

Appendix B

RF Test Data for BT V5.0(DTS) (Conducted Measurement)

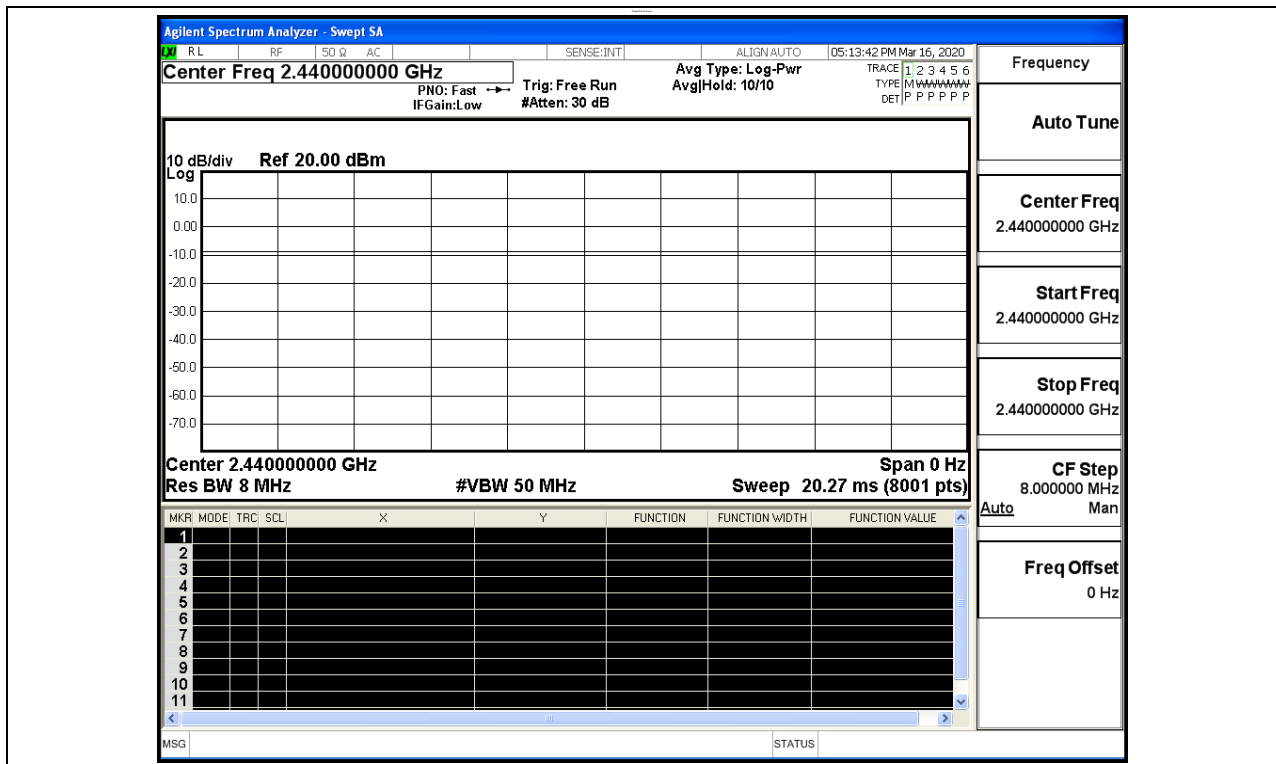
Product Name: Bluetooth Speaker
Trade Mark: Origaudio
Test Model: AMPZER

Environmental Conditions

| | |
|--------------------|-------------|
| Temperature: | 22.3 ° C |
| Relative Humidity: | 53.0% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Qu Xin |
| Supervised by: | Wang Chuang |

