

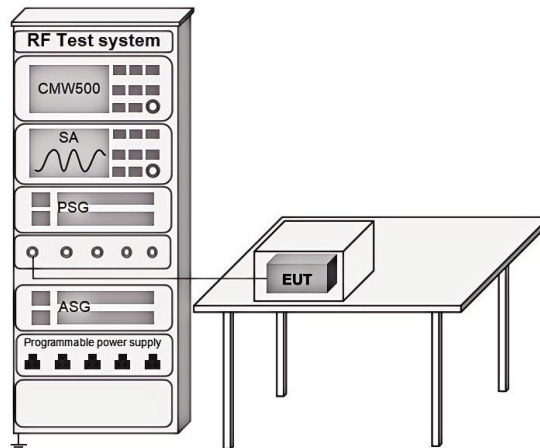
6.9 Dwell Time

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10-2020+Cor.1-2023 Section 7.8.4
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

6.9.1 Limit

Frequency(MHz)	Limit
902-928	0.4s within a 20s period(20dB bandwidth<250kHz)
	0.4s within a 10s period(20dB bandwidth≥250kHz)
2400-2483.5	0.4s within a period of 0.4s multiplied by the number of hopping channels
5725-5850	0.4s within a 30s period

6.9.2 Test setup



6.9.3 Test data

Pass: Please refer to appendix A for details

6.10 Radiated spurious emissions

Test Standard	47 CFR Part 15, Subpart C 15.247(d) 47 CFR Part 15, Subpart C 15.209
Test Method	ANSI C63.10-2020+Cor.1-2023 Section 6.3,6.4,6.5,6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

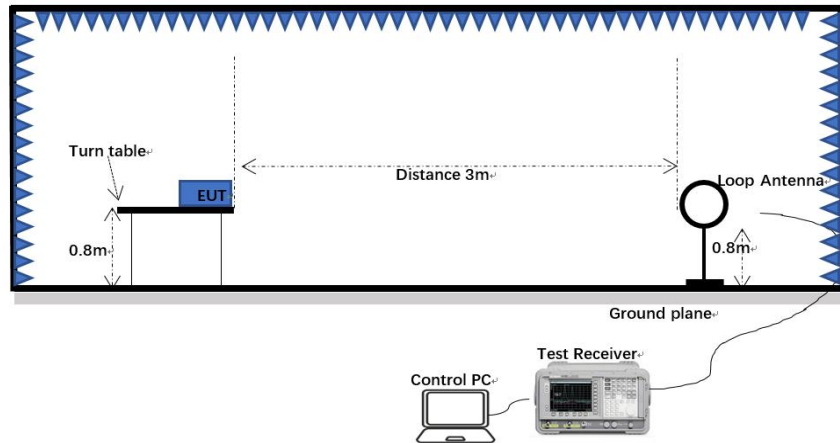
6.10.1 Limit

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

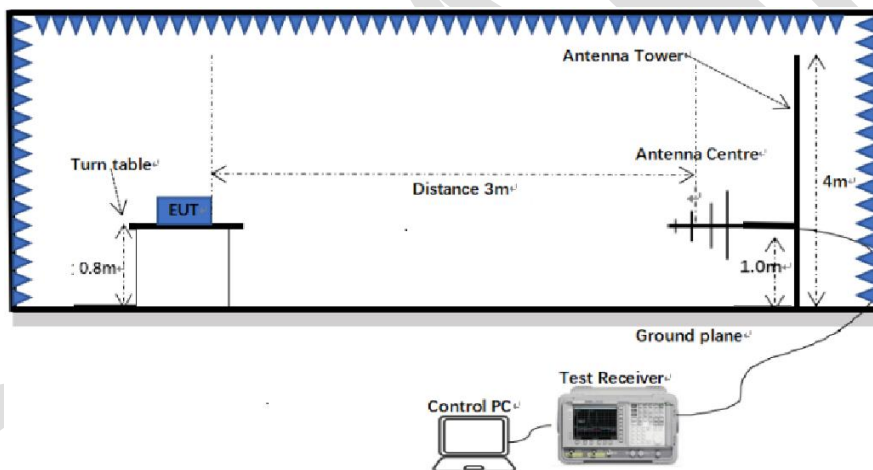
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

6.10.2 Test setup

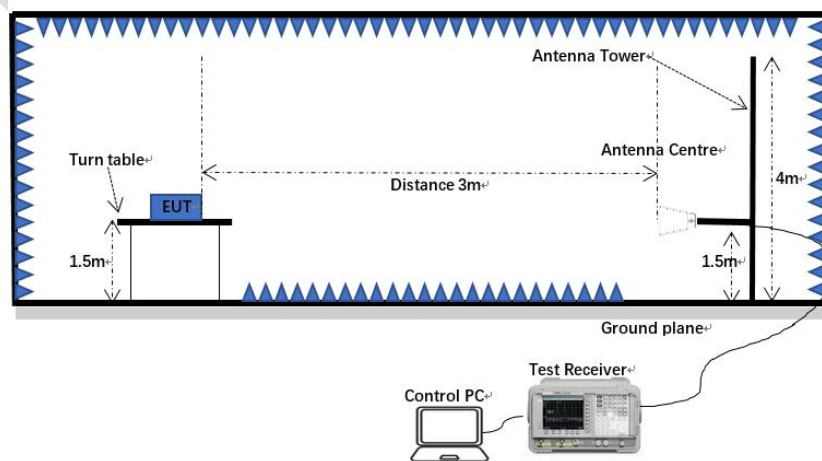
Below 1GHz:



30MHz-1GHz:



Above 1GHz:



6.10.3 Procedure

- a) For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b) For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c) The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d) The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f) The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g) If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- h) Test the EUT in the lowest channel, the middle channel, the highest channel.
- i) The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j) Repeat above procedures until all frequencies measured was complete.

Note 1: Scan from 9 kHz to 25GHz, the disturbance above 18GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. Fundamental frequency is blocked by filter, and only spurious emission is shown.

Note 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

Note 3: The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

$$\text{Level (dBuV)} = \text{Reading (dBuV)} + \text{Factor (dB/m)}$$

6.10.4 Test data

Below 1GHz

Remark: During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes, only the worst case lowest channel for GFSK was recorded in the report.

[Test mode: Charging+TX]; [Polarity: Horizontal]



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	45.2166	32.85	-18.76	14.09	40.00	-25.91	QP
2	84.7019	38.48	-22.96	15.52	40.00	-24.48	QP
3	166.6514	38.20	-18.93	19.27	43.50	-24.23	QP
4 *	270.3748	45.08	-20.12	24.96	46.00	-21.04	QP
5	334.8589	41.95	-17.43	24.52	46.00	-21.48	QP
6	603.5392	29.57	-11.92	17.65	46.00	-28.35	QP

Test Result: Pass

[Test mode: Charging+TX]; [Polarity: Vertical]



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	37.5479	40.27	-19.30	20.97	40.00	-19.03	QP
2	83.8156	39.59	-22.92	16.67	40.00	-23.33	QP
3	166.6514	44.86	-18.93	25.93	43.50	-17.57	QP
4	263.8190	47.11	-20.17	26.94	46.00	-19.06	QP
5	543.2742	34.38	-13.19	21.19	46.00	-24.81	QP
6 *	948.7610	38.97	-5.74	33.23	46.00	-12.77	QP

Test Result: Pass

Above 1GHz:

Remark: During the test, the Radiates Emission from above 1GHz was performed in all modes, only the worst case for GFSK was recorded in the report.

