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Integrating Your Recording Software

In addition to the VDAT plug-in, you can also use your usual recording software to record audio and MIDI tracks. Thanks to the large number of drivers and interfaces supported, SFP transforms your computer and your diverse audio and MIDI applications into an outstanding, integrated digital audio workstation. You can continue to use all the features of your favorite recording software, while enhancing individual audio and MIDI tracks with SFP's advanced mixing, DSP effects processing, and DSP sound production capabilities.

In this chapter you will begin to grasp the enormous possibilities of working within this integrated environment as we first introduce you to the fundamentals. Later we provide some concrete examples of how to integrate some of the popular recording applications - tripleDAT, Cubase VST, Sonar, and Logic Audio.

Recording Audio Tracks

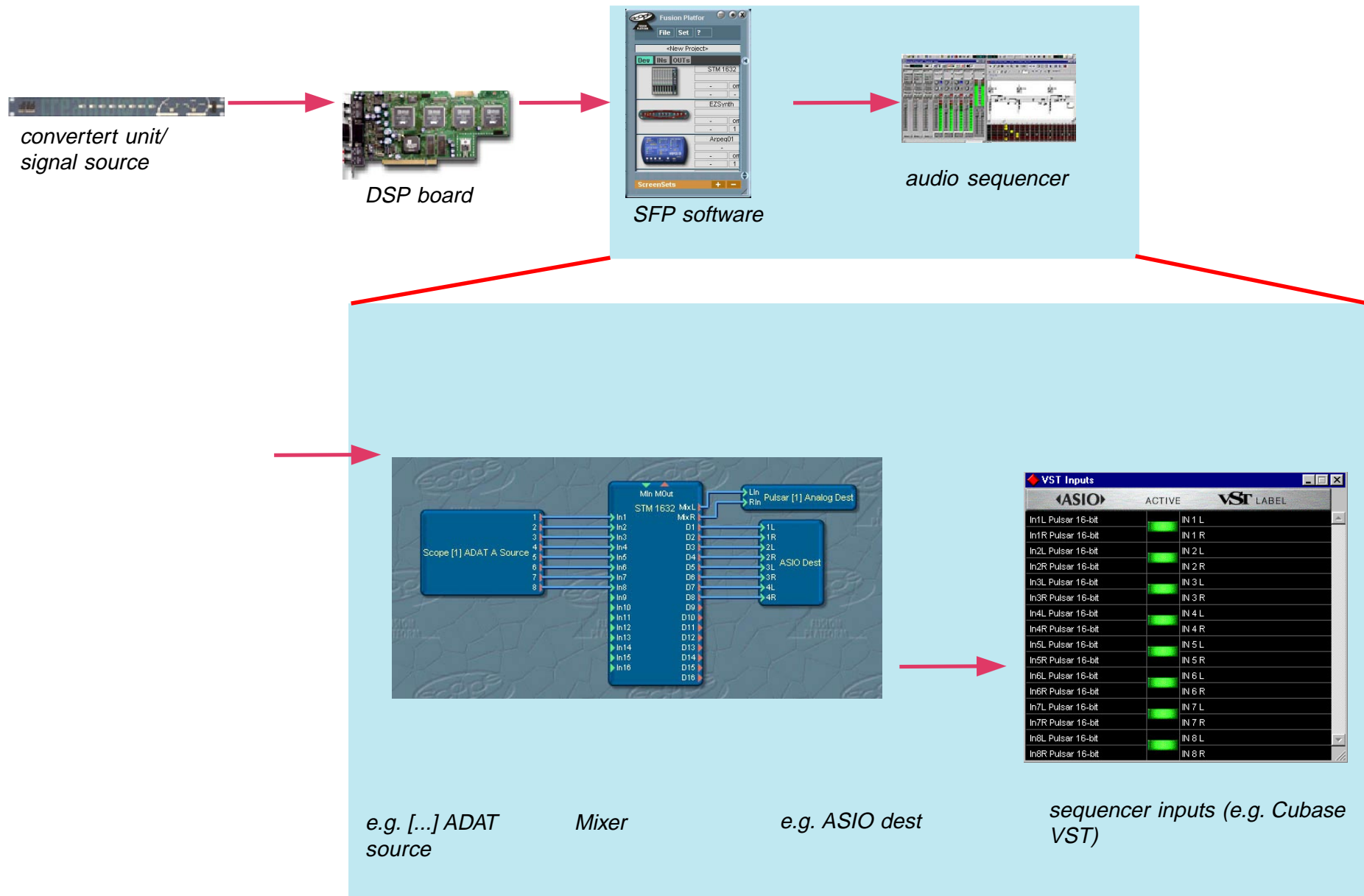
In principle, the SCOPE Fusion Platform lies 'upstream' from your audio recording software. For typical multitrack recording, the signal path is as follows:

Microphone/Sound source -> AD converter -> DSP card -> SFP software -> recording software (see illustration next page).

In this example, the signal flow in the SFP software enters via the 16-channel ADAT port and passes through to the Cubase VST recording program (ASIO) as follows:

(DSP board ADAT input ports ->) ADAT Source module -> Mixer -> ASIO dest (-> Cubase VST).

Typical signal path for recording



Configuring Mixers for Recording

We've used the STM 1632 mixer in this example. However, other mixers can be similarly configured. If necessary, consult the Modules section of this manual for a full description of the STM 1632 mixer.

In the previous example you could also simply route the **ADAT Source** signals directly through to the **ASIO dest** module in the SFP software. In this case, the DSP card serves only as an IO card. However, we have inserted the STM 1632 to preempt the input signals so we can route them over the STM 1632's direct outs. This offers the advantage that all channels can be handled directly by the STM 1632, and monitored with individual volume levels and no delay (latency) during recording.

Connecting the Mixer

Using the Live Bar or the Routing Window, connect the module representing the hardware IOs (in this example, the **SCOPE ADAT Source** module) to the mixer inputs. If desired, you can switch the mixer channels to stereo at this time. Next, connect the direct outs of the mixer (**D(L/R)1 - D(L/R)24**) to the module representing the software interface to your recording application (**ASIO dest, multiple Wave dest, tripleDAT dest**, - in this example, the **ASIO dest** module adjusted to 16 channels). Finally, connect the mix outputs (**OutL + R**) to your monitoring system (e.g. **[hardware] analog dest**) and the AUX sends (**Aux1 - Aux4**) you use for monitoring to a hardware output connected to your monitor or headphone amp.

Remember that you can make sequential connections between modules easily using the 'N' key. See the section 'Connecting Modules'.

Mixer Settings

Open the mixer's control surface. If the input signals are already optimal, you can leave the channel faders at their default positions. Or, you can process the signals (gain, effects etc.) before passing them on to your recording software if desired.

Using the AUX faders, adjust the monitor levels the musicians hear during recording.

You may need to hear previously recorded tracks when recording, as when laying down vocal tracks. In this case bring in the recorded tracks through additional mixer channels (as described later in the section *Track Playback*) and balance them with the others in the monitor output.

Other Recording Setups

One of the outstanding characteristics of the SCOPE Fusion Platform is the enormous flexibility you have to route signals. The following is an example of one of many possible alternative routings you could use for multi-track recording.

In the SCOPE Fusion Platform, a module output can be connected to several inputs of other modules. It's possible, then, to connect the hardware inputs (e.g. **ADAT Source**) to the software interface of your recording application (e.g. **ASIO dest**, **tripleDAT dest**, **Wave dest**, etc.) so the signals pass directly into the recording application. At the same time, you could route the hardware input signals into the mixer inputs. Now you can monitor both the input signals and the tracks through the mixer during recording.

Recording MIDI Tracks

MIDI communication between the SCOPE Fusion Platform and a MIDI sequencer takes place over a software interface represented by the **Midi Sequencer Source/Dest** modules.

MIDI data sent from the SCOPE Fusion Platform through the input of the **Midi Sequencer Dest** module arrives in the sequencer at the respective MIDI inputs designated **CreamWare Midi In 1-8**.

Likewise, MIDI data sent from the sequencer through **CreamWare Midi Out 1-8** enters the SCOPE Fusion Platform at the output of the **MIDI Sequencer Source** module.

The number of MIDI ports available in each direction is as indicated by the operating system (default = 2). To register more MIDI I/Os, first add additional MIDI Sequencer Source Dest modules, and then restart the computer.

To route MIDI data from an attached keyboard to the sequencer you need to load a **[hardware] Midi Source** module, representing one of the SCOPE Fusion Platform's physical MIDI inputs, and connect it to a **Midi Sequencer Dest** module.

The **[hardware] Midi Source** module is loaded and connected to the Midi Sequencer dest module as part of the default project that loads when the Live Bar starts.

Now, assuming the recorded MIDI track is to be played back to a MIDI synthesizer, and you also want to hear the synthesizer while recording the track, you can proceed two ways:

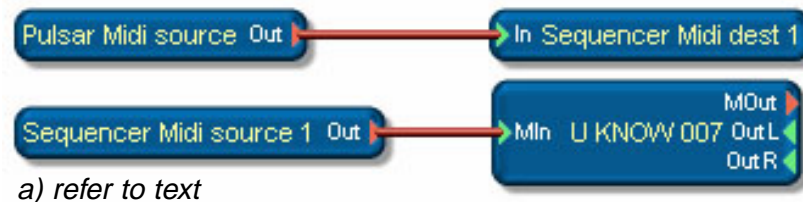
a) Connect the **[hardware] Midi Source** module to the **Sequencer Midi dest** module, and the Sequencer Midi source to the synthesizer input.

This connection is part of the default project.

