

24-bit/96kHz PCIe Audio Interface
with 4 inputs / 4 outputs

MAYA44 @X

User's Guide



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www.esi-audio.com

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1. Introduction

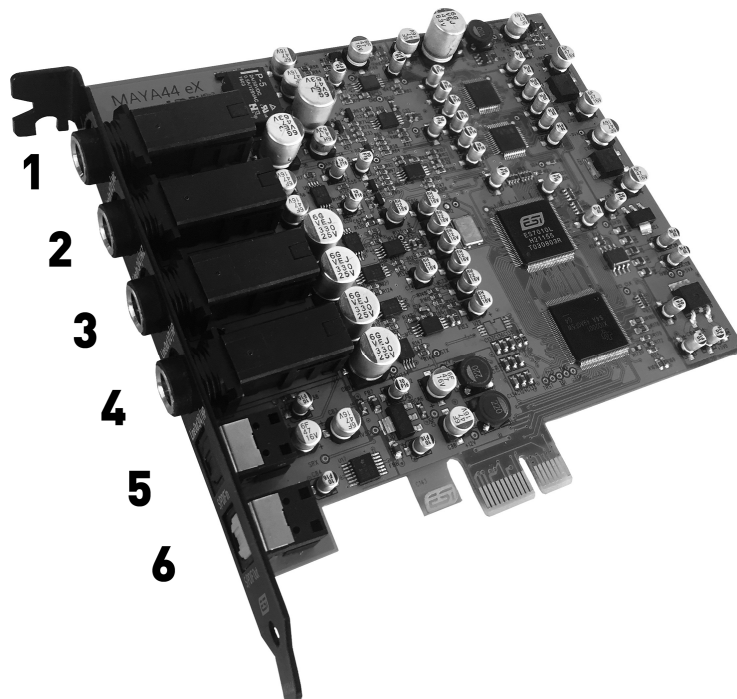
Thank you for choosing the ESI MAYA44 eX, a high quality 24-bit / 96 kHz 4-in / 4-out PCIe audio interface, providing a number of powerful and amazing features optimized for home recording on a professional quality level and for various DJ applications.

The card can easily be used by home users making their first steps in computer audio as well as by professionals who produce music on a budget, looking for a professional, yet affordable, PCIe audio solution.

MAYA44 eX provides 2 stereo analog line inputs, 2 stereo line outputs, a microphone input with +48V phantom power and preamp, a Hi-Z guitar instrument input, as well as an optical S/PDIF output and an optical S/PDIF input.

2. Description of MAYA44 eX

2.1 PCIe card connectors



1. **INPUT 1/2:** analog line input connector (stereo) / microphone input (mono)
2. **INPUT 3/4:** analog line input connector (stereo) / Hi-Z instrument input (mono)
3. **OUTPUT 1/2:** analog line output connector (stereo) / headphone output (stereo)
4. **OUTPUT 3/4:** analog line output connector (stereo) / headphone output (stereo)
5. **Optical In:** optical digital S/PDIF input
6. **Optical Out:** optical digital S/PDIF output

2.2 Minimum System Requirements

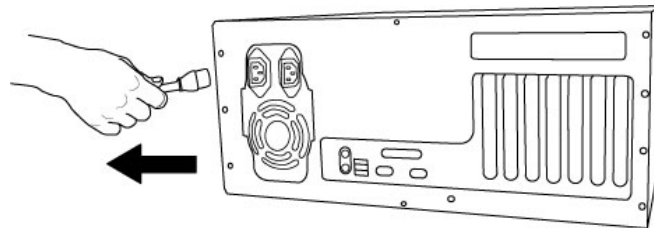
- Intel CPU or equivalent and compatible AMD CPU
- 512 MB RAM
- Direct X 8.1 or higher
- one available PCIe x1 (or higher) slot
- Windows Vista / 7 / 8.1 / 10 (in 32-bit or 64-bit)
- the latest chipset and mainboard utility drivers and system updates must be installed

3. Hardware Installation

3.1 Preparation for Hardware Installation

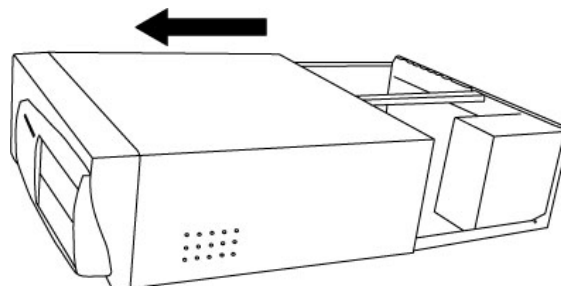
The MAYA44 eX PCIe card and other components in the computer can be damaged easily by electrical shock. You should use an anti-static device that can discharge the static electricity of your body to avoid potential static damage to the cards. If you do not feel capable of installing a PCIe card into your computer please contact a computer specialist.

Turn off the computer power and remove the power cable from your computer power supply.



