

TEST REPORT

Report No.: BCTC2312416109-1E

Applicant: Zhaohezi Technology Ltd

Product Name: Wireless Charger

Test Model: LP-1

Tested Date: 2023-12-12 to 2024-01-31

Issued Date: 2024-01-31

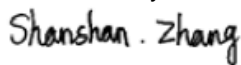
Shenzhen BCTC Testing Co., Ltd.



FCC ID: 2BEUQ-LP-1

Product Name: Wireless Charger
Trademark: N/A
Model/Type Reference: LP-1
Prepared For: Zhaohezi Technology Ltd
Address: No.5-110, Qianhai E-hub, Nanshan Dist. Shenzhen 518000, China
Manufacturer: Zhaohezi Technology Ltd
Address: No.5-110, Qianhai E-hub, Nanshan Dist. Shenzhen 518000, China
Prepared By: Shenzhen BCTC Testing Co., Ltd.
Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date: 2023-12-12
Sample Tested Date: 2023-12-12 to 2024-01-31
Issue Date: 2024-01-31
Report No.: BCTC2312416109-1E
Test Standards: FCC Part 18
FCC/OET MP-5
Test Results: PASS

Tested by:



Shanshan. Zhang / Project Handler

Approved by:



Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

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(Note: N/A Means Not Applicable)

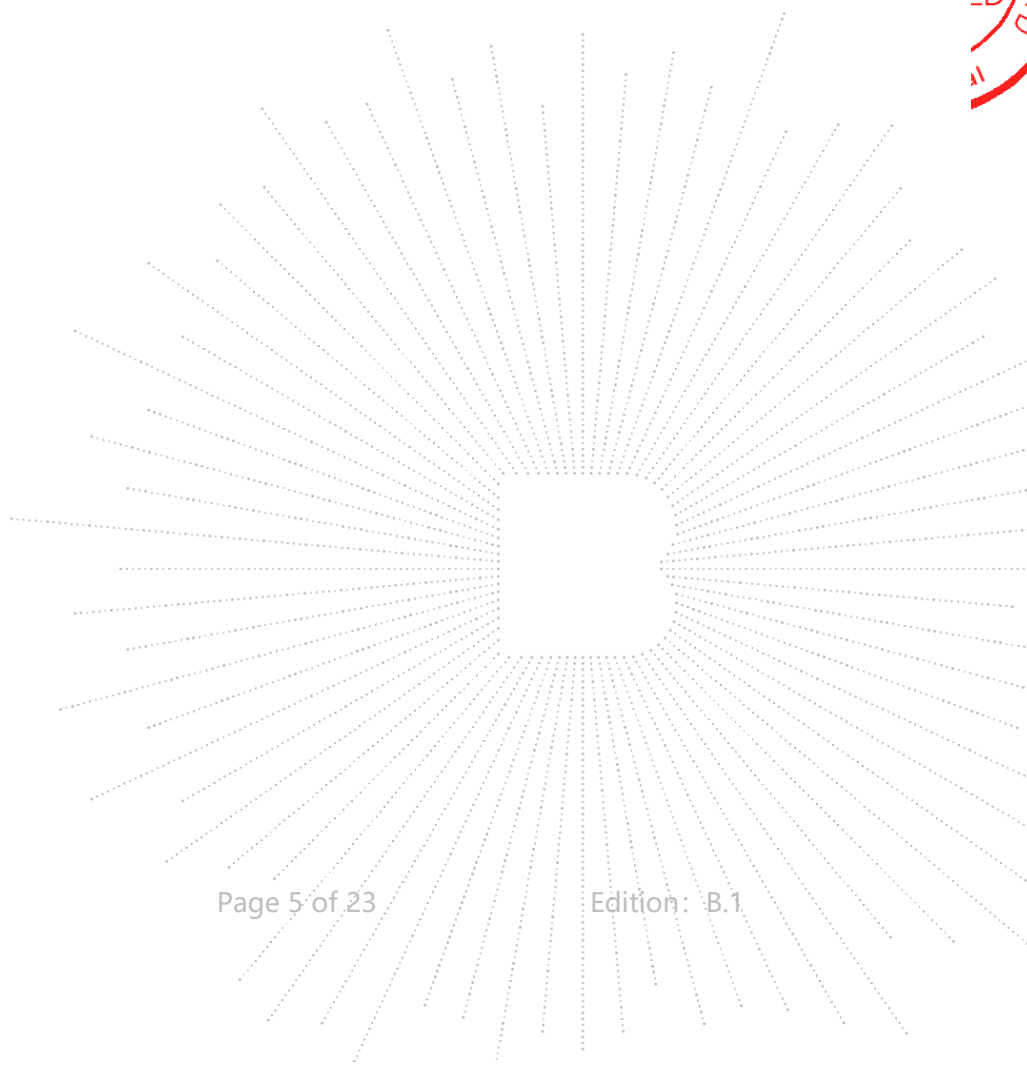
1. Version

Report No.	Issue Date	Description	Approved
BCTC2312416109-1E	2024-01-31	Original	Valid

2. Test Summary

The Product has been tested according to the following specifications:

Standard	Test Item	Test result
FCC 18.307	Conducted Emission	Pass
FCC 18.305	Radiated Emission	Pass
FCC 18.301	Operating frequencies	Pass



3. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Uncertainty
1	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
2	Radiated Emission(9kHz-30MHz)	U=4.8dB
3	Conducted Emission (150kHz-30MHz)	U=3.2dB
4	humidity uncertainty	U=5.3%
5	Temperature uncertainty	U=0.59°C

4. Product Information And Test Setup

4.1 Product Information

Model/Type Reference: LP-1
Model Differences: N/A
Hardware Version: N/A
Software Version: N/A
Operation Frequency: 6.78MHz
Modulation: ASK
Antenna installation: PCB antenna
Ratings: Input: DC 12V/0.2A Max from adapter
Output: DC 5V, 0.5A Max, 2.5W Max

4.2 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	Wireless Charger	N/A	LP-1	N/A	EUT
E-2	ADAPTER	N/A	N/A	N/A	Auxiliary
E-3	Load	N/A	N/A	N/A	Auxiliary

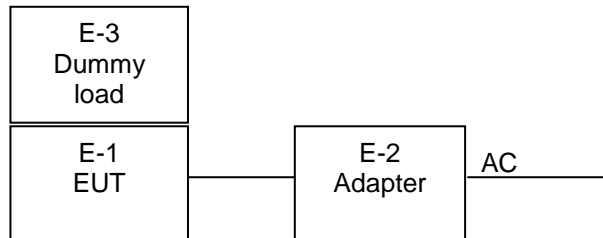
Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.3 Test Setup Configuration

See test photographs attached in *EUT TEST SETUP PHOTOGRAPHS* for the actual connections between Product and support equipment.

