

FCC Test Report

Test Report
On Behalf of
ShangXing Technology(ShenZhen) Co.,Ltd.
For

3-in-1 Magnetic Phone Stand Wireless Charger
Model No.: X23Pro, S313Pro

FCC ID: 2APDM-X23PRO

Prepared For: ShangXing Technology(ShenZhen) Co.,Ltd.

Room 408, 4th Floor, Building 30.Wisdomland Business Park, Guankou 2nd

road, Nantou, Nanshan, Shenzhen, China

Prepared By: Shenzhen HUAK Testing Technology Co., Ltd.

1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping,

Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Date of Test: Mar. 01, 2024 ~ Apr. 16, 2024

Date of Report: Apr. 16, 2024

Report Number: HK2403010911-1E



Test Result Certification

Applicant's Name.....: ShangXing Technology(ShenZhen) Co.,Ltd.

Address...... Room 408, 4th Floor, Building 30.Wisdomland Business Park,

Guankou 2nd road, Nantou, Nanshan, Shenzhen, China

Report No.: HK2403010911-1E

Manufacturer's Name: ShangXing Technology(ShenZhen) Co.,Ltd.

Room 408, 4th Floor, Building 30. Wisdomland Business Park,

Guankou 2nd road, Nantou, Nanshan, Shenzhen, China

Product Description

Trade Mark: N/A

Model and/or Type Reference: X23Pro, S313Pro

Standards: FCC CFR 47 PART 18

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Date of Test:

Date of Issue Apr. 16, 2024

Test Result : Pass

Testing Engineer :

(Len Liao)

Technical Manager:

(Sliver Wan)

Authorized

Signatory

(Jason Zhou)

25

7. Photos of the EUT

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** Modified History **

Revision	Description	Issued Data	Remark		
Revision 1.0	Initial Test Report Release	Apr. 16, 2024	Jason Zhou		
ESTING	ESTING	ESTING	G		
WAK .	- JUAN - JUA	- UNAK	- WAK I		

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1. Test Summary

1.1. Test Procedures and Results

Description of Test	Section Number	Result
Conducted Emissions Test	18.307	COMPLIANT
Radiated Emission Test	18.305	COMPLIANT

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.

1.2. Information of the Test Laboratory

Shenzhen HUAK Testing Technology Co., Ltd.

Add.: 1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping,

Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Testing Laboratory Authorization:

A2LA Accreditation Code is 4781.01.

FCC Designation Number is CA100229.

Canada IC CAB identifier is CN0045.

CNAS Registration Number is L9589.

1.3. Measurement Uncertainty

Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.71dB, k=2
Radiated emission expanded uncertainty(9kHz-30MHz) = 3.90dB, k=2
Radiated emission expanded uncertainty(30MHz-1000MHz) = 3.90dB, k=2
Radiated emission expanded uncertainty(Above 1GHz) = 4.28dB, k=2

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2. General Information

2.1. General Description of EUT

Equipment:	3-in-1 Magnetic Phone Stand Wireless Charger
Model Name:	X23Pro
Series Models:	S313Pro
Model Difference:	All model's the function, software and electric circuit are the same, only with product color and model named different. Test sample model: X23Pro.
Trade Mark:	N/A
FCC ID:	2APDM-X23PRO
Antenna Type:	Coil Antenna
Operation Frequency:	112KHz~205KHz
Test Frequency:	Mobile Phone 1: 135KHz Mobile Phone 2: 129KHz Watch: 129KHz
Modulation Type:	ASK
Power Source:	Input: DC5V/3A, 9V/2.22A, 12V/3A (Max) Wireless Output: 3W/5W/7.5W/10W/15W Wireless Output (Mobile Phone): 5W/7.5W/10W/15W Wireless Output (Watch): 3W/5W
Power Rating:	Input: DC5V/3A, 9V/2.22A, 12V/3A (Max) Wireless Output: 3W/5W/7.5W/10W/15W Wireless Output (Mobile Phone): 5W/7.5W/10W/15W Wireless Output (Watch): 3W/5W

Note: 1.The transfer system includes three coils, 3 coils can work individually or can work at the same time. All the situation has been tested, only the worst situation was recorded in the report.

- 2. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- 3. The test results in the report only apply to the tested sample.







