EMC TEST REPORT

Product Name	Active Stylus Pen
Trade mark	/
Model No.	XCR5
Report No.	CTB211225011EX
Applicant	Dongguan xiaochuang Electronic Technology Co.,Ltd. Room 802, no. 12, lane 11, nance wenming road, humen town, dongguan city
Manufacturer	Dongguan xiaochuang Electronic Technology Co.,Ltd. Room 802, no. 12, lane 11, nance wenming road, humen town, dongguan city
Prepared by	Shenzhen CTB Testing Technology Co., Ltd. Floor 1&2, Building A, No. 26 of Xinhe Road, Xinqiao Street, Baoan District, Shenzhen, China
Date of Receipt	2021-12-22
Date of Test(s)	2021-12-22~ 2021-12-25
Date of Issue	2021-12-29
Test Standard(s)	CFR47, FCC Part 15 Subpart B, ANSI C63.4: 2014
Test Result:	Pass

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

Compiled by:	Reviewed by:	Approved by:
Du Fei	Zack Zhu	Bin Wei

Note: The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report shall not be reproduced except in full, without prior written approval of CTB. This document may be altered or revised by CTB, personnel only, and shall be noted in the revision of the document.

Table of Contents

1. Description of version

Report No.	Issue Date	Description	Approved
CTB211225011EX	2021-12-29	Original	Valid

2. Test summary

Test procedures according to the technical standards:

Standard	Test Item	Test Result
§15.107	Conducted Emission	PASS
§15.109	Radiated Emission	PASS

3. Measurement uncertainty

The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard

Test Item	Frequency	Expanded Uncertainty (U_{Lab})
Conducted Emission	150 kHz to 30 MHz	±3.2 dB
Radiated Emission	30 MHz to 1000 MHz	± 4.8 dB

uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %

4. General information

4.1. Description of EUT

Product name	Active Stylus Pen
Trade mark	/
Model No.	XCR5
Serial No.	/
Model Difference	/
Rated Power	0.5W
Normal Testing Voltage	AC120V/60Hz& DC3.7V
Configuration	☒ Table-top ☐ Floor-standing
The highest frequency of the internal sources of the EUT :	☐ below 1.705 MHz, the measurement shall only be made up to 30 MHz. ☒ between 1.705 MHz and 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, whichever is lower.
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.

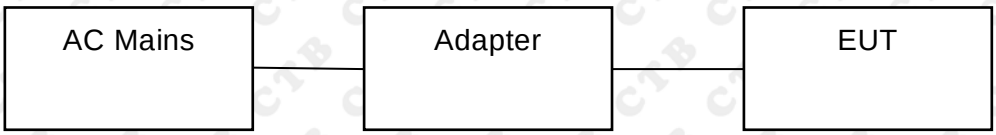
4.2. Description of accessory device

No.	Device Type	Brand	Model	Specification	Note
1	ADAPTER	JIYIN	JY-05100C	/	/

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	Test Voltage	AC 120V/60Hz
	Mode 2	Working	Test Voltage	DC 3.7V
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

Conducted Emission Measurement					
No.	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	AMN	ROHDE&SCHWARZ	ESH3-Z5	831551852	2022.08.05
2	Pulse limiter	ROHDE&SCHWARZ	ESH3Z2	357881052	2022.08.05
3	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCS30	834115/006	2022.08.05
4	Coaxial cable	ZDECL	Z302S	18091904	2022.08.05
5	AAN	Schwarzbeck	NTFM8158	6114	2022.08.05
6	EZ-EMC	Frad	EMC-con3A1.1	/	/

Radiated Emission Measurement					
No.	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	1911	2022.08.07
2	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	869	2022.08.07
3	Amplifier	Agilent	8449B	3008A01838	2022.08.05
4	Amplifier	HP	8447E	2945A02747	2022.08.05
5	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESPI7	100362	2022.08.05
6	Coaxial cable	ETS	RFC-SNS-100-NMS-80 NI	/	2022.08.05
7	Coaxial cable	ETS	RFC-SNS-100-NMS-20 NI	/	2022.08.05
8	Coaxial cable	ETS	RFC-SNS-100-SMS-20 NI	/	2022.08.05
9	Coaxial cable	ETS	RFC-NNS-100 -NMS-300 NI	/	2022.08.05
10	EZ-EMC	Frad	EMC-con3A1.1	/	/

6. Conducted Emission

6.1. Limit

☒ Except for Class B devices:

