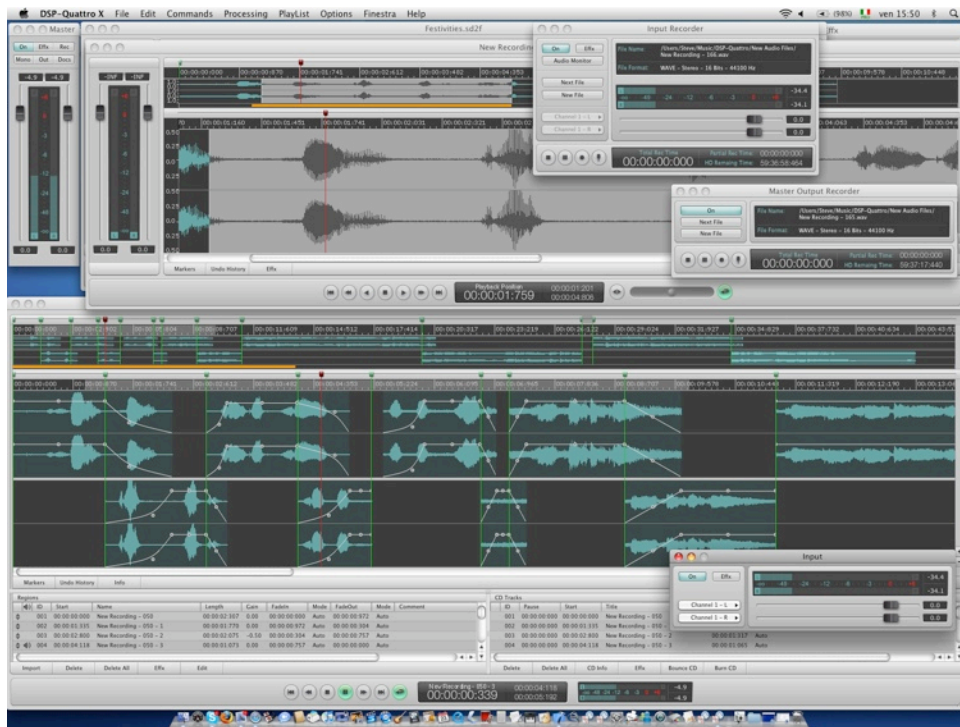




DSP-Quattro 3



Short Guide

Release 3.1
August 2009

Written by Stefano Daino

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Introduction

Welcome to the DSP-Quattro User's Guide. DSP-Quattro is the direct result of D-SoundPRO, the powerful sound editor developed since 1994 for Apple Macintosh™ computers, a highly innovative product which uses even the latest technology of the new millennium. DSP-Quattro, backed by D-SoundPRO ten-year long experience in the digital audio editor field, inserts the new dimension of real-time into the world of audio editors, turning your computer into a real time workstation for music production, plug-in hosting and audio editing for writing files ready for mastering. All of the above through the smoothest interface you have ever seen. DSP-Quattro is designed for the most professional users, but thanks to the simple and intuitive interface, however, DSP-Quattro turns out to be the ideal product for whoever has no experience in the field and would like to start out in the world of digital audio.

This User's Guide will show you all there is to know about DSP-Quattro.

What is DSP-Quattro?

DSP-Quattro is an audio editing, processing, managing and audio CDROM mastering product in the digital audio field. DSP-Quattro is even capable to export/import samples to/from your external samplers.

- DSP-Quattro is a real time audio editor.

DSP-Quattro is the right software for all people who want to create or edit their audio work with the computer. With DSP-Quattro you can record audio sources, edit existing audio files, and even create new files ready for mastering. All these using various existing formats, thanks to the QuickTime import, such as WAVE, AIFF, SDII, MP3, CD Audio, etc. You will then be able to edit the new file starting with the basic Cut, Copy&Paste commands, to the advanced Time Stretching algorithms, Pitch Shifting, reverbs, stereo enhancers, graphic and parametric EQs, Analog Filter Simulators, and so on. And it is all built-in! But not only that: DSP-Quattro is open to the standard third parties plug-ins as well. DSP-Quattro Editor allows you to use any plug-in exactly as any other internal edit function, offering also a real time preview of the result before to apply it. And, if you will not like the result, you have not to worry: DSP-Quattro internal engine keeps track of all edits and you can Undo/Redo your operations without any limitation. Not only this: the special multi-level Undo/Redo table of DSP-Quattro offers a graphical interface to your past operations to jump back and forth on the history of your edits.

- DSP-Quattro is the perfect tool for Audio CDROM mastering.

DSP-Quattro integrates CD burning that conforms to the Redbook standards for playback in any CD player. DSP-Quattro comes also with a fully programmable PlayList, offering all the features needed to build your CDROM by using your favorites songs or even selections of audio files. Several non-destructive cross-fade types can be programmed to make the transitions between your audio tracks even smoother, without audio clicks or abrupt changes. And, as very unique feature, DSP-Quattro allows you to setup a serial chain of effects (to choose from the internal list or from the effect plug-ins installed on your system), to play and master you PlayList giving a tremendous additional power to your master. Even more, each track of the PlayList may have its own chain of real time non-destructive effects, different from track to track to best suite all your needs!

Moreover, audio CD image files are fully compatible with other commercial software as Jam and Roxio Toast, making the integration between these applications very easy and flexible.

