REPORT No.: SZ24050210E02

TEST REPORT

APPLICANT	:	ShangXing Technology (ShenZhen) Co., Ltd.
PRODUCT NAME	:	Magnetic Portable charger
MODEL NAME	:	B05; SD09
BRAND NAME	:	N/A
STANDARD(S)	:	47 CFR Part 18
RECEIPT DATE	:	2024-05-24
TEST DATE	:	2024-05-30 to 2024-06-05
ISSUE DATE	:	2024-07-08

Edited by: Chen Bilian(Rapporteur)

Approved by: Xiao Xiong(Supervisor)

MORLAB

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DIRECTORY

Change History		
Version	**Date**	**Reason for change**
1.0	2024-07-08	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	ShangXing Technology (ShenZhen) Co., Ltd.
Applicant Address:	Room 408, 4th Floor, Building 30.Wisdomland Business Park,Guankou 2nd road, Nantou, Nanshan, Shenzhen, China
Manufacturer:	ShangXing Technology (ShenZhen) Co., Ltd.
Manufacturer Address:	Room 408, 4th Floor, Building 30.Wisdomland Business Park,Guankou 2nd road, Nantou, Nanshan, Shenzhen, China

1.2. Equipment Under Test (EUT) Description

Product Name:	Magnetic Portable charger	
EUT No.:	1#	
Hardware Version:	V2.0	
Software Version:	V2.0	
Frequency Range:	110 kHz ~ 205kHz	
Accessory:	**Battery**	
	Brand Name:	N/A
	Model No.:	126280P1
	Serial No.:	(N/A, marked #1 by test site)
	Capacity:	10000mAh
	Rated Voltage:	3.85V
	Charge Limit:	4.4V
	Manufacturer:	Jiangxi Huahao Lithium Energy Co.,Ltd.

Note:

1. According to the certificate holder, they declared that the product name: Magnetic Portable charger, with model name: B05; SD09 have the same hardware and software, only differ in model name, the main test model name is B05, only the result for B05 was recorded in this report.
2. For a more detailed description, please refer to specification or user's manual supplied by the applicant and/or manufacturer.

2. Test Results

2.1. Applied Reference Documents

The objective of the report is to perform testing according to 47 CFR Part 18:

No.	Identity	Document Title
1	47 CFR Part 18	INDUSTRIAL, SCIENTIFIC, AND MEDICAL EQUIPMENT

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Test Engineer	Result	Method Determination Remark
1	18.307(a)	Conducted Emission	2024.05.30	Wang Deyong	PASS	No deviation
2	18.305(b)	Radiated Emission	2024.06.05	Yuan Zihong	PASS	No deviation

Note 1: The tests were performed according to the method of measurements prescribed in FCC Measurement Procedure MP-5, “Methods of Measurements of Radio Noise Emissions from ISM equipment”.

Note 2: Additions to, deviation, or exclusions from the method shall be judged in the “method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.

Note 3: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.

2.2. EUT Setup and Operating Conditions

Test Item	
Radiated Emission	
Mode 1 :	EUT + Battery + Wireless Charging Load + Wireless Charging Mode
Conducted Emission	
Mode 2 :	EUT + Battery + Adapter + USB Cable + Wireless Charging Load + Working Mode

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 - 60
Atmospheric Pressure (kPa):	86 - 106

3. 47 CFR Part 18 Requirements

3.1. Conducted Emission

3.1.1. Requirement

According to FCC section 18.307(a), the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

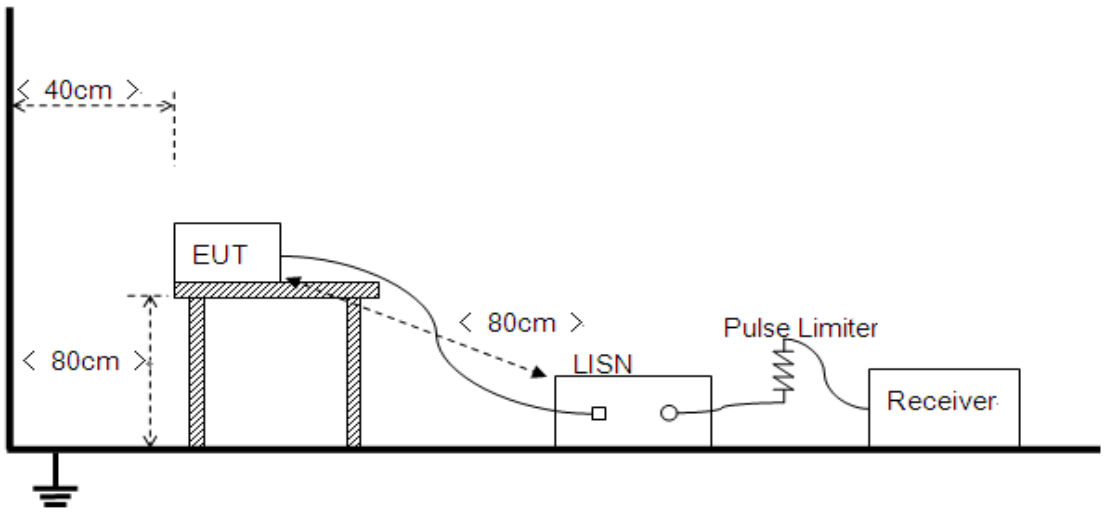
NOTE:

a) The lower limit shall apply at the band edges.

b) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

3.1.2. Test Setup

Please refer to Annex A for the photographs of the Test Configuration.