Conducted Emission and Radiated Spurious Emission::



4.4 Test Mode

Test item	Test Mode	Test Voltage
Conducted Emission (150KHz-30MHz)	Wireless Charging	AC 120V/60Hz
Radiated Emission(9kHz-30MHz)	Wireless Charging	AC 120V/60Hz

5. Test Facility And Test Instrument Used

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address:1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

5.2 Test Instrument Used

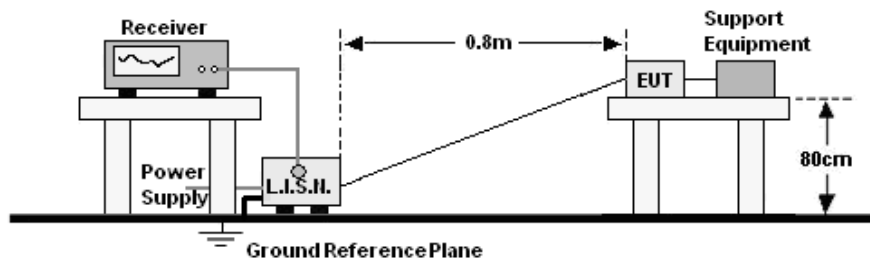
Conducted Emission Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024
LISN	R&S	ENV216	101375	May 15, 2023	May 14, 2024
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\
Pulse limiter	Schwarzbeck	VTSD 9561-F	01323	Sept. 22, 2023	Sept. 21, 2024

Radiated Emissions Test (966 Chamber01)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	May 15, 2023	May 14, 2026
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024
Receiver	R&S	ESRP	101154	May 15, 2023	May 14, 2024
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 15, 2023	May 14, 2024
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 29, 2023	May 28, 2024
Loop Antenna(9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	May 31, 2023	May 30, 2024
Amplifier	SKET	LAPA_01G18 G-45dB	SK2021040901	May 15, 2023	May 14, 2024
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 31, 2023	May 30, 2024
Amplifier(18G Hz-40GHz)	MITEQ	TTA1840-35-HG	2034381	May 15, 2023	May 14, 2024
Horn Antenna(18G Hz-40GHz)	Schwarzbeck	BBHA9170	00822	May 31, 2023	May 30, 2024
Spectrum Analyzer9kHz-40GHz	R&S	FSP40	100363	May 15, 2023	May 14, 2024
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

6. Conducted Emission At The Mains Terminals Test

6.1 Block Diagram Of Test Setup

For mains ports:



6.2 Limit

Limits for Class B devices

(MHz)	Limits dB(μ V)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56*	56 to 46*
0,50 to 5	56	46
5 to 30	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

6.3 Test procedure

For mains ports:

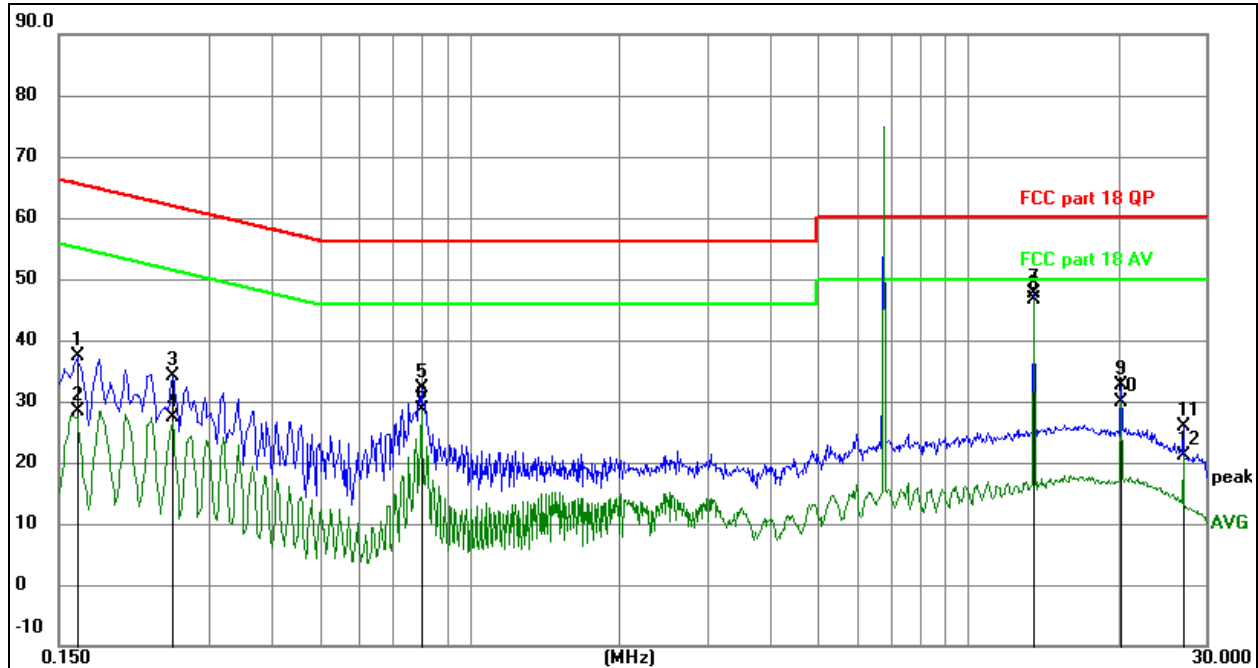
- The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

