

**FCC PART 15C TEST REPORT FOR CERTIFICATION**  
**On Behalf of**

**ION Audio, LLC**

**PORTABLE ALL-WEATHER SPEAKER WITH LIGHTS AND  
 PREMIUM WIDE SOUND**

**Model Number: PATHFINDER™ GO**

**Additional Model: iSP165, iSP165\*\*\*\*\*, PATHFINDER\*\*\*\*\***  
 (\* can be 0-9, A-Z or blank)

**FCC ID: 2AB3E-ISP165**

|                     |                                                                     |
|---------------------|---------------------------------------------------------------------|
| <b>Applicant :</b>  | ION Audio, LLC                                                      |
| <b>Address:</b>     | 200 Scenic View Drive, Cumberland, RI 02864 U.S.A.                  |
|                     |                                                                     |
| <b>Prepared By:</b> | EST Technology Co., Ltd.                                            |
|                     | Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China |
|                     | Tel: 86-769-83081888-808                                            |

|                        |                         |
|------------------------|-------------------------|
| <b>Report Number:</b>  | ESTE-R2210073-1         |
| <b>Date of Test:</b>   | Jun. 30, ~Jul. 16, 2023 |
| <b>Date of Report:</b> | Jul. 19, 2023           |

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**EST Technology Co., Ltd.**

|                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                       |                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------|
| <b>Applicant:</b>                                                                                                                                                                                                                                                                               | ION Audio, LLC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                       |                         |
| <b>Address:</b>                                                                                                                                                                                                                                                                                 | 200 Scenic View Drive, Cumberland, RI 02864 U.S.A.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                       |                         |
| <b>Manufacturer:</b>                                                                                                                                                                                                                                                                            | ION Audio, LLC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                       |                         |
| <b>Address:</b>                                                                                                                                                                                                                                                                                 | 200 Scenic View Drive, Cumberland, RI 02864 U.S.A.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                       |                         |
| <b>Factory:</b>                                                                                                                                                                                                                                                                                 | ION Audio, LLC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                       |                         |
| <b>Address:</b>                                                                                                                                                                                                                                                                                 | 200 Scenic View Drive, Cumberland, RI 02864 U.S.A.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                       |                         |
| <b>E.U.T:</b>                                                                                                                                                                                                                                                                                   | PORTABLE ALL-WEATHER SPEAKER WITH LIGHTS AND PREMIUM WIDE SOUND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                       |                         |
| <b>Model Number:</b>                                                                                                                                                                                                                                                                            | PATHFINDER™ GO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                       |                         |
| <b>Additional Model:</b>                                                                                                                                                                                                                                                                        | iSP165, iSP165*****, PATHFINDER*****<br>(* can be 0-9, A-Z or blank)<br>Note: ("*" can be "a-z", "A-Z", "0-9", blank, "-", "+" or any character, symbol, alphanumeric), they are identical to each other, only except for model name, appearance in color or decorating parts and silkscreen for marketing purpose.                                                                                                                                                                                                                                                                                        |                                                                                       |                         |
| <b>Power Supply:</b>                                                                                                                                                                                                                                                                            | DC 5V From Adapter Input AC 100-240V, 50/60Hz;<br>DC 11.1V From Battery                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                       |                         |
| <b>Trade Name:</b>                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Serial No.:</b>                                                                    | -----                   |
| <b>Date of Receipt:</b>                                                                                                                                                                                                                                                                         | Jun. 29, 2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Date of Test:</b>                                                                  | Jun. 30, ~Jul. 16, 2023 |
| <b>Test Specification:</b>                                                                                                                                                                                                                                                                      | FCC Part 15 Subpart C (15.247)<br>ANSI C63.10:2013<br>FCC KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                       |                         |
| <b>Test Result:</b>                                                                                                                                                                                                                                                                             | <p>The device described above is tested by EST Technology Co., Ltd. The measurement results were contained in this test report and EST Technology Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the FCC Rules and Regulations Part 15 Subpart C requirements.</p> <p>This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd.</p> <p style="text-align: right;"><b>Date:</b> Jul. 19, 2023</p> |                                                                                       |                         |
| <b>Prepared by:</b>                                                                                                                                                                                                                                                                             | <b>Reviewed by:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Approved by:</b>                                                                   |                         |
|                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                         |
| Emily Cai / Assistant                                                                                                                                                                                                                                                                           | Seven Wang / Engineer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Iceman Hu / Manager                                                                   |                         |
| <b>Other Aspects:</b> This report base on the previous report with report number: ESTE-R2210073, Change the AMP IC board(TPA3116), so just re-tested spurious emissions (30-1000MHz) & Conducted Emissions, other test item needn't re-tested, other data were referred to the original report. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                       |                         |
| Abbreviations: OK/P=passed    fail/F=failed    n.a/N=not applicable    E.U.T=equipment under tested                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                       |                         |
| This test report is based on a single evaluation of one sample of above mentioned products ,It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                       |                         |

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

|                     |   |                                                                               |
|---------------------|---|-------------------------------------------------------------------------------|
| Product Name        | : | PORTABLE ALL-WEATHER SPEAKER WITH LIGHTS AND PREMIUM WIDE SOUND               |
| Model Number        | : | PATHFINDER™ GO                                                                |
| Software Version    | : | V1.5                                                                          |
| Hardware Version    | : | V1.3                                                                          |
| Operation frequency | : | 2402MHz~2480MHz                                                               |
| Number of channel   | : | 79                                                                            |
| Modulation Type     | : | BT BDR(1Mbps): GFSK<br>BT EDR(2Mbps): $\pi/4$ -DQPSK<br>BT EDR(3Mbps): 8-DPSK |
| Sample Type         | : | Prototype production                                                          |

Note: For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

### 1.2. Antenna Information

| Ant No. | Brand | Model Name | Antenna Type | Connector | Gain (dBi) |
|---------|-------|------------|--------------|-----------|------------|
| 1       | -     | -          | Internal     | -         | 1.48       |

Note: This information is provided by the applicant.

## 2. SUMMARY OF TEST

### 2.1. Summary of test result

| No. | Description of Test Item                  | FCC Standard Section          | Results |
|-----|-------------------------------------------|-------------------------------|---------|
| 8   | Radiated Spurious Emissions and Band Edge | 15.205<br>15.209<br>15.247(d) | PASS    |
| 9   | AC Power Line Conducted Emissions         | 15.207                        | PASS    |

Note:“N/A” denotes test is not applicable in this test report.

## 2.2. Test Facilities

EMC Lab : Certificated by CNAS, CHINA  
Registration No.: L5288  
This Certificate is valid until: November 12, 2023

Certificated by FCC, USA  
Designation Number: CN1215  
This Certificate is valid until: January 31, 2024

Certificated by A2LA, USA  
Registration No.: 4366.01  
This Certificate is valid until: January 31, 2024

Certificated by Industry Canada  
CAB identifier No.: CN0035  
This Certificate is valid until: January 31, 2024

Certificated by VCCI, Japan  
Registration No.: C-14103; T-20073; R-13663;  
R-20103; G-20097  
Date of registration: Apr. 20, 2020  
This Certificate is valid until: Apr. 19, 2023

Certificated by TUV Rheinland, Germany  
Registration No.: UA 50413872 0001  
Date of registration: July 31, 2018

Certificated by Intertek  
Registration No.: 2011-RTL-L2-64  
Date of registration: November 08, 2018

Name of Firm : EST Technology Co., Ltd.

Site Location : Chilingxiang, Qishantou, Santun, Houjie, Dongguan,  
Guangdong, China

### 2.3. Measurement uncertainty

| Test Item                                               | Uncertainty                       |
|---------------------------------------------------------|-----------------------------------|
| Uncertainty for Conduction emission test                | $\pm 3.48\text{dB}$               |
| Uncertainty for spurious emissions test (Below 30MHz)   | $\pm 1.62\text{ dB}$              |
| Uncertainty for spurious emissions test (30MHz-1GHz)    | $\pm 4.60\text{ dB(Polarize: H)}$ |
|                                                         | $\pm 4.68\text{ dB(Polarize: V)}$ |
| Uncertainty for spurious emissions test (1GHz to 25GHz) | $\pm 4.96\text{dB}$               |
| Uncertainty for radio frequency                         | $7 \times 10^{-8}$                |
| Uncertainty for conducted RF Power                      | 1.08dB                            |
| Uncertainty for Power density test                      | 0.26dB                            |

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

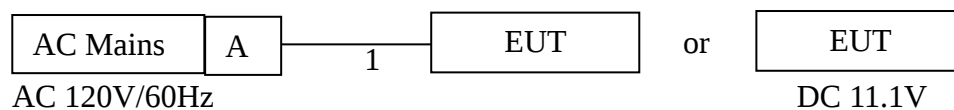
### 2.4. Assistant equipment used for test

| Item | Equipment | Brand | Model Name/Type No. | FCC ID | Series No. |
|------|-----------|-------|---------------------|--------|------------|
| A    | Adapter   | -     | CD143               | -      | -          |

| Item | Shielded Type | Ferrite Core | Length | Note     |
|------|---------------|--------------|--------|----------|
| 1    | NO            | NO           | 1.0m   | DC Cable |

### 2.5. Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 meter high above ground. EUT was beset into Bluetooth test mode by software before test.



(EUT: PORTABLE ALL-WEATHER SPEAKER WITH LIGHTS AND PREMIUM WIDE SOUND)

## 2.6. Test mode

Combining all the rates, modulations, and packet types, the Pre-scans had been carried out. The worst case test mode was selected for the final test as listed below.

| Test Item                               | Modulation Type | Operating Mode | Packet Type | Test Channel    |
|-----------------------------------------|-----------------|----------------|-------------|-----------------|
| Conducted Spurious Emissions            | GFSK&8-DPSK     | Non Hopping    | DH5         | Low/Middle/High |
| Radiated Spurious Emissions(Below 1GHz) | GFSK&8-DPSK     | Non Hopping    | DH5         | Low/Middle/High |

Note: In radiated measurement,the EUT had been pre-scan on the positioned of each 3 axis(X,Y,Z), the worst case was found when positioned on **X-plane**.

