



EMC TEST REPORT

Product Name: Bluetooth Speaker

Trade mark: /

Model No.: XY-AU001

S/N: /

Report No.: CTB240513011E

Applicant: xxx

Address: xx China

[illegible][illegible]

Prepared by: Shenzhen CTB Testing Technology Co., Ltd.

Address: 1&2/F., Building A, No.26, Xinhe Road, Xinqiao, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, China

Date of Receipt: May 06, 2024

Date of Test(s): May 07, 2024 to May 11, 2024

Date of Issue: May 14, 2024

Test Standard(s): ICES-003 Issue 7

Test Result: Pass

In the configuration tested, the EUT complied with the standards specified above.

Compiled by:

Reviewed by:

Approve

Bake ai

Blake Cai

Bin Mei

Bin Mei



Note: If there is any objection to the inspection results in this report, please submit a written report to the company within 15 days from the date of receiving the report. 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 CTB Testing Technology Co., Ltd. this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client. "★" indicates the testing items were fulfilled by subcontracted lab. "✕" indicates the items are not in CNAS accreditation scope.

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1. Description of version

Report No.	Issue Date	Description	Approved
CTB240513011E	May 14, 2024	Original	Valid

2. Test summary

Test procedures according to the technical standards:

Standard	Test Item	Test Result
ICES-003 Issue 7	Conducted Emission	PASS
ICES-003 Issue 7	Radiated Emission	PASS

3. Measurement uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %

Test Item	Frequency	Expanded Uncertainty (U_{Lab})
Conducted Emission	150 kHz to 30 MHz	± 3.1 dB
Radiated Emission	30 MHz to 1000 MHz	± 4.1 dB

4. General information

4.1. Description of EUT

Product name	Bluetooth Speaker
Trade mark	/
Model No.	XY-AU001
Serial Model No.	/
Model Difference	/
Rated Voltage& current	DC 5V from adapter & DC 3.7V
Configuration	☒ Table-top ☐ Floor-standing
The highest frequency of the internal sources of the EUT :	☐ less than 108 MHz, the measurement shall only be made up to 1 GHz. ☐ between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz. ☐ between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz. ☒ above 1 GHz, the measurement shall be made up to 5th harmonic of the highest frequency or 40 GHz.
Adapter Information	/

Note: The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

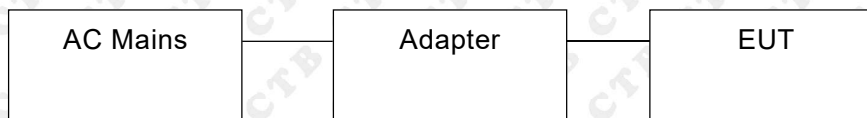
4.2. Description of accessory device

No.	Device Type	Brand	Model	Specification	Note
1	Adapter	UGREEN	C0122	/	/

4.3. Test conditions

Temperature: 15-25℃
 Relative Humidity: 30-60 %
 Atmospheric pressure: 800hPa-1060hPa

4.4. Block diagram of EUT configuration



4.5. Operating condition of EUT

Operating condition	Mode 1	Charging+Working	Test Voltage	AC110V 60Hz
Note: This test covers all possible operating modes of the device, only the worst data are list in report. The worst data are shows (*) is the nearest standard limit which were recorded in this report.				

5. List of Test and Measurement Instruments

Continuous disturbance					
No.	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	843 Shield Room	C/ R/ T	843	/	2024/8/11
2	AMN	ROHDE&SCHWARZ	ESH3-Z5	831551852	2024/7/04
3	Pulse limiter	ROHDE&SCHWARZ	ESH3Z2	357881052	2024/7/04
4	EMI TEST RECEIVER	R&S	ESCI	100428	2024/7/04
5	Coaxial cable	ZDECL	Z302S	18091904	2024/7/04
6	ISN	Schwarzbeck	NTFM8158	183	2024/7/07
7	Voltage sensor	Schwarzbeck	TK 9420	01189	2024/11/16
8	EZ-EMC	Frad	EMC-con3A1.1	/	/

