

Appendix C

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Vivi Wireless Presentation

Trade Mark: Vivi

Test Model: VWP-205-16

Environmental Conditions

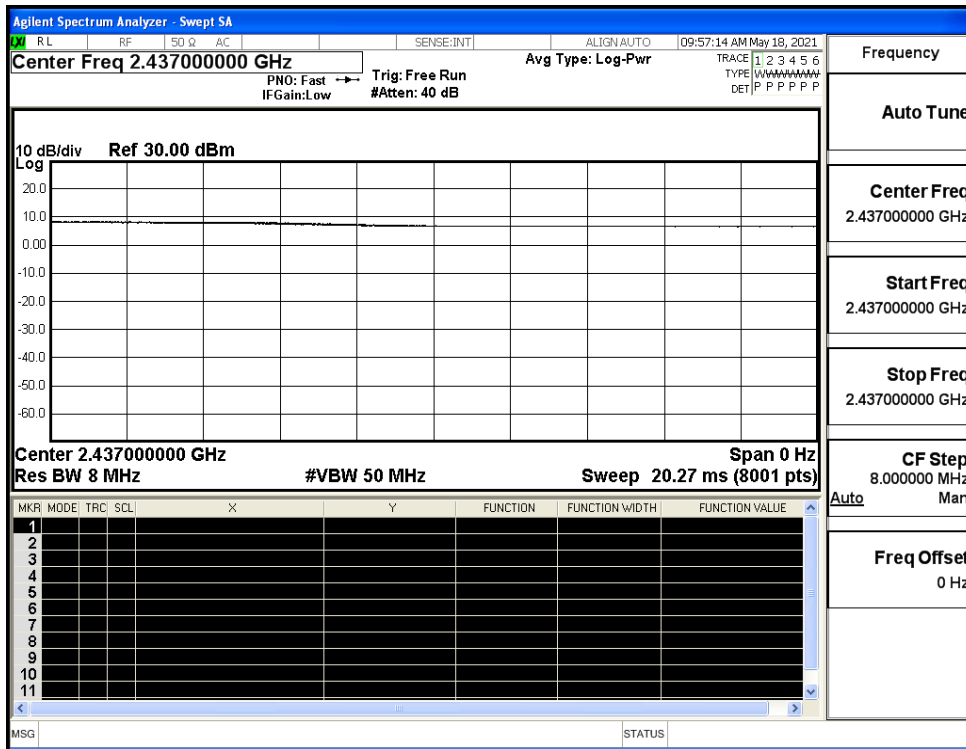
| | |
|--------------------|-----------|
| Temperature: | 20.1°C |
| Relative Humidity: | 51.6% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Carl Fu |
| Supervised by: | Li Huan |

C.1 Duty Cycle

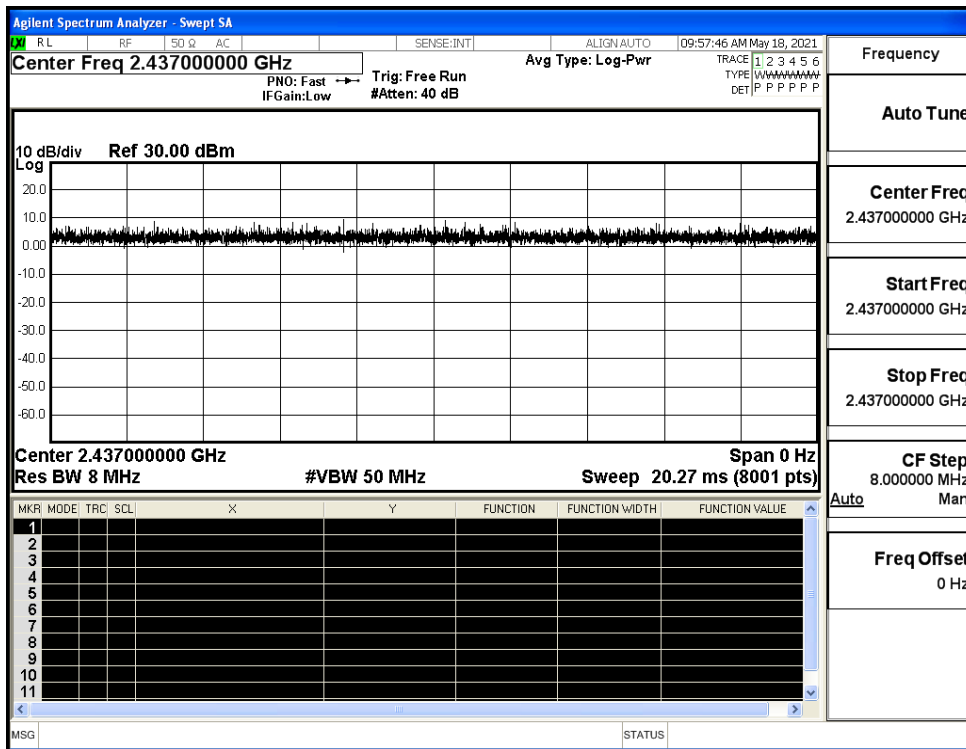
ANT0

| Test Mode | Test Channel | Ant | Duty Cycle[%] | Verdict |
|-----------|--------------|------|---------------|---------|
| 11B | 2437 | Ant1 | 100 | PASS |
| 11G | 2437 | Ant1 | 100 | PASS |
| 11N20SISO | 2437 | Ant1 | 100 | PASS |
| 11N40SISO | 2437 | Ant1 | 100 | PASS |

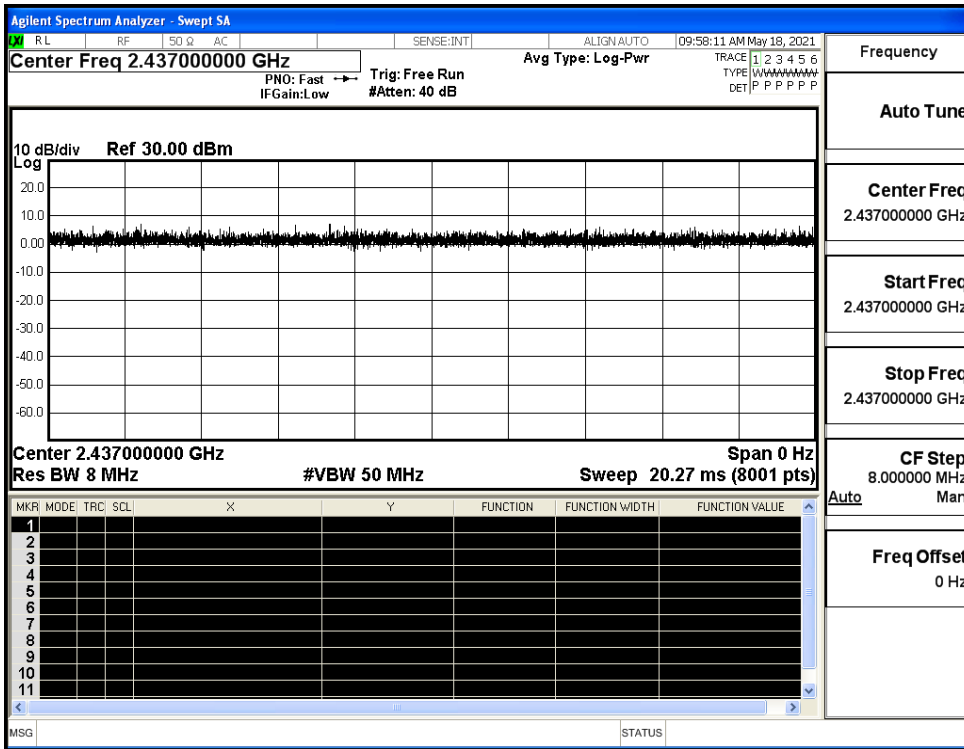
Duty Cycle_11B_2437_Ant1



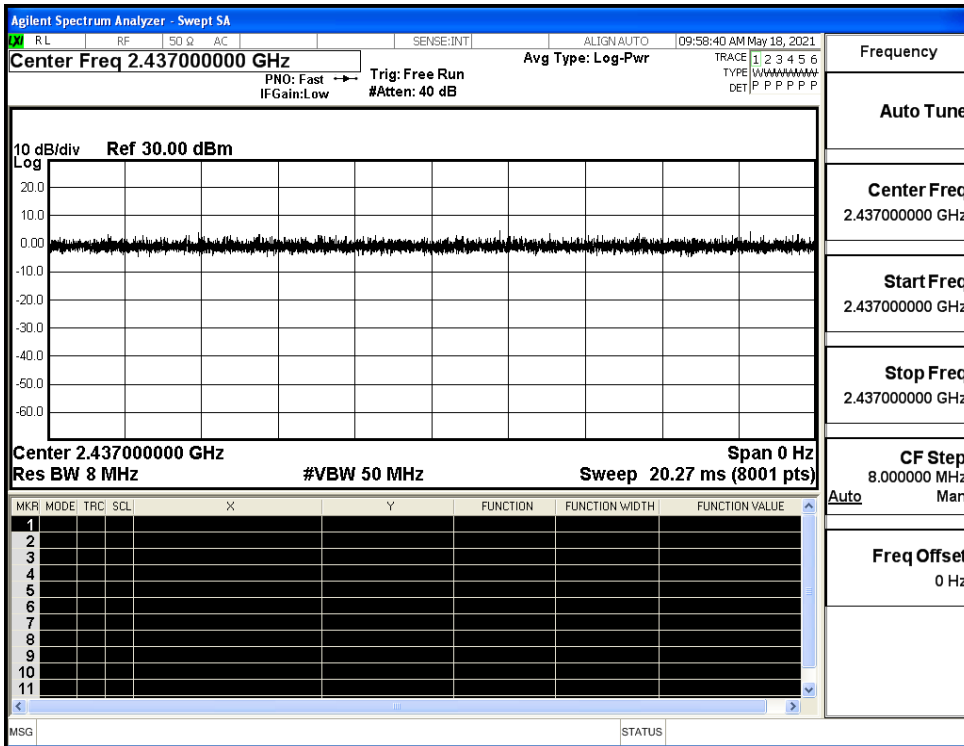
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



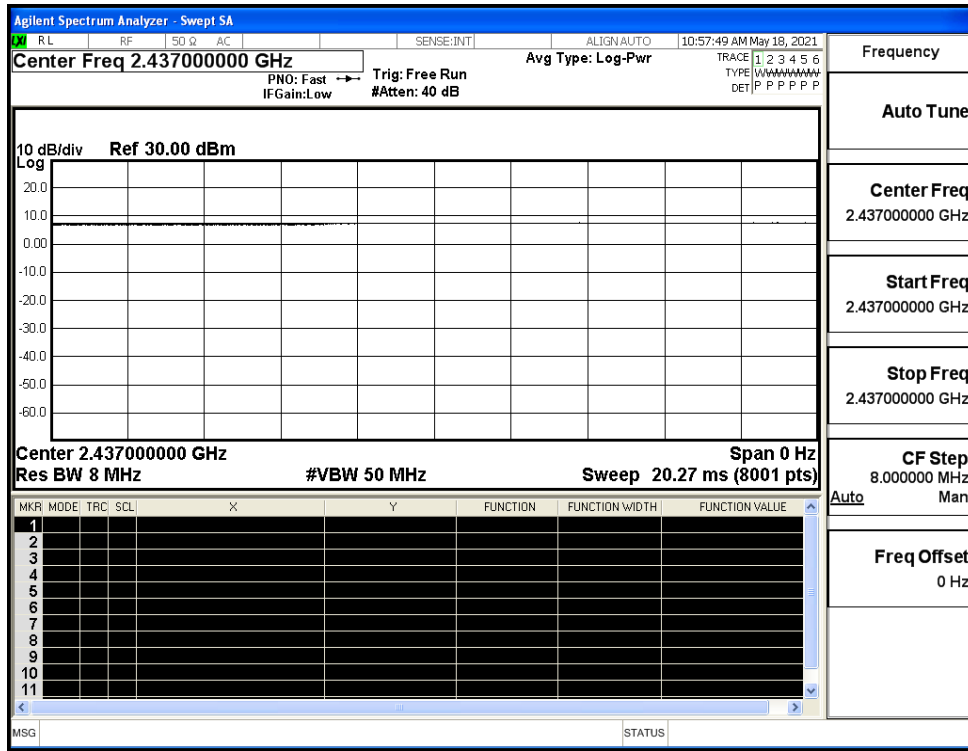
Duty Cycle_11N40SISO_2437_Ant1



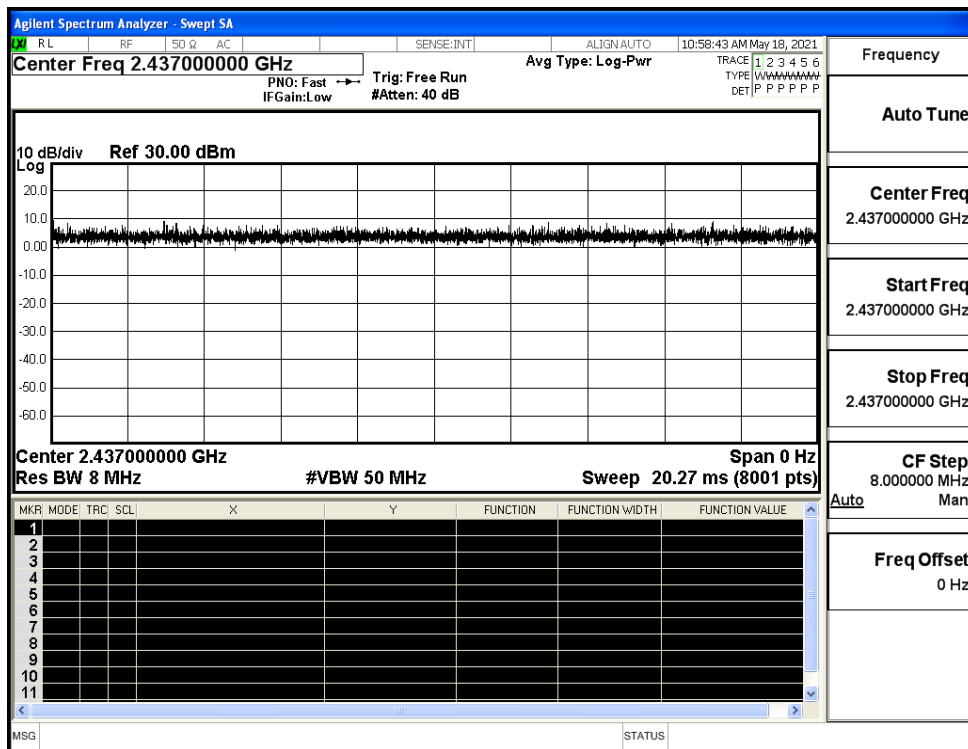
ANT1

| Test Mode | Test Channel | Ant | Duty Cycle[%] | Verdict |
|-----------|--------------|------|---------------|---------|
| 11B | 2437 | Ant1 | 100 | PASS |
| 11G | 2437 | Ant1 | 100 | PASS |
| 11N20SISO | 2437 | Ant1 | 100 | PASS |
| 11N40SISO | 2437 | Ant1 | 100 | PASS |

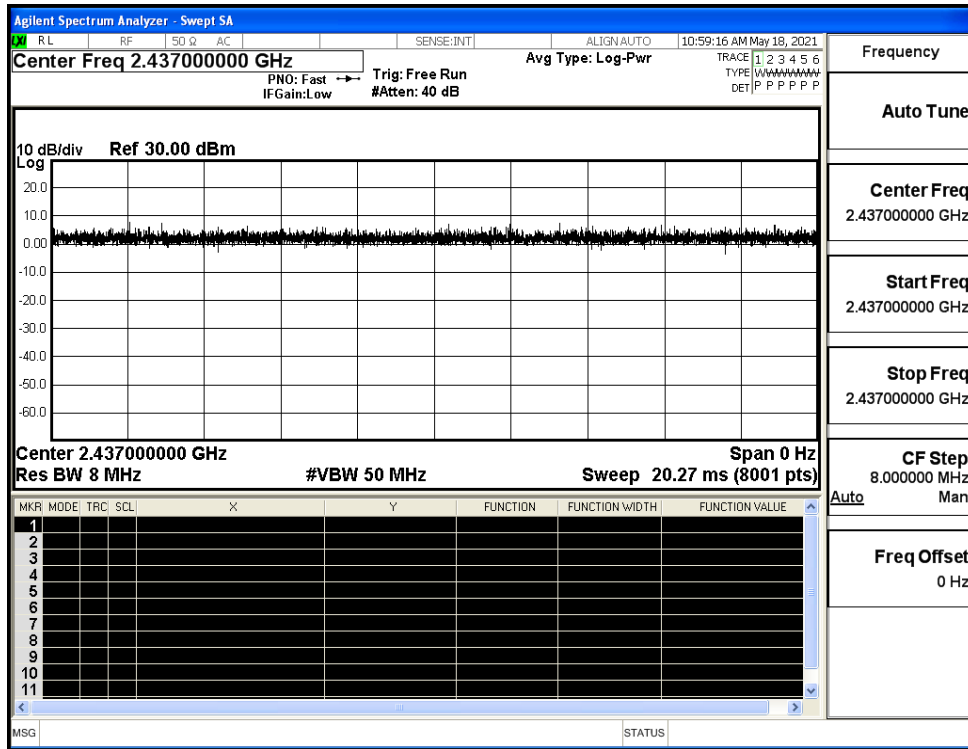
Duty Cycle_11B_2437_Ant1



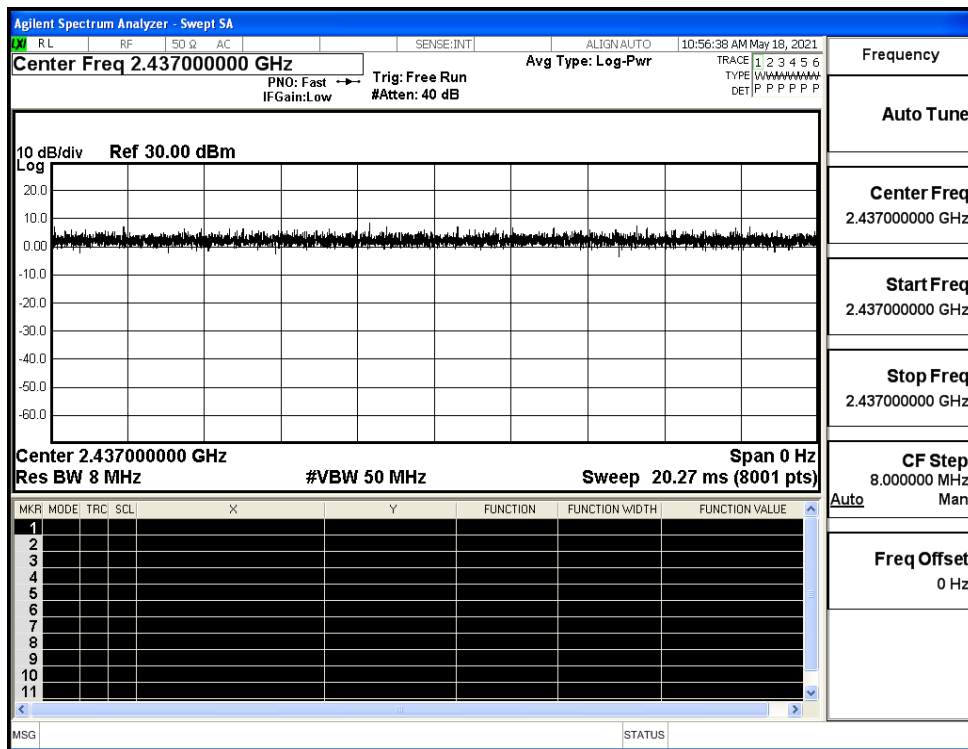
Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1



Duty Cycle_11N40SISO_2437_Ant1



C.2 Maximum Conducted Output Power

ANT0

| Mode | Channel | Meas.Level [dBm] | Limit [dBm] | Verdict |
|-----------|---------|------------------|-------------|---------|
| 11B | LCH | 13.64 | 30 | PASS |
| | MCH | 14.7 | 30 | PASS |
| | HCH | 14.27 | 30 | PASS |
| 11G | LCH | 15.5 | 30 | PASS |
| | MCH | 15.44 | 30 | PASS |
| | HCH | 15.16 | 30 | PASS |
| 11N20SISO | LCH | 15.43 | 30 | PASS |
| | MCH | 15.57 | 30 | PASS |
| | HCH | 15.05 | 30 | PASS |
| 11N40SISO | LCH | 14.74 | 30 | PASS |
| | MCH | 14.58 | 30 | PASS |
| | HCH | 14.55 | 30 | PASS |

ANT1

| Mode | Channel | Meas.Level [dBm] | Limit [dBm] | Verdict |
|-----------|---------|------------------|-------------|---------|
| 11B | LCH | 13.55 | 30 | PASS |
| | MCH | 13.65 | 30 | PASS |
| | HCH | 13.25 | 30 | PASS |
| 11G | LCH | 15.52 | 30 | PASS |
| | MCH | 14.48 | 30 | PASS |
| | HCH | 13.55 | 30 | PASS |
| 11N20SISO | LCH | 14.48 | 30 | PASS |
| | MCH | 14.34 | 30 | PASS |
| | HCH | 14.31 | 30 | PASS |
| 11N40SISO | LCH | 14.98 | 30 | PASS |
| | MCH | 14.88 | 30 | PASS |
| | HCH | 16.31 | 30 | PASS |

MIMO

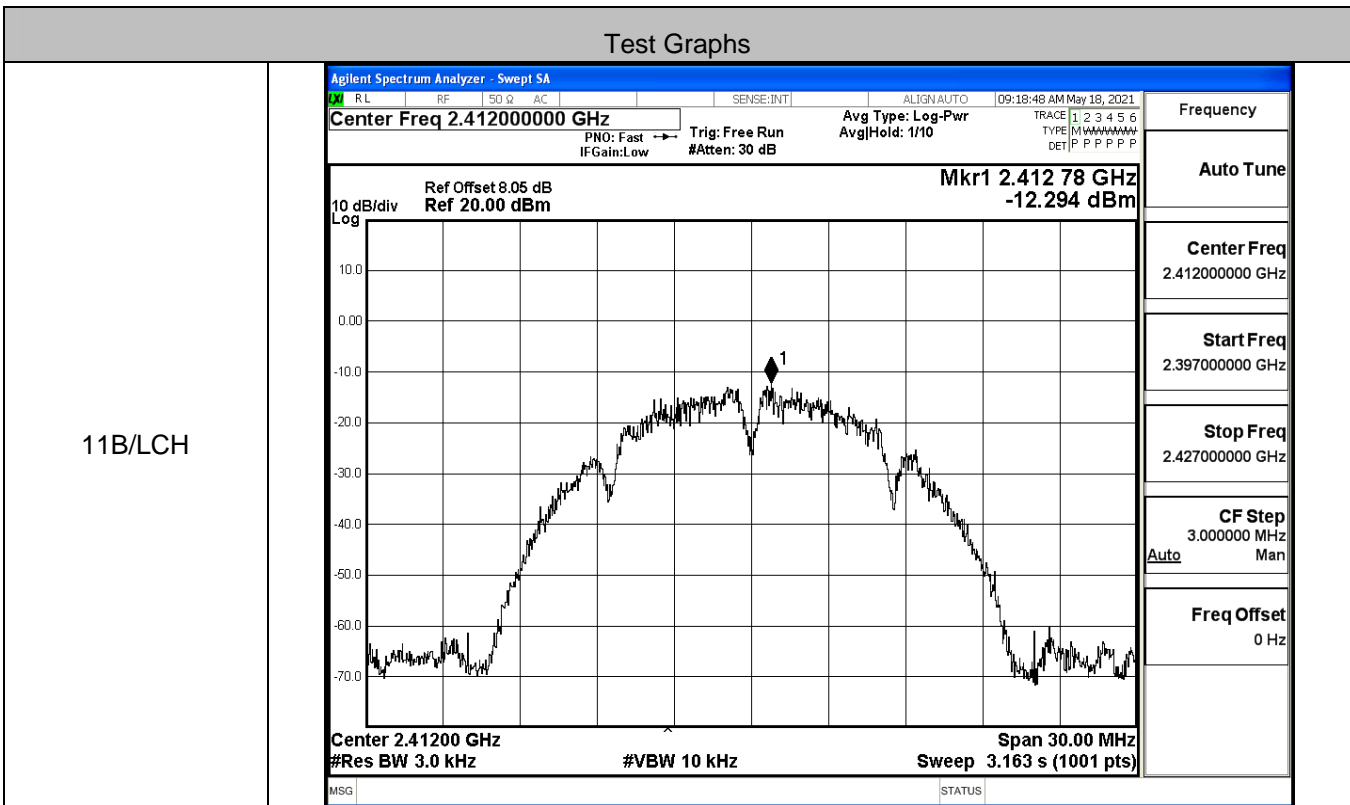
| Mode | Channel | ANT 0 [dBm] | ANT 1 [dBm] | MIMO [dBm] | Limit [dBm] | Verdict |
|-------|---------|-------------|-------------|------------|-------------|---------|
| 11N20 | LCH | 15.43 | 14.48 | 17.99 | 29.99 | PASS |
| | MCH | 15.57 | 14.34 | 18.01 | 29.99 | PASS |
| | HCH | 15.05 | 14.31 | 17.71 | 29.99 | PASS |
| 11N40 | LCH | 14.74 | 14.98 | 17.87 | 29.99 | PASS |
| | MCH | 14.58 | 14.88 | 17.74 | 29.99 | PASS |
| | HCH | 14.55 | 16.31 | 18.53 | 29.99 | PASS |

C.3 Maximum Power Spectral Density

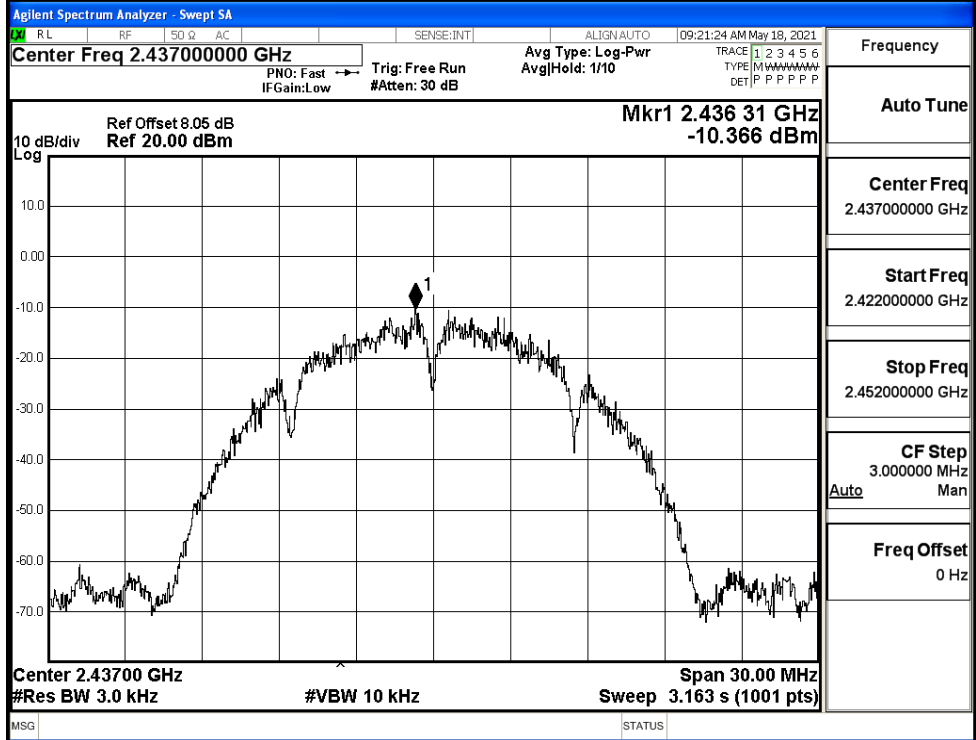
ANTO

| Mode | Channel | Meas.Level [dBm/3KHz] | Limit [dBm/3KHz] | Verdict |
|-----------|---------|-----------------------|------------------|---------|
| 11B | LCH | -12.294 | 8 | PASS |
| | MCH | -10.366 | 8 | PASS |
| | HCH | -11.054 | 8 | PASS |
| 11G | LCH | -18.130 | 8 | PASS |
| | MCH | -17.470 | 8 | PASS |
| | HCH | -17.886 | 8 | PASS |
| 11N20SISO | LCH | -17.707 | 8 | PASS |
| | MCH | -18.244 | 8 | PASS |
| | HCH | -18.725 | 8 | PASS |
| 11N40SISO | LCH | -21.165 | 8 | PASS |
| | MCH | -21.118 | 8 | PASS |
| | HCH | -21.205 | 8 | PASS |

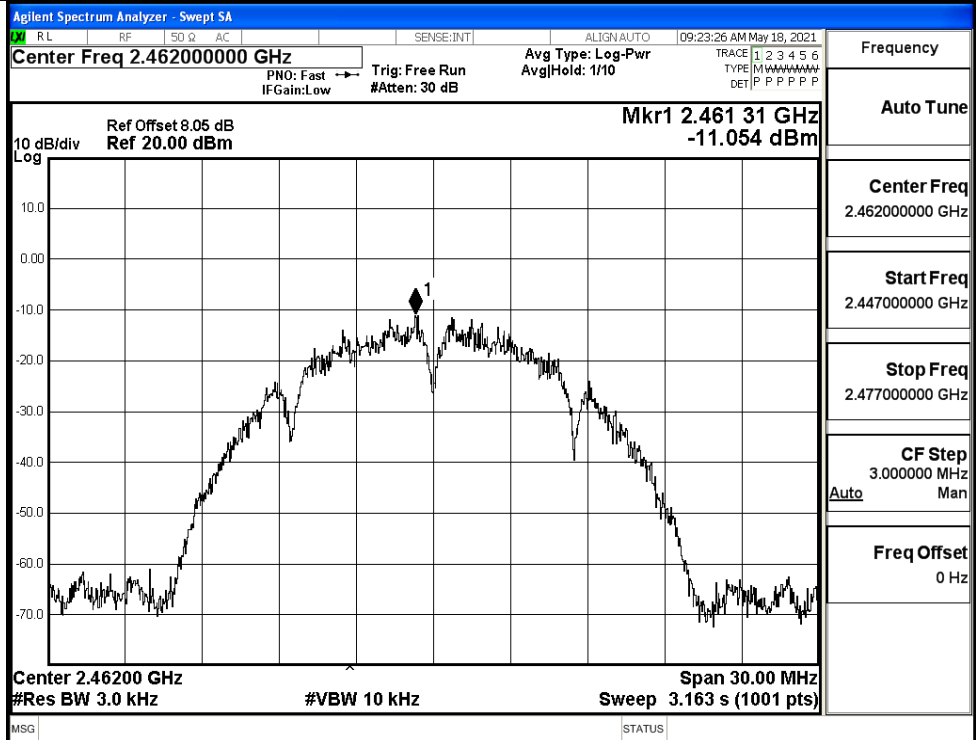
Test Graphs



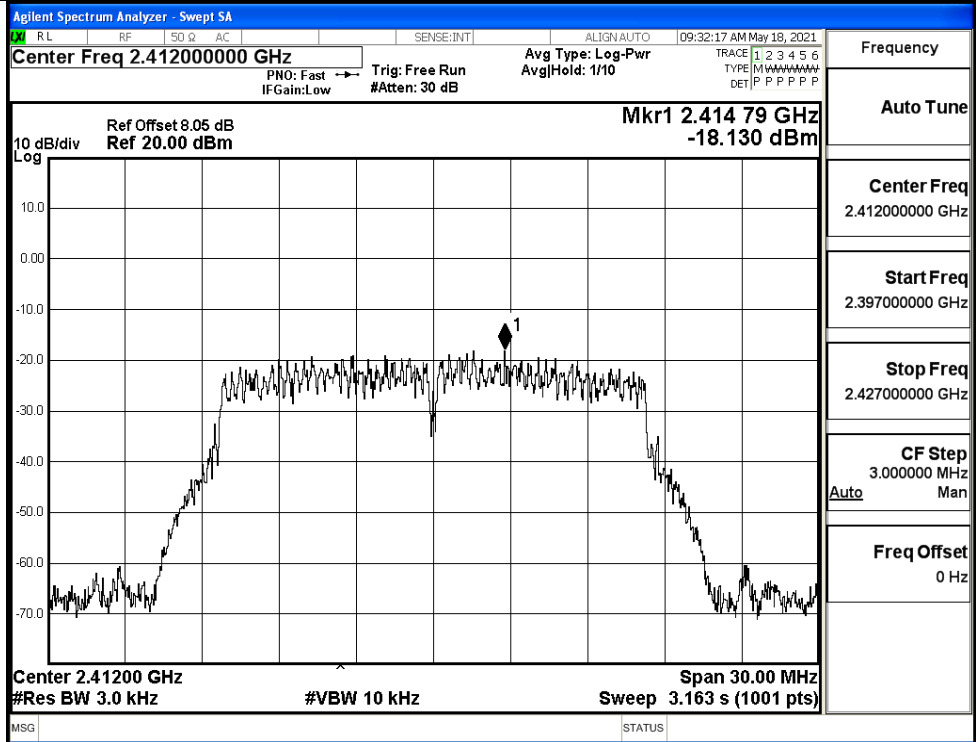
11B/MCH



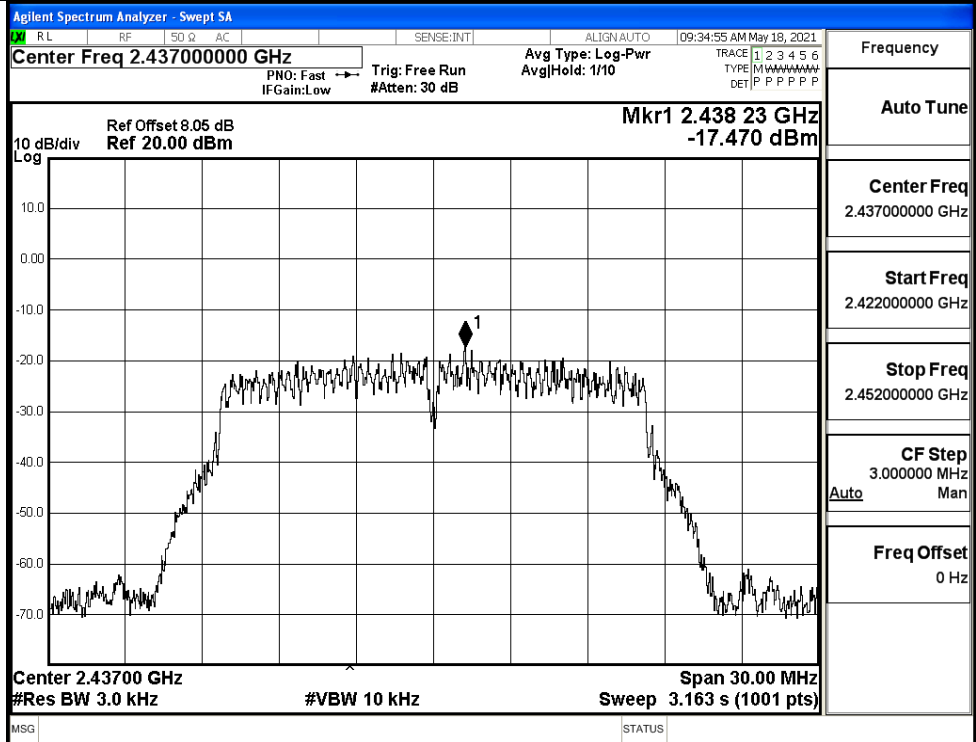
11B/HCH



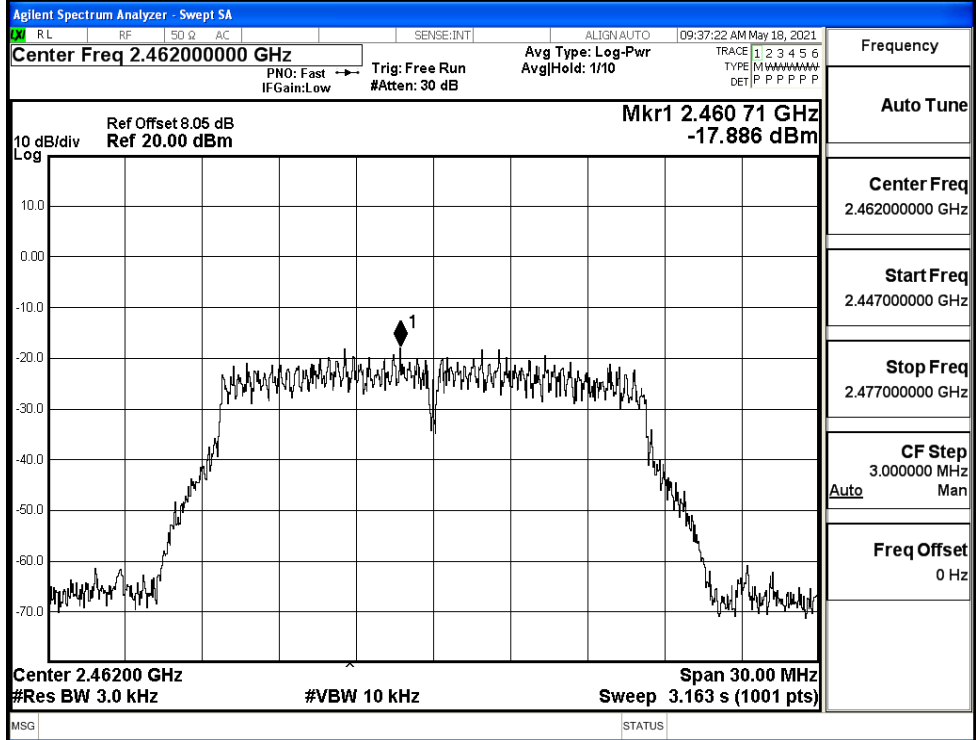
11G/LCH



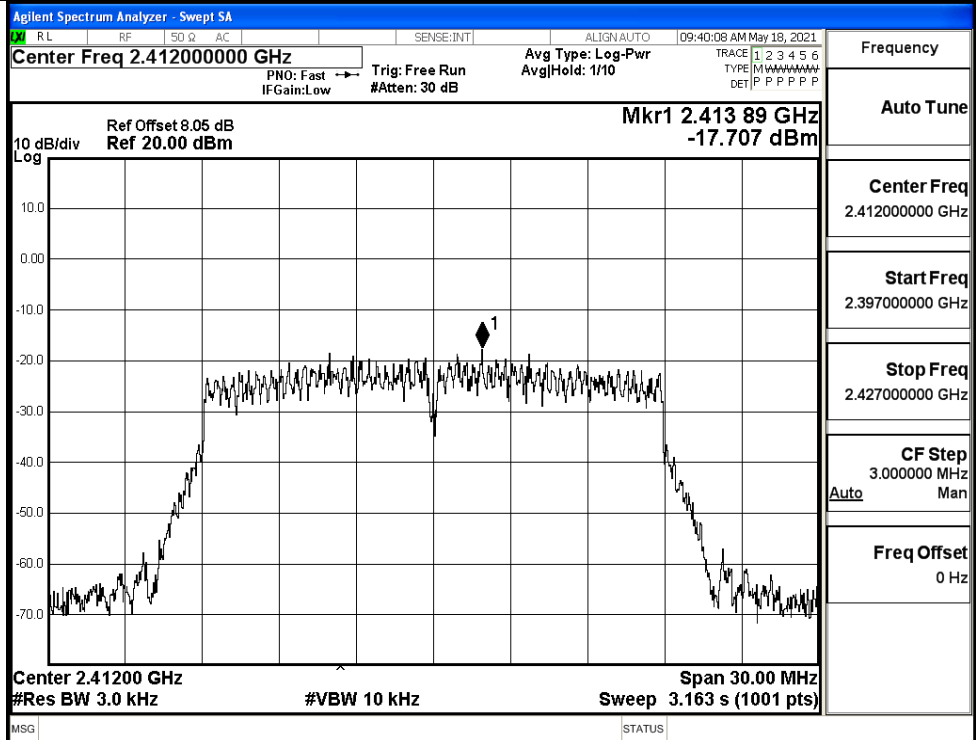
11G/MCH



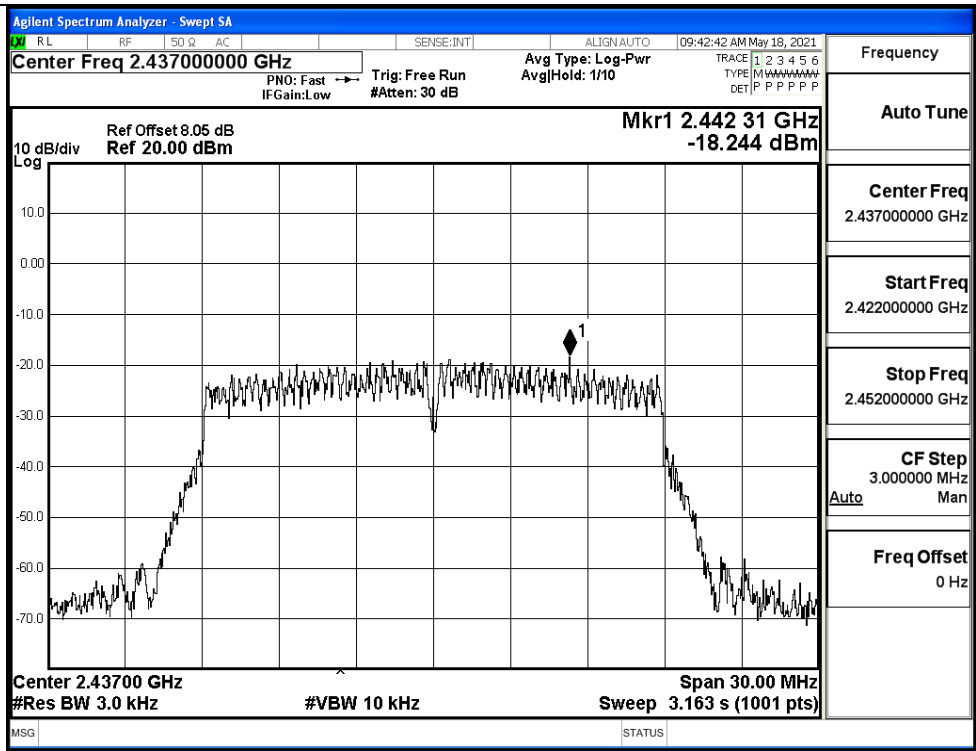
11G/HCH



11N20SISO/LCH

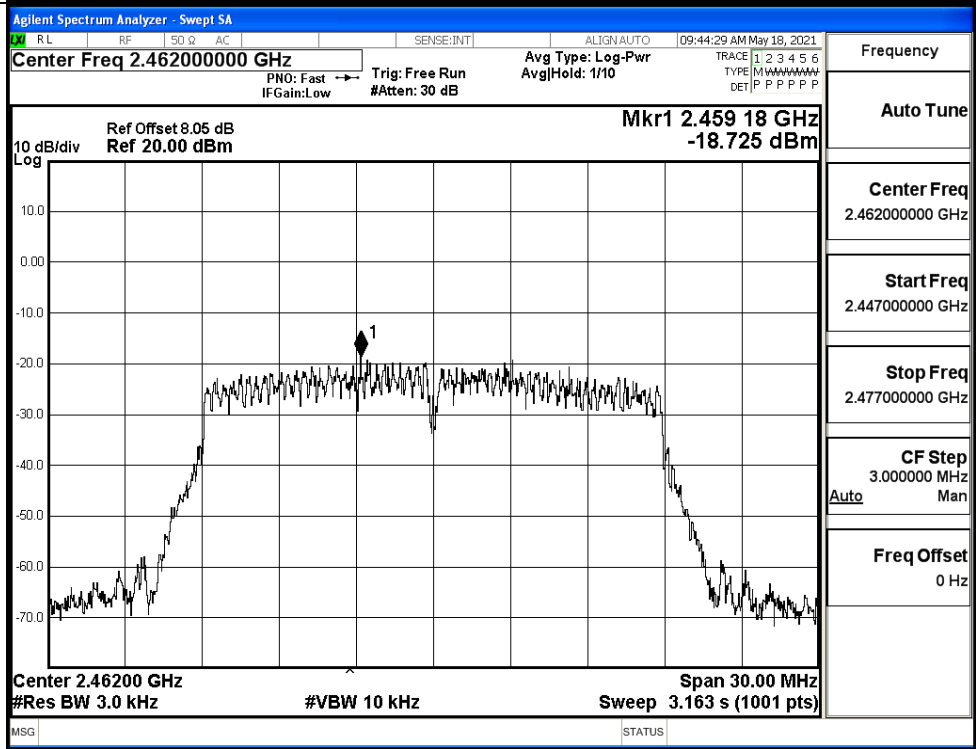


11N20SISO/MCH



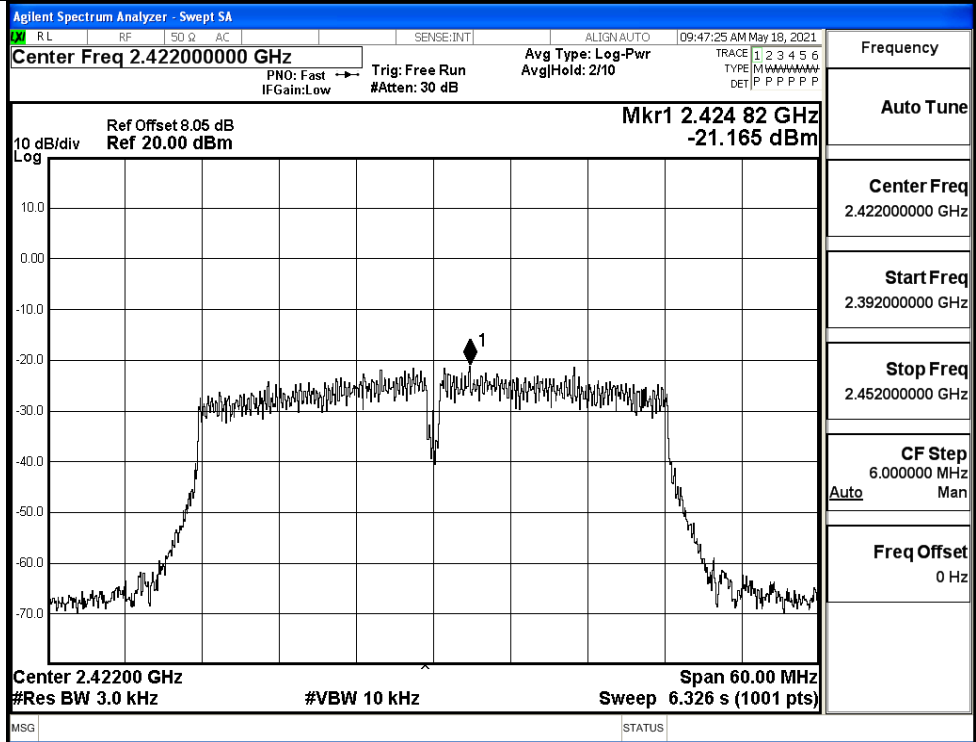
| |
|-------------------------------------|
| Frequency |
| Auto Tune |
| Center Freq 2.43700000 GHz |
| Start Freq 2.42200000 GHz |
| Stop Freq 2.45200000 GHz |
| CF Step 3.000000 MHz Auto Man |
| Freq Offset 0 Hz |

