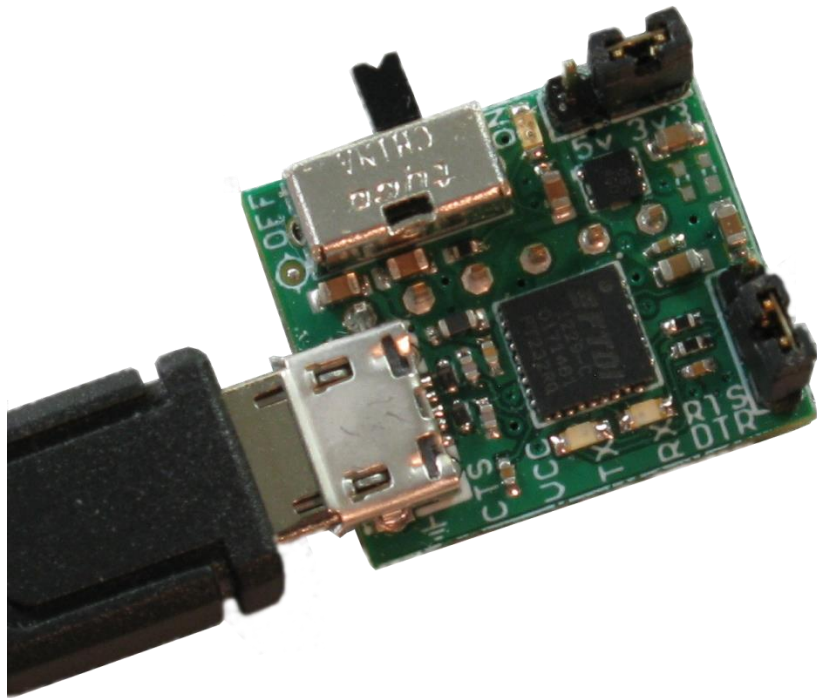


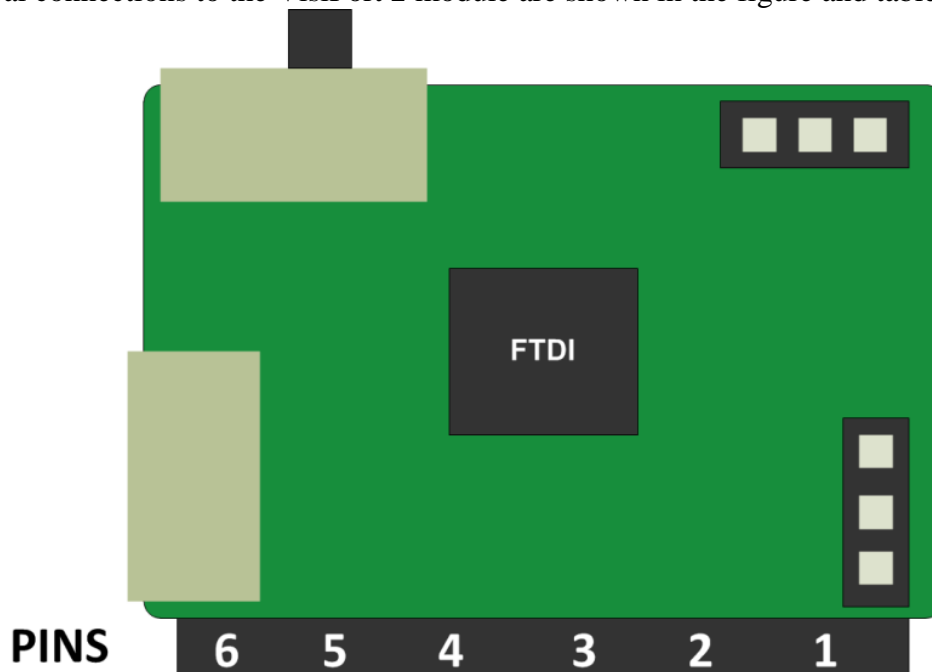
EARTH PEOPLE TECHNOLOGY**VISIPOINT 2**
USB To Serial Adapter
Data Sheet**The VisiPort 2**

The VisiPort 2 is a USB To Serial Adapter Module that is compact in size and programs any Arduino. It's small size allows it to fit into bread board applications where other programmers are too big and bulky. It has many features that make it the perfect companion to the Arduino family.