Radiated emission(No.1 Chamber)					
No.	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	966 Chamber	C/ R/ T	966	/	2024/8/11
2	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	1911	2026/7/07
3	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	869	2024/7/07
4	Amplifier	Agilent	8449B	3008A01838	2024/7/04
5	Amplifier	HP	8447E	2945A02747	2024/7/04
6	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESPI	100362	2024/7/04
7	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	2024/7/04
8	Coaxial cable	ETS	RFC-SNS-100-NMS-80 NI	/	2024/7/04
9	Coaxial cable	ETS	RFC-SNS-100-NMS-20 NI	/	2024/7/04
10	Coaxial cable	ETS	RFC-SNS-100-SMS-20 NI	/	2024/7/04
11	Coaxial cable	ETS	RFC-NNS-100-NMS-300 NI	/	2024/7/04
12	EMI test software	Frad	EZ-EMC	Ver/ EMC-con3A1/1	/

Radiated emission(No.2 Chamber)					
No.	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	966 Chamber	C/ R/ T	966	/	2026/11/14
2	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	1911	2026/7/07
3	Broadband Antenna	Schwarzbeck	VULB 9168	1471	2024/11/17
4	Amplifier	Agilent	8449B	3008A01838	2024/7/04
5	Preamplifier	Schwarzbeck	BBV 9744	/	2024/6/12
6	EMI TEST RECEIVER	R&S	ESCI7	100362	2024/11/27
7	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	2024/7/04
8	EMI test software	Farad	EZ-EMC	Ver. FARAD-3A1+	/
9	Coaxial cable	Rosenberg	8m	/	2024/11/27
10	Coaxial cable	Times	2m	/	2024/11/27
11	Coaxial cable	Times	2m	/	2024/11/27
12	Coaxial cable	Times	1m	/	2024/11/27

6. Conducted Emission

6.1. Limit

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46*
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Notes: (1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

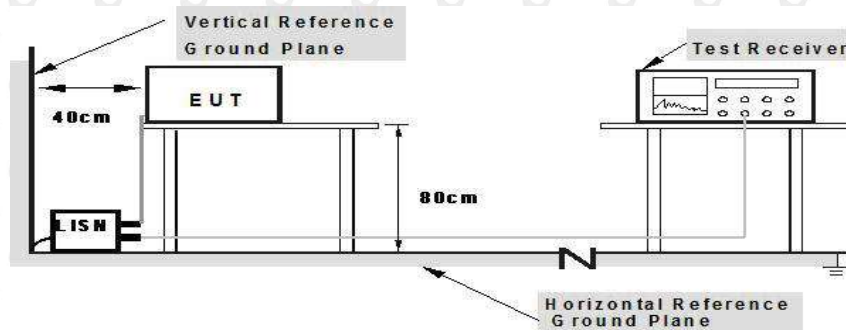
6.2. The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