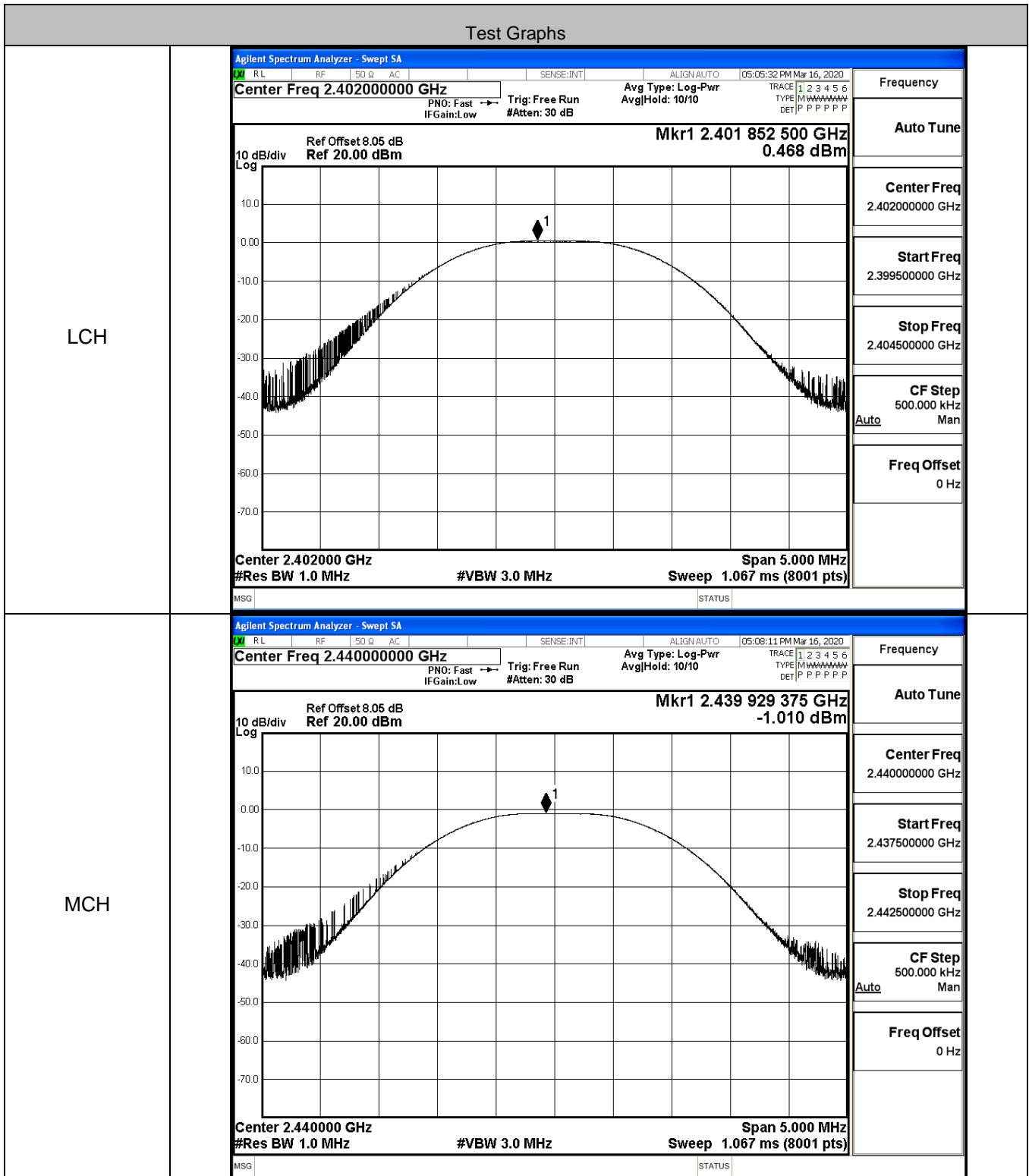
B.1 Duty Cycle

| Test Mode | Test Channel | Ant | Duty Cycle[%] | Verdict |
|-----------|--------------|------|---------------|---------|
| BT LE | 2440 | Ant1 | 100 | PASS |

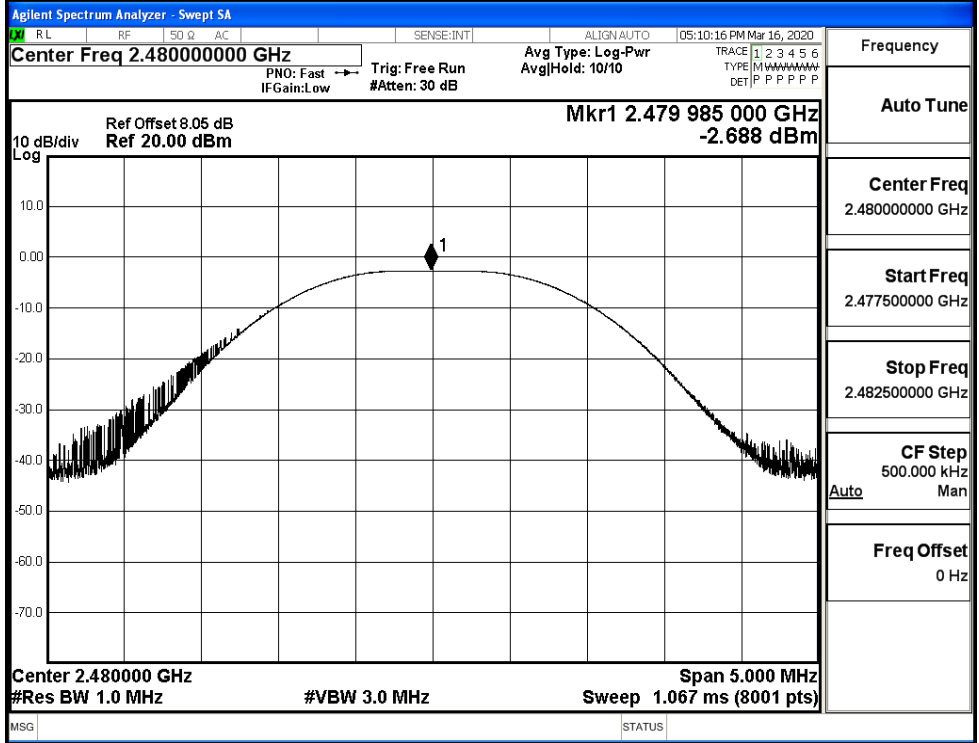


B.2 Maximum Conducted Peak Output Power

| Mode | Channel | Conduct Peak Power[dBm] | Limit [dBm] | Verdict |
|-------|---------|-------------------------|-------------|---------|
| BT LE | LCH | 0.468 | 30 | PASS |
| BT LE | MCH | -1.01 | 30 | PASS |
| BT LE | HCH | -2.688 | 30 | PASS |



