FCC TEST REPORT
FCC ID:2BGD3-MS

Report No.....	: ZHT-250425103W02
Product.....	: NeoCore Pro
Trademark.....	: SPELEC
Model(s).....	: NEOCORE-MS-5K, RRPB50, RRPB54, RRPB55, Super ChargePro, MS-PB01, MS-PB, NEOCORE-MS-10KS, NEOCORE-MS-5KS
Model Difference.....	: NEOCORE-MS-5K is tested model, other models are derivative models. The models are identical in circuit, only different on the model names. So the test data of NEOCORE-MS-5K can represent the remaining models.
Applicant.....	: Shuopu Electronics(Donguan) Co., LTD
Address.....	: 4F, A Bldg, Hesheng Science Park, Nanshe Rd, Dongfeng Comm, HumenTn, Duangguan, GD, CN (523932)
Manufacturer.....	: Shuopu Electronics(Donguan) Co., LTD
Address.....	: 4F, A Bldg, Hesheng Science Park, Nanshe Rd, Dongfeng Comm, HumenTn, Duangguan, GD, CN (523932)
Prepared by.....	: Guangdong Zhonghan Testing Technology Co., Ltd.
Address.....	: Room 104/201, Building 1. Yibaolai Industrial Park Qiaotou Community, Fuhai Street. Bao'an District, Shenzhen, China
Date of Receipt.....	: May 4, 2025
Date of Test(s).....	: May 4, 2025 to May 08, 2025
Date of Issue.....	: May 13, 2025
Standard.....	: FCC CFR Title 47 Part 15 Subpart C
Test procedure.....	: /

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

Tested by:	Reviewed by:	Approved by:
Kimi Lu	Baret.Wu	
Kimi Lu/ Engineer	Baret Wu/ Director	Levi Lee/ Manager

Note: This device described above has been tested by ZHT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report. This report shall not be reproduced except in full, without the written approval of ZHT, this document may be altered or revised by ZHT, personal only, and shall be noted in the revision of the document.

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1. VERSION

Report No.	Version	Description	Approved
ZHT-250425103W02	Rev.01	Initial issue of report	May 13, 2025

2. TEST SUMMARY

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Spurious Emission	15.209(a)(f)	Pass
20dB Bandwidth	15.215	Pass

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

3. GENERAL INFORMATION

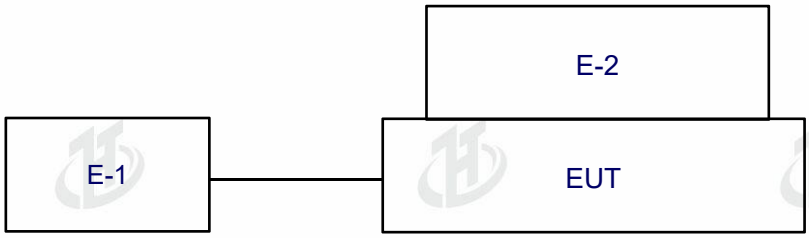
3.1 GENERAL DESCRIPTION OF EUT

Product Name:	NeoCore Pro
Test Model No.:	NEOCORE-MS-5K
Hardware version:	V1.0
Software version:	V1.0
Operation Frequency:	111-205KHz
Modulation type:	MSK
Antenna Type:	Coil Antenna
Antenna gain:	0dBi
Ratings	Input: 12 V⎓ 1.5 A Output: 2.5W/ 5W/ 7.5W/ 10W/ 15W Max
Remark:The antenna gain is provided by the customer, if the data provided by the customer is not accurate, Guangdong Zhonghan Testing Technology Co., Ltd. does not assume any responsibility.	

3.2 Test mode

Test Modes:	
Mode 1	AC Adapter+Wireless charging mode (15W)
Mode 2	AC Adapter+Wireless charging mode (10W)
Mode 3	AC Adapter+Wireless charging mode (7.5W)
Mode 4	AC Adapter+Wireless charging mode (5W)
Mode 5	AC Adapter+Wireless charging mode (2.5W)
Mode 6	Standby
Remark: All full load, half load, and no-load tests have been conducted in each mode, only the worst-case was recorded in the report. Mode 1 full load is the worst mode.	