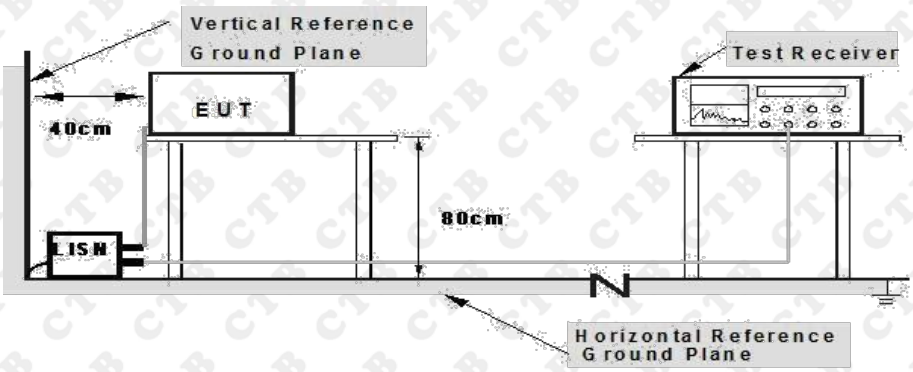
Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

Note: Decreases with the logarithm of the frequency.

☐ For Class A devices:

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	79	66
0.5-30	73	60

6.2. 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 from other units and other metal planes

The setup of EUT is according with ANSI C63.4 measurement procedure. Specification used with FCC Part 15 limits.

6.3. EMI test receiver setup

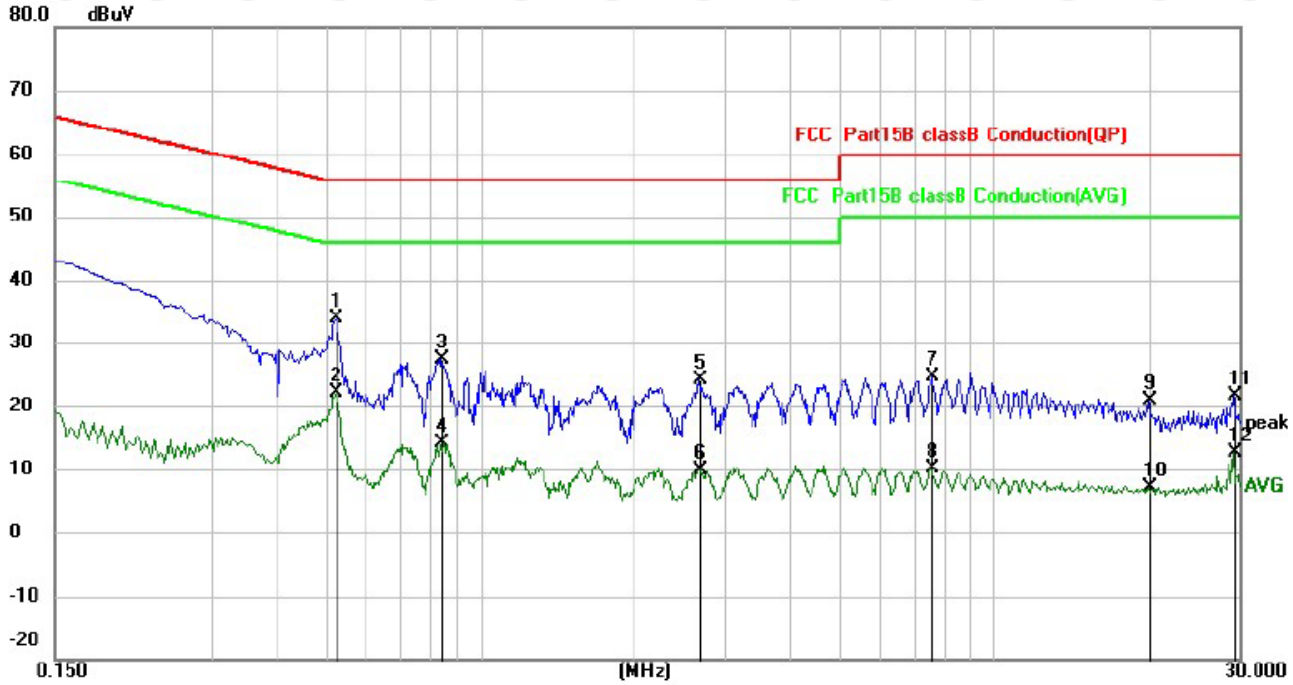
Frequency Range	9kHz-30MHz
Resolution Bandwidth	200Hz (9kHz-150kHz) 9kHz (150kHz-30MHz)

6.4. Test procedure

1. Measurement was performed in shielded room, and instruments used were followed clause 4 of ANSI C63.4.
2. Detailed test procedure was following clause 7 of ANSI C63.4.
3. Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.

