# 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
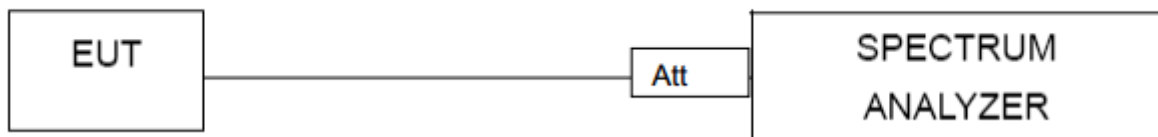
10.3. TEST Procedure

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
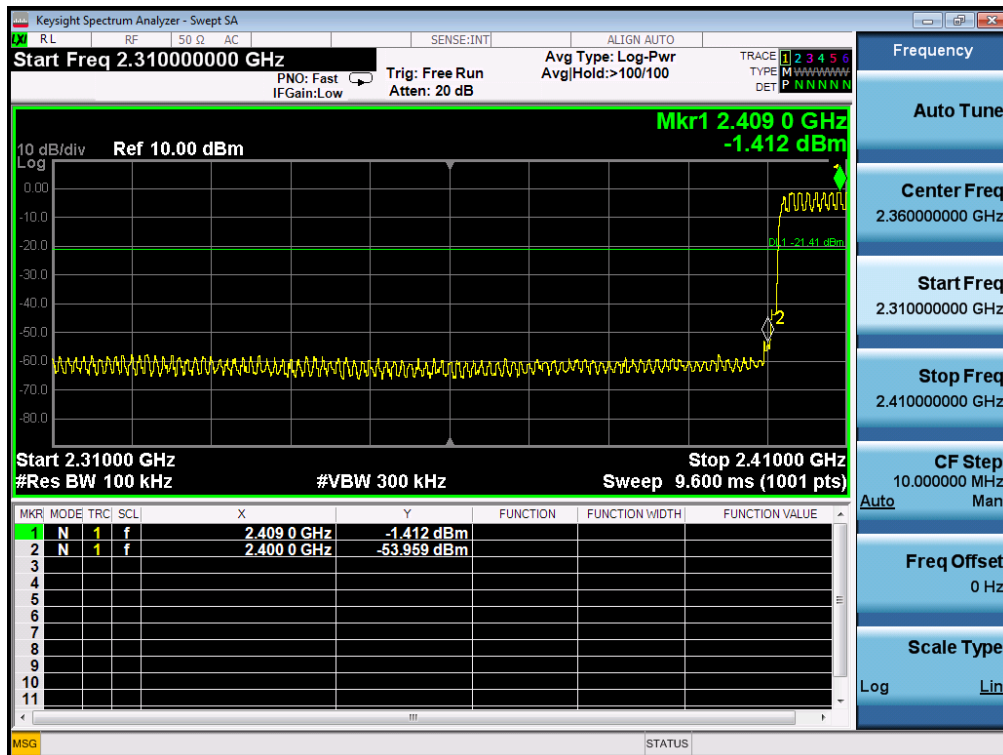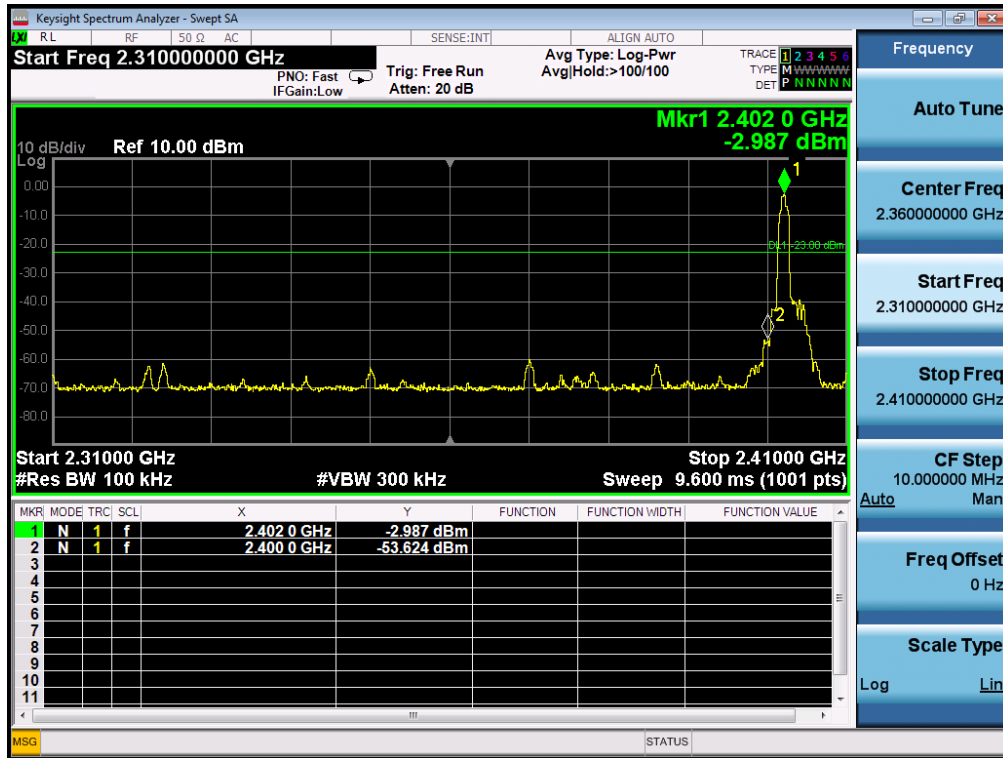
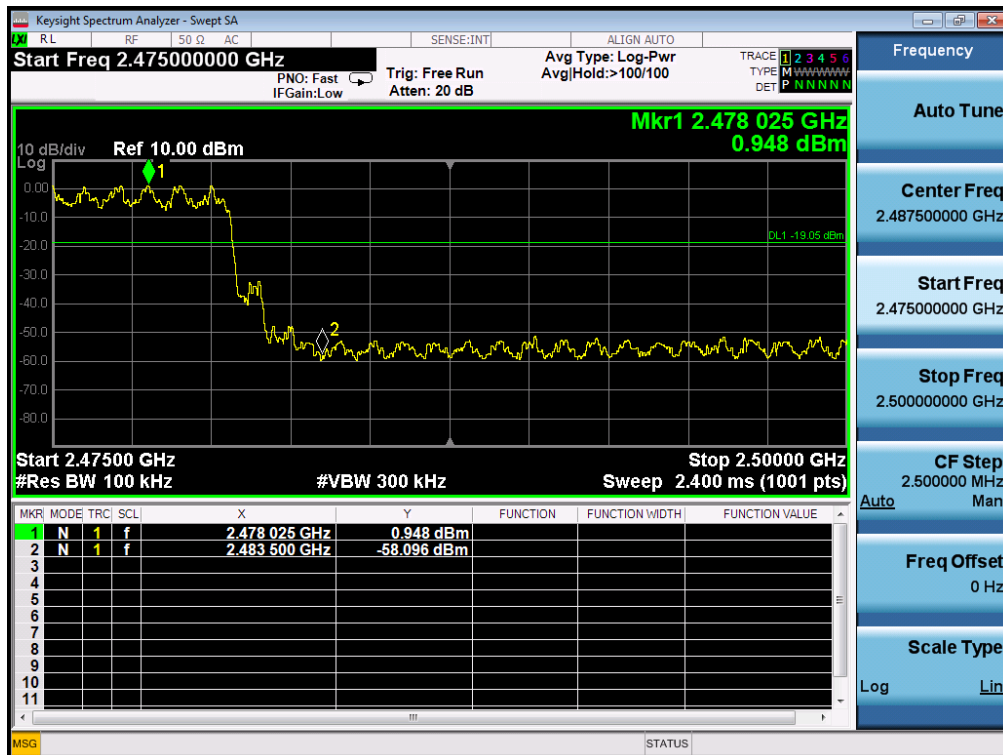For conducted Band edge test:

