# Appendix B

## RF Test Data for 2.4GWIFI(Conducted Measurement)

**Product Name: Tablet device**

**Test Model: Sundial**

**Environmental Conditions**

| | |
|---|---|
| Temperature: | 23.8° C |
| Relative Humidity: | 52.1% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Nick Peng |
| Supervised by: | Ling Zhu |

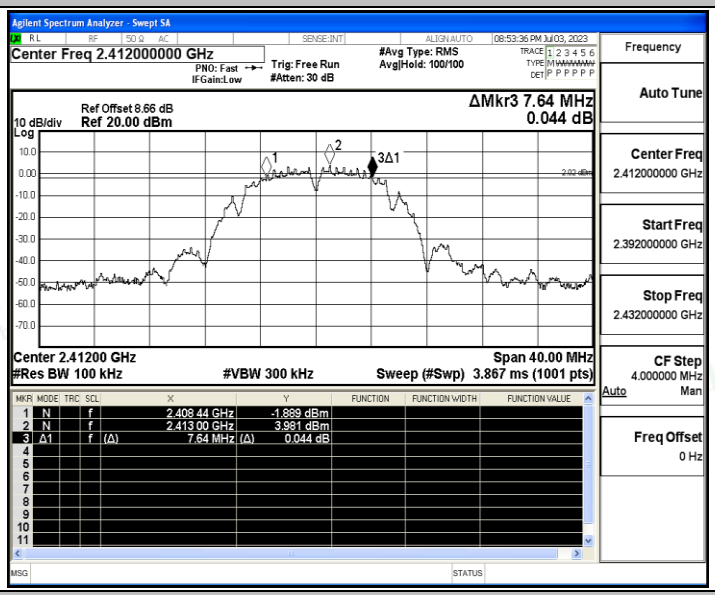
# B.1 DTS Bandwidth

## Test Result

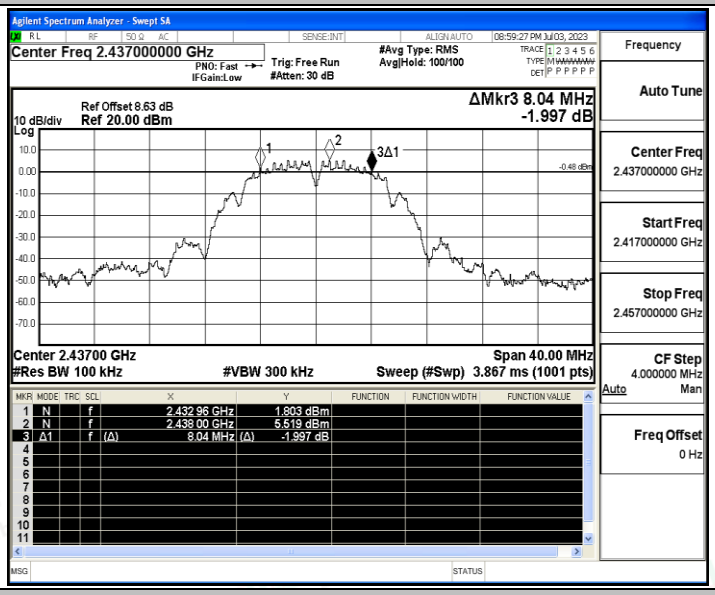
| TestMode | Antenna | Frequency[MHz] | DTS BW [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|---|---|---|---|---|---|---|---|
| 11B | Ant1 | 2412 | 7.640 | 2408.440 | 2416.080 | 0.5 | PASS |
| | | 2437 | 8.040 | 2432.960 | 2441.000 | 0.5 | PASS |
| | | 2462 | 8.520 | 2458.000 | 2466.520 | 0.5 | PASS |
| 11G | Ant1 | 2412 | 16.360 | 2403.840 | 2420.200 | 0.5 | PASS |
| | | 2437 | 16.320 | 2428.840 | 2445.160 | 0.5 | PASS |
| | | 2462 | 16.320 | 2453.840 | 2470.160 | 0.5 | PASS |
| 11N20SISO | Ant1 | 2412 | 16.560 | 2404.080 | 2420.640 | 0.5 | PASS |
| | | 2437 | 17.160 | 2428.360 | 2445.520 | 0.5 | PASS |
| | | 2462 | 16.960 | 2453.520 | 2470.480 | 0.5 | PASS |

## Test Graphs

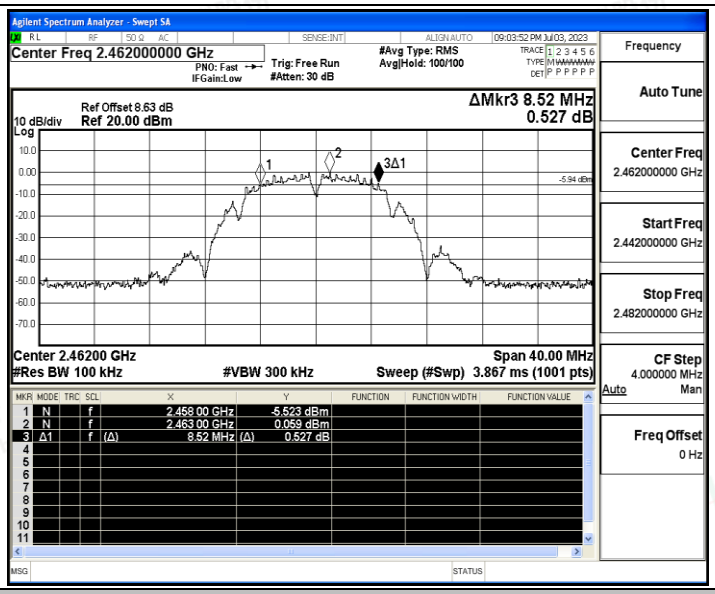
11B_Ant1_2412



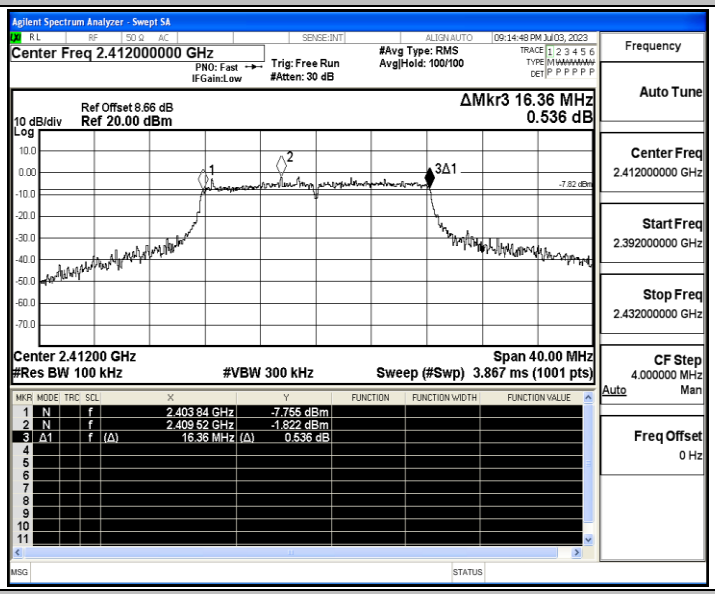

11B_Ant1_2437



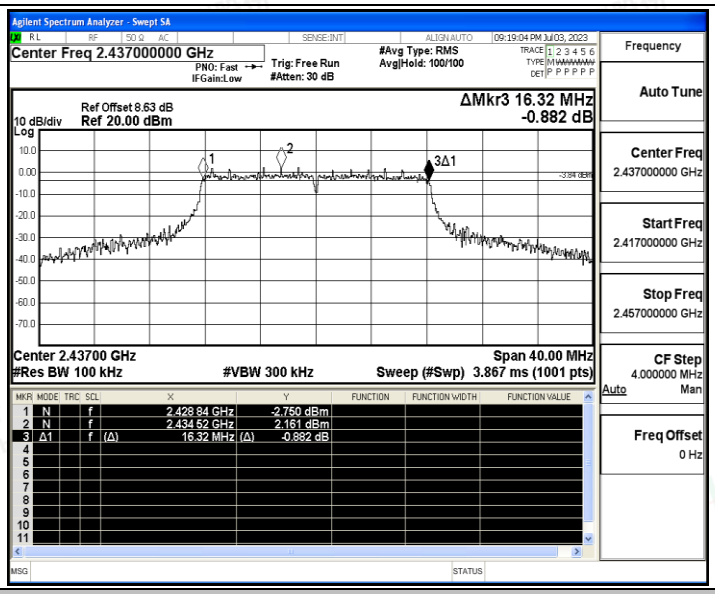

11B_Ant1_2462



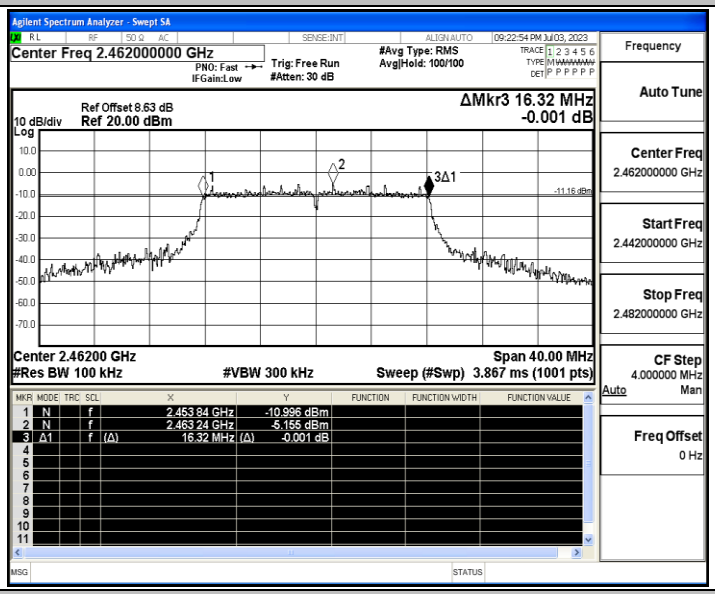

11G_Ant1_2412



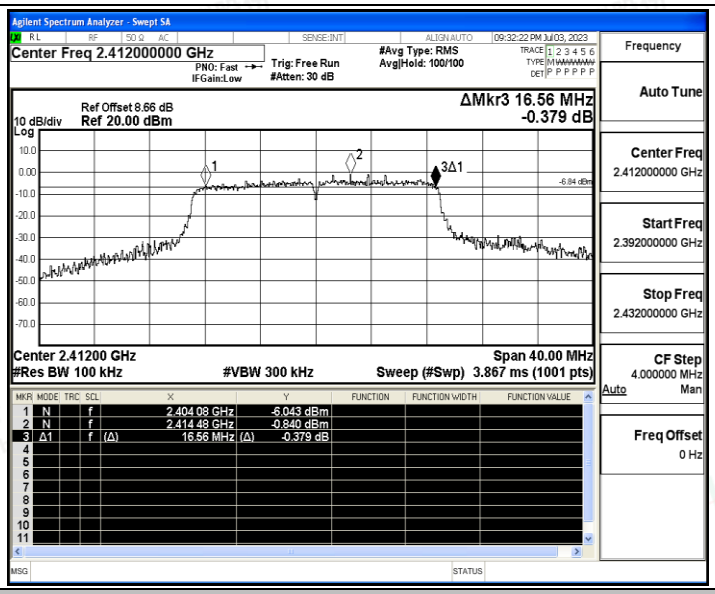

11G_Ant1_2437



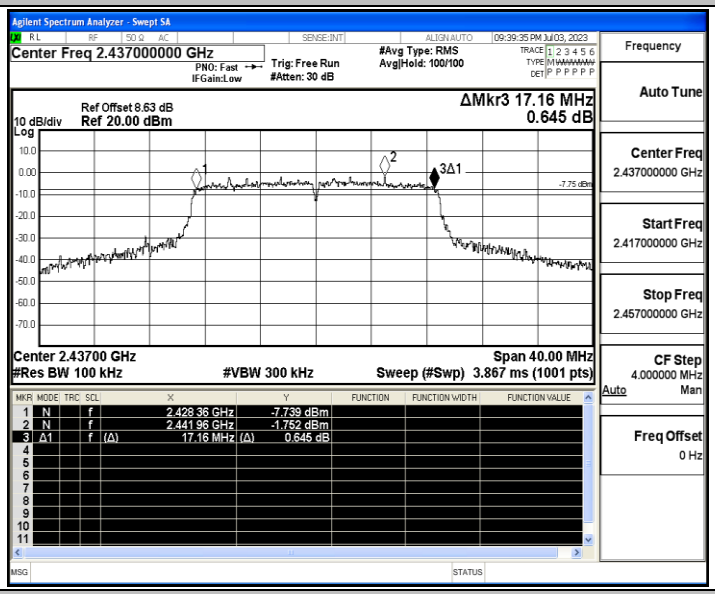

11G_Ant1_2462



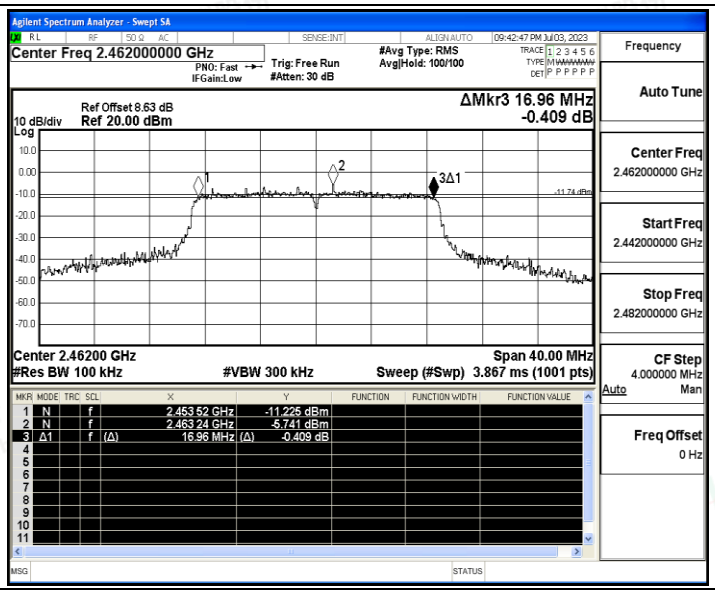

11N20SISO_Ant1_2412




11N20SISO_Ant1_2437




11N20SISO_Ant1_2462


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.462000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
09:42:47 PM Jul 03, 2023
Ref Offset 8.63 dB
10 dB/div Ref 20.00 dBm
Log
ΔMkr3 16.96 MHz
-0.409 dB
Center 2.46200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40.00 MHz
Sweep (#Swp) 3.867 ms (1001 pts)
1 N f 2.453 52 GHz -11.225 dBm
2 N f 2.463 24 GHz -5.741 dBm
3 Δ1 f (Δ) 16.96 MHz (Δ) -0.409 dB
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.442000000 GHz
Stop Freq
2.482000000 GHz
CF Step
4.000000 MHz
Auto Man
Freq Offset
0 Hz