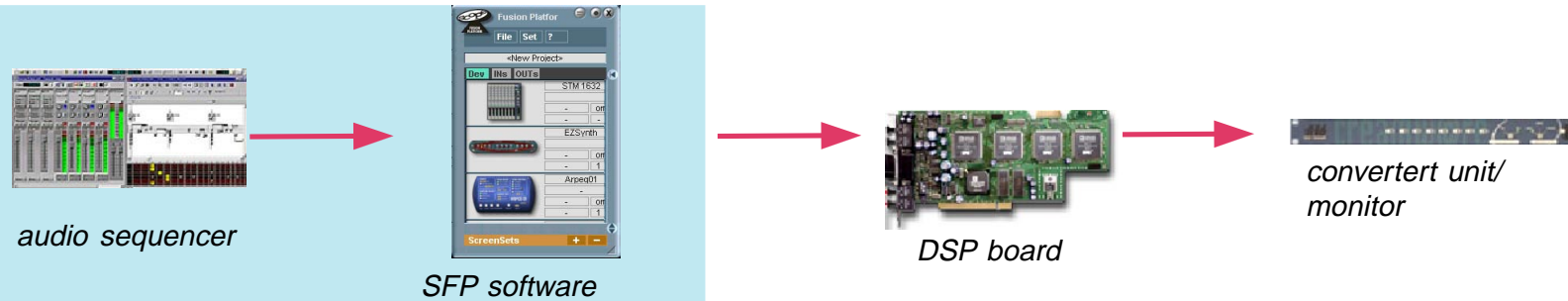
In your sequencer program, adjust the MIDI settings so that the incoming MIDI data is passed through to the **[hardware] MIDI Out** (set MIDI echo 'on' globally, or per channel - see your sequencer's manual or online help) whereby the signal arrives back in the SFP environment.

b) Connect the **[hardware] Midi Source** to the **Sequencer Midi dest**, and also to the synthesizer's MIDI input. Now when you play the keyboard, the MIDI data are sent simultaneously to the sequencer and the synthesizer. If you now want to hear the sequencer track play back, you must connect the **Sequencer Midi source** to the synthesizer input. Because you cannot

directly connect two outputs to a single input, you must use the **Midi Merger** module to combine the **[hardware] Midi Source** and **Sequencer Midi source** signals. In this scenario, disable MIDI echo in the sequencer to avoid doubling the signal, which could lead to notes misfiring, delays, or stuck notes.



Typical signal path for playback



sequencer outputs (e.g. Cubase VST)



e.g. Asio source

Mixer e.g. Pulsar analog dest

Track Playback

When you play one or more audio tracks back over the SFP virtual outputs in your recording software, the signals appear in the SFP driver modules (***Asio source***, ***Wave source***, etc.). From there they can be led to a mixer, or directly to hardware outputs.

Likewise, MIDI tracks playing back from a sequencer appear in the ***Sequencer Midi source*** module, from where the signal can be routed to virtual synthesizers, or hardware synthesizers connected to an SFP MIDI out jack (through a [***hardware***] ***MIDI dest*** module).

A Few Notes

Load an SFPproject with the necessary drivers (modules) before starting your sequencer or audio application. If you don't, the application won't find any drivers, and will generate an error message.

The sample rate in your project must be identical to the rate used in the audio recording program.

To avoid having to switch back and forth between SFP and your sequencer in SFP's Desktop Graphics mode, include the ***Sequencer remote*** module in your project to give you control over the sequencer's most important functions.

Configuring external Recording Software

tripleDAT (PC under Win9X only)

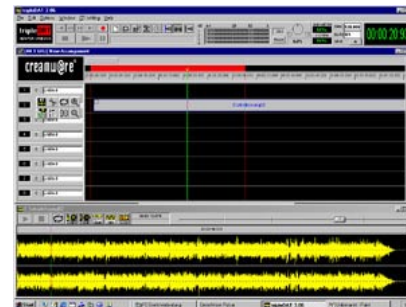
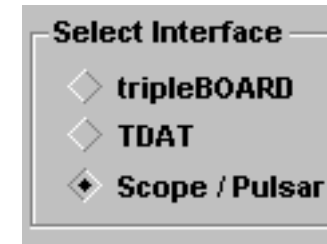
Make sure the sample rate selected in the SCOPE Fusion Platform (in **Samplerate Settings**) is the same as in your tripleDAT arrangement.

As with other audio programs that use the SCOPE Fusion Platform ASIO or MME drivers, the use of tripleDAT requires loading appropriate modules into the SFP project. These modules represent the logical inputs and outputs of the tripleDAT program.

These modules are called **tripleDAT Source** and **tripleDAT Dest** and are found in the directory `..\Devices\Software IOs`.

Add these two modules to your SFP project, and then start tripleDAT.

In tripleDAT, open the **Audio Settings** dialog. Under **Select Interface**, select the option **Scope/Pulsar**.

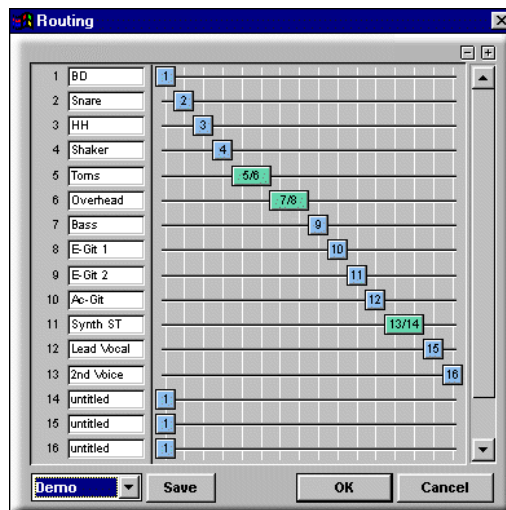


Assigning output channels for playback

tripleDAT provides sixteen virtual outputs. There are various possibilities for assigning Arranger tracks to these outputs, including the ability to assign multiple tracks to a single output. There are three ways to assign tracks to outputs:

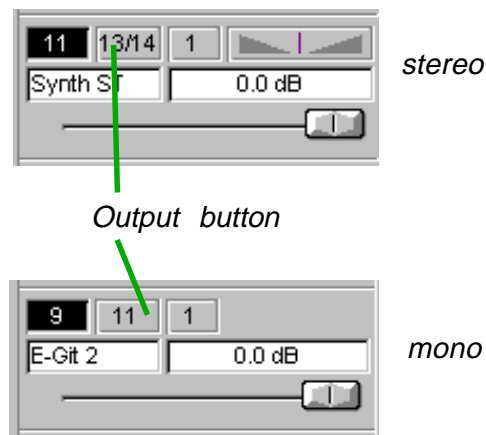
a) Routing Setup dialog:

In this dialog (found in the Options menu), set the slider for each Arranger track to the desired output. You can toggle a track between mono and stereo by double-clicking on its slider.



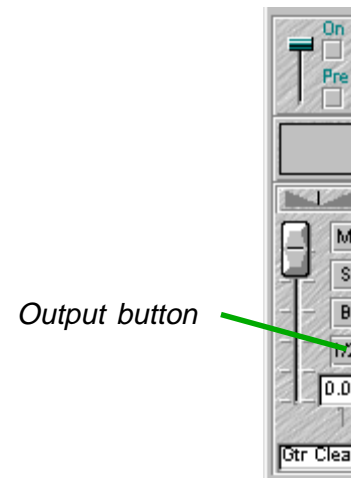
b) Arranger track menu:

Right-click on the **Output** button of any Arranger track to open a menu in which you can select the desired output for the track. If the track is set up as a mono track, you can select outputs *Scope 1 – Scope 16*. If the track is a stereo track, you can select from among output pairs *Scope 1/2 – Scope 15/16*.



c) Track Mixer:

The output assignment for any track can be incremented by clicking on the output assignment button of the mixer channel strip for the desired track. (The mono/stereo setting for a track is made in the Arranger track menu.)



Arranger tracks are played back through the outputs specified by the above settings. In the SCOPE Fusion Platform these output signals appear on the correspondingly-numbered outputs of the **tripleDAT Source** module.

Connect the outputs of this module in the usual way to an SFP mixer or to a physical output module (e.g. **[hardware] ADAT Dest**).