## 2.7. Channel List

| Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) |
|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|
| 0           | 2402            | 1           | 2403            | 2           | 2404            | 3           | 2405            |
| 4           | 2406            | 5           | 2407            | 6           | 2408            | 7           | 2409            |
| 8           | 2410            | 9           | 2411            | 10          | 2412            | 11          | 2413            |
| 12          | 2414            | 13          | 2415            | 14          | 2416            | 15          | 2417            |
| 16          | 2418            | 17          | 2419            | 18          | 2420            | 19          | 2421            |
| 20          | 2422            | 21          | 2423            | 22          | 2424            | 23          | 2425            |
| 24          | 2426            | 25          | 2427            | 26          | 2428            | 27          | 2429            |
| 28          | 2430            | 29          | 2431            | 30          | 2432            | 31          | 2433            |
| 32          | 2434            | 33          | 2435            | 34          | 2436            | 35          | 2437            |
| 36          | 2438            | 37          | 2439            | 38          | 2440            | 39          | 2441            |
| 40          | 2442            | 41          | 2443            | 42          | 2444            | 43          | 2445            |
| 44          | 2446            | 45          | 2447            | 46          | 2448            | 47          | 2449            |
| 48          | 2450            | 49          | 2451            | 50          | 2452            | 51          | 2453            |
| 52          | 2454            | 53          | 2455            | 54          | 2456            | 55          | 2457            |
| 56          | 2458            | 57          | 2459            | 58          | 2460            | 59          | 2461            |
| 60          | 2462            | 61          | 2463            | 62          | 2464            | 63          | 2465            |
| 64          | 2466            | 65          | 2467            | 66          | 2468            | 67          | 2469            |
| 68          | 2470            | 69          | 2471            | 70          | 2472            | 71          | 2473            |
| 72          | 2474            | 73          | 2475            | 74          | 2476            | 75          | 2477            |
| 76          | 2478            | 77          | 2479            | 78          | 2480            | -           | -               |

## 2.8. Test Equipment

| For conducted emission test |                 |              |            |                  |            |           |
|-----------------------------|-----------------|--------------|------------|------------------|------------|-----------|
| Equipment                   | Manufacturer    | Model No.    | Serial No. | Calibration Body | Last Cal.  | Next Cal. |
| EMI Test Receiver           | Rohde & Schwarz | ESHS30       | EST-E001   | LISAI            | June 12,23 | 1 Year    |
| Artificial Mains Network    | Rohde & Schwarz | ENV216       | EST-E002   | LISAI            | June 12,23 | 1 Year    |
| Pulse Limiter               | Rohde & Schwarz | ESH3-Z2      | EST-E078   | LISAI            | June 12,23 | 1 Year    |
| Test Software               | Audix           | e3-6.111221a | N/A        | N/A              | N/A        | N/A       |

| For radiated emissions test (30-1000MHz) |                 |              |            |                  |            |           |
|------------------------------------------|-----------------|--------------|------------|------------------|------------|-----------|
| Equipment                                | Manufacturer    | Model No.    | Serial No. | Calibration Body | Last Cal.  | Next Cal. |
| EMI Test Receiver                        | Rohde & Schwarz | ESR7         | EST-E047   | LISAI            | June 12,23 | 1 Year    |
| Bilog Antenna                            | Teseq           | CBL 6111D    | EST-E034   | LISAI            | June 12,23 | 1 Year    |
| Test Software                            | Audix           | e3-6.111221a | N/A        | N/A              | N/A        | N/A       |

### 3. RADIATED SPURIOUS EMISSIONS AND BAND EDGE

#### 3.1. Limit

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

#### 15.205 Restricted frequency band

| MHz                        | MHz                   | MHz             | GHz              |
|----------------------------|-----------------------|-----------------|------------------|
| 0.090 - 0.110              | 16.42 - 16.423        | 399.9 - 410     | 4.5 - 5.15       |
| <sup>1</sup> 0.495 - 0.505 | 16.69475 - 16.69525   | 608 - 614       | 5.35 - 5.46      |
| 2.1735 - 2.1905            | 16.80425 - 16.80475   | 960 - 1240      | 7.25 - 7.75      |
| 4.125 - 4.128              | 25.5 - 25.67          | 1300 - 1427     | 8.025 - 8.5      |
| 4.17725 - 4.17775          | 37.5 - 38.25          | 1435 - 1626.5   | 9.0 - 9.2        |
| 4.20725 - 4.20775          | 73 - 74.6             | 1645.5 - 1646.5 | 9.3 - 9.5        |
| 6.215 - 6.218              | 74.8 - 75.2           | 1660 - 1710     | 10.6 - 12.7      |
| 6.26775 - 6.26825          | 108 - 121.94          | 1718.8 - 1722.2 | 13.25 - 13.4     |
| 6.31175 - 6.31225          | 123 - 138             | 2200 - 2300     | 14.47 - 14.5     |
| 8.291 - 8.294              | 149.9 - 150.05        | 2310 - 2390     | 15.35 - 16.2     |
| 8.362 - 8.366              | 156.52475 - 156.52525 | 2483.5 - 2500   | 17.7 - 21.4      |
| 8.37625 - 8.38675          | 156.7 - 156.9         | 2690 - 2900     | 22.01 - 23.12    |
| 8.41425 - 8.41475          | 162.0125 - 167.17     | 3260 - 3267     | 23.6 - 24.0      |
| 12.29 - 12.293             | 167.72 - 173.2        | 3332 - 3339     | 31.2 - 31.8      |
| 12.51975 - 12.52025        | 240 - 285             | 3345.8 - 3358   | 36.43 - 36.5     |
| 12.57675 - 12.57725        | 322 - 335.4           | 3600 - 4400     | ( <sup>2</sup> ) |

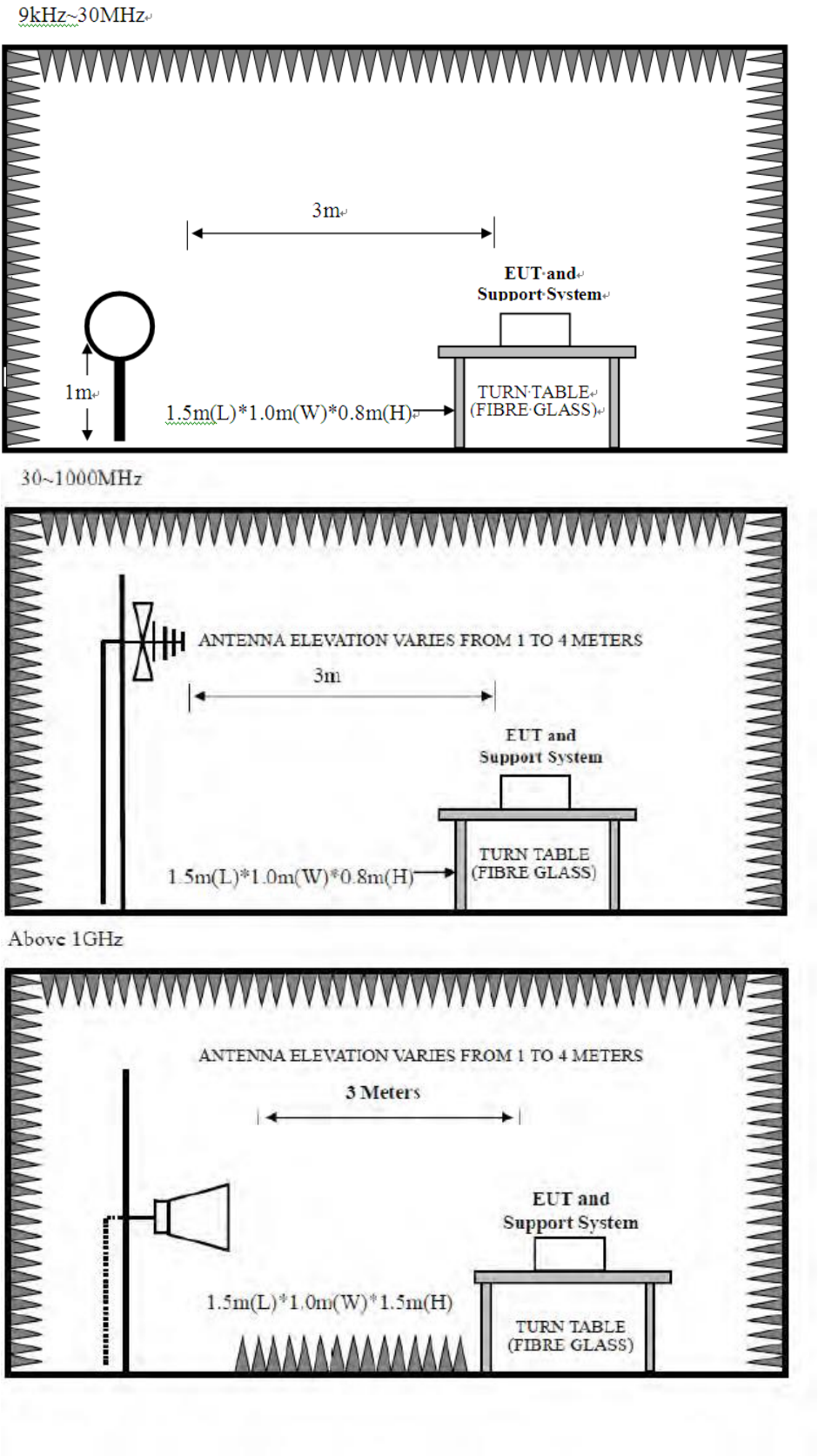
#### 15.209 Limit

| Frequency (MHz) | Field Strength( $\mu$ V/m) | Distance(m) |
|-----------------|----------------------------|-------------|
| 0.009-0.490     | 2400/F(kHz)                | 300         |
| 0.490-1.705     | 24000/F(kHz)               | 30          |
| 1.705-30        | 30                         | 30          |
| 30-88           | 100                        | 3           |
| 88-216          | 150                        | 3           |
| 216-960         | 200                        | 3           |
| Above 960       | 500                        | 3           |