Disconnecting the Power Cord

Refer to your computer user's manual and remove the computer cover. Make sure that you have an available PCIe slot on your motherboard to install the MAYA44 eX.



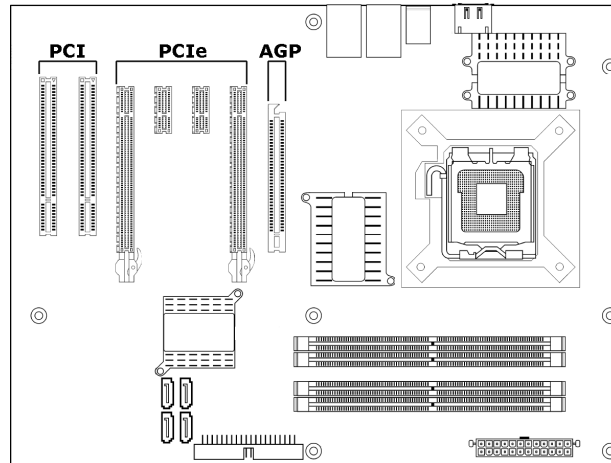
Removing the computer cover

To avoid possible static shock damage to the computer parts, discharge it by touching the computer case or something grounded. We recommend you use an anti-static device such as an anti-static wristband.

When holding the MAYA44 eX card, touch only the guide or the edge of card. Do not grab the card by the board or connector.

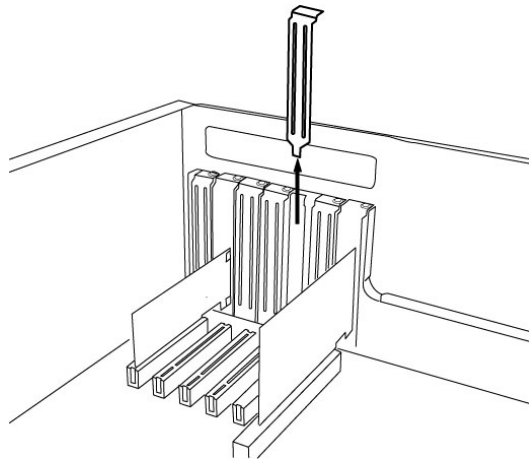
3.2 PCIe Card Installation

Find an empty PCIe slot on the motherboard. If you are unsure, please check the manual of your mainboard or computer to identify the PCIe slot, or consult a computer specialist. There are different types of PCIe slot, MAYA44 eX will work both in a shorter PCIe x1 and in any longer higher level PCIe slot, however not in old standard PCI slots.



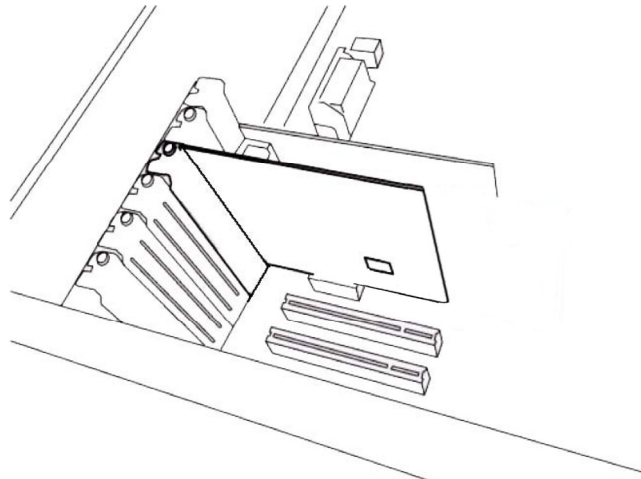
Typical PC Motherboard Slot Configuration

If a faceplate or cover is behind the PCIe slot, you can remove it by removing the screw holding it in place or by prying it off with a screwdriver.



Removing the slot faceplate

Insert the MAYA44 eX card into the PCIe slot, firmly pushing the card into the slot until it is seated securely. Replace the screw, and tighten.



