



## RF MEASUREMENT REPORT

---

**FCC ID:** HD5-EDA51K0

**Applicant:** Honeywell International Inc  
Honeywell Safety and Productivity Solutions

**Product:** Mobile Computer

**Model No.:** EDA51k-0

**Brand Name:** Honeywell

**FCC Classification:** Part 15 Low Power Communication Device  
Transmitter (DXX)

**FCC Rule Part(s):** Part 15 Subpart C (Section 15.225)

**Result:** Complies

**Test Date:** 2022-07-01 ~ 2022-07-04

**Reviewed By:**

\_\_\_\_\_  
Jame Yuan

**Approved By:**

\_\_\_\_\_  
Robin Wu



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

### Revision History

| Report No.    | Version | Description    | Issue Date | Note  |
|---------------|---------|----------------|------------|-------|
| 2206RSU017-U1 | Rev. 01 | Initial Report | 2022-07-04 | Valid |
|               |         |                |            |       |

## CONTENTS

| Description                                                | Page      |
|------------------------------------------------------------|-----------|
| <b>1. General Information .....</b>                        | <b>5</b>  |
| 1.1. Applicant.....                                        | 5         |
| 1.2. Manufacturer .....                                    | 5         |
| 1.3. Testing Facility .....                                | 5         |
| 1.4. Product Information .....                             | 6         |
| 1.5. Radio Specification under test .....                  | 6         |
| <b>2. Test Configuration.....</b>                          | <b>7</b>  |
| 2.1. Test Mode .....                                       | 7         |
| 2.2. Test Configuration and Software.....                  | 7         |
| 2.3. Applied Standards .....                               | 7         |
| 2.4. Test Environment Condition .....                      | 8         |
| <b>3. Antenna Requirements .....</b>                       | <b>9</b>  |
| <b>4. Measuring Instrument.....</b>                        | <b>10</b> |
| <b>5. Decision Rules and Measurement Uncertainty .....</b> | <b>11</b> |
| 5.1. Decision Rules .....                                  | 11        |
| 5.2. Measurement Uncertainty .....                         | 11        |
| <b>6. Test Result .....</b>                                | <b>12</b> |
| 6.1. Summary .....                                         | 12        |
| 6.2. In-band Emission Measurement .....                    | 13        |
| 6.2.1. Test Limit .....                                    | 13        |
| 6.2.2. Test Procedure .....                                | 13        |
| 6.2.3. Test Setting.....                                   | 13        |
| 6.2.4. Test Setup .....                                    | 14        |
| 6.2.5. Test Result.....                                    | 14        |
| 6.3. Out-band Emission Measurement.....                    | 15        |
| 6.3.1. Test Limit .....                                    | 15        |
| 6.3.2. Test Procedure .....                                | 15        |
| 6.3.3. Test Setting.....                                   | 15        |
| 6.3.4. Test Setup .....                                    | 16        |
| 6.3.5. Test Result.....                                    | 16        |
| 6.4. Occupied Bandwidth Measurement .....                  | 17        |
| 6.4.1. Test Limit .....                                    | 17        |
| 6.4.2. Test Procedure .....                                | 17        |
| 6.4.3. Test Setting.....                                   | 17        |

|                                                |                                                |           |
|------------------------------------------------|------------------------------------------------|-----------|
| 6.4.4.                                         | Test Setup .....                               | 18        |
| 6.4.5.                                         | Test Result.....                               | 18        |
| 6.5.                                           | Frequency Tolerance Measurement .....          | 19        |
| 6.5.1.                                         | Test Limit .....                               | 19        |
| 6.5.2.                                         | Test Procedure .....                           | 19        |
| 6.5.3.                                         | Test Setting.....                              | 19        |
| 6.5.4.                                         | Test Setup .....                               | 20        |
| 6.5.5.                                         | Test Result.....                               | 20        |
| 6.6.                                           | AC Conducted Emissions Measurement .....       | 21        |
| 6.6.1.                                         | Test Limit .....                               | 21        |
| 6.6.2.                                         | Test Setup .....                               | 21        |
| 6.6.3.                                         | Test Result.....                               | 21        |
| <b>Appendix A - Test Result .....</b>          |                                                | <b>22</b> |
| A.1                                            | In-band Emission Test Result .....             | 22        |
| A.2                                            | Out-Band Emission Test Result.....             | 23        |
| A.3                                            | Occupied Bandwidth Test Result .....           | 24        |
| A.4                                            | Frequency Stability Tolerance Test Result..... | 25        |
| A.5                                            | AC Conducted Emissions Test Result .....       | 26        |
| <b>Appendix B - Test Setup Photograph.....</b> |                                                | <b>32</b> |
| <b>Appendix C - EUT Photograph.....</b>        |                                                | <b>33</b> |

### 1.1. Applicant

## 1.2. Manufacturer

### 1.3. Testing Facility

5 of 33

#### 1.4. Product Information

|                                                                                                                                                          |                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Product Name                                                                                                                                             | Mobile Computer                                                                                         |
| Model No.                                                                                                                                                | EDA51K-0                                                                                                |
| Wi-Fi Specification                                                                                                                                      | 802.11a/b/g/n/ac                                                                                        |
| Bluetooth Version                                                                                                                                        | v4.2 dual mode                                                                                          |
| Antenna Delivery                                                                                                                                         | 1*Tx+ 1*Rx                                                                                              |
| NFC Working Frequency                                                                                                                                    | 13.56MHz                                                                                                |
| Accessories                                                                                                                                              |                                                                                                         |
| USB Adapter                                                                                                                                              | Model No.: ADS-12B-06 05010E<br>Input Power: 100 - 240V ~ 50/60Hz, Max. 0.3A<br>Output Power: 5VDC 2.0A |
| Rechargeable Li-ion Battery                                                                                                                              | Model No.: BAT-EDA50K<br>Capacitance: 4000mAh/15.2Wh<br>Rated Voltage: 3.8V                             |
| Remark:<br>The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer. |                                                                                                         |

#### 1.5. Radio Specification under test

|                    |              |
|--------------------|--------------|
| Frequency Range    | 13.56MHz     |
| Channel Number     | 1            |
| Type of modulation | ASK          |
| Antenna Type       | Loop Antenna |

## 2. Test Configuration

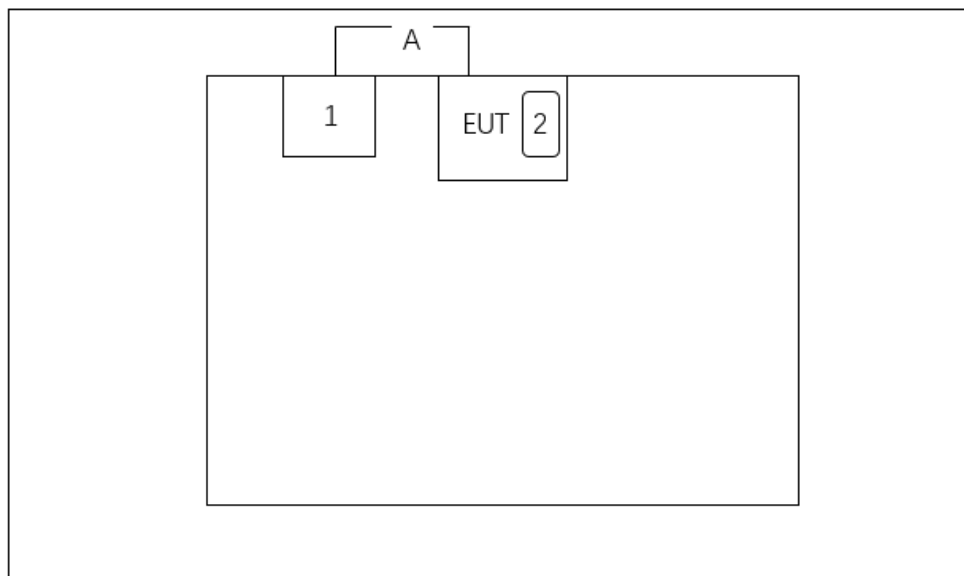
### 2.1. Test Mode

Mode 1: Make the EUT read the tag via NFC

### 2.2. Test Configuration and Software

The device was tested per the guidance ANSI C63.10-2013 that was used to reference the appropriate EUT setup for radiated spurious emissions and AC line conducted emission testing.

