

## Appendix A

### RF Test Data for BT V4.2(BT LE) (Conducted Measurement)

Product Name: Aqua Illumination Nero Submersible Pump

Trade Mark: Aqua Illumination

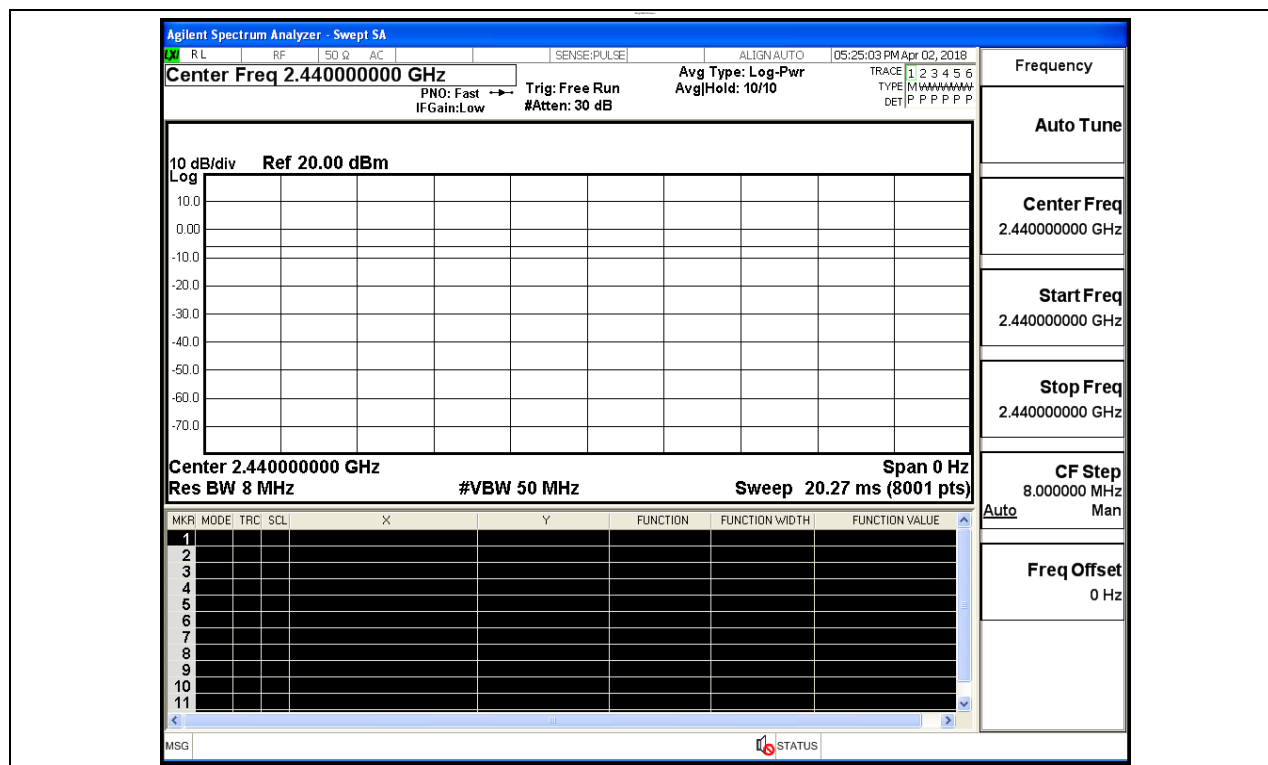
Test Model: Nero 5

#### Environmental Conditions

|                    |             |
|--------------------|-------------|
| Temperature:       | 22.3 ° C    |
| Relative Humidity: | 52.3%       |
| ATM Pressure:      | 100.0 kPa   |
| Test Engineer:     | Tom.Liu     |
| Supervised by:     | Jayden.zhuo |

