

# Mixcraft™ Overview

**Mixcraft™** is a multitrack audio mixer with effects, featuring Reverb, Delay/Echo, EQ, Compression, Flanger and Chorus, as well as resonant filters and a powerful loop editor. The high performance 32 bit sound engine supports broadcast quality WAV files and will even import compressed MP3s & WMA files. Use it to record your own music, your band or even a remix for a dance recital. The amazing fact about home recording today is that you really only need a computer and a good multitrack recording program such as Mixcraft to create amazing sound! When you've finished your mix, publish it to the Internet as an MP3, WMA or RealAudio file, or render it to a WAV and burn it to a CD.

## Unleash your creative side!

Using your computer's microphone or an external hardware mixer, you can record your own voice, guitars, drums or your kid\*. (*\*Assumes you have a kid. Doesn't everyone? ;-)*)

## Who can use it ?

DJs, pro and amateur musicians, bands, practicing singers, radio people, webmasters, professors, teachers, students, employees, dance studios, gym & spinning instructors, game designers, movie makers, sound designers and the list goes on!

## What can you use it for?

Recording music, recording a DJ dance mix, creating a mix for a dance recital, creating a presentation for your company, creating a work out mix, recording your own audio book, creating a funny off the wall answering machine message, creating audio homework, splitting up big contiguous songs into multiple songs, trimming songs, cutting out audio mistakes, and most importantly FUN!



## MIXCRAFT™ FEATURES

- ❑ Easy to use multitrack audio mixing!
- ❑ Unlimited tracks depending on your computer's processing power!
- ❑ Pan, volume, solo and mute on each track.
- ❑ Cutting edge 32 bit sound engine for maximum sonic quality!
- ❑ Read and write high quality audio, including broadcast quality 24 & 32 bit WAV files up to 192 kHz.
- ❑ Import compressed MP3, WMA and WAV files!
- ❑ 6 Powerful Effects including
  - Reverb – Simulate environments
  - Delay – Create multiple echo effects

- EQ – Boost bass, treble, mid-range, 10 band EQ
  - Compression – Boost dynamics to sound louder
  - Flanger – Create a whooshing effect
  - Chorus – Double up your vocals
- Shape your sounds with resonant filter automation. Great for DJs!
  - Easy looping tools – Create loops out of sections of other sounds or songs.
  - Render to Realaudio, MP3, WMA and WAV, including broadcast WAV files at high sample rates and bit depths. (Includes 24 and 32 bit sounds and sample rates up to 192kHz)
  - Create mix CDs.

## Quick Start

So you're in a hurry, eh? Let's follow our favorite musician "Sound Warrior" (SW) through the paces of using Mixcraft™.



### Load in sounds

SW starts Mixcraft and clicks "Add Sound" from the "Mix" menu. He finds a groovy beat called 'funky-groove-120-bpm.wav' and clicks "OK".

### Position sounds

SW clicks on the new sound and moves it to track 1 so that it starts at the beginning of the track.

### Create loop

To add looping, SW moves his mouse to the right side of the sound until the cursor looks like a <->. SW clicks and drags right to loop the sound. Each loop is represented by a tick so that he can visibly measure out 10 loops.

### Change filter over time

SW wants the loop to grow in intensity over time and instead of just changing the volume over time, he decides he wants to change the frequency over time! SW clicks on the "Show Env" control on the toolbar and switches it to "Low Pass Cutoff" He moves the mouse to the first envelope point and drags it down to the bottom of the sound. Then he switches the "Show Env" control to "Low Pass Resonance" and adjusts the first envelope point to the top. He proudly listens to the piece of art by clicking the Play button on the toolbar. "Not bad!" he thinks.

### **Add more sounds**

He adds a bass part and a synth pad on tracks 2 & 3. He then records some vocals on track 4 that go like this "yo baby, you know I luv ya..." you get the idea. ;-) Something is missing though...

### **Add Effects**

He decides to add some echo or delay to his vocals so that "yo baby" sounds more like "yo yo baby baby". He clicks on the "FX" button on track 4 and selects "Delay" from the list. In a sudden inspiration, he decides that the whole thing needs reverb and clicks "Main FX" on the master control panel to add global reverb. Now it sounds just right!

### **Mix it down to MP3**

For the final step, he needs to mix it down to a single sound. He chooses "Mix Down To" followed by clicking "MP3". He selects a filename and clicks save. Without hesitating he launches his email browser and starts composing a new message to his current #1 fan. "Dear Mom, you've gotta check out this new piece I made!!!"

## **Registration / Purchasing Options**

Mixcraft has a trial period of 7 days without any restrictions! After that, you will need to purchase a registration code to continue using the software.



We have put many hours into this software and we hope that you decide to purchase the software!

### **Benefits of Registration**

- Unlimited and unrestricted usage: mix to your heart's content!
- Support Acoustica and future products of the same caliber.

*You can purchase a registration code right now and automatically receive a registration code in your email within minutes.*

## **BUY NOW!**

To purchase a registration code, click the "Buy Now On-line" item from the "Help" menu or the "BUY" button on the toolbar.

If you don't have the software up now, visit the website to purchase a code. Go to [www.acoustica.com/buy.htm](http://www.acoustica.com/buy.htm)

## **Purchase methods**

- Credit card
- Pay Pal – pay via the popular service Pay Pal
- Snail mail or postal mail – send in a mail with a money order or check.
- Phone Order - Make a call to send payment.

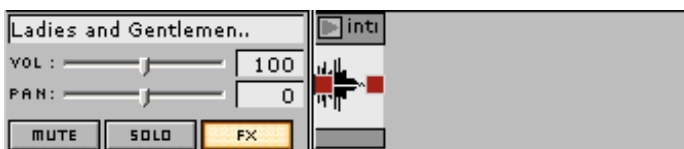
The price of registration is not much more than the cost of a large pizza! The price may actually vary which is why it isn't listed here. (More instructions are on the website.)

Once you purchase the software, you should receive instructions on completing the registration and entering in your serial code. However, if you do not hear back within 1 day, please visit the following support site. Lost Codes Department

# **Main Window**

## **Tracks**

Tracks are what hold the sounds. Each track can have its own Effects, volume and pan adjustments. These settings only affect the sounds on the track. More on Tracks



The above image shows the track header, the track and a sound on the track.

## Master Control

This is the global or master panel, which effects the entire mix. After all the tracks have been processed, the sound signal is sent through the Master Control where volume and master effects are applied. For example, it will give you much better performance to use an overall reverb on the Master Control versus applying the same reverb on every track.



## The Caret

The caret represents the location where new sounds will be placed. It is also where new recordings will be placed. Before recording or adding sounds, make sure to move your caret to the desired location. Zooming in and out uses the caret as the zoom point. Position the caret before zooming in or out. (A nice trick when zooming in and out is to spin the middle mouse wheel.)



## Timeline

The timeline is above the track area and helps you to line up sounds at specific times. You can also add markers to the timeline, which can help with lining up. More on the timeline.

## Menus & Toolbar

The toolbar contains many of the common functions, including zooming and envelope selection. Explore the menus for new features. Menus - Toolbar

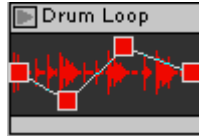
## Status Bar

This displays information about the selected sound(s) or the mix, depending on what is active.

# Sound Basics

Each sound or clip can be edited in a variety of ways.

(Here is what a sound clip looks like in Mixcraft.)



This sound is called "Drum Loop". You can play it individually by clicking the play arrow. The sound clip has a title bar, wave form, envelope, and a selection area on the bottom. Each sound can be cropped, faded, edited in a few simple clicks and drags. Cut, copy and paste is also extremely easy.

## Adding Sounds

To add a sound, position the caret and click the "Add Sound" button on the toolbar. Alternatively, double clicking on an empty area on the track will allow you to choose a sound. Locate the sound and click "Open". Alternatively, you can drag in multiple sounds directly from a Window's folder. Mixcraft currently supports WAV, MP3 and WMA files.

## Selecting Sounds

To select a sound, click its title bar. Alternatively, you can select a portion of the sound by clicking on the bottom selection part of the sound and dragging left or right. To select multiple sounds, click down in the window and drag over the sounds or portions of sounds you'd like to select.

## Moving Sounds

Simply click on the title bar of the sound clip and drag it to a new location. You may also use the keyboard to move the sound. Note that sounds can overlap and coexist at the same location if desired.

## Deleting Sounds

Simply select the sound or sounds and click "Cut" from the "Edit" menu or press the "Delete" key on the keyboard.

## Cropping Sounds

## Copy & Paste

Crossfading Sounds

Editing sounds with a 3rd party sound editor

Playback Rate

Envelopes

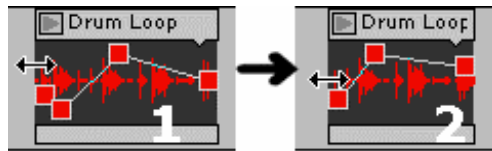
Looping

Recording

## Cropping Sounds

By clicking on the right or left hand side of a sound and dragging left or right you can crop the sound. You would do this to get rid of extra silence or other unwanted audio.

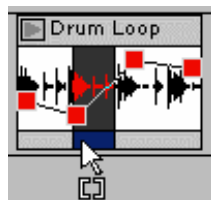
(The figure below shows a sound being cropped on the left hand side.)



You can crop from the left or right side. Note that all envelope points will also be cropped.

