| | |
|---|---|
| **Case No. :** GTS20220909003-2-3 | |
| **Ambient Condition**: 25 ℃, 45 %RH, Atmos100.1Kpa, | |
| **Test Date:** 2022.12.1 | **Test Engineer:** Jenny zeng |

# Appendix D.1: Occupied channel bandwidth

## Test Result

| TestMode | Antenna | Frequency[MHz] | OCB [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|---|---|---|---|---|---|---|---|
| 11A | Ant1 | 5745 | 17.634 | 5736.063 | 5753.697 | --- | --- |
| | | 5785 | 17.667 | 5776.084 | 5793.751 | --- | --- |
| | | 5825 | 17.765 | 5815.999 | 5833.764 | --- | --- |
| 11N20SISO | Ant1 | 5745 | 18.565 | 5735.688 | 5754.253 | --- | --- |
| | | 5785 | 18.599 | 5775.637 | 5794.236 | --- | --- |
| | | 5825 | 18.608 | 5815.638 | 5834.246 | --- | --- |
| 11N40SISO | Ant1 | 5755 | 36.826 | 5736.655 | 5773.481 | --- | --- |
| | | 5795 | 36.849 | 5776.681 | 5813.530 | --- | --- |
| 11AC20SISO | Ant1 | 5745 | 18.501 | 5735.710 | 5754.211 | --- | --- |
| | | 5785 | 18.532 | 5775.699 | 5794.231 | --- | --- |
| | | 5825 | 18.577 | 5815.670 | 5834.247 | --- | --- |
| 11AC40SISO | Ant1 | 5755 | 36.847 | 5736.582 | 5773.429 | --- | --- |
| | | 5795 | 36.784 | 5776.633 | 5813.417 | --- | --- |
| 11AC80SISO | Ant1 | 5775 | 75.936 | 5737.196 | 5813.132 | --- | --- |

## Test Graphs

| 11A_Ant1_5745 |
| --- |
| |
| 11A_Ant1_5785 |
| |
| 11A_Ant1_5825 |

11N20SISO_Ant1_5745

11N20SISO_Ant1_5785

11N20SISO_Ant1_5825

11N40SISO_Ant1_5755

11N40SISO_Ant1_5795

11AC20SISO_Ant1_5745

11AC20SISO_Ant1_5785

11AC20SISO_Ant1_5825

| 11AC40SISO_Ant1_5755 |
| --- |
| |
| 11AC40SISO_Ant1_5795 |
| |
| 11AC80SISO_Ant1_5775 |

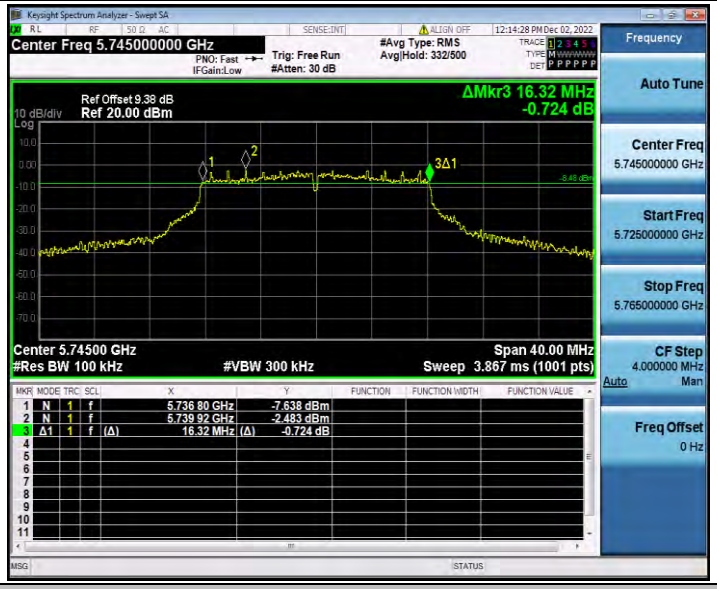
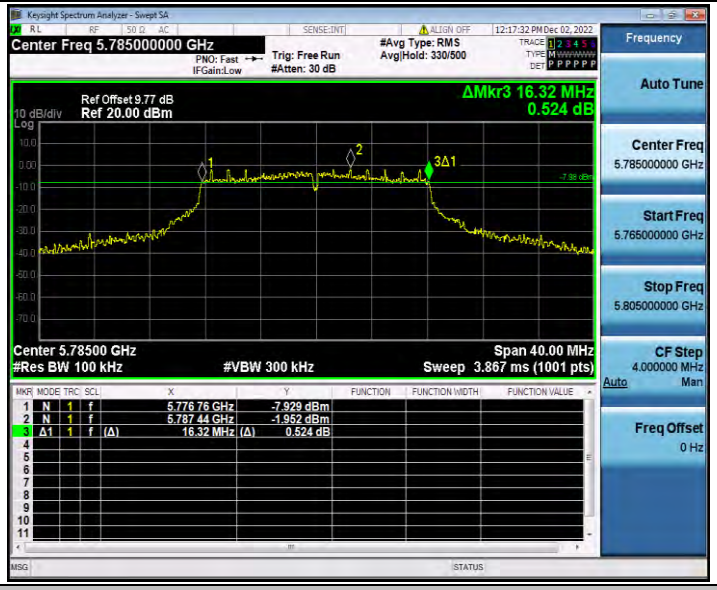
Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω AC
SENSE:INT
ALIGN OFF
12:57:18 PM Dec 02, 2022
Center Freq 5.775000000 GHz
Center Freq: 5.775000000 GHz
Trig: Free Run
Avg|Hold: 500/500
#IFGain:Low
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 9.38 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 5.77804 GHz
4.6001 dBm
Center 5.775 GHz
#Res BW 1.6 MHz
#VBW 5 MHz
Span 160 MHz
Sweep 1 ms
Occupied Bandwidth
75.936 MHz
Total Power
18.2 dBm
Transmit Freq Error
164.26 kHz
% of OBW Power
99.00 %
x dB Bandwidth
98.60 MHz
x dB
-26.00 dB
Center Freq
5.775000000 GHz
CF Step
16.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

# Appendix D.2: Min emission bandwidth

## Test Result B4

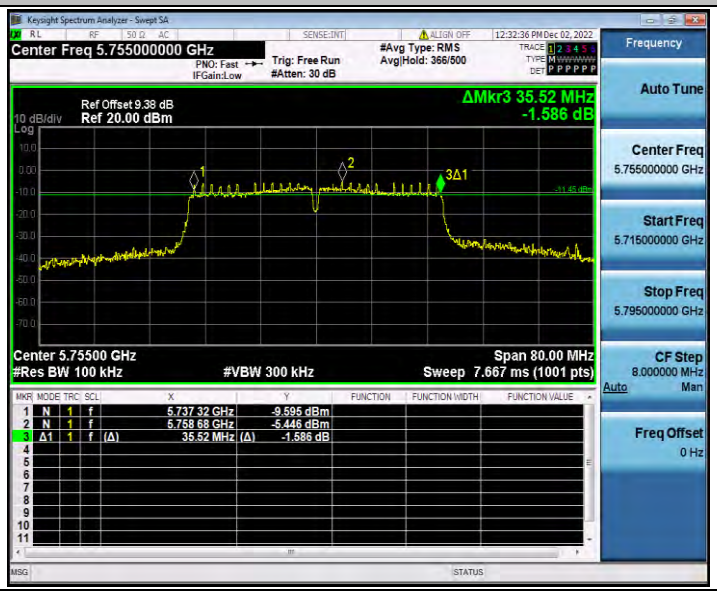
| TestMode | Antenna | Frequency[MHz] | 6db EBW [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|---|---|---|---|---|---|---|---|
| 11A | Ant1 | 5745 | 16.320 | 5736.800 | 5753.120 | 0.5 | PASS |
| | | 5785 | 16.320 | 5776.760 | 5793.080 | 0.5 | PASS |
| | | 5825 | 16.280 | 5816.760 | 5833.040 | 0.5 | PASS |
| 11N20SISO | Ant1 | 5745 | 17.320 | 5736.400 | 5753.720 | 0.5 | PASS |
| | | 5785 | 17.520 | 5776.160 | 5793.680 | 0.5 | PASS |
| | | 5825 | 16.800 | 5816.520 | 5833.320 | 0.5 | PASS |
| 11N40SISO | Ant1 | 5755 | 35.520 | 5737.320 | 5772.840 | 0.5 | PASS |
| | | 5795 | 35.680 | 5777.160 | 5812.840 | 0.5 | PASS |
| 11AC20SISO | Ant1 | 5745 | 16.480 | 5736.600 | 5753.080 | 0.5 | PASS |
| | | 5785 | 17.280 | 5776.160 | 5793.440 | 0.5 | PASS |
| | | 5825 | 17.160 | 5816.160 | 5833.320 | 0.5 | PASS |
| 11AC40SISO | Ant1 | 5755 | 35.600 | 5737.080 | 5772.680 | 0.5 | PASS |
| | | 5795 | 35.680 | 5777.160 | 5812.840 | 0.5 | PASS |
| 11AC80SISO | Ant1 | 5775 | 75.040 | 5737.400 | 5812.440 | 0.5 | PASS |