6.5. Test results

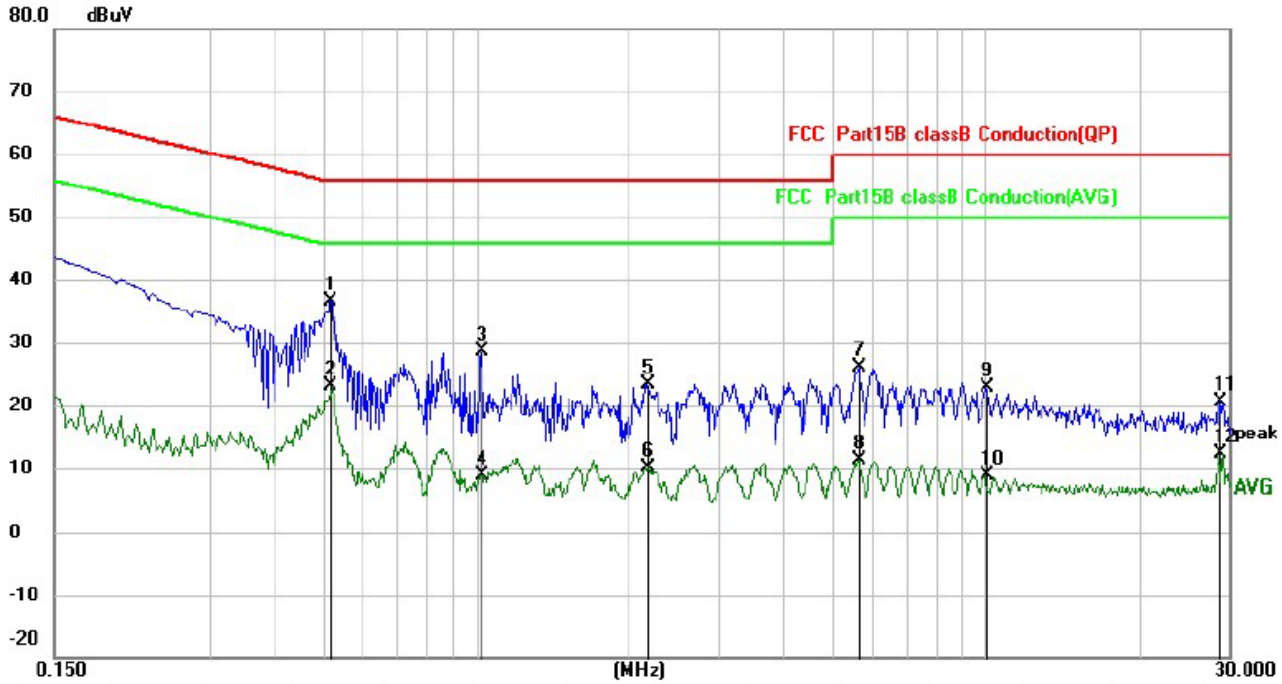
Temperature:	23℃	Relative Humidity:	54 %
Pressure:	101kPa	Phase :	Line
Test Voltage :	AC 120V/60Hz	Test Mode:	Mode 1



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.5260	24.00	9.96	33.96	56.00	-22.04	QP
2		0.5260	12.08	9.96	22.04	46.00	-23.96	AVG
3		0.8420	17.30	9.96	27.26	56.00	-28.74	QP
4		0.8420	4.05	9.96	14.01	46.00	-31.99	AVG
5		2.6780	14.00	10.05	24.05	56.00	-31.95	QP
6		2.6780	-0.10	10.05	9.95	46.00	-36.05	AVG
7		7.5780	14.02	10.49	24.51	60.00	-35.49	QP
8		7.5780	-0.45	10.49	10.04	50.00	-39.96	AVG
9		20.0260	9.81	11.14	20.95	60.00	-39.05	QP
10		20.0260	-3.96	11.14	7.18	50.00	-42.82	AVG
11		29.2340	10.38	11.29	21.67	60.00	-38.33	QP
12		29.2340	1.40	11.29	12.69	50.00	-37.31	AVG

