# Appendix A

# RF Test Data for 2.4G WIFI (Conducted Measurement)

**Product Name: Robot Vacuum Cleaner**
**Trade Mark: N/A**
**Test Model: C106**

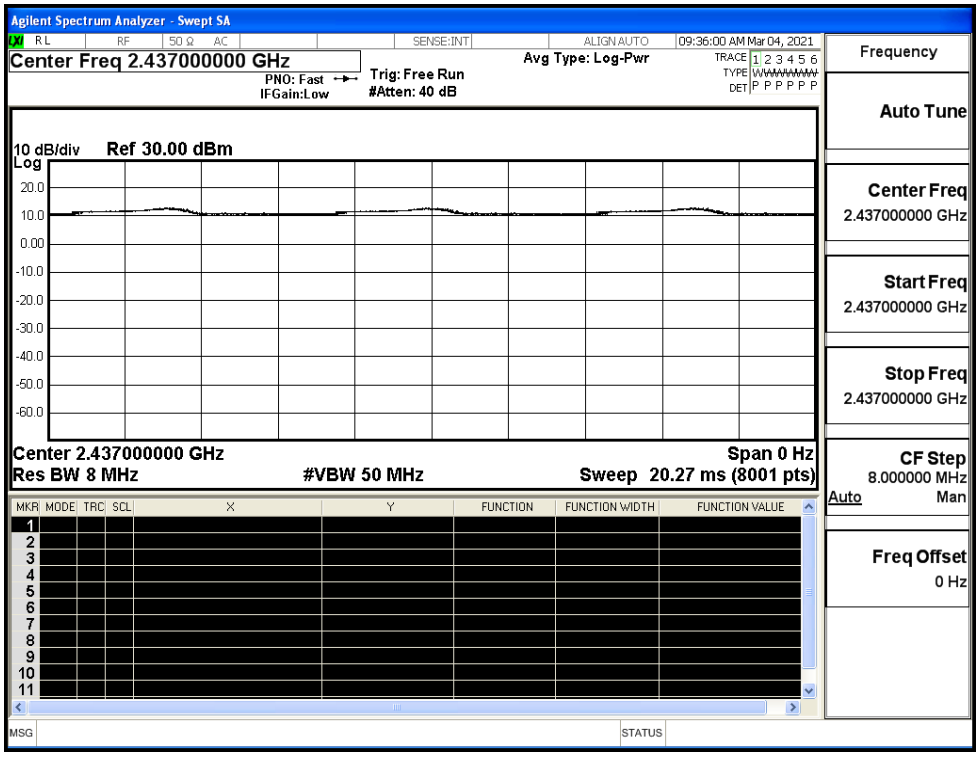
**Environmental Conditions**

| | |
|---|---|
| Temperature: | 22.2° C |
| Relative Humidity: | 53.1% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Jay Li |
| Supervised by: | Li Huan |

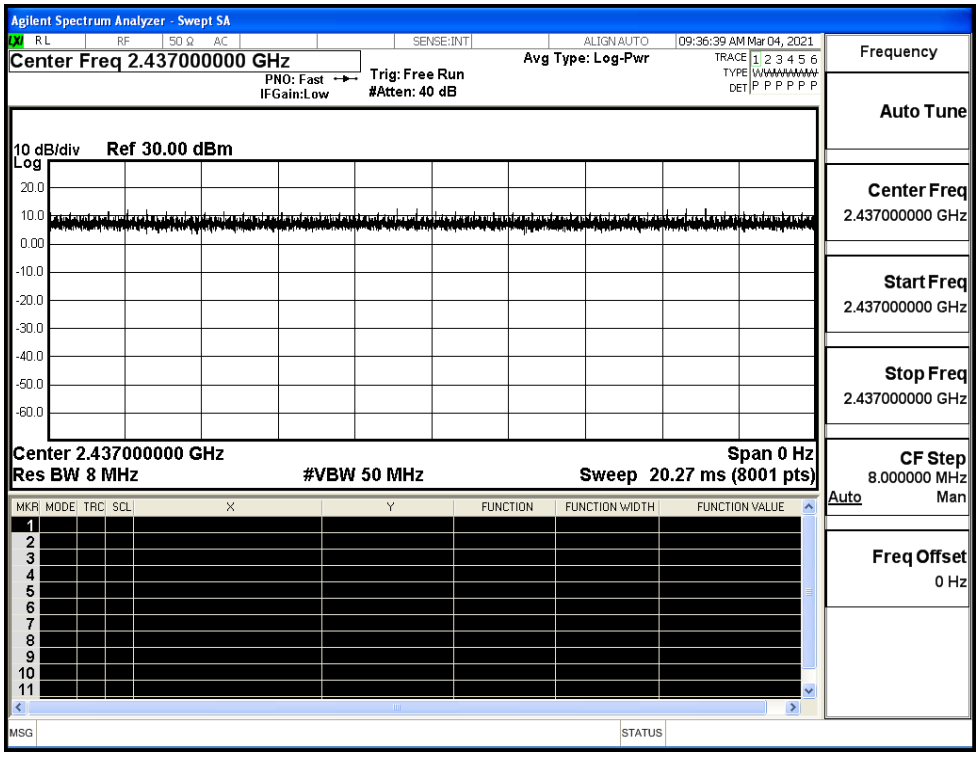
## A.1 Duty Cycle

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

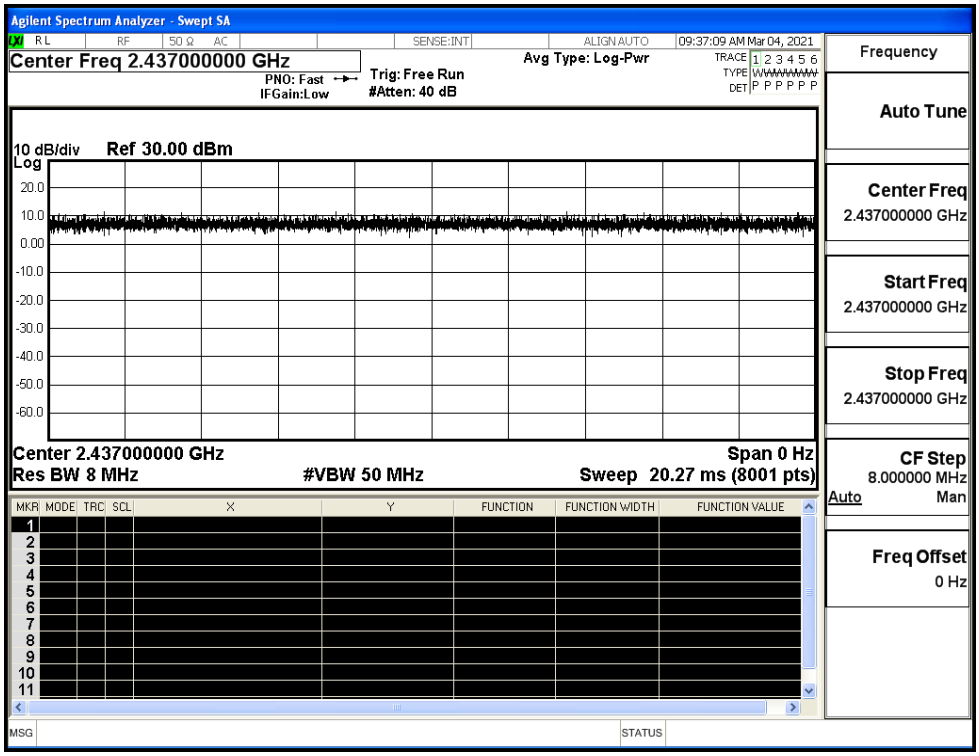
## Duty Cycle_11B_2437_Ant1




## Duty Cycle_11G_2437_Ant1



Duty Cycle_11N20SISO_2437_Ant1

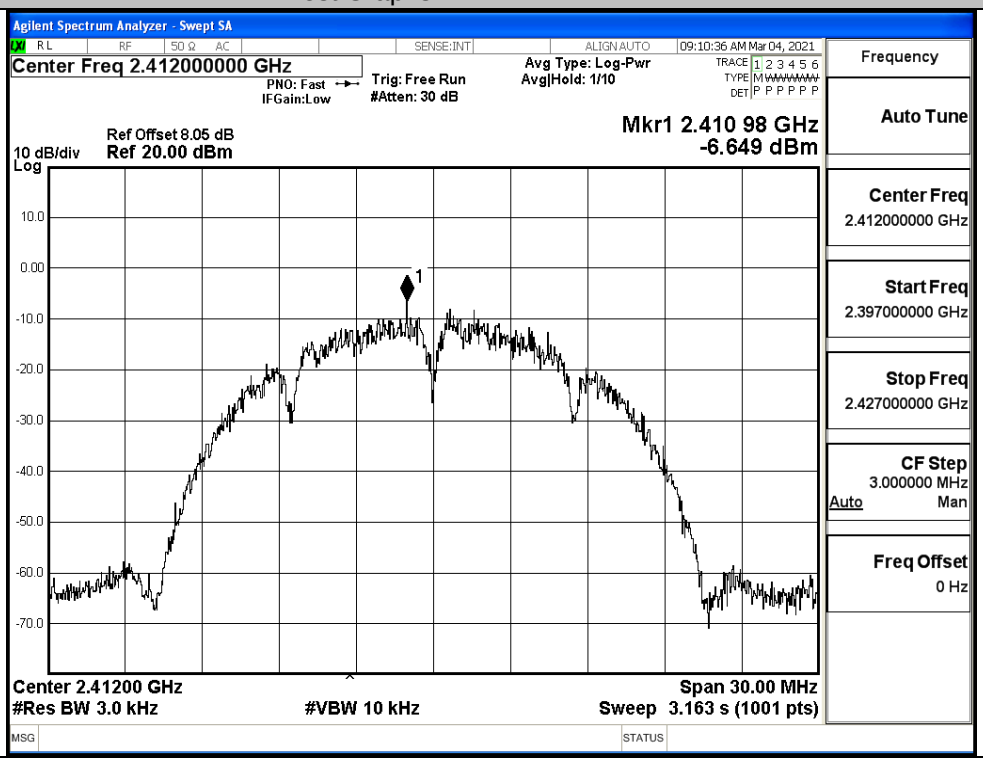


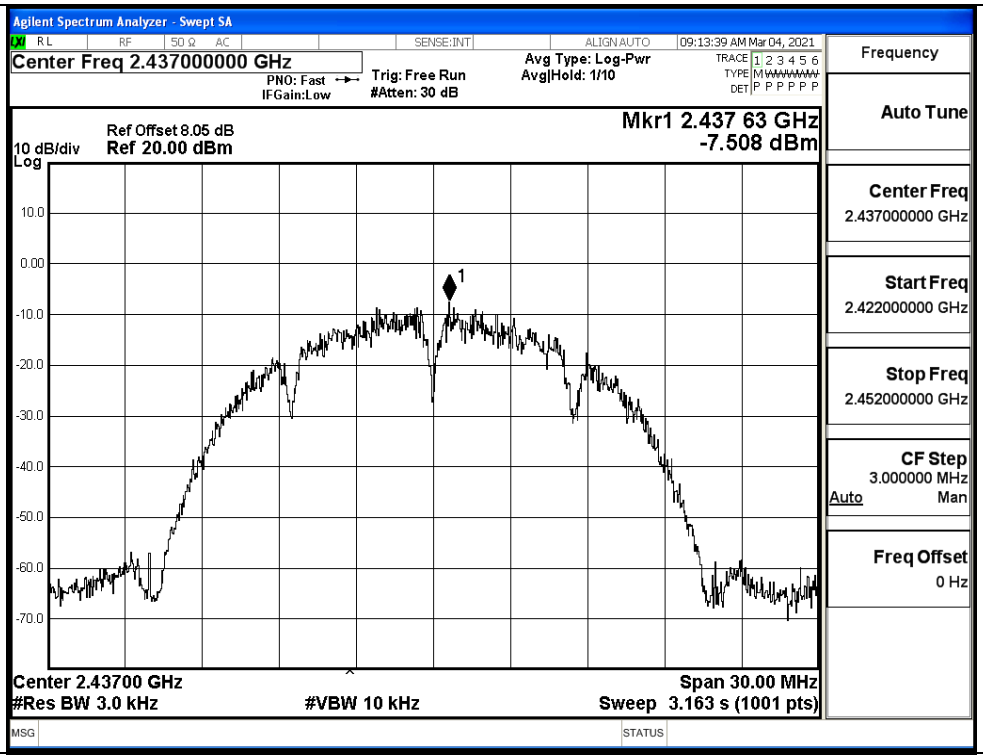
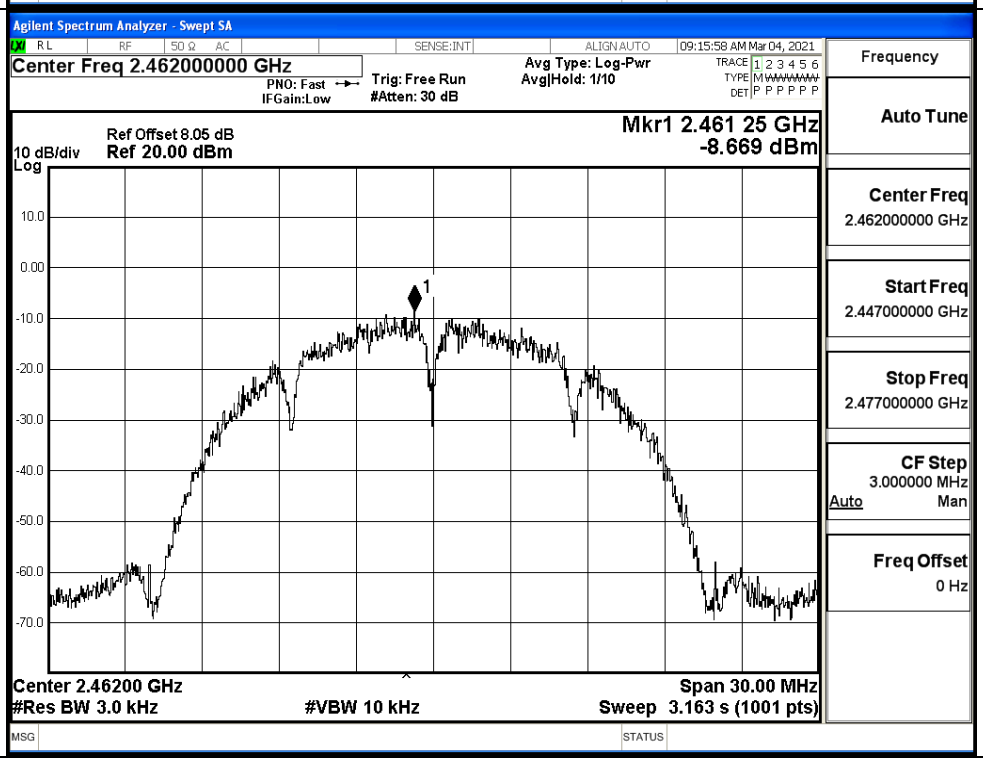
## A.2 Maximum Conducted Output Power

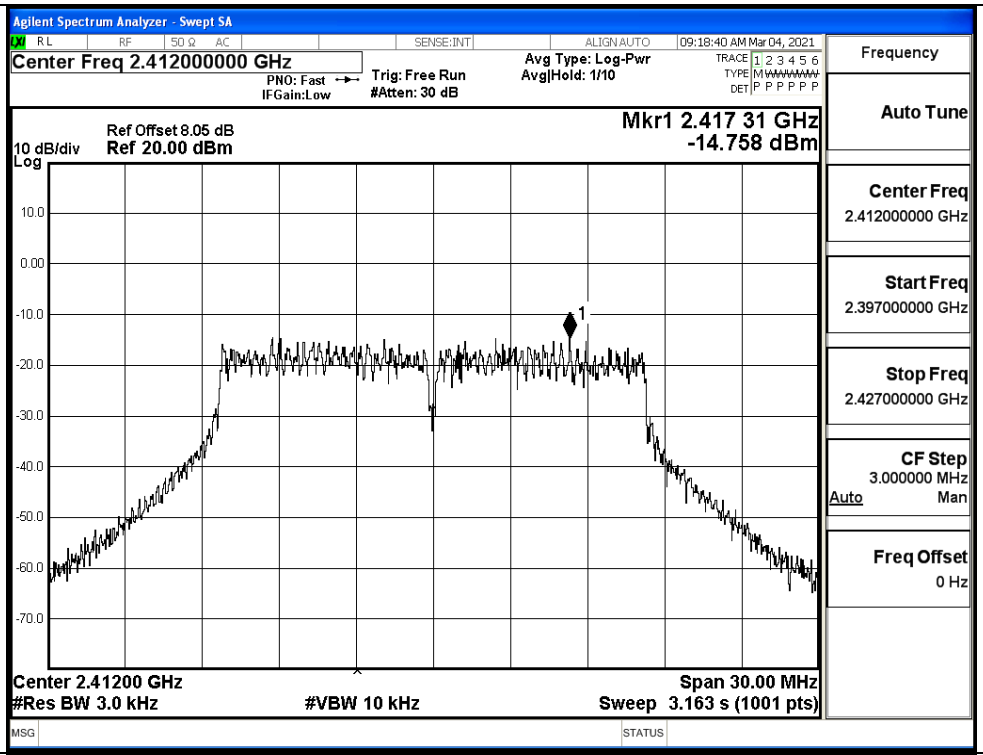
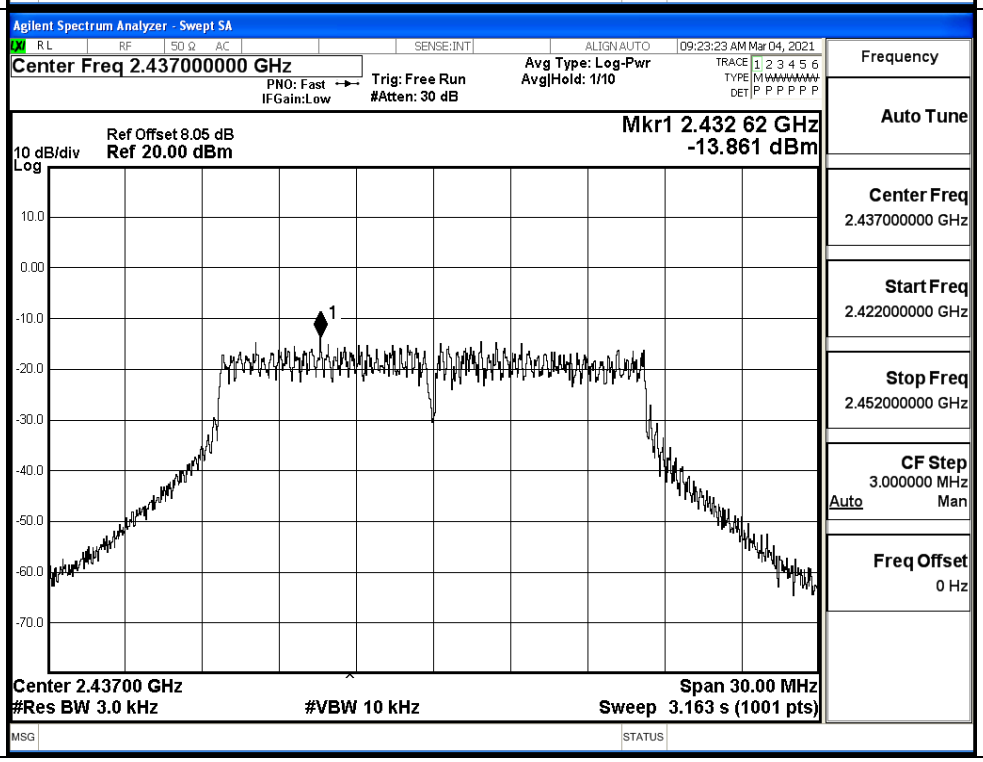
| Mode | Channel | Meas.Level [dBm] | Limit [dBm] | Verdict |
|---|---|---|---|---|
| 11B | LCH | 18.06 | 30 | PASS |
| | MCH | 18.09 | 30 | PASS |
| | HCH | 17.64 | 30 | PASS |
| 11G | LCH | 19.86 | 30 | PASS |
| | MCH | 20.34 | 30 | PASS |
| | HCH | 19.84 | 30 | PASS |
| 11N20SISO | LCH | 19.99 | 30 | PASS |
| | MCH | 20.29 | 30 | PASS |
| | HCH | 19.85 | 30 | PASS |

