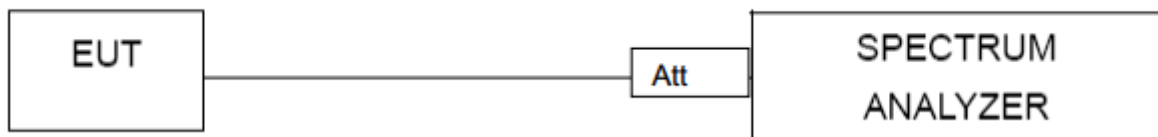


## 10. BAND EDGE COMPLIANCE TEST

### 10.1. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see §15.205(c)).

### 10.2. Test setup

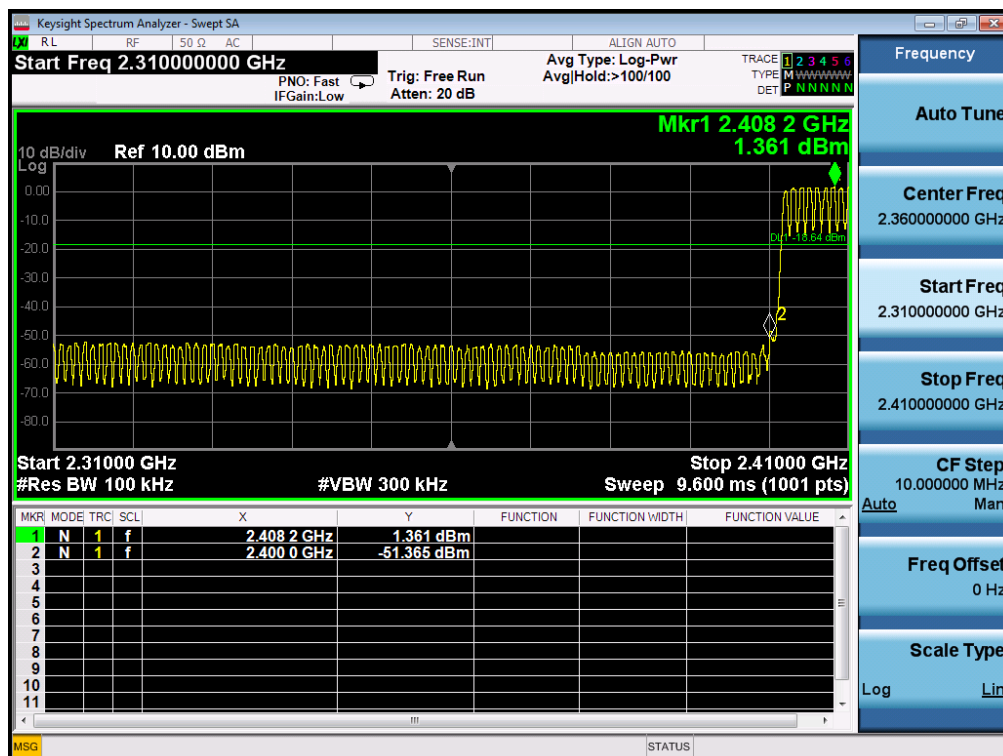
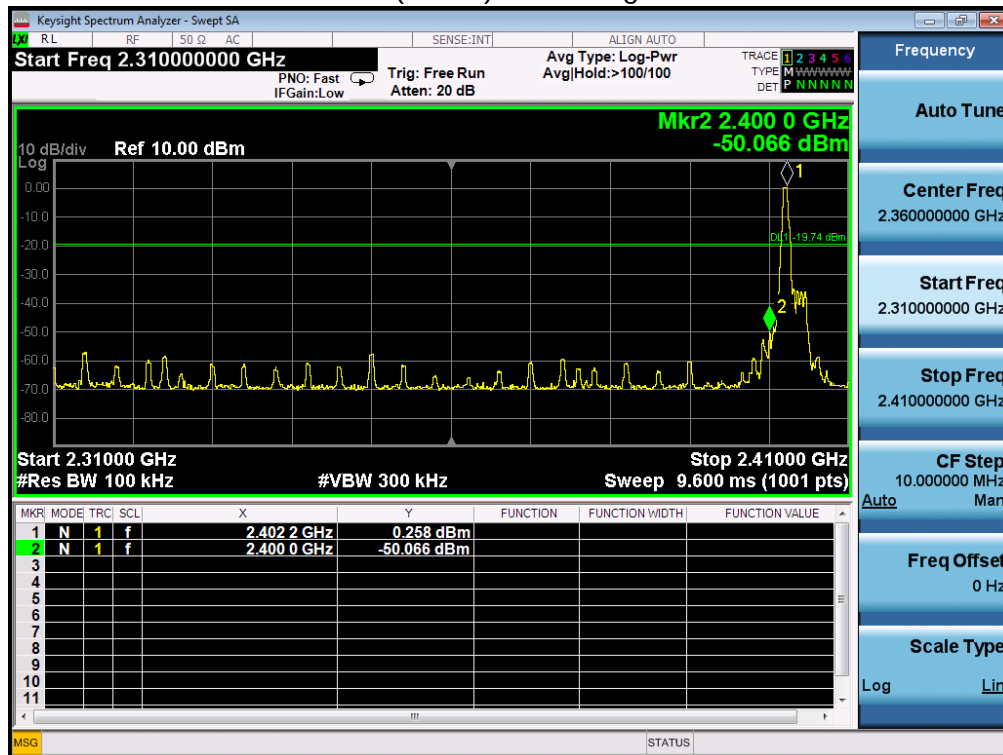


### 10.3. TEST Procedure

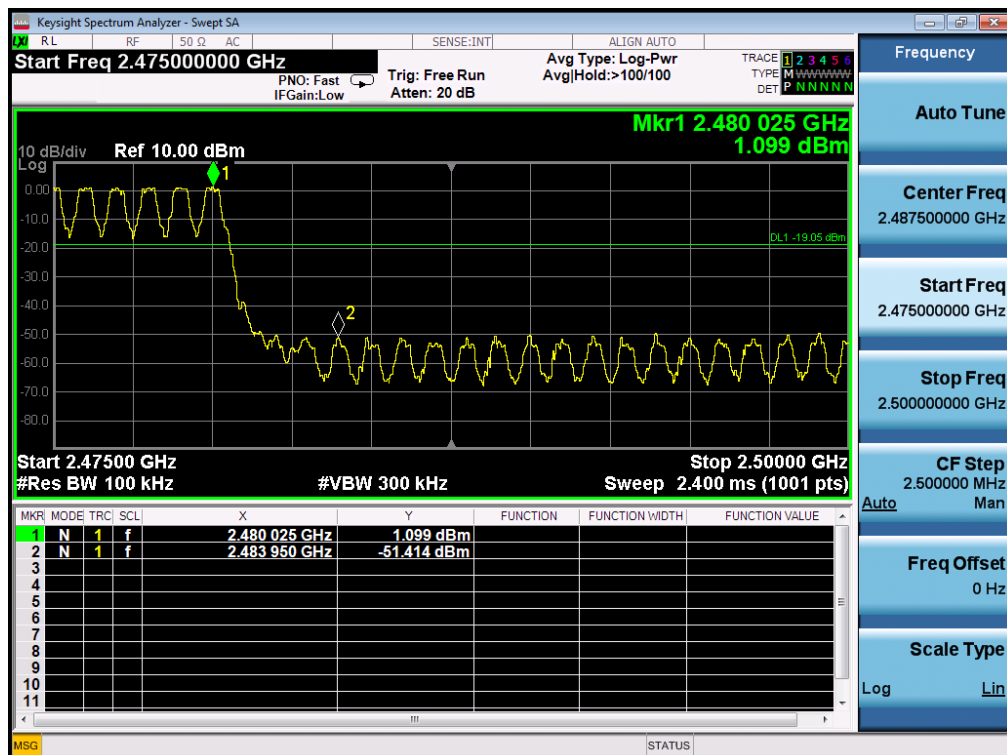
- a) Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b) Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- c) Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
- d) Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
- e) Repeat above procedures until all measured frequencies were complete