6.3. Test procedure

- The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

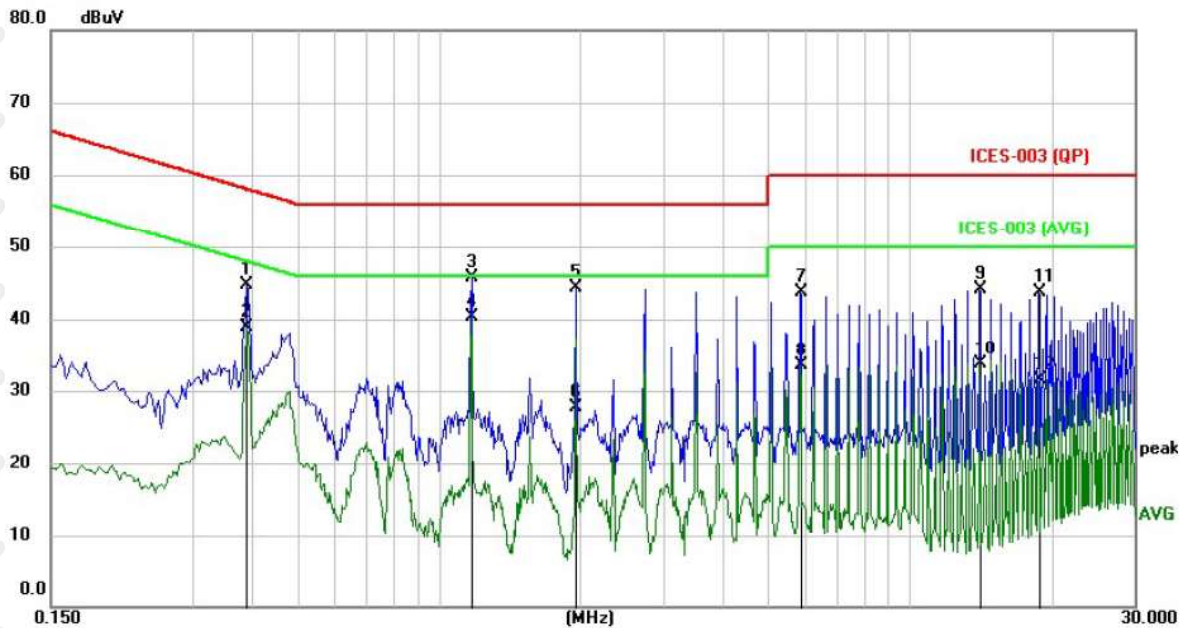
6.4. Test setup



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

6.5. Test results

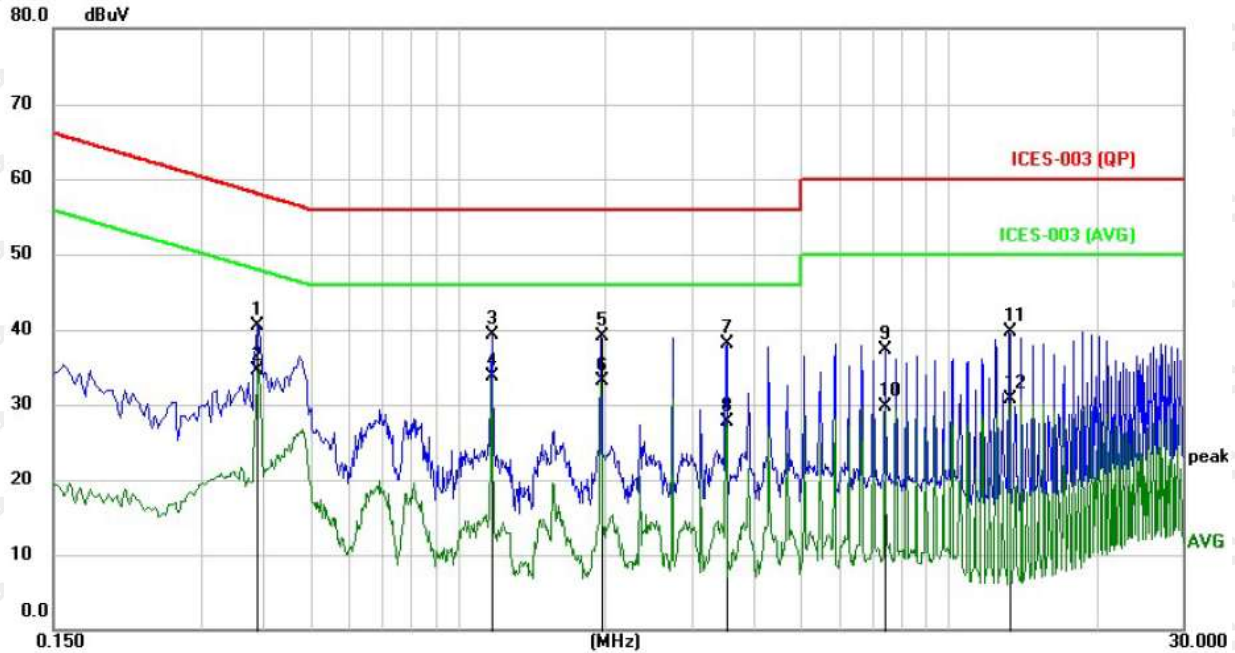
Temperature:	23℃	Relative Humidity:	54 %
Pressure:	101kPa	Phase :	Line
Test Voltage :	AC 110V/60Hz	Test Mode:	Mode 1



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.3899	34.67	9.98	44.65	58.07	-13.42	QP
2		0.3899	28.94	9.98	38.92	48.07	-9.15	AVG
3		1.1740	35.78	10.02	45.80	56.00	-10.20	QP
4	*	1.1740	30.36	10.02	40.38	46.00	-5.62	AVG
5		1.9580	34.12	10.09	44.21	56.00	-11.79	QP
6		1.9580	17.65	10.09	27.74	46.00	-18.26	AVG
7		5.8659	33.36	10.44	43.80	60.00	-16.20	QP
8		5.8659	22.97	10.44	33.41	50.00	-16.59	AVG
9		14.0780	33.32	10.70	44.02	60.00	-15.98	QP
10		14.0780	23.03	10.70	33.73	50.00	-16.27	AVG
11		18.7700	32.89	10.80	43.69	60.00	-16.31	QP
12		18.7700	20.73	10.80	31.53	50.00	-18.47	AVG

