

Create a MaxStream Zigbee 5v Interface Type 1 (Onboard)

V1.0

Most Zigbee modules are powered by a 3.3v power source. This also means the IO leads can not exceed this voltage. In order to use them with our 5v circuits we need to create an interface. The Maxstream modules also present a problem because they utilize a 2mm pinout so they cant be used with most prototype boards. In this particular article I'm going to show you how to add 4 componets to the top of the module. This will allow you to power the module with 5v and access the transmit and recieve leads using just about any 5v microcontroller.

Its important that you leave the sthandard 2mm pins in tact on the bottom of the board as this will allow you to plug the board into the various Maxstream development boards. The development boards provide an additional interface that will allow you to update the firmware if needed.

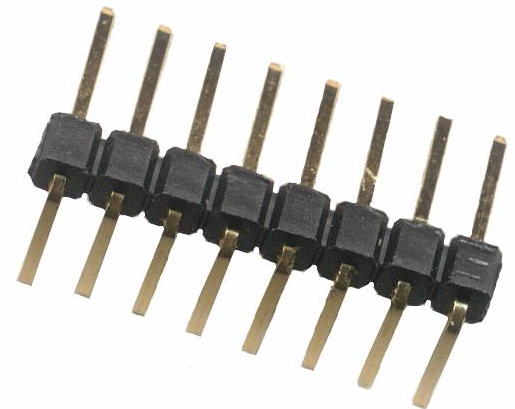
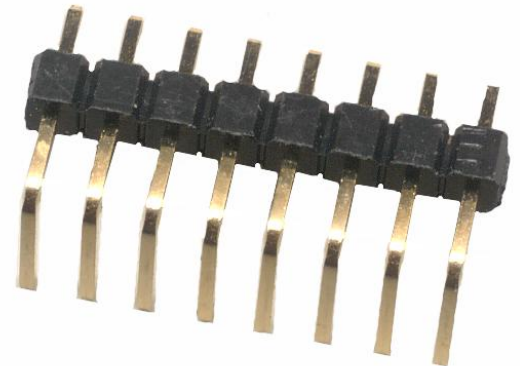
By the Numbers

I will take you through the process of adding the componets step by step. You will need the following:

- 1, 8-pin right angle header
- 1, 3.3K Resistor
- 2, 1.8K Resistors
- 1, 3.3v 100ma regulator

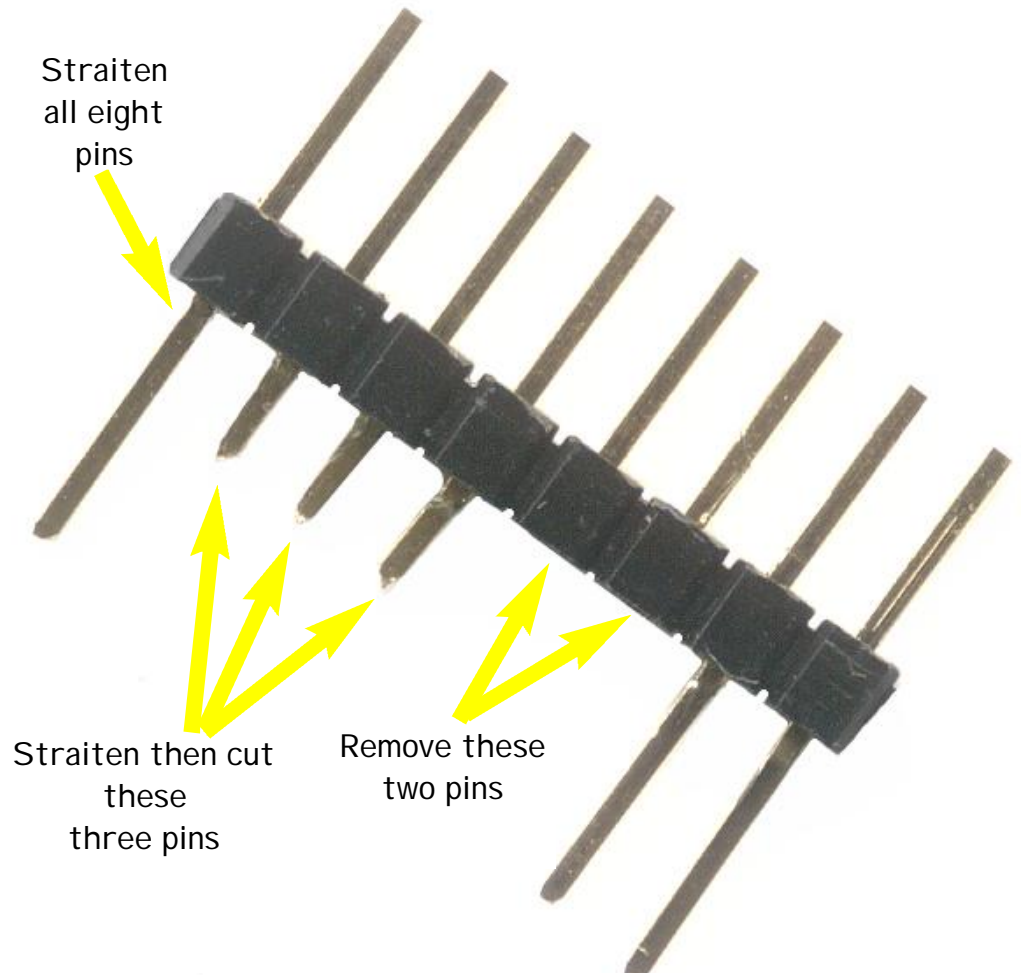
Step 1

Start by taking a 8-pin right angle header shown here. Slide each so that the angle makes contact with the plastic as shown here.



