FCC Test Report

Test Report
On Behalf of
Shenzhen Velocity Technology Innovations Co., Ltd.
For
Power Bank
Model No.: VFC01B

FCC ID: 2BGR9-VFC01B

Prepared For :	**Shenzhen Velocity Technology Innovations Co., Ltd.** **Room 301, Building C, Phase 2, Galaxy WORLD, Minle Community, Minzhi Subdistrict, Longhua District, 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:	**Jan. 09, 2025 ~ Apr. 16, 2025**
Date of Report:	**Apr. 16, 2025**
Report Number:	**HK2501090190-E**

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Test Result Certification

Applicant's Name	:	Shenzhen Velocity Technology Innovations Co., Ltd.
Address	:	Room 301, Building C, Phase 2, Galaxy WORLD, Minle Community, Minzhi Subdistrict, Longhua District, Shenzhen, China
Manufacturer's Name	:	Shenzhen Velocity Technology Innovations Co., Ltd.
Address	:	Room 301, Building C, Phase 2, Galaxy WORLD, Minle Community, Minzhi Subdistrict, Longhua District, Shenzhen, China

Product Description

Trade Mark	:	iVANKY
Product Name	:	Power Bank
Model and/or Type Reference:		VFC01B
Standards	:	FCC CFR 47 PART 18

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Date of Test	:	
Date (s) of performance of tests	:	**Jan. 09, 2025 ~ Apr. 16, 2025**
Date of Issue	:	**Apr. 16, 2025**
Test Result	:	**Pass**

Testing Engineer 

Len Liao

Technical Manager 

Sliver Wan

Authorized Signatory 

Jason Zhou

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** Modified History **

Revision	Description	Issued Data	Remark
Revision 1.0	Initial Test Report Release	Apr. 16, 2025	Jason Zhou

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

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 CN1229.
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:	Power Bank
Model Name:	VFC01B
Series Models:	N/A
Model Difference:	N/A
Trade Mark:	iVANKY
FCC ID:	2BGR9-VFC01B
Antenna Type:	Coil Antenna
Operation Frequency:	Mobile Phone+Earphone:112KHz~205KHz Watch: 319KHz or 112KHz~205KHz
Test Frequency:	Mobile Phone:131KHz(DC mode), 136KHz(AC mode) Earphone: 136KHz Watch:319KHz(DC mode), 150KHz(AC mode)
Modulation Type:	ASK
Power Source:	Type-C Input: 5V, 3A /9V, 2A /12V, 1.5A Type-C Output: 5V, 3A /9V, 2.22A /12V, 1.67A Wireless Output: 2.5W or 5W or 7.5W or 10W or15W Lithium Battery Capacity:10000mAh/38.5Wh
Power Rating:	Type-C Input: 5V, 3A /9V, 2A /12V, 1.5A Type-C Output: 5V, 3A /9V, 2.22A /12V, 1.67A Wireless Output: 2.5W or 5W or 7.5W or 10W or15W Lithium Battery Capacity:10000mAh/38.5Wh

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. Antenna gain values are provided by the customer.
3. The cable loss data is obtained from the supplier.
4. The test results in the report only apply to the tested sample.

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2.2. Carrier Frequency of Channels

Operation Frequency each of channel	
Channel	Frequency
01	131KHz(DC mode), 136KHz(AC mode)
02	136KHz
03	319KHz(DC mode), 150KHz(AC mode)

2.3. Test Mode

Test Item	Test mode	Description
Radiated & Conducted test cases	Mode 1	AC/DC Adapter+ EUT + Mobile Phone (Battery Status: <1%)
	Mode 2	AC/DC Adapter+ EUT + Mobile Phone (Battery Status: <50%)
	Mode 3	AC/DC Adapter+ EUT + Mobile Phone (Battery Status: >95%)
	Mode 4	EUT + Mobile Phone (Battery Status: <1%)
	Mode 5	EUT + Mobile Phone (Battery Status: <50%)
	Mode 6	EUT + Mobile Phone (Battery Status: >95%)
	Mode 7	AC/DC Adapter+ EUT + Watch (Battery Status: <1%)
	Mode 8	AC/DC Adapter+ EUT + Watch (Battery Status: <50%)
	Mode 9	AC/DC Adapter+ EUT + Watch (Battery Status: >95%)
	Mode 10	EUT + Watch (Battery Status: <1%)
	Mode 11	EUT + Watch (Battery Status: <50%)
	Mode 12	EUT + Watch (Battery Status: >95%)
	Mode 13	AC/DC Adapter+ EUT +Earphone (Battery Status: <1%)
	Mode 14	AC/DC Adapter+ EUT + Earphone (Battery Status: <50%)
	Mode 15	AC/DC Adapter+ EUT + Earphone (Battery Status: >95%)
	Mode 16	EUT + Earphone (Battery Status: <1%)
	Mode 17	EUT + Earphone (Battery Status: <50%)
	Mode 18	EUT + Earphone (Battery Status: >95%)

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.
3. The Mobile Phone, Earphone and Watch provided 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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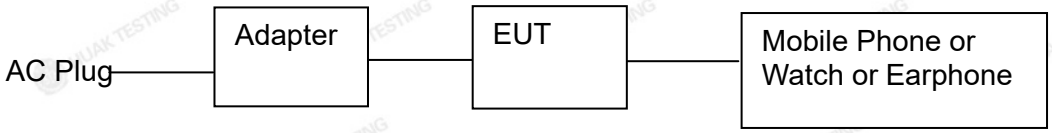
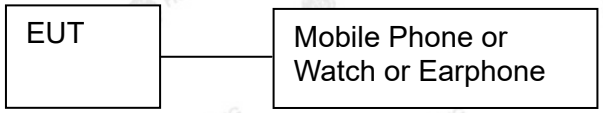
2.4. Description of Test Setup

Operation of EUT during conducted testing and radiation testing: (AC mode)



Operation of EUT during radiation testing: (DC mode)



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.