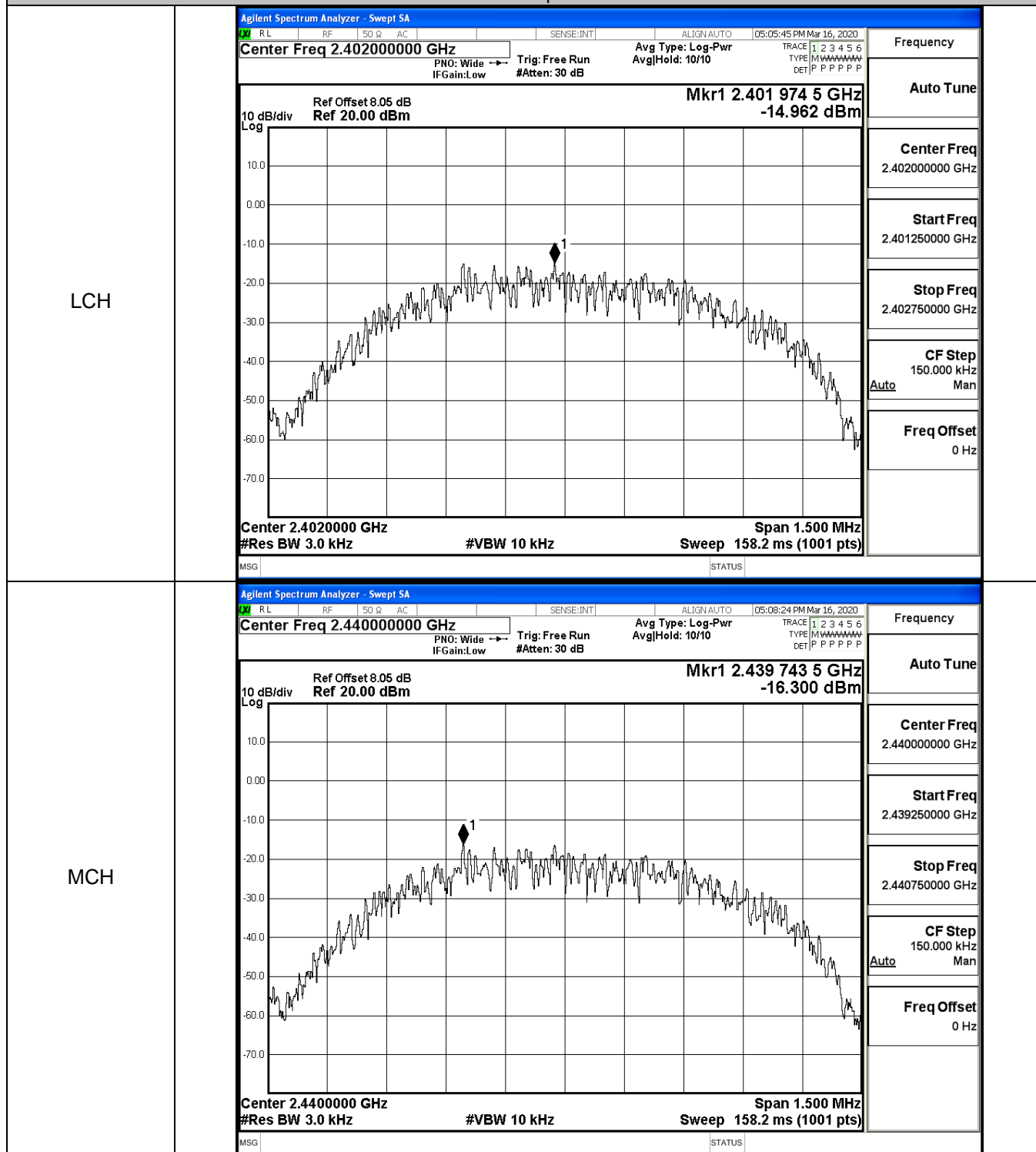
HCH



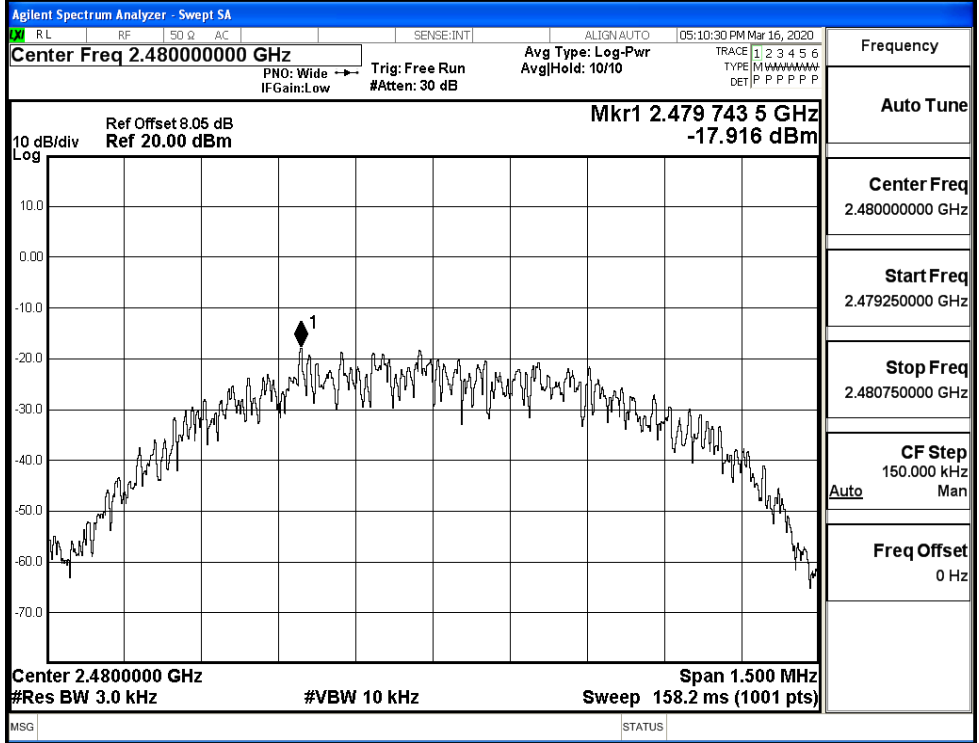
B.3 Maximum Power Spectral Density

| Mode | Channel | PSD [dBm/3KHz] | Limit [dBm/3KHz] | Verdict |
|-------|---------|----------------|------------------|---------|
| BT LE | LCH | -14.962 | 8 | PASS |
| BT LE | MCH | -16.300 | 8 | PASS |
| BT LE | HCH | -17.916 | 8 | PASS |