The EUT is placed on a 0.8m high insulating table, which stands on the grounded conducting floor, and keeps 0.4m away from the grounded conducting wall. The EUT is connected to the power mains through a LISN which provides 50Ω/50μH of coupling impedance for the measuring instrument. A Pulse Limiter is used to protect the measuring instrument. The factors of the whole test system are calibrated to correct the reading.

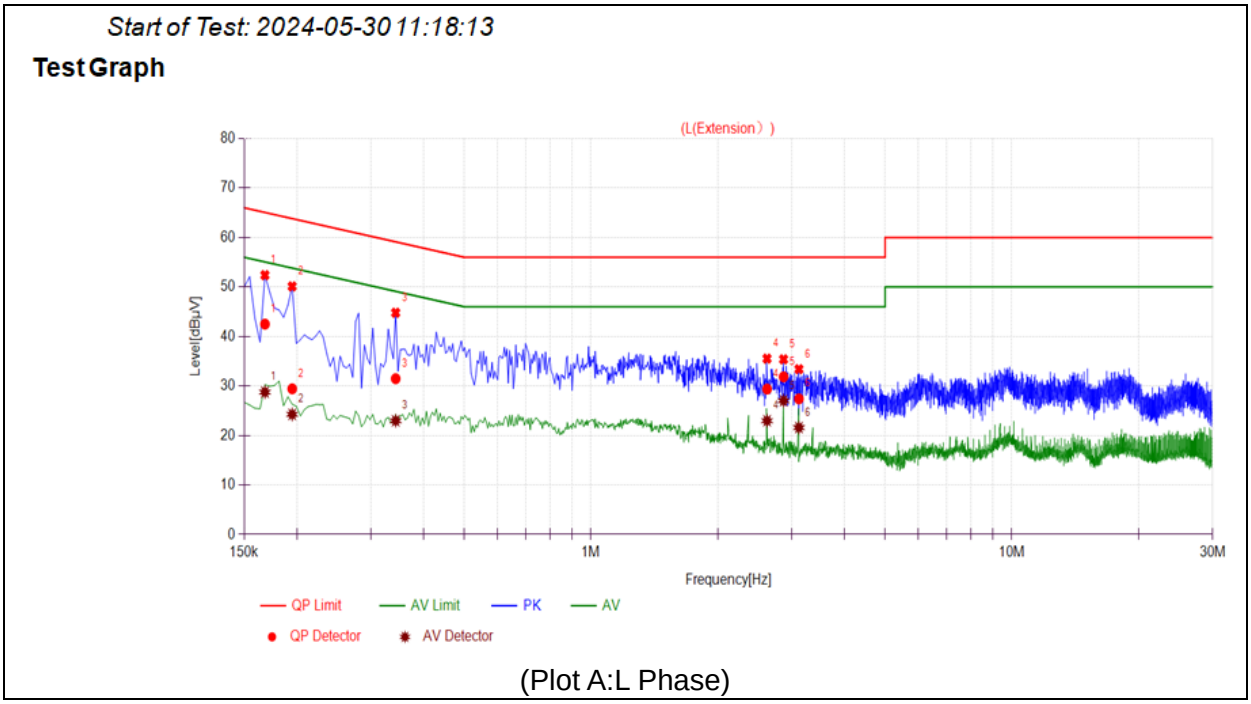
3.1.3. Test Result

The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. All test modes are considered, refer to recorded points and plots below.

The measurement results are obtained as below:
$E\ [dB\mu V] = U_R[dB\mu V] + L_{Cable\ loss}\ [dB] + A_{Factor}\ [dB]$
U_R: Receiver Reading
A_{Factor}: Voltage Division Factor of LISN
$L_{Cable\ loss}$: Correction Factor Contains Pulse Limiter and Cable

During the test, the total correction Factor $L_{Cable\ loss}$ and A_{Factor} were built in test software.

