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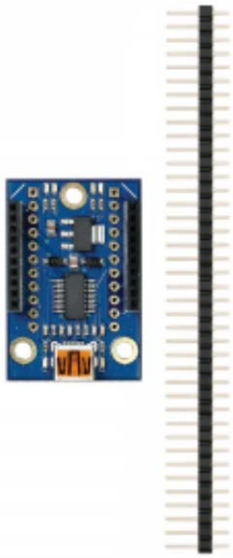
XBee USB Adapter Board (#32400)

This low cost XBee USB Adapter Board comes ready to connect to your XBee module and your computer's USB port. A 40-pin SIP header is included for optional use with breadboards or thru-hole boards, converting the 2mm pin spacing to breadboard friendly 0.1" spacing. Convenient mounting holes allow for secure installation into your project.



Features

- Provides an easy interface for configuring an XBee Module via a computer's USB port
- 4 status indicator LEDs for Power, RSSI, Associate and mode (sleep/ON)
- Converts XBee 2mm pin spacing to 0.1" pin spacing
- Provides easy pluggable wire or solder connections
- Includes mounting holes
- Pin-out compatible with our other XBee Adapter boards

Key Specifications

- Power requirements: 3.3 V pass-through to XBee module
- Communication: Serial pass-through to XBee module
- Operating temperature: -40 to +158°F (-40 to +70°C)
- PCB dimensions: 1.5 x 1.0 in (3.81 mm x 2.54 cm)

Packing List

- (1) XBee USB Adapter Board PCB (SMD components pre-soldered)
- (2) 10-pin 2mm sockets – installed, no soldering required on Rev B and later boards
- (1) 40-pin SIP header – optional, requires soldering

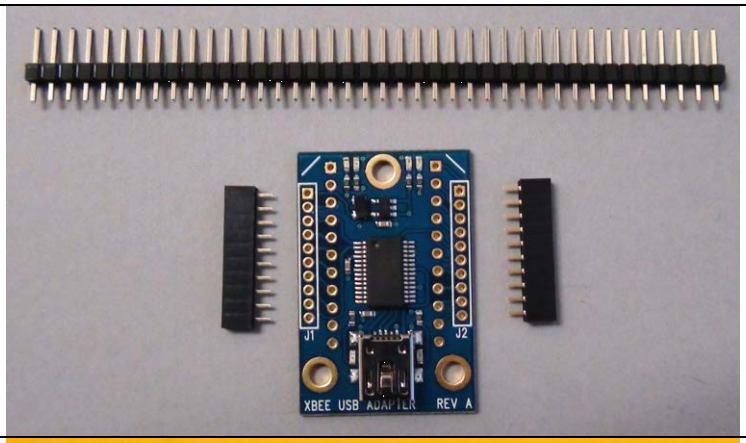
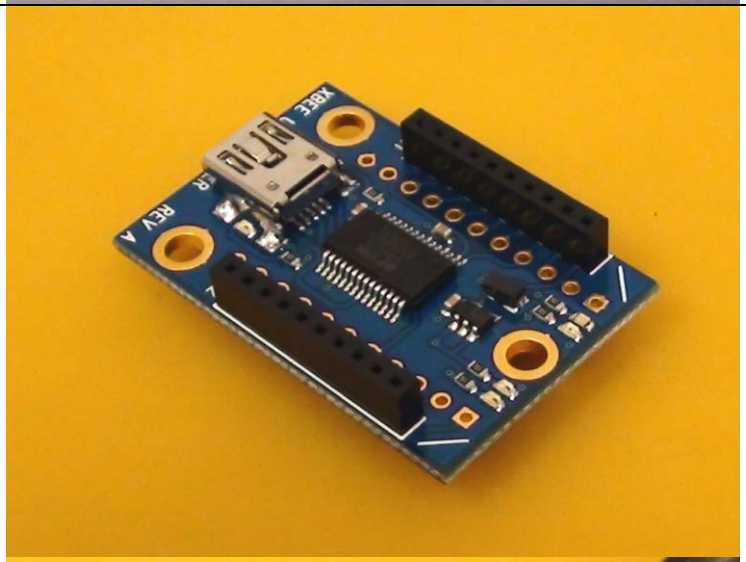
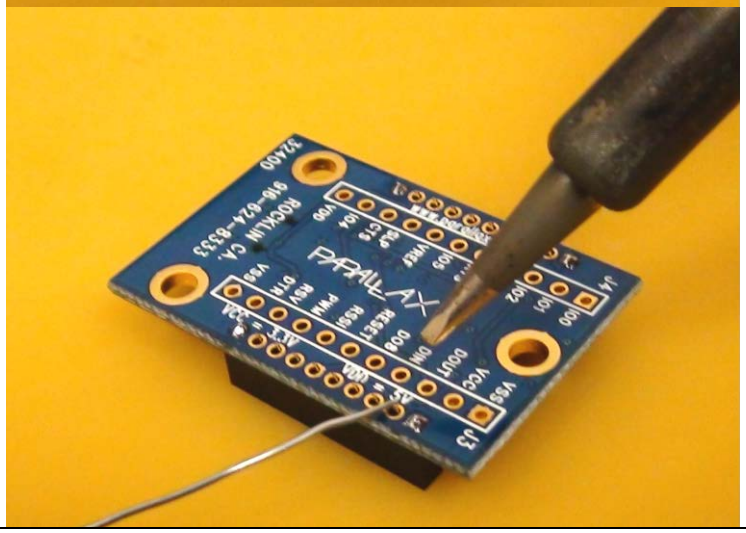
Tools Required

