



# EMC TEST REPORT

**Applicant** NOKIA Shanghai Bell CO. Ltd.  
**FCC ID** 2ADZRHA030WB  
**Product** 7368 Intelligent Services Access Manager CPE  
**Brand** NOKIA  
**Model** HA-030W-B  
**Report No.** Y1804B0039-E1V1  
**Issue Date** May 31, 2018

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC Code CFR47 Part15B (2017)/ ANSI C63.4 (2014)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

*Wei Liu*

*Guangchang Fan*

*Performed by: Wei Liu/ Manager*

*Approved by: Guangchang Fan/ Director*

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### Summary of measurement results

| Number  | Test Case          | Clause in FCC Rules     | Conclusion |
|---|--------------------|-------------------------|------------|
| 1   | Radiated Emission  | 15.109, ANSI C63.4-2014 | PASS       |
| 2   | Conducted Emission | 15.107, ANSI C63.4-2014 | PASS       |
| Test Date: December 18, 2017 ~ January 16, 2018 |                    |                         |            |

# 1 Test Laboratory

## 1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

## 1.2 Test facility

### **CNAS (accreditation number: L2264)**

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

### **FCC (Designation number: CN1179, Test Firm Registration Number: 446626)**

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

### **IC (recognition number is 8510A)**

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

### **VCCI (recognition number is C-4595, T-2154, R-4113, G-10766)**

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

### **A2LA (Certificate Number: 3857.01)**

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.



### 1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.  
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## 2 General Description of Equipment under Test

### 2.1 Client Information

|                      |  |
|----------------------|--|
| Applicant            | NOKIA Shanghai Bell CO. Ltd.                                 |
| Applicant address    | No. 388, Ningqiao Rd. Pilot Free Trade Zone, Shanghai, China |
| Manufacturer         | TAICANG T&W ELECTRONICS CO.,LTD                              |
| Manufacturer address | 89# Jiang Nan RD, Lu Du, Taicang, Jiangsu, China             |

### 2.2 General information

| EUT Description   |   |
|---|---|
| Device Type   | Mobile Device   |
| Application Purpose   | Class II Permissive Change  |
| Product Name  | 7368 Intelligent Services Access Manager CPE                                    |
| Model Number  | HA-030W-B   |
| SN  | /   |
| HW Version  | PEM2  |
| SW Version  | Null  |
| Antenna Type  | Internal Antenna  |
| Test Mode   | Transfer Data Mode  |
| EUT Accessory   |   |
| Adapter 1   | Manufacturer: Dongguan Shilong Fuhua Electronic Co., Ltd<br>Model: 1AF31249AAAA |
| Adapter 2   | Manufacturer:RUIDE<br>Model: RD1202000-C55-80MG                                 |
| Auxiliary test equipment  |   |
| PC  | PC Manufacturer: Dell<br>Model: E5450 (SN : P48G001)                            |
| Remark: The information of the EUT is declared by the manufacturer. |   |

**HA-030W-B (Y1804B0039-E1V1) is a variant model of HA-030W-B (RBA1712-0148EMC02R3). Test values duplicated from Original for variant. There is no test for variant in this report. The detailed product change description please refers to the FCC class II permissive change application letter.**

**EUT Configuration**

| No. | Name          | Model/Code No.     | Edition | Serial No. or Quantity |
|-----|---------------|--------------------|---------|------------------------|
| 1   | EMA-HA-030W-B | 3FE47429AA         | PEM2    | PEM 1                  |
| 2   | EMA-HA-030W-B | 3FE47429AB         | PEM2    | PEM 1                  |
| 3   | Power adapter | 1AF31249AAAA       | A/0     | UE171030GWAD01-R 1     |
| 4   | Power adapter | RD1202000-C55-80MG | A/0     | PEM 1                  |

| ONT Mnemonic | Kit Code   | EMA Code   | Part Description   | Power Adapter |                    |
|--------------|------------|------------|--|---------------|--------------------|
| HA-030W-B    | 3FE47357AA | 3FE47429AA | Wi-Fi Access Point and range extender, 3xGE UNI, 3x3 11n+4x4 11ac, US plug     | 1AF31249AAAA  | RD1202000-C55-80MG |
| HA-030W-B    | 3FE47357AB | 3FE47429AB | Wi-Fi Access Point and range extender, 3xGE UNI, 3x3 11n+4x4 11ac, Telmex spec |               |                    |

**Auxiliary Equipment**

| No. | Name           | Brand name | Model  | ASB code | Valid Until      |
|-----|----------------|------------|--------|----------|------------------|
| 1   | SmartBits 600B | Sprint     | DE7853 | -        | No Cal. Required |
| 2   | PC             | HP         | N.A    | -        | No Cal. Required |
| 3   | PC             | DELL       | N.A    | -        | No Cal. Required |
| 4   | PC             | Thinkpad   | N.A    | -        | No Cal. Required |

**Ports**

| No. | Port name | Number | Shielded or unshielded | Cable type (optic, twisted pair, etc.) | Max. Cable length |
|-----|-----------|--------|------------------------|--|-------------------|
| 1   | AC port   | 1      | Unshielded             | -                                      | -                 |
| 2   | GE        | 4      | Unshielded             | -                                      | -                 |



