The Latest

HackRF One

Up

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Tags: GNU Radio | HackRF One | PNW Microwave

The November meeting in the PNW Microwave group was used to discuss Gnu Radio and HackRF One. We installed the Windows version of Gnu Radio (binaries can be found here). To verify the installations we used a flowgraph for a narrow band FM receiver.

After the meeting John (W7FU) was inspired to install the latest version of GNU radio and he created 3 flowgraphs. I modified these to be used with HackRF One by adding the OsmoSDR versions of sink and source. I disabled the UHD:USRP versions but left them in the flowgraph for reference.

SSB filter simulation

This flow graph does not require any external hardware. This simulator visualize the USB, LSB or CW signal in the frequency domain. The first image below shows the flowgraph and the second is a screen shot of the output.

SSB filter simulation

SSB filter simulation output

Wide spectrum receiver

This flowgraph generates a very simple receiver and show the frequency spectrum. The HackRF One is limited to a 10 MHz bandwidth but with the use of the variables and GUI controls it can be used to show the spectrum anywhere from 10 MHz to 6GHz. A handy little spectrum analyzer although the sensitivity of the HackRF device is not that great and my version is installed in a plastic box allowing RF to get injected anywhere on the circuit board.

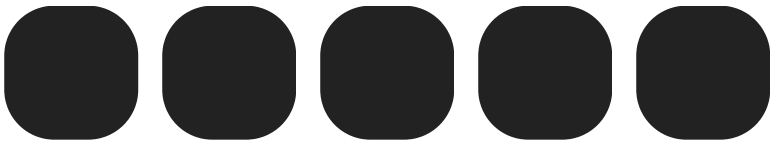
Wide spectrum receiver

Signal Generator

The signal generator is also very simple. It consists of a signal source and a sink (the component that communicate to the hardware. I tested this by tuning my handheld FM receiver to the same frequency and adjusting the drive until I was able to hear the signal. This can also be used on any frequency form 10 MHz to 6GHz with the HackRF One device.

Signal generator

Link to this Post



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