

Packet Radio Experiment 1

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After installing the software on the Raspberry Pi, it became an option as to find software to make a serial port operate properly.

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Install VNC Viewer on PC so that we could look at the Raspberry Pi using Windows 10 computer.

(This is used to allow you to use one keyboard to control the PC and Raspberry Pi. This is great when the Raspberry Pi is in my Radio Room and I am in the Computer Room.)

- 1) Free download – free for personal use – up to 5 computers.
<https://www.realvnc.com/en/connect/download/viewer/>
- 2) Select your computer option for software
- 3) I downloaded both the VNC Viewer and Server to my PC
- 4) Create an account with account and password.
- 5) Passwords will be set up for the VNC account
- 6) For each PC you will need their passwords and login information as well.
- 7) VCN Viewer/Server is built in to the Raspbian Software – no installation needed.

VNC Set-up on Raspberry Pi

- 1) Determine IP address by using the following command on the Raspberry Pi:
 - a. `$ sudo ifconfig`
 - b. In my case it looked like this:

```
wlan0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 19x.1xx.0.31 netmask 255.255.255.0 broadcast 192.168.0.255
inet6 fe80::100c:3c39:50a2:99b3 prefixlen 64 scopeid 0x20<link>
inet6 fd00:9050:ca66:1982:74d1:ab48:ca53:e5b0 prefixlen 64 scopeid 0x0
```

(I have blanked out the actual IP address)
- 2) Log into VCN Viewer on PC and set up using the Internet address of the Raspberry Pi.
 - a. You may have to set up the VNC server on the Raspberry Pi and log into the account that you just set up.

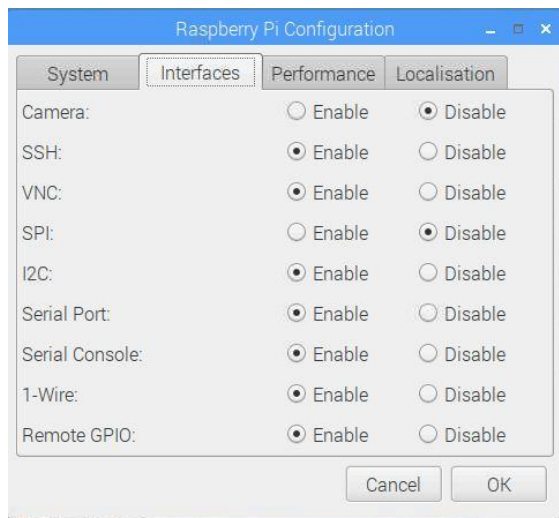


View through my PC

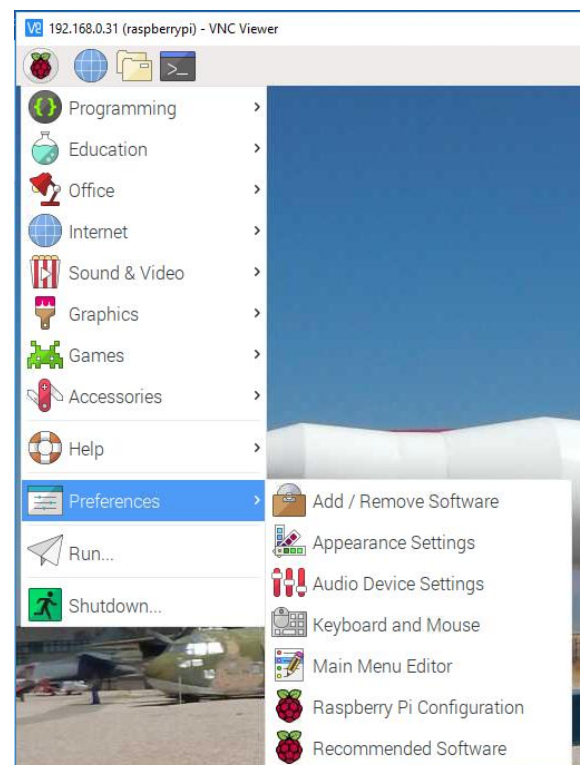
Make sure that the Raspberry Pi Configuration is Set Up

(This step is needed to allow RS232 and other ports to be enabled for use on the Raspberry Pi)

- 1) Select: Preferences → Raspberry Pi Configuration
- 2) Make sure Serial Port, SSH and VNC are enabled
- 3) Then press OK to save set-up



