CFR 47 FCC PART 15 SUBPART C

TEST REPORT

For

Magnetic wireless charging power bank

MODEL NUMBER: T3Pro, T1, T1Pro, T2, T2Pro, T3, T4, T4Pro, T5, T5Pro, T6, T6Pro, T7, T7Pro, T8, T8Pro, T9, T9Pro, T10, T10Pro

REPORT NUMBER: E04A24040635F00301

ISSUE DATE: May 11, 2024

FCC ID: 2BCJZ-T3PRO

Prepared for

Shenzhen MOPO Electronic Tech.Co.,Ltd
Room 212, Longhai Business Center,Longfeng 1 Road, Longhua Street, Longhua District, Shenzhen, China

Prepared by

Guangdong Global Testing Technology Co., Ltd.

Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong, People's Republic of China, 523808

Revision History

Rev.	Issue Date	Revisions	Revised By
V0	May 11, 2024	Initial Issue	

Summary of Test Results

Test Item	Limit/Requirement	Result
Antenna Requirement	FCC Part 15.203	Pass
AC Power Line Conducted Emission	FCC Part 15.207	Pass
20dB Bandwidth	FCC Part 15.215	Pass
Radiated Emission	FCC Part 15.205/15.209	Pass

Note:
1. N/A: In this whole report not applicable.

*This test report is only published to and used by the applicant, and it is not for evidence purpose in China.
*The measurement result for the sample received is <Pass> according to <CFR 47 FCC PART 15 SUBPART C> when <Accuracy Method> decision rule is applied.

CONTENTS

1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	Shenzhen MOPO Electronic Tech.Co.,Ltd
Address:	Room 212, Longhai Business Center,Longfeng 1 Road, Longhua Street, Longhua District, Shenzhen, China

Manufacturer Information

Company Name:	DONGGUAN MOPO NEW ENERGY TECH. CO., LTD.
Address:	Room 701, Floor 7, Building L, Fengzhimei Industrial Zone, golden phoenix Avenue, Fenggang Town,Dongguan City

Factory Information

Company Name:	DONGGUAN MOPO NEW ENERGY TECH. CO., LTD.
Address:	Room 701, Floor 7, Building L, Fengzhimei Industrial Zone, golden phoenix Avenue, Fenggang Town,Dongguan City

EUT Information

Product Description:	Magnetic wireless charging power bank
Model:	T3Pro, T1, T1Pro, T2, T2Pro, T3, T4, T4Pro, T5, T5Pro, T6, T6Pro, T7, T7Pro, T8, T8Pro, T9, T9Pro, T10, T10Pro
Brand:	/
Sample Received Date:	April 24, 2024
Sample Status:	Normal
Sample ID:	A24040635 001, A24040635 002
Date of Tested:	April 24, 2024 to May 8, 2024

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 FCC PART 15 SUBPART C	**Pass**

Prepared By:

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Project Engineer

Checked By:

Alan He

Laboratory Leader

Approved By:

Shawn Wen

Laboratory Manager

2. TEST METHODOLOGY

All tests were performed in accordance with the standard CFR 47 FCC PART 15 SUBPART C

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 6947.01)** Guangdong Global Testing Technology Co., Ltd. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1343)** Guangdong Global Testing Technology Co., Ltd. has been recognized to perform compliance testing on equipment subject to Supplier's Declaration of Conformity (SDoC) and Certification rules **ISED (Company No.: 30714)** Guangdong Global Testing Technology Co., Ltd. has been registered and fully described in a report filed with ISED. The Company Number is 30714 and the test lab Conformity Assessment Body Identifier (CABID) is CN0148.

Note: All tests measurement facilities use to collect the measurement data are located at Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong, People's Republic of China, 523808

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendationsand is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Items	k	Uncertainty
20dB Emission Bandwidth	2	±9.2 PPM
Temperature	2	±0.5℃
Humidity	2	±3%
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.		

Test Item	Measurement Frequency Range	K	U(dB)
Conducted emissions from the AC mains power ports (AMN)	150 kHz ~ 30 MHz	2	3.37
Radiated emissions	9 kHz ~ 30 MHz	2	4.16
Radiated emissions	30 MHz ~ 1 GHz	2	3.79
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.			

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	Magnetic wireless charging power bank
Model	T3Pro
Series Model	T1, T1Pro, T2, T2Pro, T3, T4, T4Pro, T5, T5Pro, T6, T6Pro, T7, T7Pro, T8, T8Pro, T9, T9Pro, T10, T10Pro
Hardware Version	V1.0
Software Version	V1.0
Ratings	Battery Capacity:10000mAh/3.85V 38.5Wh Type-C Input: 5V⎓ 3A; 9V⎓ 2A Type-C Output: 5V⎓ 2A; 9V⎓ 2.22A; 12V⎓ 1.67A USB Output: 5V⎓ 4.5A; 4.5V⎓ 5A; 9V⎓ 2A; 12V⎓ 1.5A Wireless Output (Phone): 5W/7.5W/10W/15W(Max) Wireless Output (Watch): 2.5W(Max) Wireless Output (Earphone): 3W(Max)
Power Supply	DC 5V / DC 9V / Battery 3.85V
Operation Mode	Wireless Charging
Operating Frequency	110-205KHz for phone charging 300-350KHz for Watch charging 110-205KHz for Earphone charging
Wireless Charging Power	15W(Max) for phone charging 2.5W(Max) for Watch charging 3W(Max) for Earphone charging
Modulation Technique	FSK for phone charging ASK for Watch charging ASK for Earphone charging
Antenna Type	Coil Antenna

5.2. TEST MODE

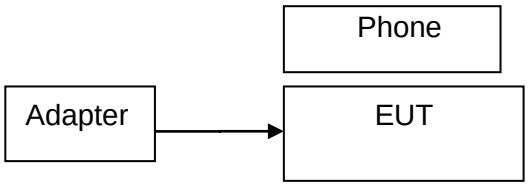
Test Mode	Description
M01	The EUT charges 5W load (phone).
M02	The EUT charges 7.5W load (phone).
M03	The EUT charges 15W load (phone).
M04	The EUT charges 2.5W load (Watch).
M05	The EUT charges 3W load (Earphone).

5.3. SUPPORT UNITS FOR SYSTEM TEST

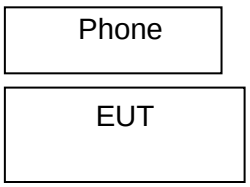
No.	Equipment	Manufacturer	Model No.	Serial No.	Remark
1	phone	Apple	A2404	/	/
2	phone	Xiaomi	Xiaomi 9	/	/
3	phone	SAMSUNG	Samsung Galaxy S9	/	/
4	Adapter	Xiaomi	580245A087	/	/
5	Earphone	momax	X5	/	/
6	Watch	Apple	A1859	/	/

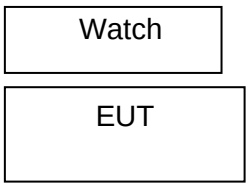
5.4. SETUP DIAGRAM

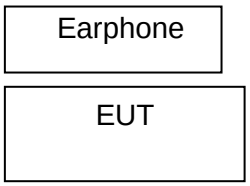
AC conducted emission :



Radiated Emission:







6. MEASURING EQUIPMENT AND SOFTWARE USED

Test Equipment of Radiated emissions below 1GHz					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
3m Semi-anechoic Chamber	ETS	9m*6m*6m	Q2146	2022/08/30	2025/08/29
EMI Test Receiver	Rohde & Schwarz	ESCI3	101409	2023/09/18	2024/09/17
Spectrum Analyzer	KEYSIGHT	N9020A	MY51283932	2023/09/18	2024/09/17
Spectrum Analyzer	Rohde & Schwarz	FSV40	101413	2023/09/18	2024/09/17
Pre-Amplifier	HzEMC	HPA-9K0130	HYPA21001	2023/09/18	2024/09/17
Biconilog Antenna	Schwarzbeck	VULB 9168	01315	2022/10/10	2025/10/09
Biconilog Antenna	ETS	3142E	00243646	2022/03/23	2025/03/22
Loop Antenna	ETS	6502	243668	2022/03/30	2025/03/29
Test Software	Farad	EZ-EMC (Ver.FA-03A2 RE)	N/A	N/A	N/A

Test Equipment of Conducted emissions					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
Shielded Room	CHENG YU	8m*5m*4m	N/A	2022/10/29	2025/10/28
EMI Test Receiver	Rohde & Schwarz	ESR3	102647	2023/09/18	2024/09/17
LISN/AMN	Rohde & Schwarz	ENV216	102843	2023/09/18	2024/09/17
NNLK 8129 RC	Schwarzbeck	NNLK 8129 RC	5046	2023/09/18	2024/09/17
Test Software	Farad	EZ-EMC (Ver. EMC-con-3A1 1+)	N/A	N/A	N/A

7. RADIATED TEST RESULTS

LIMITS

Please refer to CFR 47 FCC §15.205 and §15.209.

Radiation Disturbance Test Limit for FCC (Class B) (9 kHz ~ 1 GHz)

Emissions radiated outside of the specified frequency bands above 30 MHz		
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
		Quasi-Peak
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

FCC Emissions radiated outside of the specified frequency bands below 30 MHz			
Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)	Field Strength Limit (dBuV/m) at 3 m
			Quasi-Peak
0.009-0.490	2400/F(kHz)	300	128.5-93.8
0.490-1.705	24000/F(kHz)	30	73.8-63.0
1.705-30.0	30	30	69.5

FCC Restricted bands of operation refer to FCC §15.205 (a):

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

Note:[1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]Above 38.6c

TEST PROCEDURE

Below 30 MHz

The setting of the spectrum analyser

RBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
VBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
Sweep	Auto

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.

5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.

6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak and average detector and reported.

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made

to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.

8. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X KHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB, to the corresponding 15.209(a) limit.

Below 1 GHz and above 30 MHz

The setting of the spectrum analyser

RBW	120 kHz
VBW	300 kHz
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.

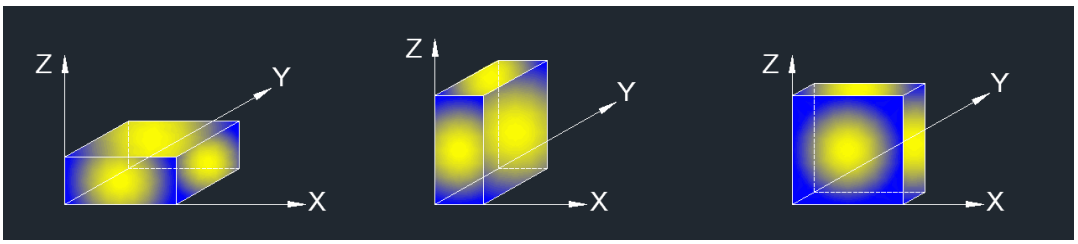
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

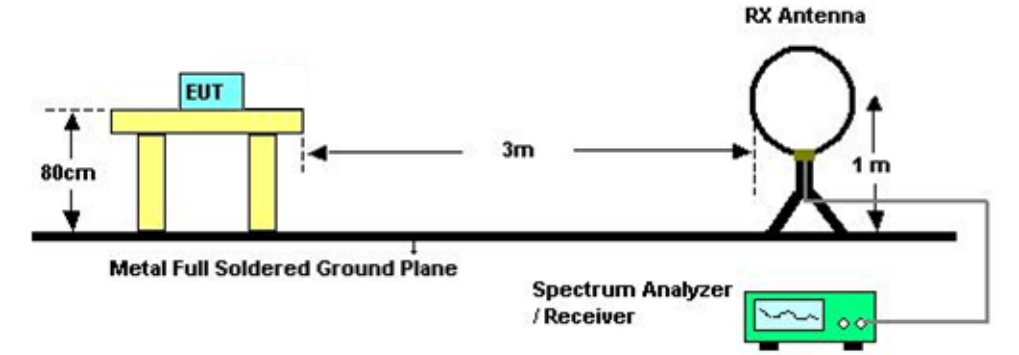
5. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

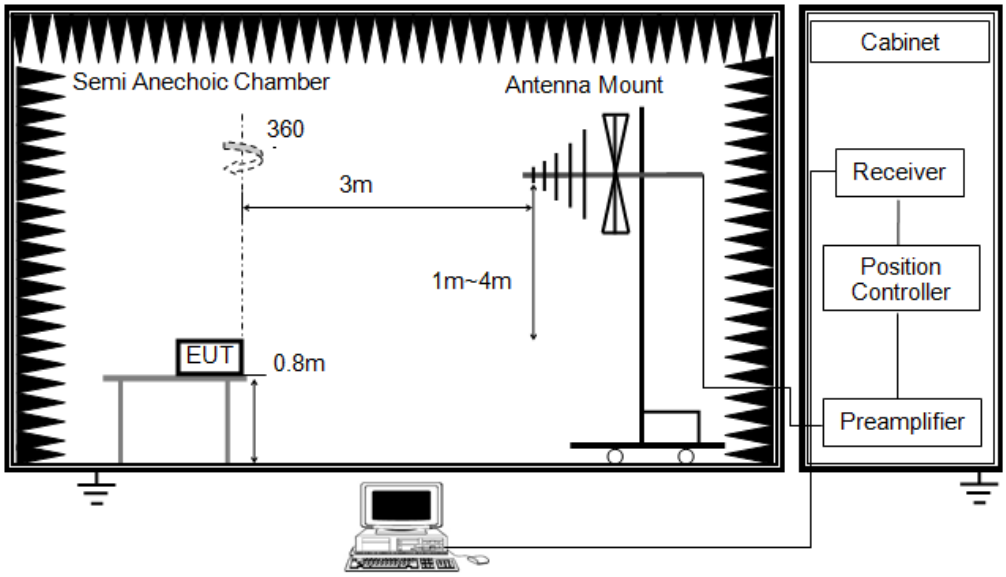
X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