## Test Graphs B4

| 11A_Ant1_5745 |
| --- |
|  |
| 11A_Ant1_5785 |
|  |
| 11A_Ant1_5825 |

11N20SISO_Ant1_5745

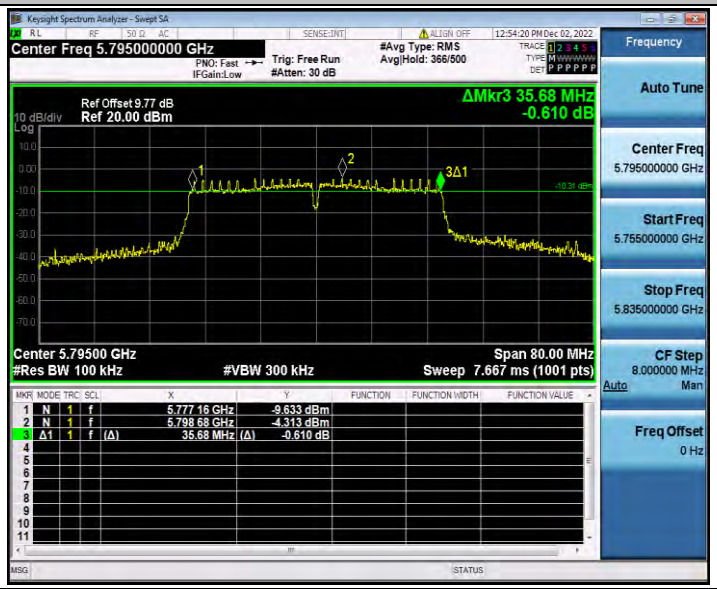
11N20SISO_Ant1_5785

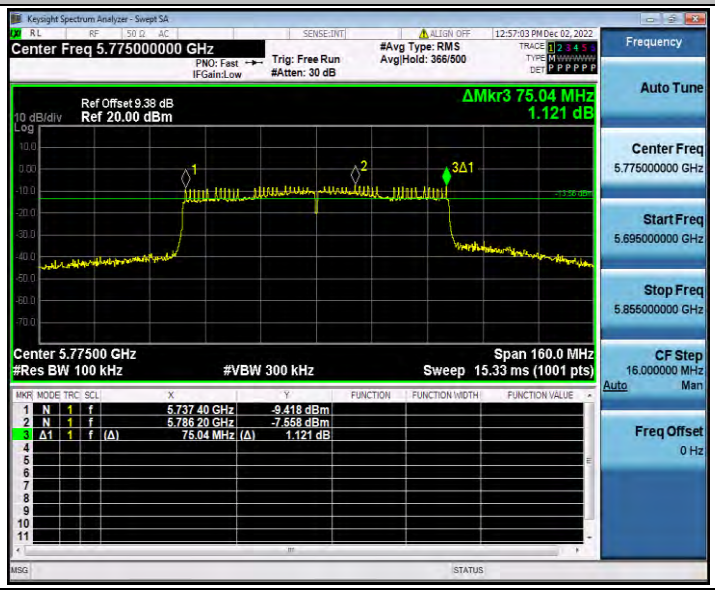
| 11N20SISO_Ant1_5825 |
| --- |
| |
| 11N40SISO_Ant1_5755 |
|  |
| 11N40SISO_Ant1_5795 |
| |

| 11AC20SISO_Ant1_5745 |
| --- |
| |
| 11AC20SISO_Ant1_5785 |
| |
| 11AC20SISO_Ant1_5825 |

11AC40SISO_Ant1_5755

11AC40SISO_Ant1_5795



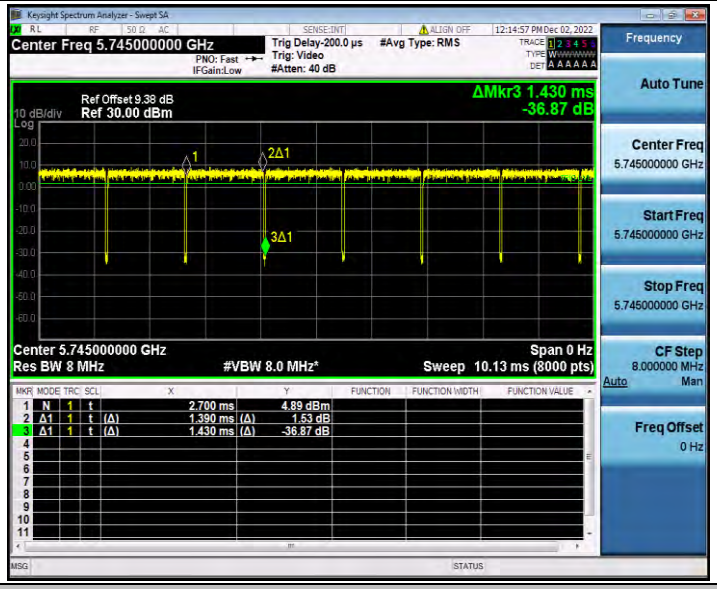
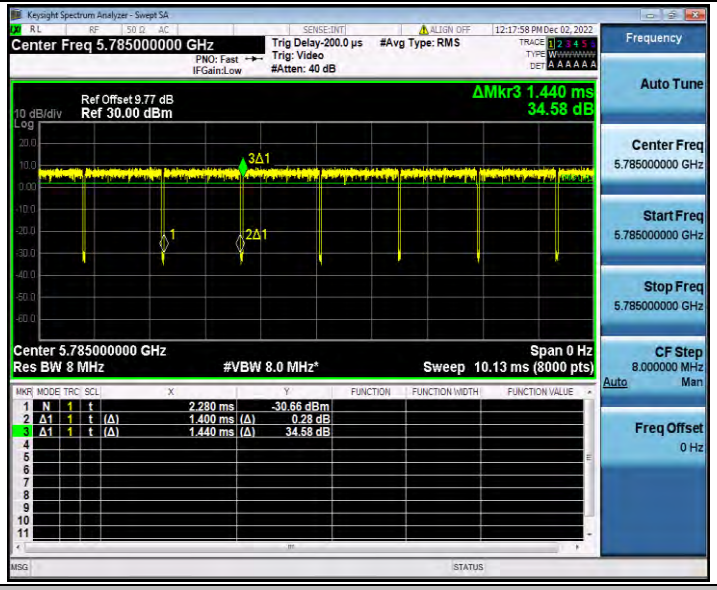
| 11AC80SISO_Ant1_5775 |
| --- |
|  |

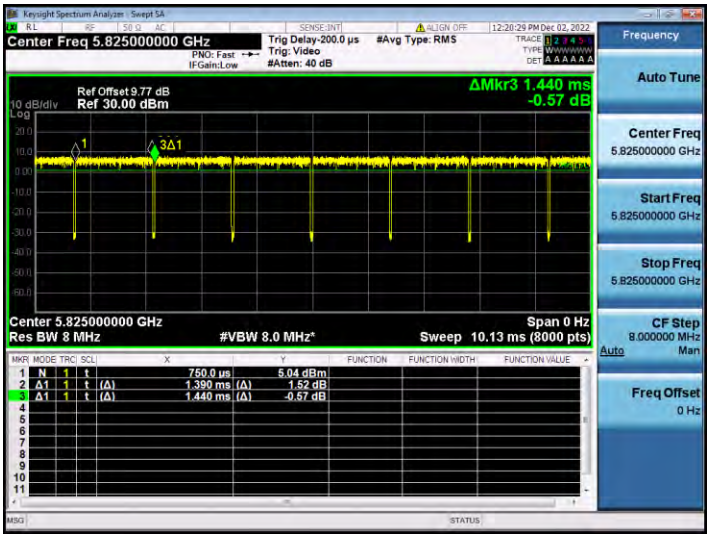
# Appendix D.3: Duty Cycle

## Test Result

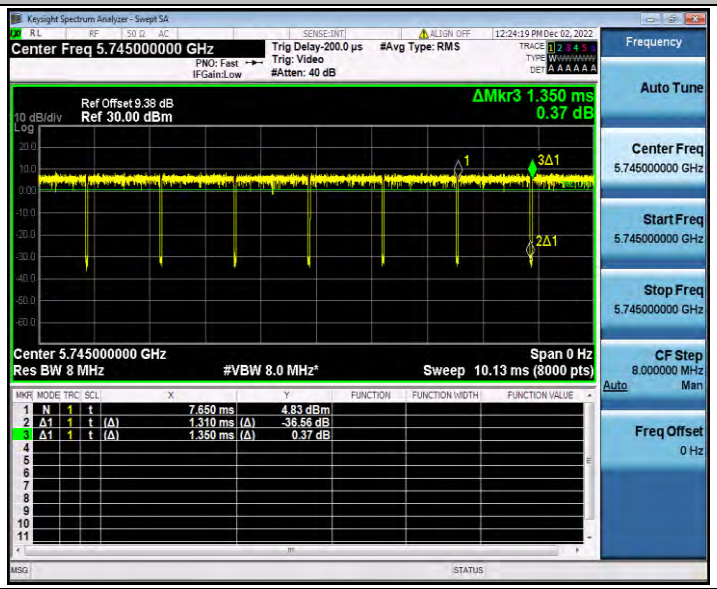
| TestMode | Antenna | Frequency[MHz] | Transmission Duration [ms] | Transmission Period [ms] | Duty Cycle [%] |
|---|---|---|---|---|---|
| 11A | Ant1 | 5745 | 1.39 | 1.43 | 97.20 |
| | | 5785 | 1.40 | 1.44 | 97.22 |
| | | 5825 | 1.39 | 1.44 | 96.53 |
| 11N20SISO | Ant1 | 5745 | 1.31 | 1.35 | 97.04 |
| | | 5785 | 1.30 | 1.34 | 97.01 |
| | | 5825 | 1.30 | 1.35 | 96.30 |
| 11N40SISO | Ant1 | 5755 | 0.65 | 0.69 | 94.20 |
| | | 5795 | 0.64 | 0.68 | 94.12 |
| 11AC20SISO | Ant1 | 5745 | 1.31 | 1.36 | 96.32 |
| | | 5785 | 1.32 | 1.36 | 97.06 |
| | | 5825 | 1.31 | 1.36 | 96.32 |
| 11AC40SISO | Ant1 | 5755 | 0.65 | 0.69 | 94.20 |
| | | 5795 | 0.65 | 0.69 | 94.20 |
| 11AC80SISO | Ant1 | 5775 | 0.32 | 0.36 | 88.89 |

