Direct Pro LX6 Specifications:

Converters:	24 bit, 96 kHz A/D D/A Shielded Converters
THD+N:	.002% @ 1 kHz
Dynamic Range:	110 dB D/A, 100 dB A/D
Frequency Response:	7 Hz-44 kHz, +/- .5 dB at 96 kHz
Sample Rates:	32 kHz, 44.1 kHz, 48 kHz, or 96 kHz
Analog Inputs:	Four 1/4" Connectors:
	• 1/4" UnBal Line Inputs at -10 dBv (w/ 30 dB Level Trim)
	• 1/4" Bal Line Inputs at +4 dBu (w/ 30 dB Level Trim)
Analog Outputs:	Four Line Outputs on 1/4" Connectors: +4 dBu/-10 dBv
	Two AUX Outputs on RCA Connectors: -10 dBv
Headphone Output:	Stereo Headphone Jack with volume knob on front
Digital I/O:	24 Bit S/PDIF In/Out, OPTIONAL: AES/EBU In/Out
MIDI I/O:	MIDI In/Out on 5-Pin DIN Connectors
Sync I/O:	S/PDIF Digital Clock, MIDI
Modes:	Full Duplex Simultaneous Record/Play
Expansion:	Up to four (4) cards can be used simultaneously in one PC.
Computer Card Type:	PCI Bus Architecture, 5" length
Connectors on Card:	25-Pin Connector to Break-Out Box, S/PDIF Digital In/Out
Powerful DSP:	24 Bit, 80 MIPS
Minimum System:	233 MHz w/ Win 95/98; 64 MB RAM

Options:

AES/EBU I/O:	AES/EBU I/O connects to S/PDIF I/O
19" 2U MONO Rack:	MONO RACK for 1 DIRECT PRO LX6
19" 2U DUAL Rack:	DUAL RACK for 2 DIRECT PRO LX6

**The Direct Pro LX6 Package Includes:**

• Direct Pro LX6 Break-Out Box
• Direct Pro LX6 Host PCI Card with DSP
• Direct Pro LX6 Manual
• Custom 25-pin Shielded Cable
• Software Control Panel
• Windows 95/98 and ASIO Drivers
• Multichannel Recording Application and Effects**

** For updated software bundle check out our website: www.aardvark-pro.com/DirectPro/software

O W N E R S   M A N U A L

DIRECT PRO LX6

4 IN / 6 OUT AUDIO INTERFACE
WITH MIDI, S/PDIF AND
REAL-TIME DSP EFFECTS

Aardvark
Superior sound, Simplified
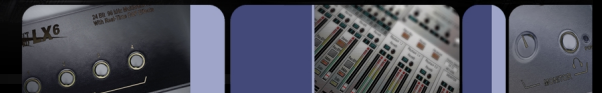
WELCOME TO THE DIRECT PRO LX6

Minimum System Requirements

• Microsoft Windows 95 or Windows 98

• Pentium or compatible of running at 233Mhz or higher

• 64 MB RAM

• One Available PCI slot

The Philosophy

The All-In-One Direct Pro LX6 is truly a revolution in PC recording. This Personal Studio System is a clever combination of hardware and software that provides professional recordings right out of the box, all while keeping the audio quality and computer performance to the expectations of the world's top professional studios.

The break-out box, software and powerful DSP engine allow you to have all the meters, faders, pan adjustments, input level trim, EQs and compression that expensive studio setups have. In addition, you get the flexibility of presets and one-touch adjustments to make the whole system more efficient.

We also know that monitoring with effects is crucial in getting good recordings, so the effects delay doesn't get in the way of your creative spirit. That's why we've included a powerful DSP engine and three real-time DSP effects so you can monitor in real-time without the 1/2 second latency that you'll find in almost all other PC recording systems. The DSP not only gives you great sounding real-time effects, but it also completely powers the Direct Pro LX6 system so it keeps your PC running lightning fast.

We hope you notice all the extra effort we put into the Direct Pro LX6. The sturdy breakout box, the perfectly shielded PCI card and our easy to use Control Panel should make using the Direct Pro LX6 a refreshing beginning to many years of PC recording. We welcome you to the Aardvark family and hope you enjoy being part of the new PC recording revolution!

FCC Statement

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 a reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency 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 correct the interference at his own expense.

This product complies with European CE requirements.

Problem: Jitter is present on digital S/PDIF recordings
Solution: Check your Sync Selection settings in the Direct Pro LX6 control panel. When recording S/PDIF, the sync selection should be set to S/PDIF.

FAQ (frequently asked questions)

There are some common questions about the LX6 and soundcards in general that may come up, we'll try to cover as many as possible here.

Question: How many tracks can I record with the LX6?
Answer: The amount of tracks you can record with the LX6 depends on the audio software you use, and how powerful your computer is. The only limitation of the LX6 is that only four tracks can be recorded simultaneously. Your total number of tracks available depends on a number of factors. Bit Depth, sample rate, (higher sample rates mean less tracks), RAM, Hard Drive Speed, Processor speed, are among the most significant.

Question: Can I put multiple LX6 units in the same computer, or can I use the LX6 with another Aardvark card?
Answer: Up to four Aardvark products, LX6 or otherwise, can be used in the same computer. In order for them to be synchronized, you must choose one of the cards as the master, and the other cards as slaves. The S/PDIF out of the Master card will connect to the S/PDIF in of the slave card, and additional cards can be daisy chained.

Question: When I have multiple cards on the same system, how does the Aardvark control panel recognize them.
Answer: Each card has its own control panel. When multiple LX6s, or other Aardvark cards are on the same system, a "card select" menu will be available in your control panel software to select which control panel you want to configure.

Question: Can I use the effects on mixdown
Answer: If you mix down internally with your multitrack software, you cannot. If you mix down to an external device, you can use the reverb. The EQ and Compression are only available on the inputs.

Question: What is the deal with the LX6 and IRQs
Answer: Although it may look like it, We do not use IRQs. Windows will assign your Aardvark card an IRQ because it is a PCI device. However, we do not actually use the assigned IRQ, allowing other devices to share.

Question: Can I have a SoundBlaster (or similar consumer-level soundcard) on my PC at the same time as the LX6?
Answer: Absolutely, they will get along just fine!

Question: I use Windows ME, will the Direct Pro LX6 work on my PC?
Answer: It will work just fine, Windows ME uses the same driver model as Windows 95 and 98.

Aardvark

Be sure you are not running at 96 kHz. Effects are bypassed at 96 kHz Also, be sure the effects are not bypassed. Every effect has a bypass button. It is a small green button that says BP next to it. If it is a lighter green, that means the effect is bypassed. Every effect has a PS button as well. This is for presets. It is not the opposite of bypass. Bypass is enabled and disabled by simply clicking the BP button.

