

Samplitude-Studio (Demo-Version)

The Windows hard disk-recording-, sample- and multimedia-program
Program documentation, 5-30-95

This demo version contains all features of the new Studio-Version, but the save-functions and some physical sample manipulations are disabled.

After 15 minutes Samplitude-Demo disables playback. You may reload Samplitude for another 15 minutes playback.

Distribution Germany:

MAGIC MIDIA, Schwabenstr. 27, 74826 Bretzfeld, Tel. 07946/7768

USA:

Soundspiration Systems, 9704 White Ash Rd., Dallas, TX 75249, Tel. 214-298-DISC

Canada:

Media Magix, 34681 Immel St., Abbotsford BC V2S 416, Tel.: 604-854-3428, Fax.: 604-853-2979

U.K.:

Evolution Electronics Ltd. 8 Church Square, Leighton Buzzard, Bedfordshire LU77AE UK

Tel. +44 (0)1525 372621, Fax.: +44 (0)1525 383228.

Evolution are the authors of Procyon software.

World wide web site <http://www.evolution.co.uk>

Email sales@evolution.co.uk

Brasil:

Quanta MIDI & Software, Af. Joao Erbolato, 50 Cj. 10, Campinas SP 13066-640

Tel.: 55-192-424662, Fax.: 55-192-416130

France:

Digisoft, 18 Bd. Vincent Auriol, Paris 75013, Tel.: 33-1-44245555, Fax.: 33-1-44245550

Spain:

Micro FUSA, Industria, 244, Barcelona 08026, Tel.: 34-3-435-3682, Fax.: 34-3-347-1916

Netherlands:

Amazing Enterprises, Tel.: 31-703-908450, Fax.: 31-703-902812

Belgium:

Micro Solution s.a., rue d'Angoussart, 53, Bierges B-1301, Tel.: 32-10-419051, Fax.: 32-10-419012

Finland:

SounData, Inc., Mannerheimintie 56, Helsinki FIN-00260

Tel.: 35-8-490322, Fax.: 35-8-490142

Sweden:

MIDI Music, Tel.: 08-806888, Fax.: 08-804339

Norway:

AV teknikk as, Graterudvn. 20, Drammen 3036, Tel.: 47-3288-1180, Fax.: 47-3288-0995

Australia:

Mainly Multitrac, Unit 20/2 Garden Boulevard, Dingley Vic 3172,

Tel.: 61-3-5581155, Fax.: 61-3-558-1514

What can Samplitude do?

Samplitude is a program to record and edit audio on your computer. To record audio on a computer it first has to be converted to digital information. This task is usually handled with a soundcard which is equipped with Analog-to-Digital converters. When you playback digital information, the information will have to be converted back to an analog signal, which is an audible signal.

A soundcard also contains Digital-to-Analog converters. The quality of those converters greatly influences the results of the work you can achieve with Samplitude. Samplitude only supports 16-bit converters (CD quality). The more simple 8-bit converters today are mostly used for sound background for games.

In the Pro-Audio industry, soundcards are often used which do not contain AD/DA-converters (Analog-to-Digital/Digital-to-Analog). Instead they offer digital interfaces such as the SP/DIF or AES-EBU standard. These cards are also supported with Samplitude if they contain Windows Drivers. By connecting a DAT recorder or a CD player direct to the input of such a card the highest audio quality can be obtained.

One of the most often asked question is concerning the optimal sample rates. Basically during the audio-digitizing process the analog signal is measured several thousand times per second to see which values the signal produces. The more often this happens the more exact the wave form can be reproduced digitally. A simple comparison is the difference between 256 colours of a graphic card and 16 million colours. Both are recognizable. However, the higher number gives a clearer picture and more colour variations.

When working with digital audio, using a CD compatible quality of 44,100 samples per second (44,1 kHz) is the way to go. Some soundcards even support 48 kHz, which is used in high end DAT recorders. However, fidelity wise they don't pose a significant difference.

Lower sample rates such as 32 kHz still sound good. Keep in mind that many digital broadcasting stations work with this format. If you want to do video/audio editing, using a sample rate of 22 kHz will still be sufficient. A great advantage of using this format is that it only takes up half the storage space when compared with 44.1 kHz.

You need to remember that digital audio signals at a sample rate of 32 kHz can only reproduce without distortion half of that frequency rate (16 kHz).

For more information on memory requirements see the table in the chapter Hardware Needed. To have a first look at the most important functions of Samplitude refer to the chapter Quickstart. Below are a few suggestions for applications with Samplitude.

Putting Samplitude to Work

If you want to use samples and sounds with synthesizers, soundcards or sequencers it is often necessary to create, edit and loop the samples. Samplitude will let you do all this and more.

While playing a loop direct from your hard disk or the internal RAM memory of your system, you can alter the boundaries of the loop and in this way find the perfect loop positions. Then, to smooth the transition of the loop use the crossfade function.

If you work with MIDI-Dump compatible sampling keyboards or racks, you can alter the samples in Samplitude and dump the complete file to your keyboard.

If the timing or the pitch of your sample needs changing you can easily apply the resampling and time stretching features of the program.

By combining drum loops, your own recordings and samples from CDs you can use the virtual project capabilities with up to 8 tracks (16 tracks with Samplitude Studio). Every sample object can contain its own volume and fade setting. Volume and fades are easily adjusted using DTP

like faders.

If you have made a mistake, simply make use of the up to 100 level undo feature. Every change applied to a virtual project can be reversed.

You can record audio direct to your hard disk. While recording you can set markers that you can jump to for easy editing after you are done with the recording session. Every position can be scrolled to instantly and samples can be zoomed into down to an individual sample level.

