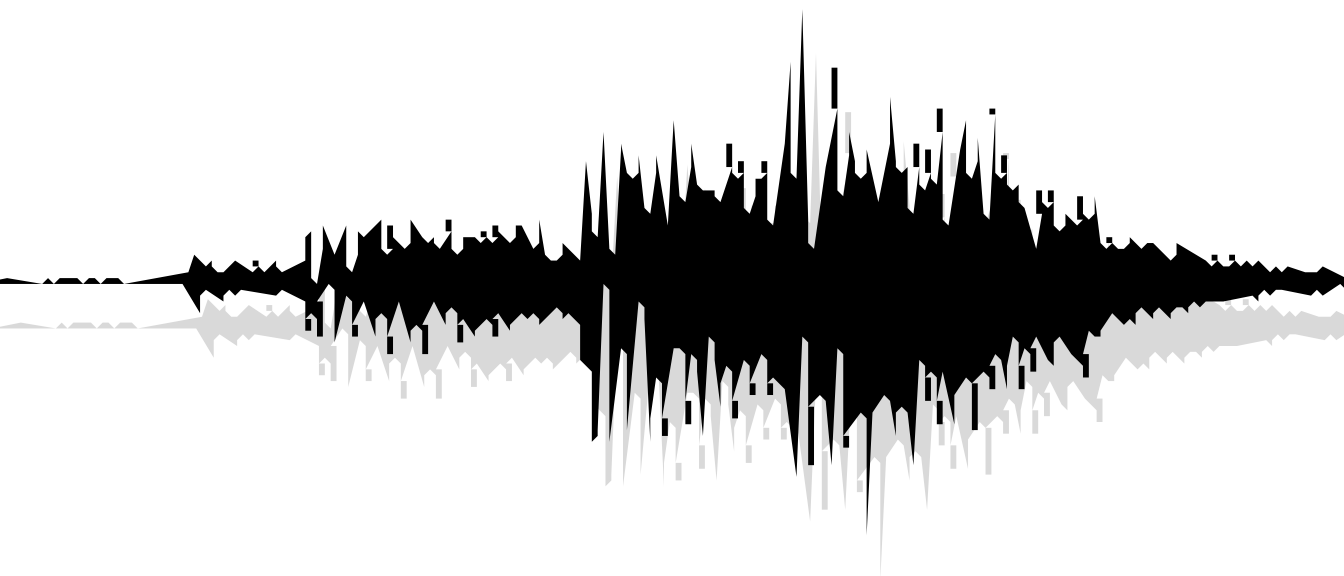


Glossary



Glossary

AIFF

Apple's Audio Interchange File Format used for recording and storing digital audio. It is also Peak's default file format and is supported by many Macintosh software applications.

AU

AU, or .au, is the audio file format common to most Sun Unix workstations. It is one of the most commonly used audio file formats on the World Wide Web.

audio card (third-party audio card, audio expansion card; audio recording/playback card)

A third-party expansion card that plus into a NuBus or PCI or PCMCIA slot in your Macintosh. These cards enhance a computer's audio recording and playback capabilities. Using Apple's Sound Manager software, Peak works with a variety of Macintosh audio cards from Digidesign, Digigram, Echo, Korg, Lucid, Mark of the Unicorn, MIDI Man, and others. In some cases, special Sound Manager Driver software or ASIO Driver software or DAE (for Digidesign cards only) may be needed from the audio card's manufacturer to work properly with Peak.

audio document

An audio document is a Macintosh audio data file created by Peak. Peak can create and open audio documents in a variety of common audio file formats. The AIFF file format is Peak's default file format. For more information, refer to AIFF, .au, WAVE, Sound Designer II, Red Book, and QuickTime.

bit resolution (bit rate)

Describes how many bits—as in “0s” and “1s”—are available to describe a digital recording. In practice, the bit resolution defines the dynamic range of a

sound, whereas the sample rate defines the frequency range. 16-bit audio is the professional Compact Disc standard; 8-bit audio is suitable for less demanding applications, such as multimedia presentations. More bits result in better quality, but also require more hard drive storage space. Also refer to dynamic range, frequency, and sample rate.

blending

Blending is an automatic crossfade function that Peak applies to areas during cutting, pasting and other editing processes in order to smooth abrupt transitions between waveform amplitudes. Blending can be toggled on or off by choosing the Blending command from the Preference menu, or by clicking the Blending enable/disable button in the Cursor Palette.