BDR mode (GFSK): Band Edge-Left Side
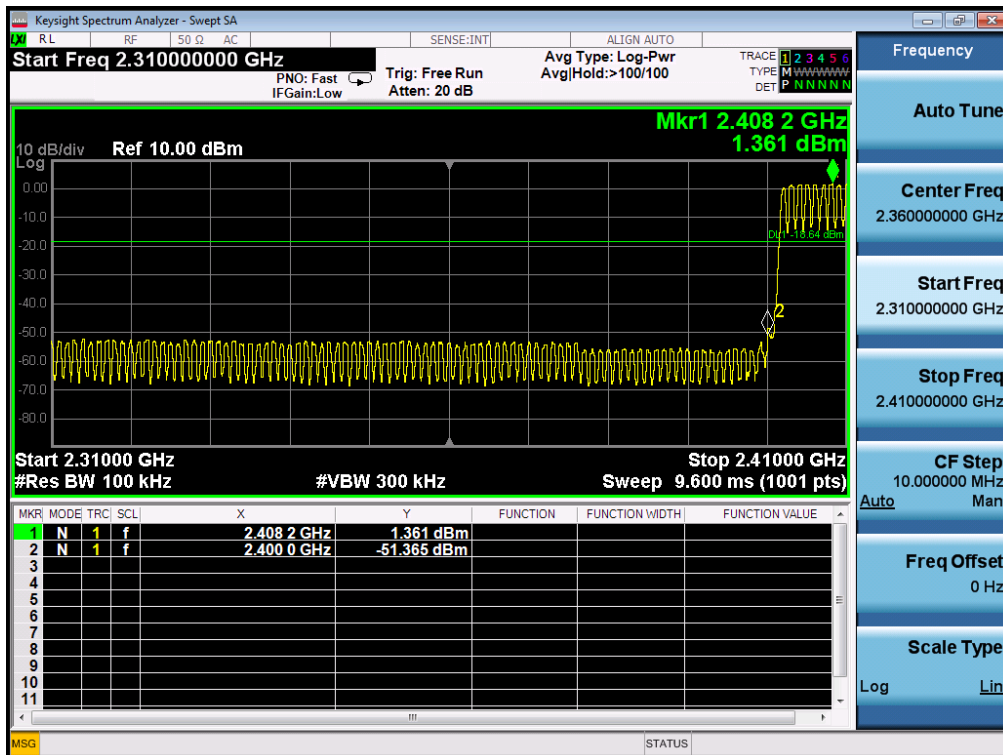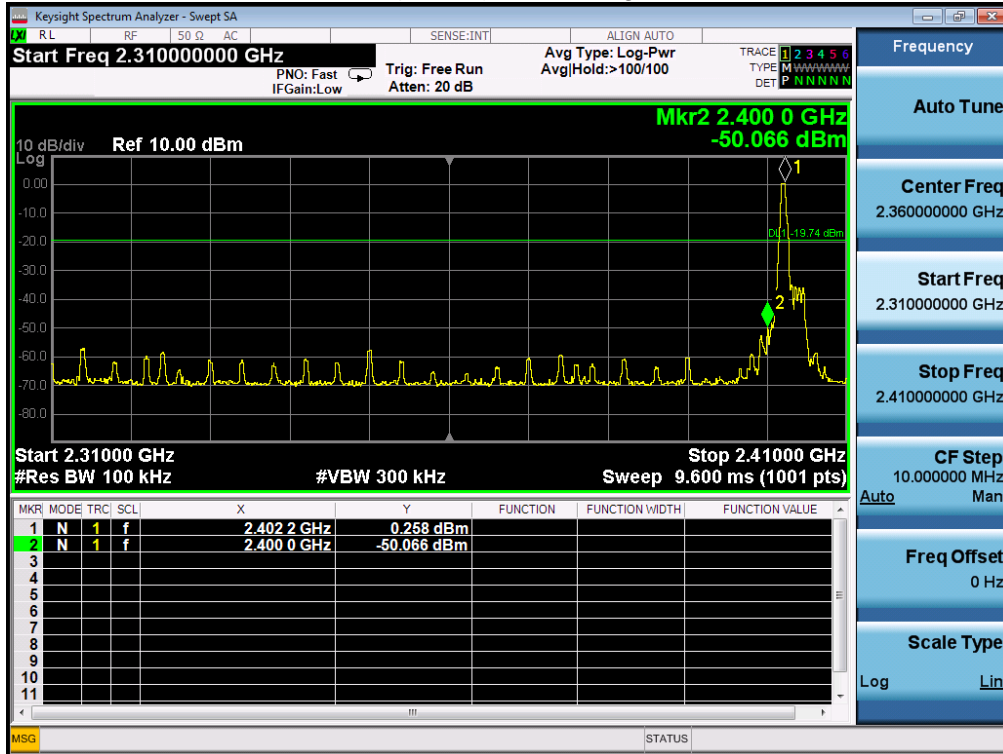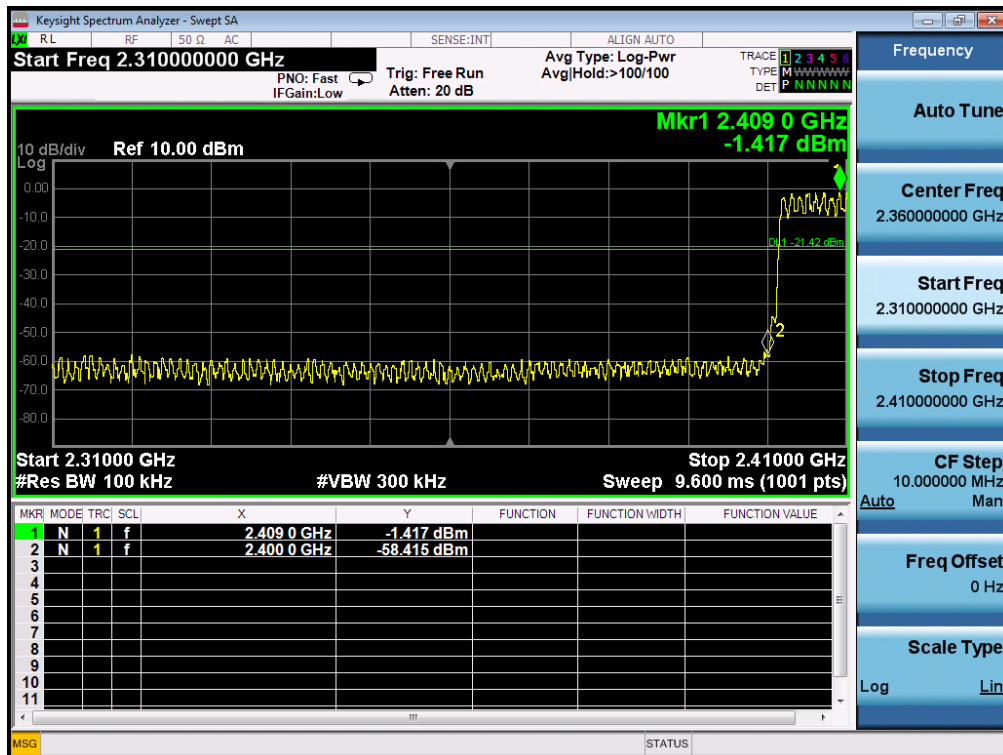