TCT 通测检测 TESTING CENTRE TECHNOLOGY

TEST REPORT

FCC ID. ..... :	HLEEA630PBWNW	
Test Report No..... :	TCT220824E022	
Date of issue..... :	Sep. 27, 2022	
Testing laboratory ..... :	SHENZHEN TONGCE TESTING LAB	
Testing location/ address:	2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China	
Applicant's name..... :	Unitech Electronics Co., Ltd.	
Address..... :	5F, No. 136, Lane 235, Pao-Chiao Rd., Hsin-Tien Dist., New Taipei City, Taiwan	
Manufacturer's name ... :	Unitech Electronics Co., Ltd.	
Address..... :	5F, No. 136, Lane 235, Pao-Chiao Rd., Hsin-Tien Dist., New Taipei City, Taiwan	
Standard(s) ..... :	FCC CFR Title 47 Part 15 Subpart C Section 15.225	
Product Name..... :	Rugged Handheld Computer	
Trade Mark ..... :	unitech	
Model/Type reference..... :	EA630 Plus	
Rating(s)..... :	Refer to EUT description of page 3	
Date of receipt of test item ..... :	Aug. 24, 2022	
Date (s) of performance of test..... :	Aug. 24, 2022 - Sep. 27, 2022	
Tested by (+signature) ... :	Brews XU	
Check by (+signature).... :	Beryl ZHAO	
Approved by (+signature):	Tomsin	

General disclaimer:

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Table of Contents

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

1. General Product Information

1.1. EUT description

Product Name.....:	Rugged Handheld Computer
Model/Type reference.....:	EA630 Plus
Sample Number.....:	TCT220824E003-0101
Operation Frequency.....:	13.56MHz
Antenna Type.....:	Internal Antenna
Rating(s).....:	Adapter Information: MODEL: S018BYU1200150 INPUT: AC 100-240V, 50/60Hz, 0.6A OUTPUT: DC 5V, 3A/ DC 9V, 2A/ DC 12V, 1.5A Rechargeable Li-ion Battery DC 3.85V

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

None.

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2. Test Result Summary

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203	PASS
AC Power Line Conducted Emission	§15.207	PASS
Spurious emissions	§15.225/ §15.209	PASS
Occupied Bandwidth	§15.215 (c)	PASS
Frequency stability	§15.225	PASS

Note:

1. PASS: Test item meets the requirement.

2. Fail: Test item does not meet the requirement.

3. N/A: Test case does not apply to the test object.

4. The test result judgment is decided by the limit of test standard.

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3. General Information

3.1. Test Environment and Mode

Operating Environment:		
Condition	Conducted Emission	Radiated Emission
Temperature:	25.3 °C	24.1 °C
Humidity:	56 % RH	52 % RH
Test Mode:		
Engineer mode:	Keep the EUT in continuous transmitting by select channel and modulations with Fully-charged battery	
The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case(Z axis) are shown in Test Results of the following pages.		

3.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

Note:

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.

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4. Facilities and Accreditations

4.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

- FCC - Registration No.: 645098

  SHENZHEN TONGCE TESTING LAB

  Designation Number: CN1205

  The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A-1

  SHENZHEN TONGCE TESTING LAB

  CAB identifier: CN0031

  The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

4.2. Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

4.3. Measurement Uncertainty

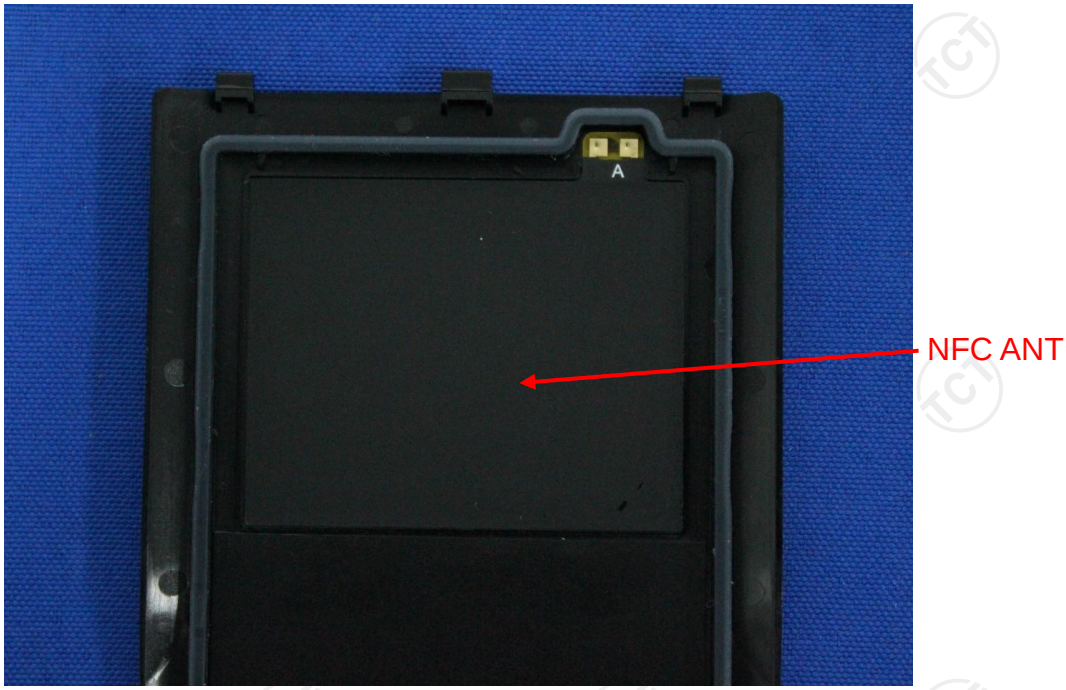
The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission	± 3.10 dB
2	RF power, conducted	± 0.12 dB
3	Spurious emissions, conducted	± 0.11 dB
4	All emissions, radiated(<1 GHz)	± 4.56 dB
5	All emissions, radiated(1 GHz - 18 GHz)	± 4.22 dB
6	All emissions, radiated(18 GHz- 40 GHz)	± 4.36 dB

5. Test Results and Measurement Data

5.1. Antenna Requirement

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: 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, 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.	
E.U.T Antenna:	
The NFC antenna is internal antenna which permanently attached.	



