

Appendix C

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Wi-Fi Smart Plug

Trade Mark: atomi

Test Model: AT1217

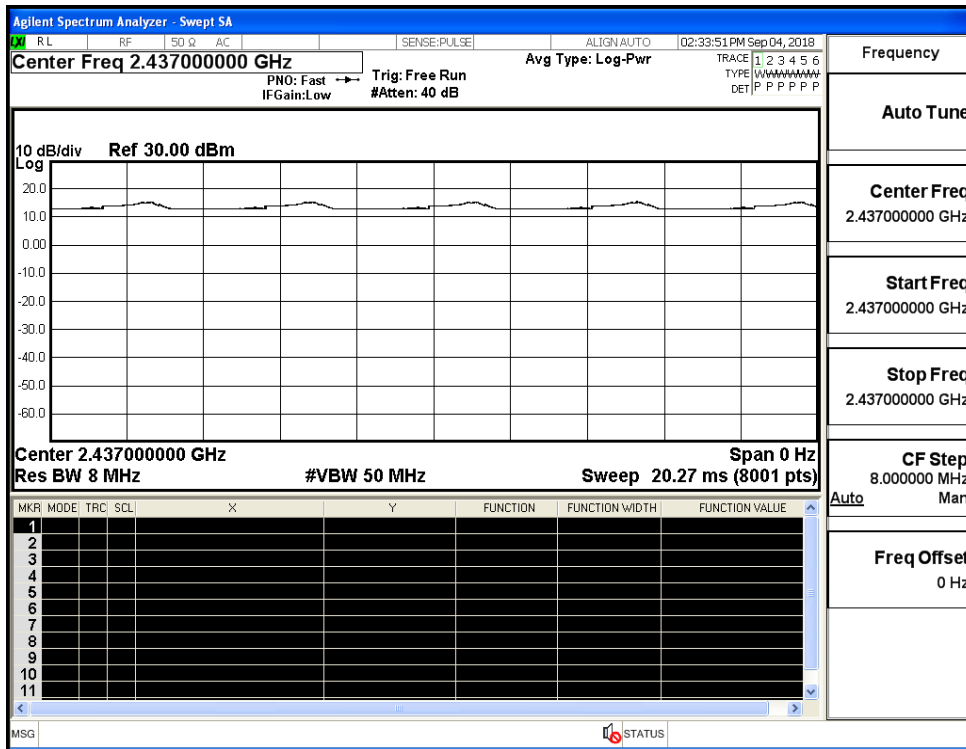
Environmental Conditions

| | |
|--------------------|-------------|
| Temperature: | 24.5 ° C |
| Relative Humidity: | 54.2% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Wilson.Hong |
| Supervised by: | Jayden.Zhuo |

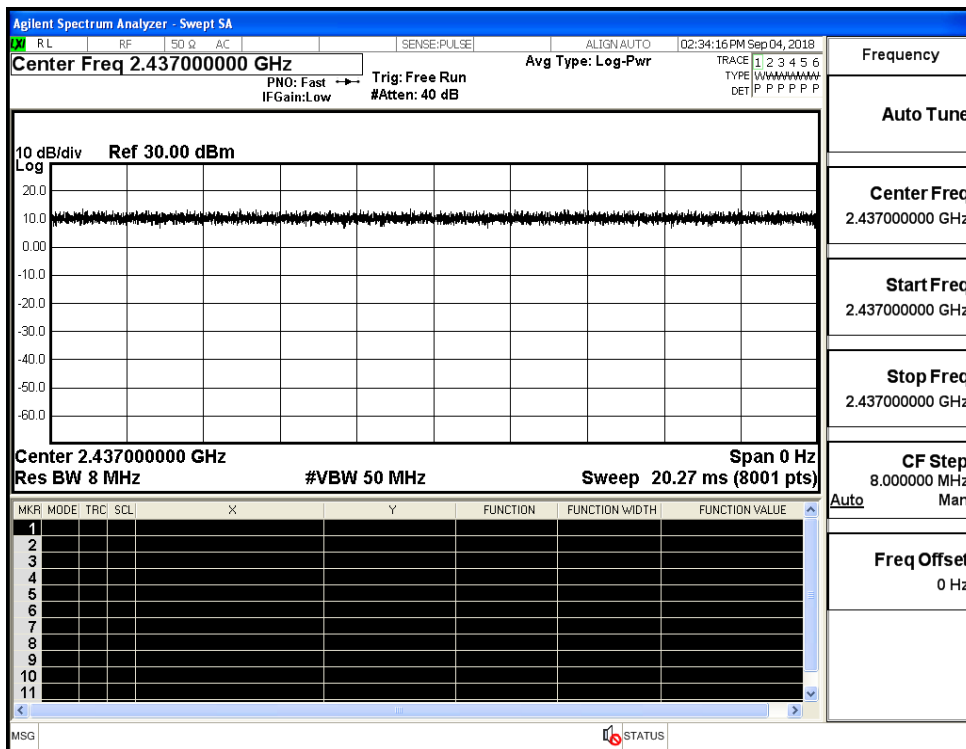
A.1 Duty Cycle

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

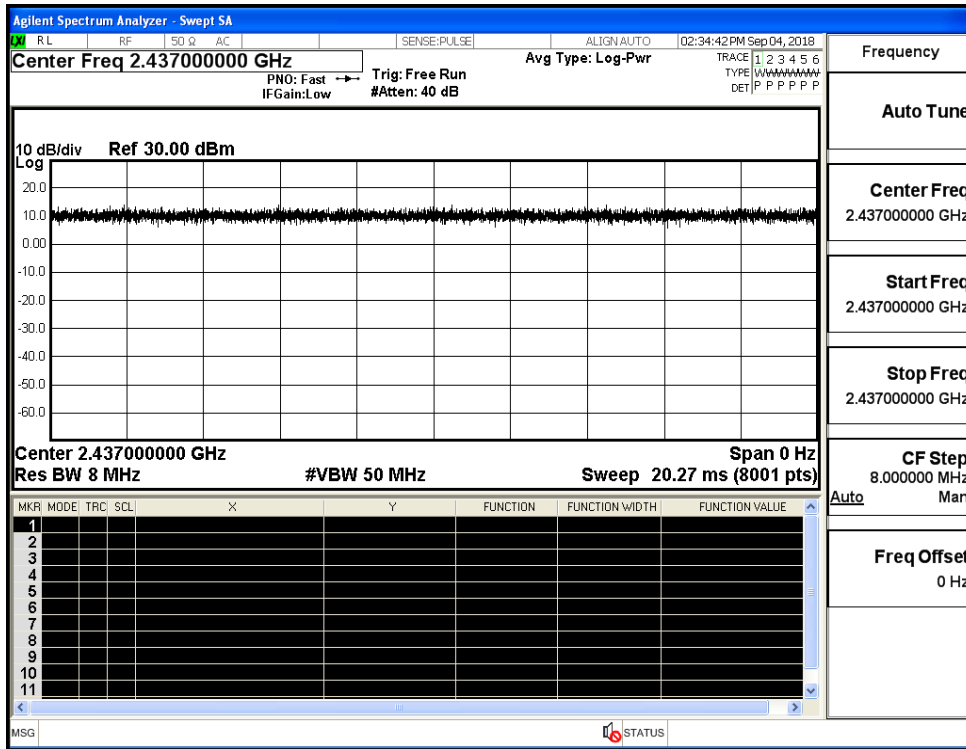
Duty Cycle_11B_2437_Ant1



Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1

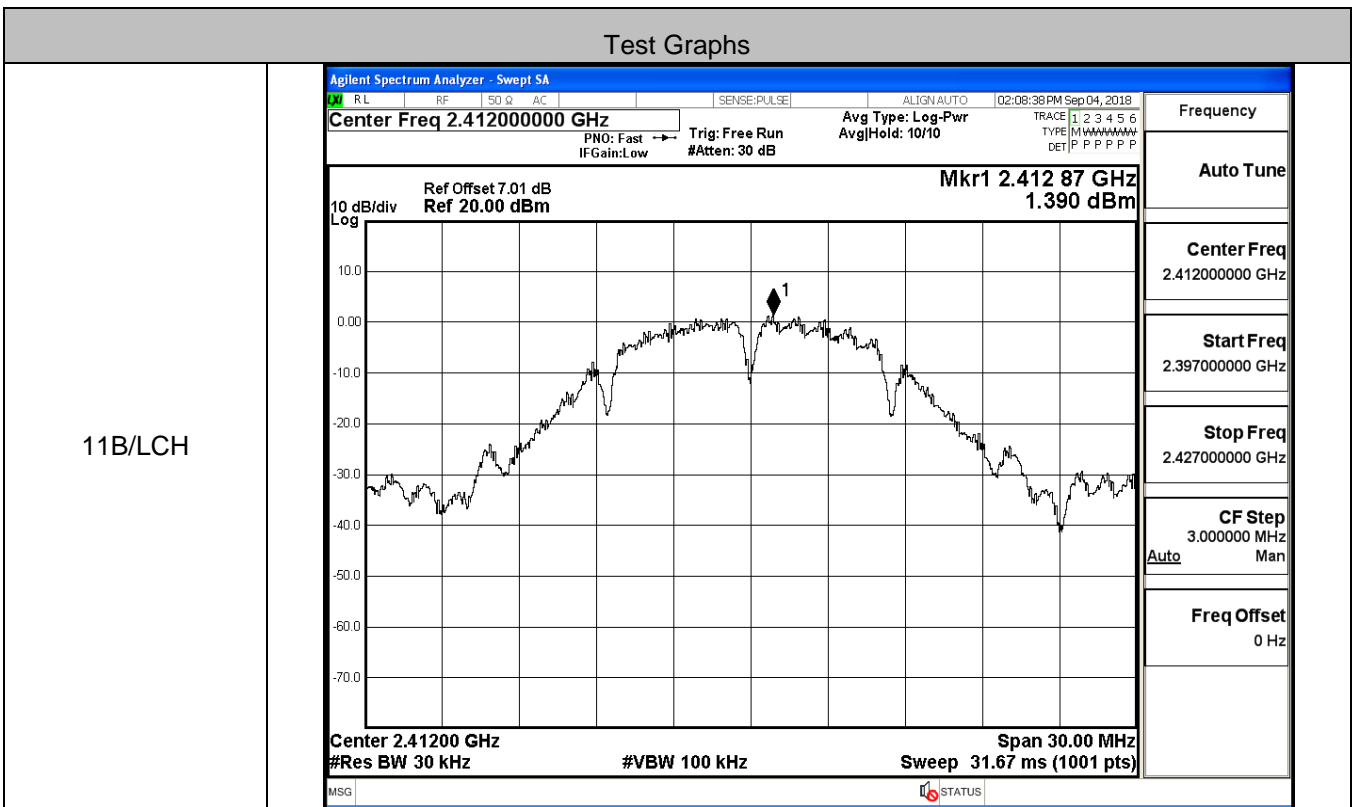


A.2 Maximum Conducted Output Power

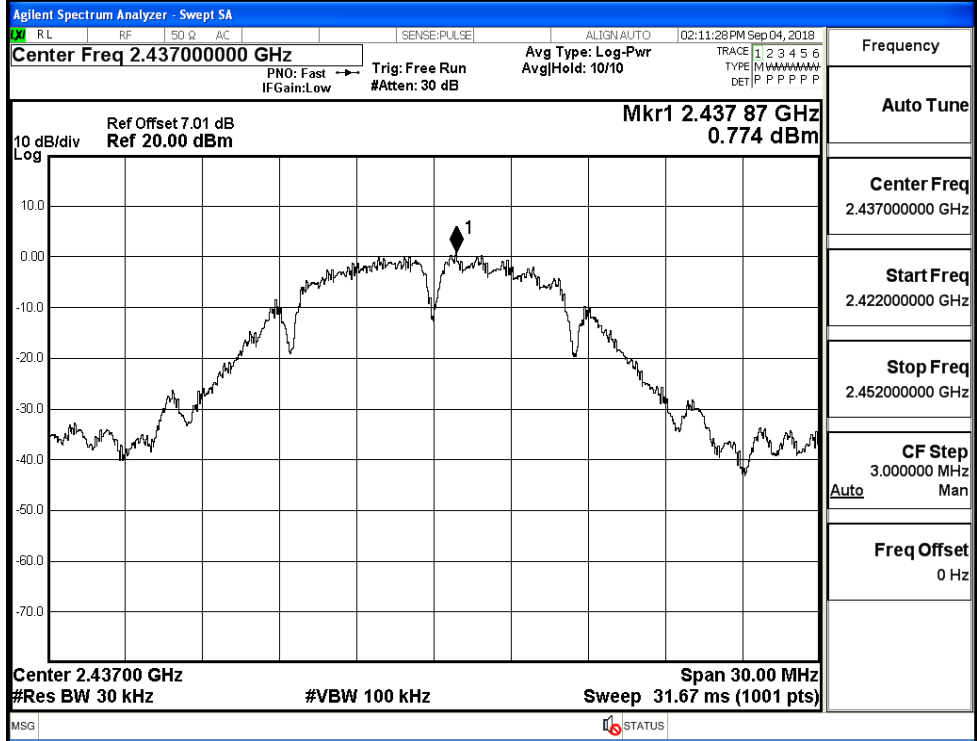
| Mode | Channel | Meas.Level [dBm] | Limit [dBm] | Verdict |
|-----------|---------|------------------|-------------|---------|
| 11B | LCH | 19.60 | 30 | PASS |
| | MCH | 18.91 | 30 | PASS |
| | HCH | 19.08 | 30 | PASS |
| 11G | LCH | 18.46 | 30 | PASS |
| | MCH | 17.77 | 30 | PASS |
| | HCH | 17.99 | 30 | PASS |
| 11N20SISO | LCH | 18.01 | 30 | PASS |
| | MCH | 18.15 | 30 | PASS |
| | HCH | 18.18 | 30 | PASS |

A.3 Maximum Power Spectral Density

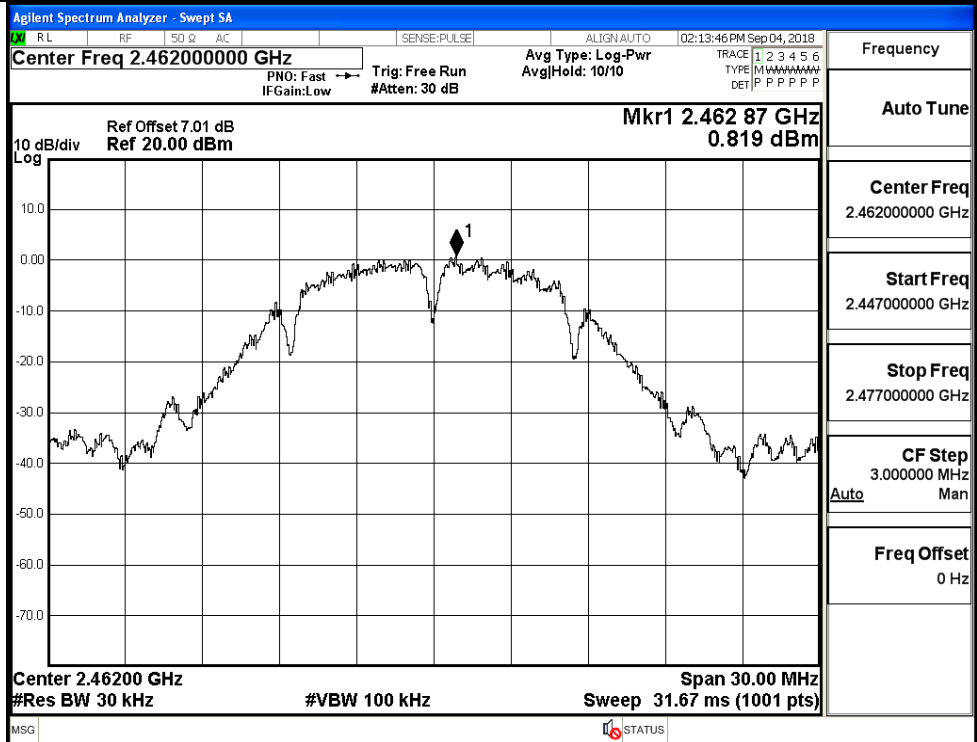
| Mode | Channel | Meas.Level [dBm/30KHz] | Limit [dBm/3KHz] | Verdict |
|-----------|---------|------------------------|------------------|---------|
| 11B | LCH | 1.390 | 8 | PASS |
| | MCH | 0.774 | 8 | PASS |
| | HCH | 0.819 | 8 | PASS |
| 11G | LCH | -5.814 | 8 | PASS |
| | MCH | -6.235 | 8 | PASS |
| | HCH | -6.783 | 8 | PASS |
| 11N20SISO | LCH | -6.474 | 8 | PASS |
| | MCH | -6.438 | 8 | PASS |
| | HCH | -6.519 | 8 | PASS |