# B.2 Maximum conducted output power

## Test Result Peak

| TestMode | Antenna | Frequency[MHz] | Peak Powert[dBm] | Conducted Limit[dBm] | Verdict |
|---|---|---|---|---|---|
| 11B | Ant1 | 2412 | 15.29 | ≤30.00 | PASS |
| | | 2437 | 15.29 | ≤30.00 | PASS |
| | | 2462 | 14.13 | ≤30.00 | PASS |
| 11G | Ant1 | 2412 | 16.33 | ≤30.00 | PASS |
| | | 2437 | 15.15 | ≤30.00 | PASS |
| | | 2462 | 14.11 | ≤30.00 | PASS |
| 11N20SISO | Ant1 | 2412 | 14.91 | ≤30.00 | PASS |
| | | 2437 | 14.63 | ≤30.00 | PASS |
| | | 2462 | 13.55 | ≤30.00 | PASS |

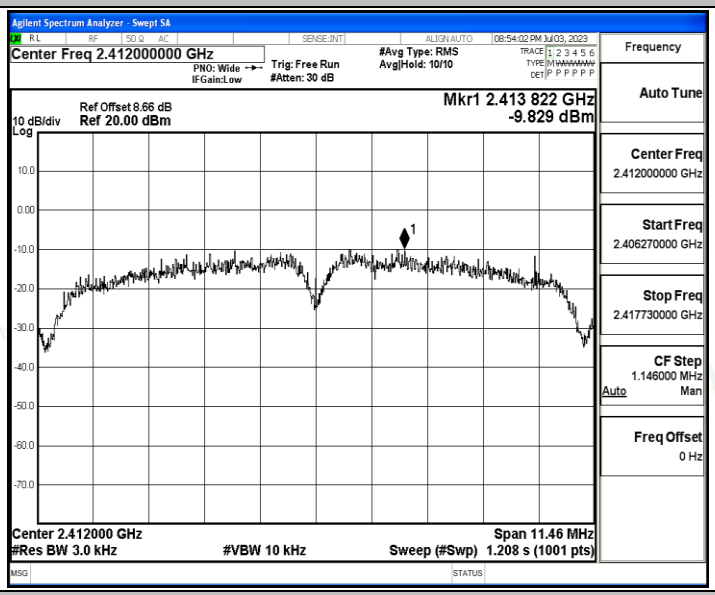
# B.3 Maximum power spectral density

## Test Result

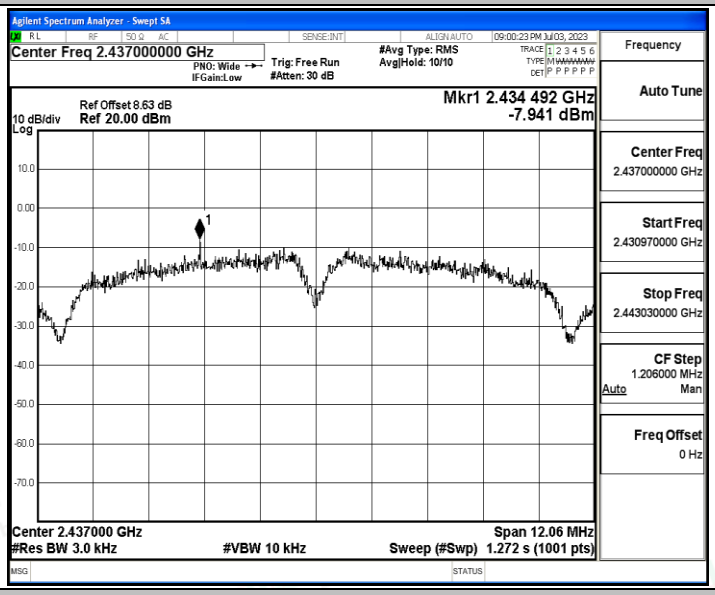
| TestMode | Antenna | Frequency[MHz] | Result[dBm/3kHz] | Limit[dBm/3kHz] | Verdict |
|---|---|---|---|---|---|
| 11B | Ant1 | 2412 | -9.83 | ≤8.00 | PASS |
| | | 2437 | -7.94 | ≤8.00 | PASS |
| | | 2462 | -11.91 | ≤8.00 | PASS |
| 11G | Ant1 | 2412 | -15.59 | ≤8.00 | PASS |
| | | 2437 | -16.17 | ≤8.00 | PASS |
| | | 2462 | -18.37 | ≤8.00 | PASS |
| 11N20SISO | Ant1 | 2412 | -16.82 | ≤8.00 | PASS |
| | | 2437 | -17.26 | ≤8.00 | PASS |
| | | 2462 | -17.71 | ≤8.00 | PASS |

