

FCC

EMC

TEST REPORT

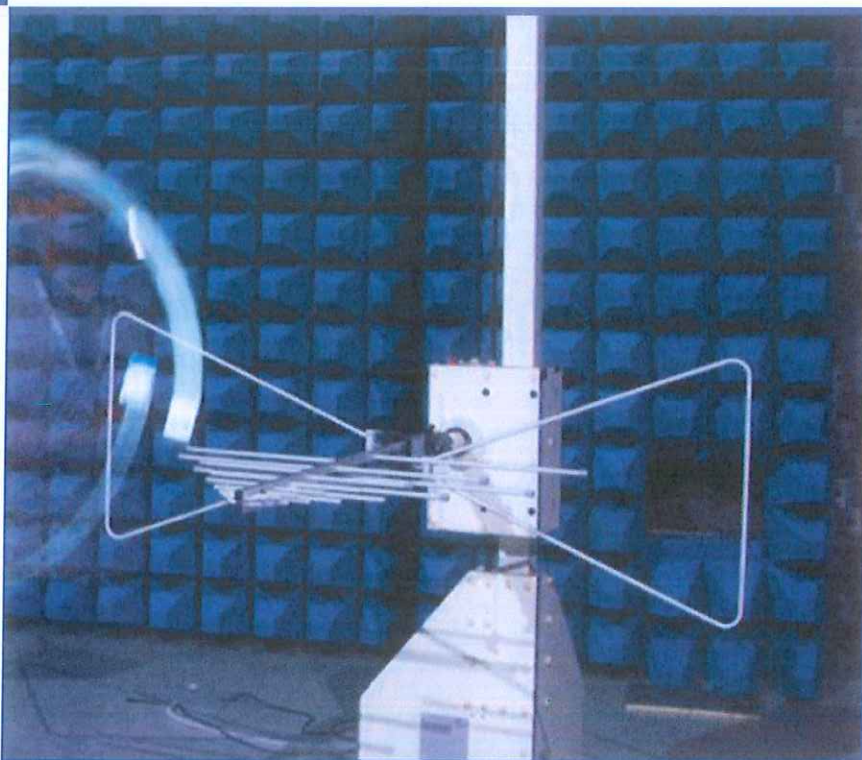
ISSUED BY  
Shenzhen BALUN Technology Co., Ltd.



FOR  
Y5s

ISSUED TO  
TP-LINK Technologies Co., Ltd.

Building 24-1F/3F/4F/5F, 28-1F/2F/3F/4F Science and Technology Park,  
Shennan Road, Nanshan District, Shenzhen City, Guangdong Province,  
P.R. China



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Xia Long  
(Engineer)

Date Jul. 10, 2017

Approved by: Liao Jianming  
Liao Jianming  
(Technical Director)

Date Jul. 10, 2017

Report No.: BL-SZ1760440-401

EUT Name: Y5s

Model Name: TP804C

Brand Name: neffos

Test Standard: 47 CFR Part 15 Subpart B

FCC ID: TE7Y5SV1

Test Conclusion: Pass

Test Date: Jul. 03, 2017 ~ Jul. 10, 2017

Date of Issue: Jul. 10, 2017

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**Revision History**

| Version        | Issue Date           | Revisions Content    |
|----------------|----------------------|----------------------|
| <u>Rev. 01</u> | <u>Jul. 10, 2017</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, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. 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, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Accreditation Certificate | <p>The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1.</p> <p>The laboratory has been listed by US Federal Communications Commission to perform electromagnetic emission measurements. The recognition numbers of test site are 832625.</p> <p>The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.</p> |
| Description               | All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055                                                                                                                                                                                                                                                                                                                                           |

### 1.3 Laboratory Condition

|                           |                   |
|---------------------------|-------------------|
| Ambient Temperature       | 20°C~25°C         |
| Ambient Relative Humidity | 45% - 55%         |
| Ambient Pressure          | 100 kPa - 102 kPa |

### 1.4 Announce

- (1) The test report reference to the report template version v6.5.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- (5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.
- (6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

## 2 PRODUCT INFORMATION

### 2.1 Applicant Information

|           |                                                                                                                                                      |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Applicant | TP-LINK Technologies Co., Ltd.                                                                                                                       |
| Address   | Building 24-1F/3F/4F/5F, 28-1F/2F/3F/4F Science and Technology Park, Shennan Road, Nanshan District, Shenzhen City, Guangdong Province, P.R. China . |

### 2.2 Manufacturer Information

|              |                                                                                                                                                    |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer | TP-LINK Technologies Co., Ltd.                                                                                                                     |
| Address      | Building 24-1F/3F/4F/5F, 28-1F/2F/3F/4F Science and Technology Park, Shennan Road, Nanshan District, Shenzhen City, Guangdong Province, P.R. China |

### 2.3 Factory Information

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

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

|                                           |                                                                                                                                                                      |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EUT Name                                  | Y5s                                                                                                                                                                  |
| Model Name                                | TP804C                                                                                                                                                               |
| Series Model Name                         | TP804C, TP804CXXYY<br>XX= 11 or 21 or 31 (11 indicates Pearl White, 21 indicates Dark Gray, 31 indicates Sunny Yellow); YY indicates different national.             |
| Description of Model name differentiation | The equipment model TP804C and TP804CXXYY are the Y5s model, the electrical parameters and internal structure of circuit are same, only the model name is different. |
| Hardware Version                          | 1.0                                                                                                                                                                  |
| Software Version                          | TP804RXXXX                                                                                                                                                           |
| Dimensions (Approx.)                      | N/A                                                                                                                                                                  |
| Weight (Approx.)                          | N/A                                                                                                                                                                  |
| Network and Wireless connectivity         | 2G Network GSM/GPRS/EDGE 850/1900 MHz<br>3G Network WCDMA/HSDPA/HSUPA + Band 2/4/5<br>4G Network FDD LTE Band 2/4/7<br>Bluetooth, WIFI, FM, GPS, GLONASS             |

## 2.5 Ancillary Equipment

|                       |                      |                           |
|-----------------------|----------------------|---------------------------|
| Ancillary Equipment 1 | Battery              |                           |
|                       | Brand Name           | neffos                    |
|                       | Model No.            | NBL-40A2400               |
|                       | Serial No.           | N/A                       |
|                       | Capacitance          | 2400 mAh                  |
|                       | Rated Voltage        | 3.85 V                    |
|                       | Limit Charge Voltage | 4.4 V                     |
| Ancillary Equipment 2 | Adapter              |                           |
|                       | Brand Name           | neffos                    |
|                       | Model No.            | N050100-2B3               |
|                       | Serial No.           | N/A                       |
|                       | Rated Input          | 100-240V~, 0.3A, 50/60 Hz |
|                       | Rated Output         | 5 V $\overline{=}$ , 1 A  |
| Ancillary Equipment 3 | USB Cable            |                           |
|                       | Length (Approx.)     | 1 m                       |

## 2.6 Technical Information

Note: Not Applicable.

### 3 SUMMARY OF TEST RESULTS

#### 3.1 Test Standards

| No. | Identity                                          | Document Title                                                                                                                                                                |
|-----|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | FCC 47 CFR Part 15<br>Subpart B (10-1-16 Edition) | Unintentional Radiators                                                                                                                                                       |
| 2   | ANSI C63.4-2014                                   | American National Standard for Methods of<br>Measurement of Radio-Noise Emissions from Low-<br>Voltage Electrical and Electronic Equipment in the<br>Range of 9 kHz to 40 GHz |

#### 3.2 Verdict

| No. | Description                  | FCC Rule | Test Verdict | Result     |
|-----|------------------------------|----------|--------------|------------|
| 1   | Radiated Emission            | 15.109   | Pass         | Annex A .1 |
| 2   | Conducted Emission, AC Ports | 15.107   | 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) | 3.23 dB |
| Radiated emissions (30 MHz-1 GHz)  | 4.30 dB |
| Radiated emissions (1 GHz-18 GHz)  | 4.81 dB |
| Radiated emissions (18 GHz-40 GHz) | 5.71 dB |

## 4 GENERAL TEST CONFIGURATIONS

### 4.1 Test Environments

| Environment<br>Parameter                        | Selected Values During Tests |                                                |                   |                  |
|-------------------------------------------------|------------------------------|------------------------------------------------|-------------------|------------------|
|                                                 | Temperature                  | Voltage                                        | Relative Humidity | Ambient Pressure |
| Normal Temperature,<br>Normal Voltage<br>(NTNV) | 23°C~26°C                    | AC 120 V/60 Hz<br>or DC 3.85 V from<br>Battery | 50%-55%           | 100 to 102 kPa   |

