

Appendix B

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

Product Name: WIRELESS HEADPHONES

Trade Mark: N/A

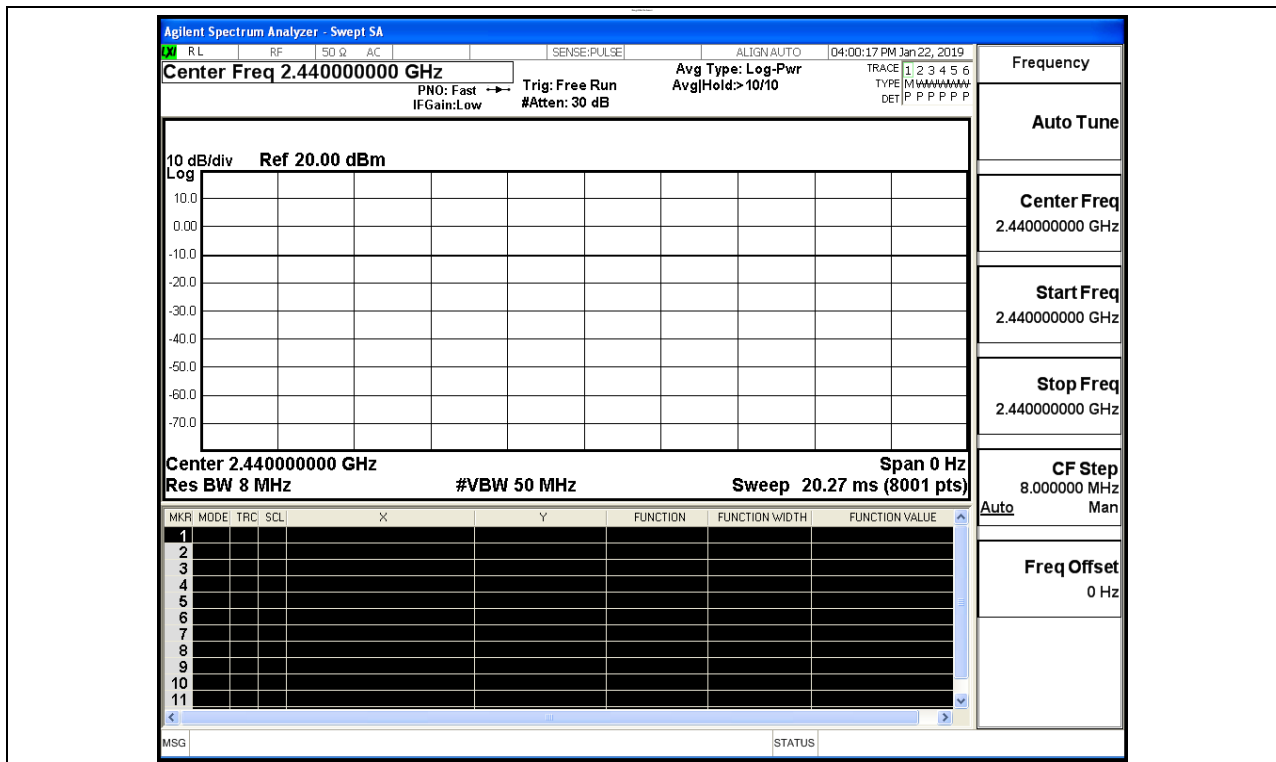
Test Model: S609-BT

Environmental Conditions

| | |
|--------------------|-------------|
| Temperature: | 24.2 ° C |
| Relative Humidity: | 54.1% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | David.Luo |
| Supervised by: | Jayden.Zhuo |