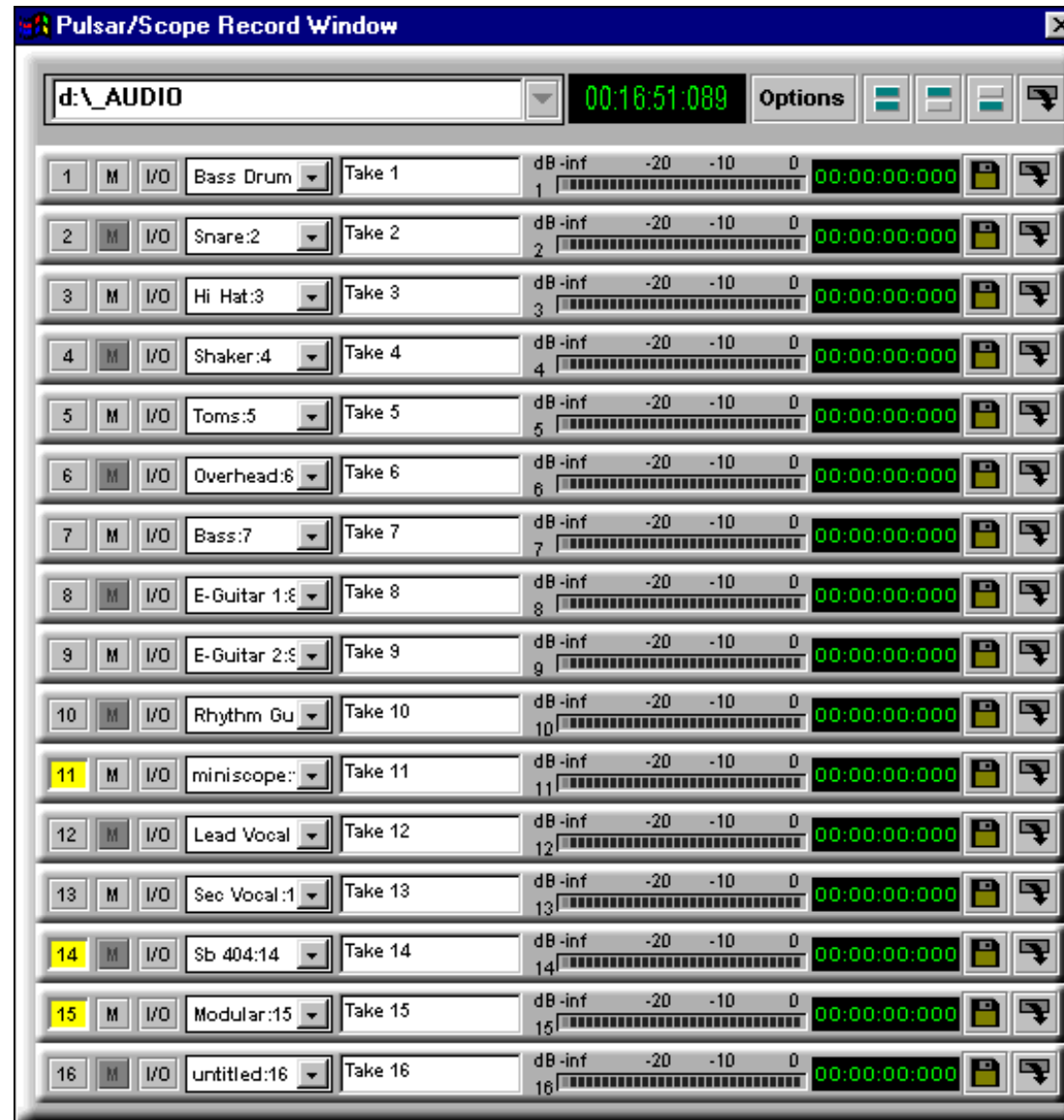
Recording

tripleDAT inputs appear in the SCOPE Fusion Platform as inputs on the *tripleDAT Dest* module. Make connections in the SCOPE Fusion Platform as appropriate so that signals are delivered to these inputs as desired (e.g., from *[hardware] ADAT Source* to *tripleDAT Dest*).

To record using the DSP hardware, open the tripleDAT Record dialog by clicking the **Record** button.

Here you can, among other things, enable any of the sixteen input channels for recording, and assign them to Arranger tracks.

For a detailed description of this dialog and its options, please refer to the tripleDAT Manual or the built-in Help system.



tripleDAT Remote

Open this dialog by double-clicking on the **tripleDAT Source** module, or open it through the module's context (right-click) menu.

With this dialog you can remotely actuate the transport functions **Play** and **Stop** from within the SCOPE Fusion Platform. It also permits you to set **locator points** with which you can define multiple start points in tripleDAT. By clicking the **Set Locate** button (so that it turns yellow) and then on one of the numbered buttons next to it, you set the corresponding locator point to the current position of the tripleDAT locator. Once values have been assigned, you can click the numbered buttons to set tripleDAT's locator directly to the defined starting positions without the need for switching from the SFP environment to the tripleDAT program.



Synchronization

tripleDAT as MTC Master

All settings for synchronizing tripleDAT to another audio device (such as an ADAT or another sequencer) are adjusted in the SCOPE Fusion Platform. The tripleDAT Synchronization dialog (that you may have used with tripleBOARD) is not accessible.

Sequencer programs can be synchronized to tripleDAT using MIDI Time Code (MTC). To do this, connect the MIDI output of the **tripleDAT Source** module to the **Sequencer Midi dest** module to route the tripleDAT MTC output to the sequencer.

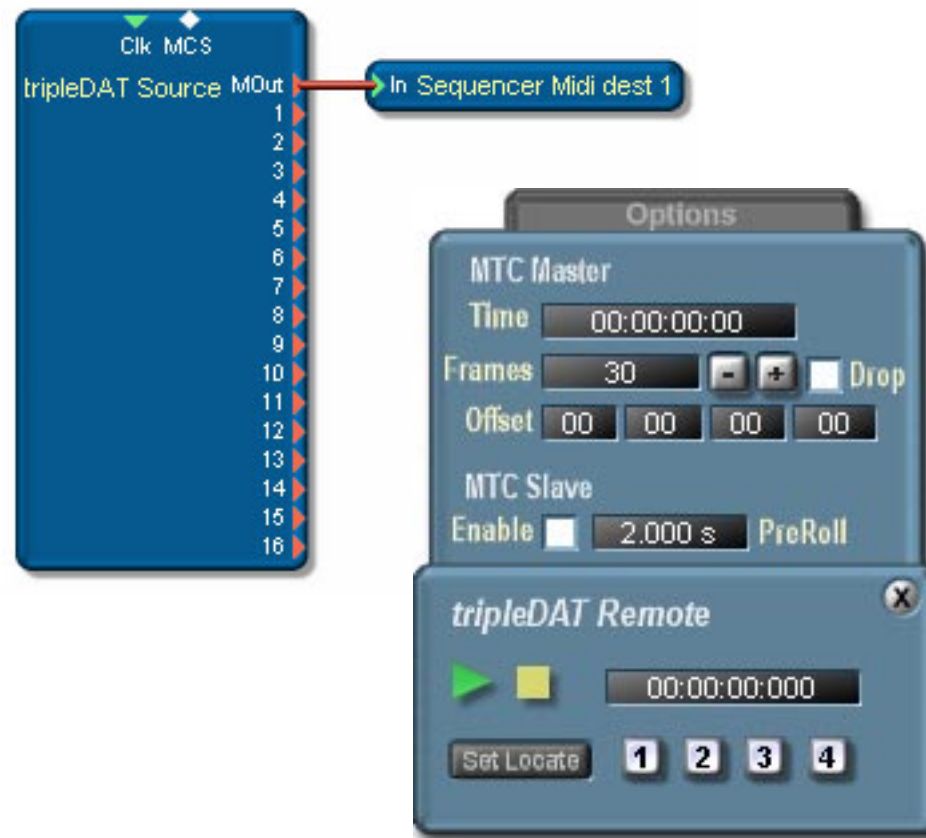
Open the Options drawer by clicking the **Options** tab.

Select the desired frame rate from the available options (24, 25, 29.97 and 30 fps, the latter two optionally in drop-frame format). Set your sequencer to synchronize as a slave to MTC from CreamWare MIDI In at the selected format (i.e. frame rate). Refer to the documentation for your sequencer program if necessary.

Now, when you start tripleDAT, the sequencer will automatically synchronize itself and follow along.

If necessary you can also specify an offset (hours:minutes:seconds:frames) in the corresponding field of the tripleDAT Remote dialog.

(Format: hours:minutes:seconds:frames)



tripleDAT as MTC Slave

tripleDAT can be synchronized to an MTC source such as a sequencer program using MIDI Time Code (MTC).

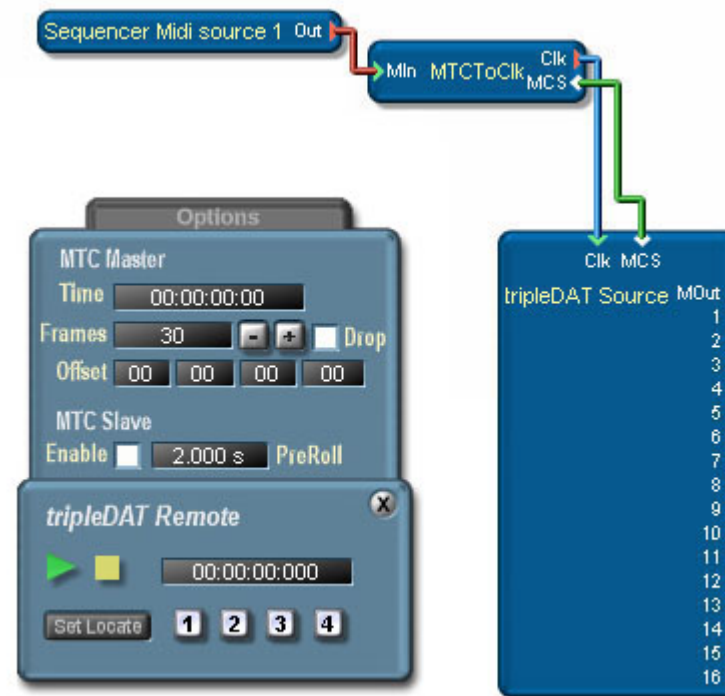
Add the **MTCToClk** module to your SFP project and connect its MCS (Motion Control Signal) and Clk (Clock) pads to the corresponding pads on the **tripleDAT Source** module.

Once this pad is connected, the **Slave** checkbox activates automatically. The **tripleDAT Remote** module recognizes automatically that timecode will be applied and that tripleDAT is to be set up as a timecode slave. Likewise, the frame rate of the MTC master is adopted automatically.

Connect the MTC source (e.g **Sequencer MIDI source** or **[hardware] Midi source**) to the MIDI input of the **MTCToClk** module to route the MTC output to tripleDAT.

When the sequencer starts, tripleDAT synchronizes to it and starts after the specified PreRoll time. A certain amount of pre-load time is required by tripleDAT in order to play back the samples. You may need to make some adjustments

here according to the number of samples which are to be played back simultaneously on your system.



Synchronization to an ADAT

Sample-accurate synchronization of tripleDAT to an ADAT is possible with the optional Sync Plate, represented in the SFP software by the **Syncplate Source** module.

Add this module to your project and connect its MCS (Motion Control Signal) and Clk (Clock) pads to the corresponding pads on the **tripleDAT Source** module.