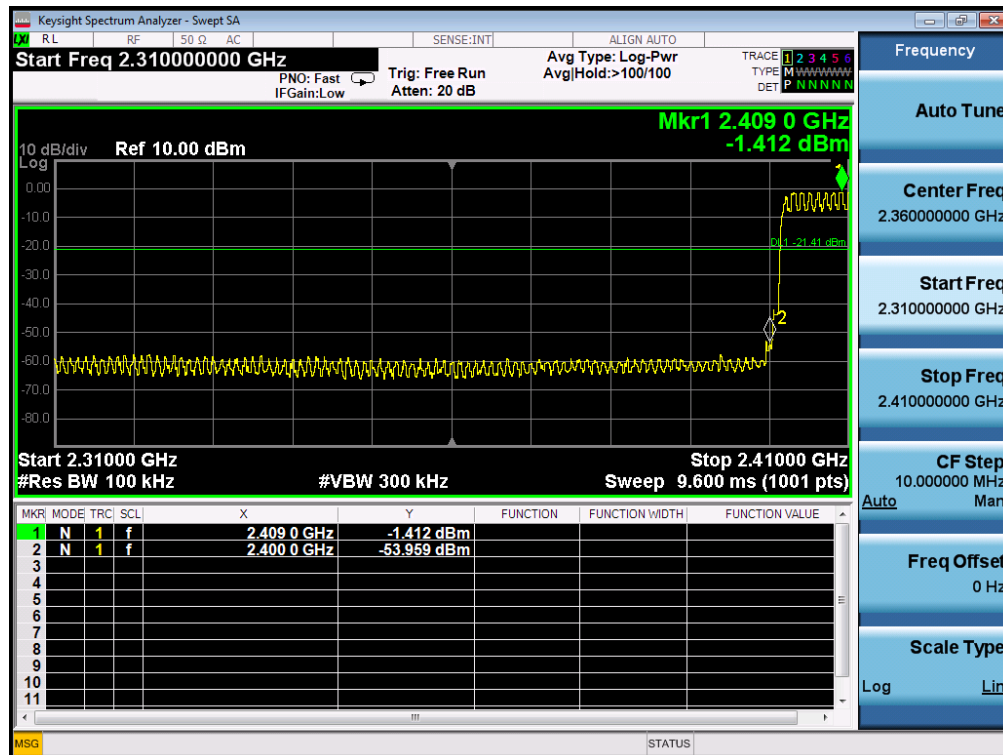
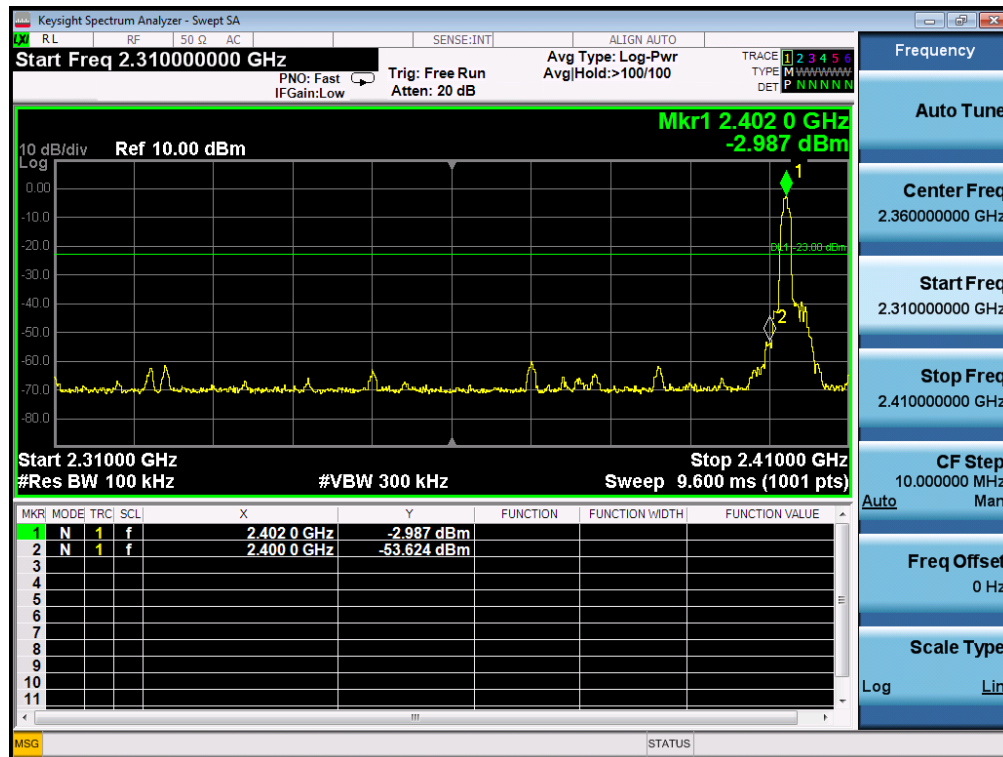
For conducted Band edge test:

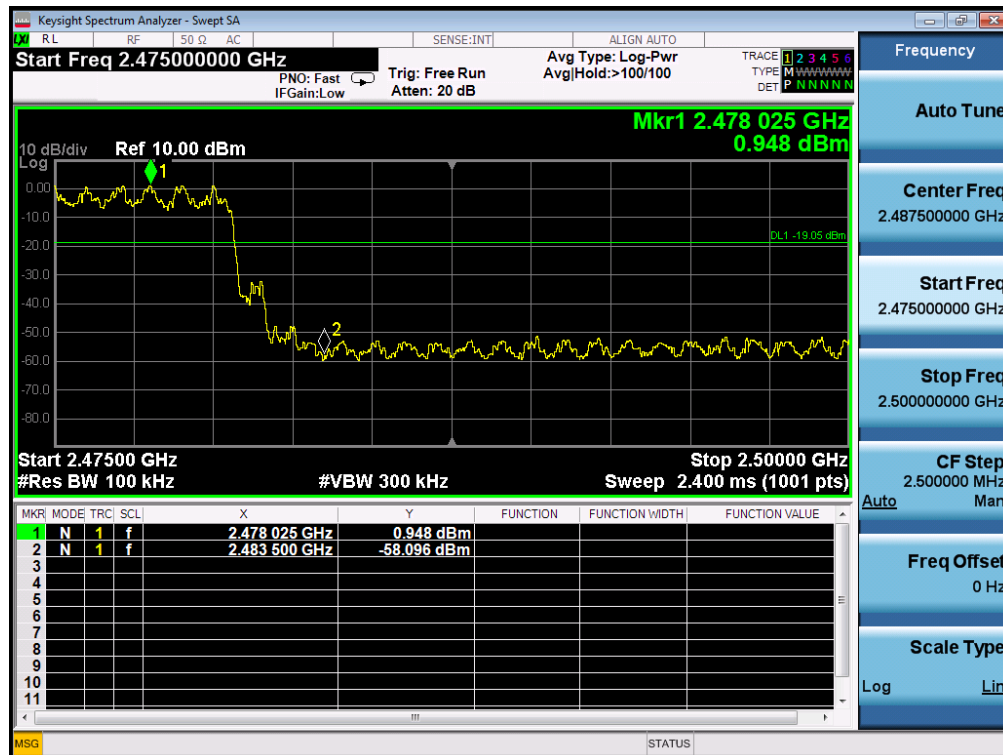
### BDR mode (GFSK): Band Edge-Left Side