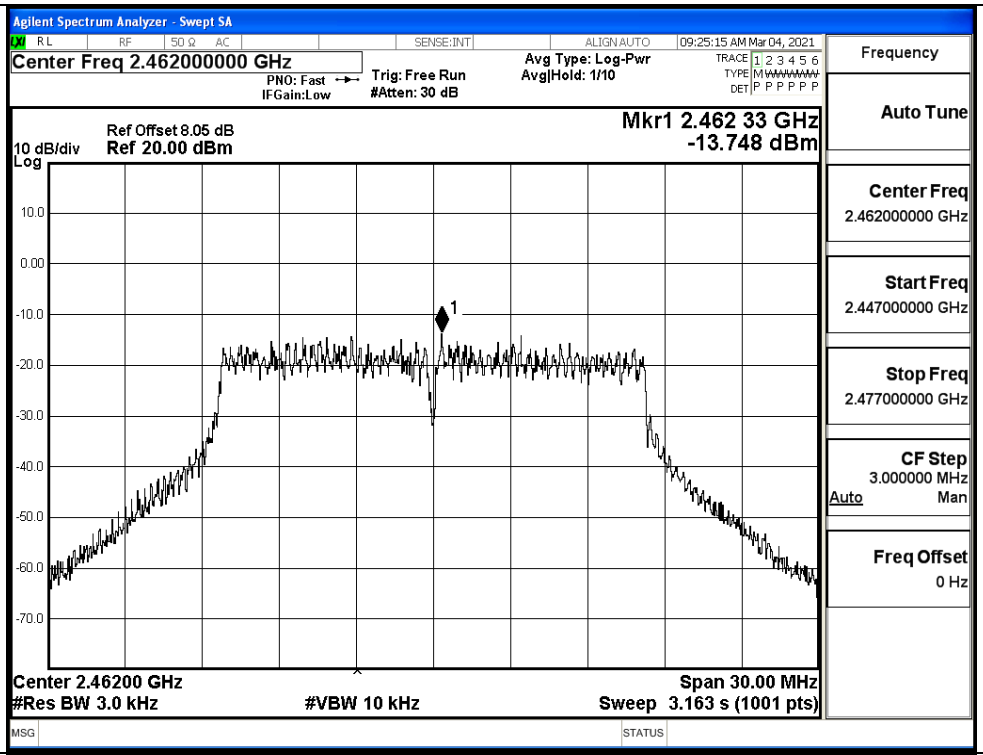
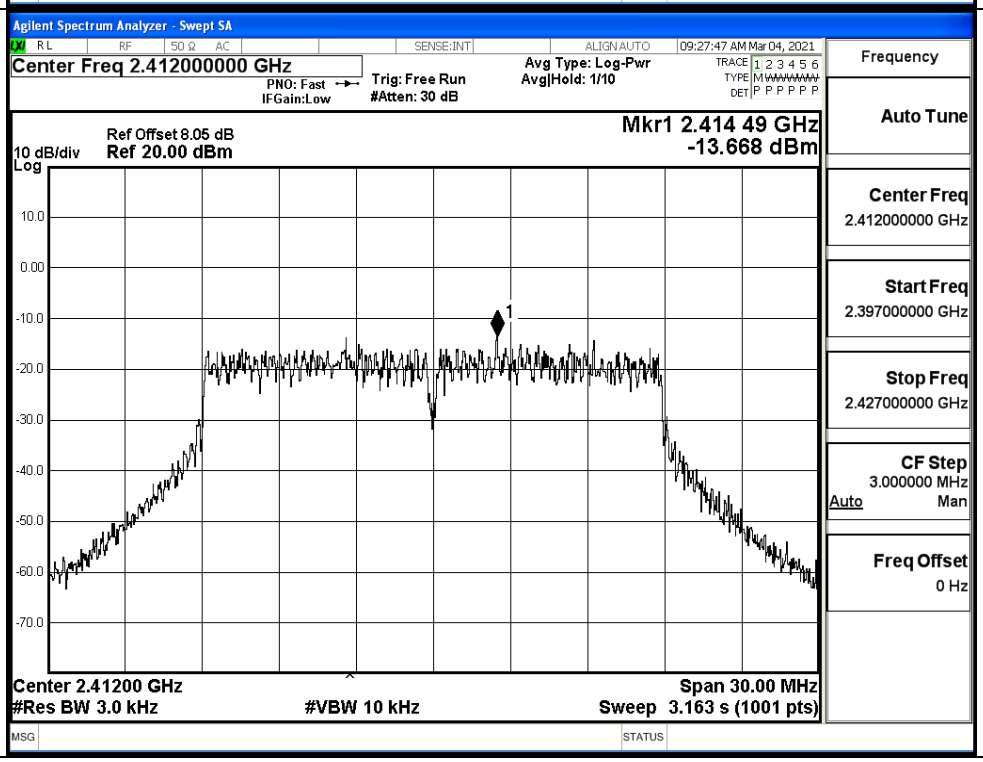
## A.3 Maximum Power Spectral Density

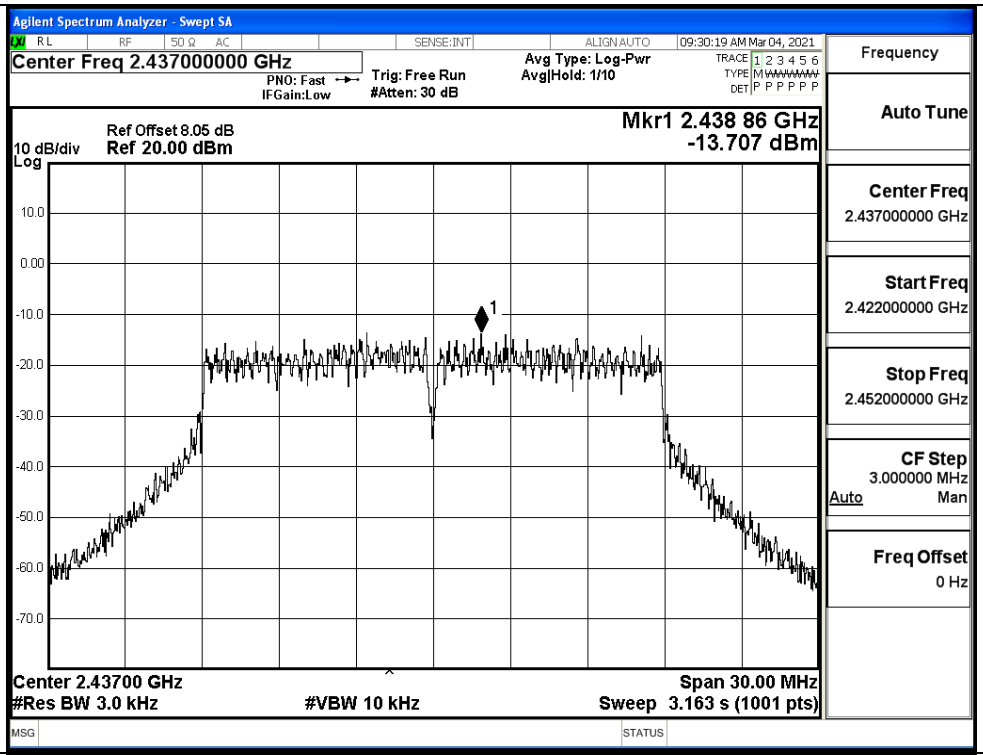
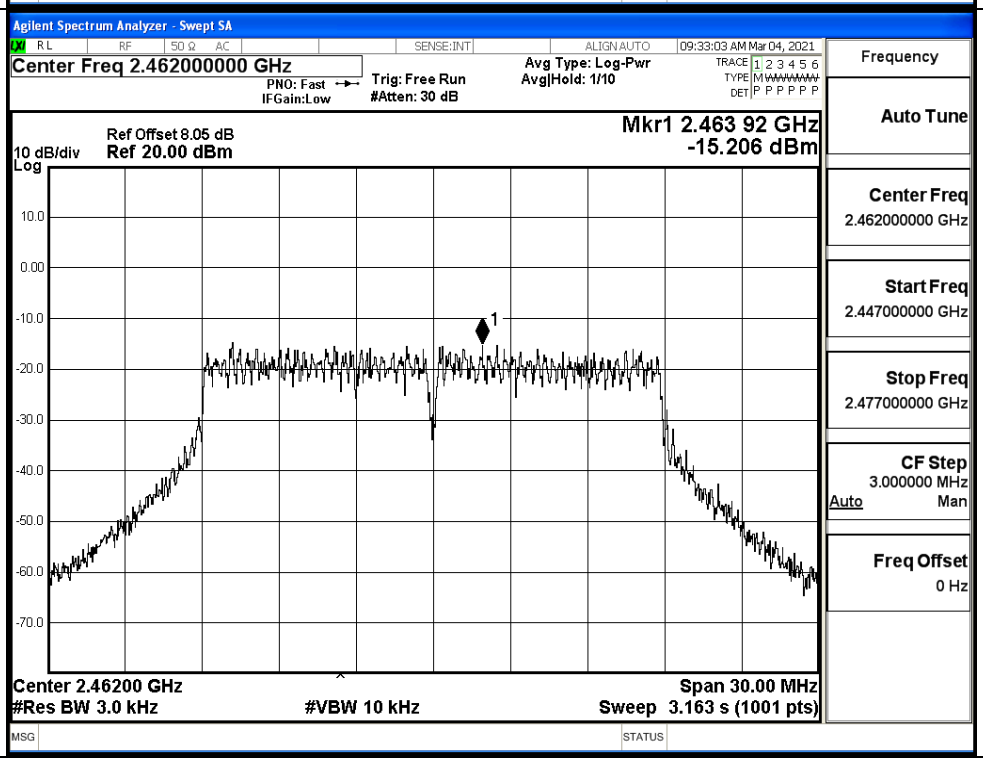
| Mode | Channel | Meas.Level [dBm/3KHz] | Limit [dBm/3KHz] | Verdict |
|---|---|---|---|---|
| 11B | LCH | -6.649 | 8 | PASS |
| | MCH | -7.508 | 8 | PASS |
| | HCH | -8.669 | 8 | PASS |
| 11G | LCH | -14.758 | 8 | PASS |
| | MCH | -13.861 | 8 | PASS |
| | HCH | -13.748 | 8 | PASS |
| 11N20SISO | LCH | -13.668 | 8 | PASS |
| | MCH | -13.707 | 8 | PASS |
| | HCH | -15.206 | 8 | PASS |

| Test Graphs | | |
|---|---|---|
| 11B/LCH | |  |

| | | |
|---|---|---|
| 11B/MCH |  | |
| 11B/HCH |  | |

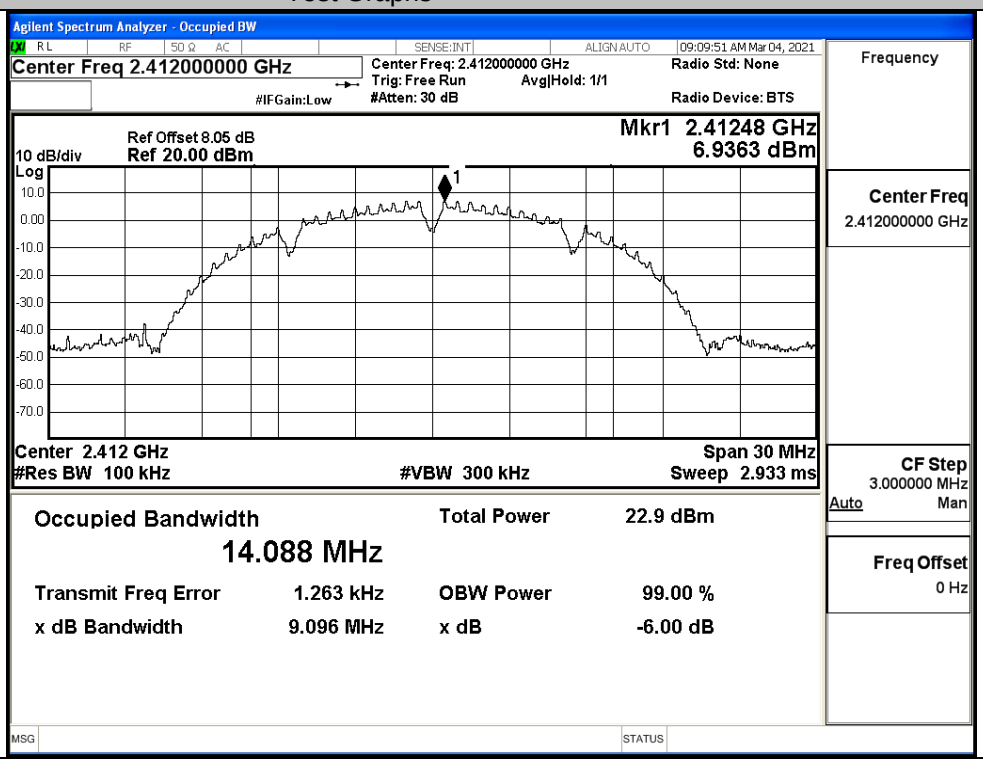
| | | |
|---|---|---|
| 11G/LCH |  | |
| 11G/MCH |  | |

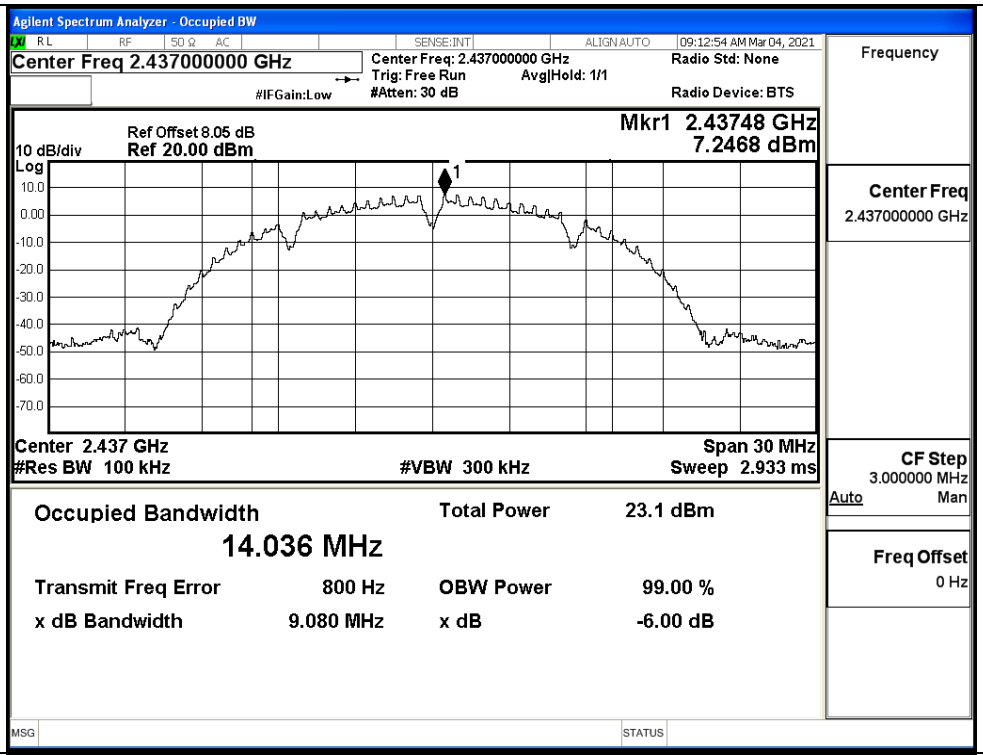
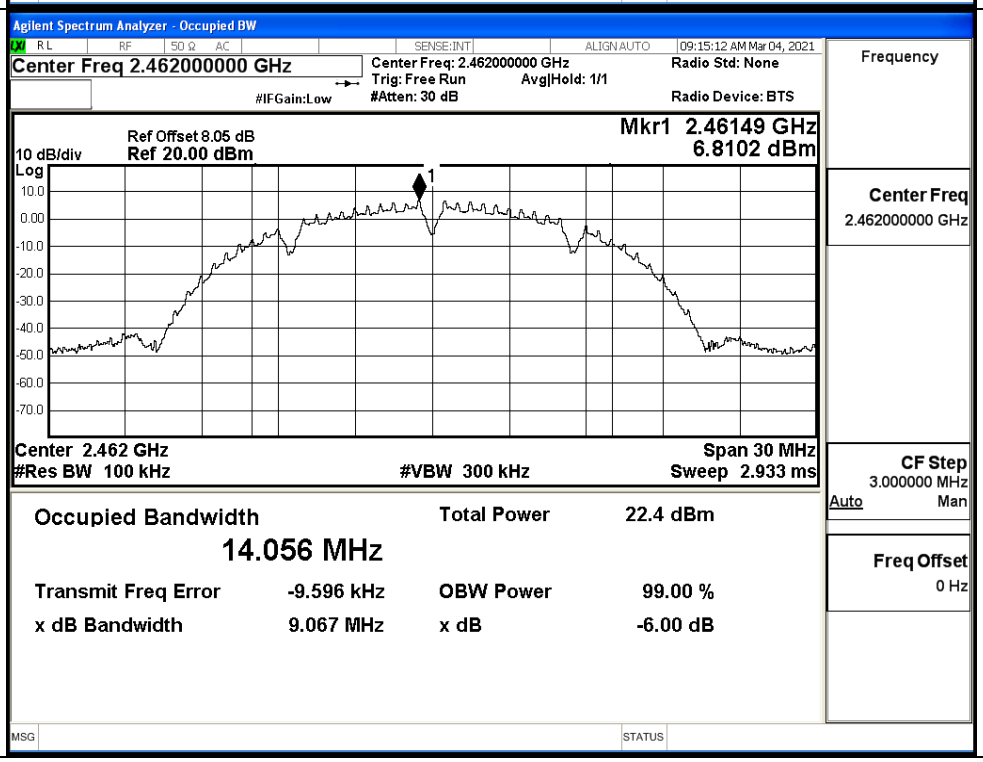
| | | |
|---|---|---|
| 11G/HCH |  | |
| 11N20SISO/LCH |  | |

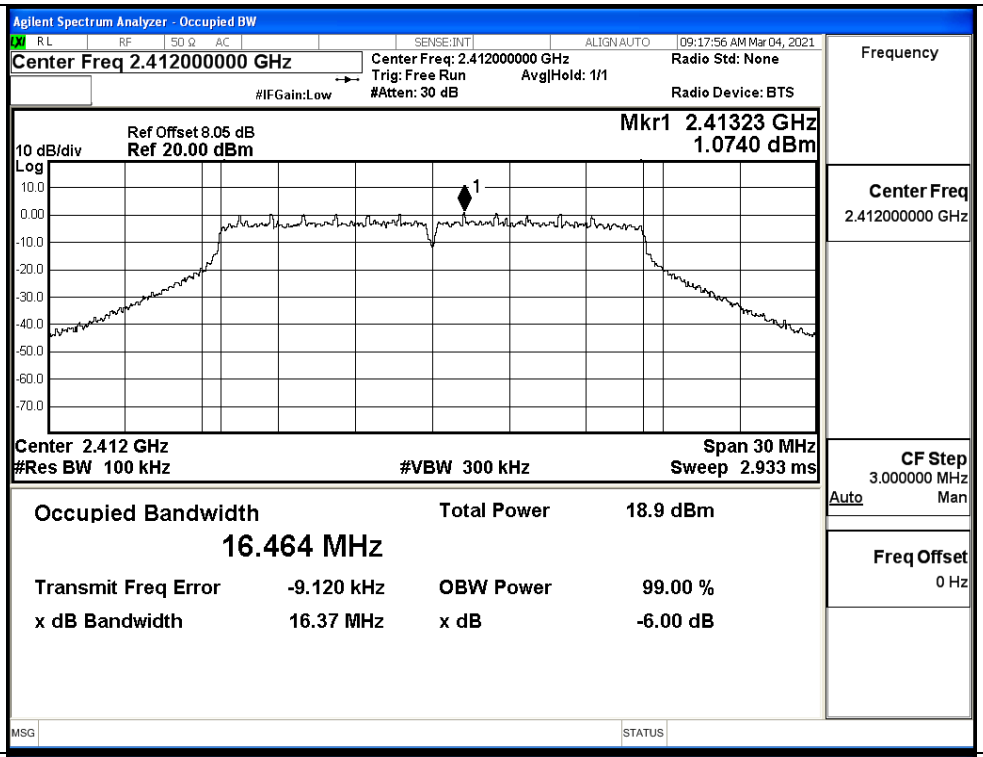
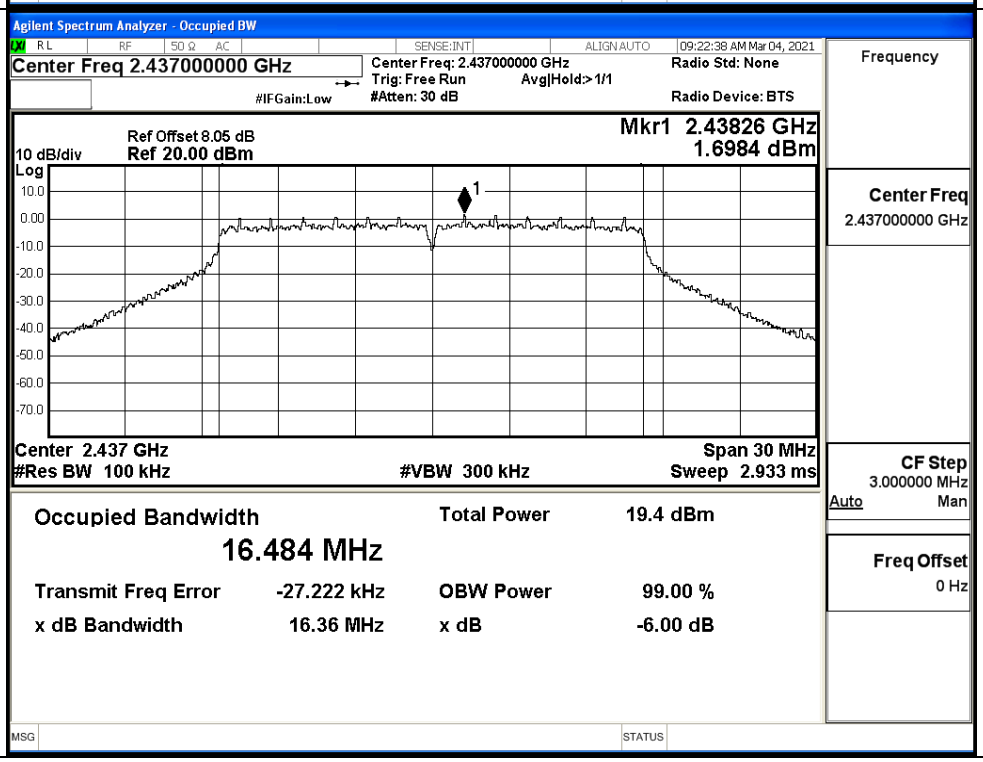
| | | |
|---|---|---|
| 11N20SISO/MCH |  | |
| 11N20SISO/HCH |  | |