The VisiPort 2 is based upon the FTDI FT232RQ USB to Serial UART IC which handles all the USB signaling and protocols. Its user signal inputs and outputs can be selected between +3.3 Volt and +5 Volt. The VisiPort 2 supports RTS/CTS hardware handshaking and is USB powered. The module supports data transfer rates from 300 baud to 3 Mbaud.

VisiPort 2 Connection Pin Out

The electrical connections to the VisiPort 2 module are shown in the figure and table below.



Silkscreen Pin	Connector Pin	Name	Description
DTR RTS	1	DTR/RTS	FT232R RTS Pin
RX	2	RXD	FT232R RXD Pin
TX	3	TXD	FT232R TXD Pin
VCC	4	VCCIO	Power from VisiPort 2
CTS	5	CTS	FT232R CTS Pin
Ground icon	6	GND	0V Power Pin

Table 1. 1X6 Pin Header

5V/3V3 Connector	Function
Link 1-2 connected	VCCIO Provides +5V @480mA
Link 2-3 connected	VCCIO Provides +3.3V @ 280mA

Table 2. 5V/3V3 Connector

RTS/DTR Connector	Function
Link 1-2 connected	RTS Connected to DTR/RTS pin
Link 2-3 connected	DTR Connected to DTR/RTS pin

Table 3. RTS/DTR Connector

The pinout is designed to mate exactly with the Arduino Mini Pro, both the +5V and +3.3V versions. The output connector is a 1x6, 0.100 inch pitch female socket. It is designed to accept header pins that are 0.040 inch square.

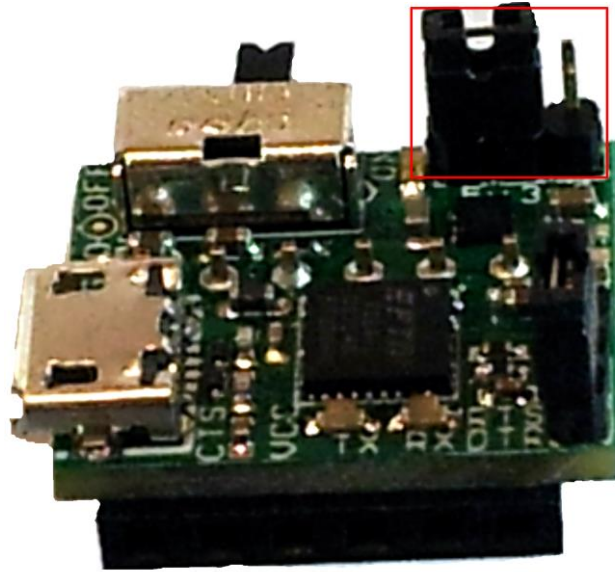
The 1x6 pin header will connect to any Arduino including the MINI, UNO, MEGA, DUE, Leonardo, etc... A 1x6 male to male header is included with the VisiPort 2. This header mates with the 1x6 pin female socket and allows the user to connect it to a solderless breadboard or use discrete wires to wire the VisiPort 2's pins to the correct pinout of the user's board.

VisiPort 2 Hardware Interface

Once the VisiPort 2 is properly connected to the user's board, you can use the Arduino IDE to program the target processor. It also provides bi-directional communication between the Arduino board and the PC. You can use "Serial Monitor" to visualize communication or use [HyperSerialPort](#). See the VisiPort 2 User Manual for more details.

VisiPort 2 Voltage Selection

The VisiPort 2 has the ability to handle either a +5V or +3.3V interface voltage. This allows it to be compatible with both +5V and +3.3V Arduinos. Only one voltage interface must be selected at one time. The selection is performed using the 5V/3V3 jumper setting. Connect the jumper between pins 1 and 2 to select +5V and 2 and 3 to select the +3.3V.



