Model: GM-FTDI-36 USB to RS-232
Commercial Interface Converter
Instruction Manual

Contents

Summary

With rapid growth and development of computer industry, USB technology is taking the place of various kinds of traditional low speed peripheral interfaces. However, RS-232 interface designs are still used in many important facilities under current industrial environments; therefore, the USB to RS-232 converter is used by many to implement the data transmission from the USB port of a computer to RS-232 devices.

GM-FTDI-36 is a universal USB to RS-232 interface converter that doesn't require an external power supply. Compatible with USB and RS-232 standards, the GM-FTDI-36 is fully capable of performing the conversion from a single-ended USB signal into UART signal of RS-232. DB9 male connectors are used for connection from RS-232 interface.

The unique I/O circuit of the internal zero delay auto transceiver contained in the converter controls the data stream direction automatically. The converter is plug-and-play. All these features ensure a universal application on all the existing communication software and hardware interfaces.

The data communication rate can be as high as 300-921.6Kbps by the point-to-point communication by GM-FTDI-36 interface. Power indicator light and data traffic indicator light are also available with the converter for malfunction indication. Conversion from USB to RS-232 is supported.

Functions

GM-FTDI-36 interface converter supports the following communication mode:

1) Point-to-point communication mode.

Hardware Installation and Application

Read the user manual carefully before installing the GM-FTDI-36 interface converter. Put the signal cable of the equipment into the USB ports. USB/DB9 male connectors are adopted for input/output interface connection for this product.

Performance Parameters

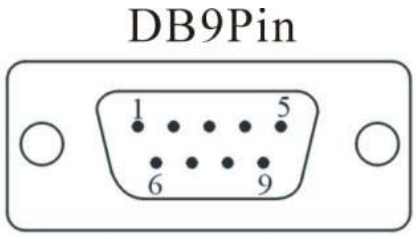
1. Standards: Conforming to USB V1.0, 1.1 and 2.0 and EIA RS-232.
2. USB signals: VCC, DATA+, DATA-, GND, FG.
3. RS-232 signals: DCD, RXD, TXD, DTR, GND, DSR, RTS, CTS, RI
4. Working mode: Asynchronous point-to-point.
5. Direction Control: Adoption of automatic data stream control for automatic recognition and control of data transmission direction.
6. Baud rate: 300-921.6Kbps, automatically detecting of the transmission rate of the serial interface signal.
7. Transmission Distance: 5 meters for RS-232 and less than 5 meters for USB
8. Interface protection: ±15KV Electrostatic protection.
9. Interface forms: B interface female connector and DB9 male connector for USB.
10. Signal Indication: 9 indicator lights for Power (PWR), Send (TXD) and Receive (RXD).
11. Transmission Media: twisted-pair cable or shielded cable.
12. Dimensions: 900mm

13. Working environment: -40°C to 85°C, relative humidity of 5% to 95%
14. Supports Win98, 2000, 2003, 2008, XP, Vista, 7, 8, CE, Mac, Linux.

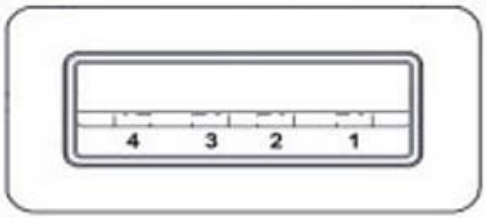
Connector and Signals

1) DB9 PIN: RS-232 output signals and PIN assignment

DB9 (PIN)	RS-232C
1	Protective Grounding DCD
2	Receive Data SIN (RXD)
3	Sending Data SOUT (TXD)
4	Data Terminal Preparation DTR
5	Signal Ground GND
6	Data Equipments Preparation DSR
7	Request Sending RTS
8	Clear Send CTS
9	Ring Indication RI