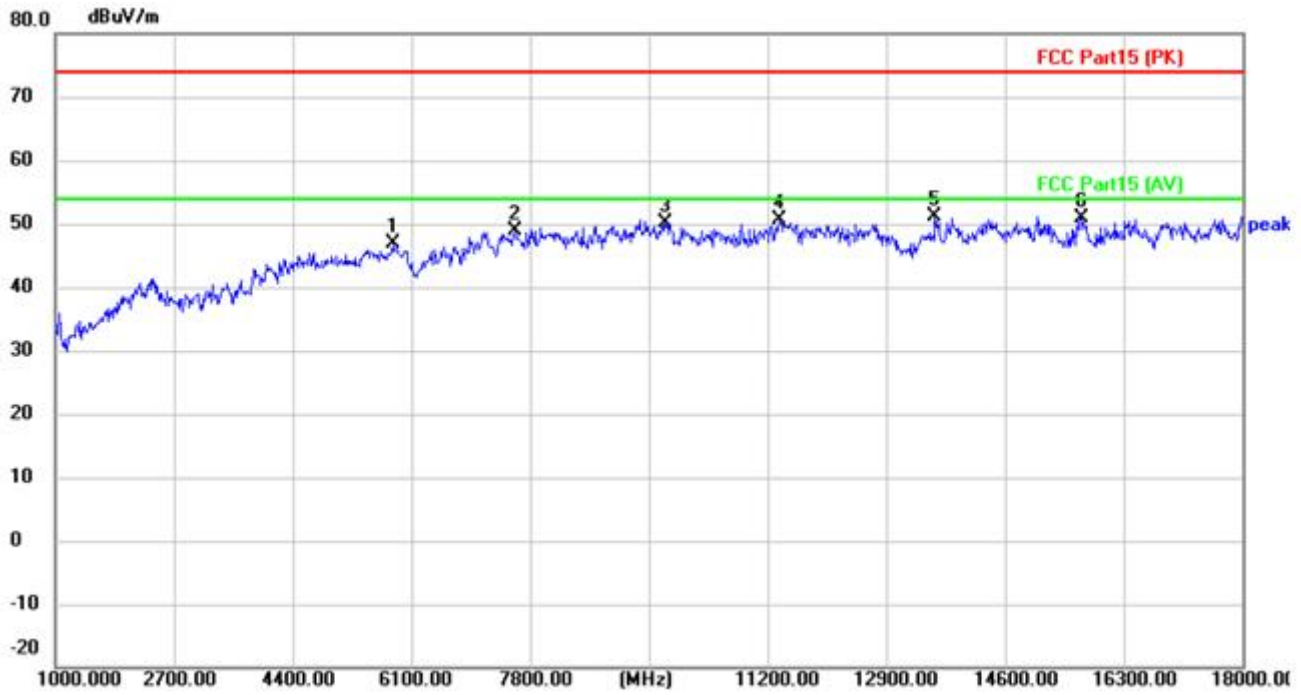
[Test mode: TX low channel]; [Polarity: Horizontal]



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	5403.000	37.33	8.31	45.64	74.00	-28.36	peak
2	7783.000	38.34	10.56	48.90	74.00	-25.10	peak
3 *	10265.00	36.47	13.44	49.91	74.00	-24.09	peak
4	11795.00	35.56	13.47	49.03	74.00	-24.97	peak
5	14362.00	38.14	10.86	49.00	74.00	-25.00	peak
6	16096.00	38.45	9.58	48.03	74.00	-25.97	peak

Test Result: Pass

[Test mode: TX low channel]; [Polarity: Vertical]



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5828.000	38.02	8.94	46.96	74.00	-27.04	peak
2		7579.000	38.23	10.67	48.90	74.00	-25.10	peak
3		9738.000	36.26	13.75	50.01	74.00	-23.99	peak
4		11370.00	36.77	13.94	50.71	74.00	-23.29	peak
5	*	13597.00	38.22	12.90	51.12	74.00	-22.88	peak
6		15688.00	41.48	9.44	50.92	74.00	-23.08	peak

Test Result: Pass

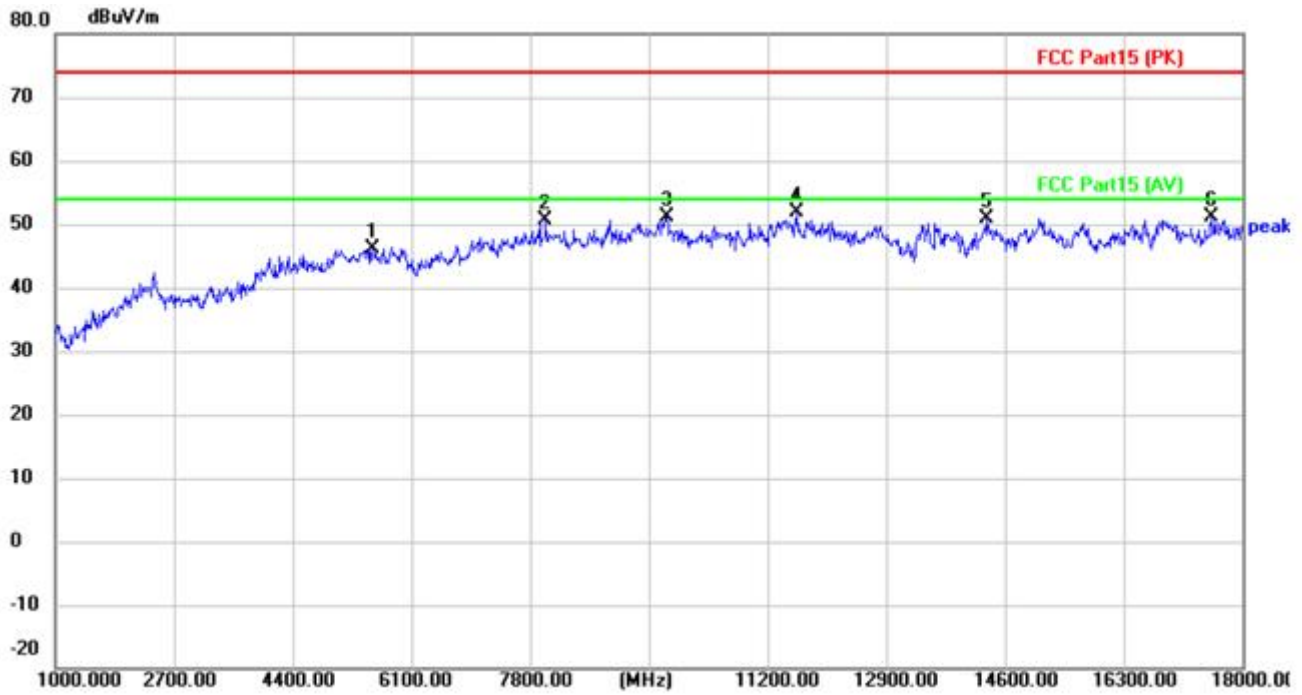
[Test mode: TX middle channel]; [Polarity: Horizontal]



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5845.000	37.92	8.88	46.80	74.00	-27.20	peak
2		8803.000	37.71	12.26	49.97	74.00	-24.03	peak
3		9755.000	37.54	13.80	51.34	74.00	-22.66	peak
4		11540.00	36.03	14.83	50.86	74.00	-23.14	peak
5	*	13665.00	40.15	11.91	52.06	74.00	-21.94	peak
6		16232.00	41.68	9.00	50.68	74.00	-23.32	peak