11N20SISO/HCH

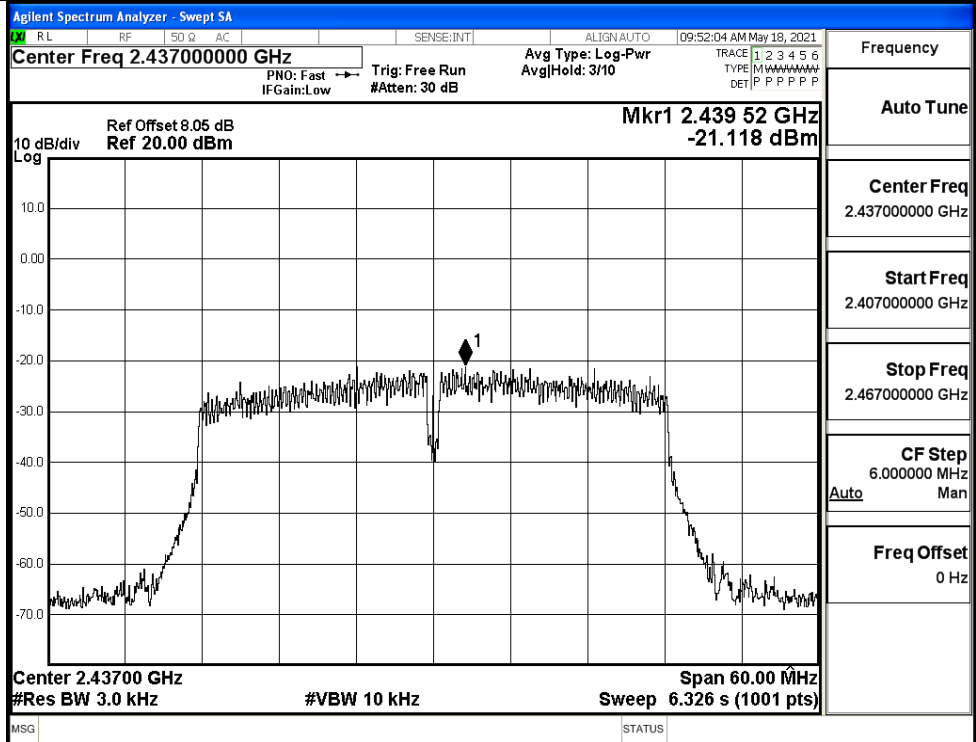


| |
|-------------------------------------|
| Frequency |
| Auto Tune |
| Center Freq 2.46200000 GHz |
| Start Freq 2.44700000 GHz |
| Stop Freq 2.47700000 GHz |
| CF Step 3.000000 MHz Auto Man |
| Freq Offset 0 Hz |

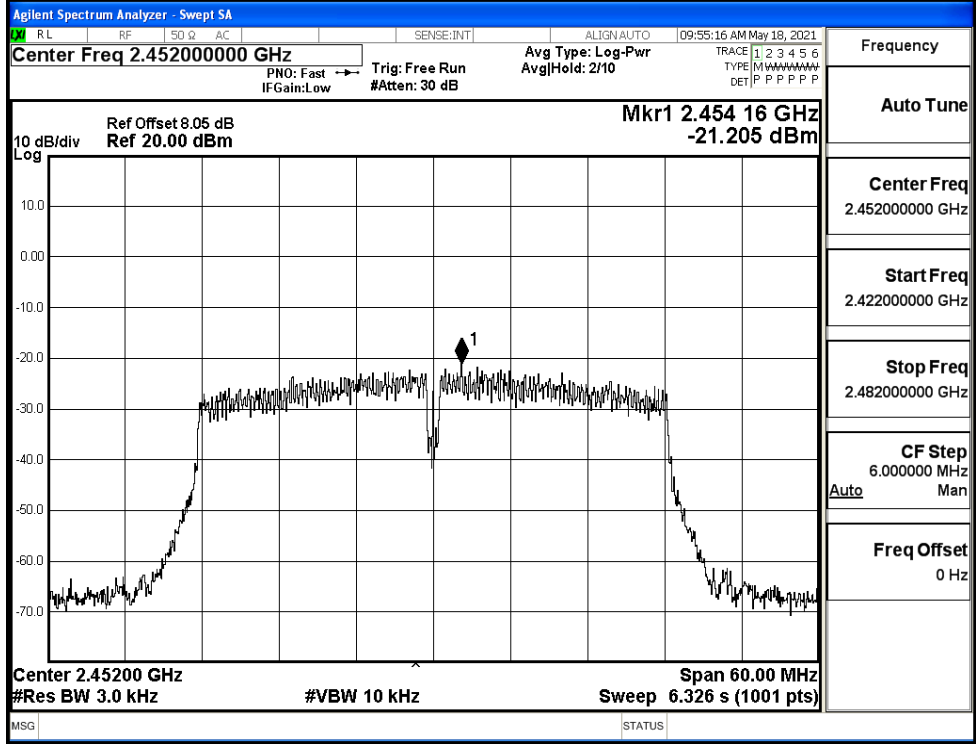
11N40SISO/LCH



11N40SISO/MCH



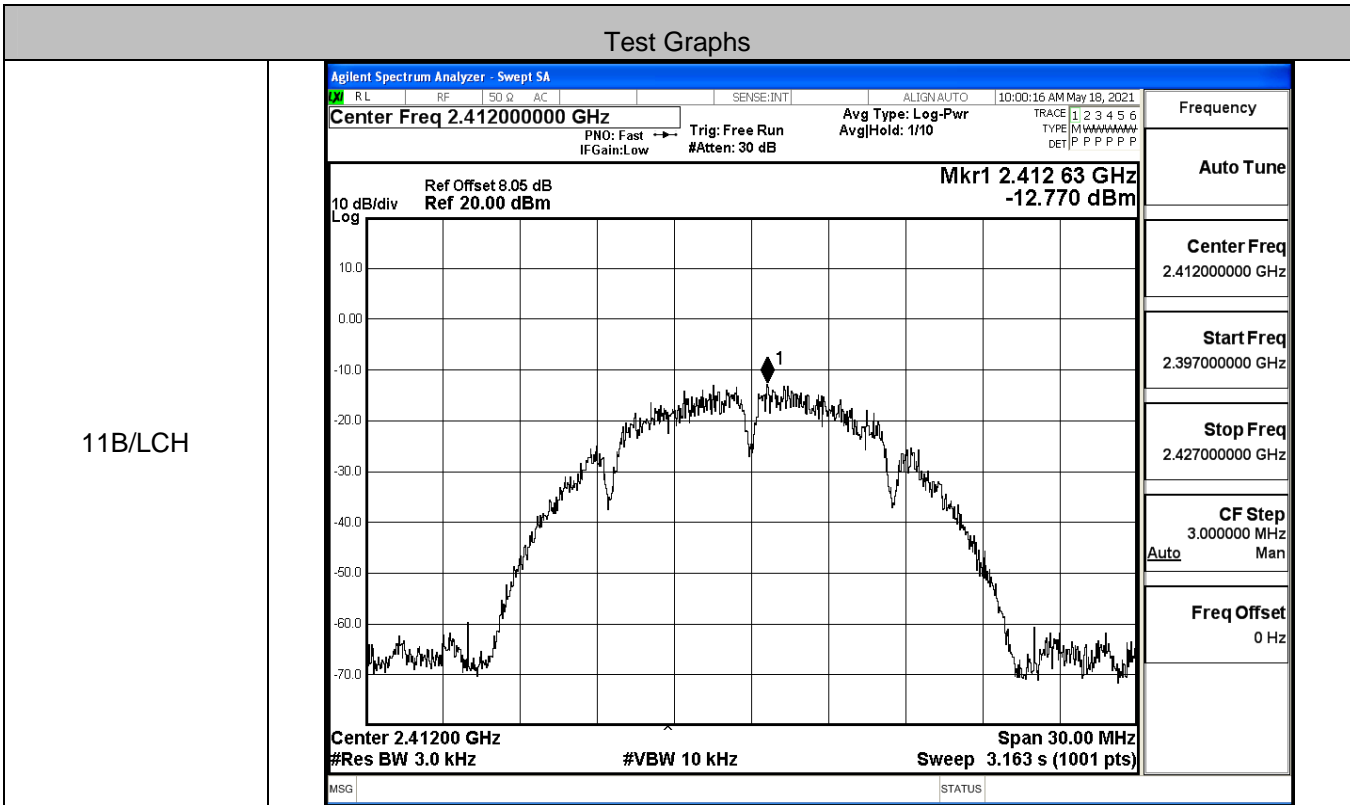
11N40SISO/HCH



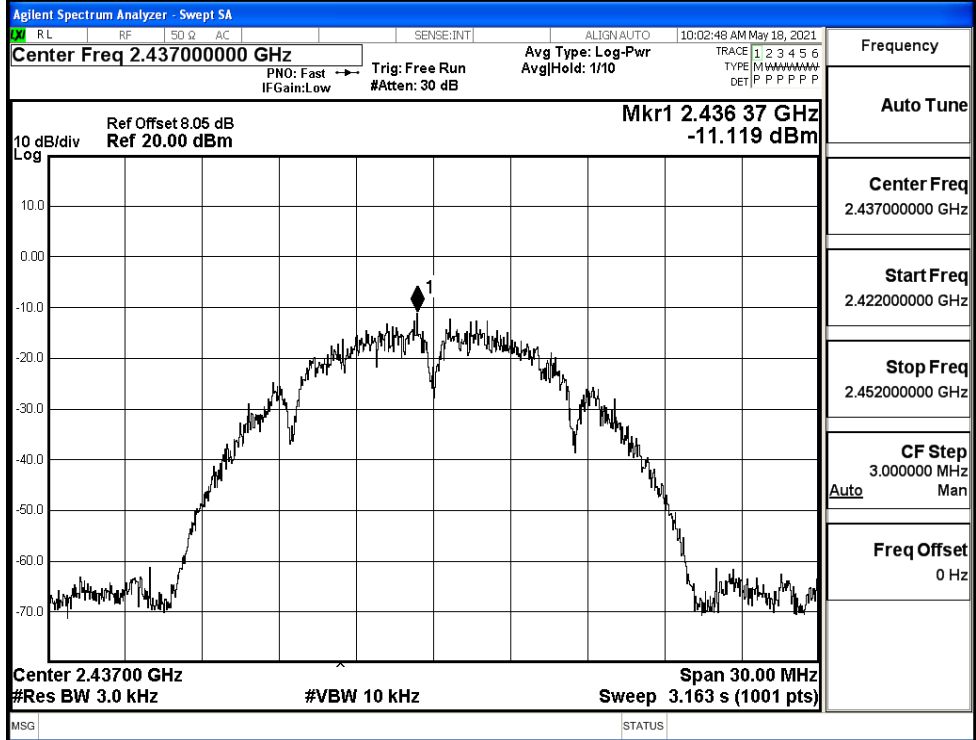
ANT1

| Mode | Channel | Meas.Level [dBm/3KHz] | Limit [dBm/3KHz] | Verdict |
|-----------|---------|-----------------------|------------------|---------|
| 11B | LCH | -12.770 | 8 | PASS |
| | MCH | -11.119 | 8 | PASS |
| | HCH | -11.568 | 8 | PASS |
| 11G | LCH | -17.768 | 8 | PASS |
| | MCH | -18.574 | 8 | PASS |
| | HCH | -17.182 | 8 | PASS |
| 11N20SISO | LCH | -19.370 | 8 | PASS |
| | MCH | -19.387 | 8 | PASS |
| | HCH | -19.571 | 8 | PASS |
| 11N40SISO | LCH | -20.551 | 8 | PASS |
| | MCH | -20.910 | 8 | PASS |
| | HCH | -20.008 | 8 | PASS |

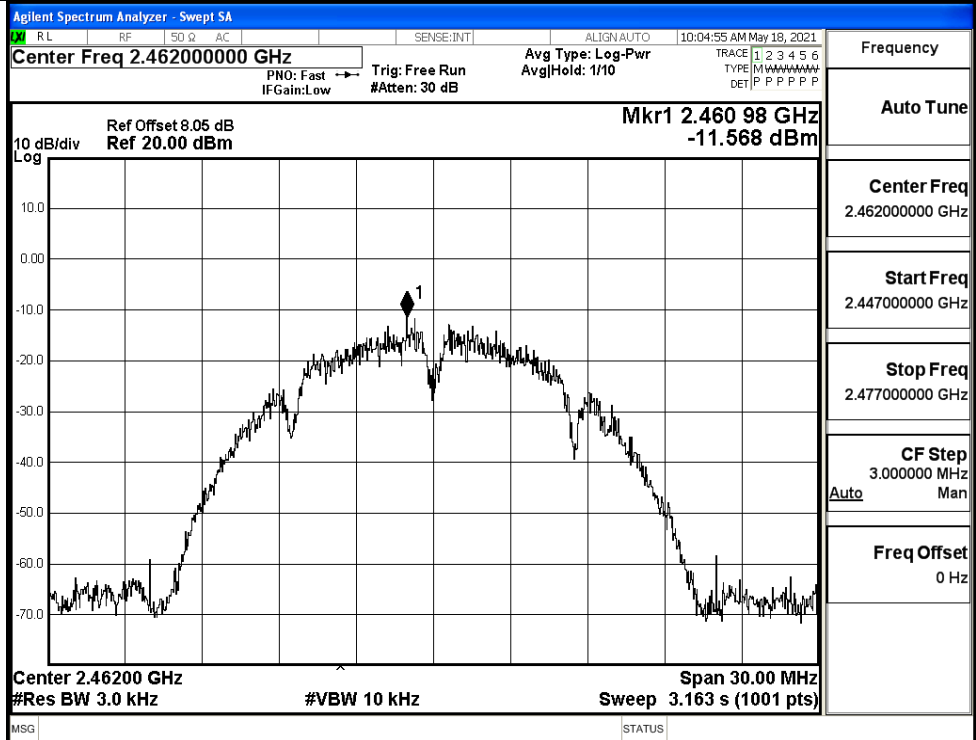
Test Graphs



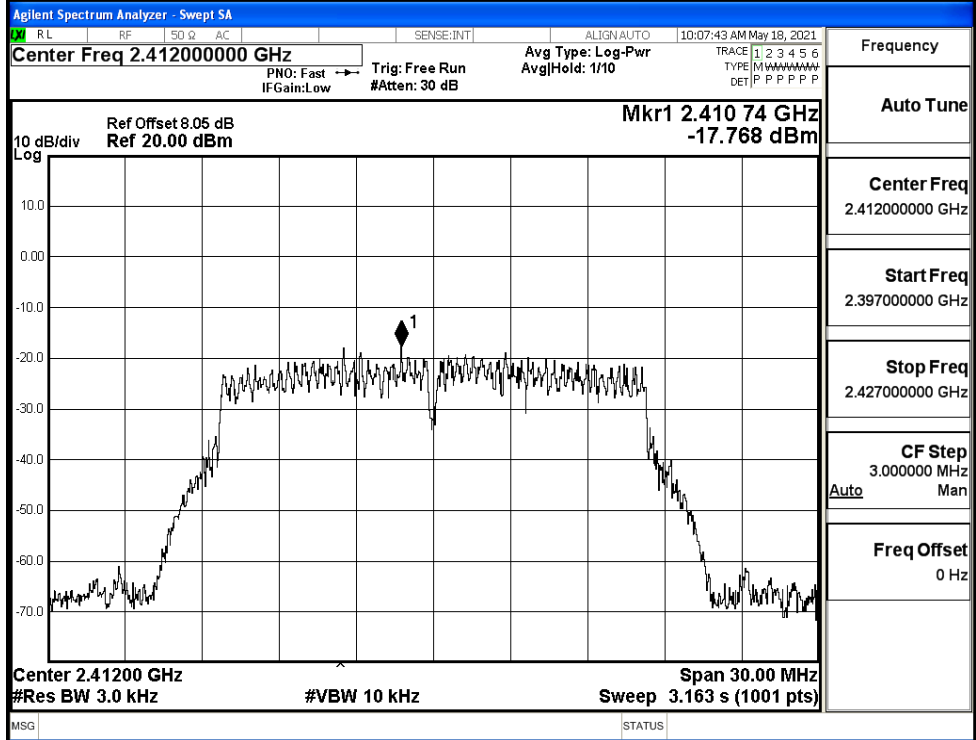
11B/MCH



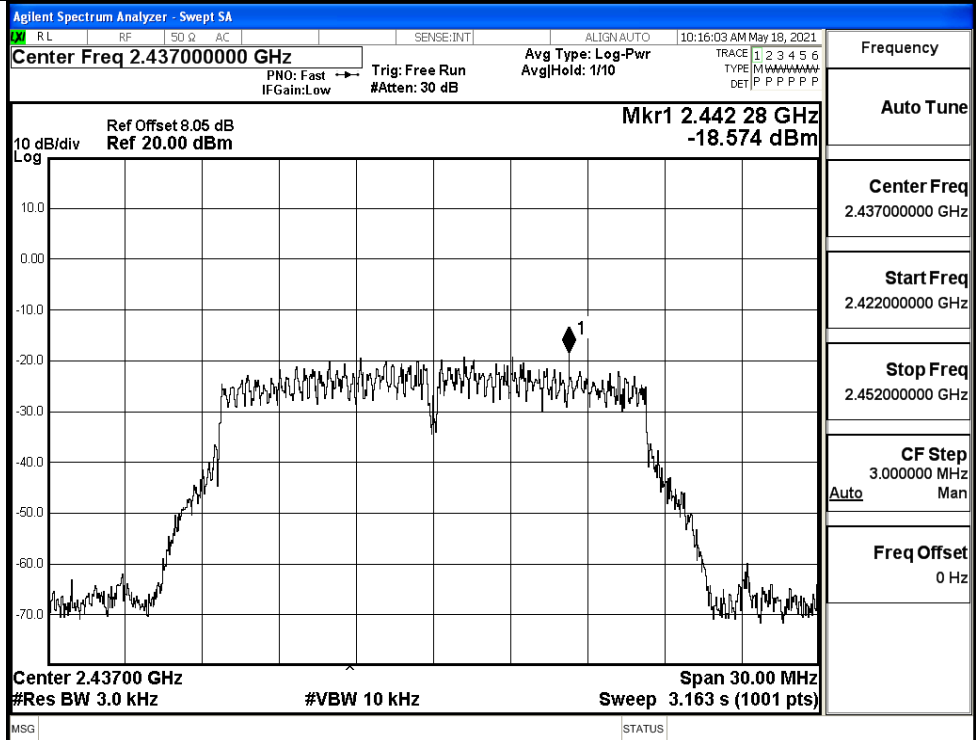
11B/HCH



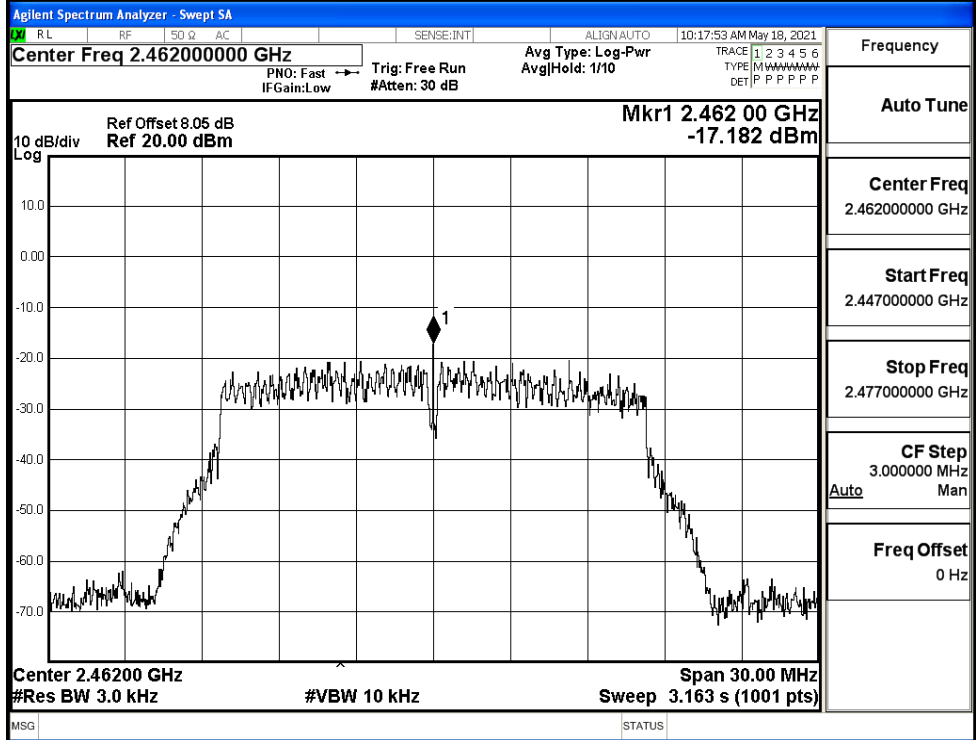
11G/LCH



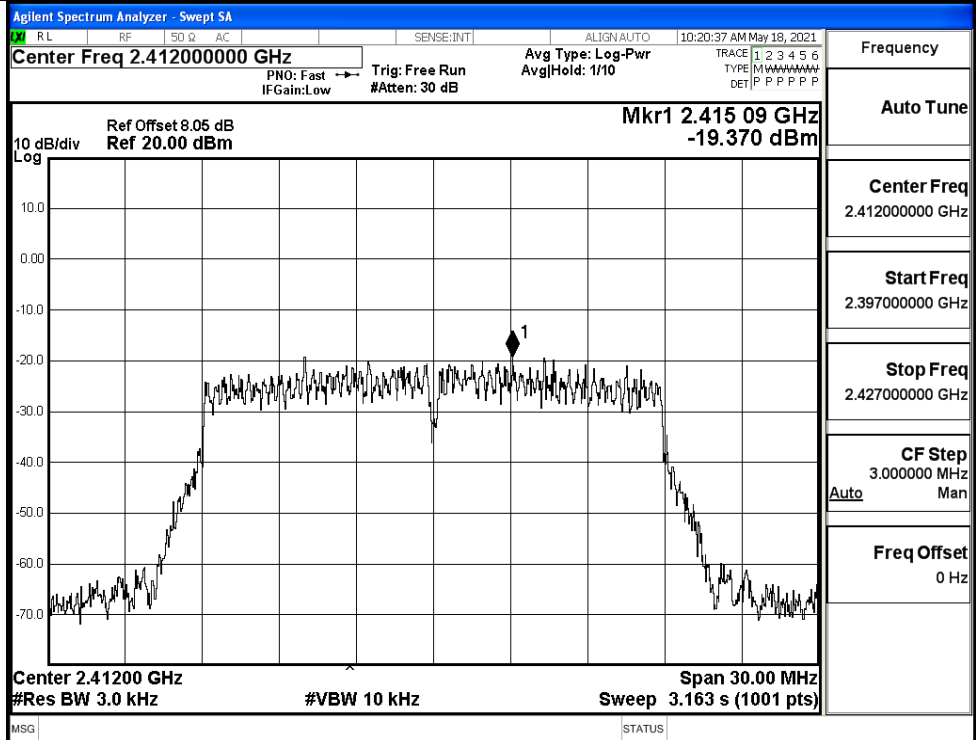
11G/MCH



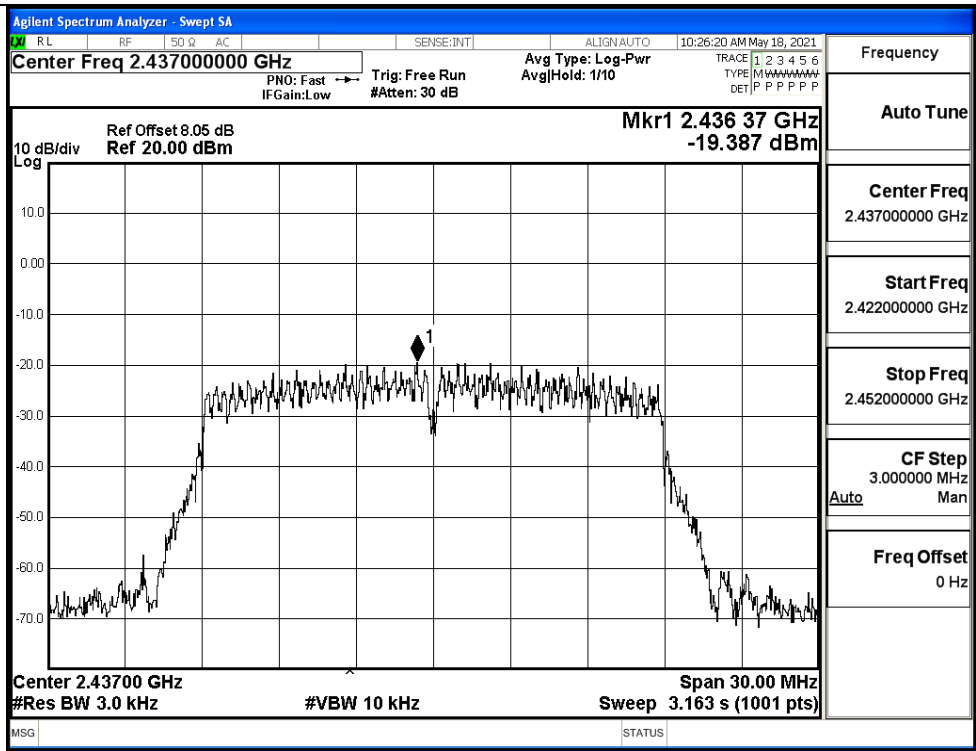
11G/HCH



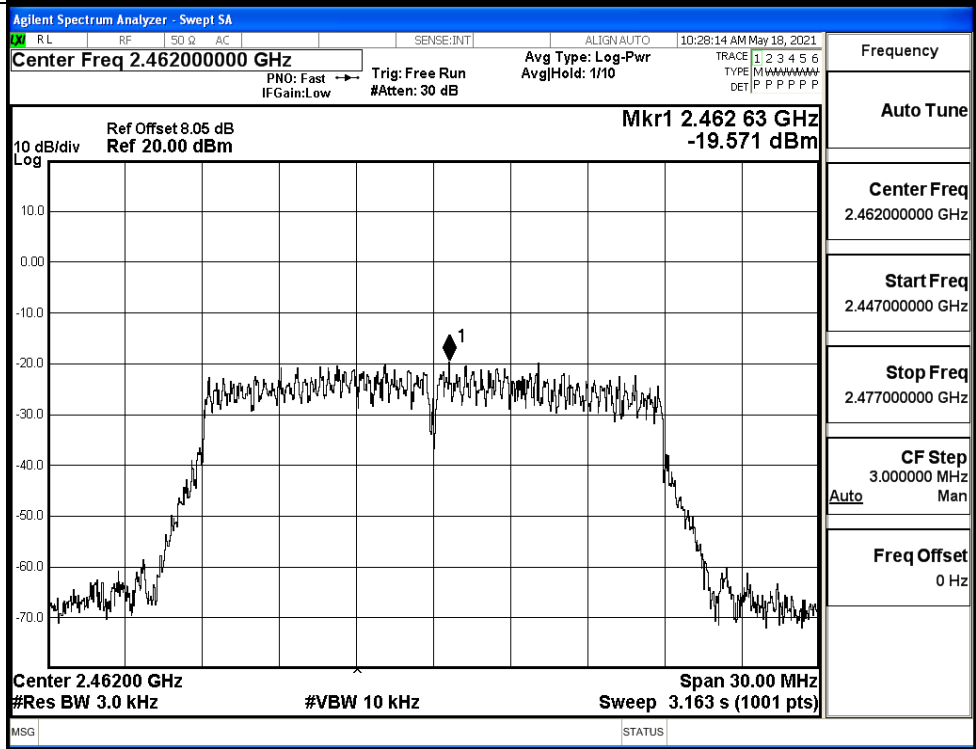
11N20SISO/LCH



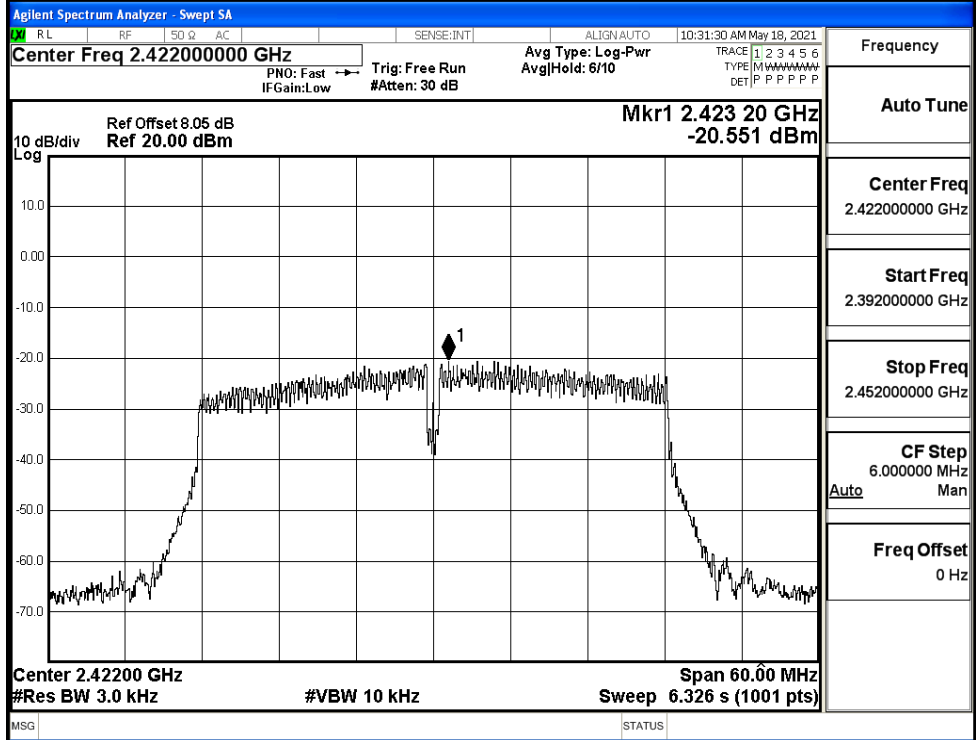
11N20SISO/MCH



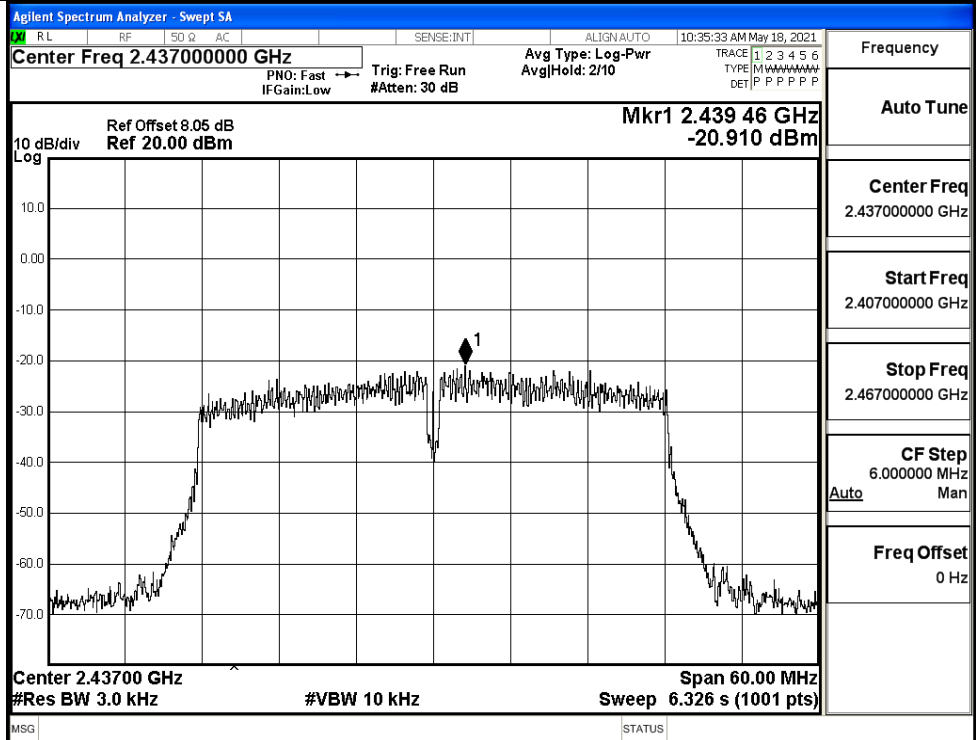
11N20SISO/HCH

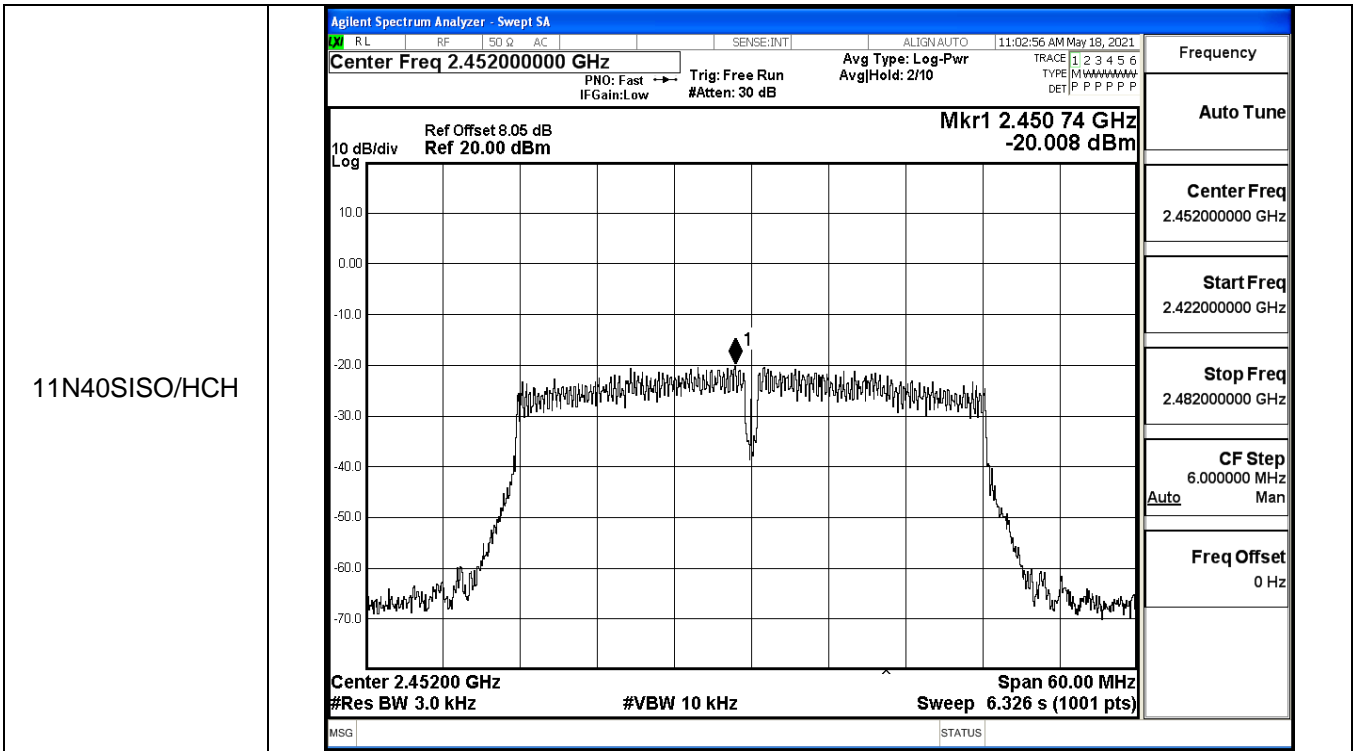


11N40SISO/LCH



11N40SISO/MCH





MIMO

| Mode | Channel | ANT 0 [dBm/3KHz] | ANT 1 [dBm/3KHz] | MIMO [dBm/3KHz] | Limit [dBm/3KHz] | Verdict |
|-------|---------|---------------------|---------------------|--------------------|---------------------|---------|
| 11N20 | LCH | -17.707 | -19.370 | -15.45 | 7.99 | PASS |
| | MCH | -18.244 | -19.387 | -15.77 | 7.99 | PASS |
| | HCH | -18.725 | -19.571 | -16.12 | 7.99 | PASS |
| 11N40 | LCH | -21.165 | -20.551 | -17.84 | 7.99 | PASS |
| | MCH | -21.118 | -20.910 | -18.00 | 7.99 | PASS |
| | HCH | -21.205 | -20.008 | -17.56 | 7.99 | PASS |

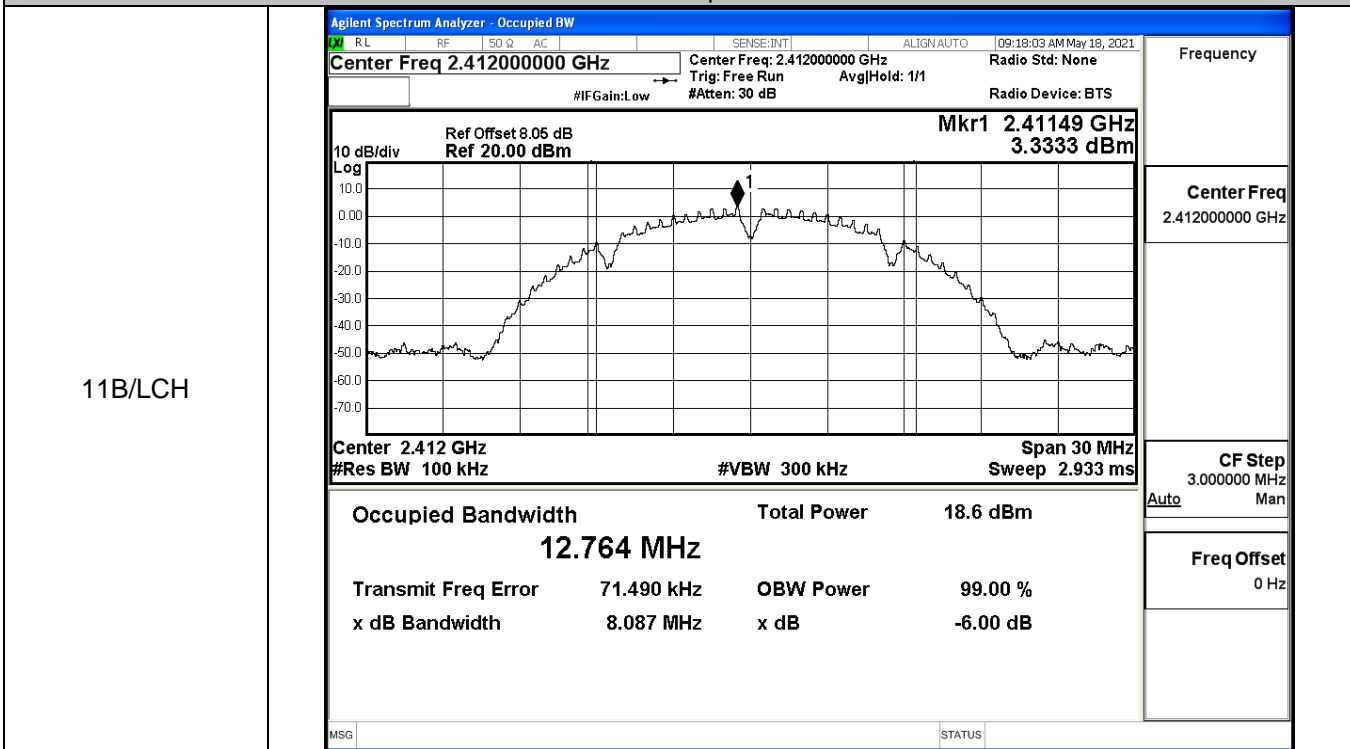
Directional gain=3dBi+10 log (2) = 6.01dBi > 6dBi, So the power density limit shall be reduced to 8-(6.01-6) = 7.99

C.4 6dB Bandwidth

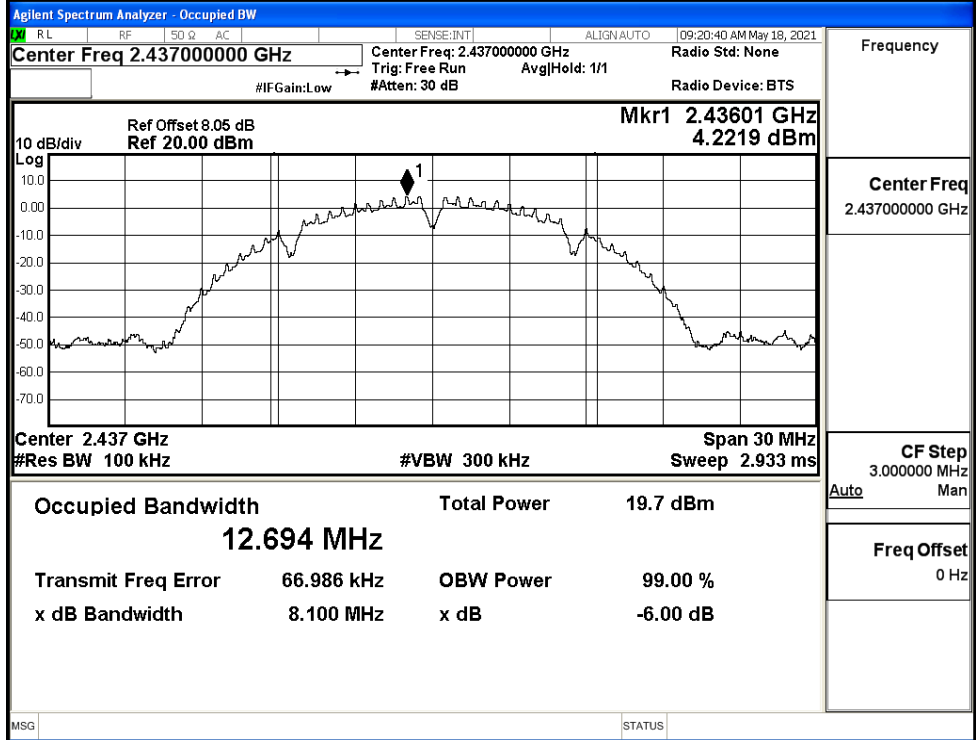
ANT0

| Mode | Channel | 6dB Bandwidth [MHz] | Limit [MHz] | Verdict |
|-----------|---------|---------------------|-------------|---------|
| 11B | LCH | 8.087 | ≥0.5 | PASS |
| | MCH | 8.100 | ≥0.5 | PASS |
| | HCH | 8.084 | ≥0.5 | PASS |
| 11G | LCH | 16.38 | ≥0.5 | PASS |
| | MCH | 16.34 | ≥0.5 | PASS |
| | HCH | 16.37 | ≥0.5 | PASS |
| 11N20SISO | LCH | 17.66 | ≥0.5 | PASS |
| | MCH | 17.63 | ≥0.5 | PASS |
| | HCH | 17.62 | ≥0.5 | PASS |
| 11N40SISO | LCH | 35.54 | ≥0.5 | PASS |
| | MCH | 35.47 | ≥0.5 | PASS |
| | HCH | 34.85 | ≥0.5 | PASS |

Test Graphs



11B/MCH



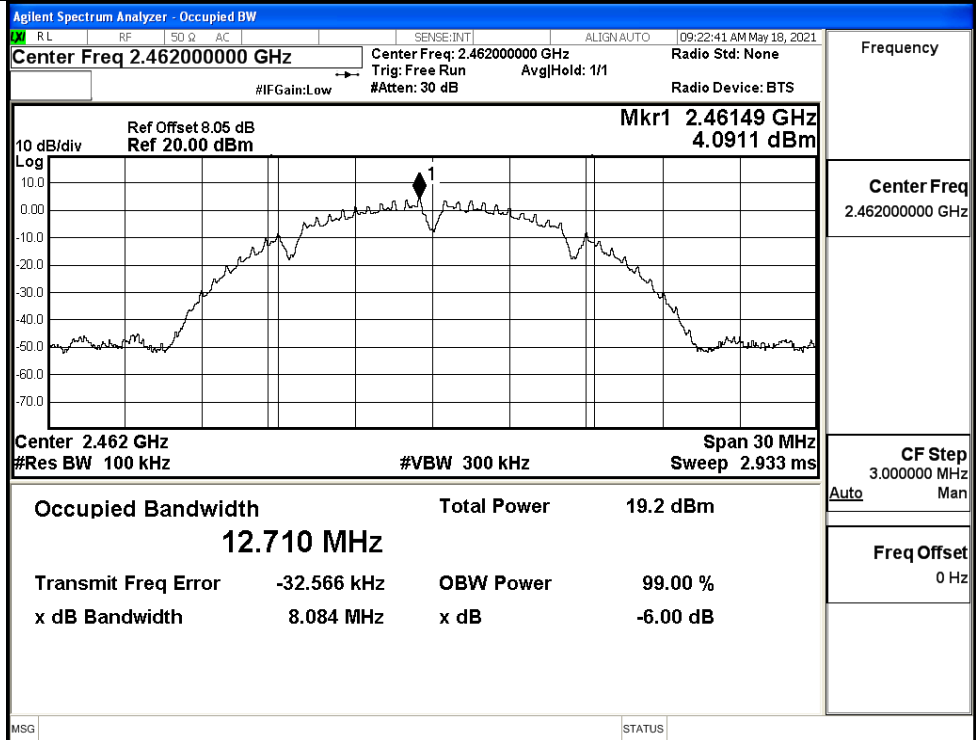
Frequency

Center Freq
2.43700000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11B/HCH



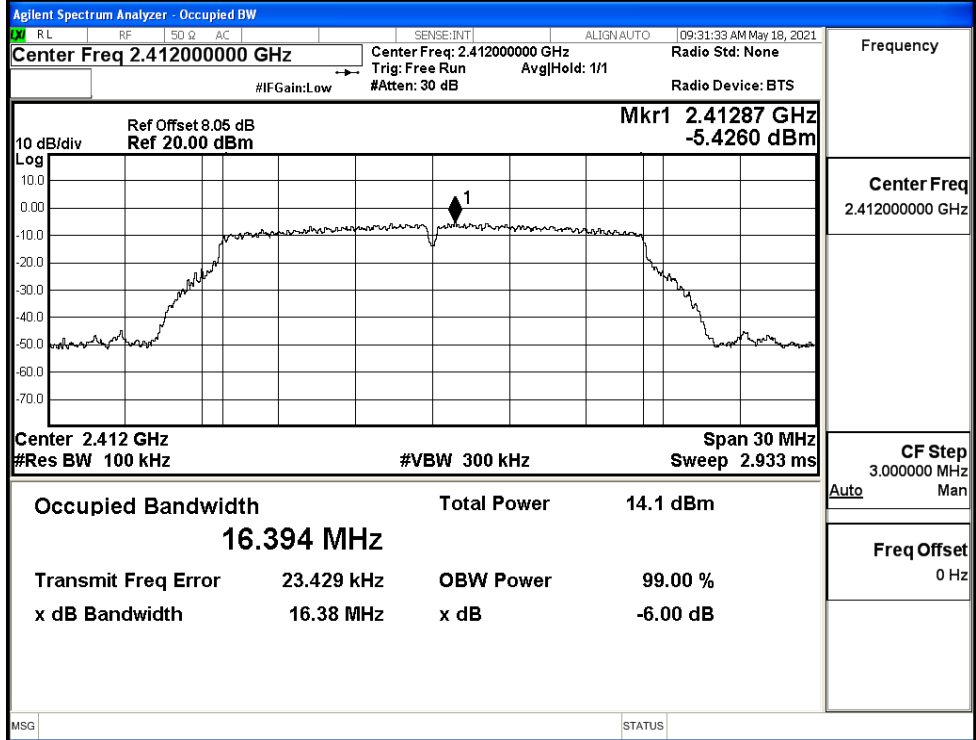
Frequency

Center Freq
2.46200000 GHz

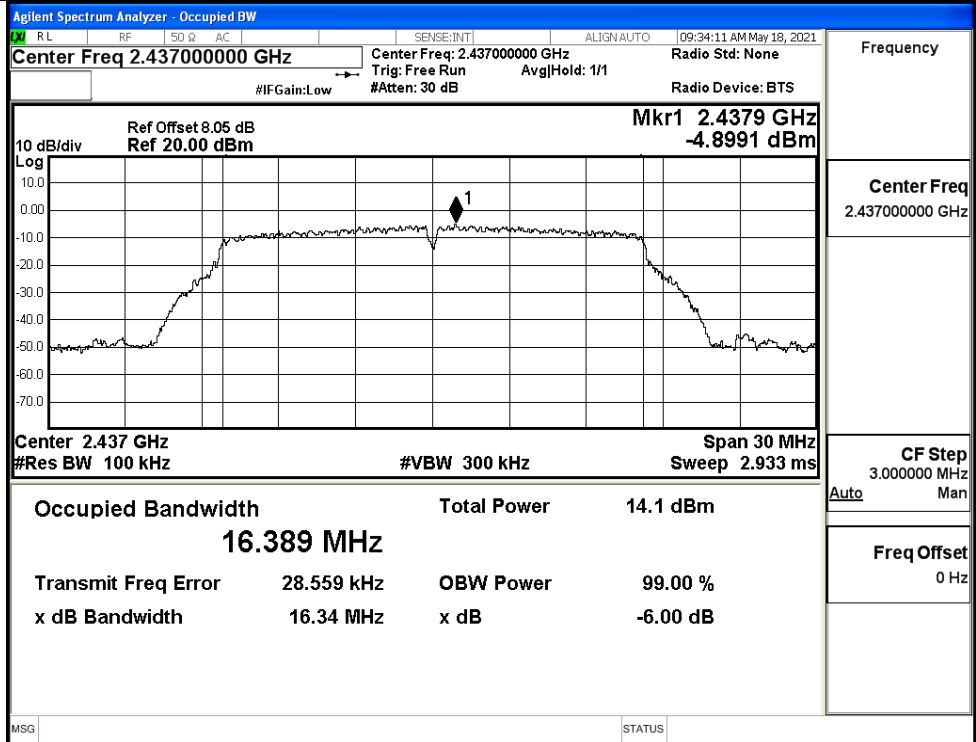
CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