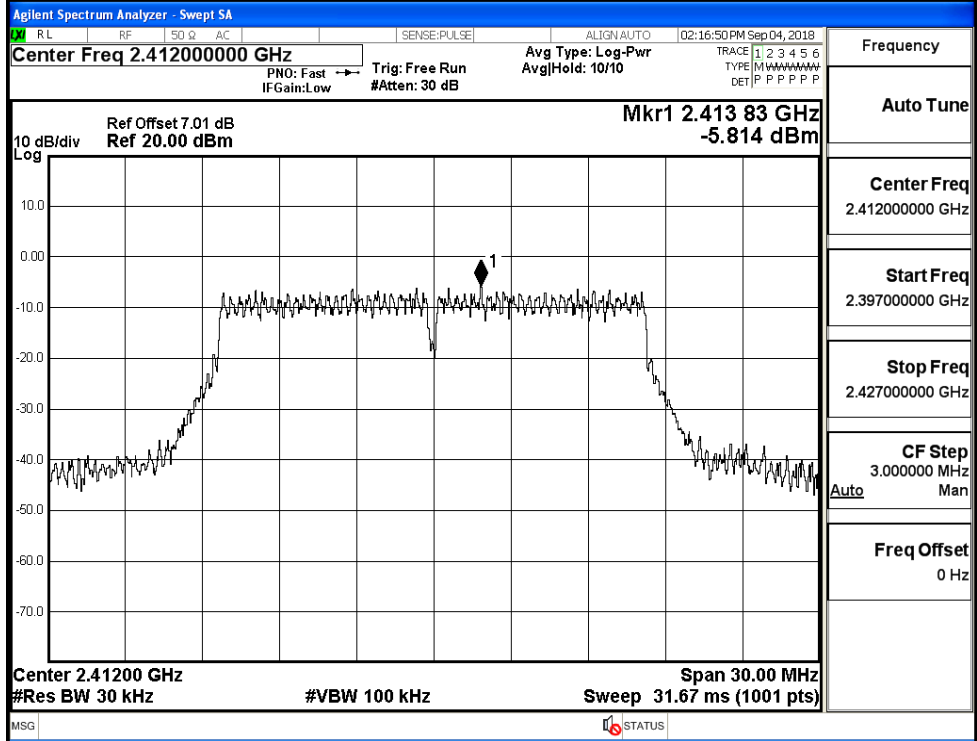
11B/MCH



11B/HCH

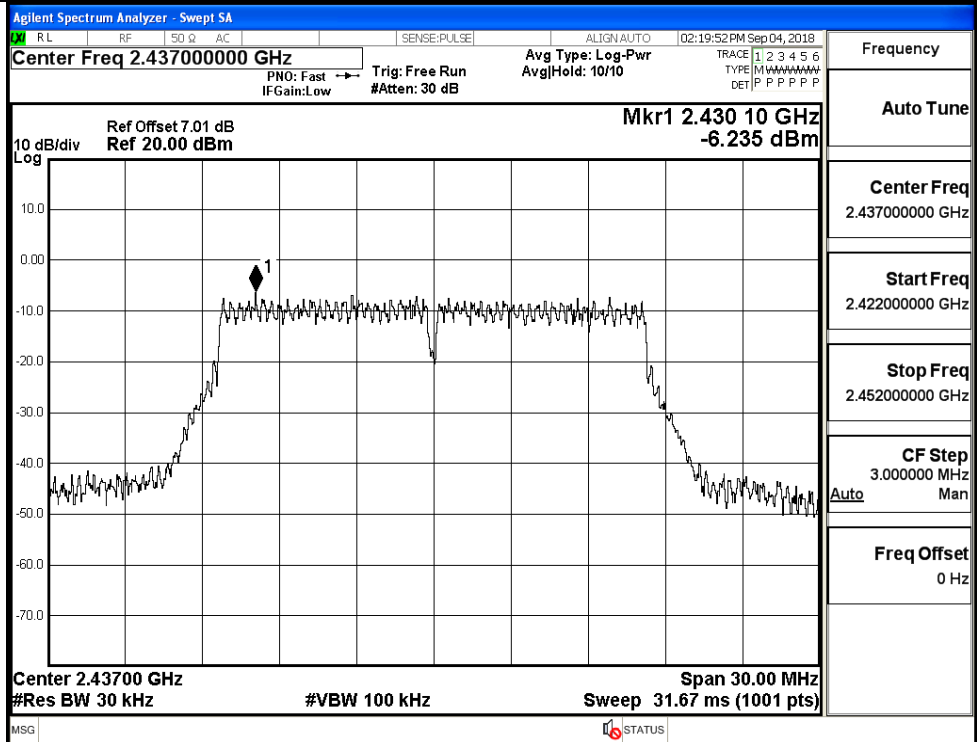


11G/LCH



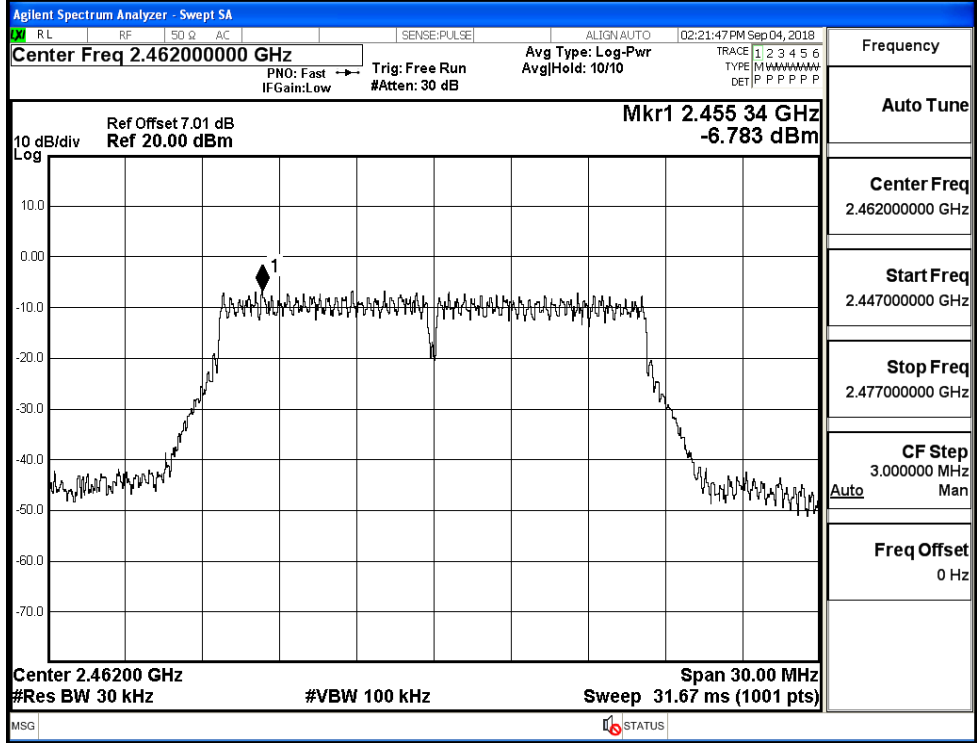
| | |
|-------------|--------------------------|
| Frequency | 2.41200000 GHz |
| Auto Tune | |
| Center Freq | 2.41200000 GHz |
| Start Freq | 2.397000000 GHz |
| Stop Freq | 2.427000000 GHz |
| CF Step | 3.000000 MHz Auto Man |
| Freq Offset | 0 Hz |

11G/MCH

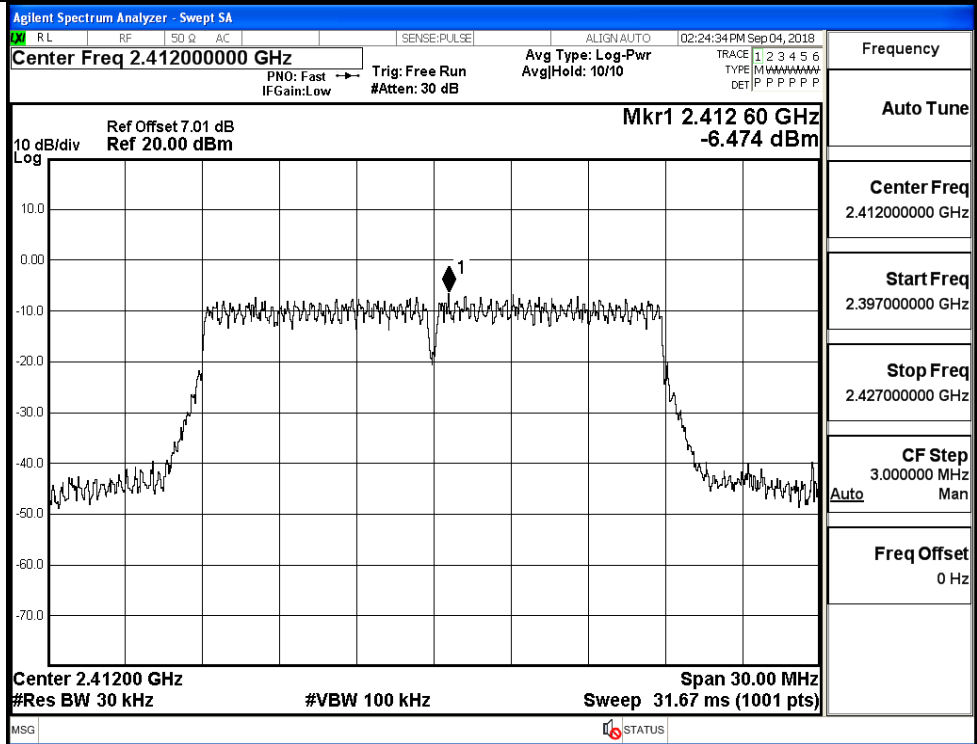


| | |
|-------------|--------------------------|
| Frequency | 2.43700000 GHz |
| Auto Tune | |
| Center Freq | 2.43700000 GHz |
| Start Freq | 2.422000000 GHz |
| Stop Freq | 2.452000000 GHz |
| CF Step | 3.000000 MHz Auto Man |
| Freq Offset | 0 Hz |

