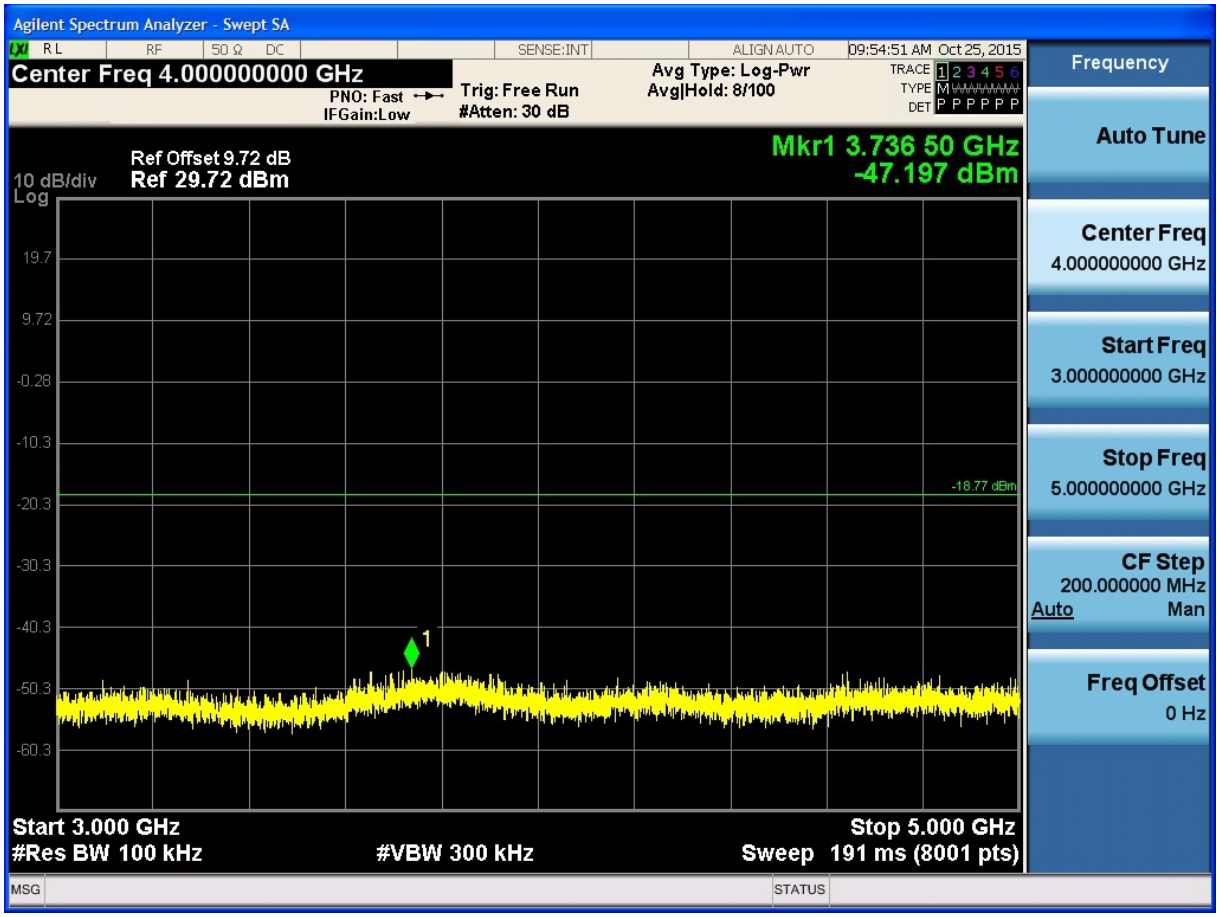
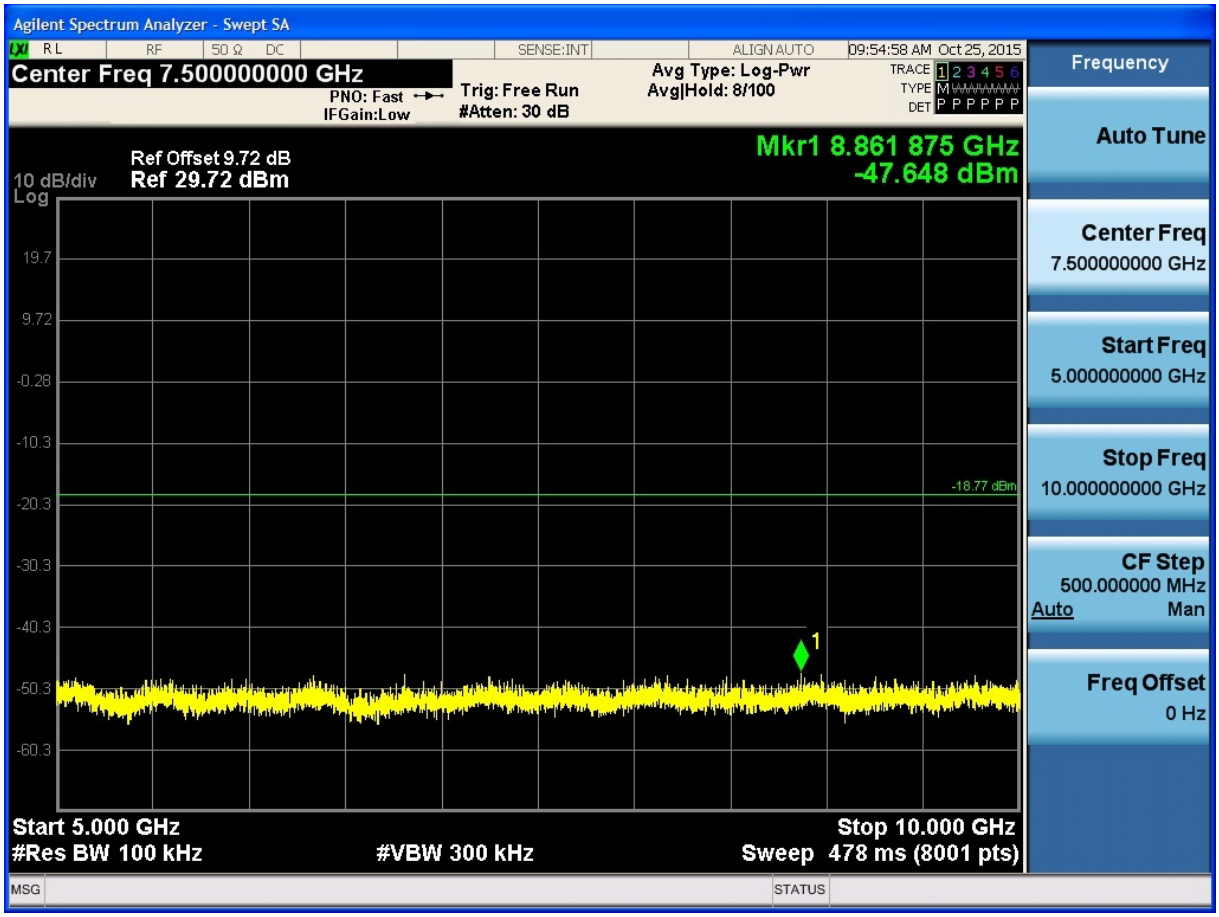
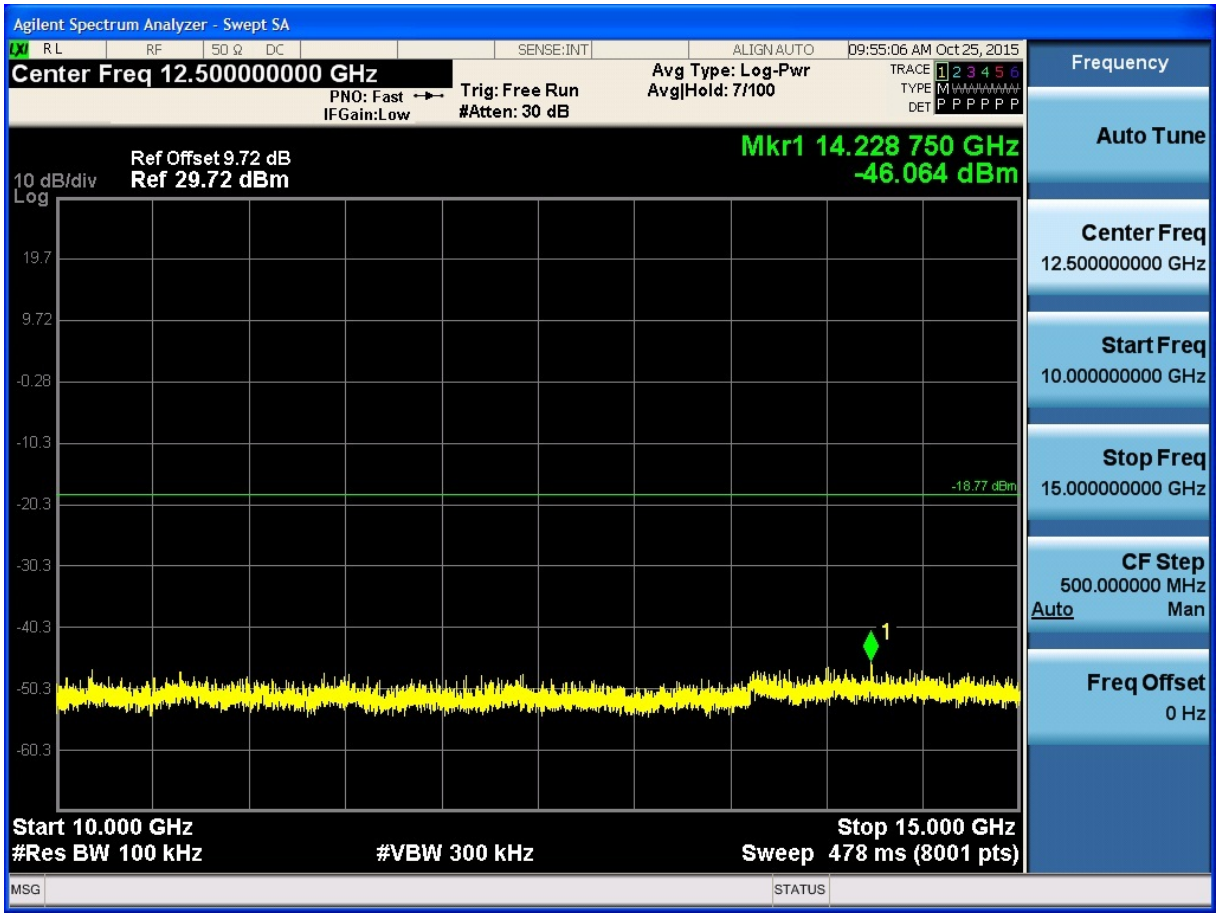