## Clipboard: Copy, Cut, & Paste

Select a sound or group of sounds and cut or copy. Cut will delete the selection and store the cut in the clipboard. Choose paste to paste the selection you just cut. Copy copies the current selection to the clipboard (without deleting the selection). You can select portions of sounds, as well by clicking on the bottom selection area of the sound and dragging left or right. Cut, copy and paste menu items are located on the "Edit" menu or by right clicking on a selection.

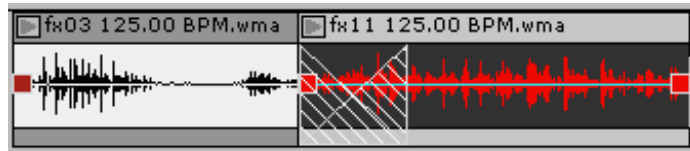


(The image above shows a selection of a part of a sound.)

To select a part of a sound, simply click on the bottom 'selection' area and drag the mouse left or right.

## Cross Fading Sounds

Drag a sound onto another sound so that they overlap. A cross section area will be drawn on the overlapped area, which represents the auto cross fade. Sound will fade from one clip to the next clip. *This is a very powerful feature!*



(The white diagonal lines represent the fade out of the first sound and the fade in of the second sound!)

Note that if a sound is entirely within another sound, it will not auto cross fade and will simply mix.

## Editing Sounds with a 3rd Party Sound Editor

If you want to apply effects or editing not possible in Mixcraft, you can work with an external sound editor. Make sure that you have already setup an external sound editor in the Preference dialog.

Right click on the sound you want to edit and select "Edit in External Editor". This brings up a dialog with two main choices.

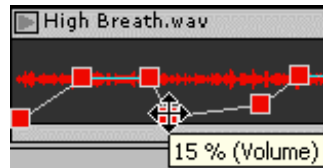
- **Edit a copy of the sound.**  
This option is the preferred method of editing a sound because if you later decide you don't like it, you will be able to undo the edit. In addition, you can have Mixcraft automatically pick a name for the new sound, thereby saving you the trouble. This will happen if the "Automatically choose a new name for the sound" checkbox is checked. You can also simply type in a new filename or browse to find one.
- **Edit the original sound.**  
This makes permanent non-undoable changes. You might choose this if the sound is extremely large and you can't afford the disk space to make a copy. The con to this option is that it is not reversible!

Once you have picked an edit option, click the Edit button and it will launch the external editor with the sound. Another dialog box appears which waits for you to finish your editing. Make all the changes you want in the external editor, and save the file (in the external editor). Go back to Mixcraft and hit either Done or Cancel, depending on how the edit went. In the

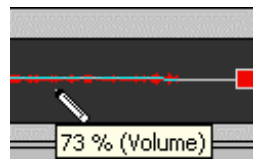
case of editing the original sound, it won't make a difference. However, if you edited a copy of the sound, Cancel will delete the copy from your hard drive.

## Sound Clip Envelope Basics

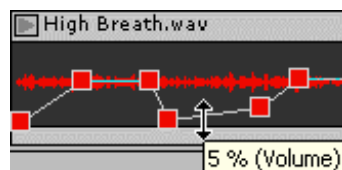
Each sound clip allows you to shape 6 parameters over time, so that you can, for example, fade audio in, and out, cut the volume in certain locations, pan from left to right speaker over time and more. Each sound starts out with 2 envelope points at the start and end of the sound. You can click on an envelope point and move it around to the desired location.



(The above image shows how to move an individual point.)

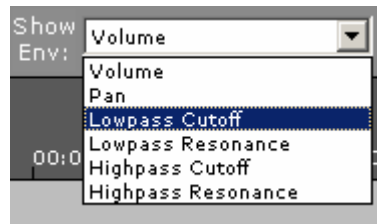


To add a point, move the mouse until it becomes a pencil tool, then left click and a new envelope point will be added.



You can move an "envelope line" by clicking on a horizontal line and dragging it up or down.

To switch the type of envelope, click the "Show Env" drop down on the toolbar.



Each sound has volume, pan, Low Pass Cutoff, Low Pass Resonance, High Pass Cutoff & High Pass Resonance envelopes.

## Volume

Add envelope points for fades, cuts, or boosts, raising or lowering the sound's volume. The range is 0% to 200%.

## Pan

Add envelope points to pan the sound from left to right speaker. The range is 100% left speaker to 100% right speaker.

# Low Pass Cutoff & Low Pass Resonance

The Low Pass Cutoff limits the high frequencies that are played. It lets the low frequencies 'pass' or 'get through.' This is *similar* to turning down the treble knob on a stereo.

**Low Pass Cutoff:** The cutoff represents a frequency value is between 0% and 100%. The default is 100% and means you hear all frequencies in the sound. 0% equates to a very low cut off frequency and you would not hear any sound.

**Low Pass Resonance:** As this value increase, the overtones near the cutoff frequency are boosted. The result is that the cutoff frequency is much louder than the rest of the audio being filtered.

**IMPORTANT:** The Low Pass Cutoff works hand in hand with the Low Pass Resonance. *The Low Pass Resonance setting will not be audible if you haven't adjusted the Low Pass Cutoff!*

## Tips:

- ❑ To use the resonant filter creatively, try a resonant filter sweep. To do this, set the Resonance envelope at 200 and create a Cutoff envelope that rises and falls slowly. Since the resonant value is relatively high (200), as the cutoff goes up and down you should distinctly hear the "resonant peak" follow the cutoff, with its characteristic sound. For example, the famous wah-wah pedals used by guitarists, makes use of resonant filter sweeps back-n-forth, with the cutoff controlled by the foot pedal.
- ❑ If the resonant setting is cranked all the way up to 256, the filter goes into a state called "self-oscillation" and produces a ringing-whistling tone. **ATTENTION:** this can be very loud and overwhelming, so please watch your audio levels as it can be dangerous for your ears and your speakers!!
- ❑ Using resonant filter sweeps on synthesizer melody lines can make some very musically compelling timbre and tone changes, to signal a transition, a buildup or a bridge.

\* The cutoff % is a mapped logarithmically from 200 Hz to ½ sample rate.

## High Pass Cutoff & High Pass Resonance

The High Pass Cutoff limits the low frequencies that are played. It lets the high frequencies 'pass' or 'get through.' This is *similar* to turning down the bass knob on a stereo.

**High Pass Cutoff:** The high pass cutoff value represents a frequency between 0% and 100%. The default is 0%, which allows all frequencies to pass. 100% is essentially silent and does not let any high frequencies be heard.

**High Pass Resonance:** As this value increase, the overtones near the cutoff are boosted. The result is that the cutoff frequency is much louder than the rest of the audio being filtered.

**IMPORTANT:** The High Pass Cutoff works hand in hand with the High Pass Resonance. *The High Pass Resonance level will not be audible if you haven't adjusted the High Pass Cutoff!*

### Tips:

- ❑ To use the resonant filter creatively, try a resonant filter sweep. To do this, set the Resonance envelope at 200 and create a Cutoff envelope that rises and falls slowly. Since the resonant value is relatively high (200), as the cutoff goes up and down you should distinctly hear the "resonant peak" follow the cutoff, with its characteristic sound. For example, the famous wah-wah pedals used by guitarists, makes use of resonant filter sweeps back-n-forth, with the cutoff controlled by the foot pedal.
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\* The cutoff % is a mapped logarithmically from 200 Hz to ½ sample rate.

## Looping Sounds

Working with loops in Mixcraft is easy.

### Creating a looped sound

Select a sound and move your mouse to the right edge. The mouse should turn into a <-> cursor. Click and drag to the right. As you drag the mouse to the right, it creates loops. Each loop is represented with a 'v' mark.



(The image above shows a sound looped 3 times.)

### Perfecting a loop

You may have a sound that doesn't loop well. For example, many MP3s have extra silence and will not loop properly, so it is necessary to trim out the silence before looping. Imagine we have a sound with 1 second of silence before the loop. Right click on a sound and click "Edit Loop". The Edit Loop window pops up and allows you to fine tune the loop. The green flag and line represents the loop start and the red flag represents the loop end. Click the play icon to play the loop. Adjust the start and end of the loop during playback. Click the + to zoom in and the - to zoom out. Once you are happy with the new loop, click "OK".

### Tips

- ❑ Use this to remove silence from the beginning of MP3 file loops
- ❑ Grab a chorus section or loop from a popular song and create a remix.
- ❑ Create short loops to create interesting sound effects. The minimum loop length is 100 milliseconds or 1/10<sup>th</sup> of a second.

## Sound Playback Rate

Change the playback rate of a sound by selecting "Adjust Clip Playback Rate" from the "Sound" menu.

Slow it down to 25% or speed it up to 4 times the normal speed.

This is similar to playing a record at the wrong RPM and will have a 'chipmunk' sound. Minor adjustments in rate will sound fine and is useful for matching up beats.

# Tracks

Tracks are audio channels that have their own volume, pan and effects.



## Track Name

Give your track a name, feed it some track food and love it dearly. (What else could I write here? ☺)

## Volume & Pan

After all sounds on the track have been mixed, each track has its own volume and pan adjustment. You can either use the slider or type in a value via an edit box.

## Track Effects (FX)

Each track has its own effects that are added after all sounds have been mixed together. In addition, the effects are added after the track volume and pan have been applied. To add or view effects, click the "FX" button on each track. More on Effects ...

## Mute

Mutes or silences all sounds on a track. Note: All muted tracks will stay muted during a mix down.

## Solo

Solos this track so that it is the only track you hear. This is convenient way to listen to a specific track without hearing the others. Note that it is possible to solo more than one track, and, thus, you will hear all soloed tracks.