- DSP-Quattro is an Instrument and Effect plug-in Host:

DSP-Quattro is also a great real time synthesizer and multi-effects that can be used by an experienced musician or by someone who simply wants to learn how to play an instrument. Thanks to its specific connection with audio plug-ins and MIDI, DSP-Quattro is capable to play a real time standard Instrument plug-in through a controller MIDI and/or with a sequencer, while listening to an audio file and recording everything on a new file! Even more, you can add in real time the Effect plug-in that better suites your needs. DSP-Quattro can even be used to better the sound quality of your voice or of your instruments as with a professional multi-effect, thanks to its real time management of the input/output connections of both internal standard and external analog/digital interfaces. All of the above without any additional hardware or maximizing the use of those eventually connected to your computer.

- DSP-Quattro is a tool for software and hardware samplers:

For all those among you that have already experienced music and both hardware and software samplers, DSP-Quattro is the perfect editing tool. In fact, not only does DSP-Quattro offer a way of processing in floating point precision to satisfy even the more professional user, it offers all the graphical tools for the punctual editing of your audio files. You will be able to set loop points through a special editing window, and apply any internal or plug-in effect directly to it! DSP-Quattro is even capable of connecting to most of the modern hardware samplers through MIDI connections, or through the direct compatibility of audio files such as AIFF, SDII, and WAVE, including the loop points information. Even better, DSP-Quattro is also capable to transfer more files in one click, to manage stereo files, and even to transmit a single region of a file.

About Third Parties AudioUnit and VST Plug-in Formats

DSP-Quattro is capable to support Instruments and Effects plug-ins. Instruments can be used to play music in real time and to generate new audio files. Effects can be used as real time modifiers or as offline edit function with real time previewing. More about this will come later on this manual.

It is important to know that the format of plug-in supported by DSP-Quattro depends on the MacOS under which it runs.

MacOS 8/9: DSP-Quattro version 2.1.2 is still available and supports Instruments and Effects VST plug-ins.

MacOS X: DSP-Quattro 3 supports Instruments and Effects Audio Unit (AU) and VST 2.4 plug-ins.

VST Plug-ins must be version 2.4 compliant, built in mach-o format for MacOS X.

DSP-Quattro 3 is a Universal Binary (UB) application, it runs natively on Macs based on PowerPC (G4/G5) or Intel microprocessors as well.

What do I need to use DSP-Quattro?

DSP-Quattro works on any Apple Macintosh™ with a PowerPC or Intel microprocessors.

The minimum requirements are: a CPU PowerPC G4, 128 MBytes of RAM, and around 100 MBytes of free space on your HD.

However we recommend the use of a PowerPC G5 or a Intel Core 2 Duo based Apple Macintosh, 512 MBytes of RAM, and 100 MBytes of free space on the HD, for better performance.

Please consider also that the performances of DSP-Quattro are heavily dependent by the number of plug-ins and effects that are used at the same time.

DSP-Quattro 3 requires MacOS X 10.4.9 or later to run.

If you have older systems, DSP-Quattro 2.1.2 which runs also on MacOS 9.2 or DSP-Quattro X 10.3, is still available. Please contact the support@dsp-quattro.com to know the requirements to run it.

Macintosh standard audio interface can be used with DSP-Quattro through Apple CoreAudio, which is built-in in the MacOS X.

DSP-Quattro X fully supports CoreMIDI, which is built-in into MacOS X.

DSP-Quattro supports also AudioUnit and VST plug-ins and all the external hardware audio interface compatible with MacOS X.

What do I need to know to use DSP-Quattro?

This User's Guide assumes that you know how to operate the Macintosh and are familiar with the basic Macintosh terminology such as point, click, drag & the Finder. If you aren't familiar with these terms, you should refer to the Macintosh User's Guide to learn the basic operations of using the Macintosh. Optionally, this User's Guide assumes that you know what technologies like AudioUnit, VST, CoreAudio, CoreMIDI and MIDI are. If you are not interested to receive or transmit sounds over MIDI, or if you have not any additional audio hardware installed on your computer, you can omit to read the chapter in question.

Support:

- *Web home page:*

DSP-Quattro official home page is:

www.dsp-quattro.com

Here you can find additional information on our product, you will be able to register your copy and, by being a registered user, you will be able to use a list of additional services in the user area. Furthermore you will have access to a bunch of FAQs to help you solve your problems with DSP-Quattro.

- *E-mail:*

At any time write us by e-mail at support@dsp-quattro.com to have the answer to your technical questions or for more information regarding the use of DSP-Quattro.

Please write to info@dsp-quattro.com for any other reason.

- *Address:*

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Installing DSP-Quattro

To install DSP-Quattro you simply need to copy the archive DSP-Quattro 3.zip somewhere into your HD. It includes a DSP-Quattro 3.dmg disk image file. Decompress the zip archive, double click on the dmg file.

The Mac OS X will mount a DSP-Quattro 3 Hard Disk. Open it.



Double click on the DSP-Quattro X Installer icon, the installer will start and you will be guided to the installation of DSP-Quattro 3.

The installer will create a DSP-Quattro X folder into the Application folder of your MacOS X system disk.

Eject the DSP-Quattro 3 disk.

Go to the Application folder on your HD, look for the DSP-Quattro X folder, open it.



DSP-Quattro X Application folder

Running and Registering DSP-Quattro

Double click on DSP-Quattro X icon application to run it. Then, please refer to the DSP-Quattro Installation GUIDE which is in the DSP-Quattro 3 disk image to know how to register your full version of DSP-Quattro 3.

Folders created and used by DSP-Quattro

To run properly, DSP-Quattro creates and uses some folders on your system HD.



