USB3.2 Gen2 Enhanced SuperSpeed+ Dual ports PCIe Host Card with Type-A Receptacle

Quick Installation Guide Ver.2

Please visit https://www.sunix.com with product model for detail and latest manual/driver update

Introduction

SUNIX USB2312A v1.1 is a dual-port Super-Speed USB3.2 Gen2 PCI Express Add-on card, and it's compliant with the PCI Express Gen-III Dual-lane (x2) specification for host PC system. It works up to 10 Gbps for data transfer when connecting to USB3.2 Gen2 compliant peripherals, while maintaining compatibility with existing USB peripheral devices. USB3.2 Gen2 performance is 2 times faster than USB3.0 and 20 times faster than USB2.0 connectivity. With SUNIX unique technology, it can output efficient power to USB device without additional power adapter connection. SUNIX USB2312A is an ideal choice for external storage devices, MP3 players, external writer, digital cameras, webcam, networking and video devices, and all other USB devices.

Package Checklist

Please Check if the following items are present and in good condition upon opening your package. Contact your vendor if any item is damaged or missing.

1. USB2312A - 2-port USB3.2 Gen2 PCIe Host Card with Type-A Receptacle
2. CD Driver
3. Quick Installation Guide (This document)

Features

- PCI Express Base Specification Revision 3.0 dual-lane (x2).
- Support PCIe L1 substate and CLK REQ# for advanced power management.
- Compliant with Universal Serial Bus 3.1 specification Gen2.
- Compliant with xHCI (eXtensible Host Controller Interface) specifications Revision 1.1.
- Supports simultaneous operation of multiple USB3.2 Gen2/1, USB2.0 and USB1.1 devices
- Supports USB data transfer rate of 10G/5G/480/12/1.5 Mbps.
- Expands dual external USB3.2 Gen2 Super-Speed plus Type-A ports on the system.
- Each USB port supplies maximum +5VDC / 1500mA power output to USB device.
- Built-in over current protection on each USB port.
- Hot-swapping feature allows connect/disconnect device without powering down the system.
- Driver supports for Microsoft Windows 7, 8.x and 10, 11 operation systems.
- Certified by Electromagnetic Compatibility (CE, FCC, VCCI, BSMI) and RoHS approval.

Hardware Installation

SAFETY FIRST

To avoid damages, please make sure to remove any power connection before card installation, and follow the detailed steps given below before inserting the card into your computer.

Step 1: Turn your PC's power off, and shut off the power to any peripheral.
Step 2: Remove the power plug from the plug socket.
Step 3: Remove the cover from the computer case.
Step 4: If fitted. Remove the metal cover plate on the rear of a free PCIe slot.
Step 5: Insert PCI Express Industrial I/O Control Board into the free PCIe slot and screw it firmly on the bracket side.
Step 6: Place the cover back onto the computer.
Step 7: Insert the plug into the plug socket.

Unplugging or ejecting a devices without first stopping them can often cause your computer to crash and lose valuable data. To safely unplug or eject any of the USB devices, always use "**Safely Remove USB Device**" icon on the taskbar to quickly unplug or eject your USB devices.

Specification

Hardware

BUS	PCI Express Spec 3.0, Dual-Lane (x2)
Controller	PCI Express USB3.2 Gen2 Host controller, Asmedia ASM3142
USB Standard	eXtensible Host Controller Interface (xHCI) Rev1.1
IRQ & IO	Assigned by System

USB Communication

Interface	Universal Serial Bus 3.2 Gen2 / 1, USB 2.0 / 1.1
Speed	Super Speed+ (10Gpbs), Super Speed(5Gpbs) High Speed(480Mbps), Full Speed(12Mbps), Low Speed (1.5Mbps)
No. of Port	2-port
PCB Connector	USB3.2 Gen2 USB Type-A port
Protection	±15KV IEC61000-4-2 Air Gap Discharge ±8KV IEC61000-4-2 Contact Discharge

Power

Source	PCIe Bus Power
Output Capacity	USB Type-A Port: +5VDC / Maximum 0.9A / each port Note: Total power output capacity will be limited by system power supply.
Over Current Protection	USB Type-A Port: +5VDC / 1.5A / each port / Power switch
Power Consumption	1.1 W @ 3.3V (board only without power output to USB device)

Driver Support

Windows Client	Windows 7 (X86/X64) Windows 8.x / 10/ 11 (X86/X64) (Windows in-box driver)
Linux	Linux 2.6.31 or later (Linux OS already implemented USB3.0 driver)

Environment

Operation Temperature	0 to 60°C (32 to 140°F)
Operation Humidity	5 to 95% RH
Storage Temperature	-20 to 70°C (-4 to 158°F)