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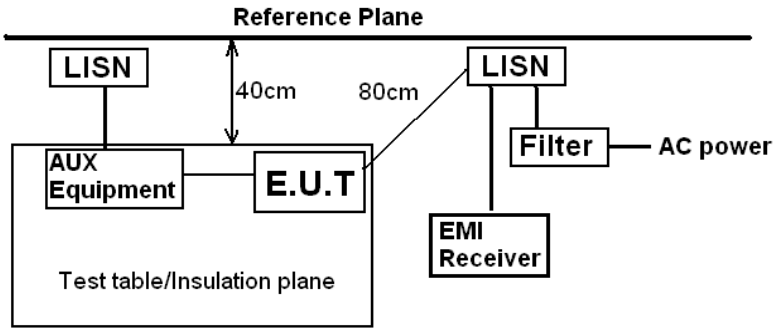
5.2. Conducted Emission

5.2.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Frequency Range:</td><td>150 kHz to 30 MHz</td></tr>
<tr><td>Receiver setup:</td><td>RBW=9 kHz, VBW=30 kHz, Sweep time=auto</td></tr>
<tr><td>Limits:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
</td></tr>
<tr><td>Test Setup:</td><td> 

Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m</td></tr>
<tr><td>Test Mode:</td><td>Charging + Transmitting Mode</td></tr>
<tr><td>Test Procedure:</td><td>1. The E.U.T is connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.
2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).
3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.</td></tr>
<tr><td>Test Result:</td><td>PASS</td></tr>
</table>

5.2.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI Test Receiver	R&S	ESCI3	100898	Jul. 03, 2023
Line Impedance Stabilisation Newtork(LISN)	Schwarzbeck	NSLK 8126	8126453	Feb. 24, 2023
Line-5	TCT	CE-05	/	Jul. 03, 2023
EMI Test Software	Shurple Technology	EZ-EMC	/	/

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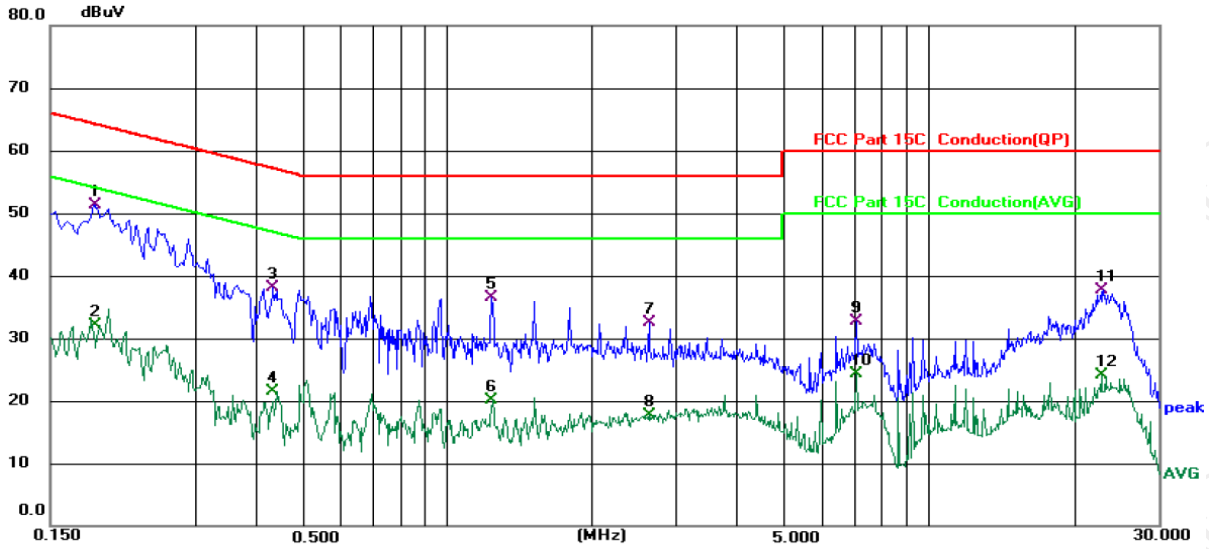
5.2.3. Test data

Please refer to following diagram for individual

Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room | Phase: *L1* | Temperature: 25.3 (℃) | Humidity: 56 %

