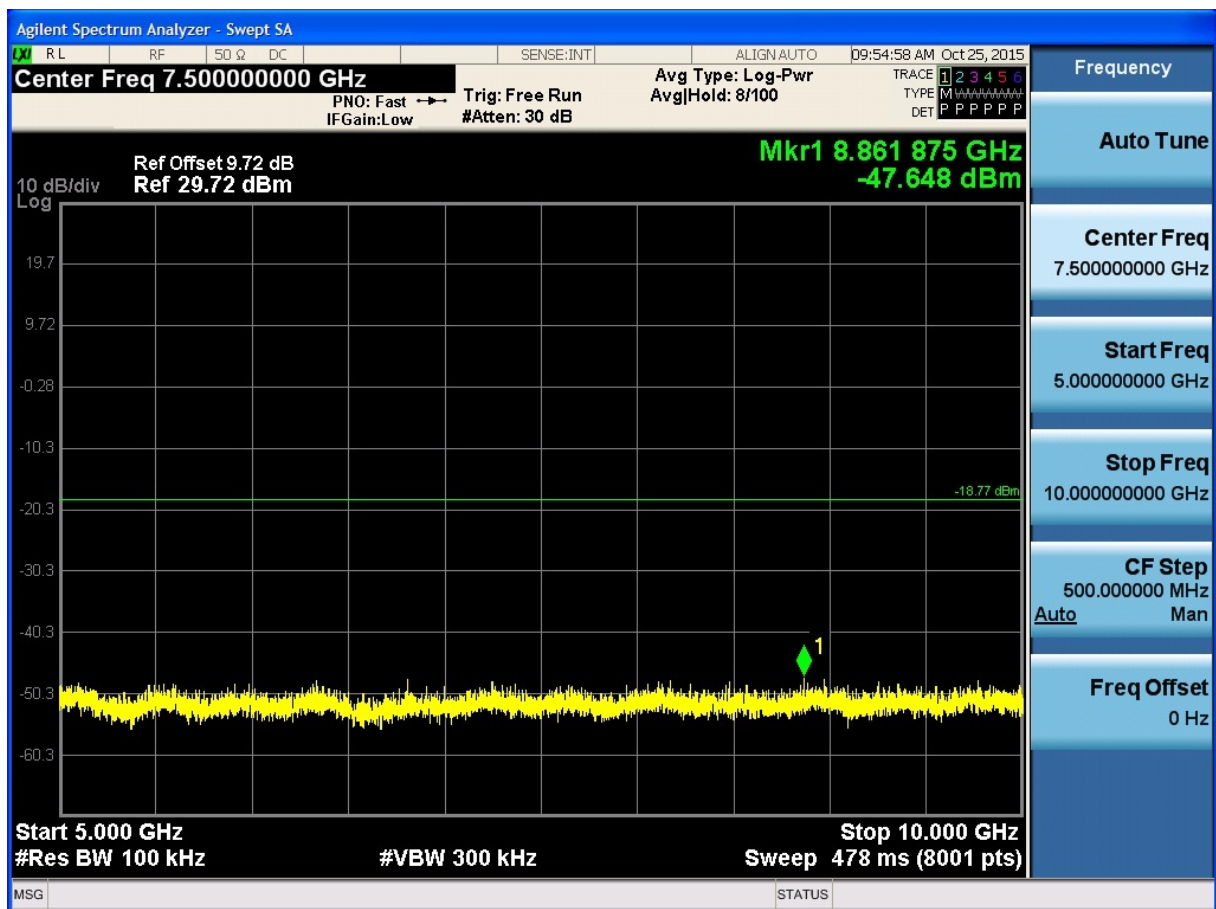
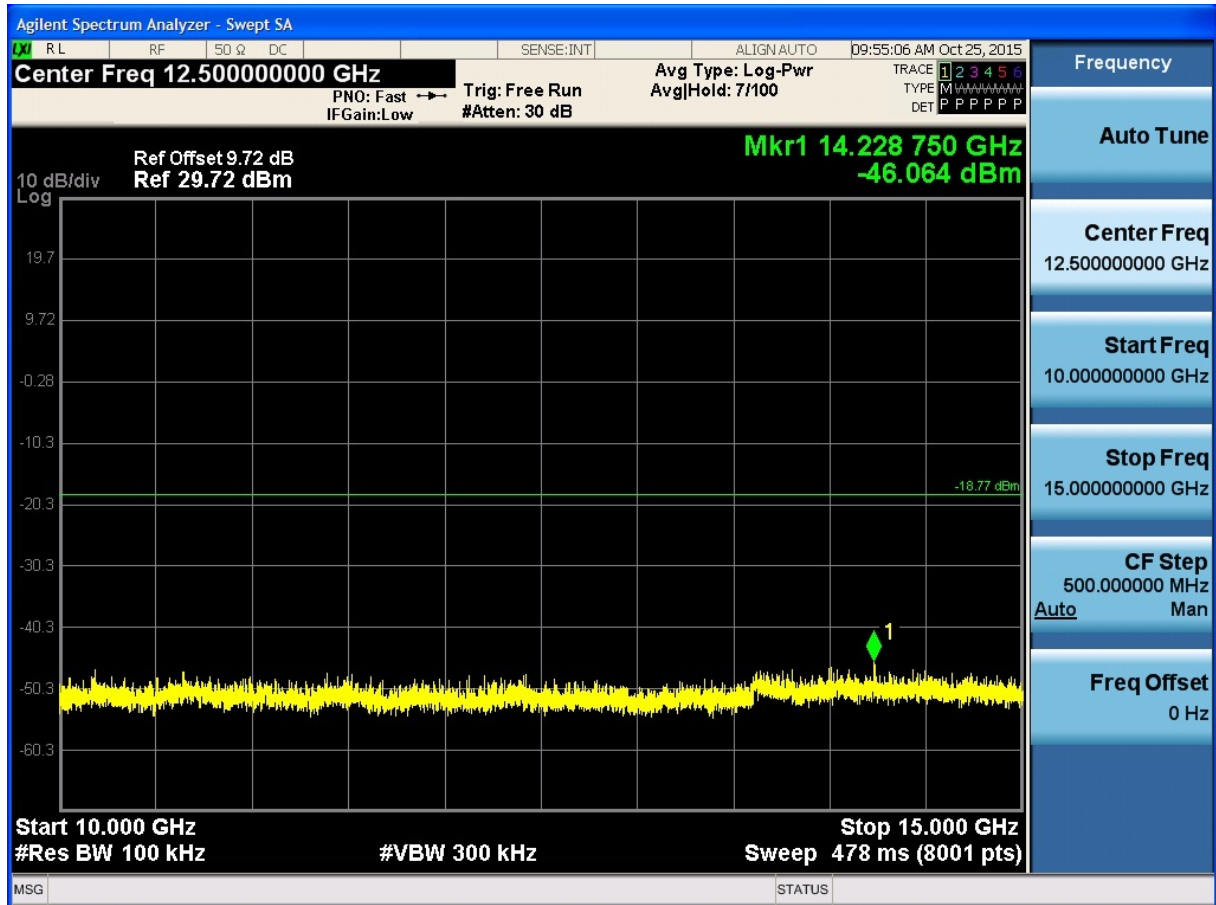