Test Result: Pass

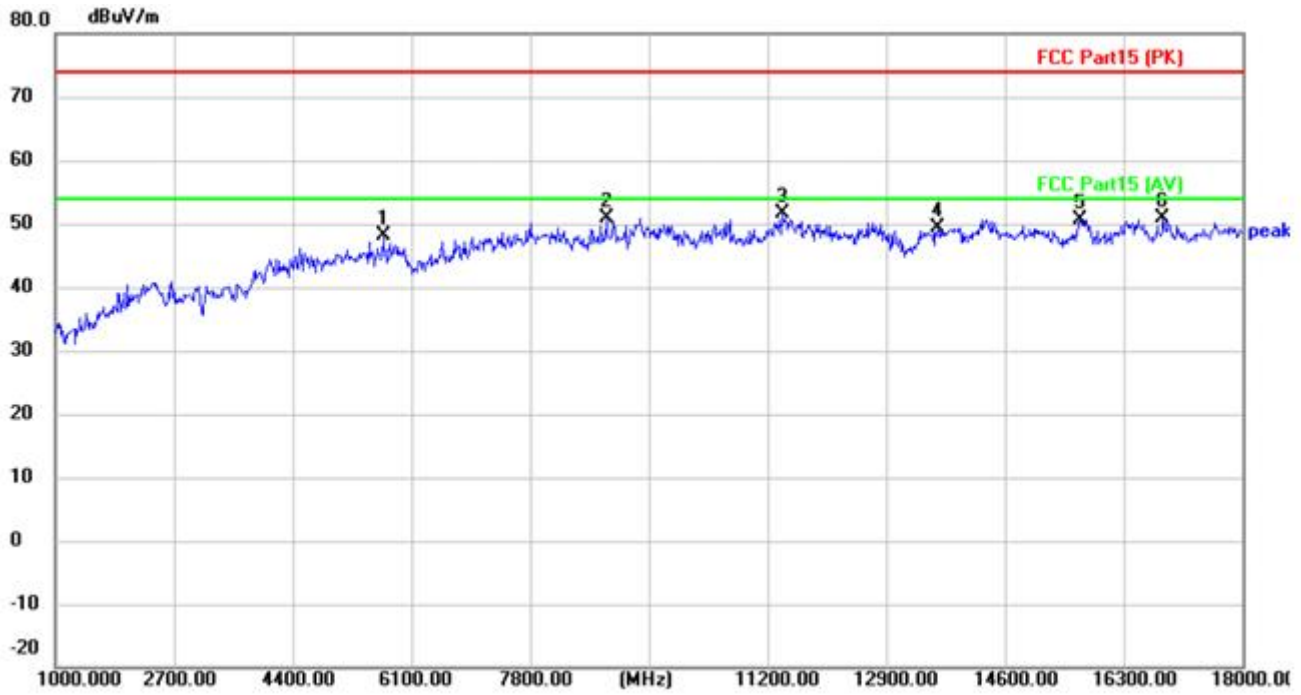
[Test mode: TX middle channel]; [Polarity: Vertical]



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5539.000	38.17	7.99	46.16	74.00	-27.84	peak
2		8021.000	39.02	11.64	50.66	74.00	-23.34	peak
3		9755.000	37.34	13.80	51.14	74.00	-22.86	peak
4	*	11625.00	37.36	14.45	51.81	74.00	-22.19	peak
5		14345.00	39.94	10.91	50.85	74.00	-23.15	peak
6		17558.00	40.95	10.13	51.08	74.00	-22.92	peak

Test Result: Pass

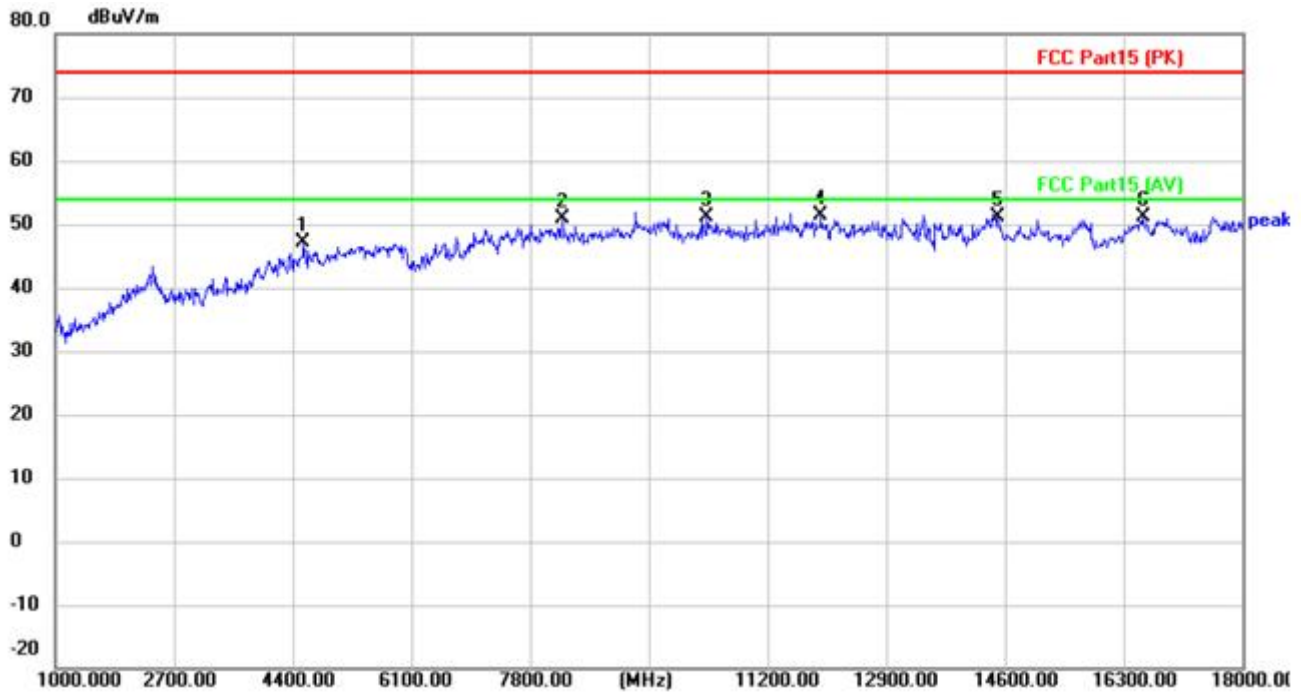
[Test mode: TX High channel]; [Polarity: Horizontal]



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5692.000	39.41	8.75	48.16	74.00	-25.84	peak
2		8888.000	38.50	12.47	50.97	74.00	-23.03	peak
3	*	11404.00	37.22	14.29	51.51	74.00	-22.49	peak
4		13631.00	37.04	12.41	49.45	74.00	-24.55	peak
5		15671.00	41.38	9.36	50.74	74.00	-23.26	peak
6		16861.00	40.51	10.36	50.87	74.00	-23.13	peak

Test Result: Pass

[Test mode: TX High channel]; [Polarity: Vertical]



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		4553.000	41.03	6.06	47.09	74.00	-26.91	peak
2		8259.000	39.67	11.16	50.83	74.00	-23.17	peak
3		10333.00	37.66	13.55	51.21	74.00	-22.79	peak
4	*	11965.00	37.36	14.03	51.39	74.00	-22.61	peak
5		14498.00	40.78	10.45	51.23	74.00	-22.77	peak
6		16572.00	40.38	10.81	51.19	74.00	-22.81	peak

