Serial Port

Header

- Serial Port is labeled **J1** on the board and utilizes a **JST PH 6 pin** connector with a **2.0mm pitch**
- The more common 2.54mm pitch connectors will not fit properly - this includes the female connectors on popular USB-TTL adapters; however, removing the plastic casing from 2.54mm female connectors allows for a stable enough connection in a pinch.

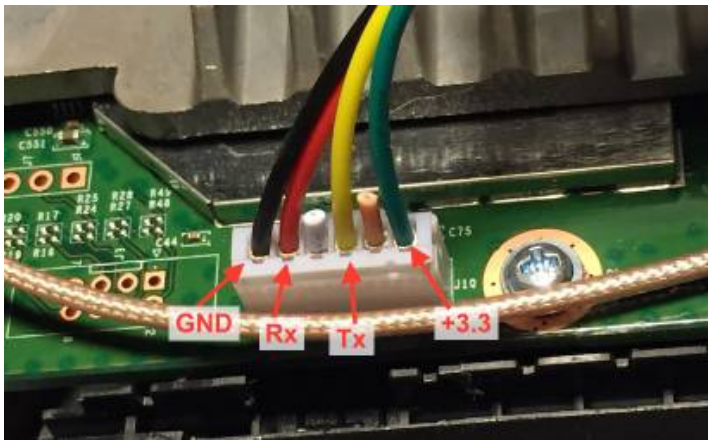
- The correct JST PH 6 connector w/cable can be purchased online (eBay listings are common).

Pin Out

Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
GND	RX	?	TX	?	+3.3

Photos

Serial Header w/attached JST PH6 cable



- While the picture above shows leads 3 & 5 cut, it's **not**recommended to do so so. De-pinning the leads would be recommended.
  - De-pinning
    - use a small pick tool or paperclip to release the metal lock tab located on the top or bottom of the pin inside the plastic header. Depending on the style of terminal used in the header, the lock tab will accessible either from the back (most likely) or front (not common) of the terminal lead

Edit

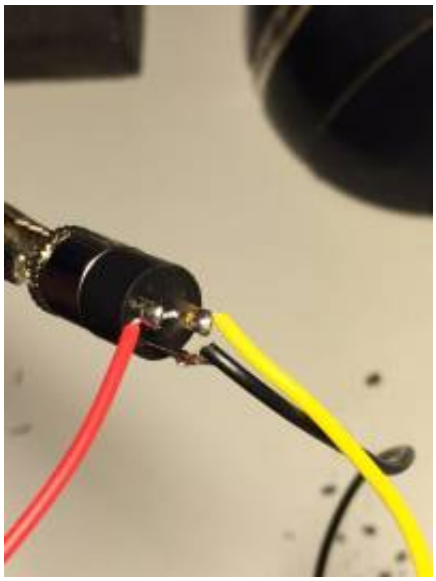
3.5mm Jack

- **One example of a simple connection is the use of a 3.5mm stereo headphone jack, like the Philmore 504K [shown below] or a USB-TTL AJ (Audio Jack) cable. Avoid using any 3.5mm jack smaller than this type, as there will not be sufficient threads for the nut that holds the**

jack to the casing.

- *There are number of different versions of the 3.5mm female jack, some are barrel shaped like the Philmore, others are square shaped; some have terminals that point vertically, while others have terminals that point horizontally (it's user preference as to which one to use).*
  - *Female 3.5mm terminal jacks come in 6 types, 1 pin through 6 pin.* ***The one purchased must be at least a 3 pin.***
- **A number of companies sell pre-made USB-TTL AJ cables; of which, Pin 2 (Rx) will be the tip of the 3.5mm jack, and Pin 3 (Tx) will be the ring on the 3.5mm jack, and Pin 5 (Gnd) will be the Ground connector on the 3.5mm.**
  - *Inside the upper black housing, next to the antenna connector on the right side (front) of the unit, there is space for the 3.5mm socket.*
  - *On the inside of this housing, there are several ridges top to bottom, using a diagonal cutter you can easily trim one of these off to make space for this connector.*
  - *A 1/4" hole in the housing will let this mount easily.*
- **For final assembly, be sure to insulate your connections on the 3.5mm jack; adhesive lined heat-shrink tubing around the soldered connection would be ideal for this.**
  - *While regular shrink tubing will work, adhesive lined provides strong stability to the joint it covers due to the thicker wall & rigidity from the adhesive once cured.*

Photos

Philmore 504K	Finished Connection
	

Edit

Arduino

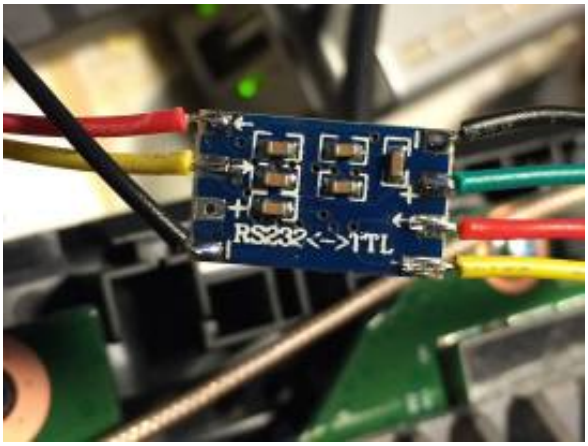
You can also use a RS-232 Serial to USB-TTL converter (MAX3232 below) or an Arduino.

WRT1900ac	VCC 3.3v	TX	RX	GND
Arduino	3.3	PIN 0	PIN 1	GND

MAX232 RS-232

- The MAX3232 RS-232 Line Driver chip can be purchased as a breakout board from a number of sources, an example of this is shown below.
  - This chip will convert the TTL level RS-232 signals to the standard 12v voltage used by most RS-232 interfaces.

Photos

MAX3232 Board	Underside of MAX3232
	

- Boards will differ on exact connections, just be sure you connect the TTL side to the WRT1900AC, and the RS-232 side to your external connector.