Note: Result=Reading+Factor
Over Limit=Result-Limit

Temperature:	23°C	Relative Humidity:	54 %
Pressure:	101kPa	Phase :	Neutral
Test Voltage :	AC 110V/60Hz	Test Mode:	Mode 1



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.3899	30.50	9.98	40.48	58.07	-17.59	QP
2		0.3899	24.57	9.98	34.55	48.07	-13.52	AVG
3		1.1740	29.32	10.02	39.34	56.00	-16.66	QP
4	*	1.1740	23.61	10.02	33.63	46.00	-12.37	AVG
5		1.9620	28.95	10.09	39.04	56.00	-16.96	QP
6		1.9620	22.98	10.09	33.07	46.00	-12.93	AVG
7		3.5300	27.78	10.24	38.02	56.00	-17.98	QP
8		3.5300	17.37	10.24	27.61	46.00	-18.39	AVG
9		7.4380	26.84	10.53	37.37	60.00	-22.63	QP
10		7.4380	19.27	10.53	29.80	50.00	-20.20	AVG
11		13.3060	28.99	10.68	39.67	60.00	-20.33	QP
12		13.3060	20.07	10.68	30.75	50.00	-19.25	AVG

Note: Result=Reading+Factor
Over Limit=Result-Limit

7. Radiated emissions

7.1. Limit

FREQUENCY (MHz)	Class A (at 3m)	Class B (at 3m)
	dBuV/m	dBuV/m
30 ~ 88	50.0	40.0
88 ~ 216	54.0	43.5
216 ~ 230	56.9	46.0
230 ~ 960	57.0	47.0
960~1000	60.0	54.0

Notes: (1) The limit for radiated test was performed according to as following:
ICES-003.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

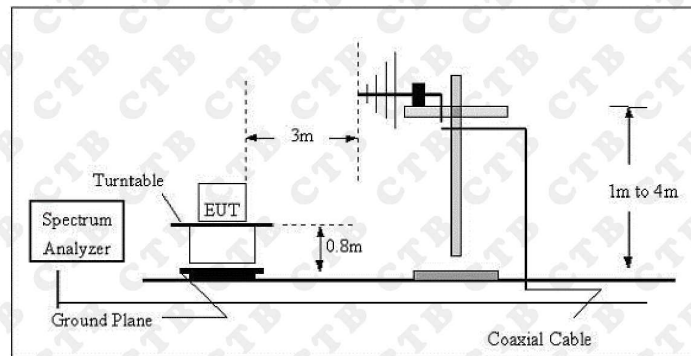
Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
Class A				
1 000 to 6 000	FSOATS	3	Average / 1MHz	60
1 000 to 6 000		3	Peak / 1MHz	74
Class B				
1 000 to 6 000	FSOATS	3	Average / 1MHz	80
1 000 to 6 000		3	Peak / 1MHz	74

7.2. Test procedure

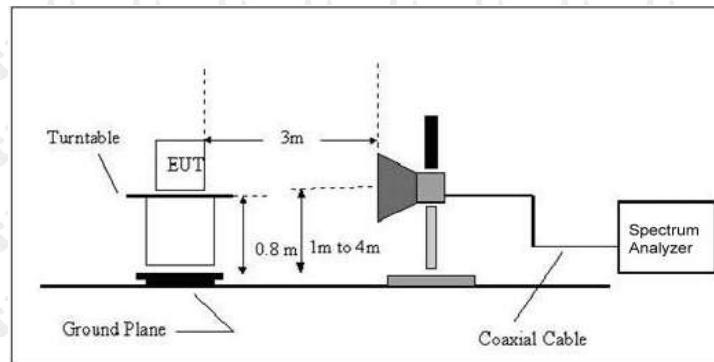
- The measuring distance of at 10 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 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, above 1G Average detector mode will be instead.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP(AV) Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

7.3. Test setup

Radiated Emission Test Set-Up Frequency Below 1 GHz



Radiated Emission Test Set-Up Frequency Above 1GHz



7.4. Test results

Up to 1GHz

Temperature:	23°C	Relative Humidity:	54 %
Pressure:	101kPa	Polarization :	Horizontal
Test Voltage :	AC 110V/60Hz	Test Mode:	Mode 1



