

# FCC Test Report

Report No.: AGC01147190410FE03

**FCC ID** : 2AHHEMNWIRLESPB  
**APPLICATION PURPOSE** : Original Equipment  
**PRODUCT DESIGNATION** : Wireless Suction Powerbank  
**BRAND NAME** : N/A  
**MODEL NAME** : MN-WIRLESPB  
**CLIENT** : THUMBS UP (UK) LTD  
**DATE OF ISSUE** : May 06, 2019  
**STANDARD(S)** : FCC Part 15 Rules  
**TEST PROCEDURE(S)**  
**REPORT VERSION** : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

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## REPORT REVISE RECORD

| Report Version | Revise Time | Issued Date  | Valid Version | Notes           |
|----------------|-------------|--------------|---------------|-----------------|
| V1.0           | /           | May 06, 2019 | Valid         | Initial Release |

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## 1. VERIFICATION OF CONFORMITY

|                                 |  |
|---------------------------------|--|
| <b>Applicant</b>                | THUMBS UP (UK) LTD   |
| <b>Address</b>                  | Unit L, Braintree Industrial Estate, Braintree Road HA4 0EJ, Ruislip LONDON United Kingdom |
| <b>Manufacturer</b>             | THUMBS UP (UK) LTD   |
| <b>Address</b>                  | Unit L, Braintree Industrial Estate, Braintree Road HA4 0EJ, Ruislip LONDON United Kingdom |
| <b>Factory</b>                  | THUMBS UP (UK) LTD   |
| <b>Address</b>                  | Unit L, Braintree Industrial Estate, Braintree Road HA4 0EJ, Ruislip LONDON United Kingdom |
| <b>Product Designation</b>      | Wireless Suction Powerbank   |
| <b>Brand Name</b>               | N/A  |
| <b>Test Model</b>               | MN-WIRLESPB  |
| <b>Date of test</b>             | Apr. 23, 2019 to Apr. 30, 2019   |
| <b>Deviation</b>                | None   |
| <b>Condition of Test Sample</b> | Normal   |
| <b>Test Result</b>              | Pass   |
| <b>Report Template</b>          | AGCRT-US-BR/RF   |

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with Section 15.207, 15.209, 15.203 of the FCC Part 15, Subpart C Rules.

The results of testing in this report apply to the product/system which was tested only.

Tested By

*Erik Yang*

Erik Yang(Yang Jianmin)

Apr. 30, 2019

Reviewed By

*Max Zhang*

Max Zhang(Zhang Yi)

May 06, 2019

Approved By

*Forrest Lei*

Forrest Lei(Lei Yonggang)  
Authorized Officer

May 06, 2019

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## 2. GENERAL INFORMATION

### 2.1. PRODUCT DESCRIPTION

A major technical description of EUT is described as following

|                        |   |
|------------------------|---|
| Operation Frequency    | 119.2kHz  |
| Maximum field strength | 55.65dBuV/m(PK)@3m                                  |
| Modulation             | FSK   |
| Number of channels     | 1   |
| Antenna Gain           | 0dBi  |
| Antenna Designation    | Integrated Antenna (Met 15.203 Antenna requirement) |
| Hardware Version       | CHD_WXCD 22 V2.0                                    |
| Software Version       | (POWER BANK) 2P5310, (WIRELESS CHARGER) WXC801      |
| Power Supply           | DC 5V 2.4A by Type-C Port or DC 3.7V by Battery     |

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### 3. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in measurement" (GUM) published by CISPR and ANSI.

- Uncertainty of Conducted Emission,  $U_c = \pm 3.2$  dB
- Uncertainty of Radiated Emission below 1GHz,  $U_c = \pm 3.9$  dB
- Uncertainty of Radiated Emission above 1GHz,  $U_c = \pm 4.8$  dB

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#### 4. DESCRIPTION OF TEST MODES

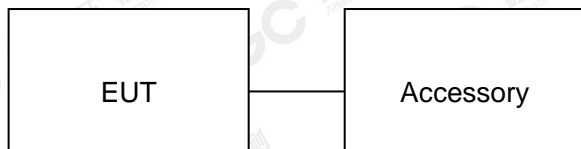
| NO.  | TEST MODE DESCRIPTION             |
|--|-----------------------------------|
| 1  | Wireless charging Mode(Full load) |
| 2  | Wireless charging Mode(half load) |
| 3  | Wireless charging Mode(Null load) |
| Note:<br>1. The mode 1 was the worst case and only the data of the worst case record in this report. |                                   |

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## 5. SYSTEM TEST CONFIGURATION

### 5.1. CONFIGURATION OF EUT SYSTEM

Configure :



### 5.2. EQUIPMENT USED IN EUT SYSTEM

| Item | Equipment                  | Model No.   | ID or Specification | Remark    |
|------|----------------------------|-------------|---------------------|-----------|
| 1    | Wireless Suction Powerbank | MN-WIRLESPB | 2AHHEMNWIRLESPB     | EUT       |
| 2    | Adapter                    | MDY-08-ES   | N/A                 | Accessory |
| 3    | Wireless Load              | N/A         | 5W                  | Accessory |
| 4    | USB and Type-C cable       | N/A         | 1m unshielded       | Accessory |

### 5.3. SUMMARY OF TEST RESULTS

| FCC RULES | DESCRIPTION OF TEST | RESULT    |
|-----------|---------------------|-----------|
| §15.209   | Radiated Emission   | Compliant |
| §15.215   | 20dB bandwidth      | Compliant |
| §15.207   | Conducted Emission  | Compliant |

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## 6. TEST FACILITY

|  |  |
|--|--|
| <b>Test Site</b>                         | Attestation of Global Compliance (Shenzhen) Co., Ltd   |
| <b>Location</b>                          | 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China |
| <b>Designation Number</b>                | CN1259   |
| <b>FCC Test Firm Registration Number</b> | 975832   |
| <b>A2LA Cert. No.</b>                    | 5054.02  |
| <b>Description</b>                       | Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA  |

## TEST EQUIPMENT OF CONDUCTED EMISSION TEST

| Equipment     | Manufacturer | Model   | S/N    | Cal. Date     | Cal. Due      |
|---------------|--------------|---------|--------|---------------|---------------|
| TEST RECEIVER | R&S          | ESPI    | 101206 | Jun. 12, 2018 | Jun. 11, 2019 |
| LISN          | R&S          | ESH2-Z5 | 100086 | Aug. 28, 2018 | Aug. 27, 2019 |

## TEST EQUIPMENT OF RADIATED EMISSION TEST

| Equipment                      | Manufacturer | Model    | S/N        | Cal. Date     | Cal. Due      |
|--------------------------------|--------------|----------|------------|---------------|---------------|
| TEST RECEIVER                  | R&S          | ESCI     | 10096      | Jun. 12, 2018 | Jun. 11, 2019 |
| EXA Signal Analyzer            | Aglient      | N9010A   | MY53470504 | Dec. 20, 2018 | Dec. 19, 2019 |
| Active loop antenna (9K-30MHz) | ZHINAN       | ZN30900C | 18051      | Jun. 14, 2018 | Jun. 13, 2020 |
| ANTENNA                        | SCHWARZBECK  | VULB9168 | D69250     | Sep. 28, 2017 | Sep. 27, 2019 |

