# Introduction

PADI IoT Stamp is a highly integrated, single-chip, low power WiFi controller with built-in antenna. The stamp combines an ARM Cortex M3, integrated Flash and RAM, WLAN MAC, WLAN baseband, RF balun, PA, LNA receiver, saw filter and power management module. Designs for makers with high speed SPI/I2C/UART interfaces for IoT applications with minimum Printed Circuit Board (PCB) area requirement. The PADI IoT Stamp is even smaller than a US stamp size.

PADI IoT Stamp Pinout Diagram
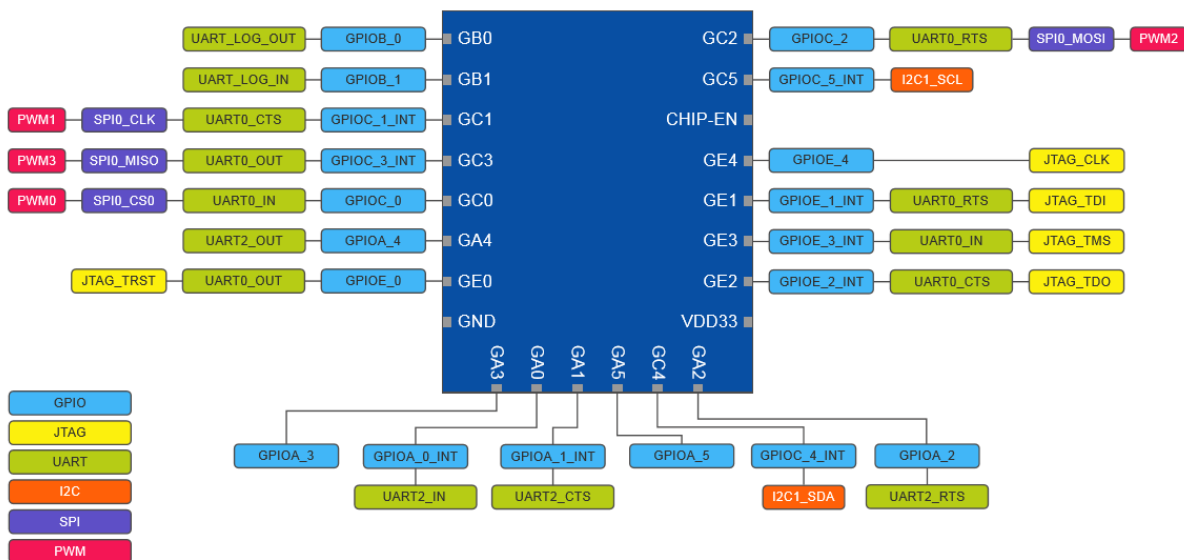
High resolution pinout diagram can be downloaded from
http://files.pine64.org/doc/PADI/documentation/padi-pinout-diagram.pdf

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PADI IoT Stamp Quick Start Guide

This quick start guide is intended for developers to setup the PADI Serial console (CH340G chipset) connection between PADI IoT Stamp and their PC running Windows, Mac OS X or Linux.

