USB/RS232/RS485/TTL Converter

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Overview

The Multibus Converter is an industrial-grade isolated converter that supports USB / RS232 / TTL to RS232 / 485 / TTL, with built-in power supply isolation, digital isolation, and protection circuits like TVS diode. It is easy to use and suitable for industrial control equipment or applications with high communication requirements.

Multibus Converter



(https://www.waveshare.com/multibus-converter.htm)

Industrial Isolated Multi-Bus Converter, USB / RS232 / RS485 / TTL Communication

Feature

- Adopts original FT232RL for USB communication, fast communicating, stable and reliable, better compatibility.
- Onboard over-voltage, over-current protection circuits (there's no protection between the two power supplies of the host terminal).
- Onboard unibody power supply isolation, providing stable isolated voltage, no extra power supply required for the isolated terminal.
- Onboard unibody digital isolation, for isolating the signal, reliable and jam-proof, low power consumption.
- Onboard TVS (Transient Voltage Suppressor), effectively suppresses surge voltage and transient spike voltage in the circuit, lightning proof & anti-electrostatic.
- Onboard resettable fuse and protection diodes, ensures the current/voltage stable outputs, provides over-current/over-voltage proof, and improves shock resistance.
- Onboard TTL serial port 3.3V and 5V voltage level switch, allows the user to select the TTL level of the Group B terminal.

- Aluminium alloy enclosure with oxidation dull-polish surface, solid and durable.

Specification

PRODUCT TYPE	Industrial Isolated Multi-bus USB/RS232/RS485/TTL Converter		
DATA RATE	300 ~ 921600bps 300 ~ 600000bps (RS232 to RS232)		
GROUP A	USB	Operating voltage	5V
		Connector	USB-B
		Protection	200mA resettable fuse, isolated output
	RS232	Connector	DB9 male
		Protection	TVS protection, surge-suppress, ESD protection
		Transmission mode	point-to-point
	TTL (UART)	Operating voltage	5V
		Connector	Screw terminal
		Pinout	TXD, RXD, GND, 5V
		Protection	clamping protection diode, over-voltage protection, reverse-proof, shock-resistance, jamproof
GROUP B	RS485	Connector	Screw terminal
		Pinout	A+, B-, GND
		Direction control	Hardware auto control
		Protection	lightningproof, surge-suppress, ESD protection
		Transmission mode	point-to-multipoints (up to 32 nodes, it is recommended to use repeaters for 16 nodes or more)
	RS232	Connector	DB9 male
		Protection	TVS protection, surge-suppress, ESD protection
		Tranmission mode	point-to-point
	TTL (UART)	Operating voltage	3.3V/5V
		Connector	Screw terminal
		Pinout	TXD, RXD, GND
		Protection	clamping protection diode, over-voltage protection, reverse-proof, shock-resistance, jamproof

OPERATING ENVIRONMENT	Temperature	-25℃ ~ 85℃
	Humidity	5%RH ~ 95%RH
OS SUPPORT	Windows 11 / 10 / 8.1 / 8 / 7 / XP	
NOTE	only one pair of devices will be matched for a complete communication between the Group A and Group B terminals at the same time	

Note

A pad for 120R terminal resistor is reserved for the RS485 port, users can add the resistor to the begin/terminal devices if connect multiple devices.

Install driver

Generally, after connecting to the computer, the system will automatically prompt to install the driver. If the device cannot communicate normally after connecting to the device, And if the device has a yellow exclamation mark in the device manager, you need to manually install the driver.

- Download the Driver
  - FT232 Driver (https://files.waveshare.com/upload/f/fd/FT232-Driver.7z)
- unzip the driver and double-click the exe file to install the driver.

RS232 Pinout



RS232 pinout	
DB9 female (PIN)	Description
2	Sending data (TXD)
3	Receiving data (RXD)
5	Ground GND
1,4,6,7,8,9	N/C

(/wiki/File:Multibus-Converter-details-10.jpg)

Resources

Software

- FT232 Driver-Windows 64bit (https://files.waveshare.com/upload/f/f3/FT232_Driver_64.zip)

- FT232 Driver-Windows 32bit (https://files.waveshare.com/upload/2/2c/FT232_Driver_32.zip)
- Serial debugging assistant Windows (https://files.waveshare.com/upload/5/5f/Sscom.7z)
- Serial debugging assistant Android (https://files.waveshare.com/upload/2/21/Sscom_Android.zip)
- PuTTY (https://files.waveshare.com/upload/5/56/Putty.zip)

Datasheet

- FT232R (https://files.waveshare.com/upload/b/b5/FT232R.pdf)

FAQ

Question: System other than Windows that cannot use USB to communicate?

Answer:
If you encounter a system other than Windows that cannot use USB to communicate normally, you can go to the official website link below, install the corresponding system driver and use it: https://www.ftdichip.cn/Drivers/D2XX.htm (https://www.ftdichip.cn/Drivers/D2XX.htm)

Question: Does USB communication support Linux system?

Answer:
Yes, it supports Win7/8/8.1/10, Mac, Linux, Android, WinCE, and so on.

Question: What should I do if the RS485 short-range communication is abnormal?

Answer:
Remove the 120-ohm termination matching resistor from RS485.

Question: Does it support the communication between the A-side and the A-side, and the B side and the B side?

Answer:
Not supported, A side can only communicate with B side, B side can only communicate with A side.

Question: How to supply power to the module, and what is the supply voltage?

Answer:
It can be powered through the TTL power interface on the A side, the USB-B data line interface, and the PWR power supply (outer diameter 3.5mm inner diameters 1.35mm) interface, and you can choose one of the three; the power supply voltage is 5V. When the PWR power interface is selected for power supply, the TTL power interface of the A end can supply power to the outside.

Question: What is the specification of the power connector?

Answer:

The power supply socket is DC-002 3.5*1.3mm, which can be used with DC 5V power supply with OD 3.5 and ID 1.35 interface.

(/wiki/File:Multibus_Converterfaq.png)

Support

Technical Support

If you need technical support or have any feedback/review, please click the **Submit Now** button to submit a ticket, Our support team will check and reply to you within 1 to 2 working days. Please be patient as we make every effort to help you to resolve the issue.
Working Time: 9 AM - 6 PM GMT+8 (Monday to Friday)

Submit Now (https://service.waveshare.com/)

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