Professional 24-bit / 192 kHz USB Audio Interface

with 8 separate high quality analog output channels

GIGAPORT eX

User's Guide

ESI

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1. Introduction

Thank you for your purchase of GIGAPORT eX, a product that is not like any other USB audio interface ... it's simply the multichannel playback solution with the best price value ratio on the market today!

With its unique set of features providing 8 independent outputs (and full 7.1 surround sound support), 2 independent stereo headphone outputs and excellent audio quality supporting up to 24-bit and 192 kHz, GIGAPORT eX provides ASIO 2.0 drivers for professional audio mixing and playback under Windows 7, Windows 8.1 and Windows 10. The hardware is also CoreAudio compatible and natively works under OS X / macOS even without the installation of a special driver. This makes GIGAPORT eX perfect for digital DJs on the road working with notebook computers. Simply use your favorite DJ software and the eight outputs as up to 4 different stereo channels, enabling you to mix, cue and add effects! Monitor and pre-listen to your signals via the two built-in headphone outputs. GIGAPORT eX of course also works on your desktop computer and is compatible with all important professional audio DAW software applications. The hardware also works with consumer programs such as DVD playback software.

GIGAPORT eX is a USB-C device, optimized for USB 3.1 operation. It is also compatible with standard USB 2.0 ports.

1.1 Features

The front panel of the GIGAPORT eX hardware has these main features from left to right:

- **USB-C connector** to connect the device to a computer or mobile device. <u>Use this connector to connect the unit to your Mac or PC or to a mobile device</u> by using one of the two included USB-C connection cables. When the device is working, the **power LED** just right of the USB-C connector will be on.

- **8 status LEDs** to show activity on each corresponding playback channel. Here you can see when audio data is being sent out to each output channel.

- **Headphone output (1/2)** with unbalanced 1/4" stereo TRS connector for channel 1 and 2. <u>Via this headphone output, you will always get the same signal that is also being sent to line outputs 1 and 2.</u> This headphone output is used to check your signals independent from what is being played via channels 3 to 8 for example, a feature that is very useful for DJ applications without an external mixer.

- **Headphone output (Mix)** with unbalanced 1/4" stereo TRS connector for the down mixed signal. <u>Via this headphone output, you will always get the mix of all 8 (or 4 stereo) channels.</u> You can use this output for instance to control and check signals for all the physical output channels.

The rear panel has these connectors:

- **Line output 1 to 8** with unbalanced RCA connectors. <u>Via these outputs, the main signals are being sent out.</u> Each output channel is labelled / numbered accordingly.

2. Installation

2.1 System Recommendation

GIGAPORT eX is not simply a standard digital audio interface, but a high-resolution device capable of advanced processing of audio content. Even though GIGAPORT eX is built to have low-CPU resource dependability, system specifications play a key part in the GIGAPORT eXs performance. Systems with more advanced components are generally recommended.

Minimum System Requirements

PC

- Windows 7 / 8 / 8.1 or 10 (32- and 64-bit) operating system
- 1 available USB 2.0 or USB 3.1 port ("type A" or "type C")

Mac

- OS X / macOS 10.9 or higher
- 1 available USB 2.0 or USB 3.1 port ("type A" or "type C")

2.2 Hardware Installation

GIGAPORT eX is directly connected to an available USB port of your computer. The connection to your computer is done either via a so-called "type A" or a "type C" port. For each connection type, a separate cable is included in the package. Connect one end of that cable with GIGAPORT eX and the other one to the USB port of your computer.

USB "type A" port of a computer   *USB "type C" port of a computer*

2.3 Driver & Software Installation

After the connection of GIGAPORT eX, the operating system automatically detects it as a new hardware device. However, you should install our driver to use it with full functionality.

We **strongly** recommend to download the latest driver from www.esi-audio.com before installing GIGAPORT eX on your computer. Only if our driver software is installed, all the functionality is provided under Windows / OS X / macOS.

You can always find the latest drivers and software for both PC and Mac for your GIGAPORT eX by going to this page in your web browser:

> **>>>   http://en.esi.ms/110   <<<**

2.3.1 Installation under Windows

The following text explains how to install GIGAPORT eX under Windows 10. If you use Windows 7, Windows 8 or Windows 8.1, the steps are basically the same. Do not connect GIGAPORT eX to your computer before you install the driver – if you have connected it already, disconnect the cable for now.

