



# FCC TEST REPORT

**Test report  
On Behalf of  
Shenzhen Topstar Industry Co., Ltd.  
For  
POWER BANK**

**Model No.: BI-B43, BI-B44, BI-B7, BI-B71, BI-B72, BI-B73, BI-B74,  
BI-B75, BI-B1, BI-B2, BI-B11, BI-B12, BI-B21, BI-B9, BI-B91**

**FCC ID: 2A2ND-BIB43**

**Prepared For :** Shenzhen Topstar Industry Co., Ltd.  
Room 929, Jiaxiye Plaza, No.318, Minzhi Avenue, Minzhi Community, Minzhi  
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**Prepared By :** Shenzhen HUAK Testing Technology Co., Ltd.  
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**Date of Test:** Apr. 03, 2023 ~ Apr. 10, 2023

**Date of Report:** Apr. 10, 2023

**Report Number:** HK2304031211-1E



TEST RESULT CERTIFICATION

Applicant's name.....: Shenzhen Topstar Industry Co., Ltd.
Address.....: Room 929, Jiaxiye Plaza, No.318, Minzhi Avenue, Minzhi Community, Minzhi Street, Longhua District, Shenzhen, 518131 China

Manufacture's Name.....: Shenzhen Topstar Industry Co., Ltd.
Address.....: Room 929, Jiaxiye Plaza, No.318, Minzhi Avenue, Minzhi Community, Minzhi Street, Longhua District, Shenzhen, 518131 China

Product description

Trade Mark: INIU
Product name.....: POWER BANK
Model and/or type reference : BI-B43, BI-B44, BI-B7, BI-B71, BI-B72, BI-B73, BI-B74, BI-B75, BI-B1, BI-B2, BI-B11, BI-B12, BI-B21, BI-B9, BI-B91

Standards.....: FCC CFR 47 PART 18

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Date of Test.....:
Date (s) of performance of tests.....: Apr. 03, 2023 ~ Apr. 10, 2023
Date of Issue.....: Apr. 10, 2023
Test Result.....: Pass

Testing Engineer : [Signature]
(Gary Qian)

Technical Manager : [Signature]
(Eden Hu)

Authorized Signatory : [Signature]
(Jason Zhou)



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**\*\* Modified History \*\***

| Revision     | Description                 | Issued Data   | Remark     |
|--------------|-----------------------------|---------------|------------|
| Revision 1.0 | Initial Test Report Release | Apr. 10, 2023 | Jason Zhou |
|              |                             |               |            |
|              |                             |               |            |



### 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



2. GENERAL INFORMATION

2.1. General Description of EUT

|                      |  |
|----------------------|--|
| Equipment:           | POWER BANK   |
| Model Name:          | BI-B43   |
| Series Models:       | BI-B44, BI-B7, BI-B71, BI-B72, BI-B73, BI-B74, BI-B75, BI-B1, BI-B2, BI-B11, BI-B12, BI-B21, BI-B9, BI-B91   |
| Model Difference:    | All model's the function, software and electric circuit are the same, only with model named different. Test sample model: BI-B43.  |
| Trade Mark:          | INIU   |
| FCC ID:              | 2A2ND-BIB43  |
| Antenna Type:        | Coil Antenna   |
| Antenna Gain:        | 0dBi   |
| Operation frequency: | 111.5KHz~205KHz  |
| Test frequency:      | 143KHz   |
| Number of Channels:  | 1  |
| Modulation Type:     | ASK  |
| Power Source:        | Battery Capacity: 10000mAh/37Wh<br>IN USB-C: 5V/3A 9V/2A 12V/1.5A<br>OUT USB-C: 5V/3A 9V/2.2A 12V/1.5A<br>OUT USB-A: 4.5V/5A 5V/4.5A 9V/2A 12V/1.5A<br>OUT Wireless: 5W/7.5W/10W |
| Power Rating:        | Battery Capacity: 10000mAh/37Wh<br>IN USB-C: 5V/3A 9V/2A 12V/1.5A<br>OUT USB-C: 5V/3A 9V/2.2A 12V/1.5A<br>OUT USB-A: 4.5V/5A 5V/4.5A 9V/2A 12V/1.5A<br>OUT Wireless: 5W/7.5W/10W |

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### 2.2. Carrier Frequency of Channels

| Operation Frequency each of channel |           |
|-------------------------------------|-----------|
| Channel                             | Frequency |
| 1                                   | 143KHz    |

### 2.3. Operation of EUT during testing

The equipment under test(EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

| Test Mode | Description                            | Remark                 |
|-----------|--|------------------------|
| DC mode:  | OUT Wireless: 5W                       |                        |
|           | OUT Wireless: 5W+OUT USB-C: 12V/1.5A   |                        |
|           | OUT Wireless: 5W+OUT USB-A: 12V/1.5A   |                        |
|           | OUT Wireless: 7.5W                     |                        |
|           | OUT Wireless: 7.5W+OUT USB-C: 12V/1.5A |                        |
|           | OUT Wireless: 7.5W+OUT USB-A: 12V/1.5A |                        |
|           | OUT Wireless: 10W                      |                        |
|           | OUT Wireless: 10W+OUT USB-C: 12V/1.5A  |                        |
|           | OUT Wireless: 10W+OUT USB-A: 12V/1.5A  |                        |
| AC mode:  | OUT Wireless: 5W                       | Connect to the adapter |
|           | OUT Wireless: 5W+OUT USB-C: 12V/1.5A   |                        |
|           | OUT Wireless: 5W+OUT USB-A: 12V/1.5A   |                        |
|           | OUT Wireless: 7.5W                     |                        |
|           | OUT Wireless: 7.5W+OUT USB-C: 12V/1.5A |                        |
|           | OUT Wireless: 7.5W+OUT USB-A: 12V/1.5A |                        |
|           | OUT Wireless: 10W                      |                        |
|           | OUT Wireless: 10W+OUT USB-C: 12V/1.5A  |                        |
|           | OUT Wireless: 10W+OUT USB-A: 12V/1.5A  |                        |

Note: All modes are tested, and the report shows only the worst mode data.