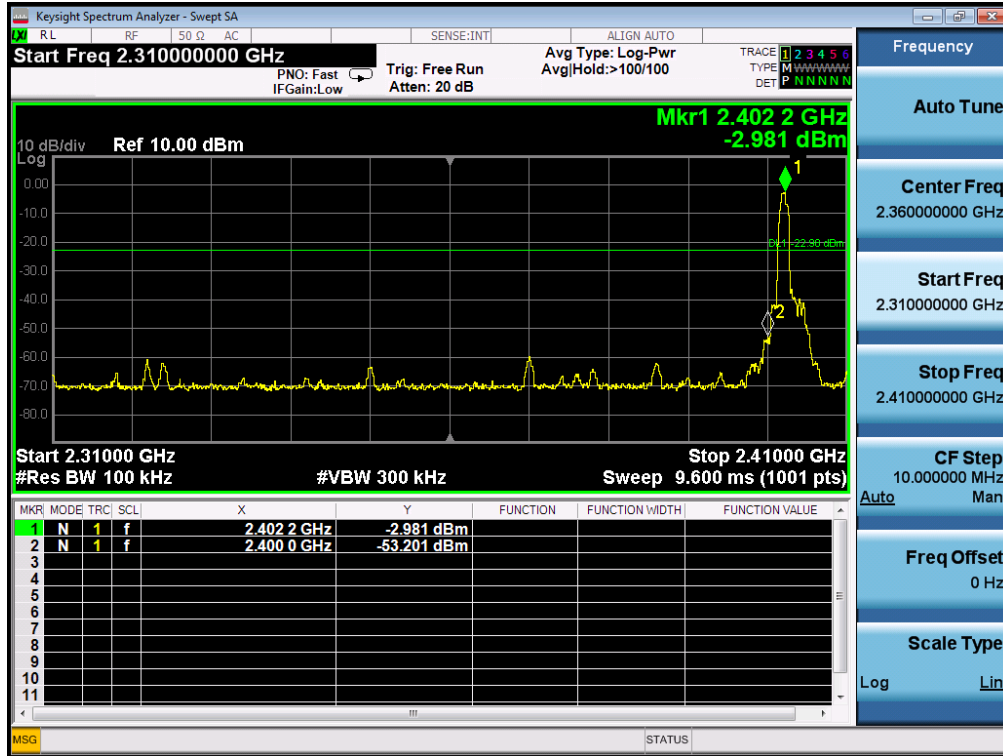
BDR mode (GFSK): Band Edge-Right Side
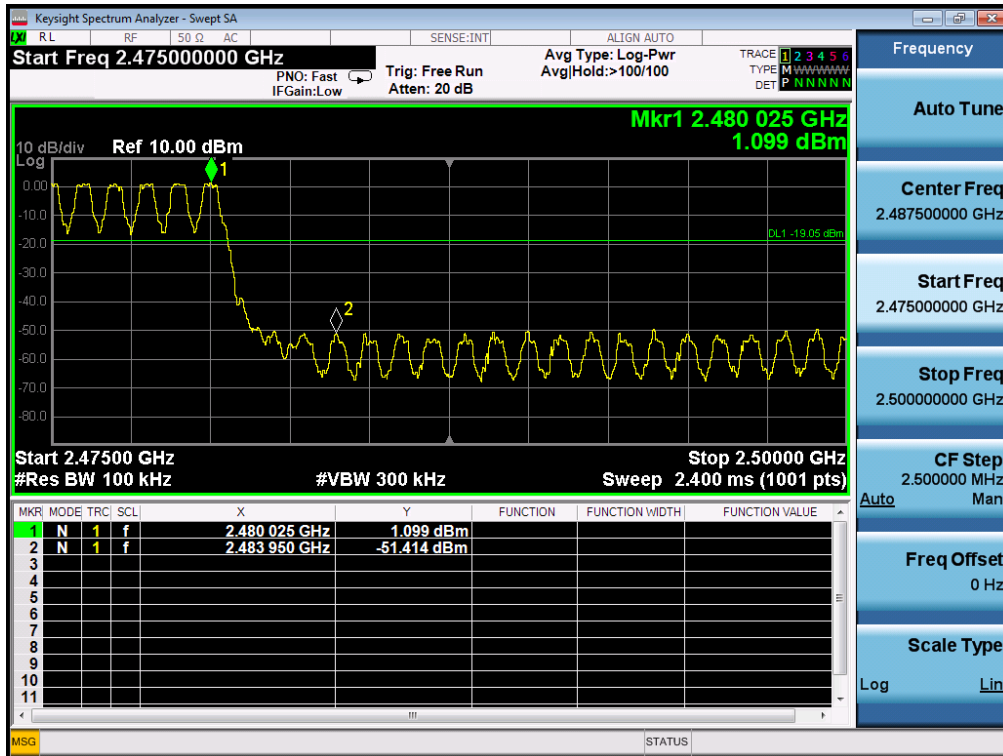
EDR mode (π/4-DQPSK): Band Edge-Left Side