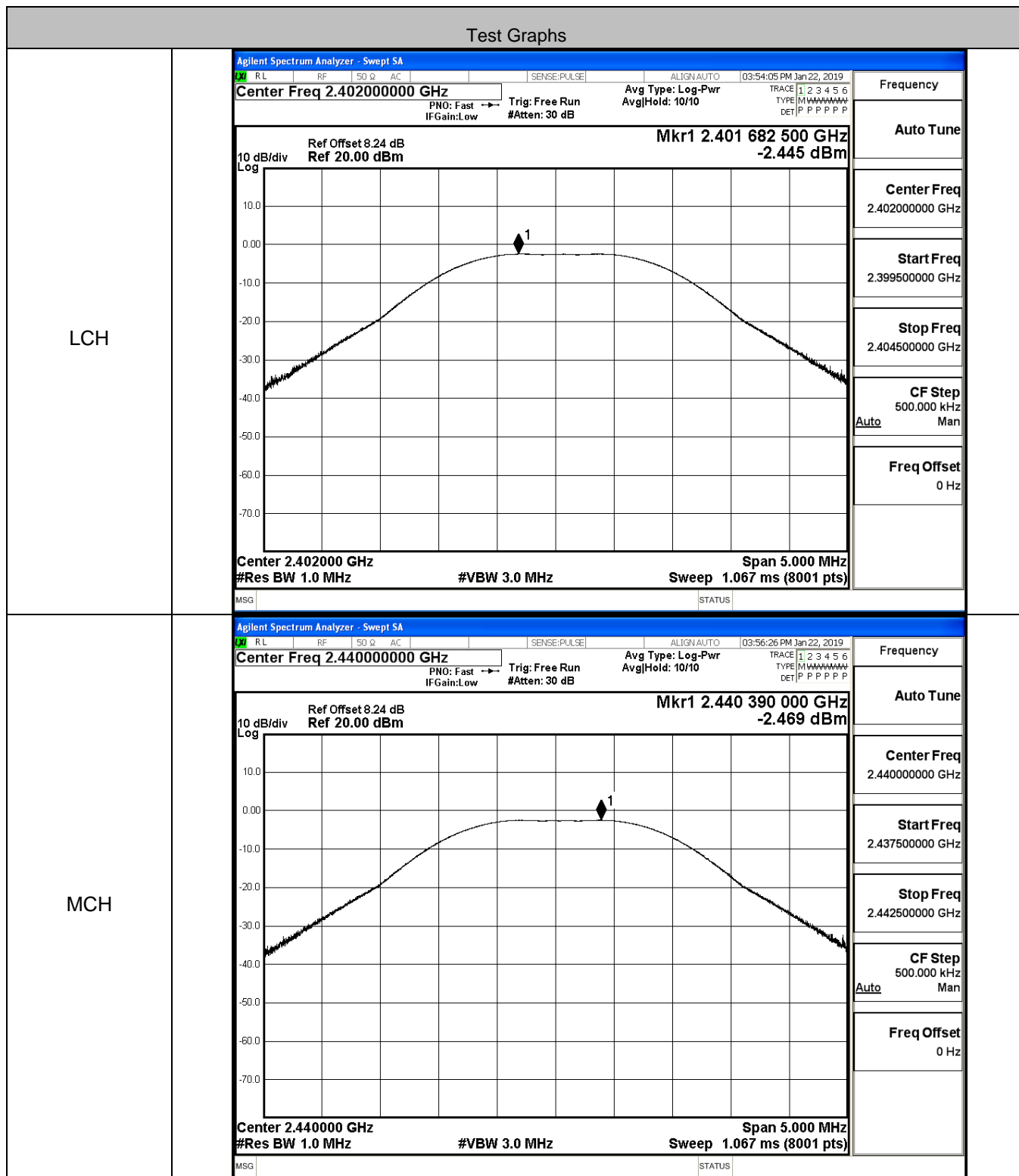
B.1 Duty Cycle

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



B.2 Maximum Conducted Peak Output Power

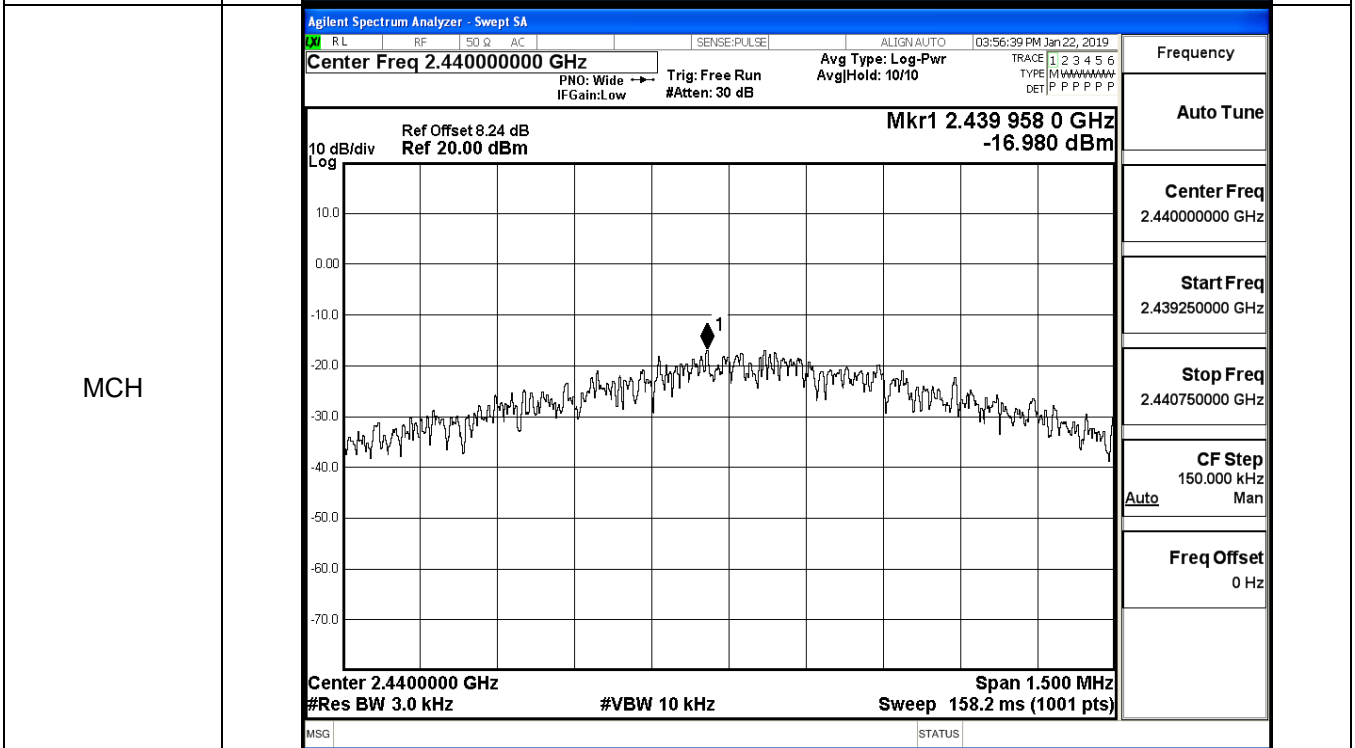
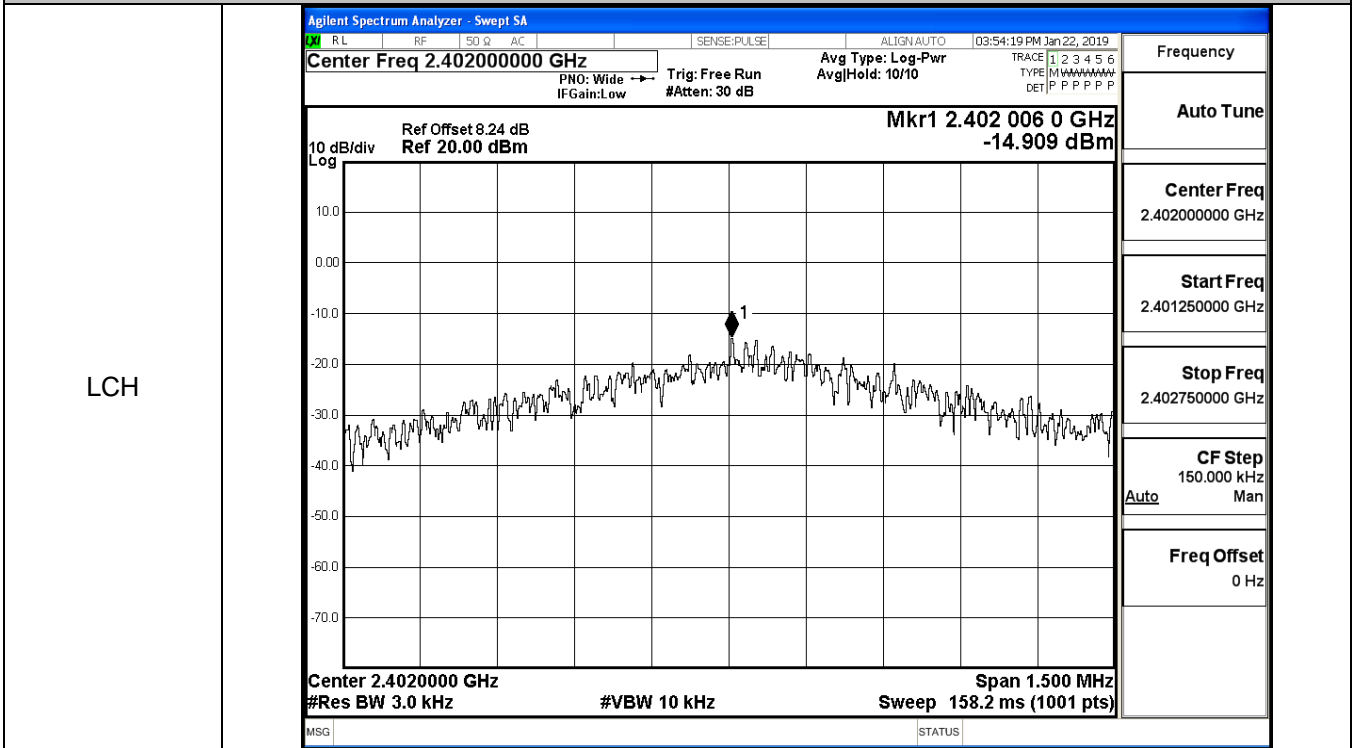
| Mode | Channel | Conduct Peak Power[dBm] | Limit [dBm] | Verdict |
|-------|---------|-------------------------|-------------|---------|
| BT LE | LCH | -2.445 | 30 | PASS |
| BT LE | MCH | -2.469 | 30 | PASS |
| BT LE | HCH | -2.224 | 30 | PASS |



