

Version 2027 for Windows®

User's Guide

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Chapter 1: Welcome

Welcome to RealBand, your all-in-one audio workstation and accompaniment program!

RealBand is a program that combines the most popular features from PG Music's PowerTracks Pro Audio DAW and the award-winning Band-in-a-Box into an all-in-one sequencing program with automatic accompaniment.

RealBand offers powerful features for musicians, students, and songwriters. With intelligent automatic arrangements, RealTracks live instrument tracks, RealDrums live drum tracks, the amazing Audio Chord Wizard, seamlessly integrated digital audio/MIDI recording, built-in DirectX effects, and notation, RealBand turns a typical PC into a music production powerhouse.

This documentation will provide you with information on how to get the most out of the great features that **RealBand** has to offer.

Updates and improvements to this version of the program are ongoing and are freely available at www.pgmusic.com.

About RealBand

RealBand is a fully-featured and powerful music arranging, sequencing, and digital recording program. RealBand is the perfect tool for musicians, students, and songwriters alike.

Features included in RealBand

- Intelligent automatic accompaniment by Band-in-a-Box.
- RealTracks and RealDrums – automatic live instrument parts.
- Audio Chord Wizard interprets chords from audio files.
- 256-track MIDI/audio mixer with multiple FX busses (up to 16 effects per track) in addition to a dedicated FX insert which is allows for 4 effects per track.
- Support for popular audio file formats – MP3, WMA, WMV, WAV, and CDA.
- Built-in DirectX audio effects.
- DirectX and VST plugins supported.
- Band-in-a-Box files load directly.
- Compatible with all Band-in-a-Box styles and Real instruments.
- Shares native .SEQ file type with PowerTracks Pro Audio, directly compatible.
- Support for MIDI and Karaoke files.
- Karaoke lyrics window.
- Piano roll window with graphic controller editing.
- Onscreen notation and lead sheet style printout.
- Virtual guitar fretboard and piano keyboard.
- …and much more!

Installation

Minimum System Requirements

Windows® 7 / 8 / 10 / 11 (32 or 64-bit)

Minimum 1 GB RAM (2 GB+ recommended)

Minimum 1.0 GHz processor (2 GHz+ multicore recommended)

Disk space required for the installation depends mainly on how many RealTracks Sets and other content you install.

- A basic installation of Band-in-a-Box (with the included MIDI SuperTracks, Artist Performances, MIDI Styles, Soloists, and Melodists), and RealBand requires about 3 GB of free hard disk space.
- A full installation of Band-in-a-Box, RealBand, and all of the RealTracks included in the Pro version requires about 30 GB of hard disk space. 40 GB is required for the MegaPAK version.
- If you have additional RealTracks Sets, they require about 100-350 MB per set on average.
- If you install additional Video RealTracks Sets, they require about 2 GB per set on average.
- A full installation of Band-in-a-Box, RealBand and all RealTracks available (UltraPAK or UltraPAK+) requires close to 170 GB of hard disk space.

1024x768 screen resolution (1360x768+ recommended)

USB port for the USB flash drive version of the MegaPAK or Pro.

USB port for the USB hard drive version of the UltraPAK, UltraPAK+, or Audiophile Edition.

A MIDI sound source is required. This could be a sound card, a MIDI keyboard, MIDI sound module, or software synthesizer.

Internet connection recommended for activation and updates.

Installing the Program

Use one of the following methods to install the program files into the RealBand directory. By default, this directory is *C:*\RealBand, but you may choose another location. If you have a previous version of RealBand installed on your computer, you should install the files to your existing RealBand directory.

Installing from the Downloaded Installer Files

If you ordered the e-delivery, download all installer files from the link provided. Double-click on each file to run the installation program.

Installing from the USB Flash Drive

Insert the USB flash drive into the USB port. The Windows® AutoPlay should open the drive and show you the contents. If the drive does not automatically open, find the drive in the Windows® Explorer and double-click on the flash drive icon to open it. Double-click on a setup file to run the installation program.

Installing from the USB Hard Drive

Larger versions of Band-in-a-Box/RealBand ship on portable USB hard drives. You can run Band-in-a-Box and RealBand directly from the hard drive by using the program shortcuts. Before you use the programs, you should double-click on Setup.exe. This will set up any files that need to be installed/registered on your computer.

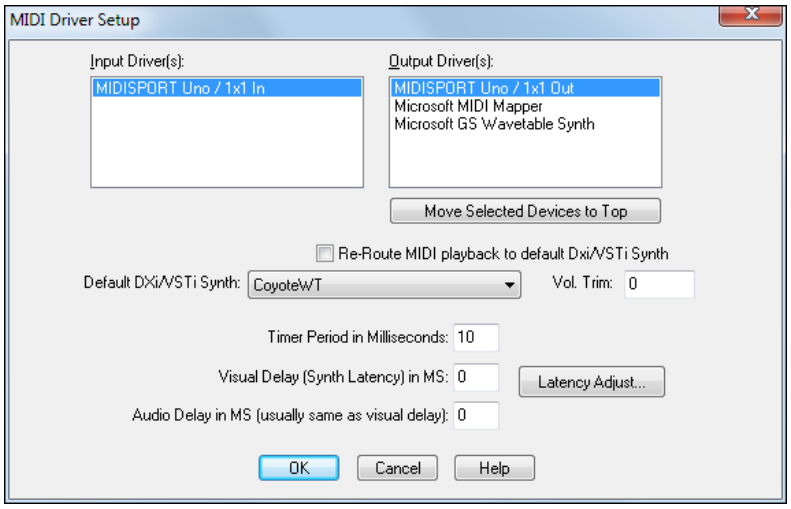
Note: Before unplugging the hard drive from your computer, make sure it is not in use, then click the "Safely Remove Hardware" icon in your taskbar. When you plug the drive in, Windows® may prompt you to select an appropriate action - if so, select "Open folder to view files."

Setup and Configuration

Step One - MIDI Setup

The first time the program runs you will be prompted to select a MIDI device from a list of currently installed devices (e.g., SB Audigy MIDI IO, Microsoft GS Wavetable SW Synth, etc.). If you don't see the **MIDI Driver Setup** dialog automatically it can be reached by pressing the **[MIDI Devices]** toolbar button. Select the MIDI device (or devices) that you want to use with RealBand (optionally) set the internal MIDI clock/timer in milliseconds.

This clock/timer setting determines how often the computer should reset its "MIDI watch." If you ever find you need an even higher degree of MIDI accuracy (and your system is extremely fast) you can decrease this number, say to 5, and the MIDI clock will be checked and reset twice as often. The default is 10 milliseconds (1/100th of a second) –which is fine for most systems.



The MIDI Input Driver is the port that your MIDI controller, for example a MIDI keyboard or MIDI guitar controller, is attached to.

The MIDI Output Driver selection is the port that your MIDI synthesizer (e.g., Sound Canvas) or an internal sound card, DXi, or VSTi synth is connected to.

Note: This is a straightforward procedure and you should encounter no difficulties selecting a MIDI driver. However, if you do experience any difficulties selecting a MIDI driver, or you do not see your sound card's internal synth or MIDI interface listed in the MIDI Driver Setup dialog, you may not have the appropriate MIDI drivers installed or configured in your Windows System.

Software Synthesizers

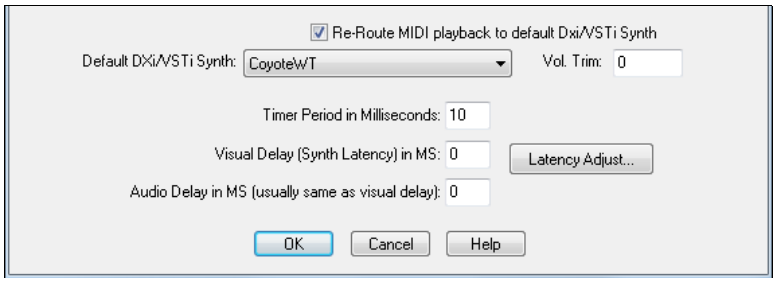
RealBand supports both DirectX (DXi) and VSTi software synthesizers, which allow RealBand to play high quality sounds directly through your computer sound card, without requiring any external MIDI hardware.

DXi Synthesizer Support

To use DXi (DirectX instrument) synthesizers with RealBand, you can think of the DXi as a type of "MIDI Output Driver." As such, you can either visit the **MIDI Driver Setup** dialog (*Options* | *Preferences* | *MIDI* | *MIDI Devices*) and select the "Re-Route MIDI Playback to Default DXi Synth" checkbox to send all MIDI playback to the default DXi synth, or you can assign DXi synths to individual tracks in the Tracks window.

Routing to Default DXi Synth

The "Default DXi Synth:" combo box lets you select which DXi (or VSTi) synth is used as the default software synth.



The "Re-Route MIDI playback to default DXi Synth" setting will cause RealBand to re-route all MIDI playback to the default DXi or VSTi synth. This is the easiest way to use a DXi softsynth for playback.

If this option is checked, then all MIDI tracks' playback output will be routed to the default DXi/VST synth regardless of the individual track's port number.

VSTi Synthesizer Support

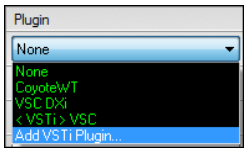
Installing a VSTi Synthesizer



To select a VSTi synthesizer for the first time, click on the **[VSTi/DXi]** toolbar button to open the **DirectX/VST Window**.



Select >> Synth 16<< in the Track list.

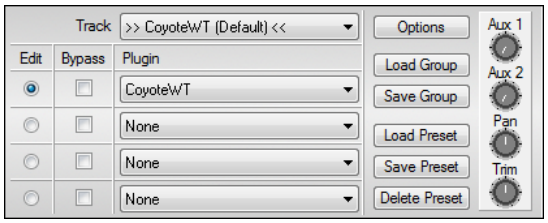


In the **Plugin** list, select "Add VSTi Plugin..." at the bottom of the list.

Note: VSTi **synthesizer** plugins have the text "<VSTi>" prepended to the plugin name, and VST **effects** plugins have "<VST>" prepended to the plugin name.

VST/VSTi plugins are often located in the **Program Files** folder in a subfolder named **VST plugins**, but they could also be in a folder named **Steinberg**, or wherever else they have been installed on the hard drive.

Select a VSTi plugin .dll file in the following **Select a VST plugin** dialog, and it is added to the plugin list. After you add each VST, the plugin is permanently added to the list. You only have to add each plugin one time.



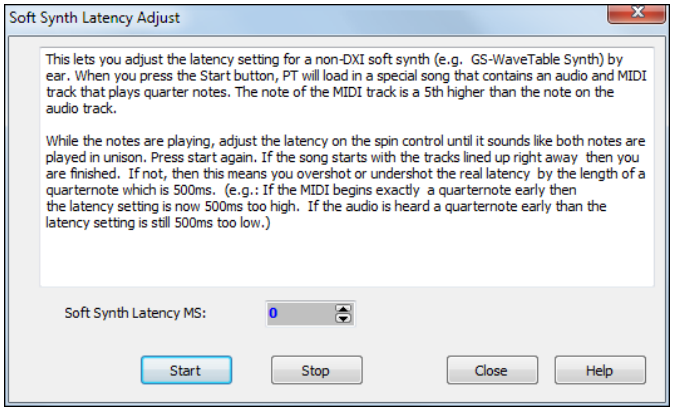
Now your VSTi synthesizer will be available along with the DXi Synth selections in the **MIDI Driver Setup** dialog.



Latency Adjustment

Pressing the **[Latency Adjust]** button in **MIDI Driver Setup** or the **[Soft Synth Latency Adjust]** in *Options* | *Preferences* | *Audio* opens the **Soft Synth Latency Adjust** dialog. This lets you adjust for fine tuning latency settings for MIDI (non-DXi, and non-VSTi) soft synths.

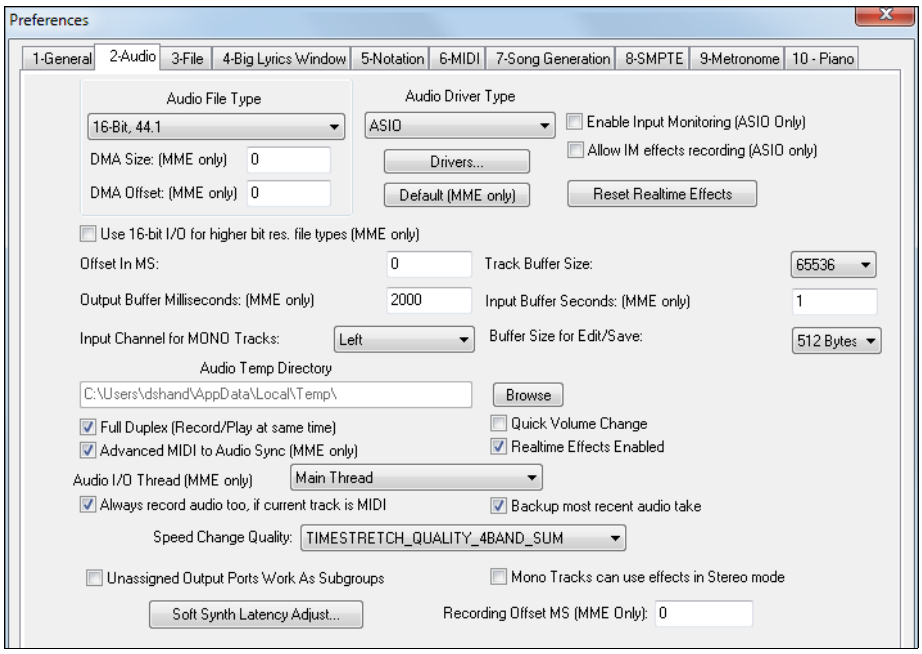
This works by playing a song called LatencyAdjust.SEQ (included with RealBand) which contains a MIDI note and audio note. Pressing the [Start] button starts the playback; you can then tweak the Soft Synth Latency MS setting until you hear the MIDI and audio tracks are in sync.



Note: If the notes sound in sync but you later play a song and the MIDI and audio still sound like they are out of sync, then likely you overshot the correct MS setting by 500ms. If this happens, we recommend starting the adjustment again at a value of zero and increasing it until you hear the MIDI and audio notes in sync.

Step Two - Digital Audio Setup

RealBand includes an auto-configuration utility to profile your computer's sound card and install optimal parameters to use when recording and playing back digital audio. Go to *Options* | *Preferences* and select the *Audio* tab to view and edit these settings. You will see the **Audio** dialog.



Pressing the **[Default (MME only)]** button instructs the program to analyze your sound card and apply the optimal values for your system if you are using the standard MME audio drivers. These settings normally don't need to be changed.

Project Recording Options

The options you may need to manually adjust in this dialog are:

1.) The "Audio File Type" **is** shown at the top of this dialog. Select the 96 kHz, 48 kHz, 44.1 kHz or 22.05 kHz sample rate option at either 16-bit or 24-bit depth, depending on your system's speed and storage capacity, on the number of tracks, and on the fidelity you wish to record. For CD audio use the 16-bit, 44.1 kHz setting. If you experience sluggish performance from your computer, you could try the 22.05 kHz setting.

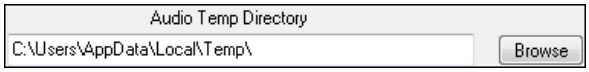
2.) The "Audio Driver Type" is MME by default, but if your sound card supports ASIO drivers you can choose this type. ASIO is an alternate driver system developed by Steinberg. It allows for much lower latency than ordinary MME drivers. When RealBand detects ASIO drivers it will prompt you to ask if you want to use them.

3.) The [Drivers] button will open the **Audio Drivers** dialog if the Driver Type is set to MME, Windows **Audio Drivers** dialog if the Driver Type is set to Windows Audio, or the **ASIO Audio Drivers** dialog if the Driver Type is ASIO.
If using MME, the Microsoft Sound Mapper is selected by default for both input and output. If you have multiple sound cards, or a multiple I/O card, you can select more than one input or output. This will affect the computer performance when recording or playing audio tracks. The more ports that are selected, the more demand is placed on your computer. This may require a very fast computer.

4.) "Input Channel for MONO Tracks" - Left/Right/L+R (2 Tracks). Since most digital audio sound cards are stereo, you have the option of recording to your project using the left channel, the right channel, or both. To determine the best setting for your recordings you must consider the audio source being recorded. For example, if you are recording a single voice with a mono-microphone you would choose either **Left** or **Right** channel to record. If your recording source is stereo, such as a guitar preamp or a synthesizer with stereo outputs, you should select **L+R (2 Tracks)** from the **"**Input Channel for MONO Tracks" list box.

> **Note**: If you are using multiple sound cards this setting must be set to L+R (2 Tracks). Also, if performance is sluggish with multiple sound cards selected you should disable some of the sound cards to free up system resources.

5.) The text box that displays the path of your "Audio Temp Directory" is another important setting.



If you have only one hard drive then you do not need to worry about this setting, just leave it on the default setting of *C:\windows\temp*.
If you have multiple hard drives or multiple partitions you should use the [Browse] button to point to the best performing drive with the most available disk space.

If you don't know what your "best" hard drive is, we have also included a special hard drive benchmarking utility so that you can test your hard drive(s) for their audio-recording capabilities to aid you in making this selection.

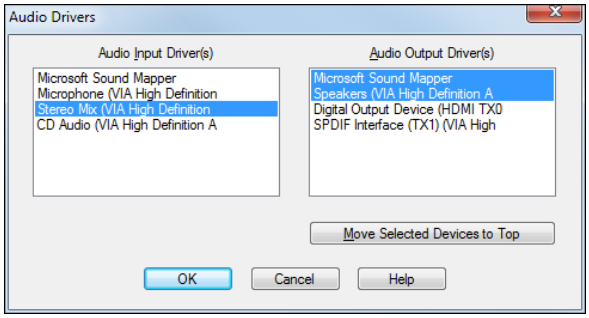
To test your hard drive(s) for their audio capabilities select the *Test Audio Performance* option from the *Action* menu. This will test your system and give you its findings on the digital audio recording capabilities.

To reapply this benchmark with another drive revisit the **Audio** dialog and change the path of the "Audio Temp Directory" to another drive, D:\temp for instance. Then select *Test Audio Performance* from the *Action* menu again and note the difference in the estimated number of tracks for each drive.

Setup for Multiple Sound Cards or Multi –Port Audio Cards

RealBand has the ability to input and output tracks of digital audio through separate channels of multiple sound cards or multiple ports of a multichannel card. If your computer system has multiple sound cards, or if you have a multiple channel audio card, you can configure RealBand for digital audio production through a mixer or other multi-channel system such as the front and rear speakers of a surround sound setup.

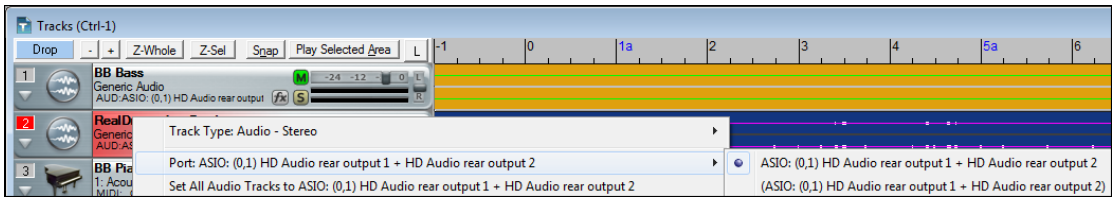
1) To configure for multiple sound cards, choose the **[Drivers]** button from the **Audio** dialog to bring up the **Audio Drivers** dialog.



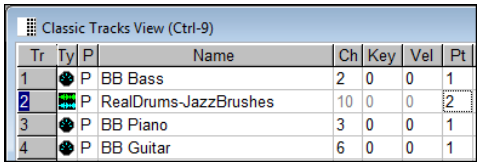
2) Choose the input and output digital audio devices that you want to use.

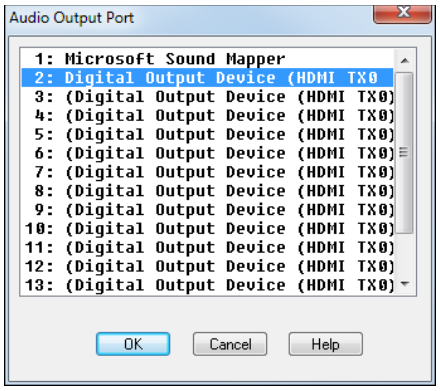
> **Note:** The Microsoft Sound Mapper driver option refers to the default Windows sound card setup as configured in the Windows Control Panel.

3) In the **Tracks** window you can choose which sound card to output each track of audio on by clicking on the track type icon and selecting one of the ports that you activated in the **Audio Drivers** dialog.



In the **Classic Tracks View** window, you can choose which sound card to output a given track of digital audio on by double-clicking the **Pt** column for any given audio track. Here, we have set the Bass, Piano, and Guitar tracks to be output through the **Pt 1** sound card, and the Drums to be output through the **Pt 2** sound card.





The **Audio Output Port** dialog is presented when the **Pt** column is double-clicked.

The sound cards/drivers selected in this dialog will correspond to the number shown to the left of the driver name and in the **Pt** column in the **Classic Tracks** window.

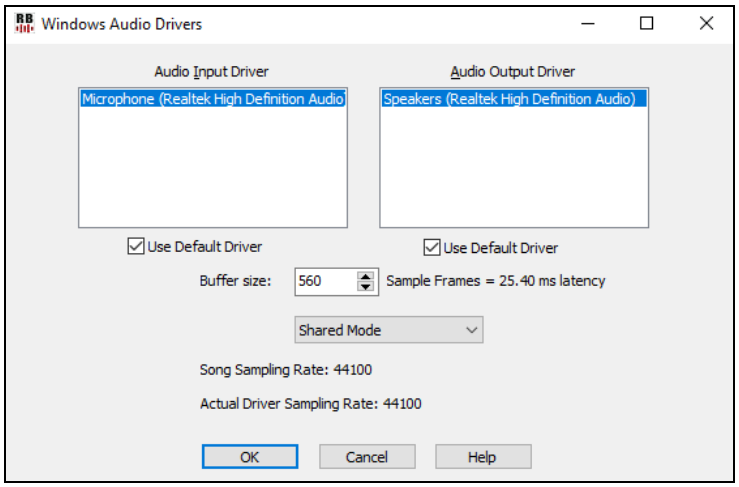
The **Safe boot-up** option gives the user the chance to boot-up RealBand with clean configuration and INI files if a crash occurred during the most recent session. This runs automatically on launching the program after a crash.

Audio Drivers

Windows Audio Session Audio Driver

RealBand supports Windows Audio Session (WASAPI) audio driver, an alternative to ASIO (a driver with low latency, but usually can be used by one program at a time) or MME (an older driver with worse latency). The Windows Audio Session driver has ultra-low latency (< 25 ms on a typical Windows PC), so audio operations like playing or sending out information via MIDI happen with no noticeable delay. Note that this supports 1 stereo input plus 1 stereo output at a time. For multiple inputs/outputs, you should continue to use either MME or ASIO.

When you boot up RealBand, it will be already set to use this driver without any action from you. If you want to confirm the selection, open the Preferences dialog (*Options* | *Preferences* | [Audio]) and see the "Audio Driver Type" option. When the WASAPI is selected for the driver type, clicking on the **[Drivers]** button will open **Windows Audio Drivers** dialog.



Audio Input Driver / Audio Output Driver: The Audio Input Driver is the device that will be used for recording sound (e.g., a microphone). The Audio Output Driver is the device that will be used for playing sound.

User Default Driver: If enabled, the device that is selected as the "Default Device" in your Windows Sound Control Panel will be used.

Buffer size: This is an audio buffer size in sample frames.

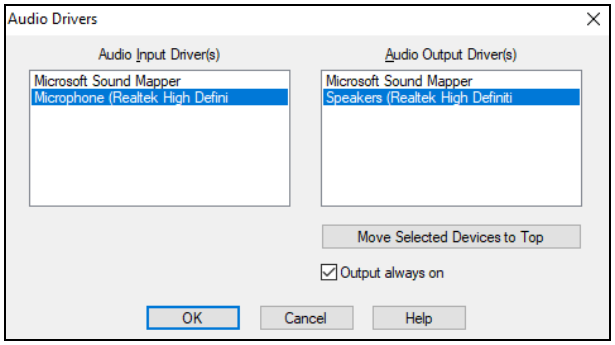
Exclusive Mode / Shared Mode: Shared Mode is recommended so that other programs will still be able to access the audio input/output devices.

Song Sampling Rate: This is the sampling rate of the current song.

Actual Driver Sampling Rate: This is the actual sampling rate of the audio driver. If this is different from song, then resampling will be in use.

MME Audio Driver

If the current Audio driver type is set to MME, the **[Drivers…]** button in the *Options* | *Preferences* | *Audio* dialog opens the **Audio Driver**s dialog, which lets you select Audio Input and Audio Output drivers. This dialog is for MME drivers, and not ASIO or ASIO.



By default, the Microsoft Sound Mapper is selected for both input and output. If you have multiple sound cards, or a multiple I/O card, you can select more than one input or output. This affects computer performance; the more ports that are selected, the more demand is placed on your computer.

If **Output always on** checkbox is enabled, sound will always be sent to the device. If this is checkbox is disabled, sound will be sent to the device only when the song is playing. Enable this option if you want MIDI plugins to work when the song is not playing.

Order of Audio Ports

The **[Move Selected Devices to Top]** button lets you adjust the order of the Audio Output ports. You can choose which Audio Output devices appear as Port 1, Port 2, etc. within RealBand, and not be stuck with the default ordering for the ports determined by the Windows operating system.

If the ports are in a different order than the order you want, you can select (highlight) one or more ports, and press the **[Move Selected Devices to Top]** button. This will move the highlighted ports to the top of the list.

When you launch the **Audio Drivers** dialog, all the highlighted ports will always be shown at the top. They will be in the same order they were before, relative to each other. For example, let's say you have 4 ports on your system, and, by default they show up sequentially:

Driver A
Driver B
Driver C
Driver D

In the preceding picture, none are highlighted. Now, let's say that you highlight the 4th port (Driver D), and move it to the top, and then you highlight the last port in the list (which is now Driver C, since Driver D was moved to the top). You now have 2 ports selected, (Driver D at the top and Driver C at the bottom). Driver D and Driver C will be ports 1 and 2 within RealBand.

Driver D
Driver A
Driver B
Driver C

The next time you launch the **Audio Drivers** dialog, you'll see Driver D and Driver C at the top, followed by the other two un-highlighted ports. The important point here is that the chosen order of the highlighted ports Driver D followed by Driver C was preserved, as shown in the picture below.

Driver D
Driver C
Driver A
Driver B

The Microsoft Sound Mapper will use the sound card selected as the preferred device in the Control Panel | Sounds and Audio Devices | Audio tab. You should not select both the Microsoft Sound Mapper and the device it uses. For example, if the preferred output device in the Audio Tab of the Multimedia settings in Control Panel is set to "AWE 64 Wave Out" you should NOT select both the "Microsoft Sound Mapper" and the "AWE 64 Wave Out" as two output ports in RealBand. You would just select one or the other, but not both. If you selected both you would get an error message saying you couldn't open one of the devices.

Recording Tracks in Stereo or Mono

Each Input and Output port is a Stereo pair, with a left and right channel. For example, if you select 4 Input Ports and 4 Output Ports, then you would be actually getting 8 input and 8 output channels, since each audio port has both a left and right channel. In the **Tracks** window, you can select the output port for each track, and in the **Mixer** window you can use the pan setting for the track to control where the output gets sent (left or right channel for the port).

When recording to a stereo audio track, the track will contain both the left and right channels. If you've selected multiple input ports, RealBand will record to multiple stereo tracks and offer to insert stereo track(s) if necessary.

MONO tracks contain only 1 channel per track, but you could record mono tracks in pairs if you've set the "Input Channel for MONO Tracks" to L+R in the *Options* | *Preferences* | *Audio* settings.

When recording to MONO tracks, multiple ports are only utilized if the Input Channel for MONO tracks in the Options | Preferences | Audio settings is set to "L+R." This will be set to "L+R" automatically if you select multiple input ports. The audio data will be recorded as 1 L+R pair per input port with all the data recorded on adjacent available tracks. Tracks will be inserted if necessary (same method as when recording L+R with a single port).

See the **Options - Audio Preferences** help topic for more information on stereo recording. Multi-port recording works the same as stereo recording, except there is more than one pair of stereo tracks being recorded by RealBand.

If the Record Channel is set to "Left" or "Right" only Input Port number 1 (the first input port in the list that was selected by you in the Audio Drivers dialog) will be recorded onto a MONO track.

Note: Port number 1 is used as a source of timing when syncing MIDI to digital audio. If you are attempting to use two different brands of sound cards together on one computer as two separate ports, there may be timing problems if the cards have different DMA buffer sizes, but it is possible you may not encounter any noticeable timing issues. The multi-port feature is mainly meant for multi-port cards. Feel free to try multiple sound cards, but your results may vary.

MME Recording Offset

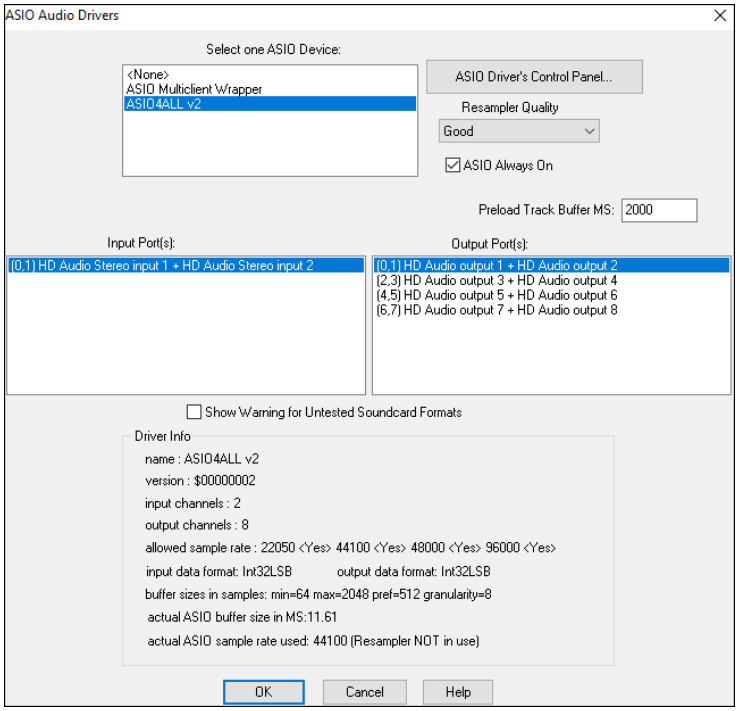
The "**Recording Offset MS [MME/Windows Audio]**" setting is found in the *Options* | *Preferences* **Audio** dialog. It can be used to correct a timing issue under Windows Vista that can cause recorded tracks to be delayed in time. Should that happen, you can increase the offset to a setting greater than zero. Usually the delay is around 50 to 60ms.

ASIO Audio Drivers

This dialog lets you choose an ASIO driver. ASIO is an alternate driver system developed by Steinberg. It has much lower latency than ordinary MME drivers.

You can arrive at this dialog in 3 different ways:

1) If you haven't used ASIO drivers, but RealBand detected them, and you answered "Yes" when asked if you want to use an ASIO driver.
2) If, within the Audio Preferences, you change the audio Driver Type from MME to ASIO.
3) If the audio Driver Type is already set to ASIO, but you press the **[Drivers]** button in the Audio Preferences.



The **Select one ASIO Device** list box lets you select an ASIO driver to use. You can only select one ASIO driver at a time, but you can run a multiclient application like Steinberg's ASIO Multiclient Wrapper to have several clients running with the same ASIO driver.

ASIO4All Driver Warning

There is a warning if the ASIO4All driver is "not connected"

Sometimes the ASIO4All driver will not be connected to an audio driver and output will be silent. This is usually due to a soft synth already using the audio driver. If RealBand detects that ASIO4ALL isn't connected, it will warn you about this, so you are aware of why the audio is silent.

Support for using ASIO with multiple programs at once. Previously, if you were using an ASIO driver (so that you have low latency), you could only use ASIO with one program at a time. Now you can use multiple programs at once with ASIO - for example RealBand and Band-in-a-Box at the same time. This requires using the Steinberg® ASIO Multiclient Wrapper, which you can download here: ftp://ftp.steinberg.net/Download/Hardware/ASIO_multiclient_driver/

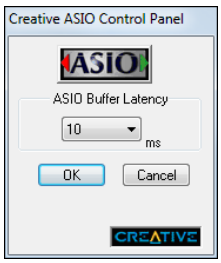
To get this function working:

1. install the ASIO Multiclient Wrapper
2. Run the ASIO Multi Server, and select your ASIO Driver (e.g., ASIO4ALL). The ASIO Server is a program located in "C:\Program Files (x86)\vidance\asiomulti\asioserver.exe"
3. Run RealBand, and choose Prefs-Audio-Driver Type ASIO, and then select ASIO Multiclient wrapper" as your ASIO driver.

Note that you may have to reboot your PC after you have installed any new ASIO Drivers.

The steps above need only be done once. The next time you run RealBand, things will already be setup.

Once you have selected an ASIO driver, you will see the **Input Port(s)** and **Output Port(s)** list boxes filled with your driver's input and output ports. By default, the first of each will be selected. You are allowed to select multiple ports with a **Ctrl+click** on the ports you choose in the list, and all the ports you select will be available for output within RealBand. If you do not hear input or output, then you may need to try different ports than the defaults. You may need to read your sound card's instructions to determine the correct ports to use.



The **[ASIO Driver's Control Panel]** button launches a settings dialog specifically provided by your driver manufacturer. This usually lets you adjust the latency by letting you choose different buffer sizes in milliseconds.

Some drivers might let you choose the buffer size in samples, which is less convenient than milliseconds.

The smaller the buffer size, the lower the latency, and the faster the response. Smaller buffers require more CPU power and if you hear dropouts or artifacts, you may need to increase the buffer size.

Since many ASIO drivers do not support multiple sample rates, RealBand has a built-in resampler which lets you play and record songs that have a different sampling rate than the rate(s) directly supported by your ASIO driver.

The **Resampler Quality** combo lets you choose Fast, Good, Better, or Best. Fast is the quickest but is the lowest of the four levels of quality. Best is the slowest (uses more CPU time) but the most transparent and accurate quality.

See the following **Understanding Latency** section.

ASIO Always On is normally selected, but it can be disabled if a driver has trouble running ASIO constantly. When this setting is turned off (unchecked), the ASIO driver is only used for playback and recording and **MIDI Thru** will be routed to the default MIDI Output destination as selected in the **MIDI Driver Setup**. This minimizes MIDI Thru latency when ASIO is not on, and it is the same way MIDI Thru behaves with high-latency MME drivers.

The **Driver Info** field shows various characteristics of your driver.

The **Name** is the driver's name.

The **Version** is the version number of your driver.

Input Channels is the total number of mono input channels that your sound card has. (Note: RealBand groups these into stereo pairs.)

Output Channels is the total number of mono output channels that your sound card has. (Note: RealBand groups these into stereo pairs.)

The **Allowed Sample Rates** field shows the sample rates allowed by your sound card's ASIO driver. RealBand has a built-in resampler which lets you play and record files that aren't directly supported by your ASIO driver.

Input data format and **output data format** is the format of the data that the ASIO driver uses (such as integer or float, 16 or 32 bit, LSB or MSB which is the ordering of the bytes).

The **Buffer Sizes In Samples** shows a range of allowed buffer sizes. The Pref is the preferred size, and this is the size that RealBand uses. Your driver may alter the preferred size if you've launched the ASIO Driver Control Panel and have selected a new buffer size from within the driver's Control Panel. If your driver changes the preferred size, then RealBand will be aware of the new preferred size.

Actual ASIO buffer size in MS is the length of an ASIO buffer in milliseconds.

Actual ASIO sample rate used is the sample rate of the ASIO driver itself. If it says (RESAMPLER IN USE) then the .SEQ file is a different sample rate than the ASIO driver. If it says (RESAMPLER NOT IN USE) then the .SEQ file and ASIO driver both are using the same sample rate.

Understanding Latency

Latency is based on the buffer sizes. The smaller the buffer sizes the lower the latency. Lower latency lets you hear mixer volume changes quickly, as well as hear MIDI thru echoed out via a DXi soft synth practically in real time.

The latency, in MS is determined by the buffer size in samples, as well as the driver's sampling rate.

Note: If your ASIO Driver's control panel lets you select the buffer size in MS, then you don't have to pay much attention to the part of this discussion about converting samples to MS.

Converting Samples to MS: For example, suppose the driver's sample rate is 48K. A 48K sampling rate means that it is playing at 48,000 samples per second. If the buffer size were 48000 samples, then the latency would be 1 second, or 1000ms (which is very large and slow, and usually not allowed in ASIO). If the buffer size were 4800 samples, which is 1/10 second, then the latency would be 100ms. If the buffer size were 2400 samples, which is 1/20 second, the latency would be 50 ms. If the buffer size were 240 samples, which is 1/200 second, the latency would be a mere 5ms which is incredibly low and very fast.

Normally, you can change your driver's latency by pressing the [ASIO Driver's Control Panel] button. Normally, the driver specifies the buffer sizes in milliseconds, which equals the latency.

Low latency is faster and more responsive but uses more CPU power.

Depending on the speed of your computer, you may find that the playback has dropouts, clicks/pops, or other artifacts if you set the buffer sizes too small. This is because smaller buffers use more CPU power and if your computer can't handle the low latency, you will hear artifacts. If this happens, you would need to use larger buffer sizes. You may need to experiment to find what works well. You may be able to use smaller buffers with songs that don't have a lot of tracks and effects, but may find that you need to use larger buffers with songs that have more tracks and use more effects. This is because more tracks and more effects use more CPU power, which leaves less CPU power available for the audio routines to keep up with lower latencies.

Chapter 2: RealBand 2027

RealBand 2027 brings major improvements to MIDI editing, AI-powered audio analysis, style selection, and overall workflow. Key additions include a redesigned Piano Roll, an AI Audio Chord Wizard for bar line and chord detection, seven-stem audio separation, and AI Style Search, which finds styles based on natural-language descriptions or song references. The Chords window also supports direct chord entry, while the Audio Edit window features an expanded timeline with chord symbols. Other improvements include more flexible window layouts and docking options, enhanced StylePicker and RealTracks and RealDrums Pickers, smoother RealTracks playback, and new editing and navigation controls. The release also includes various usability improvements and fixes, and more!

Summary of New Features

Piano Roll Window Improvements

The Piano Roll features a redesigned interface with improved visual clarity, more informative note displays, and enhanced editing controls. It provides flexible grid and snap settings, customizable note selection and editing tools, and a visual loop editor for easier playback control. New keyboard shortcuts, expanded zoom and navigation options, advanced quantization and filtering tools, and a reorganized toolbar make MIDI editing more precise and efficient.

AI Audio Chord Wizard

The Audio Edit window includes a dedicated ACW (Audio Chord Wizard) mode featuring the AI-powered bar line detection and chord analysis.

Seven-Stem Audio Separation

The AI Audio Stem Splitter can now separate audio into seven stems: Bass, Drums, Guitar, Piano, Others, Vocals, and Residual.

Expanded Audio Edit Window Timeline

The Audio Edit window features an expanded timeline that displays chord symbols directly within the timeline rather than in the audio section.

Direct Chord Entry

The Chords window now lets you enter chord symbols directly into the cells of the chord sheet.

Toolbars and Floating/Docking Options

The following windows feature new toolbars, with a design similar to the toolbar in the main Band-in-a-Box window.

- Chords window: Non-floating by default, but can be set to either floating or non-floating.
- Tracks window: Non-floating by default, but can be set to either floating or non-floating.
- Mixer window: Non-floating by default, but can be set to either floating or non-floating.
- Notation window: Non-floating by default, but can be set to either floating or non-floating.
- Audio Edit window: Non-floating by default, but can be set to either floating or non-floating.
- Big Piano windows: Floating only.
- Big Lyrics window: Floating only.
- Guita window: Floating only.
- Event List window: Floating only.

Maximized Docking Mode

Windows that support both floating and docked modes open maximized and docked by default. To open a window in floating mode, hold Ctrl while clicking on its toolbar button (e.g., [Tracks]). If the window is already open and visible, Ctrl+clicking on its toolbar button toggles it between floating and docked modes. If a window is floating, simply pressing the Dock button docks it in maximized mode.

Additional Floating-Only Windows

The Sysex, Tempo Map, and Meter Map windows are now floating only.

(Note: These windows have no toolbars.)

(Note: Legacy windows, such as Classic Tracks and Bars windows, have no toolbars.)

AI-Powered Natural-Language Style Search

AI Style Search finds suitable styles from natural-language descriptions or song references and presents results in strongest-to-weakest match order. Results include match scores and explanations, respect existing StylePicker filters, and can be copied in a spreadsheet-friendly format.

StylePicker Improvements

StylePicker filtering, searching, sorting, rebuilding, and status reporting have been improved. Rebuild options are clearer, installer-triggered rebuilds are better integrated, and list sorting is more natural.

RealTracks Playback and Performance Improvements

Many RealTracks sound smoother and more natural, with improved eighth-note push timing and cleaner transitions between riffs.

Smarter RealTracks Filtering

The RealTracks Picker features improved filtering and clearer filter status information.

RealDrums Picker Improvements

The RealDrums Picker has been redesigned, with improved columns, filtering, variations, stems, demos, and track settings. RealDrums information is more complete and remains correctly populated when switching between picker tabs.

Other Improvements and Fixes

The Event List window uses an improved font instead of the system font.

The Notation window includes a Mono Mode checkbox that automatically deletes any existing notes on the same peg when a new note is entered.

The Tracks and Audio Edit windows include an [Auto Scroll] button on the toolbar, enabled by default. When disabled, the screen does not scroll horizontally during playback or recording. This is useful for punch-ins or when playing in loop mode without wanting the display to advance to the next screen.

Miscellaneous fixes since Build 10 of RealBand 2026

Entering chords in the Chords window now correctly updates the chord display in the Tracks window timeline.

Using the *Edit | Undo* after the *Delete Bars from Song* command now restores the deleted audio.

The Big Piano window's position is now saved between sessions.

The Big Piano window's position is now saved in Window Setup files.

The time signature in the Lead Sheet window now displays correctly without distortion or overlapping.

Double-clicking on a bar in the Lead Sheet window now starts playback from the correct bar.

When RealBand is launched for the first time without a default.rws file, the Chords window now opens at the correct size.

Various access violations have been resolved.

Details of New Features

Piano Roll Window Improvements

Visual Enhancements

Modernized Color Scheme: A fully refreshed color palette throughout the Piano Roll for improved visual clarity and delivers a more contemporary look.

Velocity Shading by Default: Notes are now color-coded by velocity, with higher velocities appearing brighter and more saturated, and lower velocities appearing more subdued.

Middle C Indicator: A clear visual marker highlights middle C (C5) on the keyboard for easier octave orientation.

Full-Height Playback Cursor: The Piano Roll now features two distinct full-height cursors: a green playback cursor that tracks the current playback position, and a blue position cursor that marks your edit/start position.

Separate Playback and Position Cursors: Playback (green) and edit (blue) cursors are now distinct, matching the behavior of the Audio Edit window for a consistent user experience.

Velocity Editing Cursor: A specialized cursor appears when holding down the Ctrl key and dragging notes to adjust velocity, centered precisely at the click point for improved control.

Note Display & Information

Customizable Note Text Display: The new "Note Display" menu option lets you choose what information appears on each note (note name, velocity, duration, etc.), allowing you to control visual information density.

Intelligent Note Text Sizing: Note text now automatically shortens when notes are too small to display full information, maintaining readability at all zoom levels.

Enhanced Note Tooltips: Detailed tooltips appear when hovering over any note, showing pitch, velocity, duration, position, channel, and more. When hovering over empty space, the tooltip shows what note would be created at that location.

Real-Time Duration Feedback: When adjusting note duration by dragging, the updated duration value is displayed in real time as you drag.

Drum Kit Sound Names for Channel 10: On channel 10, notes and keyboard display the drum sound name associated with each key (e.g., “C5 (Kick)”) alongside the standard note name, making drum programming more intuitive.

Guitar Notation for Channels 11-16: On channels 11-16, notes and keyboard display guitar string and fret information (e.g., “C5 (2s/1f)” for second string, first fret) alongside the standard note name, enhancing guitar-oriented MIDI editing.

Bar.Beat.Tick Format: All position displays now use the industry-standard bar.beat.tick (b.b.t) format for consistency and clearer timing reference.

Keyboard Note Name Display: You can toggle MIDI note names on the keyboard for quick reference, with improved spacing on black-key labels for better readability.

Grid and Timing

Advanced Grid Controls: New options in the *Grid* menu allow you to:

- Toggle the grid on/off.
- Adjust the grid resolution to match your workflow.
- Apply swing or groove to the grid for non-straight timing feels.

Smart Snap with Hotkey Toggle: The enhanced snap-to-grid system now includes a Shift+S hotkey for quick toggling. Snap functions consistently whether you are entering new notes or moving existing ones.

Adjustable Snap Strength: A new “Snap Strength” setting (0-100%) lets you fine-tune how strongly notes adhere to the grid, enabling subtle timing shifts while still maintaining a loose rhythmic feel when desired.

Grid-Aware Movement: When moving a note with the arrow keys, note movement follows the current grid resolution, providing more predictable and musically aligned navigation.

Loop Region

Visual Loop Area Editor: A new dedicated loop region area appears on the Ruler panel, providing intuitive loop management.

- The default (disabled) loop region spans bars 1-4.
- Click and drag to define a new loop region.
- Shift+click on the loop region to toggle looping on or off.
- Drag the left or right edge to adjust loop start/end points.
- Drag the loop region body to move it to a new position.

Note Editing Tools

Pen Tool as Default: The Pen tool is now the default cursor mode, streamlining the note entry for faster composition.

Split Tool: A new Split tool lets you divide a note into two at the click point.

Click-and-Drag Note Creation: Create notes with custom durations by clicking and dragging horizontally. Note extend as you drag, with real-time visual feedback.

Flexible Note Movement: Move notes by clicking and dragging. By default, movement is axis-locked—restricted to pitch or time—for precise editing. Hold the Shift key while dragging to remove the lock and move notes freely in both directions.

Edge-Based Duration Editing: Click and drag from the left edge of a note to adjust its start position and duration simultaneously.

Piano Keyboard Note Entry: Click directly on the piano keyboard to insert a note at the current cursor position. Hold the key on the piano keyboard to increase the note’s duration while holding.

Direct Velocity Editing: Hold the Ctrl key and drag notes vertically to adjust velocity. The current velocity value is displayed in real time as you drag.

Shift+Drag Event Time Adjustment: In the Graphic Event panel, hold down the **Shift** key while clicking and dragging an event horizontally to slide it in time. If multiple events are selected, all selected events will move together.

Selection Rectangle Enhancement: The selection rectangle now selects all notes that overlap with the selection area, not only those whose start positions fall within it, making multi-note selection more intuitive.

Keyboard Shortcuts

Note Panel Shortcuts

- 1 - 6: Toggles the Tool mode.
- Shift: Activates the selection tool for selecting multiple notes.
- Shift on a note: Enables free movement in both directions (removes axis-lock).
- Shift+Ctrl: Activates the delete tool for removing notes.
- Ctrl+Drag: Adjusts note velocity with real-time visual feedback.
- Left/Right Cursors: Moves the selected note by 1 grid resolution, or moves cursor if no note is selected.
- Shift+L Cursor / Shift+R Cursor: Selects the adjacent note to the left or right.
- Up/Down Cursors: Moves the selected note up or down by one semitone.

- Shift+Up Cursor / Shift+Down Cursor: Moves the selected note up or down by one octave.
- N: Inserts a new note at the cursor position using the last-entered pitch.
- Shift+S: Toggles snap-to-grid on/off.

Control Panel Shortcuts

- Shift: Activates the selection tool for selecting automation regions.
- Ctrl: Activates the line cursor for drawing straight automation lines.

Keyboard Panel Shortcuts

- Shift: Activates the selection tool.

Zoom and Navigation

Extended Vertical Zoom: Zoom in vertically down to a single octave for detailed editing of specific pitch ranges, or zoom out to display all notes within the visible window height.

Complete Horizontal Zoom Out: Zoom fully out horizontally to view your entire project in the Piano Roll at once, ideal for reviewing overall song structure and long-range patterns.

Auto-Scroll Control: A new “Mouse Scroll” option in the *Scroll* menu allows you to enable or disable mouse wheel scrolling in the Piano Roll, giving you control over navigation behavior.

Cursor-Based Clicking: Clicking anywhere on the Ruler or Note panel (without dragging) now moves the cursor to that position for fast, precise navigation.

Ruler Double-Click Playback: Double-click anywhere on the Ruler to start playback from that position, making it easier to audition specific sections quickly.

Advanced Features

Mono Mode: Enable “Mono Mode” from the toolbar to ensure only one note plays at a time, perfect for creating melodic sequences and single-note lines without unintended chord overlaps.

Quantize Strength: Use the 0–100% options in the *Quantize* menu to fine-tune the intensity of quantization.

Comprehensive Quantize Dialog: A redesigned Quantize dialog provides precise and flexible control over timing and musical alignment:

- Quantize Time: Align note positions to the desired timing resolution.
- Quantize Scale: Adjust notes to a selected musical scale.
- Quantize Velocity: Normalize or modify velocity ranges.
- Clickable Section Headers: Quickly enable or disable each quantize type by clicking on its title bar.

Advanced Filter System: A new floating Filter dialog provides sophisticated note filtering capabilities:

- Pitch Filter: Show or hide notes by pitch (supports note names).
- String Range Filter: Show notes within specific guitar string ranges.
- Fret Range Filter: Show notes within specific fret ranges.
- Position Range Filter: Filter notes by time range using the bar.beat.tick format.
- Duration Filter: Display notes based on note length.
- MIDI Channel Filter: Show or hide notes by channel, with convenient All/None buttons.
- Velocity Filter: Filter by velocity ranges.
- Invert Filter: Swap visible and hidden notes instantly.
- Individual Toggle: Enable or disable each filter criterion independently.
- Filter-Aware Selection: Selection rectangle respects filters, with an option to select filtered notes.

Edit Tool Selection: Choose from different editing tool modes from the toolbar to optimize your workflow for different tasks. The “Right-Click” option in the *Pen* menu lets you configure right-click behavior. By default, right-click dragging selects notes.

GUI Improvements

Streamlined Toolbar: The toolbar has been fully reorganized, with all functions now organized into clear, logical menus for a cleaner, more professional interface.

- Tool: Select the active editing tool.
- Channel: Choose which MIDI channel to display and edit.
- Playable Track: Enable or disable the Playable Track.
- Mono Mode: Turn Mono Mode on or off.
- Grid: Configure grid resolution, visibility, and swing/groove.
- Snap: Adjust snap behavior, including snap strength and toggle.

- Quantize: Access quick quantize presets or the full Quantize dialog.
- Duration: Apply predefined note durations.
- Filter Notes: Open the advanced Filter dialog for note visibility control.
- Display Type: Select what the Control panel displays (velocity, controllers, etc.).
- Show: Toggle visual features including Ghost Notes, Velocity Shading, Note Display, and Keyboard Note Names.
- Scroll: Configure mouse and auto-scroll behavior.
- Reset Button: Restore all settings to their default values.
- Help Button: Open online help documentation.
- Floating/Docking Button: Float or dock the Piano Roll window.

AI Audio Chord Wizard

The [ACW] mode button on the Audio Edit window launches the AI-powered Audio Chord Wizard.

The [Audio Chord Wizard] toolbar button has been replaced with a new [AI Tools & ACW] button.

The Audio Chord Wizard can detect bar lines for the whole track or within a selected range.

It can also analyze chords for the whole track or within a selected range.

Status messages are displayed during detection or analysis.

The Audio Chord Wizard automatically sets the song tempo.

The AI Chord Settings let you customize chord detection by selecting chord types, bass note weighting, song key, and sensitivity to chord changes. You can also control beat interpretation, combine adjacent chords, discard chords on weak beats, and specify how repeated bars are handled.

Right-clicking on a bar handle allows you to delete the bar line.

Seven-Stem Audio Separation

The AI Audio Stem Splitter can now separate audio into seven stems: Bass, Drums, Guitar, Piano, Others, Vocals, and Residual.

Expanded Audio Edit Window Timeline

The Audio Edit window features an expanded timeline that displays chord symbols directly within the timeline rather than in the audio section.

Direct Chord Entry

The Chords window now lets you enter chord symbols directly into the cells of the chord sheet.

Toolbars and Floating/Docking Options

The following windows feature new toolbars, with a design similar to the toolbar in the main Band-in-a-Box window.

- Chords window: Non-floating by default, but can be set to either floating or non-floating.
- Tracks window: Non-floating by default, but can be set to either floating or non-floating.
- Mixer window: Non-floating by default, but can be set to either floating or non-floating.
- Notation window: Non-floating by default, but can be set to either floating or non-floating.
- Audio Edit window: Non-floating by default, but can be set to either floating or non-floating.
- Big Piano windows: Floating only.
- Big Lyrics window: Floating only.
- Guita window: Floating only.
- Event List window: Floating only.

Maximized Docking Mode

Windows that support both floating and docked modes open maximized and docked by default. To open a window in floating mode, hold Ctrl while clicking on its toolbar button (e.g., [Tracks]). If the window is already open and visible, Ctrl+clicking on its toolbar button toggles it between floating and docked modes. If a window is floating, simply pressing the Dock button docks it in maximized mode.

Additional Floating-Only Windows

The Sysex, Tempo Map, and Meter Map windows are now floating only.

(Note: These windows have no toolbars.)

(Note: Legacy windows, such as Classic Tracks and Bars windows, have no toolbars.)

AI-Powered Natural-Language Style Search

AI Style Search lets you search for styles using natural language, displays results directly and automatically filters the StylePicker style list.

AI Style Search results are ordered from strongest to weakest match, still respecting current StylePicker filters.

When two styles are equally suitable and their typical tempos are approximately equally distant from the requested tempo, AI Style Search prefers the style with the lower typical tempo.

The StylePicker status displays the correct number of styles found.

The right-click context menu in the AI Style Search results lets you load style demos or audition files.

Styles can be loaded by double-clicking them in the AI Style Search results.

AI Style Search results can be selected and copied using Ctrl+C or the *Copy* command in the right-click context menu. The copied rows are tab-delimited and include complete style names, match scores, descriptions, and all underlying text, even when not fully visible in the window. Multiple rows can be selected using Shift+click.

The full Natural-Language Style Search (AI) dialog, opened using the [More...] button in the [Style Search (AI)] tab, lets you search for styles using natural language and provides search status, result filtering options, match scores, explanations for suggested styles, and additional search options. It also includes a larger results area that expands when the dialog is resized.

The AI Style Search dialog includes a scrollable Analysis field. It identifies indirect song references and summarizes explicit musical criteria.

Pressing the Enter key in the AI Style Search field in both the StylePicker and the full AI Style Search dialog triggers the search.

AI Style Search follows instructions to identify indirect song references, summarize explicit musical criteria, and acknowledge uncertainty rather than inventing facts.

AI Style Search History can optionally save the query, analysis, timestamp, and complete results of previous searches. Saved searches can be restored from the History dialog.

Search History includes a configurable retention period and automatically removes searches older than the selected number of days.

StylePicker Improvements

The StylePicker features a tabbed search section with a new [Style Search (AI)] tab alongside the existing [Song Titles] tab.

The StylePicker no longer displays “n/a” as the artist for MIDI SuperTracks when no applicable artist name is available.

You can filter the style list by XPro Styles PAK using the “Other” filter button.

“New in 2027” in the Category filter includes 2027 Bonus, BonusPAK, MIDI, and MIDI SuperTracks styles.

The filter and search sections resize smoothly with the window and feature improved alignment.

Hints have been added to the Song Titles search section in the StylePicker.

The filter summary and tooltip have improved formatting

When a demo song cannot be found for a style, a descriptive message is displayed instead of “Not Found.”

The [Go to Top] (scroll up) button has been relocated to the upper center of the list, giving the Style Search area more space.

A [Go to Bottom] (scroll down) button has been added next to the [Go to Top] button.

The StylePicker mixer track labels were difficult to read. They now use the same background color as the instrument display.

The StylePicker mixer mute and solo indicators now update immediately when track status changes elsewhere in the program.

The “StylePicker defaults to current style” preference correctly determines whether the StylePicker selects the song’s current style or retains the previously selected style.

The “Select a RealTracks” dialog no longer includes the first RealTrack in filtered results when it doesn’t match the filter. You can filter to a single RealTrack and select it by pressing Enter without having to click it with the mouse.

The former [Options] button has been renamed [Actions] and offers clearer, style-specific commands with less redundant information. A separate [Options] button has been added to open the StylePicker Options dialog.

Three RealStyles (BM_CWLTZ, =POPPLTS, and =TEXMETL) with nonstandard filename prefixes appear in their correct alphabetical positions in the StylePicker’s default listing after a rebuild.

The Set#, #Instr, and #substyles columns sort in the correct order.

The Set# column sorts naturally, with set names in alphabetical order and numbered sets in numerical order.

The StylePicker list font size can be adjusted using Ctrl+mouse wheel.

The [Rebuild] button has been relocated to a more prominent position next to the rebuild status bar.

Rebuild choices are now described as “Normal” (rebuilds PG Music content only) and “Full” (also includes user and third-party styles), replacing “Fast” and “Slow.”

Rebuild status information is now an always-visible display showing when the style list was rebuilt and how many styles, RealTracks, and RealDrums were found.

The rebuild status remains visible and shows the date of the last database rebuild and the total number of styles found, RealDrums discovered, and RealTracks installed.

Installers can trigger an automatic rebuild at bootup.

The program installer includes an option to automatically rebuild the StylePicker on first startup if a rebuild is recommended.

The StylePicker Options dialog includes a setting to choose whether the automatic rebuild uses Normal or Full.

The StylePicker Options dialog includes an option to automatically start a rebuild instead of prompting at bootup.

The rebuild confirmation dialog displays the folders where RealTracks and RealDrums were most recently installed, if there is a conflict. (Note: The automatic rebuild pauses for folder confirmation when the most recent install locations differ from the configured RealTracks or RealDrums folders.)

Folder buttons in the rebuild confirmation dialog remain visible in a dimmed state when custom folders are disabled.

RealTracks Playback and Performance Improvements

RealTracks eighth-note pushes have better timing.

RealTracks audio stretching used to fill gaps produces smoother transitions, reducing occasional clicks between riffs, particularly with low-frequency RealTracks.

Smarter RealTracks Filtering

The “Show N/A” filter is available in the “Other” filter menu.

When the “Show N/A” filter is enabled, an indicator “N/A included” appears above the list.

Filter string is displayed in the Filter status area instead of in the “None” instrument list row.

The list can be filtered to show only RealTracks that are not currently available.

RealDrums Picker Improvements

Duplicate User RealDrums entries no longer accumulate in the RealDrums Picker after each rebuild.

The filter updates automatically as you enter a filter term, matching the behavior of the RealTracks filter.

Filter options for N/A, favorites, and stems, as well as filters for mismatched feel and out-of-range tempos, are available in the Filter menus instead of the Track Settings panel.

Active RealDrums compatibility filters (“Feel matches” and “Tempo in range”) are identified in the filter-description text above the list.

The RealDrums Picker displays the total number of installed RealDrums folders, including variations.

The RealDrums Track Settings panel lets you choose different RealDrums variations with each play.

The Variations column (^) indicates which RealDrums have variations available and supports sorting.

Double-clicking on a variation plays its corresponding pre-made demo instead of a short or interrupted raw audio excerpt.

The “Show only RealDrums with stems” option in the RealDrums Track Settings panel has been renamed from “Show RealDrums with stems”.

RealDrums demo songs and associated style demos can be loaded from the RealDrums list’s right-click context menu. Three types of files are available for the selected RealDrums track: RD Demo Songs, Style Demos, and Styles.

RealDrums auditions play and report only the selected Band or Solo demo, falling back to the other version only when necessary.

The /4 column has been renamed TimeSig and displays 3/4 or 4/4 instead of a blank value or /3.The RealDrums list displays Ntn (Notation Available), Set (Set Number), and Vid (Video Available) in three separate sortable columns.

The RealDrums Picker Set column now sorts set numbers numerically.

RealDrums Picker column widths are now saved.

The first RealDrums entry in the list (e.g., 118Pop22223^) displays properly.

All RealDrums display the correct set numbers.

The redundant Settings, Rebuild, Copy List, Audition, Play Now, and Stop buttons have been removed from the bottom of the RealDrums Picker.

RealDrums artist biographies load correctly instead of displaying only the artist’s name.

RealDrums without an authored memo display a basic memo generated from their genre, feel, time signature, and artist information.

Other Improvements and Fixes

The Event List window uses an improved font instead of the system font.

The Notation window includes a Mono Mode checkbox that automatically deletes any existing notes on the same peg when a new note is entered.

The Tracks and Audio Edit windows include an [Auto Scroll] button on the toolbar, enabled by default. When disabled, the screen does not scroll horizontally during playback or recording. This is useful for punch-ins or when playing in loop mode without wanting the display to advance to the next screen.

Miscellaneous fixes since Build 10 of RealBand 2026

Entering chords in the Chords window now correctly updates the chord display in the Tracks window timeline.

Using the *Edit | Undo after the Delete Bars From Song* command now restores the deleted audio.

The Big Piano window's position is now saved between sessions.

The Big Piano window's position is now saved in Window Setup files.

The time signature in the Lead Sheet window now displays correctly without distortion or overlapping.

Double-clicking on a bar in the Lead Sheet window now starts playback from the correct bar.

When RealBand is launched for the first time without a default.rws file, the Chords window now opens at the correct size.

Various access violations have been resolved.

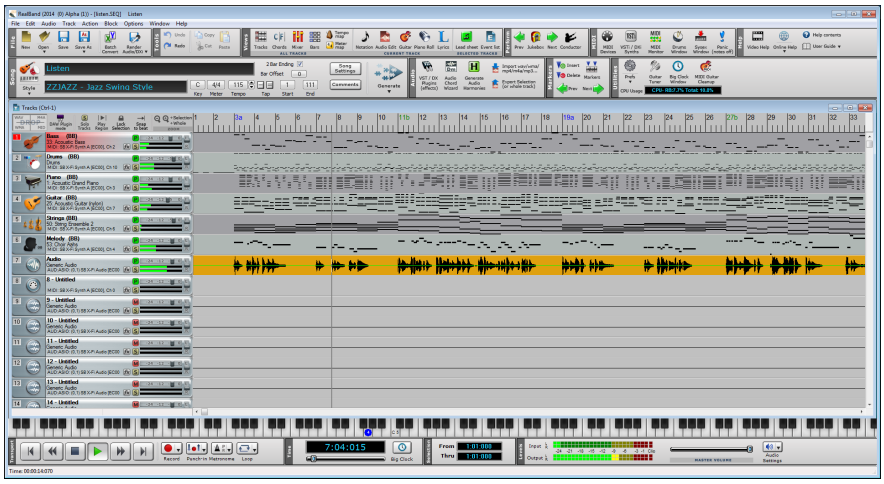
Thank you for taking time to read this introduction to RealBand 2027!

Chapter 3: Tutorial – Guided Tour of RealBand

What is RealBand?

RealBand is your all-in-one audio workstation and accompaniment program!

You may be familiar with PG Music's award-winning Band-in-a-Box program for intelligent automatic music accompaniment in a great variety of styles, and also with our PowerTracks Pro Audio DAW program for solid sequencing of both MIDI and digital audio at an incredible price. RealBand takes the main features of both programs and combines them into a full-featured sequencer with automatic accompaniment.



The other chapters in this guide provide detailed instructions and information on RealBand, but if you want to make real music now this tutorial will show you how to get started with RealBand, how to use its main features, and how to enjoy it.

Getting Started

RealBand will install by default to its own folder, usually c:\RealBand. To start the program, double click on the application file RealBand.exe in this folder.

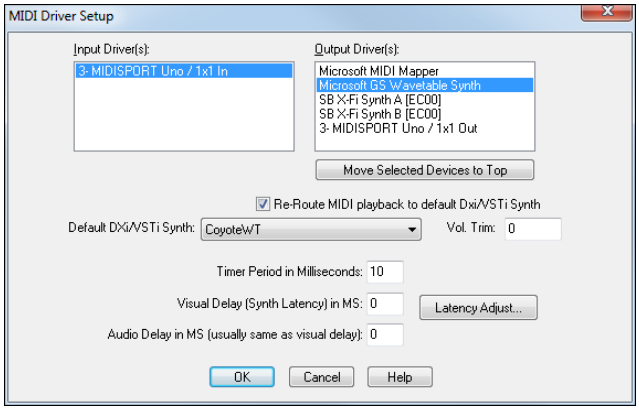
To place a convenient shortcut on your desktop you can right-click on the file name RealBand.exe for a menu of options. Select *Send To* and then *Desktop (create shortcut)*.



You can then open RealBand directly from your desktop by double-clicking on the icon, like any other Windows program.

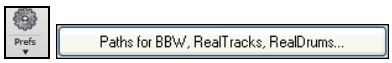
Note: If **RealBand** is already installed and set up on your computer you can now jump ahead to the next topic and get ready to make real music.

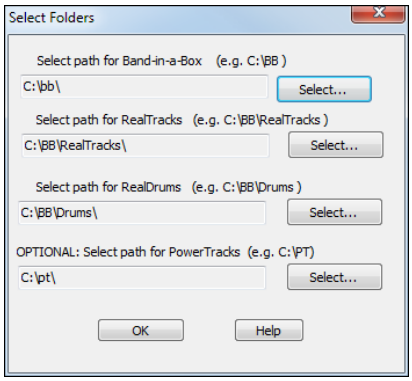
The first time RealBand runs, you will be prompted to select a MIDI device from a list of currently installed devices. If you have DXi or VSTi software synthesizers installed, you can choose to send your MIDI output to the software synth of your choice.



RealBand then prompts you to select the folders for Band-in-a-Box, RealTracks, and RealDrums. These are important settings, as they enable you to use all of Band-in-a-Box styles, RealDrums, and RealTracks that you have installed on your system. So, if you have the latest Band-in-a-Box UltraPAK, then you also have access to every style, RealDrums set, and RealTracks instrument there is for use in RealBand too.

If the BB, Drums, or RealTracks folders don't exist on boot up, a Flash message will appear to warn the user. These folder paths can be assigned or changed manually in the Preferences.





Now that RealBand has guided you through the initial setup you can start to have fun. For a start, we could look at two of the main workspaces, the Tracks window and the Mixer window.

Introduction to the Tracks and Mixer Windows



The **Tracks** window is one of the main workspaces in RealBand. It opens with the **[Tracks]** tool bar button, with the hot key combination **Ctrl+1**, or with the menu command *Window* | *Tracks*.

This window has 256 tracks, each of which can be designated as a MIDI track, a mono audio track, or a stereo audio track. When starting a new file, any track can be set to any track type in the Tracks window.

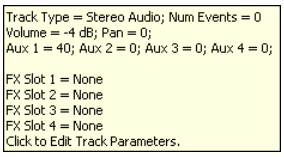


The default track type is Audio - Stereo, as indicated by the two audio wave forms on the track type button. (A mono audio track would show a single audio waveform.)

A right mouse click on the track type button opens a menu of track options, and we will reset the track to be a MIDI track. The track type button changes to show a MIDI plug.

The track settings are described in detail in the Tracks Window help topic.

For a quick look at the settings for any track just hover the mouse cursor over the track type icon and a pop-up will give a summary of the current settings.



You'll have a great time recording your own audio and MIDI tracks in this window, and you can also import wave files, MP3s, WMA files, MIDI files, and Karaoke files. You'll find your Tracks window settings duplicated in the Mixer window, where you will usually spend more time in the later stages of song production.



The Mixer window opens with the mixer icon, or with the hot key combination **Ctrl+8**, or with the menu command *Window* | *Mixer*.

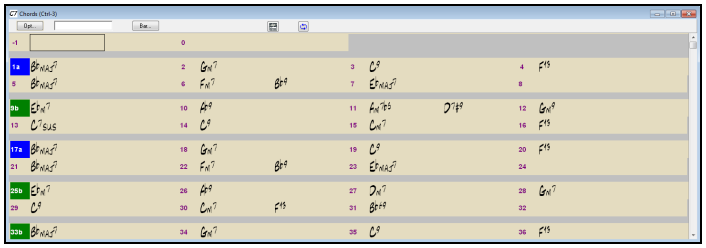
A right mouse click on any track strip brings up the same menu of track settings as in the Tracks window. These settings are explained completely in the Mixer Window help topic. There are many additional, and powerful, features in the mixer including real time audio effects with lots of routing options. This is where you put the finishing touches on your song productions. The Chords window is where automatic song arrangements begin.

Creating a New Song Arrangement

Note: This follows the RealBand tutorial video and expands on some of the topics found there.



To generate a new song arrangement, you begin by typing the chords into the Chords window using standard chord symbols. This window opens with the **[Chords]** button, the hot key combination **Ctrl+3**, or the menu command *Window* | *Chords*.



You'll see the bars of the song displayed in rows. If a bar contains chord symbols, they will be displayed to the right of the bar number.

Entering Chords

Enter the chords for your song by typing them in using standard chord symbols such as C, or Fm7, or Bb7, or Bb13#9/E. For example, type c6 to get the C6 chord. Note that you should never have to use the **Shift** key, as RealBand will sort this out for you.

- Use b for a flat, e.g., Bb7.
- Use # or 3 for a sharp, e.g., F#7. (# is the uppercase symbol of 3, so you can actually type F37 to get F#7 - RealBand will sort out the case, saving you the effort of using <SHIFT>3 to type the # symbol.
- Use / for Slash Chords with alternate Roots such as C7/E (C7 with E bass)
- Use a comma to enter 2 chords in a row. In the example below, we would type Ab9,G9 to enter 2 chords at a time (on beat 3 and 4 of bar 2)

You can use the Delete key to delete a chord, or type a comma and press Enter.

Each measure is divided into Beat Groups, indicated by a highlight cell, A Beat Group consists of two beats. If a song is in 4/4, then each measure will contain two beat groups. The current beat group will have a rectangle drawn around it. You can type two chords into the current beat group. For example if you type this: "C7,G7" (without the quotes) you'll see the text you're typing in the white rectangular panel on the toolbar. If you then hit <Enter> you'll see the C7 and G7 chords appear within the current beat group, and the input rectangle will automatically advance to the next beat group. When you're in the middle of typing chord symbols, you can use the backspace key to correct a mistake.

The Left Arrow and Right Arrow keys let you move the input rectangle to a different beat group without entering chords. You can also click the mouse on a different beat group to move the input rectangle to a new location.

Note: Don't use the mouse in a situation where you've just typed a chord symbol but haven't yet pressed enter or pressed the left arrow unless you want your input to go into another beat group.

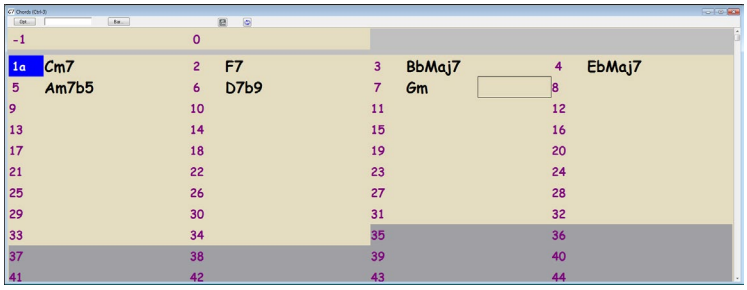
The help topic Entering Chord Symbols has additional information and a list of the chord spellings that are recognized by RealBand. The Chords Window topic explains how to enter breaks such as rests and pushes, and how to copy chords.

Let's enter some chords in the chord sheet.

We'll put our highlight cell in the first beat group of bar and type the letters cm7. Press the **Enter** key and the chord symbol Cm7 is entered at the start of bar 1.

Press the **Enter** key again and the highlight cell moves to bar 2. Type f7 for an F seventh chord and press **Enter**.

Now we'll use some chord shortcuts. The letter "j" is the shortcut for a major seventh chord. Type bbj and press **Enter** to write the chord symbol BbMaj7 on the chord sheet. Move to the next bar and type ebj to write EbMaj7 in that bar. Advance to the next bar and type the letters ah to write Am7b5 – the h is for a half-diminished chord. In the next bar type df and the chord symbol D7b9 will be entered, then enter gm for a G minor chord in bar 7. We'll stop there for purposes of this tutorial, and here is what our Chords window looks like now.



MicroChords

You can enter up to 4 chords per beat. Previously, limit was 1 chord per beat, but now you can have chords on 8th notes, triplets, or 16ths notes. This is especially useful on slow songs. You can select which tracks will play the MicroChords, allowing some tracks to play fast moving chord progressions and others to play the main chords.

Note: The soloist and background RealTracks do not follow MicroChords by design because playing would be too chopping if they did.

MicroChords are stacked vertically on the Chords Window. If there is also a main chord at the same beat, it will display in gray.



You can enter MicroChords on the Chords Window using parentheses and commas. Start with an open parenthesis, type chords separated by commas, and end with a close parenthesis.

For example, typing (C,F) enters two chords for 8th notes, (C,F,G) enters three chords for triplets, and (C,F,G,Am) enters four chords for 16th notes. If you do not type a chord between commas, it will enter a blank chord. For example, typing (C,F,G,,) would enter the first and the second chords for 16th notes and the third chord for an 8th note.



You can have both MicroChords and a main chord at the same beat. For example, type D(A,F) to enter D as a main chord and A and F as MicroChords.

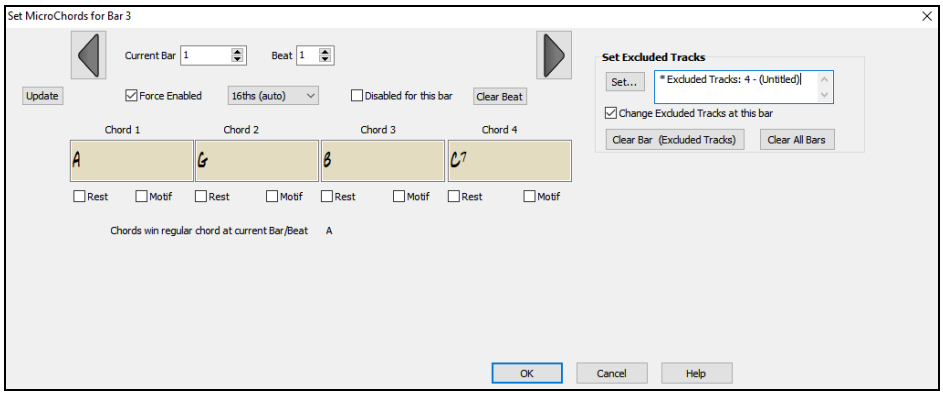
You can erase all chords (main and/or MicroChords) from the highlighted cell with the **Delete** key.

Pressing the **()** and **Enter** keys will erase just the MicroChords and advance the cell.

You can change the current main chord and keep the current MicroChords at the beat by typing another main chord. For example, if you type G and press the **Enter** key, the main chord will be replaced with G and the MicroChords will remain.

If you want to change the main chord and erase the MicroChords, type a chord followed by parentheses. For example, type G() to replace the current main chord with G and erase the MicroChords.

You can also use a dialog to enter MicroChords. Right-click on the Chords Window and select *MicroChord Settings (up to 4 chords per beat)* from the menu. You can also press the **F10** function key. This will open the **Set MicroChords** dialog. It has additional settings including the option to exclude some tracks from playing the MicroChords.



MicroChords will be entered to the bar and beat shown at the top of the dialog.

Each beat is divided into four for an even style and three for a swing style. You can change this division with the "Triplets/16ths" combo box above the cells.

Type a chord in each cell. You can move to other bar and/or beat with the arrow buttons.

Force Enabled: This is useful if you do not enter any MicroChords in the current beat but still want a beat of silence instead of the main chord.

Disabled for this bar: If this option is checked, none of the MicroChords settings will be played for this bar.

[Clear]: This delete all MicroChords from the current beat.

Rest: A rest will cause the previous chord duration to stop playing, turning the previous chord into a "shot."

Motif: Enter a checkmark if you want to create a specific rhythmic pattern. You do not need to enter chords as the motif will use whatever current chord is in the song.

Triplets/16ths: This sets the number of divisions per beat. "Triplet" divides the beat into 3, and 16th divides the beat into 4. If "Auto" is selected, the division is automatically selected by the style loaded.

Set Excluded Tracks: This area allows you to select tracks to be excluded from playing the MicroChords. Enabling the "Change Excluded Tracks at this bar" allows you to select tracks that should be excluded from playing the MicroChords. Press the [Set] button to select tracks that should be excluded. The excluded tracks will play main chords, instead. The **[Clear Bar (Excluded Tracks)]** button clears any excluded-track setting for the current bar, and the [Clear All Bars] button clears any track-excluded settings for all bars in the song.

Now we'll move on to the arranger toolbar to generate our RealBand song arrangement.

Arranger Settings



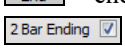
For our short tutorial song, we'll start at bar 1 and end at bar 8.



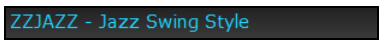
The Start of Song Chorus button is set at one by default, so it will stay the same.



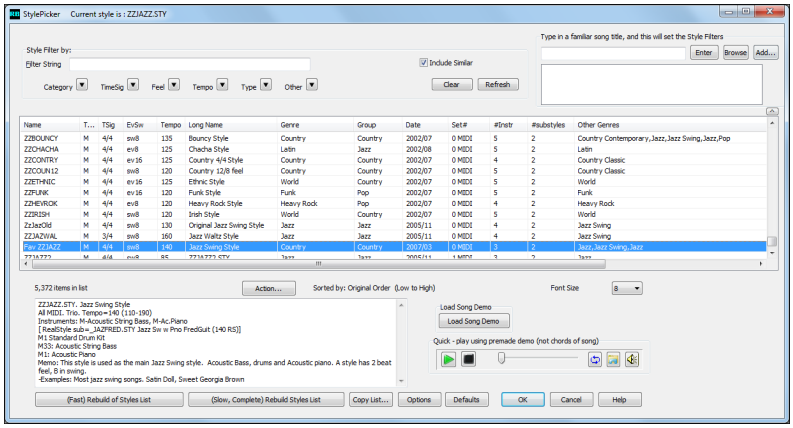
The End of Song Chorus button defaults to 32, so we'll click on the button and type in the number of the new end-of-chorus bar in the **Enter Measure Number** box.

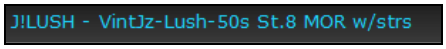


We'd like RealBand to add a 2-bar ending to our song, so we'll check the 2 Bar Ending box.



Next, we'll choose a style for our song by clicking on the style name to open the StylePicker window. You aren't required to have Band-in-a-Box for your RealBand styles, but if you do you will see that all of your Band-in-a-Box styles are available here.

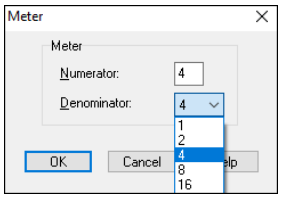




From the Jazz category select the J!Lush style (or any other style of your choosing) and you'll see that the style selection box has been updated with its name.

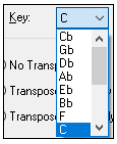


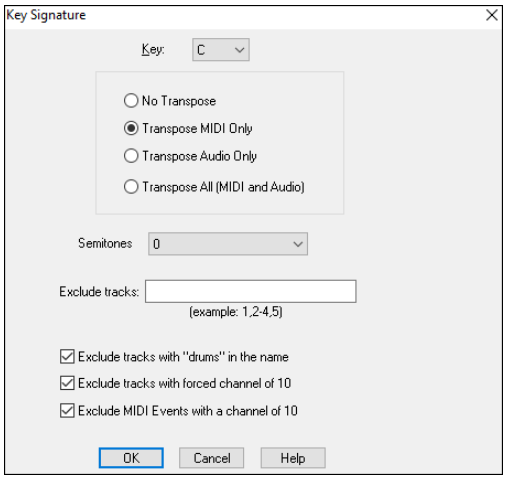
The time signature defaults to 4/4, but a new time signature can be set by clicking in this box to open the **Meter** dialog. Compound time signatures are supported; in fact, the numerator can be any number from 1 to 99. The denominator is selected from the drop down combo box.



Our song is in C minor, so we could select the relative major key signature of Eb for fewer accidentals in the notation display. Click in the key box to open the **Key Signature** dialog and choose the new key from the dropdown list.





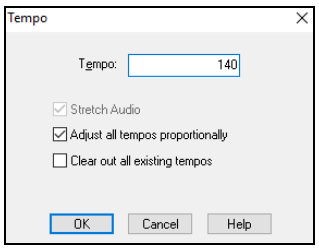


The **Key Signature** dialog also has options for transposing the song's MIDI tracks, audio tracks, or both to the new key. In this instance we do not want to transpose the tracks; we just want to change the key signature so select "No Transpose."

Just before we play our song, we can set a tempo.



The tempo box has a setting of 120 bpm. To change it to 140 we'll click in the box to open the **Tempo** dialog and type in 140.





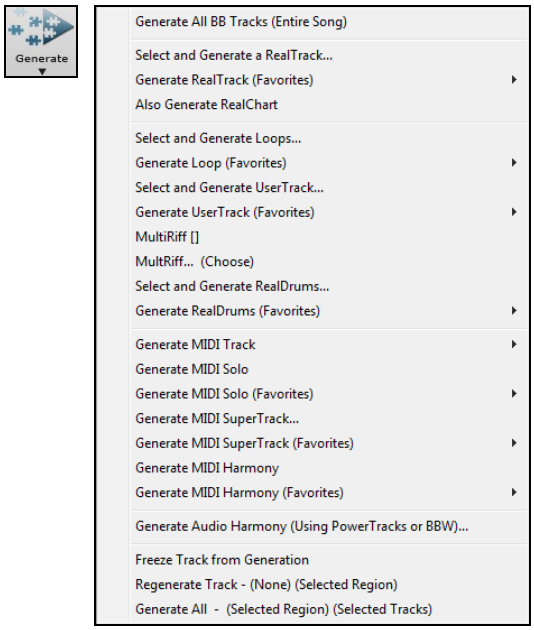
We could also set the tempo with the up and down scroll arrows, or even tap in a tempo with the minus and equals buttons.

Tempo Calculator (*Edit* | *Tempo* | *Tempo Calculator*)

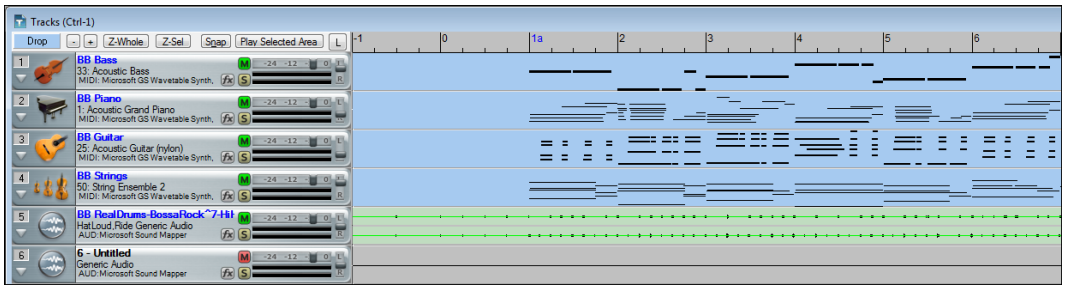
The length of a song depends on tempo and number of bars. With this calculator, found in the *File* menu under *File Utilities*, you can enter 2 of the 3 variables (length of song in seconds, tempo, number of bars) and the program calculates the third variable for you.

So we've entered our chords in the Chords window, set the length of our song and added a 2-bar ending, chosen a Band-in-a-Box style, and set the tempo.

We're ready to generate an automatic arrangement. Press the **[Generate]** button and select *Generate All BB Tracks (Entire Song)* from the menu options.

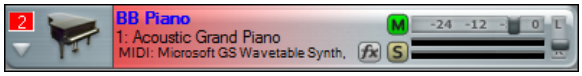


You will then see new tracks in the Tracks window.



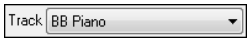
The track overview shows us that we have five MIDI tracks playing the parts generated by the J!Lush style, and because RealDrums are allowed in the *Options* | *Preferences* | *Song Generation* settings we have a RealDrums audio track. Notice that the BB track names are in blue, whereas user track names are in black.

BB tracks cannot be moved or renamed, but you can change any of the settings with the right-click menu – for example the patch, MIDI port, or MIDI channel. These tracks can also be edited in the track overview and in the Piano Roll or Notation windows. Let's examine the BB Piano track in the Piano Roll window.

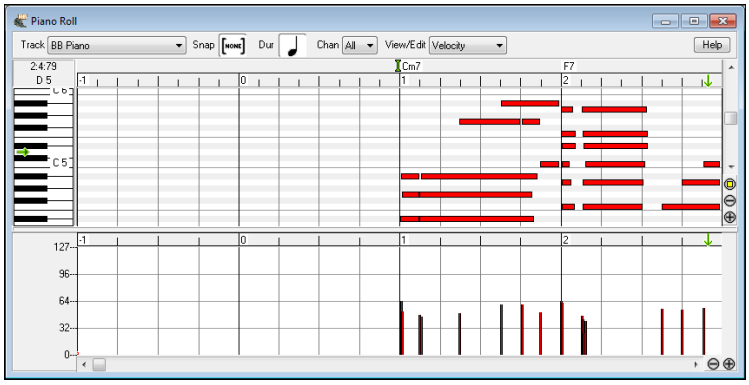


We can select the BB Piano track while still in the Tracks window, or we can open the Piano Roll window with the piano roll button and then select BB Piano from the track list.





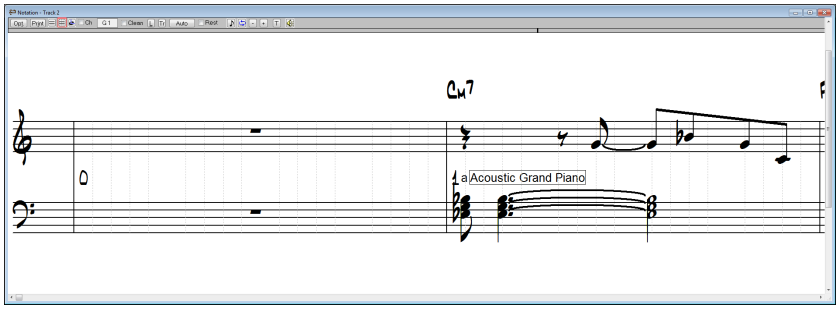
In the Piano Roll window notes can be dragged and dropped, shortened or lengthened in the Note Panel, which is the upper part of the window.



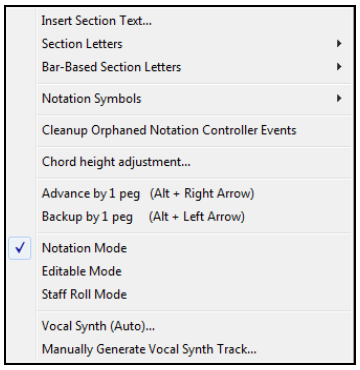
The lower panel is for graphic editing of the selected parameter in the View/Edit list. Note velocity is shown, but parameters such as pitch bend, channel aftertouch, and MIDI controllers can be edited in this panel as well. Please see the Piano Roll Window help topic for more on this very useful feature. The BB tracks can also be edited in the Editable Notation window.



Click on the eighth note toolbar button to open the Notation. In the Notation window toolbar, there are three buttons for different notation modes. Editable notation is the button with dotted vertical lines crossing the staff lines.



In this notation window notes can be inserted or deleted, and dragged and dropped. By right-clicking on any note head all parameters of the note can be edited and symbols and text can be added.



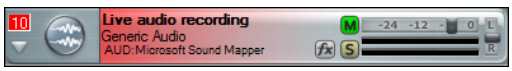
These features are covered in detail in the Notation Window topic.

Now that you have a RealBand accompaniment, your next step might be to record some audio tracks along with the BB tracks. The audio tracks could be vocals, live instruments, or the line output from a keyboard, mixer, or direct box, or digital audio if your sound card has that capability.

Audio Recording

As long as your audio drivers have been set up audio recording is simple and straightforward. If you wish you can configure the destination track as described in the Tracks Window topic, but if you select any blank track and start recording RealBand will automatically change it to an audio track with the default audio settings.

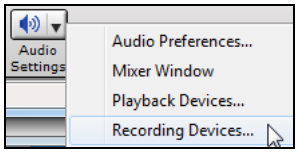
To begin, select the track you wish to record in either the Tracks or Mixer window.



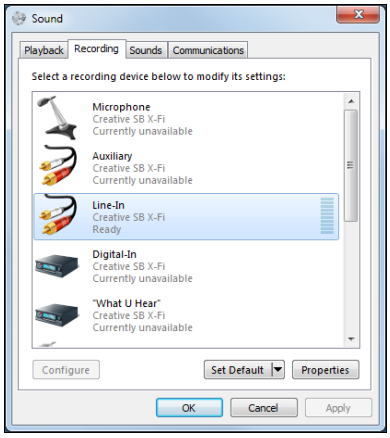
Check your recording level with the built-in VU meters, which are located at the bottom of the screen.



The input levels should normally be active in the mid-range of green segments with transient peaks in the yellow range. Red indicates levels that are too high and in danger of clipping, which adds a cracking sound to your track. When that happens, the top red segment marked “Clip” will light up. You’ll need to adjust the input level.



To adjust input levels that are either too low or too high just click on this speaker icon and select Recording Devices from the menu options to open the recording control window.



Note: The appearance of this window is different for different sound cards.

Our recording input is the analog mix from an external mixer. If you were to select “What U Hear” as your input, you would also be recording the output of the BB tracks to your new track, which is not something you would normally want to do.



When you are ready, press on the audio recording button in the toolbar and record your part as the RealBand accompaniment plays.





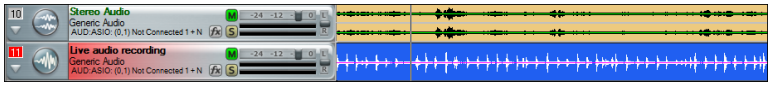
You also have the option of using a metronome to count you in and keep time during the recording using the settings that you choose under the Metronome tab in the Preferences.

Note: During recording, you could follow along with the chord changes in the Chords window, or with a notation part in either the Notation or Lead Sheet windows.



When you’ve finished recording, press the stop button on the toolbar. RealBand will prompt you to either keep or discard the take.

You can keep recording as many audio tracks as you want up to the limit of the 256 available tracks in RealBand. Here’s an overview of our first recording on track 10 and a second audio recording on track 11.

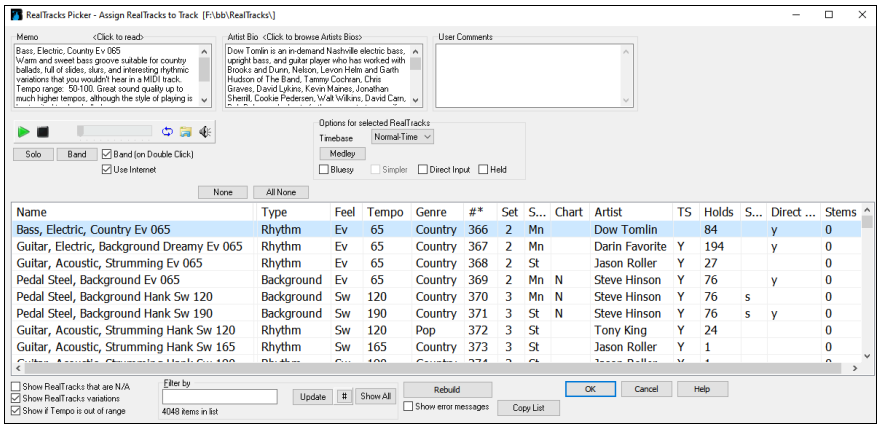


“Audio – Stereo” was specified as the track type for track 10 in the right-click Tracks window menu, but you’ll notice that Track 11 is a mono audio track. That is because we did not specify any audio settings for this track and RealBand automatically applied the default audio settings.

If you change your mind about an audio take you can use the *Edit | Undo (Keep Take)* menu command to clear it. Or, if you want to remove it at a later session, use the *Edit | Track | Erase* command.

Adding RealTracks

Another way to add live instrumental audio tracks is with RealTracks. To start, right-click on any blank track in the Tracks window. In the menu that opens, go to *Generate | Select and Generate RealTrack*. This opens the **RealTracks Picker** dialog.



Select a RealTrack from the list and click on the **[OK]** button. This will generate the RealTrack.

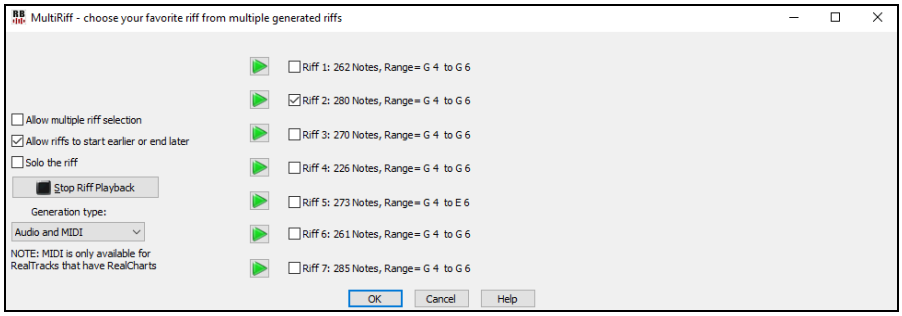


Your RealTracks players never complain about do-overs, so if you don't get what you want the first time a RealTrack is generated, you can just generate another one. Better yet, use the MultiRiffs feature to audition 7 different RealTracks performances, and choose the one that's best for our song with a single click! This works for the entire track, or the highlighted section of a track. Choose one riff or multiple riffs to add to the song.

To generate MultiRiffs you right-click with the mouse on the track where you want a new RealTracks instrument track generated. In the menu that opens, select *MultiRiff... (Choose)*.



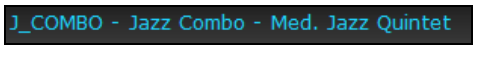
The RealTracks Picker will open and you can choose the instrument you want for the track. When you OK your choice there will be a bit of a delay and the **MultiRiff** dialog will open.



You will see the seven different riffs that have been generated listed along with a riff description giving the number and range of notes in each one. Click on the adjacent **[►]** play arrow to hear each riff playing along with your song arrangement.

Regenerating BB Tracks

You can always generate new BB tracks by choosing a new style and pressing the **[Generate]** button. Try as many as you like.





But what if there are tracks, or even parts of tracks, that you want to keep? RealBand lets you keep the parts you like and just regenerate selected bars on selected tracks. You can keep the same style or use a different style all together. Here's an example.

We'll substitute the first 4 bars of the BB Bass and BB Piano tracks by regenerating them in a different style.



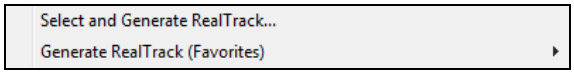
Before selecting the region to regenerate, click on the **[Snap to beat]** button in the Tracks window. With **[Snap to beat]** enabled, RealBand will automatically snap to exact beat and bar line boundaries as you drag your mouse in the track overview to make your selection.

We'll select the region we want in the BB Bass track overview. Then that exact same region can be selected in the BB Piano track with a **Ctrl+click** on the track name.



Now we can pick another style and only the highlighted areas will be regenerated using that style. The rest of the arrangement will be unchanged. This is a very powerful feature for customizing and tweaking your arrangements, especially if you have the full collection of Band-in-a-Box styles.

This feature is not limited to BB tracks. You can use it on RealTracks and RealDrums tracks too. This is especially useful to generate specific RealTracks passages or fills for your song. To do that, use a blank track in the Tracks window and highlight the range of beats or bars that you want to fill. Then right-click on the track and select either *Generate | Select and Generate RealTrack* to choose an instrument from your full list or *Generate | Generate RealTrack (Favorites)* to select from a list of recently used Real instruments.



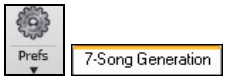
Song Settings and Song Generation Preferences

There are two types of settings that affect how your songs are generated by RealBand, the Song Settings and the Song Generation Preferences.



Song Settings are accessed from the **[Song Settings]** toolbar button. These settings apply only to the current song,

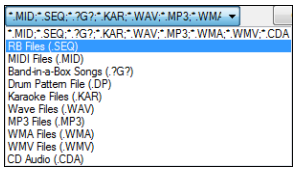
including enabling or disabling RealTracks and RealDrums and specifying a particular RealDrums set for the song.



Song Generation preferences are found in the **Preferences** dialog. These settings affect all songs and also include the path to your *RealTracks* and *RealDrums* folders.

Importing Songs

As you can see in the *File* | *Open* dialogue, RealBand supports all major audio and MIDI file types, including PG Music's PowerTracks Pro Audio files (*.SEQ) and Band-in-a-Box files (*.?G?).



Once you've opened your song file in RealBand you can use the full power of the program to add parts, edit, mix, and finally produce a professional finished recording.