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## 7. RADIATED EMISSION

### 7.1 TEST LIMIT

#### Standard FCC 15.209

| Frequency<br>(MHz)  | Distance<br>Meters | Field Strengths Limit  |                |
|---|--------------------|--|----------------|
|   |                    | $\mu$ V/m  | dB( $\mu$ V)/m |
| 0.009 ~ 0.490   | 300                | 2400/F(kHz)  | ---            |
| 0.490 ~ 1.705   | 30                 | 24000/F(kHz)   | ---            |
| 1.705 ~ 30  | 30                 | 30   | ---            |
| 30 ~ 88   | 3                  | 100  | 40.0           |
| 88 ~ 216  | 3                  | 150  | 43.5           |
| 216 ~ 960   | 3                  | 200  | 46.0           |
| 960 ~ 1000  | 3                  | 500  | 54.0           |
| Above 1000  | 3                  | Other:74.0 dB( $\mu$ V)/m (Peak) 54.0 dB( $\mu$ V)/m (Average) |                |
| Remark: (1) Emission level dB $\mu$ V = 20 log Emission level $\mu$ V/m<br>(2) The smaller limit shall apply at the cross point between two frequency bands.<br>(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system. |                    |  |                |

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## 7.2. MEASUREMENT PROCEDURE

1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

The following table is the setting of spectrum analyzer and receiver.

| Spectrum Parameter    | Setting                        |
|-----------------------|--------------------------------|
| Start ~Stop Frequency | 9KHz~150KHz/RB 200Hz for QP    |
| Start ~Stop Frequency | 150KHz~30MHz/RB 9KHz for QP    |
| Start ~Stop Frequency | 30MHz~1000MHz/RB 120KHz for QP |

| Receiver Parameter    | Setting                        |
|-----------------------|--------------------------------|
| Start ~Stop Frequency | 9KHz~150KHz/RB 200Hz for QP    |
| Start ~Stop Frequency | 150KHz~30MHz/RB 9KHz for QP    |
| Start ~Stop Frequency | 30MHz~1000MHz/RB 120KHz for QP |

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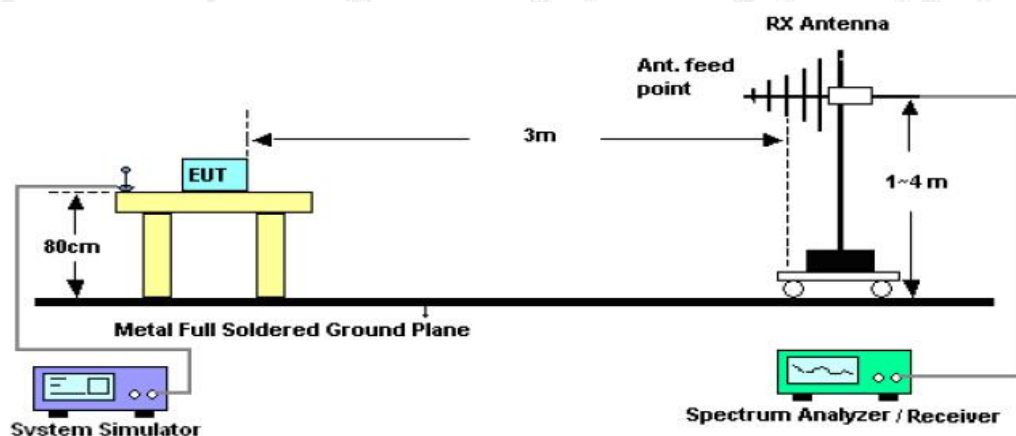


### 7.3. TEST SETUP

#### Radiated Emission Test-Setup Frequency Below 30MHz



#### RADIATED EMISSION TEST SETUP 30MHz-1000MHz



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## 7.4. TEST RESULT

### RADIATED EMISSION BELOW 30MHZ

| Frequency MHz | Polarization | Reading dB(uV) PK | Factor dB (1/m) | Level dB(uV/m) PK | Limit dB(uV/m) PK | Margin dB | Pass/Fail |
|---------------|--------------|-------------------|-----------------|-------------------|-------------------|-----------|-----------|
| 0.1192        | Face         | 45.25             | 10.40           | 55.65             | 106.08            | -50.43    | Pass      |
| 0.1192        | Side         | 35.18             | 10.40           | 45.58             | 106.08            | -60.50    | Pass      |

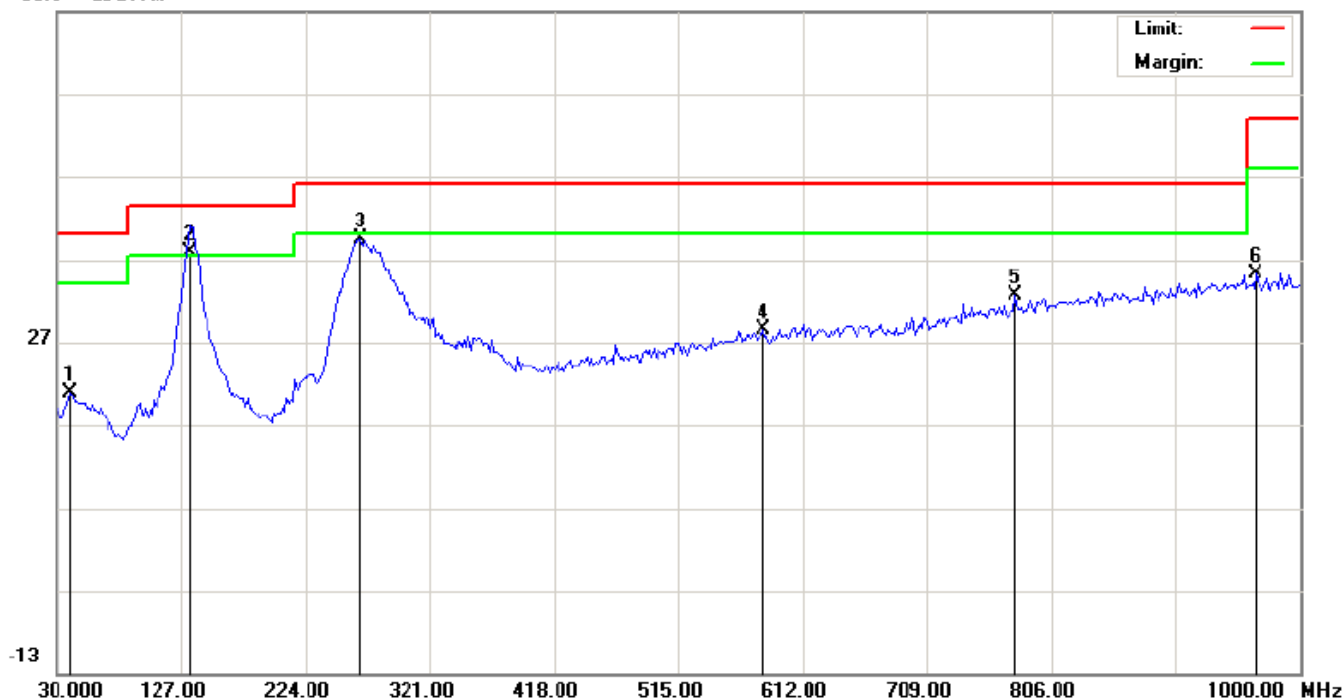
Note: No other emissions found between lowest internal used/generated frequencies to 30MHz. The peak level of the emission is less than the average limit, so the average level shall be less than the limit without test.