Item	Equipment	Trade Mark	Model/Type No.	Specification	Remark
1	Power Bank	iVANKY	VFC01B	N/A	EUT
2	Adapter	N/A	LA140	Input: 100-130V, 50/60Hz, 2.5A Output: 5V/3A, 9V3A, 12V/3A, 15V/3A, 20V/5A (100W Max); Input: 200-240V, 50/60Hz, 2.5A Output: 5V/3A, 9V3A, 12V/3A, 15V/3A, 20V/7A, 28V/5A (140W Max)	Peripheral
3	USB Cable	N/A	N/A	Length: 1.0m	Peripheral
4	Mobile phone	Oppo	Oppo Find X8	N/A	Peripheral
5	Watch	N/A	N/A	N/A	Peripheral
6	Earphone	N/A	N/A	N/A	Peripheral

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.
3. For conducted measurements (Output Power, 6dB Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

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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	1 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.	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	/	/
15.	EMI Test Software	Tonscend	JS32-RE 5.0.0	HKE-082	/	/
16.	10dB Attenuator	Schwarzbeck	VTSD9561F	HKE-153	Feb. 20, 2024	1 Year

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Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	L.I.S.N.	R&S	ENV216	HKE-002	Feb. 19, 2025	1 Year
2.	L.I.S.N.	R&S	ENV216	HKE-059	Feb. 19, 2025	1 Year
3.	EMI Test Receiver	R&S	ESR	HKE-005	Feb. 19, 2025	1 Year
4.	Spectrum analyzer	Agilent	N9020A	HKE-048	Feb. 19, 2025	1 Year
5.	Spectrum analyzer	R&S	FSV3044	HKE-126	Feb. 19, 2025	1 Year
6.	Preamplifier	EMCI	EMC051845 S	HKE-006	Feb. 19, 2025	1 Year
7.	Preamplifier	Schwarzbeck	BBV 9743	HKE-016	Feb. 19, 2025	1 Year
8.	Preamplifier	A.H. Systems	SAS-574	HKE-182	Feb. 19, 2025	1 Year
9.	6dB Attenuator	Pasternack	6db	HKE-184	Feb. 19, 2025	1 Year
10.	EMI Test Receiver	Rohde & Schwarz	ESR-7	HKE-010	Feb. 19, 2025	1 Year
11.	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	/	/
15.	EMI Test Software	Tonscend	JS32-RE 5.0.0	HKE-082	/	/
16.	10dB Attenuator	Schwarzbeck	VTSD9561F	HKE-153	Feb. 19, 2025	1 Year

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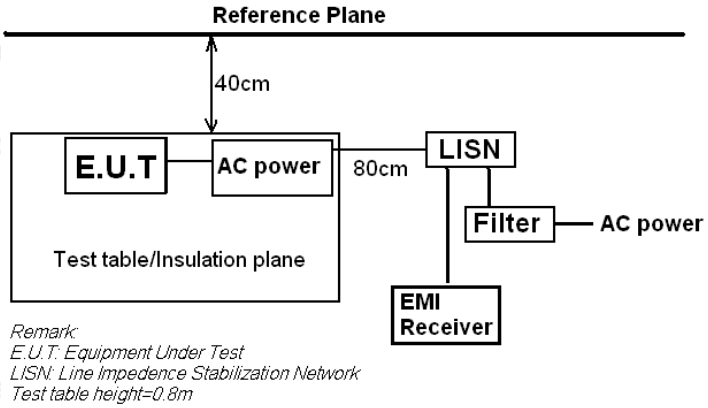
3. Conducted Emission Test

3.1. Block Diagram of Test Setup



Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m

3.2. Conducted Power Line Emission Limit

According to FCC Part 18.307(b)

Frequency (MHz)	Maximum RF Line Voltage (dBμV)			
	CLASS A		CLASS B	
	Q.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	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.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.

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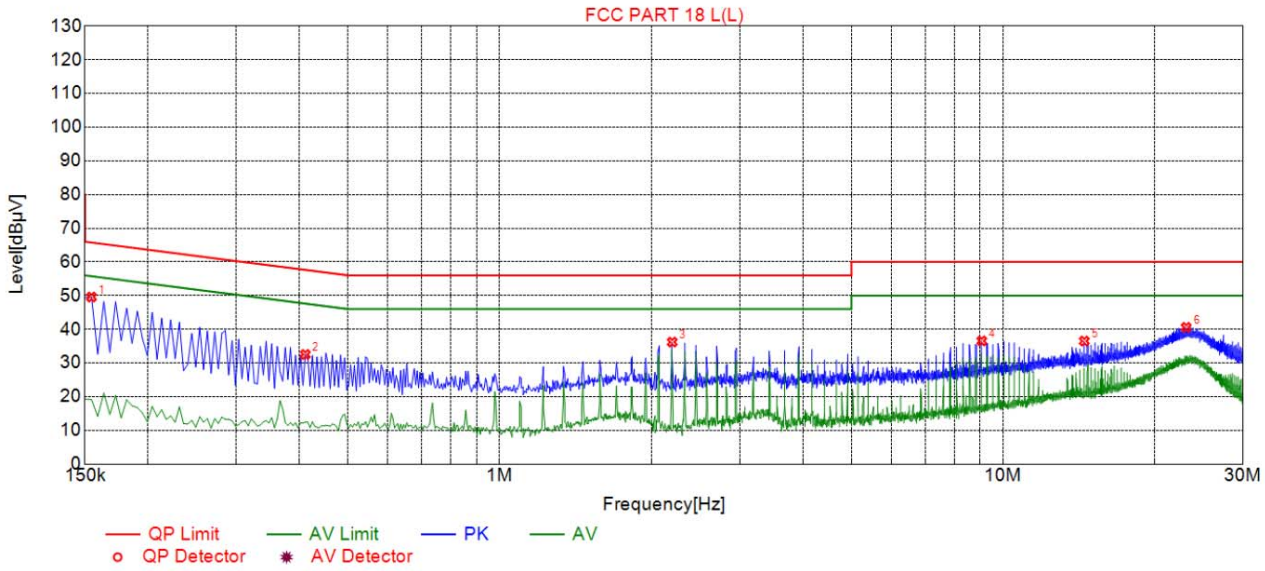
3.4. Test Result