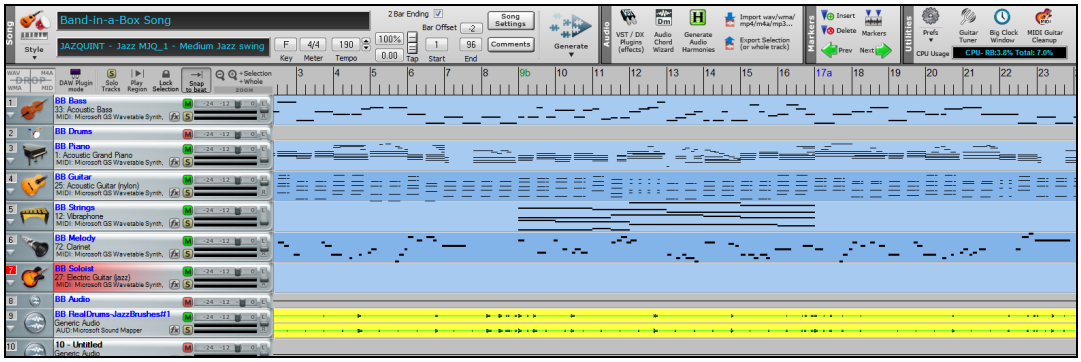
PowerTracks Pro Audio Songs

The PowerTracks Pro Audio .SEQ file is also the native format for RealBand files, so PowerTracks files load and play exactly as they would in that program.

Band-in-a-Box Songs

When importing a Band-in-a-Box file you have the choice of playing it "as-is" with the arrangement as created by Band-in-a-Box, or of generating a new arrangement in RealBand.

In this illustration, we see a Band-in-a-Box file that has been opened directly in RealBand. All of the parts, including the RealDrums track, are present in the blue-labeled BB tracks, 1 through 9.



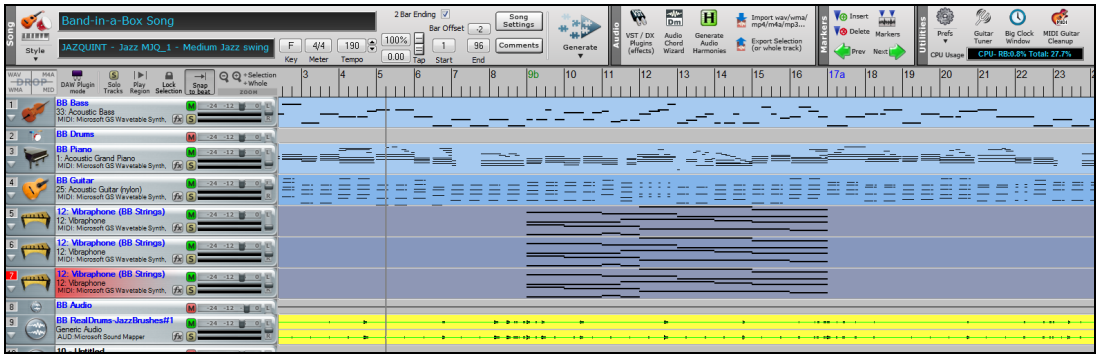
This arrangement will play exactly as it did the last time it was generated in Band-in-a-Box, which is worth remembering if you have an arrangement that you particularly liked. To keep it unchanged, you could save all of your BB tracks as user tracks with the *Track* menu command *Make all BB tracks regular tracks*. Or save the song as a .SEQ (sequence) file in RealBand.

Another option would be to use the Auto Convert Individual MIDI Track to Audio Track feature to render the MIDI tracks to audio and then save the song as a .SEQ file.

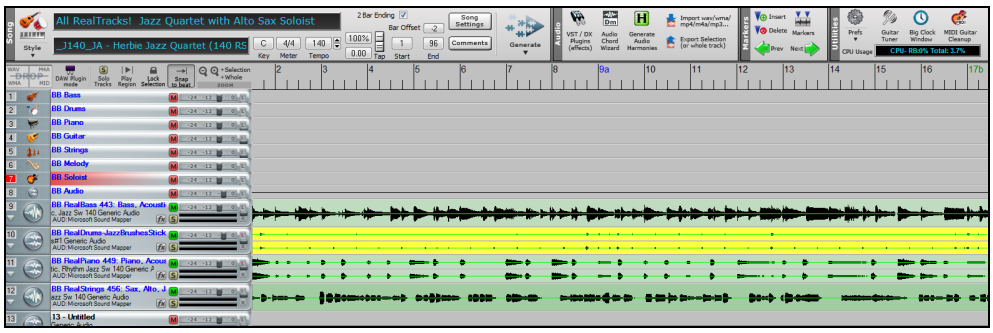


Of course, you can generate a new arrangement with any style and regenerate selected regions, add RealTracks, and record your own audio tracks, remix, and add effects once your Band-in-a-Box song is in RealBand.

You can see by comparing the BB tracks in this image with the previous one that new BB tracks have been generated. Both versions use the JAZQUINT style, but any style could be used.



If your Band-in-a-Box song has RealTracks they will be generated in RealBand when you open the file. Here is a Band-in-a-Box song with an "all RealTracks" style that has been opened in RealBand.

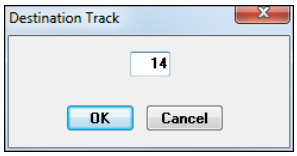


The BB tracks, except for the MIDI Melody track, are empty and there are additional blue-labeled BB RealTracks starting at track 9.

Note: The instrument on a BB track or BB RealTrack can be different than the track name. For example, the Piano track might have an acoustic guitar playing if there is no piano part in the style.

This RealTracks arrangement can be regenerated using any RealTracks style, or you could even generate an arrangement with a regular Band-in-a-Box style and add BB tracks to the existing RealTracks.

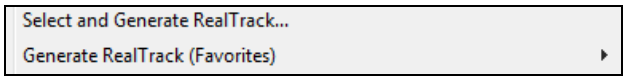
If there are any RealTracks that you want to preserve when regenerating the arrangement you can use the *Edit* | *Track* | *Duplicate* feature to make a copy on a blank track.





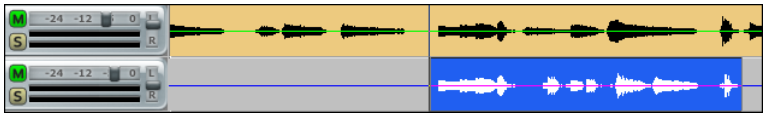
This copy will be a user track (as indicated by the name in black type) and will not be affected by generating a new arrangement.

This is a useful way to generate multiple versions of a Real instrument part and then choose the one you like best, or edit together your favorite parts from different tracks, or even layer multiple tracks.



Additional RealTracks can be added to your song by right-clicking on any blank track and selecting one of the two options for generating RealTracks from the track options menu.

You can also highlight a region of a track and generate your RealTrack for just that region to “drop in” a Real instrument lick.



Finally, you’ll want to mix your tracks into a finished recording.

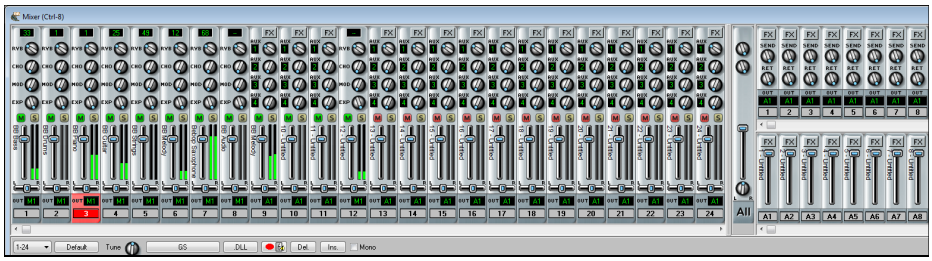
Mixing in RealBand



The Mixer window provides real time control of volume and effects. You can launch it with the fader button on the toolbar or by typing **ALT+W→8**.

With its own real time effects and support for all other DirectX and VST plugins, the RealBand mixer is a powerful production tool. It offers great flexibility in applying these effects to individual tracks, to sub-mixes, and to the final audio output.

This is an integrated mixer that controls both MIDI and audio tracks. There are sliders for all 256 tracks, 8 auxiliary effects (Aux) busses, and a combined total of 16 audio output ports or audio subgroups.



The Mixer track strips conveniently show the track name vertically to the left of the volume sliders. This is the track name that is assigned in the Tracks window, go to that window to add or change track strip names.

If moving a volume slider while pressing the **Shift** key, then any other selected tracks’ sliders will also move.

When the mouse cursor is positioned over a track number in the Mixer window a popup box will display all of the Track windows settings for the track - the track name and type, patch name, volume and pan settings, and effects settings.



MIDI tracks show an output port with an “M” prefix for a MIDI port or an “S” for a software synthesizer. They have controls for volume, pan, reverb, chorus, modulation, and expression plus a VU meter, a MIDI patch selection box, and a mute/unmute button.



Audio tracks either have a prefix of “A,” for an audio output, or “G,” for an audio subgroup, on their output ports. They have volume and pan controls, a stereo VU meter, a mute/unmute button, four assignable auxiliary sends, and a track-specific FX insert.

In addition to the track specific effects, there are eight global busses that can each have four chained effects each. You can assign each audio track to four different Aux busses and adjust the amount that each audio track uses the effects in each assigned bus. If that isn’t enough, you can add four chained effects to each audio subgroup and also to the main output - this will affect all tracks.

For a full description of the Mixer and the use of its features please refer to the Mixer Window help topic.

Having more fun with RealBand!

You’ve seen how easily you can create music from start to finish with RealBand. But don’t forget that this powerful program has many more features and configurable settings which are discussed in later chapters.

These features give you the ability to produce great sounding music in your own home “studio” with production values and effects that once required expensive studio time.

Have fun making your music with RealBand!

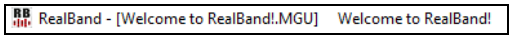
Chapter 4: The Main Screen

There are five parts to the RealBand main screen.

1. The Status Bar shows information about the current project.
2. The Menu Bar is where menus and commands are accessed.
3. The Toolbars give information and access to program functions.
4. The Windows area, the main workspace for all program windows (Tracks, Mixer, Chords, Notation).
5. The Piano Keyboard displays, and can input, MIDI notes.
6. Additional Toolbars to control playing or recording.

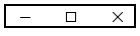


Status Bar



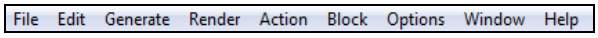
The status bar is the colored header across the top of the screen.

RealBand shows the file name for the currently loaded song in the status bar. It also shows the song title if the song has been given one, and the name of the current window, e.g., Chords, if the window is maximized. When the jukebox is playing then Juke Box mode is displayed in the status bar.



The buttons to minimize, maximize, and close the program appear at the right side of the status bar.

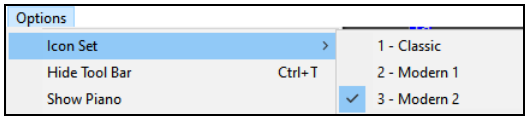
Menu Bar



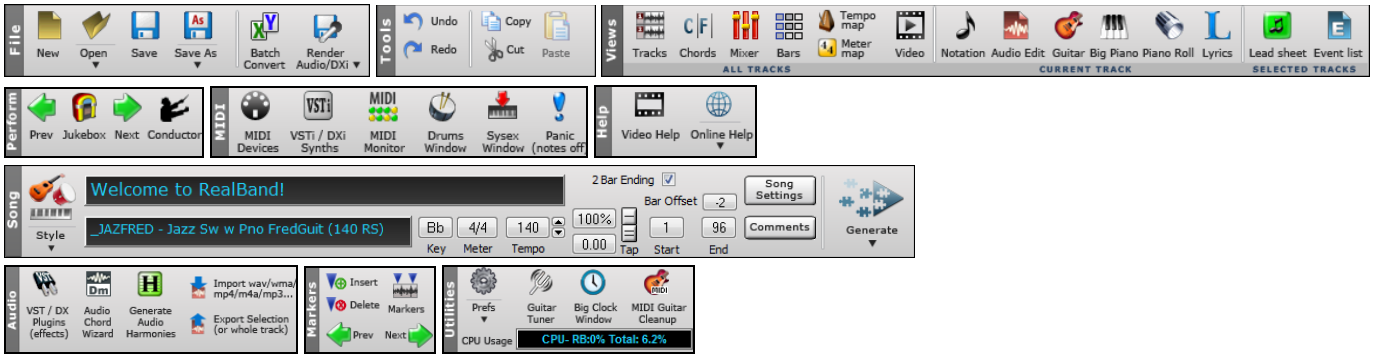
Like most Windows applications, RealBand has a pull-down menu interface. The menus list many operations that can be controlled with key strokes. These can save time and it is a good idea to memorize the ones you use regularly.

Toolbars

There are three background colors and icon sets for the toolbar. Go to the menu *Options* | *Icon Set* and select *Classic, Modern 1* or *Modern 2.*



The toolbar buttons are arranged in groups according to function. You can select a background color and icon set.



File Area



The [New] button clears the current song from memory so that you can start a new song. If you have made changes to the current song, RealBand will ask you whether or not you wish to save the file before clearing the file from memory.

The [Open] button opens a dialog which allows you to choose a file from the disk. You can open .MGU, .SGU, .SEQ, .MID, .KAR, .WAV, .MP3, .WMA, .WMV, .CDA, or a .DP file.

The [Save] button saves the current song to the disk. If the song has no name (untitled), the standard Windows 'Save As' dialog will pop up , so you can choose a file name and format (e.g., .MID, .SEQ, or .DP).

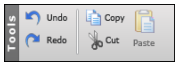
The [Save As] button is similar in function to the [Save] button except that it always displays standard Windows 'Save As' dialog. You to choose the name of the file, directory, and file type (.SEQ, Type 1. MID, Type 0 .MID, .KAR. or .DP)

The [Batch Convert[button converts a group of files in a folder over to another file type. All of the most popular audio file types are supported, as well as RealBand .SEQ files, Band-in-a-Box files, and MIDI files.

The [Render Audio/DXi] displays a menu that allows you to save tracks as a file. You can choose to save as a stereo WAV file, compressed file, WMA file, or individual file (WAV/MIDI).

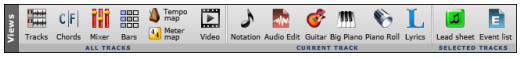
Tools Area

The buttons of this group control the editing features.



Views Area

The buttons in this area allow you to see various windows.



The **[Tracks]** button opens the **Tracks** window. This window has 256 tracks, each of which can be designated as a MIDI track, a mono audio track, or a stereo audio track.

The [Chords] button The **Chords** window displays the chord symbols of a song. You'll see the bars of the song displayed in rows.

The [Mixer] button The **Mixer** window is a graphical mixer that lets you control the 256 tracks in RealBand.

The [Bars] button The **Bars** window shows the bars (or measures) of the song. Bars with MIDI data will be shaded, while bars with audio will show the audio waveform in miniature.

The [Tempo Map] button opens the **Tempo Map**, which lists all the tempo changes that occur during the course of the song.

The [Meter map] button opens the **Meter Map**, which lists of all the meter changes that occur during the course of the song.

The [Video] button opens a window that lets you load and play a video, as well as import the audio into RealBand.

The [Notation] button opens the **Notation** window displays the notes of a MIDI track on a staff and lets you print music on your printer.

The [Audio Edit] button opens the **Audio Edit** window, which shows audio data as a waveform. Select a region to edit by mouse clicking on the waveform and dragging the mouse to the right.

The [Guitar] button opens the **Guitar** window, whichdisplays notes played in the current track or MIDI Thru on a guitar fretboard.

The [Big Piano] button opens a resizable **Big Piano** window.

The [Piano Roll] button opens the **Piano Roll** window, which allows editing of MIDI notes and graphic editing of controllers.

The [Lyrics] button opens the **Big Lyrics** window, which displays any existing lyrics in a track. The lyrics highlight and scroll, great for singing along.

The [Audio Edit] button opens the **Lead Sheet** window. This is similar to the Notation window, except that it can display multiple staves.

The [Event List] button opens the **Event List** window, that lets you insert, delete, or change MIDI events.

Perform Area



The [Prev] button plays the previous song in the Jukebox play list.

The [Jukebox] button lets RealBand play a list of songs as a jukebox mode. In the Jukebox dialog, you can choose which songs to be played.

The [Next] button plays the next song in the Jukebox play list.

The [Conductor] button opens the **Conductor** window for live playback and looping control.

MIDI Area



The [MIDI Devices] button This will open the MIDI Driver Setup dialog, which allows you to choose the MIDI input and output drivers to use with RealBand.

The [VSTi/DXi Synths] button open the VSTi/DXi Synth Panel together with the control panel for your VSTi/DXi synthesizer.

The [MIDI Monitor] button launches the MIDI Monitor, which displays a list of MIDI events. This is useful for diagnostic purposes or education about MIDI messages.

The [Drums Window] button launches the built-in 3-D animated **Drum Kit** plugin.

The [SysEx WIndow] button opens the **SysEx** window, which is a built-in system exclusive (SysEx) librarian to transmit or receive SysEx data.

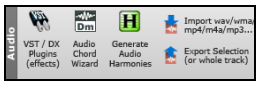
The [Panic] button attempts to shut off any hung MIDI notes by sending out an 'all note off' message to your MIDI or soft synthesizer.

Help Area

The buttons in this area will start your internet browser and show you various support pages.



Audio Area



The [VST/DX Plugins] button opens the DirectX/VST window. You can apply DirectX and VST effects in real time to the audio tracks without permanently altering the actual track data.

The [Audio Chord Wizard] button launches the Audio Chord Wizard. Audio Chord Wizard automatically figures out the chords from audio files (WAV/MP3/WMA/SEQ).

The [Generate Audio Harmonies] button allows you to generate audio harmonies.

The [Import wav/wma/mp4/m4a/mp3] button lets you import an audio file into the current track. If you are importing a multi-track .WAV file, you will have choice of merging to a mono or placing additional track of the .WAV file onto separate tracks.

The [Export Selection] button lets you export the selected or the whole of the current audio track as an audio file (WAV/MP3/WMA/MP4/M4A).

Markers Area

The buttons in this group allow you to insert or delete markers, go to the previous/next markers or open the Markers window.



Utilities Area



The [Pref] button will open the **Preferences** dialog. Most program settings and options can be accessed from this dialog.

The [Guitar Tuner] button launches the **Guitar Tuner**, which lets you tune a guitar or other instrument plugged into the mic-in or line-in of soundcard.

The [Big Clock Window] button opens the **Big Clock** Window, which displays the current time location in large texts. This window has three display mode - 'Measures:Beats:Ticks,' or 'Hours:Minutes:Seconds:MS,' and 'Samples.'.

The [MIDI Guitar Cleanup] button attempts to remove the older .DG files that were named using shorter file names but are identical to the newer files with longer names.

The CPU Usage Indicator shows total CPU usage and RB (RealBand) usage

Song Panel

This area allows you to control settings such as title, style, time signature, key, and tempo, as well as generating tracks.



The title is typed in to the title window as regular text.





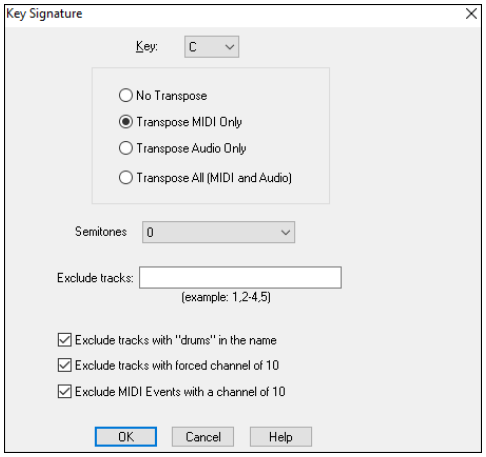
The **[Style]** button allows you to open a style. Clicking the lower part of the button will show you the menu that lets you open a style from the StylePicker, the Windows' 'Open' dialog, or 'Band' styles. The menu also let you choose the default action of the upper part of the button.

Selecting *StylePicker* from the menu opens the **StylePicker** window, where you can choose from any of your installed Band-in-a-Box styles.

Selecting *Band Style (best RealTracks)* opens a list of the most commonly used styles for Jazz, Pop, and Country with several sub-genres.



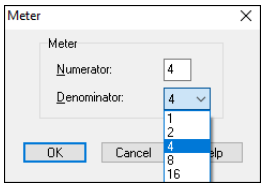
The key signature of the song is set by double clicking in those boxes to open the **Key Signature** dialog.



This dialog has options for transposing the song's MIDI tracks, audio tracks, or both to the new key. "No Transpose" changes the key signature for notation but does not affect the tracks.



Double click the mouse in this box to open the **Meter** dialog. Odd time signatures such as 5/4, 7/4, 9/16, 11/4, etc. are supported.





These buttons allow you to change the current tempo.



You can double click on Tempo box to open the selection dialog.



The tempo can also be adjusted with these buttons. Hold down the up or down arrows to scroll the tempo up or down, or click on the arrow to increase or decrease the tempo in single increments.



Click on his button and type a percentage (12% - 200%) to set a relative tempo. 12% would be 1/8 of original tempo and 200% would be twice the original tempo/to se any value



Tap tempos with the minus [-] and equals [=] buttons. Tapping on the minus sign four times will set the tempo just as if you had counted it in. Tapping on the equals sign four times will set the tempo at the average speed you tapped and then automatically begin song playback at that tempo.



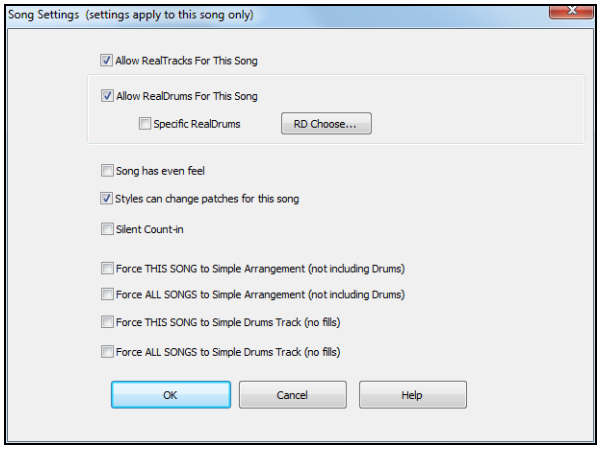
You can slow down and/or transpose any song or sequence in real time by using this button. With the high quality Elastique tempo and pitch shifting, this allows you to slow down or transpose over extreme ranges with great quality, which is a big help for learning or transcribing music, from audio or video

The [Start] and [End] buttons set the beginning and end of the song chorus, which particularly affects how endings are played. Double click on the button to open a selection dialog.

If "2 Bar Ending" is enabled, 2 bar ending will be generated.

The "Bar Offset "affects lead-in generation. If this is set to -2 (or any higher negative value such as -3), then the song will be generated with 2-bar lead-in.

The [Song Settings] button opens the **Song Settings** dialog with options that apply only to the current song.



The [Comments] button opens the **Comments Window** which allows you to edit or view comments.

These settings controls how the song arrangement is generated. It is possible to generate the complete song or just a selected range.

When you are ready to generate an automatic arrangement, press the [Generate] button and select an option from the popup menu.

- ***Generate All BB Tracks*** generates new Band-in-a-Box tracks using the current style.
- ***Select and Generate RealTrack*** opens the **RealTracks Pickers** dialog for Real instrument selection and options for the generation of the audio RealTrack.
- If ***Also Generate RealChart*** is checked, a RealChart (notation) will be generated when a RealTrack is generated.
- ***Select and Generate RealDrums*** opens the **RealDrums Picker** for selection of a RealDrums and options for the generation of the audio RealDrums.
- ***Generate MIDI Track*** opens a list box to select the part for a MIDI track to be generated on the current track.
- ***Freeze Track from Generation***: You can "freeze" a track, which prevents it from being regenerated by functions like re-generate all tracks.
- ***Regenerate Track*** will regenerate an existing track. If a track is a non-BB track, but it was generated individually from one of the generation options in Tracks window popup menu, or from one of the generation options on the Generate Button popup menu, then the track name will be displayed in green.
- ***Regenerate All*** will regenerate all Blue and Green tracks automatically, including RealDrums.

The Piano Keyboard



The re-sizeable piano keyboard is located below the Tracks window. The piano can be "played" by clicking with the mouse, either while a song is playing or when it is stopped, and clicking on a note while in Editable Notation mode enters that note in the selected track at the current time location.

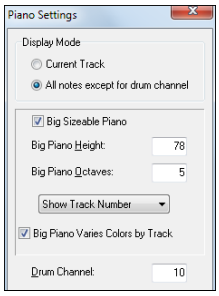
There is a 1-peg hot key in the Notation window to move current time forward or backward by 1 peg (normally a 16th note). **Alt**+left arrow moves the current time backward by 1 peg. **Alt**+right arrow moves it forward by 1 peg. This makes it easier if you are using the on-screen piano for entering notes into the Notation window.

The on-screen piano also responds to mouse clicks if the current track is an audio track. This is useful if you want to hear a note played as a reference without having to change the current track to a MIDI track.



The **Piano Settings** are found under the Piano tab in the Preferences.

They include settings for the display mode and the size of the keyboard.



When the display mode is set to “Current Track,” the piano will display notes as they are being played from the current track. If the display mode is set to “All notes except for drum channel” the piano will display notes that are played from all the tracks except for notes that are on the drum channel.

When the “Big Sizeable Piano” setting is enabled, RealBand will show a bigger piano.

For the Big Sizeable Piano, there is also a setting that gives you a choice of Show Track Number (drawn as a tiny number within the notes), Show MIDI Channel, or Show No Text.

If “Big Piano Varies Colors By Track” is enabled, then the colors of the notes drawn on the big piano will vary depending on the track number. For tracks 1 through 10, RealBand uses 10 different colors, then repeats these colors for higher track numbers.



These settings are automatically saved to RBW.INI and RB.CFG so that they will remain in effect the next time you use RealBand.

Transport Area

This area allows you to control playback or recording.




This sets the current location to the start of the song.


This rewinds the song.


This stop playback or recording.


This plays the current song.


This fast forwards the song.


This sets the current location to the end of the song.



This lets you record from the current location on the current track. Clicking the arrow button will display a menu with options to *Record* (from the current location), *Record From Start*, *Record Audio*, and *Step-Record MIDI*.



This will display a menu with options to enable/disable punch-in record and open Punch-in Record dialog. When the punch-in is enabled, recording will take place in the region and overwrite any existing data.



This will display a menu with options to enable/disable metronome during Recording and/or Playback and open **Metronome Settings** dialog.

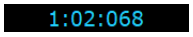


This will display a menu with options to enable/disable endless loop and open the Loop Settings dialog which allows you to set the loop range. When loop is enabled, the button will be highlighted.

Time and Selection Areas




The song location slider moves directly to a new place in the song.



This is the current location in MIDI format - bars:beats:ticks.

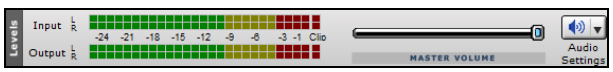


The “From” and “Thru” values indicate the range of bars currently selected for editing operations. You can double click in these fields to type in new locations.

When From: and Thru: are set to the same value RealBand always generates a complete song. If they are set to different values RealBand will generate that specific range.

Levels Area

This area allows you to control volume.

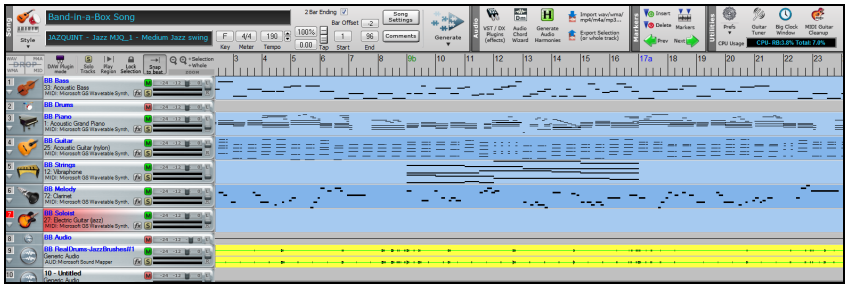


Windows

Most of the main screen is used for the windows workspace. There are many window views to choose from and you can open as many as you wish to. The **Tracks** window is the default view.

Tracks Window

The **Tracks** window shows the track names, track type (MIDI or audio), instrument settings, and an overview section showing either MIDI or audio data.



Tip: You can use the **Home, End**, **Page Up** and **Page Down** keys to navigate the Tracks Window vertically.

Tip: Drag a track divider while holding down the Ctrl key, then release the mouse button. All tracks will be set to that height.

The Track Number field shows the track number.



If the track is the current track, it will be highlighted in red.



When multiple tracks are selected, the track numbers will be highlighted in yellow for tracks other than the current track. If the track is not selected it will be gray.

Click on the track number field to make a track the current track.

If you click on the track number field while holding the **Shift** key, this will select a range of tracks from the current track through the number you clicked on. For example, if track 1 is the current track, and you hold the shift key and then click on the number field for Track 4, this will make tracks 1 through 4 selected. Track 1 will still be the current track and tracks 2, 3, and 4 will be highlighted in yellow. You can select/deselect individual tracks by clicking on a track's number field while holding down the **Ctrl** key.

The **Track Name** field shows the track's name. You can edit a track name by right-clicking on the track name field, or by double-clicking on it. After you're done editing, then press **Enter**.



The Mute button lets you mute or unmute a track.



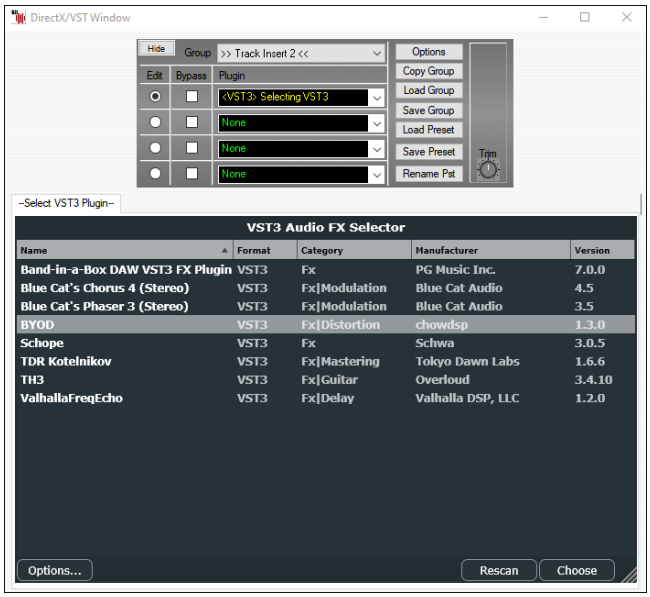
The Disclosure Triangle will reveal more information about a track by making the track row height taller. If a track is a MIDI track, you'll see Vel (velocity offset), Rvb (reverb), Mod (modulation), Loop, Key (key transpose), Cho (chorus), and Exp (expression) settings.



You can make changes to these settings by clicking on the edit fields with the left mouse button, and then moving the mouse up or down while holding the mouse button down.

The **[Edit VSTi/DXi]** button launches the **DirectX/VST Window** and will display the settings panel for either the Default DXi Synth (16th DXi synth slot which is MIDI port 32) or the current DXi port number if the track is set to a valid DXi port (17-32). Any track's MIDI Output Portcan be set to send to one of the 16 available DXi synth ports or to any other available MIDI port.

RealBand supports VST3 plugins. To load a VST3 plugin, choose the *Select VST3 plugin* from the Plugin dropdown in the **DirectX/VST Window**. You will then see a list of installed VST3 plugins.



If your VST3 plugin is not listed, press the [Rescan] button. The [Options] button provides functions such as adding a scan directory, removing the selected VST3 plugin, showing the folder of the selected VST3 plugin, and more.

You can load a VST3 plugin by double-clicking it in the list or by pressing the [Choose] button.



The Volume and Pan sliders let you adjust a track's volume and pan settings without having to go into the Mixer window. Below the Volume slider you'll see two VU level meters. These give you a general idea of a track's level during playback.

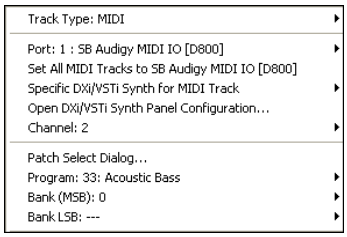
Note: If a track is an audio track, the meter display will be delayed by the size of the audio Output Buffer Milliseconds setting in the **Audio Settings** dialog.

Moving a volume slider while pressing the **Shift** key also moves other selected tracks' sliders.



If a track is a MIDI track, then you'll see the Vel (velocity offset), Rvb (reverb), Mod (modulation), Loop, Key (key transpose), Cho (Chorus), and Exp (expression) settings.

You can make changes to these settings by clicking on the edit fields with the left mouse button, and then moving the mouse up or down while holding the mouse button down. The **[Edit DXi]** button launches the **DirectX Window** dialog and will display the settings panel for either the Default DXi Synth (16th DXi synth slot which is MIDI port 32) or the current DXi port number if the track is set to a valid DXi port (17-32). Any track's MIDI Output Port can be set to send to one of the 16 available DXi synth ports or to any other available MIDI port.

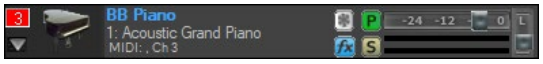


When you right-click your mouse on a MIDI icon you'll see a pop-up menu that lets you set the MIDI Output Port, Program (Patch) setting, and Bank (MSB) and Bank LSB settings.

Immediately below the **Port:** menu item is a menu command that lets you **Set All Midi Tracks to** the same port used by the track you are adjusting.

There is also a menu item **Patch Select Dialog** that launches a patch selection dialog, which lets you select patches and variations as well as allowing you to change the track's patch list. If the patch list is set to General MIDI, Roland GS, or Yamaha XG, the track will display an instrument icon corresponding to the patch. Otherwise, you'll see the patch number displayed instead of an icon.

The Track Name field shows the track's name, which is edited by right-clicking or double-clicking on the track name field. Type the name and press **Enter**.



When using the General MIDI patch map the program will automatically display an icon for the instrument selected.



The Freeze button lets you freeze/unfreeze tracks from generation.



The Mute button lets you mute or unmute a track. Green indicates the track is playing, red is mute.



Click on the solo button(s) to solo one or more tracks. Bright yellow shows that the track is soloed.



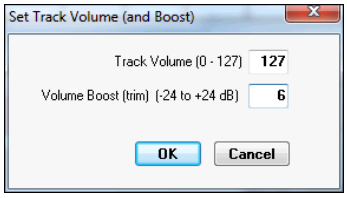
The **[*fx*]** button launches the dialog to choose VST/DX audio effects or MIDI synths for the track. If any effects or synths are assigned the **[*fx*]** button will be blue.



The Volume and Pan sliders let you adjust a track's volume and pan settings without opening the Mixer window. Right-clicking on the Volume or Pan controls will let you edit the setting by typing in a number.



Below the Volume slider stereo VU meters give you a general idea of a track's level during playback.

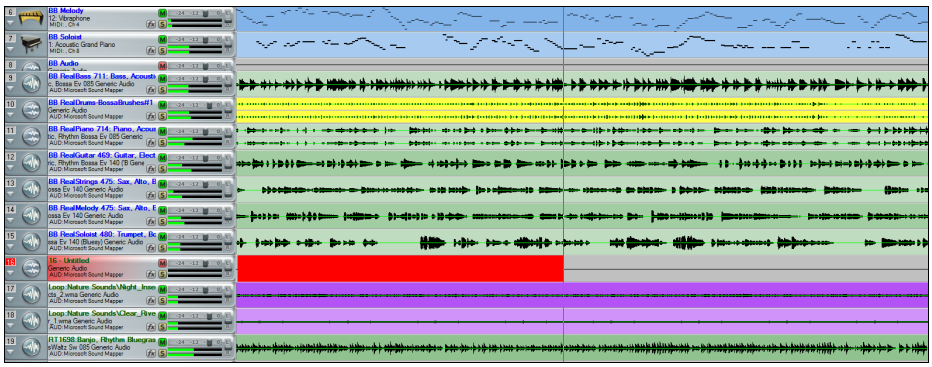


Frequently, when you are making a mix, adjusting a track's volume to the maximum still doesn't make the track loud enough relative to the other tracks. This means that you have to either apply a gain effect or reduce the other track's volumes, which is time consuming. We've added a simpler method, which is to allow settings higher than 127. Simply right-click on the volume slider, and enter a "Volume Boost" (from -24 to 24 dB), and this will apply to any audio track, or any MIDI track that uses a DXi or VSTi synth!

Track Overview Display

Automatic track color for Tracks Window

- The track colors show different shades for odd/even track number, making the tracks stand out.
- The track color for RealDrums is yellow.
- The colors for user-generated MIDI/RealTracks/RealDrums tracks have slightly different shades.
- The track color is red during actual recording.
- The track colors for Loops and UserTracks used to be the same but now Loops track is purple and UserTracks track is pink.



To the right of the track info panels you'll see the overview display. This lets you view MIDI or audio data, and select sections for editing.



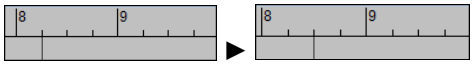
To the right of the track info panels, you'll see the overview display.

This lets you view MIDI or audio data, and select sections for editing. You can select a region of the song during playback.

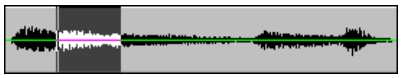


You can click and drag to highlight a section of the song for editing.

◄ Left and right ►cursor arrow keys will move the current time forward or backward by 1 beat.



If the **Alt** key is held when left-mouse clicking on the overview section of the Tracks window, the time will be changed without affecting the currently highlighted region. This lets you quickly adjust the current time without having to worry about accidentally changing the highlighted region.





Click on **[Play Region]** to hear the highlighted section being edited. Holding the **Alt** key while pressing this button will play the selected area of the current track regardless of whether the track was muted or not.



The **[-]** and **[+]** buttons let you zoom in or zoom out the overview section.



The **[Snap to beat]** button causes the time indicator to snap to the nearest beat when changing the time location or when highlighting a region for editing.

Note: If you have selected non-consecutive multiple tracks (e.g., 2, 3, and 5) for editing, you should not click on the track overview section area directly, since it will cause your track selections to be lost. If you only want to change the edit From/Thru settings, then you can click on the time line (immediately above the track overviews) with the mouse, and then press the F7 key to set the **From:** location, and then click on the time line again and press F8 to select the **Thru:** location.

Ctrl+Spacebar loops the highlighted region of a song (or whole song if nothing is currently highlighted).

Click and drag to highlight a section of the song for editing. You can select a region of the song during playback.



Shift+click (**Shift** key + left mouse button) support makes it easy to tweak the beginning or end of the highlighted area.

- If you **Shift**+click before the start of the From/Thru range, or after the end of the From/Thru range, the highlighted area will be extended.
- If you **Shift**+click within the From/Thru range, the range will be reduced, and the location you clicked on will become either From or Thru depending on which boundary was closer to where you **Shift**+clicked the mouse.
- If you keep the left mouse button held after the **Shift**+click, and you move the mouse you can adjust the boundary of the range while moving the mouse.



You can select a highlighted region by holding down the **Ctrl** key with the left mouse button pressed, and drag the region to a new location in the song.

Right-click Menu for MIDI Tracks



If a track is a MIDI track, and you right-click on the track you'll see a pop-up menu that lets you set the **MIDI Output Port, Channel, Program (Patch) setting**, and **Bank (MSB) and Bank LSB** settings.

This menu will also open with a left click on the track type icon if "Left click on track-type icon in Tracks Window shows pop-up menu" has been selected (checked) in the *Options* | *Preferences* | **General** dialog.

There are 32 MIDI Output ports. You can think of each of port as route that the track takes to output sound, whether through an onboard sound card, software synthesizer, or an external MIDI keyboard or sound module.

The first 16 ports are for either onboard synthesizers or external MIDI I/O connections. Ports 17 through 32 are for DirectX (DXi) or Virtual Studio Technology (VSTi) instruments. Mouse over the **Port** menu item to see a list of all available ports.

At the bottom of the ***Port*** submenu, there are additional menu items:

Load DXi/VSTi Synth into unused Slot loads in synth into the next available slot (port) and automatically assigns the track to that port. However, if the synth is already loaded into a port, it will assign the track to that port rather than loading another instance of the same plugin. So this command is basically the same as "Specific Synth for MIDI track."

Load DXi/VSTi Synth into specific Slot allows you to select the port to load the synth into, and it loads another instance of the synth.

Immediately below the ***Port*** menu item is a menu command that lets you ***Set All MIDI Tracks to>>*** the same port as used by the track you are adjusting.

With ***Specific DXi/VSTi Synth for MIDI track*** you can assign each track to a specific DXi or VSTi synth. This allows you to use multiple synths in the same song. Point to **Specific DXi/VSTi Synth for MIDI track** then select the synth you want to use from the submenu.

Open DXi/VSTi Synth Panel Configuration opens the **DirectX/VST Window**. This allows you complete control over assigning DXi or VSTi synths to ports, processing the synth output with DX or VST audio effects, and working inside your synth's control panel.

The help topic **Tutorial: Using DXi and VSTi synths with RealBand** provides detailed instructions for installing and selecting these high-quality music synthesizers.

There is also a ***Patch Select Dialog*** menu item that launches a patch selection dialog (which lets you select patches and variations as well as allowing you to change the track's patch list). As long a track's Patch List is set to General MIDI, Roland GS, or Yamaha XG, then the track will display instrument icon corresponding to the patch. Otherwise, you'll see the patch number displayed instead of an icon.

In the right-click Tracks window menu, MIDI tracks can quickly be rendered to audio with the commands *Auto Convert Individual MIDI Track to WAV file* and *Auto Convert Individual MIDI Track to Audio Track* as long as the track is assigned to a DXi or VSTi synth.

Generate has menu commands for generating various types of tracks.

Generate MIDI Track opens a list box to select the part for a MIDI track to be generated on the current track.

Generate MIDI Solo opens a Soloist selection list. Use the Filter String to make your selection easier. A solo will be generated for the selected track or for the highlighted section of a track.

Generate MIDI Solo (Favorites) opens a list of your most recent choices for quick selection.

Generate MIDI SuperTrack opens the list of available MIDI SuperTracks and generates your selection over the entire track or just a highlighted region.

Generate MIDI SuperTrack (Favorites) shows your most recent choices so you can quickly choose them again.

Generate MIDI Harmony opens a Harmony selection list with a Filter String for easier selection.

Generate MIDI Harmony (Favorites) opens a list of your most recent choices for quick selection.

Freeze Track from Generation prevents the track from being regenerated by functions like re-generate all tracks, or the **[BB]** button.

Regenerate Track will generate a new BB part for the current track or just for a selected region of a track.

Regenerate All generates parts for all BB tracks, unless they are frozen. If a section is highlighted the parts will just be generated for that From/Thru range.

***Auto Convert Individual MIDI Track to WAV File*:** This makes it very easy to convert a MIDI Track to a .WAV file. RealBand will automatically render using a VSTi/DXi synth. If the current track is not currently set to a VSTi/DXi synth, then a dialog will pop-up that can let you choose one to render the track. A File Save dialog will pop-up that lets you name .WAV that will be the result of the conversion.

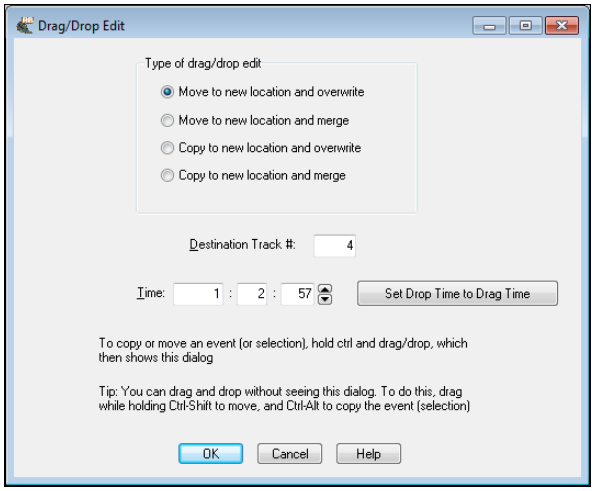
***Auto Convert Individual MIDI Track to Audio Track*:** This makes it very easy to convert a MIDI Track to an Audio Track. RealBand will automatically render using a VSTi/DXi synth. If the current track is not currently set to a VSTi/DXi synth, then a dialog will pop-up that can let you choose one to render the track. By default, the source track will be converted to an audio track, i.e., the source and destination are the same track. A pop-up dialog lets you choose a different destination track number for the conversion. The source MIDI track will be kept.

Select Whole Track command will select the entire track for editing.

Kill Selected Region will deselect a selected region of a MIDI (or audio) track.

Change Current Time (Alt+Left Mouse Click) – will change the current time without affecting the highlighting of tracks. This ensures you don't accidentally de-select a region.

Copy/Move Current Event (selection) launches the **Drag/Drop Edit** dialog.



If nothing is selected and you **Ctrl+**click to drag and drop, it will assume that you want to drag the entire current audio event.

Bypassing the dialog for quicker workflow. If you hold **Ctrl+Shift** then the drag will move the current event. If you hold **Ctrl+Alt** then the drag will copy the current event. When Dragging/Dropping within the overview section of the Tracks window, you can now drop to a blank track even if the track type wasn't originally set to the correct track type.

Drag/Drop will automatically be set to the original time if within 20 ticks (at a PPQ of 120). So if you drag a region down to a new track, you just need to be "approximate" in the drop location, as the program will snap the time to the same time as the event on the source track. If you don't want that behavior, just **Ctrl+**drag the selection, and the dialog appears with exact values. In this case, the dialog also has a handy "Set Drop Time to Drag Time" button.

Current Track Event Colors / Default Track Event Color Setup: You can apply a custom color (foreground and background) to a track, or all tracks, using right-click menu items "Current Track Event Colors" and "Default Track Event Color Setup."

The ***Cut***, ***Copy***, ***Paste***, and ***1-Track Paste*** commands apply to the highlighted section of a track(s). The functions are as described in the Edit Menu topic.

Delete removes the selected section or events.

Copy/Move highlighted area of current track to another track makes it easier for "comping" which is to create a track that is a composite of different takes/tracks. It's a quick way to move/copy to a destination track without having to first cut/copy and then paste

Grid lines allows you to change the resolution of the grid lines.

Insert Volume Change will insert a MIDI controller into the track at the current location. If a highlighted region exists, then the program will ask if you want to apply this change to the highlighted region (as opposed to a change at the location you clicked). If applying the change to a region, then program will insert a volume change at the beginning of the region, and a 2nd volume change at the end to restore the prior volume. If necessary, the program will insert a controller at the very beginning of the song to preserve the original volume if you insert a volume change beyond the start of the track. This will normally be done the first time you insert a volume change into a track beyond the tracks' beginning.

Adjust overall volume of selected area using gain nodes allows you to increase or decrease the volume of the selected area of a track by using gain nodes, without having to manually enter them in the gain node area of the track.

Fade-in or fade-out using gain nodes allows you to fade-in or fade-out a section using gain nodes, without having to manually enter them in the gain node area of the track.

Right-Click Menu for Audio Tracks



If a track is an Audio track and you right-click on the track, this pop-up menu opens. This menu will also open with a left click on the track type icon if "Left click on track-type icon in Tracks Window shows pop-up menu" has been selected (checked) in the *Options* | *Preferences* **General** dialog.

The ***Track Type*** and audio ***Port*** settings can be assigned.

Open DX/VST Plugins Configuration opens the **DirectX/VST Window** where plugins can be applied and edited.

The ***Track Category*** item lets you select preset groups of audio effects for the particular category such as guitar, vocal, keyboard, or your own user assigned effects groups.

Make a New Audio Category opens a dialog where you can name a new category, select an image for its icon, and assign an audio effects group (*.TGS) preset.

Generate has menu commands for generating various types of tracks.

Select and Generate RealTrack opens the **RealTracks Picker** dialog to select a RealTracks instrument and generate a RealTrack. Track names for generated non-BB tracks are displayed in green. For example, if you had generated a track by right-clicking on it and selecting "Generate RealTrack" then the track name of that track will be displayed in green.

Generate RealTrack (Favorites) shows a list of recently used RealTracks.

Also Generate RealChart generates notation for RealTracks that include this feature.

Select and Generate Loops launches the **Pick a Loop** dialog where you can insert an audio loop into the track.

MultiRiff shows the current MultiRiff instrument, and is used to generate a new batch of riffs with the same RealTracks instrument.

MultiRiff (Choose) opens the RealTracks Picker so you can choose an instrument for generating MultiRiffs.

Select and Generate RealDrums opens the **RealDrums Picker** to choose a RealDrums set and create a RealDrums track. Track names for generated non-BB tracks are displayed in green.

Generate RealDrums (Favorites) shows a list of recently used RealDrums.

Also Generate RealChart generates notation for RealDrums.

Generate MIDI Track opens a list box to choose which Band-in-a-Box part to generate for the track – Bass, Drums, Piano, Guitar, or Strings. When a part is chosen from the list it will automatically be generated using the current Band-in-a-Box style in use. You can create tracks in different styles in the same song. The track name of the generated non-BB MIDI track will be colored green.

Generate Intelligent Audio Harmony (with passing tones) lets you generate audio harmony parts from an existing audio track using elastique.

Freeze Track from Generation prevents the track from being regenerated by functions like re-generate all tracks, or the **[BB]** button.

Regenerate Track will regenerate an existing track. If a track is a non-BB track, but it was generated individually from one of the generation options in Tracks Window popup menu, or from one of the generation options on the Generate Button popup menu, then the track name will be displayed in green. The track name being displayed in green or blue means that the track can be regenerated using this command. This feature is useful to regenerate, if you had changed the song's tempo, or just to generate fresh material.

Regenerate All will regenerate all blue and green tracks automatically.

Time Stretch and Pitch Shiftis a dialog that lets you stretch (or reduce) the length of the highlighted section of audio tracks.

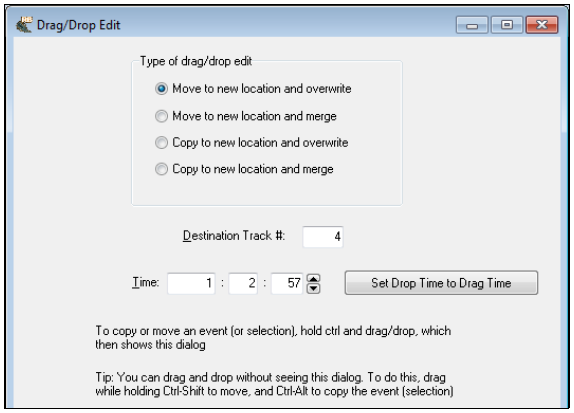
Select Whole Track command will select the entire track for editing.

Kill Selected Region will deselect a selected region of an audio (or MIDI) track.

Change Current Time will change the current time without affecting the highlighting of tracks. This ensures you don't accidentally de-select a region.

Highlight Current Audio Event makes it easier to select specific audio events, which then could be clicked and dragged (with **Ctrl** button held down) to a new location, etc.

Copy/Move Current Event (selection) launches the **Drag/Drop Edit** dialog.



If nothing is selected and you **Ctrl+**click to drag and drop, it will assume that you want to drag the entire current audio event.

Bypassing the dialog for quicker workflow. If you hold **Ctrl+Shift** then the drag will move the current event. If you hold **Ctrl+Alt** then the drag will copy the current event. When Dragging/Dropping within the overview section of the Tracks window, you can now drop to a blank track even if the track type wasn't originally set to the correct track type.

Drag/Drop will automatically be set to the original time if within 20 ticks (at a PPQ of 120). So if you drag a region down to a new track, you just need to be "approximate" in the drop location, as the program will snap the time to the same time as the event on the source track. If you don't want that behavior, just **Ctrl+**drag the selection, and the dialog appears with exact values. In this case, the dialog also has a handy "Set Drop Time to Drag Time" button.

***Current Track Event Colors / Default Track Event Color Setup*:** You can apply a custom color (foreground and background) to a track, or all tracks, using right-click menu items "Current Track Event Colors" and "Default Track Event Color Setup."

Save Audio Track (or selection) as wav/wma/mp4/m4a/mp3 lets you export a track or a section of a track to a separate audio file in one of the available formats. Some formats, such as MP3, require a proprietary codec that may not be present on your system.

Import Wave File allows you to select an audio file and insert it into either a highlighted section of a track or the whole track. This duplicates the *File | Audio | Import Wave File* command (**Ctrl+F3**) and allows you to import a wave file without to need to go to the Audio menu.

Import Audio File to separate tracks (using Stem Splitter) opens a dialog that separates an audio file containing multiple instruments into individual tracks - bass, drums, guitars/piano, vocals, and residual sounds, and imports them separately to your song. Using advanced AI and machine learning techniques, this process, also known as "audio source separation," offers greater flexibility and creative control in music production.

The ***Cut***, ***Copy***, ***Paste***, and ***1-Track Paste*** commands apply to the highlighted section of a track(s). The functions are as described in the Edit Menu topic.

Delete removes the selected section or events.

Copy/Move highlighted area of current track to another track makes it easier for "comping" which is to create a track that is a composite of different takes/tracks. It's a quick way to move/copy to a destination track without having to first cut/copy and then paste

Grid lines allows you to change the resolution of the grid lines.

Insert Volume Change will insert a MIDI controller into the track at the current location. If a highlighted region exists, then the program will ask if you want to apply this change to the highlighted region (as opposed to a change at the location you clicked). If applying the change to a region, then program will insert a volume change at the beginning of the region, and a 2nd volume change at the end to restore the prior volume. If necessary, the program will insert a controller at the very beginning of the song to preserve the original volume if you insert a volume change beyond the start of the track. This will normally be done the first time you insert a volume change into a track beyond the tracks' beginning.

Adjust overall volume of selected area using gain nodes allows you to increase or decrease the volume of the selected area of a track by using gain nodes, without having to manually enter them in the gain node area of the track.

Fade-in or fade-out using gain nodes allows you to fade-in or fade-out a section using gain nodes, without having to manually enter them in the gain node area of the track.

Audio Effects opens a submenu that is the same as the *Edit | Audio Effects* window. This submenu also contains ***Fade In*** and ***Fade Out*** menu items, which launches a Flash Message w/ instructions, and then launches the GAIN dialog.

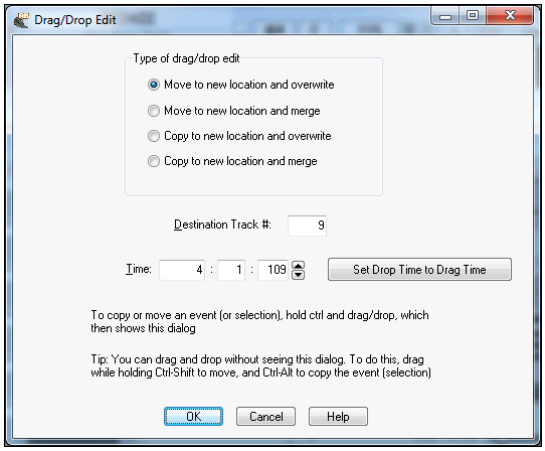
Drag and Drop Features

RealBand supports drag-and-drop editing in the Tracks and Audio Edit windows.

In the Tracks window you can easily move tracks up or down in relation to each other by drag 'n' drop using the mouse, e.g., drag track 1 below track 2 to change the order of the tracks.

You can move a highlighted region by holding down the **Ctrl** key with the left mouse button pressed, and drag the region to a new location in the song.

When you drop to a new track (or the same track), a dialog appears with options to move or copy.



If nothing is selected and you **Ctrl+**click to drag and drop, it will assume that you want to drag the entire current audio event.

Bypassing the dialog for quicker workflow. If you hold **Ctrl+Shift** then the drag will move the current event. If you hold **Ctrl+Alt** then the drag will copy the current event. When Dragging/Dropping within the overview section of the Tracks window, you can now drop to a blank track even if the track type wasn't originally set to the correct track type.

Drag/Drop will automatically be set to the original time if within 20 ticks (at a PPQ of 120). So if you drag a region down to a new track, you just need to be "approximate" in the drop location, as the program will snap the time to the same time as the event on the source track. If you don't want that behavior, just **Ctrl+**drag the selection, and the dialog appears with exact values. In this case, the dialog also has a handy "Set Drop Time to Drag Time" button.

Drag And Drop MIDI Or Audio Files Into The Tracks Window

You can drag a file, such as a .WAV file, from a folder directly onto the Tracks window. The file will be placed on the track you dropped it on, at the location onto which you dropped the file. The types of files that are supported are the audio files supported by RealBand, such as .MP3, .WAV, and WMV.

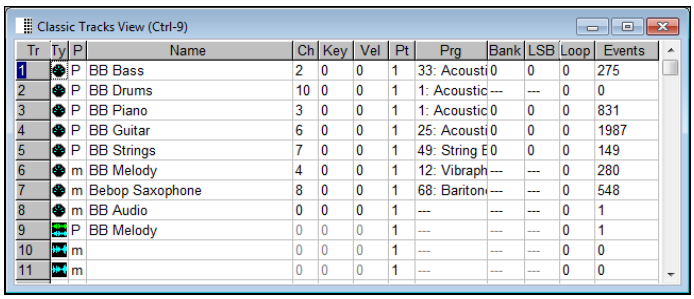
In addition to audio files, .MID files can be dropped onto the tracks window too. If the file is a multi-track .MID it will be imported onto free tracks beyond the highest occupied track.

If you hold the **Ctrl** key when dropping the file, then the file will be inserted at the time location, and any existing data moved beyond the end of the file that is being inserted, rather than overwriting any existing data.

Note: This feature will only insert files on measure boundaries.

Classic Tracks View

The **Classic Tracks View** is available in the *Window* menu or with the keystrokes **Ctrl+9**.



Click your mouse anywhere on a row to select that track. The number of the currently selected track (Tr) is highlighted in blue.

Ty = Type. The type field determines the track type: MIDI, Mono Audio, and Stereo Audio. You can't change the track type if a track already has data in it.



MIDI Audio Stereo

P = Play Status. The Play Status field shows the status of the track as Play (P), Muted (m).

Name = Track Name. This is any name you want to give to the track.

Ch = Forced MIDI channel. When not set to zero, all events in a track will be sent out over the selected channel.

Key = Forced Key Transposition. This setting transposes the events in a track up or down by the number of semitones you specify.

Vel = Forced Velocity transposition. This setting increases or decreases the velocity of the notes in a track by the amount you specify.

Pt = Port. Determines the MIDI port, or audio port, through which the data in a track is sent out.

Prg = Program change. When this setting is enabled a MIDI patch change will be sent at the start of the song. When you change this setting, a MIDI program change is sent.

Bank = Bank change. This is the MSB (Most Significant Byte) portion of the bank change, controller number 0.

LSB. This is the Least Significant Byte (controller number 32) portion of the bank change. Some synths use LSB instead of MSB, and some synths use a combination of the LSB and the MSB.

Loop. When this setting is enabled, the track will automatically repeat for the number of times specified.

Events. The number of events in a track.

Editing Fields within the window: The following fields may be edited by moving the cursor over the particular field you wish to edit and then pressing ENTER, or by double-clicking the mouse while over the field. Numeric fields may be increased or decreased by pressing the +/- keys.

Name: The name of a track.

Events: The number of events in a track.

Note: The following settings affect MIDI tracks only and don't affect .WAV audio tracks:

Ch: Forced MIDI Channel. When not set to 0 all events in a track will be sent out over the selected channel.

Key: Forced Key Transposition. This setting **transposes** the events in a track up or down by whatever amount you specify. For example, "-12" will transpose down by 1 octave.

Vel: Forced Velocity transposition. This setting increases or decreases the velocity of the notes in a track by whatever amount you specify.

Pt: MIDI Port. This setting determines which MIDI port the data in a track is sent out. If the port selected is greater than the number of available output ports the events in the track will be sent out the highest available port. For example, if only one port is available and you select port number 2, the events will be sent out of port number 1.

Prg: Program Change. When this setting is enabled a MIDI patch change will be sent at the start of a song. When you change this setting a program change will be sent out via MIDI. This is convenient for "auditioning" sounds during playback.

Bank: Bank Select. This will send a bank select message, followed by the track's current program change setting. Some synthesizers have more than 128 patches. The additional patches can be accessed by sending a bank select message, which will cause the synth to switch to a different bank of patches. See also the *Options* | *Preferences* | *MIDI* | *MIDI Out* command.

Loop: Loop MIDI Track. When this setting is enabled, a track will automatically repeat for the number of times specified. The track will loop back to the start of the measure that contains the first event in the track. If this setting is set to zero, the track will not be looped.

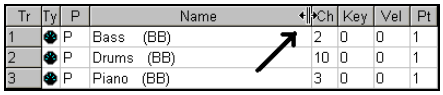
Resizing the track columns

You can resize the columns of the **Classic Tracks View** window as follows:

Move the mouse cursor to the **top gray row** and point it to the **edge** of the column you wish to resize. The **mouse cursor** will change shape.



Click on the **left mouse button** and **drag** the mouse to the right to expand the column, or to the left to reduce the column width.



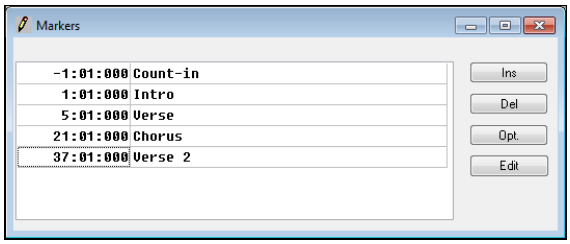
Markers Window

This window lets you insert markers in the song for keeping track of various sections of your music.

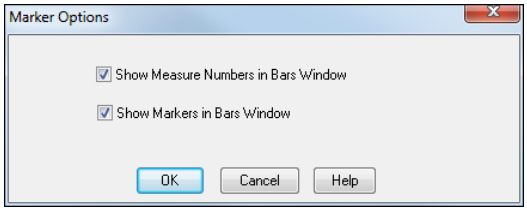


When markers are inserted in a song, you can use the [Prev] and [Next] buttons in the Markers area on the toolbar to jump from marker to marker.

These markers will also appear (by default) at the top of the **Bars** window. You could use the markers to mark sections such as the verses and choruses of the song. The **Ins** and **Del** buttons allow you to insert or delete markers. You can change the current marker by editing it directly in this window.



The [**Opt**.] button will open a dialog with checkboxes for enabling or disabling the display of Markers and Bar Numbers at the top of the **Bars** window.



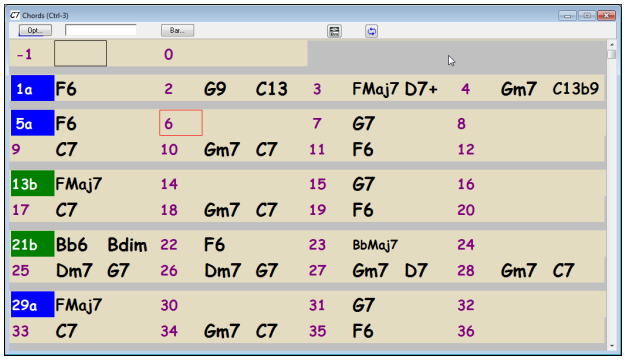
By default, both Markers and Bar Numbers are displayed. Since they are shown on the same line you can prevent either of these from being shown in the **Bars** window by unchecking the appropriate checkbox. If you uncheck the **Show Measure Numbers in Bars Window** checkbox the bar numbers will not be shown in the Bars window. If you uncheck the **Show Markers in Bars Window** checkbox the markers will not be shown in the Bars window. These options are provided in case you prefer just one or the other being shown in the **Bars** window.

Markers can be as close together in time or as far apart as you wish. Markers that are too close together will run into each other when displayed in the **Bars** window. In most situations such as marking verses and choruses of a song this isn't a problem, but it is something to keep in mind when working with markers.

Chords Window



The **[Chords]** button or the keystrokes **Ctrl+3** opens the **Chords** window.



The **Chords** window displays the chord symbols of a song. You'll see the bars of the song displayed in rows. If a bar contains chord symbols, they will be displayed to the right of the bar number. An optional setting inserts a line between each section of the song, as determined by the "a" and "b" part markers. There is another setting for the thickness of the line.

When the song isn't playing you can enter chord symbols by typing them. You enter chords in a similar manner to the Notation window, except that the Chords window is always ready for chord entry if the song is currently not playing.

Each measure is divided into Beat Groups. A Beat Group consists of two beats. If a song is in 4/4, then each measure will contain two beat groups. The current beat group will have a rectangle drawn around it. You can type two chords into the current beat group. For example if you type this: "c7,g7" (without the quotes) you'll see the text you're typing in the white rectangular panel on the toolbar. If you then hit [Enter] you'll see the C7 and G7 chords appear within the current beat group, and the input rectangle will automatically advance to the next beat group. When you're in the middle of typing chord symbols, you can use the [Backspace] key to correct a mistake.

The ←Left Arrow and Right Arrow→ keys let you move the input rectangle to a different beat group without entering chords. You can also click the mouse on a different beat group to move the input rectangle to a new location.

If you've attempted to enter chords within a beat group, and you've pressed enter and chords don't appear within that beat group, this means that you have made a typing error and the text was not recognized. You should then use the left arrow key to go back and try again. It may be that the chord spelling is different than the spelling that RealBand recognizes for that chord. Look in the list of chords for the spelling recognized by the program.

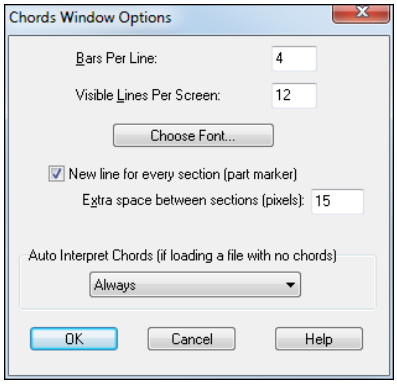
Tip: You can have the Chord Wizard name chords for you. Just record the chords on a blank track in RealBand then open the Chords window and have the Chord Wizard interpret them.

You can highlight a range of cells for editing by clicking inside of a bar and then dragging the mouse to the inside of another bar. For example, if you click in the middle of bar 1, and then drag the mouse to the middle of bar 8, you will have highlighted bars 1 through 8. **Shift+click** will extend the highlighted area. This will select all the tracks of the song for editing.

You can cut and paste sections of the song by using the *Edit* | *Cut* (or *Edit* | *Copy* if copying instead of cutting) and the *Edit* | *Paste* command.

Note: If you wish to cut and paste chords, make sure the Chord Symbols checkboxes are enabled in the **Cut** (or **Copy**), and **Paste** dialogs. If you don't wish to cut and paste the track data (audio or MIDI data) then make sure to uncheck the "Events" checkbox in the **Cut** (or **Copy**), and **Paste** dialogs.

The **[Opt...]** button launches the **Chords Window Options** dialog.



The **Bars Per Line** setting determines how many measures will be drawn per line in the Chords window.

The **Visible Lines Per Screen** setting determines how many lines (rows) of chords are will be visible per screen. Each screen will always have 125 lines per screen in the Chords window, but the Visible Lines Per Screen setting controls how many lines will be visible without scrolling.

The **[Choose Font…]** button lets you select a font for the Chords window. The font's overall size will be determined by the amount of Visible Lines Per Screen, as well as the height of the Chords window.

New line for every section (part marker) inserts a line between each section of the song based on the "a" and "b" part markers. When this feature is used each section starts on a new line, similar to paragraphs in a book, making the chords easier to follow.

Extra space between sections (pixels) sets the width of the line between sections between 0 and 100 pixels.

The **Auto-Interpret Chords** setting is useful in a situation where a file is loaded, but the file doesn't already contain any chord symbols. If you set this to "Always," then RealBand will always attempt to automatically interpret the chord symbols using the Chord Wizard. If set to "Ask First," then RealBand will ask before attempting to automatically interpret chord symbols. If set to "Never," then RealBand will just load the file without attempting to figure out the Chord Symbols.



BB Tracks can be generated using more than one style, with volume changes, and with repeats. In the Chords window, click on the bar where you want to make changes. The **[Bar]** button launches the **Settings for Bar** dialog, where you can specify the changes that you want to have happen at the highlighted bar.



This button launches the Audio Chord Wizard, where you can automatically figure out the chords from audio files (WAV, MP3, WMA, SEQ) and write them to the Chords window.



If you the [Loop] button on the toolbar is blue, RealBand will play the highlighted section in an endless loop. If no section is highlighted then the entire song will be looped.

Part Markers

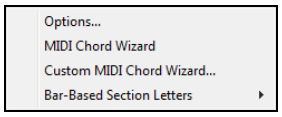


If you click directly on a bar number, the number will change into a **Part Marker**. There are two kinds of part markers: an "a" part marker (blue), and a "b" part marker (green). Clicking once on the bar number that currently has no part marker will set the bar to "a" part marker. Clicking again will set it to "b" part marker, and clicking again would set the bar back to having no part marker.

With the **New line for every section (part marker)** setting enabled, a line will be inserted between each section that has been marked with an "a" or "b" part marker.

You can toggle the part marker type for a measure during playback. In addition, you can also toggle a part marker for the current measure by pressing the **M** key on your keyboard when the Chords window is currently active.

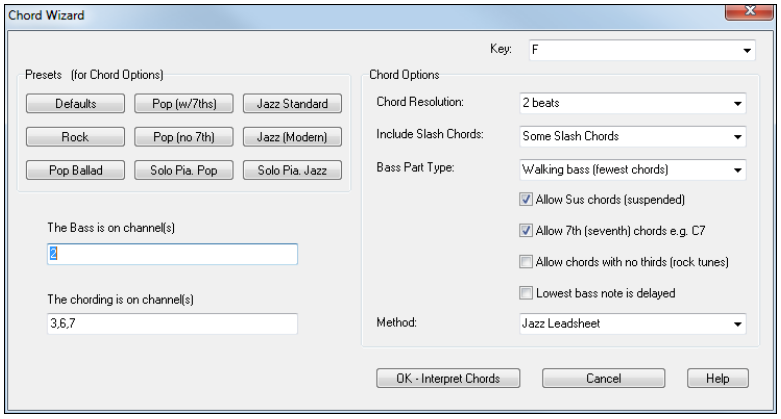
Chord Wizard



Right-click in the Chords window to open this menu with Chord Wizard options. If you select *MIDI Chord Wizard* the program will automatically detect the chords in the song. If you've highlighted a range of bars, RealBand will only attempt to detect the chords for the highlighted range.

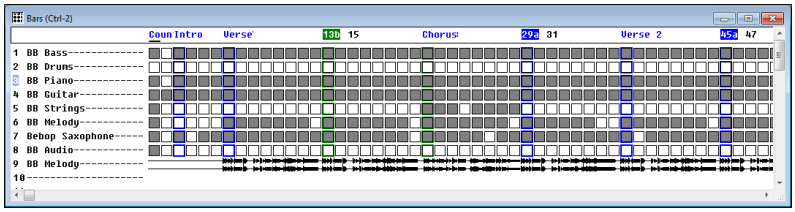
If no bars are highlighted, RealBand will attempt to detect the chords for the entire song. You can use the Undo command if you want to undo this.

The *Custom MIDI Chord Wizard* will launch the **Chord Wizard** dialog, which lets you customize the settings for chord detection.



Bars Window

The **Bars** window is available in the *Window* menu or with the keystrokes **Ctrl+2**. This window offers an overview of multiple tracks of wave and MIDI data.



This window shows the bars (or measures) of the song. Bars that have MIDI data will be shaded, while bars without any data are not shaded.

At the top of the window, you will see either the bar numbers, markers, or both, depending on the chosen settings in the **Markers** window **Marker Options** dialog.

To the left of the window you will see the track names. If the whole track name doesn't fit in this section, you will see it ending with "..." to indicate the name is actually longer than shown.

Bars that have MIDI data will be shaded. Bars that contain WAV data will be displayed as waveform overviews. Bars without any data appear as "empty squares."

Left click with the mouse to set the current time location. To ensure that a previously highlighted region is not accidentally changed while setting the current time, hold down the **Alt** key when clicking the left mouse button.

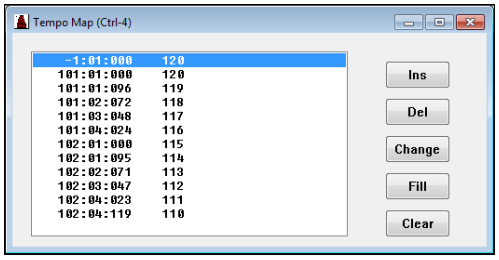
You can use the mouse to select a region to be highlighted by clicking on a measure and dragging the mouse over the measures you are interested in. This action highlights an area that can be affected by the commands in the *Edit* menu.

The **horizontal scroll bar** located at the bottom of the Bars window allows you to scroll around through your entire project.

Note: Scrolling through the Bars window won't change the "current" (Now) location in your song. Instead, you should use the scroll bar in the bottom left corner of the main screen's toolbar to scroll to a new location.

Tempo Map

The Tempo Map is a list of all the tempo changes that occur during the course of the song.



The **[Ins]**, **[Del]**, and **[Change]** buttons shown above may be used to insert, delete, and change entries in the tempo map.

You may also insert tempo changes by pressing the computer's **Insert** key. You can change the tempo of the currently selected entry by pressing **Enter** key or by double mouse clicking over the desired entry. The **Delete** key can be used to delete entries from the map.

If there is only one entry in the map you can't delete it since at least one entry in the map is required in each project.

The Tempo Map window also has a **[Fill]** button that enables you to insert a series of ascending or descending tempo changes, highly useful for ritards and accelerandos.

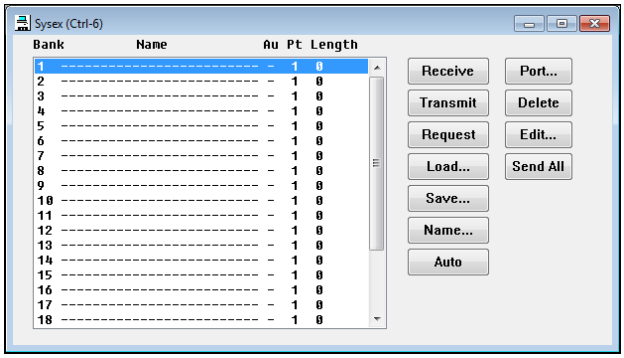
The "From:" and "Thru:" fields displayed in the **Fill Tempo Changes** dialog allow you to specify the beginning and ending locations where you want the tempo changes to occur. The "Start Value" and "End Value" fields let you choose where, in terms of tempo, the fill will begin and end.

For example, if the start value is 100 and the end value is 90, a series of tempo changes starting at 100 and decreasing down to 90 will be inserted through the bars beginning with the "From:" location and ending at the "Thru:" setting.

SysEx Window

The SysEx window is actually a built-in system exclusive (SysEx) librarian.

This allows you to transmit or receive any SysEx data. You can also load and save MIDIEX compatible SysEx files. The SysEx librarian can hold up to 24 banks of system exclusive data. Since the librarian stores all data on disk as opposed to memory, the size of the SysEx data is limited only by the amount of free disk space available.

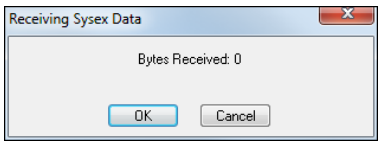


SysEx MIDI Events - you can **insert System Exclusive data** directly into a MIDI track as MIDI events in the Event List window. You can record SysEx data in real time and when you keep a take, the SysEx data will be added to a MIDI track as SysEx events. You could also load SysEx data into a SysEx MIDI event by receiving SysEx data from your synth, or by loading the SysEx data from a file. SysEx MIDI events can also be edited.

Note: Although RealBand allows SysEx MIDI events to be huge in size we recommend limiting real time SysEx MIDI events to 128K or less to prevent a song from stuttering during playback.

[Receive]: This command enables the ability to receive a data dump from your synthesizer to the currently selected bank. When you select this feature a message box will pop up to indicate that the sequencer is ready to receive the SysEx dump.

After you initiate this command, you can press the appropriate buttons to dump the data from your synth. All the data received will be stored in the current bank in the program. A dialog box will show the progress of the SysEx dump, as shown below:



When your synth is finished dumping the data press the [OK] button to exit this window.

[Transmit]: Sends the SysEx data in a given bank out via MIDI. A dialog box will inform you that a send is in progress.

If you wish to **cancel** a transmission after it has started press the **Cancel** button and the transmission will be stopped.

Request: This option allows you to initiate a SysEx dump request by sending the request to your synthesizer via MIDI. Simply choose an instrument from the available names and press the **Enter** key. You may be prompted for the channel or patch numbers if the instrument requires them. After sending the request on the MIDI Out port the program will then proceed to receive any data that is sent from your synth automatically –as if the **Receive** command had been issued.

Load: This command will load a MIDIEX compatible SysEx file into the currently selected bank.

Save: This command will save the currently selected bank on disk in MIDIEX compatible format.

Name: Provides you with the option to choose the name for a current bank of SysEx data.

Auto: When this feature is enabled the bank will automatically be transmitted via MIDI when loaded from a .SEQ file. The letter "**A**" will appear to the right of the bank name if the bank is set to be **Auto-Transmitted**.

Port: This setting determines the output port through which the SysEx data will be sent out via MIDI. If the selected port is *greater* than the number of ports available, the data will be sent out the *highest available* port. For example, if the port setting for a bank is set to 2 and there is only one MIDI output port installed, the SysEx data in the bank will be sent out through MIDI Port 1.

Delete: This simply deletes the SysEx data from a currently selected bank.

Send All: This transmits all banks that have SysEx data in them out via MIDI.

Edit: For those who wish to manually edit the bytes of a selected bank, you can also type in this SysEx data as long as the bank currently has no data in it. A dialog box will pop up in which you can manually edit the bytes. The bytes are edited as hexadecimal numbers separated by spaces. The SysEx data will look something like this: F0 41 10 42 12 40 11 02 10 1D F7. Each SysEx message should start with F0 and end with F7.

The following is a list of the editing commands available for you to use when editing SysEx data:

Home	Go to beginning of line.
End	Go to end of line.
^Home	Go to beginning of text.
^End	Go to end of text.
Up	Cursor Up.
Down	Cursor Down.
Page Up	Up one page.
Page Down	Down one page.
Right	Cursor Right.
Left	Cursor Left.
^Right	Cursor Right one word.
^Left	Cursor Left one word.
Ins	Toggle Insert Mode.
Del	Delete text.
Ctrl+X	Cut text to clipboard.
Ctrl+Ins	Copy text to clipboard.
Shift+Ins	Paste text from clipboard.

If you save a song to a .SEQ file the SysEx data will be saved within the file. However, there are a few differences in the way SysEx data is saved to MIDI files, since they must be saved as SysEx meta events. For example, if you save a file as a .MID the SysEx information will be saved, but the banks won't retain their individual names when the .MID file is loaded back into RealBand.

If a bank has multiple SysEx messages in it (such as a bulk dump), each individual SysEx message is saved *separately* into a MIDI file. If more than the maximum number (24) of SysEx meta events are read from a MIDI file into RealBand the additional banks will be added to bank number 24.

Tips: Use the "Send All" feature to send all the banks out via MIDI.

If you save a file called $OPTIONS.SEQ, RealBand will automatically send any SysEx banks with "Autosend" ("A") enabled in that file. This is useful if you want to have default SysEx data sent to your synth or sound source each time the program is started.

Dump Request Macros

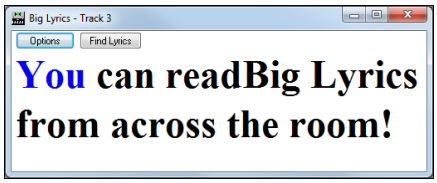
A Dump Request Macro (DRM) allows you to initiate a data dump of your synth from the program instead of having to press buttons on your synth**.** A DRM file contains the name of a synth (names appear in a **pick window** when you select the **Initiate Dump Request** command), and the appropriate packet of bytes can be sent to your synth, which will instruct it to auto-send a data dump.

When you use the **Initiate Dump Request** command, RealBand reads the dump request macros from a binary file called RB.INS. The binary file RB.INS is converted from a text file called RB.DRM, which contains the macro information in ASCII format.

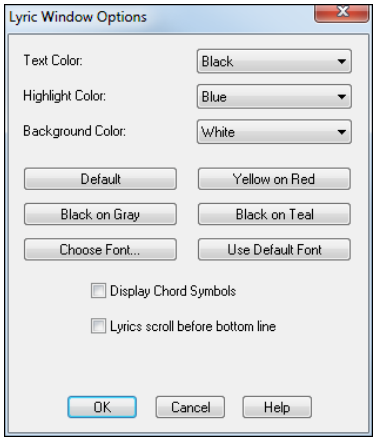
If you have a synth that isn't listed in the RB.DRM file it is possible for you to manually add your own macro for your synth. These macros are derived from the System Exclusive Implementation information in your synthesizer manual.

Big Lyrics Window

The **Big Lyrics** window opens with the [Lyrics] button on the toolbar. It displays any existing lyrics in a track. The program will highlight the lyrics as they play, which is very useful for singing along with the music.



Various settings for this window can be changed in the **Lyric Window Options** dialog, which is launched with the [Options] button in the Big Lyrics window. These options can also be found in the *Options* | *Preferences* menu's tabbed dialogs.



This lets you adjust various settings for the Big Lyrics window. The "Text Color," "Background Color," and the "Highlight Color" all can be changed if you don't like the colors that the window is using.

The [Default], [Yellow on Red], [Black on Gray], and [Black on Teal] buttons let you choose those 4 color schemes without having to play around with the individual colors.

The [Choose Font…] button lets you select a different font for the Big Lyrics window.

The [Use Default Font] button resets the Big Lyrics window to use the default font.

The "Display Chord Symbols" checkbox will let you enable or disable chord symbol display. The chord symbols will be displayed in brackets, e.g., [Am7] between the lyrics.

"Lyrics scroll before bottom line" scrolls the lyrics before the bottom line instead of scrolling after the first line.

Clicking on a lyric or chord symbol in the **Big Lyrics** window will start the song from the location of the lyric or chord that you clicked on.

The [Find Lyrics**]** button automatically sets the Big Lyrics window to the track with the most lyrics.

Big Clock Window



This is accessible from an icon on the toolbar (same section of the toolbar that has the Tracks, Bars, Chords buttons, etc.).

This window displays the current time location in a large text. It will show Measures:Beats:Ticks, or Hours:Minutes:Seconds:Hundredths, or Samples. Clicking on the window will toggle the display mode.

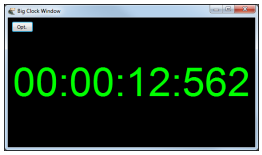
Measures:Beats:Ticks



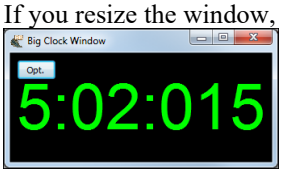
Samples



Hours:Minutes:Seconds:Hundredths



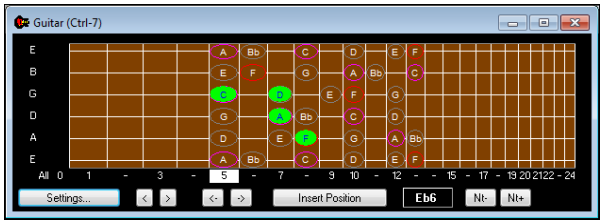
If you resize the window, then the size of the font will adjust to the new window size.



Guitar Window

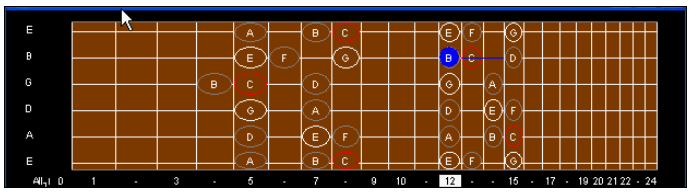
The virtual guitar fretboard displays the notes of any track or group of MIDI channels.

The virtual Guitar window displays notes (as green squares for fretted notes, and blue squares for bends) that are played in a selected track or by the MIDI Thru channel on the virtual guitar fretboard.



Pitch bends are displayed in real time as blue lines extending in the direction of the bend. If the direction is up, then line extends higher on the neck than the original note. If the direction is down (such as if a pull-off were executed), then the bend extends lower on the neck.

The pitch bends, shown as horizontal blue lines, will move horizontally along the string in real time illustrating the extent of the pitch bend.



Example of a MIDI pitch bend from a B to a C#

This virtual instrument works in the same fashion as the piano keyboard display. However, given that there are six separate strings on the guitar fretboard – and that many notes and chords can be played several different ways on the guitar, there are a few additional settings unique to this instrument.

Just below the fretboard you will find **position markers**. The current position setting of the guitar is highlighted in reverse video. The positions range from 0 (open) to 24 (24th fret). There is an additional position called "All," where the MIDI notes will be displayed in all possible ways on the guitar. When the position is set to any other range (e.g., from 0 to 24), the notes will be displayed in that position, unless they are outside the range of a given position, in which case they will not be shown. You can change the position simply by clicking on any **position marker** (e.g., 1, 3,5,7,9, etc.).

The [Insert Position] button causes the currently selected position to be embedded into the track at the "Now:" location. When you play back a track with embedded position information the guitar position will correspondingly change when the position event is encountered. A position event is stored in the track as a MIDI Controller parameter (number 84) with a value ranging from 0-24 (indicating positions 0-24). A controller #84 value of 127 indicates the "All" position.

The ability to insert position information into a track is especially useful for properly displaying a track that was recorded by a MIDI guitar controller with all six strings set to transmit over one channel. By manually inserting this position information you can coax the guitar fretboard into displaying the notes in the position they were originally played, instead of having them display in all possible positions.

Try recording guitar music on a MIDI piano-keyboard, then insert the appropriate position information into the track, and watch the virtual guitar display the notes as if they had been played on a guitar.

Of course, the best way to record guitar music is with an actual MIDI Guitar Controller set to transmit over 6 separate MIDI channels (e.g., 11-16).

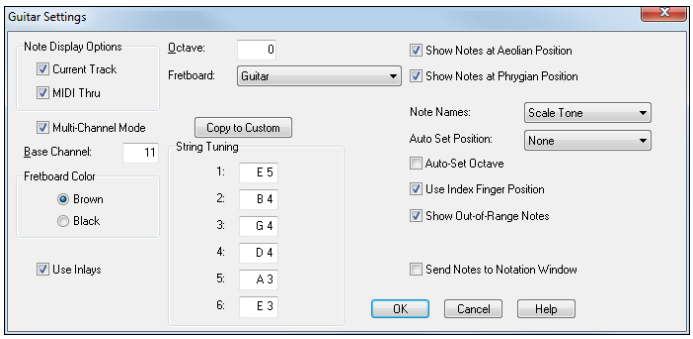
The **Note Indicator** is a white square located to the right of the [Insert Position] button. When you pass the mouse cursor over the guitar fretboard the name of the note that the cursor comes into contact with is shown in this white box. This can be used for getting to know the note locations found on the guitar.

The [<] backup and advance [>] buttons allow you to advance forward or go backward by one note at a time. The program will step-play the note that you have advanced or backed-up to. You can stop the note from sounding by advancing or backing-up to another note, or by pressing the [Stop] button. This feature is available so that you can hear and see a sequence of notes one-step-at-a-time. The keyboard shortcuts to backup and advance are the **Shift+Left Arrow** and **Shift+Right Arrow** keys.

The [←] backup group and advance [→] group buttons work in a similar fashion as the previously mentioned backup and advance buttons, except that these buttons allow you to see and hear a group or cluster of notes. Notes that are within a certain distance from each other (automatically determined by the program) are considered to be such a group/cluster of notes.

Keyboard shortcuts for the backup and advance group feature are the **Ctrl+Left Arrow** and **Ctrl+Right Arrow** keys. Additional hot keys available for this feature are the [0] and [.] numeric-pad keys, which can be used even when editing or viewing notation in the Notation window.

The **[Settings]** button offers a dialog that can change the following settings applicable to the Guitar window:



The **Note Display Options** checkboxes determines whether the Guitar window will display notes on the current/highlighted track (i.e. recorded MIDI data), or the notes echoed out via the MIDI Thru port (i.e. live MIDI-Controller data).

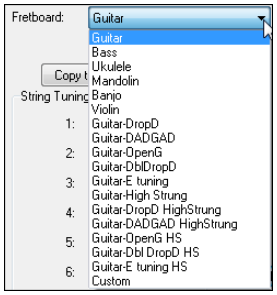
Tip: When the **Multi-Channel** mode is enabled (by default), and the MIDI channel of a note is within the guitar channel range (e.g., Channels 11-16 by default), the program assumes that notes within the specified channel range fall on a particular string. For example, in this case a note on **MIDI Channel 11** will be considered to be on **String Number 1**. A note won't be displayed at all if it is too high or too low for a particular string (e.g., the "**E**" string).

The purpose of **multi-channel mode** is so that when you play back a track that was recorded by a MIDI guitar controller in mono mode the notes will correctly display the notes in the virtual guitar. If a given note's MIDI Channel falls outside the channel range (e.g., Channel 9), the program will attempt to use the position information instead to display the note correctly.

The **Base Channel** determines the guitar channel range when in multi-channel mode. For example, with a Base Channel of 1 the channel range will be "1-6." The highest possible base channel is 11 (the default), making the range "11-16."

The **Fretboard Color** radio buttons let you choose between Brown and Black for the color of the guitar fretboard.

The **Octave** determines the range of notes that are displayed on the guitar fretboard. When set to 0, the fretboard will display notes normally. When set to "-1" for example, the guitar window can be used to correctly display bass lines instead.



The **Guitar** window can display fretboards for guitar, bass, ukulele, mandolin, and banjo. Select the instrument fretboard from the **Fretboard** combo box.

Alternate tuning presets, such as Drop D, DADGAD, Open G, etc. are supported for the Guitar window and Notation Tablature.

The Custom Tuning setting for the Guitar window lets you specify the number of strings (4 through 6) and the tuning of each string. Note: This custom setting does not support Banjo.

Press the **[Copy to Custom]** button to copy the current string settings as a starting point for a custom tuning.When you press OK, RealBand will save your custom settings, and then they will be recalled if you later switch to another fretboard and then return to the custom fretboard.

The **String Tuning** setting determines the range of notes that are displayed on each of the six strings. The **default** is *Standard E Tuning*. You can change the note value corresponding to the open note for each of the six strings. The guitar fretboard will appropriately display the notes as if they are played on a real guitar set to an alternate tuning.

Tip: The strings must be tuned from highest to lowest. For example, string number 1 must be tuned **higher** than string number 2.

The **Send Notes To Notation Window** setting, when enabled, offers the ability to insert a note **directly** into a Standard Notation window by mouse clicking on the appropriate note position on the virtual fretboard. Notes will be inserted at the current time/location of the opened Notation window.

The **Show Notes at Aeolian Position** setting, when enabled, will show guides on the guitar fretboard based on the current key of the song. For example, in the Key of C the Aeolian Position can be thought of as an A-Minor scale at the 5th Position (Aeolian Mode), with the root of the minor scale being on the 6th string of the guitar. Roots of the relative major scale are shown with orange circles.

The **Show Notes at Phrygian Position** setting, when enabled, will show guides on the guitar fretboard based on the current key of the song. For example, in the Key of C the Phrygian Position can be thought of as an A-Minor scale at the 12th position, with the root of the minor scale being on the 6th string of the guitar. We've named this the Phrygian Position since, in the Key of C, if you start playing a scale beginning at the E note on the 6th string at the 12th position it is actually a Phrygian Mode scale. You can also think of it as just another minor scale beginning on a 5th string. The roots of the corresponding major scale are shown with an orange circle.

The **Note Names** combo lets you choose between several options that affect the display within the circular guides on the fretboard. The default option is "Scale Tones," which will display all the tones of the Aeolian or Phrygian scale. Other options are "None" (no notes shown), "Root Only," (just the major scale root notes shown), and "Chord Tones" (just the major triad tones).

The **Auto Set Position combo**, if you chose to make use of this setting, will cause the program to automatically set the guitar fretboard's current position to either the Aeolian or Phrygian position of the current key. By default it is set to "None" which means that the fretboard's current position stays unchanged.

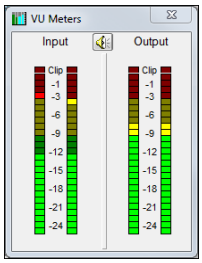
The **Auto Set Octave** setting, when enabled, will cause RealBand to automatically set the guitar octave by analyzing the MIDI data in the current track of the song.

The **Use Index Finger Position** setting when enabled causes the guitar display to use the "index finger" to play notes that are one fret outside of the normal position, instead of the little finger.

The **Show Out-of-Range Notes** setting, when enabled, will allow any note to be displayed on the guitar, regardless if it is the range of the guitar or not.

VU Meters

The *Windows | Show VU Meters* command will display the VU meters. There are 2 pairs of VU meters, one pair for audio input, and one pair for audio output. If you re-size the VU meters window vertically the height of the meters will expand or shrink to match the new window height.



The clipping indicator at the top of the meters indicates that clipping has occurred. You should try to keep the levels low enough so they're safely below 0 db and the clipping indicator doesn't light up. To be on the safe side, it's probably a good idea to adjust the levels so that the meters don't get too close to 0 db even if the clipping indicator hasn't yet lit up.

The VU meters have an automatic peak-hold feature with gradual peak fallback, so it will be easy to see the transient peak levels if you've got your eye on the meters.

For the Output, you may have to adjust your mixer settings within RealBand to keep the levels within a reasonable range.

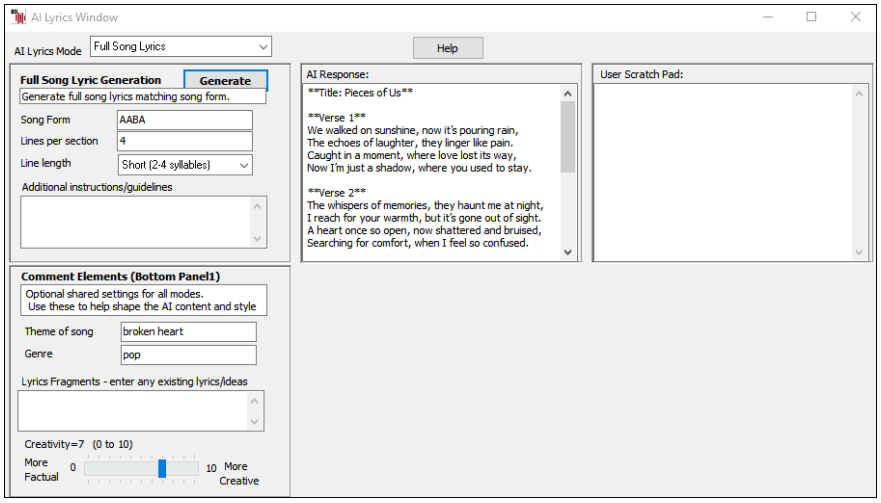
For the Input, you may have to press the speaker button to launch the Windows Record Control dialog, and you could then lower the input level.

AI Lyrics Window

This window provides creative songwriting functions that suggest or generate themes, styles, titles, and even entire song ideas. It also offers customized AI lyrics generation, enabling you to create lyrics from scratch, generate the next line, or experiment with rhymes, synonyms, antonyms, related words, or alliterations. You can enhance your existing lyrics by adding vivid imagery, emotion, richer vocabulary, or more natural phrasing. With six lyric modes - Word Suggestions, Inspiration, Songwriting, Improvements, Full Song, and Custom - you can refine your lyrics in numerous ways.

Note: An internet connection is required to use these features.

You can open this window with the *Windows* | *Show AI Lyrics Window* menu command.



There are six modes:

1. Word/Phrase Suggestions: Find rhymes, synonyms, antonyms, related words, or alliterations for a specific word or phrase. This mode lets you input a word or phrase and find rhymes, synonyms, antonyms, related words/phrases, or alliterations. You can enter a word or phrase by typing it directly or by selecting text from other memo controls, such as the scratchpad. If you have a song idea with a specific theme, genre, or lyrics, enter them in the "Common Elements" section. This will ensure that the rhymes, synonyms, and other suggestions are tailored to fit your song.
2. Songwriting Assistant: Chat with the AI assistant to help develop your song idea. Simply start the conversation with something like, "Let's get started" or share your idea, such as "I want to write a country song about hard work and blue-collar life." Alternatively, you can start by asking for themes suggestions, choose one, and the generate lyrics based on that theme.
3. Inspiration: Generate song themes, titles, or even entire song ideas, complete with examples. The "Complete Song Idea" function generates lyrics for an entire song, incorporating any information you provide, including details from the "Common Elements" section. At the end of the suggested lyrics, you'll see style suggestions to use in Band-in-a-Box. Click on the [Styles] tab of the MultiPicker Library window and type the suggested styles (e.g., Traditional Country, Americana, Southern Rock) into the text filter area to find them. The "Themes" function provides various song themes based on any ideas you input. The "Titles" function generates song titles that align with your desired theme or genre.
4. Lyrics Improvement: Refine, rewrite, extend, or add to your lyrics. In this mode, you can enhance your lyrics in the following ways:
   - Refining phrasing for a more natural flow, vivid imagery, richer vocabulary, and deeper emotion
   - Suggesting the next line to complement your lyrics
   - Rewriting the lyrics for a fresh perspective
   - Expanding the lyrics to develop the theme further
5. Full Song Lyrics: Generate complete song lyrics matching a specific form (e.g., AABA), the number of lines per section, and other details. This mode generates a complete song of lyrics that match the form and number of bars for each section you

specify. For example, if each line of lyrics represents two bars of music, then 4 lines of lyrics would equal 8 bars. So, if you want a 32-bar song with 8-bar sections, select a form like AABA, set 4 lines per section, and choose the number of words per line.