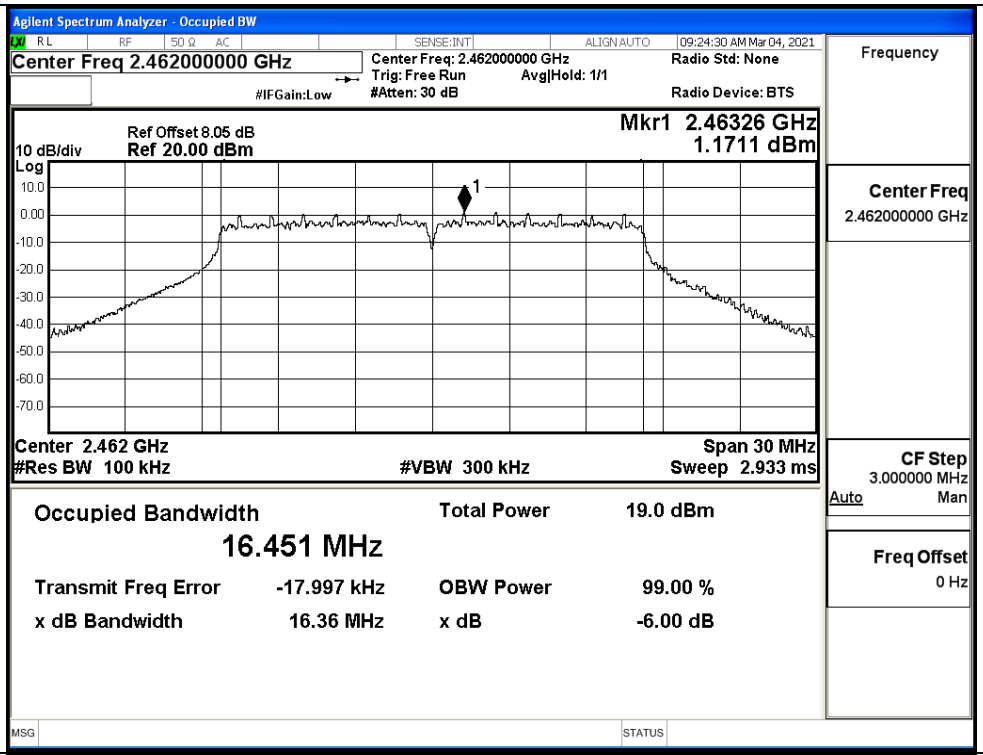
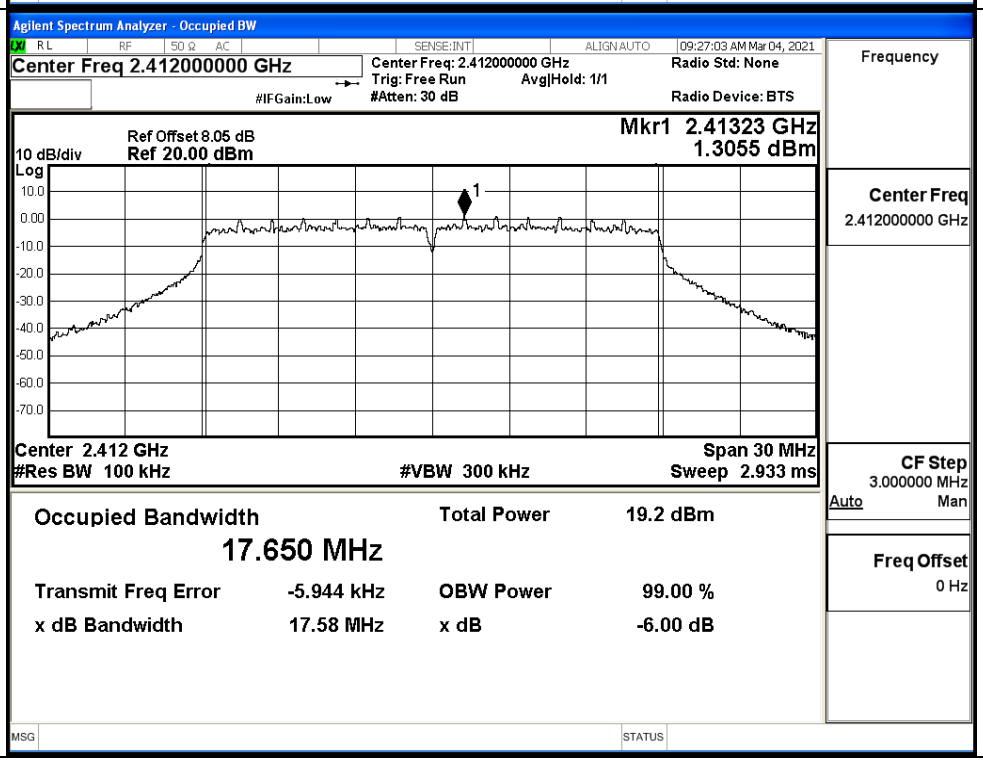
## A.4 6dB Bandwidth

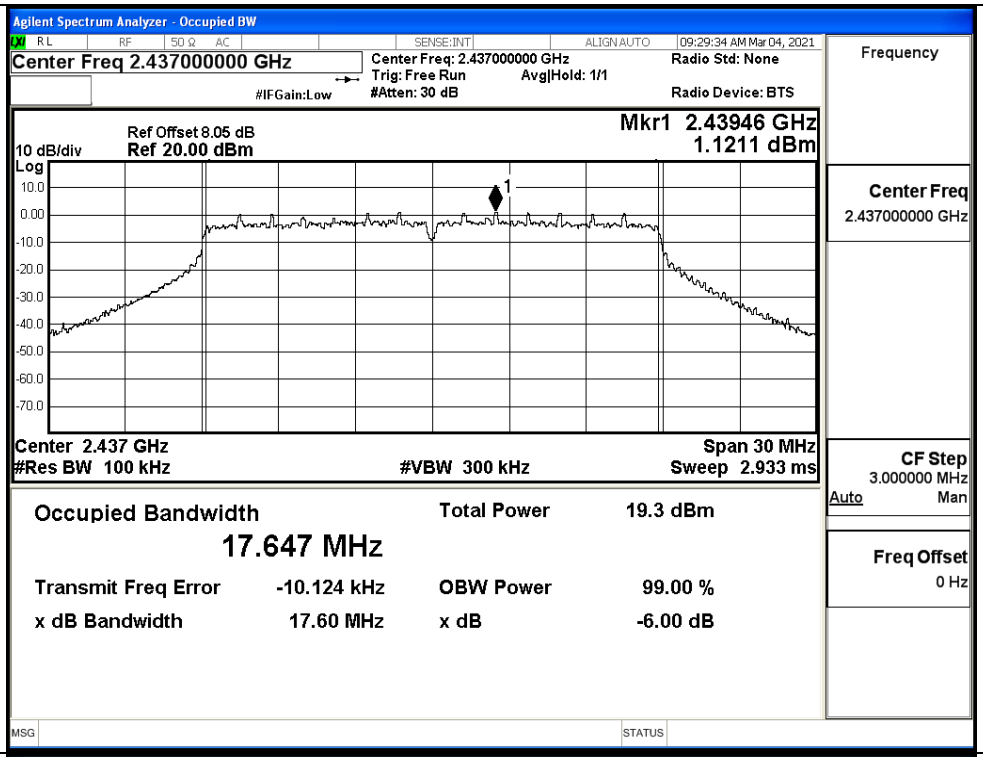
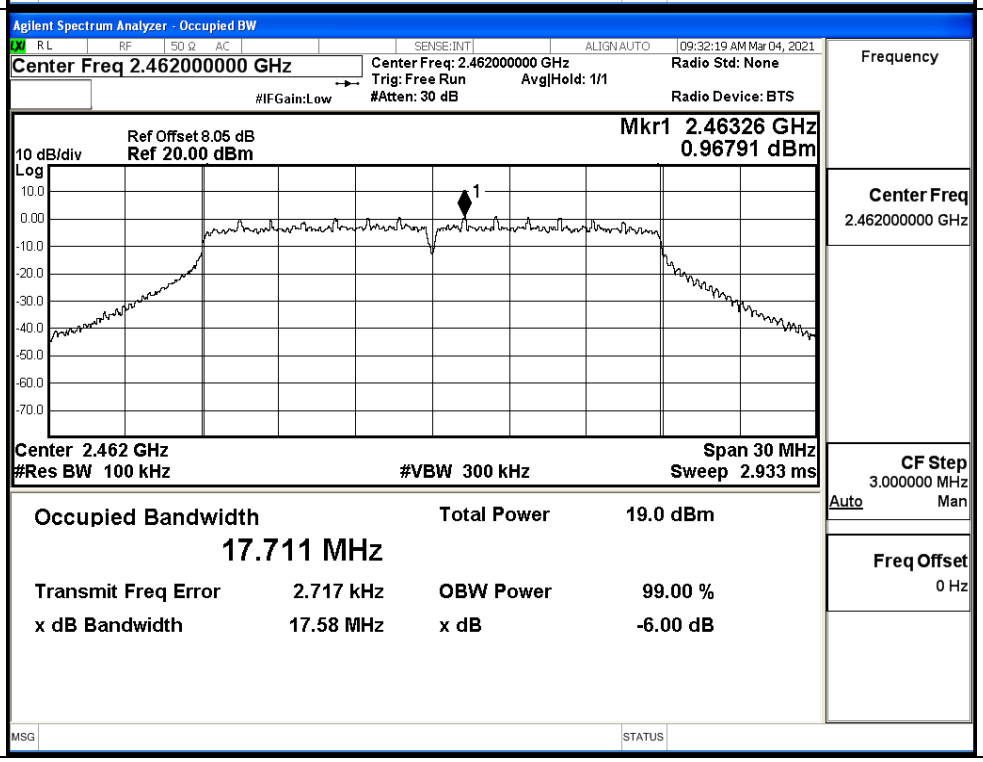
| Mode | Channel | 6dB Bandwidth [MHz] | Limit [MHz] | Verdict |
|---|---|---|---|---|
| 11B | LCH | 9.096 | ⩾0.5 | PASS |
| | MCH | 9.080 | ⩾0.5 | PASS |
| | HCH | 9.067 | ⩾0.5 | PASS |
| 11G | LCH | 16.37 | ⩾0.5 | PASS |
| | MCH | 16.36 | ⩾0.5 | PASS |
| | HCH | 16.36 | ⩾0.5 | PASS |
| 11N20SISO | LCH | 17.58 | ⩾0.5 | PASS |
| | MCH | 17.60 | ⩾0.5 | PASS |
| | HCH | 17.58 | ⩾0.5 | PASS |

| Test Graphs | |
|---|---|
| 11B/LCH |  |

| | | |
|---|---|---|
| 11B/MCH |  | |
| 11B/HCH |  | |

| | | |
|---|---|---|
| 11G/LCH |  | |
| 11G/MCH |  | |

| | | |
|---|---|---|
| 11G/HCH |  | |
| 11N20SISO/LCH |  | |

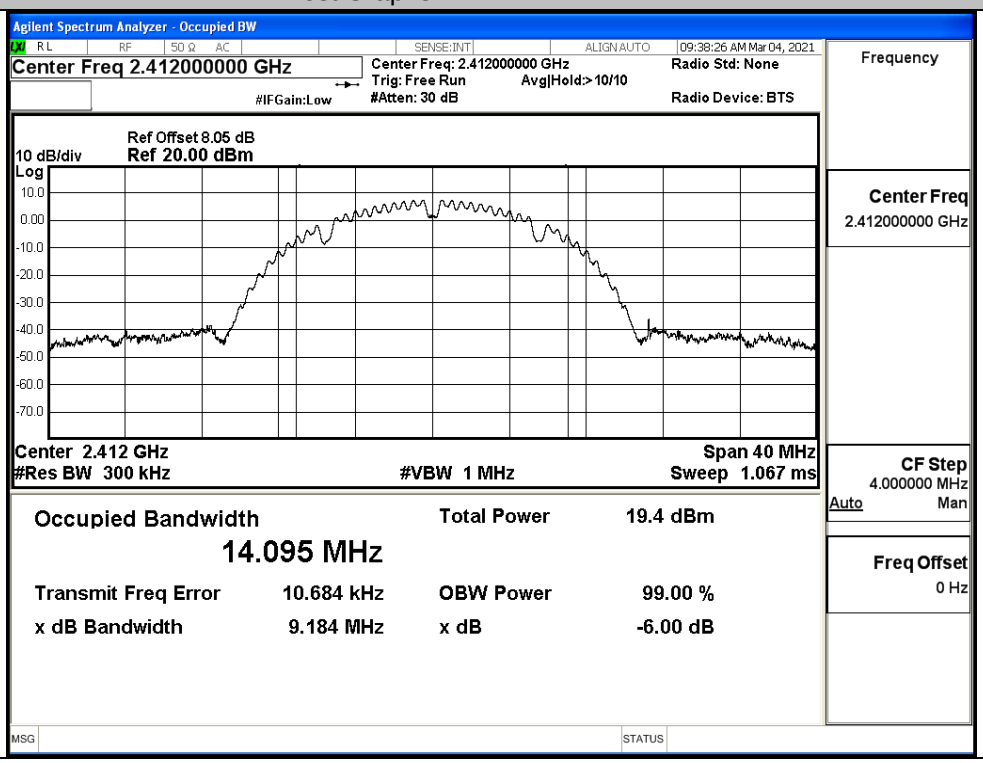
| | | |
|---|---|---|
| 11N20SISO/MCH |  | |
| 11N20SISO/HCH |  | |

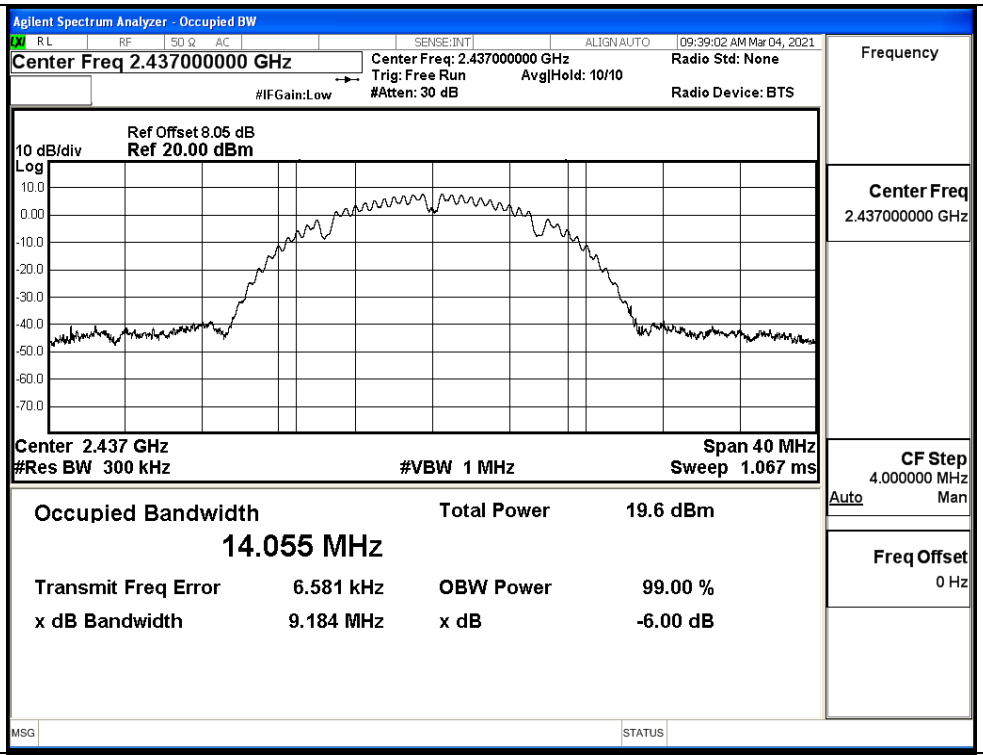
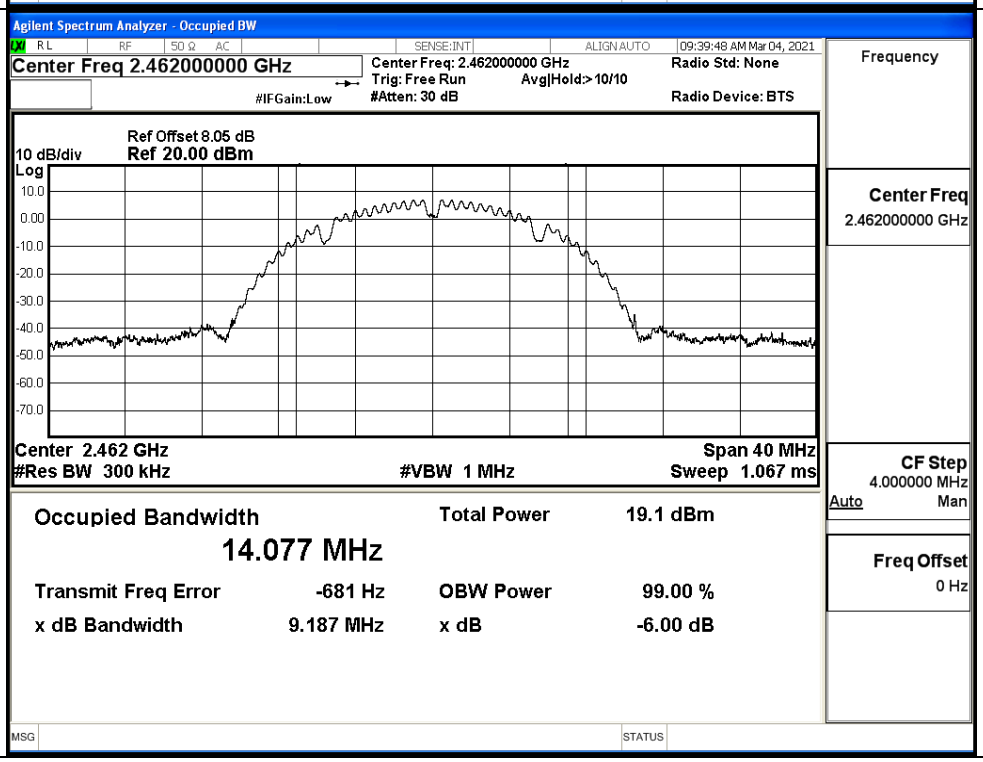
## A.5 Occupied Bandwidth