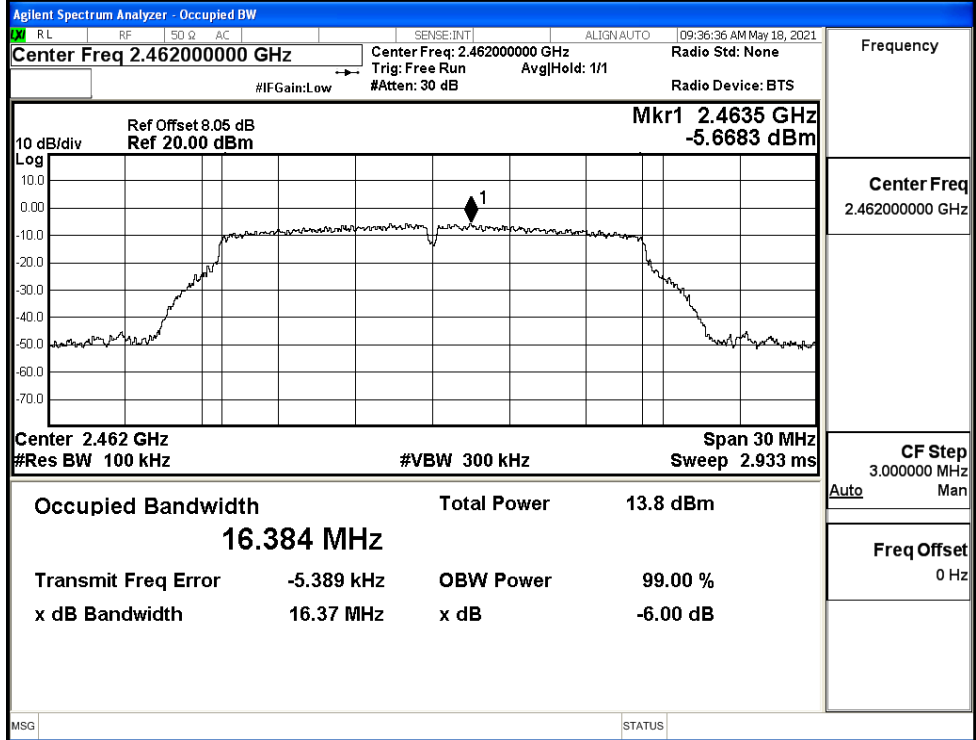
11G/LCH



11G/MCH



11G/HCH



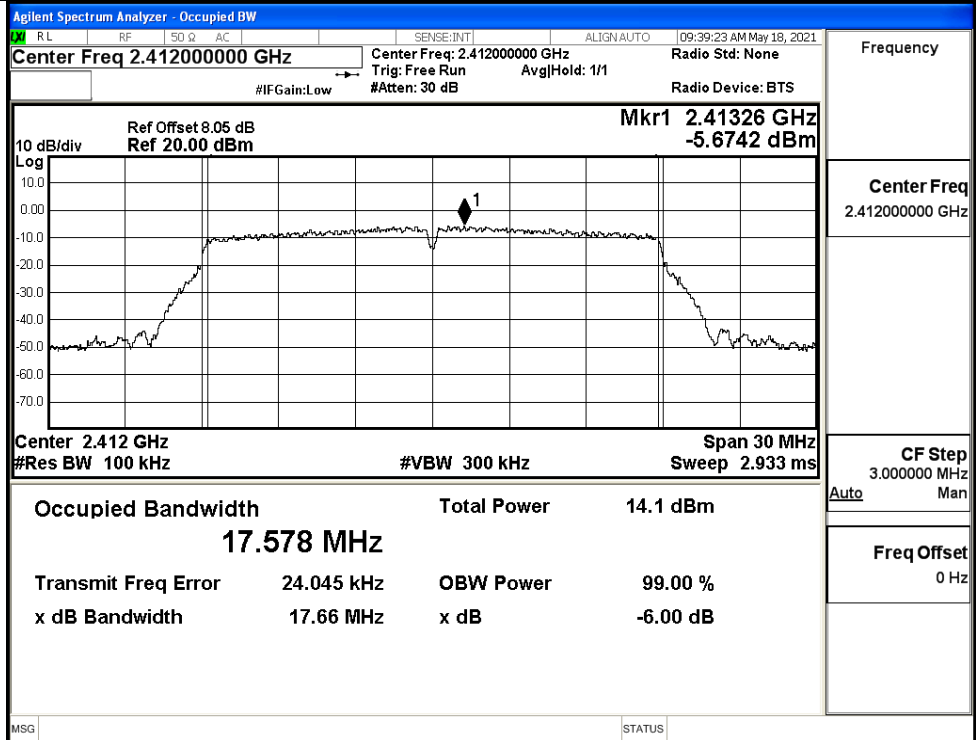
Frequency

Center Freq
2.46200000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11N20SISO/LCH



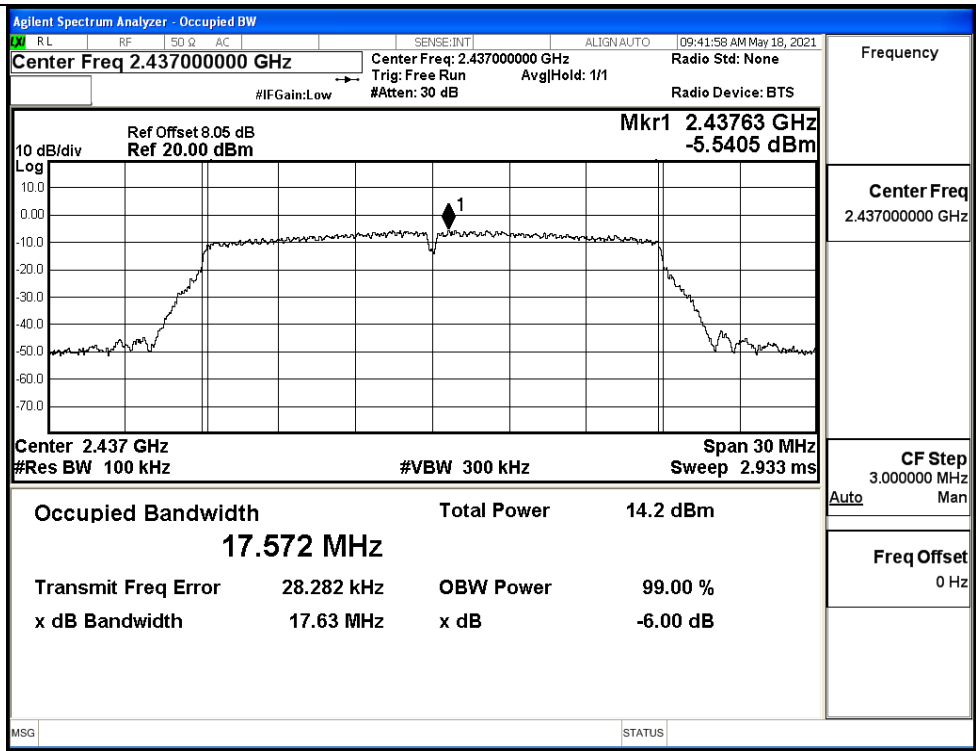
Frequency

Center Freq
2.41200000 GHz

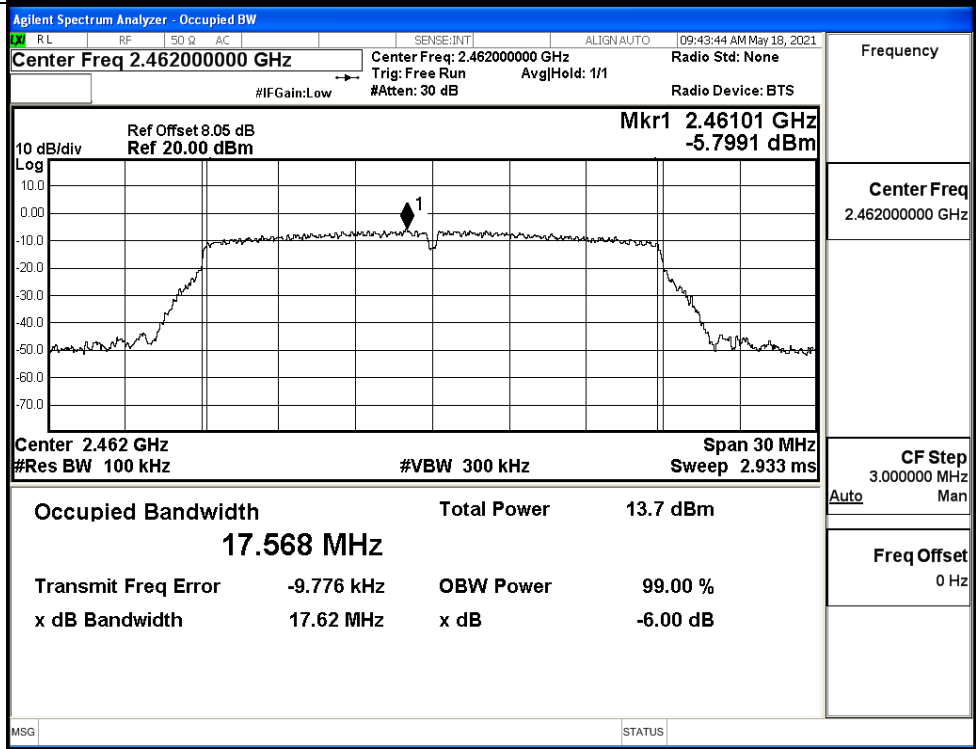
CF Step
3.000000 MHz
Auto Man

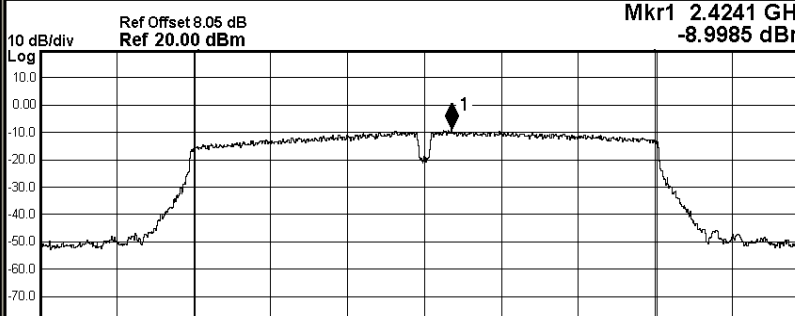
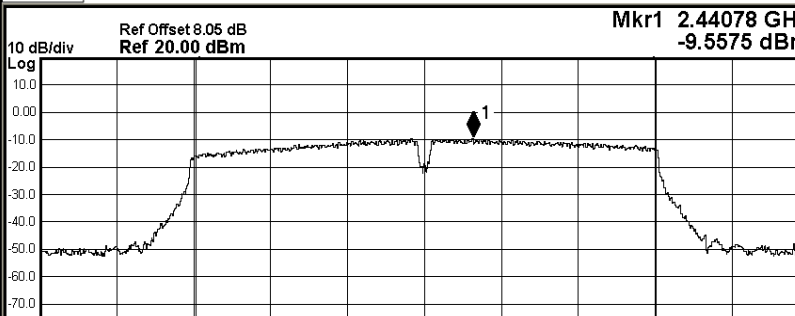
Freq Offset
0 Hz

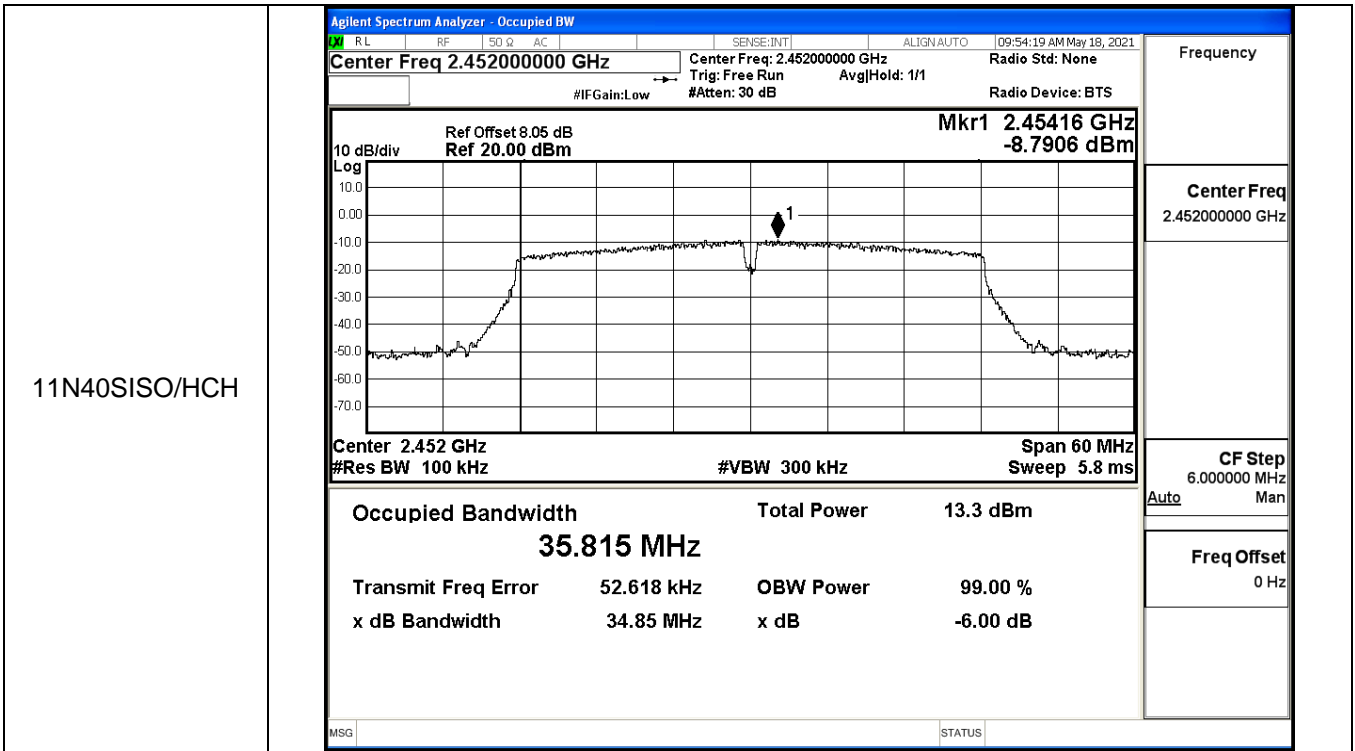
11N20SISO/MCH



11N20SISO/HCH



| | | |
|----------------------|---|---|
| <p>11N40SISO/LCH</p> | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>RL RF 50 Ω AC SENSE:INT ALIGN AUTO 09:46:28 AM May 18, 2021</p> <p>Center Freq 2.42200000 GHz Center Freq: 2.42200000 GHz Radio Std: None Trig: Free Run Avg Hold: 1/1 Radio Device: BTS #IFGain:Low #Atten: 30 dB</p>  <p>10 dB/div Ref Offset 8.05 dB Mkr1 2.4241 GHz Ref 20.00 dBm -8.9985 dBm</p> <p>Center 2.422 GHz Span 60 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.8 ms</p> <p>Occupied Bandwidth Total Power 13.4 dBm 35.945 MHz</p> <p>Transmit Freq Error 113.41 kHz OBW Power 99.00 % x dB Bandwidth 35.54 MHz x dB -6.00 dB</p> <p>MSG STATUS</p> | <p>Frequency</p> <p>Center Freq 2.42200000 GHz</p> <p>CF Step 6.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p> |
| <p>11N40SISO/MCH</p> | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>RL RF 50 Ω AC SENSE:INT ALIGN AUTO 09:49:11 AM May 18, 2021</p> <p>Center Freq 2.43700000 GHz Center Freq: 2.43700000 GHz Radio Std: None Trig: Free Run Avg Hold: 1/1 Radio Device: BTS #IFGain:Low #Atten: 30 dB</p>  <p>10 dB/div Ref Offset 8.05 dB Mkr1 2.44078 GHz Ref 20.00 dBm -9.5575 dBm</p> <p>Center 2.437 GHz Span 60 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.8 ms</p> <p>Occupied Bandwidth Total Power 13.3 dBm 35.881 MHz</p> <p>Transmit Freq Error 112.78 kHz OBW Power 99.00 % x dB Bandwidth 35.47 MHz x dB -6.00 dB</p> <p>MSG STATUS</p> | <p>Frequency</p> <p>Center Freq 2.43700000 GHz</p> <p>CF Step 6.000000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p> |

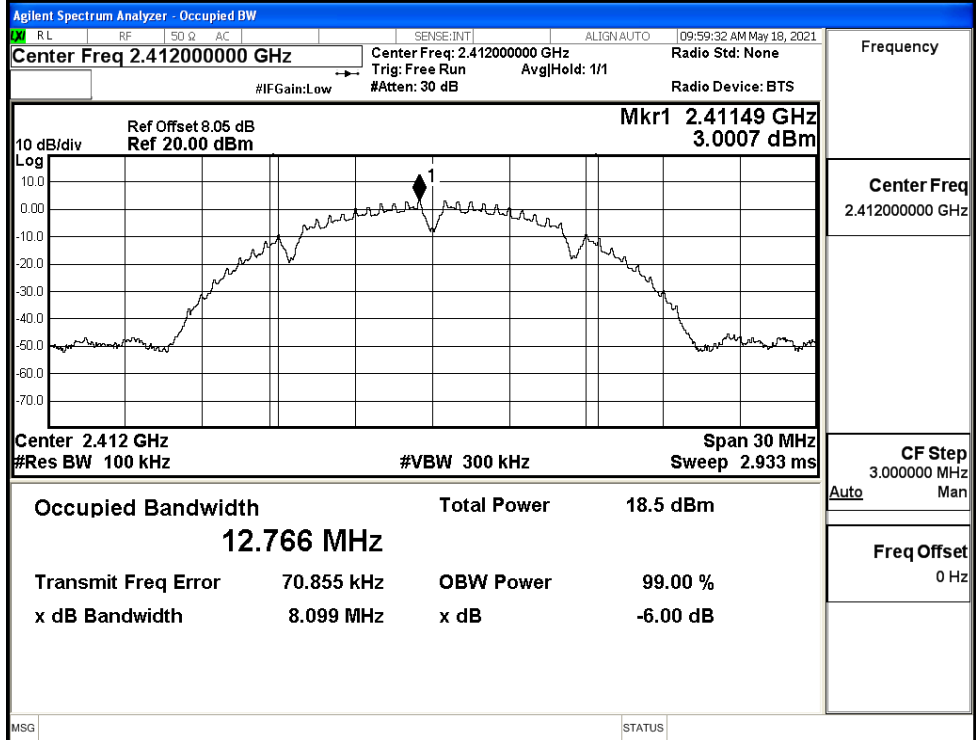


ANT1

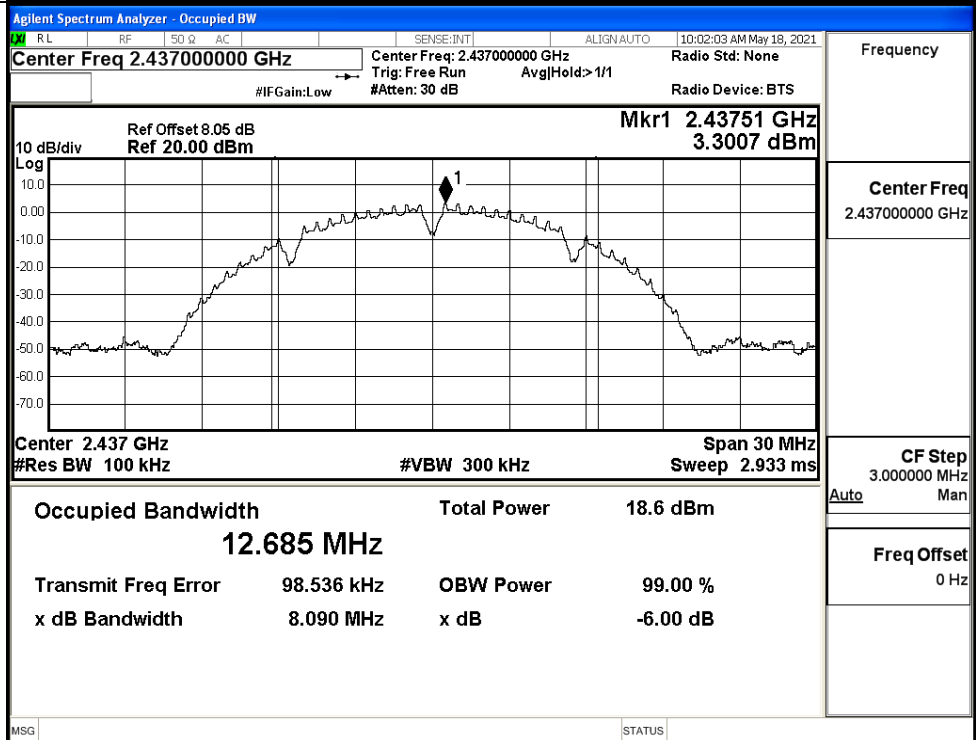
| Mode | Channel | 6dB Bandwidth [MHz] | Limit [MHz] | Verdict |
|-----------|---------|---------------------|-------------|---------|
| 11B | LCH | 8.099 | ≥0.5 | PASS |
| | MCH | 8.090 | ≥0.5 | PASS |
| | HCH | 8.095 | ≥0.5 | PASS |
| 11G | LCH | 16.42 | ≥0.5 | PASS |
| | MCH | 16.44 | ≥0.5 | PASS |
| | HCH | 16.40 | ≥0.5 | PASS |
| 11N20SISO | LCH | 17.65 | ≥0.5 | PASS |
| | MCH | 17.63 | ≥0.5 | PASS |
| | HCH | 17.62 | ≥0.5 | PASS |
| 11N40SISO | LCH | 36.14 | ≥0.5 | PASS |
| | MCH | 36.16 | ≥0.5 | PASS |
| | HCH | 36.30 | ≥0.5 | PASS |

Test Graphs

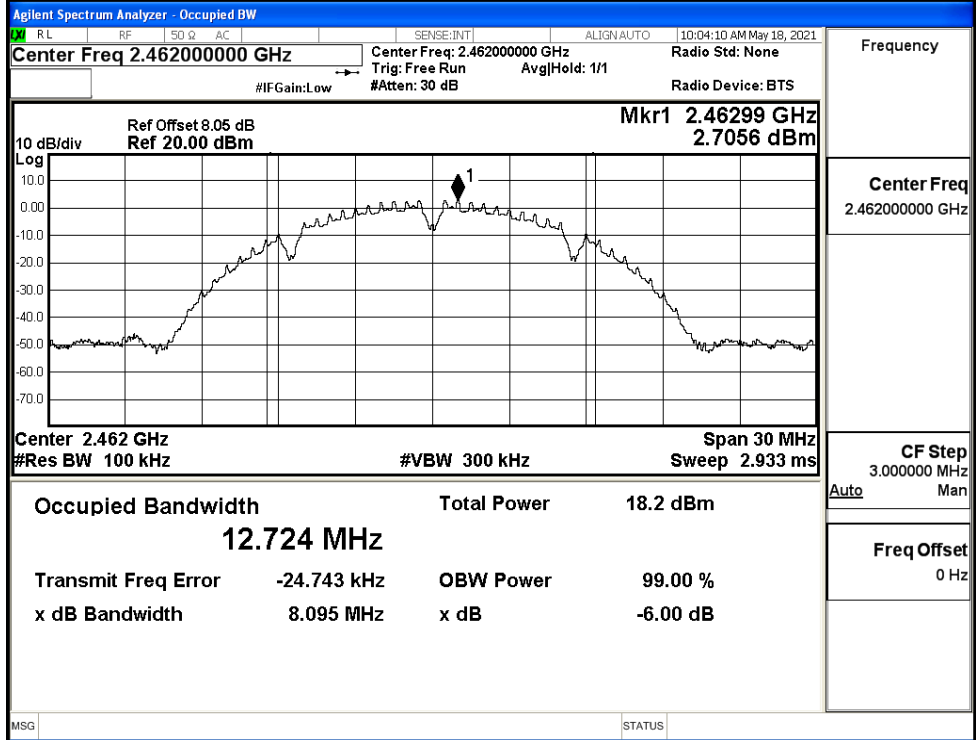
11B/LCH



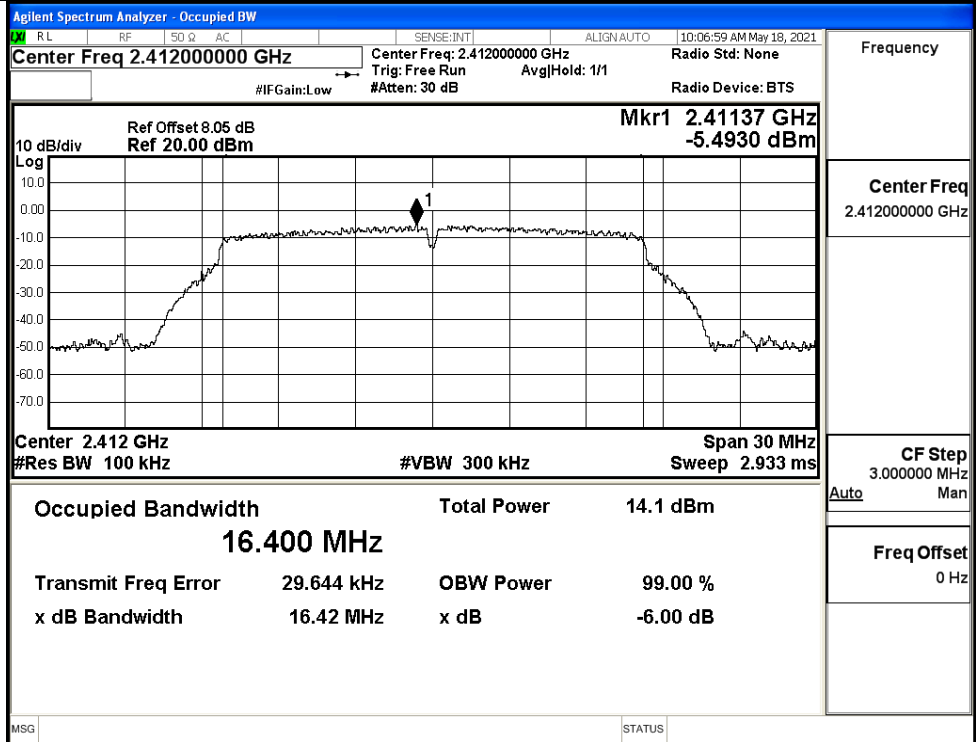
11B/MCH



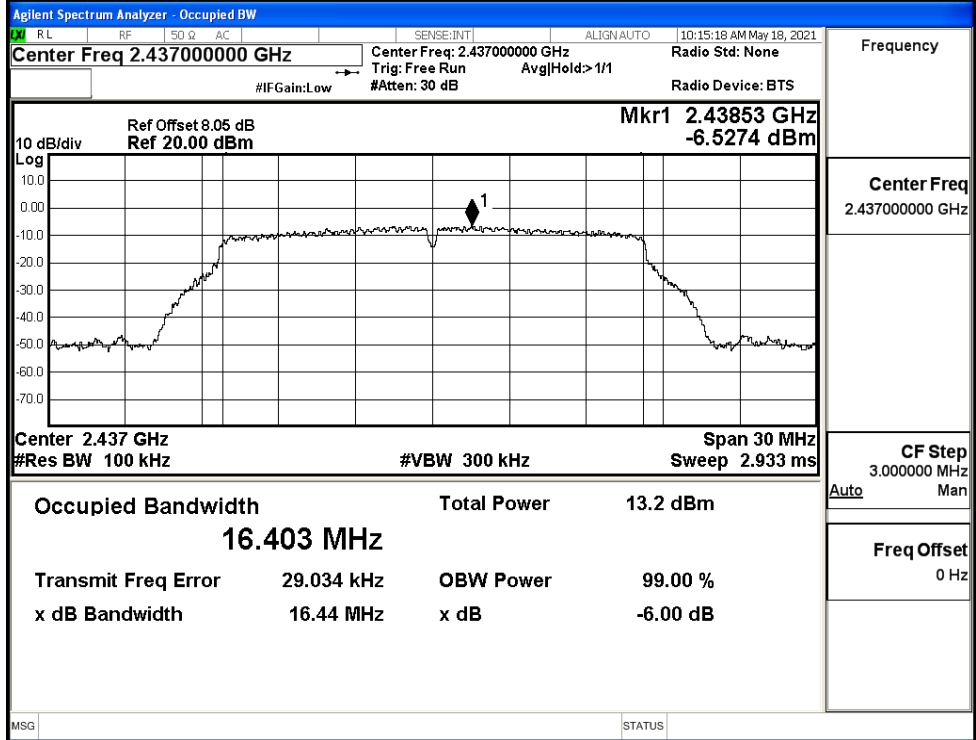
11B/HCH



11G/LCH



11G/MCH



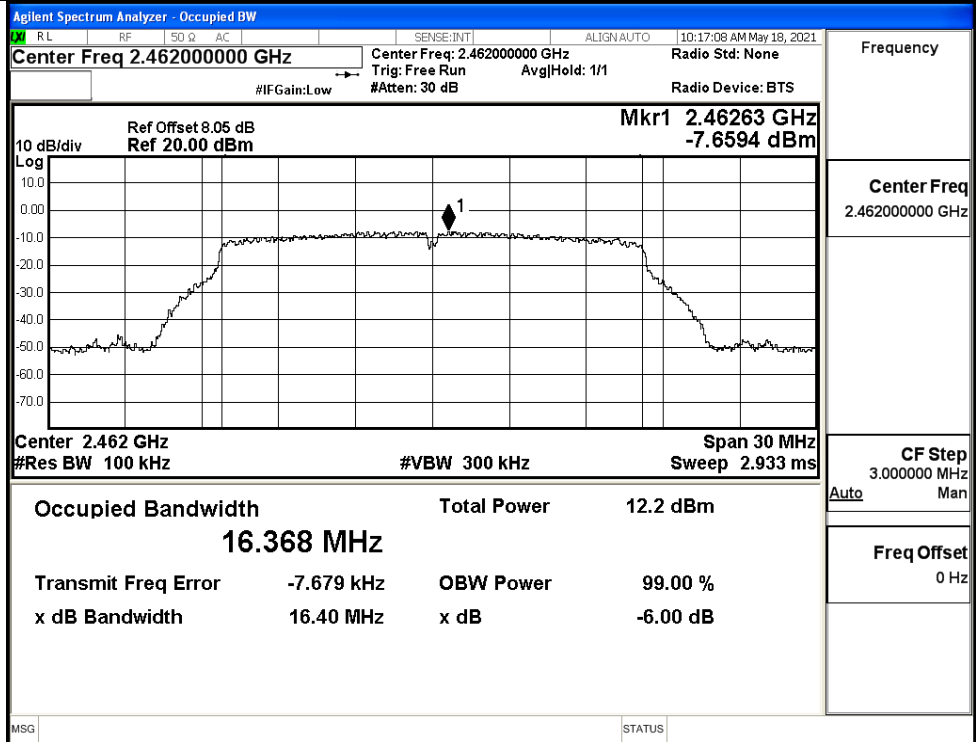
Frequency

Center Freq
2.43700000 GHz

CF Step
3.000000 MHz
Auto Man

Freq Offset
0 Hz

11G/HCH



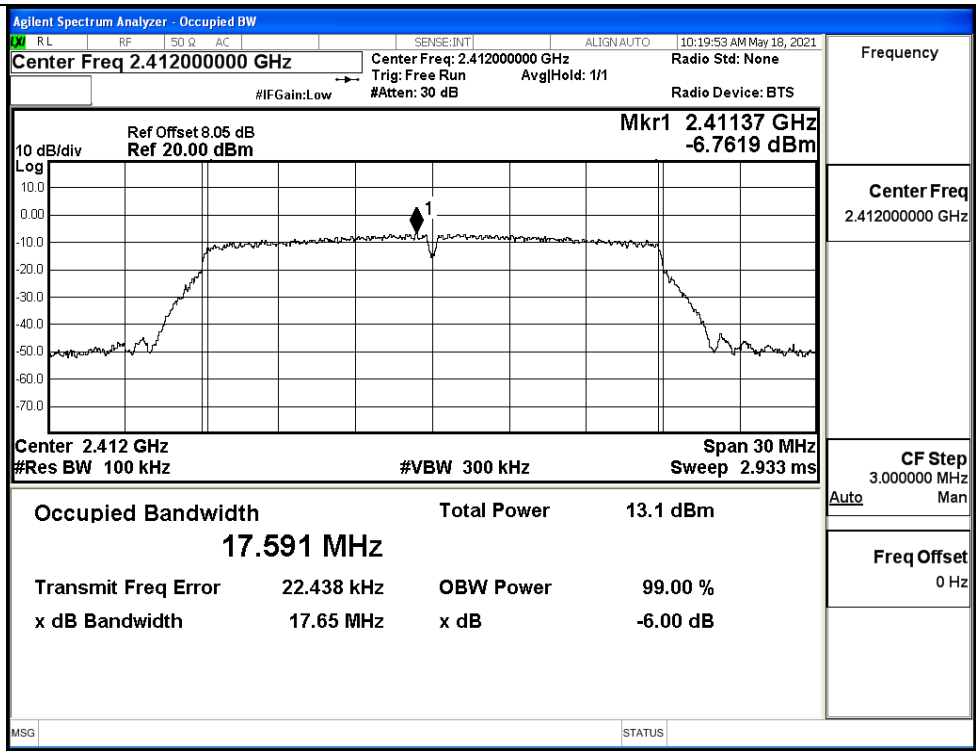
Frequency

Center Freq
2.46200000 GHz

CF Step
3.000000 MHz
Auto Man

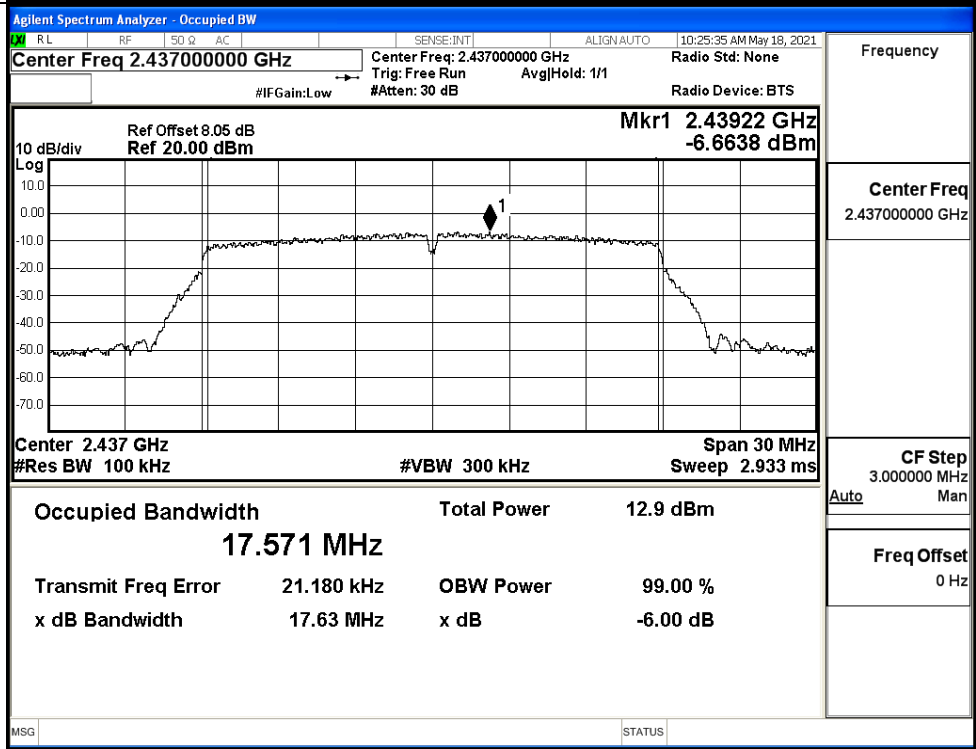
Freq Offset
0 Hz

11N20SISO/LCH



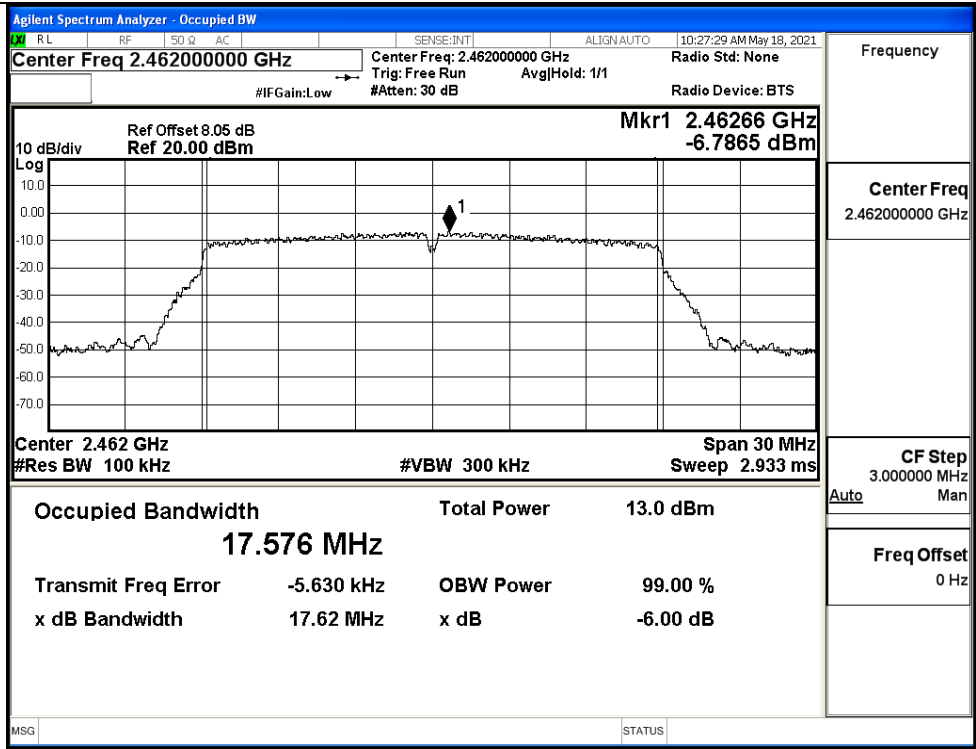
| | |
|-------------|----------------|
| Frequency | 2.41200000 GHz |
| Center Freq | 2.41200000 GHz |
| CF Step | 3.000000 MHz |
| Auto | Man |
| Freq Offset | 0 Hz |

11N20SISO/MCH

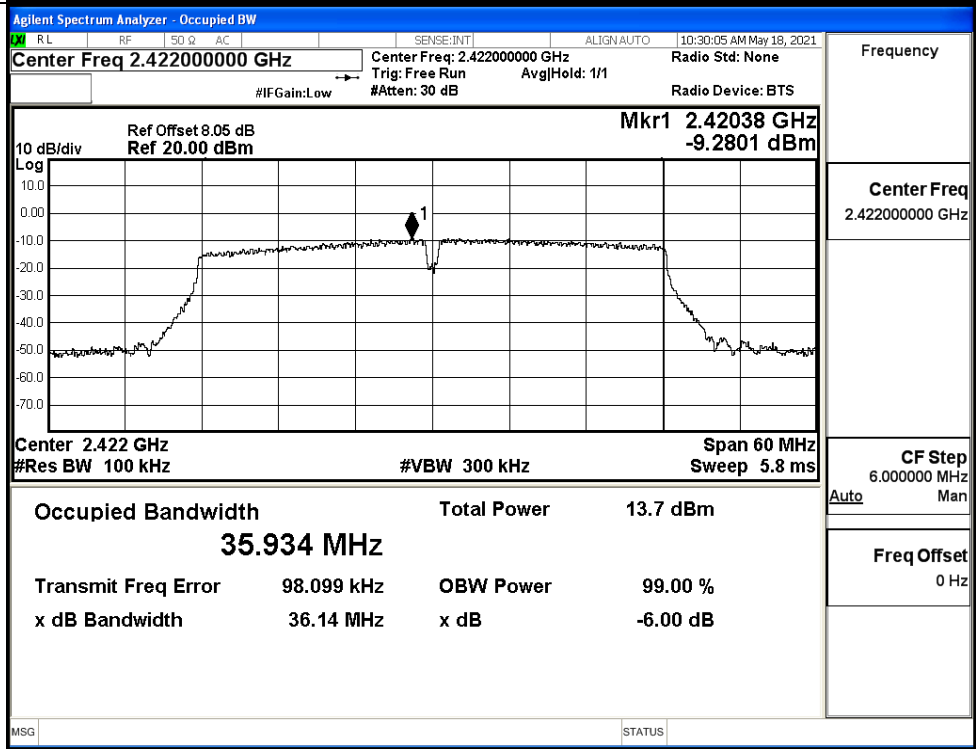


| | |
|-------------|----------------|
| Frequency | 2.43700000 GHz |
| Center Freq | 2.43700000 GHz |
| CF Step | 3.000000 MHz |
| Auto | Man |
| Freq Offset | 0 Hz |

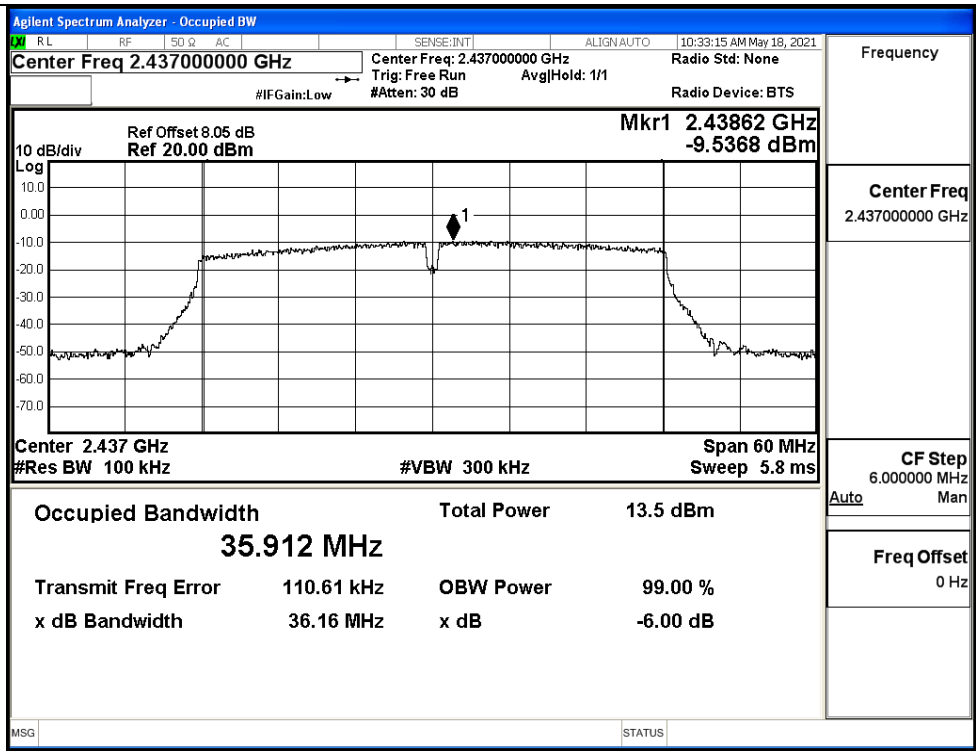
11N20SISO/HCH



11N40SISO/LCH



11N40SISO/MCH

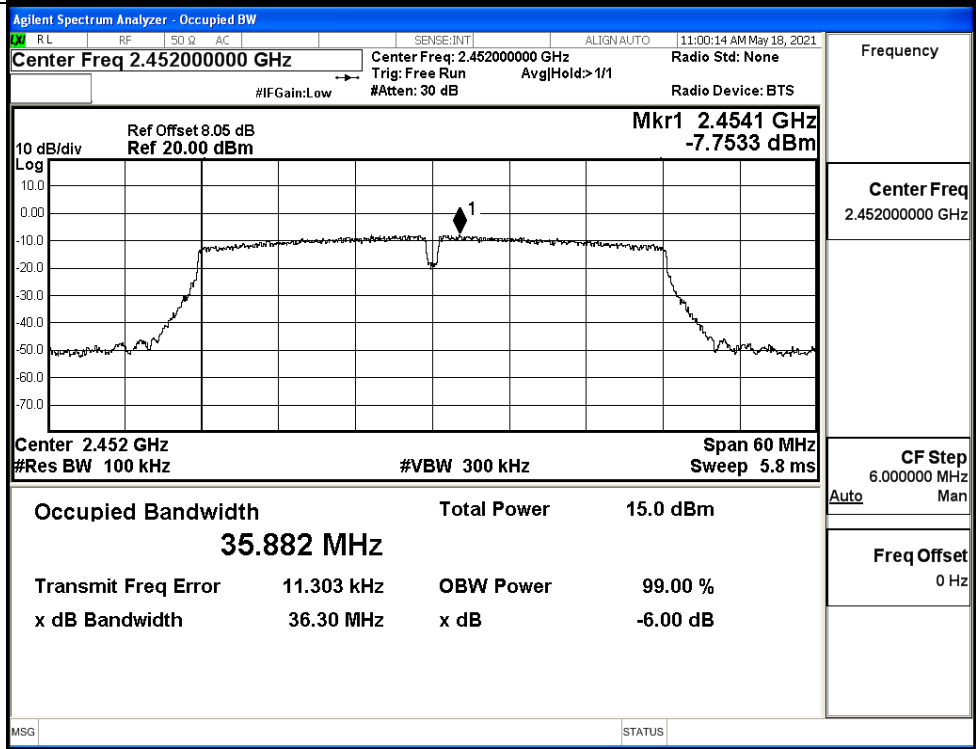


Frequency
Center Freq
2.43700000 GHz

CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

11N40SISO/HCH



Frequency
Center Freq
2.45200000 GHz

CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

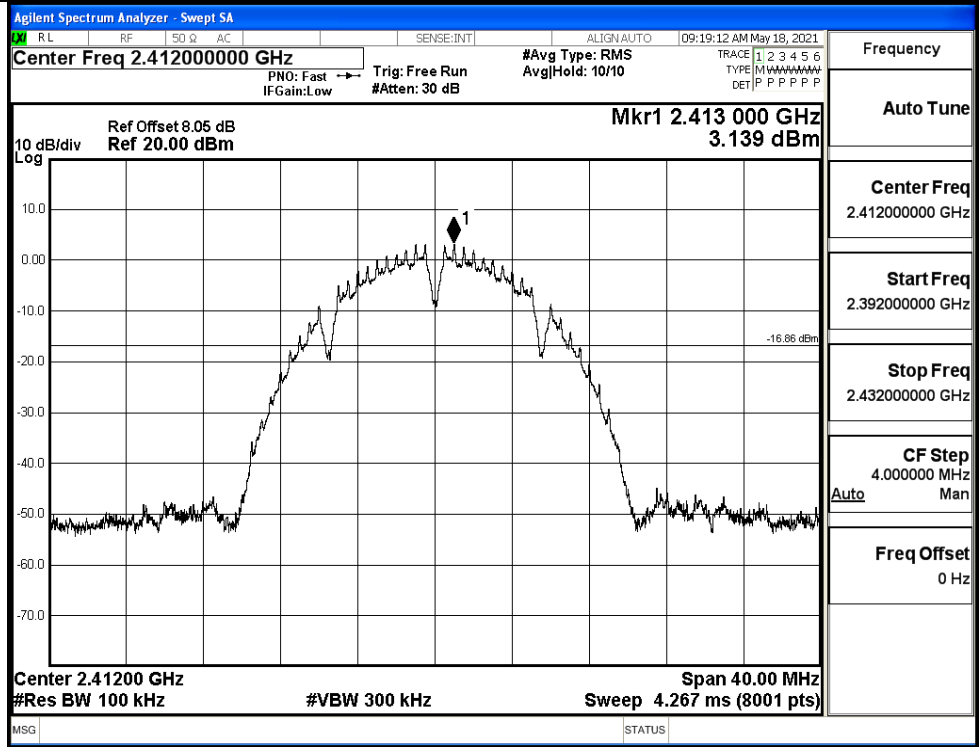
C.5 RF Conducted Spurious Emissions

ANT0

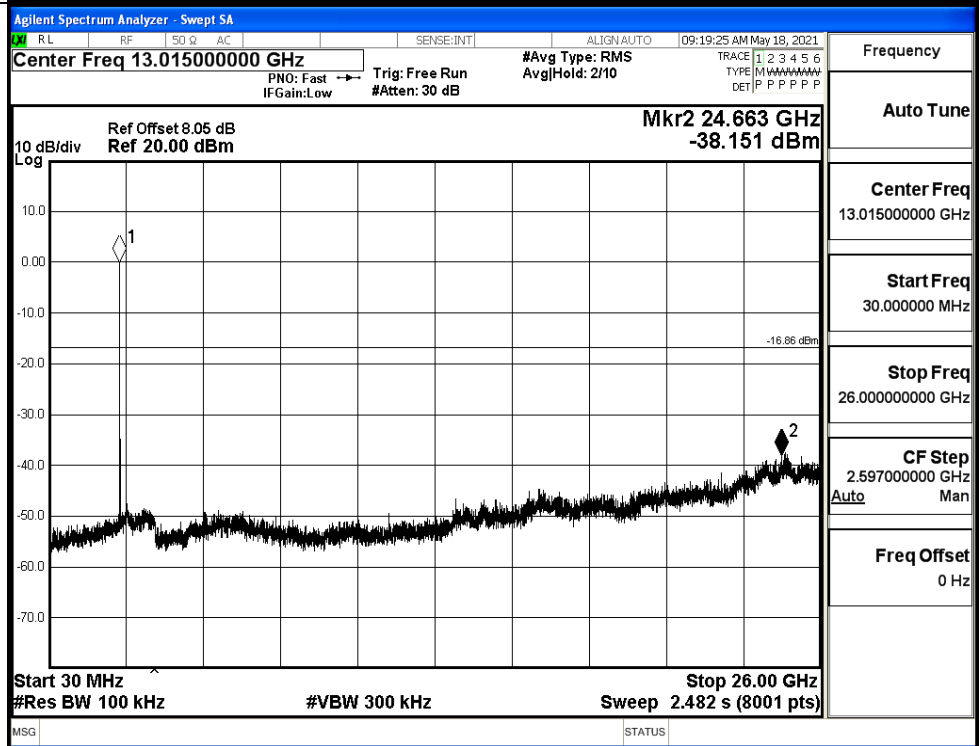
| Mode | Channel | Pref [dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|------------|------------------|-------------|---------|
| 11B | LCH | 3.139 | -38.151 | -16.861 | PASS |
| | MCH | 4.445 | -37.577 | -15.555 | PASS |
| | HCH | 3.648 | -38.214 | -16.352 | PASS |
| 11G | LCH | -5.721 | -36.950 | -25.721 | PASS |
| | MCH | -5.448 | -38.176 | -25.448 | PASS |
| | HCH | -5.977 | -37.950 | -25.977 | PASS |
| 11N20 SISO | LCH | -5.957 | -37.905 | -25.957 | PASS |
| | MCH | -5.809 | -37.245 | -25.809 | PASS |
| | HCH | -6.102 | -38.166 | -26.102 | PASS |
| 11N40 SISO | LCH | -9.561 | -37.658 | -29.561 | PASS |
| | MCH | -9.15 | -38.343 | -29.150 | PASS |
| | HCH | -9.477 | -38.214 | -29.477 | PASS |