Follow the below steps to setup the board

1. Set the Voltage jumper of PADI Serial console to 3V3
2. Connect PADI Serial console GND to IoT Stamp GND
3. Connect PADI Serial console 3V3 to IoT Stamp VDD
4. Connect PADI Serial console RxD to IoT Stamp GA4 (UART2_OUT)
5. Connect PADI Serial console TxD to IoT Stamp GA0 (UART2_IN)
6. Connect PADI Serial console to the USB port of PC to power up the IoT Stamp
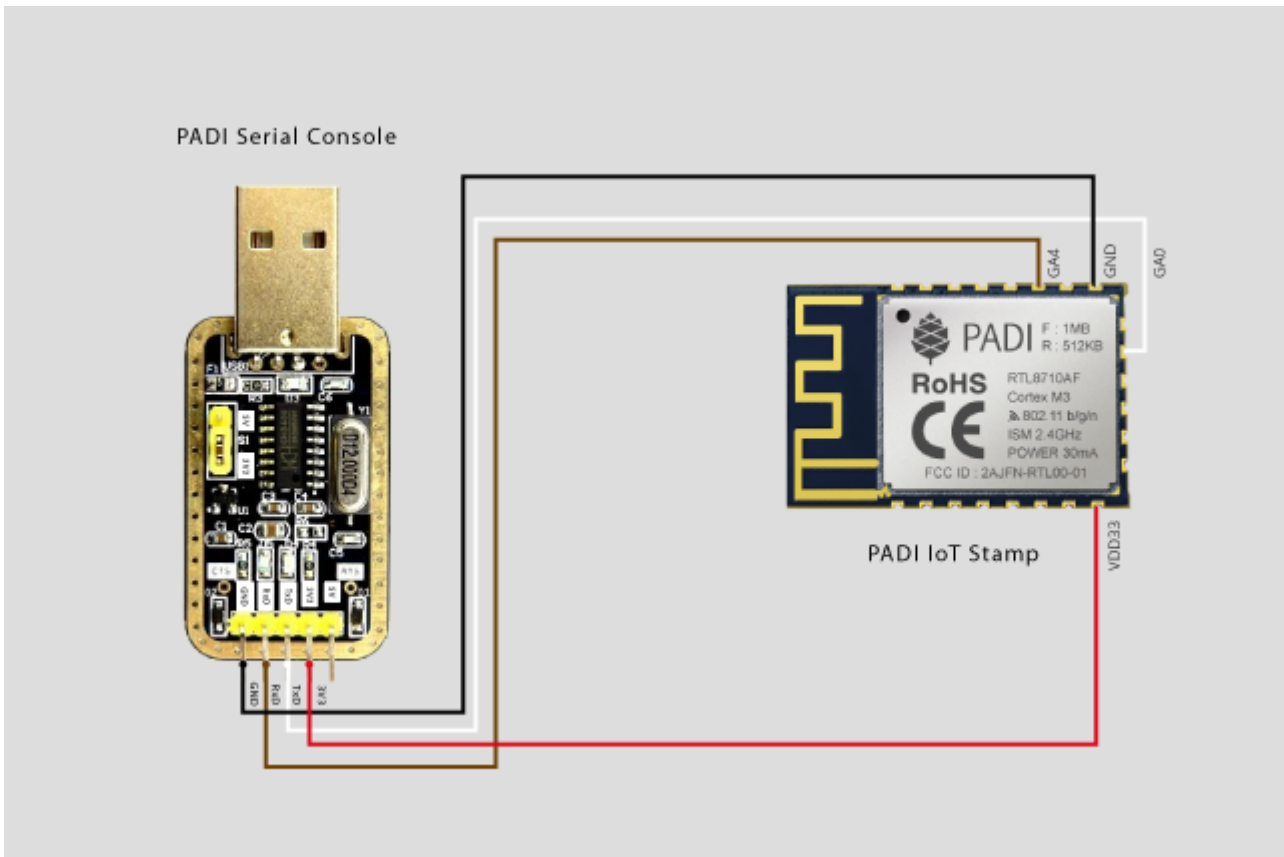
Follow the Windows, Mac OS X or Linux guides accordingly to setup the serial terminal.

Windows

1. Download the CH340G USB-Serial Driver and unzip the CH341SER_WIN.zip from

http://files.pine64.org/doc/PADI/tools-drivers/CH341SER_WIN.zip

This driver supports Windows 98/ME/2000/XP/Vista/7/8/8.1/10/2003/2008/2012 – 32-bit/64-bit

2. Install this driver in your Windows PC accordingly. Note: Windows 10 already has this driver build-in and you may skip the driver installation.