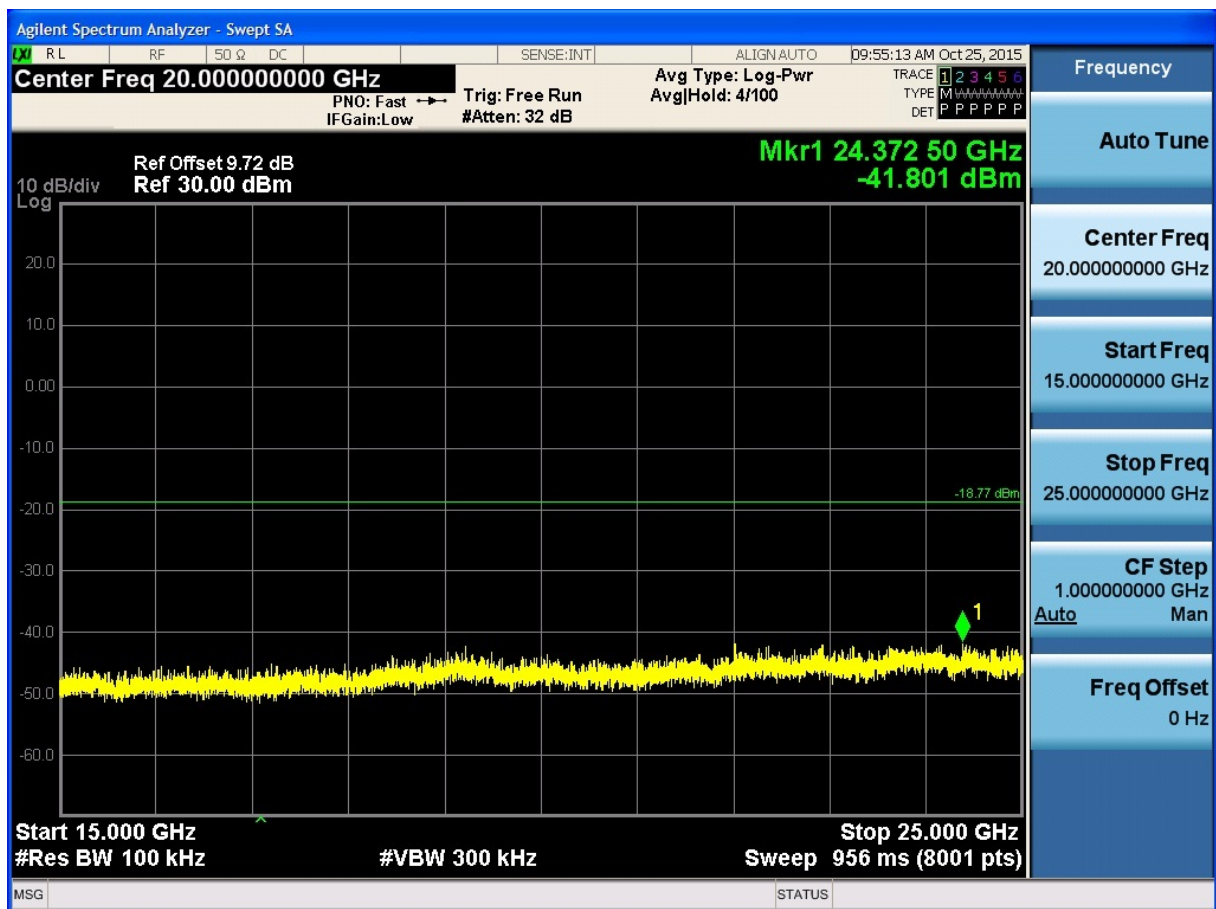
(Plot 4.9.2 A3: Channel 00: 2402MHz @ @ 8DPSK)



(Plot 4.9.2 A4: Channel 00: 2402MHz @ @ 8DPSK)



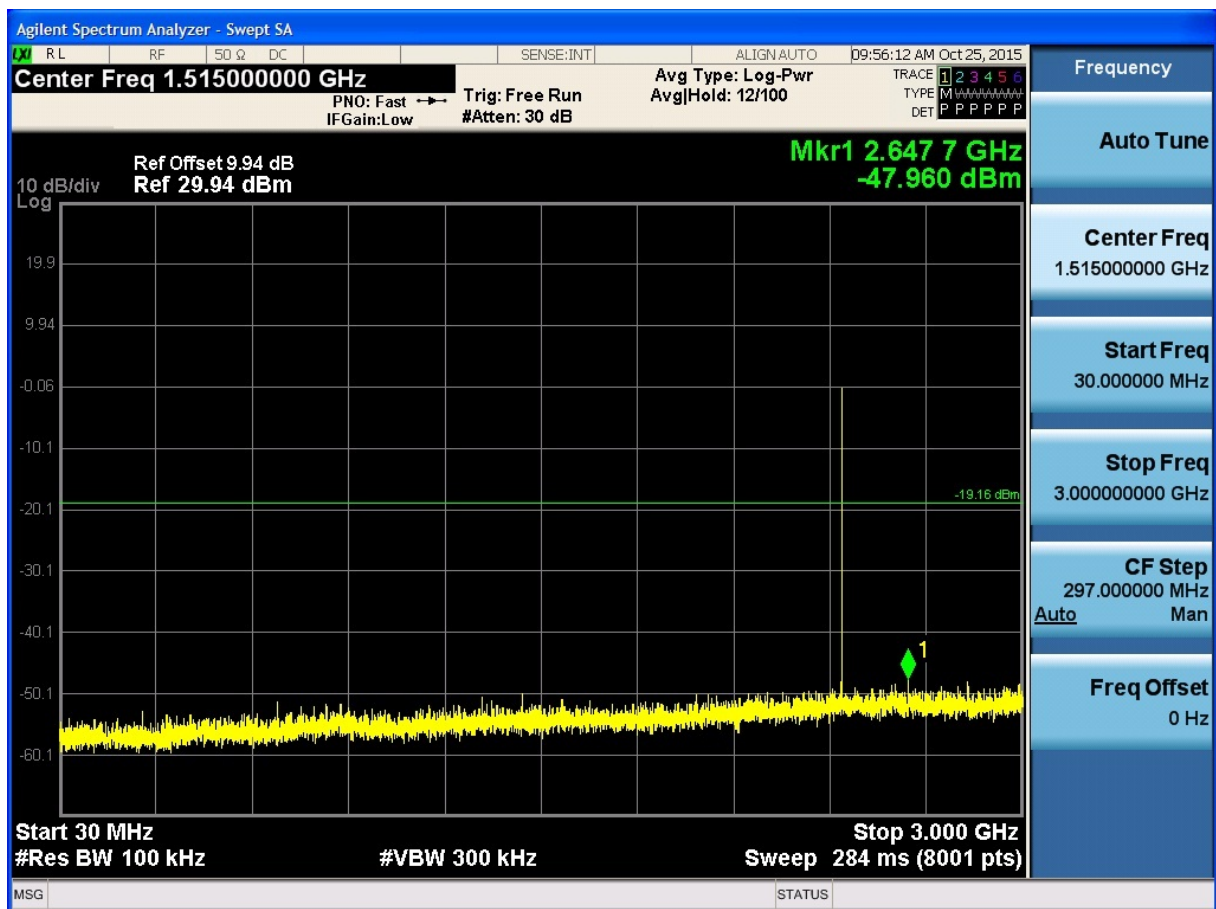
(Plot 4.9.2 A5: Channel 00: 2402MHz @ @ 8DPSK)