MacOS X/Users/.../Library/Application Support/DSP-Quattro folder

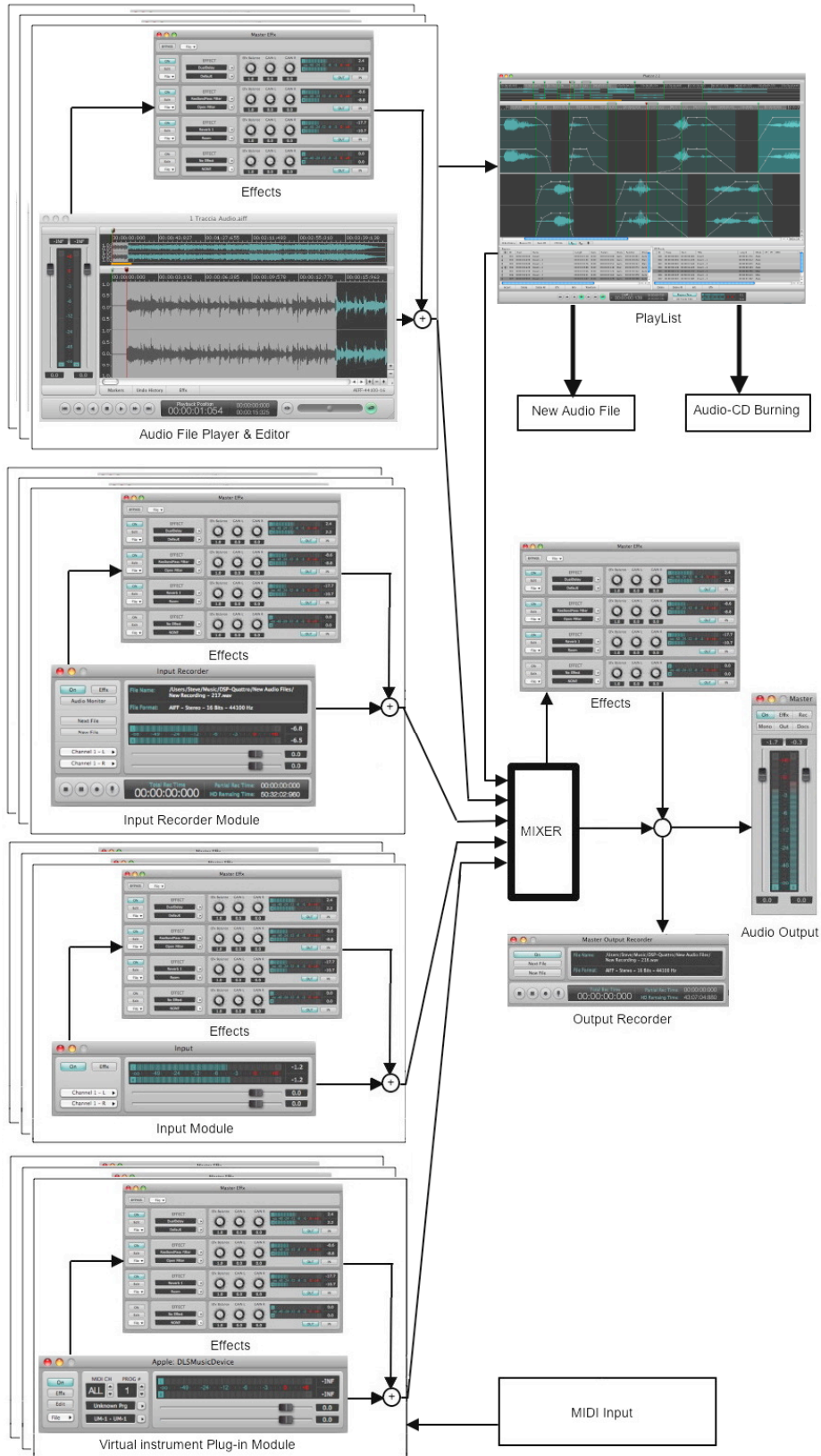
- Support Files, Temporary Files, Overview Files are the folders that DSP-Quattro uses to save all temporary support files and the graphical overviews.
- Effect Banks. which is into the same folder where there is the application, is the place where DSP-Quattro looks for the default programs for its internal effects. You can change these files with presets made by you, as long as you keep the same names.
- DSP-Quattro creates also the MacOSX/Users/.../Music/DSP-Quattro folder which, by default, will be used for new recordings.

Of course, DSP-Quattro can be then customized to allow the use of different folders by using the preference dialog window.

That's it. Enjoy DSP-Quattro!

The Basics of DSP-Quattro

To make the best of DSP-Quattro you need to understand how it works.



The Audio Generators: DSP-Quattro is based on Audio Generators or Audio Documents. By Audio Generator we mean any source of sound. Examples of Audio Generators are any kind of audio file player, audio input, and Instrument plug-ins. Moreover, in a recording studio, a recorder, a Synthesizer, a piano, a microphone and even a musician playing his instrument would all be considered Audio Generators.

In DSP-Quattro you can open or create as many Audio Generators as you want. These Audio Generators can than be played one at a time, all together or not even be played at all! A generator can be loaded or released dynamically, regardless of the other generators.

Effects and MasterOut Recorder: the sounds created by Audio Generators go into a mixer that creates a Master Out audio stream with two stereo channels. To these channels DSP-Quattro applies a series of real time effects that can be chosen among the internal effects of DSP-Quattro or can be loaded as external Effect plug-ins. The stereo channels can then be recorded as a new file thanks to a MasterOut recorder, and/or can be sent to your audio devices, such as your Macintosh audio output or, thanks to Coreaudio of MacOS X, the audio board that you may have connected to your system.

The next chapters will deal with how to use different Audio Generators, how to configure the effects chain of events, and all the other functions of DSP-Quattro.