9KHz-150KHz:

Remark: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

6.4 Test Result

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Line
Test Voltage :	AC 120V/60Hz	Test Mode:	Wireless Charging

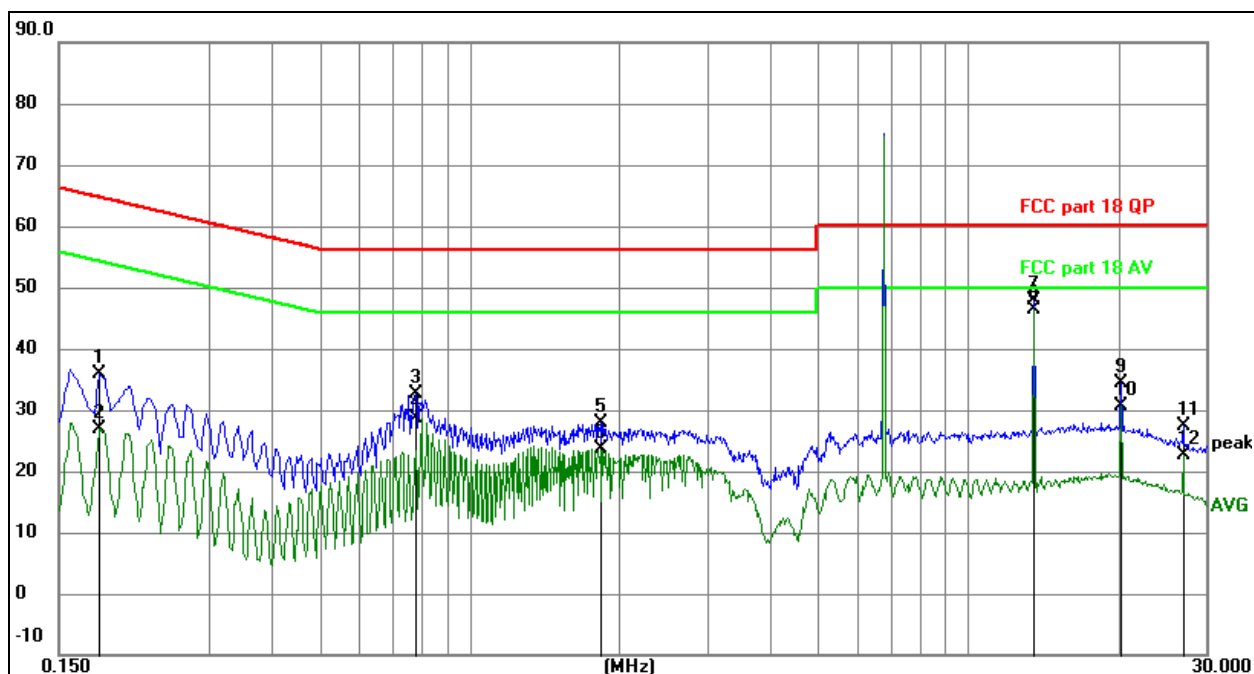


Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq. MHz	Reading Level dB	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1632	17.53	19.76	37.29	65.30	-28.01	QP
2		0.1632	8.65	19.76	28.41	55.30	-26.89	AVG
3		0.2534	14.33	19.83	34.16	61.64	-27.48	QP
4		0.2534	7.52	19.83	27.35	51.64	-24.29	AVG
5		0.8002	12.15	19.88	32.03	56.00	-23.97	QP
6		0.8002	8.64	19.88	28.52	46.00	-17.48	AVG
7		13.5508	27.86	19.88	47.74	60.00	-12.26	QP
8	*	13.5508	26.77	19.88	46.65	50.00	-3.35	AVG
9		20.2695	12.74	19.99	32.73	60.00	-27.27	QP
10		20.2695	9.84	19.99	29.83	50.00	-20.17	AVG
11		26.9833	5.97	19.99	25.96	60.00	-34.04	QP
12		26.9833	1.24	19.99	21.23	50.00	-28.77	AVG

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Neutral
Test Voltage :	AC 120V/60Hz	Test Mode:	Wireless Charging


Remark:

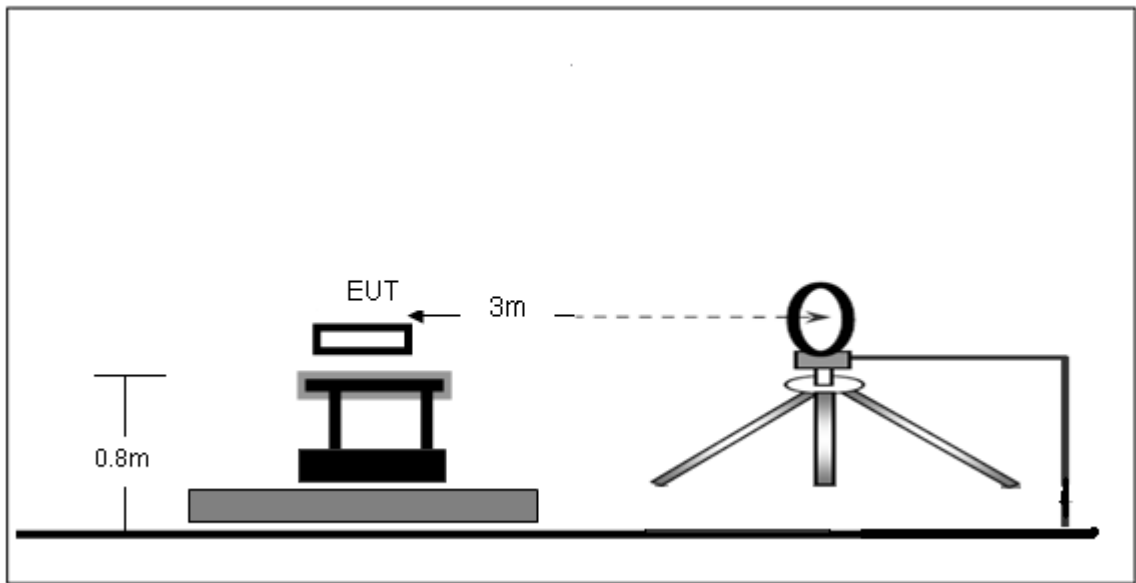
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1804	16.04	19.79	35.83	64.47	-28.64	QP
2		0.1804	7.07	19.79	26.86	54.47	-27.61	AVG
3		0.7792	12.74	19.87	32.61	56.00	-23.39	QP
4		0.7792	8.67	19.87	28.54	46.00	-17.46	AVG
5		1.8287	7.85	19.95	27.80	56.00	-28.20	QP
6		1.8287	3.60	19.95	23.55	46.00	-22.45	AVG
7		13.5508	27.90	19.88	47.78	60.00	-12.22	QP
8	*	13.5508	26.59	19.88	46.47	50.00	-3.53	AVG
9		20.2695	14.48	19.99	34.47	60.00	-25.53	QP
10		20.2695	10.58	19.99	30.57	50.00	-19.43	AVG
11		26.9835	7.48	19.99	27.47	60.00	-32.53	QP
12		26.9835	2.72	19.99	22.71	50.00	-27.29	AVG