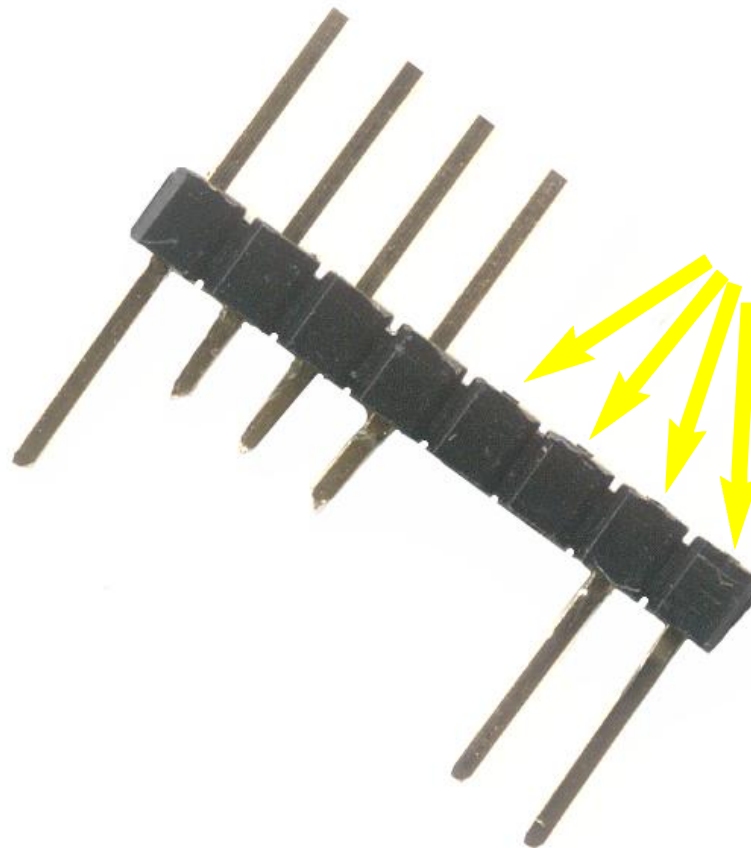
Step 2

Carefully straighten the bends so that the pins are straight. Cut some of the material off of the 2nd, 3rd and 4th pins as shown. Completely remove the bent section of the 5th and 6th pins as shown.



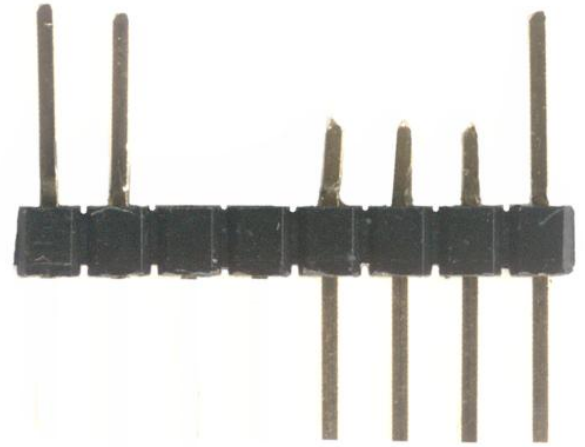
Step 3

Remove the the material from the four pins as shown here.



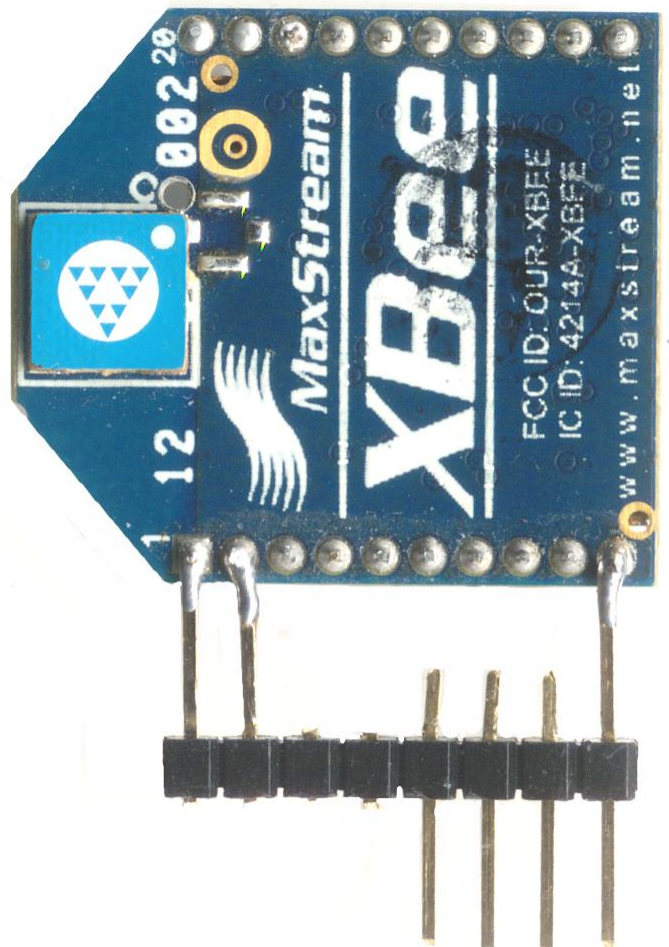
Step 4

Orient the header as shown here.