11B_LCH_Graphs

Pref/11B/LCH

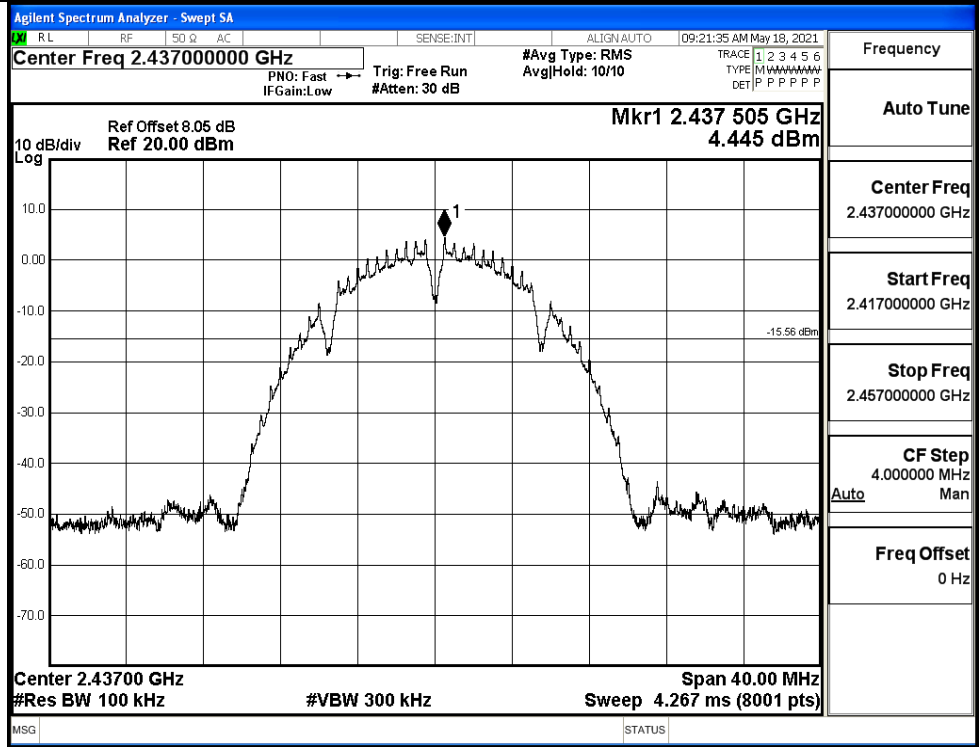


Puw/11B/LCH

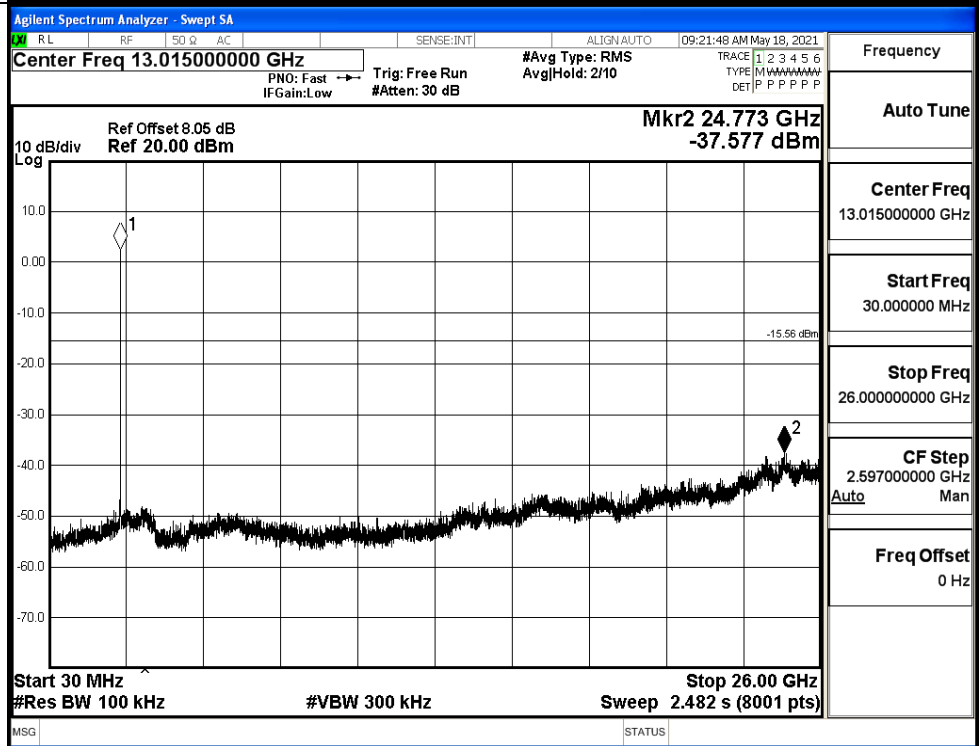


11B_MCH_Graphs

Pref/11B/MCH

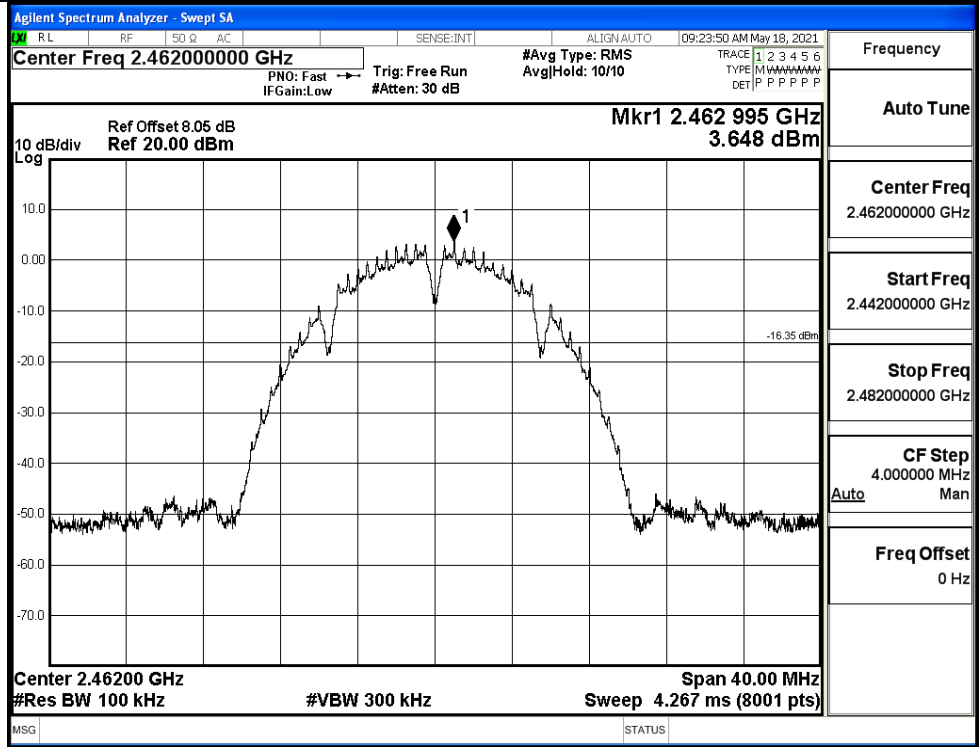


Puw/11B/MCH

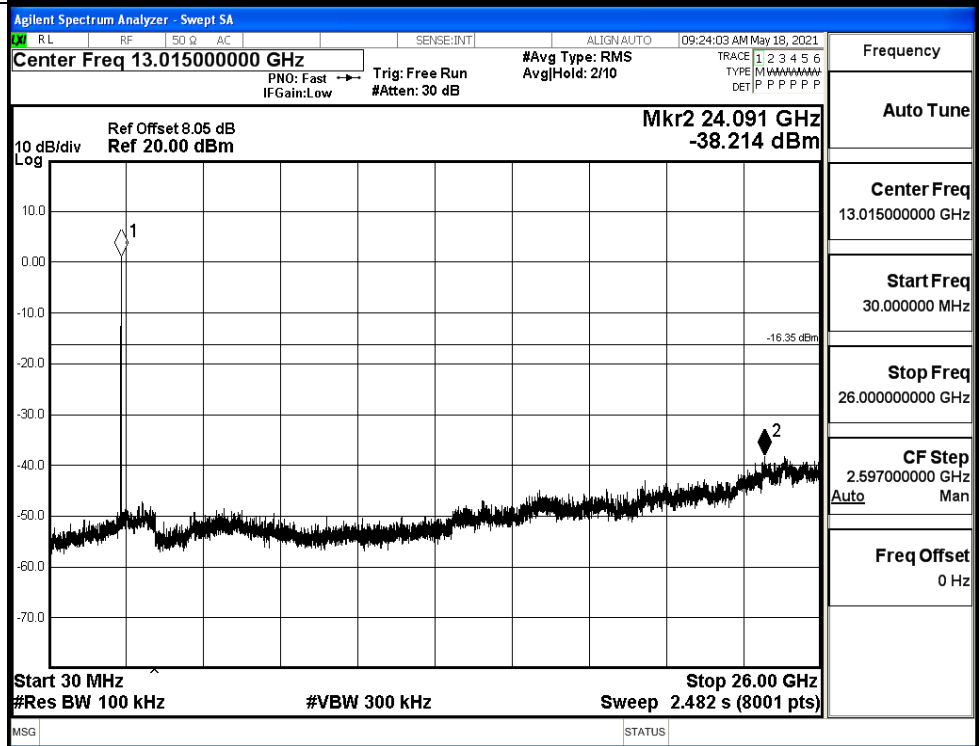


11B_HCH_Graphs

Pref/11B/HCH

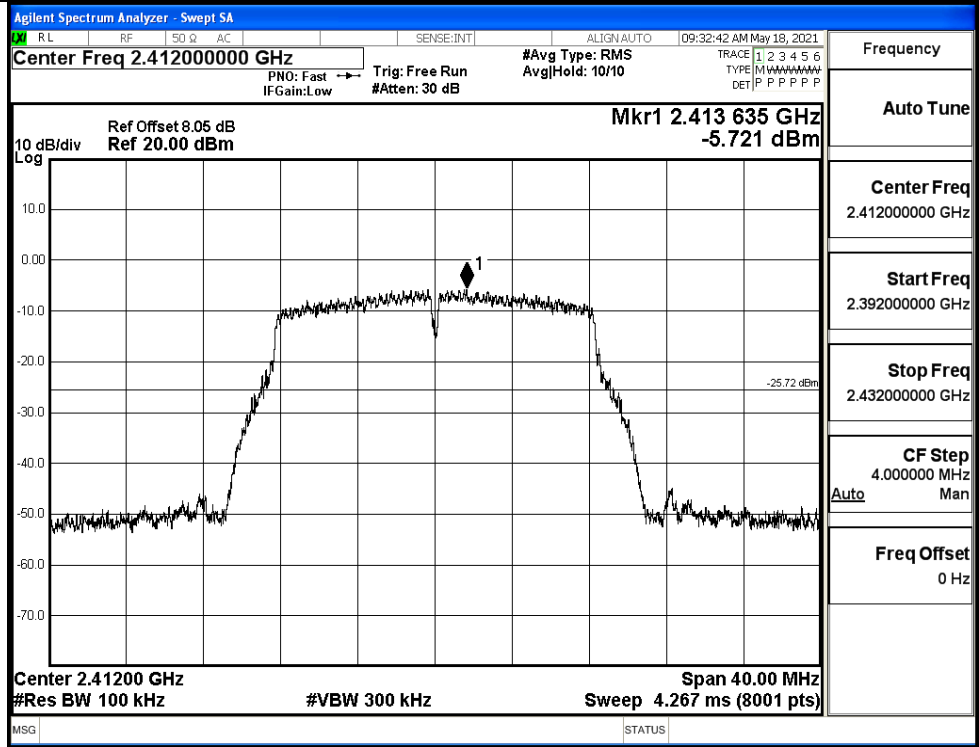


Puw/11B/HCH

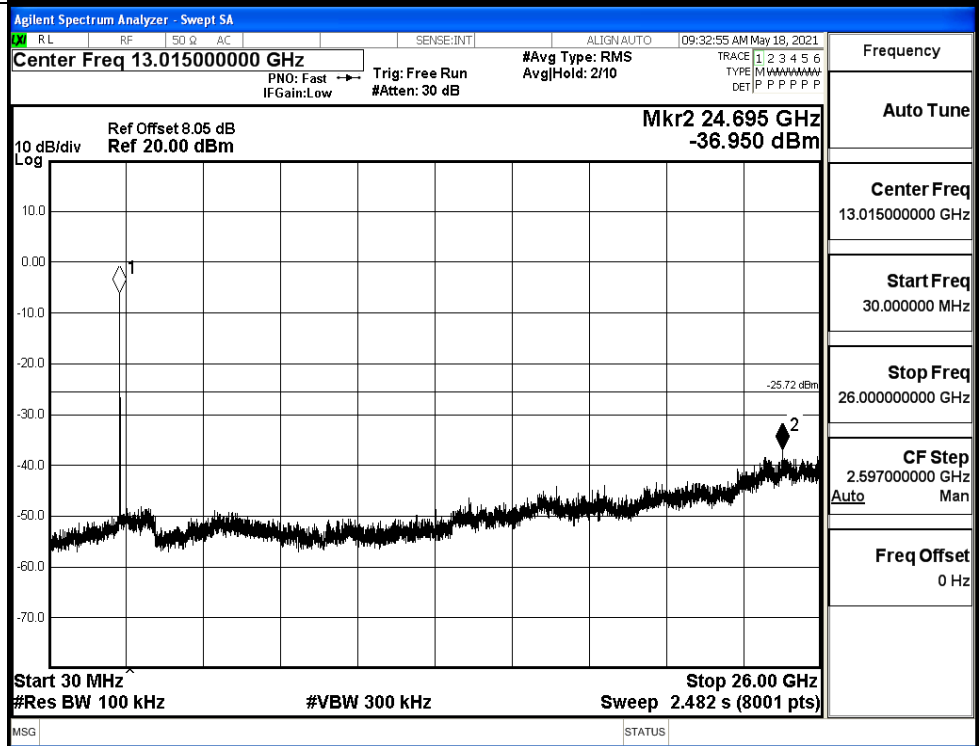


11G_LCH_Graphs

Pref/11G/LCH

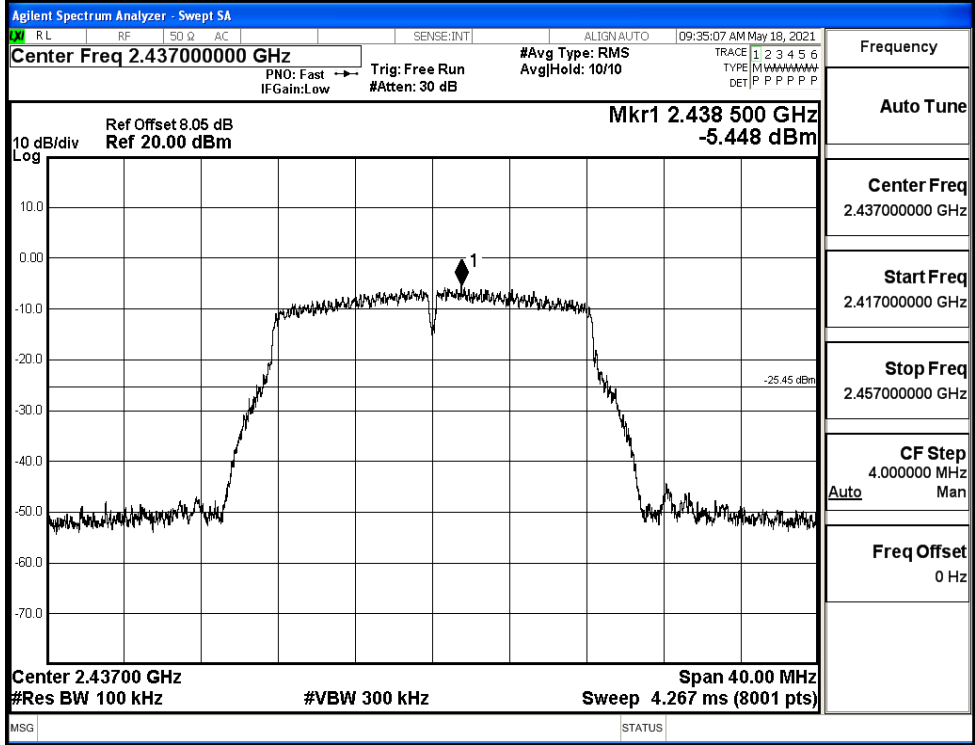


Puw/11G/LCH

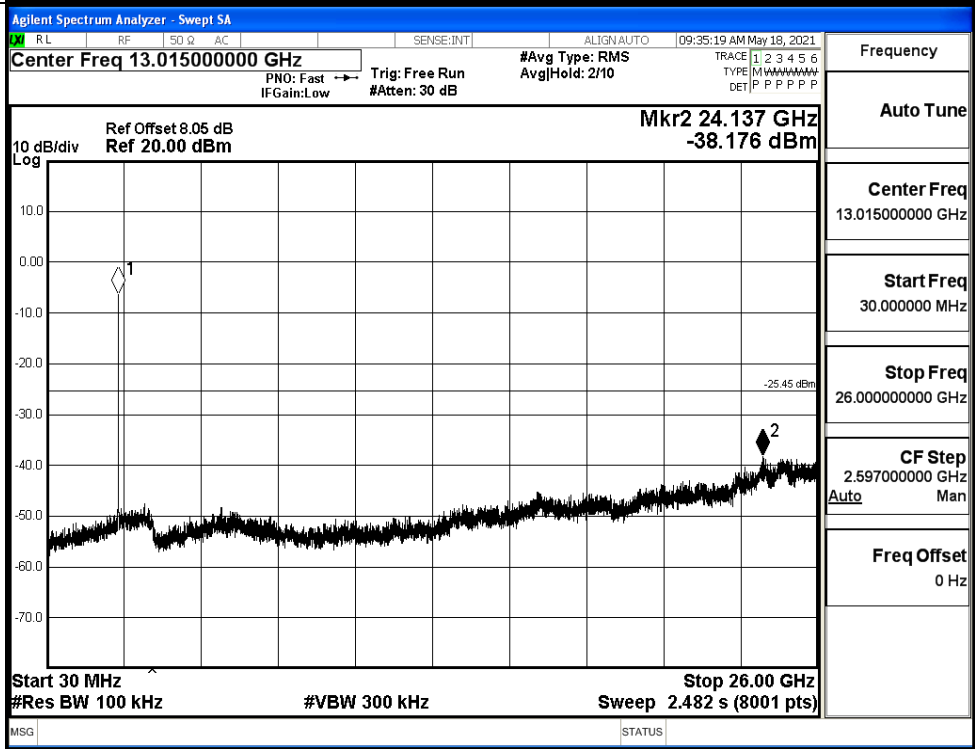


11G_MCH_Graphs

Pref/11G/MCH

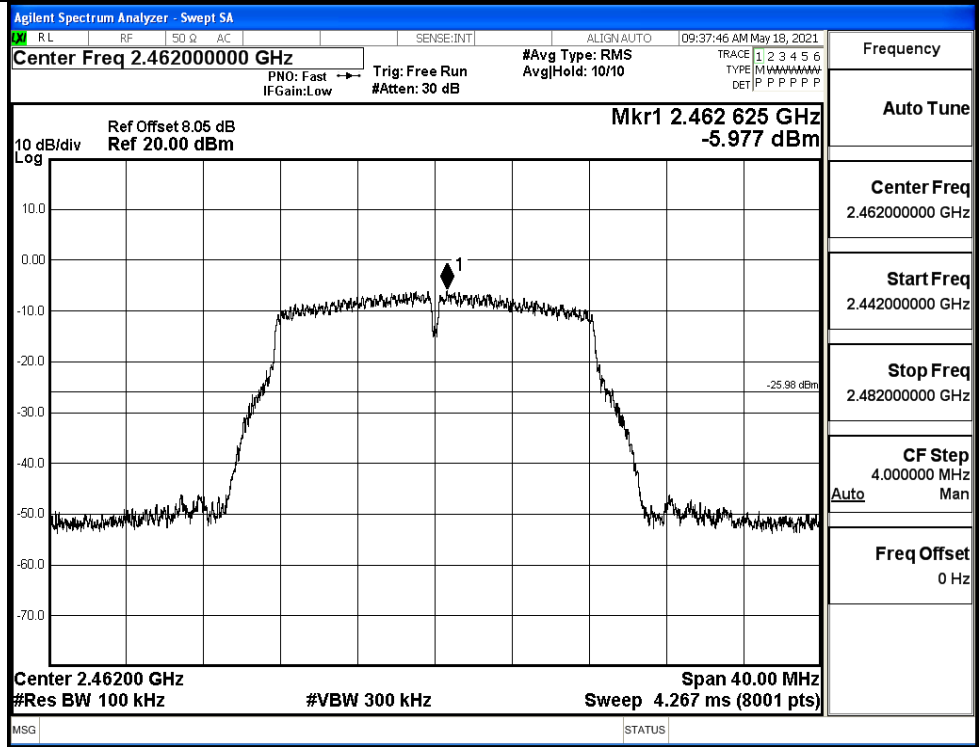


Puw/11G/MCH

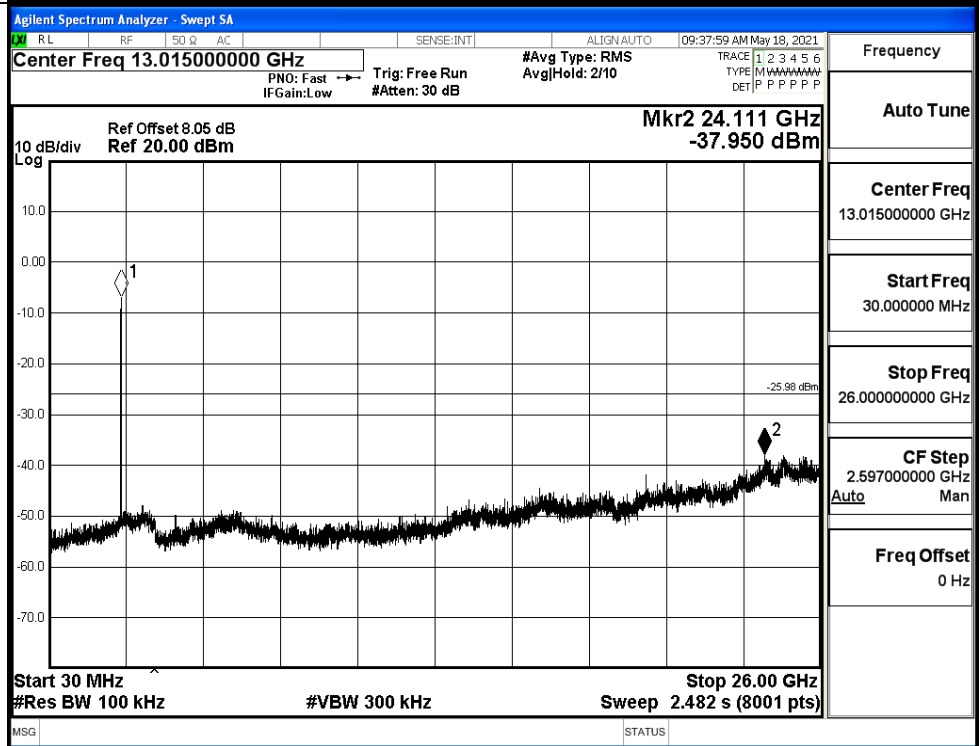


11G_HCH_Graphs

Pref/11G/HCH

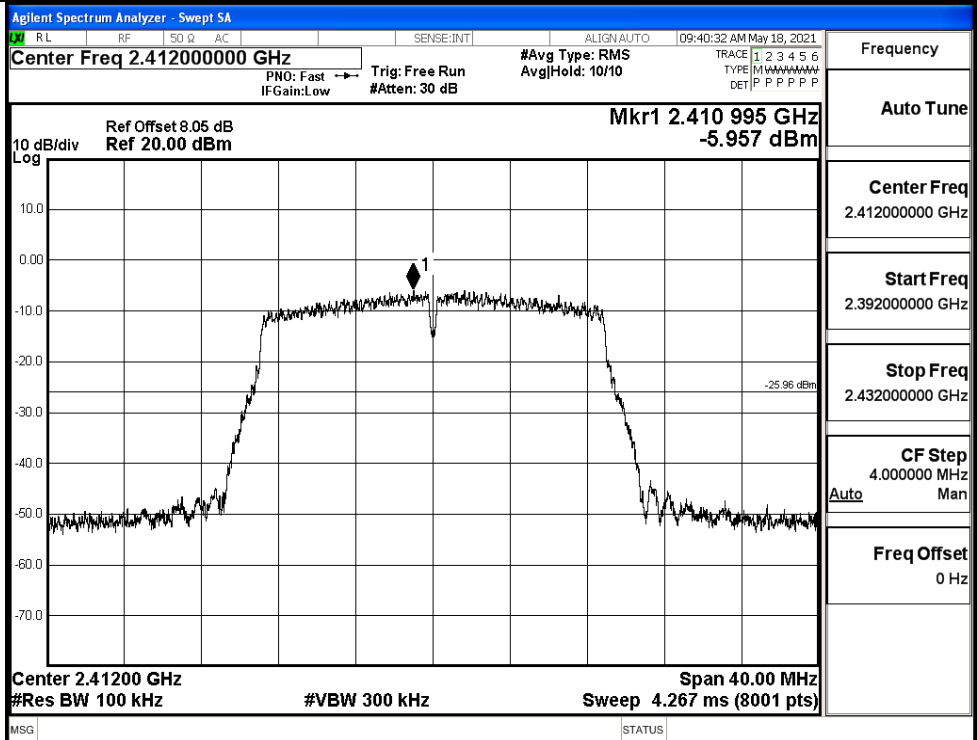


Puw/11G/HCH

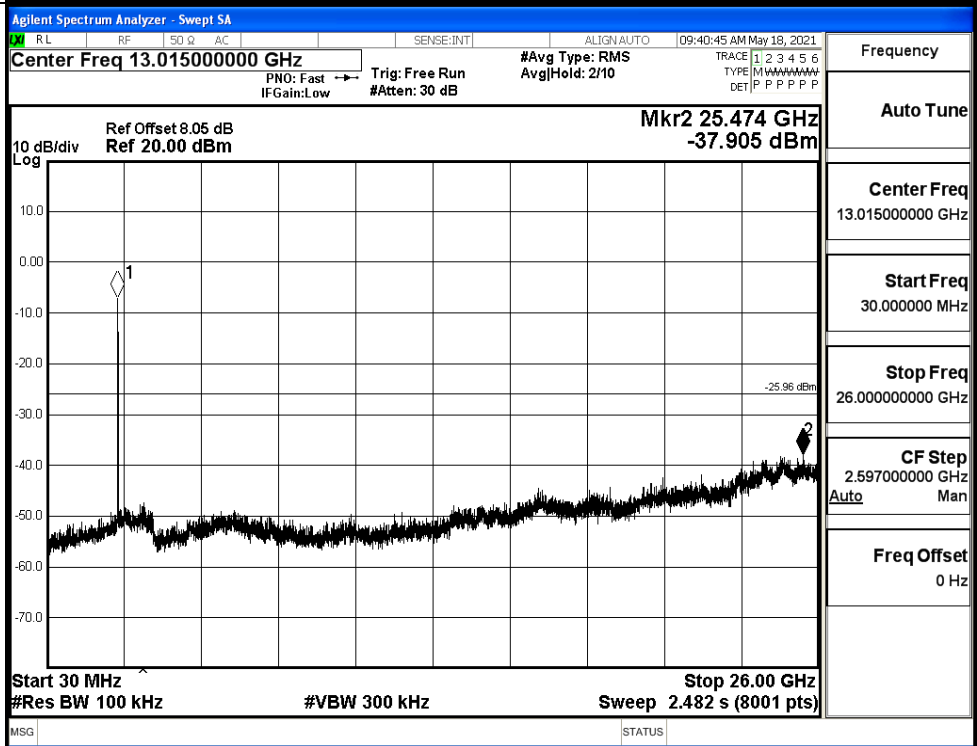


11N20SISO_LCH_Graphs

Pref/11N20SIS
O/LCH

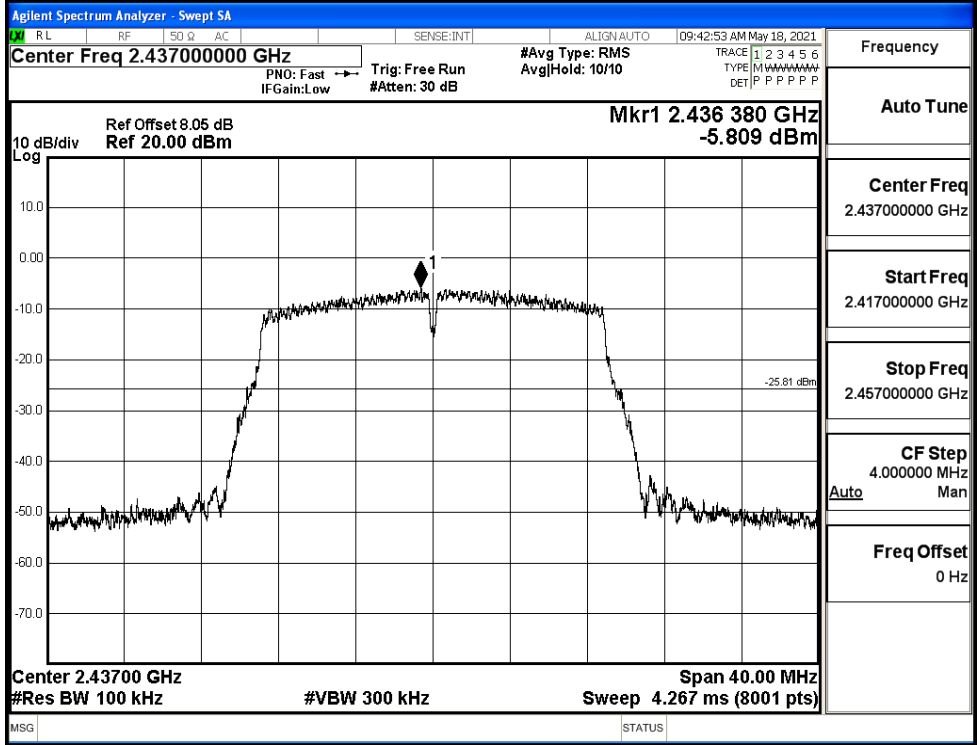


Puw/11N20
SISO/LCH



11N20SISO_MCH_Graphs

Pref/11N20
SISO/MCH

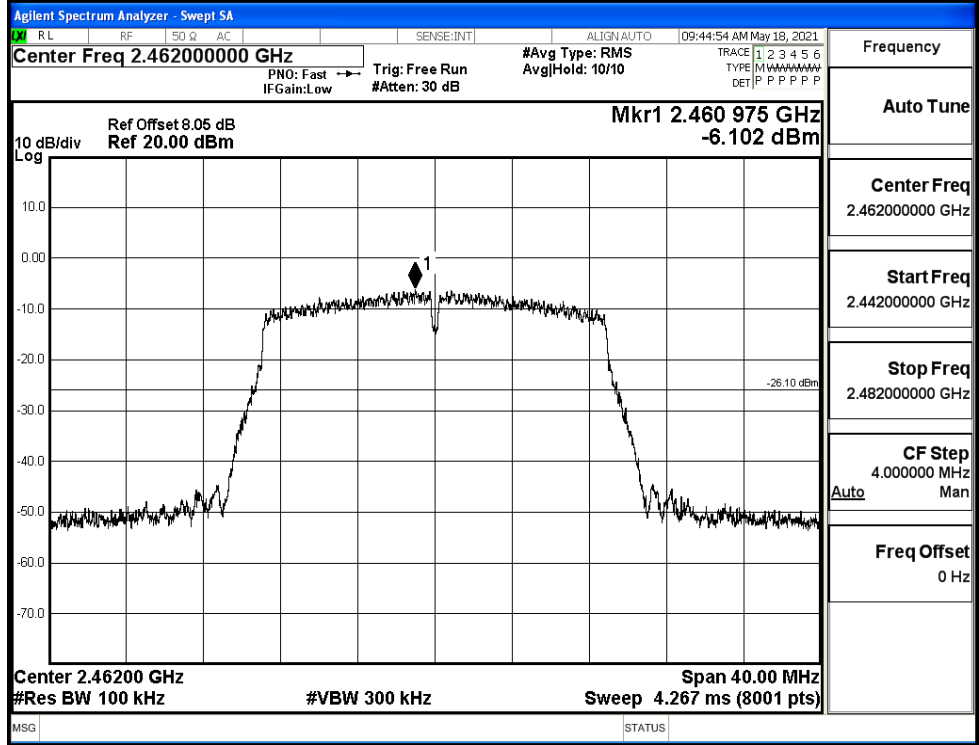


Puw/11N20
SISO/MCH

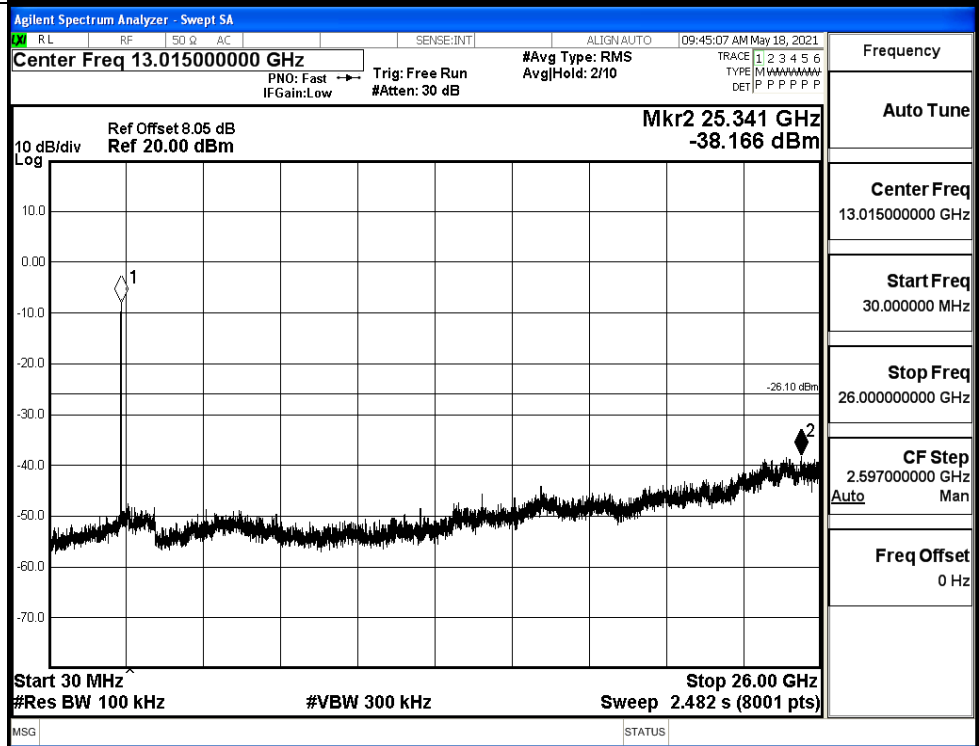


11N20SISO_HCH_Graphs

Pref/11N20
SISO/HCH

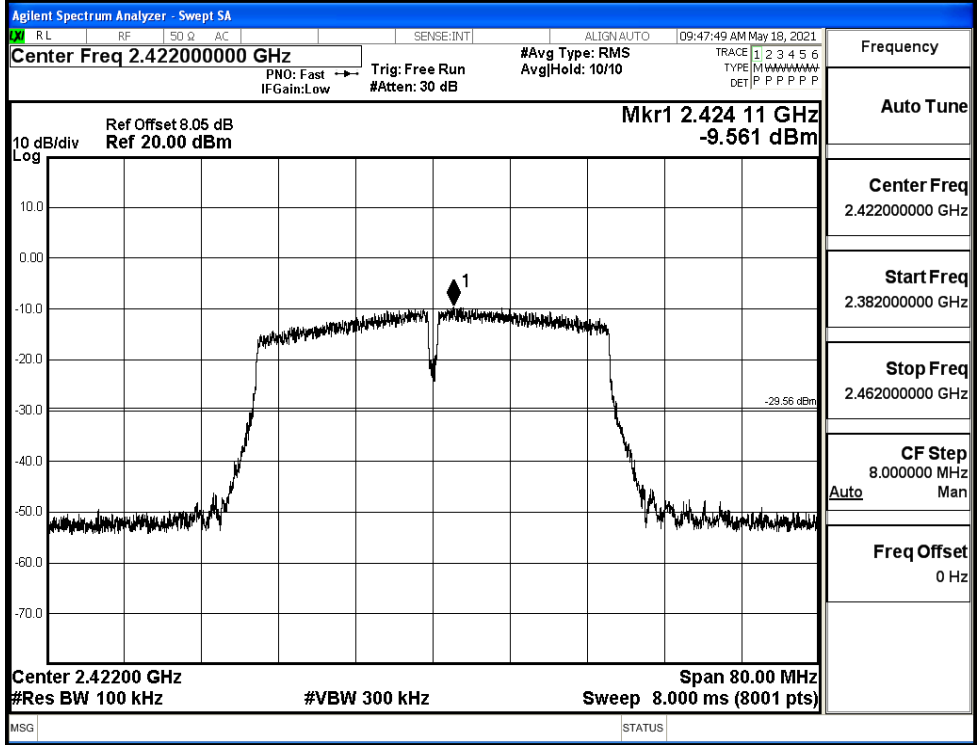


Puw/11N20
SISO/HCH

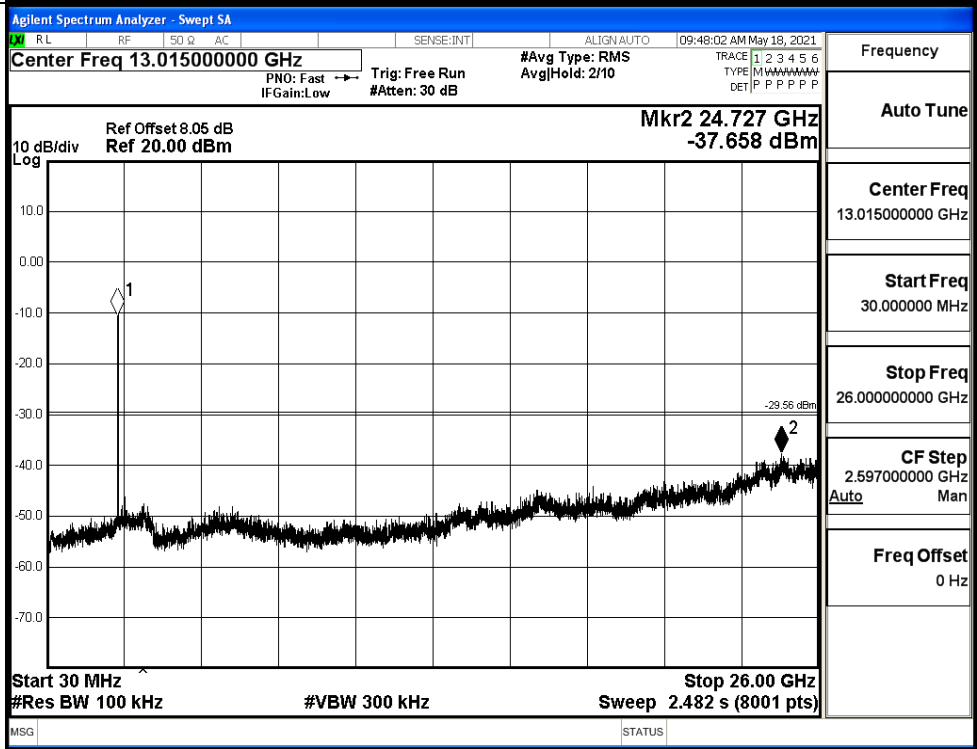


11N40SISO_LCH_Graphs

Pref/11N40
SISO/LCH

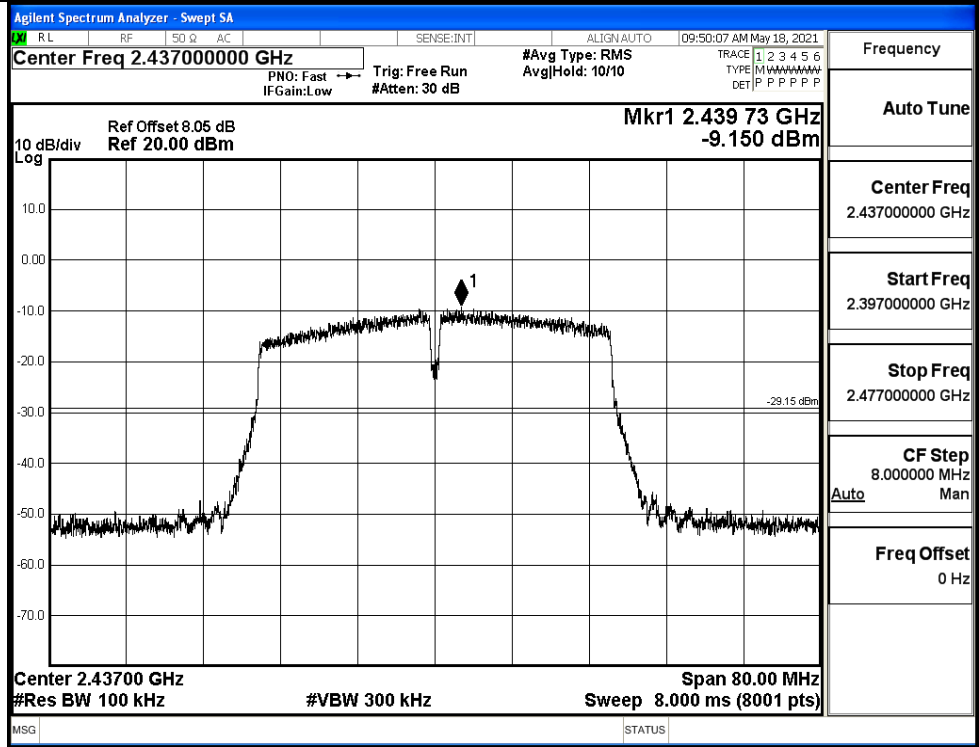


Puw/11N40
SISO/LCH



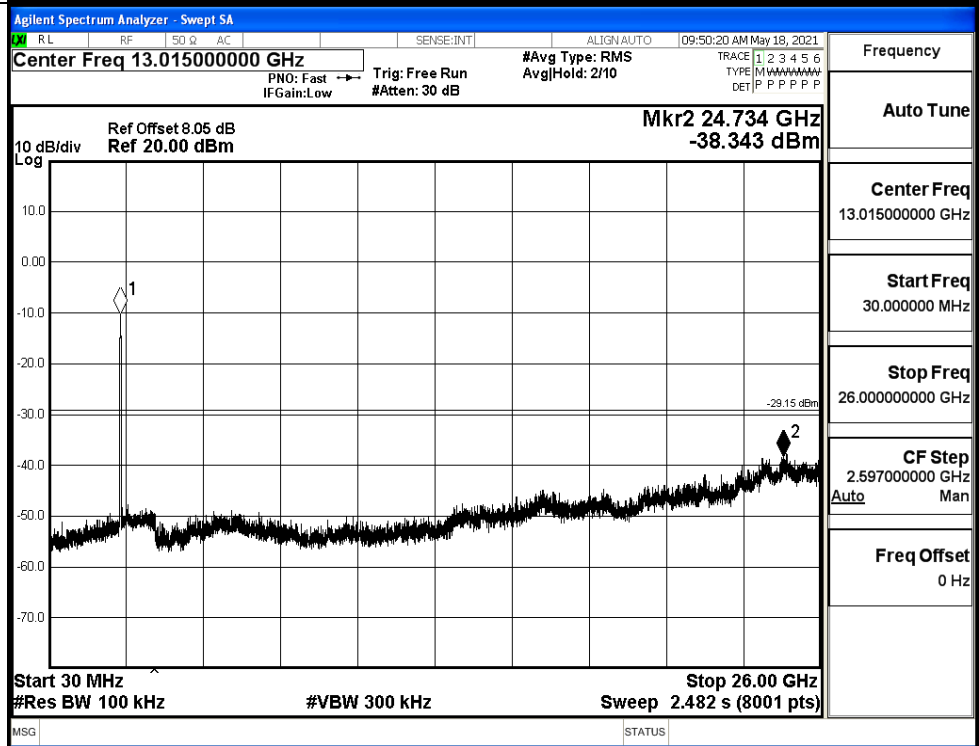
11N40SISO_MCH_Graphs

Pref/11N40
SISO/MCH



| | |
|-------------|-----------------|
| Frequency | |
| Auto Tune | |
| Center Freq | 2.437000000 GHz |
| Start Freq | 2.397000000 GHz |
| Stop Freq | 2.477000000 GHz |
| CF Step | 8.000000 MHz |
| | Auto Man |
| Freq Offset | 0 Hz |