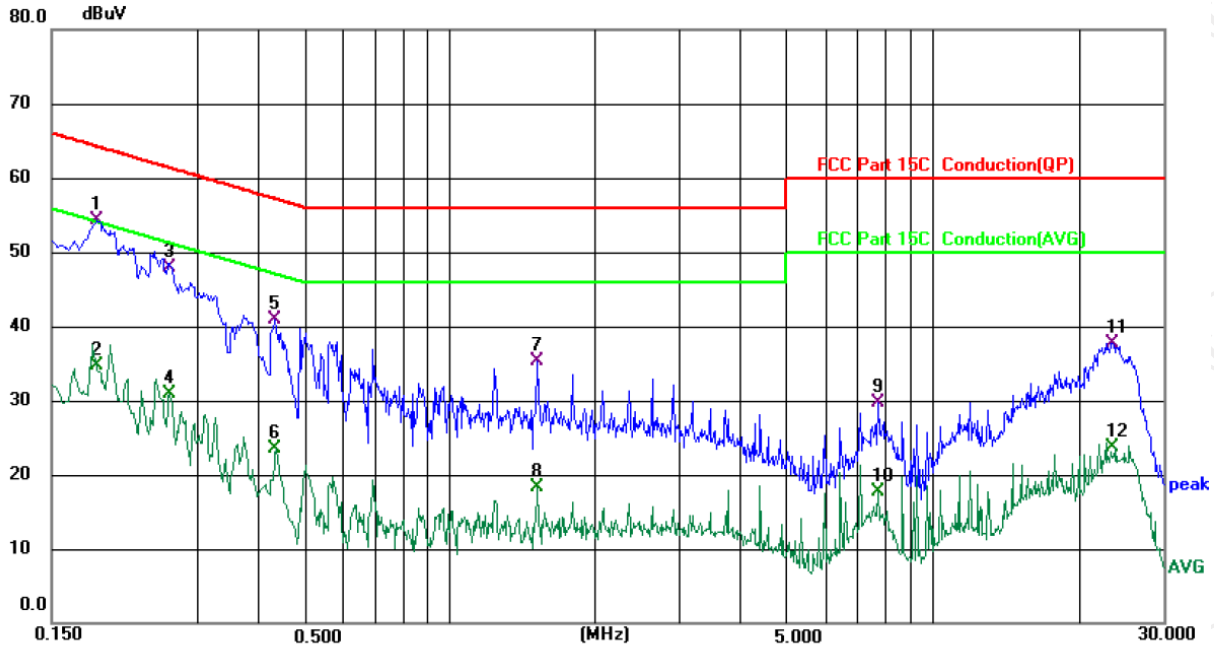
Limit: FCC Part 15C Conduction(QP) | Power: AC 120 V/60 Hz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1859	40.79	10.51	51.30	64.22	-12.92	QP	
2		0.1859	21.64	10.51	32.15	54.22	-22.07	AVG	
3		0.4339	27.87	10.18	38.05	57.18	-19.13	QP	
4		0.4339	11.33	10.18	21.51	47.18	-25.67	AVG	
5		1.2419	26.43	10.09	36.52	56.00	-19.48	QP	
6		1.2419	10.01	10.09	20.10	46.00	-25.90	AVG	
7		2.6259	22.46	10.02	32.48	56.00	-23.52	QP	
8		2.6259	7.78	10.02	17.80	46.00	-28.20	AVG	
9		7.0780	22.63	10.16	32.79	60.00	-27.21	QP	
10		7.0780	14.16	10.16	24.32	50.00	-25.68	AVG	
11		22.8060	27.14	10.49	37.63	60.00	-22.37	QP	
12		22.8060	13.55	10.49	24.04	50.00	-25.96	AVG	

Note:

Freq. = Emission frequency in MHz
Reading level (dBμV) = Receiver reading
Corr. Factor (dB) = LISN factor + Cable loss
Measurement (dBμV) = Reading level (dBμV) + Corr. Factor (dB)
Limit (dBμV) = Limit stated in standard
Margin (dB) = Measurement (dBμV) – Limits (dBμV)
Q.P. =Quasi-Peak, AVG =average
** is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz*

Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room | Phase: *N* | Temperature: 25.3 (℃) | Humidity: 56 %

Limit: FCC Part 15C Conduction(QP) | Power: AC 120 V/60 Hz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1853	43.74	10.48	54.22	64.24	-10.02	QP	
2		0.1853	24.23	10.48	34.71	54.24	-19.53	AVG	
3		0.2620	37.61	10.26	47.87	61.37	-13.50	QP	
4		0.2620	20.73	10.26	30.99	51.37	-20.38	AVG	
5		0.4339	30.66	10.18	40.84	57.18	-16.34	QP	
6		0.4339	13.27	10.18	23.45	47.18	-23.73	AVG	
7		1.5180	25.22	10.11	35.33	56.00	-20.67	QP	
8		1.5180	8.18	10.11	18.29	46.00	-27.71	AVG	
9		7.7060	19.36	10.26	29.62	60.00	-30.38	QP	
10		7.7060	7.54	10.26	17.80	50.00	-32.20	AVG	
11		23.5740	27.34	10.46	37.80	60.00	-22.20	QP	
12		23.5740	13.22	10.46	23.68	50.00	-26.32	AVG	

Note:

Freq. = Emission frequency in MHz

Reading level (dBμV) = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement (dBμV) = Reading level (dBμV) + Corr. Factor (dB)

Limit (dBμV) = Limit stated in standard

Margin (dB) = Measurement (dBμV) – Limits (dBμV)

Q.P. =Quasi-Peak

AVG =average

** is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz*

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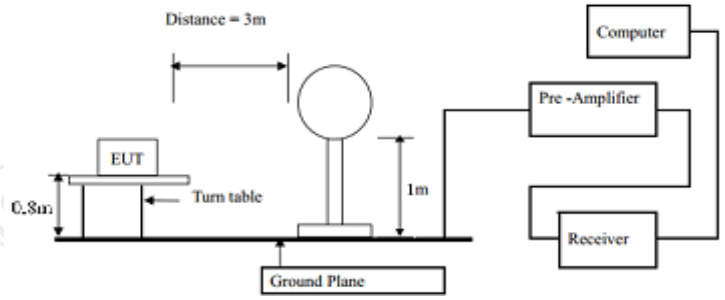
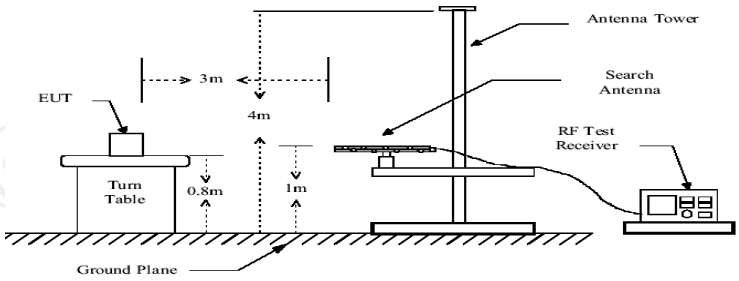
5.3. Radiated Emission Measurement