## Test Graphs

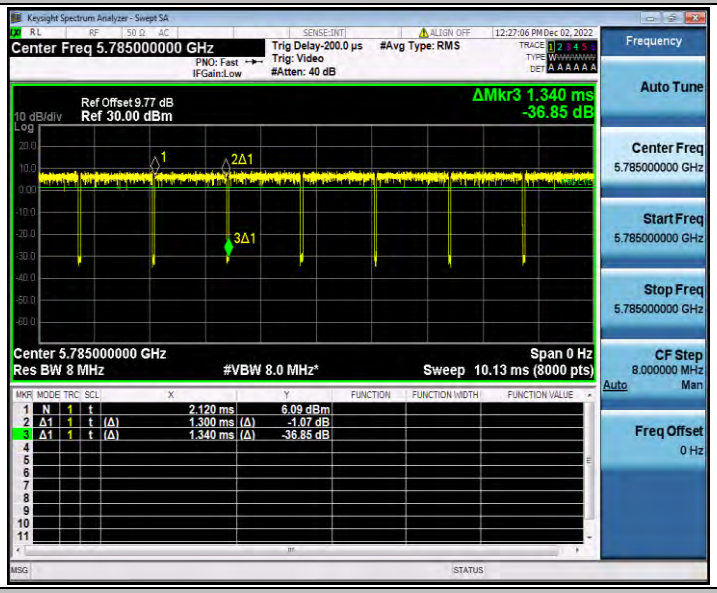
| 11A_Ant1_5745 |
| --- |
|  |
| 11A_Ant1_5785 |
|  |
| 11A_Ant1_5825 |