clipping

A type of audio distortion that occurs when a source signal (such as from an audio CD player) is recorded at such a high level that the recording device (such as a Macintosh running Peak) runs out of “headroom.” It can also occur when a signal is played back from a audio source into an audio destination at an excessive level, such as when a mixing console feeds a signal to a power amplifier at an extremely high level. In either case, clipping represents a mismatch in level between an audio source and an audio destination. When digital clipping occurs, such as during digital recording, the results can be a harsh “crackling” or “raspy” sound. When you use Peak, you can avoid digital clipping by ensuring that the record levels are set so that the loudest incoming audio passages stay below the maximum input level, as indicated on the record or playback meters. Peak's Clip indicator will easily show any clipping that occurs. Also refer to headroom.

dB (decibel)

This is the most common unit used for measuring the level of audio. The greater the number of decibels, the

higher the audio signal. Within Peak, the record and playback meters show a signal's relative level in terms of dB. There are many different kinds of decibel scales, but for the purposes of using Peak, "dB" can be used to describe the relative gain of different passages of audio, or to describe the available headroom during recording. Also refer to gain and headroom.

DSP

DSP stands for digital signal processing. In the world of audio, DSP refers to manipulating a digital audio signal by processes such as level changes, reverberation, delay, or other such effects. Peak uses DSP to perform many of its audio processing tasks—including those found in the DSP menu or Toolbar.

dynamic range

In audio recording terminology, dynamic range refers to the range in level between the quietest and loudest passages of a selection of audio. It is usually expressed in decibels. Bit resolution determines a recording's dynamic range. An 8-bit recording has 256 available levels, which translates into a dynamic range of 48dB. This may be suitable for some applications, but it may also sound noisy, since the difference in gain between the loudest passages and the quietest passages (which may contain hiss and other potential noise) is not that great. A 16-bit recording has 65,536 available levels, which translates into a high-quality dynamic range of 96dB. As a rule of thumb, you can calculate dynamic range in decibels by multiplying the bit rate by "6." Also refer to bit resolution, decibel, and gain.

fade-in/fade-out

A fade-in is a process where the gain of an audio signal is increased from zero (silence) to its full volume. A fade-out is a process where the gain of an audio signal is decreased from its full volume to zero (silence). Peak allows you to create fade-ins/fade-outs by making a selection and choosing the Fade In or Fade Out command from the DSP menu, or from the Toolbar. Envelope shapes can be editing with the Fade In Envelope or Fade Out Envelope commands in the Preference menu.

frequency

Sound consists of waves, which occur in cycles. Frequency refers to how frequently these wave cycles occur in a given period of time (generally, one second). The higher the frequency of a sound, the higher its "pitch" as perceived by human ears. Frequency is measured in Hertz (Hz), or cycles per second. Roughly speaking, humans are able to hear sounds in the frequency range between 20Hz and 20,000Hz (20kHz).

gain

1) The process of amplifying a signal. 2) A way to express relative signal levels for audio. For instance, by adding 6 decibels of level to a signal, we double the perceived loudness of the signal. Also refer to decibel and headroom.

headroom

Describes how much gain is left before a signal induces clipping or distortion. When recording with Peak, the record meters indicate how much headroom is left before clipping. When playing back audio in Peak, the meter strip at the bottom of the screen will indicate this as well. Most professional audio engineers leave between 3dB and 12dB of headroom while recording, to minimize the possibility of clipping. If you leave too much headroom, however, your signal may be recorded at too low a level, and you may end up with excessive noise or hiss. Also refer to clipping, decibel, and gain.

Hz (Hertz)

This is the unit of measurement for frequency, and refers to the number how many "cycles per second" a sound wave generates. In the world of sound, the higher the number of Hertz, the higher the frequency of a sound and hence the higher its "pitch" as perceived by human ears. A thousand Hertz can be expressed as 1kHz (one kilohertz), so that 20,000 Hertz may also be referred to as 20kHz.

loop

Loops are used to sustain or repeat a section of audio. They can be used for material that you intend to transfer to a sampler, or simply for playback within Peak itself. Peak allows you to create one loop per audio file. You can do this either by making a selection and choosing the Loop this Selection command (⌘-L) from the Actions menu or Toolbar, or by placing markers at the desired start and end point of a region, and defining the markers as loop markers.

Loop Tuner

A feature of Peak that allows you to “fine tune” the start and end points of a loop.

Loop Surfing™

Peak’s term for adjusting loops during playback.

Loop Surfer™

A proprietary feature of Peak, which automates many of the steps required to “loop surf.”

marker

A marker is a location in an audio document that you define as important; you can also think of a marker as a “memory location.” By marking a specific location in a recording, you can easily navigate to it for selection, editing or playback purposes. Peak allows you to define a marker by pressing ⌘-M or clicking a Toolbar button, either when playback is stopped or while it is engaged.

playlist

A playlist is a list of audio events, or “regions,” strung together in a specific order. See also region.

