

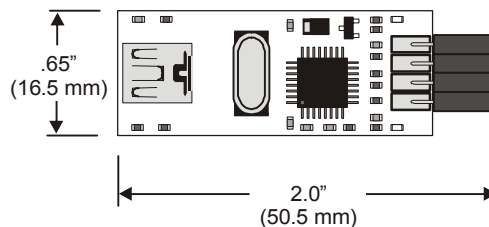
USB2SER (#28024)

FTDI FT232BM USB to Serial Development Tool

Introduction

The USB2SER provides an easy way to interface a PC to a microcontroller. It bridges the PC's USB port to logic-level RX and TX signals that can connect directly to a microcontroller's I/O pins. To the PC, the USB2SER appears as a virtual COM port. To the microcontroller, the USB2SER appears as a true 3.3V-5V serial connection consisting of an RX signal, a TX signal, and a low-pulsing RESET signal controlled by 'DTR'. The USB2SER is powered from the USB cable. It has a 4-pin female .100"-space connector that can be easily plugged and unplugged from a microcontroller circuit. Red and green LEDs indicate TX and RX activity. Standard baud rates are supported, as well as custom rates up to 3 megabits per second.

This product will require a mini-b USB cable to be able to connect to a PC. This part can be purchased from www.parallax.com part number # 805-00006.



PC Drivers and USB Vendor/Product IDs

The USB2SER is based upon the FT232BM chip by FTDI. The FT232BM can be configured with and without an EEPROM. The USB2SER has an EEPROM which is loaded with Parallax' USB Vendor ID information. Upon first plugging the USB2SER in, Windows will prompt you for the driver. After that, it will be automatically recognized each time. For more details about the FT232BM chip, see <http://www.ftdichip.com/>.

Programming a BASIC Stamp from a USB Port

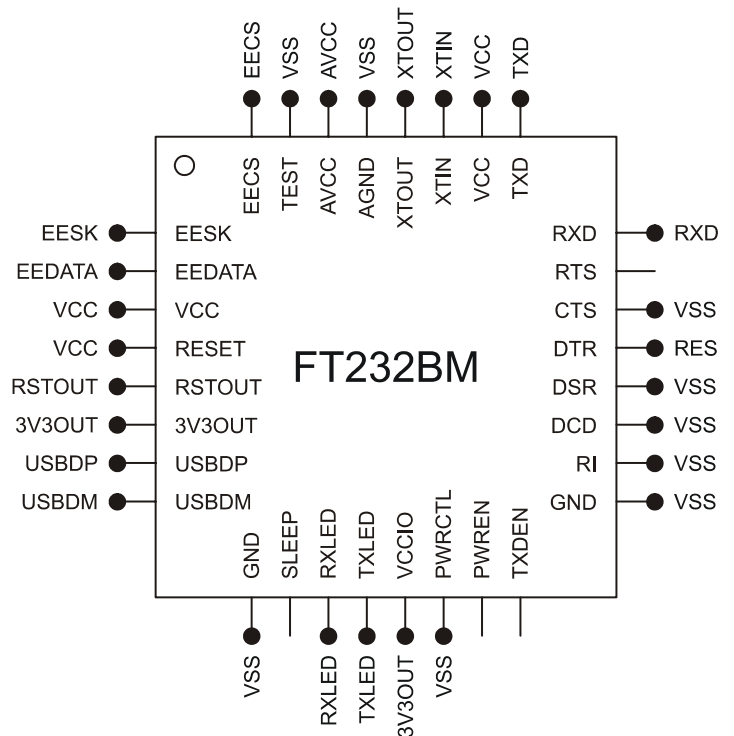
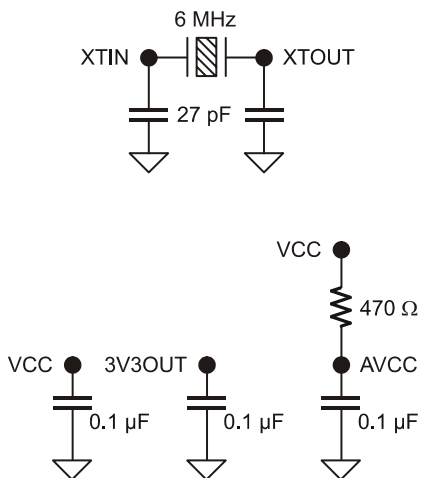
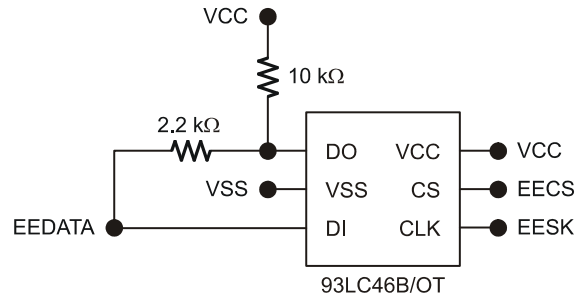
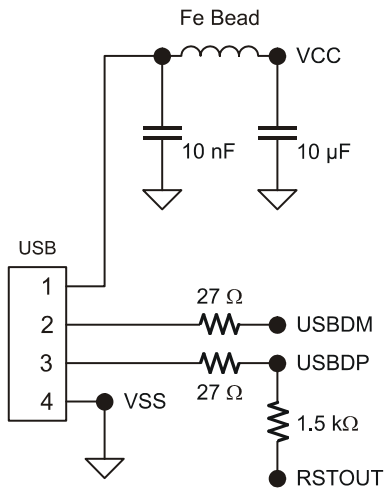
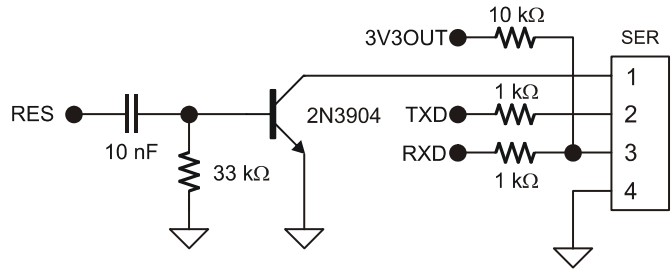
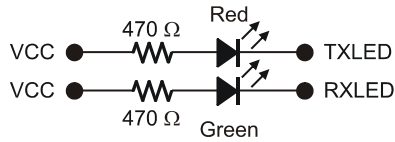
The USB2SER is not able to program BASIC Stamp[®] microcontroller modules. BASIC Stamp modules require an inverted signal. If you need to program a BASIC Stamp use the FTDI USB to Serial Adapter (#800-00030).