Problem: I hear effects, but they are not recording
Solution: If your compression and EQ are heard, but not recording, be sure the REC FX button is activated

Problem: I can't load a PRESET.
Solution: Once you have selected the preset you want to load, be sure you click RECALL before returning to the LX6 control panel.

Problem: My input meters are responding, but I don't hear anything from the outputs
Solution: Be sure the volume knob on the front is up, and you have MONITOR L,R dragged to all three outputs on the patchbay.

Problem: The Mouse does not allow me to fine tune effects or volume settings
Solution: Once you highlight the controls you want to adjust by clicking them with the mouse, you can use the arrow keys on your keyboard to make more precise adjustments.

Problem: I can't hear my microphones when they are plugged into the Direct Pro LX6
Solution: The inputs on the Direct Pro LX6 are line level. A preamp is required to record microphones.

Problem: My Guitar/Bass sounds quiet when it is plugged directly into the LX6
Solution: The LX6 inputs are line level. A preamp is required to record guitars.

Problem: Windows Freezes up on boot up after the LX6 is installed:
Solution: Most often, this occurs because Windows is trying to play a system sound before the LX6 drivers are finished loading. Go to the Windows control panel, and select "Sounds". At the bottom of this window, there will be a dropdown menu labeled "schemes". Select "no sounds" from this menu.

Problem: My sample rate changes to 32 kHz all of a sudden
Solution: Disable windows sounds, as instructed in the previous question

Problem: The Direct Pro LX6 isn't working after a reboot
Solution: Because the Direct Pro LX6 is directly powered from the computer means that the Direct Pro LX6 requires a full PCI bus reset. A complete restart is needed to achieve this, and some computers may require the power to be turned off before booting to reset the PCI bus. If the PCI bus has not been properly reset, you may see an error message such as "Direct Pro LX6 alert- Unable to send software to host card" or "The Aark hardware is not responding", the LX6 will not function until you reset the PCI bus by rebooting.

Table of Contents

THE DIRECT PRO LX6 SYSTEM

The Direct Pro LX6 box should contain all of the following items:

• 1 Direct Pro LX6 PCI host card
Connects directly to the motherboard of your computer

• 1 Direct Pro LX6 Interface Box

• 1 6' shielded 25-pin cable

• 1 Direct Pro Driver CD-ROM

• 1 Digital Audio Software CD-ROM

• 1 Direct Pro LX6 Manual

If any items are missing or damaged, please contact your dealer
or Aardvark Customer Support.

**E-mail: Support@aardvark-pro.com**

Tel: 734-665-8899

**Fax: 734-665-0694**

DIRECT PRO LX6 TROUBLESHOOTING GUIDE

Should you run into any difficulties with your Direct Pro LX6, please consult this section. Although most problems are easily rectified this way, do not hesitate to contact Aardvark Technical Support, or check our website for up to date information.

Problem: My inputs/outputs don't seem to be working
Solution: With all of the variables involved with audio software and instruments, its tough to figure out what is at fault if something is not working correctly. Here's a way to test your inputs and outputs simultaneously:
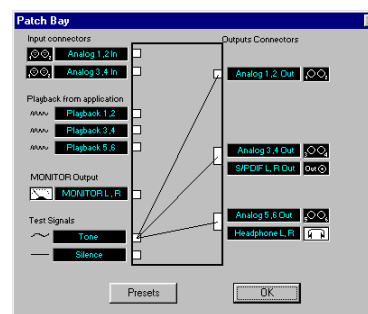
First, go to your patchbay and drag TONE to all outputs Next, with 1/4" cables, plug the LX6 output 1 into input 1, output 2 into input 2, output 3 into input 3 and output 4 into input 4. Doing this generates a tone from the LX6 1/4" outputs, that will be picked up by the LX6 inputs. You can find out if the inputs see the tone by checking the input meters at the bottom of each input channel.
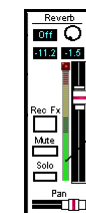
Problem: I can't hear an audio CD through the LX6 outputs
Solution: Here's why: The LX6 does not have a dedicated connection to your CD-ROM. You can play .wav or other audio files off of a CD, but some extra configuring will be necessary to play CD-audio. It requires installing an alternate CDFS.vxd file in windows. This alternate file is available on our website, and many others. It converts CD audio in to .wav files in real time, allowing the LX6 to play audio CDs.

Problem: I can't see the pan controls on the bottom of the LX6 control panel.
Solution: You need to increase the screen size your monitor accepts. Go to the Windows control panel and select DISPLAY. Then, select the SETTINGS tab. Your SCREEN AREA should be set to 800 x 600 pixels or larger. Otherwise, you will not be able to see the entire Direct Pro control panel.

Problem: I don't understand this whole "Patch Bay" thing
Solution: It's OK, it's a bit tricky at first. For now, just drag Monitor L,R to all three outputs, and you'll be happy. This allows you to monitor the inputs, as well as all playback though any output on the LX6.

Problem: My effects aren't working.
Solution: This could be a couple of things...

You are by no means limited to using this program. The LX6 works great with many other programs, including Cakewalk, Cubase, Cool Edit Pro, Logic Audio, N-Tracks, Vegas, Acid, Soundforge, Wavelab, Gigastudio, among many, many others. Guides for configuring the LX6 with these programs are available on our website http://www.aardvark-pro.com

To Install Samplitude Project

Typically, a menu will appear as soon as the Samplitude CD is placed in the drive. However, many computers optimized for audio will skip this step.

- If it does not appear, go to MY COMPUTER
- Double Click the CD-ROM drive that has the Samplitude Project CD.
- Double Click the install folder
- Double Click the Samplitude_Project_E folder (The E stands for English, you can choose another folder if this is not your preferred language to work in)
- Double click SETUP

After this, the program will install automatically. Go with all of the default options the install program provides.

Getting Around Samplitude Project

The Samplitude Project CD contains a full manual and tutorials that are very comprehensive, but here is some information to get you started.

- Open Samplitude Project by using the desktop icon that was placed during the install.
- When Samplitude opens, it brings up a Startup screen, click the CLOSE button and ignore it.
- Go to FILE and select NEW MULTITRACK PROJECT. This lets you select how many tracks you want in your project (anywhere from 2 to 16) and the desired sample rate (the LX6 allows 32, 44.1 48 or 96).
- When you set up your new project, the first thing you should do is click the MULTI-CARD MODE button in the upper left so it turns green. This allows you to use the full power of the LX6. Every track has a ? (question mark) button. Clicking this button will bring up a TRACK PROPERTIES menu. Here, you can choose what Recording Device and what Playback Device you want assigned to that track.
- To arm a track for recording, click the button on the far right of the track you want to record. It will have the letter R followed by a number (the number depends on what inputs you are recording with) The Samplitude mixer allows you to fine tune levels and add effects. Bring up the mixer by hitting the M key on your keyboard.
- After you have armed a track for recording, you need to record by clicking the multi track/MIDI record button. This button has three red dots with 3 blue waves next to them. Next to this record button is another record button that has one big red circle on it.

