

# TEST REPORT

**Applicant:** Ruijie Networks Co., Ltd.  
**Address:** Building 19, Juyuanzhou Industrial Park, No. 618  
Jinshan Road, Cangshan District, Fuzhou, Fujian,  
China  
**Equipment Type:** 1200M Dual Band Wi-Fi Range Extender  
**Model Name:** RG-REX12  
**Brand Name:** REYEE  
**FCC ID:** 2AX5J-REX12  
**Test Standard:** 47 CFR Part 15 Subpart B  
ICES-003 (Issue 7, October 15, 2020)  
**Test Date:** Jul. 20, 2022 – Jul. 21, 2022  
**Date of Issue:** Aug. 16, 2022

**ISSUED BY:**

Shenzhen BALUN Technology Co., Ltd.

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**Approved by:** Liao Jianming  
(Technical Director)

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### Revision History

| Version        | Issue Date           | Revisions Content    |
|----------------|----------------------|----------------------|
| <u>Rev. 01</u> | <u>Aug. 16, 2022</u> | <u>Initial Issue</u> |

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# 1 GENERAL INFORMATION

## 1.1 Identification of the Testing Laboratory

|              |                                                                                                                          |
|--------------|--------------------------------------------------------------------------------------------------------------------------|
| Company Name | Shenzhen BALUN Technology Co., Ltd.                                                                                      |
| Address      | Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China |
| Phone Number | +86 755 6685 0100                                                                                                        |

## 1.2 Identification of the Responsible Testing Location

|                           |                                                                                                                                                                                                                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Location             | Shenzhen BALUN Technology Co., Ltd.                                                                                                                                                                                                                                                     |
| Address                   | Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China                                                                                                                                                                |
| Accreditation Certificate | The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196. The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. |
| Description               | All measurement facilities used to collect the measurement data are located at Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China.                                                                                |

## 2 PRODUCT INFORMATION

### 2.1 Applicant Information

|           |                                                                                                            |
|-----------|------------------------------------------------------------------------------------------------------------|
| Applicant | Ruijie Networks Co., Ltd.                                                                                  |
| Address   | Building 19, Juyuanzhou Industrial Park, No. 618 Jinshan Road,<br>Cangshan District, Fuzhou, Fujian, China |

### 2.2 Manufacturer Information

|              |                                                                                                            |
|--------------|------------------------------------------------------------------------------------------------------------|
| Manufacturer | Ruijie Networks Co., Ltd.                                                                                  |
| Address      | Building 19, Juyuanzhou Industrial Park, No. 618 Jinshan Road,<br>Cangshan District, Fuzhou, Fujian, China |

### 2.3 Factory Information

|         |     |
|---------|-----|
| Factory | N/A |
| Address | N/A |

### 2.4 General Description for Equipment under Test (EUT)

|                                           |                                      |
|-------------------------------------------|--------------------------------------|
| EUT Name                                  | 1200M Dual Band Wi-Fi Range Extender |
| Model Name Under Test                     | RG-REX12                             |
| Series Model Name                         | N/A                                  |
| Description of Model name differentiation | N/A                                  |
| Serial Number                             | G1RQ5QT000742                        |
| Hardware Version                          | N/A                                  |
| Software Version                          | N/A                                  |
| Dimensions (Approx.)                      | N/A                                  |
| Weight (Approx.)                          | N/A                                  |

## 2.5 Ancillary Equipment

Note: Not applicable.

## 2.6 Technical Information

|                                   |                                                                                                                             |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Network and Wireless connectivity | 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20/40)<br>5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80)<br>U-NII-1/2A/2C/3 |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------|

The requirement for the following technical information of the EUT was tested in this report:

|                                |     |
|--------------------------------|-----|
| The Highest Speed of Processor | N/A |
|--------------------------------|-----|

### 3 SUMMARY OF TEST RESULTS

#### 3.1 Test Standards

| No. | Identity                                | Document Title                                                                                                                                                      |
|-----|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | 47 CFR Part 15 Subpart B                | Unintentional Radiators                                                                                                                                             |
| 2   | ICES-003<br>(Issue 7, October 15, 2020) | Information Technology Equipment (Including Digital Apparatus)                                                                                                      |
| 3   | ANSI C63.4-2014                         | American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz |

#### 3.2 Verdict

| No. | Description                     | FCC Rule | ISED Rule          | Test Verdict | Result     |
|-----|---------------------------------|----------|--------------------|--------------|------------|
| 1   | Radiated Emission               | 15.109   | ICES-003,<br>3.2.2 | Pass         | Annex A .1 |
| 2   | Conducted Emission,<br>AC Ports | 15.107   | ICES-003,<br>3.2.1 | Pass         | Annex A .2 |

#### 3.3 Test Uncertainty

The following measurement 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.

| Measurement                           | Value   |
|---------------------------------------|---------|
| Conducted emissions (9 kHz-30 MHz)    | 3.22 dB |
| Radiated emissions (30 MHz-1 GHz)-10m | 4.80 dB |
| Radiated emissions (30 MHz-1 GHz)-3m  | 4.76 dB |
| Radiated emissions (1 GHz-18 GHz)-3m  | 4.88 dB |

## 4 GENERAL TEST CONFIGURATIONS

### 4.1 Test Environments, Test Date and Test Engineer

| Test items         | Voltage                          | Temperature | Relative Humidity | Ambient Pressure | Test Date     | Test Engineer |
|--------------------|----------------------------------|-------------|-------------------|------------------|---------------|---------------|
| Radiated Emission  | AC 230 V/50 Hz<br>AC 110 V/60 Hz | 23.2℃       | 47%               | /                | Jul. 21, 2022 | Xiao Tangqi   |
| Conducted Emission | AC 230 V/50 Hz<br>AC 110 V/60 Hz | 25.3℃       | 53%               | /                | Jul. 20, 2022 | Ye Guanqi     |

### 4.2 Test Equipment List

| Radiated Emission Test For Frequency Below 1 GHz (3m) |              |            |             |            |            |                                     |
|-------------------------------------------------------|--------------|------------|-------------|------------|------------|-------------------------------------|
| Description                                           | Manufacturer | Model      | Serial No.  | Cal. Date  | Cal. Due   | Use                                 |
| EMI Receiver                                          | KEYSIGHT     | N9038A     | MY55330120  | 2021.10.20 | 2022.10.19 | <input checked="" type="checkbox"/> |
| Amplifier (30-1GHz)                                   | COM-MV       | ZT30-1000M | B2017119081 | 2021.10.20 | 2022.10.19 | <input checked="" type="checkbox"/> |
| Test Antenna-Bi-Log                                   | SCHWARZBECK  | VULB 9168  | 9168-0867   | 2022.04.12 | 2025.04.11 | <input checked="" type="checkbox"/> |
| Anechoic Chamber                                      | YIHENG       | 9m*6m*6m   | N/A         | 2021.08.19 | 2024.08.18 | <input checked="" type="checkbox"/> |
| Description                                           | Manufacturer | Name       |             | Version    |            | Use                                 |
| Test Software                                         | BALUN        | BL410-E    |             | V19.918    |            | <input checked="" type="checkbox"/> |