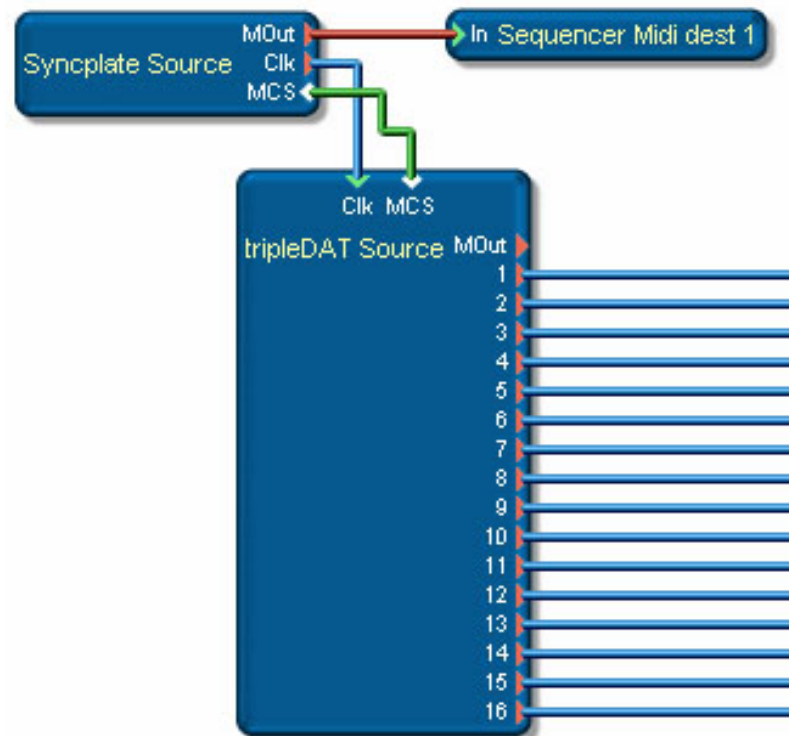
Once again, the tripleDAT Remote **Slave** checkbox is automatically activated. When synchronizing to an ADAT-type device via the 9-pin connector, no frame rate setting is necessary. Instead, tripleDAT uses the absolute position information provided via the interface, and the interface's clock signal for sample-accurate synchronization, resulting in sync much more accurate than is possible with MTC alone.

When the ADAT starts, tripleDAT synchronizes to the ADAT after the specified PreRoll time.

To synchronize an additional sequencer program to the same ADAT, connect the

MIDI output of the **Syncplate Source** module to the **Sequencer Midi Dest** module and configure the sequencer accordingly.

In this case, you must directly set the frame rate which the module is to generate from the incoming ADAT signal and pass along to the sequencer.



Cubase VST (PC version)

To ensure the flawless operation of Steinberg's Cubase VST in the SCOPE Fusion Platform environment, note the following points:

Mac users: See the notes about the Mac version later in this section and perform the steps described there to establish communication before proceeding.

a) Use the same sampling frequency in each application.

Always check to ensure that the sampling frequency in the Cubase arrangement is the same as adjusted in the current SFP project. The SCOPE Fusion Platform defaults to a sample rate of 44.1kHz.

b) Make sure an ASIO driver is available.

The SCOPE Fusion Platform offers several audio interfaces to the Cubase VST program in the form of ASIO modules. You must absolutely make sure that appropriate ASIO source and dest modules, configured to the desired number of channels, are loaded into the project *before* you start Cubase VST.

Otherwise, the following error message appears:



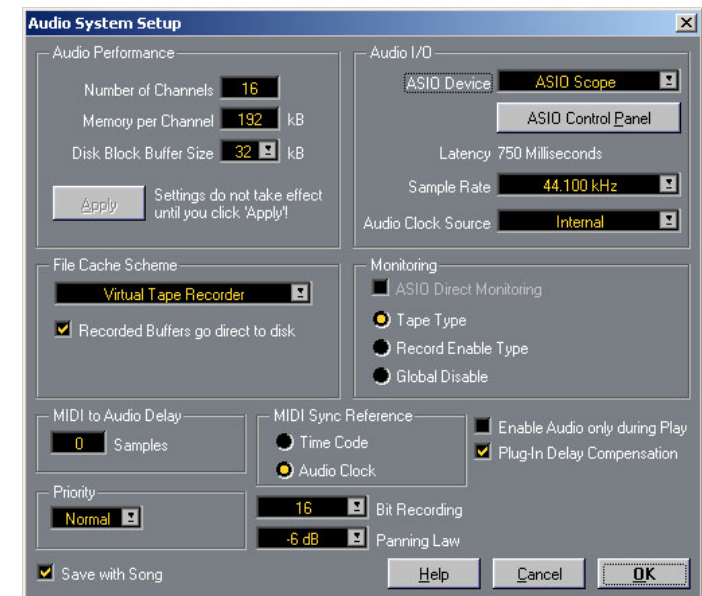
When you close your SFP/VST session, shutdown Cubase VST first, and then the SFP software. Otherwise additional error messages will appear.

As an alternative to the use of the ASIO driver included in the standard project, you can use various other ASIO drivers. Details on these drivers are found in the Hardware I/O and Driver Modules section .

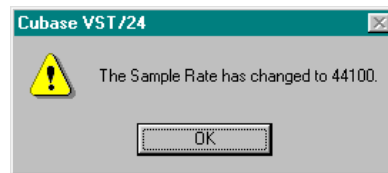
c) Select the ASIO drivers in Cubase.

To use the driver modules loaded into the SCOPE Fusion Platform project in Cubase, open the Cubase Audio system set-up panel by selecting **System**, in the **Options->Audio settings** menu.

The following dialog appears:

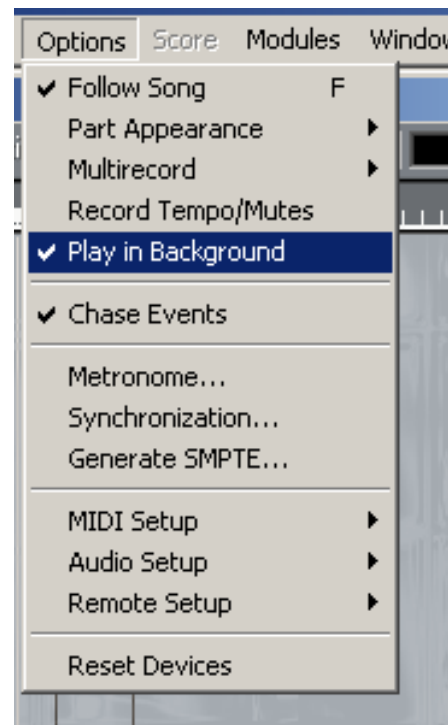


Select **ASIO Scope** as the ASIO device. Below you will see fields for **Sample Rate** and **Audio Clock Source**. You cannot change these values directly; Cubase automatically configures them for optimal sync using the SFP settings. However, you can change the settings in SFP at any time, in which case a message such as the following appears (in this case, the message simply asks you to confirm a change from 48kHz to 44.1kHz):



d) Enable background playback

To guarantee that you will always hear audio and MIDI playback when using Cubase and the SCOPE Fusion Platform select **Play in Background** in the **Options** menu. If this is not selected, playback will stop whenever you switch to the SFP software to make a change or adjustment because Cubase would then be running in the background.

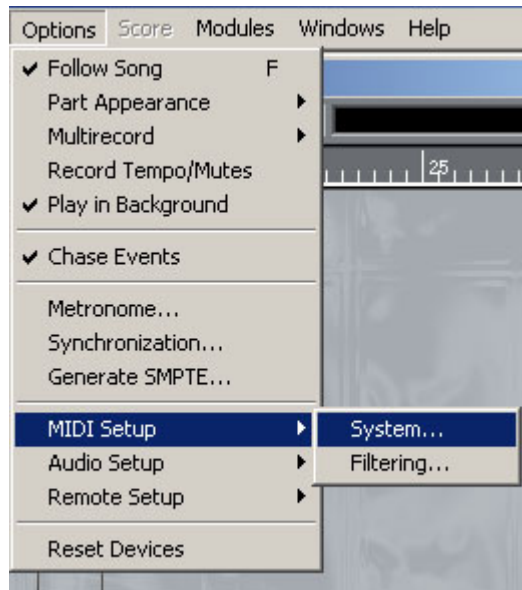


e) Enable the MIDI driver

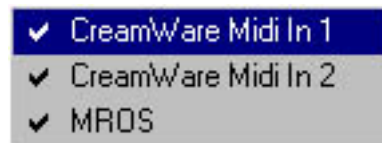
By default, the standard project contains the **Sequencer MIDI Source** and **Dest** modules. Each loaded module represents one of several possible MIDI interfaces.

You can load these modules several times in order to have more MIDI ports available in the sequencer. Each module transmits or receives its own 16 MIDI channels.

To configure MIDI support in Cubase, open the MIDI System settings dialog. Select **System...** in the **Options->MIDI Setup** menu:



In the **Enable MIDI Ins...** list check the **CreamWare Midi InX** entries.