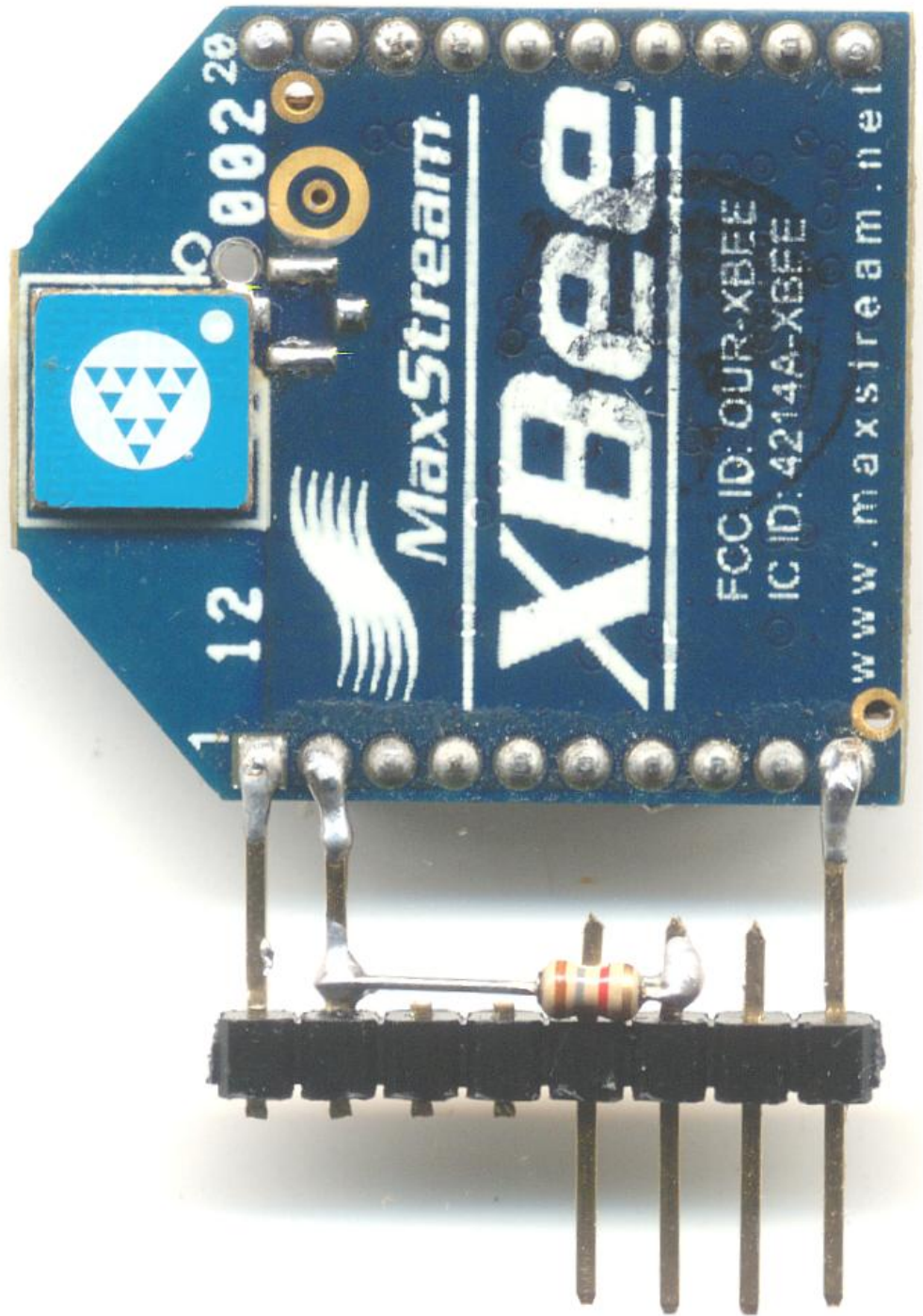
Step 5

Solder pins 1,2 and 8 on the header to pins 1,2 and 10 on the module as shown here.



