

**FCC 47 CFR PART 15 SUBPART C  
ISED RSS-210 ISSUE 10**



**CERTIFICATION TEST REPORT**

*For*

**Smart deadbolt lock**

**MODEL NUMBER: H1**

**REPORT NUMBER: E04A24011238F00101**

**ISSUE DATE: March 6, 2024**

**FCC ID: 2BEW6-H1**

**IC: 32057-H1**

*Prepared for*

**Shenzhen Fenda Smart Home Co., Ltd.**

**Floors 7-9, Building 2, Phase II, Fenda Industrial Park, Baoyuan Community,  
Shiyan Street, Bao'an District, Shenzhen, China**

*Prepared by*

**Guangdong Global Testing Technology Co., Ltd.**

**Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park,  
Dongguan city, Guangdong, People's Republic of China, 523808**

**This report shall not be reproduced, except in full, without the written approval of  
Guangdong Global Testing Technology Co., Ltd.**

Revision History

| Rev. | Issue Date    | Revisions     | Revised By |
|------|---------------|---------------|------------|
| V0   | March 6, 2024 | Initial Issue |            |

| Summary of Test Results                                                                                                                                                                                                                                                                                                                                               |                                                                   |                                                                                                         |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------|
| Clause                                                                                                                                                                                                                                                                                                                                                                | Test Items                                                        | FCC Rules                                                                                               | Test Results |
| 1                                                                                                                                                                                                                                                                                                                                                                     | 99 % Emission Bandwidth and 20 dB Bandwidth                       | CFR 47 FCC §15.215 (c)<br>RSS-Gen Clause 6.7                                                            | PASS         |
| 2                                                                                                                                                                                                                                                                                                                                                                     | Transmitter Frequency Stability (Temperature & Voltage Variation) | CFR 47 FCC §15.225(e)<br>ISED RSS-Gen Clause 6.11<br>ISED RSS-210 Annex B.6                             | PASS         |
| 3                                                                                                                                                                                                                                                                                                                                                                     | Fundamental Field Strength                                        | CFR 47 FCC §5.225(a)(b)(c)(d)<br>ISED RSS-Gen Clause 6.12<br>ISED RSS-210 Annex B.6                     | PASS         |
| 4                                                                                                                                                                                                                                                                                                                                                                     | Radiated Emissions                                                | CFR 47 FCC§15.209(a)<br>CFR 47 FCC§15.225(d)<br>ISED RSS-Gen Clause 6.13<br>ISED RSS-210 Annex B.6      | PASS         |
| 5                                                                                                                                                                                                                                                                                                                                                                     | Band Edge Radiated Emissions                                      | CFR 47 FCC §15.209(a)<br>CFR 47 FCC §15.225(c)(d)<br>ISED RSS-Gen Clause 6.13<br>ISED RSS-210 Annex B.6 | PASS         |
| 6                                                                                                                                                                                                                                                                                                                                                                     | Conducted Emission Test for AC Power Port                         | CFR 47 FCC §15.207<br>ISED RSS-Gen Clause 8.8                                                           | PASS         |
| 7                                                                                                                                                                                                                                                                                                                                                                     | Antenna Requirement                                               | CFR 47 FCC §15.203<br>ISED RSS-Gen Clause 6.8                                                           | Pass         |
| <p>Note 1: This test report is only published to and used by the applicant, and it is not for evidence purpose in China.</p> <p>Note 2: The measurement result for the sample received is &lt;Pass&gt; according to &lt; CFR 47 FCC PART 15 SUBPART C, ISED RSS-210 ISSUE 10 and ISED RSS-GEN Issue 5 &gt; when &lt;Accuracy Method&gt; decision rule is applied.</p> |                                                                   |                                                                                                         |              |

---

## TABLE OF CONTENTS

|                                                            |           |
|------------------------------------------------------------|-----------|
| <b>1. ATTESTATION OF TEST RESULTS .....</b>                | <b>5</b>  |
| <b>2. TEST METHODOLOGY .....</b>                           | <b>6</b>  |
| <b>3. FACILITIES AND ACCREDITATION .....</b>               | <b>6</b>  |
| <b>4. CALIBRATION AND UNCERTAINTY .....</b>                | <b>7</b>  |
| 4.1. MEASURING INSTRUMENT CALIBRATION .....                | 7         |
| 4.2. MEASUREMENT UNCERTAINTY .....                         | 7         |
| <b>5. EQUIPMENT UNDER TEST .....</b>                       | <b>8</b>  |
| 5.1. DESCRIPTION OF EUT .....                              | 8         |
| 5.2. MAXIMUM FIELD STRENGTH .....                          | 8         |
| 5.3. DESCRIPTION OF AVAILABLE ANTENNAS .....               | 8         |
| 5.4. TEST ENVIRONMENT .....                                | 9         |
| 5.5. DESCRIPTION OF TEST SETUP .....                       | 10        |
| 5.6. MEASURING INSTRUMENT AND SOFTWARE USED .....          | 11        |
| <b>6. ANTENNA PORT TEST RESULTS .....</b>                  | <b>13</b> |
| 6.1. 99 % BANDWIDTH .....                                  | 13        |
| 6.2. TRANSMITTER FREQUENCY STABILITY .....                 | 15        |
| <b>7. RADIATED EMISSION TEST RESULTS .....</b>             | <b>17</b> |
| 7.1. FIELD STRENGTH OF INTENTIONAL EMISSIONS .....         | 24        |
| 7.2. SPURIOUS EMISSIONS BELOW 1 GHz AND ABOVE 30 MHz ..... | 26        |
| 7.3. SPURIOUS EMISSIONS BELOW 30 MHz .....                 | 28        |
| <b>8. AC POWER LINE CONDUCTED EMISSIONS .....</b>          | <b>32</b> |
| <b>9. ANTENNA REQUIREMENTS .....</b>                       | <b>36</b> |

## 1. ATTESTATION OF TEST RESULTS

### Applicant Information

Company Name: Shenzhen Fenda Smart Home Co., Ltd.  
Address: Floors 7-9, Building 2, Phase II, Fenda Industrial Park, Baoyuan Community, Shiyan Street, Bao'an District, Shenzhen, China

### Manufacturer Information

Company Name: Shenzhen Fenda Smart Home Co., Ltd.  
Address: Floors 7-9, Building 2, Phase II, Fenda Industrial Park, Baoyuan Community, Shiyan Street, Bao'an District, Shenzhen, China

### Factory Information

Company Name: Shenzhen Fenda Smart Home Co., Ltd.  
Address: Floors 7-9, Building 2, Phase II, Fenda Industrial Park, Baoyuan Community, Shiyan Street, Bao'an District, Shenzhen, China

### EUT Information

EUT Name: Smart deadbolt lock  
Model: H1  
Brand: /  
Sample Received Date: January 29, 2024  
Sample Status: Normal  
Sample ID: A24011238 002  
Date of Tested: January 30, 2024 to March 5, 2024  
Hardware version: V1.1  
Software version: V10.01.26

| APPLICABLE STANDARDS         |              |
|------------------------------|--------------|
| STANDARD                     | TEST RESULTS |
| CFR 47 FCC PART 15 SUBPART C | PASS         |
| ISED RSS-210 ISSUE 10        | PASS         |
| ISED RSS-GEN Issue 5         | PASS         |

Prepared By:



Joson Peng  
Project Engineer

Approved By:



Shawn Wen  
Laboratory Manager

Checked By:



Alan He  
Manager



## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 414788 D01 Radiated Test Site v01r01, FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013, ISED RSS-210 ISSUE 10 and RSS-GEN Issue 5.

## 3. FACILITIES AND ACCREDITATION

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accreditation Certificate | <p><b>A2LA (Certificate No.: 6947.01)</b><br/>Guangdong Global Testing Technology Co., Ltd.<br/>has been assessed and proved to be in compliance with A2LA.</p> <p><b>FCC (FCC Designation No.: CN1343)</b><br/>Guangdong Global Testing Technology Co., Ltd.<br/>has been recognized to perform compliance testing on equipment<br/>subject to Supplier's Declaration of Conformity (SDoC) and<br/>Certification rules</p> <p><b>ISED (Company No.: 30714)</b><br/>Guangdong Global Testing Technology Co., Ltd.<br/>has been registered and fully described in a report filed with ISED.<br/>The Company Number is 30714 and the test lab Conformity<br/>Assessment Body Identifier (CABID) is CN0148.</p> |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Note: All tests measurement facilities use to collect the measurement data are located at Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong, People's Republic of China, 523808

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognize national standards.

### 4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| 1. Test Items                                                                                                                                    | k    | Uncertainty                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------------------------------|
| DTS Bandwidth                                                                                                                                    | 1.96 | ±9.2 PPM                                                                                                    |
| 20dB Emission Bandwidth                                                                                                                          | 1.96 | ±9.2 PPM                                                                                                    |
| Carrier Frequency Separation                                                                                                                     | 1.96 | ±9.2 PPM                                                                                                    |
| Time of Occupancy                                                                                                                                | 1.96 | ±0.57%                                                                                                      |
| Conducted Output Power                                                                                                                           | 1.96 | ±1.5 dB                                                                                                     |
| Power Spectral Density Level                                                                                                                     | 1.96 | ±1.9 dB                                                                                                     |
| Conducted Spurious Emission                                                                                                                      | 1.96 | 9 kHz-30 MHz: ± 0.95 dB<br>30 MHz-1 GHz: ± 1.5 dB<br>1GHz-12.75GHz: ± 1.8 dB<br>12.75 GHz-26.5 GHz: ± 2.1dB |
| Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96. |      |                                                                                                             |

| Test Item                                                                                                                                     | Measurement Frequency Range | K | U(dB) |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---|-------|
| Conducted emissions from the AC mains power ports (AMN)                                                                                       | 150 kHz ~ 30 MHz            | 2 | 3.37  |
| Radiated emissions                                                                                                                            | 9 kHz ~ 30 MHz              | 2 | 4.16  |
| Radiated emissions                                                                                                                            | 30 MHz ~ 1 GHz              | 2 | 3.79  |
| Radiated emissions                                                                                                                            | 1 GHz ~ 18 GHz              | 2 | 5.62  |
| Radiated emissions                                                                                                                            | 18 GHz ~ 40 GHz             | 2 | 5.54  |
| Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2. |                             |   |       |

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

|                     |                     |           |
|---------------------|---------------------|-----------|
| EUT Name            | Smart deadbolt lock |           |
| Model               | H1                  |           |
| Series Model        | /                   |           |
| Model Difference    | /                   |           |
| Product Description | Operation Frequency | 13.56 MHz |
| Ratings             | 5Vdc or 6Vdc        |           |
| Power Supply        | USB port            | DC 5V     |
|                     | Battery             | DC 6V     |

### 5.2. MAXIMUM FIELD STRENGTH

| Frequency (MHz) | Max Peak field strength (dB $\mu$ V/m) |
|-----------------|----------------------------------------|
| 13.56           | 54.53                                  |

### 5.3. DESCRIPTION OF AVAILABLE ANTENNAS

| Frequency (MHz) | Antenna Type | Antenna Gain (dBi) |
|-----------------|--------------|--------------------|
| 13.56           | PVC          | 0                  |

Note: The value of the antenna gain was declared by customer.