3.3 Block Diagram of EUT Configuration



3.4 Test Conditions

Temperature: 25.6℃

Relative Humidity: 54.3 %

3.5 Description Of Support Units (Conducted Mode)

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.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	AC Adapter	Huizhou Jinhu Industrial Development Co., Ltd.	VCBAJACH	/	AE
E-2	Wireless charging load	YBZ	EESON	/	AE
E-3	Wireless charging load	/	YBZ	/	AE

Item	Shielded Type	Ferrite Core	Length	Note

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.
(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

4. TAEST FACILITY AND TEST INSTRUMENT USED

4.1 TEST FACILITY

Guangdong Zhonghan Testing Technology Co., Ltd.
Add.: Room 104/201, Building 1. Yibaolai Industrial Park Qiaotou Community, Fuhai Street. Bao'an District, Shenzhen, China

FCC Registration Number:255941
Designation Number: CN0325
IC Registered No.: 29832
CAB identifier: CN0143

4.2 EQUIPMENTS LIST FOR ALL TEST ITEMS

Item	Equipment	Manufacturer	Model	Serial No.	Last Cal.	Next Cal.
1	Receiver	R&S	ESCI	100874	May 10, 2024	May 09, 2025
2	Loop Antenna	TESEQ	HLA6121	58357	May 10, 2024	May 09, 2025
3	Amplifier	Schwarzbeck	BBV 9743 B	00378	May 10, 2024	May 09, 2025
4	Amplifier	Schwarzbeck	BBV 9718 B	00040	May 10, 2024	May 09, 2025
5	Bilog Antenna	Schwarzbeck	VULB9162	00498	May 28, 2024	May 27, 2025
6	Horn Antenna	Schwarzbeck	BBHA9120D	02623	May 16, 2024	May 15, 2025
7	Horn Antenna	A.H.SYSTEMS	SAS574	588	May 10, 2024	May 09, 2025
8	Amplifier	AEROFLEX	100KHz-40GHz	097	May 10, 2024	May 09, 2025
9	Spectrum Analyzer	R&S	FSV40	101413	May 10, 2024	May 09, 2025
10	Spectrum Analyzer	KEYSIGHT	N9020A	MY53420208	May 10, 2024	May 09, 2025
11	WIDBAND RADIO COMMUNICATION TESTER	R&S	CMW500	109863	May 10, 2024	May 09, 2025
12	Single Generator	Agilent	N5182A	MY48180575	May 10, 2024	May 09, 2025
13	Power Sensor	MWRFtest	MW100-RFCB	/	May 10, 2024	May 09, 2025
14	Power Amplifier Shielding Room	EMToni	2m3m3m	/	May 10, 2024	May 09, 2025

Conduction Test equipment

Equipment	Manufacturer	Model	Serial No.	Last Cal.	Next Cal.
Receiver	R&S	ESCI	100874	May 10, 2024	May 09, 2025
LISN	R&S	ENV216	102794	May 10, 2024	May 09, 2025
ISN CAT 6	Schwarzbeck	NTFM 8158	00318	May 10, 2024	May 09, 2025
ISN CAT 5	Schwarzbeck	CAT5 8158	00343	May 10, 2024	May 09, 2025
Capacitive Voltage Probe	Schwarzbeck	CVP 9222 C	00101	May 10, 2024	May 09, 2025
Current Transformer Clamp	Schwarzbeck	SW 9605	SW9605 #209	May 10, 2024	May 09, 2025

Conducted Test Instrument

Item	Equipment	Manufacturer	Model	Serial No.	Last Cal.	Next Cal.
1	Spectrum Analyzer	R&S	FSV40	101413	May 10, 2024	May 09, 2025
2	Spectrum Analyzer	KEYSIGHT	N9020A	MY53420208	May 10, 2024	May 09, 2025
3	Power Sensor	MWRFtest	MW100-RFCB	/	May 10, 2024	May 09, 2025

4.3 TESTING SOFTWARE

Project	Software name	Edition
Radiated Emission	EZ-EMC	FA-03A2 RE+
RF Test	MTS 8310	2.0.0.0

4.4 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	Uncertainty
1	Conducted Emission Test	±1.38dB
2	RF conducted power	±0.16dB
3	Spurious emissions conducted	±0.21dB
4	All radiated emissions (9k-30MHz)	±4.68dB
5	All radiated emissions (<1G)	±4.68dB
6	All radiated emissions (>1G)	±4.89dB
7	Temperature	±0.5°C
8	Humidity	±2%
9	Occupied Bandwidth	±4.96%
10	Power Spectral Density	±0.71dB

Decision Rule

☒ Uncertainty is not included

☐ Uncertainty is included

5. CONDUCTED EMISSION TEST

5.1 CONDUCTED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

5.1.1 POWER LINE CONDUCTED EMISSION Limits

FREQUENCY (MHz)	Limit (dBuV)		Standard
	QP	AVG	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) *Decreases with the logarithm of the frequency.