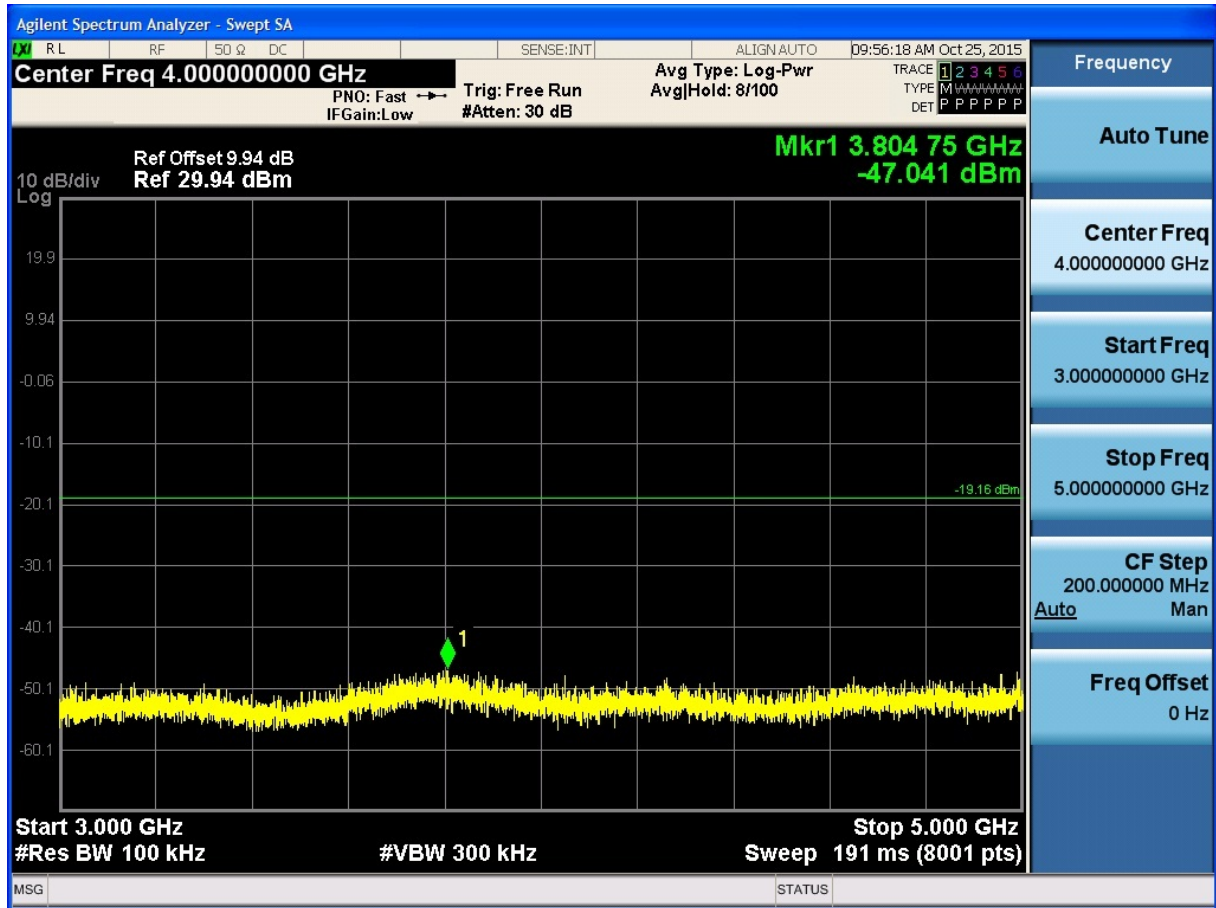
(Plot 4.9.2 A6: Channel 00: 2402MHz @ @ 8DPSK)



