

## Appendix A

### RF Test Data for BT LE (Conducted Measurement)

Product Name: All Safe LR44 Cube

Trade Mark: tracesafe

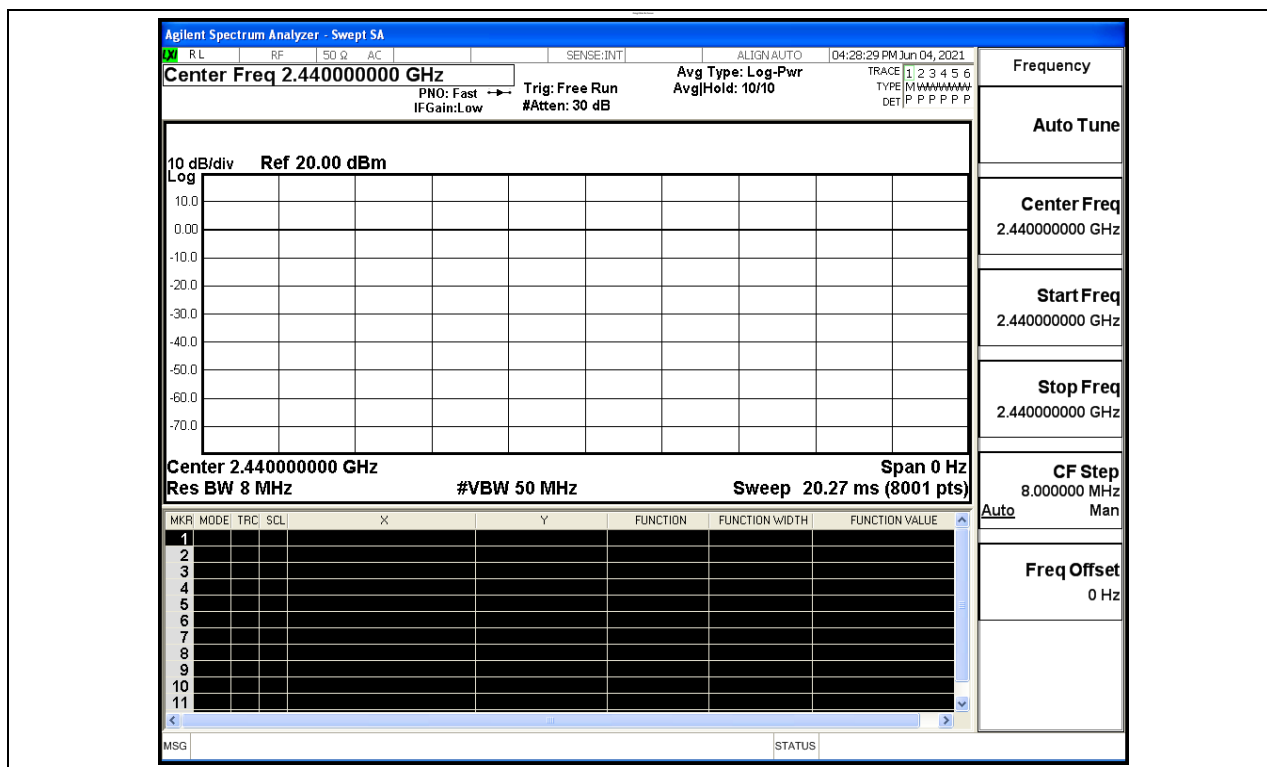
Test Model: TTLQ

#### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 25 ° C    |
| Relative Humidity: | 50%       |
| 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 |
|-----------|--------------|------|---------------|---------|
| BT LE     | 2440         | Ant1 | 100           | PASS    |



**A.2 Maximum Conducted Peak Output Power**

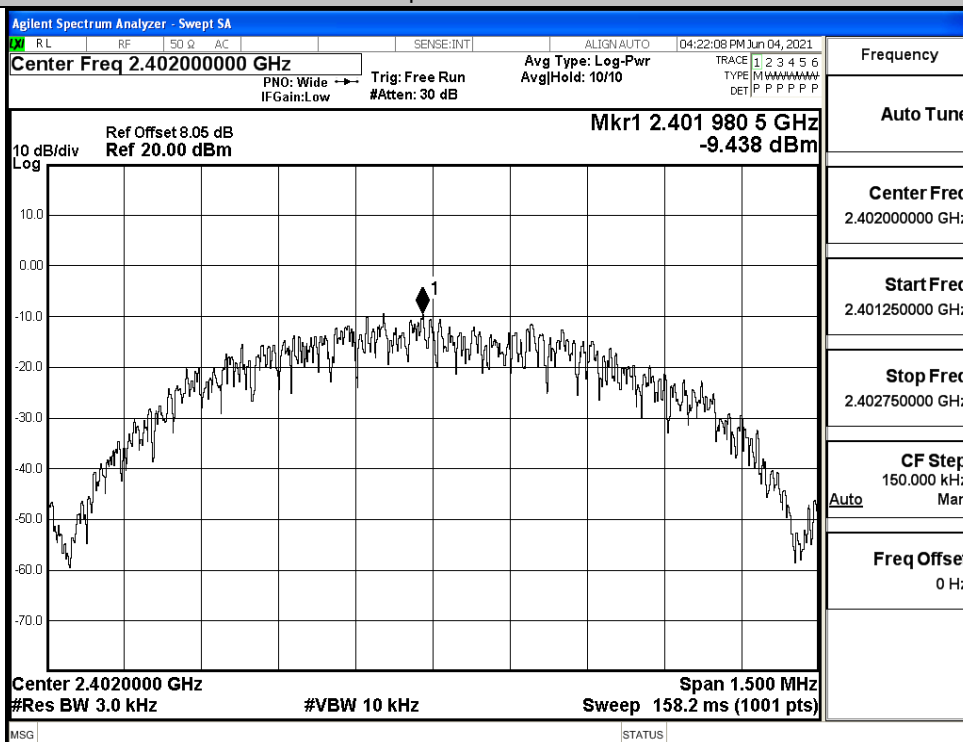
| Mode  | Channel | Conduct Peak Power[dBm] | Limit [dBm] | Verdict |
|-------|---------|-------------------------|-------------|---------|
| BT LE | LCH     | 0.306                   | 30          | PASS    |
| BT LE | MCH     | 0.75                    | 30          | PASS    |
| BT LE | HCH     | 0.251                   | 30          | PASS    |

### A.3 Maximum Power Spectral Density

| Mode  | Channel | PSD [dBm/3KHz] | Limit [dBm/3KHz] | Verdict |
|-------|---------|----------------|------------------|---------|
| BT LE | LCH     | -9.438         | 8                | PASS    |
| BT LE | MCH     | -7.041         | 8                | PASS    |
| BT LE | HCH     | -8.691         | 8                | PASS    |