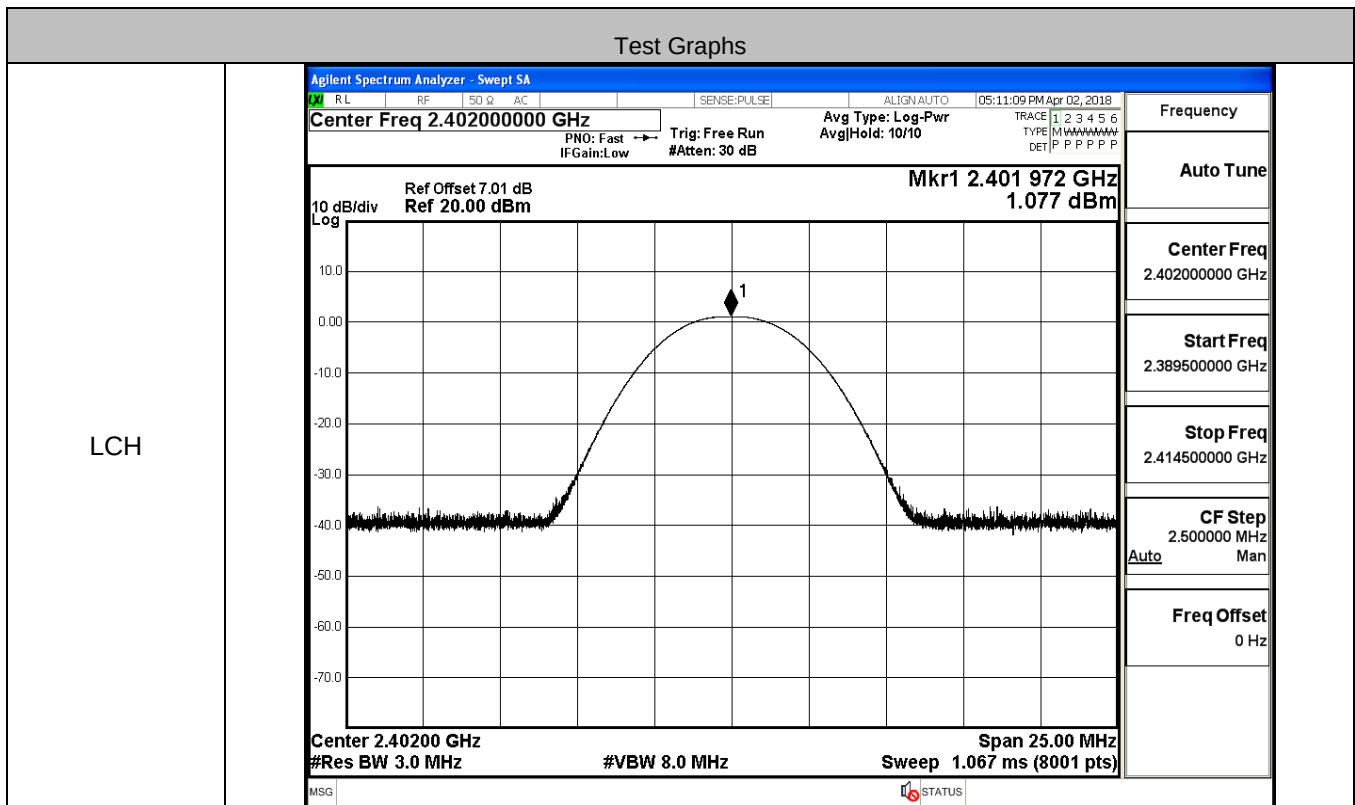
#### A.1 Duty Cycle

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

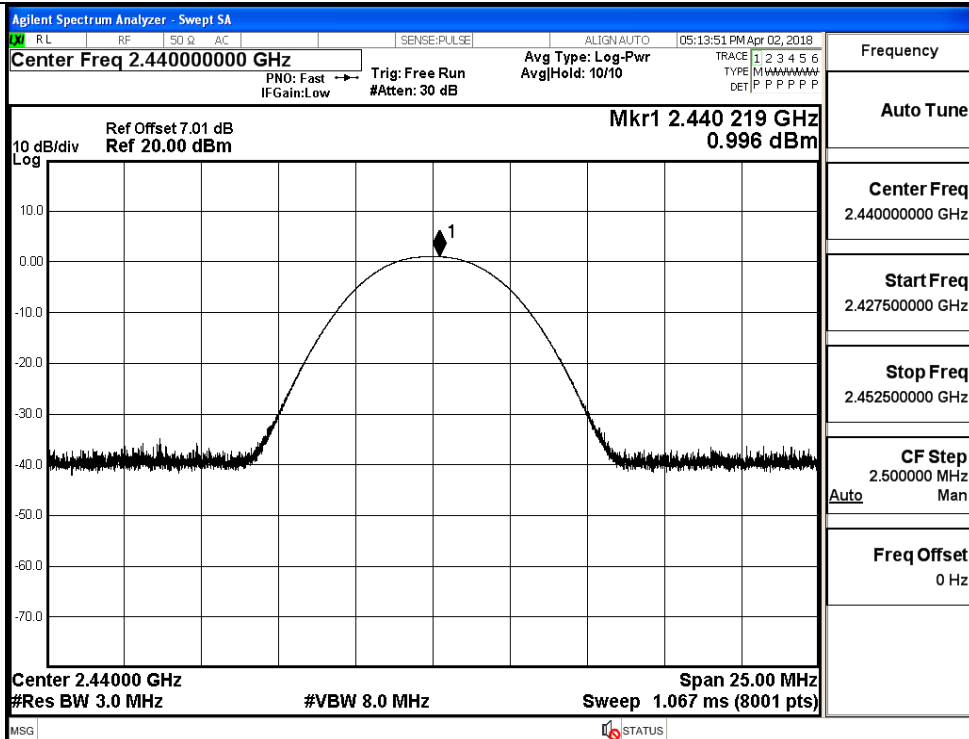


## A.2 Maximum Conducted Peak Output Power

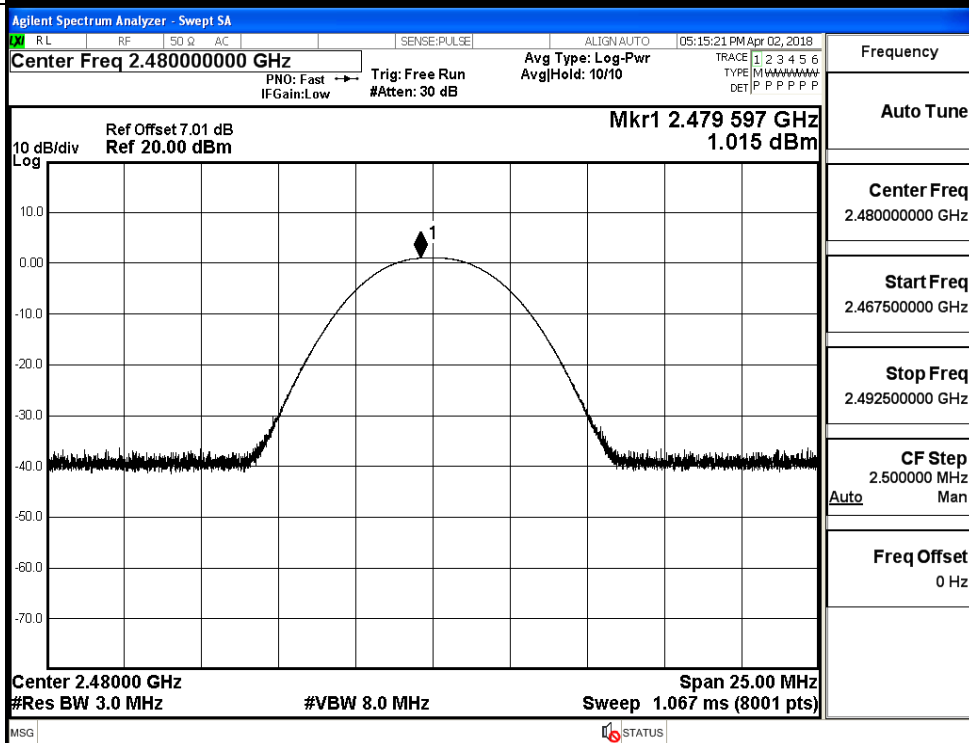
| Mode  | Channel | Conduct Peak Power[dBm] | Limit [dBm] | Verdict |
|-------|---------|-------------------------|-------------|---------|
| BT LE | LCH     | 1.077                   | 30          | PASS    |
| BT LE | MCH     | 0.996                   | 30          | PASS    |
| BT LE | HCH     | 1.015                   | 30          | PASS    |