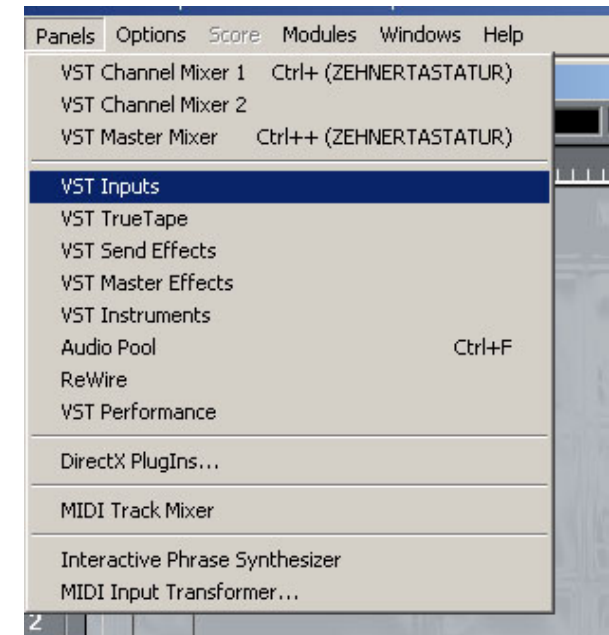


In order for the MIDI data arriving at a physical MIDI input on a DSP card to be available for use in both programs, connect the **[hardware] Midi source** module to the **Sequencer Midi dest** module and also (in parallel) to synth and sampler modules. Previously recorded MIDI tracks played back by VST appear in the SFP environment through the **Sequencer MIDI source** module, and are then routed to SFP devices or to the **[hardware] Midi dest** module to control external devices as desired. If a device's MIDI input is already occupied, use the **MIDI Merger** module to combine the two input signals.

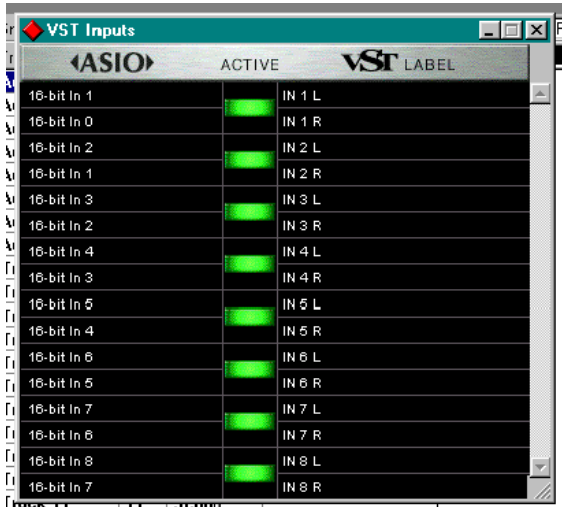
You should also disable the MIDI Through option in Cubase (**Options->MIDI Setup->System...**).

f) Enable some Cubase inputs.

The next thing to do is to enable the Cubase inputs for input. Do this in the **VST Inputs** window (**Options->VST Inputs**).



The **VST Inputs** window appears. This window shows a number of stereo inputs, the number of which varies depending on the number of channels configured for the **ASIO dest** module. Enable them all.



The input channels listed on the left side represent the **ASIO dest** module channels. On the right, next to the Enable buttons, you can see which Cubase channels the respective SFP channels are routed to.

g) Assign the Cubase tracks

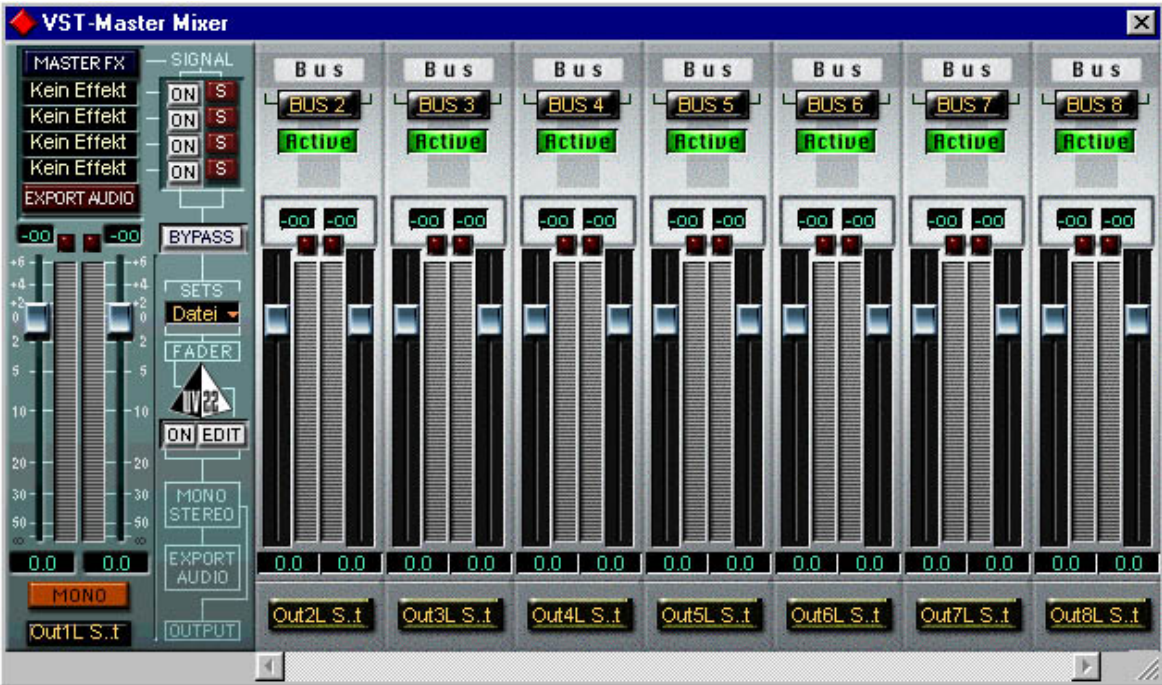
To avoid having to jump back and forth among a number of Cubase windows, all settings for each window are described together here, even though this is not necessarily the order in which you would access them in the normal course of work.

Master Settings

To open the **Master** window, select **VST Master Mixer** from the **Options** menu:

You can route two channels from Cubase to SCOPE Fusion Platform using the master outs.

To send more than two channels to the SCOPE Fusion Platform you must use Cubase buses. The buses are implemented in stereo, so you need one



bus for every two additional channels. The number of available buses depends on the number of channels configured in the **ASIO Source** module. Enable as many buses as you need by clicking the **Enable** buttons. For example, to use 8 stereo or 16 mono channels you will need to enable 7 additional buses.

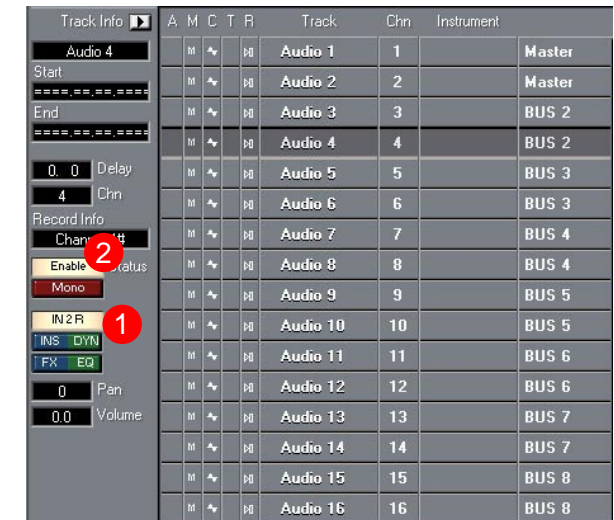
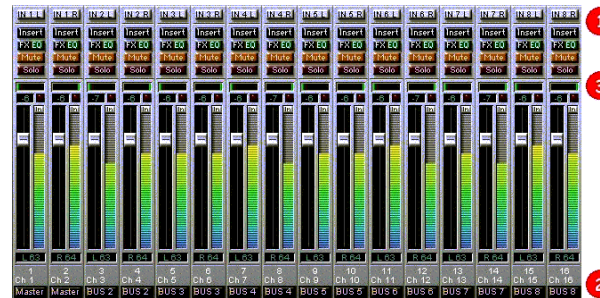
In the Cubase Master mixer, configure the routing for the master and bus outputs.

In the illustration, the Master has been assigned to “Out1L Scope 16-bit “ (the display cannot show the full label). Similarly, buses 2 - 8 have been assigned to outputs “Out2L Scope 16-bit “ through “Out8L Scope 16-bit“ respectively.

The master channels and all buses have now been assigned to appropriate channel pairs in the **ASIO Source** module.

Channel Mixer Settings

Open the VST Channel Mixer 1 (from the **Options** menu):



First assign the inputs (the **ASIO dest** channels) to the audio channels (1). For each channel, select the input you wish to record from (CTRL + left-click).

In this example we will record 16 mono signals to 16 audio tracks in Cubase with the inputs routed in sequence to the 16 channels. Assigning the channels to Cubase tracks takes place later.

Next, route the channels to the Cubase outputs (2).

We want to assign the 16 Cubase tracks to the **ASIO source** module, so we select the Master out for channels 1 and 2, and buses 2 - 8 for the remaining channels. If the buses do not appear in the menu, you have probably not enabled them in the Master window (see “Master Settings”).

Finally adjust the pan settings (3). Be aware that a channel receives the full signal level only if its pan control is set full left or full right. Because the Master and the buses are stereo channels, for a mono signal you must pan to the left to assign the full signal to the left master or bus channel only.

In our example, all odd channels are panned to the left, and even channels to the right.

h) Enable Multi Record

Select **Options->Multi Record->Active** to enable recording on several tracks simultaneously. In the arrangement window a new column labeled **R** (Record) appears. Here you can select which tracks to record on.

i) Arrangement Settings

For each audio track, assign the desired playback and record channel. If you select a single track, its channel settings are displayed in the Track Info column.

In the example, we've assigned the 16 channels one-for-one to the 16 audio tracks. Because the 4th track is highlighted its settings are displayed — for example, the assignment to input “IN 2 R” (1). As this channel is connected to the 4th channel of the **ASIO dest** module, this channel will be recorded to Cubase track 4.

To record on another track, select the track in the “R” column, or click on the “Enable” (2) field of this track. In the example we've enabled all tracks.

Because 16 tracks are enabled, all 16 channels can be recorded simultaneously.