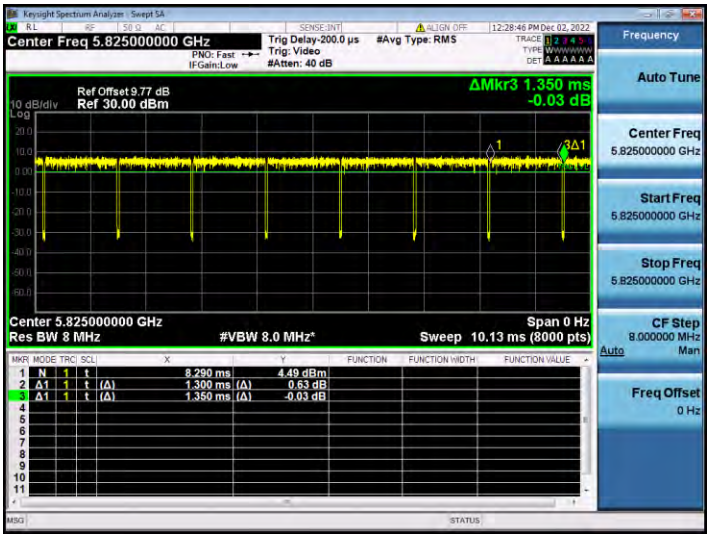

11N20SISO_Ant1_5745



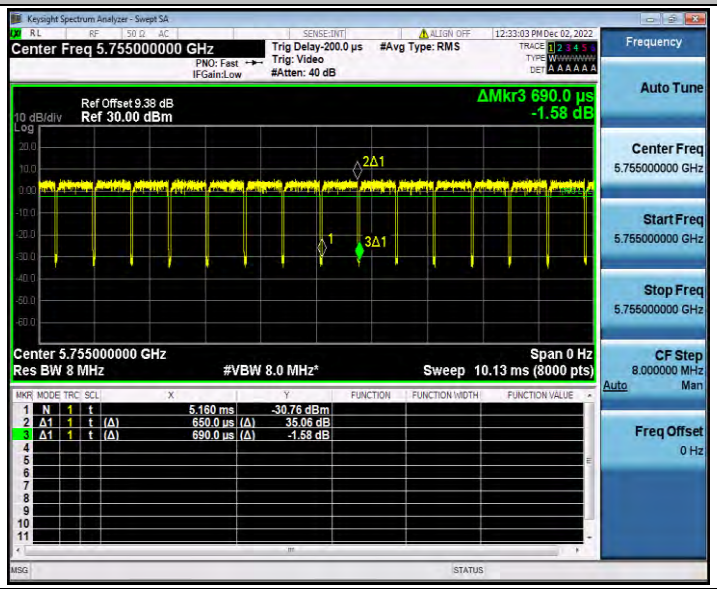

11N20SISO_Ant1_5785



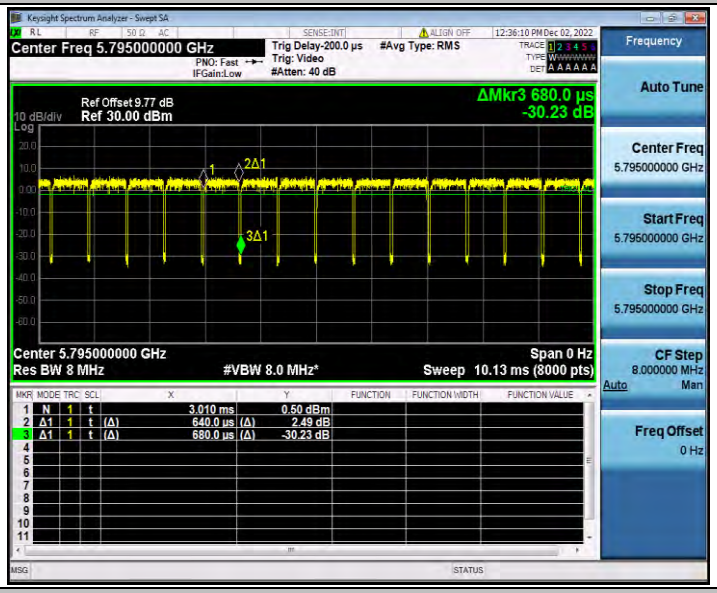

11N20SISO_Ant1_5825



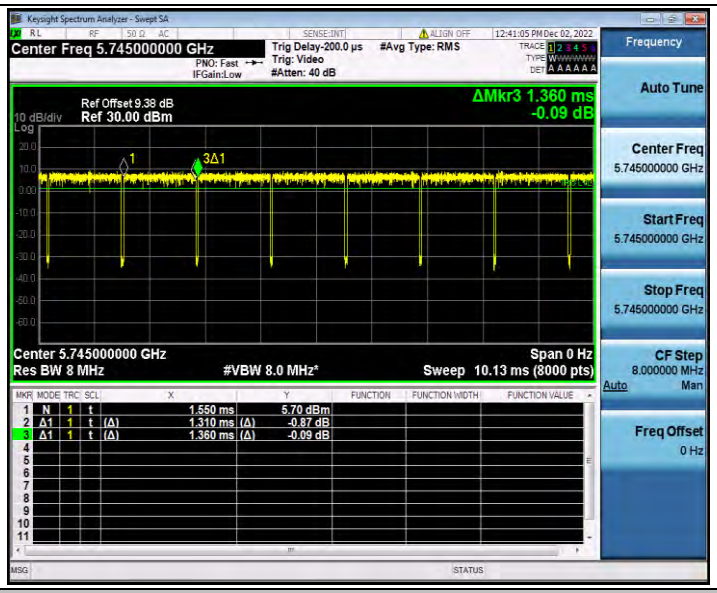

11N40SISO_Ant1_5755



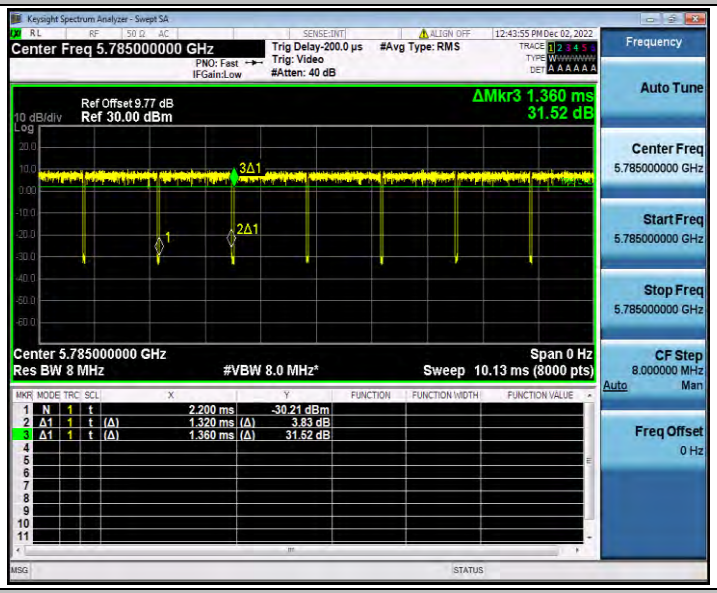

11N40SISO_Ant1_5795



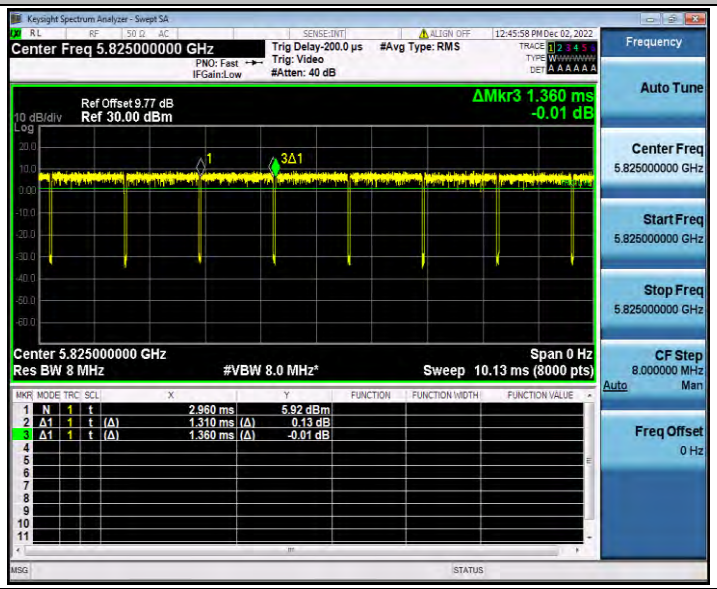

11AC20SISO_Ant1_5745

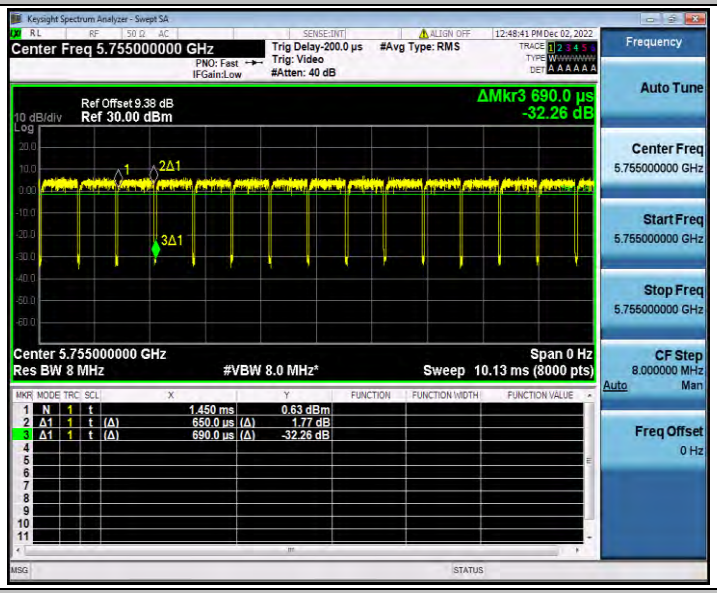
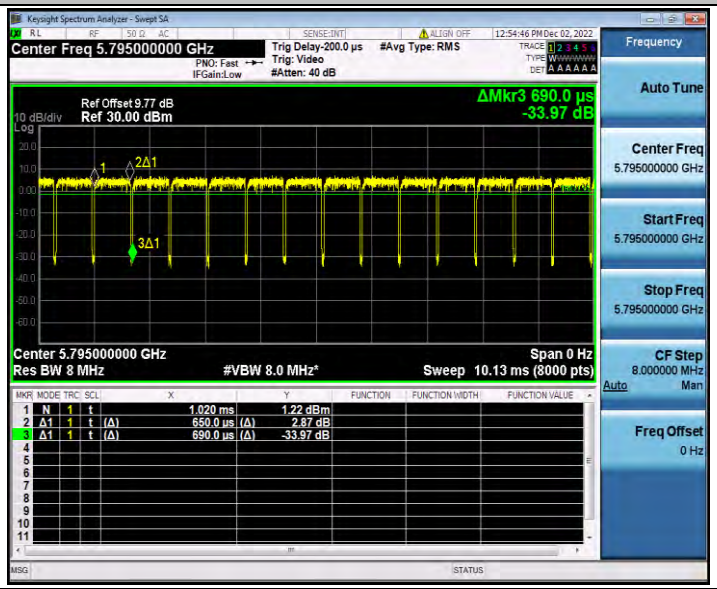


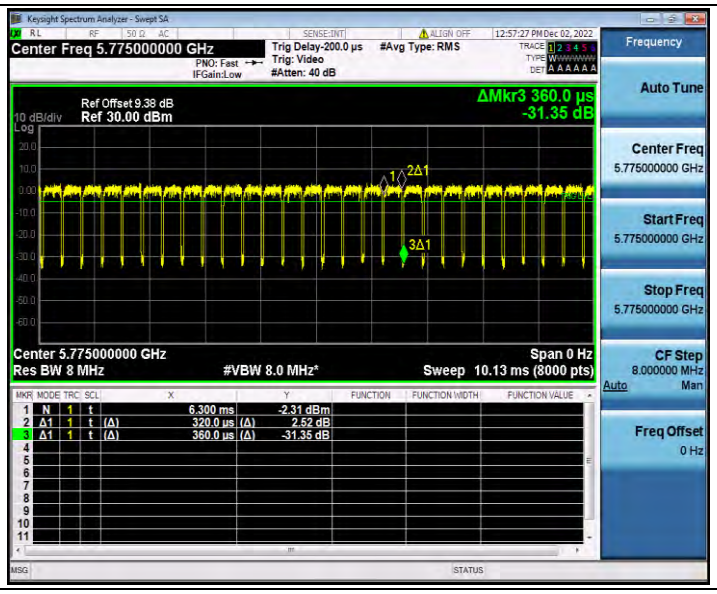

11AC20SISO_Ant1_5785




11AC20SISO_Ant1_5825



| 11AC40SISO_Ant1_5755 |
| --- |
|  |
| 11AC40SISO_Ant1_5795 |
|  |
| 11AC80SISO_Ant1_5775 |


Keysight Spectrum Analyzer - Swept SA
Center Freq 5.775000000 GHz
PNO: Fast
IFGain:Low
Trig Delay-200.0 µs
Trig: Video
#Atten: 40 dB
#Avg Type: RMS
12:57:27 PM Dec 02, 2022
Ref Offset 9.38 dB
10 dB/div
Ref 30.00 dBm
ΔMkr3 360.0 µs
-31.35 dB
Center 5.775000000 GHz
Res BW 8 MHz
#VBW 8.0 MHz*
Span 0 Hz
Sweep 10.13 ms (8000 pts)
1 N 1 t 6.300 ms -2.31 dBm
2 Δ1 1 t (Δ) 320.0 µs (Δ) 2.52 dB
3 Δ1 1 t (Δ) 360.0 µs (Δ) -31.35 dB
Frequency
Auto Tune
Center Freq
5.775000000 GHz
Start Freq
5.775000000 GHz
Stop Freq
5.775000000 GHz
CF Step
8.000000 MHz
Auto
Man
Freq Offset
0 Hz

## Appendix D.4: Maximum conducted output power

### Test Result Channel Power

| Test Mode | Antenna | Frequency[ MHz] | Channel Powert [dBm] | Duty Cycle [%] | DC Factor [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|---|---|---|---|---|---|---|---|---|
| 11A | Ant1 | 5745 | 9.07 | 97.20 | 0.12 | 9.19 | ≤30.00 | PASS |
| | | 5785 | 9.43 | 97.22 | 0.12 | 9.55 | ≤30.00 | PASS |
| | | 5825 | 8.71 | 96.53 | 0.15 | 8.86 | ≤30.00 | PASS |
| 11N20SISO | Ant1 | 5745 | 8.30 | 97.04 | 0.13 | 8.43 | ≤30.00 | PASS |
| | | 5785 | 9.02 | 97.01 | 0.13 | 9.15 | ≤30.00 | PASS |
| | | 5825 | 8.42 | 96.30 | 0.16 | 8.58 | ≤30.00 | PASS |
| 11N40SISO | Ant1 | 5755 | 8.11 | 94.20 | 0.26 | 8.37 | ≤30.00 | PASS |
| | | 5795 | 8.76 | 94.12 | 0.26 | 9.02 | ≤30.00 | PASS |
| 11AC20SISO | Ant1 | 5745 | 9.01 | 96.32 | 0.16 | 9.17 | ≤30.00 | PASS |
| | | 5785 | 9.53 | 97.06 | 0.13 | 9.66 | ≤30.00 | PASS |
| | | 5825 | 8.87 | 96.32 | 0.16 | 9.03 | ≤30.00 | PASS |
| 11AC40SISO | Ant1 | 5755 | 8.74 | 94.20 | 0.26 | 9.00 | ≤30.00 | PASS |
| | | 5795 | 9.39 | 94.20 | 0.26 | 9.65 | ≤30.00 | PASS |
| 11AC80SISO | Ant1 | 5775 | 8.78 | 88.89 | 0.51 | 9.29 | ≤30.00 | PASS |

Note：The Duty Cycle Factor is compensated in the graph.

# Appendix D.5: Maximum power spectral density

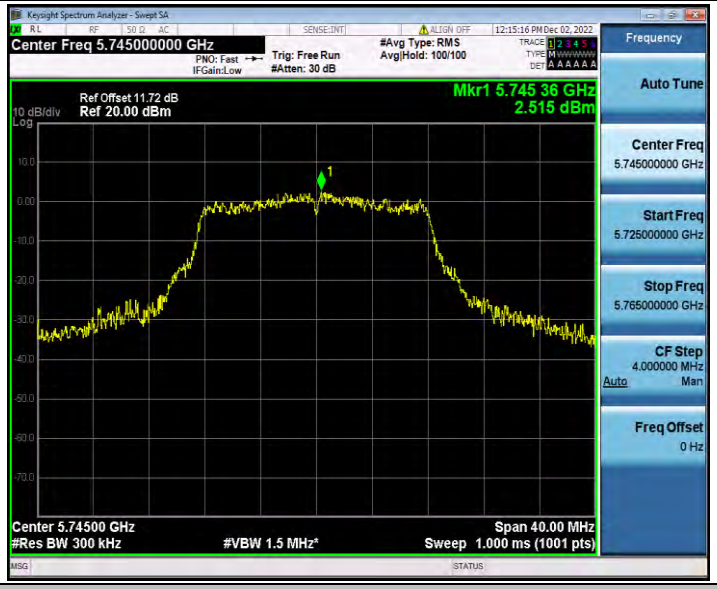
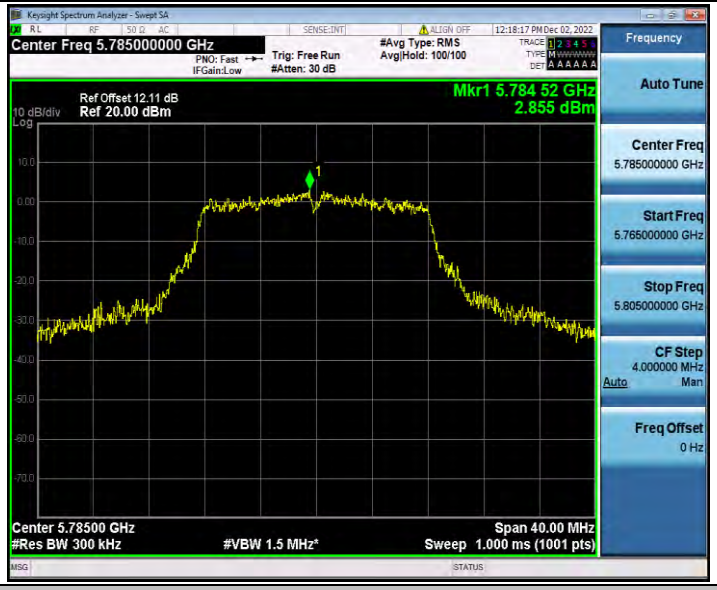
## Test Result