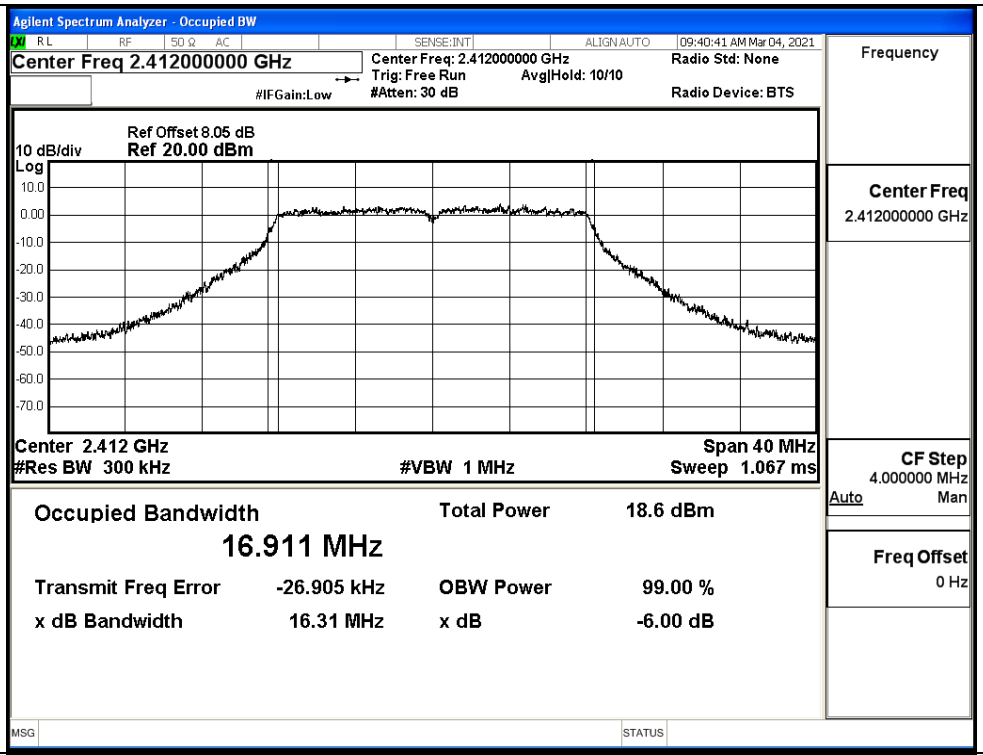
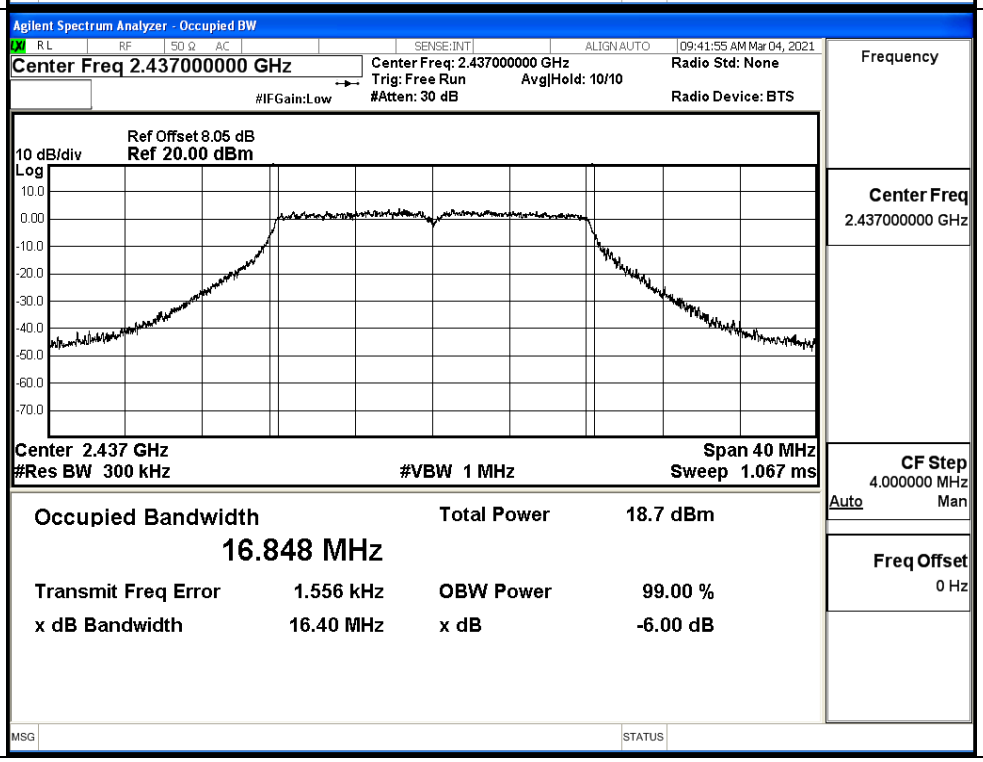
| Mode | Channel | Occupied Bandwidth [MHz] | Limit [MHz] | Verdict |
|---|---|---|---|---|
| 11B | LCH | 14.095 | ⩾0.5 | PASS |
| | MCH | 14.055 | ⩾0.5 | PASS |
| | HCH | 14.077 | ⩾0.5 | PASS |
| 11G | LCH | 16.911 | ⩾0.5 | PASS |
| | MCH | 16.848 | ⩾0.5 | PASS |
| | HCH | 16.849 | ⩾0.5 | PASS |
| 11N20SISO | LCH | 18.010 | ⩾0.5 | PASS |
| | MCH | 17.957 | ⩾0.5 | PASS |
| | HCH | 18.034 | ⩾0.5 | PASS |

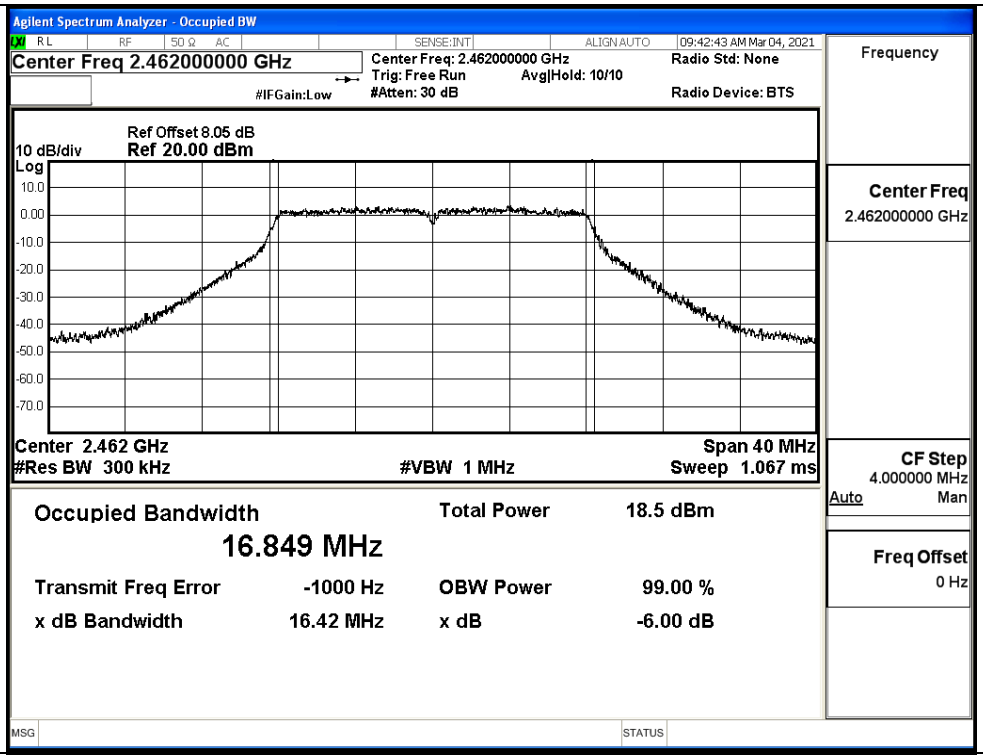
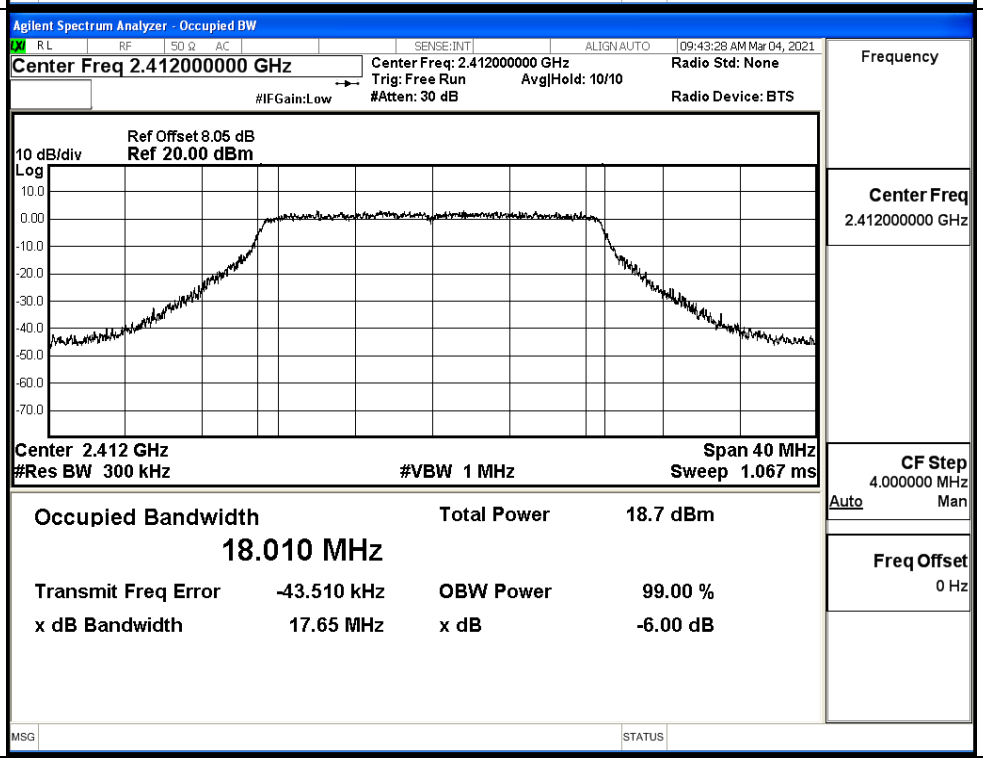
Test Graphs

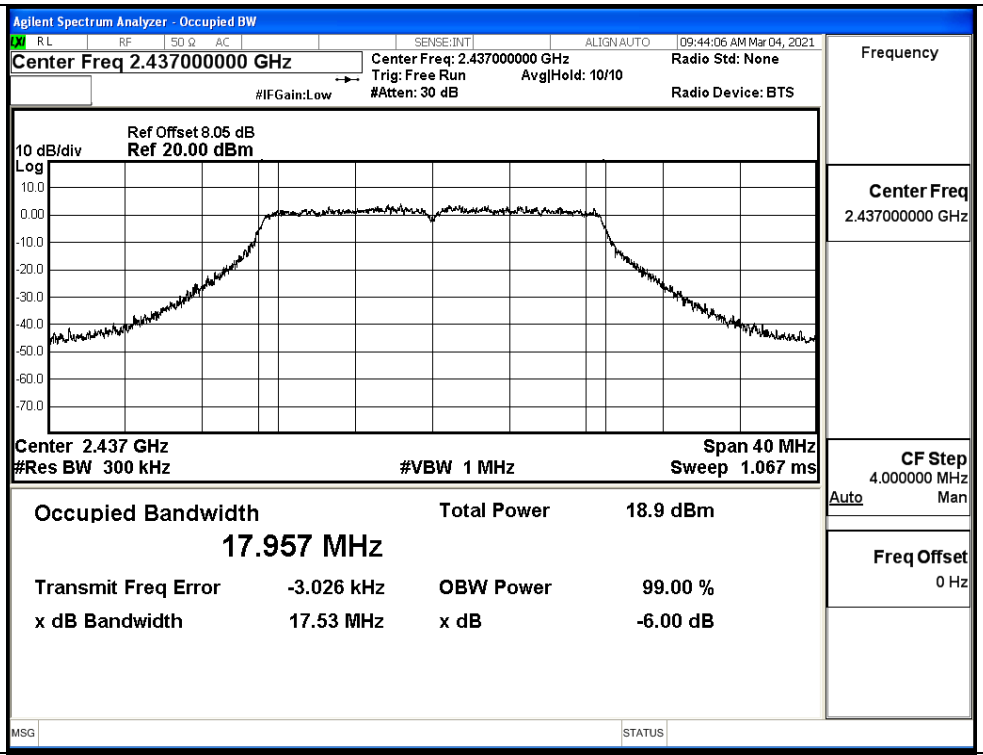
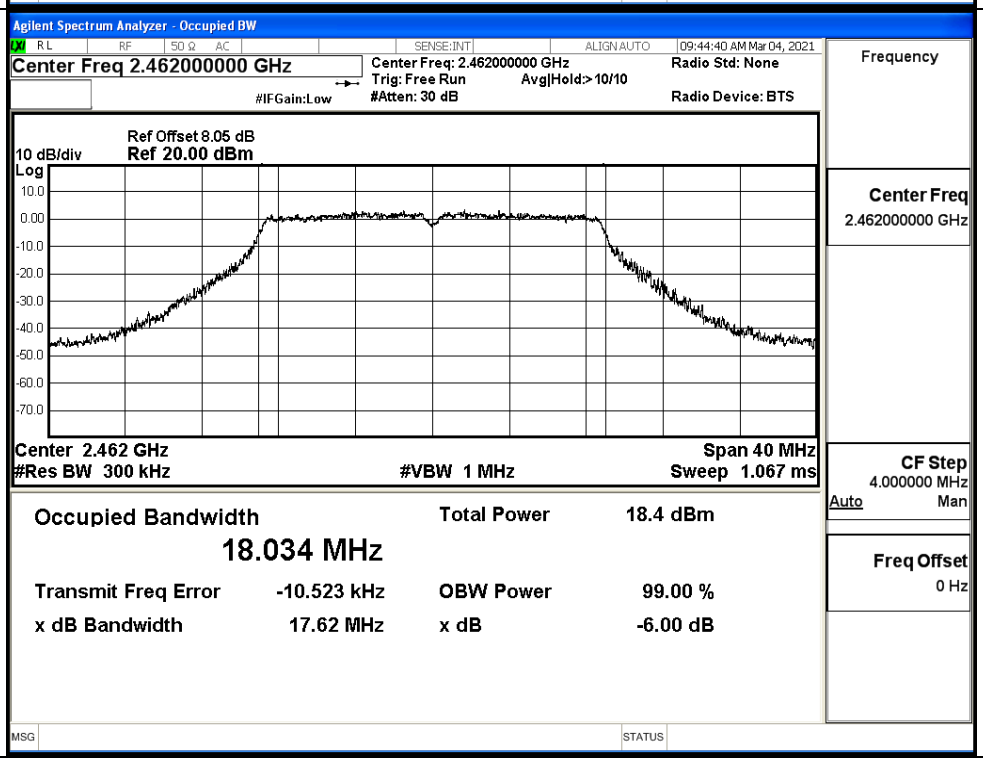
11B/LCH



| | | |
|---|---|---|
| 11B/MCH |  | |
| 11B/HCH |  | |

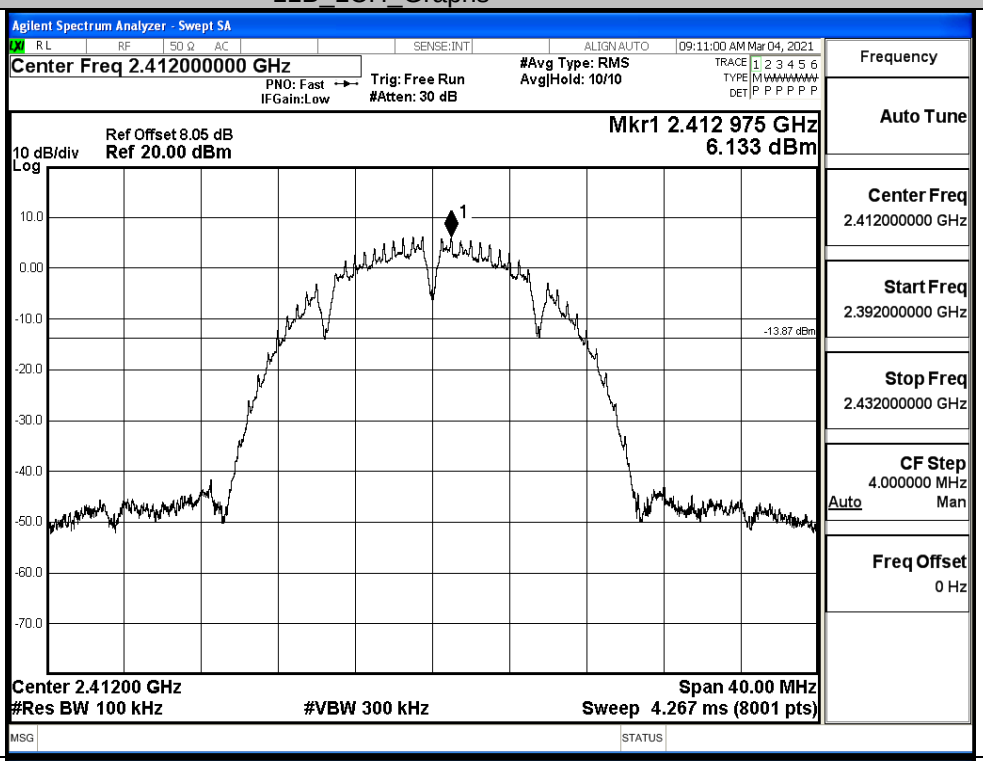
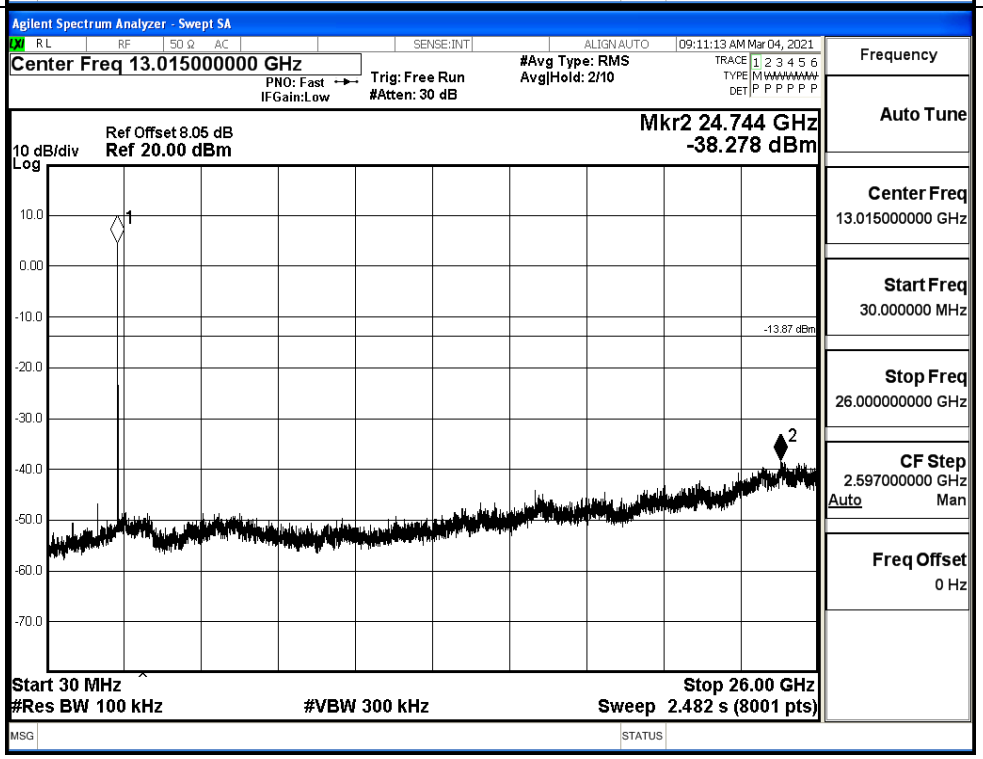
| | | |
|---|---|---|
| 11G/LCH |  | |
| 11G/MCH |  | |

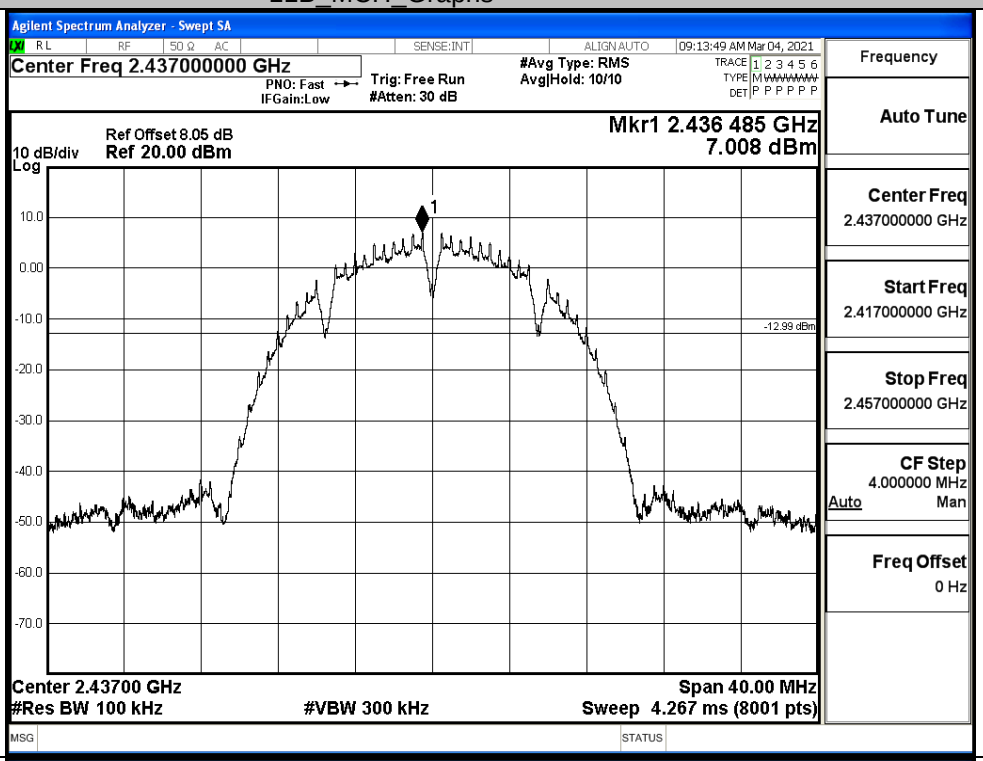
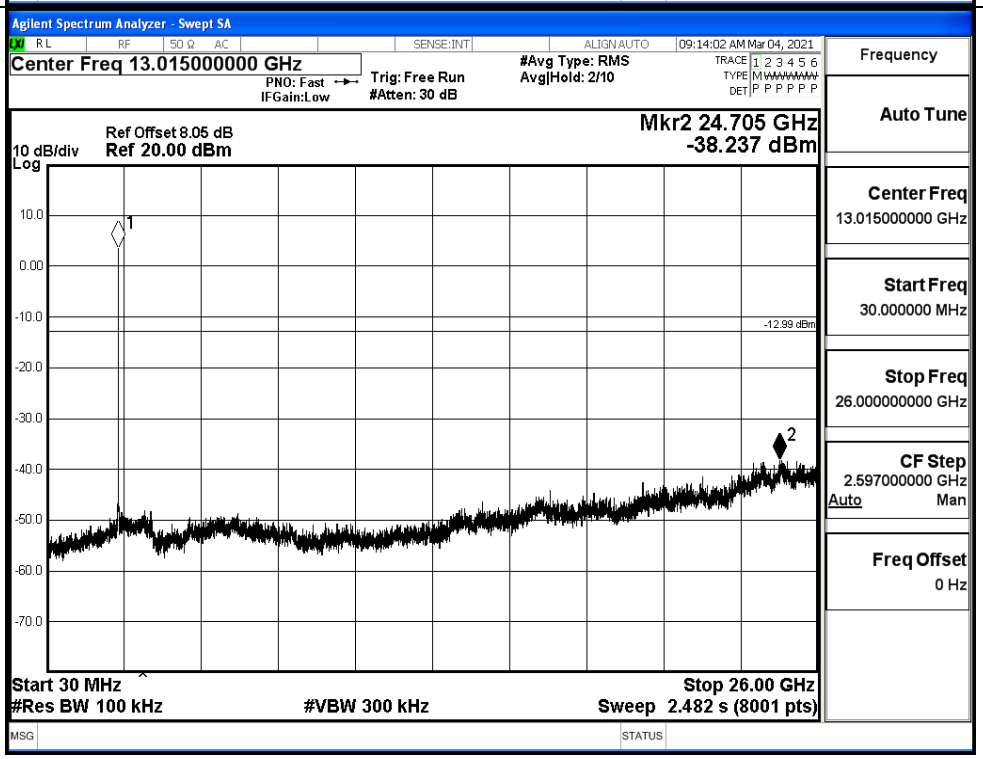
| | | |
|---|---|---|
| 11G/HCH |  | |
| 11N20SISO/LCH |  | |