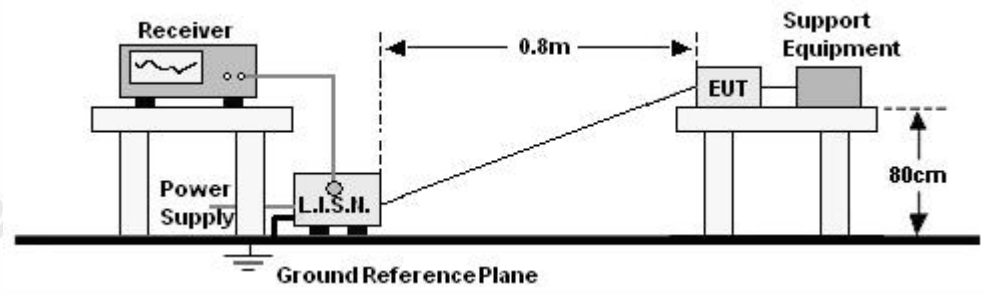
5.1.2 TEST PROCEDURE

a. The EUT was placed 0.8 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.
b. 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.
c. 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.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

5.1.3 DEVIATION FROM TEST STANDARD

No deviation

5.1.4 TEST SETUP

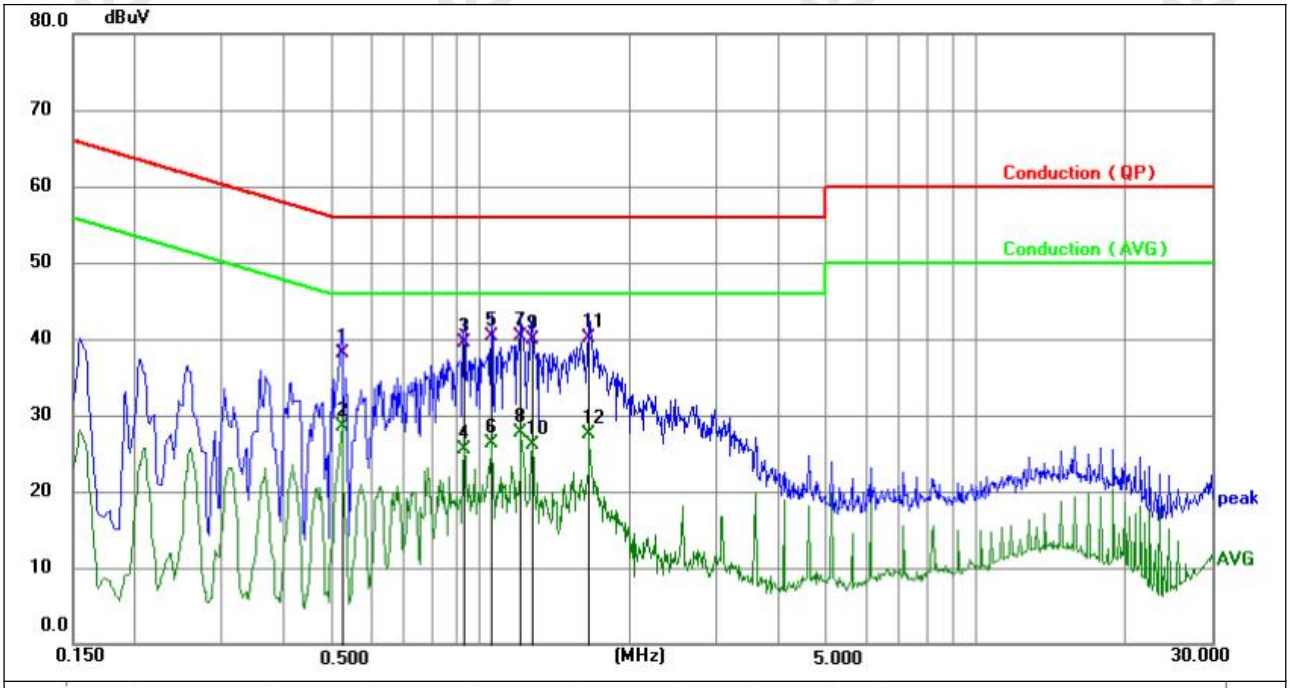


5.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

5.1.6 Test Result

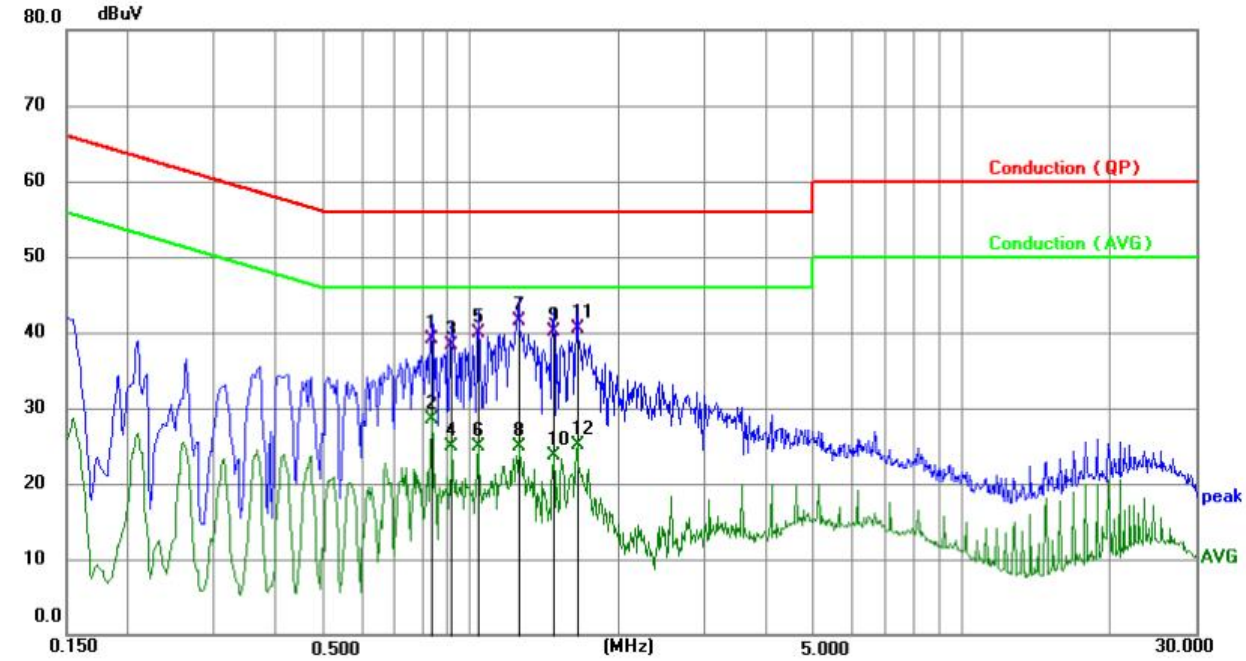
Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	L
Test Voltage:	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.5233	28.13	10.02	38.15	56.00	-17.85	QP	P	
2	0.5233	18.45	10.02	28.47	46.00	-17.53	AVG	P	
3	0.9240	29.40	10.05	39.45	56.00	-16.55	QP	P	
4	0.9240	15.36	10.05	25.41	46.00	-20.59	AVG	P	
5 *	1.0500	30.30	10.06	40.36	56.00	-15.64	QP	P	
6	1.0500	16.29	10.06	26.35	46.00	-19.65	AVG	P	
7	1.2075	30.22	10.06	40.28	56.00	-15.72	QP	P	
8	1.2075	17.65	10.06	27.71	46.00	-18.29	AVG	P	
9	1.2703	29.90	10.06	39.96	56.00	-16.04	QP	P	
10	1.2703	16.12	10.06	26.18	46.00	-19.82	AVG	P	
11	1.6573	30.02	10.06	40.08	56.00	-15.92	QP	P	
12	1.6573	17.47	10.06	27.53	46.00	-18.47	AVG	P	

Notes:
1.An initial pre-scan was performed on the line and neutral lines with peak detector.