EDR mode (π/4-DQPSK): Band Edge-Left Side

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

EDR mode(8DPSK): Band Edge-Right Side
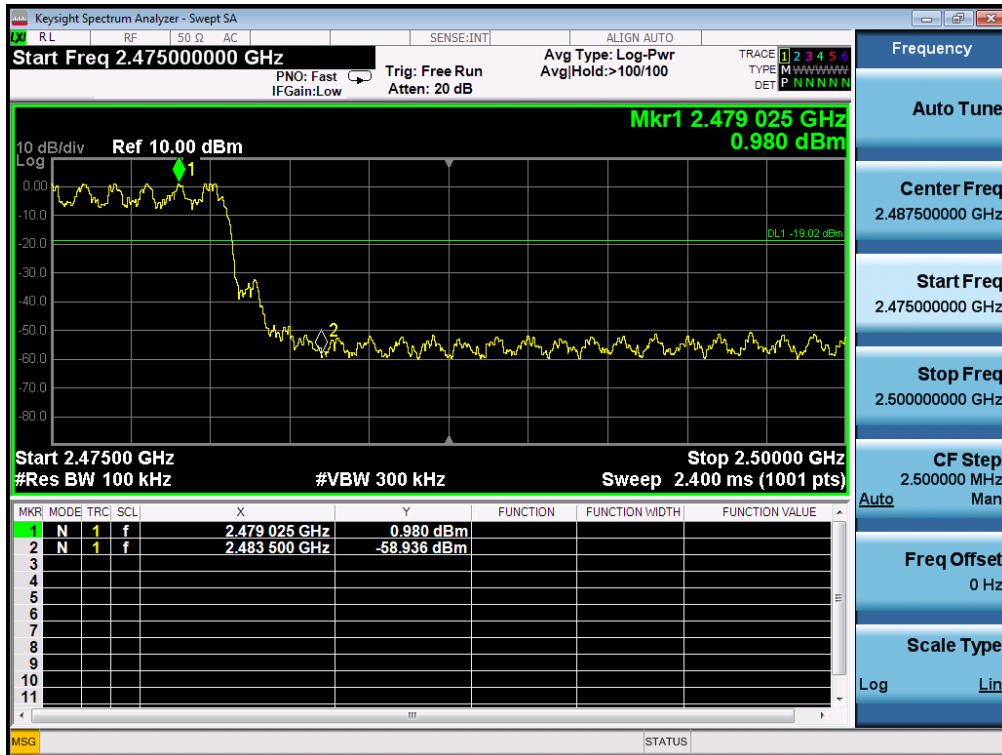
NOTE: Hopping enabled and disabled have evaluated,and the wortest data was reported

For **radiated** Band edge test:

1M-2402

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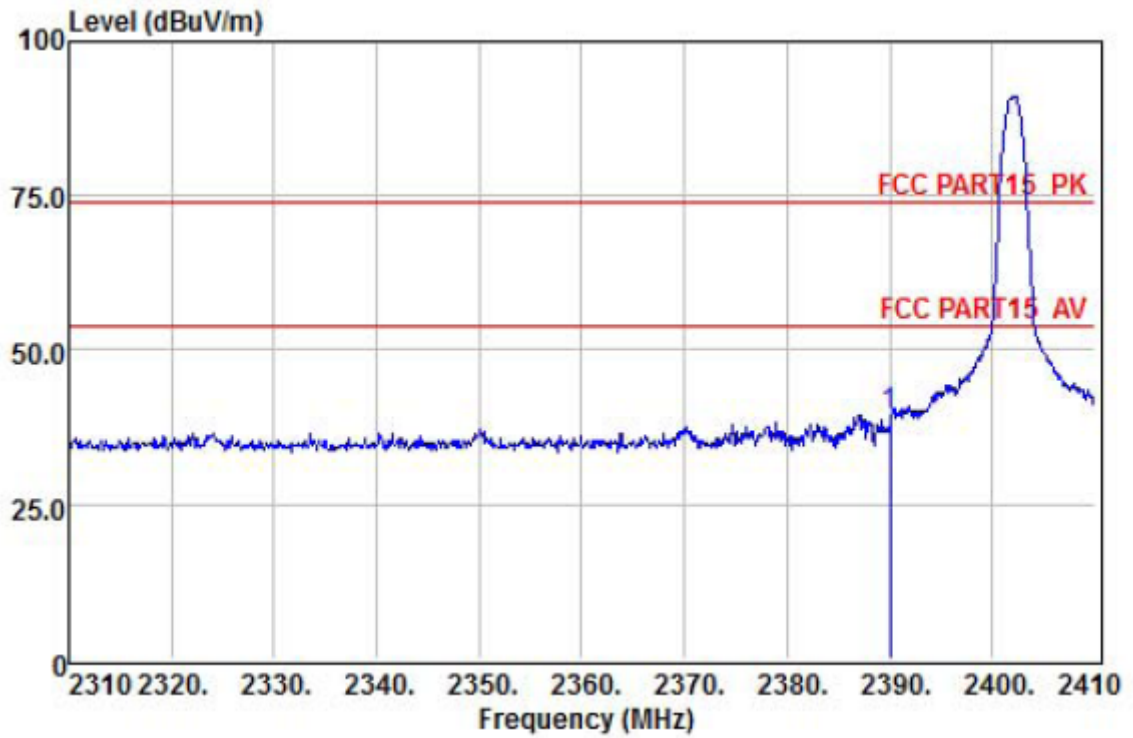
	Freq	Read Level	Preamp Factor	Antenna Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2390.00	29.66	26.32	28.72	7.34	39.40	74.00	-34.60	Peak