MAYA44 eX Installed in a PCIe x1 slot, next to two standard PCI slots

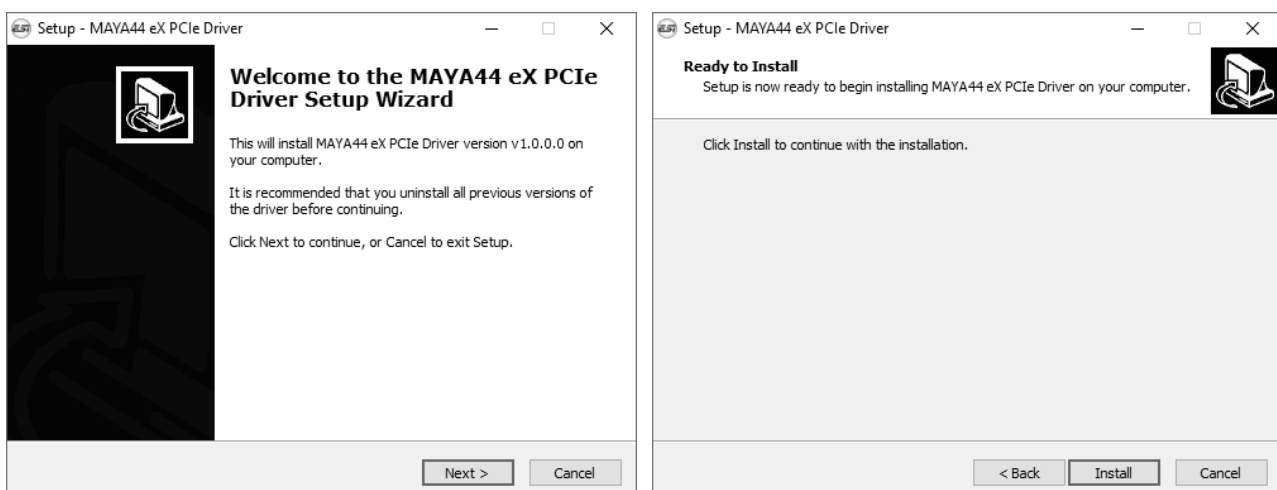
Once finished, close the computer case.

4. Driver Software Installation

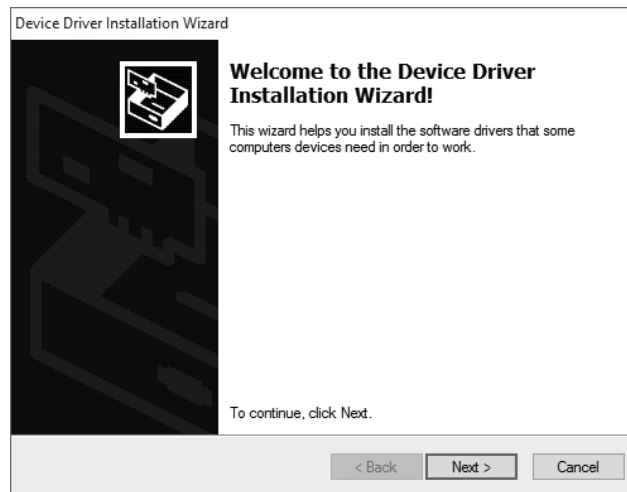
Before installing the drivers of MAYA44 eX, we recommend to check on the download section of www.esi-audio.com for updated drivers.

The following description shows Windows 10. The procedure under Windows Vista, Windows 7 and Windows 8 / 8.1 is basically identical.

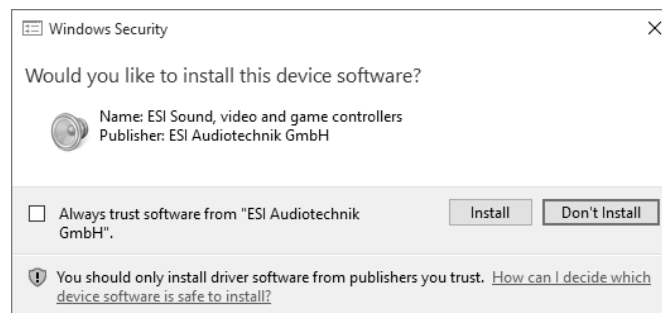
If you are just booting your system, Windows might detect the hardware as a new device and a *Found New Hardware* dialog might appear automatically. If so, click *Cancel*. If you use a downloaded driver, make sure to unzip the file. Otherwise you can find the driver installer in the *Windows* folder on the CD that ships with MAYA44 eX – typically the filename is something like *MAYA44_eX_driver_vX.YY_setup.exe* where X.YY is the version number of the driver. When launching the installer, Windows might display a security message. Make sure to allow the installation. Then, the following dialog on the left will appear. After you click *Next*, the dialog on the right is shown:



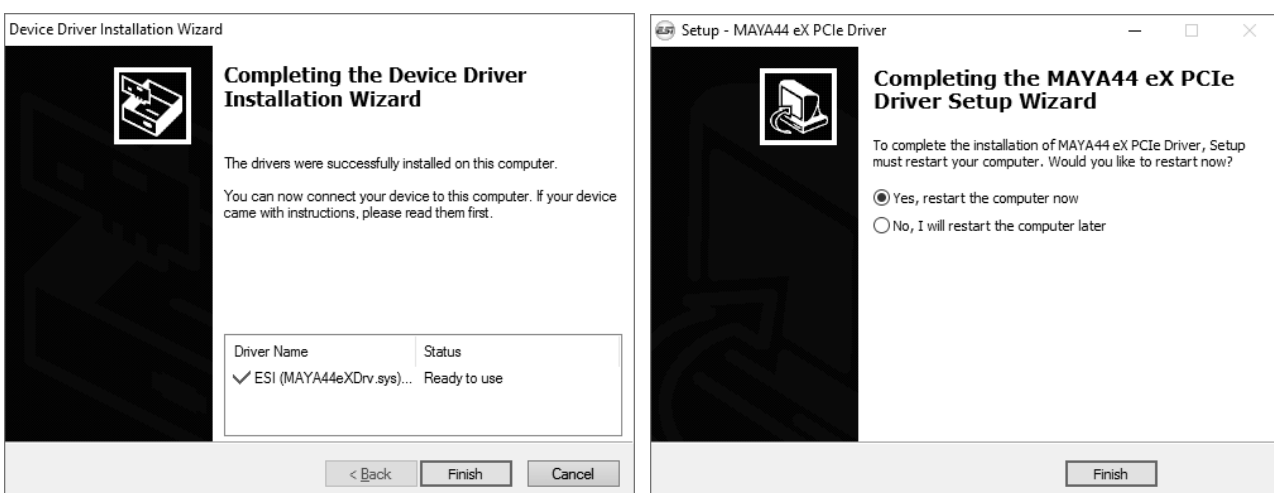
Now click *Install*. Files are now being copied. After some time an additional dialog will appear:



Confirm this by clicking *Next*. Again some files are being copied and typically you will be prompted with a *Windows Security* message like this:

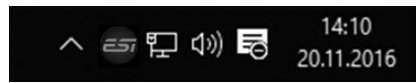


Confirm it by clicking *Install*. After a while the installation then will be completed and the following dialog will appear:



Once you see the window on the left, click *Finish*. The window on the right appears then. Select *Yes, restart the computer now* and then click *Finish*.

To confirm the completion of the installation after rebooting the system, please check if the orange color ESI icon is displayed in the taskbar notification area as shown below.

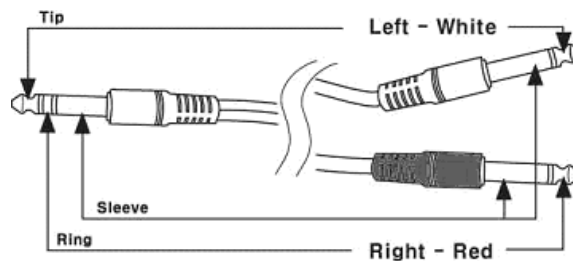


If yes, the driver installation has been completed successfully.

5. Connecting External Devices

5.1 MAYA44 eX Line Connectors

The line input and line output connectors of MAYA44 eX are unbalanced stereo, using a 1/4" TRS connection. This means that in order to have separate stereo connectors, you might need to use a special cable that is shown on the following picture. It converts one stereo (seen on the left) 1/4" jack with two mono (typically left/white and right/red) 1/4" jacks for the separate mono signals.



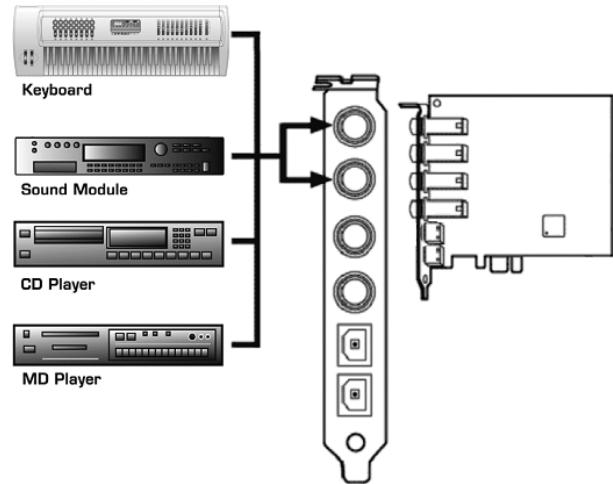
The tip of the stereo TRS connector is connected with the tip of the left TS connector. The ring of the stereo TRS connector is connected with the tip of the right TS connector. The sleeve is connected with sleeve / ground of both channel connectors.

The same type of cables are typically used as so-called 'insert-cables' to connect effects units to many mixing consoles. This information might help you when you want to make or purchase such a cable.

5.2 Connection Examples

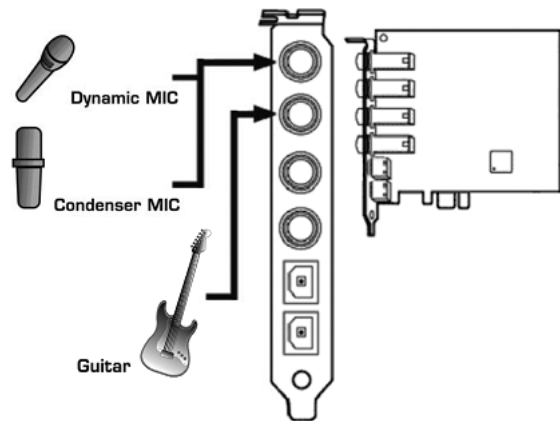
Line Inputs

MAYA44 eX has two stereo line inputs (*INPUT 1/2* and *INPUT 3/4*) that can be connected to any device with regular unbalanced -10dBv line output such as the output of a mixing console, a CD or MD player, a sound module, a keyboard with sound engine, a synthesizer or others.