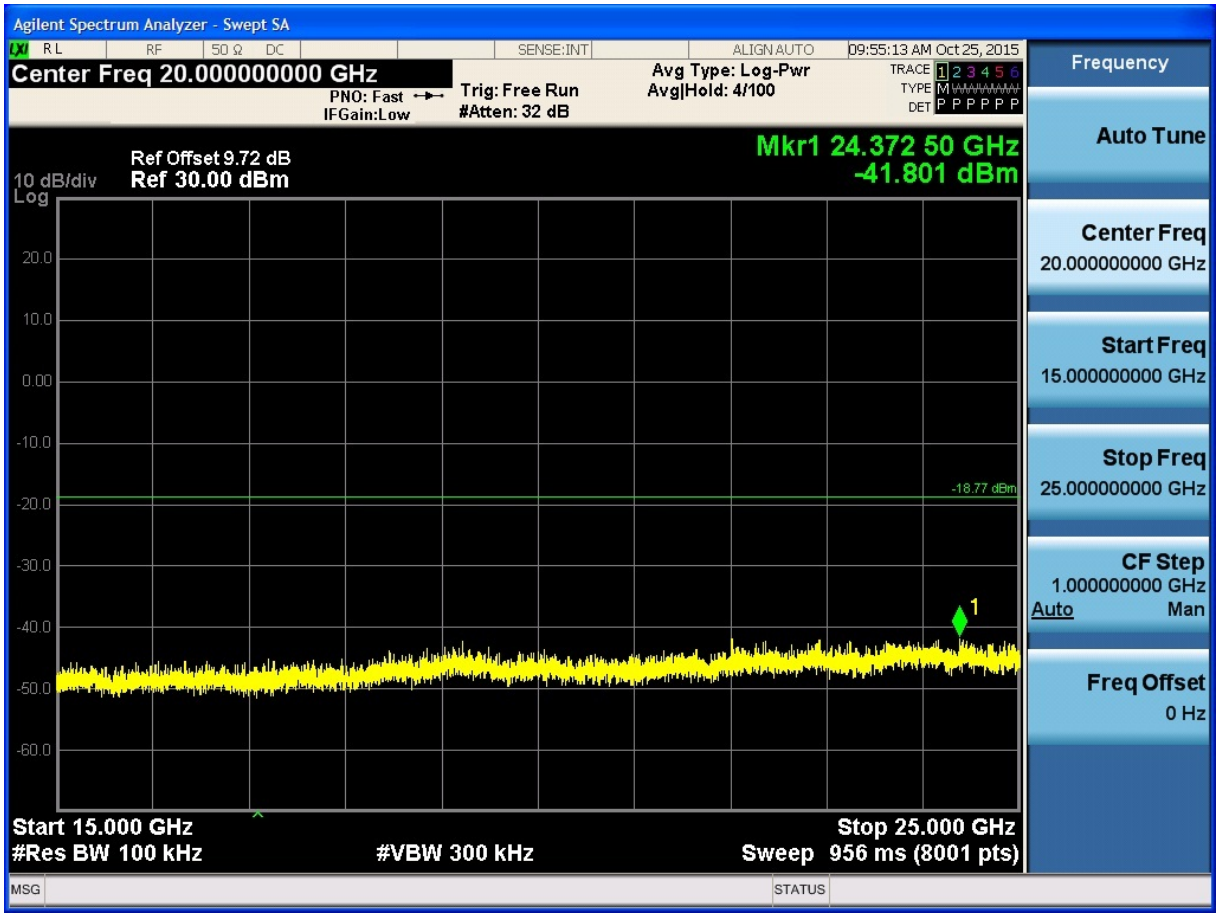

(Plot 4.9.2 A3: Channel 00: 2402MHz @ @ 8DPSK)