Test Result: Pass

6.11 Radiated emissions which fall in the restricted bands

Test Standard	47 CFR Part 15, Subpart C 15.247(d) 47 CFR Part 15, Subpart C 15.205
Test Method	ANSI C63.10-2020+Cor.1-2023 Section 6.10.5
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX

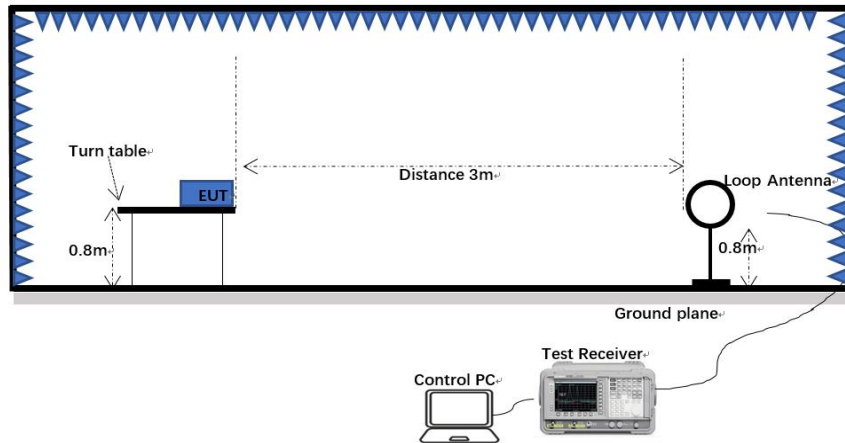
6.11.1 Limit

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

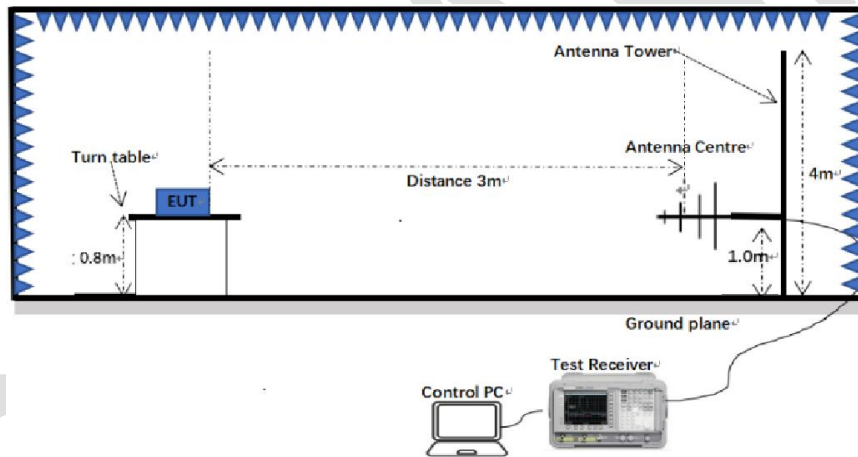
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

6.11.2 Test setup

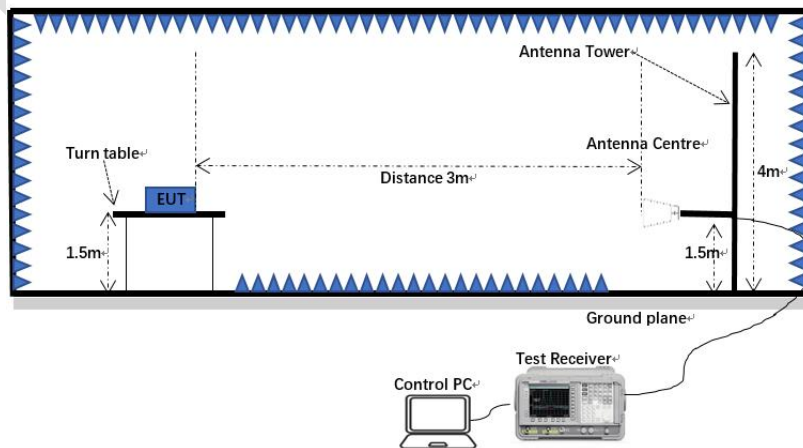
Below 1GHz:



30MHz-1GHz:



Above 1GHz:



6.11.3 Procedure

- a) For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b) For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c) The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d) The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f) The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g) If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- h) Test the EUT in the lowest channel, the middle channel, the highest channel.
- i) The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j) Repeat above procedures until all frequencies measured was complete.

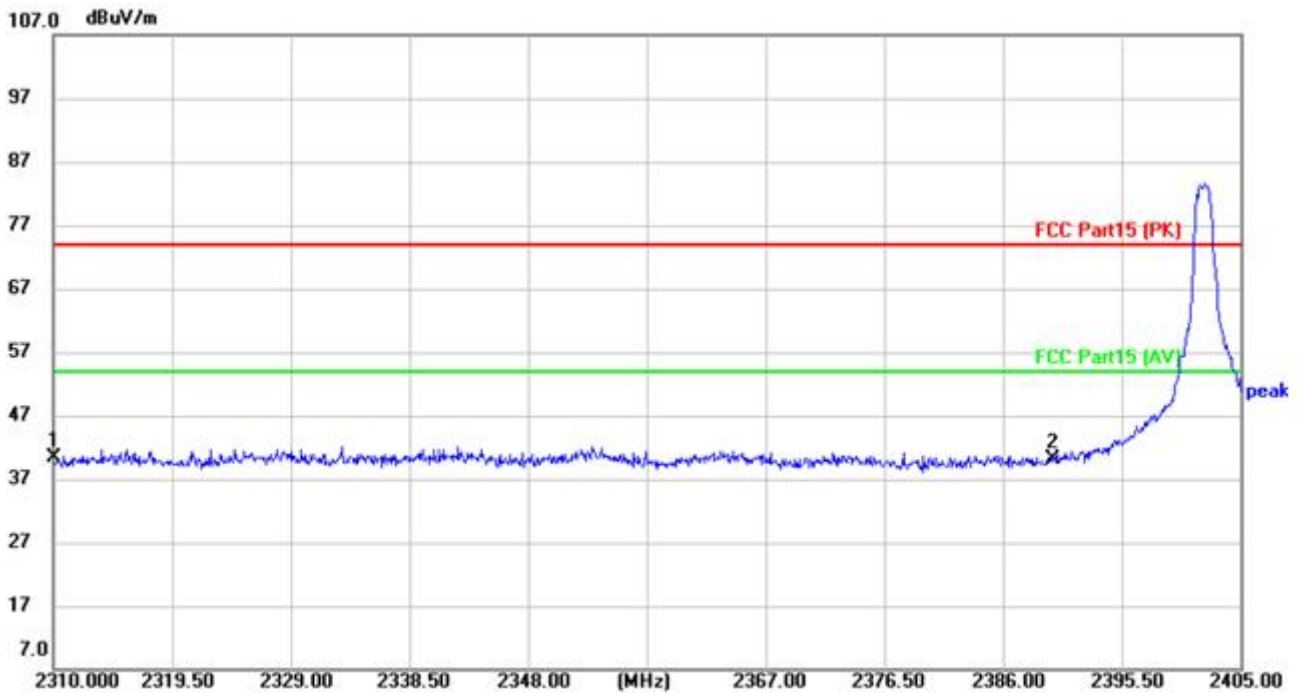
Note 1: Level (dBuV) = Reading (dBuV) + Factor (dB/m)

Note 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

6.11.4 Test data

Remark: During the test, the Radiates Emission restricted bands from above 1GHz was performed in all modes, only the worst case for GFSK was recorded in the report.