#### 5.4. TEST ENVIRONMENT

| Environment Parameter | Selected Values During Tests |            |
|-----------------------|------------------------------|------------|
| Relative Humidity     | 55 ~ 65 %                    |            |
| Atmospheric Pressure: | 1025 Pa                      |            |
| Temperature           | TN                           | 23 ~ 28 °C |
| Voltage:              | VL                           | N/A        |
|                       | VN                           | DC 6.0 V   |
|                       | VH                           | N/A        |

Note: VL= Lower Extreme Test Voltage

VN= Nominal Voltage

VH= Upper Extreme Test Voltage

TN= Normal Temperature

## 5.5. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

| Item | Equipment | Brand Name | Model Name |
|------|-----------|------------|------------|
| 1    | Laptop    | Lenovo     | T14        |
| 2    | Test Card | N/A        | N/A        |

### ACCESSORY

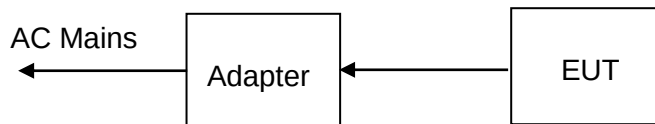
| Item | Accessory | Brand Name | Model Name | Description                                                                                      |
|------|-----------|------------|------------|--------------------------------------------------------------------------------------------------|
| 1    | Adapter   | XIAOMI     | MDY-11-EX  | Input: 100-240Vac 50/60Hz<br>Output: 5Vdc 3A, 9Vdc 3A, 12Vdc 2.25A,<br>20Vdc 1.35A, 11Vdc 3A Max |

### TEST SETUP

The EUT can continue work normally when a card touched.

### SETUP DIAGRAM FOR TESTS

#### AC conducted emission :



#### Radiated Emission:



#### RF conducted:



## 5.6. MEASURING INSTRUMENT AND SOFTWARE USED

| Test Equipment of Conducted RF      |                 |                      |             |            |            |
|-------------------------------------|-----------------|----------------------|-------------|------------|------------|
| Equipment                           | Manufacturer    | Model No.            | Serial No.  | Last Cal.  | Due Date   |
| Spectrum Analyzer                   | Rohde & Schwarz | FSV40                | 102257      | 2023/09/18 | 2024/09/17 |
| Spectrum Analyzer                   | KEYSIGHT        | N9020A               | MY51285127  | 2023/09/18 | 2024/09/17 |
| EXG Analog Signal Generator         | KEYSIGHT        | N5173B               | MY61253075  | 2023/09/18 | 2024/09/17 |
| Vector Signal Generator             | Rohde & Schwarz | SMM100A              | 101899      | 2023/09/18 | 2024/09/17 |
| RF Control box                      | MWRF-test       | MW100-RFCB           | MW220926GTG | 2023/09/18 | 2024/09/17 |
| Wideband Radio Communication Tester | Rohde & Schwarz | CMW270               | 102792      | 2023/09/18 | 2024/09/17 |
| Wideband Radio Communication Tester | Rohde & Schwarz | CMW500               | 103235      | 2023/09/18 | 2024/09/17 |
| temperature humidity chamber        | Espec           | SH-241               | SH-241-2014 | 2023/09/18 | 2024/09/17 |
| RF Test Software                    | MWRF-test       | MTS8310E (Ver. V2/0) | N/A         | N/A        | N/A        |

| Test Equipment of Radiated emissions below 1GHz |                 |                         |            |            |            |
|-------------------------------------------------|-----------------|-------------------------|------------|------------|------------|
| Equipment                                       | Manufacturer    | Model No.               | Serial No. | Last Cal.  | Due Date   |
| 3m Semi-anechoic Chamber                        | ETS             | 9m*6m*6m                | Q2146      | 2022/08/30 | 2025/08/29 |
| EMI Test Receiver                               | Rohde & Schwarz | ESCI3                   | 101409     | 2023/09/18 | 2024/09/17 |
| Spectrum Analyzer                               | KEYSIGHT        | N9020A                  | MY51283932 | 2023/09/18 | 2024/09/17 |
| Pre-Amplifier                                   | HzEMC           | HPA-9K0130              | HYP A21001 | 2023/09/18 | 2024/09/17 |
| Biconilog Antenna                               | Schwarzbeck     | VULB 9168               | 01315      | 2022/10/10 | 2025/10/09 |
| Biconilog Antenna                               | ETS             | 3142E                   | 00243646   | 2022/03/23 | 2025/03/22 |
| Loop Antenna                                    | ETS             | 6502                    | 243668     | 2022/03/30 | 2025/03/29 |
| Test Software                                   | Farad           | EZ-EMC (Ver.FA-03A2 RE) | N/A        | N/A        | N/A        |

| Test Equipment of Radiated emissions above 1GHz |                 |            |            |            |            |
|-------------------------------------------------|-----------------|------------|------------|------------|------------|
| Equipment                                       | Manufacturer    | Model No.  | Serial No. | Last Cal.  | Due Date   |
| 3m Semi-anechoic Chamber                        | ETS             | 9m*6m*6m   | Q2149      | 2022/08/30 | 2025/08/29 |
| Spectrum Analyzer                               | Rohde & Schwarz | FSV40      | 101413     | 2023/09/18 | 2024/09/17 |
| Spectrum Analyzer                               | KEYSIGHT        | N9020A     | MY51283932 | 2023/09/18 | 2024/09/17 |
| Pre-Amplifier                                   | A-INFO          | HPA-1G1850 | HYP A21003 | 2023/09/18 | 2024/09/17 |
| Horn antenna                                    | A-INFO          | 3117       | 246069     | 2022/03/11 | 2025/03/10 |

|               |       |                                |            |            |            |
|---------------|-------|--------------------------------|------------|------------|------------|
| Pre-Amplifier | ZKJC  | HPA-184057                     | HYP A21004 | 2023/09/18 | 2024/09/17 |
| Horn antenna  | ZKJC  | 3116C                          | 246265     | 2022/03/29 | 2025/03/28 |
| Test Software | Farad | EZ-EMC<br>(Ver.FA-03A2<br>RE+) | N/A        | N/A        | N/A        |

| Test Equipment of Conducted emissions |                 |                                    |            |            |            |
|---------------------------------------|-----------------|------------------------------------|------------|------------|------------|
| Equipment                             | Manufacturer    | Model No.                          | Serial No. | Last Cal.  | Due Date   |
| Shielded Room                         | CHENG YU        | 8m*5m*4m                           | N/A        | 2022/10/29 | 2025/10/28 |
| EMI Test Receiver                     | Rohde & Schwarz | ESR3                               | 102647     | 2023/09/18 | 2024/09/17 |
| LISN/AMN                              | Rohde & Schwarz | ENV216                             | 102843     | 2023/09/18 | 2024/09/17 |
| NNLK 8129 RC                          | Schwarzbeck     | NNLK 8129 RC                       | 5046       | 2023/09/18 | 2024/09/17 |
| Test Software                         | Farad           | EZ-EMC (Ver.<br>EMC-con-3A1<br>1+) | N/A        | N/A        | N/A        |

## 6. ANTENNA PORT TEST RESULTS

### 6.1. 99 % BANDWIDTH AND 20 DB BANDWIDTH

#### LIMITS

| FCC Part15 (15.247) Subpart C<br>RSS-247 ISSUE 2 |                                                |                              |
|--------------------------------------------------|------------------------------------------------|------------------------------|
| Section                                          | Test Item                                      | Limit                        |
| ISED RSS-Gen Clause<br>6.7 Issue 5               | 99 % Occupied Bandwidth<br>and 20 dB Bandwidth | For reporting purposes only. |

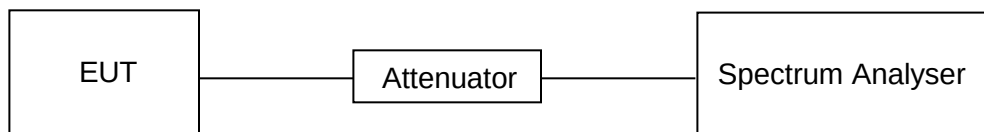
#### TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

|                  |                                                |
|------------------|------------------------------------------------|
| Center Frequency | The center frequency of the channel under test |
| Detector         | Peak                                           |
| RBW              | 1 % to 5 % of the occupied bandwidth           |
| VBW              | approximately 3×RBW                            |
| Trace            | Max hold                                       |
| Sweep            | Auto couple                                    |

Allow the trace to stabilize and 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 99 % relative to the maximum level measured in the fundamental emission.