Instrument and Microphone Inputs

MAYA44 eX has a built in professional microphone preamp with +48V phantom power support. You can connect a dynamic microphone as well as a condenser microphone to the top input. *INPUT 1/2* has to be switched to accept microphone signals in the Control Panel (see chapter 6 of this manual). If you use a condenser microphone, you need to enable +48V in the Control Panel as well. Please make sure to use a fully balanced XLR to TRS microphone cable.

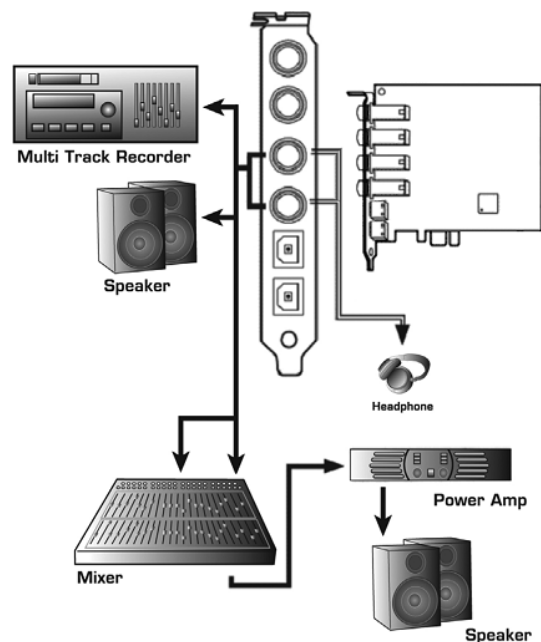


In addition, MAYA44 eX has a Hi-Z instrument input that can be used for a direct connection to an electric guitar. *INPUT 3/4* has to be switched to accept guitar signals in Control Panel (see chapter 6 of this manual). Note that the input signal will be mono only.

Line and Headphone Outputs

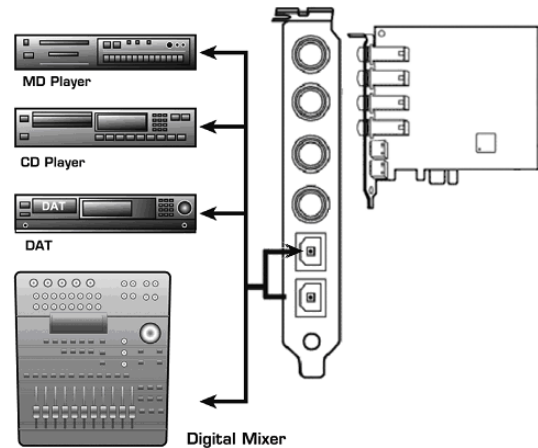
The MAYA44 eX stereo line outputs (*OUTPUT 1/2* and *OUTPUT 3/4*) can be connected to external devices with line input such as multi track recorders, a HiFi stereo system, active monitoring speakers, a power amplifier or analog mixing consoles. As the two stereo output pairs are totally independent, they can be connected to different channel of a mixer or to different devices altogether and different audio signals can be sent out to them simultaneously. This is especially nice in situations where you need two independent stereo signals, for example in a DJ setup for the main and pre-listen signal.

In addition, both stereo line outputs can be enabled used as headphone outputs.



S/PDIF I/O

MAYA44 eX provides optical S/PDIF digital in & outputs. You can use this to send signals to the digital input of an MD Player, CD Recorder, DAT-Recorder or Digital Mixer. With the digital input, you can record signals from devices with an optical S/PDIF output. The Control Panel (see chapter 6 in this manual) allows you to control S/PDIF input and output parameters.



6. MAYA44 eX Control Panel

This chapter describes the MAYA44 eX Control Panel. To open the panel double click on the orange color ESI icon in the task notification area. The following dialog will appear:



6.1 Pull-Down Menus

File – Exit: will close the MAYA44 eX control panel window but it will not shut down the control panel. You can always launch control panel the by clicking ESI icon on the system tray.

Config – Mouse Wheel: controls the increment at which the volume is adjusted when using a mouse wheel. The adjustment step is from 1 to 8.

Config – Latency: adjusts the latency (also often referred as buffer size) of MAYA44 eX. A lower latency is achieved by selecting smaller sample size which is ideal for software synthesizer and

precise timing recording. However, the latency is also limited by your system performance. For most recording applications, select a sample size between 64 ~ 512, select 256 or higher on slower systems or at very high system load. Buffer size 48 is reserved only for very fast and reliable ASIO driver environments on fast computer systems. Note that this value has to be setup before launching any audio application using MAYA44 eX.

Config – Factory Default: resets the control panel to default settings.

Config - Always On Top: this enables to place the control panel on top of every open window, which makes it easy to work with MAYA44 eX and other audio applications simultaneously.