- Soldering equipment (iron, solder, flux; always wear safety glasses when soldering)
- Diagonal cutters or Exacto knife

Additional Items Required

- XBee module (802.15.4, Pro, 900HP, or WiFi series; search XBee at parallax.com for options)
- USB A to Mini B cable (#805-00006)

Assembly Instructions

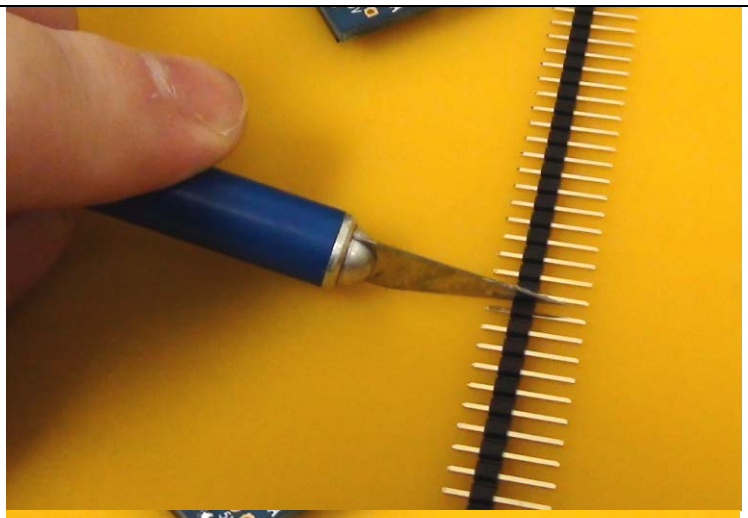
Step 1: Check to ensure your kit contains the following parts as shown in the photo. (Note, female sockets are pre-installed on Rev B and later boards.)	
Step 2: Install the 2-mm sockets on top of the PCB as shown and solder them in place from the bottom side of the board. (Note, female sockets are pre-installed on Rev B and later boards.)	 

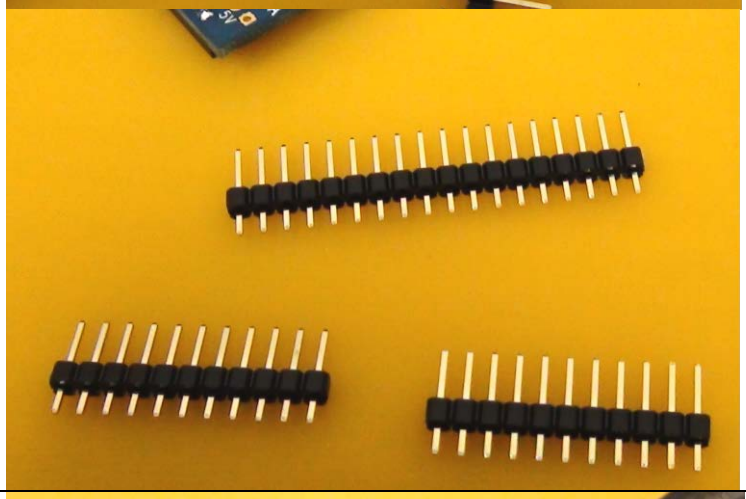
Step 3 (optional):

Step 3 and 4 are only needed if you wish to use your XBee Adapter with a breadboard or thru-hole board with 0.1" spacing.

Headers (or directly soldered wires) are not needed for PC communication or power since both are obtained from the USB port.

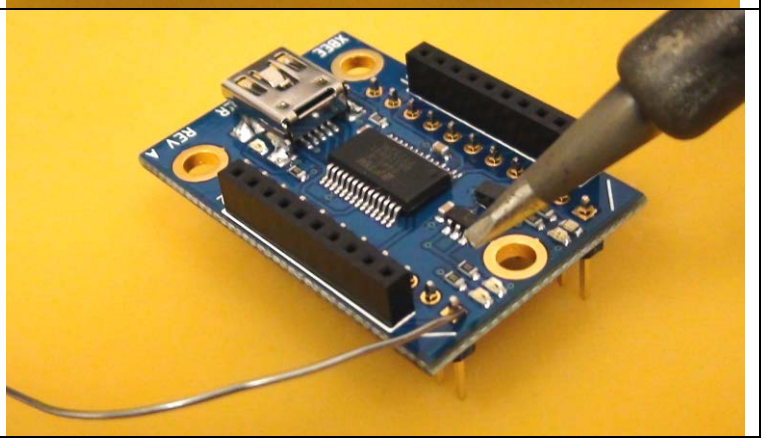
Using an Exacto knife, hobby knife or a pair of diagonal cutters, cut two 11-pin headers from the 40-pin header. Extra header material was included in case of a mistake or damaged header.





