

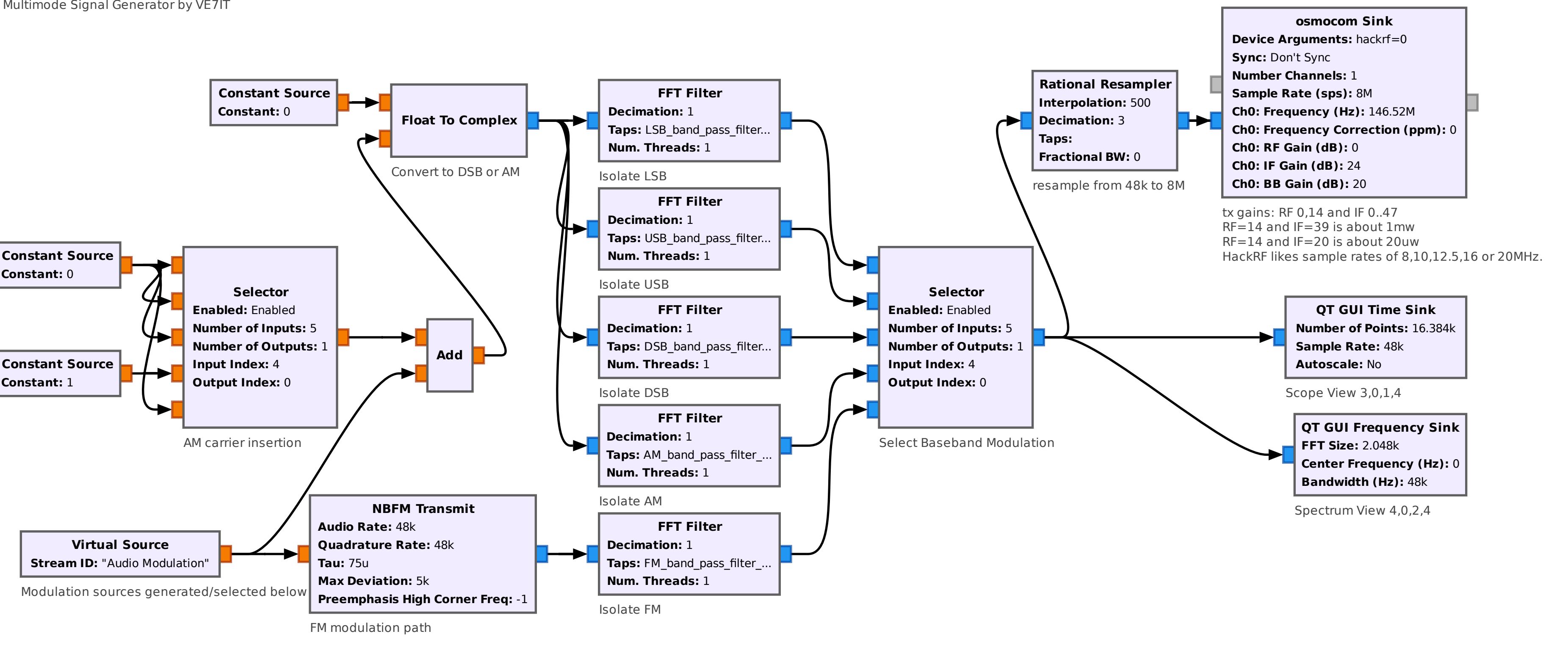
**Options**  
 Title: Multimod...or by VE7IT  
 Author: Lawrenc...ister VE7IT  
 Description: Multi...enerator  
 Output Language: Python  
 Generate Options: QT GUI

**Variable**  
 Id: samp\_rate  
 Value: 48k

**Variable**  
 Id: pl\_level  
 Value: 130m

Adj for ~650hz fm deviation  
 $0.130 = 1 / (5000 / 650)$

Multimode Signal Generator by VE7IT



**QT GUI Entry**  
 Id: freq  
 Label: Frequency(MHz)  
 Default Value: 146.52  
 0,0,1,1

**QT GUI Chooser**  
 Id: mod  
 Label: Modulation Type  
 Num Options: 5  
 Default option: 4  
 Option 0: 0  
 Label 0: LSB  
 Option 1: 1  
 Label 1: USB  
 Option 2: 2  
 Label 2: DSB  
 Option 3: 3  
 Label 3: AM  
 Option 4: 4  
 Label 4: FM5K  
 0,1,1,1

