

Software

The following procedure works for Ubuntu 20.04.2.0 LTS (Focal Fossa).

Stage-1: Installing GNU Radio.

- Open Terminal
- Install GNU radio(I have used GNU Radio 3.8), external python dependencies, and SDR drivers(for airspy SDR add 'airspy' at the end of the following command and for RTL-SDR use the following [link](#))
Paste the following command in terminal:
\$ sudo apt install gnuradio gr-osmosdr python3-h5py python3-ephem
- Install the following additional packages.
\$ sudo apt install git cmake liborc-0.4-dev

Stage-2: Installing gr-radio_astro.

- Download it by using the following command
\$ git clone -b v2020.08-gr38 https://github.com/WVURAIL/gr-radio_astro.git
- The above script will download and create the new repository 'gr-xxx'. Now you have to get into that and create a build folder and get into it.
\$ cd gr-xxx
\$ mkdir build
\$ cd build
- Run the following commands to install the software now.
\$ cmake ..
\$ sudo make
\$ sudo make install
\$ sudo ldconfig

Stage-3: Additional Steps for setting the proper Python environment

- Open Terminal
- Get to the home directory (just type cd); type **\$ gedit .bashrc** .
This opens the bashrc file in an editor.
- Go to the bottom of this file, and then copy and paste the following code as a new line:
export
PYTHONPATH=/usr/local/lib/python3/dist-packages:/usr/local/lib/python3.8/dist-packages:\$PYTHONPATH

- Now, save and close the editor window.
- Go to the following folder by typing,
\$ cd /usr/local/lib/python3.8/dist-packages
- Type **\$ ls**
- If you see a folder 'radio_astro', delete it by typing,
\$ sudo rm -rf radio_astro .

Stage-4: Check for proper installation

- Open terminal
- Start Gnuradio
\$ gnuradio-companion
- Run **spectrometer_w_cal.grc .**
If no error occurs, the installation was successful!
- Execute the companion to check the installation of the modules.