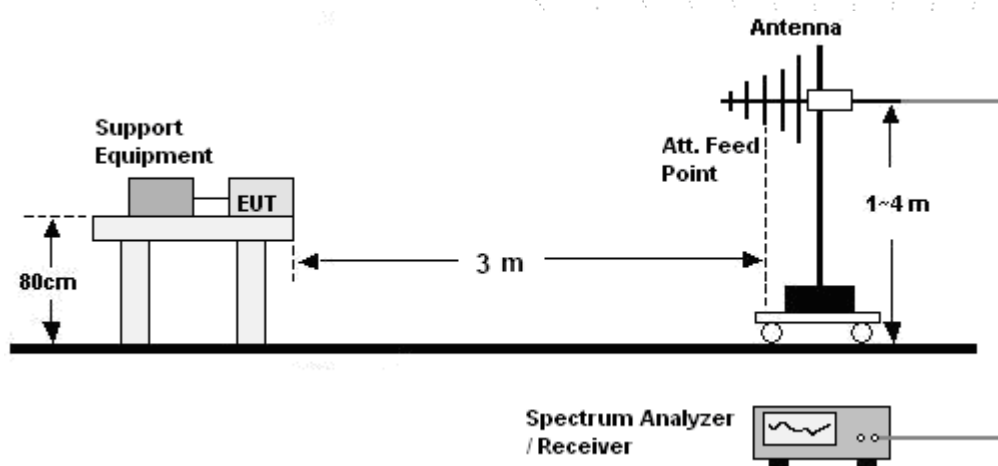
7. Radiation Emission Test

7.1 Block Diagram Of Test Setup

(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz ~ 1GHz



7.2 Limit

Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit (uV/m)	Distance (meters)
Any type unless otherwise specified (miscellaneous)	Any ISM frequency	Below 500 500 or more	25 $25 \times \text{SQRT}(\text{power}/500)$	300 ¹ 300
	Any non-ISM frequency	Below 500 500 or more	15 $15 \times \text{SQRT}(\text{power}/500)$	300 ¹ 300
Industrial heaters and RF stabilized arc welders	On or below 5,725 MHz Above 5,725 MHz	Any Any	10 (²)	1,600 (²)
Medical diathermy	Any ISM frequency	Any	25	300
	Any non-ISM frequency	Any	15	300
Ultrasonic	Below 490 kHz	Below 500 500 or more	2,400/F(kHz) $2,400/\text{F}(\text{kHz}) \times \text{SQRT}(\text{power}/500)$	300 ³ 300
	490 to 1,600 kHz Above 1,600 kHz	Any Any	24,000/F(kHz) 15	30 30
Induction cooking ranges	Below 90 kHz	Any	1,500	⁴ 30
	On or above 90 kHz	Any	300	⁴ 30

7.3 Frequency range of measurements

(a) For field strength measurements:

Frequency band in which device operates (MHz)	Range of frequency measurements	
	Lowest frequency	Highest frequency
Below 1.705	Lowest frequency generated in the device, but not lower than 9 kHz	30 MHz.
1.705 to 30	Lowest frequency generated in the device, but not lower than 9 kHz	400 MHz.
30 to 500	Lowest frequency generated in the device or 25 MHz, whichever is lower	Tenth harmonic or 1,000 MHz, whichever is higher.
500 to 1,000	Lowest frequency generated in the device or 100 MHz, whichever is lower	Tenth harmonic.
Above 1,000do	Tenth harmonic or highest detectable emission.