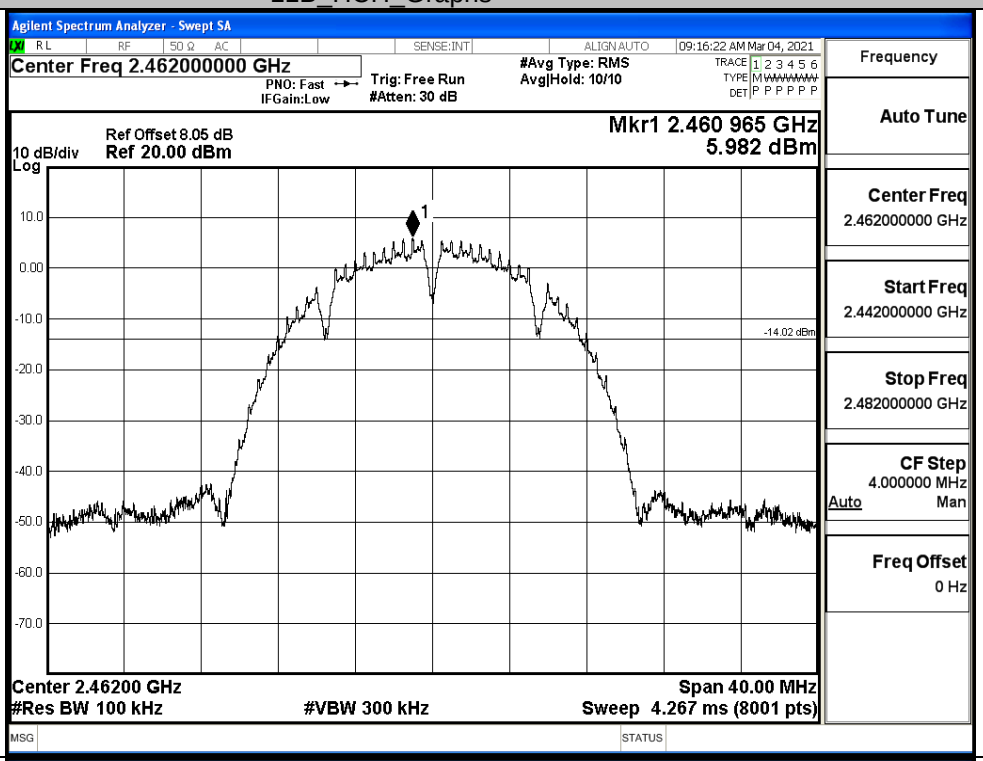
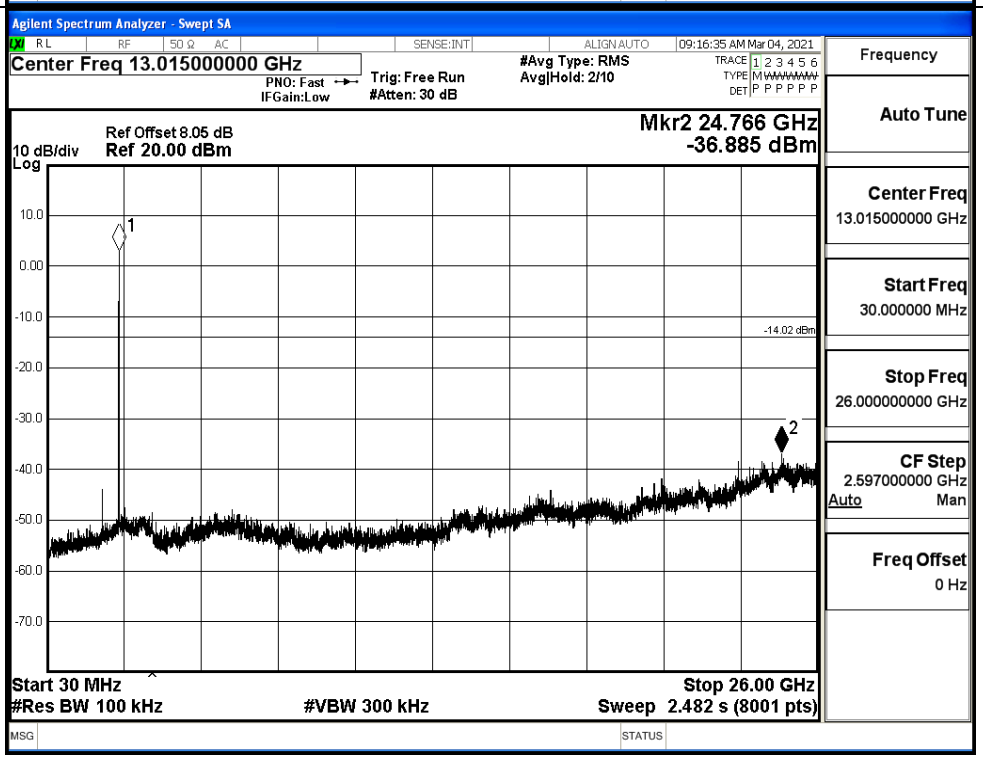
| | | |
|---|---|---|
| 11N20SISO/MCH |  | |
| 11N20SISO/HCH |  | |

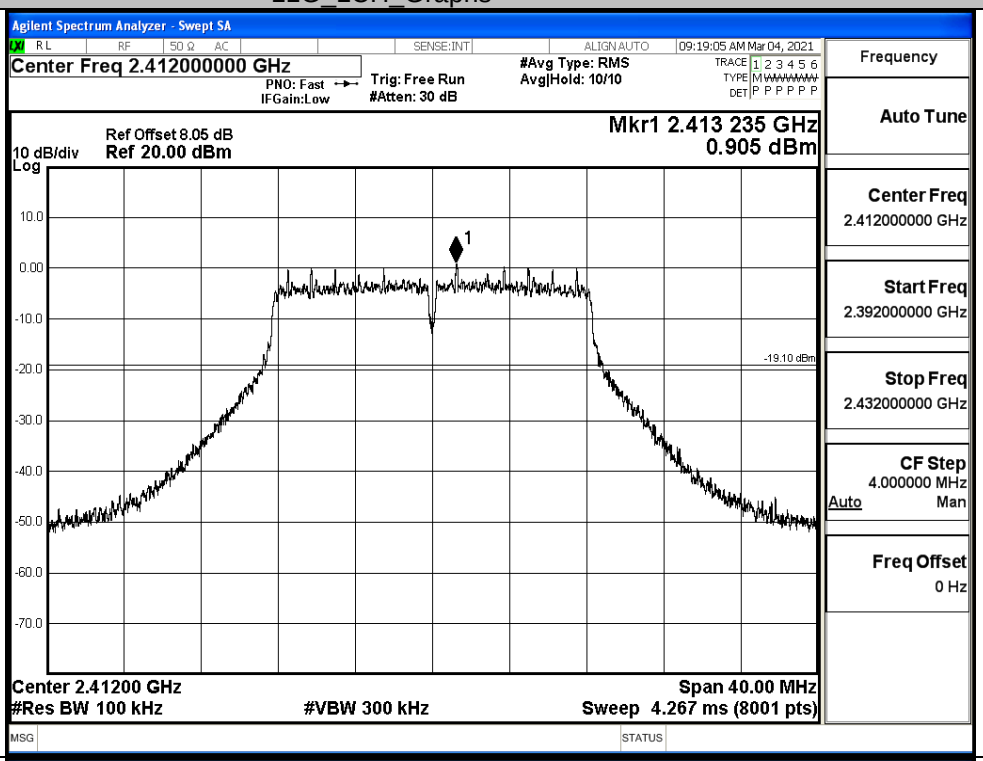
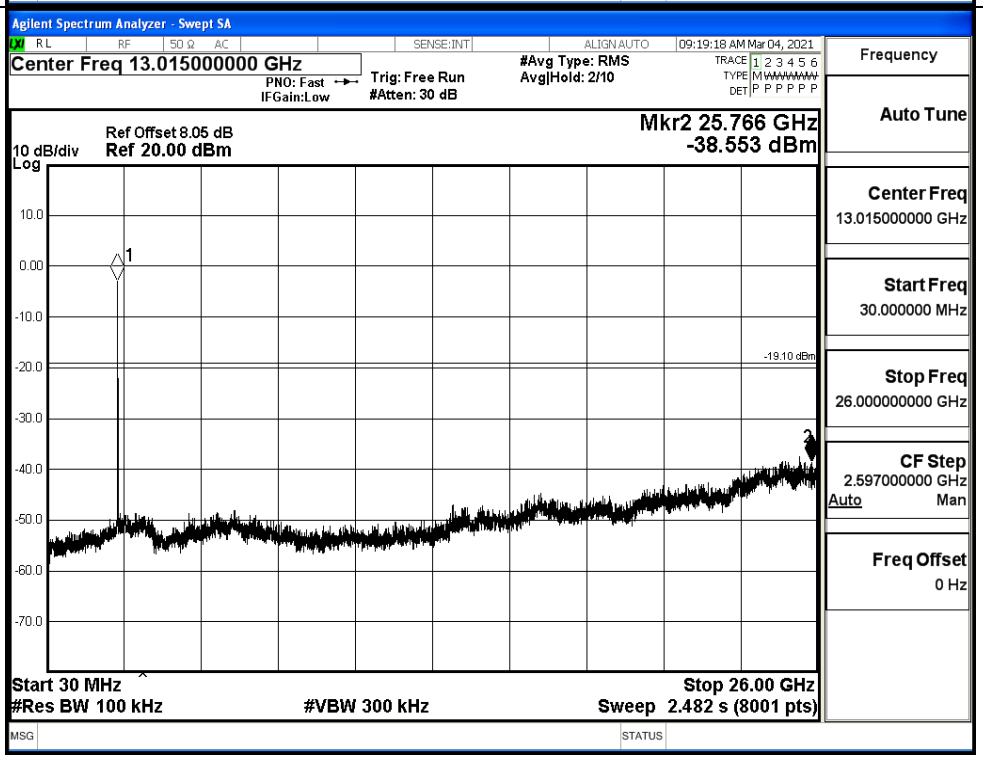
## A.6 RF Conducted Spurious Emissions

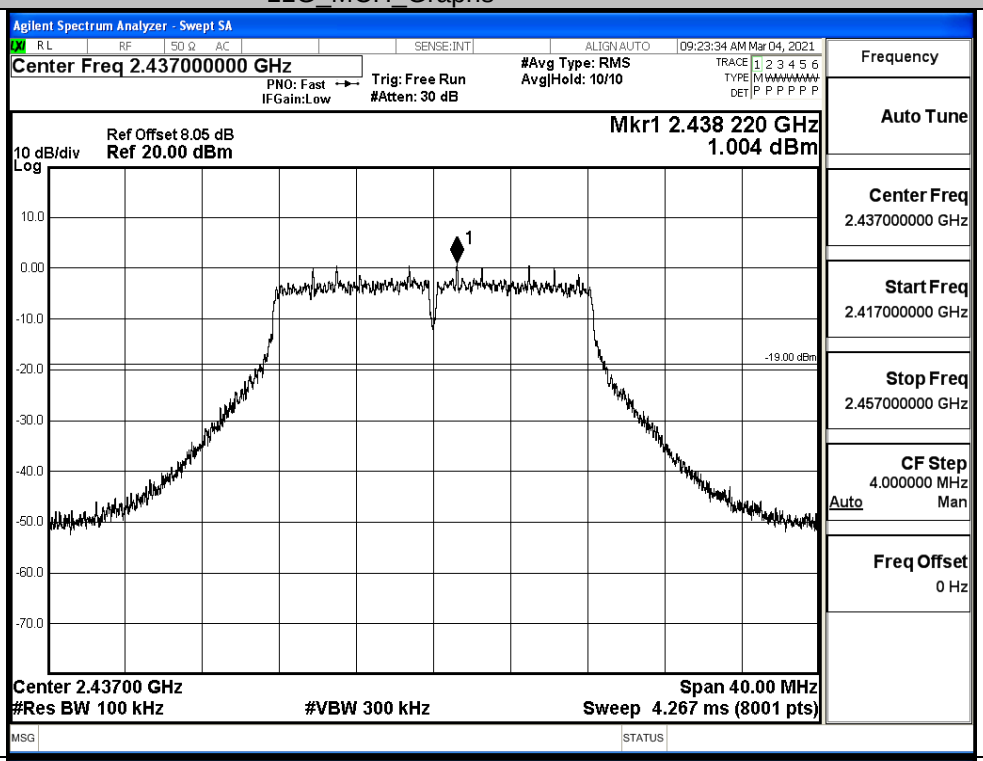
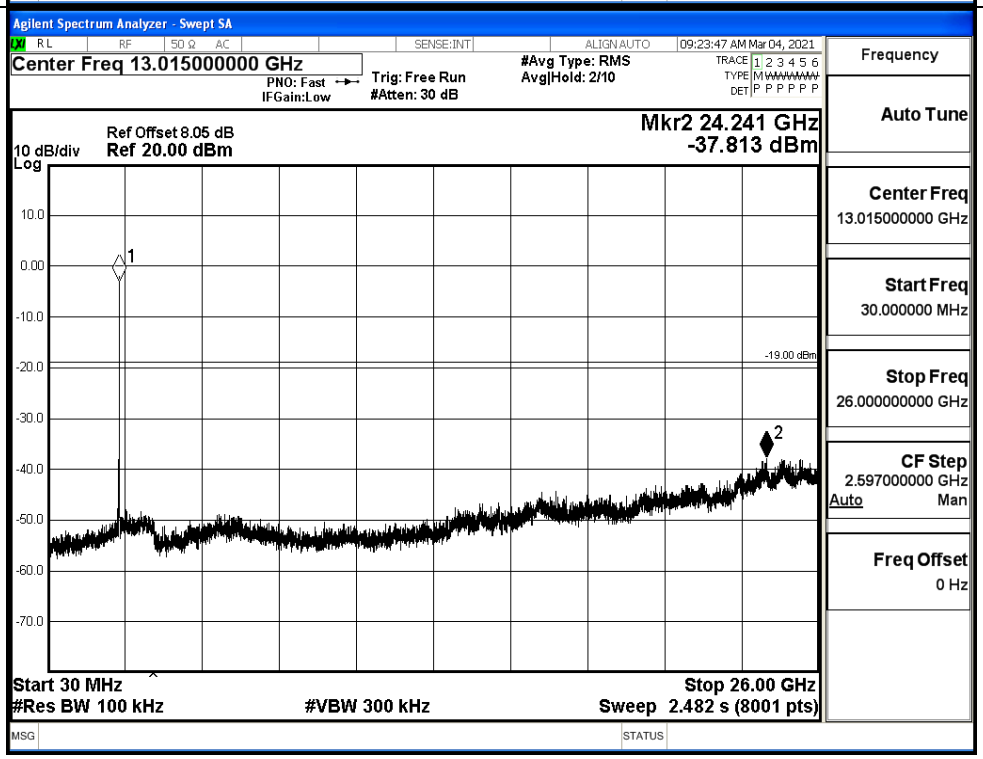
| Mode | Channel | Pref [dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|---|---|---|---|---|---|
| 11B | LCH | 6.133 | -38.278 | -13.867 | PASS |
| | MCH | 7.008 | -38.237 | -12.992 | PASS |
| | HCH | 5.982 | -36.885 | -14.018 | PASS |
| 11G | LCH | 0.905 | -38.553 | -19.095 | PASS |
| | MCH | 1.004 | -37.813 | -18.996 | PASS |
| | HCH | 0.702 | -38.315 | -19.298 | PASS |
| 11N20 SISO | LCH | 0.749 | -38.239 | -19.251 | PASS |
| | MCH | 1.357 | -38.150 | -18.643 | PASS |
| | HCH | 1.058 | -38.108 | -18.942 | PASS |

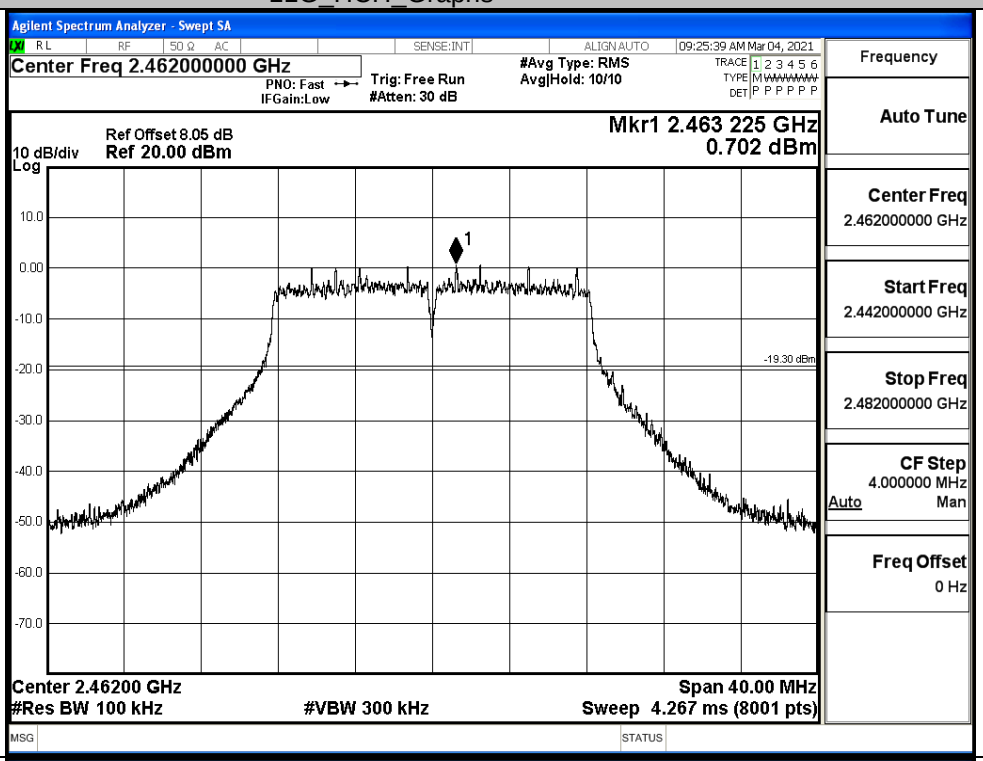
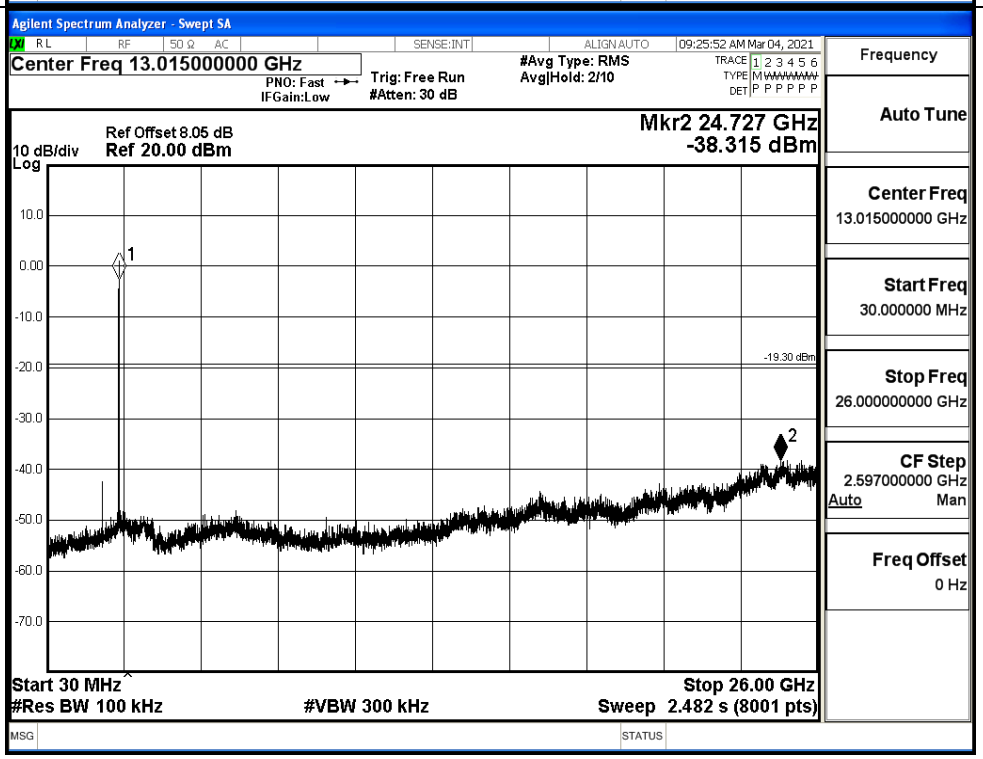
| 11B_LCH_Graphs | | |
|---|---|---|
| Pref/11B/LCH | |  |
| Puw/11B/LCH | |  |