Note:

- (1) Emission level dB $\mu$ V = 20 log Emission level  $\mu$ V/m.
- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

3.2. Test Setup



### 3.3. Spectrum Analyzer Setting

For 9KHz-150KHz

| Spectrum Parameters | Setting                                 |
|---------------------|-----------------------------------------|
| RBW                 | 300Hz(for Peak&AVG)/CISPR 200Hz(for QP) |
| VBW                 | 300Hz(for Peak&AVG)/CISPR 200Hz(for QP) |
| Start frequency     | 9KHz                                    |
| Stop frequency      | 150KHz                                  |
| Sweep Time          | Auto                                    |
| Detector            | PEAK/QP/AVG                             |
| Trace Mode          | Max Hold                                |

For 150KHz-30MHz

| Spectrum Parameters | Setting  |
|---------------------|----------|
| RBW                 | 9KHz     |
| VBW                 | 9KHz     |
| Start frequency     | 150KHz   |
| Stop frequency      | 30MHz    |
| Sweep Time          | Auto     |
| Detector            | QP       |
| Trace Mode          | Max Hold |

For 30MHz-1GHz

| Spectrum Parameters | Setting  |
|---------------------|----------|
| RBW                 | 120KHz   |
| VBW                 | 300KHz   |
| Start frequency     | 30MHz    |
| Stop frequency      | 1GHz     |
| Sweep Time          | Auto     |
| Detector            | QP       |
| Trace Mode          | Max Hold |

### 3.4. Test Procedure

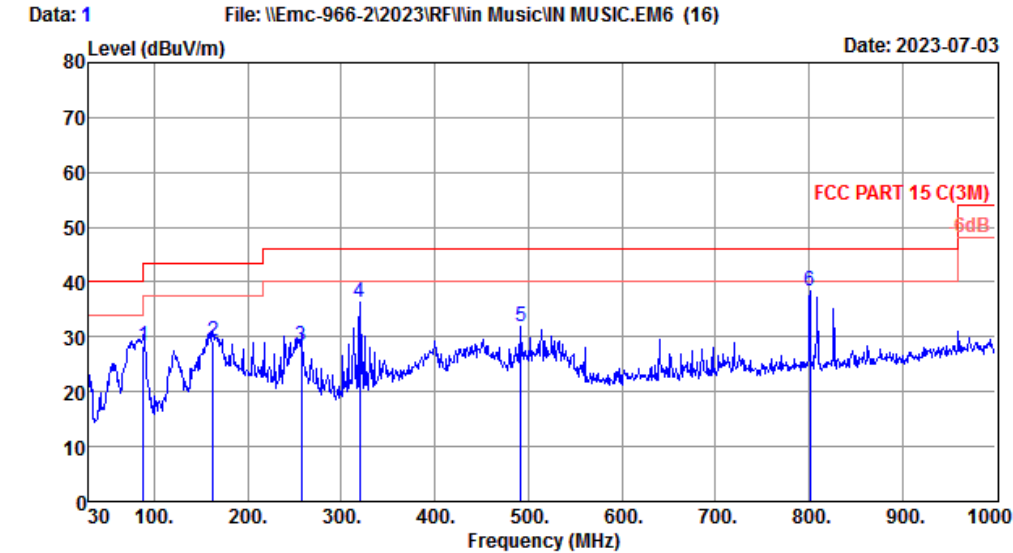
- EUT was placed on a turn table, which is 0.8 meter high above ground for below 1GHz test.
- EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower.
- Set the EUT transmit continuously with maximum output power.
- The turn table can rotate 360 degrees to determine the position of the maximum emission level.
- The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.
- Spectrum analyzer setting parameters in accordance with section 3.3.
- Repeat above procedures until all channels and test modes were measured.
- Record the results in the test report.

3.5. Test Result

Radiated Emissions Below 1GHz

EST Technology

Chilingxiang, Qishantou, Santun,  
Houjie, Dongguan, Guangdong, China  
Tel: +86-769-83081888  
Fax: +86-769-83081878



Site no. : 2# 966 chamber Data no. : 1  
Dis. / Ant. : 3m 37062 Ant. pol. : VERTICAL  
Limit : FCC PART 15 C(3M)  
Env. / Ins. : Temp:26.2℃;Humi:59%;Press:101.50kPa  
Engineer : GBond  
EUT : PORTABLE ALL-WEATHER SPEAKER WITH LIGHTS  
AND PREMIUM WIDE SOUND  
Power : DC 5V From Adapter Input AC 120V/60Hz  
M/N : PATHFINDER TM GO  
Test Mode : TX Mode

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 88.20          | 8.90                    | 0.79                  | 18.79             | 28.48                         | 43.50             | 15.02          | QP     |
| 2 | 162.89         | 10.82                   | 1.16                  | 17.11             | 29.09                         | 43.50             | 14.41          | QP     |
| 3 | 256.98         | 13.54                   | 1.67                  | 13.17             | 28.38                         | 46.00             | 17.62          | QP     |
| 4 | 320.03         | 14.00                   | 1.92                  | 20.36             | 36.28                         | 46.00             | 9.72           | QP     |
| 5 | 491.72         | 18.14                   | 2.66                  | 11.20             | 32.00                         | 46.00             | 14.00          | QP     |
| 6 | 801.15         | 22.93                   | 3.58                  | 11.94             | 38.45                         | 46.00             | 7.55           | QP     |

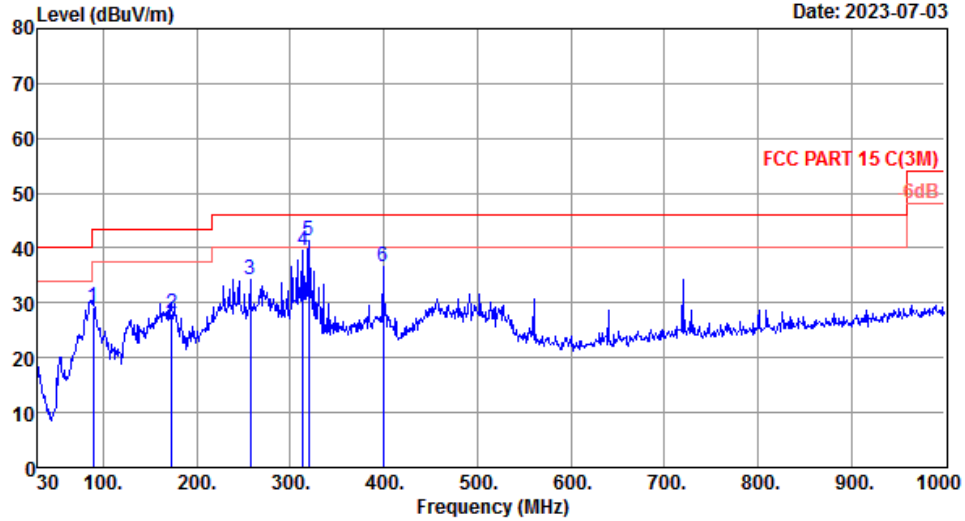
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. Margin= Limit - Emission Level.  
3. The emission levels that are 20dB below the official limit are not reported.

## EST Technology

Chilingxiang, Qishantou, Santun,  
Houjie, Dongguan, Guangdong, China  
Tel: +86-769-83081888  
Fax: +86-769-83081878

Data: 2 File: \\Emc-966-2\\2023\\RF\\In Music\\IN MUSIC.EM6 (16)

Date: 2023-07-03



Site no. : 2# 966 chamber Data no. : 2  
Dis. / Ant. : 3m 37062 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15 C(3M)  
Env. / Ins. : Temp:26.2°C;Humi:59%;Press:101.50kPa  
Engineer : GBond  
EUT : PORTABLE ALL-WEATHER SPEAKER WITH LIGHTS  
AND PREMIUM WIDE SOUND  
Power : DC 5V From Adapter Input AC 120V/60Hz  
M/N : PATHFINDER TM GO  
Test Mode : TX Mode

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 89.17          | 9.10                    | 0.79                  | 19.35             | 29.24                         | 43.50             | 14.26          | QP     |
| 2 | 173.56         | 9.78                    | 1.19                  | 17.04             | 28.01                         | 43.50             | 15.49          | QP     |
| 3 | 256.98         | 13.54                   | 1.67                  | 19.15             | 34.36                         | 46.00             | 11.64          | QP     |
| 4 | 313.24         | 13.79                   | 1.89                  | 23.81             | 39.49                         | 46.00             | 6.51           | QP     |
| 5 | 320.03         | 14.00                   | 1.92                  | 25.50             | 41.42                         | 46.00             | 4.58           | QP     |
| 6 | 399.57         | 16.20                   | 2.14                  | 18.38             | 36.72                         | 46.00             | 9.28           | QP     |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. Margin= Limit - Emission Level.  
3. The emission levels that are 20dB below the official limit are not reported.

## Note:

1. The amplitude of 9KHz to 30MHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.
2. All test mode had been pre-test, only the worst case was reported.