## Add a New Track

To add a new track, click "Add Track" on the "Mix" menu or click the "Add Track" button below the lowest track header. The other way to add a track is to simply drag or move a sound down.

# Master Control



## Peak & Clip Meter

The peak meter is a graphic way of showing how loud the mix is. The red clipping meters will light up and stay lit for 5 seconds if the volume is too loud. Generally, you should avoid clipping and it is recommended to lower either the master volume or another volume. The above image shows clipping in both the left and right channel. **Tip:** Solo a track to see if it is clipping.

## Master Volume

This is the master volume for the entire mix. If your mix is too loud, lower the master volume to avoid clipping. You can use the slider or type in a new value. The range is 0% to 200%.

## Main FX

The main effects are applied to the entire mix after all tracks have been mixed. Usually, one might use a global reverb or possibly a compressor. To edit the effects, click the "Main FX" button.

# Timeline

The timeline helps you position your sounds. Depending on your zoom level, you will see time in minutes:seconds or minutes:seconds:milliseconds. If your mix is longer than an hour, you will see hours:minutes, etc.

## Playback control

Click on the timeline during playback to start playing from the new location.

## Track Markers

Track markers can be used to line up sounds and loops or note important events. Each tracker marker can have a name. Track markers can optionally represent a "CD Track Marker" which will cause Mixcraft to render out a new track when doing a multi-file mix down. Use track markers to:

- Create an audio soundtrack for a video, by adding a track marker for each important video event.
- Sync up loops and sounds. Zoom in and line up each sound to an exact millisecond.
- Create a mix CD from exported WAV files so that each track marker represents a new track.

### **Add Track Marker**

To add a track marker, either double click on the timeline or right click and select "Add Marker". Give you marker a name and optionally uncheck the "CD Track Marker" if you don't want this marker to start a new track for a multi-file mix down.

### **Play From Marker**

If you right click on a marker, you can start playback from the marker.

### **Play From Previous Marker**

If you right click on the timeline, select this to start playback from the previous marker.

### **Delete Marker**

Right click on the timeline and select "Delete Marker" to remove the marker.

### **Delete All Markers...**

Right click on the timeline and select "Delete All Markers..." to remove all markers. (Note that the first marker will never be removed.)

See more on mixing down to multiple WAV files.

More on the CD Track Marker?

## **Effects Dialog**

Mixcraft™ comes with 6 default effects, which are used for the Main FX and track FX. Click a track's FX button or the "Main FX" button to bring up the Effects dialog. **Note that you can use all features of Mixcraft while the effects dialog is up, which includes playback controls!**

### **Adding an effect**

Choose an effect from the drop down list on the left side. This will add an instance of the effect to the "Effects Chain List." Note that you can add more than one instance of any effect. For example, you could have 2 delays and 2 choruses. Also, keep in mind that adding effects should be done cautiously as it tasks the capabilities of your computer's processing power.

### **Previewing Effects**

To hear an effect, simply select Play from the Mix menu or the toolbar. Adjust the effects in real time as the sounds play. (You do not need to close the effect dialog while it is playing!)

## Effects Chain List

Each effect dialog has a list of effects, also called the "Effects Chain List". The effect chain allows you to 'chain' or connect multiple instances of delay, reverb and others to the same track or to the Main FX. The top of the list is the first effect.

## Disabling & Muting Effects

Each effect on the Effects Chain List has a check box, which allows you to mute, and un-mute effects. This is a convenient way to determine the difference the particular effect makes.

## Reordering Effects

Each effect on the Effects Chain List is processed from top to bottom. You can reorder the list by clicking on an effect and dragging it, or by selecting the effect and clicking "Up" or "Down".

## Deleting Effects

Select an effect and click "Delete" and it will be removed from the Effects Chain List.

Delay

Reverb

Chorus

EQ

Flanger

Compressor



Delay is used to create an echo effect. It is a delayed copy or copies of the sound, usually at a reduced volume.

## Delay

This parameter specifies how long to delay a copy of the sound. You can choose from 1 millisecond to 2000 milliseconds (2 seconds.) (There are 1000 milliseconds in a second.)

### **Feedback**

This parameter specifies how much of the delayed signal gets delayed again. This will create the illusion of multiple echoes. You can choose from 0% to 95%. 0% would result in 1 echo, whereas a setting of 95% would result in a very

### **Pan**

This parameter specifies where the delayed sound will be in terms of the stereo field. Choose from the left speaker, center or the right speaker.

### **Wet Mix**

The wet mix is the new sound created by this effect. This specifies how much of the delay that you hear. You can choose from 0% to 100%. 0% is the same as muting the effect and 100% would result in a maximum delay.

### **Dry Mix**

The dry mix is the original sound. This specifies how much of the original sound that you hear. You can choose from 0% to 100%. 0% would result in no original sound and 100% would result in a 100% of the original sound.

### **Tips**

- Use for special psychedelic effects. Turn up the feedback.
- Use at a short offset for a drum loop that is in time with the loop.
- Accentuate vocals or guitars with a short echo. This can be especially useful on electric lead 'guitaring' such as used on some Pink Floyd songs.



Reverb is used to give your sound a natural feel. Reverb is a simulation of the natural reflections that sound makes in a particular room or environment. Reverb effects are used to simulate a sound in a place where it most likely was not recorded. For example, using the "Canyon" preset on a drum loop will make it sound like it was recorded in a highly reverberant space such as a canyon or tunnel. Modest amounts of reverb are generally regarded as pleasing and is almost universally applied to modern studio recordings to create a better feeling of space.

### **Reverberation**

This parameter controls the % of reflectivity that you hear. A low reverberation setting is subtle and a high reverberation setting sounds like you're in a cathedral. The valid settings are from 0% to 100%.

### High Freq. Damping

This parameter controls the reflectivity of higher frequencies. A value of 0% allows all frequencies to reverberate. Natural reverberation, around 50%, does not include higher frequencies. The valid settings are from 0% to 100%

### Stereo Width

This parameter controls the width of the reverb stereo field. The valid settings are from 0% to 100%. Setting it to 100% has more 'presence' and setting it to 0% has a 'flatter' feel.

### Wet Mix

The wet mix is the new sound created by this effect. This specifies how much of the reverb that you hear. You can choose from 0% to 100%. 0% is the same as muting the effect and 100% would result in a maximum reverb.

### Dry Mix

The dry mix is the original sound. This specifies how much of the original sound that you hear. You can choose from 0% to 100%. 0% would result in no original sound and 100% would result in a 100% of the original sound.

### Tips

- ❑ Use for special effects such as "Foggy" or "Dripping Wet FX".
- ❑ Add a light reverb such as "Room Medium" to give it a natural feel. Be careful of 'over-reverberating'! If you can hear the reverb, turn it down.
- ❑ Usually, you'll want to create reverb on the Master effects chain and not on a per track basis. Creating the same reverb on each track would be a waste of CPU processing power.



EQ or equalization allows you to lower or raise the volume of specific frequency ranges. This effect is comparable to the graphic equalizer control commonly found on stereo amplifiers. The Acoustica EQ

effect can subtly color the sound or give you a dramatic change, from a low-fidelity sound of AM Radio to subtle mid-range boosts on a vocal recording.

### EQ bands

You can change the amplification for 10 frequency bands by 18 dB. The bands represent 32 Hz, 63 Hz, 125 Hz, 250 Hz, 500 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz & 16 kHz.

### Output Gain

This allows you to raise or lower the equalized sound. In some cases, a particular equalization might cause distortion and, thereby, you'd want to reduce the output gain.

### Reset

This resets all frequency bands to their center position and the output gain to 0. This is the default position and is the same as muting or disabling the EQ.

### Tips

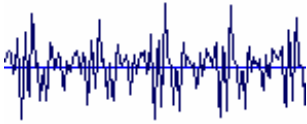
- ❑ Choose the "Telephonic" preset to make your mix sound like its going through a telephone.
- ❑ Choose the "Lo-Fi" or "1960s" preset to make your mix sound like its on a cheap TV.
- ❑ Try to avoid over equalizing. Not all speakers are created equal. For example, if you boost the bass real high, many systems may be able to play it properly. Aim for the common denominator speakers. Of course, if you are making a mix for a dance club, give it some more bass and then give it some more. 😊

\* EQ note: If you are playing back sounds with lower sample rates such as 22,050 Hz or 11,025 Hz, some of the higher bands will not have any audible effect as it is impossible to contain frequencies above  $\frac{1}{2}$  the sampling rate. (An 11,025 Hz sound cannot contain frequencies above 5,012 Hz (Nyquist's theorem) )

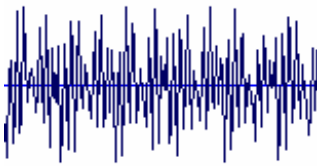


The compressor is one of the least glamorous effects and one of the least understood. However, it can be very POWERFUL when used properly. The compressor makes the dynamics more even. The low volume sounds become louder and the high volume sounds become lower. Compressors are used extensively in studio recordings, radio production and for live performances.

Compressors work by using an audio level sensing function to keep track of the sound level. When the sound level gets too high for the right amount of time, it is reduced. Once it is reduced, the entire signal can be amplified, allowing you to hear the low volumes better.



The image above shows an original sound. Notice the big difference between the peaks and valleys of the sound.



The image above shows the sound with the Compressor effect on. Notice that it is a stronger & ‘fatter’ sound and the peaks and valleys are closer together.