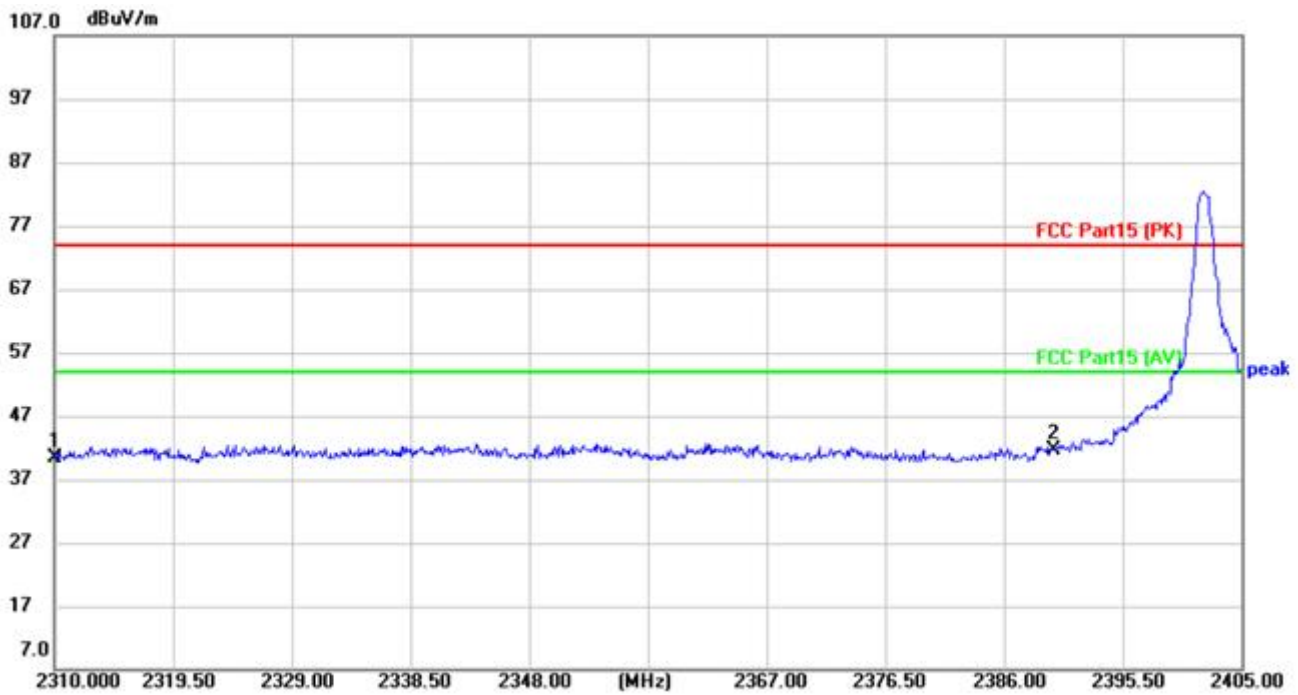
[Test mode: TX low channel]; [Polarity: Horizontal]



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	*	2310.000	42.93	-2.65	40.28	74.00	-33.72	peak
2		2390.000	42.25	-2.21	40.04	74.00	-33.96	peak

Test Result: Pass

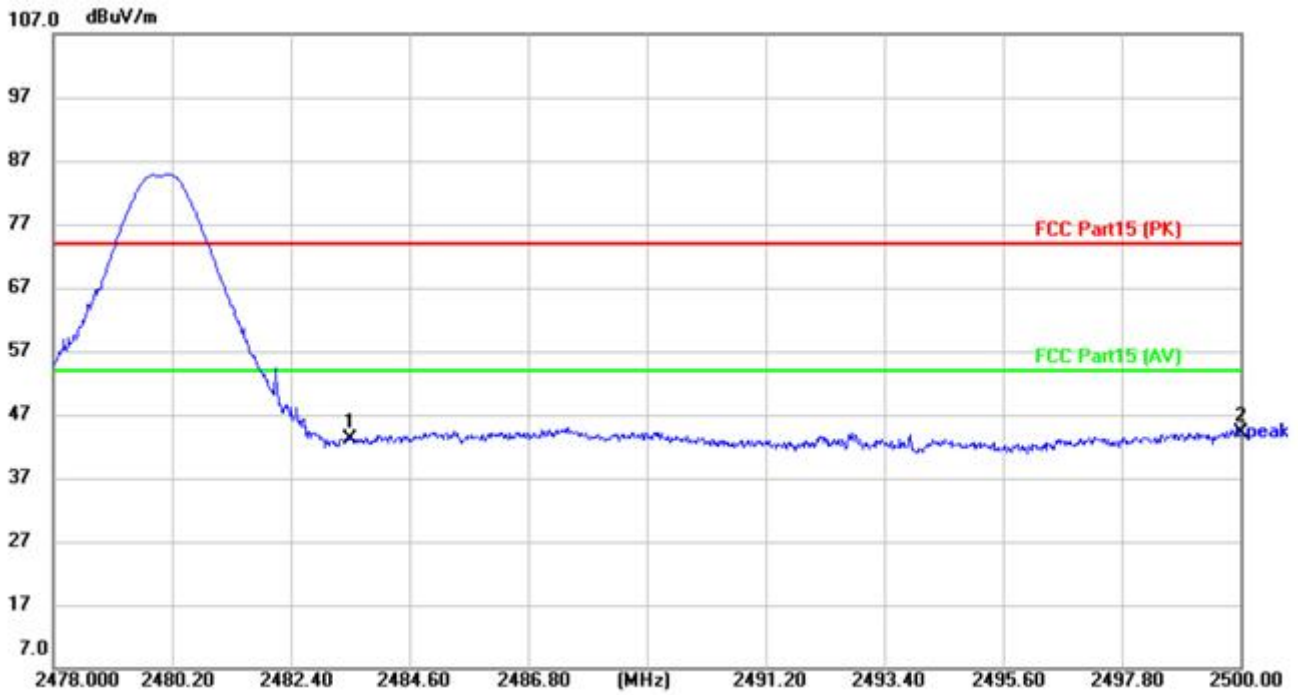
[Test mode:TX low channel]; [Polarity: Vertical]



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		2310.000	42.95	-2.65	40.30	74.00	-33.70	peak
2	*	2390.000	43.91	-2.21	41.70	74.00	-32.30	peak