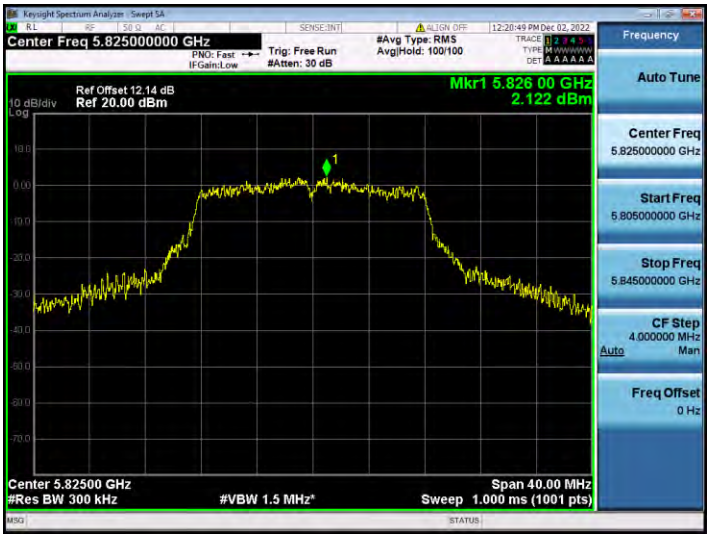
| TestMode | Antenna | Frequency[MHz] | Result [dBm/MHz] | Limit[dBm/MHz] | Verdict |
|---|---|---|---|---|---|
| 11A | Ant1 | 5745 | 2.52 | ≤30.00 | PASS |
| | | 5785 | 2.86 | ≤30.00 | PASS |
| | | 5825 | 2.12 | ≤30.00 | PASS |
| 11N20SISO | Ant1 | 5745 | 1.06 | ≤30.00 | PASS |
| | | 5785 | 2.45 | ≤30.00 | PASS |
| | | 5825 | 1.55 | ≤30.00 | PASS |
| 11N40SISO | Ant1 | 5755 | -1.57 | ≤30.00 | PASS |
| | | 5795 | -0.2 | ≤30.00 | PASS |
| 11AC20SISO | Ant1 | 5745 | 2.18 | ≤30.00 | PASS |
| | | 5785 | 3.14 | ≤30.00 | PASS |
| | | 5825 | 2.5 | ≤30.00 | PASS |
| 11AC40SISO | Ant1 | 5755 | -1.12 | ≤30.00 | PASS |
| | | 5795 | -0.02 | ≤30.00 | PASS |
| 11AC80SISO | Ant1 | 5775 | -3.63 | ≤30.00 | PASS |

Note：1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.

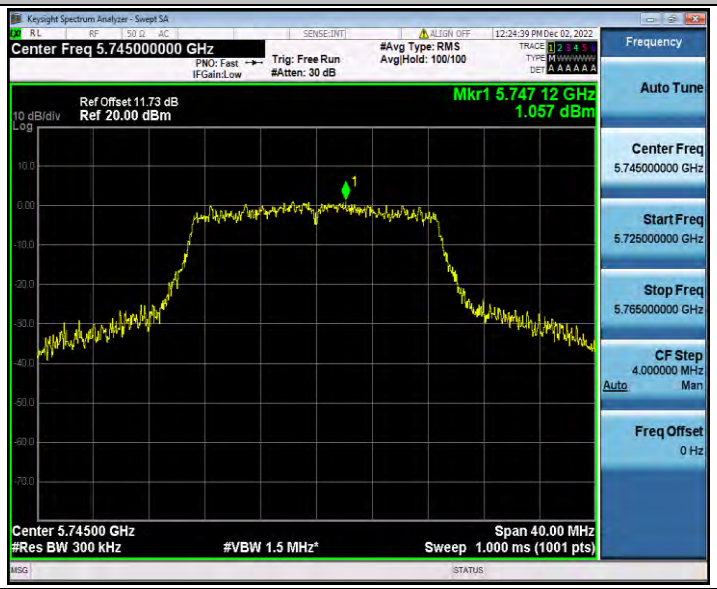
2.The Duty Cycle Factor and RBW Factor is compensated in the graph.

## Test Graphs

| 11A_Ant1_5745 |
| --- |
|  |
| 11A_Ant1_5785 |
|  |
| 11A_Ant1_5825 |

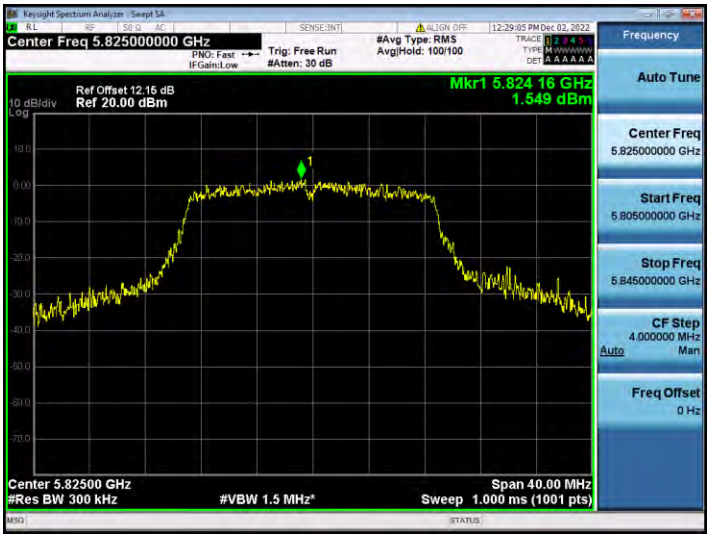



11N20SISO_Ant1_5745




11N20SISO_Ant1_5785

11N20SISO_Ant1_5825




11N40SISO_Ant1_5755

11N40SISO_Ant1_5795

11AC20SISO_Ant1_5745

11AC20SISO_Ant1_5785

11AC20SISO_Ant1_5825

| 11AC40SISO_Ant1_5755 |
| --- |
| |
| 11AC40SISO_Ant1_5795 |
| |
| 11AC80SISO_Ant1_5775 |

Keysight Spectrum Analyzer - Swept SA
Center Freq 5.775000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
12:57:46 PM Dec 02, 2022
Frequency
Auto Tune
Ref Offset 12.11 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 5.773 24 GHz
-3.633 dBm
Center Freq
5.775000000 GHz
Start Freq
5.695000000 GHz
Stop Freq
5.855000000 GHz
CF Step
16.000000 MHz
Auto
Man
Freq Offset
0 Hz
Center 5.77500 GHz
#Res BW 300 kHz
#VBW 1.5 MHz*
Span 160.0 MHz
Sweep 2.200 ms (1001 pts)
MSG
STATUS

# Appendix D.6: Band edge measurements

## Test Result B4

| TestMode | Antenna | ChName | Frequency[MHz] | FreqRange [MHz] | Result [dBm] | Limit [dBm] | Verdict |
|---|---|---|---|---|---|---|---|
| 11A | Ant1 | Low | 5745 | 5650~5700 | -38.28 | ≤7.85 | PASS |
| | | | | 5700~5720 | -28.16 | ≤14.69 | PASS |
| | | | | 5720~5725 | -23.76 | ≤21.85 | PASS |
| | | | | 5760~5650 | -40.29 | ≤-27 | PASS |
| | | High | 5825 | 5850~5855 | -33.07 | ≤16.41 | PASS |
| | | | | 5855~5875 | -35.32 | ≤10.25 | PASS |
| | | | | 5875~5925 | -39.1 | ≤-21.46 | PASS |
| | | | | 5925~5935 | -39.09 | ≤-27 | PASS |
| 11N20SISO | Ant1 | Low | 5745 | 5650~5700 | -38.69 | ≤9.55 | PASS |
| | | | | 5700~5720 | -33.52 | ≤15.47 | PASS |
| | | | | 5720~5725 | -26.44 | ≤25.26 | PASS |
| | | | | 5760~5650 | -40.85 | ≤-27 | PASS |
| | | High | 5825 | 5850~5855 | -34.56 | ≤15.79 | PASS |
| | | | | 5855~5875 | -37.47 | ≤10.14 | PASS |
| | | | | 5875~5925 | -38.85 | ≤-12.07 | PASS |
| | | | | 5925~5935 | -39.55 | ≤-27 | PASS |
| 11N40SISO | Ant1 | Low | 5755 | 5650~5700 | -37.25 | ≤4.76 | PASS |
| | | | | 5700~5720 | -27.16 | ≤15.31 | PASS |
| | | | | 5720~5725 | -24.27 | ≤26.51 | PASS |
| | | | | 5780~5650 | -40.2 | ≤-27 | PASS |
| | | High | 5795 | 5850~5855 | -38.06 | ≤20.17 | PASS |
| | | | | 5855~5875 | -38.75 | ≤14.71 | PASS |
| | | | | 5875~5925 | -38.34 | ≤-5.07 | PASS |
| | | | | 5925~5935 | -39.32 | ≤-27 | PASS |
| 11AC20SISO | Ant1 | Low | 5745 | 5650~5700 | -38.29 | ≤8.53 | PASS |
| | | | | 5700~5720 | -34.16 | ≤15.34 | PASS |
| | | | | 5720~5725 | -26.96 | ≤26.57 | PASS |
| | | | | 5760~5650 | -40.31 | ≤-27 | PASS |
| | | High | 5825 | 5850~5855 | -35.24 | ≤17.64 | PASS |
| | | | | 5855~5875 | -35.65 | ≤10.10 | PASS |
| | | | | 5875~5925 | -38.69 | ≤-9.77 | PASS |
| | | | | 5925~5935 | -38.3 | ≤-27 | PASS |
| 11AC40SISO | Ant1 | Low | 5755 | 5650~5700 | -37.17 | ≤9.16 | PASS |
| | | | | 5700~5720 | -28 | ≤15.39 | PASS |
| | | | | 5720~5725 | -24.77 | ≤25.89 | PASS |