3. Open Windows 10 Settings and locate the Devices setting
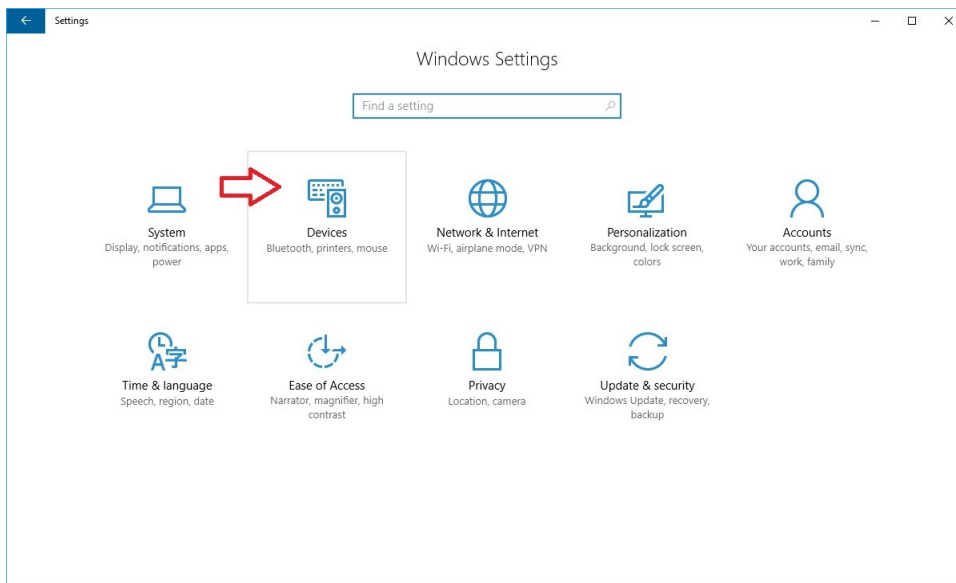
4. In Devices setting, locate and click on Device manager