2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3.Mesurement Level = Reading level + Correct Factor
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	N
Test Voltage:	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.8340	28.99	10.05	39.04	56.00	-16.96	QP	P	
2	0.8340	18.47	10.05	28.52	46.00	-17.48	AVG	P	
3	0.9150	28.18	10.05	38.23	56.00	-17.77	QP	P	
4	0.9150	14.88	10.05	24.93	46.00	-21.07	AVG	P	
5	1.0320	29.88	10.06	39.94	56.00	-16.06	QP	P	
6	1.0320	14.77	10.06	24.83	46.00	-21.17	AVG	P	
7 *	1.2524	31.44	10.06	41.50	56.00	-14.50	QP	P	
8	1.2524	14.84	10.06	24.90	46.00	-21.10	AVG	P	
9	1.4730	30.02	10.07	40.09	56.00	-15.91	QP	P	
10	1.4730	13.67	10.07	23.74	46.00	-22.26	AVG	P	
11	1.6530	30.36	10.06	40.42	56.00	-15.58	QP	P	
12	1.6530	14.98	10.06	25.04	46.00	-20.96	AVG	P	

Notes:
1.An initial pre-scan was performed on the line and neutral lines with peak detector.
2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3.Mesurement Level = Reading level + Correct Factor
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

6. RADIATED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10:2013
Test Frequency Range:	9kHz to 1GHz
Test site:	Measurement Distance: 3m
Receiver setup:	

Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Peak Value
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