### 2.4. Description of Test Setup

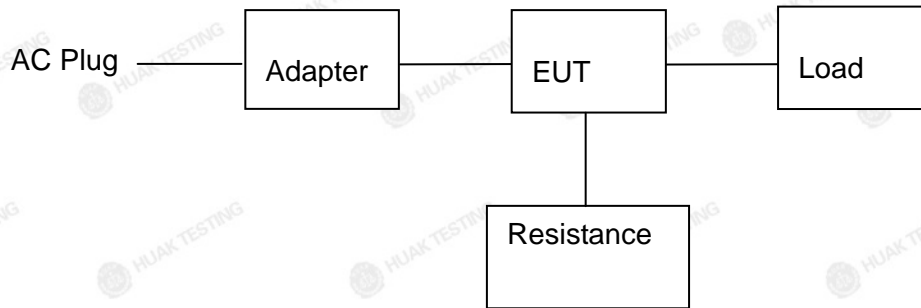
DC mode:

Operation of EUT during testing:



AC mode:

Operation of EUT during testing:



#### Adapter information

Model: GD2B9

Input: 100-240V~ 50/60Hz, 2A Max

USB-C1 Output: 5V 3A, 9V 3A, 12V 3A, 15V 3A, 20V 5A, 28V 5A 140W MAX

USB-C2 Output: 5V 3A, 9V 3A, 12V 3A, 15V 3A, 20V 5A 100W MAX

USB-A Output: 5V 4.5A, 4.5V 5A, 5V 3A, 9V 2A, 12V 1.5A 22.5W MAX

Total output power: 140W Max

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.



**2.5. Measurement Instruments List**

| Item | Equipment                               | Manufacturer    | Model No.           | Serial No. | Last Cal.     | Cal. Interval |
|------|---|-----------------|---------------------|------------|---------------|---------------|
| 1.   | L.I.S.N.<br>Artificial Mains<br>Network | R&S             | ENV216              | HKE-002    | Feb. 17, 2023 | 1 Year        |
| 2.   | Receiver                                | R&S             | ESR-7               | HKE-010    | Feb. 17, 2023 | 1 Year        |
| 3.   | RF automatic<br>control unit            | Tonscend        | JS0806-2            | HKE-060    | Feb. 17, 2023 | 1 Year        |
| 4.   | Spectrum analyzer                       | R&S             | FSP40               | HKE-025    | Feb. 17, 2023 | 1 Year        |
| 5.   | Spectrum analyzer                       | Agilent         | N9020A              | HKE-048    | Feb. 17, 2023 | 1 Year        |
| 6.   | Preamplifier                            | Schwarzbeck     | BBV 9743            | HKE-006    | Feb. 17, 2023 | 1 Year        |
| 7.   | EMI Test Receiver                       | Rohde & Schwarz | ESCI 7              | HKE-010    | Feb. 17, 2023 | 1 Year        |
| 8.   | Bilog Broadband<br>Antenna              | Schwarzbeck     | VULB9163            | HKE-012    | Feb. 17, 2023 | 1 Year        |
| 9.   | Loop Antenna                            | Schwarzbeck     | FMZB 1519<br>B      | HKE-014    | Feb. 17, 2023 | 1 Year        |
| 10.  | Horn Antenna                            | Schwarzbeck     | 9120D               | HKE-013    | Feb. 17, 2023 | 1 Year        |
| 11.  | Pre-amplifier                           | EMCI            | EMC051845<br>SE     | HKE-015    | Feb. 17, 2023 | 1 Year        |
| 12.  | Pre-amplifier                           | Agilent         | 83051A              | HKE-016    | Feb. 17, 2023 | 1 Year        |
| 13.  | EMI Test Software<br>EZ-EMC             | Tonscend        | JS1120-B<br>Version | HKE-083    | N/A           | N/A           |
| 14.  | Power Sensor                            | Agilent         | E9300A              | HKE-086    | Feb. 17, 2023 | 1 Year        |
| 15.  | Spectrum analyzer                       | Agilent         | N9020A              | HKE-048    | Feb. 17, 2023 | 1 Year        |
| 16.  | Signal generator                        | Agilent         | N5182A              | HKE-029    | Feb. 17, 2023 | 1 Year        |
| 17.  | Signal Generator                        | Agilent         | 83630A              | HKE-028    | Feb. 17, 2023 | 1 Year        |
| 18.  | Shielded room                           | Shiel Hong      | 4*3*3               | HKE-039    | Dec. 09, 2021 | 3 Year        |

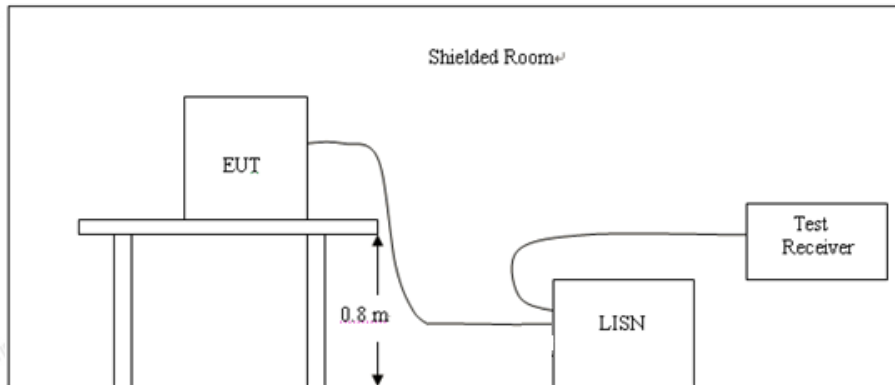
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### 3. CONDUCTED EMISSION TEST

#### 3.1. Block Diagram of Test Setup



#### 3.2. Conducted Power Line Emission Limit

According to FCC Part 18.307(b)

| 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.