PINE64
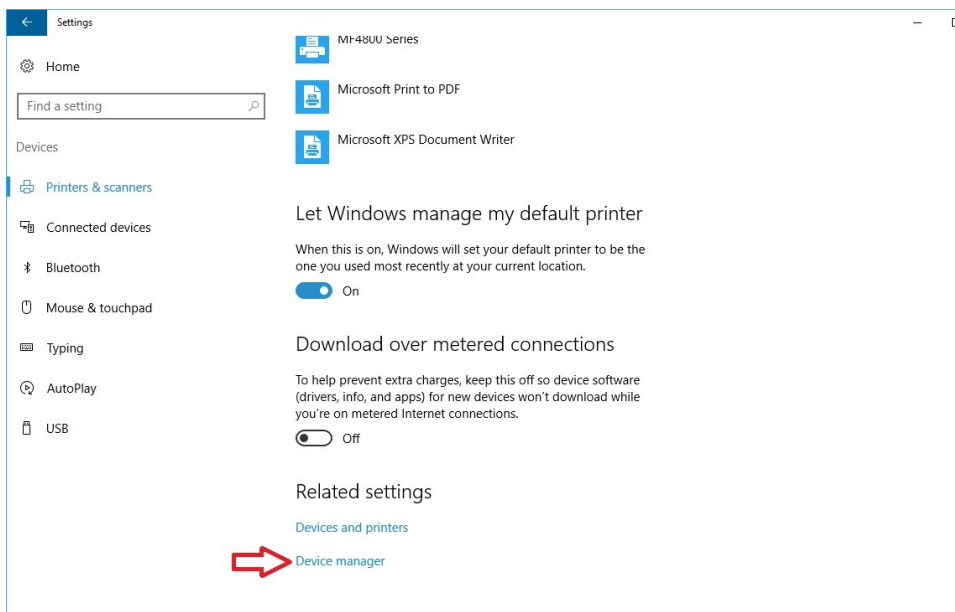
5. Open the Device manager and you should see the USB-SERIAL CH340 (COM5) appear as below if the driver is properly installed. The COM port number might be different depending on your PC setup. Just use the COM port number you see here for the rest of the document when it asks to input the COM port. For ease of explanation, we will use COM5 as an example through out this document.
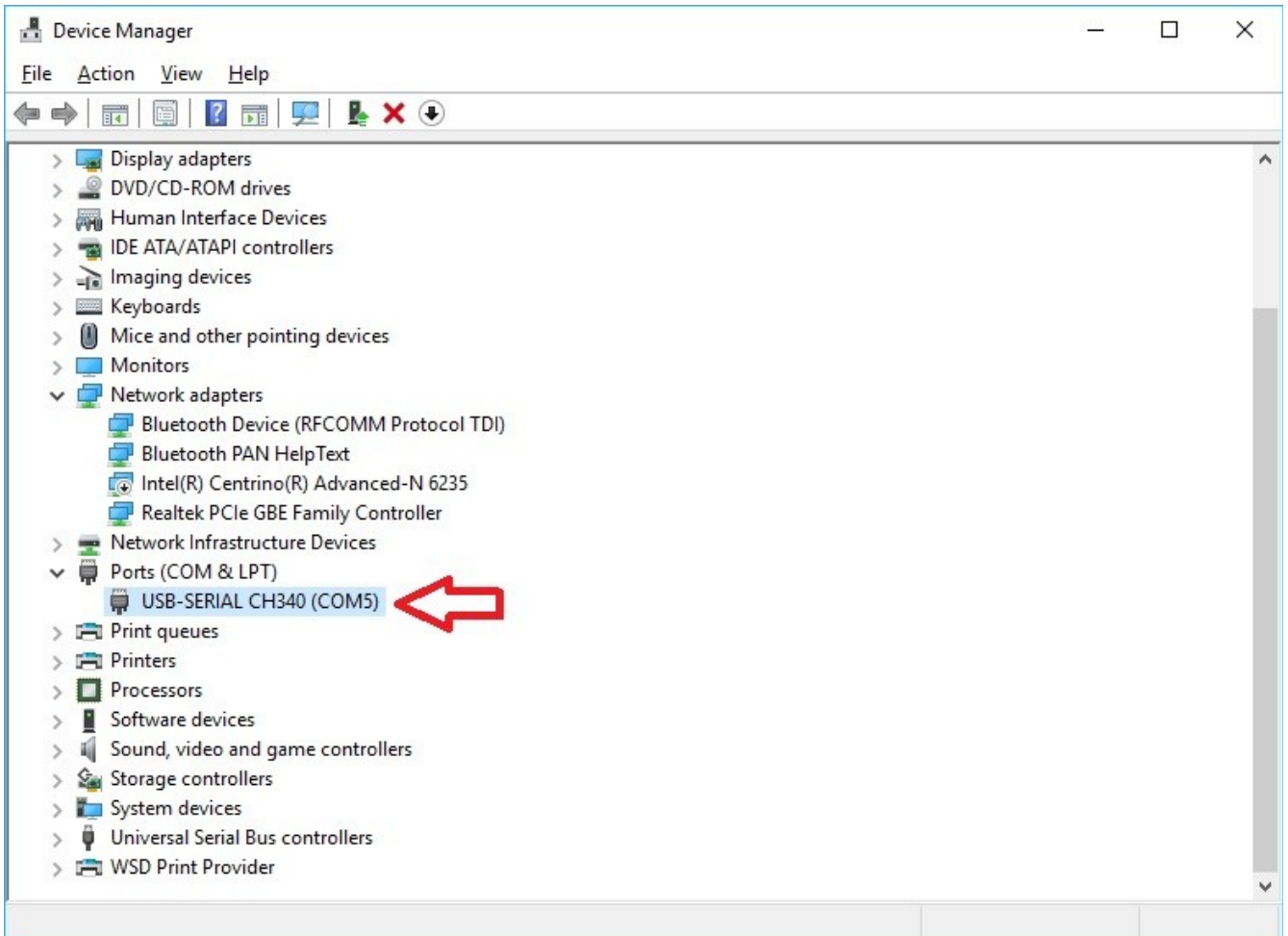
6. Download serial terminal software such as Putty from
http://files.pine64.org/doc/PADI/tools-drivers/putty.zip

7. Unzip the putty.zip and execute PUTTY.EXE

8. Click on Serial option and set Serial line to COM5 and Speed to 38400. If you wish to save this setup, input a Saved Sessions name such as NodeBasic Dev Board and click on Save. To open the terminal click the Open button.