5.3.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.225</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10: 2013</td></tr>
<tr><td>Frequency Range:</td><td>9 kHz to 1000 MHz</td></tr>
<tr><td>Measurement Distance:</td><td>3 m</td></tr>
<tr><td>Antenna Polarization:</td><td>Horizontal & Vertical</td></tr>
<tr><td>Receiver Setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>9kHz- 150kHz</td><td>Quasi-peak</td><td>200Hz</td><td>1kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>150kHz-30MHz</td><td>Quasi-peak</td><td>9kHz</td><td>30kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
FCC Part15 C Section 15.225
<table>
<tr><th>Frequency (MHz)</th><th>Limit (uV/m @30m)</th><th>Limit (dBuV/m @3m)</th><th>Detector</th></tr>
<tr><td>13.110-13.410</td><td>106</td><td>80.5</td><td>QP</td></tr>
<tr><td>13.410-13.553</td><td>334</td><td>90.5</td><td>QP</td></tr>
<tr><td>13.553-13.567</td><td>15848</td><td>124.0</td><td>QP</td></tr>
<tr><td>13.567-13.7110</td><td>224</td><td>90.5</td><td>QP</td></tr>
<tr><td>13.710-14.010</td><td>106</td><td>80.5</td><td>QP</td></tr>
</table>
Note: RF Voltage (dBuV) = 20 log RF Voltage (uV)
Limit (dBuV/m @3m) = 20log(Limit (uV/m @30m)) + 40
FCC Part15 C Section 15.209
<table>
<tr><th>Frequency Range (MHz)</th><th>Distance (m)</th><th>Field strength (dBμ V/m)</th><th>Detector</th></tr>
<tr><td>0.009-0.490</td><td>3</td><td>20log 2400/F (kHz) + 80</td><td>QP</td></tr>
<tr><td>0.490-1.705</td><td>3</td><td>20log 24000/F (kHz) + 40</td><td>QP</td></tr>
<tr><td>1.705-30</td><td>3</td><td>20log 30 + 40</td><td>QP</td></tr>
<tr><td>30-88</td><td>3</td><td>40.0</td><td>QP</td></tr>
<tr><td>88-216</td><td>3</td><td>43.5</td><td>QP</td></tr>
<tr><td>216-960</td><td>3</td><td>46.0</td><td>QP</td></tr>
<tr><td>Above 960</td><td>3</td><td>54.0</td><td>QP</td></tr>
</table>
Note:
1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT
4. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.
5. If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula Ld1 = Ld2 * (d2/d1)
</td></tr>
</table>

Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber in below 1GHz. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. 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. 4. 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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. 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.
Test setup:	For radiated emissions below 30MHz  30MHz to 1GHz 
Test Mode:	Refer to section 3.1 for details
Test results:	PASS

5.3.2. Test Instruments

Radiated Emission Test Site (966)				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI Test Receiver	R&S	ESIB7	100197	Jul. 03, 2023
Spectrum Analyzer	R&S	FSQ40	200061	Jul. 03, 2023
Pre-amplifier	SKET	LNPA_0118G-45	SK2021012102	Feb. 24, 2023
Pre-amplifier	SKET	LNPA_1840G-50	SK202109203500	Feb. 24, 2023
Pre-amplifier	HP	8447D	2727A05017	Jul. 03, 2023
Loop antenna	Schwarzbeck	FMZB1519B	00191	Jun. 11, 2024
Broadband Antenna	Schwarzbeck	VULB9163	340	Jul. 05, 2024
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Jul. 05, 2024
Horn Antenna	Schwarzbeck	BBHA 9170	00956	Apr. 10, 2023
Coaxial cable	SKET	RC-18G-N-M	/	Feb. 24, 2024
Coaxial cable	SKET	RC_40G-K-M	/	Feb. 24, 2024
EMI Test Software	Shurple Technology	EZ-EMC	/	/

5.3.3. Test Data

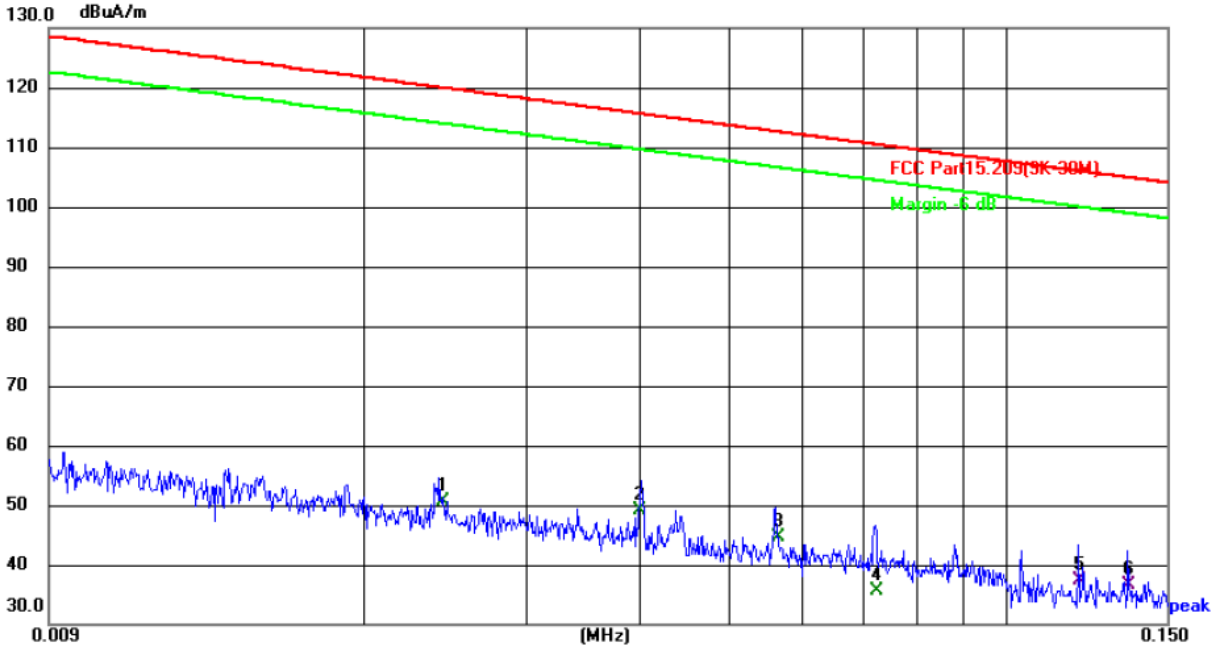
Field Strength of Fundamental

Frequency (MHz)	Emission Level dBuV/m@3m	Emission Level dBuV/m@30m	Limits dBuV/m@30m	Result
13.56	57.25	17.25	84	PASS