### 4.2 Test Equipment List

| Radiated Emission Test For Frequency Below 1 GHz |                            |                       |            |            |            |                                     |
|--------------------------------------------------|----------------------------|-----------------------|------------|------------|------------|-------------------------------------|
| Description                                      | Manufacturer               | Model                 | Serial No. | Cal. Date  | Cal. Due   | Use                                 |
| EMI Receiver                                     | ROHDE&SCHWA<br>RZ          | ESRP                  | 101036     | 2017.06.22 | 2018.06.21 | <input checked="" type="checkbox"/> |
| Test Antenna-<br>Bi-Log                          | SCHWARZBECK                | VULB 9163             | 9163-977   | 2016.07.19 | 2018.07.18 | <input checked="" type="checkbox"/> |
| Test Antenna-<br>Horn                            | SCHWARZBECK                | BBHA<br>9120D         | 9120D-1600 | 2016.07.12 | 2018.07.11 | <input type="checkbox"/>            |
| Anechoic<br>Chamber                              | EMC Electronic<br>Co., Ltd | 20.10*11.60<br>*7.35m | N/A        | 2016.08.09 | 2018.08.08 | <input checked="" type="checkbox"/> |

| Radiated Emission Test For Frequency Above 1 GHz |              |               |            |            |            |                                     |
|--------------------------------------------------|--------------|---------------|------------|------------|------------|-------------------------------------|
| Description                                      | Manufacturer | Model         | Serial No. | Cal. Date  | Cal. Due   | Use                                 |
| EMI Receiver                                     | KEYSIGHT     | N9038A        | MY53220118 | 2016.09.09 | 2017.09.08 | <input checked="" type="checkbox"/> |
| Test Antenna-<br>Bi-Log                          | SCHWARZBECK  | VULB 9163     | 9163-624   | 2015.07.22 | 2017.07.21 | <input type="checkbox"/>            |
| Test Antenna-<br>Horn                            | SCHWARZBECK  | BBHA<br>9120D | 9120D-1148 | 2015.07.22 | 2017.07.21 | <input checked="" type="checkbox"/> |
| Anechoic<br>Chamber                              | RAINFORD     | 9m*6m*6m      | N/A        | 2017.02.21 | 2019.02.20 | <input checked="" type="checkbox"/> |

| Conducted Emission Test |                   |           |            |            |            |                                     |
|-------------------------|-------------------|-----------|------------|------------|------------|-------------------------------------|
| Description             | Manufacturer      | Model     | Serial No. | Cal. Date  | Cal. Due   | Use                                 |
| EMI Receiver            | ROHDE&SCHWA<br>RZ | ESRP      | 101036     | 2017.06.22 | 2018.06.21 | <input checked="" type="checkbox"/> |
| LISN                    | SCHWARZBECK       | NSLK 8127 | 8127-687   | 2017.06.22 | 2018.06.21 | <input checked="" type="checkbox"/> |
| LISN                    | SCHWARZBECK       | NNLK 8129 | 8129-462   | 2016.09.14 | 2017.09.13 | <input type="checkbox"/>            |
| AMN                     | SCHWARZBECK       | NNBM8124  | 8124-509   | 2017.06.22 | 2018.06.21 | <input type="checkbox"/>            |
| AMN                     | SCHWARZBECK       | NNBM8124  | 8124-510   | 2017.06.22 | 2018.06.21 | <input type="checkbox"/>            |
| ISN                     | TESEQ             | ISN T800  | 34449      | 2017.06.22 | 2018.06.21 | <input type="checkbox"/>            |
| Shielded<br>Enclosure   | ChangNing         | CN-130701 | 130703     | N/A        | N/A        | <input checked="" type="checkbox"/> |

### 4.3 Test Enclosure list

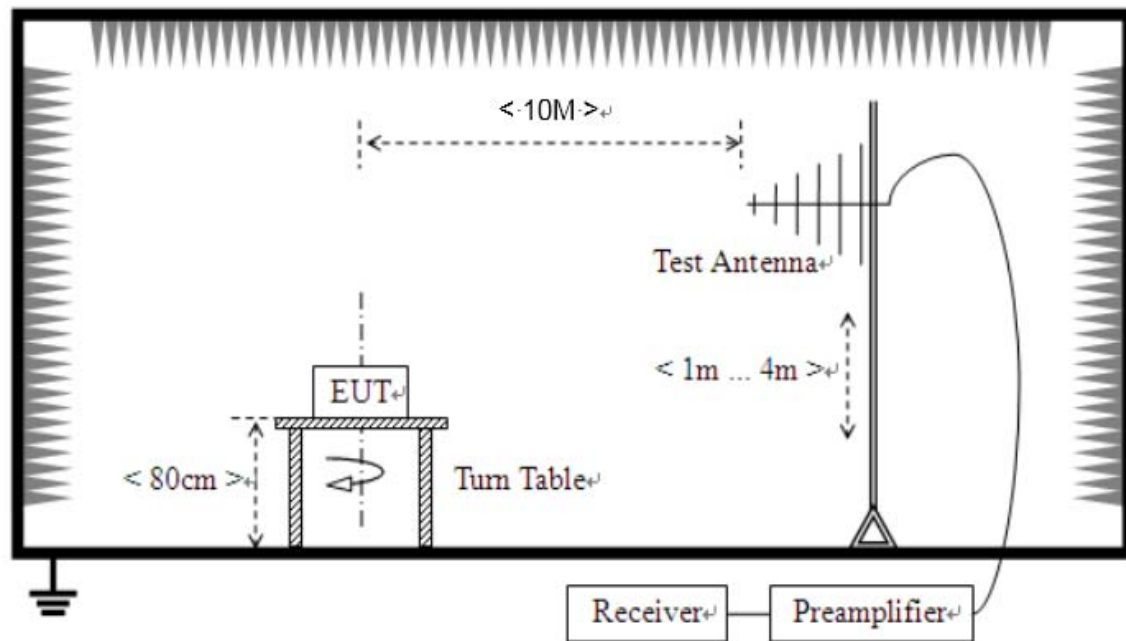
| Description                         | Manufacturer | Model        | Serial No.             | Length | Description         | Use                                 |
|-------------------------------------|--------------|--------------|------------------------|--------|---------------------|-------------------------------------|
| PC                                  | Dell         | 015K3N       | N/A                    | N/A    | Special Handled     | <input type="checkbox"/>            |
| Laptop                              | Apple        | A1465        | N/A                    | N/A    | N/A                 | <input checked="" type="checkbox"/> |
| Printer                             | HP           | DESKJET 1000 | N/A                    | N/A    | N/A                 | <input type="checkbox"/>            |
| Keyboard                            | Logitech     | Y-BP62a      | N/A                    | N/A    | N/A                 | <input type="checkbox"/>            |
| Mouse                               | Logitech     | M100         | N/A                    | N/A    | N/A                 | <input type="checkbox"/>            |
| USB disk                            | Kingston     | N/A          | N/A                    | N/A    | N/A                 | <input type="checkbox"/>            |
| TF Card                             | Kingston     | N/A          | N/A                    | N/A    | N/A                 | <input checked="" type="checkbox"/> |
| VGA Cable                           | N/A          | N/A          | N/A                    | 1.5 m  | Shielded with core  | <input type="checkbox"/>            |
| HDMI Cable                          | N/A          | N/A          | N/A                    | 1.5 m  | Shielded with core  | <input type="checkbox"/>            |
| DVI Cable                           | N/A          | N/A          | N/A                    | 1.5 m  | Shielded with core  | <input type="checkbox"/>            |
| Coaxial video cable                 | N/A          | N/A          | N/A                    | 2.0 m  | Shielded with core  | <input type="checkbox"/>            |
| iPhone                              | Apple        | A1586        | N/A                    | N/A    | N/A                 | <input type="checkbox"/>            |
| Phone                               | MI           | M4           | N/A                    | N/A    | N/A                 | <input type="checkbox"/>            |
| Bluetooth Earphone                  | SAMSUNG      | Gear Circle  | N/A                    | N/A    | N/A                 | <input checked="" type="checkbox"/> |
| GPS/GLONASS Vector signal generator | R&S          | N5172B EXG   | N/A                    | N/A    | N/A                 | <input checked="" type="checkbox"/> |
| WIFI Router                         | TP-LINK      | TL-WDR7500   | N/A                    | N/A    | N/A                 | <input checked="" type="checkbox"/> |
| Earphone                            | N/A          | OPPO         | N/A                    | 1.1 m  | N/A                 | <input checked="" type="checkbox"/> |
| Car Battery                         | Camel        | 55530        | N/A                    | N/A    | 12 V/55 Ah          | <input type="checkbox"/>            |
| Artificial load                     | N/A          | N/A          | N/A                    | N/A    | 2.5 $\Omega$ /100 W | <input type="checkbox"/>            |
| Artificial load                     | N/A          | N/A          | N/A                    | N/A    | 5 $\Omega$ /100 W   | <input type="checkbox"/>            |
| Electronic Load                     | ITECH        | IT8511       | N/A                    | N/A    | N/A                 | <input type="checkbox"/>            |
| USB Cable                           | N/A          | N/A          | N/A                    | 1.5 m  | Shielded with core  | <input type="checkbox"/>            |
| DC Power Supply                     | ITECH        | IT6863A      | 60001401068<br>7210006 | N/A    | N/A                 | <input type="checkbox"/>            |
| LCD Monitor                         | SAMSUNG      | UA32C4000P   | N/A                    | N/A    | N/A                 | <input type="checkbox"/>            |
| LCD Monitor                         | Dell         | U241HB       | N/A                    | N/A    | N/A                 | <input type="checkbox"/>            |
| RJ45 Cable                          | N/A          | N/A          | N/A                    | 1.5 m  | Shielded with core  | <input type="checkbox"/>            |