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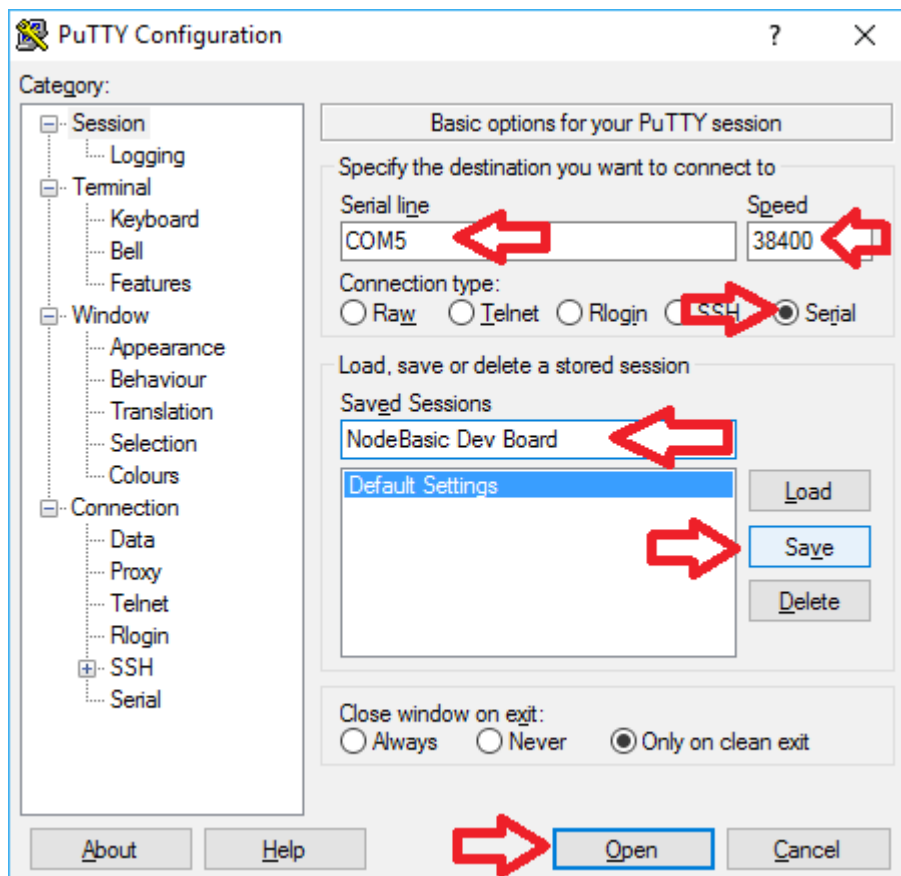
9. Press the Enter key and get access to console command command prompt #. You can input AT Command directly or key in 'ATS?' to see the supported AT Commands set.

ATS?

#
ERROR:command should start with 'A'

#
[ATS?]
Common AT Command:
ATSS
AT
ATS?
ATSR
ATSV
ATSP
ATSE
ATSY
ATSO
ATSU
ATSG
Wi-Fi AT Command:
ATPA
ATPN
ATPH
ATPE
ATPF
ATPG
ATPM
ATPW
ATWD
ATWS
ATW?
ATWQ
TCP/IP AT Command:
ATP0
ATPS
ATPD
ATPC
ATPT
ATPR
ATPK
ATPP
ATPI
ATPU
ATPL
[ATS?] OK