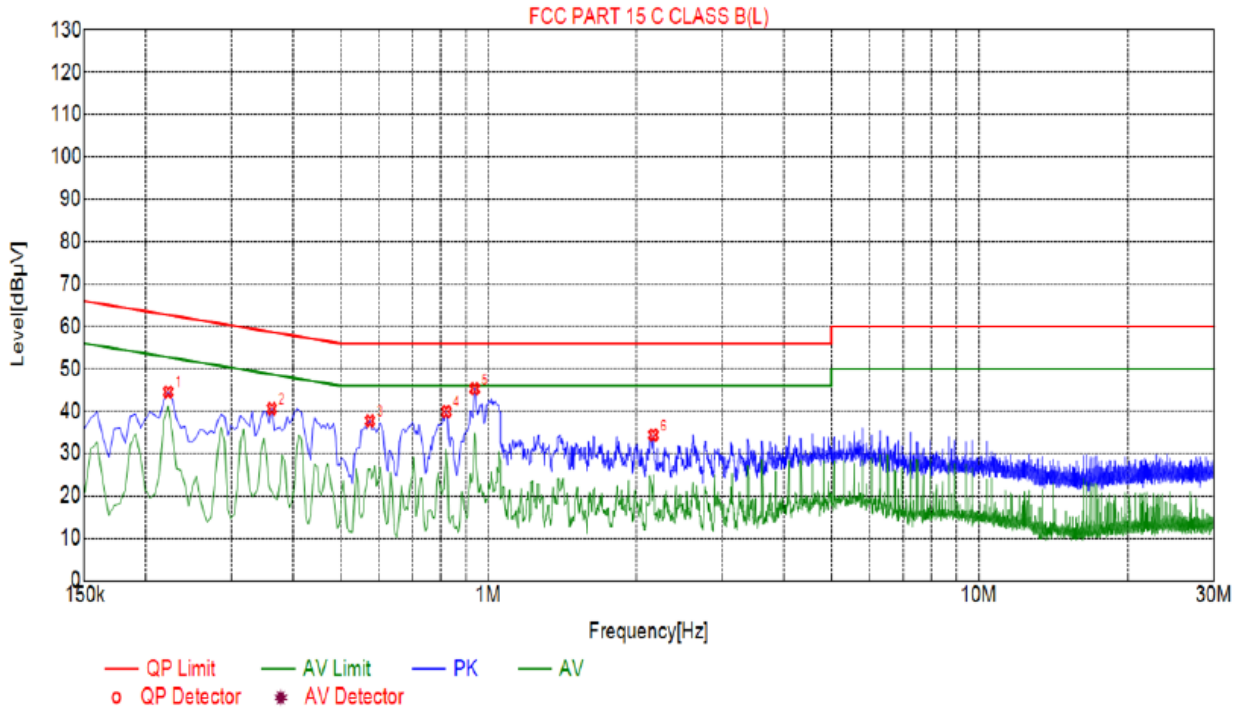


### 3.4. Test Result

PASS

All the test modes completed for test. only the worst result 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              | 0.2220      | 44.54        | 20.04       | 62.74        | 18.20       | 24.50          | PK       | L    |
| 2              | 0.3615      | 40.58        | 20.04       | 58.69        | 18.11       | 20.54          | PK       | L    |
| 3              | 0.5730      | 37.69        | 20.05       | 56.00        | 18.31       | 17.64          | PK       | L    |
| 4              | 0.8205      | 39.88        | 20.06       | 56.00        | 16.12       | 19.82          | PK       | L    |
| 5              | 0.9375      | 45.26        | 20.06       | 56.00        | 10.74       | 25.20          | PK       | L    |
| 6              | 2.1705      | 34.37        | 20.16       | 56.00        | 21.63       | 14.21          | PK       | L    |