## 4.4 Test Configurations

| Test Configurations (TC) No. | Description                                                                                                                                    |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Traffic Test Mode            |                                                                                                                                                |
| TC01                         | <u>The GSM 850 MHz Test Mode</u><br>GSM 850 Link + Adapter + USB Cable + Battery + TF Card + Earphone + GPS RX                                 |
| TC02                         | <u>The EDGE 850 MHz Test Mode</u><br>EDGE 850 Link + Adapter + USB Cable + Battery + TF Card + Earphone + BT Link + WIFI Link + GLONASS RX     |
| TC03                         | <u>The GSM 1900 MHz Test Mode</u><br>GSM 1900 Link + Adapter + USB Cable + Battery + TF Card + Earphone + BT Link + WIFI Link + GPS RX         |
| TC04                         | <u>The EDGE 1900 MHz Test Mode</u><br>EDGE 1900 Link + Adapter + USB Cable + Battery + TF Card + Earphone + BT Link + WIFI Link + GLONASS RX   |
| TC05                         | <u>The WCDMA Band 2 Test Mode</u><br>WCDMA Band 2 + Adapter + USB Cable + Battery + TF Card + Earphone + BT Link + WIFI Link + GPS RX          |
| TC06                         | <u>The WCDMA Band 4 Test Mode</u><br>WCDMA Band 4 + Adapter + USB Cable + Battery + TF Card + Earphone + BT Link + WIFI Link + GLONASS RX      |
| TC07                         | <u>The WCDMA Band 5 test mode</u><br>WCDMA Band 5 + Adapter + USB Cable + Battery + TF Card + Earphone + BT Link + WIFI Link + GPS RX          |
| TC08                         | <u>The FDD LTE Band 2 Test Mode</u><br>LTE Band 2 Link + Adapter + USB Cable + Battery + TF Card + Earphone + BT Link + WIFI Link + GLONASS RX |
| TC09                         | <u>The FDD LTE Band 4 Test Mode</u><br>LTE Band 4 Link + Adapter + USB Cable + Battery + TF Card + Earphone + BT Link + WIFI Link + GPS RX     |
| TC10                         | <u>The FDD LTE Band 7 Test Mode</u><br>LTE Band 7 Link + Adapter + USB Cable + Battery + TF Card + Earphone + BT Link + WIFI Link +GLONASS RX  |
| TC11                         | <u>The Idle Test Mode</u><br>GSM 850(Idle) + Adapter + USB Cable + Battery + TF Card + Earphone + FM RX                                        |
| Amusement Test Mode          |                                                                                                                                                |
| TC12                         | <u>The USB Test Mode</u><br>EUT + Battery + TF Card + Earphone + USB Cable + Laptop                                                            |
| TC13                         | <u>The Camera Test Mode</u><br>EUT + Battery + TF Card + Adapter + USB Cable + Earphone                                                        |
| TC14                         | <u>The Video Play Test Mode</u><br>EUT + Battery + TF Card + Adapter + USB Cable + Earphone                                                    |

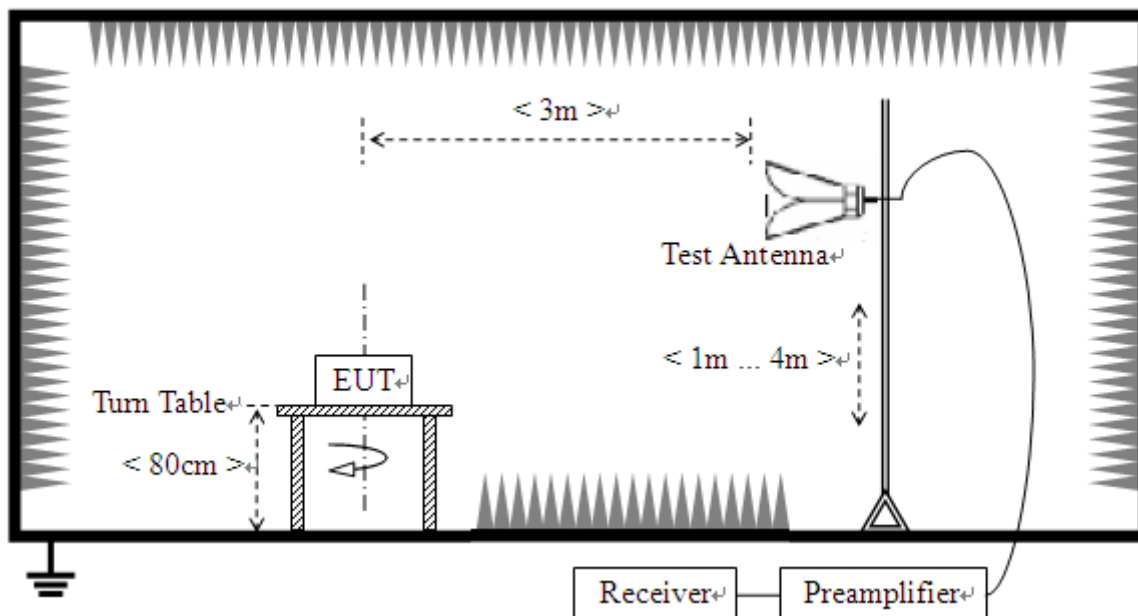
## 4.5 Test Setups

### Test Setup 1



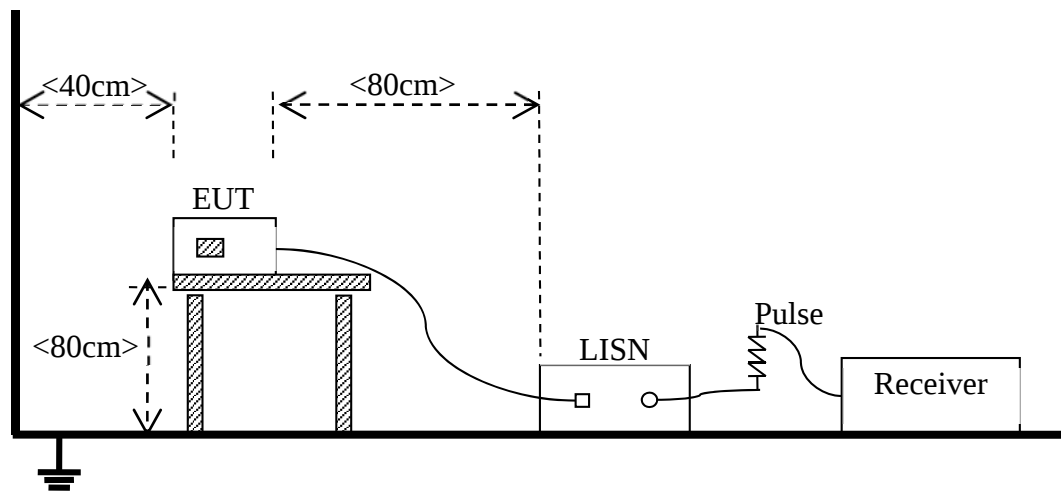
(For Radiated Emission Test (30 MHz-1 GHz))

### 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 Env.          | NTNV                      |
|                                                                                                                                                                                                                                 | Test Setup         | Test Setup 1&2            |
|                                                                                                                                                                                                                                 | Test Configuration | TC01~TC14 <sup>Note</sup> |
| Conducted Emission, AC Ports                                                                                                                                                                                                    | Test Env.          | NTNV                      |
|                                                                                                                                                                                                                                 | Test Setup         | Test Setup 3              |
|                                                                                                                                                                                                                                 | Test Configuration | TC01~TC14 <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 GSM 850 MHz 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

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

NOTE:

- 1) Field Strength (dB $\mu\text{V/m}$ ) =  $20 \cdot \log$  [Field Strength ( $\mu\text{V/m}$ )].
- 2) In the emission tables above, the tighter limit applies at the band edges.