MCH



HCH

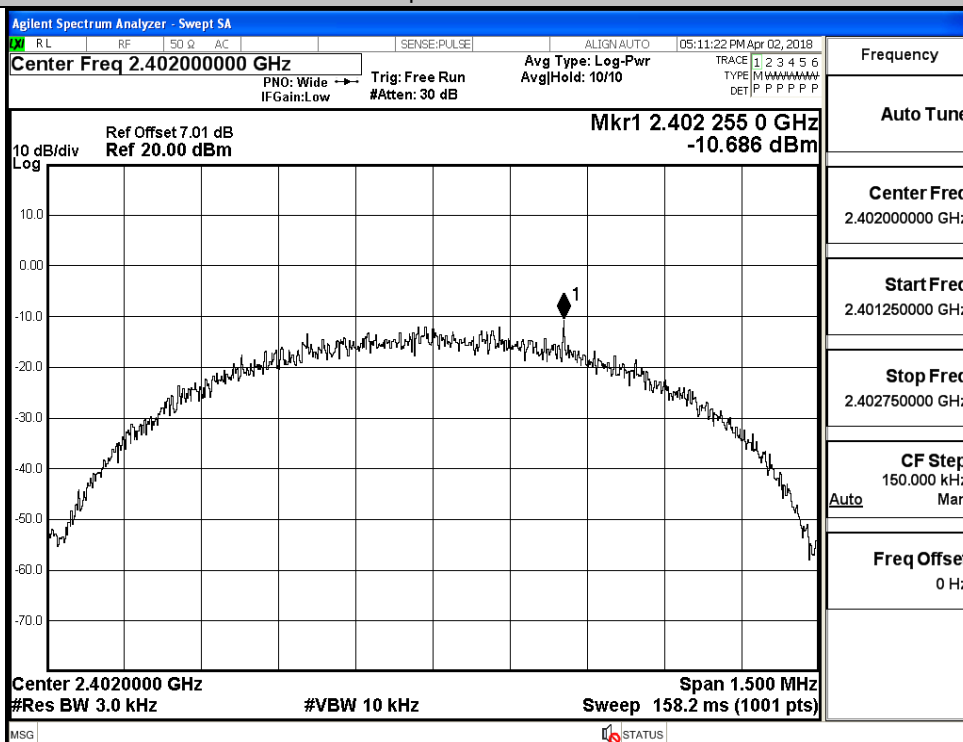


## A.3 Maximum Power Spectral Density

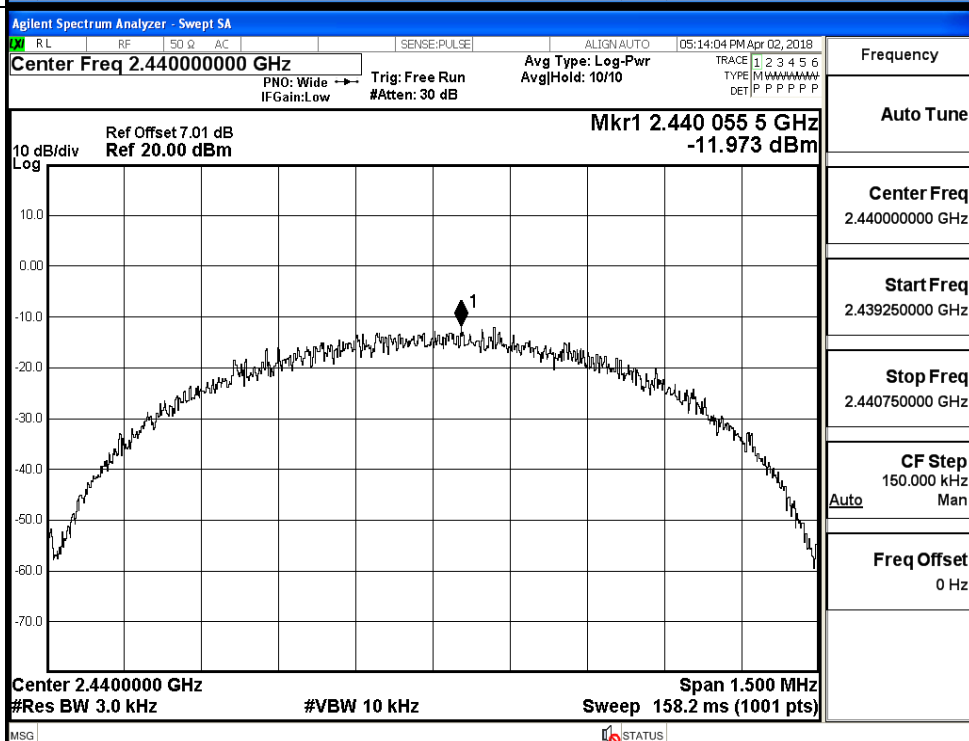
| Mode  | Channel | PSD [dBm/3KHz] | Limit [dBm/3KHz] | Verdict |
|-------|---------|----------------|------------------|---------|
| BT LE | LCH     | -10.686        | 8                | PASS    |
| BT LE | MCH     | -11.973        | 8                | PASS    |
| BT LE | HCH     | -11.741        | 8                | PASS    |