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### RADIATED EMISSION 30MHz- 1GHz

|               |                            |                    |             |
|---------------|----------------------------|--------------------|-------------|
| EUT :         | Wireless Suction Powerbank | Model Name. :      | MN-WIRLESPB |
| Temperature : | 20.5°C                     | Relative Humidity: | 48.3%       |
| Pressure :    | 1010 hPa                   | Test Voltage :     | DC 3.7V     |
| Test Mode :   | Mode 1                     | Polarization :     | Horizontal  |

66.9 dBuV/m



| No. | Mk | Freq.    | Reading | Factor | Measurement | Limit  | Over   | Detector | Antenna Height | Table Degree | Comment |
|-----|----|----------|---------|--------|-------------|--------|--------|----------|----------------|--------------|---------|
|     |    | MHz      | dBuV    | dB/m   | dBuV/m      | dBuV/m | dB     |          | cm             | degree       |         |
| 1   |    | 41.3167  | 0.73    | 20.04  | 20.77       | 40.00  | -19.23 | peak     |                |              |         |
| 2   | *  | 133.4667 | 19.03   | 18.82  | 37.85       | 43.50  | -5.65  | QP       |                |              |         |
| 3   |    | 267.6500 | 20.50   | 18.93  | 39.43       | 46.00  | -6.57  | peak     |                |              |         |
| 4   |    | 581.2833 | 1.82    | 26.58  | 28.40       | 46.00  | -17.60 | peak     |                |              |         |
| 5   |    | 778.5167 | 2.63    | 29.92  | 32.55       | 46.00  | -13.45 | peak     |                |              |         |
| 6   |    | 966.0500 | 2.90    | 32.27  | 35.17       | 54.00  | -18.83 | peak     |                |              |         |

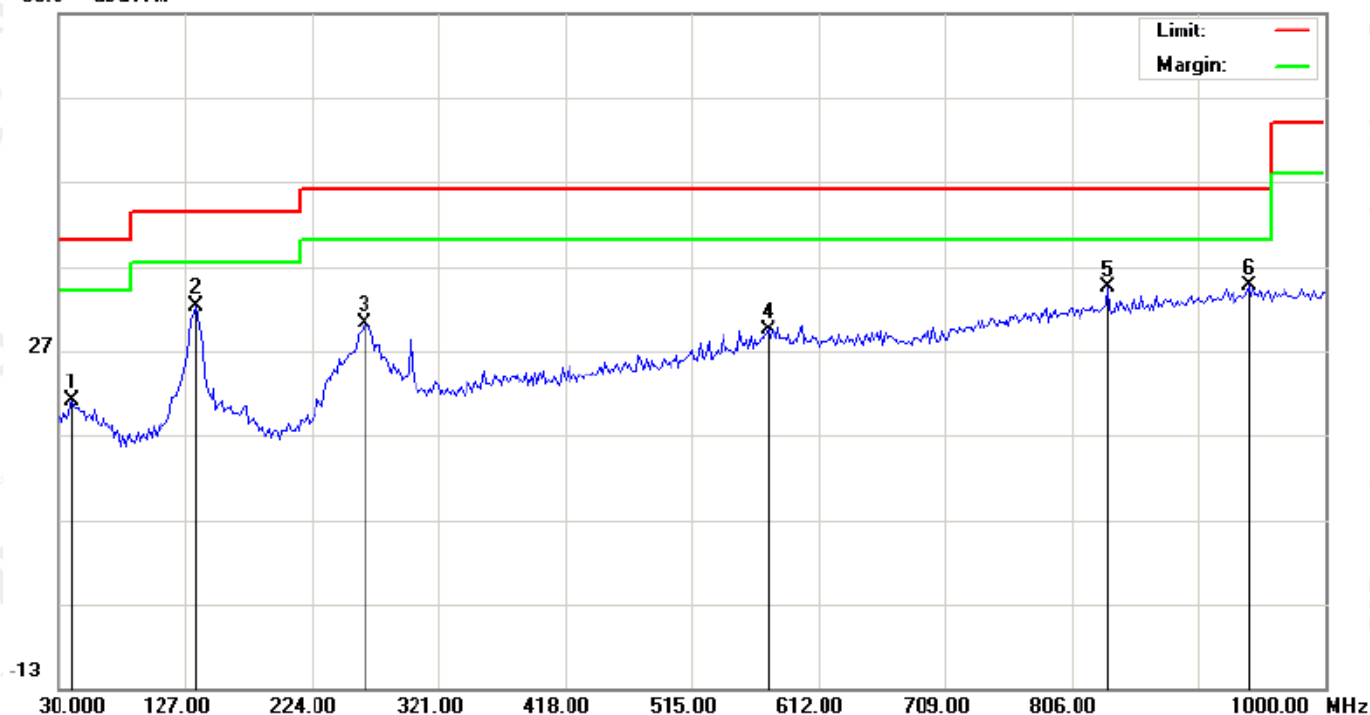
**RESULT: PASS**

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|               |                            |                    |             |
|---------------|----------------------------|--------------------|-------------|
| EUT :         | Wireless Suction Powerbank | Model Name. :      | MN-WIRLESPB |
| Temperature : | 20.5°C                     | Relative Humidity: | 48.3%       |
| Pressure :    | 1010 hPa                   | Test Voltage :     | DC 3.7V     |
| Test Mode :   | Mode 1                     | Polarization :     | Vertical    |

66.9 dBuV/m



| No. | Mk | Freq.<br>MHz | Reading<br>dBuV | Factor<br>dB/m | Measurement<br>dBuV/m | Limit<br>dBuV/m | Over<br>dB | Detector | Antenna<br>Height<br>cm | Table<br>Degree<br>degree | Comment |
|-----|----|--------------|-----------------|----------------|-----------------------|-----------------|------------|----------|-------------------------|---------------------------|---------|
| 1   |    | 41.3167      | 1.02            | 20.04          | 21.06                 | 40.00           | -18.94     | peak     |                         |                           |         |
| 2   |    | 135.0833     | 13.19           | 18.92          | 32.11                 | 43.50           | -11.39     | peak     |                         |                           |         |
| 3   |    | 264.4166     | 11.54           | 18.67          | 30.21                 | 46.00           | -15.79     | peak     |                         |                           |         |
| 4   |    | 573.2000     | 2.91            | 26.42          | 29.33                 | 46.00           | -16.67     | peak     |                         |                           |         |
| 5   |    | 833.4833     | 3.57            | 30.84          | 34.41                 | 46.00           | -11.59     | peak     |                         |                           |         |
| 6   | *  | 941.8000     | 2.57            | 32.06          | 34.63                 | 46.00           | -11.37     | peak     |                         |                           |         |

**RESULT: PASS**

**Note:**

Factor=Antenna Factor + Cable loss, Over=Measurement-Limit.