| Radiated Emission Test For Frequency Above 1 GHz (3m) |                    |                 |            |            |            |                                     |
|-------------------------------------------------------|--------------------|-----------------|------------|------------|------------|-------------------------------------|
| Description                                           | Manufacturer       | Model           | Serial No. | Cal. Date  | Cal. Due   | Use                                 |
| EMI Receiver                                          | Agilent            | N9038A          | MY55330120 | 2021.10.20 | 2022.10.19 | <input checked="" type="checkbox"/> |
| EMI Receiver                                          | ROHDE & SCHWARZ    | FSV40           | 101544     | 2022.01.04 | 2023.01.03 | <input checked="" type="checkbox"/> |
| Amplifier (1-12GHz)                                   | Advanced Microwave | WLA652A         | 1740103    | 2021.10.20 | 2022.10.19 | <input checked="" type="checkbox"/> |
| Amplifier (0.8-21GHz)                                 | Mini-Circuits      | ZVA-213-S+      | 225321316  | 2021.10.20 | 2022.10.19 | <input checked="" type="checkbox"/> |
| Amplifier (18-40GHz)                                  | COM-MV             | KA_LNA18-40G-01 | 18050001   | 2021.10.20 | 2022.10.19 | <input checked="" type="checkbox"/> |
| Test Antenna-Horn                                     | SCHWARZBECK        | BBHA 9120D      | 1917       | 2022.06.09 | 2025.06.08 | <input checked="" type="checkbox"/> |
| Test Antenna-Horn                                     | A-INFOMW           | LB-180400KF     | J211060273 | 2021.07.02 | 2024.07.01 | <input checked="" type="checkbox"/> |
| Anechoic Chamber                                      | YIHENG             | 9m*6m*6m        | N/A        | 2021.08.19 | 2024.08.18 | <input checked="" type="checkbox"/> |
| Description                                           | Manufacturer       | Name            |            | Version    |            | Use                                 |

| Radiated Emission Test For Frequency Above 1 GHz (3m) |              |         |            |           |          |                                     |
|-------------------------------------------------------|--------------|---------|------------|-----------|----------|-------------------------------------|
| Description                                           | Manufacturer | Model   | Serial No. | Cal. Date | Cal. Due | Use                                 |
| Test Software                                         | BALUN        | BL410-E |            | V19.918   |          | <input checked="" type="checkbox"/> |

| Conducted disturbance Test |                            |                |            |            |            |                                     |
|----------------------------|----------------------------|----------------|------------|------------|------------|-------------------------------------|
| Description                | Manufacturer               | Model          | Serial No. | Cal. Date  | Cal. Due   | Use                                 |
| EMI Receiver               | KEYSIGHT                   | N9010B         | MY57110309 | 2021.10.10 | 2022.10.09 | <input checked="" type="checkbox"/> |
| LISN                       | SCHWARZBECK                | NSLK 8127      | 8127-687   | 2022.06.01 | 2023.05.31 | <input checked="" type="checkbox"/> |
| Shielded Enclosure         | YiHeng Electronic Co., Ltd | 3.5m*3.1m*2.8m | N/A        | 2022.02.19 | 2025.02.18 | <input checked="" type="checkbox"/> |
| Description                | Manufacturer               | Name           |            | Version    |            | Use                                 |
| Test Software              | BALUN                      | BL410-E        |            | V19.918    |            | <input checked="" type="checkbox"/> |

### 4.3 Test Enclosure list

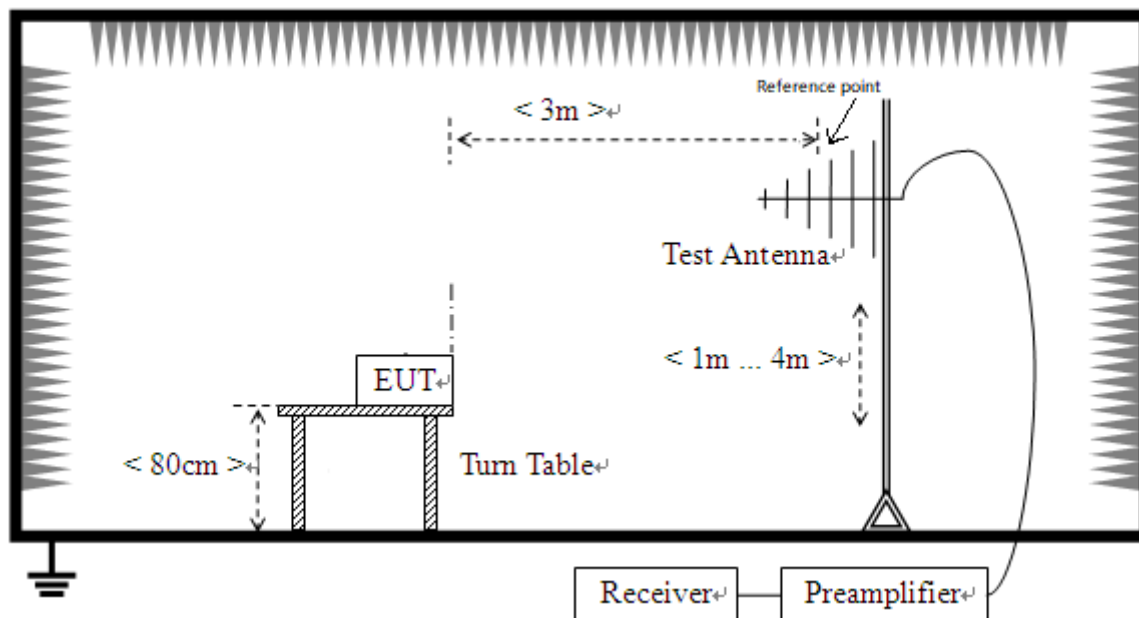
| Description | Manufacturer | Model | Serial No. | Length | Description | Use                                 |
|-------------|--------------|-------|------------|--------|-------------|-------------------------------------|
| Laptop      | Lenovo       | N/A   | N/A        | N/A    | N/A         | <input checked="" type="checkbox"/> |
| WIFI Router | N/A          | N/A   | N/A        | N/A    | N/A         | <input checked="" type="checkbox"/> |
| RJ45 Cable  | N/A          | N/A   | N/A        | N/A    | N/A         | <input checked="" type="checkbox"/> |

## 4.4 Test Configurations

| Test Configurations (TC) No. | Description                                                               |
|------------------------------|---------------------------------------------------------------------------|
| TC01                         | <u>The Working Test Mode 1</u><br>EUT + WIFI Router + RJ45 Cable + Laptop |

