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element · H

USB 3.0 Interface

User Manual

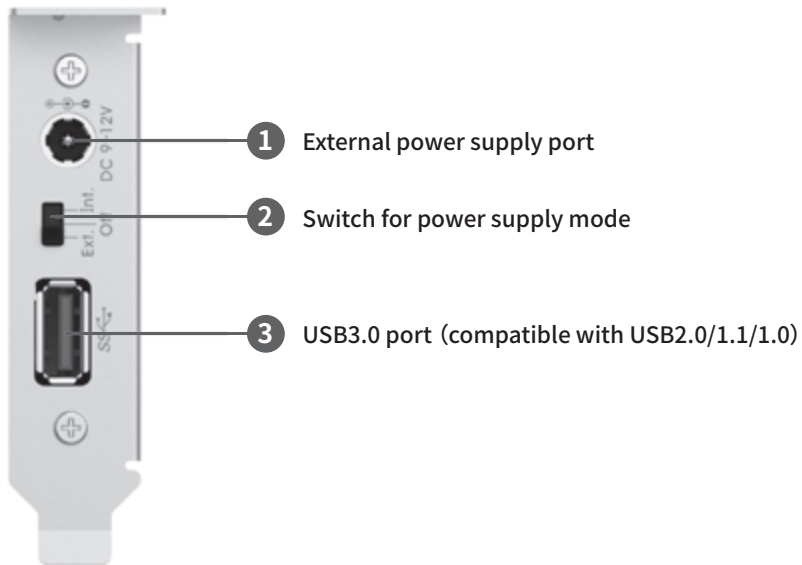
**HIGH
PERFORMANCE
AUDIO**



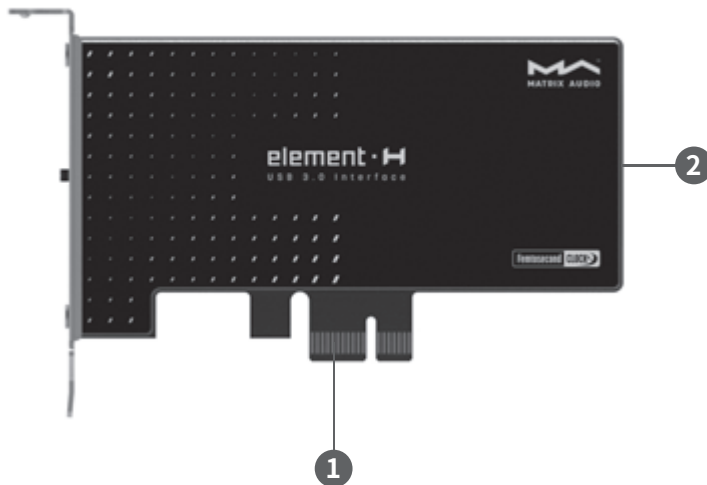
1. Summary

- In order to improve the quality of the PC USB port through the data transmission and the noise level of power supply, element H USB 3.0 INTERFACE is made to meet the high standard requirements of Hi-Fi audio transmission and from source signal to bring a complete change.
- Using the USB 3.0 bridge chip from Texas Instruments and a Crystek CCHD-575 super-low noise femtosecond clock, which opens up an independent data channel for USB audio stream, by the means of bypassing from the USB controller on the motherboard, directly bridging to PCI-E port, and to avoid sharing the data channel with other USB devices.
- The multiple filter units are integrated for USB power supply, which uses the heavy current LDO chip with $6\mu\text{VRMS}$ and the solid-state capacitor, even if it's using the internal power supply, it can also filter the high-frequency noise of PC switching power. The USB port can supply a maximum current at 5V 1500mA for all audio devices supplied by the USB port, as well as the measuring function to over-current and short circuit.
- The two power supply (external/internal) modes can be configured through the switch on the dam-board. With regard to the non-USB power supply audio devices, you can switch off the power supply of the USB port.
- The four-layer PCB with high speed circuit design standard, according with the differential on the impedance standards and line length requirements. The CNC aluminum enclosure covers the entire board, effectively shielded radiation interference from computer chassis, meanwhile taking into account the cooling requirements of power supply chip.