INSTALLING THE DIRECT PRO LX6 HARDWARE

1. Please unplug you PC before connecting or disconnecting the Direct Pro LX6 interface box and PCI host card . Connecting or disconnecting the hardware with electricity present will cause physical damage to the Direct Pro LX6 or your computer. It is best to disconnect the power cable completely before proceeding. If you are unfamiliar with installation of computer peripherals, please seek assistance from a qualified computer technician. *Aardvark will not be held responsible nor liable for damages resulting from improper installation.*

2. Remove the cover from your computer. Most computers have a series of screws on the back of the case that keeps the cover in place.

3. Choose an empty PCI slot, it will look like the PCI slots shown below.

4. Remove the small outer cover from the chosen PCI slot. This cover will likely be held in place by a screw. Ground yourself by touching an empty slot on the computer's metal chassis.

5. Gently align the Direct Pro LX6 PCI Host Card with the chosen PCI slot and press it slowly but firmly into place. It should be seated tightly, with the metal connection bracket matching up perfectly through the hole in the back of the computer.

6. Use the screw from the small outer cover to lock the Direct Pro LX6 Host Card in place while providing maximum grounding.

7. Replace the computer's cover.

8. Connect one end of the 6-ft shielded cable to the 25 pin connector on the Direct Pro LX6 Host Card, and the other end on the back of the Direct Pro LX6 interface box labeled *To Aark Host*. Tighten the screws to assure a firm connection and maximum grounding for the Direct Pro LX6 system.

Aardvark
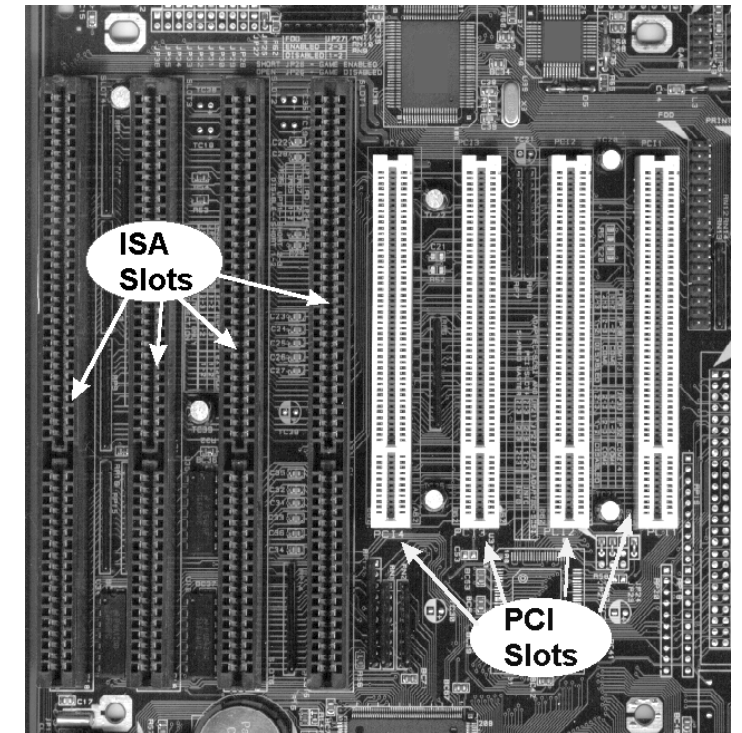
9. Avoid putting the Direct Pro LX6 interface box near your computer or TV screen. This may cause interference and degrade the quality of the audio.

10. Keep analog cables connected to the Direct Pro LX6 away from power cords and monitors.

11. Reconnect the computer's power supply, then turn on the computer. *The Direct Pro LX6 system is completely powered by your computer. Because of this, you must never detach the shielded interface cable without first turning off the computer. Otherwise, damage will occur.*

WINDOWS 95 HARDWARE SETUP

1. When Windows restarts, it will automatically detect the card you installed. Since it is a PCI card, it will identify itself as a "Plug and Play" device.

Windows will indicate detecting the hardware with these dialogs:
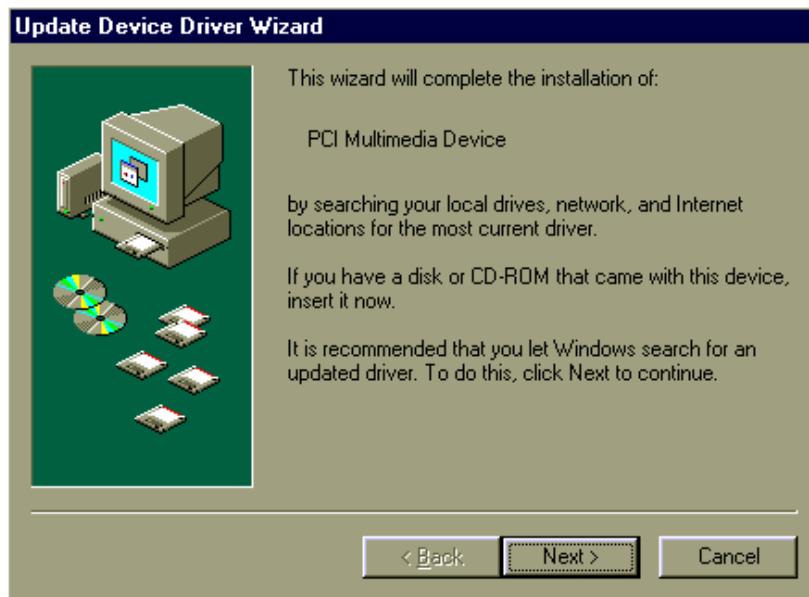
Silence

Silence options are provided as diagnostic tools to make sure that your computer is working properly, and to troubleshoot potential cabling problems. Every output pair on the right must have a source on the left connected to it. If you wish to disable an output pair, drag *silence* to it.

Test Signals

TONE lets you test the LX6 outputs without using additional software. If you drag tone to any of the outputs on the right of the patchbay, that output will generate a test tone.

SILENCE is used for disabling outputs on the LX6, if that is ever necessary.

Output Connectors

On the right side of the patchbay, there are connections that refer to physical outputs on the LX6

ANALOG 1,2 Out correspond to the 1/4 inch outputs on the back of the LX6

ANALOG 3,4 out and S/PDIF L,R out are joined. If something is playing from outputs 3,4, it will play out of the S/PDIF output on the host card as well.