## 2.3 Applied Standards

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

### Test standards

**FCC Code CFR47 Part15B (2017)**

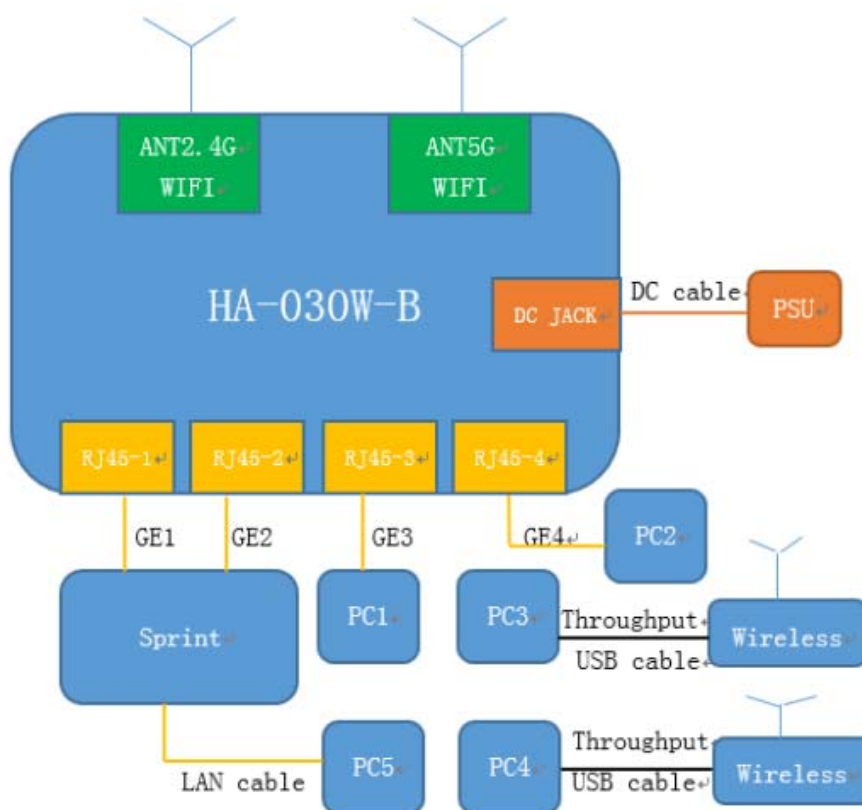
**ANSI C63.4 (2014)**



## 2.4 Test configuration

Description: The HA-030W-B is a AP which has 3 GE LAN ports, and 1 GE WAN port.

The basic functional test in normal room conditions consists of the traffic test and WIFI throughput test. HA-030W-B runs 2traffics on each line with SMB600B, the each upstream of 2 GE is 1Gbps, and downstream is 1Gbps. Frame loss ratio less than 10e-7. The WIFI keep connecting.



Test configuration

### 3 Test Case Results

#### 3.1 Radiated Emission

##### Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 24°C~26°C   | 45%~50%           | 102.5kPa |

##### Methods of Measurement

The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The distance between EUT and receive antenna should be 3 meters. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2014. Sweep the whole frequency band through the range from 30MHz to the 5th harmonic of the carrier. During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated signal level.

The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing. During the test, the EUT is worked at maximum output power.

Set the spectrum analyzer in the following:

Below 1GHz:

RBW=100 kHz / VBW=300 kHz / Sweep=AUTO

Above 1GHz:

(a) PEAK: RBW=1MHz / VBW=3MHz/ Sweep=AUTO

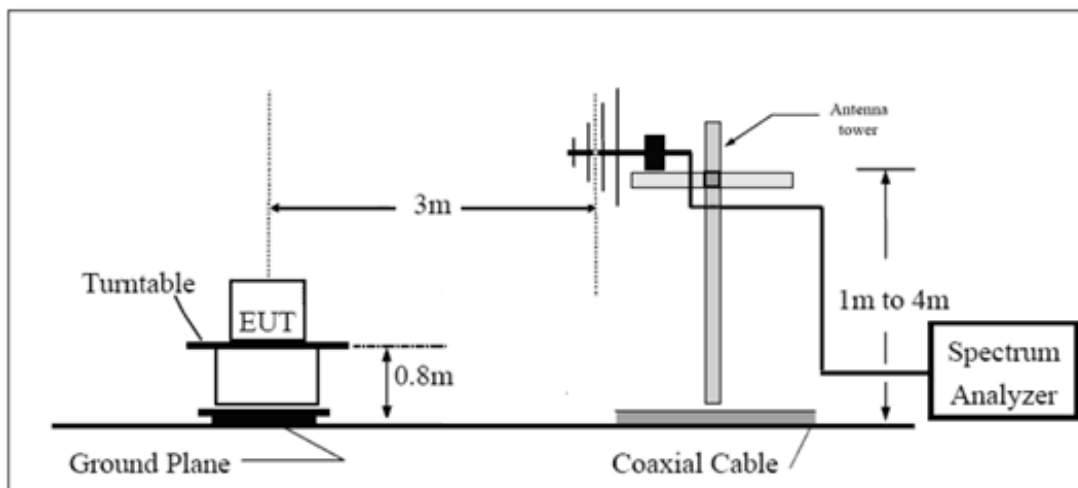
(b) AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