## Test Graphs

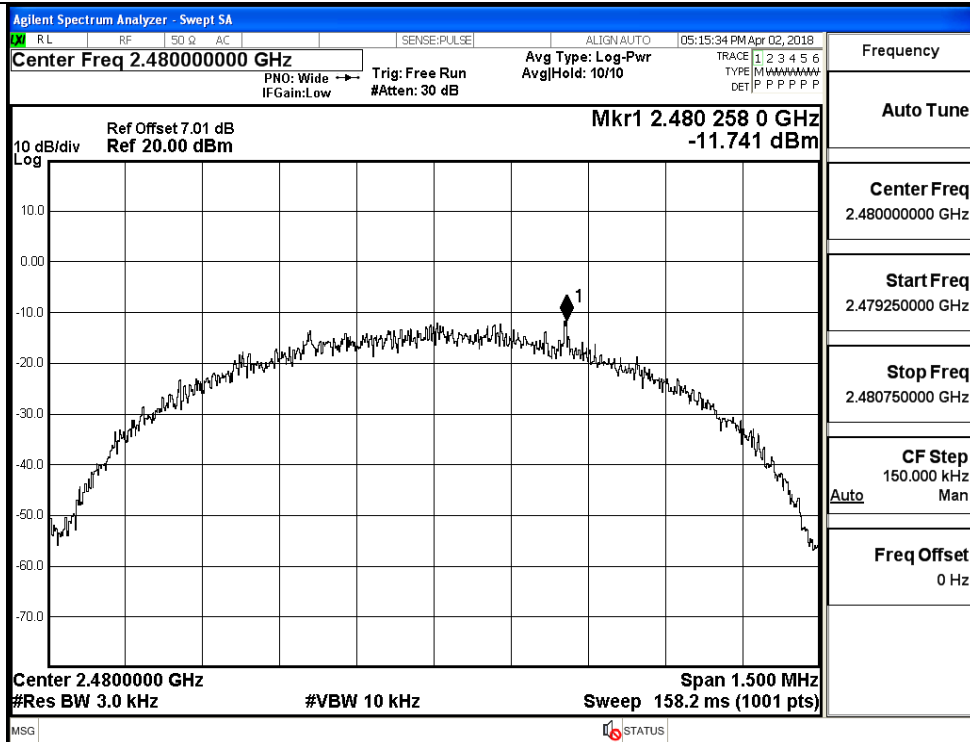
LCH



MCH



HCH

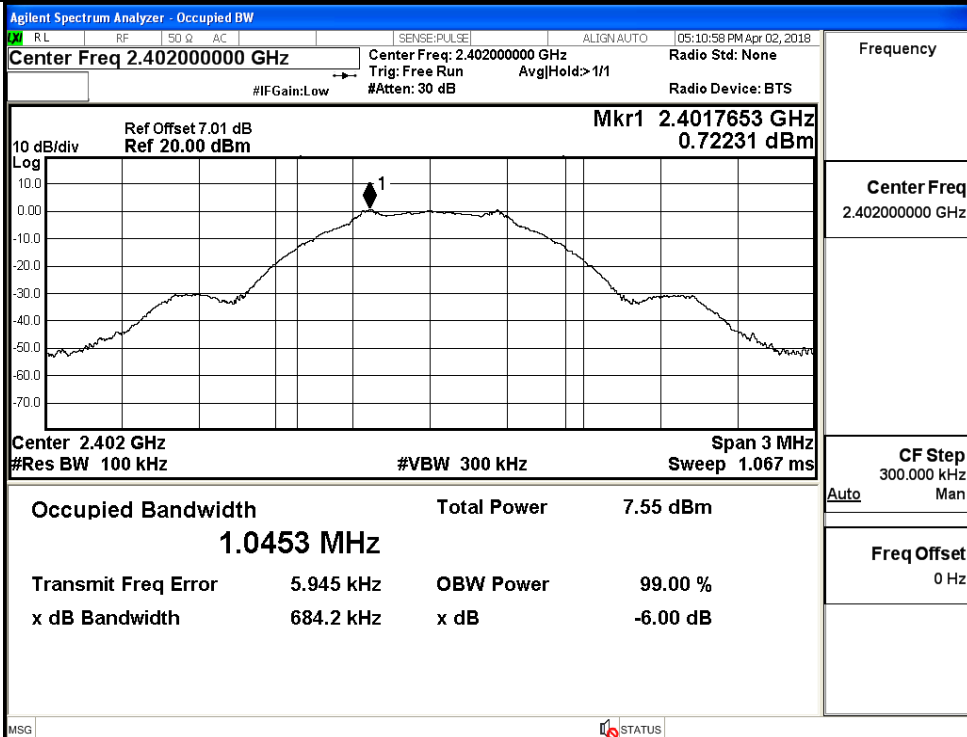


## A.4 6dB Bandwidth

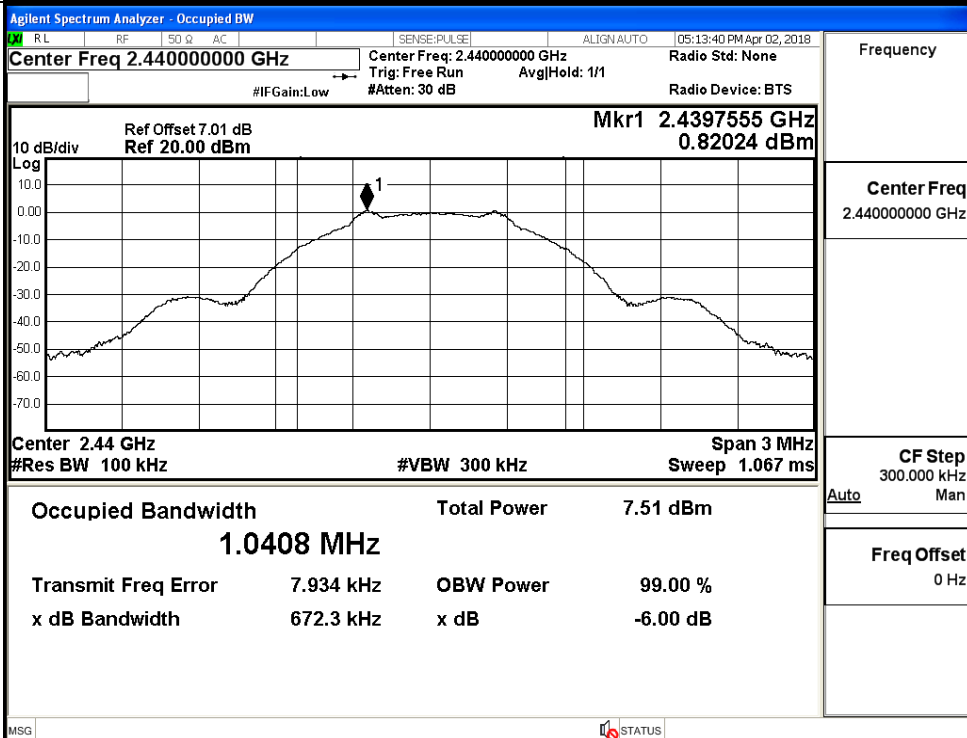
| Mode  | Channel | 6dB Bandwidth [MHz] | Limit [MHz] | Verdict |
|-------|---------|---------------------|-------------|---------|
| BT LE | LCH     | 0.6842              | $\geq 0.5$  | PASS    |
| BT LE | MCH     | 0.6723              | $\geq 0.5$  | PASS    |
| BT LE | HCH     | 0.6717              | $\geq 0.5$  | PASS    |