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	52.7600	30.49	-15.33	15.16	40.00	-24.84	QP
2	125.0065	31.65	-14.96	16.69	43.50	-26.81	QP
3	181.2834	45.77	-15.36	30.41	43.50	-13.09	QP
4 *	212.2694	49.35	-16.16	33.19	43.50	-10.31	QP
5	300.3672	40.79	-13.00	27.79	46.00	-18.21	QP
6	948.7610	25.81	1.05	26.86	46.00	-19.14	QP

Note: Result=Reading+Factor

Over Limit=Result-Limit

Temperature:	23°C	Relative Humidity:	54 %
Pressure:	101kPa	Polarization :	Vertical
Test Voltage :	AC 110V/60Hz	Test Mode:	Mode 1



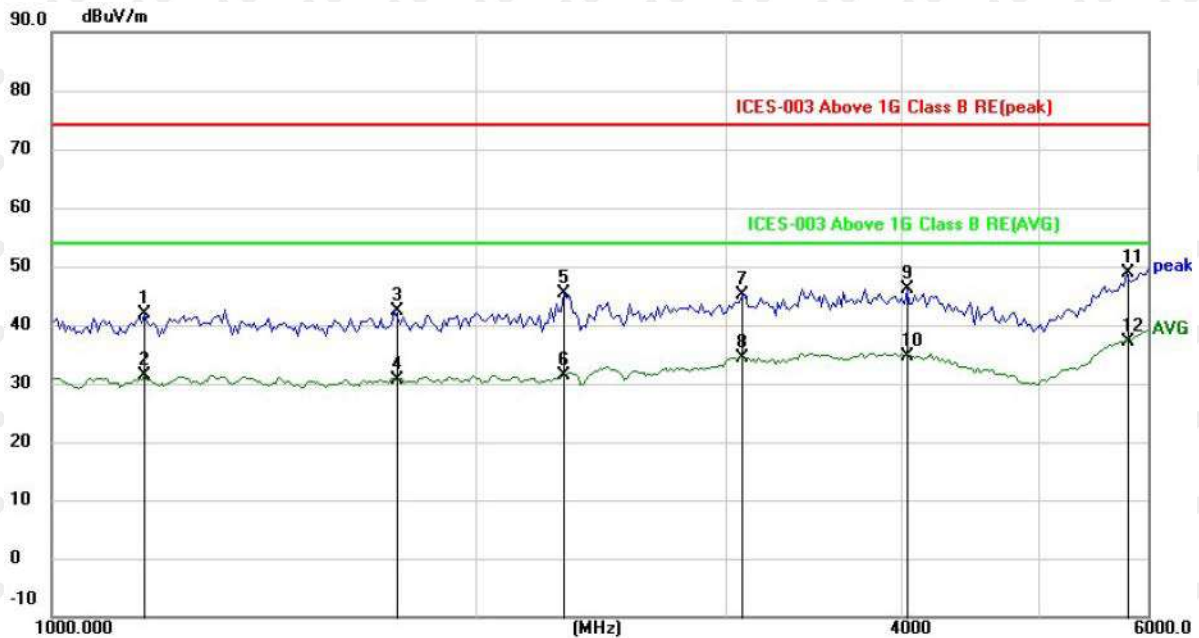
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	40.7016	43.44	-13.68	29.76	40.00	-10.24	QP
2	54.2610	43.72	-15.32	28.40	40.00	-11.60	QP
3	126.3285	39.62	-14.85	24.77	43.50	-18.73	QP
4	169.0053	44.89	-13.61	31.28	43.50	-12.22	QP
5	300.3672	37.38	-13.00	24.38	46.00	-21.62	QP
6	948.7610	27.34	1.05	28.39	46.00	-17.61	QP

Note: Result=Reading+Factor

Over Limit=Result-Limit

Above 1GHz

Temperature:	23°C	Relative Humidity:	54 %
Pressure:	101kPa	Polarization :	Horizontal
Test Voltage :	AC 110V/60Hz	Test Mode:	Mode 1