2.2. Carrier Frequency of Channels

400 A.	(850)	All Tr	(B) (C))	490 V.	
	Test Frequency			*	
01	135KHz				
02	129KHz	MAK TESTING	AKTESTING	MK TESTING	MYTEST
03	129KHz				(ii)

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Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



2.3 Test Mode

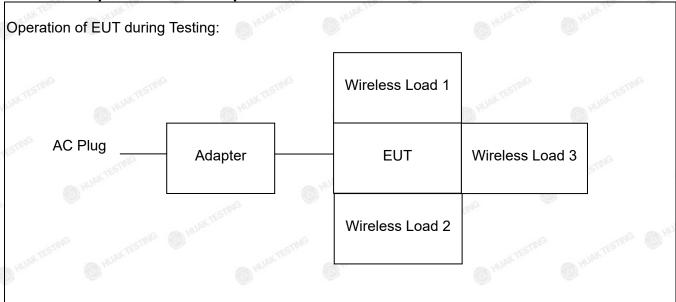
2.3. Test	Wiode	
Test Item	Test Mode	Description
	Mode 1	AC/DC Adapter + EUT + Wireless load 1 (Full load) + Wireless load 2 (Full load) + Wireless load 3 (Full load)
	Mode 2	AC/DC Adapter + EUT + Wireless load 1 (Half load) + Wireless load 2 (Half load) + Wireless load 3 (Full load)
	Mode 3	AC/DC Adapter + EUT + Wireless load 1 (Null load) + Wireless load 2 (Null load) + Wireless load 3 (Full load)
	Mode 4	AC/DC Adapter + EUT + Wireless load 1 (Full load) + Wireless load 2 (Full load) + Wireless load 3 (Half load)
	Mode 5	AC/DC Adapter + EUT + Wireless load 1 (Half load) + Wireless load 2 (Half load) + Wireless load 3 (Half load)
	Mode 6	AC/DC Adapter + EUT + Wireless load 1 (Null load) + Wireless load 2 (Null load) + Wireless load 3 (Half load)
Radiated & Conducted	Mode 7	AC/DC Adapter + EUT + Wireless load 1 (Full load) + Wireless load 2 (Full load) + Wireless load 3 (Null load)
Test Cases	Mode 8	AC/DC Adapter + EUT + Wireless load 1 (Half load) + Wireless load 2 (Half load) + Wireless load 3 (Null load)
	Mode 9	AC/DC Adapter + EUT + Wireless load 1 (Null load) + Wireless load 2 (Null load) + Wireless load 3 (Null load)
	Mode 10	AC/DC Adapter+ EUT + Wireless load 1 (Full load)
	Mode 11	AC/DC Adapter+ EUT + Wireless load 1 (Half load)
	Mode 12	AC/DC Adapter+ EUT + Wireless load 1 (Null load)
	Mode 13	AC/DC Adapter + EUT + Wireless load 2 (Full load)
	Mode 14	AC/DC Adapter + EUT + Wireless load 2 (Half load)
	Mode 15	AC/DC Adapter + EUT + Wireless load 2 (Null load)
	Mode 16	AC/DC Adapter + EUT + Wireless load 3 (Full load)
	Mode 17	AC/DC Adapter + EUT + Wireless load 3 (Half load)
	Mode 18	AC/DC Adapter + EUT + Wireless load 3 (Null load)
_nlG	Mode 19	AC/DC Adapter + EUT (Null Load)

- Note: 1. All modes and configurations above have been tested, Only the result of the worst case was recorded in the report.
 - 2. For Radiated Emission, 3axis were chosen for testing for each applicable mode, including the mobile phone in vertical and horizontal positions.
 - 3. The wireless load replaces the Mobile Phone and Watch by Lab.
 - 4. According to the manufacturer's design principle, the wireless charging power will reach its maximum when the client device's battery level is between 1% and 10%.

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2.4. Description of Test Setup



The sample was placed (0.8m (30MHz~1GHz), 0.8m (9KHz~30MHz)) 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 are shown in Test Results of the following pages. The worst case is X position.

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2.5. 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.