Test Graphs

LCH

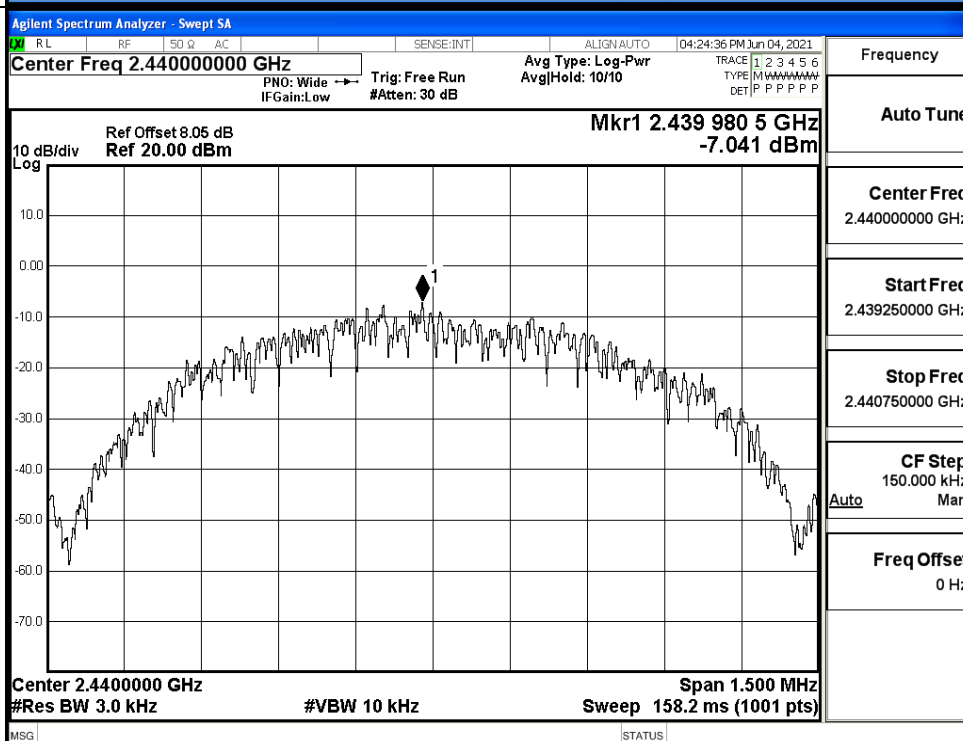


Frequency

Auto Tune

Center Freq  
2.402000000 GHzStart Freq  
2.401250000 GHzStop Freq  
2.402750000 GHzCF Step  
150.000 kHz  
Auto ManFreq Offset  
0 Hz

MCH

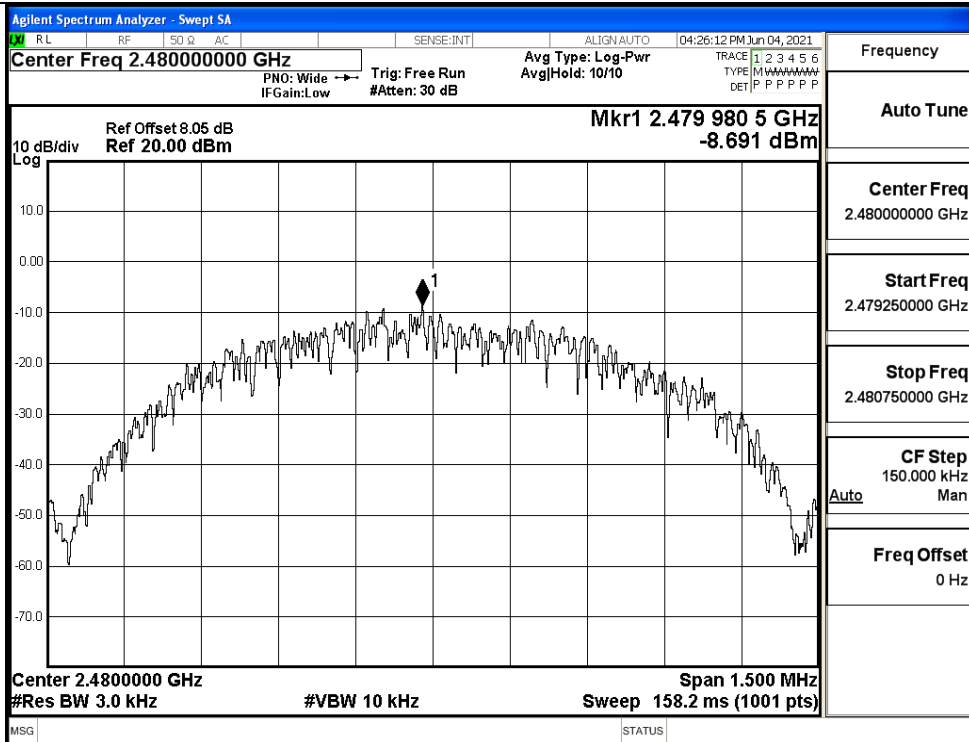


Frequency

Auto Tune

Center Freq  
2.440000000 GHzStart Freq  
2.439250000 GHzStop Freq  
2.440750000 GHzCF Step  
150.000 kHz  
Auto ManFreq Offset  
0 Hz