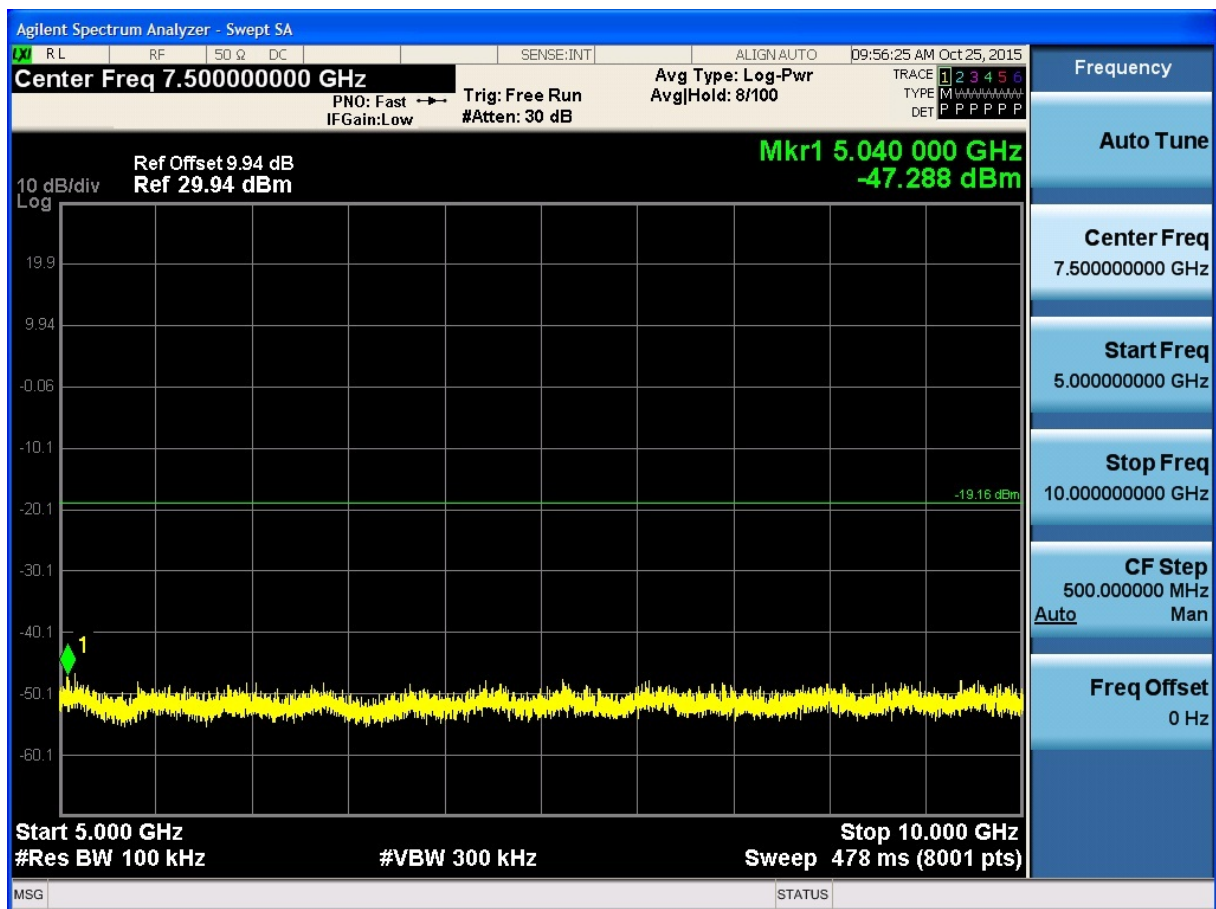
(Plot 4.9.2 B1: Channel 39: 2441MHz @ @ 8DPSK)



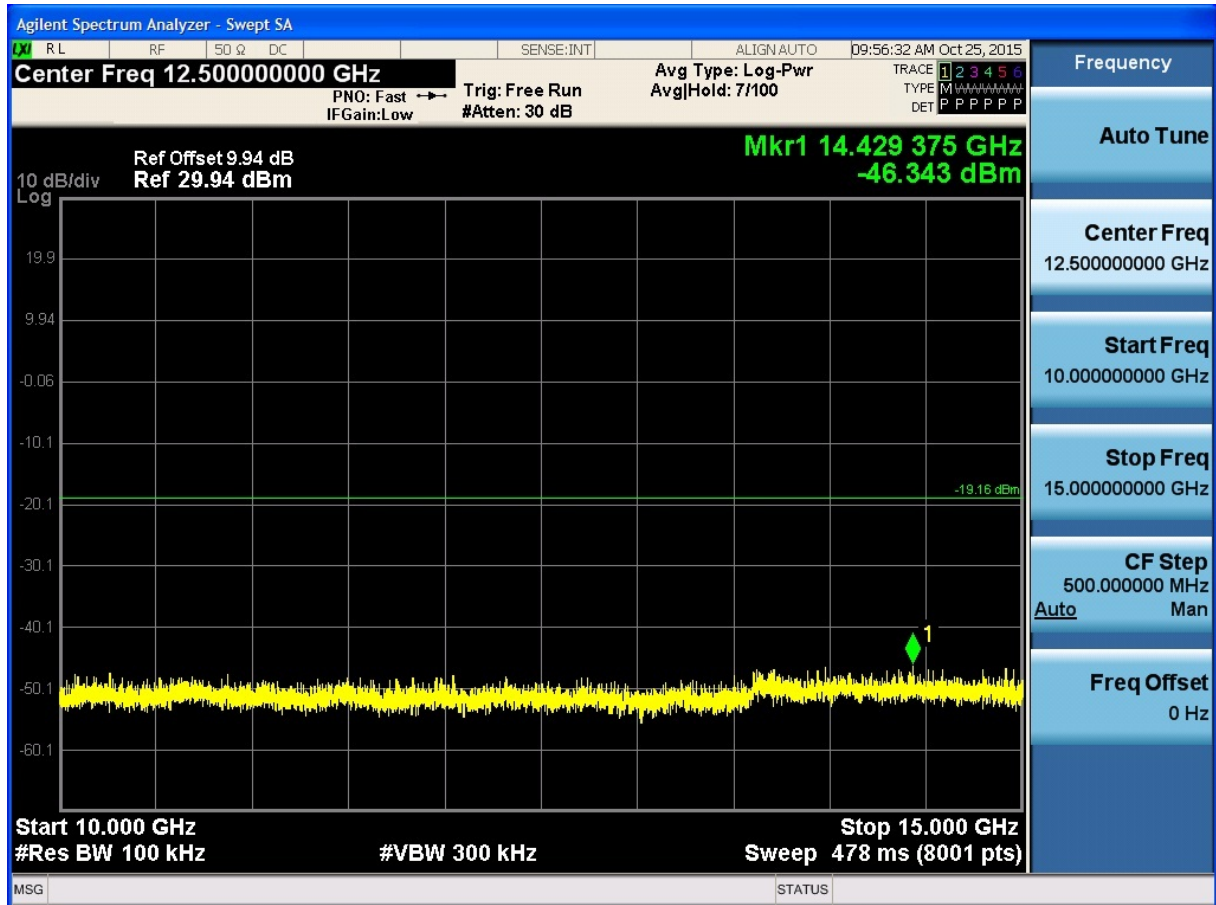
(Plot 4.9.2 B2: Channel 39: 2441MHz @ @ 8DPSK)