Test Graphs



HCH



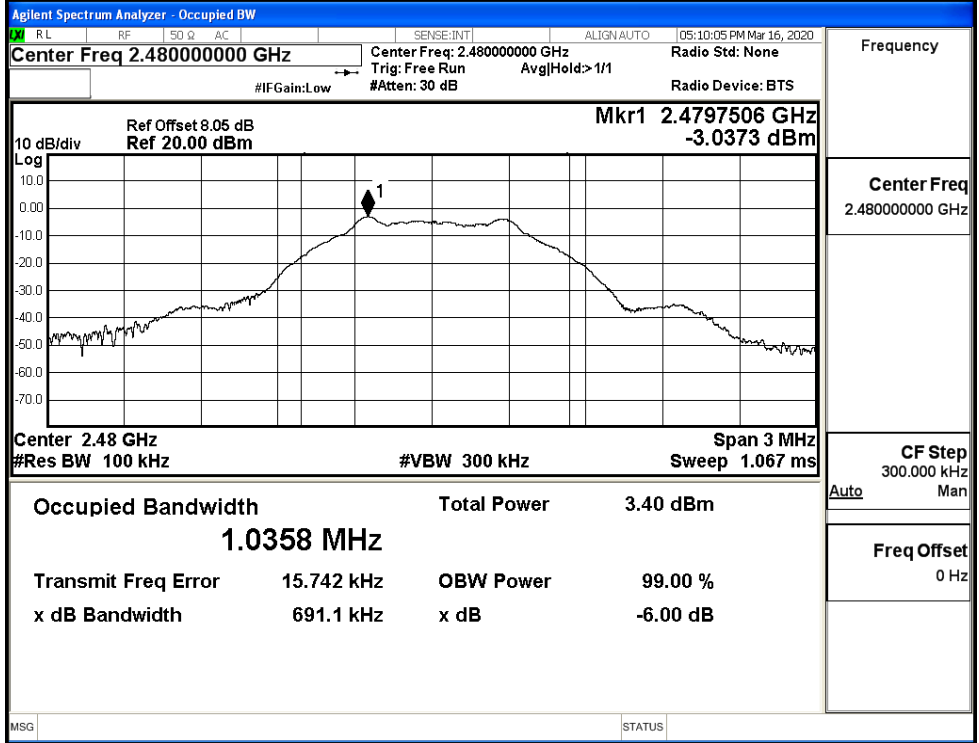
B.4 6dB Bandwidth

| Mode | Channel | 6dB Bandwidth [MHz] | Limit [MHz] | Verdict |
|-------|---------|---------------------|-------------|---------|
| BT LE | LCH | 0.6898 | ≥0.5 | PASS |
| BT LE | MCH | 0.6922 | ≥0.5 | PASS |
| BT LE | HCH | 0.6911 | ≥0.5 | PASS |

Test Graphs

| | | |
|-----|--|---|
| LCH | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.40200000 GHz</p> <p>Mkr1 2.4017506 GHz 0.043383 dBm</p> <p>Occupied Bandwidth 1.0333 MHz</p> <p>Total Power 6.48 dBm</p> <p>Transmit Freq Error 14.078 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 