### **Threshold**

The audio level where sound is compressed. This effect is in dB . The range is from 0 dB to -30 dB. -30 dB represents the strongest threshold with the most amount of compression.

### **Attack time**

This sound level needs to be above the threshold level for this amount of time in order to be compressed. The valid settings are from 0.01 milliseconds (ms) to 150 milliseconds.

### **Release time**

The release time is the length in time to restore the audio signal from being compressed back into its normal state. The valid settings for the release time are from 10 milliseconds to 500 milliseconds.

### **Ratio**

This parameter indicates how much to compress once it is passed the threshold. The valid range is from 1 to 35. A value of 1 is no compression and 35 is the maximum amount of signal compression.

### **Output Gain**

This parameter adjusts the output gain of the compressor. Note that this amplification will be in addition to automatic volume adjustments via the "Auto Gain Compensator".

### **Auto Gain Compensation**

This will automatically adjust the gain on the compressed sound in addition to the "Output Gain" setting above. Auto Gain Compensation boosts the audio signal to full strength. (Depending on the audio, you may need to additionally raise or lower the output gain.)

### **Tips**

- ❑ Vocalists/Singers: Apply compression to even out the volume changes if the singer is moving to and from the microphone.
- ❑ Presence booster: Instead of applying EQ, you might try adding a compressor to vary tone quality of a recorded instrument.
- ❑ Guitar / plucked sustain increase: Normally, after a guitar string is plucked, the sound dies away. Light compression with a long release will increase the sustain.



Chorus is an effect usually used to create a 'fuller' sound by doubling and modulating the sound. It thickens the sound by doubling it and slowly varying the time offset of the copy.

### **Delay**

This parameter specifies how long to delay the copy of the sound. The range is from 10 milliseconds to 50 milliseconds.

### **Rate**

This parameter controls how fast the doubled sound goes in and out of tune. The range is from 0.1 Hz to 2.0 Hz.

### **Intensity**

This parameter controls how much the doubled sound is out of tune. The range is from 0.01 ms to 10 ms.

### **Wet Mix**

The wet mix is the new sound created by this effect. This specifies how much of the chorus that you hear. You can choose from 0% to 100%. 0% is the same as muting the effect and 100% would result in a maximum chorus.

### **Dry Mix**

The dry mix is the original sound. This specifies how much of the original sound that you hear. You can choose from 0% to 100%. 0% would result in no original sound and 100% would result in a 100% of the original sound.

### **Tips**

- Use for vocals to give the illusion of multiple singers.
- Use strong chorus intensity for a strange warbly effect.
- Use on instruments such as keyboard or organ for a more full sound.
- Use multiple instances of chorus at slightly different settings for more than one doubled voice.



The Flanger is similar to Chorus, except that it has a feedback setting. According to legend, the flanger was born when the Beatles were in the studio producing an album. A tape machine was being used for an echo effect, when someone touched the rim of the reel, changing the pitch. After a bit of fiddling and mixing of signals, that characteristic flanging sound was born. The rim of the reel is also known as the "flange", hence the name. ☺

### **Delay**

This parameter specifies how long to delay the copy of the sound. The acceptable range is from 0.1 milliseconds to 20 milliseconds. This controls the intensity of the effect.

### **Feedback**

This parameter specifies how much of the flanger sound is 're-flanged' and sent back into the Flanger effect. The acceptable range is from 0% to 95%.

### **Rate**

This parameter specifies how fast the flanger 'whooshes' up and down.

### **Wet Mix**

The wet mix is the new sound created by this effect. This specifies how much of the Flanger that you hear. You can choose from 0% to 100%. 0% is the same as muting the effect and 100% would result in a maximum Flanger.

### **Dry Mix**

The dry mix is the original sound. This specifies how much of the original sound that you hear. You can choose from 0% to 100%. 0% would result in no original sound and 100% would result in a 100% of the original sound.

### **Tips**

- ❑ Use the "Classic" preset it to create a whooshing effect on sustaining sounds, such as vocals, pads.
- ❑ Increase the feedback and rate to create a weird warpy sound effect. "Insane Membrane" is a good warpy preset.

## **Recording**

Mixcraft™ allows you to record audio through your soundcard. To bring up the recording window, click the record button on the toolbar, or select "Record" from the "Mix" menu.

### **Preparation**

One of the biggest problems is to make sure you are actually recording from the right input. If you look at the back of your computer, you'll see the soundcard. If it's dark back there, get a flashlight. ☺ You'll want to make sure that you have either a microphone plugged into the microphone jack, or some other device such as a hardware mixer, record player, etc. plugged into the stereo input jack.

- ❑ Microphone input : Make sure that it is a 1/8" mini.
- ❑ Line-In input: Make sure that you connect a 1/8" stereo mini. If you are recording from a record player, for example, you should get an RCA to 1/8" stereo cable. The line input requires an amplified signal and you need to get a hardware mixer.

*Make sure you've selected the right source in the software!* Once you've plugged in your microphone or external source, you'll want to make sure that you are set to record it in the software, as well. In Mixcraft, click the "Record" button, followed by clicking the "Speaker icon"



. This brings up the Window's "Record Control". This contains a variety of inputs to choose from. The list will vary depending on your soundcard. However, the input options might include MIDI, CD, Line-In, Microphone, Auxilary, Wave/DirectSound, WhatUHear, etc. Click the "Select" checkbox on the one you'd like to record.

- Choose Line-In to record from the Line-In
- Choose Microphone if you have a microphone connected to the microphone jack on your soundcard.
- If in doubt, choose "WhatUHear". Note that this option may not be available on your soundcard.

### Recording options



Click this icon to bring up the recording preferences. On the recording preferences you'll have the options to change the recording sampling rate, bit depth and more. See the Recording Preferences for additional information.

### Start Recording

Before you record a sound, click the mouse on the position you'd like the new sound to start. If you are overdubbing, this will determine where playback starts, as well.



The above picture shows the 'caret', which will also be the position where the newly recorded sound will start.

The recording source should be the soundcard you'd like to record from. If you're lucky enough to have a soundcard with multiple inputs, choose the correct input.



Click the record button to start recording. The peak meters will help you monitor your recording so that it doesn't distort. Try to stay in the 'yellow', which represents a strong signal. If the clip meters turn red, they will stay red for 5 seconds.



When you are done recording, click the  stop recording button. You will now be able to preview your recording. If you messed up, click "Cancel" and try again.

Otherwise, click either "Save" or "Save As..." Note that the "Save" option provides a default name and saves you time if you don't care what its called. If the name and director are important, choose "Save As" and you'll be able to choose a directory and name for the new sound.

## Recording tips

These tips should help to get better sounding recordings!

### Line input vs microphone input

On the soundcard, you'll usually find 2 important input jacks: Line-In and Microphone. Line-In is a stereo input, which means it expects a left and right channel. The microphone input is a mono input and is not compatible with stereo input.

According to many experts, line in is the only jack you should record from, which means that it is recommended to attach a hardware mixer. You can purchase a good hardware mixer for under \$100 via some online sites. I've seen them for \$40. This will make a world of a difference. Once you get a hardware mixer, you'll need to plug it into your soundcard's Line-In jack. Check out <http://www.zzounds.com/> or <http://www.musiciansfriend.com/> Of course, make sure it has the right jacks such as an XLR microphone input.

### Get A Strong Recording

If you have to crank up the volume to hear the recording or if you have tons of distortion, you'll need to adjust your various volumes in order to get a better recording. This would include adjusting volumes on external mixers, external audio devices, record players and the Windows sound mixer. Set all your volume inputs to the midway point. Start with the first device and raise the volume until it distorts, then lower it. Go to the next device in the chain and do the same. Repeat this process to get the best signal.

### The Right 'Mike' microphone

Generally, the microphone that comes with your computer is not going to get a good recording. Even the cheap \$20 microphones that they sell at computer stores are probably not going to cut it. For some purposes, you can get okay recordings with the soundcard's Mic input. However, it is recommended that you get a condenser or dynamic microphone to plug into a hardware mixer. There are some good dynamic microphones for \$20 on the Internet. You may need to get an 'impedance matching transformer' if your hardware mixer does not have XLR input. For more information about microphones and other recording tips, we highly recommend [home-recording.com](http://www.home-recording.com). Check out <http://www.zzounds.com/> or <http://www.musiciansfriend.com/>

## **A Do It Yourself Pop Shield For Vocals**

Recording vocals can be a pain, especially if you don't have a pop shield. A pop shield is used to reduce the 'popping' sounds that come from consonants like P & B. This type of pop sounds like wind blowing on a microphone and its very unprofessional. You can either go buy a pop shield or you can simply make one! Just get a pair of nylon tights/panty hose and a wire coat hanger. Bend the coat hanger into a circle of around 20 cm or 8 inches in diameter. Stretch the nylon tights around the hole. Secure the other end of the wire on the microphone or to another surface so that it is in front of the microphone. Happy non-plosive recording! ☺

## **Mix Down / Mastering**

You're done and ready to mix it down to a single file or multiple files! Congratulations! Mixcraft currently supports mixing down to WAV, MP3, WMA and Realaudio. Choose "Mix Down To" from the "File" menu and then choose the format you are interested in.

### **WAV**

WAV files are the most widely supported file types. Unfortunately, these are also the largest file type. This would be the best option if you are burning audio CDs. More on exporting to WAV

### **MP3**

MP3 files are the most popular way of encoding sound at this time. This would be the best option if you are sending your MP3 files to the Internet, are creating an MP3 data cd, or are sending them to a portable MP3 device. More on exporting to MP3

### **Realaudio™**

Realaudio files were the first highly compressed file format to hit the Internet. Choose this option if you wish to create a realaudio file for streaming over the Internet. More on exporting to Realaudio.