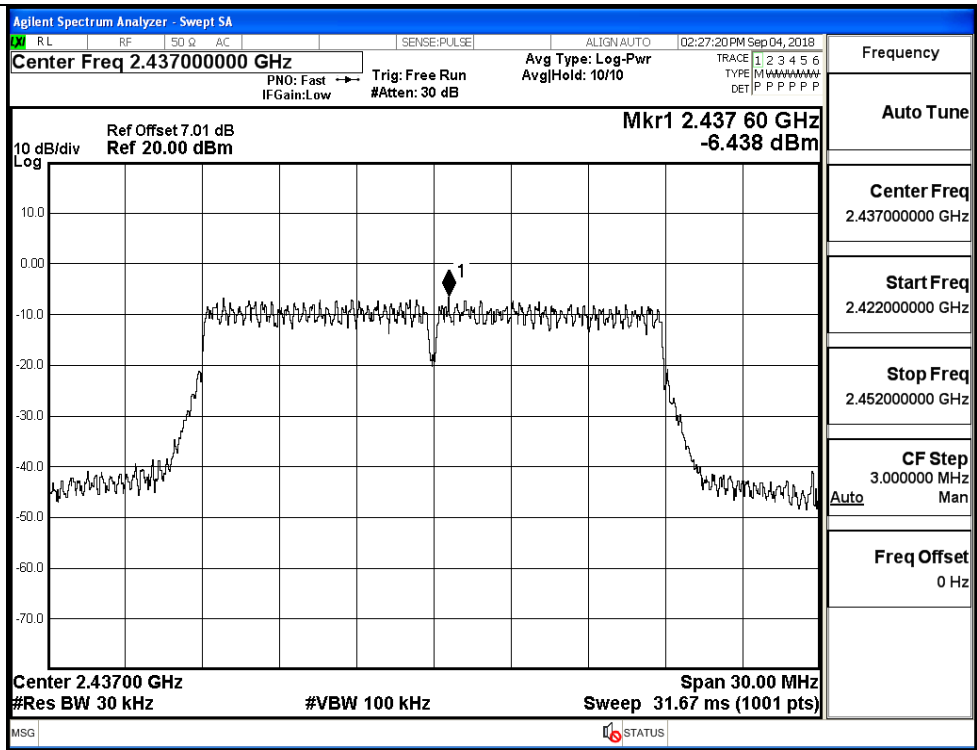
11G/HCH



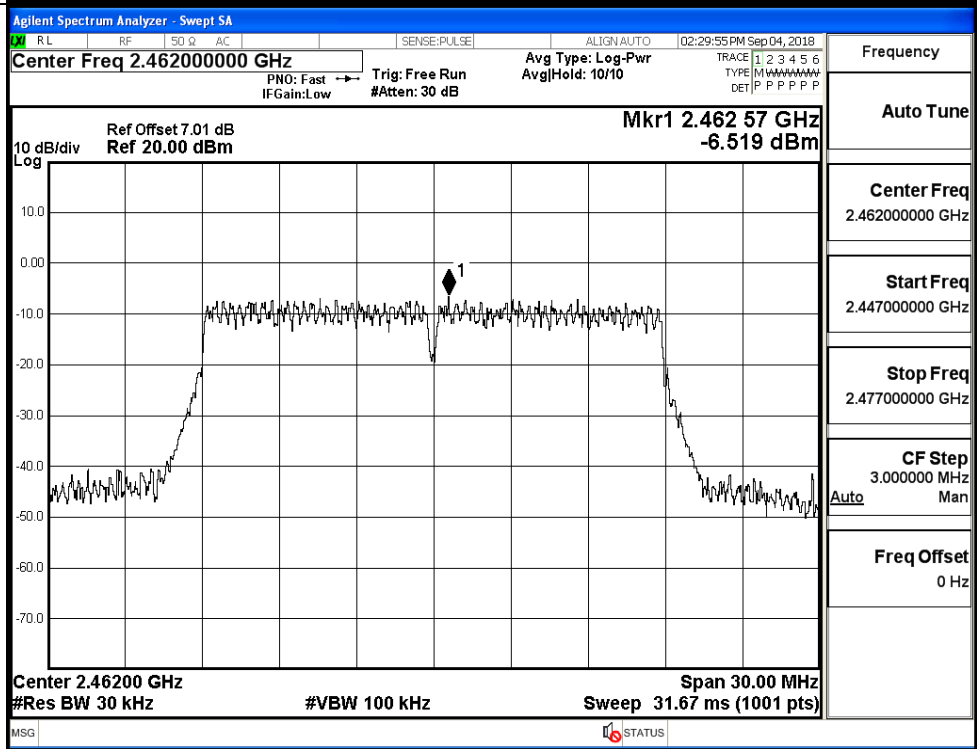
11N20SISO/LCH



11N20SISO/MCH

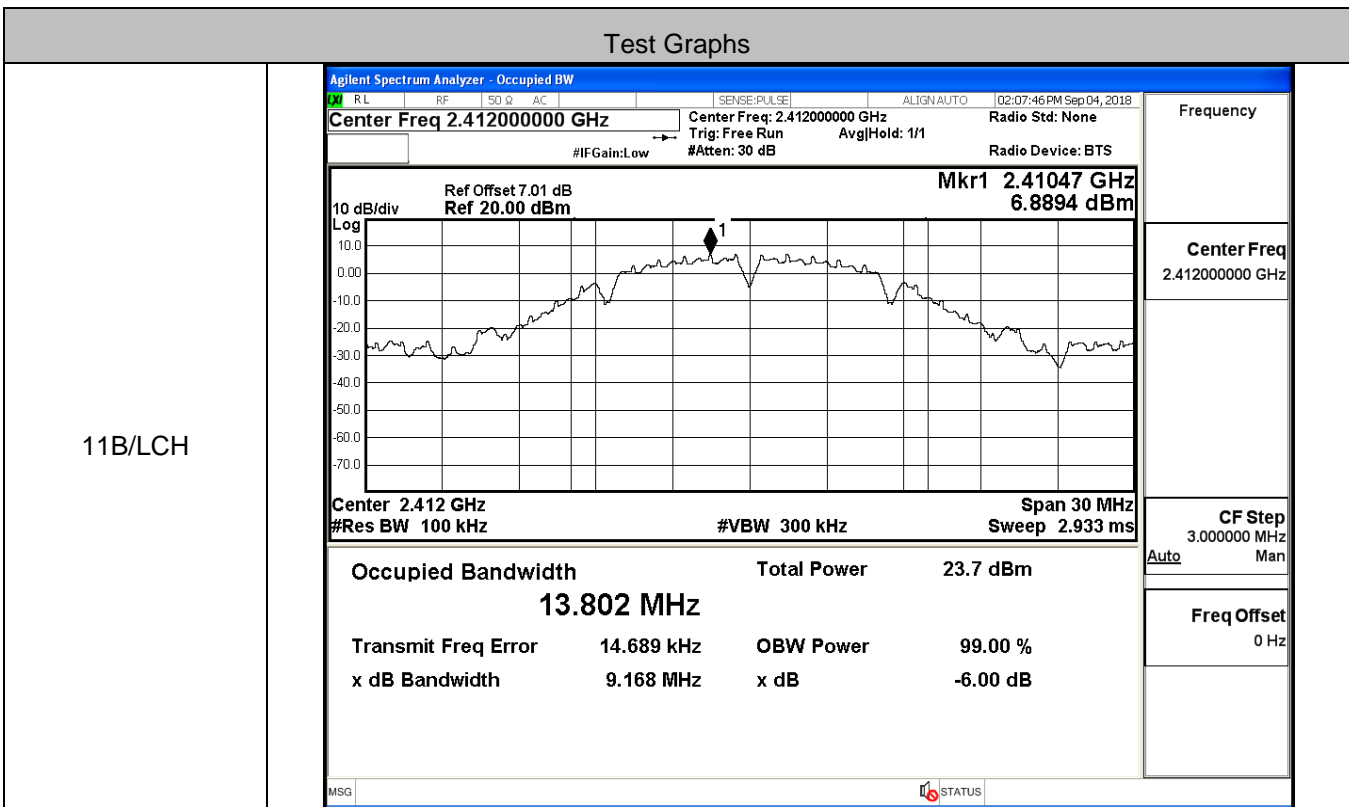


11N20SISO/HCH

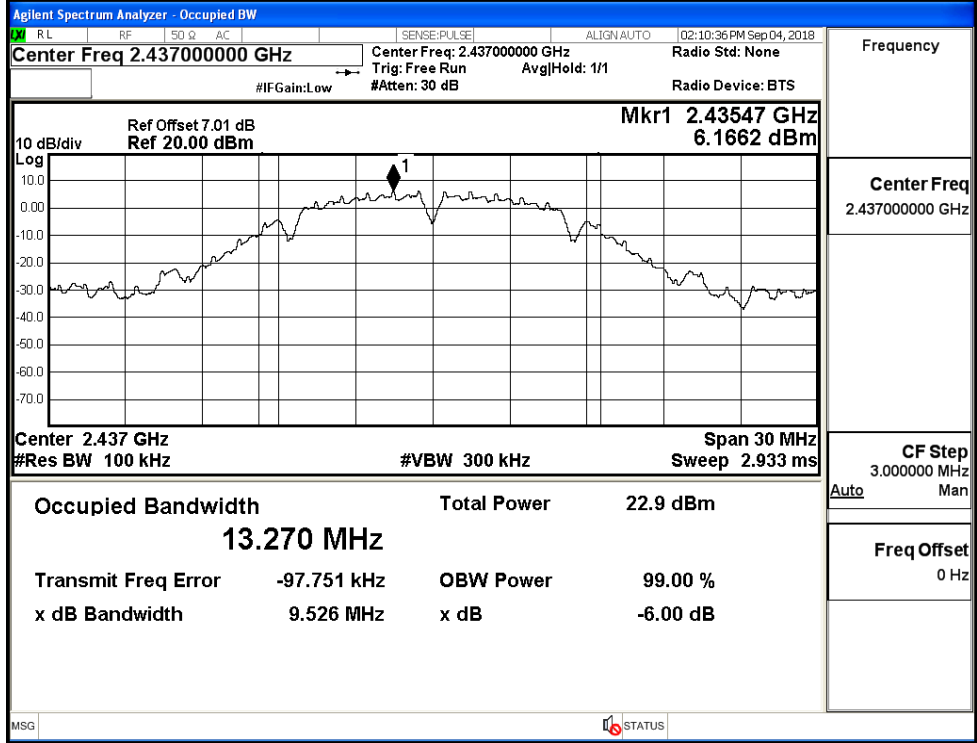


A.4 6dB Bandwidth

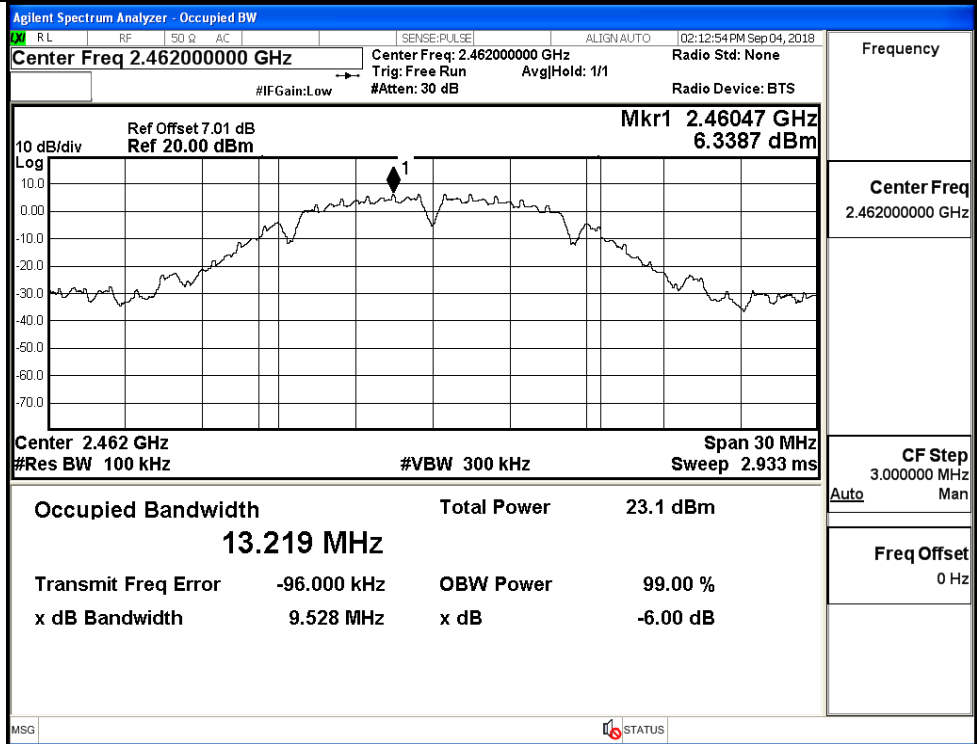
| Mode | Channel | 6dB Bandwidth [MHz] | Limit [MHz] | Verdict |
|-----------|---------|---------------------|-------------|---------|
| 11B | LCH | 9.168 | ≥0.5 | PASS |
| | MCH | 9.526 | ≥0.5 | PASS |
| | HCH | 9.528 | ≥0.5 | PASS |
| 11G | LCH | 16.61 | ≥0.5 | PASS |
| | MCH | 16.60 | ≥0.5 | PASS |
| | HCH | 16.60 | ≥0.5 | PASS |
| 11N20SISO | LCH | 17.84 | ≥0.5 | PASS |
| | MCH | 17.82 | ≥0.5 | PASS |
| | HCH | 17.82 | ≥0.5 | PASS |



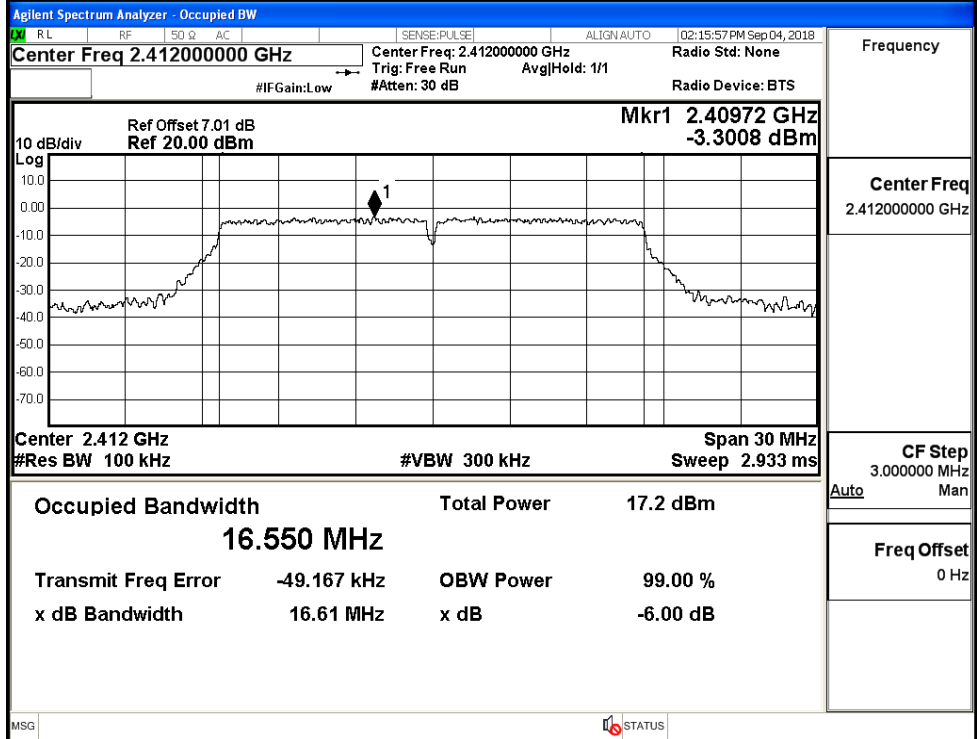
11B/MCH



11B/HCH

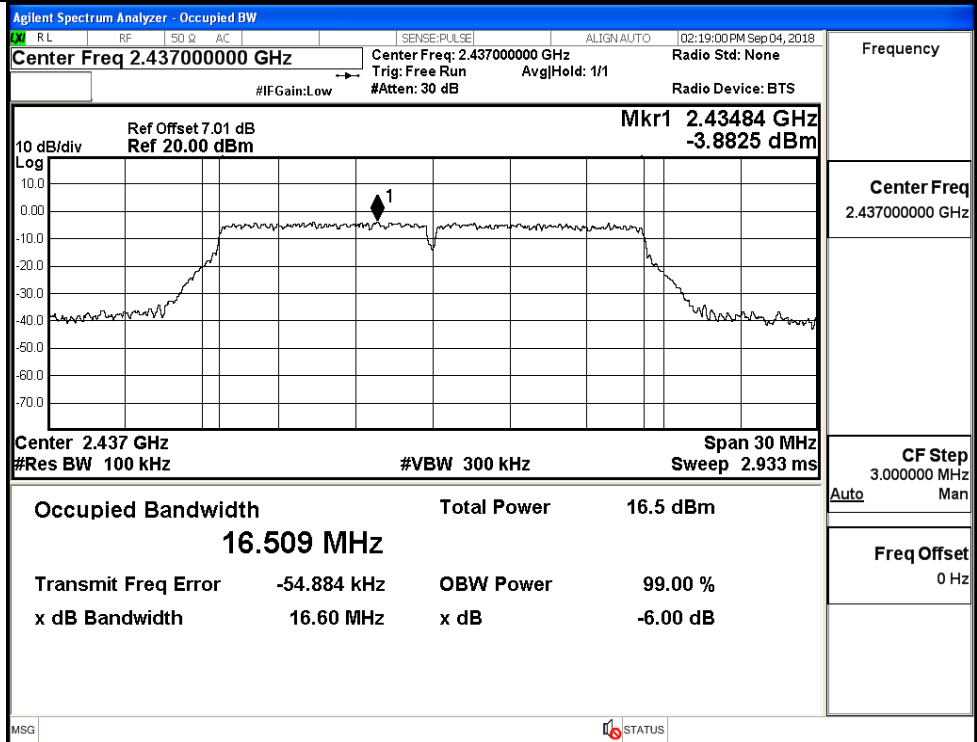


11G/LCH



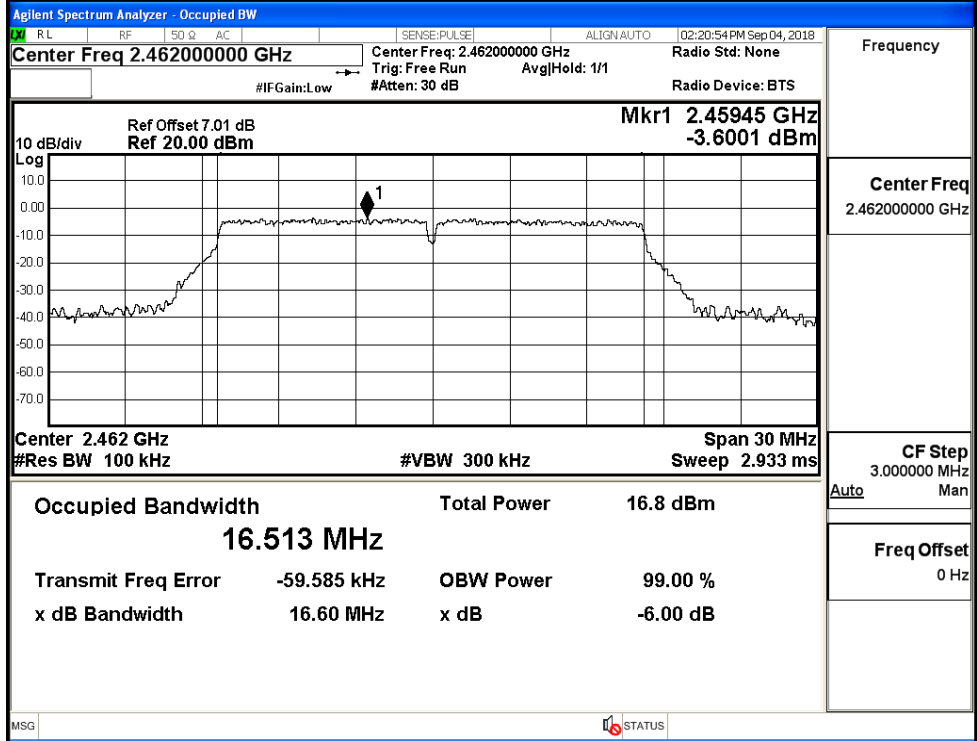
| | |
|-------------|----------------|
| Frequency | 2.41200000 GHz |
| Center Freq | 2.41200000 GHz |
| CF Step | 3.000000 MHz |
| Auto | Man |
| Freq Offset | 0 Hz |

11G/MCH



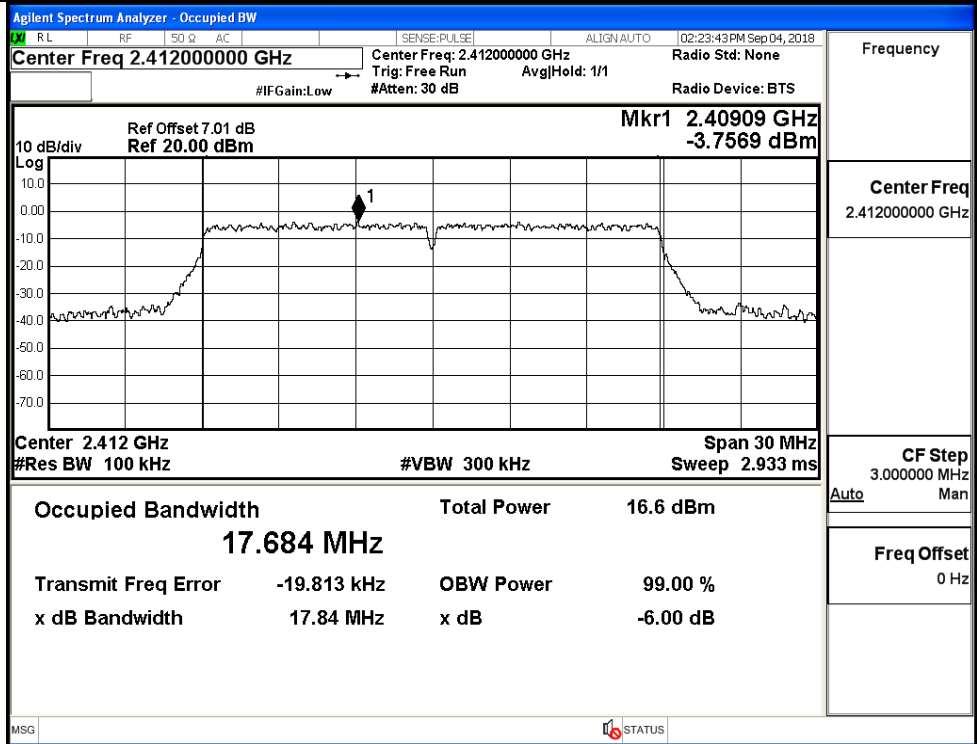
| | |
|-------------|----------------|
| Frequency | 2.43700000 GHz |
| Center Freq | 2.43700000 GHz |
| CF Step | 3.000000 MHz |
| Auto | Man |
| Freq Offset | 0 Hz |

11G/HCH



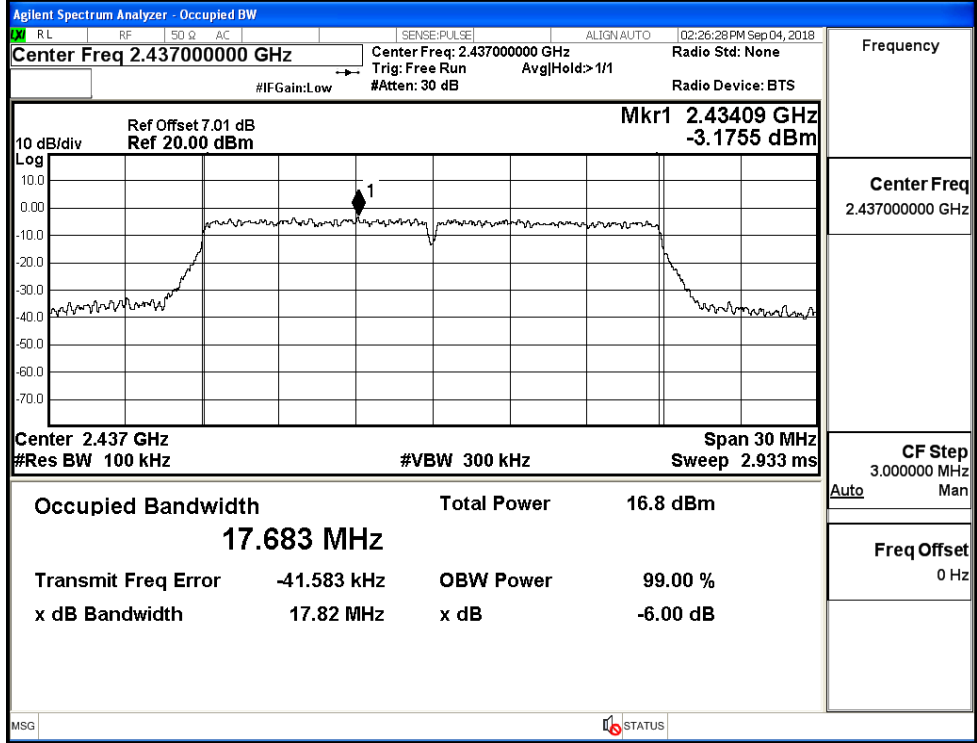
| | |
|-------------|----------------|
| Frequency | 2.46200000 GHz |
| Center Freq | 2.46200000 GHz |
| CF Step | 3.000000 MHz |
| Auto | Man |
| Freq Offset | 0 Hz |