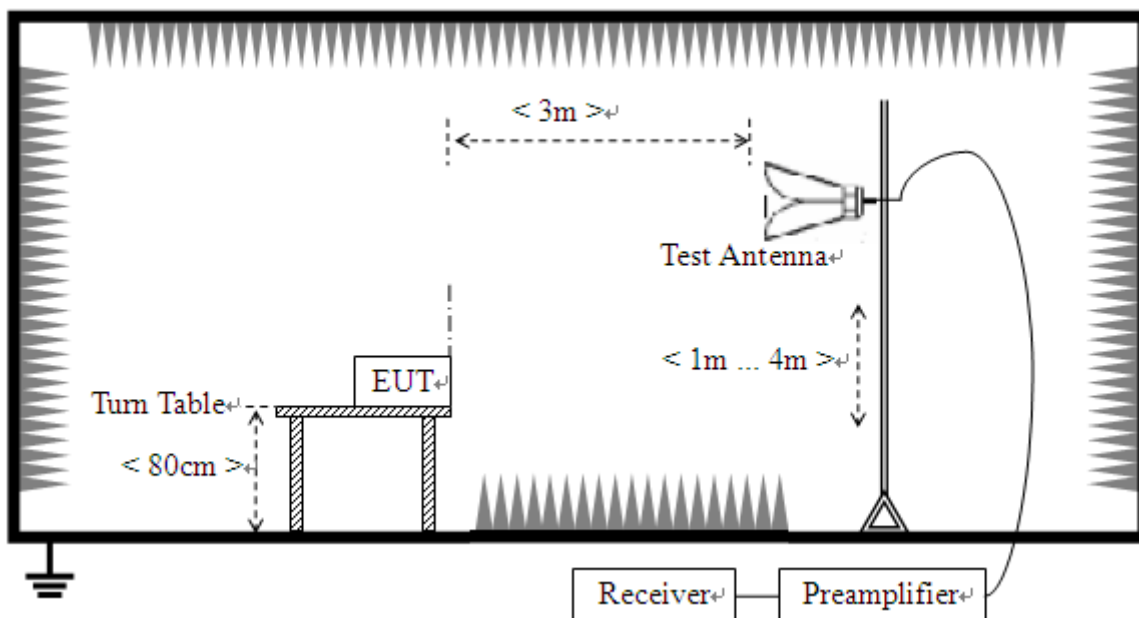
## 4.5 Test Setups

### Test Setup 1

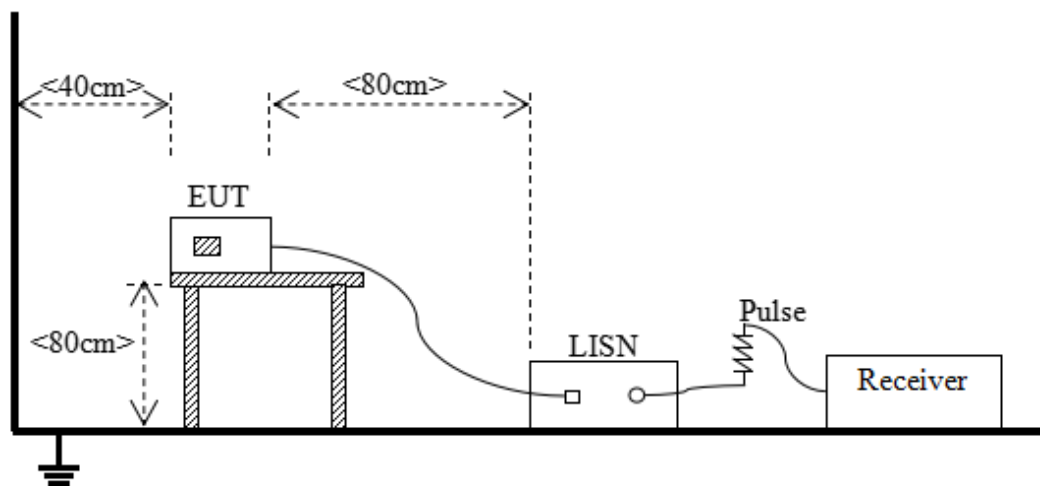


(For Radiated Emission Test (30 MHz-1 GHz))

### Test Setup 2



(For Radiated Emission Test (above 1 GHz))

Test Setup 3

(For Conducted Emission, AC Ports Test)

## 4.6 Test Conditions

| Test Case                                                                                                                                                                                                                             | Test Conditions    |                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------|
| Radiated Emission                                                                                                                                                                                                                     | Test Setup         | Test Setup 1&2       |
|                                                                                                                                                                                                                                       | Test Configuration | TC01 <sup>Note</sup> |
| Conducted Emission,<br>AC Ports                                                                                                                                                                                                       | Test Setup         | Test Setup 3         |
|                                                                                                                                                                                                                                       | Test Configuration | TC01 <sup>Note</sup> |
| Note: Based on client request, all normal using modes of the normal function were tested but only the worst test data of the worst mode is reported by this report. The Working Test Mode Test Mode is the worst mode in this report. |                    |                      |

## 5 TEST ITEMS

### 5.1 Emission Tests

#### 5.1.1 Radiated Emission

##### 5.1.1.1 Limit

FCC:

| Frequency range<br>(MHz) | Class B (at 3 m)                      |                                         | Class B (at 10 m)                       | Class A (at 10 m)                     |                                         |
|--------------------------|---------------------------------------|-----------------------------------------|-----------------------------------------|---------------------------------------|-----------------------------------------|
|                          | Field Strength<br>( $\mu\text{V/m}$ ) | Field Strength<br>(dB $\mu\text{V/m}$ ) | Field Strength<br>(dB $\mu\text{V/m}$ ) | Field Strength<br>( $\mu\text{V/m}$ ) | Field Strength<br>(dB $\mu\text{V/m}$ ) |
| 30 - 88                  | 100                                   | 40                                      | 30                                      | 90                                    | 39                                      |
| 88 - 216                 | 150                                   | 43.5                                    | 33.5                                    | 150                                   | 43.5                                    |
| 216 - 960                | 200                                   | 46                                      | 36                                      | 210                                   | 46.4                                    |
| Above 960                | 500                                   | 54                                      | 44                                      | 300                                   | 49.5                                    |

NOTE:

- 1) Field Strength (dB $\mu\text{V/m}$ ) =  $20 \times \log [\text{Field Strength } (\mu\text{V/m})]$ .
- 2) In the emission tables above, the tighter limit applies at the band edges.
- 3) The limits using ANSI C63.4.

IC:

| Frequency range<br>(MHz) | Class A (3 m)<br>Quasi-peak<br>(dB $\mu\text{V/m}$ ) | Class A (10 m)<br>Quasi-peak<br>(dB $\mu\text{V/m}$ ) | Class B (3 m)<br>Quasi-peak<br>(dB $\mu\text{V/m}$ ) | Class B (10m)<br>Quasi-peak<br>(dB $\mu\text{V/m}$ ) |
|--------------------------|------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|
| 30 - 88                  | 50.0                                                 | 40.0                                                  | 40                                                   | 30.0                                                 |
| 88 - 216                 | 54.0                                                 | 43.5                                                  | 43.5                                                 | 33.1                                                 |
| 216 - 230                | 56.9                                                 | 46.4                                                  | 46.0                                                 | 35.6                                                 |
| 230 - 960                | 57.0                                                 | 47.0                                                  | 47.0                                                 | 37.0                                                 |
| 960 - 1000               | 60.0                                                 | 49.5                                                  | 54.0                                                 | 43.5                                                 |

Note: The more stringent limit applies at transition frequencies.

| Frequency range<br>(GHz) | Class A (3 m)<br>Average<br>(dB $\mu\text{V/m}$ ) | Class A (3 m)<br>Peak<br>(dB $\mu\text{V/m}$ ) | Class B (3 m)<br>Average<br>(dB $\mu\text{V/m}$ ) | Class B (3 m)<br>Peak<br>(dB $\mu\text{V/m}$ ) |
|--------------------------|---------------------------------------------------|------------------------------------------------|---------------------------------------------------|------------------------------------------------|
| 1 - $F_M$                | 60                                                | 80                                             | 54                                                | 74                                             |

Note:

1. The highest measurement frequency,  $F_M$ , in GHz, shall be determined as next Table.
2. The measurement bandwidth shall be 1 MHz or greater.
3. These limit levels apply for a measurement distance of 3 m. If using a different measurement distance, the measured levels shall be extrapolated to the 3 m limit distance using a factor of 20 dB per decade of distance. The measurement distance shall place the measurement

| Frequency range<br>(GHz)                                                                                                                                                                                                    | Class A (3 m)<br>Average<br>(dB $\mu$ V/m) | Class A (3 m)<br>Peak<br>(dB $\mu$ V/m) | Class B (3 m)<br>Average<br>(dB $\mu$ V/m) | Class B (3 m)<br>Peak<br>(dB $\mu$ V/m) |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------|--------------------------------------------|-----------------------------------------|
| antenna in the far field of the ITE or digital apparatus<br>under test.<br>4. The test site shall have been validated at the distance used for radiated emission measurements on<br>the ITE or digital apparatus under test |                                            |                                         |                                            |                                         |

| Highest internal frequency ( $F_X$ )                                                                                  | Highest measurement frequency ( $F_M$ ) |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| $F_X \leq 108 \text{ MHz}$                                                                                            | 1GHz                                    |
| $108 \text{ MHz} \leq F_X \leq 500 \text{ MHz}$                                                                       | 2GHz                                    |
| $500 \text{ MHz} \leq F_X \leq 1 \text{ GHz}$                                                                         | 5GHz                                    |
| $F_X \geq 1 \text{ GHz}$                                                                                              | $5 * F_X$<br>up to a maximum of 40 GHz  |
| Note: $F_X$ is the highest fundamental frequency generated and/or used in the ITE or digital apparatus<br>under test. |                                         |

#### 5.1.1.2 Test Setup

Refer to 4.5 section (test setup 1 to test setup 2) for radiated emission test, the photo of test setup please refer to ANNEX B.