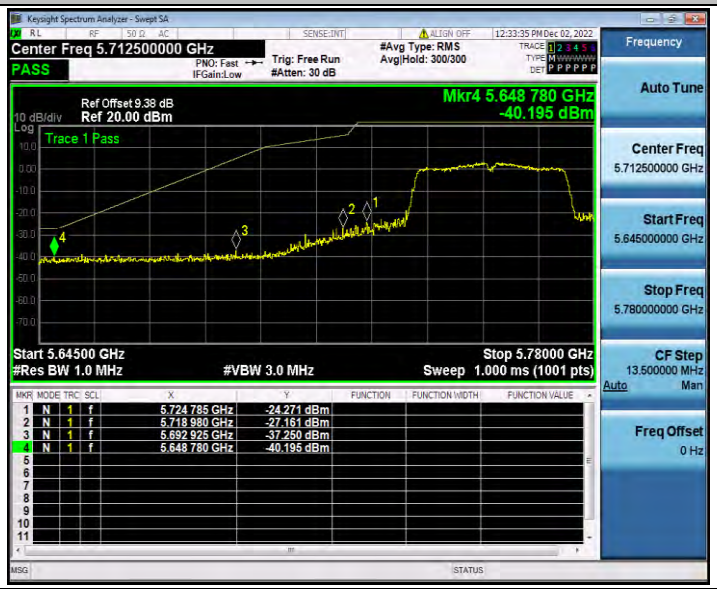
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | 5780~5650 | -39.66 | ≤-27 | PASS |
| | | High | 5795 | 5850~5855 | -37.17 | ≤16.41 | PASS |
| | | | | 5855~5875 | -37.93 | ≤13.87 | PASS |
| | | | | 5875~5925 | -37.25 | ≤0.79 | PASS |
| | | | | 5925~5935 | -39.31 | ≤-27 | PASS |
| 11AC80S ISO | Ant1 | Low | 5775 | 5650~5700 | -32.73 | ≤9.45 | PASS |
| | | | | 5700~5720 | -28.4 | ≤15.43 | PASS |
| | | | | 5720~5725 | -28.09 | ≤17.77 | PASS |
| | | | | 5800~5650 | -39.82 | ≤-27 | PASS |
| | | High | 5775 | 5850~5855 | -32.3 | ≤18.75 | PASS |
| | | | | 5855~5875 | -33.04 | ≤11.68 | PASS |
| | | | | 5875~5925 | -37.75 | ≤-21.62 | PASS |
| | | | | 5925~5935 | -38.31 | ≤-27 | PASS |

## Test Graphs B4

| 11A_Ant1_Low_5745 |
| --- |
| |
| 11A_Ant1_High_5825 |
| |
| 11N20SISO_Ant1_Low_5745 |

11N20SISO_Ant1_High_5825

11N40SISO_Ant1_Low_5755



| 11N40SISO_Ant1_High_5795 |
| --- |
| |
| 11AC20SISO_Ant1_Low_5745 |
| |
| 11AC20SISO_Ant1_High_5825 |

11AC40SISO_Ant1_Low_5755

11AC40SISO_Ant1_High_5795

| 11AC80SISO_Ant1_Low_5775 |
| --- |
| |



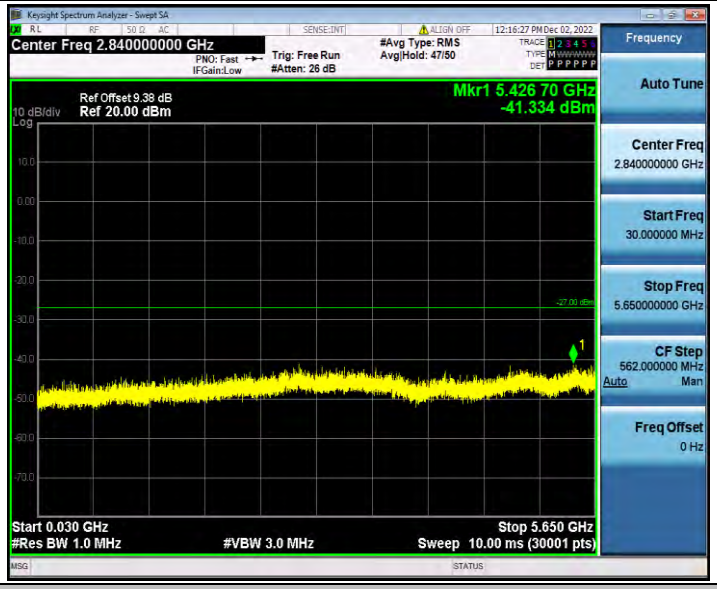
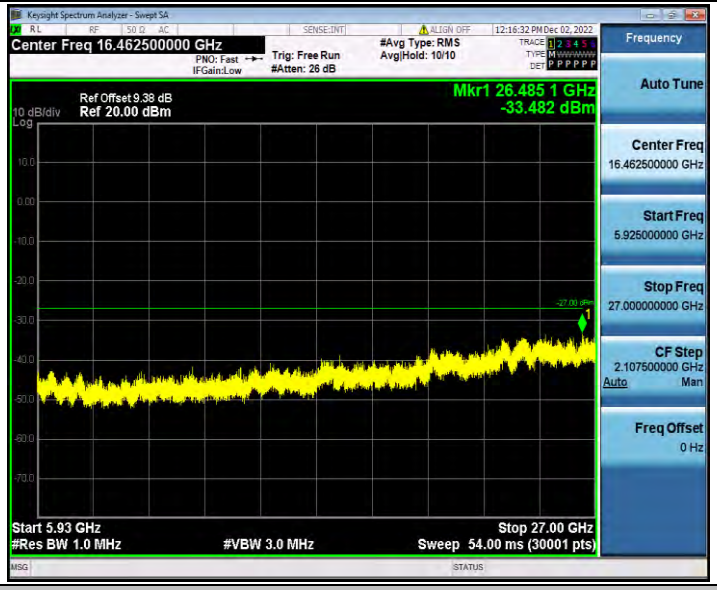
| 11AC80SISO_Ant1_High_5775 |
| --- |
| |