The "Factor" value can be calculated automatically by software of measurement system.

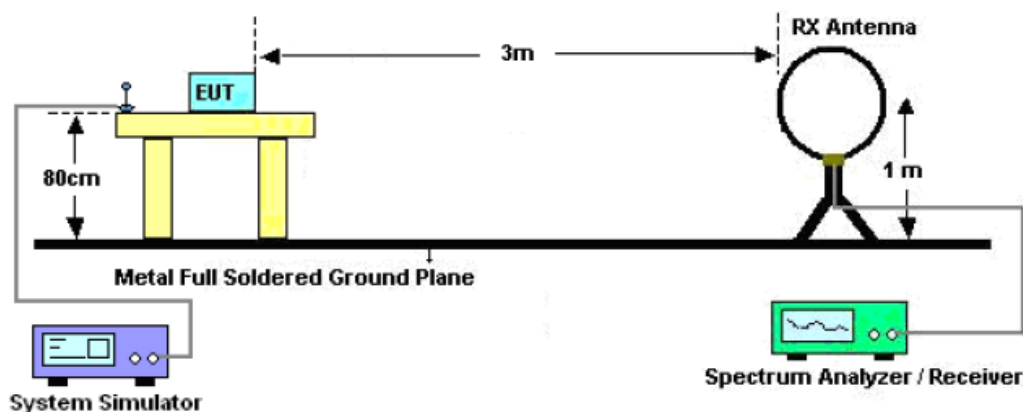
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## 8. 20DB BANDWIDTH

### 8.1. MEASUREMENT PROCEDURE

1. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Set the EUT Work on operation frequency.
3. Set Span = approximately 2 to 5 times the 20 dB bandwidth, centered on a channel  
The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW; Sweep = auto; Detector function = peak
4. Set SPA Trace 1 Max hold, then View.

### 8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



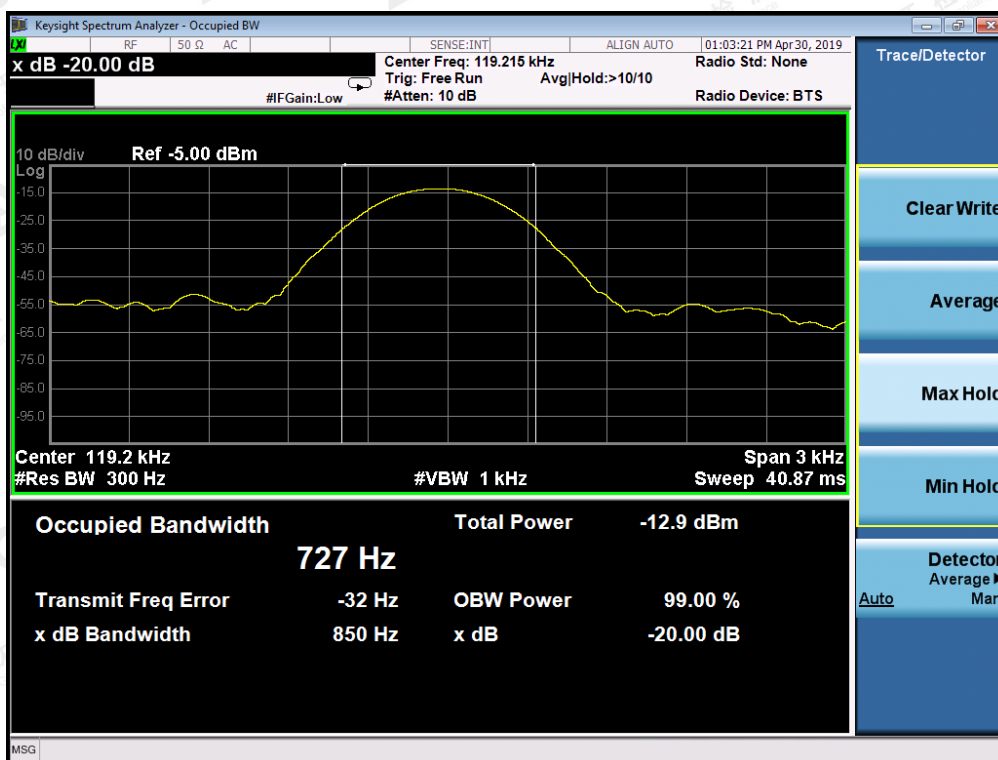
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### 8.3. MEASUREMENT RESULTS

|                 |                |
|-----------------|----------------|
| TEST ITEM       | 20DB BANDWIDTH |
| TEST MODULATION | FSK            |

| Test Data (Hz)  |     | Criteria |
|-----------------|-----|----------|
| Operate Channel | 850 | PASS     |

TEST PLOT OF BANDWIDTH



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## 9. FCC LINE CONDUCTED EMISSION TEST

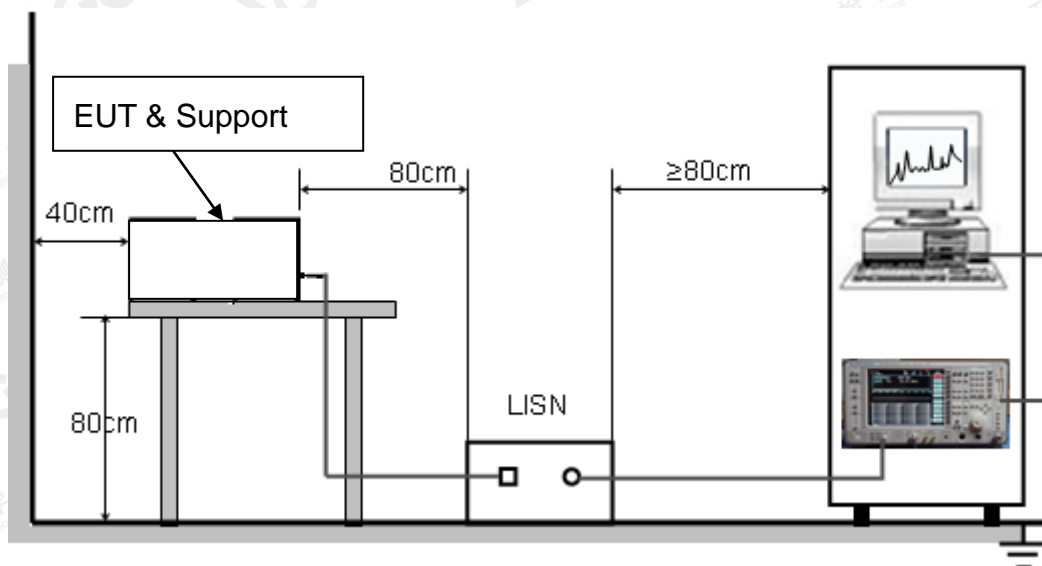
### 9.1. LIMITS OF LINE CONDUCTED EMISSION TEST

| Frequency     | Maximum RF Line Voltage |                |
|---------------|-------------------------|----------------|
|               | Q.P.( dBuV)             | Average( dBuV) |
| 150kHz~500kHz | 66-56                   | 56-46          |
| 500kHz~5MHz   | 56                      | 46             |
| 5MHz~30MHz    | 60                      | 50             |

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50MHz.