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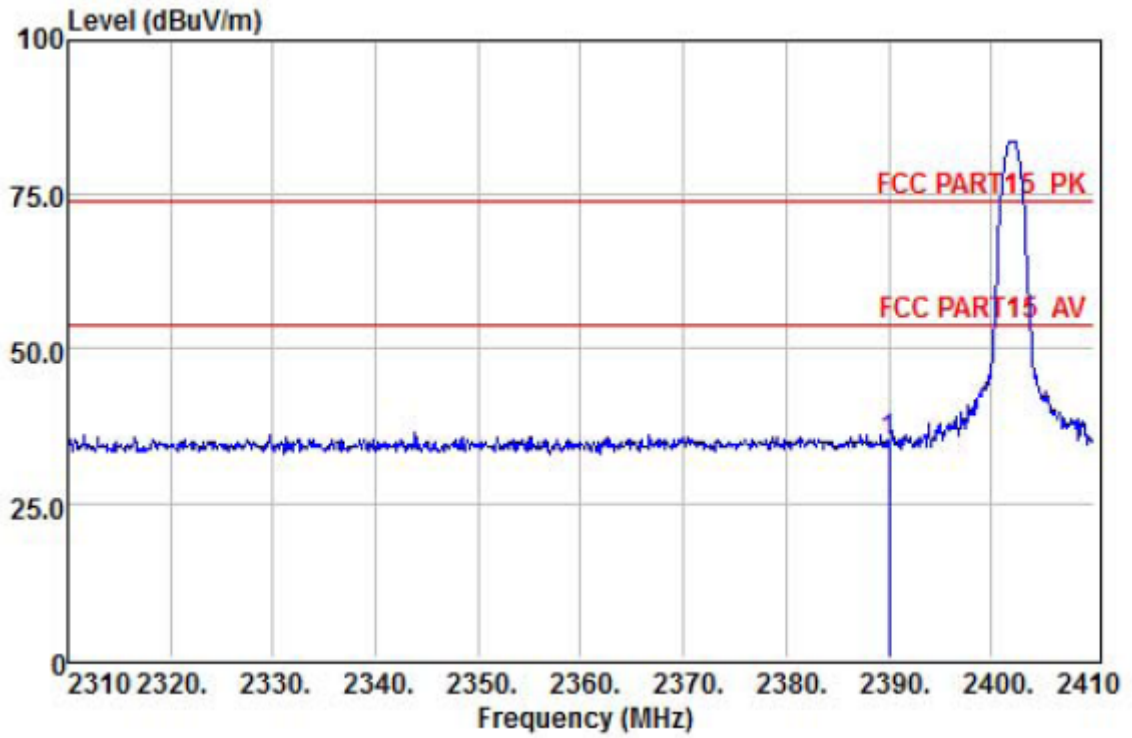
	Freq	Read Level	Preamp Factor	Antenna Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2390.00	25.17	26.32	28.72	7.34	34.91	74.00	-39.09	Peak

1M-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	33.72	26.34	28.79	7.57	43.74	74.00	-30.26	Peak

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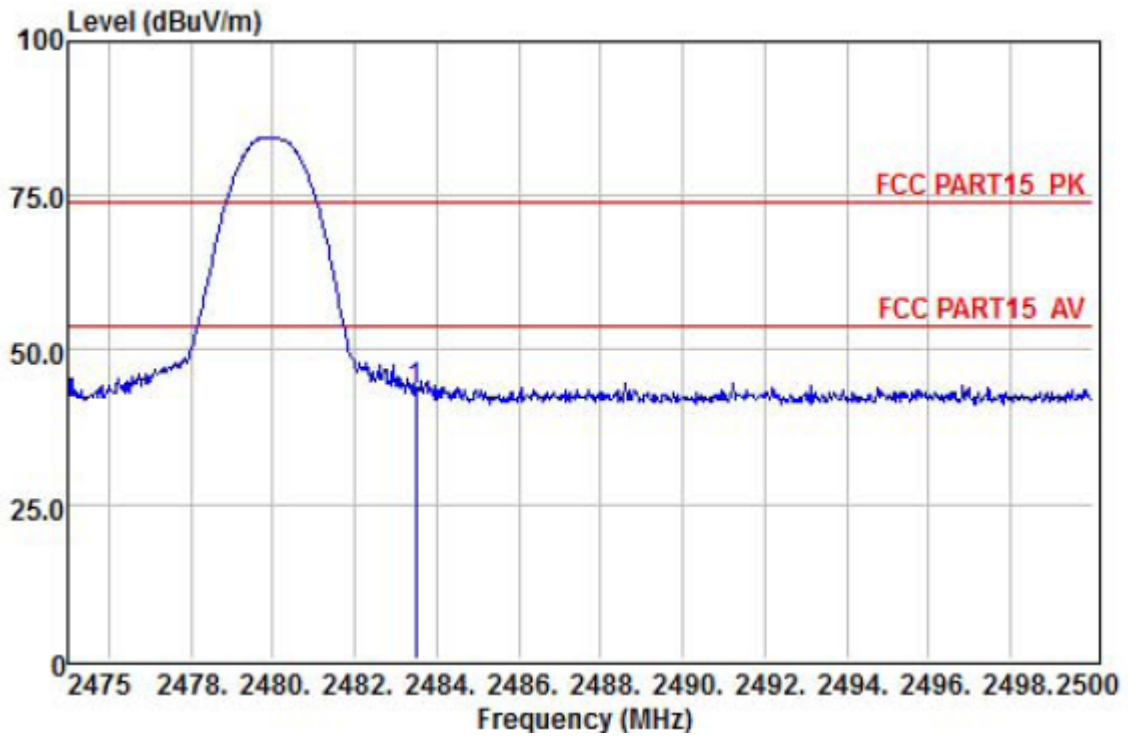
	Freq	Read Level	Preamp Factor	Antenna Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2483.50	33.35	26.34	28.79	7.57	43.37	74.00	-30.63	Peak

2M-2402

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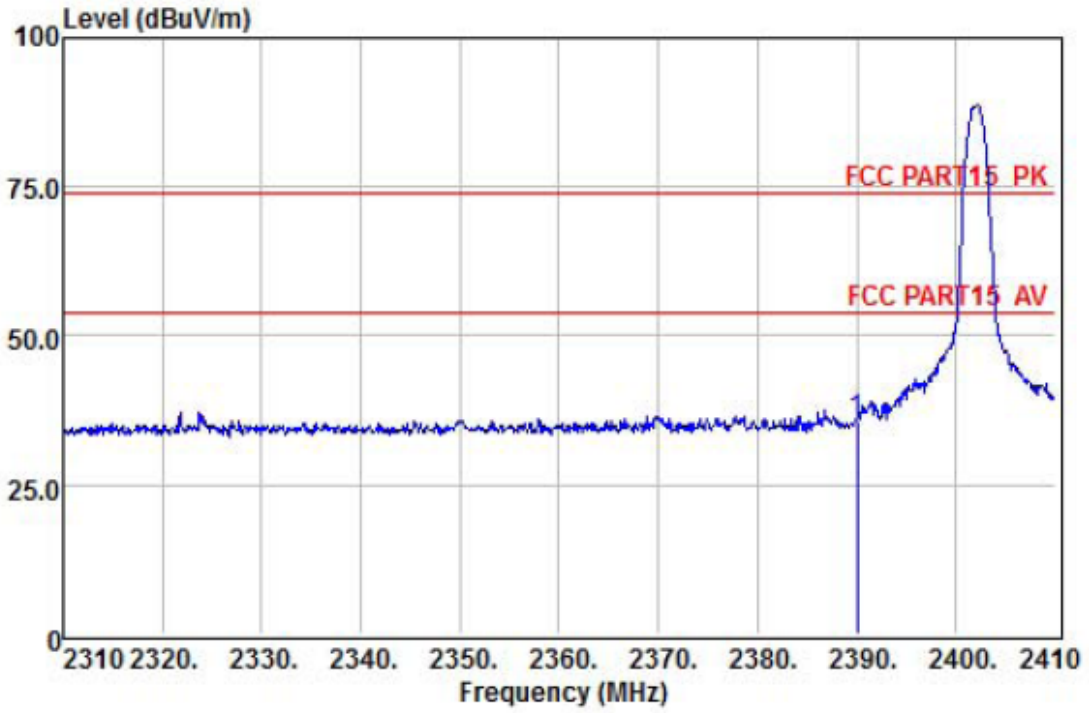
	Freq	Read Level	Preamp Factor	Antenna Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2390.00	25.85	26.32	28.72	7.34	35.59	74.00	-38.41	Peak