# Appendix D.7: Conducted Spurious Emission

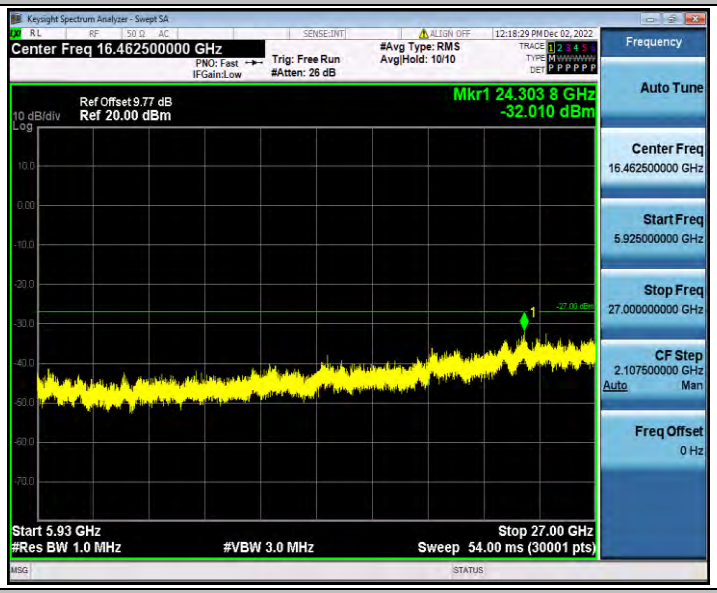
## Test Result

| TestMode | Antenna | Frequency[MHz] | FreqRange [MHz] | Max. Fre [MHz] | Max. Level [dBm] | Limit [dBm] | Verdict |
|---|---|---|---|---|---|---|---|
| 11A | Ant1 | 5745 | 30~5650 | 5426.7 | -41.33 | ≤-27 | PASS |
| | | | 5925~40000 | 26485.07 | -33.48 | ≤-27 | PASS |
| | | 5785 | 30~5650 | 5472.97 | -39.98 | ≤-27 | PASS |
| | | | 5925~40000 | 24303.81 | -32.01 | ≤-27 | PASS |
| | | 5825 | 30~5650 | 3147.6 | -39.98 | ≤-27 | PASS |
| | | | 5925~40000 | 24857.38 | -32.92 | ≤-27 | PASS |
| 11N20SISO | Ant1 | 5745 | 30~5650 | 3164.09 | -41.22 | ≤-27 | PASS |
| | | | 5925~40000 | 24330.5 | -32.31 | ≤-27 | PASS |
| | | 5785 | 30~5650 | 1737.17 | -37.67 | ≤-27 | PASS |
| | | | 5925~40000 | 26789.25 | -32.64 | ≤-27 | PASS |
| | | 5825 | 30~5650 | 5373.68 | -40.62 | ≤-27 | PASS |
| | | | 5925~40000 | 24367.03 | -32.42 | ≤-27 | PASS |
| 11N40SISO | Ant1 | 5755 | 30~5650 | 5444.87 | -40.57 | ≤-27 | PASS |
| | | | 5925~40000 | 25715.13 | -33.18 | ≤-27 | PASS |
| | | 5795 | 30~5650 | 3507.66 | -40.59 | ≤-27 | PASS |
| | | | 5925~40000 | 24823.66 | -32.55 | ≤-27 | PASS |
| 11AC20SISO | Ant1 | 5745 | 30~5650 | 2641.24 | -39.8 | ≤-27 | PASS |
| | | | 5925~40000 | 26869.34 | -32.93 | ≤-27 | PASS |
| | | 5785 | 30~5650 | 2731.72 | -40.76 | ≤-27 | PASS |
| | | | 5925~40000 | 24218.8 | -31.75 | ≤-27 | PASS |
| | | 5825 | 30~5650 | 5458.92 | -40.66 | ≤-27 | PASS |
| | | | 5925~40000 | 26952.93 | -32.32 | ≤-27 | PASS |
| 11AC40SISO | Ant1 | 5755 | 30~5650 | 5410.03 | -39.47 | ≤-27 | PASS |
| | | | 5925~40000 | 24253.93 | -32.53 | ≤-27 | PASS |
| | | 5795 | 30~5650 | 5441.31 | -39.11 | ≤-27 | PASS |
| | | | 5925~40000 | 26102.21 | -32.47 | ≤-27 | PASS |
| 11AC80SISO | Ant1 | 5775 | 30~5650 | 2670.28 | -40.2 | ≤-27 | PASS |
| | | | 5925~40000 | 24835.6 | -32.41 | ≤-27 | PASS |

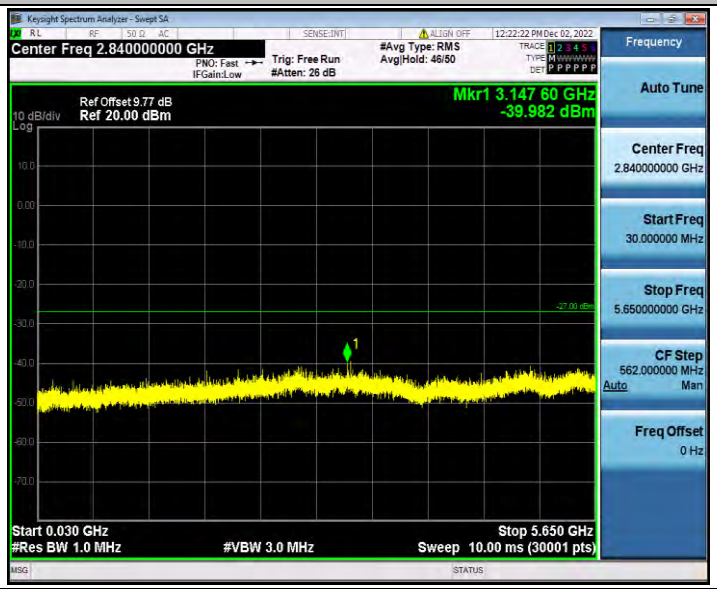
## Test Graphs

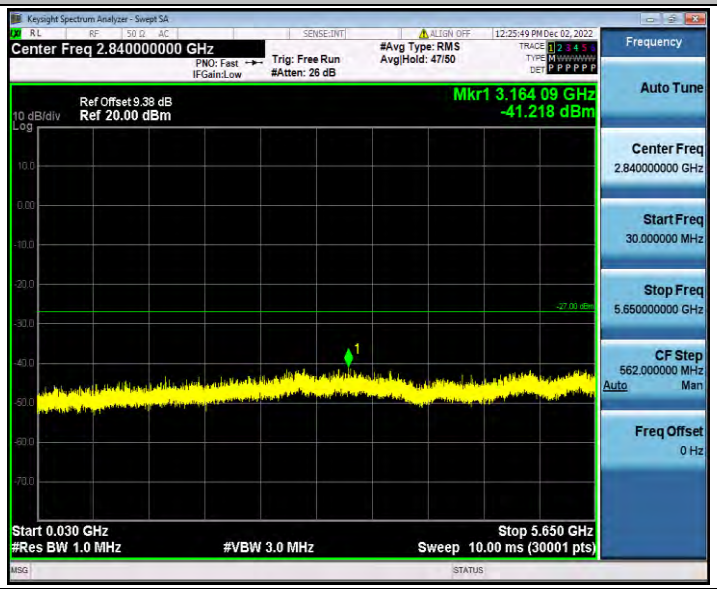
| 11A_Ant1_5745_30~5650 |
| --- |
|  |
| 11A_Ant1_5745_5925~40000 |
|  |
| 11A_Ant1_5785_30~5650 |

11A_Ant1_5785_5925~40000



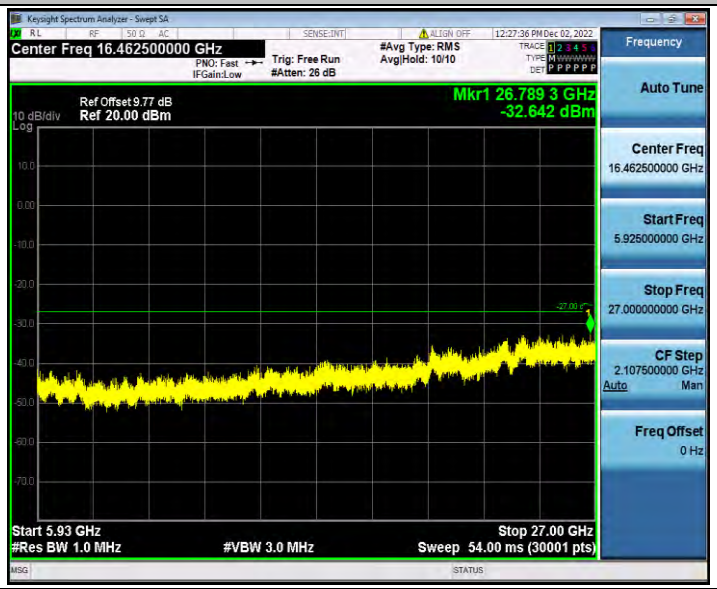

11A_Ant1_5825_30~5650



| 11A_Ant1_5825_5925~40000 |
| --- |
| |
| 11N20SISO_Ant1_5745_30~5650 |
|  |
| 11N20SISO_Ant1_5745_5925~40000 |

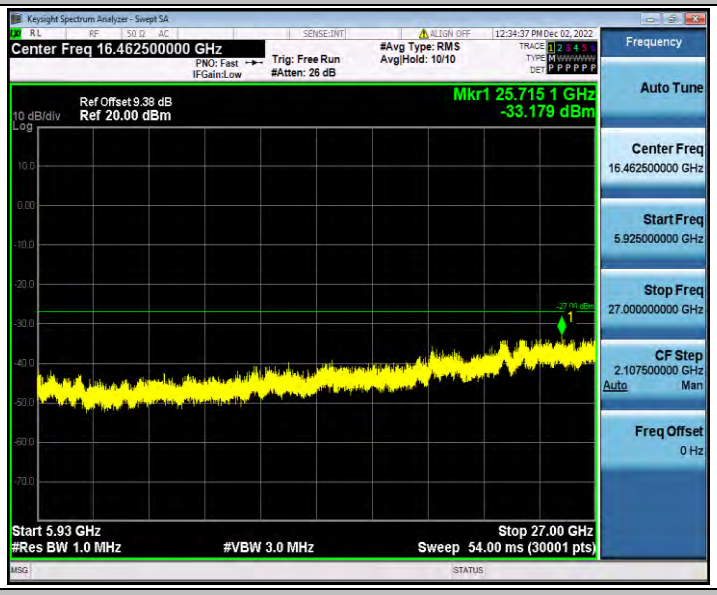
11N20SISO_Ant1_5785_30~5650

11N20SISO_Ant1_5785_5925~40000

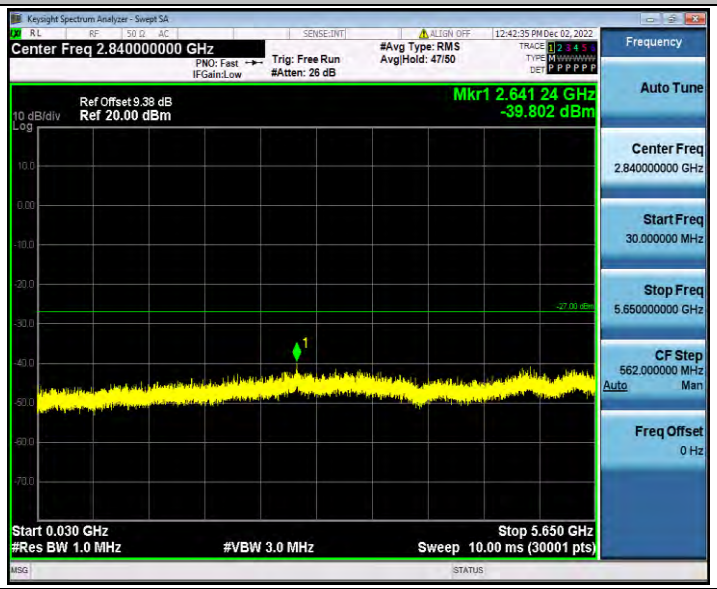


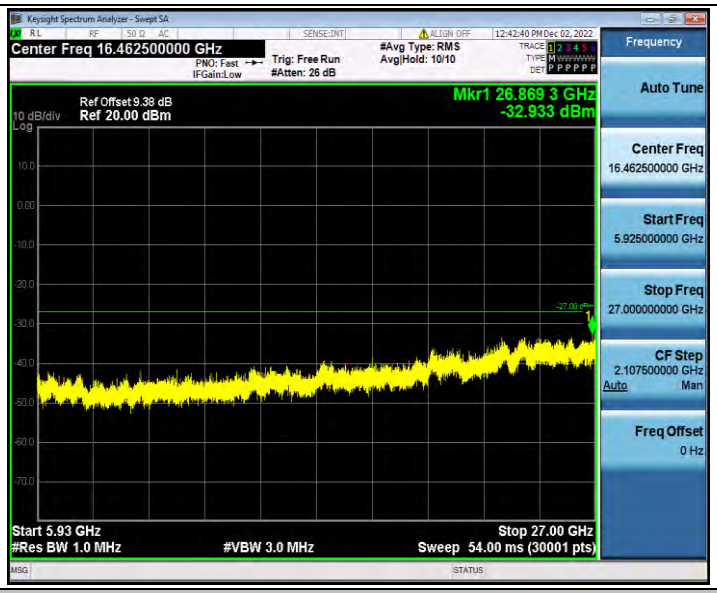
| 11N20SISO_Ant1_5825_30~5650 |
| --- |
| |
| 11N20SISO_Ant1_5825_5925~40000 |
| |
| 11N40SISO_Ant1_5755_30~5650 |