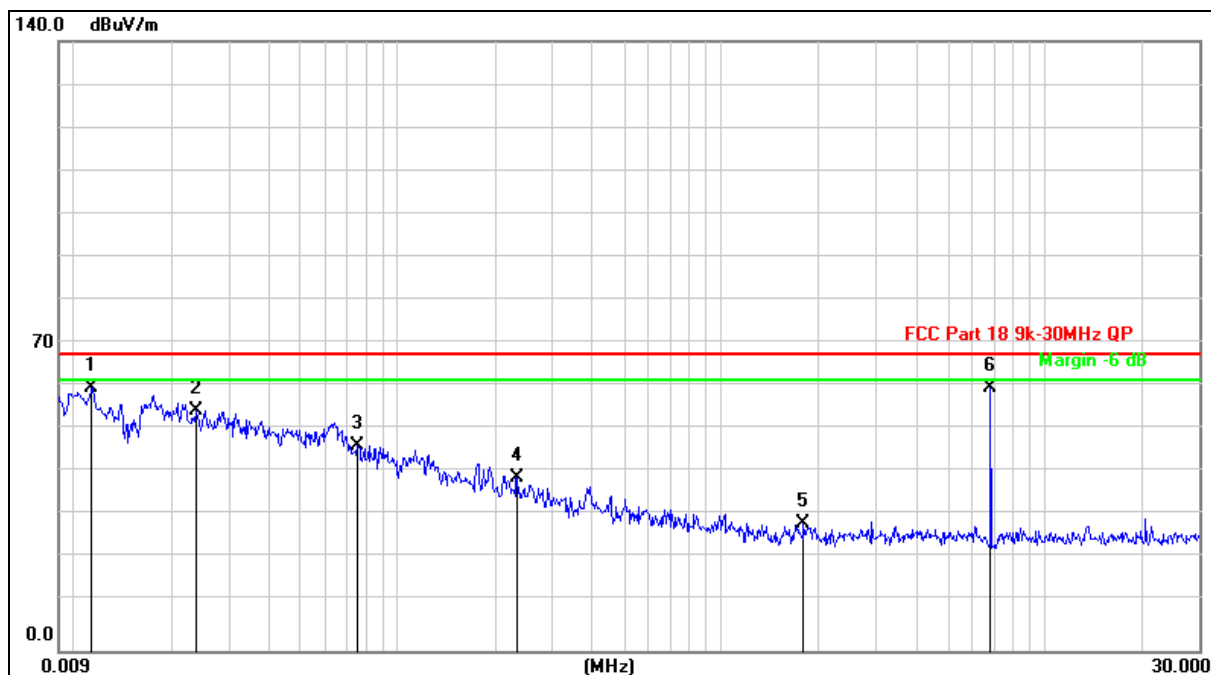
7.4 Test Procedure

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement.

7.5 Test Result

9kHz-30MHz

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Polarization:	Coaxial(Worst case)
Test Voltage :	AC 120V/60Hz	Test Mode:	Wireless Charging



Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Measurement = Reading Level + Correct Factor
- Over = Measurement - Limit

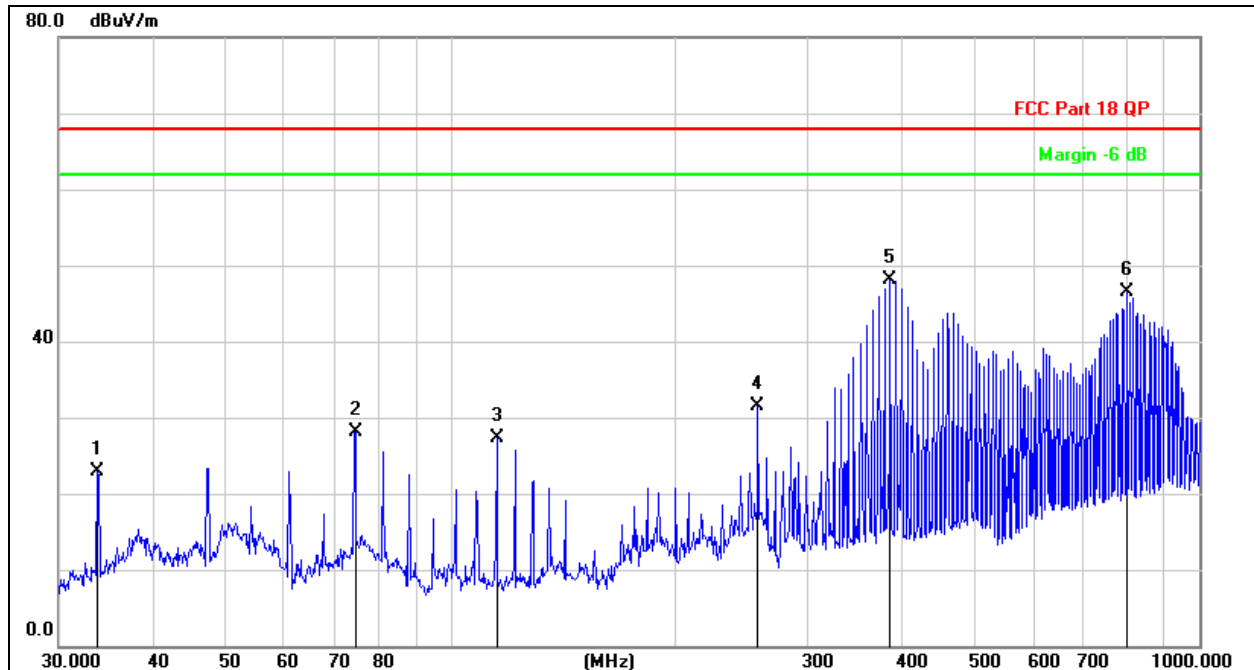
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	0.0114	67.83	-7.46	60.37	67.96	-7.59	QP
2		0.0238	62.71	-7.46	55.25	67.96	-12.71	QP
3		0.0752	54.81	-7.66	47.15	67.96	-20.81	QP
4		0.2346	47.42	-7.76	39.66	67.96	-28.30	QP
5		1.7976	36.57	-7.33	29.24	67.96	-38.72	QP
6		6.7987	67.44	-7.13	60.31	67.96	-7.65	QP

Note:

Limit(dBuV/m)= 20log(25)+20log(300/3)=67.96dBuV/m.

30MHz-1GHz:

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase:	Horizontal
Test Voltage :	AC 120V/60Hz	Test Mode:	Wireless Charging


Remark:

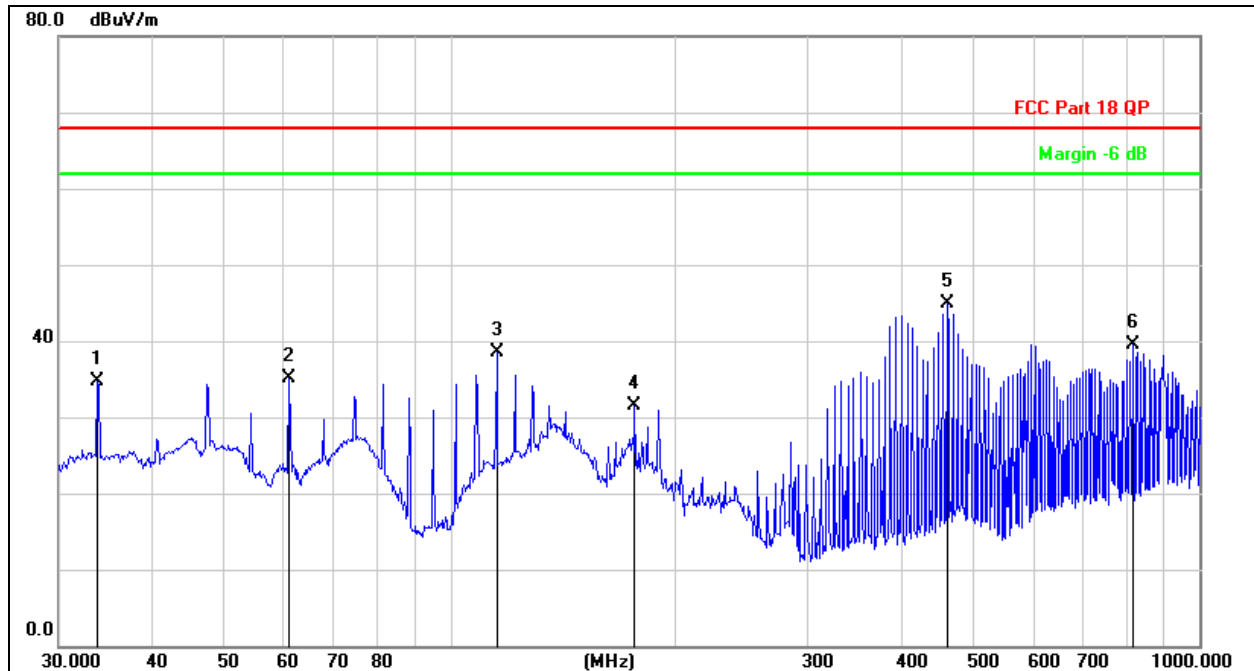
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		33.7986	38.80	-15.92	22.88	67.96	-45.08	QP
2		74.6569	46.90	-18.81	28.09	67.96	-39.87	QP
3		115.3205	44.28	-17.00	27.28	67.96	-40.68	QP
4		257.4222	45.71	-14.13	31.58	67.96	-36.38	QP
5	*	386.6338	59.13	-11.01	48.12	67.96	-19.84	QP
6		801.7863	50.90	-4.38	46.52	67.96	-21.44	QP

Note:

Limit(dBuV/m)= 20log(25)+20log(300/3)=67.96dBuV/m.

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Phase:	Vertical
Test Voltage :	AC 120V/60Hz	Test Mode:	Wireless Charging



Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Measurement = Reading Level + Correct Factor
- Over = Measurement - Limit

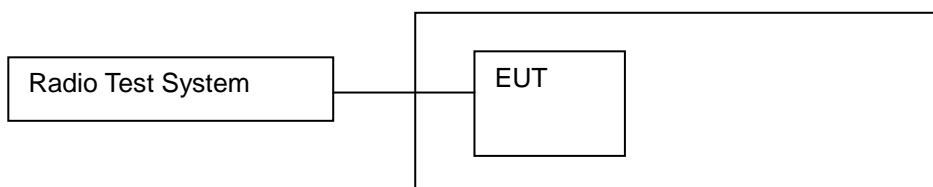
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		33.7986	50.60	-15.92	34.68	67.96	-33.28	QP
2		60.9176	50.62	-15.50	35.12	67.96	-32.84	QP
3		115.3205	55.51	-17.00	38.51	67.96	-29.45	QP
4		176.2686	49.01	-17.48	31.53	67.96	-36.43	QP
5	*	460.7271	54.47	-9.59	44.88	67.96	-23.08	QP
6		815.9678	43.68	-4.27	39.41	67.96	-28.55	QP

Note:

Limit(dBuV/m)= 20log(25)+20log(300/3)=67.96dBuV/m.

8. Permitted Range Of Operating Frequencies

8.1 Block Diagram Of Test Setup



8.2 Limit

ISM frequency	Tolerance
6.78 MHz	± 15.0 kHz
13.56 MHz	± 7.0 kHz
27.12 MHz	± 163.0 kHz
40.68 MHz	± 20.0 kHz
915 MHz	± 13.0 MHz
2450 MHz	± 50.0 MHz
5800 MHz	± 75.0 MHz
24.125 GHz	± 125.0 MHz
61.25 GHz	± 250.0 MHz
122.50 GHz	± 500.0 MHz
245.00 GHz	± 1.0 GHz