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

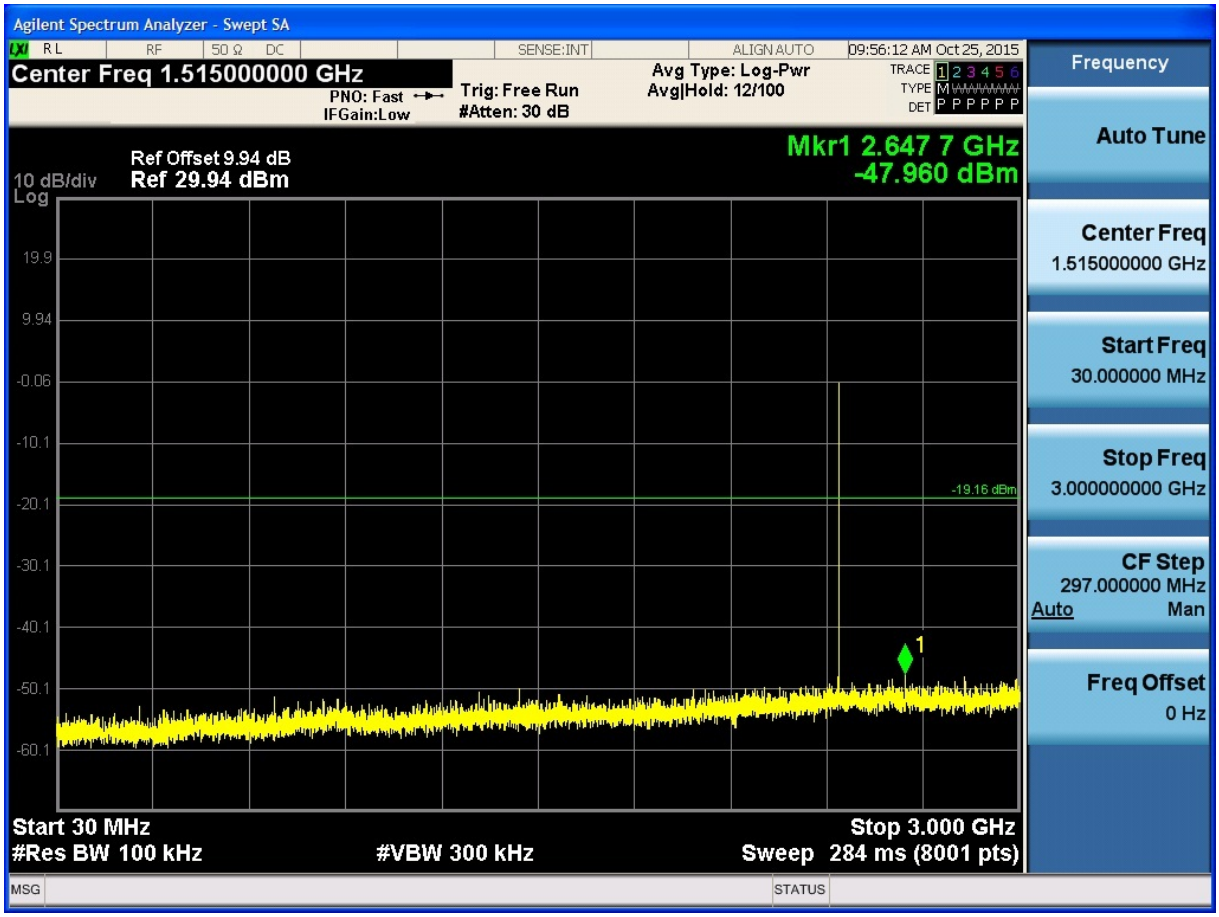



(Plot 4.9.2 A5: Channel 00: 2402MHz @ @ 8DPSK)