2. Bracket



3. Side



- 1 PCI-E x1 Gen2 port
- 2 SATA-15Pin power supply port (for internal power supply)

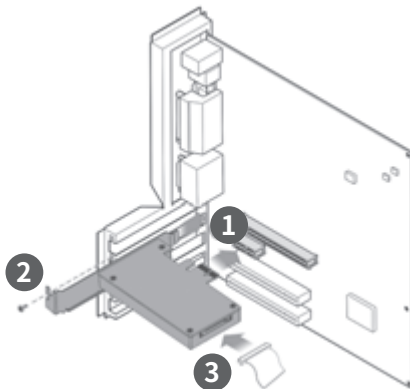
4. Installation

Installation for board

To prevent the hardware damage, please unplug the computer power cable before installing the card. To prevent static damage to the card, please release of static electricity before touch the card.

According to the specification of your own PC, you should use the attached dam-board with two M3*6mm screws to fix it on the board enclosure.

Then choose the PCI-E x1 port on the main-board or PCI-E x4/x8/x16 port to install the board, while fastening the screws and connecting SATA-15Pin power cable from PC power supply to the socket at the rear-end of the board. (Not necessary for external power supply.) As shown below:



5. Driver installation

You can see the device name when your PC find the new hardware under the Windows7/8/8.1/10 system, as shown below:



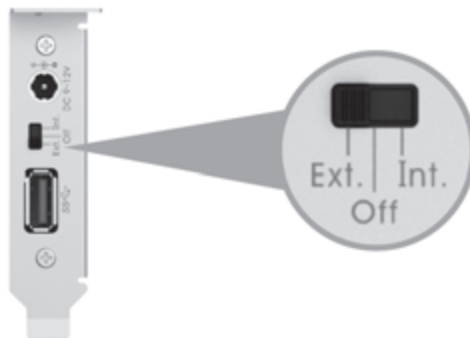
The driver can be downloaded automatically under Windows8/8.1/10 system.

If not, please visit www.matrix-digi.com to download the driver.

The driver not necessary for mainstream Linux OS.

6. USB power supply settings:

By sliding the switch on the rear panel of card can set the USB port power supply mode, this switch is a three-position switch, as shown below:



OFF: Turn off the USB port output power, when the external DAC and other products do not need USB bus power supply. In this mode, the devices such as USB flash disk which require USB bus power supply will not be available.

INT: Internal power supply, USB bus power supply from SATA_15P port on the end of card, the input power through the low noise LDO regulator and output from the USB port.

EXT: External power supply, USB bus power supply from the DC input port which on the rear panel of the card, the power from DC input through the low noise LDO regulator and then output from USB port.

Precautions:

- Some USB devices do not use the power supply from USB port, but it does not mean the bus power supply could be unplugged, or it will cause the USB devices to malfunction.
- Please disconnect your USB device before you change the power supply mode of element H. If you switch the power supply mode when device is connected, the USB bus power supply surge may cause the device to malfunction.

When the USB port does not work properly, please check the following items:

- Make sure that the card is properly installed in the PC chassis and that the driver is installed correctly, the hardware device is visible in the Device Manager after the driver is properly installed.
- Use the internal power supply, please ensure that the SATA_15Pin connector on the end of the card is properly connected to the power cable in the PC chassis.
- Use an external power supply, please ensure that the DC input jack on the rear panel of card is properly connected to the external power supply and within the appropriate voltage range.
- Make sure that the power supply mode switch on the rear panel of the card is in the correct position, set to "INT" when using internal power supply, set to 'EXT' when using external power supply, and 'OFF' when no need power supply.

7. Technical specifications

USB Port

USB 3.0-Compliant x HCI Host Controller

PCI-E x1 Gen2 Interface

One downstream port

Specifications for power supply

USB power supply: 5V/1500mA MAX

External power supply: DC 9~12V, ≥ 1200 mA

Power supply port: outer diameter 5.5mm inner diameter 2.1mm (+ for inner, - for outer)

Notice: Don't connect to the power above 12V, or will damage the device!

Boundary dimension

114 x 64 x 23 mm (including protruding parts)

For purpose of improvement design and specifications are subject to change without notice.

8. Customer service

From purchase date, we provide you one-year-limited warranty, warranty does not contain the accessories.

Free warranty is only for the faulty caused by the quality, not including the wrong operation, negligence or accident.

It is beyond our free warranty terms when you change the components or fix it by your own.

For more information, please visit www.matrix-digi.com.



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