##### 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

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.

##### 5.1.1.4 Test Result

Please refer to ANNEX A.1.

## 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.

### 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 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.

### 5.1.2.4 Test Result

Please refer to ANNEX A.2.

## ANNEX A TEST RESULTS

### A.1 Radiated Emission

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

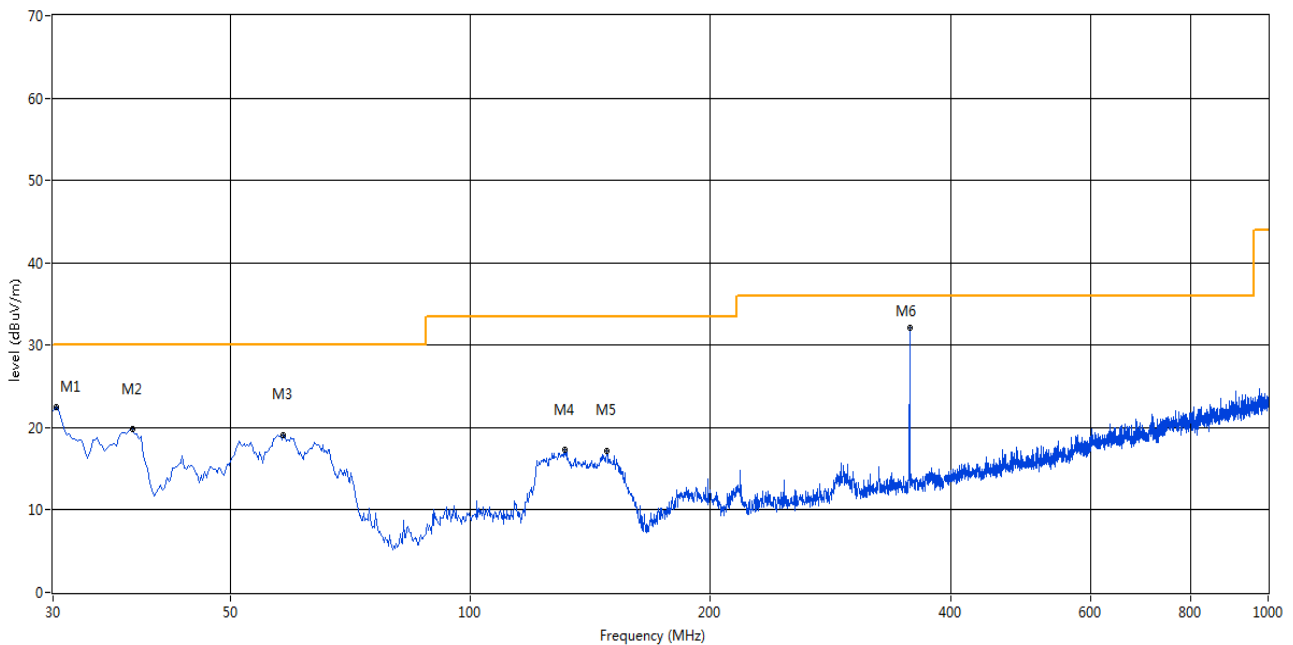
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note 3: This frequency which remake N/A should be ignored because they are MS and SS carrier frequency.

#### Test Data and Plots

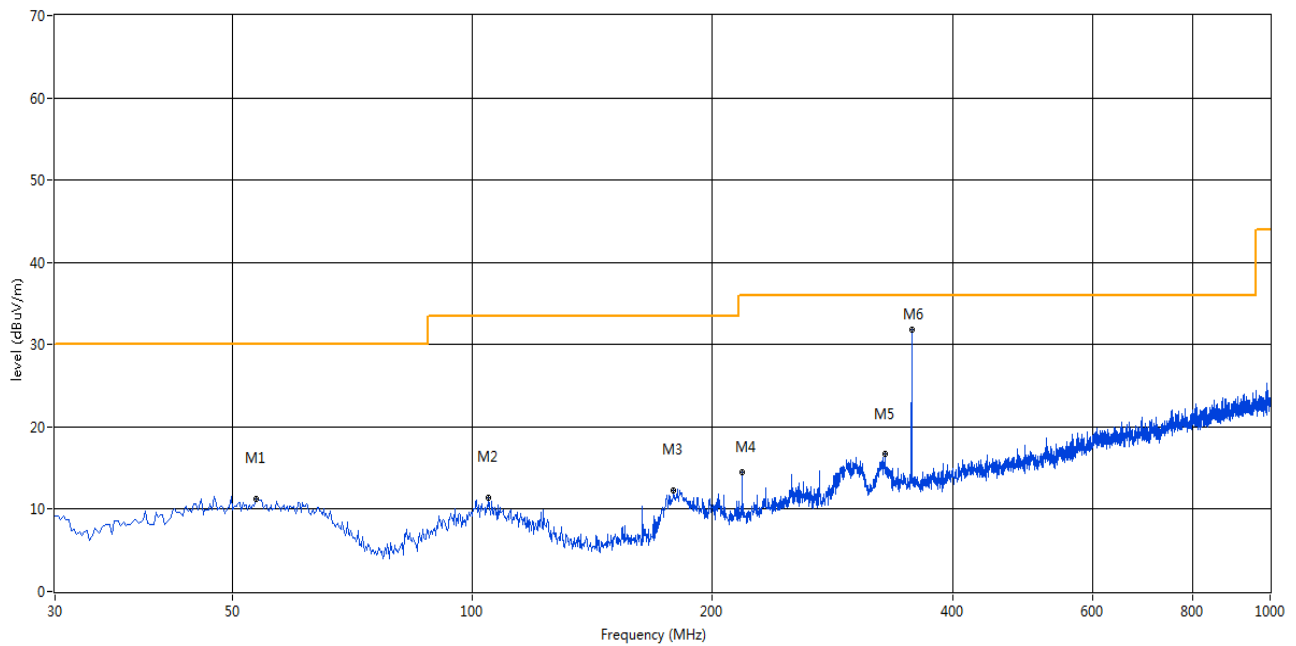
##### The GSM 850 MHz Test Mode

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



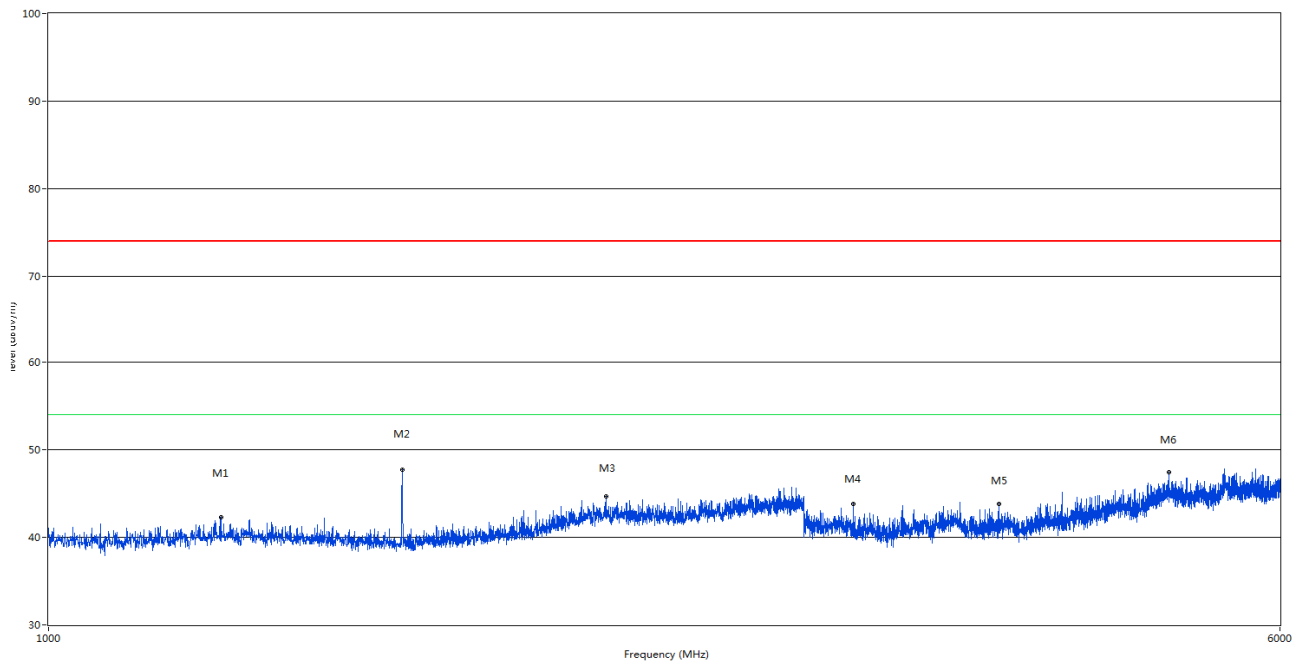
| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Margin (dB) | Detector | Table (o) | Height (cm) | ANT      | Verdict |
|-----|-----------------|------------------|-------------|----------------|-------------|----------|-----------|-------------|----------|---------|
| 1   | 30.242          | 22.54            | -16.50      | 30.0           | 7.46        | Peak     | 105.00    | 100         | Vertical | Pass    |
| 2   | 37.758          | 19.77            | -15.03      | 30.0           | 10.23       | Peak     | 191.00    | 100         | Vertical | Pass    |
| 3   | 58.365          | 19.15            | -14.72      | 30.0           | 10.85       | Peak     | 171.00    | 300         | Vertical | Pass    |
| 4   | 131.582         | 17.25            | -18.44      | 33.5           | 16.25       | Peak     | 0.00      | 200         | Vertical | Pass    |
| 5   | 148.310         | 17.23            | -18.76      | 33.5           | 16.27       | Peak     | 243.00    | 100         | Vertical | Pass    |
| 6   | 355.354         | 32.17            | -10.62      | 36.0           | 3.83        | Peak     | 174.00    | 100         | Vertical | Pass    |

