

1 ADA-8 Control Panel

Revision History:

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1.1 Contents

[1 ADA-8 Control Panel](#)

1.1 Contents.....	1
1.2 Overview.....	2
1.3 Installing.....	2
1.4 Using the ADA-8 Control Panel.....	2
1.4.1 FireWire AD/DA.....	2
1.4.1.1 Setting the sample rate.....	3
1.4.1.2 Setting the sync source.....	3
1.4.2 Other Configuration.....	4
1.4.2.1 Preparing to use multiple FireWire modules.....	4
1.4.2.2 Using multiple FireWire modules.....	5
1.5 Known Problems.....	6
1.5.1 Sharing the FireWire bus with other devices.....	6
1.5.2 Using multiple Core Audio applications.....	6
1.5.3 Logic Pro compatibility.....	6
1.6 References.....	6

1.2 Overview

When fitted with FireWire I/O Module PREV039/10/1, ADA-8 or ADA-8XR can be connected to OS X with a FireWire cable.

OS X sees the module as a class compliant FireWire Audio device. This means that standard features, such as sample rate and clock source selection, should be controlled through Core Audio clients, such as the Audio MIDI Setup (AMS) application.

However, it has been found that recent versions of OS X have some limitations. In particular, the full selection of clock sources is not available in AMS. Instead of choices for Local, WCK, AES, DI and CSP sync, there are only two modes advertised: Mac or Device. It is no longer possible to select ADA-8 sync sources from AMS.

The ADA-8 Control Panels was created to allow the user to select any sync source.

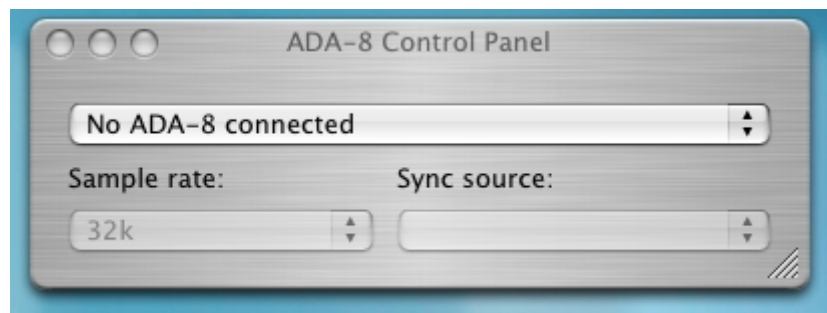
1.3 Installing

The ADA-8 Control Panel is a universal binary that runs on Mac OS X 10.4 or higher.

To install, drag the ADA-8 Control Panel icon from this folder to the location of your choice.

1.4 Using the ADA-8 Control Panel

Double-click the ADA-8 Control Panel icon to run it. The panel will tell you if the ADA-8 is not yet connected.



1.4.1 FireWire AD/DA

This chapter assumes that the ADA-8 is configured to the 'FireWire AD/DA' store. This is explained in *Module Reference*, 9.6.1.

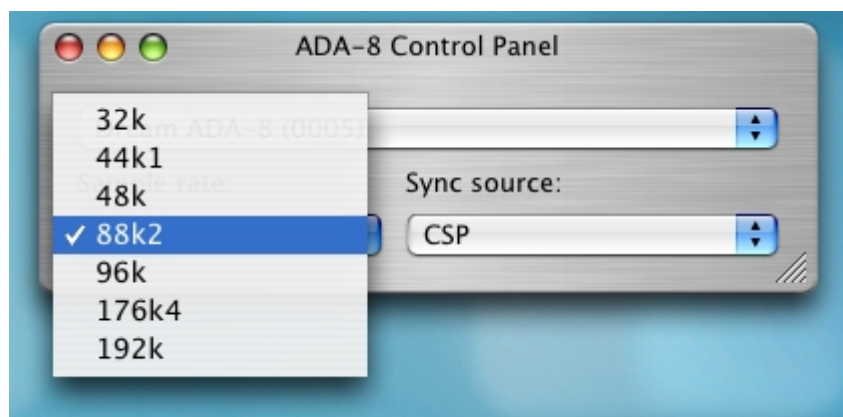
When the ADA-8 is connected with a FireWire cable, the ADA-8 Control Panel will automatically detect it.



The current sample rate and sync source are displayed.

1.4.1.1 Setting the sample rate

You can use the Sample rate drop-list to select a new sample rate. In this configuration, you will not be able to select 176k4 or 192k; if you try, the selection will not change (these rates are on the list for the *FWire AD/DA Casc ADA-8XR* option.)