## Test Graphs

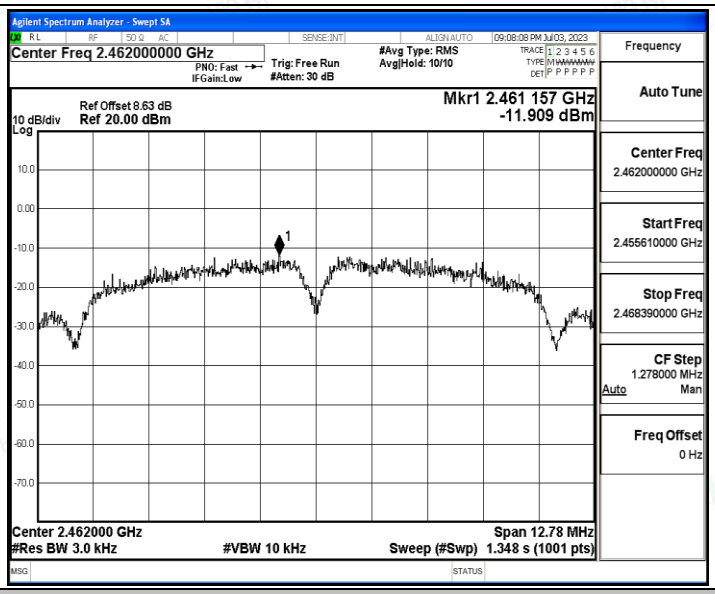
11B_Ant1_2412



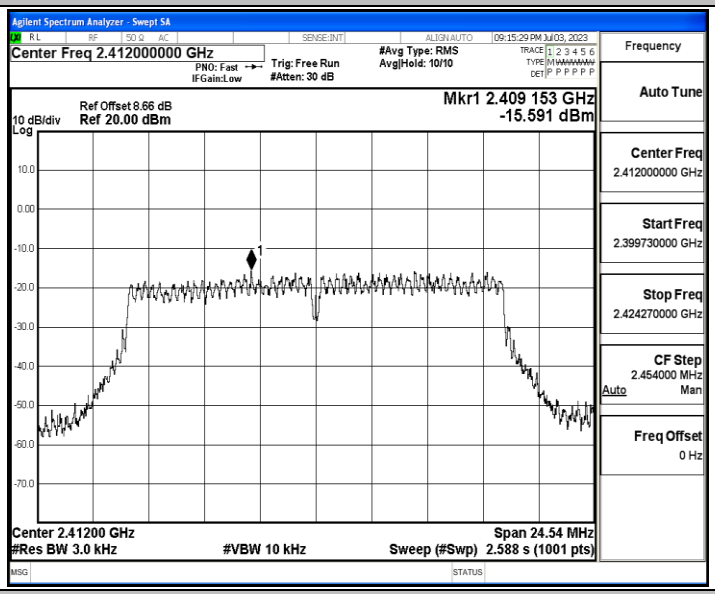

11B_Ant1_2437



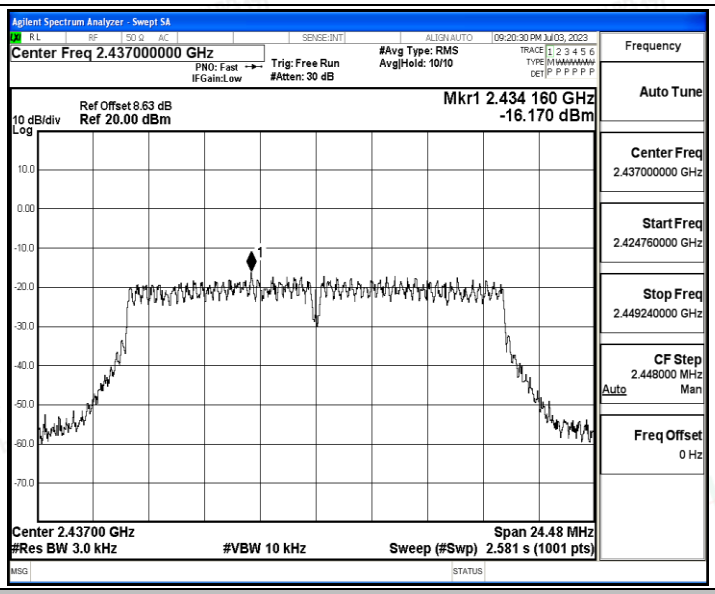

11B_Ant1_2462



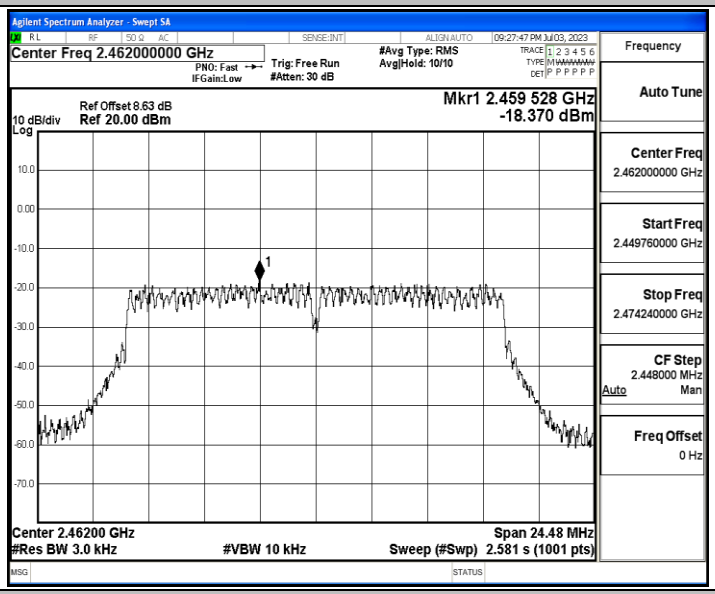

11G_Ant1_2412



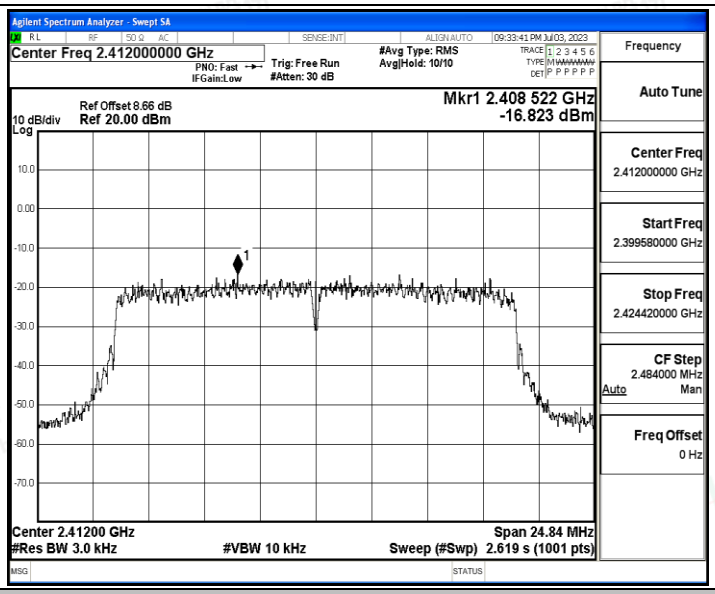

11G_Ant1_2437



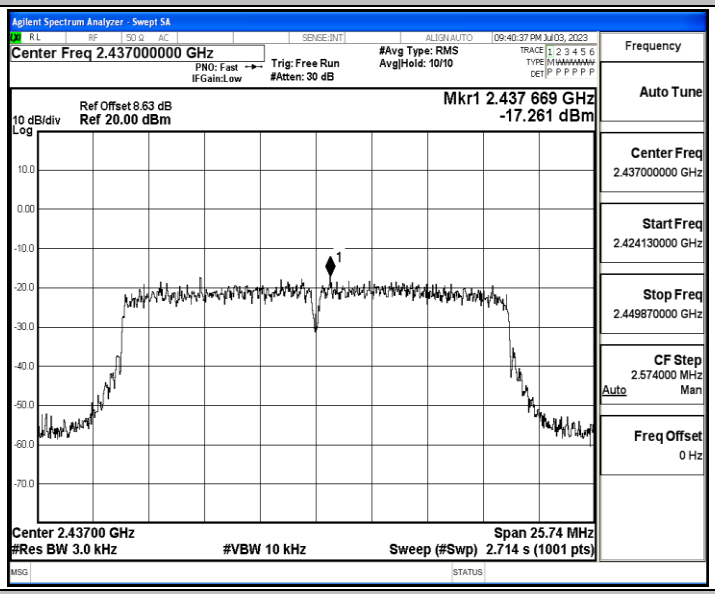

11G_Ant1_2462



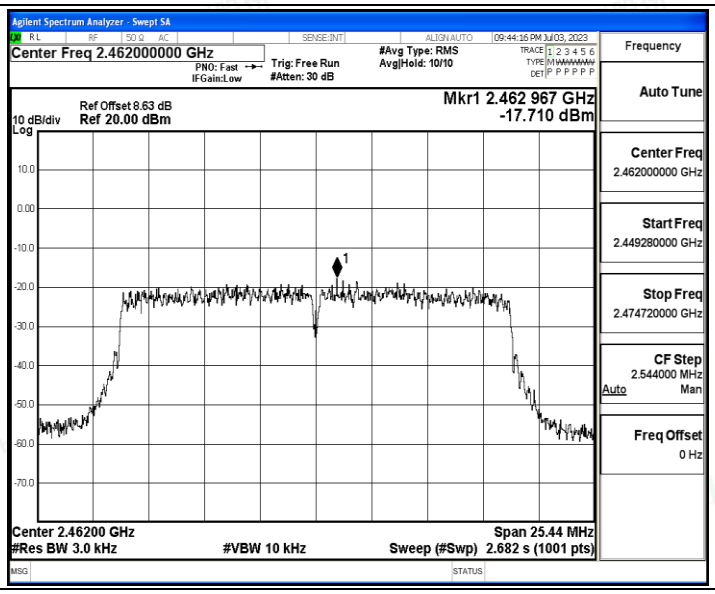

11N20SISO_Ant1_2412




11N20SISO_Ant1_2437




11N20SISO_Ant1_2462


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.462000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 10/10
09:44:16 PM Jul 03, 2023
Ref Offset 8.63 dB
10 dB/div Ref 20.00 dBm
Log
Mkr1 2.462 967 GHz
-17.710 dBm
Center 2.46200 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 25.44 MHz
Sweep (#Swp) 2.682 s (1001 pts)
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.449280000 GHz
Stop Freq
2.474720000 GHz
CF Step
2.544000 MHz
Auto
Man
Freq Offset
0 Hz

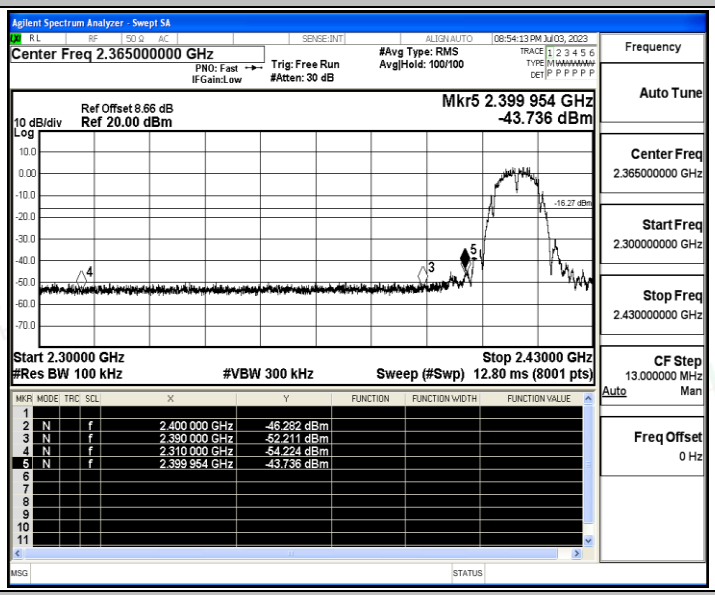
## B.4 Band edge measurements

### Test Result

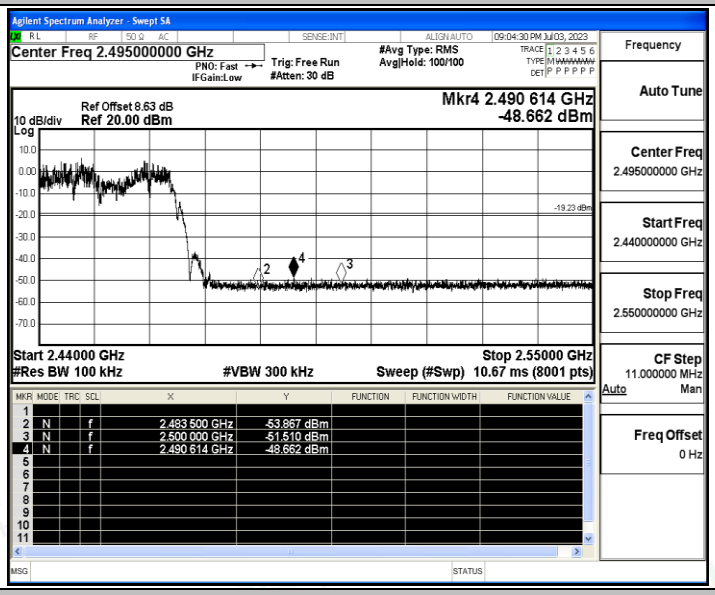
| TestMode | Antenna | ChName | Frequency[MHz] | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|---|---|---|---|---|---|---|---|
| 11B | Ant1 | Low | 2412 | 3.73 | -43.74 | ≤-16.27 | PASS |
| | | High | 2462 | 0.77 | -48.66 | ≤-19.23 | PASS |
| 11G | Ant1 | Low | 2412 | -1.10 | -31.81 | ≤-21.1 | PASS |
| | | High | 2462 | -5.78 | -48.46 | ≤-25.78 | PASS |
| 11N20SISO | Ant1 | Low | 2412 | -3.01 | -33.27 | ≤-23.01 | PASS |
| | | High | 2462 | -4.74 | -46.67 | ≤-24.74 | PASS |