HCH

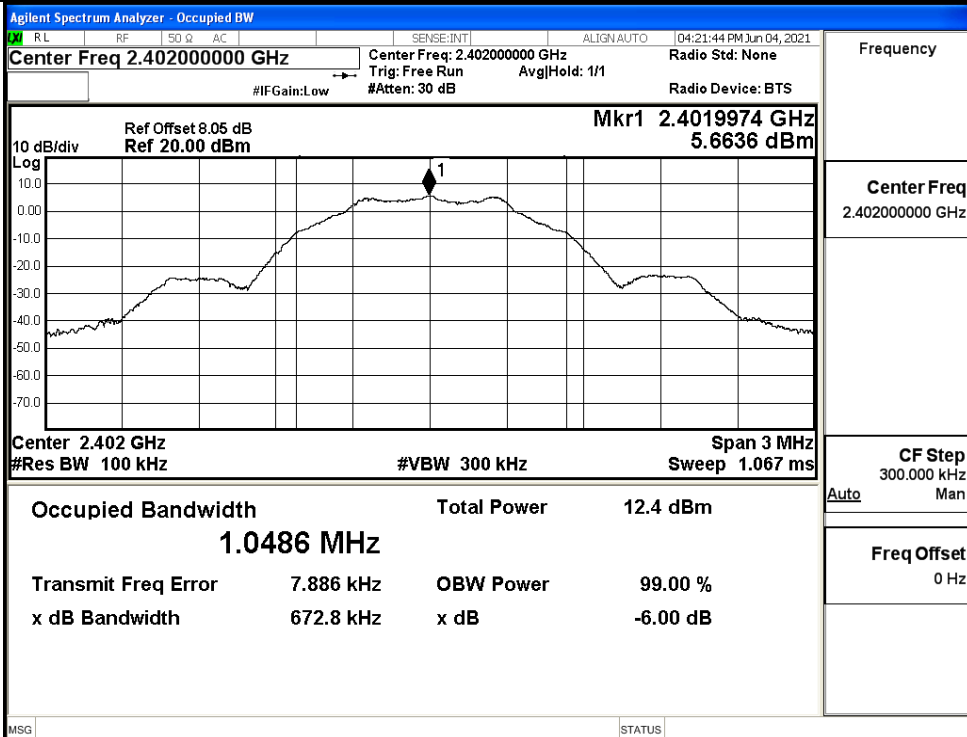


## A.4 6dB Bandwidth

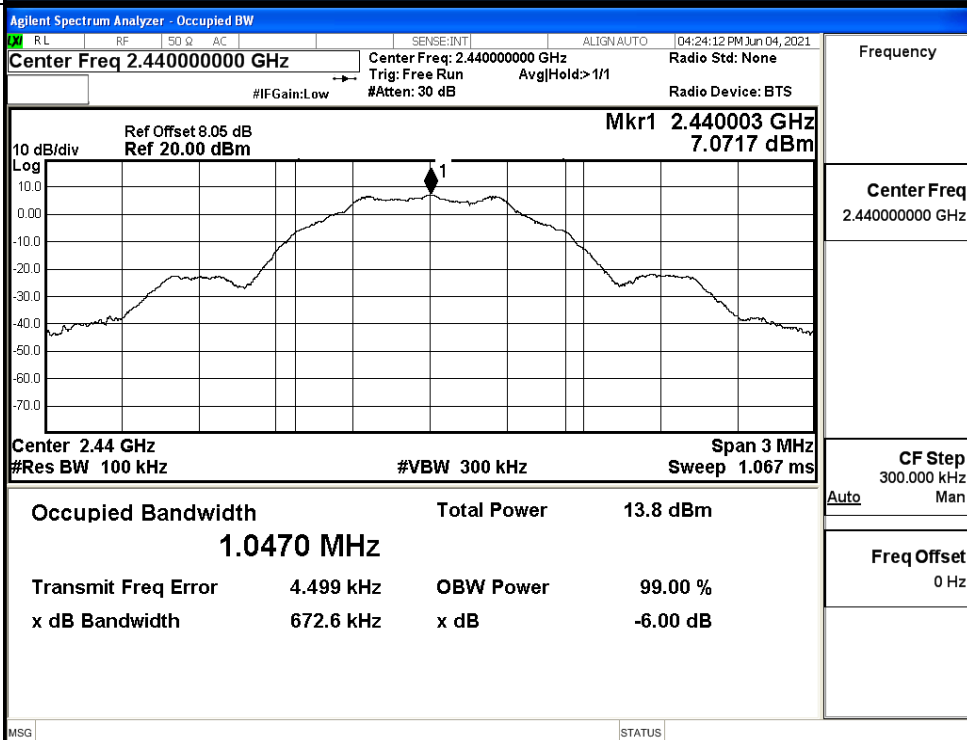
| Mode  | Channel | 6dB Bandwidth [MHz] | Limit [MHz] | Verdict |
|-------|---------|---------------------|-------------|---------|
| BT LE | LCH     | 0.6728              | $\geq 0.5$  | PASS    |
| BT LE | MCH     | 0.6726              | $\geq 0.5$  | PASS    |
| BT LE | HCH     | 0.6709              | $\geq 0.5$  | PASS    |