PASS

All the test modes completed for test. Only the worst result(Mobile Phone AC Working Full Load) was reported as below:

Test Specification: Line



Suspected List								
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1545	49.59	19.56	65.81	16.22	30.03	PK	L
2	0.4110	32.52	19.83	57.67	25.15	12.69	PK	L
3	2.2020	36.21	20.18	56.00	19.79	16.03	PK	L
4	9.0780	36.55	20.93	60.00	23.45	15.62	PK	L
5	14.5095	36.51	21.77	60.00	23.49	14.74	PK	L
6	23.1225	40.57	23.84	60.00	19.43	16.73	PK	L

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

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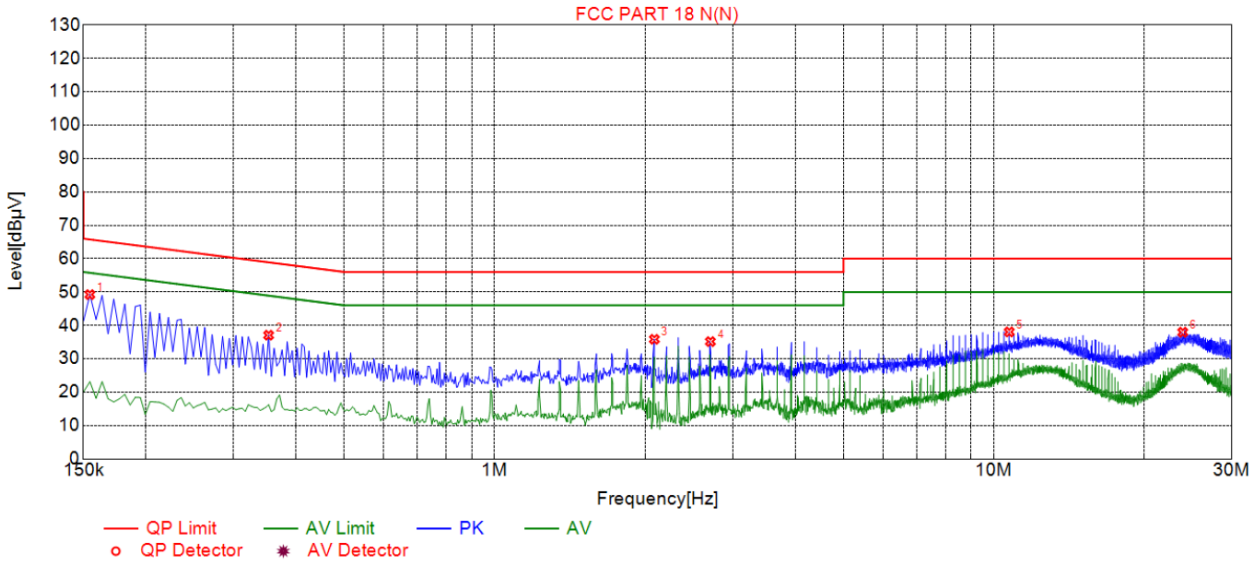
Test Specification: Neutral



Suspected List

NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1545	49.23	19.63	65.81	16.58	29.60	PK	N
2	0.3525	37.07	19.68	58.97	21.90	17.39	PK	N
3	2.0895	35.84	19.96	56.00	20.16	15.88	PK	N
4	2.7060	35.15	20.05	56.00	20.85	15.10	PK	N
5	10.7430	38.05	21.06	60.00	21.95	16.99	PK	N
6	23.9190	37.96	24.08	60.00	22.04	13.88	PK	N

Remark: Margin = Limit – Level

Correction factor = Cable lose + ISN insertion loss

Level=Test receiver reading + correction factor

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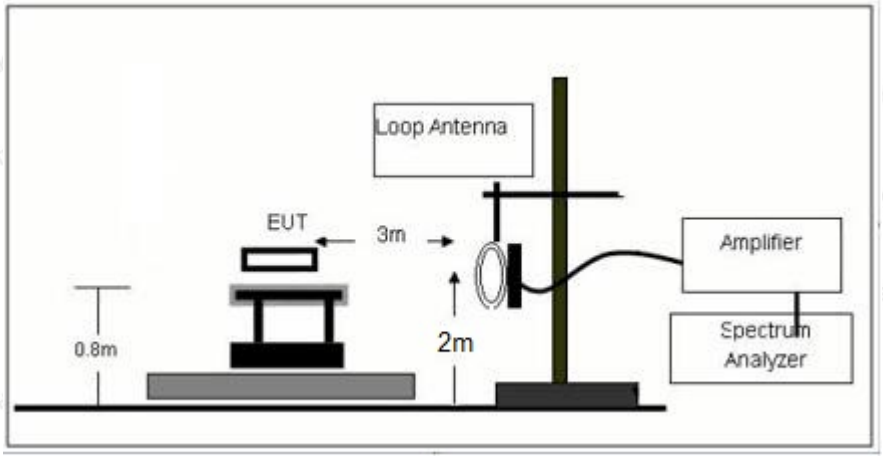
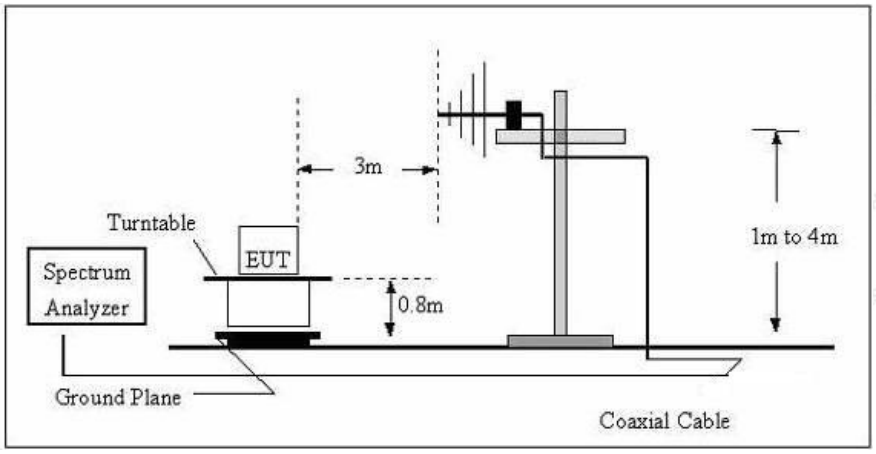
4. Radiated Emissions