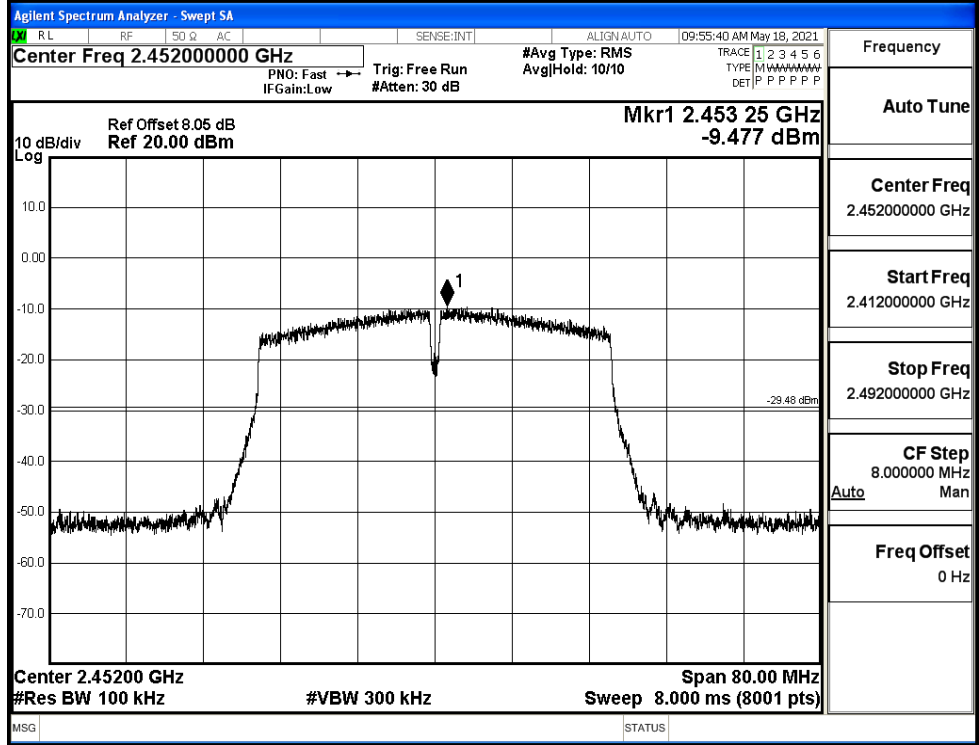
Puw/11N40
SISO/MCH



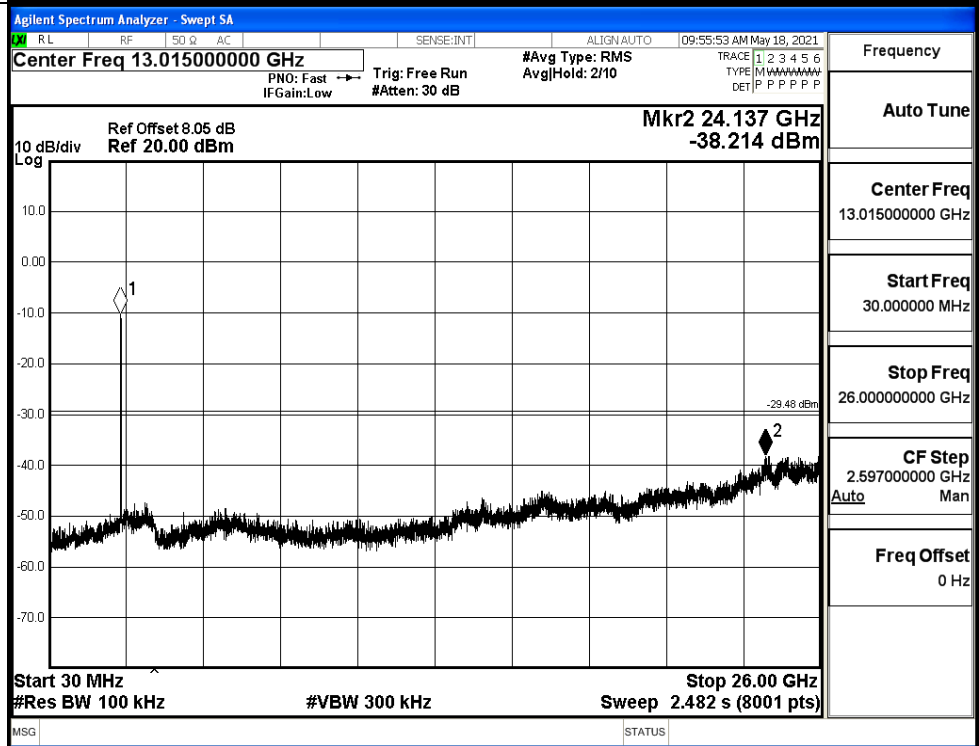
| | |
|-------------|------------------|
| Frequency | |
| Auto Tune | |
| Center Freq | 13.015000000 GHz |
| Start Freq | 30.000000 MHz |
| Stop Freq | 26.000000000 GHz |
| CF Step | 2.597000000 GHz |
| | Auto Man |
| Freq Offset | 0 Hz |

11N40SISO_HCH_Graphs

Pref/11N40
SISO/HCH



Puw/11N40
SISO/HCH

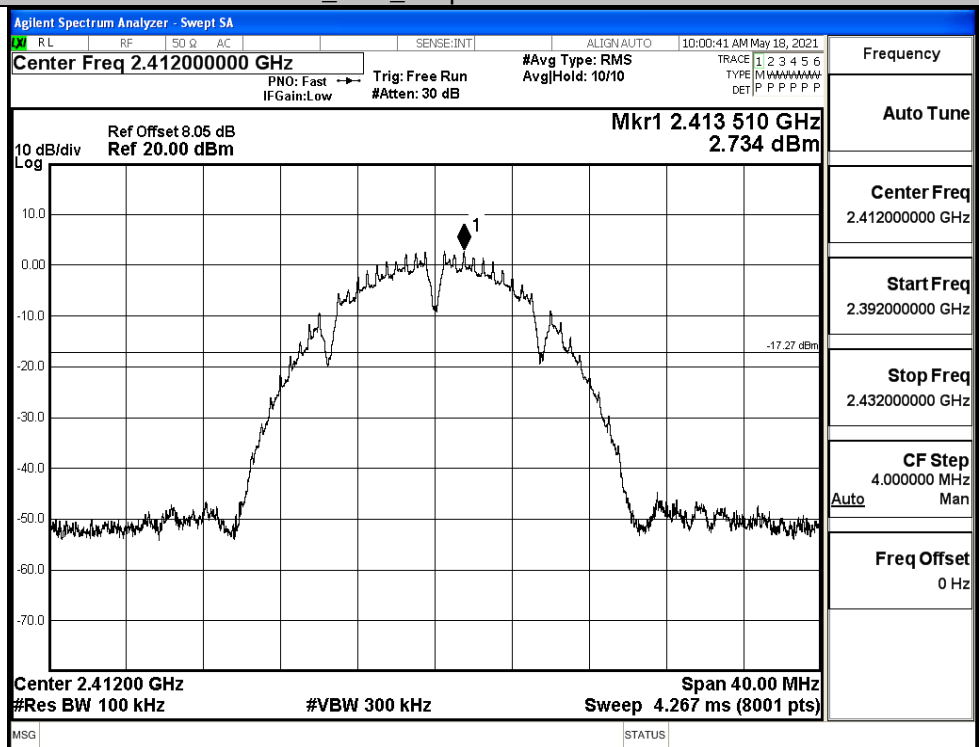


ANT1

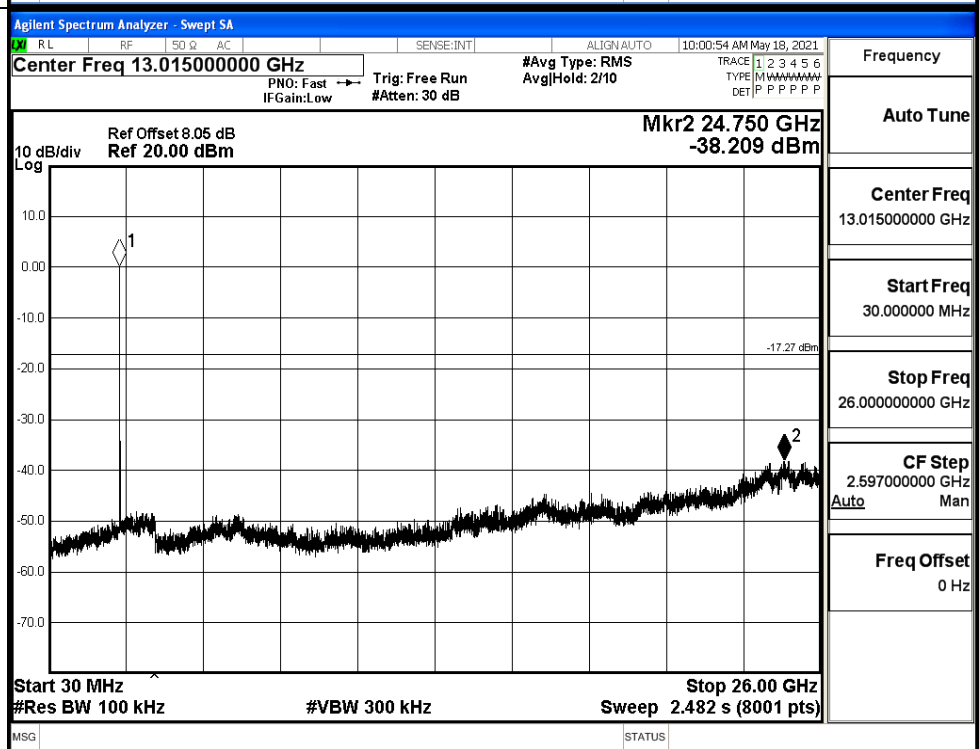
| Mode | Channel | Pref [dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|------------|------------------|-------------|---------|
| 11B | LCH | 2.734 | -38.209 | -17.266 | PASS |
| | MCH | 2.811 | -38.384 | -17.189 | PASS |
| | HCH | 2.9 | -38.151 | -17.100 | PASS |
| 11G | LCH | -5.994 | -37.880 | -25.994 | PASS |
| | MCH | -6.813 | -37.646 | -26.813 | PASS |
| | HCH | -7.851 | -38.863 | -27.851 | PASS |
| 11N20 SISO | LCH | -6.866 | -37.944 | -26.866 | PASS |
| | MCH | -6.581 | -38.176 | -26.581 | PASS |
| | HCH | -6.968 | -37.647 | -26.968 | PASS |
| 11N40 SISO | LCH | -9.371 | -37.661 | -29.371 | PASS |
| | MCH | -9.53 | -37.967 | -29.530 | PASS |
| | HCH | -7.967 | -38.264 | -27.967 | PASS |