Mode 1



| Cable Type |             | Cable Description                  |                   |
|------------|-------------|------------------------------------|-------------------|
| A          | USB Cable   | Shielded, 1.2 m                    |                   |
| Product    |             | Manufacturer                       | Model No.         |
| 1          | USB Adapter | SHENZHEN HONOR ELECTRONIC CO., LTD | ADS-12B-06 05010E |
| 2          | NFC card    | N/A                                | N/A               |

### 2.3. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15.225
- ANSI C63.10-2013

**2.4. Test Environment Condition**

|                     |            |
|---------------------|------------|
| Ambient Temperature | 15 ~ 35 °C |
| Relative Humidity   | 20 ~75 %RH |

### 3. Antenna Requirements

**Excerpt from §15.203 of the FCC Rules/Regulations:**

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

- The antenna of the this device is **permanently attached**.
- There are no provisions for connection to an external antenna.

**Conclusion:**

The unit complies with the requirement of §15.203.

#### 4. Measuring Instrument

| Instrument Name     | Manufacturer | Model No.    | Asset No.   | Cali. Interval | Cal. Due Date | Test Site |
|---------------------|--------------|--------------|-------------|----------------|---------------|-----------|
| Two-Line V-Network  | R&S          | ENV216       | MRTSUE06002 | 1 year         | 2023-06-04    | WZ-SR2    |
| Shielding Room      | MIX-BEP      | WZ-SR2       | MRTSUE06215 | N/A            | N/A           | WZ-SR2    |
| Thermohygrometer    | testo        | 608-H1       | MRTSUE06404 | 1 year         | 2023-06-06    | WZ-SR2    |
| EMI Test Receiver   | R&S          | ESR3         | MRTSUE06909 | 1 year         | 2022-11-01    | WZ-SR2    |
| Thermohygrometer    | testo        | Testo 608-H1 | MRTSUE11039 | 1 year         | 2022/11/11    | WZ-AC1    |
| EMI Test Receiver   | R&S          | ESR7         | MRTSUE06001 | 1 year         | 2022-12-29    | WZ-AC1    |
| TRILOG Antenna      | Schwarzbeck  | VULB 9168    | MRTSUE06172 | 1 year         | 2022-08-05    | WZ-AC1    |
| Anechoic Chamber    | TDK          | WZ-AC1       | MRTSUE06212 | 1 year         | 2023-04-21    | WZ-AC1    |
| Thermohygrometer    | testo        | 608-H1       | MRTSUE06403 | 1 year         | 2023-06-06    | WZ-AC1    |
| Signal Analyzer     | Keysight     | N9010B       | MRTSUE06607 | 1 year         | 2022-12-29    | WZ-AC1    |
| Thermohygrometer    | testo        | Testo 608-H1 | MRTSUE11039 | 1 year         | 2022-11-11    | WZ-AC1    |
| Loop Antenna        | Schwarzbeck  | FMZB 1519    | MRTSUE06025 | 1 year         | 2022-10-28    | WZ-AC1    |
| Temperature Chamber | BAOYT        | BYH-150CL    | MRTSUE06051 | 1 year         | 2022-10-10    | WZ-TR3    |
| Thermohygrometer    | testo        | 608-H1       | MRTSUE06401 | 1 year         | 2023-06-06    | WZ-TR3    |
| Signal Analyzer     | Keysight     | N9010B       | MRTSUE06607 | 1 year         | 2022-12-29    | WZ-TR3    |

| Software     | Version | Function          |
|--------------|---------|-------------------|
| EMI Software | V3.0.0  | EMI Test Software |

## 5. Decision Rules and Measurement Uncertainty

### 5.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2.  
(Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

### 5.2. Measurement Uncertainty

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

| AC Conducted Emission Measurement                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measurement Uncertainty for a Level of Confidence of 95% ( $U=2U_c(y)$ ):<br>9kHz~150kHz: 3.74dB<br>150kHz~30MHz: 3.44dB                                                                                                                |
| Radiated Disturbance                                                                                                                                                                                                                    |
| Measurement Uncertainty for a Level of Confidence of 95% ( $U=2U_c(y)$ ):<br>Horizontal: 9kHz~300MHz: 5.04dB<br>300MHz~1GHz: 4.95dB<br>1GHz~40GHz: 6.40dB<br>Vertical: 9kHz~300MHz: 5.24dB<br>300MHz~1GHz: 6.03dB<br>1GHz~40GHz: 6.40dB |

## 6. Test Result

### 6.1. Summary

| FCC Part Section(s)  | Test Description                      | Test Condition | Verdict |
|----------------------|---------------------------------------|----------------|---------|
| 15.225 (a), (b), (c) | In-Band Emission                      | Radiated       | Pass    |
| 15.225(d)            | Out-Band Emission                     |                | Pass    |
| 15.215(c)            | 20dB Bandwidth                        |                | Pass    |
| 15.225(e)            | Frequency Stability Tolerance         |                | Pass    |
| 15.207               | AC Conducted Emissions 150kHz - 30MHz | Line Conducted | Pass    |

Note: For radiated emission test, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.

## 6.2. In-band Emission Measurement

### 6.2.1. Test Limit

| FCC Part 15 Subpart C Paragraph 15.225                                                                                                                                                                                                                                                                        |              |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|
| Frequency (MHz)                                                                                                                                                                                                                                                                                               | Distance (m) | Level (μV/m) |
| 13.553 ~13.567                                                                                                                                                                                                                                                                                                | 30           | 15848        |
| 13.410 ~13.553, 13.567 ~13.710                                                                                                                                                                                                                                                                                | 30           | 334          |
| 13.110 ~13.410, 13.710 ~14.010                                                                                                                                                                                                                                                                                | 30           | 106          |
| <p>Note 1: The lower limit shall apply at the transition frequency.</p> <p>Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.</p> <p>Note 3: E field strength (dBμV/m) = 20 log E field strength (μV/m)</p> |              |              |

### 6.2.2. Test Procedure

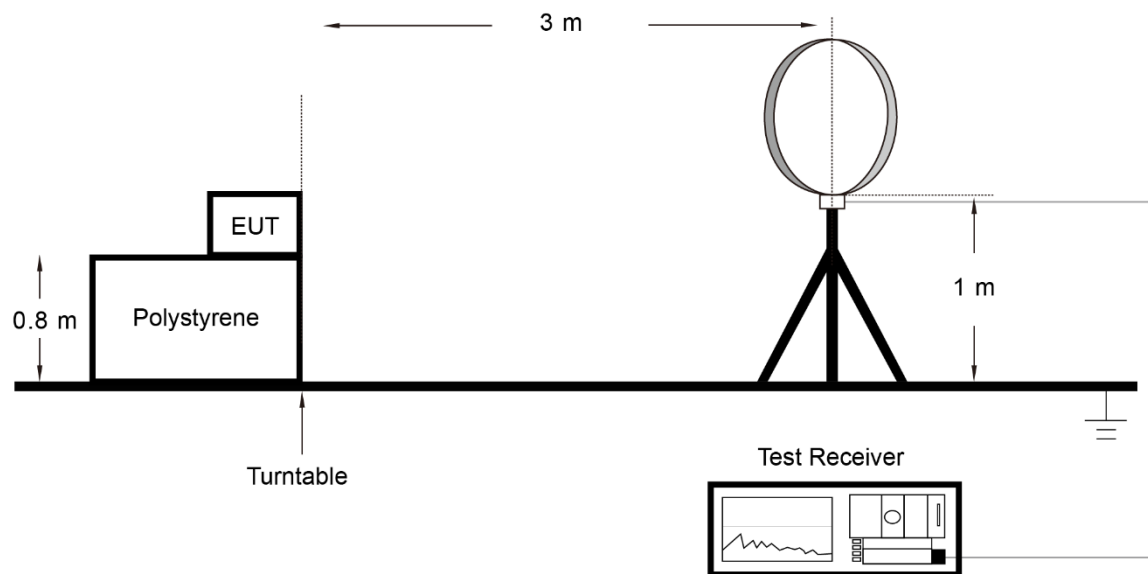
ANSI C63.10-2013 - Section 6.4.7

### 6.2.3. Test Setting

1. RBW = 9kHz
2. VBW = 3 \* RBW
3. Detector = Peak
4. Trace mode = Max hold
5. Sweep = Auto couple
6. Allow the trace to stabilize