Step 6

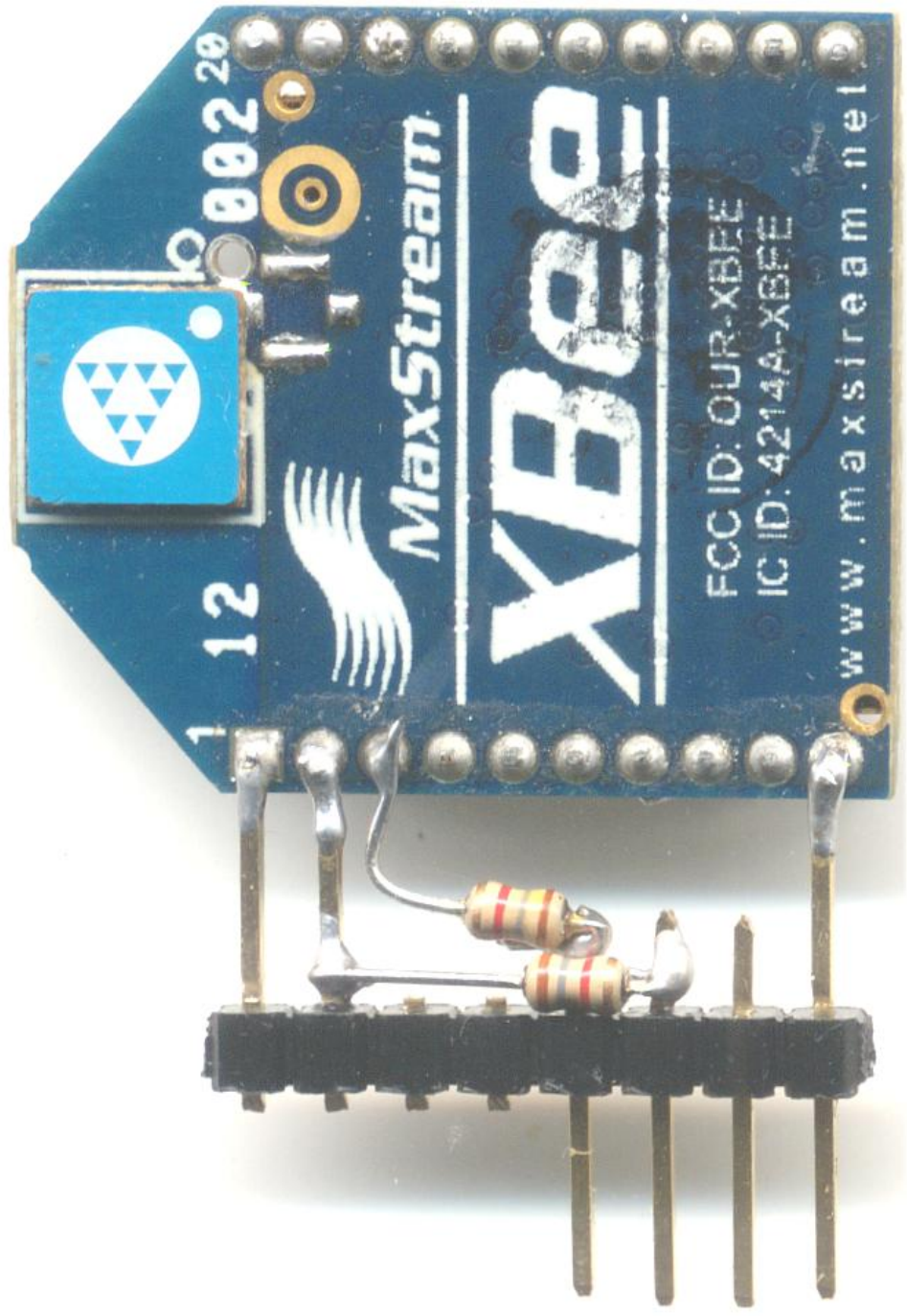
Attach a 1.8K resistor to pins 2 and 6 as shown here.



Output (Pin 1)