#### 5.1.1.3 Test Procedure

The test employing the methods of measurement described in the publication referenced in Section 3(b) (ANSI C63.4);

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

An initial pre-scan was performed in the chamber using the EMI Receiver in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bi-Log antenna with 2 orthogonal polarities.

The measurement frequency range is from 30 MHz to the 5th harmonic of the maximum frequency of the EUT internal source. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for  $f \geq 1 \text{ GHz}$ , 100 kHz for  $f < 1 \text{ GHz}$

VBW  $\geq$  RBW

Sweep = auto

Detector function = peak for  $f < 1$  GHz, peak & RMS Average for  $f \geq 1$  GHz

Trace = max hold

#### 5.1.1.4 Test Result

Please refer to ANNEX A.1.

#### NOTE:

1. Results (dB $\mu$ V/m) = Reading (dB $\mu$ V/m) + Factor (dB/m)

The reading level is calculated by software which is not shown in the sheet

2. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain (dB)

3. Over limit = Results – Limit.

## 5.1.2 Conducted Emission

### 5.1.2.1 Test Limit

| Frequency range (MHz) | Class A                    |                         |
|-----------------------|----------------------------|-------------------------|
|                       | Quasi-peak<br>(dB $\mu$ V) | Average<br>(dB $\mu$ V) |
| 0.15 - 0.50           | 79                         | 66                      |
| 0.50 - 30             | 73                         | 60                      |

| Frequency range (MHz) | Class B                    |                         |
|-----------------------|----------------------------|-------------------------|
|                       | Quasi-peak<br>(dB $\mu$ V) | Average<br>(dB $\mu$ V) |
| 0.15 - 0.50           | 66 to 56                   | 56 to 46                |
| 0.50 - 5              | 56                         | 46                      |
| 5 - 30                | 60                         | 50                      |

NOTE:

- 1) The lower limit shall apply at the band edges.
- 2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50 MHz.
- 3) The limit using ANSI C63.4.

### 5.1.2.2 Test Setup

Refer to 4.5 section test (test setup 3) for conducted emission, the photo of test setup please refer to ANNEX B.

### 5.1.2.3 Test Procedure

The test employing the methods of measurement described in the publication referenced in Section 3(b) (ANSI C63.4);

The EUT is connected to the power mains through a LISN which provides 50  $\Omega$ /50  $\mu$ H of coupling impedance for the measuring instrument. The test frequency range is from 150 kHz to 30 MHz. The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels that are more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

Use the following spectrum analyzer settings:

RBW = 9 kHz

VBW  $\geq$  RBW

Sweep = 10ms

Detector function =peak & Average

Trace = max hold

#### 5.1.2.4 Test Result

Please refer to ANNEX A.2.

NOTE:

1. Results (dB $\mu$ V) = Reading (dB $\mu$ V) + Factor (dB)

The reading level is calculated by software which is not shown in the sheet

2. Factor = Insertion loss + Cable loss

3. Over limit = Results – Limit.

## ANNEX A TEST RESULTS

### A.1 Radiated Emission

Note 1: The symbol of "--" in the table which means not application.

Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

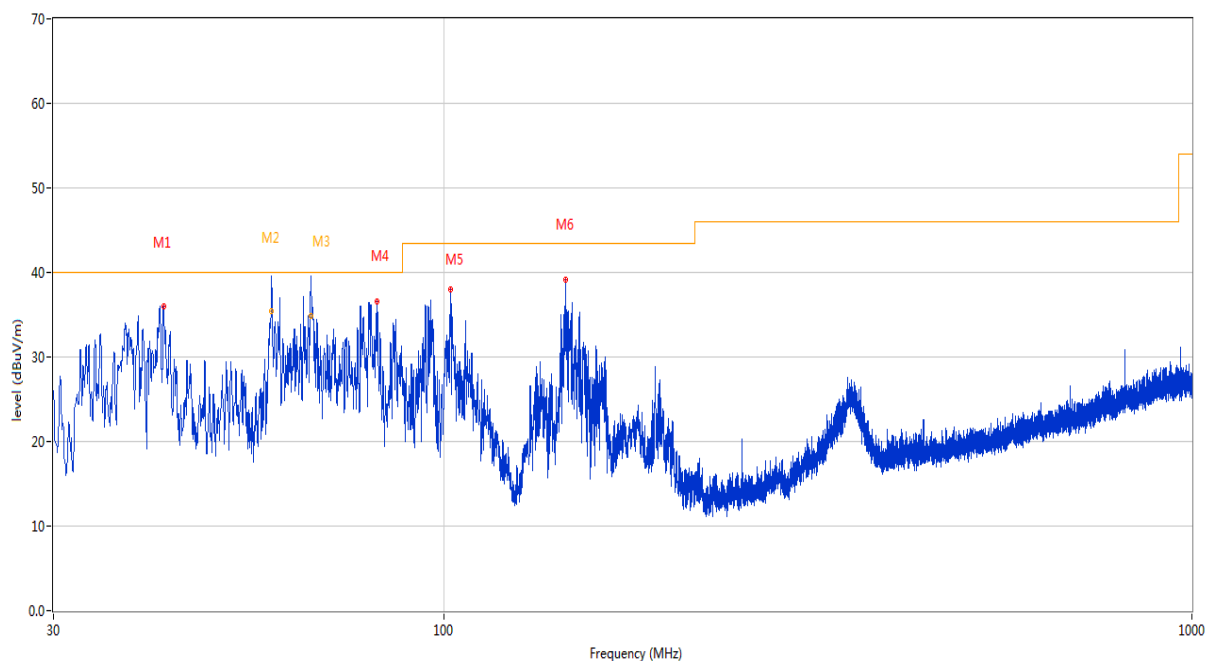
Note 3: The marked spikes near 2400 MHz with circle should be ignored because they are WIFI carrier frequency. The marked spikes near 5180 MHz with circle should be ignored because they are 5G WIFI carrier frequencies.

Note 4: The Radiated Emission from 18G-40G is noise only, do not show on the report.