A. Test Plot and Suspicious Points:

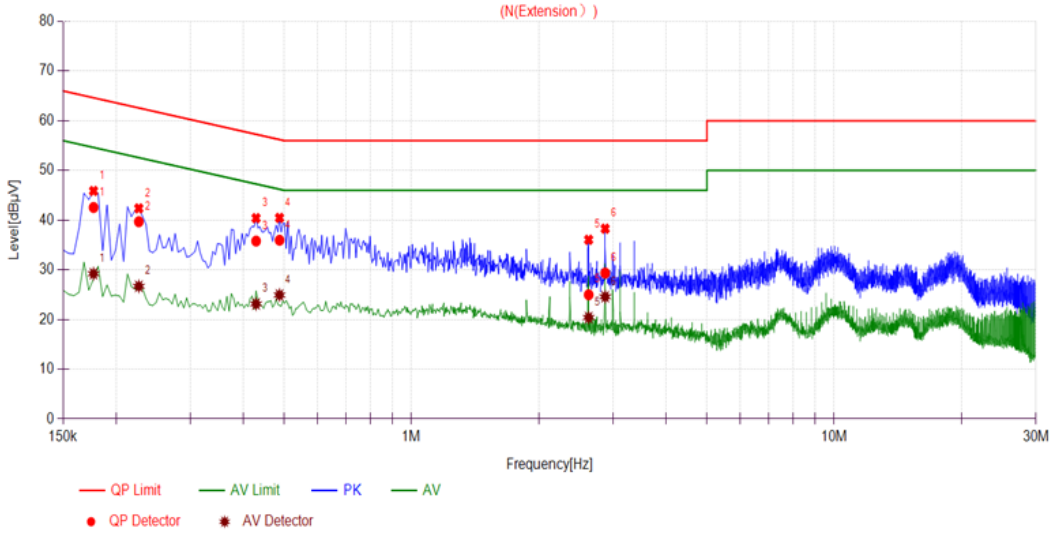


(Plot A:L Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quasi-peak	Average	Quasi-peak	Average		
1	0.1680	42.50	28.76	65.06	55.06	Line	PASS
2	0.1950	29.43	24.27	63.82	53.82		PASS
3	0.3435	31.48	22.97	59.12	49.12		PASS
4	2.6205	29.38	22.98	56.00	46.00		PASS
5	2.8680	31.85	27.03	56.00	46.00		PASS
6	3.1197	27.41	21.60	56.00	46.00		PASS

Start of Test: 2024-05-30 11:13:42

Test Graph



(Plot B: N Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quasi-peak	Average	Quasi-peak	Average		
1	0.1770	42.55	29.21	64.63	54.63	Neutral	PASS
2	0.2265	39.69	26.69	62.58	52.58		PASS
3	0.4290	35.79	23.13	57.27	47.27		PASS
4	0.4875	35.96	24.93	56.21	46.21		PASS
5	2.6250	24.98	20.40	56.00	46.00		PASS
6	2.8728	29.35	24.58	56.00	46.00		PASS

3.2. Radiated Emission

3.2.1. Requirement

According to FCC section 18.305(b), the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

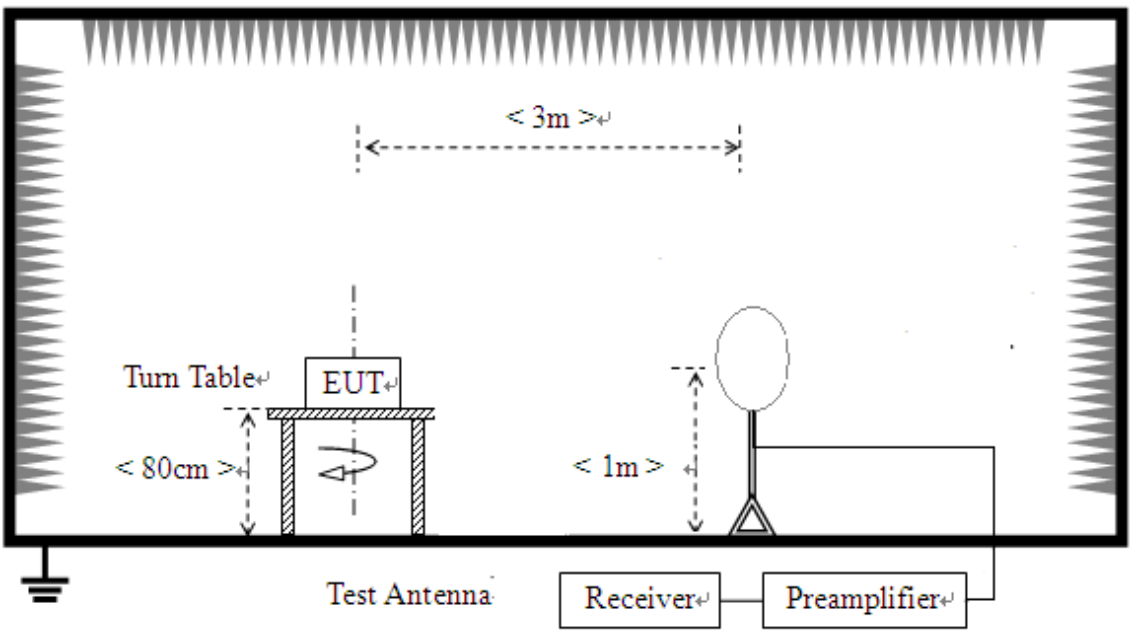
Frequency range (MHz)	Field strength limit @300m (uV/m)	Field strength limit @3m (dBμV/m)
0.009 - 30	15	103.5
30 - 1000	15	63.5

Note:

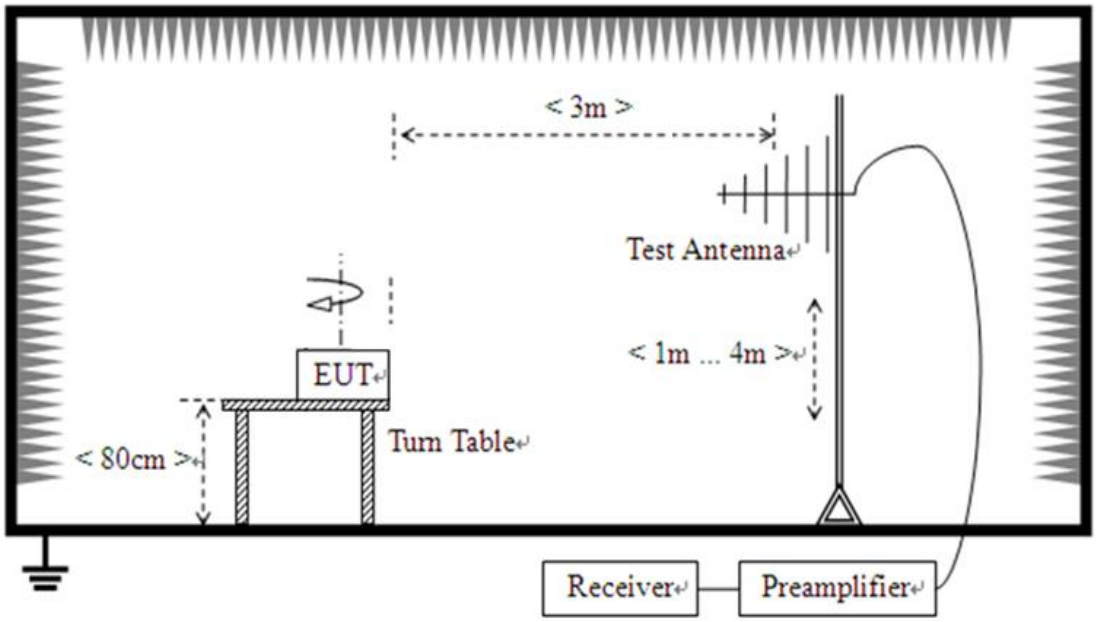
1) The Equipment is for 18.305(b) any type unless otherwise specified (miscellaneous)operating frequency in any non-ISM frequency.
2) Limitation expressed in dBμV/m is calculated by 20log (Emission Level(μV/m)).
3) For 0.009MHz-30MHz, Field strength limit@3m (dBμV/m) = Field strength limit@300m (uV/m) + 40log(300/3).
4) For 30MHz-1000MHz, Field strength limit@3m (dBμV/m) = Field strength limit@300m (uV/m) + 20log(300/3).

3.2.2. Test Setup

1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to 1GHz



The test is performed in a 3m Semi-Anechoic Chamber; the antenna factor, cable loss and so on of the site (factors) is calculated to correct the reading. The EUT is placed on a 0.8m high insulating Turn Table, and keeps 3m away from the Test Antenna, which is mounted on a variable-height antenna master tower.

For the test Antenna:

1) In the frequency range of 9KHz to 30MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.

2) In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) is used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.

3.2.3. Test Result

The maximum radiated emission is searched using PK, QP detectors; the emission levels more than the limits, and that have narrow margins from the limits will be re-measured with QP detectors. Both the vertical and the horizontal polarizations of the Test Antenna are considered to perform the tests. All test modes are considered, refer to recorded points and plots below.

The amplitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be reported.

The measurement results are obtained as below:

$E\ [dB\mu V/m] = U_R\ [dB\mu V] + A_T[dB] + A_{Factor}\ [dB]$; $A_T = L_{Cable\ loss}\ [dB] - G_{preamp}\ [dB]$