11N20SISO/LCH

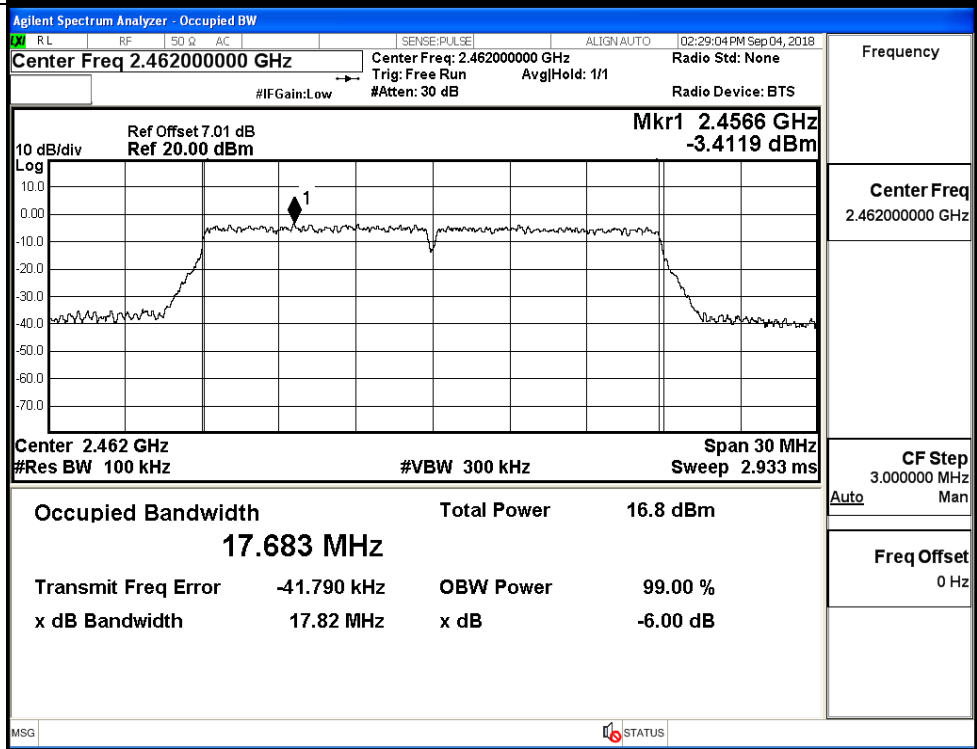


| | |
|-------------|----------------|
| Frequency | 2.41200000 GHz |
| Center Freq | 2.41200000 GHz |
| CF Step | 3.000000 MHz |
| Auto | Man |
| Freq Offset | 0 Hz |

11N20SISO/MCH



11N20SISO/HCH

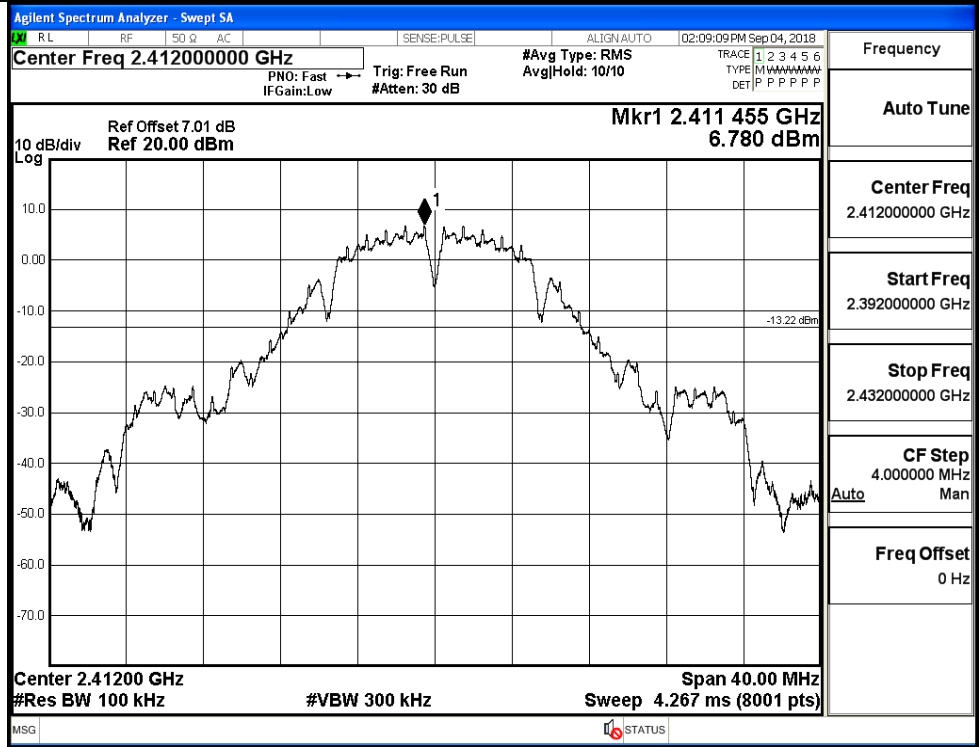


A.5 RF Conducted Spurious Emissions

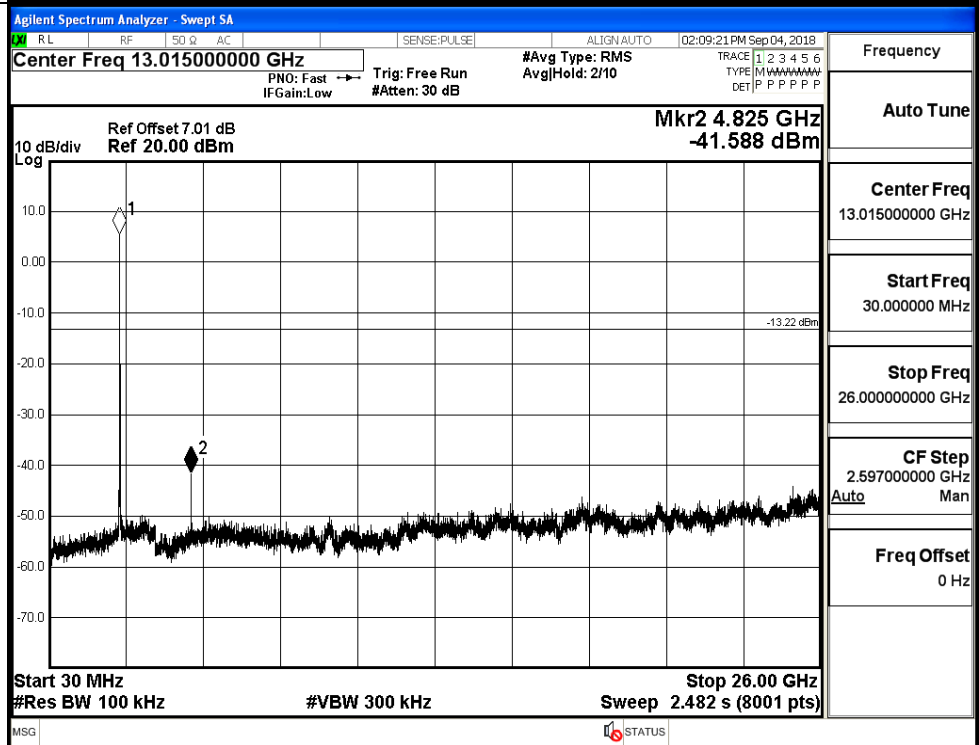
| Mode | Channel | Pref [dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|------------|------------------|-------------|---------|
| 11B | LCH | 6.70 | -41.588 | -13.220 | PASS |
| | MCH | 6.100 | -43.703 | -13.900 | PASS |
| | HCH | 6.256 | -44.457 | -13.744 | PASS |
| 11G | LCH | -3.303 | -44.606 | -23.303 | PASS |
| | MCH | -3.945 | -44.862 | -23.945 | PASS |
| | HCH | -3.771 | -44.714 | -23.771 | PASS |
| 11N20 SISO | LCH | -3.959 | -44.360 | -23.959 | PASS |
| | MCH | -3.557 | -44.498 | -23.557 | PASS |
| | HCH | -3.503 | -43.866 | -23.503 | PASS |

