

AMBus FireWire

Apogee AMBus Expansion Card

User's Guide V1.0 - March 2007



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Warnings

FCC warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to take whatever measures necessary to correct the interference at his own expense.

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference

(2) This device must accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful inteference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- 1. Re-orient or relocate the receiving antenna.
- 2. Increase the separation between the equipment and receiver.
- 3. Connect the equipment into an outlet on a different circuit from that to which the receiver is connected.
- 4. Consult the dealer or an experienced radio/TV technician for help.
- NOTE: The use of non-shielded cable with this equipment is prohibited.

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

Apogee Electronics Corporation, 3145 Donald Douglas Loop South, Santa Monica, CA 90405. Betty Bennett, CEO.

Industry Canada Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations. Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matérial brouilleur du Canada.

Declaration of Conformity – CE

Apogee Electronics Corporation hereby declares that the product, the AMBus FireWire card, to which this declaration relates, is in material conformity with the following standards or other normative documents:

- EN50081-1/EN55022; 1995
- EN50082-1/IEC 801-2, 3, 4; 1992 following the provisions of:
- 73/23/EEC Low Voltage Directive
- 89/336/EEC EMC Directive

Declaration of Conformity – Japan

Apogee Electronics Corporation hereby declares that the AMBus FireWire card, to which this declaration relates, is in material conformity with the VCCI Class A standard.

Declaration of Conformity – Australia

Apogee Electronics Corporation hereby declares that the AMBus FireWire card is in material conformity with AN/NZS standard requirements.

Registration and Warranty Information

Be sure to register your AMBus FireWire card, either by filling in the enclosed Registration Card or by completing the on-line registration form at our Web site: http://www.apogeedigital.com/support/. If you do so, Apogee can contact you with any update information. As enhancements and upgrades are developed, you will be contacted at the registration address. Firmware updates are free for the first year of ownership unless otherwise stated. Please address any inquiries to your dealer or directly to Apogee at:

APOGEE ELECTRONICS CORPORATION, 1715 Berkeley St. Santa Monica CA, 90404 • TEL: (310) 584-9394, FAX: (310) 584-9385 email: support@apogeedigital.com. Web: http://www.apogeedigital.com/

APOGEE ELECTRONICS CORPORATION warrants this product to be free of defects in material and manufacture under normal use for a period of 12 months. The term of this warranty begins on the date of sale to the purchaser. Units returned for warranty repair to Apogee or an authorized Apogee warranty repair facility will be repaired or replaced at the manufacturer's option, free of charge.

ALL UNITS RETURNED TO APOGEE OR AN AUTHORIZED APOGEE REPAIR FACILITY MUST BE PREPAID, INSURED AND PROPERLY PACKAGED, PREFERABLY IN THEIR ORIGINAL BOX. Apogee reserves the right to change or improve design at any time without prior notification. Design changes are not implemented retroactively, and the incorporation of design changes into future units does not imply the availability of an upgrade to existing units.

This warranty is void if Apogee determines, in its sole business judgment, the defect to be the result of abuse, neglect, alteration or attempted repair by unauthorized personnel.

The warranties set forth above are in lieu of all other warranties, expressed or implied, and Apogee specifically disclaims any and all implied warranty of merchantability or of fitness for a particular purpose. The buyer acknowledges and agrees that in no event shall the company be held liable for any special, indirect, incidental or consequential damages, or for injury, loss or damage sustained by any person or property, that may result from this product failing to operate correctly at any time.

USA: Some states do not allow for the exclusion or limitation of implied warranties or liability for incidental or consequential damage, so the above exclusion may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

Service Information

The AMBus FireWire card contains no user-serviceable components: refer to qualified service personnel for repair or upgrade. Your warranty will be voided if you tamper with the internal components. If you have any questions with regard to the above, please contact Apogee.

In the event your AMBus FireWire card needs to be upgraded or repaired, it is necessary to contact Apogee prior to shipping, and a Return Materials Authorization (RMA) number will be assigned. This number will serve as a reference for you and helps facilitate and expedite the return process. Apogee requires that shipments be prepaid and insured — unless otherwise authorized in advance.

IMPORTANT: ANY SHIPMENT THAT IS NOT PRE-PAID OR IS SENT WITHOUT AN RMA NUMBER WILL NOT BE ACCEPTED.

OWNER'S RECORD

The serial number is located on the rear panel of the unit. We suggest you record the serial number in the space provided below. Refer to it whenever you call an authorized Apogee Electronics repair facility or the manufacturer. Please be sure to return your completed warranty card immediately!