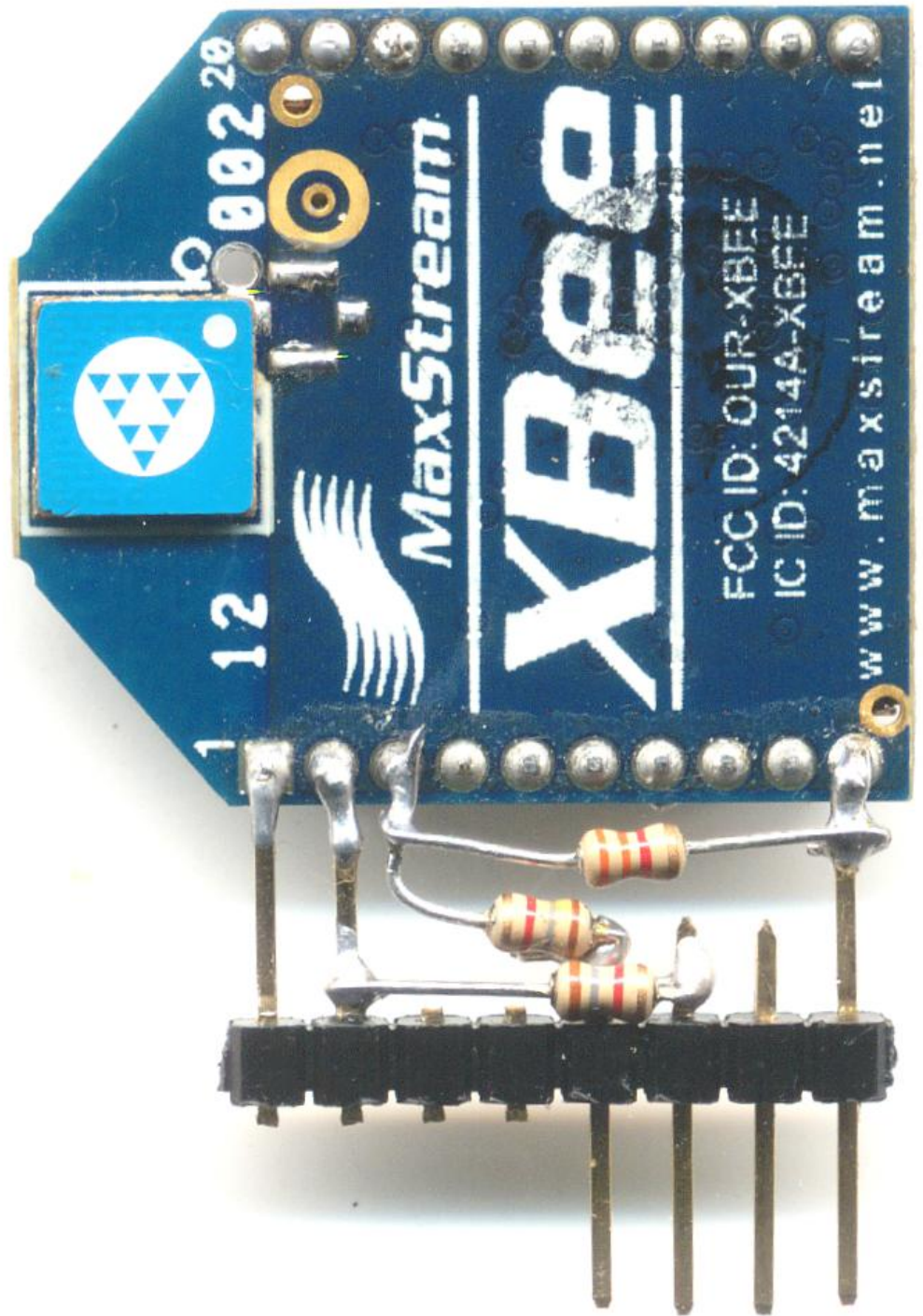
Step 7

Solder a 1.8k resistor between the module's pin 3 and the header pin 5 as shown here.



Step 8

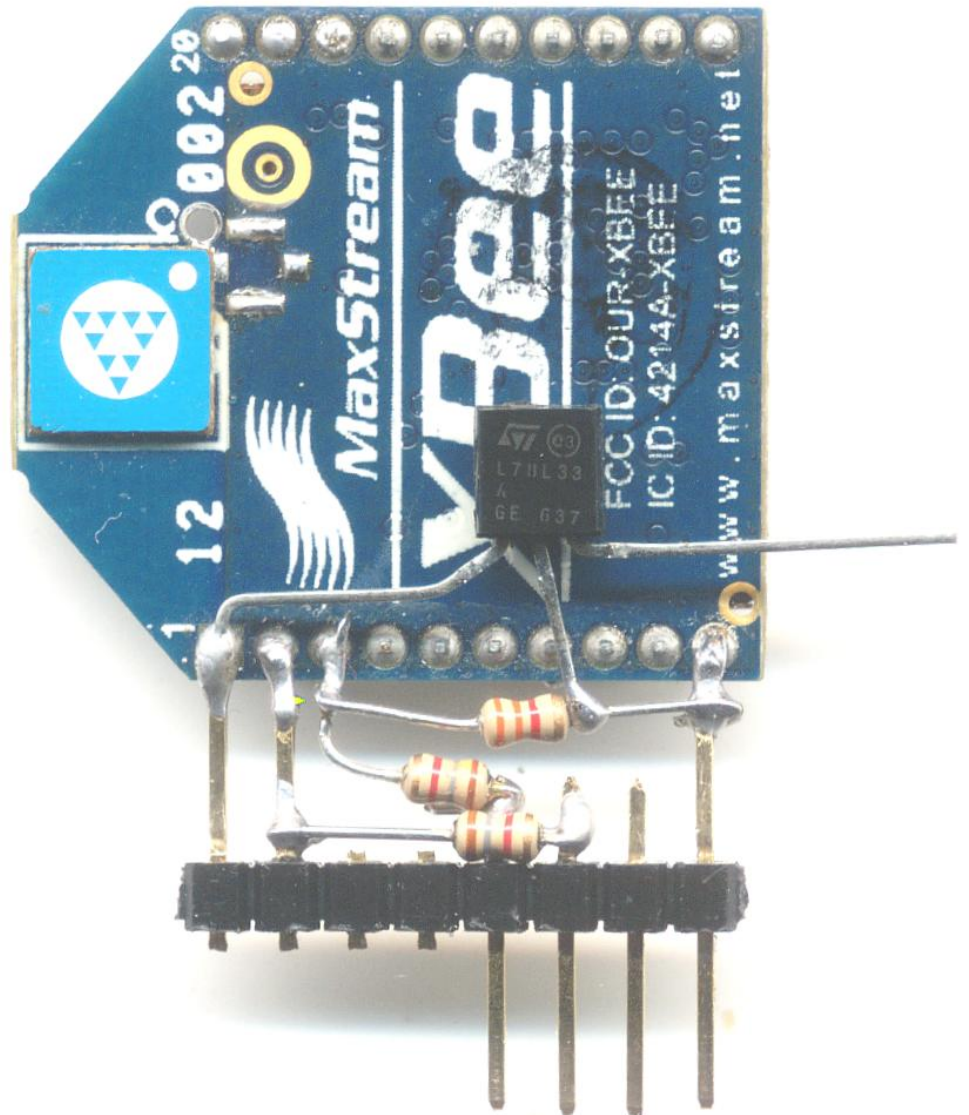
Solder a 3.3K resistor from the modules pin 3 to the header pin 8 as shown.



Step 9

Take the 3.3v regulator with rounded side down and solder pin 1 on the regulator to the modules pin 1 as shown.

Then solder the pin 2 on the regulator to the side of the 3.3v resistor connected to the modules pin 10 as shown.