### **WMA**

WMA files are Windows Media Audio files. This is a smaller and compact alternative to MP3 files. It is not as widely supported as MP3 files are but, since this is the Microsoft format, it has a funny way of becoming more popular every day. ☺ More on exporting to WMA

## Mix Down to a WAV file

WAV files are the most widely supported file types. Unfortunately, these are also the largest file type. This would be the best option if you are burning audio CDs.

- ❑ Destination File Size - This is a helpful indicator that estimates how big the destination file size is going to be.
- ❑ Render All/Selection - The default is to render the entire session. However, you can also render the current selection. You might choose to render the selection if you want to hear how it sounds under a certain sample rate, bits and stereo combination. (You wouldn't have to render the entire session which could take a while depending on the length of the session.)
- ❑ Sample rate – enter or select a sample rate. CD quality is 44,100 Hz. If, in doubt, choose 44,100 Hz. Selections include 8 kHz to 192 kHz, but you may type in any sample rate.
- ❑ Bit depth – choose from 8, 16, 24, 32 or 32 bit float. CD quality is 16 bits. If, in doubt, choose 16 bits.
- ❑ Channels – choose from Mono or Stereo. CD quality is stereo.
- ❑ User Information – Enter in the title, author and copyright if desired.
- ❑ Create a separate WAV for each track marker – This option will be enabled if you have more than one CD Track Marker. If you select this option, Mixcraft will create a WAV file for each section of audio. More on track markers

## Mix Down to a MP3 file

MP3 files are the most popular way of encoding sound at this time. This would be the best option if you are sending your MP3 files to the Internet, are creating an MP3 data CD, or are sending them to a portable MP3 device.

- ❑ Destination File Size - This is a helpful indicator that estimates how big the destination file size is going to be. It is an approximation, though, especially when rendering to variable bit rate MP3 files which depend on the actual audio content.
- ❑ Preset Quality - Adjust the slider and choose one of the presets to set the desired MP3 quality. More info on presets ...
- ❑ Specify Exact Settings - You can also set the exact format to encode to. For example, if you want to create a variable bit rate MP3, you'll need to use this option. More on setting the specific encoding settings
- ❑ File Information – Mixcraft adds authoring information to the MP3 file. It creates an ID3V1 and ID3V2 tag by default. You can fill in the Title, Author, Copyright, Genre, Year and Comment.
- ❑ Create Separate MP3 File For Each CD Marker? This option will be enabled if you have more than one CD Track Marker. If you select this option, Mixcraft will create an MP3 file for each section of audio. More on track markers

## Specify MP3 Settings

This dialog lets you fine tune the exact format, bit rate and tag information for your freshly converted MP3 files.

- ❑ MPEG Version - MPEG stands for "Moving Pictures Experts Group" and is based on a perceptual coding scheme. There are several versions of the MPEG standard. (MPEG defines the syntax of low bit-rate video and audio bit streams, and the operation of conformant decoders. MP3 is actually an abbreviation for MPEG 1 Layer 3.)

MPEG Version	L.A.M.E.
=====	=====
MPEG 1	X
MPEG 2	X
MPEG 2.5	X

- ❑ File Tag - A file's tag contains extra information about the file. The tag typically contains the track name, artist, album, genre, year and comments.
  - ID3 v1 is the original tag type. It is more common but it also is limited in the amount of information that it can display. (Text fields are limited to 31 characters)
  - ID3 v2 is the latest tag type. It can store more involved information, including videos, pictures and link information.
  - Mode (Channel Mode) - The channel mode determines if the resultant file will be mono or a stereo flavor.
    - *Mono* – One channel.
    - *Joint Stereo* – Toggles between stereo and mono depending on differences and similarities in the left and right channels.
    - *Dual Stereo* – 2 mono channels. (Encoded independently.)
    - *Stereo* - Normal stereo ( 2 channels)
  - Constant Bit Rate - Choose this option if you want the resultant MP3 file to have a Constant Bit Rate (CBR). The encoder will pad frames of the MP3 with filler data if necessary.
  - Variable Bit Rate - Variable Bit Rate (VBR) files will encode MP3 files that have a range of bit rates. Why create more data is necessary? The problem with VBR is that some players or MP3 devices may not play files as well as Constant Bit Rate MP3 files.
    - *Min Bit Rate* – The minimum bit rate to use.

- *Max Bit Rate* – The maximum bit rate to use
  - *Quality Level* – Indicates how well the encoder analyzes the audio. The more it analyzes the audio, the better chance it has of getting lower bit rate frames. 0 = highest quality and 9 = lowest quality.
  - *Average Bit Rate* - If set, the encoder will attempt to make the average bit rate equal to this value. (It is assumed that it uses the highest quality level (0) in order to achieve the average bit rate.)
- Extra Flags - Check these extra optional flags.
  - *Private*: This option
  - *Original*: Is this an original work ?
  - *Copyright*: Is this MP3 copyrighted?
  - *Checksum*: This option will add a checksum to the encoded file that will allow MP3 players to determine if the MP3 file has been corrupted or damaged. The protected flag in the MP3 will be set.

## Mix Down to a WMA file

WMA is a second-generation compressed audio format.

From the "File" menu, select "Mix Down To" and then select "WMA File..." from the submenu. Pick a name for your new WMA file. ( If you are going to be saving multiple WMA files for each CD Track Marker, this name will be the base name. )

After a name or base name is chosen, you need to set up extra parameters for the WMA file. Once all the settings are made, click the Save button to render the session to a WMA file. After it is finished, it will play the sound back via your default WMA player.

- Destination File Size - This is a helpful indicator that estimates how big the destination file size is going to be.
- Render All/Selection - The default is to render the entire session. However, you can also render the current selection. You might choose to render the selection if you want to hear how it sounds under a certain compression. (You wouldn't have to render the entire session which could take a while depending on the length of the session.)
- Preset Quality - Adjust the slider and choose one of the presets to set the desired MP3 quality.

The possible settings are:

Preset	Bit rate	Mode	Frequency Response
=====	=====	=====	=====

1	16 kbps Mono	8,000 Hz
2	32 kbps Stereo	22,050 Hz
3	48 kbps Mono	44,100 Hz
4	64 kbps Stereo	44,100 Hz
5	96 kbps Stereo	44,100 Hz
6	128 kbps Stereo	44,100 Hz (default)
7	192 kbps Stereo	44,100 Hz

- Entering File Information – Mixcraft adds authoring information to the WMA file. You can fill in the Title, Author, Copyright, Genre, Year and Comment.
- Create Separate WMA File For Each CD Marker? - This option will be enabled if you have more than 1 CD Track Marker. If you select this option, Mixcraft will create a WMA file for each section of audio. More on track markers

## Mix Down to a Realaudio file

**IMPORTANT:** If you can not create Realaudio files, then you must download and install the optional Realaudio plugin from Acoustica @ <http://www.acoustica.com/>

From the "File" menu, select "Mix Down To" and then select "RealAudio File..." from the submenu. Pick a name for your new RealAudio file.

### What is RealAudio™ ?

RealAudio is an audio format, which is highly compressed and small, allowing for real time streaming of audio over the Internet. RealAudio is a proprietary technology owned by RealNetworks, Inc. The latest version of RealAudio is called G2. Its main feature is called SureStream, which allows for multi-rate RealAudio files.

### Exporting to RealAudio™.

One of the convenient features of Mixcraft is the ability to instantly render the session into a RealAudio file. Simply select Save As.. from the File menu and change the file type to RealAudio™. Select a filename and select the Save button. This brings up the following dialog... There are several factors to consider.

### SureStream vs. Single Rate

SureStream is RealNetwork's multi-format file. It's the most important feature of G2. You can create a SureStream file that will work with people connecting through a LAN, in addition to people with bit-

pushin' 28.8 modems! The people with the higher speed connection will be served higher quality audio, while the people with the lower speed connection will be served the "less than perfect" audio. You can have up to six target audiences.

What's the catch? You need a RealServer G2 for playback! (Your ISP may have a RealServerG2 already setup.)

- Pressing 'Preview' will automatically render the first 5 seconds of the session with the selected codec .
- Pressing 'Fine Tune ' will bring another dialog, which allows you to fine-tune the selected codec in case the preset codecs don't sound good.
- Selecting the "Create RealPlayer 5 Compatible Clip" will allow the older RealPlayer 5.0 players to play the clip. It will make the clip slightly larger.
- Single rate files can also be created. These files can also be streamed via a traditional web server, just as if you were downloading a file.
- Pressing 'Preview' will automatically render the first 5 seconds of the session of the current codec.
- Pressing Fine Tune will bring another dialog, which allows you to fine-tune the current codec in case the preset codecs don't sound good.

### **Target Audience**

Who is the target audience? Perhaps, you have a lot of corporate visitors with LANs, but you also have 56K modem users. You might select 2 target audiences (56K Modem and Corporate LAN).

You can select up to 6 different target audiences if you are creating a SureStream. If you are creating a single rate file, you can only select one target audience at a time.

### **Content Type**

This one is pretty self-explanatory. Is your masterpiece music or voice? Or is it voice with background music? If the stereo separation is an important part of the piece, you might select "Stereo Music". The most important test is to simply listen to how it sounds in the various settings. The preview feature makes it very easy to do this. Take advantage of it.