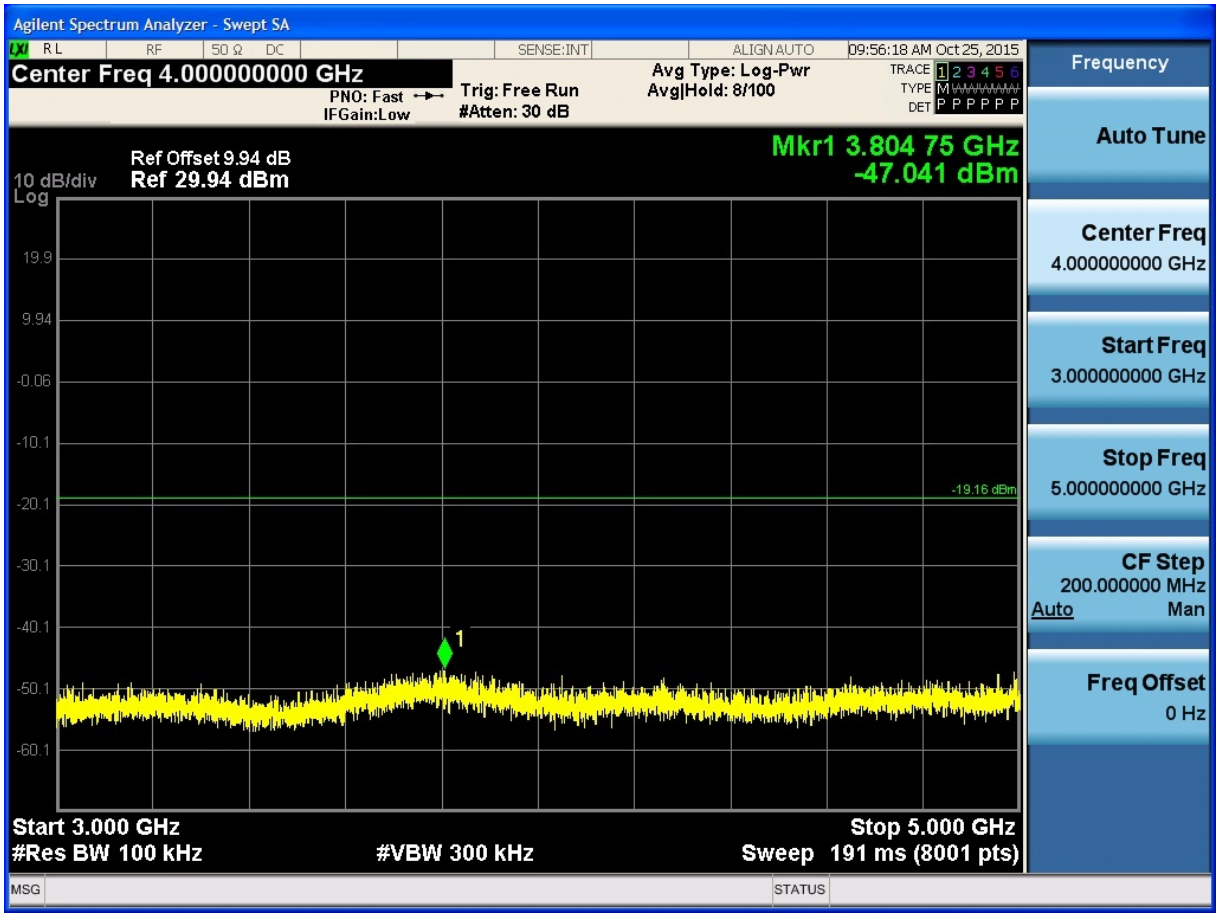



(Plot 4.9.2 A6: Channel 00: 2402MHz @ @ 8DPSK)

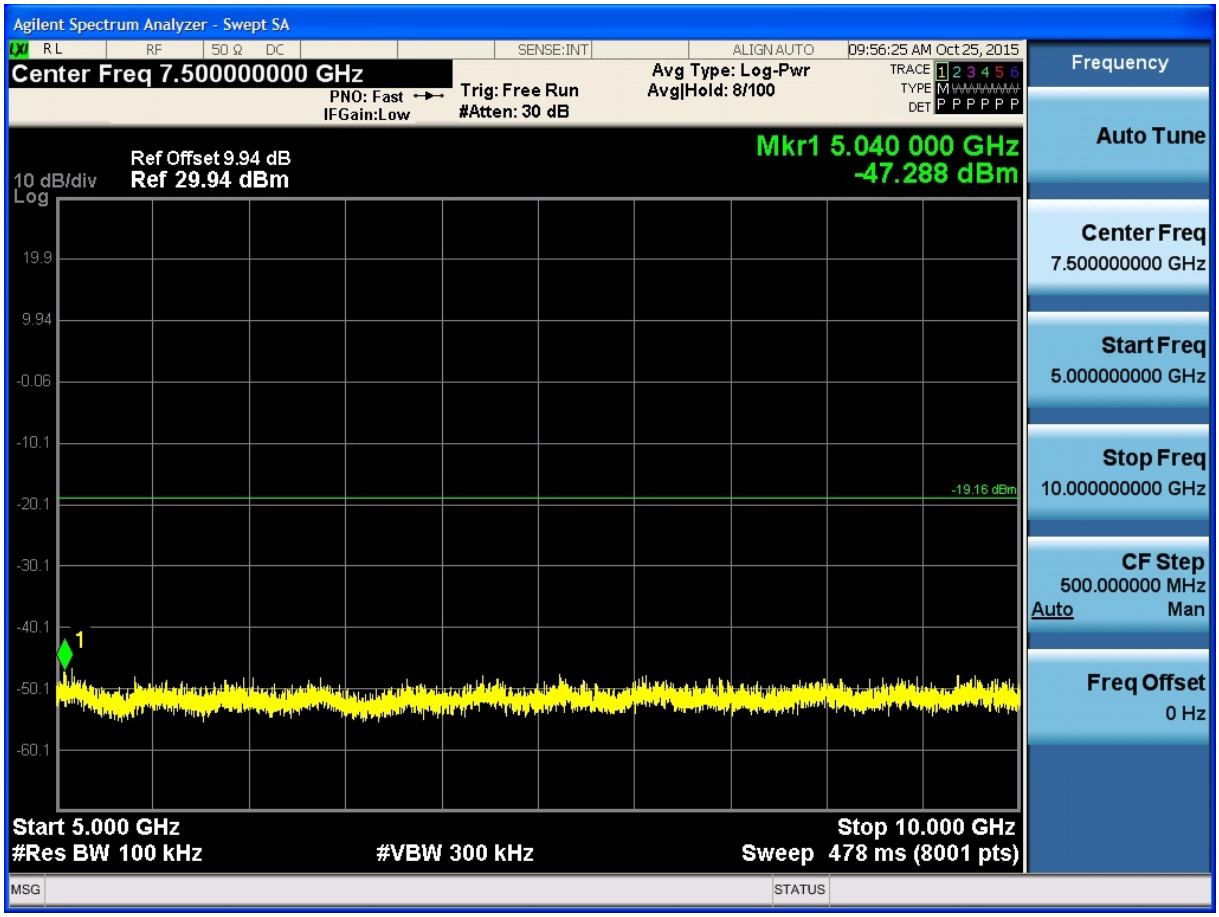

(Plot 4.9.2 B1: Channel 39: 2441MHz @ @ 8DPSK)