Step 10

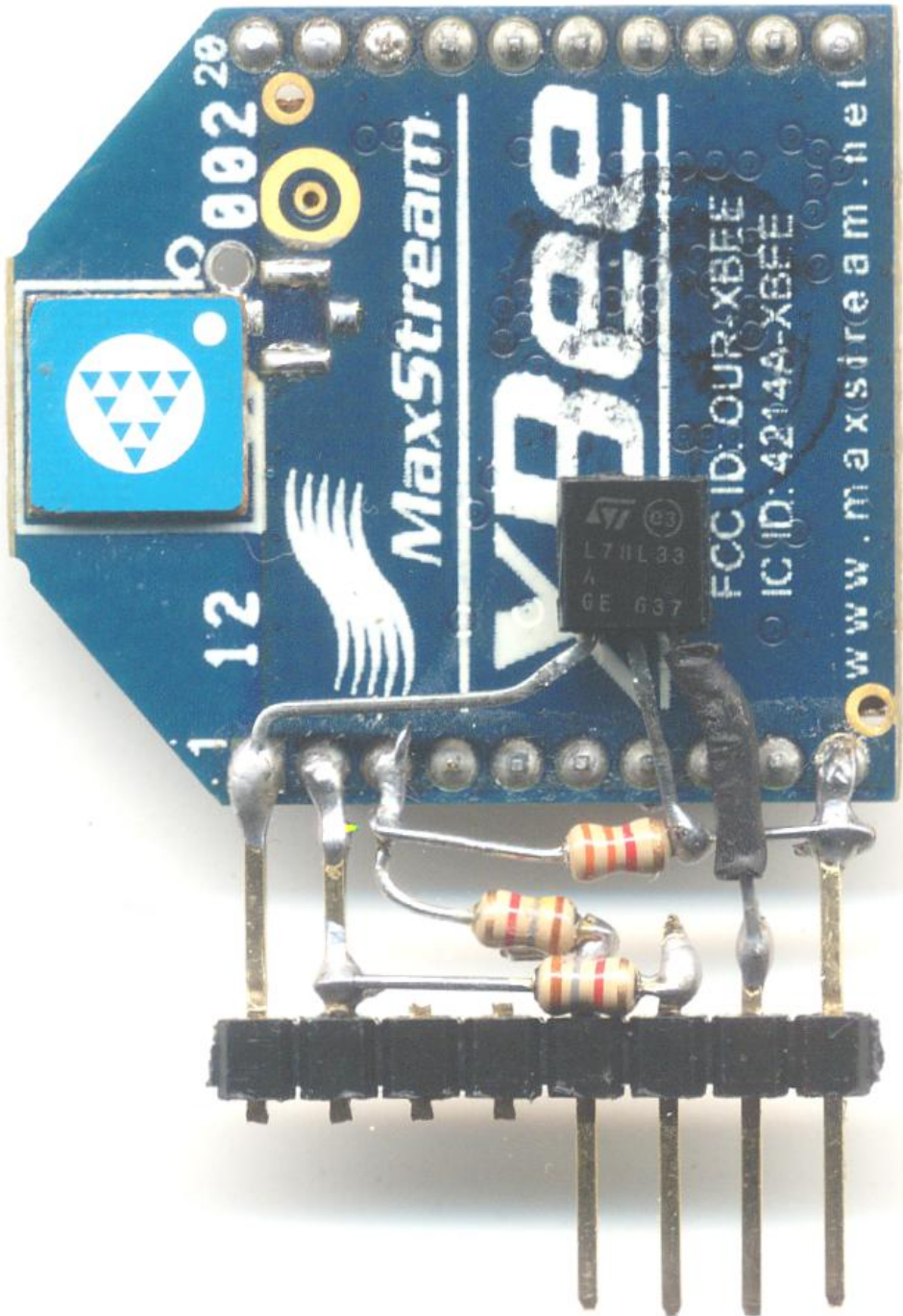
Take the remaining lead on the regulator (pin 3) and slip a small amount of heatshrink over the pin to provide some insulation as shown.

Solder the lead to pin 7 on the header as shown.