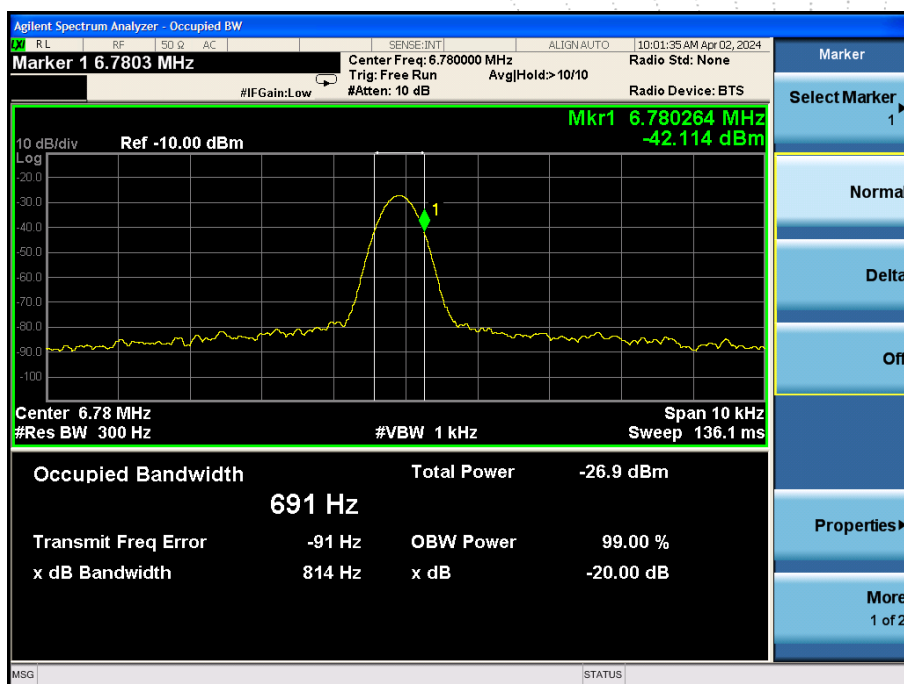
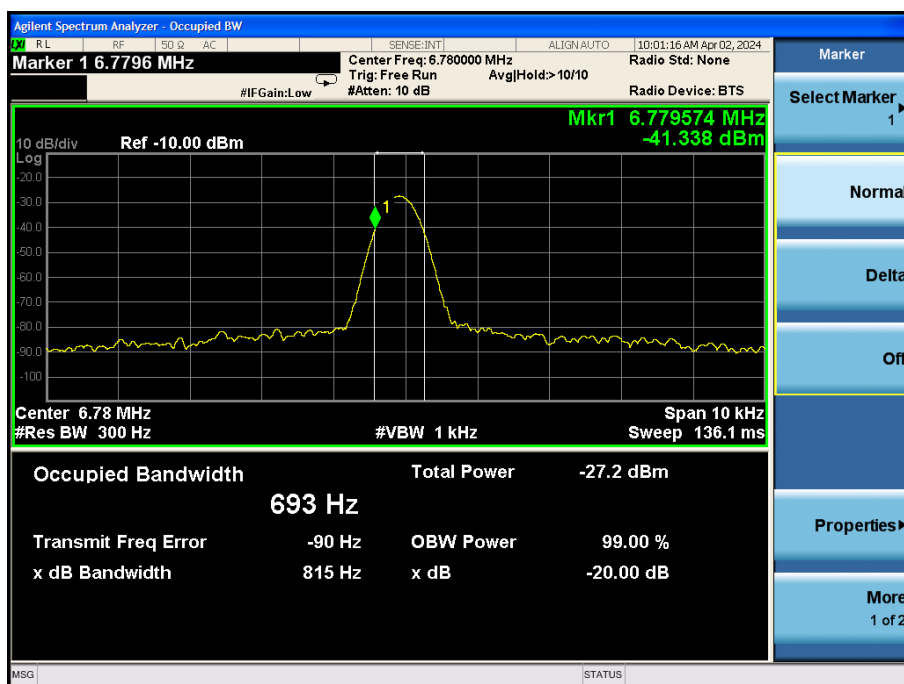
8.3 Test Procedure

- put the spectrum analyzer in video averaging mode with a minimum of 50 sweeps selected;
- select the lowest operating frequency of the equipment under test and activate the transmitter with modulation applied. The RF emission of the equipment shall be displayed on the spectrum analyzer;
- using the marker of the spectrum analyzer, find the lowest frequency below the operating frequency at which the spectral power density drops below the level given in clause 4.2.3. This frequency shall be recorded in the test report;
- select the highest operating frequency of the equipment under test and find the highest frequency at which the spectral power density drops below the value given in clause 4.2.3. This frequency shall be recorded in the test report;
- the difference between the frequencies measured in steps c) and d) is the operating frequency range. It shall be recorded in the test report.

8.4 Test Result

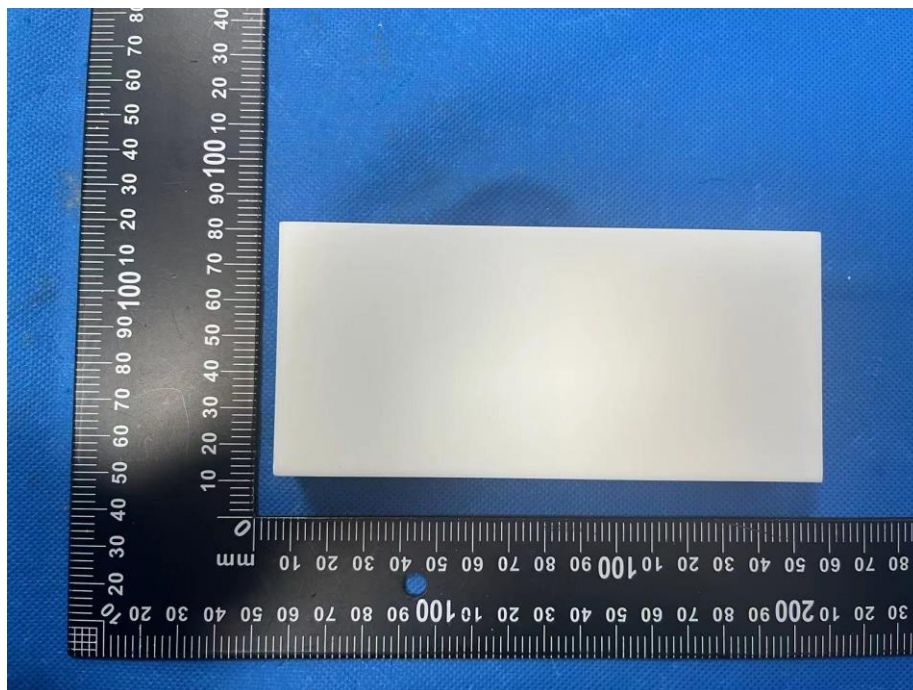
Center Frequency	Lowest Frequency (fL) (MHz)	Highest Frequency (fH) (MHz)	Tolerance (kHz)	Result	Limit (kHz)
6.78MHz	6.7796	/	-0.0004	Pass	± 15
6.78MHz	/	6.7803	0.0003	Pass	