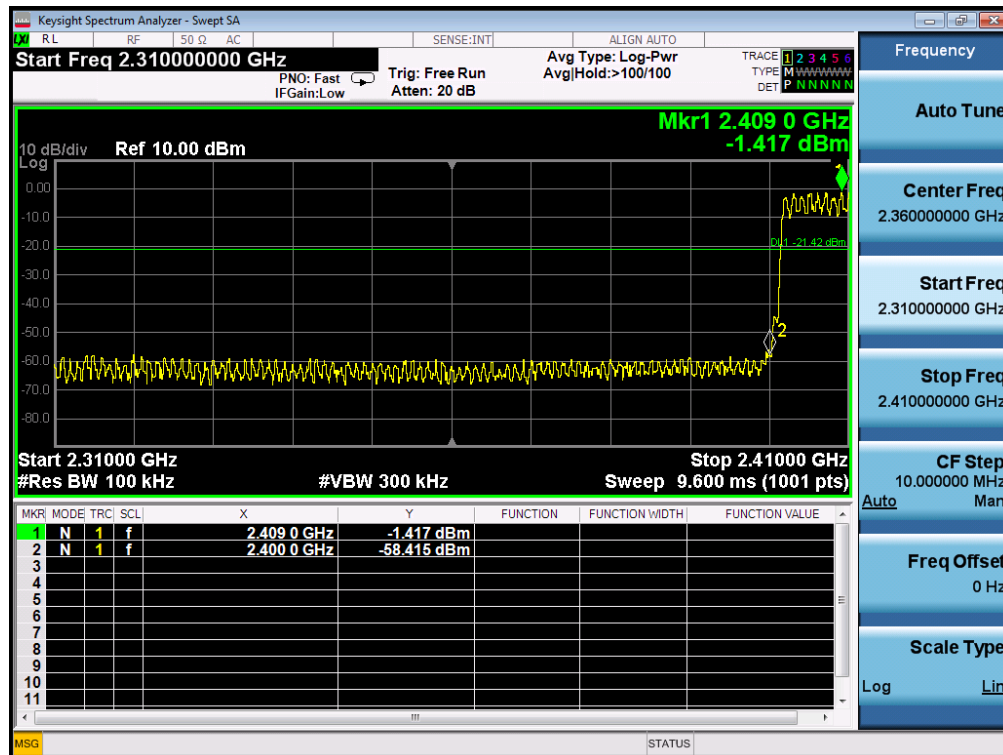
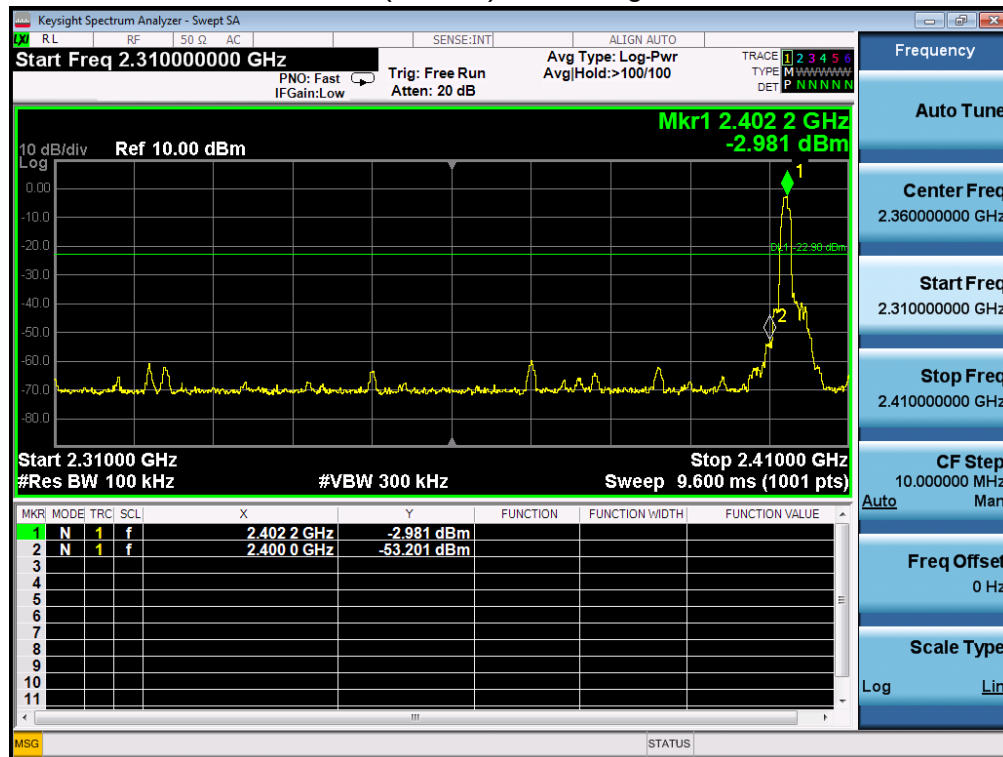
## BDR mode (GFSK): Band Edge-Right Side



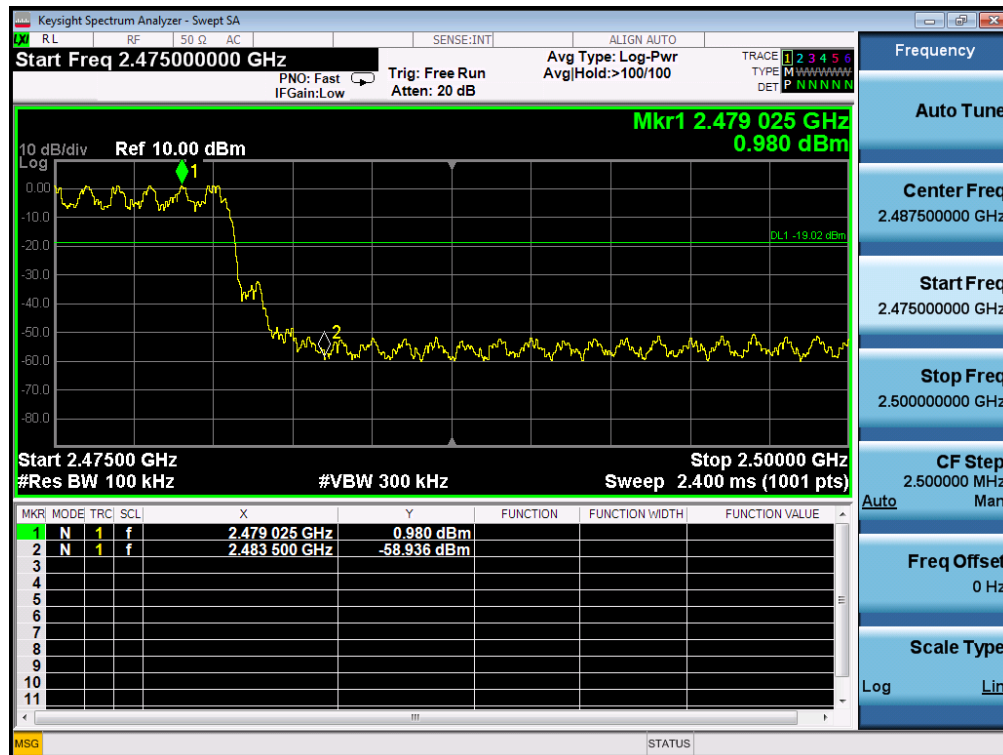
EDR mode ( $\pi/4$ -DQPSK): Band Edge-Left Side