TEST SETUP





TEST ENVIRONMENT

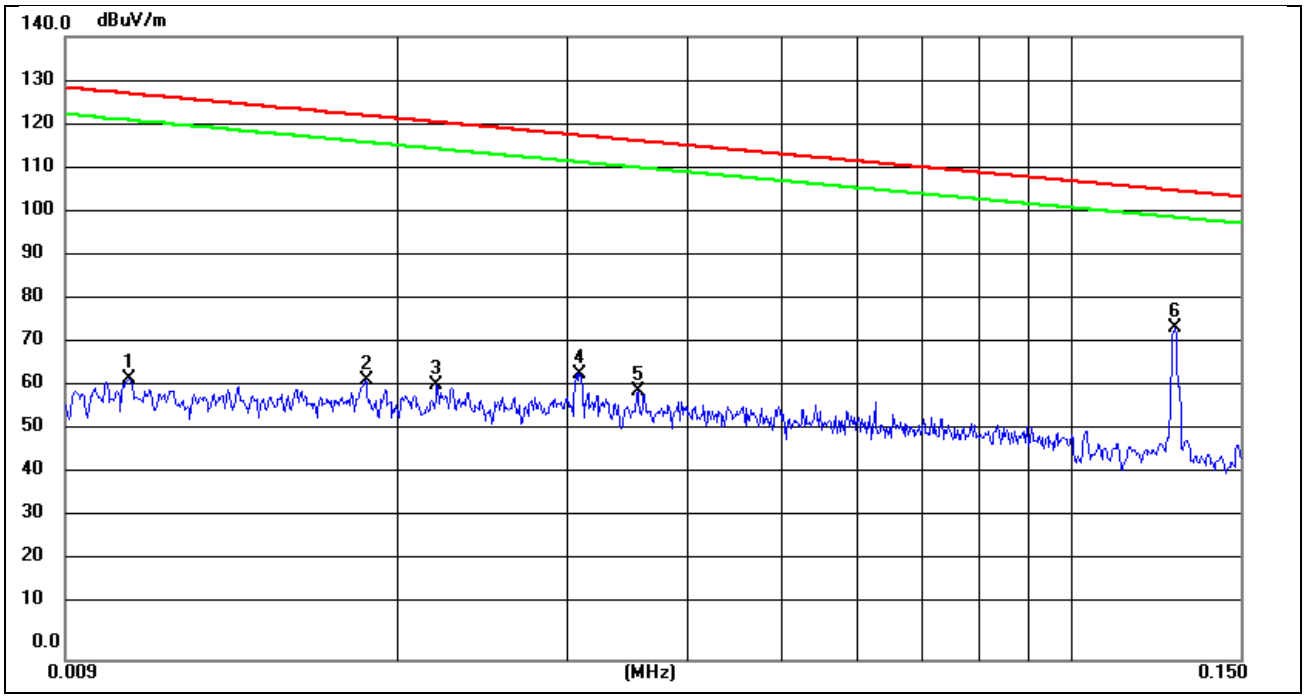
Temperature	24.3℃	Relative Humidity	51%
Atmosphere Pressure	101kPa		

TEST RESULTS

Please refer to section 8.1.

7.1. RADIATED SPURIOUS EMISSION

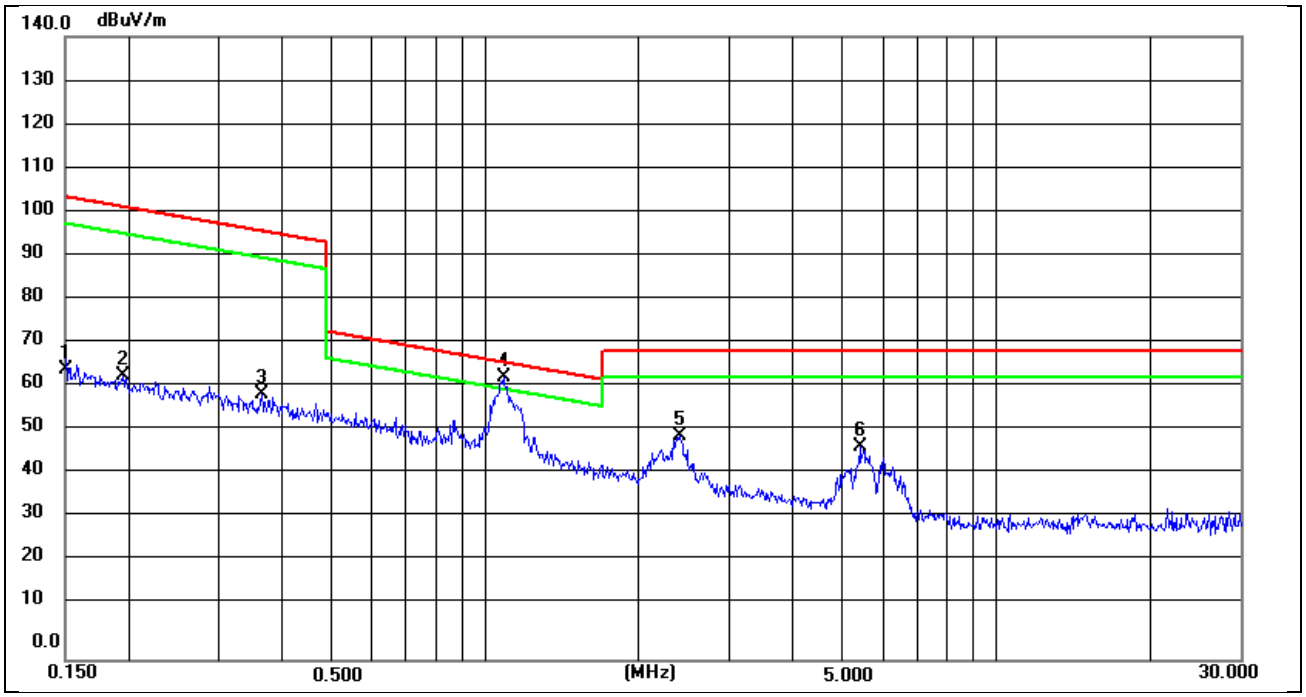
Mode:	M03
Power:	Battery 3.85V
TE:	Big
Date	2024/04/26
T/A/P	24.3℃/51%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	0.0105	42.80	20.43	63.23	127.16	-63.93	QP	coplanar
2	0.0184	42.45	20.31	62.76	122.29	-59.53	QP	coplanar
3	0.0218	41.59	20.26	61.85	120.82	-58.97	QP	coplanar
4	0.0309	44.31	20.13	64.44	117.79	-53.35	QP	coplanar
5	0.0354	40.34	20.08	60.42	116.61	-56.19	QP	coplanar
6	0.1280	54.89	19.63	74.52	105.45	-30.93	QP	coplanar

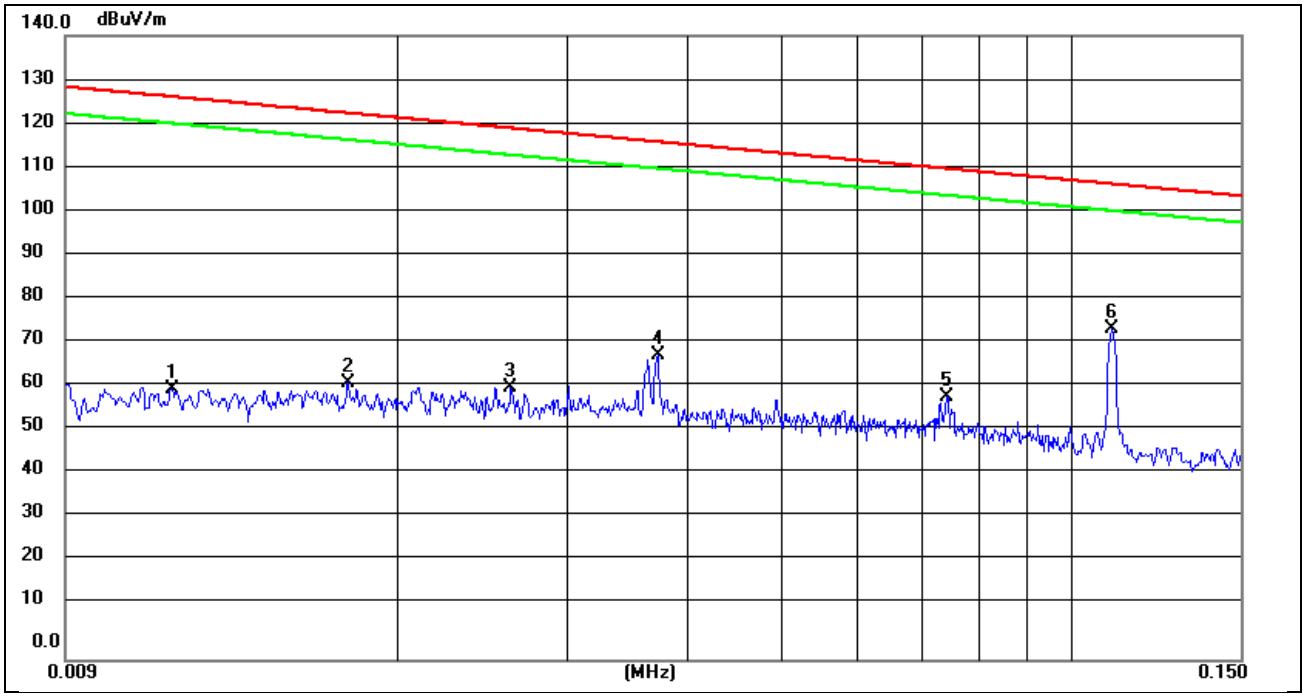
Mode:	M03
Power:	Battery 3.85V
TE:	Big
Date	2024/04/26
T/A/P	24.3℃/51%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	0.1508	45.60	19.65	65.25	104.03	-38.78	QP	coplanar
2	0.1945	44.42	19.64	64.06	101.82	-37.76	QP	coplanar
3	0.3634	40.23	19.61	59.84	96.39	-36.55	QP	coplanar
4	1.0824	44.03	19.44	63.47	66.94	-3.47	QP	coplanar
5	2.3962	30.86	19.57	50.43	69.50	-19.07	QP	coplanar
6	5.3900	28.11	19.78	47.89	69.50	-21.61	QP	coplanar

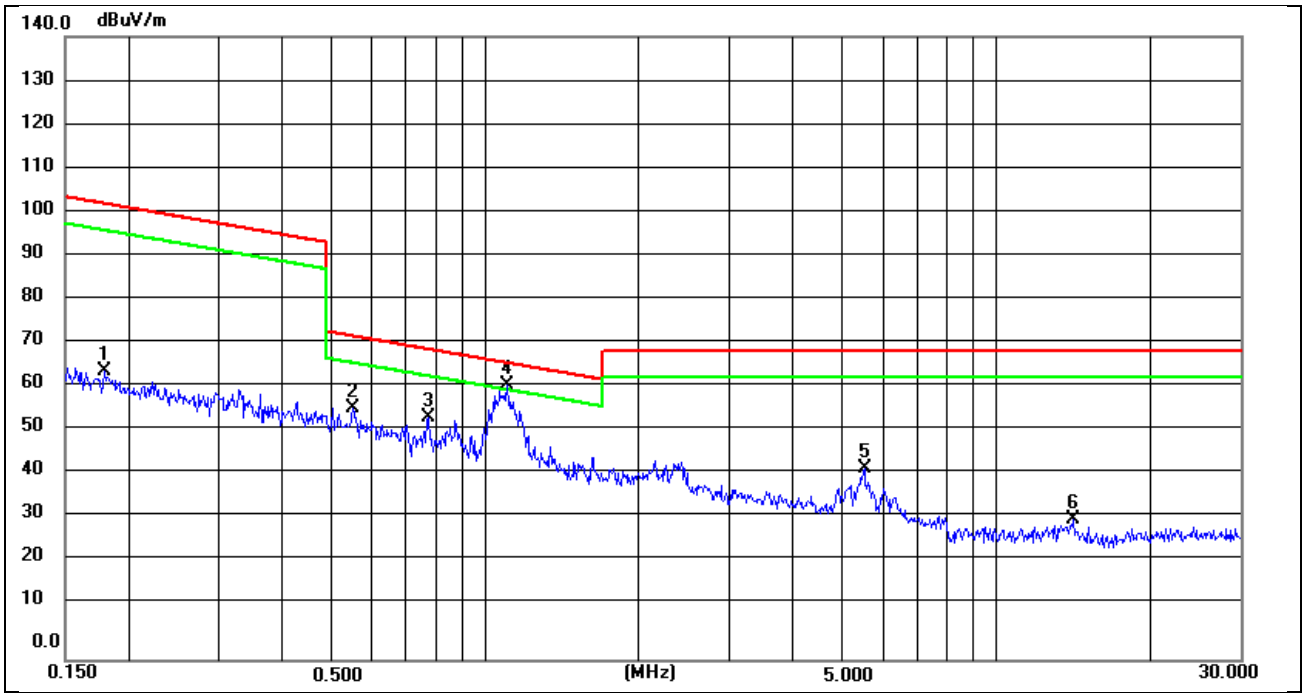
Mode:	M03
Power:	Battery 3.85V
TE:	Big
Date	2024/04/26
T/A/P	24.3℃/51%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	0.0116	40.42	20.41	60.83	126.30	-65.47	QP	coaxial
2	0.0177	41.81	20.32	62.13	122.63	-60.50	QP	coaxial
3	0.0261	40.96	20.20	61.16	119.26	-58.10	QP	coaxial
4	0.0372	48.38	20.07	68.45	116.18	-47.73	QP	coaxial
5	0.0742	39.55	19.66	59.21	110.19	-50.98	QP	coaxial
6	0.1104	54.63	19.54	74.17	106.74	-32.57	QP	coaxial

