USB TO RS232/485/422/TTL

Overview

USB TO RS232/485/422/TTL, an industrial-grade isolated converter, adopts the original FT232RNL, built-in protection circuit, supports RS232, RS485, RS422, TTL signal conversion, TVS, and self-recovery after short circuit, USB TO RS232/485/422/TTL can be used in software and hardware to achieve the conversion of USB signals to serial port signals. Also, it has the characteristics of high stability, reliability, safety, etc., and can be applied to various industrial control device or applications with high communication requirements.

Feature

- Adopt original FT232RNL chip, has good compatibility, stable and reliable, better performance
- Industrial-grade isolation communication interface conversion: USB to RS232, USB to RS485, USB to RS422, USB to TTL
- Embedded software power supply isolation, provides stable isolated voltage and needs to be used with the power supply of the device
- Embedded software digital isolation, effective data transmission, high reliability, strong interference, and low power consumption
- Adopt high-speed digital isolation chip, effectively suppresses surge voltage and transient pulse voltage in the circuit, lightning and ESD protection
- Embedded self-recovery fuse and protection diode, ensure the current/voltage stable output, effectively protect the circuit board and the equipment from damage
- Fully automatic hardware circuit with no delay, ensures the USB port communication speed, and supports the baud rate from 300bps to 921600bps
- Embedded TVS, and 2.5KV voltage transients, certify the TVS test on a batch
- 5V LEDs for indicating the power and receiver / sender status
- High quality USB A and B USB connectors, smoothly plugged
- Industrial-grade temperature, supports wide-mount and anti-mount installations, wind and humidity, easy to install

Parameters

PRODUCT TYPE	Industrial Grade Digital Isolated Converter
USB	Connector: USB A Interface: USB B Protocol: USB1.1 Cable: Shielded USB cable Length: 1.5m Protection: Self-recovery fuse, isolated output
RS232	Connector: DB9 Protocol: RS232 Protection: TVS diode, surge protection & ESD protection
RS485	Connector: DB9 Protocol: RS485 Speed: 300bps ~ 2Mbps Signal: Differential
RS422	Connector: DB9 Protocol: RS422 Speed: 300bps ~ 2Mbps Signal: Differential
TTL (UART)	Connector: Screw terminal Signal: TXD, RXD, GND, 5V, 3.3V
Protection	Overvoltage, overcurrent, short circuit, lightning, ESD, shock, radiation
Transmission	Half-duplex
Baud rate	300 bps ~ 2Mbps
Isolation	Electrical isolation, lightning, light up when there is a USB connection and voltage is detected
Receiver	TVS: 15 kilobytes, light up when the USB port sends data
Sender	TVS: 15 kilobytes, light up when the device sends and sends data
OPERATING ENVIRONMENT	Temperature: -40 ~ 85℃ Humidity: 5% ~ 95%RH
OPERATING SYSTEM	Mac, Linux, Android, Windows 11 / 10 / 8 / 7 / 8 / 7

Interface Introduction

Dimensions

Matching Resistor

Note: The RS422 and RS485 interfaces of USB TO RS232/485/422/TTL also have a built-in 120Ω matching resistor, which is not shown in the diagram, and the user can disassemble the case to modify the settings as needed.

Installation method: Welding the 120Ω resistor jumper cap at the red frame.

Software Installation

USB Driver Installation

- The first method: download the driver wizard from the Internet, and automatically detect and install the driver.
- The second method: manually install the driver: First, obtain the latest driver installation software.

Download the corresponding driver installation software according to the operating system and decompress the driver installation software.

- Click Install.

- Click Next.

- Check I accept this agreement (1), and then click Next.

- Click Finish, and check the computer device manager at this time, you can see that the port number is successfully assigned to COM4 port.

Hardware Test

Test environment: PC Windows operating system(s)
Accessories required for testing:

- USB TO RS232/ 485 /422/ TTL x1
- Ground Dupont wire.
- Dupont line / Dupont line / Cable cable
- USB female to female cable

Test USB to RS485 communication

1. Connect the hardware as shown below:

2. Open two serial software windows, open the corresponding serial port number, set the baud rate to 115200bps, and the data bits, parity bits, and stop bits are set to default settings and existing data. Start the serial data sending and receiving test. (Note: The RS485 settings of the two serial port ports are consistent.)

First, check the scheduled sending on the left window, and the time can be set to 100milliseconds, and it is found that the data received on the right window is consistent with the sent data, and it is normal. Turn off the scheduled sending, as shown in the figure below:

Then, check the sending on the right window, and it is found that the data received on the left window is consistent with the sent data, and it is normal. Turn off the scheduled sending, as shown in the figure below:

Test USB TO RS422 Communication

1. Connect the hardware as shown below:

Note: The RS485 interface of the product can be used for USB-RS485 communication, which is normal to be default. Users can disassemble the case to modify the settings according to their needs. If special requirements, it can also be connected to the serial port.

Open two SECRAT windows on the computer, open the corresponding port number, set the baud rate to 115200bps, and the data bits, parity bits, and stop bits are set to default settings. The test results are shown in the figure below:

2. Then check the timing sending in the right window, the time can be set to 100milliseconds, and it is found that the data received in the left window is consistent with the sent data, and it is normal. Turn off the timing sending, as shown in the figure below:

Test USB To TTL Communication

1. Connect the hardware as shown in the figure below:

2. Open two serial software windows, open the corresponding serial port number, set the baud rate to 115200bps, and the data bits, parity bits, and stop bits are set to default settings and existing data. Start the serial data sending and receiving test. (Note: The TTL settings of the two serial port ports are consistent.)

First, check the scheduled sending on the left window, and the time can be set to 100milliseconds, and it is found that the data received on the right window is consistent with the sent data, and it is normal. Turn off the scheduled sending, as shown in the figure below:

Then check the sending on the right window, and it is found that the data received on the left window is consistent with the sent data, and it is normal. Turn off the sending, as shown in the figure below:

Resource

Software

- PDF Driver (or download from FTDI official website):
  - FTDI USB Windows Driver
  - FTDI USB Linux Windows Driver
  - MAC FTDI Driver MAC Android
- Secret Workbench
- Secret Workbench
- Putty.exe

Datasheet

- FT232RNL
- SP485 SP485 pdf

Support

If you require technical support, please go to the page and open a ticket.