X-Bee Setup Instructions

- X-Bee is our wireless microcontroller that allows communication between our Arduino and Receiver.
- The X-Bee must be configured at a computer before being installed into setup. Do this for each X-Bee.
- Plug the XBee into our USB connector and then into a computer
- Download XTHU: https://www.digi.com/products/iot-platform/xctu
- Open XTHU and press the button below
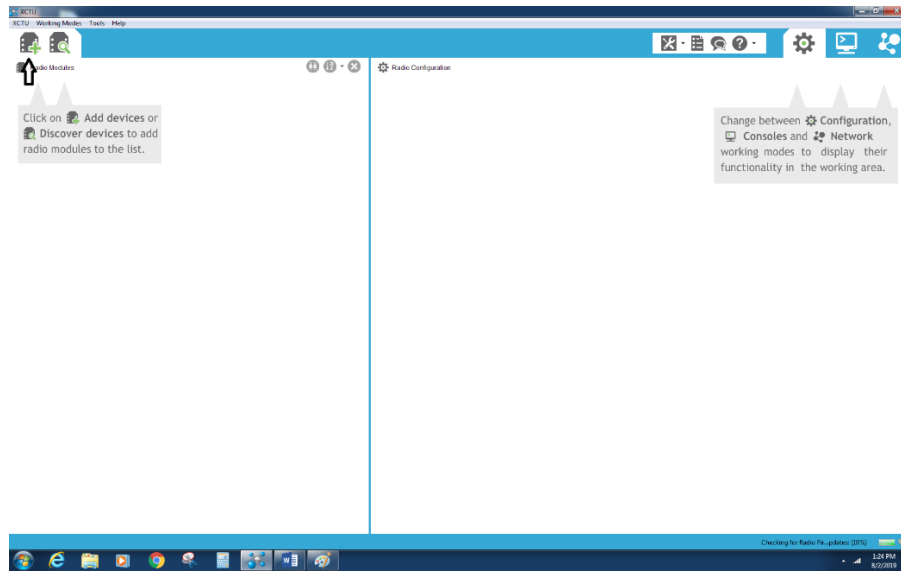
- It will ask you to configure the protocol for the X-Bee and install the firmware. Search for DigiXBee3 – 802.15.4 TH and accept the download. Do this for both X-Bees
- Once the Xbee has finished installing it should default you this window.
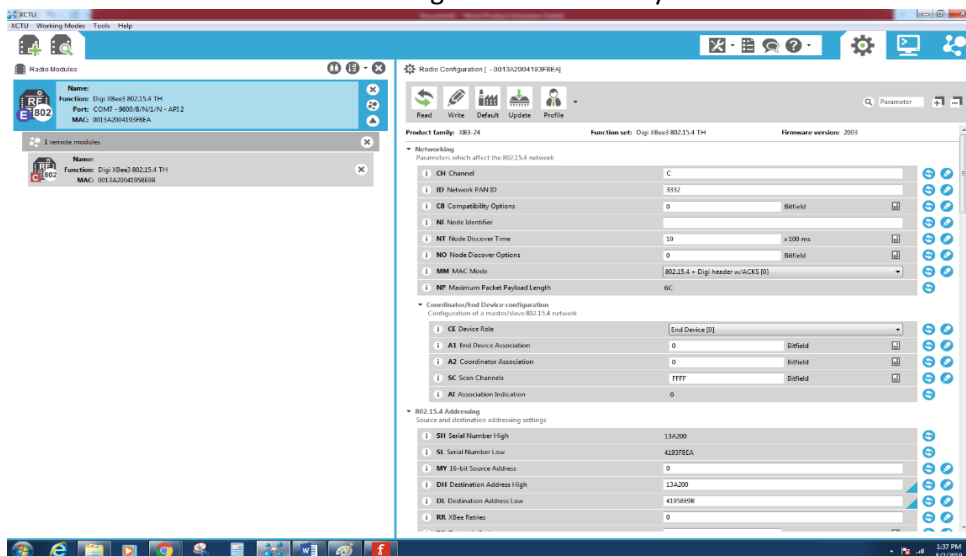
XCTU Settings