## 4. AC POWER LINE CONDUCTED EMISSIONS

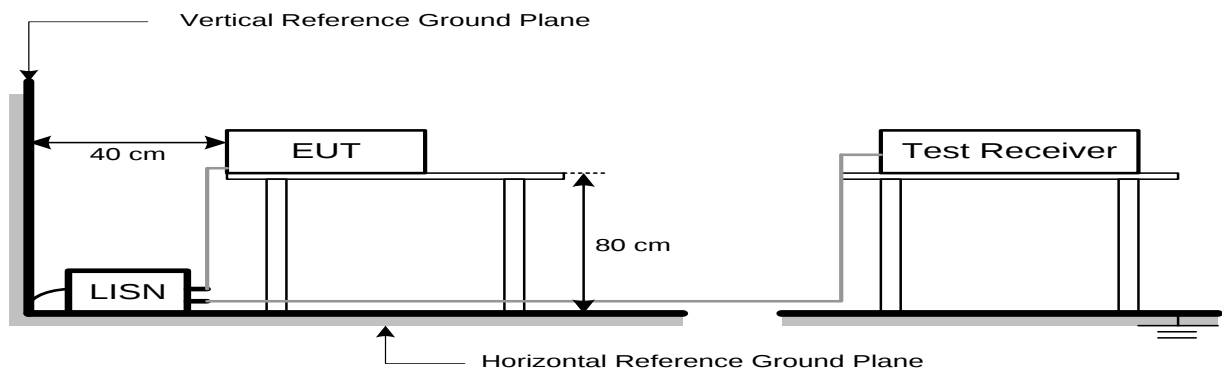
### 4.1. Limit

| Frequency |   |        | Maximum RF Line Voltage          |                               |
|-----------|---|--------|----------------------------------|-------------------------------|
|           |   |        | Quasi-Peak Level<br>dB( $\mu$ V) | Average Level<br>dB( $\mu$ V) |
| 150kHz    | ~ | 500kHz | 66 ~ 56*                         | 56 ~ 46*                      |
| 500kHz    | ~ | 5MHz   | 56                               | 46                            |
| 5MHz      | ~ | 30MHz  | 60                               | 50                            |

Note:

1. \* Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

### 4.2. Test Setup



### 4.3. Spectrum Analyzer Setting

| Spectrum Parameters | Setting  |
|---------------------|----------|
| RBW                 | 9KHz     |
| VBW                 | 9KHz     |
| Start frequency     | 150KHz   |
| Stop frequency      | 30MHz    |
| Sweep Time          | Auto     |
| Detector            | QP/AVG   |
| Trace Mode          | Max Hold |

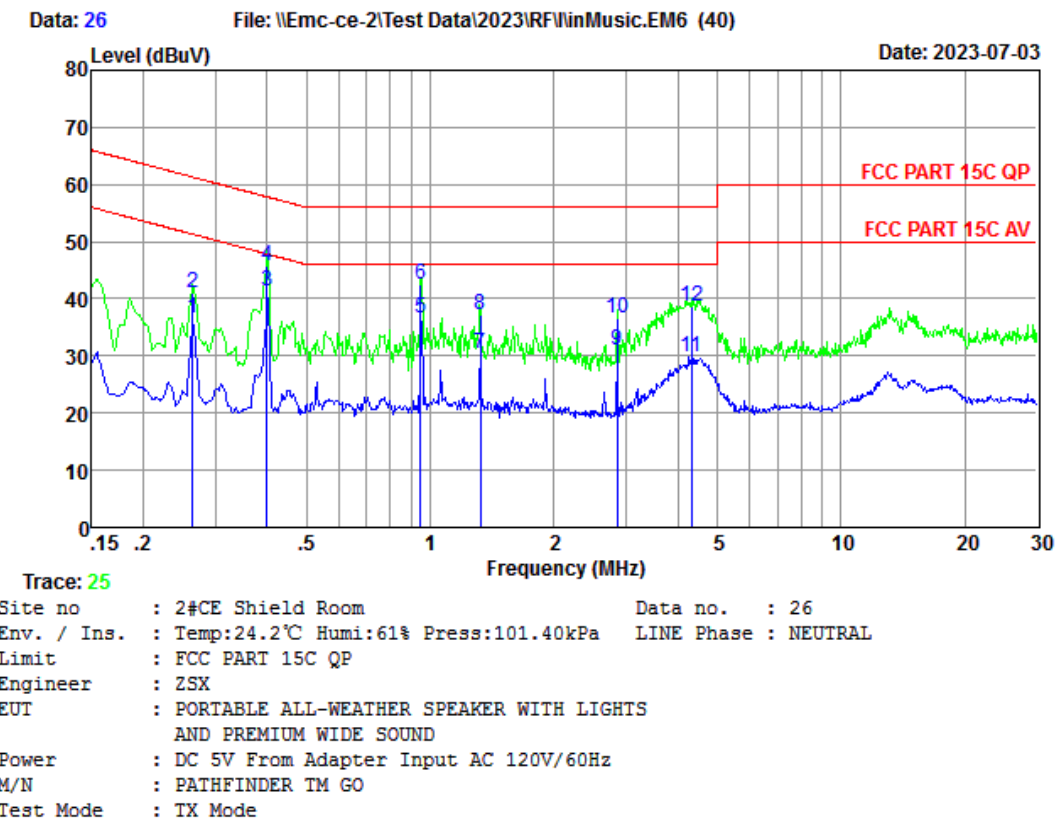
### 4.4. Test Procedure

- a. The EUT was placed on a non-metallic table, 80cm above the ground plane.
- b. The EUT Power connected to the power mains through a line impedance stabilization network.
- c. Provides a 50 ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs).
- d. Set the EUT transmit continuously with maximum output power.
- e. Spectrum analyzer setting parameters in accordance with section 4.3.
- f. The AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2013 on Conducted Emission Test.
- g. Record the results in the test report.

4.5. Test Result

EST Technology

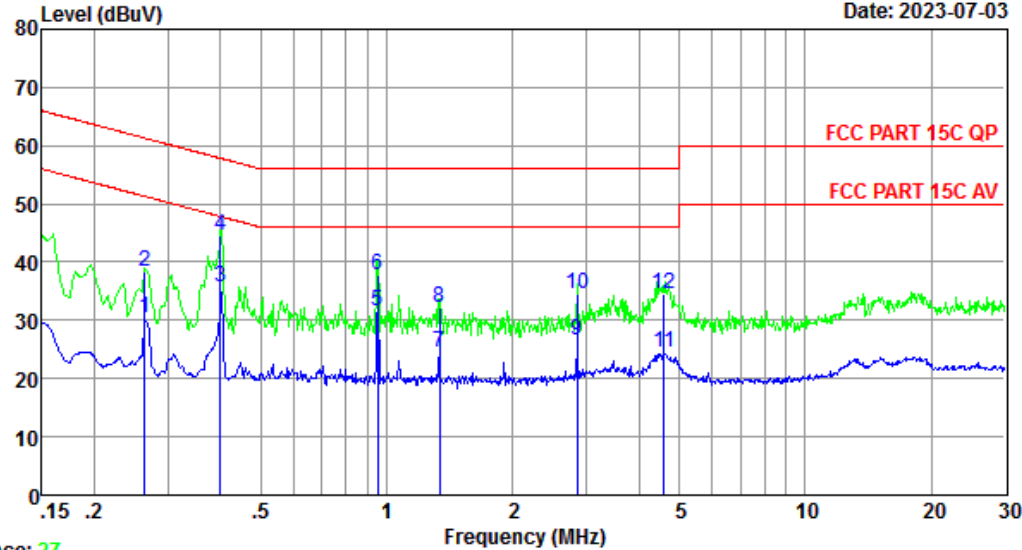
Chilingxiang, Qishantou, Santun,  
Houjie, Dongguan, Guangdong, China  
Tel: +86-769-83081888  
Fax: +86-769-83081878



| Freq.<br>(MHz) | LISN<br>Factor<br>(db) | Cable<br>Loss<br>(db) | Reading<br>dBuV | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----------------|------------------------|-----------------------|-----------------|-----------------------------|------------------|----------------|---------|
| 1 0.26442      | 9.84                   | 9.92                  | 16.85           | 36.61                       | 51.29            | 14.68          | Average |
| 2 0.26442      | 9.84                   | 9.92                  | 21.24           | 41.00                       | 61.29            | 20.29          | QP      |
| 3 0.39974      | 9.72                   | 9.92                  | 21.62           | 41.26                       | 47.86            | 6.60           | Average |
| 4 0.39974      | 9.72                   | 9.92                  | 26.12           | 45.76                       | 57.86            | 12.10          | QP      |
| 5 0.94809      | 9.85                   | 9.94                  | 16.90           | 36.69                       | 46.00            | 9.31           | Average |
| 6 0.94809      | 9.85                   | 9.94                  | 22.58           | 42.37                       | 56.00            | 13.63          | QP      |
| 7 1.32378      | 9.84                   | 9.95                  | 10.52           | 30.31                       | 46.00            | 15.69          | Average |
| 8 1.32378      | 9.84                   | 9.95                  | 17.54           | 37.33                       | 56.00            | 18.67          | QP      |
| 9 2.85407      | 9.97                   | 9.97                  | 10.99           | 30.93                       | 46.00            | 15.07          | Average |
| 10 2.85407     | 9.97                   | 9.97                  | 16.57           | 36.51                       | 56.00            | 19.49          | QP      |
| 11 4.31464     | 10.03                  | 9.99                  | 9.82            | 29.84                       | 46.00            | 16.16          | Average |
| 12 4.31464     | 10.03                  | 9.99                  | 18.55           | 38.57                       | 56.00            | 17.43          | QP      |

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.  
2. Margin= Limit - Emission Level.  
3. If the average limit is met when using a quasi-peak detector,  
the EUT shall be deemed to meet both limits and measurement  
with average detector is unnecessary.