## Test Graphs

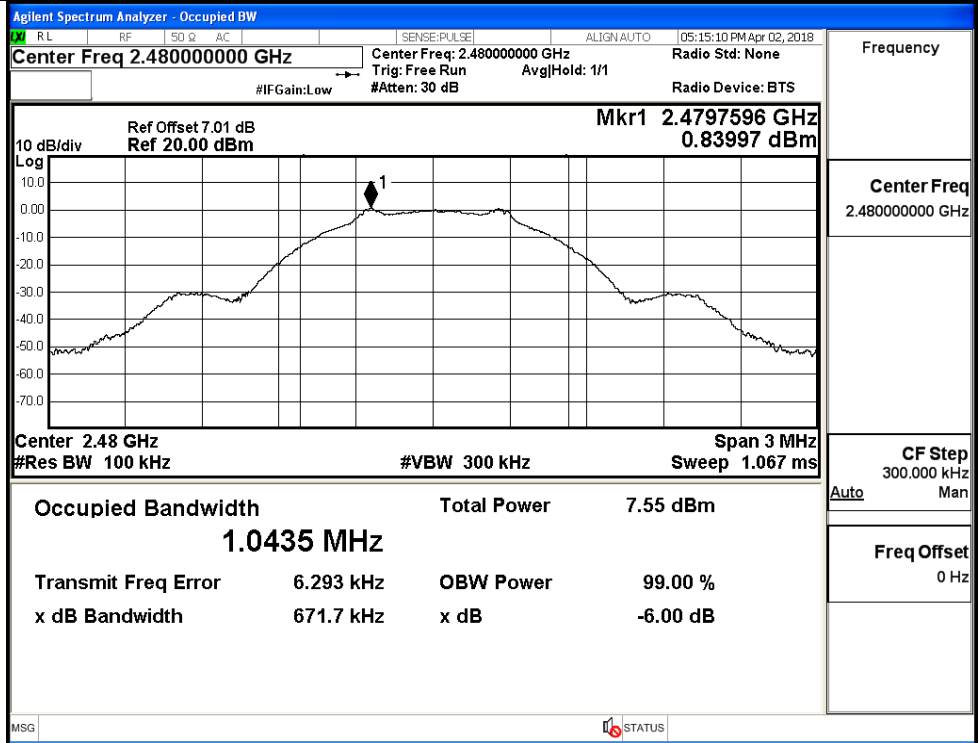
LCH



MCH



HCH

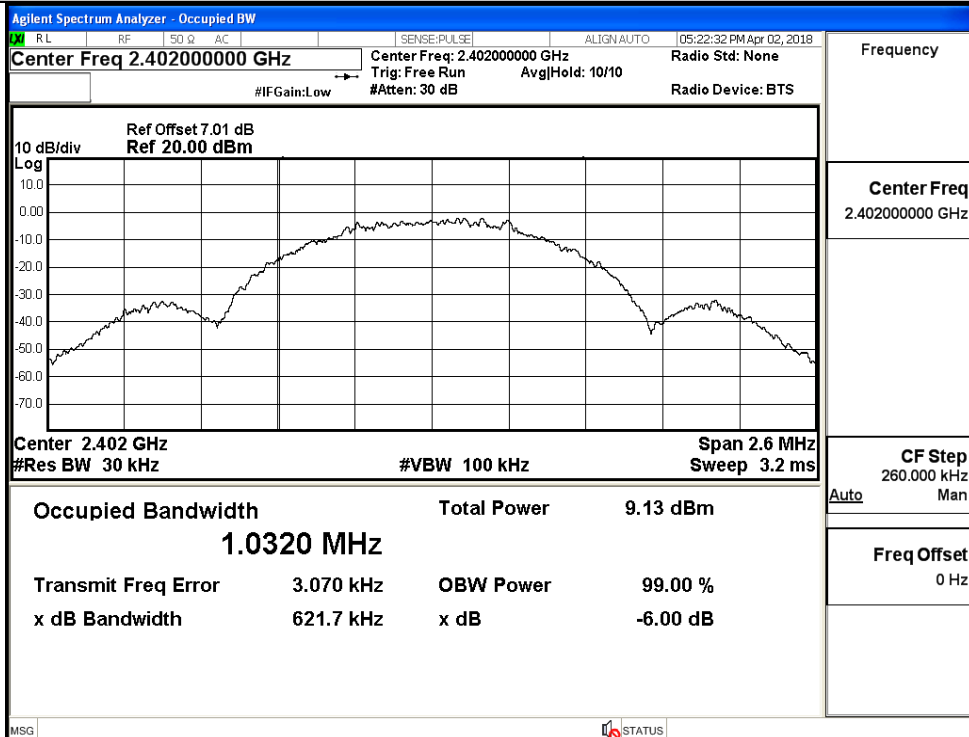


## A.5 Occupied Bandwidth

| Mode  | Channel | Occupied Bandwidth [MHz] | Limit [MHz]   | Verdict |
|-------|---------|--------------------------|---------------|---------|
| BT LE | LCH     | 1.0320                   | Not Specified | PASS    |
| BT LE | MCH     | 1.0263                   | Not Specified | PASS    |
| BT LE | HCH     | 1.0395                   | Not Specified | PASS    |