B.3 Maximum Power Spectral Density

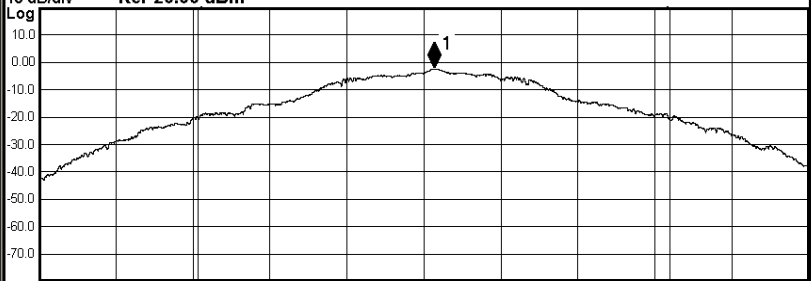
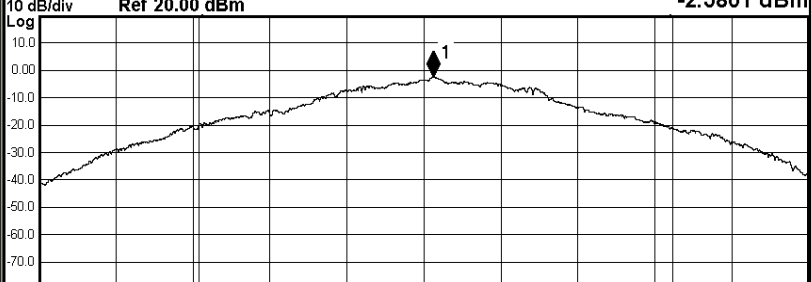
| Mode | Channel | PSD [dBm/3KHz] | Limit [dBm/3KHz] | Verdict |
|-------|---------|----------------|------------------|---------|
| BT LE | LCH | -14.909 | 8 | PASS |
| BT LE | MCH | -16.980 | 8 | PASS |
| BT LE | HCH | -14.901 | 8 | PASS |