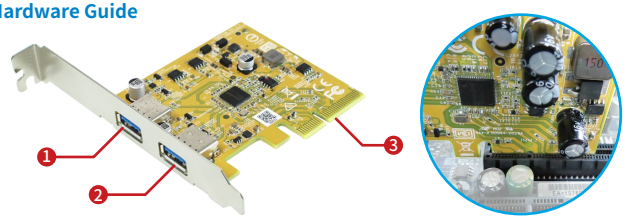
Dimension

PCB Dimension	79.3 x 68.5 mm
Bracket	Standard 120 mm (Low Profile 80mm)
Bracket Space	1

Regulatory Approvals

EMC	CE, FCC, VCCI, BSMI
Green	RoHS, CRoHS, WEEE

Hardware Guide



❶❷ External USB3.2 Gen2 SuperSpeed+ TypeA Female ports
❸ PCI Express x4 Gold Finger

Note: In order to get USB3.2 Gen2 SuperSpeed+ performance, please use PCIe Generation 3 slot for card installation. Or only get half of the data transfer rate.

System Requirement

- One available x4, x8 or x16 PCI Express slot. (Recommend PCI Express 3.0)
- Microsoft Windows 7, 8.x, 10, 11 operation system.
- INTEL Core i Processor with 4GB DDR RAM or above.
- For driver installation, you can download from SUNIX website.

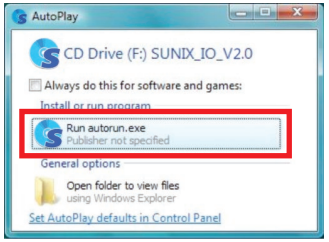
Note: To satisfy USB3.2 Gen2 10Gb/s SuperSpeed+ highest performance, SUNIX USB2312A adopts the PCIe Gen3/x2 (10Gb/s) interface connector design. User has to plug USB2312A add-on card into PCIe x16 (or x4 above) slot on the mainboard, such as graphics add-on card adopting. Due to expansion slot mechanical limitation, this card can NOT be plugged into PCIe x1 slot.

Driver Installation

SUNIX USB2312A USB3.2 Gen2 add-on card design bases on Microsoft Windows OS.
The following table is the operating system for the driver support lists.

Driver Free	Remark
Windows 8.x / 10 / 11	Microsoft Windows in-box driver (with UASP).
Windows Server 2016	
Windows Server 2012R2	
Linux	Linux 2.6.31 or later (Linux OS already implemented USB 3.0 driver)
Require USB 3.2 Driver	**Remark**
Windows 7	User has to install additional USB3.2 driver. * Asmedia USB3.2 Host IC Driver (without UASP). * Microsoft USB Hotfix Diver KB 2581464.
Windows Server 2008R2	
Do NOT support	**Remark**
Windows XP / Vista	USB Driver implemented USB3.0 performance only.
Windows Server 2003	
MAC OS	Do NOT support
DOS	

SUNIX Driver Menu Preview:



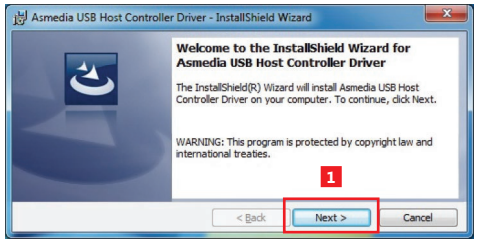
Please note that Microsoft® USB Hotfix driver has to install separately on Win7 and 2008R2. Due to Microsoft® licensed issue, driver package is not included, user can go to Microsoft official website (http://support.microsoft.com/) and search keyword "**KB 2581464**" to download driver package.

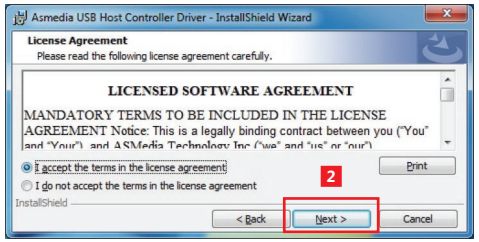
Asmedia USB3.2 host controller driver is necessary under Microsoft Windows 7 and Server 2008R2 operation system. Please install driver as below steps:

(1) Please click **Setup.exe**.
User can go to SUNIX website to download latest driver verison.