Data: 28                      File: \\Emc-ce-2\Test Data\2023\RF\linMusic.EM6 (40)                      Date: 2023-07-03



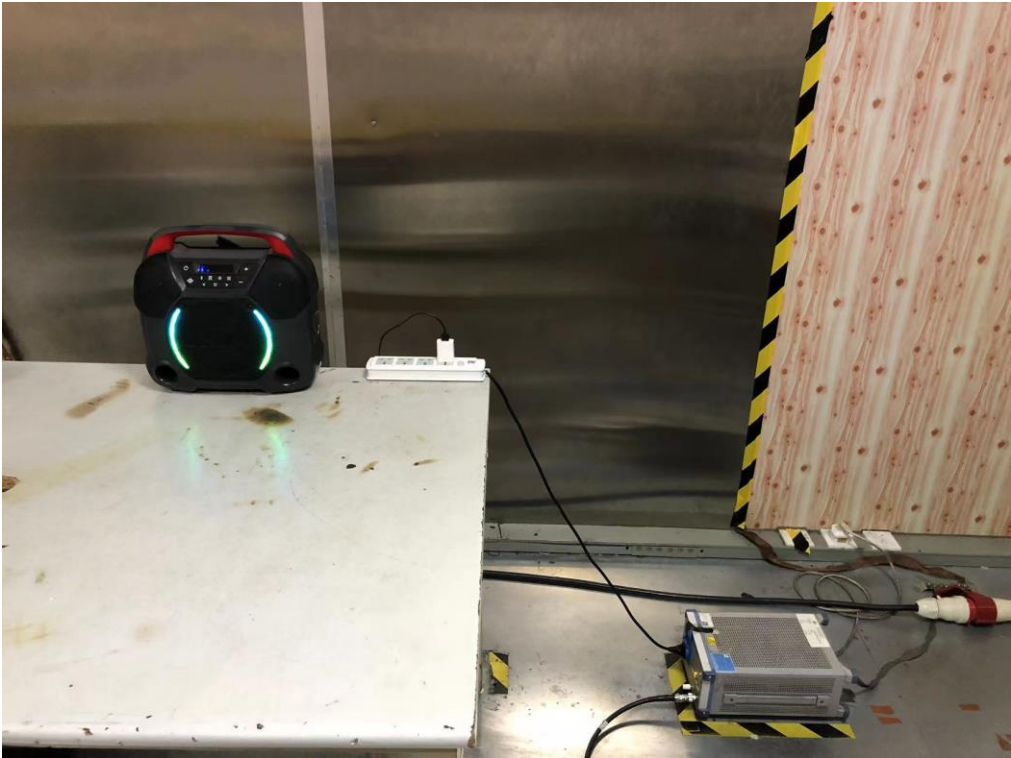
Site no : 2#CE Shield Room                      Data no. : 28  
Env. / Ins. : Temp:24.2℃ Humi:61% Press:101.40kPa                      LINE Phase : LINE  
Limit : FCC PART 15C QP  
Engineer : ZSX  
EUT : PORTABLE ALL-WEATHER SPEAKER WITH LIGHTS  
AND PREMIUM WIDE SOUND  
Power : DC 5V From Adapter Input AC 120V/60Hz  
M/N : PATHFINDER TM GO  
Test Mode : TX Mode

|    | Freq.<br>(MHz) | LISN<br>Factor<br>(db) | Cable<br>Loss<br>(db) | Reading<br>dBUV | Emission<br>Level<br>(dBUV) | Limits<br>(dBUV) | Margin<br>(dB) | Remark  |
|----|----------------|------------------------|-----------------------|-----------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.26442        | 9.77                   | 9.92                  | 10.58           | 30.27                       | 51.29            | 21.02          | Average |
| 2  | 0.26442        | 9.77                   | 9.92                  | 18.55           | 38.24                       | 61.29            | 23.05          | QP      |
| 3  | 0.39974        | 9.85                   | 9.92                  | 15.91           | 35.68                       | 47.86            | 12.18          | Average |
| 4  | 0.39974        | 9.85                   | 9.92                  | 24.85           | 44.62                       | 57.86            | 13.24          | QP      |
| 5  | 0.95313        | 9.88                   | 9.94                  | 11.73           | 31.55                       | 46.00            | 14.45          | Average |
| 6  | 0.95313        | 9.88                   | 9.94                  | 17.82           | 37.64                       | 56.00            | 18.36          | QP      |
| 7  | 1.33788        | 9.89                   | 9.95                  | 4.55            | 24.39                       | 46.00            | 21.61          | Average |
| 8  | 1.33788        | 9.89                   | 9.95                  | 12.46           | 32.30                       | 56.00            | 23.70          | QP      |
| 9  | 2.85407        | 9.93                   | 9.97                  | 6.77            | 26.67                       | 46.00            | 19.33          | Average |
| 10 | 2.85407        | 9.93                   | 9.97                  | 14.76           | 34.66                       | 56.00            | 21.34          | QP      |
| 11 | 4.59787        | 9.90                   | 10.00                 | 4.61            | 24.51                       | 46.00            | 21.49          | Average |
| 12 | 4.59787        | 9.90                   | 10.00                 | 14.52           | 34.42                       | 56.00            | 21.58          | QP      |

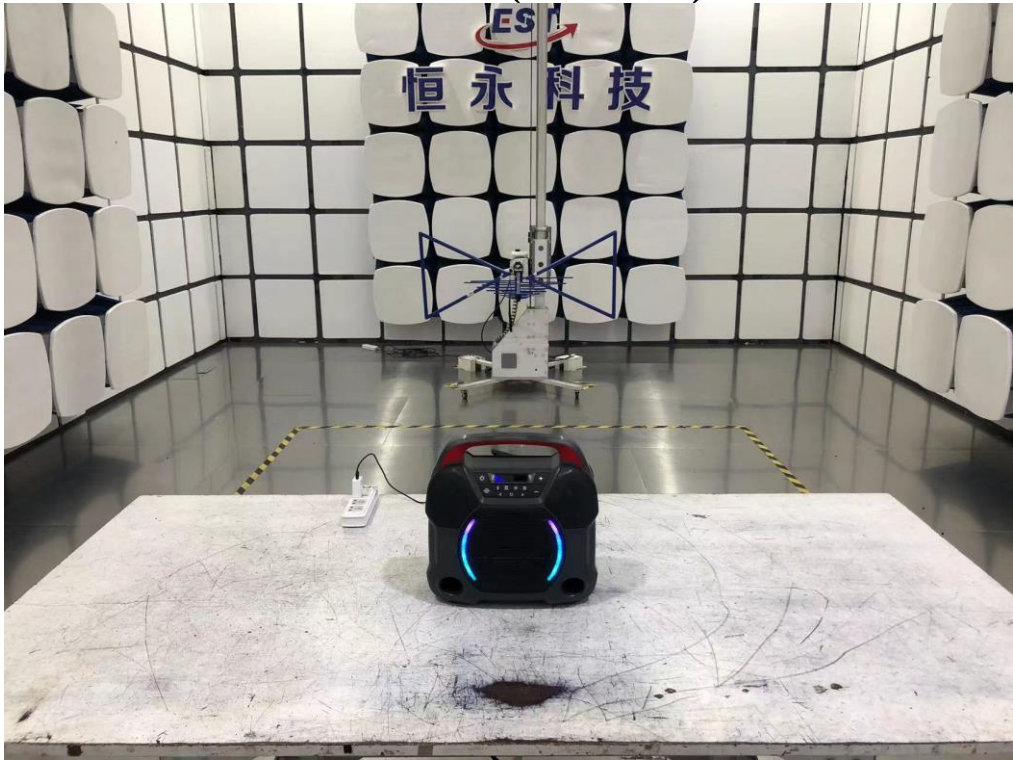
Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.  
2. Margin= Limit - Emission Level.  
3. If the average limit is met when using a quasi-peak detector,  
the EUT shall be deemed to meet both limits and measurement  
with average detector is unnecessary.

5. TEST SETUP PHOTO

Conducted Test



Radiated Test (Below 1GHz)