Bill of Materials

You can build your own USB2SER adapter from our Bill of Materials, also shown in the schematic.

Part Description	Quantity
FT232BM Chip	1
93LC46B/OT EEPROM	1
USB miniB connector	1
6 MHz crystal	1
10 nF capacitor	3
27 pF capacitor	2
0.1 uF capacitor	3
27 Ω resistor	2
470 Ω resistor	3
2.2 k Ω resistor	1
1 k Ω resistor	2
1.5 k Ω resistor	1
10 k Ω resistor	1
33 k Ω resistor	1
2N3904 transistor	1
Red LED	1
Green LED	1

USB2SER Revision A Schematic



USB2SER (#28024)

FTDI FT232RQ USB to Serial Development Tool

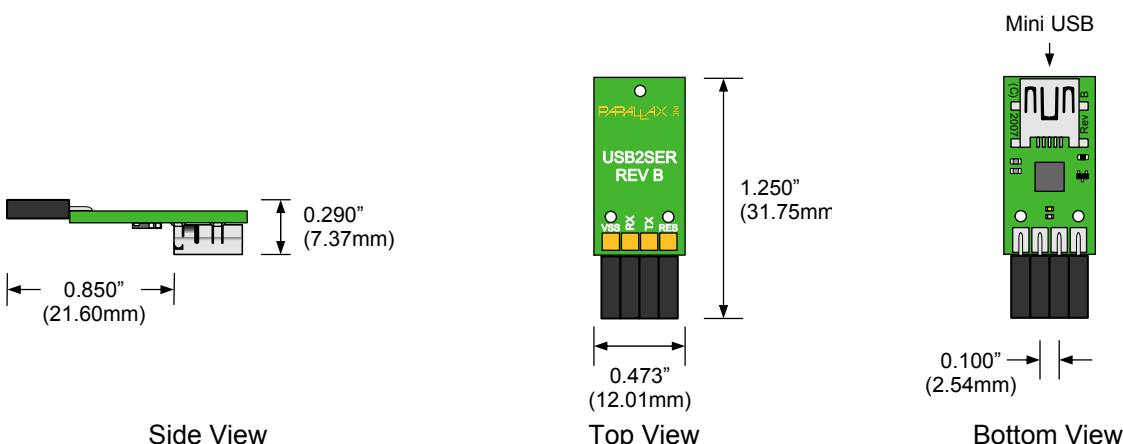
The USB2SER provides an easy way to interface a PC to a microcontroller. It bridges the PC's USB port to logic-level RX and TX signals that can connect directly to a microcontroller's I/O pins. To the PC, the USB2SER appears as a virtual COM port. To the microcontroller, the USB2SER appears as a true 5 V serial connection consisting of a RX signal, a TX signal, and a low-pulsing RESET signal controlled by 'DTR'. This product will require a USB A to Mini B cable to be able to connect to a PC. This part can be purchased from www.parallax.com, part #805-00006.

Features

- Powered via the USB cable, no external supply required
- 4-pin SIP female .1" spacing connector to microcontroller circuit
- Red and blue LEDs indicate TX and RX activity
- Supports standard baud rates and custom rates, 300 baud to 3 Mbaud

Key Specifications

- Power requirements: 5 VDC, up to 90 mA, from USB connection
- Communication: Full speed USB, full duplex 5 V non-inverted TTL serial from 300 baud to 3 Mbaud
- Operating Temperature: -40 to +85°C
- Module Dimensions given in the diagrams below



Device Connection

FTDI Virtual Com Port USB Drivers Required

Before connecting the USB2SER tool to your computer, install the correct FTDI VCP USB drivers for your operating system. A driver installer for Windows 2K/XP/Vista is available from a home page link at www.parallax.com. It is also bundled into the newest versions of the Parallax's BASIC Stamp Editor, Propeller Tool, and SX-Key Editor software. To obtain FTDI VCP USB drivers for other operating systems, visit www.ftdichip.com.

Check Polarity

Be sure to verify the correct polarity before connecting the USB2SER to another board by matching the connection names located above the connector.

Programming a BASIC Stamp from a USB Port

The USB2SER is not able to program BASIC Stamps. BASIC Stamp modules require an inverted signal. If you need to program a BASIC Stamp, use the Parallax USB to Serial (RS-232) Adapter (#28030).

Bill of Materials

You can build your own USB2SER adapter from the Bill of Materials and schematic shown below.

Description	Quantity
FT232RQ Chip	1
2N3904 transistor	1
Red LED	1
Blue LED	1
4.7 μ F capacitor	1
0.1 μ F capacitor	1
10 nF capacitor	1
150 Ω resistor	4
33 k Ω resistor	1
USB mini B connector	1
4 pin SIP socket	1

Module Schematic