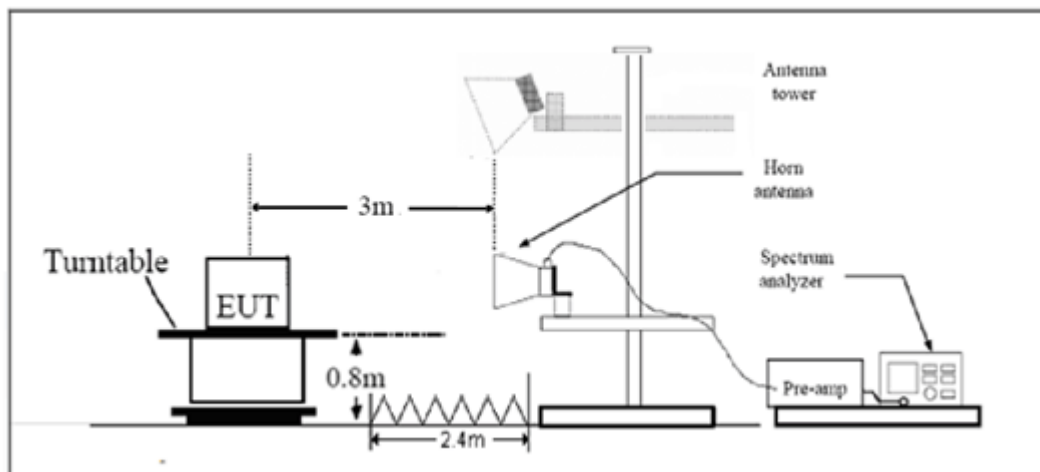
During the test, reference test configuration, EUT is connected to laptop via a cable in the case of Transfer Data mode.

## Test Setup

### Below 1GHz



### Above 1GHz



Note: Area side:2.4mX3.6m

Antenna Tower meets ANSI C63.4 requirements for measurements above 1 GHz by keeping the antenna aimed at the EUT during the antenna's ascent/ descent along the antenna mast.

**Limits**

| Frequency<br>(MHz)   | Field Strength<br>(dB $\mu$ V/m) | Detector        |
|--|----------------------------------|-----------------|
| 30 -88   | 40.0                             | Quasi-peak      |
| 88-216   | 43.5                             | Quasi-peak      |
| 216 – 960  | 46.0                             | Quasi-peak      |
| 960-1000   | 54.0                             | Quasi-peak      |
| 1000-5 <sup>th</sup> harmonic of the highest<br>frequency or 40GHz, which is lower | 54<br>74                         | Average<br>Peak |

**Measurement Uncertainty**

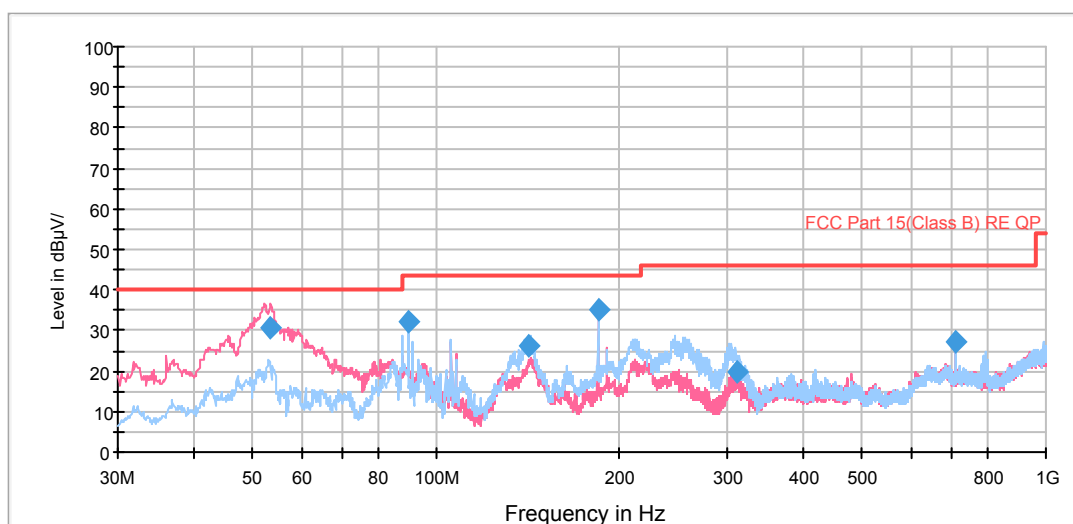
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ .  $U = 3.704$  dB.

## Test Results

The following graphs display the maximum values of horizontal and vertical by software.  
For above 1GHz, Blue trace uses the peak detection, Green trace uses the average detection.  
There is more than one Adapter, each one should be applied throughout the compliance test respectively, and however, only the worst case (Adapter 1) will be recorded in this report.