## Test Data and Plots

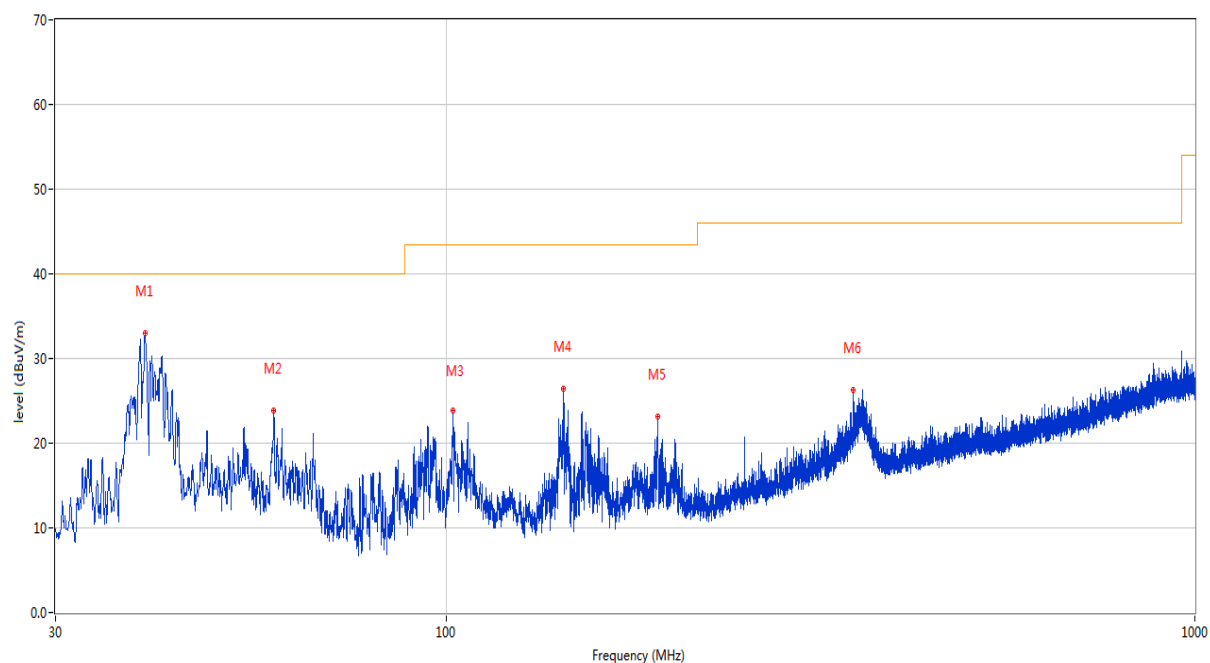
### The Working Test Mode

#### A.1.1 Test Antenna Vertical, 30 MHz – 1 GHz(FCC)



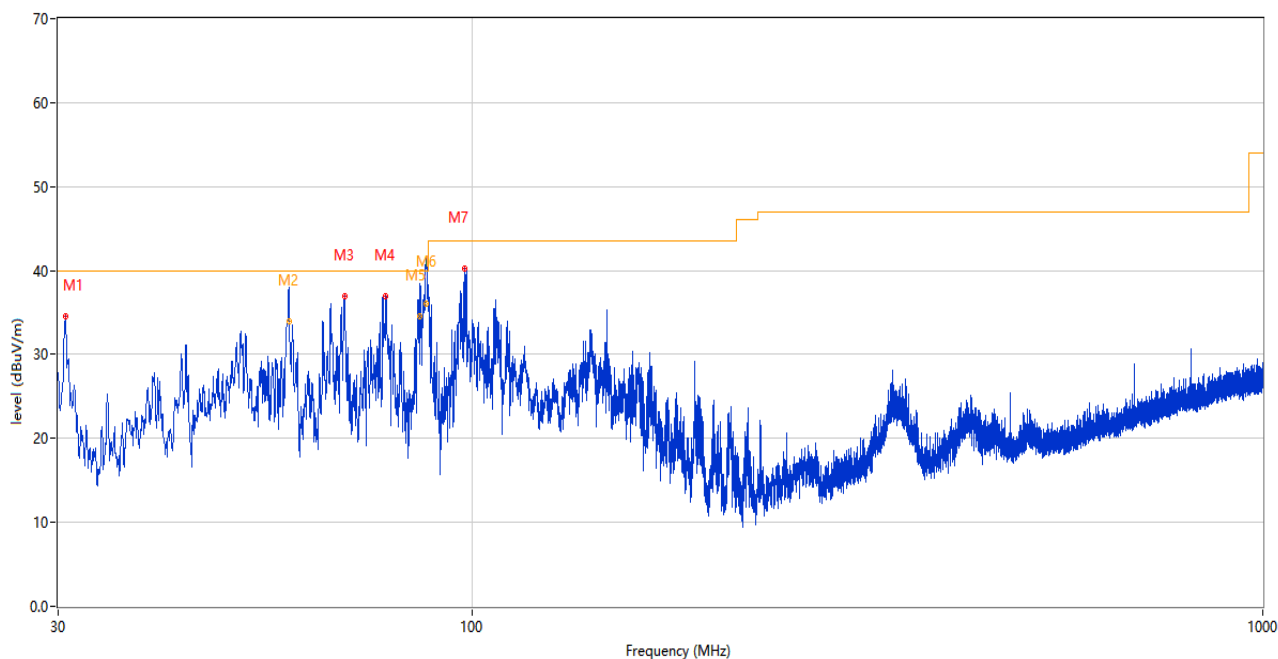
| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Over Limit (dB) | Detector | Table (Degree) | Height (cm) | Antenna  | Verdict |
|-----|-----------------|------------------|-------------|----------------|-----------------|----------|----------------|-------------|----------|---------|
| 1   | 42.125          | 35.94            | -23.45      | 40.0           | -4.06           | Peak     | 0.00           | 200         | Vertical | Pass    |
| 2   | 58.761          | 39.54            | -24.04      | 40.0           | -0.46           | Peak     | 171.40         | 100         | Vertical | N/A     |
| 2*  | 58.761          | 35.38            | -24.04      | 40.0           | -4.62           | QP       | 171.40         | 100         | Vertical | Pass    |
| 3   | 66.278          | 39.58            | -25.21      | 40.0           | -0.42           | Peak     | 233.70         | 100         | Vertical | N/A     |
| 3*  | 66.278          | 34.86            | -25.21      | 40.0           | -5.14           | QP       | 233.70         | 100         | Vertical | Pass    |
| 4   | 81.216          | 36.55            | -28.47      | 40.0           | -3.45           | Peak     | 274.90         | 200         | Vertical | Pass    |
| 5   | 101.925         | 38.02            | -24.54      | 43.5           | -5.48           | Peak     | 238.40         | 100         | Vertical | Pass    |
| 6   | 145.258         | 39.08            | -27.57      | 43.5           | -4.42           | Peak     | 333.70         | 100         | Vertical | Pass    |

## A.1.2 Test Antenna Horizontal, 30 MHz – 1 GHz(FCC)



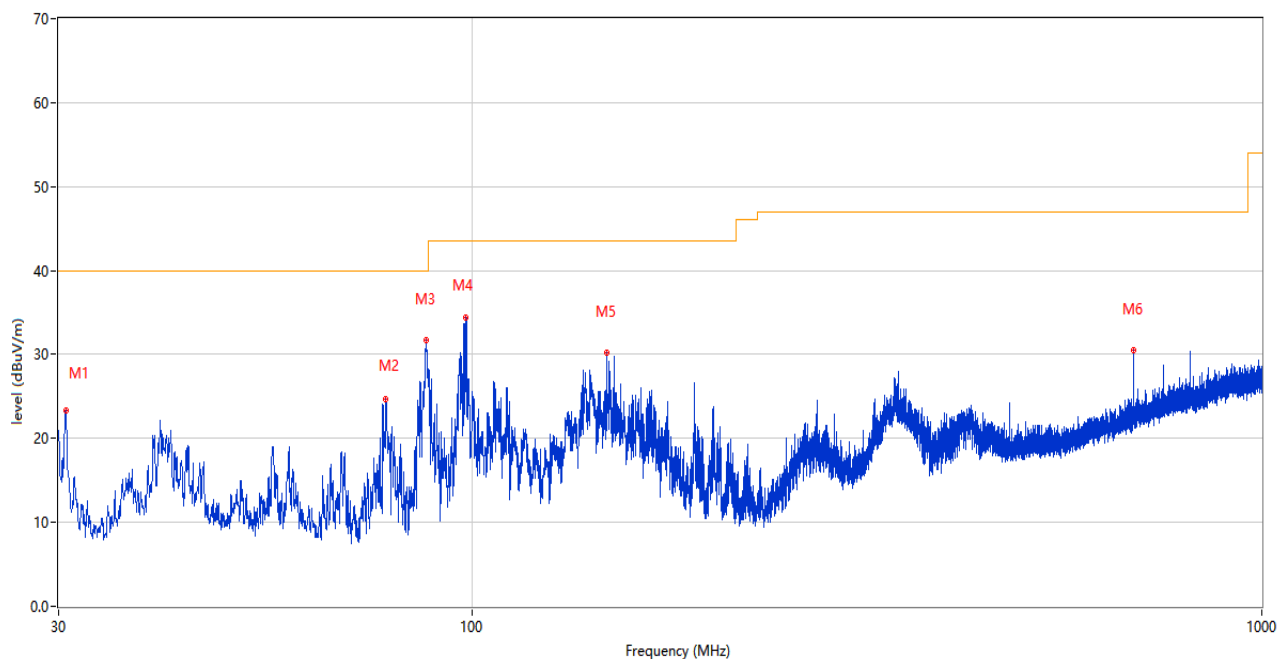
| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Over Limit (dB) | Detector | Table (Degree) | Height (cm) | Antenna    | Verdict |
|-----|-----------------|------------------|-------------|----------------|-----------------|----------|----------------|-------------|------------|---------|
| 1   | 39.506          | 32.97            | -24.29      | 40.0           | -7.03           | Peak     | 360.00         | 200         | Horizontal | Pass    |
| 2   | 58.712          | 23.89            | -24.05      | 40.0           | -16.11          | Peak     | 360.00         | 200         | Horizontal | Pass    |
| 3   | 101.877         | 23.81            | -24.55      | 43.5           | -19.69          | Peak     | 225.90         | 200         | Horizontal | Pass    |
| 4   | 143.344         | 26.48            | -27.81      | 43.5           | -17.02          | Peak     | 211.20         | 200         | Horizontal | Pass    |
| 5   | 191.262         | 23.18            | -25.14      | 43.5           | -20.32          | Peak     | 216.20         | 200         | Horizontal | Pass    |
| 6   | 349.858         | 26.22            | -20.09      | 46.0           | -19.78          | Peak     | 276.50         | 100         | Horizontal | Pass    |