A_T: Total correction Factor except Antenna

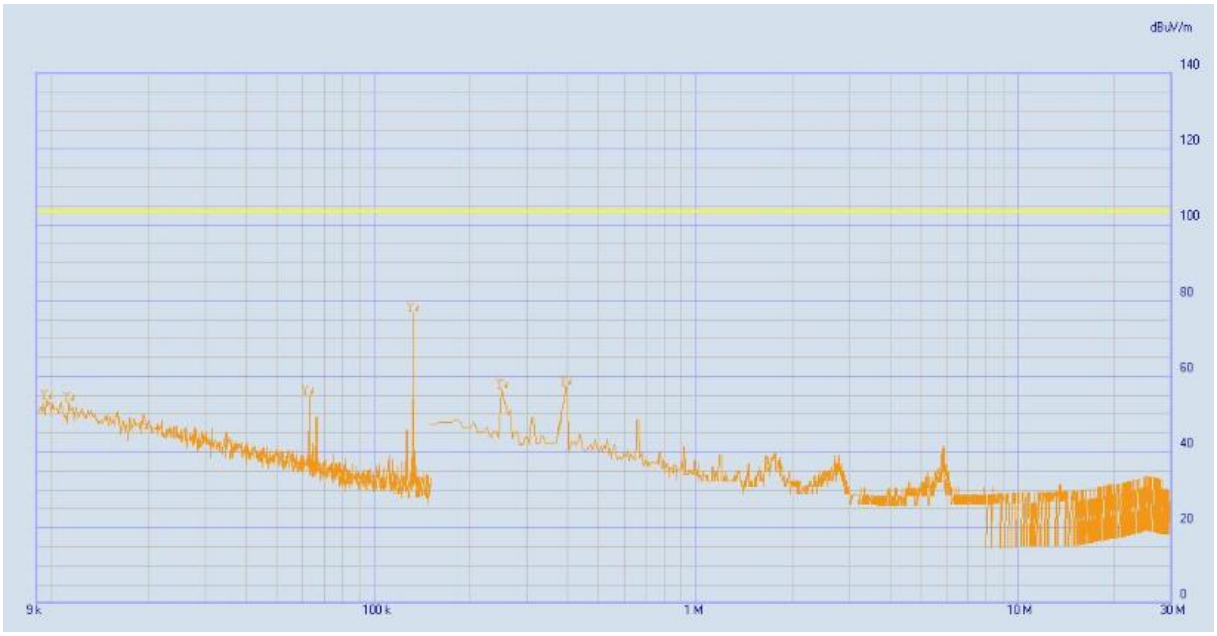
U_R: Receiver Reading

G_{preamp}: Preamplifier Gain

A_{Factor}: Antenna Factor at 3m

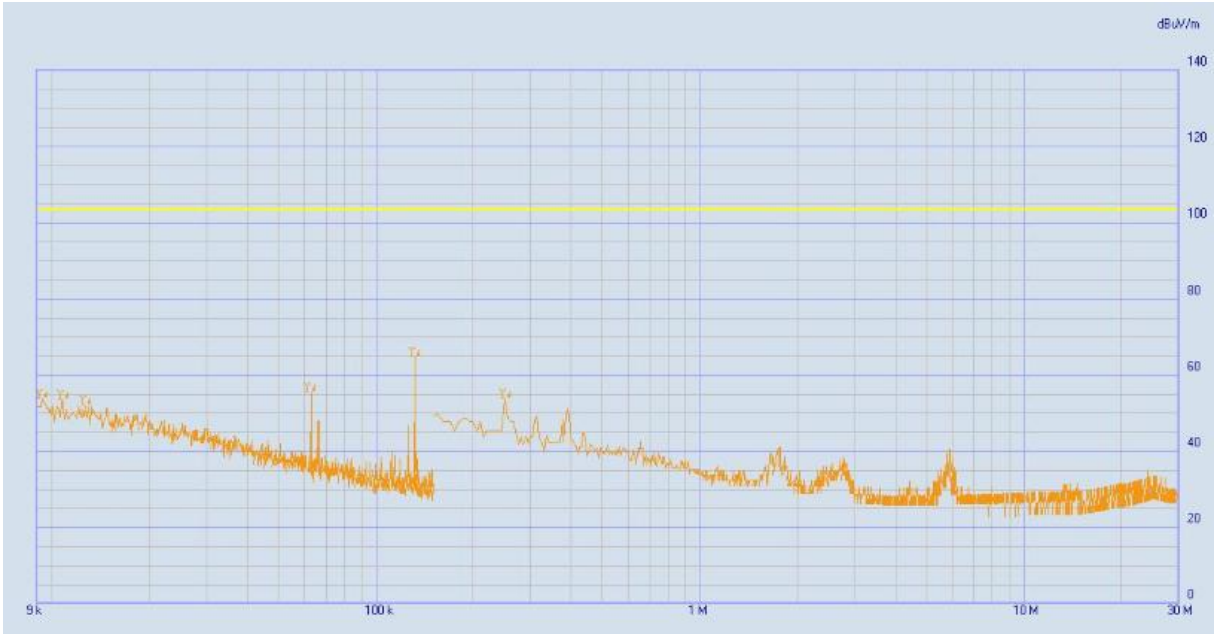
During the test, the total correction Factor A_T and A_{Factor} were built in test software.

Note: All radiated emission tests were performed in X, Y, Z axis direction, and only the worst axis test condition was recorded in this test report.



Fre. (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Verdict
0.0096	53.72	103.5	PASS
0.0113	53.21	103.5	PASS
0.0626	54.89	103.5	PASS
0.132	76.72	103.5	PASS
0.25	56.51	103.5	PASS
0.395	57.44	103.5	PASS

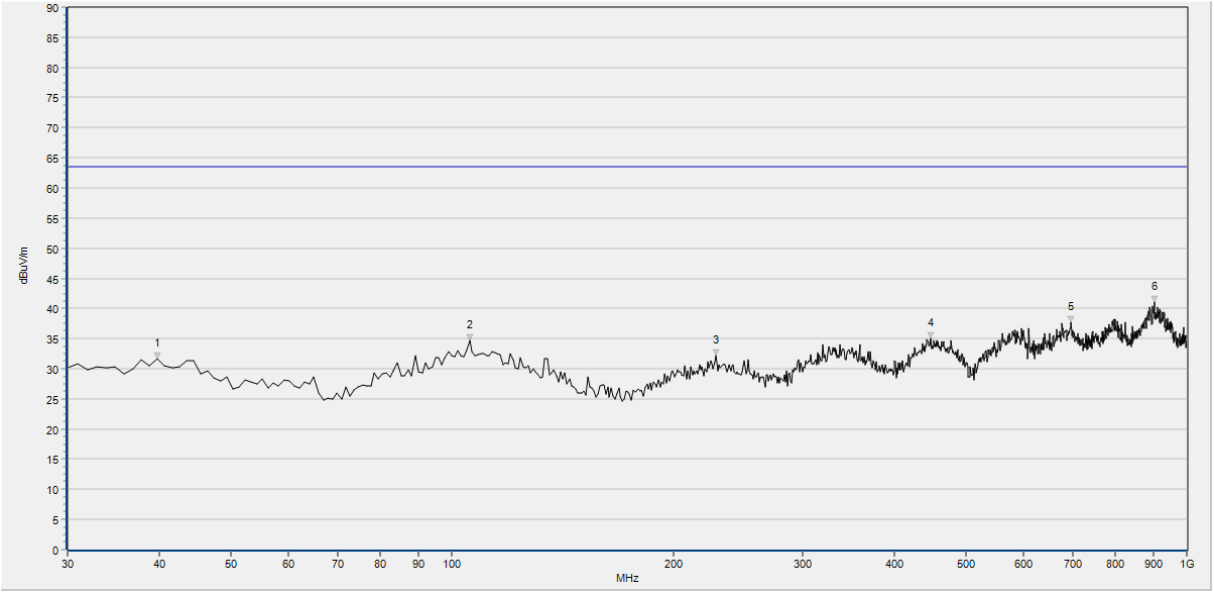
(Plot A: ANT - Parallel, 9kHz – 30MHz)