#### TEST SETUP

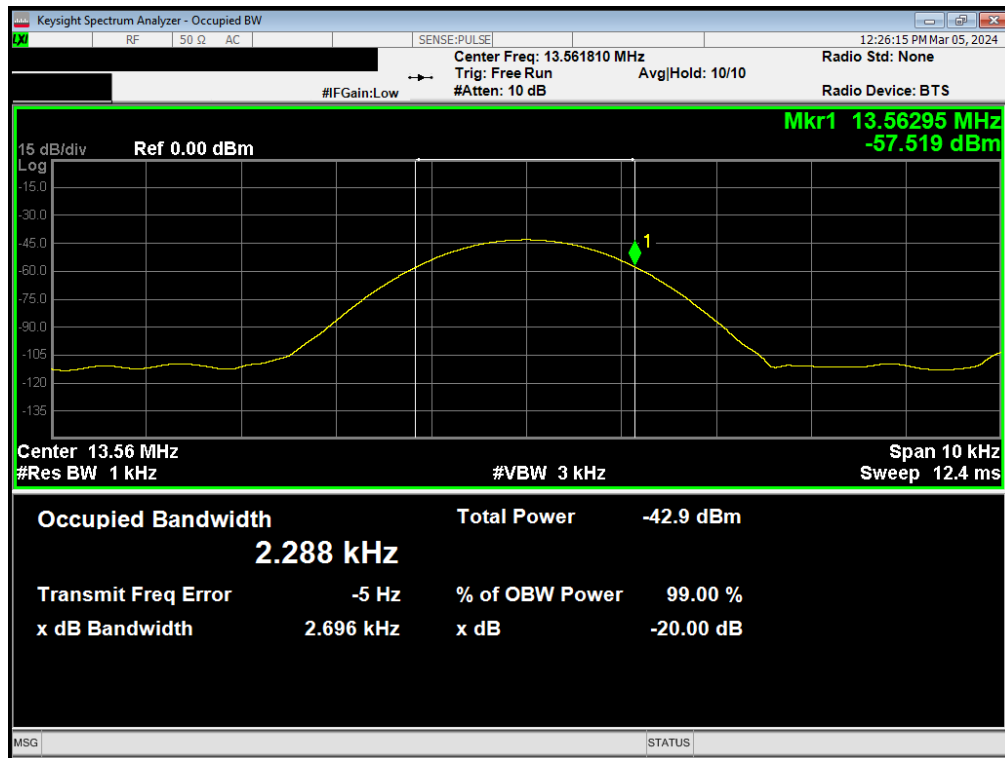


#### TEST ENVIRONMENT

|                     |         |                   |        |
|---------------------|---------|-------------------|--------|
| Temperature         | 23.5 °C | Relative Humidity | 57.0 % |
| Atmosphere Pressure | 101 kPa | Test Voltage      | DC 6 V |

#### RESULTS

| Frequency<br>(MHz) | 99 % bandwidth<br>(kHz) | 20 dB bandwidth<br>(kHz) |
|--------------------|-------------------------|--------------------------|
| 13.56              | 2.288                   | 2.696                    |



## 6.2. TRANSMITTER FREQUENCY STABILITY

### LIMITS

CFR 47 FCC §15.225(e)

ISED RSS-210 Annex B.6

The frequency tolerance of the carrier signal shall be maintained within  $\pm 0.01$  % of the operating frequency over a temperature variation of  $-20$  degrees to  $+ 50$  degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85 % to 115 % of the rated supply voltage at a temperature of 20 degrees C.

### TEST SETUP AND PROCEDURE

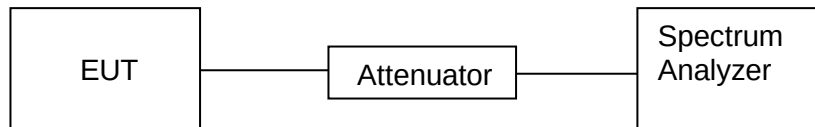
Connect the UUT to the spectrum analyser and use the following settings:

|                  |                                                              |
|------------------|--------------------------------------------------------------|
| Center Frequency | The center frequency of the channel under test               |
| Detector         | PEAK                                                         |
| RBW              | 10 kHz                                                       |
| VBW              | $\geq 3 \times \text{RBW}$                                   |
| Span             | Encompass the entire emissions bandwidth (EBW) of the signal |
| Trace            | Max hold                                                     |
| Sweep time       | Auto                                                         |

Allow the trace to stabilize, find the peak value of the power envelope and record the frequency, then calculated the frequency drift.

The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.

### TEST SETUP



**TEST ENVIRONMENT**

|                     |         |                   |        |
|---------------------|---------|-------------------|--------|
| Temperature         | 23.9 °C | Relative Humidity | 56.2 % |
| Atmosphere Pressure | 101 kPa | Test Voltage      | DC 6V  |

**TEST RESULTS**

Maximum frequency error of the EUT with variations in ambient temperature

| Temperature<br>(°C) | Time after Start- |             |             |             |
|---------------------|-------------------|-------------|-------------|-------------|
|                     | 0 minutes         | 2 minutes   | 5 minutes   | 10 minutes  |
| NT                  | 13.5606 MHz       | 13.5605 MHz | 13.5606 MHz | 13.5606 MHz |
| LT                  | 13.5606 MHz       | 13.5605 MHz | 13.5603 MHz | 13.5605 MHz |
| HT                  | 13.5605 MHz       | 13.5606 MHz | 13.5606 MHz | 13.5606 MHz |

Maximum frequency error of the EUT with variations in nominal operating voltage at an ambient normal temperature

| Supply Voltage (V) | Nominal Frequency (MHz) | Measured Frequency (MHz) | Frequency Error (Hz) | Frequency Error (%) | Limit (%) | Margin (%) | Result |
|--------------------|-------------------------|--------------------------|----------------------|---------------------|-----------|------------|--------|
| 5.1                | 13.56                   | 13.5608                  | 800                  | 0.006               | 0.01      | 0.004      | Pass   |
| 6.0                | 13.56                   | 13.5606                  | 600                  | 0.004               | 0.01      | 0.006      | Pass   |
| 6.9                | 13.56                   | 13.5607                  | 700                  | 0.005               | 0.01      | 0.005      | Pass   |



## 7. RADIATED EMISSION TEST RESULTS

### LIMITS

Fundamental field strength

|                        |                                                 |
|------------------------|-------------------------------------------------|
| FCC Reference:         | Part 15.225(a)(b)(c)(d) & 15.209(a)             |
| ISED Canada Reference: | RSS-Gen 6.13 & RSS-210 B.6 & RSS-GEN Clause 8.9 |
| Test Method Used:      | ANSI C63.10 Sections 6.3, 6.4 and 6.5           |

| Frequency<br>(MHz)          | Field Strength<br>( $\mu\text{V/m}$ ) | Field Strength<br>(dB $\mu\text{V/m}$ ) | Measured Distance<br>(Meters) |
|-----------------------------|---------------------------------------|-----------------------------------------|-------------------------------|
| 13.553-13.567               | 15848                                 | 84                                      | 30                            |
| 13.410-13.553/13.567-13.710 | 334                                   | 50.47                                   | 30                            |
| 13.110-13.410/13.710-14.010 | 106                                   | 40.51                                   | 30                            |

Note(s):

1. The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

2. The limit is specified at a test distance of 30 meters. However, as specified by FCC Section 15.31 (f)(2) / RSS-Gen Section 6.4, measurements may be performed at a closer distance and the measured level corrected to the specified measurement distance by using the square of an inverse linear distance extrapolation factor (40dB/decade).

## Radiation Disturbance Test Limit for FCC (Class B) (9 kHz-1 GHz)

| Frequency (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|-----------------|-----------------------------------|-------------------------------|
| 0.009~0.490     | 2400/F(kHz)                       | 300                           |
| 0.490~1.705     | 24000/F(kHz)                      | 30                            |
| 1.705~30.0      | 30                                | 30                            |
| 30~88           | 100                               | 3                             |
| 88~216          | 150                               | 3                             |
| 216~960         | 200                               | 3                             |
| 960~1000        | 500                               | 3                             |

Note: 1) At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

(2) At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). This paragraph (f) shall not apply to Access BPL devices operating below 30 MHz.

## Restricted bands of operation

| 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> ) |
| 13.36-13.41              |                     |               |                  |

Note: <sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup>Above 38.6c

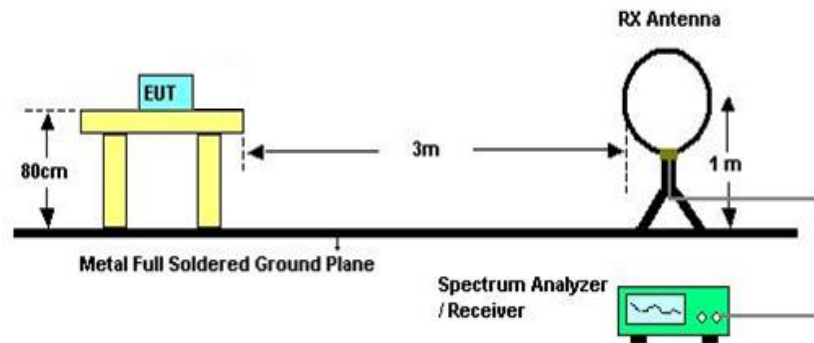
IC Restricted bands please refer to ISED RSS-GEN Clause 8.10

| Table 7 – Restricted frequency bands <sup>Note 1</sup> |                       |               |
|--------------------------------------------------------|-----------------------|---------------|
| MHz                                                    | MHz                   | GHz           |
| 0.090 - 0.110                                          | 149.9 - 150.05        | 9.0 - 9.2     |
| 0.495 - 0.505                                          | 156.52475 - 156.52525 | 9.3 - 9.5     |
| 2.1735 - 2.1905                                        | 156.7 - 156.9         | 10.6 - 12.7   |
| 3.020 - 3.026                                          | 162.0125 - 167.17     | 13.25 - 13.4  |
| 4.125 - 4.128                                          | 167.72 - 173.2        | 14.47 - 14.5  |
| 4.17725 - 4.17775                                      | 240 - 285             | 15.35 - 16.2  |
| 4.20725 - 4.20775                                      | 322 - 335.4           | 17.7 - 21.4   |
| 5.677 - 5.683                                          | 399.9 - 410           | 22.01 - 23.12 |
| 6.215 - 6.218                                          | 608 - 614             | 23.6 - 24.0   |
| 6.26775 - 6.26825                                      | 960 - 1427            | 31.2 - 31.8   |
| 6.31175 - 6.31225                                      | 1435 - 1626.5         | 36.43 - 36.5  |
| 8.291 - 8.294                                          | 1645.5 - 1646.5       | Above 38.6    |
| 8.362 - 8.366                                          | 1660 - 1710           |               |
| 8.37625 - 8.38675                                      | 1718.8 - 1722.2       |               |
| 8.41425 - 8.41475                                      | 2200 - 2300           |               |
| 12.29 - 12.293                                         | 2310 - 2390           |               |
| 12.51975 - 12.52025                                    | 2483.5 - 2500         |               |
| 12.57675 - 12.57725                                    | 2655 - 2900           |               |
| 13.36 - 13.41                                          | 3260 - 3267           |               |
| 16.42 - 16.423                                         | 3332 - 3339           |               |
| 16.69475 - 16.69525                                    | 3345.8 - 3358         |               |
| 16.80425 - 16.80475                                    | 3500 - 4400           |               |
| 25.5 - 25.67                                           | 4500 - 5150           |               |
| 37.5 - 38.25                                           | 5350 - 5460           |               |
| 73 - 74.6                                              | 7250 - 7750           |               |
| 74.8 - 75.2                                            | 8025 - 8500           |               |
| 108 - 138                                              |                       |               |