## A.1.3 Test Antenna Vertical, 30 MHz – 1 GHz(IC)



| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Over Limit (dB) | Detector | Table (Degree) | Height (cm) | Antenna  | Verdict |
|-----|-----------------|------------------|-------------|----------------|-----------------|----------|----------------|-------------|----------|---------|
| 1   | 30.631          | 34.56            | -27.23      | 40.0           | -5.44           | Peak     | 53.00          | 100         | Vertical | Pass    |
| 2   | 58.761          | 37.94            | -27.42      | 40.0           | -2.06           | Peak     | 225.00         | 100         | Vertical | N/A     |
| 2*  | 58.761          | 33.91            | -27.42      | 40.0           | -6.09           | QP       | 225.00         | 100         | Vertical | Pass    |
| 3   | 69.043          | 36.88            | -28.90      | 40.0           | -3.12           | Peak     | 276.00         | 100         | Vertical | Pass    |
| 4   | 77.918          | 36.95            | -30.07      | 40.0           | -3.05           | Peak     | 302.00         | 100         | Vertical | Pass    |
| 5   | 86.062          | 38.45            | -30.24      | 40.0           | -1.55           | Peak     | 310.00         | 100         | Vertical | N/A     |
| 5*  | 86.062          | 34.52            | -30.24      | 40.0           | -5.48           | QP       | 310.00         | 100         | Vertical | Pass    |
| 6   | 87.666          | 41.44            | -30.33      | 40.0           | 1.44            | Peak     | 281.00         | 100         | Vertical | N/A     |
| 6*  | 87.666          | 36.10            | -30.33      | 40.0           | -3.90           | QP       | 281.00         | 100         | Vertical | Pass    |
| 7   | 97.852          | 40.30            | -29.46      | 43.5           | -3.20           | Peak     | 212.00         | 100         | Vertical | Pass    |

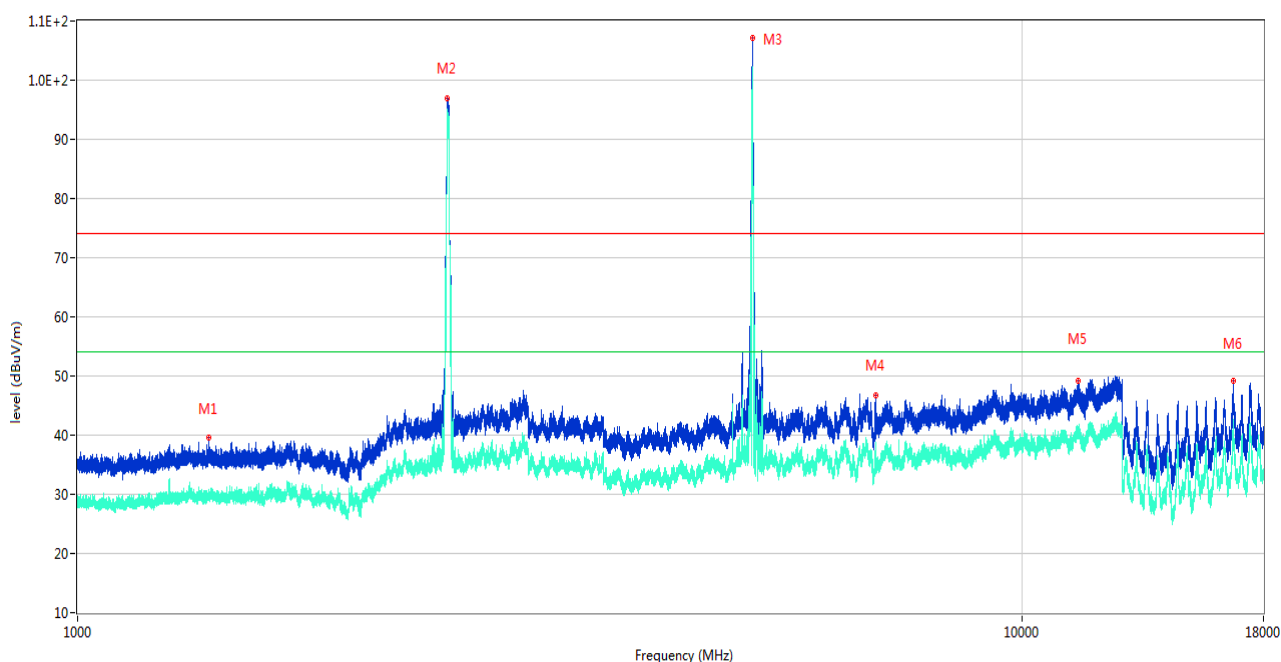
## A.1.4 Test Antenna Horizontal, 30 MHz – 1 GHz(IC)



| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Over Limit (dB) | Detector | Table (Degree) | Height (cm) | Antenna    | Verdict |
|-----|-----------------|------------------|-------------|----------------|-----------------|----------|----------------|-------------|------------|---------|
| 1   | 30.631          | 23.39            | -27.23      | 40.0           | -16.61          | Peak     | 188.00         | 200         | Horizontal | Pass    |
| 2   | 77.869          | 24.65            | -30.07      | 40.0           | -15.35          | Peak     | 335.00         | 100         | Horizontal | Pass    |
| 3   | 87.666          | 31.64            | -30.33      | 40.0           | -8.36           | Peak     | 6.00           | 200         | Horizontal | Pass    |
| 4   | 98.385          | 34.44            | -29.39      | 43.5           | -9.06           | Peak     | 32.00          | 100         | Horizontal | Pass    |
| 5   | 148.098         | 30.22            | -25.16      | 43.5           | -13.28          | Peak     | 347.00         | 200         | Horizontal | Pass    |
| 6   | 687.563         | 30.48            | -14.85      | 47.0           | -16.52          | Peak     | 335.00         | 200         | Horizontal | Pass    |