### Test Graphs

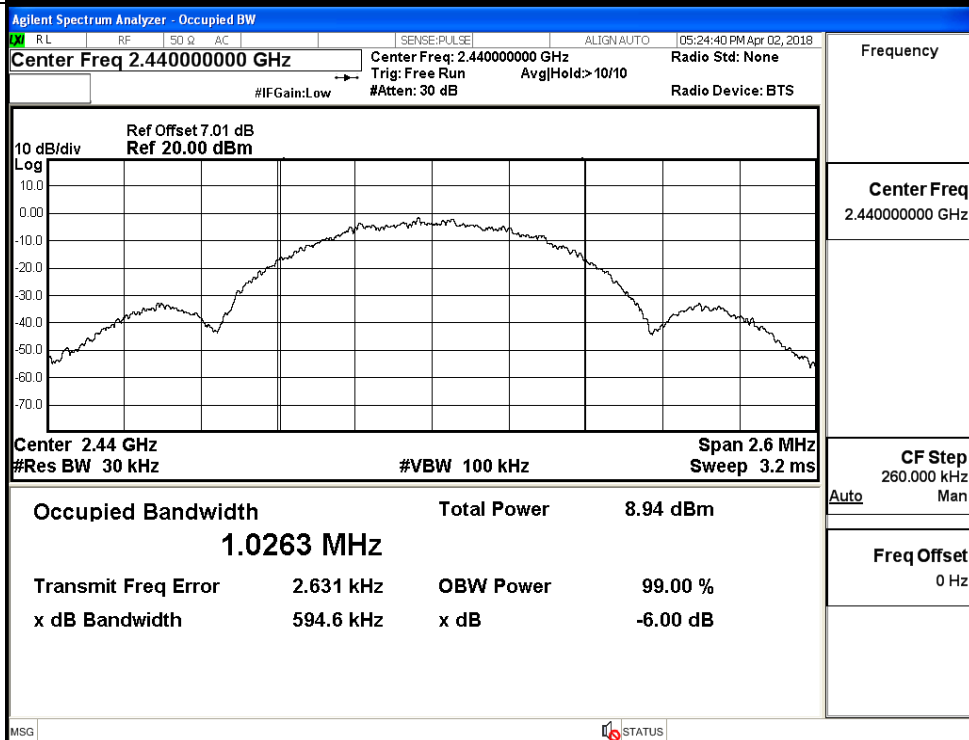
LCH



Frequency

Center Freq  
2.402000000 GHzCF Step  
260.000 kHz  
ManFreq Offset  
0 Hz

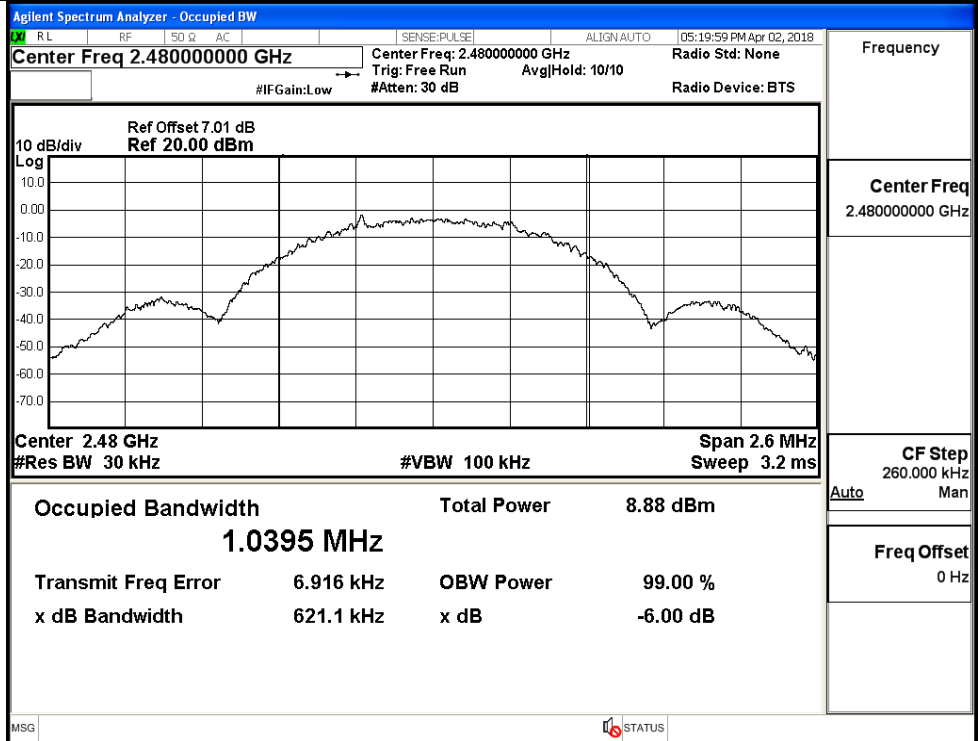
MCH



Frequency

Center Freq  
2.440000000 GHzCF Step  
260.000 kHz  
ManFreq Offset  
0 Hz

HCH

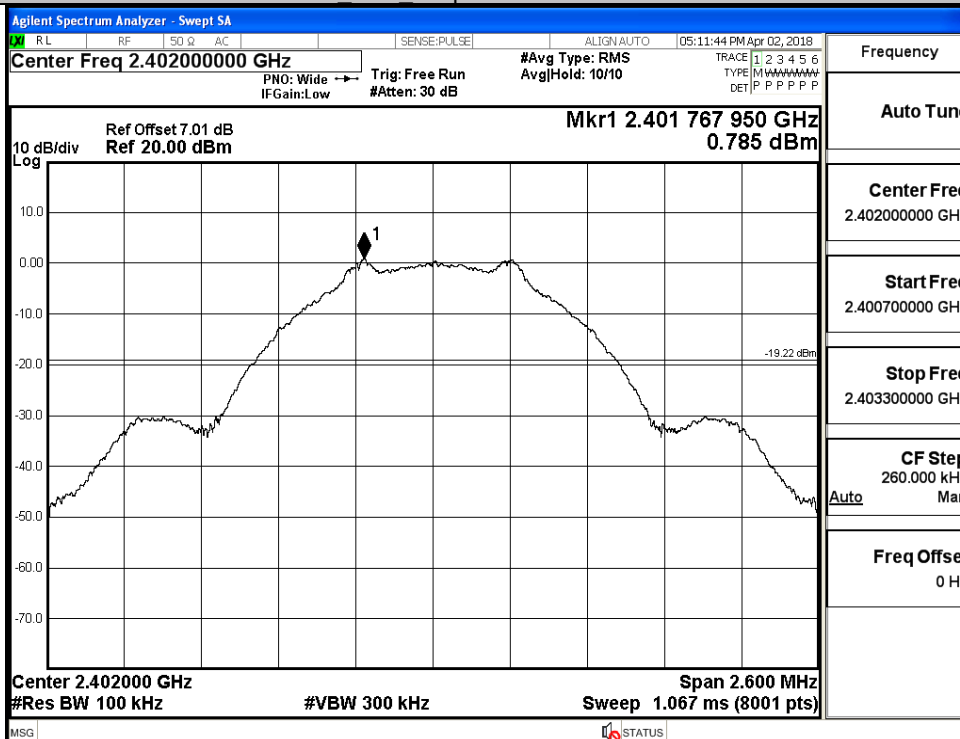


## A.6 RF Conducted Spurious Emissions

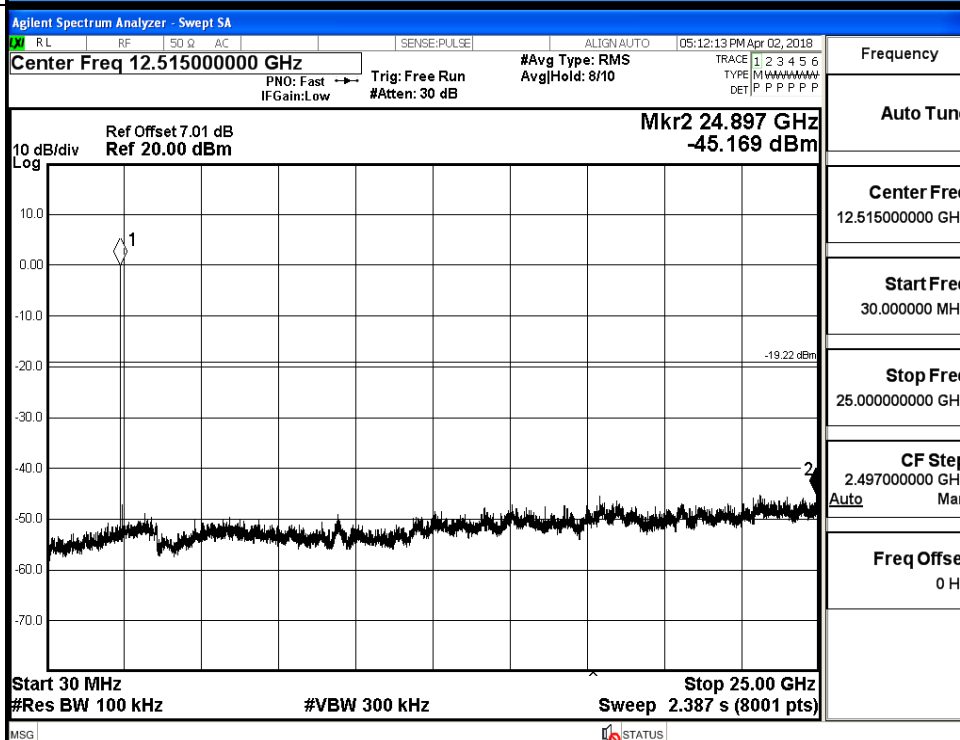
| Mode  | Channel | Pref [dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|-------|---------|------------|------------------|-------------|---------|
| BT LE | LCH     | 0.785      | -45.169          | -19.215     | PASS    |
| BT LE | MCH     | 0.568      | -39.177          | -19.432     | PASS    |
| BT LE | HCH     | 0.421      | -45.912          | -19.579     | PASS    |