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



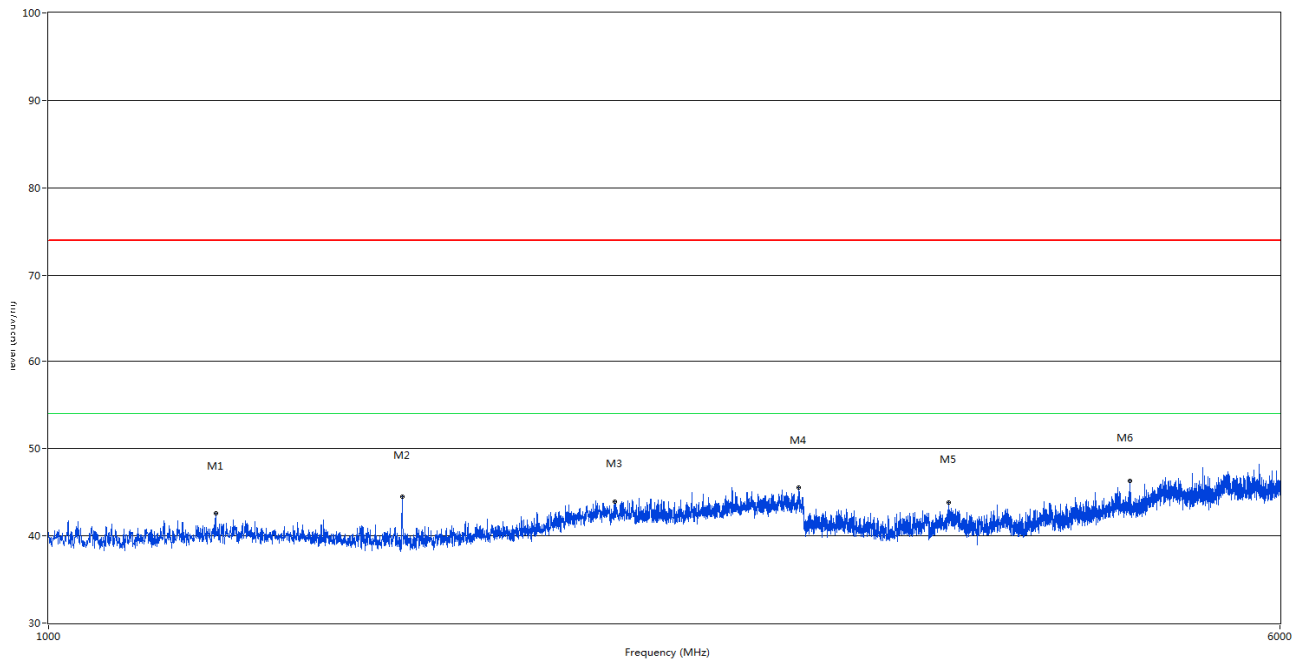
| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Margin (dB) | Detector | Table (o) | Height (cm) | ANT        | Verdict |
|-----|-----------------|------------------|-------------|----------------|-------------|----------|-----------|-------------|------------|---------|
| 1   | 53.517          | 11.27            | -13.45      | 30.0           | 18.73       | Peak     | 360.00    | 100         | Horizontal | Pass    |
| 2   | 104.914         | 11.43            | -15.01      | 33.5           | 22.07       | Peak     | 277.00    | 300         | Horizontal | Pass    |
| 3   | 178.858         | 12.31            | -17.05      | 33.5           | 21.19       | Peak     | 55.00     | 300         | Horizontal | Pass    |
| 4   | 217.891         | 14.51            | -14.97      | 36.0           | 21.49       | Peak     | 239.00    | 300         | Horizontal | Pass    |
| 5   | 329.170         | 16.66            | -11.49      | 36.0           | 19.34       | Peak     | 73.00     | 200         | Horizontal | Pass    |
| 6   | 355.354         | 31.79            | -10.62      | 36.0           | 4.21        | Peak     | 240.00    | 200         | Horizontal | Pass    |

### A.1.3 Test Antenna Vertical, 1 GHz – 6 GHz



| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Margin (dB) | Detector | Table (o) | Height (cm) | ANT        | Verdict |
|-----|-----------------|------------------|-------------|----------------|-------------|----------|-----------|-------------|------------|---------|
| 1   | 1285.000        | 42.34            | -6.19       | 74.0           | 31.66       | Peak     | 208.40    | 100         | Horizontal | Pass    |
| 2   | 1673.000        | 47.73            | -5.89       | 74.0           | 26.27       | Peak     | 6.30      | 100         | Horizontal | N/A     |
| 3   | 2250.500        | 44.68            | -2.52       | 74.0           | 29.32       | Peak     | 355.30    | 100         | Horizontal | Pass    |
| 4   | 3224.250        | 43.82            | 6.38        | 74.0           | 30.18       | Peak     | 0.30      | 100         | Horizontal | Pass    |
| 5   | 3984.750        | 43.82            | 8.50        | 74.0           | 30.18       | Peak     | 336.30    | 100         | Horizontal | Pass    |
| 6   | 5104.500        | 47.43            | 11.17       | 74.0           | 26.57       | Peak     | 358.80    | 100         | Horizontal | Pass    |