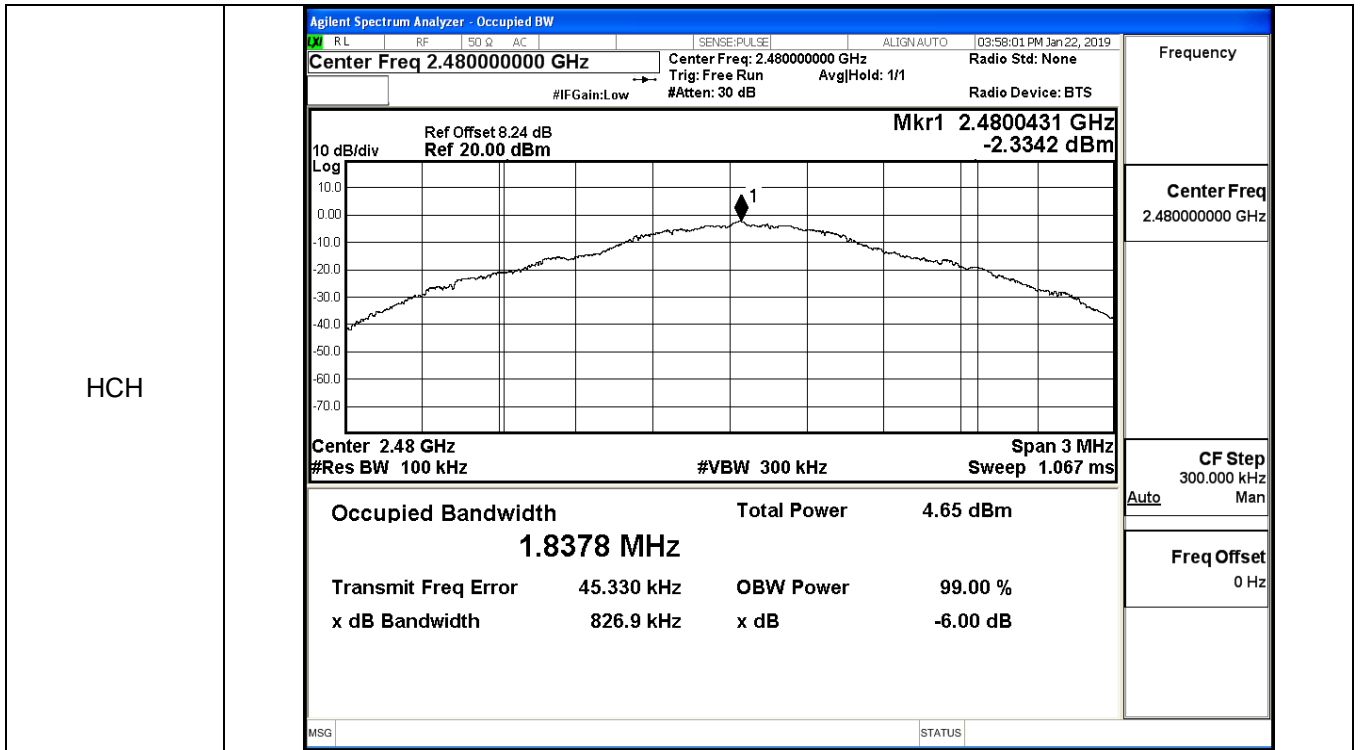
Test Graphs



B.4 6dB Bandwidth

| Mode | Channel | 6dB Bandwidth [MHz] | Limit [MHz] | Verdict |
|-------|---------|---------------------|-------------|---------|
| BT LE | LCH | 0.8364 | ≥0.5 | PASS |
| BT LE | MCH | 0.8310 | ≥0.5 | PASS |
| BT LE | HCH | 0.8269 | ≥0.5 | PASS |

| Test Graphs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|---|--------------------|-------------|----------|-------------------|--|--|---------------------|------------|-----------|----------------|-----------|------|--|--|---------|--|--|----------|--------------------|-------------|----------|-------------------|--|--|---------------------|------------|-----------|----------------|-----------|------|--|--|---------|--|--|----------|
| LCH | <div style="border: 1px solid black; padding: 5px;"> <p style="font-size: small; margin: 0;">Agilent Spectrum Analyzer - Occupied BW</p> <p style="font-size: x-small; margin: 0;">RL RF 50 Ω AC SENSE:PULSE ALIGN:AUTO 03:53:54 PM Jan 22, 2019</p> <p style="font-size: small; margin: 0;">Center Freq 2.402000000 GHz Center Freq: 2.402000000 GHz Radio Std: None</p> <p style="font-size: x-small; margin: 0;">Trig: Free Run AvgHold: >1/1</p> <p style="font-size: x-small; margin: 0;">#IFGain: Low #Atten: 30 dB Radio Device: BTS</p> <div style="border: 1px solid black; padding: 2px;"> <p style="font-size: x-small; margin: 0;">10 dB/div Ref Offset 8.24 dB Mkr1 2.4020416 GHz</p> <p style="font-size: x-small; margin: 0;">Log Ref 20.00 dBm -2.5088 dBm</p>  </div> <p style="font-size: x-small; margin: 0;">Center 2.402 GHz Span 3 MHz</p> <p style="font-size: x-small; margin: 0;">#Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms</p> <table style="width: 100%; font-size: x-small; border-collapse: collapse;"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>4.57 dBm</td> </tr> <tr> <td style="text-align: center;">1.8333 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>41.340 kHz</td> <td>OBW Power</td> </tr> <tr> <td>x dB Bandwidth</td> <td>836.4 kHz</td> <td>x dB</td> </tr> <tr> <td></td> <td></td> <td>99.00 %</td> </tr> <tr> <td></td> <td></td> <td>-6.00 dB</td> </tr> </table> <p style="font-size: x-small; margin: 0;">MSG STATUS</p> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p style="font-size: small; margin: 0;">Agilent Spectrum Analyzer - Occupied BW</p> <p style="font-size: x-small; margin: 0;">RL RF 50 Ω AC SENSE:PULSE ALIGN:AUTO 03:56:14 PM Jan 22, 2019</p> <p style="font-size: small; margin: 0;">Center Freq 2.440000000 GHz Center Freq: 2.440000000 GHz Radio Std: None</p> <p style="font-size: x-small; margin: 0;">Trig: Free Run AvgHold: 1/1</p> <p style="font-size: x-small; margin: 0;">#IFGain: Low #Atten: 30 dB Radio Device: BTS</p> <div style="border: 1px solid black; padding: 2px;"> <p style="font-size: x-small; margin: 0;">10 dB/div Ref Offset 8.24 dB Mkr1 2.4400371 GHz</p> <p style="font-size: x-small; margin: 0;">Log Ref 20.00 dBm -2.5801 dBm</p>  </div> <p style="font-size: x-small; margin: 0;">Center 2.44 GHz Span 3 MHz</p> <p style="font-size: x-small; margin: 0;">#Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms</p> <table style="width: 100%; font-size: x-small; border-collapse: collapse;"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>4.22 dBm</td> </tr> <tr> <td style="text-align: center;">1.8442 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>47.301 kHz</td> <td>OBW Power</td> </tr> <tr> <td>x dB Bandwidth</td> <td>831.0 kHz</td> <td>x dB</td> </tr> <tr> <td></td> <td></td> <td>99.00 %</td> </tr> <tr> <td></td> <td></td> <td>-6.00 dB</td> </tr> </table> <p style="font-size: x-small; margin: 0;">MSG STATUS</p> </div> | Occupied Bandwidth | Total Power | 4.57 dBm | 1.8333 MHz | | | Transmit Freq Error | 41.340 kHz | OBW Power | x dB Bandwidth | 836.4 kHz | x dB | | | 99.00 % | | | -6.00 dB | Occupied Bandwidth | Total Power | 4.22 dBm | 1.8442 MHz | | | Transmit Freq Error | 47.301 kHz | OBW Power | x dB Bandwidth | 831.0 kHz | x dB | | | 99.00 % | | | -6.00 dB |
| Occupied Bandwidth | Total Power | 4.57 dBm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.8333 MHz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transmit Freq Error | 41.340 kHz | OBW Power | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| x dB Bandwidth | 836.4 kHz | x dB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 99.00 % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | -6.00 dB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Occupied Bandwidth | Total Power | 4.22 dBm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.8442 MHz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transmit Freq Error | 47.301 kHz | OBW Power | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| x dB Bandwidth | 831.0 kHz | x dB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 99.00 % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | -6.00 dB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