6. Custom: Ask the AI anything and have fun exploring creative ideas! For example, you might ask “What are the notes of an F9 chord?”

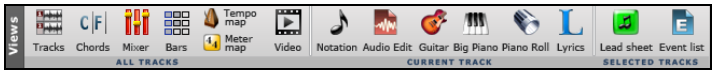
The “Common Elements” section applies to all lyric modes. It allows you to optionally provide information about your song, such as its theme, genre, language, lyric fragments, and creativity level.

- Enabled: If this option is disabled, any information in this section will be ignored.
- Theme of song: Describe the idea or story behind your song.
- Genre: Specify the genre of the song, such as “Heavy Rock” or “Children’s song about the zoo.”
- Language: Choose the language for the lyrics. If you leave it blank (default), the lyrics will be in English.
- Lyric Fragments: Provide any existing lyric fragments, and these will be considered when generating the lyrics.
- Creativity: Higher settings encourage the assistant to be more creative and inventive in generating the lyrics.
- You can press the [Clear] button to erase all entered information.

There is a “User Scratch Pad” where you can save your ideas. This space is for your use only, allowing you to copy and paste your thoughts or AI-generated suggestions so you won’t lose them. The contents of this pad will be saved to an .SEQ file

Other Program Windows

These program windows can be launched by selection in the *Window* menu or by clicking on their buttons in the Views Toolbar.



Chapter 5: Using MIDI Features

Overview

RealBand is a full-featured MIDI sequencer for Windows with the added ability to create automatic accompaniments in its BB Tracks. If you want to know how to create MIDI tracks and BB Tracks please see the **BB Tracks and MIDI tracks** chapter. This chapter has instructions for using the many powerful MIDI features in RealBand.

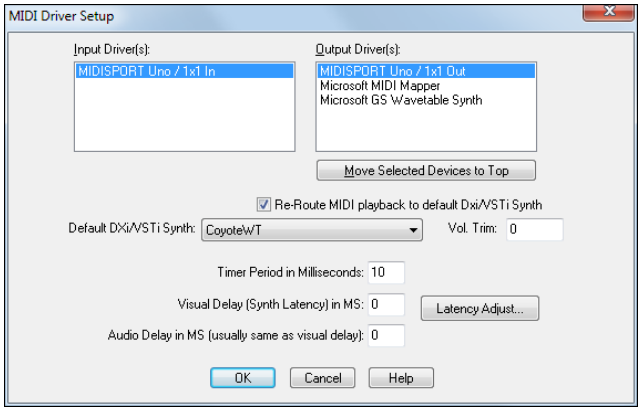
Record and edit music for playback through your sound card or MIDI synthesizer as configured in the **MIDI Driver Setup** (see MIDI Setup, Ch. 1). MIDI music can be displayed in standard music notation on the screen, and also with the on-screen piano keyboard or guitar fretboard. RealBand MIDI sequences are saved in its native sequence file format with the file extension .SEQ. RealBand also includes full support for saving, playing, and editing Standard MIDI files (*.MID) and Karaoke files (*.KAR).

Using DXi and VSTi Synthesizers

DXi and VSTi software synthesizers allow RealBand to play high quality sounds directly through your computer's sound system without external MIDI hardware. Connecting RealBand to the software synth as a plugin has several advantages over connecting as a MIDI driver.

The plugin allows RealBand to merge/sync in any existing audio file (vocals etc.) with the synth output. You can also directly render your performance to a .WAV file using the DXi or VSTi plugin.

To use DXi/VSTi soft synths with RealBand, you can think of them as a type of "MIDI Output Driver."



You can either visit the **MIDI Driver Setup** dialog (*Options* | *Preferences* | [MIDI] tab | [MIDI Devices] button) and select the "Re-Route MIDI Playback to Default DXi Synth" checkbox to send all MIDI playback to the default DXi synth, or you can assign DXi synths to individual tracks with the option to set all MIDI tracks to the same port.





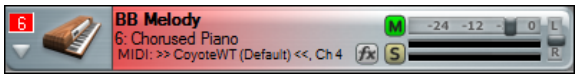
Routing to Default DXi/VSTi Synth

The **Default DXi/VSTi Synth:** combo box lets you select which DXi or VSTi synth is used as the default DXi synth.

The **Re-Route MIDI Playback to Default DXi/VSTi Synth** setting will cause RealBand to re-route all MIDI playback to the Default DXi/VSTi synth. This is the easiest way to use a DXi or VSTi softsynth for playback. If this option is checked, then all MIDI playback output will be routed to the default DXi/VSTi synth regardless of the MIDI track's port number.

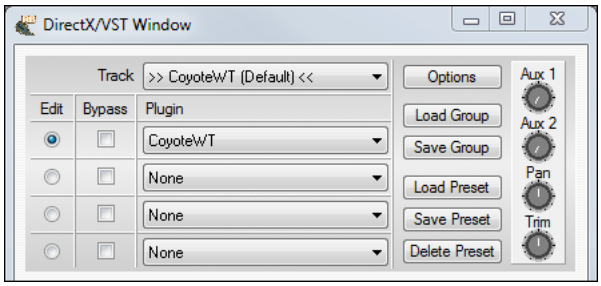
Assigning DXi or VSTi Synths to Tracks

To assign a DXi/VSTi synth to a particular MIDI track, select the track in the Tracks window and then click on the Disclosure Triangle.

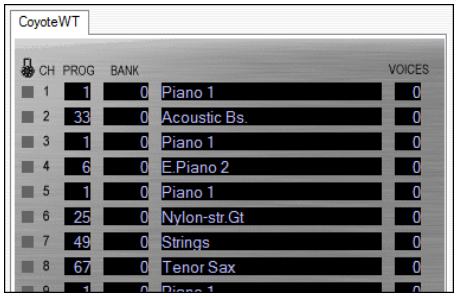


 The **Disclosure Triangle** will reveal more information about a track by making the track row height taller.

The **[Edit DXi]** button launches the **DirectX/VST Window**.



In the **DirectX/VST Window** you can select the type of DXi/VSTi softsynth to use and also see a control panel display of the softsynth that allows you to make settings directly for your DXi or VSTi synth.



The settings panel that opens is either for the default DXi synth (16th DXi synth slot which is MIDI port 32) or the current DXi port number if the track is set to a valid DXi port (17-32).



The DXi/VSTi softsynth will convert the MIDI information to audio, which RealBand will play back through your sound card to audio speakers.

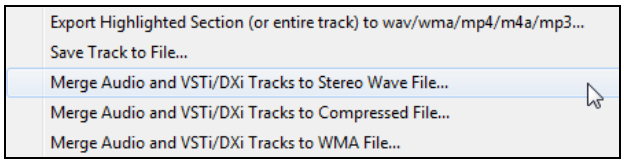
Note: If using MME drivers, only the MIDI playback output can use soft synths. MIDI Thru, MIDI metronome, scrub mode, and chord advance/backup will default to a regular MIDI port. With ASIO drivers, MIDI Thru will play through soft synths.

Rendering Songs to Audio with DXi/VSTi

Rendering songs to audio in RealBand is much easier if the MIDI tracks are using a DXi (or VSTi) synth.

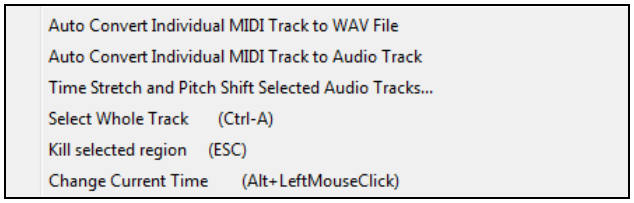
Rendering DXi MIDI tracks to audio is as simple as selecting the *Render* | *Merge Audio and DXi Tracks to Stereo Wave File* menu command. You will be prompted for a wave file name, and then RealBand will render to the .WAV file. It's as simple as that.

Remember that audio tracks will also be rendered, so if you only want to render MIDI, then be sure to mute all audio tracks first.



Rendering Individual Tracks to Audio

Right-click in the **Tracks** window to access these audio rendering commands.



Auto Convert Individual MIDI Track to WAV File: Choose this command to convert any MIDI track to a .WAV file. RealBand will automatically render using a DXi or VSTi synth. WAV files can be exported to other sequencers or Windows Media Player.

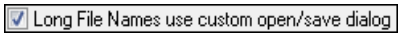
Auto Convert Individual MIDI Track to Audio Track: It is easy to convert any MIDI track to an audio track. RealBand will automatically render using a DXi or VSTi synth and import the audio into the first available track in the **Tracks** window.

Loading and Playing Songs

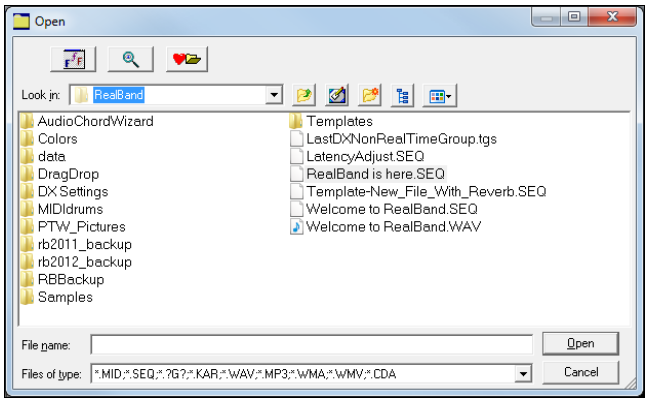
Loading a Song

To load in a new song, choose *File* | *Open*. You will then see a list of files available for use with the program.

To see the custom **Open** dialog, go to *Options* | *Preferences* (**Ctrl+F5**) and select the checkbox for "Long File Names use custom open/save dialog."



This lets you use a more advanced custom file dialog.



This dialog lets you choose a font, and it will remember the dialog's window size and placement along with the currently selected font. It also has a tree button that lets you view the directory structure, and a button that lets you choose between details mode and list mode. RealBand will remember these settings the next time you load or save a file using the custom file dialog.

RealBand will remember up to 25 folders from which you had previously loaded files. You can quickly select a folder and instantly go there without having to navigate through the Windows tree structure.



Let's load in the demo song I Said It Before. The file name is i_said.seq. Open the song as you would any file, either with a double mouse click on the file name or by selecting the file name in the dialog and then clicking on the [Open] button.

The song title and file name appear in the status bar at the top of the screen.



The song's time signature and key signature are seen below the song title and directly above the on-screen piano keyboard.



The song tempo is seen to the right of the time signature and key signature. Click in the tempo field to open the Tempo dialog and type in the tempo in beats-per-minute (bpm).

Use the up/down scroll arrows to change the tempo without typing it in again, or click the [-] button four times in tempo and RealBand will set its tempo to the four beats (three for a waltz) that you just tapped.

If you click the [=] button four times it will set the tempo and start the song playing. You can also use the minus and equals keys on the computer keyboard to do this.

Use the square bracket **[ ]** keys to change the tempo by +/- 5 bpm.

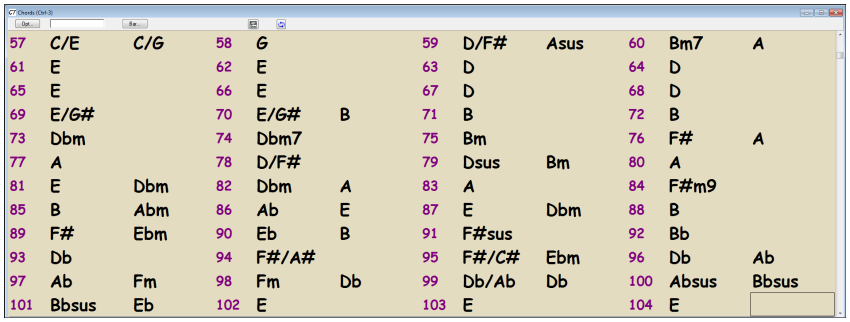
Precise "Floating Point" Tempos

RealBand supports precise floating-point tempos, such as 120.514 BPM. This makes it easier to sync MIDI tracks to prerecorded audio tracks if the audio tracks weren't recorded exactly at an integer tempo. This also is what lets RealBand play a song in sync to an existing audio track after the Audio Chord Wizard has worked its magic.

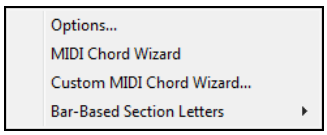
Chord Wizard



The Chord Wizard is located in the **Chords** window, which opens with the **[C7]** toolbar button. Right-click anywhere in the window to open the MIDI Chord Wizard menu.

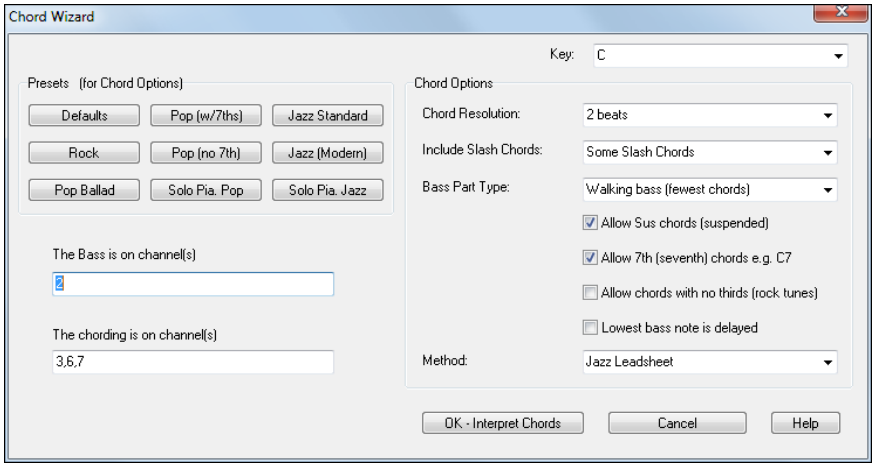


57	C/E	C/G	58	G		59	D/F#	Asus	60	Bm7	A
61	E		62	E		63	D		64	D	
65	E		66	E		67	D		68	D	
69	E/G#		70	E/G#	B	71	B		72	B	
73	Dbm		74	Dbm7		75	Bm		76	F#	A
77	A		78	D/F#		79	Dsus	Bm	80	A	
81	E	Dbm	82	Dbm	A	83	A		84	F#m9	
85	B	Abm	86	Ab	E	87	E	Dbm	88	B	
89	F#	Ebm	90	Eb	B	91	F#sus		92	Bb	
93	Db		94	F#/A#		95	F#/C#	Ebm	96	Db	Ab
97	Ab	Fm	98	Fm	Db	99	Db/Ab	Db	100	Absus	Bbsus
101	Bbsus	Eb	102	E		103	E		104	E	

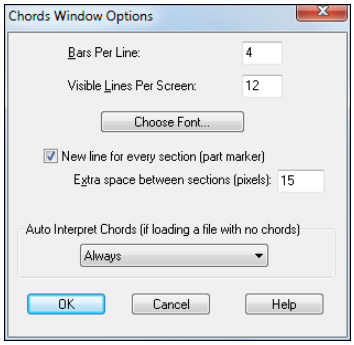


If you choose *MIDI Chord Wizard*, RealBand will attempt to automatically detect the chords in the song. You can use the Undo command if you want to undo this.

The *Custom Chord Wizard* command works the same as the *MIDI Chord Wizard* command except that it launches the **Chord Wizard** dialog, which lets you customize the settings for chord detection.



The Options menu item launches the **Chords Window Options** dialog.



The "Bars Per Line" setting determines how many measures will be drawn per line in the Chords window.

The "Visible Lines Per Screen" setting determines how many lines (rows) of chords are will be visible per screen. Each screen will always have 125 lines per screen in the Chords window, but the Visible Lines Per Screen setting controls how many lines will be visible without scrolling.

The [Choose Font…] button lets you select a font for the Chords window. The font's overall size will be determined by the amount of Visible Lines Per Screen, as well as the height of the Chords window.

The "Auto-Interpret Chords" setting is useful in a situation where a file is loaded, but the file doesn't already contain any chord symbols. If you set this to "Always," then RealBand will always attempt to automatically interpret the chord symbols using the Chord Wizard. If set to "Ask First," then RealBand will ask before attempting to automatically interpret chord symbols. If set to "Never," then RealBand will just load the file without attempting to figure out the Chord Symbols.

Audio Chord Wizard



The Audio Chord Wizard is an extremely powerful feature that automatically finds chord symbols (C, Fm7 etc.) by analyzing the audio content of a song and displays them in a chord sheet window.

The song can be in a digital file format (MP3, WAV, WMA, or CD audio file), one that you created in RealBand, or directly loaded from a CD.

In addition to the chords, the Audio Chord Wizard also automatically determines the bar lines and a Tempo map.

The Audio Chord Wizard imports chord symbols it finds into the Chords window.

Use this feature to instantly play along to your favorite songs, by reading and printing the chord symbols.

Playing a Song

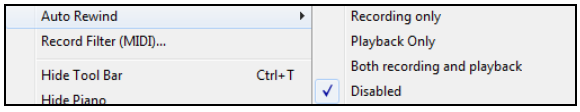


Use the familiar control buttons to Record, Play, Rewind to the start, Fast Forward to the end, and Stop song playback. Playback can be stopped and started anywhere in the song.

The fast-forward and rewind buttons jump to either the end or the beginning of the song. The red circle indicates the Record button for recording MIDI tracks, the red circle with a waveform is for recording audio.

Auto Rewind

Auto Rewind is found in the *Options* menu. When enabled, RealBand will automatically rewind to the location that playback or recording was started. The choices are Recording Only, Playback Only, Both Recording and Playback, or Disabled.



Soloing Tracks



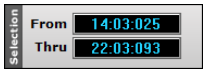
You can solo any track or any combination of tracks by pressing the Solo button on the Tracks window toolbar. The track selection can be changed while the song is playing. Select multiple tracks by holding down the **Shift** key and clicking on the track numbers.

Song Location


Use the slider on the main toolbar to jump to a new song location.



This shows the current location in the song file. The **Now:** location is in bars, beats, and MIDI clock ticks according to the current resolution setting, which could range from 48 to 3840 system clock ticks per quarter note (ppq).



The **From:** and **Thru:** locations define the range of bars and beats that will be affected by the various *Edit* menu operations. The settings are made in the *Block* menu, or by selecting a range of bars in the **Bars** window, the **Audio Edit** window, or the track overview in the **Tracks** window.

RealBand defaults to showing the **Tracks** window. Each row in the Tracks window represents a different track of the song.

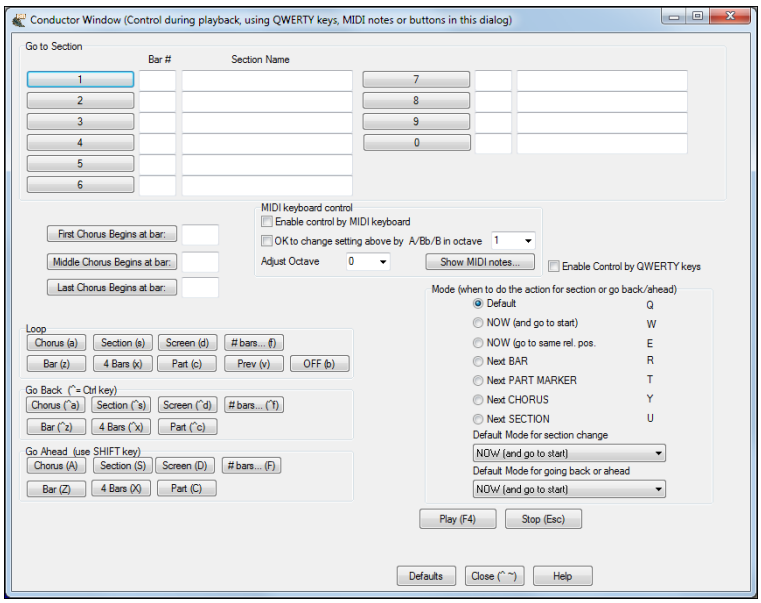
Conductor Window - Live Looping/Playback Control

As the song is playing, there are options to control the flow of playback by one of three methods:

1. Conductor window
2. QWERTY hot keys
3. MIDI keyboard



The Conductor is launched with the Conductor button on the toolbar.



You must enable the QWERTY keys to be active for the Conductor during playback. This is done by selecting the "Enable Control by QWERTY keys" checkbox on the **Conductor Window**.;

If you want to control the Conductor using the MIDI keyboard, you need to enable this by selecting the checkbox "Enable control by MIDI keyboard." in the MIDI keyboard control box. When this setting is enabled, any MIDI input will be interpreted as a hot key for the Conductor, and you won't hear MIDI thru.



If you'd like the ability to switch your MIDI keyboard between Conductor mode and regular playing mode, you can do this using the lowest "A-natural" MIDI note on your keyboard. This is **A1** on an 88-note keyboard. Note **A1** will turn the Conductor off, **Bb1** turns it on, and **B1** will toggle the Conductor on only when the **Bb1** note is held down. If you don't have an 88-note keyboard, you can set the octave setting to a number higher than 1, for example if you set it to "3," then notes **A3**/**Bb3**/**B3** will turn the Conductor Off/On/Toggled.

Using the Conductor QWERTY or MIDI keys, you can:

- Define and jump to up to 10 user defined sections in the song,
- Jump back 1 bar/4 bars/# of bars/screen/part/chorus/section,
- Jump ahead 1 bar/4 bars/# of bars/screen/part/chorus/section,
- Loop 1 bar/4 bars/# of bars/screen/part/chorus/section,
- Pause/stop the song.

In addition, using the MIDI keyboard, you can also use the Conductor to:

A1 (note#21): Turn MIDI Conductor OFF

Bb1: Turn MIDI Conductor ON

B1: Turn MIDI Conductor ON only as note is held down

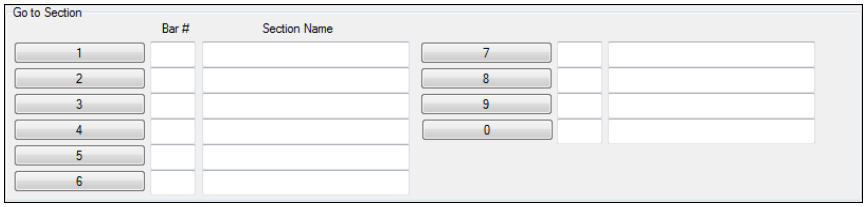
The various functions of the Conductor are available with MIDI keys and QWERTY hot keys, as listed in the **Wizards, Tools, and Plugins** chapter.

Customizing the Sections

Sections: This allows you to define up to 10 points in the song that are sections. By default, the following sections are defined for each song.

- Section 1: Start of song
- Section 2: Intro
- Section 3: First Chorus
- Section 4 :Middle Chorus (i.e. start of chorus #2)
- Section 5: Last Chorus
- Section 6: Ending
- Sections 7-10 are user definable. To do this, type in any bar # using the bar/chorus format (e.g., 21/2 would be bar 21, chorus 2).

If you prefer to enter custom values for the section numbers, you can do this if you check the “custom” checkbox, and then type in up to 10 bar numbers for each section.

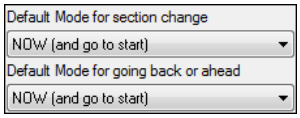


The section numbers are saved with the song. Once you have defined the sections, you can jump to a certain section of the song as the song is playing, simply by:

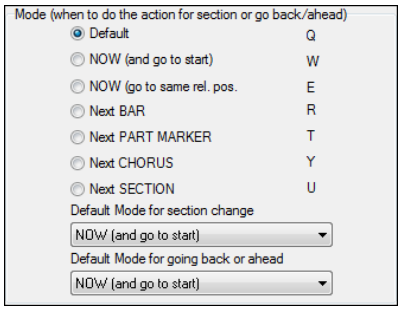
1. Pressing the **1-9** or **0** key on the QWERTY keyboard or,
2. Opening the Conductor window (~ hot key) and clicking on the section button or,
3. Pressing MIDI keys **77-86** (**F6** to **D7**) corresponding to sections 1-10.

Mode (when to do the action).

By pressing a QWERTY hot key prior to an action, you can control when the action will take place. If no mode hot key is pressed prior to an action, the default mode will occur.



The default is set in the “Default Mode for section change” or “Default Mode for going back or ahead” combo box.



For example, by default, the section change will occur as soon as you press the key, and it will go to the equivalent place in the bar immediately before the beginning of the target section (so that the music stays in time, and the next section begins at the end of the bar). But you can change the default for the action to take place at the end of the current bar or current part marker etc.

Play Control Buttons

The [Play (F4)] button plays the song. Hot key = **F4**, MIDI note = **F4**.

The [Stop (Esc)] stops playback. Hot key = **Esc**, MIDI note = **F#4**.

Example uses of the Conductor

In this example, we don’t have custom sections set, so the default sections apply (middle chorus = section 4 etc.).

- Jump to the start of middle choruses during playback (press “**4**”).
- Loop the middle chorus (press **S**, which is Loop Section).
- Jump to the end of the song (press **6**).
- Go back 1 chorus (**Ctrl+A**).
- Go ahead 1 chorus (**Shift+A**).

At the end of the current chorus, go back 1 section, press **Y** then **Ctrl+S**.

Note: Pressing the Y sets the mode to do the action at the end of the current chorus

These actions can also be done with the MIDI keyboard

Conductor Functions with MIDI and QWERTY Hot Keys

MIDI Note	Function	QWERTY Key
F4	Play	F4
F#4	Stop	Escape
A4	MIDI panic	F12
Bb4	Previous Jukebox song	Ctrl+Shift+F8
B4	Next Jukebox song	Shift+F8
Db5	Open Notation window	Ctrl+W
D5	Lead Sheet window	Alt+W
F6 to D7	Jump to sections 1-10 of the song	1-9 and 0
Eb7	Loop current chorus	A
E7	Loop current section	S
F7	Loop current bar	Z
F#7	Loop current 4 bars	X
G7	Loop current part	C
Ab7	Looping ON, previous setting	V
A7	Looping OFF	B
Bb7	Go Back 1 Chorus	Ctrl+A
B7	Go Back 1 Section	Ctrl+S
C8	Go Back 1 Screen	Ctrl+D
Db8	Go Back 1 Bar	Ctrl+Z
D8	Go Back 4 Bars	Ctrl+X
Eb8	Go Back 1 Part marker	Ctrl+C
E8	Go Ahead 1 Chorus	Shift+A
F8	Go Ahead 1 Section	Shift+S
F#8	Go Ahead 1 Screen	Shift+D
G8	Go Ahead 1 Bar	Shift+Z
Ab8	Go Ahead 4 Bars	Shift+X
A8	Go Ahead 1 Part marker	Shift+C

In addition, using the MIDI keyboard, you can also use the Conductor to:

A1	(note#21)Turn MIDI Conductor OFF
Bb1	Turn MIDI Conductor ON
B1	Turn MIDI Conductor ON only as note is held down

Selecting MIDI Patches

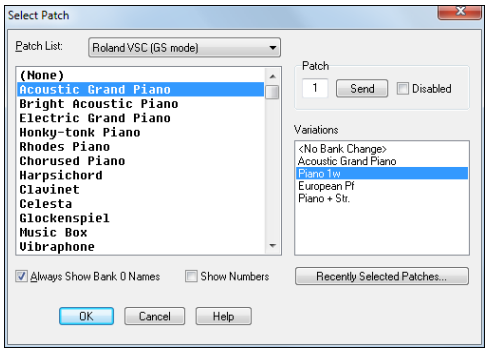
A double mouse click in the Prg (Program Change) field for any track will launch the **Select Patch** dialog.

This dialog lets you select a patch from the current patch list shown in the Patch List combo box. For example, if you select “General MIDI” then the patch list used for current track will be the General MIDI patch list. RealBand saves the most recently selected Patch List for each track in its native .SEQ files. This example shows Roland GS, which is an extension of the General MIDI list with variations (alternate choices) for many instruments.

To select a patch, simply click on the patch in the main list box then hit the [OK] button to exit the dialog. The “Variations” list box shows the variations, which are patches in other banks that have the same number as the selected patch.

If the “Always Show Bank 0 Names” checkbox is checked, the main list box will be filled with the patches of the default bank (those patches with both the bank MSB and LSB being 0), and the highlighted variation is the actual patch that is selected. If the checkbox is unchecked, then the patches in the list box will change to those of the bank number of the current variation.

Only patches that have names will be in the list box, e.g., if there are only 9 named patches in the current bank, the list box will only be filled with 9 patches. When you select a patch in the list box, the number of the patch will appear in the “Patch” edit control.



You can select any patch by number by typing the number in the “Patch” edit control. You can press the send button to send the patch change you just typed without having to exit the dialog. The disabled checkbox simply means no patch change is selected for the current track, and a value of “---” will show in the **Prg** column of the Classic Tracks View window.

The **[Recently Selected Patches…]** button brings up a dialog with a list of the 20 most recently selected patches, if any recently selected patches exist.

Chapter 6: BB Tracks and MIDI Tracks

Overview

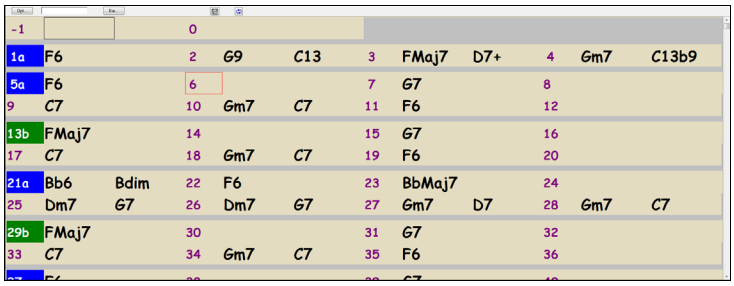
As discussed elsewhere, any one of RealBand's 256 tracks can be either a MIDI or audio track. And for either type you have the option of recording and creating your own parts or using the musical intelligence of RealBand to create professional tracks for you. When working with MIDI tracks, RealBand uses its Band-in-a-Box components to generate tracks in any of the Band-in-a-Box styles that you have installed on your computer.

RealBand also lets you generate selected sections of tracks and regenerate either complete tracks or selected parts as often as you want to – and with any style you want to use. This means that your BB Tracks can be assembled from any number of different styles to add variety and fine-tune the arrangement.

Creating a New Song Arrangement



To generate a new song arrangement, you begin by typing the chords into the Chords window using standard chord symbols. This window opens with the [C7] button, the hot key combination **Ctrl+3**, or the menu command *Window | Chords*. Band-in-a-Box users will feel right at home.



You'll see the bars of the song displayed in rows. If a bar contains chord symbols, they will be displayed to the right of the bar number.

Enter the chords for your song by typing them in using standard chord symbols such as C, or Fm7, or Bb7, or Bb13#9/E. For example, type c6 to get the C6 chord. Note that you should never have to use the **Shift** key, as RealBand will sort this out for you.

- Use b for a flat, e.g., Bb7.
- Use # or 3 for a sharp, e.g., F#7. (# is the uppercase symbol of 3, so you can actually type F37 to get F#7 - RealBand will sort out the case, saving you the effort of using <SHIFT>3 to type the # symbol.
- Use / for Slash Chords with alternate Roots such as C7/E (C7 with E bass)
- Use a comma to enter 2 chords in a row. In the example below, we would type Ab9,G9 to enter 2 chords at a time (on beat 3 and 4 of bar 2)

You can use the Delete key to delete a chord, or type a comma and press Enter.

Each measure is divided into Beat Groups, indicated by a highlight cell. A Beat Group consists of two beats. If a song is in 4/4, then each measure will contain two beat groups. The current beat group will have a rectangle drawn around it. You can type two chords into the current beat group. For example if you type this: "C7,G7" (without the quotes) you'll see the text you're typing in the white rectangular panel on the toolbar. If you then hit <Enter> you'll see the C7 and G7 chords appear within the current beat group, and the input rectangle will automatically advance to the next beat group. When you're in the middle of typing chord symbols, you can use the backspace key to correct a mistake.

The Left Arrow and Right Arrow keys let you move the input rectangle to a different beat group without entering chords. You can also click the mouse on a different beat group to move the input rectangle to a new location.

Rest/Shot/Held Chord/Pushes

Rest, Shot, Held Chord, and Pushes are supported by the RealBand generation routines:

A chord can be specified as a Rest by adding a period after the chord.

e.g., "**C.**" indicates a C chord that is a Rest.

A chord can be specified as a Shot by adding two periods after the chord.

e.g., **C..** indicates a C chord that is a Shot.

A chord can be specified as a Held Chord by adding three periods after the chord.

e.g., **C…** indicates a C chord that is a Held Chord.

Pushes:

^C = 8th push

^^C = 16th push

Note: Pushes, Shots, Rests, Hold Chords can ONLY be entered in the Chords Window.

Part Markers

If you click directly on a bar number, the number will change into a Part Marker. There are two kinds of part markers:

- an “a” part marker (blue) 1a,
- and a “b” part marker (green) 9b.

The part markers choose one of the two substyles available for BB Tracks arrangements. In general these substyles correspond to the “a” and “b” sections of a song.

Clicking once on the bar number that currently has no part marker will set the bar to “a” part marker. Clicking again will set it to a “b” part marker. Clicking again would set the bar so it would be back to having no part marker.

The Chords window allows you to toggle the part marker type for a measure during playback. This can be done the usual way, which is to click on the measure number with the mouse. In addition, you can also toggle a part marker for the current measure by pressing either the letter **M** or the letter **P** on your keyboard when the Chords window is the currently active window (and when not already in the middle of entering a chord within the Chords window).

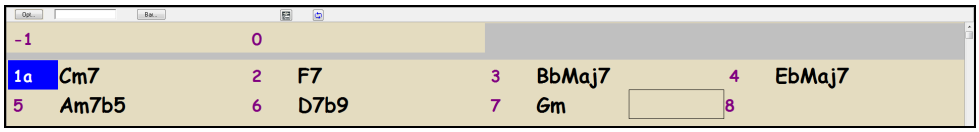
Entering Chords

Let’s enter some chords in the chord sheet.

We’ll put our highlight cell in the first beat group of bar and type the letters cm7. Press the **Enter** key and the chord symbol Cm7 is entered at the start of bar 1.

Press the **Enter** key again and the highlight cell moves to bar 2. Type f7 for an F seventh chord and press **Enter**.

Now we’ll use some chord shortcuts. The letter “j” is the shortcut for a major seventh chord. Type bbj and press **Enter** to write the chord symbol BbMaj7 on the chord sheet. Move to the next bar and type ebj to write EbMaj7 in that bar. Advance to the next bar and type the letters ah to write Am7b5 – the h is for a half-diminished chord. In the next bar type df and the chord symbol D7b9 will be entered, then enter gm for a G minor chord in bar 7. We’ll stop there for purposes of this tutorial, and here is what our Chords window looks like now.

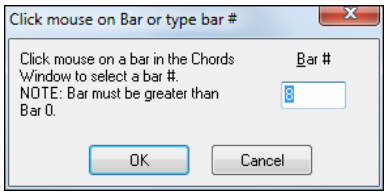


Generating the BB Tracks

Now we’ll move on to the arranger toolbar to generate our RealBand song arrangement.



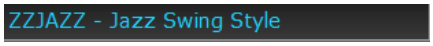
The next thing to do is reset the default song length of 32 bars to 8 bars. We’ll leave the start-of-song chorus set at bar 1 and click on the end-of-chorus button to type in the number of the new end-of-chorus bar.



For our short tutorial song, we’ll start at bar 1 and end at bar 8.

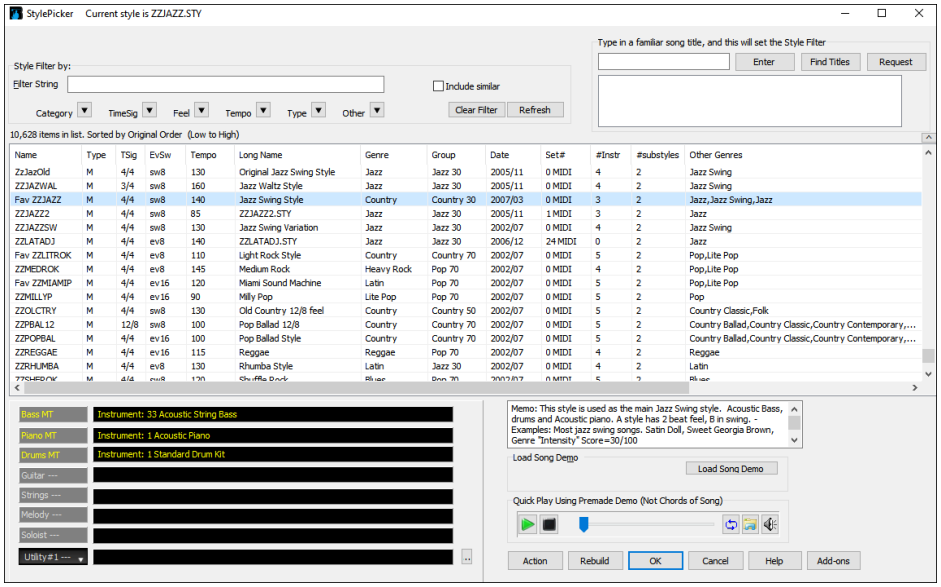


We’d like RealBand to add a 2-bar ending to our song, so we’ll check the 2 Bar Ending box.

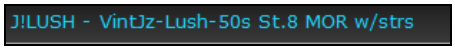


Next, we’ll choose a style for our song by clicking on the style name to open the StylePicker window.

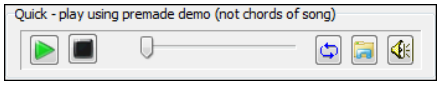
You aren’t required to have Band-in-a-Box for your RealBand styles, but if you do you will see that all of your styles are available here.



From the Jazz category select the J!Lush style (or any other style of your choosing) and you'll see that the style selection box has been updated with its name.



Note: There is a special feature that will instruct RealBand to change the style selection at any bar. The setting is made by pressing the **F5** function key. It is described under "About BB Tracks."

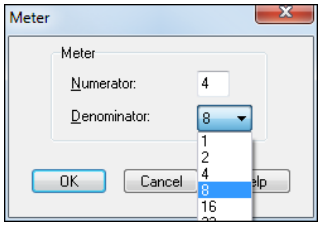


You can audition an audio demo of a style without changing your existing arrangement, by using these control buttons.

For example, if you see a style like _JSWINGG "Jazz Swing w/ Electric Guitar", you can hear what it sounds like without loading in the style. This is useful because you hear an audio demo of a good example of the style in action. It is also useful because it can demonstrate a style that you don't have, or you can compare to make sure that yours sounds the same as it is supposed to sound.

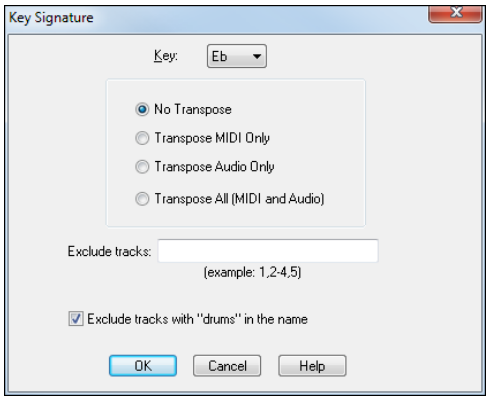


The time signature defaults to 4/4, but a new time signature can be set by clicking in this box to open the **Meter** dialog. Compound time signatures are supported. In fact, the numerator can be any number from 1 to 99. The denominator is selected from the dropdown combo box.





Our song is in C minor, so we could select the relative major key signature of Eb for fewer accidentals in the notation display. Click in the key box to open the **Key Signature** dialog.

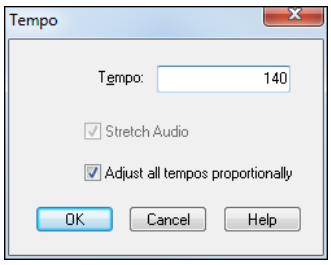


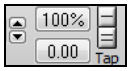
The **Key Signature** dialog also has options for transposing the song's MIDI tracks, audio tracks, or both to the new key. In this instance we do not want to transpose the tracks; we just want to change the key signature so select "No Transpose."

Just before we play our song, we can set a tempo.



The tempo box has a setting of 120 bpm. To change it to 140 we'll click in the box to open the **Tempo** dialog and type in 140.

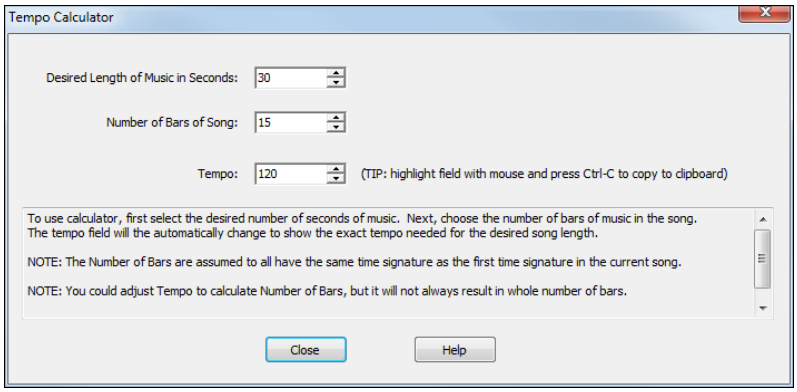




We could also set the tempo with the up and down scroll arrows, or even tap in a tempo with the minus and equals buttons.

Tempo Calculator (*Edit* | *Tempo* | *Tempo Calculator*)

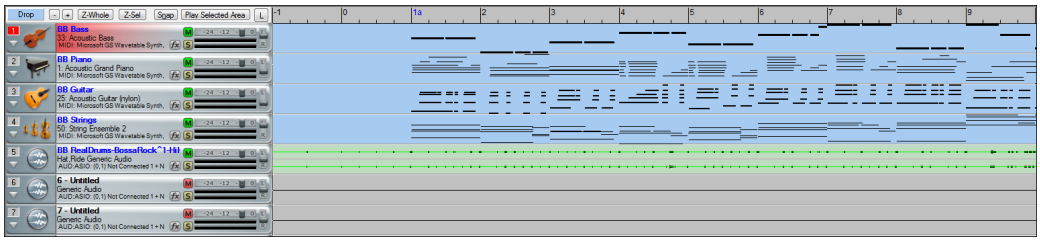
The length of a song depends on tempo and number of bars. With this calculator, you can enter 2 of the 3 variables (length of song in seconds, tempo, number of bars) and the program calculates the third variable for you. So, for example, if you need a piece of music lasting 60.00 seconds, and it is 45 bars, you can use the calculator to find the tempo that will achieve that.



So we've entered our chords in the Chords window, set the length of our song and added a 2-bar ending, chosen a Band-in-a-Box style, and set the tempo.



We're ready to generate an automatic arrangement with BB tracks, and we'll see them in the Tracks window when we press the [Generate] button to create our song.



The track overview shows us that we have five MIDI tracks playing the parts generated by the J!Lush style, and because RealDrums are allowed in the *Options* | *Preferences* | *Song Generation* settings we have a RealDrums audio track. Notice that the BB Track names are in blue, whereas user track names are in black.

About BB Tracks

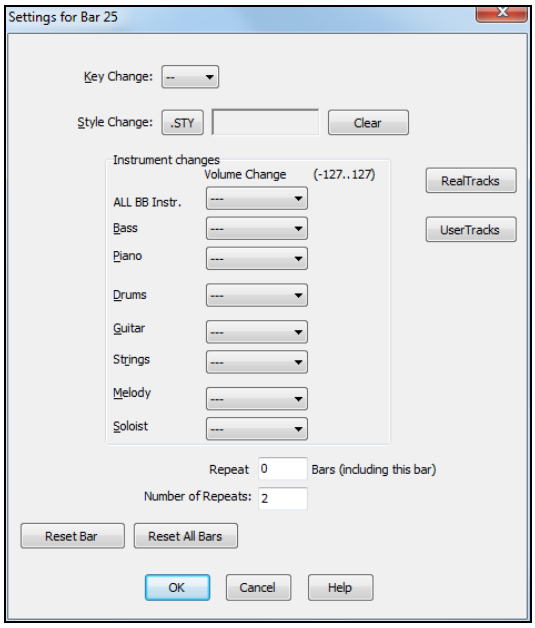
BB Tracks are MIDI tracks so they can be edited like any other MIDI track with the features described in the following section. BB tracks cannot be moved or renamed, but you can change any of the settings with the right-click menu – for example the patch, MIDI port, or MIDI channel.

Settings for Bar

BB Tracks can be generated using more than one style, with volume changes, and with repeats.

In the Chords window, click on the bar where you want to make changes. The **[Bar]** button launches the **Settings for Bar** dialog, or you can press the **F5** function key.



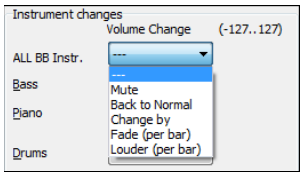


Use the **[STY]** button to open the StylePicker and make your selection, and use the **[Clear]** button to remove the selection. When the song is generated your new style will be heard playing at that bar. This feature can be used any number of times in a song.

RealTracks Bar changes can be made via the **[RealTracks]** button in the Chords window **Settings for Bar** dialog.

Note: This only is currently meant to work when generating the whole song.

Volume Changes can be applied at any bar to all BB tracks together, or just to selected instruments.



The options are:

- Mute, to silence the track.
- Back to Normal, to undo a previous change and restore the normal track volume.
- Change by, to enter a value in the range of -127 to 127.
- Fade or increase volume.
- Louder (per bar), to enter a value from -127 to 127.

You can add repeats to an arrangement.



The repeats display on the Chords window, and both audio/MIDI play with the repeats. When the number in "Repeat _ Bars" is greater than zero, a repeat will be enabled, and repeat signs shown in the Chords window.

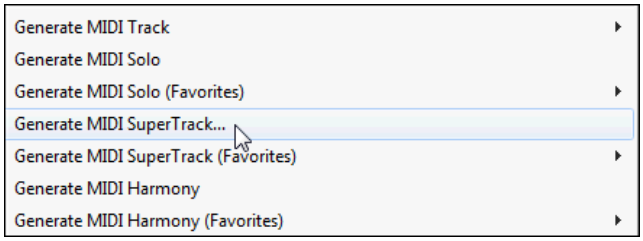
[Reset Bar] and **[Reset All Bars]** buttons allow you to quickly remove settings that apply to the current bar or all bars. Canceling the dialog will restore the original.

Now that you have generated BB Tracks for the chords you entered in the Chords window, your next step might be to record some additional MIDI tracks along with the BB tracks.

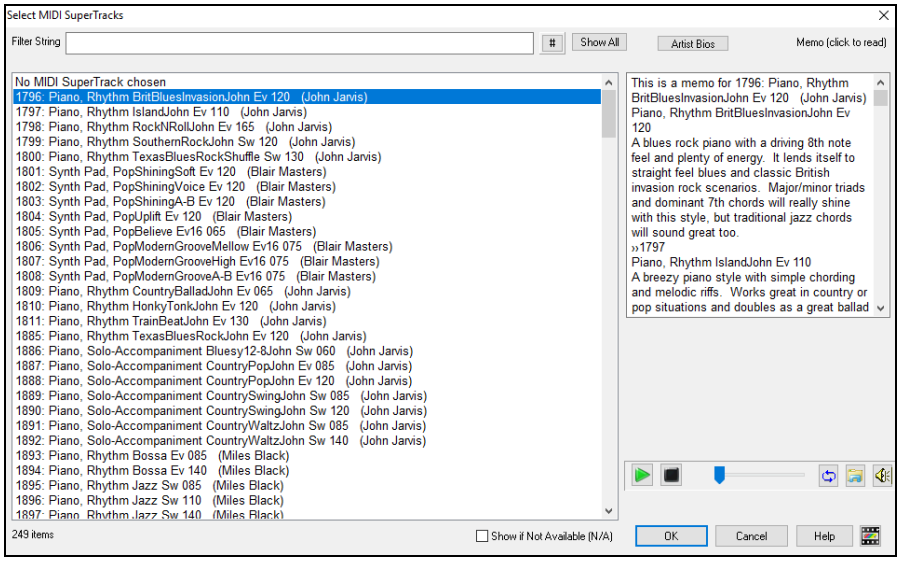
MIDI SuperTracks

Band-in-a-Box MIDI SuperTracks are supported, so you can now generate special MIDI tracks with sophisticated professional playing. These tracks are not generated from patterns, but, similar to RealTracks, use actual MIDI playing from top studio musicians.

There is a command in the right-click track popup menu to *Generate | Generate MIDI SuperTrack.*



When you choose it, you will see a menu of available MIDI SuperTracks. You can type filter text to narrow down your search.



Choose an instrument from the list and click on OK to generate the track.

Once you choose the track, you will see that the track label has turned green (like RealTracks) to indicate that it is a MIDI SuperTrack.



When you press Play, you will hear a much more sophisticated MIDI arrangement than a typical MIDI style, since it is not based on C7 chord patterns; instead, it is based on hours of actual MIDI playing from a top studio musician.

Once generated, MIDI SuperTracks behave like a regular MIDI track, and can be saved as MIDI files etc.

Recording Your Own MIDI Tracks

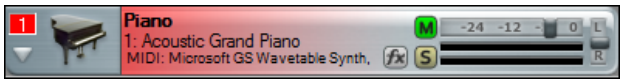
In addition to BB Tracks, MIDI data can be recorded on any track in RealBand. Just select the track by clicking on the track number, and make sure that the track type is set to MIDI.

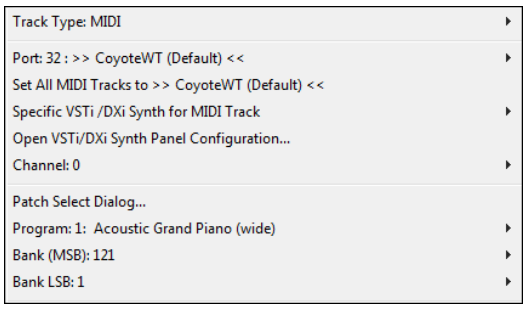
MIDI is recorded with the Input driver that is selected in the **MIDI Driver Setup** dialog. (Press the [MIDI Devices] button on the toolbar.) If more than one Input Driver is available, then choose the one that is connected to your MIDI keyboard or controller.

Before you start, you might want to select a higher resolution for greater precision. RealBand supports note resolutions as high as 3840 PPQ.

Note: Higher note resolution reduces the maximum allowed song length, as well as reducing the maximum allowed note duration length. At 3840 PPQ, the maximum song length of a 4/4 song is around 35 minutes long at a tempo of 120, less at faster tempos. At 3840 PPQ and a 4/4 time signature the maximum allowed note duration length is around 17 beats regardless of the tempo.

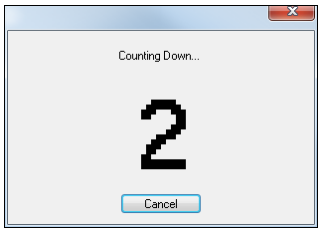
Then make the necessary settings in the **Tracks** window to select the port, MIDI channel, patch, etc. for the part you are recording. Right click on the track to open the track settings menu.







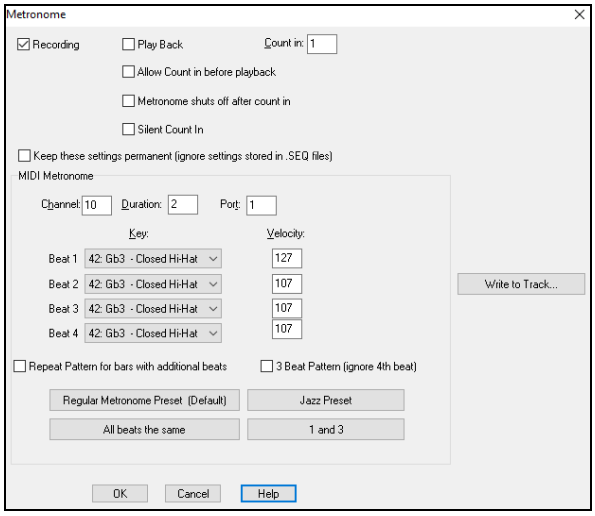
Start recording with the Record button, by pressing the **R** key on the computer keyboard, or with the menu command *Action | Record*.



The Record command starts the count-in according to the settings that you have made in the **Metronome Settings** dialog.

To open the metronome settings, go to **Preferences** and select the **Metronome** tab. Click on the **[Metronome Settings]** button.





In addition to the on-screen countdown, there is an option for a MIDI drum count-in on any drum kit instrument. The default note is F#3, hi-hat.

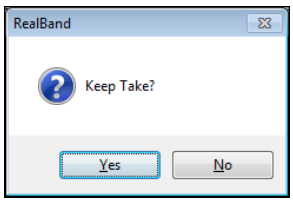
There is a setting in the **Metronome Settings** dialog, "Keep these settings permanent (ignore settings stored in .SEQ files)," that will cause RealBand to remember the current metronome settings and ignore any settings stored in .SEQ files.

Tracks are "painted Red" during recording, to confirm that recording is occurring in the right place.





Recording is stopped by hitting the spacebar or pressing the Stop button.



When recording is stopped, you will be asked whether or not you wish to keep the take.

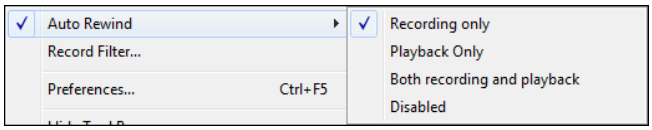
Remember that with MIDI recording small glitches are easily corrected; so you don't need to discard an otherwise good take because of a minor slip.

Note: If you see a message that audio data was recorded that is because "Always Record Audio too, if current track is MIDI" has been enabled in the **Audio Preferences** dialog. This is an automatic backup feature in case you wanted to record audio, but accidentally selected the current track as a MIDI track.

Auto Rewind

Auto Rewind is found in the *Options* menu. When enabled, RealBand will automatically rewind to the location that playback or recording was started. The choices are Recording Only, Playback Only, Both Recording and Playback, or Disabled.

It is convenient to rewind to the start of a recording after a take so that you can listen to the result immediately.



Overdubs

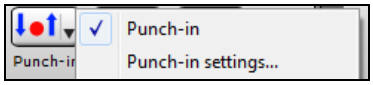
If there is MIDI data on the selected track it will be overdubbed, i.e., the existing MIDI notes will not be erased as the new ones are recorded. This is sometimes useful, but a better way to make overdubs is to select a blank track and give it the same settings as the track you want to overdub. Then record the overdub part on the new track, using as many tracks as you need for additional overdubs or layers. This is a great way to overdub drum fills or layer string parts.

Then you can delete, edit, or re-record each separate overdub without affecting the original track. Use *Track* | *Merge* to combine all of the overdubs onto a single track.

To clear any previously recorded material from a track go to *Track* | *Erase Data Only*. This will erase the recorded MIDI data on the track, but will preserve all of the other track settings such as volume, patch, and channel.

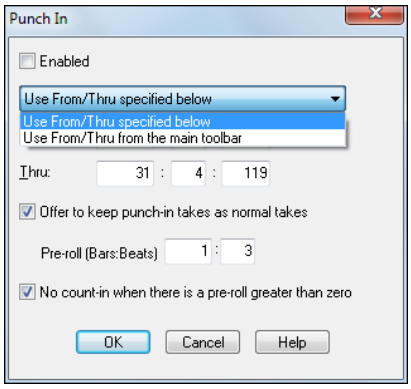
Punch-In

The Punch-In feature allows you to enable or disable Punch-In. If Punch-In mode is active, recording will erase previously recorded MIDI data in the Punch In range without the need to erase the old MIDI data.



You can enable or disable punch-in mode by clicking the **Punch-in** button.

When Punch In is enabled, recording will take place during the period between **From:** and **Thru:** and will overwrite any existing events during that time.



The **From:** and **Thru:** settings for punch-in recording can be set in the **Punch In** dialog, or they can be the settings from the main toolbar.

When punching in it is usual to get a "running start" by starting to play or sing before the actual punch-in point. The **Punch In** dialog's pre-roll feature automatically starts playback by a specified number of bars and beats before the start of the punch-in point. In the example shown, the pre-roll could be leading in to a punch-in that starts with a pickup note on beat 4 of the bar.

You wouldn't normally have a count-in playing when a pre-roll is set.

When Punch-In is disabled, recording may occur at any time within the song and data will be merged with any existing events if the track is a MIDI track, or the data will overwrite existing data if the track is an Audio track.

Recording Mixer Moves

Any volume, pan, chorus, and reverb mixer adjustments made during recording will be recorded in real time as MIDI controller messages. Adjustments made in the **All** column of the mixer will not be recorded, however.

When recording mixer moves for audio tracks, you must move the slider for the current track in order to record the mixer moves. For MIDI tracks, you could move any slider and the data will get recorded onto the current track, but normally you'll move the slider of the current track.



There is a special "Record Mixer Moves" button in the mixer, which will let you record ONLY mixer moves.

This special button will also let you record mixer moves onto an audio track without the audio being silent during recording.

In order for the recording of mixer moves to work correctly for MIDI tracks, please make sure each track has its own unique MIDI channel in the Tracks window. Also, keep in mind that mixer moves will only be recorded onto the current track, so you can only record mixer moves for one track at a time.

Note: If a track is an audio track, and the regular "Keep Take" is selected, the audio will be deleted for the section of the track where mixer moves were recorded. You're better off using the "record ONLY mixer moves" button in the Mixer window to start recording, and you can then concentrate on recording ONLY mixer moves.

For audio tracks, recorded Mixer moves show up as control changes in the Event List for that track. So, if you used the volume slider to fade the song out, you would see a series of Controller 7 (volume) changes in the Event List.

Alternatively, you could just use the *Edit* | *MIDI* | *Fill* command or insert MIDI controller events into the Event List for the particular audio track.

SysEx MIDI Events

You can **insert System Exclusive data** directly into a MIDI track as MIDI events. You can record SysEx data in real time and when you keep a take, the SysEx data will be added to a MIDI track as SysEx events. You could also load SysEx data into a SysEx MIDI event by receiving SysEx data from your synth, or by loading the SysEx data from a file. SysEx MIDI events can also be edited.

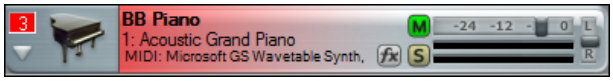
Editing BB Tracks and MIDI tracks

Edit Menu

The *Edit* menu lists all of the regular editing commands like Cut, Copy, and Paste plus many features that are unique to RealBand. All editing commands are fully described in the **Reference** chapter.

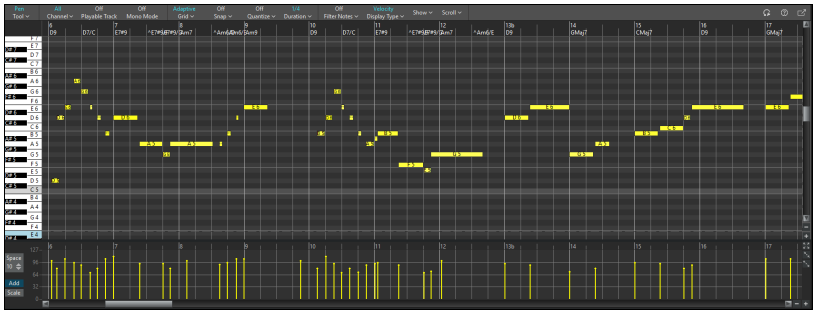
Piano Roll Editing

Let's examine the BB Piano track in the Piano Roll window.





We can select the BB Piano track while still in the Tracks window, or we can open the Piano Roll window with the [Piano Roll] button on the toolbar and select BB Piano from the track list.



In the Piano Roll window notes can be dragged and dropped, shortened, or lengthened in the Note Panel, which is the upper part of the window.

The lower panel is for graphic editing of the selected parameter in the View/Edit list. Note velocity is shown, but parameters such as pitch bend, channel aftertouch, and MIDI controllers can be edited in this panel as well. Please see the chapter titled **Piano Roll Window** for more on this very useful feature.

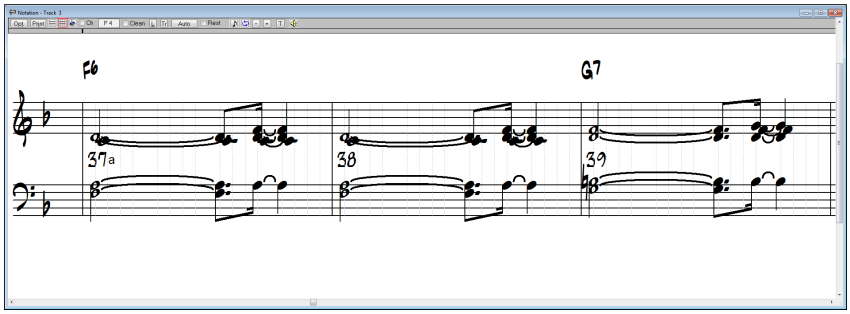
The BB Tracks and MIDI tracks can also be edited in the Editable Notation window.

Editable Notation



Click on the eighth note toolbar button to open the Notation. In the Notation window toolbar, there are three buttons for different notation modes. Editable notation is the button with dotted vertical lines crossing the staff lines.

In the Editable Notation mode, notes can be inserted by clicking on the Notation window with the left mouse button, moved by dragging with the left mouse button, or edited by clicking on a note head with the right mouse button. Broken vertical gray lines are shown across the staff to show each note subdivision for either eighth note triplets or sixteenth notes.



Moving Notes (Drag and Drop)

To move a note, move the mouse cursor over an existing note and then click and hold the left mouse button. The mouse cursor will change to a different shape. While keeping the mouse button pressed, move the mouse cursor over to the location you wish to drop the note and then let go of the mouse button. The note will be moved to the place you dropped it. Certain areas of the screen are not valid locations to drop a note. The mouse cursor will change to a circle with line through it to indicate an invalid location.

When you click and drag a note with the left mouse button you will hear the note being played as you move it up and down the screen. The note's pitch will be increased or decreased chromatically as you move it up/down the screen.

Entering Notes

Notes can be inserted simply by clicking on the staff in an appropriate location. You will see the name and octave of the current note location in a box at the top of the window, helpful for inserting a note above or below the grand staff.

When inserting a note, holding down the mouse button and then pressing the **Shift** key (**click+Shift**) will make the note 1 half-step sharper than the position that you click on. Holding down the **Ctrl** key and then clicking (**Ctrl+click**) will make the note 1 half-step flatter, and holding down the **Alt** key will make the note a natural. Hold the key down until after you release the mouse button.

You can also insert notes by clicking on the Piano or the Guitar window. Notes will be inserted at the current location in the Notation window.

Note: By default, you must hold the Ctrl key before clicking on the Guitar fretboard to insert a note into a Notation window. If the "Send Notes To Notation Windows" option in the Guitar Settings dialog is enabled, holding the Ctrl key won't be required, but be careful not to accidentally insert a note when using the mouse to switch to the Guitar window.

Notes can be deleted by holding down the **Delete** key and then clicking over the note you wish to delete.

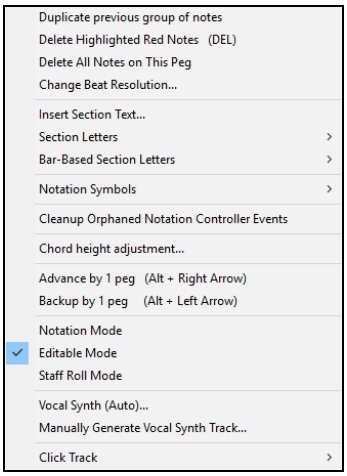
Editing Notes

Notes can be edited with a right-click directly on the note with to launch a menu of Editable Notation commands.

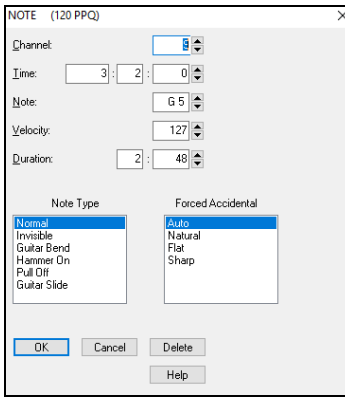
In addition to editing or deleting note events, this menu has commands for adding section text and notation symbols.

There is also a cleanup tool for controller events and 1 peg advance/backup to pinpoint the location of inserted notes.

The Notation chapter has full descriptions of these commands.



Click on *Edit Note* to open the **NOTE** editing dialog.



The **NOTE** dialog allows editing of:

- The MIDI channel for the note.
- The exact time location.
- Note name.
- Velocity of the note.
- Duration of the note in beats and ppq.

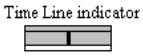
The "Forced Accidental" setting lets you choose whether a note is displayed as a sharp or flat if the program is not showing what you want.

Notes can be Normal, Invisible, or a Guitar Bend.

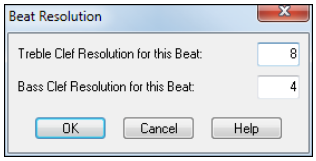
The **Delete]** button removes the note.

Micro-Resolutions

You can change the resolution for any individual beat of a song to a different resolution by clicking with the right mouse button above that beat on the Notation window's time line.



For example, if you click on the time line above the 2nd beat in a measure, a dialog box will pop which will let you set the resolution of the current beat for both clefs.



If you select a resolution of 8, then 32nd notes can be displayed. You can even select a resolution as high as 32, which would allow 128th notes to be shown.

When you choose a micro-resolution RealBand will insert a special controller event into the track as a means of storing the resolution.

Highlighting a section of the Notation window.

When the Notation window is in Editable Notation Mode, you can highlight a section of the Notation window, so that you can cut or copy the section.

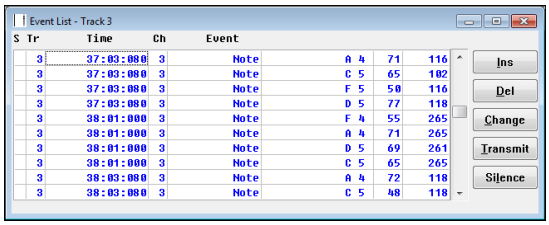
To highlight a section of the Notation window:

1) Click and hold the left mouse button at the upper right corner of the rectangular section you want to highlight. Make sure you don't click on any existing notes, and make sure you don't release the left mouse button until you are finished highlighting.
2) Move the mouse down and to the right to form a rectangle. You will see a rectangular section of the Notation Window become highlighted in reverse.
3) When you've finished highlighting release the left mouse button.

During the process of highlighting a section, you can highlight a section beyond the current notation screen by moving the mouse cursor beyond the right edge of the notation window. When you do this, the Notation window will advance to the next screen. The Notation window will continue advancing until you move the mouse cursor back inside of the Notation window. You should move the mouse cursor back inside the notation window when it has reached the screen that contains the last measure of the section you wish to highlight. Then you can move the mouse cursor to the left or right within the Notation window to adjust to make any final adjustments to the highlighted section.

Event List Window

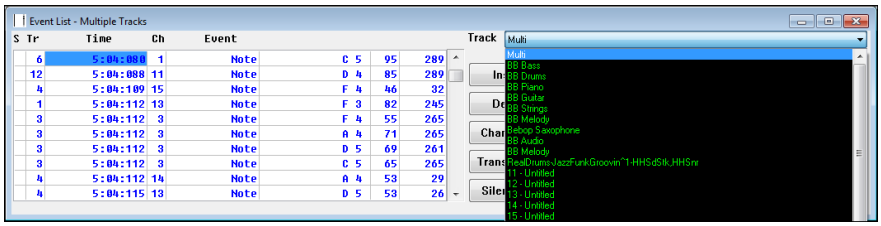
The Event List window lets you insert or delete MIDI events, and lets you make changes to existing events. A list of events is displayed vertically in a window, with each line in the list representing an individual event. Each event is shown with its track number, time, MIDI channel number, the kind of the event, and the parameters of the event. The **[Ins]**, **[Del]**, and **[Change]** buttons may be used to insert, delete, and change events. You can also type directly in the **Ch**, **Time**, and **Event** fields to change the values of an event.





When an Event List is created by pressing the **[Event List]** button, the **F2** key, or by using the *Window* | *New* | *Event List* menu, it is based on the tracks that are currently selected. For example, if only track 1 is selected, and you use the *New* command to create an Event List window, it will only deal with events that occur in track 1.

A Track combo lets you set the Event List window to any track number (or all tracks). Click on the ▼ down arrow in the Track combo to see the list of tracks. You can select an individual track to view, or select "Multi" to see all tracks. The **Tr** column to the left shows the track number(s) for the events displayed.



You can also open an Event List for selected tracks. In this case the Event List will deal with events in all the tracks which are selected at the time of the creation of the Event List window. For example, if tracks 1 through 3 were selected when you created an Event List window, the Event List will deal with events occurring in those 3 tracks regardless of what tracks you've selected after it was created.

Events may be inserted by pressing the computer keyboard's **Insert** key. After pressing **Insert**, a menu will pop up, and you may choose which type of event to insert. After picking the kind of event to insert, an entry box will pop up which will let you choose the MIDI channel, time, and any other parameters of the event. Events may be deleted simply by pressing the computer's **Delete** key.

Existing events may be edited by pressing the **[Change]** button. A dialog box will pop up, and you may make changes to the event. You can also type directly in the **Time, Ch**, and **Event** fields in the Event List window. You can use either the period (.) or colon (:) key to separate the Measures:Beats:Ticks (or the Hours:Minutes:Seconds:Frames when the SMPTE display mode is enabled).

Notes can be made into "invisible notes" using the radio button in the edit entry box. Invisible notes will be invisible in the Notation window when in non-editable notation mode.

You can play events one at a time by pressing the **[Transmit]** button. If the event you're playing isn't a note, the cursor will be advanced to the next event, but if the event is a note, it will be sustained until any other key is pressed. You can stop a sustained note from sounding by pressing the **[Silence]** button. The sustained note will also stop in other situations, such as when you switch to a different window or choose a different event list command.

Event List window supports shift-click to extend the start (From) or end (Thru) of the selected area.

When an Event List is created, it is displayed based on the tracks that are currently selected/highlighted. For example, if only one track, e.g., Track 1, is selected and you use the *New* command to create an Event List window, it will only display events that occur within Track 1.

You can also open an Event List while multiple tracks are selected. In this case the Event List will display all events encountered in the tracks that are selected. For example, if Tracks 1 through 3 were selected/highlighted when you created an Event List window, the Event List will display all the events occurring in those 3 tracks –regardless of what tracks you select later.

Events are inserted by pressing the [Ins] key or button. After pressing this insert key a menu will pop up to allow you to choose what type of event to insert. After picking the event type, an entry box will pop up which will ask you to choose the MIDI Channel, Time, and any other parameters applicable to the event.

Events can be deleted by pressing the [Del] key/button.

Existing events may be edited by pressing the **Enter** key. An entry box will pop up and you may make changes to the event in this box.

You can **play** events one at a time by pressing the **Transmit** button. If the event you're playing isn't a note the cursor will be advanced to the next event. If the event is a note it will be sustained until any other key is pressed.

You can **stop** a sustained note from sounding by pressing the **Silence** button. The sustained note will also stop in other situations, such as when you switch to a different window, or if you choose a different event list command.

Types of Events

Note events consist of three parameters:

- **Note string:** shows the name of the note and its octave.

- **Velocity:** the speed that the key was pressed.

- **Duration:** the length of the note.

Controller Change events consist of 2 parameters:

- **Controller number:** a number ranging from 0 to 127.

- **Controller value:** a number ranging from 0 to 127

Program Change events consist of 1 parameter:

- **Program number:** a number ranging from 0 to 127 or 1 to 128. The range depends on which patch list is currently selected, or which numeric range is selected if you are using the Numeric patch list. See also the *Patch Names* command in the *Options* menu for more information about patch lists.

Pitch Bend (wheel) events consist of 1 parameter:

Bend level: a number ranging from -8192 to 8192, with 0 representing the wheel in the center position.

Channel Aftertouch events consist of 1 parameter:

Aftertouch level: a number ranging from 0 to 127.

Key Aftertouch events consist of 2 parameters:

Note string: the note, which the aftertouch will affect.

Aftertouch level: a number ranging from 0 to 127.

Lyric events can be entered and edited in the **Event List**. Lyrics that are entered in track in the **Notation** window will appear in the Event List for that track.

Split MIDI Drums

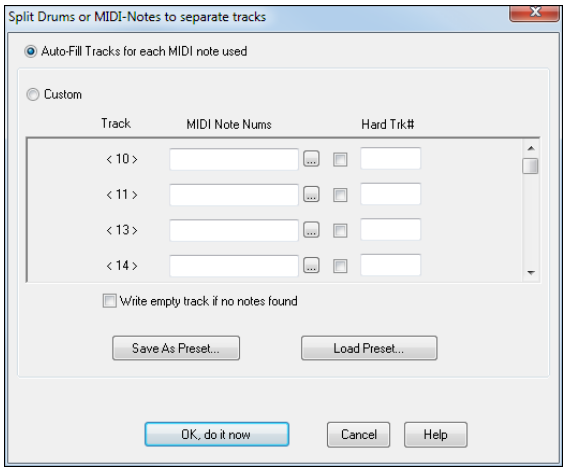
The *Edit | MIDI | Split MIDI drums* command will split a MIDI drum track to separate tracks, which allows for precise editing of drum kit balance and dynamics. The "Custom" settings allow you to control which notes go to which track. This feature acts upon the current track, and is not necessarily limited to drum tracks.

If the "Auto-Fill Tracks for each MIDI note used setting" is enabled, then RealBand will automatically move each MIDI note over to a new blank track.

If the Custom setting is enabled, you can specify which midi notes go to which track. On the left column of the Custom section, you will see the track numbers that notes will be placed onto. You can type the note numbers into MIDI Note Nums edit field, separated by commas. For example, "62,65" would mean that MIDI note numbers 62 and 65 will go onto the track specified on the left field E.g., <7>.

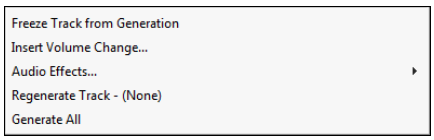
If you press the "..." button a list box will pop up that makes it easier to specify the note numbers. The Note Name Octave number of each note is shown (e.g., E 5) and, for notes in the GM drum range, the GM drum sound names for GM drums are shown (e.g., Acoustic Snare, Closed High Hat, etc) .

You could override the track number by enabling the checkbox next to the "Hard Trk" field and typing another track number in the hard track field. The Hard Track can be any MIDI or blank track that you specify.



Freeze Tracks

You can “freeze” a track, which prevents it from being regenerated by functions like re-generate all tracks. To do this, right-click on the track and select, *Freeze track from Generation*.



Auto-Backup of .SEQ Files

When you save a file, RealBand saves a backup of the file in a c:\RealBand\ RBBackup folder. This doesn’t add any time to the file-save command, and the number of backups is configurable. So, the next time that you mistakenly overwrite a file when saving, go the backup folder to look for a saved previous copy!

Chapter 7: Digital Audio Features

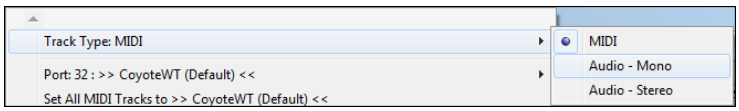
Overview

Audio tracks are great for recording live performances; they work much like tracks on a tape recorder. They are also used for RealTracks and RealDrums since these parts are created from live audio recordings of studio musicians.

You can edit audio data by cutting and pasting in the Bars window or the Audio Edit window, you can import .WAV, .MP3, .WMA, .WMV, and .CDA files to be inserted into audio tracks, and you can also process audio tracks with the professional effects included with RealBand.



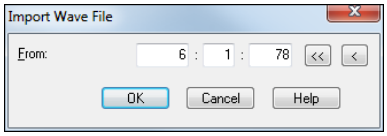
Any track can be designated as an audio track - mono or stereo. Click on the track icon to set the track type.



Other Audio Formats

RealBand supports .WAV, .WMA, .WMV, .CDA, .MP3, .MP4, and .M4A audio file formats.

These files can be loaded directly with the *File* | *Open* menu option, or they can be imported to an exact location in a specific track with the *File* | *Audio* | *Insert Wave File* command (**Ctrl+F3**).



Loading and Playing Audio Files

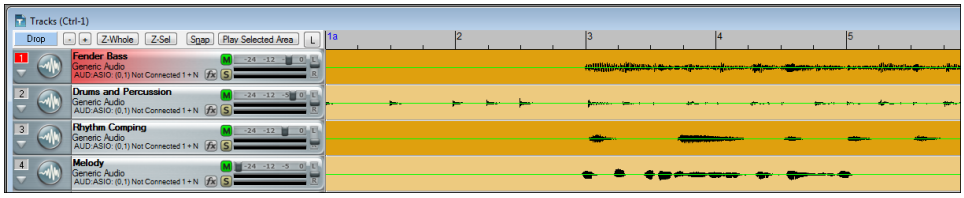
Let's load an audio wave file and explore the audio features of RealBand. RealBand files have the .SEQ (sequence) file extension and open in the same way as a MIDI file.



Use the **[Open]** button or the menu command *File* | *Open* to go to the RealBand directory. In the "Samples" folder choose the file tutor2.seq.

Tracks Window

Here's how the **Tracks** window looks when the audio file is loaded.





Press the Play button. You should now be hearing the demo song playing through your computer's sound system. What you're hearing are four discrete tracks of digital audio.



To mute any track, click on **[M]** button to the right of the track name. When the button is red the track is muted.

Note: If you wanted to add MIDI data to this project you would select one of the empty tracks and press the record button.

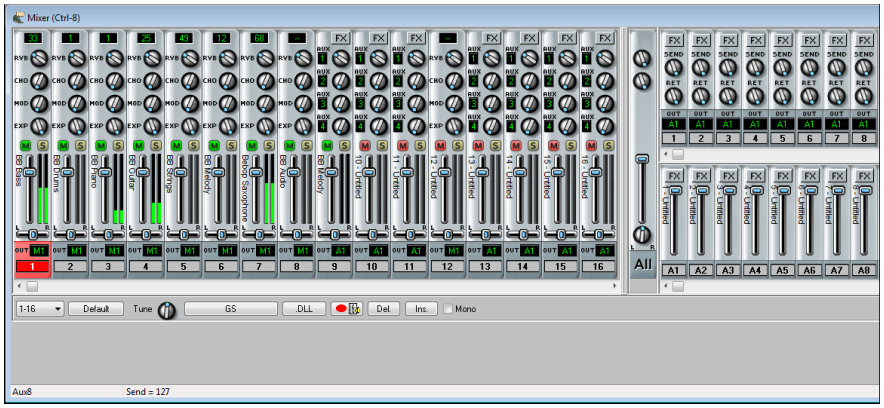


You can solo any track or combination of tracks by pressing the **[S]** buttons. Bright yellow = soloing.

Mixer Window

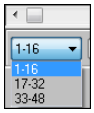


To adjust track volume level and panning controls, open the Mixer window by selecting the *Window* | *Mixer* menu item or by clicking the Mixer button on the toolbar palette.



Here, you can change things such as track levels and panning to the left or right speaker as the song is playing.

Moving a volume slider while pressing the **Shift** key also moves other selected tracks' sliders.



Select a track view range from the combo list, or use the Mixer window left/right scroll bar directly above to scroll horizontally across the mixer layout.





The vertical splitter bar between the track strips and the bus strips can be moved right or left to make a custom mixer view.



The Delete button in the mixer will automatically delete all mixer events (volume, reverb, pan, chorus) that are currently embedded within the song's selected tracks.



The mixer's Insert button will automatically insert mixer events (volume, reverb, pan, chorus) into the song's non-blank tracks.

The **Ctrl+M** and **Ctrl+U** hot keys are a convenient way to mute or unmute any track within the **Bars** or **Mixer** window.



Mixer moves can be recorded as the song is playing. There is a special "Record Mixer Moves" button in the mixer that will let you record ONLY mixer moves. This special button also lets you record mixer moves onto an audio track without the audio being silent during recording.

Note: This mixer is a combination mixer that controls audio and MIDI data in one integrated console. Therefore, MIDI tracks have reverb, chorus, modulation and expression controls in place of the Aux sends, and there is no [FX] button.

Creating Audio Subgroups in the Mixer

Unassigned Outputs Work As Subgroups



When this checkbox is enabled in the **Audio** preferences dialog, any audio output ports that do not currently have a driver port assigned to them will function as subgroups. A subgroup is a bus or signal path that gives you the ability to control several tracks as a group.

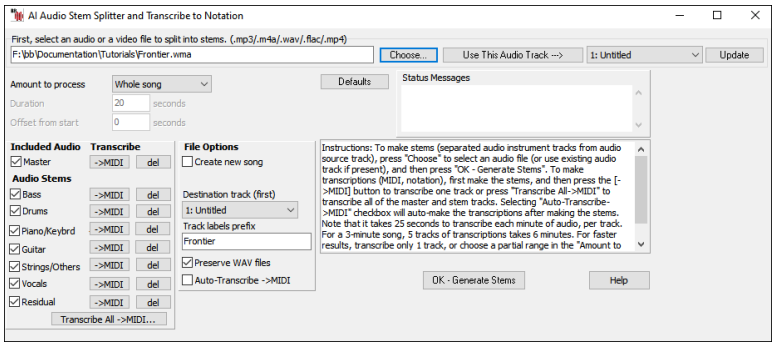
The **Mixer Window** chapter has full instructions for creating audio subgroups.

AI Audio Stem Splitter

The amazing Stem Splitter separates an audio file containing multiple instruments into individual tracks - bass, drums, guitars/piano, vocals, and residual sounds, and imports them separately to your song. Using advanced AI and machine learning techniques, this process, also known as "audio source separation," offers greater flexibility and creative control in music production.

It also includes Audio-to-MIDI transcription, allowing you to convert any separated stem (or the full mix) into MIDI notation. These MIDI transcriptions can be viewed, edited, remixed, or used for learning purposes. For example, you can import vocals from your favorite singer, transcribe a desired instrument part to MIDI, and then use Band-in-a-Box to rearrange or replace the backing tracks, creating a fully personalized mix.

This tool can be accessed from the *Import Audio File to separate tracks (using Stem Splitter)* command in the *File | Open Special* menu, the *Edit | Audio* menu or the right-click menu in the Tracks or Mixer window.



Select a file by typing its directory or pressing the [Choose] button at the top of the dialog. The file should be an audio file (.wav/.mp3/.wma/.m4a) or a video file (.mp4).

You can choose to process the entire song or just a portion using the "Amount to Process" dropdown. Since creating the stems can take some time (usually 10-30 seconds for a full song), you may want to select a smaller section for previewing the results.

In the "Stems to Include" area, you can choose which stems to add to your song. Typically, you'll want to include all the individual tracks as well as the master track, but if you want to include only certain tracks, you can customize your selection here.

- Master is the original audio file.
- Bass is the bass part of the song.
- Drums contains drums or percussions.

- Piano contains pianos or keyboards.
- Guitar contains guitars.
- Others contains additional instruments like strings, vibes, etc.
- Vocals contains all vocals including harmonies. The vocals won't be separated from each other and will be loaded onto a single track.
- The [->MIDI] button beside the Master checkbox transcribes the Master track. This merges all pitched instruments into a single track, as if they were played on a single piano. Drums are not included in this transcription.
- Use the [->MIDI] button for each stem to transcribe the generated stem to MIDI.
- The [->MIDI] buttons are greyed out (disabled) if MIDI transcription is not available but they automatically become enabled when the status changes.
- The [All->MIDI] button transcribes all the generated stems to MIDI separately on their respective tracks, with an option to make copies of the MIDI on the tracks below.

The "File Options" area allows you to select additional options.

- With the "Create New Song" checkbox, you can choose to add the stems to either a new song or the current song.
- The "Destination track (first)" dropdown allows you to select the destination track for the first stem. The rest will be placed on the next tracks.
- The text entered in the "Track labels prefix" field will be used for the track names.
- If you enable the "Preserve WAV files" option, WAV files for each track will be saved in the same folder as the original audio file. The audio .WAV is always 16 bit 44.1 KHz.
- Enable the **Auto-Transcribe ->MIDI** option to generate stems and automatically transcribe each one to MIDI when you press OK.

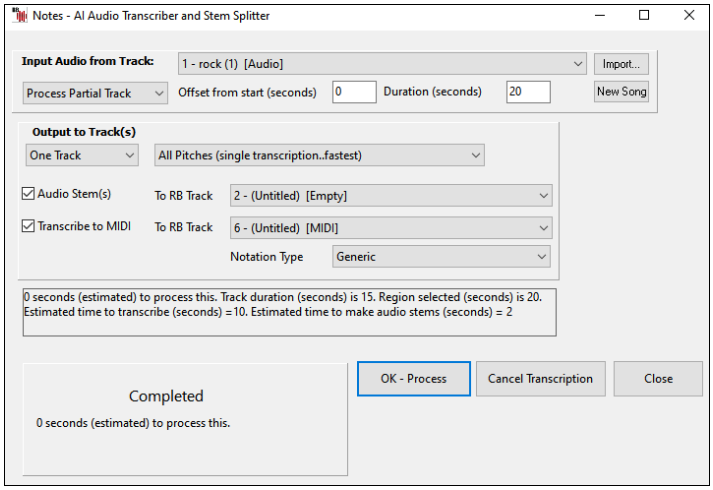
When you are ready, press the [OK - Generate Stems] button. For a full 3-minute song, the process may take 10-45 seconds to complete. The routines use multiple CPU cores, so it will be faster on fast machines with higher performance and more cores.

Once the stems are generated, they will be loaded to your song and appear in the Tracks window. Now you can play these tracks as a group, remix them, or mute/solo any individual track. The possibilities for creative fun are endless!

AI Audio Transcriber

This feature transcribes polyphonic audio to MIDI, allowing it to be viewed in notation or played as MIDI. It can transcribe an entire audio file (all pitched instruments and all drums), or it can isolate and transcribe individual instruments (drums, bass, guitar, piano, others, and vocals). It uses an advanced AI neural network to produce highly accurate results that sound exceptionally musical when played. For example, load your favorite pop song and generate transcriptions for its instruments (bass, drums, guitars/pianos, vocals), which you can play on their own or along with the audio of the song. This is an excellent way to learn songs, as you can visually follow the parts as they play on the piano keyboard or guitar fretboard. You can also use this feature together with the "AI-Stems" feature to split the original audio into separate tracks.

Choose the menu item *Edit | Audio | Launch AI Audio Transcriber*. In the dialog, select a track containing audio that you want to process, choose the instrument(s) to split and/or transcribe, specify the destination track(s) for the MIDI output, and press OK.



Input Audio from Track: Transcription or stem split processes use the existing audio in the track selected here.

[Import]: This lets you select an audio file to import to the selected track.

[New Song]: This clears the current song, allowing you to open a new audio file to a new song using the [Import] button.

Process Whole Track / Process Partial Track: Choose whether to process the entire song or only a portion. Because transcription can take time (up to two minutes for a three-minute song), selecting a smaller section speeds up processing.

Offset from start: Specify the location where the transcription begins.

Duration: Set the length of audio to process from the start location

One Track / Master + 4 Tracks: Choose to output transcriptions and/or stems for a single instrument or multiple instruments.

Audio Stem(s): Select this to generate stems. You should also select a destination track for the generated stems.

Transcribe to MIDI: Select this to transcribe audio in the selected track to MIDI. You should also choose a destination track for that MIDI output.

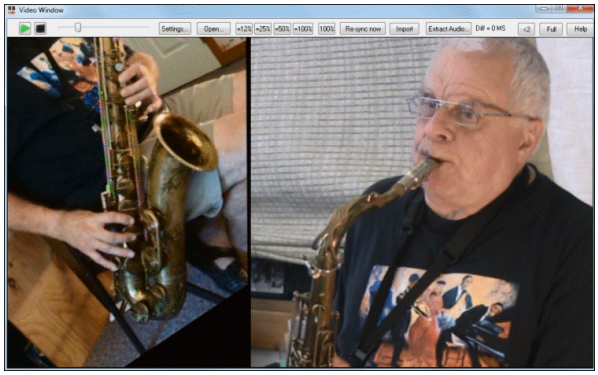
Notation Type: Select a type to assign the correct channel, patch, and notation display for the output track.

Video Window

You can load videos that you have already downloaded from YouTube or elsewhere into the RealBand Video Window. The audio is extracted from the video to the audio track, and you can slow down video and audio to help with learning and transcription, with Hi-Quality audio preserved at extreme tempo slowdowns.

To play a video, either use the [**Open**] toolbar button and select *Open File* from the menu or press the Views - [**Video**] button which launches the **Video Window** with its own toolbar which has an [**Open**] button.

Once you open a video, the **Video Window** will open.



There is a 'Full' Screen button to make the video full screen, and the [Esc] key will go out of the full screen mode.

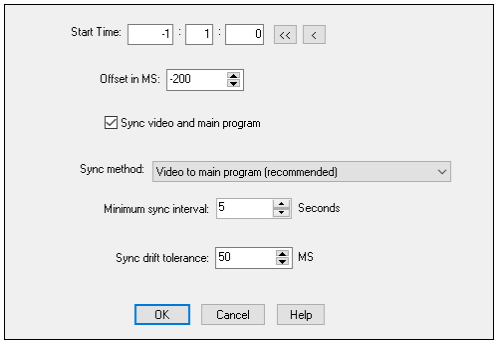
Play, Stop or Move to a position in the video using the Transport toolbar.

As the song plays, you can slow down the video, and the audio will slow down and stay in sync.

The quality of the audio at slower tempos is great - better than most video player programs. The video slowdown range is 50-100%. If you want slower than that, you can select values as low as 12%, which is an 8X slow down (1 second would take 8 seconds), and still has good quality. Note: When set to values lower than 50%, the Video Window is disabled, but the audio continues at the extreme slow tempo. This is a great tool for transcription. You can select a range in the Tracks window and loop a section of the video at a low tempo for example.

If the audio and video have become out of sync, press the **[Re-sync now]** button.

The **[Settings]** button will open the **Video Settings** dialog, which allows you to adjust the audio and video playback time.



Recording Audio Tracks

Audio tracks are great for recording live sounds such as a person singing or playing guitar, in a similar manner to tracks on a tape recorder. You can edit audio data by cutting and pasting in the Bars window or the Audio Edit window. You can import .WAV files to be inserted into audio tracks. You can also process audio tracks with effects in the *Edit | Audio Effects* menu.

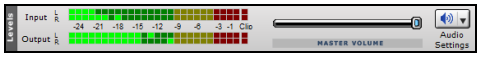
Recording will occur over the current track selection, i.e., the track number that is highlighted in the Tracks window. The track type must be set to "Audio."

The “Always Record Audio too, if current track is MIDI” setting in the **Audio Options** dialog (*Options* | *Preferences* | *Audio*) will cause RealBand to record audio even when the current track type is MIDI. RealBand will offer to keep the audio take on the nearest available blank track. This can be a “lifesaver” in those situations where you wanted to record audio, but you accidentally selected the current track as a MIDI track.

The “Backup Most Recent Audio Take” setting in the **Audio Options** dialog, when enabled, will always backup the most recent audio take. This can be helpful if you accidentally recorded audio onto the WRONG audio track, or you accidentally punched-in instead of recording a regular take. If this happens you can undo the keeping of the most recent take and then use the *File* | *Audio* | *Insert Wave File* command to insert the recorded audio onto a different track, by importing the RBBAKx.WAV file from the Temporary Audio Directory.

Setting Audio Levels

There are 2 pairs of VU meters, one pair for audio input, and one pair for audio output.



The clipping indicator indicates that clipping has occurred. Try to keep the levels low enough so they’re safely below 0 db, and so that the clipping indicator doesn’t light up.

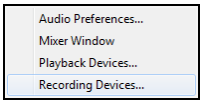
To be on the safe side, it’s probably a good idea to adjust the levels so that the meters don’t get close to 0 db even if the clipping indicator hasn’t yet lit up.

The VU meters have an automatic peak-hold feature with gradual peak fallback, so it will be easy to see the transient peak levels if you’ve got your eye on the meters.

For the Output, you may have to adjust your mixer settings within RealBand to keep the levels within a reasonable range.



For the Input, you may have to press the speaker button to launch the Windows **Recording Control** properties and adjust the input level.



In the example shown of the Recording properties, “Microphone” is the selected audio input for a SoundBlaster device and the Volume fader is at 70% of the maximum level. Different devices will show different consoles.

If the Input meter were too high, either clipping or getting close to 0 db, then lowering the Microphone volume level would correct this.



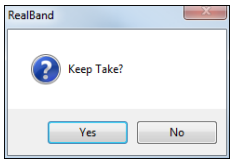
Note: The appearance of this window is different for different sound cards. The example shown is for a typical Sound Blaster Audigy card.



Start recording by pressing the Record button.



Stop recording by pressing the Stop button or the <SPACE> bar.

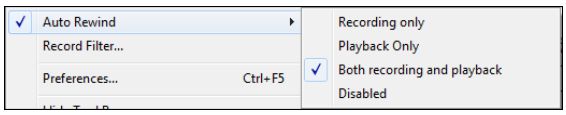


When recording is stopped a “Keep Take?” dialog appears that gives you the option to keep or reject the take.

If you choose **[Yes]** the audio wave file will be saved and you will see an added event in the Events column for the track (Classic view).

Auto Rewind

Auto Rewind is found in the *Options* menu. When enabled, RealBand will automatically rewind to the location that playback or recording was started. The choices are “Recording Only, Playback Only, Both Recording and Playback,” or “Disabled.”



Multi-Input Audio Recording

Multi-input audio recording is implemented in RealBand for ASIO. Go to the Audio Preferences dialog, select ASIO for “Audio Driver Type” and press the [Drivers] button below it. In the ASIO Audio Driver dialog, select more than 1 input port by Ctrl+clicking on ports. Then, if the track you’re recording on (the current track with the number displayed red in Tracks Window) is a stereo audio track, the first port will record both channels of the first input port that was selected in the ASIO Audio Drivers dialog. The next track after the current track will record both channels of the next port that was selected. If the current track is a mono audio track, then the left channel of the first input port will be recorded onto the current track and the right channel onto the next track. Then the left channel of the second port will be recorded onto the next track after that, and so on. In order to be able to record multiple inputs in mono in RealBand the “Input Channel for Mono Tracks” setting in the Audio Preferences dialog needs to be set to “L+R (2 Tracks).”

Multi-input audio recording is not implemented for Windows Audio.

Multi-input audio recording is implemented in RealBand for MME, but this isn’t recommended because of the higher latency and being less reliable for multi-input recording than ASIO.

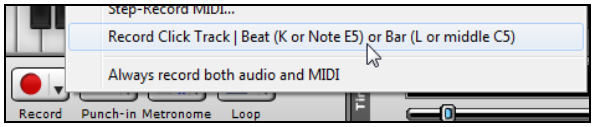
Align Music to Click Track

This feature attempts to align a track of music that was recorded in free time to a click track. It tries to take a free time track and make adjustments to the times of the events so that the music becomes a standard track that can be synced to a metronome.

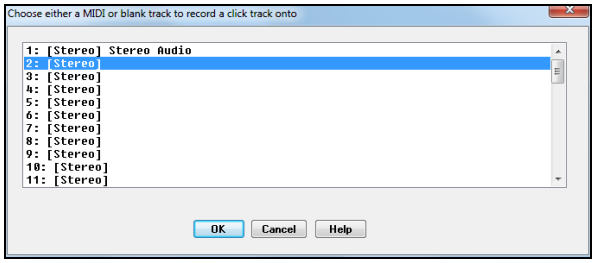
You can now easily record a click track along with any audio and/or MIDI, and then have RealBand automatically line up everything with tempo and time signature changes. This can have many useful applications. For example, if you recorded a strumming guitar in free time, RealBand can line it up to the grid so you can add loops, RealDrums, or RealTracks. Or, if you have just purchased a song from iTunes, you can have it line up to the grid in RealBand to make it easier for you to learn. Or, if you have recorded MIDI (not to a click track), and you can have that MIDI line up to the grid without affecting the actual performance.

Method 1: Recording of Bars

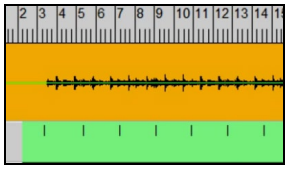
For example, you have just recorded your guitar, but since you sped up a little throughout the whole song, you want to make it line up correctly with the grid. Go down to the bottom of the screen and click on the arrow on the Record button. You will see a menu item *Record Click Track* and the additional information: *Beat (K or Note E5) or Bar (L or middle C5)*. When you start recording, you can just type the letter L on your keyboard to indicate where the bar lines are. If you have an external MIDI keyboard, you can do this with the note C5. You can also enter specific beats by typing the letter K or playing the note E5 on your external MIDI keyboard. In this example, we will show you how to enter bars only.