Spurious Emissions

9KHz-30MHz

9KHz-150KHz:



Site

Polarization: *Vertical*

Temperature: 24(℃)

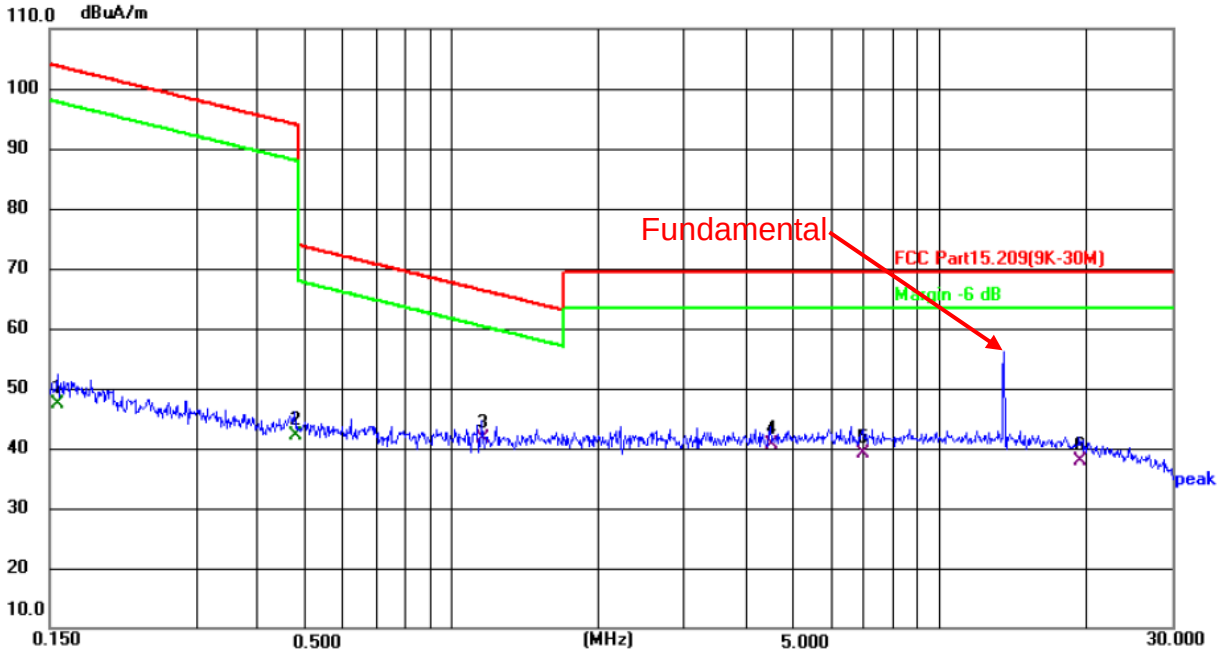
Limit: FCC Part15.209(9K-30M)

Power: DC 3.7 V

Humidity: 52 %

No.	Frequency (MHz)	Reading (dBuA)	Factor (dB/m)	Level (dBuA/m)	Limit (dBuA/m)	Margin (dB)	Detector	P/F	Remark
1 X	0.0241	30.04	20.54	50.58	119.96	-69.38	AVG	P	
2 *	0.0400	28.62	20.54	49.16	115.56	-66.40	AVG	P	
3 X	0.0561	23.89	20.76	44.65	112.63	-67.98	AVG	P	
4 X	0.0720	14.64	21.05	35.69	110.46	-74.77	AVG	P	
5	0.1201	16.74	20.60	37.34	106.01	-68.67	QP	P	
6	0.1362	16.35	20.29	36.64	104.92	-68.28	QP	P	

150KHz-30MHz:



Site

Polarization: *Vertical*

Temperature: 24(℃)

Limit: FCC Part15.209(9K-30M)