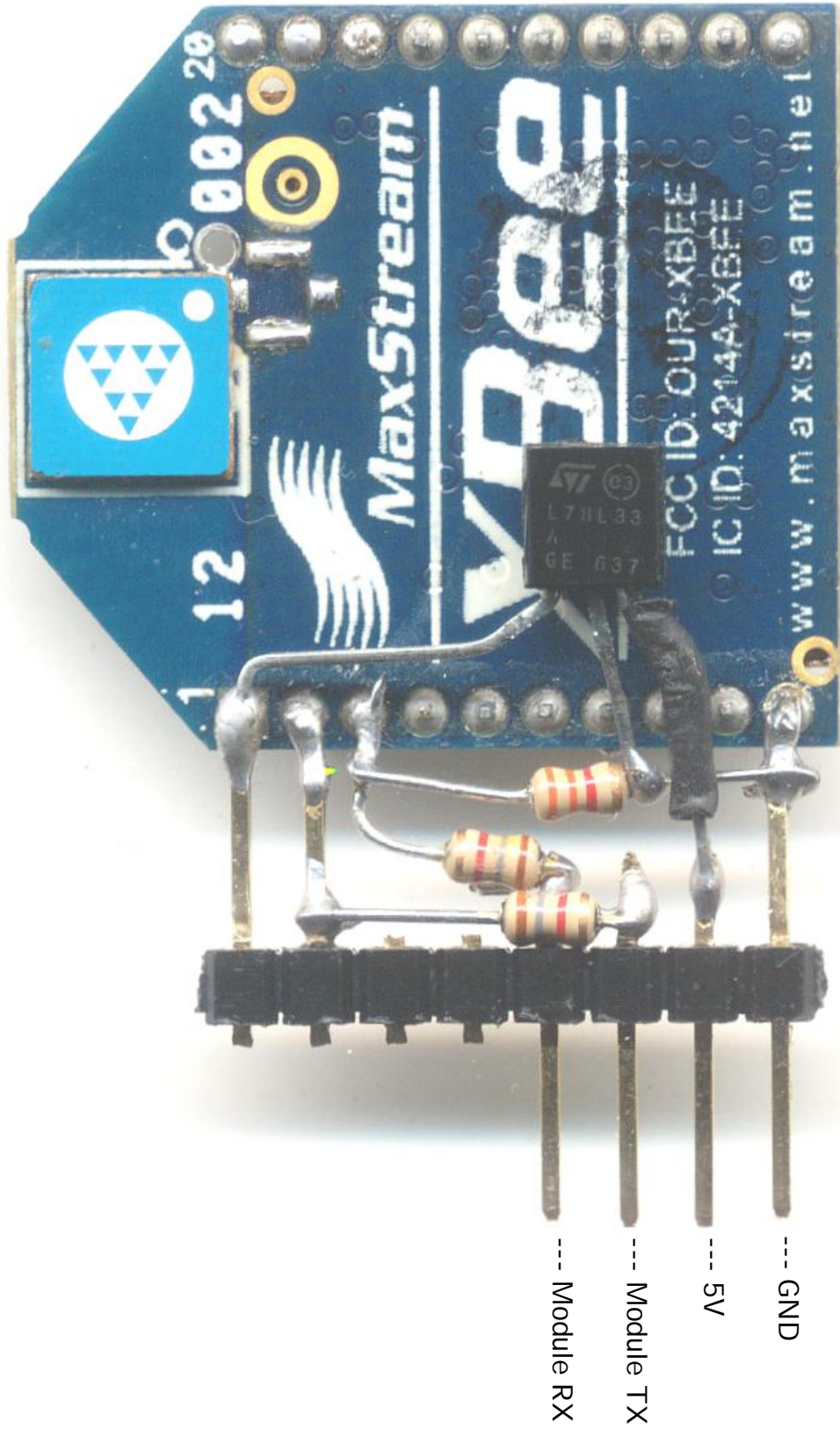
Important

If you are going to use one of the larger higher powered Zigbee modules you need to use a larger TO220 23.3v regulator and connect the pins appropriately.

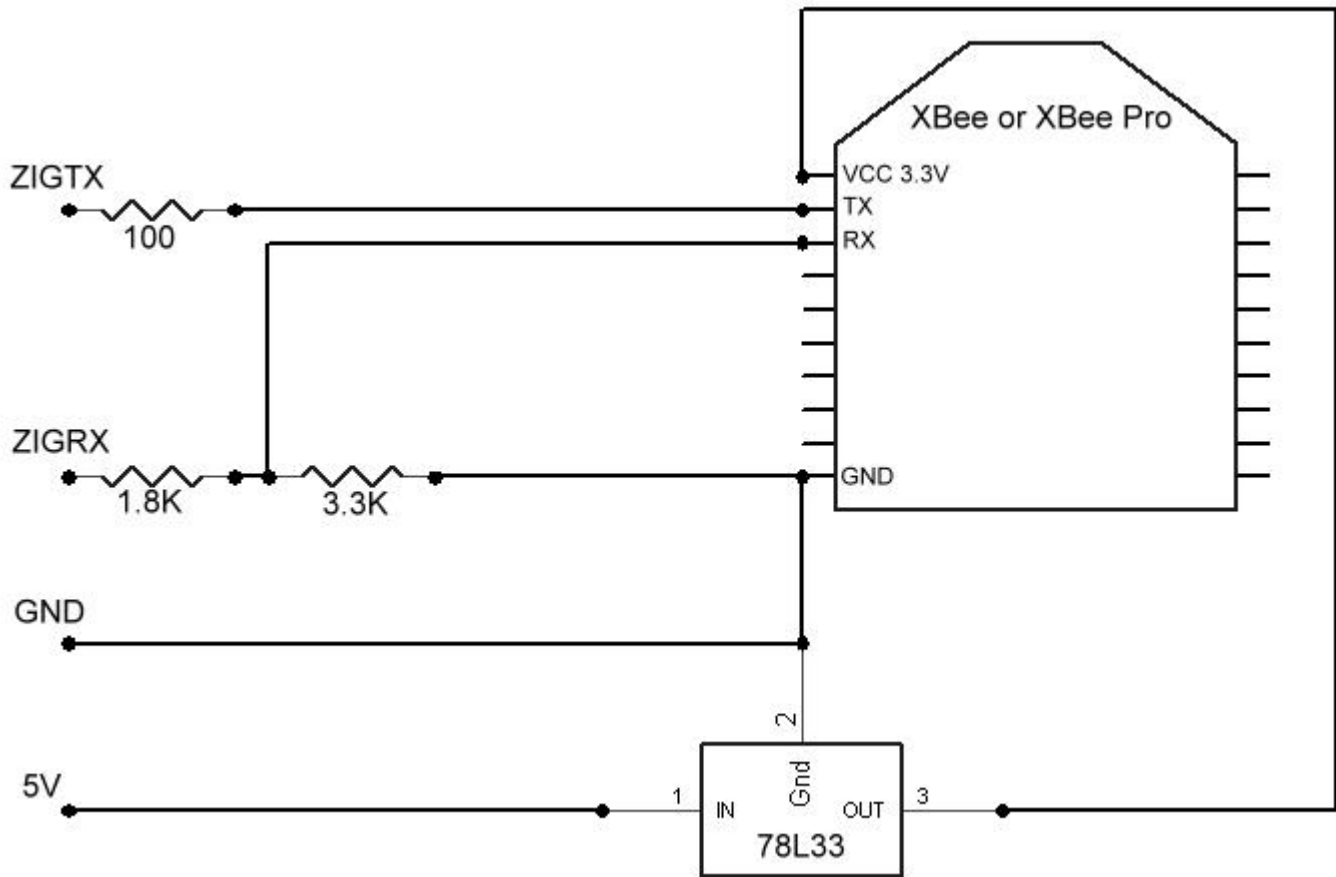
Module Pin 1 = Reg Out
Module Pin 10 = Reg Gnd
Header Pin 7 = Reg In