## Test Graphs

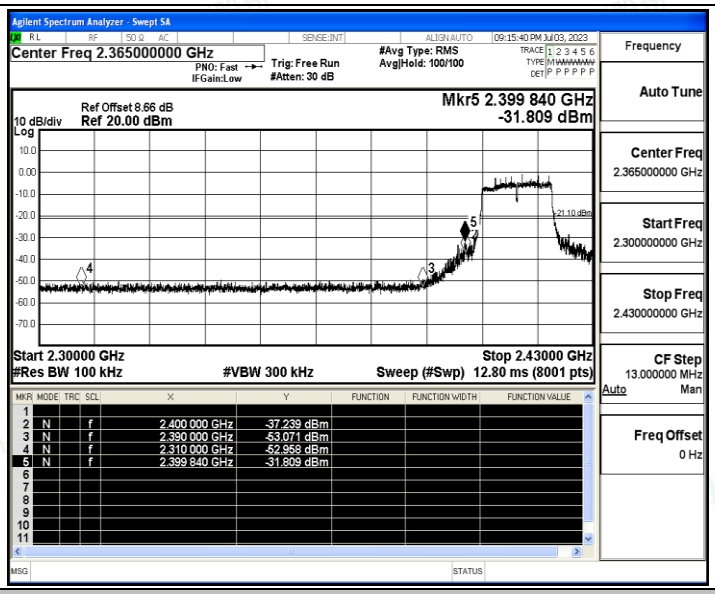
11B_Ant1_Low_2412



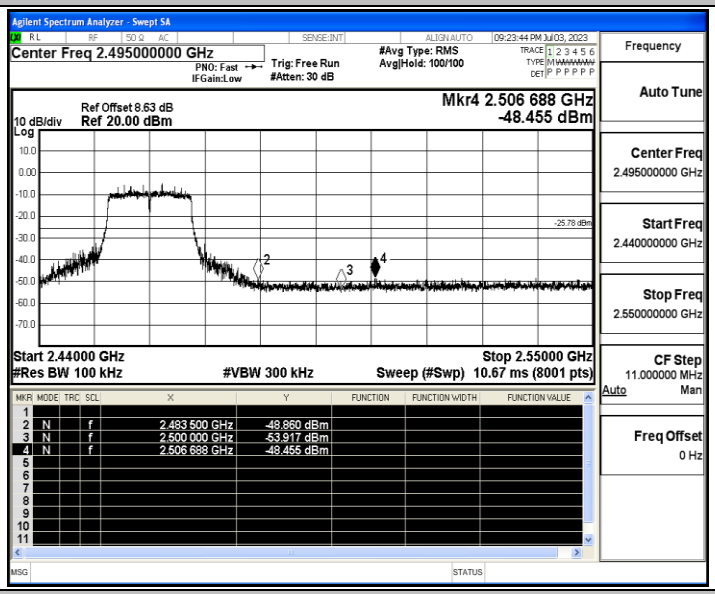

11B_Ant1_High_2462



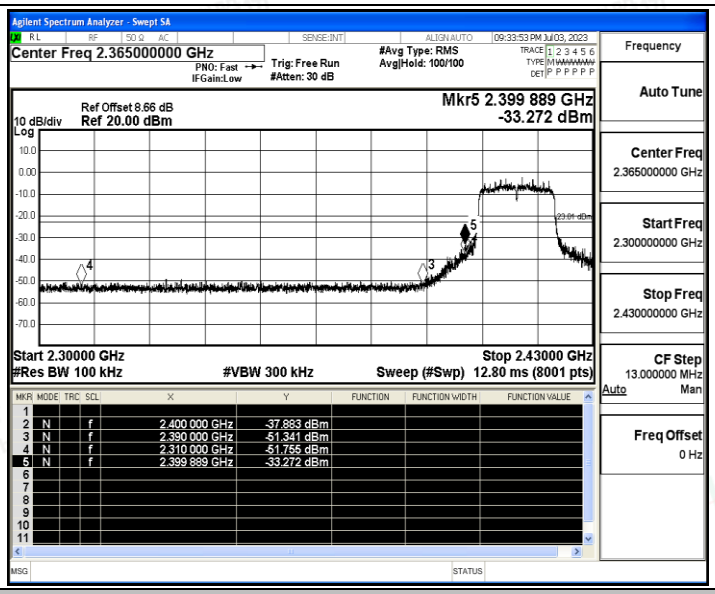

11G_Ant1_Low_2412



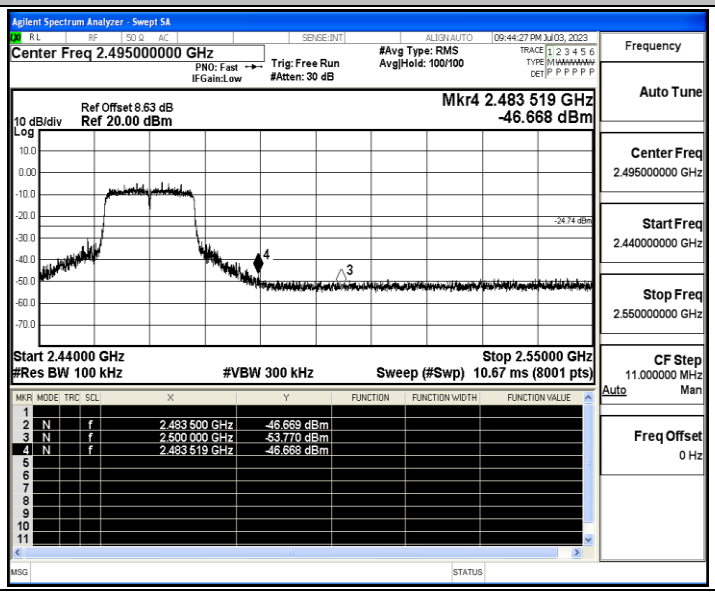

11G_Ant1_High_2462




11N20SISO_Ant1_Low_2412




11N20SISO_Ant1_High_2462



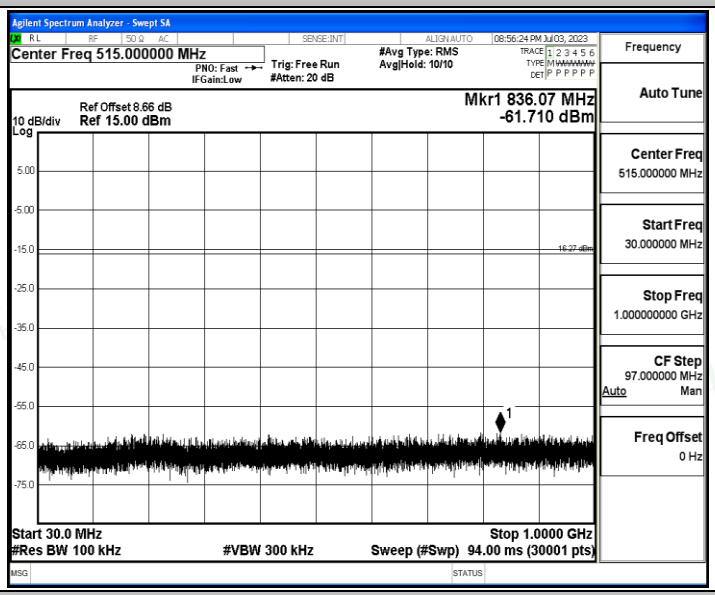
# B.5 Conducted Spurious Emission

## Test Result

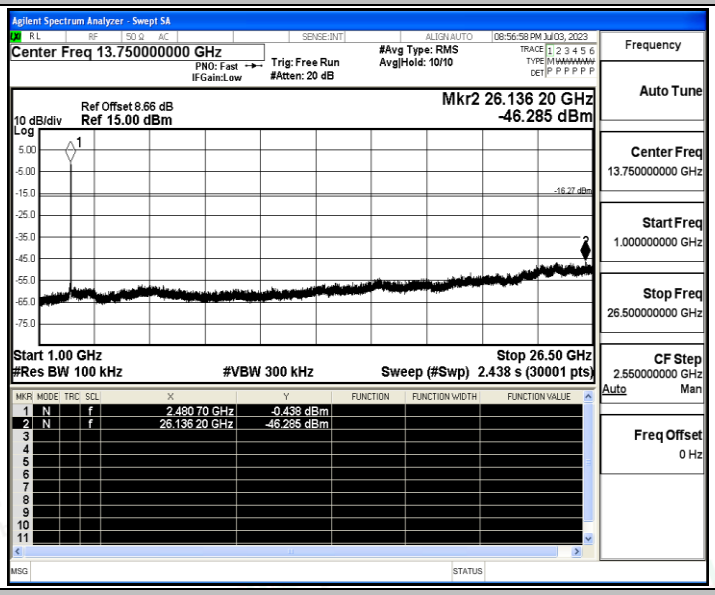
| TestMode | Antenna | Frequency[MHz] | FreqRange [Mhz] | RefLevel [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|---|---|---|---|---|---|---|---|
| 11B | Ant1 | 2412 | 30~1000 | 3.73 | -61.71 | ≤-16.27 | PASS |
| | | | 1000~26500 | 3.73 | -46.29 | ≤-16.27 | PASS |
| | | 2437 | 30~1000 | 3.99 | -61.17 | ≤-16.01 | PASS |
| | | | 1000~26500 | 3.99 | -46.95 | ≤-16.01 | PASS |
| | | 2462 | 30~1000 | 0.77 | -61.33 | ≤-19.23 | PASS |
| | | | 1000~26500 | 0.77 | -46.52 | ≤-19.23 | PASS |
| 11G | Ant1 | 2412 | 30~1000 | -1.10 | -61.37 | ≤-21.1 | PASS |
| | | | 1000~26500 | -1.10 | -24.35 | ≤-21.1 | PASS |
| | | 2437 | 30~1000 | -2.66 | -60.89 | ≤-22.66 | PASS |
| | | | 1000~26500 | -2.66 | -46.03 | ≤-22.66 | PASS |
| | | 2462 | 30~1000 | -5.78 | -61.52 | ≤-25.78 | PASS |
| | | | 1000~26500 | -5.78 | -46.67 | ≤-25.78 | PASS |
| 11N20SISO | Ant1 | 2412 | 30~1000 | -3.01 | -60.5 | ≤-23.01 | PASS |
| | | | 1000~26500 | -3.01 | -46.5 | ≤-23.01 | PASS |
| | | 2437 | 30~1000 | -4.09 | -60.32 | ≤-24.09 | PASS |
| | | | 1000~26500 | -4.09 | -46.51 | ≤-24.09 | PASS |
| | | 2462 | 30~1000 | -4.74 | -61.07 | ≤-24.74 | PASS |
| | | | 1000~26500 | -4.74 | -47.15 | ≤-24.74 | PASS |