Samplitude even lets you add reverb and echo effects to your sample files. The digital audio file can be normalized as well, using values of 100% and higher.

You can simply drag a range into a virtual multitrack project and adjust the position with your mouse. The range is immediately added to the arrangement and is available for playback and display. Rasters make sure that the transitions of several ranges work without interruption. You don't need to keep editing those tricky sample connections.

To include the sound capabilities of your soundcard or MIDI equipment you can easily link a MIDI file for simultaneous playback.

The same is true for AVI-videoclips that can be integrated in Samplitude to edit direct on your computer the sound to your pictures. Video-post-production nightmares are over!

Sometimes you find these nasty spots on a perfect DAT recording that need to be cleaned up not to spoil the rest of the recording. Simply dump the contents of your DAT tape to your computer via the soundcard and Samplitude. Then cut out the mistake using the virtual features of Samplitude and smooth over the empty spot with the crossfading function.

All graphically oriented object functions work while playing!

1.2 Features of Samplitude:

Samplitude-Multimedia has the following features:

- Real hard disk recording/playback with all Windows compatible 16 bit sound cards
- Support of all samplers with sampling rates of up to 48 kHz
- Support of mono/stereo projects in recording and playback
- Support of Ram- or hard disk projects
- Virtual projects with up to 4 tracks
- "Volume-Rubberbands" for realtime mix of the virtual tracks
- Realtime crossfades in virtual tracks with various curves
- MIDI and AVI files can be linked to Samplitude, qualified for film music composition, MIDI/audio synchronisation ...
- Direct synchronisation with MIDI sequencers "Evolution", "Procyon Pro v2.08 upwards" and "MIDI-Connections"
- Realtime surround effect
- Physical sample processing in high speed and high quality (e.g. cutting, normalisation, fading, crossfading, echo, hall effect, filter...)
- Virtual projects for non-destructive editing, sample objects can be placed, shifted (displaced) and manipulated (time-line)
- Ranges of various projects (RAM and HD) can be combined into virtual projects, e.g. cuttings of various records
- Fade-in, fade-out and volume of every object can be produced in real time (non- destructive) and easily manipulated by "handlers"
- Sophisticated window techniques, unlimited number of projects
- Several windows per project, e.g. for loop search
- Special mode for automatic loop optimization
- Ranges and cursors can be manipulated during playback
- Autoscroll mode while playing

- All cursors and ranges can be saved.
- Very long samples can be displayed quickly
- Various raster functions, e.g. for objects, bars, ranges...
- Wave file import and export
- Simple Windows installation
- Can be supplied in German or English versions

Samplitude-Pro has following additions:

- Virtual projects can have up to 8 tracks
- MIDI sample dump for sample transferring with MIDI samplers
- Resampling / time stretching / pitch-shifting
- Track bouncing for converting virtual projects into a physical file (Samplitude project or wave file); up to 16 tracks can be combined.

Samplitude-Studio has following additions:

- Virtual projects can have up to 16 tracks (16 Mono or 8 Stereo)
- Record while Playing if the soundcard(s) supports this
- Support of up to 4 soundcards for real 8 outputs
- Ext. Sync via SMPTE/MTC/MC (Slave) or MC (Master)
- Runs in multitasking with MIDI-Sequencers, e.g. Cakewalk and Procyon Pro
- High quality digital filters (graph. EQ, param. EQ) with realtime preview
- Dynamics Compressor/Expander/Noise-Gate with realtime preview
- Convolution for enhanced effects like reverb, echo and filter...

1.3 Hardware needed

For using Samplitude you need a PC with Windows 3.1, 4 MB RAM and an 80386 processor are minimum requirements.

To record and playback audio data you will need a 16 bit sound card with Windows driver.

For "Record while Play" you need a soundcard, which can be used for simultaneous record and playback or two soundcards with two drivers, one for playback, one for recording.

For hard disk recording an adequate hard disk memory will be needed (one minute recording in CD quality requires about 10 MB), together with a fast 80386 processor or better still an 80486.

For realtime filter-preview and volume rubberbands on more than 4 tracks you need a 486/66 or Pentium processor. The faster the better.

To use MIDI sample dump or a connection with MIDI devices you must have a Windows-compatible MIDI interface and driver.

For external Sync via SMPTE you need a special SMPTE interface, for Sync via MIDI-Timecode or MIDI-Clock you can use any Windows compatible MIDI interface.

Typical number of tracks (Mono) in virtual projects:

386/40 with AT-hard disk: 4 tracks 32 KHz

486/66 with AT-hard disk: 4 tracks 44 KHz, 6-8 tracks 32 KHz

486/66 with SCSI-hard disk, PCI-Controller: 6-8 tracks 44 KHz

Pentium with PCI-SCSI-hard disk: 12 tracks 44KHz , 16 tracks 32 KHz

Using of stereo tracks instead of 2 mono tracks increases the performance.

For maximum track number please raise the buffer size for VIPs in menu "Setup > System"!

Some examples for the requirement of memory size corresponding the sampling rate and sampling resolution:

Mode	Memory in bytes / second	Memory for one minute
Stereo 16 bit 44.1 kHz	176.400	10.584.000 byte
Stereo 16 bit 22.05 kHz	88.200	5.292.000
Stereo 8 bit 44.1 kHz	88.200	5.292.000
Mono 16 bit 44.1 kHz	88.200	5.292.000
Stereo 8 bit 22.05 kHz	44.100	2.646.000
Mono 16 bit 22.05 kHz	44.100	2.646.000
Mono 8 bit 44.1 kHz	44.100	2.646.000
Mono 8 bit 22.05 kHz	22.050	1.323.000

The memory size will change at a basic sampling rate of 48 kHz or 32 kHz.