Mode:	M03
Power:	Battery 3.85V
TE:	Big
Date	2024/04/26
T/A/P	24.3℃/51%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	0.1796	45.43	19.64	65.07	102.51	-37.44	QP	coaxial
2	0.5493	36.96	19.57	56.53	72.81	-16.28	QP	coaxial
3	0.7711	34.91	19.51	54.42	69.87	-15.45	QP	coaxial
4	1.0997	42.30	19.44	61.74	66.80	-5.06	QP	coaxial
5	5.5054	23.48	19.76	43.24	69.50	-26.26	QP	coaxial
6	14.1376	11.36	20.35	31.71	69.50	-37.79	QP	coaxial

Note:

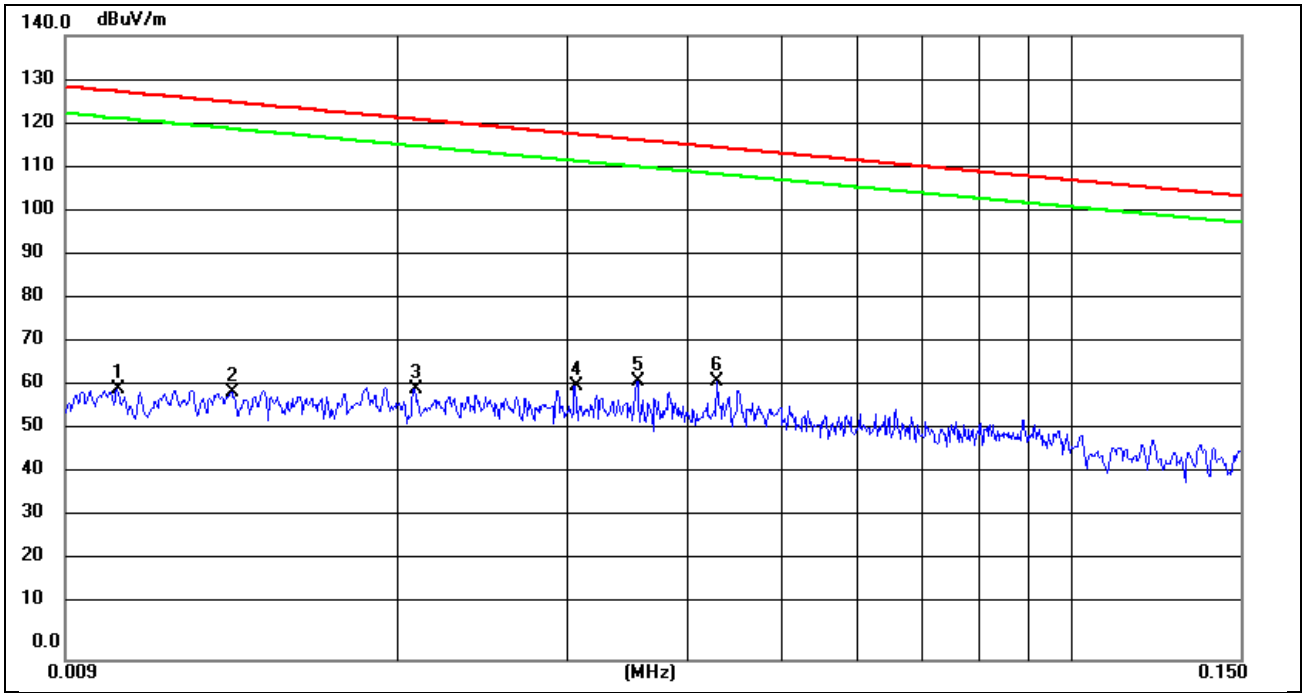
1.Measurement = Reading Level + Correct Factor.

2.Margin= Measurement - Limit.

3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

4. M01, M02 and M03 were all tested, and only M03 was recorded in the report as the worst mode.

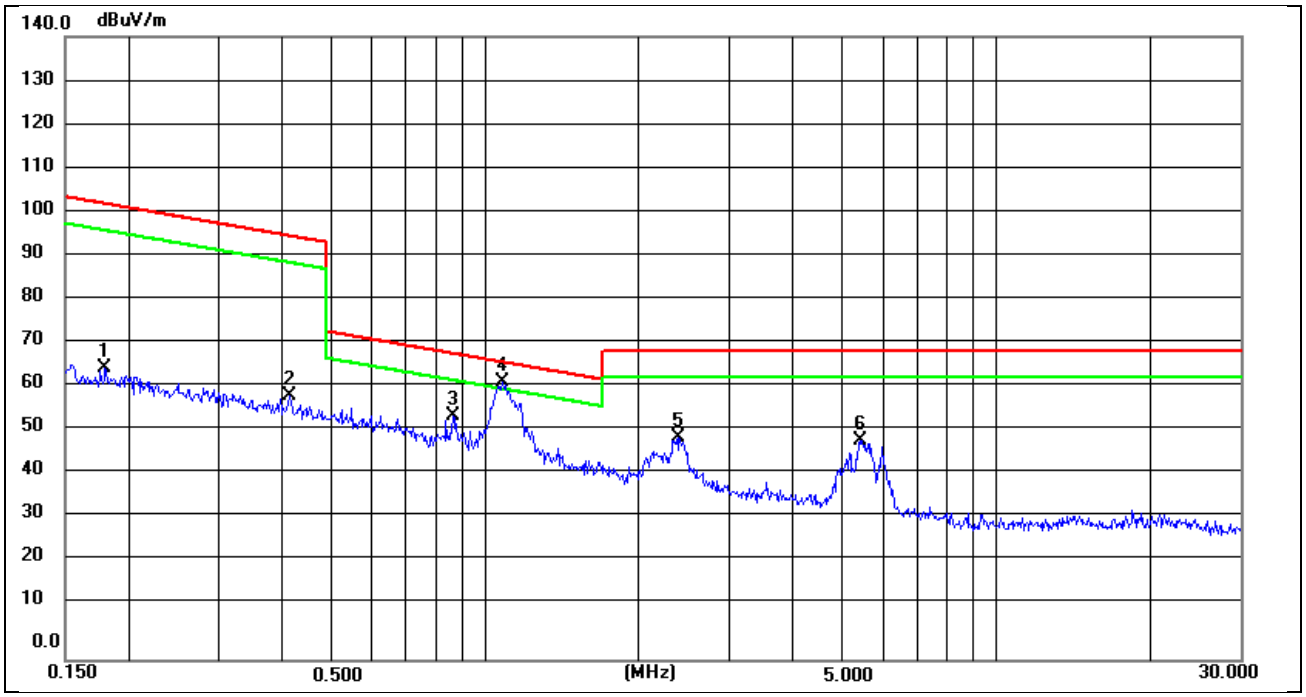
Mode:	M04
Power:	Battery 3.85V
TE:	Big
Date	2024/04/26
T/A/P	24.3℃/51%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	0.0102	40.23	20.43	60.66	127.41	-66.75	QP	coplanar
2	0.0134	39.66	20.38	60.04	125.04	-65.00	QP	coplanar
3	0.0208	40.53	20.28	60.81	121.23	-60.42	QP	coplanar
4	0.0305	41.27	20.13	61.40	117.90	-56.50	QP	coplanar
5	0.0354	42.47	20.08	62.55	116.61	-54.06	QP	coplanar
6	0.0429	42.61	20.01	62.62	114.94	-52.32	QP	coplanar

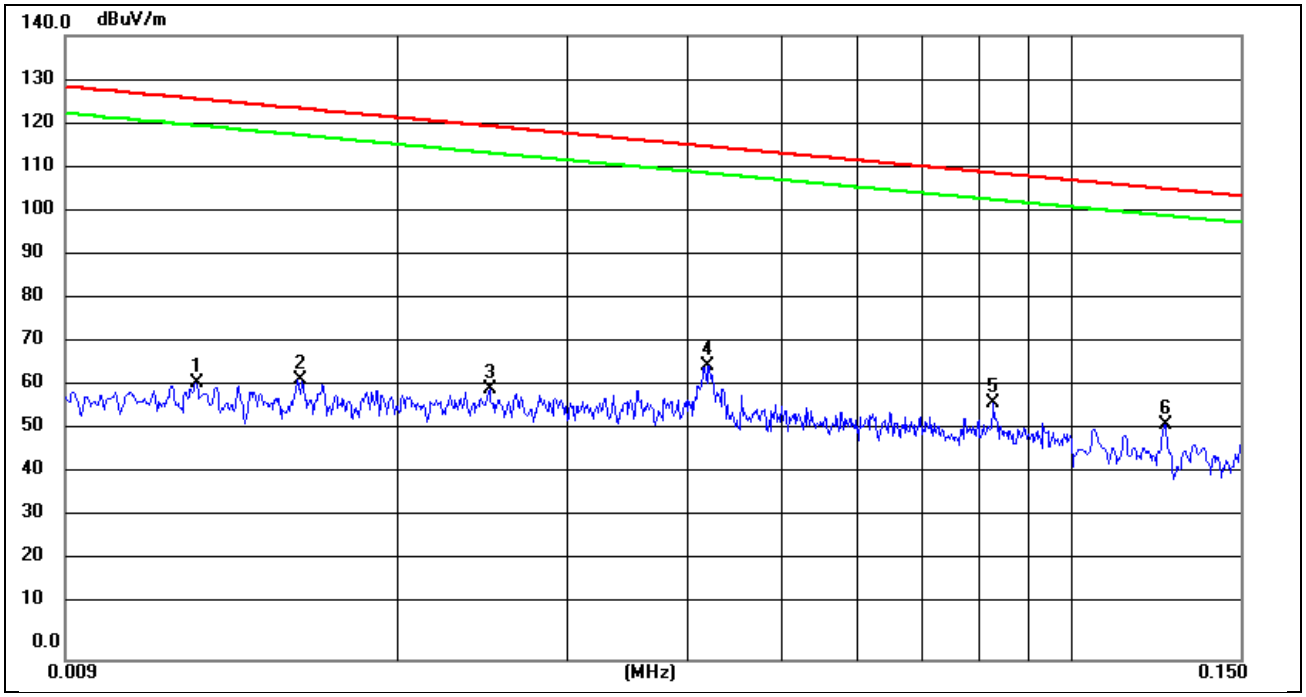
Mode:	M04
Power:	Battery 3.85V
TE:	Big
Date	2024/04/26
T/A/P	24.3℃/51%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	0.1796	46.20	19.64	65.84	102.51	-36.67	QP	coplanar
2	0.4127	39.71	19.60	59.31	95.29	-35.98	QP	coplanar
3	0.8618	35.37	19.49	54.86	68.91	-14.05	QP	coplanar
4	1.0766	43.11	19.44	62.55	66.98	-4.43	QP	coplanar
5	2.3836	30.41	19.57	49.98	69.50	-19.52	QP	coplanar
6	5.4186	29.61	19.78	49.39	69.50	-20.11	QP	coplanar

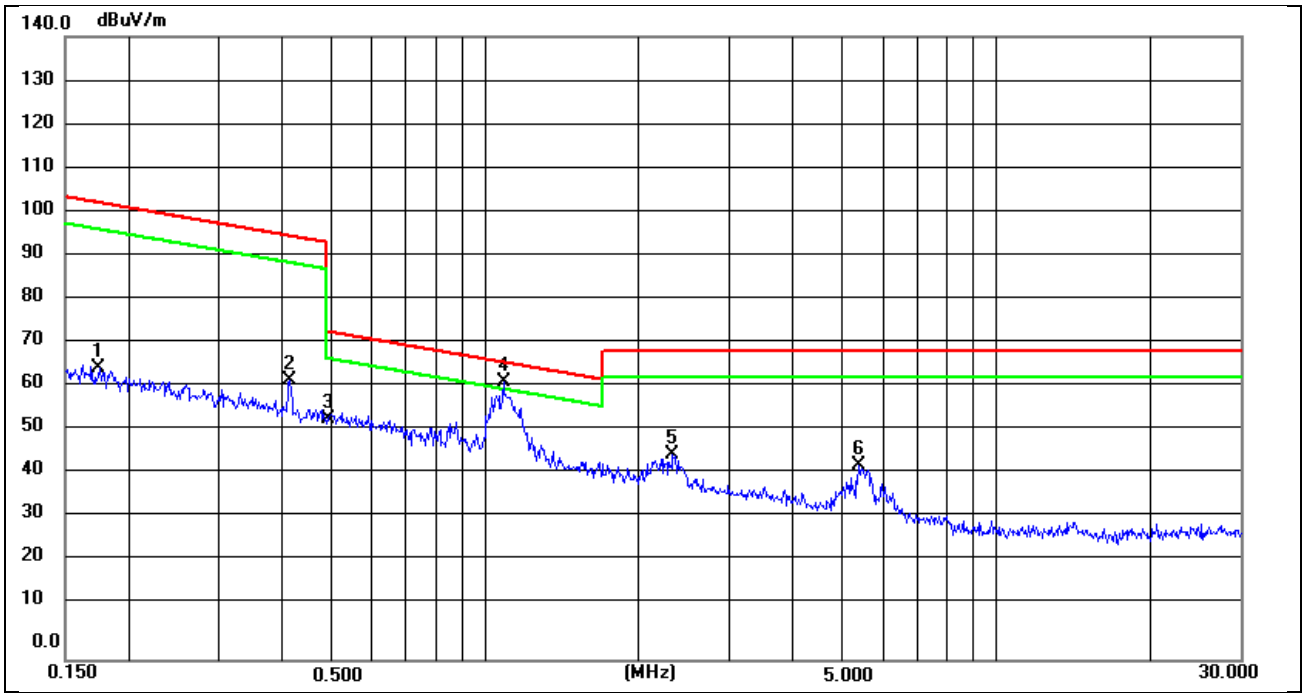
Mode:	M04
Power:	Battery 3.85V
TE:	Big
Date	2024/04/26
T/A/P	24.3℃/51%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	0.0123	41.76	20.40	62.16	125.79	-63.63	QP	coaxial
2	0.0157	42.43	20.35	62.78	123.67	-60.89	QP	coaxial
3	0.0249	40.53	20.22	60.75	119.67	-58.92	QP	coaxial
4	0.0419	46.15	20.02	66.17	115.15	-48.98	QP	coaxial
5	0.0831	37.96	19.71	57.67	109.20	-51.53	QP	coaxial
6	0.1253	33.27	19.62	52.89	105.64	-52.75	QP	coaxial