11B_LCH_Graphs

Pref/11B/LCH

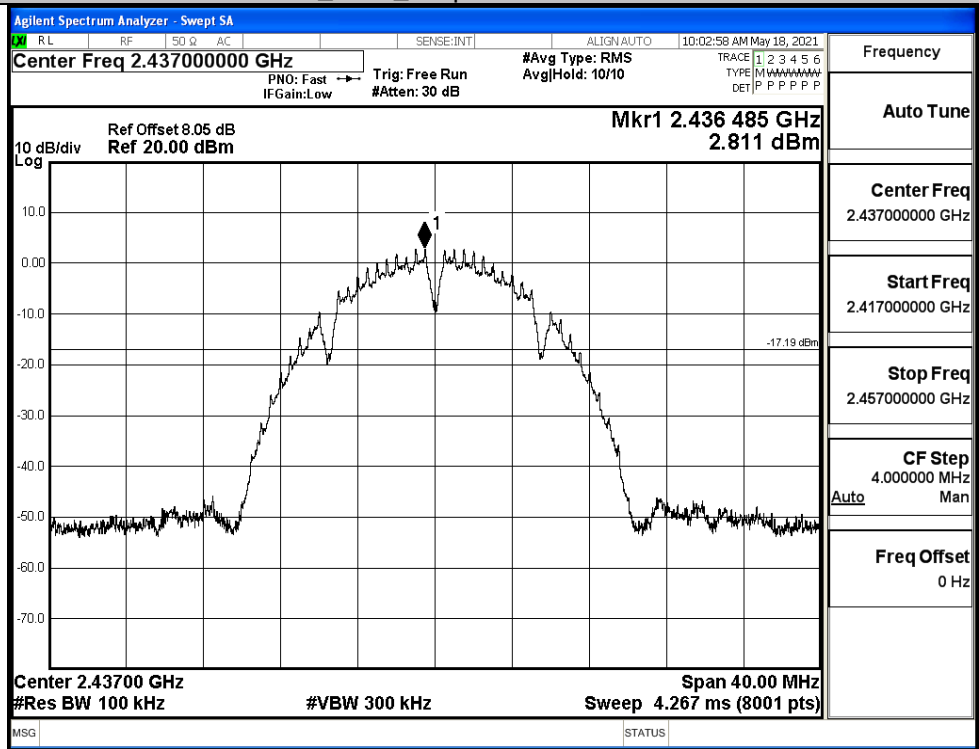


Puw/11B/LCH

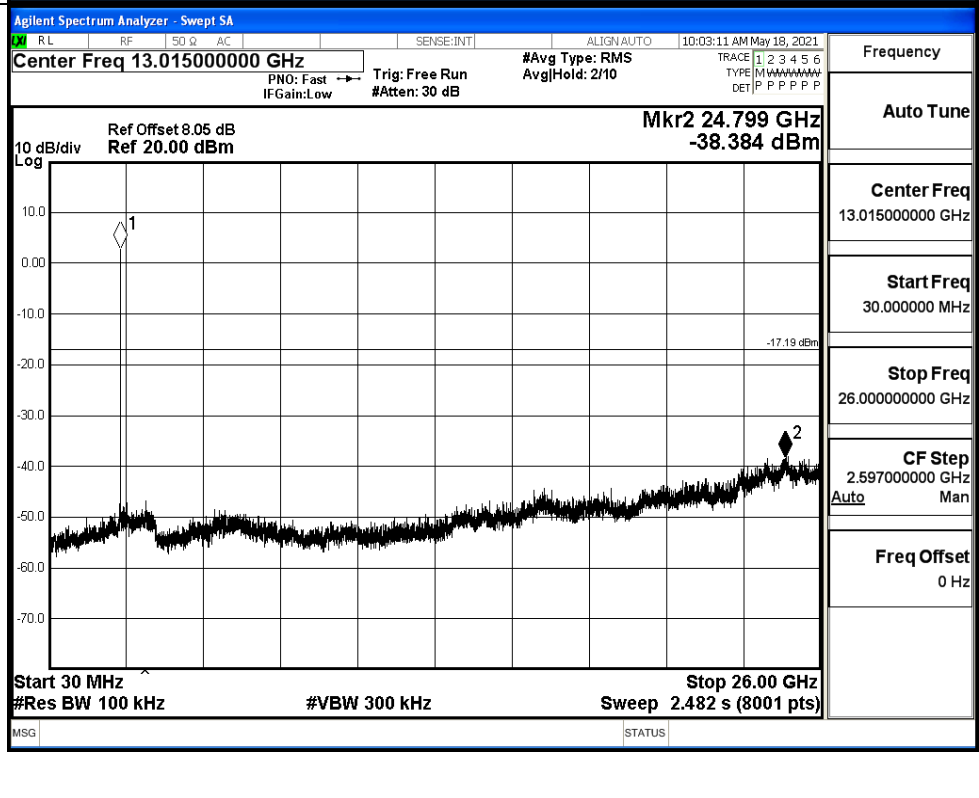


11B_MCH_Graphs

Pref/11B/MCH

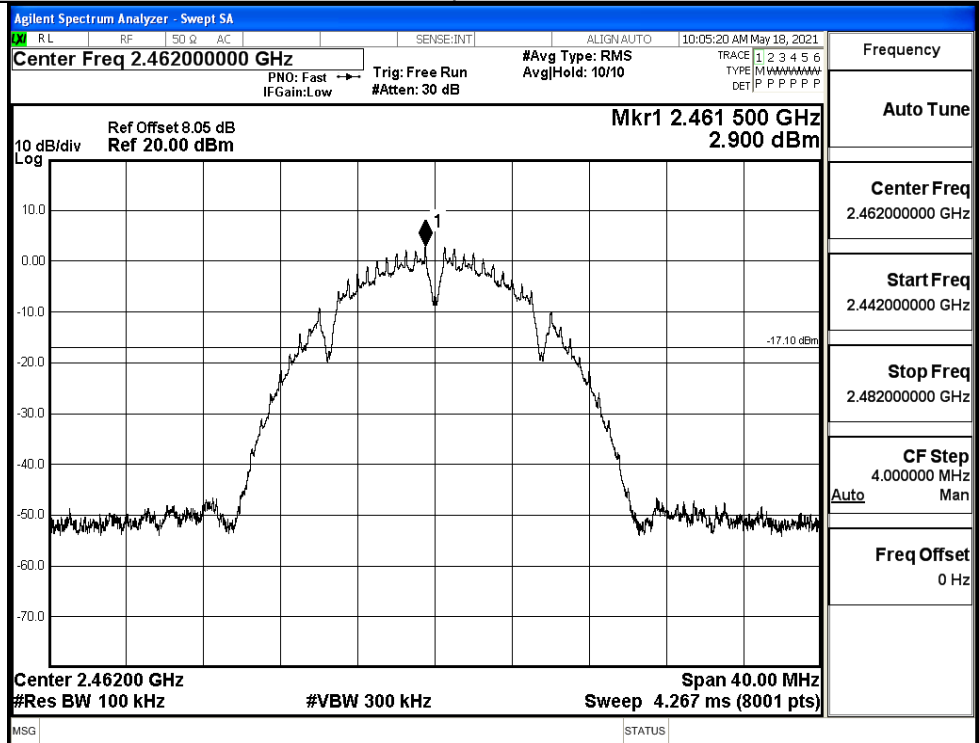


Puw/11B/MCH

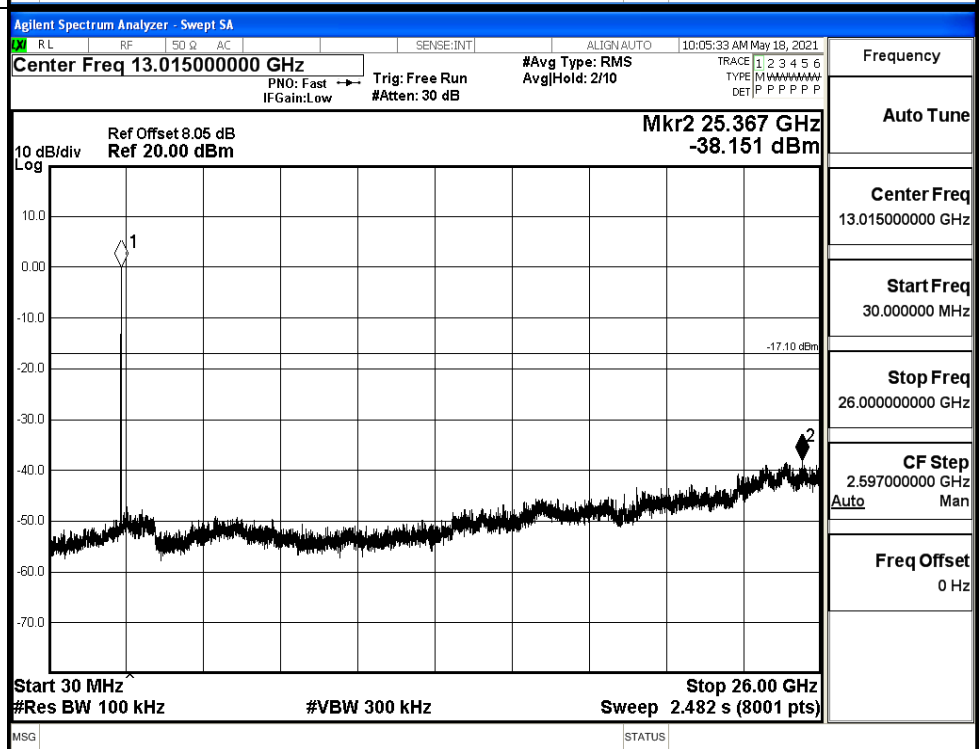


11B_HCH_Graphs

Pref/11B/HCH

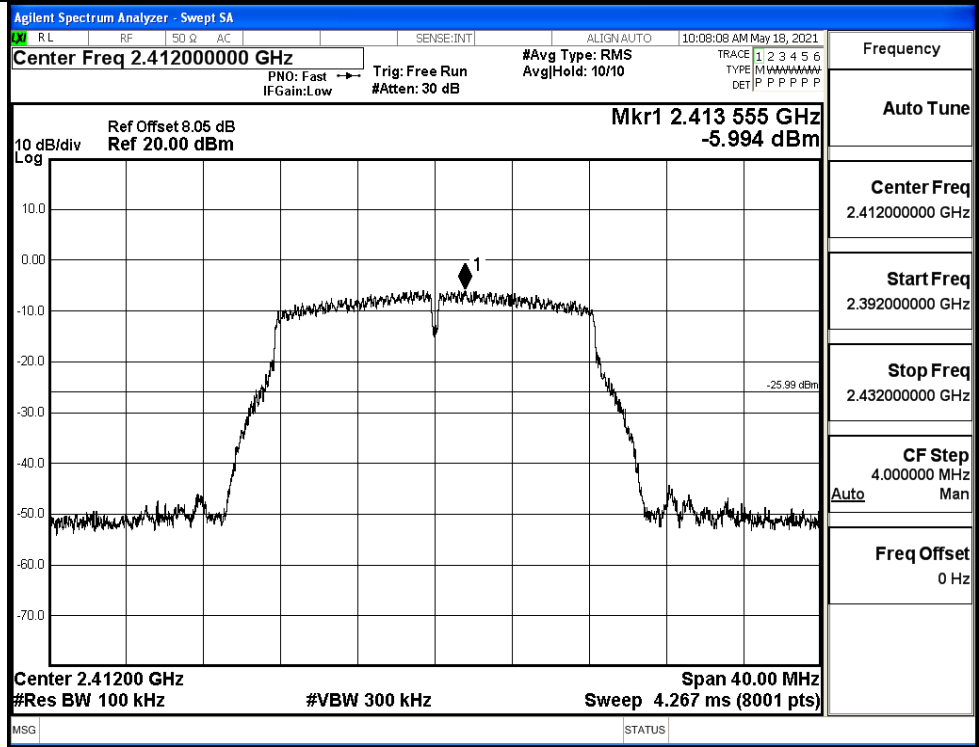


Puw/11B/HCH

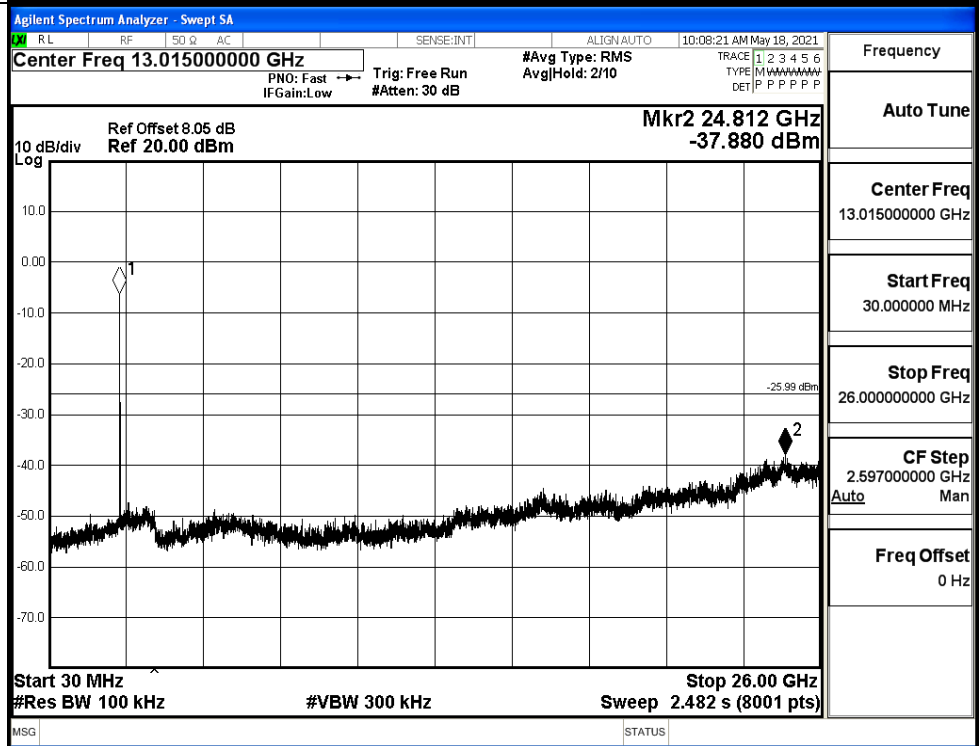


11G_LCH_Graphs

Pref/11G/LCH

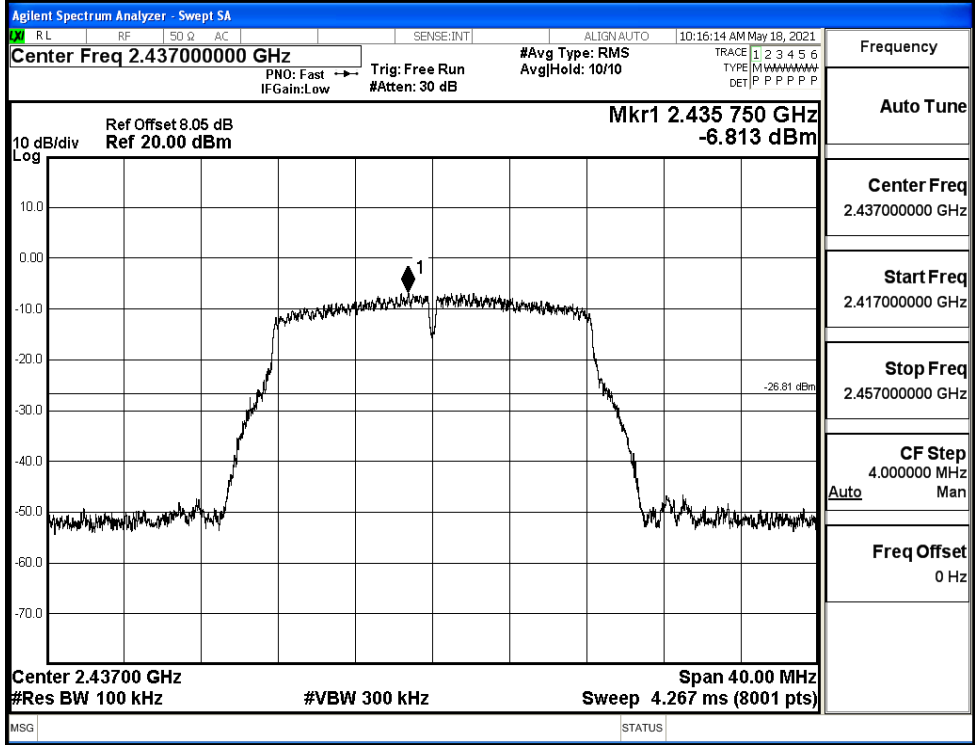


Puw/11G/LCH

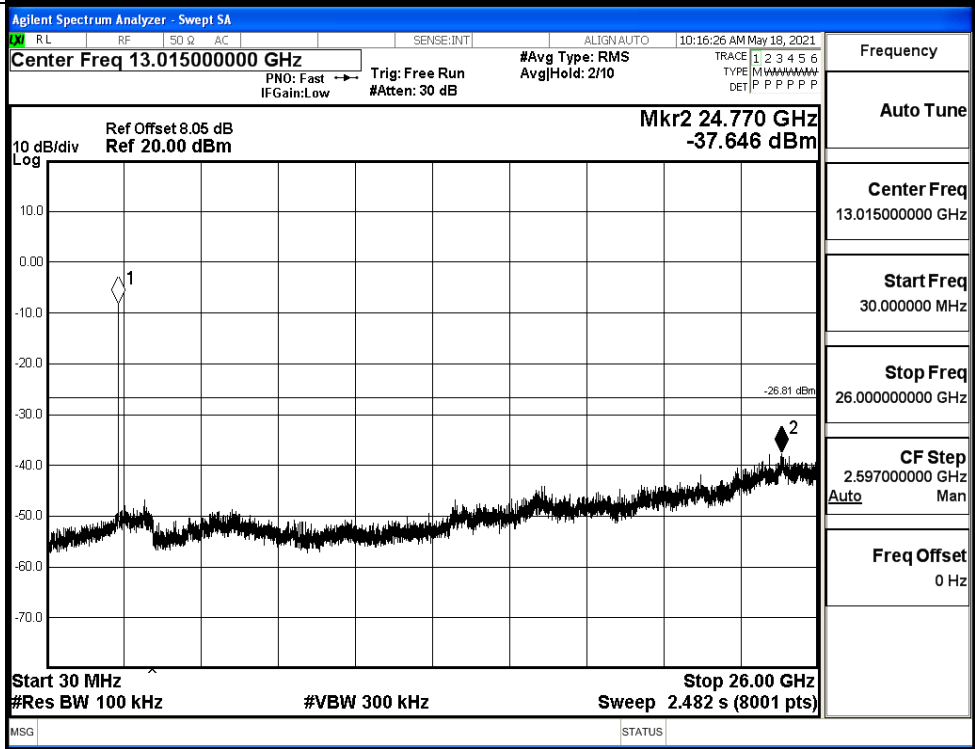


11G_MCH_Graphs

Pref/11G/MCH

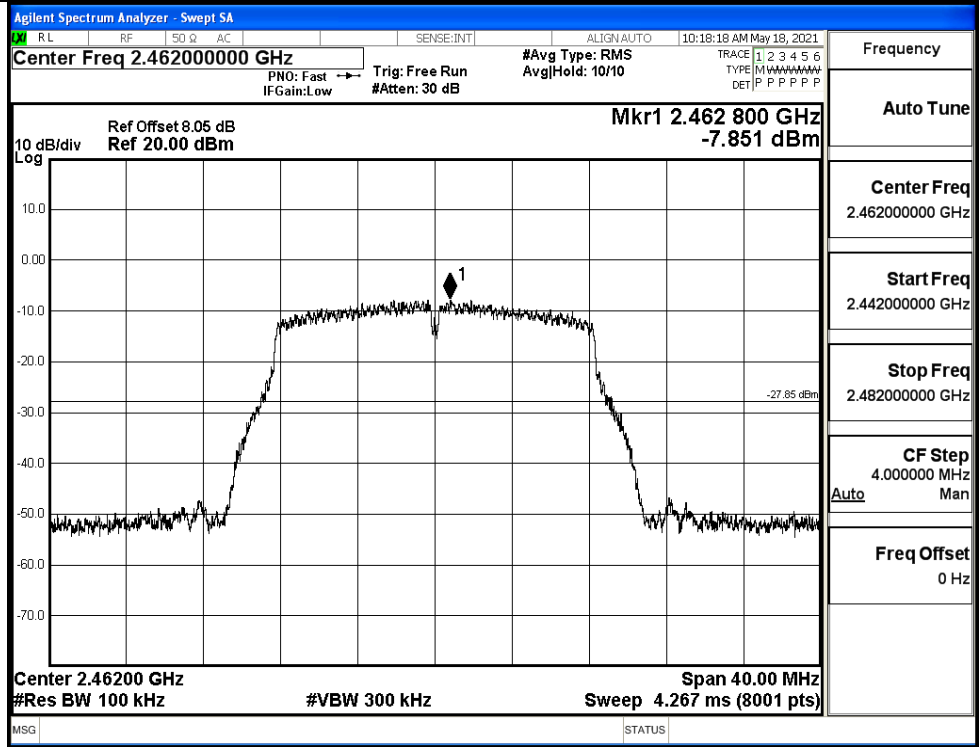


Puw/11G/MCH

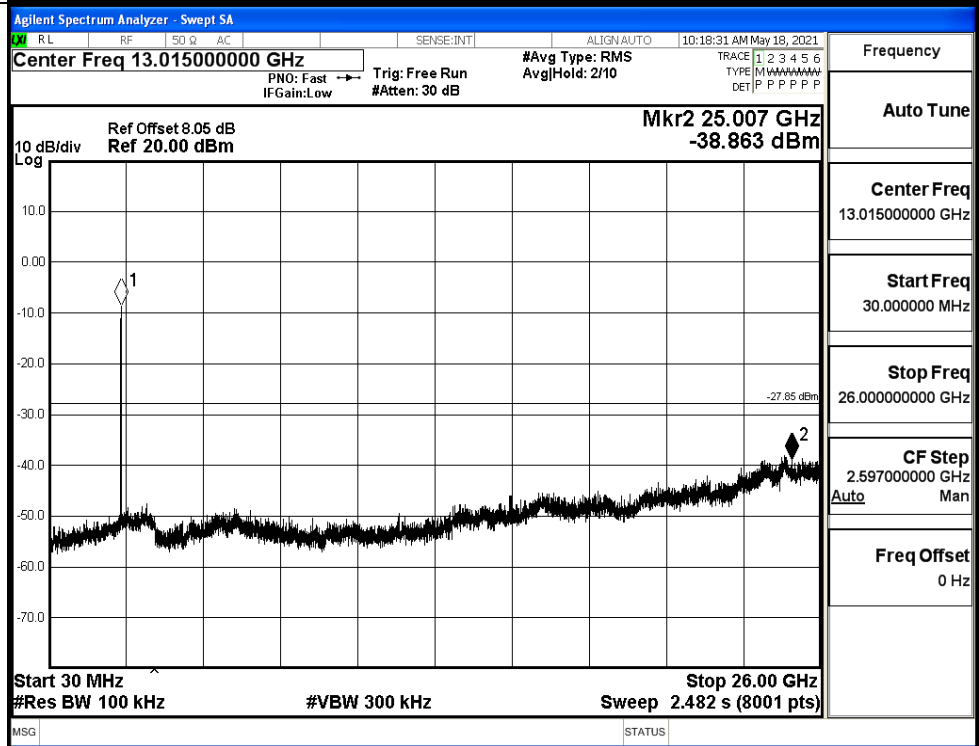


11G_HCH_Graphs

Pref/11G/HCH

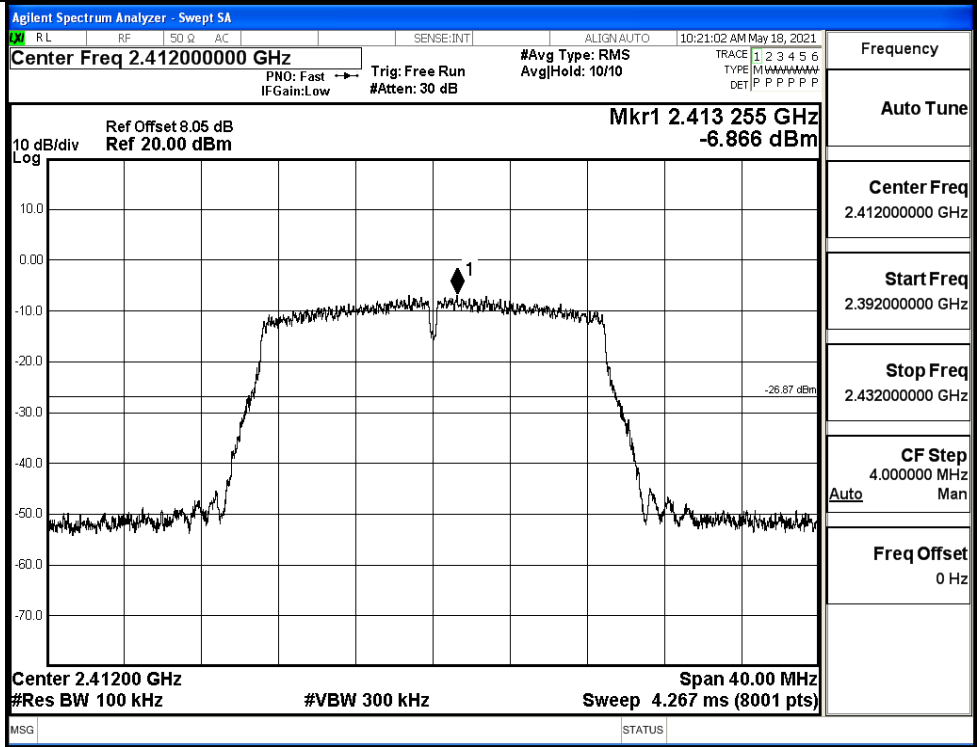


Puw/11G/HCH

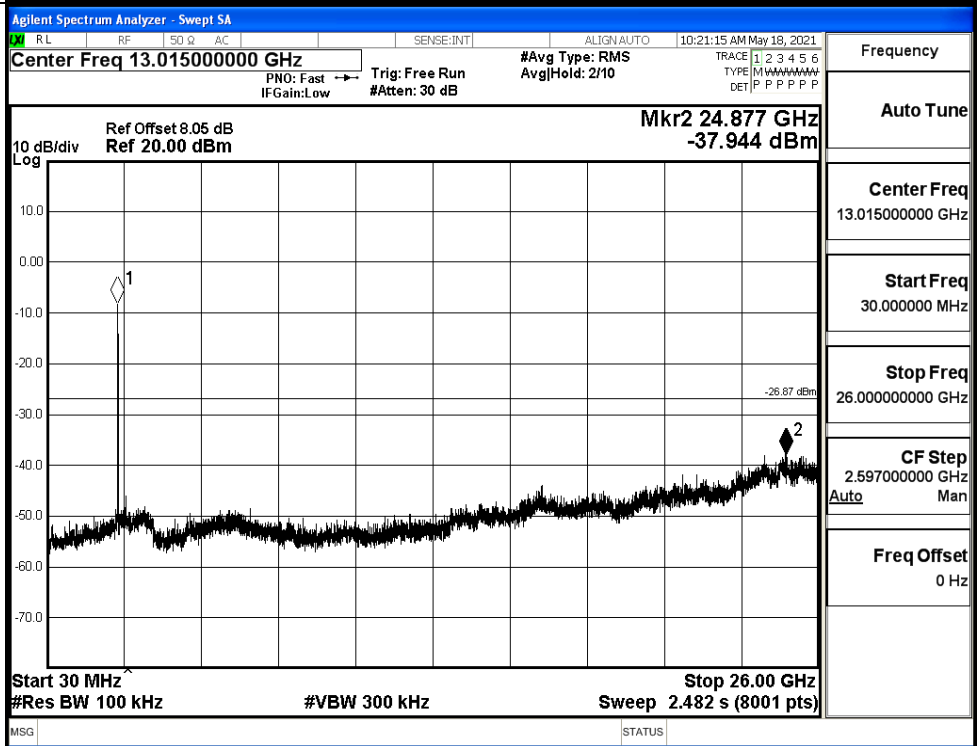


11N20SISO_LCH_Graphs

Pref/11N20SIS
O/LCH

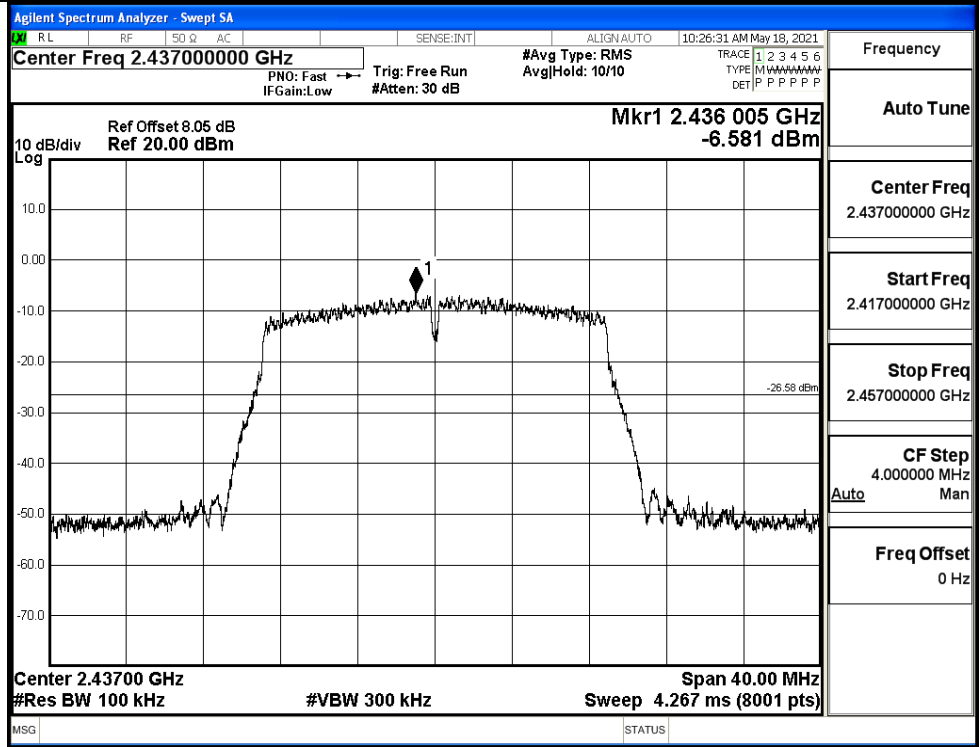


Puw/11N20
SISO/LCH

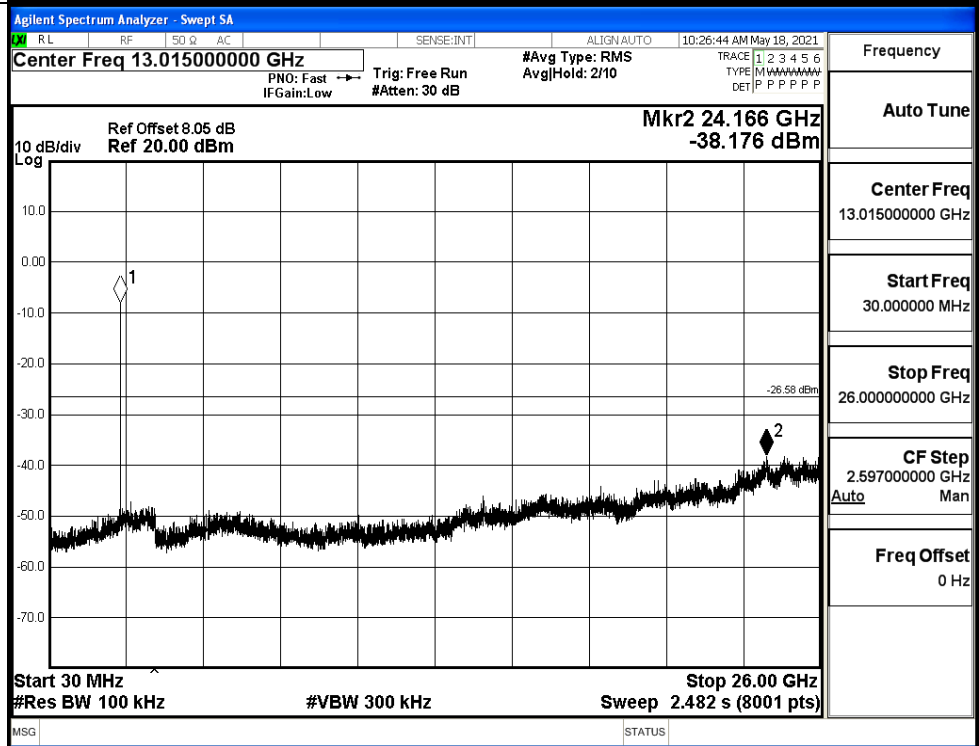


11N20SISO_MCH_Graphs

Pref/11N20
SISO/MCH

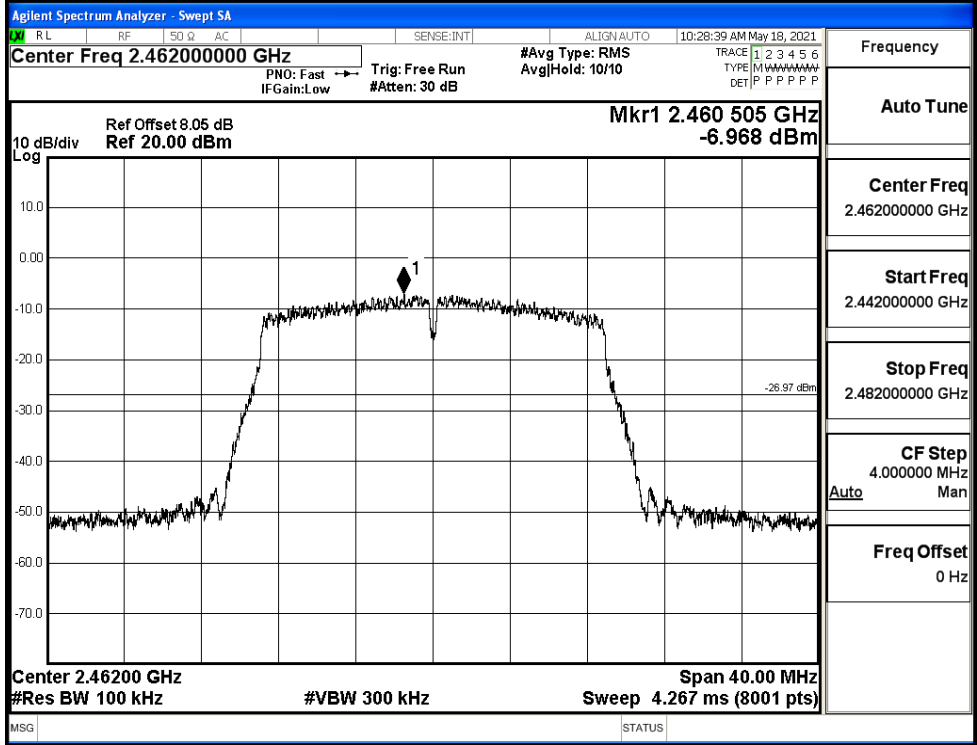


Puw/11N20
SISO/MCH

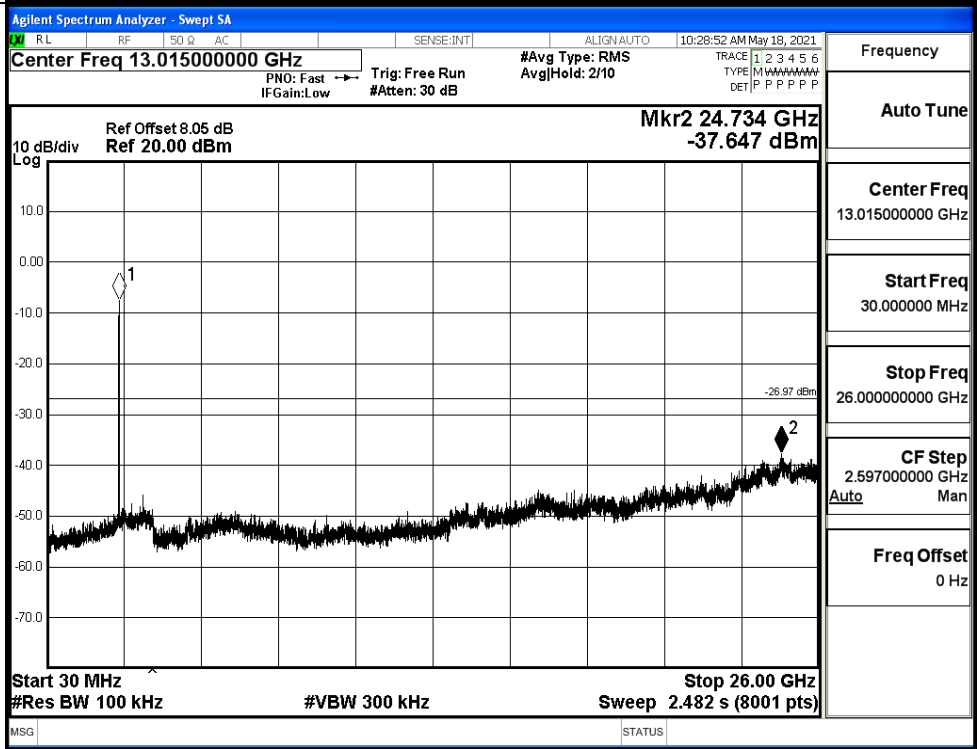


11N20SISO_HCH_Graphs

Pref/11N20
SISO/HCH

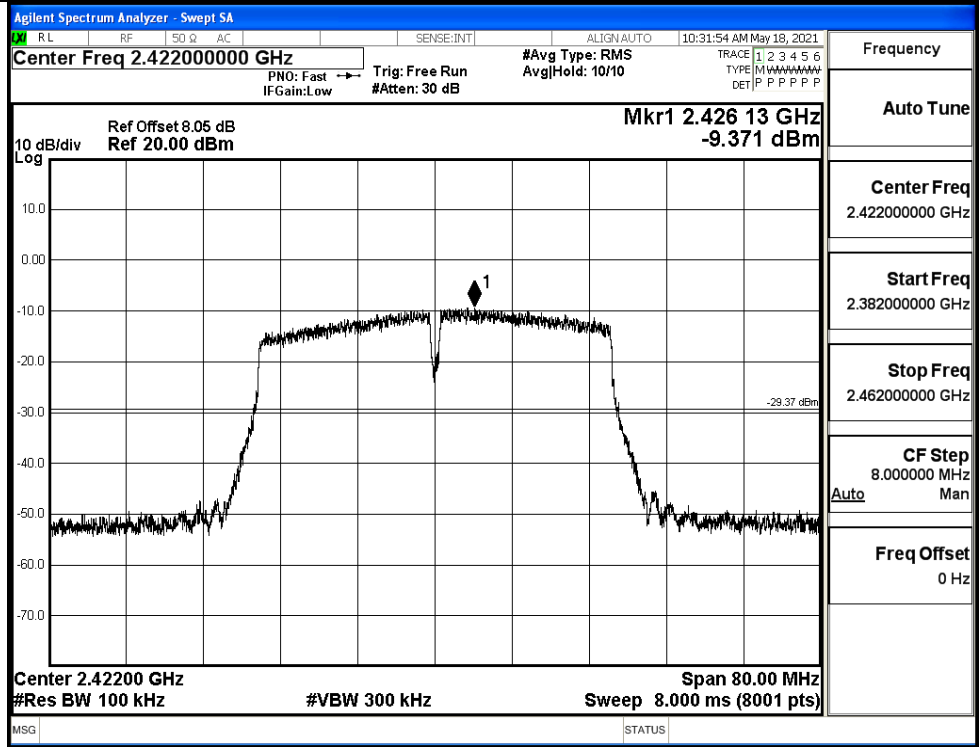


Puw/11N20
SISO/HCH

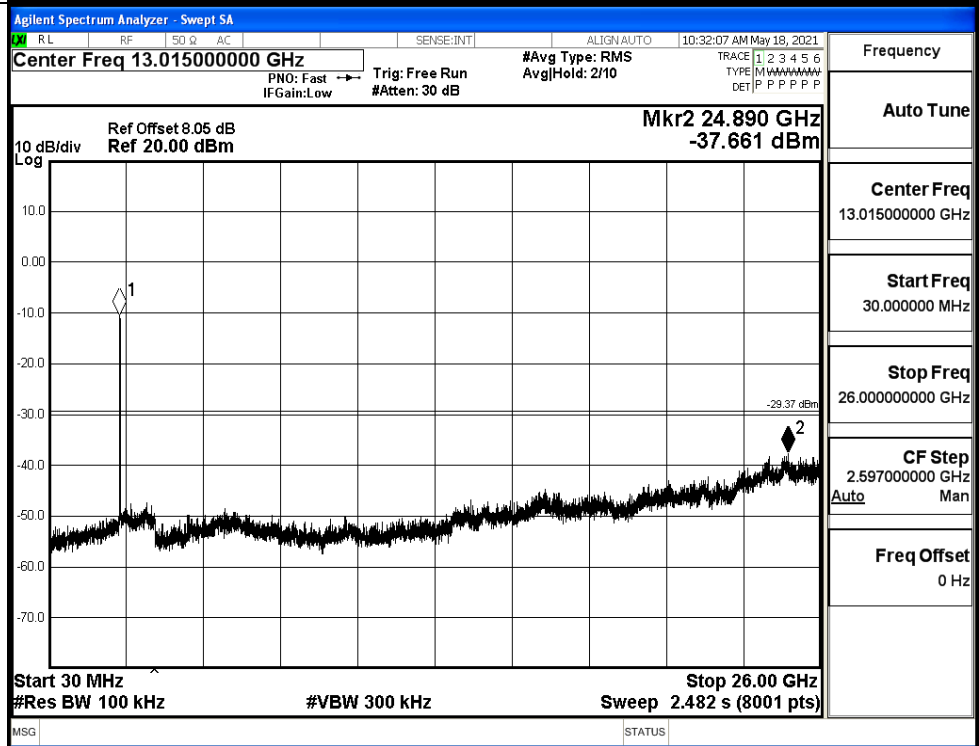


11N40SISO_LCH_Graphs

Pref/11N40
SISO/LCH

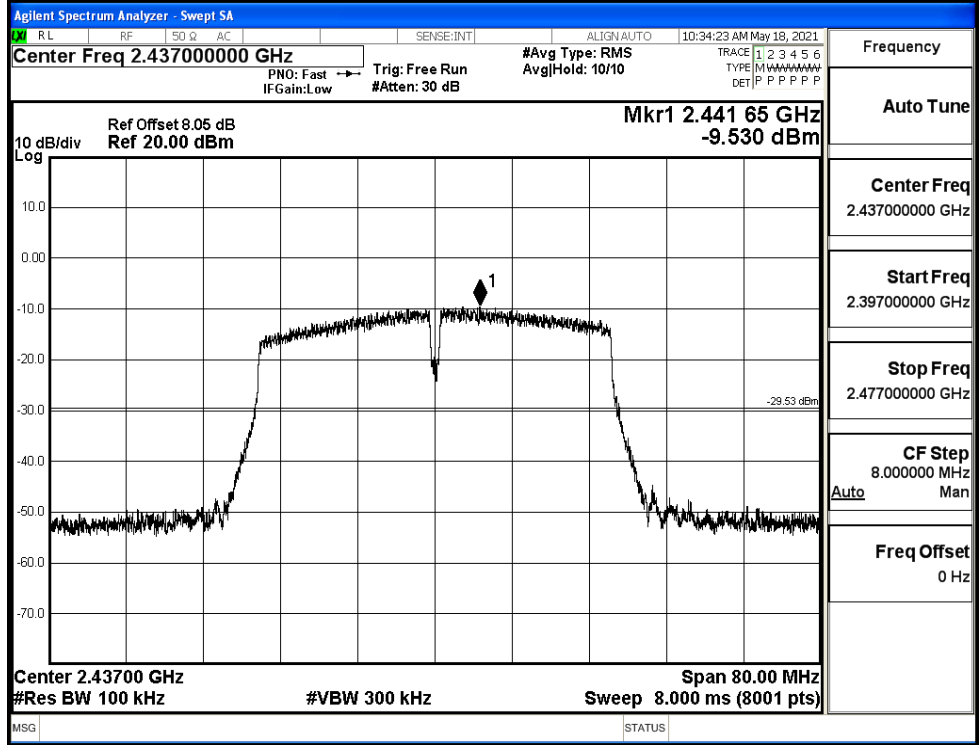


Puw/11N40
SISO/LCH



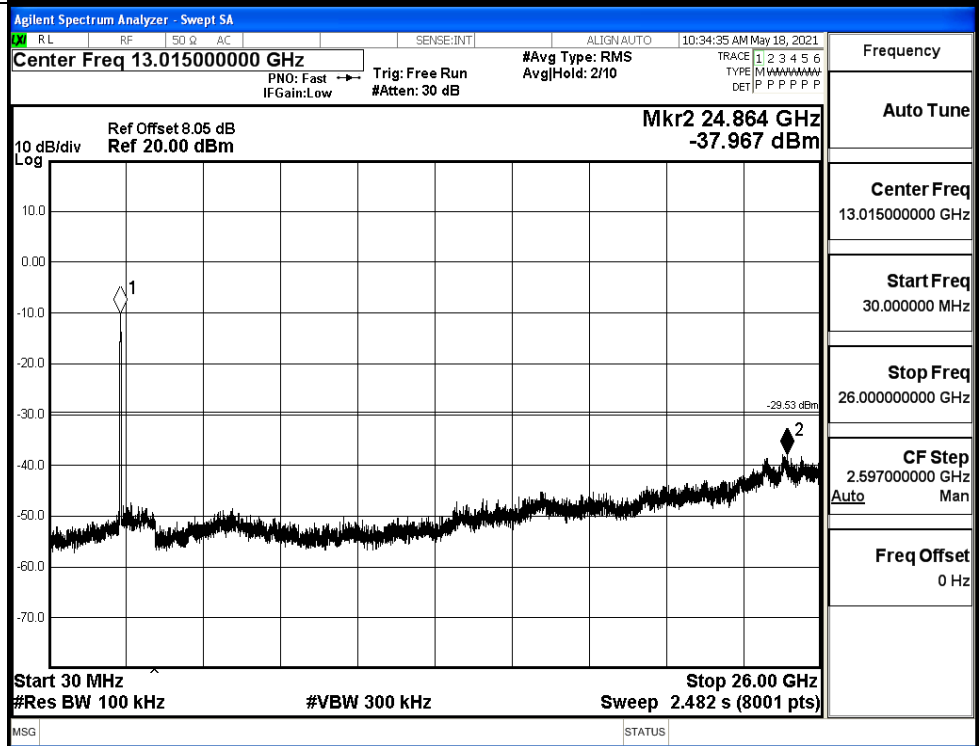
11N40SISO_MCH_Graphs

Pref/11N40
SISO/MCH



| | |
|-------------|-----------------|
| Frequency | |
| Auto Tune | |
| Center Freq | 2.437000000 GHz |
| Start Freq | 2.397000000 GHz |
| Stop Freq | 2.477000000 GHz |
| CF Step | 8.000000 MHz |
| | Auto Man |
| Freq Offset | 0 Hz |

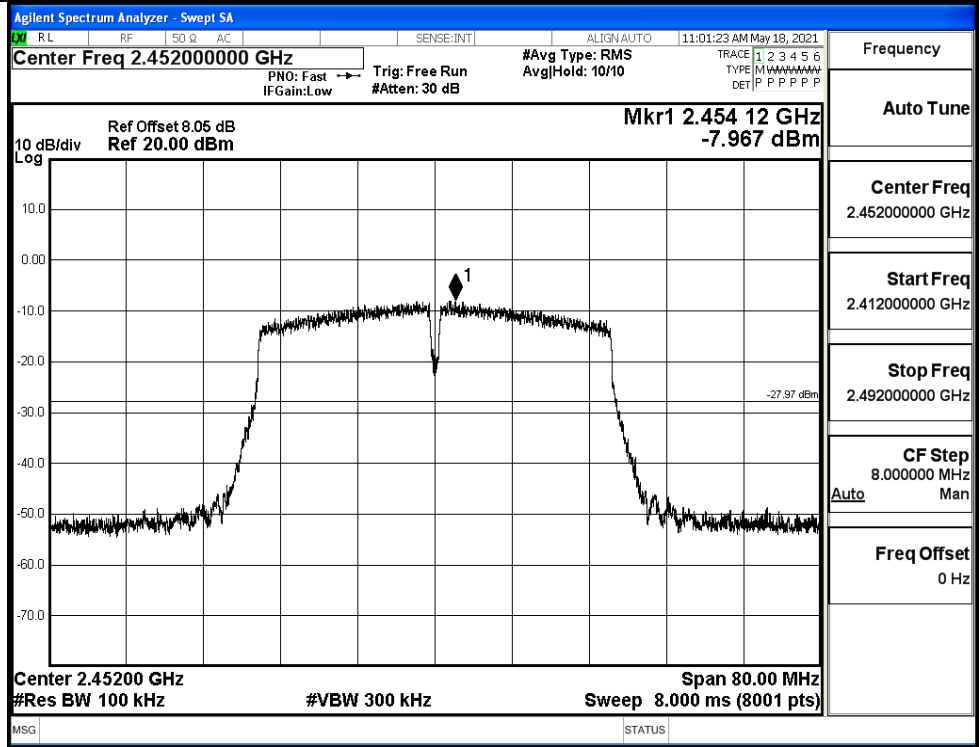
Puw/11N40
SISO/MCH



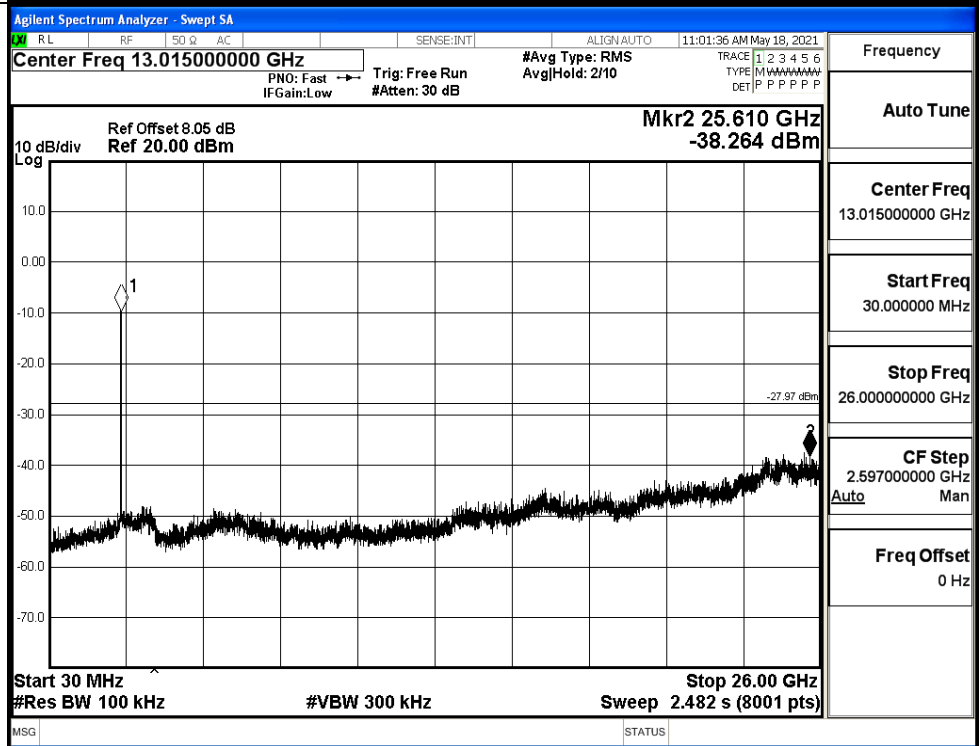
| | |
|-------------|------------------|
| Frequency | |
| Auto Tune | |
| Center Freq | 13.015000000 GHz |
| Start Freq | 30.000000 MHz |
| Stop Freq | 26.000000000 GHz |
| CF Step | 2.597000000 GHz |
| | Auto Man |
| Freq Offset | 0 Hz |

11N40SISO_HCH_Graphs

Pref/11N40
SISO/HCH



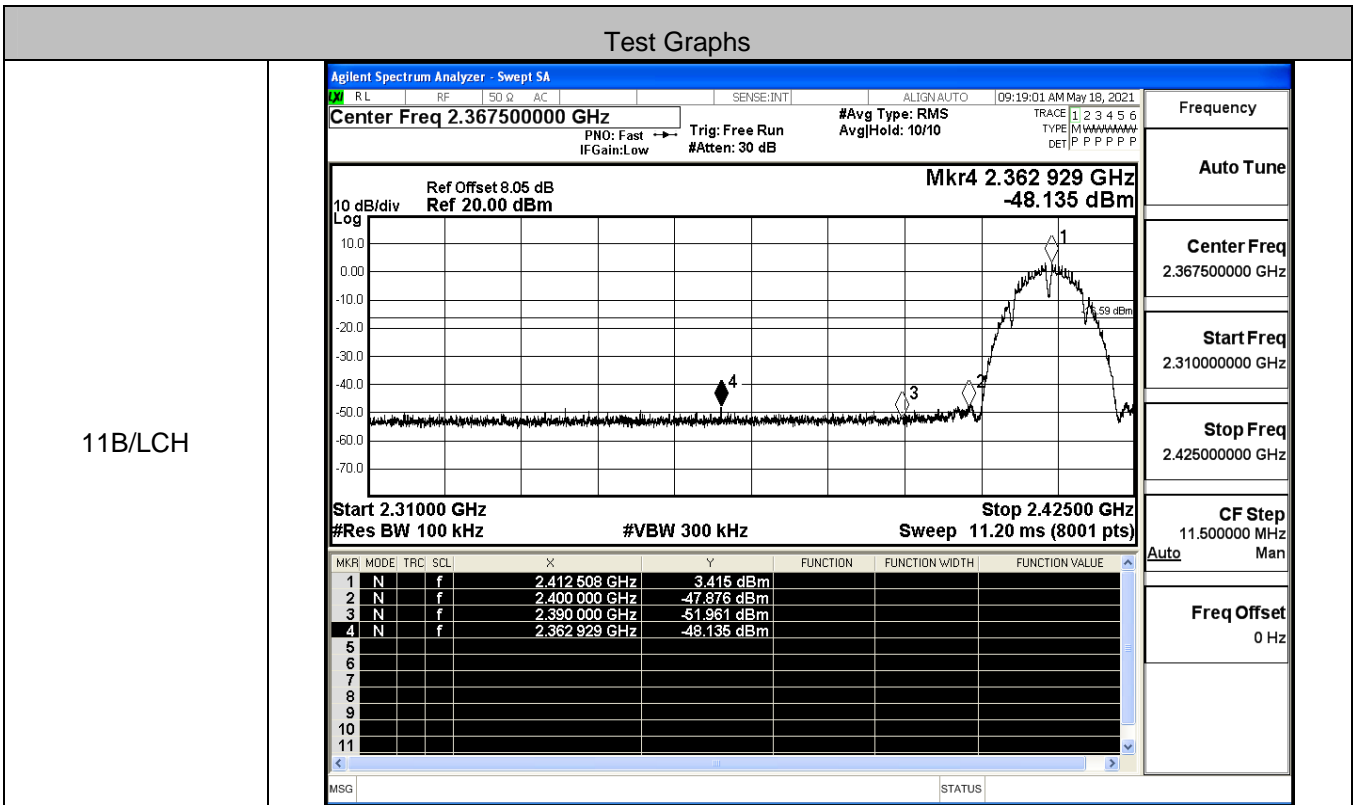
Puw/11N40
SISO/HCH



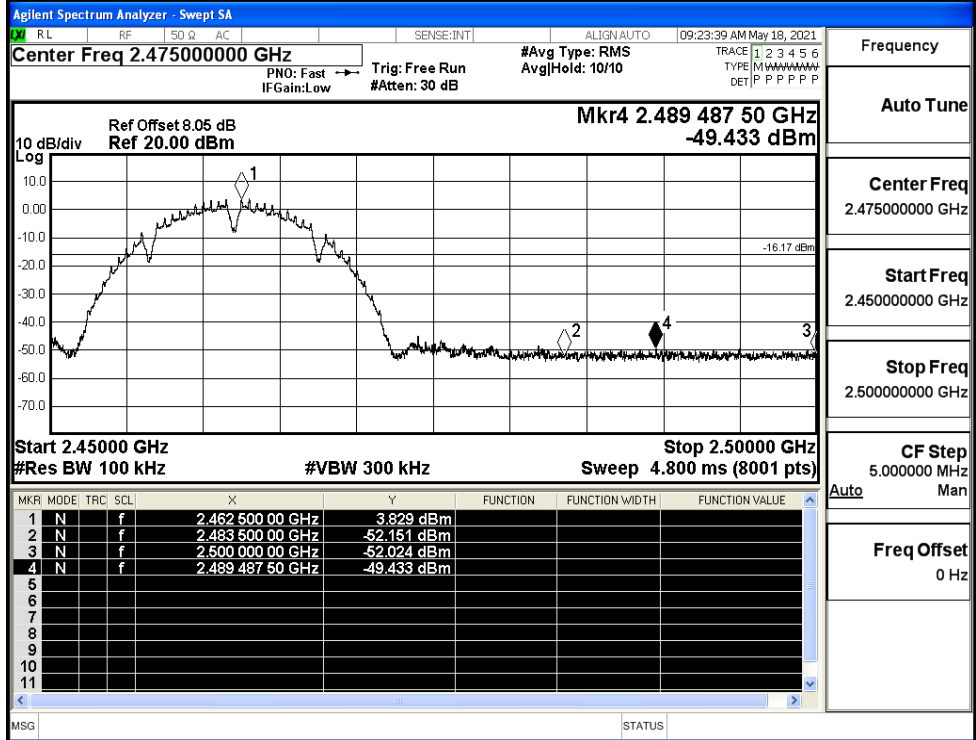
C.6 Band-edge for RF Conducted Emissions

ANT0

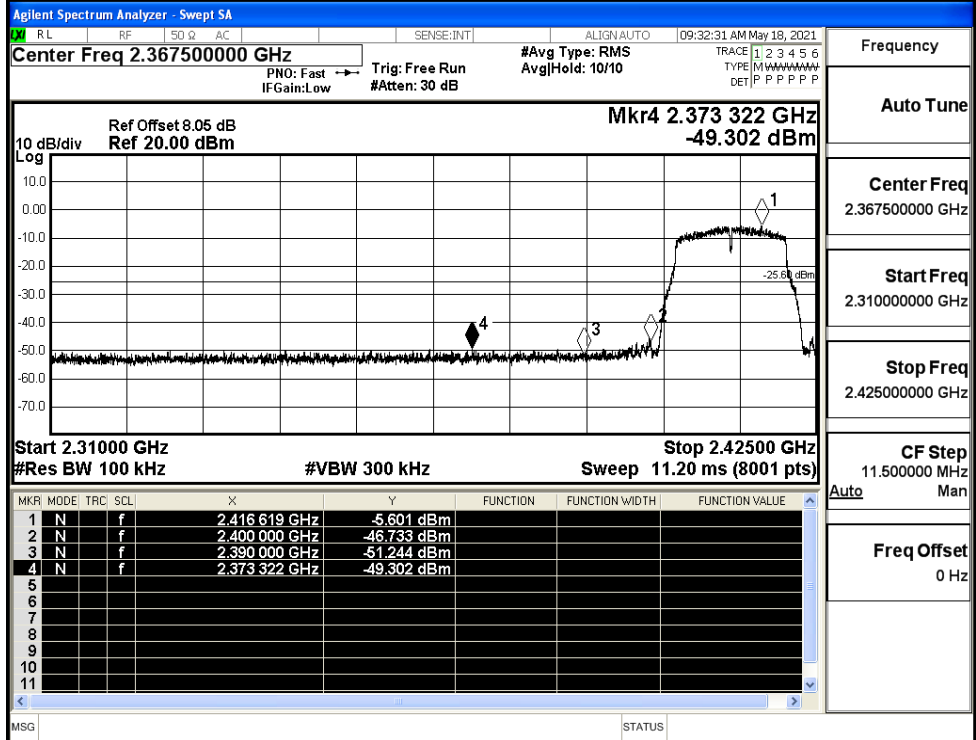
| Mode | Channel | Carrier Power[dBm] | Max.Spurious Level [dBm] | Limit [dBm] | Verdict |
|-----------|---------|--------------------|--------------------------|-------------|---------|
| 11B | LCH | 3.415 | -48.135 | -16.59 | PASS |
| | HCH | 3.829 | -49.433 | -16.17 | PASS |
| 11G | LCH | -5.601 | -49.302 | -25.6 | PASS |
| | HCH | -5.901 | -48.710 | -25.9 | PASS |
| 11N20SISO | LCH | -5.845 | -48.881 | -25.85 | PASS |
| | HCH | -6.399 | -49.024 | -26.4 | PASS |
| 11N40SISO | LCH | -9.220 | -49.307 | -29.22 | PASS |
| | HCH | -9.560 | -48.384 | -29.56 | PASS |



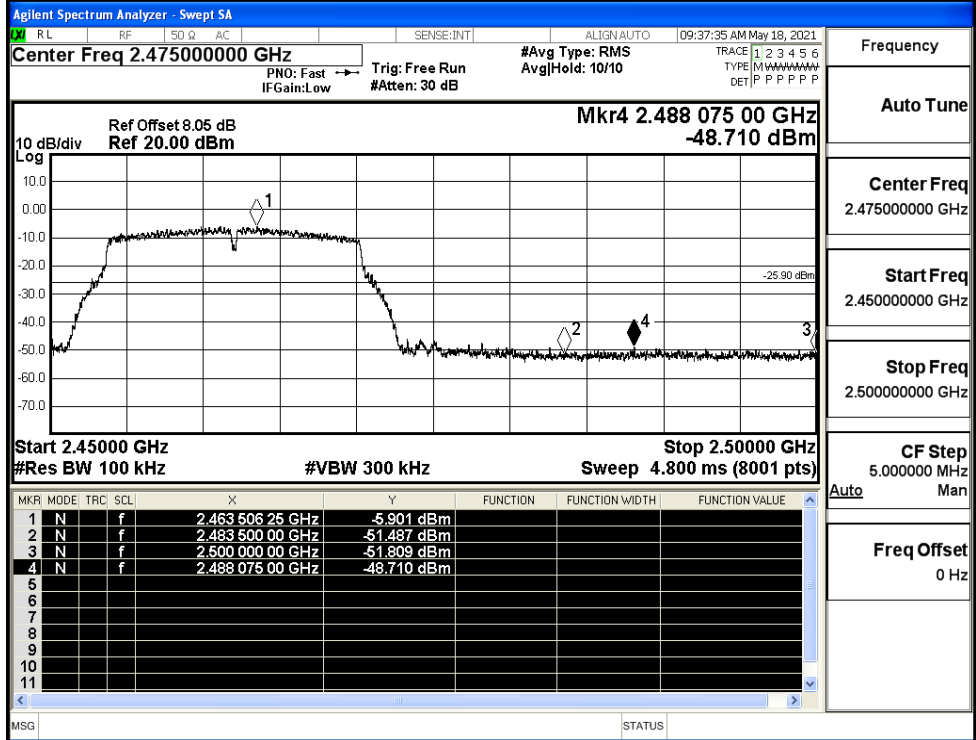
11B/HCH



11G/LCH

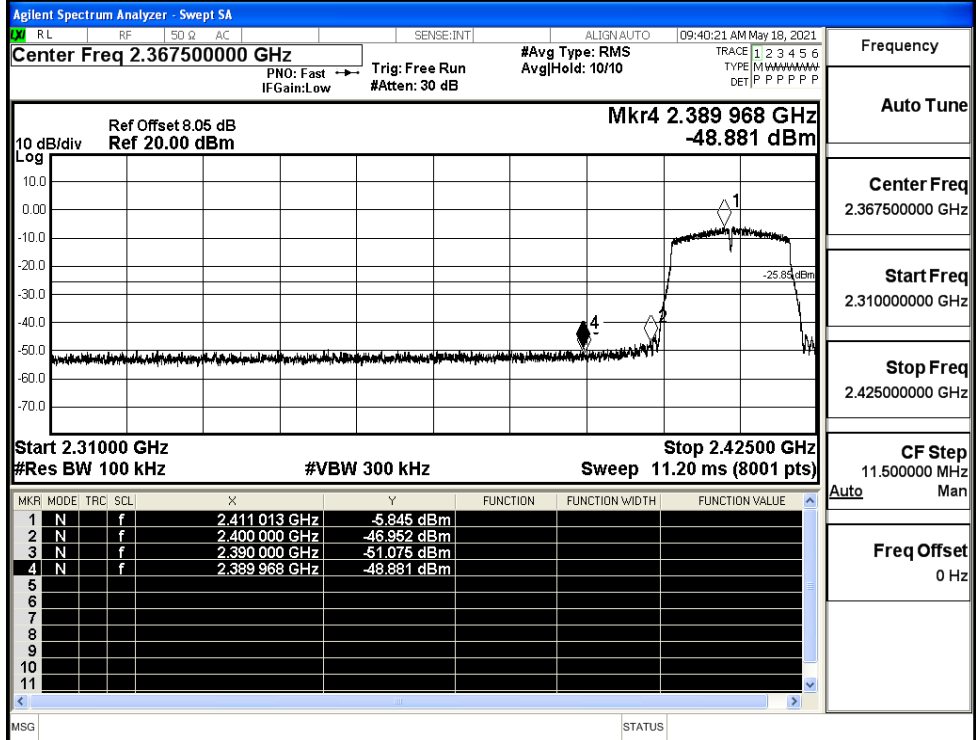


11G/HCH



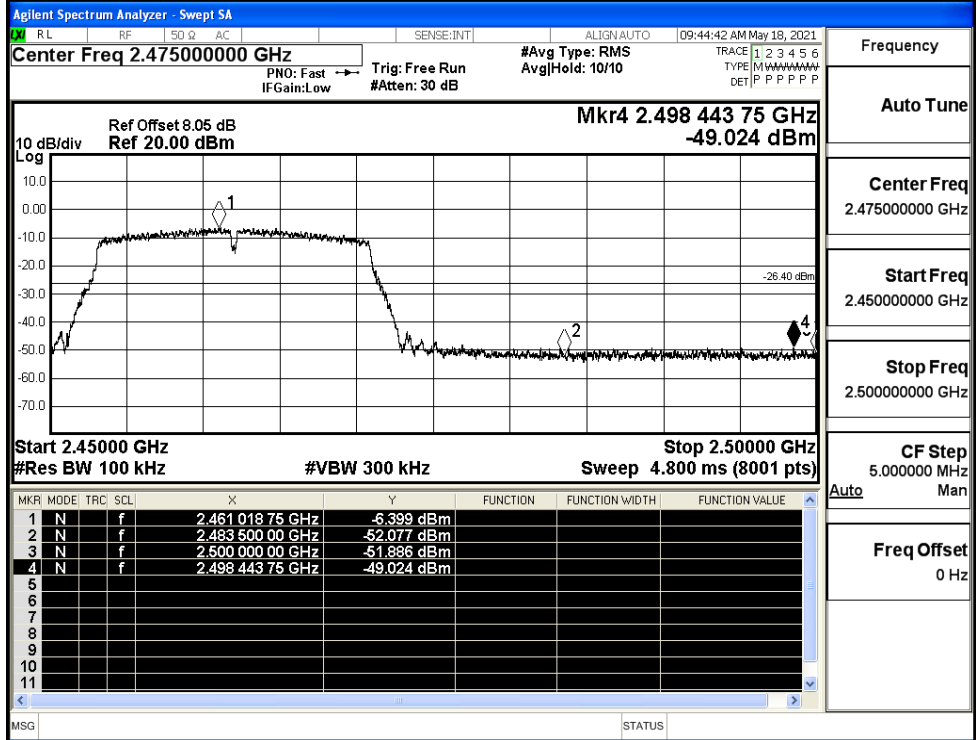
| | |
|-------------|-----------------|
| Frequency | 2.475000000 GHz |
| Auto Tune | |
| Center Freq | 2.475000000 GHz |
| Start Freq | 2.450000000 GHz |
| Stop Freq | 2.500000000 GHz |
| CF Step | 5.000000 MHz |
| Freq Offset | 0 Hz |

11N20SISO/LCH

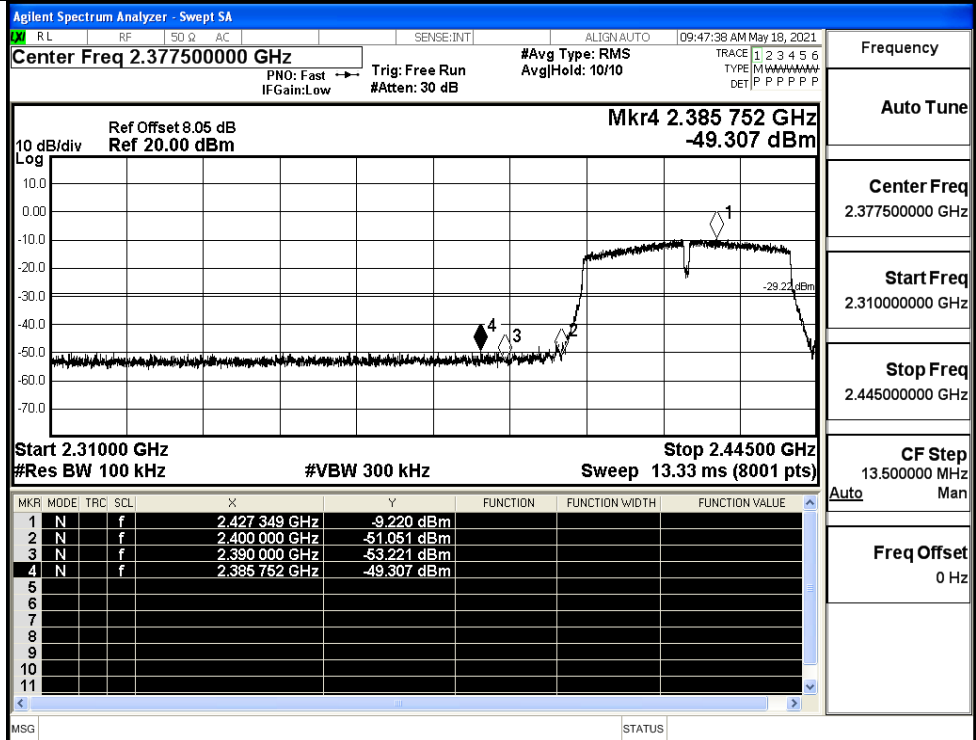


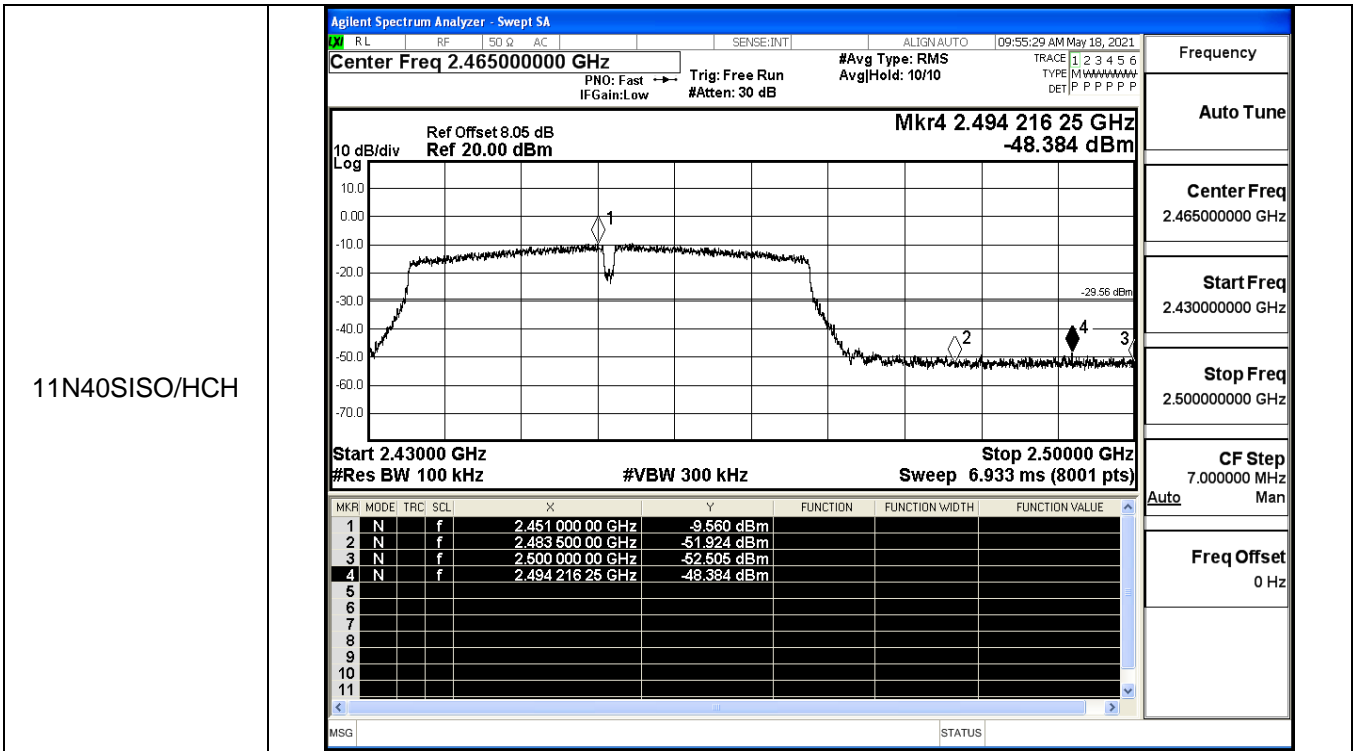
| | |
|-------------|-----------------|
| Frequency | 2.367500000 GHz |
| Auto Tune | |
| Center Freq | 2.367500000 GHz |
| Start Freq | 2.310000000 GHz |
| Stop Freq | 2.425000000 GHz |
| CF Step | 11.500000 MHz |
| Freq Offset | 0 Hz |

11N20SISO/HCH



11N40SISO/LCH



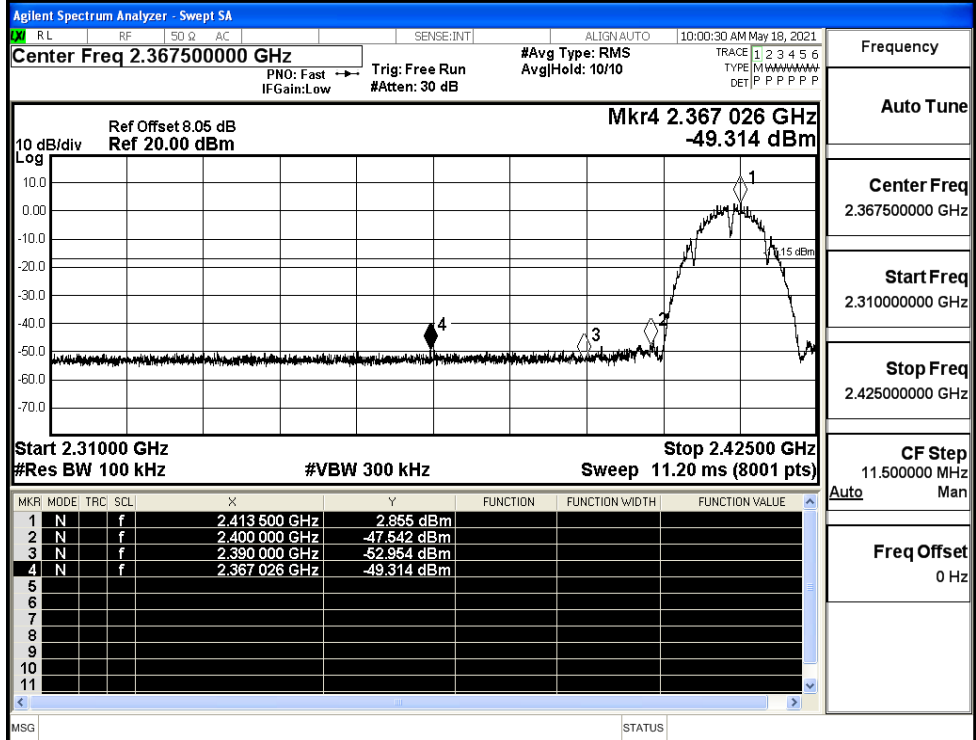


ANT1

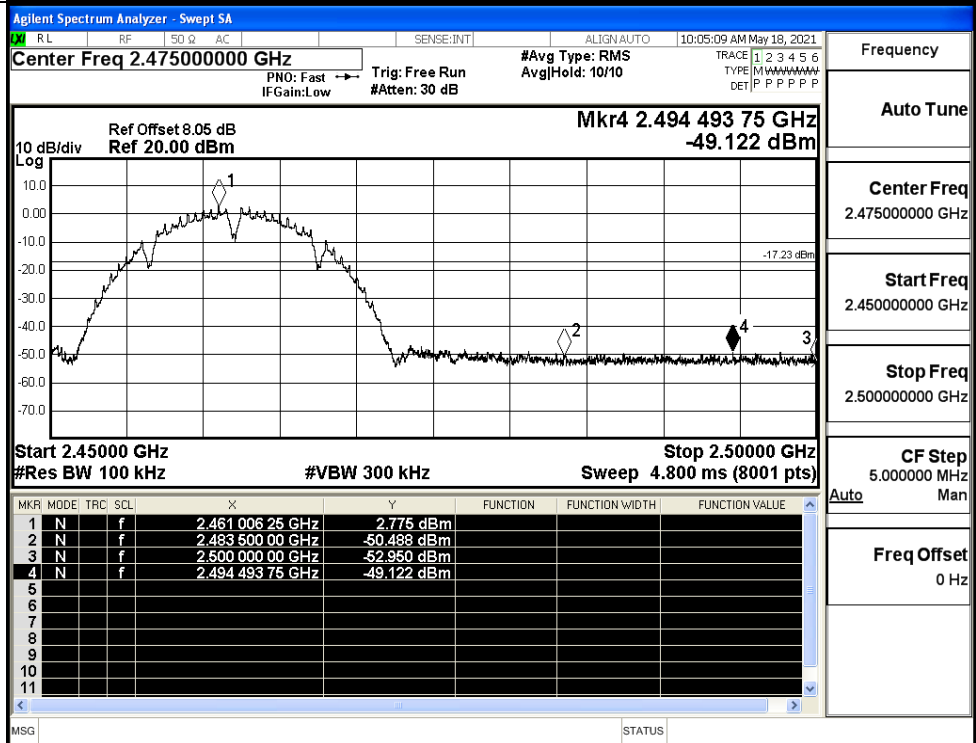
| Mode | Channel | Carrier Power[dBm] | Max.Spurious Level [dBm] | Limit [dBm] | Verdict |
|-----------|---------|--------------------|--------------------------|-------------|---------|
| 11B | LCH | 2.855 | -49.314 | -17.15 | PASS |
| | HCH | 2.775 | -49.122 | -17.23 | PASS |
| 11G | LCH | -5.828 | -49.287 | -25.83 | PASS |
| | HCH | -7.664 | -48.475 | -27.66 | PASS |
| 11N20SISO | LCH | -7.191 | -48.822 | -27.19 | PASS |
| | HCH | -6.862 | -48.800 | -26.86 | PASS |
| 11N40SISO | LCH | -9.269 | -48.349 | -29.27 | PASS |
| | HCH | -7.553 | -48.638 | -27.55 | PASS |

Test Graphs

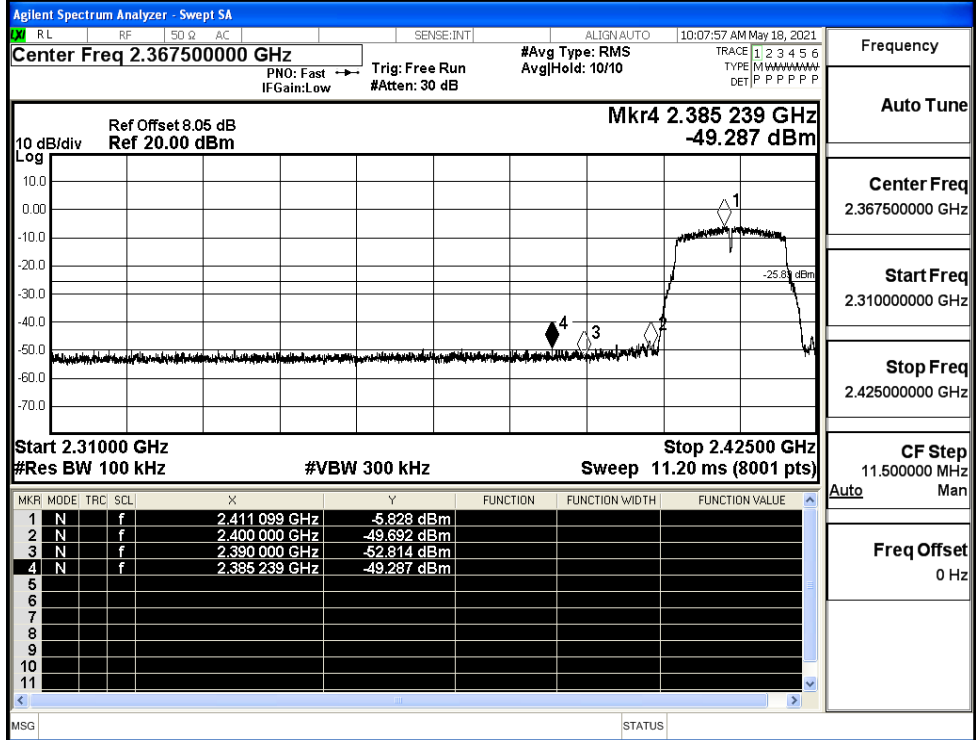
11B/LCH



11B/HCH

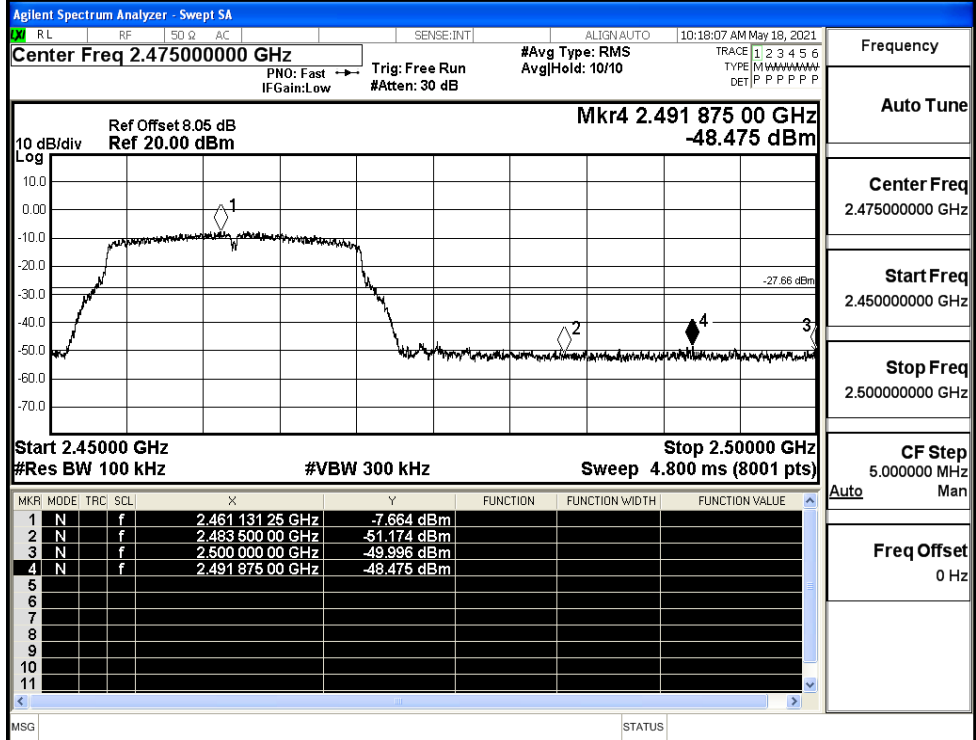


11G/LCH



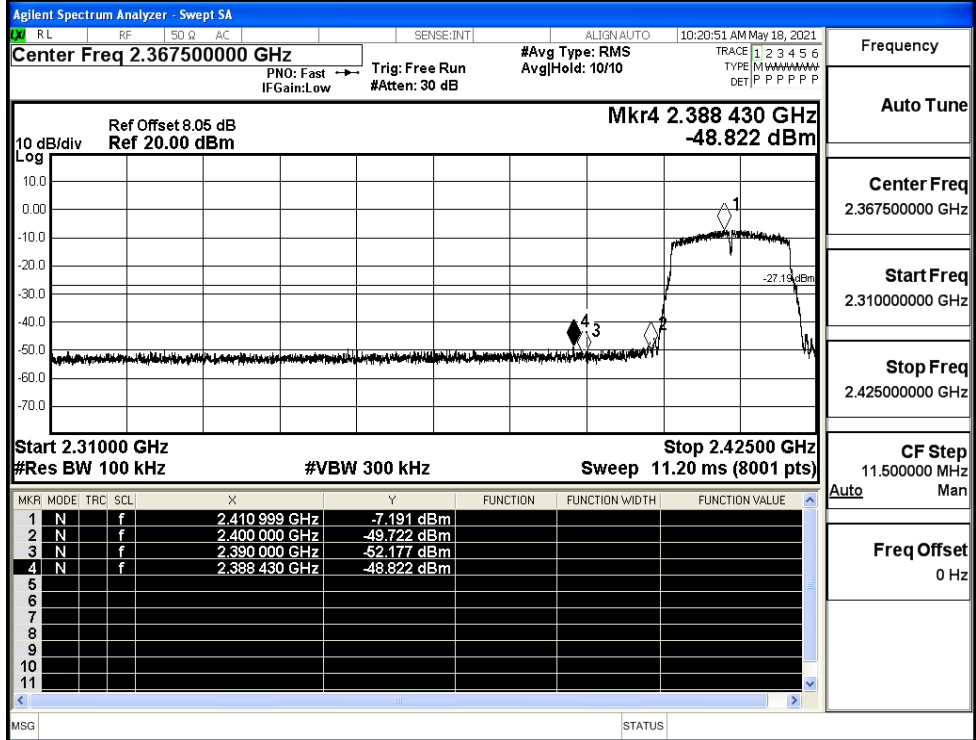
Frequency
Auto Tune
Center Freq
2.367500000 GHz
Start Freq
2.310000000 GHz
Stop Freq
2.425000000 GHz
CF Step
11.500000 MHz
Auto Man
Freq Offset
0 Hz