Audio File Players & Editors: a special kind of Audio Generator is the Audio File Player/Editor. This object is not only capable of playing an audio file, but it allows you to edit the file thanks to a series of different editing functions without modifying the source file.

If you are already used a digital audio editor, the Audio File Editor of DSP-Quattro will look just like what you may have already used. Our advice however is not to stop at the use of our product as a simple audio editor, although DSP-Quattro has all the possibilities to do so. In fact, DSP-Quattro introduces a new dimension of audio editing, and the time you will spend to understand how it works will be very well worth in the end by the improvements that will come from it.

The PlayList: another very important component of DSP-Quattro is the PlayList. The PlayList is able to play a sequence of audio files or simply parts of audio files. Each of these is called 'region'. You have also the capability to set cross-fades between one region and the next to it, to avoid abrupt changes in the output audio stream, allowing smooth transitions between your audio regions. Then, you can also place markers to set your Audio-CD track starts and pauses. The PlayList output can be saved as a new file, can be used – in real time - as audio generator itself, or can be used to create an image of an Audio-CD. Moreover, DSP-Quattro is able to burn Audio-CDs by itself, if you have an internal or external CD writer device connected to your Macintosh.

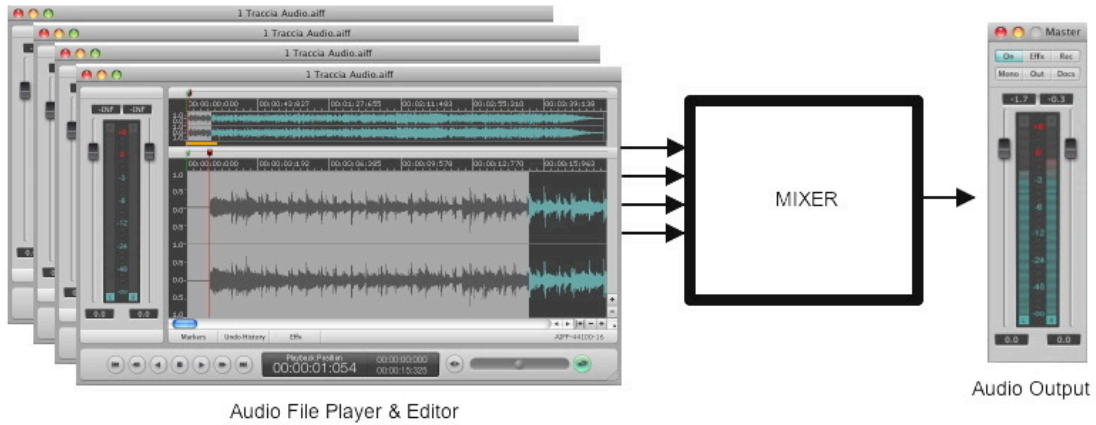
Following are basic examples of what can be done with DSP-Quattro. But the list could be so much longer...

NOTE: Everything shown in these examples is dynamic and therefore can be wholly customized by the user. Nothing stops you from adding or closing any of the elements, and to create a melting pot of the different configurations shown in the examples.

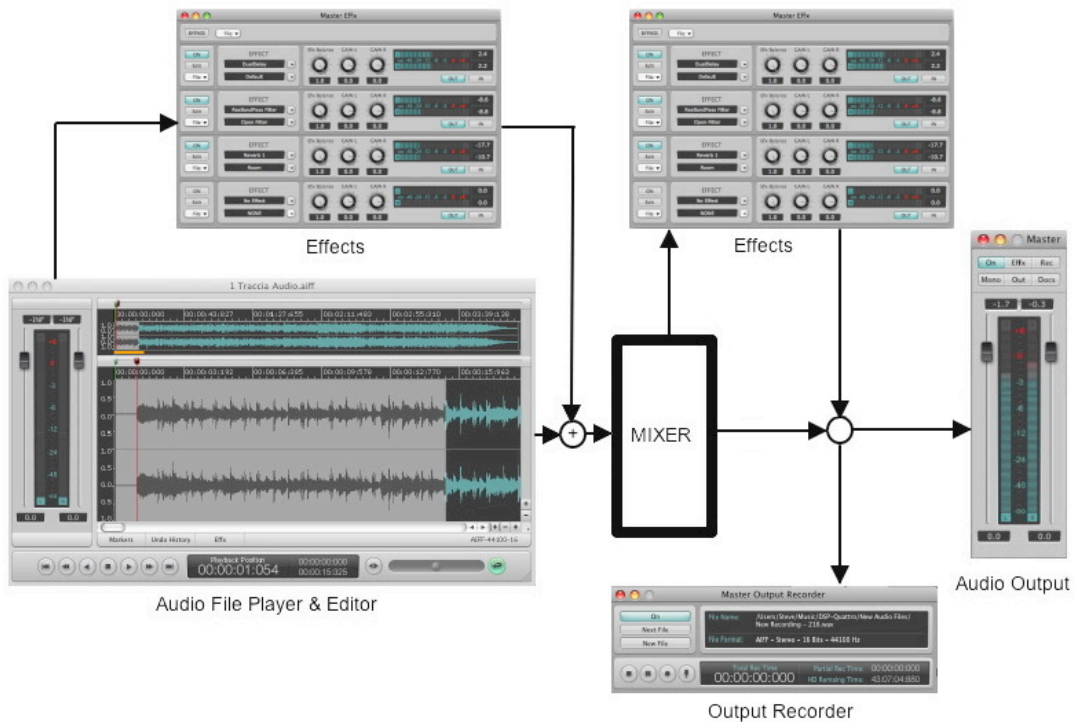
Using DSP-Quattro as Audio File Editor

You can choose to open/save AIFF, SDII or WAVE files (8, 16, 24, 32 or 32-Floats (*) bits/sample) or you can import/export from/to RAW data files and, using QuickTime's import feature, a long list of formats such as MP3 and CD audio tracks. Again you can open different clip files at the same time and pass data to one another thanks to the audio clipboard of DSP-Quattro.