AMBus FireWire card Serial No._____

Purchase Date_____

Dealer

Phone_____

Address____

Any changes or modifications not expressly approved by APOGEE ELECTRONICS CORPORATION could void your authority to operate this equipment under the FCC rules.

Please register this unit by filling in the included registration card, or registering online at <u>http://www.apogeedigital.com/support/register.php</u> Please read this manual – if you call for technical support, we'll assume that you have. There will be a quiz.

AMBus FireWire

User's Guide

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Introduction

The AMBus FireWire card is

Requirements

Windows X	P	
OS:	Windows XP SP1 or SP2 (Windows 200 Microsoft "hotfix" http://support.micros computer and X-FireWire card are equip	oft.com/kb/885222 (if your
Hardware :	1.5 gig or greater processor At least 512 megs RAM FW 400 or FW 800 FireWire ports using	aTexas Instruments or Lucent chipset
OS X	OS X 10.3.7 (10.3.8 not supported)	
Hardware :	867 mHz or greater	

Overview

The following steps must be completed before using your AMBus FireWire card. A detailed description of each step may be found further in this User's Guide.

At least 512 megs RAM Apogee AD-8000 or Trak2 interface

For Mac OS X Users:

- To get started quickly, simply connect your AMBus FireWire equipped Apogee interface to the FireWire port of your Mac, and configure your audio application as specified on page xx (iTunes, Quicktime), xx (Apple Logic Pro) XXX.
- When recording, we suggest downloading our zero latency monitoring software, Firemix, which may be found on Apogee's website here: www,apogeedigital.com/xx

For Windows XP Users:

- Download the Apogee FireWire ASIO driver from Apogee's website here: www.
- apogeedigital.com/xx. Follow the instructions on pages xx-xx to install the driver.
- Configure
- When recording, we suggest downloading our zero latency monitoring software, Firemix, which may be found on Apogee's website here: www,apogeedigital.com/xx

Before Starting

We've done everything possible to ensure full compatibility between Apogee's FireWire technology and the Legacy interfaces that support the AMBus FireWire card, but there are certain operational limitations of the AMBus FireWire card that users should be aware of.

Sample Rate Selection

The sample rate of both the AD-8000 and Trak2 must be set manually to match the sample rate at which the FireWire driver of the connected computer is running.

Sample Rate Range

The AD-8000 does not support sample rates of 88k2-96k, even though these rates are listed in the FireWire driver's sample rate selection drop-down menus.

Clock Source

The clock source of the Apogee interface must be selected from the AD-8000 or Trak2's front panel. Software switching of clock source is not supported.

Working with OS X

- 1. Thanks to the class compliant FireWire driver in Apple's OS X, no drivers need to be installed.
- After installing the AMBus FireWire card in the host interface and connecting the card to your computer, open the Audio Midi Setup utility, found on an OSX Macintosh here: Applications/Utilities/Audio Midi Setup.
- **3.** Click on the Properties For drop-down menu and select Apogee FireWire (xxxx) (the serial number of your card appears in parentheses).
- 4. Verify that the host interface sample rate matches the sample rate indicated in the Format field.
- **5.** If the OS X audio application you're using doesn't have a sample rate parameter, the sample rate of the system is determined by the setting in Audio Midi Setup. Applications that fall under this category include Apple iTunes, Apple Quicktime and other "audio utilities".
- 6. If the OS X audio app does include a sample rate parameter, the audio app setting determines the system sample rate and transmits the rate to AMS. Apps that fall under this category include Apple Logic Pro and other professional digital audio workstations (DAWs).
- 7. Thus, if your app includes a sample rate parameter, change the rate from the app; if your app doesn't include a sample rate parameter, change the rate from AMS, as described in steps 2-4. In both cases, set the Apogee interface sample rate from the interface's front panel.

Working with OS X

3 Computer is slave, AMBus FireWire device is master, locked to another external source such as word clock.



- 1 In OS X's Audio Midi Setup, set Clock Source to Apogee FireWire (xxxx) Ext Plug5.
- 2 On the Apogee host interface front panel, set the clock source to the desired clock source (such as word clock); (on a Rosetta 200 or 800, set **Sample Rate** to **EXT** and **Sync** to the desired clock source).

General Notes

When power cycling an Apogee host interface connected to a computer via AMBus FireWire, it is essential to allow the operating system sufficient time to first "de-mount" the host interface and subsequently "re-mount" it. With the Audio MIDI Setup window open:

- 1 Power down the host interface.
- 2 Wait until the "Apogee FireWire" option is no longer preset under **Default Input** and **Default Output**.
- **3** Power up the unit; upon power up, "Apogee FireWire" should become once again available under Default Input and Default Output.