#### 6.2.4. Test Setup

9kHz ~ 30MHz Test Setup:



#### 6.2.5. Test Result

Refer to Appendix A.1.

### 6.3. Out-band Emission Measurement

#### 6.3.1. Test Limit

| FCC Part 15 Subpart C Paragraph 15.209 |                 |                              |
|----------------------------------------|-----------------|------------------------------|
| Frequency<br>(MHz)                     | Distance<br>(m) | Level<br>( $\mu\text{V/m}$ ) |
| 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                          |
| 88 - 216                               | 3               | 150                          |
| 216 - 960                              | 3               | 200                          |
| Above 960                              | 3               | 500                          |

Note 1: The lower limit shall apply at the transition frequency.

Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Note 3:  $E \text{ field strength (dB}\mu\text{V/m)} = 20 \log E \text{ field strength (}\mu\text{V/m)}$

#### 6.3.2. Test Procedure

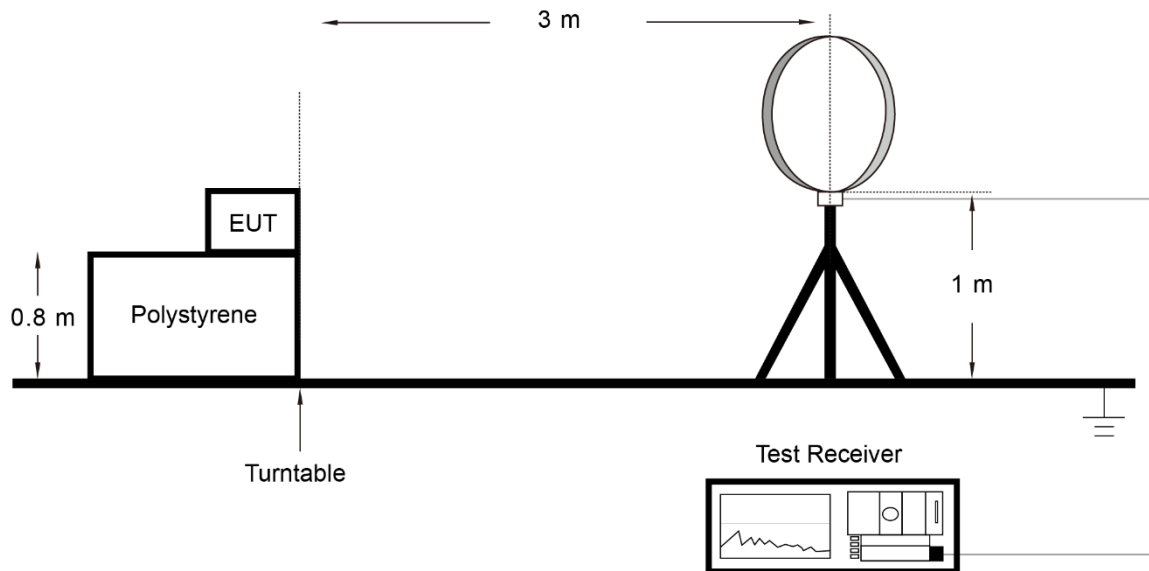
ANSI C63.10-2013 - Section 6.5.4

#### 6.3.3. Test Setting

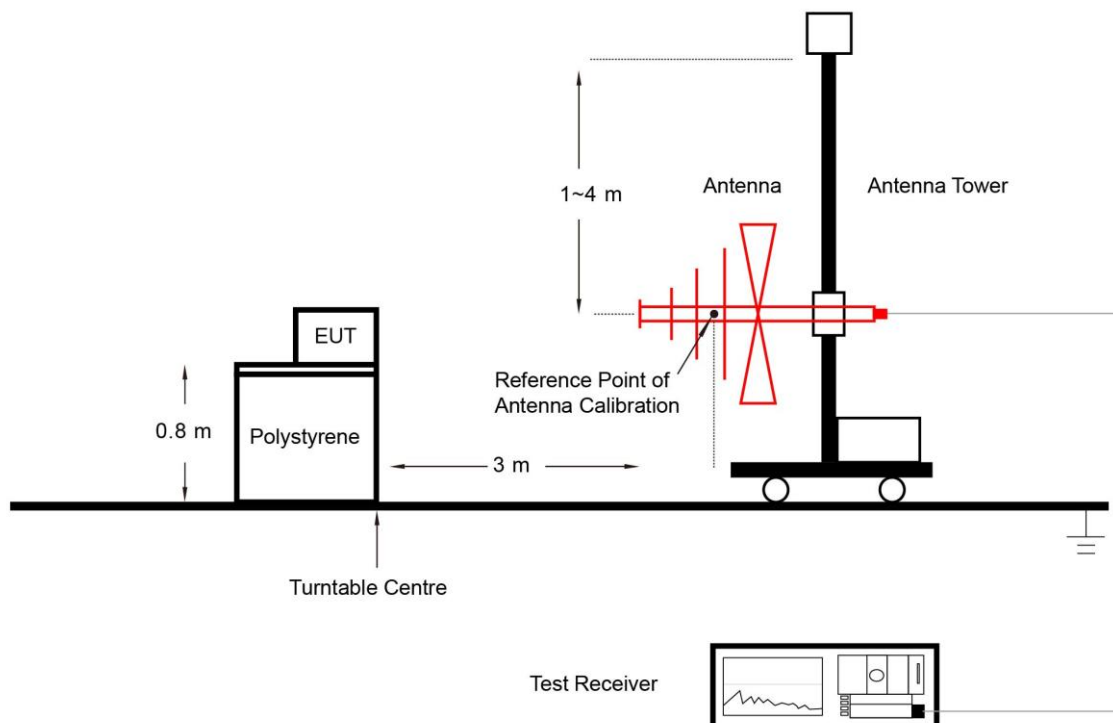
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 9kHz for emission below 30MHz and 100kHz for emission between 30MHz and 1GHz
3. VBW = 3 \* RBW
4. Detector = Peak
5. Trace mode = Max hold
6. Sweep = Auto couple
7. Allow the trace to stabilize

### 6.3.4. Test Setup

#### 9kHz ~ 30MHz Test Setup:



#### 30MHz ~ 1GHz Test Setup:



### 6.3.5. Test Result

Refer to Appendix A.2.

## **6.4. Occupied Bandwidth Measurement**

### **6.4.1. Test Limit**

The occupied bandwidth is measured with a spectrum analyzer connected to the receive antenna while the EUT is operating in transmission mode at the appropriate frequency.