ANALOG 5,6 out and Headphone L,R are joined as well. Anything playing in the headphones will also be heard from the RCA outputs on the back of the LX6

Again, if the patchbay is a bit confusing (anything this flexible can be!), just drag MONITOR L/R to all three outputs, and you'll be fine! Most users will make a lot of use of the MONITOR by dragging it to the Headphone Output so they can monitor their mix in real-time along with all of the effects. This monitor can also simultaneously be sent to any of the analog line outputs and even the digital output.

SAMPLITUDE PROJECT INSTALL AND QUICK START

The LX6 comes bundled with Samplitude Project by SEK'D. It's a "lite" version of Samplitude 24/96, but it is a very powerful program in its own right. You can record up to 16 tracks of MIDI or audio at sample rates as low 32 and as high as 96 kHz. It also has powerful mixing and effects capabilities. If you want to upgrade to the full version, call SEK'D at 1-800-330-7753.

This is also the number to call if you are having technical support issues with Samplitude Project. If the LX6 does not seem to be working right, by all means give us a call here at Aardvark. SEK'D makes the Samplitude Project software, however.
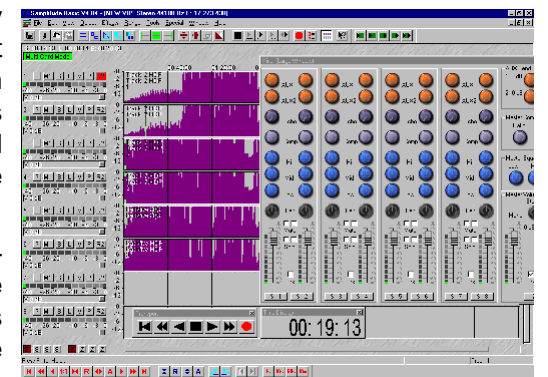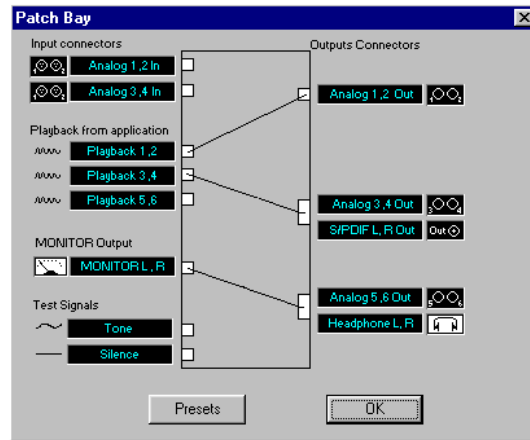
PATCH BAY

Clicking the PATCH BAY button on the LX6 control panel opens a window that provides a flexible means of configuring the LX6 outputs.

If the PATCH BAY concept is confusing, it may be easiest to simply drag Monitor L,R to all outputs. This will allow you to hear what is plugged into your inputs, as well as already recorded tracks in your multitrack software. This is because MONITOR L,R is a combination of all input and output channels.

When you open the PATCH BAY the left side lists audio sources, and the right side refers to the hardware outputs of the LX6. This allows you to assign different audio sources to the LX6 outputs as you see fit.

Using the patchbay is quite easy. Click a white box on the left, then click a white box on the right. This will connect the two devices you selected. There will always be three lines in the PATCH BAY, there is no way to create more. If you want to connect more than one audio source to an output, use MONITOR L/R, because it is a combination of all input and playback channels.

Input Connectors

There are two sets of input connectors listed here, Analog 1,2 in, and Analog 3,4 in. These correspond to the four inputs on the front of the LX6. If you drag either Analog 1,2 in or Analog 3,4 in to an output pair on the right, the outputs you selected will monitor only the selected inputs. You will not be able to hear playback through those outputs.

(In your multitrack software, an additional input pair will be recognized by your software as inputs 5,6 , this does not correspond directly to physical inputs on the LX6. Rather, it is a virtual recording device that allows you to record the full monitor mix of the LX6, it is also the only way to record the reverb)

Monitor Output

This comes in very handy, and will probably be the most used portion of your patchbay. The monitor is a combination of all inputs and playback channels. If you want to hear what you have plugged into the LX6, as well as previously recorded tracks through the same outputs, you must connect MONITOR L,R to that output. Also, MONITOR L/R is the only selection in the patchbay that allows you to hear the LX6 effects.

2. Insert the Driver CD-ROM packaged with the Direct Pro LX6 , and click *Next*. The Following dialog should appear:


3. Click *Next*. Windows may now ask for the location of the drivers. If this is the case, specify the CD-ROM drive (usually D:). Otherwise, simply click *Next* again. Windows will copy the files from the Direct Pro LX6 CD-ROM.

4. When the files have been copied, Windows will ask to restart the computer. This is because the files just installed will not take effect until the next time Windows is loaded. Click *NO,* since you will restart the computer after completing the Direct Pro LX6 software installation in the next section.

WINDOWS 95 SOFTWARE SETUP

5. Once Windows has finished loading, the Direct Pro LX6 Control Panel installation program may appear automatically. If not, go to *My Computer,* find your CD-ROM drive, and click the *setup.exe* icon.
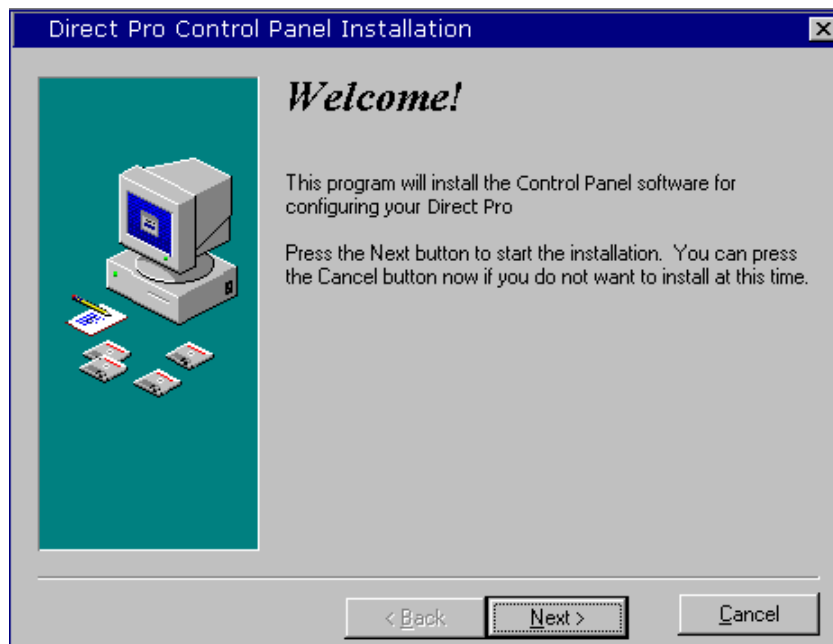
6. Click *Next* when you see the welcome screen:

7. Setup will allow you to select the Destination Directory. Otherwise, it will put the Direct Pro LX6 software and drivers in the "*C:\Program Files\Aark manager"* directory. If you would like the files elsewhere, simply type the new destination or select *Browse* to put the files in another directory.