Power: DC 3.7 V

Humidity: 52 %

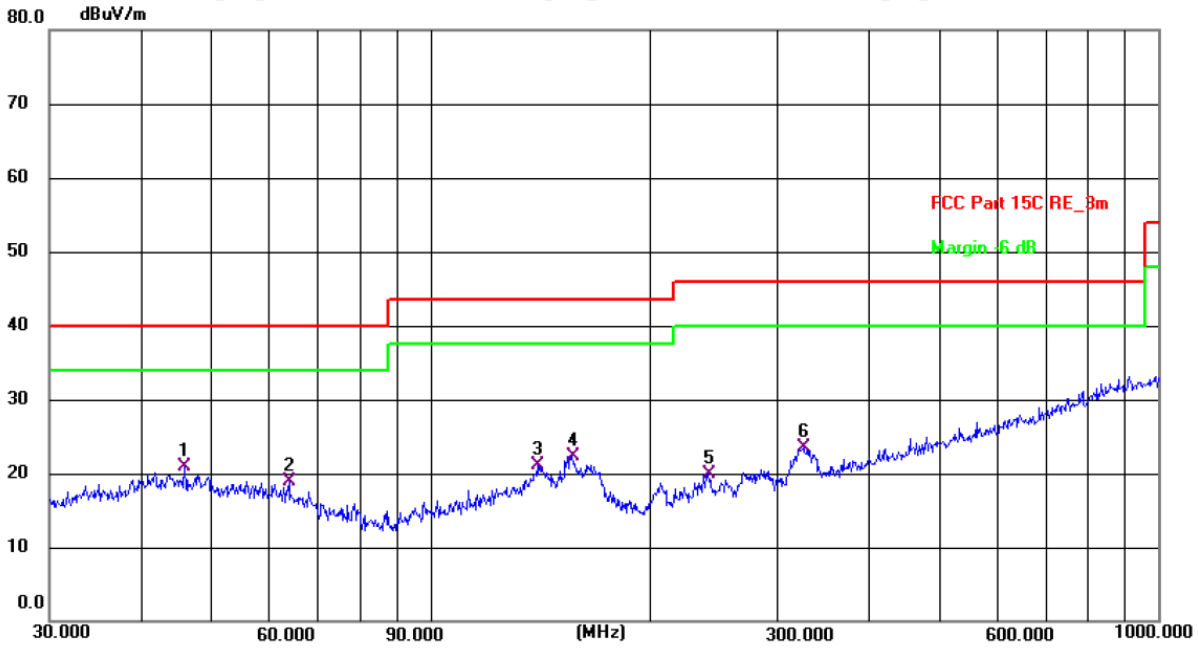
No.	Frequency (MHz)	Reading (dBuA)	Factor (dB/m)	Level (dBuA/m)	Limit (dBuA/m)	Margin (dB)	Detector	P/F	Remark
1 X	0.1559	26.58	20.74	47.32	103.75	-56.43	AVG	P	
2 X	0.4770	20.54	21.49	42.03	94.03	-52.00	AVG	P	
3 *	1.1534	18.71	22.97	41.68	66.39	-24.71	QP	P	
4	4.5174	10.80	29.71	40.51	69.50	-28.99	QP	P	
5	6.9878	4.78	34.43	39.21	69.50	-30.29	QP	P	
6	19.3598	18.39	19.56	37.95	69.50	-31.55	QP	P	

Note *：1) Emission Level=Peak Reading + Correction Factor;*

Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

30MHz-1GHz

Horizontal:

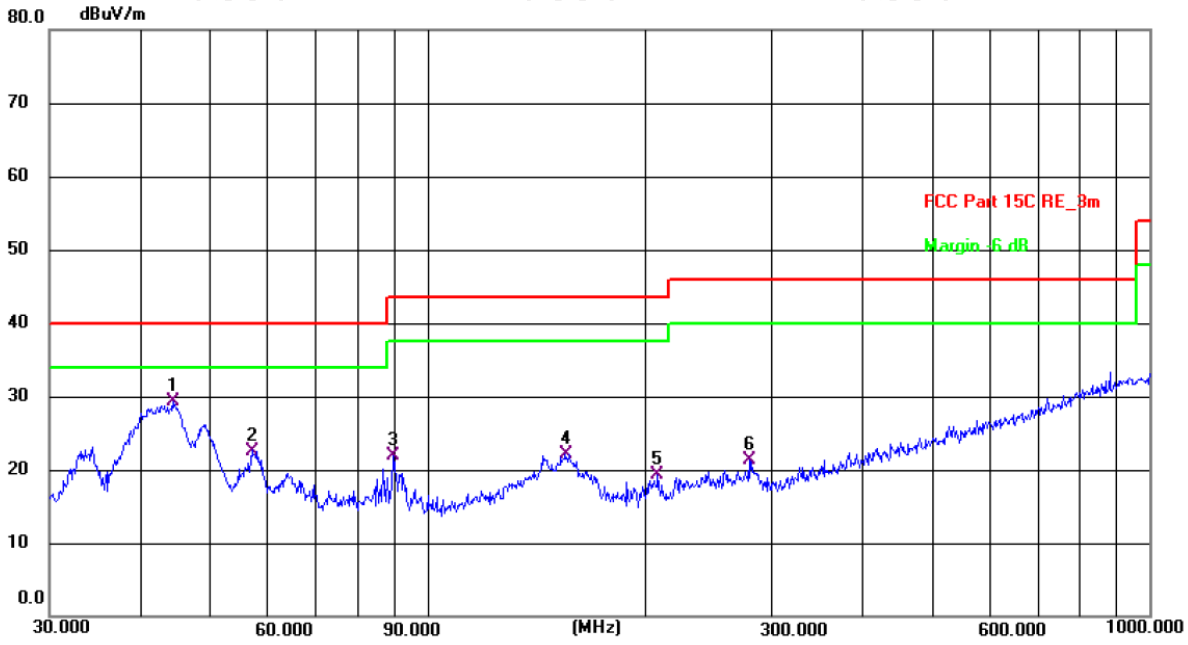


Site #2 3m Anechoic Chamber Polarization: ***Horizontal*** Temperature: 24.1(C) Humidity: 52 %

Limit: FCC Part 15C RE_3m Power: DC 3.85 V

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	46.0162	6.96	13.88	20.84	40.00	-19.16	QP	P	
2	63.9827	6.56	12.31	18.87	40.00	-21.13	QP	P	
3	140.3420	7.82	13.25	21.07	43.50	-22.43	QP	P	
4	156.4577	8.99	13.38	22.37	43.50	-21.13	QP	P	
5	240.8303	7.21	12.74	19.95	46.00	-26.05	QP	P	
6	325.5958	8.95	14.60	23.55	46.00	-22.45	QP	P	

Vertical:



Site #2 3m Anechoic Chamber Polarization: *Vertical* Temperature: 24.1(C) Humidity: 52 %

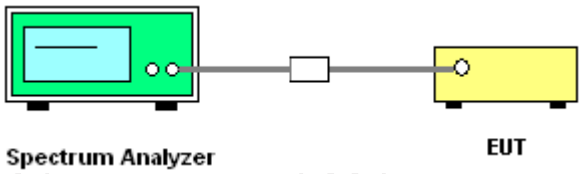
Limit: FCC Part 15C RE_3m Power: DC 3.85 V