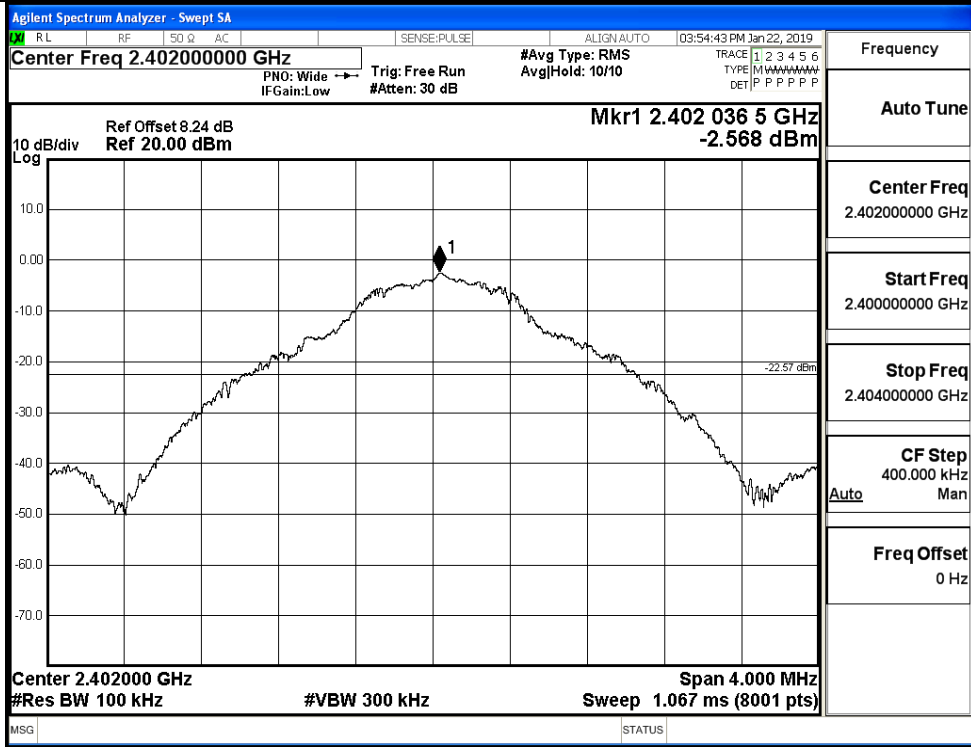


B.5 RF Conducted Spurious Emissions

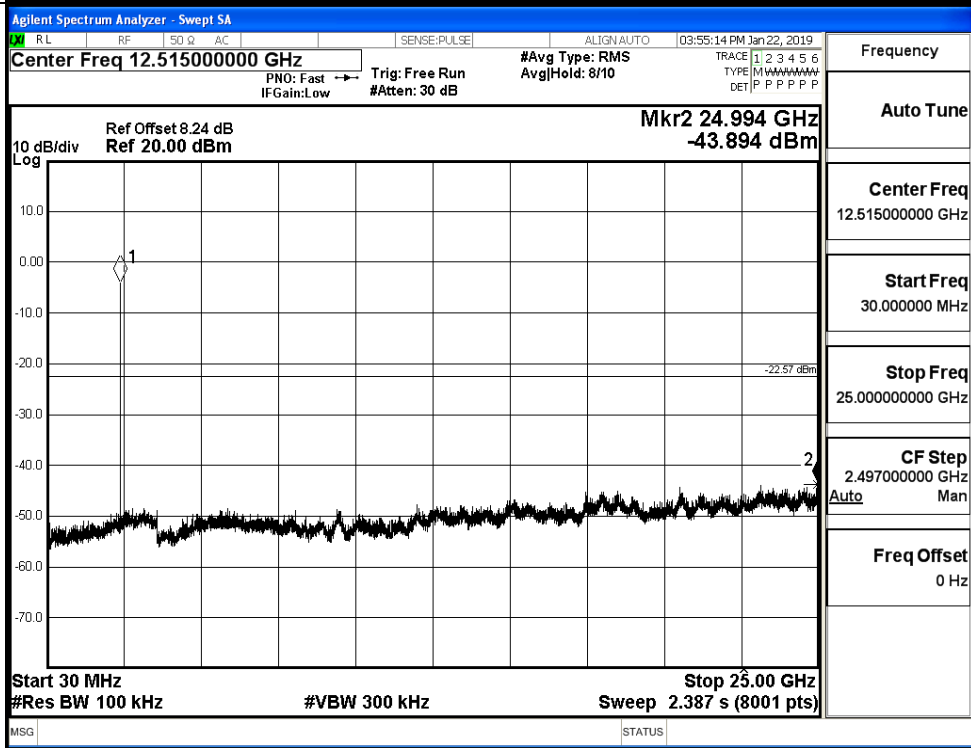
| Mode | Channel | Pref [dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|-------|---------|------------|------------------|-------------|---------|
| BT LE | LCH | -2.568 | -43.894 | -22.568 | PASS |
| BT LE | MCH | -2.755 | -43.760 | -22.755 | PASS |
| BT LE | HCH | -2.344 | -42.867 | -22.344 | PASS |