8. Click the *Next* button to continue. The *Ready to Install!!* Dialog should now appear. Click *Next* again to begin installation.

ADVANCED MENU

Clicking the ADVANCED button on the Direct Pro control panel brings up a menu that provides access to some additional features of the LX6.

• REGISTRATION: You may be asked for this number if you contact tech support. Other than that, you do not need to be concerned with it.

• ISSUE WARNINGS ON SAMPLE RATE ERRORS: If activated, the LX6 will provide a warning if you are trying to play an unsupported sample rate, or if your multitrack software is set to a different sample rate than what is set in the SOURCE SELECT of the LX6 Control Panel, or if you are trying to record S/PDIF with out changing SOURCE SELECT to S/PDIF.

• PLAYBACK CHANNEL 1-4 OUTPUT LEVEL: This lets you select between -10dBV (consumer) and +4dBu (professional) for the four 1/4" outputs on the back of the LX6.

• PCI BUS EFFICIENCY: This reading is a tool used by tech support to help determine the cause of various problems. Due to the variety of computer components currently available, a low PCI BUS EFFICIENCY percentage reading does not necessarily mean that the LX6 is operating poorly. You can disregard this reading unless you are running into other problems.

• DIRECT SOUND BUFFER SIZE: This lets you choose a buffer size for fine tuning performance in DirectSound applications. This does not apply to multitrack software. Direct Sound is most commonly used by software synthesizers, such as Rebirth, Fruityloops, Retro, Reality, and others.

• ASIO CONFIGURATION: This is for using the Direct Pro with ASIO compatible programs, such as Steinberg Cubase VST, Emagic Logic Audio, and Native Instruments Reaktor. You can choose between 16 bit and 24 bit ASIO operation, as well as the ASIO buffer size. Lowering your ASIO buffer size will reduce the latency in you ASIO software. However, if your ASIO buffers are too low, you may get unwanted clicks and pops in your audio. The ideal ASIO buffer size varies from computer to computer.

  Ignore this menu unless you are using an ASIO compatible program. Programs such as Cakewalk, Cool Edit Pro, Vegas, Samplitude, Sound Forge are among the programs that are not ASIO compatible.

• ASIO configuration also provides the option for selecting a master Aardvark Aark card. This is for when multiple Aardvark cards are on the same computer.

SOFTWARE TAB

This tab will let you know if your audio software is currently using any of the LX6 devices. If a device says IDLE, it simply means that a program is not using that device. It does not mean that inputs or playback are having problems.

SOURCE SELECT

This lets you select what sample rate you want to use the LX6 at. You can select 32 kHz, 44.1 kHz, 48 kHz, 96 kHz, or slave to S/PDIF. This must always correspond to the selected sample rate in your multitrack software application. Otherwise, playback and recording will not function properly.

The Direct Pro LX6 can slave to other digital devices via the S/PDIF input on the host card. Selecting S/PDIF in **Source Select** **will allow you to slave to the device.** If you are recording S/PDIF, you must have Source Select set to S/PDIF, otherwise jitter (digital noise) will occur.

If you have Source Select set to 96 kHz, all DSP effects will be bypassed.

The number below the white box is the actual measured sample rate of the system. This value shows the sample rate of the system which makes it very easy to verify that your system is running exactly at the rate you need. It also provides an accurate measurement of the sample rate of any S/PDIF device you may be slaving to.
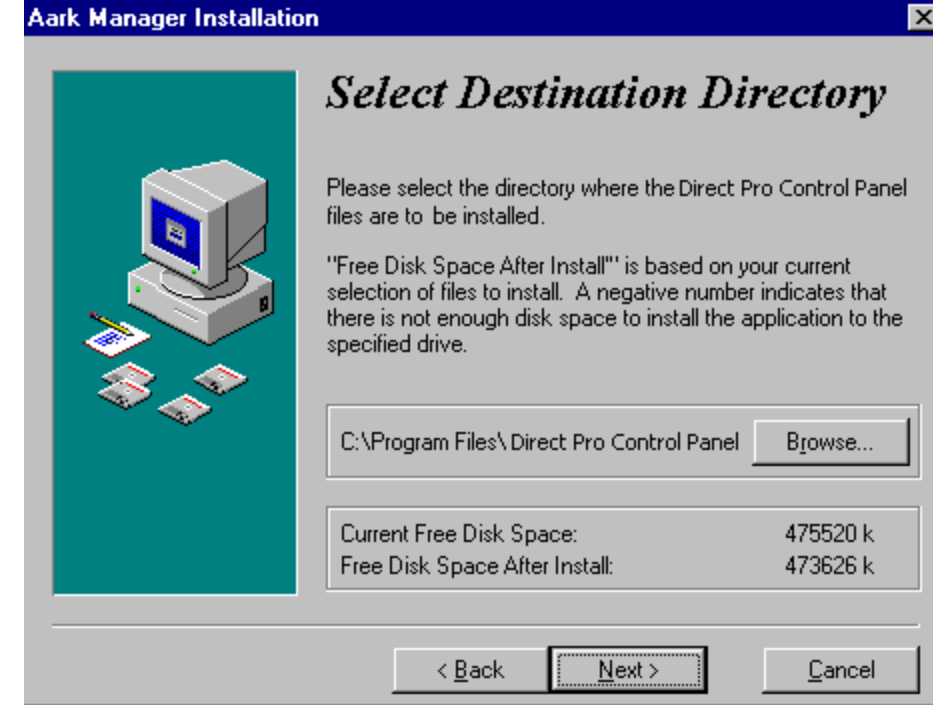
PRESETS

The LX6 is very flexible, so you may have multiple configurations for different situations. You can load and save these various configurations by using the PRESETS menu. The PRESET menu saves and loads the entire LX6 software configuration, including effects, fader levels, volume, sample rate, balanced/unbalanced, and patch bay settings.

If you want to save or load settings for an individual effect, instead of the entire Direct Pro control panel, you can use the PS button that is present on each effect. This will bring up a similar preset menu, but it only has parameters for that specific effect.

When you open a PRESET menu, either for the entire control panel, or for a specific effect, you have the option to load a saved configuration, or save your current settings.

To save a preset, type it's new name in the text box in the upper right, click add, then close the window.

To recall a preset, double click a name from the box on the left, and it should appear on the upper right, click recall, then close the window.

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9. When the installation is complete, a new folder for the Direct Pro LX6 Control Panel application will reside in the destination directory, and a shortcut will automatically appear on the desktop for easy access.

10. You must now turn your computer off for the changes to take place. Instead of restarting, select *Shut Down* from the *Start Menu/Shut down* menu. If you choose *restart* the installation will not be compete, and you will have to repeat this process!