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

Temperature:	23℃	Relative Humidity:	54 %
Pressure:	101kPa	Phase :	Neutral
Test Voltage :	AC 120V/60Hz	Test Mode:	Mode 1



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.5180	26.62	9.96	36.58	56.00	-19.42	QP
2		0.5180	13.13	9.96	23.09	46.00	-22.91	AVG
3		1.0260	18.75	9.96	28.71	56.00	-27.29	QP
4		1.0260	-0.99	9.96	8.97	46.00	-37.03	AVG
5		2.1580	13.34	10.02	23.36	56.00	-32.64	QP
6		2.1580	0.14	10.02	10.16	46.00	-35.84	AVG
7		5.6340	15.80	10.25	26.05	60.00	-33.95	QP
8		5.6340	1.14	10.25	11.39	50.00	-38.61	AVG
9		10.0460	12.00	10.80	22.80	60.00	-37.20	QP
10		10.0460	-1.99	10.80	8.81	50.00	-41.19	AVG
11		28.6860	9.43	11.28	20.71	60.00	-39.29	QP
12		28.6860	1.20	11.28	12.48	50.00	-37.52	AVG

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

7. Radiated emissions

7.1. Limit

☒ Except for Class B devices (at 3m):

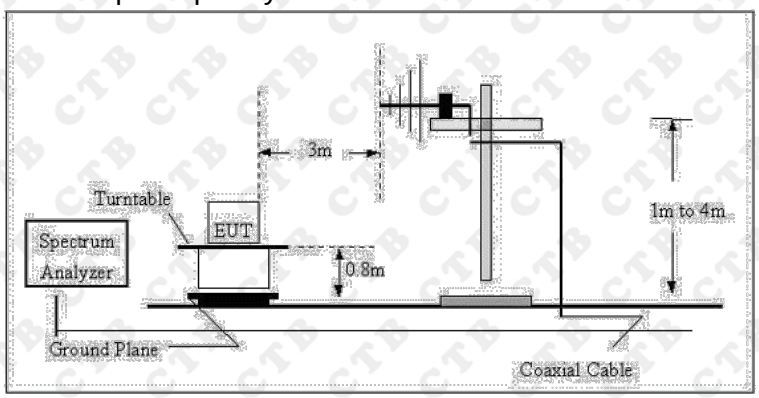
Frequency of emission (MHz)	Field strength (microvolts/meter)	
	(microvolts/meter)	(dBμV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

☐ For Class A devices (at 10m):

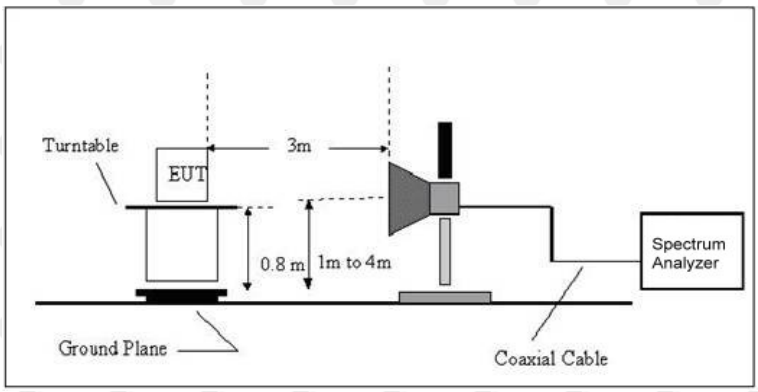
Frequency of emission (MHz)	Field strength (microvolts/meter)	
	(microvolts/meter)	(dBμV/m)
30-88	90	39
88-216	150	43.5
216-960	210	46.4
Above 960	300	49.5

7.2. Test setup

Radiated Emission Test Set-Up Frequency Below 1 GHz



Radiated Emission Test Set-Up Frequency Above 1GHz



The radiated tests wer performed in 3 meter Charmber test site, using the setup accordance with the ANSI C63.4:2014.