- 4) Plug in the USB to RS232 Cable

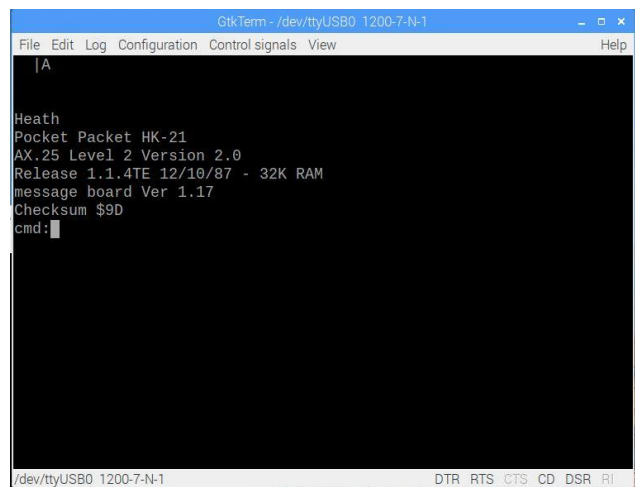
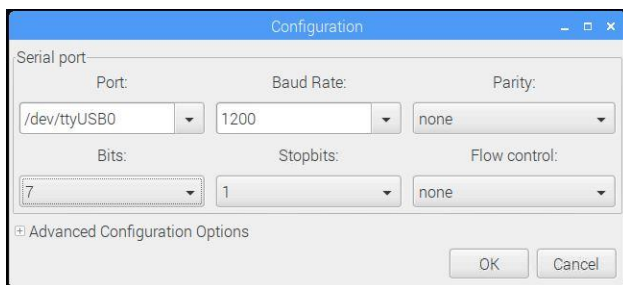
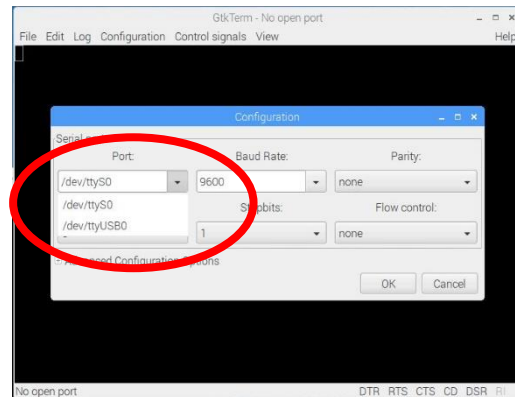
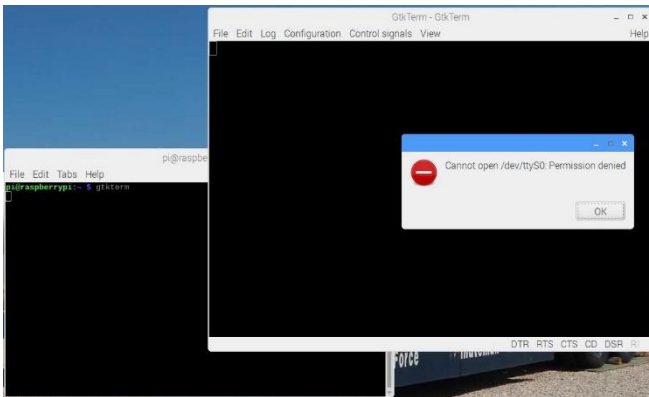


Download and install “*gtkterm*” which is a Port Viewer on Raspberry Pi (This is used as a window or viewer to the TNC)

- 1) After several experiments, I determined that I liked “*gtkterm*” best of all the viewers that I could find.

This will allow us to look at the TNC through the RS232 adaptor.

- 2) Type `$ sudo apt-get install gtkterm` on the Raspberry Pi
- 3) After installation and reboot, *gtkterm* is run from the Terminal Window as shown
 - a. To determine the serial port, I used the “*gtkterm*” application
 - b. Type `$ gtkterm` in the Raspberry Pi Terminal Window
 - c. An error occurs at first because the default tty is not usable
 - d. Select Configuration Tab at top of *Gtkterm* window
 - e. Set up the `ttyUSB0` to operate with my TNC (Heathkit HK-21)



- f. The Heathkit HK-21 TNC uses 7 bits at 1200 Baud Rate
- g. Select OK to set parameters.
- h. Turn on TNC:
- i. You can now connect a radio and run Packet in a Terminal Mode.
- j. You can also save the set-up so that next time you load *gtkterm* it will set you to the correct port and set-up.

This Experiment is now complete!