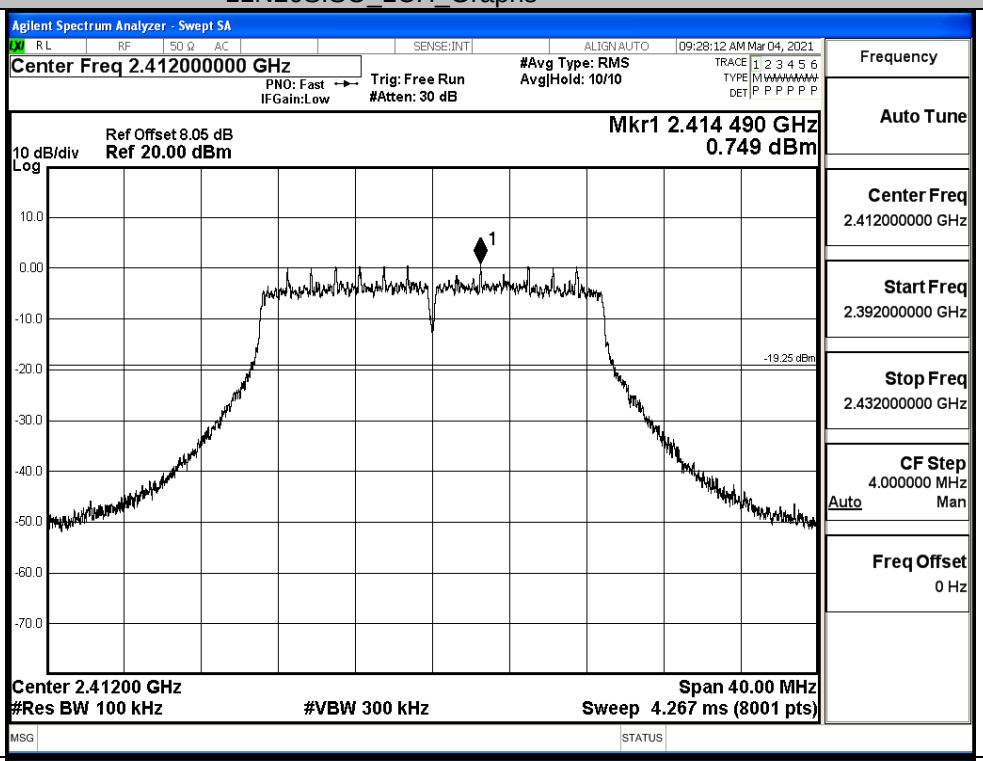
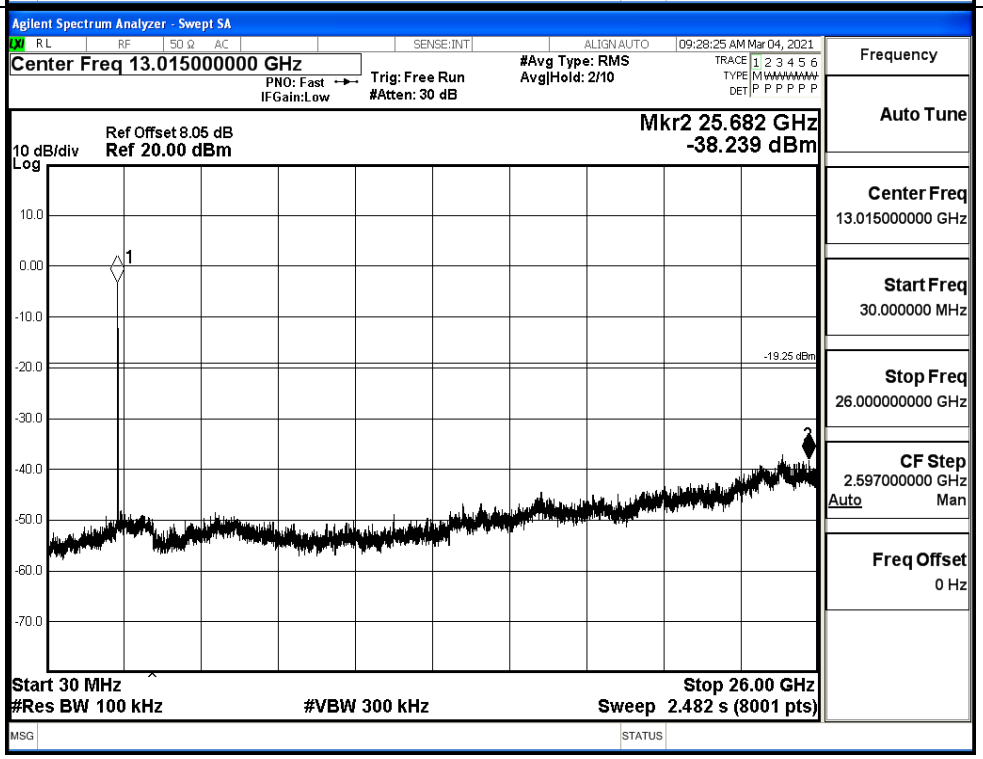
| 11B_MCH_Graphs | | |
|---|---|---|
| Pref/11B/MCH | |  |
| Puw/11B/MCH | |  |

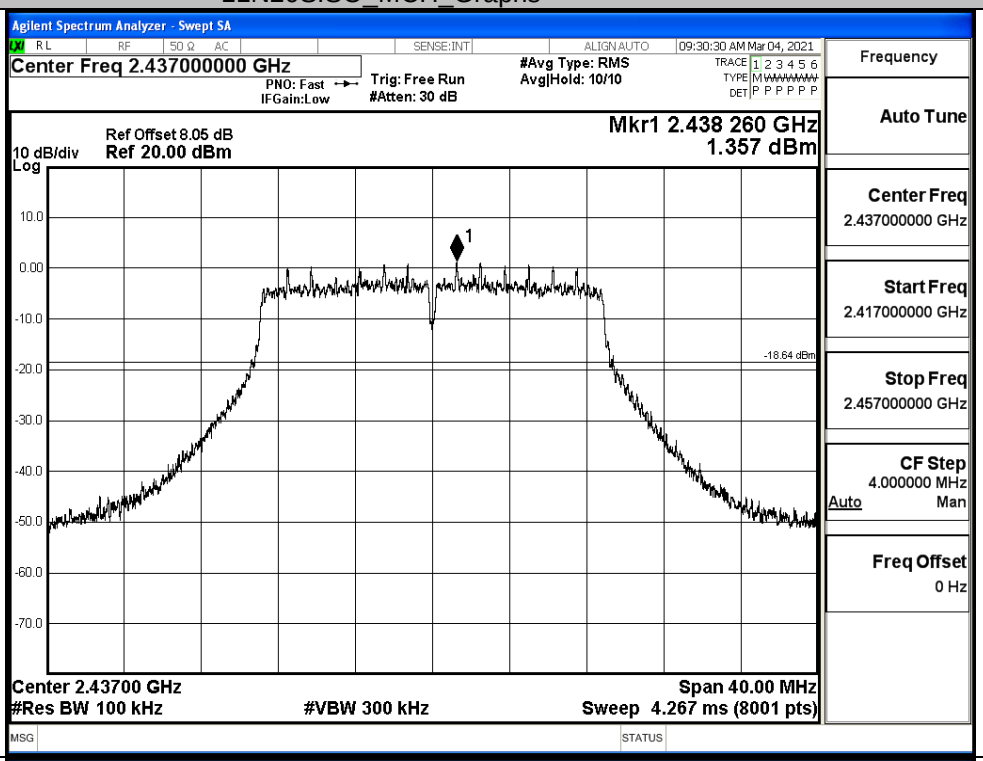
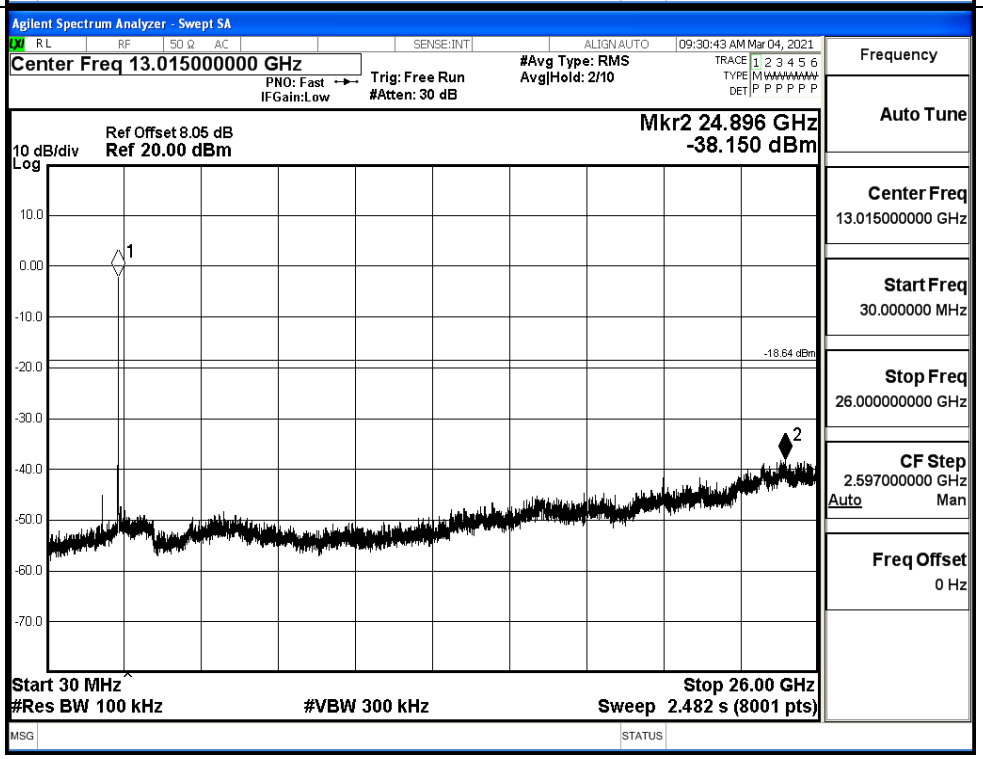
| 11B_HCH_Graphs | | |
|---|---|---|
| Pref/11B/HCH | |  |
| Puw/11B/HCH | |  |

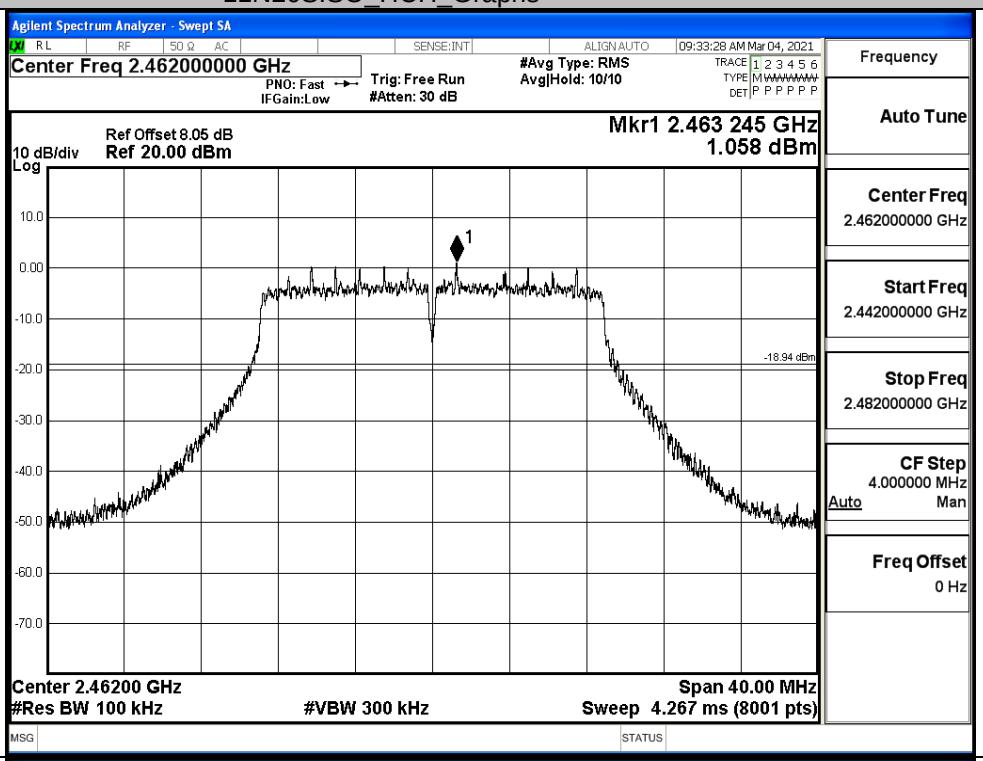
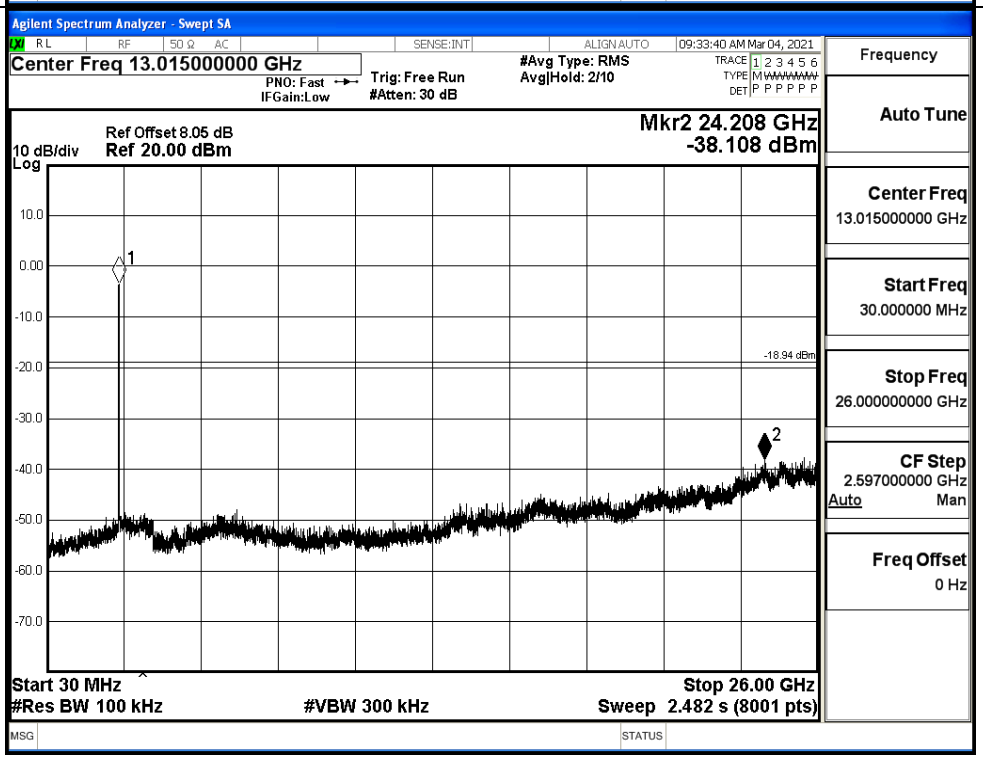
| 11G_LCH_Graphs | | |
|---|---|---|
| Pref/11G/LCH | |  |
| Puw/11G/LCH | |  |

| 11G_MCH_Graphs | | |
|---|---|---|
| Pref/11G/MCH | |  |
| Puw/11G/MCH | |  |

| 11G_HCH_Graphs | | |
|---|---|---|
| Pref/11G/HCH | |  |
| Puw/11G/HCH | |  |

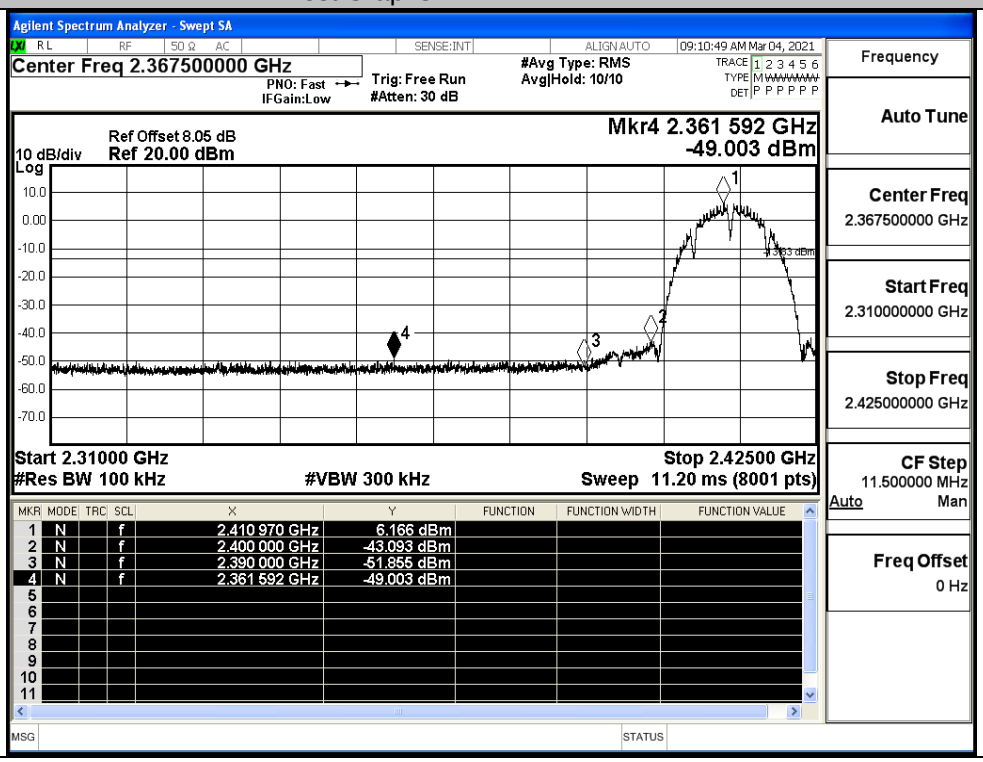
| 11N20SISO_LCH_Graphs | | |
|---|---|---|
| Pref/11N20SISO/LCH | |  |
| Puw/11N20SISO/LCH | |  |

| 11N20SISO_MCH_Graphs | |
|---|---|
| Pref/11N20 SISO/MCH |  |
| Puw/11N20 SISO/MCH |  |

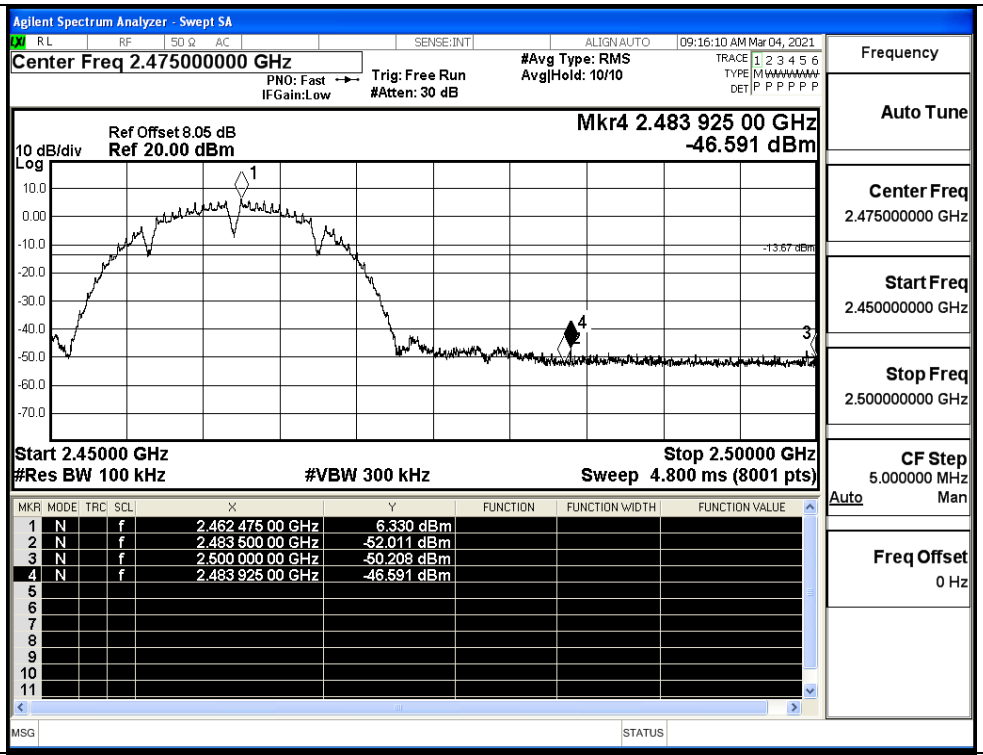
| 11N20SISO_HCH_Graphs | |
|---|---|
| Pref/11N20 SISO/HCH |  |
| Puw/11N20 SISO/HCH |  |