(*) SDII format does not support 32 bits floats



DSP-Quattro offers a range of editing possibilities, starting with basic Cut, Copy and Paste operations, and passing to highly professional commands such as Time Stretching and Pitch Shifting algorithms, reverbs, stereo enhancers, graphical and parametrical EQs, Analog Filter Simulators, and not even ending there. In fact DSP-Quattro has been developed to accept even standard Effect plug-ins, which can act as edit function as well.



And don't forget that the editing is not destructive, because DSP-Quattro offers an infinite number of Undo/Redo chances, as well as an Undo/Redo History window to trace your way back to your previous situations in one click. Last but not least, all the editing algorithms work with the precision of 32 bits floating point arithmetic, to guarantee the best dynamic and professional results.

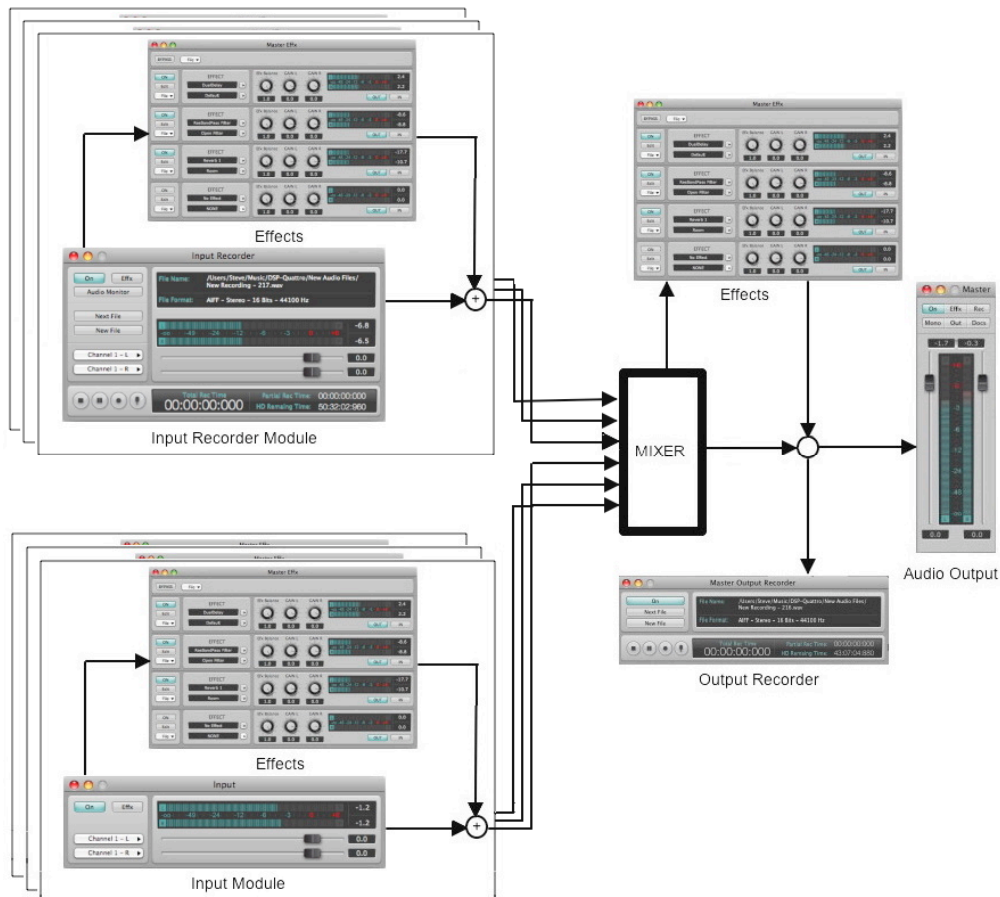
To the editing settings can be added a series of real time effects, both as insert and as global to the master out.

Each effect can be chosen among the internal effects of DSP-Quattro and/or between the Effect plug-ins installed in your system. The insert chain of effects can even be used as an off-line editing algorithm. Using a Recorder in the Master Out, any modification can be recorded in real time, such as changes in the pitch, in the effects, etc.

Furthermore you can open more files at the same time and by playing them together or consecutively will result in a new file that is the mix of the former files, processed each with its own chain of effects in insert or globally in the master out.

Using DSP-Quattro as Digital Audio Recorder

The easiest way to make a new recording is to open an Input Recorder. This object is able to create a new audio file, choose a couple of audio input (or only one input, if you prefer) and then record everything exactly as with a traditional recorder.



Each Input Recorder and Audio Input may have its own insert effect chains, to optimize and customize the incoming sounds.