**Note 1:** Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

## TEST SETUP AND PROCEDURE

Below 30 MHz

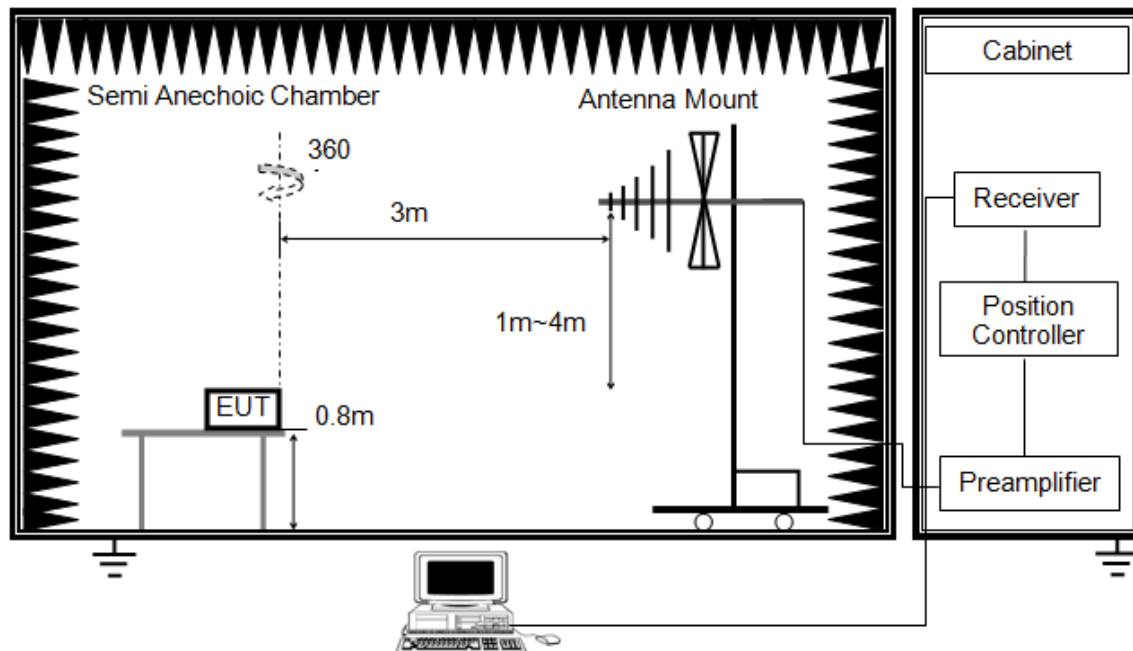


The setting of the spectrum analyser

|          |                                                                  |
|----------|------------------------------------------------------------------|
| RBW      | 200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz) |
| VBW      | 200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz) |
| Sweep    | Auto                                                             |
| Detector | Peak/QP/ Average                                                 |
| Trace    | Max hold                                                         |

1. The testing follows the guidelines in ANSI C63.10-2013.
2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 80cm meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1m height antenna tower.
5. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
6. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
7. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
8. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30m open field site. Therefore, the sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

Below 1 GHz

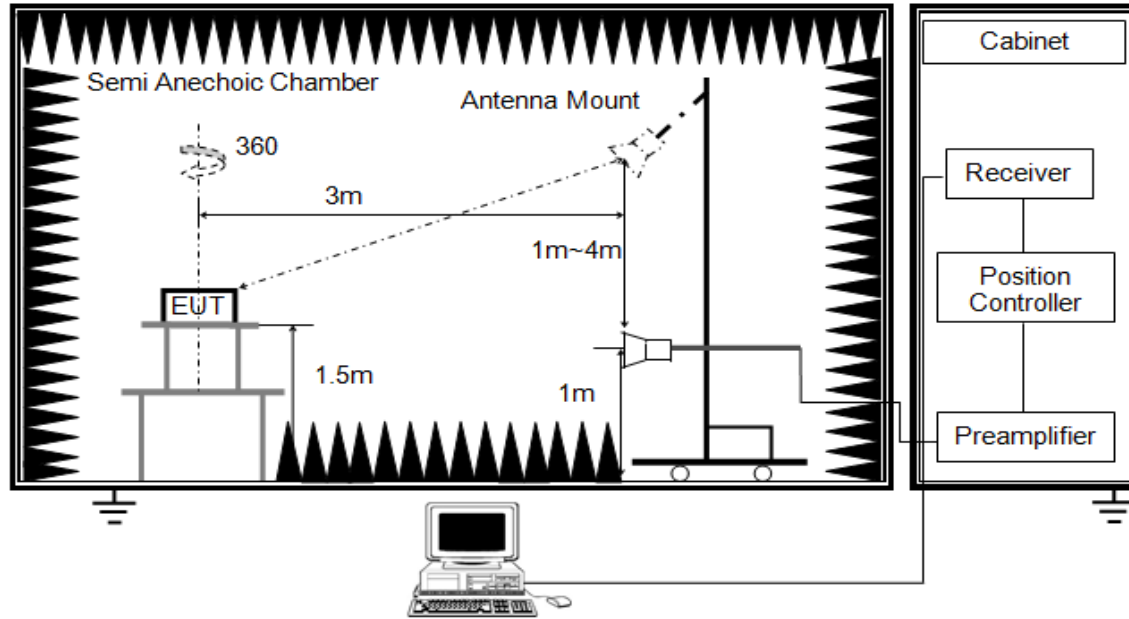


The setting of the spectrum analyser

|          |          |
|----------|----------|
| RBW      | 120 kHz  |
| VBW      | 300 kHz  |
| Sweep    | Auto     |
| Detector | Peak/QP  |
| Trace    | Max hold |

1. The testing follows the guidelines in ANSI C63.10-2013.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 80cm above ground.
4. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
5. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
6. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
7. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

Above 1 GHz

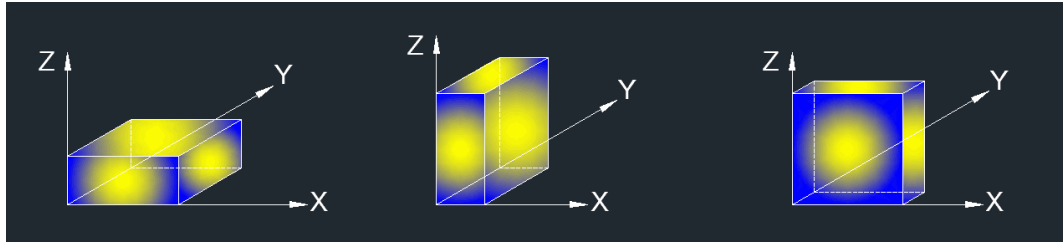


The setting of the spectrum analyser

|          |                                |
|----------|--------------------------------|
| RBW      | 1 MHz                          |
| VBW      | PEAK: 3 MHz<br>AVG: see note 6 |
| Sweep    | Auto                           |
| Detector | Peak                           |
| Trace    | Max hold                       |

1. The testing follows the guidelines in ANSI C63.10-2013.
2. The EUT was arranged to its worst case and then tune the antenna tower (1.5 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter or band reject filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 80cm above ground.
4. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
5. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements. Where necessary, average emission are determined by applying the Duty Cycle Correction Factor to the peak measurements. For the Duty Cycle and Correction Factor please refer to clause 6.1. ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis for horizontal and Y axis for vertical) data recorded in the report.