11B_LCH_Graphs

Pref/11B/LCH

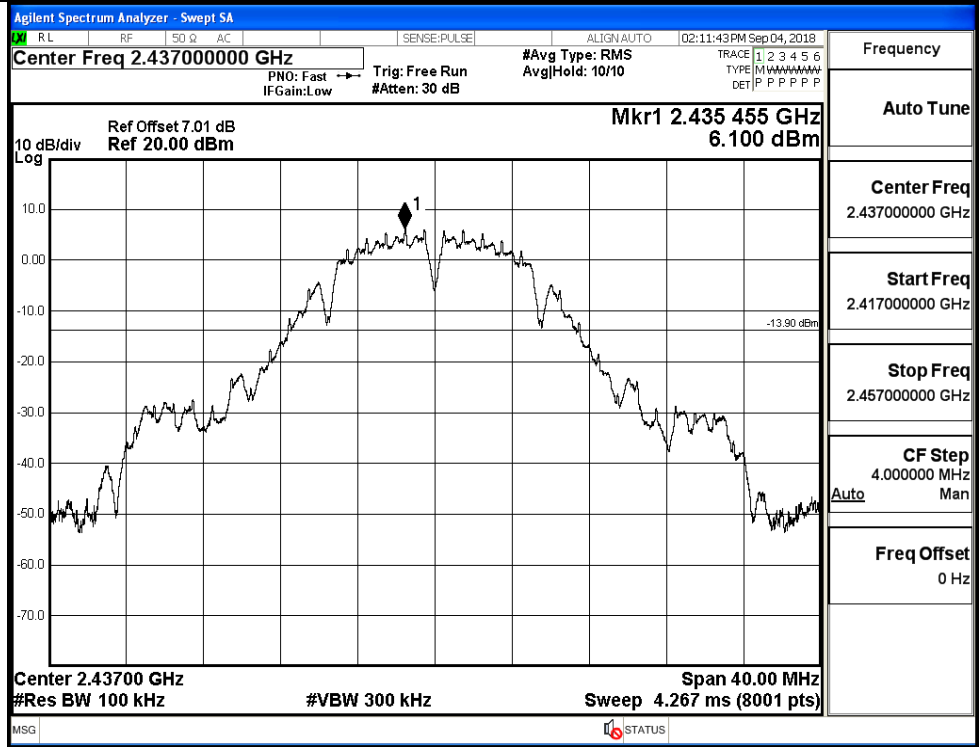


Puw/11B/LCH

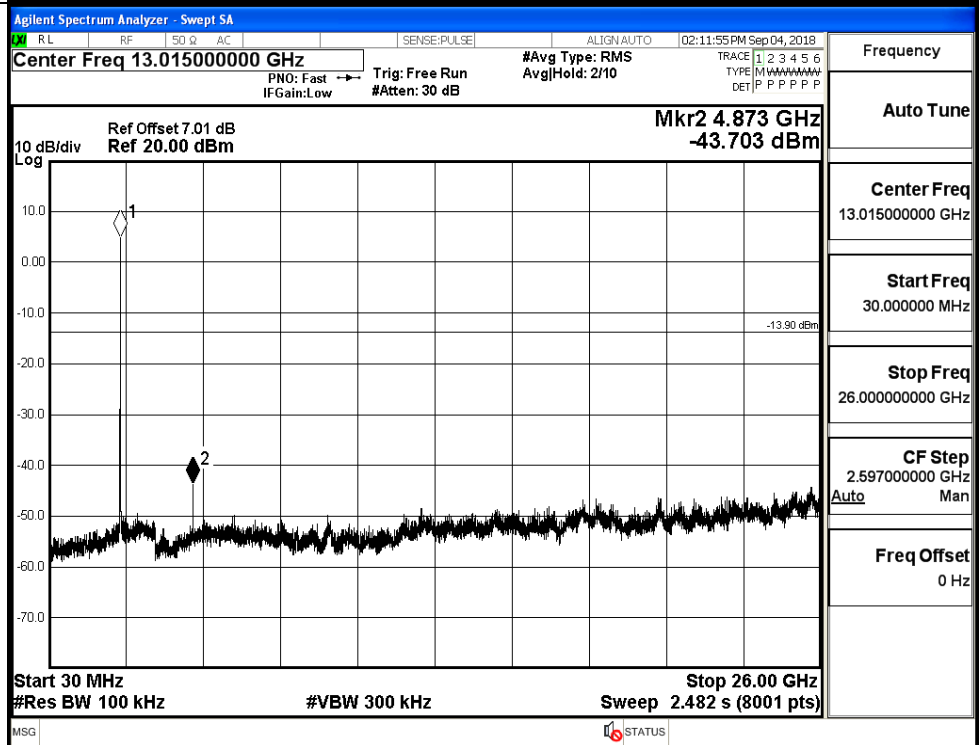


11B_MCH_Graphs

Pref/11B/MCH

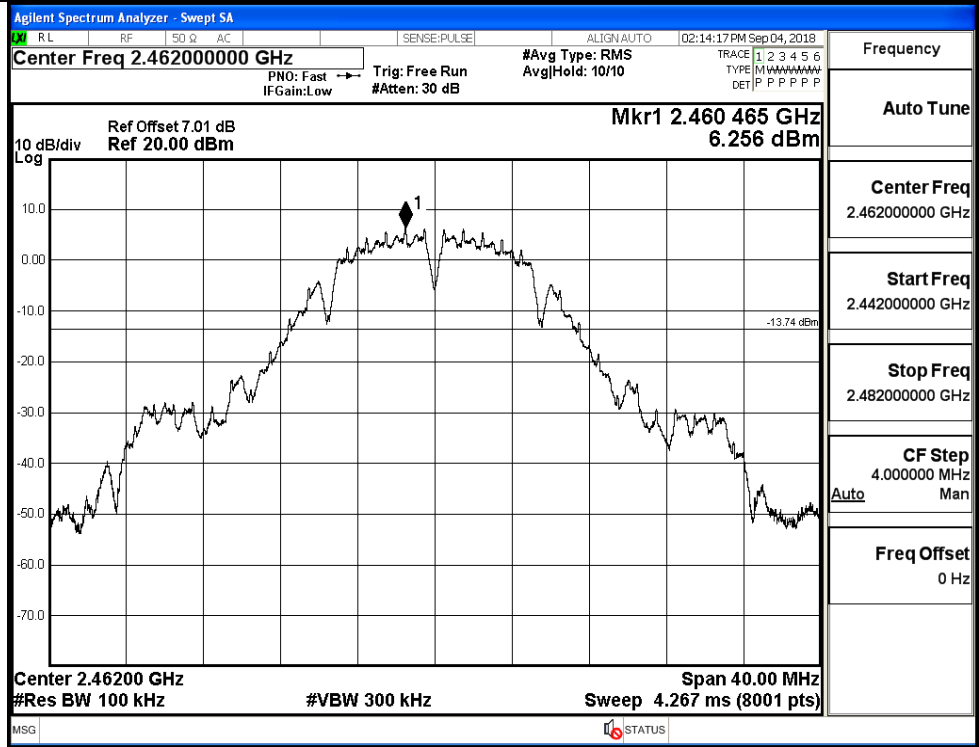


Puw/11B/MCH

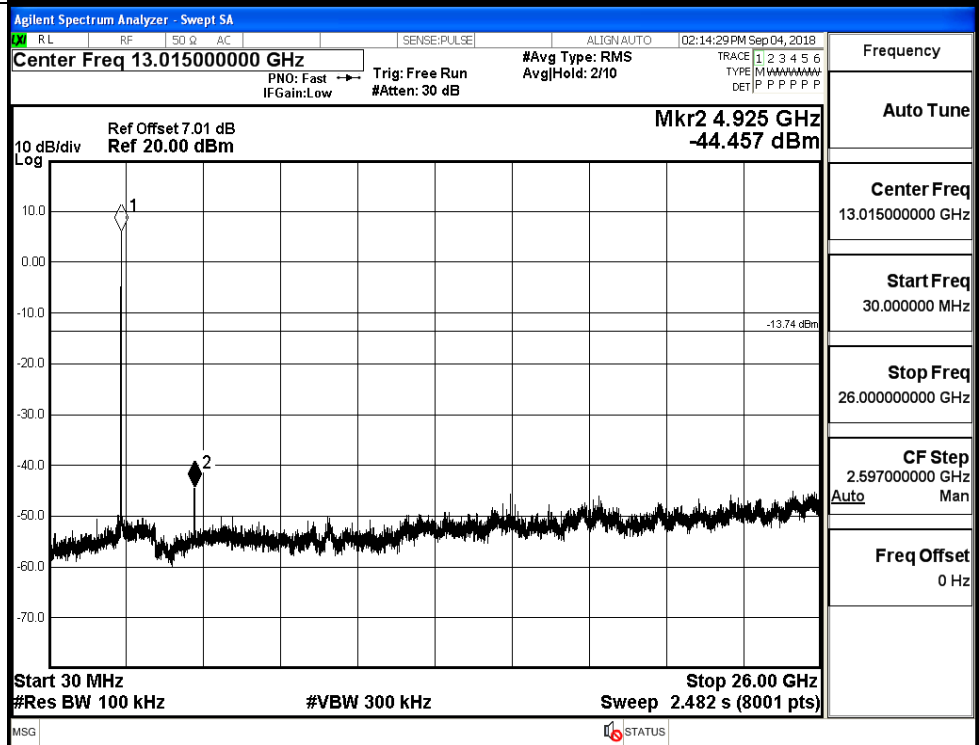


11B_HCH_Graphs

Pref/11B/HCH

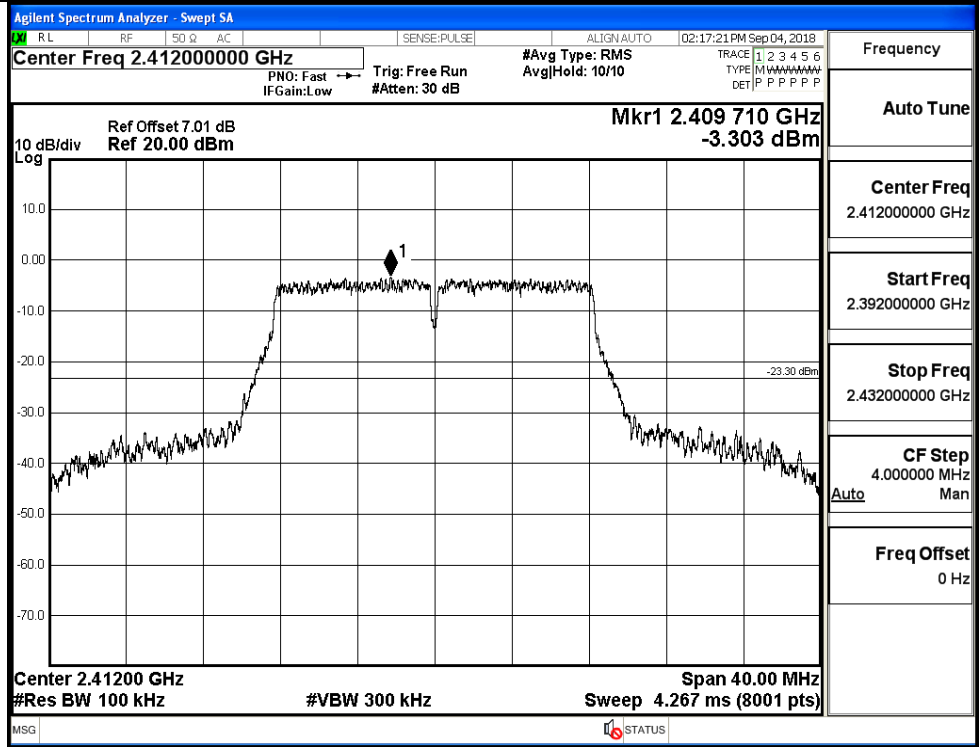


Puw/11B/HCH

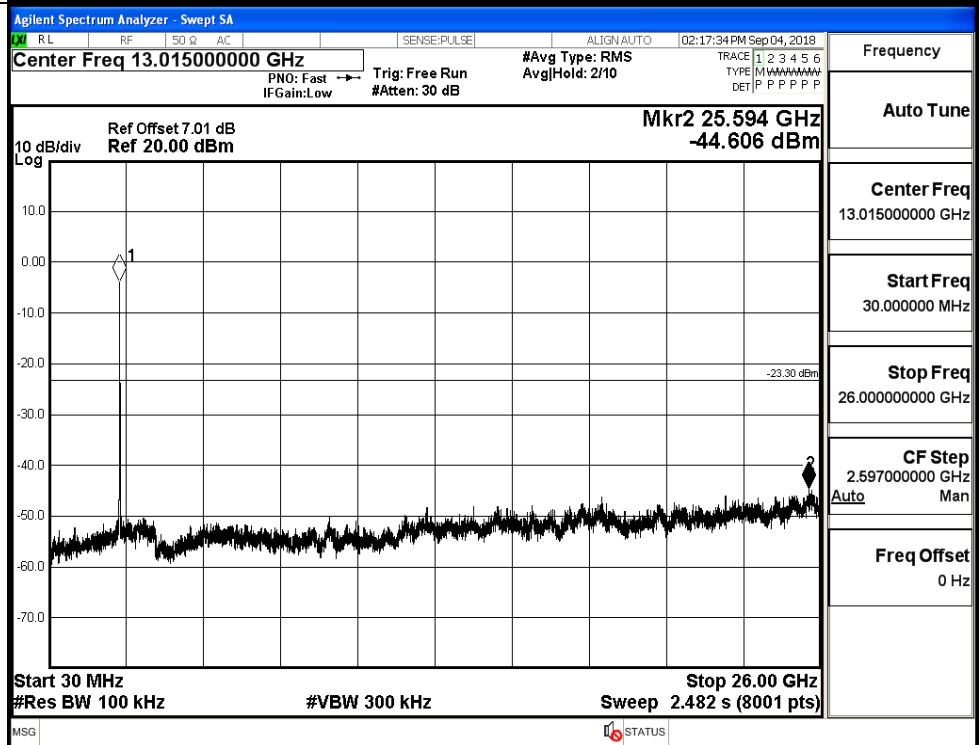


11G_LCH_Graphs

Pref/11G/LCH

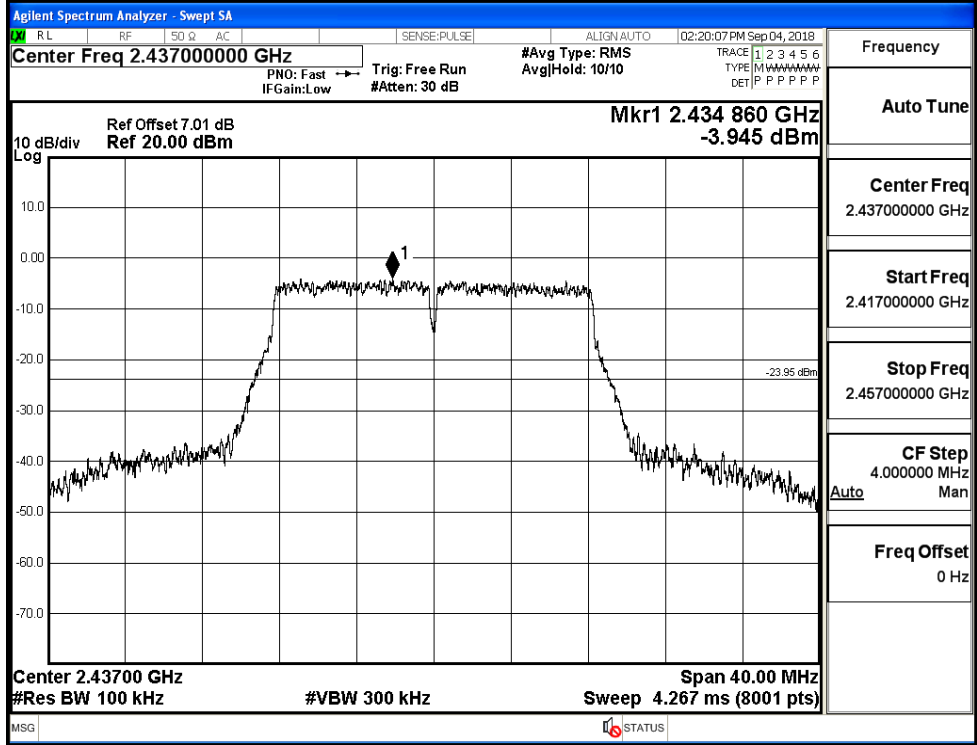


Puw/11G/LCH

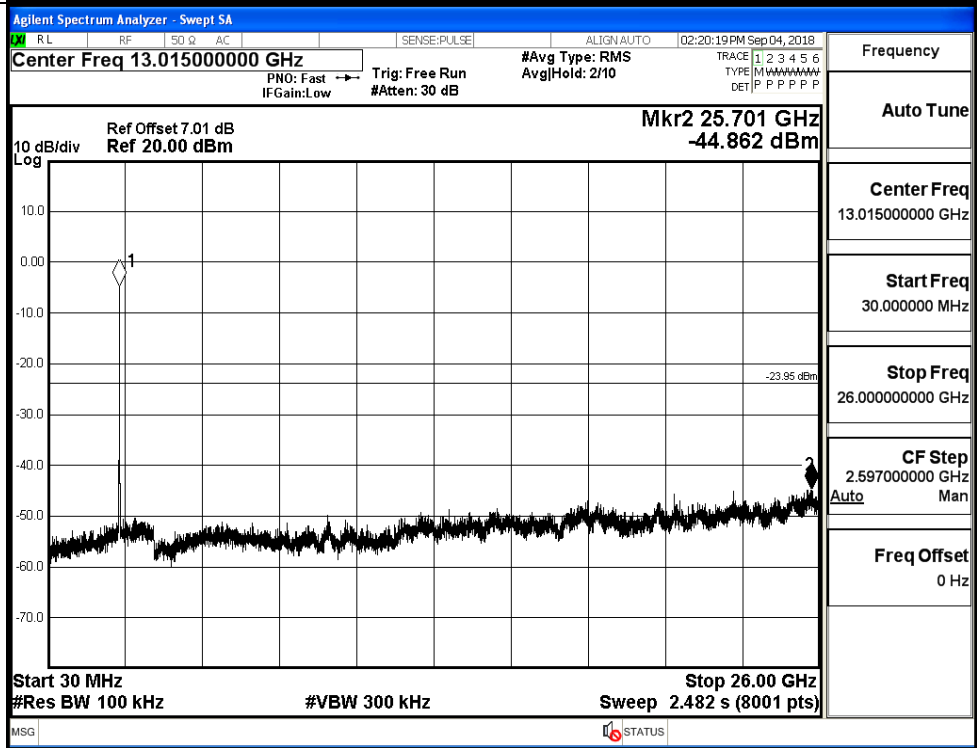


11G_MCH_Graphs

Pref/11G/MCH

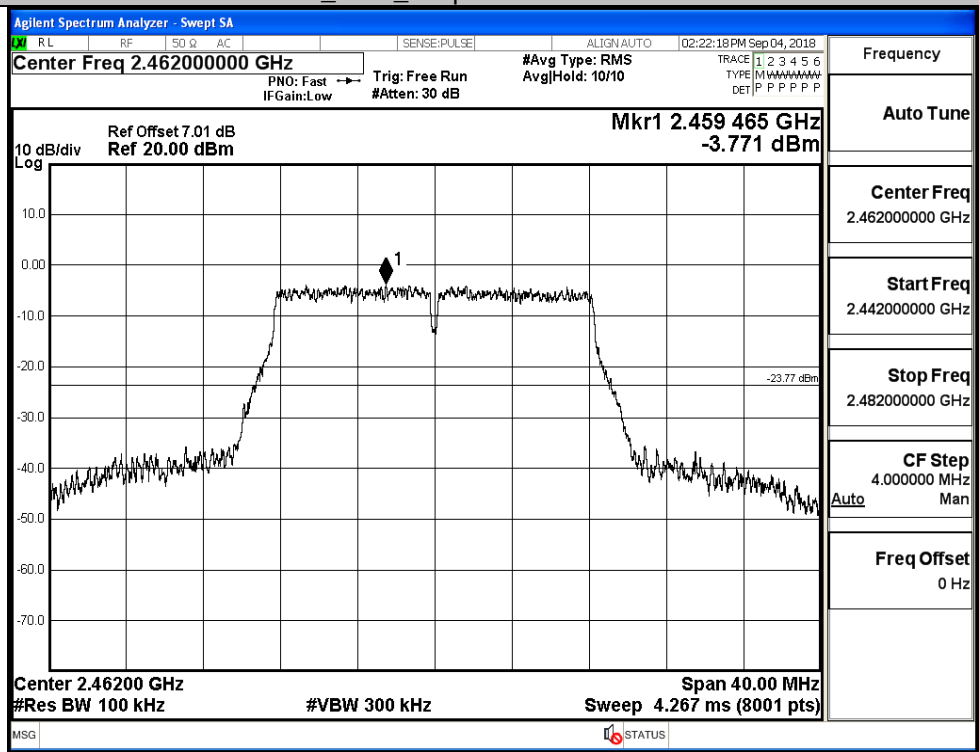


Puw/11G/MCH

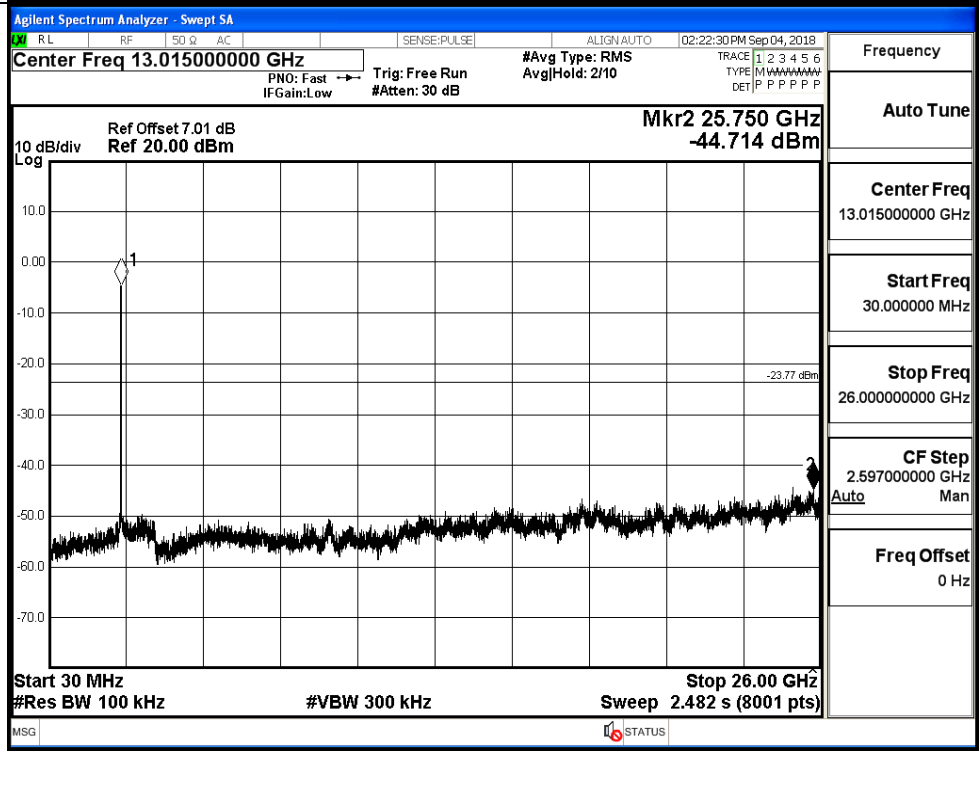


11G_HCH_Graphs

Pref/11G/HCH

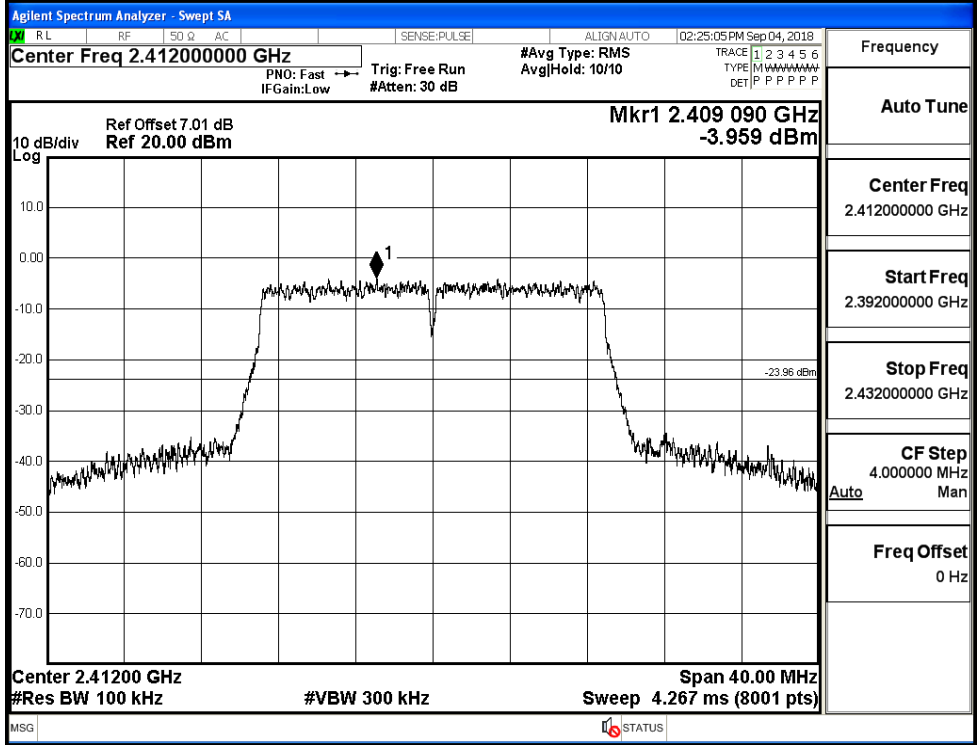


Puw/11G/HCH

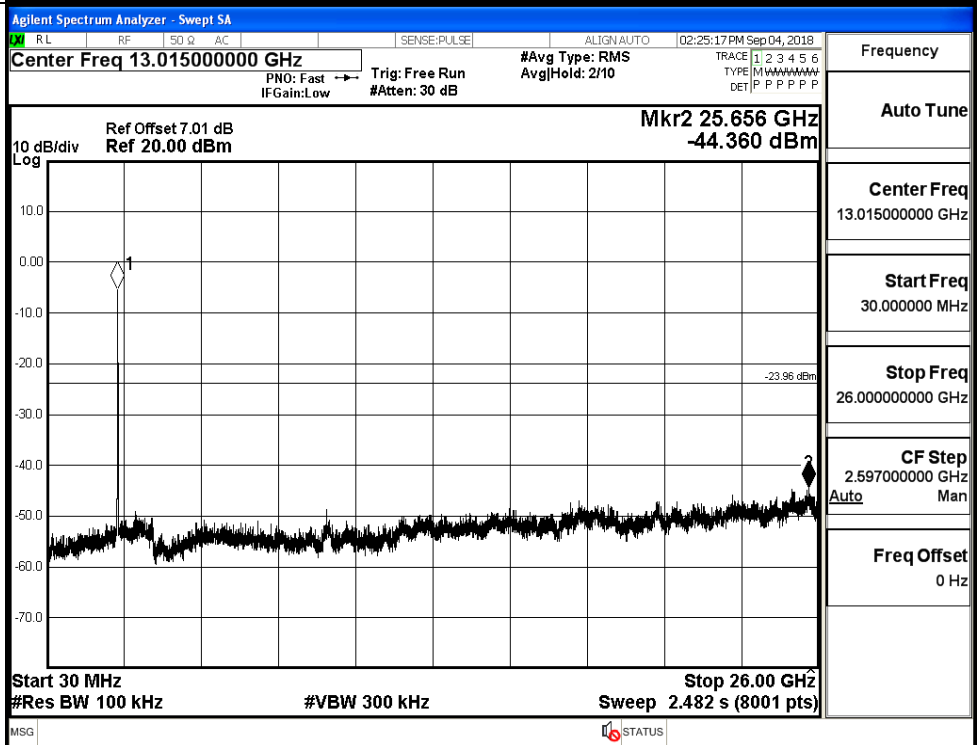


11N20SISO_LCH_Graphs

Pref/11N20SIS
O/LCH

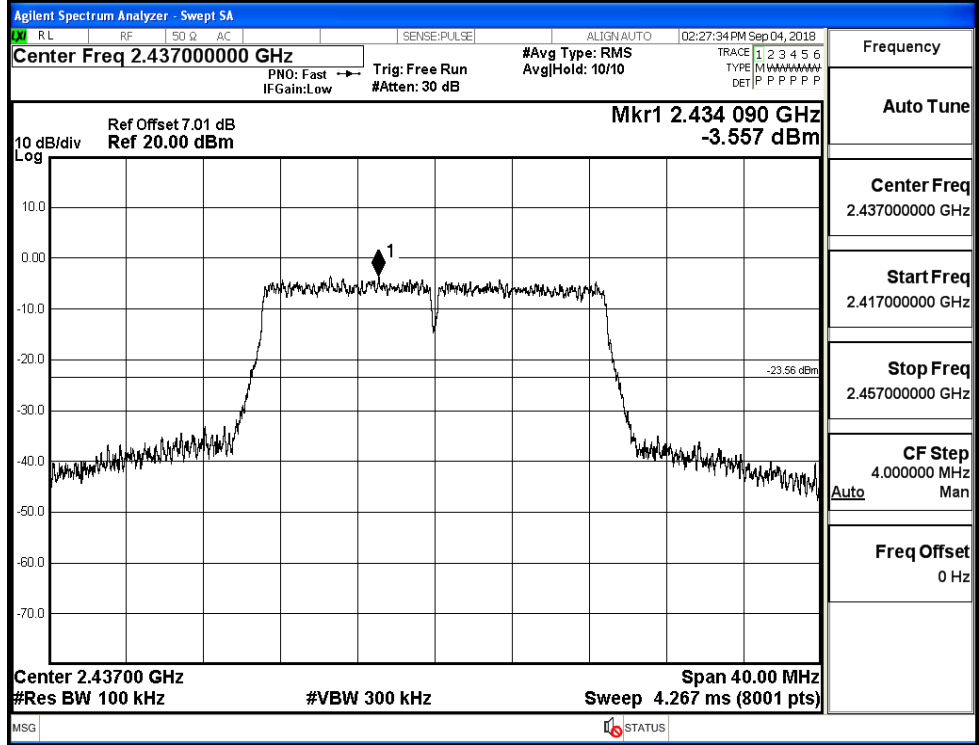


Puw/11N20
SISO/LCH