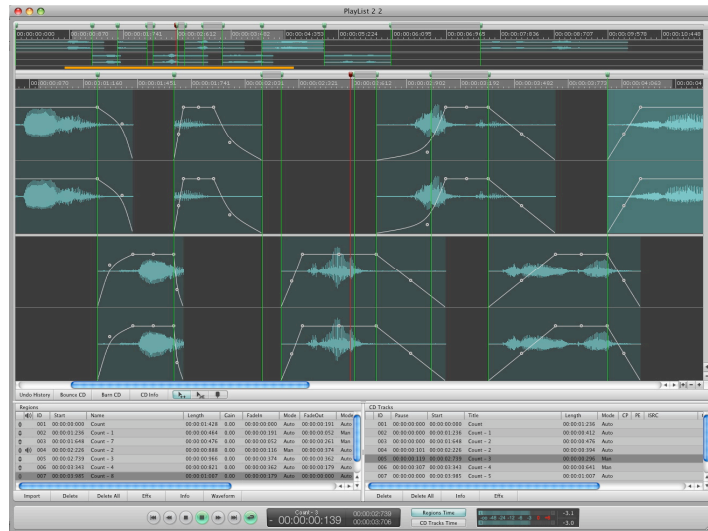
DSP-Quattro offers another possibility that can also be used together with the previous one. You can open an Output Recorder, which works almost as the Input Recorder, but it dumps to file everything that DSP-Quattro sends to the audio outputs. In this case you will be able to apply all the effects in the master out before the recording. In this way it will be possible to use a bunch of effects such as parametric and graphic EQs, stereo enhancers, etc. to have a better recording quality.

Is then possible to open other Input Recorders, and to record in different files both the input and the output. This could be very useful when you have audio interfaces with multiple audio inputs.

We bet you have already guessed that while listening one input you could play any other audio file and record everything with the Output Recorder...

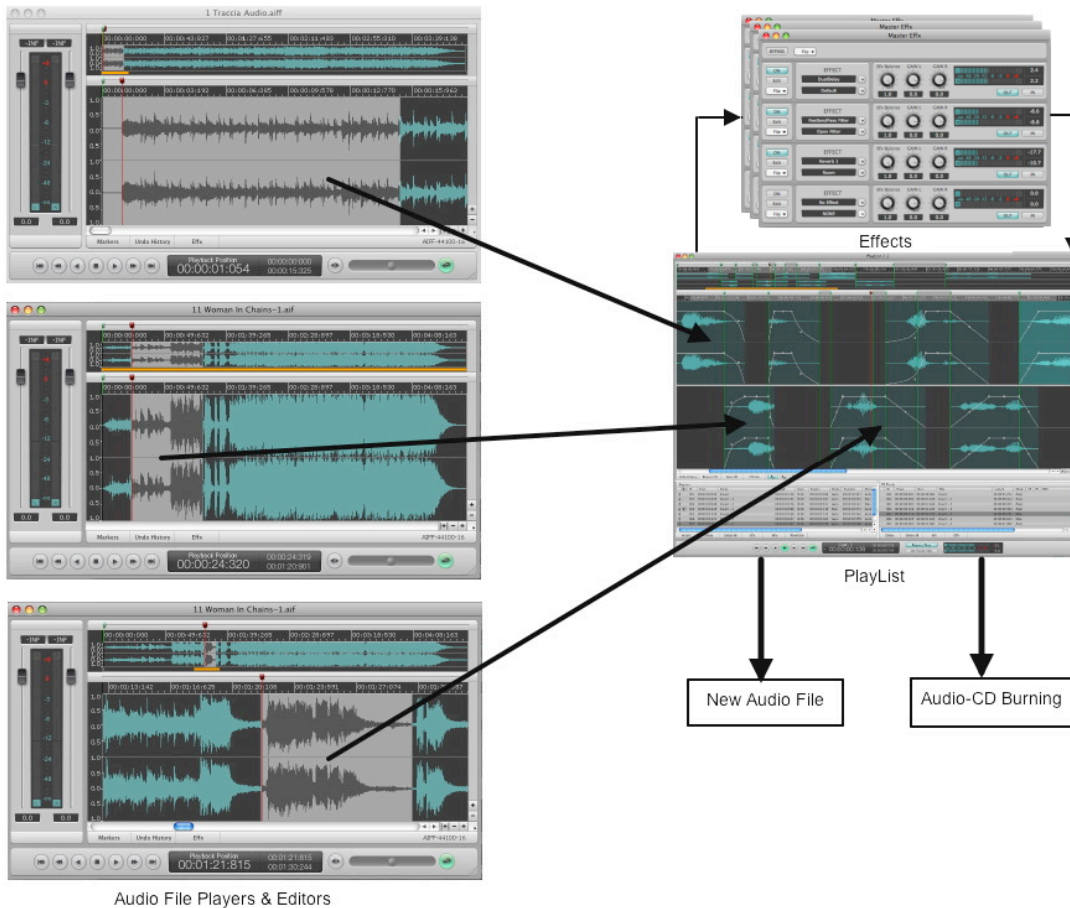
Using DSP-Quattro for Audio-CD Mastering

DSP-Quattro allows you all the operations you will need to do your new recordings, get your audio files, edit your audio materials, improve the audio quality of your product, build your PlayList, and even burn and audio-CD compliant with the Redbook standard, extended to include CD-Text, EAN/UPC CD-ROM Disc code, CD-Track ISRC and P-Q sub-codes.



Phase 1: Record your audio files or import your audio files. Use DSP-Quattro as Digital Audio Recorder, as described above, to do your new recordings, use standard AIFF, WAVE or SDII audio file formats supported by DSP-Quattro, or the several audio file formats supported by QuickTime (MP3, audio CD,...) to prepare all the files you wish to master.

Phase 2: Edit your files and improve the audio quality. Use DSP-Quattro as Audio File Editor and plug-in host to edit your audio files and to apply your favorite plug-in to clean them or to improve their dynamics, modify their audio frequencies, add reverbs and enhance the stereo image, and more.