Mode:	M04
Power:	Battery 3.85V
TE:	Big
Date	2024/04/26
T/A/P	24.3℃/51%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	0.1749	46.11	19.64	65.75	102.74	-36.99	QP	coaxial
2	0.4127	43.14	19.60	62.74	95.29	-32.55	QP	coaxial
3	0.4915	34.49	19.59	54.08	73.77	-19.69	QP	coaxial
4	1.0824	43.01	19.44	62.45	66.94	-4.49	QP	coaxial
5	2.3213	26.57	19.57	46.14	69.50	-23.36	QP	coaxial
6	5.3615	24.03	19.79	43.82	69.50	-25.68	QP	coaxial

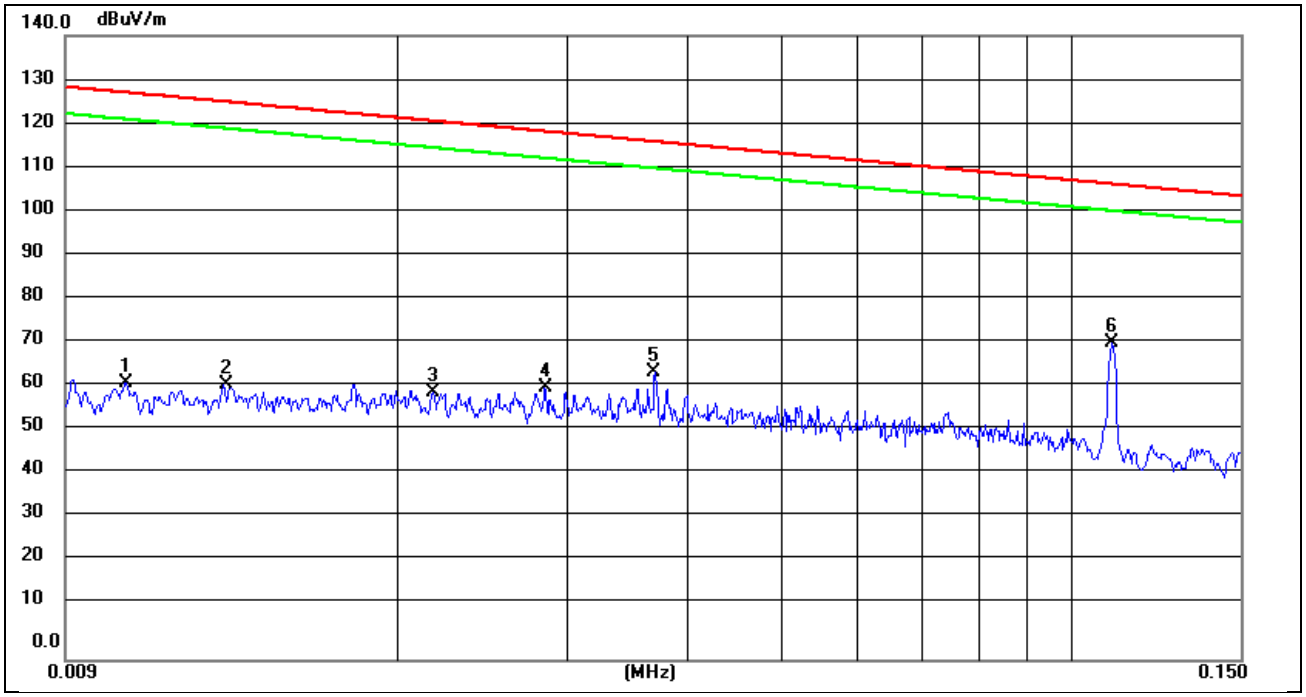
Note:

1.Measurement = Reading Level + Correct Factor.

2.Margin= Measurement - Limit.

3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

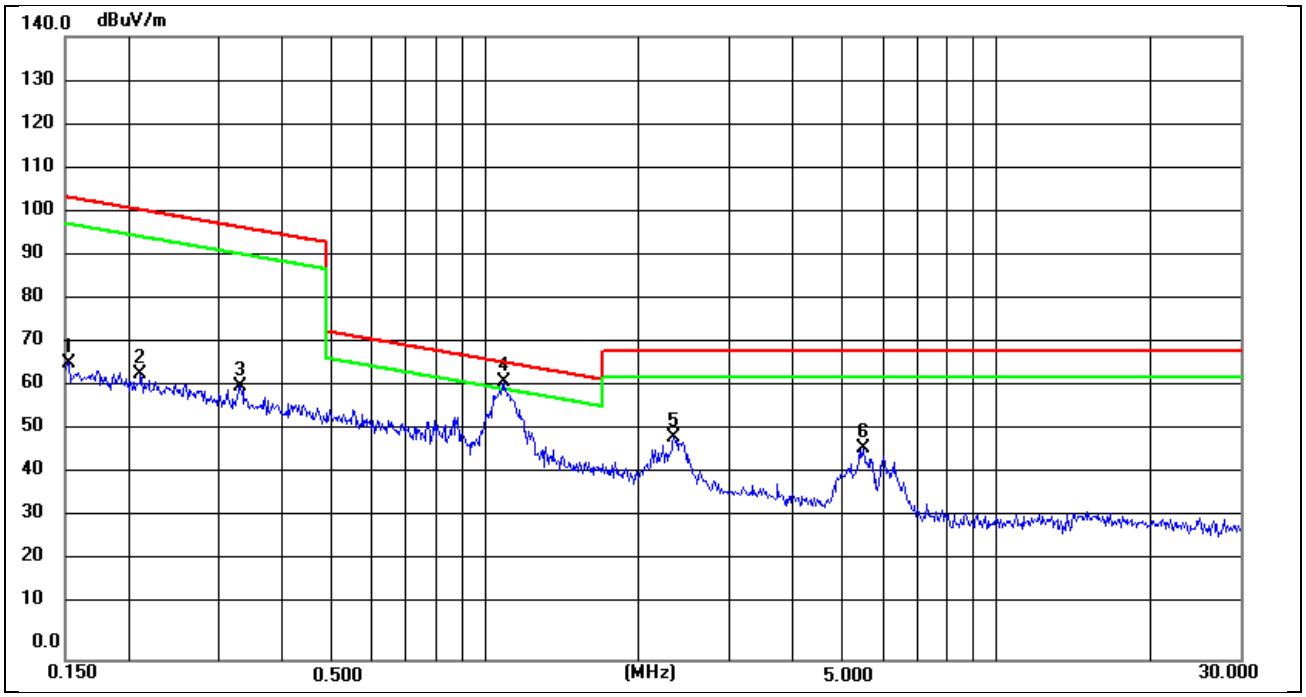
Mode:	M05
Power:	Battery 3.85V
TE:	Big
Date	2024/04/26
T/A/P	24.3℃/51%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	0.0104	41.68	20.43	62.11	127.24	-65.13	QP	coplanar
2	0.0132	41.43	20.39	61.82	125.18	-63.36	QP	coplanar
3	0.0217	39.88	20.27	60.15	120.86	-60.71	QP	coplanar
4	0.0284	40.83	20.17	61.00	118.52	-57.52	QP	coplanar
5	0.0369	44.41	20.07	64.48	116.25	-51.77	QP	coplanar
6	0.1104	51.57	19.54	71.11	106.74	-35.63	QP	coplanar

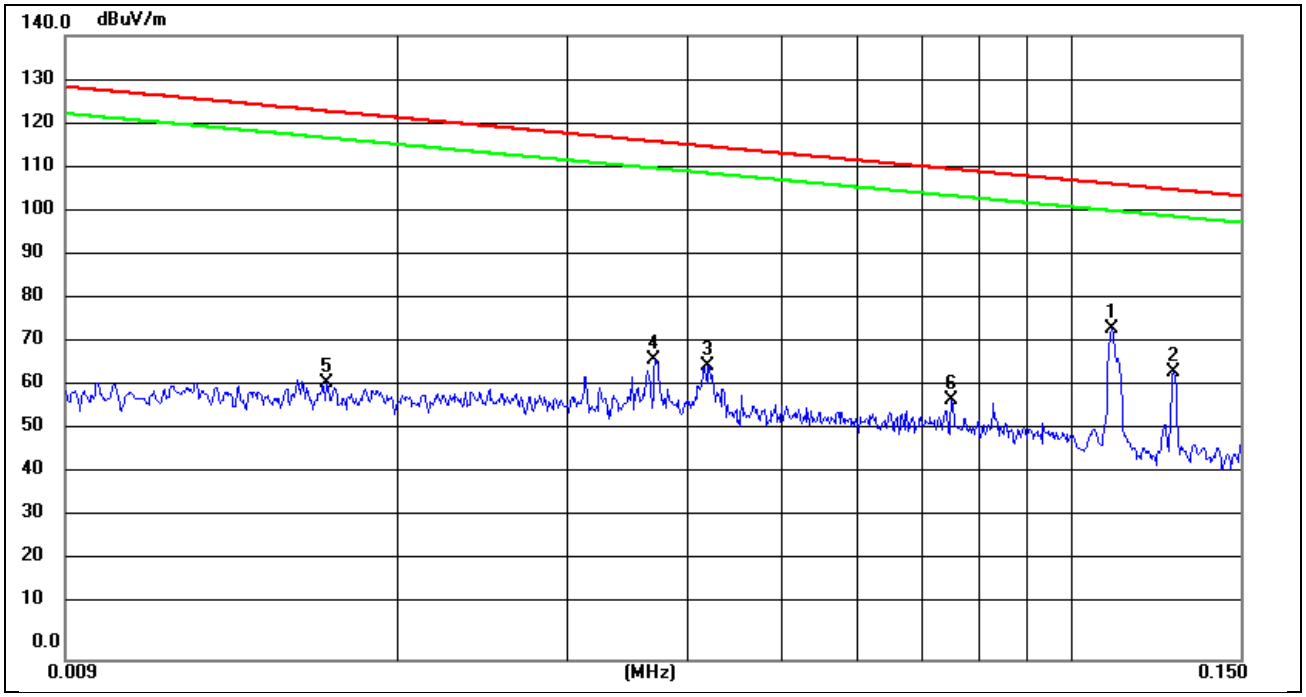
Mode:	M05
Power:	Battery 3.85V
TE:	Big
Date	2024/04/26
T/A/P	24.3℃/51%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	0.1524	46.98	19.65	66.63	103.94	-37.31	QP	coplanar
2	0.2106	44.50	19.63	64.13	101.13	-37.00	QP	coplanar
3	0.3303	41.99	19.62	61.61	97.22	-35.61	QP	coplanar
4	1.0824	43.04	19.44	62.48	66.94	-4.46	QP	coplanar
5	2.3336	30.67	19.57	50.24	69.50	-19.26	QP	coplanar
6	5.4763	27.81	19.77	47.58	69.50	-21.92	QP	coplanar