## Test Graphs

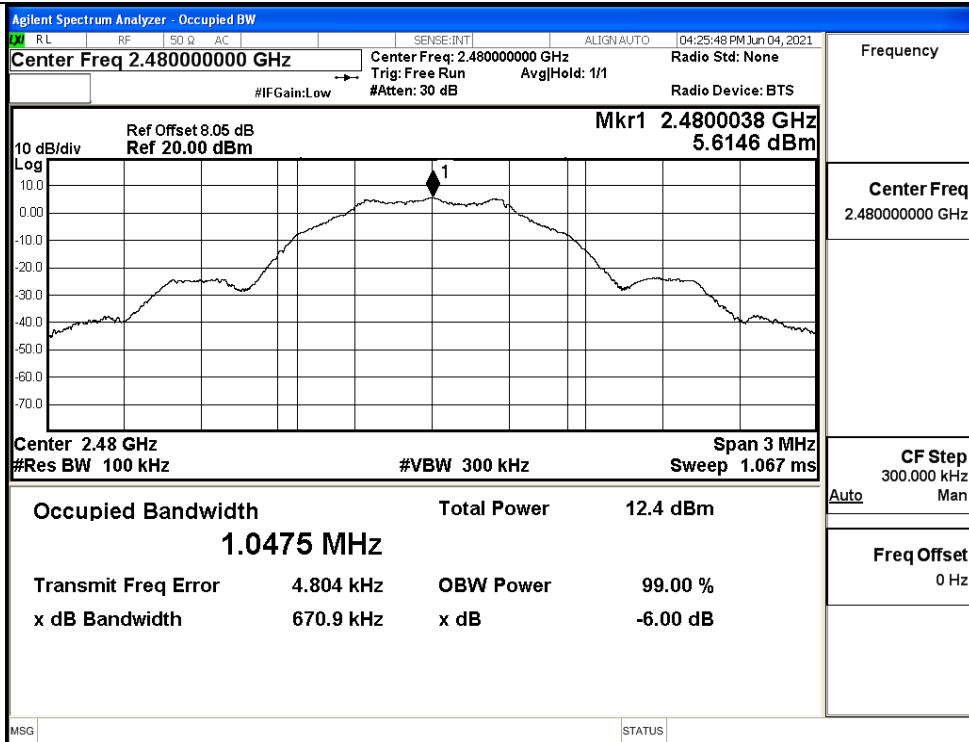
LCH



MCH



HCH

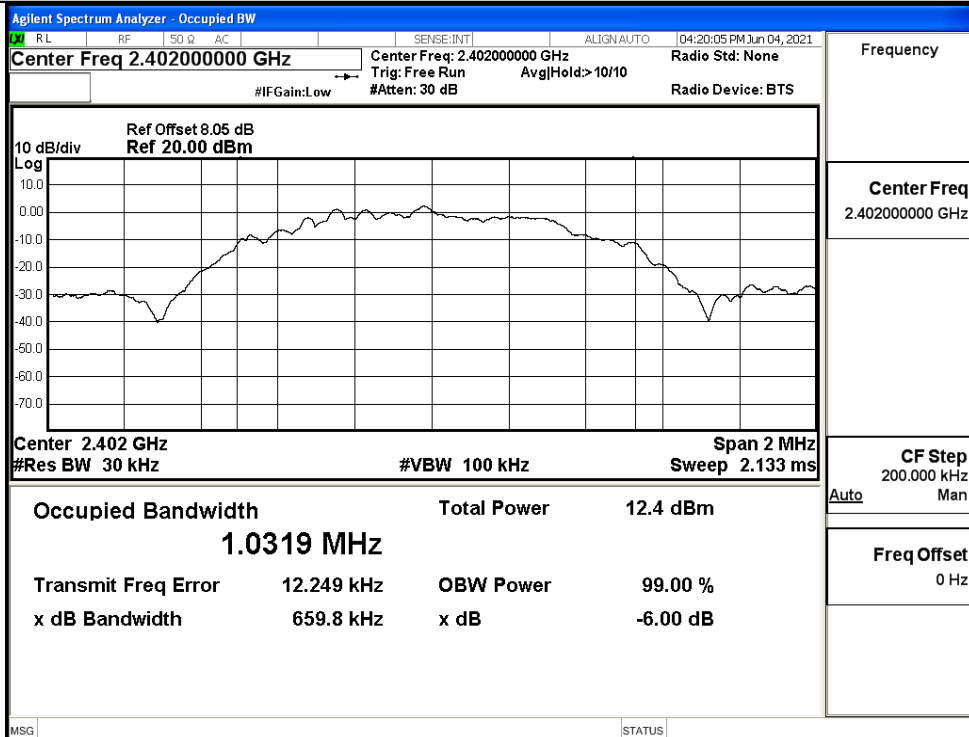


## A.5 Occupied Bandwidth

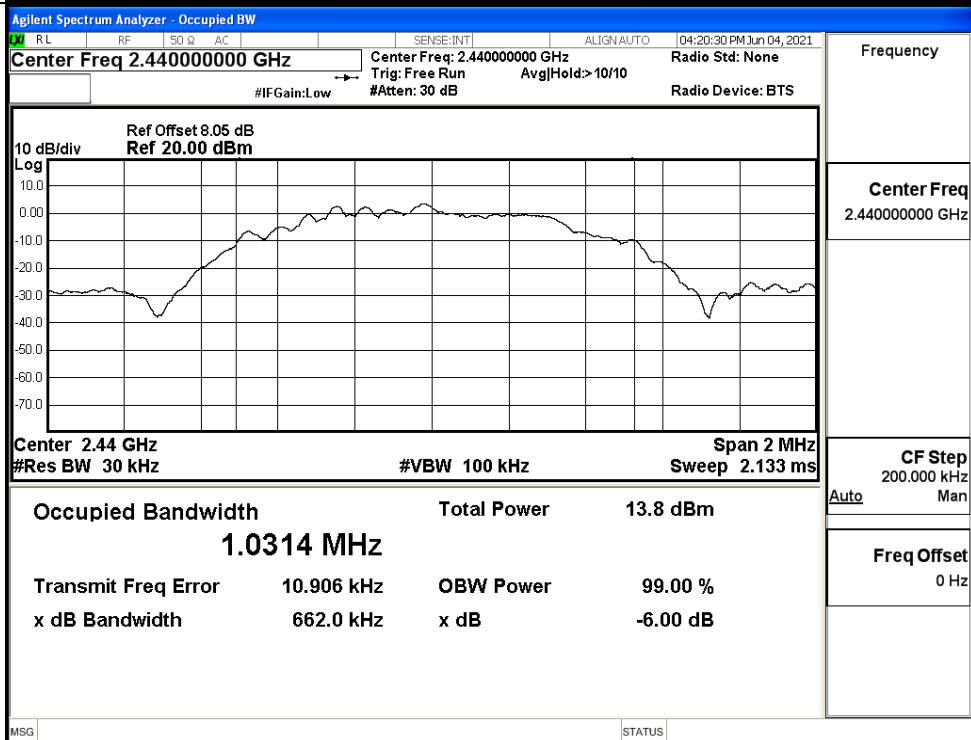
| Mode  | Channel | Occupied Bandwidth [MHz] | Limit [MHz] | Verdict |
|-------|---------|--------------------------|-------------|---------|
| BT LE | LCH     | 1.0319                   | No Limit    | PASS    |
| BT LE | MCH     | 1.0314                   | No Limit    | PASS    |
| BT LE | HCH     | 1.0319                   | No Limit    | PASS    |