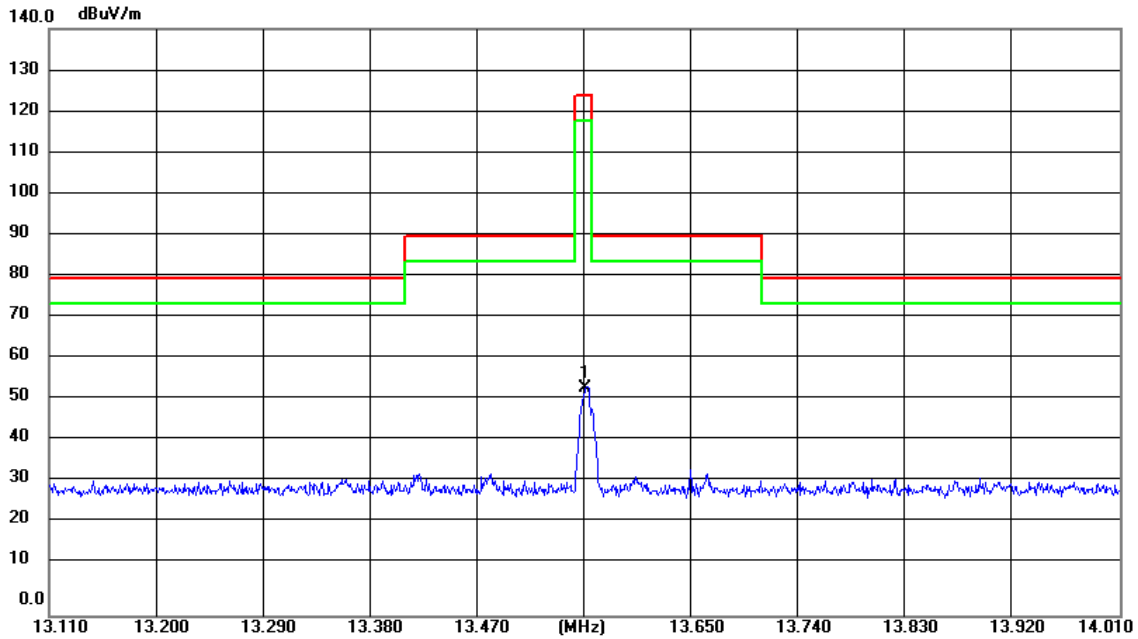
#### **TEST ENVIRONMENT**

|                     |         |                   |       |
|---------------------|---------|-------------------|-------|
| Temperature         | 24.3 °C | Relative Humidity | 55.2% |
| Atmosphere Pressure | 101 kPa | Test Voltage      | DC 6V |

#### **RESULTS**

## 7.1. FIELD STRENGTH OF INTENTIONAL EMISSIONS

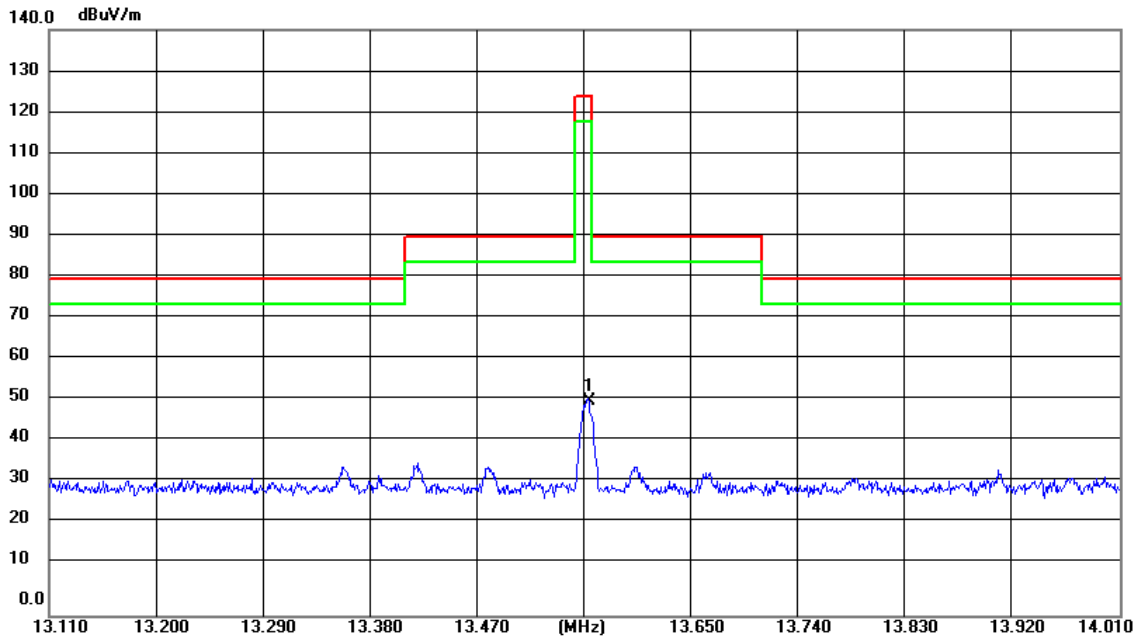
### FIELD STRENGTH OF INTENTIONAL EMISSIONS (HORIZONTAL)



| No. | Frequency | Reading  | Correct | Result 3m | Result 30m | Limit 3m | Limit 30m | Margin | Remark |
|-----|-----------|----------|---------|-----------|------------|----------|-----------|--------|--------|
|     | (MHz)     | (dBuV/m) | dB/m    | (dBuV/m)  | (dBuV/m)   | (dBuV/m) | (dBuV/m)  | (dB)   |        |
| 2   | 13.5609   | 34.23    | 20.30   | 54.53     | 14.53      | 124.00   | 84.00     | -69.47 | peak   |

Note: 1. Result 3m= Reading+ Correct Factor  
 2. Result 30m= Result 3m-40



**FIELD STRENGTH OF INTENTIONAL EMISSIONS (VERTICAL)**

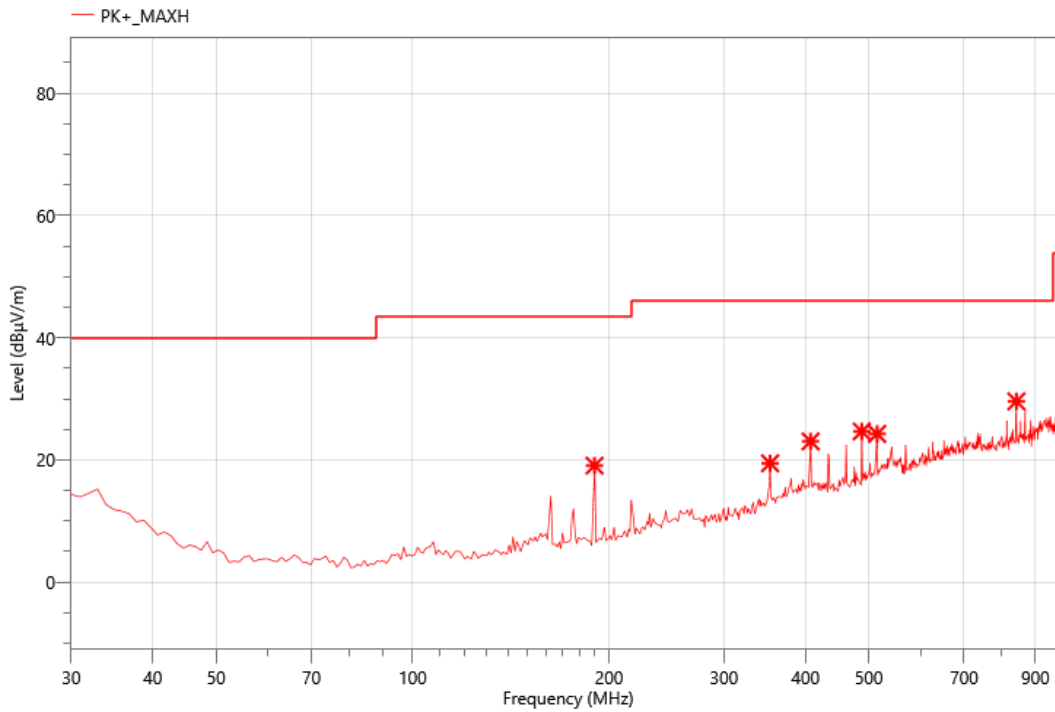
| No. | Frequency | Reading  | Correct | Result 3m | Result 30m | Limit 3m | Limit 30m | Margin | Remark |
|-----|-----------|----------|---------|-----------|------------|----------|-----------|--------|--------|
|     | (MHz)     | (dBuV/m) | dB/m    | (dBuV/m)  | (dBuV/m)   | (dBuV/m) | (dBuV/m)  | (dB)   |        |
| 2   | 13.5636   | 30.96    | 20.30   | 51.26     | 11.26      | 124.00   | 84.00     | -72.74 | peak   |

Note: 1. Result 3m= Reading+ Correct Factor

2. Result 30m= Result 3m-40

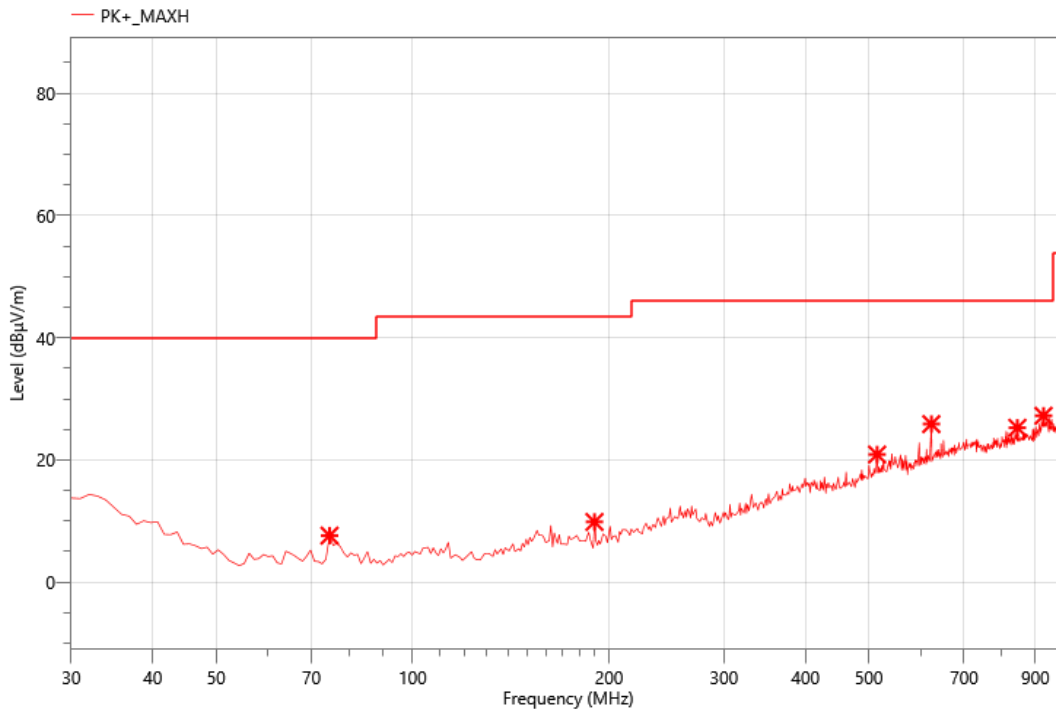
## 7.2. SPURIOUS EMISSIONS BELOW 1 GHz AND ABOVE 30 MHz