Config – Link: links the L-R faders for stereo operation. Unselect the entry, if you need to control the levels of left and right channels independently.

DirectWIRE: opens the DirectWIRE dialog, described in section 6.5 of this manual.

Help – About: allows you to check current driver information.

6.2 Input Section

Monitor buttons: with this button you can enable the input monitoring for the corresponding input channel. When enabled, the input signal is audible via the output.

Line/Mic/+48V/Digital selection: by default, input channel 1/2 is processing the stereo line input signal coming in from *INPUT 1/2* (when *LINE* is selected). However, it can also be switched to process the mono input signal from a microphone connected to MAYA44 eX as described in chapter 5 of this manual – for that, *MIC* must be selected. If a condenser microphone that requires power supply is connected, the *+48V* switch must be enabled to enable phantom power. Note that *+48V* should be enabled only after a condenser microphone has been connected. Never enable *+48V* when a dynamic microphone or no microphone at all is connected to MAYA44 eX. Input channel 1/2 can also process the digital input signal from the optical S/PDIF input of MAYA44 eX. For that, *DIGITAL* must be selected.

Line/Guitar selection: by default, input channel 3/4 is processing the stereo line input signal coming in from *INPUT 3/4* (when *LINE* is selected). However, it can also be switched to process the mono input signal from a guitar connected to MAYA44 eX as described in chapter 5 of this manual – for that, *GUITAR* must be selected.

Gain knobs: as the output level of a microphone typically is very low and requires amplification, the gain knobs allow you to control the built-in amplifier in order to raise and match the input signal in order for the signal to be further processed. The range is from 0dB to +24dB amplification. The 2 gain knobs are not available under Mac OS X, instead the level faders (below) are longer.

Level faders: these faders allow you to adjust the input level for the analog input 1/2 and 3/4. The levels can be set using the mouse, mouse wheel, or cursor keys. Depending on the *Link* setting (refer to section 6.1), you can control left and right channels simultaneously or independently.

Mute buttons: this button allows you to mute the input signal on channel 1/2 or on channel 3/4. When the button is red, mute is enabled – otherwise disabled.

6.3 Output Section

Mix buttons: with these buttons it is possible mix the output 1/2 and 3/4 signals to each other. This is especially important if you want to listen to the same signal played through only one channel pair on both outputs, especially with headphones connected to one of the outputs. When *Mix* is enabled, the blue arrow will display that the signal is transferred to the other channel.

Mix level knobs: controls the level for mixed signal to adjust the level that you wish to send to the other channel. Make sure not to confuse the mix knobs with the gain knobs in the input section.

Level faders: these faders allow you to adjust the playback level for the analog output 1/2 and 3/4 signals. The levels can be set using the mouse, mouse wheel, or cursor keys. Depending on the *Link* setting (refer to section 6.1), you can control left and right channels simultaneously or independently.

Mute buttons: this button allows you to mute the output signal on channel 1/2 or on channel 3/4. When the button is red, mute is enabled – otherwise disabled.

6.4 Digital Section

Digital Out section: here you can select the source for the optical S/PDIF output. It can either be from *OUTPUT 1/2* or from *OUTPUT 3/4*, depending on the selection. The optical MAYA44 eX S/PDIF output is capable to send out professional (*PRO*) and consumer (*CON*) status bits, depending on the selection. Some digital devices will only process either one of the two signal types on their S/PDIF input.

Digital In section: allows you to select the digital input source. When this is set to *LOOPBACK*, the digital input signal will be internally taken from the S/PDIF transmitter – this means that you can internally record and process 1:1 copies on a pure hardware level inside the MAYA44 eX hardware. The recommended and default setting is *EXTERNAL*, as it processes the signal from the physical optical S/PDIF input from MAYA44 eX instead. Below that, the *status bit* area displays the current S/PDIF input signal state.

6.5 DirectWIRE

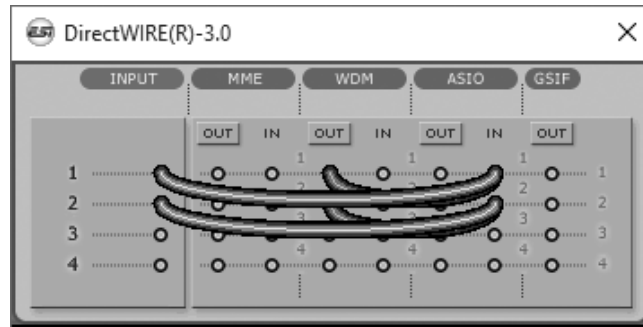
What is DirectWIRE?

DirectWIRE is a driver technology, which can be used for routing audio streams internally within different audio applications.

With the DirectWIRE router, an application can record from other application's audio outputs without external wiring or any loss of data when they are running at the same time. DirectWIRE also allows you to easily rip any audio stream in real time by transferring data thru DirectWIRE from playback, live broadcasting and on demand streaming content and more.