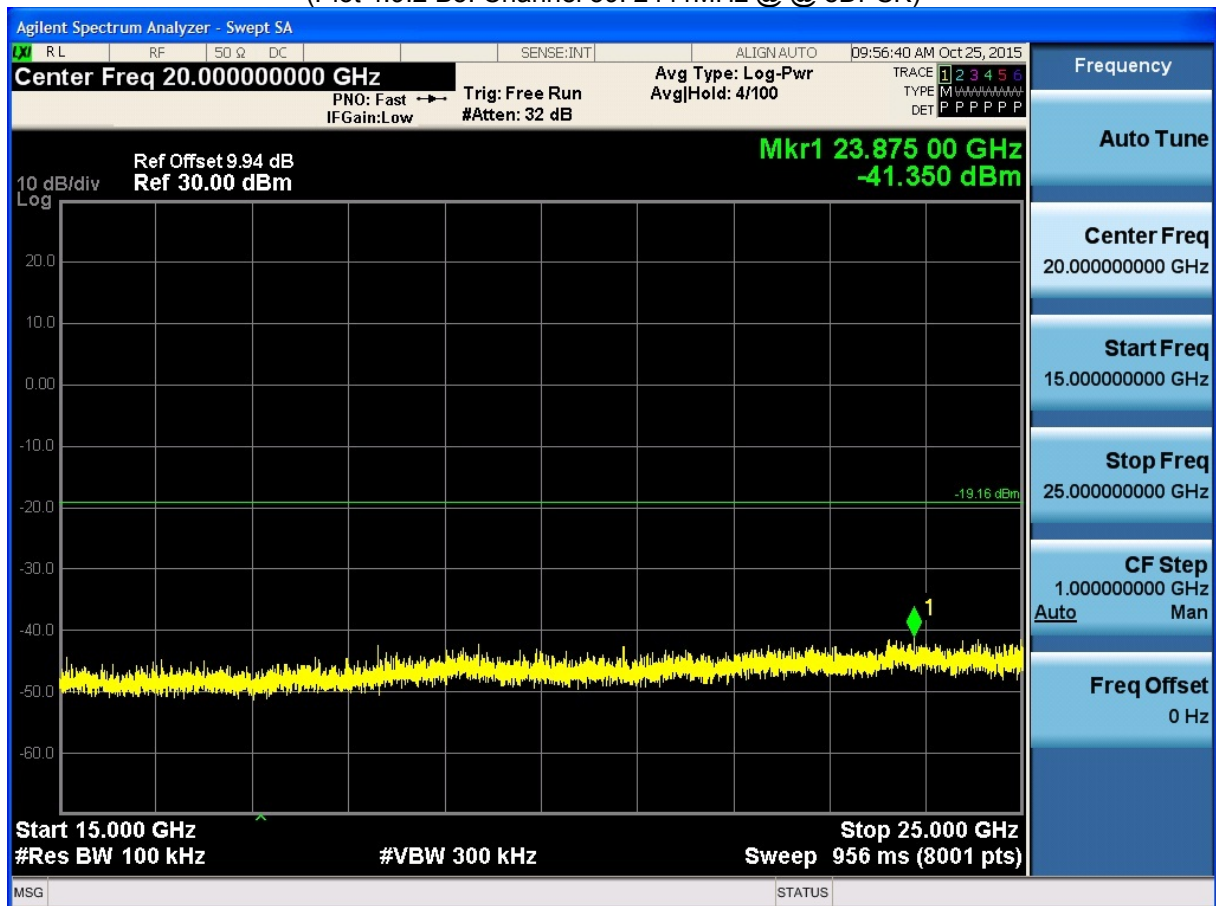
(Plot 4.9.2 B3: Channel 39: 2441MHz @ @ 8DPSK)



(Plot 4.9.2 B4: Channel 39: 2441MHz @ @ 8DPSK)



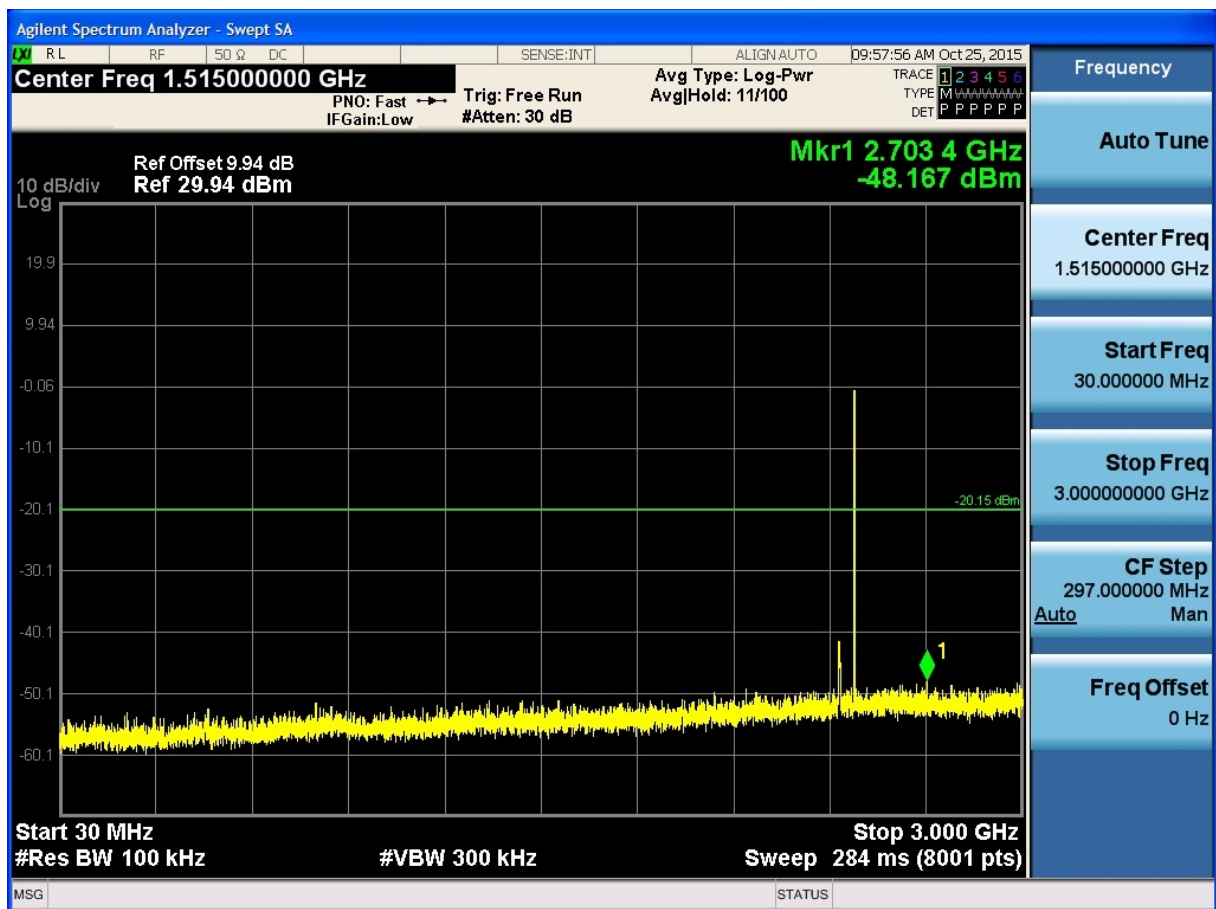
(Plot 4.9.2 B5: Channel 39: 2441MHz @ @ 8DPSK)