If you are going to eventually include this with a RealSlideshow™ or a RealVideo™, you should uncheck the "Audio Only?" checkbox which will adjust any selected codecs. (It will lower the bit-rates to accommodate other data being downloaded.)

### **Render All or Selection**

One of the cool features of Mixcraft™ is that you can render selections anywhere in your session. Select some sounds and press the RealAudio button. Now you can press the "Render Selection" radio button, which will enable you to render the current selection! This can be very handy if you are curious how a particular segment sounds, but you don't want to render the entire one hour piece!

### **Clip Information**

This is the information that is stored with the clip. The name of the clip will default to the name of the main Sound Group. The copyright and author information will default from the Miscellaneous information tab in the Preference dialog.

### **RealAudio Fine Tune Dialog**

If you choose to fine-tune a codec, it will bring up this dialog (fig17b). You may choose a different codec and preview it. The bit-rate, frequency response, compatibility information and a detailed description are displayed as you switch between different codecs. It will not allow you to exceed the maximum bit-rate for the target audience you are tuning.

Note: It may take awhile for the RealAudio file to be completely rendered, depending on the power of your computer and the length of the session. You may hit the cancel button to escape a lengthy encoding.

### **Creating the RealAudio File (.ra)**

After you are happy with the settings, you should press the Save button on the main RealAudio dialog. Pick a filename and press "Save". It may take awhile for the RealAudio file to be completely rendered, depending on the power of your computer and the length of the session. You may hit the cancel button to escape a lengthy encoding. By default, after it is finished encoding, it will play the newly rendered file.

### **Optimizing your sound for RealAudio™**

You may be wondering, "how can I improve the way that my RealAudio files sound?" The rule of thumb is to not make your Sound Groups too quiet. If you feel they are too loud, simply turn your speakers down. You will notice substantial improvements if the volume levels are kept as high as possible.

If you have an external editor that can "compress" the sound, this may also help for RealAudio conversion. This is not the file type compression. This is referring to dynamic amplitude compression. Basically it takes the low parts of your sound and makes them louder, as well as taking the loud parts and making them quieter.

### **Uploading it to the Internet.**

Mixcraft™ does not upload or publish the file to the Internet by itself. You will find that most WEB page creation programs have this type of feature built in. You may also choose to use a ftp program to upload the RealAudio file.

Check the "Links" page on Acoustica for some links to sites that have useful information on uploading RealAudio files!

## MP3 Preset Quality

The easiest way of choosing a level of compression for your MP3 files is to use the Preset Quality slider.

The Preset Quality slider allows you to choose from several levels of quality and resultant file sizes. As you choose higher quality, the file size goes up as well. On the other hand, lower quality presets will be smaller and easier to send over the Internet.

Preset	Bit rate	Channels
=====	=====	=====
Phone	16 kbps	Mono
Shortwave	24 kbps	Mono
AM Radio	32 kbps	Mono
FM Radio*	96 kbps	Stereo
Voice	64 kbps	Mono
Radio	112 kbps	Stereo
Tape	128 kbps	Stereo
Hi-Fi	160 kbps	Stereo
CD	192 kbps	Stereo
Studio	256 kbps	Stereo

The default is CD quality (192 kbps, Stereo).

\* Note that the FM Radio bit rate is higher than the next preset quality, which is Voice. Voice is @ 64 kbps and FM Radio is @ 96 kbps. The reason that there is a discrepancy is because Voice is mono and FM Radio is stereo. If you were to divide the FM Radio bit rate in half, you would have 48 kbps per channel, which is lower than the Voice preset.

# Keyboard Controls

## Keyboard shortcuts

(<- or -> )	+/- quick move (depends on zoom level.) More..
Ctrl + (<- or -> )	+/- 20 milliseconds. More..
Ctrl + Shift + (<- or -> )	+/- 1 millisecond. More..
TAB	Select next sound. More ...
Shift+TAB	Select previous sound. More ...
SPACE bar	Start/stop playback.
[Home]	Rewind playback indicator to 0.
[End]	Fast forward playback indicator to end of Mix.
[Delete]	Delete any selection of sound(s).
+	Zoom in.
-	Zoom out.
Ctrl+Z	Undo.
Ctrl+Y	Redo.
Ctrl+X	Cut.
Ctrl+C	Copy.
Ctrl+V	Paste.
Ctrl+A	Select All.
Ctrl+N	New Mix.
Ctrl+O	Open Mixcraft Project...
Ctrl+S	Save.

## Nudging Sounds via the Keyboard

You can move sounds via the keyboard. Use the arrow keys to move selected sounds!

### Moving horizontally along the timeline.

Use the arrows to move the sound quickly.

Hold down the Ctrl key and the sounds will move in increments of 20 milliseconds. Hold down the Ctrl+Shift key to move in increments of 1 millisecond.

(<- or -> )	+/- quick move (depends on zoom level.)
Ctrl + (<- or -> )	+/- 20 milliseconds
Ctrl + Shift + (<- or -> )	+/- 1 millisecond

### Moving sounds vertically

You can move the sound vertically as well. You may do this if you are trying to move sound(s) to another track.

### **Tabbing between Sounds via the Keyboard**

If you are interested in getting around quickly in the session and love the keyboard movement features, you will be happy to know that you can switch from sound to sound via the *Tab* key and *Shift-Tab* key combination.

The *Tab* key will select the next sound on the current track or the first sound on the subsequent track. (If you are at the end of the last track, it will go to the start of the first track.)

Holding down *Shift* key and pressing the *Tab* key will do the opposite of *Tab*. It will select the previous sound on the track. If it is the first track, it will select the last sound on the previous track.

## **Preferences**

Playback

Recording

Miscellaneous

Information

## **Playback Preferences**

If you have more than one soundcard, you can choose the soundcard you want for playback in the *Playback device* drop down at the top of window.

If you select *Use Best Quality*, Mixcraft will always use the best sound format in the session as the default sound format. Choosing this option will ensure that you don't have any sound degradation.

You may, instead, choose to use a specific format. Wave formats have the following characteristics:

- *Sample Rate*  
Sample rate simply means the number of times per second that the computer plays or records a *snapshot* of the sound. Faster sample rates catch faster frequencies. You may set the format to the following sample rates : 11,025 , 22,050, and 44,100, or you may type in a sample rate.
- *Bits Per Sample*  
This determines the quality of each *snapshot*. The more bits, the better. You may set the format to either 8 or 16. (8 has a tendency to sound fuzzy)
- *Number of channels*  
Is it stereo or mono? Setting the format to mono, will essentially disable panning.

The advanced section allows you to change the number of buffers and buffer size. Without getting too complicated, you use these options to find a balance between audio discontinuity and playback latency.

Latency is the amount of time it takes from the time you press the *Play* to the time you hear the sound. If you feel the latency is to big, try reducing the number of buffers or the buffer size.

Audio discontinuity is sometimes described as "popping" or "static". The audio will drop in and out. If you have audio discontinuity problems, try increasing the number of buffers and/or the buffer size.

## Recording Preferences

Use the recording preferences to set the recording sample rate and other recording specific settings.

- ❑ *Full Duplex Test:* Take this test to make sure that you can play and record sound at the same time.
- ❑ *Recording Settings*
  - Sample rate: This is the number of times per second that an audio sample is recorded. CD quality is 44,100 samples per second.
  - Bit depth: 8 or 16 bits? 8 bit sound has a real high signal to noise ratio and sounds pretty noisy, especially for subtle and lower volume sounds. If in doubt, choose 16 bits.
  - Channels: Stereo or mono? If you are doing a lot of mono recordings and wish to cut down on hard drive space, choose mono. Mono sounds are 2 times smaller than stereo sounds.
  - Overdub: If this is checked, Mixcraft will play sound while simultaneously recording.
- ❑ *Advanced Settings*
  - Number of buffers: This is the number of buffers sent to the soundcard to be filled up with sound data. Some soundcards, work better with more buffers.
  - Buffer size: This specifies the size of each buffer, in terms of kilobytes (KB). Use larger buffers to reduce the change of losing parts of your recordings. . If you find that your recordings are missing sound or have static glitches, try increasing the number of buffers and/or the buffer size.
- ❑ *Temporary recording directory:* This is where recordings will be created. Make sure you have enough free space on the hard drive that your recording directory is on. If you want to record using your computer's RAM, clear all characters from the edit box so that it is empty. You should see "(RAM)" displayed above and then hit "OK".

## Miscellaneous Preferences

- ❑ *Auto scroll during playback.* - Normally, during playback if the indicator gets near the right end of the window, the view is scrolled over in time. This option allows you to turn that off or back on.
- ❑ *Start playback at beginning when near end* - Normally, if the session has played to the end, starting playback again will also cause the session to rewind to the beginning. This option allows you to toggle the behavior.
- ❑ *Wave Display\_Resolution*- Mixcraft can operate faster because it doesn't load in a pixel for every sound sample. It defaults to 1 milliseconds per pixel. You can configure it to be anywhere from 1 millisecond per pixel to 100 milliseconds per pixel.
- ❑ *Setting the playback indicator when clicking in the session window* - If you click within the main window, this will cause the playback indicator to be set. Normally, this only sets the caret (paste point). If you are currently playing, it will restart playback from this position.
- ❑ *Play exported files after being created* - After exporting a new file, this will automatically play back your freshly created sound. Thus, you can preview it to make sure it sounds correct.
- ❑ *Editing sounds in an external editor.* - If you want to edit sounds in an external editor, you need to select an external editor executable that MP3 Audio Mixer launches. You can either type in the full path to the sound editor or press the *Browse* button to find it through Windows file system.
- ❑ *Temp directory* – This is where all temporary cached peak (.IPK) and seek (.ISK) files are stored.