6. EUT PHOTO

External Photos  
M/N: ISP165



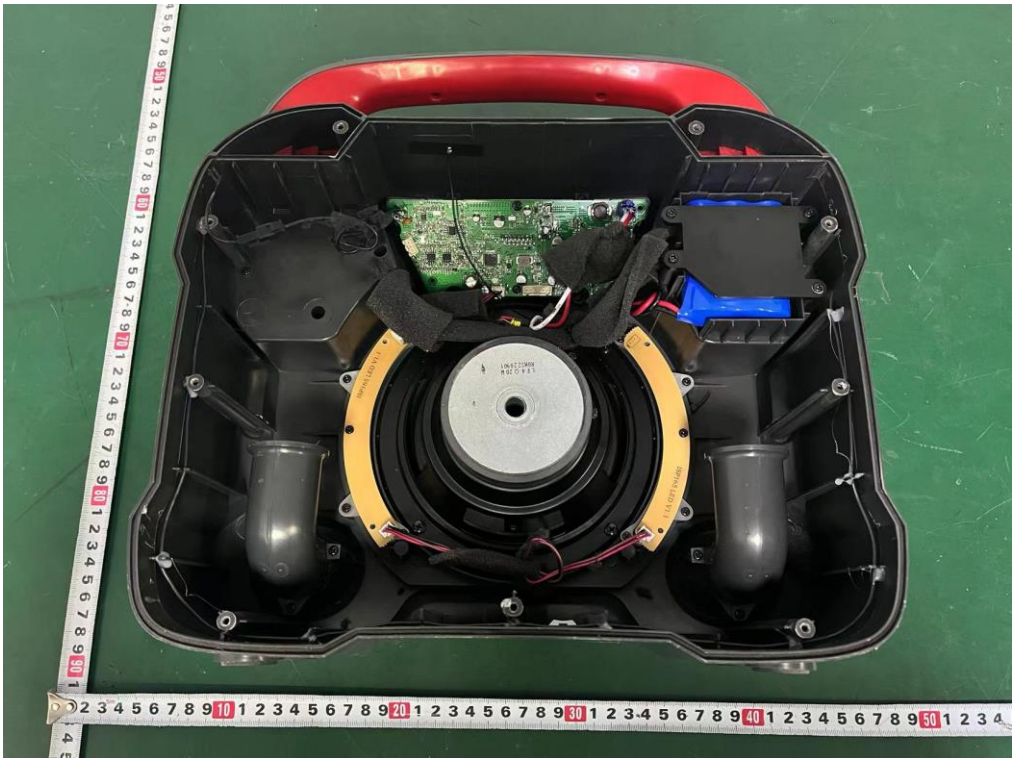
External Photos  
M/N: ISP165



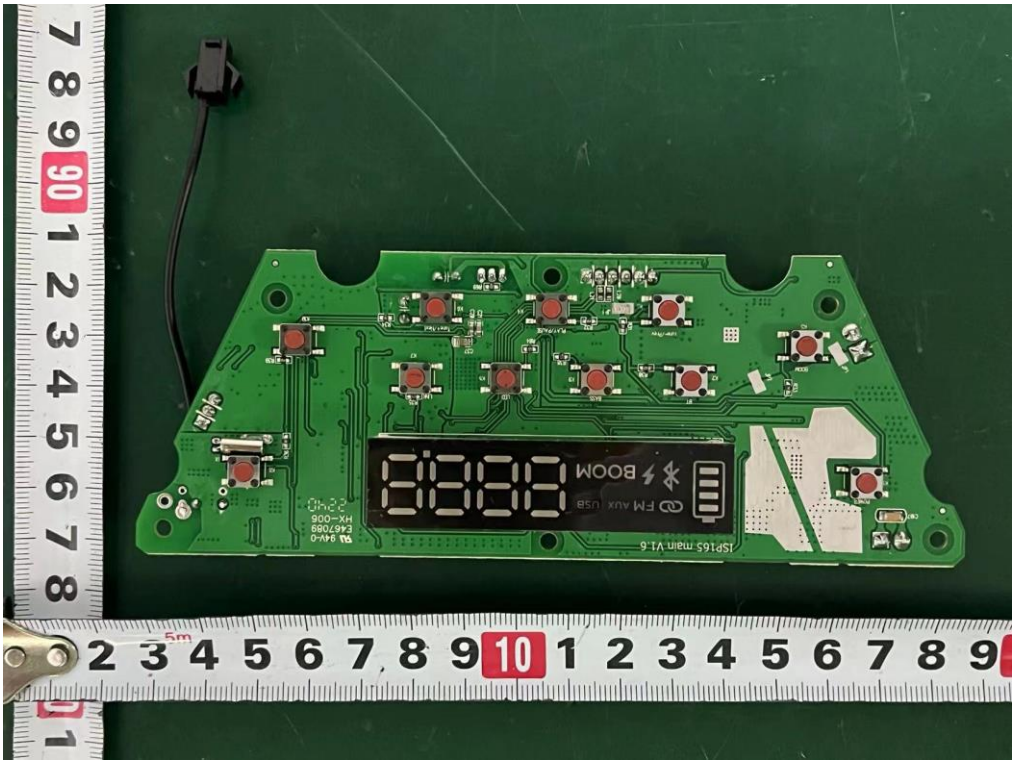
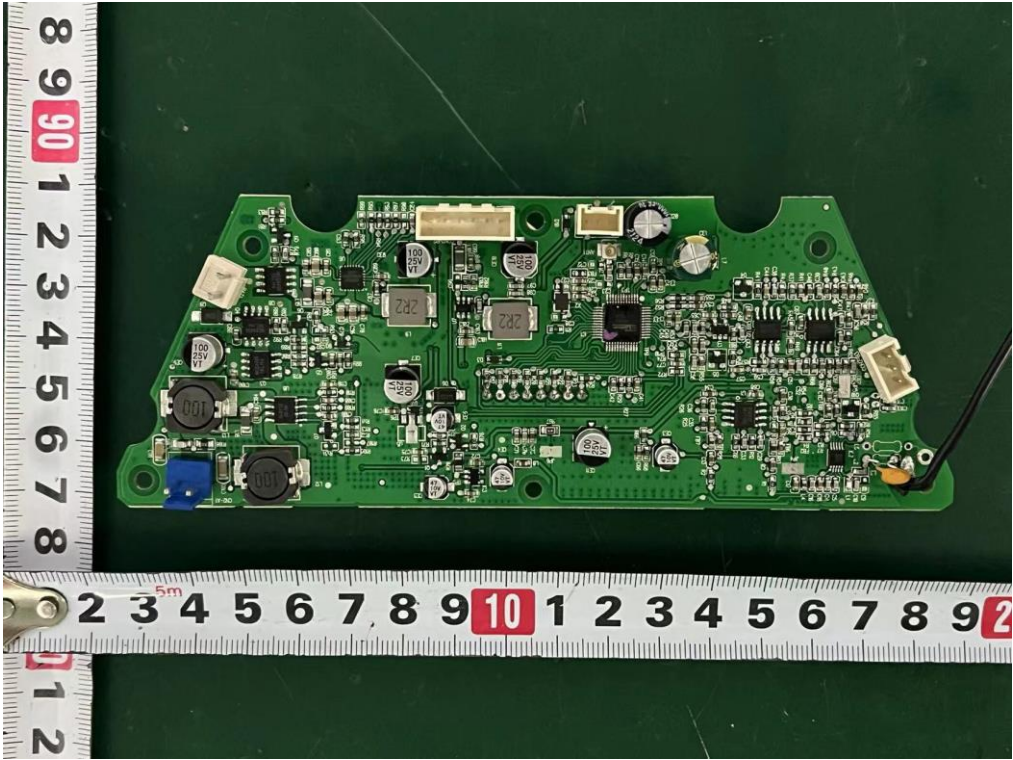
External Photos  
M/N: ISP165



