coolgear

USB3.2 Gen 1 Super-Speed Isolator
w/15KV ESD Surge Protection
Model Number: *MG-14031IS*

Installation Guide

Coolgear, Inc.

Version: 1.0
Date: 04/08/2024

Table of Contents

Revision History

Revision	Date	Comments
1.0	04/08/2024	First Release

1. Introduction

Thank you for purchasing Coolgear's USB3.2 Gen 1 Super-Speed Isolator. It complies and works with USB3.2 Gen 1 Super-Speed mode at 5Gbps data rate. It provides 3KVrms isolation between its upstream and downstream facing ports. The isolator works with USB3.2 Gen 1 compliant devices and backward compatible with USB2.0 High-Speed and USB1.1 devices. Its upstream port with a type-B connector is fully compliant with USB3.2 Gen 1 or Gen 2 host ports (but not USB2.0 or below). This isolator does NOT support a USB2.0 host, it only supports USB3.2 Gen 1 (or called USB3.0) or above

Features:

✔ Compliant with USB1.1 and High-speed USB3.2 Gen 1
✔ Supports High-speed, Full-speed and or Low-speed Packet Protocol Sequencer for Endpoint 0/1
✔ Provides 1 Downstream Facing Port
✔ Supports Screw-Lock USB Mechanism
✔ Supports Wall and Optional DIN Rail Mounting Clip
✔ Supports 5Gbps, 480Mbps, 12Mbps and 1.5Mbps Speed
✔ Supports 3,000Vrms Isolation Between Upstream and Downstream Port
✔ Supports Self-powered and Bus-powered Mode
✔ Supports DC Jack to Add Additional Downstream USB Bus Power

2. Connector Layout

3. Installing the Power Supply

I.   Power Supply

Since the Isolator supports USB bus-powered feature, in most cases you don't need to connect any AC adapter (power supply) on it. However, in some cases you may need an AC adapter to provide more bus power for your USB device, please note that the power input DC jack was located at secondary side (the same domain as the type-A connector):

👉 **WARNING! Don't supply the power from your PC USB host with an USB-to-DC-Jack conversion cable to the DC jack of the Isolator, it will short the primary and secondary side isolation. If you are using an AC Adapter to provide the power instead, please make sure that your AC adapter provides enough isolation capability, at least it should be bigger than 3,000Vrms.**

II.   Host USB Port Limitation

Due to the limitation of the Isolator, it can support USB3.2 and USB2.0/1.1 devices on its downstream port, but cannot support USB2.0 host on its upstream port. The following table lists the combinations:

Upstream Port (Host)	Downstream port (Device)	Support
USB3.2 Gen 2	USB3.2 Gen 2 (at Super-Speed) USB3.2 Gen 1 Super-Speed USB2.0 High-Speed USB2.0 Full-Speed USB1.1	Yes
USB3.2 Gen 1	USB3.2 Gen 2 (at Super-Speed) USB3.2 Gen 1 Super-Speed USB2.0 High-Speed USB2.0 Full-Speed USB1.1	Yes
USB2.0 or USB1.1	N/A	No

III.   Installing the Isolator

1. **Use static electricity discharge precautions.**
   Remove possible static discharge potential from any objects that the Isolator may come in contact with before installation. This can be accomplished by touching a bare metal chassis rail after you have turned off the power.