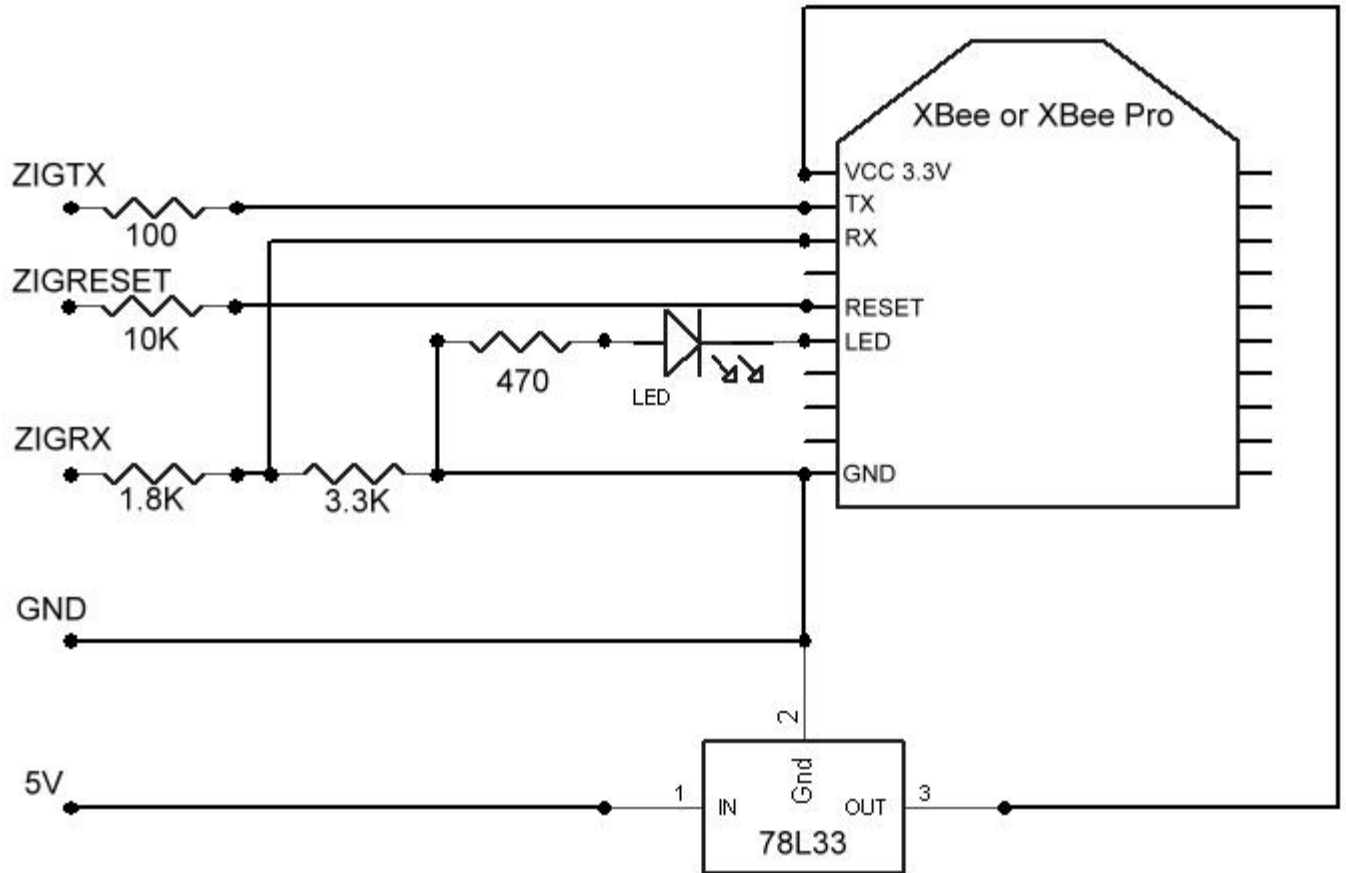
Hookup



Here is the schematic for the interface you just built. This is the bare minimum for using the Zigbee unit. It gives you access to the TX and RX leads only.



This is an updated schematic showing an LED connection. The reset pin will allow you the ability to force config mode.



Parts

MaxStream

XBee

www.maxstream.net/products/xbee/xbee-oem-rf-module-zigbee.php

XBee Pro

www.maxstream.net/products/xbee/xbee-pro-oem-rf-module-zigbee.php

Kronos Robotics

<http://www.kronosrobotics.com>

3.3v regulator

<http://www.kronosrobotics.com/xcart/customer/product.php?productid=16452>

1.8K Resistors

<http://www.kronosrobotics.com/xcart/customer/product.php?productid=16529>

3.3K Resistors

<http://www.kronosrobotics.com/xcart/customer/product.php?productid=16530>