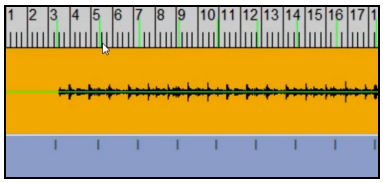
Select this menu item and then select a blank track to designate as the click track.



Then, type the letter L during the recording.

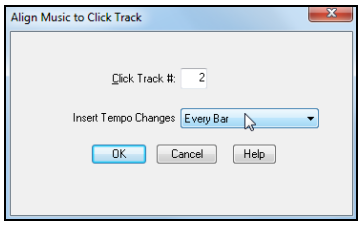


The Tracks window displays where you have placed the bar lines.



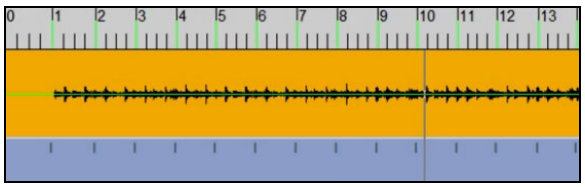
When you stop recording, you will also see the green lines on the grid, which indicate where the bar lines are.

Right click on the Tracks window, and go to *Click Track* | *Align (or Realign) music to click track*.



When the dialog opens, select "Every Bar" for "Insert Tempo Changes," and click OK.

Now you will see the actual bar lines above are in the correct places.

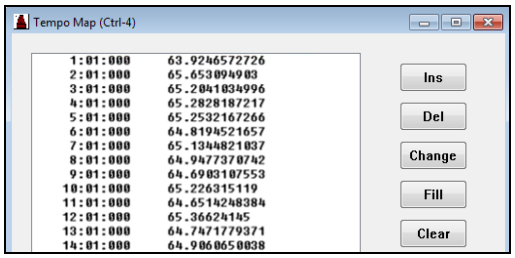


And when you play, you will see at the bottom of the screen that the bars and beats are displaying correctly.



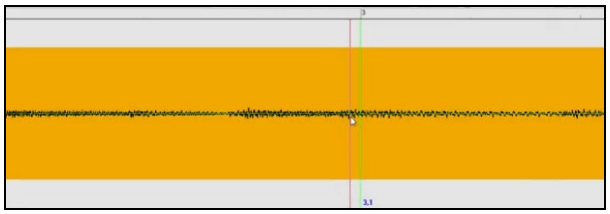


If you open the Tempo Map, you can see exactly what RealBand has done.

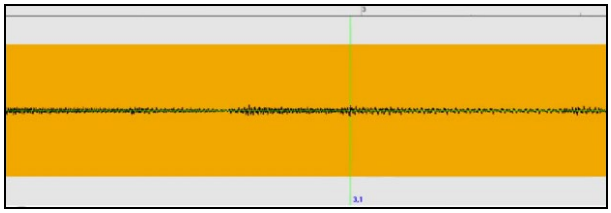


It has put in tempo changes automatically at every bar so it will match up with the bar lines that you have typed in. You can see that it wavers between 64 and 65 beats per minute based on the bar lines you have entered.

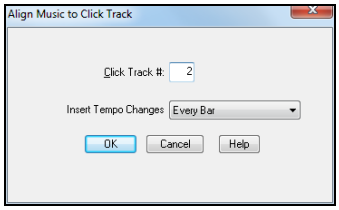
When you open the Audio Edit window for your guitar track, you can see the green lines. If you zoom in some of them, you can see they are not all perfectly line up with your guitar. You can easily move these around, and then re-align.



Right click where you want the bar line moved to, and go to *Click Track* | *Move nearest click track event to location you clicked on*.

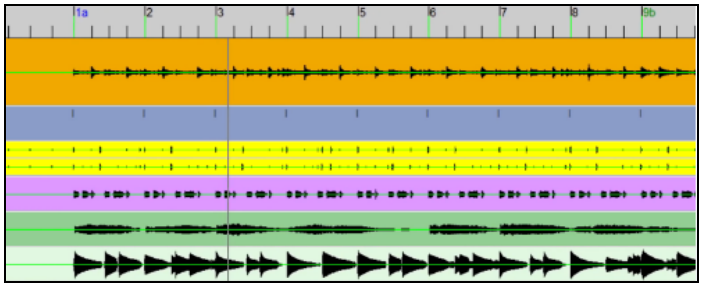


Then, right click again and go to *Click Track* | *Align (or Realign) music to click track.*



You can do this process for any bar if necessary.

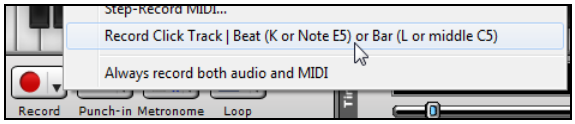
When all bar lines are lined up, it will be much easier to record additional tracks. Or you can even add RealDrums, Loops, or RealTracks.



Method 2: Recording of Bars and Beats

You can also easily deal with more complex songs. For example, if you have a 4/4 song that has a bar of 3/4 and want to learn from it, just drag it into RealBand.

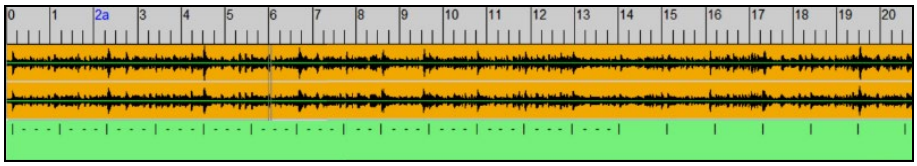
Next, click on the arrow on the Record button, and select *Record Click Track*.



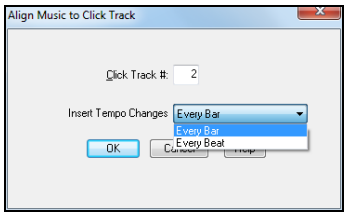
When the **Align Music to Click Track** dialog opens, select a blank track to designate as the click track.

And now do the same thing as before, but with one change; because the song has a 3/4 bar, you will also need to record beats by typing the letter K (or playing the note E5 if you are using an external MIDI keyboard).

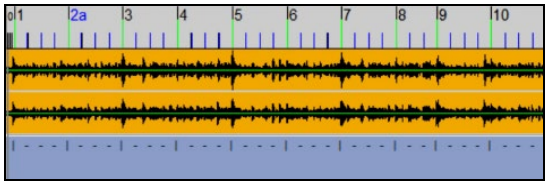
This time, the Tracks window looks slightly different. Because you are entering beats too, you will see dashes in addition to lines. And for the bar of 3/4, you only see two dashes because has 3 beats instead of 4. You don't need to enter beats for all bars; if you stop entering beats, RealBand will assume that the beats are following the main time signature (4/4) of the song. You only need to enter beats for bars that are different from the main time signature.



When you finish recording, right click and go to *Click Track | Align (or Realign) music to click track.*

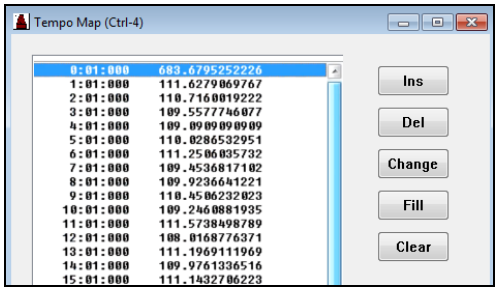


You could set a new tempo every BEAT since there are beat events that you recorded. But the only reason why you entered beats was to let RealBand know there is a bar of 3/3. So either way would be fine.



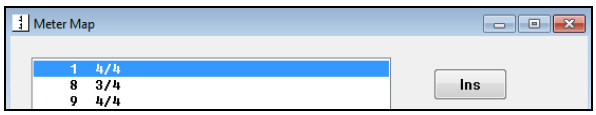


If you look at the Tempo Map, you can see how RealBand has aligned tempos.





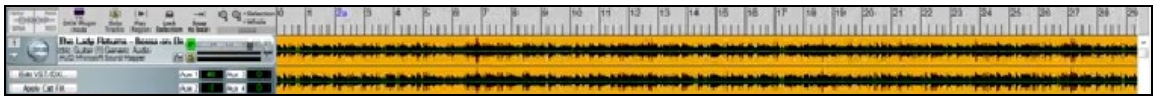
And if you look at the Meter Map, you can see that the meter switches to 3/4 at bar 8, then back to 4/4 at bar 9.



Method 3: Manually Entering Bars

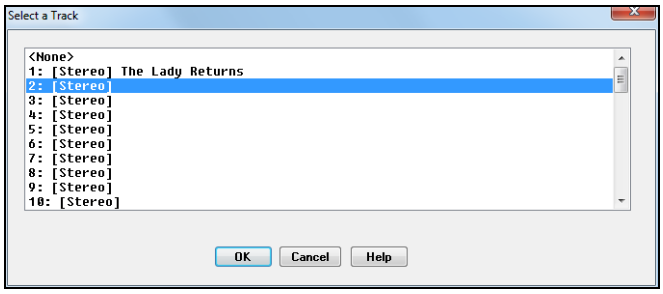
Instead of recording the bars or beats, you can just designate the first and lar bars as click track bars.

For example, you have a song that gradually speeds up from the start to the finish, and you want it to line up with all the bars. You could tap the letter L to enter bars, but if you know exactly how long the song is, you can just specify the first bar and a bar near the end and have it just fill in the rest.

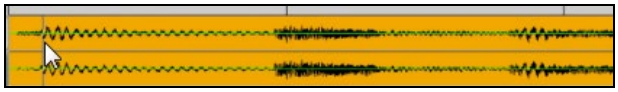


First of all, because you are not recording a click track, you need to select an empty track and designate it as the click track. Right click and go to *Click Track | Choose Click Track.*

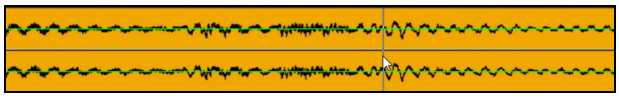
Select the track 2.

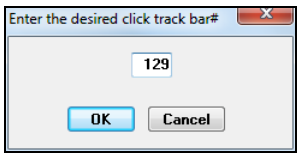


Now, right click at the very beginning, where the musicians start, and go to *Click Track | Insert new bar click track event* to manually add a bar event there.



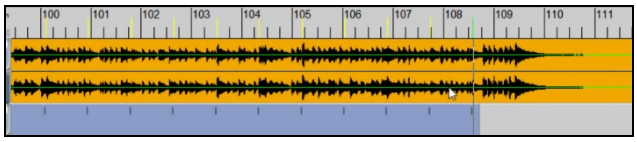
Go to the end of the song and locate the last bar before the ending. Right click, and go to *Click Track | Make the current location the Nth bar*.



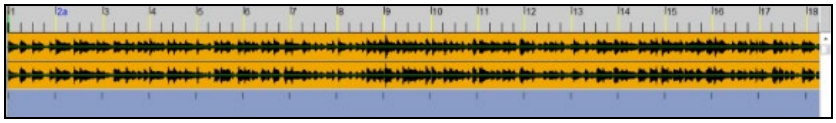


For example, if you want to make that location the 129th click track bar, enter 129 and press OK.

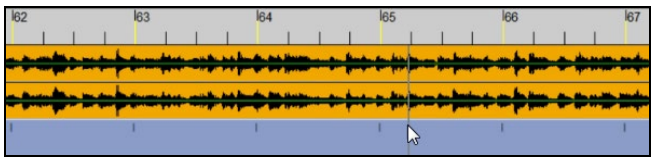
You will then see bar lines on the click track. When you look at the grid, it has a green line where you have entered manually. It also has yellow lines. These are inferred bar lines. Since you have entered bars 1 and 129, RealBand know where all the in-between bars should be.



In the Click Track menu, there are options to take the inferred bar lines and make them definite bar lines, which would change them to Green. But you cand just select *Align (or Realign) music to click track.*

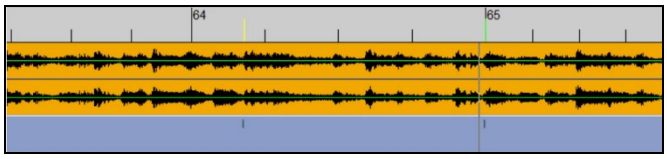


Now you will see that by just entering the first and last bars, it's pretty close to lining up. If it's not perfectly lining up, you can specify another location in the middle, for example bar 65.



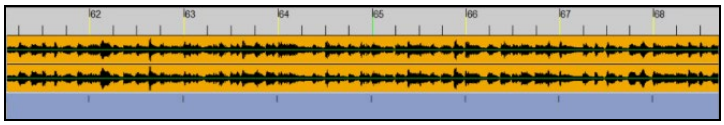
Right click where bar 65 should be should be located and go to *Click Track | Move nearest click track event to location you clicked on.*

You will then see the yellow line at bar 65 has changed to green, which means this bar has been changed from an inferred bar to a definite bar.



However, since all of the other bars remain as the inferred bars, you will need to do a quick realign by selecting *Click Track | Align (or Realign) music to click track* from the right click menu.

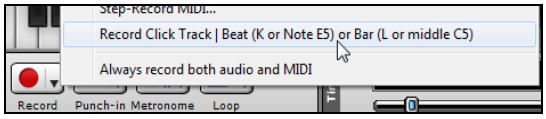
And this has made every part of the song much better.

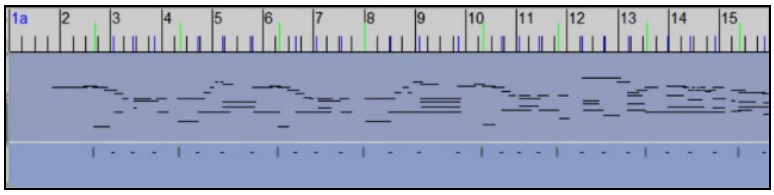


Method 4: Aligning MIDI

You can also align MIDI that wasn't recorded to a click track. For example, if you have a MIDI where the tempo is frequently slowed down and sped up for a dramatic effect, you can have it aligned to a click track without affecting the fluid nature of the performance.

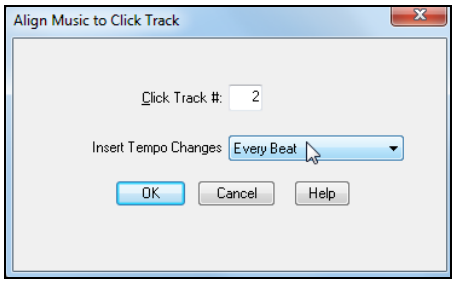
First, right click on the arrow on the Record button to select the *Record Click Track* menu item, and start recording the click track.





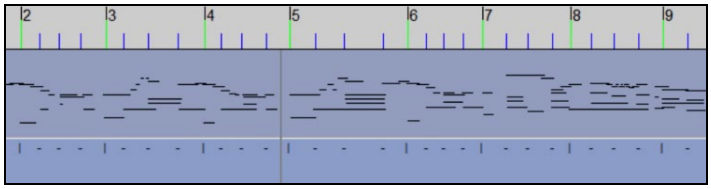
When you have entered bars and beats, you will see that where the tempo is quicker, the beats are closer together, and where the tempo is slower, the beats are stretched out.

Right click and go to *Click Track | Align (or Realign) music to click track*.



You can select "Every Beat" for the "Insert Tempo Changes" option to have the tempo changes reflect on each beat you have entered.

When you press OK, you will see the bar lines are all lined up.

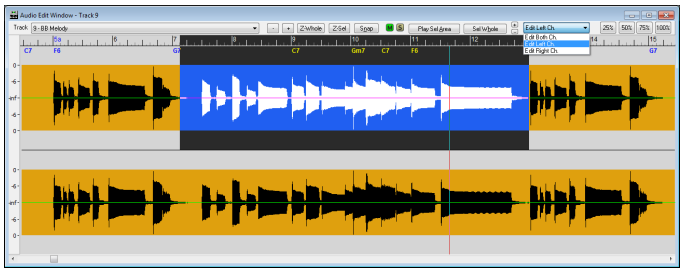


Audio Editing

Any of the forty-eight tracks within RealBand can be designated as either mono audio or stereo audio. If you edit a stereo track in the Audio Edit window, you will see two channels (waveforms) in the window.

The Audio Edit window lets you edit only the left or right channels of a stereo track instead of always editing both channels. This lets you Cut/Paste just the left or right channel, or you can apply a non-real time effect (*Edit* | *Audio Effects*) to just the left or right channel.

Stereo tracks are normally panned to the center so the stereo signal is centered.



Scrub Mode



Enable this button and drag a mouse over a section of waveforms to hear the audio of that section.

Loop Record



If you record while in Loop mode (which is activated using the loop button) the music will loop when recording is started with the Record button. The music that is recording during each loop can be put onto individual tracks after recording is finished, or the entire take can be put onto a single track like an ordinary recorded take. A dialog will pop up giving you a choice of whether the recorded audio will go on separate tracks or on the same track. If you choose the latter, the take will be kept the same way an ordinary take is normally kept. If you choose to have the loops put on separate tracks, the program will put each loop on any available track that is greater than or equal to the Current Track. For example, if there are 10 audio loops recorded then program will put the takes onto 10 audio tracks. If you don't want to overwrite existing tracks, then make sure the current track, and any tracks with a higher number than the current track, are blank before recording. For example, if the song already has 10 tracks used, then start recording on track 11 and the loops will be placed on track 11 and beyond. If the program runs out of tracks, it will attempt to put remaining loops onto the last track.

Note: Loop recording will always begin at the start of a loop.

Note: Punch-in mode will automatically be deactivated by the program since it is incompatible with loop recording mode.

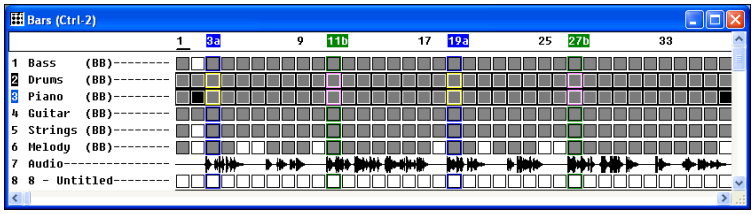
Editing Audio Tracks

Note: By default, the program uses the Windows/Temp directory for temporary audio files created during editing. You can change the directory in the *Options* | *Preferences* dialog under the **Audio** tab.

You may find that you do much of your audio editing in the Tracks window overview, but the Bars window and the Audio Edit window are also very useful.

Bars Window

The **Bars** window provides an overview of the data (WAV and/or MIDI) in a song file. This view makes it easy to select a large region of a track for editing.



You'll see that as the song plays the **Bars** window scrolls along, showing graphical representations of the waveforms that are contained in the individual tracks. A small cursor at the top of the window indicates the current bar and the numbers indicate the bar numbers of the song.

If the **Alt** key is held when left-mouse clicking on the overview section of the Bars window the time will be changed without affecting the currently highlighted region. This lets you quickly adjust the current time without having to worry about accidentally changing the highlighted region.

Audio Edit Window



You can open an **Audio Edit** window for any track that contains WAV data. To view the waveforms of the individual tracks, click on the track that you want and then click on the Audio Edit toolbar button.

You can also open the **Audio Edit** window with the menu command *Window* | *New* | *Audio Edit Window* (**Ctrl+F2**).



In the Audio Edit window, the **Track Name Combo** shows the track number in addition to the name for non-blank tracks.

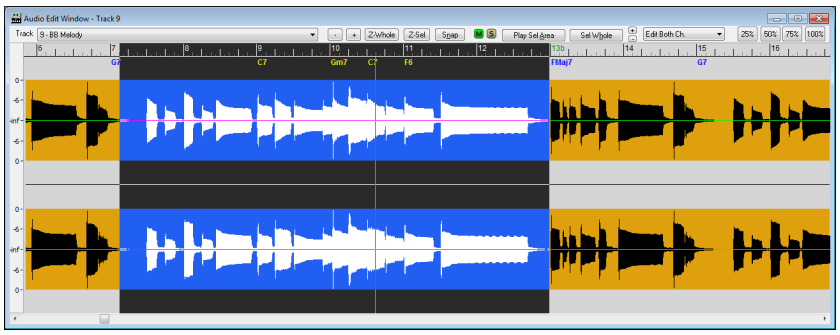
Use this list to change to a view of a different track.

This window lets you view audio data as a graphical representation of the waveforms on the selected track. It scrolls as the song plays, with a thin red vertical stripe to mark the current song position.

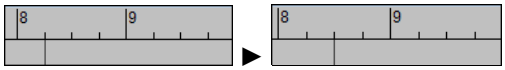
The number-ruler at the top of the window denotes the bar numbers of the current song.



Small vertical lines are displayed at 8th and 16th note boundaries. This makes it easier to align audio to correct timing issues.



◄ Left and right ►cursor arrow keys will move the current time forward or backward by 1 beat.



The **dB Scale** on the left side of the **Audio Edit** window gives you a better idea of the level of an audio track.



By clicking on the **[+]** and **[-]** buttons you can "zoom" in or out on the waveform to facilitate very precise waveform editing.



The large +/- buttons zoom horizontally, the smaller set zooms vertically.



The **[Z-Whole]** button zooms out to show the entire waveform.



The **[Z-Sel]** button zooms in on the highlighted section of the waveform.



The **[M]** button mutes or plays the track. Red indicates the track is muted, green indicates playing.



The **[S]** button solos the track. Bright yellow indicates the track is soloed.



The **[Snap]** button will cause the highlighted region to snap to the nearest beat when selecting a region with the mouse.



The **[Play Selected Area]** button will play the highlighted area to let you hear what was selected.



The **[Select Whole]** button selects the whole audio track.



Enable this button and drag a mouse over a section of waveforms to hear the audio of that section.

The current time within the song, if visible within the **Audio Edit** window, will be shown as a vertical line in red. This will be drawn in reverse video if the current time is within the selected region.

You can select a region to edit with the mouse by clicking on the waveform and dragging the mouse to the right. **Shift+click** (**Shift** key + left mouse button) support makes it easy to tweak the beginning or end of the highlighted area.

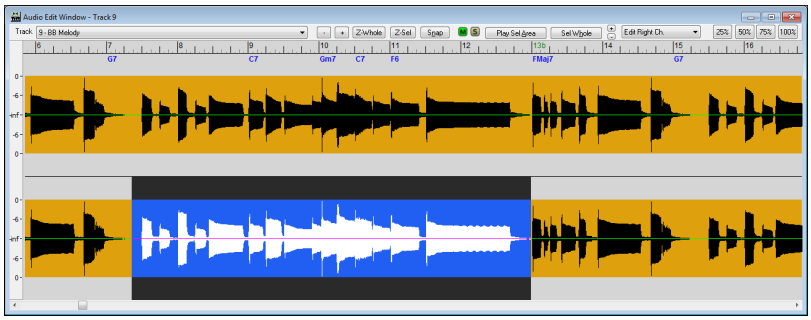
- If you **Shift+click** before the start of the From/Thru range, or after the end of the From/Thru range, the highlighted area will be extended.
- If you **Shift+click** within the From/Thru range, the range will be reduced, and the location you clicked on will become either From or Thru depending on which boundary was closer to where you Shift+clicked the mouse.
- If you keep the left mouse button held after the **Shift+click**, and you move the mouse you can adjust the boundary of the range while moving the mouse.

Alt+click is supported the same way as for the overview section of the Tracks window. In other words, **Alt+click** will ONLY move the time marker, which ensures you don't accidentally alter the current selected area.

After selecting a region, you can then execute *Cut*, or one of the audio effects in the *Edit* menu.

Note: RealBand has support for resolutions as high as 3840 PPQ, which allows for more precise audio editing, since at higher resolutions each tick spans a finer section of audio. Go to *Options* | *Resolution* to make this setting.

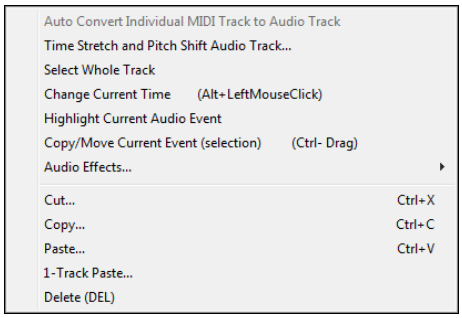
The **Audio Edit** window lets you edit only the left or right channels of a Stereo track instead of editing both channels. This lets you cut/paste or apply a non-real time effect (*Edit | Audio Effects*) to just the left or right channel.



RealBand supports drag-and-drop editing in the **Audio Edit** windows. Select the highlighted region by holding down the **Ctrl** key with the left mouse button pressed, and then drag the region to a new location in the song.

Audio Edit Right-Click Menu

The right-click menu in the Audio Edit Window is similar to the right-click menu in the Tracks window.



The ***Time Stretch and Pitch Shift Audio Track*** feature allows you to permanently change the duration and pitch of individual audio tracks, or change the speed and pitch of the entire RealBand mix.

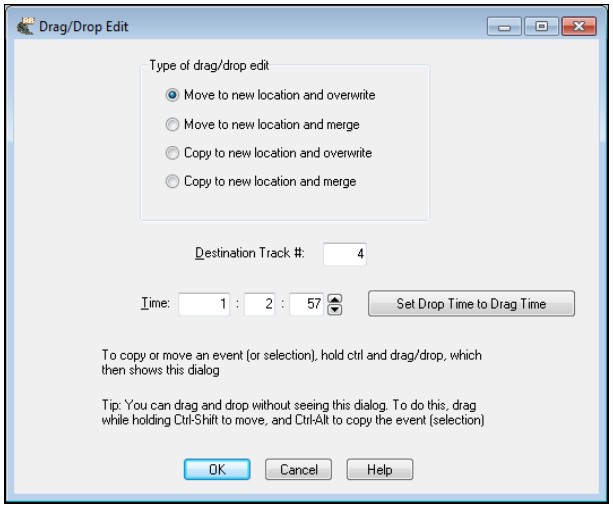
Select Whole Track command will select the entire track for editing.

Kill Selected Region will deselect a selected region of an audio (or MIDI) track.

Change Current Time will change the current time without affecting the highlighting of tracks. This ensures you don't accidentally de-select a region.

Highlight Current Audio Event makes it easier to select specific audio events, which then could be clicked and dragged (with **Ctrl** button held down) to a new location, etc.

Copy/Move Current Event (selection) launches the **Drag/Drop Edit** dialog.



- **If nothing is selected**, and you **Ctrl+click** to drag and drop, it will assume that you want to drag the entire current audio event.
- **Bypassing the dialog for quicker workflow.** If you hold **Ctrl+Shift** then the drag will move the current event. If you hold **Ctrl+Alt** then the drag will copy the current event. When **Dragging/Dropping within the overview section** of the Tracks window, you can now drop to a blank track even if the track type wasn't originally set to the correct track type.
- **Drag/Drop will automatically be set to the original time** if within 20 ticks (at a PPQ of 120). So if you drag a region down to a new track, you just need to be "approximate" in the drop location, as the program will snap the time to the same time as the event on the source track. If you don't want that behavior, just **Ctrl+drag** the selection, and the dialog appears with exact values. In this case, the dialog also has a handy "Set Drop Time to Drag Time" button.
- **The Time field has been added to the Drag/Drop Edit dialog,** so you can fine-tune the time for the drop when you drag a selection using **Ctrl+drag**.
- **Destination Track # added to Drag/Drop Edit dialog** when launched from the Tracks window.
- **[Set Drop Time to Drag Time]** button has been added to the **Drag/Drop Edit** dialog
- *Copy/Move Current Event (selection)* menu item added to the Tracks window right-click menu
- When dragging/dropping within the overview section of the Tracks Win, you can **drop to blank track** even if the track type wasn't originally set to the correct track type.

Audio Effects opens a submenu that is the same as the *Edit | Audio Effects* window. This submenu also contains **Fade In** and **Fade Out** menu items, which launches a Flash Message w/ instructions, and then launches the GAIN dialog.

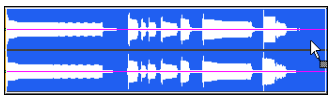
The ***Cut***, ***Copy***, ***Paste***, and ***1-Track Paste*** commands apply to the highlighted section of a track(s). The functions are as described in the Edit Menu topic.

Delete removes the selected section or events.

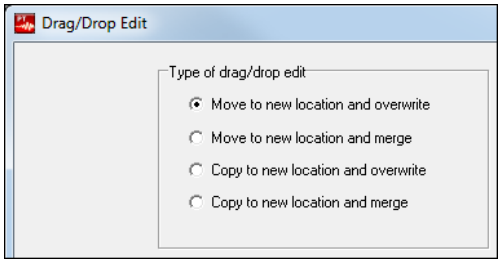
Tracks Window Editing

Audio edits can also be performed directly in the **Tracks** window, although the **Audio Edit** window offers a larger view for precision editing.

Drag and drop audio editing in the **Tracks** window makes it easy to drag a clip from one track to another.



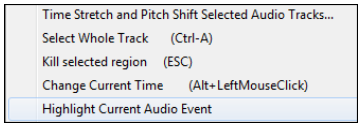
You can select a highlighted region by holding down the **Ctrl** key with the left mouse button pressed, and drag the region to a new location in the song.

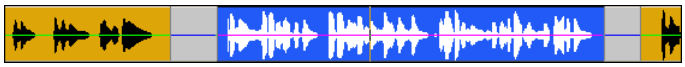


After releasing the mouse button, you have four options:

1. Move to new location and overwrite.
2. Move to new location and merge.
3. Copy to new location and overwrite.
4. Copy to new location and merge.

There is a **right-click** menu item in the Tracks window to **highlight the current Audio Event**. This makes it easier to select specific audio events, which then could be clicked and dragged (with **Ctrl** button held down) to a new location, etc.



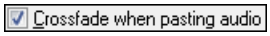


Note: An event is defined as an event in the Event List. If an audio track is a single event, and doesn't have any boundaries shown in the tracks window, then the whole track will be highlighted.

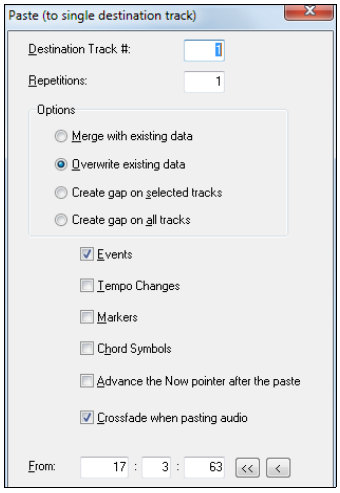
Audio Edit Commands

Audio editing uses the *Edit* menu commands. You can *Cut*, *Copy,* and *Paste* audio data just as if it were text.

Each action brings up its own dialog, which can also be launched with the standard Windows keystroke commands **Ctrl+X** for *Cut*, **Ctrl+C** for *Copy*, and **Ctrl+V** for *Paste*.

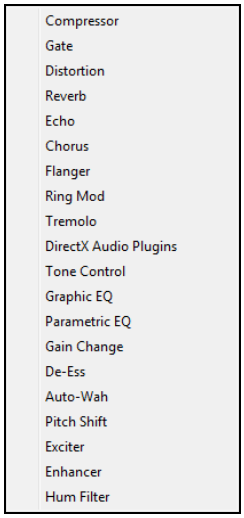


The crossfade option when pasting audio smoothes out a paste, so that no audible “clicks” are heard at splice points of pastes.



Click on the **[Help]** button in each edit dialog for detailed instructions on the settings and commands.

Audio Effects



This is a submenu that contains all of the permanent audio effects for RealBand.

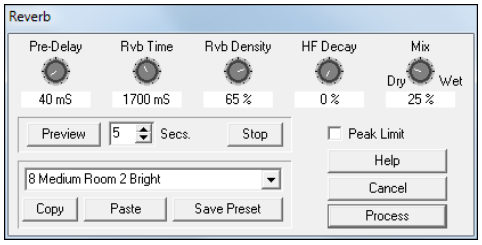
The audio effects in this submenu are actually external plugins that are transparently integrated with RealBand, but actually aren't built-in to the program itself. You'll be able to use them just as if they were built-in to RealBand.

Unlike the effects that are added in the Mixer window on the FX track insert and the Aux busses, when the effects in the Audio Effects submenu are applied the content of the audio track is permanently altered. The effect can be removed with the *Edit* | *Undo* command.

Note: Once the file has been saved the effect cannot be undone.

This command will undo the last edit command executed and restore the track to its previous state. The number of Undo Levels is adjustable from 1 to 100 in the General section of the *Options* | *Preferences* dialog.

Each effect has its own dialog with custom settings and commands. Click on the **[Help]** button for a detailed explanation of the settings and a concise tutorial on how to apply the effect.



Time Stretch and Pitch Shift

This feature is available from the **Tracks** window by right-clicking with the mouse on any audio track.

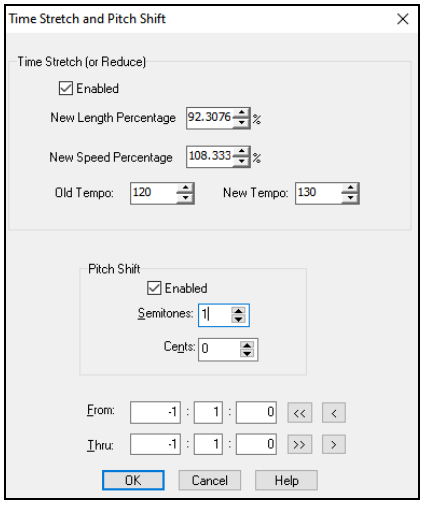


It allows you to permanently change the duration and pitch of individual audio tracks, or change the speed and pitch of the entire RealBand mix.

If an audio track has been inadvertently recorded too flat or too sharp, you can easily modify the pitch without affecting the track's duration. If the duration of an audio track is incorrect RealBand can change the tempo of the audio track without affecting the pitch. Tempo can be adjusted from 1/4 speed to 4X speed. Pitch can be adjusted +/- one Octave, in one Cent increments (a Cent is 1/100 of a Semitone).

These features are also useful for learning your favorite up-tempo song. Load the file and play it back at half speed. If the song is in the key of F but you would rather learn it in Eb, transpose it down 2 semitones and continue playing at half-speed. As you master the song, you can gradually increase the tempo until you can play along at full speed.

The **Time Stretch and Pitch Shift** dialog lets you stretch (or reduce) the length of the highlighted section of audio tracks.



Time Stretch (or Reduce)

Enabled: If checked, then RealBand will change the length based on the following settings:

New Length Percentage: The new length as a percentage relative to the original length. For example, a new length percentage of 200% will result in the section being double the original length.

New Speed Percentage: Time stretching (or reduction) will also cause the section to be played faster or slower. If you are stretching a section of the song, it will play slower. If you are reducing a section, it will play faster. This setting is the inverse of the New Length Percentage. For example, a New Speed Percentage of 50% (half speed) will result in a New Length Percentage of 200% (double length).

Old Tempo and **New Tempo**: If you specify old and new tempos, this is another way of adjusting the speed, but this method lets you think in terms of a change in tempo rather than a change in speed as a percentage.

Pitch Shift

Enabled: If checked, then RealBand will pitch shift based on the following settings:

Semitones: This is the number of semitones to pitch shift up or down. There are 12 semitones per octave.

Cents: This is the number of cents to pitch shift up or down. There are 100 cents per semitone.

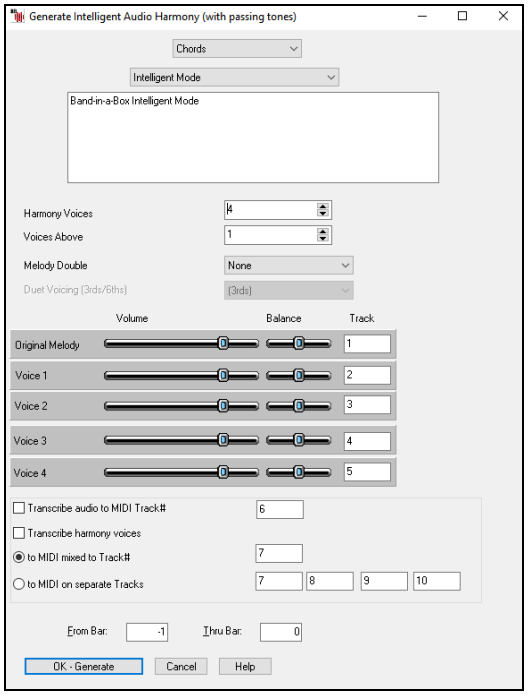
Generate Audio Harmony

The intelligent audio harmony feature uses elastique.

The feature includes:

- Harmonizing the audio with up to 4 harmony voices
- Transcribing the original audio to MIDI
- Transcribing the harmony voices to MIDI

To use, right-click on the Tracks window and select *Generate* | **Generate Intelligent Audio Harmony (with passing tones), MIDI Vocoder, Fix Tuning.** If you want to generate harmonies for a region, highlight the region before selecting this command. This will open the **Generate Intelligent Audio Harmony (with passing tones)** dialog.



Select the number of "Harmony Voices" that you want to generate.

The "Voices Above" setting determines the number of harmony voices that will sing higher than the original voice.

The "Melody Double" option allows you to double original voice either in unison or an octave above/below.

The "Duet Voicing" option is for the 2-part harmony that doesn't include a melody double (i.e. "Harmony Voices" = 1 and "Melody Double" = None). It allows you to make the harmony voice 3rds, 6ths, or a combination of 3rds and 6ths, above or below the original voice depending on the "Voice Above" setting.

In the "Track" fields, specify the track of the original voice and select the destination tracks of the harmony voices. You can set the "Volume" and the stereo "Balance" for the original voice and each harmony voice.

This dialog can also transcribe the original voice and/or generated harmony voices to MIDI. Check the "Transcribe audio to MIDI Track" option to transcribe the original voice and select the destination track for the transcribed MIDI. To transcribe harmony voices, check the "Transcribe harmony voices" option. Harmony voices can be transcribed to either a single MIDI track or multiple tracks.

Real Time Effects Plugins

RealBand supports DirectX and VST effects, which you can apply in real time to the audio tracks. A full range of PG Music effects is included with the program; you can also use any other third-party DirectX or VST effects to add effects in real time without permanently altering the actual track data.

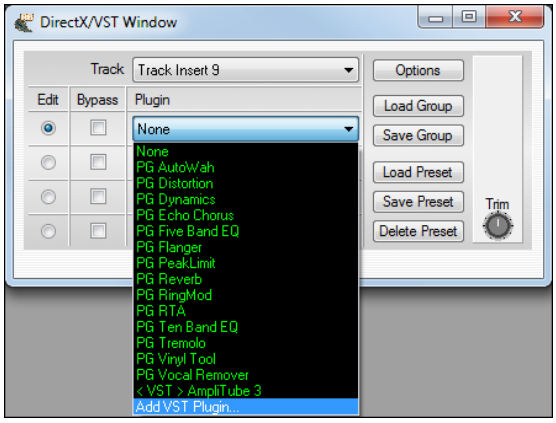
Install DirectX Effects Plugins

DirectX effects are installed by default in the Program Files folder on Windows computers. They will be present in the "Plugin" list in the **DirectX/VST** window. There is a "Scan" feature in the **DirectX/VST Options** that will search for newly installed DirectX plugins not on the list.

Installing a VST Effects Plugin



Click on the **[FX]** button in the Mixer window or the **[VST/DX Synth]** button on the toolbar to open the **DirectX/VST Window**.



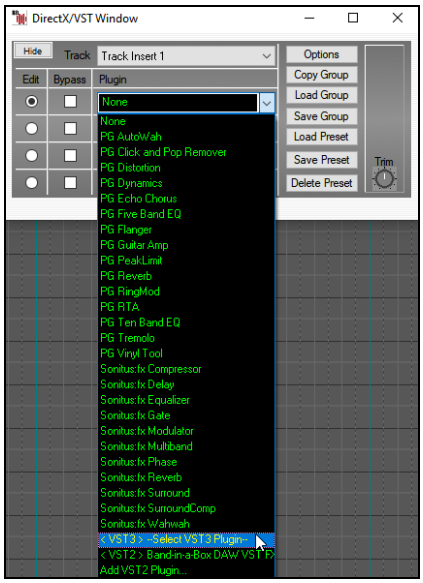
In the Plugin list, select the "Add VST Plugin..." item at the bottom of the list.

Select a VST plugin .dll file in the following **Select a VST plugin** dialog, and it is added to the plugin list. After you add each VST, the plugin is permanently added to the list. You only have to add each plugin one time.

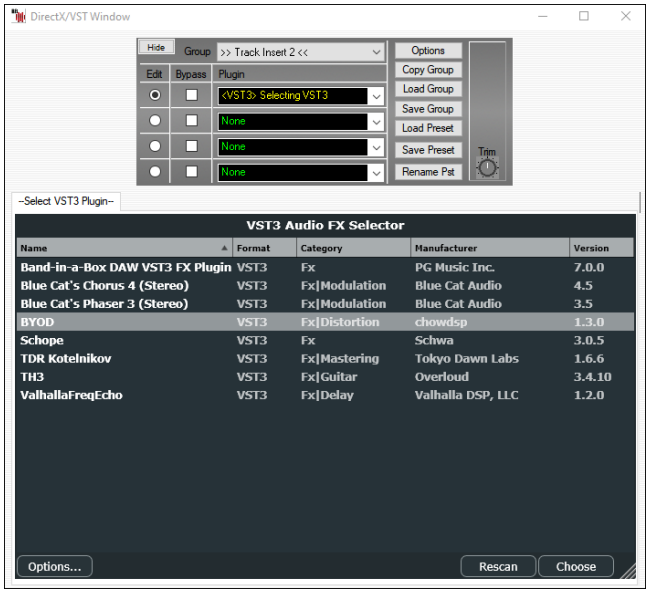
VST3 Plugin

RealBand supports VST3 plugins.

To load a VST3 plugin, open the **DirectX/VST** window and choose the *Select VST3 plugin* from the Plugin dropdown.



You will then see a list of installed VST3 plugins.



If your VST3 plugin is not listed, press the [Rescan] button.

The [Options] button provides functions such as adding a scan directory, removing the selected VST3 plugin, showing the folder of the selected VST3 plugin, and more.

You can load a VST3 plugin by double-clicking it in the list or by pressing the [Choose] button.

Remove VST/VSTi Plugin

You can remove a VSTi or VST plugin that you have installed. This only removes the VST/VSTi plugin from RealBand' list of remembered VST plugins. The feature does not uninstall a plugin or delete any plugin files.

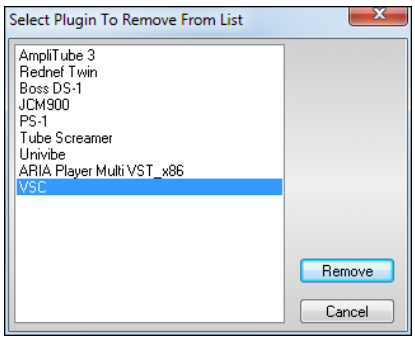
After you remove a plugin from view in RealBand, that plugin still remains usable to any other VST program where you prefer to have it available.

To remove a VSTi or VST plugin from RealBand:

Click on the **[Options]** button in the **DirectX/VST Window** to launch the **DX/VST Options** dialog.

Select the **[Remove VST Plugin (from list)]** button.

Select the plugin to remove so it is highlighted in the list, then click the [Remove] button.



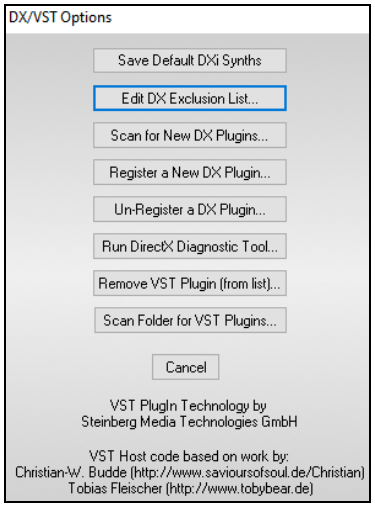
Uninstall a VST/VSTi PlugIn

If you want to permanently delete a VST/VSTi plugin from your computer, first check if the plugin has an uninstaller in the Windows menu "*Start* | *Settings* | *Control Panel* | *Add or Remove Programs*." If an uninstaller is available, that is the best way to get a clean plugin uninstall.

With plugins that do not have an uninstaller, it is safe to drag the plugin's DLL and any other plugin support files to the Windows Recycle folder.

DX/VST Options

The **[Options]** button opens the **DX/VST Options** dialog where you can manage your real time effects plugins.



[Edit DX Exclusion List] This lets you edit the list of plugins to include or exclude in the DirectX editor. This is useful if you have some plugins which were found and which aren't compatible with RealBand. If you edit the exclusion list, you'll see a dialog box with the left side displaying the included plugins and the right side displaying the excluded plugins.

[Scan for New DX Plugins]: This will cause RealBand to scan for newly installed plugins.

[Register a New DX Plugin] This button can be used to register a plugin with DirectX, so that audio applications such as RealBand can use the plugin if you have a plugin that doesn't automatically register itself.

[Unregister a DX Plugin]: This removes a plugin from DirectX so that audio applications will no longer be able to use this plugin.

[Run DirectX Diagnostic Tool]: This will run the Microsoft Direct X Diagnostic tool, which checks for problems with DirectX.

[Remove VST Plugin (from list)]: Press this button to remove a VST plugin so that it is no longer included in the "Plugin" list in the **DirectX/VST Window**.

[Scan VST Plugin (from list)]: This allows you to load multiple VST plugins from a folder rather than one at a time.

Note: VST/VSTi plugins are added manually to the Plugin list in the **DirectX/VST Window**. Once added, a VST/VSTi plugin is available on the list until removed.

Effects Controls



Track Settings

The **[FX]** track insert button in the **Mixer** window assigns effects to the specific track alone. Up to four effects can be chained on the FX insert.

Each of the four Aux control knobs can be assigned to one of the eight auxiliary effects busses. The position of the control knob determines the amount of the signal that is routed through the auxiliary bus and how much of the "dry" signal goes directly to the audio output bus.

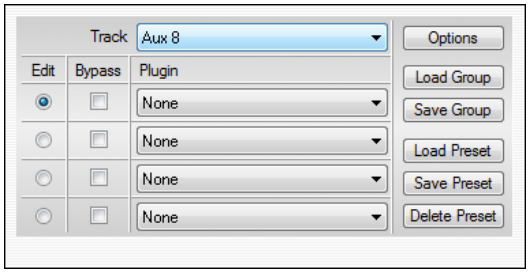
Auxiliary Effects Busses

Each of the eight Aux busses can have a chain of up to four real time effects. These can be any DirectX or VST effects that you have installed on your system, either the included PG Music effects or third-party effects.

The effects on each bus or insert are chained (in sequence), which means that the processed signal from each plugin is then further processed by the chain's next plugin. There are no hard-and-fast rules, but a typical effects chain might start with effects that condition the incoming signal (noise gate, EQ, dynamics), then add effects that alter the tonal qualities of the sound (chorus, distortion, modulation) and then time-based effects (reverb, delay).

To run effects in parallel, rather than chained, you can assign them to any of the eight auxiliary busses and route each track individually through any four effects.





Aux Bus FX insert window

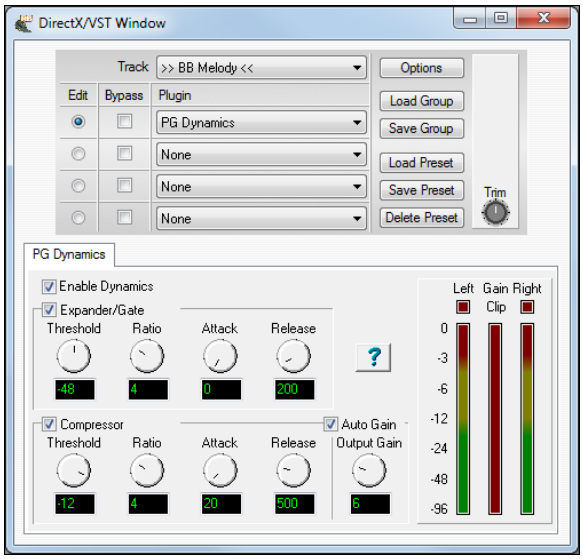
Choosing and Editing DirectX/VST Effects

The Track field of the **DirectX/VST** window lets you choose a track in which to select or edit effects. A "track" can be a Track Insert, an Aux bus, or an Output Insert.

The "Edit" radio buttons let you choose which of the four effects to edit in the group of effects available in each track. The "Bypass" checkboxes lets you bypass any of the four effects in a group.

In the example, the BB Melody is the currently selected Track and slot 1 (PG Dynamics) is selected for editing.

The **[Load Group]** and **[Save Group]** buttons let you load and save the effects settings for the currently selected track. The **[Load Preset]** and **[Save Preset]** buttons let you save and load presets for the current effect. The **[Delete Preset]** button lets you remove a preset from the list of already saved presets.



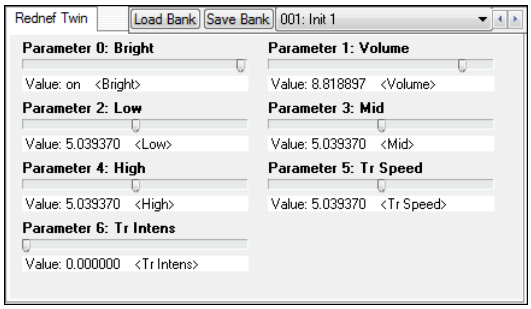
VST/VSTi Additional Panel Controls

VST is necessarily different from DirectX/DXi, and some extra controls are available for VST plugins. DirectX/DXi plugins save their presets to the Windows Registry and only one setting is "alive" at a time.

VST/VSTi plugins save their presets to disk files. VST/VSTi plugins contain a bank of presets in memory. You can switch between presets while editing, and each edited preset is remembered in the current bank.

VST Generic User Interface

VST/VSTi plugins are not required to have a fancy graphic control panel. There are many "faceless" VST plugins that have many adjustable parameters, but no fancy control panel. When you open such a plugin, the control panel will look like this example. RealBand presents one "generic" slider for each adjustable parameter in the plugin.



Parameter Name: Simply the name of each adjustable parameter.

Value Slider: Move the slider to adjust the parameter value.

Value Indication Text: Displays the value of the slider, as interpreted by the plugin. In the above example, Parameter 0: Bright is interpreted as an ON/OFF switch, but Parameter 1: Volume is interpreted as a value from 0 to 10.

The number of real time effects that you can expect to activate at a time without stressing the system depends on the speed of your computer. Normally you would mostly be using the Aux busses, since the effects used in the Aux busses can be applied to

multiple tracks efficiently. In other words, it isn't very taxing on the CPU to apply an Aux effect to multiple tracks. For example, let's say you were to select a reverb in the Aux 1 section of the mixer, and you adjust the Aux1 send knobs for 5 tracks so that they were all using Aux 1 for reverb. In this case, there would only be one instance of this reverb plugin active in RealBand, regardless of the number of tracks (5) that were utilizing the Aux1 bus. What's nice about this is that you can apply completely different amounts of the same effect to different tracks, so some tracks can be very "wet" with lots of reverb, while others can be relatively "dry" with very little reverb.

If you use Track Inserts on multiple-tracks, you will use up CPU processing power relatively quickly and your computer may have trouble handling this depending on the speed of your CPU. The reason for this is that the Track Inserts each involve the usage of a unique instance of each effect, since each Track Insert is a unique signal path for each track.

Note: The more effects you chain together within each Aux bus, Track Insert, or Output Insert, the more CPU power will be required. For example, an Aux bus with just an EQ will require a lot less CPU power than an Aux bus with chain of 4 effects such as (Compressor – EQ – Chorus – Reverb).

Reset Effects



The **[Reset Realtime Effects]** button is found in the **Audio Preferences** dialog. It removes all real time effects from your project so you can remix your project from scratch.

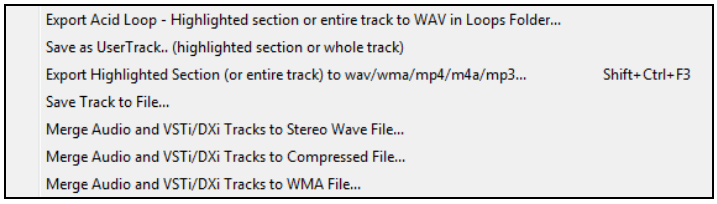
Rendering MIDI Tracks to Audio

The *Render* menu on the main menu bar has commands to automatically render entire sequences to audio files, or to export selected tracks to WAV files.

Rendering MIDI to audio is virtually automatic when using the DXi/VSTi synthesizer support in RealBand. Just go to the *Render* menu and choose *Merge Audio and DXi Tracks to Stereo Wave File*, or to a WMA file, or to any compressed format (such as .MP3) that is supported by your computer.

Note: If no audio tracks are present the MIDI tracks will still be rendered to audio using the DXi synthesizer. This feature requires that you have a DXi software synth assigned to the MIDI track(s) you are rendering.

All levels and effects settings will be rendered exactly as they are in the **Tracks** and/or **Mixer** windows.



Export Acid Loop - Highlighted section or entire track to WAV in Loops Folder

This command will render the highlighted section of the current track or the whole track as an ACID Loop and save it to the bb\RealTracks\Loops folder.

Save as UserTrack (highlighted section or whole track)

This command will render the highlighted section of the current track or the whole track as a WAV file and save it to the bb\RealTracks\UserTracks folder.

Export Highlighted Section (or entire track) to wav/wma/mp4/m4a/mp3

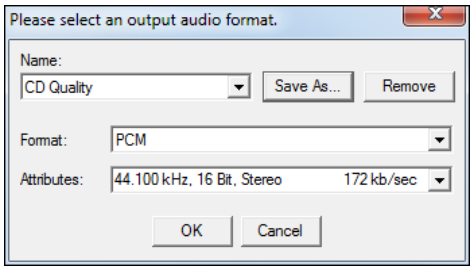
This command will export the highlighted section of the current track to a wave file –as long as the track contains audio data. Drag a section of the track while holding down the left mouse button to select a highlighted section. Use **Ctrl+A** to select the whole track, or open the right-click menu and choose *Select Whole Track*.

Merge Audio and VSTi/DXi Tracks to Stereo Wave File

This is an export command that will merge all the audio tracks to a stereo wave file while simultaneously rendering and merging the MIDI tracks to audio if you have a DXi or VSTi software synth. When played in a wave file player the file will sound the same as if the audio tracks of the song were being played by RealBand. The volume, mute, pan, etc. settings of the track will affect the sound of the merged stereo wave file.

Merge Audio and VSTi/DXi Tracks to Compressed File

When you export audio to alternate file formats a standard Windows **Audio Format** dialog appears.



Use the **Format** popup menu to select the ACM codec you wish to use, and then select the exact specifications of the file from the choices available in the **Attributes** popup menu.

If you frequently use a particular combination you can click on **[Save As]** to name the setting in the **Name** combo box and save it for future use.

When you press OK, RealBand will export the song to the format you have selected using the ACM codec.

Note: Most conversions work fine, but not all codecs can save in every format listed. RealBand does intermediate conversions when necessary (to try to get the job done), but sometimes a codec will report "Conversion not Possible." This error is caused by a limitation of the codec rather than RealBand.

Merge Audio and VSTi/DXi Tracks to WMA File

This command works the same as the *Render* | *Merge Audio and DXi Tracks to Stereo Wave File* command except that this feature will compress the file using the Microsoft Streaming Media® Compression Technology™. When you execute this command the program first generates a temporary stereo PCM file (Raw Wave). A dialog will then pop-up that will let you save the resulting stereo PCM wave file to a .WMA file (Windows Media Audio).

Auto Convert Individual MIDI Track to WAV File

Invoke this command by right-clicking on the track in the **Tracks** window and easily convert any MIDI track to a .WAV file. RealBand will automatically render using a DXi or VSTi synth.



Auto Convert Individual MIDI Track to Audio Track

It is easy to convert any MIDI track to an audio track. RealBand will automatically render using a DXi or VSTi synth. This command is accessible by right-clicking on the track in the **Tracks** window.



Manual Rendering of MIDI to Audio

MIDI tracks can easily be rendered (recorded) to audio using your system's sound card and its onboard MIDI synthesizer or by recording the audio output from an external MIDI device.

To render MIDI tracks to audio with the internal system sound device:

1. Load the source MIDI file into RealBand.
2. In the Tracks window select a blank track and set the track type to stereo audio.
3. In *Options* | *Preferences* | *MIDI Devices* verify that the internal MIDI synthesizer is selected. This could be the Microsoft GS Wavetable SW Synthesizer, any model of Sound Blaster, or another onboard sound device.
4. Click on the VU Meters button on the Tool Bar.
5. In the VU Meters window click on the Windows mixer button to open the Volume Control (see note following). To see the Recording Control, select *Options* | *Properties* in the Volume Control window.
6. In the Recording Control select the input source by checking the Select checkbox. Different systems and sound cards use different labels; you might be selecting "MIDI" as the input source, or "What You Hear," or "Stereo Mix." If you aren't sure which source to choose, start by eliminating the obvious like CD Player, Microphone, or Line In.
7. Play the MIDI file and monitor the levels on the Input VU meter. Levels can be adjusted in both the Recording Control and the Volume (or Playback) control. The levels can occasionally go into the yellow zone, and a transient peak in the red zone is OK. Consistent readings in the red or lighting up the clip indicator means your levels are set too high.
8. Unless you want to record the metronome, check to be sure it is disabled in *Options* | *Metronome.*
9. Click on the Record Audio button to record the song. The Input VU meters will become active during recording.
10. When done, click the Stop button and choose to "Keep Take" when prompted. A stereo track will have been recorded.

You could then use the menu command *Edit* | *Track* | *Save Track to File…* to save the recorded audio track as a .WAV file.

Note: RealBand attempts to open the Recording Control panel associated with the Windows mixer. If you get an error message when the Windows Mixer button is pressed you probably have a sound card with its own control panel and mixer. In that case, you need to open the sound card's software separately to adjust the recording properties.

To render MIDI to audio when you're using an external synthesizer or sound module you connect its audio output to the Line In of your sound card and select Line In as your input source in the Windows Recording Control.

Rendering when you're using an external synthesizer:

1. Load the source MIDI file into RealBand.

2. In the Tracks window select a blank track and set the track type to stereo audio.
3. In *Options* | *Preferences* | *MIDI Devices* verify that the external MIDI driver is selected. It could be named MPU-401, MIDI Out Port or another name with the word "out" such as SB Live MIDI Out, or MIDI IO (input/output).
4. Click on the VU Meters button on the Tool Bar.
5. In the VU Meters window click on the Windows mixer button to open the Volume Control. To see the Recording Control select *Options* | *Properties* in the Volume Control window.
6. In the Recording Control select "Line In" as the input source by checking the Select checkbox. Make sure that the audio output of your MIDI synthesizer or sound module is connected to your computer's Line In jack.
7. Play the MIDI file and monitor the levels on the Input VU meter. Levels can be adjusted in both the Recording Control and the Volume (or Playback) Control, the levels can occasionally go into the yellow zone, and a transient peak in the red zone is OK. Consistent readings in the red or lighting up the clip indicator means that your levels are set too high.
8. Unless you want to record the metronome, check to be sure it is disabled in *Options* | *Preferences* | *Metronome.*
9. Click on the Record Audio button to record the song. The Input VU meters will become active during recording.
10. When done, click the Stop button and choose to "Keep Take" when prompted. A stereo track will have been recorded.

You could then use the menu command *Edit* | *Track* | *Save Track to File…* to save the recorded audio track as a .WAV file.

Note: While recording (rendering) the MIDI tracks you can perform real time mixer moves, such as fading volume levels up or down, which will be recorded to the audio track. These changes cannot be undone, but the tracks could be re-rendered if necessary.

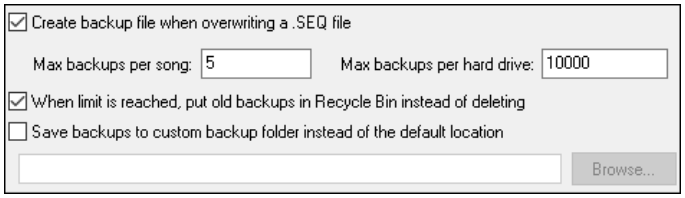
Saving Audio Files

RealBand files are saved in the .SEQ (sequence) file format, which can include both audio and MIDI tracks in the same file. So you could import a Band-in-a-Box MIDI file into RealBand and then record live parts along with the Band-in-a-Box accompaniment.

Auto-Backup of .SEQ Files

When you save a file, RealBand now saves a backup of the file in a c:\RealBand\RBBackup folder. This doesn't add any time to the file-save command, and the number of backups is configurable. So the next time that you mistakenly overwrite a file when saving, go the backup folder to look for a saved previous copy.

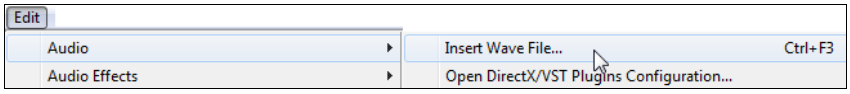
Backup settings are found under the **File** tab in the **Preferences** dialog.



When the Create backup file when overwriting a .SEQ file setting is enabled, RealBand will always create a backup file (BKS file) when a .SEQ file is overwritten. For songs saved into the same hard drive where RealBand is installed, the backups are placed into an RBBackup subfolder of the RealBand folder. For songs that are saved to a different hard drive, the backups are placed in an RBBackup folder which is off of the root (e.g., D:\RBBackup). The max backups per song setting determines the maximum number of backups to be kept for each song. If this limit is reached, then RealBand will delete the oldest backup of the song you are overwriting and create a newer backup. The "Max backups per hard drive:" setting is the maximum total backups allowed per hard drive. If this limit is reached, then RealBand will delete the oldest backup file. There is also on option for moving the older backups into the Recycle Bin instead of deleting them when either of the two limits is reached.

Wave Files

Insert Wave File: This command offers to import a wave file into the "current track" of your project. These audio file formats can be loaded from the *Edit* | *Audio* | *Insert Wave File* menu command.



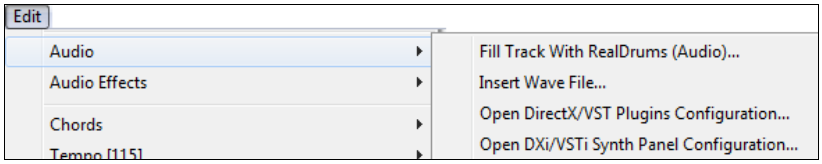
- **WAV**: Windows wave files, native digital audio files for the Microsoft Windows platform.
- **MP3**: compressed audio files, popular on the Internet. Requires codec to be present on system.
- **WMA**: Windows Media Audio, a compressed audio format developed by Microsoft.
- **WMV**: Windows Media Video is a compressed video format developed by Microsoft. RealBand will load the audio from a WMV.
- **CDA**: CD Audio is the file extension used by Windows to make CD audio tracks available for loading into programs like RealBand. Just put an audio CD into your CD-ROM, and then open a .CDA file from that drive (usually drive D).

Note: This feature may not work unless running Windows XP or higher. CDA files may not open in Windows Vista.

This command will also import MultiTrack .WAV files by offering a choice of merging them to mono or placing additional tracks of the wave file onto separate tracks. For example, if Track 1 is the current track and Track 2 is empty (and you import a Stereo Wave file), RealBand will place the left channel on track 1. The right channel will be imported to Track 2 on the next available track, which, in this case, is Track 2 since this track is empty.

A dialog will pop up which lets you select the time location to place the wave file(s). By default, this is the current time (**Now:**) of a song.

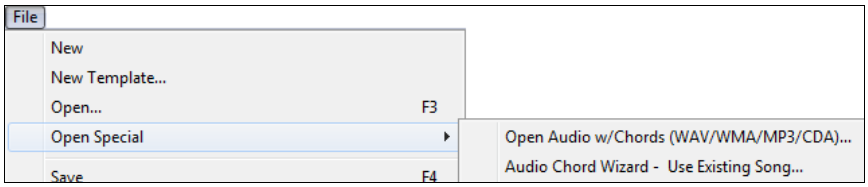
DirectX/VST Configuration



Open DirectX/VST Plugins Configuration: Open the DirectX/VST window to select and edit effects plugins.

Open DXi/VSTi Synth Panel Configuration: Opens the DirectX/VST window with the control panel for the current synth.

Audio Chord Wizard



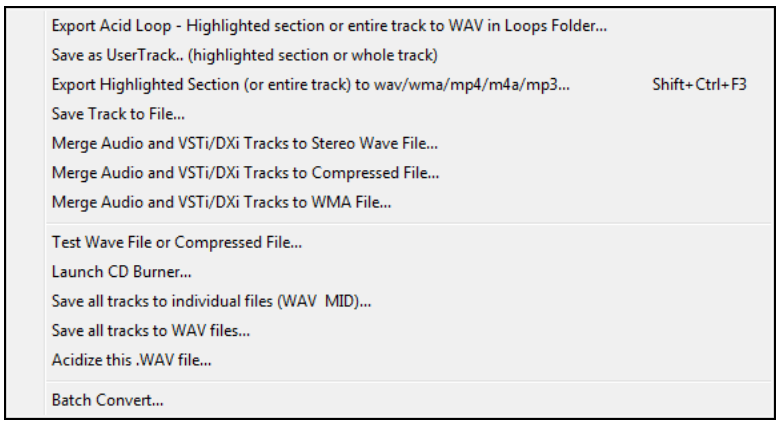
Open Audio file (WAV/WMA/MP3/CDA) : Select an audio file to load into the Audio Chord Wizard.

Audio Chord Wizard - Use Existing Song: Load the currently loaded song into the Audio Chord Wizard.

Save Wave File

To make a .WAV file, and even burn a CD of the song, you can render the MIDI tracks to audio and export the whole song to a wave file.

RealBand offers a number of options to save or export audio files in different formats. These options are found in the *Render* menu.



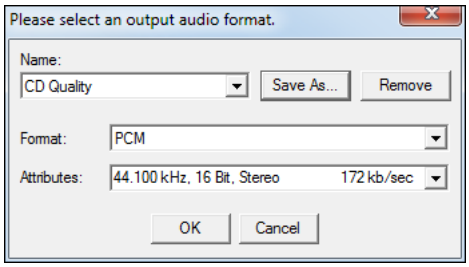
Export Acid Loop - Highlighted section or entire track to WAV in Loops Folder: This command will render the highlighted section of the current track or the whole track as an ACID Loop and save it to the bb\RealTracks\Loops folder.

Save as UserTrack (highlighted section or whole track): This command will render the highlighted section of the current track or the whole track as a WAV file and save it to the *bb\RealTracks\UserTracks* folder.

Export Highlighted Section (or entire track) to wav/wma/mp4/m4a/mp3: This command will export the highlighted section of the current track to a wave file –as long as the track contains audio data. Drag a section of the track while holding down the left mouse button to select a highlighted section. Use **Ctrl+A** to select the whole track, or open the right-click menu and choose *Select Whole Track.*

Merge Audio and VSTi/DXi Tracks to Stereo Wave File: This is an export command that will merge all the audio tracks to a stereo wave file while simultaneously rendering and merging the MIDI tracks to audio if you have a DXi or VSTi software synth. When played in a wave file player the file will sound the same as if the audio tracks of the song were being played by RealBand. The volume, mute, pan, etc. settings of the track will affect the sound of the merged stereo wave file.

Merge Audio and VSTi/DXi Tracks to Compressed File: When you export audio to alternate file formats a standard Windows **Audio Format** dialog appears.



Use the **Format** popup menu to select the ACM codec you wish to use, and then select the exact specifications of the file from the choices available in the **Attributes** popup menu.

If you frequently use a particular combination, you can save a setting in the **Name** combo box.

When you press OK, RealBand will export the song to the format you have selected using the ACM codec.

Note: Most conversions work fine, but not all codecs can save in every format listed. RealBand does intermediate conversions when necessary (to try to get the job done), but sometimes a codec will report "Conversion not Possible." This error is caused by a limitation of the codec rather than RealBand.

Merge Audio and VSTi/DXi Tracks to WMA File: This command works the same as the *Render | Merge Audio and DXi Tracks to Stereo Wave File* command except that this feature will compress the file using the Microsoft Streaming Media® Compression Technology™. When you execute this command, the program first generates a temporary stereo PCM file (Raw Wave). A dialog will then pop-up that will let you save the resulting stereo PCM wave file to a .WMA file (Windows Media Audio).

Test Wave File or Compressed File: This command launches your default media player so you can test your file for compatibility and playability with a standard Windows media player.

Launch CD Burner: This command launches the "MiniBurn" CD Burner program. If the current song has audio data, this feature will first offer to merge audio tracks in the current song to a WAV file. If you say OK to this option, the CD Burner will automatically add the .WAV file to a list of files to be burned onto a CD (burn list).

If necessary, RealBand will convert your file to 16-bit, 44.1 kHz stereo before burning it to an audio CD.

Save all tracks to individual files (WAV MID): This command will save all tracks to either WAV or MID files depending on the track type.

Save all tracks to WAV files: This command will save all tracks to WAV files. MIDI tracks will be rendered using DXi.

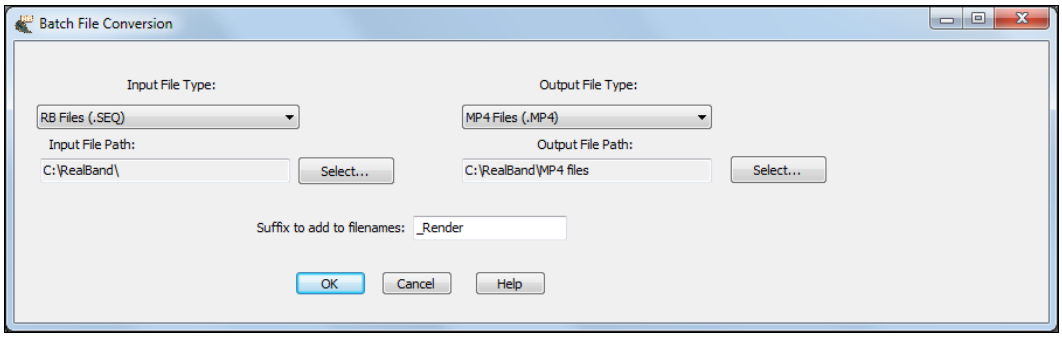
Acidize this .WAV file: This command will acidize the selected .WAV file. You can write the Acid information such as tempo, root note, and the tempo signature.

Batch Convert: The command will convert a group of files in a folder over to another file type (.SEQ, .MID, .MP3, .MP4, .M4A, .WAV, .MGU, .SGU).



This feature is also available from the [Batch] button.

So, let's say you want to convert your PowerTracks Pro Audio songs to MP4 files. It's as easy as entering the location and file type (or all files) for the files that you want to convert and then choosing the output file type and location. There is also the option to add a suffix to the file names to identify the rendered files.



Input File Type: The Input File Type combo lists the most common MIDI and audio file formats plus RealBand and Band-in-a-Box file types. There is also the option to select "All Supported File Types" to convert a folder with more than one type of file.

Input File Path: This is the location where the files to be converted are found.

Click on the **[Select]** button to browse for a folder.

Chapter 8: RealTracks and RealDrums

Overview

The audio production options available in RealBand include RealTracks, RealDrums, and audio tracks plus powerful audio effects and editing features.

RealTracks are audio tracks generated automatically following the chord changes you enter in the Chords window. They use the exciting Real Instruments, live recordings of top session musicians. This is the same feature found in Band-in-a-Box.

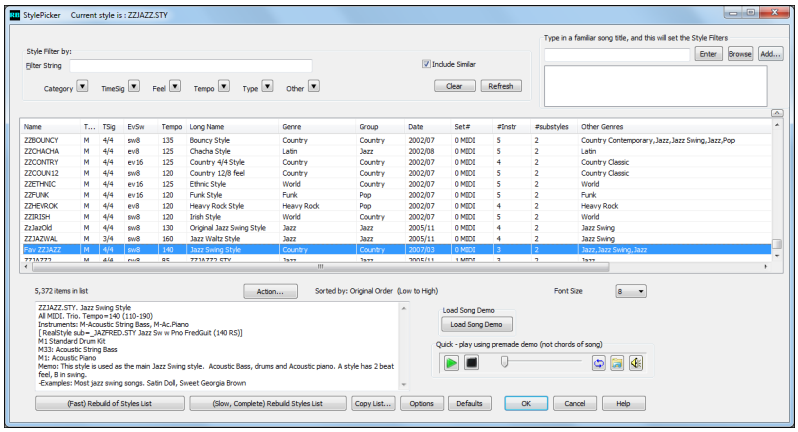
RealDrums, also found in Band-in-a-Box, are similar to RealTracks, except that they are generated from live recordings of top studio drummers.

You don't need to have Band-in-a-Box to generate RealTracks and RealDrums, but if you have a copy you can use all of your RealTracks and RealDrums from Band-in-a-Box in RealBand.

Audio tracks are for your own live recordings - such as a person singing or playing guitar – or for imported audio files in the many formats supported by RealBand.

RealStyles - Styles with RealTracks

RealStyles use only RealTracks and RealDrums. Every track generated by these styles is a RealTrack, playing audio from live recording sessions.



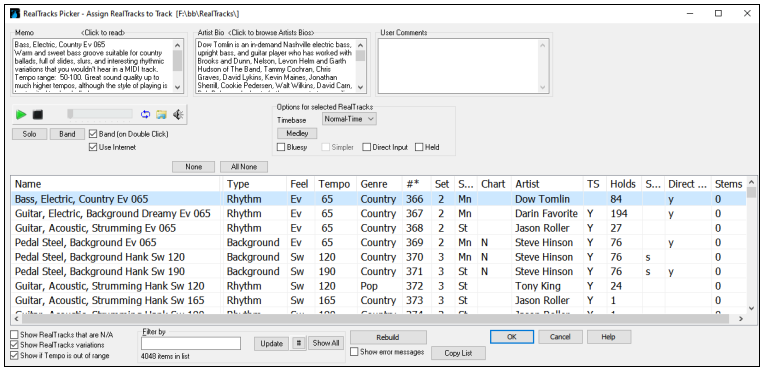
Generating RealTracks

This feature lets you generate realistic instrument tracks using RealTracks instruments. It is selected from the right-click menu in the Tracks window.

You can generate complete tracks or just selected sections of tracks, and you can use more than one RealTracks instrument in a single track.

Select an open track for your RealTracks, then right-click and choose either *Select and Generate RealTracks* or *Generate RealTracks (Favorites)*.

Select and Generate RealTracks: This command opens the **RealTracks Picker** dialog. It shows a list of all available RealTracks, including the RealTracks you have installed in Band-in-a-Box if you have specified your bb\RealTracks folder as the path for RealTracks in the Song Generation preferences.

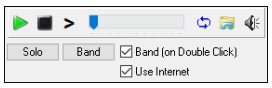


When you click on a RealTrack in the list a **Memo** appears with information about the selected instrument.

The RealTracks have been recorded by top studio musicians. The **Artist Bio** displays the names and bios for the RealTracks artist. Double click here to view the full memo.

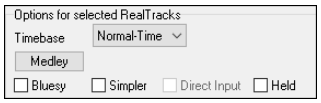
You can enter your own comments about any style in the **User Comments** field. The comments are saved in RTUserMemos.txt.

You can audition an audio demo of the currently selected RealTracks.



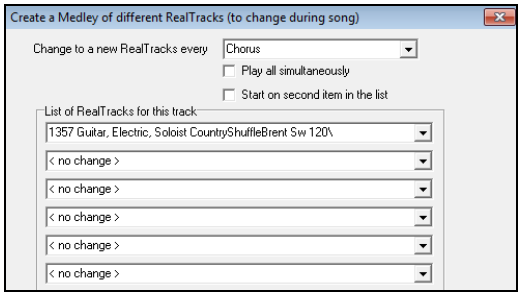
The **[Solo]** button plays the solo version of an audio demo, while the **[Band]** button plays the band version. If the **Band (on Double Click)** option is checked, then when you double click on a RealTracks in the list, an audio demo will play with the RealTracks AND a band backup, followed by the solo version. If this option is disabled, the solo version plays first. The **Use Internet** option allows an audio demo to play from pgmusic.com using the internet if the audition file isn't found on disk.

With the **Timebase** option, you can play any RealTracks at normal, half-time, or double time.



Half time is used for fast tempo songs when a much slower tempo RealTrack has been chosen. Double time is used for slow tempo songs (e.g., ballads) when a much faster tempo RealTrack is chosen. This allows you, for example, in a ballad at a tempo of 70, to add a RealTracks Sax solo with a tempo of 140, and play it as a double time, which will match the ballad tempo of 70. All of your existing RealTracks can be used at three different tempos (normal, half-time, double time).

The **[Medley]** button lets you assign a series of RealTracks to play on the track.



Change to a new RealTracks every: There are lots of options to control how often the RealTracks in the medley will change.

Click on the ▼ arrow to choose from the list. Note that <Silence> is an option. You can use it when you want to play a section yourself. There are hundreds of RealTracks to choose from, so type a string like "guitar country" to filter the list.

Choose the **Bluesy** setting to have the current RealTracks play in a bluesy style where major triads are treated like 7th chords.

When the **Simpler** setting is selected, RealBand plays a simpler arrangement if the RealTracks instrument has an "s" in the "Simpler" column.

When the **Direct Input** setting is selected, RealBand uses a clean guitar signal if there is a "y" in the Direct Input column. You add your own effects.

The **[None]** button sets the current instrument to have no override of RealTracks for the song. The style may still have a RealTrack in it for the instrument.

The **[Clear All]** button sets all RealTracks for the song to "None." It will also optionally disable RealTracks present in the style for the song.

Name	Instrument	Type	Feel	Tempo	Genre	#*	N/A	Set	Stereo	Chart	Artist	TS	Holds	Simpler Available	Direct Input Available	Stems

To help make your selection you can sort the list by clicking on any of the column headings. As well as Name, Instrument, Type (Rhythm or Soloist), Feel (Even or Swing), Tempo, Genre, and Number there are more columns with additional information about each RealTrack instrument.

The tempo shown is the "base" (or typical) tempo for the RealTracks instrument as it is played, but RealTracks have a tempo stretching capability that enables their application over a wide range of tempos. If saving a song with RealTracks and the audio base tempo is different than the song tempo, a warning message will show, asking you to confirm that you want to save it like this.

- The "N/A" column shows "N/A" for RealTracks that you have not installed yet or haven't purchased, if "Show RealTracks that are N/A" is checked.
- "Set" is the number of the RealTracks set that includes the instrument.
- The "Stereo" column shows whether the instrument playback is stereo or mono.
- Instruments with an "N" or "Gt" in the "Chart" column will display the RealTrack in notation.
- The "Artist" column has the name of the musician playing on the RealTrack instrument. See the "Artist Bio" box for information about the player.
- The letter "Y" in the "TS" column means that Tempo Swapping is supported for the instrument. If you have similar RealTracks available at different tempos, Band-in-a-Box automatically chooses the best one to use.
- "Holds" indicates whether that RealTrack supports shots, holds, and pushes. If there is a number there (other than a blank field), then they are all supported.
- "Simpler Available" will have a letter "s" in the column if the RealTracks instrument has simpler options available. These are parts with less busy, less embellished playing for generating simpler arrangements.
- "Direct Input Available" has a letter "y" if the instrument offers the option of clean recordings without effects. This allows you to start with a clean track and add your own effects.

- The “Stems” column shows the number of individual instruments/voices available. When you select a RealTrack that has stems, you will see what they are just below the list. Using the checkboxes, you can load all stems, the selected stems, or the mix of all stems for your song.

Show RealTracks that are N/A: This will show RealTracks that you do not have installed yet, or may not have purchased. The missing RealTracks will be marked in the N/A column.

Show RealTracks Variations: Variations of RealTracks use the same performances but with different settings.

Show if Tempo is out of Range: This will show RealTracks that wouldn’t work well at the current tempo. The acceptable range is -15% and +40% of the source tempo of the RealTracks.

Filter by: The filter is another feature that makes it easier to select a RealTracks instrument. For example, type “Blues” in the edit control box and press the **[Update]** button to see a list of Blues instruments available, including instruments from other genres that are suitable. The **[Show All]** button clears any filter and shows all available RealTracks.

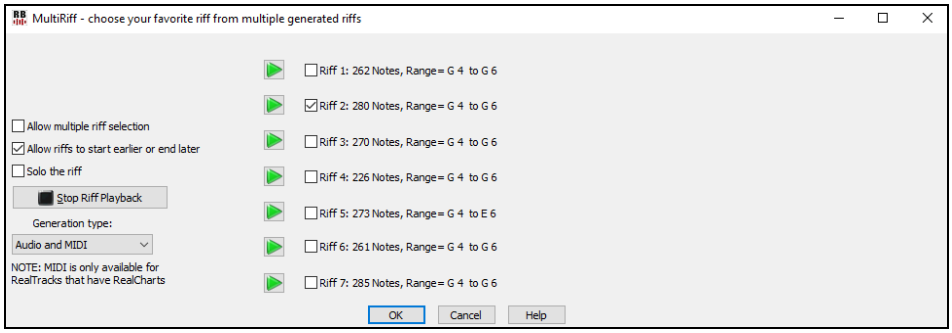
Click on **[OK]** to generate the RealTrack and close the dialog.

Click on **[Cancel]** to exit the dialog without generating a RealTrack.

The **[Rebuild and Fix]** button rebuilds the list of RealTracks and reports errors.

Show Error messages: This will display installation errors of RealTracks when you open the dialog. Press the **[Rebuild and Fix]** button for more information, or after you have installed new RealTracks.

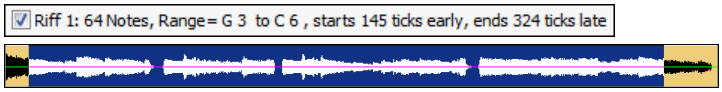
MultiRiff: With “Same but Different” MultiRiff selection you can audition 7 different RealTracks performances, to choose the one that works the best with your song, with a single click! This works for the entire track, or the highlighted region of a track. Choose one riff or multiple riffs to add to the song.



For example, if you want a pedal steel riff for 4 bars, highlight that region, and listen to the 7 selections, and choose the riff that works best. Or if you want 2 “different” acoustic guitar strumming parts, choose 2 from the 7 different generated parts, they will be written as to different tracks, and contain different strumming. We call this “Same but different” since the strumming patterns are on the same chords, but are different performances.

If you are generating riffs for a highlighted region of a track, not for the complete track, you can select the “Allow riffs to start earlier or end later” checkbox. This allows the program to insert the whole riff, even in the case of the riff starting earlier or ending later than the highlighted area.

For example, you may have selected bar 2 through bar 4. If that checkbox is enabled, and the riff generated by the program happens to start early or end late (be more than exactly 3 bars long), then, when the OK button is pressed, the program is allowed to insert the entire riff into the track, even if it means that what gets inserted actually starts earlier than bar 2 or actually ends later than the end of bar 4. The riff description in the **MultiRiff** dialog reports how many ticks earlier and later the riff is. This is also visible in the track overview.



The Riff data itself is generated in such a way so that the program always generates the nearest “X” bars worth of riff data. For example, if the user highlighted beat two through beat three of bar 6, then the riff is really going to be a bar long. However, if "Allow riffs to start earlier or end later" checkbox is unchecked, then the user will get what the user selected rather than a full bar. If that checkbox is unchecked, the user will get at least a full bar of data inserted.

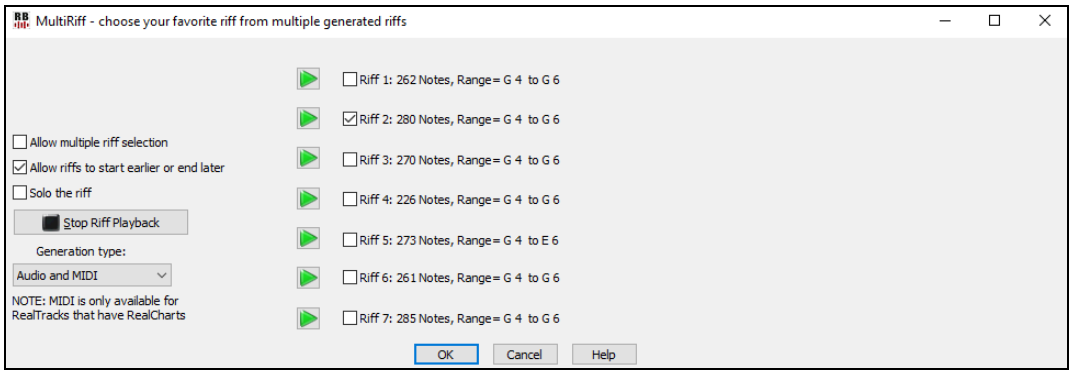
If the start of the highlighted area, or end of the highlighted area, is not on a bar boundary, then the Riff description is expected say that the riff starts early (or ends late). That is not a bug, since it does start early or end late relative to the area that the user highlighted. For example, if the user highlighted beat 2 through beat 3 of a bar, then the program may say that the riff starts 120 ticks early and ends 120 ticks late since the program really generates at least a full bar in that case.

Note: If a riff that was generated happens to END earlier than the end of a bar, or END earlier than the end of the highlighted region, this will not be reported in the riff description field. That field will only tell you if the riff starts early or ends late.

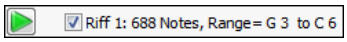
Generating MultiRiffs

To generate MultiRiffs you right-click with the mouse on the track where you want a new RealTracks instrument track generated. In the menu that opens, select *MultiRiff (Choose)*.

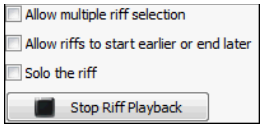
The RealTracks Picker will open and you can choose the instrument you want for the track. When you OK your choice there will be a bit of a delay and the **MultiRiff** dialog will open.



You will see the seven different riffs that have been generated listed along with a riff description giving the number and range of notes in each one. Click on the adjacent **[►]** play arrow to hear each riff playing along with your song arrangement.



Hit the **[Stop Riff Playback]** button if you've heard enough and want to move on to the next riff.



There is also an option to play multiple riffs. You can have several riffs – all seven if you want – generated and played on separate tracks. Try this with some of the Dixieland RealTracks soloists! This is also the easy way to layer backing tracks.

There is also an option to solo each riff to hear it unaccompanied.

When your riffs play, they are loaded into the track you have selected (or multiple tracks for multiple riffs playback) and you will see the waveform(s) in the Tracks window overview. Of course this means that you have all of RealBand's editing features available to you. You could even drag and drop your favorite sections of each separate MultiRiff onto a single track to compile them into one edited track.

You'll see that your track name has been updated with the name of the RealTracks instrument you chose for your riffs.



To change to a different instrument, right-click on the track and select *MultiRiff... (Choose)* in the menu.

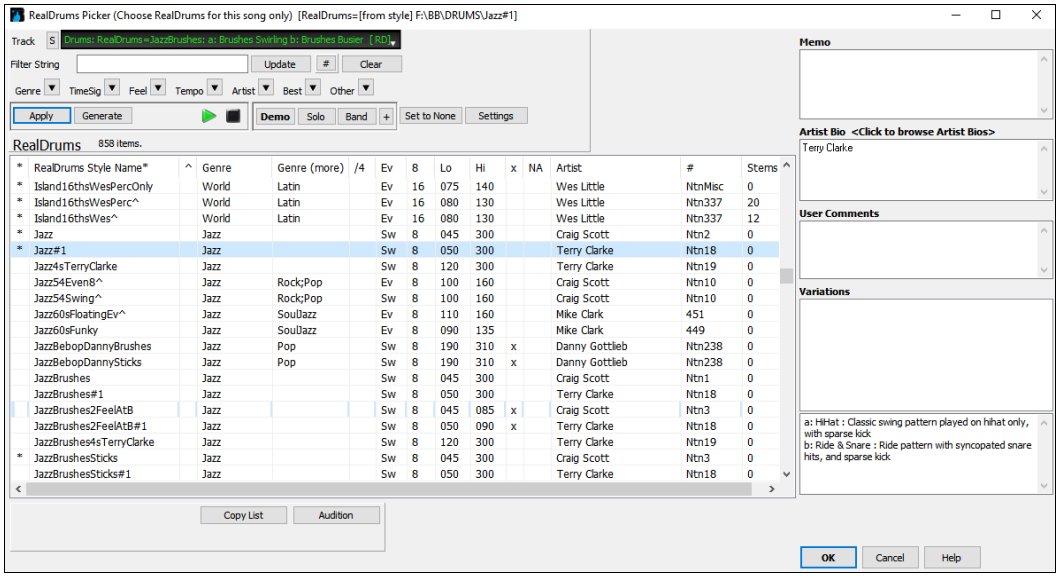
This will open the **RealTracks Picker** dialog (RealTracks Picker), where you can select different instruments to play the riffs.

RealBand can **automatically generate RealCharts** after you have chosen multiple riffs, if the *Also Generate RealCharts* was enabled in the track's right-click menu.

Generating RealDrums

This feature lets you generate realistic drum tracks using RealDrums. It is selected from the right-click menu in the Tracks window. You can generate a full track or any part of a track, and you can use different RealDrums for different sections of a track.

Select an open track for your RealDrums, then right-click and choose either *Select and Generate RealDrums* or *Generate RealDrums (Favorites)*.

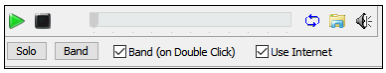


A filter is available. Type a filter text (e.g., bossa) in the **Filter by** field, and press **[Update]**, You will then see the list filtered to show only RealDrums that have the word "bossa" somewhere in the title, memo, etc. If you separate terms with a space, each term is searched for separately. So, a search for "Bossa Rock Ev 120," will find any Bossa Rock styles with an Even feel that would work with a tempo of close to 120. Adding a search term that has a number will filter for RealDrums that match the tempo or within a compatible range. Pressing the **[#]** button allows you to quickly filter the list by many elements including feel, time signature, RealDrums with notation, artists, etc. The **[Show All]** button will cancel the filter and show all RealDrums.

You can double-click on a RealDrums or on the Variation name of the RealDrums to audition each variation of the RealDrums. For example, if you've found CountryWaltz^, you can now hear demos of the variations (CountryWaltz^1-HiHat,Ride, CountryWaltz^2-Brushes etc.).

You can double click on a RealDrums, or on the Variation name of the RealDrums, to audition each variation of the RealDrums. For example, if you've found CountryWaltz^, you can now hear demos of the variations (CountryWaltz^1-HiHat,Ride, CountryWaltz^2-Brushes etc.).

Each demo has a "band" version with all instruments, and a "solo" version with drums only.



You can choose which of band or solo plays first if you double click on the list, by the "Band (on DblClick)" checkbox. Otherwise, press the **[Band]** or the **[Solo]** button. The demos play 4 bars of "a" substyle, and then 4 bars of "b" substyle, using the current RealDrums (left hand panel) and the variation (right hand panel).

The list can be sorted by any of the column headings.

- * Click on this column to enter an asterisk, indicating that this is a favorite style.
- Click on the name of the RealDrums that you want to select for the song. Names ending in a caret ^ have variations available.
- ^ Clicking in the caret column will show the variations for the selected RealDrums (if available).
- Genre is the type of music that the RealDrums comes from, such as Jazz, Rock, or Country.
- Genre (more) suggests additional types of music that the RealDrums might work for.
- /4 indicates the time signature, which is 4/4 by default. If the column is empty, the time signature is 4/4; if there is a 3 in this column, the time signature is 3/4.
- Ev* indicates the feel of the RealDrum, either Even or Swing.
- The listing in the 8 column indicates whether the meter is based on eighth notes (8) or sixteenth notes (16).
- Lo is the slowest tempo for which the RealDrum is suited.
- Hi is the fastest tempo recommended for the RealDrum.
- X indicates a style with a tempo that is out of range for the song.
- N/A are styles not found in the *Drums* folder.
- Artist is the name of the drummer who recorded the RealDrums.
- # is the number of the RealDrums set for the style. This column also tells you whether a video or notation (RealChart) is available for the RealDrums.
- The Stems column shows the number of microphones used for stems during the actual recording sessions.

Drum Stems: When you select a RealDrums that has drum stems, you will see what they are just below the list. Using the checkboxes, you can load all stems, the selected stems, or the mix of all stems for your song.

Show if Tempo is out of Range: This will show styles that wouldn't work well at the current song tempo. The acceptable range is shown in the **Lo** | **Hi** columns for the list of styles.

Show if Feel does not match: This will show a song where the drums are in Even feel and the style is Swing, or vice versa.

Show RealDrums that are not Favorites: You can assign a style as one of your favorites by clicking in the first column on the left, which is headed with an asterisk *. This will place an asterisk to the left of the style name. Then you can sort by favorites or use this option to only see favorites.

Show RealDrums that are N/A: These are styles not found in the \drums folder, likely because they are add-on styles not purchased yet. If you think that styles that show as N/A should be present press the [Rebuild] button and confirm the path for the drums folder in the Song Generation preferences.

Simple Drums for this song (no fills): If this is enabled, RealDrums will play a simpler arrangement without fills.

For this song only, force MIDI drums: Set this if you want to use MIDI drums and want to override a RealDrums that is embedded in the style.

The **[None]** button sets the drums to no RealDrums override for the song, and optionally also forces MIDI drums (i.e., no RealDrums for style either).

When a RealDrum is picked in the list a descriptive **Memo** opens.

The **User Comments** field is where you can type in and save your own notes about a RealDrum style.

RealDrums ending in a caret ^ have **Variations** available. These are shown in the list here. For style names with two variations - such as Brushes, Sticks - the first refers to the "a" substyle and the second is the "b" substyle.

The **[RD Demo]** button loads and plays a demo of the chosen RealDrum. A list of demos for the chose style will be displayed.

The **[Song Demo]** button shows BB styles that will use this RealDrum. The song demo for the style will get loaded.

The **[Audition]** button doesn't load the style, but instead uses Media Player to play a demo .WAV file for the style.

Use the **[Rebuild]** button to build the list of RealDrums present in the \drums folder. If you add new drum styles, press this button to update the list.

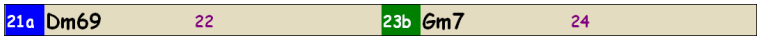
RealDrums Variations, Fills, and Accents

There are "a" and "b" variations for each RealDrum. They are determined by the part markers assigned in the Chords window.



To assign the substyles for your song, click on the Chords button to open the Chords window and insert "a" or "b" part markers.

Click on the desired bar numbers to toggle through the a/b selection or to clear a marker.



Rests, shots, and pushes are supported by the RealDrums generation routines. They are entered in the Chords window.

Rests and shots are set by adding periods to the chord name.

A chord can be specified as a Rest by adding a period after the chord.

e.g., "***C.***" indicates a C chord that is a Rest.

A chord can be specified as a Shot by adding two periods after the chord.

e.g., "***C..***" indicates a C chord that is a Shot.

Pushes are set by entering carets in front of the chord symbol.

^C = 8th push

^^C = 16th push

Note: Rests, shots, and pushes can ONLY be entered in the Chords window.

Chapter 9: Notation and Printing

Notation Window

Overview



The Notation window displays the notes of a MIDI track on a staff and lets you print music on your printer. Open the Notation window with the "eighth-note" button, with the *Window* | *New* | *Notation* menu option, or with the keystrokes **Alt+F2**.

Note: When clicking on the Notation button and the current track is a BLANK audio track, and the song is not playing, then RealBand will ask if it's okay to change the track to a MIDI track (rather than opening an Audio Edit window).

Notation Window Tool Bar





Opens the **Notation Window Options** dialog where user settings and preferences are made.



Launches the Print Options dialog to print music.



Opens the Standard notation mode window.



Opens the Editable notation mode window.



Opens the Staff Roll notation mode window.



Enables Chord Entry mode to type chords in the notation.



Name of the current note or the note that will be entered.



The Clean checkbox put the standard notation into Clean Mode. Clean Mode will clean up the notation in certain situations where there are notes played very close together and are within a certain interval of each other. The clean option makes the notation more readable when there are a lot of grace notes (notes leading up or down to the next note) or glitch notes, which are notes that are short in duration and have a low velocity.



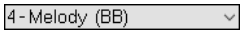
This allows you to view 4/4 notation as 12/8, 6/8, 2/4 or Cut-time 2/2, or view 3/4 as 9.8. If you select an anternate dixplay mode, then it will not change the song's actual signature or affect playback timing.



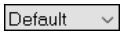
For non-concert instruments, set a value other than zero for the number of semitones to transpose. For example, set -2 or +14 for Bb, +9 or -3 for Eb instruments, and 0 for the concert instruments.



Opens Lyric Edit mode. In the Notation window, lyrics can be entered into a track that already contains the notes of a melody. When you switch into Lyric Edit mode, a gray edit box will appear near the top of the Notation window. The closest note or chord to the current time location will be highlighted.



This lets you select a track to view.



You can select a track type, for notation display purposes.



The Playable Tracks mode allows you to customize the RealTracks/RealDrums performance by adding your own notes..