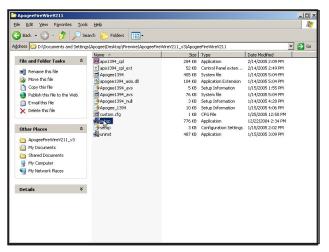
Installing the Windows Driver

If your computer and AMBus FireWire card are equipped with FW800 connections and you're using SP 2, it's necessary to run a Microsoft "hotfix" which may be found on the Microsoft website here: http://support.microsoft.com/kb/885222

Without this hotfix the driver will not install correctly.

Before starting the setup.exe driver installation program, disconnect the AMBus FireWire card from the computer. You will be instructed at which point during the driver installation process to connect the AMBus FireWire card. If you have multiple units, be sure to connect them all when instructed to do so.

Download the Windows XP driver from our web site here: http://www.apogeedigital.com/downloads/ unzip the downloaded file.



1 Double click on the **setup.exe**.

🚰 Apogee 1394 Audio Driver	V2.11 Setup	×
	Welcome to Apogee 1394 Audio Driver V2.11 Setup program. This program will install Apogee 1394 Audio Driver V2.11 on you computer.	
	Before you continue, please disconnect your IEEE 139 audio device(s) from this computer system.	4
16	It is strongly recommended that you exit all Windows programs before running this Setup program.	
ALA I	Click Cancel to quit Setup and close any programs you have running. Click Next to continue with the Setup program.	
100		
	Next> Cancel	
	Cancel	

2 As noted onscreen, **disconnect** the X-FWequipped interface, then click on **Next**. If a previous version of the driver was installed, this window will be preceded by an uninstallation procedure.

🚰 Apogee 1394 Audio Driver V2.11 Setup 🛛 🗙	
Destination Location	and click Nex the driver in t
Setup will install Apogee 1394 Audio Driver V2.11 in the following folder. To install into a different folder, click Browse and select another folder. You can choose not to install Apogee 1394 Audio Driver V2.11 by clicking Cancel to exit Setup.	
Destination Folder D:\Program Files\Apogee\1394AudioDriver_Apogee Browse Browse	
Wise Installation Wizard®	
Setup will now prepare your system for installation of device drivers. During this process the system may prompt you to confirm installation of software that has not passed Windows Logo testing. Please select [Continue Anyway] to confirm installation. Click Next to continue.	4 Click Next.
Software Installation	2 Click Contin sage from Mic
Continue Anyway	

3 Determine the Destination for the installer, and click **Next**. We recommend that you install the driver in the default location.

- Click **Continue Anyway**. Disregard this mesage from Microsoft.



3 Now connect the X-FW-equipped interface, and click **Next**.

It may be necessary to wait for the **New Hardware Found** notification pop-up to appear before clicking **Next**.

4 Click Continue Anyway.

Software	Installation
1	The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. (<u>Tell me why</u> this testing is important.) Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing.
	Continue Anyway STOP Installation

5 During the installation process, you should see these three Found New Hardware Notification pop-ups: **Apogee FireWire, Apogee FireWire WDM Audio**, and **Your new hardware is installed and ready to use**.

🍫 Safely Remove Hardware	k	<u>? ×</u>
Select the device you want to ur Windows notifies you that it is sa computer.		
Hardware devices:		
Apogee Firewire WDM Audio		
Apogee Firewire on Texas Instruments OF	ICI Compliant IEEE 1394 H	Host Controller <u>S</u> top
Display device components		Close
	_	2000

6 To verify that the driver is correctly installed, double click on the Safely Remove Hardware icon in the Notification area (usually in the lower right hand corner of your computer screen). If both Apogee FireWire and Apogee FireWire WDM Audio devices are not displayed, the installation has failed. Go to Add or Remove Programs in the control panel, uninstall the driver, power cycle the computer and Apogee host interface, and reinstall the driver.