Fre. (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Verdict
0.0093	53.68	103.5	PASS
0.0108	53.47	103.5	PASS
0.0127	51.98	103.5	PASS
0.0625	55.52	103.5	PASS
0.1311	64.80	103.5	PASS
0.25	53.74	103.5	PASS

(Plot B: ANT - Perpendicular, 9kHz – 30MHz)

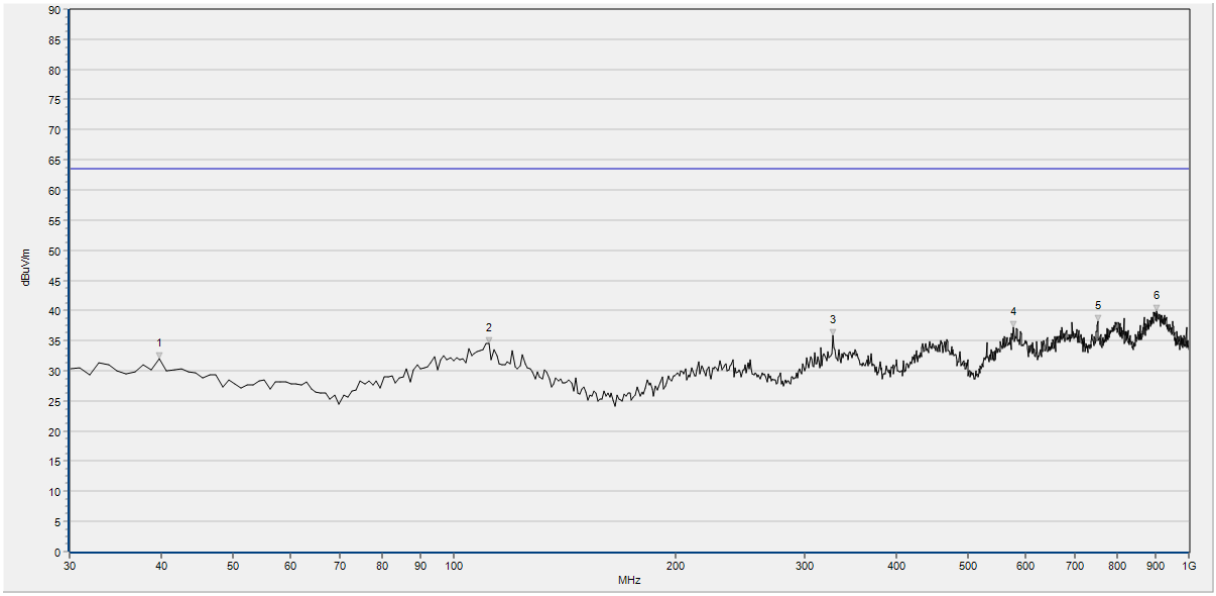
Test Date: 2024.06.05



(Plot C:ANT-Vertical, 30MHz - 1GHz)

No.	Fre. MHz	Pk dBµV/m	QP dBµV/m	AV dBµV/m	Limit-PK dBµV/m	Limit-QP dBµV/m	Limit-AV dBµV/m	ANT	Verdict
1	39.700	31.63	N.A	N.A	N.A	63.50	N.A	V	PASS
2	105.660	34.74	N.A	N.A	N.A	63.50	N.A	V	PASS
3	228.850	32.14	N.A	N.A	N.A	63.50	N.A	V	PASS
4	448.070	34.98	N.A	N.A	N.A	63.50	N.A	V	PASS
5	696.390	37.75	N.A	N.A	N.A	63.50	N.A	V	PASS
6	903.970	41.09	N.A	N.A	N.A	63.50	N.A	V	PASS