To start the installation, launch the setup program, which is an .exe file that is inside a recent driver download from our website by double clicking on it. When launching the installer, Windows might display a security message. Make sure to allow the installation. After that, the following dialog on the left will appear. Click *Next* and then the dialog on the right will appear:
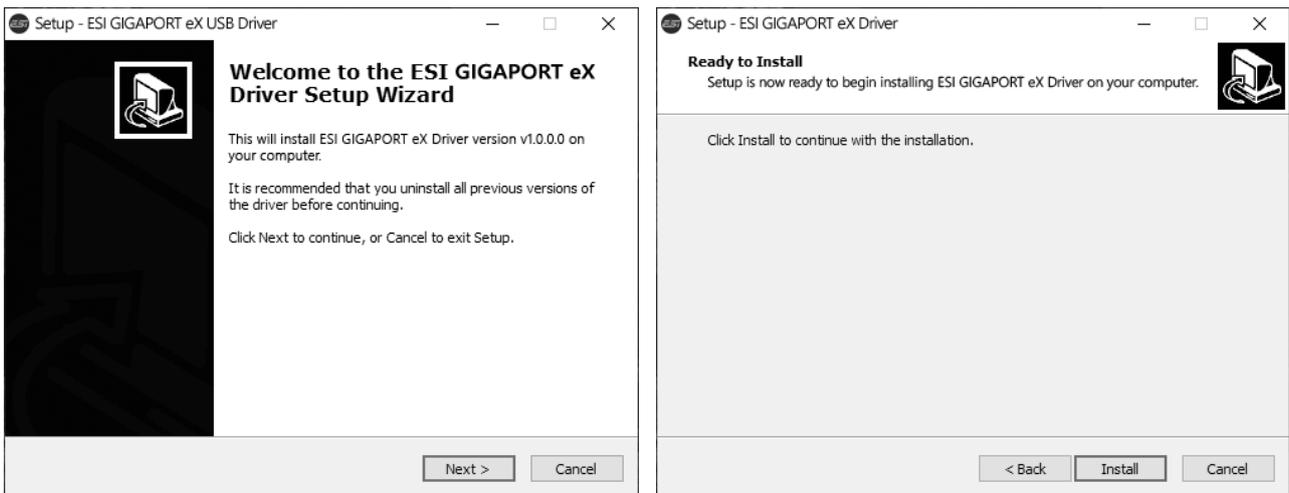
Now click *Install*. Files are now being copied. After some time an additional dialog will appear:
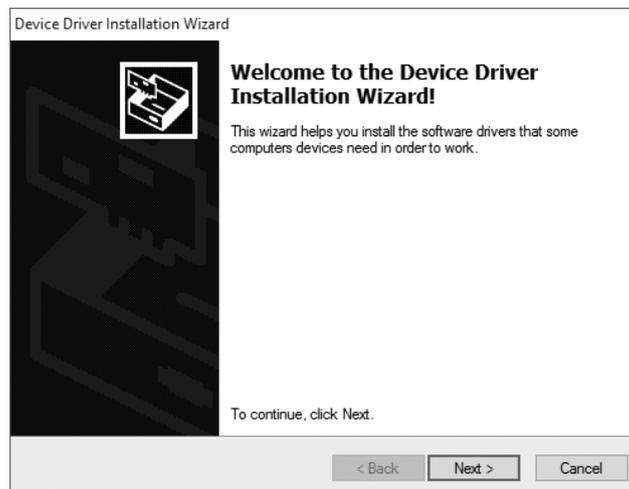
Confirm this by clicking *Next*. Again some files are being copied and in some cases you will be prompted with a Windows Security message like this:
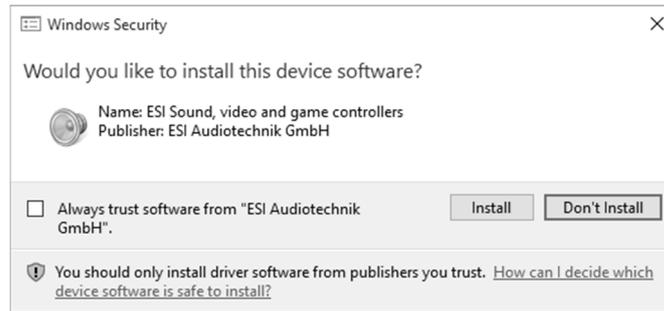
Confirm it by clicking *Install*. After a while the installation then will be completed and the following dialog will appear:
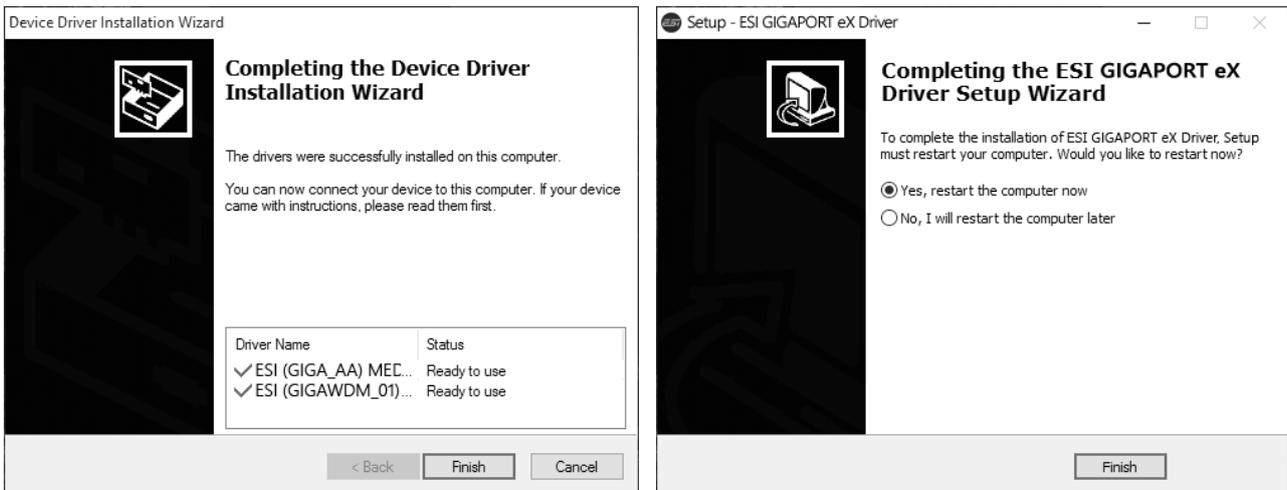
Once you see the window on the left, click *Finish*. In many cases, the window on the right appears then. We strongly suggest to select *Yes, restart the computer now* and then click *Finish*.