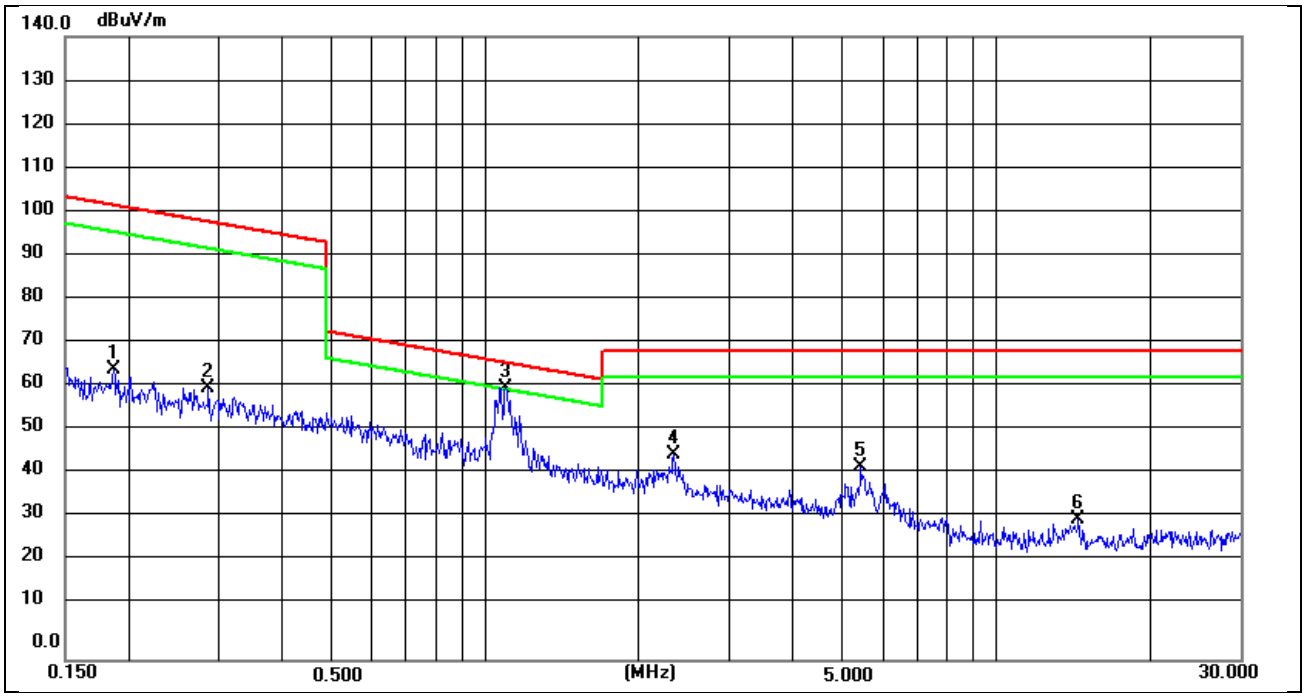
Mode:	M05
Power:	Battery 3.85V
TE:	Big
Date	2024/04/26
T/A/P	24.3℃/51%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	0.1104	54.91	19.54	74.45	106.74	-32.29	QP	coaxial
2	0.1278	44.86	19.63	64.49	105.47	-40.98	QP	coaxial
3	0.0419	46.15	20.02	66.17	115.15	-48.98	QP	coaxial
4	0.0369	47.18	20.07	67.25	116.25	-49.00	QP	coaxial
5	0.0169	42.00	20.34	62.34	123.03	-60.69	QP	coaxial
6	0.0751	38.60	19.67	58.27	110.08	-51.81	QP	coaxial

Mode:	M05
Power:	Battery 3.85V
TE:	Big
Date	2024/04/26
T/A/P	24.3℃/51%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	0.1863	45.58	19.64	65.22	102.19	-36.97	QP	coaxial
2	0.2862	41.57	19.62	61.19	98.47	-37.28	QP	coaxial
3	1.0938	41.64	19.44	61.08	66.84	-5.76	QP	coaxial
4	2.3335	26.74	19.57	46.31	69.50	-23.19	QP	coaxial
5	5.4186	23.85	19.78	43.63	69.50	-25.87	QP	coaxial
6	14.4403	11.23	20.37	31.60	69.50	-37.90	QP	coaxial

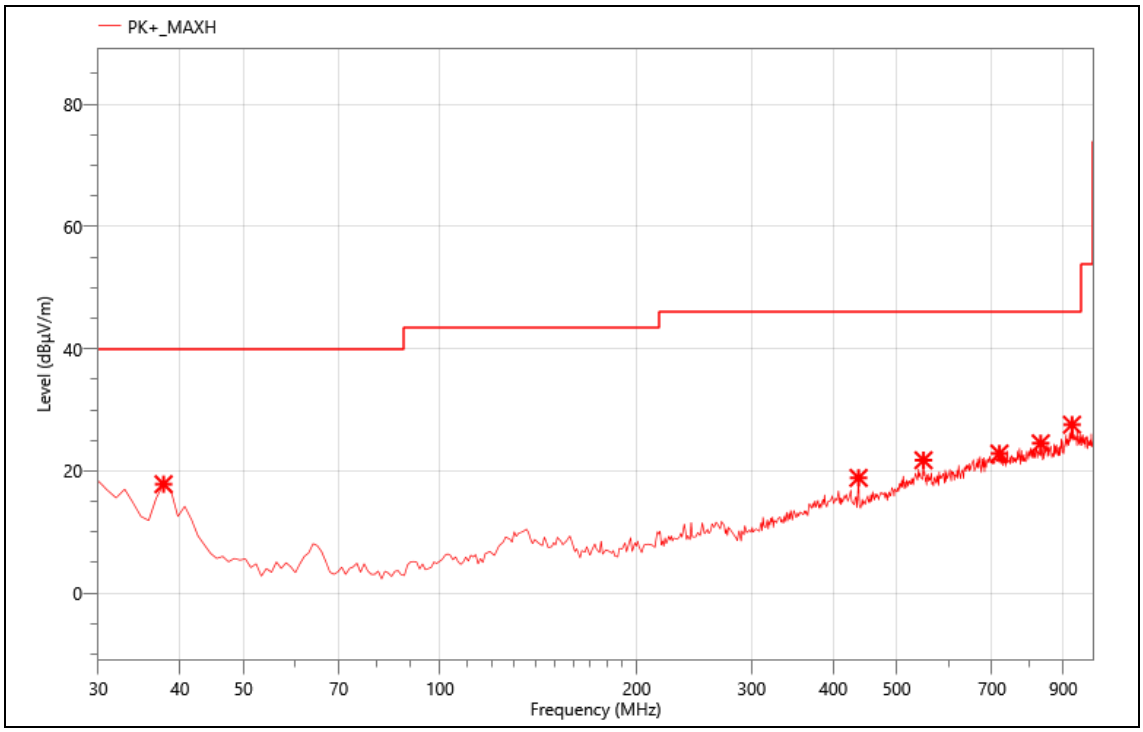
Note:

1.Measurement = Reading Level + Correct Factor.

2.Margin= Measurement - Limit.

3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

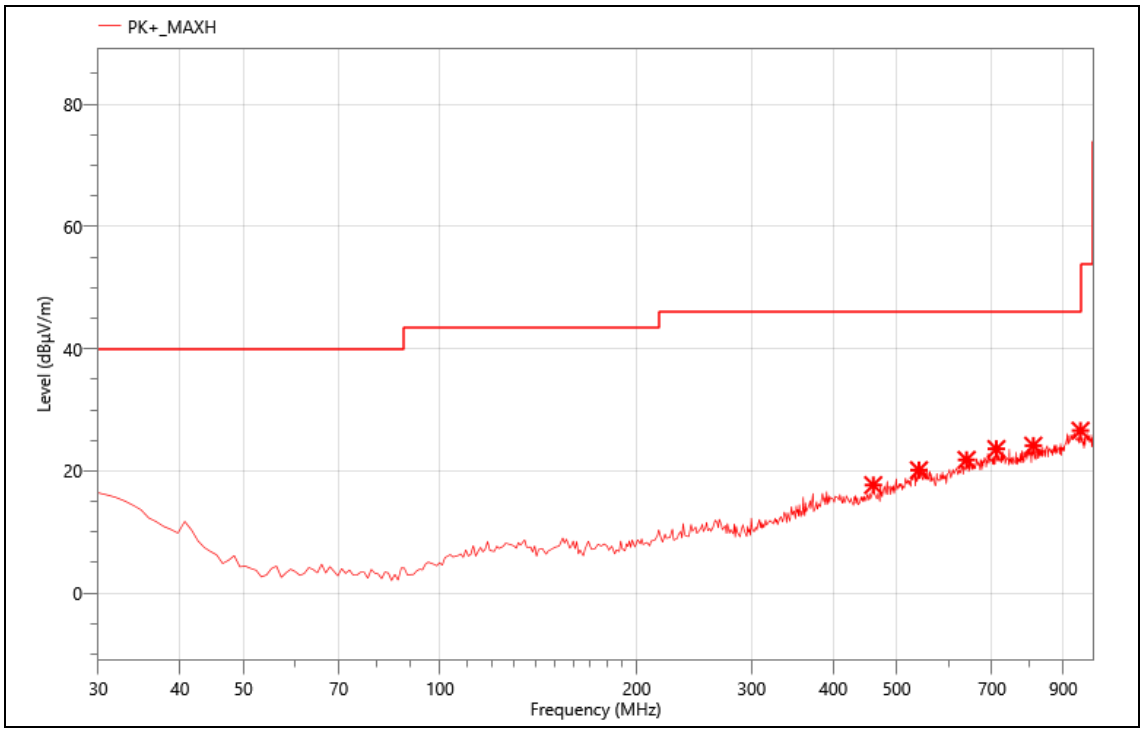
Mode:	M03
Power:	Battery 3.85V
TE:	Berny
Date	2024/04/25
T/A/P	24.5℃/52%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	37.760	36.59	-18.76	17.83	40.00	22.17	PK+	V
2	437.400	33.12	-14.26	18.86	46.00	27.14	PK+	V
3	549.920	31.48	-9.73	21.75	46.00	24.25	PK+	V
4	718.700	29.77	-6.91	22.86	46.00	23.14	PK+	V
5	831.220	30.37	-5.84	24.53	46.00	21.47	PK+	V
6	928.220	30.66	-3.09	27.57	46.00	18.43	PK+	V

Mode:	M03
Power:	Battery 3.85V
TE:	Berny
Date	2024/04/25
T/A/P	24.5℃/52%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	460.680	31.34	-13.65	17.69	46.00	28.31	PK+	H
2	541.190	30.32	-10.19	20.13	46.00	25.87	PK+	H
3	640.130	30.51	-8.69	21.82	46.00	24.18	PK+	H
4	710.940	30.69	-7.09	23.60	46.00	22.40	PK+	H
5	809.880	30.38	-6.23	24.15	46.00	21.85	PK+	H
6	956.350	30.31	-3.71	26.60	46.00	19.40	PK+	H

Note:

1.Measurement = Reading Level + Correct Factor.

2.Margin=Limit- Measurement.

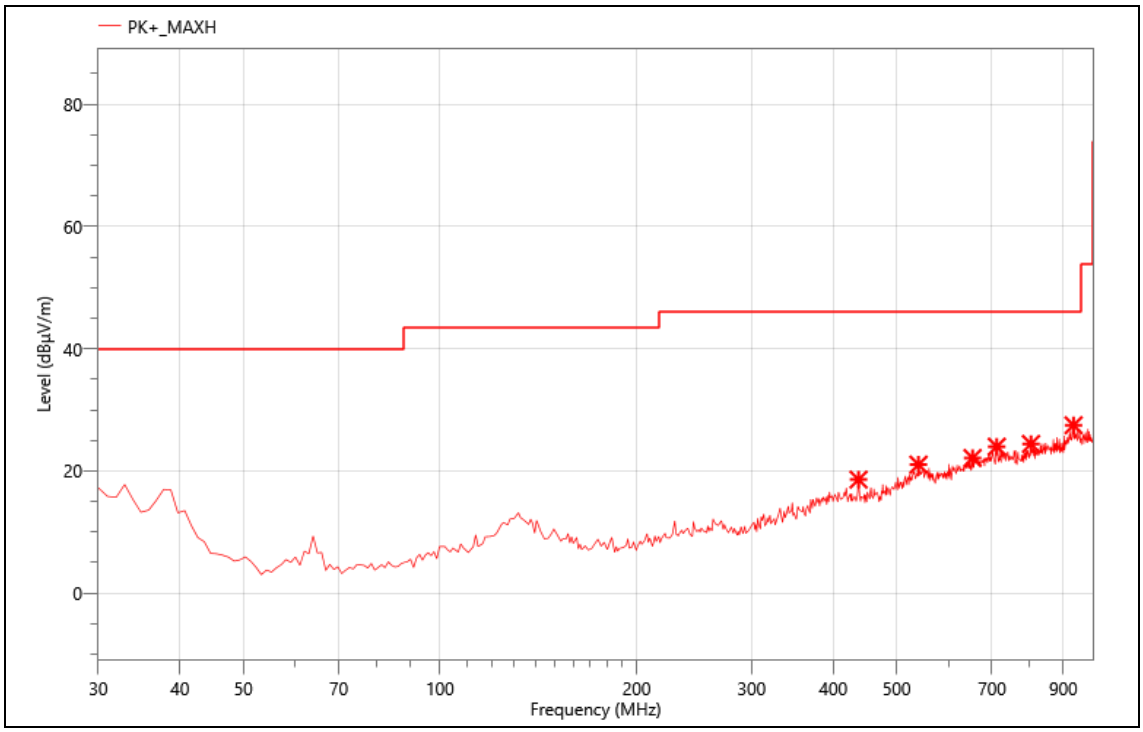
3. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