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	44.4307	15.34	13.92	29.26	40.00	-10.74	QP	P	
2	57.1914	9.29	13.31	22.60	40.00	-17.40	QP	P	
3	89.9046	12.71	9.26	21.97	43.50	-21.53	QP	P	
4	155.3643	8.73	13.38	22.11	43.50	-21.39	QP	P	
5	208.5801	8.62	10.74	19.36	43.50	-24.14	QP	P	
6	279.0436	7.15	14.06	21.21	46.00	-24.79	QP	P	

Note *: 1) Emission Level=Peak Reading + Correction Factor;*
Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

5.4. Occupied Bandwidth

5.4.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.215(c)
Test Method:	ANSI C63.10: 2013
Limit:	N/A
Test Procedure:	1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT. 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Use the following spectrum analyzer settings for 20dB Bandwidth measurement. Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel; RBW≥ 1% of the 20 dB bandwidth; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold. 4. Measure and record the results in the test report.
Test setup:	
Test Mode:	Refer to section 3.1 for details
Test results:	PASS

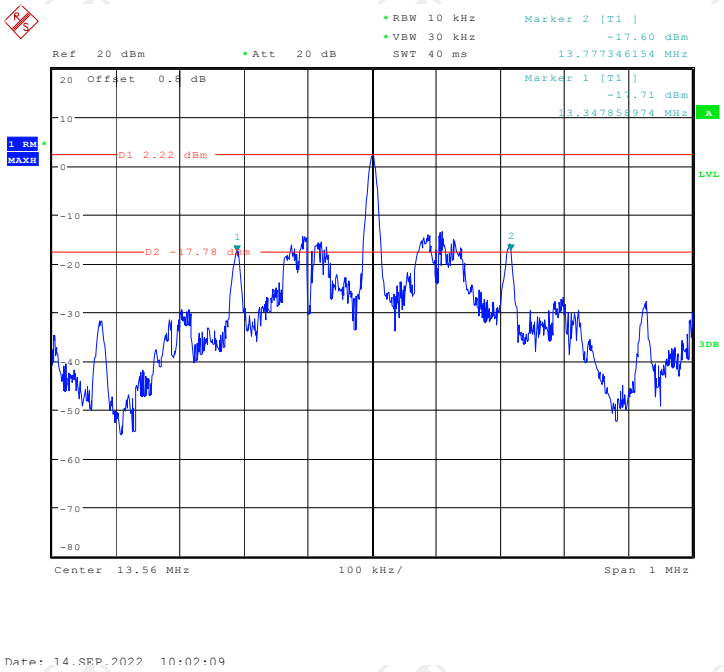
5.4.2. Test Instruments

RF Test Room				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	R&S	FSU	200054	Jul. 04, 2023

5.4.3. Test data

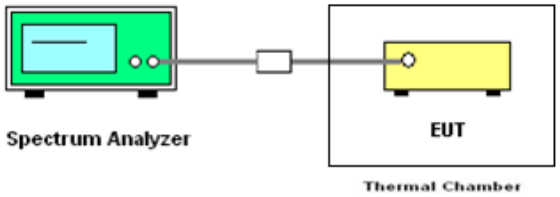
Frequency(MHz)	20dB Occupy Bandwidth (kHz)	Limit (kHz)	Conclusion
13.56	429.49	---	PASS

Test plots as follows:



5.5. Frequency stability

5.5.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.225
Test Method:	ANSI C63.10 : 2013
Operation mode:	Refer to item 3.1
Limit:	+/-0.01%
Test Setup:	
Test Procedure:	1. The equipment under test was connected to an external DC power supply and input rated voltage. 2. RF output was connected to a spectrum analyzer. 3. The EUT was placed inside the temperature chamber. 4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20℃ operating frequency as reference frequency. 5. Turn EUT off and set the chamber temperature to -20℃. After the temperature stabilized for approximately 30 minutes recorded the frequency. 6. Repeat step measure with 10℃ increased per stage until the highest temperature of +55℃ reached. 7. Repeat step measure with a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C
Test Result:	PASS

5.5.2. Test Instruments

RF Test Room				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	R&S	FSU	200054	Jul. 04, 2023
DC power supply	Kingrang	KR3005K	/	Jul. 04, 2023