BT LE LCH Graphs

Pref/BT LE/LCH

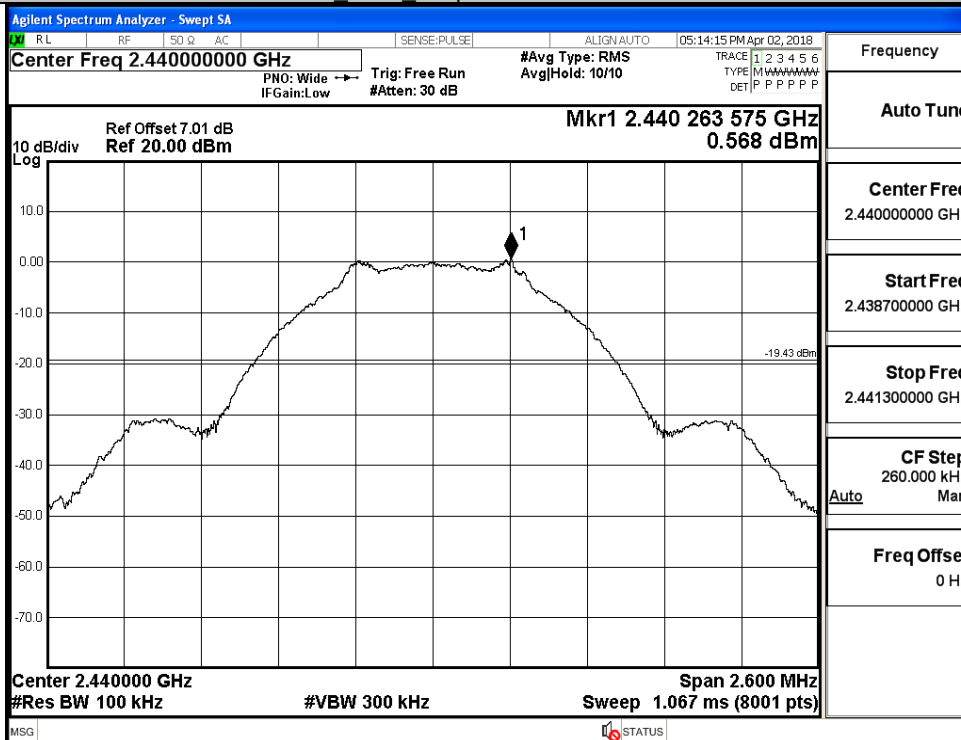


Puw/BT LE/LCH

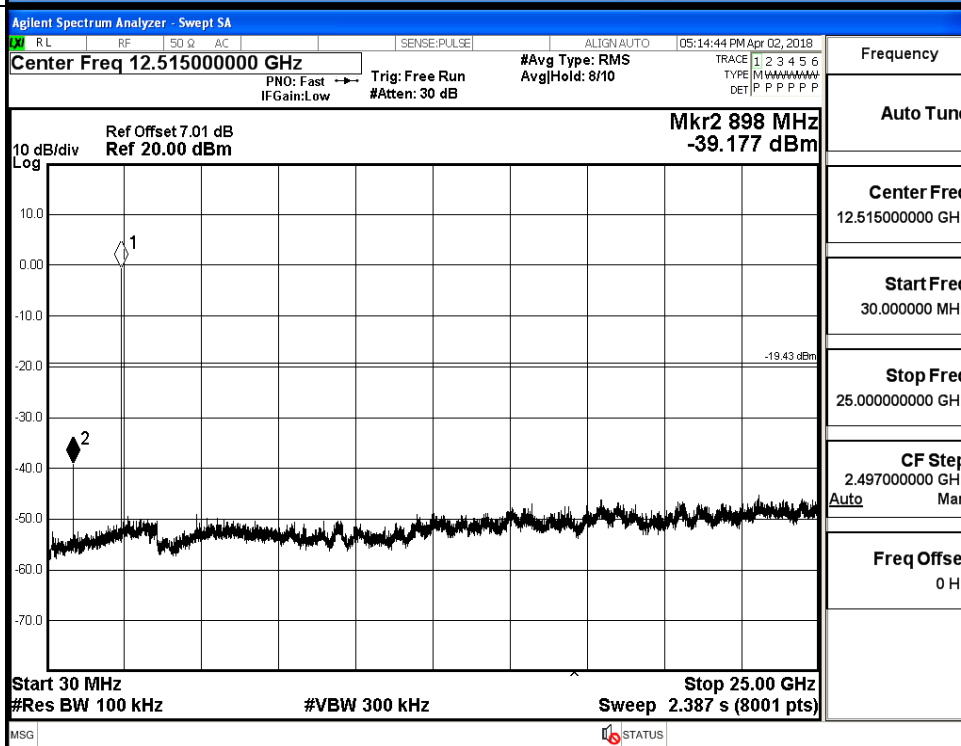


## BT LE MCH Graphs

Pref/BT LE/MCH

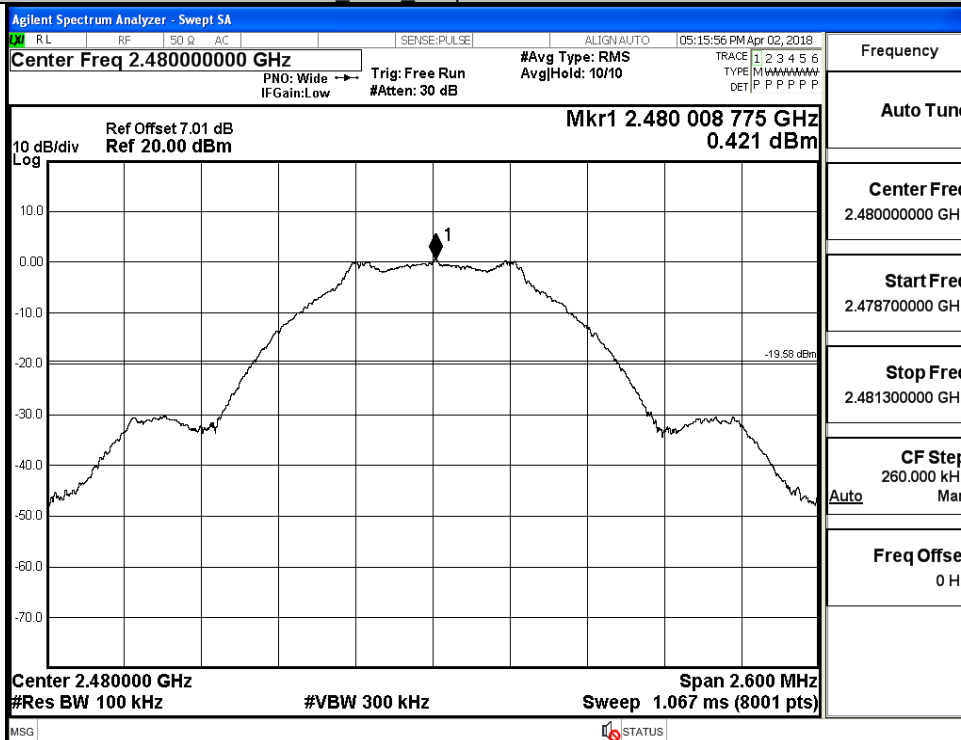


Puw/BT LE/MCH

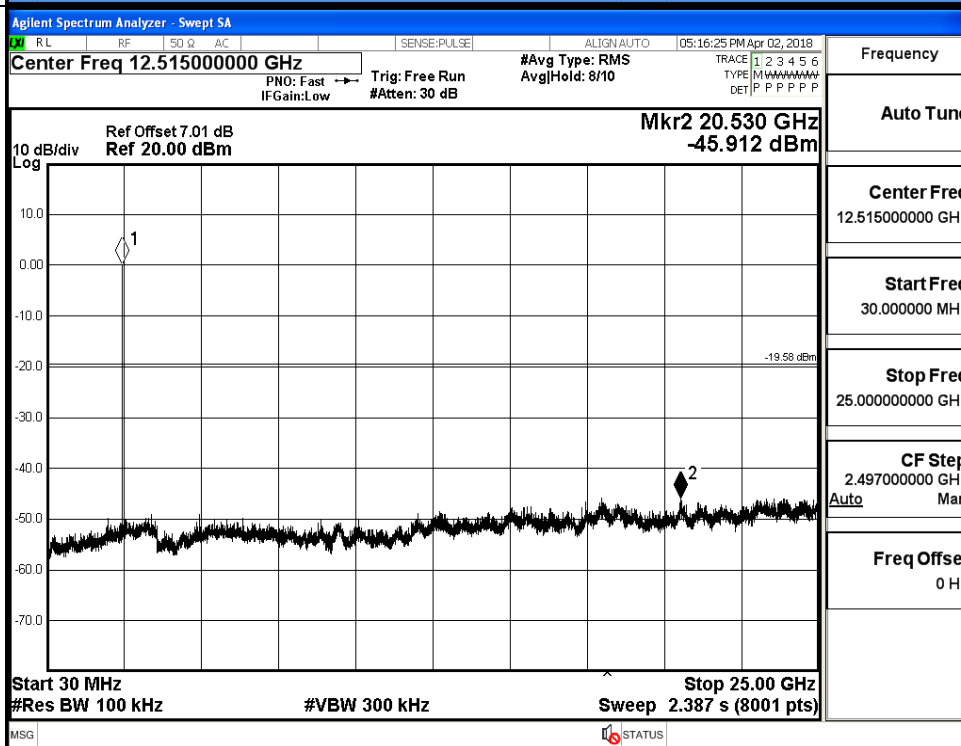


## BT LE HCH Graphs

Pref/BT LE/HCH



Puw/BT LE/HCH

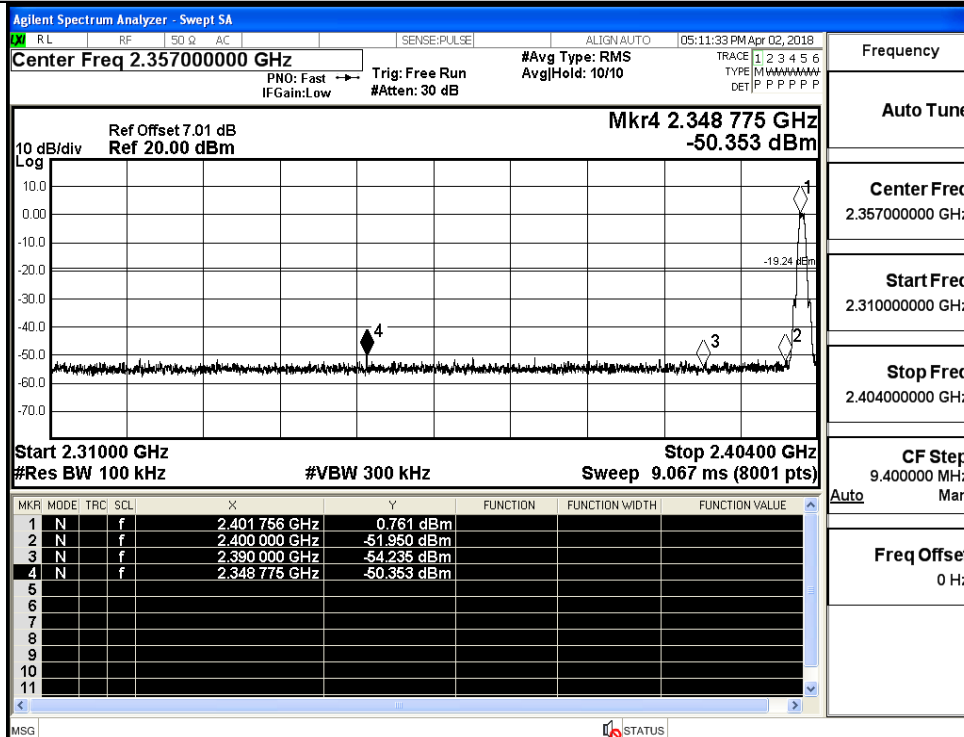


## A.7 Band-edge for RF Conducted Emissions

| Mode  | Channel | Carrier Power[dBm] | Max.Spurious Level [dBm] | Limit [dBm] | Verdict |
|-------|---------|--------------------|--------------------------|-------------|---------|
| BT LE | LCH     | 0.761              | -50.353                  | -19.24      | PASS    |
| BT LE | HCH     | 0.446              | -50.833                  | -19.55      | PASS    |