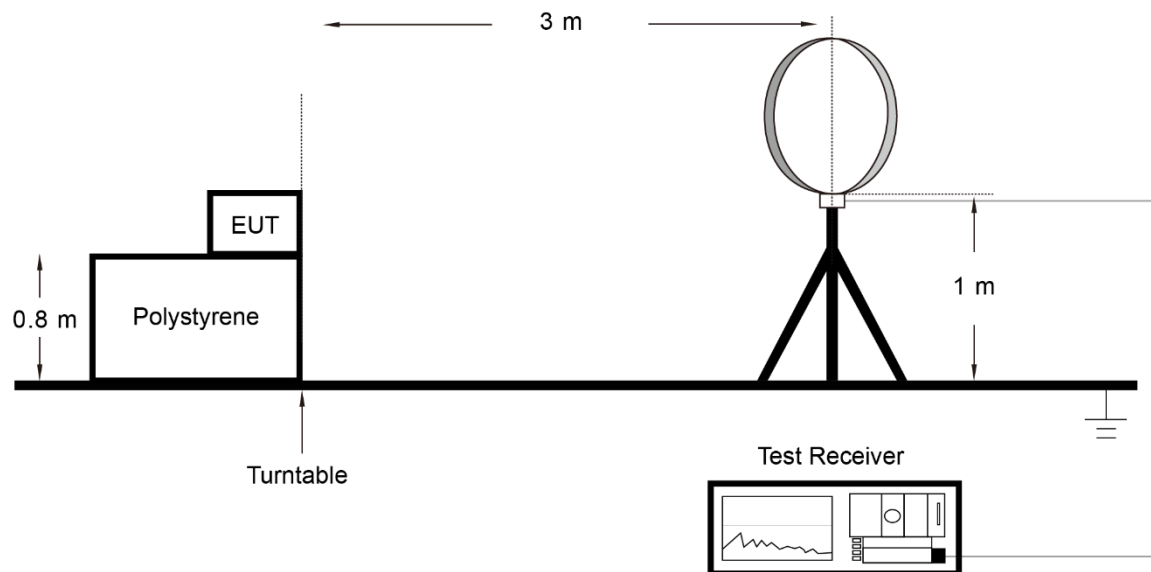
### **6.4.2. Test Procedure**

ANSI C63.10-2013 - Section 6.9.2

### **6.4.3. Test Setting**

1. Set RBW  $\geq$  1% to 5% of the 20dB bandwidth
2. VBW = approximately three times RBW
3. Span = approximately 2 to 5 times the 20dB bandwidth
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. Allow the trace to stabilize
8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

#### 6.4.4. Test Setup



#### 6.4.5. Test Result

Refer to Appendix A.3.

## **6.5. Frequency Tolerance Measurement**

### **6.5.1. Test Limit**

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency.

### **6.5.2. Test Procedure**

ANSI C63.10-2013 - Section 6.8

### **6.5.3. Test Setting**

#### **Frequency Stability Under Temperature Variations:**

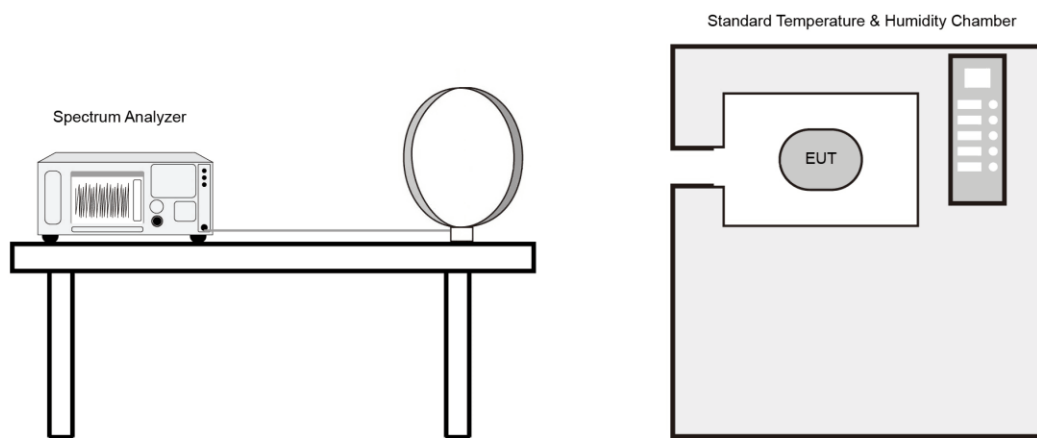
The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to highest. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C decreased per stage until the lowest temperature reached.

#### **Frequency Stability Under Voltage Variations:**

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ( $\pm 15\%$ ) and endpoint, record the maximum frequency change. For hand-carried battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

#### 6.5.4. Test Setup



#### 6.5.5. Test Result

Refer to Appendix A.4.

## 6.6. AC Conducted Emissions Measurement

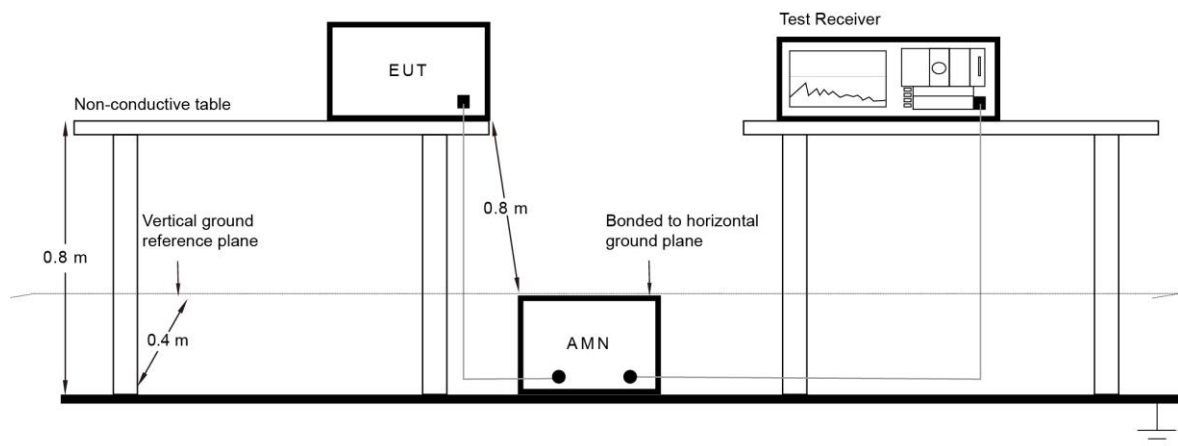
### 6.6.1. Test Limit

| FCC Part 15 Subpart C Paragraph 15.207 |                 |                 |
|----------------------------------------|-----------------|-----------------|
| Frequency (MHz)                        | QP (dB $\mu$ V) | AV (dB $\mu$ V) |
| 0.15 - 0.50                            | 66 - 56         | 56 - 46         |
| 0.50 - 5.0                             | 56              | 46              |
| 5.0 - 30                               | 60              | 50              |

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

### 6.6.2. Test Setup



### 6.6.3. Test Result

Refer to Appendix A.5.