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.

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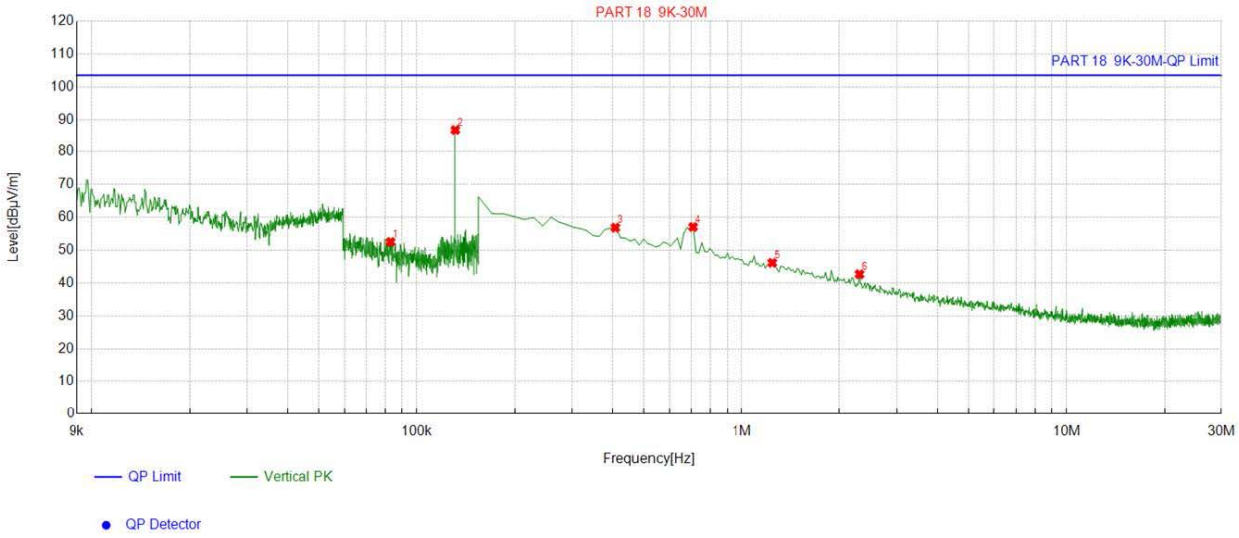
4.4. Test Result

PASS

Note: All the test modes completed for test. Only the worst result Mobile Phone Full Load was reported as below:

For 9KHz - 30MHz

DC Mode:



Suspected List						
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]
1	0.083132	20.73	31.78	52.51	103.50	50.99
2	0.13119	20.40	76.70	97.10	103.50	6.40
3	0.408809	20.15	36.70	56.85	103.50	46.65
4	0.707409	20.25	36.82	57.07	103.50	46.43
5	1.244887	20.48	25.67	46.15	103.50	57.35
6	2.304915	20.41	22.27	42.68	103.50	60.82

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

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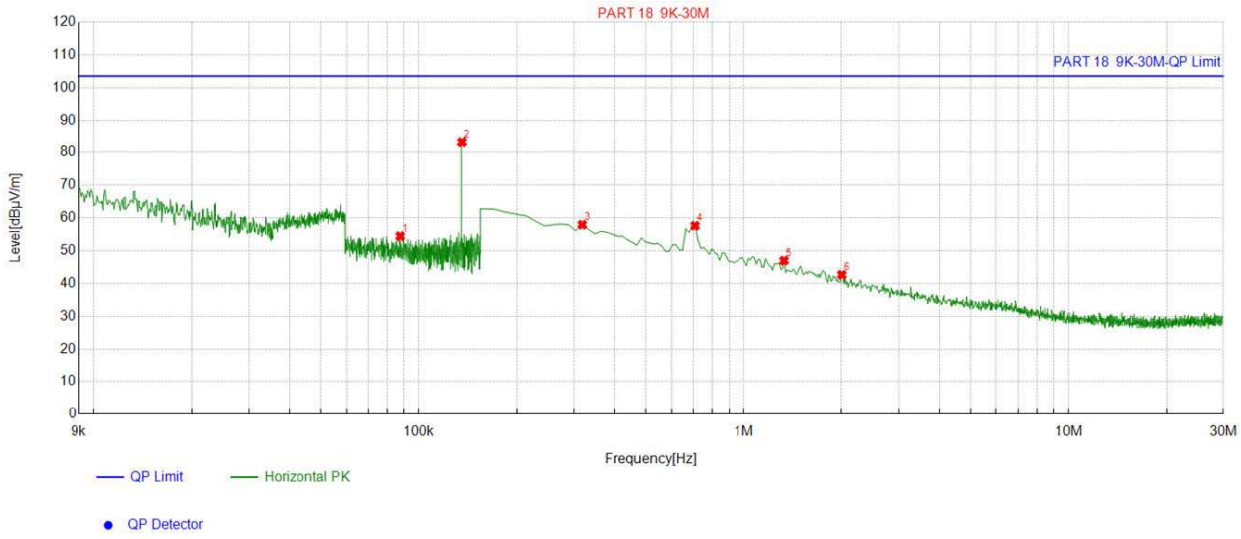
For 9KHz - 30MHz
AC Mode:



Suspected List

NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]
1	0.08766	20.74	33.69	54.43	103.50	49.07
2	0.135572	20.41	62.66	83.07	103.50	20.43
3	0.31923	20.05	37.86	57.91	103.50	45.59
4	0.707409	20.25	37.38	57.63	103.50	45.87
5	1.334467	20.49	26.51	47.00	103.50	56.50
6	2.006316	20.52	22.12	42.64	103.50	60.86

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

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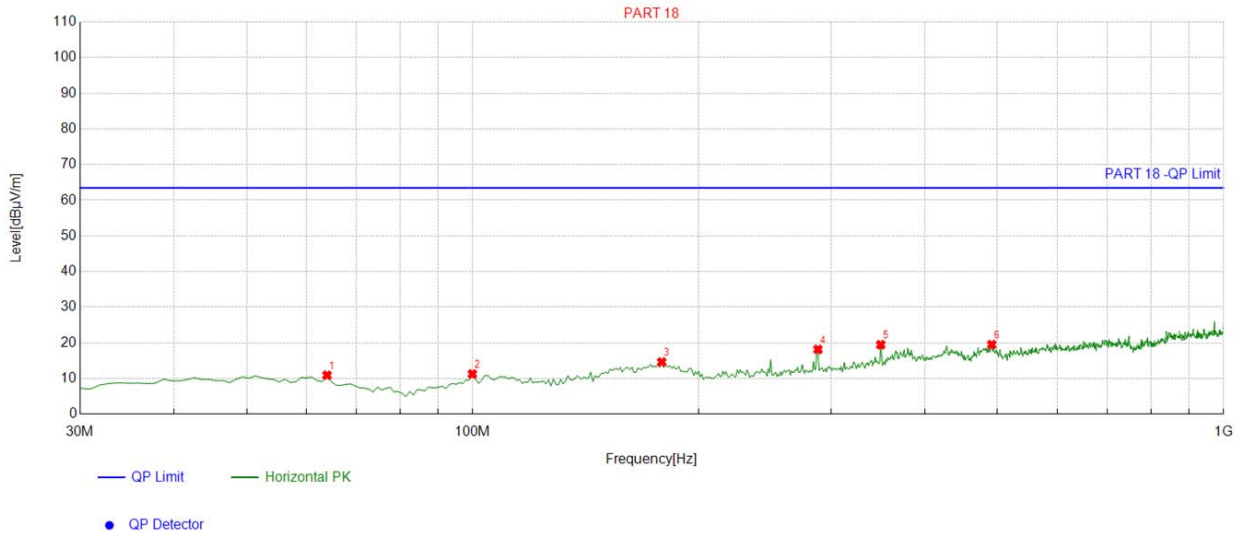
For 30MHz-1GHz

DC Mode:

Antenna polarity: H



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	63.983984	-14.38	25.30	10.92	63.50	52.58	100	233	Horizontal
2	99.90991	-14.70	25.97	11.27	63.50	52.23	100	256	Horizontal
3	178.55855	-16.60	31.23	14.63	63.50	48.87	100	224	Horizontal
4	288.27827	-12.19	30.36	18.17	63.50	45.33	100	310	Horizontal
5	349.44944	-10.04	29.52	19.48	63.50	44.02	100	136	Horizontal
6	491.21121	-7.88	27.40	19.52	63.50	43.98	100	277	Horizontal

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

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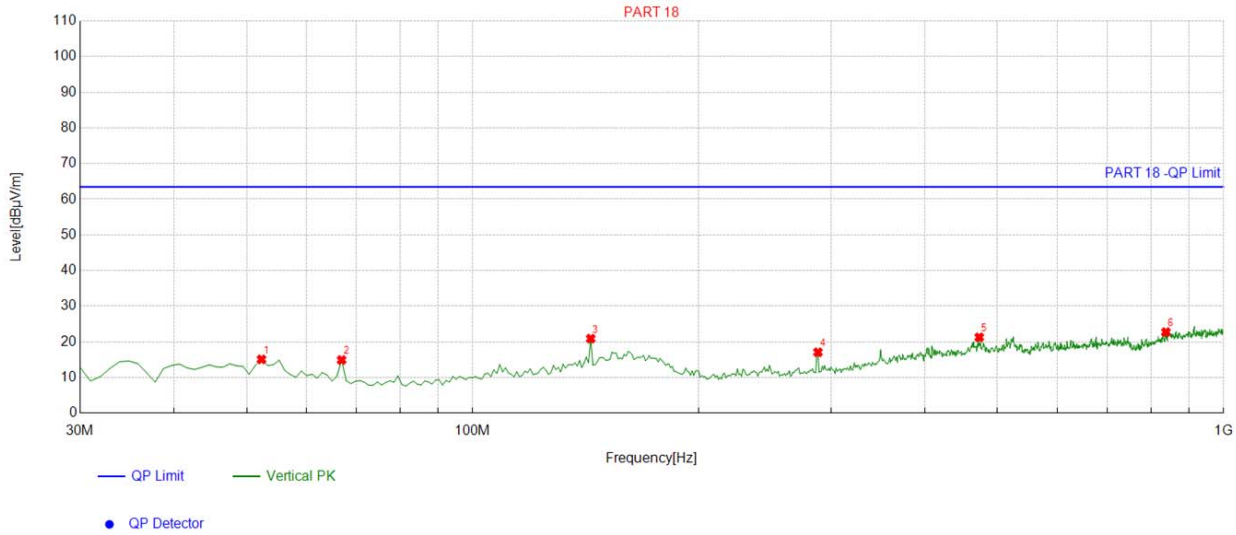
Antenna polarity: V