## Test Graphs

LCH



Frequency

Auto Tune

Center Freq

2.357000000 GHz

Start Freq

2.310000000 GHz

Stop Freq

2.404000000 GHz

CF Step

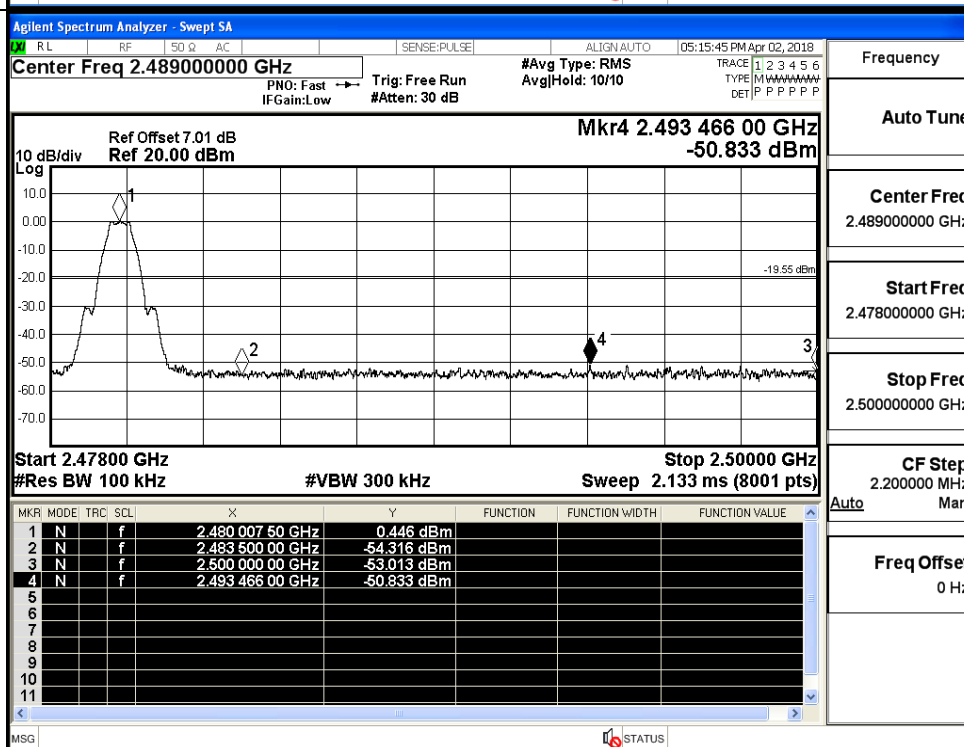
9.400000 MHz

Auto Man

Freq Offset

0 Hz

HCH



Frequency

Auto Tune

Center Freq

2.489000000 GHz

Start Freq

2.478000000 GHz

Stop Freq

2.500000000 GHz

CF Step

2.200000 MHz

Auto Man

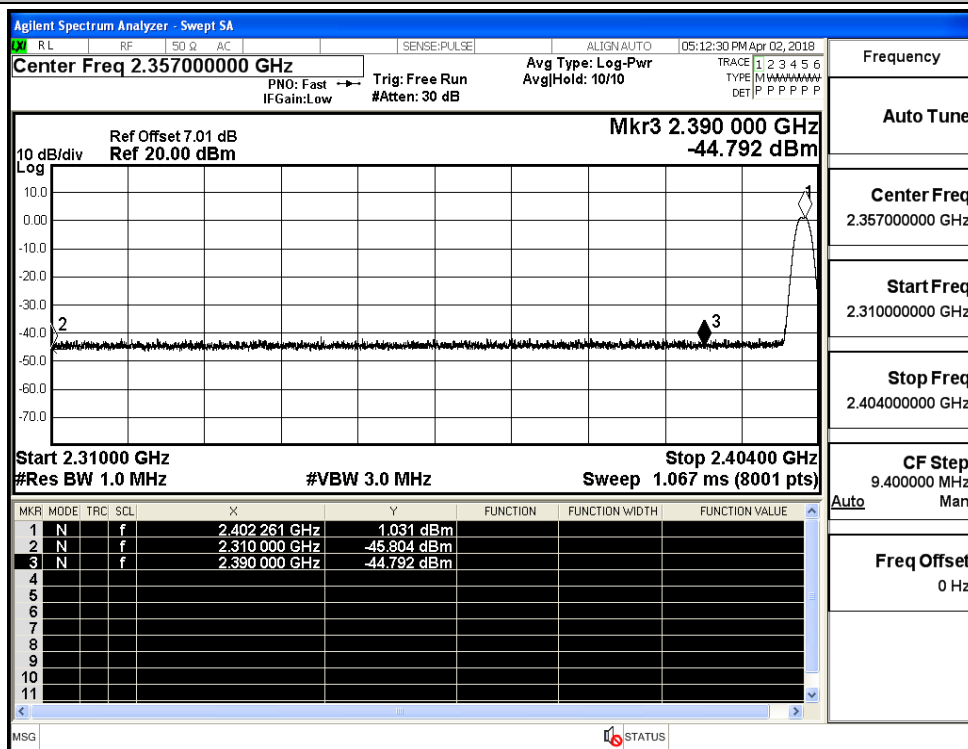
Freq Offset

0 Hz

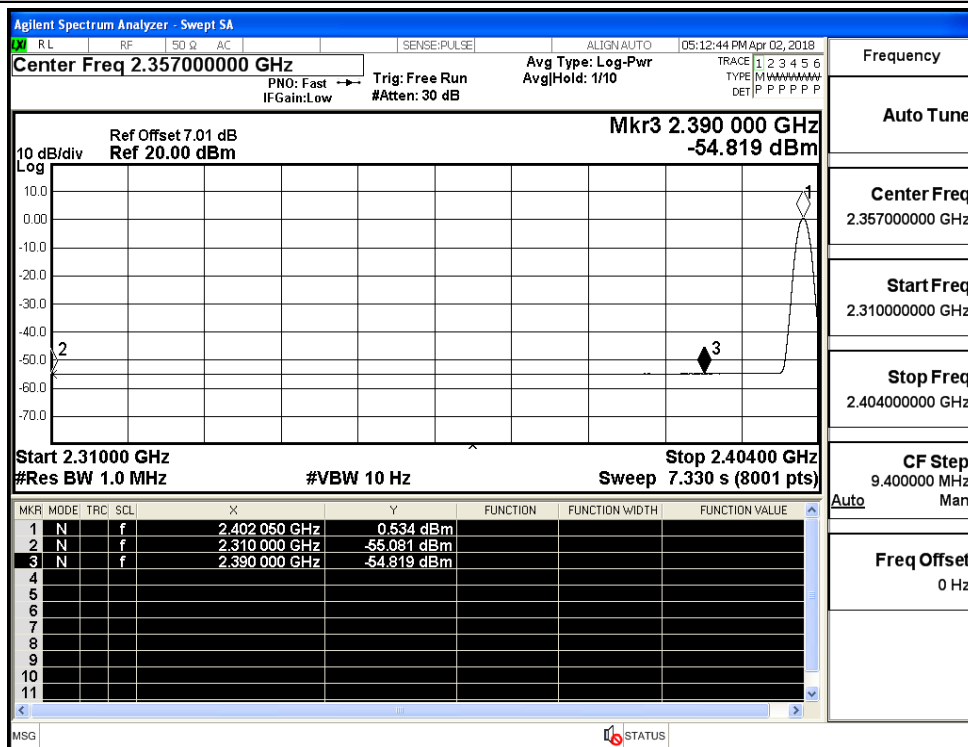
**A.8 Restrict-band band-edge measurements**

| Test Mode | Test Channel | Ant  | Freq.  | Power [dBm] | Gain | Ground Factor | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdict |
|-----------|--------------|------|--------|-------------|------|---------------|------------|----------|----------------|---------|
| BT LE     | 2402         | Ant1 | 2310.0 | -45.80      | 2.55 | 0             | 52.01      | PEAK     | 74             | PASS    |
|           |              | Ant1 | 2310.0 | -55.08      | 2.55 | 0             | 42.73      | AV       | 54             | PASS    |
|           |              | Ant1 | 2390.0 | -44.79      | 2.55 | 0             | 53.02      | PEAK     | 74             | PASS    |
|           |              | Ant1 | 2390.0 | -54.82      | 2.55 | 0             | 42.99      | AV       | 54             | PASS    |
|           | 2480         | Ant1 | 2483.5 | -44.50      | 2.55 | 0             | 53.31      | PEAK     | 74             | PASS    |
|           |              | Ant1 | 2483.5 | -54.47      | 2.55 | 0             | 43.34      | AV       | 54             | PASS    |
|           |              | Ant1 | 2500.0 | -43.43      | 2.55 | 0             | 54.38      | PEAK     | 74             | PASS    |
|           |              | Ant1 | 2500.0 | -54.48      | 2.55 | 0             | 43.33      | AV       | 54             | PASS    |

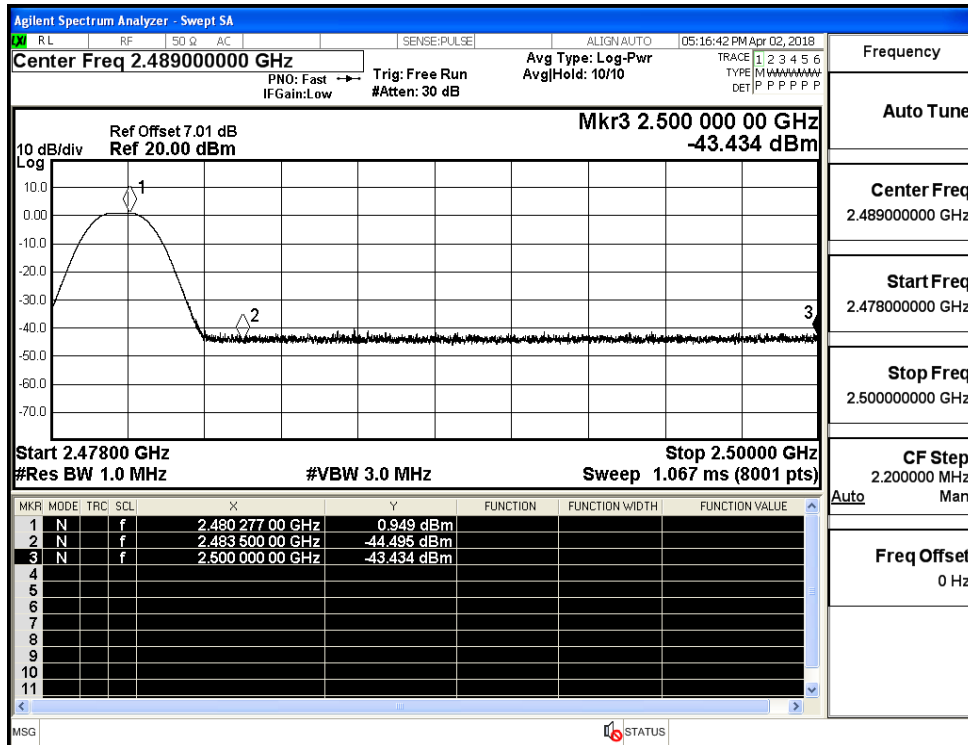
## Restrict-band band-edge measurements\_BT LE\_2402\_Ant1\_PEAK



## 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