You'll find more extensive and detailed information in the VST user manual. Familiarize yourself with the step-by-step operation of both programs before contacting Creamware or Steinberg Customer Support for help. With a little time and patience, you'll soon know your way around the programs.

Have fun sequencing with SFP and VST!

A Few Useful Tips for Mac Cubase VST Users

In the Mac OS the SFP MIDI driver is integrated with the OMS (Open Music System). Therefore, before starting VST for the first time after installing the SFP software it is necessary to run the **OMS Setup**. For use with Cubase, proceed as follows:

OMS Setup

The **OMS** basic installation program is located in the **OMS** sub-directory of the **Additional files** directory on the Cubase CD. Run the program to perform a normal installation during which the required files are copied to **Start Volume:Opcode**. Restart the computer.

After restarting the computer you will find a directory named **OMS** in the **System** directory. Into this directory copy the file **CreamWare OMS Driver** from the **drive:Sfp:Driver** directory. (Select the file and drag it while pressing the ALT key).

Next, start the SFP application (if it is not already running) to load the required MIDI modules. Change to the **Start Volume:Opcode** directory and run the **OMS Setup** program found under **OMS Applications**.

If **AppleTalk** is running, you will be asked if it should remain enabled or if should be switched off.

AppleTalk may cause MIDI timing problems if enabled.

The AppleTalk **Options** dialog gives you the following choices:

- Always leave it on, without asking
- Turn it back on when done with MIDI

If a Greeting/Info dialog appears, click **continue**. Otherwise, call the **File -> Create a New Studio Setup** dialog. Exit by clicking **OK**.

This is followed by the **OMS Driver search** dialog. Here you select the **default Interface** (e.g. modem and printer with a G4).

Click on the **Search** button. After a short pause during which the system is inspected, the **SFP** logo appears. Click **OK** to confirm.

The next dialog shows the completed **Studio Setup**. Again, confirm with **OK**. You are now asked to save this configuration (normally **My Studio Setup** or something similar). After clicking on **Save** the **Studio Setup** is displayed in miniature in the dialog.

Finally select **save and make current** from the **File** menu to save and enable the Setup. You can now end the OMS Setup procedure by selecting **Quit** from the **File** menu. When you are asked to confirm (save) the changes, click on **save**.

Now any application that uses OMS will recognize the MIDI inputs and outputs.

In the OMS Setup you must also configure the MIDI interface for background operation (Standard).

Make the ASIO Driver Available to Cubase

In the Cubase folder you will find a subdirectory named **ASIO Drivers**. Into this directory copy the ASIO driver, named **ASIO CreamWare**, from the Mac driver directory (drag it to **CubaseDirectory:-ASIO Drivers** while holding the ALT key).

In your Mac this directory will be **Drive:Sfp:Driver** and the file is named **CreamWare ASIO**.

Logic Audio (PC version)

Emagic's Logic Audio also supports multiple Wave drivers (16/24 bit), and the Interleaved driver, any of which can be used as an alternative to the ASIO driver described here. References to these drivers are found at the end of this section.

Mac users should refer to the notes about the Mac version in Connections and perform the steps described there.

In general, proceed as you would for any other MIDI-Audio application:

The drivers (modules) you want (need) to use **must** be present in the SFP project, and the project must already be loaded and running *before* you launch the other program (in this case, Logic).

As far as this applies to MIDI, it means that you must make sure that the **[hardware] MIDI source/dest** and **Sequencer MIDI source/dest** modules are present in your project and appropriately connected before starting Logic. Integration of SFP audio I/O modules into Logic is described below.

1. Record and Playback via ASIO drivers

As an alternative to the use of the ASIO driver described here, you can use the ASIO2 drivers. Details on these drivers (ASIO2 source16, ASIO2 source24, ASIO2 dest16 and ASIO2 dest24) are found in the reference section.

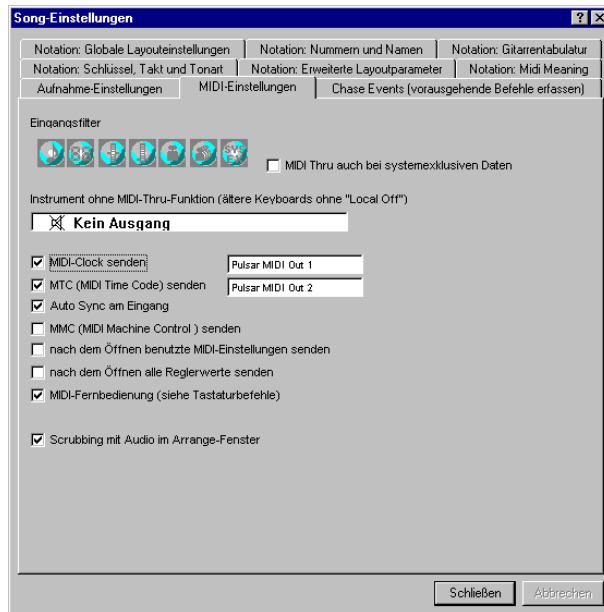
To record and play back using the ASIO drivers, first ensure that the ASIO source and ASIO dest modules are loaded into the current project. Each module has a control surface you can open by double-clicking on the module in the routing window. Here you can adjust the number of channels. Always load and configure the ASIO modules in the SFP application before starting Logic Audio.

For this example we'll use 16 channels for both recording and playback. For the ASIO source module adjust the number of outs to 16 (click and hold on the value and move the mouse up or down until the desired number appears). Next set the ASIO dest module to 16 ins.

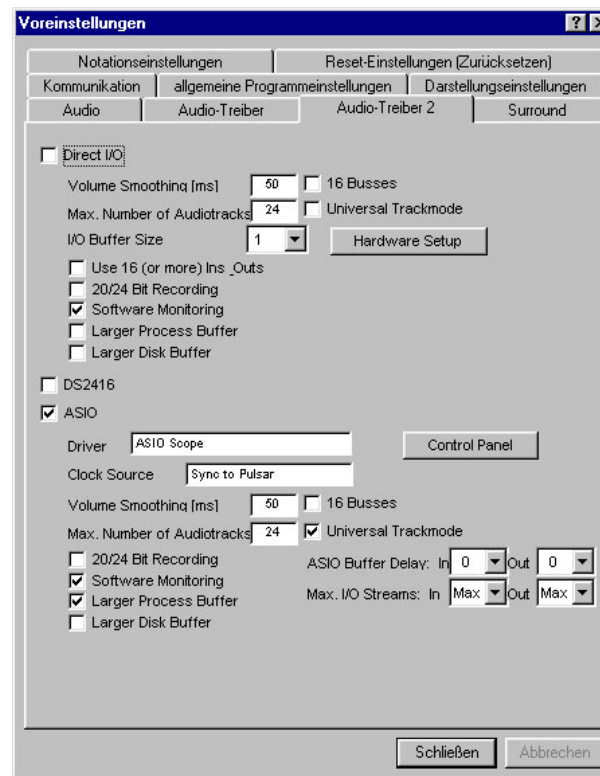
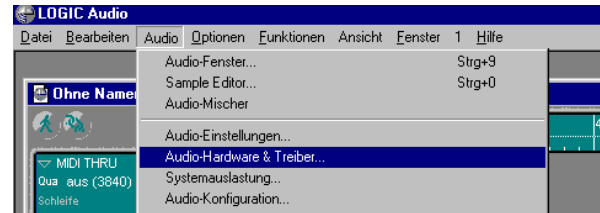
Now start Logic Audio.

In the **MIDI Settings** dialog, select the desired MIDI outputs.

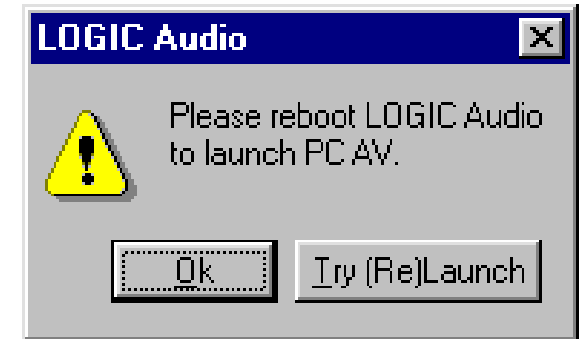




To select the SCOPE Fusion Platform ASIO driver in Logic Audio you must select ASIO Scope in the **Audio Hardware & Driver** dialog (-> tab **Audio Drivers 2** in Logic v4.5 or higher) (menu audio).

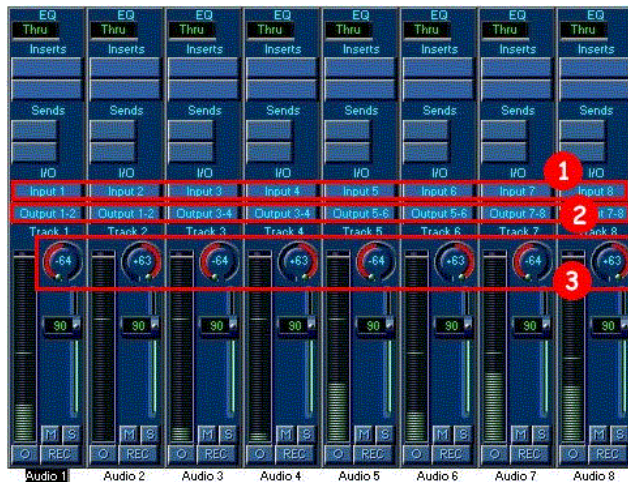


If a message appears click '**Try/ReLaunch**' or click the **OK** button and restart Logic.



Assigning Inputs and Outputs in Logic

In the Logic Mixer you can route audio tracks to corresponding channels in the ASIO module. (Only the first 8 channels are displayed here. The next 8 Channels can be assigned similarly.)