689.8 kHz</p> <p>x dB -6.00 dB</p> | <p>Frequency</p> <p>Center Freq 2.40200000 GHz</p> <p>CF Step 300.000 kHz</p> <p>Freq Offset 0 Hz</p> |
| | <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.44000000 GHz</p> <p>Mkr1 2.4397499 GHz -1.3812 dBm</p> <p>Occupied Bandwidth 1.0346 MHz</p> <p>Total Power 5.07 dBm</p> <p>Transmit Freq Error 16.097 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 692.2 kHz</p> <p>x dB -6.00 dB</p> | <p>Frequency</p> <p>Center Freq 2.44000000 GHz</p> <p>CF Step 300.000 kHz</p> <p>Freq Offset 0 Hz</p> |

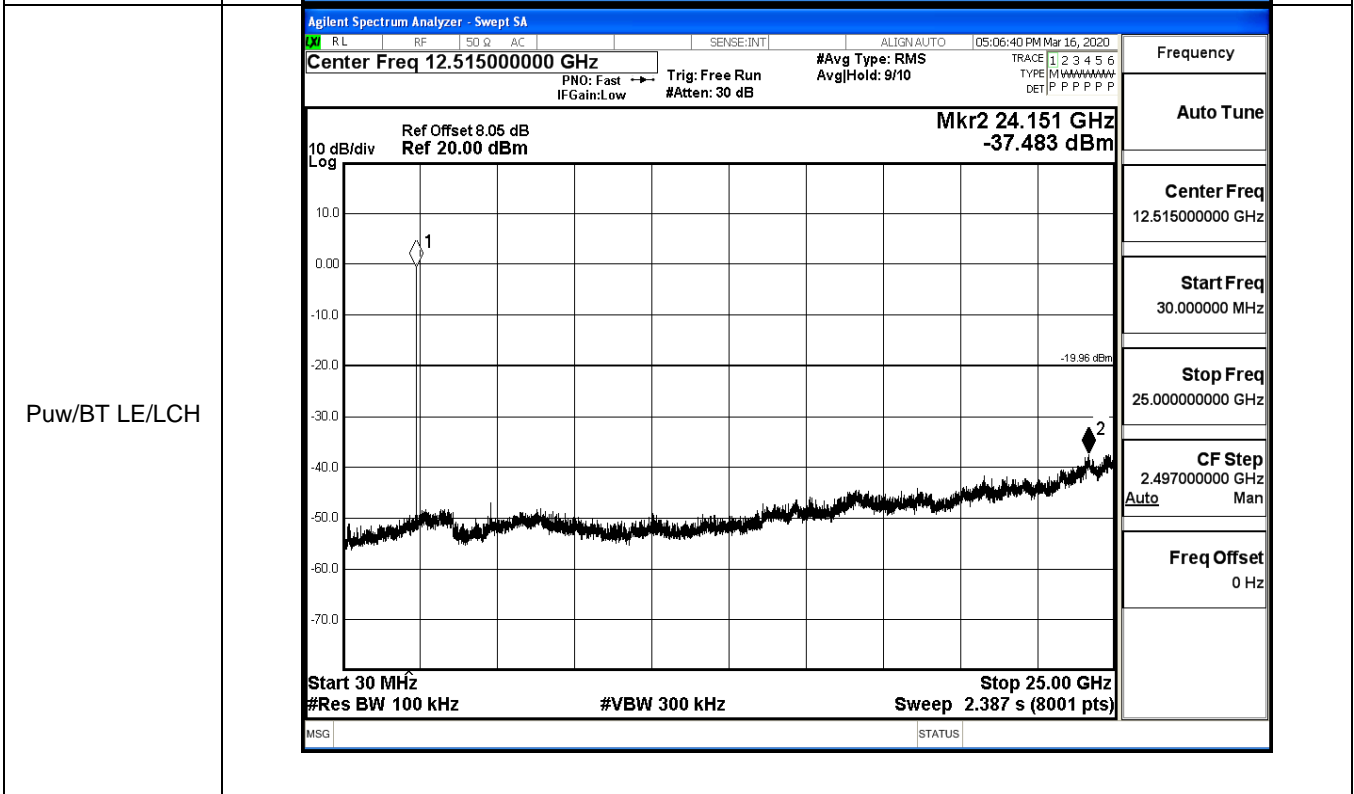
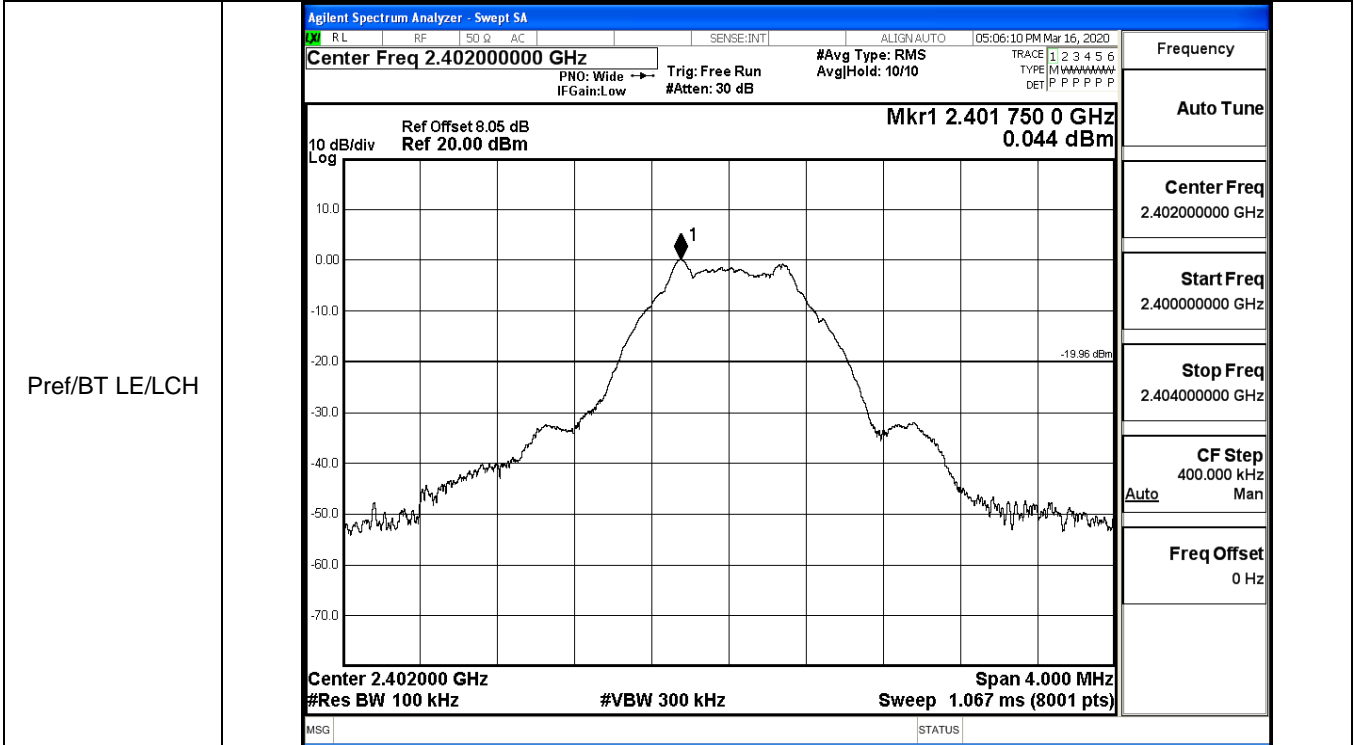
HCH



