USB Serial ISO - Preliminary Datasheet

Serial RX/TX 1.8V-5.5V isolating USB Bridge

Overview

The USB Serial ISO is an isolating UART multi-voltage USB Bridge supporting up to 921600 baud. It can withstand voltages differences of up to 2.5kV RMS (60s) and has a common mode transient immunity of minimum 35kV/µsec. Therefore it's ideal suited for harsh environments, like power electronics where sensible computer equipment needs to be protected. All inputs (primary and secondary side) are protected against ESD and withstand 15kV discharges on the human body model.

The secondary side uart input and supply voltages range from 1.8V to 5.5V. Logic Level and supply voltages need to be matched. The secondary side current consumption is low. A true-green LED shows presence of supply power. Only RX and TX signals are isolated. All other RS232 signals are not available.

The primary-side USB chipset consist of FTDI FT231. A mini-usb connector is used to connect the IC. Red and yellow LEDs indicate ongoing receive and transmission actions.

The product is available in a small, rouged 3D printed case, measuring 48mm x 28mm. The case cannot be compared with a molded case.

Overview	
Primary	
Chipset	FT231
USB Connector	Mini USB
Protection	ESD 15kV HBM
RX LED	yellow
TX LED	red
Min Baud Rate	>=921600 Baud
Isolation	
Diff. Voltage	2.5kV
CMTI	35kV/µsec
Pri-Sec Clearance	>3.5mm
Secondary	
Suppy Voltage	1.8V-5.5V
Supply current	<20mA @ 1.8V <10mA @ 3.3V <5mA @ 5V
Protection	ESD 15kV HBM
Power good LED	True Green

Benefits

- A versatile RS232 converter, without the requirement to care of supply voltages
- Avoiding ground loops helps for ensure a reliable communication
- High datarates allow fast communication of up to 921600 baud. Eventually higher communication speed might be possible. Common devices have limit of 56k Baud.
- ESD protected (15kV Human Body Model)
- Stable enclosure allows on the field usage