4. Peak: Peak detector.

5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

6. M01, M02 and M03 were all tested, and only M03 was recorded in the report as the worst mode.

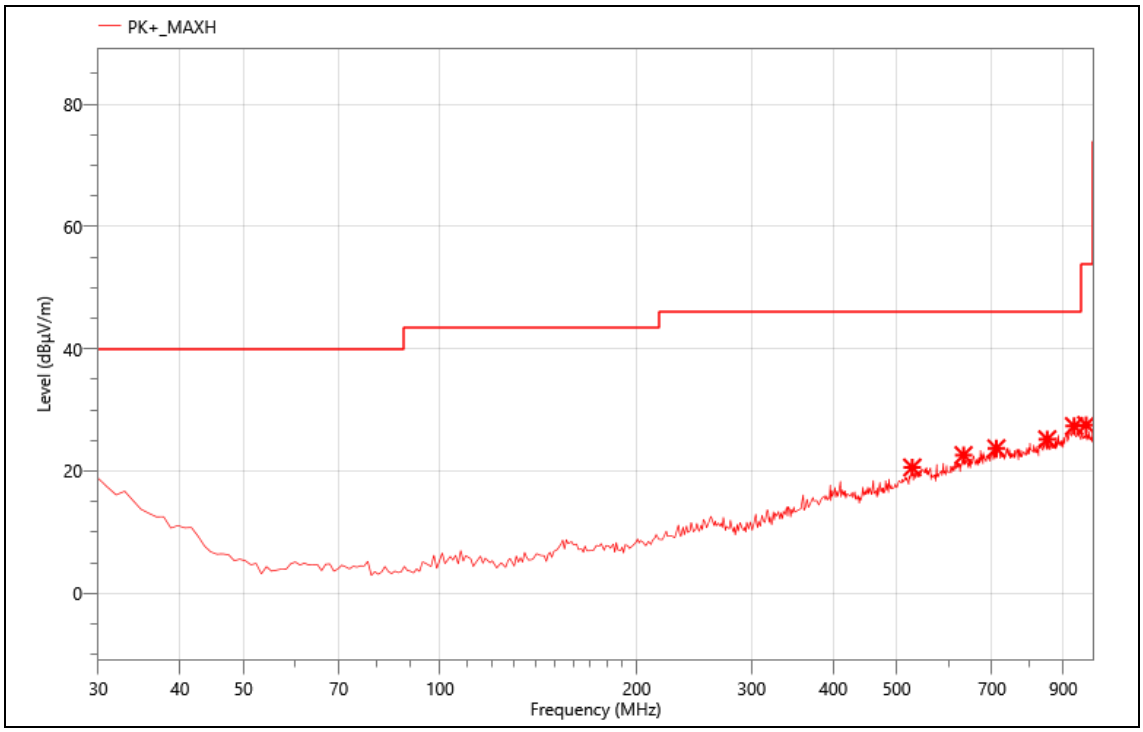
Mode:	M04
Power:	Battery 3.85V
TE:	Berny
Date	2024/04/25
T/A/P	24.5℃/52%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	437.400	32.85	-14.26	18.59	46.00	27.41	PK+	V
2	540.220	31.30	-10.25	21.05	46.00	24.95	PK+	V
3	653.710	30.52	-8.4	22.12	46.00	23.88	PK+	V
4	711.910	31.05	-7.07	23.98	46.00	22.02	PK+	V
5	803.090	30.71	-6.29	24.42	46.00	21.58	PK+	V
6	933.070	30.51	-3.03	27.48	46.00	18.52	PK+	V

Mode:	M04
Power:	Battery 3.85V
TE:	Berny
Date	2024/04/25
T/A/P	24.5℃/52%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	528.580	31.39	-10.79	20.60	46.00	25.40	PK+	H
2	633.340	31.56	-8.94	22.62	46.00	23.38	PK+	H
3	710.940	30.83	-7.09	23.74	46.00	22.26	PK+	H
4	850.620	30.88	-5.67	25.21	46.00	20.79	PK+	H
5	935.010	30.45	-3.08	27.37	46.00	18.63	PK+	H
6	975.750	31.24	-3.7	27.54	53.90	26.36	PK+	H

Note:

1.Measurement = Reading Level + Correct Factor.

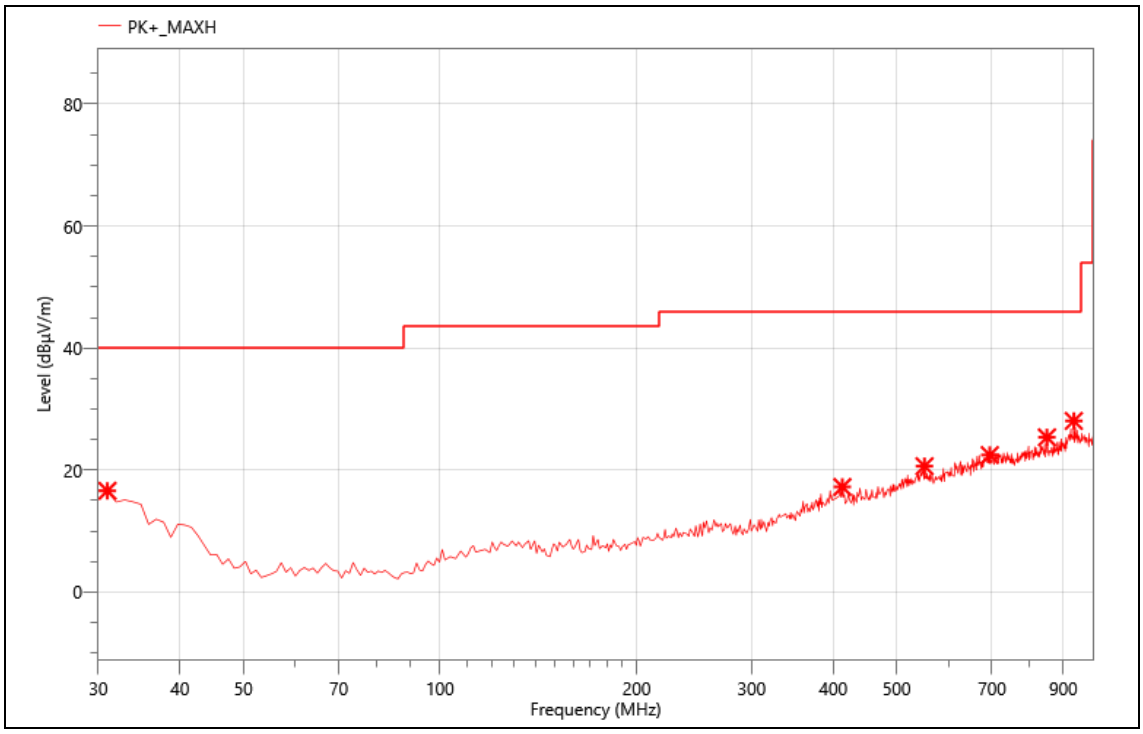
2.Margin=Limit- Measurement.

3. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

4. Peak: Peak detector.

5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

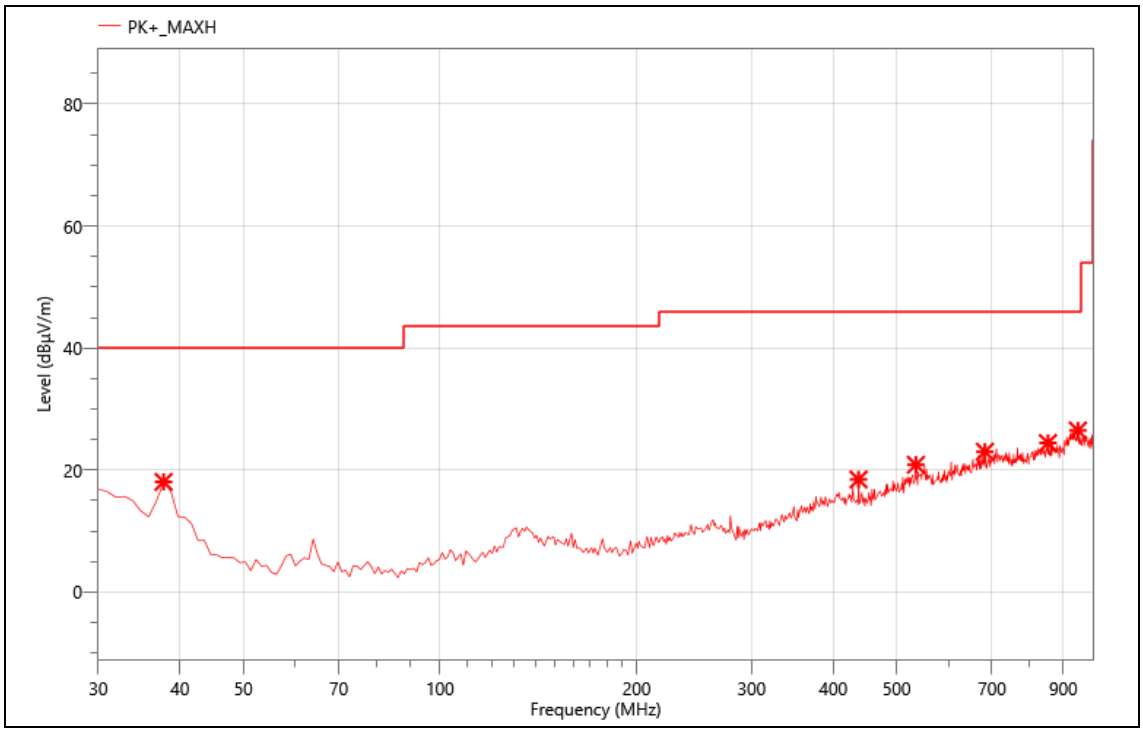
Mode:	M05
Power:	Battery 3.85V
TE:	Berny
Date	2024/04/25
T/A/P	24.5℃/52%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	30.970	31.38	-14.8	16.58	40.00	23.42	PK+	H
2	413.150	31.04	-13.83	17.21	46.00	28.79	PK+	H
3	551.860	30.47	-9.84	20.63	46.00	25.37	PK+	H
4	694.450	30.10	-7.65	22.45	46.00	23.55	PK+	H
5	849.650	31.06	-5.71	25.35	46.00	20.65	PK+	H
6	934.040	31.10	-3.05	28.05	46.00	17.95	PK+	H

Mode:	M05
Power:	Battery 3.85V
TE:	Berny
Date	2024/04/25
T/A/P	24.5℃/52%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	37.760	36.81	-18.76	18.05	40.00	21.95	PK+	V
2	437.400	32.71	-14.26	18.45	46.00	27.55	PK+	V
3	535.370	31.35	-10.49	20.86	46.00	25.14	PK+	V
4	682.810	30.75	-7.75	23.00	46.00	23.00	PK+	V
5	852.560	30.07	-5.64	24.43	46.00	21.57	PK+	V
6	947.620	29.91	-3.42	26.49	46.00	19.51	PK+	V

Note:

1.Measurement = Reading Level + Correct Factor.

2.Margin=Limit- Measurement.

3. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

4. Peak: Peak detector.

5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

8. AC POWER LINE CONDUCTED EMISSION

LIMITS

Please refer to CFR 47 FCC §15.207 (a)

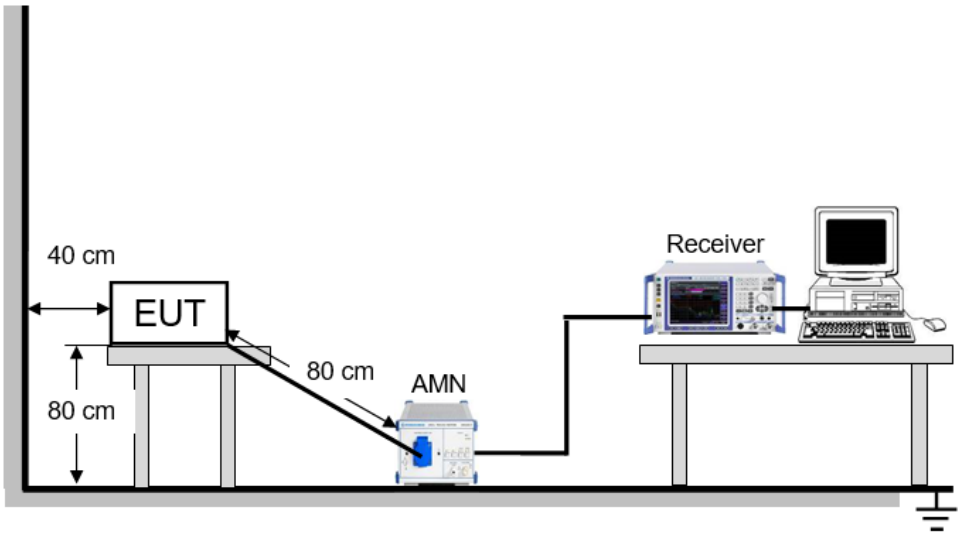
FREQUENCY (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

TEST PROCEDURE

The EUT is put on a table of non-conducting material that is 80 cm high. The vertical conducting wall of shielding is located 40 cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