11G/HCH



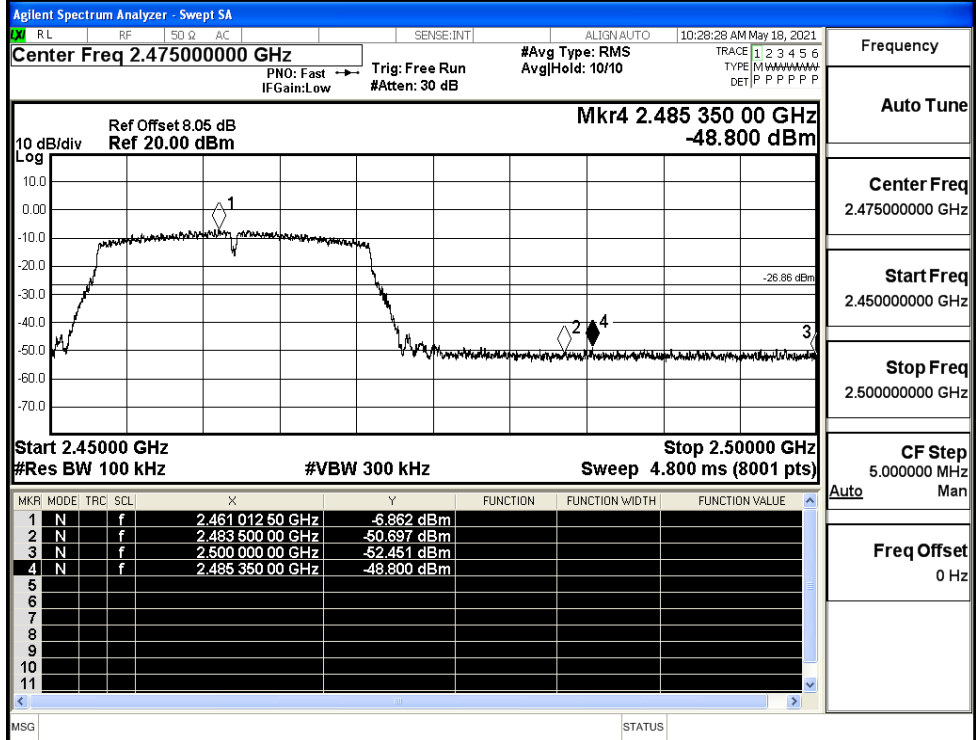
Frequency
Auto Tune
Center Freq
2.475000000 GHz
Start Freq
2.450000000 GHz
Stop Freq
2.500000000 GHz
CF Step
5.000000 MHz
Auto Man
Freq Offset
0 Hz

11N20SISO/LCH



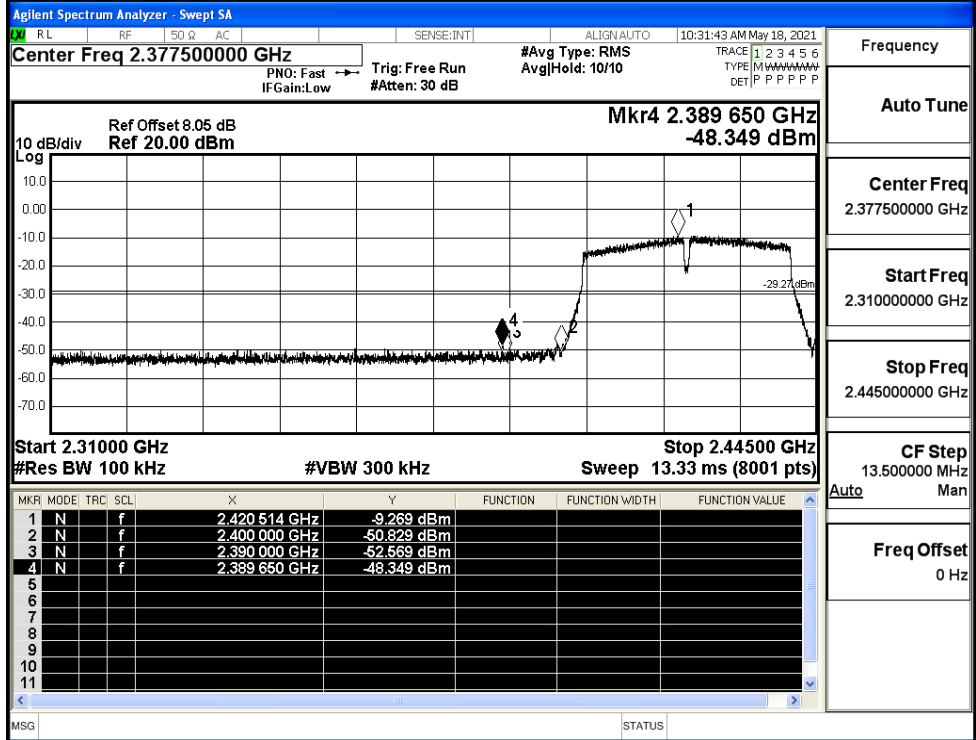
| | |
|-------------|-----------------|
| Frequency | |
| Auto Tune | |
| Center Freq | 2.367500000 GHz |
| Start Freq | 2.310000000 GHz |
| Stop Freq | 2.425000000 GHz |
| CF Step | 11.500000 MHz |
| Auto | Man |
| Freq Offset | 0 Hz |

11N20SISO/HCH



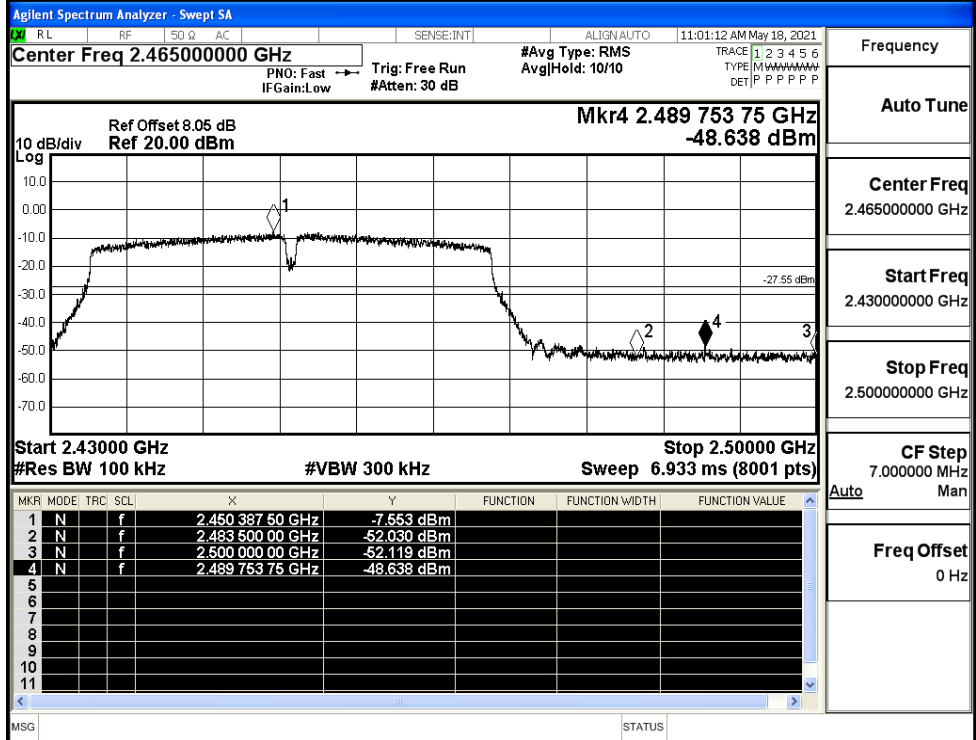
| | |
|-------------|-----------------|
| Frequency | |
| Auto Tune | |
| Center Freq | 2.475000000 GHz |
| Start Freq | 2.450000000 GHz |
| Stop Freq | 2.500000000 GHz |
| CF Step | 5.000000 MHz |
| Auto | Man |
| Freq Offset | 0 Hz |

11N40SISO/LCH



| | |
|-------------|-----------------|
| Frequency | |
| Auto Tune | |
| Center Freq | 2.377500000 GHz |
| Start Freq | 2.310000000 GHz |
| Stop Freq | 2.445000000 GHz |
| CF Step | 13.500000 MHz |
| Auto | Man |
| Freq Offset | 0 Hz |

11N40SISO/HCH



| | |
|-------------|-----------------|
| Frequency | |
| Auto Tune | |
| Center Freq | 2.465000000 GHz |
| Start Freq | 2.430000000 GHz |
| Stop Freq | 2.500000000 GHz |
| CF Step | 7.000000 MHz |
| Auto | Man |
| Freq Offset | 0 Hz |

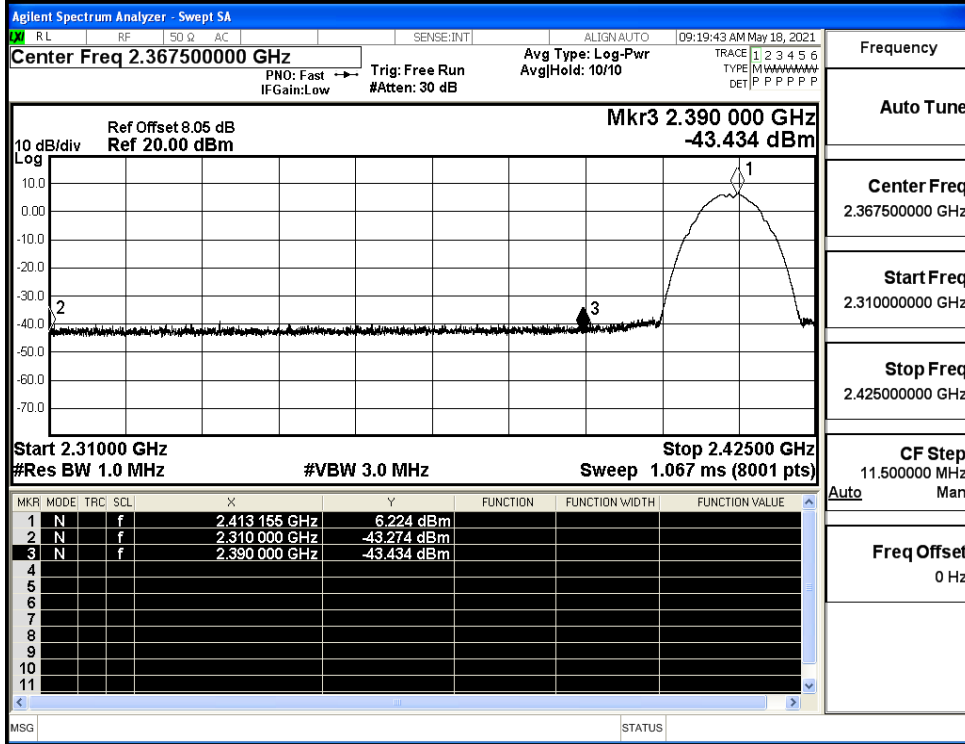
C.7 Restrict-band band-edge measurements

ANT0

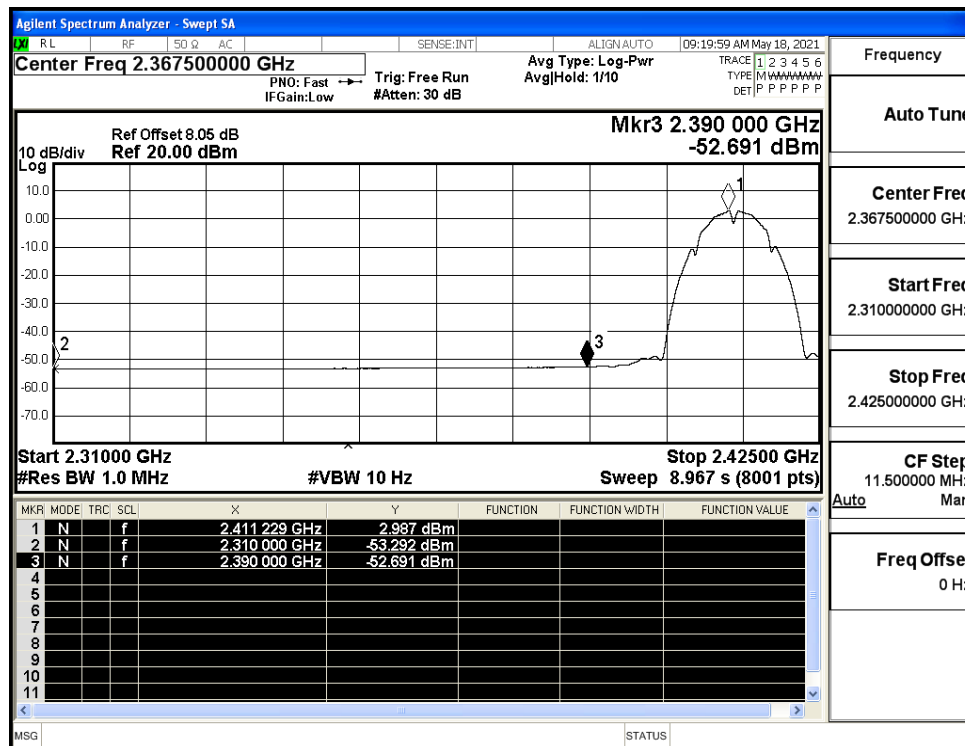
| Test Mode | Test Channel | Ant | Freq. | Power [dBm] | Gain | Ground Factor | E [dBuV/m] | Detector | Limit [dBu V/m] | Verdict |
|---------------|--------------|------|--------|-------------|------|---------------|------------|----------|-----------------|---------|
| 11B | 2412 | Ant1 | 2310.0 | -43.27 | 3.0 | 0 | 54.96 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2310.0 | -53.29 | 3.0 | 0 | 44.94 | AV | 54 | PASS |
| | 2412 | Ant1 | 2390.0 | -43.43 | 3.0 | 0 | 54.80 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2390.0 | -52.69 | 3.0 | 0 | 45.54 | AV | 54 | PASS |
| | 2462 | Ant1 | 2483.5 | -42.50 | 3.0 | 0 | 55.73 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2483.5 | -52.32 | 3.0 | 0 | 45.91 | AV | 54 | PASS |
| | 2462 | Ant1 | 2500.0 | -41.14 | 3.0 | 0 | 57.09 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2500.0 | -52.16 | 3.0 | 0 | 46.07 | AV | 54 | PASS |
| 11G | 2412 | Ant1 | 2310.0 | -42.21 | 3.0 | 0 | 56.02 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2310.0 | -53.30 | 3.0 | 0 | 44.93 | AV | 54 | PASS |
| | 2412 | Ant1 | 2390.0 | -41.21 | 3.0 | 0 | 57.02 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2390.0 | -52.39 | 3.0 | 0 | 45.84 | AV | 54 | PASS |
| | 2462 | Ant1 | 2483.5 | -41.36 | 3.0 | 0 | 56.87 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2483.5 | -52.22 | 3.0 | 0 | 46.01 | AV | 54 | PASS |
| | 2462 | Ant1 | 2500.0 | -41.99 | 3.0 | 0 | 56.24 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2500.0 | -52.18 | 3.0 | 0 | 46.05 | AV | 54 | PASS |
| 11N20 SISO | 2412 | Ant1 | 2310.0 | -42.75 | 3.0 | 0 | 55.48 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2310.0 | -53.35 | 3.0 | 0 | 44.88 | AV | 54 | PASS |
| | 2412 | Ant1 | 2390.0 | -42.50 | 3.0 | 0 | 55.73 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2390.0 | -52.36 | 3.0 | 0 | 45.87 | AV | 54 | PASS |
| | 2462 | Ant1 | 2483.5 | -40.92 | 3.0 | 0 | 57.31 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2483.5 | -52.18 | 3.0 | 0 | 46.05 | AV | 54 | PASS |
| | 2462 | Ant1 | 2500.0 | -41.49 | 3.0 | 0 | 56.74 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2500.0 | -52.16 | 3.0 | 0 | 46.07 | AV | 54 | PASS |
| 11N40 SISO | 2422 | Ant1 | 2310.0 | -42.08 | 3.0 | 0 | 56.15 | PEAK | 74 | PASS |
| | 2422 | Ant1 | 2310.0 | -53.30 | 3.0 | 0 | 44.93 | AV | 54 | PASS |

| | | | | | | | | | | |
|--|------|------|--------|--------|-----|---|-------|------|----|------|
| | 2422 | Ant1 | 2390.0 | -41.10 | 3.0 | 0 | 57.13 | PEAK | 74 | PASS |
| | 2422 | Ant1 | 2390.0 | -52.36 | 3.0 | 0 | 45.87 | AV | 54 | PASS |
| | 2452 | Ant1 | 2483.5 | -40.94 | 3.0 | 0 | 57.29 | PEAK | 74 | PASS |
| | 2452 | Ant1 | 2483.5 | -52.09 | 3.0 | 0 | 46.14 | AV | 54 | PASS |
| | 2452 | Ant1 | 2500.0 | -42.84 | 3.0 | 0 | 55.39 | PEAK | 74 | PASS |
| | 2452 | Ant1 | 2500.0 | -52.19 | 3.0 | 0 | 46.04 | AV | 54 | PASS |

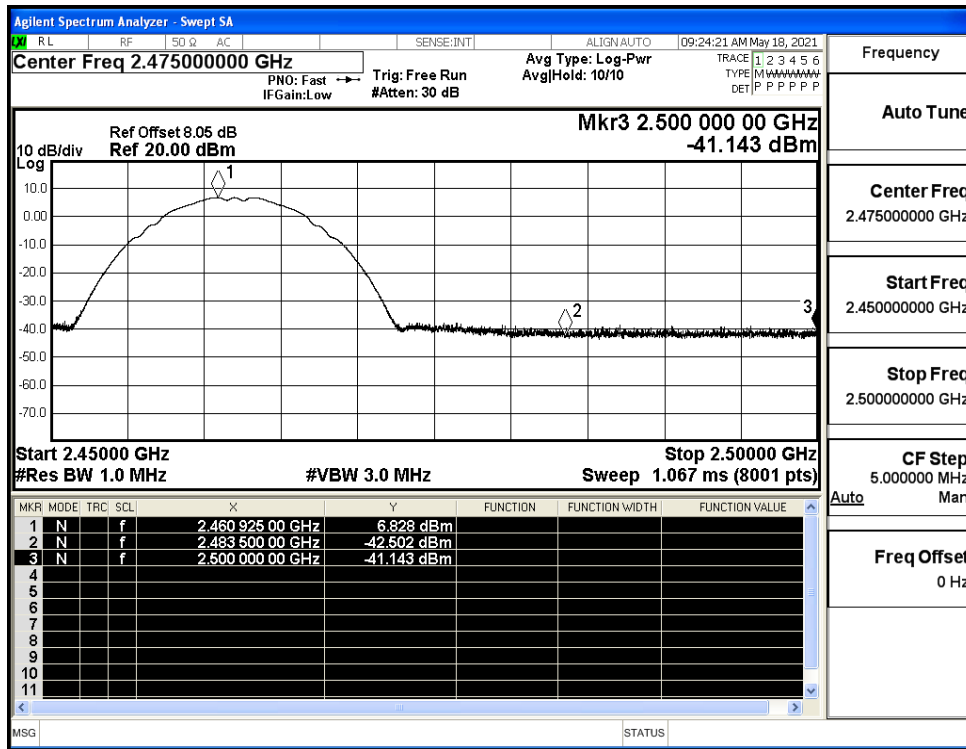
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



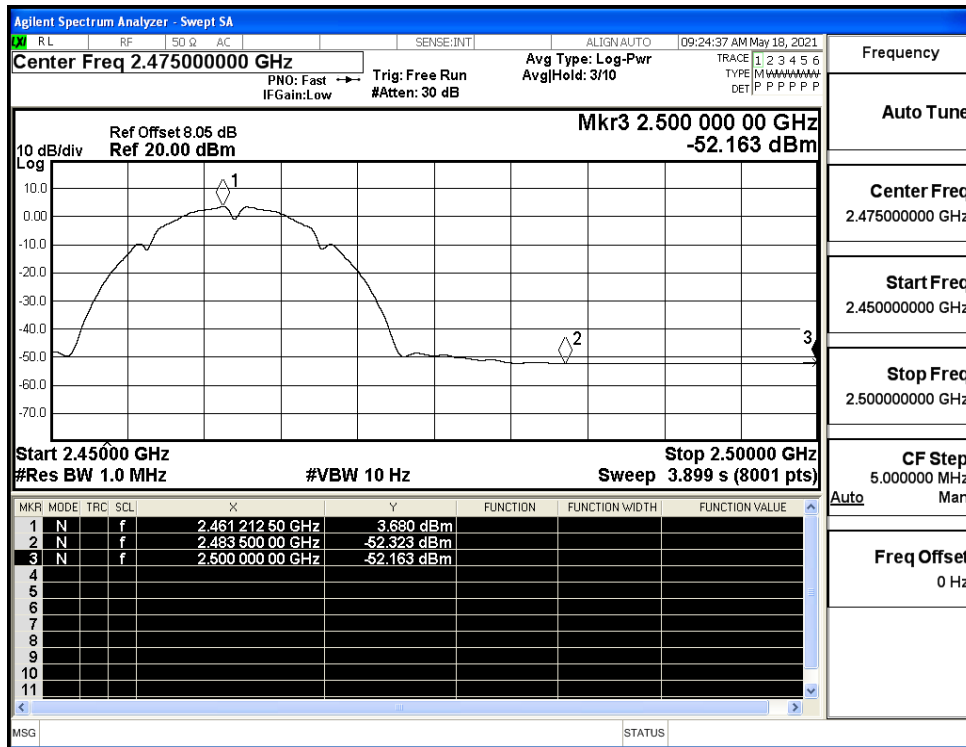
Restrict-band band-edge measurements_11B_2412_Ant1_AV



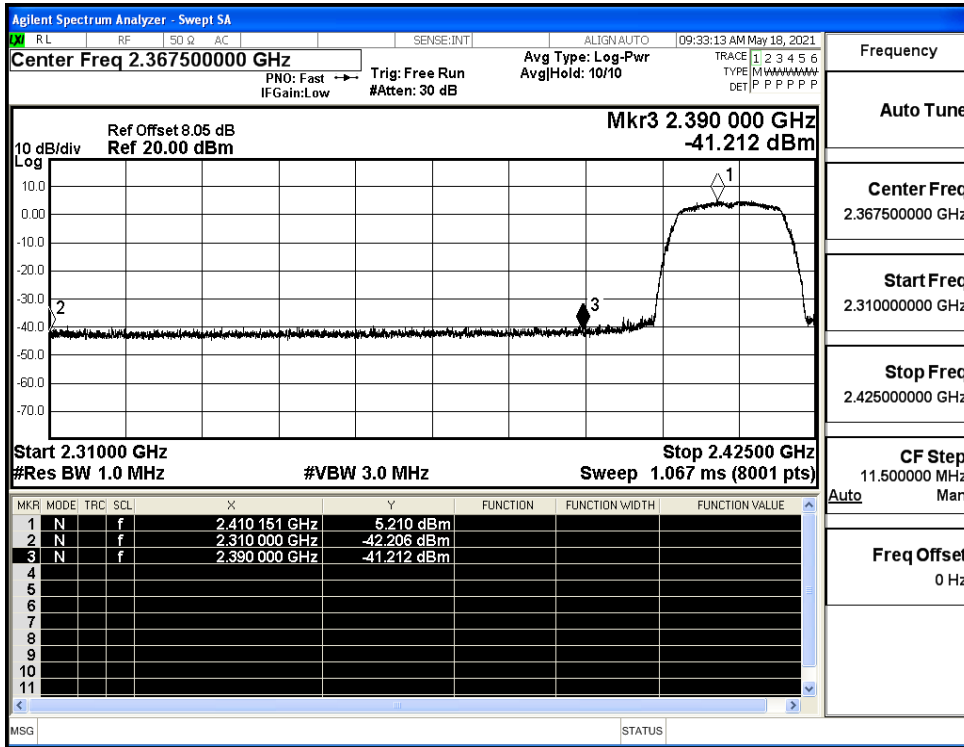
Restrict-band band-edge measurements_11B_2462_Ant1_PEAK



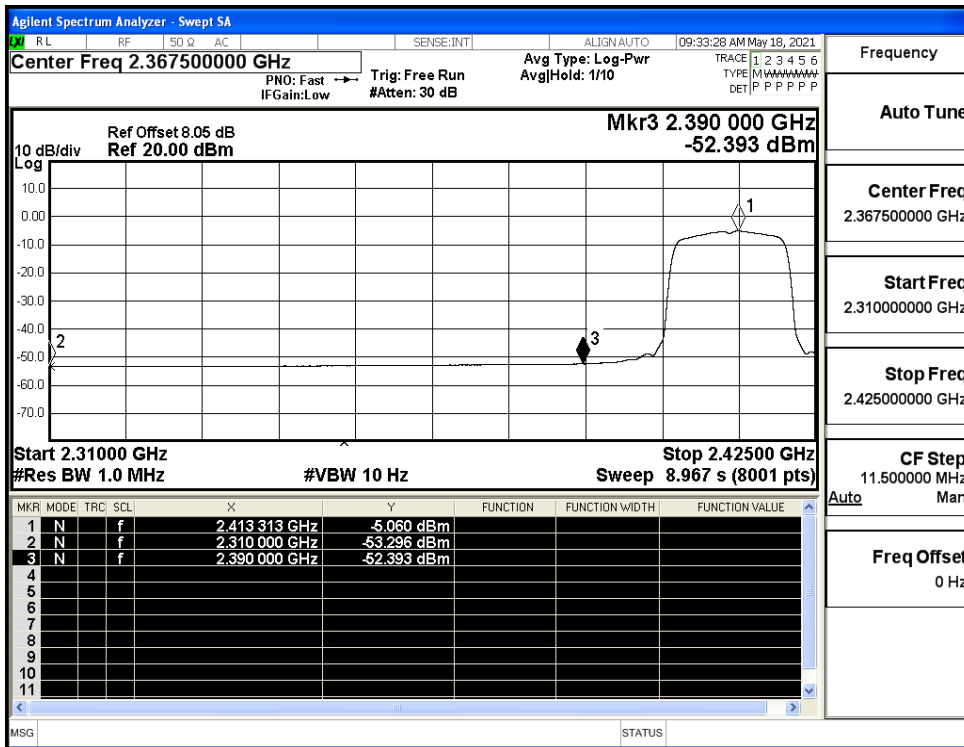
Restrict-band band-edge measurements_11B_2462_Ant1_AV



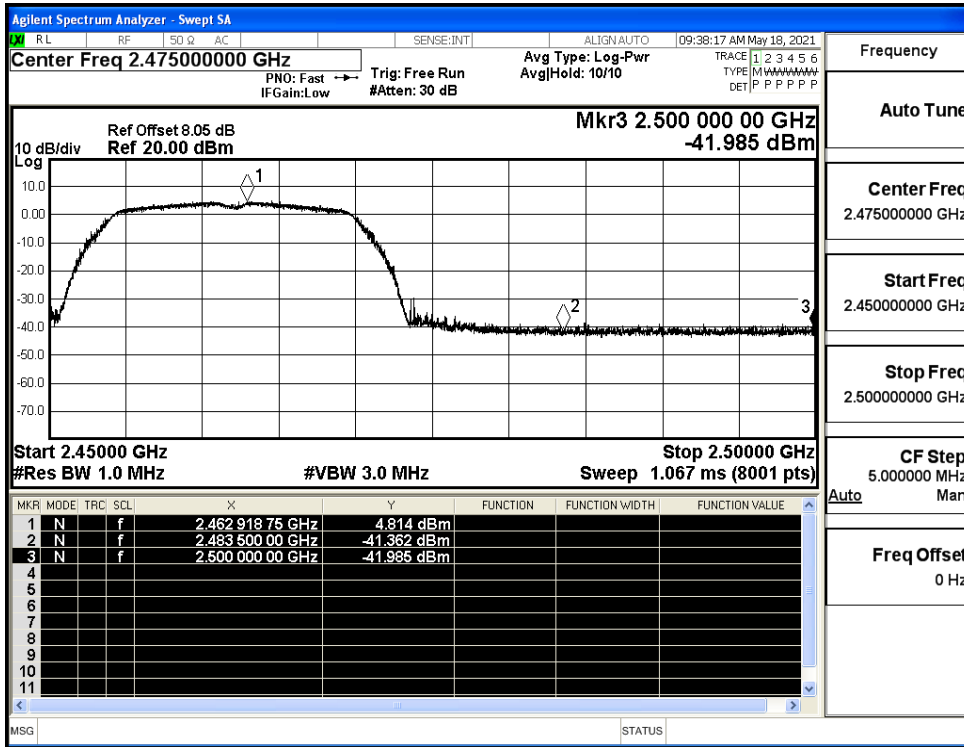
Restrict-band band-edge measurements_11G_2412_Ant1_PEAK



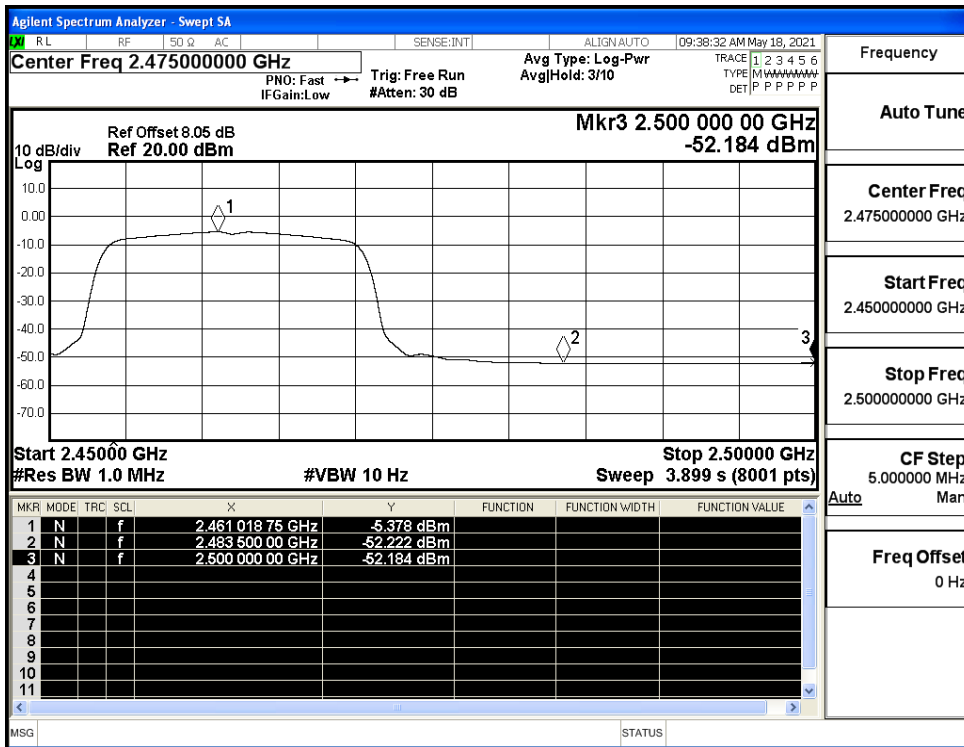
Restrict-band band-edge measurements_11G_2412_Ant1_AV



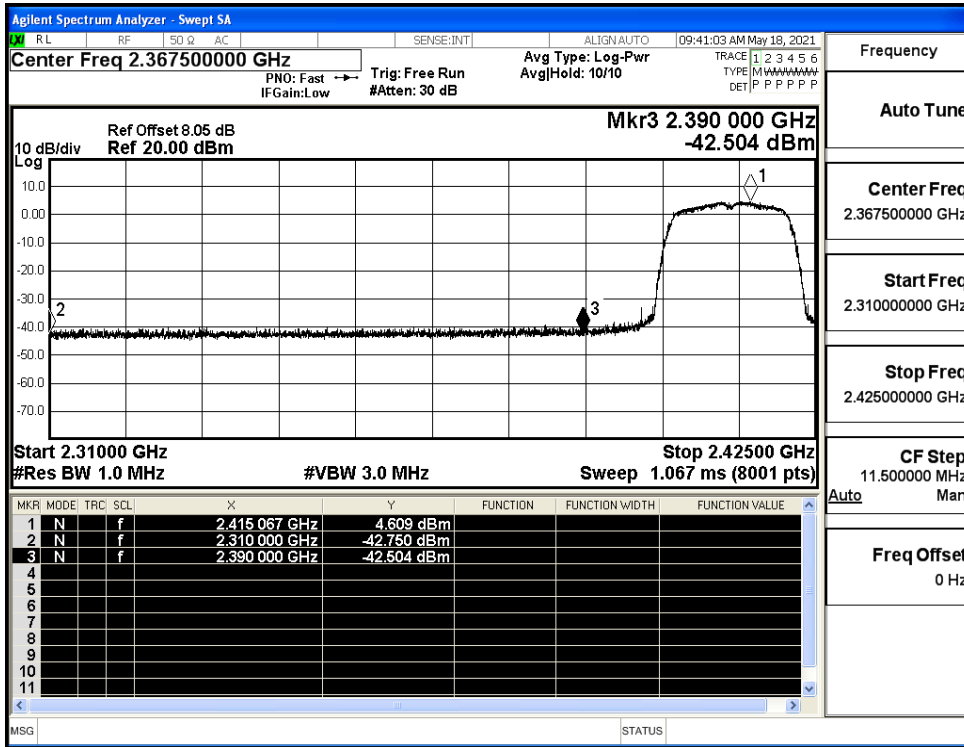
Restrict-band band-edge measurements_11G_2462_Ant1_PEAK



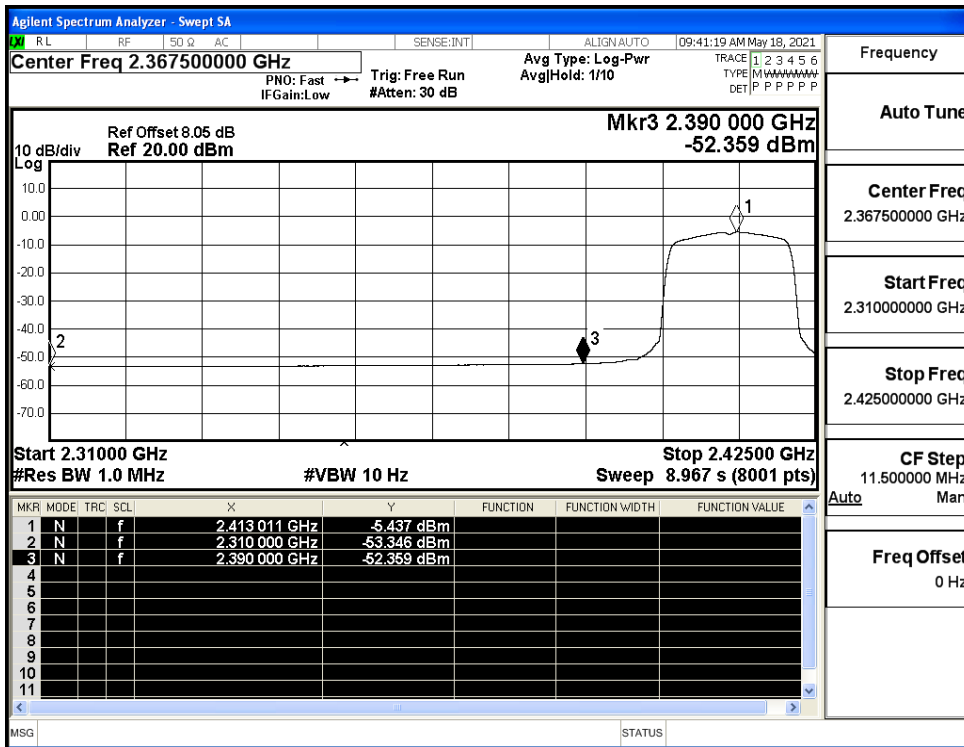
Restrict-band band-edge measurements_11G_2462_Ant1_AV



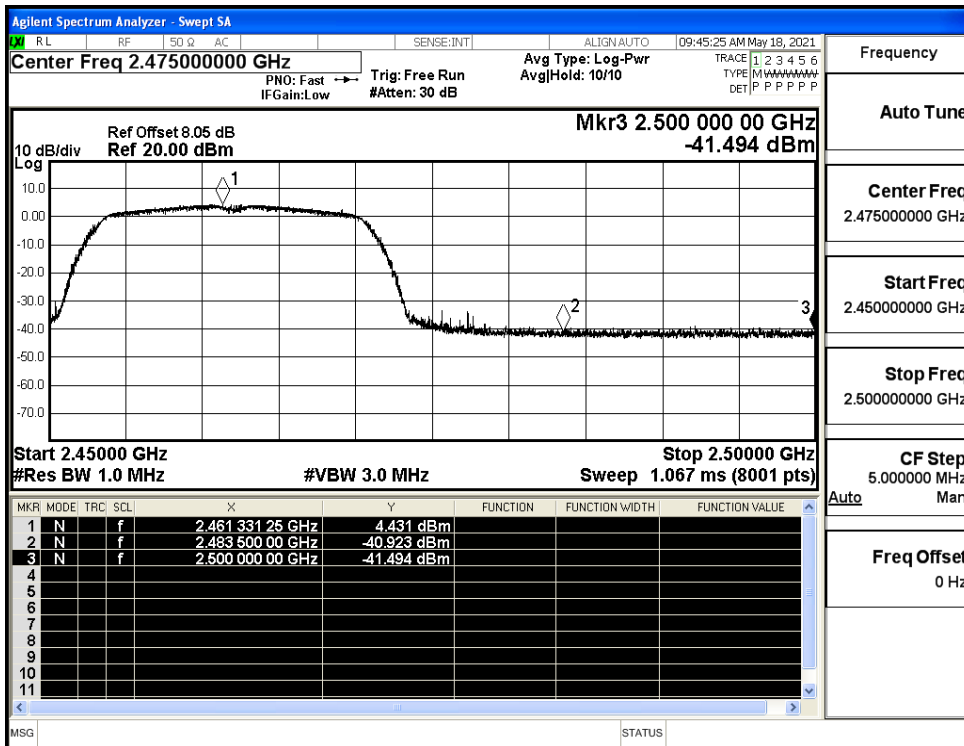
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_PEAK



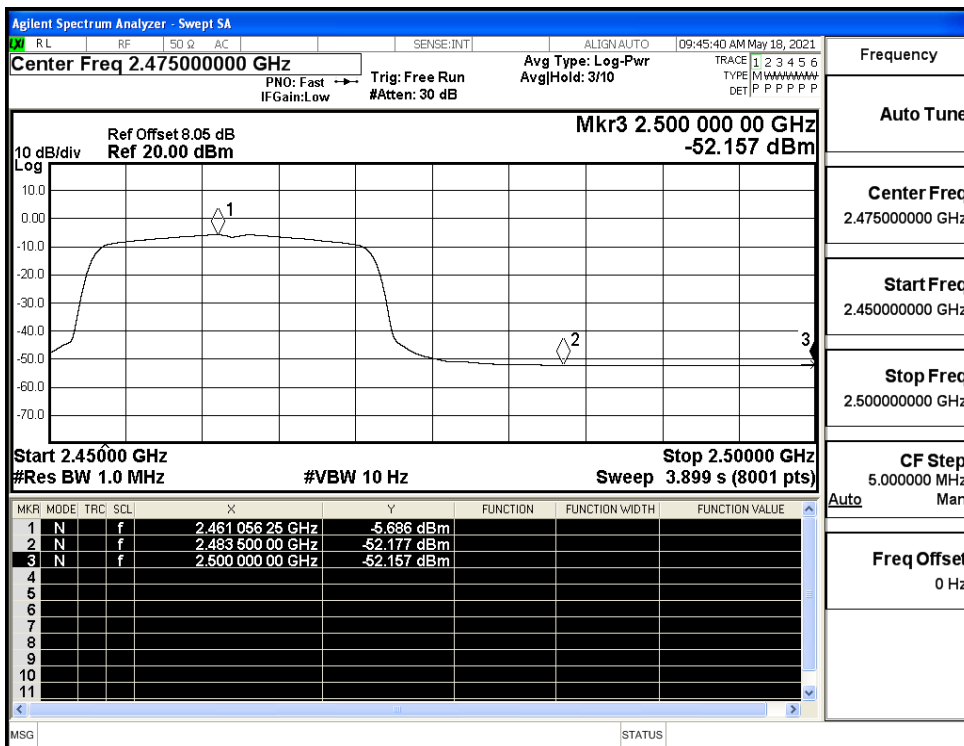
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_AV



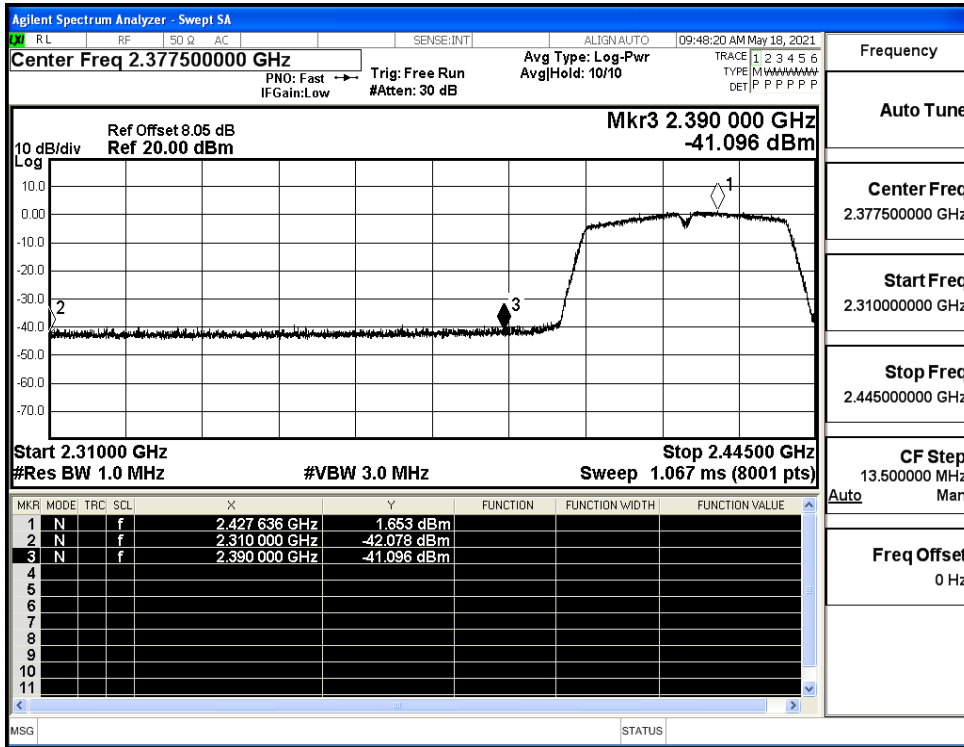
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_PEAK



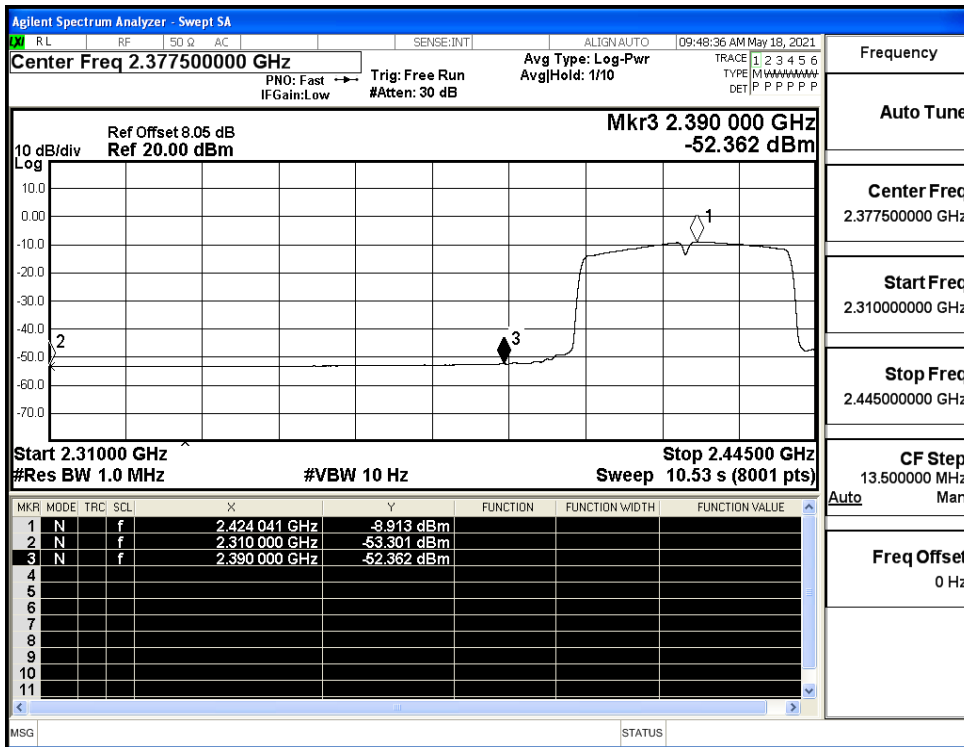
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_AV