EDR mode ( $\pi/4$ -DQPSK): Band Edge-Left Side

## EDR mode(8DPSK): Band Edge-Left Side



## EDR mode(8DPSK): Band Edge-Right Side

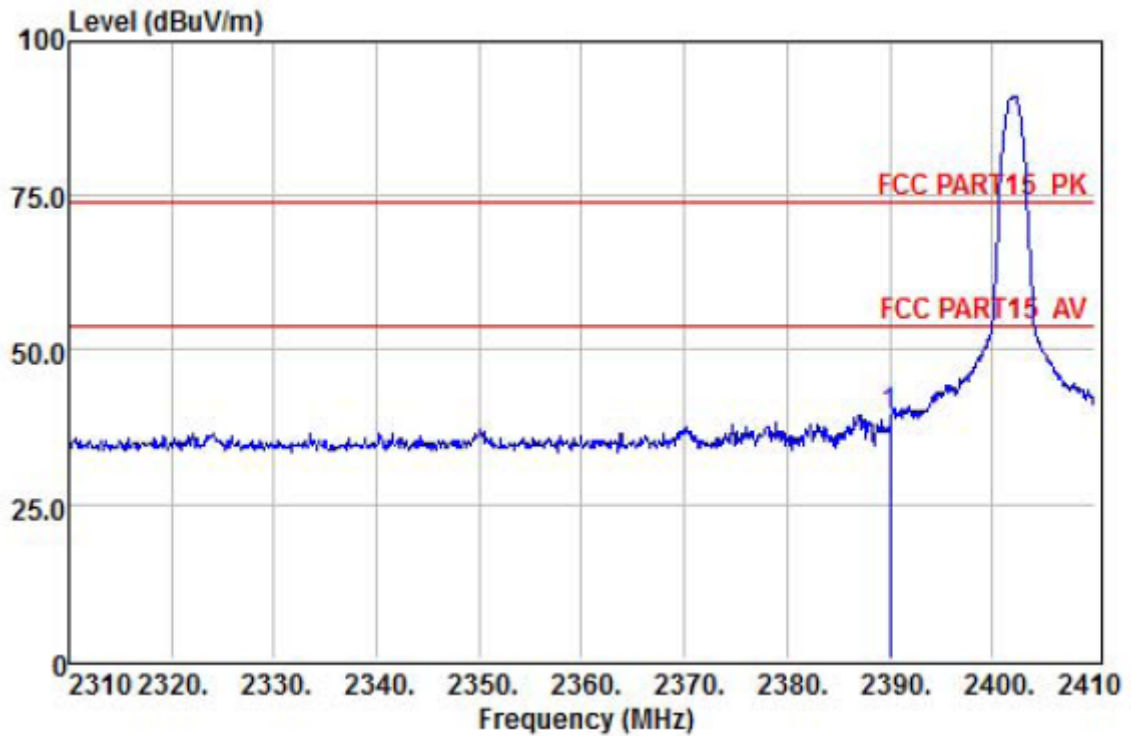


NOTE: Hopping enabled and disabled have evaluated, and the worst data was reported

For **radiated** Band edge test:

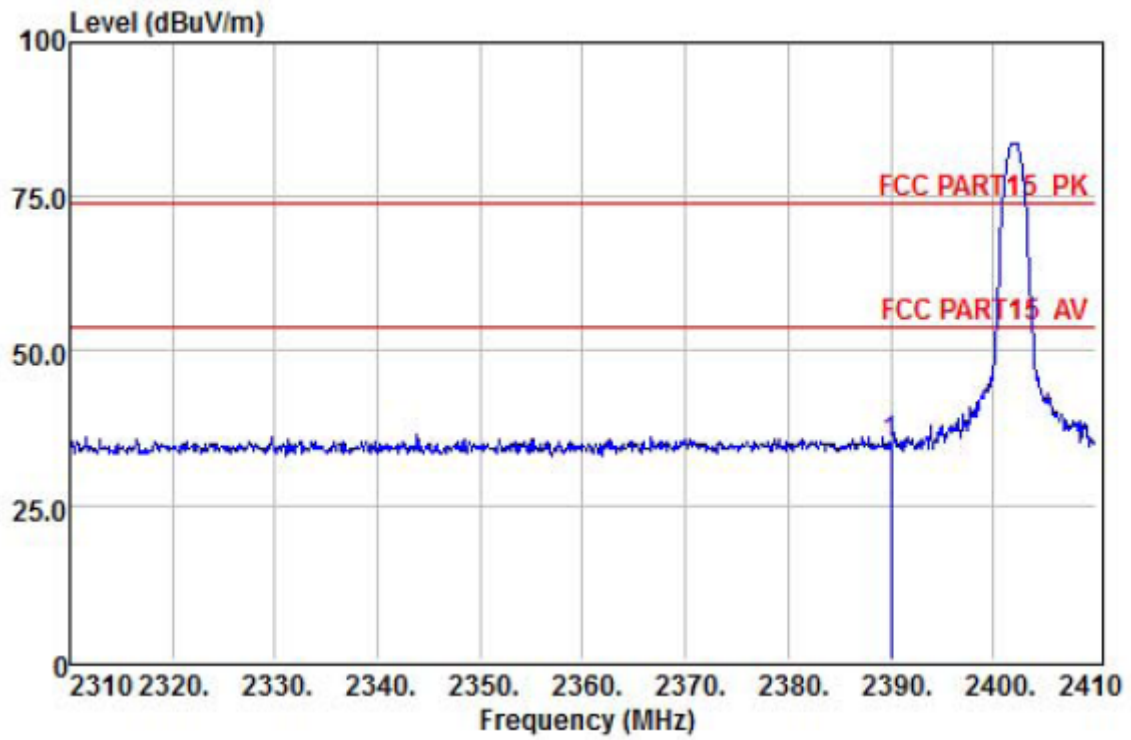
1M-2402

Horizontal



|   | Freq    | Read Level | Preamplifier Factor | Antenna Factor | Cable Loss | Level  | Limit Line | Over Limit | Remark |
|---|---------|------------|---------------------|----------------|------------|--------|------------|------------|--------|
|   | MHz     | dBuV       | dB                  | dB/m           | dB         | dBuV/m | dBuV/m     | dB         |        |
| 1 | 2390.00 | 29.66      | 26.32               | 28.72          | 7.34       | 39.40  | 74.00      | -34.60     | Peak   |