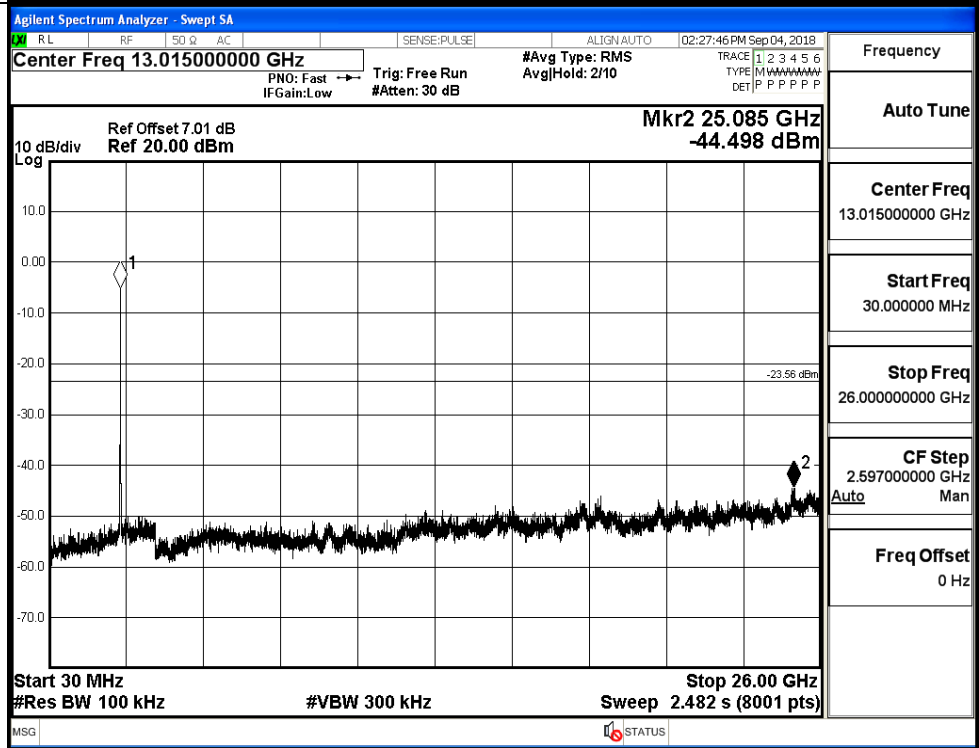


11N20SISO_MCH_Graphs

Pref/11N20
SISO/MCH

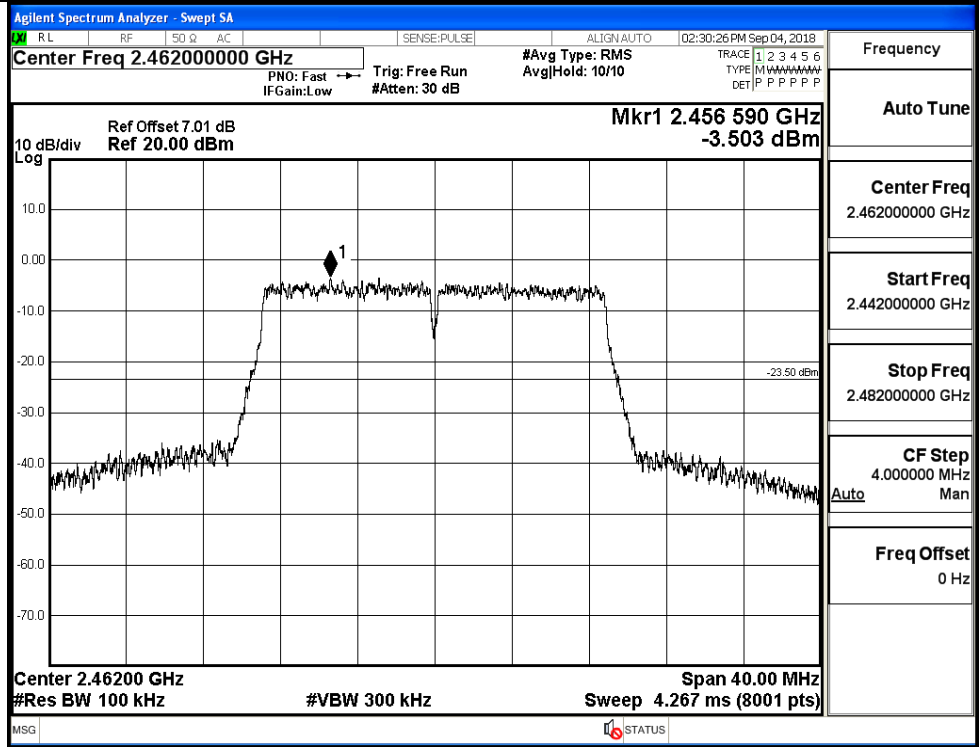


Puw/11N20
SISO/MCH

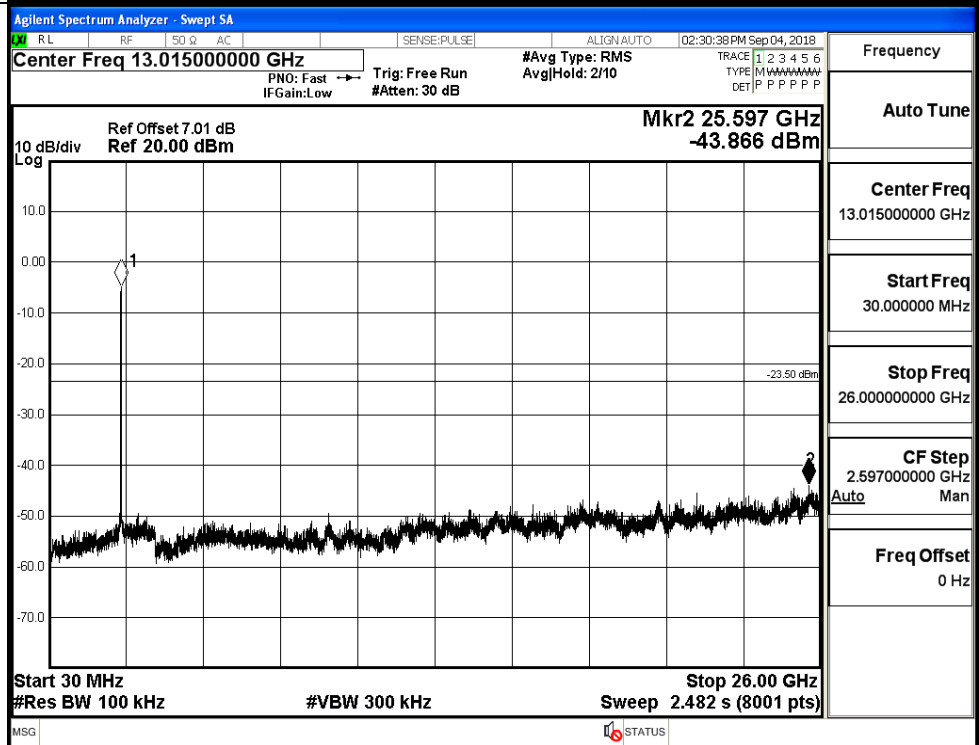


11N20SISO_HCH_Graphs

Pref/11N20
SISO/HCH

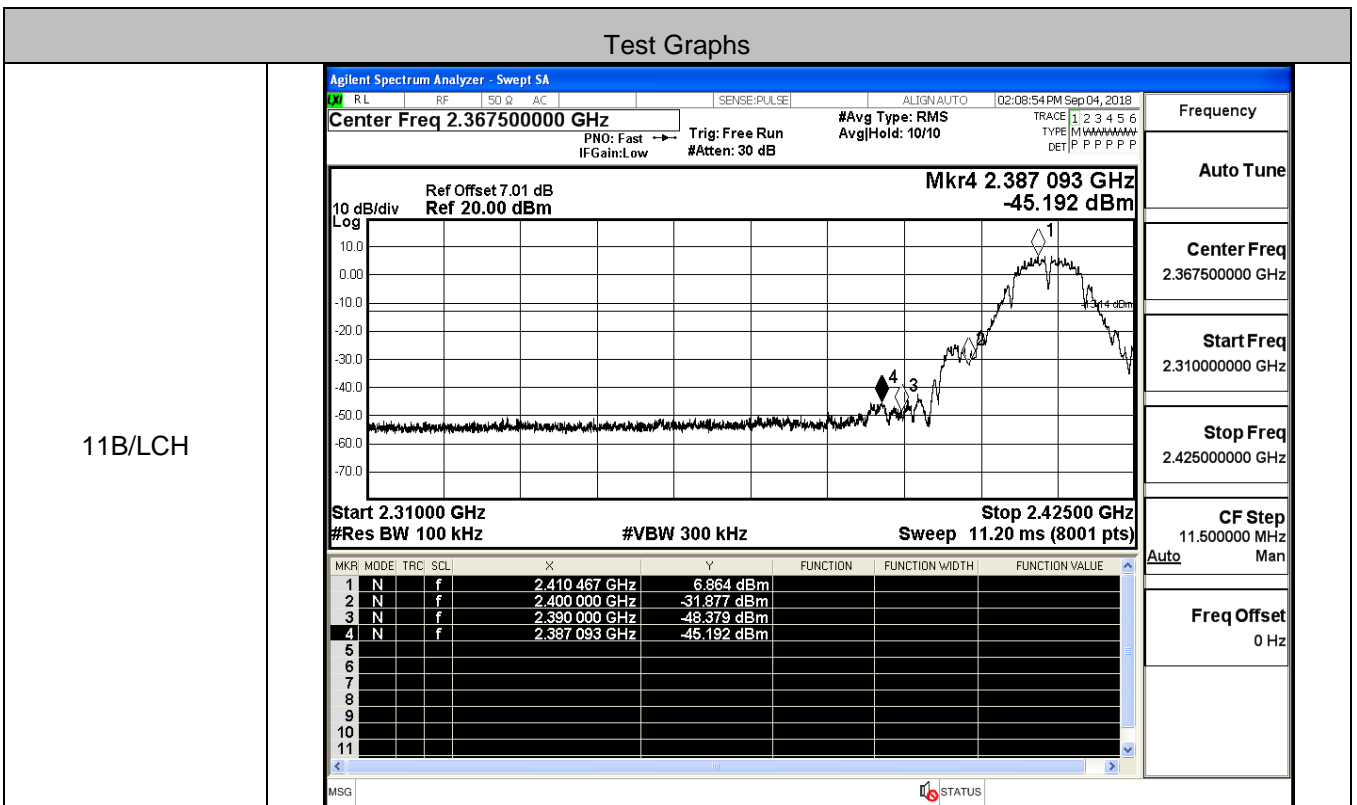


Puw/11N20
SISO/HCH

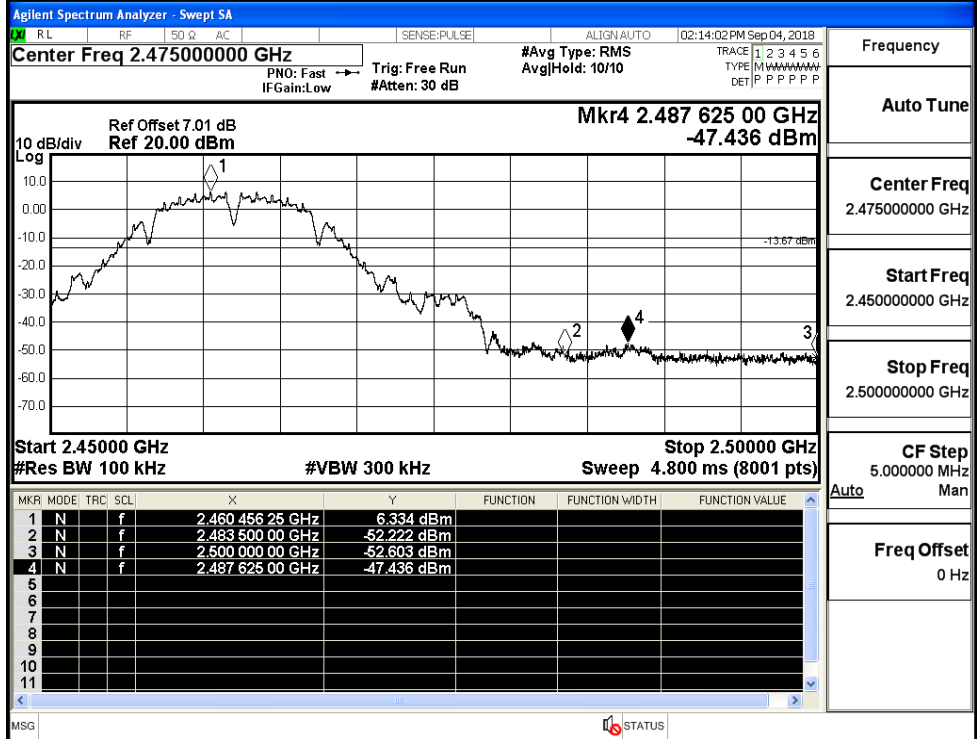


A.6 Band-edge for RF Conducted Emissions

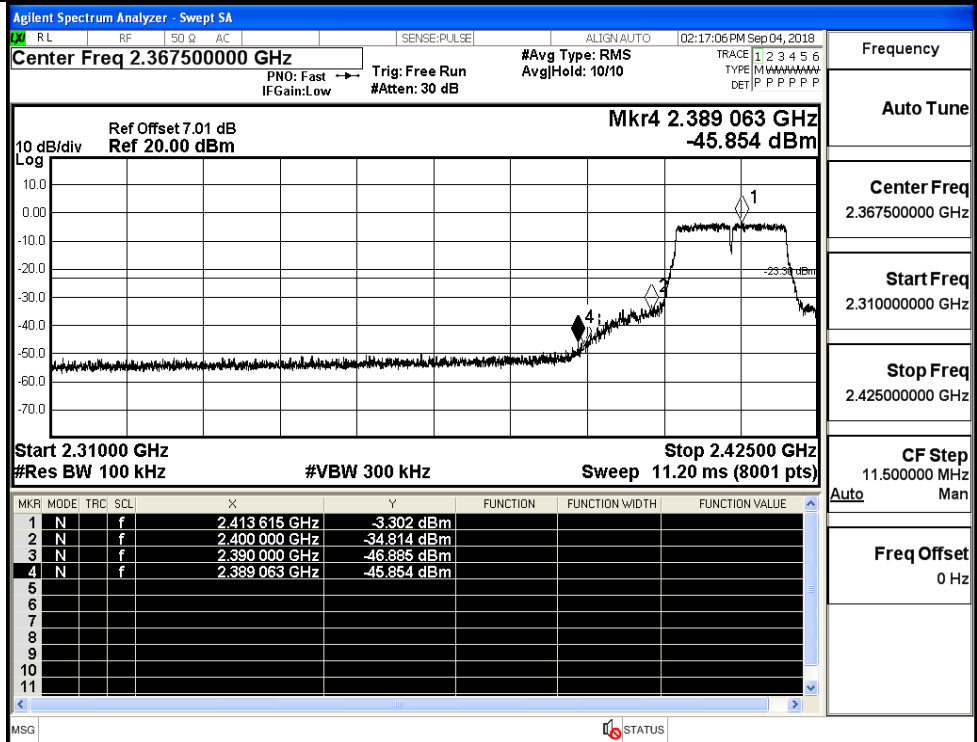
| Mode | Channel | Carrier Power[dBm] | Max.Spurious Level [dBm] | Limit [dBm] | Verdict |
|-----------|---------|--------------------|--------------------------|-------------|---------|
| 11B | LCH | 6.864 | -45.192 | -13.14 | PASS |
| | HCH | 6.334 | -47.436 | -13.67 | PASS |
| 11G | LCH | -3.302 | -45.854 | -23.3 | PASS |
| | HCH | -3.721 | -48.030 | -23.72 | PASS |
| 11N20SISO | LCH | -4.079 | -44.457 | -24.08 | PASS |
| | HCH | -3.410 | -45.806 | -23.41 | PASS |