Test Result: Pass

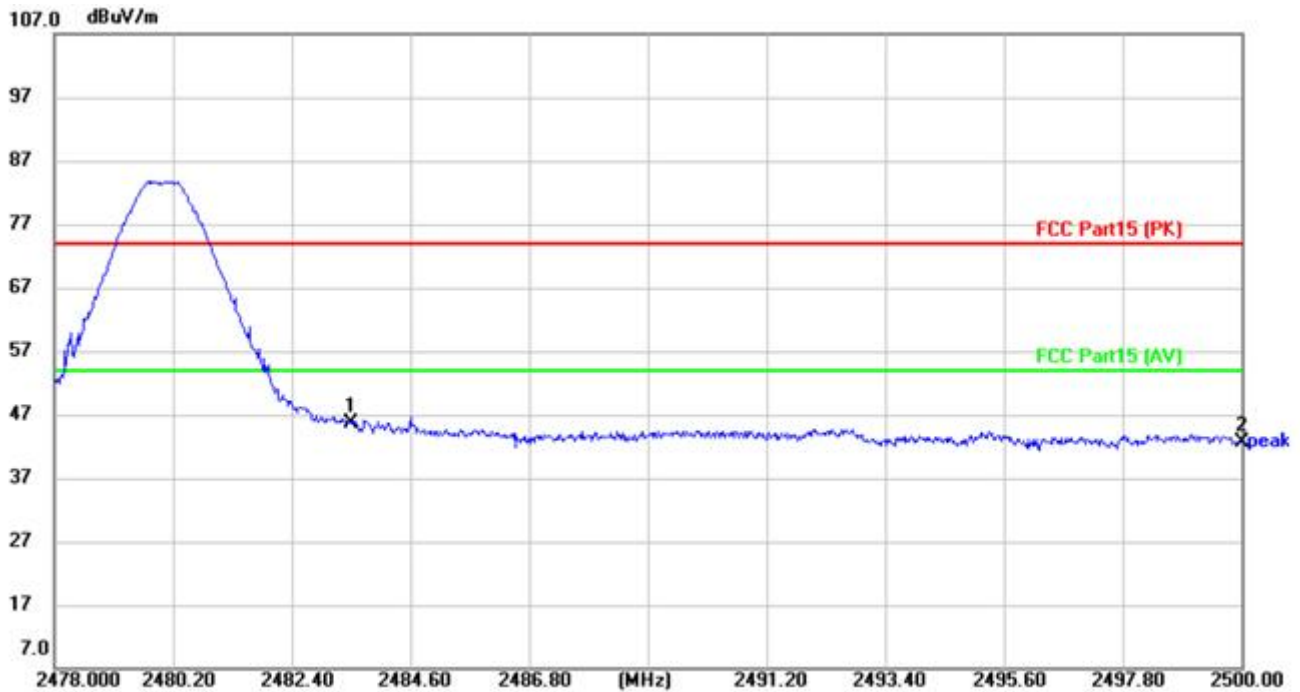
[Test mode: TX High channel]; [Polarity: Horizontal]



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		2483.500	45.92	-2.69	43.23	74.00	-30.77	peak
2	*	2500.000	46.86	-2.77	44.09	74.00	-29.91	peak

Test Result: Pass

[Test mode:TX High channel]; [Polarity: Vertical]



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	*	2483.500	48.28	-2.69	45.59	74.00	-28.41	peak
2		2500.000	45.37	-2.77	42.60	74.00	-31.40	peak

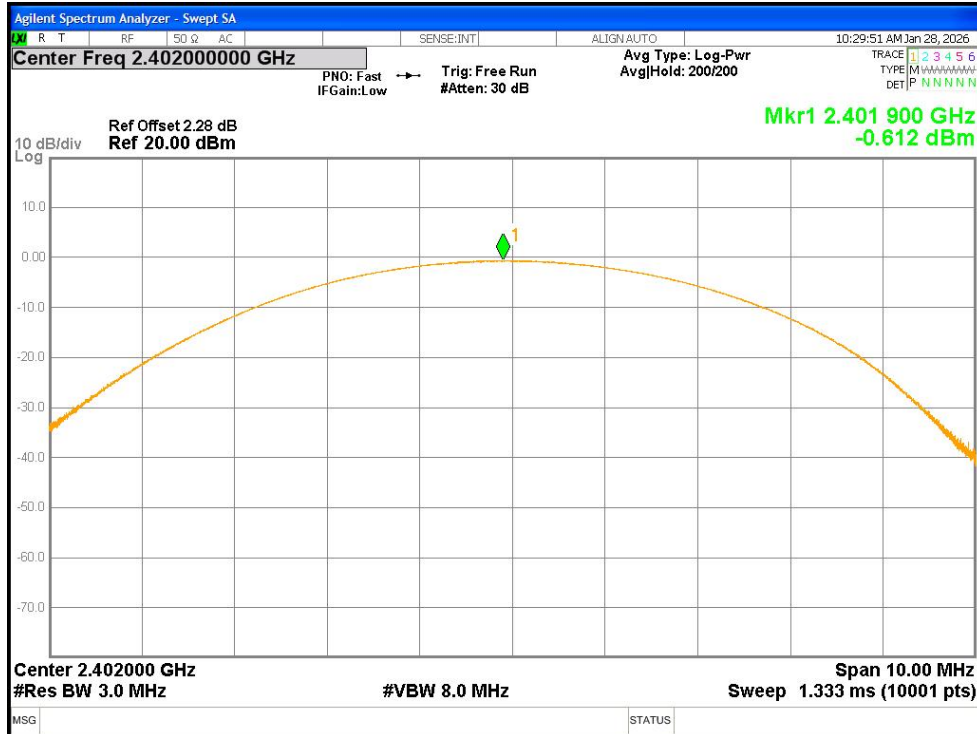
Test Result: Pass

7 Appendix A

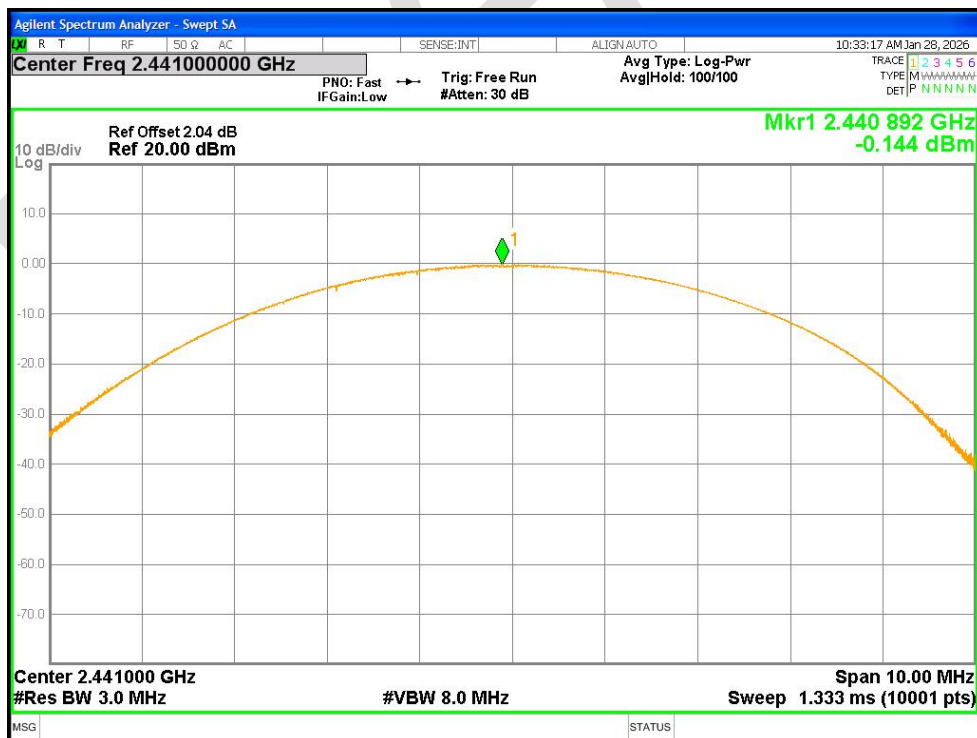
7.1 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	-0.612	21	Pass
NVNT	1-DH1	2441	Ant1	-0.144	21	Pass
NVNT	1-DH1	2480	Ant1	-0.414	21	Pass
NVNT	2-DH1	2402	Ant1	-1.280	21	Pass
NVNT	2-DH1	2441	Ant1	-0.958	21	Pass
NVNT	2-DH1	2480	Ant1	-1.165	21	Pass
NVNT	3-DH1	2402	Ant1	-1.415	21	Pass
NVNT	3-DH1	2441	Ant1	-1.005	21	Pass
NVNT	3-DH1	2480	Ant1	-1.274	21	Pass