Apogee 1394 Audio Control Panel

Once correct driver installation has been verified, open the Apogee 1394 Audio control panel by double clicking on the **Apogee 1394 Audio** icon found in the Windows XP control panel. While discovering the functionality of the control panel as described below, try a few control panel operations, such as switching sample rates, to verify proper communication between the control panel and the Apogee host interface.

e Edit View Favorites Back - 🕥 - 🎓 🕽	<u>T</u> ools	Help rch 🥟 Folde						
	O Sea	ren 🃂 Folde	ers 🛄 🕶					
dress 📴 Control Panel								- 🔁
Control Panel	*	Ġ.	×.	õ	50	BCO.	la 🌯	P
🚱 Switch to Category View		Accessibility Options	Add Hardware	Add or Remov	Administrative Tools	Apogee 1394 Audio	Automatic Updates	Date and Time
See Also	\$	1	I		and a	9	1	3
Windows Update		Display	Folder Options	Fonts	Game Controllers	Internet Options	Keyboard	Mouse
Help and Support				1	4		١	
		Network Connections	Network Setup Wizard	Phone and Modem	Power Options	Printers and Faxes	Regional and Language	Scanners and Cameras
		B	۲	Ø,	2			<u>.</u>
		Scheduled Tasks	Security Center	Sounds and Audio Devices	Speech	System	Taskbar and Start Menu	User Accounts
		6						
		Windows Firewall	Wireless Network Set					

The Apogee 1394 Audio control panel consists of the following 5 windows accessed by clicking on their names in the left hand column of the control panel : **Devices, Input Channels, Output Channels, Synchronization** and **Settings**.

Devices Window

🜌 Devices	Device name	Serial number	
₩U Input Channels ₩U Dutput Channels ∰ Synchronisation ∰ Settings	Apogee X-FireWire	0003DB0220000008D	
	Edit Device Name		

In the **Devices** window, **Apogee AMBus FireWire** should be displayed under **Device name**, and a unique serial number is displayed under **Serial number**. If multiple host interfaces have been installed, they should all appear simultaneously. Press **Edit Device Name** to edit the Device name.

Input Channels Window

Devices	Device name	Channel name	ASIO display name
nput Changels	Apogee X-FireWire	In1	In1
Jutput Channels	Apogee X-FireWire	In2	In2
Synchronisation	Apogee X-FireWire	In3	In3
Settings	Apogee X-FireWire	In4	In4
	Apogee X-FireWire	In5	In5
	Apogee X-FireWire	In6	In6
	Apogee X-FireWire	In7	In7
	Apogee X-FireWire	In8	In8
	Hardware name of selected	Edit Channel Nam	e Include device name in ASIO display name

In the **Input Channels** window, it's possible to edit the input Channel names for the devices connected.

Output Channels Window

Device name	Channel name	ASIO display name
Channels Apogee X-FireWire	Out1	Out1
Apogee X-FireWire	Out2	Out2
Apogee X-FireWire	Out3	Out3
Apogee X-FireWire	Out4	Out4
Apogee X-FireWire	Out5	Out5
Apogee X FireWire	Out6	Out6
Apogee X-FireWire	Out7	Out7
Apogee X-FireWire	Out8	Out8
1	Edit Channel Nam	Include device name in ASIO display name

In the **Output Channels** window, it's possible to edit the output Channel names for the devices connected.

Synchronization Window

Output Channels	Clk Master	Devices	Current Synchronisation Source	
Synchronisation		PC Driver	Internal	
Settings		Apogee X-FireWire	SYT (PCR Compound Input)	
		1		
	Change Sy	ynchronisation Mode		
	G Samalia	ng rate is set manually		
	se o annihili		· · · · · · · · · · · · · · · · · · ·	
				- ula
	C Samplin	ng rate is set automatically as	defined by the clock master Ap	49
	C Samplin	ng rate is set automatically as	defined by the clock master Ap	100
			defined by the clock master Ap	
	C Samplin		defined by the clock master Ap	-1-0
			defined by the clock master Ap	

In the **Synchronization** window, synchronization parameters for each device may be set as described below.

Sampling Rate

The sample rate for the selected master device is set with this drop-down menu. Ensure that the sample rate of the audio application matches the setting made here.

To set the clock source for each device connected, it's necessary to first specify whether the computer or the AMBus FireWire device is clock master by checking the appropriate box in the **Ck Master** column. Next, it's necessary to set the clock source of each AMBus FireWire device connected by selecting the interface and clicking the **Change Synchronization Mode** button. With these controls, it's possible to set up the following three clock configurations:

- 1 Computer is master, AMBus FireWire device is slave, locked to the AMBus FireWire card.
- 2 Computer is slave, AMBus FireWire device is master, locked to it's internal clock.
- 3 Computer is slave, AMBus FireWire device is master, locked to another external source such as word clock.