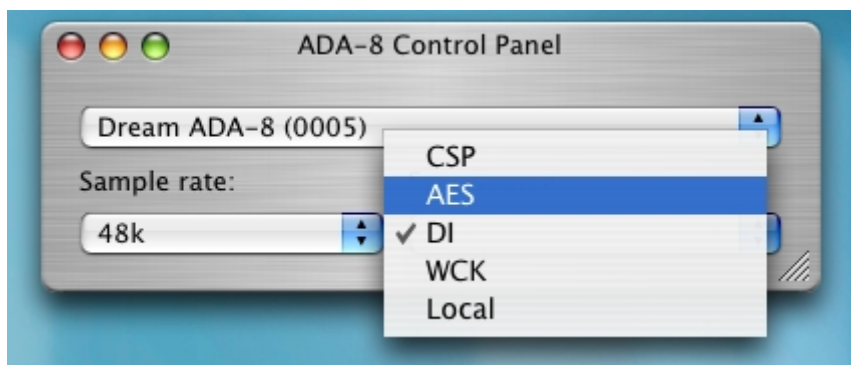
You can also set the sample rate from Core Audio clients such as Logic Pro or AMS.

Do not set the sample rate from the mimic panel of the ADA-8.

If you do, the FireWire module will not know that the sample rate has been changed and audio will not be streamed to the Mac. Always change the sample rate from the Mac.

1.4.1.2 Setting the sync source

You can use the Sync source drop-list to select the ADA-8 sync source.



'Local' selects the ADA-8 internal clock as the sync source. If this is selected, the amber Local LED is lit on the mimic panel.

'WCK' selects the ADA-8 utility panel WCK input, and the WCK LED is lit on the mimic panel. If no WCK signal is attached, the WCK LED will flash, the ADA-8 reverts to Local sync and the amber Local LED is also lit.

'AES' selects the ADA-8 utility panel AES input, but otherwise behaves in the same manner as the WCK selection.

'DI' will attempt to synchronise to the digital input of the module in the other digital slot. If ADA-8 can lock on to a digital signal, the DI LED is lit on the mimic panel. If there is no digital module, or no valid input signal, the DI LED for that slot will flash and the ADA-8 will revert to Local sync.

'CSP' sync selects Cycle Start Packet synchronisation. In this mode, the FireWire module derives its clock from the FireWire bus, and the ADA-8 uses this clock. The DI LED for the FireWire module's slot will be lit.

Do not set the sync source from the mimic panel.

If you do, the FireWire module will not know that the sync source has changed, and the audio will not be synchronised correctly.

1.4.2 Other Configuration

It is possible to put two FireWire modules in an ADA-8, one in each digital slot. Stores that rely on this are "FireWire 2xADC", "FireWire 2xDAC" and "Fwire AD/DA Casc". See Module Reference, 9.6.2 to 9.6.4.

It is also possible to daisy-chain ADA-8s together in any configuration.

In any of these cases, there will be more than one FireWire module that needs to be connected to the Mac.

OS X Core Audio sees each FireWire module as a separate audio device. It has no way of knowing that the modules are supposed to be part of the same system. This means that you must configure multiple-module systems manually.

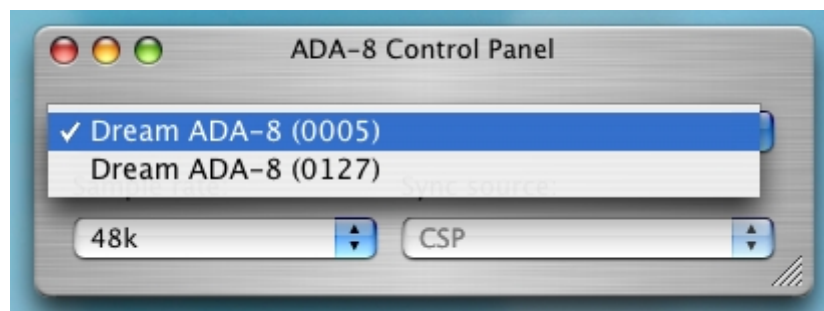
1.4.2.1 Preparing to use multiple FireWire modules

ADA-8 FireWire modules are not compatible under some circumstances. If sample rates are mismatched, or sync sources are incompatible, modules will not be detected by the Mac.

In order to use multiple-module configurations, each module must be configured individually.