## Test Graphs

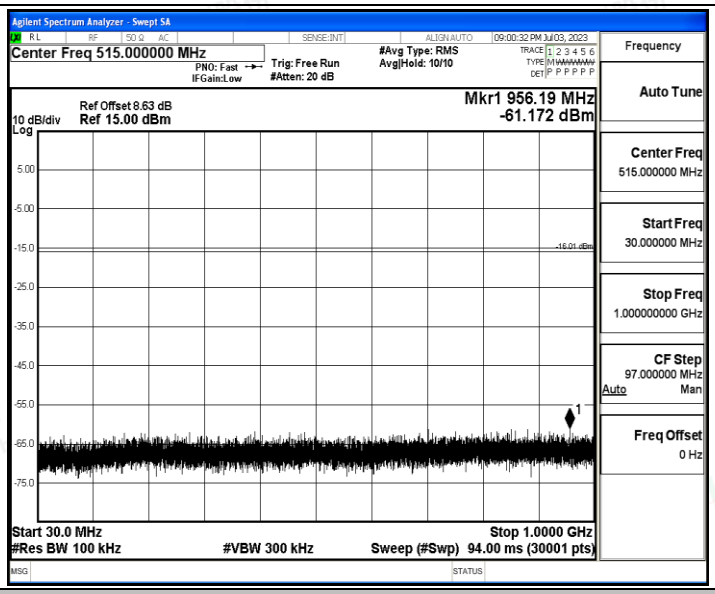
11B_Ant1_2412_30~1000



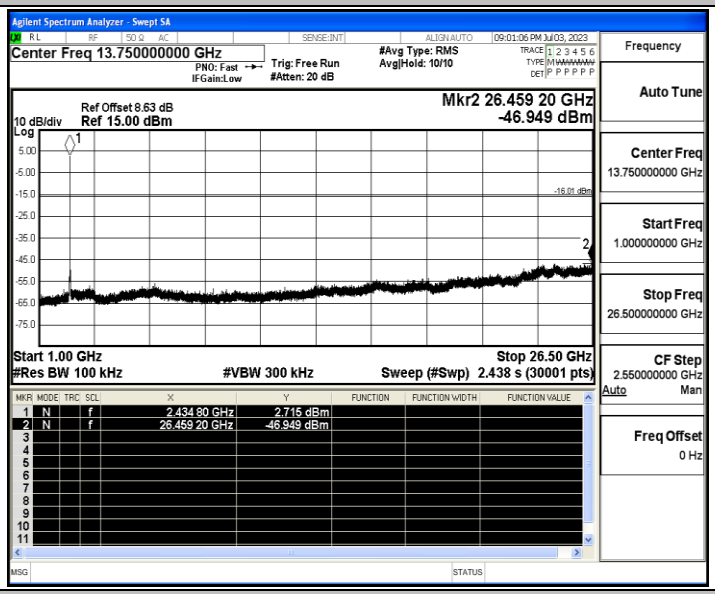

11B_Ant1_2412_1000~26500



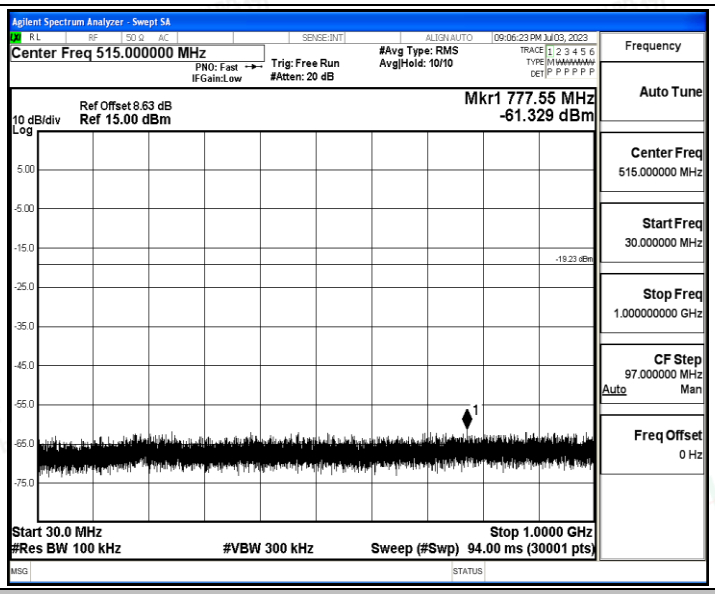

11B_Ant1_2437_30~1000



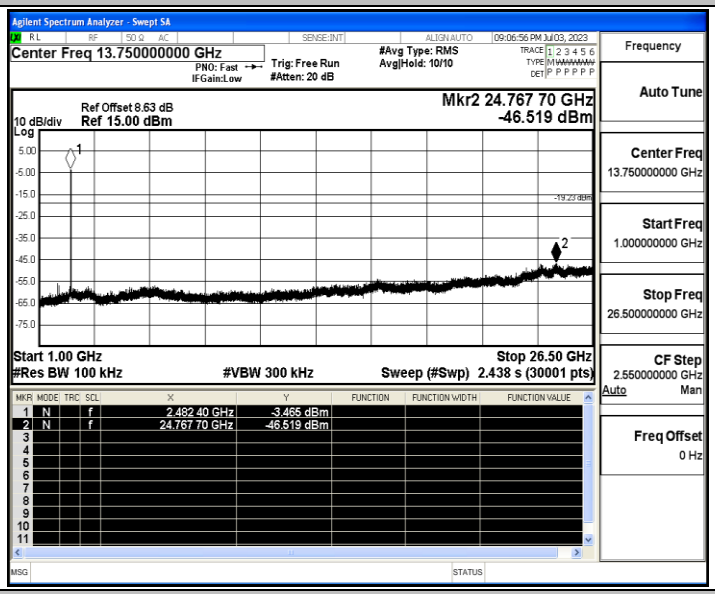

11B_Ant1_2437_1000~26500



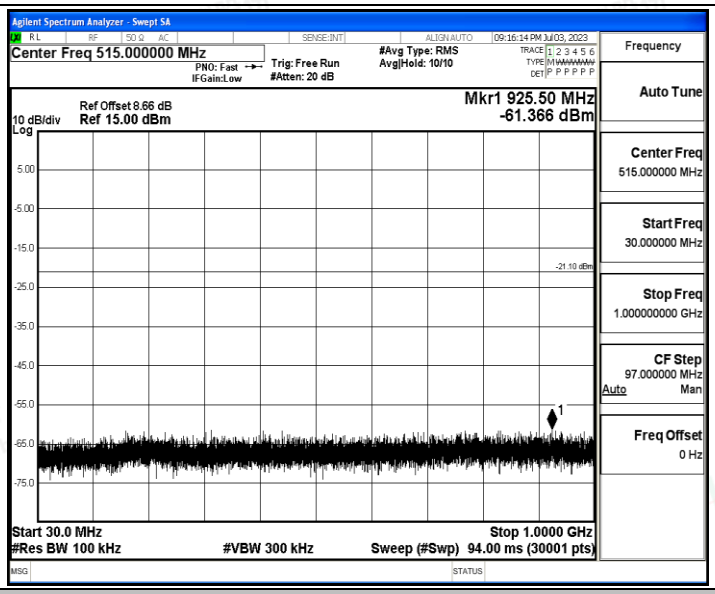

11B_Ant1_2462_30~1000



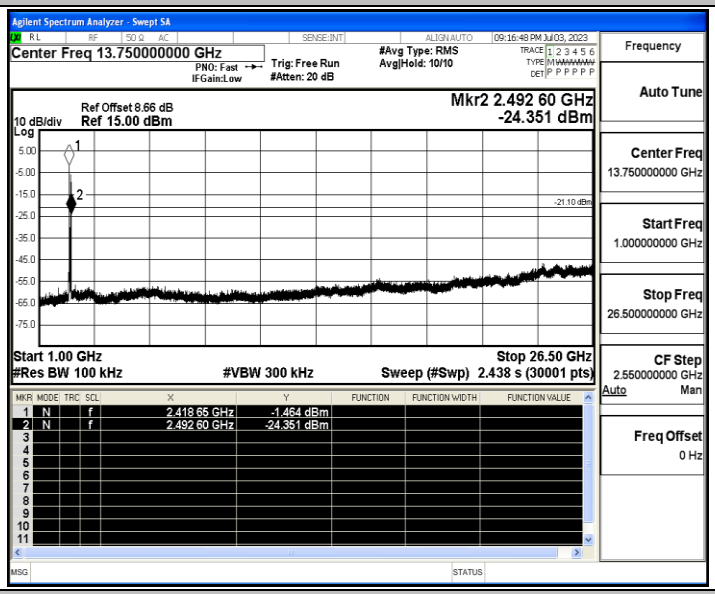

11B_Ant1_2462_1000~26500



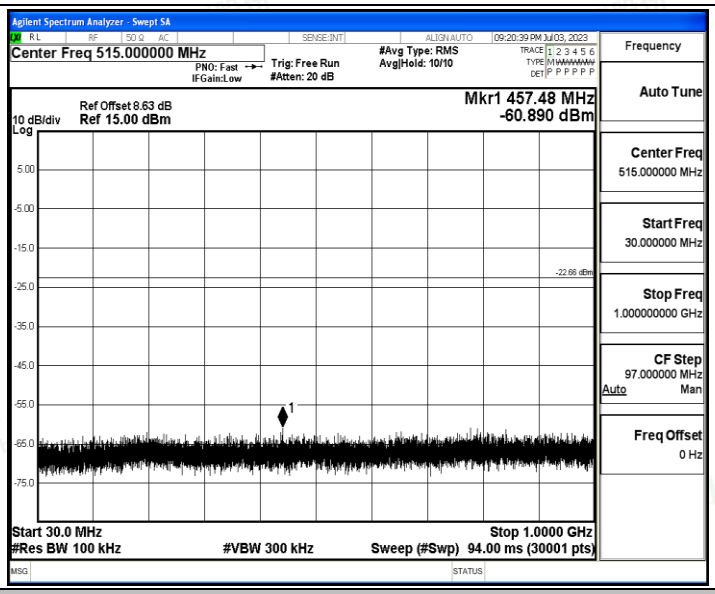

11G_Ant1_2412_30~1000



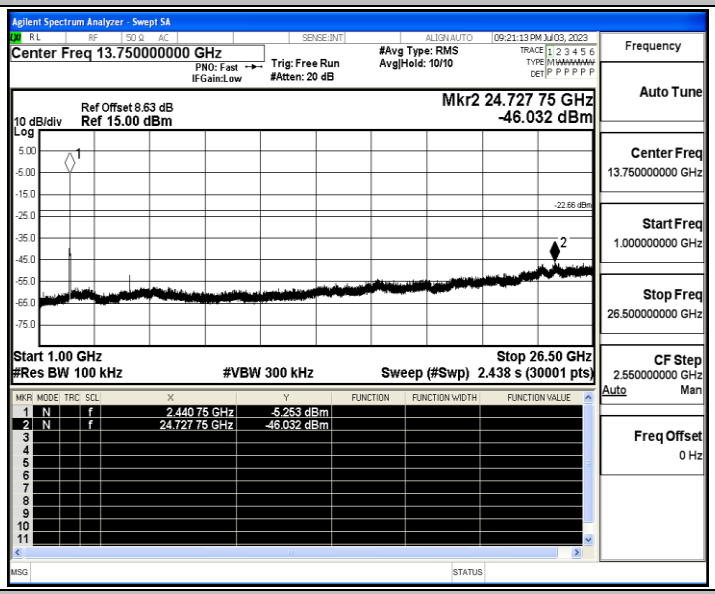

11G_Ant1_2412_1000~26500



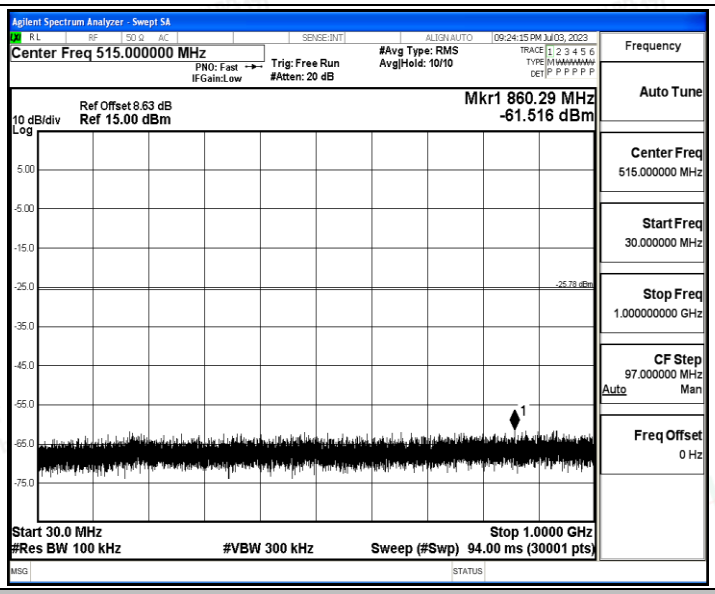

11G_Ant1_2437_30~1000



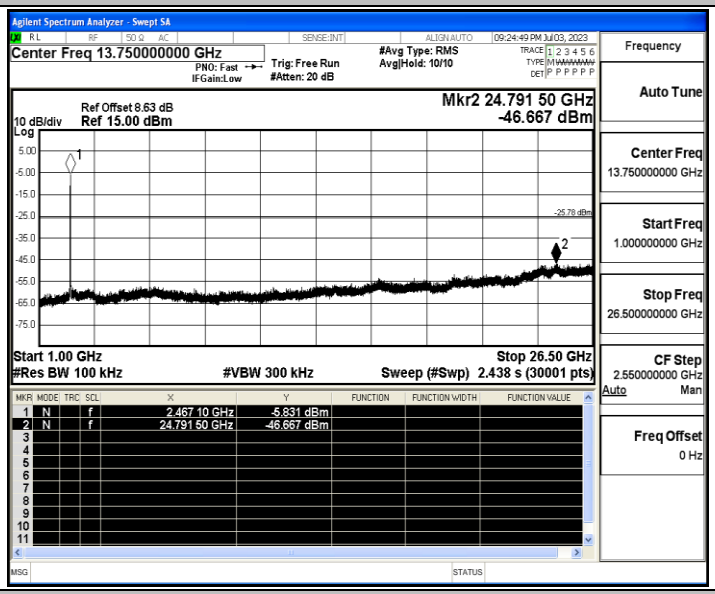

11G_Ant1_2437_1000~26500



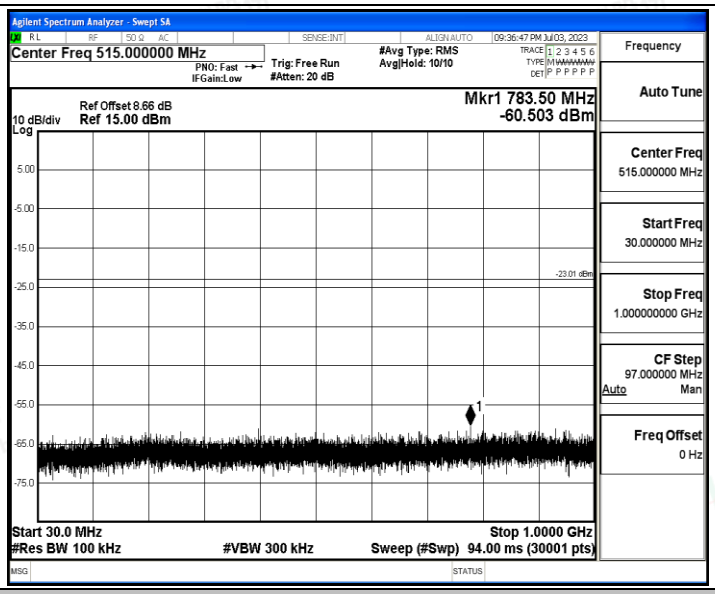

11G_Ant1_2462_30~1000



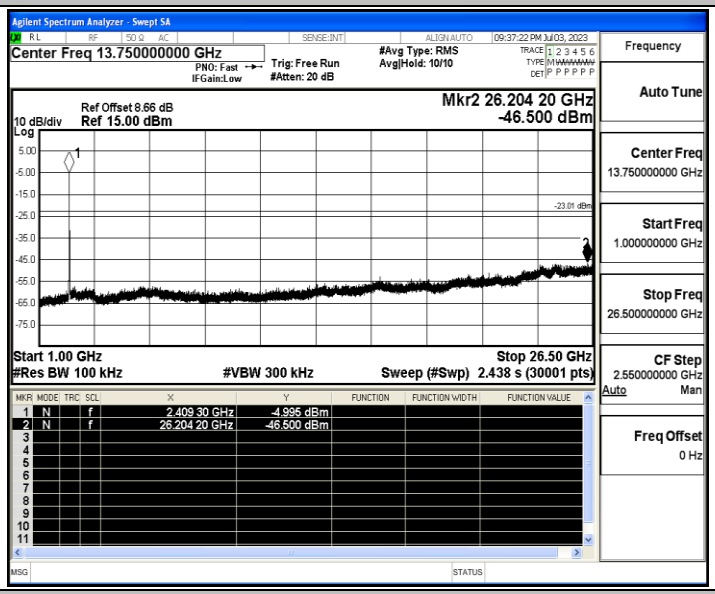

11G_Ant1_2462_1000~26500



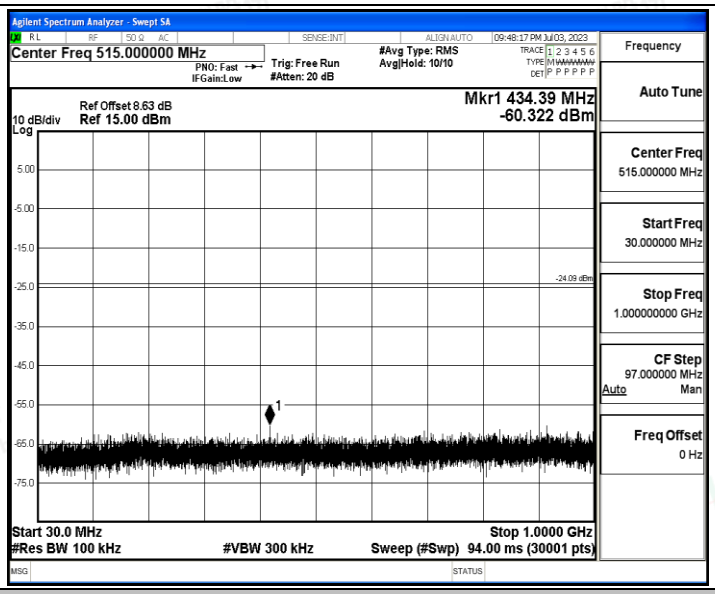

11N20SISO_Ant1_2412_30~1000