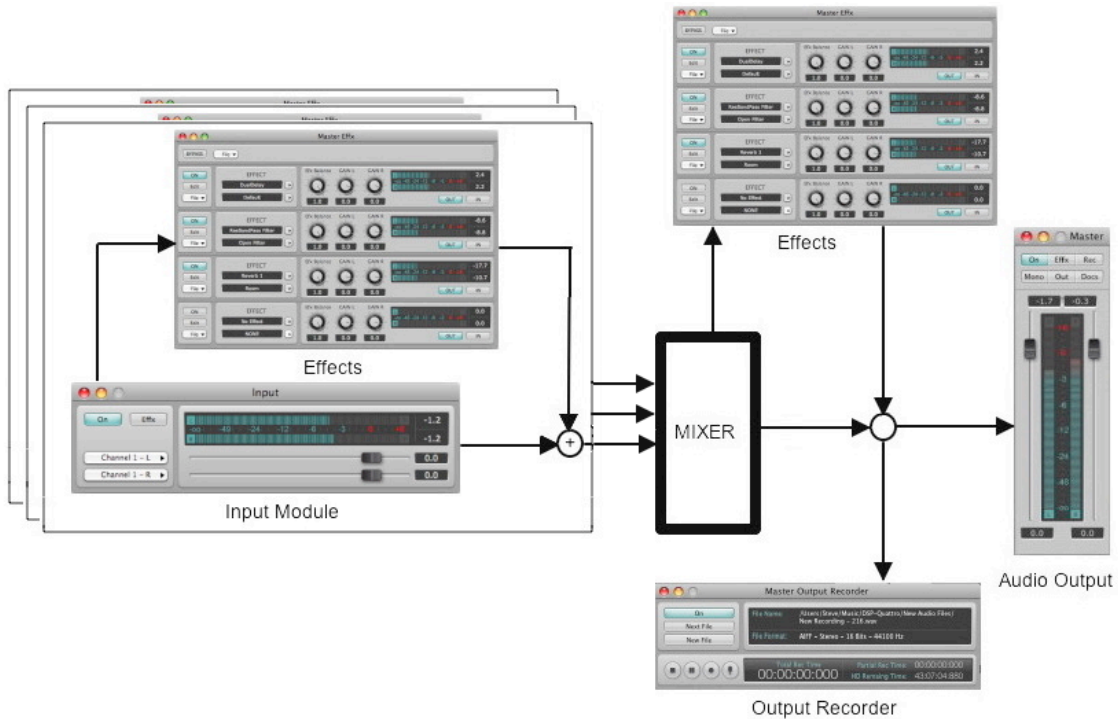


Phase 3: Build the PlayList. Use the audio files, or simply their selections/regions to build the sequence you want to burn on your audio-CD. By mouse dragging each region on the PlayList waveform editor, set the cross-fades between regions to avoid clicks and for the smoothest transitions between them. You can also use DSP-Quattro for setting realtime non-destructive serial chains of effects differently for each track, or on the PlayList output if you want to apply effects common to all the tracks. You can choose the effects among the real-time effects internal to DSP-Quattro or Effect plug-ins installed on your configuration.

Phase 4: As soon as your PlayList suites all your needs, save your work as output audio file using even the very best audio format (DSP-Quattro allows you to save even with 32 float sample bit precision), to use it when you will need to burn an audio-CD master. Moreover, DSP-Quattro allows you even to burn an audio-CD directly using your Mac, without the need of additional software. The resulting audio-CD will be compliant with the Redbook standard, to guarantee the perfect compatibility with all the audio CDROM players available on the market.

Using DSP-Quattro as Real-Time Digital Multi-Effects Unit

The chain of effects in the Master Out can be easily changed to use DSP-Quattro as a Real Time Digital Multi-Effects Unit. All you need to do is to open an Audio Input, set a couple of input, load the chosen effects in the Master Out, and choose the output.

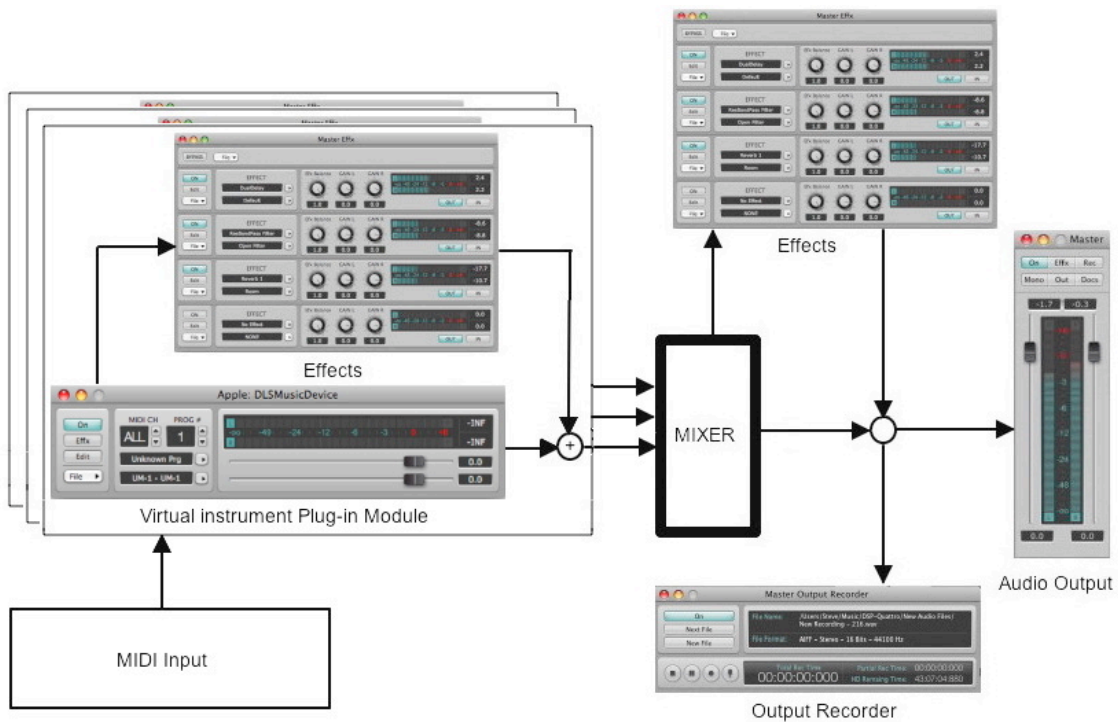


Your Macintosh, without any other hardware or software, is now become a Digital Multi-Effects Unit. And since DSP-Quattro let you choose the input and output on your audio board, this use allows you to turn the built-in real time effects or your Effect plug-ins into a professional stand alone processing units for your recording studio.

