



## USB2312

USB3.1 Enhanced SuperSpeed  
Dual ports PCI Express Host Card  
with Type-A Receptacle



### Introduction

SUNIX USB2312 is a dual-port Super-Speed USB3.1 PCI Express Add-on card, and it's compliant with the PCI Express Generation 2 (Dual-lane x2) specification for host PC system. It works up to 10 Gbps for data transfer when connecting to USB 3.1 compliant peripherals, while maintaining compatibility with existing USB peripheral devices. USB3.1 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 USB2312 is an ideal choice for external storage devices, MP3 players, external writer, digital cameras, webcam, networking and video devices, and all other USB devices.

### Features

- PCI Express Base Specification Revision 2.0 dual-lane (x2) .
- 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 USB 3.1, 3.0, USB 2.0 and USB 1.1 devices
- Supports USB data transfer rate of 10G/5G/480/12/1.5 Mbps.
- Expands dual external USB3.1 Super-Speed plus Type-A ports on the system.
- Each USB port supplies maximum +5VDC / 900mA power output to USB device.
- Built-in over current protection on each USB port.
- Support device remote wakeup function from USB keyboard or mouse.
- Hot-swapping feature allows connect/disconnect device without powering down the system.
- Driver supports for Microsoft Windows 7, 8.x and 10 operation systems.
- Certified by Electromagnetic Compatibility (CE, FCC, VCCI, C-Tick, BSMI) and RoHS approval.

## Specifications

### Hardware

|                     |   |
|---------------------|---|
| <b>BUS</b>          | PCI Express Spec 2.0, Dual-Lane (x2)                |
| <b>Controller</b>   | PCI Express USB3.1 Host controller, Asmedia ASM1142 |
| <b>USB Standard</b> | eXtensible Host Controller Interface (xHCI) Rev1.1  |
| <b>IRQ &amp; IO</b> | Assigned by System                                  |

### USB Communication

|                      |   |
|----------------------|---|
| <b>Interface</b>     | Universal Serial Bus 3.1 / 3.0 / 2.0 / 1.1  |
| <b>Speed</b>         | Super Speed+ (10Gpbs), Super Speed(5Gpbs)<br>High Speed(480Mbps), Full Speed(12Mbps), Low Speed (1.5Mbps) |
| <b>No. of Port</b>   | 2-port  |
| <b>PCB Connector</b> | USB3.1 USB Type-A port  |
| <b>Protection</b>    | ±15KV IEC61000-4-2 Air Gap Discharge<br>±8KV IEC61000-4-2 Contact Discharge                               |

### Power

|                                |   |
|--------------------------------|---|
| <b>Source</b>                  | PCIe Bus Power  |
| <b>Output Capacity</b>         | USB Type-A Port:<br>+5VDC / Maximum 0.9A / each port<br>Note: Total power output capacity will be limited by system power supply. |
| <b>Over Current Protection</b> | USB Type-A Port:<br>+6VDC / 1.1A / each port / PTC Fuse   |
| <b>Power Consumption</b>       | 1.1 W @ 3.3V (board only without power output to USB device)  |

### Driver Support

|                  |   |
|------------------|---|
| <b>Microsoft</b> | Windows 7 (X86/X64)<br>Windows 8.x / 10 (X86/X64) (Windows in-box driver) |
| <b>Linux</b>     | Linux 2.6.31 or later (Linux OS already implemented USB3.0 driver)        |

### Environment

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

### Standards and Certifications

|              |  |
|--------------|--|
| <b>EMC</b>   | EUR: CE, EN55022 Class B, EN55024, EN61000-3-2, EN61000-3-3<br>US: FCC Part 15 Class B<br>TAIWAN: BSMI: CNS13438<br>AS/NZS: C-Tick: CISPR22<br>JAPAN: VCCI |
| <b>Green</b> | RoHS, CRoHS, WEEE  |

## Physical Characteristics

|   |                                    |
|---|------------------------------------|
| <b>PCB Dimension</b>                      | 79.3 x 68.5 mm                     |
| <b>Bracket</b>                            | Standard 120 mm (Low Profile 80mm) |
| <b>Bracket Space</b>                      | 1                                  |
| <b>Mechanical Drawings<br/>(unit: mm)</b> |                                    |

### Note:

To satisfy USB3.1 10Gb/s SuperSpeed+ highest performance, SUNIX USB2312 adopts the PCIe Gen2/x2 (10Gb/s) interface connector design. User has to plug USB2312 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. If user does not have available PCIe x16 on the mainboard, please pick SUNIX USB2312C (USB3.1 PCIe add-on card with 2-port USB Type-C Receptacle) that adopts PCIe Gen3/x1 (8Gb/s) interface connector design.



## Package

- USB2312 - 2-port USB3.1 PCIe Host Card with Type-A Receptacle
- CD Driver
- User's Manual

## Product Family

- USB2311C - USB3.1 PCIe Host Card with 1-port USB Type-C Receptacle
- USB2312 - USB3.1 PCIe Host Card with 2-port USB Type-A Receptacle
- USB2302C - USB3.0 PCIe Host Card with 2-port USB Type-C Receptacle

### Headquarters

#### Taiwan

Sunix Co., Ltd.

Tel : +886-2-8913-1987

Fax : +886-2-8913-1986

Website : [www.sunix.com](http://www.sunix.com)

E-mail : [info@sunix.com](mailto:info@sunix.com)

#### America

SUNIX USA, INC.

Tel : +1 (909) 594-8022

Fax : +1 (909) 594-8906

Website : [www.sunix.com](http://www.sunix.com)

E-mail : [sales.sunixusa@sunix.com](mailto:sales.sunixusa@sunix.com)

#### Germany

Sunix Vertriebs GmbH

Tel : +49(0)6146-60 1345

Fax : +49(0)6146-60 1346

Website : [www.sunix.com](http://www.sunix.com)

E-mail : [info@sunix-euro.de](mailto:info@sunix-euro.de)

#### China

Shanghai Office

Tel : +86-21-6469-1670

Fax : +86-21-6468-8346

Website : [www.sunix.com.cn](http://www.sunix.com.cn)

E-mail : [info@sunix.com.cn](mailto:info@sunix.com.cn)

Beijing Office

Tel : +86-010-65308429

Fax : +86-010-65308421

Shenzhen Office

Tel : +86-755-33500418