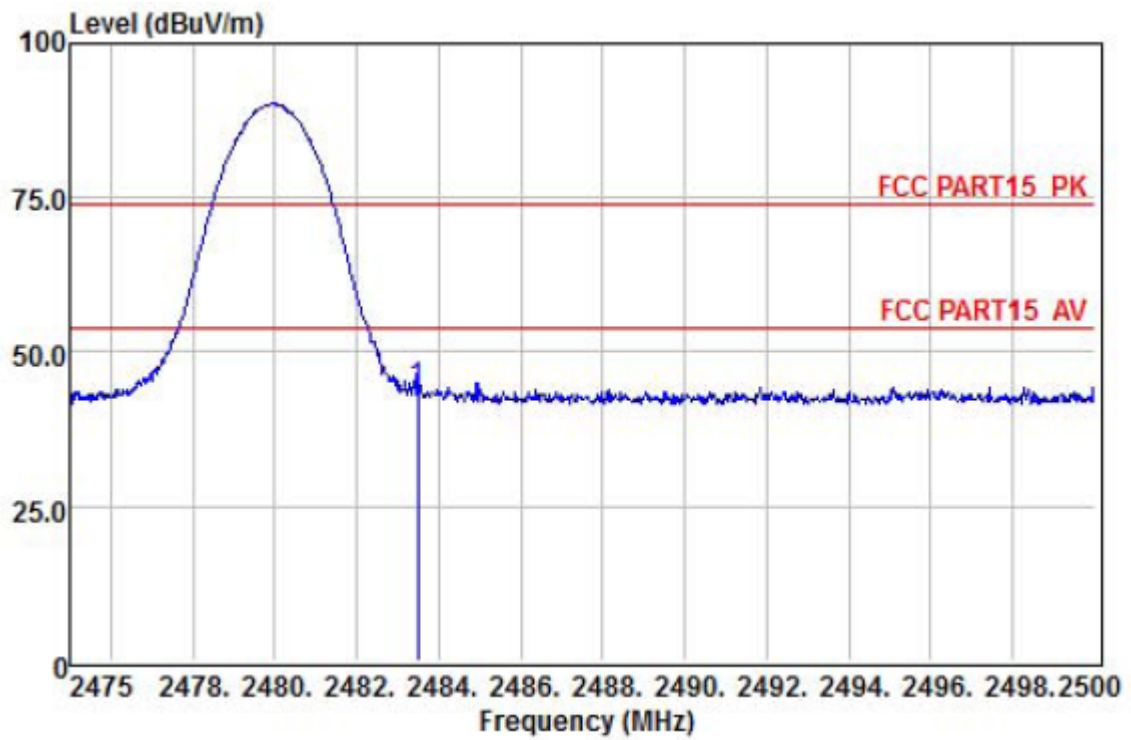
Vertical



|   | Freq    | Read Level | Preamplifier Factor | Antenna Factor | Cable Loss | Level  | Limit Line | Over Limit | Remark |
|---|---------|------------|---------------------|----------------|------------|--------|------------|------------|--------|
|   | MHz     | dBuV       | dB                  | dB/m           | dB         | dBuV/m | dBuV/m     | dB         |        |
| 1 | 2390.00 | 25.17      | 26.32               | 28.72          | 7.34       | 34.91  | 74.00      | -39.09     | Peak   |

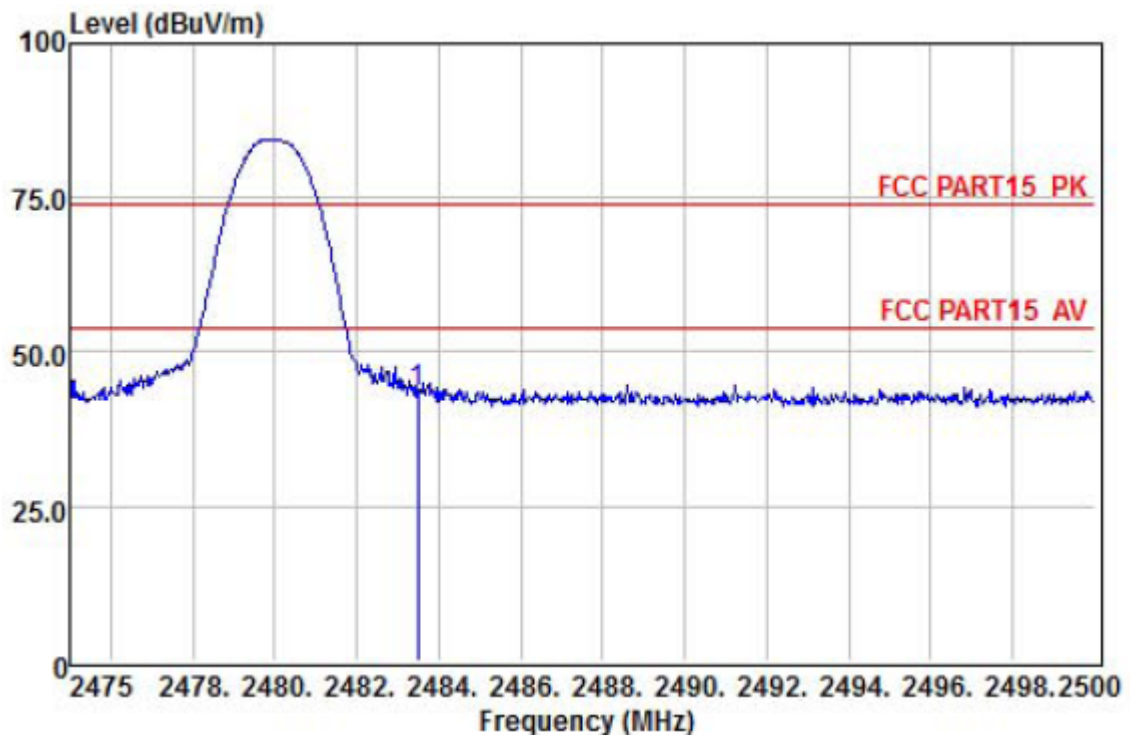
1M-2480

Horizontal



|   | Freq    | Read Level | Preamplifier Factor | Antenna Factor | Cable Loss | Level  | Limit Line | Over Limit | Remark |
|---|---------|------------|---------------------|----------------|------------|--------|------------|------------|--------|
|   | MHz     | dBuV       | dB                  | dB/m           | dB         | dBuV/m | dBuV/m     | dB         |        |
| 1 | 2483.50 | 33.72      | 26.34               | 28.79          | 7.57       | 43.74  | 74.00      | -30.26     | Peak   |

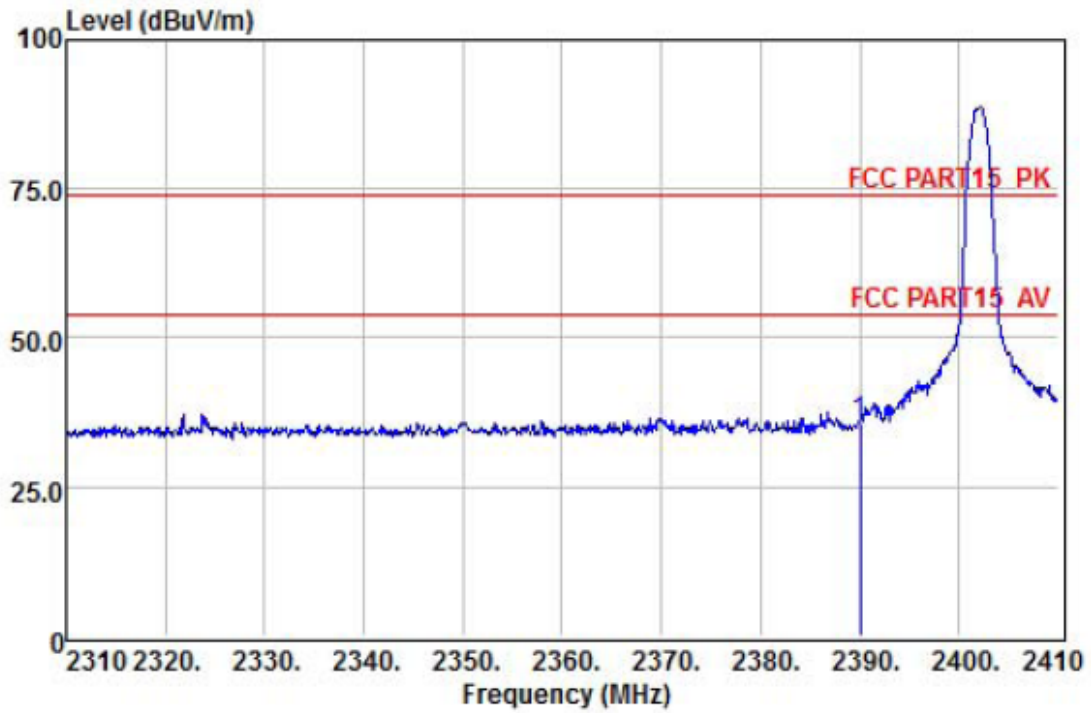
Vertical



|   | Freq    | Read Level | Preamplifier Factor | Antenna Factor | Cable Loss | Level  | Limit Line | Over Limit | Remark |
|---|---------|------------|---------------------|----------------|------------|--------|------------|------------|--------|
|   | MHz     | dBuV       | dB                  | dB/m           | dB         | dBuV/m | dBuV/m     | dB         |        |
| 1 | 2483.50 | 33.35      | 26.34               | 28.79          | 7.57       | 43.37  | 74.00      | -30.63     | Peak   |