### Adapter 1

RE 30M-1GHz QP

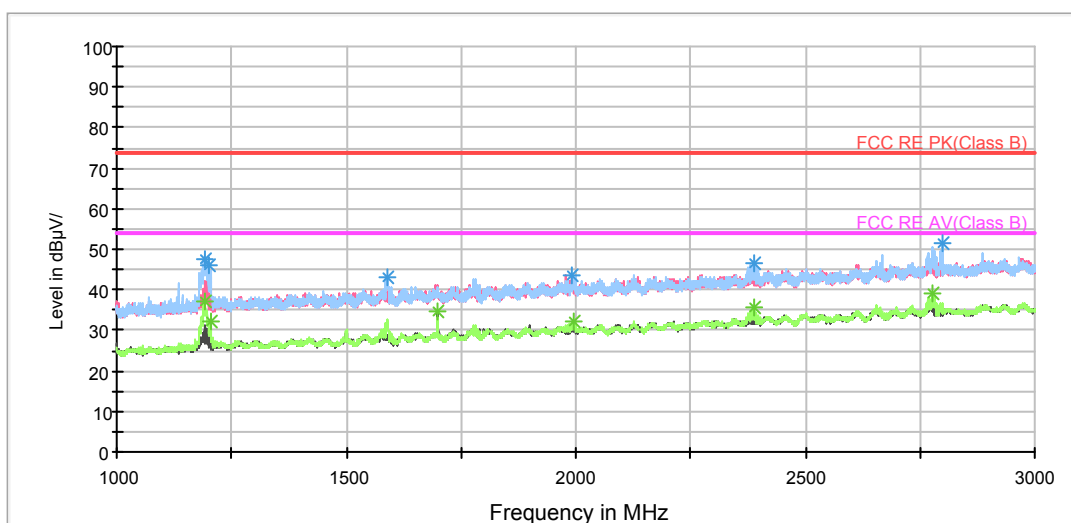


Radiated Emission from 30MHz to 1GHz

| Frequency (MHz) | Quasi-Peak (dBuV/m) | Reading value (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------------|------------------------|-------------|--------------|---------------|---------------------|-------------|----------------|
| 53.388694       | 30.9                | 50.5                   | 120.0       | V            | 23.0          | -19.6               | 9.1         | 40.0           |
| 89.912756       | 32.1                | 55.9                   | 225.0       | H            | 121.0         | -23.8               | 11.4        | 43.5           |
| 142.122753      | 26.0                | 54.1                   | 225.0       | H            | 76.0          | -28.1               | 17.5        | 43.5           |
| 184.249425      | 35.0                | 61.7                   | 194.0       | H            | 56.0          | -26.7               | 8.5         | 43.5           |
| 311.973000      | 19.9                | 42.1                   | 100.0       | H            | 154.0         | -22.2               | 26.1        | 46.0           |
| 711.245250      | 27.0                | 41.9                   | 125.0       | H            | 341.0         | -14.9               | 19.0        | 46.0           |

- Remark:**
1. Quasi-Peak = Reading value + Correction factor
  2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)
  3. Margin = Limit – Quasi-Peak

## RE 1G-3GHz PK+AV

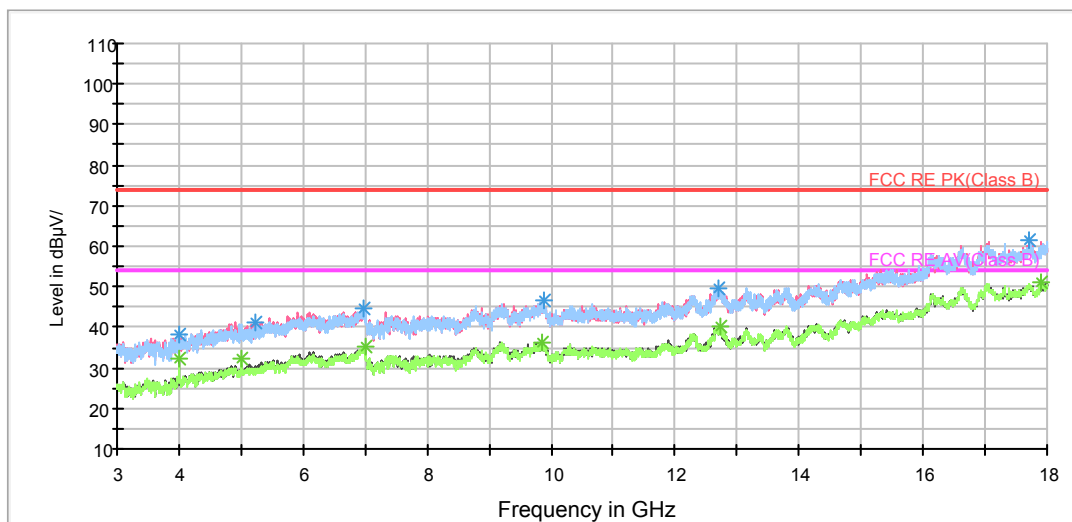


## Radiated Emission from 1GHz to 3GHz

| Frequency (MHz) | Peak (dBuV/m) | Reading value (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------------|-------------|--------------|---------------|---------------------|-------------|----------------|
| 1190.250000     | 46.3          | 54.5                   | 200.0       | H            | 274.0         | -8.2                | 27.7        | 74             |
| 1203.750000     | 44.3          | 52.5                   | 200.0       | H            | 81.0          | -8.2                | 29.7        | 74             |
| 1700.000000     | 41.0          | 45.9                   | 200.0       | V            | 202.0         | -4.9                | 33.0        | 74             |
| 1995.000000     | 42.8          | 46.0                   | 200.0       | H            | 226.0         | -3.2                | 31.2        | 74             |
| 2387.000000     | 46.4          | 47.8                   | 200.0       | H            | 325.0         | -1.4                | 27.6        | 74             |
| 2777.000000     | 50.3          | 49.5                   | 200.0       | H            | 162.0         | 0.8                 | 23.7        | 74             |

| Frequency (MHz) | Average (dBuV/m) | Reading value (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|------------------|------------------------|-------------|--------------|---------------|---------------------|-------------|----------------|
| 1191.000000     | 35.7             | 43.9                   | 200.0       | H            | 274.0         | -8.2                | 18.3        | 54             |
| 1202.500000     | 32.1             | 40.3                   | 200.0       | H            | 81.0          | -8.2                | 21.9        | 54             |
| 1588.250000     | 32.5             | 38.9                   | 200.0       | H            | 81.0          | -6.4                | 21.5        | 54             |
| 1991.500000     | 30.8             | 34.1                   | 200.0       | V            | 190.0         | -3.3                | 23.2        | 54             |
| 2387.750000     | 34.9             | 36.3                   | 200.0       | H            | 325.0         | -1.4                | 19.1        | 54             |
| 2798.000000     | 36.5             | 35.4                   | 200.0       | H            | 162.0         | 1.1                 | 17.5        | 54             |