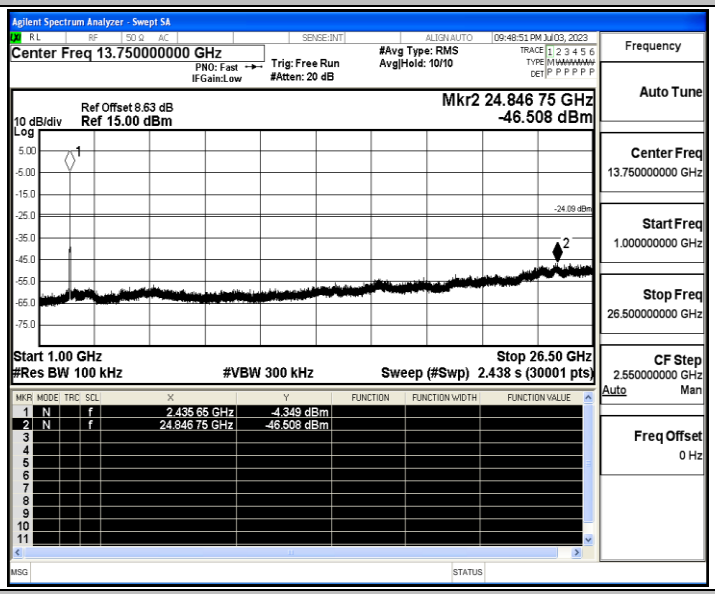

11N20SISO_Ant1_2412_1000~26500



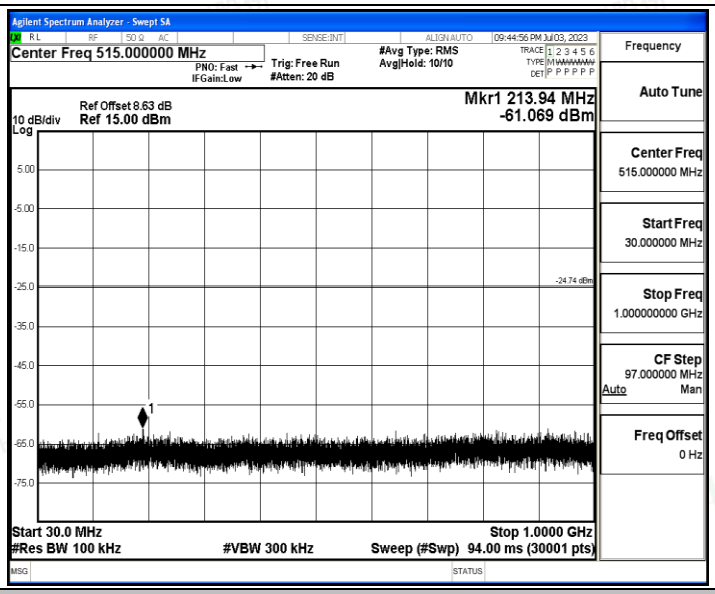

11N20SISO_Ant1_2437_30~1000



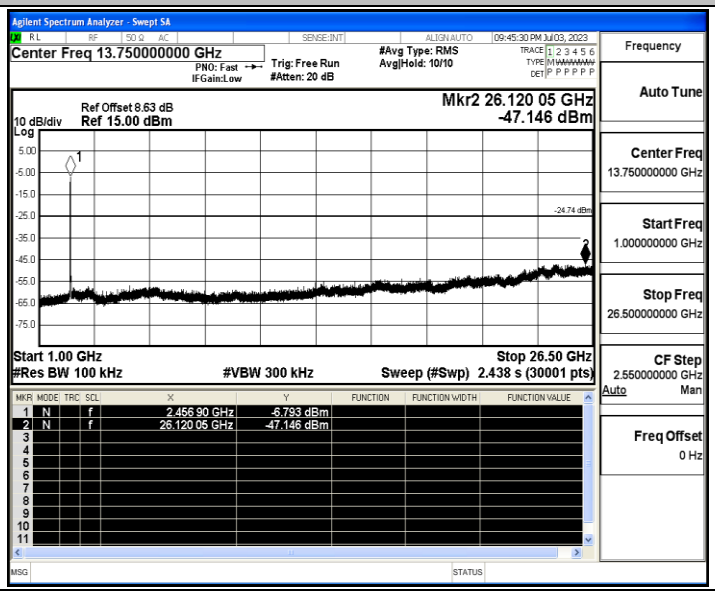

11N20SISO_Ant1_2437_1000~26500




11N20SISO_Ant1_2462_30~1000




11N20SISO_Ant1_2462_1000~26500



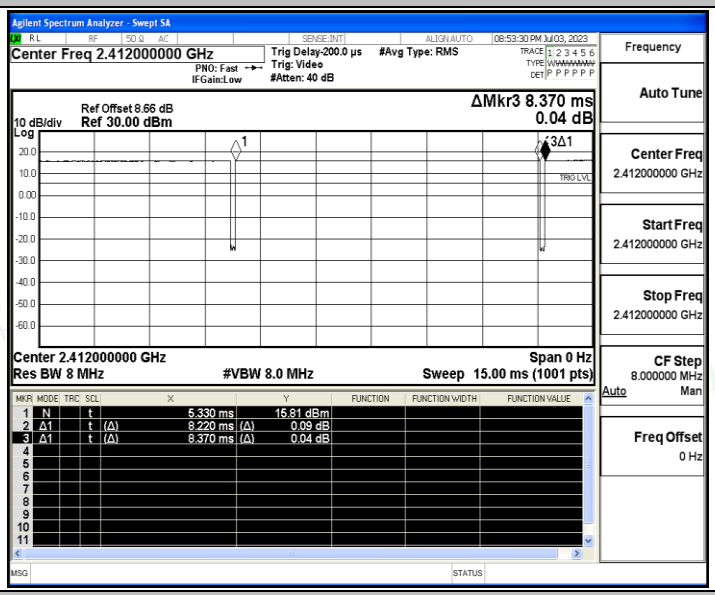
## B.6 Duty Cycle

### Test Result

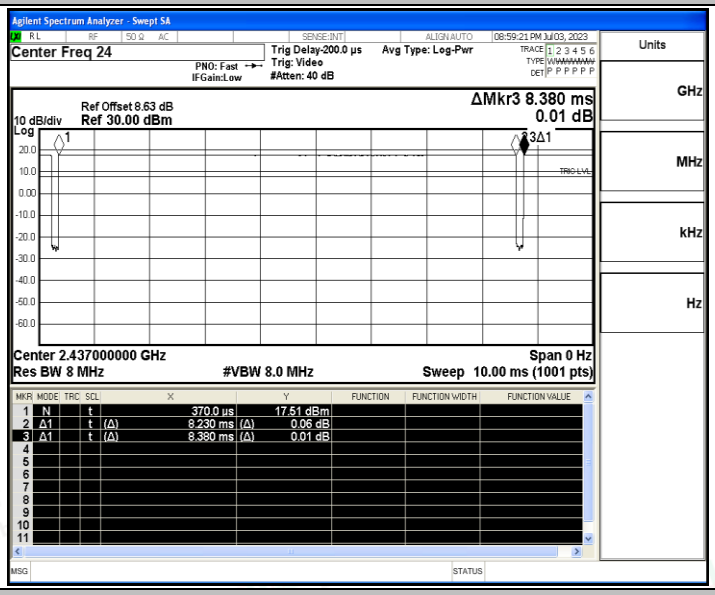
| TestMode | Antenna | Frequency[MHz] | Transmission Duration [ms] | Transmission Period [ms] | Duty Cycle [%] |
|---|---|---|---|---|---|
| 11B | Ant1 | 2412 | 8.22 | 8.37 | 98.21 |
| | | 2437 | 8.23 | 8.38 | 98.21 |
| | | 2462 | 8.22 | 8.37 | 98.21 |
| 11G | Ant1 | 2412 | 1.36 | 1.51 | 90.07 |
| | | 2437 | 1.37 | 1.51 | 90.73 |
| | | 2462 | 1.36 | 1.52 | 89.47 |
| 11N20SISO | Ant1 | 2412 | 1.15 | 1.32 | 87.12 |
| | | 2437 | 1.15 | 1.31 | 87.79 |
| | | 2462 | 1.16 | 1.32 | 87.88 |