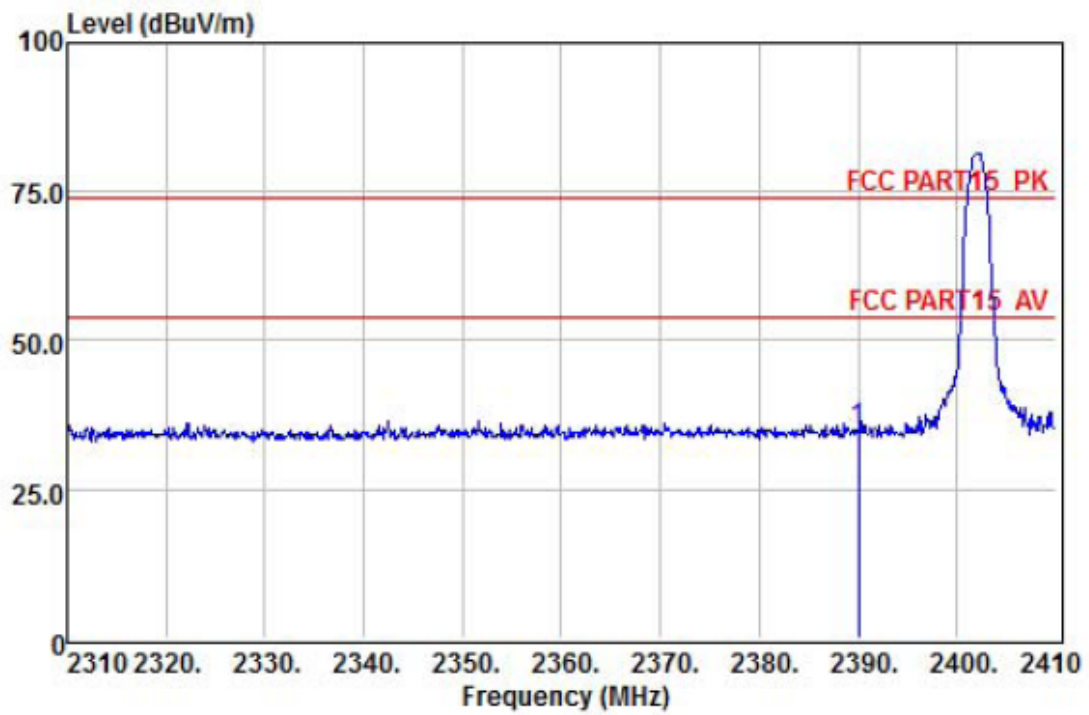
2M-2402

Horizontal



|   | Read Freq | Preamp Level | Antenna Factor | Cable Factor | Cable Loss | Limit Level | Over Line | Over Limit | Remark |
|---|-----------|--------------|----------------|--------------|------------|-------------|-----------|------------|--------|
|   | MHz       | dBuV         | dB             | dB/m         | dB         | dBuV/m      | dBuV/m    | dB         |        |
| 1 | 2390.00   | 25.85        | 26.32          | 28.72        | 7.34       | 35.59       | 74.00     | -38.41     | Peak   |

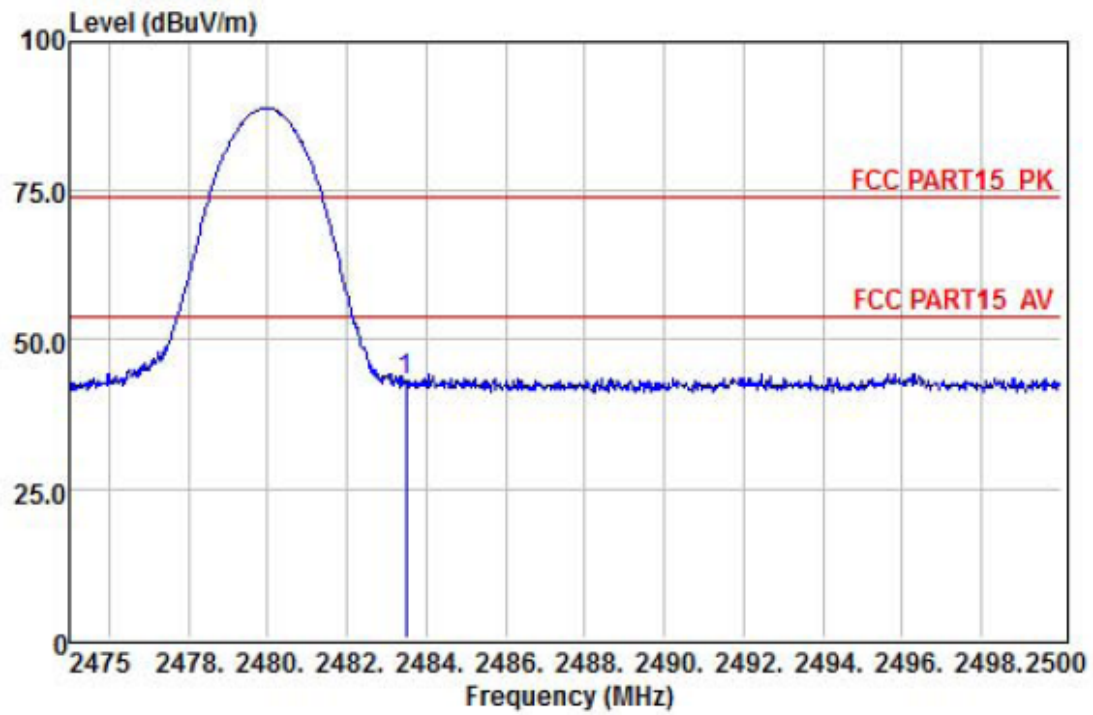
Vertical



|   | Freq    | Read Level | Preamplifier Factor | Antenna Factor | Cable Loss | Level  | Limit Line | Over Limit | Remark |
|---|---------|------------|---------------------|----------------|------------|--------|------------|------------|--------|
|   | MHz     | dBuV       | dB                  | dB/m           | dB         | dBuV/m | dBuV/m     | dB         |        |
| 1 | 2390.00 | 25.28      | 26.32               | 28.72          | 7.34       | 35.02  | 74.00      | -38.98     | Peak   |