## A.7 Band-edge for RF Conducted Emissions

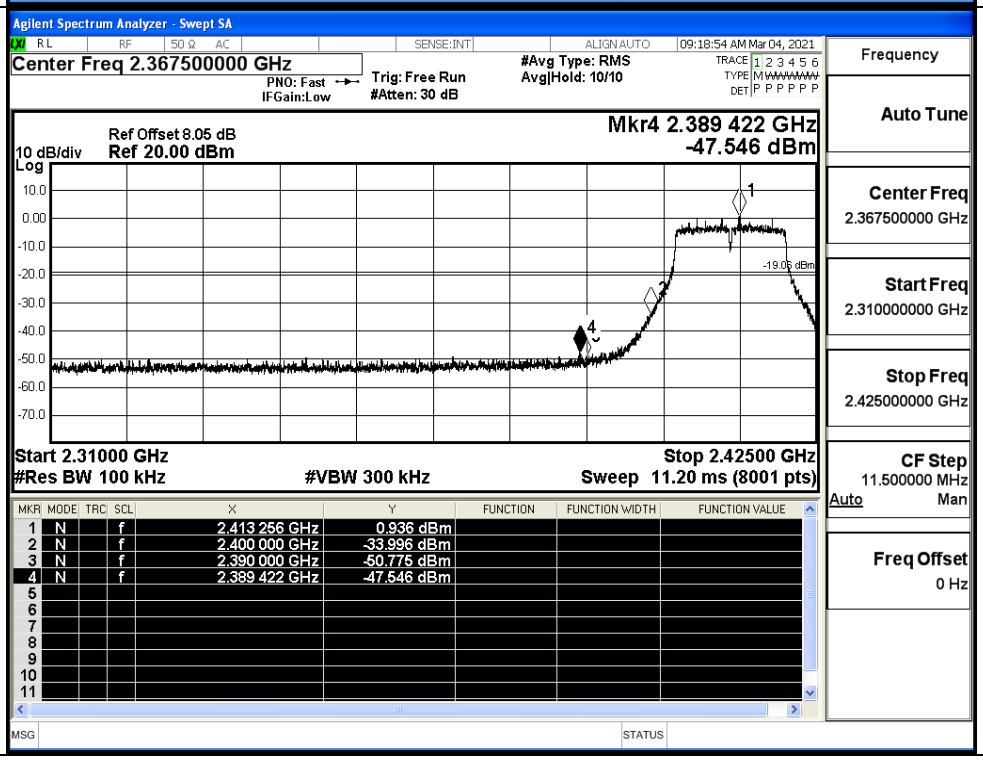
| Mode | Channel | Carrier Power[dBm] | Max.Spurious Level [dBm] | Limit [dBm] | Verdict |
|---|---|---|---|---|---|
| 11B | LCH | 6.166 | -49.003 | -13.83 | PASS |
| | HCH | 6.330 | -46.591 | -13.67 | PASS |
| 11G | LCH | 0.936 | -47.546 | -19.06 | PASS |
| | HCH | 0.682 | -48.182 | -19.32 | PASS |
| 11N20SISO | LCH | 0.182 | -48.521 | -19.82 | PASS |
| | HCH | 1.069 | -48.584 | -18.93 | PASS |

| Test Graphs | |
|---|---|
| 11B/LCH |  |

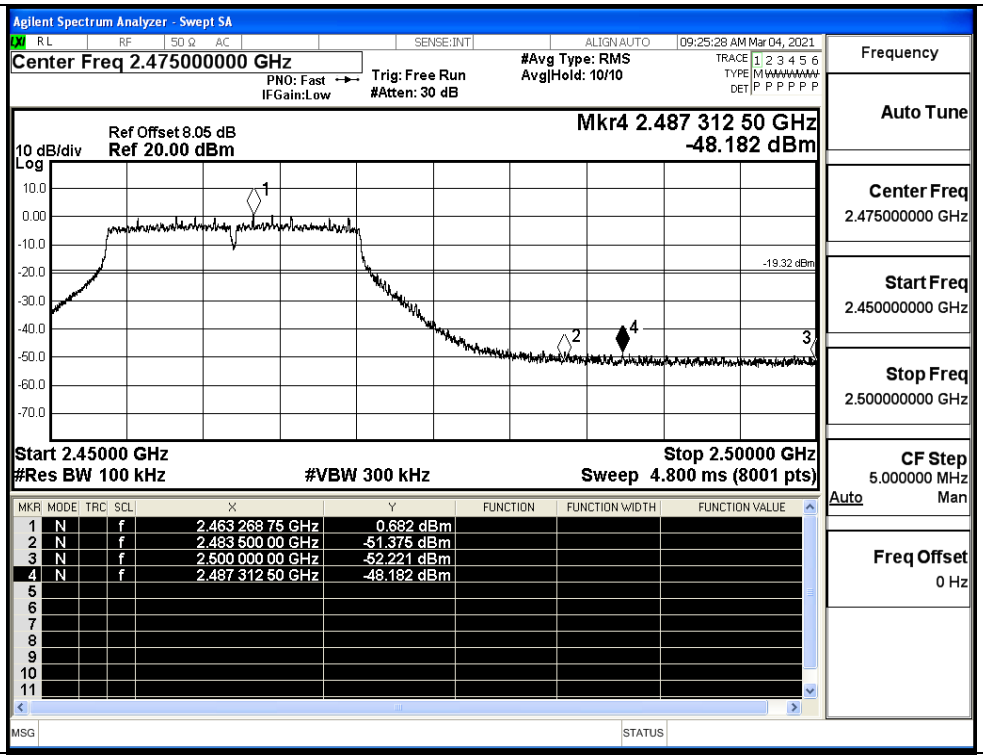
11B/HCH



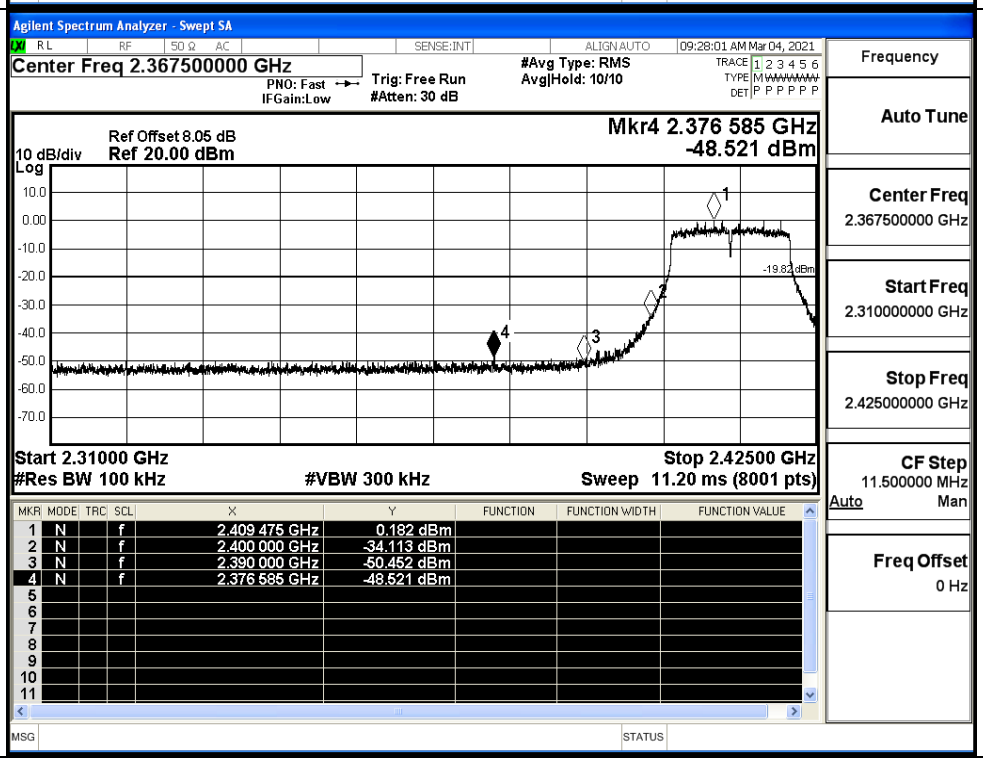

11G/LCH



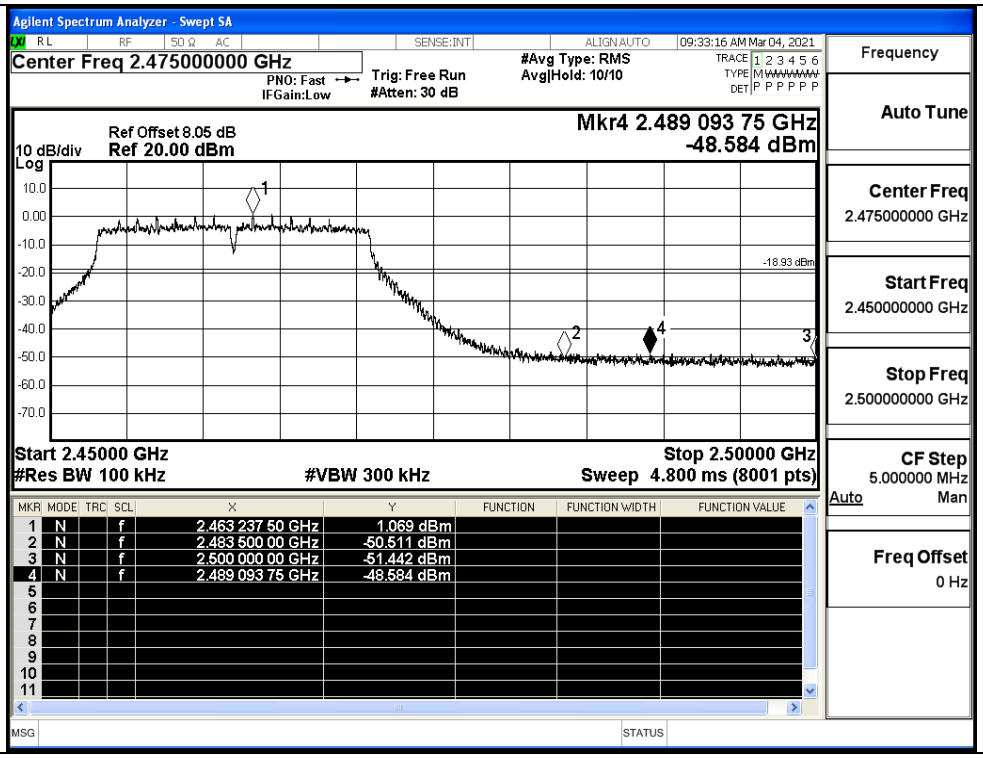
11G/HCH




11N20SISO/LCH



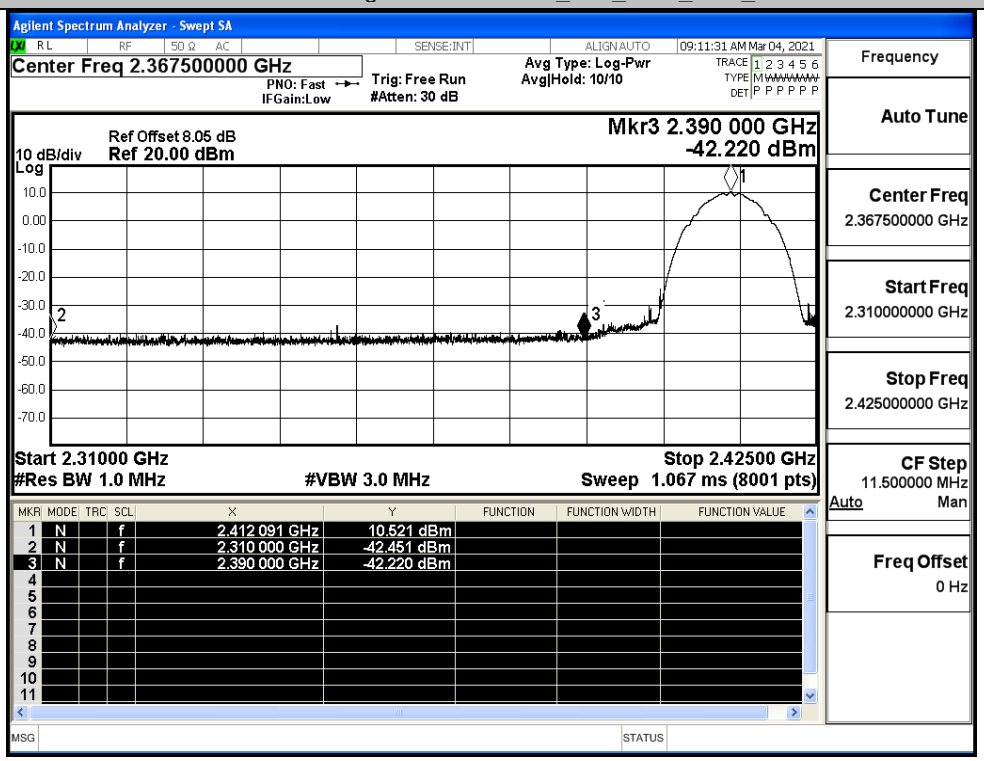
11N20SISO/HCH



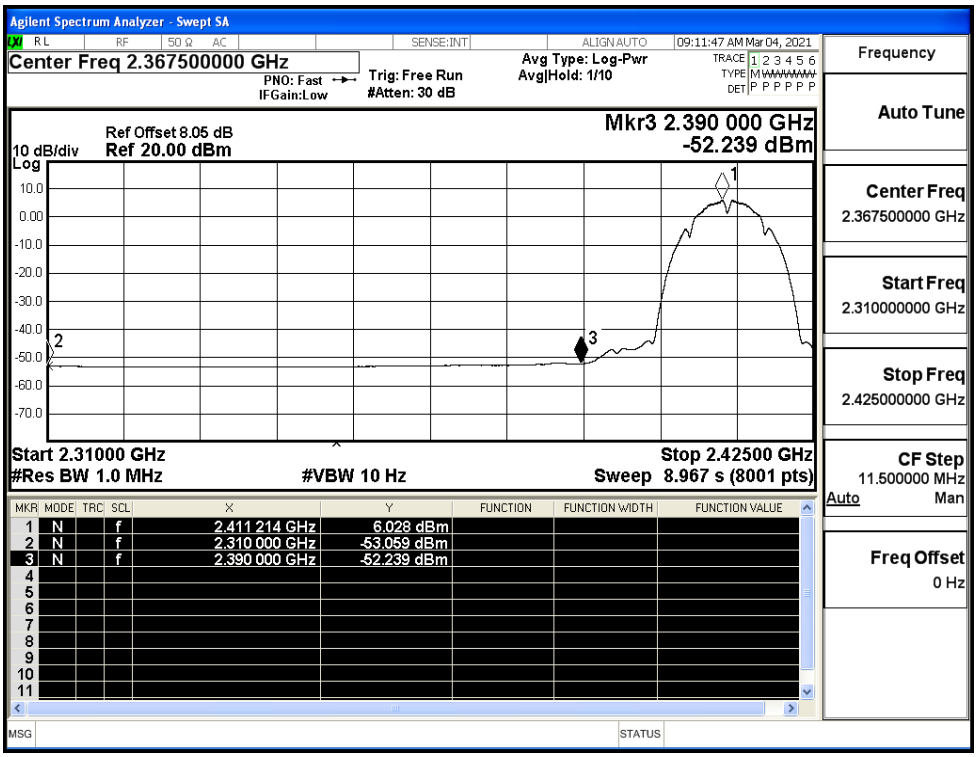
## A.8 Restrict-band band-edge measurements

| Test Mode | Test Channel | Ant | Freq. | Power [dBm] | Gain | Ground Factor | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdict |
|---|---|---|---|---|---|---|---|---|---|---|
| 11B | 2412 | Ant1 | 2310.0 | -42.45 | 2.0 | 0 | 54.81 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2310.0 | -53.06 | 2.0 | 0 | 44.20 | AV | 54 | PASS |
| | 2412 | Ant1 | 2390.0 | -42.22 | 2.0 | 0 | 55.04 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2390.0 | -52.24 | 2.0 | 0 | 45.02 | AV | 54 | PASS |
| | 2462 | Ant1 | 2483.5 | -41.13 | 2.0 | 0 | 56.13 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2483.5 | -51.82 | 2.0 | 0 | 45.44 | AV | 54 | PASS |
| | 2462 | Ant1 | 2500.0 | -39.47 | 2.0 | 0 | 57.79 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2500.0 | -52.03 | 2.0 | 0 | 45.23 | AV | 54 | PASS |
| 11G | 2412 | Ant1 | 2310.0 | -43.57 | 2.0 | 0 | 53.69 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2310.0 | -53.26 | 2.0 | 0 | 43.99 | AV | 54 | PASS |
| | 2412 | Ant1 | 2390.0 | -39.16 | 2.0 | 0 | 58.10 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2390.0 | -51.44 | 2.0 | 0 | 45.81 | AV | 54 | PASS |
| | 2462 | Ant1 | 2483.5 | -40.59 | 2.0 | 0 | 56.67 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2483.5 | -51.05 | 2.0 | 0 | 46.21 | AV | 54 | PASS |
| | 2462 | Ant1 | 2500.0 | -41.85 | 2.0 | 0 | 55.41 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2500.0 | -52.07 | 2.0 | 0 | 45.19 | AV | 54 | PASS |
| 11N20 SISO | 2412 | Ant1 | 2310.0 | -41.91 | 2.0 | 0 | 55.35 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2310.0 | -53.25 | 2.0 | 0 | 44.00 | AV | 54 | PASS |
| | 2412 | Ant1 | 2390.0 | -38.21 | 2.0 | 0 | 59.04 | PEAK | 74 | PASS |
| | 2412 | Ant1 | 2390.0 | -51.22 | 2.0 | 0 | 46.04 | AV | 54 | PASS |
| | 2462 | Ant1 | 2483.5 | -40.48 | 2.0 | 0 | 56.77 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2483.5 | -50.88 | 2.0 | 0 | 46.38 | AV | 54 | PASS |
| | 2462 | Ant1 | 2500.0 | -41.56 | 2.0 | 0 | 55.70 | PEAK | 74 | PASS |
| | 2462 | Ant1 | 2500.0 | -52.04 | 2.0 | 0 | 45.22 | AV | 54 | PASS |

Restrict-band band-edge measurements_11B_2412_Ant1_PEAK




Restrict-band band-edge measurements_11B_2412_Ant1_AV



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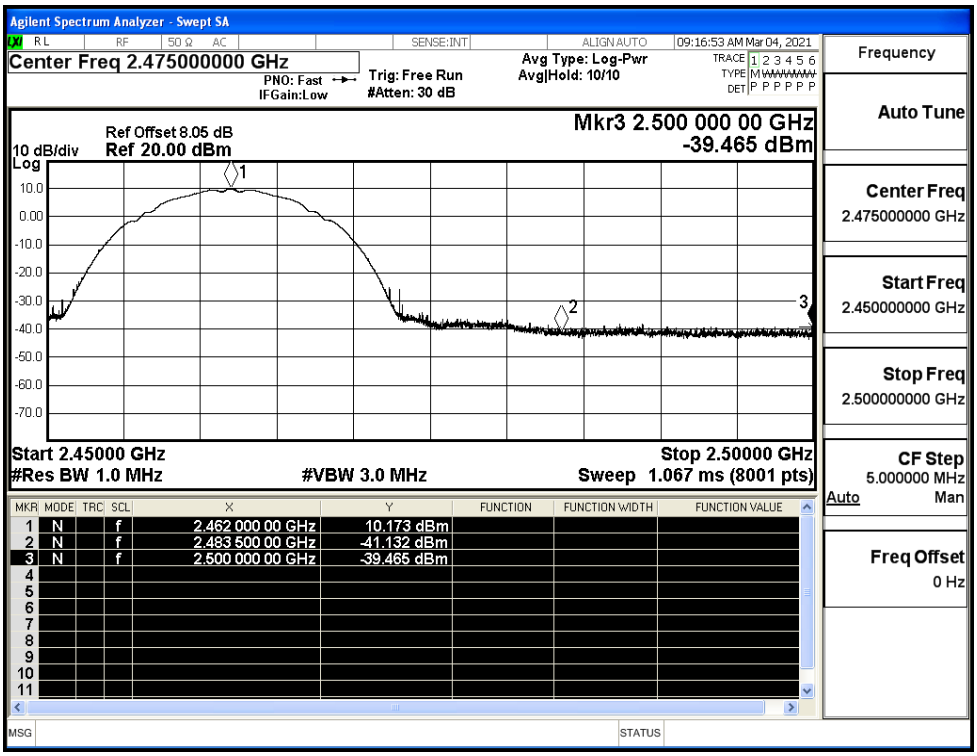