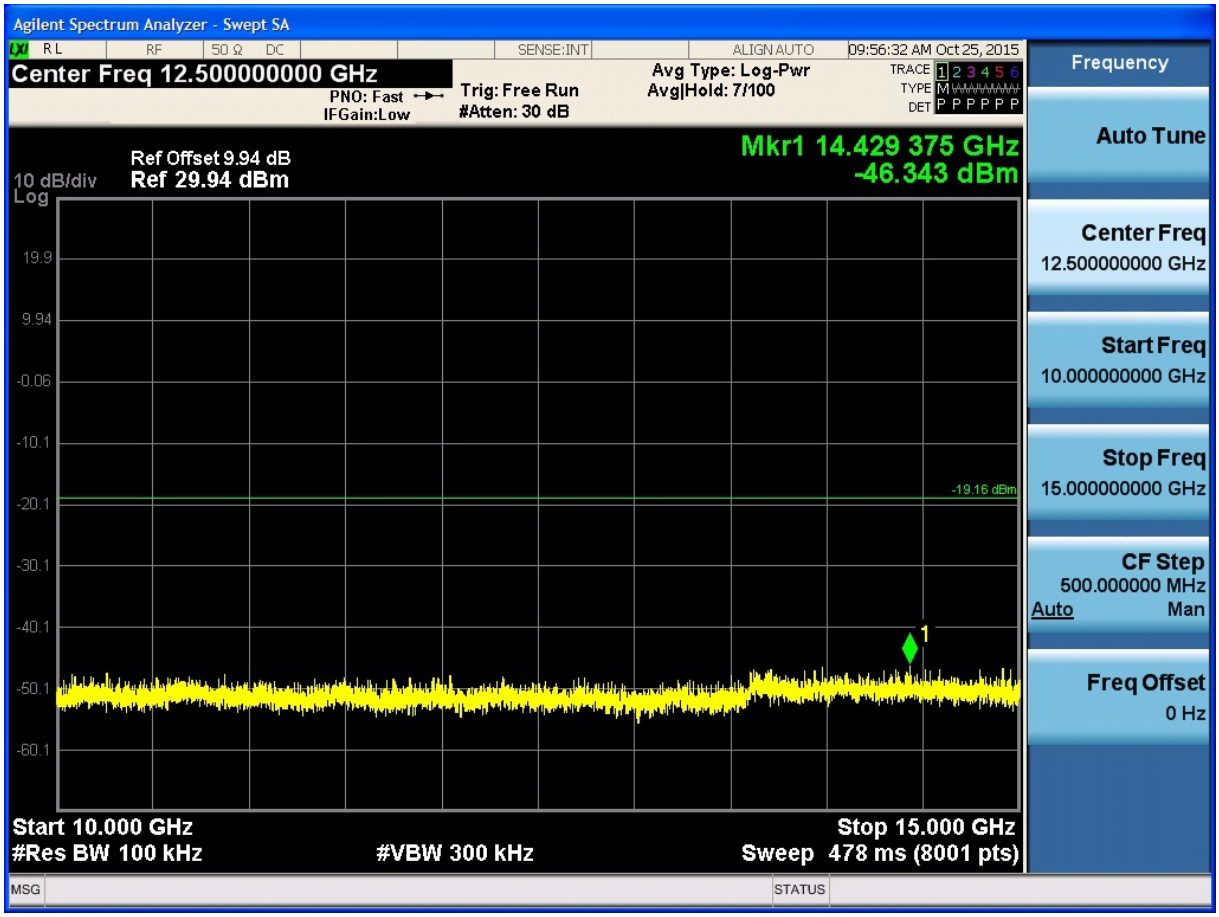

(Plot 4.9.2 B2: Channel 39: 2441MHz @ @ 8DPSK)



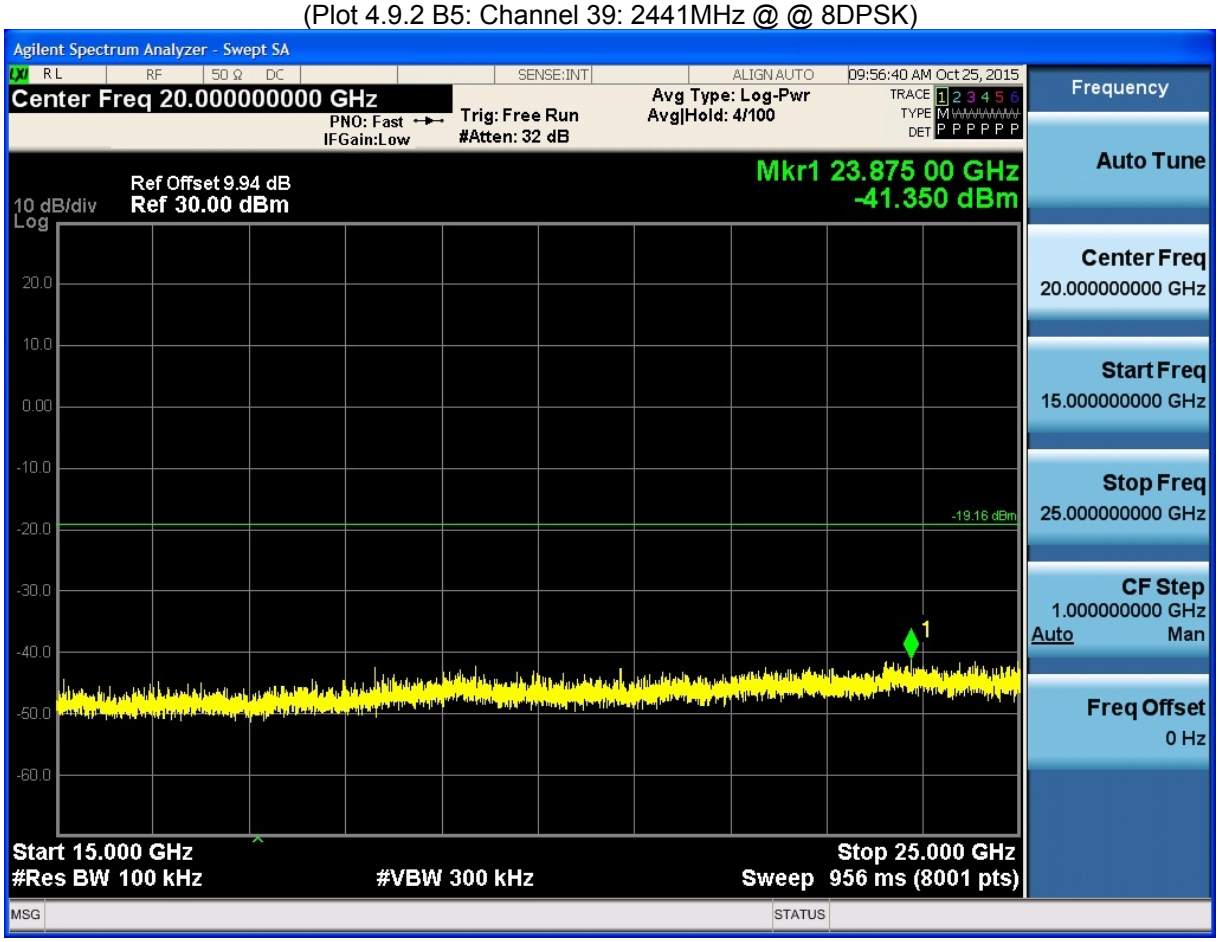

(Plot 4.9.2 B3: Channel 39: 2441MHz @ @ 8DPSK)