You can connect GIGAPORT eX to your computer anytime now. Windows will automatically setup the system so you can use the device.

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 you can see it, the driver installation has been completed successfully.

2.3.2 Installation under OS X / macOS

To use GIGAPORT eX under OS X / macOS, you need to install the control panel software from the download from our website. This procedure is basically the same for all the different versions of OS X / macOS.

The control panel gets installed by double clicking on the .dmg file and then you will get the following window in *Finder*:

To install the *GIGAPORT eX* panel, click and drag it with your mouse to the left to *Applications*. This will install it into your *Applications* folder.

Controlling some of the basic options of GIGAPORT eX under OS X / macOS can be done via the *Audio MIDI Setup* utility from Apple (from the folder *Applications > Utilities*), however the main functions are controlled by our dedicated control panel application that has now been placed into your *Applications* folder.

3. Windows Control Panel

This chapter describes the GIGAPORT eX Control Panel and its functions under Windows. To open the control panel double click on the orange ESI icon in the task notification area. The following dialog will appear:
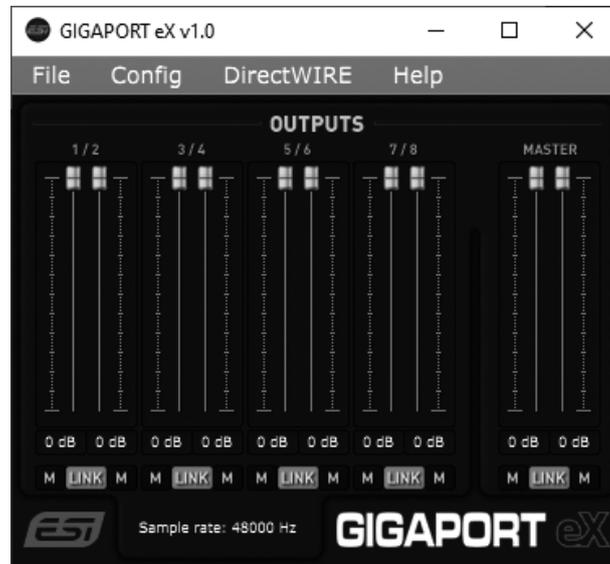
The *File* menu provides an option called *Always on Top* that makes sure the Control Panel stays visible even when working in other software and you can launch the *Windows Audio Settings* there. The *Config* menu allows you to load the *Factory Defaults* for the panel and driver parameters and the *Help > About* entry shows current version information. Under the *File*, *Config*, *DirectWIRE* and *Help* menu items, you can find the following main functions and sections under *OUTPUTS*:

1 / 2, 3 / 4, 5 / 6 and 7 / 8

This section contains volume control sliders and signal level meters for all the playback channels, arranged in (stereo) channel pairs. Under each slider you can find a mute button (*M*) to mute that channel. To control both and left channels simultaneously (stereo), the *LINK* switch under it must be activated. If *LINK* is not active, each channel is controlled independently.

MASTER

This section contains volume control sliders and signal level meters for the sum of all playback channels. Under each slider you can find a mute button (*M*) to mute that channel. To control both and left channels simultaneously (stereo), the *LINK* switch under it must be activated. If *LINK* is not active, each channel is controlled independently.

SAMPLERATE

At the bottom section the currently selected sample rate is shown. You can change it (as long as no audio is being played back) by selecting it via the menu under *Config > Samplerate*. As GIGAPORT eX is a digital audio interface, all applications and audio data will be processed with the same sample rate at a given time. The hardware natively supports rates between 44.1 kHz and 192 kHz.

3.1 Latency and buffer settings

Via *Config > Latency* in the Control Panel it is possible to change the latency setting (also called "buffer size") for the driver of GIGAPORT eX. A smaller latency is the result of a smaller buffer size and value. Depending on the typical application (e.g. for playback of software synthesizers) a smaller buffer with a smaller latency is an advantage. At the same time, the best latency setting indirectly depends on the performance of your system and when the system load is high (for instance with more active channels and plugins), it can be better to increase the latency. The latency buffer size is selected in a value called *samples* and if you are curious about the actually latency time in milliseconds, many recording applications display this value inside the settings dialog there. Please note that the latency has to be setup before launching the audio application using GIGAPORT eX.

Via *Config > USB Buffer*, you can select the number of USB data transfer buffers used by the driver. In many cases, these values do not need to be changed, however as they have a bit of an influence on the audio latency and on stability, we allow you to fine tune this setting. In some applications where real time processing and latency values or better performance at high system load are critical, you can optimize the values here additionally. Which value is best on your system depends on a number of factors such as what other USB devices are used at the same time and what USB controller is installed inside your PC.

3.2 DirectWIRE Output Routing

Under Windows, GIGAPORT eX has a feature called DirectWIRE Output Channels that allows you to change the assignment between the audio channel in your application to the physical audio output, even while playback is running in real time.

> **Note:** DirectWIRE is a very powerful feature for special applications and professional usage. For most situations no DirectWIRE settings are needed at all and you should not change those settings unless you know what you want to achieve.

To open the related settings dialog, click on the *DirectWIRE > Output Channels* entry in the top menu of the control panel software and the following window appears:

On this dialog you can see a list with 8 output channels. The left column identifies the physical output of GIGAPORT eX. The right column shows the playback channel on the computer (i.e. if you play a signal via channel 1 and 2, it is identified here by the numbers *1* and *2*). By default, playback channel 1 (right) is assigned to physical output 1 (left) , playback channel 2 to physical output 2 and so on.

With the - and + buttons next to the number for the playback channel, you can change this assignment. With the *STEREO LINK* button at the bottom of the dialog, you can make sure that channel assignments are always changed in pairs (perfect for stereo signals).

DirectWIRE Output Channels examples

Let's look at the following example configuration:
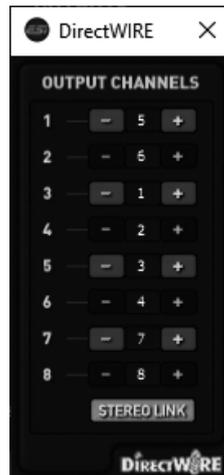
In this example, the signal from playback channel 5 / 6 is sent to the physical outputs 1 and 2, the signal from playback channel 1 / 2 is sent to the physical outputs 3 and 4, the signal from playback channel 3 / 4 is sent to physical outputs 5 and 6 and the playback channels 7 / 8 are being sent as default to physical outputs 7 and 8. The settings have been made with *STEREO LINK* enabled.

