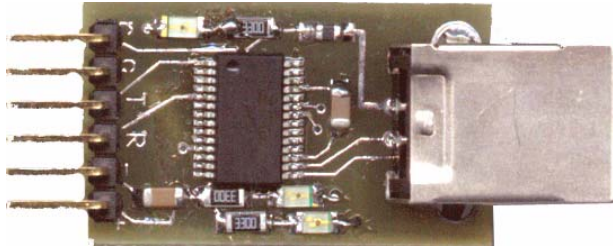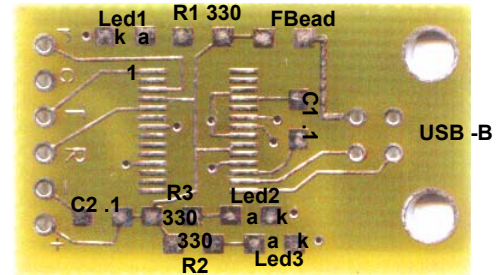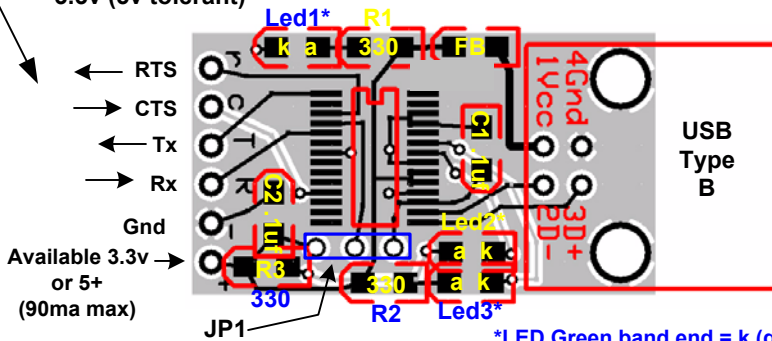# FT232R Board Rev 1

The USBP provides an easy method of connecting TTL to RS232 signals on PC via a USB port. Ideal for microcontroller circuits. The design uses Future Technology Devices (FTDI) latest FT232R chip. The FTDI website provides the USB drivers for a virtual com port as well as Windows DLLs for interfacing with VisualBasic and Visual C, plus other applications.

FT232BM documentation and files are available from their website: **http://www.ftdichip.com/FTDriver.htm**

**TTL RS232 I/O
3.3v (5v tolerant)**

← RTS
→ CTS
← Tx
→ Rx
Gnd
Available 3.3v →
or 5+
(90ma max)

JP1

5v
3.3v
Jumper options

*LED Green band end = k (gnd)

For latest drivers and IC information, please check with http://www.ftdichip.com/

PARTS
R1-R3 330 ohm resistor
C1-C2 0.1 uf capacitor
Led1-Led3 LEDs
FB ferrite bead
IC1 FTD232R IC
Printed circuit board
USB Type B connector

Assembly
(1) Carefully mount IC1, observe orientation of Pin 1. Apply some flux to the pads, align the IC with the pads and tack solder the corners then apply heat briefly to each pin. Only if needed, use a tiny amount of solder.
(2) Mount the resistors, capacitors and the ferrite bead.
(3) Orient the LEDs (banded end is the cathode) and mount them on the board.
(4) Carefully mount the USB Type B connector, making sure not to bend the pins. Solder in place. For support, apply a small amount of solder on the two tabs.
(5) Check your work carefully for solder splashes and solder bridges.
(6) Using a standard USB cable connect the board to a PC's USB port. The power LED should light and Windows (Win2K or above) should find the device

Construction Hints

Assembly of this kit requires that the user has the necessary tools and skills to work with SMD (surface mount device) components. If you are not comfortable with soldering miniature parts, then please seek assistance from someone who is capable to do so. Small mistakes can cause many frustrating hours of grief in trouble shooting!

Minimum tools required:
A fine point low power (25w max) soldering iron and thin solder. Ideally, 0.022" diameter (or less) silver-bearing non-corrosive rosin core should be used. In addition. narrow needle nose pliers, diagonal cutting pliers, good quality tweezers, large magnifying glass, volt-ohm meter, and a 7 to 12 vdc power supply.

Make sure that you work in a clean well lighted area and have adequate desk area. If you have carpeting then please be aware of static discharge as well as accidentally losing tiny components in the carpets fiber. SMD capacitors and resistors are very tiny and can quickly become lost in the carpeting.

Disclaimer and Terms of Agreement

As with any kit, only the individual parts supplied are guaranteed against defects and not the user assembled unit. All kit parts are purchased from reputable sources such as Digikey Inc, Allied Electronics and Mouser Inc, however, should a kit part be ascertained to be defective it will be replaced at no charge within 30 (thirty) days of the purchase date. Beyond that, COMPSys Workbench and / or the COMPSys developer(s) assume no liability and WILL NOT be held liable nor be held responsible wholly or in part for any damages caused by the construction of and / or use of their products sold .

TTL Serial I/O

FT232R

3.3V or 5V Supply to External Logic

330 Pwr led

330 Tx LED
330 Rx LED

PWREN#
SLEEP#

TXD
RXD
RTS#
CTS#
DTR#
DSR#
DCD#
RI#
CBUS0
CBUS1
CBUS2
CBUS3
CBUS4

VCC
USBDM
USBDP
VCCIO
NC
RESET#
NC
OSCI
OSCO
3V3OUT
AGND
GND
GND
GND
TEST

GND

GND

0.1uf

Vcc

Ferrite Bead

Jumper
1
2
3

0.1uf

0.1uf

GND

1
2
3
4

SHIELD
5