Following are the precise steps to achieve each of these three clock configurations:

ls Clk Mast	er Devices	Current Synchronisation Source
on 🗹	PC Driver	Internal
on 🗹	Apogee X-FireWire	SYT (PCR Compound Input)
Change	Synchronisation Mode	
6.0		
🙂 bam	build rare to ear mannaid.	
	ping rate is set automatically as	defined by the clock master
		defined by the clock master
	ping rate is set automatically as	defined by the clock master
C Sam	ping rate is set automatically as	defined by the clock master
C Sam	pling rate is set automatically as	defined by the clock master
C Sampling F	pling rate is set automatically as	
C Sam Sampling F 44.1	pling rate is set automatically as	
C Sam Sampling F 44.1	ping rate is set automatically as Rate KHz e Synchronisation M	
C Sampling F	pling rate is set automatically as Nate kHz	
C Sampling F	ping rate is set automatically as Rate KHz e Synchronisation M	ode
C Sam Sampling F 44.1 Devic	ping rate is set automatically as Rate kHz e Synchronisation M Mode	ode
C Sam Sampling F 44.1 Devic	Ingrate is set-automatically as late E Synchronisation M Mode SYT (PCR Compound Digital Input (Internal)	ode
C Sam	pling rate is set-automatically as take E Synchronisation M Mode SYT (PCR Compound	ode
Sampling F	Ingrate is set-automatically as late E Synchronisation M Mode SYT (PCR Compound Digital Input (Internal)	ode
Sampling F	Ingrate is set-automatically as late E Synchronisation M Mode SYT (PCR Compound Digital Input (Internal)	ode

1 Computer is master, AMBus FireWire device is slave, locked to the AMBus FireWire card.

 Under Ck Master, check PC Driver.
 Select the Apogee AMBus FireWire device and click Change Synchronization Mode.
 Check SYT (PCR Compund Input), and click OK.

4 Click Apply.

5 On the Apogee host interface front panel, set the clock source to **Option** (on a Rosetta 200 or 800, set **Sample Rate** to **EXT** and **Sync** to **Option**).

Note that this is not possible with an AD-16X, which cannot lock to an installed AMBus FireWire Card. Also, note that Apogee does not recommend this configuration.

nels Clk Master	Devices	Current Synchronisation Source
tion 🛛	PC Driver	External
	Apogee X-FireWire	Digital Input (Internal)
 Sampling 	ynchronisation Mode) ng rate is set manually ng rate is set automatically as	defined by the clock master App
- Sampling Rat		App
44.1 kF		ode X
44.1 k	łz	
44.1 kł	iz Synchronisation M Mode	ode
44.1 kł	^{iz} Synchronisation M Mode SYT (PCR Compound I	ode
44.1 kł	¹² Synchronisation M Mode SYT (PCR Compound I Digital Input (Internal)	ode
44.1 kł	^{iz} Synchronisation M Mode SYT (PCR Compound I	ode

2 Computer is slave, AMBus FireWire device is master, locked to it's internal clock

1 Under Ck Master, check Apogee AMBus FireWire.

2 Select the Apogee AMBus FireWire device and click Change Synchronization Mode.

3 Check Digital Input (Internal) and click OK.

4 Click Apply.

5 On the Apogee host interface front panel, verify that the clock source is set to **INT**.

3 Computer is slave, AMBus FireWire device is master, locked to another external source such as word clock.

Apogee FireWire Con	trol Panel			1 Under Ck Master, check Apogee AMBus	
Devices	Synchronisat	ion Settings		FireWire.	ام ما
tau Devices wij Input Charnels wij Dutput Charnels vSinchronisation → Settings Ready	Chi Matter	Devices PC Driver Apoges X-FireWire grachesistion Mode Ing rate is set manually ng rate is set automatically as e	Input)	 2 Select the Apogee AMBus FireWire device a click Change Synchronization Mode. 3 Check Digital Input (External) and click OK. 4 Click Apply. 5 On the Apogee host interface front panel, set the clock source to the desired clock source (such as word clock) (on a Rosetta 200 or 800, set Sample Rate to EXT and Sync to the desired clock source) 	he s le

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When multiple Apogee AMBus FireWire cards are connected, we recommend that one interface be designated as the clock master and configured as in example **2**, that the remaining units be configured as clock slaves as in example **3**, and that word clock be distributed from the clock master to the clock slaves.

Settings Window

🔀 Apogee FireWire Con	trol Panel		_ 🗆 ×
Eile Info			
Devices Input Channels Ultput Channels Channels Synchronisation	Stream buffer depti:	2.0 ms	Apply
	Audio Buffers ASID buffer deptr.	10.0 ms 448 samples	Apply
	WDM sound buffer depth:	10.0 ms 448 samples	Apply
	ASIO Statistics Drop outs detected: 0		
Settings		1 Device(s) connected.