Recording:

To record an audio signal that is routed to an SFP **ASIO dest** module, select the Logic input for the track you want to record to. When using mono tracks (button in the lower left part of the channel strip in the Logic mixer) the Input (1) in the selection menu corresponds to channels 1-16 in the ASIO dest module. With stereo tracks, pairs of inputs are indicated. We set channel 1 to inputs 1, 2; 2 to inputs 3, 4 etc. In the illustration, the first 8 tracks in logic record signals from the first 8 channels of the **ASIO dest** module (1).

Playback:

To play a Logic track into an SFP project, set the output of the Logic track to the respective Logic output (implemented in stereo). Logic output 1-2 is assigned to the first two channels in the **ASIO source** module and so on. In the illustration, the first 8 Logic tracks are routed to the first 8 channels of the **ASIO source** module (2).

As you probably want to assign tracks 1,3,5,..., 15 to the left channels and tracks 2,4,6,...,16 to the right channels, adjust the pan control for all odd tracks to hard left and for the even ones to hard right. This ensures that track one is routed to channel 1, track 2 to channel 2, and so on.

For further details on recording in Logic Audio, please refer to the Logic documentation.

A Few Useful Tips for Mac Logic Audio Users

With the Mac OS the Creamware MIDI driver is integrated with the OMS (Open Music System). Therefore, before starting VST for the first time after installing SFP it is necessary to call the '**OMS Setup**'. For use with Logic, proceed as follows:

OMS Setup

You can acquire the basic OMS installation program for Mac by downloading it from **<http://www.opcode.com/downloads>**. Run the program to install OMS as normal in **Start Volume: Opcode**. After the installation restart the computer.

After the computer has rebooted you will find a folder named **OMS** in the **System Folder**. Into this folder copy the file **CreamWare OMS Driver** from **Drive:Sfp:Driver** (select the file and drag it while pressing the **Alt** key).

Next, start the SFP application (if it is not already running) to load the required MIDI modules. Change to the **Start Volume:Opcode** directory and run the **OMS Setup** program found under **OMS Applications**.

If **AppleTalk** is running, you will be asked if it should remain enabled or if should be switched off.

Apple Talk may cause MIDI timing problems if enabled.

The **AppleTalk Options** dialog offers the following choices:

- Always leave it on, without asking
- Turn it back on when done with MIDI

If a Greeting/Info dialog appears, click on **continue**. Otherwise, call the **Create a New Studio Setup** dialog from the **File->New Studio Setup** menu selection. Exit by clicking **OK**.

This is followed by the **OMS Driver search** dialog. Here you select the '**default Cut Settings** (e.g. modem and printer with a G4).

Click on the **Search** button. After a short pause during which the system is inspected, the **SFP logo** appears. Confirm by clicking **OK**.

The next dialog indicates the completed **Studio Setup**. Again, confirm with **OK**. You are now asked to save this configuration (normally '**My Studio Setup**' or something similar). After clicking **Save** the **Studio Setup** is shown in miniature in the dialog.

Finally select **save and make current** from the **File** menu to save and enable the Setup. You can now end the OMS Setup procedure by selecting **Quit** from the **File** menu. When you are asked to confirm (save) the changes, click **save**.

Now any application that uses OMS will recognize the MIDI inputs and outputs.

In the OMS Setup you must also configure the MIDI interface for background operation (Standard).

Make the ASIO Driver Available to Logic

In the Logic folder you will find a subdirectory named **ASIO Drivers**. You must now copy the CreamWare ASIO driver, named **CreamWare ASIO**, from the *Mac designated* driver directory (drag it while holding the 'ALT' key).

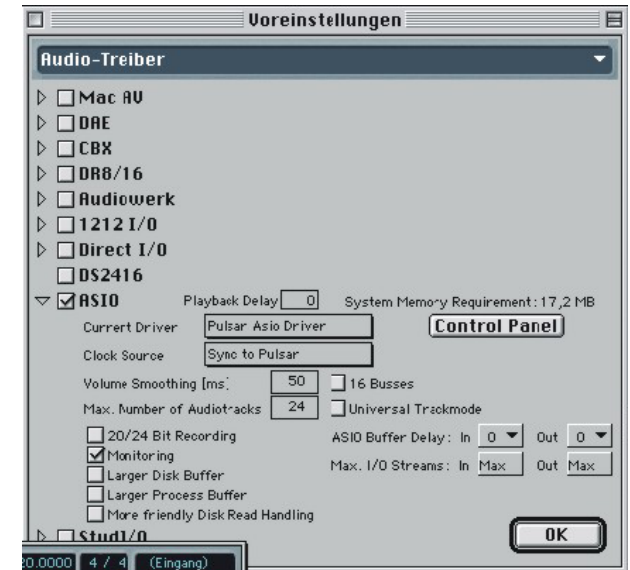
In your Mac this directory will be **Drive:Sfp:Driver** and the file is named **CreamWare ASIO**.

When you start Logic, open the **Audio System Setup** dialog (in the **Options** menu under **Audio -> Audio Hardware & Driver**) to view and incorporate the loaded SFP modules in the Logic environment:



Open the **ASIO** folder by clicking on the triangle to its left.

Select **CreamWare ASIO Driver** as the Current Driver. In the **Clock Source** area underneath, make sure **sync to SFP** is selected.



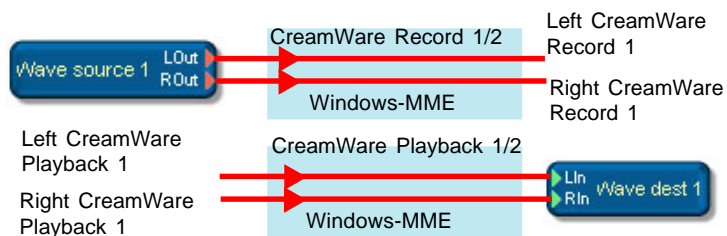
You can change the sample rate at any time in the SFP software **Samplerate Settings** dialog. Logic will display a message when the sample rate changes.

To ensure that you will always hear MIDI and audio playback when using Logic and the SFP software together, make sure OMS is configured to provide background operation of the MIDI interface.

Sonar (PC only)

We chose Sonar to provide an example of the use of the Wave modules. The SFP configuration described here is the same for other programs that use the standard operating system drivers (Wave, MME, Sound Manager) such as Vegas, CoolEdit Pro, Samplitude, and so on. Refer to the documentation for these programs for program-specific settings.

The SCOPE Fusion Platform provides audio channels to other programs using the Windows MME interface. In the SFP software, Wave modules represent MME drivers. These modules appear to other programs as **CreamWare Record** and **CreamWare Playback** drivers. The following diagram shows the routing for the first two tracks:



To use this interface, proceed as follows:

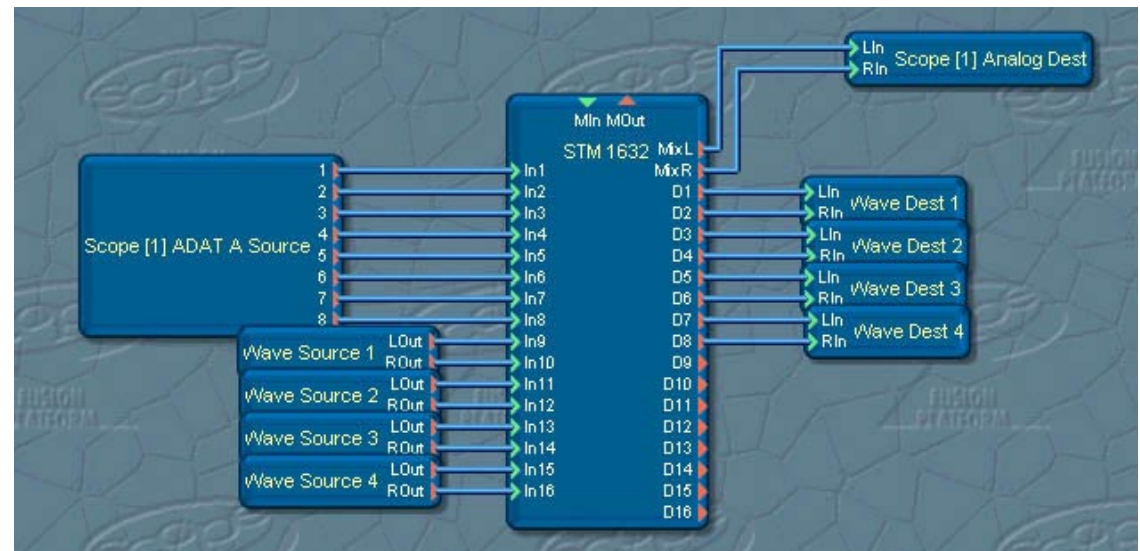
1. Load the required Wave modules into the SFP project.

Generally you can record as many audio tracks in Sonar as you have loaded into the SFP project. Since a **Wave dest** module appears to other programs (such as Sonar) as a stereo device, you need to load 8 **Wave dest** modules to provide 16 audio tracks. Make sure your SFP project includes 8 **Wave dest** modules.

The same applies to the Wave source modules; load as many you need for playback in Sonar.

This example uses 16 audio tracks. You can configure another number of tracks (2-64) in exactly the same manner as described here.

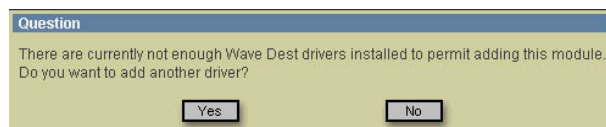
The illustration below shows how you can route input signals through the STM 1632 mixer and send them to Sonar for recording using the mixer's direct outs.



In this example, 8 channels from a SCOPE ADAT interface are connected to 8 mixer inputs, and then sent to the **Wave Dest** module through the direct outs for recording in Sonar.

For processing Sonar audio tracks during playback and mixdown, 4 Wave source modules are connected to the next 8 mixer channels.