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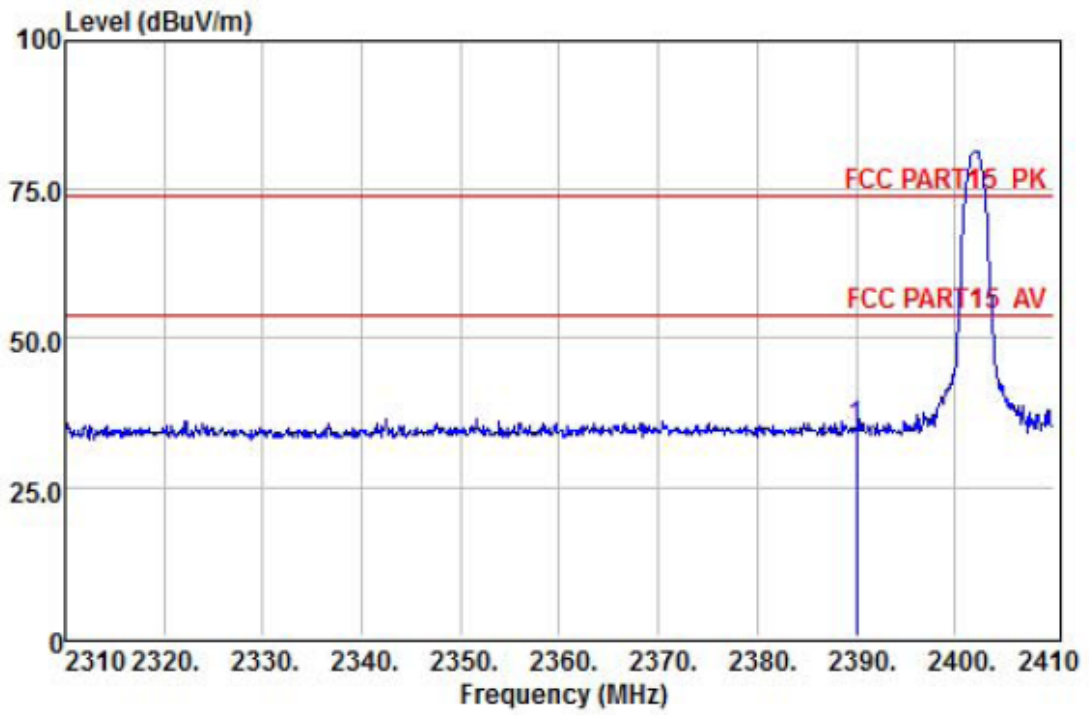
	Freq	Read Level	Preamp Factor	Antenna Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2390.00	25.28	26.32	28.72	7.34	35.02	74.00	-38.98	Peak

2M-2480

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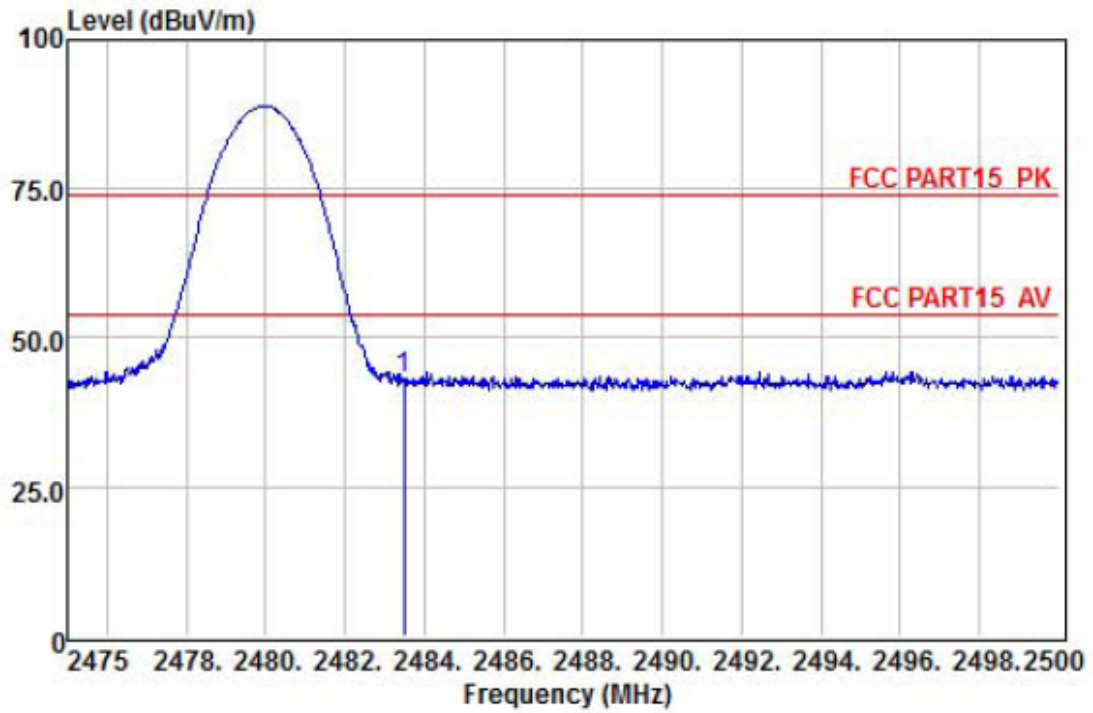
	Freq	Read Level	Preamp Factor	Antenna Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2483.50	33.20	26.34	28.79	7.57	43.22	74.00	-30.78	Peak