Mac OS X

1. Download the CH340G USB-Serial Driver and unzip the CH341SER_MAC.zip from

http://files.pine64.org/doc/PADI/tools-drivers/CH341SER_MAC.zip

this driver supports OS X and has been tested working with OS X Yosemite.
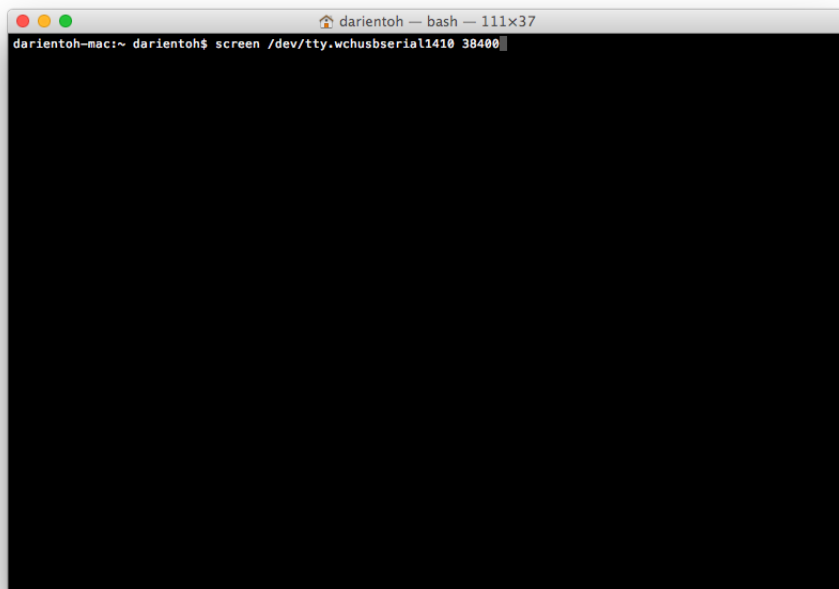
2. Install this driver by executing CH34x_install.pkg
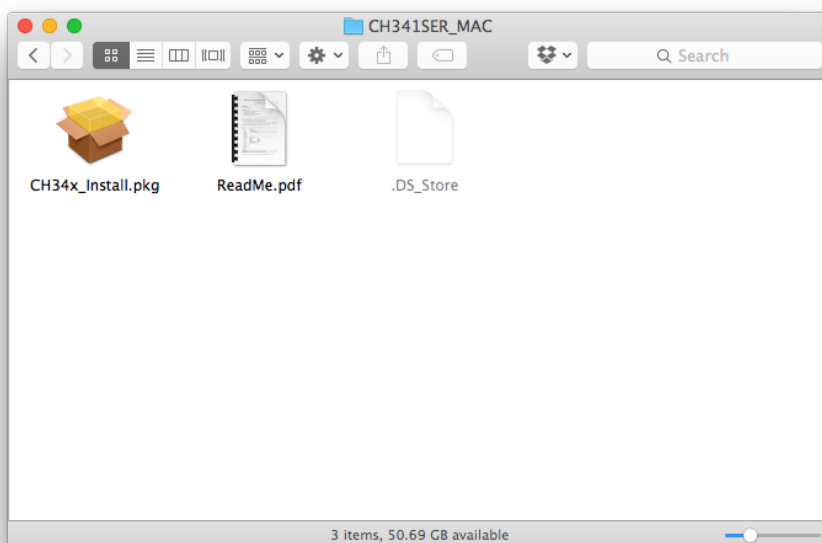
3. Install this driver for all users of your computer.
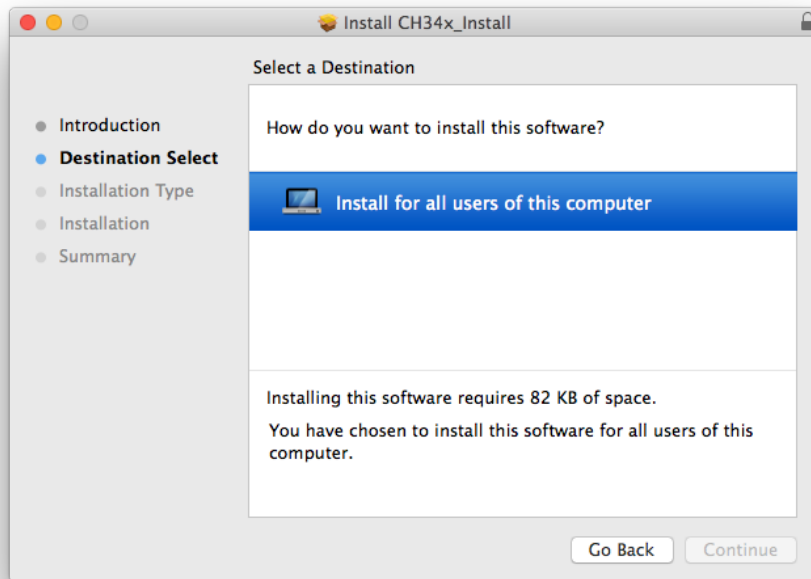
4. Execute the command below to bring up the serial console