6.1 Radiated Emission Limits

Limits for frequency below 30MHz

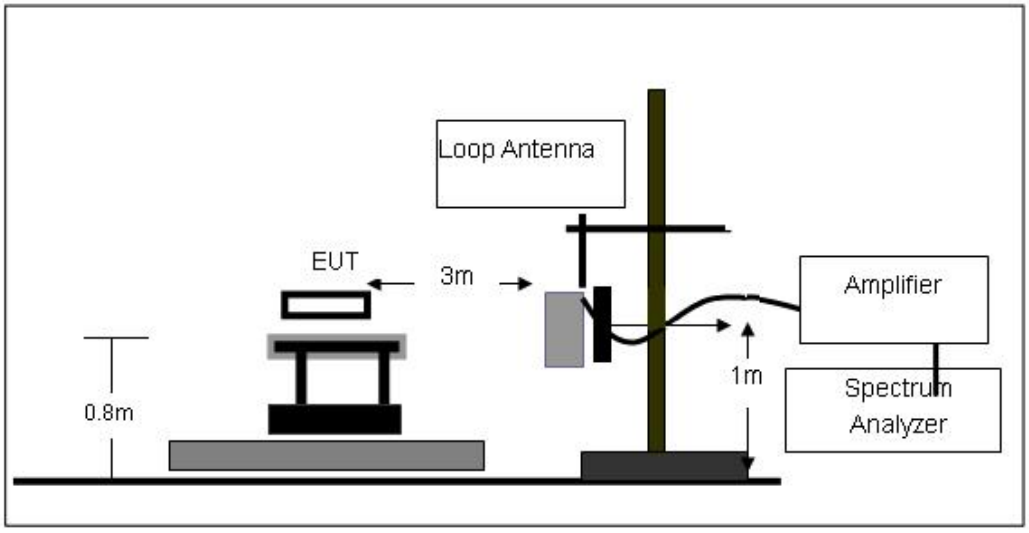
Frequency	Limit (uV/m)	Measurement Distance(m)	Remark
0.009-0.490	2400/F(kHz)	300	Peak Value
0.490-1.705	24000/F(kHz)	30	Quasi-peak Value
1.705-30	30	30	Quasi-peak Value

Limits for frequency Above 30MHz

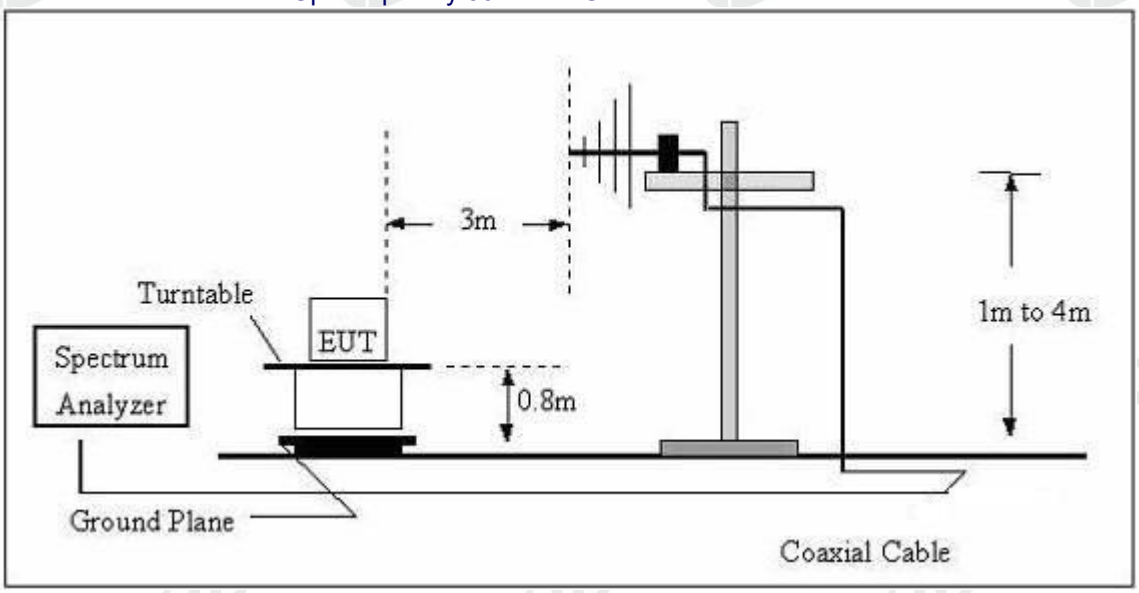
Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.00	Quasi-peak Value
88MHz-216MHz	43.50	Quasi-peak Value
216MHz-960MHz	46.00	Quasi-peak Value
960MHz-1GHz	54.00	Quasi-peak Value
Above 1GHz	54.00	Average Value
	74.00	Peak Value

6.2 Anechoic Chamber Test Setup Diagram

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



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



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209 and FCC 15.205 limits.

6.3 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.