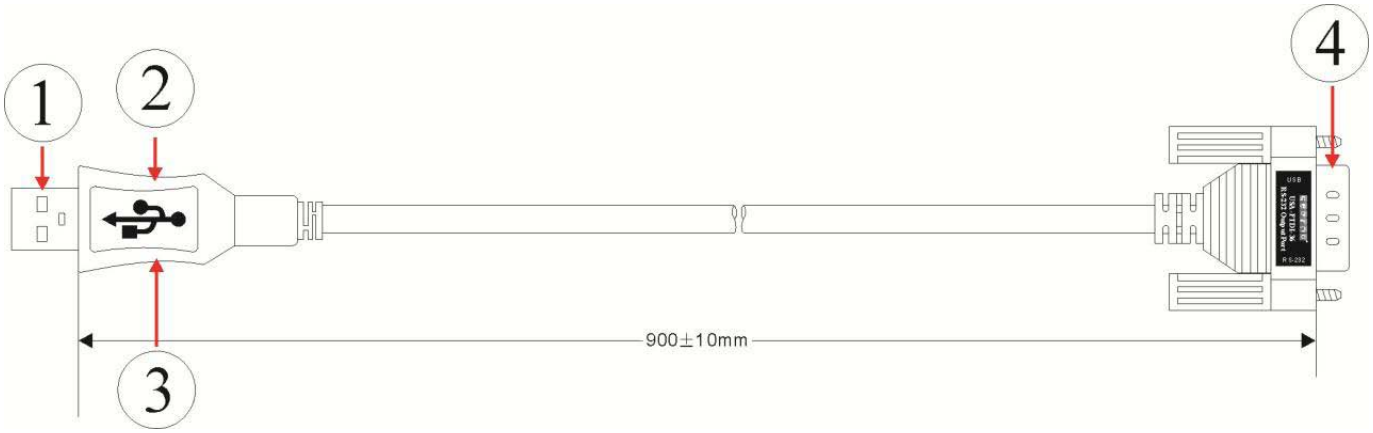


2) USB-B female: USB output signals and PIN assignment



1. VCC
2. DATA-(DM)
3. DATA+(DP)
4. GND

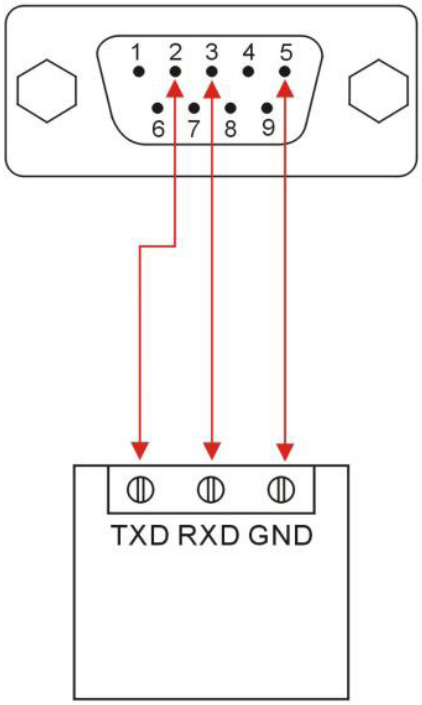
Communication Connection Chart



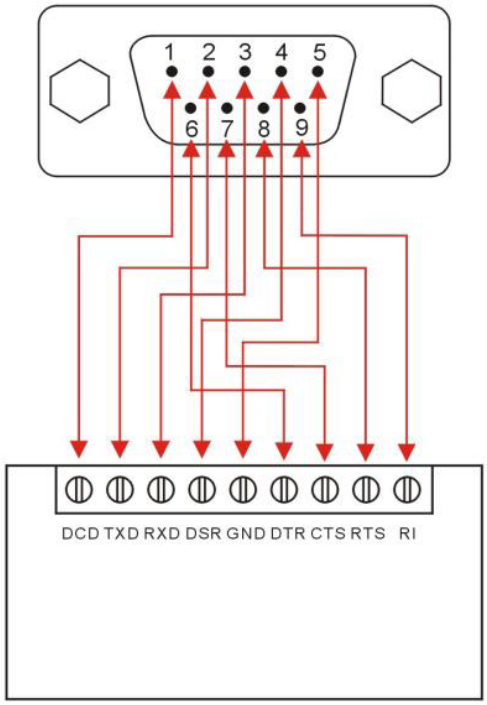
1. Standard USB A type male connector
2. Fine shell (black)
3. MCU adopts the product of the British FTDI company
4. Standard DB9 male connector

USB to RS-232 Communication

1. DCD 2, RXD 3, TXD 4, DTR 5, GND 6, DSR 7, RTS 8, CTS 9, RI



RS-232 Device



RS-232 Device

Problems and Troubleshooting

1. **Data Communication Failure**
   a. Check to make sure USB cable is OK.
   b. Make sure RS-232 output interface connection is correct.
   c. Make sure power supply is OK.
   d. Make sure the wire terminal connection is OK.
   e. Make sure the indicator lights flash when receiving.
   f. Make sure the indicator lights flash when sending.
2. **Data missing or incorrect**
   a. Check to see whether the data rate and format at both ends of the communication equipment are consistent.