$ screen /dev/tty.wchusbserial1410 38400

5. You can input AT Command directly or key in 'ATS?' to see the supported AT Commands set.

Linux

1. Download the CH340G USB-Serial Driver and unzip the CH341SER_LINUX.zip from

http://files.pine64.org/doc/PADI/tools-drivers/CH341SER_LINUX.zip

2. Follow the readme.txt in the package to compile and install the driver.

Note: Ubuntu 15.x and above already have this driver build-in and you may skip the driver installation.
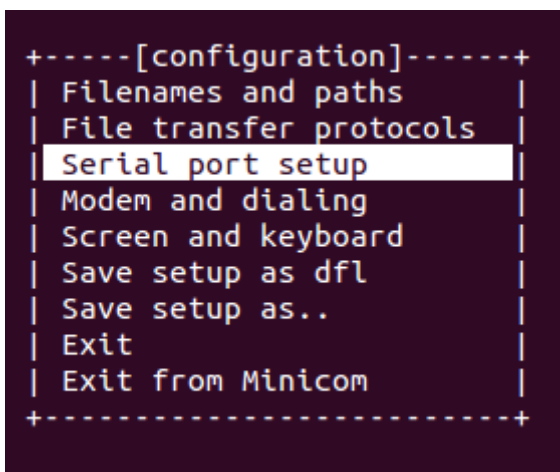
3. Install minicom in Ubuntu

```
$ sudo apt-get install minicom
```

4. Execute minicom

```
$ sudo minicom -s
```

5. Select serial port setup from the menu and press 'Enter' which will give you some options to change.

6. In the serial port setup, choose the right setting for the serial device. Press 'A' to navigate to the Serial Device setup, then change the /dev/ttyXXX to /dev/ttyUSB0. Do a 'lsusb' and 'dmesg | grep usb' to find the actual device name. Next, press 'E' to navigate to Bps/Par/Bits. This is the bit rate, parity and stop-bit setting. Set it to 38400 8N1.

```
+-----------------------------------------------------------------+
| A -     Serial Device       : /dev/ttyUSB0                      |
| B - Lockfile Location       : /var/lock                         |
| C -     Callin Program      :                                   |
| D -   Callout Program       :                                   |
| E -     Bps/Par/Bits        : 38400 8N1                         |
| F - Hardware Flow Control : Yes                                 |
| G - Software Flow Control : No                                  |
|                                                                 |
|    Change which setting? ▊                                      |
+-----------------------------------------------------------------+
           | Screen and keyboard      |
           | Save setup as dfl        |
           | Save setup as..          |
           | Exit                     |
           | Exit from Minicom        |
           +--------------------------+
```

7. Hit 'Escape' to exit from the serial port setup menu and you will be back at the base minicom setup menu. Select 'Save setup as dfl' and hit 'Enter' to save the minicom settings as the defaults. Then select exit and hit enter to start up minicom with the new settings.

8. Now you should see anything that is coming in on the UART interface from your board. You should also be able to simply run minicom from a terminal window whenever you want to open the terminal with your board. You can input AT Command directly or key in 'ATS?' to see the supported AT Commands set.