## RE 3-18GHz PK+AV



## Radiated Emission from 3GHz to 18GHz

| Frequency (MHz) | Peak (dBuV/m) | Reading value (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|------------------------|-------------|--------------|---------------|---------------------|-------------|----------------|
| 3999.375000     | 38.0          | 39.1                   | 200.0       | V            | 159.0         | -1.1                | 36.0        | 74             |
| 5242.500000     | 41.1          | 39.0                   | 200.0       | V            | 278.0         | 2.1                 | 32.9        | 74             |
| 6991.875000     | 44.8          | 38.3                   | 200.0       | V            | 289.0         | 6.5                 | 29.2        | 74             |
| 9871.875000     | 46.5          | 36.2                   | 200.0       | V            | 256.0         | 10.3                | 27.5        | 74             |
| 12690.000000    | 49.8          | 35.6                   | 200.0       | V            | 10.0          | 14.2                | 24.2        | 74             |
| 17700.000000    | 61.3          | 36.6                   | 200.0       | V            | 225.0         | 24.7                | 12.7        | 74             |

| Frequency (MHz) | Average (dBuV/m) | Reading value (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|------------------|------------------------|-------------|--------------|---------------|---------------------|-------------|----------------|
| 3999.375000     | 32.1             | 33.2                   | 200.0       | V            | 159.0         | -1.1                | 21.9        | 54             |
| 4998.750000     | 32.2             | 30.6                   | 200.0       | H            | 108.0         | 1.6                 | 21.8        | 54             |
| 6993.750000     | 35.2             | 28.7                   | 200.0       | H            | 162.0         | 6.5                 | 18.8        | 54             |
| 9851.250000     | 36.3             | 26.0                   | 200.0       | H            | 0.0           | 10.3                | 17.7        | 54             |
| 12744.375000    | 40.1             | 26.0                   | 200.0       | H            | 316.0         | 14.1                | 13.9        | 54             |
| 17915.625000    | 50.9             | 25.3                   | 200.0       | V            | 181.0         | 25.6                | 3.1         | 54             |

## 3.2 Conducted Emission

### Ambient condition

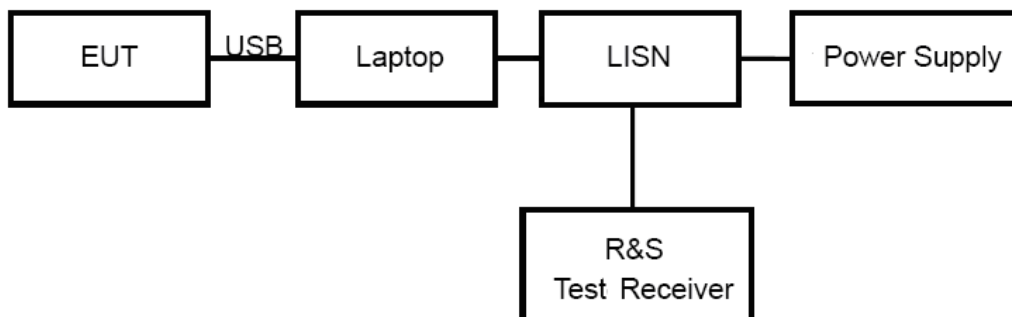
|             |                   |          |
|-------------|-------------------|----------|
| Temperature | Relative humidity | Pressure |
| 24°C ~26°C  | 50%~55%           | 102.5kPa |

### Methods of Measurement

The EUT is placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2014. Connect the AC power line of the EUT to the L.I.S.N. Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9 kHz, VBW is set to 30kHz. The measurement result should include both L line and N line.

During the test, reference test configuration, EUT is connected to laptop via a cable in the case of Transfer Data mode.

### Test Setup



Note: Power Supply is AC Power source and it is used to change the voltage 120V/60Hz.

### Limits

| Frequency<br>(MHz)                                | Conducted Limits(dB $\mu$ V) |            |
|---|------------------------------|------------|
|   | Quasi-peak                   | Average    |
| 0.15 - 0.5  | 66 to 56 *                   | 56 to 46 * |
| 0.5 - 5   | 56                           | 46         |
| 5 - 30  | 60                           | 50         |
| *: Decreases with the logarithm of the frequency. |                              |            |

### Measurement Uncertainty

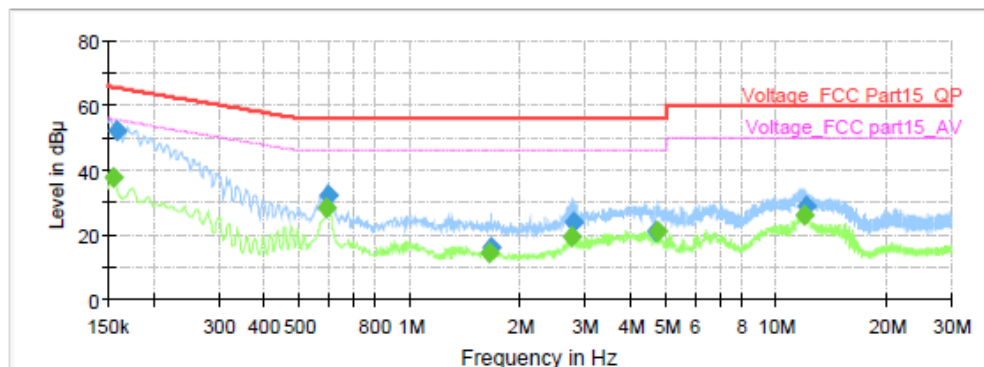
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ .  $U = 2.57$  dB.