### SPURIOUS EMISSIONS (HORIZONTAL)



| No. | Freq. (MHz) | Reading (dBμV) | Corr. (dB) | Meas. (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Det. | Pol. |
|-----|-------------|----------------|------------|----------------|----------------|-------------|------|------|
| 1   | 190.050     | 41.65          | -22.57     | 19.08          | 43.50          | 24.42       | PK+  | H    |
| 2   | 353.010     | 35.68          | -16.22     | 19.46          | 46.00          | 26.54       | PK+  | H    |
| 3   | 407.330     | 36.79          | -13.75     | 23.04          | 46.00          | 22.96       | PK+  | H    |
| 4   | 487.840     | 37.39          | -12.72     | 24.67          | 46.00          | 21.33       | PK+  | H    |
| 5   | 515.000     | 35.73          | -11.46     | 24.27          | 46.00          | 21.73       | PK+  | H    |
| 6   | 841.890     | 35.36          | -5.77      | 29.59          | 46.00          | 16.41       | PK+  | H    |

Note: [Margin=Limit-Meas.]; [Meas.=Reading+Corr. ]

**HARMONICS AND SPURIOUS EMISSIONS (VERTICAL)**

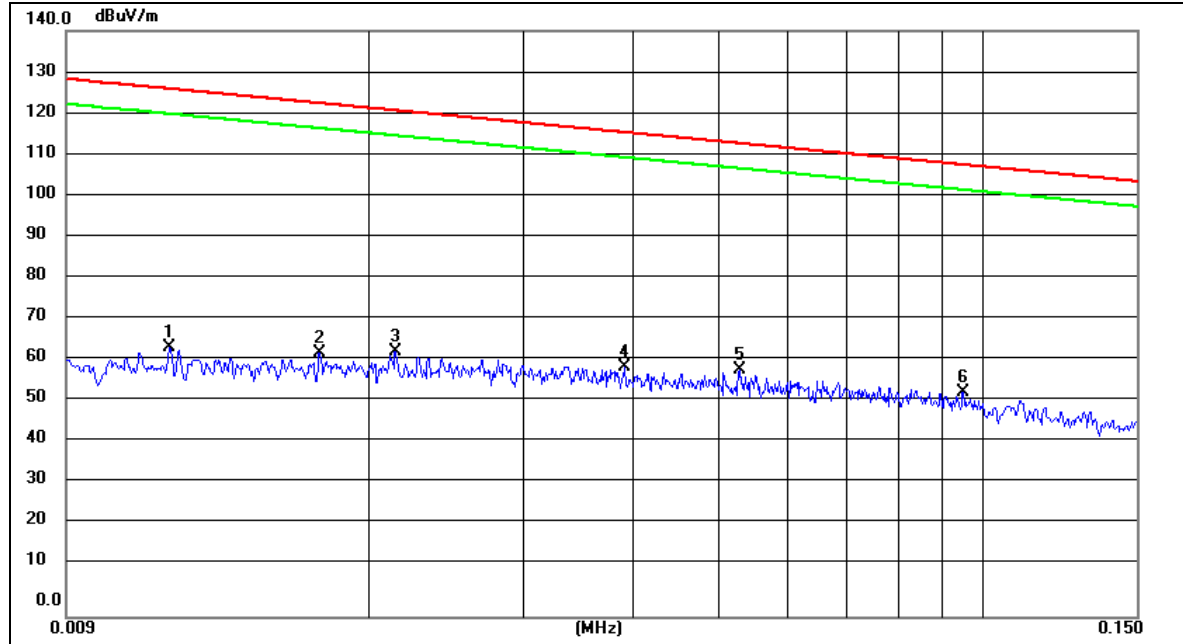
| No. | Freq. (MHz) | Reading (dBμV) | Corr. (dB) | Meas. (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Det. | Pol. |
|-----|-------------|----------------|------------|----------------|----------------|-------------|------|------|
| 1   | 74.620      | 32.88          | -25.25     | 7.63           | 40.00          | 32.37       | PK+  | V    |
| 2   | 190.050     | 32.43          | -22.57     | 9.86           | 43.50          | 33.64       | PK+  | V    |
| 3   | 515.000     | 32.35          | -11.46     | 20.89          | 46.00          | 25.11       | PK+  | V    |
| 4   | 623.640     | 35.07          | -9.2       | 25.87          | 46.00          | 20.13       | PK+  | V    |
| 5   | 844.800     | 31.06          | -5.79      | 25.27          | 46.00          | 20.73       | PK+  | V    |
| 6   | 926.280     | 30.41          | -3.18      | 27.23          | 46.00          | 18.77       | PK+  | V    |

Note: [Margin=Limit-Meas.]; [Meas.=Reading+Corr. ]

### 7.3. SPURIOUS EMISSIONS BELOW 30 MHz

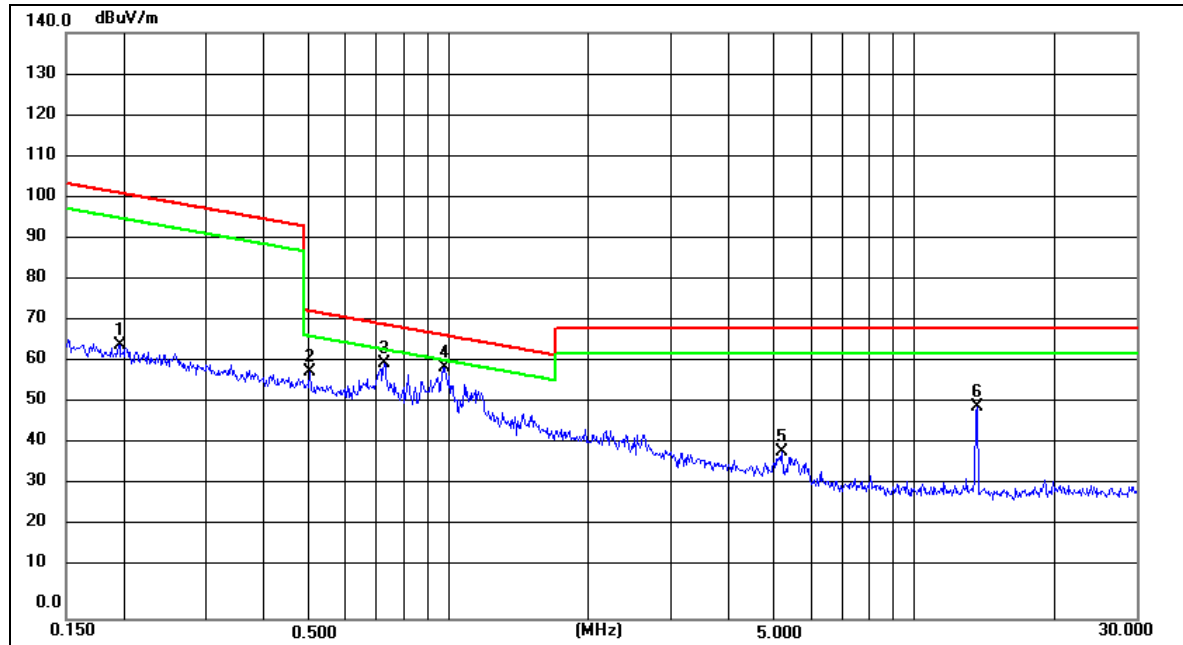
#### SPURIOUS EMISSIONS (LOOP ANTENNA FACE ON TO THE EUT)

0.09 kHz~ 150 kHz



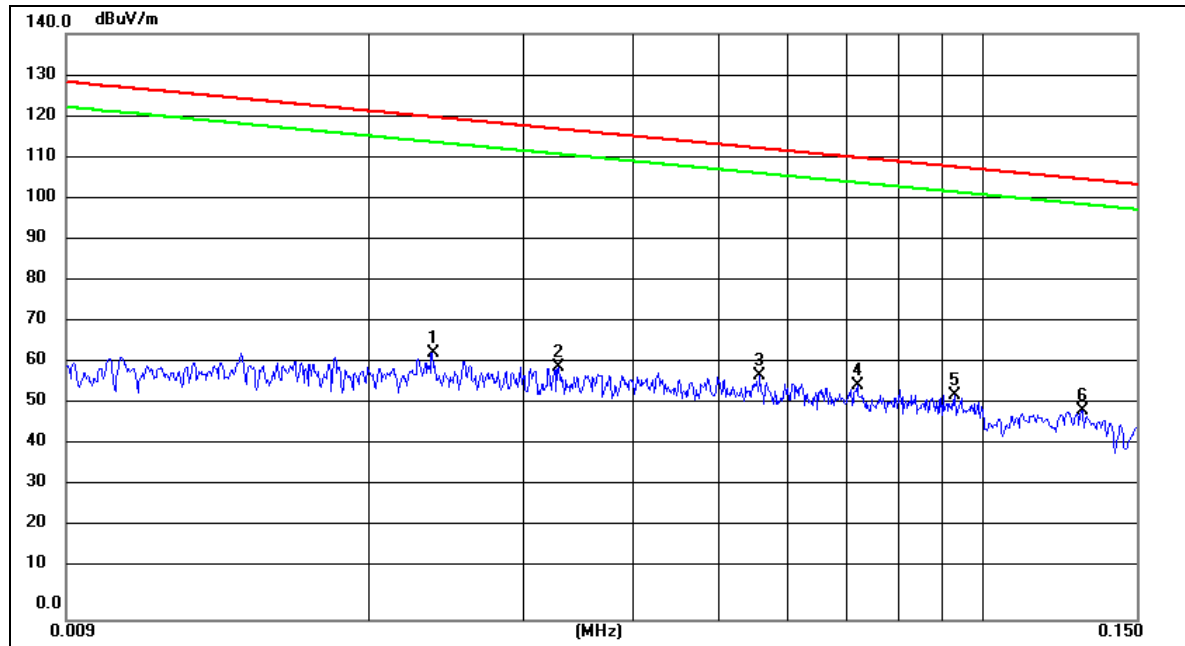
| No. | Frequency (MHz) | Reading Level(dBuV) | Correct Factor(dB/m) | Measurement(dBuV/m) | Limit (dBuV/m) | Over (dB) | Detect or |
|-----|-----------------|---------------------|----------------------|---------------------|----------------|-----------|-----------|
| 1   | 0.0118          | 44.18               | 20.41                | 64.59               | 126.15         | -61.56    | peak      |
| 2   | 0.0175          | 42.78               | 20.33                | 63.11               | 122.73         | -59.62    | peak      |
| 3   | 0.0214          | 43.20               | 20.27                | 63.47               | 120.98         | -57.51    | peak      |
| 4   | 0.0390          | 39.80               | 20.05                | 59.85               | 115.77         | -55.92    | peak      |
| 5 * | 0.0528          | 39.11               | 19.90                | 59.01               | 113.14         | -54.13    | peak      |
| 6   | 0.0950          | 34.18               | 19.69                | 53.87               | 108.04         | -54.17    | peak      |

Note: Measurement = Reading Level + Correct Factor.