## Appendix A - Test Result

### A.1 In-band Emission Test Result

|               |         |           |            |
|---------------|---------|-----------|------------|
| Test Engineer | Hyde Yu | Test Date | 2022/07/01 |
| Test Mode     | Mode 1  | Test Site | WZ-AC1     |

| Frequency<br>(MHz)  | Reading Level<br>(dBμV/m) | Factor<br>(dB) | Measure Level<br>(dBμV/m) | Limit (@3m)<br>(dBμV/m) | Margin<br>[dB] |
|---------------------|---------------------------|----------------|---------------------------|-------------------------|----------------|
| Face On - Coaxial   |                           |                |                           |                         |                |
| 13.347              | 19.327                    | 17.038         | 36.365                    | 80.506                  | -44.141        |
| 13.453              | 22.412                    | 17.036         | 39.448                    | 90.488                  | -51.040        |
| 13.562              | 36.438                    | 17.034         | 53.472                    | 123.999                 | -70.527        |
| 13.665              | 21.122                    | 17.032         | 38.154                    | 90.488                  | -52.334        |
| 13.770              | 18.152                    | 17.030         | 35.182                    | 80.506                  | -45.324        |
| Face Off - Coplanar |                           |                |                           |                         |                |
| 13.350              | 19.980                    | 17.038         | 37.018                    | 80.506                  | -43.488        |
| 13.488              | 22.158                    | 17.036         | 39.194                    | 90.488                  | -51.294        |
| 13.560              | 37.480                    | 17.034         | 54.514                    | 123.999                 | -69.485        |
| 13.666              | 23.200                    | 17.032         | 40.232                    | 90.488                  | -50.256        |
| 13.771              | 16.608                    | 17.030         | 33.638                    | 80.506                  | -46.868        |

#### Note

1. All measurements were performed using a loop antenna. The antenna was positioned in two orthogonal (coaxial and coplanar) and the position with the highest emission level was recorded.
2. Measurements were tested at 3m and the data was extrapolated to the specified measurement distance of 30m using the square of an inverse linear extrapolation factor (40 dB/decade) as specified in &15.31(f)(2).  

$$\text{Extrapolation Factor} = 20 \cdot \log(30/3)^2 = 40 \text{ dB}$$

$$\text{For example, Limit (@3m)} = 20 \cdot \log(106) + 40 = 80.506 \text{ dB}\mu\text{V/m}$$
3. All measurements were recorded using an EMI test receiver employing a peak detector.

## A.2 Out-Band Emission Test Result

|               |         |           |            |
|---------------|---------|-----------|------------|
| Test Engineer | Hyde Yu | Test Date | 2022/07/01 |
| Test Mode     | Mode 1  | Test Site | WZ-AC1     |

| Out-Band Emission Below 30MHz |                        |             |                        |                      |             |          |
|-------------------------------|------------------------|-------------|------------------------|----------------------|-------------|----------|
| Frequency (MHz)               | Reading Level (dBμV/m) | Factor (dB) | Measure Level (dBμV/m) | Limit (@3m) (dBμV/m) | Margin (dB) | Detector |
| Face On - Coaxial             |                        |             |                        |                      |             |          |
| 0.687                         | 20.263                 | 17.426      | 37.689                 | 70.865               | -33.176     | Peak     |
| Face Off - Coplanar           |                        |             |                        |                      |             |          |
| 1.225                         | 16.830                 | 17.499      | 34.329                 | 65.842               | -31.513     | Peak     |

| Out-Band Emission Above 30MHz |                 |                        |             |                        |                |             |          |
|-------------------------------|-----------------|------------------------|-------------|------------------------|----------------|-------------|----------|
| Polarization                  | Frequency (MHz) | Reading Level (dBμV/m) | Factor (dB) | Measure Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Detector |
| H                             | 70.740          | 10.854                 | 16.054      | 26.908                 | 40.000         | -13.092     | Peak     |
| H                             | 114.875         | 17.117                 | 15.217      | 32.334                 | 43.500         | -11.166     | Peak     |
| H                             | 140.095         | 13.682                 | 17.507      | 31.189                 | 43.500         | -12.311     | Peak     |
| H                             | 264.255         | 7.883                  | 17.115      | 24.998                 | 46.000         | -21.002     | Peak     |
| H                             | 379.685         | 9.963                  | 20.365      | 30.328                 | 46.000         | -15.672     | Peak     |
| H                             | 841.405         | 4.973                  | 28.680      | 33.653                 | 46.000         | -12.347     | Peak     |
| V                             | 40.670          | 11.696                 | 18.261      | 29.957                 | 40.000         | -10.043     | Peak     |
| V                             | 71.225          | 17.446                 | 15.978      | 33.424                 | 40.000         | -6.576      | Peak     |
| V                             | 84.320          | 20.204                 | 12.900      | 33.104                 | 40.000         | -6.896      | Peak     |
| V                             | 97.415          | 20.028                 | 12.917      | 32.945                 | 43.500         | -10.555     | Peak     |
| V                             | 118.270         | 17.417                 | 15.605      | 33.022                 | 43.500         | -10.478     | Peak     |
| V                             | 139.610         | 13.412                 | 17.469      | 30.881                 | 43.500         | -12.619     | Peak     |

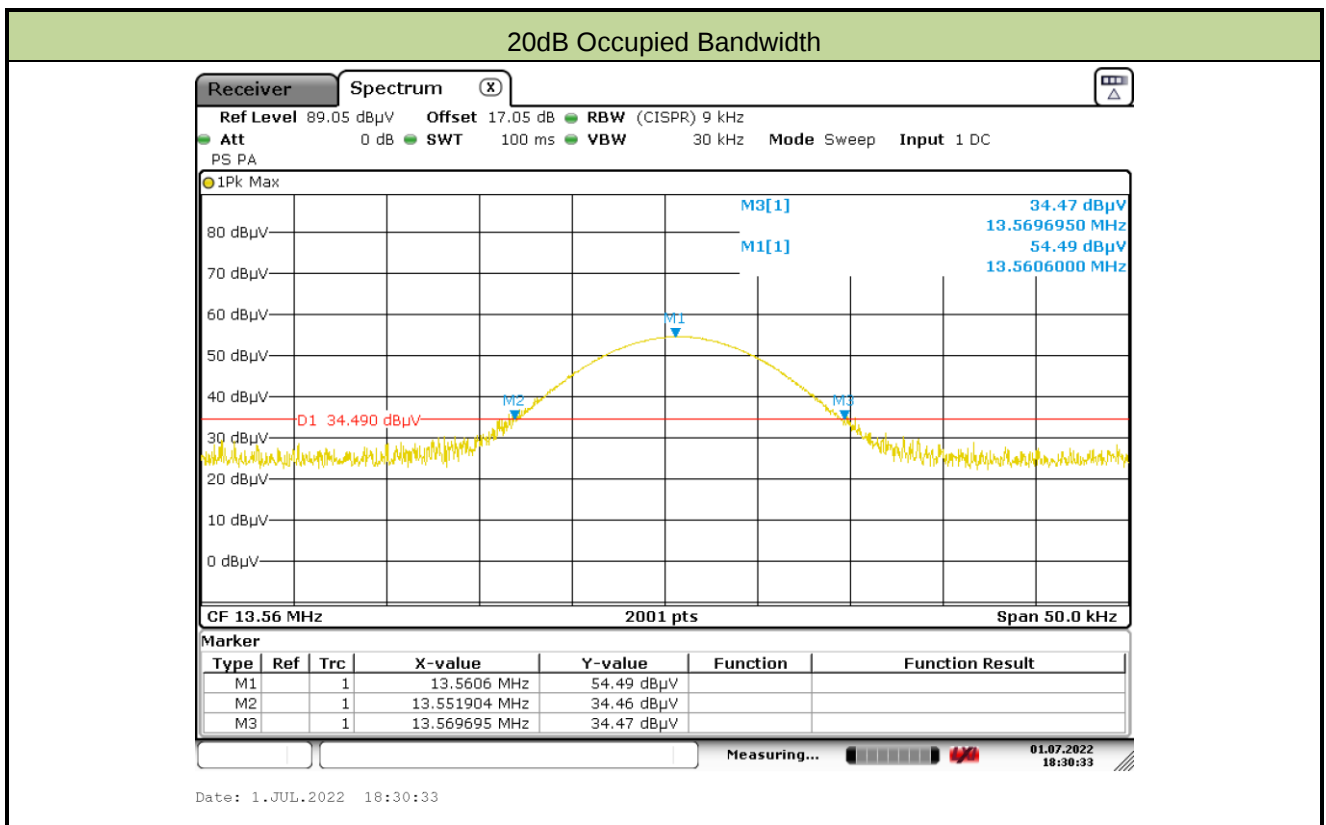
### Note

- Below 30MHz measurement was performed using a loop antenna. The antenna was positioned in two orthogonal (coaxial and coplanar) and the position with the highest emission level was recorded.
- Measurements were tested at 3m and the data was extrapolated to the specified measurement distance of 30m using the square of an inverse linear extrapolation factor (40 dB/decade) as specified in &15.31(f)(2).  
Extrapolation Factor =  $40 \times \log(30/3)^2 = 40$  dB  
For example, Limit (@3m) =  $20 \times \log(34.934) + 40 = 70.865$  dBμV/m
- All measurements were recorded using an EMI test receiver employing a peak detector.