6.4 DEVIATION FROM TEST STANDARD

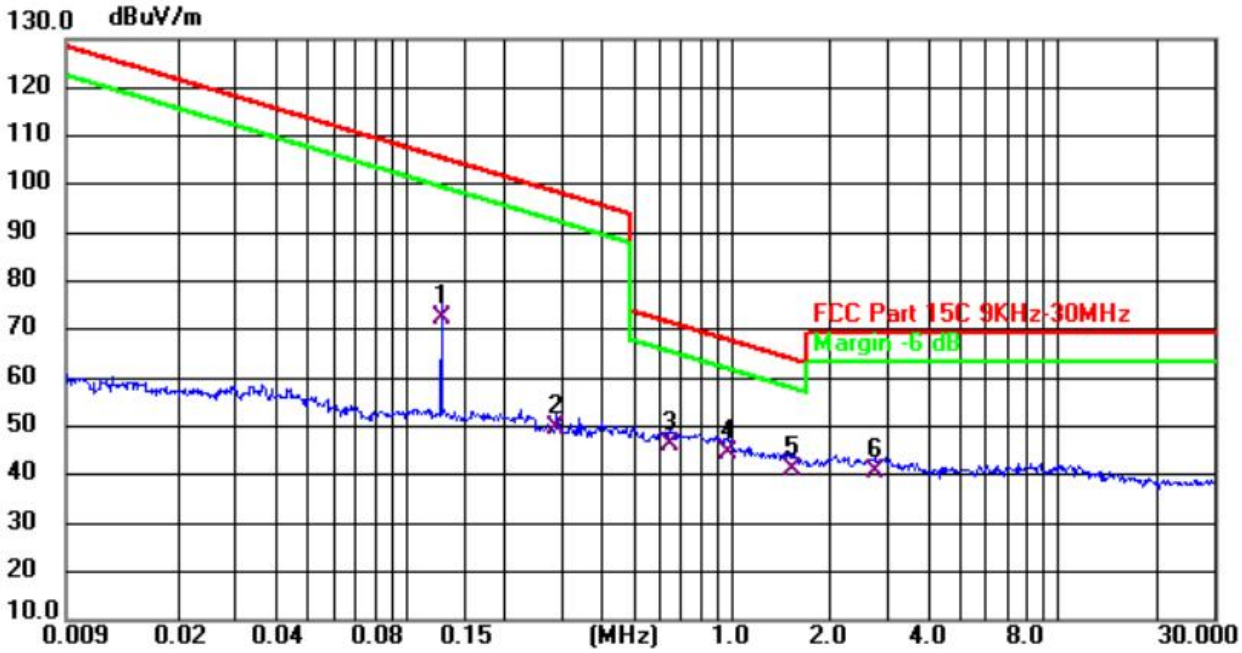
No deviation

6.5 Test Result

Measurement data:

Note: Limit dBuV/m @3m = Limit dBuV/m @300m+ 80
Limit dBuV/m @3m = Limit dBuV/m @30m + 40