The Duration Button lets you select the duration of the note. The default duration is Auto. If Auto is the currently selected duration, the duration will be automatically set by the program so the note's duration lasts up to the next note in the measure or to the end of the measure, whichever is closer.



The Rest checkbox lets you insert a hard rest onto the notation window to force a rest to be shown at a particular location. For example, if there is a half note at the beginning of a measure, you can cause it to be displayed as quarter note by inserting a hard-rest on the 2nd beat of the measure. Hard rests are shown in blue. The Rest checkbox only remains checked until you insert a rest.



Switch between a Notation Window and a Lead Sheet Window.



The Loop Screen button will play the music of the current notation screen in a loop.



The Zoom Out button reduces the size of the Notation Window's font.



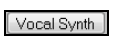
The Zoom In button increases the size of the Notation Window's font.



The Section Text button lets you place a text event at any location on the staff window. When you press this button, you'll see a dialog box with a list of any existing text events.



The Scrub Mode button plays the notes in the song as you drag the mouse horizontally over the notation. This can be helpful for learning difficult parts, or for examining recorded tracks for glitches or wrong notes. Click the scrub mode button and the mouse cursor will change to speaker icon.



This will generate a vocal track using an online third party vocal synthesizer called Sinsy for a MIDI melody track with lyrics.

 This allows you to quickly change the number of bars per line.

 This allows you to display notation with larger font size and note names within note heads. Press the button again to return to the normal size.

There are three Notation window modes, each with its own toolbar button.

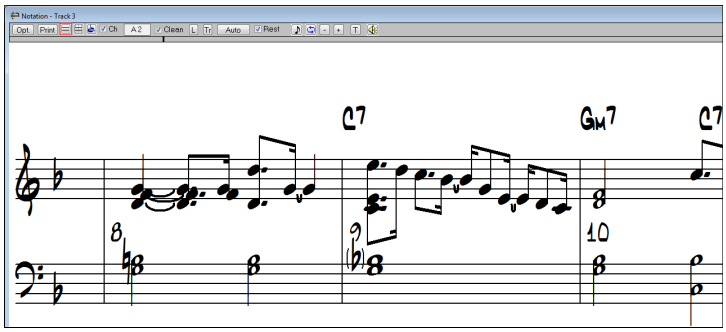
1. **Standard Notation** mode
2. **Editable Notation** mode
3. **Staff Roll Notation** mode

By default, the Notation window is in Standard Notation mode, which displays the notes as regular music with chord symbols and lyrics.

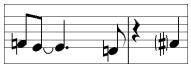
Editable Notation mode also displays standard notation but allows you to edit the notation. You will see standard notation with vertical gray lines that represent possible note locations, either eighth note triplets or sixteenth notes.

The Staff roll mode displays the notes as note heads (no stems) with optional duration and velocity lines. The Staff roll mode also contains gray vertical lines across the staff.

Standard Notation Mode



Standard Notation mode is a convenient way of displaying a track as regular music on a staff with chord symbols and lyrics.



The Notation window will draw **brackets around an accidental (#)** in a situation where the same note in the previous bar was an accidental outside the current key.

This is a courtesy which helps to remind you that the note is now played as expected within the current key.

Entering Chord Symbols

Chords symbols can be entered in the notation for each beat of a song. A beat is equal to the numerator of the current time signature. For example, if the song is 2/4, you could enter up to 2 chord symbols per bar. If a song is 6/8, you could enter up to 6 chords per bar (although you likely won't want to enter that many).

Chords are typed in from the computer keyboard using standard chord symbols like C or Fm7 or Bb7 or Bb13#9/E. Chord entry is enabled when the "Ch" checkbox is checked in the Notation window.

Note: Chords can also be entered by typing them in the **Chords** window.

To start typing in chords in a Notation window:

– Rewind to the beginning of the song.

– Enable chord entry by clicking on the "Ch" checkbox.

– You may move around by cursor arrow Keys, **Enter** key, or mouse pointer click on the time indicator at the top of the Notation window. The time line moves 2 beats at a time in response to the left and right cursor keys.

When you have the time indicator at or close to the beat where you want to enter a chord, you then type the name of the chord. Note that the chord entry works the same as Band-in-a-Box in that the chord you type will go to the first beat in a 2 beat "cell." For example, if the time is 1:02:00 and you type the letter c the C chord will be placed on beat 1. You can enter a chord on beat 2:00:00 with a comma as discussed below.

For example, type c6 to get the C6 chord. Note that you should never have to use the **Shift** key, as RealBand will sort this out for you.

- Use b for a flat, e.g., Bb7.
- Use # or 3 for a sharp, e.g., F#7. You can actually type F37 to get F#7; RealBand will sort out the case, saving you the effort of using **Shift+3** to type the # symbol.
- Use / for slash chords with alternate roots such as C7/E, C7 with E bass.
- Use a comma to enter two chords in a row. For example, we would type Ab9, G9 to enter two chords on consecutive beats.
- You can use **Ctrl+Delete** or the comma key to delete a chord.

The chords are shown in the Notation window above the treble clef:

| C6 AM7 | DM7 Ab9 G9 | C6/E | A7#9 |

In the above example, the | symbol shows roughly where the bar lines would be if these chords were entered in a Notation window. The sequence of keystrokes to enter all the chords in the above line would be:

w c6> am7> dm7> ab9,g9> c6/e> > a739 Enter

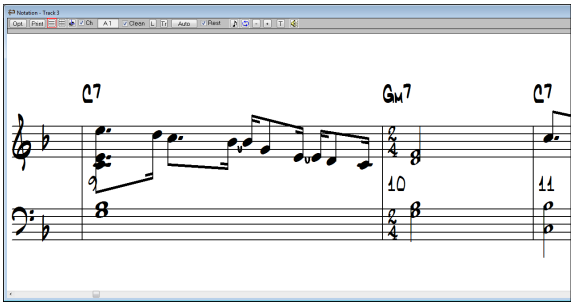
W indicates rewind, the **>** indicates cursor key to the right, and **Enter** indicates pressing the Enter key.

Hint: The fastest way to type in chords is to use your left hand to type in the chords. Your right hand stays on the cursor keys (or mouse) to advance the time indicator to the next bar/beat after you've typed in the chords

Time Signature Display

Time signature changes that occur during the song (1/4 through 4/4) will be displayed in the Notation window, Lead Sheet window, or printout.

Note: Time signature display works in non-editable Notation mode with engraver spacing enabled. Time signatures are not displayed in Staff Roll mode.



Time signature change at bar 10 in Standard notation display.

Entering Lyrics



The **[L]** button in the Notation window puts the notation into a mode in which you can enter lyrics. Lyrics are stored as individual track events, which can be accessed in the Event List window like any other events.

In the Notation window, lyrics can be entered into a track that already contains the notes of a melody. In Lyric Edit mode, a gray edit box will appear near the top of the Notation window. The closest note or chord to the current time location will be highlighted.

Lyrics are entered by typing a word in the edit box and then pressing **Enter**. When **Enter** or **Tab** is pressed, the Notation window will advance to the next note or chord of the melody. You can then continue typing lyrics and pressing **Enter** to advance forward into the melody. **Ctrl+** ← (left cursor arrow) lets you back up to the previous note or chord, and **Ctrl+** → (right cursor arrow) lets you advance to the next chord without saving the contents of the edit control.

Note: When creating .KAR files you enter lyrics in RealBand as usual, and if you save as a .KAR file the lyrics will be converted to the KAR format.

Unlike the .KAR format RealBand lyrics should not be preceded by spaces. Syllables are indicated with dashes, and paragraphs and lines are indicated with backslashes and forward slashes at the end of a line or paragraph.

Multi-Syllable Words: If a word has two or more syllables, you should follow the syllable with a dash. For example, the word "crazy" would be entered as two separate lyric events, **cra-** and **zy**.

Ending a line when lyrics are displayed in Big Lyrics window:



The Line and Para buttons appear when Lyrics mode is selected in the Notation window. These two convenient buttons let you enter line breaks (/) or paragraph breaks (\) when entering lyrics.

To end a line and start a new line, enter a break (line or para) at the end of the last lyric in a line. For example, if a word ends with a backslash, e.g., "town\," then the next lyric after "town" will be displayed on a new line in the Big Lyrics window.

If you plan on saving as a .KAR file, you can use a "Para" backslash to indicate the end of a paragraph, and a "Line" forward slash to indicate the end of a line. In RealBand and in some Karaoke players, both the \ and / characters are treated the same way.

Generating Vocal Synth

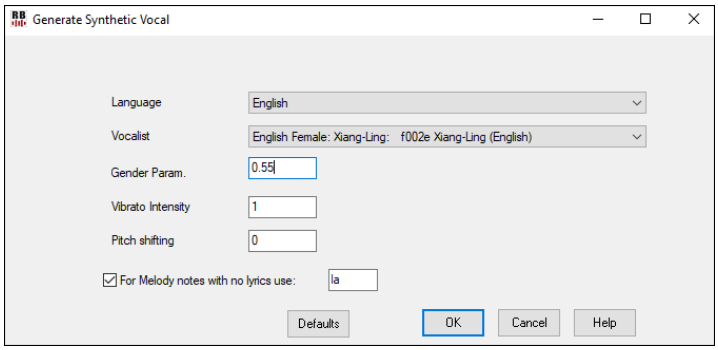
You can generate a vocal track using an online third party vocal synthesizer called Sinsy for a MIDI melody track with lyrics.

To access this feature, you should first pick a song that has lyrics and a MIDI Melody. If no Lyrics are present, you can still generate a vocal synth using the syllable of your choice (la la la etc.).

Once you've loaded in a song, you can launch the Vocal Synth generation, either by:

- Press the **[Vocal Synth]** button in the **Big Lyrics** window and choose either auto or manual.
- Press the **[Vocal Synth]** button in the **Notation** window and choose either auto or manual.
- Or go to the **Notation** window, right-click on the track with lyrics and select either Vocal Synth (Auto" or Manually Generate Vocal Synth Track.

Once you choose the option, you see the dialog.



Normally you would use the AUTO mode, which means that you just press a single button, and wait (about 30 seconds) for the file to be generated.

Language: The choices here are English or Japanese. If you are using non-English words, phonetic spelling is advisable.

Vocalist: Choose singing voice (one English voice, or two Japanese voices).

Gender Parameters: This ranges from -0.8 to +0.8, and defaults to 0.55. Higher numbers are more masculine.

Vibrato Intensity: This controls the amount of vibrato in the voice. Range 0 to 2. Default is 1.

Pitch shifting: If set the pitch will be shifted in semitones. -12 would be down one octave. (Range -24 to +24)

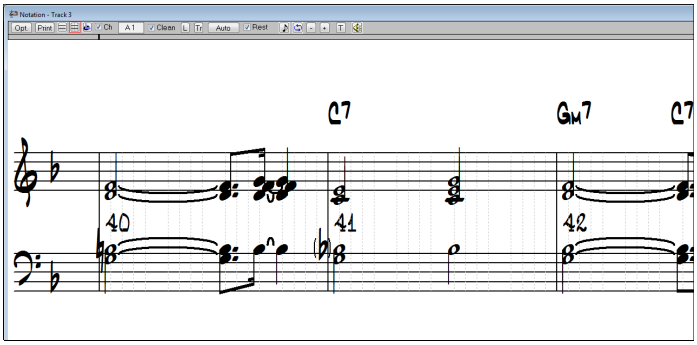
For Melody notes with no lyrics use: If there are no lyrics, but there is a melody, the vocal synth can use the syllable you enter to sing the song. e.g., if you put 'la', then the song will be sung 'la la la la.'

The synthesized vocal will be returned as an audio file and loaded in to a blank track.

Editable Notation Mode

Editable Notation mode is the same as Standard Notation mode, but notes can be inserted by clicking on the staff with the left mouse button, moved by dragging with the left mouse button, or edited by clicking on a note head with the right mouse button.

Broken vertical gray lines across the staff show the position for each note subdivision in either eighth note triplets or sixteenth notes.



Editable Notation window in 16th note (even) resolution.

Moving Notes

Notes can be moved via drag and drop. To move a note, move the mouse cursor over an existing note and then click and hold the left mouse button. The mouse cursor will change to a different shape.

While keeping the mouse button pressed, move the mouse cursor over to the location you wish to drop the note and then let go of the mouse button. The note will be moved to the place you dropped it. Certain areas of the screen are not valid locations to drop a note. The mouse cursor will change to a circle with line through it to indicate an invalid location. If you try to drop a note in an invalid location, nothing will happen.

When you click on a note with the left mouse button, and drag the mouse without releasing the left mouse button, you will hear the note being played as you move it up and down the screen. The note's pitch will be increased or decreased chromatically as you move it up/down the screen.

Entering Notes

Notes can be inserted simply by clicking on the staff in an appropriate location. You will see the name and octave of the current note location in a box at the top of the window. This helps if you are inserting a note above or below the grand staff. You can also insert notes via the Piano or Guitar window as discussed later in this section.

When inserting a note, holding down the mouse button and then pressing the **Shift** key (**click+Shift**) will make the note 1 half-step sharper than the position that you click on. Holding down the **Ctrl** key and then clicking (**Ctrl+click**) will make the note 1 half-step flatter, and holding down the **Alt** key will make the note a natural. Hold the key down until after you release the mouse button.

You can also insert notes by clicking on the Piano or the Guitar window. If you click on the Piano or Guitar window, notes will be inserted into any open Notation window at the current location in the Notation window. For example, if you click on middle C of the Piano keyboard, a middle C will be inserted into the Notation window.

There is a 1-peg hot key in the Notation window to move current time forward or backward by 1 peg (normally a 16th note). **Alt+left arrow** moves the current time backward by 1 peg. **Alt+right arrow** moves it forward by 1 peg. This makes it easier if you are using the on-screen piano for entering notes into the Notation window.

Note: By default, you must hold the Ctrl key before clicking on the Guitar fretboard to insert a note into a Notation window. If the "Send Notes To Notation Windows" option in the Guitar Settings dialog is enabled, holding the Ctrl key won't be required, but be careful not to accidentally insert a note when using the mouse to switch to the Guitar window.

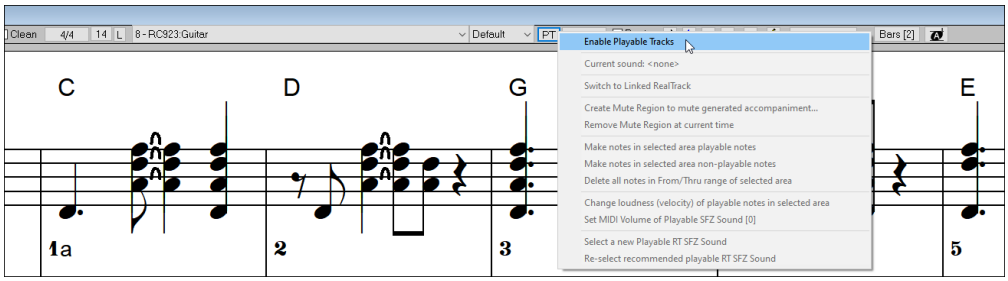
Notes can be deleted by holding down the **Delete** key and then clicking over the note you wish to delete.

Playable Tracks

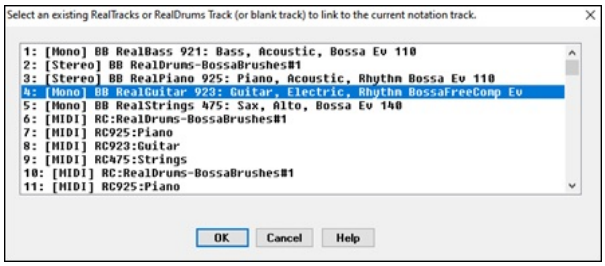
This feature allows you to customize the RealTracks/RealDrums performance by adding your own notes. You will then hear those notes using a MIDI sound created from the RealTracks/RealDrums recording. This means you can get the RealTracks/RealDrums to play the notes you want at key parts of the performance, either augmenting or replacing what the RealTracks/RealDrums ares playing, for any sections in the song.

To use the Playable Tracks feature, you first need to link a RealChart track (or any MIDI track) with an audio track containing a RealTrack/RealDrum.

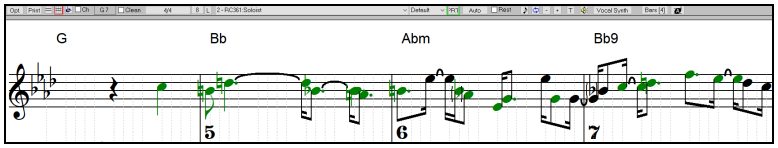
Then, open the Notation window and press the [PT] button and select *Enable Playable Tracks* from the menu.



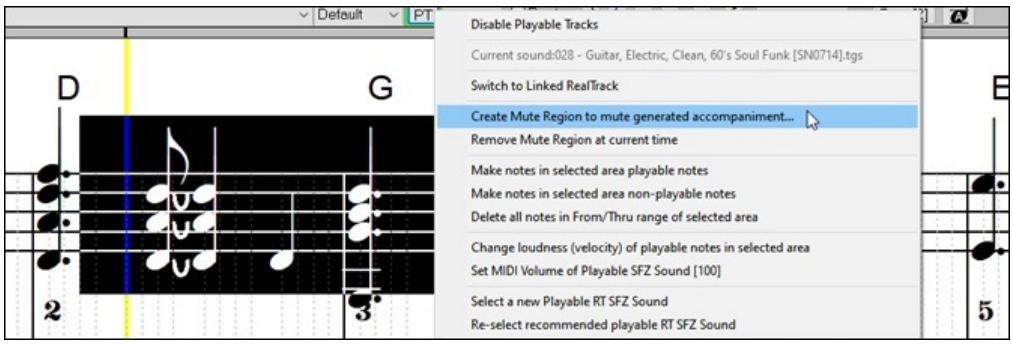
A dialog will then open and let you select either an existing RealTrack/RealDrum track or a blank track to link to the current notation track. If you select a blank track, then you will have a chance to generate a new RealTrack/RealDrum.



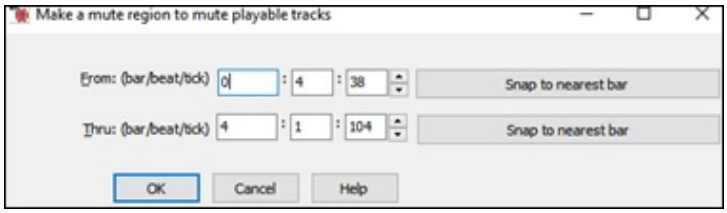
PT The selected RealTrack/RealDrum is then linked to the current notation track, and the [PT] button gets the green borders to indicate that you are in the Playable Track mode. You can now add playable notes by clicking on the Editable or Staff Roll Notation Window.



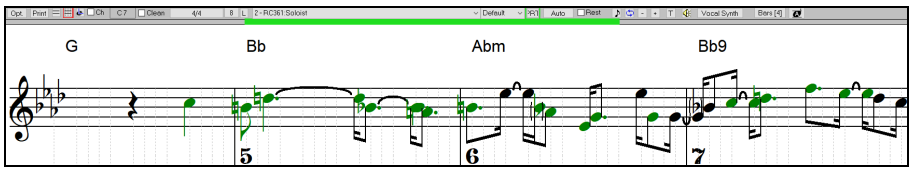
The notes you have entered show in green and will be heard during playback along with the RealTrack audio. But you would want to have your own notes play in place of the RealTrack audio. So, press the [PT] button and select *Create Mute Region to mute RealTracks* from the menu.



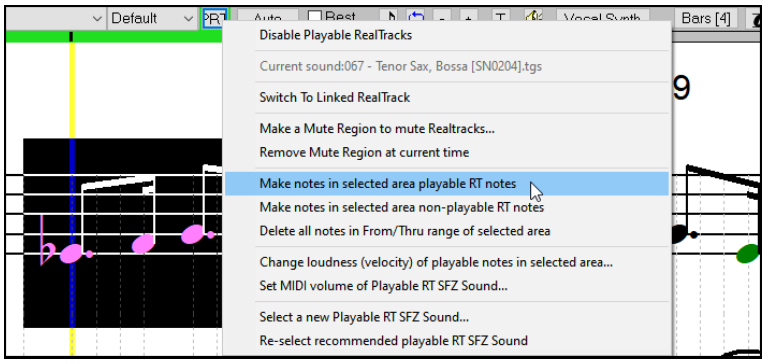
Then, select the region and press OK.



This will add a green label at the top. When you play the song, the RealTrack/RealDrum audio in this region won't be heard, but the green notes you have entered will be heard.

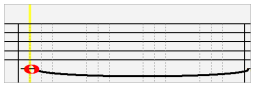


There is also a feature to change the non-playable notes in a region to playable notes. To do this, select the notes, click on the [PT] button to, and select *Make notes in selected area playable notes* from the menu. The selected notes will then become green and be heard during playback. This menu also has options to change the playable notes to non-playable notes, set MIDI volume of playable notes, choose a different Hi-Q patch, etc.

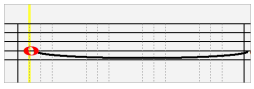


Entering Notes Entirely with Keystrokes

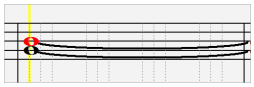
There's a keystroke entry mode - the "N" mode, which lets you enter a melody entirely using keystrokes. The keystrokes are **N** to enter a note, **up/down** cursor to change its pitch, **left/right** cursor to move the time line, **M** to enter an additional note a third above the existing note, and **R** to enter a rest.



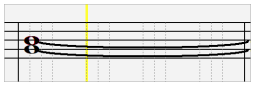
Hit the **N** key to enter a note at the current time line.



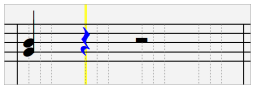
While the note is highlighted, use the up/down cursor keys to change its pitch.



If you want to add a note a third above the existing note on the current time line, hit the **M** key.



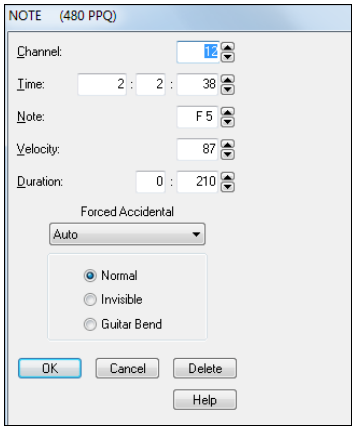
Use the right/left cursor keys to move the time line.



Hit the **R** key to enter a rest at the current time line.

Editing Notes

Notes can be edited by clicking on the note with the right mouse button to launch a menu of editing commands. Select *Edit Note* to open the **NOTE** dialog.



This dialog allows editing of:

- The MIDI channel for the note.
- The exact time location.
- Note name.
- Velocity of the note.
- Duration of the note in beats and ppq.

Forced Accidental

If a note is being displayed as a sharp, but you want it to appear as a flat (or vice versa), you can force that here.

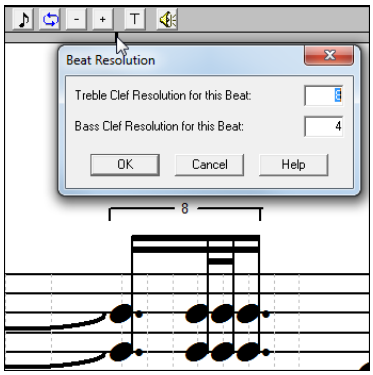
Note Type - You can choose for the note to be Normal, Invisible (note will sound but will not appear in regular notation), or Guitar Bend (a B will appear above the note). Note that the guitar bend is for notation only and does not affect the sound of the note.

The **[Delete]** button removes the note.

Micro-Resolutions

You can change the resolution for any individual beat of a song to a different resolution by clicking with the right mouse button above that beat on the Notation window's time line. You can also right-click on the window and select *Change Beat Resolution* from the menu.

For example, if you click on the time line above the 2nd beat in a measure, a dialog box will pop up which will let you set the resolution of the current beat for both clefs. If you select a resolution of 8, then 32nd notes can be displayed. You can even select a resolution as high as 32, which would allow 128th notes to be shown.



When you choose a micro-resolution RealBand will insert a special controller event into the track as a means of storing the resolution. If you set the resolution to the same setting as the Options dialog's resolution setting, then micro-resolutions won't be used, and the special controller for the current beat and clef will be deleted.

Highlighting a section of the Notation window

When the Notation window is in Editable Notation Mode, you can highlight a section of the Notation window, so that you can cut or copy the section.

To highlight a section of the Notation window:

1. Click and hold the left mouse button at the upper right corner of the rectangular section you want to highlight. Make sure you don't click on any existing notes, and make sure you don't release the left mouse button until you are finished highlighting.
2. Move the mouse down and to the right to form a rectangle. You will see a rectangular section of the Notation window become highlighted in reverse.
3. When you've finished highlighting release the left mouse button.

During the process of highlighting a section, you can highlight a section beyond the current notation screen by moving the mouse cursor beyond the right edge of the Notation window. When you do this, the Notation window will advance to the next screen. The Notation window will continue advancing until you move the mouse cursor back inside of the Notation window. You should move the mouse cursor back inside the notation window when it has reached the screen that contains the last measure of the section you wish to highlight. Then you can move the mouse cursor to the left or right within the Notation window to adjust to make any final adjustments to the highlighted section.

The highlighted area will include any notes on the first and last pegs (vertical beat division lines) of the highlighted section. The minimum highlighted section contains two pegs.

Shift+click to adjust the highlighted section of notation

Shift+click (**Shift** key + left mouse button) support makes it easy to tweak the beginning or end of the highlighted area.

- If you **Shift+click** before the start of the From/Thru range, or after the end of the From/Thru range, the highlighted area will be extended.
- If you **Shift+click** within the From/Thru range, the range will be reduced, and the location you clicked on will become either From or Thru depending on which boundary was closer to where you **Shift+clicked** the mouse.

- If you keep the left mouse button held after the **Shift+click**, and you move the mouse you can adjust the boundary of the range while moving the mouse.

Shift+click works in terms of adjusting the top and bottom of the highlighted area, and this affects the range of notes selected.

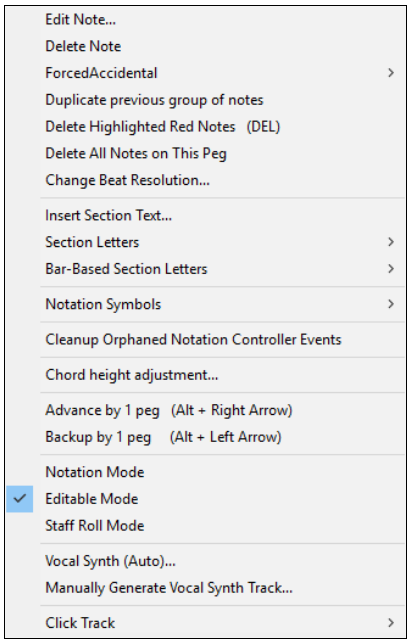
Once you have highlighted a section of the Notation Window, you can use the *Edit* | *Cut* or *Edit* | *Copy* commands to cut/copy a section of notation. The From/Thru values in the **Cut** or **Copy** dialog will automatically be set to reflect the highlighted area. You can then cut or copy as you would normally.

When you cut or copy after having selected a section of the Notation window and you press [OK], RealBand will ask you if you wish to apply a Data Filter based on the highlighted range of notes. If you answer "Yes" a **Data Filter** will pop up which will be set to include notes based on the vertical highlighted range in the Notation window.

Right-click Pop-Up Menu

This menu of notation commands pops up when you right-click on the **Editable Notation** window.

Note: If you right-click on a note head you will see this menu with two additional commands at the top, *Edit Note* and *Delete Note*.



Edit Note opens the **Note** dialog and lets you edit the current note.

Delete Note deletes the current note.

Forced Accidental lets you quickly add an accidental to the current note.

Duplicate previous groups of notes quickly duplicates the previous chord (a group of notes on the same location) without having to reenter it.

Delete Highlighted Red Notes deletes all notes that are currently highlighted in red.

Change Beat Resolution allows you to change the beat resolution of the current beat.

Insert Section Text opens the **Section Text Event** dialog where either regular or boxed section text is entered along with its time and vertical position in the window.

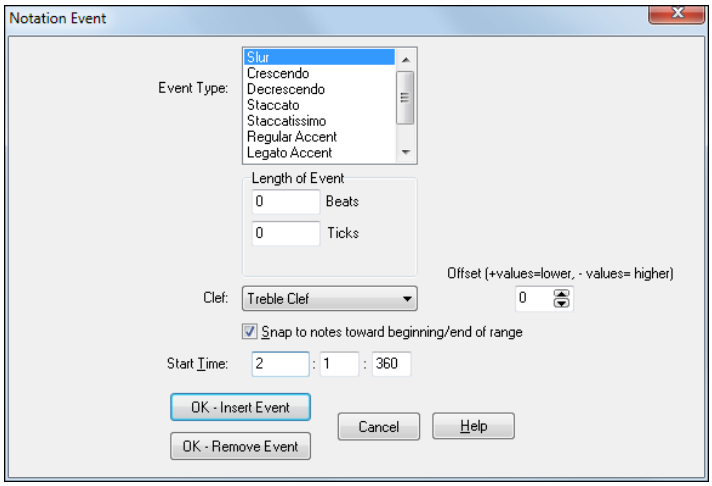
Section Letters: A submenu will let you select a section letter from A – Z, or Remove, which removes the nearest section letter to where you right-clicked.

Bar-Based Section Letters: Select a letter or number from the list and it will be inserted at the top of the bar line so that it doesn't overwrite chords or notes.

Notation Symbols: The notation symbols are entered from the **Notation Event** dialog, which is accessed from the right-click menu in the Editable Notation window. This dialog lets you insert (or remove) notation symbols such as,

Slur		Staccato	•	Marcato	Λ
Crescendo		Accent	>	Staccatissimo	▼
Decrescendo		Legato	–	Trill	*tr*

Choose the event type (slur, decrescendo, etc.) in the **Notation Event** list box.



The **Length of Event** field determines the length of a slur, crescendo, or decrescendo. The length is specified in beats and ticks. If an event is a "single-peg" event, such as a staccato or accent, then this field will cause multiple events to be inserted if the range is greater than zero (and the range spans multiple pegs). If you had highlighted an area of the Notation window prior to right-clicking on it (to launch the pop-up menu and choose the notation symbols menu item) then this field is set based on the length of the highlighted area.

Note: The highlighted area does not actually include the very last peg at the very edge of the highlighted area.

The **Clef** field, if present, indicates the clef in which the event will be inserted (or removed from). Most events affect only one clef at a time, and therefore you must choose the clef and this field will be preset based on where you had initially right-clicked with the mouse on the Notation window (you did this to get the pop-up menu that launches this dialog). For example, if you had right-clicked on the treble clef, then this will be set to treble.

The **Offset** field, if present, lets you make adjustments to the vertical position of an event.

The **Start Time** field is the start time of the event (in measures:beats:ticks).

OK – Insert Event exits this dialog and then inserts the event into the notation track.

OK – Remove Event exits this dialog and then REMOVES the event (if it exists in the specified time range) from the notation track.

Cleanup Orphaned Notation Controller Events: This command will remove notation symbol events (such as staccato) that are no longer close enough to a note to display properly.

Chord height adjustment: Use this to adjust the height of a certain chord by adjusting the "Offset:" value in the Notation Event dialog. Note that a positive value moves the chord symbol lower, and vice versa.

Advance by 1 Peg – Advance the time by 1 peg.

Backup by 1 Peg – Backup the time by 1 peg.

Modes: Clicking on another notation mode will change to that screen while staying at the same location in the song.

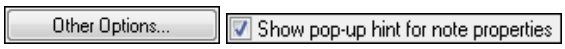
Vocal Synth (Auto) : Your Melody or Soloist track with lyrics can be rendered to a vocal audio track by sending it to the 3rd party vocal synthesizer Sinsy.

"1-Peg" Notation Hot Key

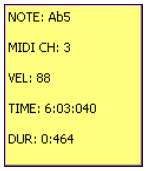
There is a 1-peg hot key in the Notation window to move current time forward or backward by 1 peg (normally a 16th note). **Alt+left arrow** moves the current time backward by 1 peg. **Alt+right arrow** moves it forward by 1 peg. This makes it easier if you are using the on-screen piano for entering notes into the Notation window.

Pop-Up Note Properties Display

When in Editable Notation mode, if the **Show pop-up hint for note properties** setting is enabled in the **Other Notation Options**, a pop-up hint will appear if you move the mouse cursor over a note and stop.



Other Notation Options a pop-up hint will appear if you move the mouse cursor over a note and stop.



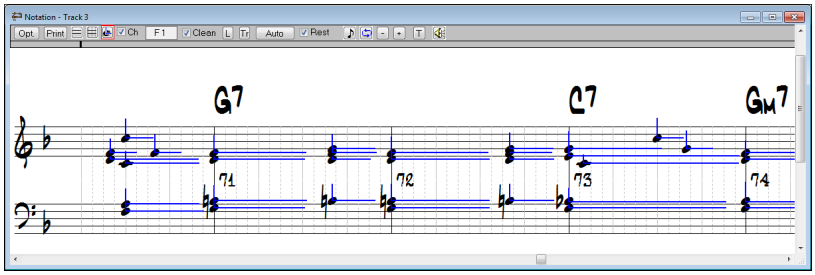
The hint window shows the note's properties - note name, MIDI channel, velocity, start time, and duration.

This lets you quickly see a note's properties without having to bring up the edit dialog by right-clicking on the note.

Staff Roll Notation Mode

Staff Roll mode is similar to a piano roll, except the notes are shown on a grand staff. Its purpose is to allow for easy graphical editing of notes, with the Staff Roll you will be able to graphically edit sequences much easier than if you were using a regular piano roll or an ordinary notation window.

Notes are shown as black dots (note heads) on the staff. Note stems are NOT shown.



If the Show Note Durations option is enabled, the durations of the notes are shown as horizontal lines. The horizontal duration lines are drawn a little higher or lower if the note is a sharp or a flat, which helps you be aware of rare situations where notes a half step apart overlap each other. Notes are shown with sharp, flat, or natural symbols depending on the key signature of the song. Notes are shown exactly where they occur. They are not quantized.

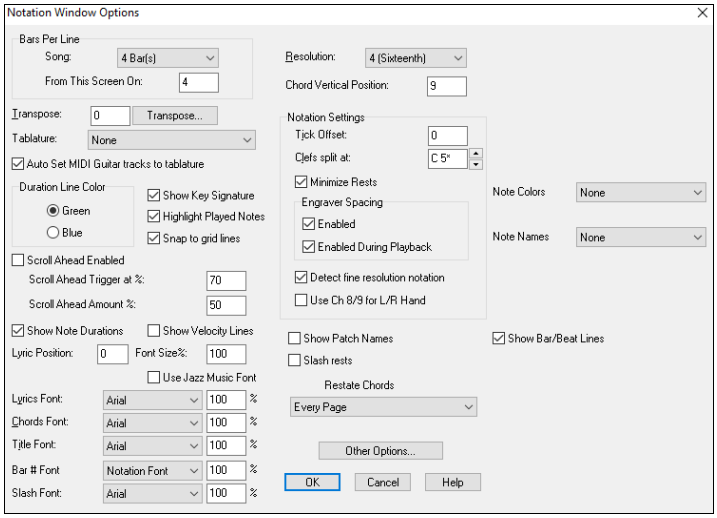
You can adjust the velocity and duration of a note by clicking on a note head with the right mouse button and then, while holding the button down, dragging the mouse cursor either vertically or horizontally. The velocity or duration will be changed based on the location where you release the right mouse button.

You can step forward or backward in the song by one chord by pressing the keypad period (**.**) and keypad zero (**0**) keys. The notes will be highlighted in red and sustained.

Notation Window Options



The [Opt] button launches the **Notation Window Options** dialog.



The **Bars Per Line – Song** setting determines the horizontal resolution of the screen. For example, with 2 Bars Per Line, the width of the screen is equal to 2 Bars in length. You can increase this setting to 16 Bars Per Line, although the screen may look unusual at this extreme since the size of the note heads remains the same regardless of this setting.

You can also use this setting to make the resolution equal to between 1 and 4 beats rather than complete bars. This is mainly for editing purposes. If you use beats with this setting, the program will ignore any “Bars Per Line -| From This Screen On” markers in order to display the partial bars.

The **Bars Per Line - From This Screen On** setting lets you change the horizontal resolution from this screen on. This will cause the program to insert a special Bars Per Line marker (Controller Event) into the sequence. This is useful if you have some sections of the song that you would like to be displayed with a different number of Bars Per Line than the overall Song setting. The Notation window will then display the number of bars you selected from the current screen on.

The **Resolution** setting determines how many vertical grid lines will be drawn for each beat. For example, with a resolution of 1, just one line will be drawn per beat. With a resolution of 4, 4 lines will be drawn, with 1 line being the beat line drawn in a solid color and the other lines being dashed lines representing sixteenth notes in 4/4. If you're displaying Jazz Swing or Shuffle music that has a triplet feel to the eighth notes, make sure to set the resolution to =3 (triplets). This will display the 8th notes and other aspects of Jazz Swing music correctly. You can also set micro-resolutions by clicking on the time line above any beat with the right mouse button.

The **Chord Vertical Position** setting adjusts the vertical position in which the chord symbols are displayed, which is useful when chord symbols overlap other notation. This setting can range from 1 to 10, with 1 being nearest to the staff.

The **Transpose** setting lets you adjust the Notation window to display notes either higher or lower than their actual pitches. For example, if you're working with guitar music, you could set this to +12 and the guitar music will be displayed an octave higher, which is the way guitar music is normally notated.

Hint: This setting is also useful for displaying music for non-concert instruments such as trumpet or saxophone. Trumpet players (and other Bb instruments) should set transpose to +2; Alto Saxophone (and other Eb instruments) should set the transpose to -3. The music is then displayed in the correct key for the instrument, but plays in the concert key to the MIDI card.

The **Show Beat/Bar Lines** checkbox, when unchecked, will cause the staff window to be drawn without beat or bar lines (Staff Roll mode only, not in Standard Notation mode).

The **Tablature** box gives a choice of tablature for guitar and additional fretted instruments - bass, ukulele, mandolin, and banjo. The fretboard tablature will show where the bass clef is normally located. Tablature is only shown in Standard Notation and Editable Notation mode. A track displayed with tablature must be a valid multi-channel guitar track, or the tablature won't be displayed properly.

Duration Line Color selects the color of the horizontal lines that represent note duration and the vertical lines for note velocity in the Staff Roll notation mode.

The Key Signature is shown if the **Show Key Signature** option is enabled.

If the **Highlight Played Notes** checkbox is checked, notes will be highlighted in red as the notes are played when a song is playing.

If the **Snap to grid lines** checkbox is checked, the inserted note will be lined up with the closest grid line (quantized). The duration of inserted notes is determined by the **Inserted Note Defaults** settings in the **Other Notation Options**.

The Notation window can be set to scroll ahead of the music without interfering with your view of the current notation. Use the **Scroll Ahead Enabled** checkbox to toggle this feature on and off.

The **Scroll Ahead Trigger at %** setting adjusts the location where the screen will scroll. A setting of 70 would cause the notation to scroll when the 70% of the current screen has played.

The **Scroll Ahead Amount %** determines how much the screen will scroll, based on the Bars Per Line setting. For example, a setting of 50% with the Bars Per Line setting at 4 Bars would scroll the notation ahead by two bars.

If the **Show Note Durations** checkbox is checked, then in Staff Roll Mode the durations of notes will be shown as either green or blue horizontal lines depending on whether the **Duration Line Color** is set to green or blue.

The **Show Velocity Lines** setting causes the Staff roll mode to display vertical lines in the same color as the duration lines. These lines represent the velocity of the notes, the higher the velocity the longer the line. The velocity lines are roughly the height of a staff when a note has a velocity of 127.

The **Lyric Position** lets you adjust the vertical position of the lyrics. When set to zero, the lyrics are drawn between the staves. The range is -64 to 64.

The **Font Size** setting adjusts the size of the Notation window's font. The default size is 100%. You can increase or decrease the font size by changing this setting. You can also use the Zoom In [+] and Zoom Out [-] buttons at the top of the Notation window.

The **Use Jazz Music Font** setting enables the Jazz Music font for notation instead of the standard font. The Jazz font will give your lead sheets the appearance of a Jazz lead sheet rather than having a "Classical" appearance.

The **Lyrics Font**, **Chords Font**, and **Title Font** let you choose a different font for lyrics, chord symbols, and a song title. The percentage fields are used by RealBand to determine the size of the font (rather than the size in the font selection dialog).

The **Bar # Font** setting lets you choose either the Notation Font, or a different font of your choice. The percentage setting lets you adjust the percentage relative to the default size.

The following group of settings is for Standard Notation mode only, and don't have any effect in Staff roll mode:

The **Tick Offset** lets you display the music ahead or behind the beat. If you tend to play the music ahead of the beat, you can specify a setting from 1 to 120 to have the music displayed forward in time. A setting from -1 to -120 will cause the music to be displayed ahead of the beat (but not before the beginning of the song). 120 ticks equal one quarter note for this setting regardless of the current PPQ setting. Generally, you won't need to use this setting since the notes are rounded when being displayed in standard notation.

Hint: The notation of Jazz Swing music will often be improved by a Tick Offset setting of about -5 because Jazz music is typically played a little after the beat.

The **Clefs Split At** setting determines the split point for placing notes on the Bass or Treble clef. The default setting is C5, displayed as C5* to indicate it is middle C. For example, you can use a higher split point, such as C6 if you want some notes up to a G above middle C to be displayed on the bass clef with ledger lines instead of on the treble clef. If the split point is above middle C, and a note in the music is high enough that any of the ledger lines above the bass clef would overwrite the treble clef, the note will be placed on the treble clef.

The **Minimize Rests** checkbox, when checked, will cause RealBand to display the music with minimal rests. Use this setting if notes are displayed as shorter than you intended. For example, if eighth notes are displayed as sixteenth notes because you recorded them staccato.

The **Engraver Spacing** setting, when enabled, will improve the appearance of the standard notation in situations where the Notation window is crowded. However, you may notice a significant decrease in the speed of screen re-draws. You may want to only enable this setting before printing if you find that the screen redraws too slowly on your computer. When in Editable Notation, the spacing will not be drawn using engraver spacing. There are two Engraver Spacing settings, "Enabled" and "Enabled During Playback." If the "Enabled" checkbox is checked, then engraver spacing is enabled, but won't be displayed during playback unless the "Enabled During Playback" checkbox is checked. If the "Enabled" checkbox is unchecked then engraver spacing will be totally deactivated.

The **Detect fine resolution notation** setting will allow the Notation window, in Standard Notation Mode (non-editable mode) to detect micro-resolutions automatically. It will detect notes a short as 32nd notes in most situations. When this setting is enabled, the program will count the number of distinct chords (or individual notes) per beat and if there are more chords played in the beat than the current Resolution, the program will display the beat at a high enough resolution to show all of them separately rather than lumped together. For example, if the Resolution is set to 3 and 4 chords were played on a beat the program will display 4 chords as 16th note chords for that beat even though the song's resolution is 3.

The **Use Ch 8/9 for Left/Right Hand** checkbox will cause the standard notation to display, within reason, notes on channel 8 on the bass clef and the notes on channel 9 on the treble clef. Notes on channels other than 8 or 9 will be displayed on the clef that they normally would be shown.

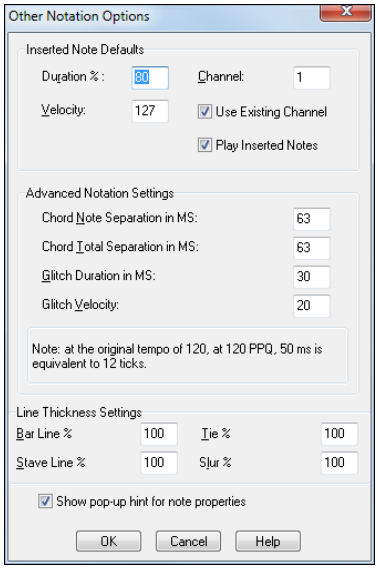
When **Show Patch Names** is checked**,** the patch name for the track is displayed on the notation, lead sheet, and printout.

If **Slash Rests** is enabled, slash marks / / / / will show for empty bars.

If **Restate Chords** is set to "Don't Restate," then the program works as in previous versions, and if the chord stays the same, it will never be stated again in the arrangement until it does change. If set to "Every Bar," "Every Line" or "Every Page," then the Notation, Lead Sheet and Printout will restate the chord every bar, line or page. The setting of "Every Page" is the default, which means that the first bar of the Lead Sheet Window will always have a chord as will the top of each Notation Window screen.

Other Notation Options

There are some additional settings that can be accessed by pressing the **[Other Options]** button.



The **Duration %** setting causes the durations to be set to a percentage of the currently selected duration. For example, if the current duration is Whole, and you set the percentage to 50, the duration will be 50% of a Whole note.

The **Channel** and **Velocity** settings determine the MIDI Channel and velocity of inserted notes.

When **Use Existing Channel** is enabled, and you insert a note in the Notation window, RealBand will intelligently determine the channel number of inserted notes instead of using the “Channel” setting in the **Other Notation Options** dialog. When this setting is disabled, the Channel field is used for inserted notes.

If this setting is enabled, and you then insert a note in the Notation window, RealBand will first try to use the forced MIDI channel in the Tracks window to determine the channel of the note you're inserting. If there is a forced MIDI channel setting for the track in the Tracks view, then RealBand will set the channel of the note you are currently attempting to insert so that its channel is the same as the forced MIDI channel.

If this setting is enabled, but there is no forced MIDI channel, i.e., the Ch field in the Tracks window is set to zero, RealBand will search the track for the nearest MIDI event in the track that is located before the time of the note you are currently attempting to insert. If a MIDI event was found in the track, then RealBand will set the channel of the note you're currently attempting to insert so that its' MIDI channel matches the MIDI channel of the event which was found.

If this setting is enabled, but there is no forced channel, and a MIDI event isn't found in the track, then RealBand will use the “Channel” field of the “Inserted Note Defaults” section in the **Other Notation Options** dialog.

If the **Play Inserted Notes** checkbox is checked, notes that you insert will sound briefly as they are inserted so you know that the note is correct.

These are advanced settings for standard notation mode:

- **Chord Note Separation in MS** is the maximum time span in milliseconds allowed for adjacent notes within a chord when “Detect fine resolution notation” is enabled. The default setting is 63 milliseconds, around 15 ticks at a tempo of 120 bpm and a resolution of 120 PPQ. In this case notes further than 15 ticks away will be detected as separate chords. Increasing this setting will increase the amount of time allowed between notes within each chord.
- **Chord Total Separation in MS** in the maximum time span in milliseconds allowed for the entire chords when “Detect fine resolution notation is enabled.” The default setting is 63, about 15 ticks. In this case, any note beyond 15 ticks from the earliest chord will be detected as a new chord.
- **Glitch Duration in MS** is a setting used by the clean routine to determine which notes are glitches and which notes are valid. Increasing this setting increases the likelihood that notes will be detected as glitches when clean mode is checked and the notation is in non-editable Notation mode.
- **Glitch Velocity** is a setting used by the clean routine to determine which notes are glitches and which notes are valid. Increasing this setting increases the likelihood that notes will be detected as glitches and not shown when clean mode is checked and the notation is in non-editable Notation mode.

The **Line Thickness Settings** (**Bar Line %**, **Stave Line%**, **Tie %**, and **Slur %**) affect the thickness of the lines drawn by RealBand. The settings are a percentage, with 100% being the regular thickness.

Notation Controllers

The Notation window’s advanced features use controllers. For example, when you insert a hard rest or change the resolution of a beat to a “micro resolution” a controller event is inserted into the track. The Notation window controllers are:

Controller	Value	Purpose
85	1 - 32	Bass clef micro resolutions.
85	34	Invisible Note (Affects note immediately before it in the track.)
85	37	Bass clef hard rest.
86	1 - 32	Treble clef micro resolutions.
86	37	Treble clef hard rest.
88	33 - 48	Bars Per Line From This Screen On (33 corresponds to 1 BPL while 48 corresponds to 16 BPL).
89	0	Slur
	1	Crescendo

2	Decrescendo
3	Staccato
4	Staccatissimo
5	Regular Accent
6	Legato
7	Strong Accent (Marcato)
8	Chord Height Adjustment
9	Boxed Section Letter (A through Z)
90	Used to store notation data for events such as slurs, crescendo, etc.

You can prevent RealBand from sending these controllers by checking the “Disable Special Controllers” in the **MIDI Out** dialog (*Options* | *Preferences* | *MIDI* | *MIDI Out*).

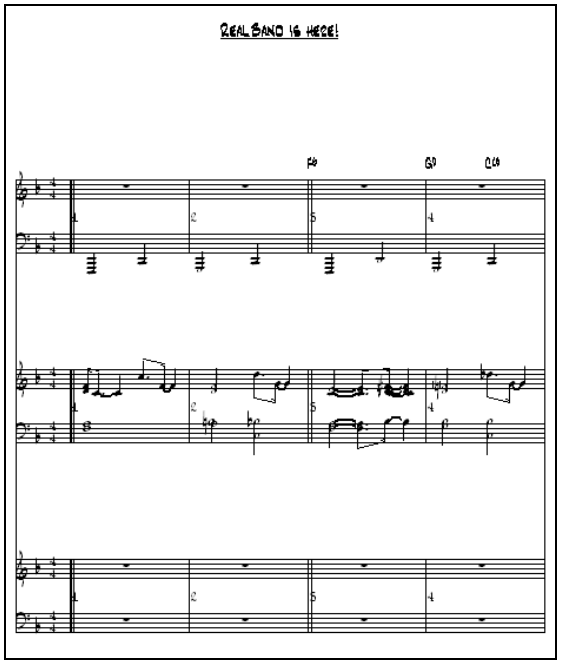
Lead Sheet Window

This window is similar to the Notation window, except that it can display a track in the form of a lead sheet, with multiple staves per page.

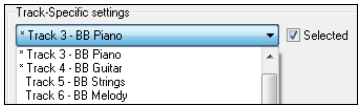


Open the **Lead Sheet** window with the tool bar button, or the *Window* | *New* | *Lead Sheet Window* menu option, or with the keystrokes **Ctrl+Alt+F2**. The Lead Sheet window is resizable and automatically adjusts the height and width of staves when resized.

The Lead Sheet window can display notation for up to seven tracks at the same time. In order to display multiple tracks, you should first select the tracks in the Tracks window or Bars window and then open up a new **Lead Sheet** window.



Another way to select multiple tracks is in the **Lead Sheet Options** dialog.





RealBand can also print notation with multiple tracks when you press the Print button at the top of a Lead Sheet window that is currently displaying multiple tracks.

If you attempt to display multiple tracks and the lead sheet appears overcrowded, you should reduce the Font Size setting in the Lead Sheet Options dialog. This will solve the problem of staves bumping into each other.

Note: When printing, the Font Size in the print options dialog controls the font size for printing. Generally, you'll fit more tracks at a 100% font size when printing than would fit in the Lead Sheet window, due to the different dimensions of a printed page.



You can switch between the **Lead Sheet** window and a regular **Notation** window by pressing the eighth-note button at the top of the Lead Sheet window.



The Loop Screen button will play the music of the current lead sheet screen in a loop.



This will open the **Lead Sheet Memo** window. This window is ideal for song lyrics that you want entered as a text entry appended to the end, multiple verses of lyrics, or any other text.



Press this button to set the number of bars per line to a different value.



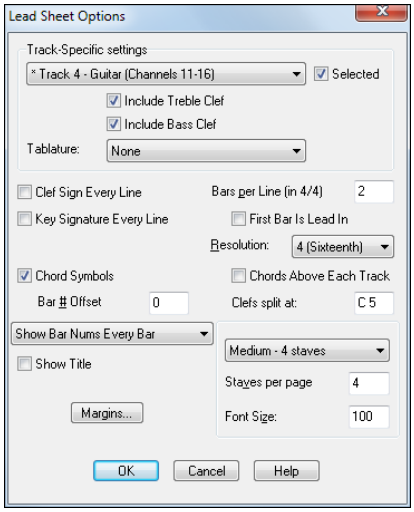
This display notation with larger font size and note names within note heads. Press the button again to return to the normal size.



Although the Lead Sheet window has its own **Options** dialog, many of the settings in the Notation window's **Options**

dialog also affect the Lead Sheet window.

Lead Sheet Options



The **Track-Specific settings** section lets you adjust settings for individual tracks. The "Selected" checkbox determines if a track is displayed in the current Lead Sheet window; use this to display multiple tracks of notation. The combo box with the track numbers will show an asterisk (*) for tracks that are selected.

The **Include Bass Clef** and **Include Treble Clef** settings determine which of the clefs will be displayed for each track.

The "Show Tablature" checkbox lets you enable or disable the display guitar tablature for each track.

Note: When a Lead Sheet window is launched the selected tracks will be based on the selected tracks in the Tracks window.

The **Clef Sign Every Line** and **Key Signature Every Line** checkboxes let you decide if the lead sheet should show the clef sign and key signature on every line. These two settings are the same settings as found in the **Print Options** dialog of the Notation window.

The **Bars Per Line** setting determines how many measures are drawn on each line of the lead sheet in 4/4. If the Bars Per Line is set to 4, you will get 8 measures per line if the time signature is 2/4. Note: This setting is the same setting as found in the Print Options dialog of the Notation window.

The **First Bar is Lead In** setting causes the program to display an extra bar of music on the first line of the first page displayed. Use this setting in combination with the "Bar # Offset" setting if the song has a lead in. This setting is the same setting as found in the Print Options dialog of the Notation window.

The **Resolution** setting determines the resolution of each beat. Normally you'll keep this set to either 4 (sixteenth notes) or 3 (triplets). In the Notation window you can select micro resolutions for each individual beat.

When the "**Chord Symbols** checkbox is checked, the program will show the chord symbols of the song, if there are any. This setting is the same setting as found in the Print Options dialog of the Notation window.

When **Chords Above Each Track** is checked the chord symbols (if present) will be seen above each track. This is helpful for following the chord changes on tracks farther down the screen, but it makes the overall appearance of the window "busier." If left unchecked chords will only show above the top track.

The "**Bar # Offset**" setting is an advanced setting that you can use to decrease all the measure numbers of the lead sheet. It decreases the numbers that are displayed at each measure. For example, if you specify a Bar # Offset of -2, all the measures numbers will be shown as 2 less than their actual numbers. So, measure 3 would be shown with a number of 1, and the number for measure number 4 would be shown as 2. Any number that is reduced to 0 or less isn't shown, so in this case measures 1 and 2 would have no number, useful if the song has a 2-bar lead in. This setting is the same setting as found in the Print Options dialog of the Notation window.

The "**Clefs Split At**" setting determines the split point for placing notes on the Bass or Treble clef. The default setting is C5 that is middle C. For example, you can use a higher split point, such as C6 if you want some notes up to a G above middle C to be displayed on the bass clef with ledger lines instead of on the treble clef. If the split point is above middle C, and a note in the music is high enough that any of the ledger lines above the bass clef would overwrite the treble clef, the note will be placed on the treble clef. This is identical to the Clefs Split At setting in the Notation Options dialog.

The **Show Bar Nums** setting lets you choose how often bar numbers are displayed. This setting is the same setting as found in the Print Options dialog of the Notation window.

The **Show Title** checkbox lets you see the song title on the top of the first page of the song.

The **Margins** button lets you adjust the margins of the Lead Sheet window.

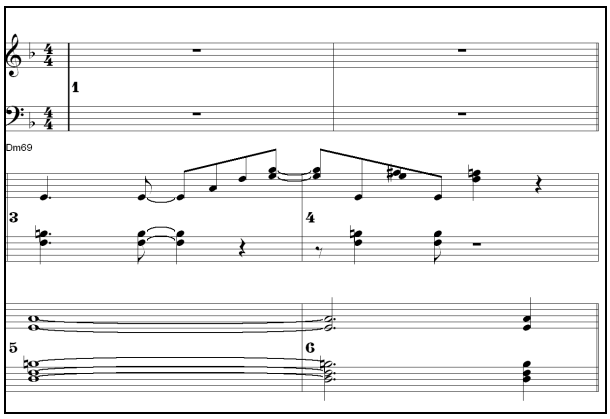
You can select the **Staves per page** and **Font Size**. The bigger the font, the fewer staves you'll be able to fit on each page. If you select a higher number of staves than will fit with the current font size, the Lead Sheet window will only display the maximum number of staves that will actually fit on the page. Use the combo box to select from several presets.

Double Bar Lines

Double bar lines supported in the Lead Sheet and for staff printout. RealBand will automatically display double bar lines when a new part marker is reached.

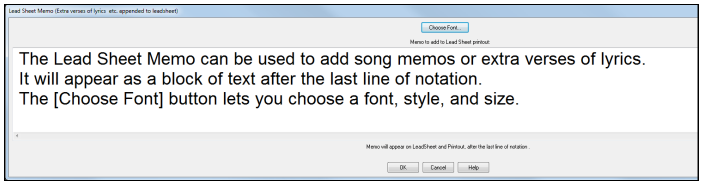
Note: The part markers are entered in the Chords Window.

RealBand will display a double-fat bar line at the beginning of the 1st part marker, except when the First Bar Is Lead-in Checkbox is enabled, in which case the double-fat bar line will be displayed at the beginning of bar 2. RealBand will also display a double-fat bar line at the end of the printout. Double-bar lines of normal thickness will be displayed at part-marker section changes in the middle of a printout.



Lead Sheet Memo - Copy/Paste Song Lyrics to Lead Sheet

Easily copy and paste lyrics from other applications, to be appended to your lead sheet for display and printout, with selectable font.



The [**Memo]** button on the Lead Sheet window opens the **Lead Sheet Mem**o dialog.

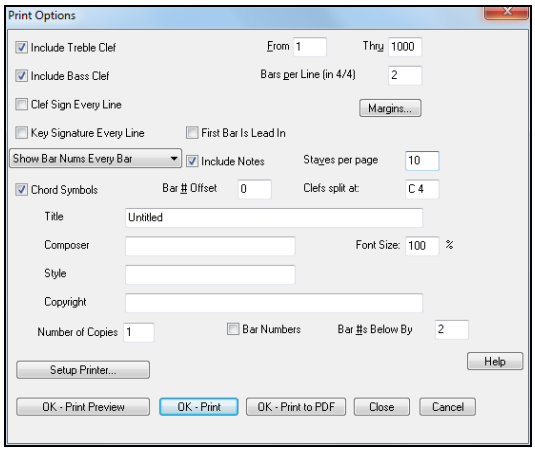
In this dialog you can type in a memo, such as extra lyrics, etc. The memo will show up after the last line of notation in Lead Sheet or notation printout. The **[Choose Font]** button lets you choose which font is used to display the memo.

Printing

The **[Print]** button lets you print out music. When you press the print button, the **Print Options** dialog will open.

Print Options Dialog

This dialog lets you change various settings that affect the printout. These settings will remain in effect until you exit the program. Almost all of these settings are saved to RealBand .SEQ files.



The **Include Bass Clef** and **Include Treble Clef** checkboxes let you decide whether the printout should contain the Bass Clef, Treble Clef, or both. Note that both the bass and treble clefs are always printed in Staff roll mode regardless of these settings.

The **From** and **Thru** settings determine the range of measures that are printed. By default, “From” is set to 1 and “Thru” is set to 1000. This will cause the entire song to be printed (unless the song really goes beyond 1000 measures). The program won't print beyond the end of the song. If there are sustained notes that go beyond the measure in the “Thru” setting, the program may print extra measures. For example, if the “Thru” setting is set to measure 5, and there is a note that is sustained until measure 6, the program will print measure 6.

The **Bars Per Line** setting determines how many measures are drawn on each line of the print out in 4/4. If the “Bars Per Line” is set to 4, you will get 8 measures per line if the time signature is 2/4.

The **Clef Sign Every Line** and **Key Signature Every Line** checkboxes let you decide if the printout should print the clef sign and key signature on every line.

The **First Bar is Lead In** setting causes the program to print an extra bar of music on the first line of the first page printed. Use this setting in combination with the “Bar # Offset” setting if the song has a lead in.

The **Margins** setting lets you change the left and right margins of the printout in inches. When the margins are set to 0, the program will print as wide as your printer will support. Therefore, there may still be margins if your printer can't print on the edges of the paper.

The **Show Bar Nums** combo lets you choose where you want bar numbers to be printed.

When the **Include Notes** checkbox is checked, the program will print the notes of the track. The only reason for un-checking this would be to print blank paper, with just the key signature. (You would also have to make sure the Bars Per Line is set to 1, and un-check the Bar Numbers and Chord Symbols checkboxes.)

The **Staves Per Page** setting lets you determine how many staves will be printed per page. Normally, you'll want to leave this at 10, but you can decrease this setting if the song has a lot of very high or very low notes so that there is room between staves for them. If you increase this setting beyond 10, there may not be enough room for all the staves on the paper depending on the size of the paper in your printer. If the printout has a song title, the first page printed out will be limited to 8 staves so that there's room for the title.

When the **Chord Symbols** checkbox is checked, the program will print the chord symbols of the song, if there are any.

The **Bar # Offset** setting is an advanced setting that you can use to decrease all the measure numbers of the printout. It decreases the numbers that are printed at each measure. For example, if you specify a Bar # Offset of -2, all the measures numbers will be printed as 2 less than their actual numbers. This setting is useful if the song has a lead in, because, for example, a setting of -1 would cause the first measure to be printed with no number and the rest of the measures will be printed with their numbers starting with 1.

The **Clefs Split At** setting determines the split point for placing notes on the Bass or Treble clef. The default setting is C5, which is middle C. For example, you can use a higher split point, such as C6 if you want some notes up to a G above middle C to be displayed on the bass clef with ledger lines instead of on the treble clef.

The **Title**, **Composer**, **Style**, and **Copyright** settings let you insert text onto the first page of the printout. The “Title” field is for a song title. The “Composer” field is for the author's name, and will appear to the right of the title. The “Style” field is for the style of the music such as Slow Blues, and will appear to the left of the title. The “Copyright” field is for a copyright notice and will appear at the bottom of the first page of the printout.

The **Font Size**” setting lets you adjust the size of the font used for the printout. A value of 100 % is normal size. You can make the font smaller or larger by increasing or decreasing this setting.

The **Number of Copies** setting allows you to easily print out multiple copies of notation. You can print any number of copies from 1 to 1000.

Select the **Bar Numbers** checkbox to print only the range of bars defined by the **Print Options’** “From” and “Thru” boxes.

You can adjust the position of the bar numbers with the **Bar #s Below By** option.

The **[Setup Printer]** button lets you configure your printer. The changes to the printer configuration will be in effect for printing music until you exit the program.

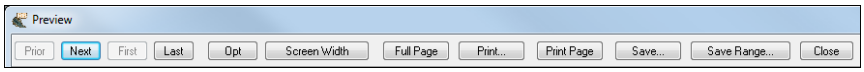
The **[OK – Print Preview]** button launches the **Print Preview**.

The **[Print-to-PDF]** button lets you print the notation directly to a .PDF file.

Unlike most other dialogs, the **Print Options** has a **[Close]** button in addition to **[OK]** and **[Cancel]**. The **[Close]** button works the same as **[Cancel]**, except that any changes you've made to the settings will be saved.

Print Preview

When you press the **[Print]** button to print from the Notation window, you can print to a **Print Preview** window. This lets you view what the printout will look like without having to waste paper. To access the **Print Preview** window, you print as you normally would, except you press the **[OK- Print Preview]** button. When you’ve pressed the **[OK – Print Preview]** button, the **Print Preview** will be shown. At the top of the **Print Preview** window, you will see a toolbar with various buttons.



The **[Prior]** and **[Next]** buttons will go to the prior page or next page of the printout.

The **[First]** and **[Last]** buttons will jump to the first or last pages of the printout.

The **[Opt]** button will access the **Preview Options**, such as the bitmap dimensions and the type of file used if you wish to save a page to a graphics file.

The **[Screen Width]** button will make the size of the pages in the preview equal to the width of the screen.

The **[Full Page]** button will make the size of the pages just big enough to see the entire image in proportion without having to do any scrolling.

The **[Print]** button returns to the **Print Options** dialog.

The **[Print Page]** button prints the currently displayed page directly to the default printer, unless you select a different printer in the **Print Options** dialog.

The **[Save]** button lets you save the current page to a graphics file. You’ll see a dialog with some of the same settings as the **Options** dialog. Graphics files can be inserted into documents, uploaded to the Internet, or sent as email attachments. You can choose to print to BMP, JPG, TIF, and other graphic formats as grayscale or color files with either low or high resolution. The JPG Save Smooth and JPG Save Quality settings affect the quality of JPG files.

The **[Save Range]** button saves a range of pages in the folder you choose. The pages will be named SONGNAMEXXX.BMP with SONGNAME being the name of the song, and XXX being the page number.

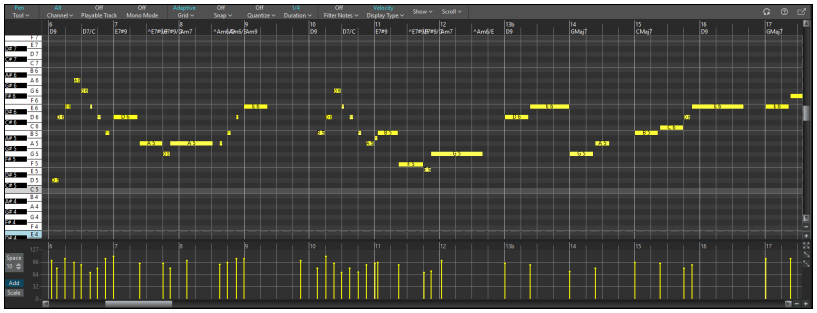
The **[Close]** button closes the **Print Preview**.

Chapter 10: Piano Roll Window

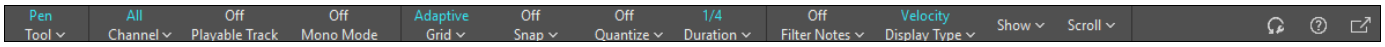
Overview



The **Piano Roll** window enables precise graphic editing of note timing and duration. You can also graphically edit Note Velocity, Controllers, Program Changes, Channel Aftertouch, or Pitch Bend. There are 2 panes in the window – one for notes and the other for controllers, velocity, and other data.



Toolbar



Tool

Choose from different editing tool modes to optimize your workflow for different tasks. “Pen” is the default tool, streamlining the note entry for faster composition. The “Split” tool lets you divide a note into two at the click point. The “Right-Click” option lets you configure right-click behavior. By default, right-click dragging selects notes. You can also switch tools by hotkeys **1-6** (1 - Pen, 2 - Select, 3 - Move, 4 - Split, 5 - Erase, 6 - Velocity).

Channel

Choose which MIDI channel’s events to display.

When “All” is selected, events on all channels in a multi-channel track are shown.

When “10” is selected, Note and Keyboard panels display the drum sound name associated with each key (e.g., “C5 (Kick)”) alongside the standard note name, making drum programming more intuitive.

When a channel from 11 to 16 is selected, Note and Keyboard panels display guitar string and fret information (e.g., “C5 (2s/1f)” for second string, first fret) alongside the standard note name, enhancing guitar-oriented MIDI editing.

Playable Track

Enable or disable the Playable Track. When enabled, any note you enter will be heard during playback unlike RealCharts notes.

Mono Mode

When Mono mode is on, only one note plays at a time. This is ideal for creating melodic sequences and single-note lines without unintended chord overlaps.

Grid

Toggle the grid on/off, adjust the grid resolution to match your workflow, or apply swing or groove to the grid for non-straight timing feels.

Snap

Adjust snap behavior, including snap strength and toggle.

When the Snap mode is on, selections, inserted notes, or edited notes will align to the selected note value.

The hotkey (Shift+S) toggles the Snap mode on and off.

The “Strength” option (0-100%) lets you fine-tune how strongly notes adhere to the grid, enabling subtle timing shifts while still maintaining a loose rhythmic feel when desired.

Quantize

This provides quick quantize strength presets (0-100%) or opens the full Quantize dialog, which offers precise and flexible control over timing and musical alignment.

In the Quantize dialog, click on a quantize type button (Time, Scale, or Velocity) to enable or disable that quantize type.

- Time: Align note positions to the desired timing resolution.

- Scale: Adjust notes to a selected musical scale.

- Velocity: Normalize or modify velocity ranges.

Duration

Set the default duration of inserted notes. You can easily adjust individual note durations with the mouse, so typically you only

need to choose a standard duration that fits your song.

Filter Notes

This lets you toggle note filtering on or off and provides advanced filtering options.

The Note Filter Settings dialog provides sophisticated note filtering capabilities.

- [Pitch Range]: Show or hide notes by pitch.
- [String Range]: Show notes within specific guitar string ranges.
- [Fret Range]: Show notes within specific fret ranges.
- [Position Range]: Filter notes by time range using the bar.beat.tick format.
- [Duration Range]: Display notes based on note length.
- [MIDI Channels]: Show or hide notes by channel, with convenient All/None buttons.
- [Velocity Range]: Filter by velocity ranges.
- [Invert Filters]: Swap visible and hidden notes instantly.
- Enable or disable each filter criterion independently by clicking on the filter button.
- Selection rectangle respects filters, with an option to select filtered notes.

Display Type

This determines which graphic data is displayed or edited in the Graphic Event panel. You can choose Velocity, Controller, Program Change, Channel Aftertouch, or Pitch Bend.

Show

This lets you select visual features including:

- Crosshairs: These are the faint dotted horizontal and vertical lines that follow the mouse as you move it in the Note panel.
- Middle C Indicator: A clear visual marker highlights Middle C (C5) for easy octave orientation.
- Ghost Notes: When viewing a single channel, notes on other channels are displayed, helping you follow multi-channel tracks.
- Velocity Shading: Notes are color-coded by velocity, with higher velocities appearing brighter and more saturated, and lower velocities appearing more subdued.
- Note Display: Choose what information appears on each note (note name, velocity, duration, etc.).
- Keyboard Note Names: Display MIDI note names on the piano keyboard for quick reference.

Scroll

The “Mouse Scroll” option allows you to enable or disable mouse wheel scrolling, giving you control over navigation behavior.

When the “Auto Vertical Scroll” option is enabled, the Piano Roll automatically scrolls vertically as you switch tracks to keep the average note range in view.

The “Mouse Scroll Direction” option lets you choose whether the mouse wheel scrolls vertically or horizontally.

Reset Button

This restores all settings to their default values.

Help Button

This opens the help file for the Piano Roll window.

Floating/Docking Button

This toggles between floating and docking modes.

Ruler Panel



The Ruler panel displays bar numbers with a full-height vertical line for each bar and a shorter line for each beat, along with the chords in the song.

Click anywhere to move the cursor to that position.

Double-click anywhere to start playback from that position.

You can select a range by clicking and dragging on the Ruler panel. **Shift**+click to extend it, drag either endpoint to resize it, or **Shift**+drag to move it. To clear the range, right-click on the Ruler panel and select *Clear Selection* from the menu. The loop range is synchronized across the timeline in other windows, Song Overview, Chord Sheet, and the Loop Section Settings dialog.

Cursor Location Info Panel



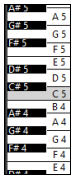
This panel shows the cursor’s location in bar.beat.tick format, along with the corresponding MIDI note or controller value (depending on the cursor position).

Insert/Delete Beats

You can insert or delete a specified number of beats in the MIDI track. For example, to insert 2 bars at bar 5, right-click on a track label in the Mixer or Tracks window, select *Edit MIDI* | *Quantize, Time Adjust* | *Insert Beats at Bar…*, select bar 5, and select 8 beats (2 bars) to insert.

Piano Keyboard Panel

The piano keyboard displays MIDI note names for quick reference. This is enabled by default via the *Keyboard Note Names* option in the [Show] drop-down menu.



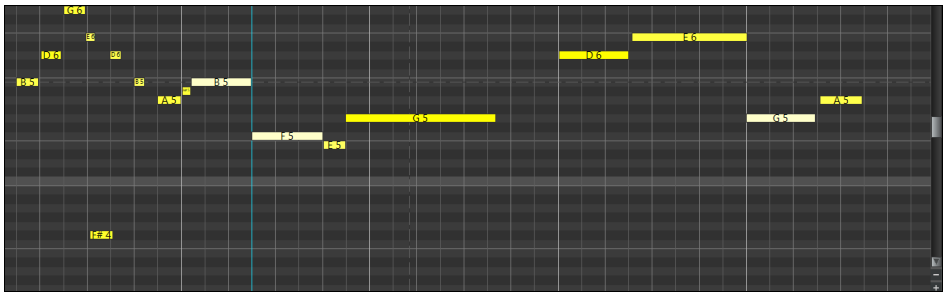
Clicking on a key inserts a note at the cursor with the duration set in the [Duration] drop-down menu.

Holding a key inserts a note at the cursor with a duration determined by how long you hold the key.

Shift+clicking on a key selects all notes of that pitch.

Shift+dragging across the keyboard selects all notes within a pitch range.

Note Panel



This panel displays two distinct full-height cursors: a green playback cursor that tracks the current playback position, and a blue position cursor that marks your edit/start position.

Faint dotted horizontal and vertical lines appear as you move mouse.

A clear visual marker highlights Middle C (C5) for easy octave orientation.

Zoom in vertically down to a single octave for detailed editing of specific pitch ranges, or zoom out to display all notes within the visible window height.

Zoom fully out horizontally to view your entire project at once, ideal for reviewing overall song structure and long-range patterns.

Horizontal bars represent notes. Notes can be selected, edited (start time, pitch, duration), inserted, and deleted.

Notes are color-coded by velocity, with higher velocities appearing brighter and more saturated, and lower velocities appearing more subdued.

When viewing a single channel, notes on other channels are displayed in while, helping you follow multi-channel tracks.

Notes display information such as note name, velocity, duration, etc. You can choose what information appears using the [Show] drop-down menu.

Note text automatically shortens when notes are too small to display full information, maintaining readability at all zoom levels.

Detailed tooltips appear when hovering over any note, showing pitch, velocity, duration, position, channel, and more. When hovering over empty space, the tooltip shows what note would be created at that location.

Overlapping notes are displayed in white for easy identification. They can be eliminated from the context menu.

Note Selection

Click on a note to select it. The selected note will be shown in red.

Shift+drag over notes to select multiple notes.

Shift+click on a note to add it to the selection.

Holding down the **Shift** key while pressing the **left/right arrow s**elects the adjacent note to the left or right.

In the “Select” Tool mode, click on empty space and drag a rectangle around notes to select all notes within that rectangle.

The selection rectangle picks up all notes that overlap with the rectangle, not just those whose start positions fall within it, making multi-note selection more intuitive.

Adding Note

In the “Pen” Tool mode, click anywhere on the Note panel to enter a note with the duration set in the [Duration] drop-down menu.

Pressing the **N** key inserts a note at the cursor position using the last-entered pitch.

To add notes with custom durations, click and drag horizontally. Notes will extend as you drag, with real-time visual feedback.

Clicking on a key in the Piano Keyboard panel adds a note at the current cursor position.

If Snap mode is on, inserted notes will align to the selected note value.

Editing Note

Click and drag a note horizontally to adjust its start time.

The **left/right arrow** keys move the start time of the selected note by 1 grid resolution.

Click and drag a note vertically to adjust its pitch.

The **up/down arrow** keys move the selected note by one semitone.

Holding down the **Shift** key while pressing the **up/down arrow** keys moves the selected note up or down by one octave.

Click and drag from the right edge of a note to adjust its duration.

Click and drag from the left edge of a note to adjust its start time and duration simultaneously.

When moving a note with the **arrow** keys, note movement follows the current grid resolution, providing more predictable and musically aligned navigation.

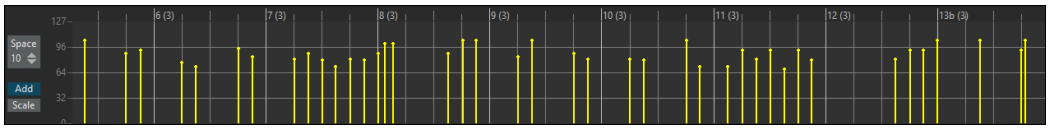
By default, note movement is axis-locked—restricted to pitch or time—for precise editing. Hold the **Shift** key while dragging to remove the lock and move notes freely in both directions.

Select a note and press the **Delete** key to delete the note. Clicking on a note while holding down the **Shift**+**Ctrl** keys also deletes the note. If "Erase" is enabled in the [Tool] drop-down menu, clicking on a note deletes it.

Hold down the **Ctrl** key as you hover over a note. When the cursor changed to a "V" click and drag the note vertically to adjust its velocity. The current velocity value is displayed in real time as you drag.

Hold down the **Ctrl** key while hovering over a note. When a specialized cursor ("V") appears, click and drag the note vertically to adjust its velocity. The current velocity value is displayed in real time as you drag.

Graphic Event Panel

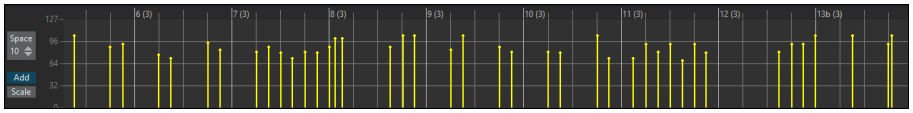


This panel displays non-note MIDI events such as Velocity, Controller, Program Change, Channel Aftertouch, and Pitch Bend. Use the [Display Type] drop-down menu to choose which type of data is shown.

When inserting controller or pitch bend events graphically, the event density can be adjusted from one event per tick up to one event per 30 ticks.

For events like Pitch Bend or Controller (e.g.,modulation or sustain), always end a "gesture" with a zero-value event. Otherwise, subsequent notes may be affected, causing unwanted effects such as a lingering pitch bend, continuous vibrato, or a stuck sustain pedal.

Velocity

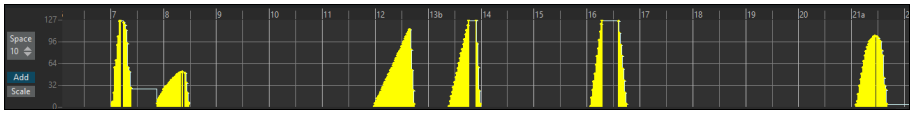


You can increase or decrease velocities of the selected notes using hotkeys or the context menu.

(Hotkey)	(Context menu)
+	*Increase Velocities of Selected Notes by 1.*
Shift +	*Increase Velocities of Selected Notes by 5.*
-	*Decrease Velocities of Selected Notes by 1.*
Shift -	*Decrease Velocities of Selected Notes by 5.*
~	*Randomize Velocities of Selected Notes (-1 to +1).*
Shift ~	*Randomize Velocities of Selected Notes (-5 to +5).*

You can also adjust velocities directly on the Note panel. To do this, hold down the **Ctrl** key while hovering over a note, and when a specialized cursor ("V") appears, click and drag the note vertically.

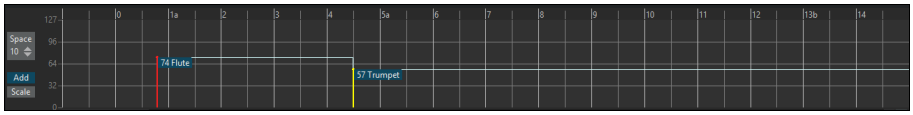
Controller



The Graphic Event panel displays the chosen controller type such as:

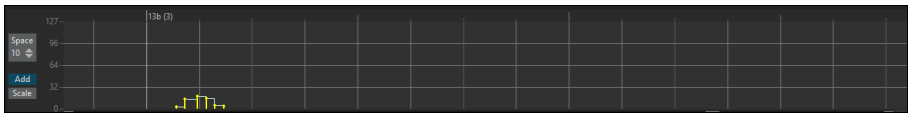
- Expression MSB: This is recognized by most modern synthesizers including most General MIDI synths. However, some older synths do not recognize this controller. Expression is an alternative to "7 Main Volume MSB." Use the Expression controller for individual tracks and reserve the main Volume controller for overall track loudness. That way, you can use the Band-in-a-Box main window Volume controls without affecting individual notes on the track.
- Modulation Wheel MSB: This is not firmly defined, but it is usually a Vibrato or Tremolo effect (especially in General MIDI synths). Play PianoRollDemoSong.MGU and watch how Modulation has been added to some notes to add Vibrato. It is usually best to use a modest amount. With graphic edits, too much is almost always too much!

Program Change



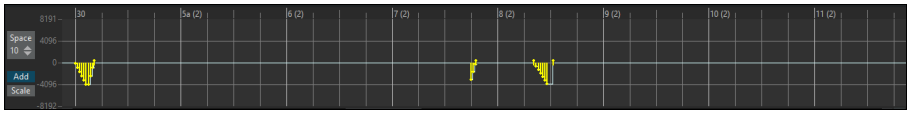
The demo song intro has a flute program change. Then the first chorus is trumpet, the second chorus is flute, and the third chorus is soprano sax.

Channel Aftertouch



Select "ChnAfter" in the [Display Type] drop-down menu to see Channel Aftertouch events.

Pitch Bend



Play the demo song and watch how the pitch bends have been inserted to "scoop" some note attacks, "sting" the middle of a note, or "fall off" some note releases.

Event Selection

Click on an event to select it. The selected event will be shown in red.

Shift+drag over events to select multiple events.

Shift+click on an event to add it to the selection.

Adding Events

Click on the desired location to insert a single event.

Use the **Pencil** or **Line** tool to add multiple events at once.

- **Pencil Tool**: Hover the mouse cursor over an empty area to activate the Pencil tool. Then, click and drag to draw a freehand curve. If the curve isn't perfect on the first try, keep holding the mouse button and move back and forth until it matches your desired shape. Releasing the mouse inserts a series of events following the freehand curve.



- **Line Tool**: Hold down the **Ctrl** key while hovering the mouse cursor over an empty area to activate the Line tool. Then, click and drag to draw a straight line. Releasing the mouse inserts events along the line slope.



- For both tools, the **Space** setting controls the spacing of inserted events. For example, setting it to 30 inserts events every 30 ticks.

Edit Modes

There are two modes for editing graphic events.

- The **Add** mode adds or subtracts the same amount to all selected events.
- The **Scale** mode scales the selected events. Select one or more Graphic Events and move the mouse over one of the events. **Shift**-drag vertically, and the events are scaled in a proportional fashion. Large-value events are scaled more than small-value events. This keeps the same shape of a gesture but makes the gesture bigger or smaller.

In the **Add** mode, note velocities exactly match the slope of your drawn line.

In the **Scale** mode, the Line Tool shapes the dynamics, but note velocities are scaled to follow the approximate shape of your drawn line. With this mode, you can insert a velocity fade, or change the velocity of a region, while preserving the Velocity dynamics of the music.

Editing Events

Click and drag an event up or down to change its value. If multiple events are selected, the values of all selected events will be changed.

Hold down the **Shift** key while clicking and dragging an event horizontally to slide it in time. If multiple events are selected, all selected events will move together.

Select an event and press the **Delete** key to delete the event. Clicking on an event while holding down **Shift**+**Ctrl** also deletes the event.

Context Menu

Right-click in the Note, Graphic Events, or Ruler panel to access the context menu.

Note: By default, right-clicking in the Note panel opens the context menu. This behavior is controlled by the [Tool] drop-down on the toolbar.

Undo: Duplicates the Band-in-a-Box *Edit* | *Undo* (or **Ctrl+Z**) action.

Delete Selected Events: Deletes any selected events (highlighted in red). This can also be accomplished by tapping the **Delete** key.

Select All Notes and Graphic Events: If the "Chan" combo box is set to "All," this item will select ALL EVENTS on ALL CHANNELS (all events in the track). Otherwise, ALL EVENTS are selected which match the CURRENT MIDI CHANNEL.

Select All Note Events (Of Current Channel) (right-click on the Note Panel or Note Ruler): If the Chan combo box is set to "All," this item will select ALL NOTES on ALL CHANNELS, but it will not select any non-note events. Otherwise, ALL NOTES are selected which match the CURRENT MIDI CHANNEL.

Select All Note Events (Of Current Channel) (right-click on the Graphic Event Panel or Graphic Event Ruler): If the "Chan" combo box is set to "All," this item will select ALL GRAPHIC EVENTS of the CURRENT VIEW/EDIT TYPE on ALL CHANNELS. Otherwise, ALL GRAPHIC EVENTS of the CURRENT VIEW/EDIT TYPE are selected which match the CURRENT MIDI CHANNEL. For instance, you could select all channel 4 modulation events, then **Delete**, to easily remove all of those events from the track.

Cut: Copy selected events to the clipboard and then remove them from the track. Can also be accomplished with the menu *Edit* | *Cut* (or **Ctrl+X**) action. If you wish, it is possible to cut from the Piano Roll, and then paste into the Notation window, or vice-versa.

Copy: Copy selected events to the clipboard can also be accomplished with the menu *Edit* | *Copy* (or **Ctrl+C**) action. If you wish, it is possible to copy from the Piano Roll, and then paste into the Notation window, or vice-versa.

*Paste - Replace***:** If no events are on the clipboard, this item is dimmed. The paste occurs at the time location of your right-click. Move the mouse cursor to the desired insert location. Right-click on the Note Panel, Graphic Event Panel, or any of the Rulers. Then choose this item from the pop-up menu. Any previous event types in the paste range which match event types in the clipboard are removed before the clipboard data is added to the track. If the "Chan" combo box is set to All, pasted events keep their original (copied) MIDI channel. Otherwise, the pasted events will be re-channeled to match the "Chan" combo box.

Paste - Merge: If no events are on the clipboard, this item is dimmed. The paste occurs at the time location of your right-click. Move the mouse cursor to the desired insert location. Right-click on the Note Panel, Graphic Event Panel, or any of the Rulers. Then choose this item from the pop-up menu. Events from the clipboard are merged with existing data in the track. If the "Chan" combo box is set to All, pasted events keep their original (copied) MIDI channel. Otherwise, the pasted events will be re-channeled to match the "Chan" combo box. The feature can also be accomplished with the menu *Edit* | *Paste* (or **Ctrl+V**) action (to match the Notation window, which also uses a merge style of pasting). Before using the main menu *Edit* | *Paste* (or **Ctrl+V**), first make sure the insertion marker is set to your desired paste time location. This is easy to do. Just click or drag in the Chord Ruler to place the insertion marker where you want it. Then tap **Ctrl+V**.

Re-Channel All Events to the Track Channel (Ch = xx): Re-channel all notes and graphic events (the entire track) to the MIDI Output channel assigned for this track. Sometimes this can come in handy to bring some "sanity" into Piano Roll editing. For instance, though the default Melody output channel might be channel 4, meaning that Band-in-a-Box transmits any events in the Melody track on channel 4. The actual events in the Melody track might be channel 1, or a mixture of several channels. For ordinary playback or note tweaking, it doesn't matter if the event channels are "mixed up," as long as you have the view channel set to All. But if you wish to use *Paste - Replace*, the Paste - Replace function is smart enough not to "stomp on" a track's events that differ from the channels of the clipboard MIDI data. So if you force all events to the track channel, the Paste - Replace function will always replace appropriately.

Re-Channel Selected Events to the Track Channel (Ch = xx): Re-channel only the selected events to the track channel.

Re-Channel Selected Events to the View Channel: When editing a multi-channel guitar track or editing an imported multi-channel MIDI file, this command may be useful. Beware that it might initially appear confusing. For instance, one might set the view channel to ALL, and make a selection (intending to set these events to Ch 12). Then set the view channel to 12, and of course the selected events disappear (if the events had some other MIDI Channel). But then when you invoke "Re-Channel Selected Events to the View Channel," the MIDI events will reappear on the Piano Roll.

Eliminate Overlapped Notes: Overlapped notes are displayed in bold aqua color, making them easy to identify. Selecting this menu command will remove the overlap.

Create Mute Region to mute generated accompaniment: This menu item is available in the Playable Track mode. When you select this, a green label will show at the top, and you can extend it by dragging horizontally. When you play the song, the generated accompaniment in this region won't be heard, but the green notes you have entered will be heard. If you regenerate accompaniment, it will be outside of this is region.

Increase Velocities of Selected Notes by 1: This increases velocities of all selected notes by 1. The hotkey is **+** (plus).

Increase Velocities of Selected Notes by 5. This increases velocities of all selected notes by 5. The hotkey is **Shift**++.

Decrease Velocities of Selected Notes by 1: This decreases velocities of all selected notes by 1. The hotkey is **–** (minus).

Decrease Velocities of Selected Notes by 5: This decreases velocities of all selected notes by 5. This The hotkey is **Shift**+**-**.

Randomize Velocities of Selected Notes (-1 to +1): This changes velocities of all selected notes by a random number from -1 to +1. The hotkey is **~** (tilde).

Randomize Velocities of Selected Notes (-5 to +5): This changes velocities of all selected notes by a random number from -5 to +5. The hotkey is **Shift**+**~**.

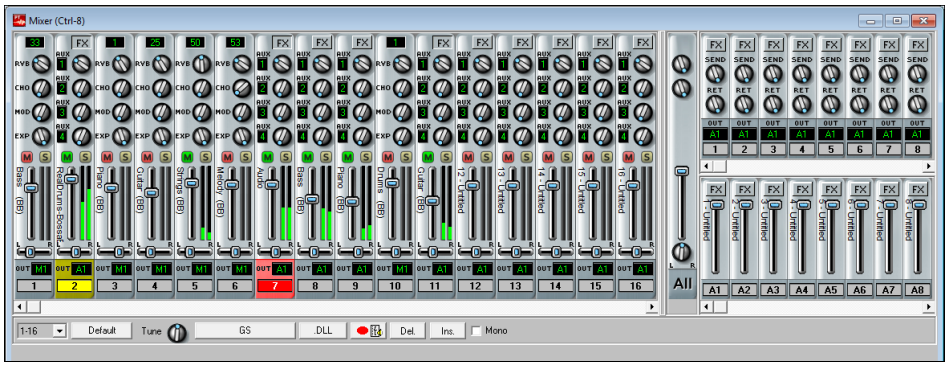
Chapter 11: Mixer Window

Overview



The Mixer window provides real time control of volume and effects. You can launch it with the toolbar button or by typing **Ctrl+8**.

This is an integrated mixer that controls both MIDI and Audio tracks. There are sliders for all 256 tracks, 8 auxiliary effects (Aux) busses, and a combined total of 16 audio output ports or audio subgroups.



The Mixer track strips conveniently show the track name vertically to the left of the volume sliders. This is the track name that is assigned in the Tracks window, go to that window to add or change track strip names.

When the mouse cursor is positioned over a track number in the Mixer window a popup box will display all of the Track windows settings for the track - the track name and type, patch name, volume and pan settings, and effects settings.



MIDI tracks show an output port with an “M” prefix for a MIDI port or an “S” for a software synthesizer. They have controls for volume, pan, reverb, chorus, modulation, and expression plus a VU meter, a MIDI patch selection box, and a mute/unmute button.



Audio tracks either have a prefix of “A,” for an audio output, or “G,” for an audio subgroup, on their output ports. They have volume and pan controls, a stereo VU meter, a mute/unmute button, four assignable auxiliary sends, and a track-specific FX insert.

In addition to the track specific effects, there are eight global busses that can each have four chained effects each. You can assign each audio track to four different Aux busses and adjust the amount that each audio track uses the effects in each assigned bus. If that isn’t enough, you can add four chained effects to each audio subgroup and also to the main output - this will affect all tracks.

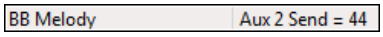
Mixer Controls

Knobs



To use the knobs, click and hold the left mouse button while the mouse cursor is inside the knob and move the mouse cursor in a circular motion. The knob’s pointer will follow your mouse cursor movements.

In this follow mode you can even move the mouse cursor off the knob so that it isn’t obscuring your view of the pointer.



As you move any Mixer knob or slider a continuous readout of its setting displays at the bottom of the window. At the desired position simply release the mouse button to set the value.

Volume Slider



To use the slider controls**,** simply **click, hold and drag** the control knob using the mouse or click on the control strip above or below the knob to move the slider in small increments. Holding the mouse button down on the control strip causes continuous movement of the control in small increments until the mouse button is released.

Pan Slider



If you need to see or edit the precise value of a knob or slider you can right mouse click on the knob to pop up a dialog box which displays the exact setting as a number, allowing you to manually type in a new numeric value (e.g., 80, 28, 12, etc.).

These knobs and sliders can be automated with MIDI controller messages for volume, pan, chorus, and reverb that are present as events in a song.

Moving a volume or pan slider while pressing the **Shift** key also moves other selected tracks’ sliders.

Track Controls

The Mixer has different controls for MIDI tracks and audio tracks.

MIDI Track Strip

This is the Mixer strip for a MIDI track.



Click on the patch number box to see the **Select Patch** dialog where the name of the patch will be highlighted. You can select a new patch from this dialog.

Control knobs for Reverb, Chorus, Modulation, and Expression effects have a smooth "real feel" response. Right-click on these control knobs to type in an exact controller value.

Click on the **[M]** mute button above the fader to turn tracks on and off, i.e., to toggle between active and mute states. A red button indicates the track is muted, green indicates it is playing.

The **[S]** solo button will change to bright yellow when the track is soloing.

Right-click on the sliders to type in an exact fader level.

The track name (from the Tracks window) is shown vertically to the left of the Volume slider.

Each track strip has its own stereo VU meter.

The LR stereo pan slider also has a smooth, even response with the option to right-click and type in an exact value.

Click in the "Out" box to assign the track to a MIDI output port. DXi and VSTi synths are identified with an S. For example, the default DXi synth or VSTi synth is S16.

Selected tracks are highlighted in red or yellow, as in the Tracks window.

Hover the mouse over any track number to see a summary of the track settings (MIDI or audio).



A click in area around the track number will open the context menu with a full list of commands and settings for the particular track. This is the same menu that opens with a right-click in the Tracks window, so it reduces the need to switch back and forth between windows.

Audio Track Strip

This is the Mixer strip for an Audio track.



The **[FX]** button opens the **DirectX/VST Window** where up to four real time effects can be inserted into the track. When effects are assigned the button appears "pushed in."

Each track has four auxiliary effects sends that can be assigned to any four of the eight available Aux busses. Each Aux bus can have up to four chained effects.

The rotary knobs set the send level to each Aux bus. Right-click on a knob to enter an exact level for the send.

Click on the [M] mute button above the fader to turn tracks on and off, i.e., to toggle between active and mute states. A red button indicates the track is muted, green indicates it is playing.

The [S] solo button will change to bright yellow when the track is soloing.

The track name displays vertically to the left of the volume slider. The track name is entered in the Tracks window.

Right-click on the volume slider to enter an exact fader level.

Each track strip has its own stereo VU meter.

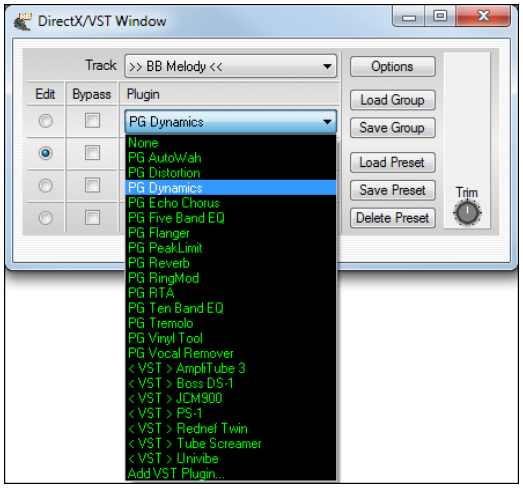
The LR stereo pan slider also has a smooth, even response with the option to right-click and type in an exact value.

Tracks can be assigned to audio subgroups using audio output ports that do not currently have a driver port assigned. This track is assigned to subgroup 2.

When using audio subgroups the Aux busses should also be sent to that subgroup, so auxiliary busses 5, 6, 7, and 8 would be assigned to Subgroup 2 (G2) in this example.



Press the **[FX]** button to bring up the **DirectX/VST Window**, and you can select/edit the effects you wish to insert. When effects are assigned to a track the **[FX]** button appears "pushed in."





A click in area around the track number will open the context menu with a full list of commands and settings for the particular track. This is the same menu that opens with a right-click in the Tracks window, so it reduces the need to switch back and forth between windows.

Master Controls and Mixer Utilities



The two knobs in the **All** column serve as master reverb and chorus settings. These controls will affect the overall level of Reverb and Chorus without changing the settings on individual tracks.

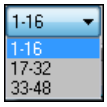
The volume slider control in the **All** column is the **master volume** control. This setting is also displayed on the main toolbar.

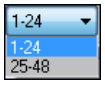
The **L-R** panning knob in the **All** column will change the settings for all 256 tracks at the same time.

When a .SEQ file is saved, all of the Mixer's current volume, pan, chorus, and reverb settings are also saved. These settings will be restored when the file is reloaded.

The current mixer track corresponds to the current/highlighted track in the **Tracks** and/or **Bars** windows. You can change the current track in the **Mixer** window simply by clicking on the track number.

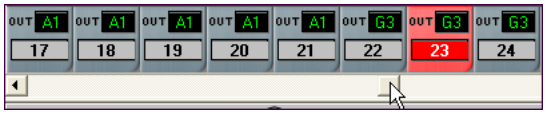
The Mixer's **Range Combo** settings are determined by the display configuration you set with the splitter bar.