### A.3 Occupied Bandwidth Test Result

|               |         |           |            |
|---------------|---------|-----------|------------|
| Test Engineer | Hyde Yu | Test Date | 2022/07/01 |
| Test Mode     | Mode 1  | Test Site | WZ-AC1     |

| Frequency<br>(MHz) | 20dB Occupied Bandwidth<br>(kHz) |
|--------------------|----------------------------------|
| 13.56              | 17.791                           |



#### A.4 Frequency Stability Tolerance Test Result

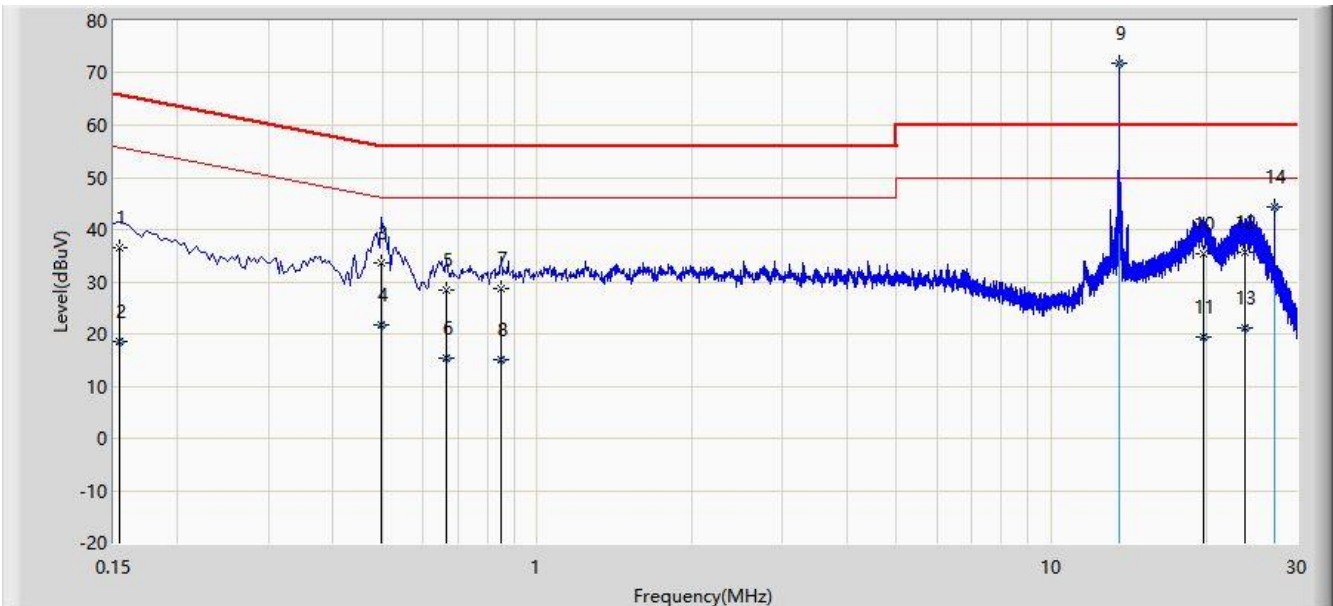
|               |         |           |            |
|---------------|---------|-----------|------------|
| Test Engineer | Hyde Yu | Test Date | 2022/07/01 |
| Test Mode     | Mode1   | Test Site | WZ-TR3     |

| Reference Voltage: 3.80V                |                  |              |                             |
|-----------------------------------------|------------------|--------------|-----------------------------|
| Deviation Limit: +/- 0.01% = +/- 1356Hz |                  |              |                             |
| Voltage                                 | Power<br>Battery | Temp<br>(°C) | Frequency Deviation<br>(Hz) |
| Normal                                  | 3.80VDC          | -20          | 737                         |
|                                         |                  | -10          | 736                         |
|                                         |                  | 0            | 735                         |
|                                         |                  | +10          | 730                         |
|                                         |                  | +20          | 729                         |
|                                         |                  | +30          | 719                         |
|                                         |                  | +40          | 702                         |
|                                         |                  | +50          | 691                         |
| Battery Endpoint                        | 3.45VDC          | + 20         | 672                         |
| Battery Upper                           | 4.35VDC          | + 20         | 689                         |

Note: Battery upper voltage is 4.35Vdc, battery endpoint voltage is 3.45Vdc, which are declared by the manufacturer.

### A.5 AC Conducted Emissions Test Result

|                                   |                          |
|-----------------------------------|--------------------------|
| Site: WZ-SR2                      | Time: 2022/07/04 - 18:01 |
| Temperature: 23.3°C               | Humidity: 65.2%          |
| Limit: FCC_Part15.207_CE_AC Power | Engineer: Helen Han      |
| Probe: ENV216_101683_Filter Off_E | Polarity: Line           |
| EUT: Mobile Computer              | Power: AC 120V/60Hz      |
| Test Mode 1                       |                          |



| No | Mark | Frequency (MHz) | Measure Level (dBμV) | Reading Level (dBμV) | Margin (dB) | Limit (dBμV) | Factor (dB) | Type |
|----|------|-----------------|----------------------|----------------------|-------------|--------------|-------------|------|
| 1  |      | 0.154           | 36.661               | 26.783               | -29.120     | 65.781       | 9.878       | QP   |
| 2  |      | 0.154           | 18.578               | 8.700                | -37.203     | 55.781       | 9.878       | AV   |
| 3  | *    | 0.498           | 33.600               | 23.652               | -22.433     | 56.033       | 9.948       | QP   |
| 4  |      | 0.498           | 21.601               | 11.653               | -24.432     | 46.033       | 9.948       | AV   |
| 5  |      | 0.666           | 28.546               | 18.597               | -27.454     | 56.000       | 9.949       | QP   |
| 6  |      | 0.666           | 15.311               | 5.362                | -30.689     | 46.000       | 9.949       | AV   |
| 7  |      | 0.850           | 28.678               | 18.714               | -27.322     | 56.000       | 9.964       | QP   |
| 8  |      | 0.850           | 15.210               | 5.246                | -30.790     | 46.000       | 9.964       | AV   |
| 9  |      | 13.558          | 71.815               | 60.736               | NaN         | NaN          | 11.080      | PK   |
| 10 |      | 19.702          | 35.464               | 23.929               | -24.536     | 60.000       | 11.535      | QP   |
| 11 |      | 19.702          | 19.482               | 7.947                | -30.518     | 50.000       | 11.535      | AV   |
| 12 |      | 23.836          | 35.658               | 23.883               | -24.342     | 60.000       | 11.774      | QP   |
| 13 |      | 23.836          | 21.273               | 9.498                | -28.727     | 50.000       | 11.774      | AV   |
| 14 |      | 27.122          | 44.440               | 32.456               | NaN         | NaN          | 11.984      | PK   |