The VisiPort 2 is designed to provide power to the target device. By selecting an interface voltage using the 5V/3V3 jumper, this same voltage will be provided to the user's Arduino. The Visiport 2 has a built in +3.3V power supply and uses the USB power for the +5V. The power provided is:

- +5V @ 480 mA's
- +3.3V @ 280 mA's

The VisiPort 2 also has the option of accepting an interface voltage from the target device. In this mode, the Arduino would be powered by another circuit. The Arduino would provide an interface voltage to the VisiPort 2. This interface voltage would set the level of the RX and TX signals. To use this mode, perform the following steps.

- Connect the VisiPort 2 VCCIO pin to the Arduino power pin.
- Remove the 5V/3V3 jumper.

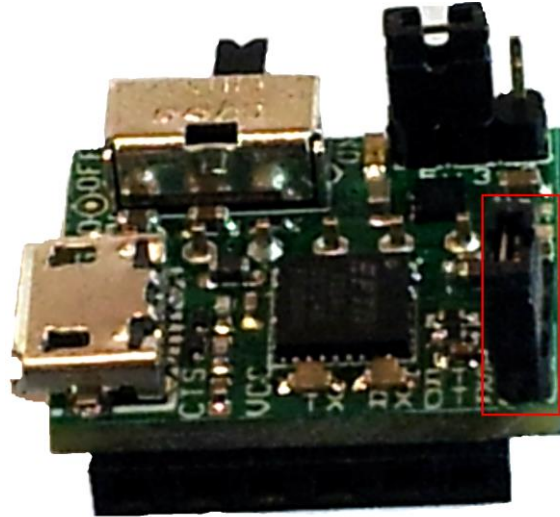
When these steps are complete, the VisiPort 2 automatically sets the interface voltage to the target device voltage.

VisiPort 2 Reset Selection

To program the target Arduino, the programming device must assert the reset of the Arduino. By asserting the reset, the bootloader of the Arduino enters the programming mode. The VisiPort 2 can perform this reset by using either the RTS or the DTR signal from the FT232R chip. The

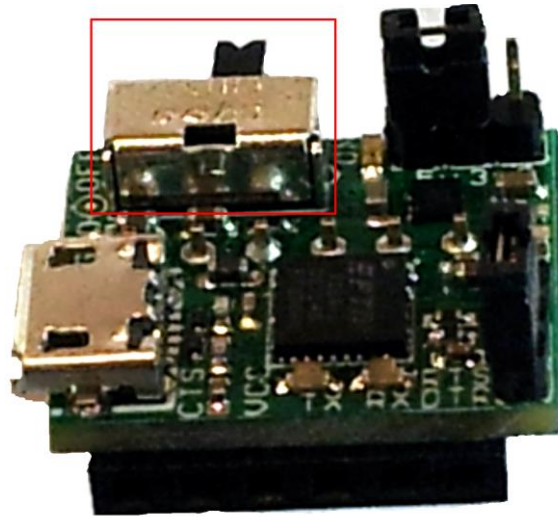
VisiPort 2 Data Sheet USB To Serial Adapter

Arduino IDE asserts the DTR signal at the start of programming. The RTS or DTR signal can be selected as the reset source for the target Arduino. Use the DTR/RTS jumper setting to select which signal is to be used for reset. Connect the jumper between pins 1 and 2 to select RTS. Connect the jumper between pins 2 and 3 to select DTR.