This possibility can be extended, because each Audio Input may have its own insert effect chain. It allows you to set-up a fully customizable parallel real time multi effect unit, with any limitation except the CPU power...

Using DSP-Quattro as Software Synthesizer

As with what has been said before, you can open a Instrument plug-in, set it to use it with a MIDI port and a certain MIDI channel, and play it in real time listening to it through the output. You can even process it with the chain of effects loaded in an Insert Effects chain (independent for each open Instrument) or in the Master Out Effects chain, recording everything that is played, if that's what you want of course! The virtual Instrument plug-in can be played in real time thanks to an external MIDI control, or with a sequencer. Even in this case is possible to open several different virtual Instrument plug-ins at the same time (even the same plug-in more than once), and mix the new settings with the existing ones. This allows you to record what is played while listening to an audio file, or while singing into a microphone connected to the Macintosh, or while playing instruments together with your friend...



All of the above are possible simply opening, creating or closing Audio Generators, and without worries about setting new systems or make audio connections. All is automatic. All you need to do is open a new object to use it. And when you don't need it anymore you can simply close it again.

Using DSP-Quattro Project

There is a very powerful additional tool in DSP-Quattro: the Project.

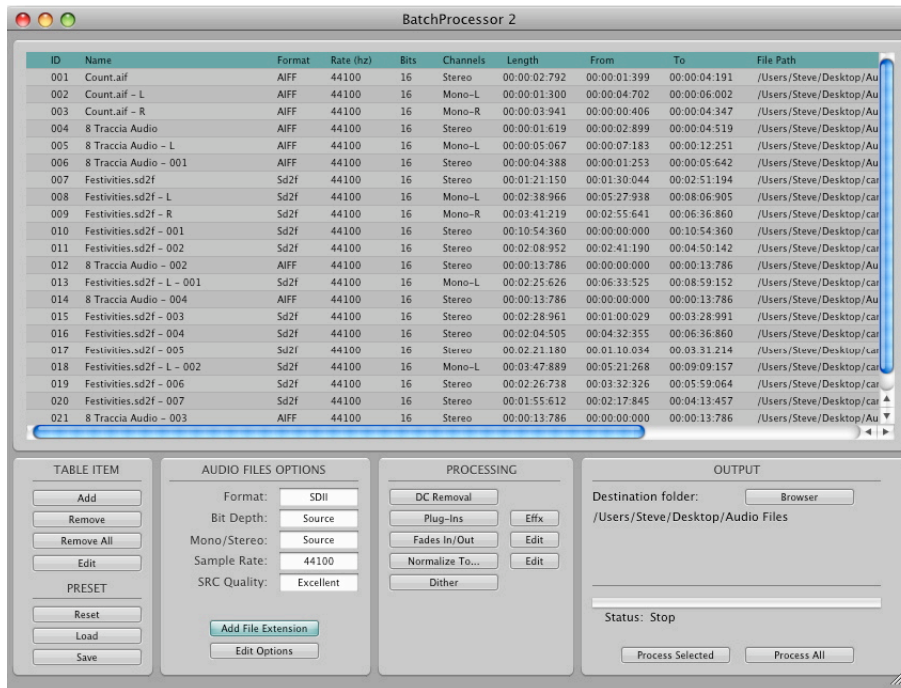
A Project is the union of all the objects you have loaded and configured in a certain instant. In other words, saving a Project, DSP-Quattro saves a snapshot of the current situation, including which Audio File is open, Instrument plug-ins and their MIDI settings, Audio Inputs, the PlayList settings, Insert and Master Effects matrix including loaded plug-ins and their current presets, windows coordinates, status, and so on. And, of course, when loading a Project, DSP-Quattro resets the configuration to the state as it was when you saved that Project.

Using the Project, you can very easily re-configure DSP-Quattro with a mouse click only.

DSP-Quattro Batch Processor

Last but not least, DSP-Quattro is capable of batch processing. A batch processor is a tool, fully integrated into DSP-Quattro, to apply the same - or same chain of - editing functions on several audio files - or simply portions of audio files - with one mouse click only. As an example, if you want to change the audio file format or sample rate to hundreds of audio files, DSP-Quattro allows you to do it with a couple of steps only, without the need of loading each audio file alone, one after the other, and process it. DSP-Quattro will do it for you! The most common functions has been included into the batch processor, like audio file format conversions, sample rate

conversion, internal effects or Effect plug-ins as edit functions, Normalization (Gain adjustment), Fade In/Out, dithering, and more.



Because the Batch Processor of DSP-Quattro fully supports the very unique DSP-Quattro feature of dragging and dropping selections of even a single channel from stereo audio file waveforms, you can use very easily the DSP-Quattro batch processor as ultra-fast exporter/slicer of your audio files. Just drag over there your audio file waveform selections, and click on 'process'. DSP-Quattro will export each audio selection into newly created audio file, having the file format which will best suite your needs.