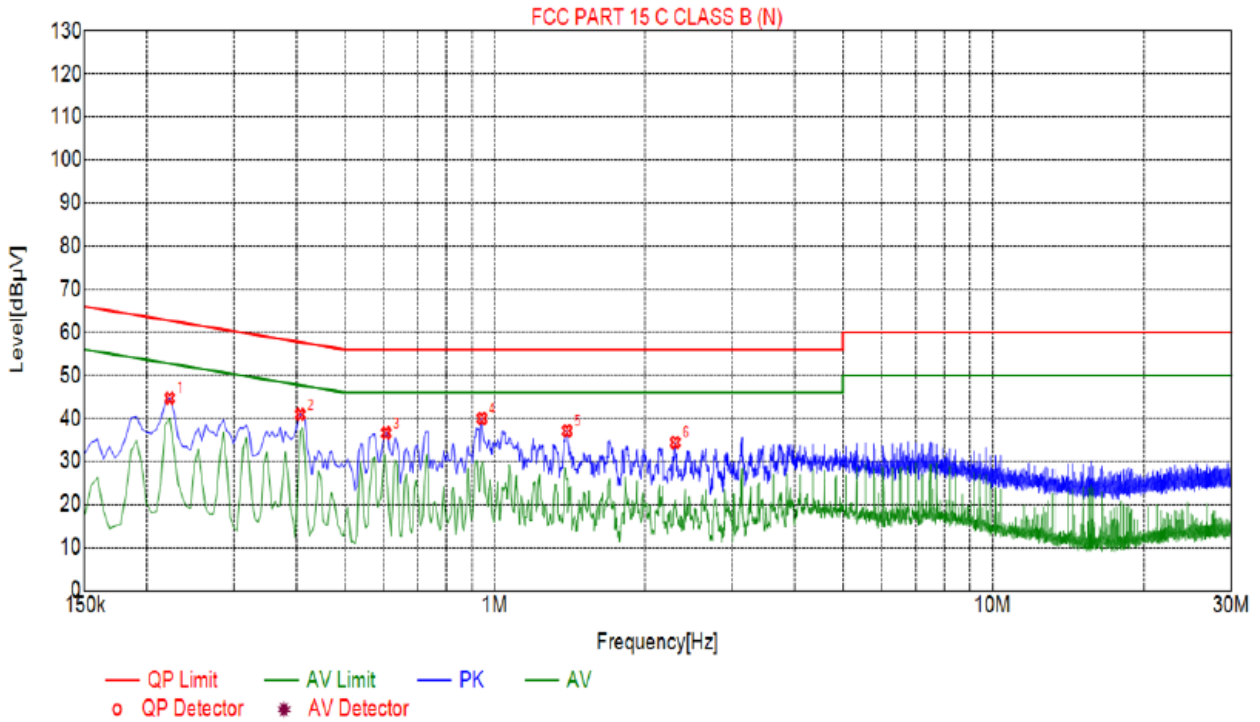
Remark: Margin = Limit - Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor



Test Specification: Neutral



### Suspected List

| NO. | Freq. [MHz] | Level [dBµV] | Factor [dB] | Limit [dBµV] | Margin [dB] | Reading [dBµV] | Detector | Type |
|-----|-------------|--------------|-------------|--------------|-------------|----------------|----------|------|
| 1   | 0.2220      | 44.72        | 20.04       | 62.74        | 18.02       | 24.68          | PK       | N    |
| 2   | 0.4065      | 40.91        | 20.03       | 57.72        | 16.81       | 20.88          | PK       | N    |
| 3   | 0.6045      | 36.59        | 20.05       | 56.00        | 19.41       | 16.54          | PK       | N    |
| 4   | 0.9420      | 39.97        | 20.06       | 56.00        | 16.03       | 19.91          | PK       | N    |
| 5   | 1.3965      | 37.11        | 20.11       | 56.00        | 18.89       | 17.00          | PK       | N    |
| 6   | 2.3055      | 34.40        | 20.18       | 56.00        | 21.60       | 14.22          | PK       | N    |

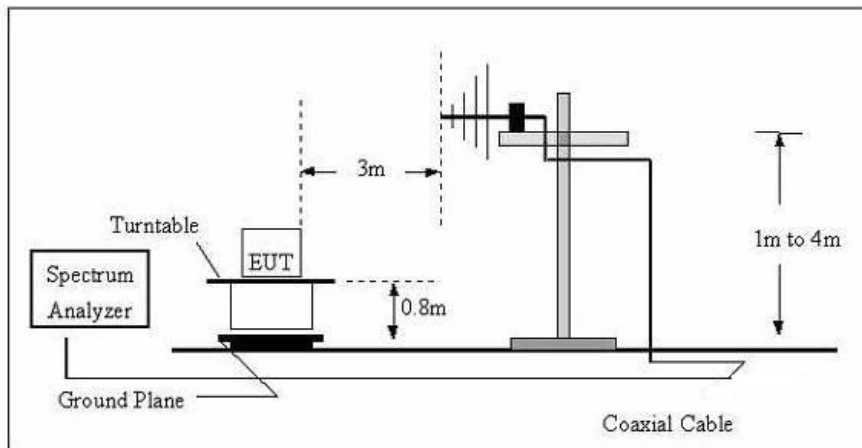
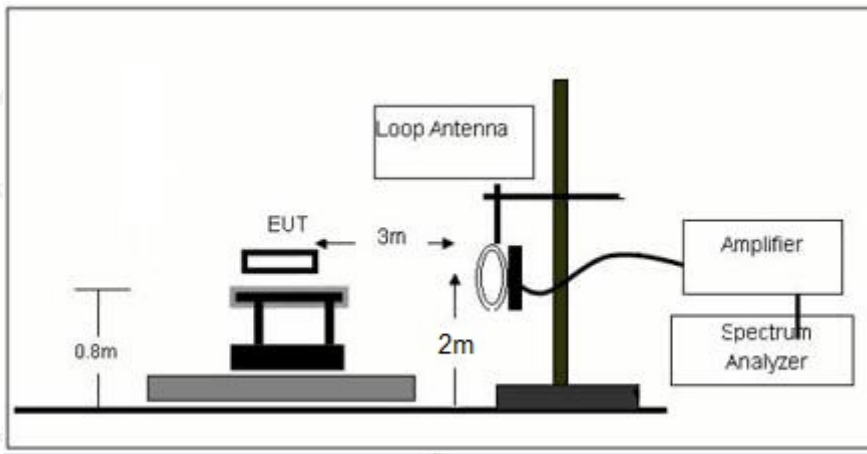
Remark: Margin = Limit - Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor

## 4. RADIATED EMISSIONS

### 4.1. Block Diagram of Test Setup



### 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<br>500 or more                | 15<br>15 × SQRT(power/500)  | 300<br>1300       |



Remark:

- (1) Emission level dBuV/m for 0.009~30MHz =  $20\log(15) + 40\log(300/3)$  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

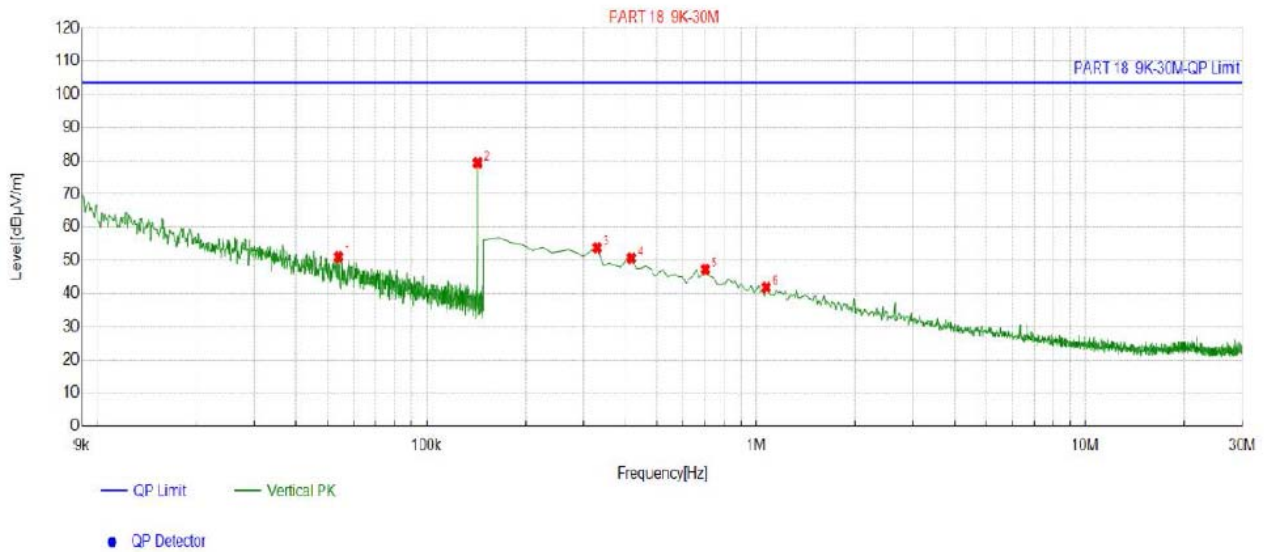
PASS

Note: All the test modes completed for test. Only the worst result (OUT Wireless: 10W+OUT USB-A: 12V/1.5A) was reported as below:



For 9KHz - 30MHz

DC Mode:



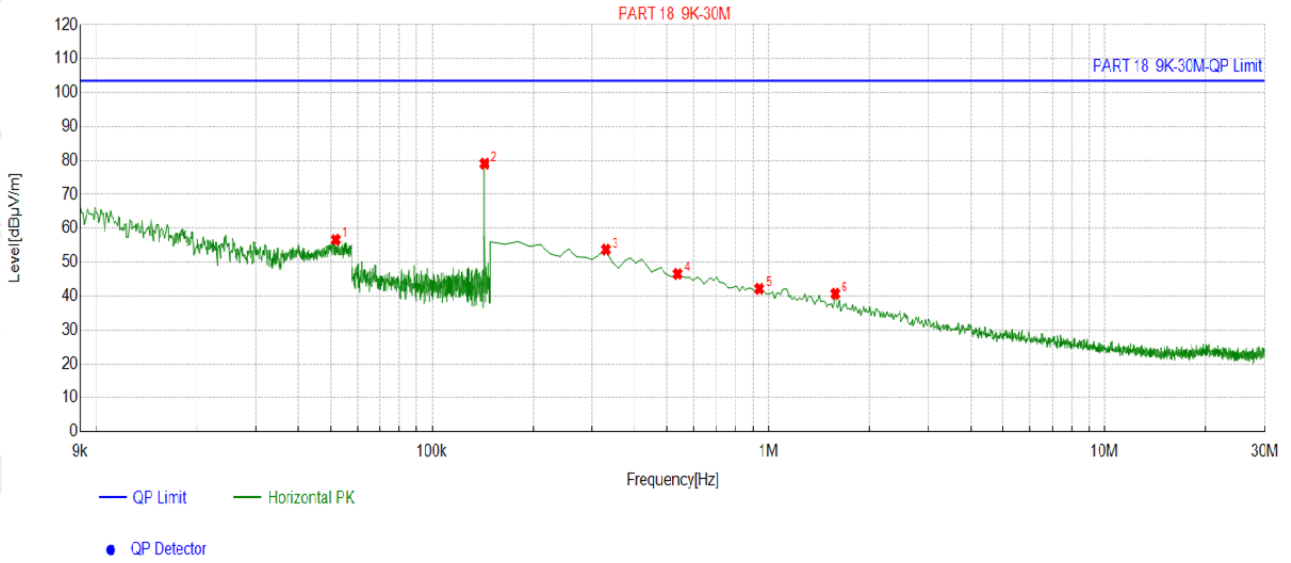
| Suspected List |             |             |                  |                |                |             |
|----------------|-------------|-------------|------------------|----------------|----------------|-------------|
| NO.            | Freq. [MHz] | Factor [dB] | Reading [dBµV/m] | Level [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
| 1              | 0.0540      | 13.93       | 37.10            | 51.03          | 103.50         | 52.47       |
| 2              | 0.1429      | 13.77       | 65.80            | 79.57          | 103.50         | 23.93       |
| 3              | 0.3292      | 13.72       | 40.07            | 53.79          | 103.50         | 49.71       |
| 4              | 0.4188      | 13.77       | 36.92            | 50.69          | 103.50         | 52.81       |
| 5              | 0.7025      | 13.81       | 33.47            | 47.28          | 103.50         | 56.22       |
| 6              | 1.0758      | 14.14       | 27.71            | 41.85          | 103.50         | 61.65       |