### 9.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



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### 9.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When 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 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
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. All support equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received charging voltage by adapter which received 120V/60Hz power by a LISN..
6. The 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.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

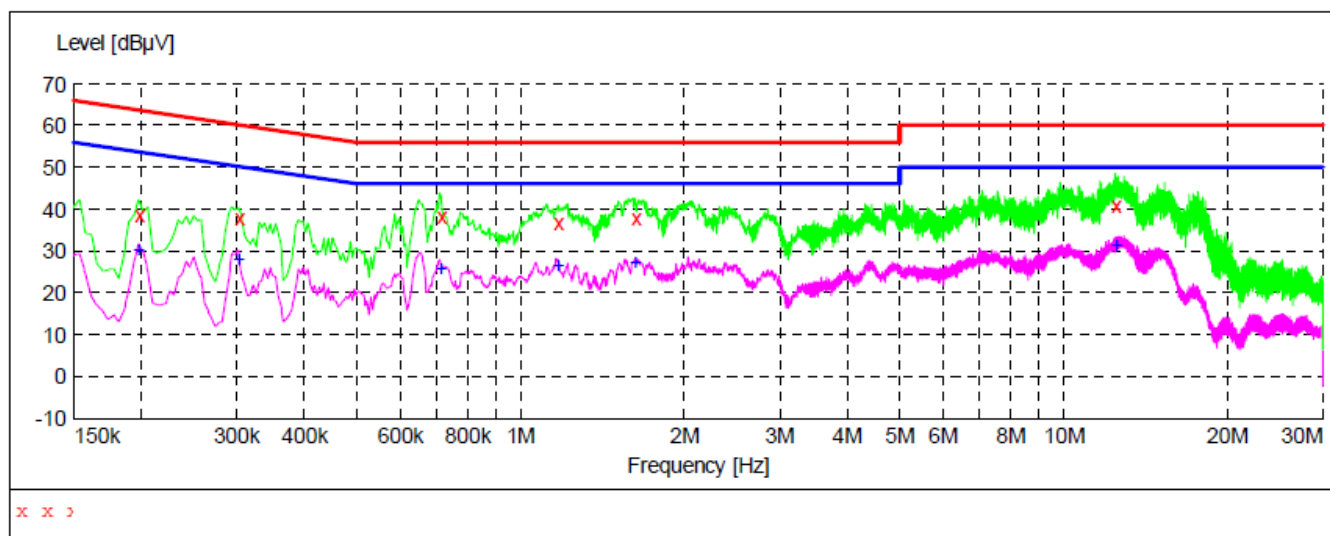
### 9.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less -2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.

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## 9.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

### LINE CONDUCTED EMISSION TEST-L



#### MEASUREMENT RESULT

| Frequency<br>MHz | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line |
|------------------|---------------|--------------|---------------|--------------|----------|------|
| 0.198000         | 38.90         | 10.3         | 64            | 24.8         | QP       | L1   |
| 0.302000         | 37.80         | 10.2         | 60            | 22.4         | QP       | L1   |
| 0.714000         | 38.20         | 10.3         | 56            | 17.8         | QP       | L1   |
| 1.170000         | 36.80         | 10.4         | 56            | 19.2         | QP       | L1   |
| 1.622000         | 37.90         | 10.4         | 56            | 18.1         | QP       | L1   |
| 12.458000        | 41.10         | 10.8         | 60            | 18.9         | QP       | L1   |

#### MEASUREMENT RESULT

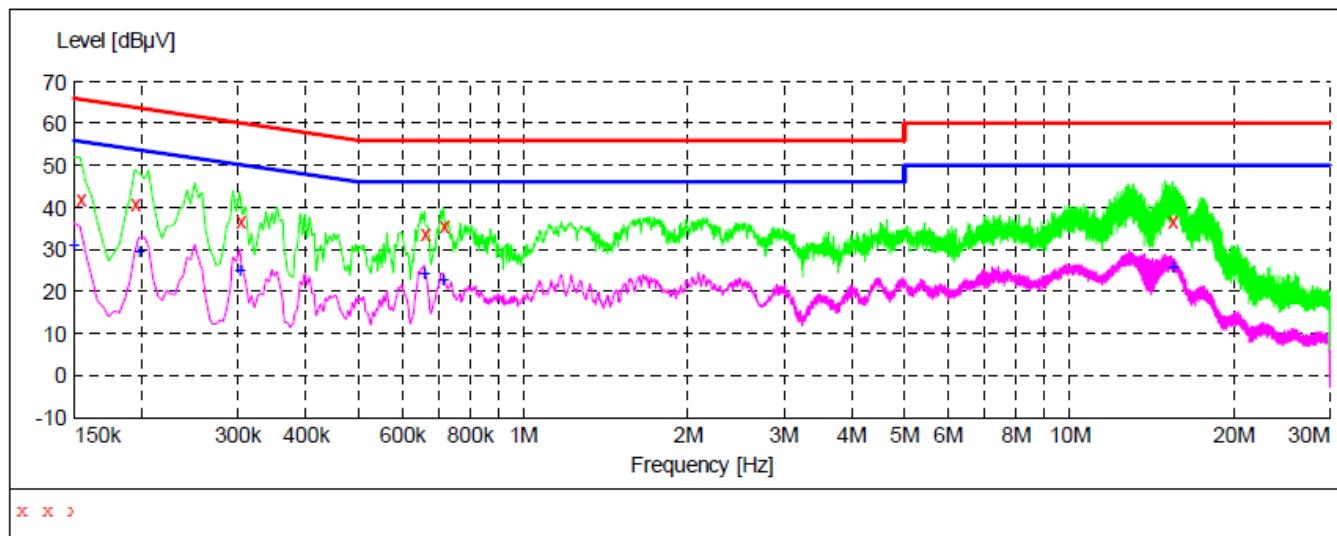
| Frequency<br>MHz | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line |
|------------------|---------------|--------------|---------------|--------------|----------|------|
| 0.198000         | 30.40         | 10.3         | 54            | 23.3         | AV       | L1   |
| 0.302000         | 28.00         | 10.2         | 50            | 22.2         | AV       | L1   |
| 0.714000         | 26.00         | 10.3         | 46            | 20.0         | AV       | L1   |
| 1.170000         | 26.80         | 10.4         | 46            | 19.2         | AV       | L1   |
| 1.622000         | 27.30         | 10.4         | 46            | 18.7         | AV       | L1   |
| 12.458000        | 31.50         | 10.8         | 50            | 18.5         | AV       | L1   |

**RESULT: PASS**

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# LINE CONDUCTED EMISSION TEST-N



## MEASUREMENT RESULT

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line |
|------------------|---------------|--------------|---------------|--------------|----------|------|
| 0.154000         | 42.30         | 10.3         | 66            | 23.5         | QP       | N    |
| 0.194000         | 41.00         | 10.3         | 64            | 22.9         | QP       | N    |
| 0.302000         | 36.70         | 10.2         | 60            | 23.5         | QP       | N    |
| 0.658000         | 33.90         | 10.3         | 56            | 22.1         | QP       | N    |
| 0.714000         | 35.60         | 10.3         | 56            | 20.4         | QP       | N    |
| 15.470000        | 36.60         | 10.9         | 60            | 23.4         | QP       | N    |