Plug-Ins

Plug-Ins are optional software enhancements for Peak that are available from BIAS and other developers that support either the Adobe Premiere Audio Plug-In Standard, the Digidesign AudioSuite and TDM standards, and the Steinberg VST standard. By installing plug-ins in Peak’s Plug-Ins folder, you can

enhance Peak’s audio editing and processing capabilities with tools such as filtering, reverberation, chorusing and flanging, noise reduction, spatialization, and more.

QuickTime

This is an audio format developed by Apple Computer for QuickTime-based multimedia. It is supported by all Macintosh software applications that support QuickTime. The QuickTime format is best if you plan to use an audio document in multimedia applications that support QuickTime, such as Adobe Premiere or Macromedia Director.

region

A region is a portion of an audio document bounded by region markers. Regions are portions of an audio document defined using the New Region command (⌘-Shift-R) from the Actions menu or Toolbar. Regions can be saved into only AIFF and Sound Designer II files created by Peak. See also playlist .

sample

(verb) Sampling refers to the act of recording audio material digitally by a sampling instrument or other digital recording device. See sampler and sample rate.

sample

(noun) A sample refers to audio material which has recorded digitally or “sampled” by a sampling instrument or other digital recording device. Sample also refers to a single wave-cycle “snapshot” of sound. See also sampler and sample rate.

sampler

A sampler is an electronic instrument capable of digitally recording or “sampling” a sound and playing it back from a keyboard or other controller. Samplers are used extensively in all areas of audio production, ranging from recording and performance, to film production and sound design. See sample rate.

sample rate

Sample rate describes how frequently an analog audio signal is been “sampled” or analyzed as it is recorded and converted to a digital medium. Sample rate directly affects audio fidelity in terms of upper frequency response: the higher the sample rate, the higher the available frequency response. A fundamental principle of sampling states that to accurately capture a sound, the sample rate must be at least twice the highest frequency in the sound. The standard sample rate for Compact Discs is 44.1 kHz. The following are common sample rates which are supported by many Macintosh computers and Peak software.

96.000kHz This is the standard sample rate for Digital Video Disc (DVD) audio, and is often used by sound editors working in audio post-production for DVD. This rate results in an upper frequency response of 48kHz — well above the range of human hearing.

48.000kHz This is one of two standard sample rates for digital audio tape (DAT) recorders, and is often used by sound editors working in audio post-production for video or film. This rate results in an upper frequency response of 24kHz — well above the range of human hearing.

44.100kHz This is the standard sample rate for Compact Discs, digital audio tape (DAT) recorders, and high-fidelity audio applications on Macintosh and PC-compatible computers with 16-bit playback capability. It is colloquially called “forty-four one” (as in 44.1kHz). Most sound engineers working in music production — or anything that may be distributed on a CD — work at this rate. This rate results in an upper frequency response of 22,050Hz — above most people’s hearing range.

22.050kHz & 11.025kHz These sample rates are sometimes used for lower-fidelity audio playback on Macintosh and PC-compatible computers. Many games, web-sites and other multimedia

productions utilize 22.050kHz (or lower) 8-bit audio, since it uses half the disc space of CD-quality audio. The 22.050kHz sample rate results in an upper frequency response of 12.025kHz; this may sound “muffled,” since most people can hear considerably higher frequencies than 12.025kHz.

Also refer to bit resolution, frequency, and Hertz.

SCSI

Stands for Small Computer System Interface. It is a standard developed to allow a variety of computers and peripheral devices such as hard disks, CD recorders, scanners, and other storage media, to connect and transfer data. Most external hard drives designed for use with the Macintosh are SCSI hard drives and must be connected to the SCSI port on the rear of the Macintosh. The SCSI specification allows up to seven SCSI-equipped devices to be connected or “daisy-chained” together.

SMDI

SMDI stands for SCSI Musical Data Interchange Protocol. SMDI Samplers use SCSI to send samples between devices several times more quickly than over MIDI. In order to transfer samples between the Macintosh and your sampler using SMDI, you must connect a SCSI cable between your Macintosh and the sampler.

Sound Designer II™

This is an audio file format developed by Digidesign for use with its digital audio products. The format can also be read by a wide variety of Macintosh-based audio editing and multimedia development programs, including Peak. Use this format if you wish to interchange audio documents with a Digidesign audio application.

WAVE

This is Microsoft’s Windows Audio File Format. It is supported by many Windows software applications and some Macintosh applications. The WAVE format is

best if you plan to use an audio document in an application that supports or requires WAVE format files.

zero-crossing

The zero-crossing is the point where the waveform meets the zero crossing line or the center line through the waveform. It is the point of zero amplitude in the waveform.