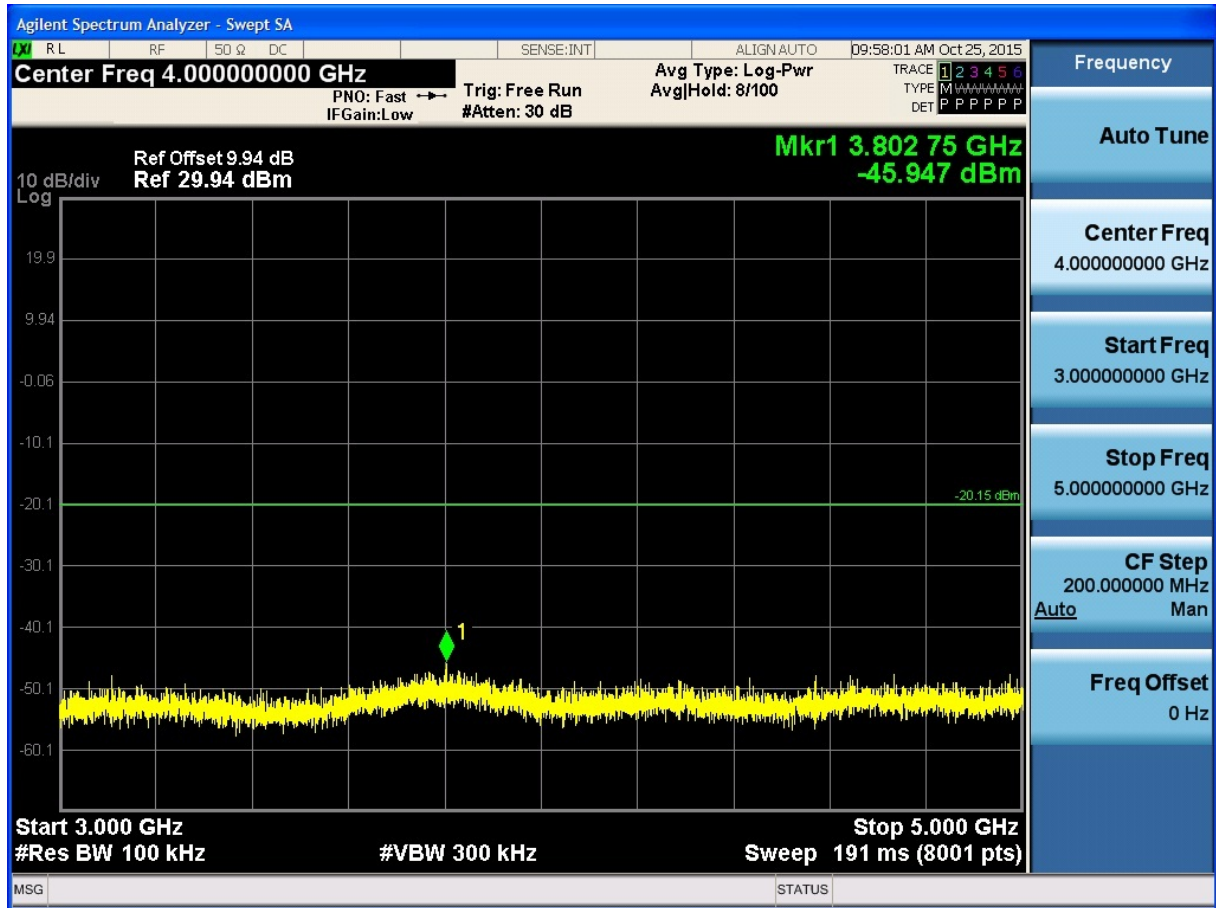
(Plot 4.9.2 B6: Channel 39: 2441MHz @ @ 8DPSK)



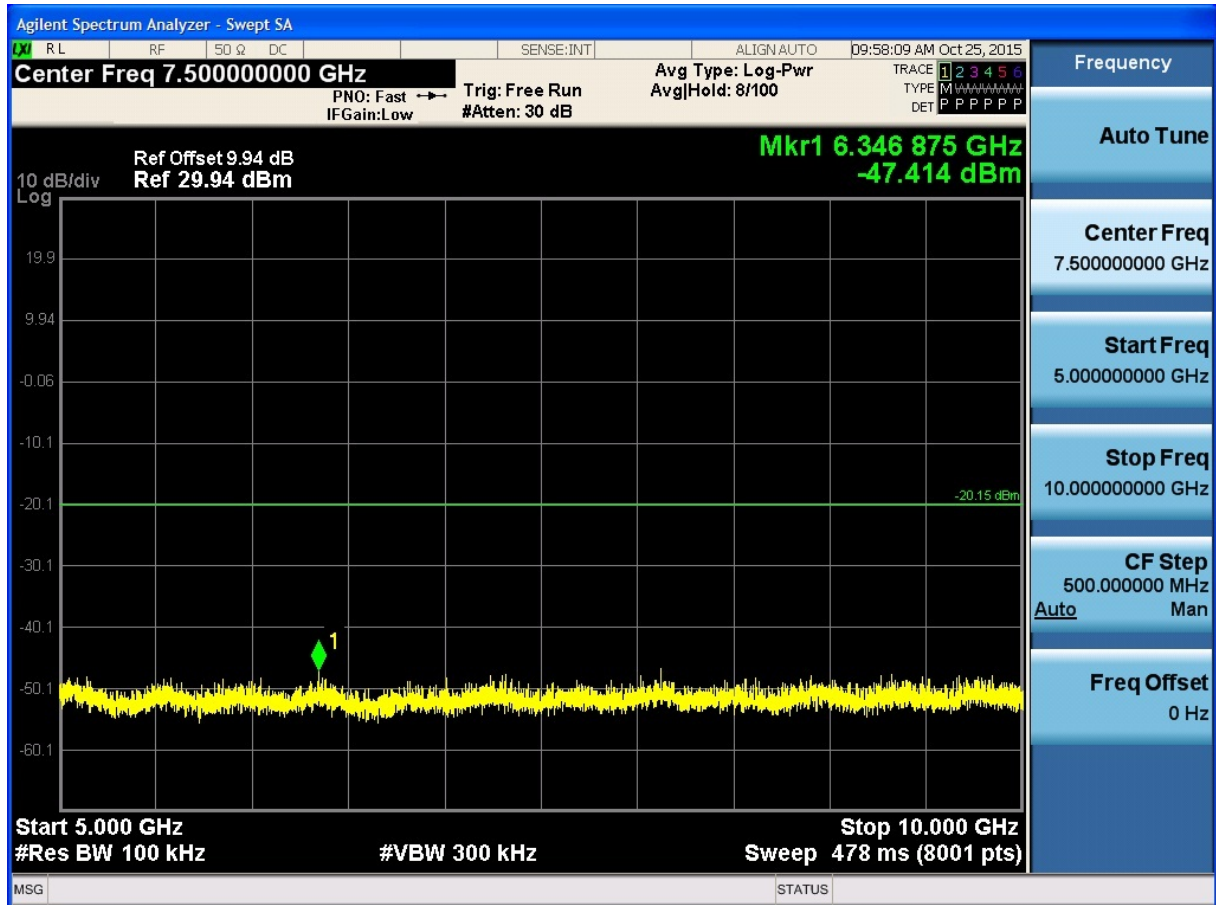
(Plot 4.9.2 C1: Channel 78: 2480MHz @ @ 8DPSK)