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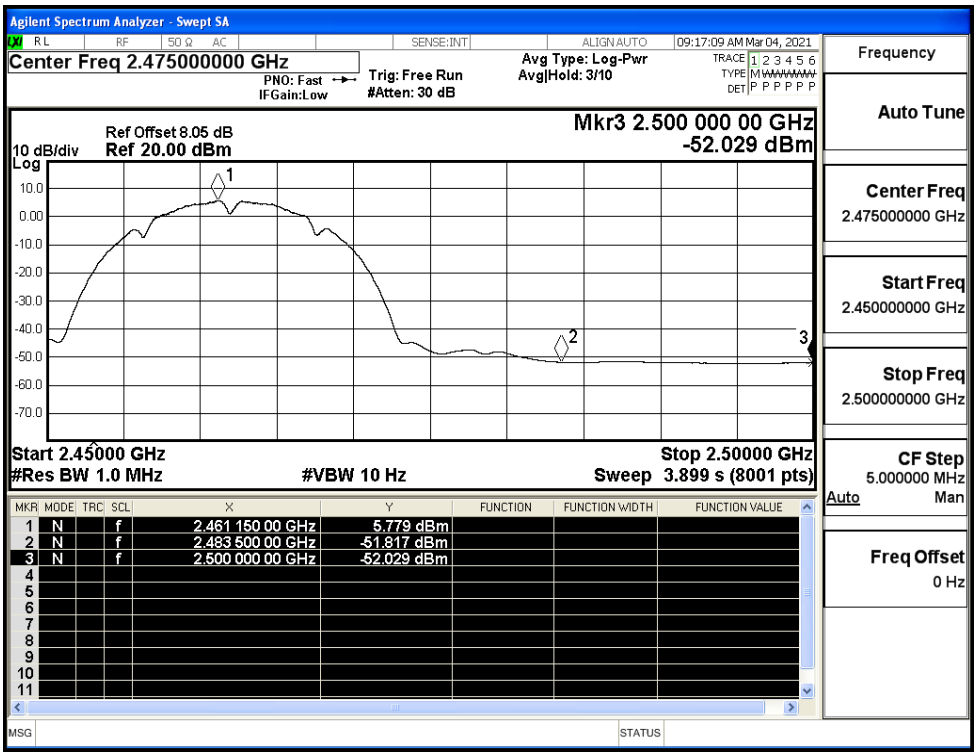

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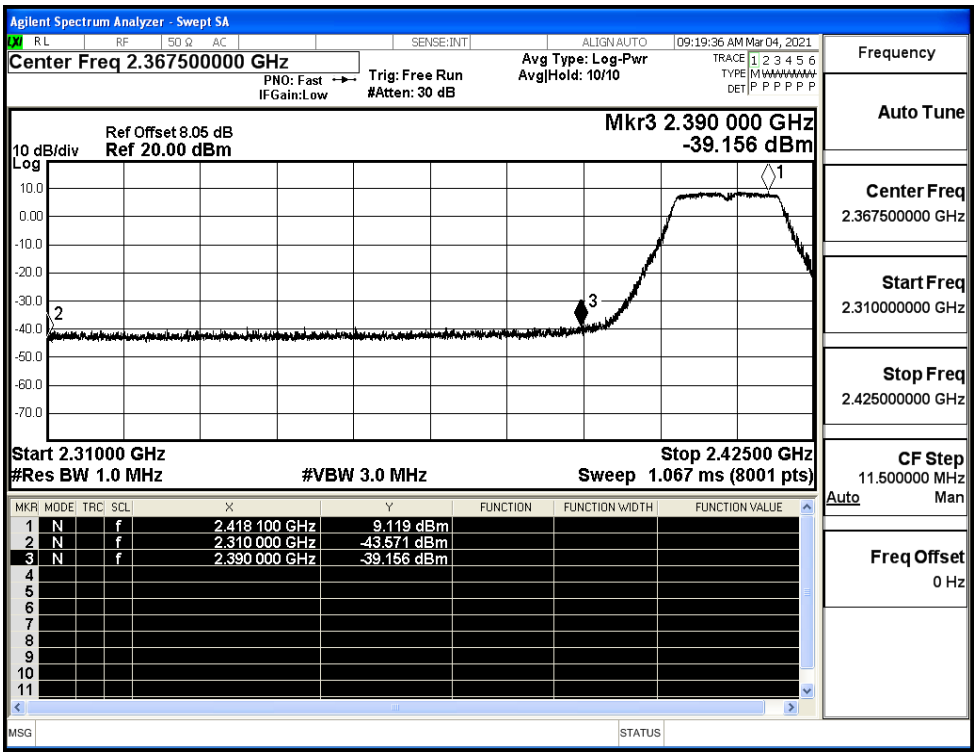


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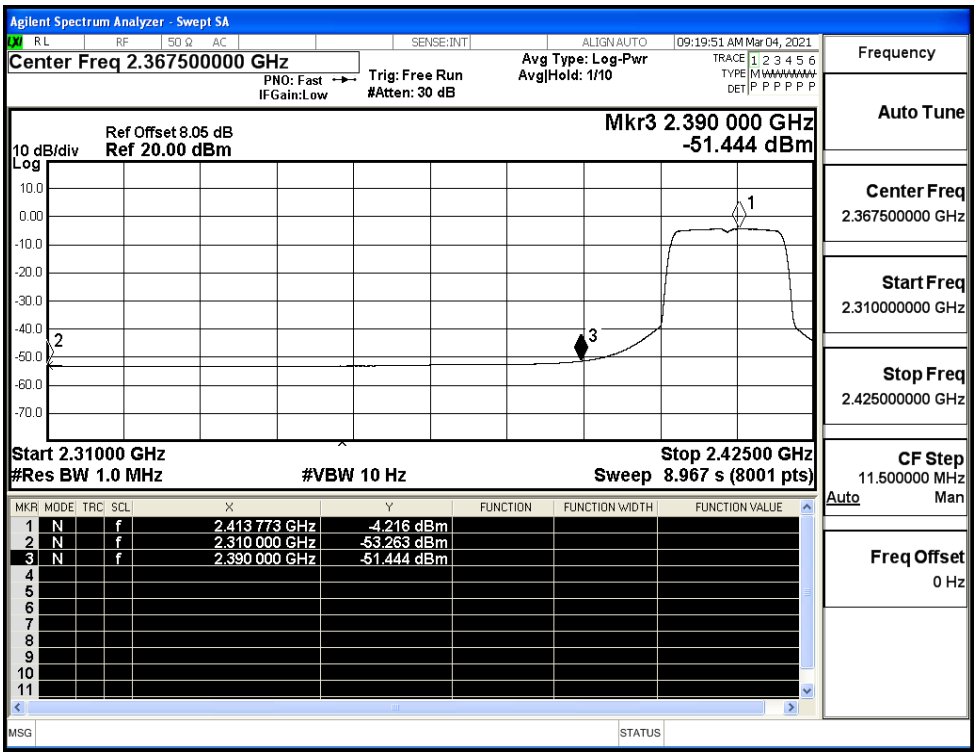

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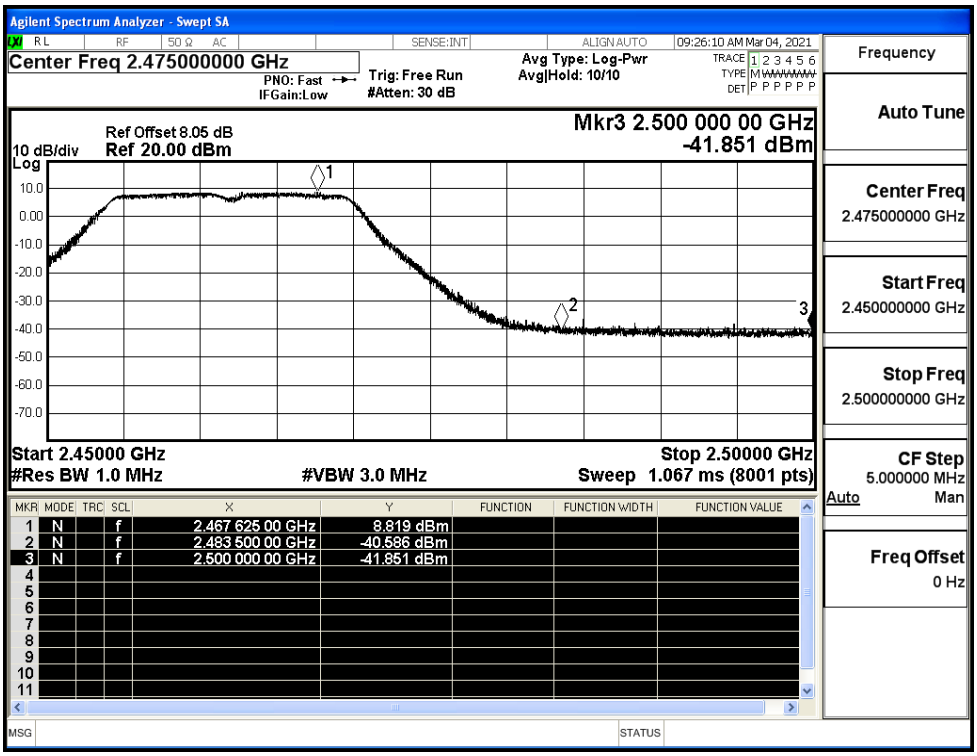


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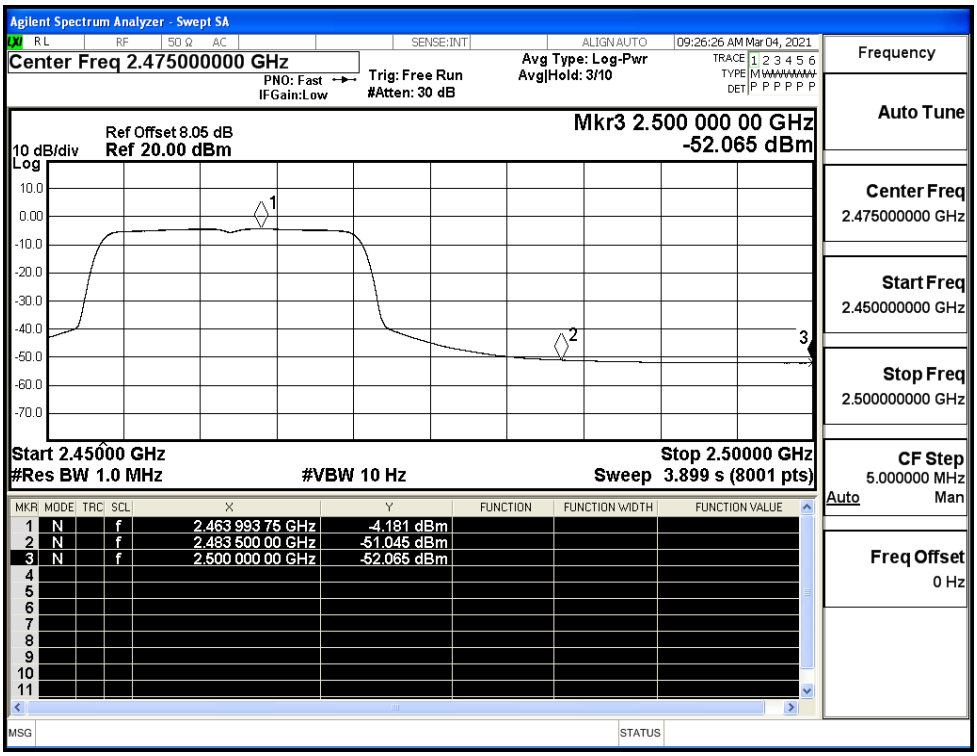

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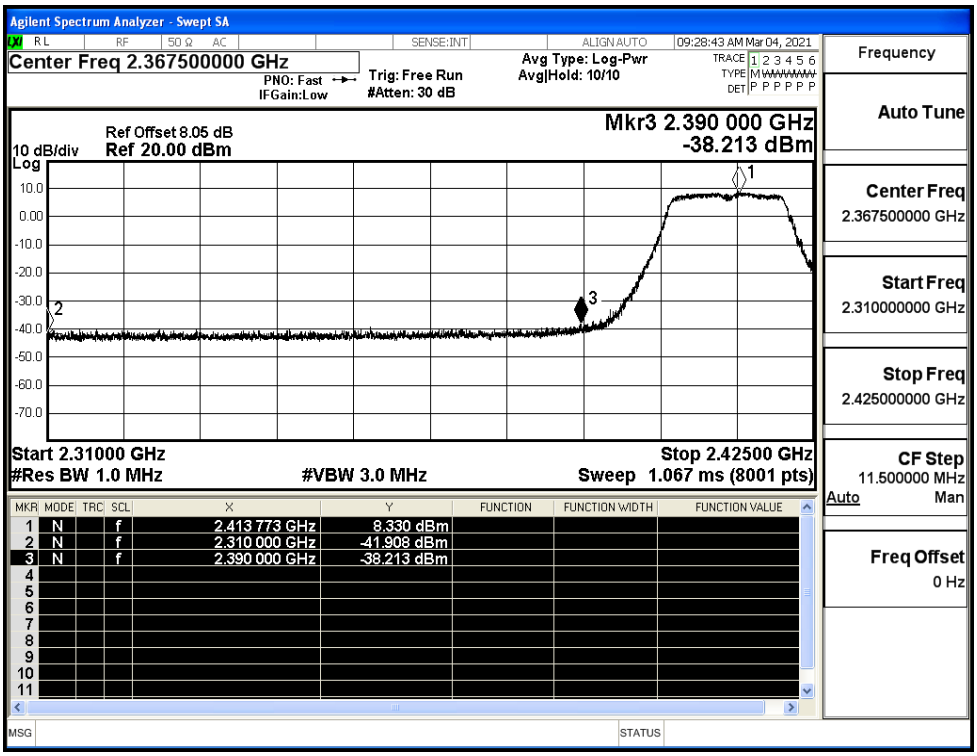


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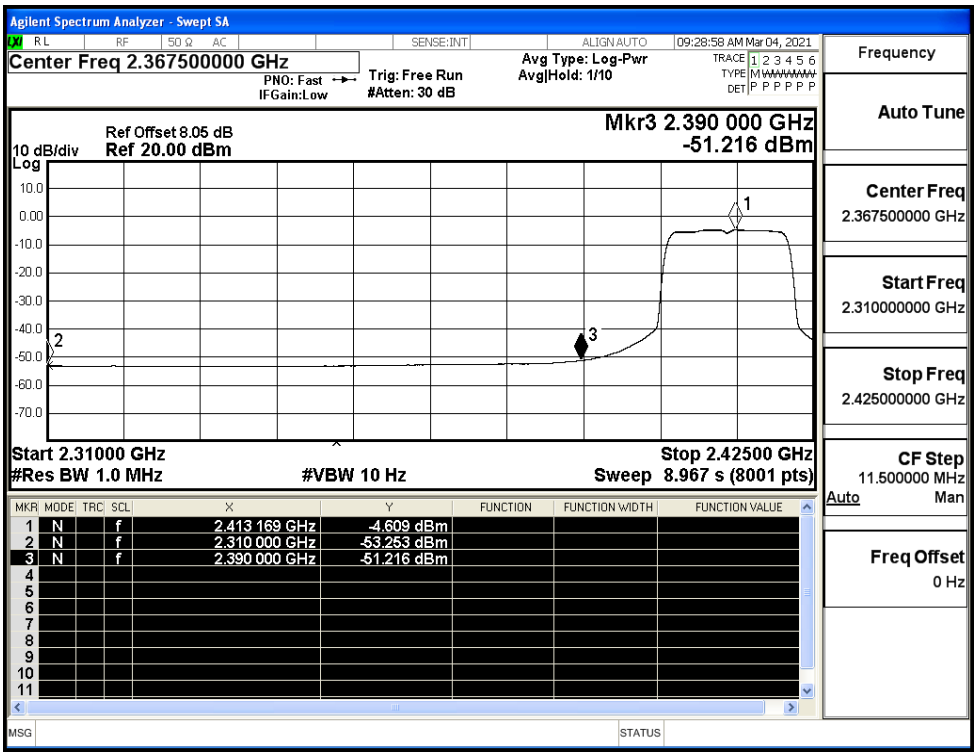

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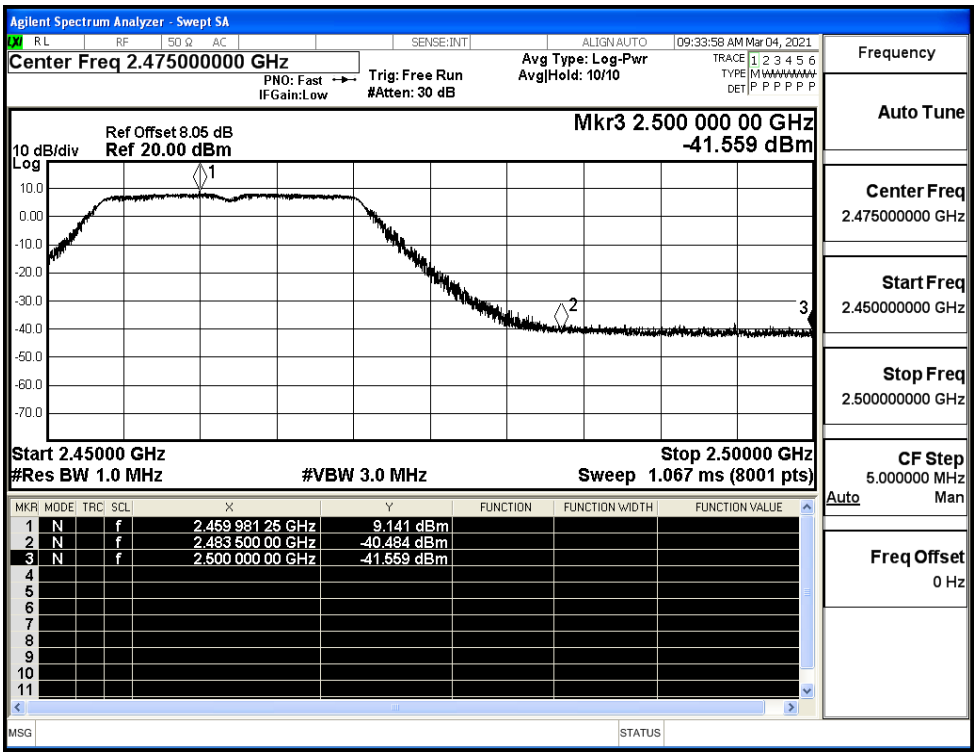

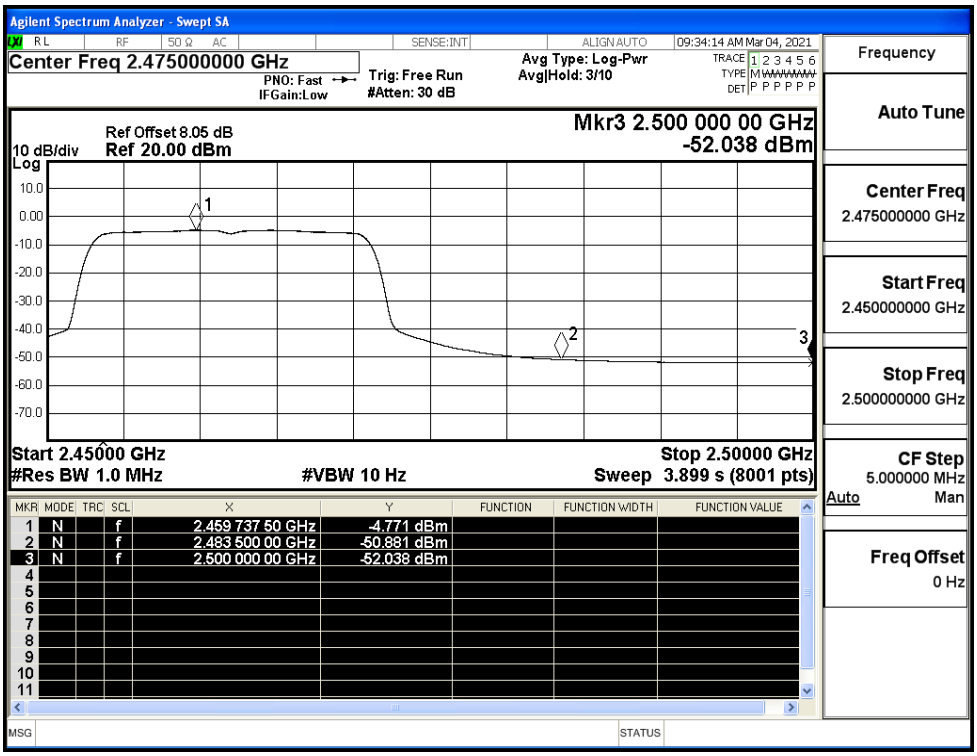
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