B.5 RF Conducted Spurious Emissions

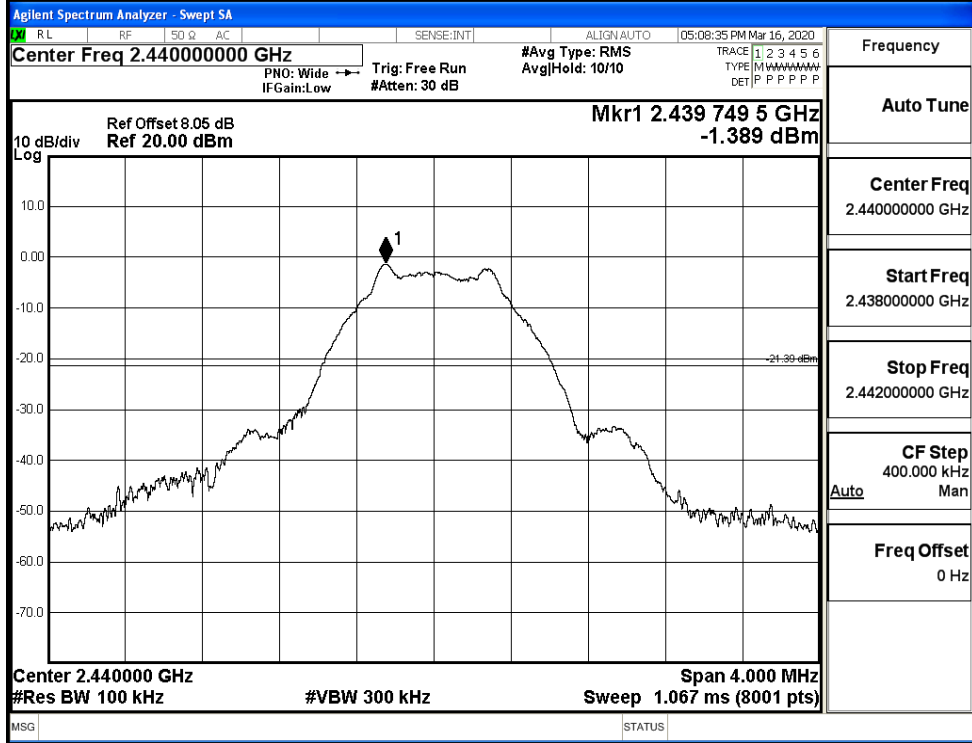
| Mode | Channel | Pref [dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|-------|---------|------------|------------------|-------------|---------|
| BT LE | LCH | 0.044 | -37.483 | -19.956 | PASS |
| BT LE | MCH | -1.389 | -37.040 | -21.389 | PASS |
| BT LE | HCH | -3.057 | -37.358 | -23.057 | PASS |