## Information Preferences

The name, and copyright fields will automatically appear when rendering the session to a RealAudio™ MP3, WMA or Wave file. This saves you the trouble of having to type it every time you want to export or render a file.

- ❑ *Author* – Generally, this should be the organization or person who creates the audio mixes.
- ❑ *Copyright* – This should be the copyright for the author or organization that does the creating.
- ❑ *Comments* – These comments will be inserted into the comments section of your mixes.

## Menus

File

Edit

Mix

Sound

Help

# File Menu

## **New Project**

This menu item clears the Mix. If the current Mix has unsaved actions, Mixcraft will ask you if you'd like to save.

## **Open Project...**

This menu item brings up a standard file dialog, which allows you to find a Mixcraft project file (.MXC) to load. If the current Mix has unsaved actions, Mixcraft will first ask you if you'd like to save.

## **Add Sound...**

This option allows you to add sound to the Mix.

## **Import Playlist...**

This feature allows you to import play lists (.CBS, .M3U and .PLS). Play lists are simply lists of sounds (MP3s, usually.) Note that this will import Acoustica MP3 CD Burner play lists (.CBS).

After selecting a play list to import, the Play List Wizard dialog will come up. Choose which sounds/MP3s to import. You can set how much overlap there is between the sounds. Or you can set it up to have space between the sounds. It can also create automatic CD Markers at the start of each new sound. Click the "OK" button to import each sound and generate a mix. This can be a *very handy feature* if you are a DJ and you have some existing play lists.

## **Save Project**

This menu item saves the Mix as a Mixcraft Project file (.MXC ). If the Mix has not been saved yet, it will bring up a standard file dialog allowing you to pick a filename and folder.

## **Save Project As...**

This menu item allows the user to save the Mix with a different name. You may elect to use this option if you are branching off in several possible sound designs and want to be able to compare them.

## **Mix Down To...**

When you are ready to mix down your Mix, select one of the following formats from the sub-menu.

Wave File

MP3 File

WMA File

RealAudio™ File.

## **Most Recent Files (8)**

Mixcraft displays the most recently used Mixcraft Project (.MXC) files here. It will display the most recent 8 MXC files.

## **Preferences...**

This brings up the Preference dialog.

## Exit

There's always a time when you have to turn it off. You can't use Mixcraft all the time. (We don't mind that much, though. ;-))

This exits Mixcraft. It will ask if you want to save, if the Mix needs to be saved.

# Edit Menu

## Undo

Undo allows you to go back to previous states. Undo is supported for the following actions.

- Editing sounds & loops
- Editing envelope points
- Effect changes
- Track adjustments

Once you save, the Undo memory is cleared. (Thus, you cannot Undo after saving...)

## Redo

Redo is the opposite of Undo. For example, Sound Warrior adds an envelope point on his "angry-war-cry.wav", then decides he doesn't like it and does an Undo. Suddenly, he thinks of the ancestors looking down upon him and decides to put it back by doing a *Redo*. ☺

## Copy

Copy will take a snapshot of all currently selected sounds & associated envelopes. Each successive Copy command clears the previous copied sounds. Note that this will copy only the selected portions of the sound(s).

## Cut

Cut will remove all currently selected portions of sounds and envelopes from the Mix. It will also copy the selected portions of the sound(s) into the clipboard for pasting. (Don't worry, remember, you can Undo.)

*An alternative to Cut, is the 'Delete' key. This will cut all the selected portions of sounds, but will not store them in the clipboard. This is handy if you don't want to overwrite the contents of the clipboard.*

## Paste

Paste will add all *Copied* sound(s) at the *Caret* position.

## Select All

All sounds will be selected.

### **Zoom In**

Mixcraft allows you to zoom in up to a resolution of 1 pixel = 2 milliseconds.

### **Zoom Out**

Mixcraft allows you to zoom out to a resolution of 1 pixel = 1 second.

## **Mix Menu**

In addition to the menu bar, you can right click in the main session to get this menu.

### **Add Sound...**

This option brings up a standard file dialog allowing you to select a new Wave file (.wav) to include in the current Sound Group. It will appear at the current position of the Caret.

### **Record Sound...**

This option brings up the recording dialog. More on recording ...

### **Mix Info**

Mix Info is a dialog that allows you to change the name and associated comments. It also displays the date it was created, its length in time, the number of sounds and a checkbox to display itself on start up.

### **Play/Stop**

This option plays or stops the Main Sound Group.

### **Rewind**

This causes playback to rewind to the beginning of the Main Sound Group. This can happen during playback.

### **Fast Forward**

This causes playback to fast forward to the end of the Main Sound Group. You may use this option to get to the end of the Main Sound Group quickly.

### **Waveform Display**

This brings up a window that shows a more detailed view of playback. Note that clipping audio will be drawn in red.

# Sound Menu

You can also use the Sound menu by right clicking on a sound bar. Make sure that the sound is selected first.

## **Cut** *(on right click only)*

This will remove the sound from the Mix. (You can always redo to get it back.)

## **Copy** *(on right click only)*

This will copy the sound and it's associated envelopes.

## **Invert Envelope**

This is a helpful function, which changes each pivot point to an opposite or *mirrored* value. (This can be undone, as well.) IE: For volume envelopes, volumes of 100% will go to 0%. Volumes of 50% will stay the same. Volumes at 33% will go to 66%, etc. More on envelopes.

## **Reset Envelope**

Have you added a billion pivot points to "godly.wav"? Don't want to undo everything else that you like, but you want to get this sound back to normal. Simply select this *Reset Envelope* and it will be set back to the very original settings. This works for each effect type separately, so you don't have to cleanse the volume, if you've been mucking around with the Low Pass Cutoff. More on envelopes.

## **Edit Loop**

This launches the loop adjustment window, which allows you to define a looping area for a sound.

## **Adjust Clip Playback Rate**

This allows you to choose a playback rate.

## **Sound Info**

This brings up a dialog with information about the sound, including name, file path, format, length and size. You can rename the sound if it appears to generic looking, ie: "untitled-wav-302123x12.wav" could be "john-tooted.wav". Plus, it gives onlookers a brief laugh.

## **Muted**

This either sets the sound to be muted or un-mutes the sound. A check mark on the menu item indicates that it is muted.

## **Locked**

This is a flag which tells you if the sound is locked in position. If it has a check box next to it, it means that the sound bar is locked and cannot be moved. To reposition a locked sound, un-toggle this option.

## **Play/Stop**

This will play the sound if its not playing and stop it when it is.

# Help Menu

## Help Contents

This brings up this file. (Of course, if you didn't try that option, you may not ever see this. ☺ )

## Check For Update...

This will communicate with the [acoustica.com](http://acoustica.com) website to determine if a new version is available. If so, you can click a link to take you the download page.

## Enter Registration Code

This brings up a window, which allows you to enter your registration information to unlock the software into full functionality with no restrictions.

## Buy Now!

This either launches a web browser or starts an integrated purchase system. Once you've purchased the software, you will receive registration information.

## Acoustica Software Products

This has a sub menu of other Acoustica software products. All products have free trials. Give them a try! If you like it, you can choose to buy it later!

## About Mixcraft...

This brings up a dialog with some credits, copyright notices and cool artwork. It also contains the built number, which may be important if you are seeking support.

# Toolbar

The toolbar allows quick access to common functions.



Create a new Mixcraft project



Open/Load a Mixcraft project



Save



Add a sound (MP3, WAV or WMA)



Play/Stop



Rewind to the beginning



Fast Forward to the end



Record



Select the active envelope (volume, pan, etc.)



Zoom In.



Zoom Out.



Preferences



Purchase the software. (This goes away, if the software is already purchased.)

## Troubleshooting

### It's Not Making Any Sound

You've added sounds, but you can't play anything... There are a few things you can check here.

1. Are the speakers on and plugged in? (Sorry, management made us ask.)
2. Can you play a Wave file through Windows sndrec32.exe or another sound application? If you can't there may be a problem with your sound card's configuration or drivers. Refer to your soundcard documentation to try to figure out what is wrong.
3. Load the volume control that came with your soundcard and make sure that the Wave device is turned up.
4. Another program may be using the Wave device. Mixcraft will put up a dialog stating that another application has the Wave device in this case.

### Playback Is Stopping Too Soon!

If you are trying to play sounds in Mixcraft and it seems to cut off too soon or it may have some other strange behavior, you should make sure that you have the latest drivers for your sound card. Download the latest drivers from your soundcard manufacturer's website!

### Sound Is Breaking Up / Popping Or Clicking / Lagging

When playing the session, it sounds like someone is starting and stopping the sound real quick, repeatedly. This could be because the computer has slowed down due to other programs running at the same time.

Mixcraft has to work harder as the layers of sound increase. Try increasing the buffer size or the number of buffers in the Advanced Section of the Preferences Playback tab.

If you are doing a lot of recording and you find that the actual recordings are being broken up, you may change the Recording Settings on the Recording tab of the Preference Dialog.

Additionally, you may choose to reduce the # of effects that you are using during recording. Go ahead and mute the effects. You can always turn them back on later. (Effects use significant CPU power.)

Another trick is to reduce the number of tracks. Each track has its own separate mix down which costs in terms of your computer's memory and CPU power. If you don't need sounds to be separate tracks, try and put them on as few tracks as possible.