Here is another interesting example:
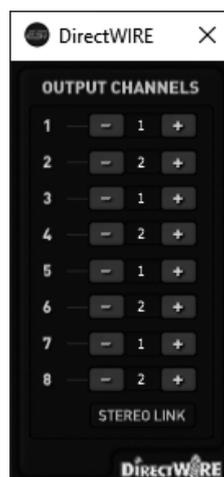
On this setup, all physical output channel pairs are assigned to send out the signal from playback channel 1 / 2, i.e. you 'clone' the signal from one stereo playback channel to all physical outputs.

Please note that the change of these parameters can be done on the fly, even when playback is running. To reset the settings to default, you can right click on this panel and then on *Reset routing to default*.

3.3 Windows Audio Settings

Via the Windows *Sound* control panel icon or by selecting *File > Windows Audio Settings* in our control panel software, you can open these *Playback* and *Recording* dialogs:
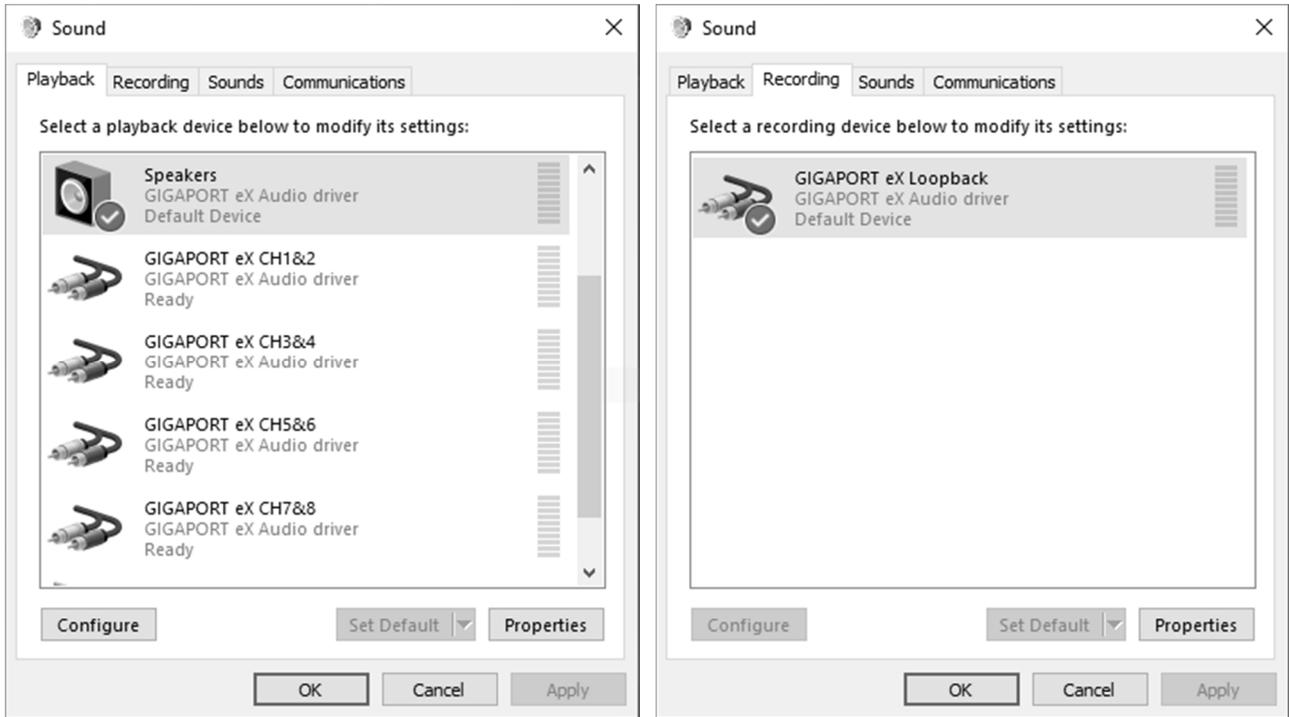
You can see that in the *Playback* section, there are 4 devices, one for each stereo channel (*GIGAPORT eX CH1&2*, *GIGAPORT eX CH3&4*, *GIGAPORT eX CH5&6* and *GIGAPORT eX CH7&8*). Each of these so-called MME/WDM devices represent one channel pair for playback and by default these are corresponding to the physical output channel with the same number. It can be useful to have these separate devices available if you want to use multiple applications accessing different outputs of the hardware simultaneously or if you use an application that allows you to select separate wave devices for different functions.