					· Mar		
Item	Equipment	Trade Mark	Model/Type No.	Specification	Remark		
TESTING	3-in-1 Magnetic Phone Stand Wireless Charger	N/A	X23Pro	N/A	EUT		
2	USB Cable	N/A	N/A	Length:1.03m	Accessory		
3 Municipal	Adapter	N/A	191106C	Input: 100-240V, 50/60Hz, 1.8A Output: 5V/3A, 9V3A, 12V/3A, 15V/3A, 20V/3.25A(65W Max)	Accessory		
4	Wireless Load 1	YBZ	N/A	Wireless input 15W	Peripheral		
5	Wireless Load 2	YBZ	N/A	Wireless input:15W	Peripheral		
¹¹¹ 6	Wireless Load 3	YBZ	N/A	Wireless input:5W	Peripheral		
				-m ^C			

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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2.6. Measurement Instruments List

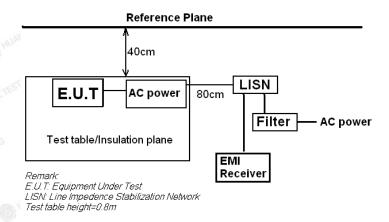
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	
1.	L.I.S.N.	R&S	ENV216	HKE-002	Feb. 20, 2024	1 Year	
2.	L.I.S.N.	R&S	ENV216	HKE-059	Feb. 20, 2024	1 Year	
3.	EMI Test Receiver	R&S	ESR	HKE-005	Feb. 20, 2024	1 Year	
4.	Spectrum analyzer	Agilent	N9020A	HKE-048	Feb. 20, 2024	1 Year	
5.	Spectrum analyzer	R&S	FSV3044	HKE-126	Feb. 20, 2024	ୀ Year	
6.	Preamplifier EMCI		EMC051845 S	HKE-006	Feb. 20, 2024	1 Year	
7.	Preamplifier	Schwarzbeck	BBV 9743	HKE-016	Feb. 20, 2024	1 Year	
8.	Preamplifier	A.H. Systems	SAS-574	HKE-182	Feb. 20, 2024	1 Year	
9.	6dB Attenuator	Pasternack	6db	HKE-184	Feb. 20, 2024	1 Year	
10.	EMI Test Receiver	Rohde & Schwarz	ESR-7	HKE-010	Feb. 20, 2024	1 Year	
11,00	Broadband Antenna	Schwarzbeck	VULB9168	HKE-167	Feb. 21, 2024	2 Year	
12.	Loop Antenna	COM-POWER	AL-130R	HKE-014	Feb. 21, 2024	2 Year	
13.	Horn Antenna	Schwarzbeck	9120D	HKE-013	Feb. 21, 2024	2 Year	
14.	EMI Test Software	Tonscend	JS32-CE 2.5.0.6	HKE-081	1 TESTI	<i>6</i> /	
15.	EMI Test Software	Test Software Tonscend		HKE-082	N HILAND	1	
16.	10dB Attenuator	Schwarzbeck	VTSD9561F	HKE-153	Feb. 20, 2024	1 Year	

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3. Conducted Emission Test

3.1. Block Diagram of Test Setup



3.2. Conducted Power Line Emission Limit

According to FCC Part 18.307(b)

(339)		10000		1207	(339)				
-		Maximum RF Line Voltage (dΒμV)							
Frequen (MHz		CLAS	SS A	C	CLASS B				
(11112).P.	Ave.	Q.P.	Ave.				
0.15 - 0.	50	79	66	66-56*	56-46*				
0.50 - 5.	00	73	60	56	46				
5.00 - 30	0.0	73	60	60	50				

^{*} Decreasing linearly with the logarithm of the frequency

For intentional device, according to §18.307 Line Conducted Emission Limit is same as above table.

3.3. Test Procedure

- 1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10.
- 2. Support equipment, if needed, was placed as per ANSI C63.10.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4. If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5. All support equipments received AC power from a second LISN, if any.
- 6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.

AFICATION.

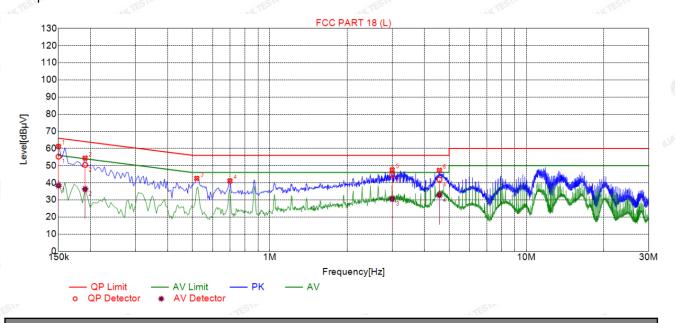
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3.4. Test Result

PASS

All the test modes completed for test. Only the worst result was reported as below:

Test Specification: Line



Sus	spected	List						
NO.	Freq. [MHz]	Level [dBµ∀]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµ∀]	Detector	Туре
1	0.1500	61.18	20.03	66.00	4.82	41.15	PK	L
2	0.1905	54.37	20.04	64.01	9.64	34.33	PK	
3	0.5190	42.57	20.04	56.00	13.43	22.53	PK	
4	0.6990	41.09	20.05	56.00	14.91	21.04	PK	اــ
5	2.9985	47.56	20.22	56.00	8.44	27.34	PK	L
6	4.5825	47.26	20.25	56.00	8.74	27.01	PK	L

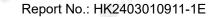
Fir	Final Data List											
NC).	Freq. [MHz]	Correction factor[dB]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	QP Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	AV Reading [dBµV]	Туре
1		0.1500	20.03	55.29	66.00	10.71	35.26	38.37	56.00	17.63	18.34	L
2		0.1905	20.04	50.43	64.01	13.58	30.39	36.36	54.01	17.65	16.32	L
3		2.9985	20.22	44.59	56.00	11.41	24.37	30.56	46.00	15.44	10.34	L
4		4.5825	20.25	41.88	56.00	14.12	21.63	32.76	46.00	13.24	12.51	L

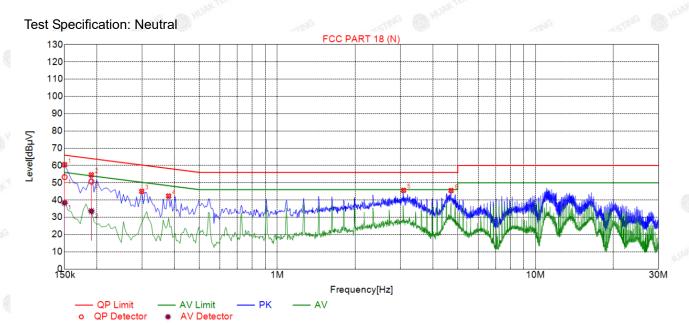
Remark: Margin = Limit - Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor

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170	Sus	spected	l List						
~	NO.	Freq. [MHz]	Level [dBµ√]	Factor [dB]	Limit [dBµ∀]	Margin [dB]	Reading [dBµ∀]	Detector	Туре
	1	0.1500	60.42	20.03	66.00	5.58	40.39	PK	N
	2	0.1905	54.58	20.04	64.10	9.52	34.54	PK	N
	3	0.2985	45.02	20.04	60.33	15.31	24.98	PK	N
Armen	4	0.3795	42.31	20.05	58.33	16.02	22.26	PK	N
	5	3.0840	45.63	20.22	56.00	10.37	25.41	PK	N
	6	4.7130	45.52	20.26	56.00	10.48	25.26	PK	N

Final Data List												
1	NO.	Freq. [MHz]	Correction factor[dB]	QP Value [dBµV]	QP Limit [dΒμV]	QP Margin [dB]	QP Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	ΑV Reading [dBμV]	Туре
	1	0.1500	20.03	53.34	66.00	12.66	33.31	38.38	56.00	17.62	18.35	N
5	2	0.1905	20.04	50.69	64.01	13.32	30.65	33.56	54.01	20.45	13.52	N

Remark: Margin = Limit - Level

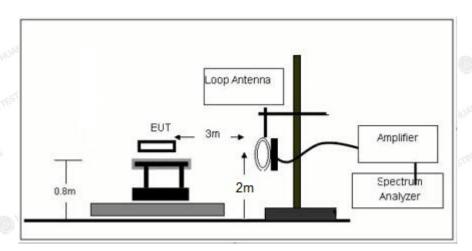
Correction factor = Cable lose + LISN insertion loss

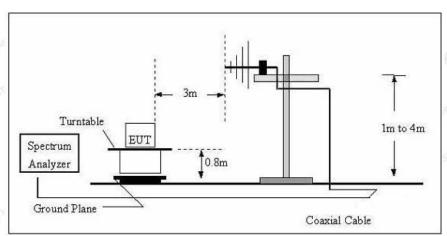
Level=Test receiver reading + correction factor



4. Radiated Emissions

4.1. Block Diagram of Test Setup





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4.2. Rules and Specifications

Except as provided elsewhere in this Subpart 18.305 (b), the field strength levels of emissions which lie outside the bands specified in §18.301, unless otherwise indicated, shall not exceed the following table:

Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit (uV/m)	Distance (meters)
(miscellaneous)				
	Any non- ISM frequency	Below 500 500 or more	15 15 × SQRT(power/500)	300 ¹ 300

Remark:

- (1) Emission level dBuV/m for 0.009~30MHz = 20log (15) + 40log (300/3) dBuV/m;
- (2) Calculated according FCC 18.305.
- (3) The smaller limit shall apply at the cross point between two frequency bands.
- (4) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

4.3. Test Procedure

Measurement distance 3m

For the measurement range up to 30MHz in the following plots the field strength result from 3m Distance measurements are extrapolated to 300m and 30m distance respectively, by 40dB/decade, Per antenna factor scaling.