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



For 9KHz - 30MHz

AC Mode:



| Suspected List |             |             |                  |                |                |             |
|----------------|-------------|-------------|------------------|----------------|----------------|-------------|
| NO.            | Freq. [MHz] | Factor [dB] | Reading [dBµV/m] | Level [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
| 1              | 0.0516      | 13.92       | 42.71            | 56.63          | 103.50         | 46.87       |
| 2              | 0.1434      | 13.77       | 65.55            | 79.32          | 103.50         | 24.18       |
| 3              | 0.3292      | 13.72       | 40.00            | 53.72          | 103.50         | 49.78       |
| 4              | 0.5382      | 13.72       | 32.83            | 46.55          | 103.50         | 56.95       |
| 5              | 0.9414      | 14.12       | 28.05            | 42.17          | 103.50         | 61.33       |
| 6              | 1.5835      | 14.36       | 26.34            | 40.70          | 103.50         | 62.80       |

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





For 30MHz-1GHz

Antenna polarity: H

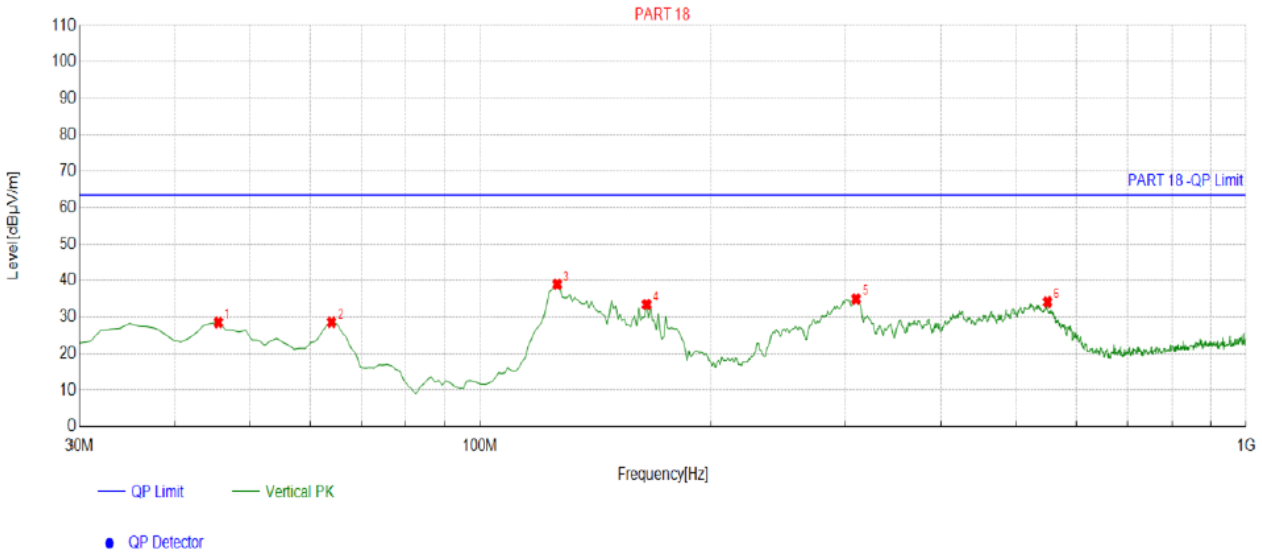


| Suspected List |             |             |                  |                |                |             |             |           |            |
|----------------|-------------|-------------|------------------|----------------|----------------|-------------|-------------|-----------|------------|
| NO.            | Freq. [MHz] | Factor [dB] | Reading [dBµV/m] | Level [dBµV/m] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1              | 45.5355     | -14.97      | 31.91            | 16.94          | 63.50          | 46.56       | 100         | 104       | Horizontal |
| 2              | 64.9550     | -14.59      | 34.02            | 19.43          | 63.50          | 44.07       | 100         | 358       | Horizontal |
| 3              | 126.1261    | -16.21      | 45.76            | 29.55          | 63.50          | 33.95       | 100         | 247       | Horizontal |
| 4              | 163.0230    | -17.19      | 42.20            | 25.01          | 63.50          | 38.49       | 100         | 311       | Horizontal |
| 5              | 308.6687    | -11.85      | 54.24            | 42.39          | 63.50          | 21.11       | 100         | 255       | Horizontal |
| 6              | 425.1852    | -8.54       | 43.20            | 34.66          | 63.50          | 28.84       | 100         | 259       | Horizontal |

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



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              | 45.5355     | -14.97      | 43.53            | 28.56          | 63.50          | 34.94       | 100         | 289       | Vertical |
| 2              | 63.9840     | -14.68      | 43.28            | 28.60          | 63.50          | 34.90       | 100         | 13        | Vertical |
| 3              | 126.1261    | -16.21      | 55.22            | 39.01          | 63.50          | 24.49       | 100         | 245       | Vertical |
| 4              | 164.9650    | -17.39      | 50.88            | 33.49          | 63.50          | 30.01       | 100         | 173       | Vertical |
| 5              | 309.6396    | -11.84      | 46.88            | 35.04          | 63.50          | 28.46       | 100         | 197       | Vertical |
| 6              | 550.4404    | -6.08       | 40.27            | 34.19          | 63.50          | 29.31       | 100         | 193       | Vertical |