Step 4 (optional):

Insert the two 11-pin SIP headers into the bottom of the adapter board as shown and solder them in place from the top.



USB Driver Installation

If you wish to connect your XBee USB Adapter to your PC then you will first need a USB A to Mini B cable (sold separately). You will also need to install the FTDI VCP drivers. You may obtain the latest drivers by pointing your web browser to http://www.parallax.com/usbdrivers. You may also obtain these drivers from the FTDI website at http://www.ftdichip.com/Drivers/VCP.htm.

Once the USB driver has been installed you may connect your USB cable between the PC and the XBee USB Adapter Board. The XBee USB Adapter is now ready to be configured via the X-CTU software from Digi. Note that the functions of some of the I/O lines on the adapter can be configured from the X-CTU software. As long as the USB port is providing power the XBee Adapter Board is powered on. Please remember that the I/O signals are 3.3V level and should not be connected to a 5V system without proper buffering. The XBee I/O pins are not 5V tolerant.

Connecting and Testing

Connect your compatible microcontroller to the required pins on the XBee USB Adapter. The VDD pin will be at 5 V whenever the USB port is providing 5 V. The VCC pin will be at 3.3 V but if you're powering from USB you won't want to draw more than ~40 mA from this pin.

If you need to power your XBee Module in the absence of USB power you can connect a regulated 5 V supply to the VDD pin and the FTDI USB chip and the XBee Module will be powered. **Do not connect voltage to the VDD pin when the USB cable has power or you may damage your PC and/or your XBee Module**.

LED Status Indicators

The XBee USB Adapter has 4 LEDs for status indication. Whenever the board has 5 V from either the USB or external power to VDD the Yellow LED lights up. The Green LED indicates the module is ON (not in standby mode). The Blue LED is connected to the RSSI pin and the Red LED is connected to the Associate pin. Some of these functions can be reconfigured using the X-CTU software.

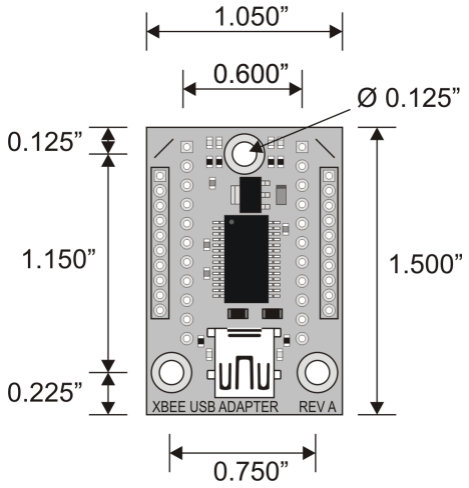
Rev C LED Functions
Green – Power
Yellow – ON (Not in standby/sleep mode)
Blue – Associate
Red – RSSI

Rev A & B LED Functions
Yellow – Power
Green – ON (Not in standby/sleep mode)
Blue – RSSI
Red – Associate

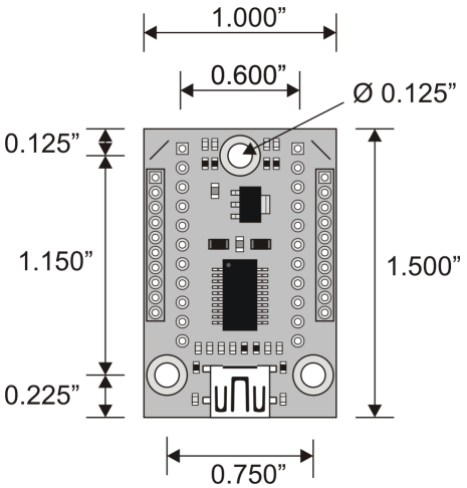
The USB connector also has two LEDs which indicate TX / RX status. The Red LED indicates data being transmitted to the PC and the Green LED indicates data being received from the PC.

Module Dimensions

Rev A and B



Rev C



Product Revision History

Rev A: Original release.
Rev B: Upgraded 3.3 V regulator from 100 mA to 400 mA.
Rev C: Upgraded 3.3 V regulator from 400 mA to 1 A. Changed FTDI chip from FT232RL to FT231X. Changed LED colors, see LED Status Indicators, page 4. USB Mini B connector style changed and moved flush with edge of PCB, and PCB resized slightly, to accommodate XBee WiFi modules.

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