VisiPort 2 USB Disconnect

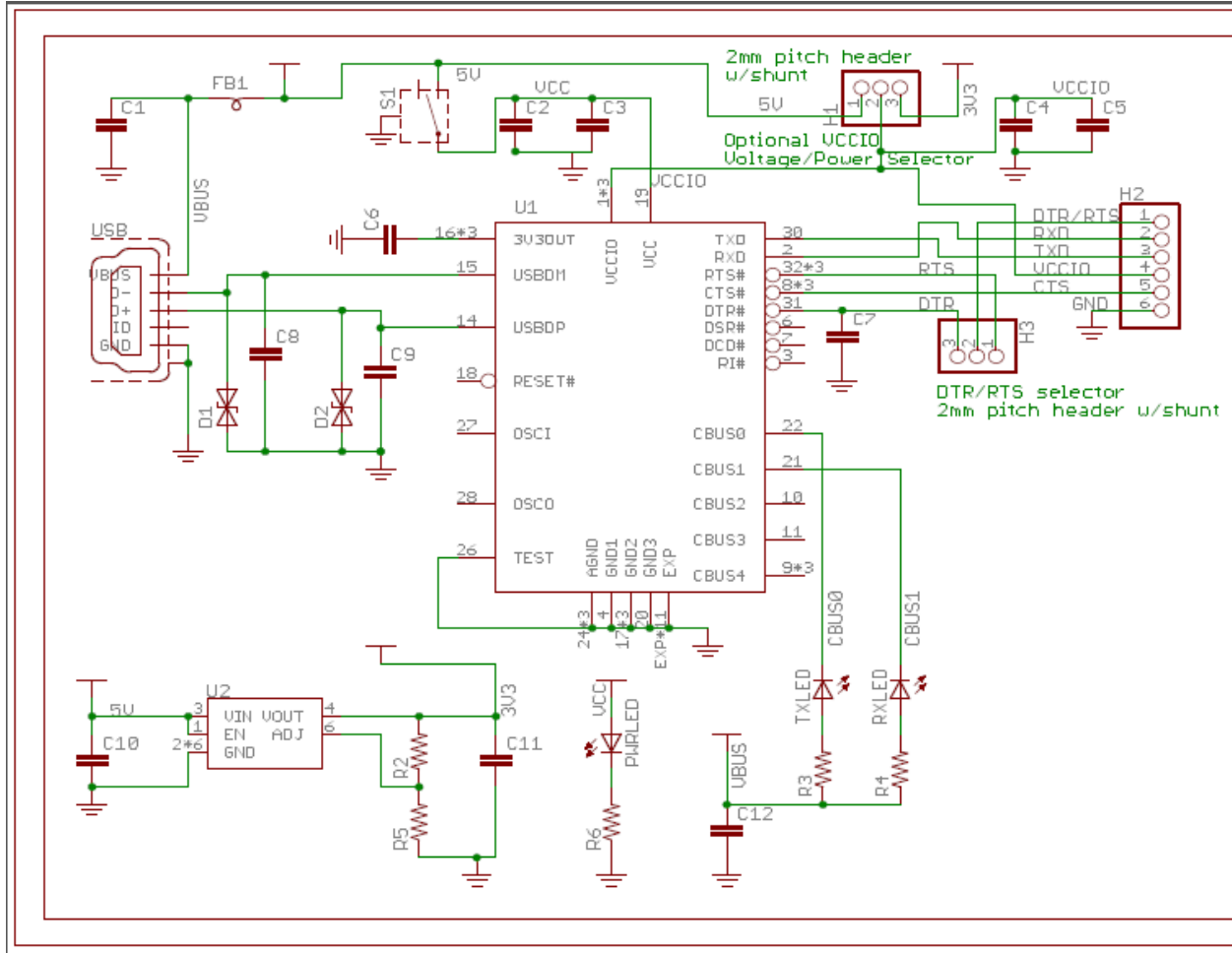
The VisiPort 2 includes a switch which allows the USB UART to disconnect from the PC. This will not turn off the power to the VCCIO pin. The ability to disconnect the USB is useful in debugging the Arduino code. When the USB UART disconnect switch engages, it removes power to the FT232R chip. This will cause the VisiPort 2 to remove the drive voltage on the TX signal, so other devices can communicate using the serial signals. Also, the Arduino IDE can sometimes fail to connect with the USB driver. When this happens, use the USB disconnect switch to toggle the USB connection to the PC. This will cause the Arduino IDE to reconnect with the VisiPort 2.



VisiPort 2 LED's

The VisiPort 2 has three LED's installed on the board. One Green LED is used to indicate power to the USB UART is active. Two Yellow LED's are used to indicate when the TX and RX signals are active.

VisiPort 2 Schematic



VisiPort 2 Layout