#### A.1.4 Test Antenna Horizontal, 1 GHz – 6 GHz

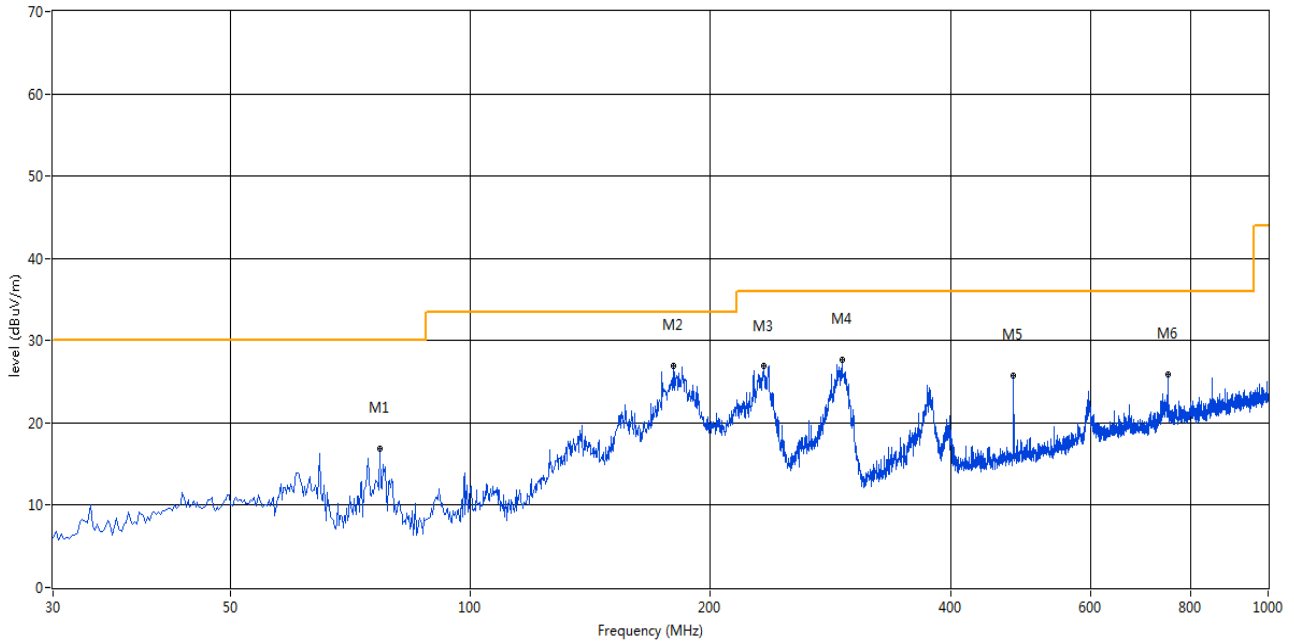


| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Margin (dB) | Detector | Table (o) | Height (cm) | ANT      | Verdict |
|-----|-----------------|------------------|-------------|----------------|-------------|----------|-----------|-------------|----------|---------|
| 1   | 1275.000        | 42.59            | -6.24       | 74.0           | 31.41       | Peak     | 201.70    | 100         | Vertical | Pass    |
| 2   | 1672.500        | 44.45            | -5.91       | 74.0           | 29.55       | Peak     | 157.50    | 100         | Vertical | N/A     |
| 3   | 2280.000        | 43.94            | -2.63       | 74.0           | 30.06       | Peak     | 86.20     | 100         | Vertical | Pass    |
| 4   | 2980.000        | 45.51            | 0.06        | 74.0           | 28.49       | Peak     | 0.20      | 100         | Vertical | Pass    |
| 5   | 3703.500        | 43.79            | 7.82        | 74.0           | 30.21       | Peak     | 266.70    | 100         | Vertical | Pass    |
| 6   | 4821.000        | 46.33            | 10.52       | 74.0           | 27.67       | Peak     | 62.50     | 100         | Vertical | Pass    |

## Test Data and Plots

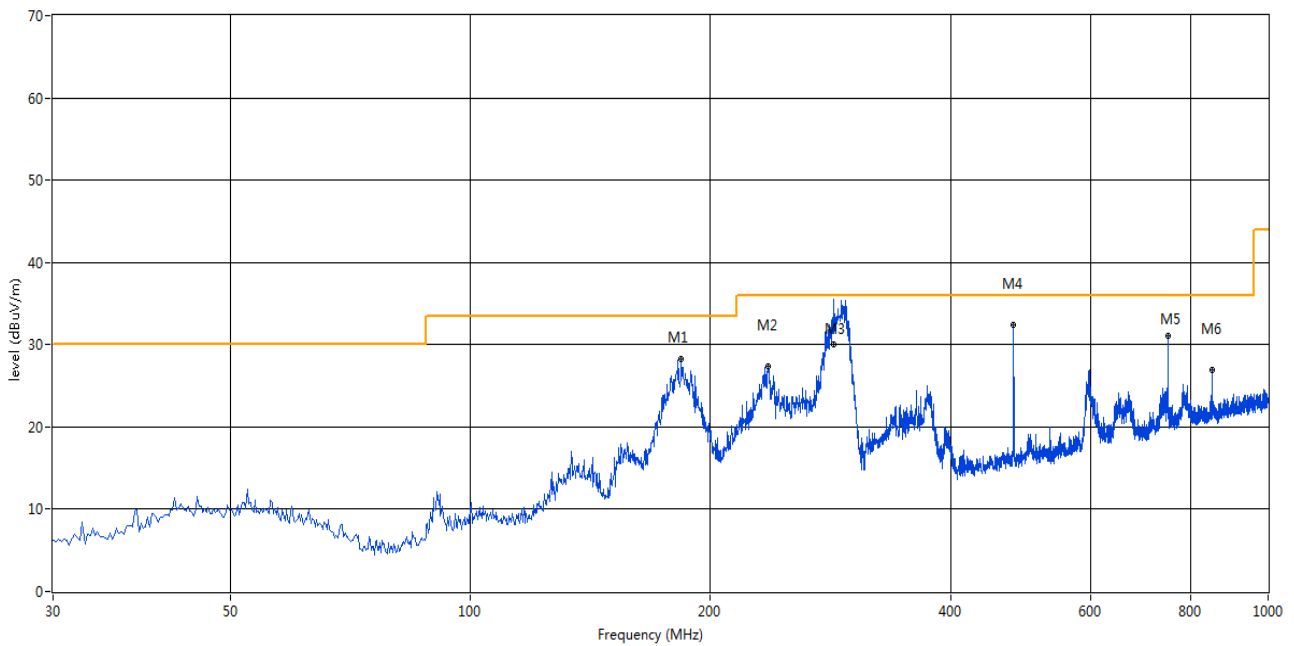
### The USB Test Mode

#### A.1.5 Test Antenna Vertical, 30 MHz – 1 GHz



| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Margin (dB) | Detector | Table (o) | Height (cm) | ANT      | Verdict |
|-----|-----------------|------------------|-------------|----------------|-------------|----------|-----------|-------------|----------|---------|
| 1   | 77.033          | 16.84            | -19.41      | 30.0           | 13.16       | Peak     | 0.00      | 300         | Vertical | Pass    |
| 2   | 179.585         | 26.94            | -16.96      | 33.5           | 6.56        | Peak     | 73.00     | 100         | Vertical | Pass    |
| 3   | 233.407         | 26.87            | -14.05      | 36.0           | 9.13        | Peak     | 217.00    | 100         | Vertical | Pass    |
| 4   | 292.804         | 27.72            | -12.41      | 36.0           | 8.28        | Peak     | 56.00     | 300         | Vertical | Pass    |
| 5   | 479.968         | 25.72            | -8.21       | 36.0           | 10.28       | Peak     | 314.00    | 400         | Vertical | Pass    |
| 6   | 749.803         | 25.91            | -2.92       | 36.0           | 10.09       | Peak     | 210.00    | 300         | Vertical | Pass    |

### A.1.6 Test Antenna Horizontal, 30 MHz – 1 GHz



| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Margin (dB) | Detector | Table (o) | Height (cm) | ANT        | Verdict |
|-----|-----------------|------------------|-------------|----------------|-------------|----------|-----------|-------------|------------|---------|
| 1   | 183.707         | 28.22            | -16.61      | 33.5           | 5.28        | Peak     | 37.00     | 400         | Horizontal | Pass    |
| 2   | 236.558         | 27.43            | -13.85      | 36.0           | 8.57        | Peak     | 27.00     | 400         | Horizontal | Pass    |
| 3   | 286.034         | 37.63            | -12.59      | 36.0           | -1.63       | Peak     | 152.00    | 354.00      | Horizontal | N/A     |
| 3*  | 286.034         | 30.08            | -12.59      | 36.0           | 5.92        | QP       | 152.00    | 354.00      | Horizontal | Pass    |
| 4   | 479.968         | 32.38            | -8.21       | 36.0           | 3.62        | Peak     | 239.00    | 200         | Horizontal | Pass    |
| 5   | 749.803         | 31.03            | -2.92       | 36.0           | 4.97        | Peak     | 125.00    | 100         | Horizontal | Pass    |
| 6   | 849.930         | 26.99            | -1.78       | 36.0           | 9.01        | Peak     | 42.00     | 100         | Horizontal | Pass    |