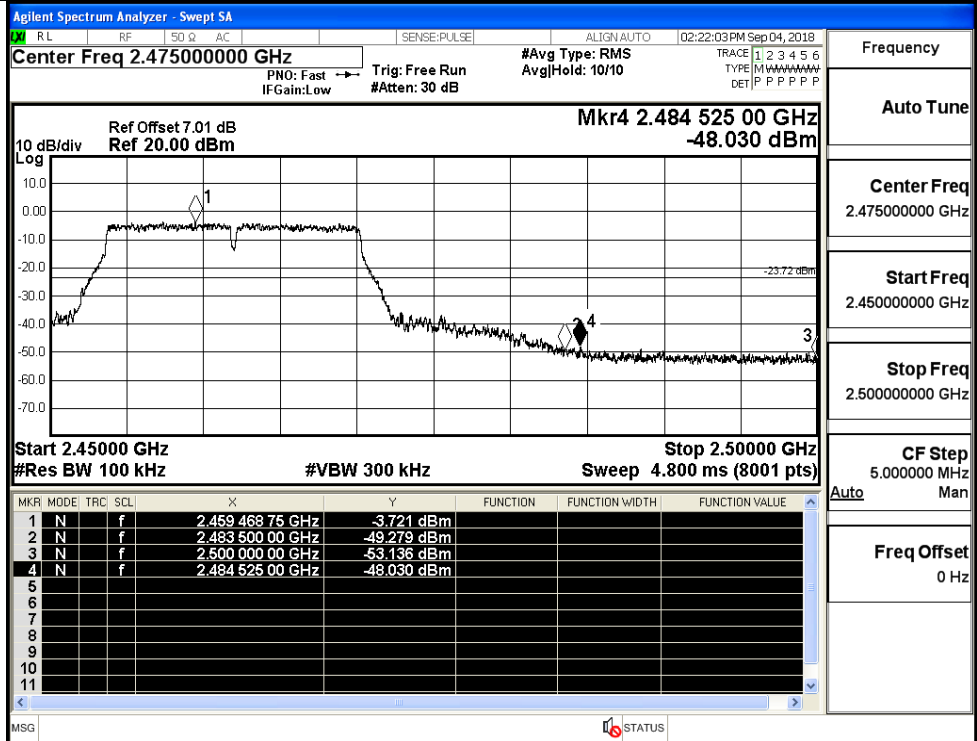
11B/HCH



11G/LCH

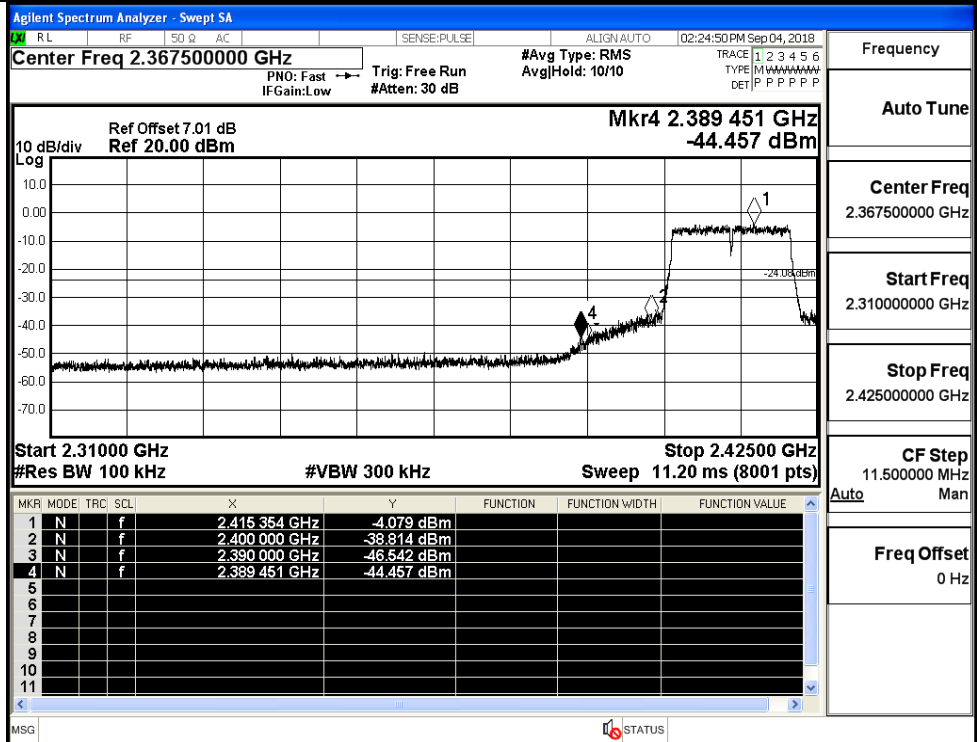


11G/HCH



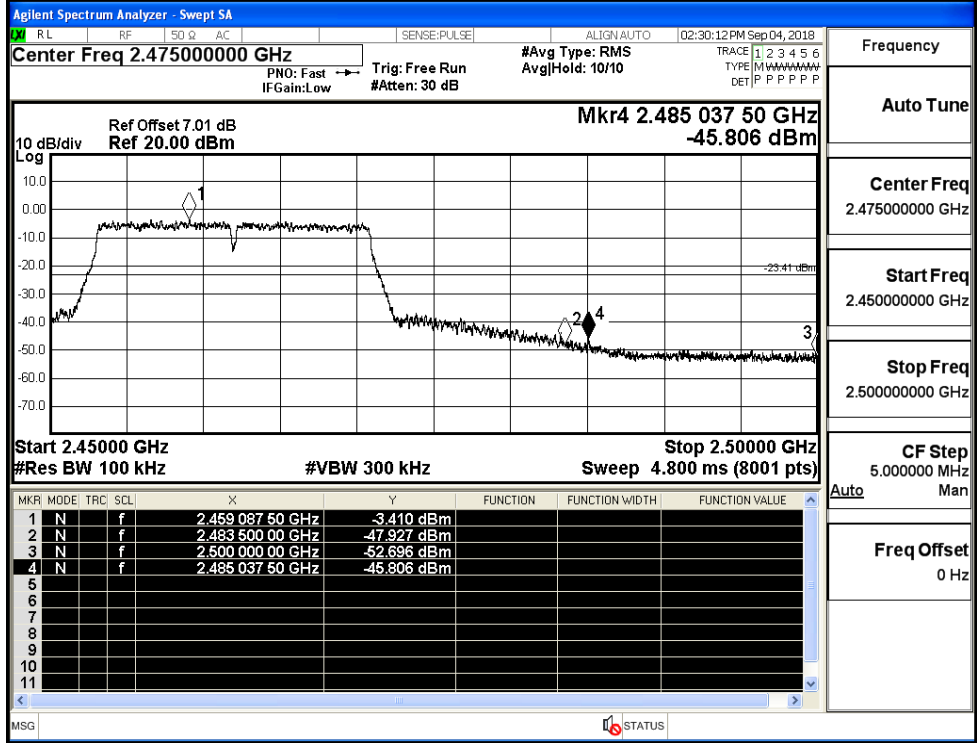
| | |
|-------------|-----------------|
| Frequency | |
| Auto Tune | |
| Center Freq | 2.475000000 GHz |
| Start Freq | 2.450000000 GHz |
| Stop Freq | 2.500000000 GHz |
| CF Step | 5.000000 MHz |
| Freq Offset | 0 Hz |

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 |
| Freq Offset | 0 Hz |

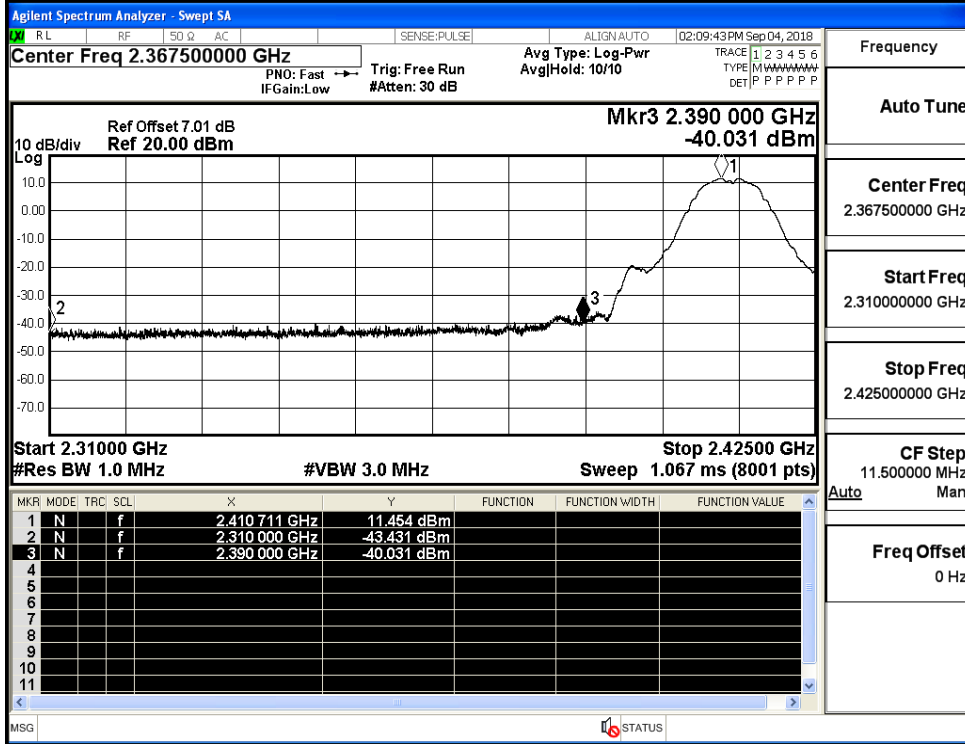
11N20SISO/HCH



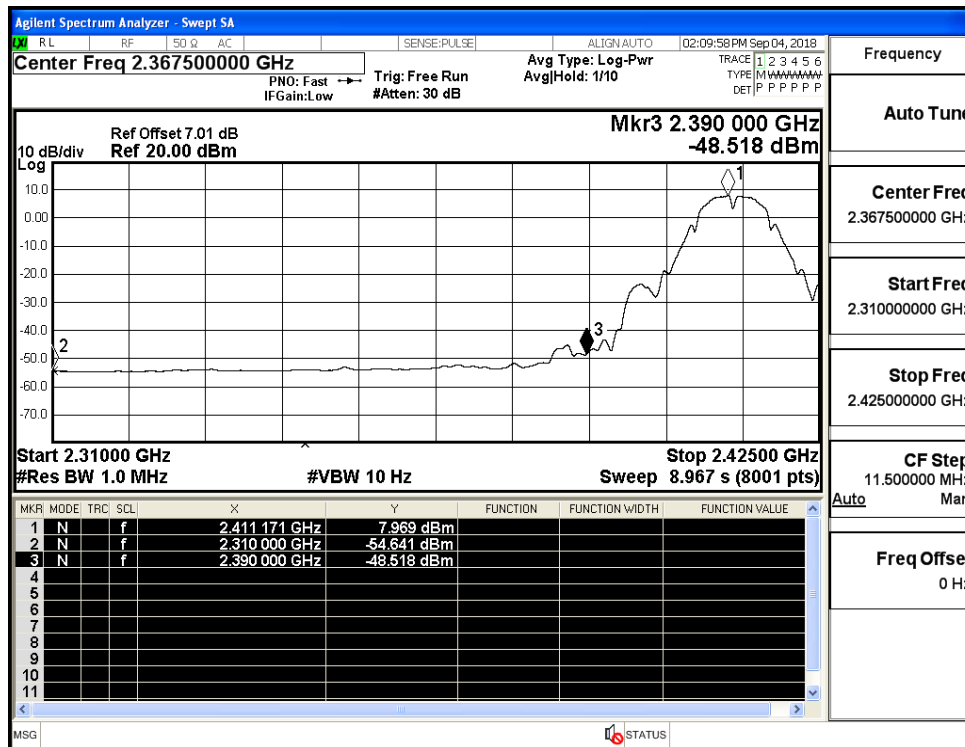
A.7 Restrict-band band-edge measurements

| 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 | -43.43 | 2.0 | 0 | 53.83 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2310.0 | -54.64 | 2.0 | 0 | 42.62 | AV | 54 | PASS |
| | 2412 | Ant1 | 2390.0 | -40.03 | 2.0 | 0 | 57.23 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2390.0 | -48.52 | 2.0 | 0 | 48.74 | AV | 54 | PASS |
| | 2462 | Ant1 | 2483.5 | -40.85 | 2.0 | 0 | 56.41 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2483.5 | -51.29 | 2.0 | 0 | 45.97 | AV | 54 | PASS |
| | 2462 | Ant1 | 2500.0 | -43.26 | 2.0 | 0 | 54.00 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2500.0 | -53.72 | 2.0 | 0 | 43.54 | AV | 54 | PASS |
| 11G | 2412 | Ant1 | 2310.0 | -44.93 | 2.0 | 0 | 52.33 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2310.0 | -54.74 | 2.0 | 0 | 42.52 | AV | 54 | PASS |
| | 2412 | Ant1 | 2390.0 | -33.51 | 2.0 | 0 | 63.75 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2390.0 | -48.46 | 2.0 | 0 | 48.80 | AV | 54 | PASS |
| | 2462 | Ant1 | 2483.5 | -36.15 | 2.0 | 0 | 61.11 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2483.5 | -50.10 | 2.0 | 0 | 47.16 | AV | 54 | PASS |
| | 2462 | Ant1 | 2500.0 | -42.25 | 2.0 | 0 | 55.01 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2500.0 | -52.97 | 2.0 | 0 | 44.29 | AV | 54 | PASS |
| 11N20 SISO | 2412 | Ant1 | 2310.0 | -43.61 | 2.0 | 0 | 53.65 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2310.0 | -54.74 | 2.0 | 0 | 42.52 | AV | 54 | PASS |
| | 2412 | Ant1 | 2390.0 | -30.18 | 2.0 | 0 | 67.08 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2390.0 | -48.50 | 2.0 | 0 | 48.76 | AV | 54 | PASS |
| | 2462 | Ant1 | 2483.5 | -33.38 | 2.0 | 0 | 63.88 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2483.5 | -49.00 | 2.0 | 0 | 48.25 | AV | 54 | PASS |
| | 2462 | Ant1 | 2500.0 | -42.06 | 2.0 | 0 | 55.19 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2500.0 | -52.93 | 2.0 | 0 | 44.33 | AV | 54 | PASS |

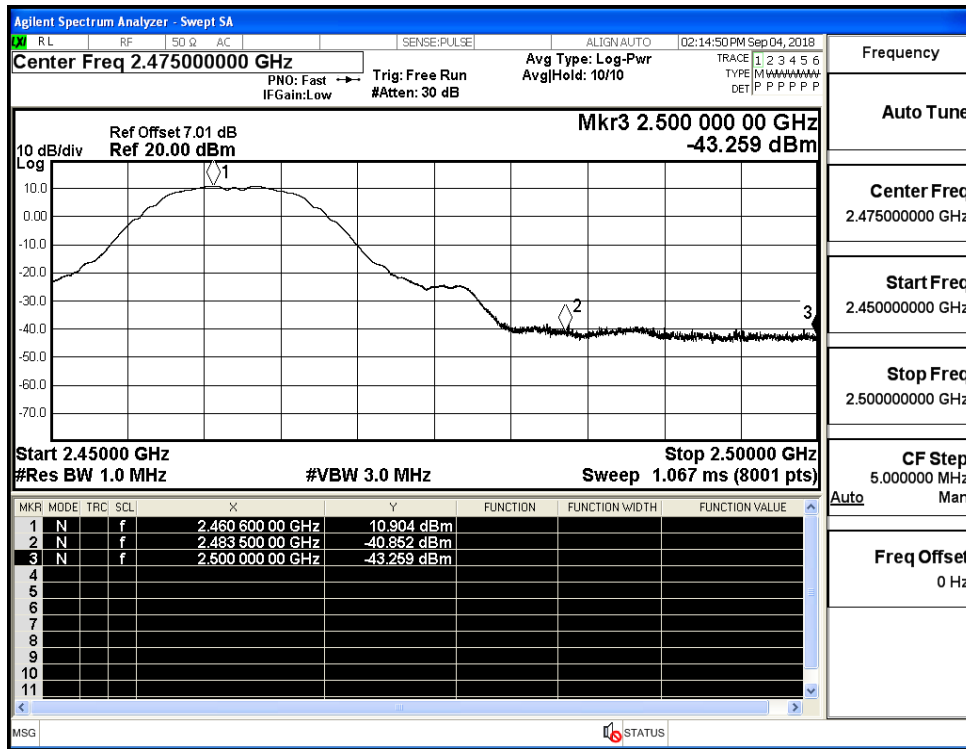
Restrict-band band-edge measurements_11B_2412_Ant1_PEAK



