MWC Lab ESE

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Aim:

To design and implement a real-time GMSK Transceiver using the ADALM Pluto SDR and GNU Radio

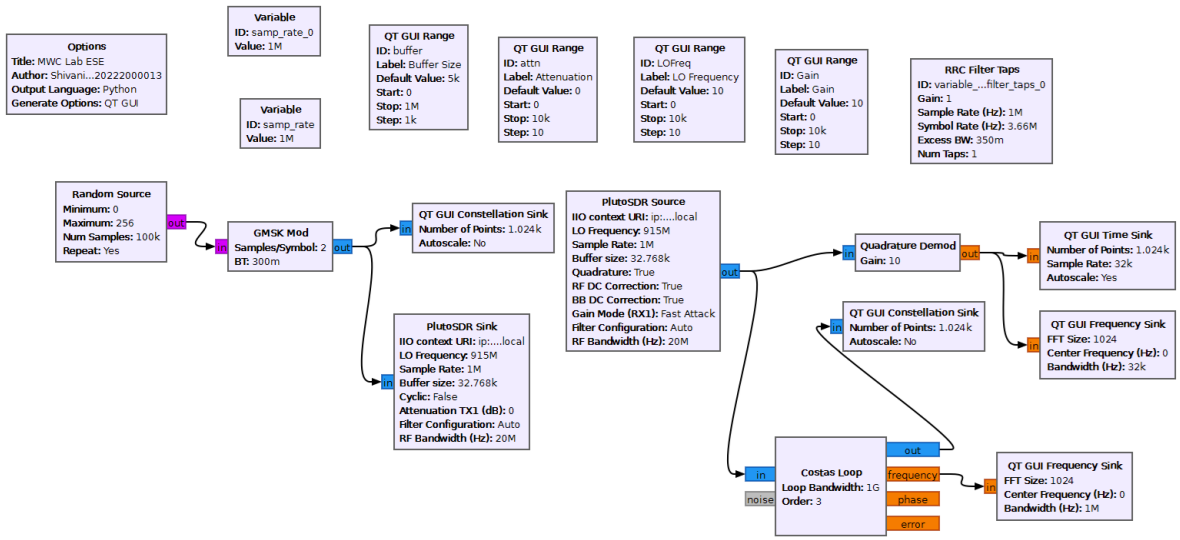
Software Used:

GNU Radio, PlutoSDR Device drivers to be pre-installed

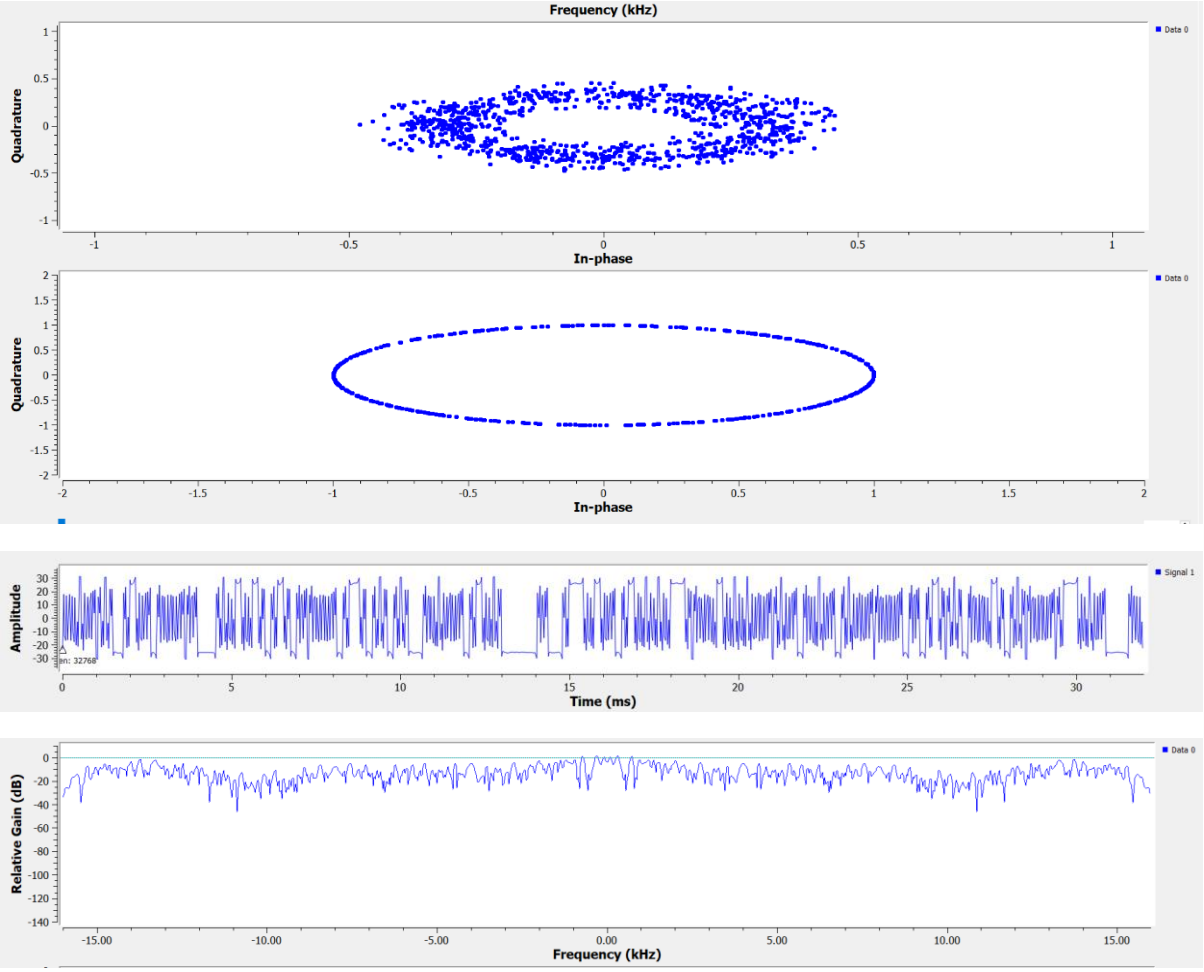
Procedure:

1. Install the PlutoSDR device drivers
2. Connect the PlutoSDR device to the PC and open device manager to confirm the connections
3. Open GNU Radio and create a new file.
4. Configure the following parameters: Center Frequency=915MHz, Sample Rate=1MSPS, Attenuation (Tx Power =0 dB), BT = 0.3 and Samples per symbol=4
5. Create the source and sink flowgraphs in the same file
6. Plot the output

Flowgraph Screenshots:



Results:



Conclusion:

The following effects have been observed:

1. Phase Synchronization: Constellation diagram gets compact and constricted
2. Bandwidth Occupancy: Occupy the 1Ghz band
3. Sensitivity: When it increases, the error rate decreases but it reduces the spectrum/plot observed