Three buffer settings are provided in this window, **Stream buffer depth**, **ASIO buffer depth**, and **WDM sound buffer depth**. Found below are a few general guidelines for setting buffer depths - please note that the right setting depends on the speed of your computer's processor and the amount of processing needed for a particular session in your audio application (as determined by the number of I/O, the number of DSP plugins, soft synths, etc.).

- Lower buffer depths result in lower latency from input to output, but can result in buffer overruns which cause clicks and pops. Buffer overruns occur when the computer's CPU runs out of processing power and cannot provide data quickly enough to the driver. If clicks and pops do occur, either the buffer depth must be increased to give the CPU more time, or the CPU's load must be reduced by removing plug-ins, tracks or other DSP.
- Higher buffer settings result in higher latency but allow the use of more DSP (plug-ins, soft synths) without clicks and pops.
- During the recording phase of a session, it's best to compromise DSP usage in order to minimize latency, so the performers being recorded are not disturbed by latency. To eliminate latency in performer's cue mix, use Apogee's Firemix Software Mixer.
- During the mixing phase of a session, latency is in most cases not an issue, thus it's possible to increase buffer depths so more DSP may be used without clicks and pops.

Stream buffer depth

This is an **expert** setting, and should be left at 2.0 ms in most cases. If your processor is exceptionally fast, you may try lowering the buffer depth for lower latency. If the Apogee host interface is locking intermittently to FireWire, Stream buffer depth should be increased..

ASIO buffer depth

This setting controls buffer depth when using the AMBus FireWire card with ASIO-compatible applications (Steinberg Nuendo-Cubase, Sonar 4 (not 3), Samplitute, and others.

WDM sound buffer depth

This setting controls buffer depth when using the AMBus FireWire card with applications which employ WDM.

General Notes

If you change the Apogee AMBus FireWire hardware connected to your computer in any way (i.e. you add interfaces or change AMBus FireWire cards), it's necessary to uninstall and re-install the Windows XP driver.

Troubleshooting

Symptom – When the driver instructs me "To finish the installation connect your device to this computer and turn it on", I connect the device but nothing happens; the Apogee hardware is not recognized. **Solution** – This indicates some sort of hardware problem:

- If you're computer and AMBus FireWire care are equipped with FW800 connections, be sure you're connecting the AMBus FireWire card to the computer with a FW800 cable.
- Test the host interface on another computer if possible
- Verify the chipset of the computer FireWire connections. We have had the most reliable operation with Texas Instruments or Lucent chipsets.

Symptom – The driver installation seems to have gone well, but the interface(s) don't appear correctly in the "Safely Remove Hardware" window. Also, I don't see I/O in the **Input Connections** and **Output Connections** windows of the Apogee 1394 Audio control panel.

Solution - If you're using SP2 and using FW800, run the Microsoft hotfix found here: http://support. microsoft.com/kb/885222. After that, go to **Add or Remove Programs** in the Windows control panel, uninstall the driver, power cycle the computer and Apogee host interface, and re-install the driver.

Symptom – I'm getting clicks and pops in my audio software. **Solution** – Go to the Apogee 1394 Audio control panel's **Settings** window and increase the buffer setting sizes.

Symptom – My AD16X, DA16X or Big Ben won't lock to the FireWire connection. **Solution –** Increase the **Stream buffer depth** in the Apogee 1394 Audio control panel.

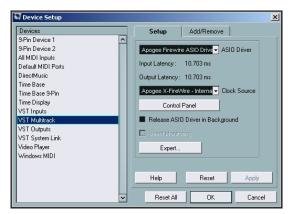
Configuring Audio Applications for use with AMBus FireWire equipped Apogee Interfaces

In general, configuring the "major" audio applications (such as Apple Logic, Steinberg Nuendo or Cubase, MOTU Digital Performer or Cakewalk Sonar 4) consists of identifying a Device Setup window in the app and selecting the Apogee host interface as the hardware device providing I/O. On the other hand, configuring "utility" audio applications such as Windows Media Player (on Windows XP) or iTunes (on OS X) consists of selecting the Apogee host interface in an operating system control panel. The following four configuration examples are given below:

Configuring Steinberg Nuendo on Windows XP Configuring Windows Media Player on Windows XP Configuring Apple Logic on OS X Configuring iTunes on OS X.