## Test Graphs

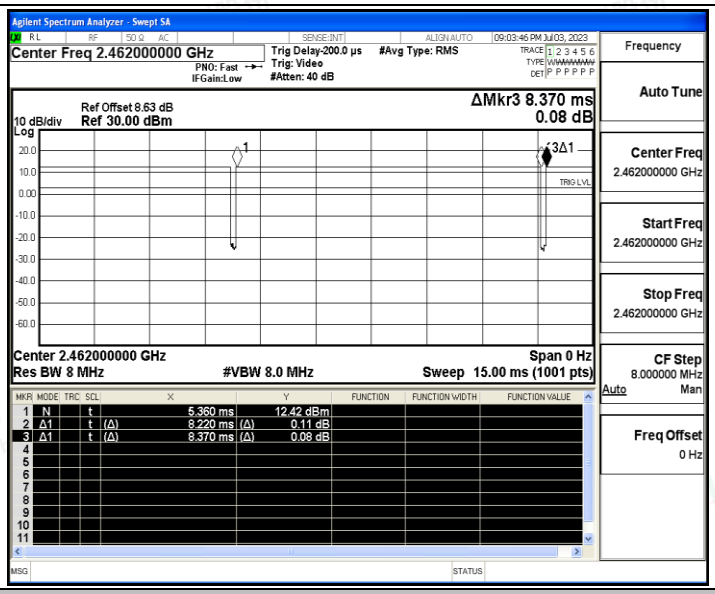
11B_Ant1_2412



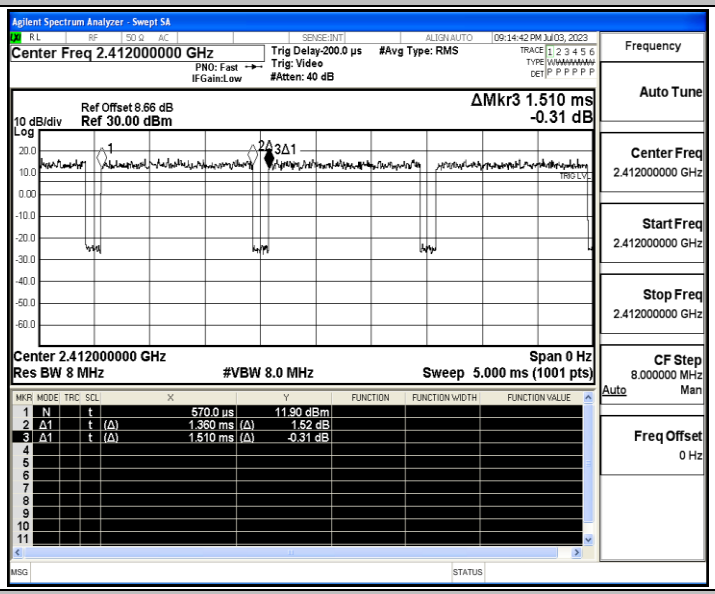

11B_Ant1_2437



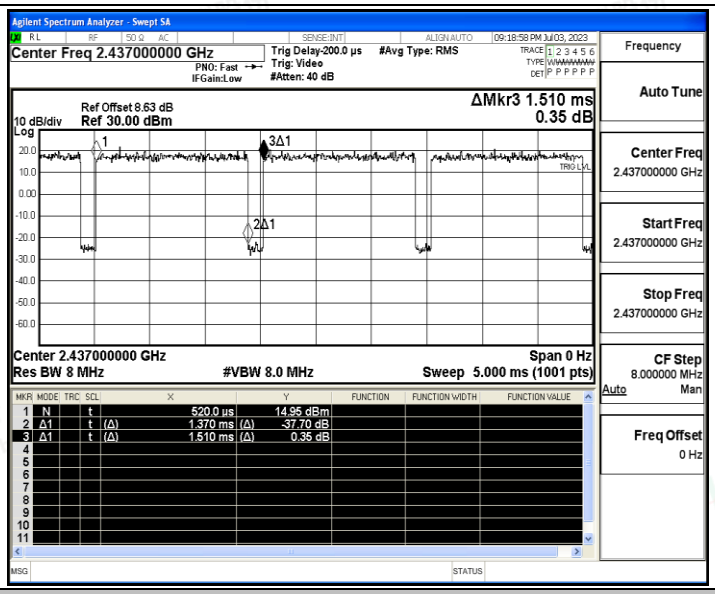

11B_Ant1_2462



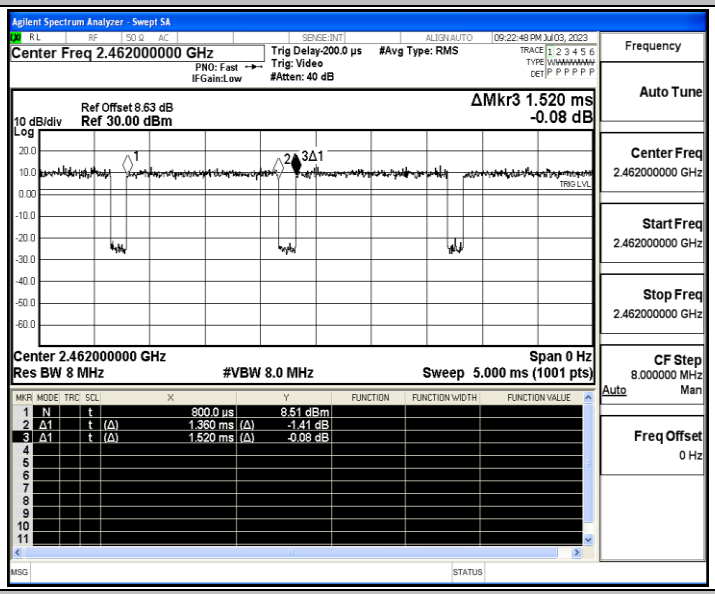

11G_Ant1_2412



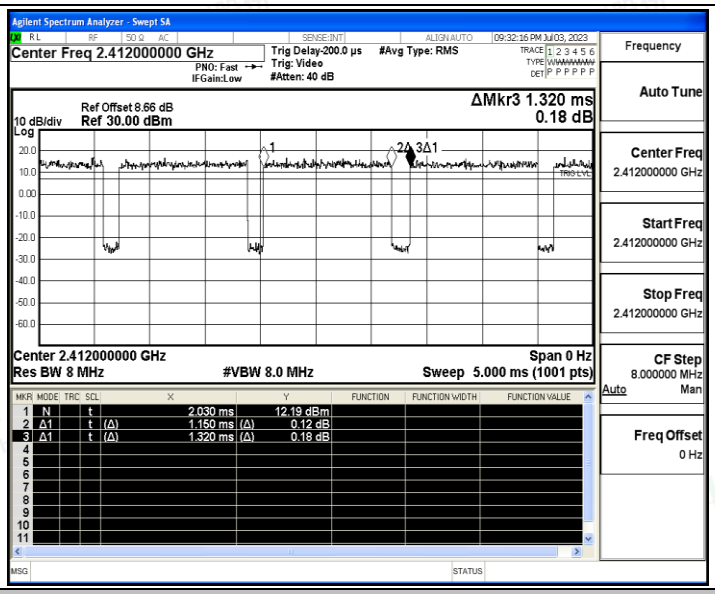

11G_Ant1_2437



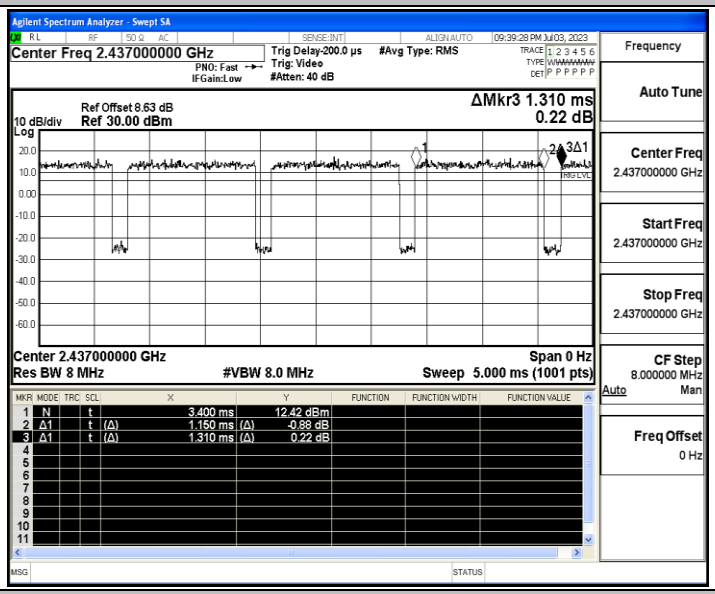

11G_Ant1_2462



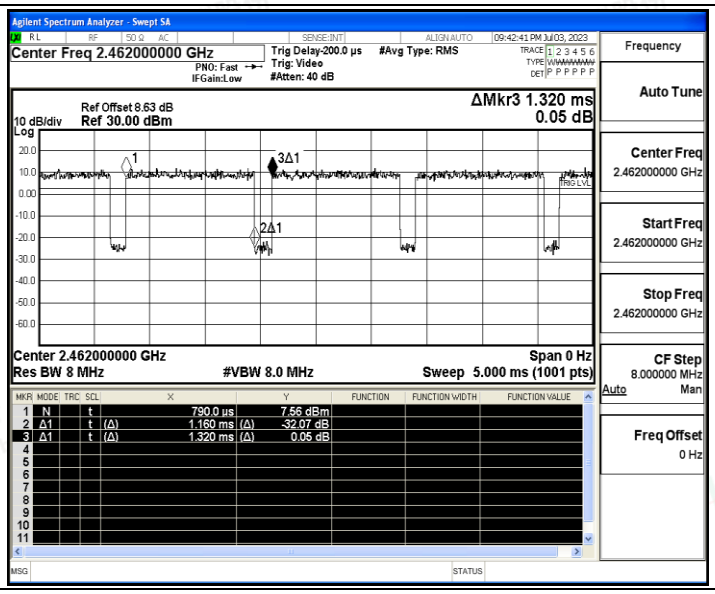

11N20SISO_Ant1_2412




11N20SISO_Ant1_2437




11N20SISO_Ant1_2462


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.462000000 GHz
Trig Delay-200.0 µs
#Avg Type: RMS
Trig: Video
#Atten: 40 dB
PNO: Fast
IFGain:Low
Ref Offset 8.63 dB
10 dB/div Ref 30.00 dBm
Log
ΔMkr3 1.320 ms
0.05 dB
Center 2.462000000 GHz
Span 0 Hz
Res BW 8 MHz
#VBW 8.0 MHz
Sweep 5.000 ms (1001 pts)
1 N t 790.0 µs 7.56 dBm
2 Δ1 t (Δ) 1.160 ms (Δ) -32.07 dB
3 Δ1 t (Δ) 1.320 ms (Δ) 0.05 dB
Frequency
Auto Tune
Center Freq 2.462000000 GHz
Start Freq 2.462000000 GHz
Stop Freq 2.462000000 GHz
CF Step 8.000000 MHz
Auto Man
Freq Offset 0 Hz

# B.7 Emissions in Restricted Bands

## Test Result

| TestMode | Antenna | ChName | Frequency[MHz] | Detector | Freq [MHz] | Result [dBm] | Limit [dBm] | Result [dBuV/m] | Limit [dBuV/m] | Verdict |
|---|---|---|---|---|---|---|---|---|---|---|
| 11B | Ant1 | Low | 2412 | AV | 2310.000 | -48.59 | ≤-41.20 | 46.61 | ≤54 | PASS |
| | | | | AV | 2389.960 | -47.71 | ≤-41.20 | 47.49 | ≤54 | PASS |
| | | | | AV | 2390.000 | -47.71 | ≤-41.20 | 47.49 | ≤54 | PASS |
| | | | | Peak | 2310.000 | -42.75 | ≤-21.20 | 52.45 | ≤74 | PASS |
| | | | | Peak | 2359.020 | -38.16 | ≤-21.20 | 57.04 | ≤74 | PASS |
| | | | | Peak | 2390.000 | -39.49 | ≤-21.20 | 55.71 | ≤74 | PASS |
| | | High | 2462 | AV | 2483.500 | -47.5 | ≤-41.20 | 47.70 | ≤54 | PASS |
| | | | | AV | 2484.770 | -47.3 | ≤-41.20 | 47.90 | ≤54 | PASS |
| | | | | AV | 2500.000 | -47.62 | ≤-41.20 | 47.58 | ≤54 | PASS |
| | | | | Peak | 2483.500 | -41.72 | ≤-21.20 | 53.48 | ≤74 | PASS |
| | | | | Peak | 2484.330 | -38.25 | ≤-21.20 | 56.95 | ≤74 | PASS |
| | | | | Peak | 2500.000 | -41.13 | ≤-21.20 | 54.07 | ≤74 | PASS |
| 11G | Ant1 | Low | 2412 | AV | 2310.000 | -47.91 | ≤-41.20 | 47.29 | ≤54 | PASS |
| | | | | AV | 2389.960 | -46.42 | ≤-41.20 | 48.78 | ≤54 | PASS |
| | | | | AV | 2390.000 | -46.42 | ≤-41.20 | 48.78 | ≤54 | PASS |
| | | | | Peak | 2310.000 | -42.68 | ≤-21.20 | 52.52 | ≤74 | PASS |
| | | | | Peak | 2389.830 | -37.66 | ≤-21.20 | 57.54 | ≤74 | PASS |
| | | | | Peak | 2390.000 | -38.91 | ≤-21.20 | 56.29 | ≤74 | PASS |
| | | High | 2462 | AV | 2483.500 | -46.72 | ≤-41.20 | 48.48 | ≤54 | PASS |
| | | | | AV | 2483.670 | -46.56 | ≤-41.20 | 48.64 | ≤54 | PASS |
| | | | | AV | 2500.000 | -47.05 | ≤-41.20 | 48.15 | ≤54 | PASS |
| | | | | Peak | 2483.500 | -40.92 | ≤-21.20 | 54.28 | ≤74 | PASS |
| | | | | Peak | 2486.640 | -37.03 | ≤-21.20 | 58.17 | ≤74 | PASS |
| | | | | Peak | 2500.000 | -41.5 | ≤-21.20 | 53.70 | ≤74 | PASS |
| 11N20SISO | Ant1 | Low | 2412 | AV | 2310.000 | -47.94 | ≤-41.20 | 47.26 | ≤54 | PASS |
| | | | | AV | 2389.830 | -46.6 | ≤-41.20 | 48.60 | ≤54 | PASS |
| | | | | AV | 2390.000 | -46.62 | ≤-41.20 | 48.58 | ≤54 | PASS |
| | | | | Peak | 2310.000 | -41.96 | ≤-21.20 | 53.24 | ≤74 | PASS |
| | | | | Peak | 2327.560 | -38.34 | ≤-21.20 | 56.86 | ≤74 | PASS |
| | | | | Peak | 2390.000 | -39.23 | ≤-21.20 | 55.97 | ≤74 | PASS |
| | | High | 2462 | AV | 2483.500 | -45.84 | ≤-41.20 | 49.36 | ≤54 | PASS |
| | | | | AV | 2483.560 | -45.84 | ≤-41.20 | 49.36 | ≤54 | PASS |
| | | | | AV | 2500.000 | -46.89 | ≤-41.20 | 48.31 | ≤54 | PASS |
| | | | | Peak | 2483.500 | -40.13 | ≤-21.20 | 55.07 | ≤74 | PASS |
| | | | | Peak | 2484.000 | -34.82 | ≤-21.20 | 60.38 | ≤74 | PASS |

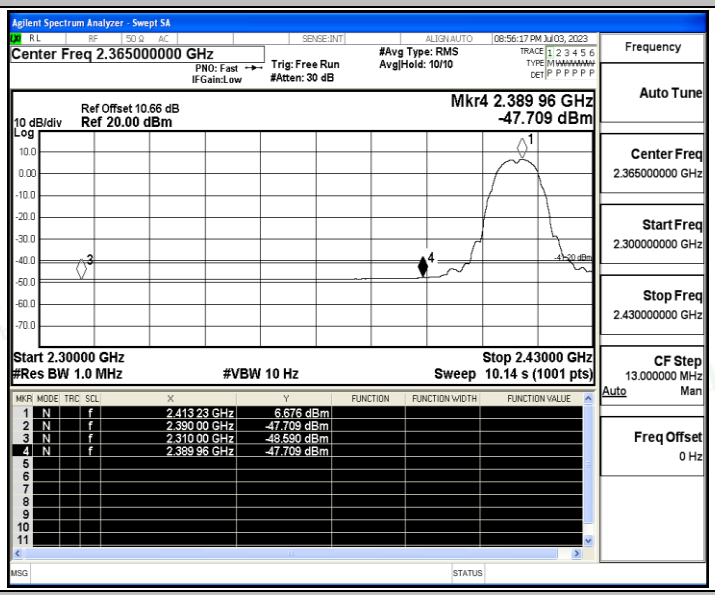
| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Peak | 2500.000 | -41.13 | ≤-21.20 | 54.07 | ≤74 | PASS |

Note：

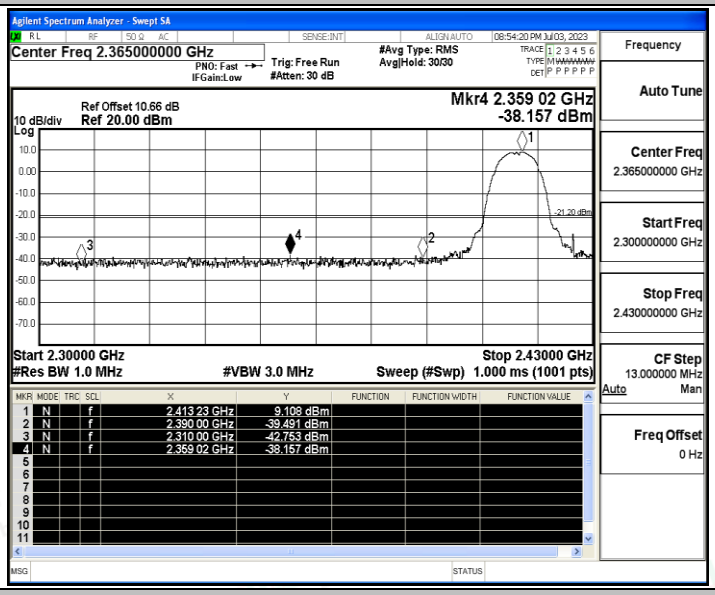
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