11N40SISO_Ant1_5755_5925~40000

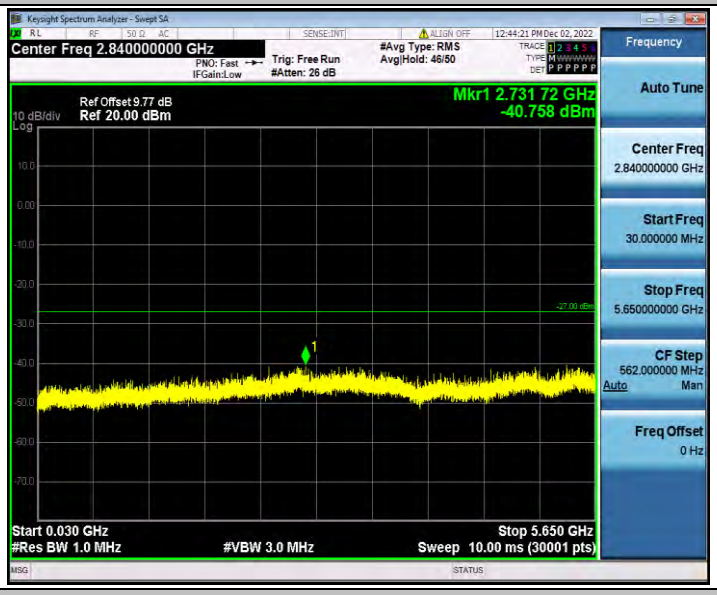



11N40SISO_Ant1_5795_30~5650

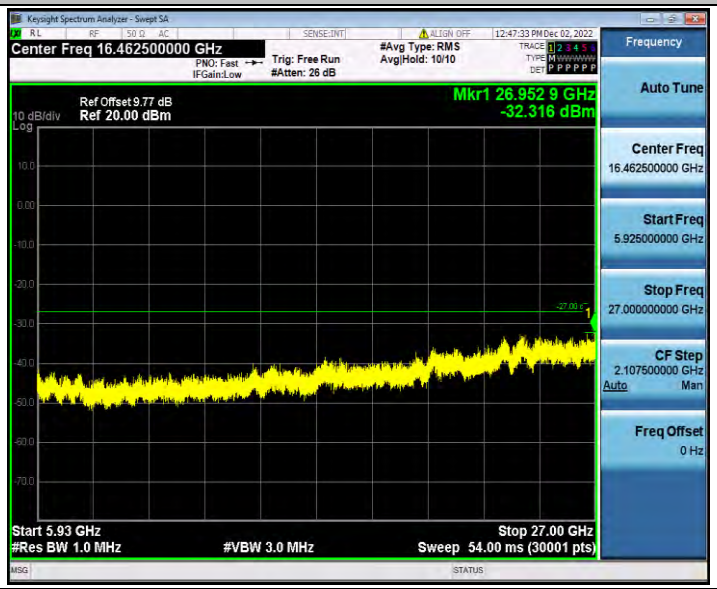
| 11N40SISO_Ant1_5795_5925~40000 |
| --- |
| |
| 11AC20SISO_Ant1_5745_30~5650 |
|  |
| 11AC20SISO_Ant1_5745_5925~40000 |



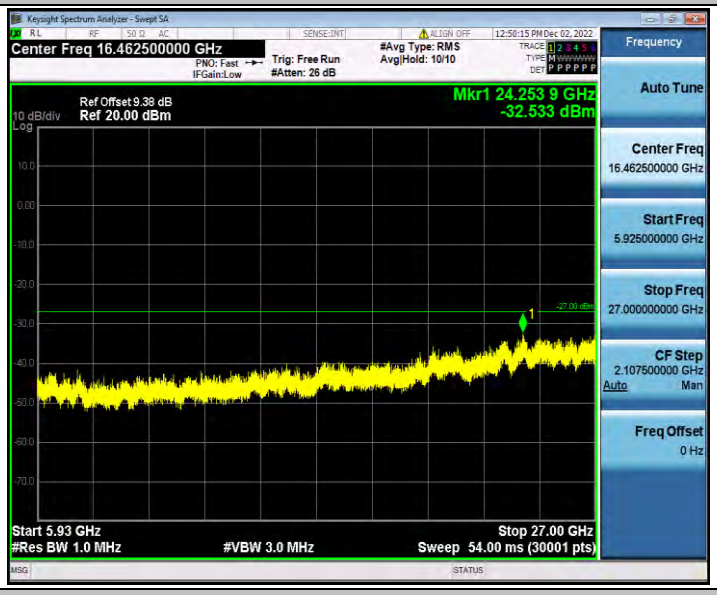

11AC20SISO_Ant1_5785_30~5650



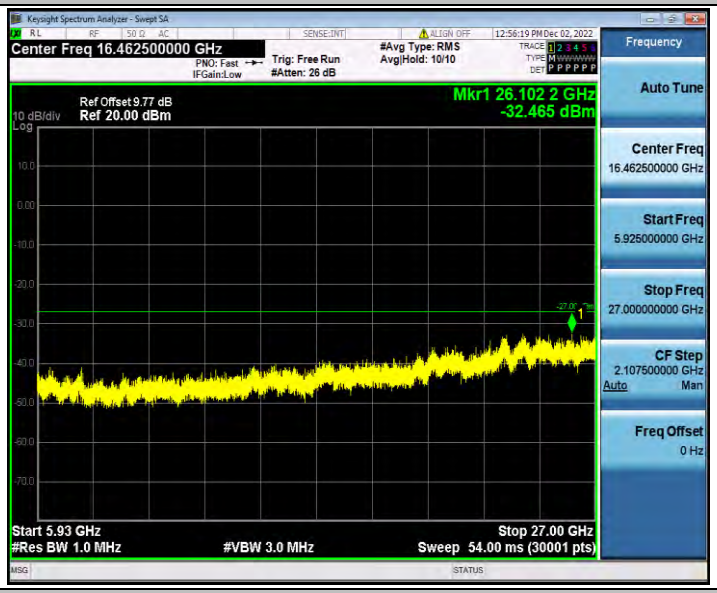
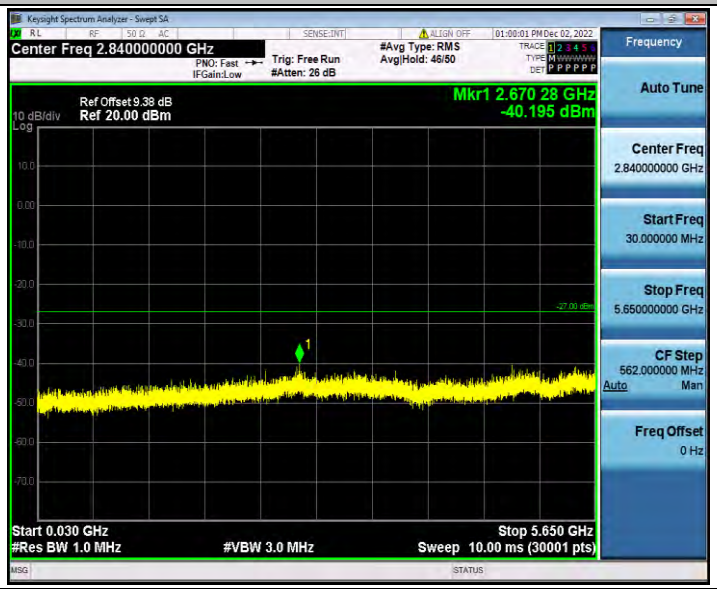

11AC20SISO_Ant1_5785_5925~40000

| 11AC20SISO_Ant1_5825_30~5650 |
| --- |
| |
| 11AC20SISO_Ant1_5825_5925~40000 |
|  |
| 11AC40SISO_Ant1_5755_30~5650 |

11AC40SISO_Ant1_5755_5925~40000




11AC40SISO_Ant1_5795_30~5650

| 11AC40SISO_Ant1_5795_5925~40000 |
| --- |
|  |
| 11AC80SISO_Ant1_5775_30~5650 |
|  |
| 11AC80SISO_Ant1_5775_5925~40000 |

Keysight Spectrum Analyzer - Swept SA
Center Freq 16.462500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 26 dB
#Avg Type: RMS
Avg|Hold: 10/10
01:00:06 PM Dec 02, 2022
Ref Offset 9.38 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 24.835 6 GHz
-32.410 dBm
Start 5.93 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 27.00 GHz
Sweep 54.00 ms (30001 pts)
Frequency
Auto Tune
Center Freq
16.462500000 GHz
Start Freq
5.925000000 GHz
Stop Freq
27.000000000 GHz
CF Step
2.107500000 GHz
Auto
Man
Freq Offset
0 Hz