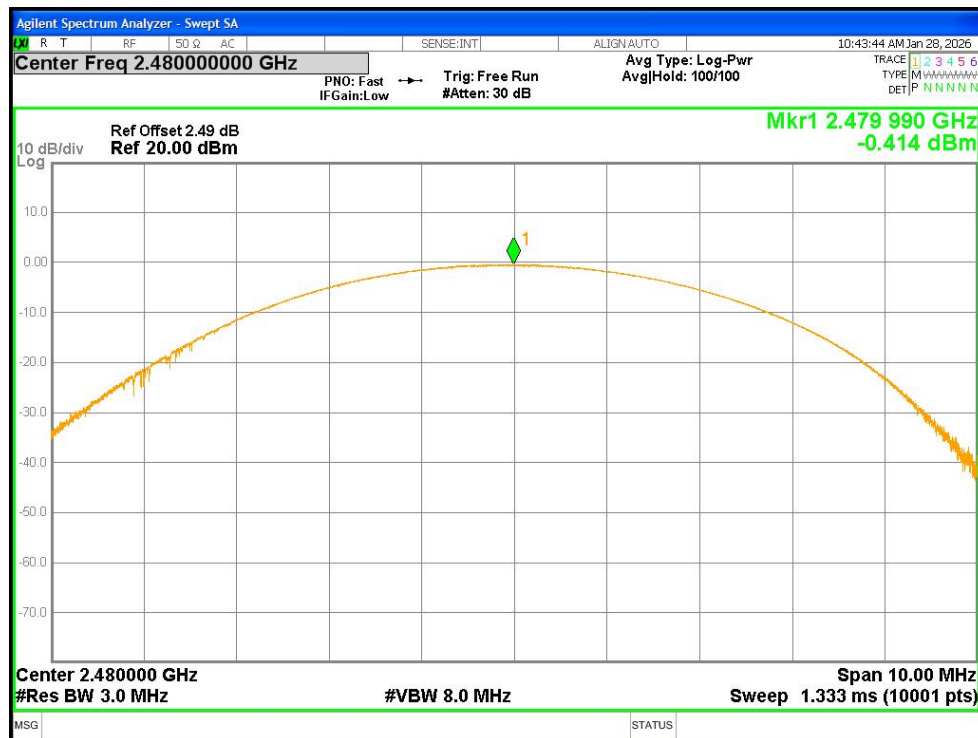
Power NVNT 1-DH1 2402MHz Ant1



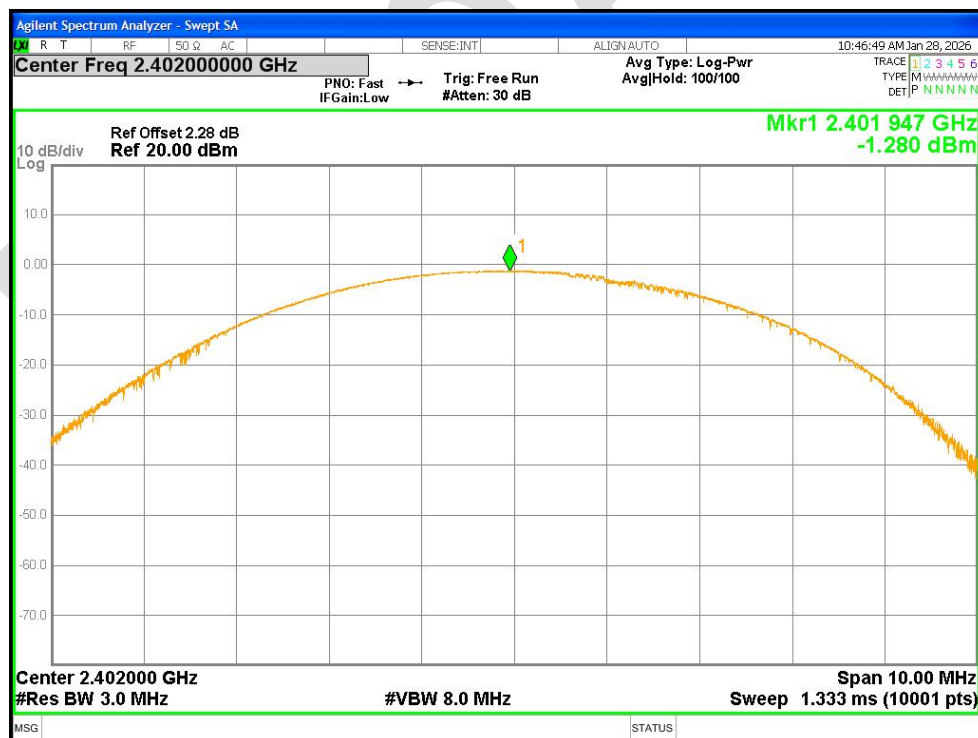
Power NVNT 1-DH1 2441MHz Ant1



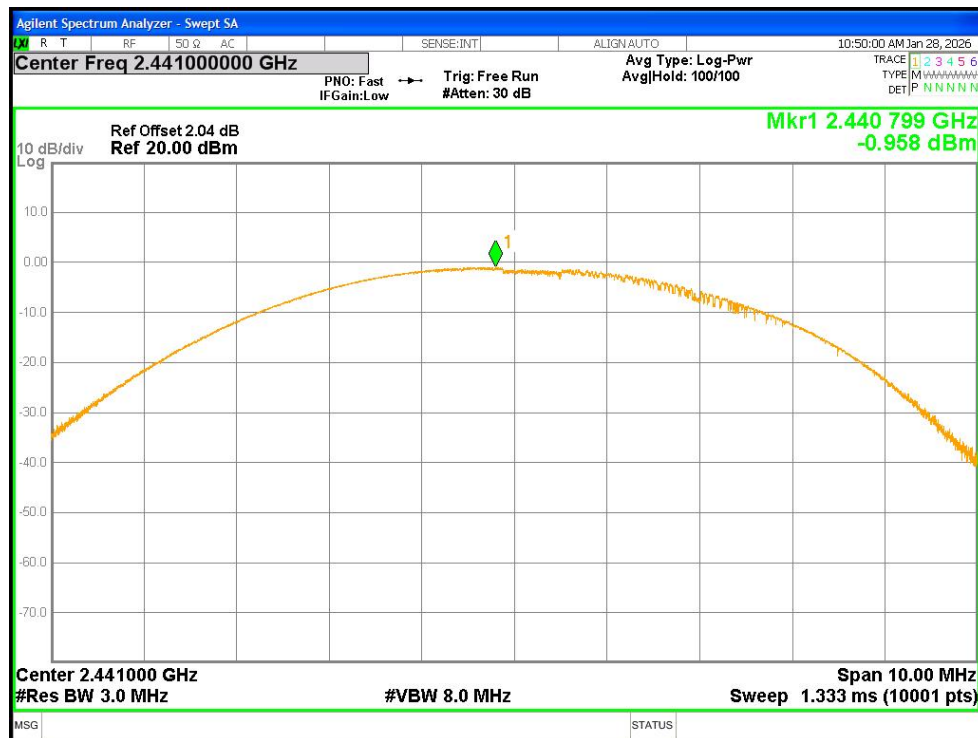
Power NVNT 1-DH1 2480MHz Ant1



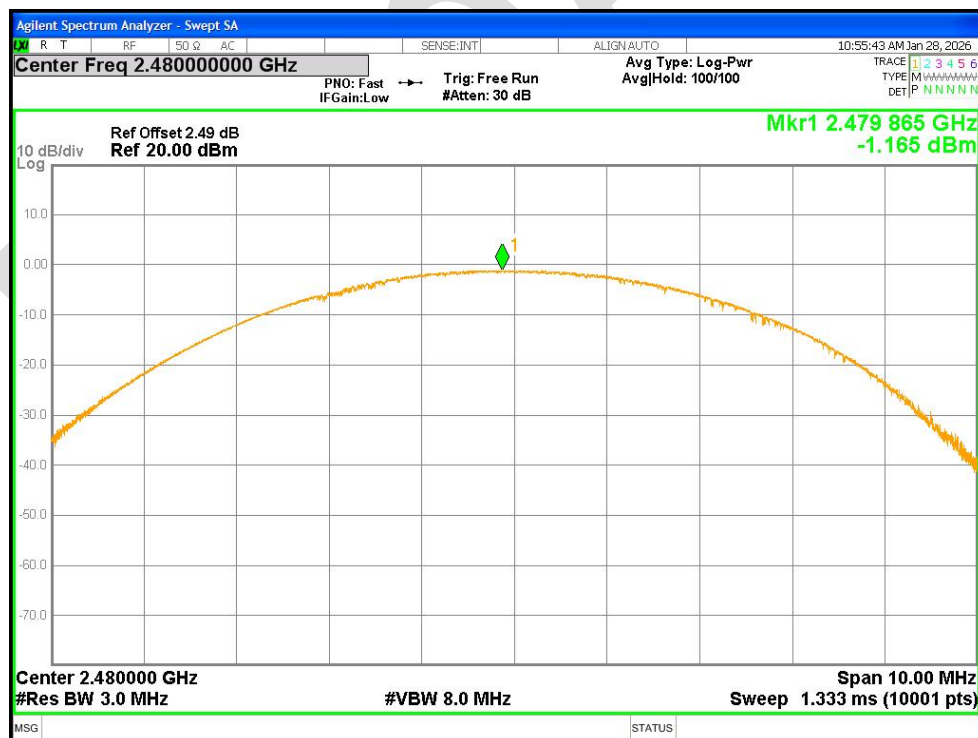