DirectWIRE Panel

Click on *DirectWIRE* on the MAYA44 eX control panel. The DirectWIRE dialog as shown below will appear. DirectWIRE routes audio streams internally within applications using standard audio drivers such as WDM, ASIO and MME, even when they are running at the same time.



The number on the row represents the input or output port. The columns represent ins and outs (on and off) of the respected drivers. Patch the virtual cables from one point to another as you drag your mouse point.

INPUT section: It's used to route signals from the card's hardware inputs.

MME section represents general applications I/O (typically older versions), like WinAmp, WaveLab (non ASIO mode), Cakewalk, Audition, Vegas, etc.

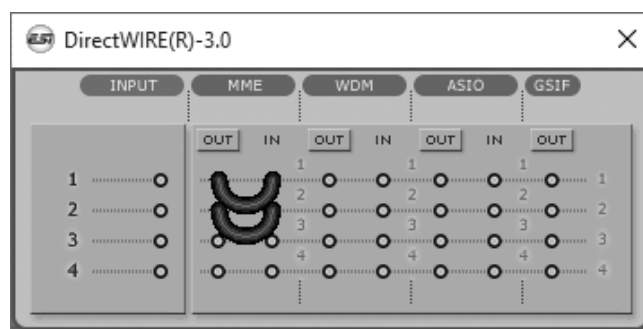
WDM section represents Multi-MME applications I/O (typically newer versions), like SONAR (when using WDM/KS), PowerDVD, WinDVD, etc.

ASIO section represents ASIO applications, like Cubase, Reason, Nuendo, SONAR (when using ASIO), Samplitude, etc.

Note that some applications support multiple driver modes. Usually the following applies: when an application does not support ASIO, it usually supports WDM. Older programs typically support MME.

DirectWIRE Examples

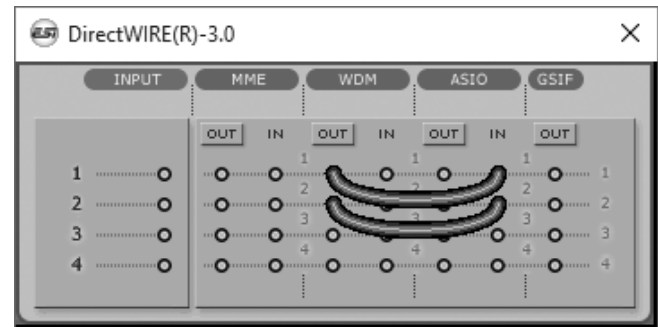
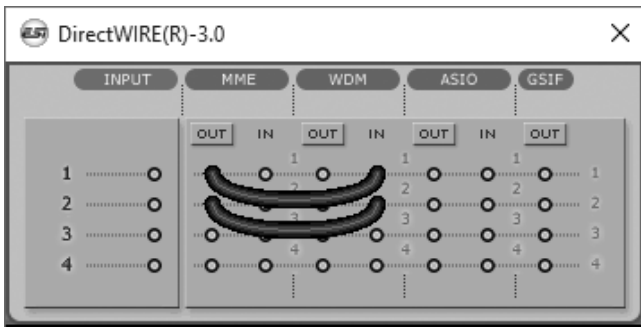
Example 1. Recording from WinAmp (MME) to WaveLab (MME).



If you want to record what's played back in WinAmp, but don't want to hear the sound, you should click the *OUT* button in the MME section so it'll change to *OFF*.

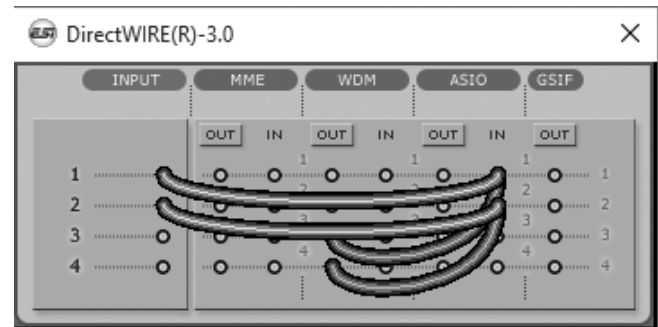
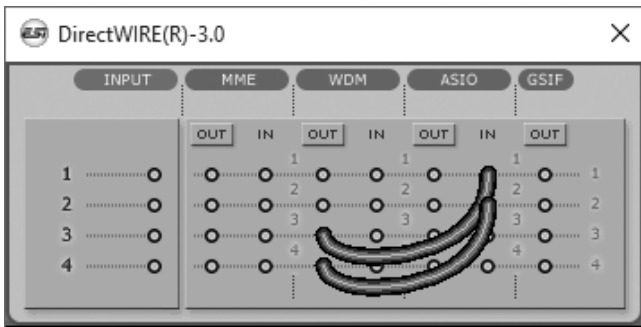
Example 2. Recording from WinAmp (MME) to SONAR (WDM).