**150 kHz ~ 30MHz**

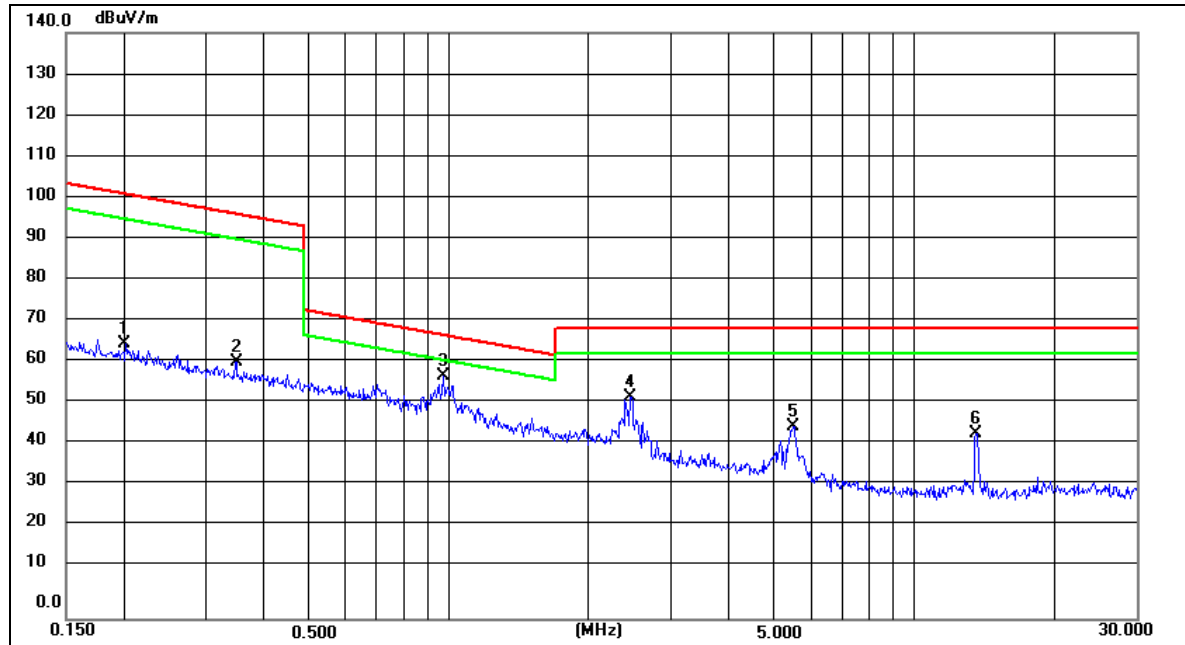
| No. | Frequency (MHz) | Reading Level(dBuV) | Correct Factor(dB/m) | Measurement(dBuV/m) | Limit (dBuV/m) | Over (dB) | Detect or |
|-----|-----------------|---------------------|----------------------|---------------------|----------------|-----------|-----------|
| 1   | 0.1955          | 46.00               | 19.64                | 65.64               | 101.78         | -36.14    | peak      |
| 2   | 0.5020          | 39.63               | 19.59                | 59.22               | 73.59          | -14.37    | peak      |
| 3   | 0.7236          | 41.49               | 19.52                | 61.01               | 70.42          | -9.41     | peak      |
| 4 * | 0.9787          | 40.80               | 19.45                | 60.25               | 67.81          | -7.56     | peak      |
| 5   | 5.1663          | 20.12               | 19.81                | 39.93               | 69.50          | -29.57    | peak      |
| 6   | 13.6228         | 30.30               | 20.30                | 50.60               | 69.50          | -18.90    | peak      |

Note: Note: Measurement = Reading Level + Correct Factor.

**SPURIOUS EMISSIONS (LOOP ANTENNA FACE OFF TO THE EUT)****0.09 kHz~ 150 kHz**

| No. | Frequency (MHz) | Reading Level(dBuV) | Correct Factor(dB/m) | Measurement(dBuV/m) | Limit (dBuV/m) | Over (dB) | Detect or |
|-----|-----------------|---------------------|----------------------|---------------------|----------------|-----------|-----------|
| 1   | 0.0236          | 43.64               | 20.24                | 63.88               | 120.13         | -56.25    | peak      |
| 2   | 0.0328          | 40.38               | 20.11                | 60.49               | 117.27         | -56.78    | peak      |
| 3 * | 0.0557          | 38.50               | 19.85                | 58.35               | 112.68         | -54.33    | peak      |
| 4   | 0.0720          | 36.40               | 19.65                | 56.05               | 110.45         | -54.40    | peak      |
| 5   | 0.0930          | 34.07               | 19.71                | 53.78               | 108.23         | -54.45    | peak      |
| 6   | 0.1300          | 30.56               | 19.64                | 50.20               | 105.32         | -55.12    | peak      |

Note: Measurement = Reading Level + Correct Factor.

**150 kHz ~ 30MHz**

| No. | Frequency (MHz) | Reading Level(dBuV) | Correct Factor(dB/m) | Measurement(dBuV/m) | Limit (dBuV/m) | Over (dB) | Detect or |
|-----|-----------------|---------------------|----------------------|---------------------|----------------|-----------|-----------|
| 1   | 0.2017          | 46.05               | 19.64                | 65.69               | 101.51         | -35.82    | peak      |
| 2   | 0.3483          | 41.80               | 19.61                | 61.41               | 96.76          | -35.35    | peak      |
| 3 * | 0.9684          | 38.70               | 19.45                | 58.15               | 67.90          | -9.75     | peak      |
| 4   | 2.4476          | 33.59               | 19.58                | 53.17               | 69.50          | -16.33    | peak      |
| 5   | 5.4763          | 26.28               | 19.77                | 46.05               | 69.50          | -23.45    | peak      |
| 6   | 13.5509         | 24.12               | 20.30                | 44.42               | 69.50          | -25.08    | peak      |

Note: Note: Measurement = Reading Level + Correct Factor.

## 8. AC POWER LINE CONDUCTED EMISSIONS

### LIMITS

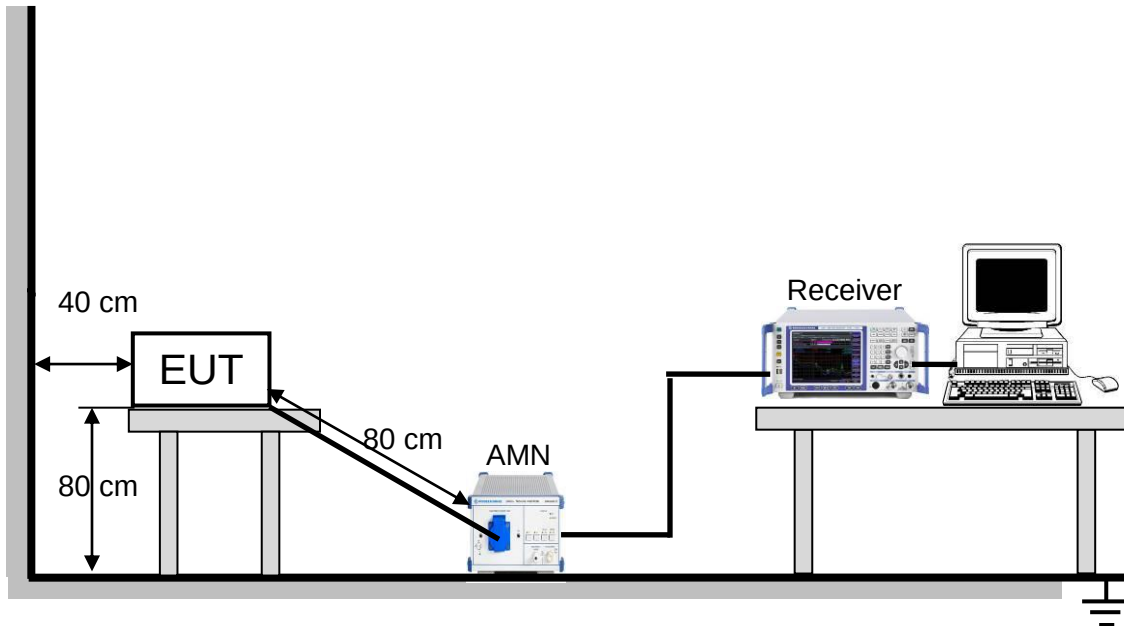
Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8

| FREQUENCY (MHz) | Quasi-peak | Average   |
|-----------------|------------|-----------|
| 0.15 -0.5       | 66 - 56 *  | 56 - 46 * |
| 0.50 -5.0       | 56.00      | 46.00     |
| 5.0 -30.0       | 60.00      | 50.00     |

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.