Note: Always turn off your monitors or speakers when rebooting! Often, the speakers will pop during startup, causing potential damage!

WINDOWS 98 HARDWARE SETUP

1. When Windows restarts, it should automatically detect the card you installed. Since it is a PCI card, it will identify itself as a "Plug and Play" device.

Windows will indicate detecting the new hardware with these dialogs:

New Hardware Found

PCI Multimedia Device

Windows is installing the software for your new hardware.

2. Click *Next* then select the option *Search for the best driver for your device*, then click *Next* again.

Update Device Driver Wizard

This wizard will complete the installation of:

Direct Pro 24/96

A device driver is a software program that makes a hardware device work

< Back   Next >   Cancel

MONITOR CONTROLS

The monitor channel plays all audio routed in or out of the Direct Pro LX6 . In order to hear the monitor, it must be routed to a physical output in the patch panel. For more detailed information, please read the *Direct Pro LX6 Patch Bay* section.

• FADERS: Cut or boost the volume of the monitor signal. All faders, input, output and master, deal with the levels of the monitor signal ONLY.   In order for these faders to work, *Monitor L,R* must be assigned to an output on your patchbay. (See the *Patchbay* section for more detailed information on how to do this)

• PEAK: When pressed, will display the highest volume that has gone through the monitor

• RESET: Will reset the peak volume to zero.

If you would like to record the monitor mix in your multitrack software, select inputs 5,6 as your recording device. This input pair does not correspond to physical inputs on the breakout box. Instead, it is made available to record your monitor mix. This is useful for recording the reverb, and bouncing tracks.
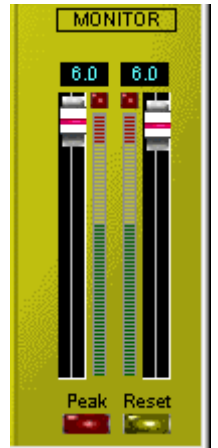
PLAYBACK CHANNEL CONTROLS

Just to the right of the input controls are three groups of faders to control the output channels.

Although it may seem like it, these faders are not hard wired to the hardware outputs on the back of the direct pro. These faders are used to boost and cut playback in the monitor mix. You will hear adjustments to these faders in the headphones, and out of the main RCA outputs. If you want these faders to adjust volume on the 1/4" outputs as well, you must have monitor L/R connected to those outputs in the PATCHBAY.

MUTE mutes these channels in the monitor mix,

SOLO will solo an output channel, and will mute all other channels, both input and output.

On the far right there are faders labeled MONITOR. This allows you to fine tune the volume of the main monitor mix. These faders always affect the head-phone output and the main RCA outs. The MONI-TOR fader can affect the 1/4" outputs if MONITOR L/R is connected to them in the PATCHBAY
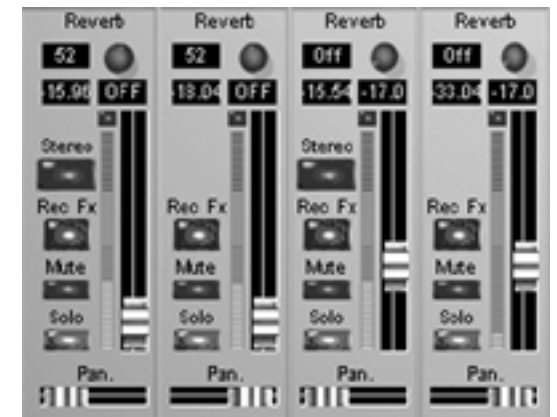
Stereo

This button on Channel 1 links all the effects and knobs of that strip with Channel 2, and the same is true with Channel 3 & 4. This can also be thought of as a 'Link' button because every control on either strip affects the other strip. There is no 'master' or 'slave' strip because changes on either strip will directly make changes on the other.

The PAN slider at the bottom is automatically forced in the far Left and far Right positions. The PAN slider is not 'linked' to the corresponding strip.

Only Channels 1 & 2 can be linked and Channels 3 & 4 can be linked. There is no way to 'link' all 4 input strips together.

• MUTE: Turns off the channel's signal entirely

• SOLO: The opposite of mute. Soloing an input channel will mute all other output channels. It will be the only audible channel.

Rec FX

This button allows flexibility in recording the effects that are on the Direct Pro LX6 Control Panel input strips. This button only affects the Compressor and EQ for that input channel strip. It does not allow recording of the REVERB. For information on how to record our Reverb, refer to the Master Reverb section of the manual.

Note: If you choose to record 96kHz audio, the Rec Fx button cannot be activated. All effects will be disabled.

IF THE REC FX BUTTON IS PRESSED

The EQ and Compressor (assuming they are not bypassed) that are on that channel strip will be recorded into the corresponding recording device driver. This allows each of the 4 input channels to have their own effects separately recorded onto 4 different tracks.

In this case, the digital peak meter shows the value of the wet signal that is being sent to the computer. This is a post-fader meter so if you move the volume fader, the meter will move accordingly and affect the level of the signal that is being recorded. It will also affect the level of that track as it is sent to the MONITOR bus.

IF THIS BUTTON IS NOT PRESSED

The EQ and Compressor on the input channel strip can only be heard via the MONITOR bus should you be listening or recording the MONITOR bus. The input device drivers 1,2 Direct Pro & 3,4 Direct Pro will not record either the EQ or Compressor.

In this case, the digital peak meter shows the value of the dry signal that is being sent to the computer for recording. The volume fader changes the volume of that track and sends it to the MONITOR bus. This meter is before the fader (pre-fader) so if you move the volume fader, the meter will not be affected.

3. Insert the driver CD-ROM that came with the Direct Pro LX6. Place a check mark beside *CD-ROM drive* by clicking on it. All other boxes must be cleared. Click *Next*.

4. Windows will now locate the Direct Pro LX6 driver software. Click *Next* to begin installation. Windows will copy the files from the Direct Pro LX6 driver CD-ROM.

5. When the installation is complete, you must press *Finish* to exit the setup. Windows will ask to restart the computer. This is because the files you just installed will not take effect until the next time Windows is loaded. Click *NO*, since you will restart the computer after installing the Direct Pro LX6 Control Panel software in the next section.

WINDOWS 98 SOFTWARE SETUP

6. IF the welcome screen does not automatically appear, run *Setup.exe* from your CD-ROM. This can be done from Windows by opening your CD-ROM drive (usually D:) in *My Computer* and double clicking the *Setup.exe* icon.

7. Click *Next* when you see the Welcome Screen.

8. Setup will allow you to select the Destination Directory. Otherwise, it will put the Direct Pro LX6 software and drivers in the *C:\Program Files\Aark Manager Control Panel* directory. If you would like the files elsewhere, simply type the new destination or select *Browse* to put the files in another directory.