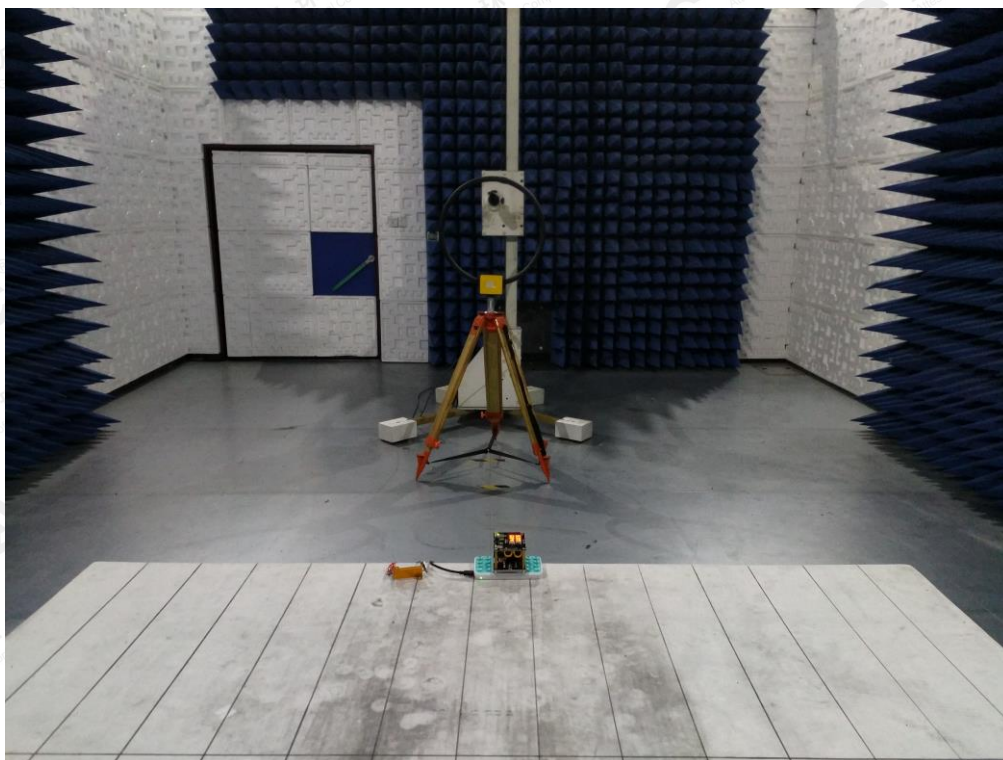
## MEASUREMENT RESULT

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line |
|------------------|---------------|--------------|---------------|--------------|----------|------|
| 0.150000         | 31.00         | 10.3         | 56            | 25.0         | AV       | N    |
| 0.198000         | 29.70         | 10.3         | 54            | 24.0         | AV       | N    |
| 0.302000         | 25.10         | 10.2         | 50            | 25.1         | AV       | N    |
| 0.658000         | 24.30         | 10.3         | 46            | 21.7         | AV       | N    |
| 0.714000         | 23.10         | 10.3         | 46            | 22.9         | AV       | N    |
| 15.462000        | 26.10         | 10.9         | 50            | 23.9         | AV       | N    |

**RESULT: PASS**

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**APPENDIX A: PHOTOGRAPHS OF TEST SETUP**  
**FCC RADIATED EMISSION TEST SETUP BELOW 1GHZ**



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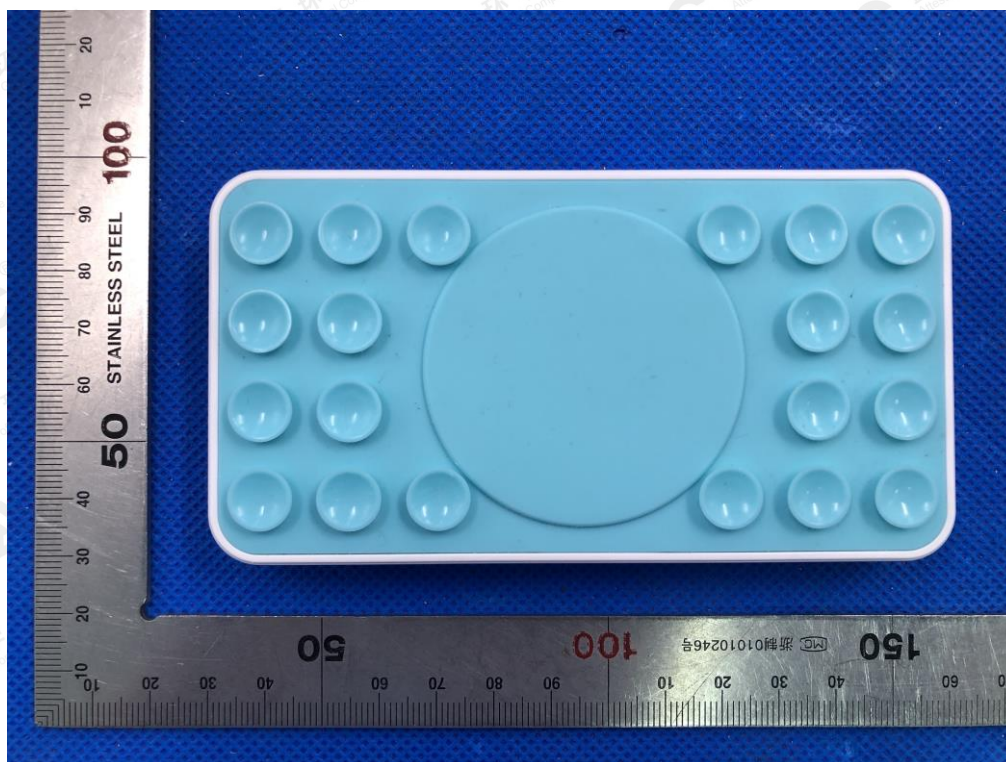
FCC LINE CONDUCTED EMISSION TEST SETUP