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	52.332332	-13.35	28.44	15.09	63.50	48.41	100	125	Vertical
2	66.896897	-16.17	31.09	14.92	63.50	48.58	100	224	Vertical
3	143.60360	-18.35	39.26	20.91	63.50	42.59	100	325	Vertical
4	288.27827	-12.19	29.27	17.08	63.50	46.42	100	5	Vertical
5	472.76276	-8.35	29.63	21.28	63.50	42.22	100	348	Vertical
6	837.84784	-2.39	25.14	22.75	63.50	40.75	100	72	Vertical

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

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AC Mode:

Antenna polarity: H

Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	92.142142	-16.47	33.93	17.46	63.50	46.04	100	343	Horizontal
2	143.60360	-18.35	37.57	19.22	63.50	44.28	100	259	Horizontal
3	191.18118	-15.86	39.76	23.90	63.50	39.60	100	58	Horizontal
4	264.97497	-13.11	41.17	28.06	63.50	35.44	100	268	Horizontal
5	299.92993	-11.71	50.25	38.54	63.50	24.96	100	273	Horizontal
6	424.21421	-8.89	30.36	21.47	63.50	42.03	100	262	Horizontal

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

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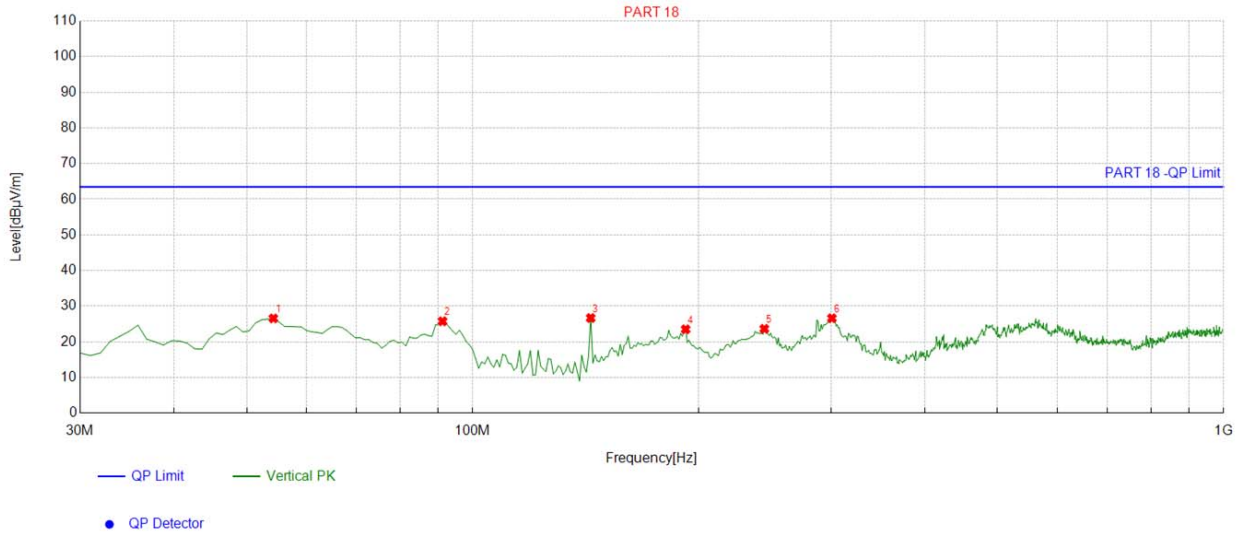
Antenna polarity: V



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	54.274274	-13.50	40.09	26.59	63.50	36.91	100	48	Vertical
2	91.171171	-16.91	42.68	25.77	63.50	37.73	100	334	Vertical
3	143.60360	-18.35	45.05	26.70	63.50	36.80	100	25	Vertical
4	192.15215	-15.74	39.26	23.52	63.50	39.98	100	11	Vertical
5	244.58458	-13.21	36.87	23.66	63.50	39.84	100	221	Vertical
6	300.90090	-11.75	38.38	26.63	63.50	36.87	100	34	Vertical

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

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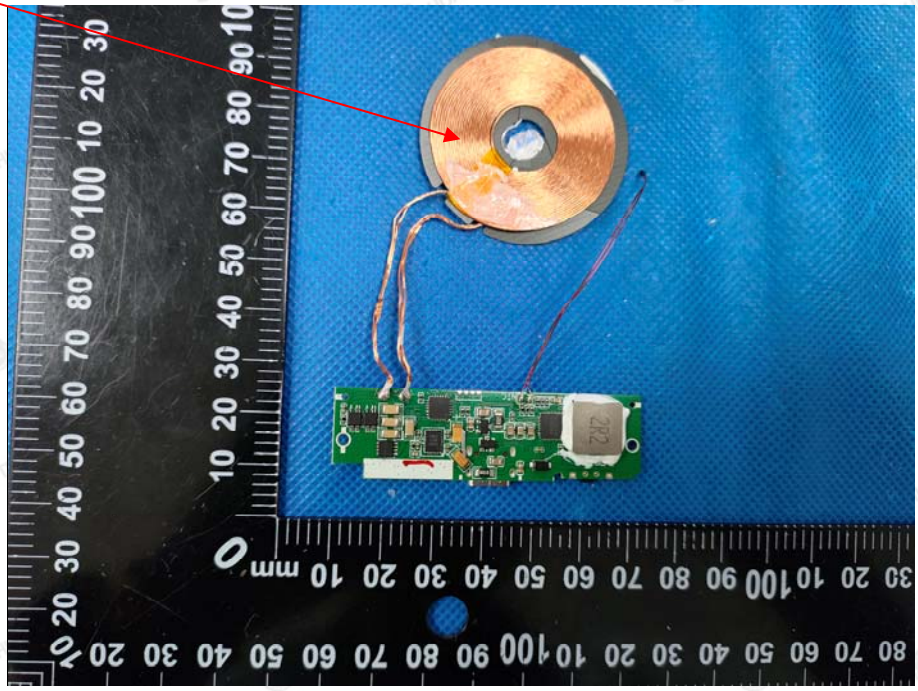
5. Antenna Requirement