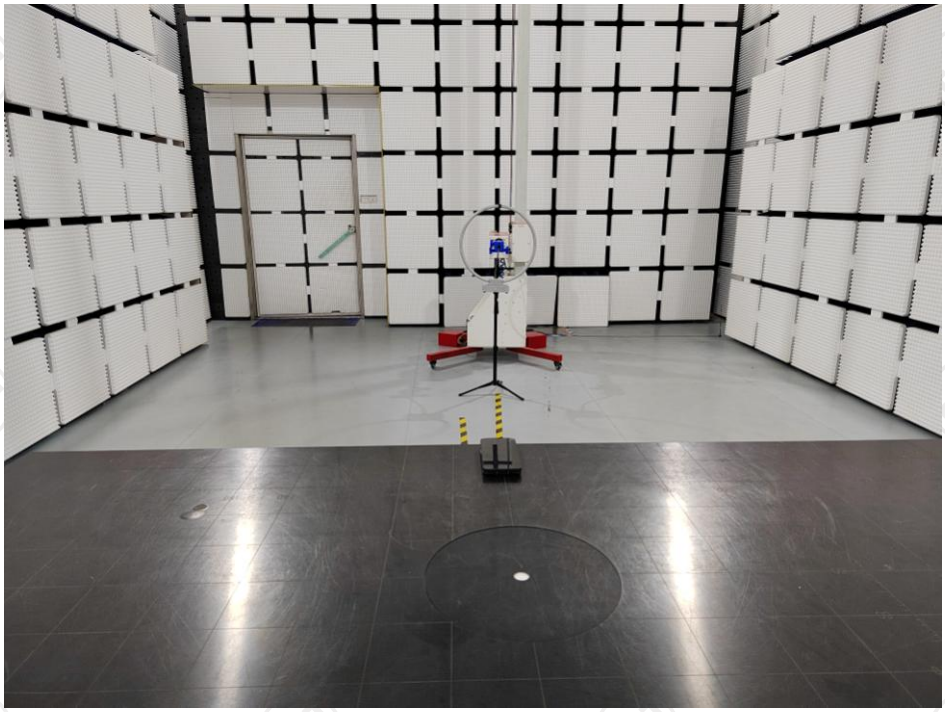
5.5.3. Test Data

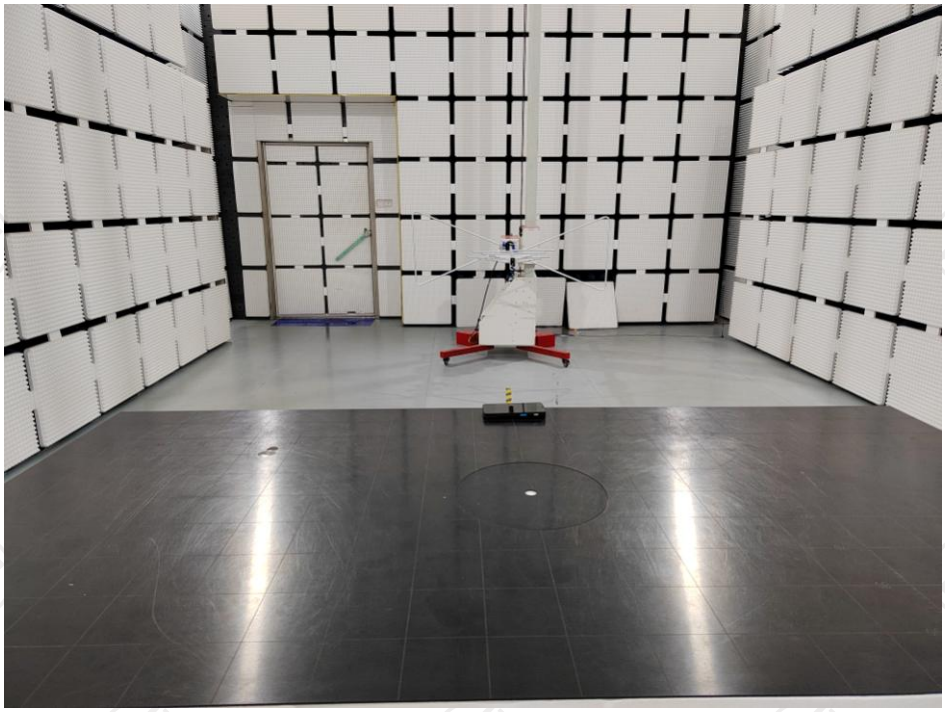
Voltage (Vdc)	Temperature (℃)	Frequency (MHz)	Deviation (%)	Limit (%)
3.85	-20	13.560969	0.00715	+/-0.01%
3.85	-10	13.560915	0.00675	
3.85	0	13.560934	0.00689	
3.85	10	13.560961	0.00709	
3.85	20	13.561000	0.00737	
3.85	30	13.560982	0.00724	
3.85	40	13.560907	0.00669	
3.85	50	13.560906	0.00668	
3.85	55	13.560903	0.00666	
4.35	20	13.560966	0.00712	
3.3	20	13.560958	0.00706	

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

Appendix A: Photographs of Test Setup

Product: Rugged Handheld Computer
Model: EA630 Plus
Radiated Emission





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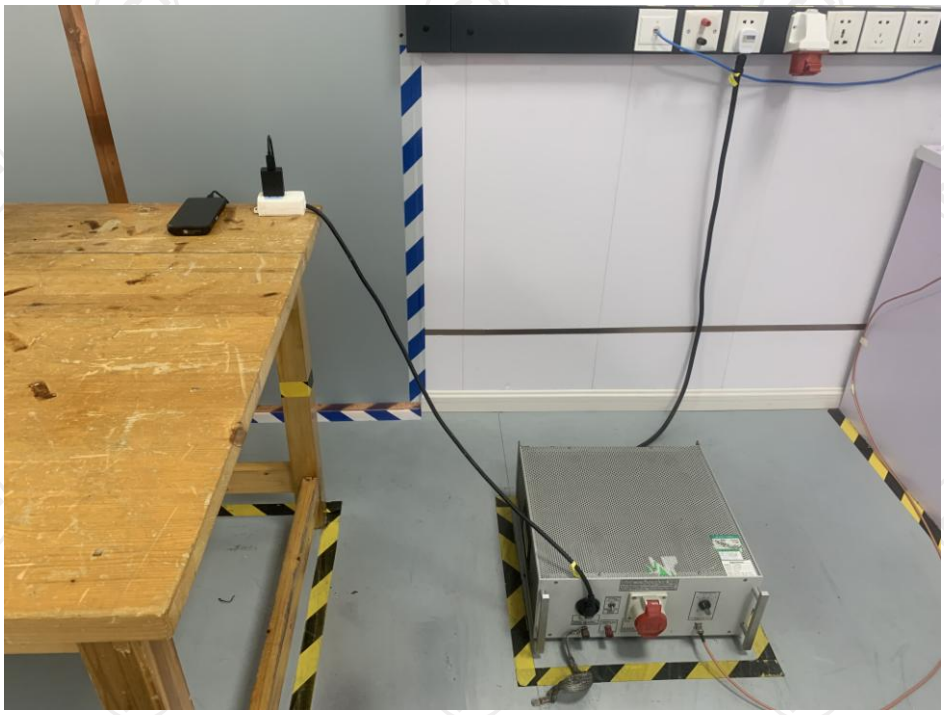
Conducted Emission



Appendix B: Photographs of EUT

Refer to the test report No. TCT220824E003

********END OF REPORT********