## Test Graphs

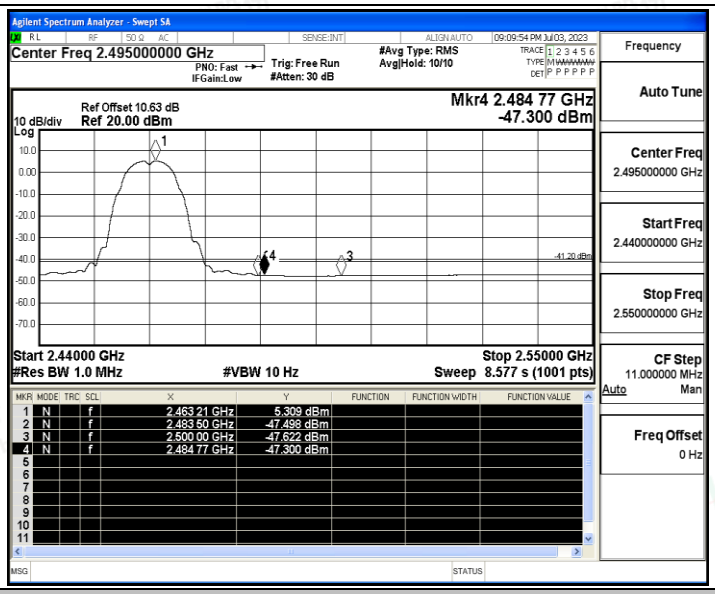
11B_Ant1_Low_2412_AV



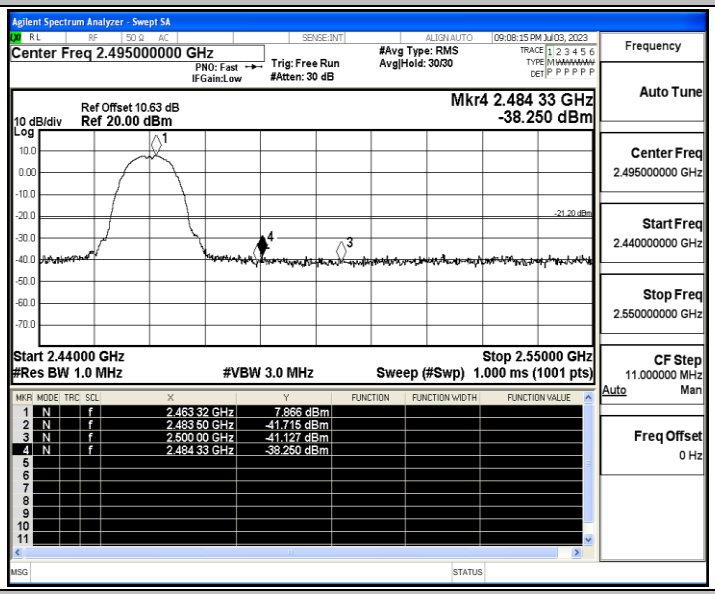

11B_Ant1_Low_2412_Peak



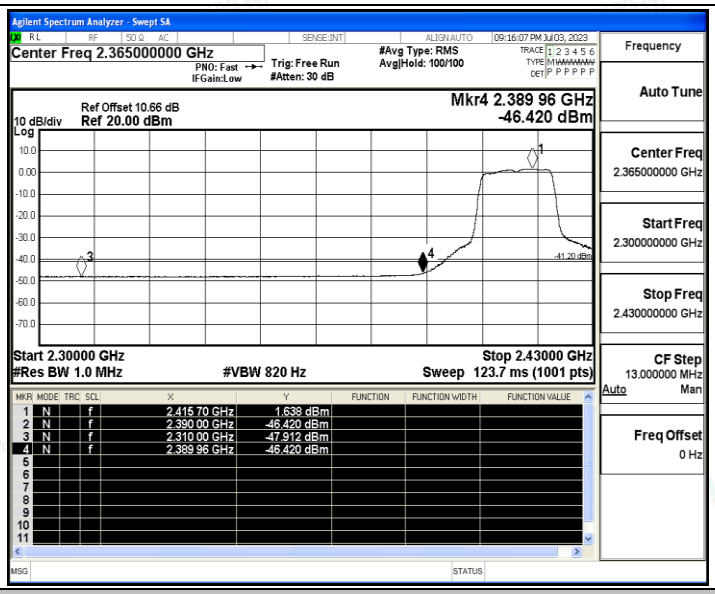

11B_Ant1_High_2462_AV



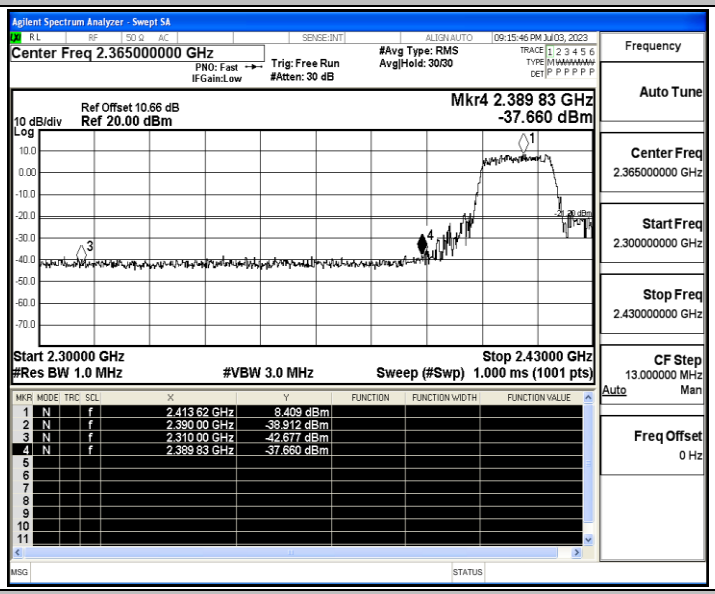

11B_Ant1_High_2462_Peak



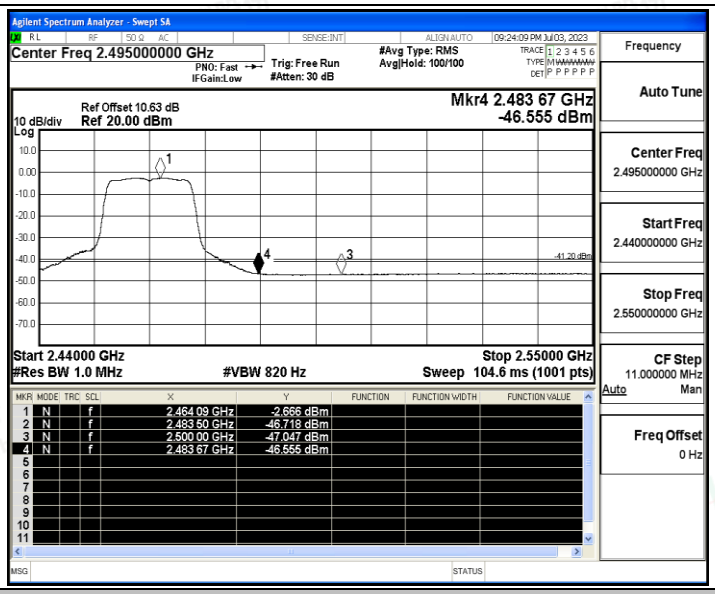

11G_Ant1_Low_2412_AV



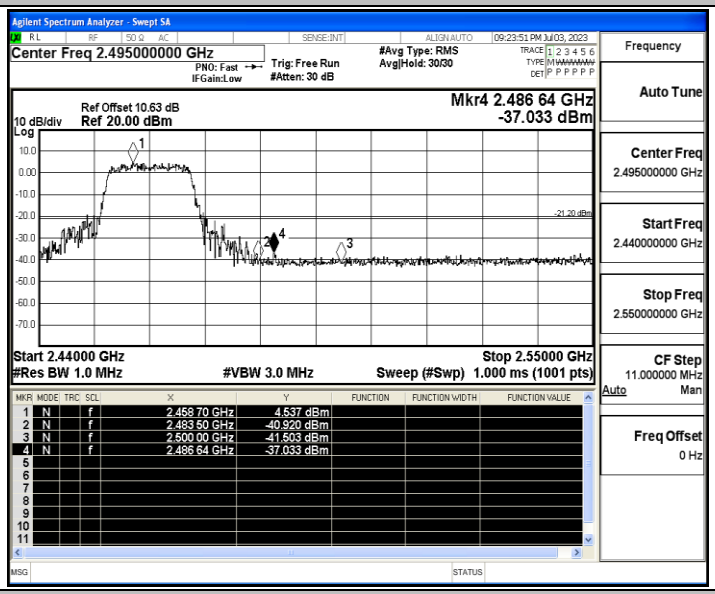

11G_Ant1_Low_2412_Peak



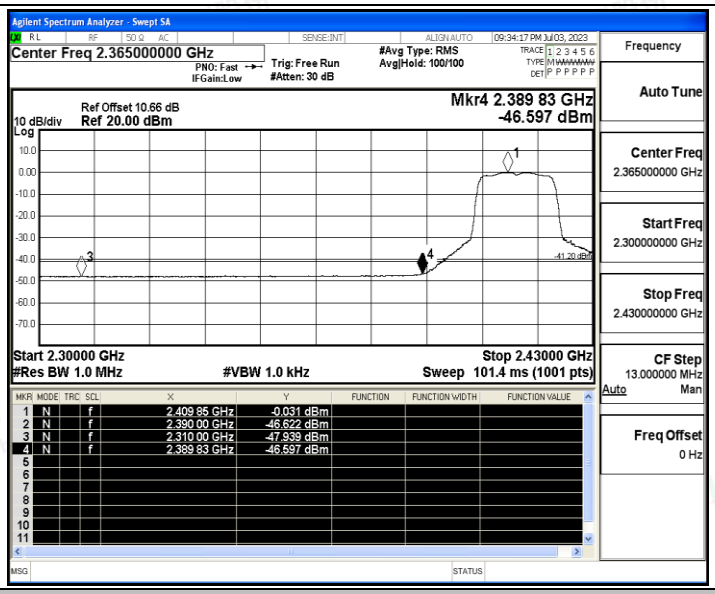

11G_Ant1_High_2462_AV



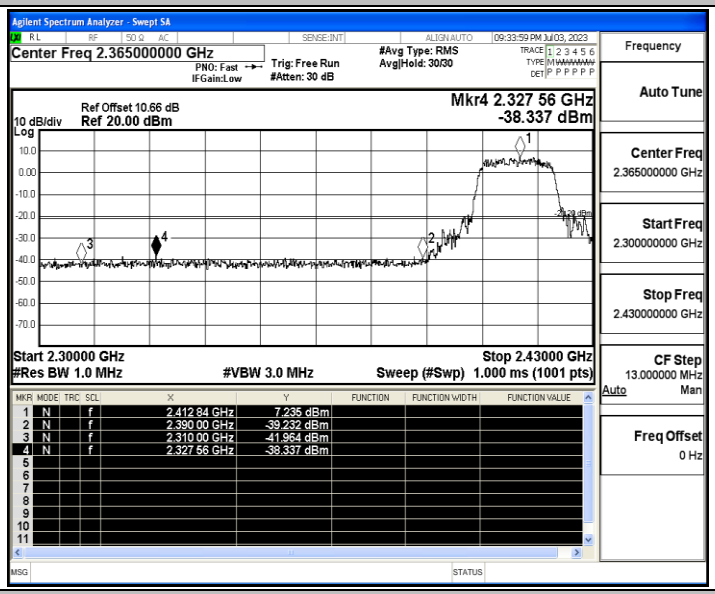

11G_Ant1_High_2462_Peak



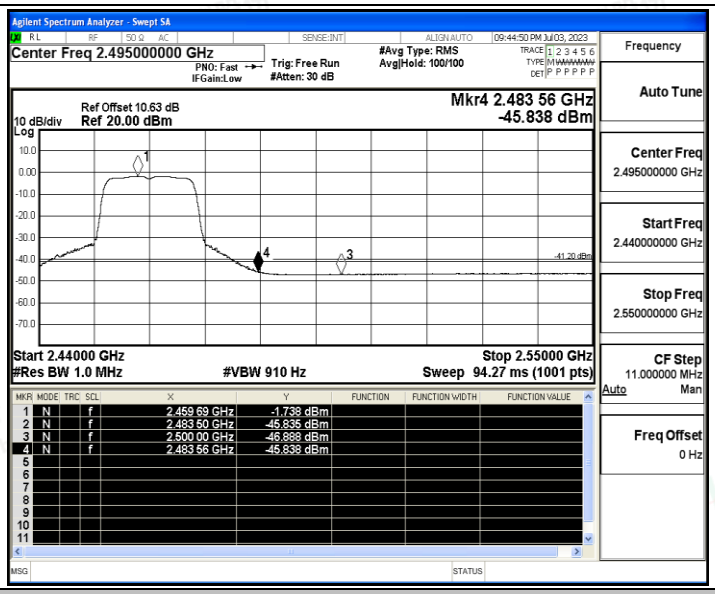

11N20SISO_Ant1_Low_2412_AV

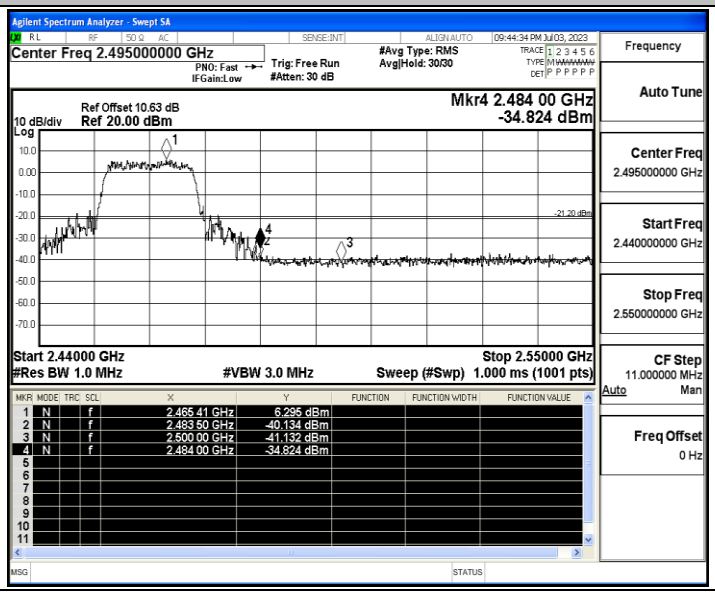



11N20SISO_Ant1_Low_2412_Peak




11N20SISO_Ant1_High_2462_AV




11N20SISO_Ant1_High_2462_Peak