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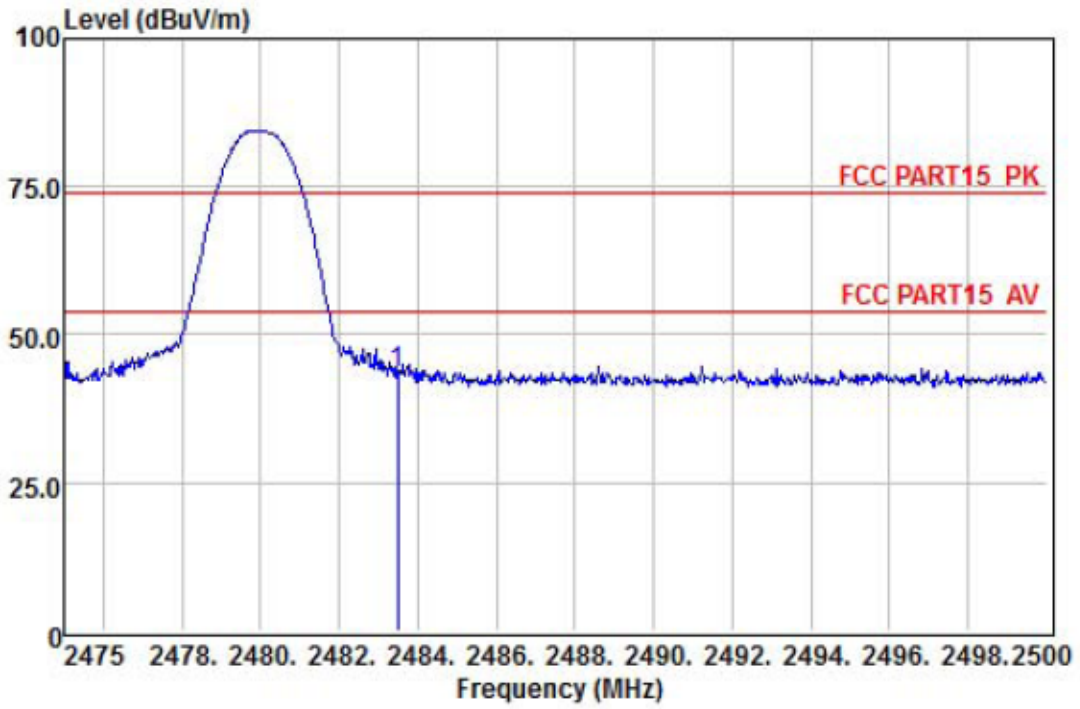
	Freq	Read Level	Preamp Factor	Antenna Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2483.50	33.72	26.34	28.79	7.57	43.74	74.00	-30.26	Peak

3M-2402

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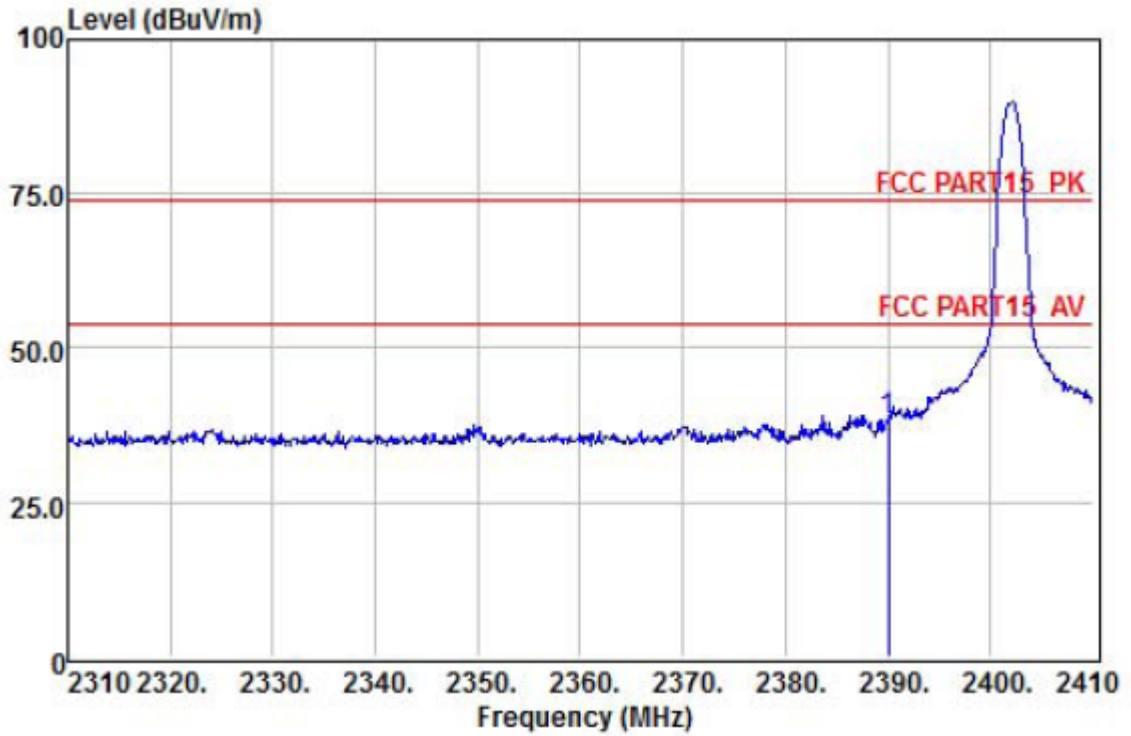
	Freq	Read Level	Preamp Factor	Antenna Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2390.00	28.68	26.32	28.72	7.34	38.42	74.00	-35.58	Peak

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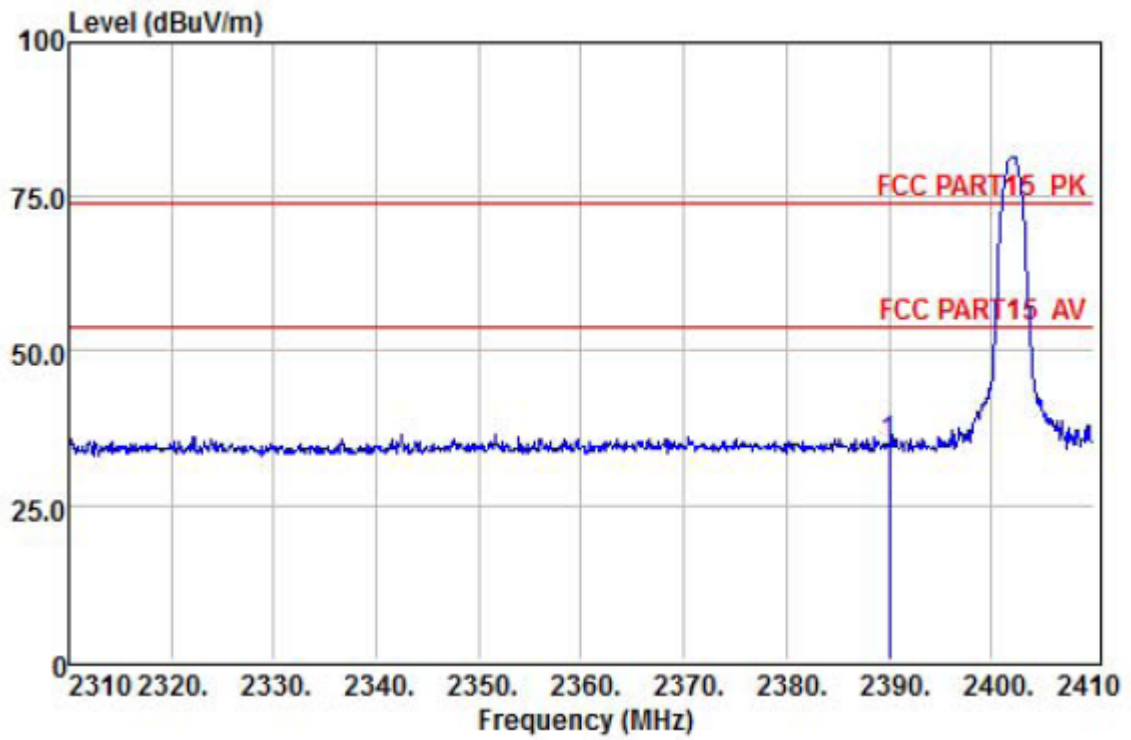
	Freq	Read Level	Preamp Factor	Antenna Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2390.00	25.21	26.32	28.72	7.34	34.95	74.00	-39.05	Peak