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

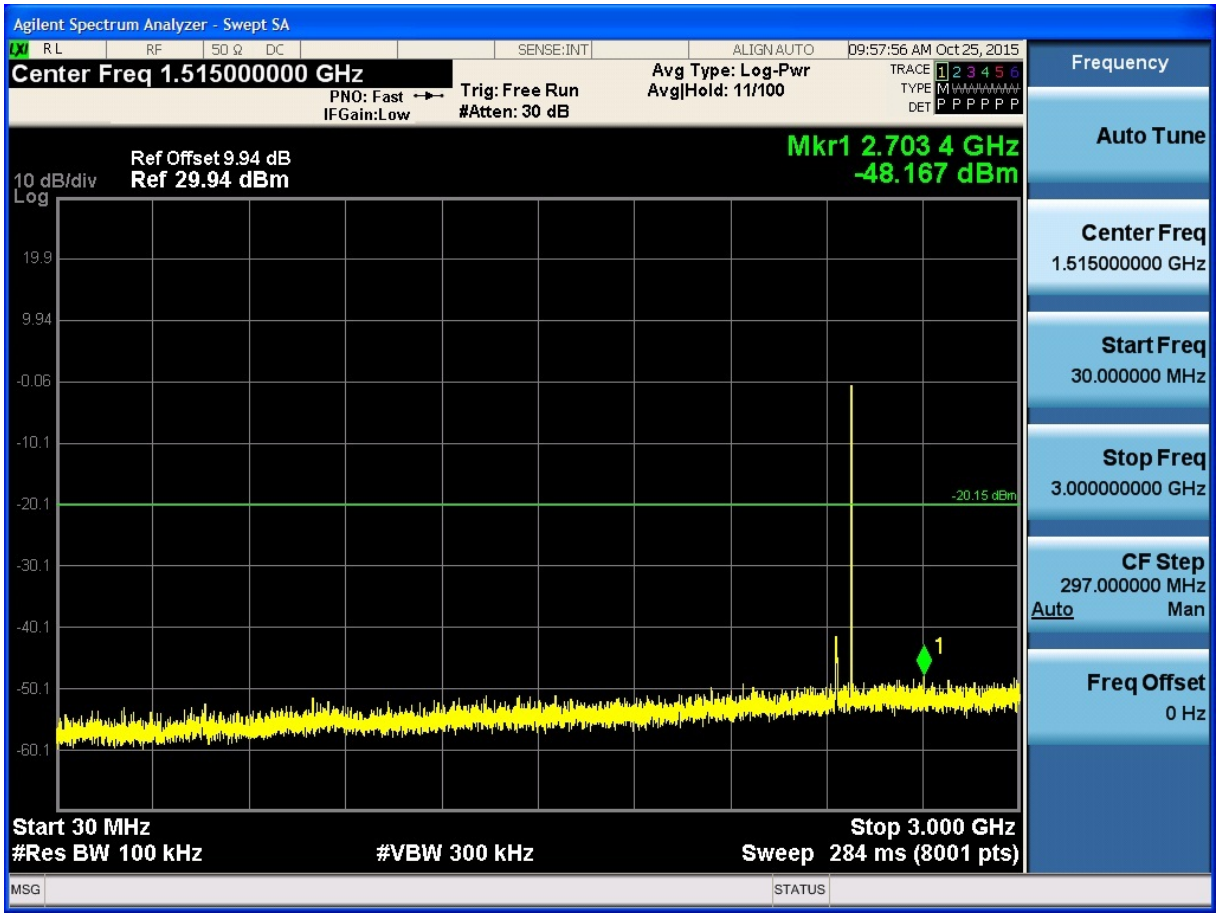



(Plot 4.9.2 B5: Channel 39: 2441MHz @ @ 8DPSK)

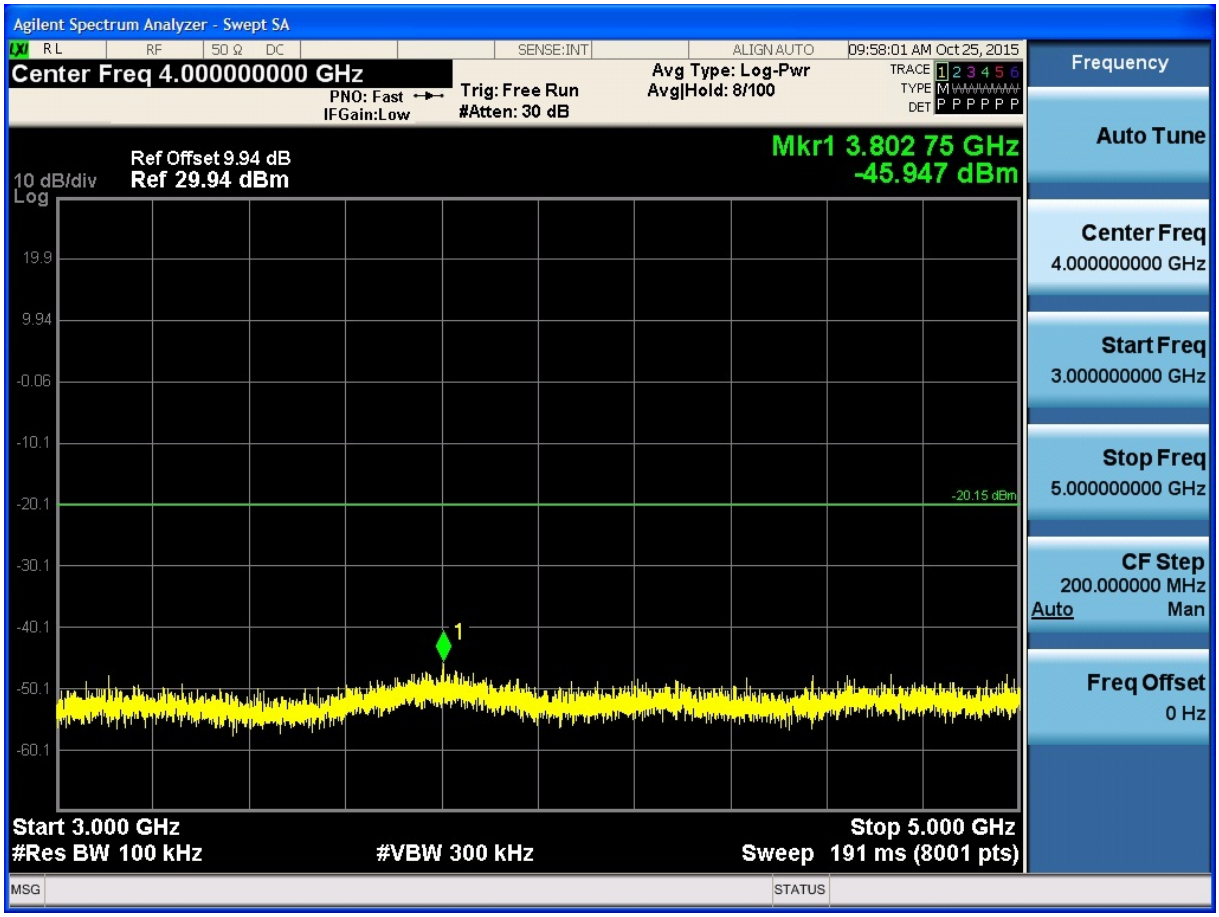



(Plot 4.9.2 B6: Channel 39: 2441MHz @ @ 8DPSK)