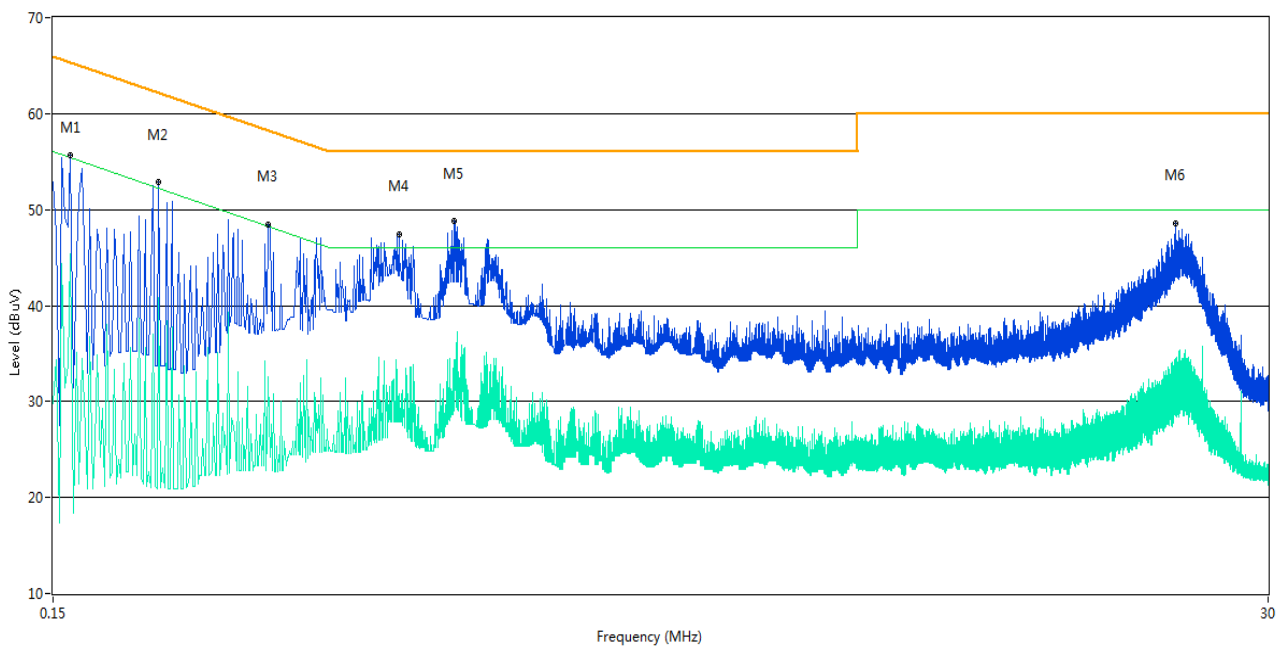
## A.2 Conducted Emission

### Test Data and Plots

#### The GSM 850 MHz Test Mode

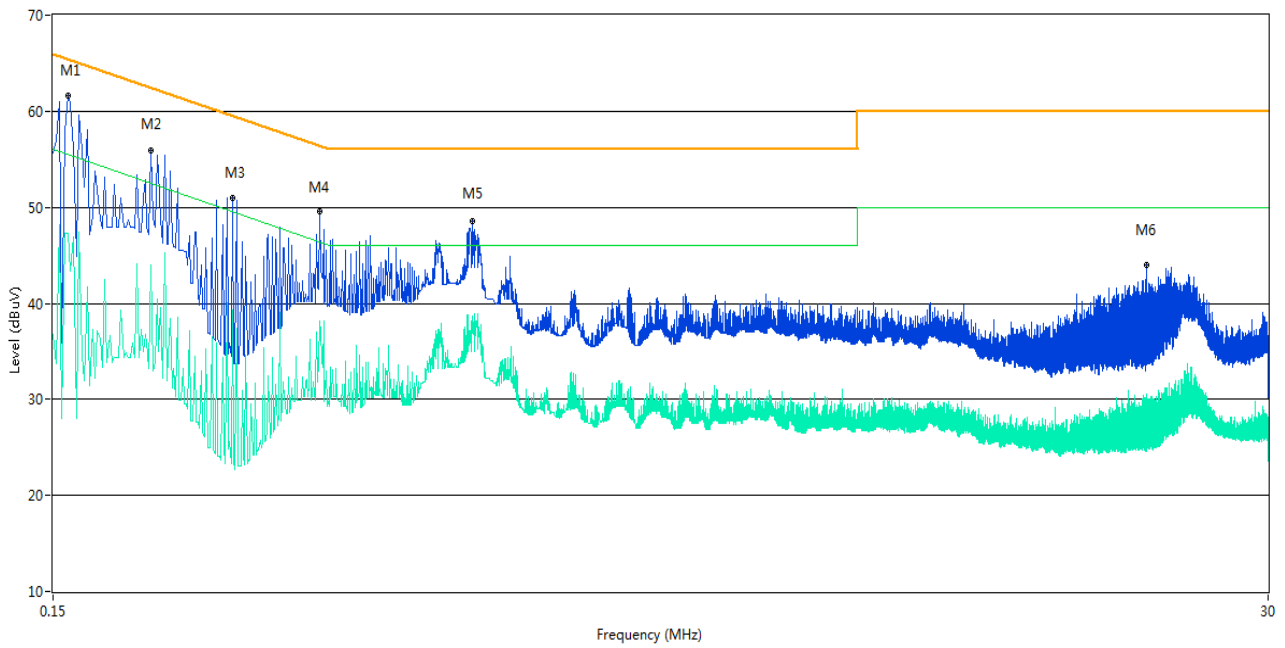
Note: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz ) shown here.

#### A.2.1 L Phase



| No. | Frequency (MHz) | Results (dBuV) | Factor (dB) | Limit (dBuV) | Margin (dB) | Detector | Line   | Verdict |
|-----|-----------------|----------------|-------------|--------------|-------------|----------|--------|---------|
| 1   | 0.162           | 55.6           | 9.85        | 65.4         | 9.80        | Peak     | L Line | Pass    |
| 1** | 0.162           | 45.4           | 9.85        | 55.4         | 10.00       | AV       | L Line | Pass    |
| 2   | 0.238           | 52.8           | 10.00       | 62.2         | 9.40        | Peak     | L Line | Pass    |
| 2** | 0.238           | 40.9           | 10.00       | 52.2         | 11.30       | AV       | L Line | Pass    |
| 3   | 0.384           | 48.5           | 10.78       | 58.2         | 9.70        | Peak     | L Line | Pass    |
| 3** | 0.384           | 32.5           | 10.78       | 48.2         | 15.70       | AV       | L Line | Pass    |
| 4   | 0.678           | 47.5           | 9.62        | 56.0         | 8.50        | Peak     | L Line | Pass    |
| 4** | 0.678           | 30.9           | 9.62        | 46.0         | 15.10       | AV       | L Line | Pass    |
| 5   | 0.862           | 48.8           | 9.32        | 56.0         | 7.20        | Peak     | L Line | Pass    |
| 5** | 0.862           | 34.3           | 9.32        | 46.0         | 11.70       | AV       | L Line | Pass    |
| 6   | 20.052          | 48.6           | 10.79       | 60.0         | 11.40       | Peak     | L Line | Pass    |
| 6** | 20.052          | 34.2           | 10.79       | 50.0         | 15.80       | AV       | L Line | Pass    |