**QT GUI Range**  
 Id: mic\_gain  
 Label: Mic Gain  
 Default Value: 1  
 Start: 0  
 Stop: 1  
 Step: 100m  
 0,2,1,1

**Band-pass Filter Taps**  
 Id: USB\_band\_pass\_filter\_taps  
 Tap Type: Complex  
 Gain: 2  
 Sample Rate (Hz): 48k  
 Low Cutoff Freq (Hz): 150  
 High Cutoff Freq (Hz): 3.2k  
 Transition Width (Hz): 75  
 Window: Hamming  
 Beta: 6.76

**Band-pass Filter Taps**  
 Id: LSB\_band\_pass\_filter\_taps  
 Tap Type: Complex  
 Gain: 2  
 Sample Rate (Hz): 48k  
 Low Cutoff Freq (Hz): -3.2k  
 High Cutoff Freq (Hz): -150  
 Transition Width (Hz): 75  
 Window: Hamming  
 Beta: 6.76

**Band-pass Filter Taps**  
 Id: DSB\_band\_pass\_filter\_taps  
 Tap Type: Complex  
 Gain: 1  
 Sample Rate (Hz): 48k  
 Low Cutoff Freq (Hz): -3.2k  
 High Cutoff Freq (Hz): 3.2k  
 Transition Width (Hz): 200  
 Window: Hamming  
 Beta: 6.76

**Band-pass Filter Taps**  
 Id: AM\_band\_pass\_filter\_taps  
 Tap Type: Complex  
 Gain: 500m  
 Sample Rate (Hz): 48k  
 Low Cutoff Freq (Hz): -3.2k  
 High Cutoff Freq (Hz): 3.2k  
 Transition Width (Hz): 200  
 Window: Hamming  
 Beta: 6.76

**Band-pass Filter Taps**  
 Id: FM\_band\_pass\_filter\_taps  
 Tap Type: Complex  
 Gain: 1  
 Sample Rate (Hz): 48k  
 Low Cutoff Freq (Hz): -10k  
 High Cutoff Freq (Hz): 10k  
 Transition Width (Hz): 500  
 Window: Hamming  
 Beta: 6.76

About 75db other SB suppression on 1kHz tone

Filters have different bandwidth and gain based on mode.

**QT GUI Chooser**  
 Id: mc  
 Label: Mod Content  
 Num Options: 5  
 Default option: 0  
 Option 0: 0  
 Label 0: Wavefile  
 Option 1: 1  
 Label 1: Wavefile + PL Tone  
 Option 2: 2  
 Label 2: Tone  
 Option 3: 3  
 Label 3: Tone + PL Tone  
 Option 4: 4  
 Label 4: None  
 1,0,1,1

**QT GUI Entry**  
 Id: wavefile  
 Label: Wavefile  
 Default Value: /hom...-at.wav  
 1,1,1,1

**QT GUI Entry**  
 Id: tone  
 Label: Tone(Hz)  
 Default Value: 1k  
 1,2,1,1

**Wav File Source**  
 File: ...-hackrf/ve7it-at.wav  
 Repeat: Yes  
 Voice,1kHz,DTMF @ 48kHz

**Multiply Const**  
 Constant: 1  
 Mic Gain

**Signal Source**  
 Sample Rate: 48k  
 Waveform: Cosine  
 Frequency: 141.3  
 Amplitude: 130m  
 Offset: 0  
 Initial Phase (Radians): 0  
 PL is 650hz dev

**Multiply Const**  
 Constant: 884.956m  
 adj for pl+wav

**Signal Source**  
 Sample Rate: 48k  
 Waveform: Cosine  
 Frequency: 1k  
 Amplitude: 1  
 Offset: 0  
 Initial Phase (Radians): 0  
 Amplitude of 1 results in the max deviation setup in the NBFM transmit block or 100% modulation in the other modes.

**Multiply Const**  
 Constant: 884.956m  
 adj for pl+tone

**Null Source**  
 No Modulation or possible input from line in or system microphone

**QT GUI Range**  
 Id: output\_lvl  
 Label: Output Level  
 Default Value: 24  
 Start: 0  
 Stop: 47  
 Step: 1  
 2,0,1,1

**QT GUI Toggle Switch**  
 Id: output\_amp  
 Label: HackRF Output Amp  
 Default Value: 0  
 Initial State: Released  
 On Value: 14  
 Off Value: 0  
 2,1,1,1

**QT GUI Chooser**  
 Id: pl\_freq  
 Label: PL Tone  
 Num Options: List  
 Options: [67.0, "71.9, 74.4...  
 Labels: ["67.0", "71.9", "...  
 Default option: 141.3  
 2,2,1,1