These two examples show the Range Combo settings with the splitter bar set to show 16 or 24 tracks at a time, but you could use different settings depending on the size of your display or on what combination of track strips, Aux busses, and output ports you want to see.

This panel is scrollable, so if you can't see all of the faders just use the scroll bar to get to the one you want.





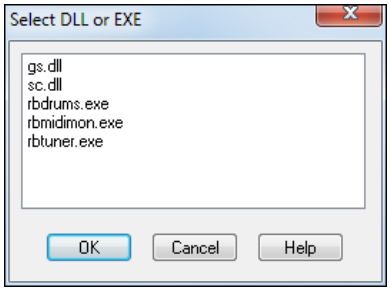
The **[Default]** button located on the lower-left of the Mixer will reset all mixer parameters to the default settings.



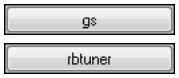
The **Tune** knob lets you fine-tune your synth or MIDI sound source. When you click on the Tune knob you'll hear an "**A**" note sent out through the current part. Adjust the knob until the module is set to the desired tuning and release the mouse button.



This button launches the **Select DLL or EXE** dialog that lets you select a .DLL or .EXE that was written specifically to work with RealBand. The name of the button changes from .EXE to .DLL depending on the plugin that is running.



All .DLLs or .EXEs that begin with the "$" character, e.g., $GS.DLL, will show up in the dialog (without the "$" character).



This run button (to the left of the [.EXE] [.DLL] button) changes to show the name of the currently running .DLL or .EXE plugin, such as the **GS Settings** dialog or the RealBand built-in **Tuner**. Click on this button to open the window displaying the currently running application.

These .DLLs and .EXEs are small plugin programs that have been specifically designed to work with the program to extend functionality and features, such as the .DLL plugin that is used to edit Roland GS settings (gs.dll). All of these special .DLL/EXE plugin files should reside in the RealBand default directory, e.g., c:\RealBand. A list of all plugin files will be displayed automatically.



Clicking on the Record Mixer Moves button starts the song playing and lets you record only mixer moves. The controller moves are saved as MIDI events in the selected track (including audio tracks).



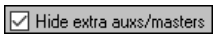
The Delete button in the mixer will automatically delete all mixer events (volume, reverb, pan, chorus) that are currently embedded within the song's selected tracks.



The Insert button in the mixer will automatically insert Mixer Events (volume, reverb, pan, chorus) into song's non-blank tracks.



Sometimes a stereo mix will have problems when it is played back in mono. Use this checkbox to hear the mix in mono and check for problems such as flanging or canceling.



When this checkbox is enabled, RealBand will automatically hide any extra masters or auxes beyond the highest used master and highest used aux.

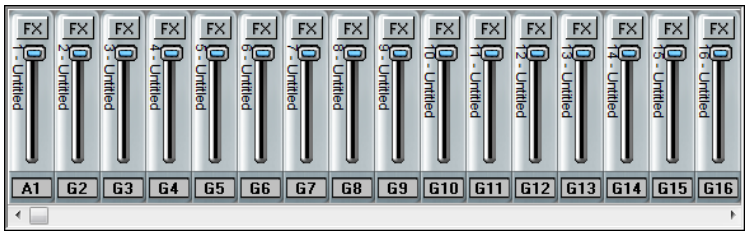
Creating Audio Subgroups in the Mixer

Unassigned Outputs Work As Subgroups

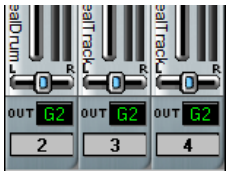


When this checkbox is enabled in the **Audio** preferences dialog, any audio output ports that do not have a driver port assigned to them will function as subgroups. A subgroup is a bus or signal path that gives you the ability to control several tracks as a group.

Let's suppose you only have one audio Output Driver port installed in RealBand and you've enabled the "Unassigned Outputs Work As Subgroups" checkbox. Audio Output Ports 2 -16 can then become subgroups.

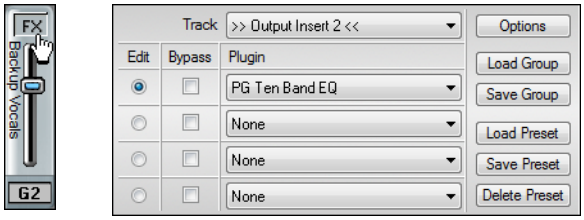


Note that this panel is scrollable, so if you can't see all of the faders just use the ◄ ► scroll arrows to get to the one you want.



If you were to then set the output ports of tracks 2, 3, and 4 to G2 (i.e., port 2, which is now called Subgroup 2), and you were to adjust the volume of Subgroup 2 in the mixer the same way you do for output ports, this will affect the volume of all 3 tracks as a whole.

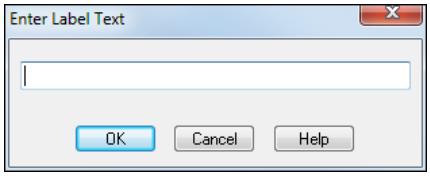
You could also add effects to the subgroup in the mixer the same way you do for output ports. For example, you could apply an EQ to the subgroup as a whole.

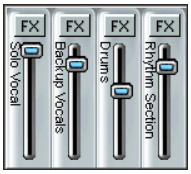


The final output of the subgroup (G2) is sent to the audio output port (A1).

Mixer labels for master effects

You can type in a label and it is shown vertically next to volume slider, and the labels are saved with .SEQ files. Right click on the fader to enter the label.





Real Time Audio Effects

Real time effects will let you add your favorite effects (such as chorus, reverb, EQ, etc.) at the same time that the audio tracks are played without permanently altering the actual track data. You can apply real time DirectX and VST effects to the audio tracks, Aux busses, audio subgroups, and audio output ports.

Track FX Inserts



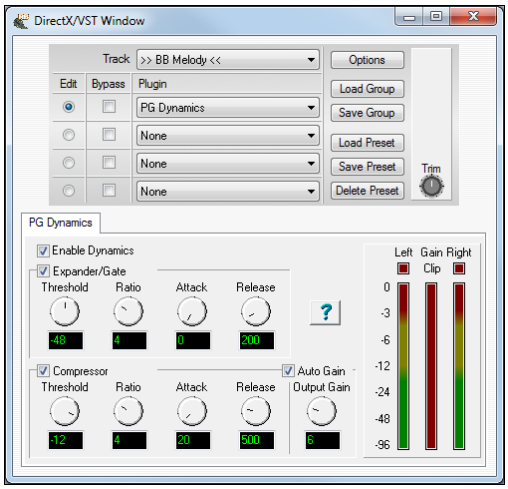
On the mixer, there is an **[FX]** button at the top of each channel (track) strip of the mixer. Press the [FX] button to bring up the **DirectX/VST Window** and you can select/edit a chain of up to four effects plugins you wish to insert for just that particular track.

The "Track" field of the **DirectX/VST Window** lets you choose a track in which to select or edit effects. The "Edit" radio buttons let you chose which of the four effects to edit in the group of effects available in each Track.

DirectX/VST Window

In the illustration, the Melody is the currently selected Track, and slot 1 (PG Dynamics) is selected for editing.

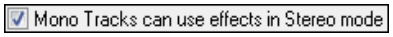
Note: A "track" can be a track FX Insert, an Aux bus, or an Output insert.



The **[Load Group]** and **[Save Group]** buttons let you load and save the effects settings for the currently selected track. The **[Load Preset]** and **[Save Preset]** buttons let you save and load presets for the current effect (such as Echo/Chorus). The **[Delete Preset]** button lets you remove a preset from the list of already saved presets.

The **[Options]** button opens the **DX/VST Options** dialog for managing the real time DirectX and VST effects plugins on your system.

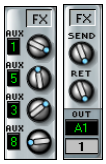
Mono Tracks Can use effects in Stereo Mode



This setting in the **Audio Options** dialog allows mono audio tracks to use the real time effects track inserts in stereo mode for better sounding mixes.

Note: This feature only applies to track effects inserts. Aux busses have always worked in stereo mode (if the effects were stereo). This feature, when enabled, will also cause RealBand to use up more CPU processing power.

Aux Busses

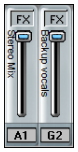


Each track's mixer channel strip also has four assignable AUX knobs that let you individually control the send levels for up to four auxiliary effects on each track.

There are eight **Aux** (auxiliary) effects busses in the **Mixer** window. Each allows a chain of up to four effects.

You can adjust the Send level, Return level, and output port destination (audio port or subgroup) for each bus.

The **[FX]** (effects) button at the top of each Aux strip brings up the **DirectX/VST Window** so you can select effects or edit effects settings. When a buss has any effects assigned to it the **[FX]** button appears to be "pushed in."



Effects can also be applied to the individual audio subgroups and output ports.

Each subgroup and audio port has an FX insert, with slots for four chained effects.

This is useful if you wish to apply special effects to a selected group of tracks, or apply them globally to the final stereo output.

Real Time Effects Reset

The **[Reset Realtime Effects]** button in the **Audio** preferences dialog removes any real time effects from your project so you can begin remixing from scratch.

Notes on Performance

The number of real time effects that you can expect to activate at a time without stressing the system depends on the speed of your computer. Normally you would mostly be using the Aux busses, since the effects used in the Aux busses can be applied to multiple tracks efficiently.

Let's say you select a reverb in the Aux1 section of the mixer, and you use the Aux1 send knobs for five tracks to use Aux1 for reverb. In this case, there would only be one instance of this reverb plugin active regardless of the number of tracks (5) that were utilizing the Aux1 bus, all tracks utilizing Aux1 share the same signal path.

Note: The more effects you chain together within each Aux bus, Track Insert, or Output Insert, the more CPU power will be required. An Aux bus with just one effect will require a lot less CPU power than an Aux bus with a chain of four effects.

Recordable Mixer Moves

Audio track mixer moves (Vol/Pan/Aux1/Aux2) are recordable, and you can insert/delete/edit the associated MIDI controller events in the Event List. To record Mixer moves the current track should be set to the track in which you want to record the moves.

- Rehearse the Mixer move while playing the song, noting the "begin" and "end" points for the move. It's often useful to enable the metronome for reference during playback and recording.
-  Start recording with the Mixer moves record button and perform the Mixer moves as rehearsed. Stop recording.
- Answer **[Yes]** to "Keep Recorded Mixer Moves?" They will show up as a series of MIDI controller events in the Event List for the selected track.

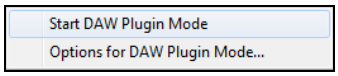
Alternatively, you could just use the *Edit* | *MIDI* | *Fill* command or insert MIDI controller events into the event list for the particular audio track.

Chapter 12: Wizards, Tools, and Plugins

Plugin Mode and Drag ‘n’ Drop



To enter plugin mode in RealBand, click on the DAW Plugin Mode button of the Tracks window and select *Start DAW Plugin Mode* from the menu.



In plugin mode, RealBand is open as a small always-on-top window, and acts as a plugin for your favorite DAW/sequencer, so that you can drag-and-drop MIDI and audio (WAV or WMA) tracks from RealBand to another sequencer (or to Explorer). You can work in another sequencer, type a chord progression in RealBand, and then simply drag the track from RealBand to your sequencer's track at the desired track and bar location.

Dragging and dropping from RealBand to an outside location, such as the desktop or another audio program, involves:

- entering the Tracks window.
- holding down the left mouse button on the Track Number of the source track.
- dragging the mouse (still holding down the button) to the new location of the track, either the desktop or a track in another sequencing program.

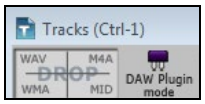


To drag and drop part of a track, first highlight the section that you want and then hold down the left mouse button on the track number and drag the mouse to the desired drop site.

You can select a region of the song during playback in the Tracks window and some other windows like the Audio Edit window and Chords window.

Drop Station

If drag ‘n’ drop to another sequencer/DAW isn't working, you may need to use the Drop Station.



There are 4 quadrants, and they are labeled according to the types of files that will be made by the drop: Audio Files (wav, wma, m4a) or MIDI file (mid). The Drop Station makes it faster and easier to make different file types. It also allows you to make MIDI versions of the RealTracks (RealCharts), by simply dragging a RealTrack to the “MIDI” quadrant of the Drop Station.



When you drop the track onto the Drop Station, you will see an orange color, indicating that the track is accepted and the file is being prepared.



The color of the **[Drop]** button will change to green when the file is ready.

When the file is ready, the Drop Station turns green. You can now drag it to the DAW.

Note: Programs that require this step include Cubase and Abelton Live.

Audio Tracks

If the track is an audio track, it will be dropped as a either a .WAV file (uncompressed) or a .WMA file. To choose the audio file type, click on the DAW Plugin Mode toolbar button and select *Options for DAW Plugin Mode* from the dropdown menu to open the **Plugin settings** dialog.

In the **Plugin settings** click on the “Drag Audio as” combo box to choose the audio file type.



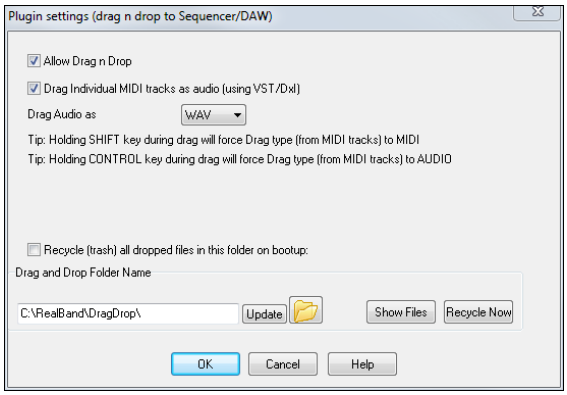
MIDI Tracks

If the track is a MIDI track, it will either be dropped as a MIDI file or an audio file depending on the "Drag Individual MIDI tracks as audio (Using VST/DXi)" setting in the **Plugin settings** dialog.

Also, if **Shift** is held when dragging/dropping MIDI outside RealBand, then a MIDI track will be dropped as a MIDI file regardless of that particular setting. If **Ctrl** is held, it will be dropped as an audio file regardless of the setting.

Options for DAW Plugin Mode

The second menu item on the DAW Plugin Mode button is *Options for DAW Plugin Mode*. This opens the **Plugin settings** dialog.



Allow Drag n Drop must be checked to use this feature. There shouldn't be a reason to disable this.

If **Drag Individual MIDI tracks as audio (using VST/DXi)** is checked, MIDI tracks will be rendered to audio WAV files before they are dropped.

If **Recycle (trash) all dropped files in this folder on bootup** is set, the DragDrop subfolder in the RealBand folder will be erased (recycled) on boot up. Before enabling this setting, make sure that your DAW does not require a permanent copy of the file in this folder.

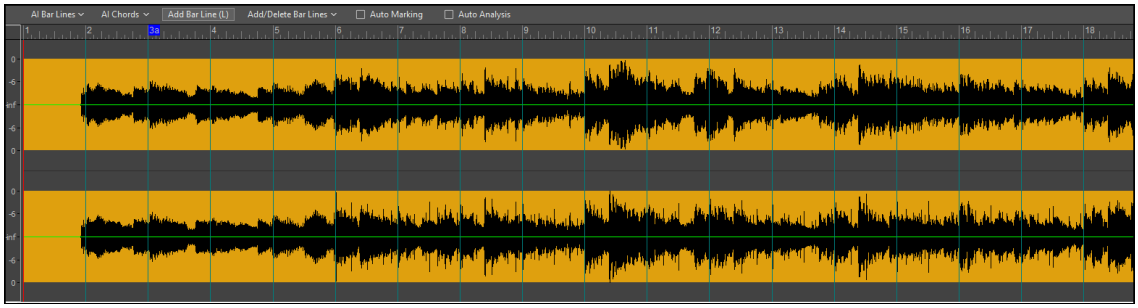
RealBand lets you change the DragDrop temp folder by clicking on the folder button and browsing for a new location.

Drag and drop is allowed outside of RealBand even if the plugin mode is not specifically enabled. The options in this dialog still apply to drag-and-drop outside of RealBand when not in plugin mode.

Audio Chord Wizard

The AI-powered **Audio Chord Wizard** automatically detects bar lines and analyzes chords in an audio file. It also detects the tempo, generates a tempo map, identifies the time signature, and determines the song key. Dedicated settings let you refine the results and re-process the entire song or a selected range for greater accuracy and flexibility.

To launch the A**udio Chord Wizard**, click on the [**AI Tools ACW**] button on the toolbar and select *AI Audio Chord Wizard* from the drop-down menu,



TranzPort® Support - Wireless Remote Control

TranzPort Support - Wireless Remote Control support for RealBand!



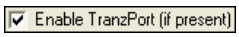
The Frontier Design TranzPort® is a wireless remote control hardware unit (*Electronic Musician* Editors' Choice 2006) that now allows you to control RealBand from 30 feet away!

The backlit LCD provides a two line readout. Buttons and a wheel allow control of many RealBand features. Select songs and control Play, Stop, Pause, and Loop. Select, Mute, and Solo tracks as well as Volume and Tempo changes are all supported.

You can, for example, put the TranzPort unit on your piano at home (or your music stand on a gig) and load/play/control songs, all while far away from your computer – all wirelessly up to 30 feet – even through walls! The TranzPort also works "right-out-of-the-box" with Band-in-a-Box.

Note: The TranzPort is currently not in production. It's still a great product if you can find one.

To use the MIDI TranzPort with RealBand, first make sure the Frontier USB wireless receiver is plugged into a USB port of your computer.



The "Enable TranzPort (if present)" checkbox must be selected under the MIDI tab in Preferences. If this checkbox is unchecked, then RealBand will not attempt to look for and initialize the TranzPort. By default, this checkbox is enabled, which means that, by default, RealBand will always try to find and initialize the TranzPort.

You should see a TranzPort icon on the Windows task bar. RealBand should then automatically connect to TranzPort when you start-up RealBand.

To verify that the TranzPort is installed, you can visit the MIDI drivers dialog and see if TranzPort shows up as a MIDI In and MIDI Out driver. Do NOT select the TranzPort in the MIDI drivers dialog.
To start using the TranzPort

While RealBand is running, "wake up" the TranzPort by pressing a key on the TranzPort (e.g., the STOP key). The TranzPort display will show

- "Title of RB song" on top row of LCD
- <tempo> <Current Track Number> <track volume> <patch # (if track is MIDI)>

For example, the screen might say
“My Tune”
120 Tr=1 v=122 p=1

Pitch to MIDI Converter

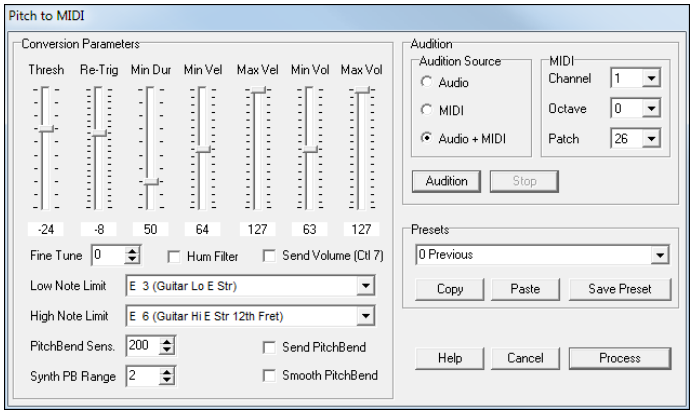
Access the Pitch to MIDI Converter by selecting (highlighting) an audio track and choosing the *Edit* | *MIDI* | *Pitch to MIDI Convert (current audio track)* menu item.

The converter cannot recognize chords or mixes of music instruments. It gives the best results with single-note melody lines, played very cleanly, and with very little background noise or hum.

For best results, use very plain playing technique and pure tone. Idiosyncratic playing technique or wide variation in instrument tone can confuse the converter. When playing guitar or other stringed instruments try to avoid ringing strings. A quietly ringing open string can also confuse the converter as it tries to determine the pitch of your intended note. For vocals, try humming or singing all notes with a pure vowel sound such as “Oooh” or “Aaaah.”

As with other pitch-to-MIDI computer algorithms, this plugin is not absolutely perfect. However, with careful playing (or singing) and the right settings you can get good conversion results on *most* of the notes. You can also expect to get a few “off the wall” notes, which must be edited, in the Notation or Event Edit screens.

Settings



Thresh - The Note On level threshold, in dB. Audio below the Note On threshold will not trigger notes. If Thresh is set too low, the converter will try to convert noise and unintended notes to MIDI. If Thresh is set too high, the converter might miss some of the intentional notes in the audio.

For best results use a fairly loud track. It is not necessary to have the audio recorded so loud that it distorts.

Re-Trig - Set the sensitivity for re-triggering identical note pitches. For instance, this control is useful to properly detect guitar double-picking techniques. If the slider is too high, it will re-trigger too many notes, and if the slider is too low it will miss some re-triggers. Some instruments might work better with minimal or no re-triggering (slider all the way down). Soft attack instruments such as flute or sax might need the Re-Trig set fairly high in order to get good performance on legato repeat notes.

Min Dur - Minimum note duration (in milliseconds). This setting helps to ignore very short glitch notes, short tracking errors within notes, and fixes tracking wobble on note decay. As notes decay and become very quiet the note is not very loud compared to the noise in the track, which means the converter will have more difficulty measuring the pitch. If you get too many glitches *increase* the Min Dur setting. If you miss too many notes *decrease* Min Dur.

Fine Tune - Compensate for an out-of-tune recording. If too many MIDI notes are playing a half step too high adjust the Fine Tune setting upwards. If too many MIDI notes are playing a half step too low adjust it downwards.

Low Note Limit, High Note Limit - Set the expected note range of the source audio.

Min Vel, Max Vel - The Midi velocity range that corresponds to the audio note amplitude. An input Note that reaches up to 0 dB will send the Max Vel, and a note that is barely above Thresh will send the Min Vel. For an organ-type on-or-off response, set Max Vel and Min Vel to the same value. This will cause all MIDI notes to have the same velocity.

Hum Filter Checkbox - Pre-process the audio thru a hum filter –in case the audio has too much hum (hum can confuse the pitch detection).

Send Volume Checkbox - Insert Volume messages in the MIDI track.

This could be most useful with voice, violin, horns, or even guitar

A good way to use this setting would be to set a narrow velocity range– Perhaps **Min Vel** and **Max Vel** could be set to 127, or perhaps **Max Vel = 127** and **Min Vel = 100**. Then enable the **Send Volume** checkbox.

Each note’s MIDI volume is controlled by the instantaneous audio level rather than controlling the level by MIDI velocity. You could use a long-decay synth patch, and each note will track the volume envelope of the underlying audio. With “just the right settings” it will track gradual changes in dynamics on sustained instruments such as horn or voice.

Min Vol, Max Vol - Adjust the volume message range (controller 7) that is transmitted according to the instantaneous audio level of the source file.

Audition Button - Convert and then play the file.

Stop Button - End the audition playback.

Audition Source - Audition the source wav, the converted MIDI, or both at the same time. The timing is fairly tight between audio and MIDI, but when auditioning Audio and MIDI simultaneously, there may be slight variations depending on the MIDI latency and audio latency of your sound card. The playback timing will be much better once the MIDI track has been exported back into RealBand.

Note: The audio audition uses the Windows default audio device, and the MIDI audition uses the Windows default MIDI device.

MIDI Channel - The audition MIDI channel.

MIDI Octave - The audition octave. This only affects the octave of audition playback. It does not affect the pitch of file output. Once the conversion has been exported back into RealBand you can adjust the octave of the track here, if necessary.

MIDI Patch - The MIDI patch is used for Audition playback. This setting does not affect the patch assigned in RealBand.

Cancel - Exit the Pitch to MIDI converter.

Process - Do the conversion and return to the host program (RealBand).

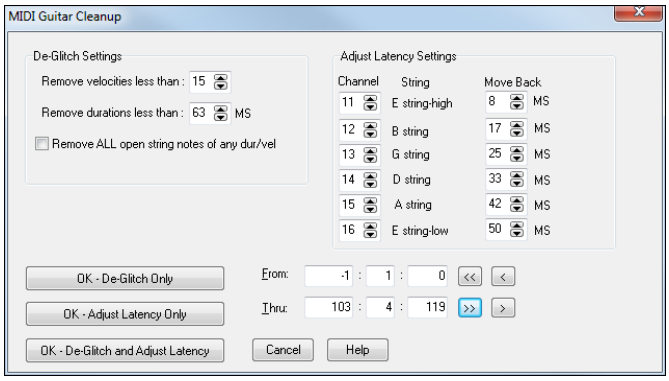
MIDI Guitar Cleanup



The MIDI guitar tool bar button launches the **MIDI Guitar Cleanup** dialog where you can clean up MIDI tracks recorded on a MIDI guitar.

The **De-Glitch** routine will automatically remove glitch notes based on the Velocity and Duration settings in milliseconds (ms). The **Adjust Latency** routine will automatically move the location of notes earlier to compensate for MIDI guitar latency. You can specify the adjustments for each string in milliseconds if the default settings don't match your guitar's response times.

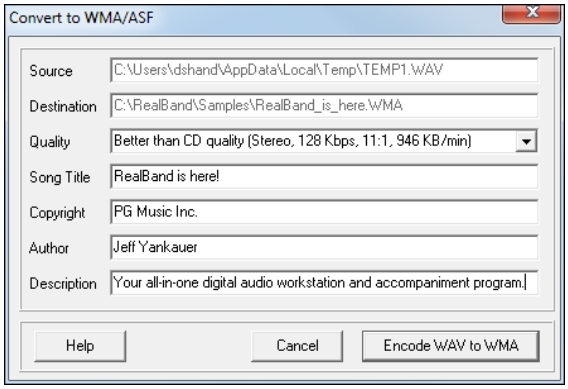
- **OK – DeGlitch Only** – This will process the track using the DeGlitch routines only.
- **OK – Adjust Latency Only** – This will process the track using the latency adjustment routines only.
- **OK – DeGlitch and Adjust Latency** – This will process the track using both sets of routines.



Convert to WMA (Windows® Media Audio™)

Us this plugin feature to convert a .WAV file to Windows Media Audio format (*.WMA). There are options to save the file to a specific filename and destination folder, to select a resolution (quality) for the file, and spaces to fill in the appropriate Title, Author, Copyright, and song Description credits. This information will be embedded into the resulting WMA file and will be viewable when the file is played in an appropriate media player.

To access this feature, select *Render | Merge Audio and DXi Tracks to WMA file.*



Source – This field displays the source WAV file. It is for informational purposes only. This field cannot be edited.

Destination – This field displays the Destination filename and path. This can be edited if desired.

Quality – Set the bit rate of the compressed file. Higher bit rates have higher quality audio, while lower bit rates make smaller files which take up less space on a hard drive (and are easier to stream over the Internet) at the expense of sound quality.

Song Title – The Song Title which is encoded into the WMA file, and which is displayed by a WMA player.

Copyright – Copyright information encoded into the WMA file.

Author – Author information encoded into the WMA file.

Description – Additional information encoded into the WMA file.

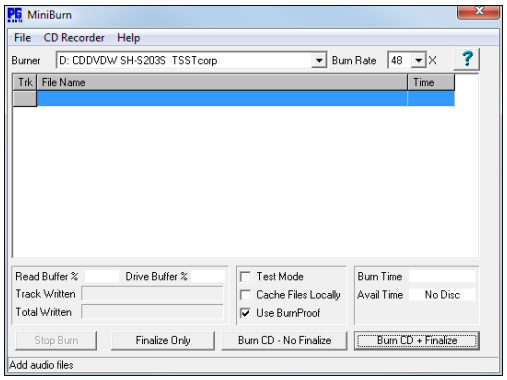
As mentioned, the information you enter into the Song Title, Copyright, Author, and Description fields will be viewable when the file is played in a supported media player.

MiniBurn

The *Render* | *Launch CD Burner…* plugin feature renders the current project file to a stereo .WAV file and then launches the CD Burner application.

Note: If your drive is not recognized by MiniBurn then you should burn the rendered .WAV file to CD using the software supplied with the CD drive.

You can add songs to the CD-R at a later date if you don't select (disable) the "Finalize" option. Any CD you create won't be playable in an audio CD player until the disc is finalized. Make sure that the disc is finalized when you burn the CD for the last time.



The Burn List

Burn list files are displayed in MiniBurn's central file list region.

Trk - Track Number

File Name - Path and name of Wave files

Time - Play time of each track, formatted in minutes:seconds:frames.

Burn Time indicates the sum of all the burn list track times.

Avail Time indicates the time available on the blank CDR, if a writeable CDR or CDRW has been inserted in the CD Burner. If no disc has been inserted, or if an unwriteable disc has been inserted, Available Time reads "No Disc."

Add Files to the Burn List

- Use the menu item *File* | *Add Track…*
- Right-click on the Burn List and select *Add Track* from the pop-up menu.
- Drag wave files into the MiniBurn window from an open Windows folder.

Remove Files from the Burn List

- Left-click to select a track, then use *File* | *Remove Selected Track.*
- Left-click to select a track, then right-click on the Burn List and pick *Remove Track* from the pop-up menu.

Clear All Files from the Burn List

- Use the menu item *File* | *Clear All Tracks From Burn List.*
- Right-click on the burn list and select *Clear All Tracks* from the pop-up menu.

Change the Order of Tracks in the Burn List

- Left-click on the **Trk** column of the file you wish to move, and drag the file to a new location in the list.

Description of Filenames

miniburn.exe - Main program executable. This program can be run as a plugin from within RealBand, or it can be run stand-alone. Double-click this file (located in the main RealBand folder) to run Miniburn in stand-alone mode.

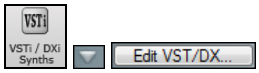
done.wav - This wave file (if present) will play when the burning operation is complete. You can use any standard wave file – just save it as done.wav and the program will play that file when done.

burn.txt - The program automatically looks for and loads files specified in the burn.txt file at the beginning of a burn session. A burn.txt file is made when the program is launched, adding the "current song" to the burn list automatically.

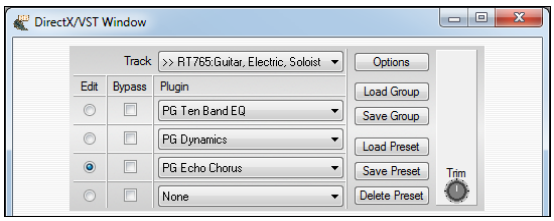
acdwrite.ocx - An active X control that is registered and installed into the Windows OS. This file is required for the burner software to operate.

DirectX (Windows® Audio Plugin Format)

Use this feature to apply DirectX (DX) or VST audio plugins to a track.



Access the feature by clicking on the **[VSTi]** button in the toolbar and selecting a track from the list, or in the Tracks window by clicking on the disclosure arrow for an audio track and then pressing the **[Edit VST/DX]** button.



You can also select a track and then go to *Edit* | *Audio Effects* | *DirectX Audio Plugins*.

The DirectX feature requires that you have Microsoft DirectX installed in your OS. Note also that this functionality will be of no use to you until you have at least one DirectX Audio plugin installed into your system.

You can download the latest version of Microsoft DirectX from www.microsoft.com.

Dynamic 3D Drum Kit Window

This re-sizable drum window is an animated 3D display of a complete MIDI drum kit with all 61drum sounds displayed on their respective instruments.



To launch the **Drum Kit** window, click the Drums button in the toolbar.

You can do several things with the **Drum Kit** window:

- Watch the drum part being played on the drum kit in real time.
- Play along with the drums in real time by mouse clicking on the drum instruments, or using the QWERTY keys. The computer keyboard, the piano key number, and sound names can all (optionally) be made visible on the hint line by moving your mouse cursor over a given instrument.
- Record a drum part into RealBand.

Drum Display

All the **General MIDI** percussion instruments are shown. Some percussion instruments are triggered by multiple MIDI notes. When a sound is controlled by more than one MIDI note, a percussion instrument will show different behavior in response to the different notes. For instance, the Hi-Hat responds differently to Close Hat, Pedal Hat, and Open Hat MIDI notes.

The on-screen instruments may be played by mouse clicking or by pressing the appropriate computer keys. When playing by mouse click or computer keys, the **Shift** key can be used to switch the velocity between two user-specified levels (i.e. loud=100 and soft=50). The multi-note instruments send different MIDI notes to your sound source, depending on where you "click" on the instrument. For instance, the Kick Drum can send three different notes: Ac. Bass Drum (MIDI note 35), Bass Drum 1 (MIDI note 36), and Square Kick (MIDI Note 32).

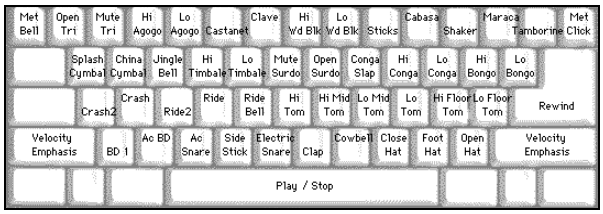


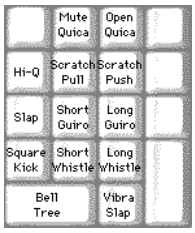
Tip: The hint line at the top of the window describes the current control under the mouse cursor. Use the hint line to learn the mouse-responsive areas of each drum instrument.

Control Buttons:

- **Record**: Places RealBand in Record mode so drum instruments can be recorded.
- **Play**: Starts song playback (Space key).
- **Rewind**: **Stop** and **return** to song start (Return key).
- **Stop**: Stops song playback (Space key).
- **Size Buttons 1/1 - 1/2 - 1/4**: Clicking on these buttons changes the size of the Drum Kit window to full size, half size, or quarter-size. (You can also resize the window to any size by dragging a window border.)
- **Settings**: Adjusts program behavior. See the Settings Dialog topic.
- **Help**: To launch the drum Help file, press **F1**.

Computer Keys





Press computer keys to play drums.

Drums are grouped on the computer keyboard by category. The kick, snare, and hi-hat sounds are on the lowest keyboard row. The lower-middle row contains toms and cymbals. The upper-middle row contains Latin drums, and the top row contains Latin hand percussion. The Numpad keys contain the rest of the Latin hand percussion plus the electronic tones.

Multi - Note Instruments

Kick Drum - Ac. Bass Drum, Bass Drum 1, Square Kick
Snare - Acoustic Snare, Side Stick
Hi-Hat - Closed, Pedal, Open
Floor Tom - Low, High
Electronic Pad - Multi-zoned for Hi-Q, Slap, Electric Snare
High Conga - Mute, Open
Surdo - Mute, Open
Cuica - Mute, Open
Metronome - Bell, Click
Whistle - Long, Short
Triangle - Mute, Open
Guiro - Long, Short
Scratch - Push, Pull

Settings Dialog



Press the **Settings** button (to the left of the **Rewind** button), to adjust the various Drums Settings.

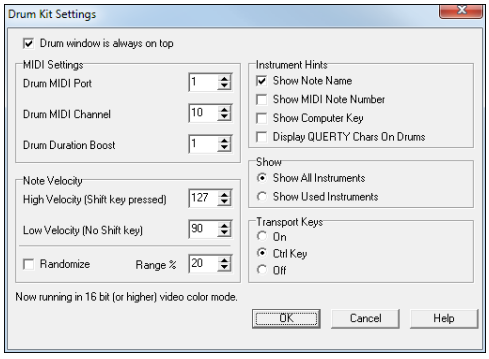
The "Drum window is always on top" checkbox keeps the **Drum Kit** window on top of other program windows.

MIDI Settings

- "Drum MIDI Port" defaults to Port 1, but can be changed to use any of the ports available, i.e., the MIDI Output drivers enabled in the MIDI Driver Setup.
- "Drum MIDI Channel" defaults to channel 10, which is the channel used by General MIDI instruments. If your drum machine or MIDI device uses a different channel for drums you can set it here.
- "Drum Duration Boost" adds duration to drum notes with a range of 1-10.

Note Velocity

When playing drums with a mouse or computer keys, the **Shift** key toggles between two levels of note velocity. The default velocity is 90, with a default shift key velocity of 127. The two velocity levels can be set any way desired. For instance, if you want the **Shift** key to send quieter notes you can program the shift velocity lower than the non-shift velocity.



The **Randomize** checkbox enables the program to send random velocity levels when playing the drums. This is handy when using non velocity-sensitive devices such as a mouse or computer keyboard.

Range controls the amount of velocity randomization. Usually a small range works best, around 10% to 30%. For example, if velocity is set to 127, and the random range is set to 20%, notes would randomly vary between a maximum velocity of 127 and a minimum velocity of 102.

Instrument Hints: Customize the appearance of the Hint line.

Show: "Show All Instruments" shows all instruments in the drum window. "Show Used Instruments" displays the basic trap kit, but does not display any extra instruments unless they are used in a song.

The drum window is cleared each time **Play** or **Stop** is pressed.

Transport Keys

- "On" - Control playback with the computer keyboard. Space key will toggle Play/Stop. Return key will halt and return to the song beginning. **Ctrl+Tab** will enter Record mode.
- "Ctrl Key" - Sometimes it is distracting to play the drums with the computer keys, because if you accidentally play the **spacebar** or **Enter** key, it halts playback. With this option enabled, playback is controlled by **Ctrl+space** and **Ctrl+Enter**, so it is more difficult to accidentally stop playback.
- "Off" - Playback is not controlled by the computer keyboard.

Guitar Tuner

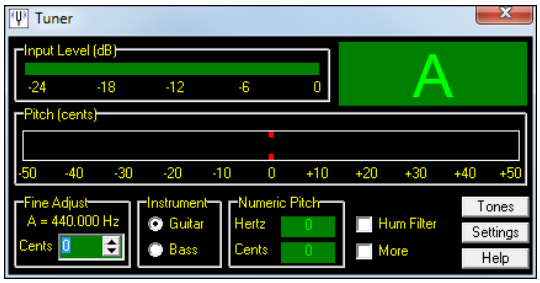


The Guitar Tuner is launched with the "tuning fork" button, which is found on the toolbar.

The **Guitar Tuner** is optimized for guitar and bass, although it is also useful with other acoustic instruments, including voice.

Note: The Guitar Tuner must be able to receive audio from your instrument via the line input or microphone input of your sound card. Please make sure that either the **Microphone In** or **Line-In** is enabled in the **Recording Properties** of the Windows Mixer (or the appropriate Mixer application for your sound card).

To use the tuner, connect an electric guitar or bass to your computer's sound card input, or tune an acoustic instrument using a microphone connected to the sound card microphone input. Then, play a pitch, and the tuner will "auto-range" to determine the nearest note and display the intonation of your instrument.



Input Level: Displays the instrument Input Level in dB. For best results, the level should peak at least halfway up. Quiet signals may be too noisy to properly recognize the pitch. Some inexpensive sound cards do not handle clipping gracefully. If your card seems to misbehave on very loud signals you should try to avoid hitting the very top of the level meter. On most sound cards, however, "going over the top" will not significantly affect the tuner's performance.

Input Note: The name of the most recent note detected by the tuner is shown in the upper right corner.

Pitch (cents): Displays the intonation of the note in cents (hundredths of a semitone). The note is in-tune (with the current detected note) when the indicator is hovering near zero.

When the tuner has "locked on" to a recognizable pitch the indicator turns green and tracks the current pitch. If a note is not loud enough, too noisy, or too unsteady for the tuner to measure, the indicator will turn red and freeze at the last known good value.

It can sometimes take the tuner a moment to "lock on" to a pitch. You may need to play a note a couple of times in succession before the tuner is well locked on to the note. This is most noticeable on very high or very low notes.

The display has quarter-cent resolution. Noise, hum, or bad strings can cause the pitch indicator to wobble. Guitar "G" strings seem particularly prone to odd harmonics which wobble the pitch indicator.

Don't be alarmed if the indicator is wobbling quite a bit. Center the average indicator motion around zero. The resolution of the display magnifies pitch deviations that the ear may not notice. A deviation of a few cents is not very obvious to the ear even though it is a large distance on the pitch display.

Fine Adjust: Modify the tuner's calibration. For instance, if Fine Adjust is set to 10 cents an instrument must be tuned 10 cents higher than usual to measure in tune.

If you have access to a Strobotuner or other expensive tuner you could calibrate this Guitar Tuner program to agree with the other tuner you use. The accuracy of this Guitar Tuner program should be within a few cents of standard on most computers. However, the tuner program relies upon the audio clock stability of the sound card, so there may be slight variations on different sound cards.

If you have a piano, organ, or other instrument you wish to use as reference you can likewise adjust the Tuner to agree with your fixed-pitch instrument.

Instrument: Optimize the tuner for guitar or bass. Bass cannot be tuned at its best if the Guitar button is selected, and guitar cannot be tuned at its best if the Bass button is selected.

In addition, the Fretboard display changes according to the selected instrument. The Guitar setting displays a standard-tuned six string guitar. The Bass setting displays a standard-tuned six string bass. If tuning a four-string bass, you would look for the middle four strings in the display. If tuning a five-string bass, ignore the "C" string.

Numeric Pitch (Hz): Display the frequency of the incoming signal. As with the Cents pitch display, if the pitch becomes unreadable, this control will freeze and remember the last good reading.

Hum Filter: The tuner works best if you give it a signal with little hum or noise. Hum can make the pitch measurement "jittery." If you can't keep your guitar from humming, then the hum filter may help.

Note: The Hum Filter nearly doubles the processing work that the program must accomplish so it may not work very well on slower computers.

More: Opens a window that displays the most recently detected note on the piano keyboard and the guitar fretboard.

The tuner program has no way to know what string you are playing, so non-open guitar notes may show up on the wrong string in the display – though it will properly indicate the correct note pitch.

Tones: This button opens the **Generate Tones** dialog to create wave tones for audible tuning reference.

Generate Tones

Generate tone references for tuning by ear. This may be preferable if you do not have enough gain on a mic input, or have an acoustic guitar or a guitar with dead strings. With dead strings or some acoustic guitars, the ear can reconcile the out-of-tune harmonics in the string better than the Tuner program.

These tones are basically very accurate, but remember that the final accuracy depends upon the accuracy of the sample clock in your sound card. The cards we have tested seem to be within a couple of cents of standard tuning, but larger errors are possible with some sound cards.

Wave Shape - Sine wave is a very pure wave which only contains the listed fundamental frequency. Complex is a filtered ramp wave, which contains the fundamental tone plus a healthy dose of even and odd harmonics.

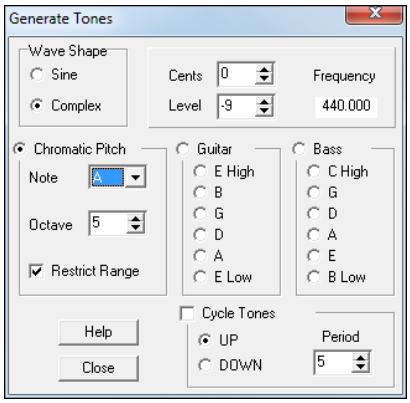
The complex wave may be easier to tune against, since guitars and other instruments usually have a broad mix of harmonics. Complex wave may also be less tiring to the ear.

In the low bass range, the sine wave can be difficult to hear unless you have a very good set of monitor speakers.

“Cents” - Fine-adjust the pitch in cents (hundredths of a semitone).

“Level” - The output level measured in dB. Zero dB is as loud as it gets, and negative numbers reduce the level.

“Frequency” - A read-only indication of the frequency of the tone. As you adjust Note, Octave, and Cents, Frequency is calculated from the current settings.



Chromatic Pitch - Select this radio button to select any desired note and octave.

“Note” - Pick the desired note.

“Octave” - Pick the desired octave.

“Restrict Range” - The reference tone can become painful and possibly dangerous to speakers in the very high range, if the playback system is set too loud. Similarly, very low reference tones could damage woofers.

If the “Restrict Range” checkbox is enabled, the pitch range is limited to the mid and bass range where the tone is not as hazardous to ears or loudspeakers.

Guitar - Select this radio button to tune using standard guitar pitches.

Once a note has been selected in the Guitar group, you can switch between the different string pitches with the cursor up and cursor down computer keys.

Bass - Select this radio button to tune using standard Bass pitches. These are the notes for six string bass. Use the middle four pitches for four string bass, and use the bottom five pitches for five string bass.

Once a note has been selected in the Bass group, you can switch between the different string pitches with the cursor up and cursor down computer keys.

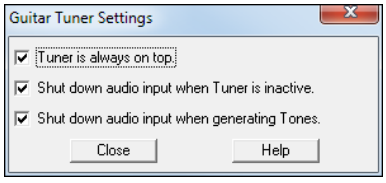
Cycle Tones - This checkbox automatically plays the Guitar or Bass pitches in sequence, to make it easier to tune guitar without touching the computer keyboard or mouse.

With “Cycle Tones” enabled, if the “Guitar” radio button is selected, the tuner will automatically play the guitar pitches in sequence. If the “Bass” radio button is selected, the tuner will play the bass pitches in sequence.

The “UP” and “DOWN” buttons cycle the pitches either up or down.

“Period” is the sustain time of each pitch, in seconds. With the default period of five, each pitch will hold for five seconds before cycling to the next pitch.

Settings



Tuner is always on top: The Tuner main window remains above all other windows on the screen. Sometimes this option does not appear to “stick” after it is set. If the Tuner is set to “always on top” but doesn't stay on top, close the Tuner and re-open it to get the desired behavior.

Shut down audio input when Tuner is inactive: When the Tuner window is not the active window, it will close the sound input channel. This can help the Tuner work smoother on slow computers, or free up the sound input driver for other programs which are running.

Shut down audio input when generating Tones: When the Generate Tones window is active, it will close the sound input channel. This can help the Tuner work smoother on slow computers. If the Audio Input continues to be processed while the computer is generating tones, it makes more work for the program. This extra work might stall slow computers.

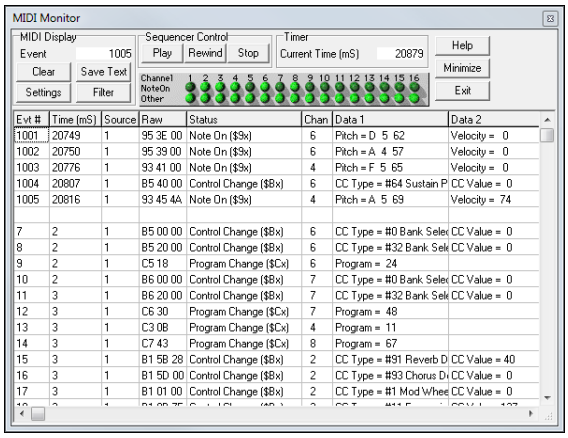
MIDI Monitor



The MIDI Monitor opens with the MIDI button, which is found in the View Panel.

The MIDI Monitor displays a listing of data received from computer MIDI Input and/or the RealBand MIDI output. This plugin program has been found to be very useful for educational and diagnostic purposes.

Note: To display the data received from the computer MIDI Input, the MIDI THRU option must be enabled in RealBand.



Event: The current event number since the display was last cleared.

Clear: Clear the MIDI Display, Event counter, and Channel Activity panel.

Save Text: This feature will allow you to save a text file of the data in the MIDI display. The file can be opened with a word processor or spreadsheet program, for printing or further study. Various **Save Text** options can be adjusted in the **Settings** window.

Settings: Press to open the **Settings dialog**, which allows you to adjust various display behaviors. The display can be modified to suit the task at hand.

Filter: This opens the **Filter dialog**, where receive settings can be adjusted.

Sequencer Control: Standard transport controls: **Play**, **Rewind**, and **Stop**.

Timer: A millisecond timer useful for viewing timing relationships between MIDI messages. If the computer is under a "light load," this timer is fairly accurate. However, if the computer is under a "heavy load" the values can be expected to be less than perfectly accurate.

You can record MIDI data in RealBand and examine the timing in the RealBand Event List window.

To use RealBand to measure correctly in milliseconds, set then RealBand' PPQ resolution to 480 and RealBand' tempo to 125 BPM. With this special resolution and tempo, tick values in the Event List window will correspond to milliseconds.

Current Time: This is the millisecond count since the timer was last started. Click anywhere in the **Timer** area to clear the Current time, setting it to zero.

The timer automatically starts when MIDI data is received. The period that the timer will run after MIDI activity ceases can be adjusted in the **Settings** dialog.

Channel Activity Panel: The Channel Activity panel has an array of "LEDs" (light emitting diodes) to indicate which channels are active. For example, if note information is received on a channel, the **Note On** LED will latch on. If controller, pitch bend, or other channel events are received, the **Other** LED will latch on. Click anywhere on the **Channel Activity Panel** to clear all the indicators.

MIDI Display Area

The MIDI Display area, located at the bottom of the main window, displays the data generated by RealBand and/or data received at the computer MIDI input. Each row is a single MIDI event.

Evt #: Event number, starting from when the display was last cleared.

Time (mS): The time in milliseconds, from when the timer was last cleared.

Source: When set to "Int," the event was generated by RealBand, and when it is reading "Ext," the event was generated by an external MIDI Device attached to the computer's "MIDI In" port.

Note: To display data received from computer MIDI Input the MIDI THRU option must be enabled in RealBand.

Raw: This indicates the raw bytes representing each MIDI message. Most MIDI message types contain three bytes, but some contain only one or two bytes. SysEx messages can contain an arbitrary number of bytes.

Note: This field is normally blank in the case of SysEx messages. With SysEx messages, up to 16 "raw" bytes are displayed in the Data fields. Long SysEx messages are displayed on multiple lines, at 16 bytes per line.

Status: Show the text name of the Event type.

Chan: This displays the MIDI channel of an Event. This field is blank for System messages (values from $F0 to $FF). System messages do not have an associated channel.

Data 1: Text name for the meaning of the first data byte of the MIDI message.

Data 2: Text name for the meaning of the second data byte of a MIDI Message.

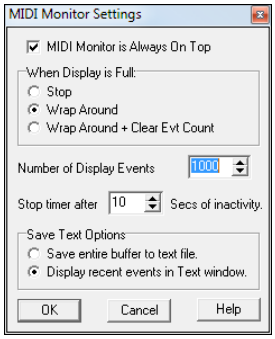
Notes:

(1) For some messages such as Pitch Bend or Song Position Pointer, the value of both data bytes 1 and 2 are calculated and displayed in Data 1.

(2) Some MIDI messages, such as Program Change or Channel Pressure, only have a single Data byte, and the Data 2 field will be blank. Also, some MIDI Messages have no data bytes, in which case both Data fields will be blank.

Settings Window

MIDI display options are adjusted in the **MIDI Monitor Settings** dialog.



MIDI Monitor is Always On Top: Check this item to keep the MIDI Monitor window on top of other programs or windows.

When Display is Full: The display buffer can record a maximum of 32000 events. There are three options when the display gets full:

- "Stop" - Stop capturing events and turn off the timer.
- "Wrap Around" - When the display is full, begin over-writing it from the start.
- "Wrap Around + Clear Evt Count" is like the "Wrap Around" option, except the event count is cleared when the display wraps around.

Number of Displayed Events: This box allows you to set the length of the capture buffer. The length can be set as high as 32,000.

Stop Timer after x seconds of inactivity: It does no harm to let the timer free-run, but if you find this irritating, you can set the timer to automatically stop after a period of no MIDI activity.

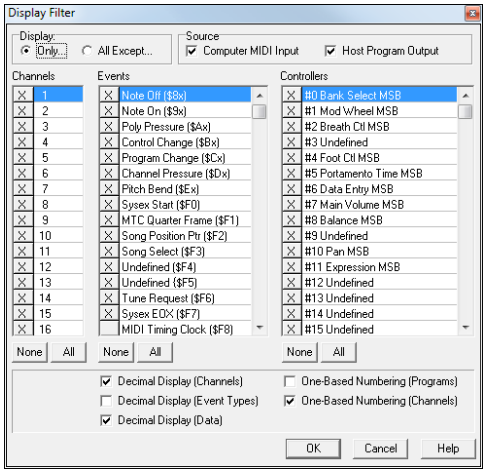
Save Text Options: These options help set the behavior when the [Save Text] button is pressed.

"Save entire buffer to text file" - To capture a listing of a large number of events, enable this option. This directly saves the entire buffer to a disk text file.

"Display recent events in Text window" - A text listing of the most recent events will be created in a text window. In this window unwanted events can be selected and deleted. You can also edit events or add comments. The selected text in this window can be saved to a text file or copied to the Windows clipboard, where it can be pasted into a word processor or spreadsheet program.

Display Filter

The Display Filter dialog allows you to select which events are to be recognized by the MIDI Monitor program.



Note: Virtually any combination of display events can be selected in the filter. It is therefore possible to select combinations that do not display any MIDI events at all. The MIDI Monitor will warn you about the more obvious "nil" combinations, but if you find that you are not receiving what

Display: "Only" displays *only* the selected items chosen in the filter lists. "All Except…" displays all data *except* the selected items in the filter lists.

Source:"Computer MIDI Input," when enabled, displays data arriving on the computer's MIDI Input (when MIDI Thru is enabled in RealBand). To view data exactly as it is received, set RealBand's "Thru Method" to Global. Also, check the RealBand Record Filter to ensure that the desired events are enabled.

"Host Program Output" displays data generated by RealBand.

Note: If both inputs are disabled (in Display Only mode), or both inputs are enabled (in Display All Except mode), then no MIDI data will be received.

Channels: Select which channels are received.

Events: Select which Event types are received.

Controllers: Select which Controller types are received.

Save Text Window

When the [Save Text] button is pressed in the MIDI Monitor program's main window, and the "Display recent events in Text window" option has been enabled in the **Settings** dialog, the Save Text window will open, containing the most recent MIDI events.

Select All: Selects all the text in the window.

Clear: Clears the selected text.

Copy: Copies the selected text to the Windows clipboard.

Save: Saves all window text to a .TXT file.

You can also use the common **Ctrl+X** (cut), **Ctrl+C** (copy), **Ctrl+V** (paste), and **Delete** keys to edit the text.

Note: If column alignment of the text appears ragged adjust the font and tab spacing in your word processor, or the column width in your spreadsheet program. We suggest 10 or 12 point System or Courier fonts.

Chapter 13: Reference

This chapter describes the pull-down menu commands in RealBand. The information discussed in this chapter is divided into separate sections based on each menu.

File Menu

The *File* Menu contains commands that are related to loading and saving files.

New

This command **clears** the current song from memory so that you can start a new song. If you've changed the current song since you last saved it, you will be prompted as to whether or not you wish to resave the file (with changes) before clearing the file from memory.

New Template

This command will let you create a new song using a template. A template is a file that is used as a starting point when creating a new song. A **Choose Template** dialog box will pop up that shows a list of all available templates. Select one, and then start working on your song.

Open

A dialog box will pop up which has two list boxes, one displaying all files with recognized extensions in the current directory, and another displaying the different directories/folders.

Note to Band-in-a-Box Users: If you open a MIDI file that was generated with Band-in-a-Box the patch numbers, channels, and even the chords are imported and displayed correctly in RealBand. Furthermore, if you recorded a WAV audio track to go along with your Band-in-a-Box generated MIDI file the RealBand software will offer to automatically import and align this data too.

You can selectively restrict the type of file you're looking for. RealBand supports virtually all common MIDI and audio formats in addition to its own .SEQ files and Band-in-a-Box ?G? files.

```
*.MID;*.SEQ;*.?G?;*.KAR;*.WAV;*.MP3;*.WMA;*.WMV;*.MP4;*.M4A;*.AVI;*.CDA;*.XML
```

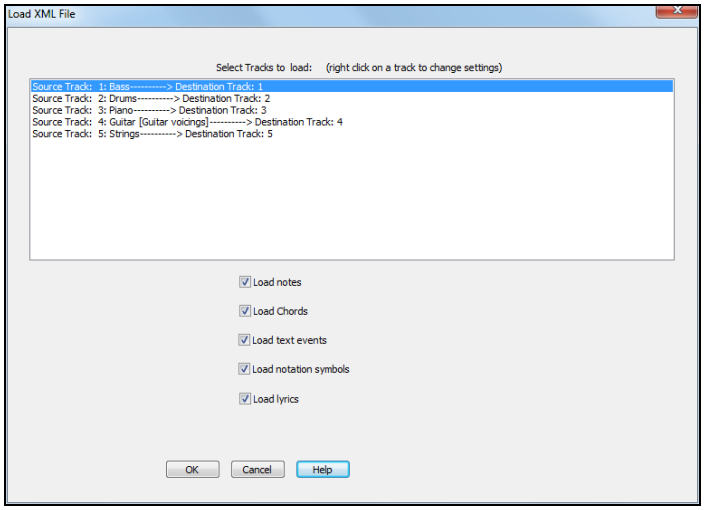
To load a file move the highlight bar over the desired choice and either press **Enter** or click on the **[Open]** button.

The **Open** dialog recalls the folder from the last time the dialog was used. This setting can be enabled or disabled in the **File** tab of the *Options* | *Preferences* dialog.

A file can also be loaded by typing its name directly in the "File name:" field instead of using the list box. You can also use the mouse to select a file by double-clicking on the file with the left-mouse button.

Open MusicXML Files: RealBand supports MusicXML so you can easily import MusicXML files from your notation programs such as Finale, Sibelius, and Guitar Pro to RealBand.

If you select a MusicXML file in the **Open** dialog, the **Load XML File** dialog will open. In this dialog, select a track that you want to load. To select multiple tracks, hold down the CTRL key and click a track. If you want to change the destination track, right click on a track and select *Destination Track*. Then, select elements that you want to load from the XML file. Finally, press **[OK]**, and the XML file will be loaded to RealBand.



Open Special | Open Audio w/Chords (WAV/WMA/MP3/CDA)

This menu command will let you select an existing audio file and launch the Audio Chord Wizard.

Open Special | Audio Chord Wizard - Using Existing Song

This menu command will open an existing audio file into RealBand, and then immediately launch the Audio Chord Wizard.

Open Special | Import Audio File to separate tracks (using Stem Splitter)

This menu command will separate an audio file containing multiple instruments into individual tracks - bass, drums, guitars/piano, vocals, and residual sounds, and imports them separately to your song. Using advanced AI and machine learning techniques, this process, also known as "audio source separation," offers greater flexibility and creative control in music production.

Open Special | Open Stem Splitter Player

This menu command will separate an audio file containing multiple instruments into individual tracks - bass, drums, guitars/piano, vocals, and residual sounds, and imports them separately to your song. Using advanced AI and machine learning techniques, this process, also known as "audio source separation," offers greater flexibility and creative control in music production.

Open Special | Open Previous File

This feature will open the previous file found in the current file directory or folder. The order is based on the alphabetic order of the files. This command is most useful when you've been using the **Open Next File** command and you need to "go back" to a previously loaded file.

Open Special | Open Next File

This feature will open the next file found in the current file directory or folder. The order is based on the alphabetic order of the files. This command is useful when working with a group of files (e.g., a set list) and you need to edit a number of them. This feature saves you the trouble of having to keep using the *File | Open* command and repeatedly type in the file names.

Open Special | Open from Clipboard

If data is in the Windows Clipboard in the form of a Standard MIDI File the Open From Clipboard feature will use the data to load the entire "file" from the Clipboard into RealBand. This is similar to loading a file from disk except that the file is loaded from the Clipboard instead. This command provides a quick way of transferring an entire file from another program (e.g., Band-in-a-Box) into RealBand.

Open Special | Open Backup File

When the "Create backup file when overwriting a SEQ file" setting is enabled in the File preferences, RealBand will always create a backup file (BKS file) when a .SEQ file is overwritten. Use this command to open a backup file with a previous version of a .SEQ file.

Open Special | Open from Favorite Folder

This will open the Favorite Folders dialog with a list of recently used folders. Select a folder from the list, and then you can open a song from that folder.

Open Special | MultiTracks Wave File Player

This command will play special MultiTracks wave files (up to 48 tracks). This file format is similar to regular wave files, but instead of being simple stereo or mono standard wave files these files can be quite large and contain up to 48 discrete mono tracks.

The dedicated MultiTrack Wave dialog is simply a quick means of playing these special wave files. This player can also play and preview any regular mono or stereo wave files.

To use, note the following:

1. Use the **Load** button to load a file.
2. Use the **Play** and **Stop** buttons to start and stop playback.
3. The **Time Scrollbar** lets you adjust the current time location.
4. The **Import** button offers the ability to import a wave or waves into new projects – provided the sampling rate and resolution of the file is supported by or can be converted by RealBand. Otherwise, the import button will be disabled (grayed out).

Save

This command will offer to save your work along with a name of your choosing. If a song has no name (untitled), a dialog box will pop up when you choose this option so that you can choose a file name and format (e.g., .MID, .SEQ, or .DP). See the *Save As* command for more information on choosing a file name and format.

Note: There are dedicated commands in the Audio menu for saving/exporting audio data to a .WAV file, etc.

Save As

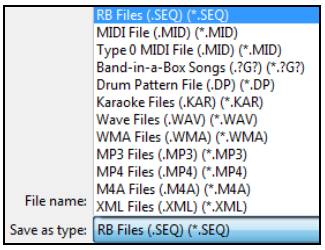
This command is similar in function to the Save command except that it also prompts you every time to choose the name of a file before saving it.

The **Save As** dialog recalls the folder from the last time it was used. This setting can be enabled or disabled in the **File** tab of the *Options | Preferences* dialog.

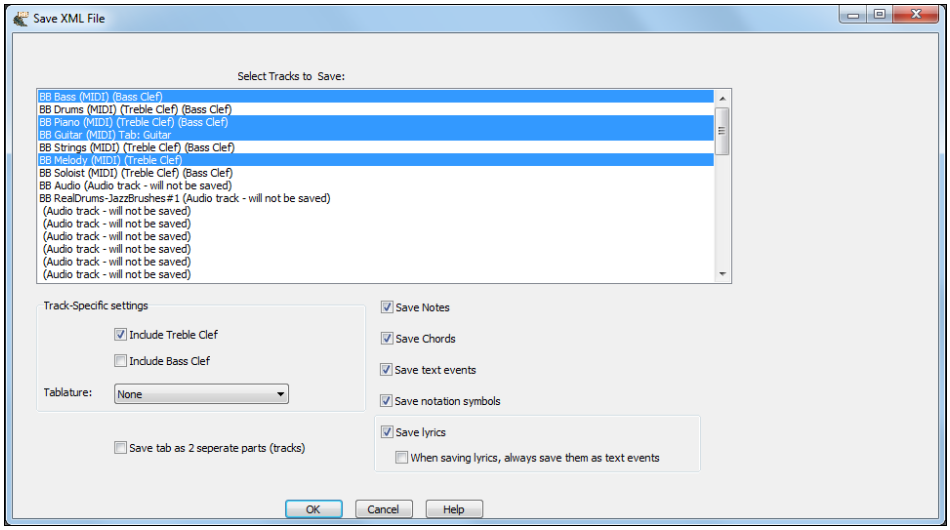
RealBand can save files either in .MID, Type 0 .MID (one track), Karaoke .KAR or .SEQ format. A dialog box that looks similar to the File Open dialog allows you to choose the name of the file, directory, drive, and file type. If you choose to save a file with a file name that already exists the program will prompt you to confirm that you want to overwrite the pre-existing file.

You can also save MIDI data as .DP files. A .DP file is simply a .MID file renamed with the .DP extension. The .DP files are used for storing drum patterns in order to differentiate them from a song (.MID) file.

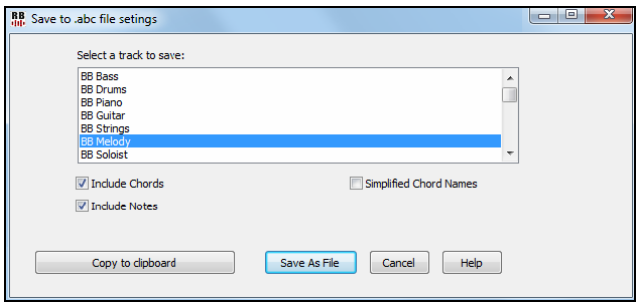
The *Save As* command also supports saving to MP3, .MP4, .M4A, and .WMA files. MIDI tracks are automatically rendered to audio and saved in the file. Note that your system must have the codec installed for the type of file you want to save (e.g., MP3).



Save as MusicXML: To save the song as a MusicXML file, choose "XML Files (*.XML)" as a file type in the **Save As** dialog. This will open the **Save XML File** dialog. First, select a track that you want to save. To select multiple tracks, hold down the Ctrl key and click the track. The "Track-specific settings" area lets you choose which clef to include for each track. For example, you can save the bass clef for the Bass track, both tracks for the Piano track, and the treble clef for the Melody track. There is also an option to include a tablature. You can also select elements that you want to save in the XML file. Finally, press OK, and the XML file will be saved. (Note: The "Save bends when saving tablature" option is primarily intended for reloading into PG Music programs. Other software may interpret XML bends differently, and results may vary.)



Save as ABC Music File: You can save a track of notation in a popular ASCII text format to import into other programs, or you can paste this format into a user forum as a way of sending the track (usually the melody and chord symbols) to other users without having to attach a file. To save the file, press the **[Save As]** toolbar button. Then, when the **Save As** dialog opens, select "ABC Files" as a file type, and specify the location and the name of the file. This will open the **Save to .abc file settings** dialog.



In the "Select a track to save" area, click on the track that you want to save in the file.

Enable "Include Chords" to save chords in the file.

When "Include Notes" is checked, notes on the selected track will be saved.

When "Simplified Chord Names" is enabled, complicated chords will be written as simplified names. For example, D7#5#9 will be written as D7.

The [Copy to clipboard] button will copy the file to the clipboard. You can then paste it into other programs. The [Save as File] button will let you type a name and select the destination in your hard drive.

Save As Special | Save As Template

File templates make it easier for you to begin new projects by selecting from a list of available templates (instead of from a completely blank slate). The templates can contain preferred track layouts, preferred song settings, and, since templates are stored in .SEQ format, they can even contain MIDI or audio backing tracks. You can create your own custom templates simply by using the *File | Save As Template* command.

Since templates are stored in .SEQ format, they contain settings and song data. Templates are stored in the \template subfolder of the RealBand main folder (usually C:\RealBand\templates).

Save As Special | Save Song as Default Template

This will save the song as $OPTIONS.SEQ so that the song will be loaded automatically whenever starting a new song with the *File | New* command.

Save As Special | Save to Favorite Folders

This will let you save the song in the recently used folder.

Import

This lets you easily add a MIDI/ WAV/ SEQ/ or MGU file to an existing project (SEQ). This is handy when combining media types to a new or existing project.

Scrap | Load Scrap

This command works in the same way as the **Open** command except that a selected .MID or .SEQ file is loaded into the scrap buffer instead of directly into a project. You can then paste the contents of this scrap buffer anywhere within the song. This is useful for importing another file into your current project.

Load Scrap loads audio tracks into the scrap buffer, so they can be pasted into the current song. If the audio file format of the .SEQ file doesn't match the file format of the current song, the tracks in the file you're loading will be converted to match the audio file format of the current song.

Note: If you load a *.SEQ with both MIDI and audio tracks, check that both files have matching track types in order to ensure that all the data will be pasted into the song when you use the *Edit | Paste* command.

If the existing song contains some blank tracks, then RealBand will automatically set the track types to the correct track type. This won't be done until you use the *Edit | Paste* command, if the scrap buffer contains data, and if the corresponding tracks in the project are blank, but aren't already set to the correct track type.

Scrap | Save Scrap

This command works like the **Save As** command but is also used to save only the contents of the scrap buffer to a separate .MID or .SEQ file. This is useful for exporting "part" of a project for use in another program, etc.

Change Directory (Path)

This command lets you change the current (working) directory for loading/saving files. A dialog box will pop up prompting you to select a new directory.

Window Setup

This item is a special sub-menu for loading and saving .RWS (Window Setup) files. See the proceeding three sections (Load Window Setup, Save Window Setup, and Normalize Window Setup) for details on .RWS files.

Window Setup | Load Window Setup

This feature allows you to load a .RWS (Window Setup) file. When the .RWS file is loaded RealBand will restore the window locations and sizes that were in effect at the time of saving the .RWS file. See the next section (Save Window Setup) for more information about .RWS files.

Window Setup | Save Window Setup

This feature allows you to save a .RWS (Window Setup) file of your "current" program window setup. The current window setup consists of the locations of any opened windows. Up to three Notation Staff, three Big Lyrics, and three Event List window positions can be saved in each .RWS file. The .RWS files can also contain information such as whether or not the **Toolbar** and **Piano** are "visible" or "hidden."

RealBand will automatically save a file called DEFAULT.RWS each time the program is exited. Then, each time the program is started it will look for this DEFAULT.RWS file in the RealBand directory (or the configuration directory–such as C:\WINDOWS –if running under a network). If the program finds such a file it will restore the setup that was stored in it, thus restoring your screen setup back to the way it was when you exited from your last session.

However, if you save a file called FAVORITE.RWS to the .EXE directory RealBand will use the setup stored in this file **even if** DEFAULT.RWS exists. Saving a Window Setup file called FAVORITE.RWS is a nice way to have RealBand always start with your favorite setup. Take advantage of this feature if you would prefer to have RealBand start out with a certain setup every time –rather than restoring the most recent/last setup. You could also create a "blank" text file called FAVORITE.RWS if you would prefer the program start out in an identical manner to previous versions of RealBand.

Although .RWS files can store information on whether or not a window is currently an icon/minimized, the exact locations of these icons are not available to be recalled when a .RWS file is loaded.

An **Event List** window that is displaying multiple tracks can also be restored when loading a .RWS file (if it was part of the window setup). However, when restored it will display all the tracks –regardless of which ones were being displayed before. For example, if you have an Event List window open for Tracks 1, 2, and 3, and you proceed to save a .RWS file, the Event List window would be restored when the .RWS file is loaded. However, it will display *all the tracks* –regardless of how many were displayed before.

Window Setup |Normalize Window Setup

This command resets all windows to the "factory defaults." When selected, RealBand will restore the window locations and sizes that were in effect when the program was first installed.

Print

This feature will send notation to your printer to be printed. This is the same as the print button in the Notation window. A Notation window must be the currently active (highlighted) window in order to print. You can launch a Notation window by clicking on the notation button or by pressing **Alt+F2**.

Exit

This command exits/quits the program. If you've changed your work since you last saved it the program will first prompt you as to whether or not you wish to save your project before proceeding with the exit feature.

Edit Menu

The *Edit* menu contains commands relating to editing (changing) a song. This menu has standard editing features such as cutting, pasting, quantizing, etc. The editing commands normally affect the marked (highlighted) area of all selected tracks.

Undo

Undo can be applied to most operations in RealBand –including audio effects processing, notation edits, and event-level MIDI edits.

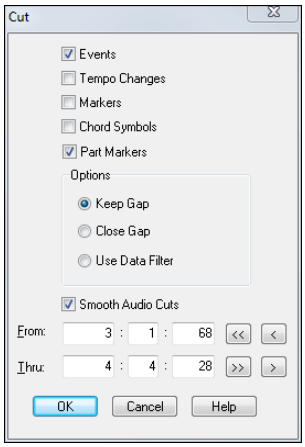
This feature will undo the last edit command executed from the lower portion of the *Edit* menu (excluding commands in the chords submenu). It will restore the tracks that were affected by the last edit command to their previous state. If you are working in the **Comments** window, this will also undo the last text edit command. RealBand supports up to 100 levels of Undo, the number is set in *Options* | *Preferences* | *General*.

Note: The Undo command itself can be undone. If you've just executed the Undo command, it will appear in the menu as "Redo." The REDO command simply re-executes the command that was just undone.

If you execute a command for which there may not be enough memory to be able to issue the *Undo* command RealBand will warn you beforehand. If you receive such a warning it might be a good idea to save your work to disk before proceeding.

Cut

This command works in a few different ways – depending upon which window is active. If you are working in the **Comments** window, this command will **cut** the selected text to the clipboard. Otherwise, it deletes MIDI events and wave data from the marked area and moves them to the scrap buffer. As with copied events, cut events can later be pasted to any location, or saved to a file with the *Save Scrap* command.



Events Checkbox: When this checkbox is enabled the Cut command will operate on MIDI events or WAV data in the marked area of all selected tracks.

Tempo Changes Checkbox: When this checkbox is enabled the Cut command will operate on tempo changes in the tempo map. If the first tempo map entry is within the marked area it will be **copied** instead of cut, and all other entries will be **cut**. You can the **paste** the tempo changes to a different location in a song using the Paste command.

Markers Checkbox: Enable this if you want to cut Markers in the marked area between From: and Thru: locations.

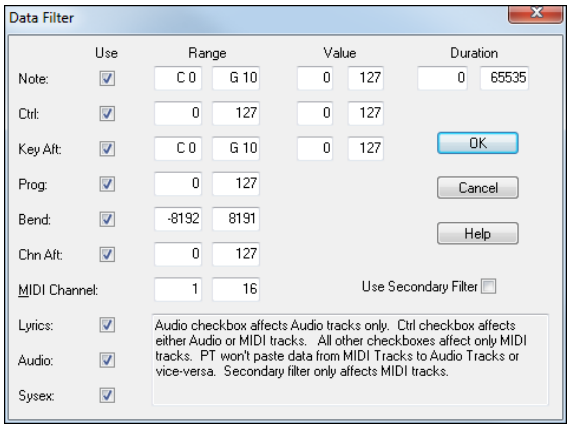
Chord Symbols Checkbox: Enable to cut chord symbols in the marked area.

Part Markers Checkbox: Enable to cut "a" and "b" part markers in the marked area.

Options: When events are Cut a gap is created (by default) in the selected track(s) of a song. You can choose to keep or close this gap.

Note: This command also will automatically place cut MIDI events into the Windows clipboard in MIDI format in order to be able to paste the events into any Windows application that supports clipboard pasting. Only MIDI data (not audio data) can be placed into the Windows clipboard from RealBand.

Use Data Filter: The Data Filter is a filter that, when in use, determines which events will be affected by the current edit command. RealBand will only allow the events that match the chosen characteristics to "pass through" the filter so that the current edit command can act upon them. The filter has a separate row for all six types of MIDI events. Within each row are settings that determine whether a type of event will pass through the filter, and the ranges and values of the events that RealBand will allowed to pass through. There is also a row within the filter that lets you specify which MIDI channels will pass through the filter.



The **Use** column determines whether or not an event type will pass through the filter. If the Use column is checked, the event type will be used, but if it isn't checked the event won't pass through the filter. For example, if the use column in the Note row is not checked then note events will not pass through the filter.

The **Range** column determines what range of events will pass through the filter. For example, if the minimum for the note range is C1 and the maximum is C2 only notes that fall within the range of C1 through C2 will pass through the filter. The current edit command will not affect any notes lower than C1 or higher than C2.

The **Value** column works in the same way as the range column, but will act upon note velocities, controller values, or aftertouch values. Only events with values that fall within the specified values will pass through the filter. For example, if the minimum note value is 50 and the maximum is 100, then only notes with a velocity of 50 up to a velocity of 100 will be passed through the filter.

Duration allows you to specify that only notes with durations in a specified range will be affected by your edit.

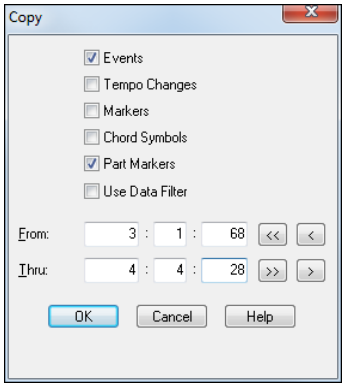
A **Secondary Filter** is a second Data Filter that you can use in addition to the regular filter. If you check the "Use Secondary Filter" option at the bottom of the filter, then a second filter will pop up after you're done editing the regular filter. Events that pass through either the regular or Secondary Filter will be affected by the current edit command.

The purpose of the Secondary Filter is to let you choose two separate sets of ranges. For example, you could specify a note range of C1 to C2 in the regular filter, and a note range of C7 to C8 in the secondary filter. Notes that fall within either range will be affected by the current edit command but notes that don't fall within either of these two separate ranges won't be affected at all.

Smooth Audio Cuts Checkbox: This feature performs a very quick "fade-in" if there is audio data immediately beyond the cut section. This will prevent any clicks or pops from occurring when the section beyond the cut is played back.

Copy

This command works in different ways –depending upon which window is active. If you are working in the **Comments** window, this command will copy the selected text to the clipboard. Otherwise, this command copies the marked area of selected tracks, as specified by the **From:** and **Thru:** settings, and places the copied events in a scrap buffer. You can then use the **Paste** command to paste the contents of the scrap buffer anywhere within the song, or you may use the **Save Scrap** feature to save the contents of the buffer to a file. You can use the **Data Filter** to determine which events to copy.



Events Checkbox: When this checkbox is enabled the Copy command will operate on MIDI events in the marked area of all selected tracks.

Tempo Changes Checkbox: When this checkbox is enabled the Copy command will operate on **tempo changes** in the tempo map. You can the paste the tempo changes to a different location in the song using the paste command.

This command also automatically copies MIDI events into the Windows clipboard so that you may paste the events into another Windows application that supports pasting Standard MIDI Data to/from the clipboard.

Note: Only MIDI *tracks* can be copied to the Windows clipboard. Digital audio tracks (WAV data) are copied and pasted to the program's own internal clipboard/scrap buffer.

Markers and **Chord Symbols** will be copied if these boxes are checked.

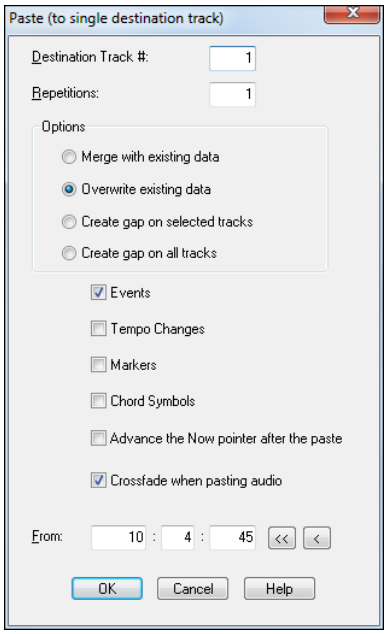
Another option when working with MIDI tracks is to use the **Data Filter** to determine which events to copy. If you use the Data Filter the program will copy some events and will leave others untouched, depending on whether or not they "pass through" the filter. See the detailed description under the *Cut* topic.

Copy Lyrics to Clipboard

This feature can copy any existing lyrics of the current track to the standard Windows clipboard as text so that you can share them with another program. Selecting this command will automatically launch a **Big Lyrics** window for the current track –and then copies the lyrics to the clipboard. You can close the Big Lyrics window at any time after the lyrics have been copied to the clipboard. If a Big Lyrics window is already open for a given track the program will use the existing window rather than launch a new one.

The ***Paste*** command works differently depending upon which window is active. If you are working in the Comments window the paste command will paste text from the Windows clipboard into the Comments section. Otherwise, this command pastes the contents of the scrap buffer to the current location in the song, as specified in the **From:** settings.

Paste automatically works the same way as *1-Track Paste* if the scrap buffer only has data from 1 track.



Destination Track #: If you copy or cut from a single track, the **Paste** dialog will let you choose the destination track, with the current track being the default value. Use the *1-Track Paste* menu item if you wanted to paste multiple tracks onto a single track.

The **Repetitions** option will cause the paste to repeat for as many times as you specify.

The **Options** field gives you 4 choices:

1) Merge the Paste with existing data.
2) Overwrite Existing Data.
3) Create a Gap on the currently Selected Tracks.
4) Create a Gap on All Tracks.

Events Checkbox: When this checkbox is enabled this command will offer the ability to paste any Events that are currently in the scrap buffer.

Tempo Changes Checkbox: When this checkbox is enabled the *Paste* command will paste any tempo changes that were copied or Cut into the tempo scrap buffer. The **Markers** and **Chord Symbols** checkboxes have the same function.

Advance the Now pointer after the paste advances the current time to the end of the pasted area. This is a useful feature for when you plan to create a new track or song section from multiple Pastes.

Note: This command can also paste a Standard MIDI File/data from the Windows clipboard. If you're using another MIDI application capable of copying a Standard MIDI File/data to the clipboard (such as Band-in-a-Box), this can be a very convenient feature to use to get MIDI data into your project quickly. Keep in mind, though, that this command *does not* paste "meter" changes.

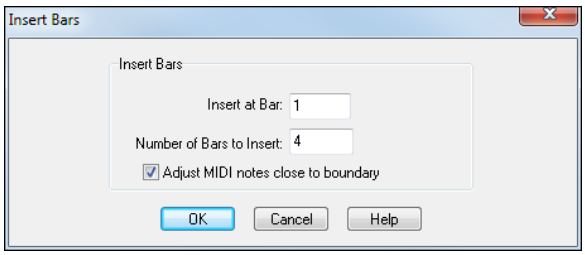
Crossfade when pasting audio smoothes out a paste, so that no audible "clicks" are heard at splice points of pastes.

1-Track Paste: This feature performs a similar function as the Paste command except that it pastes all the data onto **one single track**. Therefore, you should select only one track as the destination track or this command can't be performed.

This command will only paste MIDI data to a MIDI track and WAV data to an audio track. For example, if you 1-Track Paste to an audio track, and there is also MIDI data in the scrap buffer, the MIDI data will be ignored.

If more than one audio track is in the scrap buffer RealBand will merge those tracks together automatically during the **1-Track Paste** procedure; but this will take a notably longer time to carry out.

Insert Blank Bars into song: This command makes it easy to insert blank bars into the song, with an option to intelligently adjust MIDI notes that are close to the boundary of the section you are inserting (useful if inserting bars in the middle of a song). This will insert blank bars at any location of the song, and push the music forward in time to create the blank bars.

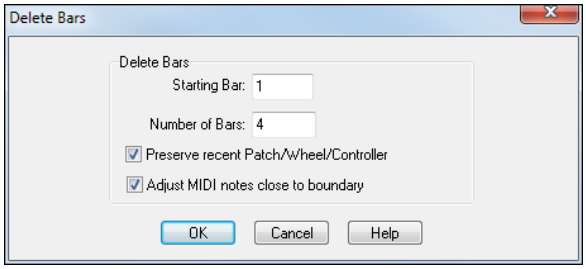


In the **Insert at** field, enter the bar at which you would like RealBand to place the blank bars.

In the **Number of Bars to Insert** field, enter the amount of blank bars you would like RealBand to insert.

If the **Adjust MIDI Notes Close to Boundary** checkbox is checked, RealBand will attempt to ensure that MIDI notes that are slightly earlier than the point of the insert (and really is part of the section of music that will be moved forward in time but was played slightly early) will be moved to the end of the inserted section rather than staying just before the inserted section.

Delete Bars from song: This makes it easier to delete bars from a song with an option to preserve the most recent Patch/Wheel/Controller settings and an option to intelligently adjust MIDI notes that are close to the boundary of the section being deleted. This command will delete bars of music from the song (and will move the music beyond the deleted section backward in time so there is no gap left over).



In the **Starting Bar** field, enter the bar number of the beginning of the section you would like RealBand to remove.

In the **Number of Bars** field, enter the number of bars to remove.

If the **Adjust MIDI Notes close to boundary** checkbox is checked, RealBand will attempt to ensure that MIDI notes that are slightly earlier than the very end of the deleted section (and really are part of the section of music beyond the deleted section) will be moved backward in time rather than deleted. RealBand will also attempt to delete MIDI notes that are slightly earlier than the start bar and really considered to be part of the first bar being deleted.

Track | Duplicate

This makes an exact copy of a track. You must select only one track as this feature is intended to duplicate one track at a time. You will be prompted to select a destination track. The destination track *must* be empty.

Track | Erase

This command permanently erases all selected tracks and resets their track setup values to "0." You will be prompted as to whether or not you wish to erase all selected tracks. This command can't be undone later.

Track | Erase Data Only

This feature works the same as the preceding *Erase* command except that it will not erase the parameter settings in the Tracks window such as the Track Name, Channel, Velocity, etc.

Track | Erase All Lyrics

This delete all lyrics from the track.

Track | Adjust Volume/Trim of All Tracks

This will increase or decrease the audio trim db for all tracks at the same time or set them all to the same specific value.

Track | Merge

This feature will offer to merge two tracks (of the same type- e.g., MIDI) together and place all the MIDI or WAV data found in both tracks onto a 3rd track.

"Merge Track #" and "with Track #" fields: These settings contain the numbers of the two source tracks that are to be merged.

"To Track #" field: This setting specifies the number of the destination track in which the merged data from the source tracks will be placed. Any blank track number (from 1 to 48) is valid.

Note: This command can't be undone, but you can simply delete the destination track if you change your mind. The original source tracks are unaffected by this command.

Track | Convert Guitar Tracks

This command will convert a single channel guitar track that contains position information in it into a multi-channel guitar track (i.e. MIDI Channels 11-16). The position information tells the Guitar window which position on the fretboard to display the notes. It consists of Controller Number 84 MIDI Events that have been inserted into the track in the Guitar window by pressing the **insert position** button.

If you have created a single channel guitar track using your keyboard and you used the Guitar Window to insert position information then this command will help you convert the track into a multi-channel "MIDI Guitar" track.

Six MIDI channels are used in this conversion, one for each guitar string. The range of the channels is based on the "Base Channel" setting in the Guitar window's Options dialog. If the base channel is set to 11 (default), the channels will range from 11 to 16 –with Channel 11 corresponding to the highest string and Channel 16 corresponding to the lowest.

Track | Split Piano Track into LH/RH

This command will attempt to split a piano track so that the notes that were played by the left hand are moved to Channel 8 and the notes played by the right hand moved to Channel 9. This command may not work perfectly in all situations, but it often produces quite acceptable results. The auto-splitting performed by this command can be thought of as one of the many possible ways a track may have been played.

When a track is split by this command you can check the "Use Ch 8/9 for Left/Right hand" checkbox in the Notation Window's **Options** dialog to attempt to display the notes in the Notation window on Channel 8 in the bass clef and the notes on Channel 9 in the treble clef.

Track | Align Music to Click Track

This feature attempts to align a track of music that was recorded in free time to a click track. It tries to take a free time track and make adjustments to the times of the events so that the music becomes a standard track that can be synced to a metronome.

You can easily record a click track along with any audio and/or MIDI, and then have RealBand automatically line up everything with tempo and time signature changes. This can have many useful applications. For example, if you recorded a strumming guitar in free time, RealBand can line it up to the grid so you can add loops, RealDrums, or RealTracks. Or, if you have just purchased a song from iTunes, you can have it line up to the grid in RealBand to make it easier for you to learn. Or, if you have recorded MIDI (not to a click track), and you can have that MIDI line up to the grid without affecting the actual performance.

Track | Consolidate Audio Region

Use the **Consolidate Audio Region** feature when you are working with WAV (digital audio) files to recreate a track or region as one contiguous file. While not always necessary, this is especially useful in situations where you have performed many edits (e.g., Cut/Copy/Paste) and the resulting track has been broken up into many smaller wave "chunks" that may cause audio glitches and/or timing errors as your computer has to work harder to open and close the many small files.

The "consolidate" feature effectively serves to "stitch together" these smaller files into one big file. The non-real time audio effects work better with consolidated tracks, if these effects are returning error messages the problem is often corrected by applying this feature.

This command will offer the option to include silence when consolidating from the start of the song and tracks(s) don't start at the very beginning.

Track | Insert Blank Track

This command inserts a blank track at the position of the Current Track selected in the Tracks window and bumps all existing tracks down in the Tracks view by one row. For example, say you want to insert a blank track at Track 2. By using this command, the existing track at track 2 will become track 3 and the track that was previously track 3 will become track 4.

To undo this procedure, you could use the **Remove** command to remove the track previously inserted.

Track | Remove Track

This command removes (deletes) the Current Track and moves higher numbered tracks up by 1 row in the Tracks window. If you want to delete track number 3 with this command, Track 4 will become track 3 and track 5 will become track 4, etc.

This command can't be undone later, but you could move the remaining tracks back to their original locations by using the **Insert Blank Track** feature.

Track | Swap Tracks

This command lets you easily swap two tracks. This will switch their positions (track number) on the Tracks window. To swap track 2 with track 4, enter 2 in the **Swap Track #** field and enter 4 in the **With Track #** field, and the two tracks will trade places.

Track | Save Track to File

This command lets you save the current track as a file. If the track is an audio track this will export it to a .WAV file. If the track is a MIDI track you can save it either to a .SEQ, .MID, or Type 0 .MID file.

Track | Generate Intelligent Audio Harmony (with passing tones), MIDI Vocoder, Fix Tuning

The intelligent audio harmony feature uses elastique. The feature includes:

- Harmonizing the audio with up to 4 harmony voices
- Transcribing the original audio to MIDI
- Transcribing the harmony voices to MIDI

Track | Merge 2 Mono Audio Tracks to Stereo

This command lets you combine any two mono audio tracks into a single stereo track. When the dialog box pops up, you need to type in the track numbers of tracks containing mono audio in the **Source Track for Left Ch** and **Source Track For Right Ch** fields. In the **Destination Track** field, type in the track number of a blank track. Press the OK button and RealBand will merge the mono audio tracks to stereo.

Note: The original tracks will remain untouched. At some point, you could choose to erase the original tracks using the *Track* | *Erase* command.

Track | Split a Stereo Track Into 2 Mono Tracks

This command lets you split a single stereo audio track into two mono audio tracks. This is useful in special situations, such as if you wanted to use completely different effects on each of the two channels. In the Stereo Source field, type in the track number of a stereo audio track. In the Destination Track For Left Ch and Destination Track For Right Ch fields, type in two blank track numbers. Press the OK button, and RealBand will split the stereo track into two mono audio tracks.

Note: The original track will remain untouched. At some point, you could choose to erase the original track using the Track - Erase command.

Track | Make all BB tracks regular tracks

This allows BB tracks to be moved or renamed like regular tracks. It also means the tracks won't be regenerated, so it is useful safety feature to save a RealBand arrangement that you don't want to change.

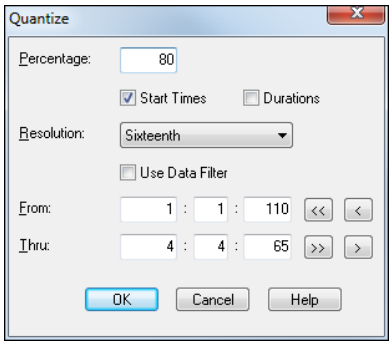
Track | Make first 8 tracks BB tracks

The first eight tracks will be assigned the default BB settings. If there are existing tracks present they will be moved down.

MIDI

MIDI | Quantize

The Quantize feature can be used on MIDI data only. This command "rounds" the times of notes to the nearest user-specified time interval.



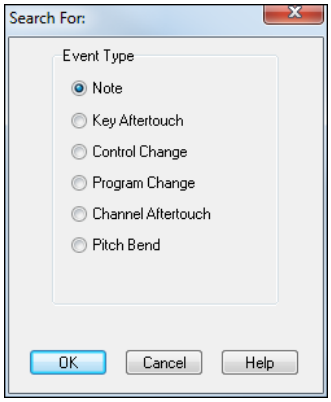
This is very useful for correcting timing errors in your music performance(s). Both the *start times* and *durations* of MIDI notes can be quantized. The *resolution* setting will determine the degree to which the timing is rounded. For example, if you choose a resolution of a sixteenth note, the notes in the marked area will be rounded off to the nearest sixteenth note. You may choose any resolution setting anywhere from a whole note down to a 32nd note.

The *percentage* option will allow you to make the timing of your music more accurate without sounding too mechanical. For example, if you chose an interval of a sixteenth note, a percentage of 50% will move the notes 50% closer to the nearest sixteenth note instead of moving the notes exactly to the nearest sixteenth note.

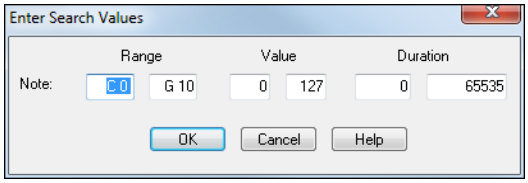
Tip: You can also use the **Data Filter** to determine which notes will be affected by the **Quantize** command.

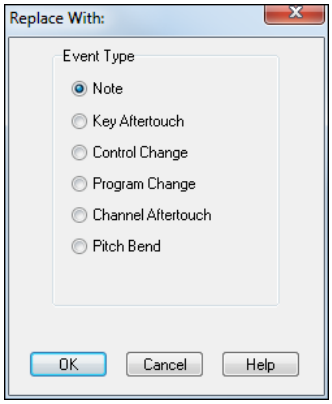
MIDI | Replace

This command is for MIDI tracks only. It can search for any type of event you specify and replace the events that it encounters with new ones. As with other edit commands, the replace command affects only the marked area of all selected tracks.

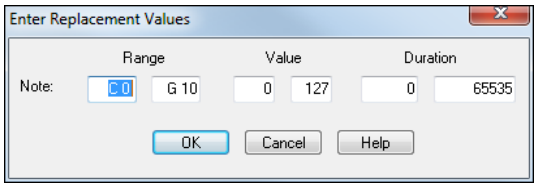


When you select this command, you will be prompted for the type of event to search for, followed by the search ranges.





Next, you will be prompted for: 1) the type of event with which to replace the found events, and 2) the replacement ranges.



Pressing the **Esc** key at any time will take you back to the previous step. The events that match the search criteria will be changed to the kind of event you specified as the replacement event type (assuming you didn't select the same replacement type as the search type). In addition, the program will re-map the values of these events from the search ranges in order to fall within the replacement ranges.

MIDI | Pitch Transpose MIDI Music

This command transposes notes in the marked area of all selected tracks by the specified v*alue*. For example, if you specify a value of "-12" the notes will be transposed down one octave. You can also use the **Data Filter** to further refine the selection of notes to transpose.

MIDI | Fill

This command will insert a stream of the controller, pitch bend, or channel aftertouch events. You can use the **Fill** feature to perform various tricks such as fade-ins, fade-outs, pitch bends, etc. The program will prompt you for the type of event to fill and what the **From**: (start) and **Thru:** (end) value should be. Then, the events will be automatically inserted throughout the marked area of the song. The values of the inserted events will *gradually* increase or decrease from the **start value** to the **end value**.

MIDI | Length of MIDI Music

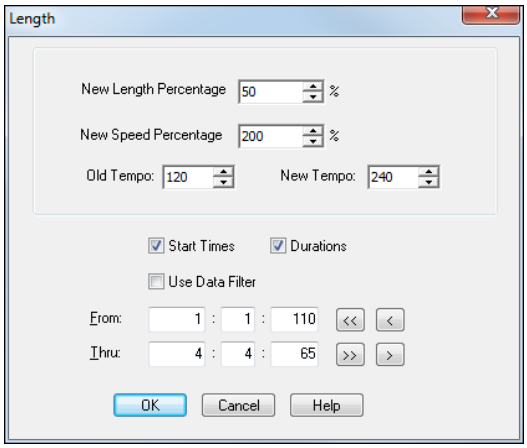
This command alters the length of the marked area of all selected tracks by the specified percentage. For example, a setting of 50% will shorten the length by half.

Perhaps you don't know the length percentage, but you know how much faster or slower you want the section to be. You can enter a speed percentage and the corresponding length percentage will be calculated by RealBand.

Similarly, if you enter a new tempo the length and speed percentages will be updated to match the new tempo.

You can also use the **Data Filter** to determine which events this feature affects.

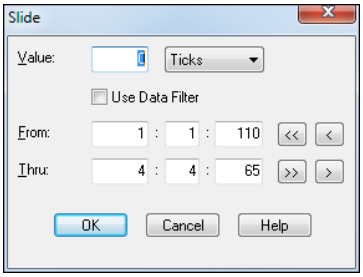
The *Edit | Length of MIDI Music* command supports floating point percentages. You can specify a length percentage as a floating-point number, such as 110.54%



MIDI | Slide MIDI Music

This command shifts the time values of the events within the marked area of all selected tracks by a user-specified value. This value can be either positive or negative. A positive value will slide the events **forward** in time and a negative value will slide them **backwards** in time. This feature can be set in terms of Ticks (i.e. PPQ) or MS (milliseconds, 1000=1 second).

There is a combo box available next to the **value** field that allows you to choose between these two time formats. The **Data Filter** offers refinements to the selection of exactly which type of MIDI events will be affected by the *Slide MIDI Music* command.

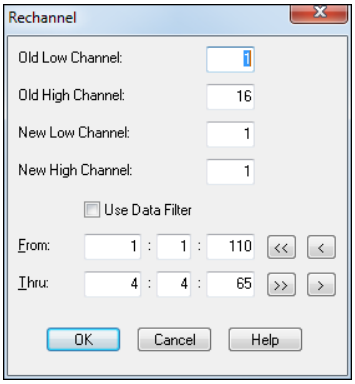


MIDI | Rechannel

This handy feature lets you make changes to the MIDI channel(s) of the events in a marked area of any selected tracks. The "Old Low Channel" and "Old High Channel" fields allow you to specify a range of channels that will be affected. Conversely, the "New Low Channel" and "New High Channel" fields allow you to select the range within which to re-map the events.

For example, let's say you wanted to change all the events in a marked region so that they are all on MIDI Channel 2. First, choose an Old Low Channel of 1and an Old High Channel of 16 (to encompass the **all** range of 1 through 16). Next, select both a New Low and New High Channel of 2 (e.g., a range of 2 through 2). This would have the desired result of all events in all MIDI channels remapped to MIDI channel 2.