9. Click the *Next* button to continue. The *Ready to Install!!* Dialog should now appear. Click *Next* again to begin installation.

ROOM SIZE. This changes the size of the room that our reverb simulates. You can select Room, Hall or Church. To change the room, simply click on the existing room until it changes to your desired setting..

INPUT VOLUME FADERS

These faders can boost or cut the volume of the incoming signal in the monitor mix. It does not affect the actual input volume of the track unless the REC FX button is pressed (see REC FX below). At all times, this fader adjusts the level of the track as it is being sent into the MONITOR bus.

The text box above the fader displays the actual fader value in dB. It can range from minus infinity (OFF) to +6 dB gain. If you would like no gain at this stage, just set this fader so the text box reads 0.0 dB.

Reverb Send

The reverb send knob determines how much of the master reverb is applied to the incoming signal.

Digital Peak Meters

These individual peak meters at all times show the value of the signal that is being sent to the computer for recording. With one exception listed below, all of the meters are post-fader (meaning the value of the meter is calculated after the fader) so moving the fader affects the value of the meter. The text box above each meter displays the actual meter value in dB.

On the 4 input strip meters, the value of the meter at all times shows the level of the signal that is being recorded to the computer. The meters on the 4 input strips can change in meaning when the REC FX button is pressed. (read REC FX below)

On the 6 Playback meters, the value of the meter shows the level being routed to the MONITOR bus AND the level of the Playback channels.
On the MONITOR digital peak meter, it shows the combined levels of all things routed to the MONITOR bus.

Peak & Reset

All of the above digital meters can be switched to Peak meters by pressing the 'PEAK' button below the MONITOR meters in the bottom right hand corner of the Control Panel. This affects all the digital meters on the Control Panel and can be reset by hitting the 'RESET' button next to the 'PEAK' button.

Equalization (EQ)

Our EQ allows you to fine tune your sound on the way in, freeing up valuable CPU resources for the mastering process. Our EQ is designed to match the eq on today's high end mixers.

• HIGH: Boosts/Cuts the signal's high end at 8 kHz
• LOW: Boosts/Cuts the signal's low end at 220 kHz
• MID: Boosts/Cuts the frequency specified by the Frequency (FREQ) knob just to the right
• FREQ: Selects the desired frequency to boost or cut with the MID knob.
  It ranges from 50 Hz to 15 kHz.
• PS (preset): Allows you to recall or save EQ settings, for more see "Presets"
• BP (bypass): Bypasses EQ entirely

Remember: in order to record the EQ, you must have REC FX activated on the input channel you are recording!

Master Reverb

This reverb can be sent to as many channels as you wish, by using the channel's reverb send. This reverb can be applied to both input and playback channels. Each channel has an independent reverb send that allows you to apply as little or as much reverb as you want. The reverb send is located just above the faders for each channel. . Adjustments to the effect are performed in this section.

Note: In order to record reverb in your multitrack software, you must select recording inputs 5,6. These inputs do not correspond to physical inputs on the breakout box. Rather, they are virtual inputs that record the monitor mix.

These are the controls available to you on the MASTER REVERB:

DECAY: This determines how long the reverb lasts

DIFFUSION: This determines the amount of time that early reverb reflections precede late reflections. For realistic reverb, be sure that the DIFFUSION time is less than the DECAY time.

BRIGHTNESS: At its highest setting, brightness filters no treble from the reverberated signal. In a recording environment, reverb naturally loses treble as it is reflected. Brightness allows you to better simulate a natural recording environment.

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10. When the installation is complete, a new folder for the Direct Pro LX6 Control Panel application will reside in the destination directory, and a shortcut will automatically appear on the desktop for easy access.

11. You must now turn your computer off for the change to take place. Instead of restarting, select *Shut Down* from the *Start Menu/Shut down* menu. If you choose *restart* the installation will not be compete, and you will have to repeat this process!

Note: Always turn off your monitors or speakers when rebooting! Often, the speakers will pop during startup, causing potential damage!

DIRECT PRO LX6 INTERFACE BOX

Front Panel

The LX6 has four analog inputs located on the front of the interface box. (An additional S/PDIF digital input is located on the host card, we'll get into that later).

The inputs are designed to accept line level signals, such as the output of a mixer, synthesizers, or drum machines. A preamp is needed for the LX6 to record microphones, guitars, or other low-level signals. The inputs accept both balanced (+4dBu) and unbalanced (-10dBv) signals. The LX6 control panel allows you to specify each input as balanced or unbalanced, allowing you to use balanced and unbalanced gear at the same time. Each LX6 input is mono. If you want to connect a stereo device such as a synthesizer or CD player, you must use two inputs.

The headphone output enables you to monitor the audio without speakers. The volume knob on the front of the LX6 controls the volume for both the headphone output and the RCA main outputs simultaneously. *Note: The headphone Jack is optimized for 60-150 ohm headphones. Headphones with impedance higher than 150 ohm will sound softer.*

Rear Panel

The Direct Pro LX6 rear panel has 6 analog outs, MIDI in, MIDI out, and a 25 pin port for connecting the interface box to the PCI host card.

Analog outputs 1-4 are 1/4" jacks. They can be used as balanced or unbalanced, and output at the professional +4dBu level. Outputs 5-6 are auxiliary RCA jacks, outputting at consumer level -10dBu.

The MIDI inputs and outputs are provided for interfacing with other MIDI products and producing MIDI time code (MTC). These are standard MIDI ports that will be recognized by any MIDI software. Please note: The LX6 does not have a built in synthesizer. These ports can be used to trigger MIDI sounds in a separate sound module, but the ports themselves do not create sound in any way.

Compression

Compression helps you deliver the strongest signal possible. It prevents unwanted jumps in volume, resulting in a more consistent average volume. Because the peaks in volume are less severe, the signal can be boosted far higher without distortion or clipping. Our real time compression allows you to apply this to a signal before it is recorded to your PCs hard disk, resulting in a signal that takes better advantage of high resolution digital recording. Compression is one of the major reasons that professional recordings sound so much louder than amateur recordings played at the same volume.

Compression is one of the more difficult effects to configure. Good compression is usually so subtle that it is difficult to tell that an effect is being applied. If a signal is obviously compressed, it is probably too much. The only way to be sure that the compression is really helping is by comparing it to the dry signal.

One of the analogies used to describe compression is that it the hardware equivalent of an engineer with their hands on their volume controls at all times. When the audio gets too loud, they respond quickly by reducing the channel volume, then bringing the volume back up when the audio is no longer too loud.