## Test Results

Following plots, Blue trace uses the peak detection; Green trace uses the average detection.

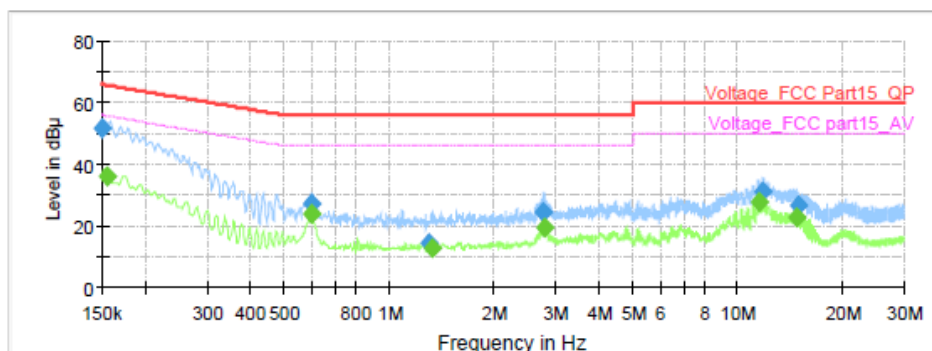
### Adapter 1



| Frequency (MHz) | QuasiPeak (dB $\mu$ V) | Average (dB $\mu$ V) | Limit (dB $\mu$ V) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Filter | Corr. (dB) |
|-----------------|------------------------|----------------------|--------------------|-------------|-----------------|-----------------|------|--------|------------|
| 0.154500        | ---                    | 37.94                | 55.75              | 17.82       | 1000.0          | 9.000           | L1   | ON     | 19.6       |
| 0.159000        | 52.16                  | ---                  | 65.52              | 13.36       | 1000.0          | 9.000           | L1   | ON     | 19.6       |
| 0.591000        | ---                    | 28.32                | 46.00              | 17.68       | 1000.0          | 9.000           | L1   | ON     | 19.6       |
| 0.595500        | 32.41                  | ---                  | 56.00              | 23.59       | 1000.0          | 9.000           | L1   | ON     | 19.6       |
| 1.641750        | ---                    | 14.70                | 46.00              | 31.30       | 1000.0          | 9.000           | L1   | ON     | 19.6       |
| 1.666500        | 15.93                  | ---                  | 56.00              | 40.07       | 1000.0          | 9.000           | L1   | ON     | 19.6       |
| 2.766750        | ---                    | 19.53                | 46.00              | 26.47       | 1000.0          | 9.000           | L1   | ON     | 19.6       |
| 2.784750        | 23.85                  | ---                  | 56.00              | 32.15       | 1000.0          | 9.000           | L1   | ON     | 19.6       |
| 4.697250        | 21.17                  | ---                  | 56.00              | 34.83       | 1000.0          | 9.000           | L1   | ON     | 19.7       |
| 4.751250        | ---                    | 21.16                | 46.00              | 24.84       | 1000.0          | 9.000           | L1   | ON     | 19.7       |
| 11.917500       | ---                    | 26.15                | 50.00              | 23.85       | 1000.0          | 9.000           | L1   | ON     | 19.9       |
| 11.998500       | 28.79                  | ---                  | 60.00              | 31.21       | 1000.0          | 9.000           | L1   | ON     | 19.9       |