BT LE_LCH_Graphs

Pref/BT LE/LCH

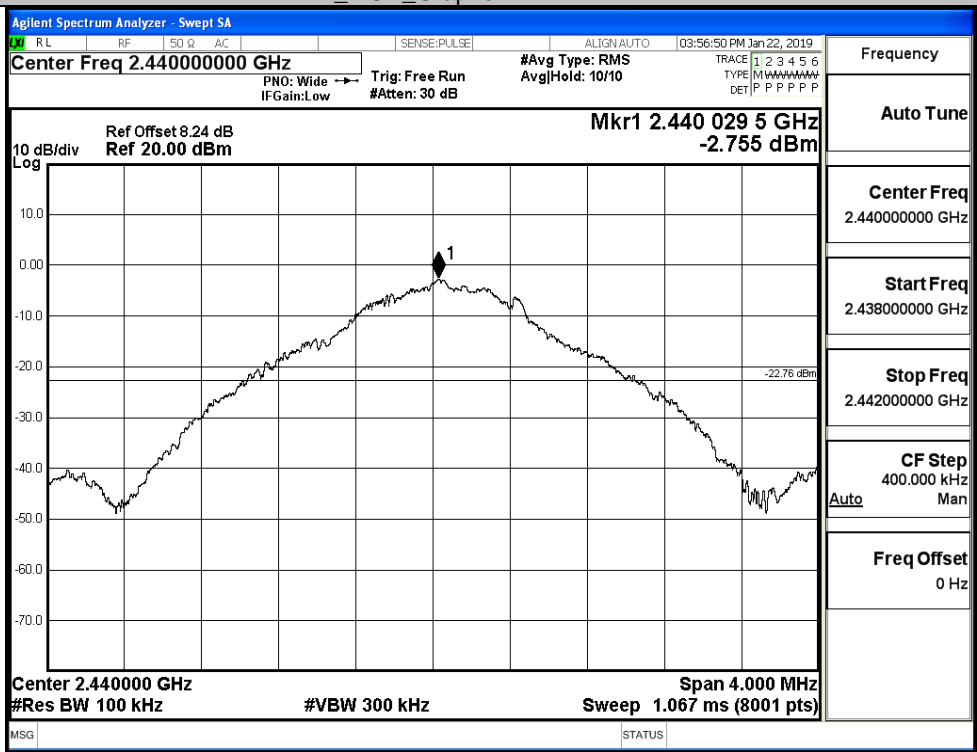


Puw/BT LE/LCH

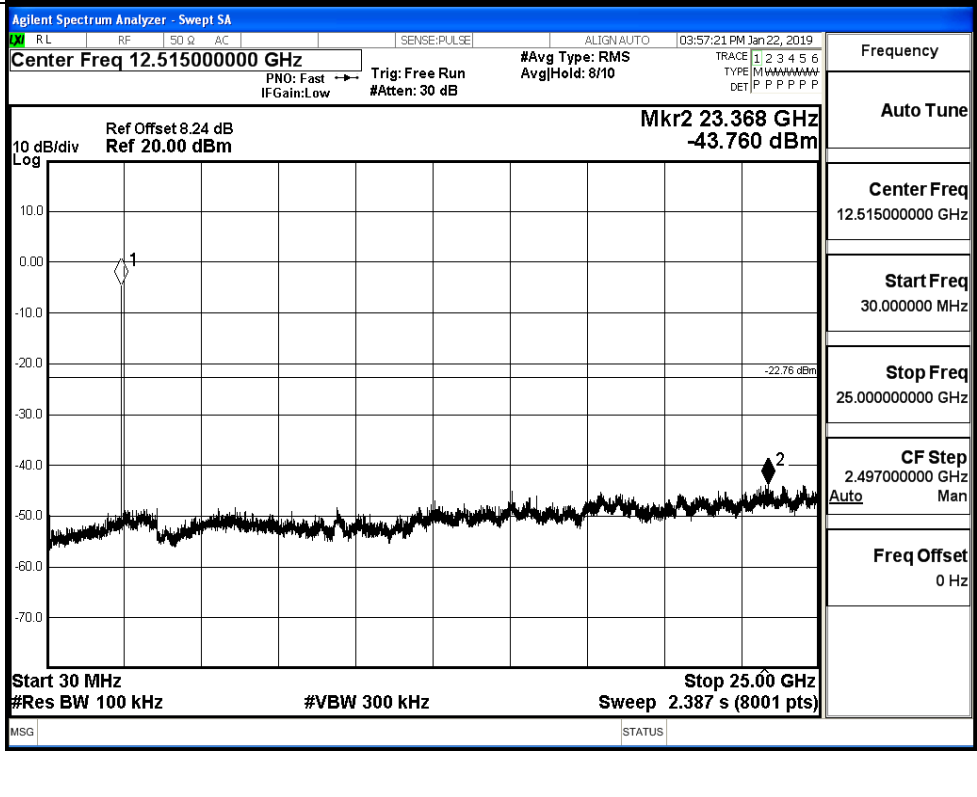


BT LE_MCH_Graphs

Pref/BT LE/MCH

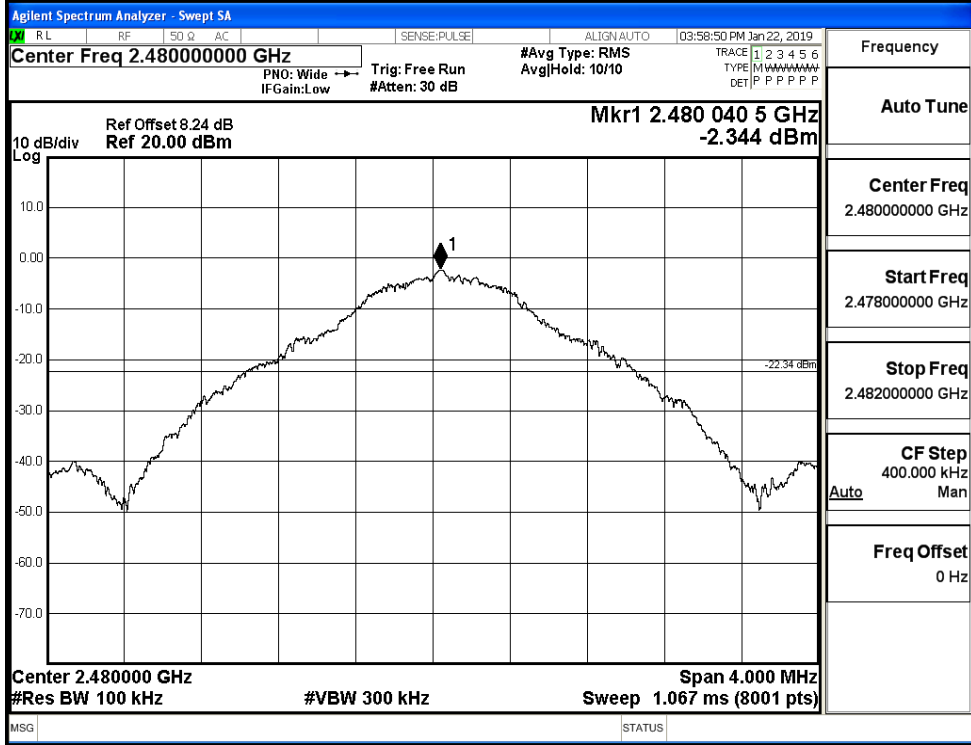


Puw/BT LE/MCH

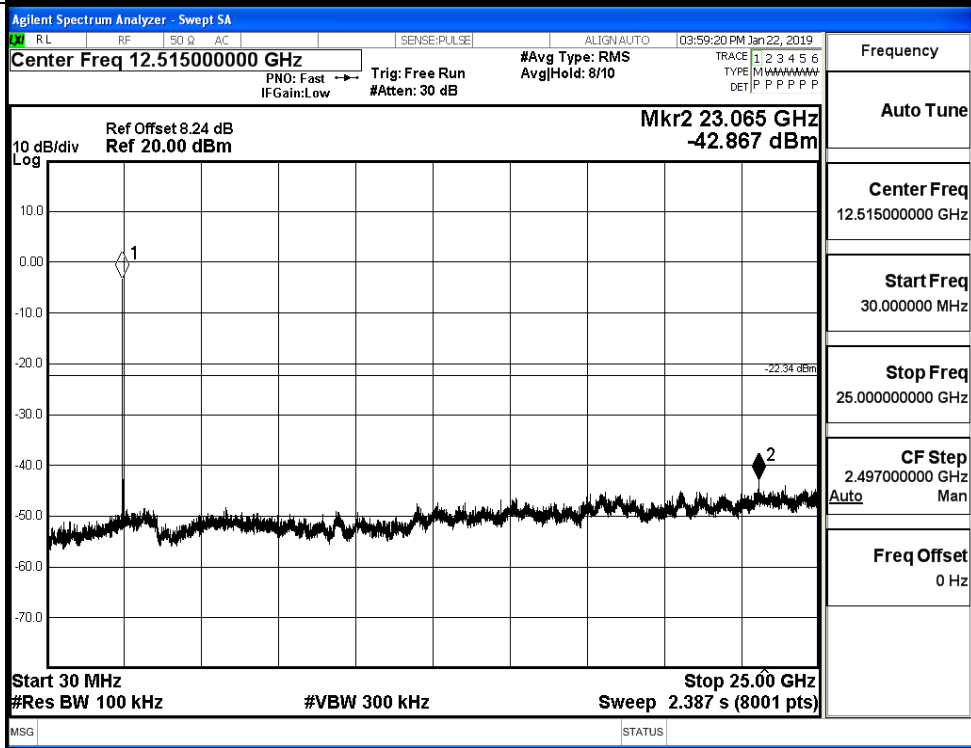


BT LE_HCH_Graphs

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 | -2.397 | -50.403 | -22.4 | PASS |
| BT LE | HCH | -2.440 | -49.613 | -22.44 | PASS |

Test Graphs

LCH

| MKR | MODE | TRC | SCL | X | Y | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |
|-----|------|-----|-----|---------------|-------------|----------|----------------|----------------|
| 1 | N | f | | 2.402 043 GHz | -2.397 dBm | | | |
| 2 | N | f | | 2.400 000 GHz | -42.940 dBm | | | |
| 3 | N | f | | 2.390 000 GHz | -54.957 dBm | | | |
| 4 | N | f | | 2.332 978 GHz | -50.403 dBm | | | |

Frequency

Auto Tune

Center Freq
2.357500000 GHz

Start Freq
2.310000000 GHz

Stop Freq
2.405000000 GHz

CF Step
9.500000 MHz

Freq Offset
0 Hz

HCH

| MKR | MODE | TRC | SCL | X | Y | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |
|-----|------|-----|-----|-----------------|-------------|----------|----------------|----------------|
| 1 | N | f | | 2.480 038 9 GHz | -2.440 dBm | | | |
| 2 | N | f | | 2.483 500 0 GHz | -52.230 dBm | | | |
| 3 | N | f | | 2.500 000 0 GHz | -53.504 dBm | | | |
| 4 | N | f | | 2.490 388 9 GHz | -49.613 dBm | | | |