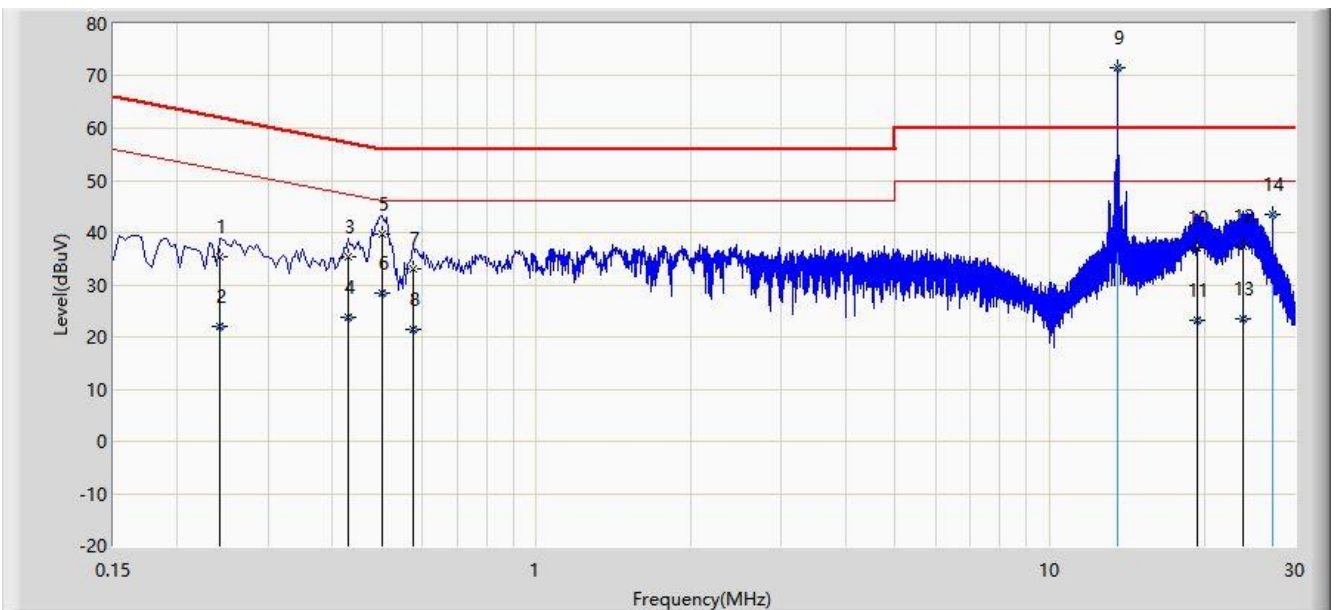
Note 1: " \* ", means this data is the worst emission level.

Note 2: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB).

Note 3: Factor (dB) = Cable Loss (dB) + LISN Factor (dB).

Note 4: The point (9) is NFC fundamental frequency and the point (14) is harmonic frequency, Data under below indicates that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

|                                   |                          |
|-----------------------------------|--------------------------|
| Site: WZ-SR2                      | Time: 2022/07/04 - 18:08 |
| Temperature: 23.3°C               | Humidity: 65.2%          |
| Limit: FCC_Part15.207_CE_AC Power | Engineer: Helen Han      |
| Probe: ENV216_101683_Filter Off_E | Polarity: Neutral        |
| EUT: Mobile Computer              | Power: AC 120V/60Hz      |
| Test Mode 1                       |                          |



| No | Mark | Frequency (MHz) | Measure Level (dBμV) | Reading Level (dBμV) | Margin (dB) | Limit (dBμV) | Factor (dB) | Type |
|----|------|-----------------|----------------------|----------------------|-------------|--------------|-------------|------|
| 1  |      | 0.242           | 35.227               | 25.310               | -26.800     | 62.027       | 9.917       | QP   |
| 2  |      | 0.242           | 22.121               | 12.205               | -29.906     | 52.027       | 9.917       | AV   |
| 3  |      | 0.430           | 35.483               | 25.534               | -21.770     | 57.253       | 9.948       | QP   |
| 4  |      | 0.430           | 23.861               | 13.912               | -23.392     | 47.253       | 9.948       | AV   |
| 5  | *    | 0.502           | 39.811               | 29.851               | -16.189     | 56.000       | 9.960       | QP   |
| 6  |      | 0.502           | 28.336               | 18.376               | -17.664     | 46.000       | 9.960       | AV   |
| 7  |      | 0.574           | 33.129               | 23.163               | -22.871     | 56.000       | 9.967       | QP   |
| 8  |      | 0.574           | 21.470               | 11.504               | -24.530     | 46.000       | 9.967       | AV   |
| 9  |      | 13.562          | 71.463               | 60.364               | NaN         | NaN          | 11.099      | PK   |
| 10 |      | 19.430          | 37.111               | 25.571               | -22.889     | 60.000       | 11.540      | QP   |
| 11 |      | 19.430          | 23.044               | 11.504               | -26.956     | 50.000       | 11.540      | AV   |
| 12 |      | 23.826          | 37.389               | 25.631               | -22.611     | 60.000       | 11.758      | QP   |
| 13 |      | 23.826          | 23.521               | 11.763               | -26.479     | 50.000       | 11.758      | AV   |
| 14 |      | 27.118          | 43.369               | 31.385               | NaN         | NaN          | 11.984      | PK   |

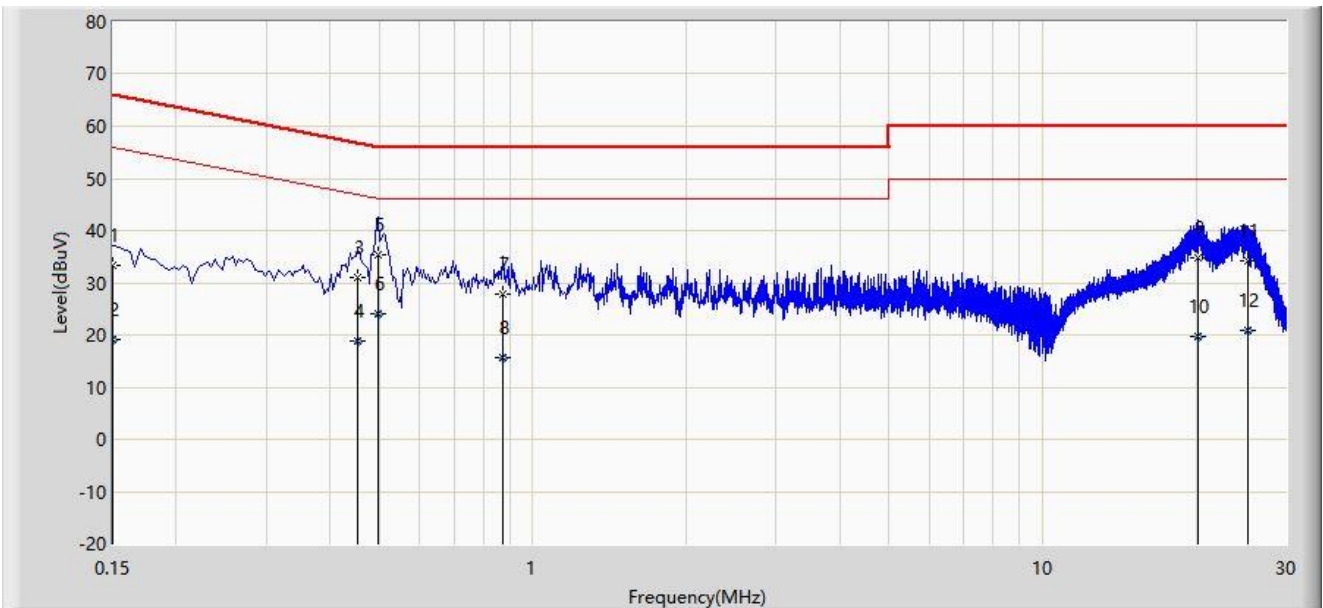
Note 1: " \* ", means this data is the worst emission level.

Note 2: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB).