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

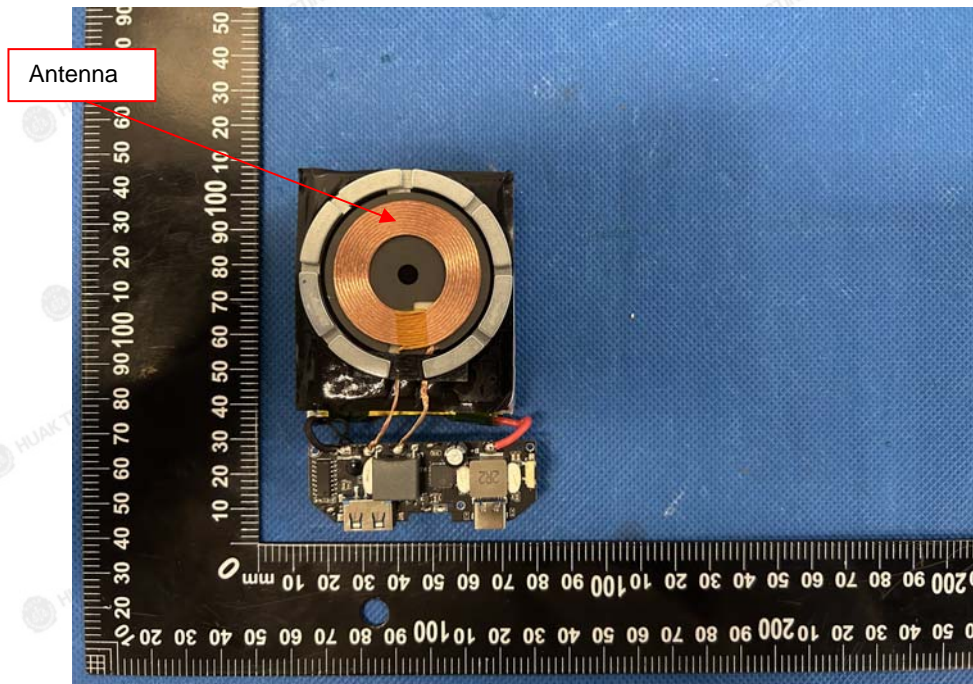
## 5. ANTENNA REQUIREMENT

### 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

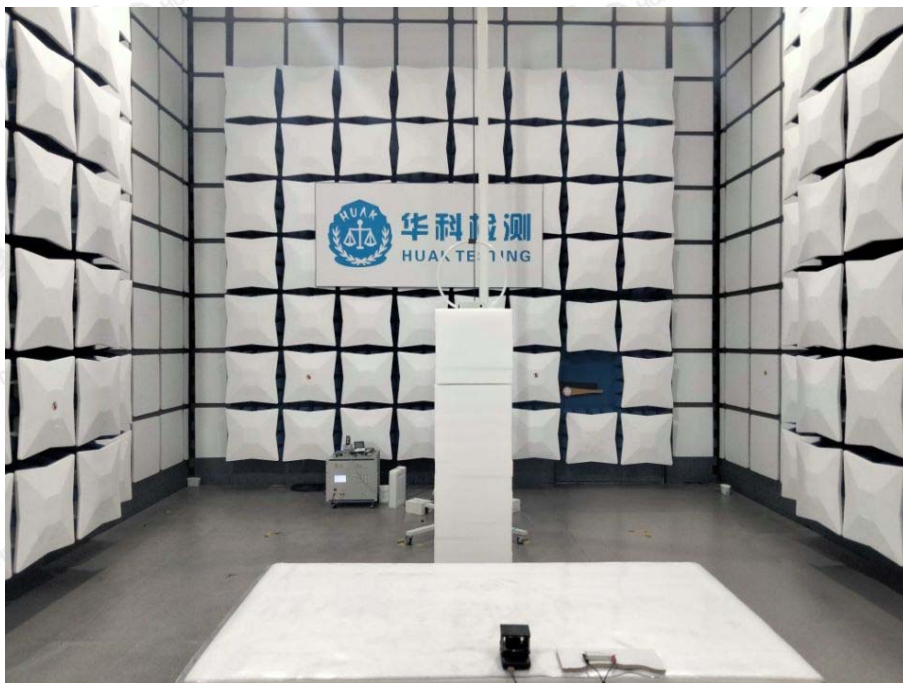
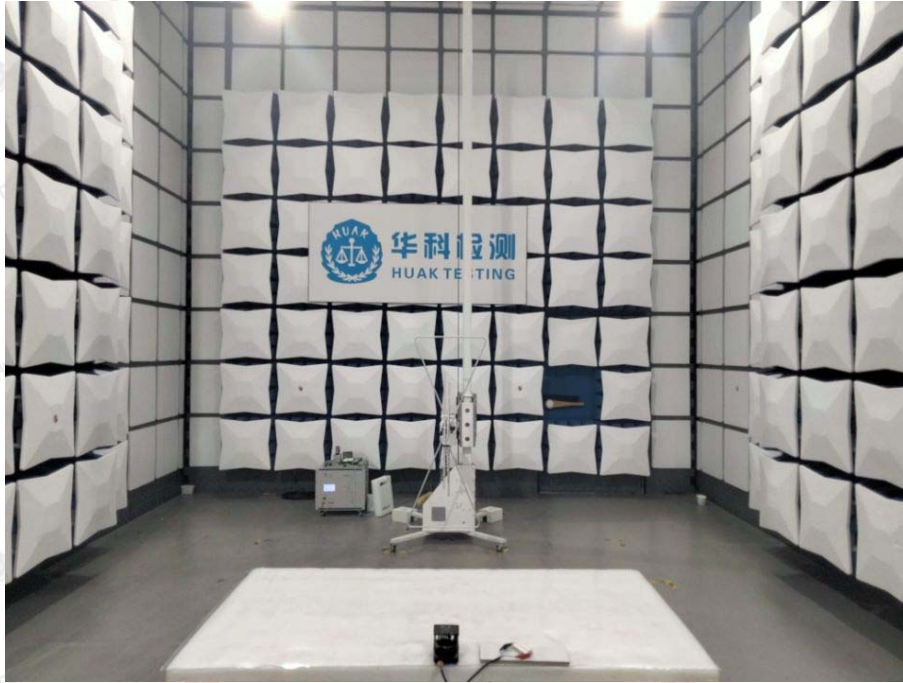
The antenna used in this product is a Coil Antenna, which permanently attached. It conforms to the standard requirements. The directional gains of antenna used for transmitting is 0dBi.