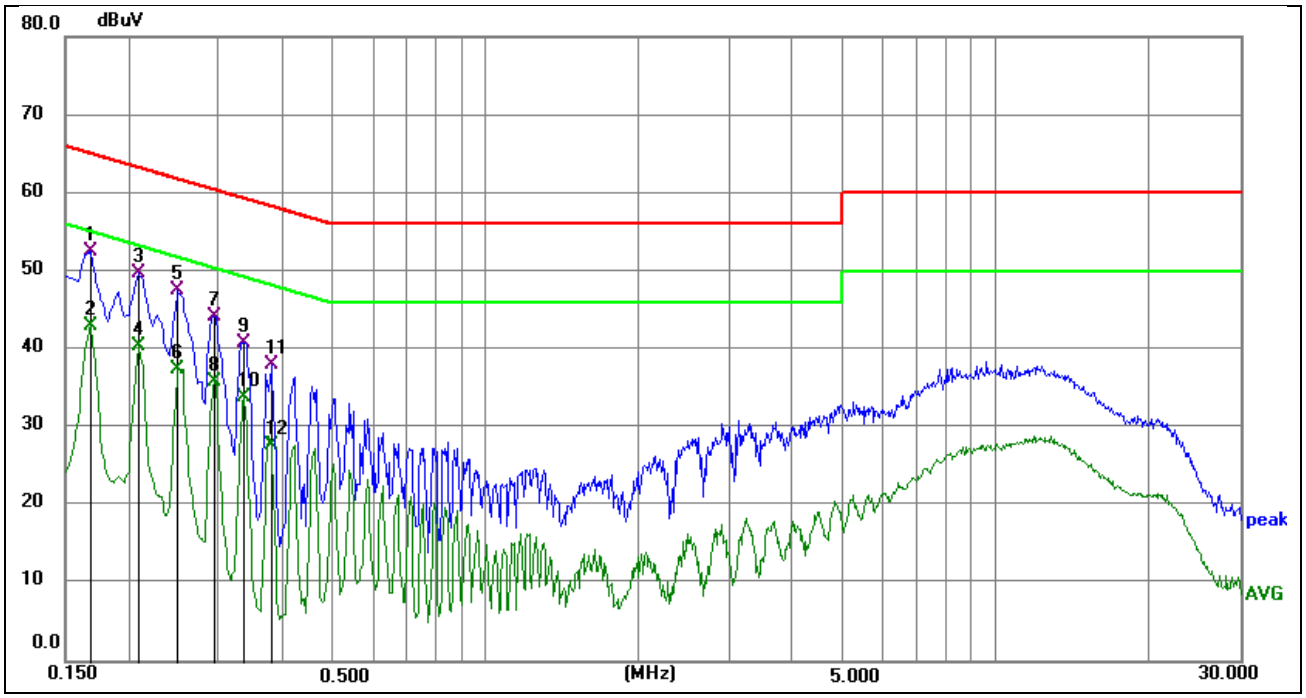
TEST SETUP



TEST ENVIRONMENT

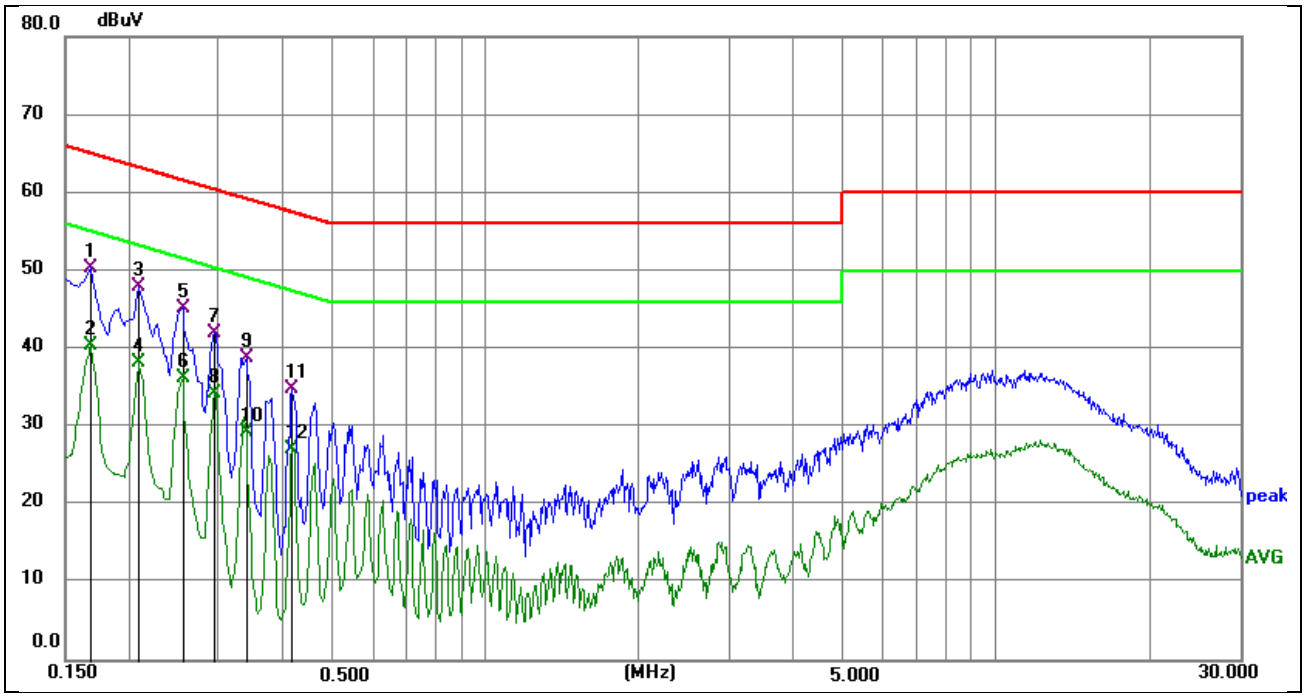
Temperature	24.2℃	Relative Humidity	53%
Atmosphere Pressure	101kPa		

TEST RESULTS



Phase: L1	Mode: M03

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1680	42.69	9.81	52.50	65.06	-12.56	QP
2	0.1680	33.25	9.81	43.06	55.06	-12.00	AVG
3	0.2085	39.95	9.80	49.75	63.26	-13.51	QP
4	0.2085	30.62	9.80	40.42	53.26	-12.84	AVG
5	0.2490	37.70	9.85	47.55	61.79	-14.24	QP
6	0.2490	27.66	9.85	37.51	51.79	-14.28	AVG
7	0.2940	34.06	10.04	44.10	60.41	-16.31	QP
8	0.2940	25.85	10.04	35.89	50.41	-14.52	AVG
9	0.3345	31.01	9.87	40.88	59.34	-18.46	QP
10	0.3345	24.05	9.87	33.92	49.34	-15.42	AVG
11	0.3795	28.20	9.78	37.98	58.29	-20.31	QP
12	0.3795	17.97	9.78	27.75	48.29	-20.54	AVG



Phase: N	Mode: M03

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1680	40.40	9.89	50.29	65.06	-14.77	QP
2	0.1680	30.42	9.89	40.31	55.06	-14.75	AVG
3	0.2085	38.15	9.87	48.02	63.26	-15.24	QP
4	0.2085	28.25	9.87	38.12	53.26	-15.14	AVG
5	0.2535	35.30	9.85	45.15	61.64	-16.49	QP
6	0.2535	26.29	9.85	36.14	51.64	-15.50	AVG
7	0.2940	32.08	9.87	41.95	60.41	-18.46	QP
8	0.2940	24.29	9.87	34.16	50.41	-16.25	AVG
9	0.3390	29.06	9.83	38.89	59.23	-20.34	QP
10	0.3390	19.39	9.83	29.22	49.23	-20.01	AVG
11	0.4155	24.96	9.81	34.77	57.54	-22.77	QP
12	0.4155	17.29	9.81	27.10	47.54	-20.44	AVG

Note: 1. Result = Reading + Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).
4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

Note: All the modes have been tested, only the worst data was recorded in the report(M03).

9. 20DB BANDWIDTH

LIMITS

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. In the case of intentional radiators operating under the provisions of subpart E, the emission bandwidth may span across multiple contiguous frequency bands identified in that subpart. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

TEST PROCEDURE

a.) The EUT operates at maximum output power according to the user manual.

b.) If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.

c.) If the EUT is a floor standing device, it is placed on the ground.

d.) Auxiliary equipment and cables were positioned to simulate normal operation conditions.

f.) The EUT is connected to DC Power Source or an adapter.

e.) The measurement distance is 3 meter.

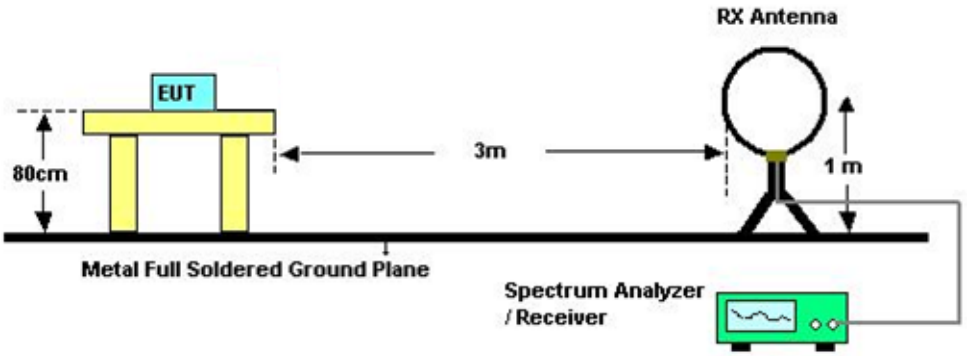
f.) The EUT was set into operation.

g.) Adjust the test instrument for the following setting.

RBW	1kHz
VBW	3*RBW
Detector	Peak
Sweep time	Auto
Trace Mode	Max hold

h.) Allow trace to fully stabilize.

TEST SETUP



TEST ENVIRONMENT

Temperature	23.5℃	Relative Humidity	54%
Atmosphere Pressure	101kPa		

TEST RESULTS

For phone

Frequency (kHz)	20dB Bandwidth (kHz)	Result
123.5	2.695	Pass

For Watch

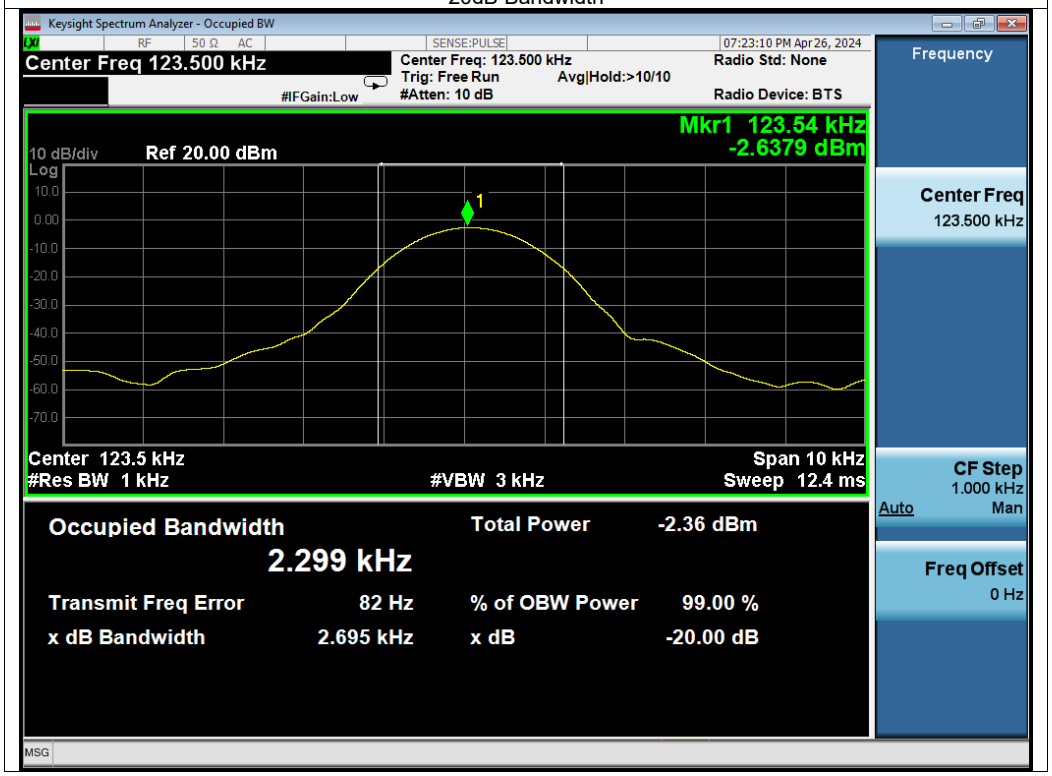
Frequency (kHz)	20dB Bandwidth (kHz)	Result
325.1	2.786	Pass