## Test Graphs

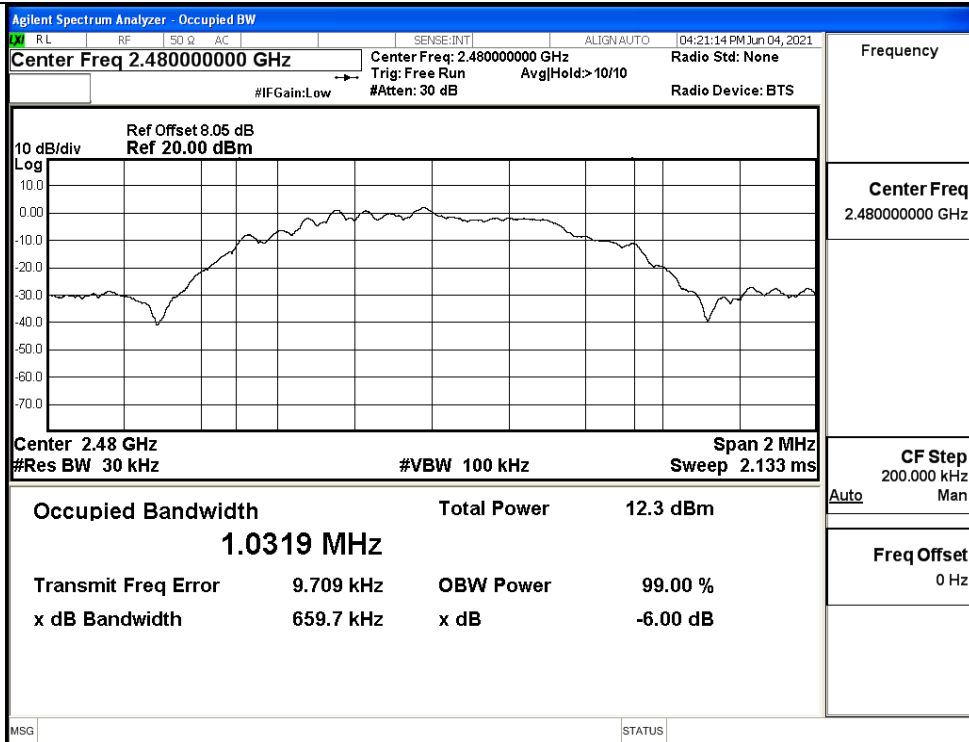
LCH



MCH



HCH

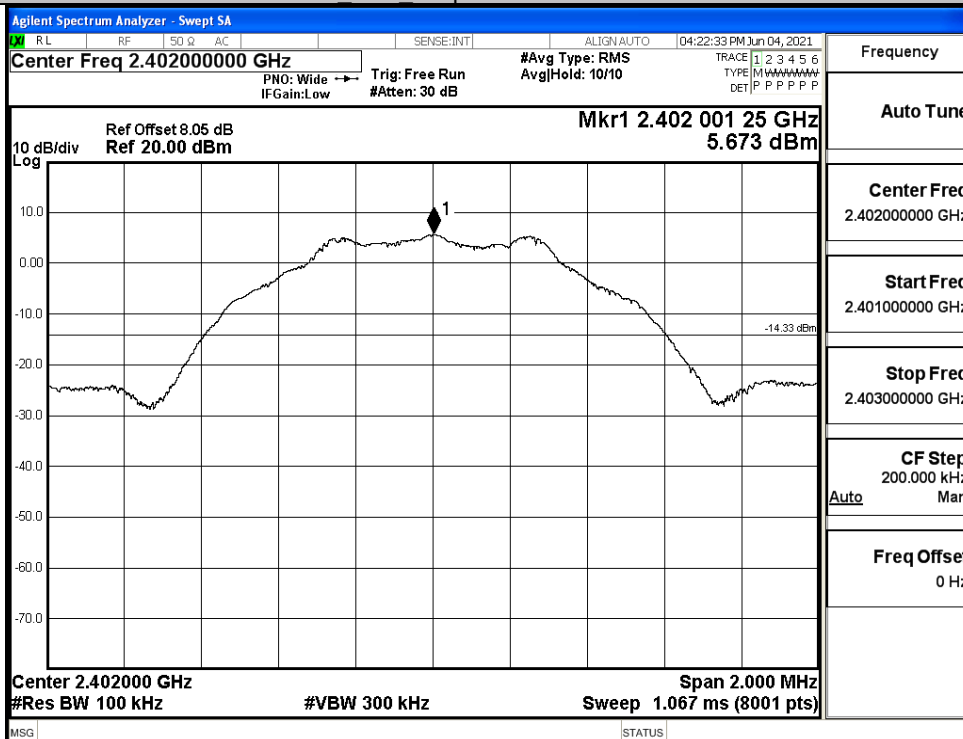


## A.6 RF Conducted Spurious Emissions

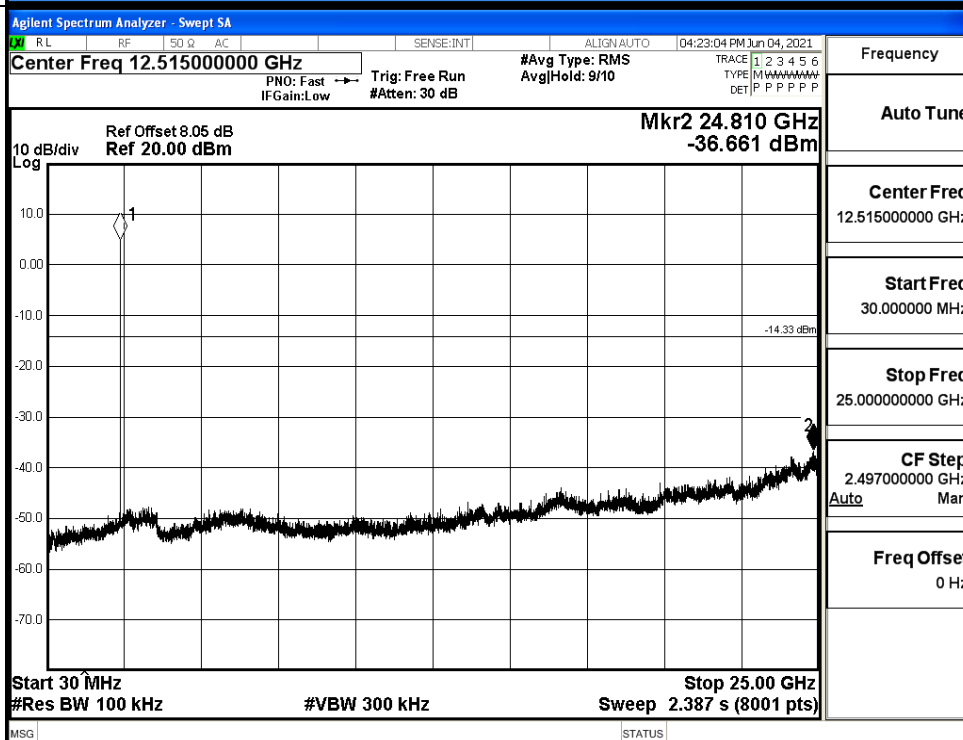
| Mode  | Channel | Pref [dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|-------|---------|------------|------------------|-------------|---------|
| BT LE | LCH     | 5.673      | -36.661          | -14.327     | PASS    |
| BT LE | MCH     | 7.149      | -37.238          | -12.851     | PASS    |
| BT LE | HCH     | 5.641      | -37.579          | -14.359     | PASS    |