The *Playback* section also contains a *Speakers* device from the *GIGAPORT eX Audio driver*, which in many cases would or should be the selected default device. This device can be used for playback with any channel count up to 8 channels. Some audio applications require you to select via *Configure > Speaker Setup*, how many output channels you intend to use: *Stereo* (= 2 output channels), *Quadraphonic* (= 4 output channels), *5.1 Surround* (= 6 output channels), *6.1 Surround* (= 7 output channels) or *7.1 Surround* (= 8 output channels). Select one of them to define how many channels you want to be able to playback simultaneously (*7.1 Surround* is suggested).

Please note that any audio hardware that is installed in your computer already will also appear in the Windows *Sound* control panel and you might need to choose which one you want to use by default here (for instance for the Windows system sounds or the audio playback from your web browser). To do that, select the entry in the list and then click *Set Default*.

Note that many (especially professional) audio applications have their own settings for the used device and that audio applications that use the ASIO driver of GIGAPORT eX ignore these settings since they have direct access to the hardware.

3.4 DirectWIRE Loopback

GIGAPORT eX has a feature that we call DirectWIRE Loopback. It allows you to record the playback internally. For instance, you can use it to playback any audio signal in any application while you record it with a different software or you could record the main master output signal of a DJ mix on the same computer. There are many possible applications, i.e. you can record what you are streaming online or you can save the output of a software synthesizer application. Essentially, you can make a 1:1 identical transfer of the playback signal digitally inside your system.

You will find in the Windows *Sound* control panel and in the audio settings of many applications that there is a 2 channel MME/WDM input device called *GIGAPORT eX Loopback* (shown on the picture in the previous section). Also ASIO compatible applications can use 2 input channels. How it works is that anything you play back via physical output channels 1 and 2 within the same or even from another application can be recorded internally.

Please note that the signals you play via outputs 3 to 8 cannot be recorded internally, only those from playback channel 1 and 2 - with the exception that those signals you assign from other playback channels to output 1 and 2 via the DirectWIRE Output Channels functionality (described earlier) are also being recorded.

4. OS X / macOS Control Panel

This chapter describes the GIGAPORT eX Control Panel and its functions on the Mac. Under OS X / macOS, you can find a GIGAPORT eX icon in the *Applications* folder. Double click on this to launch the control panel software and the following dialog will appear:
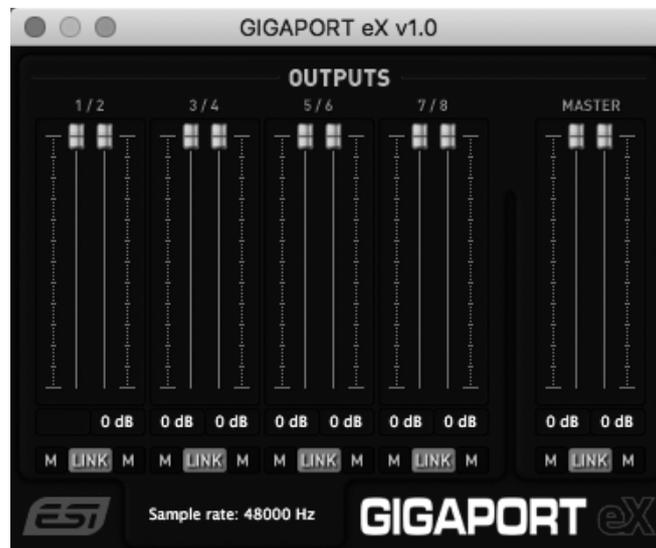
The *File* menu provides an option called *Always on Top* that makes sure the Control Panel stays visible even when working in other software and you can launch the *macOS Audio Settings* there. The *Config* menu allows you to load the *Factory Defaults* for the panel parameters and the *Help > About* entry shows current version information. The main dialog has these sections under *OUTPUTS*:

1 / 2, 3 / 4, 5 / 6 and 7 / 8

This section contains volume control sliders for all the playback channels, arranged in (stereo) channel pairs. Under each slider you can find a mute button (*M*) to mute that channel. To control both and left channels simultaneously (stereo), the *LINK* switch under it must be activated. If *LINK* is not active, each channel is controlled independently.