3M-2480

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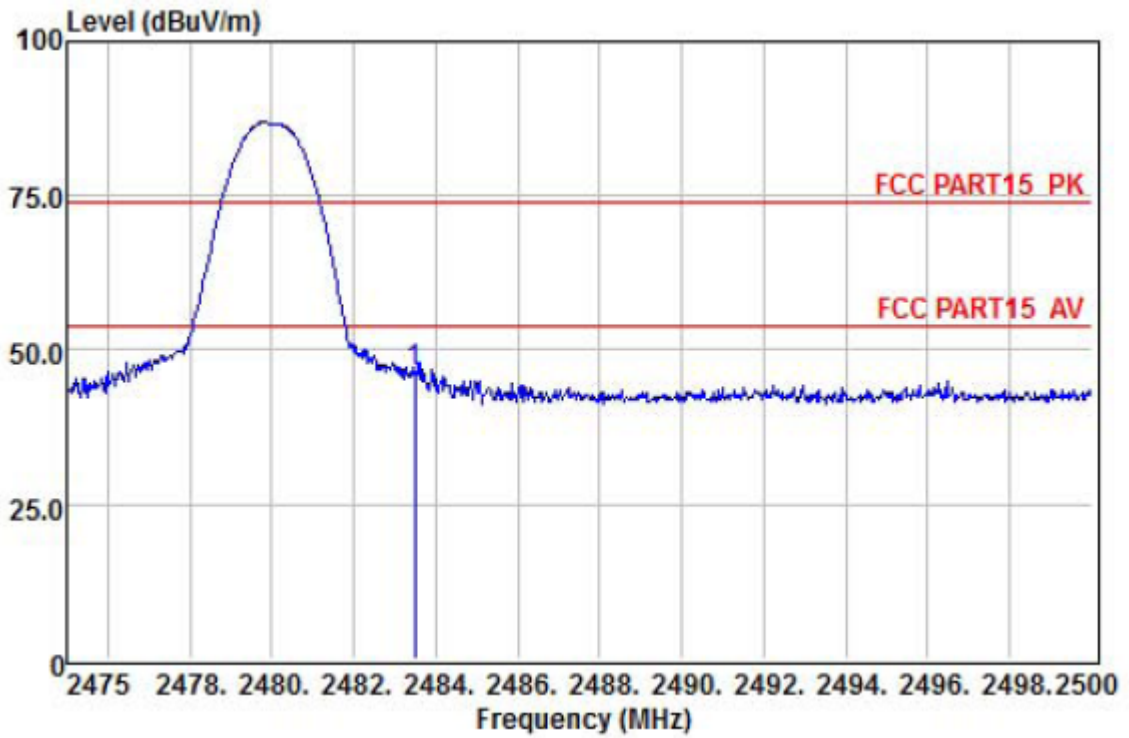
	Freq	Read Level	Preamp Factor	Antenna Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2483.50	36.47	26.34	28.79	7.57	46.49	74.00	-27.51	Peak

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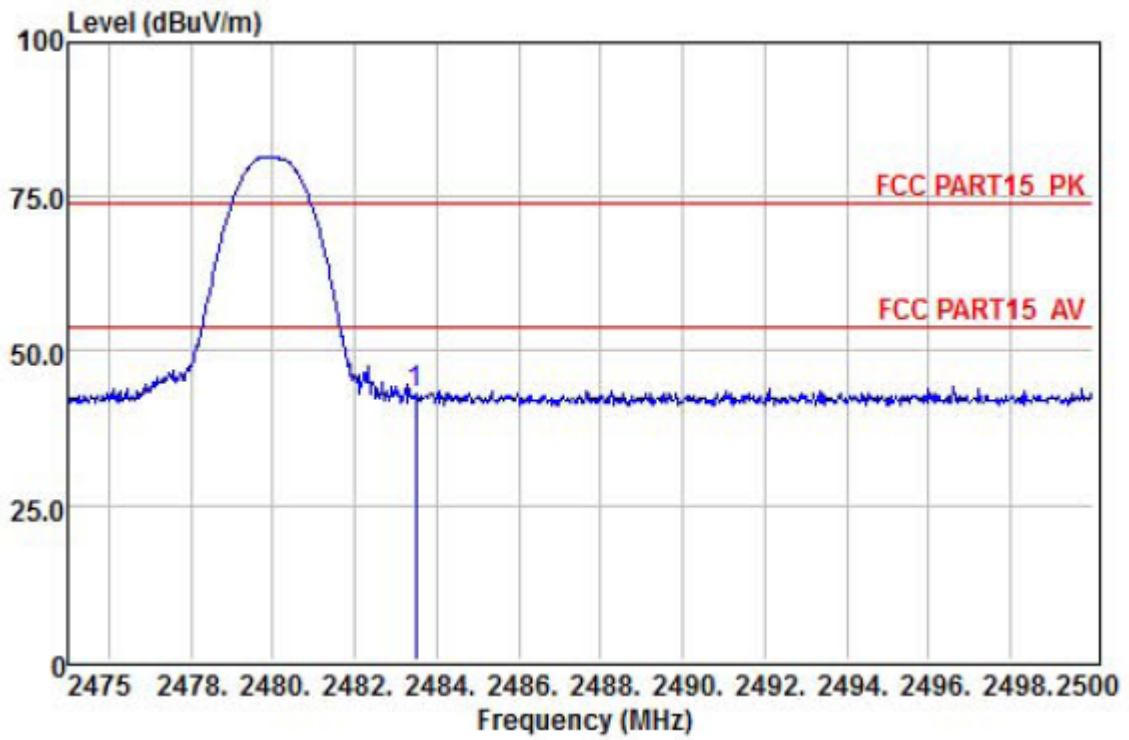
	Freq	Read Level	Preamp Factor	Antenna Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1	2483.50	32.94	26.34	28.79	7.57	42.96	74.00	-31.04	Peak

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.

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