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.

Antenna



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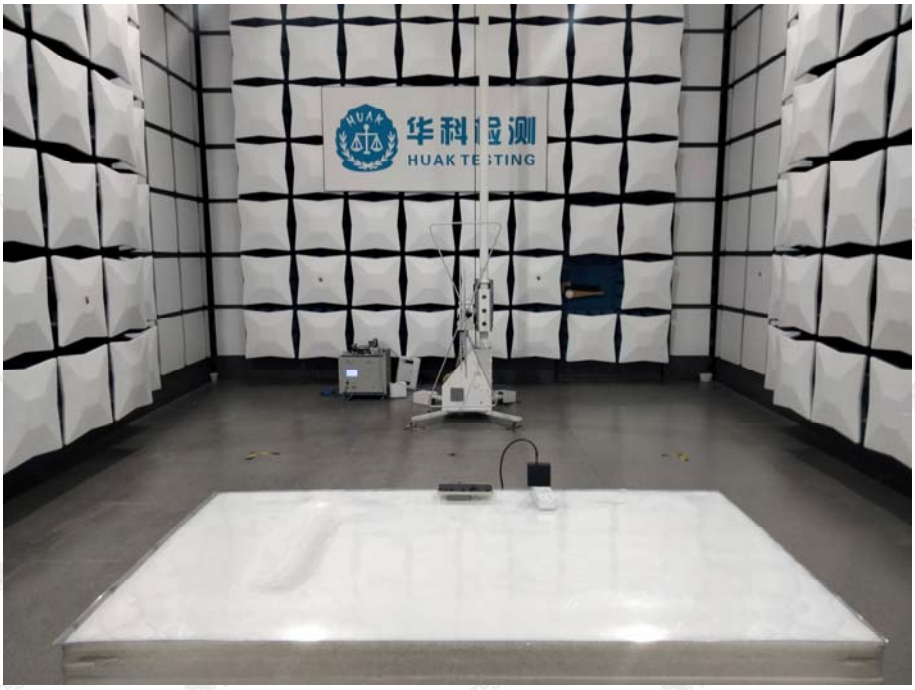
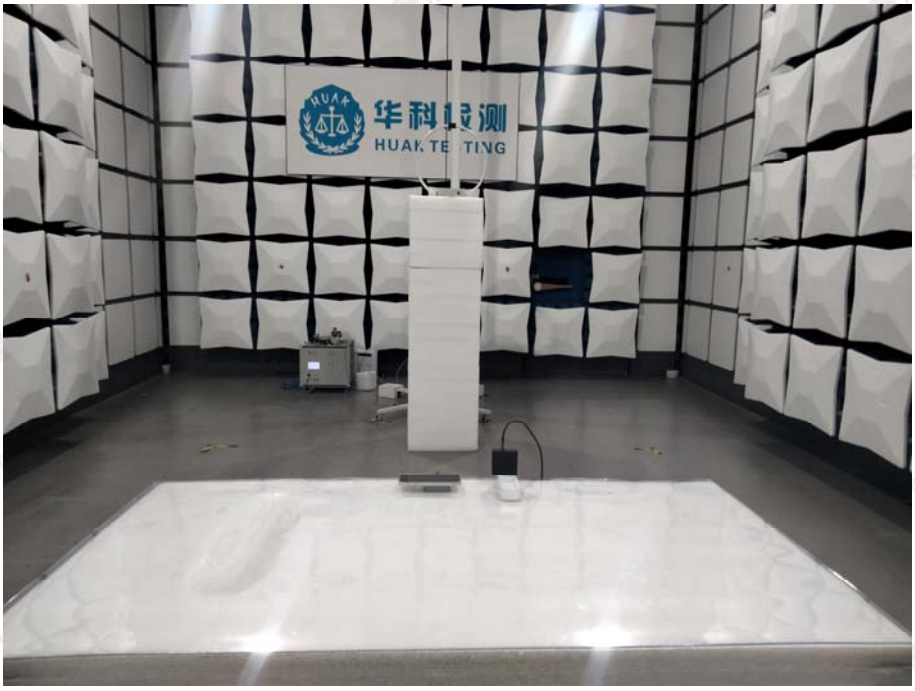
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

6. Photographs of Test

Radiated Emission

AC Mode:





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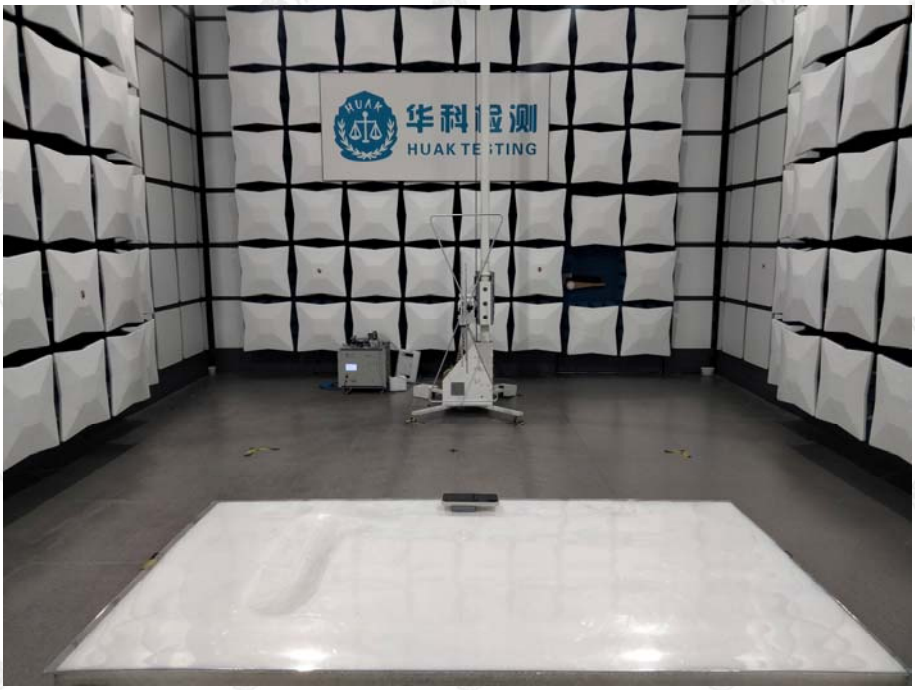
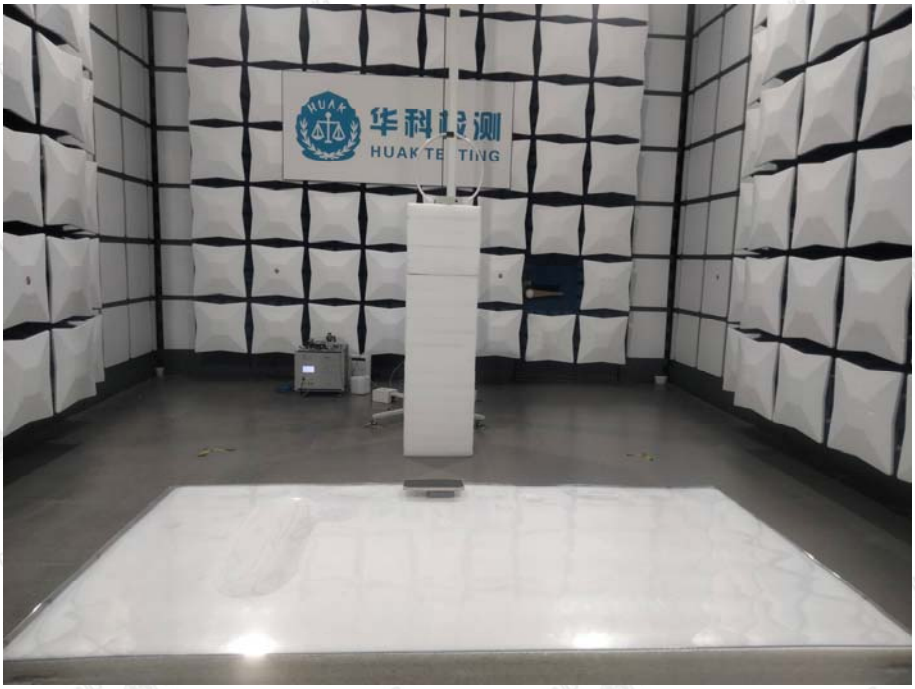
DC Mode:





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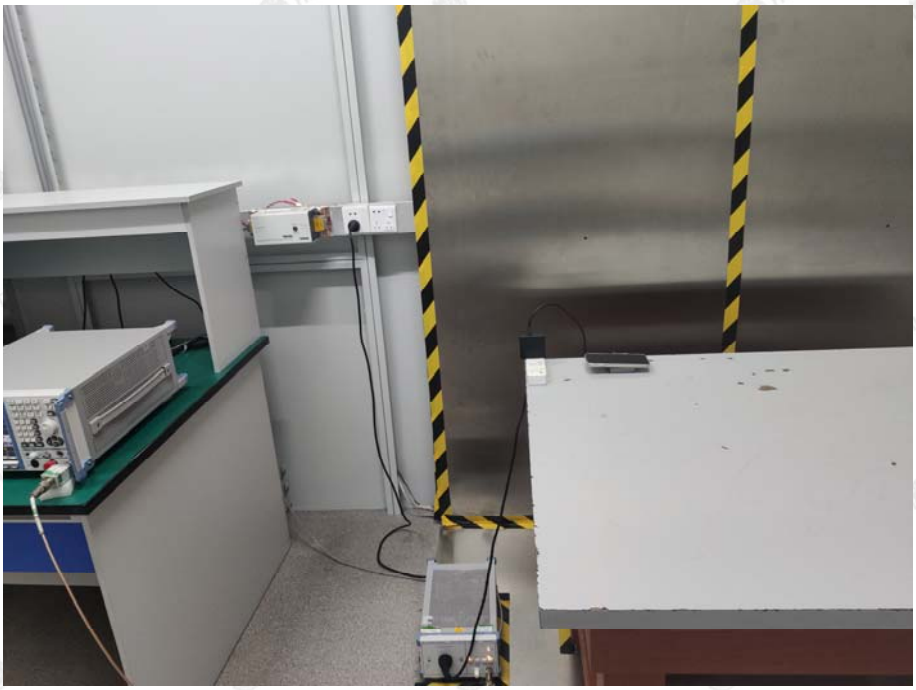
Conducted Emission



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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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