- Set MM to 802.15.4 + Digiheader [0]
- Set the first X-Bee you configure to End Device [0] – This is the X-Bee that will be plugged into the Arduino. The second X-Bee should be configured to Coordinator [1].
- SH and SL will give you the Serial High and Serial Low numbers of the X-Bee. This is very important, you must set the other X-Bees DH and DL to the numbers you see here. These numbers can also be found on the X-Bees themselves. So the SH and SL for X-Bee 1 should be the DH and DL for X-Bee 2 and vice versa
- Set UART Baud Rate to 9600 [3]
- Set AP to API mode With Escapes [2] || Set AP to Transparent [0] for transmitter X-Bee
- Set AO to Legacy …[2]
- In I/O Settings set D2 to Digital Out High [5] ||Set to Digital Input [3]
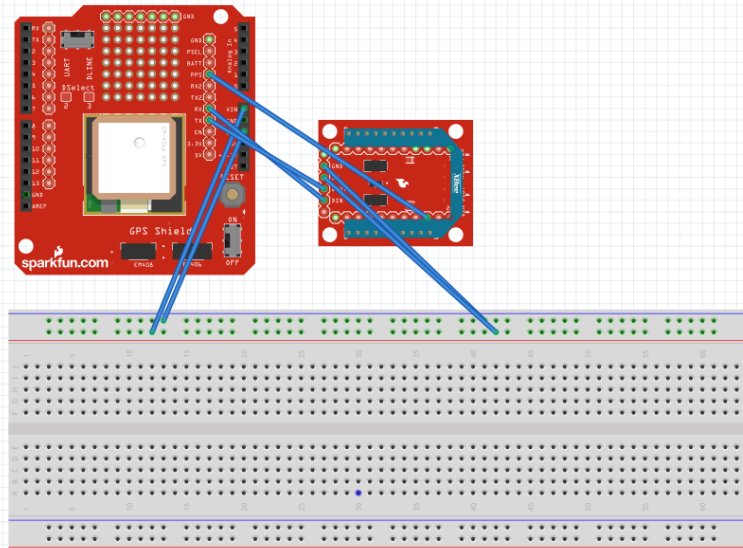- Set IU to [1] in I/O Line Passing

Physical Setup

You will need:

- Arduino Mega 2560

- GPS Receiver

- 2 X-Bees

- 2 Bread Boards

- 2 Break out Boards

Receiver Side
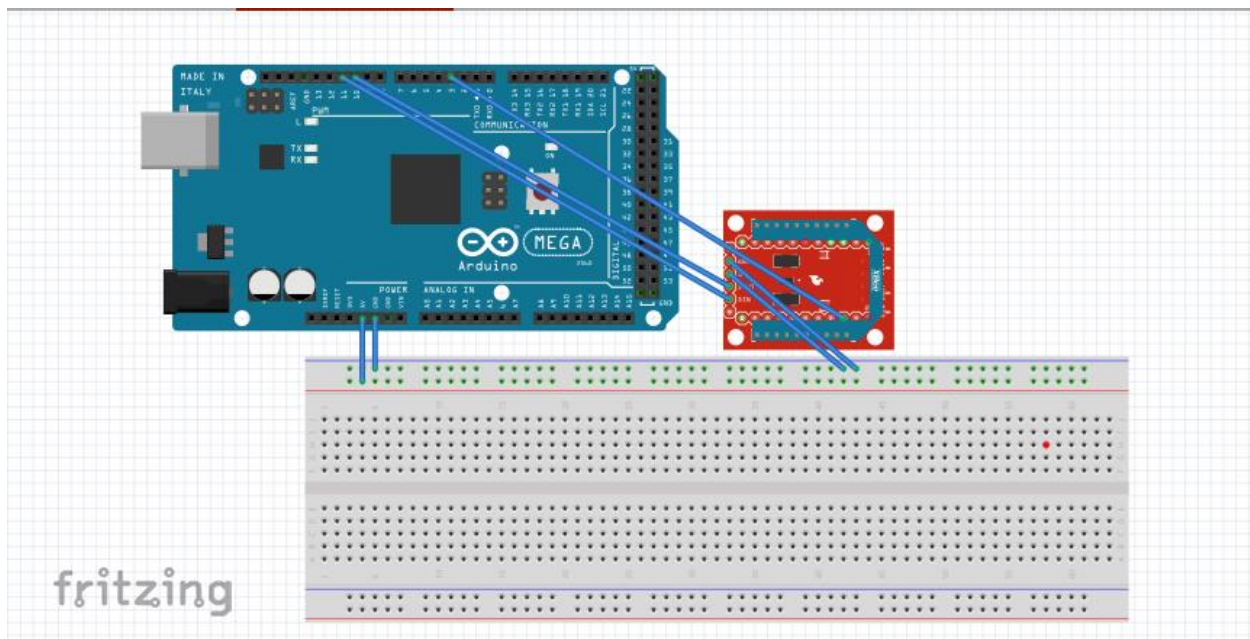
Transmitter Side

The GPS shield is different from the GPS breakout Board but the connections should be the same connections. The pin on the breakout board itself is DI/O2.

Once all these steps are followed, you can plug the X-Bee into the breakout board and run the script. Make sure the X-Bee configured as end device is on the receiver side!