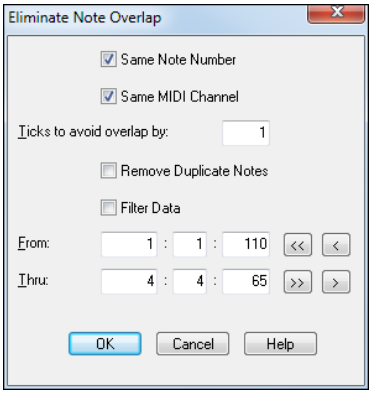
As another example suppose you have a multi-channel MIDI guitar part ranging from channels 3 through 8 and you wanted to change the part so it is played on MIDI channels 11 through 16 (the standard MIDI guitar channels). In this case, you would select an *Old Channel* range of 3 through 8, and a *New Channel* range of 11 through 16. This would result in all the events in the guitar part being remapped to MIDI Channels 11 through 16.



Tip: You can also use the **Data Filter** to refine which events are affected by this feature.

MIDI | Eliminate Note Overlap

This feature is a convenient way of eliminating overlapping notes without having to spend a lot of time manually identifying and editing each one. An overlapping note is one that **ends** *after* the next note **starts**.
For example, if a note begins at 1:01:00 and ends at 1:01:130, but the next note starts at 1:01:120, then the first note overlaps the second note. In this situation, the **Eliminate Note Overlap** feature would shorten the note, making it end at 1:01:119 so that the two notes don't overlap each other.



The **default** settings for this command are to eliminate overlapping notes that are identical in note number and MIDI Channel. If you want to eliminate *all* overlapping notes uncheck the *Same Note Number* and *Same MIDI Channel* checkboxes so that the command will affect all notes that appear to overlap.

Notes are normally only considered to be overlapping if they are on the same track in the **Tracks** window.

Be careful not to use this command on notes that you *want* to have overlap –such as chords and arpeggios. Since this command can be undone, you can listen to the results carefully to further ensure that everything sounds as it should.

If you do not like what you hear, use the **Undo** feature before moving on to other commands.

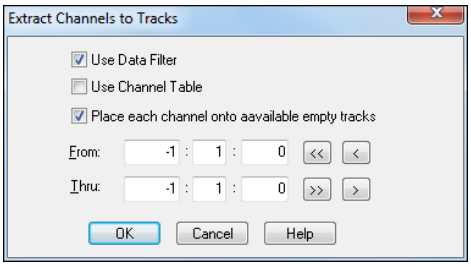
Remove Duplicate Notes checkbox, when enabled, is especially useful for eliminating "ghost" notes that may have been accidentally inserted over existing notes in the Editable Notation window. They may even be masked from view in the regular notation screen display.

A duplicate note is a note that is has same note number, is located at the same time location, and is on the same MIDI channel as a pre-existing note.

Tip: You can also use the **Data Filter** to determine which events are affected by this procedure.

MIDI | Extract Channels to Tracks

This feature will move MIDI events to different tracks based on the channel number of said events. For example, if the **channel number** of an event is 1 the event will be moved to **track number 1**.



This can be useful when multiple channels of data are recorded on a track and you decide you want to split the data into multiple tracks (e.g., Channel 8/9 can be split into two tracks for use with the piano keyboard's **Auto-hand splitting** feature).

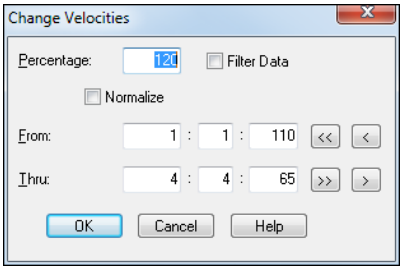
When "Place each channel onto available empty tracks" is checked, RealBand will extract the current track's MIDI data by placing each channel found onto the next available empty track. For example, if the current track is Track 1, and it has MIDI data on two channels (1 and 10) and Track 2 is blank, then the MIDI data on channel 1 will stay on Track 1 and the MIDI data on channel 10 will be moved to Track 2.

If the **Use Channel Table** checkbox is enabled a dialog box will pop up before this command is issued. This gives you the opportunity to choose which tracks the various MIDI Channel events are extracted to. For example, as you'll notice when the Channel Table dialog box pops up, the default is for Channel 3 to be extracted to Track 3. Using this table you could, for example, enable this feature to extract certain events on Channel 3 to Track 19.

Tip: You can use the **Data Filter** to determine which events are affected by this command.

MIDI | Change Velocities

This feature allows for easy increases or decreases of the velocity values of notes within a marked region of all selected tracks by a specified percentage.



The Normalize command can be used to apply the same levels to many MIDI files, so they all sound with the same approximate volume. Dynamics in the files are preserved!

The "Percentage" setting determines how the velocity values are changed. For example, a percentage setting of 100 results in no change, while a percentage setting of 50 would reduce the velocity values by half. A percentage parameter of 125 would increase the velocity values in the track by 25%.

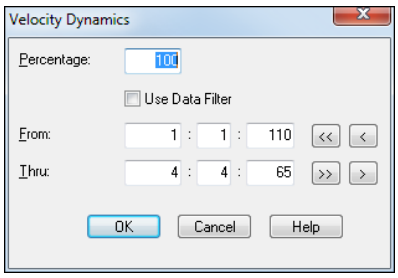
Tip: You can use the **Data Filter** to determine and refine which events are affected by this command.

When "Normalize" is checked, the MIDI note velocities of the track being edited will be boosted by the difference between the highest velocity found in the track and 127.

Note: The MIDI Normalize works on each track independently. This could potentially change the mix when multiple tracks are normalized. For example, if normalizing two tracks, and one track generally had very low velocities, but another had very high velocities then normalizing multiple tracks may boost the relative volume of the one that originally had low velocities. The solution would be to reduce the volume of that track.

MIDI | Velocity Dynamics

This command will "compress" or "expand" the velocity values of notes within the marked area of all selected tracks. The program will automatically determine the **average** velocity of all notes within a marked area.



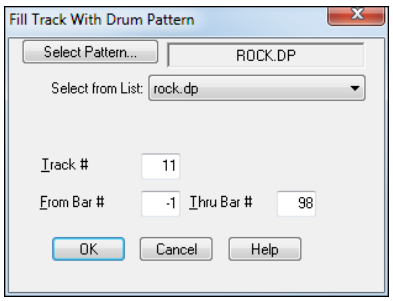
The **Percentage** setting will cause the velocity values to be moved either closer or farther away from the average velocity. A percentage setting of 100 results in no change. A percentage setting of 50 would compress the velocity values so that they are 50% closer to the average velocity. For example, if the average velocity is 64 and a note has a velocity of 84, the note's velocity will be moved midway between these values (64 and 84) to become 74.

A percentage setting of 150 would "expand" the velocity values so that they are 50% farther away from the average velocity. For example, if the average velocity is 64 and a note has a velocity of 84 the note would be moved 50% farther away from 64 and 84 to become 94.

In the preceding examples the velocity value suggested would be considered to be "above the average." Remember that velocity values that are "below the average" will be **increased** toward the average velocity when *compression* occurs and **decreased** when *expansion* occurs.

Tip: You can use the **Data Filter** to determine which events are affected by this command.

MIDI | Fill Track With MIDI Drum Pattern



This feature is a convenient way of loading an existing drum pattern and pasting it onto a track. The [Select Pattern] button lists all of the available patterns in a drop-down combo so that you can quickly select a Drum Pattern file (*.DP) to be pasted into the track that is selected in the "Track #" field.

The measures that have been specified in the "From Bar #" and "Thru Bar #" fields will be filled with the loaded pattern. The pattern will be repeated until the selected ending bar is reached.

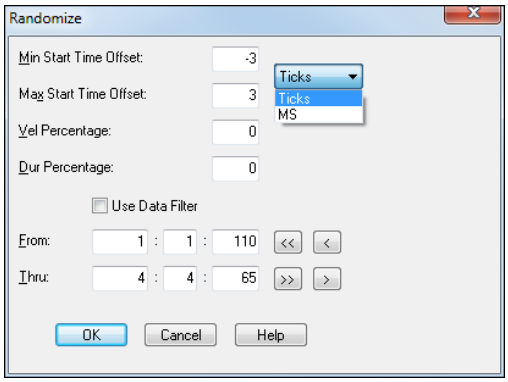
Note: Filename.DP files are simply MIDI files containing a short MIDI drum pattern saved with the .DP extension. You can create your own .DP files by recording them yourself (i.e. with the "virtual MIDI drums" plugin). Technically, any MIDI data can be saved to a .DP file, but it makes sense for them to only contain a short drum pattern instead of additional instrument parts.

MIDI | Randomize

This feature will randomly alter the start times, velocities, and durations of notes within a marked area of all selected tracks.

This command can be used to alter the **timings and dynamics** of notes in a quantized track so that the track sounds less robotic and has a more "human" feel to it.

Use this setting sparingly; otherwise it may cause a track to sound "sloppy." This command can be undone with the *Edit | Undo* menu item.



The **Min Start Time Offset** is the lowest amount of ticks that the program can move a note backward in time. The **Max Start Time Offset** is the highest amount of ticks that the program can move a note forward in time.

For example, if the Min Start Time Offset is "-5" and the Max Start Time Offset is 2, and a note begins at 2:01:100 the program will randomly move it anywhere between 2:01:095 and 2:01:102. If both the **Min** and the **Max Start Time Offsets** are set to 0 the notes won't be moved.

When MS is selected instead of Ticks, the min/max start time offset in the Randomize command is specified in milliseconds rather than ticks. The MS offset will be rounded to the closest tick at the actual song PPQ which works excellent with higher song PPQ resolutions.

Note: If the Ticks setting is enabled, the ticks are actually based on a PPQ of 120 regardless of the current PPQ. This is how "Randomize" has always worked.

The **Vel Percentage** setting determines the degree to which the program will randomly alter note **velocities**. For example, a setting of 10 will cause the program to randomly alter velocities anywhere from 10% lower or up to 10% higher than the note's original velocity. If a note has a velocity of 100, for example, the program will randomly alter it so that its new velocity is somewhere between 90 and 110. If this setting is set to 0 then the note velocities won't be altered at all.

The **Dur Percentage** setting determines the degree to which the program will randomly alter note **durations**. For example, a setting of 10 will cause the program to randomly alter durations anywhere from 10% shorter or up to 10% longer than the note's original duration.

If a note has a duration of 200, for example, the program will randomly alter it so that its new velocity is somewhere between 180 and 220. If this setting is set to 0 the note durations won't be altered at all. This feature is often used to randomly adjust the durations for tracks that were either step recorded or ones that were manually entered into the Notation window.

MIDI | Rechannel All Track

This command will rechannel all the events in ALL the tracks to the forced MIDI channel in the "Ch" field of the **Classic Tracks** window. Any track that has "0" as the forced channel won't be affected.

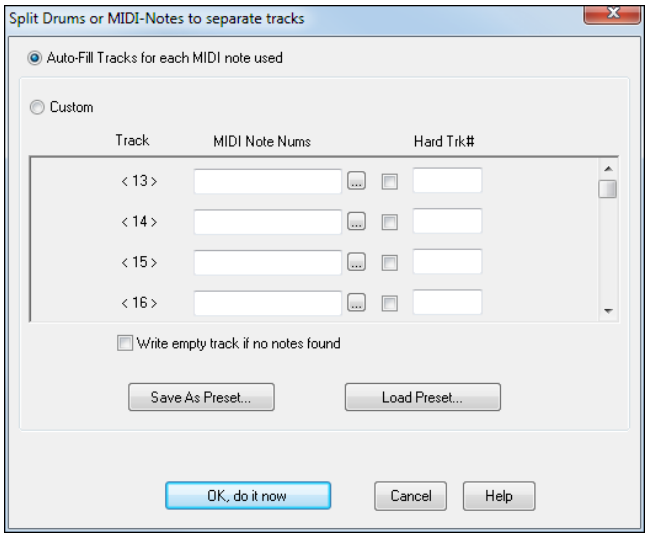
Make sure you don't execute this command if multi-channel tracks such as guitar tracks have forced channels. This would cause you to lose the multi-channel information.

Note: This command is for MIDI tracks only. This command has no effect on audio tracks.

Note: Rechanneling of all tracks used to automatically be done when saving to a .MID file but this has been eliminated because it destroyed the string separation of multi-channel guitar tracks. Use this command as a quick way to rechannel the data in all the tracks before saving to a .MID file.

MIDI | Split MIDI drums

This command will split a MIDI drum track to separate tracks. Custom settings allow you to control which notes go to which track. It acts upon the current track.



If the "Auto-Fill Tracks for each MIDI note used setting" is enabled, then RealBand will automatically move each MIDI note over to a new blank track.

If the "Custom" setting is enabled, you can specify which MIDI notes go to which track. On the left column of the Custom section, you will see the track numbers that notes will be placed onto. You can type the note numbers into MIDI Note Nums edit field, separated by commas. For example, "62,65" would mean that MIDI note numbers 62 and 65 will go onto the track specified on the left field e.g., <7>.

If you press the "..." button a list box will pop up that makes it easier to specify the note numbers. The Note Name Octave number of each note is shown (e.g., E 5) and, for notes in the GM drum range, the GM drum sound names for GM drums are shown (e.g., Acoustic Snare, Closed High Hat, etc).

You could override the track number by enabling the checkbox next to the "Hard Trk" field and typing another track number in the hard track field. The Hard Track can be any MIDI or blank track that you specify.

Remap to .KAR format:

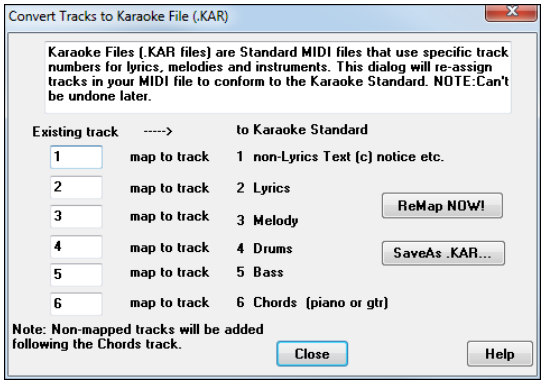
This dialog will pop up when attempting to save a .MID or .SEQ file as a .KAR file, or if you select the *Remap to .KAR Format* command.

This feature will remap the track numbers to conform to the .KAR (Karaoke) file format. In a .KAR file Track 1 and Track 2 only contain lyric events. Track 1 has lyric events for identification and copyright purposes. Track 2 contains the actual lyrics of the song.

In the 6 edit boxes you can enter the track numbers that should be moved to destination tracks in order to conform to the standard. For example, if track 7 contains lyrics you would type 7 in the edit box for track 2. If the melody were on track 8 you would type an 8 for track 3, etc. If the lyrics and melody are both on the same track, for example track 6, you would type a 6 for both the lyrics and melody track.

If there are any tracks such as non-lyrics text, bass, etc. that are not included in a given song you should type a 0 in the **edit** controls for these.

Note: KAR files use a slightly different format than RealBand's native files to store lyrics. When loading a .KAR file RealBand will automatically convert KAR lyrics to the RealBand format, and when resaving to a .KAR it will automatically save the lyrics back in the original .KAR format.



Pressing the **ReMap Now** button will cause tracks to be remapped to the **Karaoke Standard Track Order**. Any tracks that are present in a sequence that wasn't specified to be remapped will be placed after the chords track.

Only lyric events are re-mapped to Tracks 1 and 2. For example, if you've specified that track 3 should be remapped to the lyrics track and it also contains MIDI data events, these won't get remapped to Track 3 but will instead be placed in a track *after* the chords track. The only exception is in the case where lyrics and melody are both on the same track. In this case you would type the same track number for both lyrics and melody so that the lyrics get mapped to track 2 and the melody goes over to Track 3.

If the tracks in a song are already in the proper order there is no need to remap, but pressing the **REMAP NOW** button will cause the program to insert special identification events at the beginning of tracks 1 and 2 if they don't already exist.

If this dialog was popped up as a result of selecting the **Remap to .KAR Format** feature there will also be a **Save As** button which will allow you to save the file as a .KAR file. Make sure you press the **REMAP NOW** button if remapping is required in order to comply with the KAR specification.

If this dialog was popped up during a **Save As** operation there will be a **CANCEL** button which, when pressed, will cancel the save operation.

MIDI | Pitch to MIDI Convert (current audio track):

This command will perform a pitch-to-MIDI conversion of the current track. It works best on audio tracks that contain only single-note melodies. The current track is analyzed and then the program will attempt to convert it to MIDI. If the conversion is successful the MIDI notes will be placed on the next available empty MIDI track.

MIDI | Drum/Patch Map

This feature provides the ability to load a Drum/Patch Map file that is customized to your MIDI sound source. A Drum/Patch Map file has the .DK extension. These are the same files that are used by Band-in-a-Box to identify and use all the sounds and patches available on a given sound source or synth. Once a .DK file is loaded you can use the Re-map Drums/Patches command to re-map a General MIDI file to the custom sounds accessible in your .DK file. Check the PG Music web site for additional .DK files that may be applicable to your synth or sound source.

MIDI | Clear Drum/Patch Map

This command clears the current Drum/Patch Map from memory.

MIDI | Re-map Drums/Patches

This command will re-map the drum notes and patches from a General MIDI file to those of the current Drum/Patch map. This will bring up a dialog box in which you have two checkboxes that determine whether drums, patches, or both will be re-mapped. Open the PATCHES.INI file (located in the \RealBand directory) with a text program to see instructions for creating a new patch map.

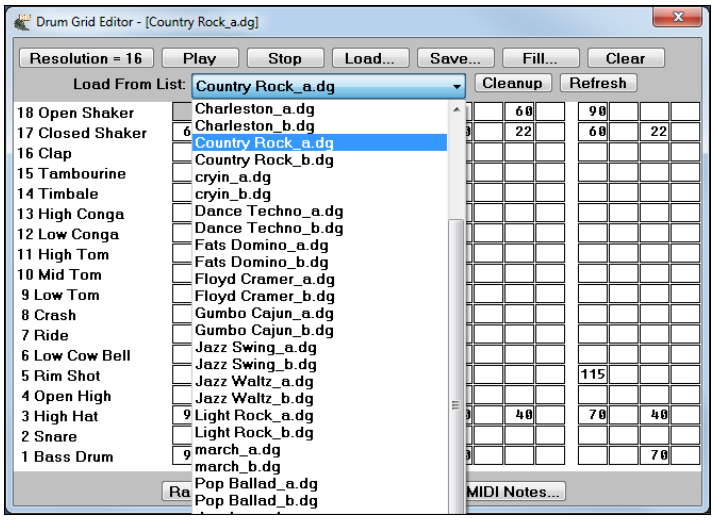
MIDI | Drum Grid Editor

This command will bring up a window with a grid that lets you create 4/4 drum patterns. Patterns can be loaded from a list or created in the drum grid editor.



Patterns are created by typing velocity values into the square fields of the grid. To the right of the grid are the names of the drum instruments that correspond to each row of the grid. Each column of the grid represents one of the 16 divisions of the measure (assuming the resolution is set to 16).

For example, if you type the number 100 in the field located in the lower left corner of the grid a bass drum will sound with a **velocity of 100** on the first 16th note of the measure.



To use the Drum Grid Editor first click on any field of the grid and start typing a number into the field. If you make a mistake and wish to erase part of what you typed press the **backspace** key. The left and right **arrow** keys, **Tab** and **Shift+Tab** (as well as the **Enter** and **Shift+Enter** keys) – allow you to move to the previous or next field.

The **Resolution** button toggles the resolution between 16 and 12 divisions per measure. When the resolution is 16 the patterns will have a **straight** feel. When the resolution is 12 the pattern will have a **triplet** (swung) feel.

The **Play** button will play a pattern repeatedly –up to 100 times, or until the **Stop** button is pressed. The pattern is actually temporarily copied to track number 48 before playing the pattern and then is erased when playback is finished. This isn't something that you need to be concerned with unless you are using track 48 for regular playback. If this is the case the program will issue a warning message instead of playing the pattern.

Note: When playing back patterns the **channel** and **port** settings assigned to Track 48 will be used. You can change these settings if you want the pattern played over a different **channel** or **port**.

The **Save** button allows you to **save** the current pattern as a .DG (Drum Grid) file, and the **Load** button will **load** a pre-made .DG file into the grid.

The **Fill** button activates the *Edit | Fill Track with Drum Pattern* feature. This can be used to fill a track with either a **.DG** (drum grid) or a **.DP** (drum pattern) file. This is the command to use to get drum patterns into a track of a song. The file name of the current pattern will appear in the **File** field of the **Fill Track with Drum Pattern** dialog so you can execute the command without having to manually reload the file into this dialog. If the current pattern hasn't been saved you will be prompted as to whether you wish to **save** before performing the **Fill Track with Drum Pattern** operation.

The **Clear** button will erase the current pattern so you can create a new pattern in its place.

Tip: If you press the **F5** key or the [Subst.] button a dialog box will pop-up that lets you choose a substitute drum note for the one currently selected in a given field. For example, if a note is a "closed high hat" with a velocity of 100 you could have, say, an "open high hat" with a velocity of 80 (or 120, etc.) as a substitute for the closed high hat (occurring 20% of the time).

The **Substitute Play %** field determines how often a substitution may occur. A **Substitute Play %** value of 80 would mean that the substitute note has an 80% chance of replacing the "regular" note in the specified position of the grid each time a measure is placed into a track using the **Fill** command. The **Substitute Note** field allows you the ability to select a **note number** – ranging from 1 (Bass Drum) to 18 (Open Shaker). Similarly, the **Substitute Velocity** field offers you a way to alter the **velocity** of the substitute drum note.

The **Random** button launches a dialog that ties the previous settings together and lets you specify whether the program will randomly alter the **start times** and **velocities** of notes when the "Fill Track with Drum Pattern" command is used. This feature does not randomly alter any notes in real-time. It will only randomly alter velocities when the **Fill Track with Drum Pattern** command is issued. If you re-select a fill the track will very likely be different each time.

The **Min Start Time Offset** is the lowest amount of ticks that the program can move a note backward in time. The **Max Start Time Offset** is the highest amount of ticks that the program can move a note forward in time.

For example, if the **Min Start Time Offset** is **-5** and the **Max Start Time Offset** is **2**, and a note begins at 2:01:100, the program will randomly move it anywhere between 2:01:095 and 2:01:102. If both the Min and Max Start Time Offsets are set to 0 the notes won't be moved in time.

The **Vel Percentage** setting determines the degree to which the program will randomly alter note velocities. For example, a setting of 10 will cause the program to randomly alter velocities anywhere from 10% lower and up to 10% higher than the note's original velocity. If this setting is set to 0 the note velocities won't be altered by the program.

There are hot keys available for quickly setting the value of a drum grid "cell" without having to type an entire number. These hot keys are located along the bottom row of the keyboard. The **Z** key sets the cell to "unused" while the other keys to the right of the **Z** key will set the cell to values ranging from 40 for the **X** key up to 127 for the forward slash / key.

The **[** key lets you decrease the tempo without having to exit the Drum Grid editor, and the **]** key will increase the tempo. Each time you press **[** or **]** key the tempo will decrease or increase by 1. Holding down these keys will gradually decrease or increase the tempo.

MIDI | Real Time Control

This command brings up a dialog box that lets you send either MIDI **Pitch Bend** or **Modulation Wheel** messages to your sound source. These messages are sent out over the **forced channel** and **port** of a selected track. The combo box lets you choose between **Pitch Bend** and **Mod Wheel** messages. This feature isn't intended to be a substitute for a good hardware controller. However, by clicking on the scroll bar's "thumb position box" and using the mouse to move the scroll bar, you can send these controller messages in a familiar way (i.e. like a hardware version). This is useful if you don't have a good hardware controller available.

When **Pitch Bend** is selected the scroll bar will return to the center when the mouse is released. When **Mod Wheel** is selected the scroll bar will always stay wherever you leave it.

RealBand can record any **Real Time Control** messages that you send when **Recording** is active. For example, when you've finished recording and you have sent some **Real Time Control** messages, the program will prompt you as to whether you wish to keep the recorded "Controller Moves" – just like when you make changes to pan/vol/effect settings in the "Mixer" window.

MIDI | Panic!

This command will send an **All Notes Off** and a **Sustain Pedal Off** command over all 16 MIDI channels. It will also shut off any MIDI Thru notes that may be sustained. This command is the same as pressing the panic button.

MIDI | Cache Patches Now

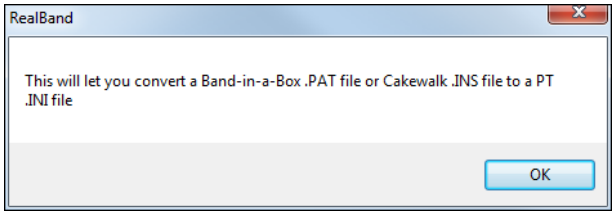
This command is only applicable to you if you are using a MIDI output driver that requires patch caching. This command will cause RealBand to update the patch cache. See also the *Options | MIDI Out* menu.

MIDI | Mode-On Messages

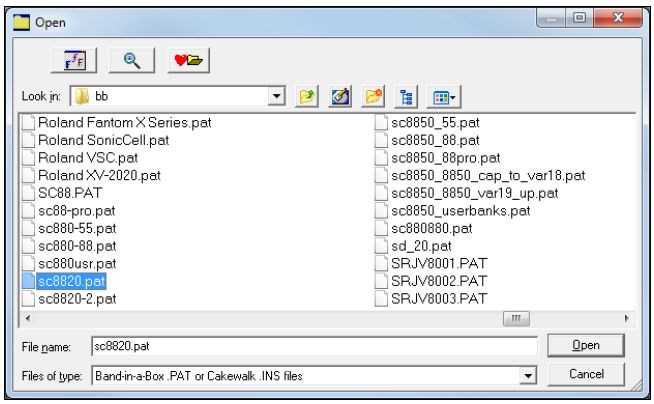
This command has a submenu for sending a GM, GS, or XG mode-on message out the MIDI output ports. The purpose of these messages is to enable the General MIDI mode on GM synthesizers, or the GS or XG extensions to General MIDI on devices that support them. GS and XG extend and add more functionality and features to the General MIDI standard.

MIDI | Convert Band-in-a-Box and Cakewalk Patches

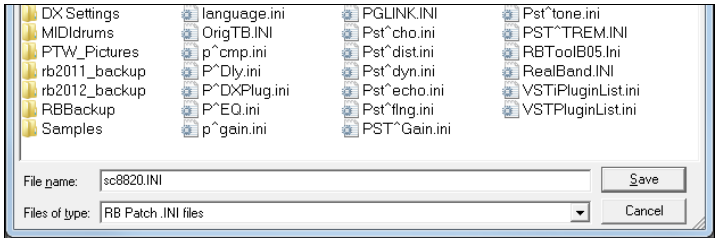
This command will let you convert a Band-in-a-Box .PAT file or a Cakewalk .INS file to a RealBand .INI file.



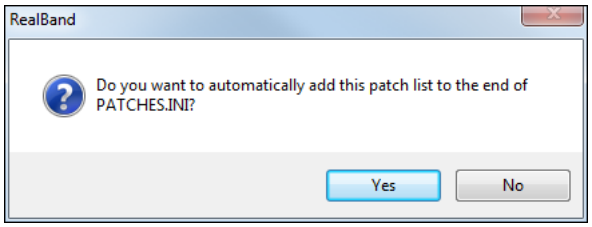
Select the location of the patch list you want to convert in the **Open** dialog.



Then a file **Save As** dialog will pop up, with a default .INI file name based on the name of the source patch file.



When you press the **[Save]** button, RealBand will prompt you to add the new patches to your existing PATCHES.INI file.

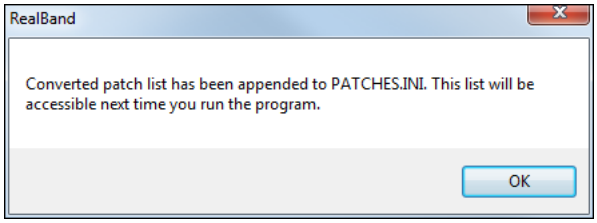


Choose [Yes] to add your new patch list to the existing PATCHES.INI file.

Choose [No] if you want to create a new .INI file with just the new patches. The original PATCHES.INI file will not be modified.

To use your new .INI file by itself you will need to name it PATCHES.INI and copy it over the default PATCHES.INI file in your RealBand folder. Be sure to save a backup copy of the default PATCHES.INI file first.

The next time you run RealBand it will recognize the new patch list. This message will confirm that your new patch list has been made.



MIDI | Run .DLL or .EXE

This command will let you run any .DLL or .EXE "plugin" that was specifically designed to work with RealBand. To choose which DLL or EXE plugin will be run by this command see the next topic.

MIDI | Select .DLL or .EXE

This command will bring up the Select .DLL or .EXE dialog. This allows you to select and run any .DLL or .EXE plugin that was specifically designed to work with RealBand. All plugin files that ship with RealBand are installed by default into the RealBand main folder (e.g., C:\RealBand).

The RealBand\dlldemo32.zip file contains information for developers about interfacing a .DLL or .EXE with RealBand.

Audio | Insert Wave File

This command offers to import a wave file into the "current track" of your project.

- **WAV**: Windows wave files, native digital audio files for the Microsoft Windows platform.
- **MP3**: compressed audio files, popular on the Internet. Requires codec to be present on system.
- **WMA**: Windows Media Audio, a compressed audio format developed by Microsoft.

- **WMV**: Windows Media Video is a compressed video format developed by Microsoft. RealBand will load the audio from a WMV.
- **CDA**: CD Audio is the file extension used by Windows to make CD audio tracks available for loading into programs like RealBand. Just put an audio CD into your CD-ROM, and then open a .CDA file from that drive (usually drive D).

Note: This feature may not work unless running Windows XP or higher. CDA files may not open in Windows Vista.

This command will also import MultiTrack .WAV files by offering a choice of merging them to mono or placing additional tracks of the wave file onto separate tracks. For example, if Track 1 is the current track and Track 2 is empty (and you import a Stereo Wave file), RealBand will place the left channel on track 1. The right channel will be imported to Track 2 on the next available track, which, in this case, is Track 2 since this track is empty.

A dialog will pop up which lets you select the time location to place the wave file(s). By default, this is the current time (**Now:**) of a song.

Audio | Import Audio File to separate tracks (using Stem Splitter)

This feature separates an audio file containing multiple instruments into individual tracks - bass, drums, guitars/piano, vocals, and residual sounds, and imports them separately to your song. Using advanced AI and machine learning techniques, this process, also known as “audio source separation,” offers greater flexibility and creative control in music production.

Audio | Open DirectX/VST Plugins Configuration

This opens the DirectX/VST window to select and edit effects plugins.

Audio | Open DXi/VSTi Synth Panel Configuration

This opens the DirectX/VST window with the control panel for the current synth.

Audio | Launch AI Audio Transcriber

This feature transcribes polyphonic audio to MIDI, allowing it to be viewed in notation or played as MIDI. It can transcribe an entire audio file (all pitched instruments and all drums), or it can isolate and transcribe individual instruments (drums, bass, guitars/piano, and vocals). It uses an advanced AI neural network to produce highly accurate results that sound exceptionally musical when played. For example, load your favorite pop song and generate transcriptions for its instruments (bass, drums, guitars/pianos, vocals), which you can play on their own or along with the audio of the song. This is an excellent way to learn songs, as you can visually follow the parts as they play on the piano keyboard or guitar fretboard. You can also use this feature together with the “AI-Stems” feature to split the original audio into separate tracks.

Audio | Audio Effects

This submenu contains all of the installed audio (DSP) effects that can be used with Wave Digital Audio Tracks (or “rendered” MIDI tracks). The audio effects in this submenu are actually external “plugins” that are transparently integrated with RealBand. You’ll be able to use them just as if they are built-in to the program since they work in a manner similar to the standard editing commands. To access any DirectX or VST plugins you have installed in your system, choose the “DirectX Audio Plugins” option and select the effect you want to use from the drop-down list located in the DirectX plugin dialog. There is also a menu item to reverse a highlighted section of audio to create backwards effects in your song. This can be used for backwards soloing effects or for transitions to a new section of a song. In the *Edit | Audio Effects* menu, there is an item to reverse a highlighted section of audio to create backwards effects in your song. This can be used for backwards soloing effects or for transitions to a new section of a song. For example, if you reverse a held chord or a sustained cymbal, it can be used as a “crescendo” effect to transition from one section to another section of a song.

A detailed description of each effect is described in Appendix A on this manual.

Audio | Reverse Audio Effects

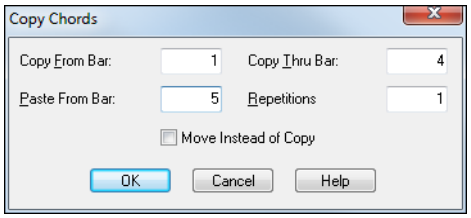
This feature will reverse a highlighted section of audio to create backwards effects in your song. This can be used for backwards soloing effects or for transitions to a new section of a song. For example, if you reverse a held chord or a sustained cymbal, it can be used as a “crescendo” effect to transition from one section to another section of a song.

Chords

This menu item contains a special sub-menu that allows you to delete or copy chord symbols that are shown in the Chords or Notation window. The commands in this sub-menu do not affect the MIDI playback of a song, but the song will be changed if BB tracks are regenerated.

Chords | Copy

This command lets you copy or move chord symbols that are shown in the Chords or Notation window to a different location in one easy operation. This command does not affect the MIDI playback of a song, but it does affect the generation of BB tracks.



The **Copy From Bar** and **Copy Thru Bar** settings provide you with the ability to select a range of bars (measures) in which the chord symbols are copied.

The **Paste From Bar** setting offers a space to choose the bar number in which to paste the copied chord symbols.

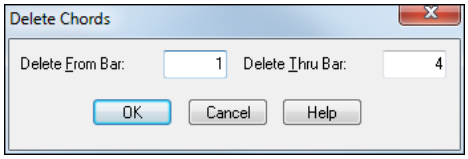
If the **Move Instead of Copy** checkbox is enabled the chord symbols are *moved* instead of copied.

The **Repetitions** setting causes the program to paste the chord symbols by the amount shown in this setting. The repetitions setting is ignored if the "Move Instead of Copy" checkbox is checked.

Note: This command can't be undone later. A warning message box will give you one last chance to cancel the command before it is carried out.

Chords | Delete

This command deletes any chord symbols that are shown in the Chords window or the Notation window. This command does not affect the MIDI Events of a song but it does affect the generation of BB tracks.



The **Delete From Bar** and **Delete Thru Bar** settings allow you to select a range of bars (measures) in which the chord symbols are deleted. This command can't be undone later. A warning message box will provide you with the opportunity to cancel the command before it is performed.

You can delete chord symbols individually for a specific beat of a song by pressing **Ctrl+Delete** or the comma (,) key while in the Notation window (only if the Ch checkbox in the Notation window is checked).

Chords | Chords Window

This command opens the **Chords Window**.

Song Settings

This menu command opens the **Song Settings** dialog with options that apply only to the current song.

Tempo | Set Current Tempo

This command allows you change the current tempo of the song. You may choose a tempo value of 8 to 2000. RealBand will automatically change the current tempo entry in the Tempo Map to the tempo that you select. See also Tap-in tempos as described in the Reference section.

Tempo | Tempo Map

The Tempo Map is a list of all the tempo changes that occur during the course of the song.

Tempo | Tempo Calculator

The length of a song depends on tempo and number of bars. With this calculator, you can enter 2 of the 3 variables (length of song in seconds, tempo, number of bars) and the program calculates the third variable for you. So, for example, if you need a piece of music lasting 60.00 seconds, and it is 45 bars, you can use the calculator to find the tempo that will achieve that.

Meter | Set Time Signature (Meter)

This command lets you change the current meter. The **Meter Map** event for the current time will correspondingly be automatically changed. The numerator can be from 1 to 99. You can change the denominator via the drop-down combo box.

Meter | Meter Map

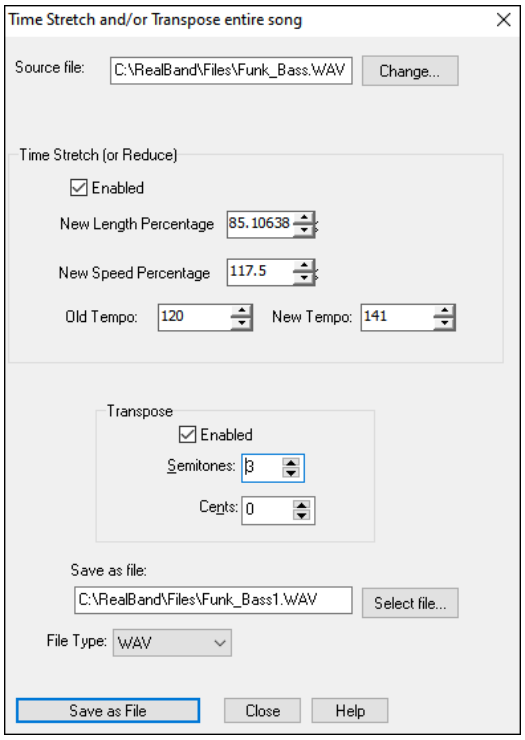
The Meter Map contains a list of all the meter changes that occur during the course of a song. The **[Ins]**, **[Del]**, and **[Change]** buttons may be used to insert, delete, and change the entries in the **Meter Map**. You may also insert meter entries by pressing the **Insert** key on your computer while in the **Meter Map** dialog.

Key Signature

This feature allows you to choose the key signature for a song. This setting will affect whether accidentals are displayed as sharps or flats. The key signature is selected from the dropdown combo box. The **Key Signature** dialog also has options for transposing the song's MIDI tracks, audio tracks, or both to the new key. "No Transpose" changes the key signature for notation but does not affect the tracks.

Time Stretch and/or Transpose Entire Song

This lets you transpose/stretch/reduce all tracks and then conveniently save to a new file.



Source file: This is the source file that will be stretched and/or transposed. You can change it with the [Change] button.

Time Stretch (or Reduce)

Enabled: if checked, then RealBand will change the length based on the following settings:

New Length Percentage: The new length as a percentage relative to the original length. For example, a new length percentage of 200% will result in the section being double the original length.

New Speed Percentage: Time stretching (or reduction) will also cause the section to be played faster or slower. If you are stretching a section of the song, it will play slower. If you are reducing a section, it will play faster. This setting is the inverse of the New Length Percentage. For example, a New Speed Percentage of 50% (half speed) will result in a New Length Percentage of 200% (double length).

Old Tempo / New Tempo: If you specify old and new tempos, this is another way of adjusting the speed, but this method lets you think in terms of a change in tempo rather than a change in speed as a percentage.

Transpose

Enabled: If this is checked, then RealBand will pitch shift based on the following settings.

Semitones: This is the number of semitones to pitch shift up or down. There are 12 semitones per octave.

Cents: This is the number of cents to pitch shift up or down. There are 100 cents per semitone.

Save as file: This is the target file name.

File Type: Select a file type (WAV, MP3, WMA, M4A, SEQ, or SGU)

[Save as File]: Press this button when you are ready to save.

Generate Menu

The Generate Menu contains commands that are related to generating tracks.

Render Menu

Export Acid Loop - Highlighted section or entire track to WAV in Loops Folder

This command will render the highlighted section of the current track or the whole track as an ACID Loop and save it to the bb\RealTracks\Loops folder.

Save as UserTrack (highlighted section or whole track

This command will render the highlighted section of the current track or the whole track as a WAV file and save it to the bb\RealTracks\UserTracks folder.

Export Highlighted Section (or entire track) to wav/wma/mp4/m4a/mp3

This command will export the highlighted section of the current track to a wave file –as long as the track contains audio data. Drag a section of the track while holding down the left mouse button to select a highlighted section. Use **Ctrl+A** to select the whole track, or open the right-click menu and choose *Select Whole Track*.

Save Track to File

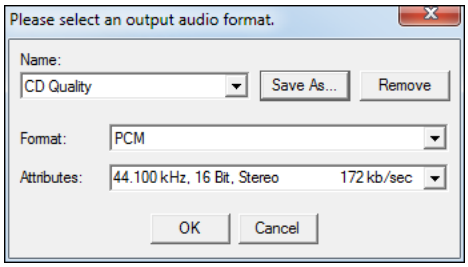
This command lets you save the **Current Track** as a file. If the track is an audio track this will export it to a .WAV file. If the track is a MIDI track you can save it either to an .SEQ, .MID, or Type 0 .MID file.

Merge Audio and VSTi/DXi Tracks to Stereo Wave File

This is an export command that will merge all the audio tracks to a stereo wave file while simultaneously rendering and merging the MIDI tracks to audio if you have a DXi or VSTi software synth. When played in a wave file player the file will sound the same as if the audio tracks of the song were being played by RealBand. The volume, mute, pan, etc. settings of the track will affect the sound of the merged stereo wave file.

Merge Audio and VSTi/DXi Tracks to Compressed File

When you export audio to alternate file formats a standard Windows **Audio Format** dialog appears.



Use the **Format** popup menu to select the ACM codec you wish to use, and then select the exact specifications of the file from the choices available in the **Attributes** popup menu.

If you frequently use a particular combination, you can save a setting in the **Name** combo box.

When you press OK, RealBand will export the song to the format you have selected using the ACM codec.

Note: Most conversions work fine, but not all codecs can save in every format listed. RealBand does intermediate conversions when necessary (to try to get the job done), but sometimes a codec will report "Conversion not Possible." This error is caused by a limitation of the codec rather than RealBand.

Merge Audio and VSTi/DXi Tracks to WMA File

This command works the same as the *Render | Merge Audio and DXi Tracks to Stereo Wave File* command except that this feature will compress the file using the Microsoft Streaming Media® Compression Technology™. When you execute this command, the program first generates a temporary stereo PCM file (Raw Wave). A dialog will then pop-up that will let you save the resulting stereo PCM wave file to a .WMA file (Windows Media Audio).

Test Wave File or Compressed File

This command launches your default media player so you can test your file for compatibility and playability with a standard Windows media player.

Launch CD Burner

This command launches the "Miniburn" CD Burner program. If the current song has audio data this feature will first offer to merge audio tracks in the current song to a WAV file. If you say OK to this option the CD Burner will automatically add the .WAV file to a list of files to be burned onto a CD (burn list).

If necessary, RealBand will convert your file to 16-bit, 44.1 kHz stereo before burning it to an audio CD.

Save all tracks to individual files (WAV MID)

This command will save all tracks to either WAV or MID files depending on the track type.

Save all tracks to WAV files

This command will save all tracks to WAV files. MIDI tracks will be rendered using DXi.

Batch Convert

The *Batch Convert* command will convert a group of files in a folder over to another file type (.SEQ, .MID, .MP3, .MP4, .M4A, .WAV, .MGU, .SGU). For example, you might want to convert your RealBand songs to MP4 files.

You just enter the location and file type (or all files) for the files that you want to convert and then choose the output file type and location. There is also the option to add a suffix to the file names to identify the rendered files.

Action Menu

This menu contains commands dealing with **recording** or **playback**.

Play

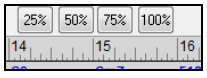
You can start playback by using this command or pressing or by pressing the <SPACE BAR> or by pressing the Play button.

Play From Start

This command will play back the song from the beginning.

Play at Speed

This command brings up a submenu that gives you a choice of playing the song at 25% speed (one quarter the regular speed), 50% regular speed, 75% regular speed, and 100%, which is regular speed.



Percentage tempo buttons are also available in the **Audio Edit** window.

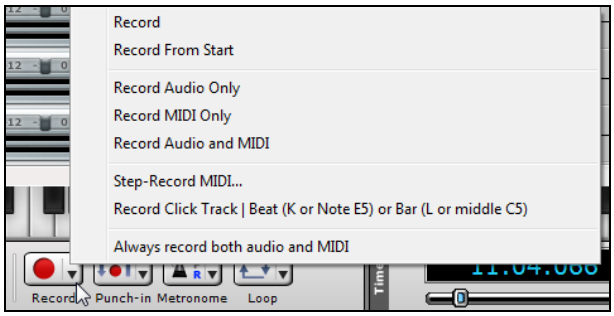
Once engaged from either location the tempo playback speed remains in effect until changed in one of the two locations.

Stop

This command stops a sequence from playing or recording. You can also stop playback by pressing the <SPACE BAR> or the Stop button.

Record

You can start recording either by using the *Record* menu item or by pressing the Record button.



Use *Record Audio Only* to prevent MIDI from also being recorded. This will avoid extra popup questions after recording.

- Use *Record MIDI Only* to prevent audio from also being recorded. This will also avoid extra popup questions.
- Use *Record Audio and MIDI* to record both regardless of the current track type.
- Use *Record Click Track* menu item for recording a click track to align events to the locations you clicked. This automatically will ensure that the current track gets set to MIDI, or switch to a new track if the current track is audio. This will also designate the track as the Click Track after recording, and set the name to "Click Track" as well.
- If *Always Record both Audio and MIDI* menu command is enabled, then when the Record button is pressed, both types of recording will occur by default. If this is not checked, then either MIDI or audio will be recorded, depending upon the track type.

Recording will occur over the track that is selected as the current track when you activate Record. The program will attempt to record either MIDI or audio data –depending on whether the current track is set to audio or MIDI in the **Tracks** window.

Any Volume, Pan, Chorus, and Reverb mixer adjustments made while recording will be recorded in real-time and saved as MIDI controller messages –just like incoming MIDI data. Adjustments made in the **All** column of the mixer will not be recorded. When recording mixer moves it is common to record the data on separate tracks from the musical data so that it can be more easily edited or deleted.

Recording can be stopped by pressing the <SPACE BAR > or by pressing the Stop button.

When you have successfully recorded any MIDI or audio events you will be asked whether or not you wish to keep the take.



If the **Punch In** mode is activated the recording will automatically *erase* previously recorded data in the **Punch In** range field without the need for you to erase the old data.

When recording **WAV** audio tracks the recording **always overwrites** any existing data even if you're not punching in. In other words, audio recording works like a tape recorder. If you want to ADD to a track without overwriting the old/existing track simply select and use a new/blank track before recording additional material.

Recording onto a **MIDI** track **won't** overwrite any existing data unless **Punch In** mode is *enabled*.

Each column in the mixer represents a track, and if the track is a MIDI track then any adjustments made in that column will result in a MIDI controller message (mixer move) being generated based on the forced MIDI channel of that particular track. If there is no forced channel for the track the channel of the first MIDI event will be used. If there are no events *or* a forced channel the actual track number will be used.

See the **Window Menu** section later in this chapter for further information on the **Mixer** window.

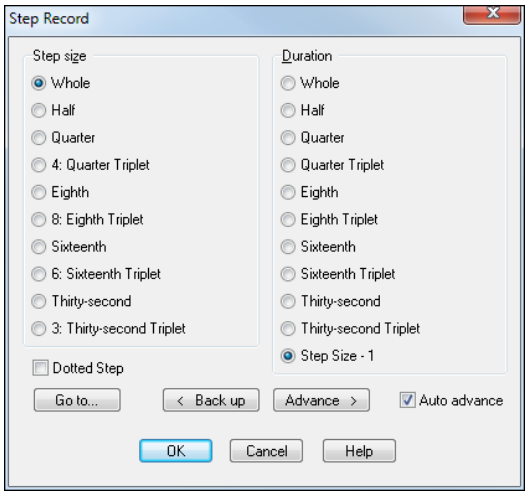
If a selected track is a MIDI track and you also make mixer adjustments during recording, then you will be prompted as to whether or not you wish to keep the recorded moves at the end of the take.

Record From Start

This command will automatically start recording from the beginning of a song.

Step Record

The **Step Record** feature allows you to record MIDI data *one step at a time* as opposed to a regular, real-time recording. Each time you play something on your keyboard the sequencer will record the event with a time value representing the current location in the song (i.e. the **Now:** time field). This kind of recording method is very useful if you know your way around a piano keyboard, but perhaps don't know it quite well enough to play in real time. This way, you can quickly enter the notes you want via your MIDI keyboard without having to play it in time, as there will be an unrecorded "rest time" – of any length you want – between notes played.



Step Size: To choose a step size simply mouse-click over the desired step. In the example dialog box shown above, for example, a **Whole** note step has been selected.

Duration: Durations are chosen exactly the same way as step sizes; the "step Size minus 1" option will automatically make the durations 1 tick less (PPQ) than the selected Step Size. This is a convenient way to make durations automatically match whatever step size you choose.

When the **Auto Advance** setting is checked the time will automatically advance to the next step after you play each note or a chord. You will see the Now: and Time: fields on the tool bar change accordingly as the time is advanced.

When **Dotted Step** is enabled the step size will be 1and 1/2 times the regular step size. (Example: a dotted eighth note is equal to 3 sixteenth notes.)

Use the [**Go to**…] key to conveniently move to a new location.

[< Back Up] and [**Advance >**] buttons allow you to move through your project forwards and backwards by one step at a time.

When you are finished with step record press the [OK] button. The take will be automatically saved. Pressing the [Cancel] button will cancel the step record without keeping the take.

Test Audio Performance

This command will test the performance of your computer and hard-drive for recording digital audio tracks. This feature will provide an estimate of the maximum number of 44.1 kHz tracks that the program can successfully play back. Keep in mind that this is just a rough estimate; the actual amount of tracks you can play back may be higher or lower than this estimate.

Go to Time

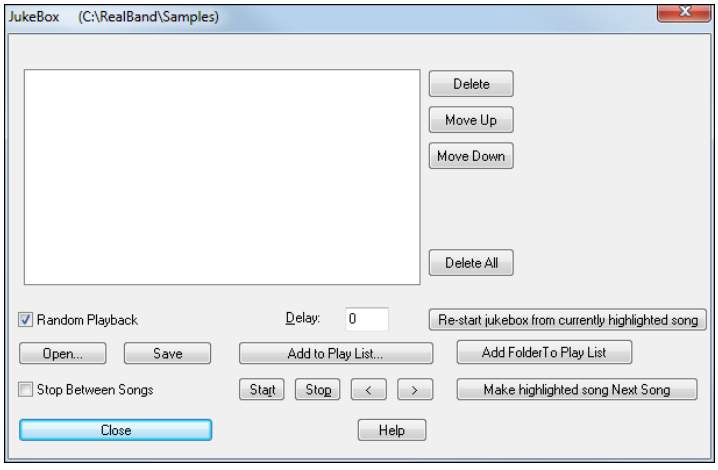
This command gets you directly to any time in a song. You can also use the **F6** function key to activate this command. If the Display Mode (in the SMPTE section of the Options Menu) is set to "Normal" then the time is expressed in Measures:Beats:Ticks. If the Display Mode is set to "SMPTE" then the time is expressed in Hours:Minutes:Seconds:Frames.

Go To Marker

This command allows you to go to a specific marker without having the Markers window opened.

Jukebox

The Jukebox feature lets you automatically play a list of songs. When selected, a dialog box will pop up that offers you choices as to which songs will be played in a Jukebox session, etc.



The "Play List String" field contains a list of songs to be played. "Wild Cards" are allowed, as shown in the illustration above.
For example, if the "Play List String" is ***.*** then all .MID and .SEQ files in a specified directory will be played.

Note: Only files with a .MID or .SEQ extension will be loaded if the extension of the file name is a wild card. The current directory is shown to the right of the dialog's title. You can specify several files (and folders) to search for by separating them with a semicolon (;) character.

For example, suppose the **Play List String** is "C:\WINDOWS\CANYON.MID;C:\RealBand*.SEQ;D:\MIDIFILE*.MID."

In this example, the program will first play CANYON.MID followed by all the .SEQ files in the C:\RealBand directory. This would be followed by all the .MID files in the D:\MIDIFILE directory. The Play List String can be up to 1024 characters long.

The **[Delete]** button removes the currently highlighted song from the play list.

[Move Up] and **[Move Down]** reposition the currently highlighted song in the list.

Use **[Delete All]** to remove all songs from the play list.

When the "Random" checkbox is checked the Jukebox feature will play all the files in a random order. Otherwise, songs will be played in the order in which they are physically encountered. There are many 3rd party disk utilities which can be used to re-sort files in a given directory based on selectable sort options such as file size, alphabetical, file date, etc.

The "Delay" field lets you insert a user-definable delay, in milliseconds (thousandths of a second), that the Jukebox will pause between playback of songs.

[Re-start jukebox from currently highlighted song] restarts the Jukebox with the currently highlighted song.

The **[Open]** button allows you the option of loading a .JUK file. A .JUK file simply contains a pre-made Play List String. If you save a .JUK file with the **[Save]** button the current Play List String can be saved to a .JUK file. If you later load the .JUK file with the **[Open]** button the Play List String stored in the file will appear in the Jukebox dialog.

Click on **[Save]** to save the current play list as a .JUK file.

The **[Add to Play List]** button lets you add a file to the play list from a *File* | *Open* dialog without having to type the file name into the Play List String field.

[Add Folder to Play List] automatically adds all the songs in a folder to the play list.

The "Stop Between Songs" checkbox will cause the program's playback to stop between songs. You can later re-start the Jukebox by pressing the Start button.

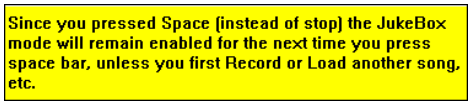
The **[Start]** button will start the Jukebox. If you've typed any invalid file names in the Play List String field the program will inform you of the error so you can correct it. When the Jukebox is playing the window title on the main screen will have the words "(Jukebox)" shown (to the right of the file name) to indicate that the program is in Jukebox Mode.

The **[Stop]** button will stop the Jukebox. You can restart the Jukebox from the current song by pressing start. There are hot keys for the **[Start]** (t) and **[Stop]** (o) buttons within the Jukebox. The hot keys (t) and (o) will work as long as the jukebox is visible and the currently active window.

The [<] and [>] buttons enable you to jump to the previous or next songs in the play list.

[Make highlighted song Next Song] lets you move to a new song in the play list. The currently highlighted song will be the next to play.

The **[Close]** button will exit the Jukebox. Even if the Jukebox is playing you can still exit the Jukebox. You can always return to the Jukebox later. When playing in JukeBox mode, and you have exited the Jukebox window itself, and space bar is pressed, RealBand will remain in JukeBox mode so you can press space again to resume Jukebox play. A Flash message will display when the space bar is pressed.



Note: Use the **[Start]** and **[Stop]** buttons within the Jukebox if you wish to **stop** and **resume** playing the Jukebox.

Changing the Play List

If you are playing a list of individual songs in a non-random order you can change the play list after you've already started.

To do this, follow these steps:

1. First, enable the **Stop Between Songs** checkbox.
2. Next, start editing the song list either during the playback of the current song, or you could wait until it stops and then do so.
3. When editing the song list you must delete the songs that already have been played, otherwise they will be heard again since the program will be restarting the song list from the first song in the list. Your new song list should start from the song that you want to be played next.
4. Then make any other changes to the song list such as substituting one file for another, etc. Use the **Add to Play List** button to add a song. This action will add the song at the end. To change the position of a file you can use **Ctrl+X** (cut) and **Ctrl+V** (Paste) keys.
5. The Jukebox will stop after the current song is played since the **Stop Between Songs** checkbox is enabled (Step 1).
6. Press the [Start] button and the Jukebox will proceed to inform you that the song list has changed and will ask if you want to use the new song list. Choose "yes" and the Jukebox will restart with the new song list.

Note: If you edit the song list ensure that you don't exit the Jukebox until the new song list is playing. Otherwise, the new song list will be ignored. If you make any errors while editing the song list you will be prompted to fix them before proceeding.

Block Menu

The *Block* menu contains commands that deal with marking an area (or block) of the song. The areas marked here work in conjunction with the editing options found in the *Edit* menu.

From = Now

This command sets the **beginning** of the marked area to the current time.

Thru = Now

This command sets the **end** of the marked area to the current time.

From = Value

This command lets you directly specify the **From Time** value. A dialog box will appear in which you can enter the new time.

Thru = Value

This command lets you directly specify the **Thru Time** value. A dialog box will appear in which you can enter the new time.

Now = From

This command sets the current time to the **beginning** of the marked area.

Now = Thru

This command sets the current time to the **end** of the marked area.

Select Current Section

This command will highlight the current section for editing purposes. The current section starts with the previous marker and ends at the next marker.

If there is a marker in the song at time 1:01:000 named “Intro” and another marker at 4:01:000 called “Verse 1,” and the current time of the song is 2:01:000 when you execute this command, then the section from 1:01:000 up to but not including 4:01:000 will be highlighted for editing purposes.

Choose recent From/Thru Range

This command lets you select from a list of recently highlighted From/Thru regions and RealBand will make your chosen range into the currently highlighted From/Thru range. This is especially useful if you've accidentally unselected the current From/Thru range, or if you wish to re-select a range you selected earlier in the session.

When you launch this command, a dialog box will pop up with a list of recently selected From/Thru ranges. RealBand will automatically pick the most recent of any previously selected ranges. You can click on any range in the list, or use the arrow keys on the keyboard to navigate the list box. When you have made your choice, press the [OK] button.

Note: It helps to have the **Tracks** window opened, since it will make it easier to see the results of reverting back to a recent range.

Options Menu

The *Options* menu contains access to various settings that affect basic program operation. Some of these options can be stored within a song if it is saved as a .SEQ file. Similarly, several of these options can also be saved into a .MID file.

Run Control Panel – Drivers

This feature auto-runs the Windows **Sound** dialog. This command performs the same function as manually going in to the Control Panel settings and double clicking on the Sounds icon.

Patch Names

You can easily associate a list of names to patch numbers. The *Options* | *Patch Names* setting can be regarded as a global default setting. This means that unless you’ve specifically selected another patch list when changing the patch of a track in the **Tracks, Classic Tracks View,** or **Mixer** window the patch list you select here will be shown in the **Patch Selection** dialog.

For example, if the Patch Names list is set to “General MIDI” you will encounter the General MIDI patch list by default when you choose to select a patch. As another example, if you select the “General MIDI 2” patch name list when you select a patch for Track 2 the program will “remember” this selection the next time you decide to select a patch for Track 2.

The Patch Name list information is saved in RealBand’s .SEQ files.

The **Numeric** setting allows you to select patches as **numbers** rather than from a named patch list. When the **Numeric** setting is used numbers will *always* be used for all tracks when selecting a patch.

The **Numeric Range** setting dialog also offers the ability to choose whether the numbers should range from 0-127 or 1-128 in order to accommodate both numbering conventions used with different synths. This setting has no effect when a named patch list is used. If you’re using a named patch list the number range is based on whether the first name in the list was assigned a value of 0 or 1 in the PATCHES.INI file.

PATCHES.INI is a text file that resides in the RealBand folder. It defines a named list of synth-specific patches. You could add a new named patch list (specific to your synth) by entering the names into the PATCHES.INI file. This file also has instructions for creating a new patch map

Punch in

When the Punch In feature is enabled recording takes place between the **From** and **Thru** settings and will overwrite existing events in the specified section. When Punch In is **disabled** recording may occur at any time within the song and the data will be **merged** with any existing MIDI events.

Resolution

This option allows you to set (or change) the timing resolution for a given project in Pulses Per Quarter note (PPQ). Simply pick a fixed resolution from the supplied menu-list and the program will automatically convert a song to the new resolution.

RealBand supports resolutions as high as 3840 PPQ, which allows for more precise audio editing, since at higher resolutions each tick spans a finer section of audio.

Note: For really long songs, or for songs that have really long note durations, it may be wise to not use the highest PPQ settings. Higher note resolution reduces the maximum allowed song length, as well as reducing the maximum allowed note duration length. At 3840 PPQ, the maximum song length of a 4/4 song is around 35 minutes long at a tempo of 120, less at faster tempos.

Sync Source

This option determines which “clock source” will handle all the timing of the MIDI music.

Internal

When the sync source is set to “internal” the program will handle all timing. The following two settings are also used when syncing to external devices:

MIDI Sync

When the sync source is set to **MIDI** the program will use song position pointer (SPP) and MIDI clocks as the clock source.

MTC/SMPTE

When the Sync Source is set to **MTC/SMPTE** the program will use MIDI Time code (MTC) as the clock source and display the time in SMPTE format.

If a song has WAV audio data the playback speed of the audio will not be varied (freewheeled) during playback –even when clock-syncing to an external device, as described above. If the external sync-device being used varies you may find that the audio may eventually drift “out-of-sync” over time.

You may also have to decrease the Output Buffer Seconds setting in the *Options* | *Preferences* | *Audio Settings* dialog if your computer is having trouble syncing correctly after playback has started.

If syncing to MIDI the program may not have enough time to start syncing correctly if the MIDI device (drum machine, sound module, etc.) isn’t providing enough delay time between the sending of the Song Position Pointer information and the start of MIDI playback. In this situation your drum machine may have a “SPP locate delay” or similar adjustment that can be made to give RealBand enough time to correctly sync to the external MIDI clock-source.

The sync options are saved automatically to the RB.INI file and will remain in effect until you re-visit this dialog and change it.

Auto Sync Chase

This feature is useful when syncing the program to an external device (e.g., drum machine, tape deck, etc.) during playback. When Auto Sync Chase is **enabled** this allows for “hands-free” sync chasing to the external device.

For example, if the program is playing back while synched to a tape deck and you stop the deck, the program will also stop and await a MIDI Sync or MTC start command – all without you having to find your mouse and manually click on the STOP and PLAY buttons. When you start the tape deck again the program will attempt to automatically re-sync. When this option is selected a check mark will appear next to the appropriate menu item.

This option is saved automatically to the RB.INI file and will remain in effect the next time you use the program.

Endless Loop

When this option is enabled playback will automatically loop through a section of a song. Use the Loop button to open the dialog from toolbar, or click the Loop button while holding the **Ctrl** key to toggle endless looping on and off.

The **From Bar** and **Thru Bar** fields determine the location of the loop. If the **Thru** setting is in a range beyond the end of the song the **loop end point** will be automatically adjusted to reflect the end of the song. Looping only occurs during playback.

This setting is not saved to RB.INI or to .SEQ files.

The **Endless Loop** command also has the following four choices:

1. **Chosen Range Below** lets you enter start end measures in the From Bar and Thru Bar fields.
2. The **Entire Song** setting loops the entire song.
3. The **Current Song Section** will loop the song based on any existing Markers. When you press “Play” the song will loop until the next marker (or end of song) is reached, and will then loop to the most recent marker at the time Play was pressed. For example, let’s say there is a marker at 4:01:000 and 8:01:000. If the current time is 5:01:000 and you press Play, the song will continue playing until just before 8:01:000 is reached. Then the song will continue playing the loop starting at 4:01:000.
4. The **Highlighted Area** setting will loop the song based on the highlighted area. This is the same highlighted area (From/Thru) that you use for editing.

Auto Rewind

When this command is enabled, RealBand will automatically rewind to the location that playback or recording was started. The choices are Recording Only, Playback Only, Both Recording and Playback, or Disabled.

Record Filter

This feature brings up a dialog in which it is possible to choose what kinds of MIDI events are recorded, as well as exactly which MIDI Channels will be recorded. For example, if you uncheck the “Key Aft” checkbox any key aftertouch events that were transmitted won’t actually get recorded. Similarly, if you uncheck the “Channel 9” checkbox any events encountered on MIDI channel 9 won’t be recorded.

Icon Set

This allows you to select the classic, modern 1, or modern 2 icon set.

Hide Tool Bar / Show Tool Bar

This toggles the three toolbar modes (two rows, single row, and none). You can also press Ctrl+T keys to toggle the modes

Hide Piano / Show Piano

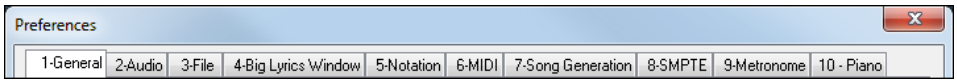
This option offers to hide the piano keyboard from the main screen. When the piano is hidden with this feature there will be more space available for the placement of the additional windows below the tool bar. This menu option changes to **Show Piano** when the hidden mode is in effect.

Language

Select another language for RealBand from the dropdown combo box in the **Language** dialog. The new language will take effect the next time the program is launched.

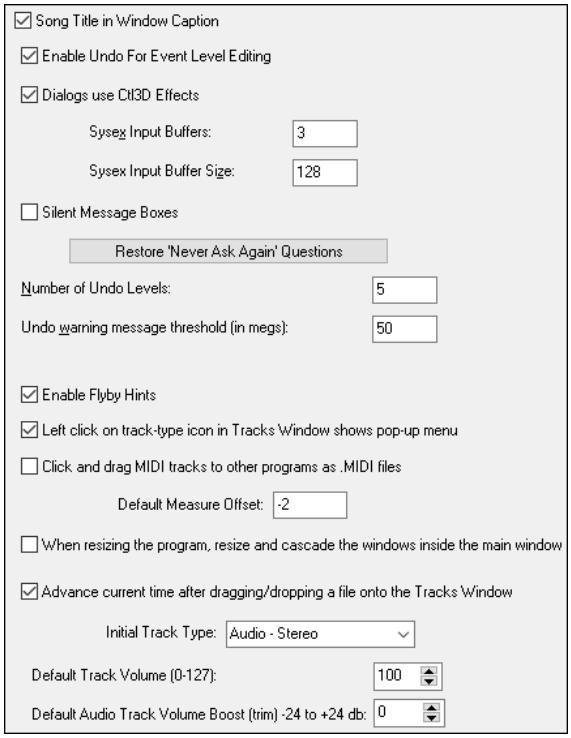
Preferences

This will launch a tabbed **Preferences** dialog box, which has multiple sections or tabs. This replaces the preferences submenu in previous versions of RealBand.



Preferences – [1 General]

General settings that affect overall RealBand operation.



Song Title in Window Caption: This checkbox, when enabled, displays the song title in the main window's caption. If you prefer to have only a song's file name displayed, you can uncheck this option.

Enable Undo For Event Level Editing: This feature, when checked, will allow you to undo the last event level edit in the Event list or Notation window, such as inserting, deleting, changing, or moving a note.

Dialogs Use Ctl3D effects: This checkbox ensures a modern appearance for the program.

The **SysEx Input Buffers** setting offers the ability to change the amount of SysEx input buffers allocated before receiving a SysEx dump. This setting can range between 2 and 512.

The **SysEx Input Buffer Size** settings let you change the size of each input buffer allocated by RealBand before receiving a SysEx dump. The default size is 128. You can decrease this to as low as 64K to as high as 1024K.

The **Silent Message Boxes** checkbox, when enabled, will prevent RealBand from making a "beeping sound" in situations where a message box is displayed.

Restore "Never Ask Again" Questions will restore pop-up message boxes in which "Never Ask This Again" was chosen.

The **Number of Undo Levels** determines the number of recently executed edit commands can be undone. By default, this is set to 5 levels of undo; you could increase this to as high as 100.

You can also adjust the **Undo Warning Message Threshold** (in same dialog). For example, if you set the threshold to 100 megabytes, RealBand will issue a warning message and ask if it's okay to clear some undo buffers if the undo buffers contain temporary audio files that can be erased to free up disk space.

Enable Flyby Hints checkbox lets you enable or disable the hints that pop-up when you move the mouse over certain controls, such as those on the toolbar.

Left click on track-type icon in Tracks Window shows pop-up menu: When this is checked, a left-click on a track type icon will show the pop-up menu of settings for that track.

Click and drag MIDI tracks to other programs as .MIDI files: When this is checked, then when you drag MIDI tracks to other programs, they will be dropped as MIDI files. If this is unchecked, then MIDI tracks will be rendered to audio files before the drop.

Default Measure Offset: This allows you to decrease the bar numbers for all songs. For example, if this is set to -2, then all the bar numbers will be shown as two less than their actual numbers (i.e., Bar 3 would be 1, and Bar 4 would be 2).

When resizing the program resize and cascade the windows inside the main window: This allows you to choose whether the windows display proportionally as cascade or they display as there were when you resize the program window.

Advance current time after dragging/dropping a file onto the Tracks Window: If this is checked, then when you drag a file from outside of RealBand and drop that onto the Tracks Window, the current time will advance, but if this is unchecked, the current time will remain unchanged after the drop.

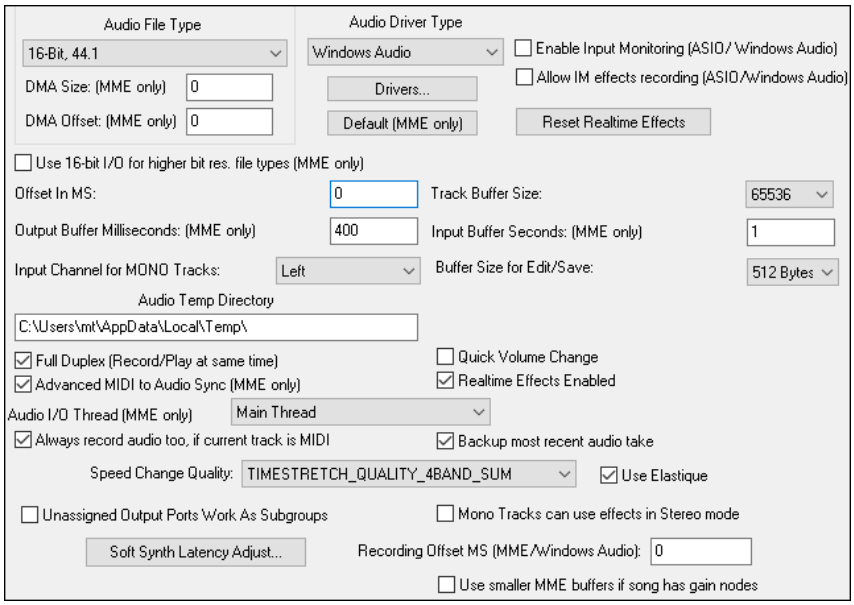
Initial Track Type: This sets the initial track type for new songs. When a new song is started, all tracks will initially be set to the type selected (MIDI, Audio-Mono, Audio-Stereo) until changed to another type.

Default Track Volume: You can set the default volume for MIDI tracks.

Default Audio Track: This allows you to set the default gain offset in dB for audio tracks.

Preferences – [2 Audio]

Various settings that affect audio recording/playback.



The **Audio File Type** combo box gives you a choice of sampling rates from 22.05K to 96K at bit depths of either 16-bits or 24-bits. 16-Bit, 44.1 is the file type to use for files that you want to burn to audio CDs.

Sample Rate Change: This setting can be changed even if the song already has audio tracks. If you change the sample rate with a project that already has audio saved at a different sample rate the program will offer to automatically convert the song.

When you've pressed the **OK** button to exit the Audio Preferences dialog you will be asked whether or not to go ahead with the conversion (if applicable). Press the **Yes** button to convert your project to the new sampling rate.

Note: Any field with "(MME only)" has no effect when using ASIO drivers.

The **DMA Size** and **DMA Offset (MME only)** settings are memory buffer sizes and offsets used by the sound card's driver. These settings are detected by RealBand, and don't normally need to be changed.

Audio Driver Type: RealBand supports Windows Audio Session audio driver, an alternative to ASIO (a driver with low latency, but usually can be used by one program at a time) or MME (an older driver with worse latency). The Windows Audio Session driver has ultra-low latency (< 25 ms on a typical Windows PC), so audio operations like playing or sending out information via MIDI happen with no noticeable delay. Note that this supports 1 stereo input plus 1 stereo output at a time. For multiple inputs/outputs, you should continue to use either MME or ASIO.

When you boot up RealBand, it will be already set to use this driver without any action from you. If you want to confirm the selection, open the **Preferences** - **Audio** dialog (*Options* | *Preferences* | [Audio]) and see the "Audio Driver Type" option.

The **[Drivers…]** button opens the **Audio Drivers** dialog if the Driver Type is set to MME, Windows **Audio Drivers** dialog if the Driver Type is set to Windows Audio, or the **ASIO Audio Drivers** dialog if the Driver Type is ASIO.

When RealBand detects ASIO drivers it will prompt you to ask if you want to use them.

ASIO Driver Warning: There is a warning if the ASIO4All driver is "not connected" Sometimes the ASIO4All driver will not be connected to an audio driver and output will be silent. This is usually due to a soft synth already using the audio driver. If RealBand detects that ASIO4ALL isn't connected, it will warn you about this, so you are aware of why the audio is silent.

If using MME, by default, the Microsoft Sound Mapper is selected for both input and output. If you have multiple sound cards, or a multiple I/O card, you can select more than one input or output. This will affect the computer performance when recording or playing audio tracks. The more ports that are selected, the more demand is placed on your computer. This may require a very fast computer.

Each Input and Output port is a stereo pair, with a left and right channel. If you select 4 input ports and 4 output ports then you would be actually getting 8 input and 8 output channels, since each audio port has both a left and right channel.

Note: When using MME drivers, Port number 1 is used as a source of timing when syncing MIDI to digital audio. If you are attempting to use two different brands of sound cards together on one computer as two separate ports, there may be timing problems if the cards have different DMA buffer sizes, but it is possible you may not encounter any noticeable timing issues. The multi-port feature is mainly meant for multi-port cards. Feel free to try multiple sound cards, but your results may vary.

The **Default (MME only)** button will restore some of the MME settings in this dialog to default settings. Since some of these settings must be detected, RealBand will analyze the sound card again.

Enable Input Monitoring [ASIO/Windows Audio]: When this checkbox is enabled in the **Audio** dialog (and ASIO or Windows Audio is selected in the Driver Type combo) then RealBand will take the ASIO input signal from input port number 1 and send it to output 1 so that you will hear the input through the speakers.

You can apply real time effects to the monitored input by selecting "Input" in the top combo box of the DirectX/VST Real Time Effects dialog. You can then select up to four DirectX or VST effects.

WARNING! Do not enable this feature if the input port number 1 is set to record the output (e.g., "What you hear" or "Mix") because enabling input monitoring in this case will cause massive feedback that could hurt your ears!

When **Allow IM effects recording [ASIO/Windows Audio]** is enabled, and Input Monitoring is enabled, and effects plugins are enabled for input monitoring, the effected signal will be recorded instead of the dry signal.

The **[Reset Realtime Effects]** button will remove any real time effects from your project so you can begin remixing your project from scratch.

If the **Use 16-bit I/O for higher bit res. file types (MME only)** setting is enabled, then RealBand will convert the audio to 16-bit before sending to the sound card.

The **Offset In MS** setting can be used to make an adjustment to the timing for the purpose of keeping the MIDI and audio in sync. You can make an adjustment to this setting if the sound card's audio timing is early or late in comparison to the MIDI. For example, if the sound card's audio is being heard later than the MIDI, you can try increasing this setting, which will delay the MIDI timing to match the audio timing. The default for this setting is 0.

The **Track Buffer Size** settings determine the amount of memory used by RealBand as a buffer when reading audio data from disk for each audio track.

Output Buffer Milliseconds (MME only) setting lets you adjust the output buffer duration. The default setting is 4000 milliseconds (4 seconds), which is a very conservative setting. The higher the setting, the less likely it is that playback will glitch. The lower the setting, the quicker the song will start playback, and the quicker the program will respond when you change volume, pan, mute, or effects settings for an audio track.

You can reduce this setting if you want faster response to mixer moves (such as volume, pan, etc.) without needing to enable the Quick Volume Changes setting. 1000 milliseconds (1 second) is usually a good overall setting for fast enough response, while still leaving enough buffers to avoid audible dropouts or clicks, assuming your computer has a reasonably fast CPU.

Note: If you set this to less than 1000 milliseconds you may further improve the response time of mixer moves, but you'll also further increase the risk of an audible dropout or audible click when the system is under stress. In addition, if you set to a very low setting, then MIDI playback may temporarily slow down due to subtle and brief interruptions in the audio during activity such as minimizing and maximizing a window.

The **Input Buffer Seconds (MME only)** setting determines the number of seconds of audio data that are in the input buffer during recording. The greater the setting, the less likely a dropout will occur during recording in situations when the system is very active.

The **Input Channel for MONO Tracks** setting determines which audio input channel (Left, Right, Stereo) is used by RealBand to record audio onto a MONO track. When set to Left or Right, the audio in a track is stored as mono so only one channel is used when recording.

Keep in mind that this setting ONLY is relevant when recording onto MONO audio tracks.

When set to "L+R (2 Tracks)" the left channel will be recorded on the Current Track and the right channel will be recorded on the next highest track number. If the next highest track is a non-blank MIDI track, then a new track will automatically be inserted at that position to make room to record audio. You can undo the keeping of an L+R take.

Example: Say the current track is track number 1. When you record using L+R, the Left channel will get recorded on track number 1 and the Right channel will get recorded on track number 2. If Track 2 is blank or already has audio, then the audio for the Right channel will get recorded directly onto the existing track number 2. If track number 2 already has MIDI data then a new track will automatically be inserted at track number 2, and the existing track with the MIDI data will become track number 3.

If RealBand inserted a new track when recording using L+R, *Undo* won't remove the inserted track, but you could use the *Remove Track* command if you decided to remove the newly inserted track.

Note: When multiple input ports are selected in the audio drivers dialog, this setting MUST be set to "L+R" in order to record multiple channels onto MONO tracks. (RealBand will set this to "L+R" automatically if you choose multiple input ports in the drivers dialog.) Each audio input port is recorded as an L+R pair, and it works the same way as with a single (two track) L+R pair. The audio data will be recorded as 1 L+R pair per port with all the dated recorded on adjacent available tracks. Tracks will be inserted if necessary (same method as when recording L+R with a single port).

If the Record Channel is set to Left or Right, only Input Port number 1 (the first input port in the list that was selected by you in the **Audio Drivers** dialog) will be recorded, even if multiple ports are selected.

The **Buffer Size for Edit/Save** setting in the **Audio** dialog lets you adjust the buffer size used by RealBand when editing and saving a song. It lets you adjust the buffer size that RealBand uses during operations such as cutting and pasting or when saving a file. Depending on your hard drive, using larger buffer sizes may result in a speed improvement.

The **Audio Temp Directory** is the directory used by RealBand to store temporary audio data when recording or editing a song. This setting can't be changed if the song already has audio data.

The **Full Duplex** setting, when checked, will allow RealBand to record and play back audio at the same time. This setting will only work if your sound card its driver supports full duplex (simultaneous record/playback).

The **Quick Volume Change** checkbox, when checked, will cause RealBand to quickly stop and restart playback in response to any volume or panning changes to an audio track, or muting/unmuting of audio tracks. There may be a slight delay or glitch

before the change occurs. If this checkbox is unchecked, then there will be a delay equal to the Output Buffer Seconds setting before you hear the change.

The **Advanced MIDI to Audio Sync (MME only)** checkbox, when checked, will enable a mode in which RealBand polls the sound card for position information at a higher rate for more accurate timing.

Realtime Effects Enabled allows processing of audio tracks through real time DirectX or VST effects from PG Music Inc. or others. These are non-destructive effects that do not permanently alter the individual tracks.

Audio I/O Thread (MME only) gives you three different choices regarding the execution thread for audio playback and recording. The three choices are: "Main Thread," "Discrete Thread - Normal Priority," and "Discrete Thread - High Priority." When set to use the Main Thread, the audio I/O uses the program's main execution thread rather than multi-tasking. When set to Discrete Thread it uses a separate execution thread for the audio playback, which makes it less likely that there will be an audio dropout in certain situations, such as when small I/O buffer size settings were selected by the user.

Very Important: If you change this setting, and later experience any unusual problems with the audio playback/recording, please change this back to the "Main Thread" setting. The Main Thread setting is the safest of the three.

Always Record Audio too, if current track is MIDI – this setting will cause RealBand to record audio even when the current track is MIDI. RealBand will offer to keep the audio take on the nearest available blank track. This can be a "lifesaver" in those situations where you wanted to record audio, but you accidentally selected the current track as a MIDI track.

Backup Most Recent Audio Take – this setting, when enabled, will cause RealBand to always backup the most recent audio take as <Temporary Audio Directory>\RBBAKx.WAV, with x being the audio input port number. This can be helpful in those rare-yet-frustrating situations, such as when you accidentally recorded audio onto the WRONG audio track, or you accidentally punched in instead of recording a regular take. If this happens you can undo the keeping of the most recent take and then use the *Wave Files - Import Wave File* command to insert the recorded audio onto a different track, by importing the RBBAKx.WAV file which will be located in the Temporary Audio Directory.

Note: If you do this, you may have to edit the audio data's track location to get it to sound at the right time.

Speed Change Quality: This setting determines the time stretch method used to alter the speed of the song when you play the song at a different speed, such as 50% speed. There are 8 different choices here. The "best" choice depends on the source material. You may need to experiment to determine the best choice for the music you are working with. Here are the choices:

- 1BAND_SUM - The fastest method but with the lowest quality. May sound best on simple tracks.
- 2BAND_SUM - Fast with better quality than 1BAND_SUM. May sound best on simple tracks.
- 4BAND_SUM - Fast with better quality than 2BAND_SUM. Good for simple tracks or mixes.
- 8BAND_SUM - This is the best-sounding fast method, likely to sound good on either simple tracks or mixes.
- 2BAND_AUTOCORR - Noticeably slower than the above methods. It may sound much better than 8BAND_SUM on simple tracks, but it probably will not sound better than 8BAND_SUM on mixes.
- 3BAND_AUTOCORR - Even slower, may sound much better on simple tracks, but it may not sound better than 8BAND_SUM on mixes.
- 4BAND_AUTOCORR - Same speed as 8BANDSUM_HYBRID, but may sound better than 8BANDSUM_HYBRID on simple tracks.
- 8BANDSUM_HYBRID - Same speed as 4BAND_AUTOCORR. If processing speed is not an issue, 8BANDSUM_HYBRID is likely to be the best choice for full mixes. It uses AUTOCORR on low audio bands, and SUM on the high audio bands.

When the **Use Elastique** option is enabled, RealBand will use Elastique for realtime pitch transposition and stretching whenever possible.

When the **Unassigned Output Ports Work As Subgroups** checkbox is enabled in the **Audio** dialog, any audio output ports that do not currently have a driver port assigned to them will function as subgroups. A subgroup is a bus or signal path that gives you the ability to control several tracks as a group.

The **Mono Tracks can use effects in Stereo mode** setting in the **Audio Options** dialog allows mono audio tracks to use the real time effects track inserts in stereo mode for better sounding mixes. When the checkbox is enabled, and a mono track is using an effects **insert** (added via **FX** button on mixer) such as a stereo reverb, the output from the stereo reverb will be heard in stereo rather than mono.

Note: This feature only applies to track effects inserts. Aux busses have always worked in stereo mode (if the effects were stereo). This feature, when enabled, will also cause RealBand to use up more CPU processing power.

Pressing the **[Soft Synth Latency Adjust]** lets you adjust for fine tuning latency settings for MIDI (non-DXi, and non-VSTi) soft synths. This works by playing a song called LatencyAdjust.SEQ (which comes with RealBand) which contains a MIDI note and audio note. Pressing the Start button starts the playback; you can then tweak the Soft Synth Latency MS setting until you hear the MIDI and audio tracks are in sync.

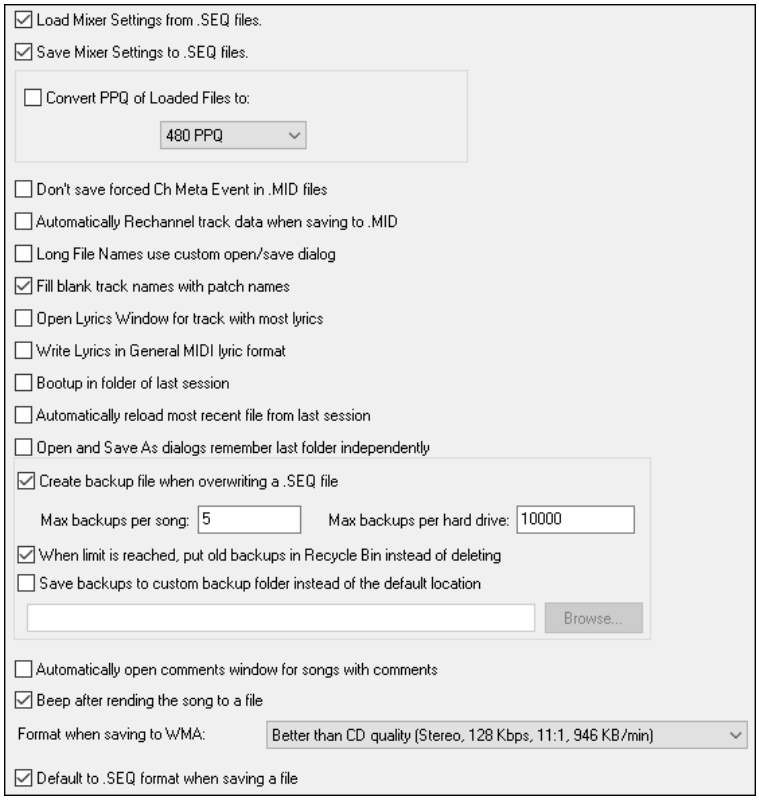
Note: if the notes sound in sync but you later play a song and the MIDI and audio still sound like they are out of sync, then likely you overshot the correct MS setting by 500ms. If this happens, we recommend starting the adjustment again at a value of zero and increasing it until you hear the MIDI and audio notes in sync.

The **Recording Offset MS [MME/Windows Audio]** setting can be used to correct a timing issue under Windows Vista that can cause recorded tracks to be delayed in time. If that happens, you can increase to a setting greater than zero. Usually the delay is around 50 to 60 milliseconds (ms).

Use smaller MME buffers if song has gain nodes - Small buffers help eliminate potential clicking when doing fade ins/outs with gain nodes. This does not affect the total buffer size in ms.

Preferences – [3 File]

Preferences that deal with saving or loading files.



The **Load Mixer Settings from .SEQ Files** checkbox, when checked, enables the feature in which RealBand automatically loads and transmits any mixer settings that are stored in .SEQ files.

The **Save Mixer Settings to .SEQ Fil**es checkbox, when checked, will cause RealBand to save all the current mixer settings of non-blank tracks to .SEQ files. If the "Load Mixer Settings from .SEQ Files" setting is enabled the settings will be loaded and sent whenever a .SEQ file is loaded.

The **Convert PPQ of Loaded Files to PPQ** checkbox, when checked, will automatically convert files to the selected PPQ resolution. For example, if the selected PPQ resolution is 480 PPQ (Pulses Per Quarter note), and this checkbox is checked, RealBand will automatically convert any files you load to 480 PPQ. RealBand supports PPQ as high as 3840, which allows for more precise audio editing, since at higher resolutions each tick spans a finer section of audio.

Note: For really long songs, or for songs that have really long note durations, it may be wise to not use the highest PPQ settings. Higher note resolution reduces the maximum allowed song length, as well as reducing the maximum allowed note duration length. At 3840 PPQ, the maximum song length of a 4/4 song is around 35 minutes long at a tempo of 120, less at faster tempos. At 3840 PPQ and a 4/4 time signature the maximum allowed note duration length is around 17 beats regardless of the tempo.

The **Don't Save Forced Ch Meta Event in .MID files** checkbox, when checked, will prevent RealBand from saving the forced MIDI channels (the Ch field in the Classic Tracks View window) into the .MID files. This META event is only recognized by other PG Music programs.

If you choose to not have this setting saved then the forced channels won't be recalled the next time the file is loaded. You could use the *MIDI | Edit | Rechannel All Tracks* command to convert the actual MIDI data in the tracks to the forced channel so that a forced channel setting isn't needed.

Automatically Rechannel track data when saving to .MID

When saving to a MIDI file, RealBand will automatically ask you if you want to rechannel the track data to the forced MIDI channels in the tracks view, if the tracks contain MIDI channels different from the forced channel.

Note: By default, this is disabled and you will receive a notification dialog if you enable it. If you are a MIDI guitar player you probably will want to leave this setting disabled permanently. Leaving this setting disabled and never enabling it will ensure that you will always retain the individual channels recorded by your MIDI guitar.

Long file names use custom open/save dialog: This lets you use a more advanced, custom file dialog. This dialog allows you to choose a Font. This dialog will remember the dialog's window size and placement, and the currently selected font. It also has a tree button that lets you view the directory structure, and a button that lets you choose between details mode and list mode.

These settings will all be remembered by RealBand the next time you load or save a file using the custom file dialog.


The Find button in the Custom File Selection dialog lets you search for a file within the current folder. This is useful when a folder has many files and you wish to avoid scrolling through a long file list.


The Favorite Folders button in the Custom File Selection dialog will let you select from a list of "favorite" folders.

When using the Custom File Selection dialog, RealBand will remember up to 25 folders from which you had previously loaded files. When you press the Favorite folders button, you can quickly select a folder without having to navigate through the Windows folder tree structure.

Fill blank track names with patch names: This setting, when enabled, will cause RealBand to fill a blank track name with the patch name for the track when loading a file, assuming the track has MIDI data, and the Prg field (in the Classic Tracks View) isn't blank. For .MID files this is ALWAYS a General MIDI patch name. For .SEQ files this is based on the patch list of each track.

Open Lyrics Window for track with most lyrics: This setting, when enabled, lets RealBand automatically open a Big Lyrics window for the track that has the most lyrics.

Write Lyrics in General MIDI lyric format saves Standard MIDI File lyrics.

Boot up in folder of last session is a checkbox that can be enabled or disabled. When you enable this setting, RealBand will boot up in the folder of the most recently loaded file from the previous session of RealBand.

Automatically reload most recent file from last session. If this is enabled, then when you run RealBand it will load the most recently loaded file from the last session.

Open and Save As dialogs remember last folder independently: When this is enabled, the File Open and File Save As dialogs individually recall the folder from the last time either dialog was used.

Create backup file when overwriting SEQ files: When this is enabled, RealBand will always create a backup file (BKS file) when a .SEQ file is overwritten. For songs saved into the same hard drive that RealBand is installed, the backups are placed into RBBackup subfolder of the RealBand folder. For songs that are saved to a different hard drive, the backups are placed in a RBBackup folder which is off of the root (e.g., D:\ RBBackup).

Max backups per song setting: This determines the maximum number of backups to be kept for each song. If this limit is reached, then RealBand will delete the oldest backup of the song you are overwriting and create a newer backup.

Max backups per hard drive: This is the maximum total backups allowed per hard drive. If this limit is reached, then RealBand will delete the oldest backup file.

When limit is reached, put old backups in Recycle Bin instead of deleting: There is an option for moving the older backups into the Recycle Bin instead of deleting them when either of the two limits are reached.

Save backups to custom backup folder instead of the default location: This allows you to choose a custom folder where backup files are automatically saved

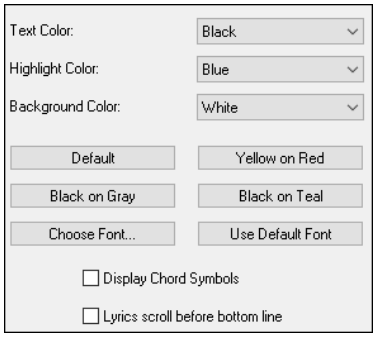
Automatically open comments window for songs with comments opens the Comments when the song loads if this box is checked.

When **Beep after rendering the song to a file** is selected it tells you that audio rendering of a MIDI file is done and the audio file is ready.

Format when saving to WMA: has a drop-down combo box where you can select the quality of the WMA files you render with RealBand.

Preferences – [4 Big Lyrics Window]

The various settings for the **Big Lyrics** window.



The **Text**, **Background**, and **Highlight Colors** can all be changed if you prefer different colors than the defaults.

The **Default**, **Yellow on Red**, **Black on Gray**, and **Black on Teal** buttons let you chose between 4 preset color schemes without having select individual colors for each setting.

The **Choose Font** button provides you with ability to select a different font for use with the Big Lyrics window.

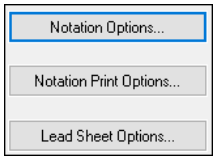
The **Use Default Font** button "resets" the font used in the Big Lyrics window back to its default setting.

The **Display Chord Symbols** checkbox, when enabled, allows chord symbols present in a song.

Lyrics scroll before bottom line scrolls the lyrics before the bottom line instead of scrolling after the first line.

Preferences – [5 Notation]

This lets you access settings for the Notation window and Lead Sheet window. The options are described in detail in the **Notation and Printing** chapter.



The **[Notation Options]** button lets you access the settings for the Notation window.

The **[Notation Print Options]** button lets you access the Notation Print settings and is accessible only if the current track contains notes.

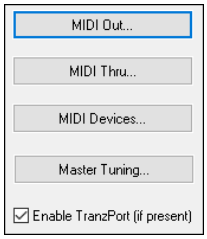
The **[Lead Sheet Options]** button lets you access the settings for the Lead Sheet window.

Note: You can also access these settings from buttons within their respective windows instead of from this **Preferences** dialog. Since accessing these settings requires that a Notation window or Lead Sheet window be active, RealBand may temporarily launch one of these windows (Notation or Lead Sheet), if necessary, and then close the

window after the settings dialog has been exited.

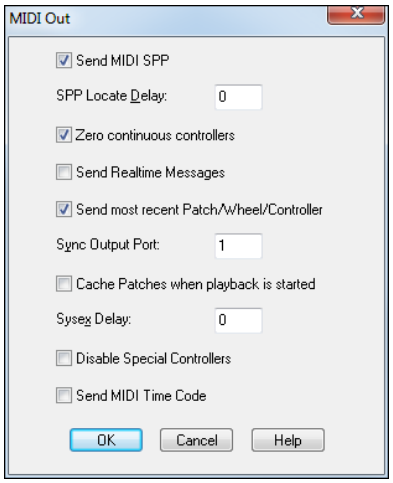
Preferences – [6 MIDI]

This lets you access settings related to the MIDI setup.



Preferences – [MIDI Out]

Use the **MIDI Out** dialog to choose the messages that will be sent to your MIDI sound source.



Send MIDI SPP: This determines whether **MIDI Song Position Pointer** data is sent.

SPP Locate Delay: This lets you adjusts the delay time (in milliseconds) before playback is started after sending Song Position Pointer (SPP) information. This gives external MIDI devices the time required to find the proper location when syncing to the program.

Zero continuous controllers: Sets continuous controllers such as Pitch Bend to zero, which is the off position.

Send Real-time Messages: When this option is enabled the program will send "MIDI clocks" information – as well as **Start**, **Stop**, and **Continue** messages.

Send Most Recent Patch/Wheel/Controller: When this option is enabled the program will search back through the tracks for the most recent patch, wheel (pitch bend), and controller events. These events will be sent to your MIDI sound source *before* starting playback. This ensures that you hear the proper sounds when playing from a new location within a song.

Cache Patches when playback is started: If you are using an output driver that requires patch caching RealBand will update the patch cache when a .MID or .SEQ file is loaded.

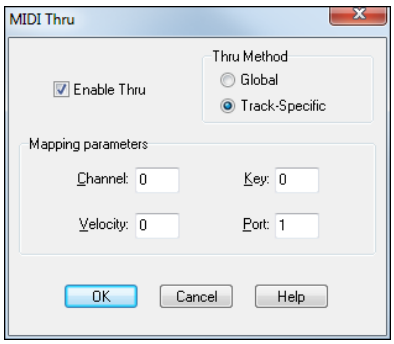
SysEx Delay: When multiple packets of **system exclusive data** are sent, many synthesizers require a slight delay between packets. A SysEx packet is a message that begins with (Hex) F0 and ends with F7. If your synth requires a delay between packets when receiving SysEx (which is quite common), then this setting lets you specify a delay setting of between 1 and 100 milliseconds. The default setting is 0, which equals no delay. If you are encountering problems (e.g., overflows, lockups, etc.) with sending SysEx data to your MIDI sound source you should try a setting of 10-100 milliseconds to correct the problem.

Disable Special Controllers: This prevents RealBand from sending any of the special controller messages that are used for the Guitar and Notation windows. The Guitar window uses controller 84 for inserting "position" markers. The Notation window uses controller 85, 86, and 88 for advanced notation features such as "micropegs" and Bars Per Line markers.

Send MIDI Time Code: When this feature is enabled the MIDI Time Code will be sent through the MIDI OUT port during playback. This is useful if you need to sync an external device to RealBand that only supports synching to MTC (rather than synching to MIDI clocks/SPP).

Preferences – [MIDI Thru]

This command provides you with the ability to enable or disable the MIDI Thru setting. This also allows you to choose how the MIDI data is echoed. There are two types of MIDI Thru: *Track-Specific* and *Global*.



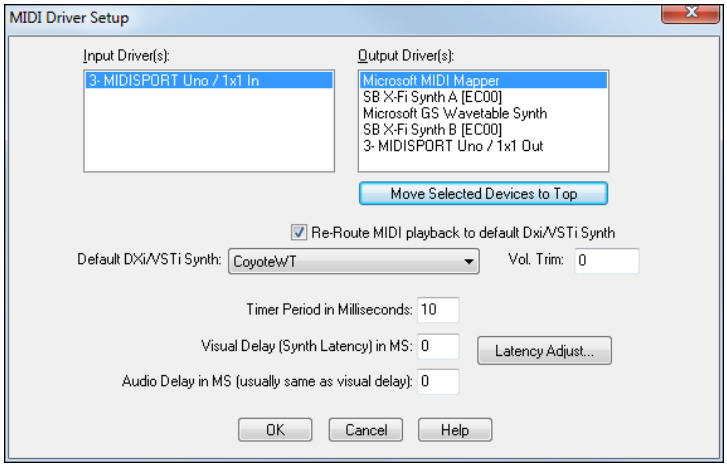
Enable Thru: If this option is checked the **MIDI Thru** feature will be enabled.

