USB to RS-485/422 Converter Specification



- User Manual
- Drivers

1. Overview

USB to RS-485/422 Converter, no external power supply, compatible with USB, RS-422, RS-485 standards, capable of converting single-ended USB signals to balanced differential RS-422 or RS-485 signals, providing per-line surge protection power, and surge voltage generated on the line is very small. The inter-pole capacitance ensures high speed transmission of RS-422/RS-485 interface, and the RS-422 and RS-485 ends are connected via DB9 male connectors. The converter is equipped with zero-latency automatic transceiver, and the unique I/O circuitry automatically controls the data flow direction without any handshaking signals (e.g. RTS, DTR, etc.). No jumper settings are required to achieve full-duplex (RS-422) and half-duplex (RS-485) mode conversion, plug-and-play. All existing communication software and interface hardware is suitable.

This interface converter can provide reliable connection for point-to-point and point-to-multipoint communication. Point-to-multipoint each converter can allow 32 RS-

422 or RS-485 interface devices to be connected with data communication rate 300-921600bps, and the supported communication methods are USB to RS-422 and USB to RS-485 conversion.

2. Major Functions & Features

- Support USB to RS-485/422 converter

3. Technical Parameters

- Standard: Compliant with USBV1.1, EIA RS-485, RS-422 standard
- USB signal: VCC, DATA+, DATA-, GND, FG
- RS-485 signal: T+, T-, GND
- RS-422 signal: T+, T-, R+, R-, GND
- Working mode：Asynchronous, point-to-point or multi-point, 2-wire half-duplex, 4-wire full-duplex
- Directional control: Using automatic data flow control technology to automatically identify and control the direction of data transmission
- Baud rate: 300-921600bps, auto-detection of serial signal rate
- Load capacity: support point to multipoint each converter can allow the connection of 32 RS-422 or RS-485 interface devices
- Transmission distance: RS-485/422 end 1200 meters (9600bps), USB port no more than 5 meters
- Interface protection: Surge protection, ±15000V electrostatic protection
- Interface form: USB end Class A interface female, DB9 male connector connection
- Transmission medium: twisted pair or shielded wire
- Dimension: 35mm×20mm×69.5mm
- Operating environment: -20~75°C, relative humidity 5~95%
- Transmission distance: 0-1200m (921600bps-9600bps)
- Support Win98/Win2000/WinXP/Vista/Win7/Win8/8.1/10/Linux etc

Main chip: Adopted Prolific: PL2303TA

3. Pin Assignment (DB9 Male, RS-485/RS-422 Side)

Pin	Signal	Description	RS-422 full-duplex wiring	RS-485 half-duplex wiring
1	T/R+	Transmit/Receive A+	RS-422 TX(A+)	RS-485 (A+)
2	T/R-	Transmit/Receive B-	RS-422 TX(😎	RS-485 (😎
3	RXD+	Receive A+	RS-422 RX(A+)	—
4	RXD-	Receive B-	RS-422 RX(😎	—
5	GND	Signal ground	GND	GND
6	N/A	Reserved / not used	—	—
7	N/A	Reserved / not used	—	—
8	N/A	Reserved / not used	—	—
9	N/A	Reserved / not used	—	—

4.Structure Dimension