7.3. EMI test receiver setup and spectrum analyzer setup

During the radiated emission test, the EMI test receiver and Spectrum Analyzer were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30MHz-1000MHz	100kHz	300kHz	120kHz	QP
Above 1GHz	1MHz	3MHz	/	PK
	1MHz	10Hz	/	AVG

7.4. Test procedure

1. The measurement was performed in a semi-anechoic chamber, and instruments used were followed clause 4 of ANSI C63.4

2. Detailed test procedure was following clause 8 of ANSI C63.4.

7.5. Corrected Amplitude & Margin Calculation

1. The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

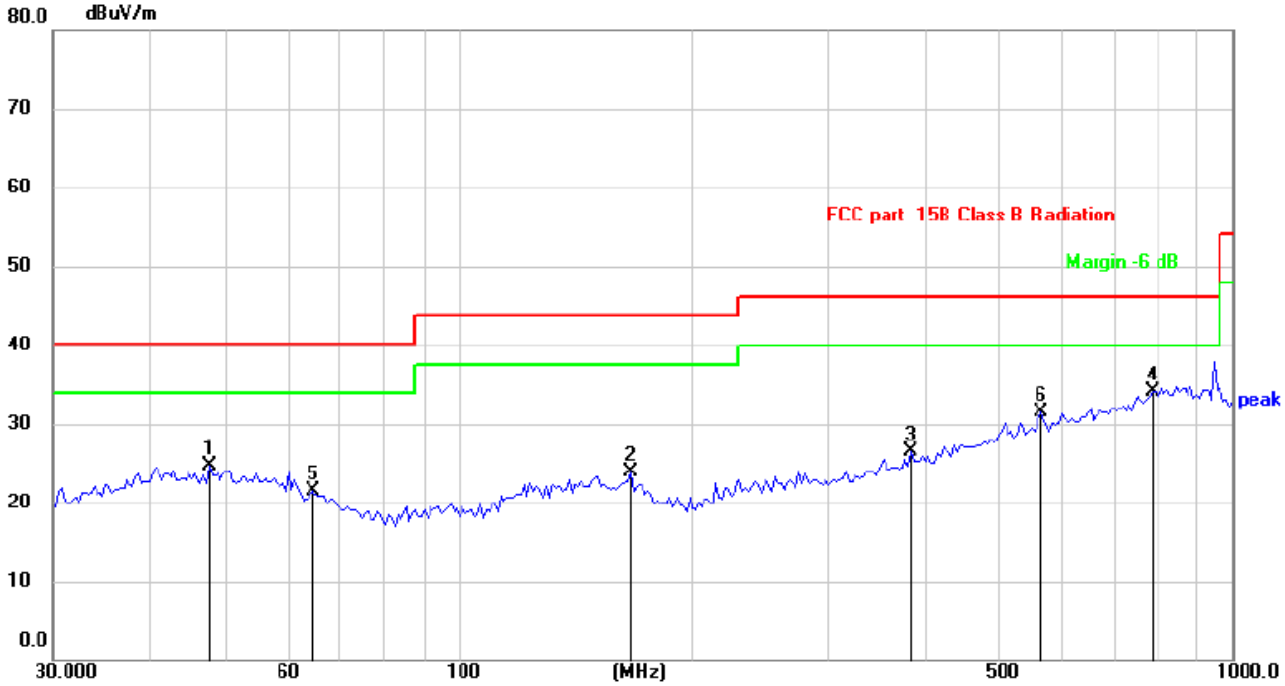
Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