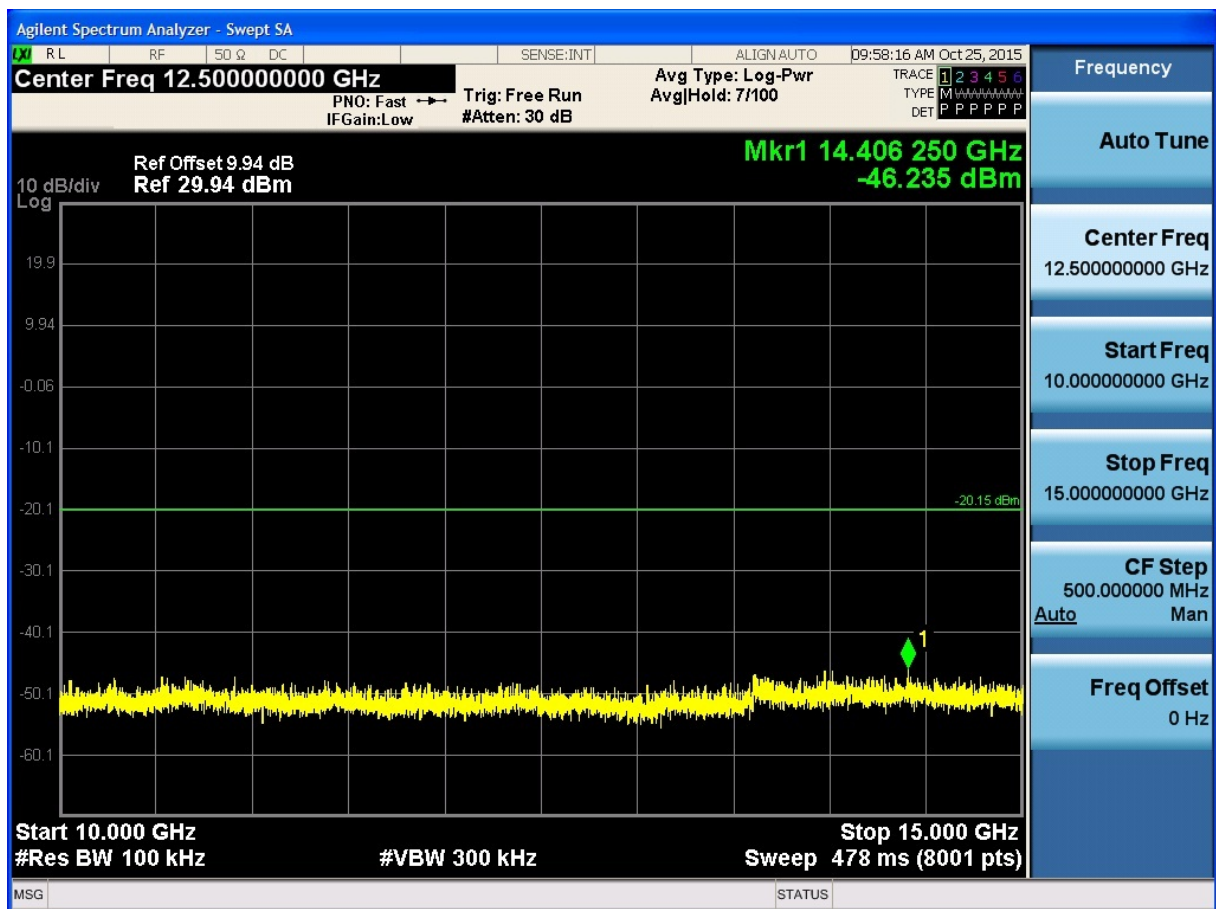
(Plot 4.9.2 C2: Channel 78: 2480MHz @ @ 8DPSK)