Power NVNT 2-DH1 2402MHz Ant1



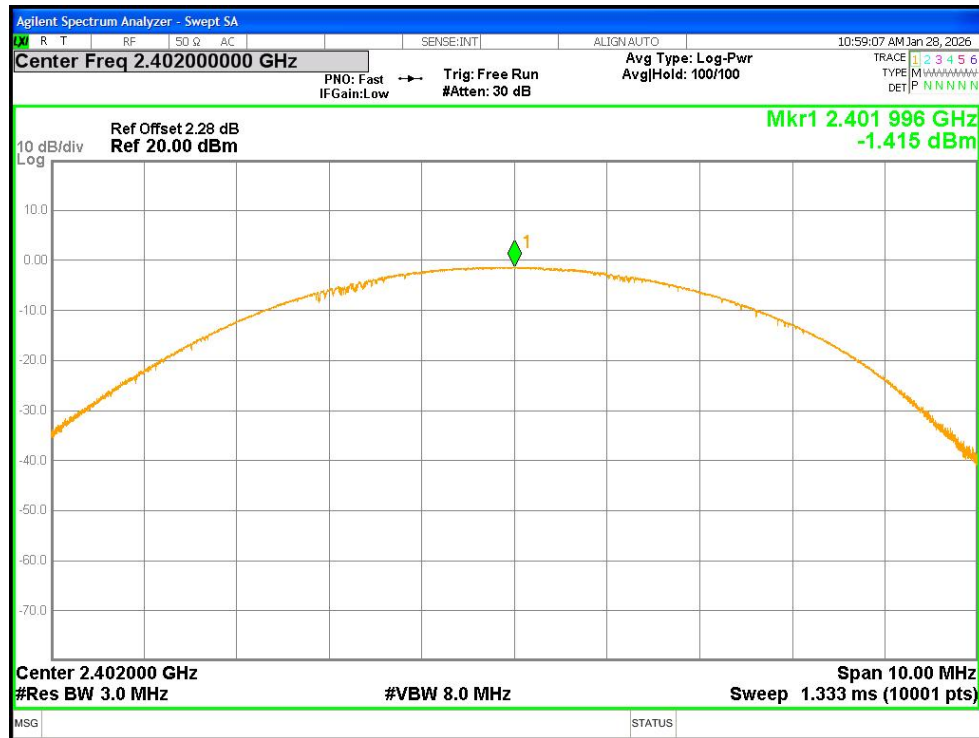
Power NVNT 2-DH1 2441MHz Ant1



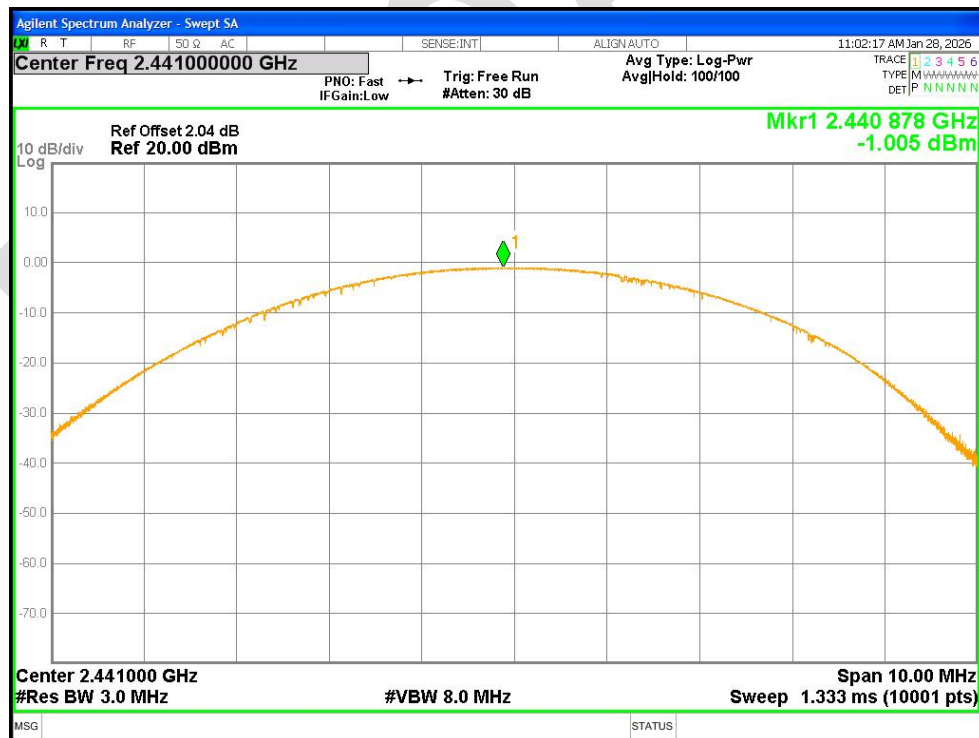
Power NVNT 2-DH1 2480MHz Ant1



Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1



Power NVNT 3-DH1 2480MHz Ant1