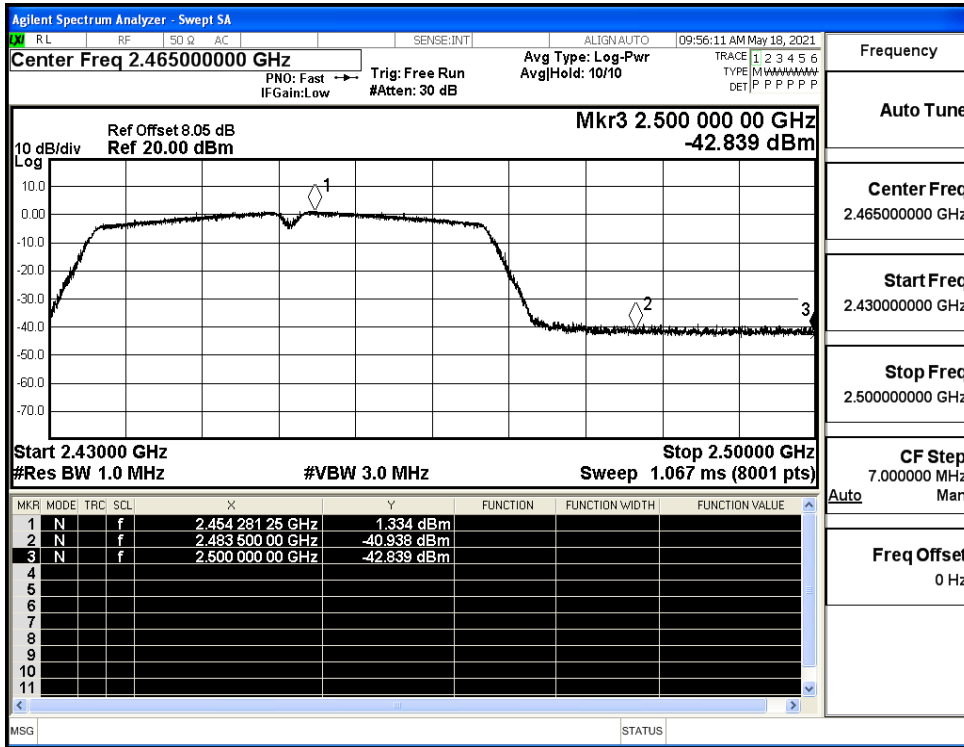
Restrict-band band-edge measurements_11N40SISO_2422_Ant1_PEAK



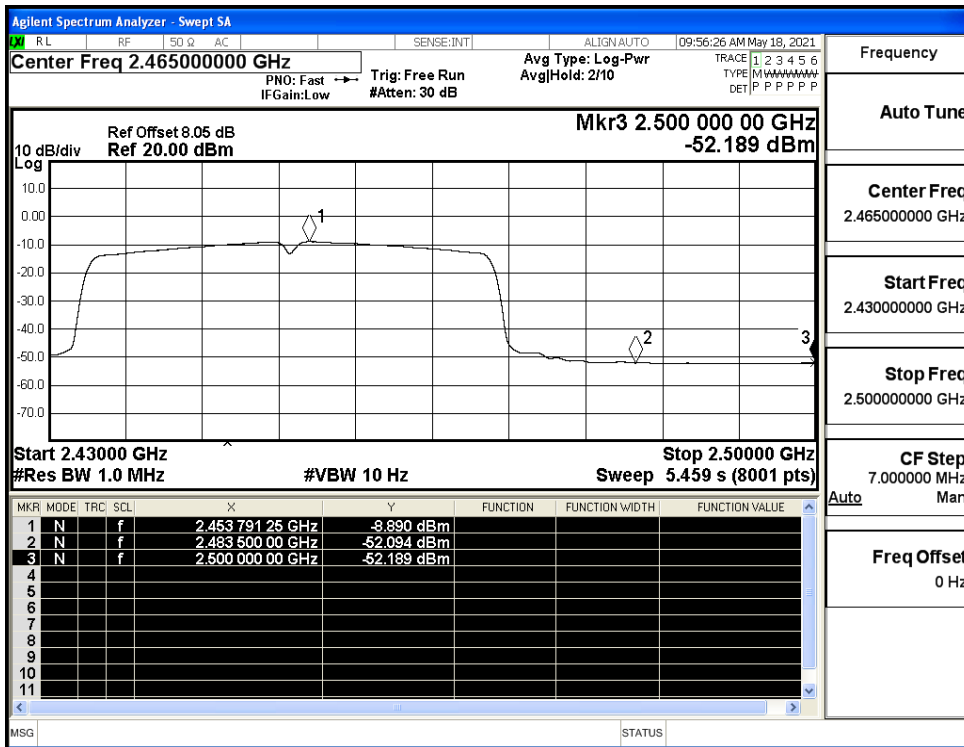
Restrict-band band-edge measurements_11N40SISO_2422_Ant1_AV



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_PEAK



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_AV

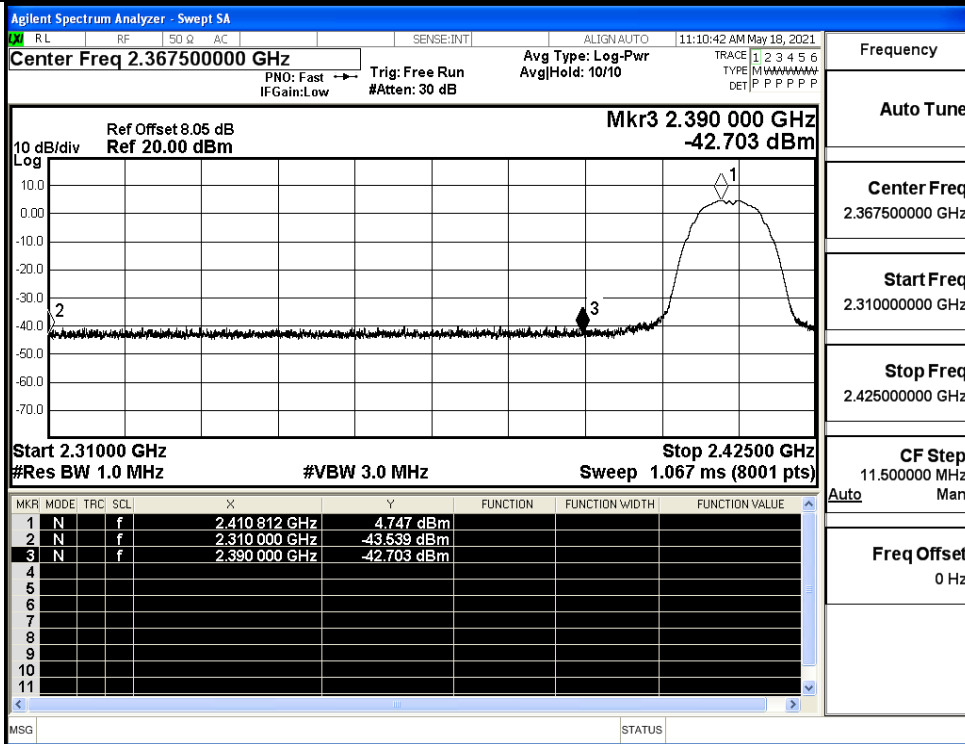


ANT1

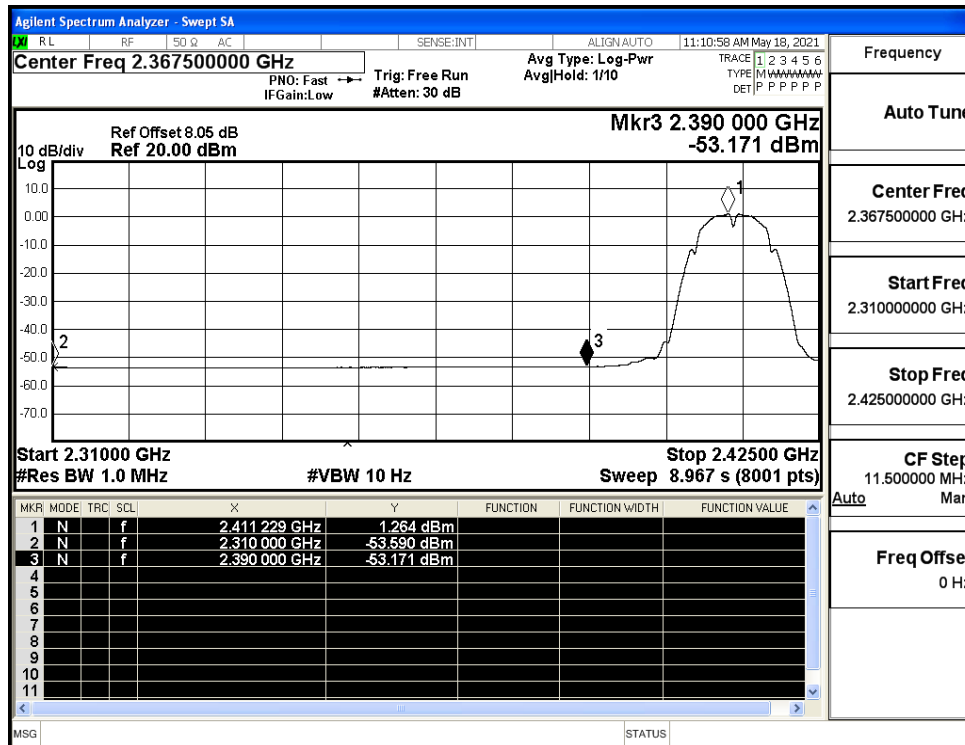
| Test Mode | Test Channel | Ant | Freq. | Power [dBm] | Gain | Ground Factor | E [dBuV/m] | Detector | Limit [dBu V/m] | Verdict |
|---------------|--------------|------|--------|-------------|------|---------------|------------|----------|-----------------|---------|
| 11B | 2412 | Ant1 | 2310.0 | -43.54 | 3.0 | 0 | 54.69 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2310.0 | -53.59 | 3.0 | 0 | 44.64 | AV | 54 | PASS |
| | 2412 | Ant1 | 2390.0 | -42.70 | 3.0 | 0 | 55.53 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2390.0 | -53.17 | 3.0 | 0 | 45.06 | AV | 54 | PASS |
| | 2462 | Ant1 | 2483.5 | -41.69 | 3.0 | 0 | 56.54 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2483.5 | -52.14 | 3.0 | 0 | 46.09 | AV | 54 | PASS |
| | 2462 | Ant1 | 2500.0 | -42.80 | 3.0 | 0 | 55.43 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2500.0 | -52.57 | 3.0 | 0 | 45.66 | AV | 54 | PASS |
| 11G | 2412 | Ant1 | 2310.0 | -42.55 | 3.0 | 0 | 55.68 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2310.0 | -53.55 | 3.0 | 0 | 44.68 | AV | 54 | PASS |
| | 2412 | Ant1 | 2390.0 | -42.14 | 3.0 | 0 | 56.09 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2390.0 | -52.88 | 3.0 | 0 | 45.35 | AV | 54 | PASS |
| | 2462 | Ant1 | 2483.5 | -39.76 | 3.0 | 0 | 58.47 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2483.5 | -50.63 | 3.0 | 0 | 47.60 | AV | 54 | PASS |
| | 2462 | Ant1 | 2500.0 | -42.51 | 3.0 | 0 | 55.72 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2500.0 | -52.56 | 3.0 | 0 | 45.67 | AV | 54 | PASS |
| 11N20 SISO | 2412 | Ant1 | 2310.0 | -43.59 | 3.0 | 0 | 54.64 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2310.0 | -53.58 | 3.0 | 0 | 44.65 | AV | 54 | PASS |
| | 2412 | Ant1 | 2390.0 | -43.18 | 3.0 | 0 | 55.05 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2390.0 | -52.82 | 3.0 | 0 | 45.41 | AV | 54 | PASS |
| | 2462 | Ant1 | 2483.5 | -33.79 | 3.0 | 0 | 64.44 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2483.5 | -50.05 | 3.0 | 0 | 48.18 | AV | 54 | PASS |
| | 2462 | Ant1 | 2500.0 | -42.39 | 3.0 | 0 | 55.84 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2500.0 | -52.63 | 3.0 | 0 | 45.60 | AV | 54 | PASS |
| 11N40 SISO | 2422 | Ant1 | 2310.0 | -43.82 | 3.0 | 0 | 54.41 | PEAK | 74 | PASS |
| | 2422 | Ant1 | 2310.0 | -53.60 | 3.0 | 0 | 44.63 | AV | 54 | PASS |
| | 2422 | Ant1 | 2390.0 | -41.77 | 3.0 | 0 | 56.46 | PEAK | 74 | PASS |
| | 2422 | Ant1 | 2390.0 | -52.89 | 3.0 | 0 | 45.34 | AV | 54 | PASS |

| | | | | | | | | | | |
|--|------|------|--------|--------|-----|---|-------|------|----|------|
| | 2452 | Ant1 | 2483.5 | -28.79 | 3.0 | 0 | 69.44 | PEAK | 74 | PASS |
| | 2452 | Ant1 | 2483.5 | -49.54 | 3.0 | 0 | 48.69 | AV | 54 | PASS |
| | 2452 | Ant1 | 2500.0 | -43.48 | 3.0 | 0 | 54.75 | PEAK | 74 | PASS |
| | 2452 | Ant1 | 2500.0 | -52.56 | 3.0 | 0 | 45.67 | AV | 54 | PASS |

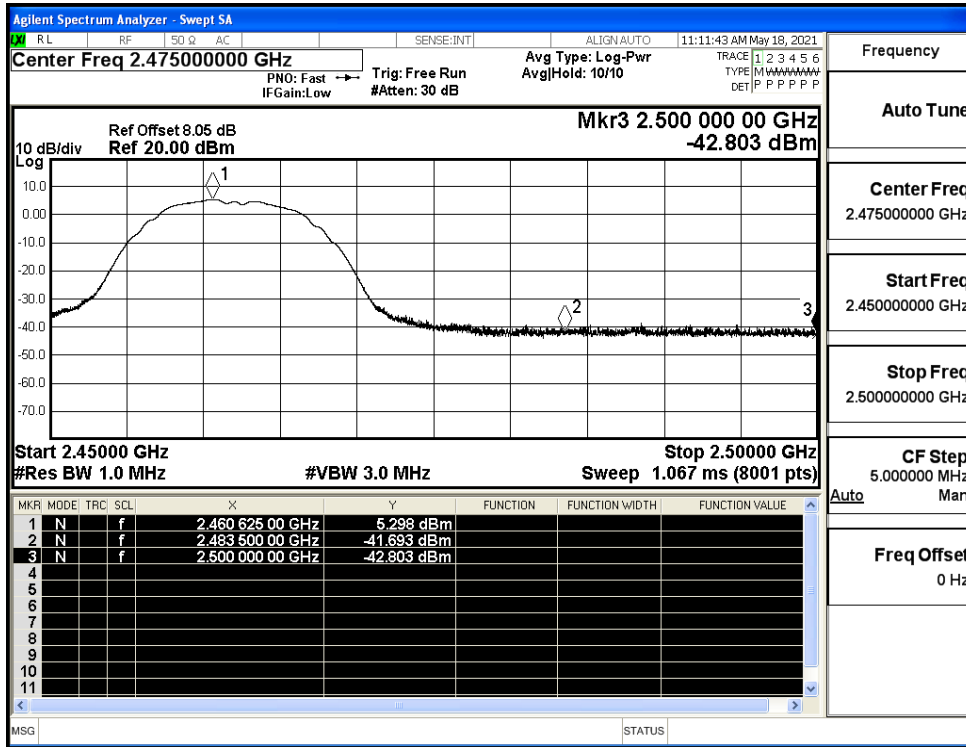
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



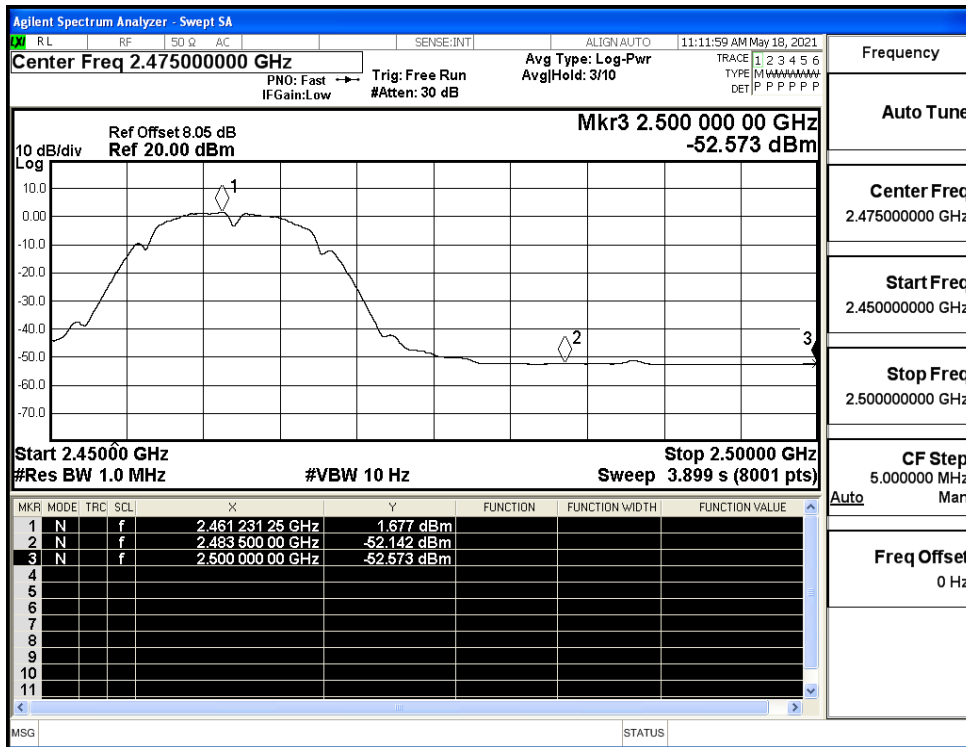
Restrict-band band-edge measurements_11B_2412_Ant1_AV



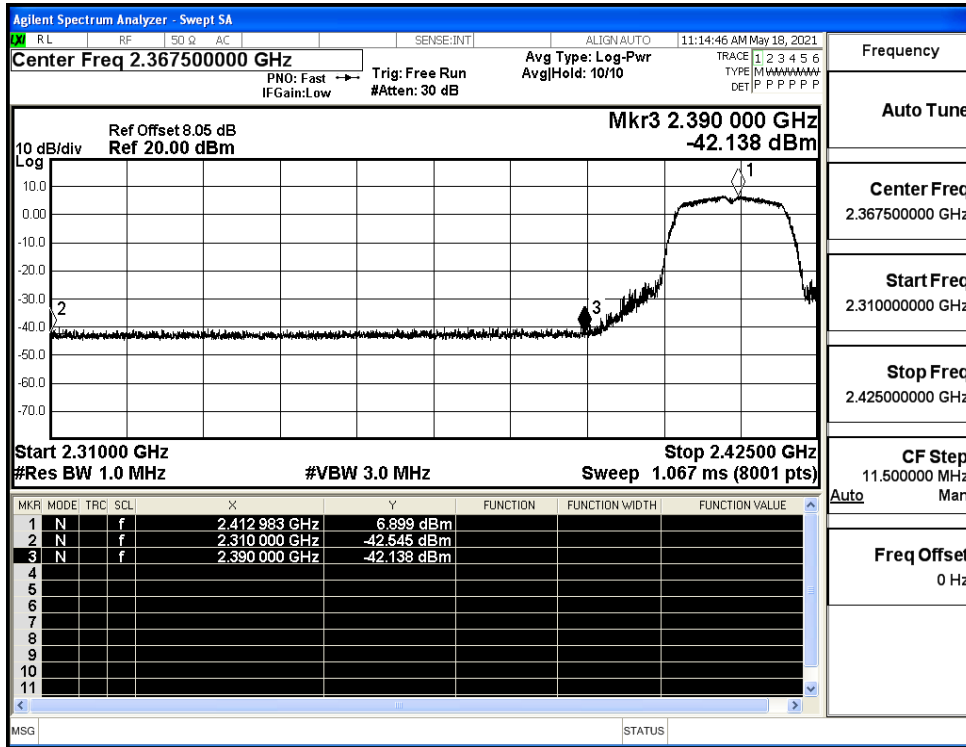
Restrict-band band-edge measurements_11B_2462_Ant1_PEAK



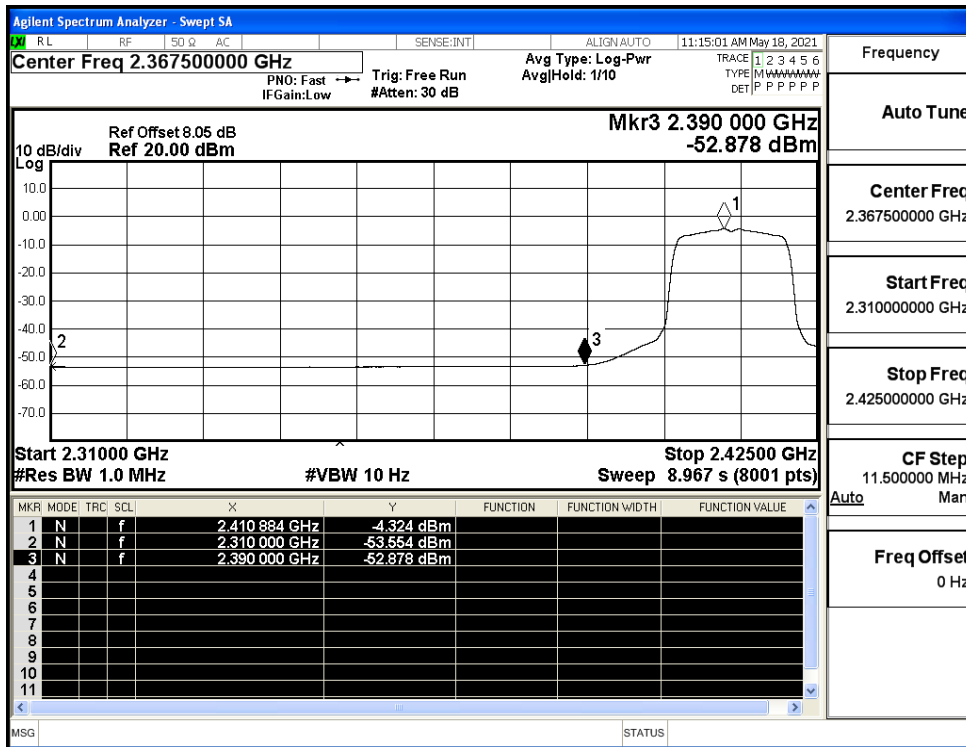
Restrict-band band-edge measurements_11B_2462_Ant1_AV



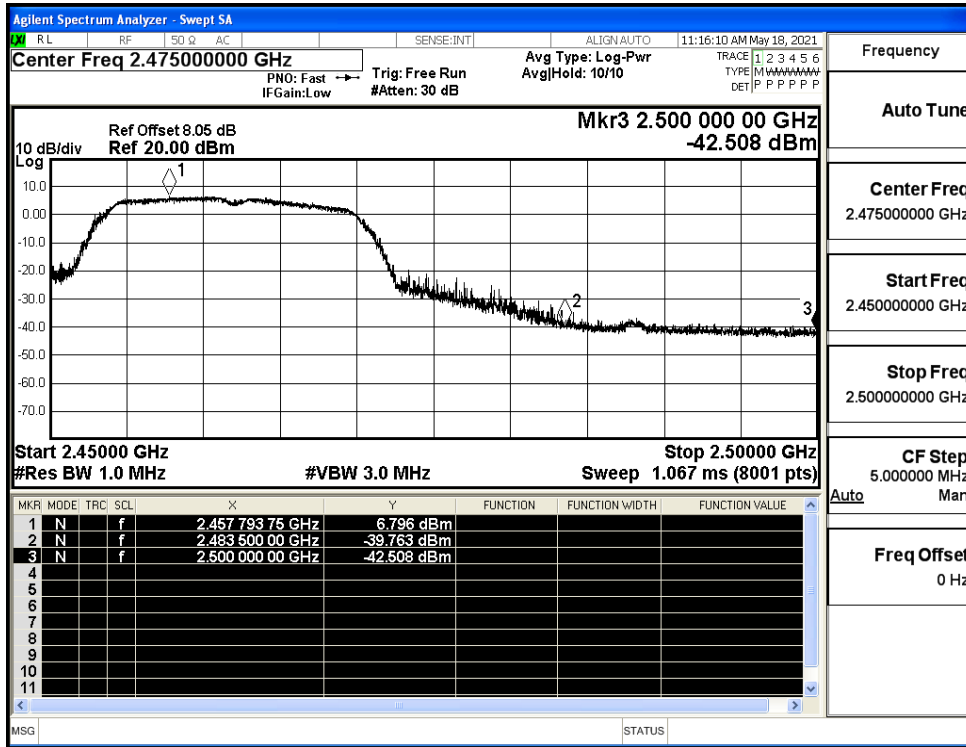
Restrict-band band-edge measurements_11G_2412_Ant1_PEAK



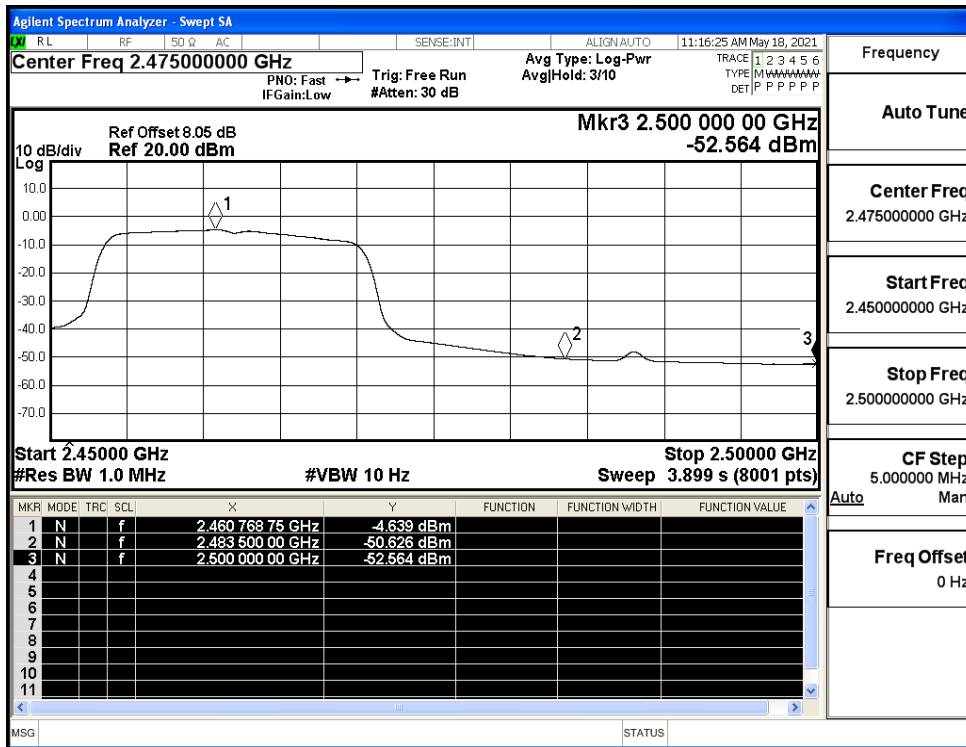
Restrict-band band-edge measurements_11G_2412_Ant1_AV



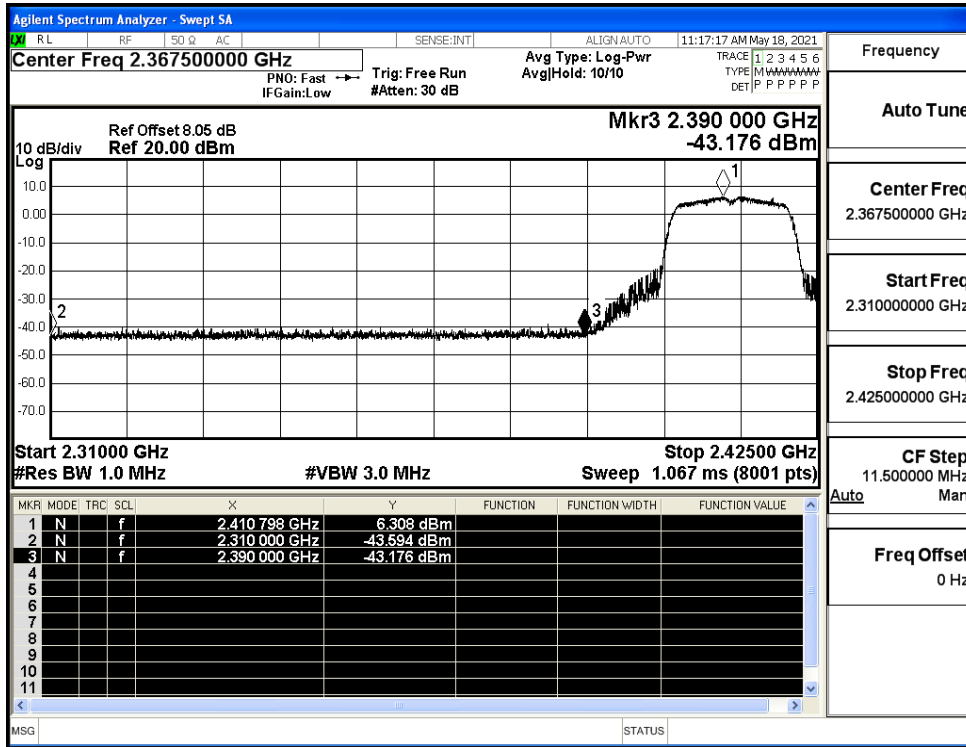
Restrict-band band-edge measurements_11G_2462_Ant1_PEAK



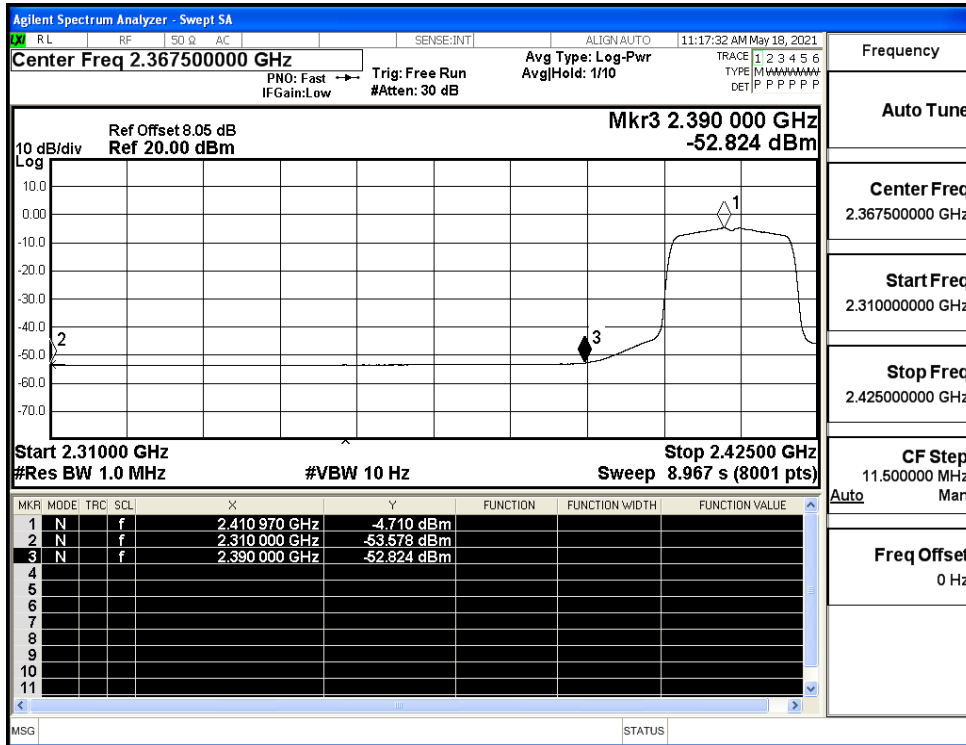
Restrict-band band-edge measurements_11G_2462_Ant1_AV



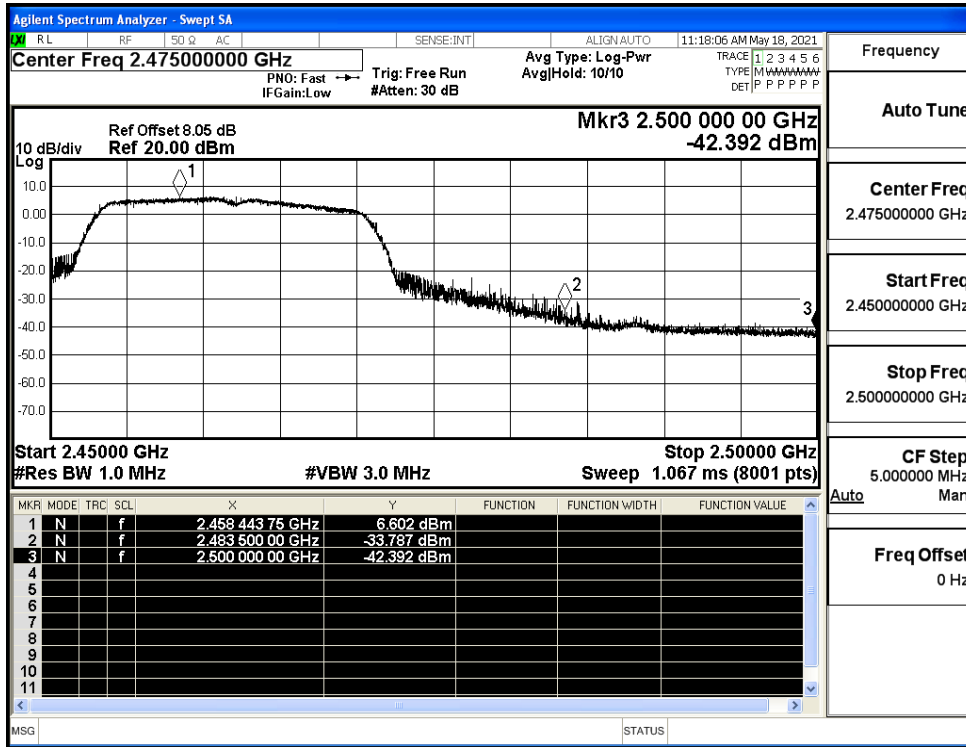
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_PEAK



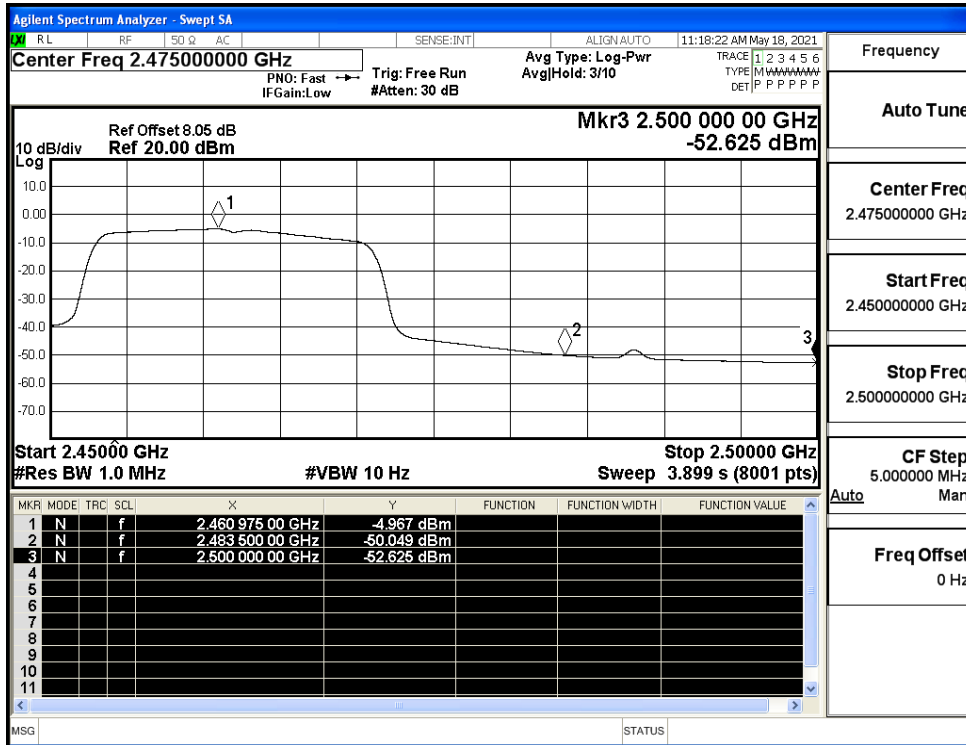
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_AV



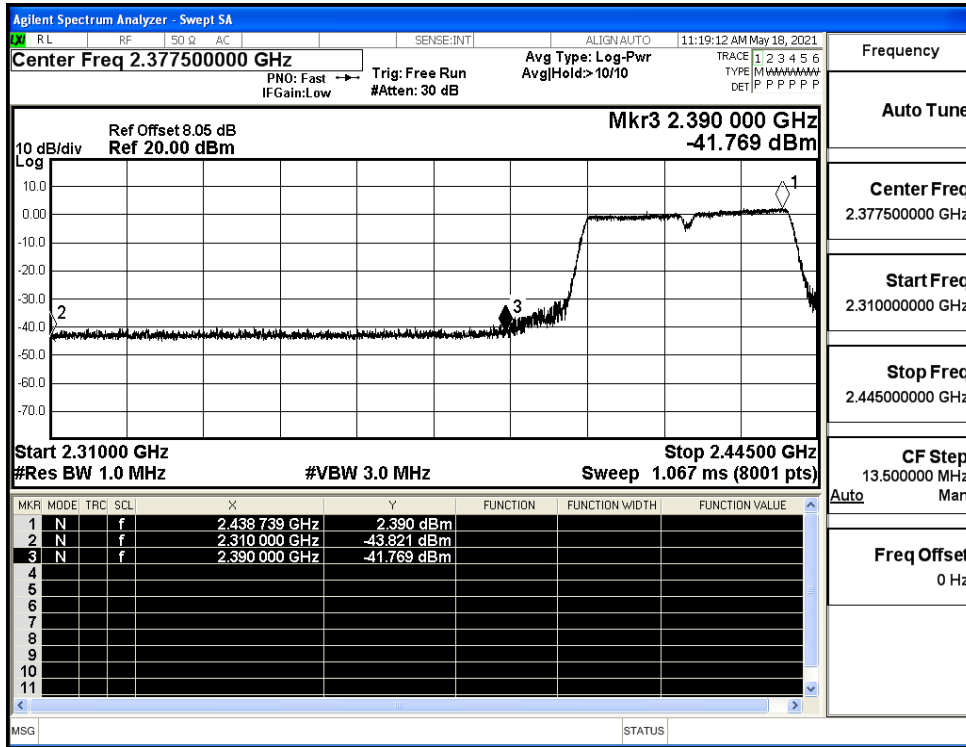
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_PEAK



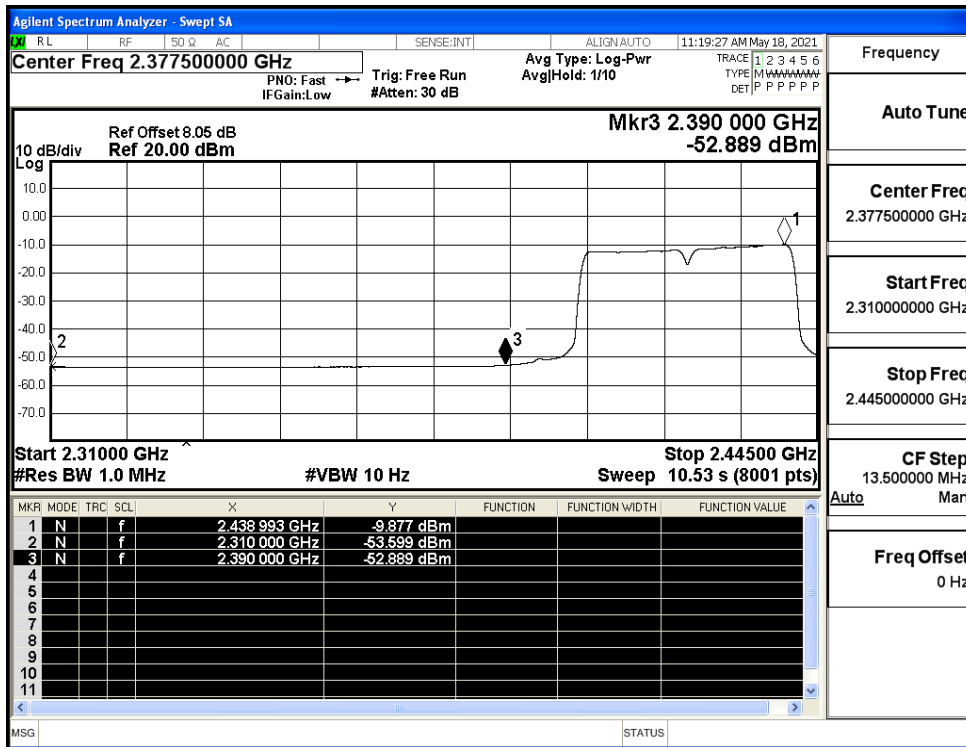
Restrict-band band-edge measurements_11N20SISO_2462_Ant1_AV



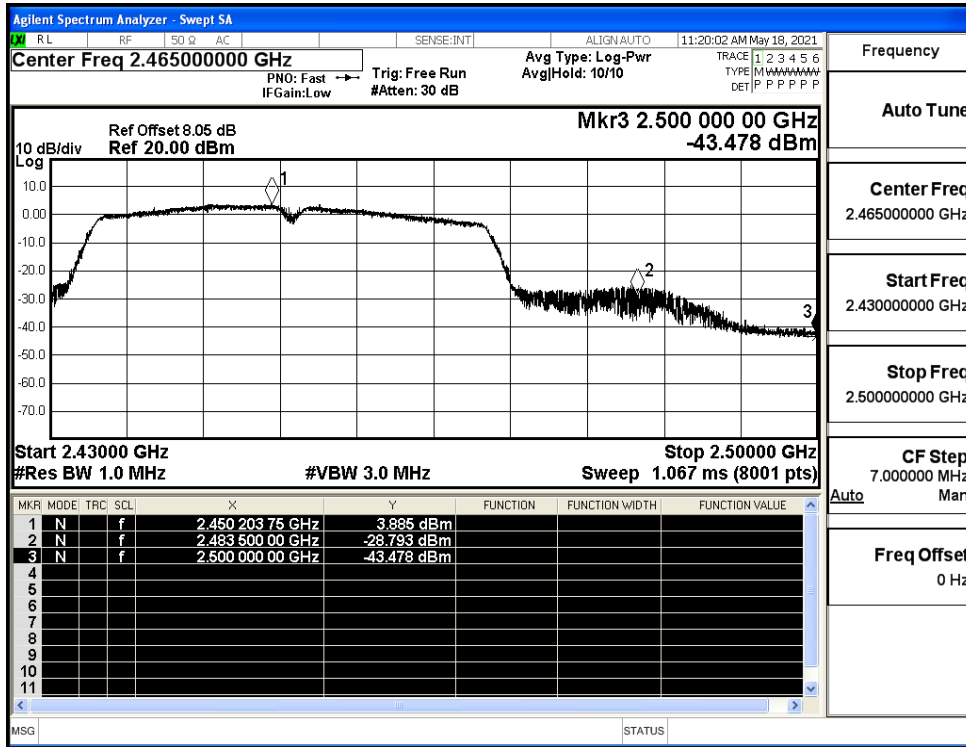
Restrict-band band-edge measurements_11N40SISO_2422_Ant1_PEAK



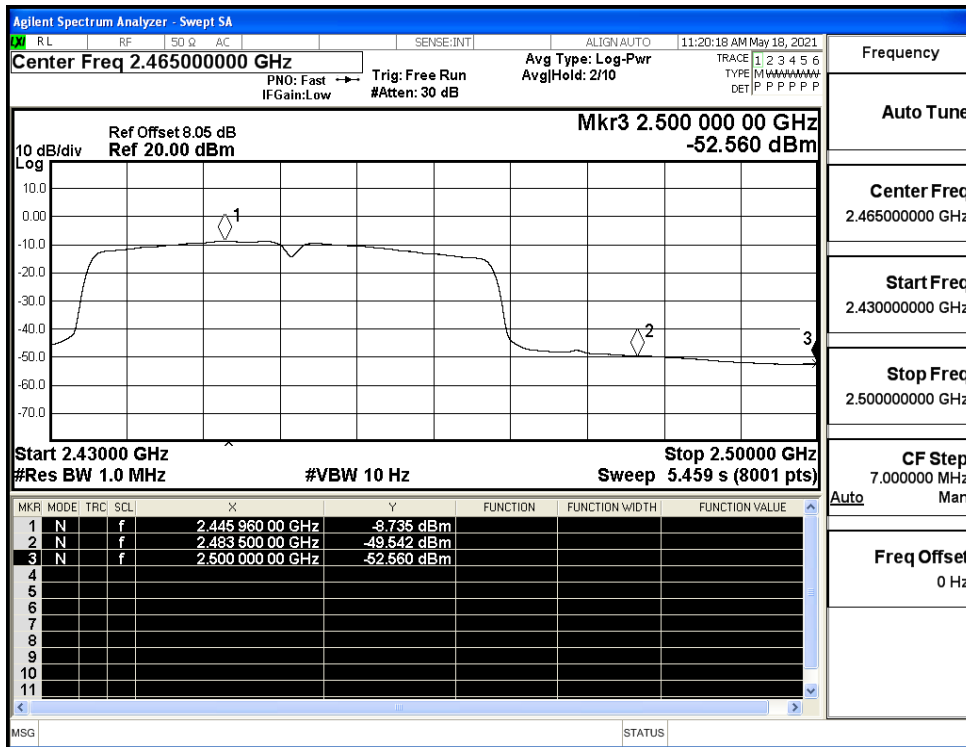
Restrict-band band-edge measurements_11N40SISO_2422_Ant1_AV



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_PEAK



Restrict-band band-edge measurements_11N40SISO_2452_Ant1_AV



MIMO

| Test Mode | Test Channel | Freq. | ANT 0 Power [dBm] | ANT 1 Power [dBm] | MIMO Power [dBm] | Gain | Ground Factor | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdict |
|-----------|--------------|--------|-------------------|-------------------|------------------|------|---------------|------------|----------|----------------|---------|
| 11N20 | 2412 | 2310.0 | -42.75 | -43.59 | -40.14 | 6.01 | 0 | 61.10 | PEAK | 74 | PASS |
| | 2412 | 2310.0 | -53.35 | -53.58 | -50.45 | 6.01 | 0 | 50.79 | AV | 54 | PASS |
| | 2412 | 2390.0 | -42.5 | -43.18 | -39.82 | 6.01 | 0 | 61.42 | PEAK | 74 | PASS |
| | 2412 | 2390.0 | -52.36 | -52.82 | -49.57 | 6.01 | 0 | 51.67 | AV | 54 | PASS |
| | 2462 | 2483.5 | -40.92 | -33.79 | -33.02 | 6.01 | 0 | 68.22 | PEAK | 74 | PASS |
| | 2462 | 2483.5 | -52.18 | -50.05 | -47.98 | 6.01 | 0 | 53.26 | AV | 54 | PASS |
| | 2462 | 2500.0 | -41.49 | -42.39 | -38.91 | 6.01 | 0 | 62.33 | PEAK | 74 | PASS |
| | 2462 | 2500.0 | -52.16 | -52.63 | -49.38 | 6.01 | 0 | 51.86 | AV | 54 | PASS |
| 11N40 | 2422 | 2310.0 | -42.08 | -43.82 | -39.85 | 6.01 | 0 | 61.39 | PEAK | 74 | PASS |
| | 2422 | 2310.0 | -53.3 | -53.6 | -50.44 | 6.01 | 0 | 50.80 | AV | 54 | PASS |
| | 2422 | 2390.0 | -41.1 | -41.77 | -38.41 | 6.01 | 0 | 62.83 | PEAK | 74 | PASS |
| | 2422 | 2390.0 | -52.36 | -52.89 | -49.61 | 6.01 | 0 | 51.63 | AV | 54 | PASS |
| | 2452 | 2483.5 | -40.94 | -28.79 | -28.53 | 6.01 | 0 | 72.71 | PEAK | 74 | PASS |
| | 2452 | 2483.5 | -52.09 | -49.54 | -47.62 | 6.01 | 0 | 53.62 | AV | 54 | PASS |
| | 2452 | 2500.0 | -42.84 | -43.48 | -40.14 | 6.01 | 0 | 61.10 | PEAK | 74 | PASS |
| | 2452 | 2500.0 | -52.19 | -52.56 | -49.36 | 6.01 | 0 | 51.88 | AV | 54 | PASS |

The upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands or 2 dBi, whichever is greater

Directional gain=3dBi+10 log (2) = 6.01dBi