### L line

Conducted Emission from 150 KHz to 30 MHz

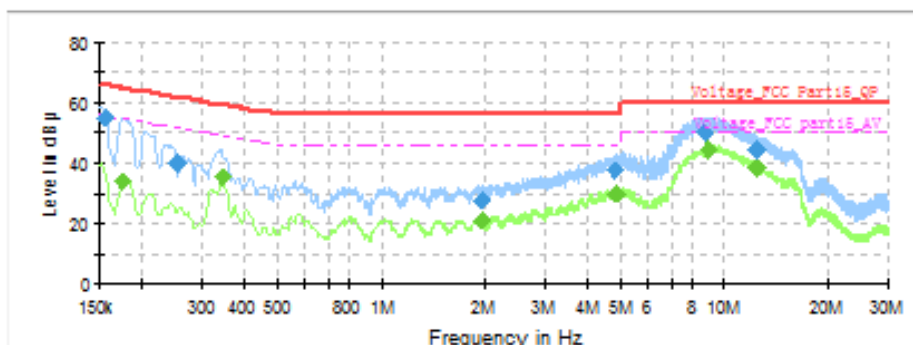


| Frequency (MHz) | QuasiPeak (dB $\mu$ V) | Average (dB $\mu$ V) | Limit (dB $\mu$ V) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Filter | Corr. (dB) |
|-----------------|------------------------|----------------------|--------------------|-------------|-----------------|-----------------|------|--------|------------|
| 0.150000        | 51.92                  | ---                  | 66.00              | 14.08       | 1000.0          | 9.000           | N    | ON     | 19.7       |
| 0.154500        | ---                    | 36.13                | 55.75              | 19.62       | 1000.0          | 9.000           | N    | ON     | 19.7       |
| 0.595500        | ---                    | 23.79                | 46.00              | 22.21       | 1000.0          | 9.000           | N    | ON     | 19.6       |
| 0.600000        | 27.10                  | ---                  | 56.00              | 28.90       | 1000.0          | 9.000           | N    | ON     | 19.6       |
| 1.306500        | 14.24                  | ---                  | 56.00              | 41.76       | 1000.0          | 9.000           | N    | ON     | 19.6       |
| 1.329000        | ---                    | 12.99                | 46.00              | 33.01       | 1000.0          | 9.000           | N    | ON     | 19.6       |
| 2.769000        | 24.52                  | ---                  | 56.00              | 31.48       | 1000.0          | 9.000           | N    | ON     | 19.6       |
| 2.798250        | ---                    | 19.48                | 46.00              | 26.52       | 1000.0          | 9.000           | N    | ON     | 19.6       |
| 11.539500       | ---                    | 27.95                | 50.00              | 22.05       | 1000.0          | 9.000           | N    | ON     | 19.9       |
| 11.807250       | 30.86                  | ---                  | 60.00              | 29.14       | 1000.0          | 9.000           | N    | ON     | 19.9       |
| 14.851500       | ---                    | 22.77                | 50.00              | 27.23       | 1000.0          | 9.000           | N    | ON     | 19.9       |
| 14.885250       | 26.58                  | ---                  | 60.00              | 33.42       | 1000.0          | 9.000           | N    | ON     | 19.9       |

### N line

Conducted Emission from 150 KHz to 30 MHz

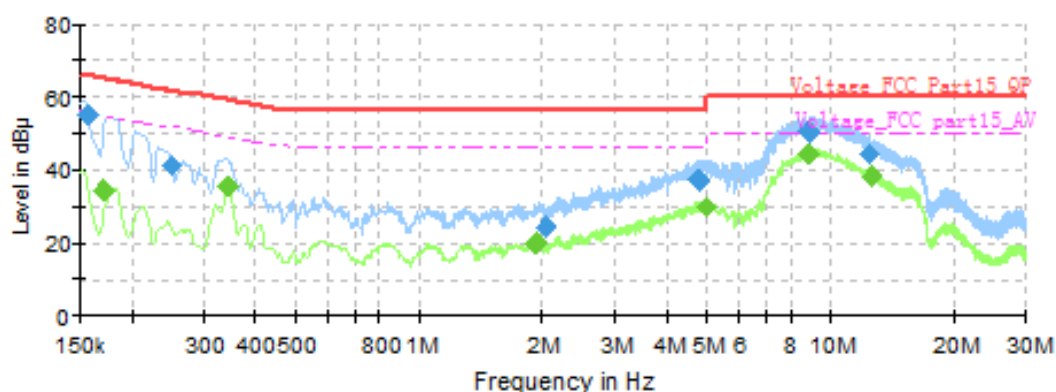
## Adapter 2



| Frequency (MHz) | QuasiPeak (dB uV) | Average (dB uV) | Limit (dB uV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Filter | Corr. (dB) |
|-----------------|-------------------|-----------------|---------------|-------------|-----------------|-----------------|------|--------|------------|
| 0.156750        | 54.96             | ---             | 65.63         | 10.68       | 1000.0          | 9.000           | L1   | ON     | 19.6       |
| 0.174750        | ---               | 33.68           | 54.73         | 21.05       | 1000.0          | 9.000           | L1   | ON     | 19.6       |
| 0.253500        | 40.25             | ---             | 61.64         | 21.39       | 1000.0          | 9.000           | L1   | ON     | 19.7       |
| 0.345750        | ---               | 35.76           | 49.06         | 13.31       | 1000.0          | 9.000           | L1   | ON     | 19.6       |
| 1.963500        | ---               | 21.23           | 46.00         | 24.77       | 1000.0          | 9.000           | L1   | ON     | 19.6       |
| 1.965750        | 27.63             | ---             | 56.00         | 28.37       | 1000.0          | 9.000           | L1   | ON     | 19.6       |
| 4.807500        | 37.51             | ---             | 56.00         | 18.49       | 1000.0          | 9.000           | L1   | ON     | 19.7       |
| 4.870500        | ---               | 30.27           | 46.00         | 15.73       | 1000.0          | 9.000           | L1   | ON     | 19.7       |
| 8.828250        | 50.07             | ---             | 60.00         | 9.93        | 1000.0          | 9.000           | L1   | ON     | 19.9       |
| 8.974500        | ---               | 44.58           | 50.00         | 5.42        | 1000.0          | 9.000           | L1   | ON     | 19.9       |
| 12.421500       | 44.55             | ---             | 60.00         | 15.45       | 1000.0          | 9.000           | L1   | ON     | 19.9       |
| 12.527250       | ---               | 38.50           | 50.00         | 11.50       | 1000.0          | 9.000           | L1   | ON     | 19.9       |

L line

Conducted Emission from 150 KHz to 30 MHz



| Frequency (MHz) | QuasiPeak (dB uV) | Average (dB uV) | Limit (dB uV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Filter | Corr. (dB) |
|-----------------|-------------------|-----------------|---------------|-------------|-----------------|-----------------|------|--------|------------|
| 0.156750        | 55.04             | ---             | 65.63         | 10.60       | 1000.0          | 9.000           | N    | ON     | 19.7       |
| 0.172500        | ---               | 34.40           | 54.84         | 20.44       | 1000.0          | 9.000           | N    | ON     | 19.7       |
| 0.251250        | 40.85             | ---             | 61.72         | 20.87       | 1000.0          | 9.000           | N    | ON     | 19.7       |
| 0.345750        | ---               | 35.33           | 49.06         | 13.73       | 1000.0          | 9.000           | N    | ON     | 19.6       |
| 1.934250        | ---               | 19.89           | 46.00         | 26.11       | 1000.0          | 9.000           | N    | ON     | 19.6       |
| 2.049000        | 24.32             | ---             | 56.00         | 31.68       | 1000.0          | 9.000           | N    | ON     | 19.6       |
| 4.800750        | 37.04             | ---             | 56.00         | 18.96       | 1000.0          | 9.000           | N    | ON     | 19.7       |
| 5.032500        | ---               | 30.24           | 50.00         | 19.76       | 1000.0          | 9.000           | N    | ON     | 19.7       |
| 8.871000        | 50.45             | ---             | 60.00         | 9.55        | 1000.0          | 9.000           | N    | ON     | 19.9       |
| 8.922750        | ---               | 44.68           | 50.00         | 5.32        | 1000.0          | 9.000           | N    | ON     | 19.9       |
| 12.477750       | 44.49             | ---             | 60.00         | 15.51       | 1000.0          | 9.000           | N    | ON     | 19.9       |
| 12.592500       | ---               | 38.41           | 50.00         | 11.59       | 1000.0          | 9.000           | N    | ON     | 19.9       |