From these examples it should be possible to deduce configuration details for the specific audio application you're using. Please consult operating instructions for the audio application.

Configuring Steinberg Nuendo on Windows XP



After verifying proper operation of the AMBus FireWire card with the Apogee 1394 Audio control panel, open Nuendo.

Under Nuendo's **Devices** drop-down menu, select **Device Setup** then **VST Multitrack**.Set **ASIO Driver** to **Apogee FireWire ASIO Driver**.

It's possible to access the Apogee 1394 Audio control panel by clicking on the **Control Panel** button.

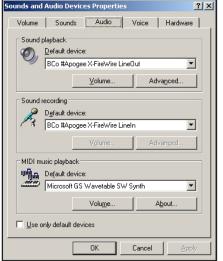
Inputs Outputs) 🗉	E All Add Bus Presets .	
Bus Name	Speakers	ASID Device Port	
🖯 Stereo In	Stereo		-
≤i: Left		1 in1	
Si Right		2 ln2	
🕀 Stereo In 2	Stereo		
≤i: Left		3 In3	
<u><</u> Right		4 In4	
	Stereo		
<u><</u> ti Left		5 In5	
<u><</u> Right		6 In6	
	Stereo		
<u><</u> Left		7 In7	
i <u>⊲</u> ∈ Right		8 In8	

Under Nuendo's **Devices** drop-down menu, select **VST Connections**.

Create Input and Output busses as needed and assign **ASIO Device Ports** to the newly created busses.

Configuring Audio Applications for use with AMBus FireWire equipped Apogee Interfaces

Configuring Windows Media Player on Windows XP



From the Windows XP control panel, open the **Sounds and Audio Devices** control panel. Select the **Audio** tab. Set **Sound playback** and **Sound recording Default devices** to **Bco#Apogee AMBus FireWire LineOut** and **LineIn**, as depicted below. Open Windows Media Player and....play!

Configuring Apple Logic on OS X

O O O Preferences	0
Global Audio MIDI Display Score Video Automation Control Surf	aces
General Drivers Display Sample Editor Surround MP3 Res	set Nodes
Core Audio DAE Direct TDM	
Enabled	
System Memory Requirement: 29.0 MB	
Driver: Apogee Firewire (0151)	
I/O Buffer Size: 1024 ÷	
Recording Delay:	
Max. Number of Audio Tracks:	
64 Busses	
Universal Track Mode	
Larger Disk Buffer	
24 Bit Recording	
Software Monitoring	
Process Buffer Range: Medium	-
Rewire behavior: Playback Mode (Less CPU Load)	• I
Maximum Scrub Speed: Normal	•
Scrub Response: Normal	:

1 Connect the Apogee interface and open Apple Logic.

2 In Logic, select Audio > Audio Hardware &
Drivers to open the Core Audio driver page.
3 First click on the Drivers tab, then the Core Audio tab.

4 Check the **Enabled** checkbox (click **OK** when the "Reboot Logic" message is displayed").

5 Select **Apogee FireWire (xxxx)** in the **Driver** field (click **Try (Re)Launch** when the "Reboot Logic" message is displayed").

6 Set **I/O Buffer Size** to **512**; once the proper operation of the Apogee hardware is verified, this value may be reduced to lower latency.

7 Though it's not specific to Apogee hardware, you'll probably want to check the **24 Bit Recording** as well as **Software Monitoring** check boxes.

Configuring Audio Applications for use with AMBus FireWire equipped Apogee Interfaces

Configuring Apple Logic on OS X (continued)



8 In Logic's **Track Mixer**, set the inputs and outputs of **Audio** objects to the desired hardware I/O channels, as shown below.

Configuring iTunes on OS X.