## A.2.2 N Phase

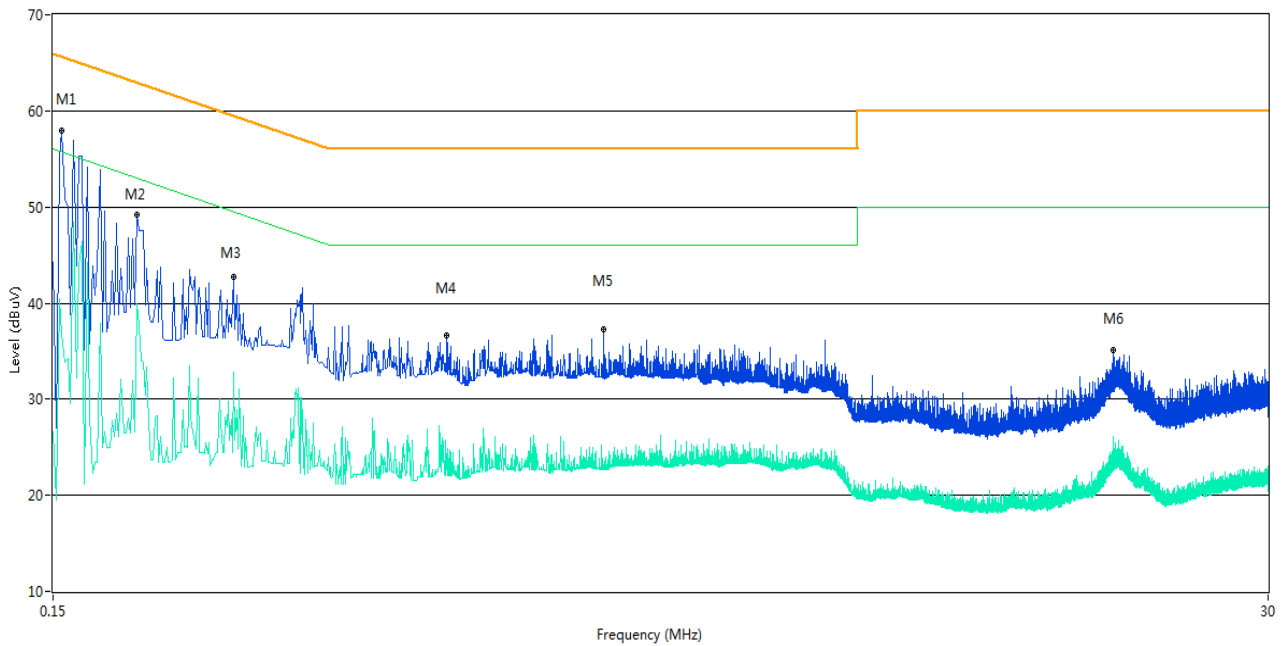


| No. | Frequency (MHz) | Results (dBuV) | Factor (dB) | Limit (dBuV) | Margin (dB) | Detector | Line   | Verdict |
|-----|-----------------|----------------|-------------|--------------|-------------|----------|--------|---------|
| 1   | 0.160           | 61.6           | 10.29       | 65.5         | 3.90        | Peak     | N Line | Pass    |
| 1** | 0.160           | 47.3           | 10.29       | 55.5         | 8.20        | AV       | N Line | Pass    |
| 2   | 0.230           | 56.0           | 10.02       | 62.4         | 6.40        | Peak     | N Line | Pass    |
| 2** | 0.230           | 44.0           | 10.02       | 52.4         | 8.40        | AV       | N Line | Pass    |
| 3   | 0.328           | 51.0           | 11.10       | 59.5         | 8.50        | Peak     | N Line | Pass    |
| 3** | 0.328           | 39.3           | 11.10       | 49.5         | 10.20       | AV       | N Line | Pass    |
| 4   | 0.480           | 49.5           | 11.23       | 56.3         | 6.80        | Peak     | N Line | Pass    |
| 4** | 0.480           | 38.2           | 11.23       | 46.3         | 8.10        | AV       | N Line | Pass    |
| 5   | 0.932           | 48.5           | 9.88        | 56.0         | 7.50        | Peak     | N Line | Pass    |
| 5** | 0.932           | 38.7           | 9.88        | 46.0         | 7.30        | AV       | N Line | Pass    |
| 6   | 17.630          | 44.0           | 11.18       | 60.0         | 16.00       | Peak     | N Line | Pass    |
| 6** | 17.630          | 30.2           | 11.18       | 50.0         | 19.80       | AV       | N Line | Pass    |

## Test Data and Plots

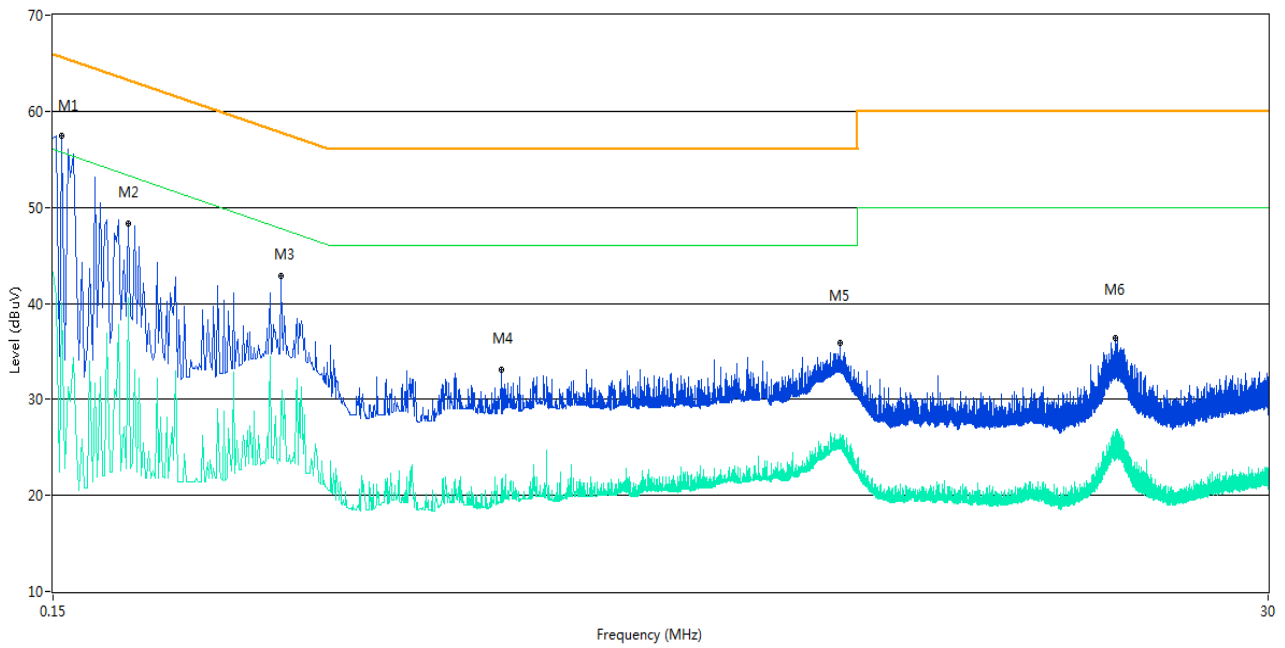
### The USB Test Mode

#### A.2.3 L Phase



| No. | Frequency (MHz) | Results (dBuV) | Factor (dB) | Limit (dBuV) | Margin (dB) | Detector | Line   | Verdict |
|-----|-----------------|----------------|-------------|--------------|-------------|----------|--------|---------|
| 1   | 0.156           | 57.9           | 10.20       | 65.7         | 7.80        | Peak     | L Line | Pass    |
| 1** | 0.156           | 36.9           | 10.20       | 55.7         | 18.80       | AV       | L Line | Pass    |
| 2   | 0.216           | 49.2           | 10.82       | 63.0         | 13.80       | Peak     | L Line | Pass    |
| 2** | 0.216           | 40.0           | 10.82       | 53.0         | 13.00       | AV       | L Line | Pass    |
| 3   | 0.330           | 42.7           | 11.05       | 59.5         | 16.80       | Peak     | L Line | Pass    |
| 3** | 0.330           | 32.9           | 11.05       | 49.5         | 16.60       | AV       | L Line | Pass    |
| 4   | 0.836           | 36.6           | 9.66        | 56.0         | 19.40       | Peak     | L Line | Pass    |
| 4** | 0.836           | 22.7           | 9.66        | 46.0         | 23.30       | AV       | L Line | Pass    |
| 5   | 1.658           | 37.3           | 9.89        | 56.0         | 18.70       | Peak     | L Line | Pass    |
| 5** | 1.658           | 23.1           | 9.89        | 46.0         | 22.90       | AV       | L Line | Pass    |
| 6   | 15.272          | 35.2           | 11.46       | 60.0         | 24.80       | Peak     | L Line | Pass    |
| 6** | 15.272          | 26.1           | 11.46       | 50.0         | 23.90       | AV       | L Line | Pass    |

## A.2.4 N Phase



| No. | Frequency (MHz) | Results (dBuV) | Factor (dB) | Limit (dBuV) | Margin (dB) | Detector | Line   | Verdict |
|-----|-----------------|----------------|-------------|--------------|-------------|----------|--------|---------|
| 1   | 0.156           | 57.4           | 10.20       | 65.7         | 8.30        | Peak     | N Line | Pass    |
| 1** | 0.156           | 40.0           | 10.20       | 55.7         | 15.70       | AV       | N Line | Pass    |
| 2   | 0.208           | 48.3           | 9.34        | 63.3         | 15.00       | Peak     | N Line | Pass    |
| 2** | 0.208           | 40.6           | 9.34        | 53.3         | 12.70       | AV       | N Line | Pass    |
| 3   | 0.406           | 42.8           | 10.93       | 57.7         | 14.90       | Peak     | N Line | Pass    |
| 3** | 0.406           | 28.8           | 10.93       | 47.7         | 18.90       | AV       | N Line | Pass    |
| 4   | 1.062           | 33.1           | 10.58       | 56.0         | 22.90       | Peak     | N Line | Pass    |
| 4** | 1.062           | 21.7           | 10.58       | 46.0         | 24.30       | AV       | N Line | Pass    |
| 5   | 4.632           | 35.9           | 10.07       | 56.0         | 20.10       | Peak     | N Line | Pass    |
| 5** | 4.632           | 26.4           | 10.07       | 46.0         | 19.60       | AV       | N Line | Pass    |
| 6   | 15.434          | 36.4           | 11.35       | 60.0         | 23.60       | Peak     | N Line | Pass    |
| 6** | 15.434          | 24.3           | 11.35       | 50.0         | 25.70       | AV       | N Line | Pass    |

## **ANNEX B TEST SETUP PHOTOS**

Please refer the document “BL-SZ1760440-AE.PDF”.

## **ANNEX C EUT EXTERNAL PHOTOS**

Please refer the document “BL-SZ1760440-AW.PDF”.

## **ANNEX D EUT INTERNAL PHOTOS**

Please refer the document “BL-SZ1760440-AI.PDF”.

--END OF REPORT--