N line

Conducted Emission from 150 KHz to 30 MHz

## 4 Main Test Instrument

| Name                    | Manufacturer | Type      | Serial Number | Last Cal.  | Cal. Due Date |
|-------------------------|--------------|-----------|---------------|------------|---------------|
| Signal Analyzer         | R&S          | FSV30     | 100815        | 2017-12-17 | 2018-12-16    |
| EMI Test Receiver       | R&S          | ESCI      | 100948        | 2017-05-20 | 2018-05-19    |
| Loop Antenna            | SCHWARZBECK  | FMZB1519  | 1519-047      | 2017-02-18 | 2019-02-17    |
| Trilog Antenna          | SCHWARZBECK  | VULB 9163 | 9163-201      | 2017-11-18 | 2020-11-17    |
| Horn Antenna            | R&S          | HF907     | 100126        | 2014-12-06 | 2019-12-05    |
| Horn Antenna            | ETS-Lindgren | 3160-09   | 00102643      | 2015-01-30 | 2018-01-29    |
| EMI Test Receiver       | R&S          | ESR       | 101667        | 2017-09-06 | 2018-09-05    |
| LISN                    | R&S          | ENV216    | 101171        | 2016-12-16 | 2019-12-15    |
| Bore Sight Antenna mast | ETS          | 2171B     | 00058752      | NA         | NA            |
| Test software           | EMC32        | R&S       | V9.26.0       | NA         | NA            |

## ANNEX A: The EUT Appearance and Test Configuration

### A.1 EUT Appearance



Front Side



Back Side

a: EUT





Adapter 1



Adapter 2

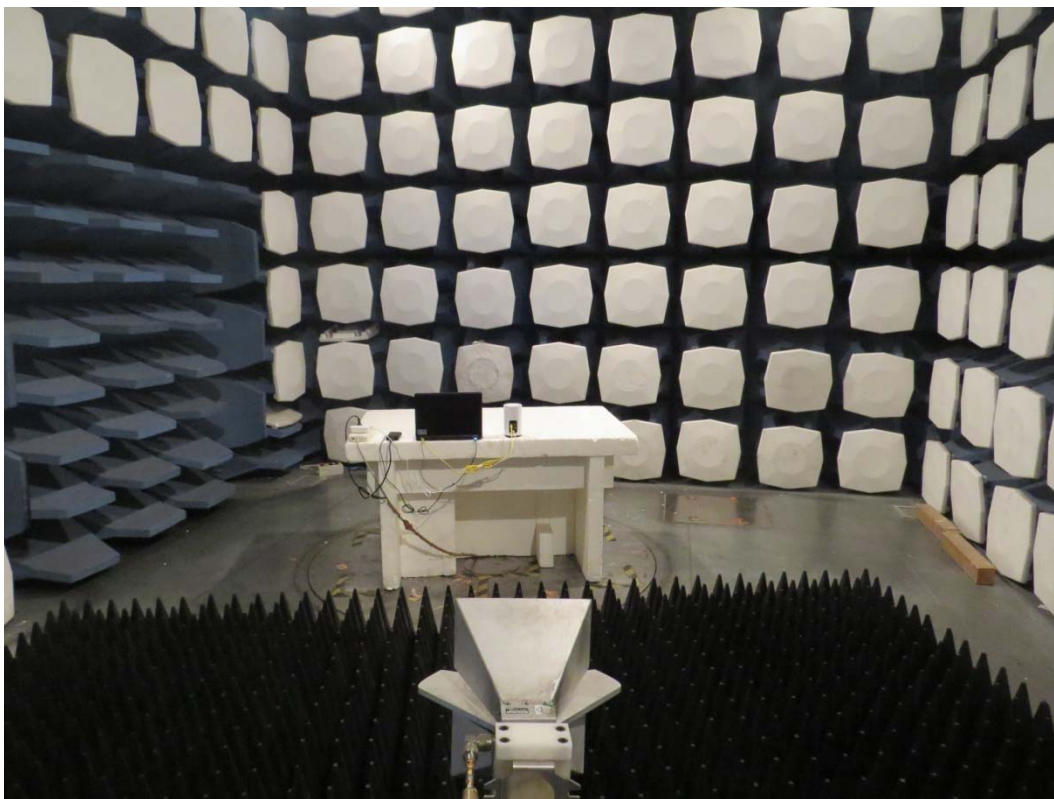
b: Adapter

Picture 1 EUT

## A.2 Test Setup



a: Below 1GHz



b: Above 1GHz

**Picture 2 Radiated Emission Test Setup**



Picture 3 Conducted Emission Test Setup