9 kHz~30 MHz

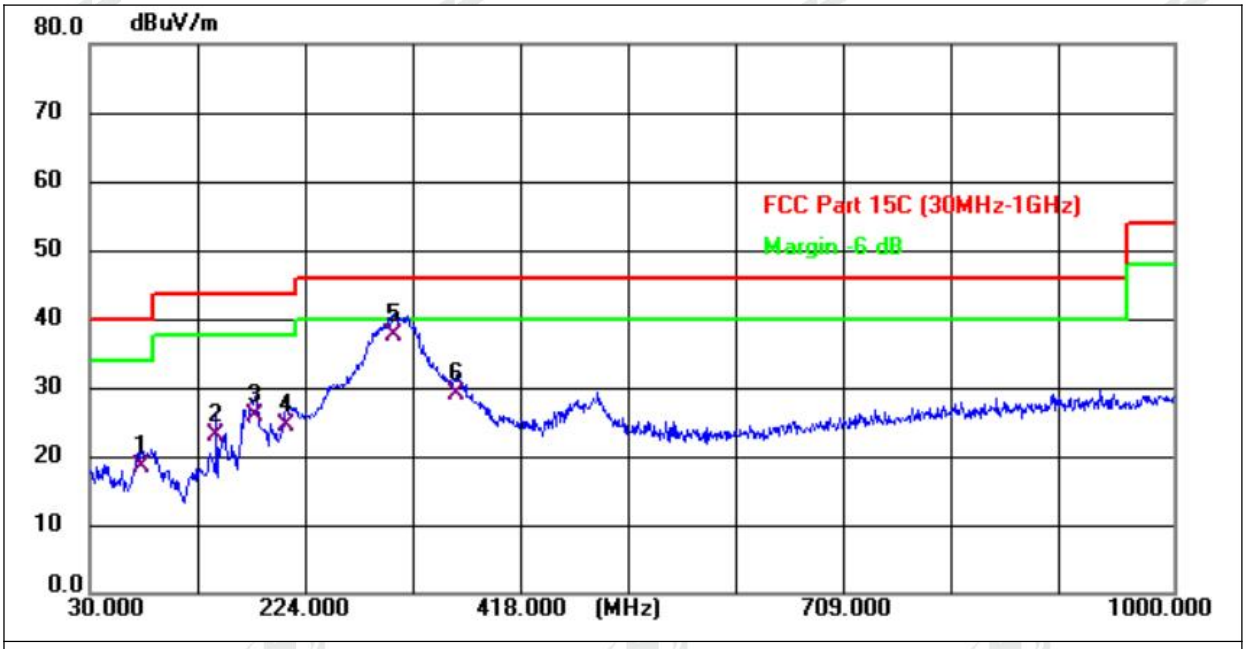


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.128	72.02	0.16	72.18	105.46	-33.28	QP
2	0.287	48.72	0.71	49.43	98.45	-49.02	QP
3	0.641	44.81	1.38	46.19	71.47	-25.28	QP
4	0.963	42.43	2.03	44.46	67.93	-23.47	QP
5 *	1.528	38.04	3.20	41.24	63.92	-22.68	QP
6	2.719	34.89	5.63	40.52	69.54	-29.02	QP

Note:
Pre-scan in the all of mode, the worst case in of was recorded.
Factor = antenna factor + cable loss – pre-amplifier.
Emission Level = Meter Reading - Factor
Margin = Emission Level- Limit.
The amplitude of emissions which are attenuated by more than 20db below the permissible value has no need to be reported.
Both Coaxial and Coplanar were tested and only the worst Both Coaxial was shown.

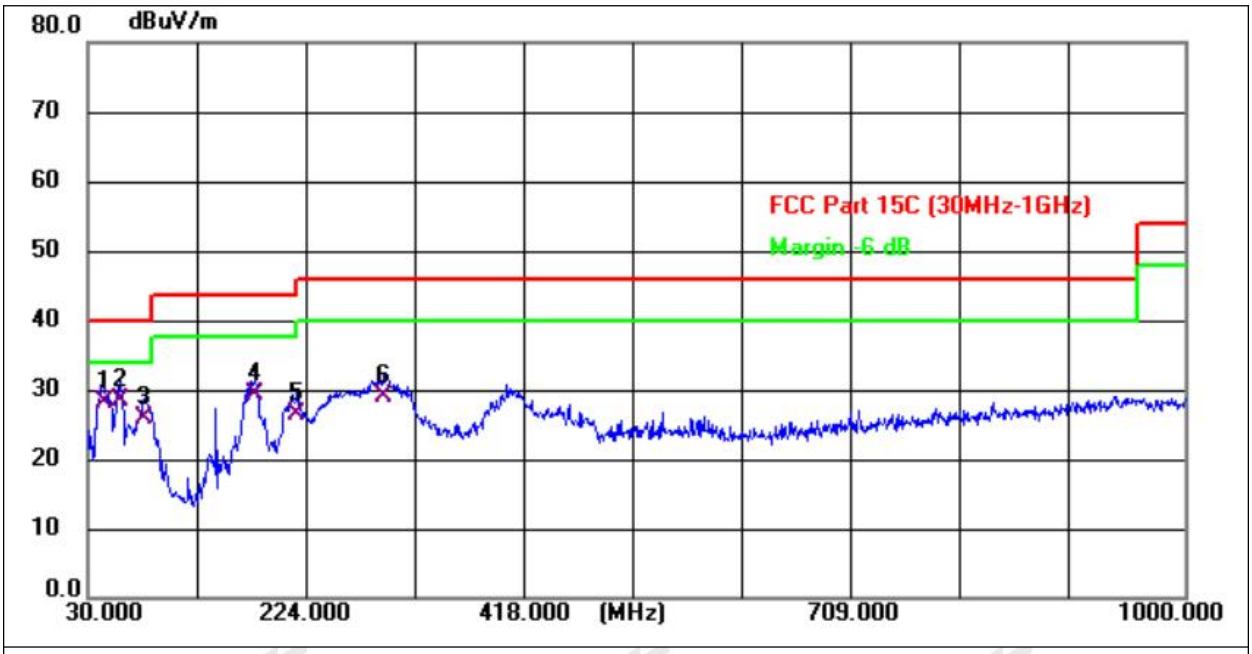
30MHz-1GHz

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F
1	75.590	32.22	-13.92	18.30	40.00	-21.70	QP			P
2	143.490	36.89	-13.88	23.01	43.50	-20.49	QP			P
3	178.410	38.29	-12.57	25.72	43.50	-17.78	QP			P
4	206.540	35.31	-10.90	24.41	43.50	-19.09	QP			P
5 *	302.570	45.85	-8.20	37.65	46.00	-8.35	QP			P
6	358.830	35.76	-6.89	28.87	46.00	-17.13	QP			P