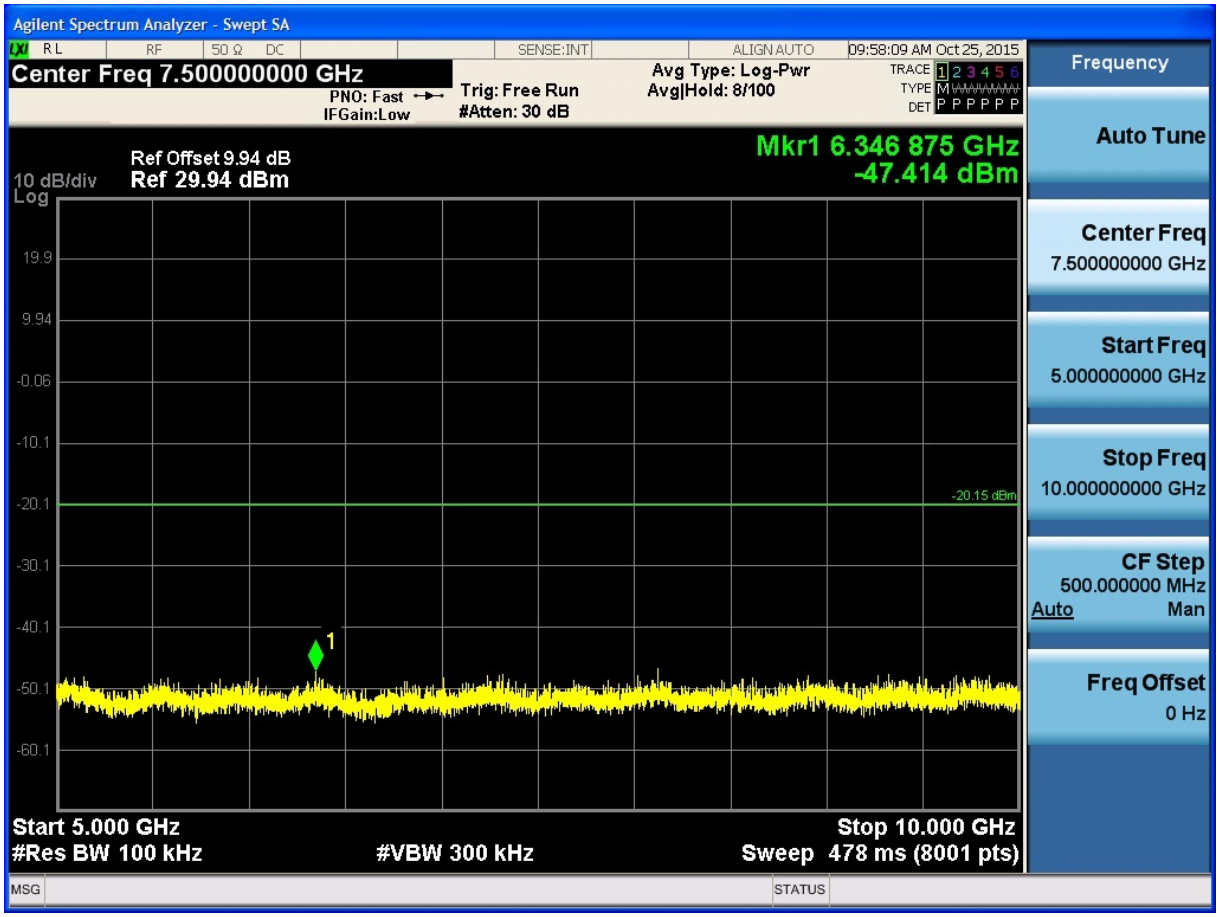

(Plot 4.9.2 C1: Channel 78: 2480MHz @ @ 8DPSK)



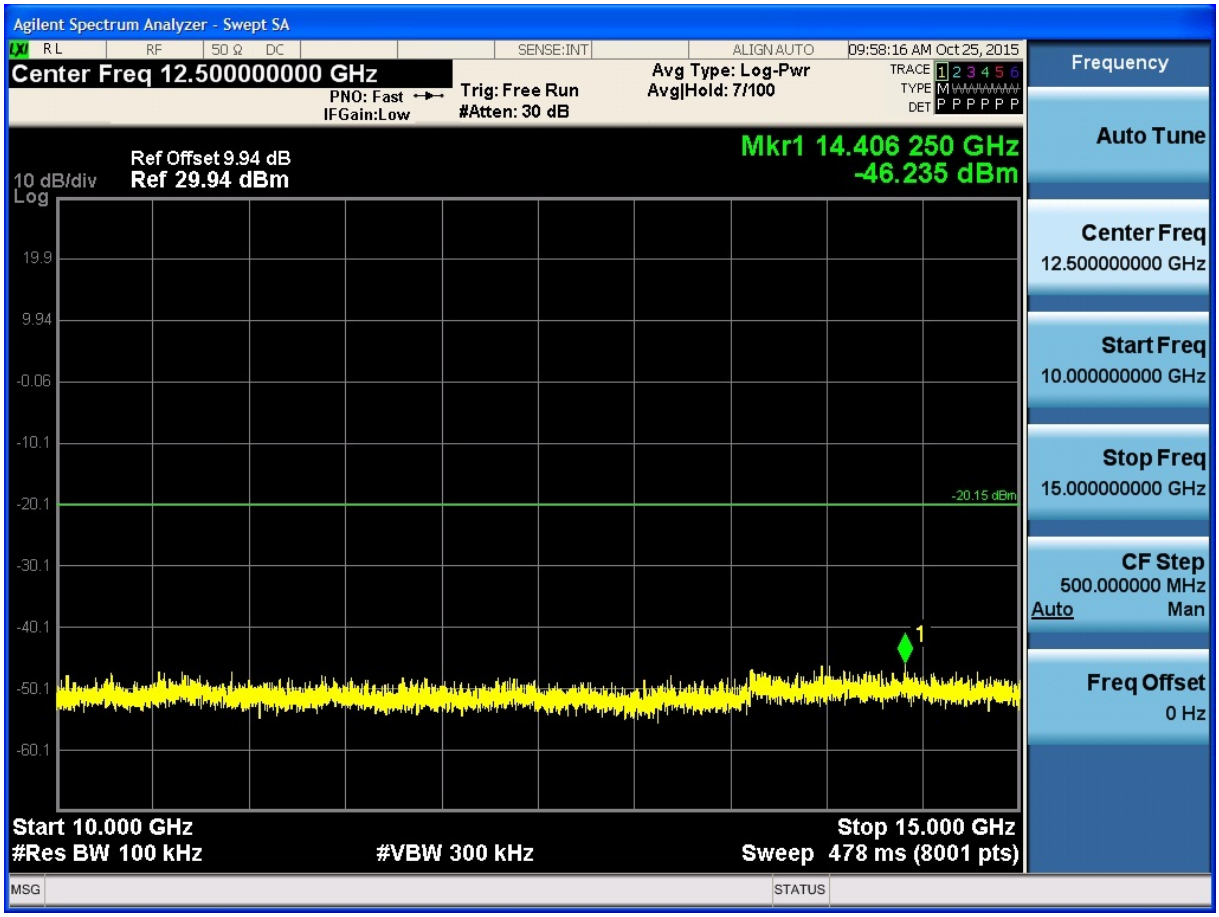

(Plot 4.9.2 C2: Channel 78: 2480MHz @ @ 8DPSK)