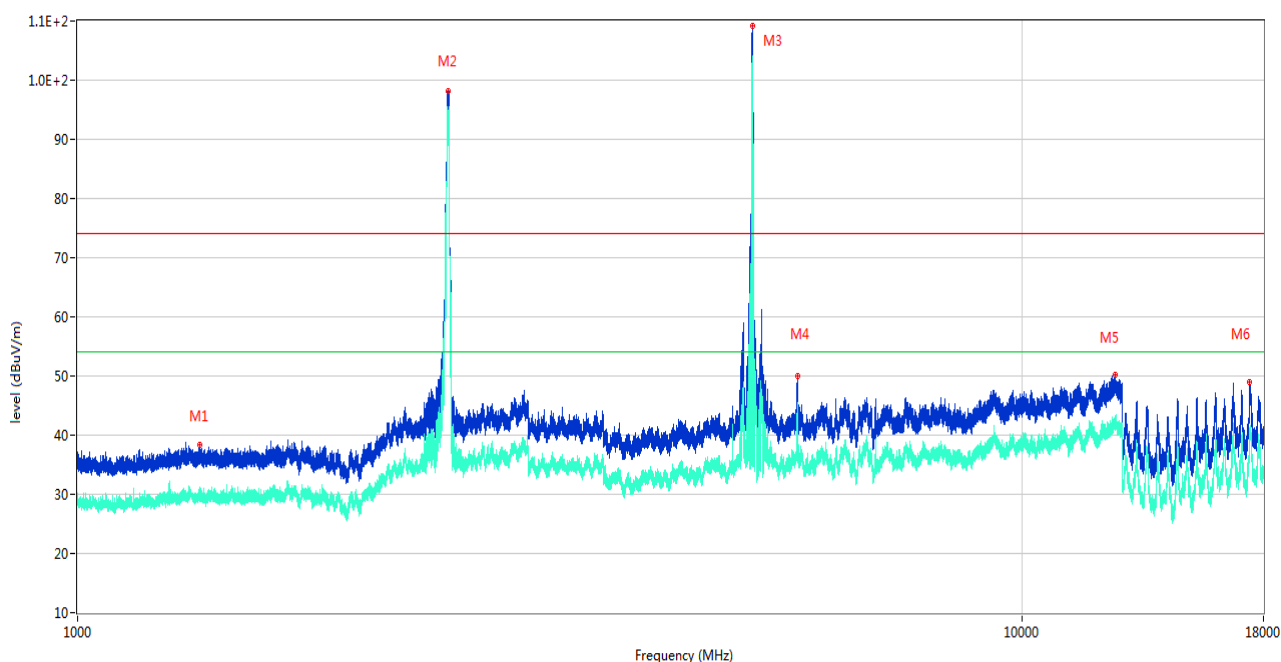
## Test Data and Plots (Above 1 GHz)

### A.1.5 Test Antenna Vertical, 1 GHz – 18 GHz



| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Over Limit (dB) | Detector | Table (Degree) | Height (cm) | Antenna  | Verdict |
|-----|-----------------|------------------|-------------|----------------|-----------------|----------|----------------|-------------|----------|---------|
| 1   | 1375.800        | 39.58            | -15.23      | 74.0           | -34.42          | Peak     | 56.80          | 100         | Vertical | Pass    |
| 1** | 1375.800        | 30.13            | -15.23      | 54.0           | -23.87          | AV       | 56.80          | 100         | Vertical | Pass    |
| 2   | 2464.100        | 96.75            | -9.22       | 74.0           | 22.75           | Peak     | 277.60         | 100         | Vertical | N/A     |
| 2** | 2464.100        | 94.19            | -9.22       | 54.0           | 40.19           | AV       | 277.60         | 100         | Vertical | N/A     |
| 3   | 5185.000        | 107.10           | -2.62       | 74.0           | 33.10           | Peak     | 65.00          | 100         | Vertical | N/A     |
| 3** | 5185.000        | 102.33           | -2.62       | 54.0           | 48.33           | AV       | 65.00          | 100         | Vertical | N/A     |
| 4   | 6999.600        | 46.70            | -1.24       | 74.0           | -27.30          | Peak     | 0.50           | 100         | Vertical | Pass    |
| 4** | 6999.600        | 38.79            | -1.24       | 54.0           | -15.21          | AV       | 0.50           | 100         | Vertical | Pass    |
| 5   | 11459.700       | 49.23            | 20.69       | 74.0           | -24.77          | Peak     | 356.50         | 100         | Vertical | Pass    |
| 5** | 11459.700       | 39.45            | 20.69       | 54.0           | -14.55          | AV       | 356.50         | 100         | Vertical | Pass    |
| 6   | 16722.938       | 49.28            | 25.55       | 74.0           | -24.72          | Peak     | 327.70         | 100         | Vertical | Pass    |
| 6** | 16722.938       | 41.05            | 25.55       | 54.0           | -12.95          | AV       | 327.70         | 100         | Vertical | Pass    |

## A.1.6 Test Antenna Horizontal, 1 GHz – 18 GHz



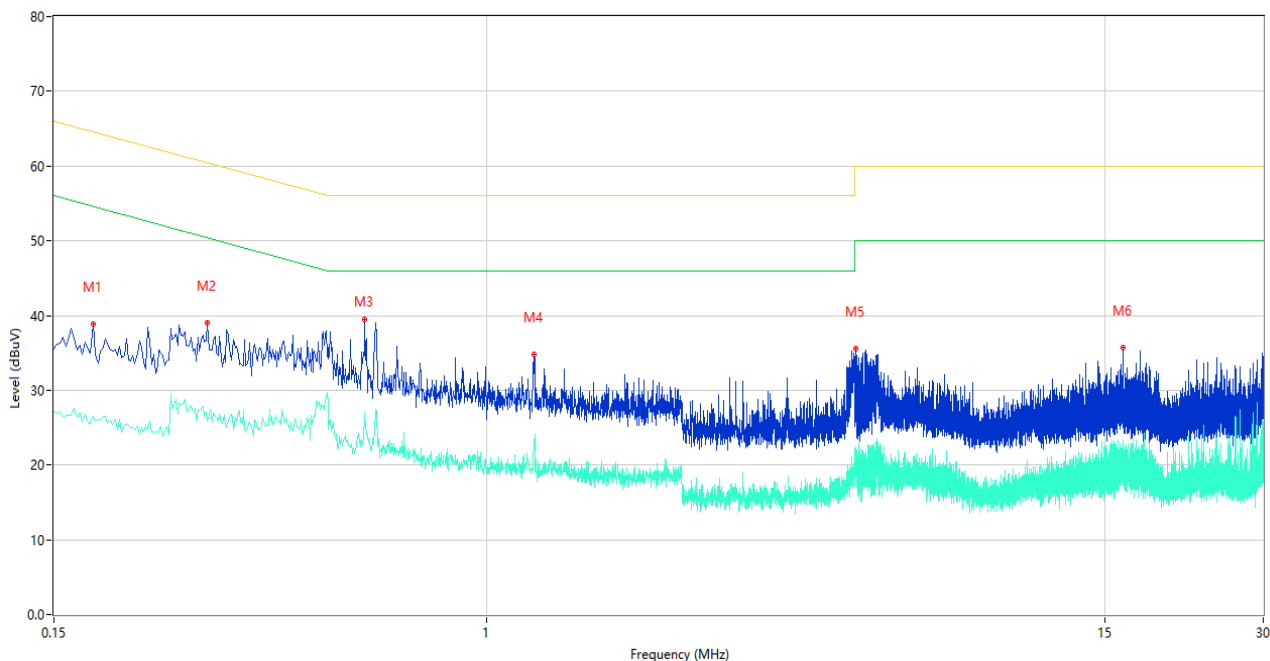
| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Over Limit (dB) | Detector | Table (Degree) | Height (cm) | Antenna    | Verdict |
|-----|-----------------|------------------|-------------|----------------|-----------------|----------|----------------|-------------|------------|---------|
| 1   | 1346.700        | 38.33            | -15.04      | 74.0           | -35.67          | Peak     | 148.70         | 100         | Horizontal | Pass    |
| 1** | 1346.700        | 29.87            | -15.04      | 54.0           | -24.13          | AV       | 148.70         | 100         | Horizontal | Pass    |
| 2   | 2469.900        | 98.25            | -9.59       | 74.0           | 24.25           | Peak     | 336.50         | 100         | Horizontal | N/A     |
| 2** | 2469.900        | 94.88            | -9.59       | 54.0           | 40.88           | AV       | 336.50         | 100         | Horizontal | N/A     |
| 3   | 5183.200        | 109.23           | -2.74       | 74.0           | 35.23           | Peak     | 128.70         | 100         | Horizontal | N/A     |
| 3** | 5183.200        | 104.06           | -2.74       | 54.0           | 50.06           | AV       | 128.70         | 100         | Horizontal | N/A     |
| 4   | 5780.400        | 50.09            | -3.25       | 74.0           | -23.91          | Peak     | 229.00         | 100         | Horizontal | Pass    |
| 4** | 5780.400        | 41.58            | -3.25       | 54.0           | -12.42          | AV       | 229.00         | 100         | Horizontal | Pass    |
| 5   | 12529.776       | 50.15            | 21.64       | 74.0           | -23.85          | Peak     | 282.20         | 100         | Horizontal | Pass    |
| 5** | 12529.776       | 41.76            | 21.64       | 54.0           | -12.24          | AV       | 282.20         | 100         | Horizontal | Pass    |
| 6   | 17401.238       | 48.93            | 24.73       | 74.0           | -25.07          | Peak     | 161.50         | 100         | Horizontal | Pass    |
| 6** | 17401.238       | 39.23            | 24.73       | 54.0           | -14.77          | AV       | 161.50         | 100         | Horizontal | Pass    |

