

# ITUS Networks

WiFi Shield

Advanced Instructions

# Hardware

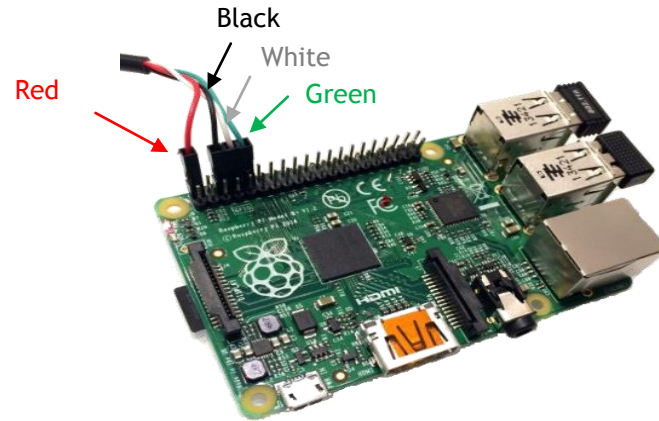
# WiFi Shield

- ▶ Connect Ethernet cable to WiFi Shield
- ▶ Plug power adapter into wall outlet, and the end with the micro USB connection to the WiFi Shield



# Serial Connection

- ▶ Connect the serial adapter to the WiFi Shield as depicted in the image below
  - ▶ (Note: If the WiFi Shield is already powered by the wall adapter, the red wire is not needed)



- ▶ Plug the USB end of the serial adapter into your computer of choice
  - ▶ The following instructions are for Linux, using Terminal, and Windows, using Putty

The background features abstract, overlapping geometric shapes in various shades of blue, ranging from light sky blue to deep navy blue. These shapes are primarily located on the right side of the image, creating a modern, layered effect. The word "Linux" is centered on the left side of the image.

# Linux

# Terminal

- ▶ Open up a terminal. Enter the following commands
  - ▶ `>lsusb` #see if the serial adapter is connected
  - ▶ `>dmesg|grep tty` #see if adapter is active
  - ▶ `>minicom -b 115200 -D /dev/ttyUSB<number>` #begin serial session with specified settings

```
ltususar@itus:~$ lsusb
Bus 002 Device 003: ID 187c:0514 Alienware Corporation
Bus 002 Device 004: ID 067b:2303 Prolific Technology, Inc. PL2303 Serial Port
Bus 002 Device 002: ID 8087:0020 Intel Corp. Integrated Rate Matching Hub
Bus 002 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
Bus 001 Device 003: ID 0c45:6424 Microdia
Bus 001 Device 002: ID 8087:0020 Intel Corp. Integrated Rate Matching Hub
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
ltususar@itus:~$ 
ltususar@itus:~$ 
ltususar@itus:~$ dmesg|grep tty
[    0.000000] console [tty0] enabled
[   137.510729] usb 2-1.3: pl2303 converter now attached to ttyUSB0
ltususar@itus:~$ 
ltususar@itus:~$ 
ltususar@itus:~$ sudo minicom -b 115200 -D /dev/ttyUSB0
ltususar@itus:~$ sudo minicom -b 115200 -D \qemu\l1n\280
ltususar@itus:~$ 
ltususar@itus:~$ 
ltususar@itus:~$
```



```

Welcome to minicom 2.7

OPTIONS: I18n
Compiled on Jan  1 2014, 09:30:18.
Port /dev/ttyUSB0, 07:38:04

Press CTRL-A Z for help on special keys

root@Shield:/# ls
bin      lib      overlay  root     tmp
dev      lost+found  proc    /sbin    usr
etc      mnt     rom      sys      var

root@Shield:/#

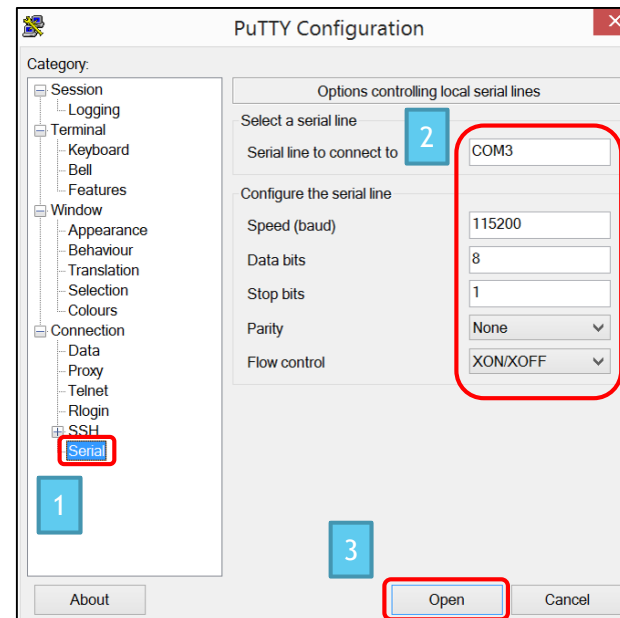
```

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# Windows

# Putty

- ▶ Double click the category labeled “Serial”
- ▶ Enter the listed settings:
  - ▶ Baud Rate = 115200
  - ▶ Port = 22
  - ▶ Start Bits = 1
  - ▶ Stop Bits = 1
  - ▶ Parity = None



- ▶ Click “Open” and hit ENTER once in terminal. It should now display that you are in the WiFi Shield as “root” user.



# Configuration

# Password

- ▶ Now it is time to change the default password from the WiFi Shield
  - ▶ Username: root
  - ▶ Password: itus
- ▶ Enter the command:
  - ▶ `>passwd`

```
root@Shield:/# passwd
Changing password for root
New password: 
```

- ▶ You will now be prompted to enter your new password

# WiFi

- ▶ It is now time to change the default SSID and Key
  - ▶ SSID: WIFI\_SHIELD
  - ▶ Key: wifi\_shield
- ▶ Enter the following commands to edit the configuration
  - ▶ `>vi/etc/config/wireless`
- ▶ You have now opened the wireless configuration file, and have the ability to change the settings.

# WiFi (cont.)

- ▶ In the file, scroll down until you see “option device ‘radio0’”, and change the respective SSID and Key to your preferred settings
  - ▶ To edit the file in vi, press ‘i’, and then modify the text
  - ▶ Once settings are edited, press ESC, ‘:’, and type “wq”. Afterwards, hit ENTER.

```
config wifi-device 'radio0'
    option type 'mac80211'
    option hwmode '11g'
    option path 'platform/bcm2708_usb/usb1/1-1/1-1.5/1-1.5:1.0'
    option txpower '20'
    option country '00'
    option channel '1'
    option htmode 'HT40'

config wifi-iface
    option device 'radio0'
    option network 'lan'
    option mode 'ap'
    option encryption 'psk2'
    option auto_cache '0'
    option hidden '0'
    option wps_pushbutton '0'
    option ssid '<new_ssid>'
    option key '<new_key>'
```

# Reboot

- ▶ At this time we will reboot the WiFi Shield
- ▶ Enter the command:
  - ▶ >reboot -f

```
root@Shield:/# reboot -f  
[636749.515220] watchdog stopped  
[636749.521747] reboot: Restarting system
```

# End

- ▶ You have now successfully changed the device's default password, and SSID and Key