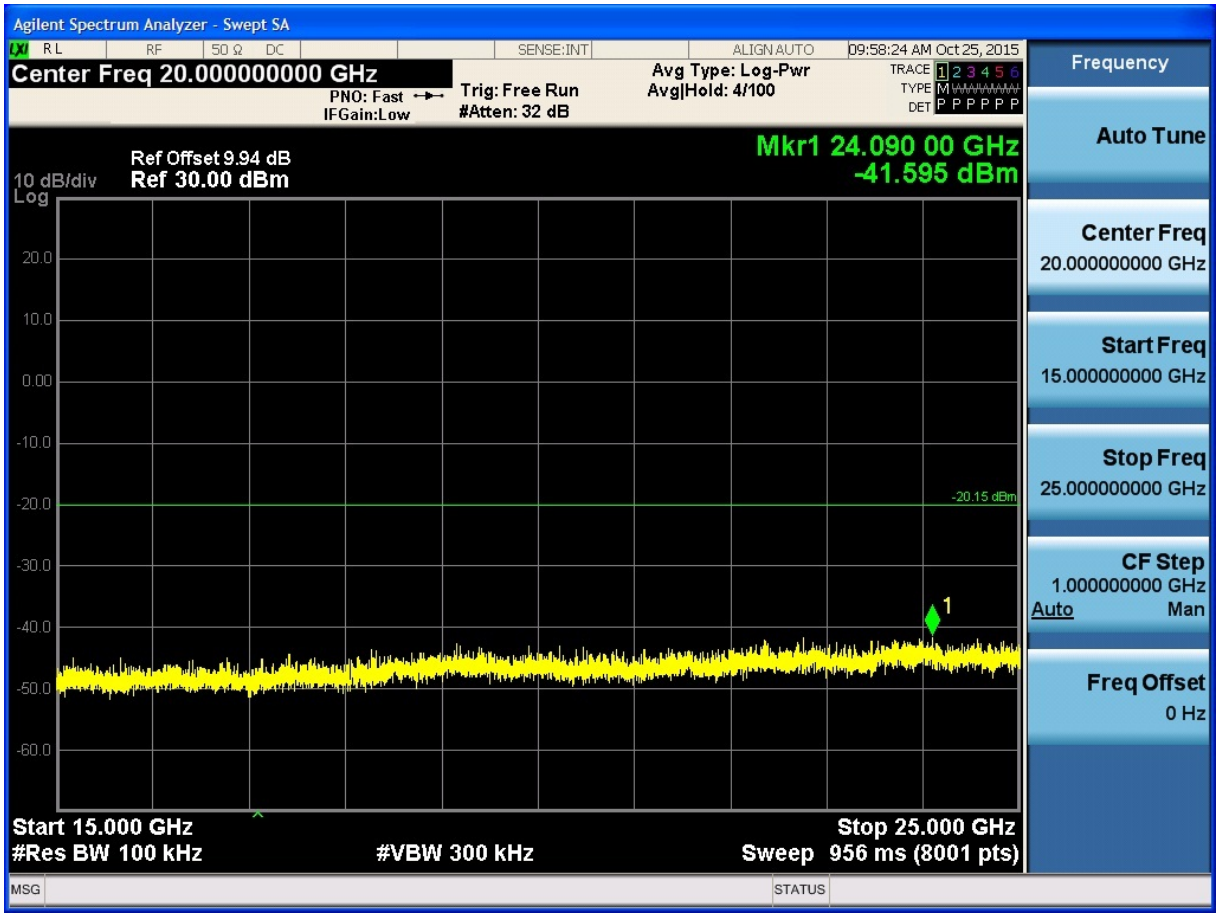

(Plot 4.9.2 C3: Channel 78: 2480MHz @ @ 8DPSK)




(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**

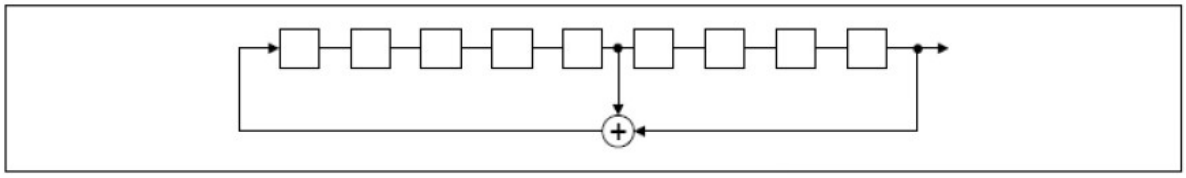
**For 47 CFR Part 15C section 15.247 (a)(1) requirement:**

Frequency hopping systems shall have hopping channel carrier fre-quencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hop-ping channel, whichever is greater. Al-ternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier fre-quencies 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 chan-nel frequencies that are selected at the system hopping rate from a pseudo ran-domly ordered list of hopping fre-quencies. Each frequency must be used equally on the average by each trans-mitter. The system receivers shall have input bandwidths that match the hop-ping channel bandwidths of their cor-responding transmitters and shall shift frequencies in synchronization with the transmitted signals.

**EUT Pseudorandom Frequency Hopping Sequence Requirement**

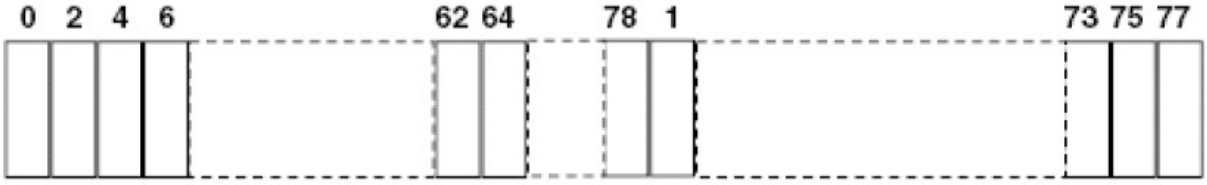
The pseudorandom frequency hopping sequence may be generated in a nice-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage.And the result is fed back to the input of the frist stage.The sequence begins with the frist one of 9 consecutive ones,for example:the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

- Number of shift register stages:9
- Length of pseudo-random sequence:29-1=511 bits
- Longest sequence of zeros:8(non-inverted signal)



*Linear Feedback Shift Register for Generation of the PRBS sequence*

An explame of pseudorandom frequency hopping sequence as follows:




Each frequency used equally one the average by each transmitter.
The system receiver have input bandwidths that match the hopping channel bandwidths of their corresponding transmitter and shift 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.....**