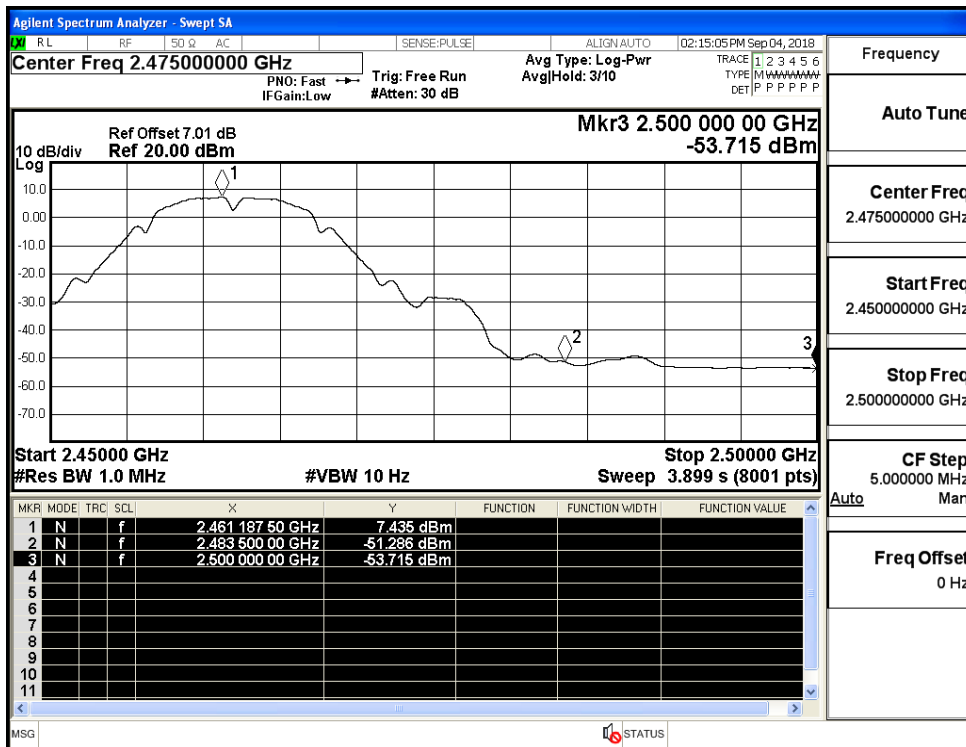
Restrict-band band-edge measurements_11B_2412_Ant1_AV



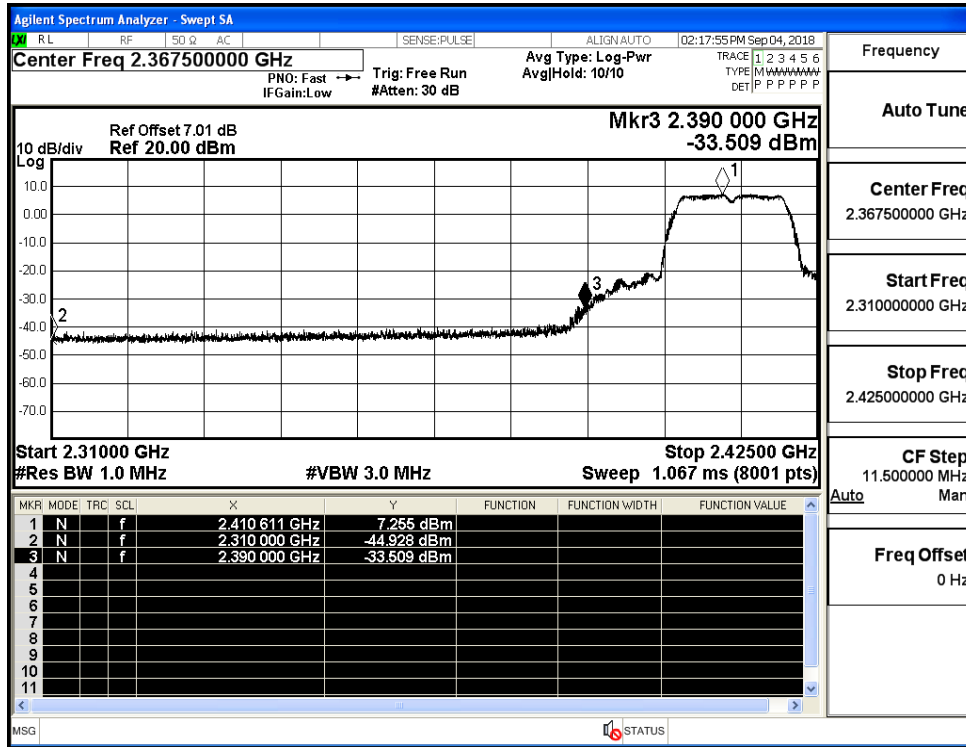
Restrict-band band-edge measurements_11B_2462_Ant1_PEAK



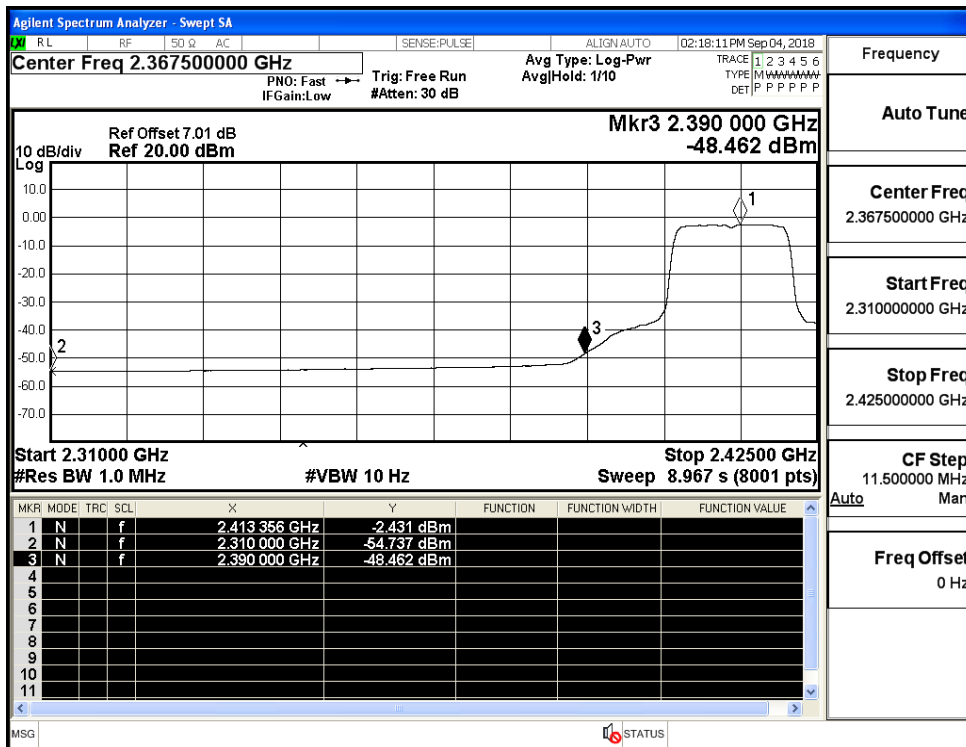
Restrict-band band-edge measurements_11B_2462_Ant1_AV



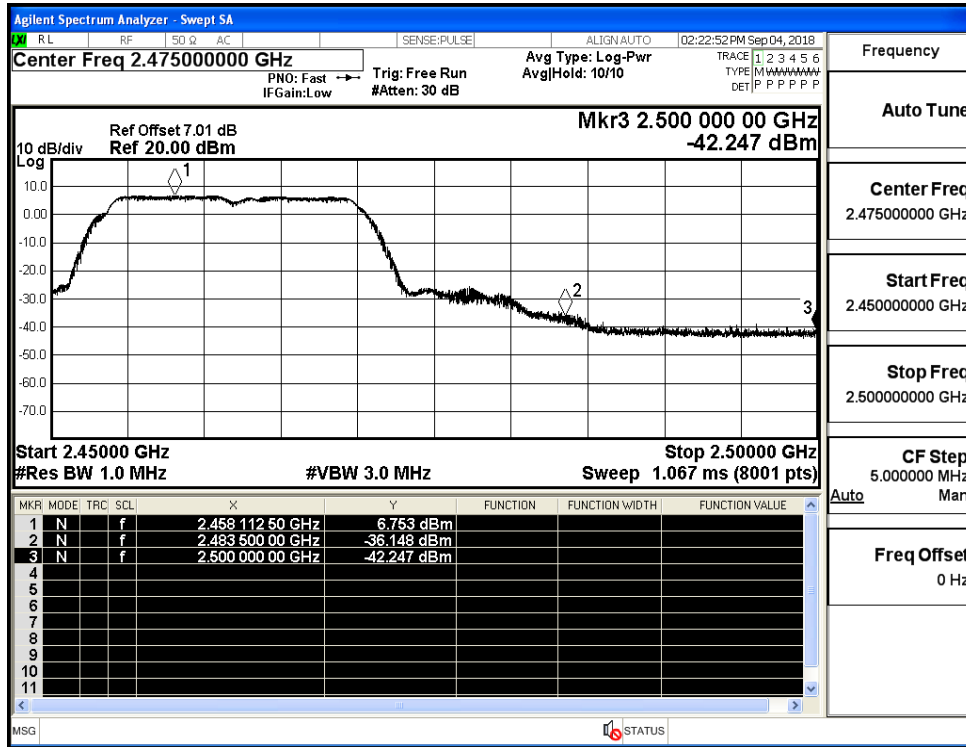
Restrict-band band-edge measurements_11G_2412_Ant1_PEAK



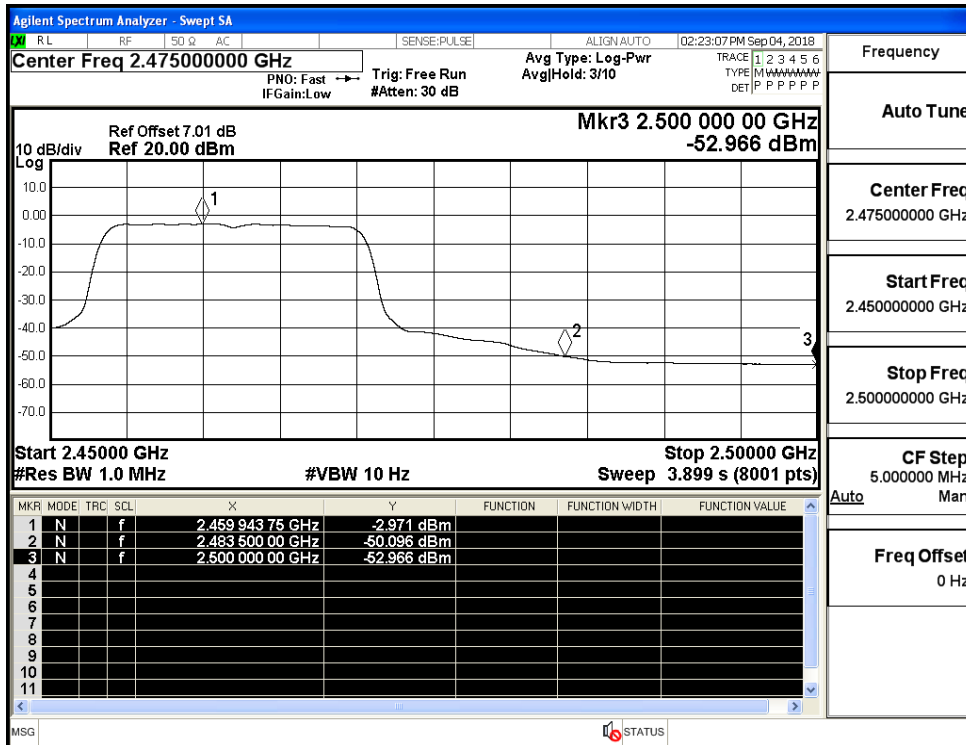
Restrict-band band-edge measurements_11G_2412_Ant1_AV



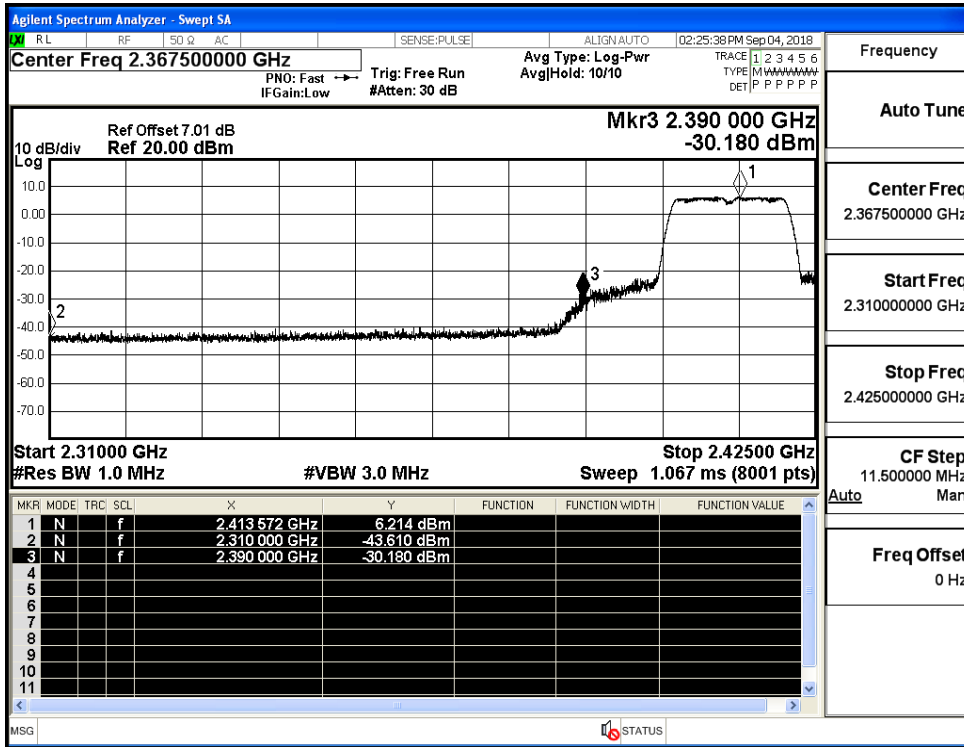
Restrict-band band-edge measurements_11G_2462_Ant1_PEAK



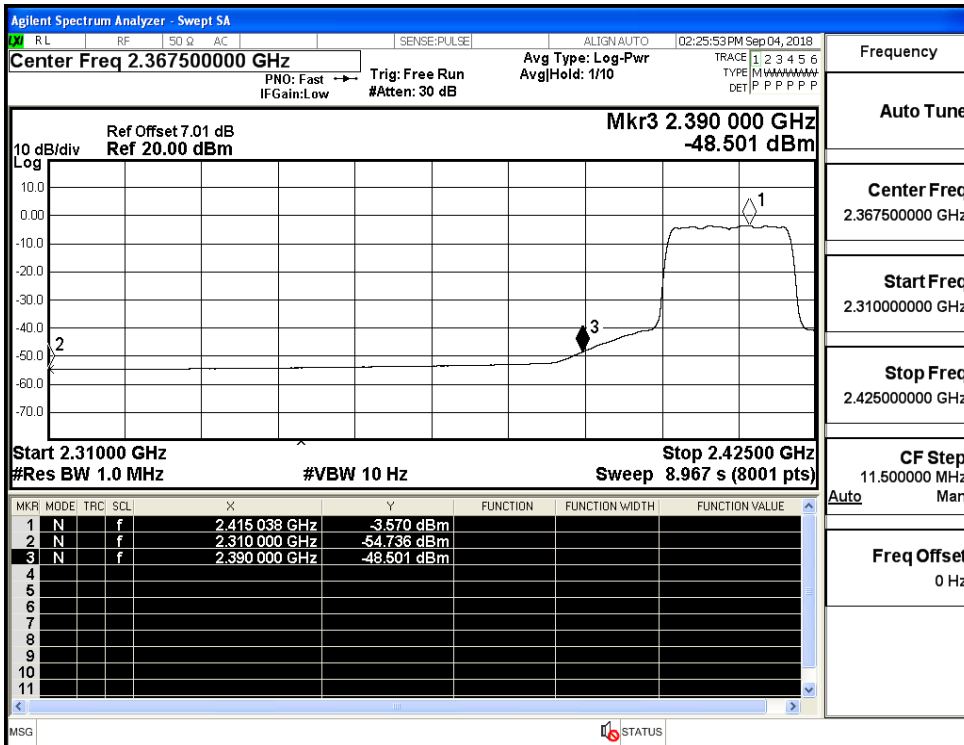
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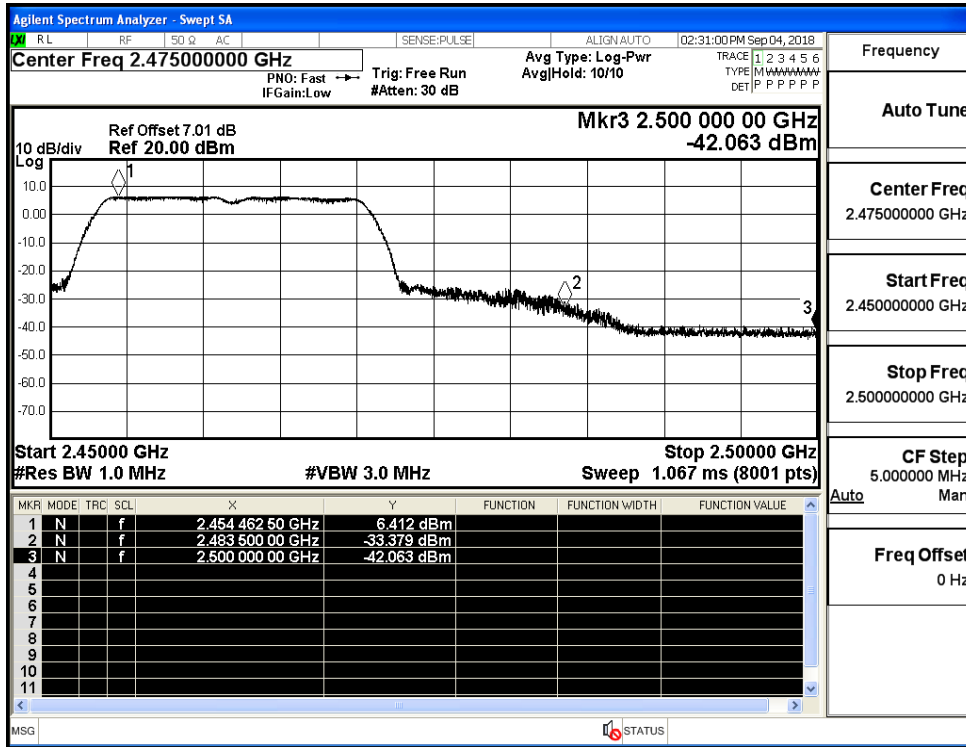
Restrict-band band-edge measurements_11N20SISO_2412_Ant1_PEAK



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