Example 3. Recording from SONAR (WDM) to Cubase, Nuendo (ASIO).

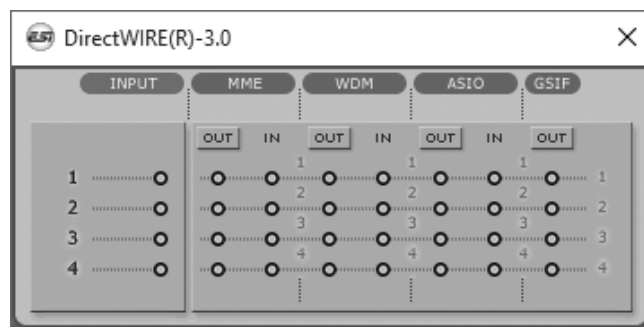


Example 4. Recording of the playback from channel 3/4 from Windows Media Player (WDM) into channel 1/2 of Cubase, Nuendo (ASIO).

Example 5. same as example 4, but in addition the input signal is also recorded and mixed to the playback signal.



Default Settings: remove all connections in the DirectWIRE panel, when you do not want to record signals internally from one application to another.



7. Windows Audio Settings

If you want to use your MAYA44 eX as the main sound device for Windows multimedia applications, some settings are required. Go to *My Computer*-> *Control Panel* -> *Sound*. Select the MAYA44 eX entry as your *Playback* device to make sure that all standard signals are played via the MAYA44 eX hardware.

You will find two output devices, one for output channel 1/2 and the other for output channel 3/4. Via *Properties* you can define additional Windows related settings such as the default sample rate.

All other important settings are handled through the MAYA44 eX Control Panel as described in chapter 6.

8. Specifications

<Analog Audio>

1. Sample Rates
 - 32, 44.1, 48, 88.2, 96 kHz recording & playback
2. Analog Input
 - 1) connector type: 4 channel analog inputs
 - * 1/4" TRS (stereo) jack (line in 1 and 2) common with microphone input
 - * 1/4" TRS (stereo) jack (line in 3 and 4) common with Hi-Z input
 - 2) peak level: 0dBFS @ +6dBV
 - 3) programmable gain: -48dB ~ +24dB (1dB step size)
 - 4) impedance: 10K Ohm
3. Analog Output
 - 1) connector type: 4 channel analog line outputs
 - * 1/4" TRS (stereo) jack
 - 2) peak level: +6dBV @ 0dBFS
 - 3) attenuation: -48dB ~ +0dB (1dB step size)
 - 4) impedance: 33 Ohm (line out 1 and 2, headphone out), 33 Ohm (line out 3 and 4, headphone out)
4. Microphone Preamp
 - 1) mic preamp gain: +21dB
 - 2) peak level: 0dBFS @ 246mV
 - 3) +48V phantom power supply
 - 4) impedance: 3.3K Ohm
5. Hi-Z / Guitar Input
 - 1) impedance: min. 330K Ohm
6. Headphone Amplifier
 - 1) load impedance range: 32-300 Ohm (for best performance)
 - 2) output power: 125mW @ 32 Ohm per channel

<Digital Audio>

1. Sample Rates
 - 1) 32, 44.1, 48, 96 kHz input and output
2. A/D Converter
 - 1) SNR: 102dBA (0dB @ fs=48kHz)
 - 2) dynamic range: 102dBA
 - 3) THD: -95dB (1kHz, -1dBFS)
 - 4) interchannel isolation: 90dB
3. D/A Converter
 - 1) SNR: 108dBA (0dB @ fs=48kHz)
 - 2) dynamic range: 108dBA
 - 3) THD: -97dB(1kHz, 0dBFS)
 - 4) interchannel isolation: 100dB
4. Digital Input
 - 1) connector type: optical Toslink
 - 2) format: IEC-60958 Consumer (S/PDIF)
 - 3) resolution: 24-Bit

5. Digital Output

- 1) connector type: optical TOSlink
- 2) format: IEC-60958 Consumer (S/PDIF)
- 3) resolution: 24-Bit
- 4) digital pass thru

9. General Information

Trademarks

ESI, MAYA, MAYA44 and MAYA44 eX are trademarks of ESI Audiotechnik GmbH. Windows is a trademark of Microsoft Corporation. Other product and brand names are trademarks or registered trademarks of their respective companies.

The FCC and CE Regulation Warning

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, and (2) this device must accept any interference received, including interference that may cause undesired operation. Caution : Any changes or modifications in construction of this device with are not expressly approved by the party responsible for compliance, could void the user's authority to operate equipment.

Note: 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 the equipment is 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 correct the interference at his own expense. If necessary, consult an experienced radio/television technician for additional suggestions.

Correspondence

For technical support inquiries, contact your nearest dealer, local distributor or ESI support online at www.esi-audio.com.

Disclaimer

All features and specifications subject to change without notice.

Parts of this manual are continually being updated. Please check our web site www.esi-audio.com occasionally for the most recent update information.