## A.2 Conducted Emission

### Test Data and Plots

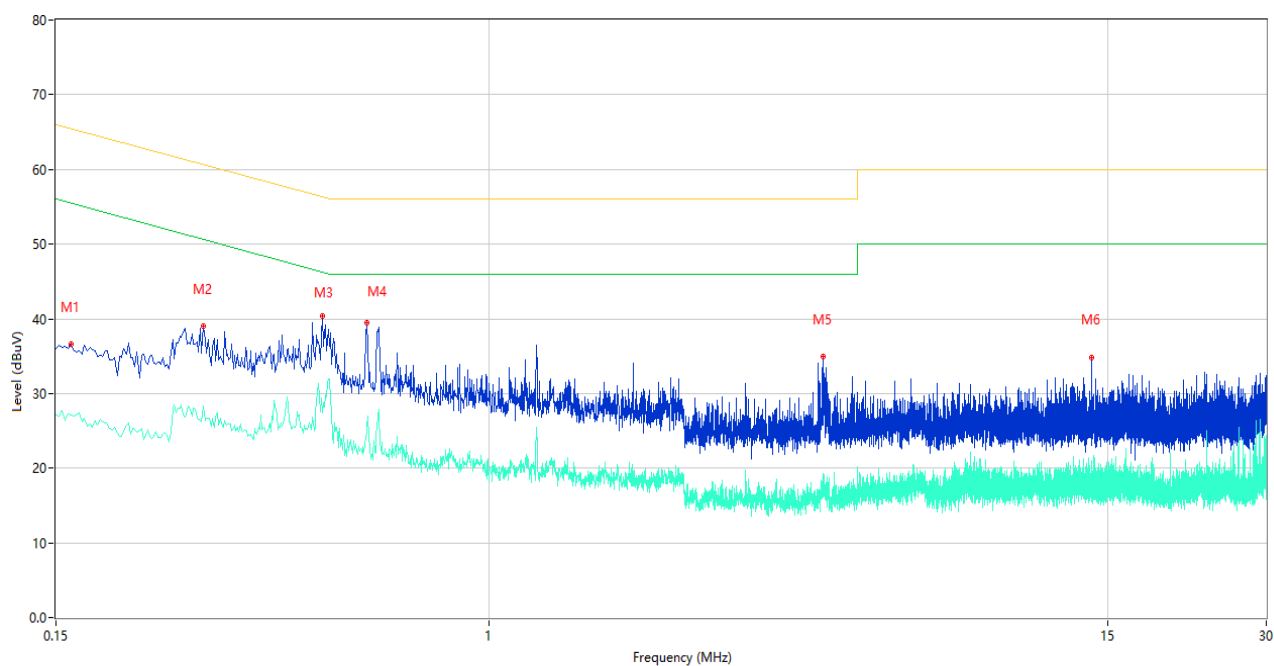
#### The Working Test Mode

##### A.2.1 L Phase



| No. | Frequency (MHz) | Results (dBuV) | Factor (dB) | Limit (dBuV) | Over Limit (dB) | Detector | Line | Verdict |
|-----|-----------------|----------------|-------------|--------------|-----------------|----------|------|---------|
| 1   | 0.178           | 38.87          | 10.14       | 64.58        | -25.71          | Peak     | L    | Pass    |
| 1** | 0.178           | 26.51          | 10.14       | 54.58        | -28.07          | AV       | L    | Pass    |
| 2   | 0.294           | 39.04          | 10.05       | 60.41        | -21.37          | Peak     | L    | Pass    |
| 2** | 0.294           | 25.85          | 10.05       | 50.41        | -24.56          | AV       | L    | Pass    |
| 3   | 0.586           | 39.52          | 10.55       | 56.00        | -16.48          | Peak     | L    | Pass    |
| 3** | 0.586           | 26.99          | 10.55       | 46.00        | -19.01          | AV       | L    | Pass    |
| 4   | 1.230           | 34.76          | 10.11       | 56.00        | -21.24          | Peak     | L    | Pass    |
| 4** | 1.230           | 23.05          | 10.11       | 46.00        | -22.95          | AV       | L    | Pass    |
| 5   | 5.022           | 35.53          | 10.30       | 60.00        | -24.47          | Peak     | L    | Pass    |
| 5** | 5.022           | 22.45          | 10.30       | 50.00        | -27.55          | AV       | L    | Pass    |
| 6   | 16.226          | 35.70          | 10.23       | 60.00        | -24.30          | Peak     | L    | Pass    |
| 6** | 16.226          | 19.87          | 10.23       | 50.00        | -30.13          | AV       | L    | Pass    |

## A.2.2 N Phase



| No. | Frequency (MHz) | Results (dBuV) | Factor (dB) | Limit (dBuV) | Over Limit (dB) | Detector | Line | Verdict |
|-----|-----------------|----------------|-------------|--------------|-----------------|----------|------|---------|
| 1   | 0.160           | 36.58          | 10.17       | 65.46        | -28.88          | Peak     | N    | Pass    |
| 1** | 0.160           | 27.18          | 10.17       | 55.46        | -28.28          | AV       | N    | Pass    |
| 2   | 0.286           | 38.96          | 10.06       | 60.64        | -21.68          | Peak     | N    | Pass    |
| 2** | 0.286           | 28.36          | 10.06       | 50.64        | -22.28          | AV       | N    | Pass    |
| 3   | 0.482           | 40.35          | 10.37       | 56.30        | -15.95          | Peak     | N    | Pass    |
| 3** | 0.482           | 27.47          | 10.37       | 46.30        | -18.83          | AV       | N    | Pass    |
| 4   | 0.584           | 39.47          | 10.55       | 56.00        | -16.53          | Peak     | N    | Pass    |
| 4** | 0.584           | 24.92          | 10.55       | 46.00        | -21.08          | AV       | N    | Pass    |
| 5   | 4.310           | 34.88          | 10.23       | 56.00        | -21.12          | Peak     | N    | Pass    |
| 5** | 4.310           | 19.26          | 10.23       | 46.00        | -26.74          | AV       | N    | Pass    |
| 6   | 13.968          | 34.86          | 10.47       | 60.00        | -25.14          | Peak     | N    | Pass    |
| 6** | 13.968          | 20.98          | 10.47       | 50.00        | -29.02          | AV       | N    | Pass    |

## **ANNEX B TEST SETUP PHOTOS**

Please refer the document “BL-SZ2261190-AE.PDF”.

## **ANNEX C EUT EXTERNAL PHOTOS**

Please refer the document “BL-SZ2261190-AW.PDF”.

## **ANNEX D EUT INTERNAL PHOTOS**

Please refer the document “BL-SZ2261190-AI.PDF”.

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--END OF REPORT--