MASTER

This section contains volume control sliders for the sum of all playback channels. Under each slider you can find a mute button (*M*) to mute that channel. To control both and left channels simultaneously (stereo), the *LINK* switch under it must be activated. If *LINK* is not active, each channel is controlled independently.

SAMPLERATE

At the bottom section the currently selected sample rate is shown. You can change it (as long as no audio is being played back) by selecting it via the menu under *Config > Samplerate*. As GIGAPORT eX is a digital audio interface, all applications and audio data will be processed with the same sample rate at a given time. The hardware natively supports rates between 44.1 kHz and 192 kHz.

4.1 Latency and buffer settings

Unlike under Windows, on OS X / macOS, the latency setting is depending on the audio application (i.e. DAW) and usually setup there inside the audio settings of that software and not in our control panel software. If you are unsure, check the manual of the audio software you are using.

4.2 OS X / macOS Audio Settings

The *Audio MIDI Setup* utility from Apple (you can find it under *Applications > Utilities* or you can call it from our Control Panel via *File > macOS Audio Settings*) lists GIGAPORT eX as a device with 2 inputs and 8 outputs.

The *Output* section under *Audio Devices* looks like this:
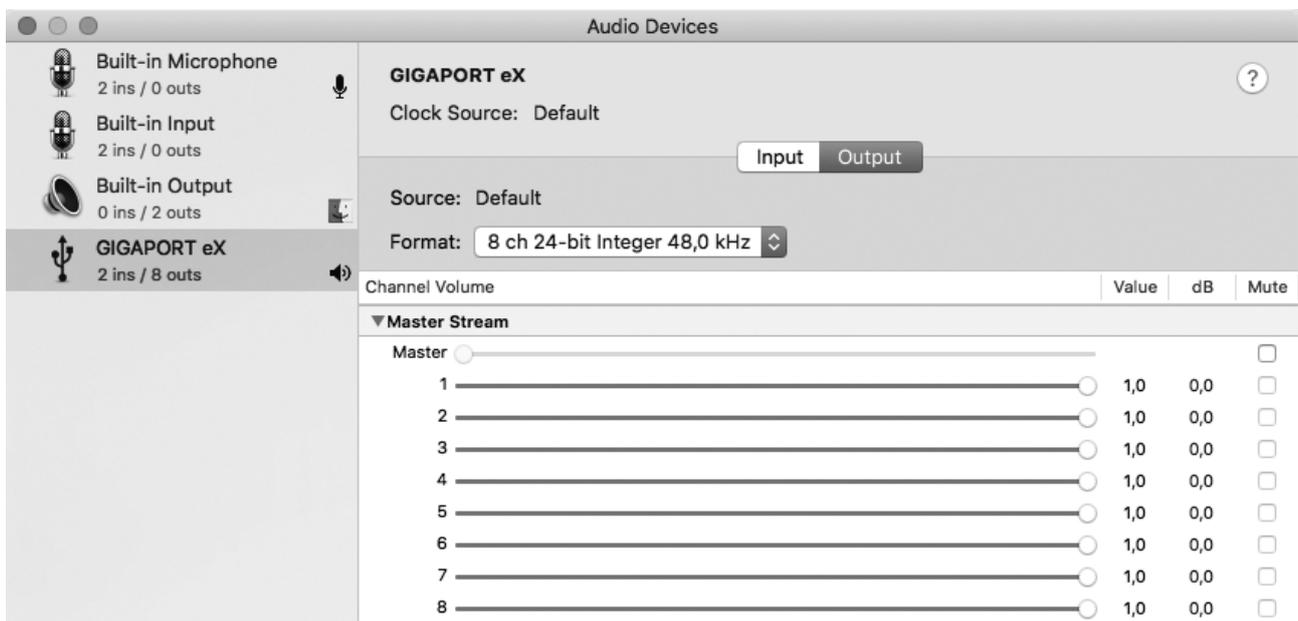
You can see all 8 output channels and you could access their volume here. Under *Format* you can change the default resolution and sample rate.

