VSC-X
The Virtual Serial Cable

Assembly Manual

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VSC-X provides a virtual serial link that allows you to connect your computer programmable radio to your computer without actually running a serial cable between the two. The serial link is provided by a pair of XBee Pro transceivers that operate in the 2.4 GHz license free band. It utilizes the USB port on your computer (no serial port required) and the serial port on your radio. Generally both RS232 level and TTL level radio serial ports are supported.

Parts List USB Module:

U1: FT232RL USB chip (comes pre-installed).
U2: XBee or XBee Pro radio module.
U3: BA338CO Voltage Regulator (3 pin).
J1: Mini-USB connector (comes pre-installed).
C1, C3: .1 uf mono cap (labeled 104).
C2: .01 uf mono cap (labeled 103). (comes pre-installed).
C4: .47 uf 50 volt electrolytic cap (polarized!)
L1: Ferrite Bead (comes pre-installed).
R1: 1K resistor (red, black, brown)
LED1: 3mm red LED (polarized)

Parts List Serial Module:

U1: 3232 IC (with socket … polarized!)
U2: XBee or XBeePro radio module.
U3: BA338CO Voltage Regulator (3 pin).
J1: 9 pin DSub connector.
JP1: 4 pin (2x2) header.
C1, C2, C3, C5, C6, C7: .1 uf monocap (labeled 104)
C4: .47 uf 50 volt electrolytic cap (polarized!)
D1: 1N4001 diode (polarized… has stripe)
R1: 1K resistor (red, black, brown)
LED1: 3mm red LED (polarized)
PWR: 9 volt battery connector.
2 jumpers

Assembly Notes:

Assembly is fairly straight forward. Here are some tips to help you:

1. Install first the parts that lie flat against the board (mono-caps, resistors, diode and ferrite bead. Make sure that the stripe on the diode lines up with the stripe on the board.

2. Install the voltage regulators. Makes sure that the longer flat side is flush against the board.

3. Install the IC socket. Make sure the notch on the socket lines up with the notch on the board.

4. Install the LED and C4. On both boards make sure that the **shorter** lead on the LED is closer to C3. Make sure the longer lead on C4 is inserted in the hole marked +.

5. Install the 9V battery connector, carefully observing polarity (+ is red).

6. Install the XBee radios. Make sure that the end of the module with the antenna is installed toward the edge of the board and the end without the antenna is towards D1

or L1. You don't need to solder all the pins on the module because they aren't all used. If you don't solder all the pins, it will make removal easier if you ever find you need to unsolder and remove the module. The pins you **must** solder are: 1, 2, 3, 10, and 13 on the USB module and 1, 2, 3, 10, 12, 13, 14, and 16 on the serial module. Of course, no damage will be done if you opt to solder all the pins.

7. Install the ICL3232 chip if you are planning to use the VSC-X serial module at RS-232 signal levels (for example, with the Kenwood D700 or D710). Leave the chip out if you are planning to use the module at TTL levels (for example the Yaesu 857, 897, etc. or ICOM CI-V controlled radios).

8. If you are planning to use the serial module at TTL levels install the two jumpers as follows: One connecting pins 1 and 3 and the other connecting pins 2 and 4). If you are planning to use the serial module at RS-232 levels leave the jumpers out.

WHAT EVER YOU DO, DON'T EVER INSTALL BOTH THE JUMPERS AND THE ICL3232 CHIP. DOING SO WILL CERTAINLY DAMAGE THE XBEE RADIO!