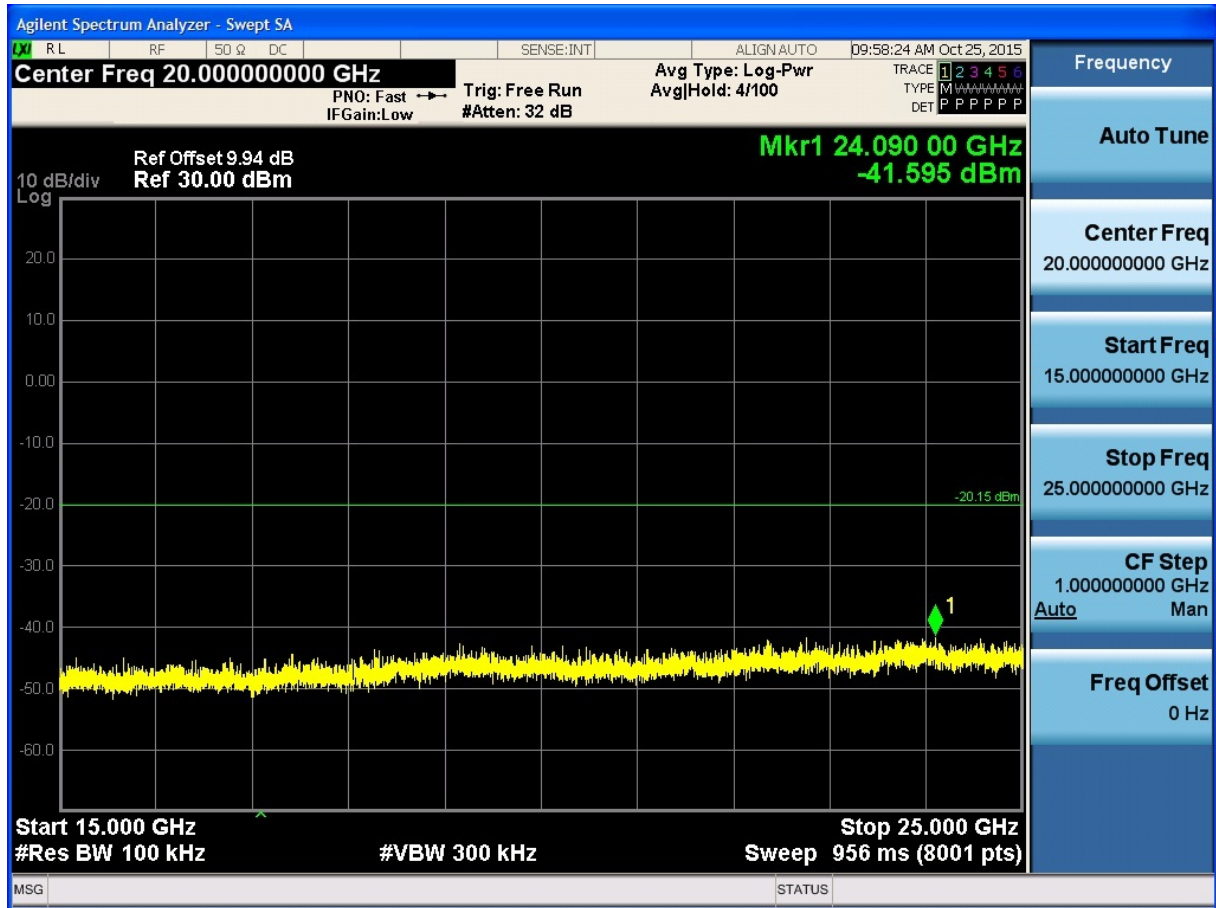
(Plot 4.9.2 C3: Channel 78: 2480MHz @ @ 8DPSK)



(Plot 4.9.2 C4: Channel 78: 2480MHz @ @ 8DPSK)



(Plot 4.9.2 C5: Channel 78: 2480MHz @ @ 8DPSK)



(Plot 4.9.2 C6: Channel 78: 2480MHz @ @ 8DPSK)

4.10 Pseudorandom Frequency Hopping Sequence

TEST APPLICABLE

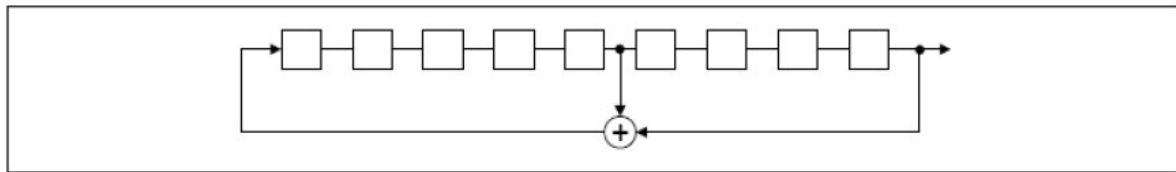
For 47 CFR Part 15C section 15.247 (a)(1) requirement:

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

EUT Pseudorandom Frequency Hopping Sequence Requirement

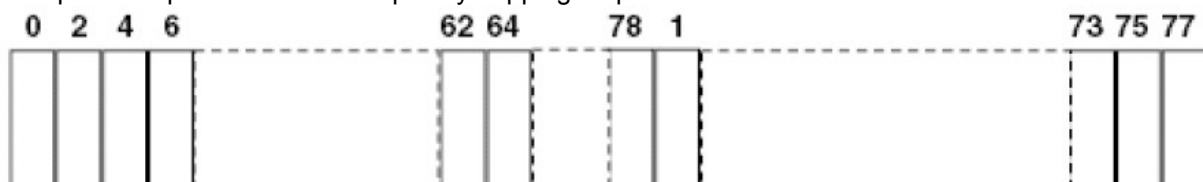
The pseudorandom frequency hopping sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first one of 9 consecutive ones, for example: the shift register is initialized with nine ones.

- Number of shift register stages: 9
- Length of pseudo-random sequence: $2^9 - 1 = 511$ bits
- Longest sequence of zeros: 8 (non-inverted signal)



Linear Feedback Shift Register for Generation of the PRBS sequence

An example of pseudorandom frequency hopping sequence as follows:



Each frequency used equally on the average by each transmitter.

The system receiver has input bandwidths that match the hopping channel bandwidths of their corresponding transmitter and shifts frequencies in synchronization with the transmitted signals.

4.11 Antenna Requirement

Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (c), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Refer to statement below for compliance

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

Measurement

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module. For normal BT devices, the GFSK mode is used.

Conducted power refer ANSI C63.10 :2009 Section 7.8.5 Output power test procedure for frequency-hopping spread-spectrum (FHSS) devices

Radiated power refer to ANSI C63.10 :2009 Section 6.6.4 Radiated emissions tests.

Measurement parameters

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	1MHz
Video bandwidth:	3MHz
Trace-Mode:	Max hold

Limits

FCC	IC
Antenna Gain	
6 dBi	

Results

T _{nom}	V _{nom}	Lowest Channel 2402 MHz	Middle Channel 2441 MHz	Highest Channel 2480 MHz
Conducted power [dBm] Measured with GFSK modulation		2.55	2.71	3.00
Radiated power [dBm] Measured with GFSK modulation		3.79	4.48	4.48
Gain [dBi] Calculated		1.24	1.77	1.48
Measurement uncertainty		± 0.6 dB (cond.) / ± 2.56 dB (rad.)		

5 Test Setup Photos of the EUT

Please refer to separated files for Test Setup Photos of the EUT.

6 External Photos of the EUT

Please refer to separated files for External Photos of the EUT.

7 Internal Photos of the EUT

Please refer to separated files for Internal Photos of the EUT.

.....**End of Report**.....