Measurements below 1000MHz are performed with a peak detector and compared to average limits, Measurements with an average detector are not required.

Note:

For battery operated equipment, the equipment tests shall be performed using a new battery.

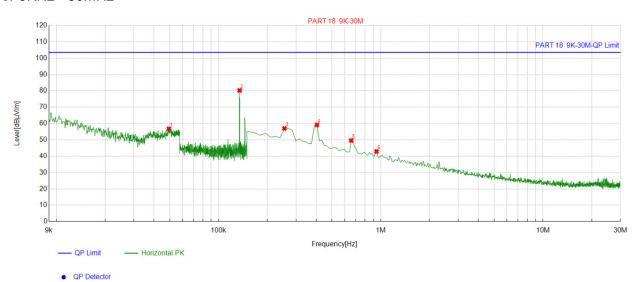
4.4. Test Result

PASS

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Mobile phone:

For 9KHz - 30MHz



Suspected List

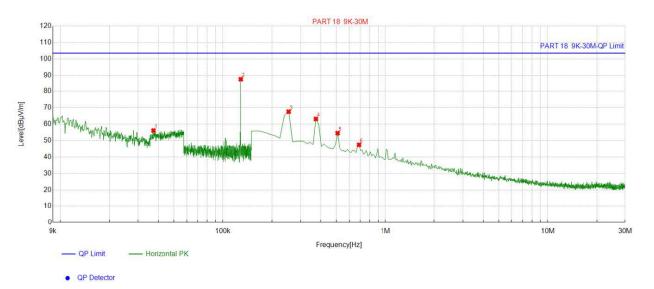
\ 	Freq.	Factor	Reading	Level	Limit	Margin
NO.	[MHz]	[dB]	[dBµV/m]	[dBµV/m]	[dBµV/m]	[dB]
1	0.049417	13.94	42.86	56.80	103.50	46.70
2	0.134764	13.78	66.45	80.23	103.50	23.27
3	0.254527	13.68	43.28	56.96	103.50	46.54
4	0.403852	13.79	45.32	59.11	103.50	44.39
5	0.657704	13.76	35.87	49.63	103.50	53.87
6	0.941421	14.12	28.81	42.93	103.50	60.57

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

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Mobile phone:

For 9KHz - 30MHz



Suspected List

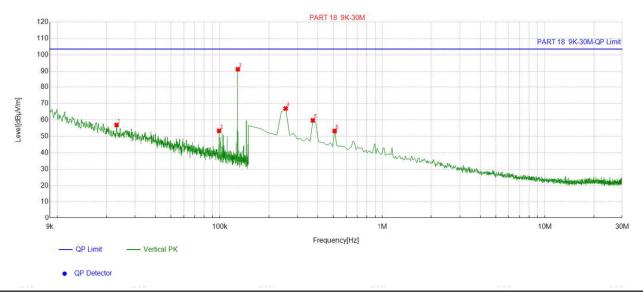
	Cuopo						
		Freq.	Factor	Reading	Level	Limit	Margin
63	NO.	[MHz]	[dB]	[dBµV/m]	[dBµV/m]	[dBµV/m]	[dB]
-	1	0.037285	14.55	41.58	56.13	103.50	47.37
9	2	0.128698	13.78	74.00	87.78	103.50	15.72
	3	0.254527	13.68	53.92	67.60	103.50	35.90
	4	0.373987	13.76	49.42	63.18	103.50	40.32
14	5	0.508379	13.73	40.80	54.53	103.50	48.97
	6	0.687569	13.79	33.63	47.42	103.50	56.08

Remark: Factor = Cable loss + Antenna factor + Attenuator - Preamplifier; Level = Reading + Factor; Margin = Limit - Level



Watch:

For 9KHz - 30MHz

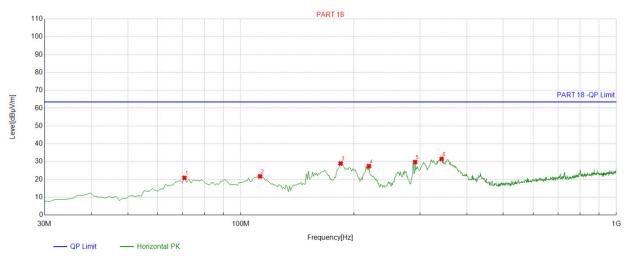


T	Suspe	uspected List										
X	NO.	Freq.	Factor	Reading	Level	Limit	Margin					
G		[MHz]	[dB]	[dBµV/m]	[dBµV/m]	[dBµV/m]	[dB]					
	1	0.023107	14.60	42.34	56.94	103.50	46.56					
90	2	0.098862	13.98	39.37	53.35	103.50	50.15					
100	3	0.128769	13.78	77.53	91.31	103.50	12.19					
	4	0.254527	13.68	53.32	67.00	103.50	36.50					
	5	0.373987	13.76	45.99	59.75	103.50	43.75					
X	6	0.508379	13.73	39.57	53.30	103.50	50.20					

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

For 30MHz-1GHz

Antenna polarity: H



QP Detecto

Ą	Suspected List									
		Freq.	Factor	Reading	Level	Limit	Margin	Height	Angle	
	NO.	[MHz]	[dB]	[dBµV/m]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity
3	1	70.780781	-16.20	37.09	20.89	63.50	42.61	100	177	Horizontal
	2	112.53253	-15.10	36.84	21.74	63.50	41.76	100	324	Horizontal
	3	184.38438	-16.67	45.62	28.95	63.50	34.55	100	98	Horizontal
	4	219.33933	-14.30	41.75	27.45	63.50	36.05	100	122	Horizontal
8	5	291.19119	-12.28	42.03	29.75	63.50	33.75	100	330	Horizontal
	6	342.65265	-11.28	42.82	31.54	63.50	31.96	100	343	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Antenna polarity: V



Sı	ıspe	spected List									
42		Freq.	Factor	Reading	Level	Limit	Margin	Height	Angle		
N	NO.	[MHz]	[dB]	[dBµV/m]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity	
	1	36.796797	-15.71	42.43	26.72	63.50	36.78	100	159	Vertical	
	2	68.838839	-15.56	48.96	33.40	63.50	30.10	100	311	Vertical	
3	3	143.60360	-18.31	52.41	34.10	63.50	29.40	100	58	Vertical	
	4	168.84884	-17.09	51.28	34.19	63.50	29.31	100	349	Vertical	
	5	185.35535	-16.83	49.98	33.15	63.50	30.35	100	184	Vertical	
	6	356.24624	-11.03	45.62	34.59	63.50	28.91	100	195	Vertical	

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level





5. Antenna Requirement

Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

Antenna Connected Construction

The antenna used in this product is Coil Antenna, which permanently attached. It conforms to the standard requirements.

<u>Antenna</u>

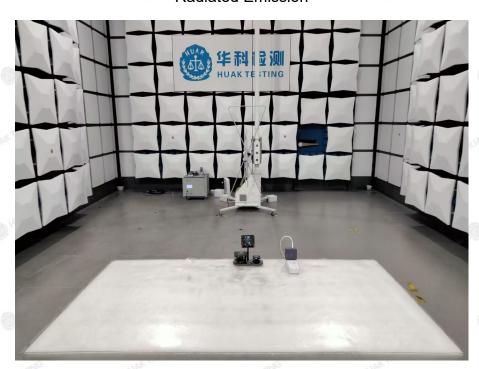


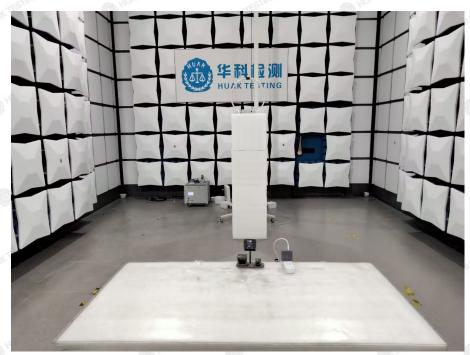
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6. Photographs of Test

Radiated Emission





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7. Photos of the EUT

Reference to the report: ANNEX A of external photos and ANNEX B of internal photos.

-----End of test report-----

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