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**APPENDIX B: PHOTOGRAPHS OF EUT**  
**TOP VIEW OF EUT**



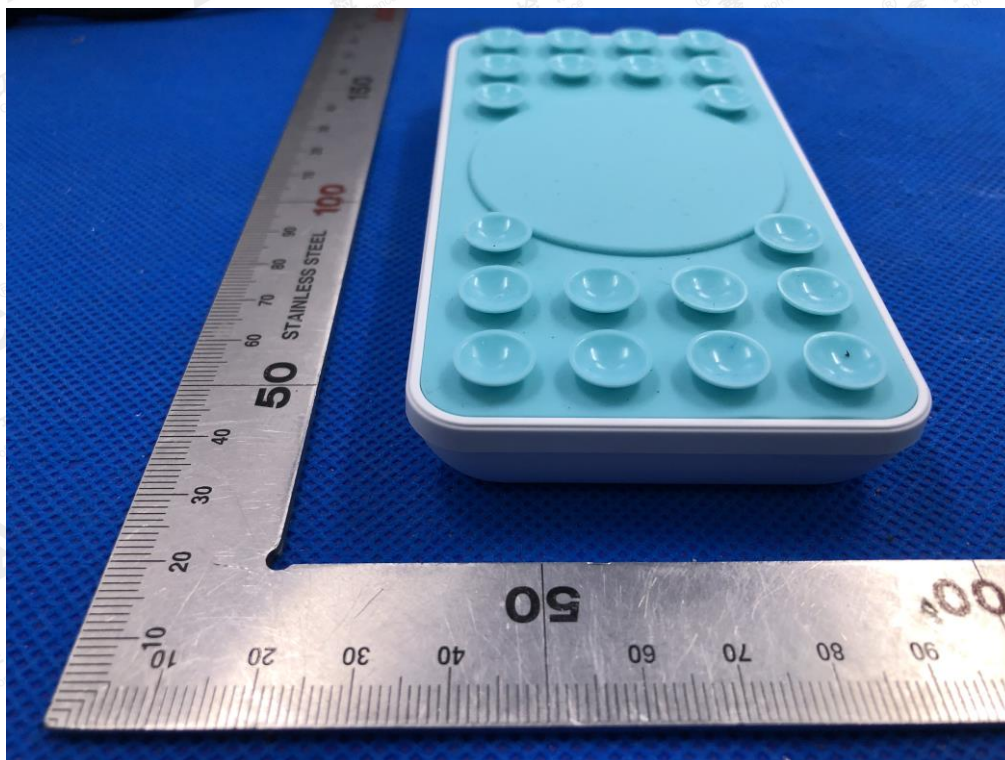
**BOTTOM VIEW OF EUT**



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FRONT VIEW OF EUT



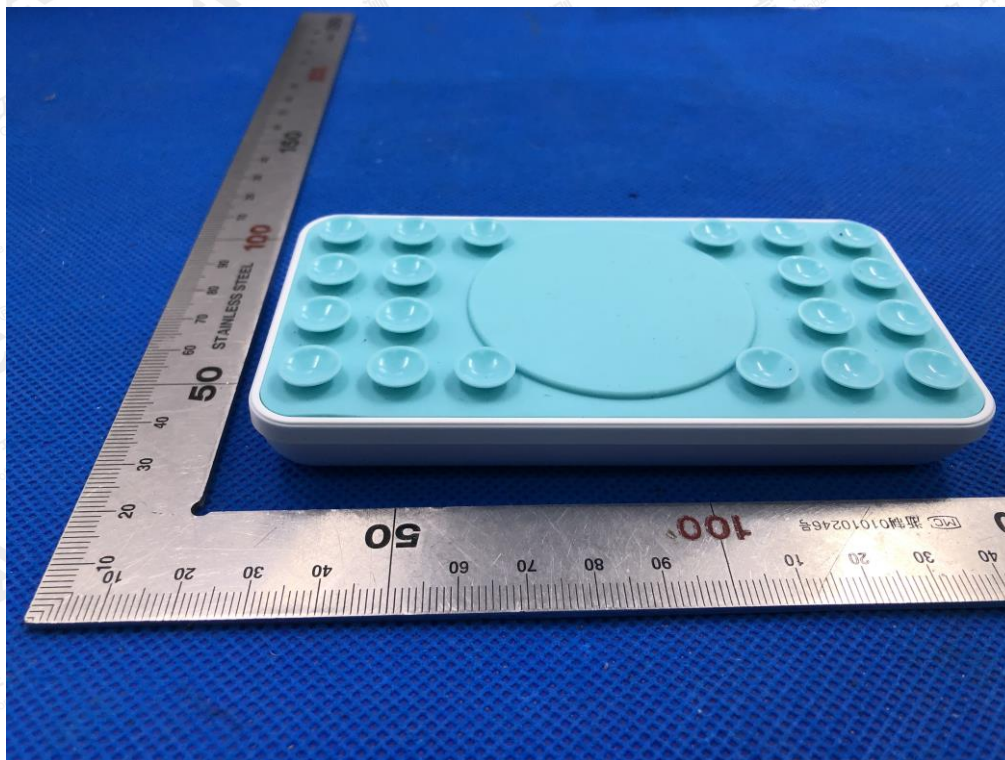
BACK VIEW OF EUT



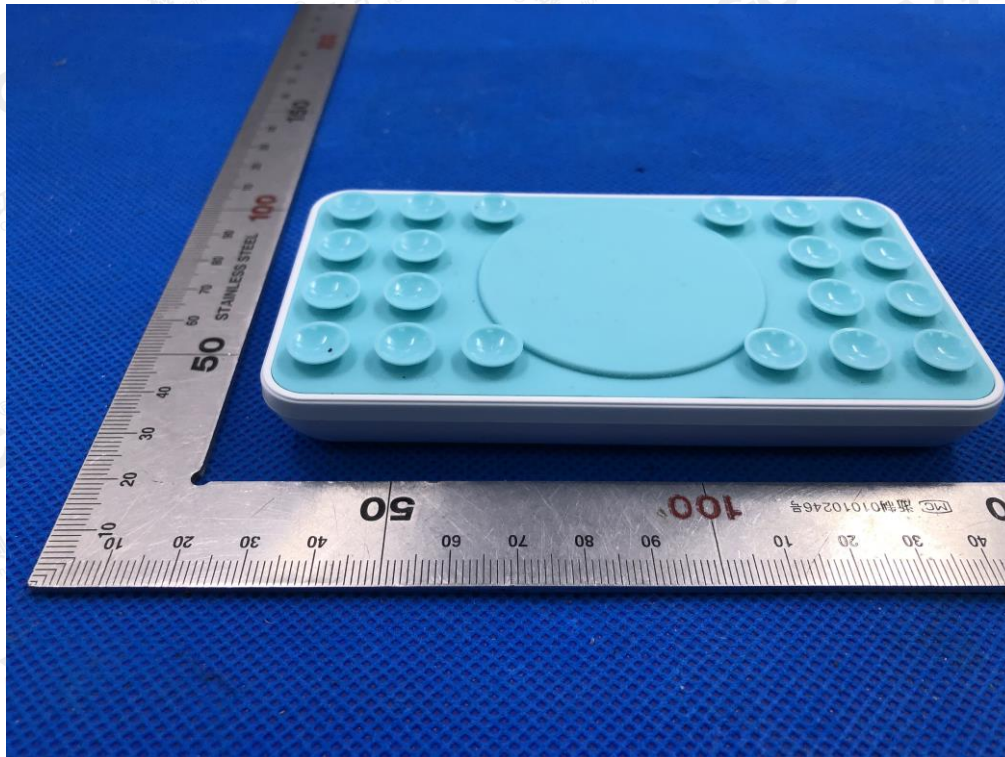
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LEFT VIEW OF EUT