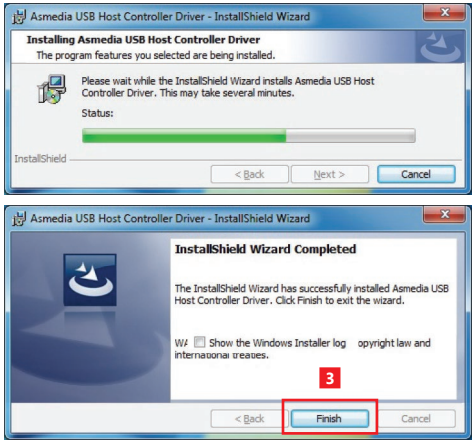
: \ USB \ USB 3.2 \ Asmedia \ Setup.exe

(2) Click "**Next**" to continue.
Please check accept license agreement box, and click "**Next**" to continue.





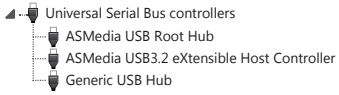
(3) Specify driver installation folder in system and click "**Next**" to continue
Click "**Finish**" to end of the driver installation steps.



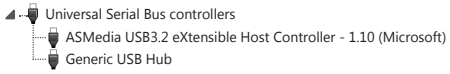
Hardware Verify

Click on the "**Device Manager**" tab in the Windows Control Panel
Start > Control Panel > Device Manager

Under Win7 and 2008 OS, entry Universal Serial Bus controllers catalog,
and "**ASMedia USB3.2 eXtensible Host Controller**" shows in the device manager.



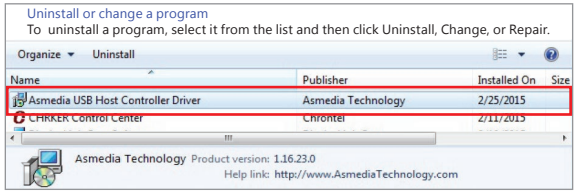
Under Win10, 8.x and 2012 OS, entry Universal Serial Bus controllers catalog, and "**ASMedia USB3.2 eXtensible Host Controller - 1.10 (Microsoft)**" shows in the device manager.



Driver Uninstall

Click on the "**Programs and Features**" tab in the Windows Control Panel
Start > Control Panel > Programs and Features

Entry Uninstall or change a program page, and double click
"**ASMedia USB Host Controller Driver**" to process driver uninstallation procedure.



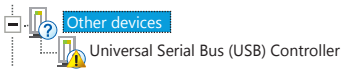
Troubleshooting

Q 1. If card and devices connected to the computer do not seem to be working properly, please perform below basic troubleshooting steps:

Ans:a. Check that all cables are correct and securely connected.
b. Make sure USB device' s power is turned on.
c. Make sure the devices are getting enough power they require.
d. Make sure there is no problem with the card installation.

Q 2. Computer failed to start after inserting the USB3.2 Gen2 PCI Express card.
Ans: Turn off the computer, remove the USB3.2 Gen2 PCI Express card, and try to restart the computer. If the computer starts successfully, it means that the card has not been inserted into the PCI Express slot correctly. Please clean PCI golden finger by rubber firstly, then change another PCI-E slot!

Q 3. How to deal with there is a yellow exclamation point on controller?



Ans:a. Please shutdown your computer and move the card to another available slot then re-install USB3.2 driver.

b. Please point on this device then right-check on the mouse. Selecting "Update Driver" to renew USB driver.

c. This exclamation point usually means there is a resource conflict between the this card and another card in your system. Please move the card to another available slot. Restart your computer. Windows will re-configure itself and re-assign resources. Check your device manager again.

Q 4. The USB cable has been extended and the device no longer works.
Ans: The length of the USB3.2 cable must not exceed 1.0 meters. Please do not extend the cable or a USB repeater must be used if the cable is longer than 1.0 meters. The longer cable causes poor performance.

Q 5. Is it possible to connect current USB 1.1, 2.0, 3.0 devices to the USB3.2 PCIe card?
Ans: Yes it works. Device will not obtain the USB3.2 Gen2 10G top performance, but depends on your USB 3.0/2.0 device.

Q 6. I could not get USB3.2 Gen2 top performance?
Ans: USB3.2 Gen2 PCIe Card benchmark performs up to 700~750MB/s with SSD (Solid State Drive) RAID 0 structures. So please check your USB3.2 Gen2 device could satisfy USB3.2 Gen2 bandwidth.

Q 7. Will my USB 3.0/2.0 device raises performance when connecting with USB3.2 card?
Ans: USB3.2 Gen2 card provides higher USB communicating bandwidth between PC desktop and USB device. However USB device implements performance limits on your USB device data throughput capacity itself.

Q 8. How to enable UASP (USB Attached SCSI Protocol) feature under Windows 7 ?
Ans: USB3.2 Gen2 host controller driver does not support UASP feature. We recommend user upgrade operation system to Windows 11, 10, 8.x or 2012 version that Windows in-box driver includes UASP feature.

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