BT LE_LCH_Graphs

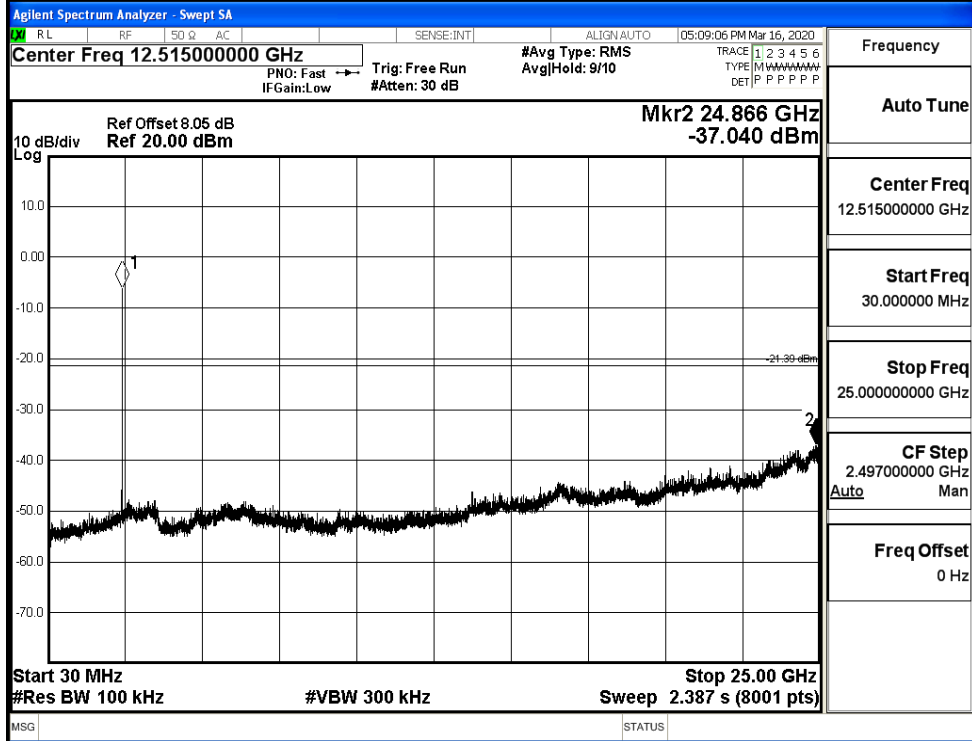


BT LE_MCH_Graphs

Pref/BT LE/MCH

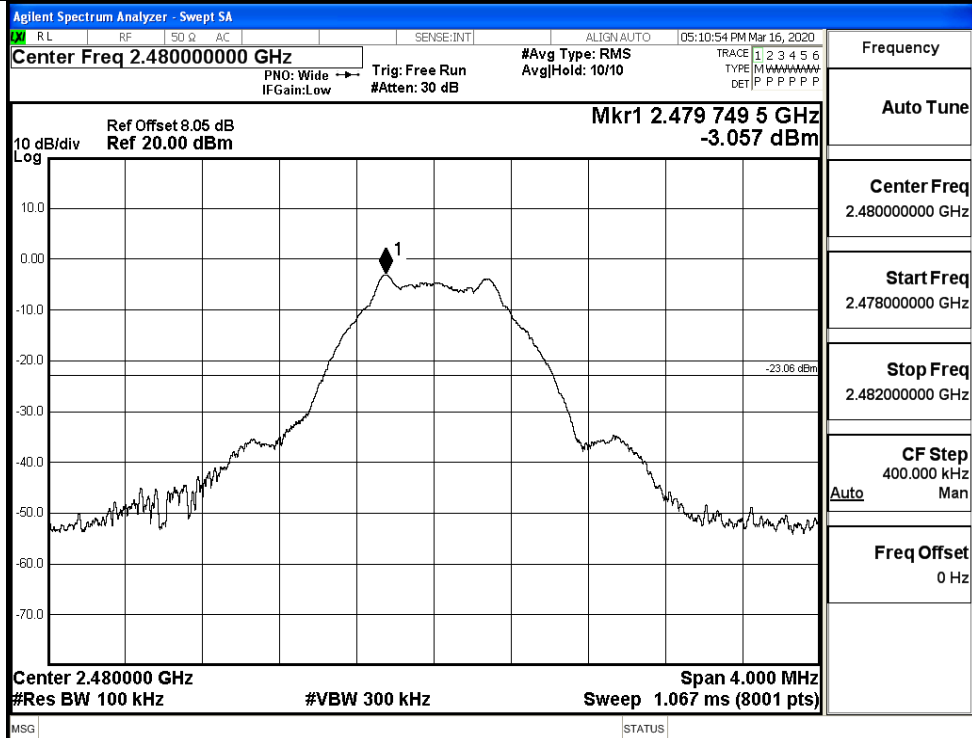


Puw/BT LE/MCH

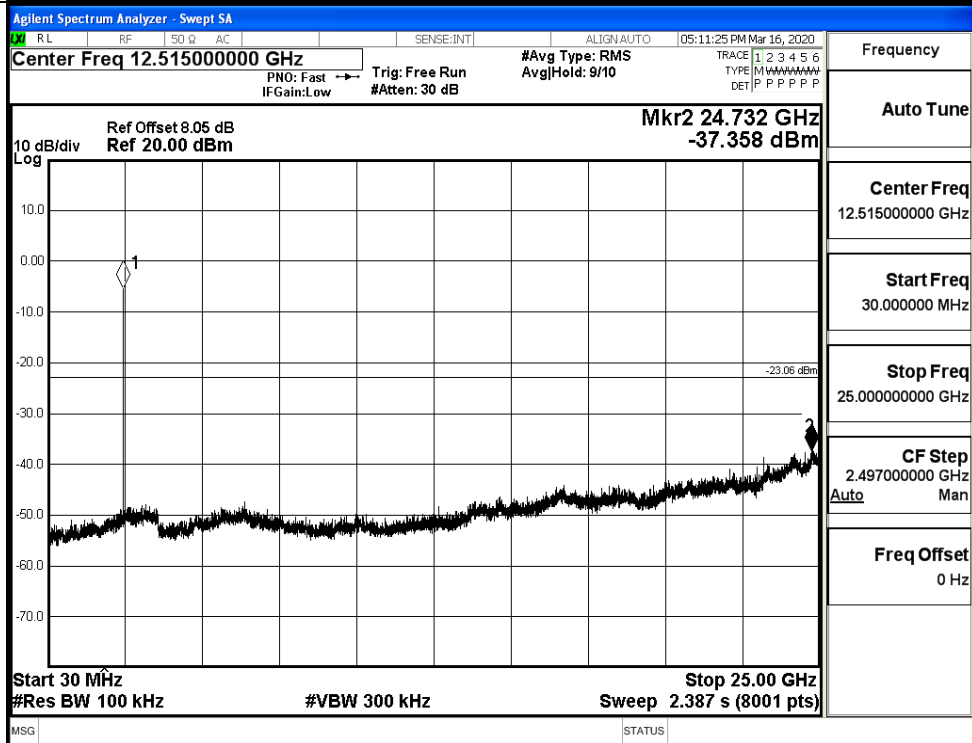


BT LE_HCH_Graphs

Pref/BT LE/HCH



Puw/BT LE/HCH



B.6 Band-edge for RF Conducted Emissions

| Mode | Channel | Carrier Power[dBm] | Max.Spurious Level [dBm] | Limit [dBm] | Verdict |
|-------|---------|--------------------|--------------------------|-------------|---------|
| BT LE | LCH | 0.046 | -49.554 | -19.95 | PASS |
| BT LE | HCH | -3.034 | -48.707 | -23.03 | PASS |

Test Graphs

LCH

Agilent Spectrum Analyzer - Swept SA
 Center Freq 2.357000000 GHz
 Ref Offset 8.05 dB, Ref 20.00 dBm
 Mkr4 2.382 521 GHz, -49.554 dBm
 Start 2.31000 GHz, Stop 2.40400 GHz
 #Res BW 100 kHz, #VBW 300 kHz, Sweep 9.067 ms (8001 pts)

| MKR | MODE | TRC | SCL | X | Y | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |
|-----|------|-----|-----|---------------|-------------|----------|----------------|----------------|
| 1 | N | f | | 2.401 756 GHz | 0.046 dBm | | | |
| 2 | N | f | | 2.400 000 GHz | -51.970 dBm | | | |
| 3 | N | f | | 2.390 000 GHz | -53.130 dBm | | | |
| 4 | N | f | | 2.382 521 GHz | -49.554 dBm | | | |

Frequency

Auto Tune

Center Freq
2.357000000 GHz

Start Freq
2.310000000 GHz

Stop Freq
2.404000000 GHz

CF Step
9.400000 MHz

Freq Offset
0 Hz

HCH

Agilent Spectrum Analyzer - Swept SA
 Center Freq 2.489000000 GHz
 Ref Offset 8.05 dB, Ref 20.00 dBm
 Mkr4 2.490 757 25 GHz, -48.707 dBm
 Start 2.47800 GHz, Stop 2.50000 GHz
 #Res BW 100 kHz, #VBW 300 kHz, Sweep 2.133 ms (8001 pts)

| MKR | MODE | TRC | SCL | X | Y | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |
|-----|------|-----|-----|------------------|-------------|----------|----------------|----------------|
| 1 | N | f | | 2.479 754 50 GHz | -3.034 dBm | | | |
| 2 | N | f | | 2.483 500 00 GHz | -51.940 dBm | | | |
| 3 | N | f | | 2.500 000 00 GHz | -50.595 dBm | | | |
| 4 | N | f | | 2.490 757 25 GHz | -48.707 dBm | | | |