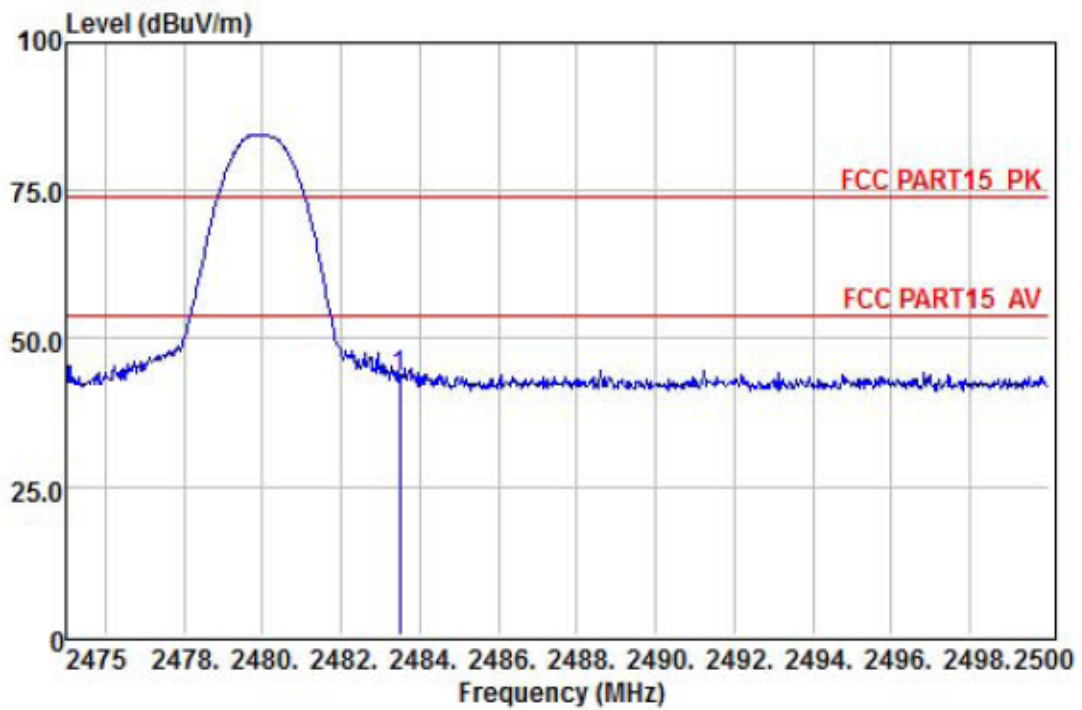
2M-2480

Horizontal



|   | Freq    | Read Level | Preamp Factor | Antenna Factor | Cable Loss | Level  | Limit Line | Over Limit | Remark |
|---|---------|------------|---------------|----------------|------------|--------|------------|------------|--------|
|   | MHz     | dBuV       | dB            | dB/m           | dB         | dBuV/m | dBuV/m     | dB         |        |
| 1 | 2483.50 | 33.20      | 26.34         | 28.79          | 7.57       | 43.22  | 74.00      | -30.78     | Peak   |

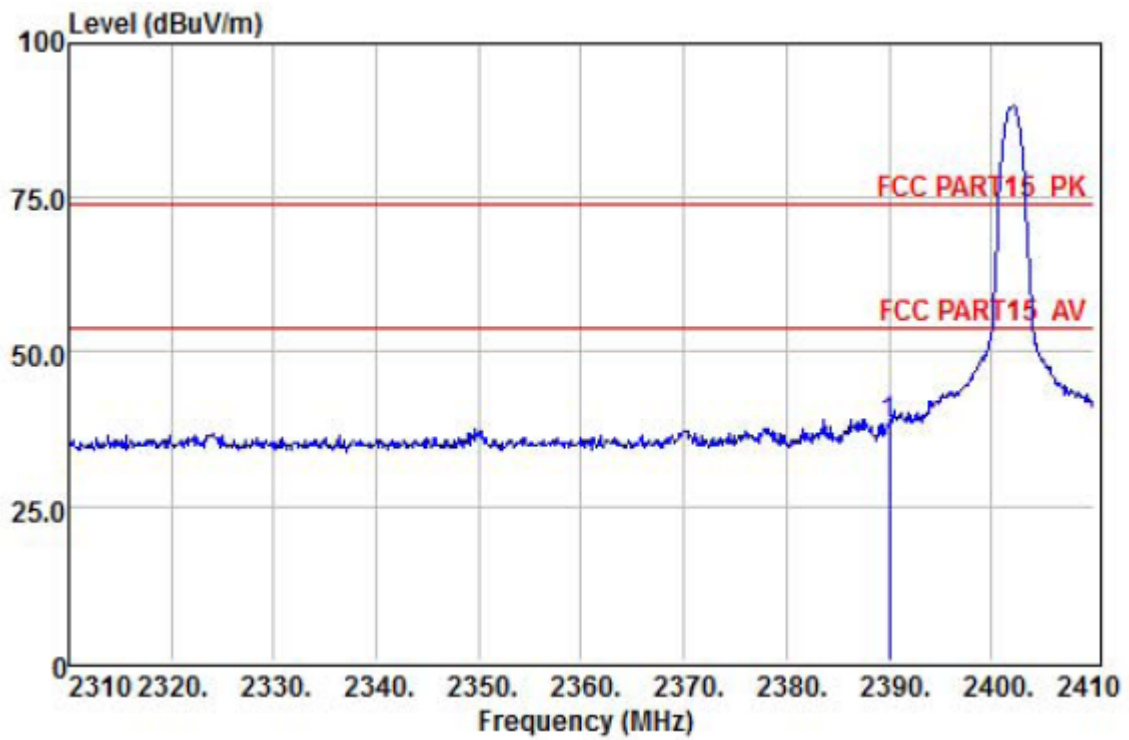
Vertical



|   | Freq    | Read Level | Preamp Factor | Antenna Factor | Cable Loss | Level  | Limit Line | Over Limit | Remark |
|---|---------|------------|---------------|----------------|------------|--------|------------|------------|--------|
|   | MHz     | dBuV       | dB            | dB/m           | dB         | dBuV/m | dBuV/m     | dB         |        |
| 1 | 2483.50 | 33.72      | 26.34         | 28.79          | 7.57       | 43.74  | 74.00      | -30.26     | Peak   |

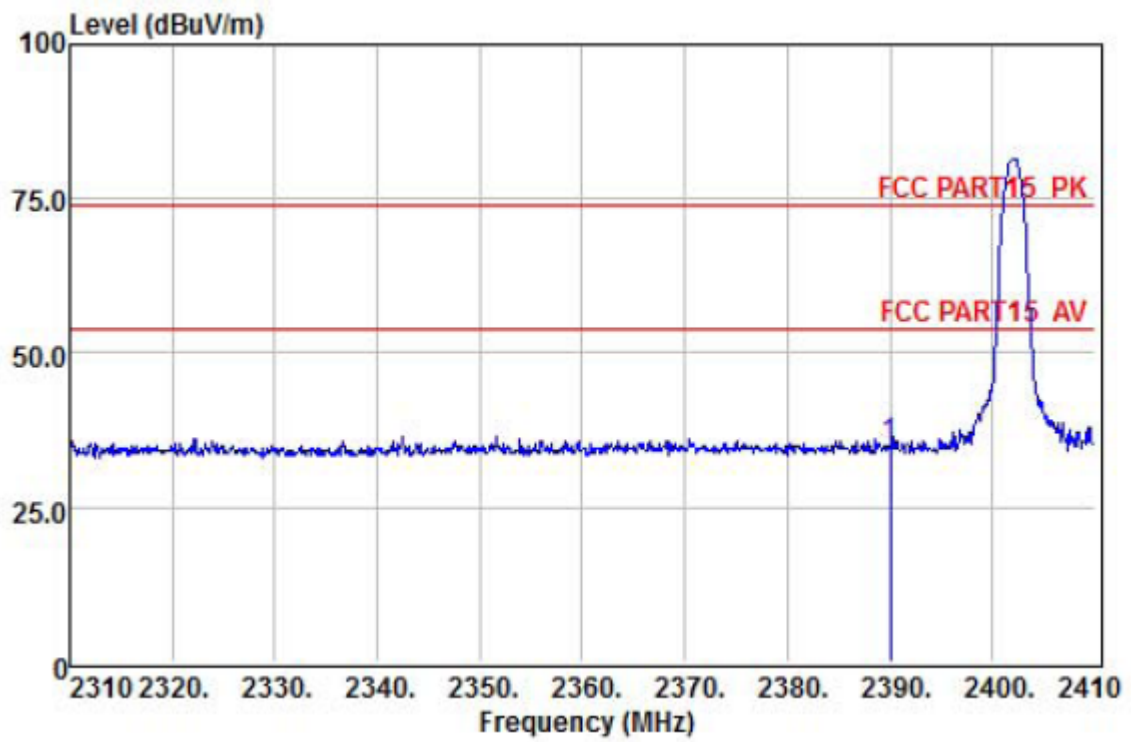
3M-2402

Horizontal



|   | Freq    | Read Level | Preamplifier Factor | Antenna Factor | Cable Loss | Level  | Limit Line | Over Limit | Remark |
|---|---------|------------|---------------------|----------------|------------|--------|------------|------------|--------|
|   | MHz     | dBuV       | dB                  | dB/m           | dB         | dBuV/m | dBuV/m     | dB         |        |
| 1 | 2390.00 | 28.68      | 26.32               | 28.72          | 7.34       | 38.42  | 74.00      | -35.58     | Peak   |