- 1) Ensure that all FireWire cables are disconnected, including any that are connecting modules in the same ADA-8 chassis.
- 2) Connect the first FireWire module (it does not matter which) to the Mac .
- 3) Use the ADA-8 Control Panel to set the chosen sample rate.
- 4) Use the ADA-8 Control Panel to set the sync source to CSP.
- 5) Disconnect the FireWire cable.
- 6) Repeat steps 2-3 for all FireWire modules, ensuring that the sample rate is the same in all cases.
- 7) Daisy-chain the FireWire modules together; connect the first module to the Mac, the second module to the first, and so on. Modules need to be daisy-chained even if they are in the same ADA-8 chassis. Do not connect anything to the FireWire port of your final module.

At this point, all your modules are running at the same sample rate with a CSP sync source. The ADA-8 will show two FireWire modules in the name drop-list.



1.4.2.2 Using multiple FireWire modules

Multiple modules must remain in CSP sync. Other sync modes are not valid, and setting them may result in modules being thrown off the FireWire bus.

This means that your ADA-8 system cannot accept external sync sources such as WCK, AES or DI sync. If you are connecting to other audio devices using digital connections, you must use an ADA-8 as the sync master.

The ADA-8 Control Panel will not allow you to change the sync source when there are multiple FireWire modules connected.

Multiple modules that are daisy-chained must have the same sample rate. The ADA-8 Control Panel will change the sample rate of all connected modules at the same time.

ADA-8 FireWire modules are class-compliant FireWire Audio devices, which means that they are accessible from Core Audio clients. These clients can change the sample rate or sync source of individual modules and destroy the multiple module configuration. Therefore, it is recommended that you use the ADA-8 Control Panel to change settings.

Most DAWs, such as Logic Pro, can only connect to a single Core Audio device. This is a problem, because it is highly likely that you will require access to all FireWire modules. For example, if you have an ADA-8XR configured as "FWire AD/DA Casc", one firewire module handles channels 1-4, and the other handles channels 5-6. If you cannot connect to both modules, you will lose half of the system's channels.

Apple's solution is to create an aggregate device: <http://support.apple.com/kb/HT1215>

When you change the sample rate of an aggregate device, all component devices are changed simultaneously, so it is valid to use it instead of the ADA-8 Control Panel.

Once you have created an aggregate device, you can connect to it from your DAW and access all channels successfully. It is also valid to change the session sample rate in your DAW, because this will affect the aggregate device rather than individual modules.

Aggregate devices can become invalid if you disconnect modules from the Mac. In order to avoid this, it is wise to create a new aggregate device from scratch every time you reconnect your ADA-8. DAW sessions will be able to reconnect to it as long as you use the same name for the new device.

1.5 Known Problems

1.5.1 Sharing the FireWire bus with other devices

Most FireWire devices are perfectly compatible with ADA-8. However, some devices, including many external hard drives, are not compatible and will cause audio drop-outs.

In order to guarantee that drop-outs do not occur, we recommend that you do not share the FireWire bus with other devices.

Note that Apple Macs have a single internal FireWire bus. This means, for example, that devices plugged into an S800 port may cause problems for ADA-8 plugged into the S400 port on the same Mac.

ADA-8 is not affected by devices on other firewire buses. You can add another FireWire bus by installing a FireWire expansion card.

1.5.2 Using multiple Core Audio applications

OS X has a known problem (Apple bug #5855907) that results in audio degradation when a class-compliant FireWire audio device such as ADA-8 is connected to two or more Core Audio clients at the same time. This behaviour is present in all versions of OS X up to at least 10.5.5.

For example, you could experience drop-outs in Logic Pro if iTunes is also being used in the background.

To prevent this, **we recommend that you only connect to a single Core Audio application at a time**. Please also ensure that ADA-8 is not your default recording or playback device in order to prevent accidental connection.

1.5.3 Logic Pro compatibility

Early versions of Logic Pro 8 had issues with FireWire audio interfaces. These issues were resolved in Logic Pro 8.0.2.

We recommend using Software Update to ensure that you always have the latest Logic patches. For more information, please refer to the troubleshooting guides:

- Logic Pro 7 http://support.apple.com/kb/TA24237?viewlocale=en_US
- Logic Pro 8 http://support.apple.com/kb/HT2375?viewlocale=en_US

1.6 References

ADA-8XR Multi-channel A/D D/A Converter Operation Manual 1.0
ADA-8XR Multi-channel A/D D/A Converter Module Reference 1.1