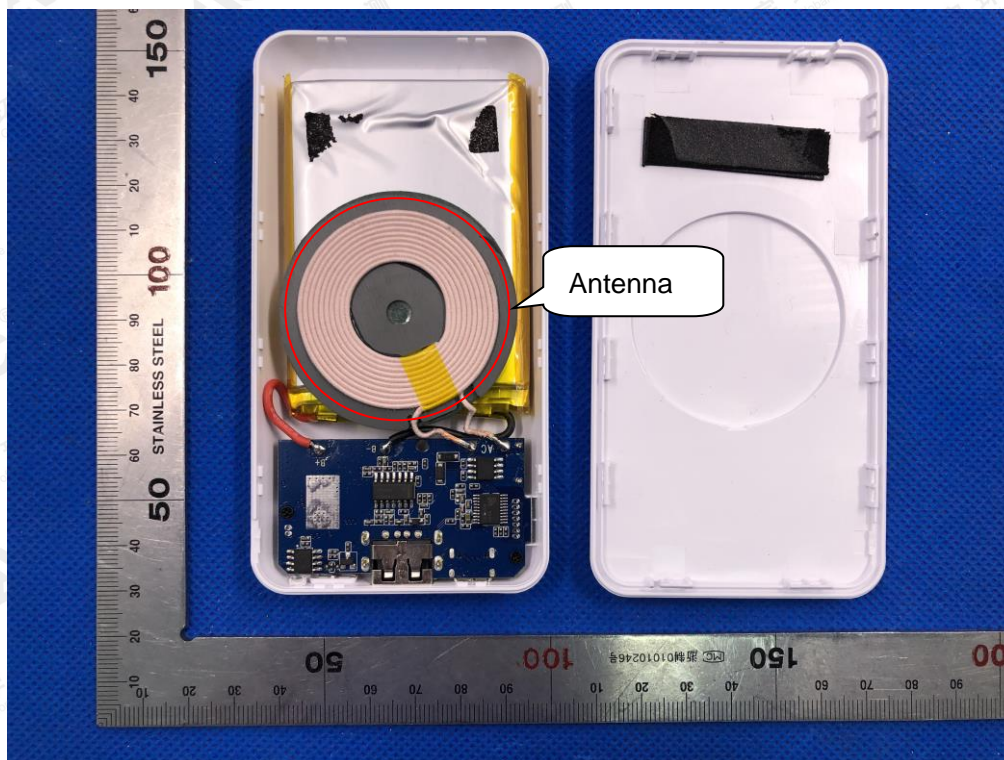
RIGHT VIEW OF EUT



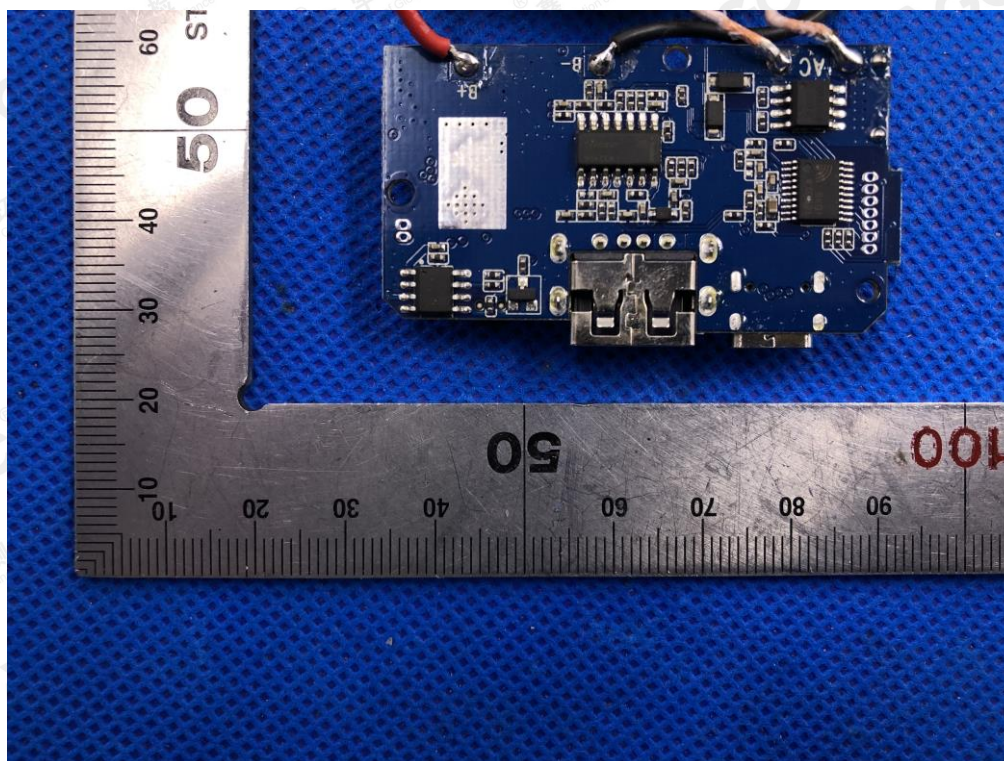
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OPEN VIEW OF EUT



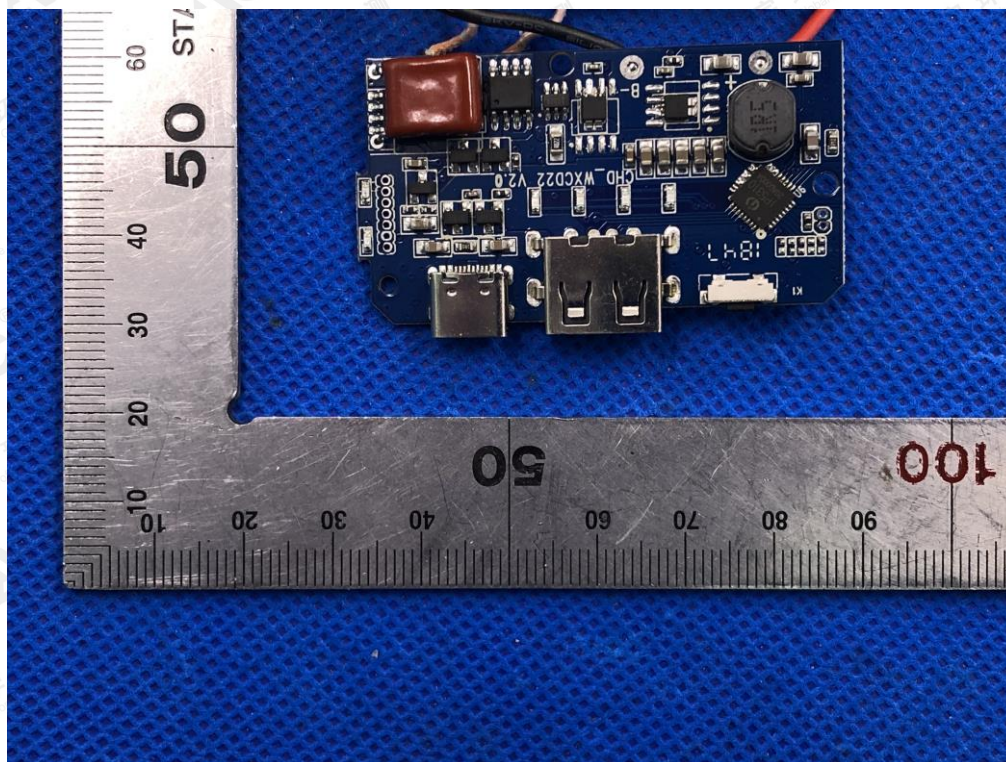
INTERNAL VIEW-1 OF EUT



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INTERNAL VIEW-2 OF EUT



---END OF REPORT---

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