Tolerance= Lowest Frequency/ Highest Frequency - Center Frequency



9. EUT Photographs

EUT Photo 1

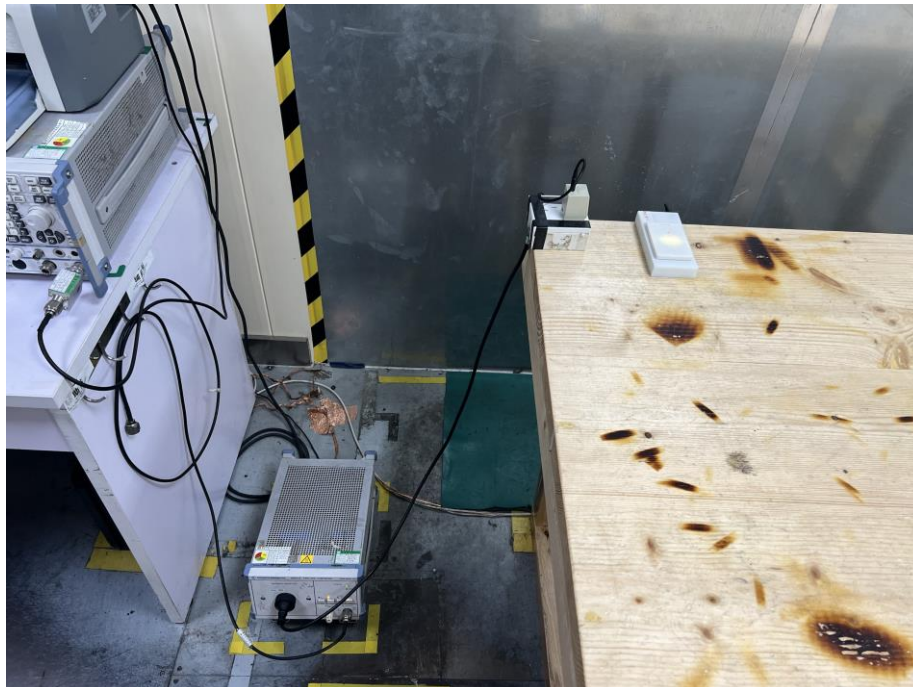


NOTE: Appendix-Photographs Of EUT Constructional Details

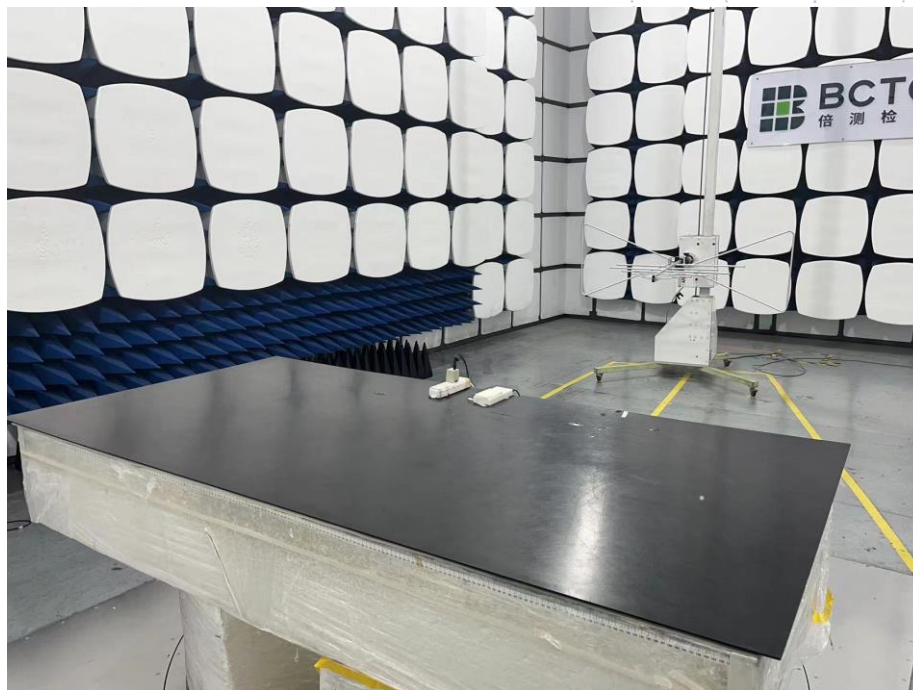


10. EUT Test Setup Photographs

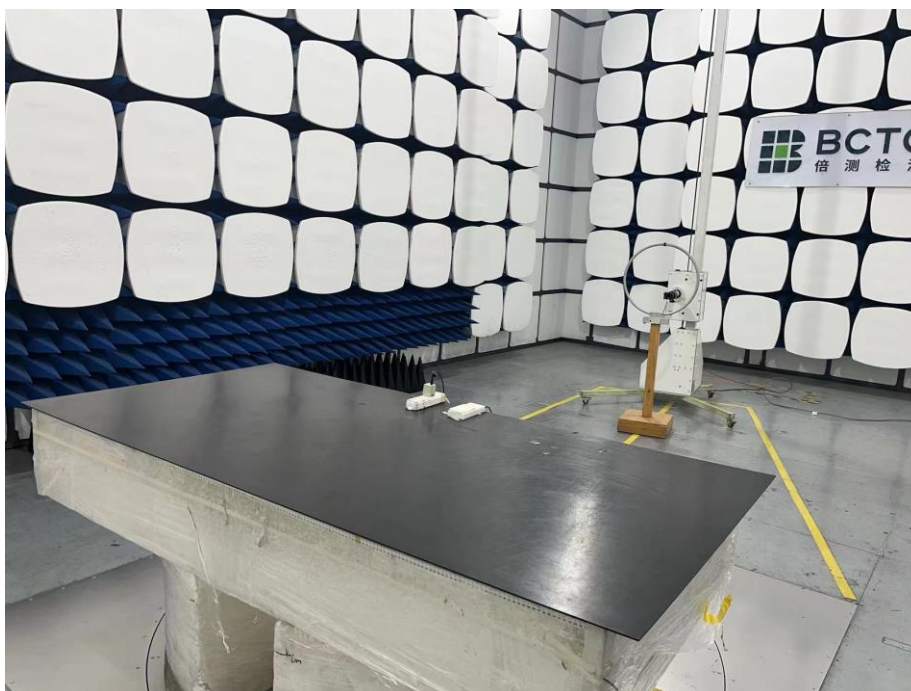
Conducted emission



Radiated emission



Radiated emission



STATEMENT

1. The equipment lists are traceable to the national reference standards.
2. The test report can not be partially copied unless prior written approval is issued from our lab.
3. The test report is invalid without the "special seal for inspection and testing".
4. The test report is invalid without the signature of the approver.
5. The test process and test result is only related to the Unit Under Test.
6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.
7. The quality system of our laboratory is in accordance with ISO/IEC17025.
8. If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

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***** END *****