The *Input* section looks like this:
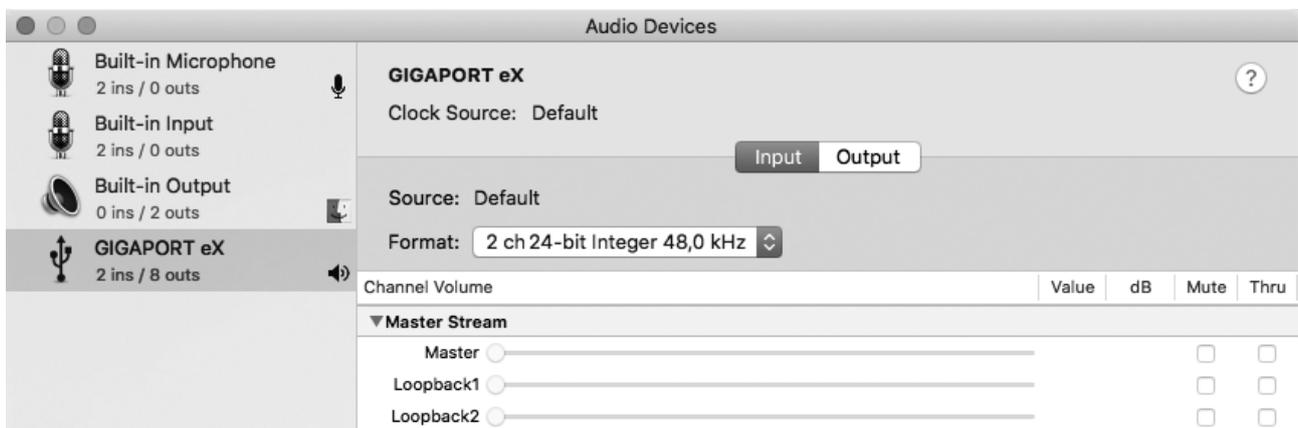
The two input channels listed here are used for internal *Loopback* recording as part of our DirectWIRE functionality (described in the next section). The *Format* option allows you to change the default sample rate and resolution.

4.3 DirectWIRE Loopback

GIGAPORT eX has a feature that we call DirectWIRE Loopback. It allows you to record the playback internally. For instance, you can use it to playback any audio signal in any application while you record it with a different software or you could record the main master output signal of a DJ mix on the same computer. There are many possible applications, i.e. you can record what you are streaming online or you can save the output of a software synthesizer application. Essentially, you can make a 1:1 identical transfer of the playback signal digitally inside your system.

You will find that there is a 2 channel input device that you can open for recording inside any audio application (internally the two channels are called *Loopback 1* and *Loopback 2* although most applications will simply show it as GIGAPORT eX). How it works is that anything you play back via physical output channels 1 and 2 within the same or even from another application can be recorded internally.

Please note that the signals you play via outputs 3 to 8 cannot be recorded internally, only those from playback channel 1 and 2.

5. Specifications

- USB 3.1 audio interface with USB-C connector ("type C" to "type C" cable included)

- USB 2.0 compatible ("type A" to "type C" cable included)

- USB bus powered

- 8 independent output channels with -10dBV RCA connectors

- 2 independent stereo headphone outputs
    - 1st output sends out mixed signal of all playback channels
    - 2nd output sends out different signal from playback channel 1/2
    - both with 1/4" stereo TRS connector
    - max. output level +6.4dBu (@ 0dBFS)
    - THD+N 0.0024% A-weighted (@ fs=48kHz)
    - 32~600ohm impedance

- 24-bit / 192 kHz D/A converter, for all output channels
    - 114dB dynamic range A-weighted
    - THD+N -100dB (@ 0dBFS)

- DirectWIRE Output Routing support under Windows for flexible signal routing

- DirectWIRE Loopback routing support for 2 channels under Windows and OS X / macOS

- supports Windows 7 / 8 / 8.1 / 10 with ASIO 2.0, MME, WDM and DirectSound

- supports OS X / macOS (10.9 and above) via the native CoreAudio USB audio driver from Apple (no driver installation needed)

- 100% class compliant (no driver installation required on many modern operating systems such as Linux via ALSA as well as iOS based and other mobile devices)

6. General Information

Trademarks

ESI, GIGAPORT and GIGAPORT 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. Please also check our extensive Knowledge Base with Frequently Asked Questions, installation videos and technical details about our products in the support section of our website.

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.