



深圳市艾尔赛科技有限公司
Shenzhen LC Technology Co., Ltd.

LCTECH single channel isolated USB module

LC-USB-3160

Single channel isolated USB module ADUM3160

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1, Overview

The LCTECH USB Isolation Module is based on Analog Devices' proprietary iCoupler® technology and is USB 2.0 compliant, providing fully isolated 1.5 Mbps and 12 Mbps data rates, isolating 1500V, requires no external power, and requires no drivers. The USB port is protected from external strong power and strong signals, and the computer's USB port and computer motherboard are escorted.

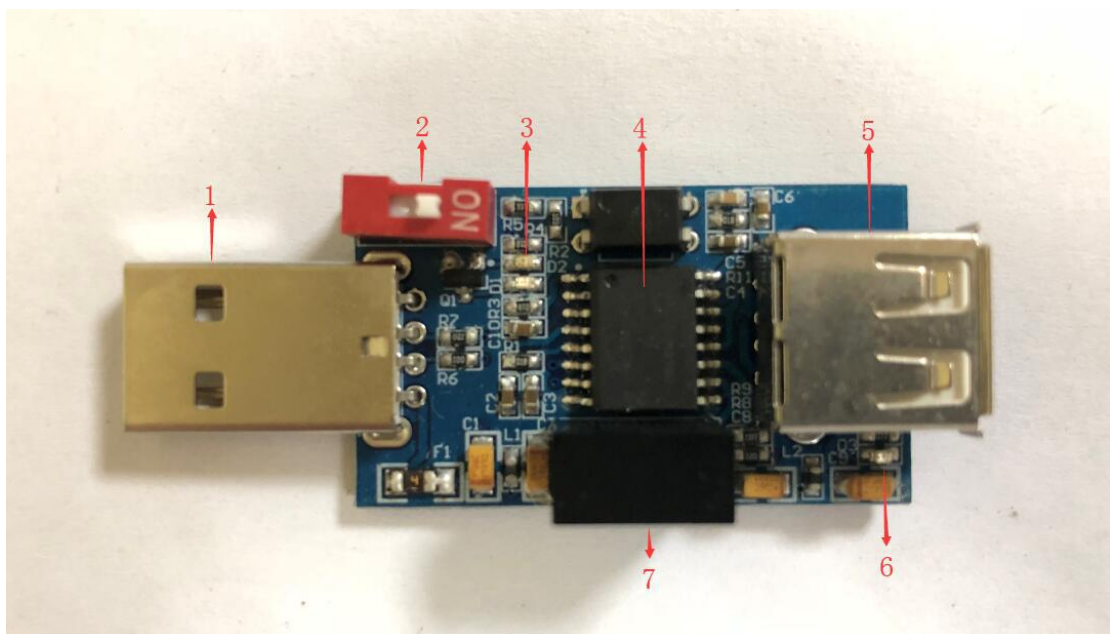
2, Features

1. Compatible with USB2.0;
2. Isolation voltage of ADUM3160: 2500V ;
3. Isolation voltage of power module: 1500V;
4. Supports low speed 1.5Mbps and full speed 12Mbps devices , Toggled by on-board switch, pure high-speed devices are not supported ;
5. Support USB control transfer, batch transfer, interrupt transfer, sync/isochronous transfer;
6. The output power of B0505S: 1W;
7. Drive-free, hot swappable, plug and play;
8. Operating environment: -40°C to 85°C.

3, Hardware Introduction

Board size: 23.3*40mm

1, On-board source





- 1, **USB input**
- 2, **Mode switch**: Pushing to ON is low speed mode, another side is full speed mode
- 3, **Mode indicators**: Red represents low speed mode, Blue represents full speed mode
- 4, **ADUM3160 core chip**
- 5, **USB output**
- 6, **Power indicator**
- 7, **B0505S isolated power module**

2, Instructions

2.1, Application

(1) Strong electricity, strong interference working environment: Some circuits contain strong electricity, strong interference (such as high voltage, inverter, motor drive, etc.) environment, when it is connected to the computer, must be isolated to ensure computer, personal safety.

(2) Noise sensitive area: The computer is a big source of noise. In the noise sensitive field, we can isolate the USB interface through this device. Such as high-precision USB data acquisition system, HIFI sound system.

(3) USB debugging device: For example, various USB interface JTAG/SWD emulators, ISP/ASP/IAP/ICP downloaders, etc. When you often can't connect during the debugging process, you can use the USB isolator to try to improve when the simulation is abnormal.

(4) Various industrial control USB devices: In industrial environments, USB devices often crash, such as USB mouse, keyboard, USB to serial port and other communication devices. USB isolators reduce the chance of crashes and damage to these devices in industrial environments. Sometimes it is necessary to extend the USB cable, the USB isolator can act as a very good USB repeater, and can also isolate the ground pressure difference between upstream and downstream devices.

(5) USB peripheral: Such as mouse, keyboard, USB sound card, USB flash disk, printer, digital camera, USB HUB, USB camera, etc.

(6) Medical equipment: The safety of the human body is the most important and primary consideration, but some medical devices are connected to the computer through the USB interface. In the process of collecting data or treatment for the human body, it is necessary to have direct electrical contact with the human body, and to avoid possible passage from the computer. The high voltage of the equipment and interface lines transmitted to the human body causes electric shock, and the electrical isolation of the interface line becomes one of the important protective measures.



2.2, Supported devices:

●**Full speed devices:** USB flash disk, Digital camera, Card reader, Mobile hard disk, U shield, USB HUB, AVRJTAG, AVRISP, AVRISPMKII, S-Lab, JET51, J-Link, FET430UIF, PICKIT2, XDS100, LPC-Link, ICD2, USB to TTL module (Such as FT232, CP2102, PL2303, CH341)

●**Low speed devices:** Keyboard, Mouse, USBAPS, USBHID, USBCDC

Unsupported devices:

USB wireless card, Some USB3.0 USB flash disk

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