BT LE LCH Graphs

Pref/BT LE/LCH

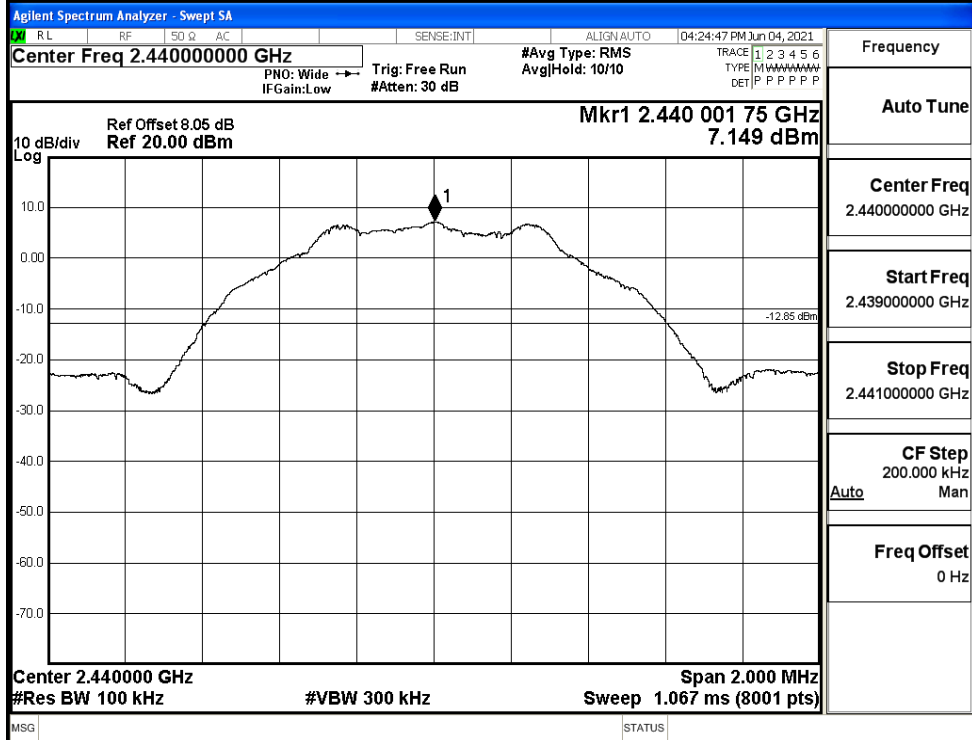


Puw/BT LE/LCH

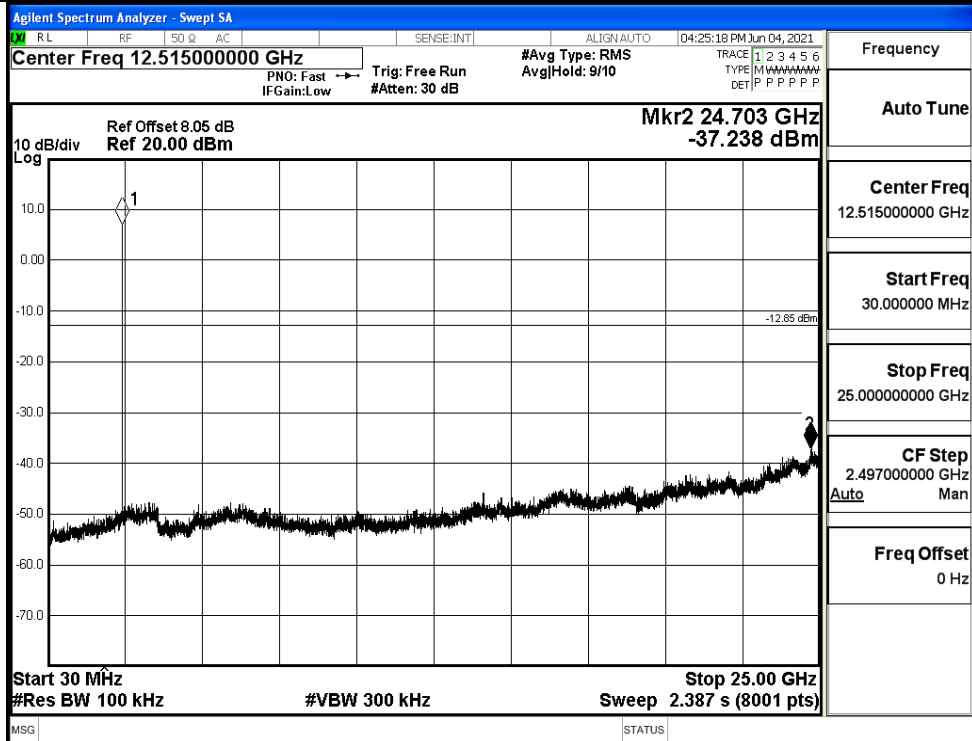


## BT LE MCH Graphs

Pref/BT LE/MCH

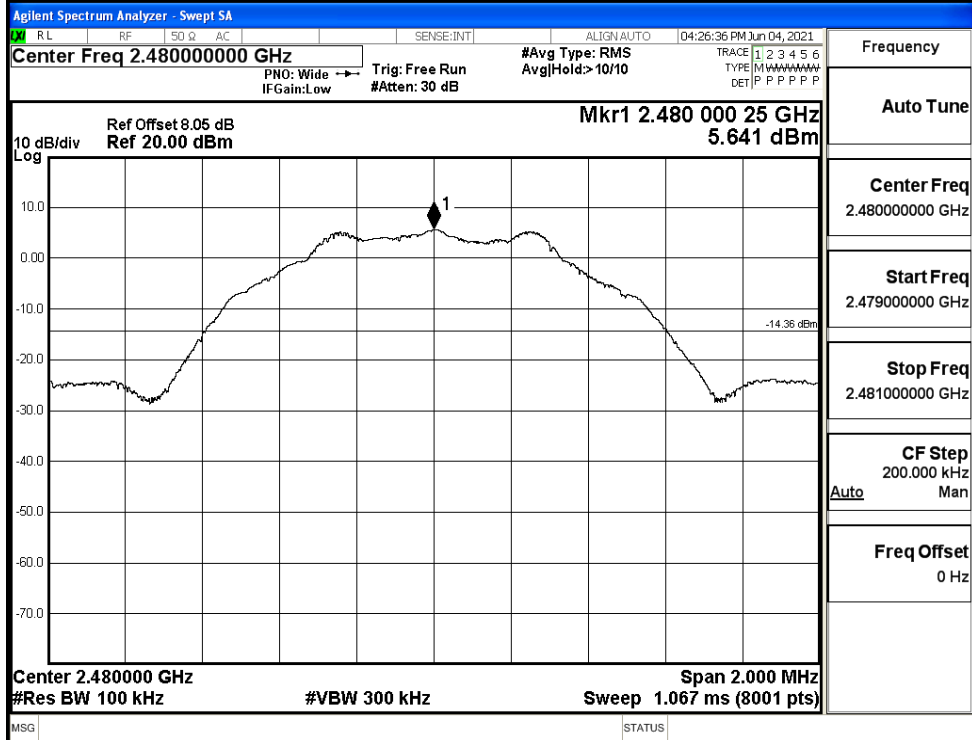


Puw/BT LE/MCH

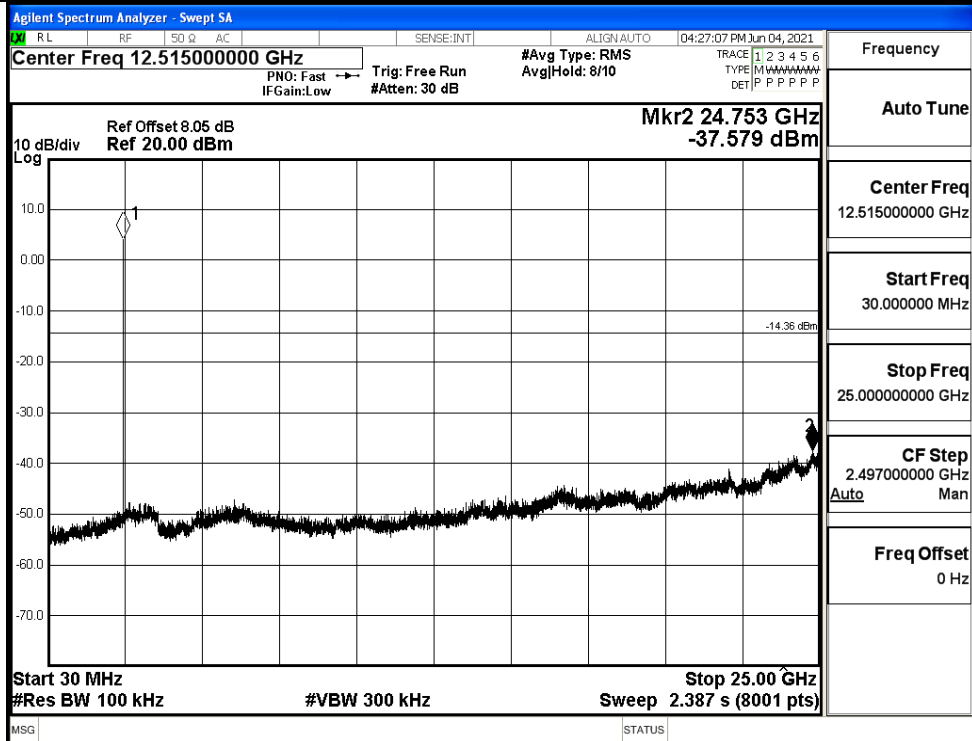


## BT LE HCH Graphs

Pref/BT LE/HCH



Puw/BT LE/HCH

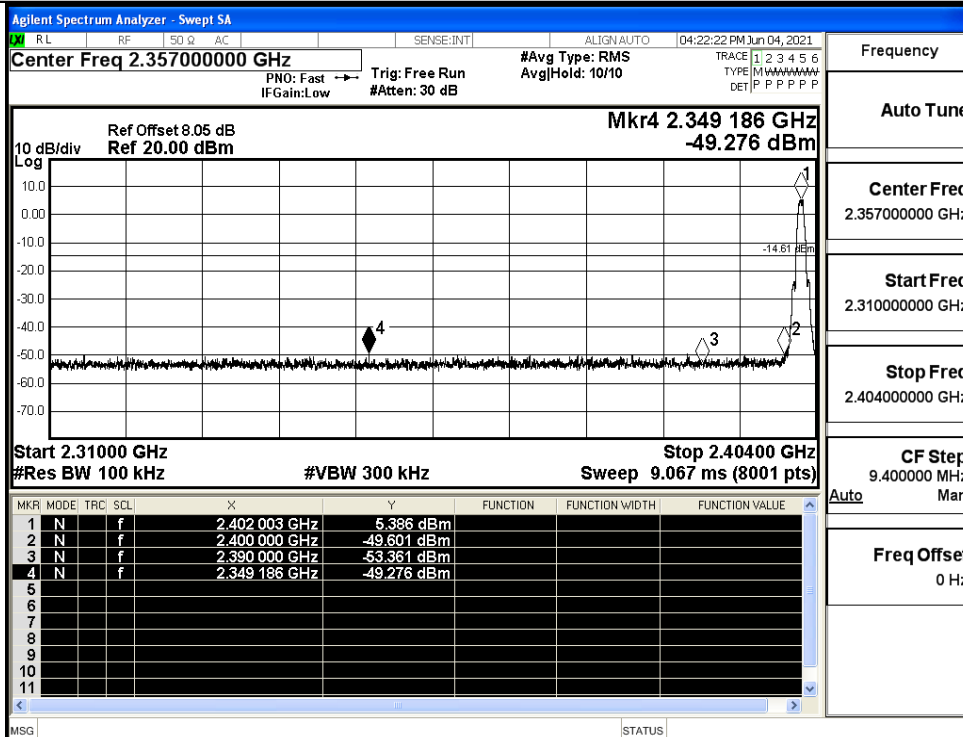


## A.7 Band-edge for RF Conducted Emissions

| Mode  | Channel | Carrier Power[dBm] | Max.Spurious Level [dBm] | Limit [dBm] | Verdict |
|-------|---------|--------------------|--------------------------|-------------|---------|
| BT LE | LCH     | 5.386              | -49.276                  | -14.61      | PASS    |
| BT LE | HCH     | 5.852              | -49.131                  | -14.15      | PASS    |