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz		



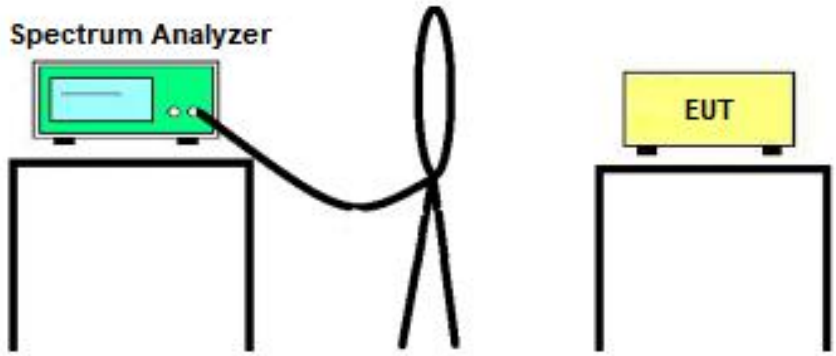
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F
1	44.550	37.03	-8.91	28.12	40.00	-11.88	QP			P
2 *	58.130	38.87	-10.44	28.43	40.00	-11.57	QP			P
3	79.470	40.16	-14.31	25.85	40.00	-14.15	QP			P
4	178.410	41.73	-12.57	29.16	43.50	-14.34	QP			P
5	215.270	37.09	-10.57	26.52	43.50	-16.98	QP			P
6	290.930	37.52	-8.43	29.09	46.00	-16.91	QP			P

Remarks:
1. Factor = Antenna Factor + Cable Loss – Preamplifier Factor
2. Level = Reading + Factor
3. Margin = Emission Level- Limit.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

7. BANDWIDTH TEST

1. Set RBW = 10 Hz for 1%-5%OBW.
2. Set the video bandwidth (VBW) ≥ 3 x RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

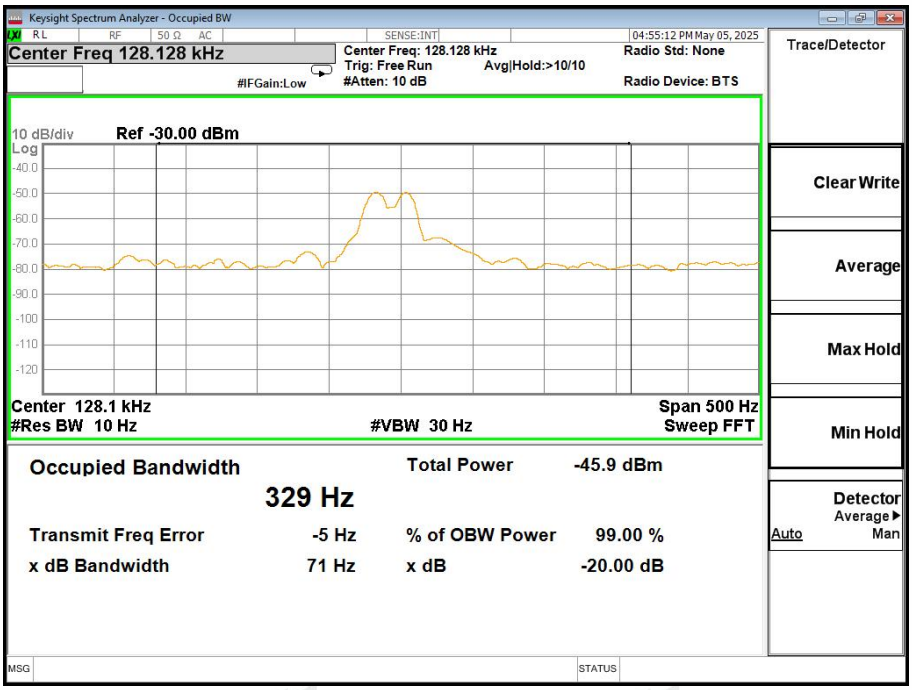
TEST SETUP



Temperature:	25.7 ℃	Relative Humidity:	55%
Pressure:	101kPa		

Frequency (KHz)	20dB bandwidth (KHz)	Result
128.1	0.071	Pass

Mobile phone



8. 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.	
EUT Antenna:	
The antenna is Coil Antenna, the best case gain of the antennas is 0dBi, reference to the appendix II for details	

9. TEST SETUP PHOTO

Reference to the appendix I for details.

10. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

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