Here are how the controls work:

- THRESHOLD: This knob determines how loud a signal can get before compression is applied. It's measured in dB. You can see what dB your incoming signal is at by taking a look at the numeric display just above and to the left of each input fader
- RATIO: Setting the Threshold determines how loud a signal can get before it is compressed. RATIO determines how much the signal gets compressed once the signal exceeds that threshold. The higher the RATIO, the more a loud signal will be reduced when it exceeds the THRESHOLD.
- ATTACK and RELEASE: These knobs determine how long it takes for compression to start and stop when a signal has gone past the THRESHOLD. The controls are measured in milliseconds. This is helpful, because if compression is applied to quickly, it can sound unnatural.
- PS (preset): Allows you to recall or save compressor settings, for more information, see "Presets"
- BP (bypass): Bypasses compression entirely

Remember: in order to record the compressor, you must have REC FX activated on the input channel you are recording!

In addition, REC FX lets you use the faders to boost or cut the volume of your incoming signals. If REC FX is not activated, your multitrack software will record the signal at the volume it is set to when it enters the LX6, regardless of fader position. If you want to fine tune your input levels with the faders, be sure REC FX is pressed!

The MUTE and SOLO buttons function differently depending on whether the REC FX button is activated.

With REC FX activated, the MUTE button completely disables the input that is muted. The SOLO button disables every input and output, except for the one that is soloed,

With REC FX not activated, the MUTE button will remove the incoming signal from the monitor mix, but will still allow you to record it. This is helpful if you are recording microphones, or other instruments that can cause feedback.

At the bottom of each input is a PAN control. PAN does not affect how an incoming signal is recorded, it only affects the way it is heard in your monitor mix. Here is an example of why PAN is helpful: if you are monitoring with headphones, and recording a guitar with channel 1, it is easiest to hear the guitar in both sides of the headphones, even though you are recording a mono track.

EFFECTS

The LX6's dedicated DSP chip provides Reverb, Compression, and Equalization. Unlike plugins, these effects bypass the CPU, providing zero-latency effects!

Each input channel has a dedicated Compressor and EQ, and all input and output channels share the same master Reverb.

Note: If you choose to record in 96 kHz, the LX6 DSP effects will be disabled.

Each effect has a PS and BP button The PS button allows you to load and save preset effects configurations The BP button will bypass an effect if it is activated. BP will be a lighter green if activated. If you want to record the Compressor and EQ, you need to have the REC FX button activated for that input channel.

If you want to record the Reverb, you need to choose LX6 5,6 as your recording device in whatever audio software you choose to use. If you choose to use LX6 5,6 as your recording device, your software will record the entire monitor mix. This means that it will record the input with the reverb, as well as any previously recorded tracks.

DIRECT PRO LX6 HOST CARD

Direct Pro Host Port

The 25 pin port is reserved for the 6-foot cable included with the Direct Pro LX6. This connects directly with the 25 pin connector on the PCI card. *Note: Only the original cable should be used; damage may result from using a different cable.*

PCI Card

The PCI card houses S/PDIF ins and outs, and our DSP processor. Our shielding process, along with the powerful DSP engine prevents unwanted computer noise in your audio.

S/PDIF Digital I/O

OUT

IN

The LX6 S/PDIF (Sony/Phillips Digital Interface Format) inputs and outputs are located on the PCI host card. For those of you unfamiliar with S/PDIF, S/PDIF inputs and outputs look like RCA jacks, but they process very different information. They allow you to transmit and receive audio digitally, so it is not subject to the signal degradation and interference that is present in analog transfers.

S/PDIF transfers a stereo audio signal through one cable. Standard RCA cable can be used, but it is best to work with cable designed specifically for S/PDIF. Our S/PDIF can accept digital information with a bit depth of 16, 24 or any in between. Our S/PDIF inputs and outputs only work with other S/PDIF devices.

To activate the S/PDIF input, go to the LX6 control panel and double click the top of input channel 3 or 4 where it says "Analog 3 in" or "Analog 4 in" highlighted in white. This will change analog 3/4 into S/PDIF L/R. Analog inputs 3 and 4 will not work when S/PDIF is activated. If you are recording with the S/PDIF input, you must have the "Source Select" in the LX6 control panel set to S/PDIF, otherwise, unwanted digital noise will occur.

The S/PDIF output is always activated. You can designate what is directed to this output by using the LX6 patchbay.

DIRECT PRO LX6 CONTROL PANEL

The Direct Pro LX6 Control Panel is an easy to use interface that completely controls both the Direct Pro LX6 hardware and its powerful DSP engine. It is also the first panel that you'll see when you click on the Direct Pro LX6 ICON on your desktop. This entire control panel is powered by the DSP engine on the PCI card.

The LX6 control panel may seem a bit complex at first, but you'll find that it becomes user friendly rather quickly. What may be initially confusing, allows unparalleled flexibility and power!

All of the knobs and faders on the LX6 control panel are adjusted with the mouse. If you want to fine tune a control with more precision than the mouse allows, first click it with the mouse, then use the arrow keys on your keyboard to fine tune it.

Note: You will need an audio recording application to actually record audio to your computer. This Control Panel only acts as a software interface for the Direct Pro LX6 interface box and the DSP effects.

Input Controls

At the top of each input channel, there are buttons that allow you to choose between –10 unbalanced and +4 balanced connections. Beneath each of these buttons is a trim/gain knob which provides extra gain to your incoming signal. Additional gain can be provided with the faders at the bottom of each input channel.

You may also notice that Analog 3 and 4 in are highlighted in white. Double clicking this white area will allow you to change channels 3 and 4 from Analog to S/PDIF.

Each input channel has its own equalizer and compressor. Detailed information on these two effects is in the EFFECTS section, a little later on. All of the effects have a PS button and a BP button. The PS button stands for PRESETS, and opens a menu that allows you to save and recall effects configurations. BP stands for BYPASS. This will disable the effect. You will know that BYPASS is activated if the button light is green.

Right above the faders, each input channel also has a reverb send. This allows you to allocate different amounts of the master reverb to the input channel. Setting up your software to record the reverb can be a bit tricky, so refer to the EFFECTS section if you are having trouble doing this.

The STEREO button is used to link the controls of channel 1 to channel 2, and channel 3 to channel 4.   This button is used for recording devices with individual left/right outputs, such as a synthesizer or drum machine.   You'll notice that if STEREO is pressed on channel 1, and you adjust the channel 1 volume, channel 2 will change as well.

Next is the REC FX button, this one is pretty handy, so you may want to get out your highlighter pen. When REC FX is activated, the button is lit green. Activating REC FX allows you to record the compressor and the eq that you have applied to each channel. If REC FX is not activated, your multitrack software will record your raw input signal, without the effects. This may seem like an odd feature, but it comes in very handy.

This reading tells you how much reverb has been sent to the input channel

This reading lets you know, in dB, how loud the incoming signal is. If REC FX is activated, this signal can be boosted or cut by the faders.

This reading lets you know, in dB, how much the fader is cutting or boosting the input signal.