Note 3: Factor (dB) = Cable Loss (dB) + LISN Factor (dB).

Note 4: The point (9) is NFC fundamental frequency and the point (14) is harmonic frequency, Data under below indicates that when the antenna terminal is terminated the fundamental amplitude is lowering below the limit line.

|                                   |                          |
|-----------------------------------|--------------------------|
| Site: WZ-SR2                      | Time: 2022/07/04 - 19:17 |
| Temperature: 23.6°C               | Humidity: 63.3%          |
| Limit: FCC_Part15.207_CE_AC Power | Engineer: Helen Han      |
| Probe: ENV216_101683_Filter Off_E | Polarity: Line           |
| EUT: Mobile Computer              | Power: AC 120V/60Hz      |
| Note: Antenna port terminated     |                          |



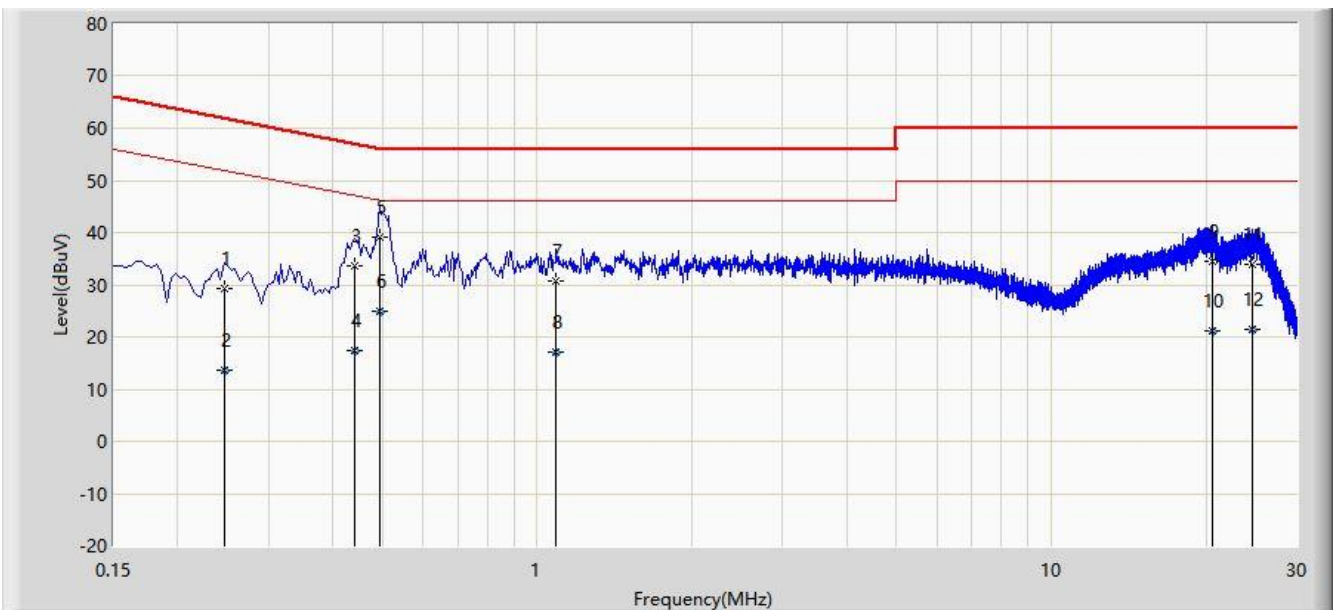
| No | Mark | Frequency (MHz) | Measure Level (dBμV) | Reading Level (dBμV) | Margin (dB) | Limit (dBμV) | Factor (dB) | Type |
|----|------|-----------------|----------------------|----------------------|-------------|--------------|-------------|------|
| 1  |      | 0.150           | 33.289               | 23.412               | -32.711     | 66.000       | 9.878       | QP   |
| 2  |      | 0.150           | 19.064               | 9.186                | -36.936     | 56.000       | 9.878       | AV   |
| 3  |      | 0.454           | 31.131               | 21.192               | -25.671     | 56.802       | 9.939       | QP   |
| 4  |      | 0.454           | 18.708               | 8.770                | -28.093     | 46.802       | 9.939       | AV   |
| 5  | *    | 0.498           | 35.417               | 25.469               | -20.617     | 56.033       | 9.948       | QP   |
| 6  |      | 0.498           | 23.977               | 14.029               | -22.056     | 46.033       | 9.948       | AV   |
| 7  |      | 0.874           | 27.684               | 17.718               | -28.316     | 56.000       | 9.967       | QP   |
| 8  |      | 0.874           | 15.511               | 5.545                | -30.489     | 46.000       | 9.967       | AV   |
| 9  |      | 20.150          | 34.878               | 23.310               | -25.122     | 60.000       | 11.569      | QP   |
| 10 |      | 20.150          | 19.730               | 8.162                | -30.270     | 50.000       | 11.569      | AV   |
| 11 |      | 25.194          | 34.210               | 22.357               | -25.790     | 60.000       | 11.854      | QP   |
| 12 |      | 25.194          | 20.825               | 8.972                | -29.175     | 50.000       | 11.854      | AV   |

Note 1: " \* ", means this data is the worst emission level.

Note 2: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB).

Note 3: Factor (dB) = Cable Loss (dB) + LISN Factor (dB).

|                                   |                          |
|-----------------------------------|--------------------------|
| Site: WZ-SR2                      | Time: 2022/07/04 - 19:22 |
| Temperature: 23.6°C               | Humidity: 63.3%          |
| Limit: FCC_Part15.207_CE_AC Power | Engineer: Helen Han      |
| Probe: ENV216_101683_Filter Off_E | Polarity: Neutral        |
| EUT: Mobile Computer              | Power: AC 120V/60Hz      |
| Note: Antenna port terminated     |                          |



| No | Mark | Frequency (MHz) | Measure Level (dBμV) | Reading Level (dBμV) | Margin (dB) | Limit (dBμV) | Factor (dB) | Type |
|----|------|-----------------|----------------------|----------------------|-------------|--------------|-------------|------|
| 1  |      | 0.246           | 29.318               | 19.401               | -32.573     | 61.891       | 9.918       | QP   |
| 2  |      | 0.246           | 13.507               | 3.589                | -38.384     | 51.891       | 9.918       | AV   |
| 3  |      | 0.442           | 33.614               | 23.664               | -23.410     | 57.024       | 9.950       | QP   |
| 4  |      | 0.442           | 17.387               | 7.437                | -29.637     | 47.024       | 9.950       | AV   |
| 5  | *    | 0.494           | 39.099               | 29.140               | -17.001     | 56.100       | 9.958       | QP   |
| 6  |      | 0.494           | 24.973               | 15.015               | -21.127     | 46.100       | 9.958       | AV   |
| 7  |      | 1.090           | 30.616               | 20.614               | -25.384     | 56.000       | 10.002      | QP   |
| 8  |      | 1.090           | 17.086               | 7.084                | -28.914     | 46.000       | 10.002      | AV   |
| 9  |      | 20.546          | 34.598               | 22.985               | -25.402     | 60.000       | 11.614      | QP   |
| 10 |      | 20.546          | 21.030               | 9.417                | -28.970     | 50.000       | 11.614      | AV   |
| 11 |      | 24.658          | 33.983               | 22.188               | -26.017     | 60.000       | 11.795      | QP   |
| 12 |      | 24.658          | 21.555               | 9.760                | -28.445     | 50.000       | 11.795      | AV   |

Note 1: " \* ", means this data is the worst emission level.

Note 2: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB).

Note 3: Factor (dB) = Cable Loss (dB) + LISN Factor (dB).

## **Appendix B - Test Setup Photograph**

Refer to “2206RSU017-UT” file.

## **Appendix C - EUT Photograph**

Refer to “2206RSU017-UE” file.

---

The End

---