2. The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

7.6. Test results

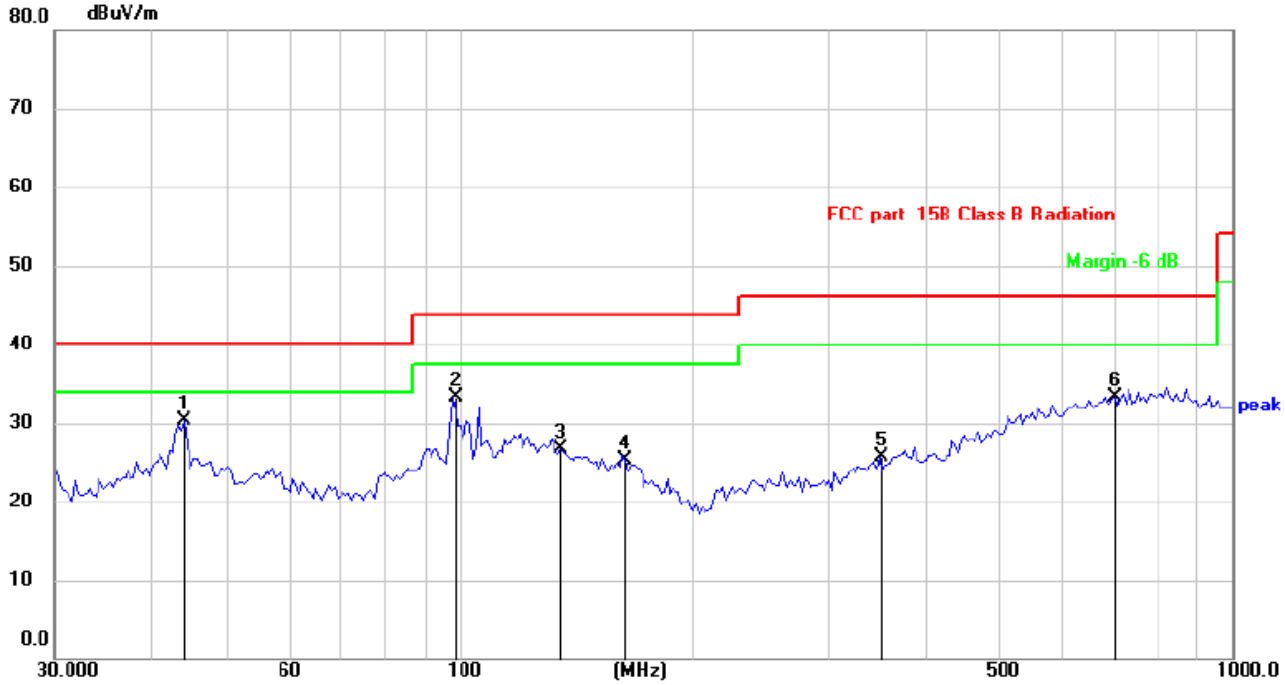
Temperature:	23℃	Relative Humidity:	54 %
Pressure:	101kPa	Polarization :	Horizontal
Test Voltage :	AC 120V/60Hz	Test Mode:	Mode 1



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		47.7421	30.26	-5.56	24.70	40.00	-15.30	QP
2		167.2366	29.81	-5.99	23.82	43.50	-19.68	QP
3		384.6055	28.67	-2.22	26.45	46.00	-19.55	QP
4	*	789.2335	28.38	5.81	34.19	46.00	-11.81	QP
5		64.8863	28.56	-7.03	21.53	40.00	-18.47	QP
6		565.6295	29.50	1.93	31.43	46.00	-14.57	QP

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

Temperature:	23℃	Relative Humidity:	54 %
Pressure:	101kPa	Polarization :	Vertical
Test Voltage :	AC 120V/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	*	44.1200	35.65	-5.42	30.23	40.00	-9.77	QP
2		97.9700	42.08	-8.86	33.22	43.50	-10.28	QP
3		135.5061	32.50	-5.76	26.74	43.50	-16.76	QP
4		164.3301	31.16	-5.82	25.34	43.50	-18.16	QP
5		349.2500	29.14	-3.48	25.66	46.00	-20.34	QP
6		704.2260	29.20	4.06	33.26	46.00	-12.74	QP

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

8. Photographs of test setup

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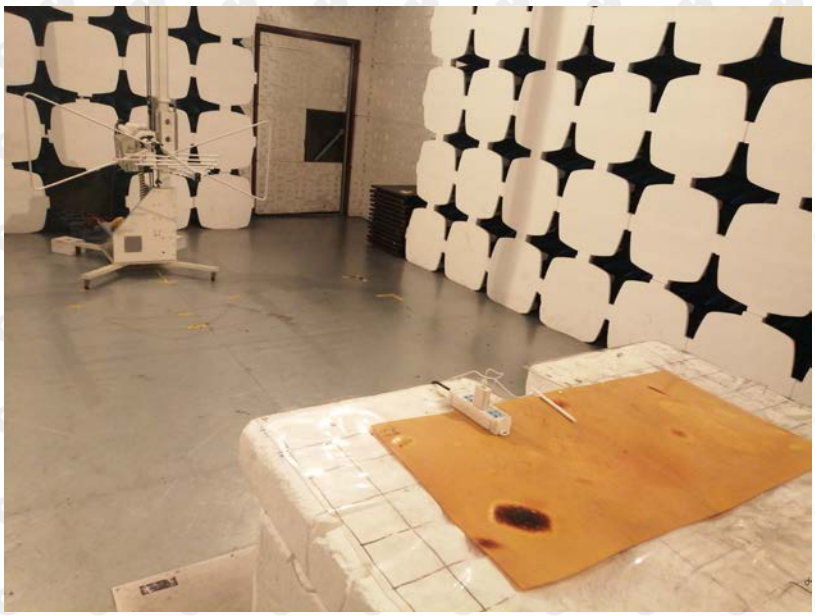

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9. Photographs of EUT

EUT photo 1

EUT photo 2

End of report