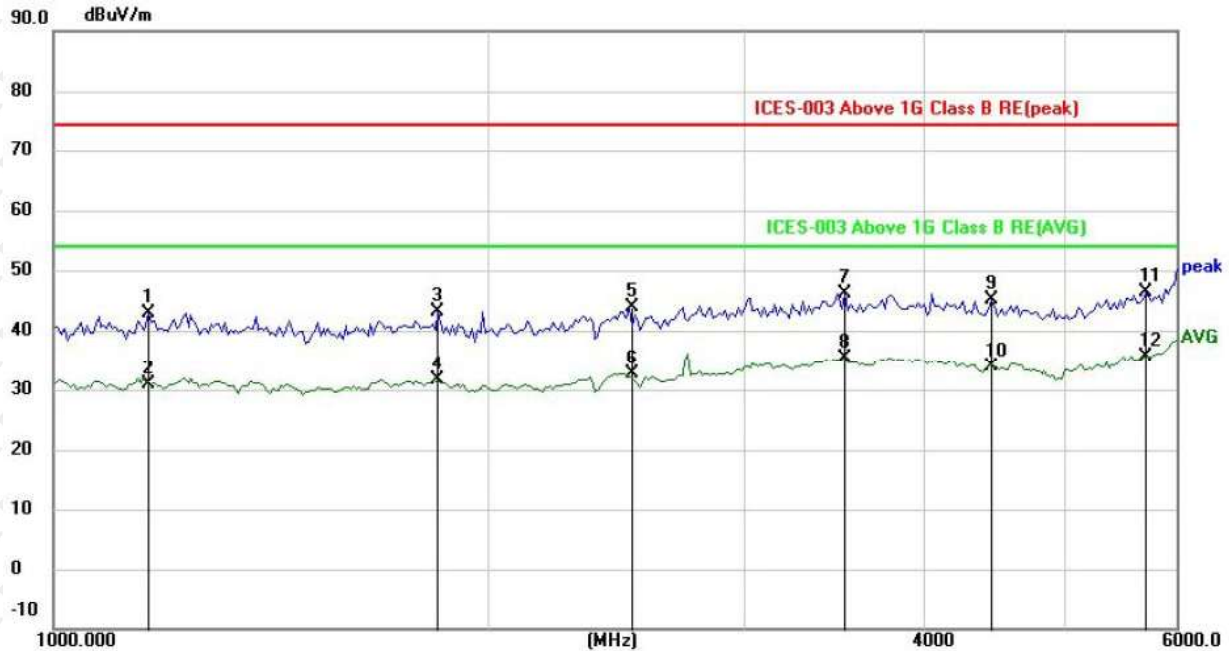


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			
			dBuV	dB	dBuV/m	dB/m	dB	Detector
1		1164.509	43.35	-1.43	41.92	74.00	-32.08	QP
2		1164.509	32.69	-1.43	31.26	54.00	-22.74	AVG
3		1750.541	41.91	0.38	42.29	74.00	-31.71	QP
4		1750.541	30.23	0.38	30.61	54.00	-23.39	AVG
5		2310.924	43.18	2.20	45.38	74.00	-28.62	QP
6		2310.924	29.06	2.20	31.26	54.00	-22.74	AVG
7		3091.970	40.43	4.78	45.21	74.00	-28.79	QP
8		3091.970	29.61	4.78	34.39	54.00	-19.61	AVG
9		4045.367	39.32	6.70	46.02	74.00	-27.98	QP
10		4045.367	27.98	6.70	34.68	54.00	-19.32	AVG
11		5788.796	38.54	10.28	48.82	74.00	-25.18	QP
12	*	5788.796	26.90	10.28	37.18	54.00	-16.82	AVG

Note: Result=Reading+Factor

Over Limit=Result-Limit

Temperature:	23°C	Relative Humidity:	54 %
Pressure:	101kPa	Polarization :	Vertical
Test Voltage :	AC 110V/60Hz	Test Mode:	Mode 1



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		1164.509	44.41	-1.43	42.98	74.00	-31.02	QP
2		1164.509	32.21	-1.43	30.78	54.00	-23.22	AVG
3		1847.212	42.36	0.67	43.03	74.00	-30.97	QP
4		1847.212	30.99	0.67	31.66	54.00	-22.34	AVG
5		2504.970	41.05	2.87	43.92	74.00	-30.08	QP
6		2504.970	29.73	2.87	32.60	54.00	-21.40	AVG
7		3536.687	40.32	5.81	46.13	74.00	-27.87	QP
8		3536.687	29.61	5.81	35.42	54.00	-18.58	AVG
9		4464.330	39.99	5.06	45.05	74.00	-28.95	QP
10		4464.330	28.80	5.06	33.86	54.00	-20.14	AVG
11		5711.525	36.74	9.56	46.30	74.00	-27.70	QP
12	*	5711.525	26.18	9.56	35.74	54.00	-18.26	AVG