Sooner or later, when adding modules, you'll probably encounter this dialog:



The SFP software is letting you know that there are not enough reserved Windows drivers and asks you if you want to introduce another driver to Windows. Click **Yes**, and the software will tell you that Windows must be restarted for the new driver to be activated. Before you do so, load the required number of modules and save your project. Then restart Windows.

2. Load the SFP Wave driver

Now Windows supplies other programs with SFP Wave drivers. You can check the number of drivers in the DSP card's Driver Setup dialog (Control Panel -> System -> Device manager -> Sound, video and game controllers -> *DSP card* -> Settings):

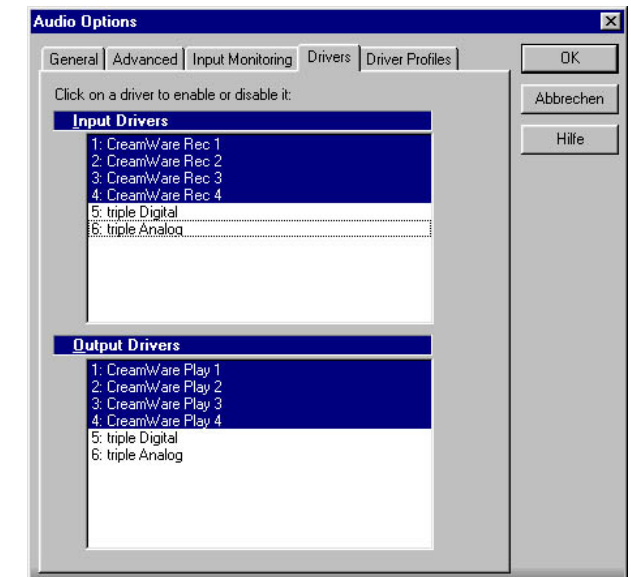


The "Input Devices" are represented by Wave source modules; the "Output Devices" by Wave dest modules.

If you want to make use of these drivers, you must start SFP and load the previously created project. With it, you load the **Wave dest** modules.

3. Tell Cakewalk to use the new Wave drivers

Start Sonar and open the **Audio Options** dialog (Options -> Audio...). In the **Drivers** panel you will see the new drivers listed. Highlight all drivers you wish to enable.



In the "General" panel make sure the selected sampling rate (1) is the same as in the SCOPE Fusion Platform (default 44.1kHz). Select **CreamWare Playback 1** and **CreamWare Record 1** as timing master for playback and recording.

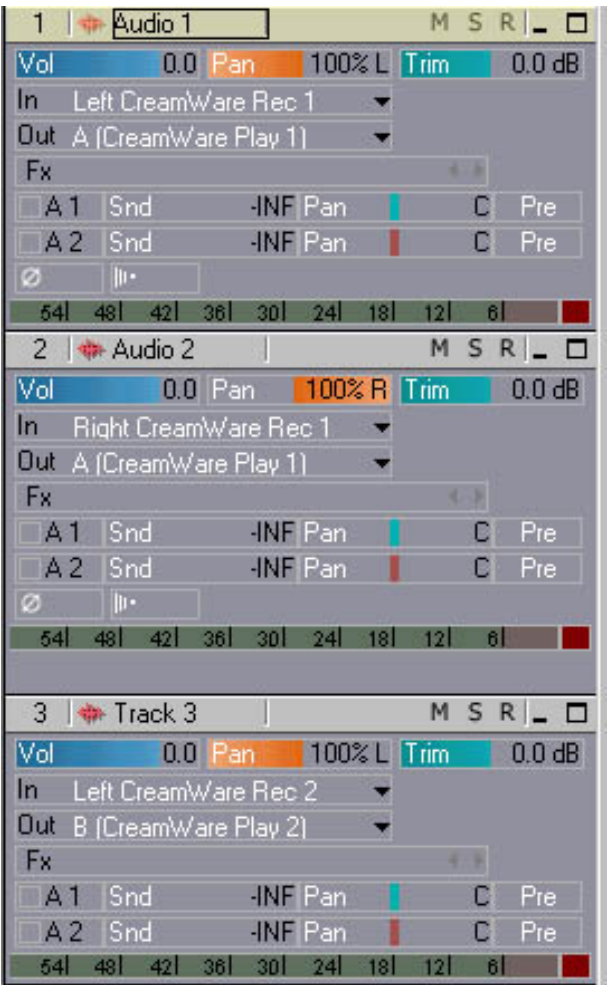
Also, make sure that the number of *Virtual Mains* set here is the same as the number of Wave source modules loaded into SFP.

All SFP drivers should be disabled in the „Input Monitoring“ panel to prevent feedback loops. It's better to configure the input monitoring in the SFP software.

Next, assign the Cakewalk tracks to the inputs and outputs. In our example we'll record all audio signals to mono tracks.

Record:

Select the source to record from in a track's **In** field. For example, if you want to assign the left channel of the first SFP **Wave dest** module to the first track, select "left CreamWare Record 1" under **Source** (1)



Playback:

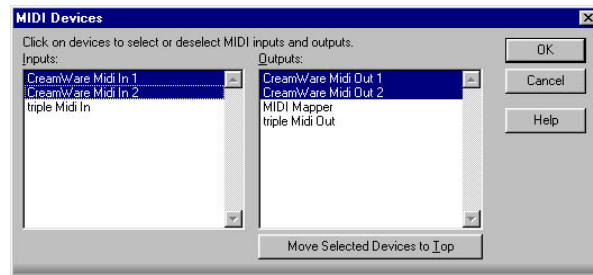
Select the device you want to play the track back to in a track's **Out** field. For example, if you want to assign the first track to the left channel of the first SFP **Wave source** module, select "CreamWare Playback 1" in the **Port** field (2). In addition, you must set the track pan hard left (value 0) to make sure the signal appears *only* on the left channel of the **Wave source** module (3).

In our example, all odd tracks have pan set to 100% left and all even tracksto 100% right. All track signals will therefore appear in the appropriate channels in the SFP mixer.

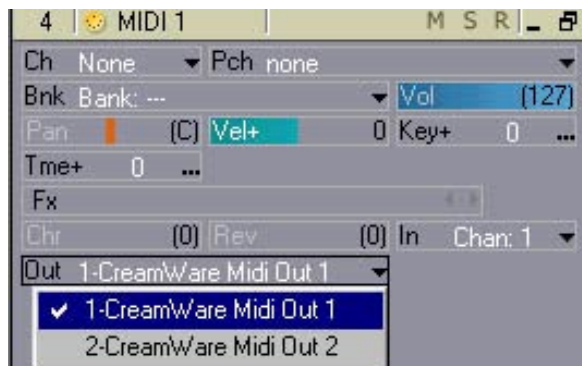
When recording or playing back stereo tracks, the pan control no longer handles the signal distribution. For stereo tracks you need only assign them sequentially as desired.

4. The MIDI setup

Open the MIDI Ports dialog of Cakewalk (Menu: Tools -> MIDI Devices or Options -> Midi Devices in v9.0). Enable the SFP MIDI Ports. The default is two MIDI ins and two MIDI outs. You can specify the number of MIDI ports in the SFP driver setup dialog (in the Windows Device Manager).



Assign sources and ports for each MIDI track in the Cakewalk Track Properties dialog which appears when you double-click on the source or port field:

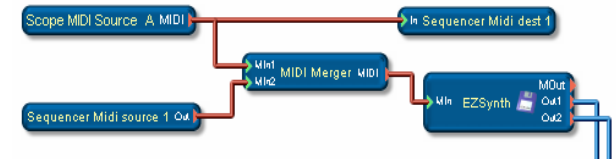


This example shows how to record MIDI from your keyboard into Cakewalk using Pulsar.

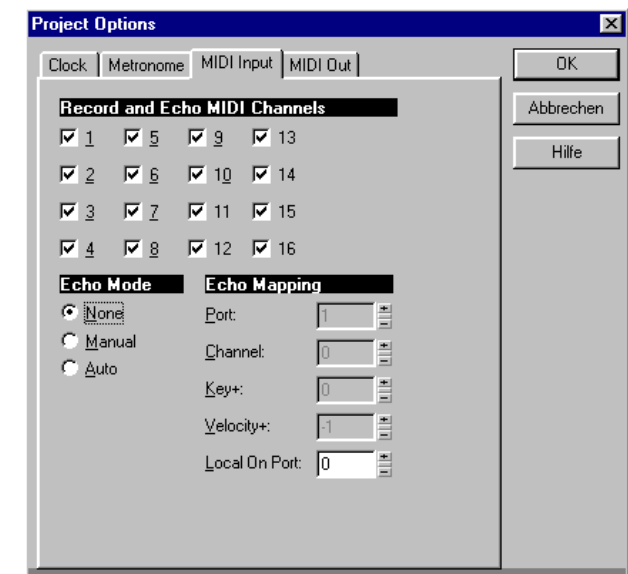
The keyboard is connected to the SFP MIDI input, represented by the 'Creamware MIDI Source' module. This module is connected to 'Sequencer MIDI Dest 1' so that the MIDI signal will appear as an input in Cakewalk.

We want to record a solo using the EZ Synth. The MIDI signal from 'Pulsar MIDI Source' is also connected to the input of the EZ Synth, so we can hear the synth while playing the keyboard.

In addition, 'Sequencer MIDI Source 1' is connected to the input of the EZ Synth, so we can hear the recorded solo when it is played back from the sequencer. The MIDI Merger is required in order to connect both 'Sequencer MIDI Source 1' and 'Pulsar MIDI Source' to the EZ Synth at the same time.



To avoid a doubled sound while recording, disable echo for the MIDI channel you are recording or for all MIDI channels (Echo Mode: None) in Cakewalk's Project Options dialog (Tools -> Project Options -> Midi In):



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