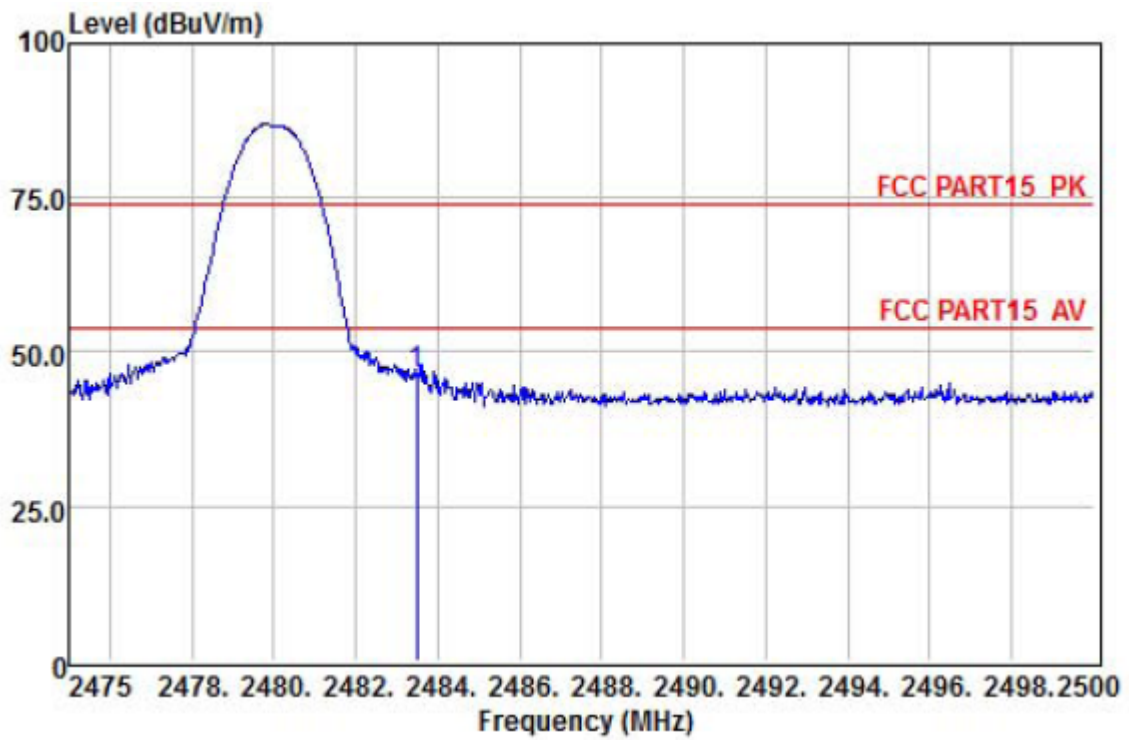
Vertical



|   | Read Freq | Preamplifier Level | Antenna Factor | Cable Loss | Antenna Level | Limit Line | Over Limit | Remark      |
|---|-----------|--------------------|----------------|------------|---------------|------------|------------|-------------|
|   | MHz       | dBuV               | dB             | dB/m       | dB            | dBuV/m     | dBuV/m     | dB          |
| 1 | 2390.00   | 25.21              | 26.32          | 28.72      | 7.34          | 34.95      | 74.00      | -39.05 Peak |

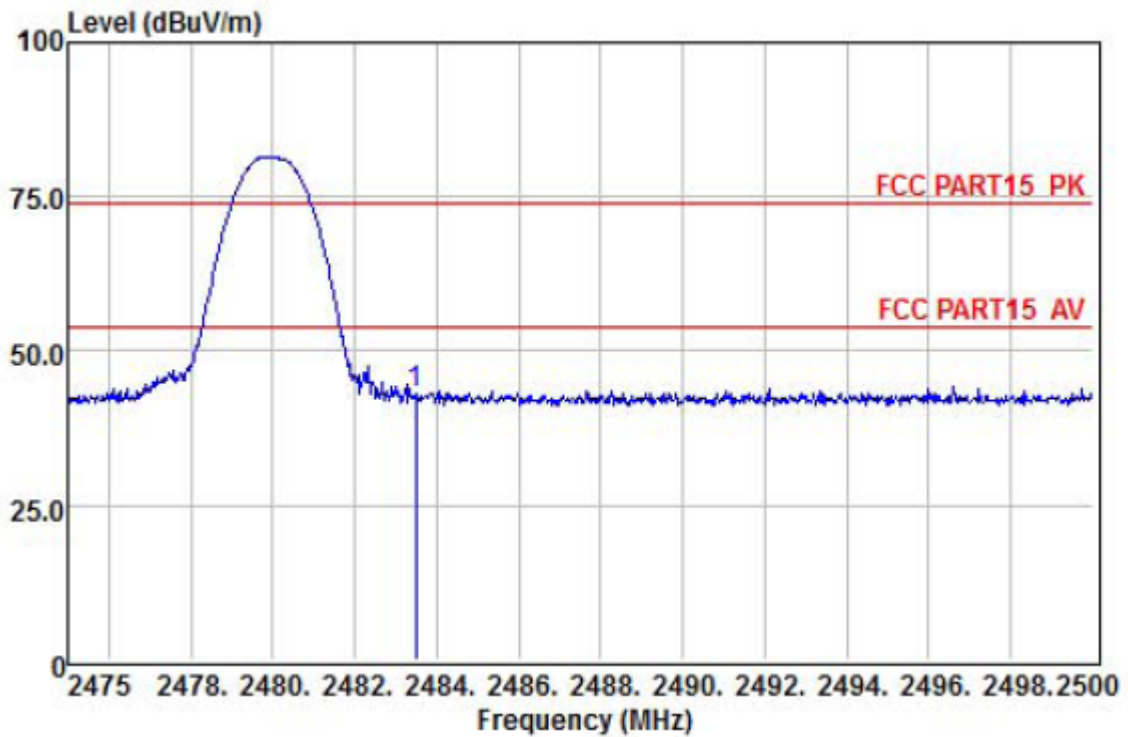
3M-2480

Horizontal



|   | Freq    | Read Level | Preamplifier Factor | Antenna Factor | Cable Loss | Level  | Limit Line | Over Limit | Remark |
|---|---------|------------|---------------------|----------------|------------|--------|------------|------------|--------|
|   | MHz     | dBuV       | dB                  | dB/m           | dB         | dBuV/m | dBuV/m     | dB         |        |
| 1 | 2483.50 | 36.47      | 26.34               | 28.79          | 7.57       | 46.49  | 74.00      | -27.51     | Peak   |

Vertical



|   | Read Freq | Preamp Level | Antenna Factor | Cable Factor | Cable Loss | Limit Level | Over Line | Limit  | Remark |
|---|-----------|--------------|----------------|--------------|------------|-------------|-----------|--------|--------|
|   | MHz       | dBuV         | dB             | dB/m         | dB         | dBuV/m      | dBuV/m    | dB     |        |
| 1 | 2483.50   | 32.94        | 26.34          | 28.79        | 7.57       | 42.96       | 74.00     | -31.04 | Peak   |

If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

## 11. ANTENNA REQUIREMENTS

### 11.1.Limits

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### 11.2. Result

The antennas used for this product is PCB antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 4.01dBi.

---END---