Frequency

Auto Tune

Center Freq
2.488500000 GHz

Start Freq
2.477000000 GHz

Stop Freq
2.500000000 GHz

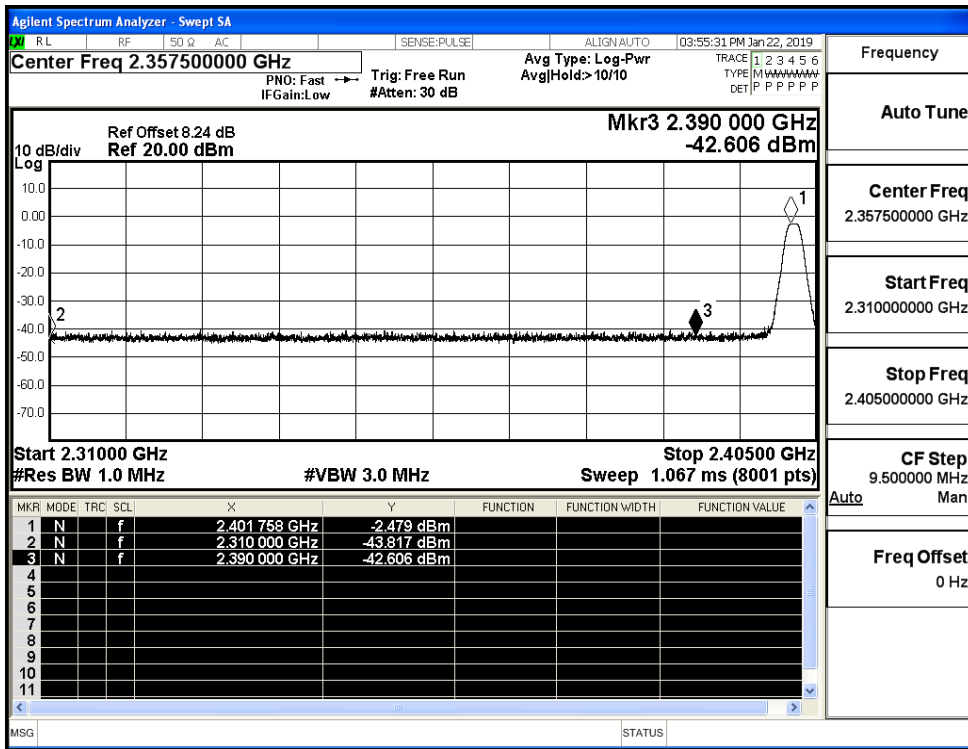
CF Step
2.300000 MHz

Freq Offset
0 Hz

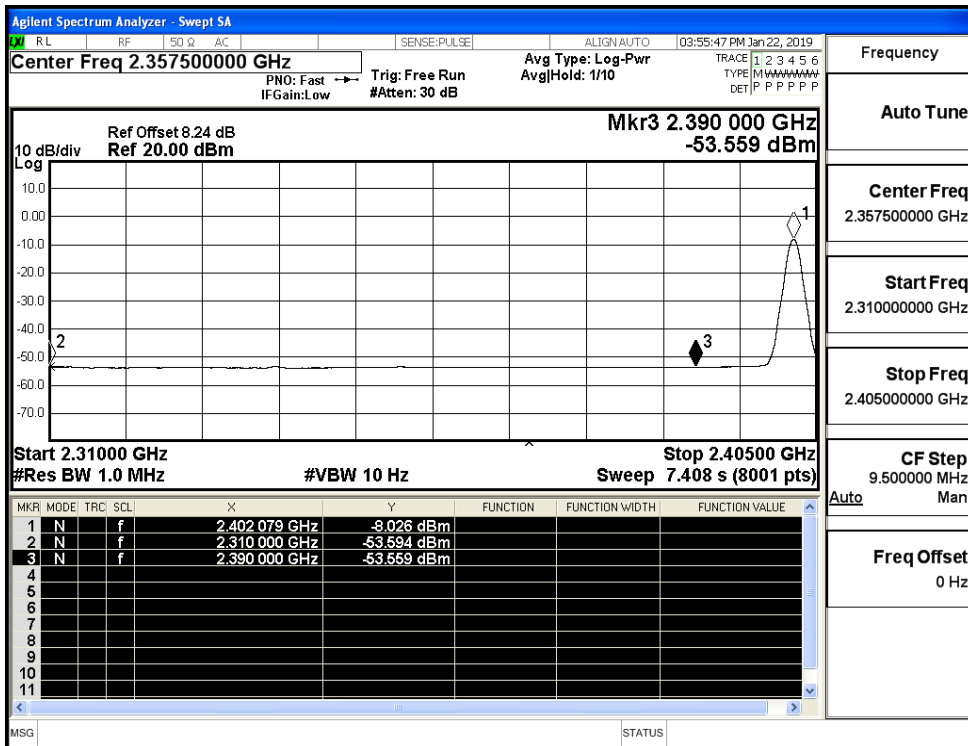
B.7 Restrict-band band-edge measurements

| 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 | -43.82 | 2.0 | 0 | 51.44 | PEAK | 74 | PASS |
| | | Ant1 | 2310.0 | -53.59 | 2.0 | 0 | 41.66 | AV | 54 | PASS |
| | | Ant1 | 2390.0 | -42.61 | 2.0 | 0 | 52.65 | PEAK | 74 | PASS |
| | | Ant1 | 2390.0 | -53.56 | 2.0 | 0 | 41.70 | AV | 54 | PASS |
| | 2480 | Ant1 | 2483.5 | -38.71 | 2.0 | 0 | 56.55 | PEAK | 74 | PASS |
| | | Ant1 | 2483.5 | -52.04 | 2.0 | 0 | 43.21 | AV | 54 | PASS |
| | | Ant1 | 2500.0 | -41.64 | 2.0 | 0 | 53.62 | PEAK | 74 | PASS |
| | | Ant1 | 2500.0 | -52.85 | 2.0 | 0 | 42.41 | AV | 54 | PASS |

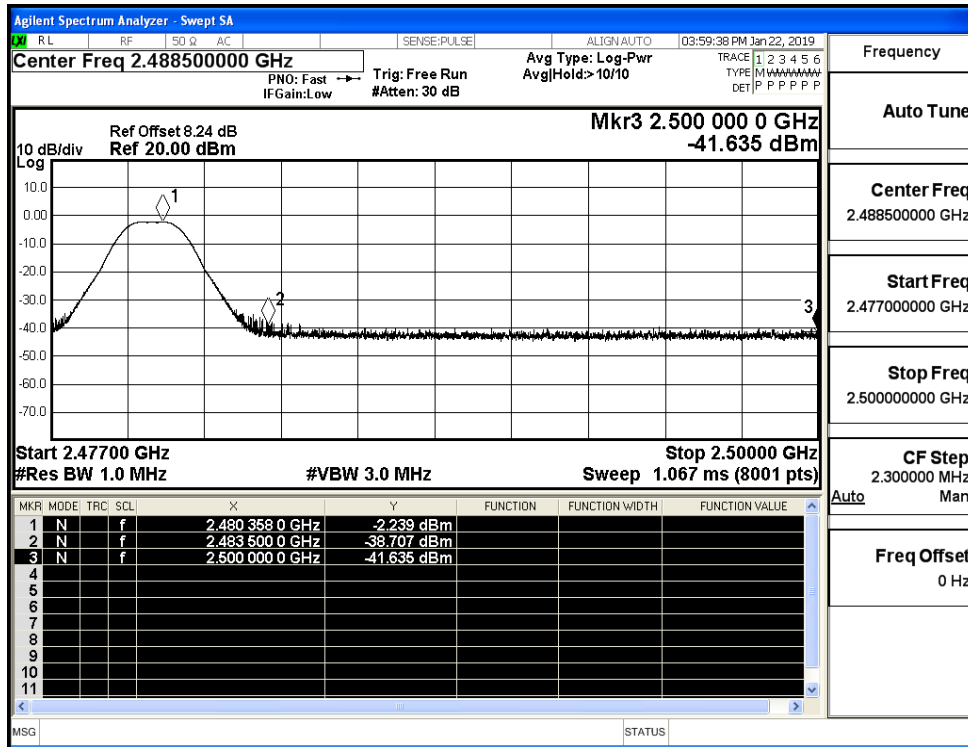
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



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