### 6. PHOTOGRAPH OF TEST

Radiated Emission  
DC Mode:



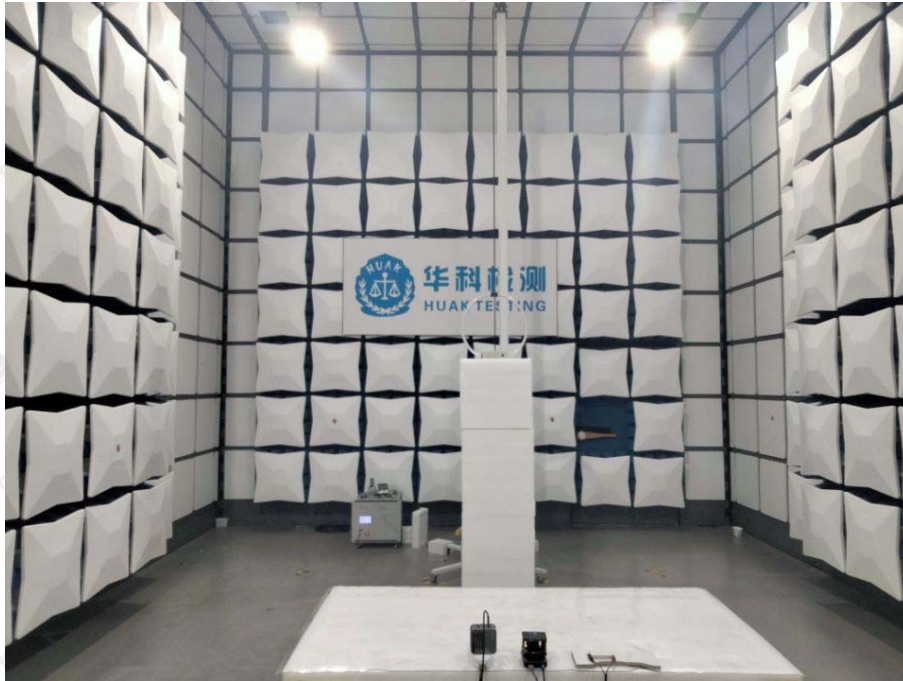
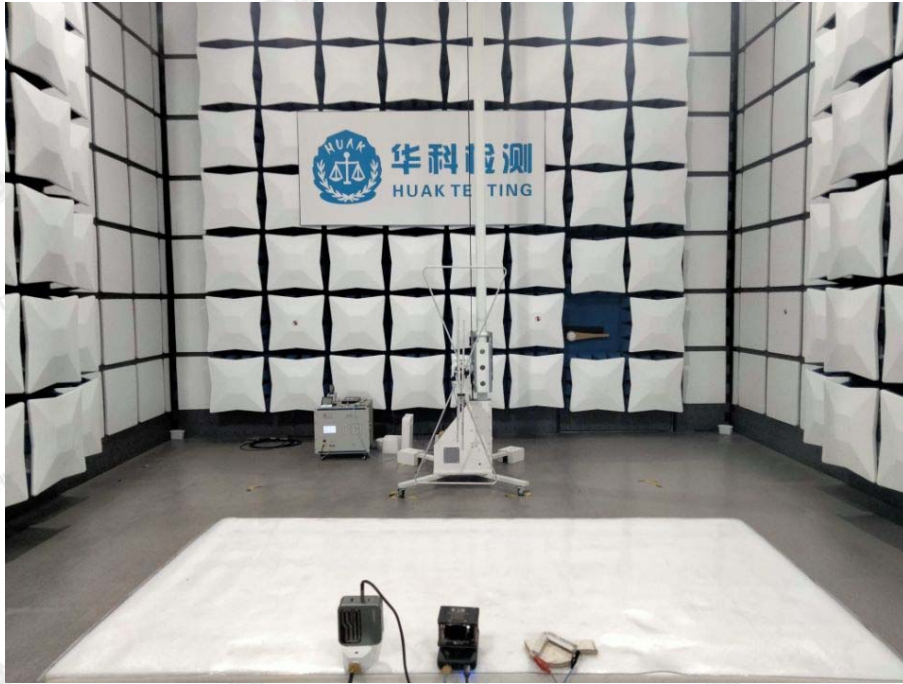
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAKE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

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AC Mode:



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Conducted Emissions



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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-----

QUALIFICATION