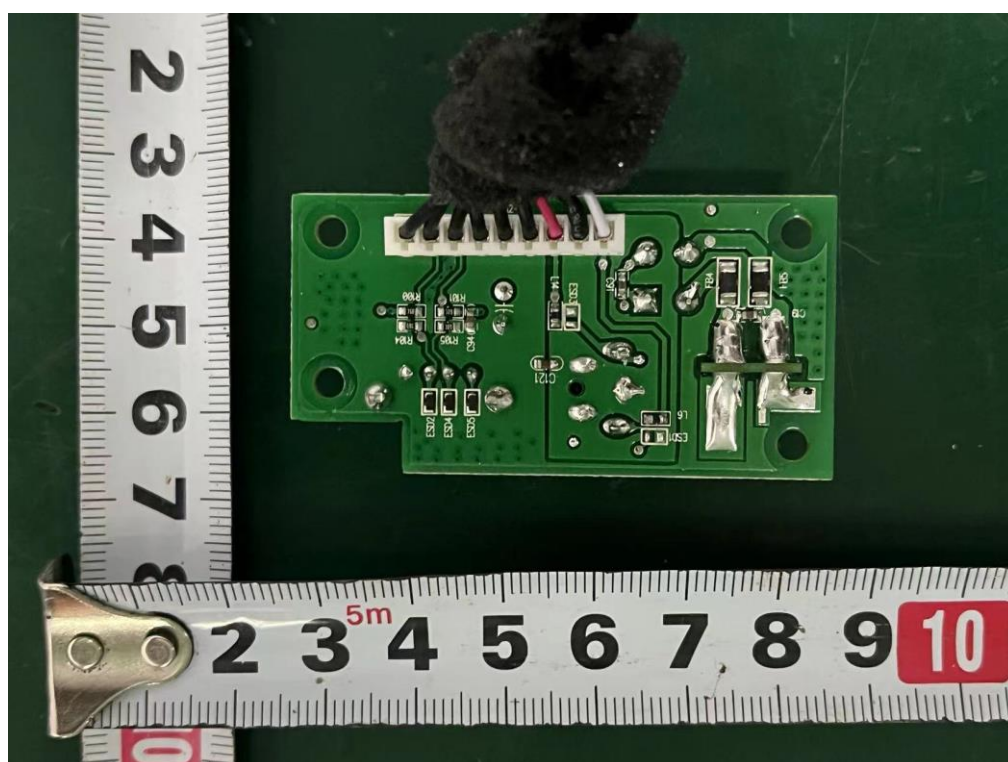
Internal Photos  
M/N: ISP165



Internal Photos  
M/N: ISP165



**Internal Photos**  
M/N: ISP165



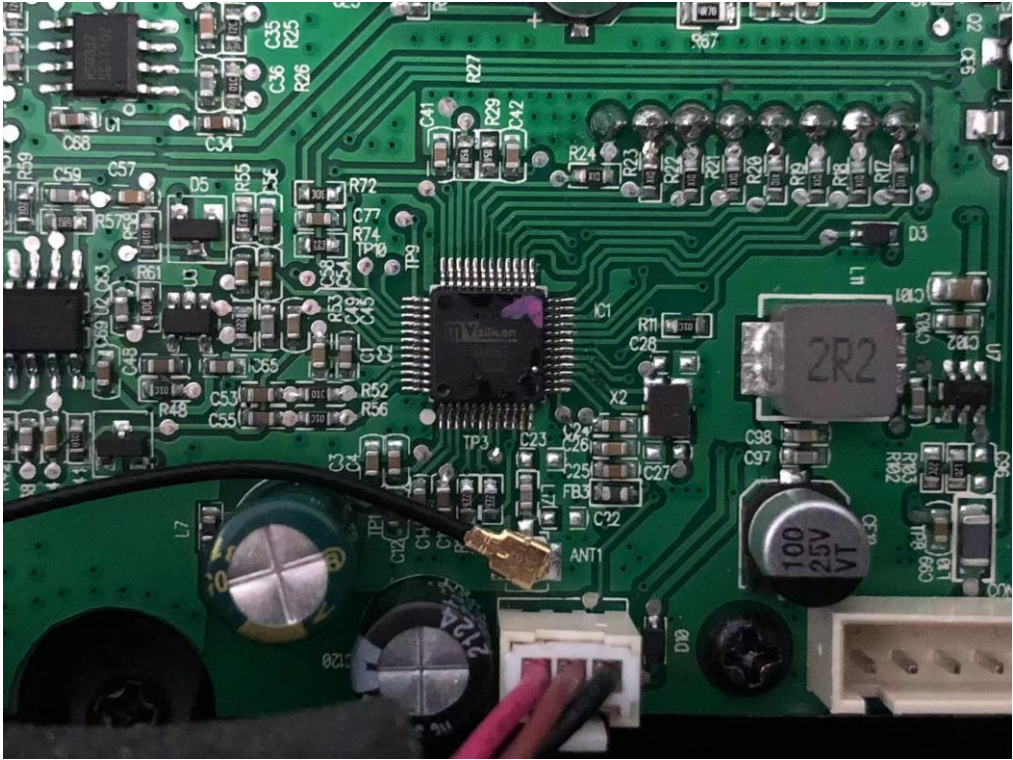
Internal Photos  
M/N: ISP165



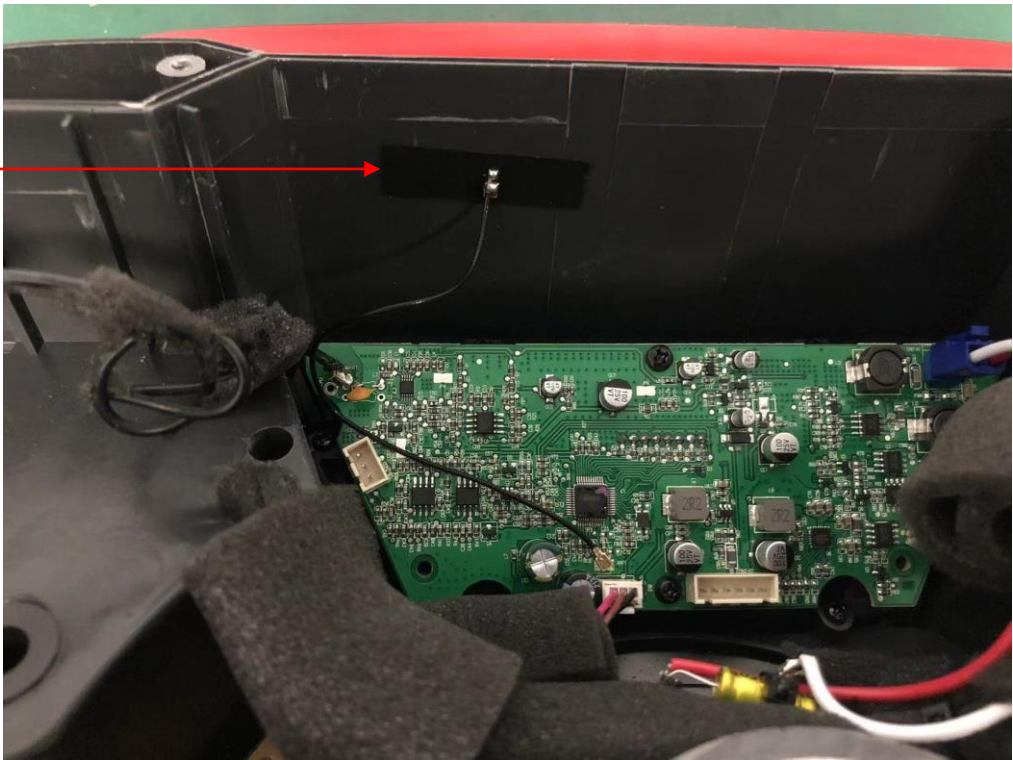
Internal Photos  
M/N: ISP165



Internal Photos  
M/N: ISP165



Bluetooth  
Antenna



Internal Photos  
M/N: ISP165

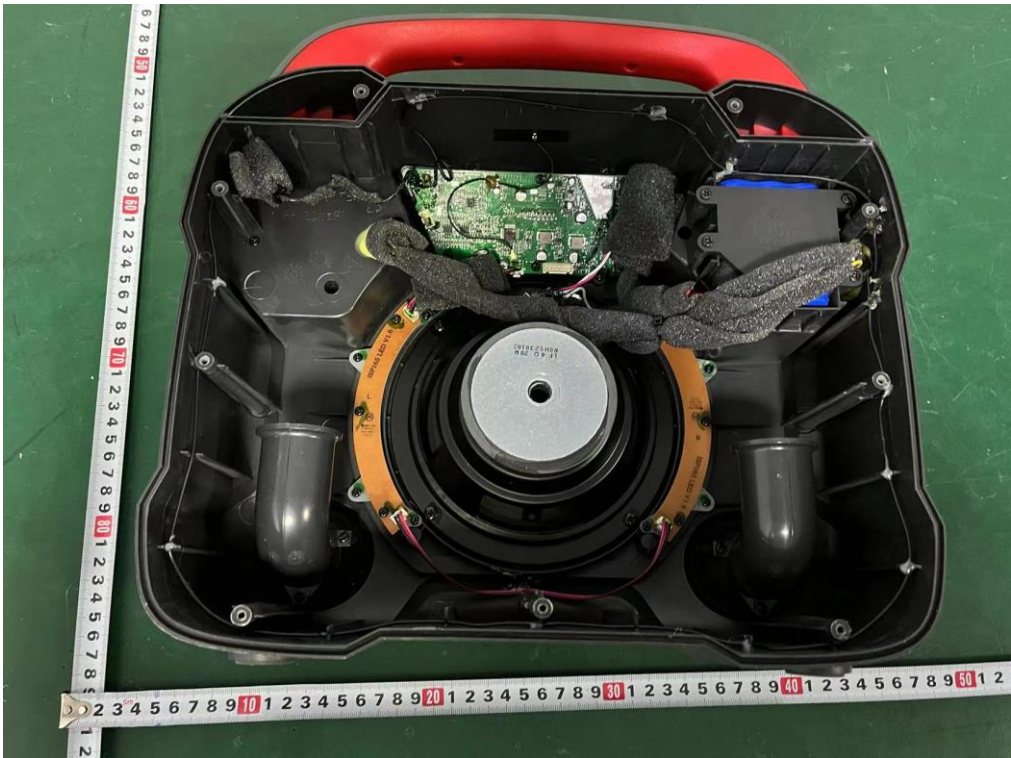
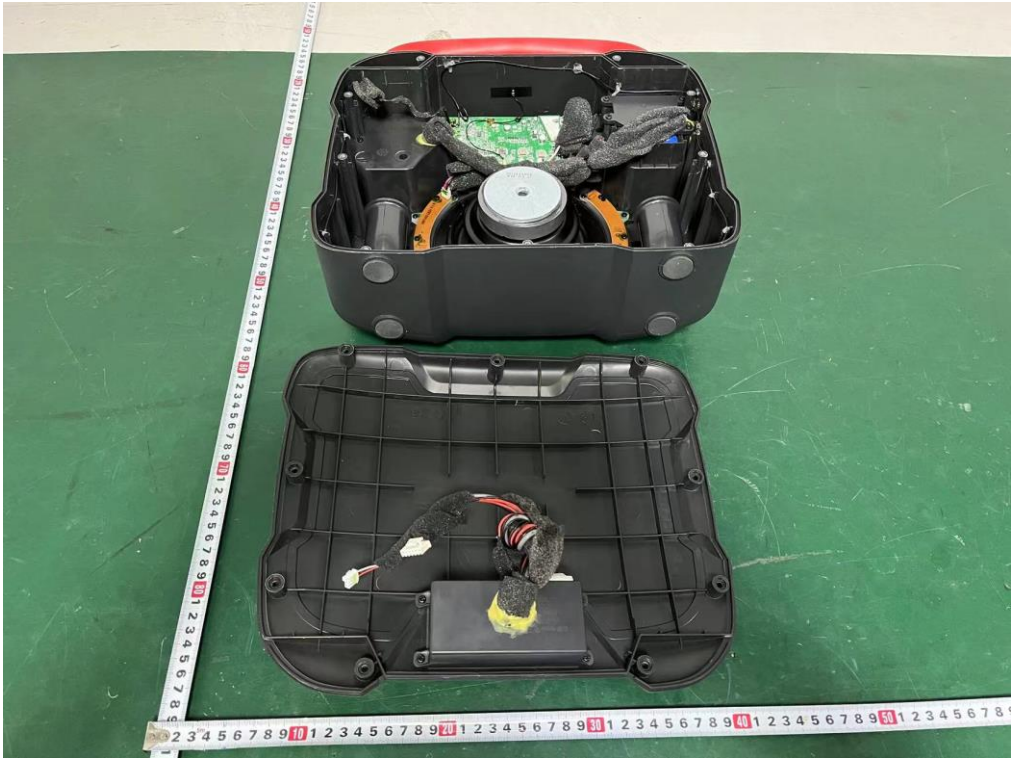