Frequency

Auto Tune

Center Freq
2.489000000 GHz

Start Freq
2.478000000 GHz

Stop Freq
2.500000000 GHz

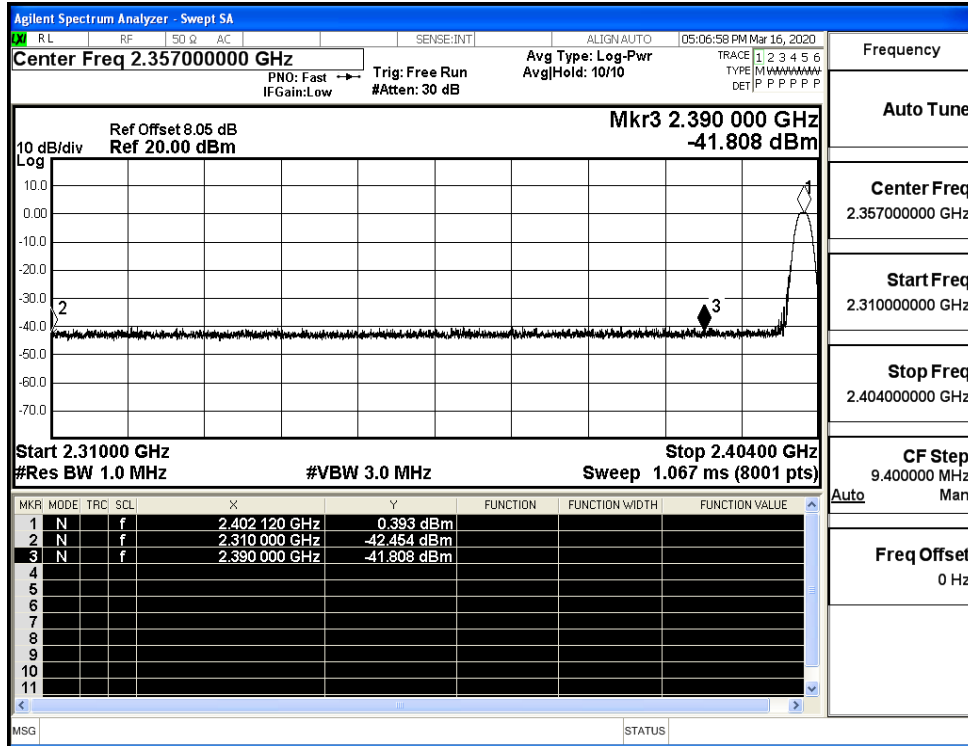
CF Step
2.200000 MHz

Freq Offset
0 Hz

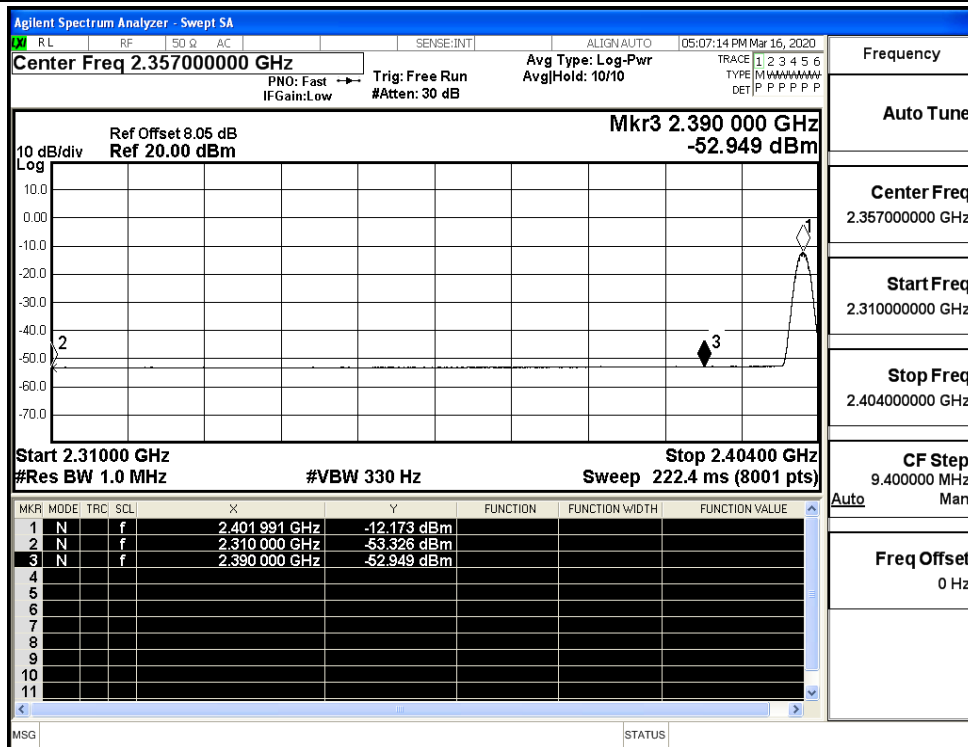
B.7 Restrict-band band-edge measurements

| Test Mode | Test Channel | Ant | Freq. | Power [dBm] | Gain | Ground Factor | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdi |
|-----------|--------------|------|--------|-------------|------|---------------|------------|----------|----------------|-------|
| BT LE | 2402 | Ant1 | 2310.0 | -42.45 | 2.0 | 0 | 54.78 | PEAK | 74 | PASS |
| | | Ant1 | 2310.0 | -53.33 | 2.0 | 0 | 43.90 | AV | 54 | PASS |
| | | Ant1 | 2390.0 | -41.81 | 2.0 | 0 | 55.42 | PEAK | 74 | PASS |
| | | Ant1 | 2390.0 | -52.95 | 2.0 | 0 | 44.28 | AV | 54 | PASS |
| | 2480 | Ant1 | 2483.5 | -42.06 | 2.0 | 0 | 55.17 | PEAK | 74 | PASS |
| | | Ant1 | 2483.5 | -52.47 | 2.0 | 0 | 44.76 | AV | 54 | PASS |
| | | Ant1 | 2500.0 | -41.11 | 2.0 | 0 | 56.12 | PEAK | 74 | PASS |
| | | Ant1 | 2500.0 | -52.06 | 2.0 | 0 | 45.17 | AV | 54 | PASS |

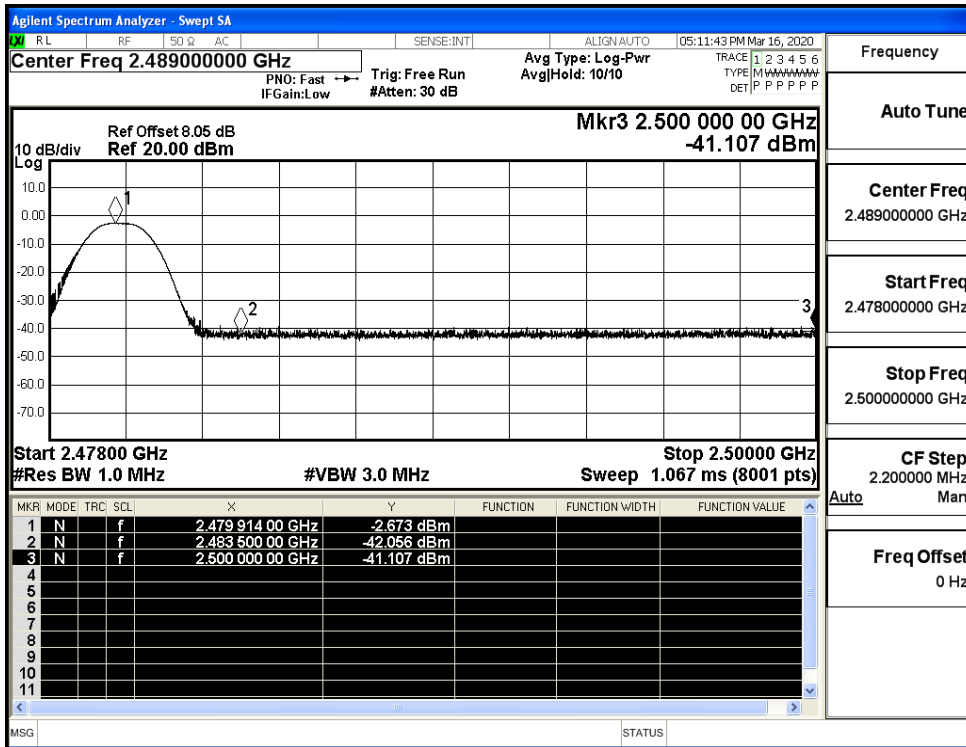
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



Restrict-band band-edge measurements_BT LE_2402_Ant1_AV



Restrict-band band-edge measurements_BT LE_2480_Ant1_PEAK



Restrict-band band-edge measurements_BT LE_2480_Ant1_AV