Note: Result=Reading+Factor

Over Limit=Result-Limit

8. Photographs of test setup

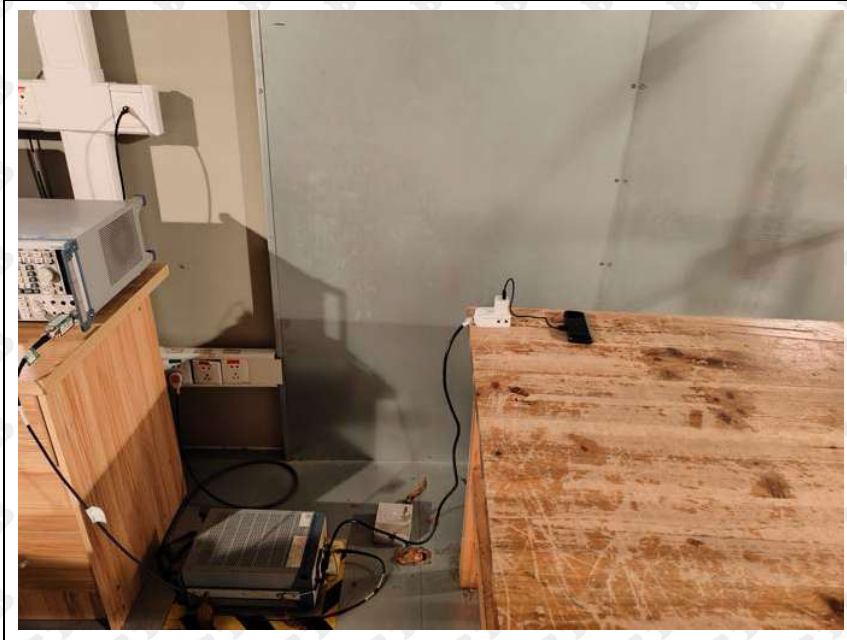
RE Up to 1GHz



RE Above 1GHz



CE



9. Photographs of EUT

EUT photo 1



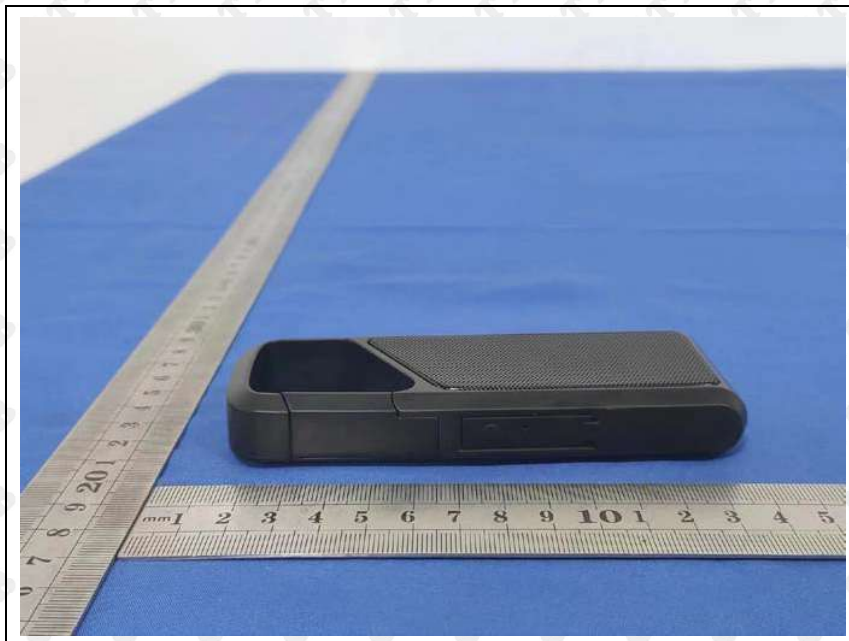
EUT photo 2



EUT photo 3



EUT photo 4



EUT photo 5



EUT photo 6



EUT photo 7



EUT photo 8



End of report