			Audio E	Devices	MI	DI Devic	es					
System Settir	igs —											
Default Input:	ో Apogee F	irewire	(0151)	;	Def	ault Out	put:	″o⁴ Ar	ogee	Firew	ire (01	51)
					Syst	tem Out	put:	″o⁴ Ap	ogee	Firew	ire (01	51)
Properties Fo	r: 💅 Apogee F	irewire	(0151)	+			_					
Clock Source:	Apogee Fire	wire (01	51) Sy	ncł 🛟								
Audio Input –					Aud	lio Outp	ut —					-
					-			onfigur		akoro	1.	
					6					akers		
							torlan	and Day	ico	A		
- Non-Inter	leaved Device	* -			F	Non-In	terrea	veu De	vice	*		
	leaved Device Default	÷ –			F	Non-In Source:	Def		NCE	•		^
Source:	Default	\$ -	4bit			Source:	Def	ault	_	*	-24bit	
	Default		4bit	÷ •			Def	ault	_	*	-24bit	÷
Source:	Default		4bit Mute 1	•		Source:	Def	ault	_	* 8ch-	-24bit Value	
Source:	Default 4100.0Hz 💽	8ch-2 Value	Mute 1	Thru		Source: Format:	Def	ault	_			Mute
Source: Format: 4	dB dB dB dB dB dB dB dB dB dB dB dB dB d	8ch-2 Value 0.25 n/a	Mute 1	Thru	Ch M 1	Source: Format:	Def	ault	_	dB 0.5 n/a	Value 0.25 n/a	Mute
Source: Format: 4	Default 4100.0Hz 💽 dB	8ch-2 Value 0.25 n/a	Mute 1	Thru	Ch M 1 2	Source: Format:	Def	ault	_	dB 0.5	Value 0.25	Mute
Source: Format: 4	dB dB dB dB dB dB dB dB dB dB dB dB dB d	8ch-2 Value 0.25 n/a n/a	Mute 1	Thru	Ch M 1	Source: Format:	Def	ault	_	dB 0.5 n/a	Value 0.25 n/a	Mute
Source: Format: 4	Default 4100.0Hz dB 0 n/a n/a	8ch-2 Value 0.25 n/a n/a n/a	Mute 1	Thru	Ch M 1 2	Source: Format:	Def	ault	_	dB 0.5 n/a n/a	Value 0.25 n/a n/a	Mute
Source: Format: 4	Default 4100.0Hz	8ch-2 Value 0.25 n/a n/a n/a n/a	Mute 1	Thru	Ch M 1 2 3	Source: Format:	Def	ault	_	dB 0.5 n/a n/a n/a	Value 0.25 n/a n/a n/a	Mute
Source: Format: 2 Ch Volume M 1 2 3 4	Default 4100.0Hz d d c n/a n/a n/a n/a	8ch-2 Value 0.25 n/a n/a n/a n/a n/a	Mute 1	Thru	Ch M 1 2 3 4	Source: Format:	Def	ault	_	dB 0.5 n/a n/a n/a n/a	Value 0.25 n/a n/a n/a n/a	Mute
Source: Format: 4	Default 4100.0Hz dB 0 //2 //2 //3 //3 //3 //3 //3	8ch-2 Value 0.25 n/a n/a n/a n/a n/a n/a	Mute 1	Thru	Ch M 1 2 3 4 5	Source: Format:	Def	ault	_	dB 0.5 n/a n/a n/a n/a n/a	Value 0.25 n/a n/a n/a n/a	Mute

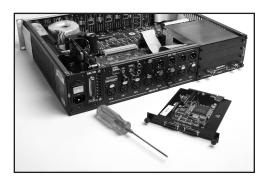
1 Open the Audio Midi Setup ultility, found on an OS X Macintosh here: Applications > Utilities > Audio MIDI Setup.

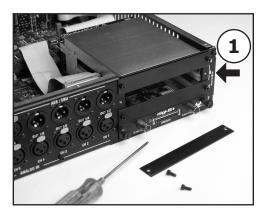
2 Set Default Input, Default Output, and System Output to Apogee FireWire (xxxx) The AMBus FireWire serial number is displayed in parentheses.

3 In Audio Midi Setup, set **Properties For** to **Apogee FireWire (xxxx)**, set **Clock Source** to **Apogee FireWire (xxxx) Synch** and **Format** to **44100.0Hz**.

4 Open iTunes, and play!

Installing the AMBus FireWire Card



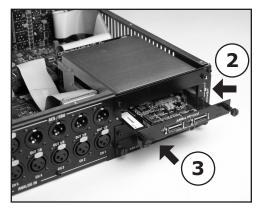


Your AMBus FireWire card should include the following:

- 1 AMBus FireWire card 1 user's guide
- 1 Remove the plate cover of an available Ambus slot.
- 2 Locate the card between the guides.
- **3** Gently press on the back panel of the card until you feel it mate with the AMBus connector.
- 4 Fasten the card in place with the included screws.

A NOTE ABOUT UPDATING THE AMBus FireWire CARD

Due to the space constraints associated with AMbus card slots, the MIDI connector necessary for performing firmware upgrades on the AMBus FireWire card was removed prior to shipping. Please contact Apogee in the event that you need to update your card. Additionally, do not forget to register your AMBus FireWire card so that you may be notified of any updates.







AMBus FireWire card USER'S GUIDE - v1.0 - March 2007