## Test Graphs

LCH



Frequency

Auto Tune

Center Freq

2.357000000 GHz

Start Freq

2.310000000 GHz

Stop Freq

2.404000000 GHz

CF Step

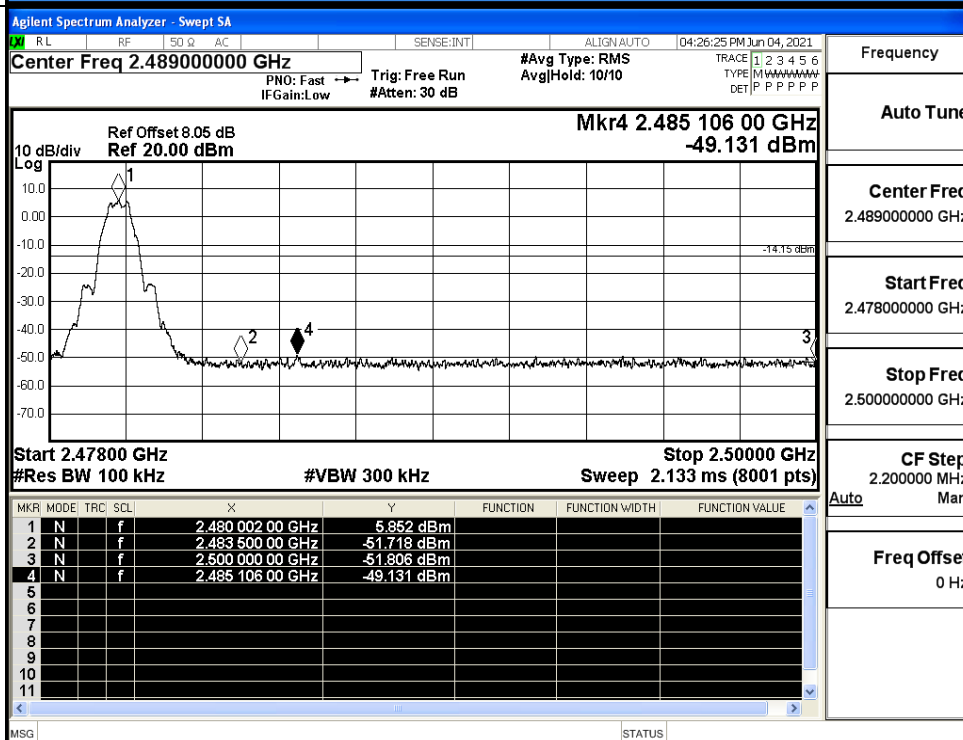
9.400000 MHz

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

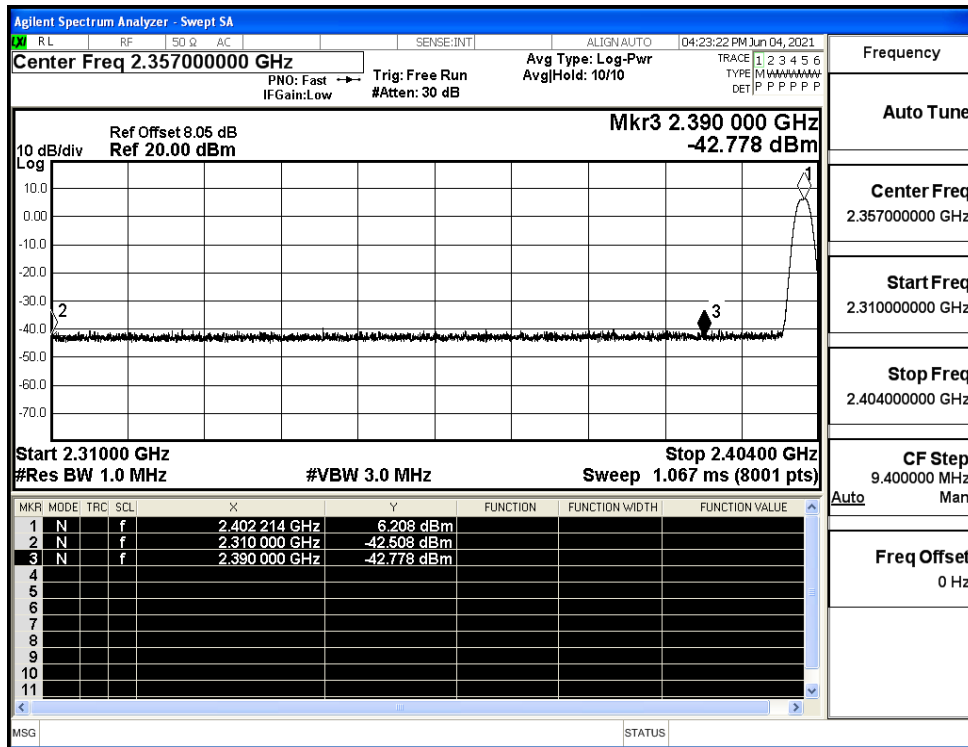
Freq Offset

0 Hz

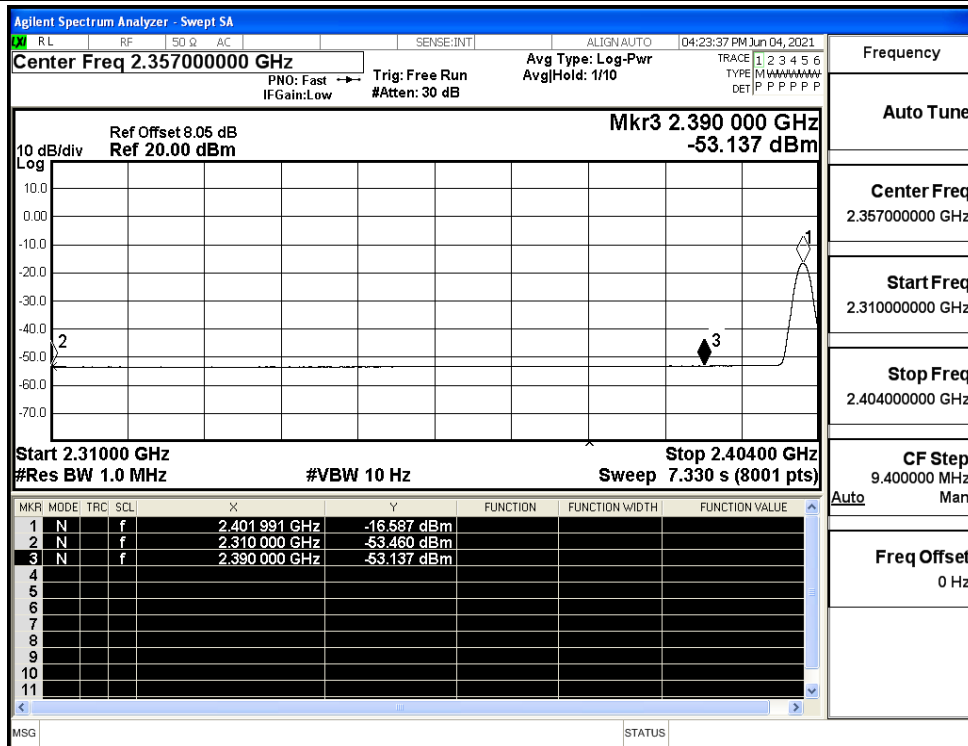
## A.8 Restrict-band band-edge measurements

| Test Mode | Test Channel | Ant  | Freq.  | Power [dBm] | Gain | Ground Factor | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdi |
|-----------|--------------|------|--------|-------------|------|---------------|------------|----------|----------------|-------|
| BT LE     | 2402         | Ant1 | 2310.0 | -42.51      | 2.0  | 0             | 54.72      | PEAK     | 74             | PASS  |
|           |              | Ant1 | 2310.0 | -53.46      | 2.0  | 0             | 43.77      | AV       | 54             | PASS  |
|           |              | Ant1 | 2390.0 | -42.78      | 2.0  | 0             | 54.45      | PEAK     | 74             | PASS  |
|           |              | Ant1 | 2390.0 | -53.14      | 2.0  | 0             | 44.09      | AV       | 54             | PASS  |
|           | 2480         | Ant1 | 2483.5 | -42.64      | 2.0  | 0             | 54.59      | PEAK     | 74             | PASS  |
|           |              | Ant1 | 2483.5 | -52.51      | 2.0  | 0             | 44.72      | AV       | 54             | PASS  |
|           |              | Ant1 | 2500.0 | -40.30      | 2.0  | 0             | 56.93      | PEAK     | 74             | PASS  |
|           |              | Ant1 | 2500.0 | -52.50      | 2.0  | 0             | 44.73      | AV       | 54             | PASS  |

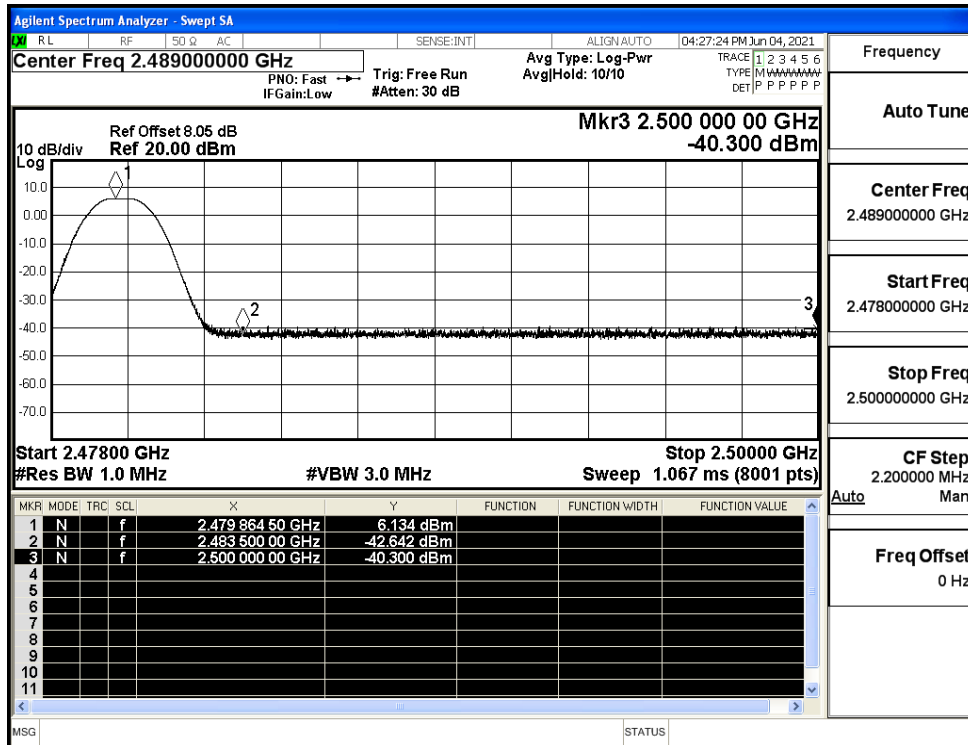
## Restrict-band band-edge measurements\_BT LE\_2402\_Ant1\_PEAK



## 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