Test Date: 2024.06.05

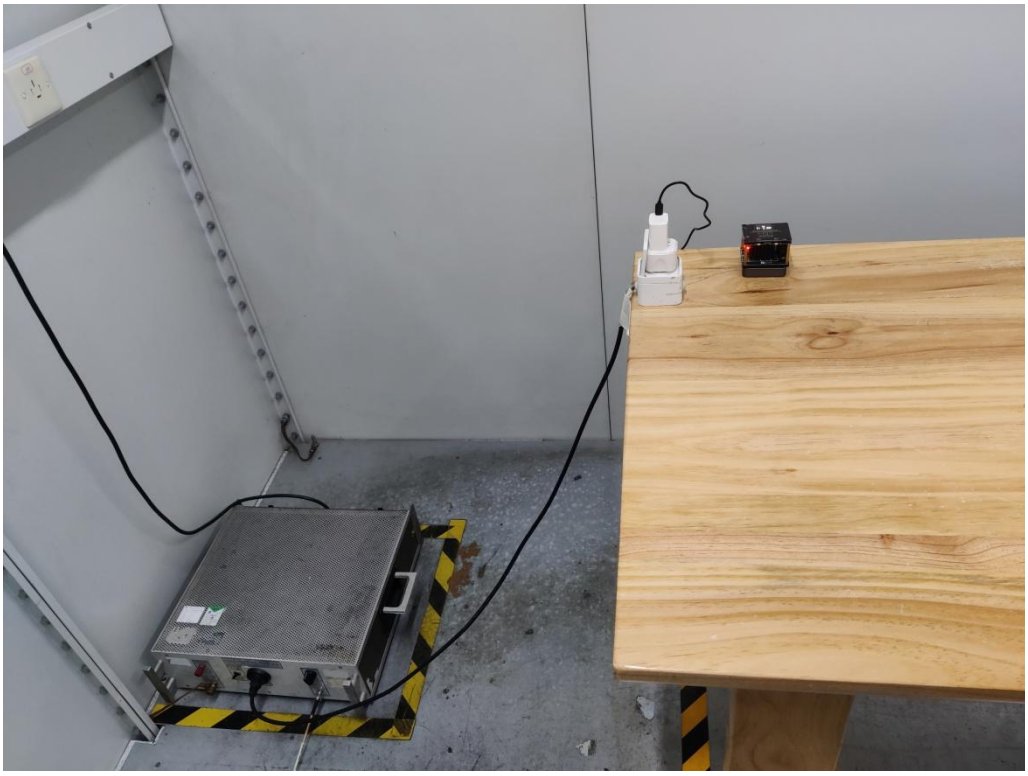


(Plot D:ANT- Horizontal, 30MHz - 1GHz)

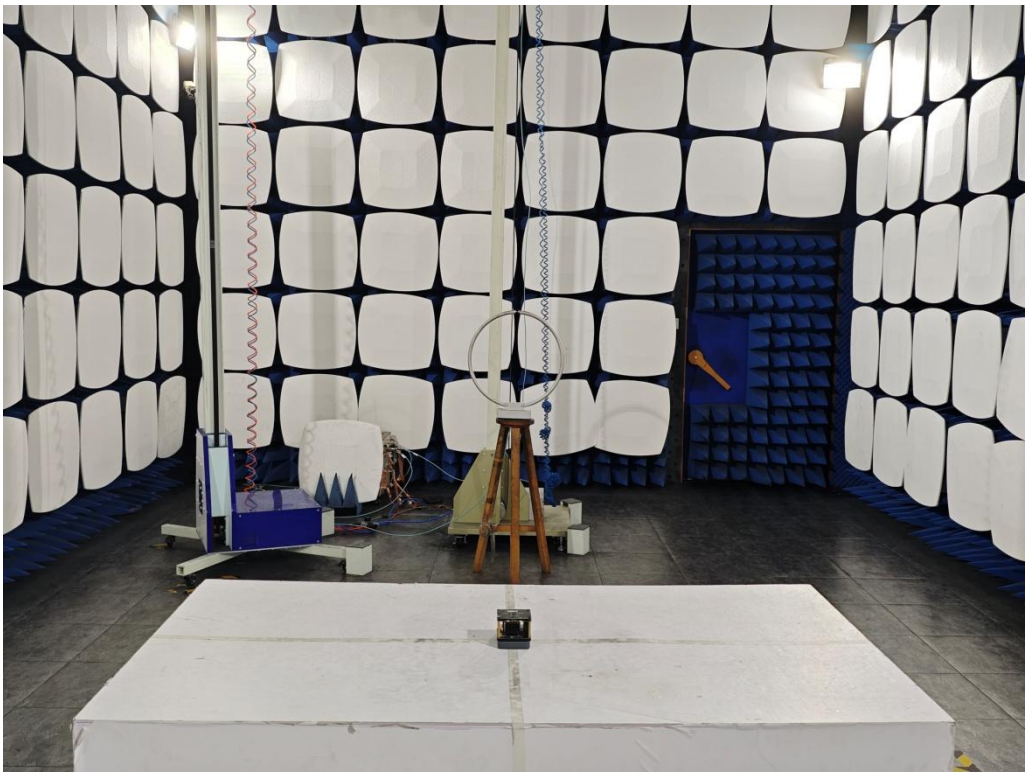
No.	Fre. MHz	Pk dBµV/m	QP dBµV/m	AV dBµV/m	Limit-PK dBµV/m	Limit-QP dBµV/m	Limit-AV dBµV/m	ANT	Verdict
1	39.700	31.99	N.A	N.A	N.A	63.50	N.A	H	PASS
2	111.480	34.49	N.A	N.A	N.A	63.50	N.A	H	PASS
3	327.790	35.84	N.A	N.A	N.A	63.50	N.A	H	PASS
4	577.080	37.18	N.A	N.A	N.A	63.50	N.A	H	PASS
5	751.680	38.17	N.A	N.A	N.A	63.50	N.A	H	PASS
6	904.940	39.87	N.A	N.A	N.A	63.50	N.A	H	PASS

