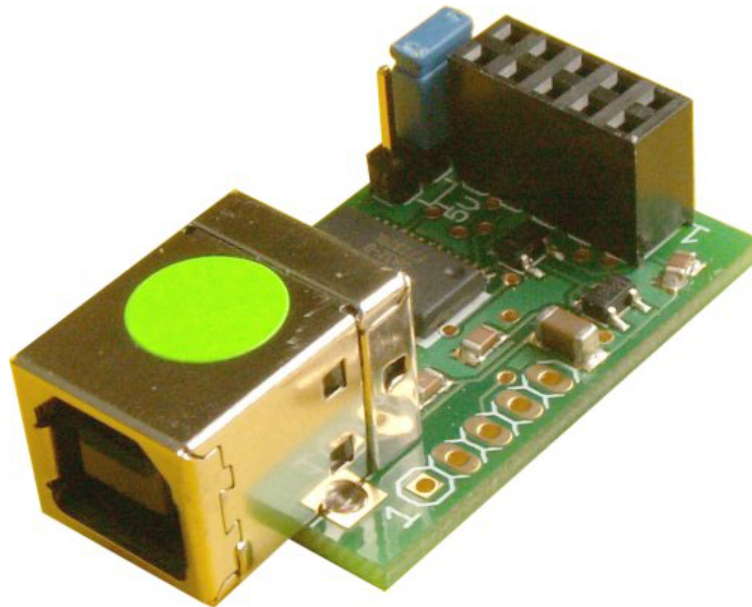

USB Serial Interface

BV103



BV103

USB Serial Interface with 3.3V & 5V

Product specification

Aug 2009

USB Serial Interface

BV103

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USB Serial Interface

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1. Introduction

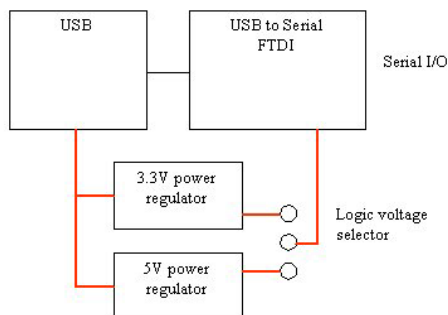
This is a USB to serial converter that is primarily designed for the BV system but could be used for any USB – serial application. The output is 3.3V and 5V logic levels that are selectable from a jumper.

Up to 100mA can be taken from the USB via an on board low drop out voltage regulator. This regulator also provided short circuit protection to the USB host system.

The board utilises the FT232BM chip and free drivers are available from www.ftdichip.com The Virtual COM port (VCP) driver should be used.

In addition to this there are TWO low drop out voltage regulators providing 3.3V and 5V output regardless of the jumper setting.

There are two output connectors on the board, one for connecting to ASI or other serial devices and the other provides the control signals, DSR, DCD, etc. This second connector is supplied with the 5 way pinhead connector but without it soldered in place giving the user maximum flexibility.



2. Specification

- **Input** – USB type B
- **PCB** – Surface mount.
- **On board** TWO voltage regulators with short circuit protection
- **3 connection** options, 2 x socketed.

- **Dimensions overall** 32 x 21mm x 13mm High
- **Weight** 4g

3. Serial Connection

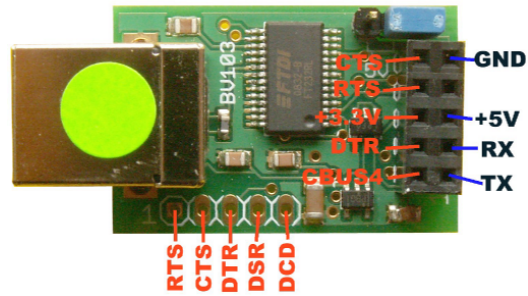


Figure 1 Serial Connection

Figure 1 shows the input / output available from the two, five way sockets and also from the five way row of connectors at the bottom of the board.

The selector at the top of the board selects what power is supplied to the FTDO chip and therefore determines the logic levels on the signal pins.

The selector DOES NOT effect the power output on pins 5 and 6, they will always provide 3.3V and 5V.

Some of the signal pins are duplicated on the 5 pads at the bottom of the board.

4. Software Drivers

The USB, FTDI Chip was chosen for this device because it has drivers for most operating systems and is freely available. The driver required is for the VCP (Virtual Com Port). The following describes the windows installation, the FTDI site has comprehensive installation instructions for other operating systems.

- 1) The first thing to do is to obtain the VCP drivers from FTDI. The web site is www.ftdichip.com and the page for the drivers was: <http://www.ftdichip.com/FTDrivers.htm>

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- 2) Unzip the file to a suitable directory, c:\temp if you like.
- 3) Connect the BV103. The PC should react with new hardware found. At this stage choose the option that allows you to select the location of the drivers, and show windows the c:\temp directory. Windows will eventually tell you that the driver has been successfully installed. Don't delete c:\temp just yet as experience has shown Windows always asks at least twice for the location of the drivers.
- 4) The driver will install a new COM port on your system. The easiest way to discover what this port is, is to use BV Terminal 2. This will have a new entry in the COM port drop down list. As an alternative look in the device manager. In Windows XP this is Control Panel, System, Hardware tab and Device manager.

pin 10 CTS input

Pin 1 is at the bottom of the board with the USB socket to the left.

All of the signals are standard RS232 communications signals except 1. This is a configurable output from the FTDI chip and can be programmed for various functions. For further information about this refer to the FTDI website.

5. Using

The BV103 although primarily designed for use with the ASI and bVT100 series of boards can be used with any device that requires RS232 communication. There is no voltage translation of course so if you do need + and - 12V you will need to add a transceiver chip such as the MAX232.

Pin 5 and pin 6 of the 5 way connector can provide up to 100mA to supply power to an external device.

The 2x5 way connector sockets have the following pins

| | | | |
|-----|---|-------|------------|
| pin | 1 | TXD | output |
| pin | 3 | RXD | input |
| pin | 5 | +5V | power |
| pin | 7 | n/c | unused |
| pin | 9 | GND | power |
| pin | 2 | CBUS4 | (see text) |
| pin | 4 | DTR | output |
| pin | 6 | 3.3V | power |
| pin | 8 | RTS | output |