**TEST SETUP AND PROCEDURE**

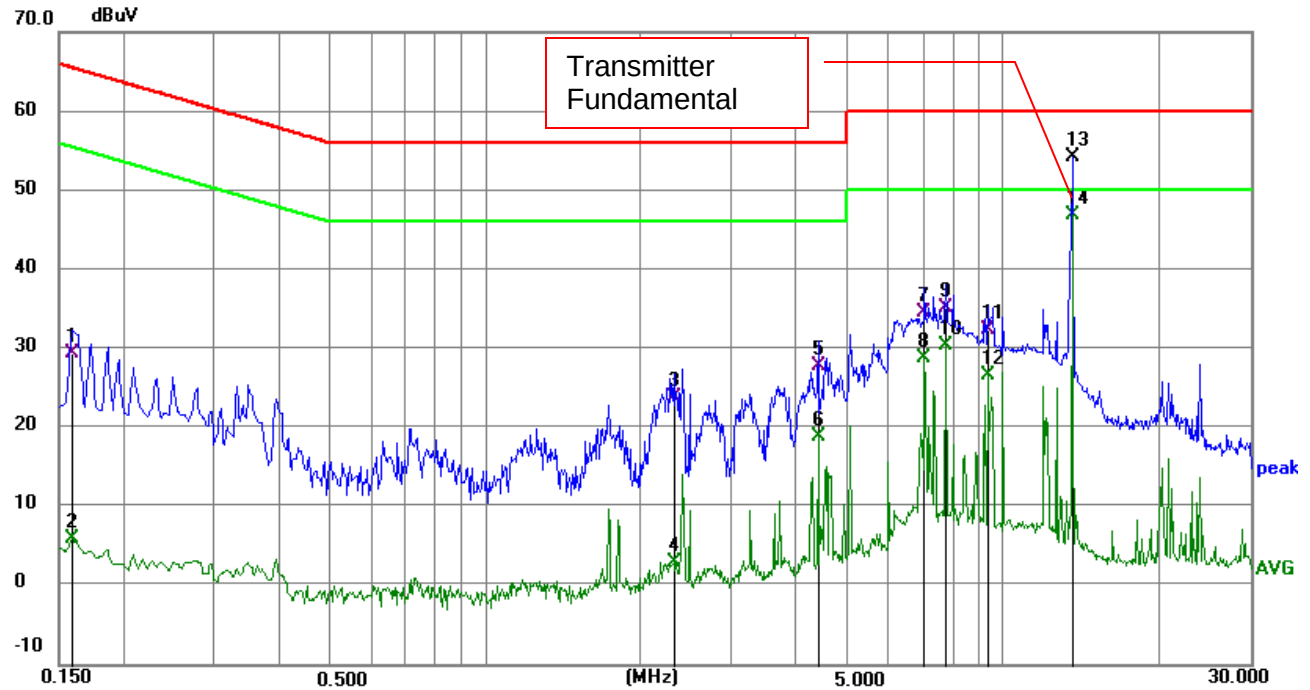
The following table is the setting of the receiver

| Receiver Parameters | Setting  |
|---------------------|----------|
| Attenuation         | 10 dB    |
| Start Frequency     | 0.15 MHz |
| Stop Frequency      | 30 MHz   |
| IF Bandwidth        | 9 kHz    |

1. The testing follows the guidelines in ANSI C63.10-2013.
2. The EUT was placed on the top of a rotating table 0.8 meters above the horizontal ground plane and being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 ohm/ 50 uH of coupling impedance for the measuring instrument.
3. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
4. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
5. LISN at least 80 cm from nearest part of EUT chassis.
6. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.
7. The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

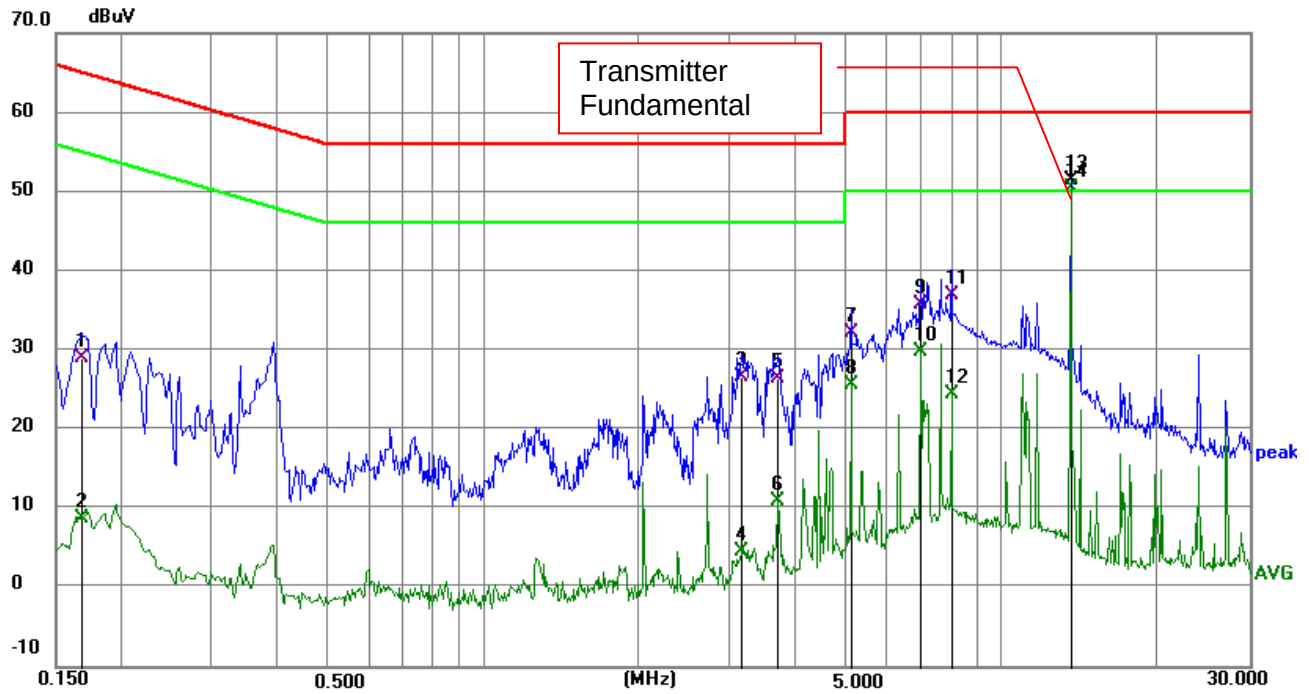
**TEST ENVIRONMENT**

|                     |         |                   |              |
|---------------------|---------|-------------------|--------------|
| Temperature         | 22.6 °C | Relative Humidity | 57 %         |
| Atmosphere Pressure | 101 kPa | Test Voltage      | AC 120V 60Hz |

**LINE N RESULTS**

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB) | Result<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-----------------|------------------|-----------------|----------------|--------|
| 1   | 0.1590             | 19.45             | 9.97            | 29.42            | 65.52           | -36.10         | QP     |
| 2   | 0.1590             | -4.05             | 9.97            | 5.92             | 55.52           | -49.60         | AVG    |
| 3   | 2.3190             | 13.67             | 10.18           | 23.85            | 56.00           | -32.15         | QP     |
| 4   | 2.3190             | -7.16             | 10.18           | 3.02             | 46.00           | -42.98         | AVG    |
| 5   | 4.3935             | 17.62             | 10.28           | 27.90            | 56.00           | -28.10         | QP     |
| 6   | 4.3935             | 8.51              | 10.28           | 18.79            | 46.00           | -27.21         | AVG    |
| 7   | 7.0620             | 24.06             | 10.50           | 34.56            | 60.00           | -25.44         | QP     |
| 8   | 7.0620             | 18.33             | 10.50           | 28.83            | 50.00           | -21.17         | AVG    |
| 9   | 7.7325             | 24.60             | 10.60           | 35.20            | 60.00           | -24.80         | QP     |
| 10  | 7.7325             | 19.76             | 10.60           | 30.36            | 50.00           | -19.64         | AVG    |
| 11  | 9.3075             | 21.47             | 10.85           | 32.32            | 60.00           | -27.68         | QP     |
| 12  | 9.3075             | 15.85             | 10.85           | 26.70            | 50.00           | -23.30         | AVG    |
| 13  | 13.5645            | 43.18             | 10.99           | 54.17            | --              | --             | peak   |
| 14  | 13.5645            | 35.97             | 10.99           | 46.96            | --              | --             | AVG    |

Note: Result = Reading +Correct

**LINE L RESULTS**

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB) | Result<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-----------------|------------------|-----------------|----------------|--------|
| 1   | 0.1680             | 19.19             | 9.91            | 29.10            | 65.06           | -35.96         | QP     |
| 2   | 0.1680             | -1.18             | 9.91            | 8.73             | 55.06           | -46.33         | AVG    |
| 3   | 3.1514             | 16.48             | 10.08           | 26.56            | 56.00           | -29.44         | QP     |
| 4   | 3.1514             | -5.48             | 10.08           | 4.60             | 46.00           | -41.40         | AVG    |
| 5   | 3.7095             | 16.23             | 10.17           | 26.40            | 56.00           | -29.60         | QP     |
| 6   | 3.7095             | 0.84              | 10.17           | 11.01            | 46.00           | -34.99         | AVG    |
| 7   | 5.1135             | 21.95             | 10.25           | 32.20            | 60.00           | -27.80         | QP     |
| 8   | 5.1135             | 15.47             | 10.25           | 25.72            | 50.00           | -24.28         | AVG    |
| 9   | 6.9585             | 25.22             | 10.56           | 35.78            | 60.00           | -24.22         | QP     |
| 10  | 6.9585             | 19.32             | 10.56           | 29.88            | 50.00           | -20.12         | AVG    |
| 11  | 7.9890             | 26.28             | 10.72           | 37.00            | 60.00           | -23.00         | QP     |
| 12  | 7.9890             | 13.75             | 10.72           | 24.47            | 50.00           | -25.53         | AVG    |
| 13  | 13.5600            | 40.45             | 10.97           | 51.42            | --              | --             | peak   |
| 14  | 13.5600            | 39.38             | 10.97           | 50.35            | --              | --             | AVG    |

Note: Result = Reading +Correct

## 9. ANTENNA REQUIREMENTS

### APPLICABLE REQUIREMENTS

Please refer to FCC §15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall 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 manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Please refer to FCC §15.247(b)(4)

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### RESULTS

Complies

---

**END OF REPORT**