2. **Locate an unused USB host port on your PC, connect USB cable from the USB host port to the Isolator's upstream port.**

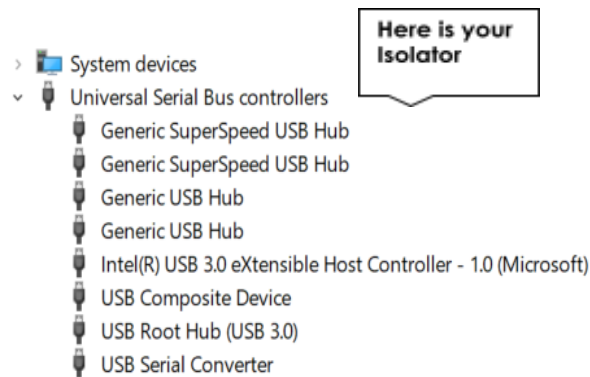3. **Installing USB cable from the Isolator to the USB device**

4. **Installing the Wall and Optional DIN Rail mounting clip**
   The Isolator provides a Wall mounting kit which can easily hold the Isolator on a wall or similar places. The DIN Rail clip (optional) can be fixed under the Wall kit with 4 screws.

4. Checking the Isolator Installation

To check the Isolator installation in Windows device manager, please follow the following steps:

1. Click **Start □ Control Panel □ System □ Device Manager** button
2. Double click **Universal Serial Bus Controller**
3. Double click **Generic USB Hub**, the message will show that this device is working properly.

5. Specifications

Type	Specifications
Connectors	Upstream: Type-B USB3.2 Gen 1
	Downstream: Type-A USB3.2 Gen 1
Speed	USB3.2 Gen 1 Super-speed: 5Gbps
	USB2.0 High-speed: 480Mbps
	USB2.0 Full-speed: 12Mbps
	Low-speed: 1Mbps
Isolation	3,000Vrms
Power Consumption	5V/120mA max.
Operating Temperature	0 to 60°C (32 to 140°F)
Operating Humidity	5 to 95% RH
Storage Temperature	-20 to 85°C (-4 to 185°F)

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Safety	• Read the entire Installation Guide before implementing this product for your application. This guide contains important information about electrical connections that must be followed for safe and proper operation.
	• Inspect the product closely for visual defects before putting it to use.
	• Keep away from areas where moisture builds, this product contains electrical components that can be damaged by moisture build up, this can adversely affect your equipment connected to it.
	• Do not disassemble the product. Handling the product's internal components can expose it to ESD (Electro-Static Discharge) hazards that can affect the function of the device.
	• If this product is not functioning properly, email our support team at support@coolgear.com.

USB CHARGING & CONNECTIVITY EXPERTS

Within Every Great Machine

For over 20 years our rugged, off-the-shelf USB hubs, chargers, and serial products are ready to go for your next project. Based in the US, Coolgear has successfully engineered and deployed millions of connectivity solutions into industrial, medical, automotive, commercial, and aerospace industries.

We understand the importance of reliability, build quality, & consider all our customers' applications as critical, wanting to ensure long-lasting event-free integrations.

Compliance Statement

View compliance within the product's respective Technical Data Sheet, found on the product's online listing.

Technical Support

When you reach out to Coolgear support, you'll find yourself in the hands of a solution-oriented and knowledgeable expert ready to answer whatever question you throw at them. If you ever need help with your product, visit coolgear.com/support for support tickets, downloads, and other support resources. For the latest drivers, please visit coolgear.com/download.

Product Standard Warranty

One (1) Year Warranty from Date of Purchase Invoice. Coolgear will repair or replace any Product determined to be defective and which has been returned, at your risk and expense, to Coolgear. Where Coolgear determines in its sole judgment that repair or replacement of such Product is not reasonable, Coolgear will keep the non-conforming Product and refund to you the amount you paid for such Product. Returned Products shall be subject to the balance of the Warranty Period otherwise applicable. Any reconditioned parts used by Coolgear shall be subject to all the same provisions as otherwise applicable to new parts. THE FOREGOING DESCRIBES COOLGEAR'S SOLE LIABILITY, AND YOUR SOLE REMEDY, FOR ANY BREACH OF WARRANTY. IF YOU DO NOT AGREE WITH THE TERMS OF THIS LIMITED WARRANTY, YOU MUST RETURN THE PRODUCTS UNUSED AND IN THEIR ORIGINAL CONTAINERS TO YOUR ORIGIN OF PURCHASE.

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