## **How Do I Cut And Paste Portions Of Sounds?**

You know how to copy a whole sound, but how do you copy part of a sound? Left click on the bottom selection area of the sound . Keep the left mouse button down and then move the mouse over the area you want to copy or cut. A selection rectangle will highlight over the area of the sound. Then let the mouse button up and select "Cut" or "Copy" from the "Edit" menu. If you are "copying", you can then select "Paste" from the "Edit" menu to paste at the caret point.

### **I Can't Load Or Save WMA Files!**

In order to load and save to WMA files, you must have support for Microsoft Windows Media Format 7.1. If you are trying to load a WMA file or export to WMA file and the option is grayed out, you probably do not have this installed. To download and install it, please visit <http://www.acoustica.com/plugins/index.htm> . (You do not need to restart your computer!)

If you've already installed WMA support, you may be trying to open a WMA with Digital Rights Management (DRM). If you created this WMA file with Windows Media Player, you could recreate it with DRM turned off. To turn off DRM, run Windows Media Player, choose Options from the Tool menu, click on "Copy Music" and make sure that "Copy Protect Music" is unchecked. You'll have to recreate the WMA. (The old one with DRM will not work.)

### **I Can't Preview Or Play Realaudio™ Files**

In order to hear RealAudio files, you must have the RealAudio player. Download the latest player from <http://www.real.com>

### **Mixcraft Won't Load The Sound. It Says That The Format Is Unsupported**

There are many different types of sound file formats. Mixcraft currently supports the Wave (.wav), MP3, and WMA formats. Trying to load a .aif or .au will not work.

In addition, Mixcraft will work with Windows Audio Compression Manager (ACM) to load compressed wave files. If it is a WMA file, make sure that WMA format support is installed, and that the file does not have Digital Rights Management (DRM) on it.

## **I Edited A Sound In An Editor And It Messed Up Other Sounds!**

If you had copied a sound and then edited it in an external editor in the "Edit Original" mode, it would have made the copies reference the same sound file. If the length was changed or if the sound were altered in a time specific way, Mixcraft would not have been able to load it back in the correct way. Next time consider selecting the "Edit A Copy" option.

## **How Do I Record From The CD?**

Mixcraft supports the recording of whatever sound that it is possible to record via your soundcard. Here are the steps to record your CD.

Recording from the CD is simple as long as your soundcard is connected to your CD.

1) Click on the speaker icon on the lower right hand corner of the window's desktop. If you do not have this, then you may need to add/remove programs and make sure you select all "multimedia" components.

This should have brought up a window that is titled "Volume Control".

2) Select "Properties" from the "Option" menu.

This brings up another window

3) Select the "Recording" option from the "Adjust Volume For" grouping.

Look at the list box called "Show the volume controls."

4) Make sure that the "CD Audio" option is selected.

5) Hit OK

Brings up the "Recording Control" window.

6) Make sure that "CD Audio" option is selected and at a decent level.

7) Put in an audio CD and start it playing.

8) Launch Mixcraft

9) Select the Record option and make sure the "Show Recording Level" is selected.

You should see the level indicator moving in Mixcraft's recording level.

Go back to the Recording Control window if it's distorting.

10) Hit the record button in the Mixcraft Record window and you are done.

### **How Do I Set Mixcraft Up To Record From Memory (RAM)?**

Go to the preference dialog and remove all text in the edit box labeled "Temporary Recording Directory". You should see the words "(RAM)" appear. Then click "OK" and record to your heart's content.

### **I'm Not Hearing Real-Time Changes Of Effects During Playback!**

If you have some sounds selected, you will not hear your volume, pan, or clipboard changes during playback. Once you restart playback after making a change, you will hear the changes.

### **How Do I Overdub Or Record While Listening To My Other Tracks?**

You need to make sure that you have done the full duplex test and have the "Overdub" checkbox checked in the Recording Preferences. Depending on your soundcard's level of full-duplex support, you may need to set the recording sampling rate to be the same as the playback sampling rate.

### **I Can't Render To Realaudio. It Says I Need To Download More Files!**

Not everyone uses Mixcraft to create RealAudio files. We chose to leave out the RealAudio files and make it an optional download. This makes the download much smaller. Look for the RealAudio patch [here](#).

### **New Tracks Are Picking Up Sound From Old Tracks.**

Your new audio tracks are picking up remnants of other tracks. Your microphone or input device is picking up the output from your speakers. Try using headphones. If that doesn't work, your soundcard may have some touchy circuitry. Go to your mixer's recording settings and make sure that only the devices you are interested in recording are set.

## **Recording Is Not Working!**

You're mixing sounds great, but you can't record anything!!! There can be many reasons why this is not working. Recording tips ...

1. Your microphone is not plugged in to the right hole in the back of your soundcard. Sometimes it happens. ☺
2. You're trying to record on your CD but nothing is happening. Make sure that your soundcard has a connection to your CD player. This is usually an internal cable.
3. Another problem for not recording is related to the Win95/98/NT audio mixer.
  - Double click the speaker icon on the lower right of your Window's taskbar.
  - Select "Properties" from the Options menu.

- Select "Adjust volume for recording" radio button.
- Make sure all the checkboxes are checked in the window entitled "Show the following volume controls" and press the "OK" button.
- Make sure that the device you are trying to record is selected and the slider is up.
- For example, if you are trying to record the CD, make sure the checkbox enabled "Select" in the "CD Audio" panel is checked, then adjust the slider to about 75%.
- Make sure that the overall "Recording" balance on the very left is also set at 50%. (On many systems, you cannot adjust this anyhow.)
- Go back to Mixcraft and start recording!

## **What Are These CD Track Marker Things?**

Track markers can be used to help organize your session. But they can also be used in conjunction with a multi-WAV, MP3 or WMA mix down. What's that you say? Lets say you created this 60 minute CD audio masterpiece that has 10 sections. You invite your friend over and tell him to "listen to this one part." You spend 15 minutes trying to fast forward to the right spot and your friend loses interest! Wouldn't it have been better to just seek to track #8 ,for example? Thus, you can place a marker at the exact spot and select the "CD Track" checkbox. When you do a multi-WAV save, it will create multiple WAV files based on these "CD Track" markers. Then, use your cd burning software and drag in the new files!

## **I Can't Render To Realaudio™ Files! It's Grayed Out!**

Realaudio is now a separate download in some cases. You can download the Realaudio plugin for Mixcraft at <http://www.acoustica.com/plugins/index.htm>

## **Hey, I Can't Even Find My Problem In This Section!**

Start your Internet browser and go to <http://www.acoustica.com/support.htm> for the latest help. You will even find some animated tutorials on the most common problems! If it's not on the website, you can request a support request from our online help form at to <http://www.acoustica.com/support.htm> !

## **Version History**

To check for a new version, select "Check For Update" from the "Help" menu or you can visit the website at [www.acoustica.com](http://www.acoustica.com)

### **Version 1.0 - April 2004**

- Initial Release!



Acoustica was founded in 1998 and is located in the foothills of the Yosemite Valley. Acoustica's mission is to create high quality, intuitive and powerful software. We value diligence, creativity and innovation. We are embracing Internet technology and the new world that it is creating. We also have this curious idea that SOFTWARE SHOULD BE EASY TO USE! ☺

Mixcraft is the latest in a series of highly innovational and user-friendly software we are making. Our other products include MP3 To Wave Converter PLUS, MP3 Audio Mixer, MP3 CD Burner and CD/DVD Label Maker.

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## Decibel (dB)

The decibel (dB) is a logarithmic unit of relative measurement used to compare the ratio of the intensities of two signals. When an amplitude doubles, the increase corresponds to 6 dB.

## WMA Files

WMA stands for Windows Media Audio. WMA files contain perceptually encoded sound data.

The frequencies that humans cannot perceive are removed, although some audio purists say they can tell the difference between a high bit-rate WMA and a Wave file.

A WMA file can be as much as 20 times smaller than an equivalent WAV file.

.WMA

## Sound Group File

The project file for MP3 Audio Mixer. (.SGP)

## Codec

Codec stands for coder – decoder. In our case, codecs refer to small audio program-ettes, which convert compressed audio to uncompressed audio and vice versa.

## Mixcraft Project File

The project file for Mixcraft™ (.MXC)

## Hertz (HZ)

Hz is the rate at which the cycles of a periodic waveform repeat or cycles per second. Humans can hear frequencies or Hz from 20 Hz to 20,000 Hz. In reality, most humans can't hear above 14,000 Hz. A low Hz or frequency will sound deeper and a high Hz or frequency will sound higher.

## Frequency Band

A frequency band is range of frequencies, such as 6,000 Hz to 8,000 Hz.

## Gain

Gain is a fancy word for amplification or volume adjustment. Use it to impress your friends.  
☺ By the way, thanks for looking this up.

## Millisecond (MS)

A millisecond (ms) is 1/1000<sup>th</sup> of a second. Humans can't hear changes that are less than 20 milliseconds. Rabbits can't either, for that matter. ;-)

## Whooshes

A very serious technical term that describes sound. 10 Whooshes = 1 Wahwah, for the quiz.  
☺ (For those that don't have a grin on their face, yet, this is a joke.)

## Clip

A clip is a sound.

## Clipping

Clipping is when the audio signal is too strong and surpasses the capacity to represent it. It usually results in distortion, which sounds like bursts of noise. Generally, you should avoid clipping!

## Peak

A peak is the top of a wave form. A Wave form represents the oscillations of a sound signal.

## Wave form

A Wave form is a graphical representation of the oscillations and gyrations of a sound signal.