Thru Method: As noted, there are two types of **Thru** methods:

- **Track-Specific**: When Track-Specific MIDI Thru is enabled the incoming MIDI data will be "echoed" using the forced Channel, Velocity, Key, and Port settings of the track. If these settings are set to 0 the MIDI data will be echoed but otherwise unchanged.
  For example, if a given track has a forced MIDI channel of 2, all incoming MIDI events will be echoed out via MIDI on Channel 2.
- **Global:** When Global MIDI Thru is enabled the incoming MIDI data will be "echoed" using the forced Channel, Velocity, Key, and Port settings that you specify in the **Mapping parameters** settings. If these settings are set to 0 the MIDI data will be echoed out but otherwise unchanged.

Preferences – [MIDI Devices]

This command allows you to select the MIDI input and output drivers to use with the program. When selected, a dialog box will pop up which contains two list boxes, one for the **Input Driver(s)** and one for the **Output Driver(s)** (specific to your system). You can select more than one input or output driver. RealBand supports multiple MIDI ports.



The **[Move Selected Devices to Top]** button lets you adjust the order of the MIDI Output ports. This means you can choose which MIDI Output devices appear as Port 1, Port 2, etc. within RealBand, rather than the default order for the ports determined by the operating system.

If the ports are in a different order than required, you can select (highlight) one or more ports, and press the [Move Selected Devices to Top] button. This will move the highlighted ports to the top of the list. You can highlight one or more ports and then move them to the top to shuffle the order until it's the order you want.

When you launch the **MIDI Driver Setup** dialog, all the highlighted ports will always be shown at the top. They will be in the same order they were before, relative to each other. For example, let's say you have four ports on your system, and, by default they show up sequentially:

Original Driver Order	**After Re-ordering**	**Next Launch of Dialog**
Driver A	**Driver D**	**Driver D**
Driver B	Driver A	**Driver C**
Driver C	Driver B	Driver A
Driver D	**Driver C**	Driver B

Let's say that you highlight the 4th port (Driver D) and move it to the top, and then you highlight the last port in the list (which is now Driver C, since Driver D was moved to the top). You now have 2 ports selected, Driver D at the top and Driver C at the bottom. Driver D and Driver C will be ports 1 and 2 within RealBand.

The next time you launch the **MIDI Driver Setup** dialog, you'll see Driver D and Driver C at the top, followed by the other two un-highlighted ports. The important point here is that the chosen order of the highlighted ports Driver D followed by Driver C was preserved.

The **Re-Route MIDI Playback to Default DXi/VSTi Synth** setting will cause RealBand to re-route all MIDI playback to the Default DXi/VSTi synth. This is the easiest way to use a DXi (Direct X Instrument) or VSTi soft-synth for playback. If this option is checked, then ALL MIDI tracks' playback output will be routed to the default DXi synth regardless of the track's port number.

Note: If using MME drivers, only the MIDI playback output can use softsynths. MIDI Thru, MIDI metronome, scrub mode, and chord advance/backup will default to a regular MIDI port. With ASIO drivers, MIDI Thru will play through softsynths.

The **Default DXi/VSTi** combo lets you select which DXi/VSTi synth is used as the default softsynth.

The **Timer Period in Milliseconds** setting determines how fast the timer interrupt rate will be for MIDI synchronization, the smaller the setting the faster the interrupt rate. The range can be between 1 and 20.

The **Visual Delay (Synth Latency) in MS** is useful if you're using a software-based synth such as the Coyote WT. This setting will delay the visual display within RealBand, such as displayed times and highlighting of notes during playback. When using a software-based synth, you may have to set this to a few hundred milliseconds depending on your computer's speed. You may have to tweak this a few times until the visual display during playback matches the sounding of notes on a software-based synth.

The **Audio Delay in MS** setting will delay the start of audio playback and audio recording, which is useful if you want to attempt to keep audio playback/recording in sync with MIDI if you are using a software-based synth for MIDI playback. Normally, you will set this to match the Visual Delay (Synth Latency). This is why this setting is in the MIDI Devices dialog. If you are using a software based MIDI synth, setting both the Visual Latency and Audio Delay will let you play/record audio in sync with the MIDI.

Note: When recording/playing audio tracks along with a software-based synthesizer, the stability of the audio/MIDI synchronization will vary depending on the stability and speed of your computer, operating system, and drivers. Software-based synthesizers have excellent playback quality, but for recording situations a hardware chip-based MIDI synthesizer may be best since hardware synths don't have an output delay, and don't consume much CPU power.

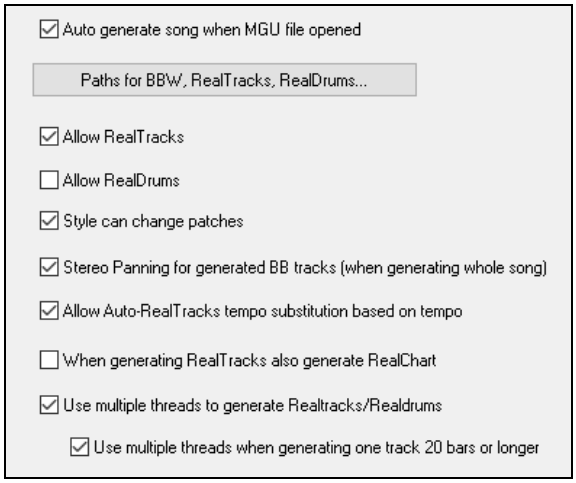
[Latency Adjust] opens a routine for manually adjusting softsynth latency.

[Master Tuning…] allows you to master tune your sound card or sound module, useful if you're playing along with an instrument or recording that can't easily be re-tuned, like an acoustic piano. A setting of 0 is the default A = 440. This setting is saved between RealBand sessions.

Enable TranzPort (if present) allows remote control from a TranzPort wireless DAW controller.

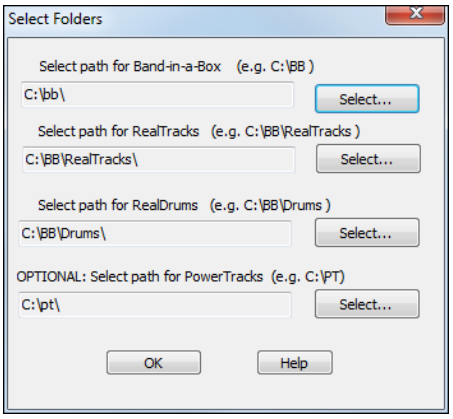
Preferences – [7 Song Generation]

These are global settings that apply to all RealBand songs.



Auto generate song when MGU file opened automatically generates and arrangement when a Band-in-a-Box file is opened in RealBand. Disable this feature if you don't want the parts in the imported Band-in-a-Box file to be regenerated and overwritten.

Click on the **[Paths for BBW, RealTracks, RealDrums]** button to open the **Select Folders** dialog to choose or change the path for RealBand to find its RealTracks and Real Drums.

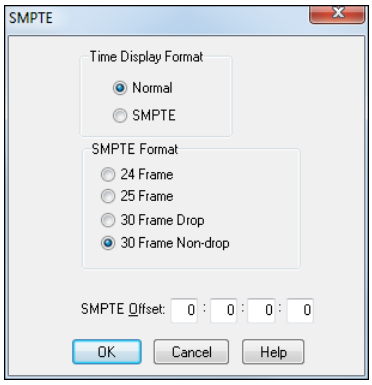


The other settings enable the listed functions when checked and disable them when unchecked.

Preferences – [8 SMPTE]

Settings for the time code used by the Society of Motion Picture and Television Engineers.

The **[SMPTE Settings]** button gives access to the **SMPTE** dialog, which offers the ability to choose the time display format –as well as whether MIDI events will be translated and displayed as SMPTE times.



Time Display Modes: If the time display mode is set to Normal the time will be displayed in Measures:Beats:Ticks. When it is set to SMPTE, the time will be displayed as Hours:Minutes:Seconds:Frames.

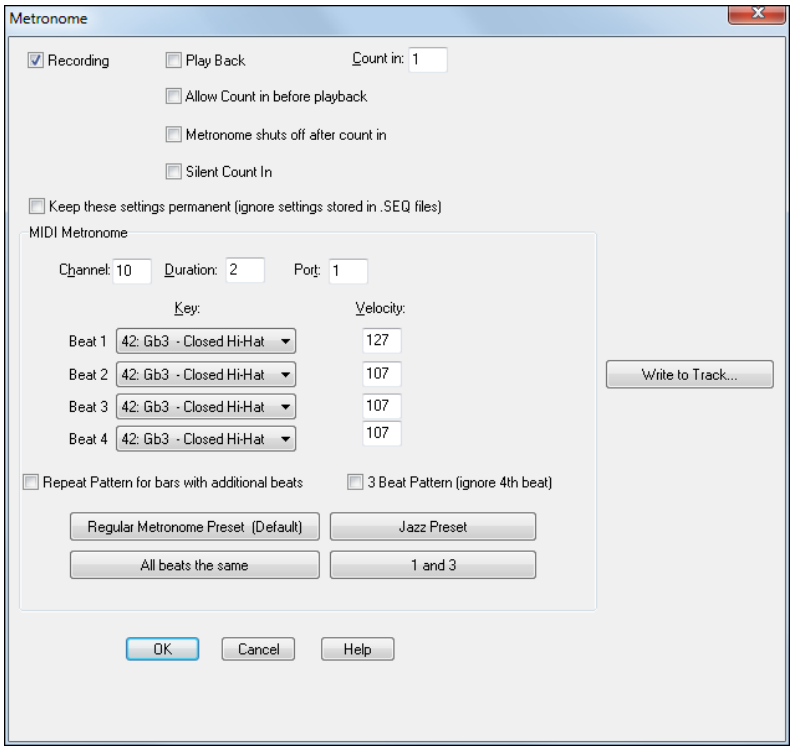
SMPTE Format: You may choose one of four SMPTE formats: 30 FPS (Non-Drop), 30 FPS (Drop-frame), 25 FPS, or 24 FPS (frames per second).

SMPTE Offset: This determines the SMPTE time that the program associates with the beginning of a song. For example, if you use an **offset** of 00:00:02:00 then the start of the song will be 00:00:02:00. This gives the program two seconds to "sync up" to a tape when starting a tape from the beginning.

Preferences – [9 Metronome]

Access to the **Metronome** dialog.

The metronome can be active during recording, playback, or both.



Recording - If this checkbox option is enabled the metronome will be **on/heard** during **recording**.

Playback - If this option is enabled the metronome will be **on** during **playback**.

RealBand will send a specific note out via MIDI on each beat. The note, velocity, duration, and port options will determine the pitch and characteristics of the note that is sent out via MIDI on each beat of the song.

Count In - This option lets you choose how many measures/bars will be counted down before recording begins. The countdown may range from 1 to 4 measures.

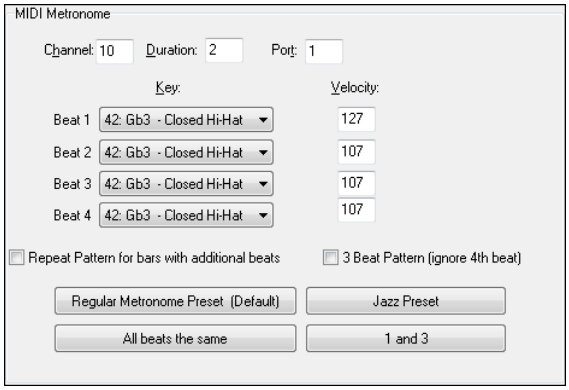
Allow Count in before playback - Enables count-in before playback. This is useful for practicing or playing live.

Metronome shuts off after count in - Shuts the metronome off after the count-in so it is silent during playback.

Silent Count In - Ensures that the count-in will be silent (visual count-in only). This is useful if you are playing live and you don't want an audible count-in.

Keep these settings permanent (ignore settings stored in .SEQ files) will cause RealBand to remember the current metronome settings and ignore any settings stored in .SEQ files.

MIDI Metronome - RealBand will send a specific note out via MIDI on each beat. The Channel, Key, Duration, Velocity and Port options will determine the characteristics of the note that is sent out via MIDI on each beat of the song.



You can choose a different sound for each beat by using the Beat combo box to select a key from the list of drum notes for the standard GM drum kit. Use the Velocity setting to vary the volume of the notes in a rhythmic pattern.

Note: DXi output can not be used for the metronome. The metronome can only sound on regular midi ports.

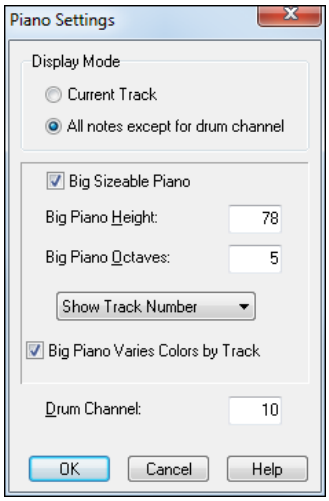
There are preset buttons for typical count-in patterns for different genres. For example, the Jazz preset is silent on beats 1 and 3, with closed hi-hat on beats 2 and 4.

The **[Write to Track]** button writes the metronome to a chosen MIDI track, or to just a specified region of the track.

The Counting Down dialog visibly shows the numbers (e.g., 1, 2, 3, 4) during the countdown.

Preferences – [10 Piano]

Access to the **Piano Settings** dialog with settings applicable to the virtual piano display mode. There are two display modes for the piano:



When the display mode is set to **Current Track**, the piano will display notes as they are being played from the current (highlighted) track.

When the display mode is set to **All notes except for drum channel**, the piano will display the notes of all tracks except for notes that are on the drum channel.

The **default drum channel** is normally set to channel 10 in this dialog but it can be changed to any MIDI channel between 1 and 16. If you select a drum channel of 0 all notes that are being played will display, including the drums.

When the **Big Sizeable Piano** setting is enabled, RealBand will show a bigger piano below the toolbar, instead of the smaller piano. You can vertically resize the Big Piano by placing the mouse on the bottom edge of the piano and then clicking and dragging the mouse up or down.

For the Big Sizeable Piano, there is also a setting that gives you a choice of Show Track Number (drawn as a tiny number within the notes), Show MIDI Channel, or Show No Text.

If **Big Piano Varies Colors By Track** is enabled, then the colors of the notes drawn on the big piano will vary depending on the track number. For tracks 1 through 10, RealBand uses 10 different colors, then repeats these colors for higher track numbers.

These settings are automatically saved to RB.INI and RB.CFG so that they will remain in effect the next time you use RealBand.

Reset to default settings

This will reboot the program with factory settings.

Window Menu

The *Window* menu contains commands that aid in creating, selecting, and arranging windows.

In RealBand, you can open more than one instance of some types of windows. The **New** command offers the creation of such "multiple instance" windows. The Event List, Notation, Big Lyrics window, Audio Edit window, and Lead Sheet window are all windows that fall into this category.

New

When you choose this command, the sub-menu (shown above) will appear –offering the Event List, Notation, Audio Edit, Big Lyrics, and Lead Sheet windows available to be opened.

Event List

The Event List window allows you to insert, delete, and change all MIDI events. A list of events is displayed vertically in the window (shown above) and each line in the list represents an individual event. Each event is shown with its *track number*, *time*, *MIDI channel number*, the *kind* of the event, and the *parameters* applicable to the event.

Notation Window

The **Notation** window displays the notes of a MIDI track on a staff and lets you print music on your printer. The Notation window can also display chord symbols and lyrics.

There are three notation modes - each mode opens with its own button on the tool bar. From left to right, the buttons are for Standard Notation, Editable Notation, and Staff Roll Notation modes.

See the chapter on **Notation and Printing** for full details.

Big Lyrics Window

The Big Lyrics window will display any existing lyrics in a track. The program will highlight the lyrics as they play, which is very useful for singing along with the music.

Audio Edit Window

The Audio Edit window opens with the [Audio Edi]t toolbar button, from the *Window* | *New* submenu, or with the keystrokes Ctrl+F2.

Note: When clicking on the Audio Edit window button and the current track is a BLANK MIDI track, and the song is not playing, then RealBand will ask if it's okay to change the track type to an Audio track (rather than opening a Notation window).

This window displays wave audio data as a large, editable waveform. The dB scale on the left side of the **Audio Edit** window gives you a better idea of the level of an audio track.

Lead Sheet Window

This window is similar to the Notation window, except that it can display a track in the form of a lead sheet, with multiple staves per page.

The Lead Sheet window is resizable. It will adjust the height and width of staves automatically when resized.

Up to 7 tracks at a time can be displayed per Lead Sheet window. In order to display multiple tracks, you should first select the tracks in the **Tracks** window or **Bars** window and then open up a new **Lead Sheet** window. Another way to select tracks is in the **Lead Sheet Options** dialog.

RealBand can also print notation with multiple tracks when you press the [Print] button at the top of a **Lead Sheet** window that is currently displaying multiple tracks.

The **Lead Sheet** window is fully described in the **Notation and Printing** chapter.

Piano Roll Window

The **Piano Roll** window enables precise graphic editing of note timing and duration. You can also graphically edit Note Velocity, Controllers, Program Changes, Channel Aftertouch, or Pitch Bend. There are 2 panes in the window – one for notes and the other for controllers, velocity, and other data.

All notes and controllers are displayed as black/gray bars on a grid. You can change note duration and pitch by selecting and dragging with your mouse.

The piano roll features are fully described in the **Piano Roll Window** chapter.

Show VU Meters

This command will display the VU meters. There are 2 pairs of VU meters, one pair for audio input, and one pair for audio output. If you re-size the VU meters window vertically the height of the meters will expand or shrink to match the new window height. The clipping indicator at the top of the meters indicates that clipping has occurred. You should try to keep the levels low enough so they're safely below 0 db and the clipping indicator doesn't light up. To be on the safe side, it's probably a good idea to adjust the levels so that the meters don't get too close to 0 db even if the clipping indicator hasn't yet lit up. For the Output, you may have to adjust your mixer settings within RealBand to keep the levels within a reasonable range. For the Input, you may have to press the speaker button to launch the Windows Record Control dialog, and you could then lower the input level. The VU meters will display the input and output for all ports that were selected in the Audio Drivers dialog and not just for Input 1 and Output 1.

Show Markers Window

This command will display the Markers window. This window lets you insert markers in the song for keeping track of various sections of your music.

Show Karaoke Window

Use this command to display karaoke files.

Show Big Clock Window

This window displays the current time location in a large text. It will show Measures:Beats:Ticks, or Hours:Minutes:Seconds:Hundredths, or Samples. Clicking on the window will toggle the display mode.

Show Big Piano Window

This command opens the resizable piano keyboard.

Show Video Window

This allows you to load a video that you have already downloaded from YouTube or elsewhere into RealBand.

Show AI Lyrics Window

This opens the AI Lyrics window. It provides creative songwriting functions that suggest or generate themes, styles, titles, and even complete song ideas. It also offers customized AI lyrics generation, enabling you to create lyrics from scratch, generate the next line, or experiment with rhymes, synonyms, antonyms, related words, or alliterations. You can enhance your existing lyrics by adding vivid imagery, emotion, richer vocabulary, or more natural phrasing. With six lyric modes - Word Suggestions, Inspiration, Songwriting, Improvements, Complete Song and Custom - you can refine your lyrics in numerous ways/

Tile

This command will arrange the various project windows so that an equal portion of each window is visible on the screen.

Cascade

This command arranges the various program windows on screen on top of each other with the tops of each window visible.

Close All

This command minimizes all open windows so that they are shown as icons.

Tracks Window

The Tracks window shows the tracks with their names, track type (MIDI or audio), various settings, as well as an overview section showing either MIDI or audio data.

Chords Window

The Chords window displays the chord symbols of a song. You'll see the bars of the song displayed in rows. If a bar contains chord symbols they will be displayed to the right of the bar number. An optional setting inserts a line between each section of the song, as determined by the "a" and "b" part markers. There is another setting for the thickness of the line.

Tempo Map

The Tempo Map is a list of all the tempo changes that occur during the course of the song.

SysEx Window

The SysEx window is actually a built-in system exclusive (SysEx) librarian. This allows you to transmit or receive any SysEx data. You can also load and save MIDIEX compatible SysEx files. The SysEx librarian can hold up to 24 banks of system exclusive data. Since the librarian stores all data on disk as opposed to memory, the size of the SysEx data is limited only by the amount of free disk space available.

Guitar Window

The virtual Guitar window displays notes (as green squares for fretted notes, and blue squares for bends) that are played in a selected track or by the MIDI Thru channel on the virtual guitar fretboard.

Mixer Window

The Mixer window provides real time control of effects and track volumes. You can launch it by typing **Ctrl+8**.

Classic Tracks View Window

This is the original tracks window from PowerTracks Pro. Settings made in the **Classic Tracks View** will also affect the **Tracks** Window and the **Mixer**.

Help Menu

The **Help Menu** provides an easy access to the Help file, User Guide, Upgrade Manual, and more.

Launch Help

This will open the RealBand Help file.

Tip of the Day

This item accesses a dialog box that will provide you with numerous tips applicable to this program. By default, a tip is displayed when you first run the program. You can disable the tip feature by unchecking the "Show Tips at Start-Up" checkbox offered in the **Tip of the Day** dialog. Select the [Next Tip] Button to cycle through all the tips available.

User Guide

This launches your .pdf file reader and opens a full RealBand manual in .pdf format.

Upgrade Manual

This launches the New Features Guide for your version. It is a quick reference to newly added features.

Show log text file of flash messages

This will run the Notepad and show you a list of flash messages.

About RealBand

This displays a dialog box containing the Version and Copyright information applicable to the RealBand program.

Utilities

Activate RealBand (Serial Number Required)

This allows you to activate RealBand if you haven't done so yet. RealBand needs to be activated within 30 days after you first run RealBand.

Special Options for Activation/De-Activation

This will show options to change the activation status (e.g., removing activation and moving it to another PC).

Write RealBandRequest file

This creates a file that you can email to support@pgmusic.com if you have a problem activating the program.

Chord List

Chords listed here are based on C, but any valid chord letter (A-G) can be used.

(Major chords)

C, CMAJ, C6, CMAJ7, CMAJ9, CMAJ13, C69, CMAJ7#5,

C5b, Caug, C+, CMAJ9#11, CMAJ13#11

(Minor chords)

Cm, Cm6, Cm7, Cm9, Cm11, Cm13, Cmaug, Cm #5, CmMAJ7

(Half Diminished)

Cm7b5

(Diminished)

Cdim

(Dominant 7th chords)

C7, 7+, C9+, C13+, C13, C7b13, C7#11, C13#11, C7#11b13, C9,

C9b13, C9#11, C13 #11, C9#11b13, C7b9, C13b9, C7b9b13, C7b9#11,

C13b9#11, C7b9#11b13, C7#9, C13#9, C7#9b13, C9#11, C13#9#11, C7#9#11b13, C7b5, C13b5, C7b5b13, C9b5, C9b5b13, C7b5b9, C13b5b9, C7b5b9b13, C7b5#9, C13b5#9, C7b5#9b13, C7#5, C13#5, C7#5#11, C13#5#11, C9#5, C9#5#11, C7#5b9, C13#5b9, C7#5b9#11, C13#5b9#11, C7#5#9, C13#5#9#11, C7#5#9#11, C13#5#9#11

(Sustained 4 chords)

Csus, C7sus, C9sus, C13sus, C7susb13, C7sus#11, C13sus #11, C7sus#11b13,C9susb13, C9sus#11, C13sus #11, C9sus#11b13, C7susb9, C13susb9, C7susb9b13, C7susb9#11, C13susb9#11, C7susb9#11b13, C7sus#9, C13sus#9, C7sus#9b13, C9sus#11, C13sus#9#11, C7sus#9#11b13, C7susb5, C13susb5, C7susb5b13, C9susb5, C9susb5b13, C7susb5b9, C13susb5b9, C7susb5b9b13, C7susb5#9, C13susb5#9, C7susb5#9b13, C7sus#5, C13sus#5, C7sus#5#11, C13sus#5#11, C9sus#5, C9sus#5#11, C7sus#5b9, C13sus#5b9, C7sus#5b9#11, C13sus#5b9#11, C7sus#5#9, C13sus#5#9#11, C7sus#5#9#11, C13sus#5#9#11.

Notes on entering chords:

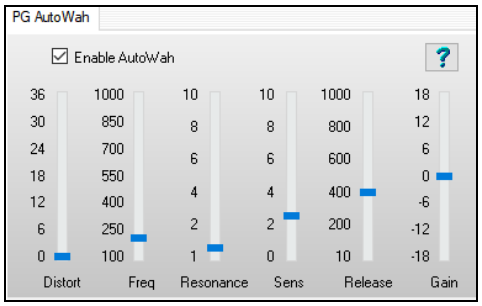
- It is not necessary to type upper or lower case; the program will sort this out for you.
- Any chord may be entered with an alternate root (slash chord), e.g., C7/E = C7 with E bass.
- Separate chords with commas to enter 2 chords at a time, e.g., Dm7, G7.

Appendix A: PG Music DirectX Plugins

PG AutoWah

Wah effects were invented in the 60's, pedal-controlled band-pass filters. In the 70's, "envelope-follower" boxes became common for electric bass, clavinet, and guitar.

PG AutoWah is a classic envelope-follower effect. Loud input signals increase the filter cutoff frequency, and quiet input signals allow the filter to "close down." Loud notes become brighter than quiet notes.



Distort adds some grit before filtering. When Distortion is set to a value of zero, there is no distortion. If attempting to AutoWah a mellow signal that doesn't have many high frequencies, you can crank the Distort slider to add some buzzy highs before filtering.

Freq sets the filter's lower frequency cutoff limit (in Hz). Quiet audio input levels allow the filter to drop no lower than the Lo Freq cutoff. If the Wah effect is too dark on quiet notes, increase Freq. If the wah effect is too bright on loud notes, try decreasing Freq or decreasing Sens.

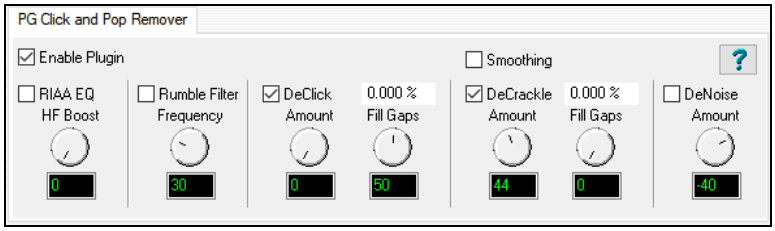
Resonance adds a loudness peak at the cutoff frequency. When the filter sweeps around, this loudness peak emphasizes (resonates with) harmonics at the cutoff frequency. High resonance has a biting, synthetic effect. Low resonance is mellower sounding.

Sens adjusts the degree to which loud notes sweep the filter cutoff frequency. No level-sensitive sweep occurs when Sens is set to zero.

Release is the time (in milliseconds) that it takes for the filter to track note loudness decay. Adjust to taste.

Gain is applied if the plugin settings make the signal too loud or too quiet.

PG Click and Pop Remover



Enable Plugin Checkbox

Toggle the checkbox to compare the original recording to the plugin output. This helps avoid excessive settings. PG Click and Pop Remover uses look-ahead buffering, so if you bypass the plugin, the output will "jump in time." This is expected, because there is some added delay when PG Click and Pop Remover is enabled.

RIAA EQ Checkbox

If you recorded from a stereo tuner or other gadget with a phono input jack, DO NOT enable the RIAA EQ section. The RIAA EQ option is for folks who do not have a turntable preamp, having recorded with an ordinary mixer.

RIAA EQ was designed to overcome the shortcomings of vinyl. RIAA pre-emphasis is applied when vinyl discs are mastered. High frequencies get boosted, and low frequencies get cut. This makes high frequencies compete better against the inevitable vinyl pops, clicks, and surface noise. Pre-emphasis also prevents low frequency signals from bouncing the stylus out of the groove.

When you play a record, the preamp's RIAA de-emphasis will reverse the EQ. High frequencies are cut, and low frequencies are boosted. If you do not apply RIAA de-emphasis, either with a phono preamp or in the software, vinyl will sound too bright and shallow.

HF Boost

If you recorded the disc with a mixer which has high-impedance inputs (preferably 1 MegOhm or better), set HF Boost to zero, for "pure" RIAA de-emphasis.

Most audio mixer instrument/line inputs have impedance in the 10 KOhm to 100 KOhm range. A turntable's magnetic cartridge will be "loaded" by the lower-than-expected mixer impedance. This won't damage the turntable, but will affect the frequency balance. A 10 KOhm mixer input could cut the highs quite a bit, and even a 100 KOhm mixer input could cut the highs a perceptible amount.

There is no way to predict the characteristics of your turntable cartridge and the input impedance of your mixer. Adjust HF Boost by ear until the frequency balance sounds right. You may not get the frequency response as precisely as the mastering engineer intended, but if you are happy with the result, who cares?

Some PG Click and Pop Remover options can cut highs. If a record is damaged so much that subsequent PG Click and Pop Remover cut high frequencies along with the noise, you could increase the HF Boost by ear, to make up the loss.

Rumble Filter Checkbox

Cheap or worn-out turntable platters can make subsonic vibrations. Slightly warped records can also make undesirable low-frequency noise. Use the Rumble Filter to block unwanted low frequencies.

The Rumble Filter is a 24 dB per Octave Butterworth High Pass filter, which attenuates undesirable low frequencies. In most situations, it will do no harm to always enable the Rumble Filter.

Rumble Filter Frequency

At the default of 40 Hz, signals below 40 Hz are attenuated, and signals above 40 Hz are unaffected.

Vinyl mastering engineers typically avoided frequencies lower than 40 Hz. It is difficult to make vinyl cleanly reproduce very low frequencies. Also, most consumers, even audiophiles with expensive stereos, did not have speakers capable of reproducing lower than 40 Hz.

Unless you are dubbing classical organ records, it is doubtful that there is anything of interest below 30 or 40 Hz. While adjusting PG Click and Pop Remover, you can experimentally toggle the Rumble Filter on/off to make sure the filter is not removing important audio features.

DeClick Checkbox

Enable the DeClick section. Click and Pop Remover defines clicks as midrange frequency defects, in the range of 500 Hz to 2000 Hz.

DeClick Amount

Adjust the sensitivity of what PG Click and Pop Remover considers to be a click. At zero, nothing is removed. As the DeClick Amount is increased, PG Click and Pop Remover will mute more "click suspects." If the control is set too high, it can partially mute musical features, like snare drum hits. Adjust this control only high enough to remove clicks.

Note: A long-duration defect (longer than a couple of milliseconds) might sound like a click or pop until the high and mid frequency defects have been fixed. On long-duration defects, the left-over defect might sound like a "thump."

DeClick Activity

This displays the percentage of audio which is being muted. Except for very worn records, it is advisable to adjust the DeClick Amount so that the DeClick Activity reads no higher than a few percent. On very good discs, one might get "perfect" results with much less than one percent of DeClick Activity. Strive to mute only the minimum necessary to clean your record.

Note: If DeClick is set outrageously high, the DeClick Activity reading can exceed 100 percent. This is not a bug. The DeClick section makes two processing passes, in different frequency bands. It can happen that the first pass will "heal" a bad click, but the next pass will "heal" the left-over residue of the click.

Sometimes a bad click will be repaired in multiple processing stages, until the defect can no longer be detected as a tick or click. With absurdly high DeClick settings, the DeClick Activity can exceed 100 percent, because both stages incrementally repair the same bad clicks.

DeClick Fill Gaps

When a click is detected, it is smoothly "snipped out" of the midrange spectrum, without affecting the lower-frequencies at that point. A typical click might last 0.5 to 2 milliseconds. Each muted section is very short.

If Fill Gaps is set to zero, this small muted region is replaced by nothing. It behaves like a very brief mid-frequency dropout. On a clean record, occasional muted clicks are never noticed. But on a dirty scratched disc, if many snips are made, it can sound like a reduction in high and mid frequencies.

As you increase the Fill Gaps knob, PG Click and Pop Remover extrapolates the midrange signal in the vicinity of the click, synthesizing a guess of what the signal might have been in the tiny muted region. If you set Fill Gaps to 100, it will insert this extrapolated guess at the same level as the original signal. This allows many clicks to be snipped from a dirty record, without reducing the mid-frequency content.

On many recordings, the extrapolated guesses are quite good. Frequent clicks can often be removed without audible side-effects.

One might encounter a badly damaged record where the audio is so damaged that the guesses are not good enough to be completely transparent.

In these problem cases, you could try setting Fill Gaps to 70, or 50, filling the gaps with lower-amplitude guesses, which may sound less obnoxious.

Set Fill Gaps to 100, unless it sounds bad.

Smoothing

Some badly damaged records (particularly worn-out 45's and 78's) have high frequency noise approaching "crackle on steroids." The surface noise sounds like bacon frying. Crackle atop crackle, atop even more crackle.

The Smoothing section could be useful with severe surface noise. The Smoothing section is a very gentle Gaussian low pass filter with 6 selectable intensities.

Gaussian low pass filters are "about as good as it gets" for attenuating random noise while having minimal effect on music transients.

However, a Gaussian filter is still a low pass filter. All low pass filters reduce high frequencies along with surface noise. You should only enable the Smoothing section if it is necessary for a badly damaged record. Experiment with the Smoothing Level to find an acceptable tradeoff between reduction in surface noise versus reduction of musical high frequencies.

DeCrackle Checkbox

Enable the DeCrackle section. PG Click and Pop Remover defines crackle as high frequency defects in the range of 2000 Hz to 20,000 Hz.

A single microscopic speck of dust, or a tiny static discharge, can cause an isolated "tick" which is too short to be considered a "click." The DeCrackle section removes these isolated ticks. Crackle is a cluster of high-frequency ticks. If there are multiple close-spaced ticks, the ticks are perceived as a crackling sound.

First disable the DeClick Checkbox, and adjust DeCrackle. On a clean record in good condition, DeCrackle may be the only necessary section. Normally you would only enable the DeClick section if DeCrackle can't adequately clean up the mess.

DeCrackle Amount

This adjusts the sensitivity of what PG Click and Pop Remover considers to be a tick/crackle. At zero, nothing is removed. As the DeCrackle Amount is increased, PG Click and Pop Remover will mute additional "tick suspects." If the control is set too extreme, PG Click and Pop Remover will partially mute musical features, such as hand percussion or high-hat notes. Only set the control high enough to remove ticks and crackles. If longer clicks remain, enable the DeClick section for additional cleaning.

DeCrackle Activity

This displays the percentage of audio which is muted. Except for very worn records, adjust the DeCrackle Amount so that the DeCrackle Activity reads no higher than a few percent. On very good discs, one might get "perfect" results with less than one percent of DeCrackle Activity. Strive to mute only the minimum necessary to clean your record.

Note: If DeCrackle is set outrageously high, the DeCrackle Activity reading can exceed 100 percent. This is not a bug. The DeCrackle section does three processing passes in progressively lower frequency bands. It might happen that the first pass will "heal" a click, but subsequent bands will "heal" the left-over residue of that click.

Sometimes a bad click might be repaired in multiple processing stages, until the defect can no longer be detected. With absurdly high DeCrackle settings, the DeCrackle Activity can exceed 100 percent, because several stages incrementally repair the same bad clicks.

DeCrackle Fill Gaps

When a tick is detected, it is smoothly "snipped out" of the high-frequencies, without affecting the lower frequencies. High-frequency ticks last less than one millisecond. Each muted section is very short, only a few samples.

If Fill Gaps is set to zero, this tiny high-frequency-muted region is replaced by nothing. It behaves like a very brief high-frequency dropout. On a clean record, occasional muted ticks are never noticed. But on a dirty scratched disc, if many snips are made, it will sound like a reduction in high frequencies.

As you increase the Fill Gaps knob, PG Click and Pop Remover will extrapolate the signal in the vicinity of the click, synthesizing a "guess" at what the signal might have been in the tiny muted region. If you set Fill Gaps to 100, it will insert this extrapolated guess at the same level as the original signal. This allows many ticks to be snipped from a dirty record, without reducing the high frequency content.

One might encounter a badly damaged record where the audio is so damaged that the guesses are not good enough. In these problem cases, try setting Fill Gaps to 70, or 50, filling the gaps with lower-amplitude guesses, which may sound less obnoxious.

Set Fill Gaps to 100, unless it sounds bad.

DeNoise Checkbox

PG Click and Pop Remover DeNoise is a "hiss gate." It gradually attenuates quiet High Frequencies below the Denoise Threshold. Think of it as a sliding high frequency dynamics expander.

Many vinyl discs were made from reel-to-reel tape masters. The best quality reel-to-reel tape recorders of yesteryear had more hiss than modern digital recorders. A vinyl disc in excellent condition could contain an accurate copy of the original tape hiss. In some cases, carefully adjusted DeNoise may give a perceived improvement over the original noise level.

DeNoising may also be beneficial on low level disc surface noise (slightly worn discs). If you have low level "frying bacon" surface noise, DeNoise might work better than Smoothing.

With loud "frying bacon" surface noise, you could try a judicious combination of Smoothing and DeNoise.

DeNoise Amount

This control sets the DeNoise threshold, in dB.

For instance, if you set it to -40 dB, high frequencies louder than -40 dB are passed unaltered. High frequencies quieter than -46 dB are completely silenced. Levels between -40 and -46 dB are gradually faded down to complete silence.

If the audio level at 8000 Hz happens to be below threshold, but the audio level at 4000 Hz happens to be above threshold, the 8000 Hz signal would be muted but the 4000 Hz signal would pass un-altered. This is "Multi Band Single-Ended Noise Reduction."

The DeNoise section can slide the filter all the way down to 500 Hz; so on "silent" sections of a record, the DeNoise silence can be pretty silent.

Carefully adjust the Denoise Amount so that desirable high frequencies in the music are minimally affected, but hiss in the quiet sections of the music is removed. Even a 1 dB difference can be easy to hear when tweaking the Denoise Amount. Many high fidelity vinyl records didn't have much information higher than 10 KHz (another common mastering decision in the good old days). On many records, frequencies above 10 KHz can be squelched most of the time without noticeably affecting the sound.

A suggestion for tweaking the DeNoise Amount; first increase the setting until the music is obviously losing high frequencies. Then gradually reduce the level until the music is unaffected. This can ensure that any noise below the minimum music level is exterminated. Be sure to check the DeNoise Amount against the quietest parts of the recording, because the quiet locations are most likely to be affected if the DeNoise Amount has been set too high.

PG Distortion

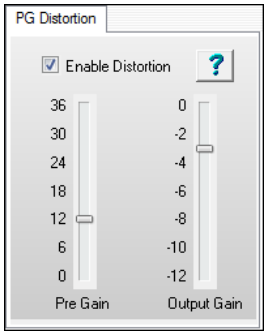
PG Distortion is a Soft Distortion effect. Soft Distortion is similar to over driven analog tape or tube amplifiers. Soft Distortion is mellow; it generates more even harmonics than hard distortion. Even harmonics can complement musical tones and chords. Tape or tubes have soft distortion because overloaded signal peaks are gently rounded off.

Hard Distortion is caused by over driven digital audio systems or solid-state amplifiers. Odd harmonics in hard distortion have a raucous sound — less musical sounding notes and chords.

Low Gain settings around 3 to 9 dB give subtle distortion, which may be perceived as “warm” or “fat.” Low Gain settings can be used to warm up vocal harmony, or fatten up drums and electric guitar. Many musicians prefer to record guitar and drums to analog tape, for a “fat” effect. Use modest amounts of Soft Distortion to fatten a track.

High Gain settings are more similar to the sound of a smoking guitar amp. Use high gain for Marshall-like electric guitar crunch. In Rap, Techno, Industrial, or Grunge styles, it is common to use high distortion to fry drum, synth, bass, or vocal tracks. Record a tame drum machine groove, and then distort the heck out of it for a nasty, rap street sound.

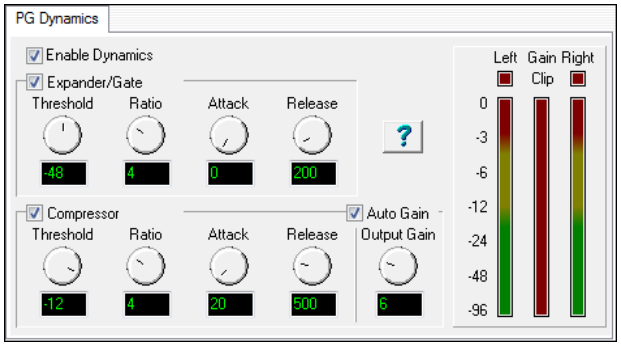
If the maximum gain doesn’t fry the signal adequately, make multiple passes on the same audio selection. With three or more passes of distortion, a signal can sound as ratty as your heart desires!!



Pre Gain: Adjust the amount of Soft Distortion.

Output Gain: Reduce the final level of the distorted signal. Distortion makes tracks sound louder. Use Output Gain to compensate by reducing the final level.

PG Dynamics



PG Dynamics will apply compression, expansion, or a combination of the two.

Compressor

A compressor “squeezes” the dynamics of a performance, reducing the difference between loud and quiet passages.

Compression is used for leveling a performance. If some sections of a performance are too loud and other sections too soft, compression can reduce the difference.

Compression can make a signal loud with more sustain. This can be desirable when preparing music for noisy environments, such as club music, car music, radio and television sound, or small computer multimedia speakers.

Live music has a wide dynamic range. Live music peaks are much louder than the average music level. When playing live music on a weak sound system— if playback volume is raised so you can hear soft parts, the speakers can distort on loud peaks. Compression can level the peaks, making a sound system can seem louder without distortion.

The PG Dynamics compressor is a downward compressor with make-up gain.

A downward compressor works by making loud signals softer. After loud passages have been made quieter by the compressor, you can apply make-up gain to raise the final audio level.

Compressor checkbox **e**nables PG Dynamics' compressor module.

Threshold sets the level where compression begins. Below Threshold, the level is unchanged. Above Threshold, as the input gets louder, the gain is gradually reduced.

Ratio adjusts how drastically the compressor behaves.

At a 2:1 ratio, an over-threshold input change of 6 dB would yield an output change of 3 dB. An input change of 12 dB would yield an output change of 6 dB. Modest ratios are appropriate for smoothing a vocal or drum performance.

At a 10:1 ratio, the difference between loud and soft signals is changed more drastically. An input change of 6 dB would yield an output change of only 0.6 dB. A 12 dB input change would yield an output change of 1.2 dB. At high ratios, loud and soft input signals arrive at the output at nearly the same level. High ratios are useful for special effects— add long sustain to clean guitar, or make spoken dialog loud and intelligible on small computer speakers.

Attack is the time required for the compressor to respond to an increase in amplitude.

As a general rule, use fast Attack values to compress individual notes, but use slow Attack values to compress the overall level of a track.

With fast Attack, each note will be modified, which can keep the notes within a phrase more consistent. This can tighten up an inconsistent performance, but also could remove the expressiveness from an expert expressive performance.

With slow Attack, individual notes are not affected very much, but the compressor controls long-term level. Individual notes can retain their expressive emphasis, but the long-term audio level is controlled.

Release is the time required for the compressor to respond to reductions in amplitude.

Fast Release lets the compressor "spring back" quickly after a loud passage.

Slow Release makes the compressor wait awhile before raising gain after a loud passage.

Use fast Release to compress individual notes. Use slow Release to compress the overall level of a track.

Very fast Attack and Release settings can sometimes cause intermodulation distortion on multi-instrument tracks (or wide-frequency-range single instruments such as Grand Piano). For instance, on a track containing both kick drum and hi-hat, the kick drum might audibly pump the hi-hat level.

Rule of thumb: Use moderate Attack and moderate-to-long Release on mixes, but use shorter Attack and Release on individual instruments.

With **Auto Gain** enabled, makeup gain is automatically adjusted to match the compressor settings.

As the compressor Ratio and Threshold knobs are adjusted, Auto Gain adjusts the Output Gain knob to set the output level to an "approximately good level."

With slow Attack settings, the Auto Gain may be too high, causing the output to exceed 0 dB on fast note attacks. In this case, disable Auto Gain, and manually adjust the Output Gain knob for the desired output level.

Output Gain applies make-up gain to the audio output, in case the compressor settings make the signal too quiet.

Since PG Dynamics and the RealBand mixer use floating point math, the internal audio level can exceed 0 dB without clipping, as long as the level is reduced below 0 dB sometime before the mixer converts the output signal to 16 bit or 24 bit samples for playback or mixdown.

PG Dynamics can be safely adjusted so that occasional passages exceed 0 dB, as long as the signal is attenuated back into a safe range before exiting the RealBand Mixer. Adjust the final Mixer output level with the PG Dynamics Output Gain knob, or adjust the Mixer's Track or Master sliders, or insert an instance of PG Peak Limit somewhere down-stream of any PG Dynamics plugins.

Expander/Gate

An Expander increases the difference between soft and loud sounds. The PG Dynamics Expander is a downward expander, which means it does not affect loud signals, but reduces the level of quiet signals. A Gate (sometimes called a noise gate) is simply a drastic, high-ratio Expander setting.

Expander/Gate checkbox enables PG Dynamics' expander module.

Signals below **Threshold** are attenuated, but signals above threshold are not affected.

Ratio adjusts how drastically to attenuate below threshold.

At 1:2 Ratio, a -6 dB reduction of below-threshold input level, yields a -12 dB reduction in output level.

At 1:10 Ratio, a -6 dB reduction in input level, yields a -60 dB reduction in output level, effectively chopping off or gating low-level signals.

Modest Ratio can subtly reduce low-level noises between musical notes and phrases, without creating unnatural-sounding side effects.

High Ratio settings give more drastic results. Sometimes a high Ratio expander is useful as a special effect, but high ratio does not often sound natural.

Attack is the time required for the expander to respond to an increase of amplitude.

Release is the time required for the expander to respond to a decrease of amplitude.

Fast Release, combined with high Threshold and high Ratio, can cause odd-sounding decay tails. Sometimes it can even sound distorted. This is called Gate Chatter, and is a common side effect on expanders. If you hear Gate Chatter, use settings that are more conservative.

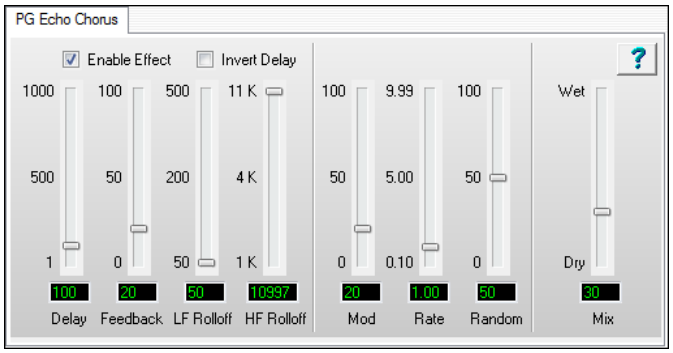
Using Compressor and Expander Together

High compression settings can raise low-level noise between musical phrases. To reduce hiss, noise, breathing sounds, lip smacks, kick drum squeak, snare drum rattles, or other quiet accidental noises between musical phrases, enable both the Compressor and Expander. Adjust the Expander to attenuate between musical phrases. This keeps the Compressor from boosting undesirable sounds.

When both compression and expansion are enabled, the signal first passes through the Expander, then passes through the Compressor, and finally the make-up gain is applied.

PG Echo Chorus

PG Echo Chorus creates medium to long delay effects.



- A Delay longer than about 40 milliseconds is perceived as **echo** or **slapback**.
- A Delay in the range of 20 to 40 milliseconds is perceived as **doubling** or **chorus**.
- A Delay shorter than 20 milliseconds is perceived as a **comb-filter** effect rather than delay. Very short delay is called **Flanging**. Short delay flanging is better accomplished with the **PG Flanger** plugin.

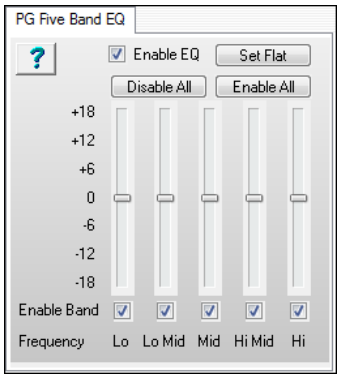
These delay ranges for Echo, Chorus, and Flange are approximate, and depend on the nature of the audio source. Sustained instruments may be perceived as a flange filter effect, even with rather long delays. Percussive instruments may be perceived as short slapback, even with very short delay time.

Pitch Modulation

A chorus of voices sounds big, because the individual voices have slightly different pitch and timing. PG Echo Chorus causes pitch and timing variation with the modulation section (the three sliders in the middle of the panel).

PG Five Band EQ

PG Five Band EQ is a convenient, simple effect for overall tone shaping. If a track requires finer control, try PG Ten Band EQ.



Enable EQ

Though the processor load of an individual frequency band is very light, this plugin can be made even more efficient by un-checking frequency bands that are not needed. For instance, if a track only needs adjustment in the Lo and Lo-Mid frequencies, you could disable the Mid, Hi-Mid, and Hi bands on that track. Reducing the processor load can make it possible to run more simultaneous real-time plugins within RealBand.

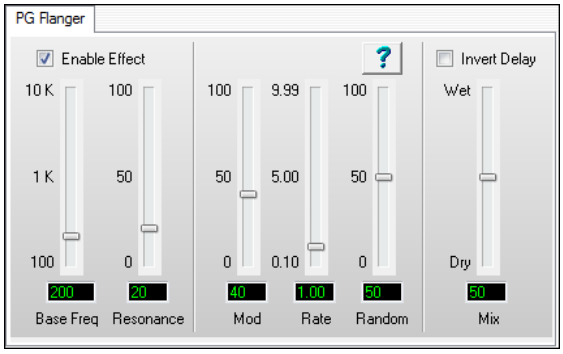
When a band is disabled, the band is bypassed and receives no boost or cut. Bypassed bands have a flat frequency response, as if the slider was in the center position. This feature can also be used to help audition an EQ setting. If you are not sure that a certain band's setting is making the sound better or worse, listen to the tune while toggling the band in and out. This is easier than constantly moving the slider to judge the effect of a setting.

- [Enable All] button enables all the bands.
- [Disable All] button disables all the bands. If you only want to enable one or two bands, it is quicker to [Disable All] and then enable the bands desired rather than to uncheck all the unwanted bands.
- [Set Flat] button returns all the sliders to the center position.

Note: It usually makes no sense to use PG Five Band EQ by itself in an Aux Return, though EQ can be useful to tailor some other effect that is chained on the Aux Return, such as Delay or Reverb.

PG Flanger

Flange is a hollow, whooshing effect, created by mixing the original signal with a very short delay (usually less than 20 milliseconds).



Interference between the original and delayed signals, makes a comb filter —many peaks and dips in the frequency response. As delay increases, more peaks and notches appear in the comb filter, and the frequency of the lowest peak/notch descends.

In truth, any delay creates a comb filter, but as delay time increases, the number of peaks and notches multiply, and each peak or notch becomes very narrow. Above about 20 mS, there are so many narrow peaks/notches in the filter; the ear does not recognize individual peaks. The frequency response of a long delay usually sounds flat.

As a Flanger sweeps up and down, all the peaks and notches sweep up and down in tandem, and the spacing of the comb will change.

Many Flangers use a Delay control, as in a Chorus or Echo effect. However, since a Flanger acts like a filter, the PG Flanger uses a Base Frequency control, where the short delay is calibrated by frequency rather than milliseconds. This may make it more intuitive to dial up the desired frequency range.

Flange can be tasty on many types of instrument — Acoustic Guitar, Electric Guitar, Electric Piano, Bass, Drums, and Vocal.

Flange can be used as a quirky equalizer — Set slow modulation rate and little or no modulation depth. With this setting, the filter doesn't move much (or at all). You can tune the flanger to statically emphasize specific frequencies in a signal.

Base Freq sets the lower limit of the lowest-pitched peak or notch in the comb filter. To get a wide sweep, set Base Freq low. Modulation will drive the frequency higher than the Base Freq at the "tops" of the modulation wave.

Resonance sets Flanger delay feedback. High resonance settings make peaks louder and notches deeper, creating a more pronounced effect.

Mod sets Modulation Depth, which controls how far the flanger sweeps. Think Vibrato Depth. When set to 100, it will sweep all the way from the Base Frequency up to about 10 KHz.

Rate is the Modulation Rate, which controls how fast the flanger sweeps. Think Vibrato Speed.

Random randomizes the modulation rate, to avoid a mechanical sweeping sound.

Mix is usually set to 50 percent for "classic" flanging, but you can reduce the setting for more subtle effects.

If PG Flanger is inserted by itself on an Aux Return, perhaps Mix should be set to 100 percent. Then adjust the amount of Flange at the Mixer output with RealBand's "Aux Return Level control."

Invert Delay

Invert the delay against the original signal. Inverted and non-Inverted have distinctly different sounds. The Invert setting makes a bright "classic" whooshing sound. Invert is even more dramatic at high Resonance settings.

With Invert enabled, low frequencies are attenuated, and the first filter Peak is at the Base Frequency. With Invert disabled, low frequencies are not attenuated and the first filter Notch is at the Base Frequency.

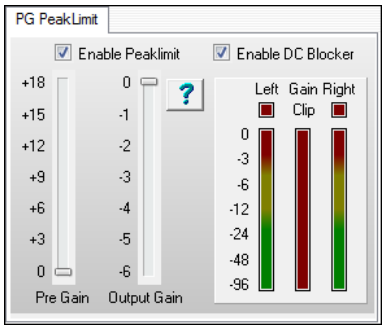
PG Guitar Amp



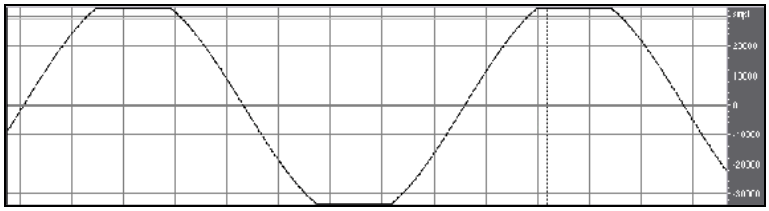
The **Low Cut** setting filters out frequencies below the frequency set by the Frequency knob. The Gain setting increases the signal going into the amp. The **Hardness** is distortion or overdrive. The **Master** is the master output volume.

PG Peak Limit

PG Peak Limit is a DirectX plugin that prevents signals getting loud enough to clip the audio. PG Peak Limit can also remove any DC Offsets that have crept into the audio stream. DC Offsets can reduce the available dynamic range of your music, and cause clicks at the beginning or end of audio files (when the silent audio level suddenly "jumps up" to the DC Offset).



Audio Clipping happens when the audio is so loud that the sample numeric range is exceeded, and the tops of the waves are "clipped off."



PG Peak Limit is a look-ahead peak limiter—it can "see peaks coming" and begin to reduce the output gain before over-level peaks can happen.

PG Peak Limit uses multi-stage Release Envelopes to smooth out the gain. This allows Peak Limit to recover very quickly after brief loud peaks, but recover more slowly after sustained over-level passages.

You get quick recovery from the occasional brief loud peak. Intermodulation distortion and pumping is difficult to hear on brief loud peaks, so we can afford to deal with quick peaks without drastically affecting the level of surrounding audio.

However, recovery time is longer on sustained loud passages, to avoid intermodulation distortion and "pumping" between low frequency and high frequency instruments.

Meters

The Left and Right level meters indicate the plugin output level, including whatever extra loss is contributed by the Output Gain slider.

However, the Gain meter always shows Gain Reduction before the contribution of the Output Gain slider. In other words, the Output Gain slider does not affect the Gain Reduction meter.

Only the Left meter is used with Mono signals.

The Clip indicators light when the plugin output has exceeded 0 dB. The Clip indicators cannot light up if Peak Limit is enabled, because Peak Limit never allows Over-Level outputs. However, if Peak Limit is not enabled, you can see any over-level signals that might appear on Peak Limit's input.

Enable Peak Limit allows the plugin to control loud peaks.

Enable DC Blocker allows the plugin to eliminate DC Offsets.

Pre Gain

Apply extra gain to the audio before limiting. If a song is too quiet, raise the Pre Gain to get a louder signal, without having to worry about clipping the output.

Even if a song is quite loud, you can apply extra gain to make a "fatter" sound. Music is often boosted via a Peak Limiter for a more consistent level.

If Pre Gain is boosted too much, the audio can sound “squashed.” It will be very loud, but you may hear “pumping” as the gain continually adjusts to the input level. Squashed music can sound “loud but lifeless.” It is nice to make nice loud songs, but you risk losing musical dynamics if you overdo Pre Gain.

Post Gain

Use Post Gain if you want to reduce the dynamic range of a track, but you don’t want the output level “as loud as it will go without clipping.”

Typical Uses

PG Peak Limit is typically inserted as the last plugin on the Master Output Insert.

Applied to the Master Output Insert, PG Peak Limit makes sure your mix does not clip, and it eliminates any DC Offset.

Unless a song’s source tracks are really quiet, making it difficult to get enough gain just with the RealBand Mixer sliders, it is usually the “right thing to do” to set both Pre Gain and Post Gain to 0 dB. With this setting, PG Peak Limit offers a pure output clipping protection function, and never changes your music unless an over-level peak happens somewhere in the song.

If your tracks are well performed and do not obviously require drastic fix-up, it is probably best to use just a single instance of PG Peak Limit, inserted on the Master Output.

The RealBand mixer uses floating-point math, which means that the mixer cannot clip internally. The only way clipping can happen is when the floating point samples from the Master Output signal are converted back to 16 bit or 24 bit samples for playback or mixdown.

Therefore, with good source tracks, it doesn’t matter if the mixer internally exceeds 0 dB, provided you take precautions on the Mixer Output.

- Watch the output meters and reduce the master if you see clipping, or
- Insert PG Peak Limit on the Master Output to prevent output clipping.

Aux Return

In most cases, it makes no sense to insert PG Peak Limit on an Aux Return, unless you wish to apply Peak Limit to other unruly effects that are chained up-stream on the same Aux Return plugin group.

Track Insert

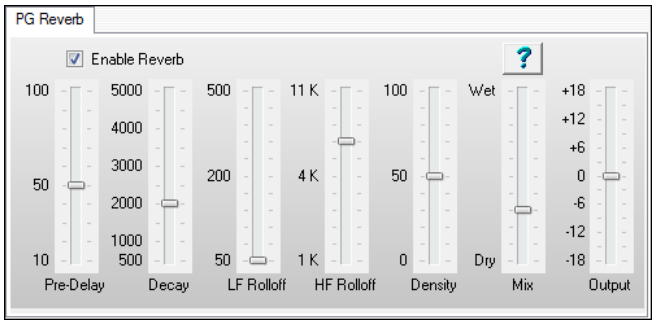
PG Peak Limit can be used on a Track Insert as a quick-and-easy-to-adjust compressor, smoothing a track’s dynamic range.

PG Peak Limit may be helpful on tracks with inconsistent levels. If inexpertly performed or recorded, any track can have inconsistent levels. PG Peak Limit is not a cure-all for badly performed tracks. It is much better to record a proper performance, rather than apply a band-aid to fix-it-in-the-mix. However, if you should become stuck trying to mix an impossibly inconsistent performance, PG Peak Limit could help a bit.

PG Reverb

Reverb is the spacious sound of multiple reflections in a room. In most rooms, reverb has three distinct phases:

1. The listener first hears the direct sound from the instrument.
2. Then a group of distinct echoes arrives, first reflections from the walls and ceiling.
3. After the first reflections, more closely spaced echoes build up from secondary reflections bouncing between room surfaces. As the reverb decays, the echo density builds up into a final sheen of hundreds of quiet closely spaced echoes.



Pre-Delay is the time delay of first reflections.

Decay is the time it takes for reverb to decay. Reverb Time is measured as RT60, the time it takes reverb to decay to a level -60 dB below the dry signal.

Brightness is the rate at which the high frequencies die away as the reverb decays. Rooms with hard surfaces are typically bright, but rooms with soft surfaces are usually darker.

Density is the density of low-level echoes near the end of the reverb tail. High Density settings add sheen to the sound.

Mix is the proportion of original (Dry) signal to the reverb (Wet) signal. When PG Reverb is inserted in an Aux Return set Mix to 100 percent to keep the original dry signal from returning on the Aux. Any original dry signal returning on the Aux would dilute the effect of the reverb.

Output adjusts the final level of the plugin.

Typical Settings

- A large hall might have long Pre-Delay, long Decay, and moderate Density.
- A hard large space such as a gymnasium might have long Pre-Delay, high Density and high Brightness.
- A soft large space such as a concert hall with carpet, padded seats, hangings, might have medium Density and low Brightness.

- A small hard space such as a tile washroom, might have short Pre-Delay, medium-to-long Decay, high Density, and high Brightness.
- A small soft space such as a large living room might have short Pre-Delay, short Decay, medium-to-low Density, and low Brightness.

PG Real Time Analyzer

The PG Real Time Analyzer is ONLY a frequency measurement tool. PG RTA never modifies the audio.

Sonic Repair

An RTA can help identify frequencies which should be boosted or cut with an Equalizer plugin. For instance, if an instrument track is too noisy, examine the frequency response with an RTA. To reduce noise, unused frequency bands would be the first likely places to equalize.

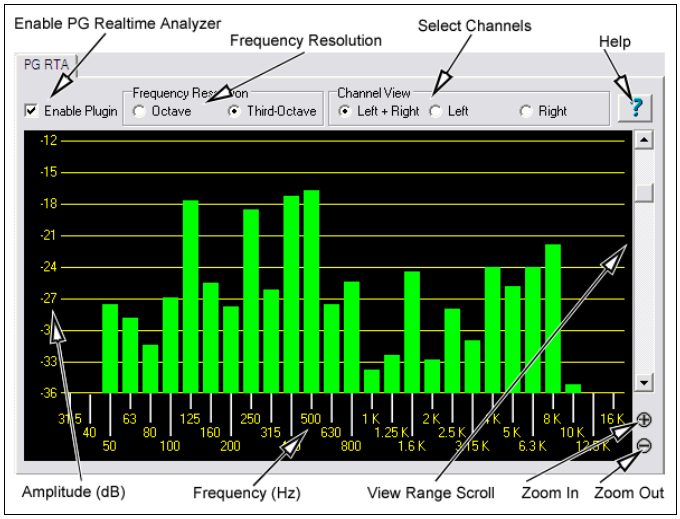
If a track sounds bad, the objectionable frequencies are likely to be among the loudest in the RTA display. It can be easier/quicker to improve the tone if you first try equalizing the loud frequencies.

Mixing/Mastering

An RTA is a good reality check on full mixes. To get a feel for the frequency distribution of a music style, use the RTA to study your favorite CDs. Music styles often have typical frequency distributions.

While polishing your mix, the RTA can help you make a tune's frequency balance “in the ballpark” of the tune's genre. It may seem uncreative to purposely make original tunes similar to the norm, but listeners are less likely to seriously audition a tune, if it sounds “out of whack” from the target genre.

Metal and Big Hair 80's Rock are among the brightest commercial mixes, often approaching a straight horizontal line on an RTA. If your mix has an overall positive slope (the high frequencies measure higher than low frequencies), you should rest your ears and then re-evaluate the mix. If the mix has a positive slope, it is almost certainly brighter than any musical genre.



Rhythm 'n' Blues tends to be bass-heavy. Most R&B tunes have an overall negative slope, with the high-frequency bands quieter than the low-frequency bands. If you mix an R&B tune with a straight-horizontal-line frequency distribution, it is probably too bright for the R&B genre.

Classical music tends to be even darker than R&B, except for low bass frequencies. Techno and Dance music is often very bass heavy. Jazz is typically pretty mellow, with low frequencies louder than high frequencies, but not necessarily a lot of very low bass.

Country music often has rolled-off low bass. Many country tunes use bright bass and bright kick drum, so that the bass is not as deep-sounding as R&B or Dance styles.

Some people have to work very hard to get a good mix, while others almost effortlessly find the proper combination. An RTA doesn't turn mixing into a “paint by number” game. For instance, if you only change the level of drum hi-hat, it can radically change the RTA display. One can make a bad-sounding mix which has the same frequency distribution as your favorite famous recording. But an RTA is an excellent reality check. If your mix sounds good to the ear, AND THE RTA IS ALSO IN THE BALLPARK, the odds are good that you are getting close to a finished mix.

Control Descriptions

Enable Plugin Checkbox

Toggle the checkbox to turn the RTA ON or OFF.

PG RTA only does processing when:

1. The plugin is enabled.

2. The plugin is visible.

If PG RTA is not enabled or it is not visible, it does not add to the computer load during playback.

It does no harm to leave several instances of the plugin assigned to various Tracks, Aux Returns, or Masters.

When you don't have the plugin visible on-screen, it will not load down the computer.

Frequency Resolution

The Octave button displays ten bands, representing the level of each octave in the audio. The Third-Octave button displays 28 bands, representing the level of each third of an octave in the audio.

There may be situations where it is more useful to have a 'general' overview at octave resolution, but the main reason you might prefer Octave resolution is to reduce the CPU load. Compared to third-octave resolution, Octave resolution only presents one third of the computer load.

Channel View

Channel View is only meaningful when metering a stereo track, or Aux/Master inserts (which are almost always stereo). The Channel View setting has no effect on a mono track.

If metering a stereo insert, select the Left+Right button to view the summed frequency response of both the Left and Right channels. Select the Left or Right buttons to view only one of the channels.

Zoom In/Out (Adjust the vertical amplitude resolution in dB.)

If a track has wide dynamics, zoom out to see all the bands without scrolling. If zoomed out too far, it can be difficult to visually judge frequency levels. All the bands may appear about the same level.

Zoom In to see the best amplitude resolution. For instance, in the screenshot above, the display was zoomed to 3 dB per ruler line, which emphasizes the differences between loud and quiet frequency bands.

View Range Scroll

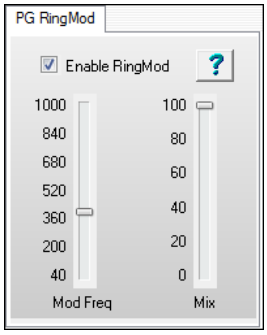
Adjust the Scrollbar to center the display to taste. When zoomed-in on a quiet track (as in the screenshot above), you would scroll down to get a good view of the frequency distribution.

PG RingMod

Ring Modulation is a strange effect, which works best for non-pitched sounds such as gongs, unusual percussion, and robot voices.

Ring Modulation is not a very useful effect on ordinary melodic or chord parts, because it radically changes the pitch of the signal.

PG RingMod is a balanced modulator, or four-quadrant multiplier. Carrier and Modulator signals are multiplied together, and only the sum and difference frequencies are passed. The original frequencies in each signal are suppressed.



Modulator Freq sets the frequency of the modulator sine wave.

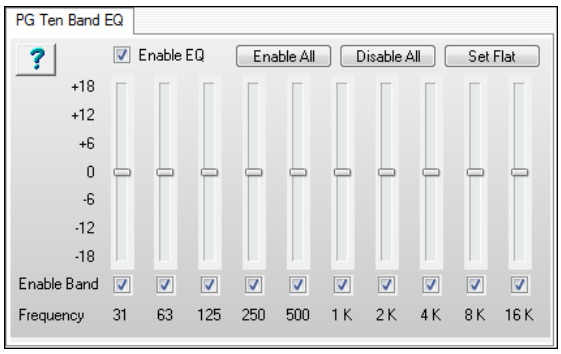
Mix adjusts the mix between original signal and ring-modulated signal.

PG Ten Band EQ

PG Ten Band EQ offers reasonably fine level of frequency contouring.

Fine frequency contouring is useful to repair a track with tonal flaws, but gentle tone shaping may sound more musical on tracks that basically sound OK, but need just a little tweaking.

If a track does not require fine tailoring of narrow bands, try PG Five Band EQ.



Enable EQ

Though the processor load of an individual frequency band is very light, this plugin can be made even more efficient by un-checking frequency bands that are not needed.

For instance, if a track only needs adjustment in the 250 and 500 Hz frequency bands, you could disable the other bands on that track.

Reducing the processor load can make it possible to run more simultaneous real-time plugins within RealBand.

When a band is disabled, the band is bypassed and receives no boost or cut. Bypassed bands have a flat frequency response, as if the slider was in the center position. This feature can also be used to help audition an EQ setting. If you are not sure that a certain band's setting is making the sound better or worse, listen to the tune while toggling the band in and out. This is easier than constantly moving the slider to judge the effect of a setting.

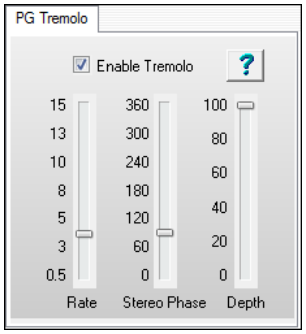
- [Enable All] button enables all the bands.
- [Disable All] button disables all the bands. If you only want to enable one or two bands, it is quicker to [Disable All] and then enable the bands desired rather than to uncheck all the unwanted bands.
- [Set Flat] button returns all the sliders to the center position.

Note: It usually makes no sense to use PG Ten Band EQ by itself in an Aux Return, though EQ can be useful to tailor some other effect that is chained on the Aux Return, such as Delay or Reverb.

PG Tremolo

Tremolo applies amplitude modulation, causing the signal to repetitively rise and fall in level.

Tremolo is a classic guitar effect, as used on innumerable surf and rock songs of the 50's and 60's. The vocal chorus of the 60's song, "Crimson and Clover" prominently featured tremolo. Tremolo is often heard today on Techno recordings, applied to instruments and vocal tracks. In Techno, the tremolo is often fast, with the tremolo rate locked to the tempo of the song, at eighth or sixteenth note rate.



Rate is the number of tremolo pulses per second.

Stereo Phase only has an effect on Stereo Tracks. It is un-noticeable on mono tracks. Stereo Phase adjusts the time separation of the Tremolo pulse between left and right channels. When set to zero or 360 degrees, both channels "pulse" in sync. When set to 180 degrees, the tremolo has a ping-pong effect. The left channel is loudest when the right channel is quietest, and vice-versa. Set between 0 and 180 degrees, the sound may appear to move left to right. Set between 180 and 360 degrees, the sound may appear to move right to left.

Depth sets the depth of the tremolo effect. At zero percent, no tremolo is audible. At one hundred percent, the volume falls all the way to zero between each tremolo "pulse," an exaggerated stuttering sound.

PG Vinyl Tool

PG Vinyl Tool can improve vinyl recordings.

Vinyl discs can have many troubles, depending on their condition. Some records may be severely damaged, whereas others may only have a few occasional crackles. Though PG Vinyl Tool has many processing sections, it will not be necessary to use every section on every record. We can't really offer meaningful presets, because each record you process will be a little different.

Digitally Recording a Vinyl Disc

Here are some basic recording tips. If the reader is interested, copious audiophile advice can be found on the internet. Some audiophile wisdom may be superstitious hokum, and other audiophile advice may be vastly better than the brief suggestions in this help file.

Obviously, to use PG Vinyl Tool, the disc must first be recorded to a computer audio file. To record a wave file, obviously you need a turntable... preferably a turntable in pretty good shape, with a reasonably new stylus.

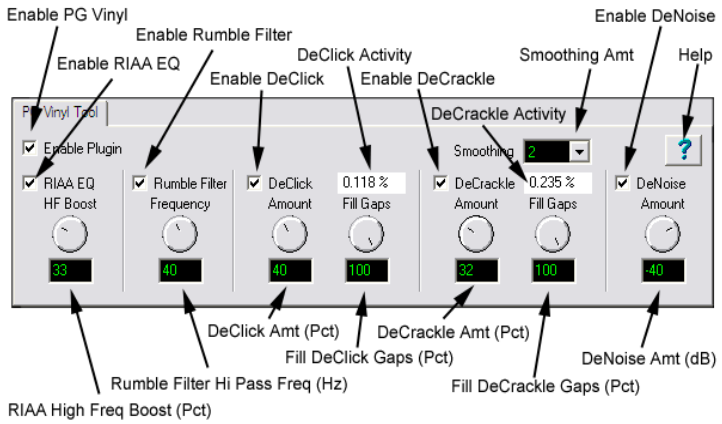
For high-quality recording a vinyl disc, a home-audio turntable may be a better buy than a DJ turntable, which has special features unnecessary for a good vinyl-to-digital dub. At the same price levels, you may get better fidelity from a home-audio turntable rather than a DJ turntable.

A turntable with a magnetic cartridge is almost mandatory. Old turntables with ceramic cartridges just do not sound very good, and can have tracking force heavy enough to damage records.

Sometimes modern high-quality home-audio receivers do not have phono turntable inputs. However, if you have a quality home-audio integrated receiver (with phono inputs) or a quality turntable preamp, these are the best choice for turntable recording.

If you have a cheap home-audio tuner or phono preamp, the choice is less clear-cut. Older cheap tuners and phono preamps had undesirable preamp noise.

There are small inexpensive phono preamp boxes, but the cheapies often have excessive hum and hiss. Most DJ mixers have turntable phono preamp inputs, but the inexpensive DJ mixers are rather noisy.



If you do not have any gear with good phono inputs, you can connect the turntable to the inputs of an ordinary music recording mixer. The mixer will not have phono RIAA EQ, but at least most modern inexpensive mixers have low-noise preamps.

If you must use a mixer, check if your mixer has a couple of channels with high impedance guitar inputs. Guitar preamps often have a high input impedance, a characteristic which is also desirable in a turntable preamp.

Connect the output of your Tuner or Mixer to your computer's soundcard input. In RealBand set the input levels on the Mixer and computer to record a good loud level, but not loud enough to cause clipping. Try to avoid any clipping, even on the loud clicks that might be in a damaged vinyl record. PG Vinyl Tool will work best if the clicks are recorded clean.

Whatever preamp you use, leave the tone controls flat. Simply record the disc as accurately as possible. You can tweak the tone in the computer, after the disc has been dubbed to a wave file.

Clean the disc thoroughly. Some suggest water and a soft cloth (or whatever esoteric vinyl disc cleaning tools you may have available). Some audiophiles claim good results recording a disc “wet.” You might add a couple of drops of dish detergent to a bottle of water, and wet the record before recording. This will lubricate the record and minimize some noise and distortion.

Keep the stylus clean. It may help to play the record all the way thru before recording it. After the first play, re-clean/re-wet the disc, and then record. A first play might dislodge dust specks, so that the second play-thru might sound better.

After the disc is recorded to a wave file, you can insert the PG Vinyl Tool plugin on the track, and twiddle the plugin settings while the wave file plays. Polish the plugin settings as you listen to the results.

You may find it beneficial to insert additional plugins after PG Vinyl Tool. Some obvious possibilities could be a Peak Limit or EQ plugin. After PG Vinyl Tool has been adjusted to your satisfaction, make the final cleaned output with RealBand’s menu item *Render | Merge Audio and DXi Tracks to Stereo Wave file*.

PG Vinyl Tool Features

Enable Plugin Checkbox

Toggle the checkbox to compare the original recording to the plugin output. This helps avoid excessive settings. PG Vinyl Tool uses look-ahead buffering, so if you bypass the plugin, the output will “jump in time.” This is expected, because there is some added delay when PG Vinyl Tool is enabled.

RIAA EQ Checkbox

If you recorded from a stereo tuner or other gadget with a phono input jack, DO NOT enable the RIAA EQ section. The RIAA EQ option is for folks who do not have a turntable preamp, having recorded with an ordinary mixer.

RIAA EQ was designed to overcome the shortcomings of vinyl. RIAA pre-emphasis is applied when vinyl discs are mastered. High frequencies get boosted, and low frequencies get cut. This makes high frequencies compete better against the inevitable vinyl pops, clicks, and surface noise. Pre-emphasis also prevents low frequency signals from bouncing the stylus out of the groove.

When you play a record, the preamp's RIAA de-emphasis will reverse the EQ. High frequencies are cut, and low frequencies are boosted. If you do not apply RIAA de-emphasis, either with a phono preamp or in the software, vinyl will sound too bright and shallow.

HF Boost

If you recorded the disc with a mixer which has high-impedance inputs (preferably 1 MegOhm or better), set HF Boost to zero, for “pure” RIAA de-emphasis.

Most audio mixer instrument/line inputs have impedance in the 10 KOhm to 100 KOhm range. A turntable's magnetic cartridge will be “loaded” by the lower-than-expected mixer impedance. This won't damage the turntable, but will affect the frequency balance. A 10 KOhm mixer input could cut the highs quite a bit, and even a 100 KOhm mixer input could cut the highs a perceptible amount.

There is no way to predict the characteristics of your turntable cartridge and the input impedance of your mixer. Adjust HF Boost by ear until the frequency balance sounds right. You may not get the frequency response as precisely as the mastering engineer intended, but if you are happy with the result, who cares?

Some PG Vinyl Tool options can cut highs. If a record is damaged so much that subsequent PG Vinyl Tools cut high frequencies along with the noise, you could increase the HF Boost by ear, to make up the loss.

Rumble Filter Checkbox

Cheap or worn-out turntable platters can make subsonic vibrations. Slightly warped records can also make undesirable low-frequency noise. Use the Rumble Filter to block unwanted low frequencies.

The Rumble Filter is a 24 dB per Octave Butterworth High Pass filter, which attenuates undesirable low frequencies. In most situations, it will do no harm to always enable the Rumble Filter.

Rumble Filter Frequency

At the default of 40 Hz, signals below 40 Hz are attenuated, and signals above 40 Hz are unaffected.

Vinyl mastering engineers typically avoided frequencies lower than 40 Hz. It is difficult to make vinyl cleanly reproduce very low frequencies. Also, most consumers, even audiophiles with expensive stereos, did not have speakers capable of reproducing lower than 40 Hz.

Unless you are dubbing classical organ records, it is doubtful that there is anything of interest below 30 or 40 Hz. While adjusting PG Vinyl Tool, you can experimentally toggle the Rumble Filter on/off to make sure the filter is not removing important audio features.

DeClick Checkbox

Enable the DeClick section. PG Vinyl Tool defines clicks as midrange frequency defects, in the range of 500 Hz to 2000 Hz.

DeClick Amount

Adjust the sensitivity of what PG Vinyl Tool considers to be a click. At zero, nothing is removed. As the DeClick Amount is increased, PG Vinyl Tool will mute more “click suspects.” If the control is set too high, it can partially mute musical features, like snare drum hits. Adjust this control only high enough to remove clicks.

Note: A long-duration defect (longer than a couple of milliseconds) might sound like a click or pop until the high and mid frequency defects have been fixed. On long-duration defects, the left-over defect might sound like a “thump.”

DeClick Activity

This displays the percentage of audio which is being muted. Except for very worn records, it is advisable to adjust the DeClick Amount so that the DeClick Activity reads no higher than a few percent. On very good discs, one might get “perfect” results with much less than one percent of DeClick Activity. Strive to mute only the minimum necessary to clean your record.

Note: If DeClick is set outrageously high, the DeClick Activity reading can exceed 100 percent. This is not a bug. The DeClick section makes two processing passes, in different frequency bands. It can happen that the first pass will “heal” a bad click, but the next pass will “heal” the left-over residue of the click.

Sometimes a bad click will be repaired in multiple processing stages, until the defect can no longer be detected as a tick or click. With absurdly high DeClick settings, the DeClick Activity can exceed 100 percent, because both stages incrementally repair the same bad clicks.

DeClick Fill Gaps

When a click is detected, it is smoothly “snipped out” of the midrange spectrum, without affecting the lower-frequencies at that point. A typical click might last 0.5 to 2 milliseconds. Each muted section is very short.

If Fill Gaps is set to zero, this small muted region is replaced by nothing. It behaves like a very brief mid-frequency dropout. On a clean record, occasional muted clicks are never noticed. But on a dirty scratched disc, if many snips are made, it can sound like a reduction in high and mid frequencies.

As you increase the Fill Gaps knob, PG Vinyl Tool extrapolates the midrange signal in the vicinity of the click, synthesizing a guess of what the signal might have been in the tiny muted region. If you set Fill Gaps to 100, it will insert this extrapolated guess at the same level as the original signal. This allows many clicks to be snipped from a dirty record, without reducing the mid-frequency content.

On many recordings, the extrapolated guesses are quite good. Frequent clicks can often be removed without audible side-effects.

One might encounter a badly damaged record where the audio is so damaged that the guesses are not good enough to be completely transparent.

In these problem cases, you could try setting Fill Gaps to 70, or 50, filling the gaps with lower-amplitude guesses, which may sound less obnoxious.

Set Fill Gaps to 100, unless it sounds bad.

Smoothing

Some badly damaged records (particularly worn-out 45's and 78's) have high frequency noise approaching “crackle on steroids.” The surface noise sounds like bacon frying. Crackle atop crackle, atop even more crackle.

The Smoothing section could be useful with severe surface noise. The Smoothing section is a very gentle Gaussian low pass filter with 6 selectable intensities.

Gaussian low pass filters are “about as good as it gets” for attenuating random noise while having minimal effect on music transients.

However, a Gaussian filter is still a low pass filter. All low pass filters reduce high frequencies along with surface noise. You should only enable the Smoothing section if it is necessary for a badly damaged record. Experiment with the Smoothing Level to find an acceptable tradeoff between reduction in surface noise versus reduction of musical high frequencies.

DeCrackle Checkbox

Enable the DeCrackle section. PG Vinyl Tool defines crackle as high frequency defects in the range of 2000 Hz to 20,000 Hz.

A single microscopic speck of dust, or a tiny static discharge, can cause an isolated “tick” which is too short to be considered a “click.” The DeCrackle section removes these isolated ticks. Crackle is a cluster of high-frequency ticks. If there are multiple close-spaced ticks, the ticks are perceived as a crackling sound.

First disable the DeClick Checkbox, and adjust DeCrackle. On a clean record in good condition, DeCrackle may be the only necessary section. Normally you would only enable the DeClick section if DeCrackle can't adequately clean up the mess.

DeCrackle Amount

This adjusts the sensitivity of what PG Vinyl Tool considers to be a tick/crackle. At zero, nothing is removed. As the DeCrackle Amount is increased, PG Vinyl Tool will mute additional “tick suspects.” If the control is set too extreme, PG Vinyl Tool will partially mute musical features, such as hand percussion or high-hat notes. Only set the control high enough to remove ticks and crackles. If longer clicks remain, enable the DeClick section for additional cleaning.

DeCrackle Activity

This displays the percentage of audio which is muted. Except for very worn records, adjust the DeCrackle Amount so that the DeCrackle Activity reads no higher than a few percent. On very good discs, one might get “perfect” results with less than one percent of DeCrackle Activity. Strive to mute only the minimum necessary to clean your record.

Note: If DeCrackle is set outrageously high, the DeCrackle Activity reading can exceed 100 percent. This is not a bug. The DeCrackle section does three processing passes in progressively lower frequency bands. It might happen that the first pass will “heal” a click, but subsequent bands will “heal” the left-over residue of that click.

Sometimes a bad click might be repaired in multiple processing stages, until the defect can no longer be detected. With absurdly high DeCrackle settings, the DeCrackle Activity can exceed 100 percent, because several stages incrementally repair the same bad clicks.

DeCrackle Fill Gaps

When a tick is detected, it is smoothly “snipped out” of the high-frequencies, without affecting the lower frequencies. High-frequency ticks last less than one millisecond. Each muted section is very short, only a few samples.

If Fill Gaps is set to zero, this tiny high-frequency-muted region is replaced by nothing. It behaves like a very brief high-frequency dropout. On a clean record, occasional muted ticks are never noticed. But on a dirty scratched disc, if many snips are made, it will sound like a reduction in high frequencies.

As you increase the Fill Gaps knob, PG Vinyl Tool will extrapolate the signal in the vicinity of the click, synthesizing a “guess” at what the signal might have been in the tiny muted region. If you set Fill Gaps to 100, it will insert this extrapolated guess at the same level as the original signal. This allows many ticks to be snipped from a dirty record, without reducing the high frequency content.

One might encounter a badly damaged record where the audio is so damaged that the guesses are not good enough. In these problem cases, try setting Fill Gaps to 70, or 50, filling the gaps with lower-amplitude guesses, which may sound less obnoxious.

Set Fill Gaps to 100, unless it sounds bad.

DeNoise Checkbox

PG Vinyl Tool DeNoise is a “hiss gate.” It gradually attenuates quiet High Frequencies below the Denoise Threshold. Think of it as a sliding high frequency dynamics expander.

Many vinyl discs were made from reel-to-reel tape masters. The best quality reel-to-reel tape recorders of yesteryear had more hiss than modern digital recorders. A vinyl disc in excellent condition could contain an accurate copy of the original tape hiss. In some cases, carefully adjusted DeNoise may give a perceived improvement over the original noise level.

DeNoising may also be beneficial on low level disc surface noise (slightly worn discs). If you have low level “frying bacon” surface noise, DeNoise might work better than Smoothing.

With loud “frying bacon” surface noise, you could try a judicious combination of Smoothing and DeNoise.

DeNoise Amount

This control sets the DeNoise threshold, in dB.

For instance, if you set it to -40 dB, high frequencies louder than -40 dB are passed unaltered. High frequencies quieter than -46 dB are completely silenced. Levels between -40 and -46 dB are gradually faded down to complete silence.

If the audio level at 8000 Hz happens to be below threshold, but the audio level at 4000 Hz happens to be above threshold, the 8000 Hz signal would be muted but the 4000 Hz signal would pass un-altered. This is “Multi Band Single-Ended Noise Reduction.”

The DeNoise section can slide the filter all the way down to 500 Hz; so on “silent” sections of a record, the DeNoise silence can be pretty silent.

Carefully adjust the Denoise Amount so that desirable high frequencies in the music are minimally affected, but hiss in the quiet sections of the music is removed. Even a 1 dB difference can be easy to hear when tweaking the Denoise Amount. Many high fidelity vinyl records didn't have much information higher than 10 KHz (another common mastering decision in the good old days). On many records, frequencies above 10 KHz can be squelched most of the time without noticeably affecting the sound.

A suggestion for tweaking the DeNoise Amount; first increase the setting until the music is obviously losing high frequencies. Then gradually reduce the level until the music is unaffected. This can ensure that any noise below the minimum music level is exterminated. Be sure to check the DeNoise Amount against the quietest parts of the recording, because the quiet locations are most likely to be affected if the DeNoise Amount has been set too high.

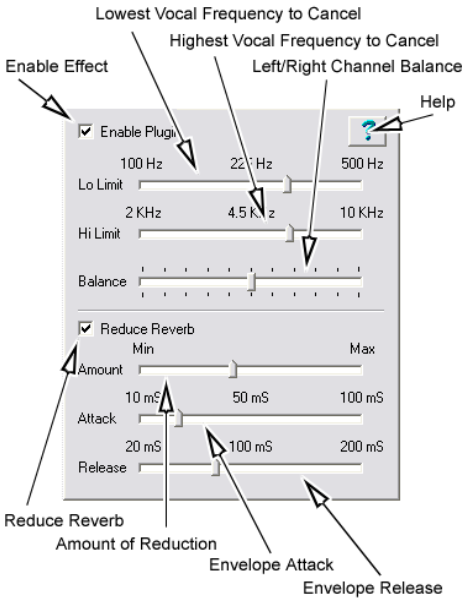
Conclusion

PG Vinyl Tool offers many tools which can clean vinyl records.

But there is a limit what can be done for severely damaged discs (without investing in very expensive tools). On very damaged records, you may be forced to decide between a “natural” sound which contains a few residual defects, versus a more heavily processed sound which has collected new annoying artifacts to replace the old annoying defects.

PG Vocal Remover

PG Vocal Remover can reduce the level of vocals on many commercial recordings.



Operating Principle

PG Vocal Remover exploits a common mixing technique; the lead vocal is often center-panned (i.e., the left and right stereo channels have identical vocal loudness). Typically the bass and kick drum is centered, and often snare drum is centered. However, most accompaniment instrumental tracks and backup harmony vocals are side-panned (louder on one side than the other).

On typical recordings, we can subtract one stereo channel from the other, which removes “common mode” lead vocal, but leaves side-panned accompaniment tracks relatively unaffected.

Simple subtraction will also cancel center-panned bass, kick drum, and snare (or other center-panned instruments). Therefore, we only subtract the midband where the vocal resides.

Even when lead vocal is center-panned, vocal reverb is typically in stereo. If a song has loud stereo reverb, the stereo vocal reverb is unaffected by the Vocal Remover. The Reduce Reverb feature can reduce the level of the side-panned tracks when the center vocal is loud.

Some vocal reverb leakage may not be a bad thing on a sing-along track. When you sing along, the original reverb ambience could make you sound better.

Source Recordings

PG Vocal Remover works best on wave files extracted from well-made commercial audio CD's, which usually have good fidelity and low distortion. But it works fine on many MP3 or WMA files, as long as the file is encoded in stereo. It works best with high quality recordings. Of course an MP3 or WMA file must be converted when loading into RealBand.

Note: This plugin MUST be applied to the insert of a RealBand stereo track. It doesn't work if you insert PG Vocal Remover on a mono track.

Operation

Enable Plugin Checkbox

Toggle the checkbox to compare the sound with/without the Vocal Remover activated.

Balance Slider

Fine-tune with the Balance slider. The center position is typically as good as it gets, but some recordings have accidentally mismatched Left-Right balance. This is common with vinyl or cassette recordings, or CD-reissues of Oldies. You may get improved vocal cancellation by twiddling the Pan slider to find a "sweet spot."

Lo Limit and Hi Limit Sliders

Adjust these sliders to fit the nature of the vocal. The default settings are fine for many tunes. Frequencies below the Lo Limit and above the Hi Limit are not processed, preserving fidelity except in the vocal midrange. Set the Lo Limit slider just low enough to attenuate low vocal notes. Set the Hi Limit slider just high enough to attenuate high vocal harmonics.

Obviously the best settings are different for a Baritone, Tenor, Alto, or Soprano voice. They are best set by ear. Some sopranos have warm low tone, but some Baritones have very bright tone, so the mid-frequency vocal range may be wider than expected.

Reduce Reverb Checkbox

Toggle the checkbox to compare with/without Reverb Reduction.

Reduce Reverb Amount Slider

Reverb Reduction behaves like a dynamics compressor, but the loudness of the center channel affects the loudness of the side channels. Move the slider to the right to increase the effect. The effect compares the relative level between center and side channels, so no processing takes place unless there is a significant difference between the loudness of the center versus side channels.

Vocal is not the only sound which can trigger the compressor. Any loud midrange center instrument could trigger the compressor, so if you crank the Amount too high, snare drum or other loud center instruments may unpleasantly "pump" the side channels.

Reduce Reverb Attack Slider

Works like a compressor Attack control. Move the slider to the left for faster response to sudden increase in loudness (when the vocalist starts a phrase). Move to the right for a slower response to sudden increase in loudness.

Reduce Reverb Release Slider

Works like a compressor Release control. Move to the left for faster recovery after the loudness diminishes (when the vocalist ends a phrase). Move right for slower recovery.

Adjusting Reverb Reduction

Experiment to get a feel for what works. There may be some songs where the reverb can't be improved, and in those cases just disable the Reduce Reverb Checkbox.

Some vocals have short pre-delay and reverb tails. Short attack and release would make sense.

Some songs (especially ballads) have loud "balloon" reverb tails with long pre-delay. Since the reverb comes in after the vocal phrase begins, and lasts a long time after the vocal phrase ends, longer attack and release would make sense. Adjust the Attack so that the compression kicks in about the same time as the pre-delay reverb, and adjust the release long enough to hold back the reverb after a vocal line is finished.

Don't expect miracles. You can reduce the reverb level, but will rarely completely eliminate vocal reverb. Judiciously use just enough compression to avoid ruining the overall fidelity.

Compare the dry sound against the processed sound. The maximum vocal reduction setting could be extreme enough to ruin the instrumental quality. Sometimes it is better to allow some vocal leakage to achieve the best-sounding instrumental quality. Is it better to allow some low voice leakage to improve the bass response? Is it better to allow some high voice leakage to improve the cymbals and acoustic guitar?

After the PG Vocal Remover is adjusted as good as it gets, try inserting an Equalizer plugin downstream. Notch some frequencies to improve the effect.

If the output amplitude is inconsistent, try inserting a compressor or peak limiter plugin downstream.

Appendix B: Keystroke Commands

F1	Opens help file
Ctrl+G	Generate/regenerate track
Spacebar	Play/Stop
P	Play
Ctrl+P	Play from start
R	Record
Ctrl+R	Record from start
S	Stop
W	Rewind to beginning
Ctrl+M	Mutes current track
Ctrl+U	Unmutes current track
[and]	Decrease/increase tempo by 5
Ctrl+minus sign	changes playback speed to half speed
Ctrl+equal sign	changes playback speed from half speed to full speed
F5	Tempo
F6	Go to time
F9	Panic
F10	Set MicroChords
F11	GS Settings
Shift+F11	Select DLL or EXE
F3	Open file
F4	Save file
Shift+F8	Open next file
Shift+Ctrl+F8	Open previous file
Ctrl+F5	Preferences dialog
T	Notation Window Options dialog
I	Print Options dialog
Ctrl+X	Edit Cut dialog
Ctrl+C	Edit Copy dialog
Ctrl+V	Edit Paste dialog
F7	From = Now
F8	Thru = Now
Ctrl+F7	From = Value
Alt+F7	Now = From
Ctrl+F8	Thru = Value
Alt+F8	Now = Thru
Ctrl+1	Tracks window
Ctrl+2	Bars window
Ctrl+3	Chords window
Ctrl+4	Tempo Map window
Ctrl+5	Comments window
Ctrl+6	SysEx window
Ctrl+7	Guitar window

Ctrl+8	Mixer window
Ctrl+9	Classic Tracks view
Alt+F2	New Notation window
Shift+F2	New Big Lyrics window.
Ctrl+F2	New Audio Edit window.
Ctrl+Alt+P	New Piano Roll Window
F2	Event List window
L	Toggles lyric entry mode
O	Sets duration of inserted notes to whole
H	Sets duration of inserted notes to half
Q	Sets duration of inserted notes to quarter
8	Sets duration of inserted notes to 8th
6	Sets duration of inserted notes to 16th
3	Sets duration of inserted notes to 32nd
4	Sets duration of inserted notes to 64th
1	Sets duration of inserted notes to 128th
A or Ctrl+A	Sets duration of inserted notes to be automatic
Ctrl+Z	Deletes the last notes entered

Appendix C: MIDI Controller Numbers

Number	Controller Name
0	Bank Select MSB
1	Modulation Wheel
2	Breath Controller
3	Undefined
4	Foot Controller
5	Portamento Time
6	Data Entry MSB
7	Main Volume
8	Balance
9	Undefined
10	Pan
11	Expression
12	Effect Control 1
13	Effect Control 2
14-15	Undefined
16-19	General Purpose Controllers (Nos. 1-4)
20-31	Undefined
32-63	LSB for Controllers 0-3
64	Damper Pedal (Sustain) [Data Byte of 0-63=0ff, 64-127=On]
65	Portamento
66	Sostenuto
67	Soft Pedal
68	Legato Footswitch
69	Hold 2
70	Sound Controller 1 (default: Sound Variation)
71	Sound Controller 2 (default: Timbre/Harmonic Content)
72	Sound Controller 3 (default: Release Time)
73	Sound Controller 4 (default: Attack Time)
74	Sound Controller 5 (default: Brightness)
75-79	Sound Controller 6-10 (no defaults)
80-83	General Purpose Controllers (Nos. 5-8)
84	Portamento Control
85-90	Undefined
91	Effects 1 Depth (previously External Effects Depth)
92	Effects 2 Depth (previously Tremolo Depth)
93	Effects 3 Depth (previously Chorus Depth)
94	Effects 4 Depth (previously Detune Depth)
95	Effects 5 Depth (previously Phaser Depth)
96	Data Increment
97	Data Decrement
98	Non-Registered Parameter Number LSB
99	Non-Registered Parameter Number LSB
100	Registered Parameter Number LSB
101	Registered Parameter Number MSB
102-120	Undefined
121	Reset All Controllers

122	Local Control
123	All Notes Off
124	Omni Off
125	Omni On
126	Mono On (Poly Off)
127	Poly On (Mono Off)

More MIDI Controller Information

Additional descriptions of MIDI controllers are available in the MIDI tutorials found in the Support pages on the PG Music Inc. web site, www.pgmusic.com.

For the full MIDI specification, search MIDI Manufacturers Association in your Internet browser.

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Be sure to visit the FAQ pages at www.pgmusic.com for information about known troubleshooting issues as well as the latest technical support bulletins.

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Address _____

City _____

State/Province _____

Zip/Postal Code _____

Country _____

Telephone number _____

Fax number _____

E-mail address _____

Computer (OS): □ Windows® □ MAC® _____

What MIDI interface are you using? _____

What primary synth/sound card do you use? _____

Favorite Styles: □ Jazz □ Rock □ Pop □ Country □ Latin □ Other _____

Purchased from _____

Date of purchase _____

Comments/Suggestions

_____

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