Annex A Photographs of Test Setup

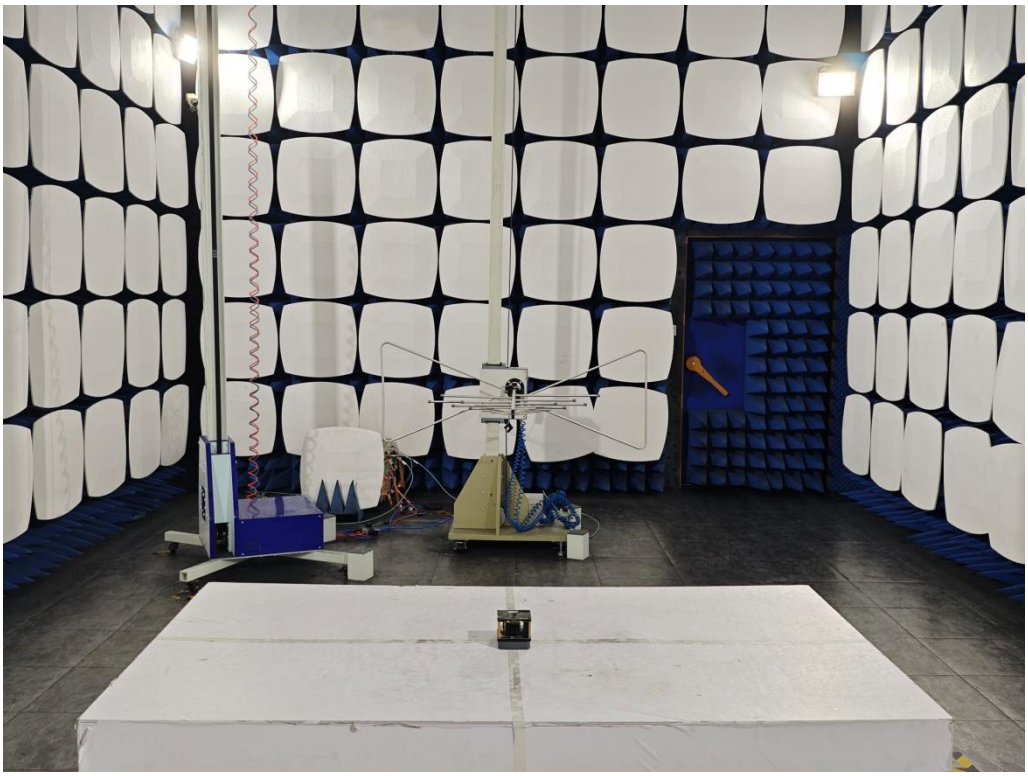
1. Conducted Emission



2. Radiated Emission (9kHz-30MHz)



3. Radiated Emission (30MHz-1GHz)



Annex B Test Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

Uncertainty of Conducted Emission Measurement

Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))	9kHz-150kHz	±3.3dB
	150kHz-30MHz	±2.8dB

Uncertainty of Radiated Emission Measurement

Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))	30MHz-200MHz	±5.06dB
	200MHz-1000MHz	±5.04dB
	1GHz-6GHz	±5.18dB
	6GHz-18GHz	±5.48dB

Annex C Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

3. Accreditation Certificate

Accredited Testing Laboratory:	The FCC designation number is CN1192. Test firm registration number is 226174. (Shenzhen Morlab Communications Technology Co., Ltd.)

4. Test Software Utilized

Model	Version Number	Producer
TS+ -[JS32-RE]	Version 2.5.0.6	Tonscend
TS+ -[JS32-CE]	Version 2.5.0.0	Tonscend
PMM Emission Suite	Version 2.02	PMM

5. Test Equipments Utilized

Description	Model	Serial No.	Manufacturer	Cal. Date	Due. Date
Loop Antenna	FMZB 1519	1519-022	SCHWARZBECK	2023/6/26	2024/6/25
Bi-Log Antenna	VULB 9163	9163-274	SCHWARZBECK	2023/6/27	2024/6/26
Bi-Log Antenna	VULB 9163	9163-519	SCHWARZBECK	2023/7/1	2024/6/30
Horn Antenna	BBHA 9120D	9120D-963	SCHWARZBECK	2023/6/27	2024/6/26
Horn Antenna	BBHA 9120D	01774	SCHWARZBECK	2023/7/1	2024/6/30
Receiver	N9038A	MY54130016	Agilent	2023/6/21	2024/6/20
Receiver	N9038A	MY56400093	KEYSIGHT	2024/1/25	2025/1/24
Receiver	PMM 9010	595WX11007	PMM	2024/1/25	2025/1/24
6db Attenuator	BW-N6W5+	E191001	Mini-circuits	2023/9/19	2024/9/18
Preamplifier	S020180L3203	61171/61172	LUCIX CORP.	2023/6/27	2024/6/26
Preamplifier	S10M100L3802	46732	LUCIX CORP.	2023/6/27	2024/6/26
RF Coaxial Cable	PE330	MRE001	Pasternack	N/A	N/A
RF Coaxial Cable	CLU18	MRE002	Pasternack	N/A	N/A
RF Coaxial Cable	CLU18	MRE003	Pasternack	N/A	N/A
RF Coaxial Cable	QA360-40-KK-0.5	22290045	Qualwave	N/A	N/A
RF Coaxial Cable	QA360-40-KKF-2	22290046	Qualwave	N/A	N/A
RF Coaxial Cable	QA500-18-NN-5	22120181	Qualwave	N/A	N/A
RF Coaxial Cable	BNC	MRE04	Qualwave	N/A	N/A
Receiver	ESPI	101052	R&S	2023/6/21	2024/6/20
LISN	NSLK 8127	8127449	Schwarzbeck	2024/2/2	2025/2/1
10dB Pulse Limiter	VTSD 9561-F	VTSD 9561 F-B #206	SCHWARZBECK	2023/6/27	2024/6/26

6. Ancillary Equipment Utilized

Description	Model	Serial No.	Manufacturer
Wireless charging load	N/A	N/A	YBZ
Adapter	CYPD33SU	N/A	CHENYANG

END OF REPORT