For Earphone

Frequency (kHz)	20dB Bandwidth (kHz)	Result
121.5	2.712	Pass

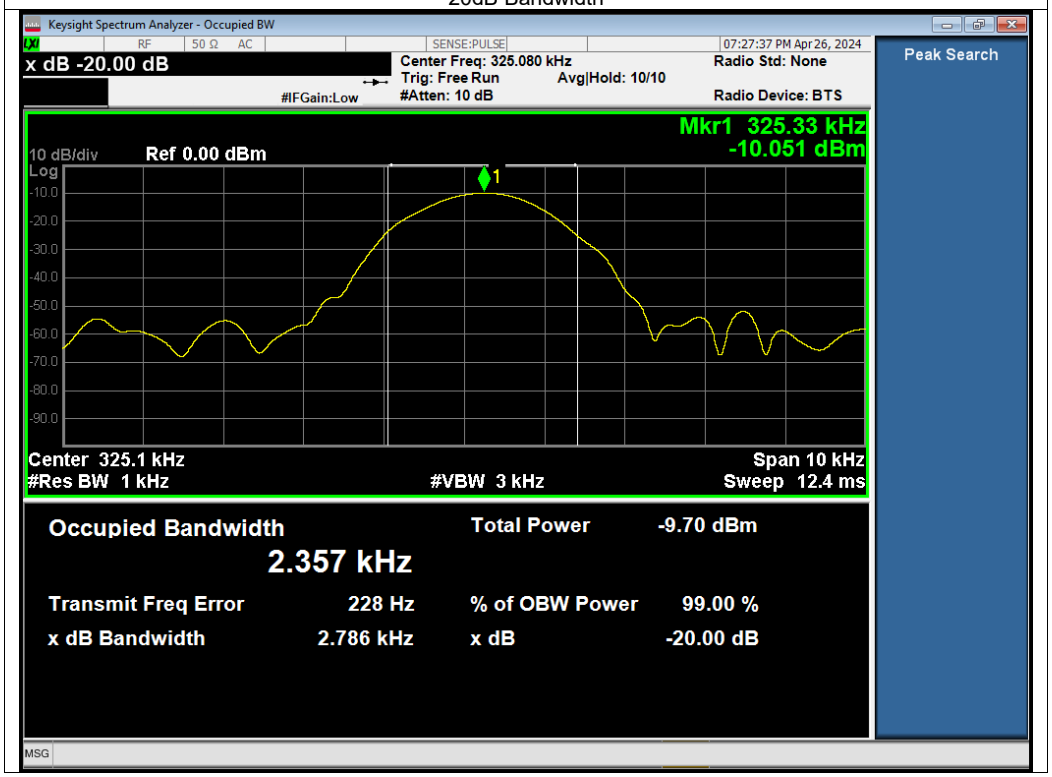
For phone

Test Graphs
20dB Bandwidth



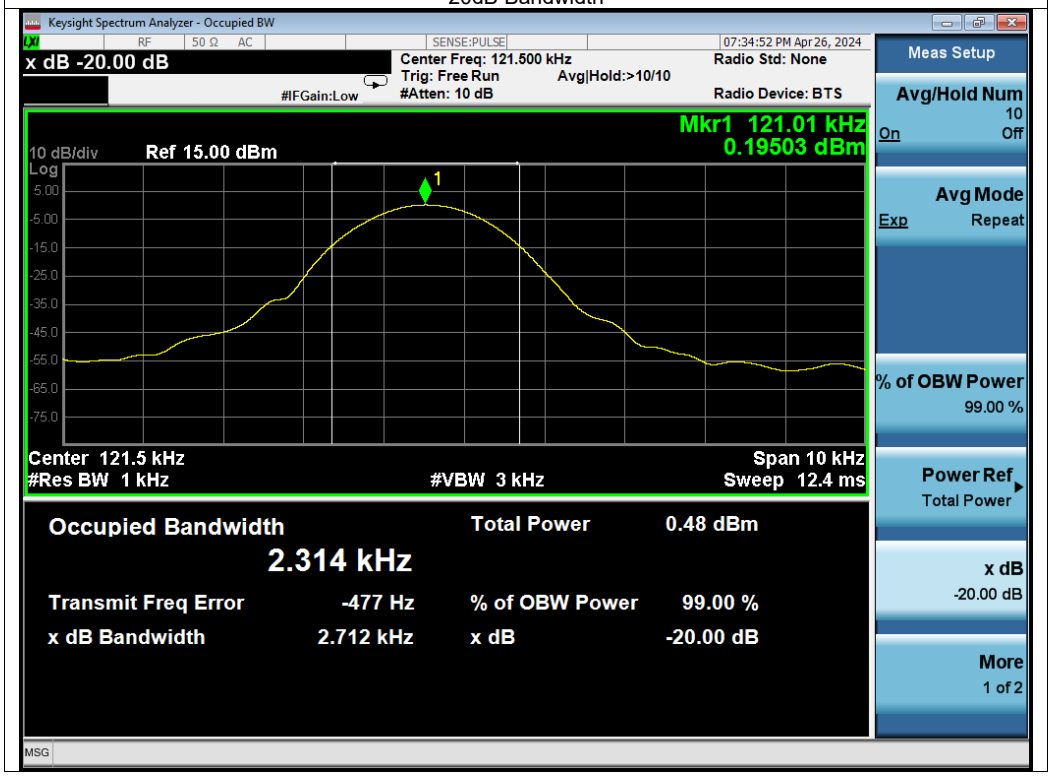
For Watch

Test Graphs
20dB Bandwidth



For Earphone

Test Graphs
20dB Bandwidth



10. ANTENNA REQUIREMENT

REQUIREMENT

Please refer to FCC §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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

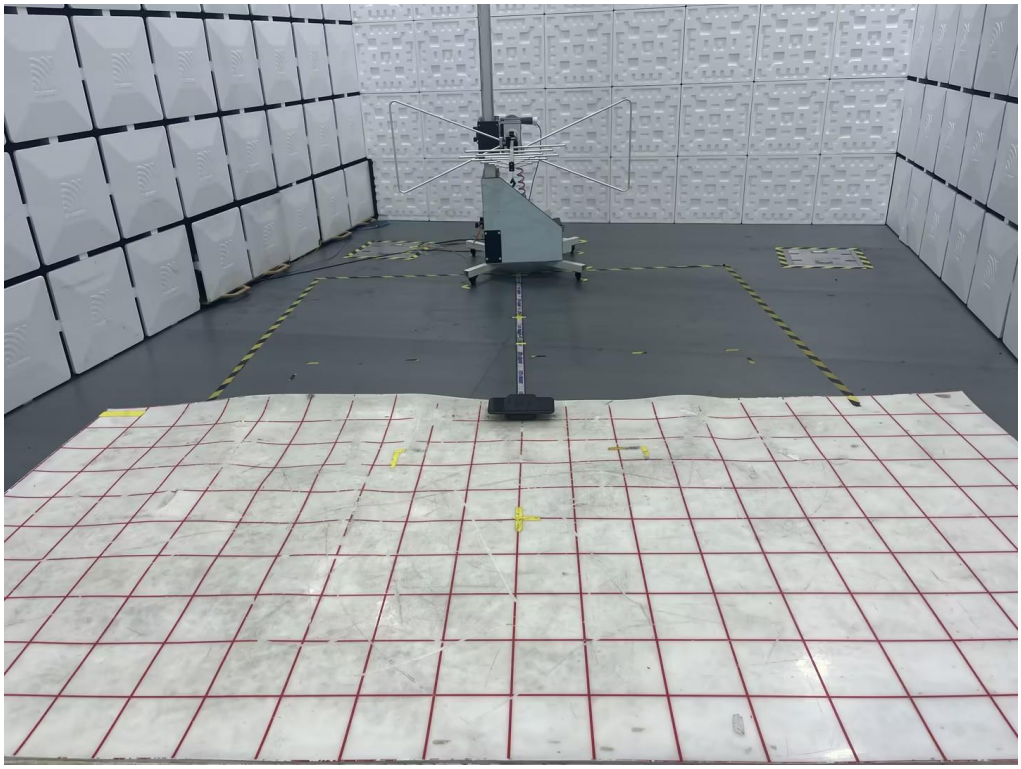
DESCRIPTION

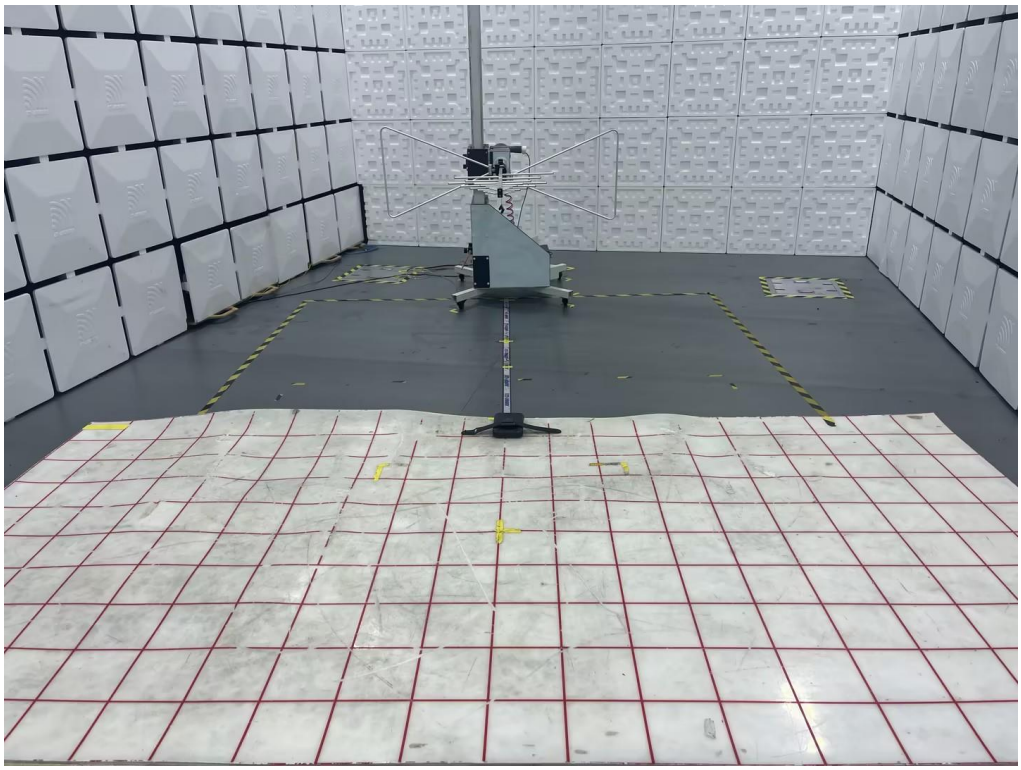
Pass

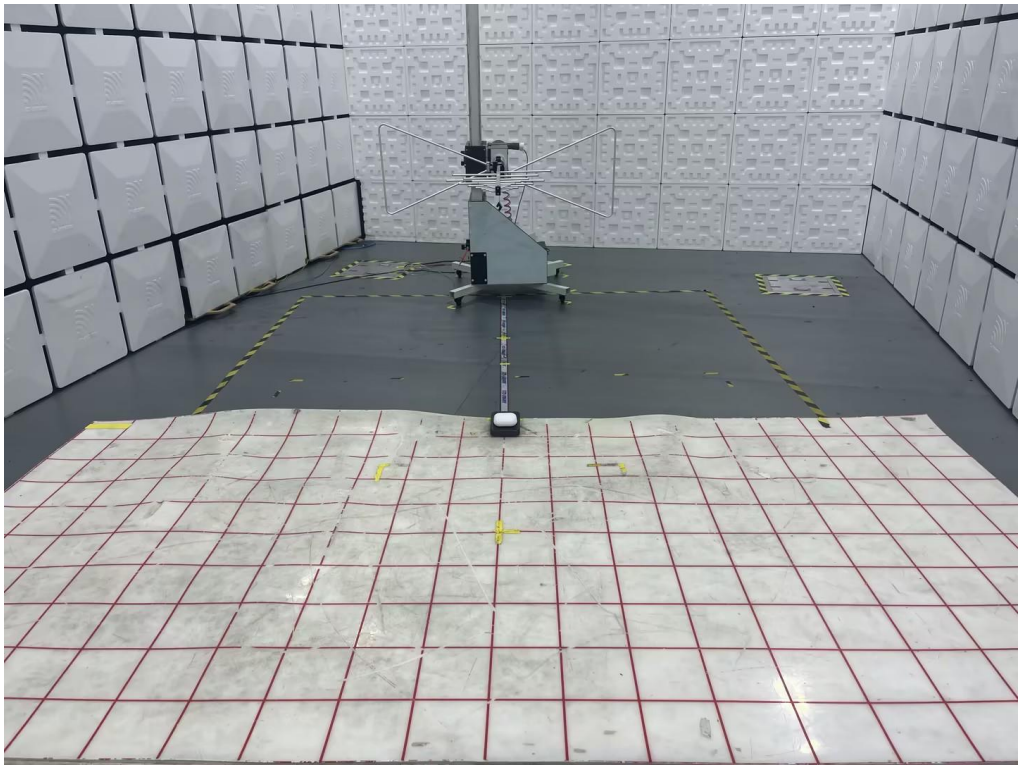
APPENDIX: PHOTOGRAPHS OF TEST CONFIGURATION

Radiated Spurious Emission

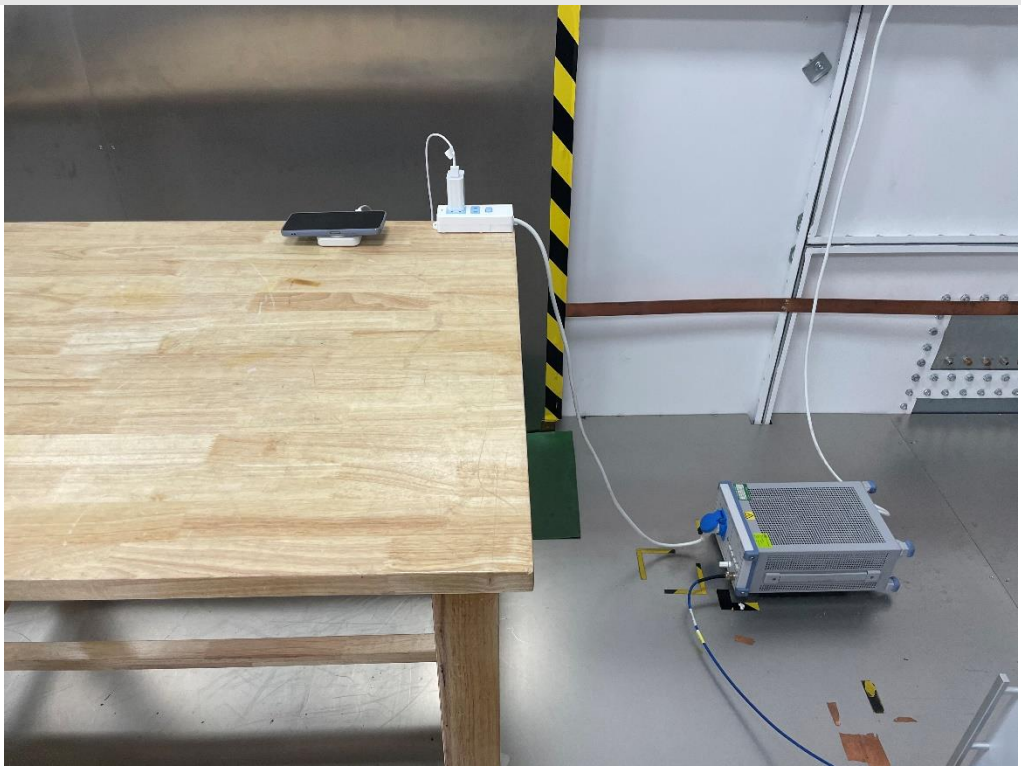

3m法电波暗室







AC Power Line Conducted Emission



END OF REPORT