Internal Photos  
M/N: ISP165

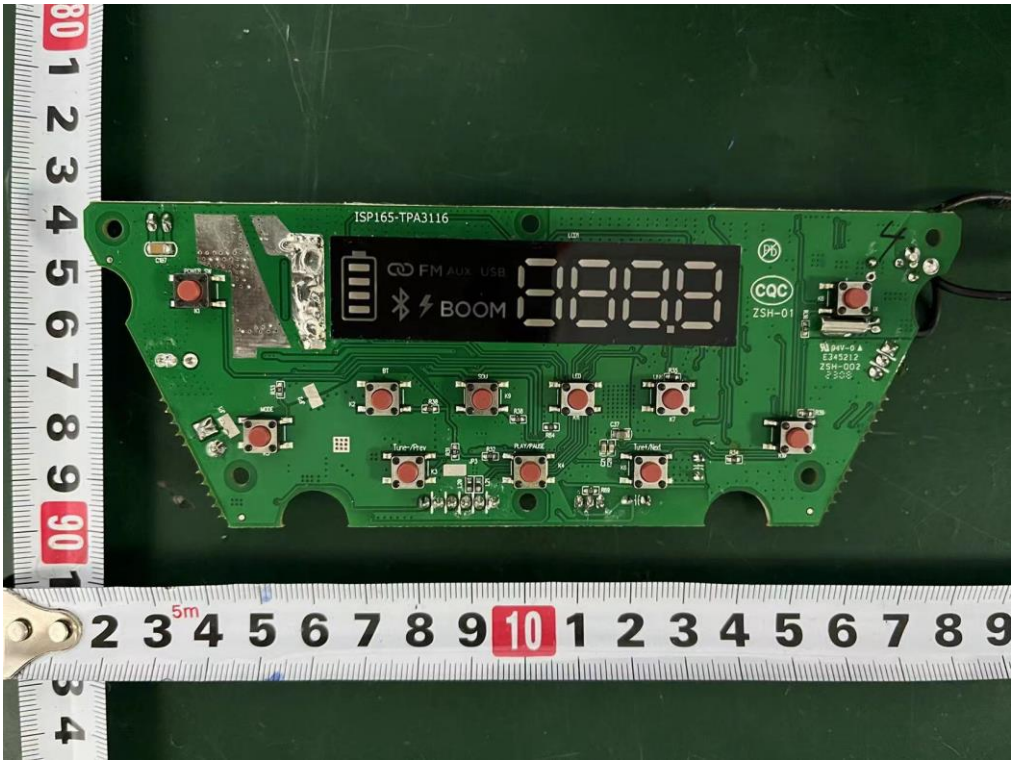


New AMP IC board

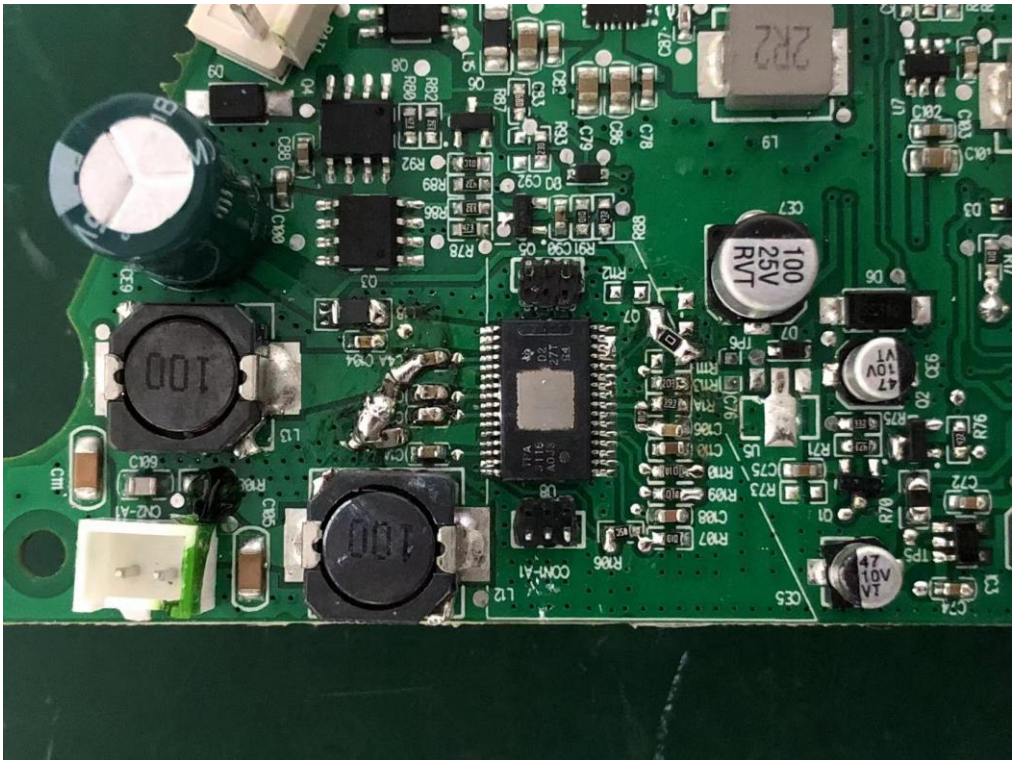
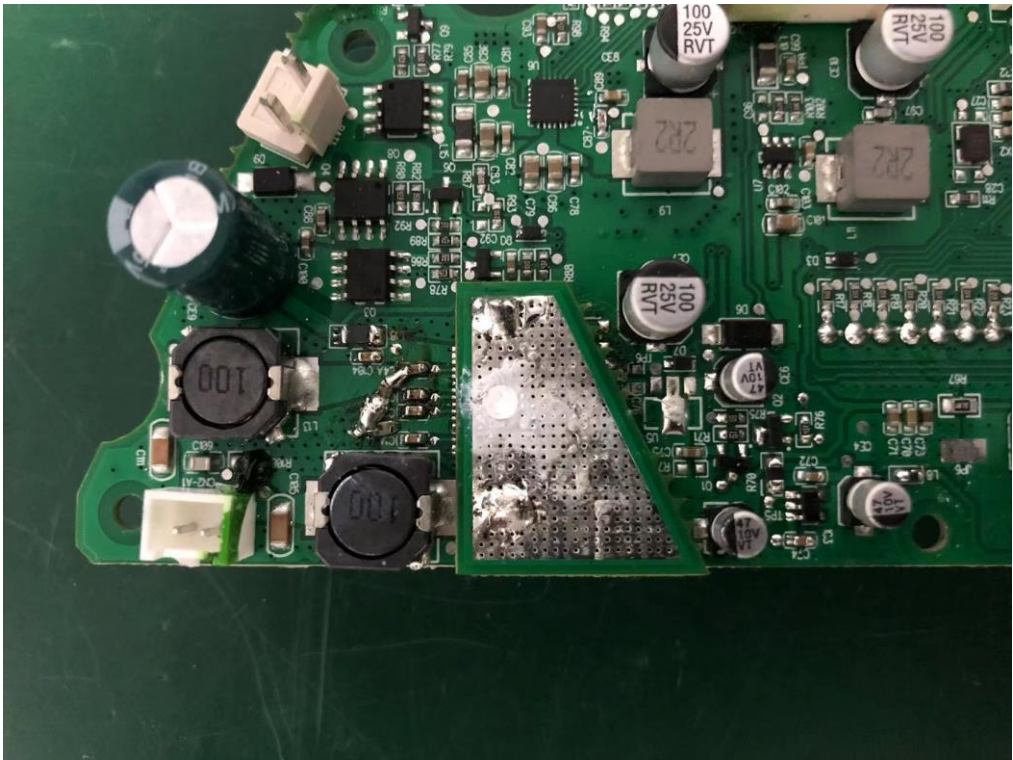
Internal Photos  
M/N: ISP165



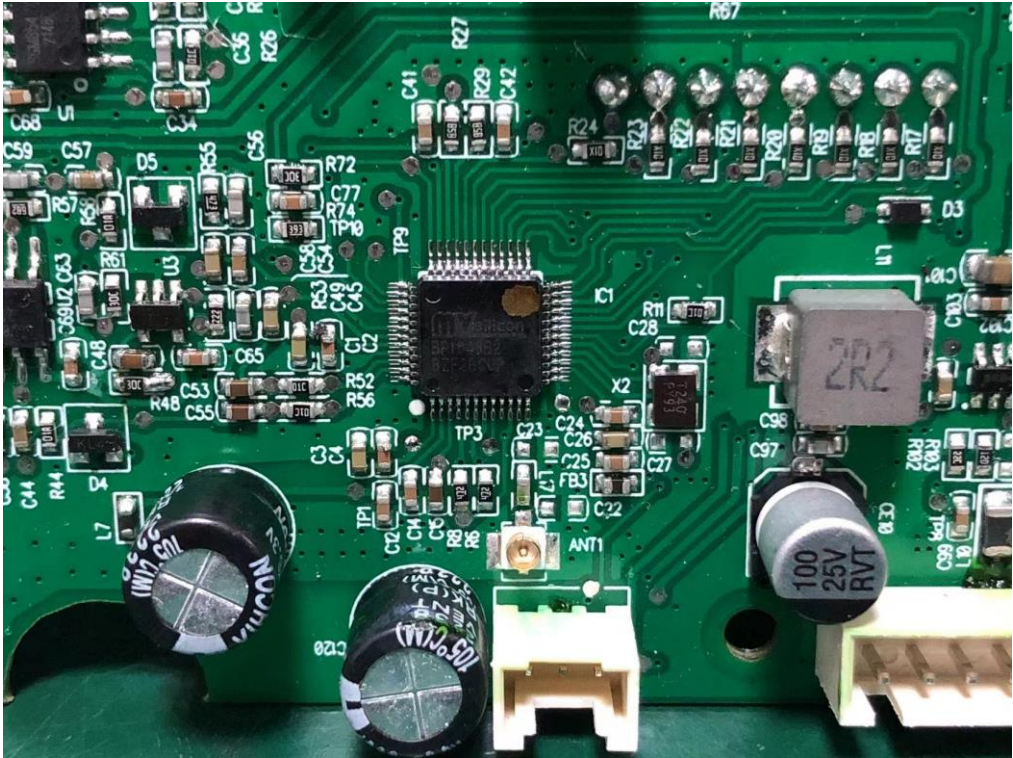
Internal Photos  
M/N: ISP165



Internal Photos  
M/N: ISP165



Internal Photos  
M/N: ISP165



End of Test Report