

# EMC TEST REPORT



Report No.: 15070892-FCC-E

Supersede Report No.:N/A

|                                                                                                                                      |                                                                        |  |
|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|--|
| Applicant                                                                                                                            | SENMAX INC.                                                            |  |
| Product Name                                                                                                                         | LTE Phone                                                              |  |
| Model No.                                                                                                                            | Carbon                                                                 |  |
| Serial No.                                                                                                                           | N/A                                                                    |  |
| Test Standard                                                                                                                        | FCC Part 15 Subpart B Class B:2014, ANSI C63.4: 2014                   |  |
| Test Date                                                                                                                            | October 10 to October 30, 2015                                         |  |
| Issue Date                                                                                                                           | October 30, 2015                                                       |  |
| Test Result                                                                                                                          | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail |  |
| Equipment complied with the specification <input checked="" type="checkbox"/>                                                        |                                                                        |  |
| Equipment did not comply with the specification <input type="checkbox"/>                                                             |                                                                        |  |
| <i>Winnie Zhang</i>                                                                                                                  | <i>David Huang</i>                                                     |  |
| Winnie Zhang<br>Test Engineer                                                                                                        | David Huang<br>Checked By                                              |  |
| This test report may be reproduced in full only<br>Test result presented in this test report is applicable to the tested sample only |                                                                        |  |

Issued by:

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## Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



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### Accreditations for Conformity Assessment

| Country/Region | Scope                              |
|----------------|------------------------------------|
| USA            | EMC, RF/Wireless, SAR, Telecom     |
| Canada         | EMC, RF/Wireless, SAR, Telecom     |
| Taiwan         | EMC, RF, Telecom, SAR, Safety      |
| Hong Kong      | RF/Wireless, SAR, Telecom          |
| Australia      | EMC, RF, Telecom, SAR, Safety      |
| Korea          | EMI, EMS, RF, SAR, Telecom, Safety |
| Japan          | EMI, RF/Wireless, SAR, Telecom     |
| Singapore      | EMC, RF, SAR, Telecom              |
| Europe         | EMC, RF, SAR, Telecom, Safety      |

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## 1. Report Revision History

| Report No.     | Report Version | Description | Issue Date       |
|----------------|----------------|-------------|------------------|
| 15070892-FCC-E | NONE           | Original    | October 30, 2015 |
|                |                |             |                  |
|                |                |             |                  |
|                |                |             |                  |
|                |                |             |                  |
|                |                |             |                  |

## 2. Customer information

|                  |                                            |
|------------------|--------------------------------------------|
| Applicant Name   | SENMAX INC.                                |
| Applicant Add    | 2300 GRAYSON DR # 1611 GRAPEVINE, TX 76051 |
| Manufacturer     | SENMAX INC.                                |
| Manufacturer Add | 2300 GRAYSON DR # 1611 GRAPEVINE, TX 76051 |

## 3. Test site information

|                      |                                                                                                                                              |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Lab performing tests | SIEMIC (Shenzhen-China) LABORATORIES                                                                                                         |
| Lab Address          | Zone A, Floor 1, Building 2 Wan Ye Long Technology Park<br>South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong<br>China 518108 |
| FCC Test Site No.    | 718246                                                                                                                                       |
| IC Test Site No.     | 4842E-1                                                                                                                                      |
| Test Software        | Radiated Emission Program-To Shenzhen v2.0                                                                                                   |

## 4. Equipment under Test (EUT) Information

Description of EUT: LTE Phone

Main Model: Carbon

Serial Model: N/A

Date EUT received: October 09,2015

Test Date(s): October 10 to October 30, 2015

Antenna Gain:

GSM850: -7.22 dBi  
 PCS1900: -2.93 dBi  
 UMTS-FDD Band V: -7.22 dBi  
 UMTS-FDD Band IV: -2.55 dBi  
 UMTS-FDD Band II:-2.93 dBi  
 Bluetooth/BLE:-2.94 dBi  
 WIFI:-2.94 dBi  
 LTE Band 2: -3.96 dBi  
 LTE Band 4: -2.33 dBi  
 LTE Band 7: -2.54 dBi  
 LTE Band 17: -8.25 dBi  
 GPS:-3.56 dBi

Type of Modulation:

GSM / GPRS: GMSK  
 EGPRS: GMSK, 8PSK  
 UMTS-FDD: QPSK, 16QAM  
 802.11b/g/n: DSSS, OFDM  
 Bluetooth: GFSK,  $\pi/4$ DQPSK, 8DPSK  
 BLE: GFSK  
 LTE Band: QPSK, 16QAM  
 GPS:BPSK

RF Operating Frequency (ies):

GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz  
 PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz  
 UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz  
 UMTS-FDD Band IV TX:1712.4 ~ 1752.6 MHz;

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UMTS-FDD Band II TX:1852.4 ~ 1907.6 MHz;

RX: 1932.4 ~ 1987.6 MHz

WIFI:802.11b/g/n(20M): 2412-2462 MHz

WIFI:802.11n(40M): 2422-2452 MHz

Bluetooth& BLE: 2402-2480 MHz

LTE Band 2 TX: 1852.5 ~ 1907.5 MHz; RX : 1932.5 ~ 1987.5 MHz

LTE Band 4 TX: 1712.5 ~ 1752.5 MHz; RX : 2112.5 ~ 2152.5 MHz

LTE Band 7 TX: 2502.5 ~ 2567.5 MHz; RX : 2622.5 ~ 2687.5 MHz

LTE Band 17 TX: 706.5 ~ 713.5 MHz; RX : 736.5 ~ 743.5 MHz

GPS RX:1575.42 MHz

Battery:

Spec:3.8V,2850mAh

Adapter:

Model:TPA-955100UU

Input: 100-240V; 50/60Hz; 150mA

Output: DC 5.0V,1000mA

Input Power:

Port:

Power Port, Earphone Port, USB Port

GPRS/EGPRS Multi-slot class

8/10/12

Trade Name :



FCC ID:

2AF99CARBON

## 5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

| FCC Rules                 | Description of Test               | Result     |
|---------------------------|-----------------------------------|------------|
| §15.107; ANSI C63.4: 2014 | AC Power Line Conducted Emissions | Compliance |
| §15.109; ANSI C63.4: 2014 | Radiated Emissions                | Compliance |

### Measurement Uncertainty

| Emissions                                 |                                                                                                                                                 |               |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Test Item                                 | Description                                                                                                                                     | Uncertainty   |
| Band Edge and Radiated Spurious Emissions | Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m) | +5.6dB/-4.5dB |
| -                                         | -                                                                                                                                               | -             |

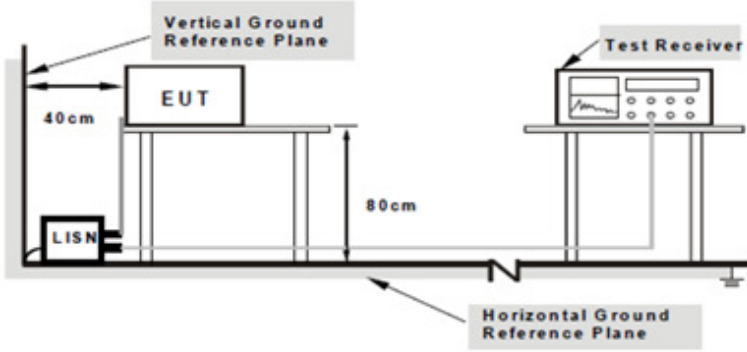
## 6. Measurements, Examination And Derived Results

### 6.1 AC Power Line Conducted Emissions

|                      |                  |
|----------------------|------------------|
| Temperature          | 24°C             |
| Relative Humidity    | 56%              |
| Atmospheric Pressure | 1023mbar         |
| Test date :          | October 23, 2015 |
| Tested By :          | Winnie Zhang     |

#### Requirement(s):

| Spec                      | Item         | Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Applicable                                                                            |              |  |    |         |            |         |         |         |    |    |        |    |    |  |
|---------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------|--|----|---------|------------|---------|---------|---------|----|----|--------|----|----|--|
| 47CFR§15.107              | a)           | For Low-power radio-frequency devices that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 [mu] H/50 ohms line impedance stabilization network (LISN). The lower limit applies at the boundary between the frequencies ranges. |  |              |  |    |         |            |         |         |         |    |    |        |    |    |  |
|                           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                       |              |  |    |         |            |         |         |         |    |    |        |    |    |  |
|                           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                       |              |  |    |         |            |         |         |         |    |    |        |    |    |  |
|                           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                       |              |  |    |         |            |         |         |         |    |    |        |    |    |  |
|                           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                       |              |  |    |         |            |         |         |         |    |    |        |    |    |  |
|                           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                       |              |  |    |         |            |         |         |         |    |    |        |    |    |  |
|                           |              | <table><tr><th rowspan="2">Frequency ranges<br/>(MHz)</th><th colspan="2">Limit (dBµV)</th></tr><tr><th>QP</th><th>Average</th></tr><tr><td>0.15 ~ 0.5</td><td>66 – 56</td><td>56 – 46</td></tr><tr><td>0.5 ~ 5</td><td>56</td><td>46</td></tr><tr><td>5 ~ 30</td><td>60</td><td>50</td></tr></table>                                                                                                                                                                      | Frequency ranges<br>(MHz)                                                             | Limit (dBµV) |  | QP | Average | 0.15 ~ 0.5 | 66 – 56 | 56 – 46 | 0.5 ~ 5 | 56 | 46 | 5 ~ 30 | 60 | 50 |  |
| Frequency ranges<br>(MHz) | Limit (dBµV) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                       |              |  |    |         |            |         |         |         |    |    |        |    |    |  |
|                           | QP           | Average                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                       |              |  |    |         |            |         |         |         |    |    |        |    |    |  |
| 0.15 ~ 0.5                | 66 – 56      | 56 – 46                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                       |              |  |    |         |            |         |         |         |    |    |        |    |    |  |
| 0.5 ~ 5                   | 56           | 46                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                       |              |  |    |         |            |         |         |         |    |    |        |    |    |  |
| 5 ~ 30                    | 60           | 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                       |              |  |    |         |            |         |         |         |    |    |        |    |    |  |

|            |                                                                                                                                                                                                                                                                       |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Setup |  <p>Note: 1.Support units were connected to second LISN.<br/>2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.</p> |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|           |                                                                                                                                                                                                                                                                                                                    |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Procedure | <ol style="list-style-type: none"> <li>The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table.</li> <li>The power supply for the EUT was fed through a 50Ω /50mH EUT LISN, connected to filtered mains.</li> </ol> |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

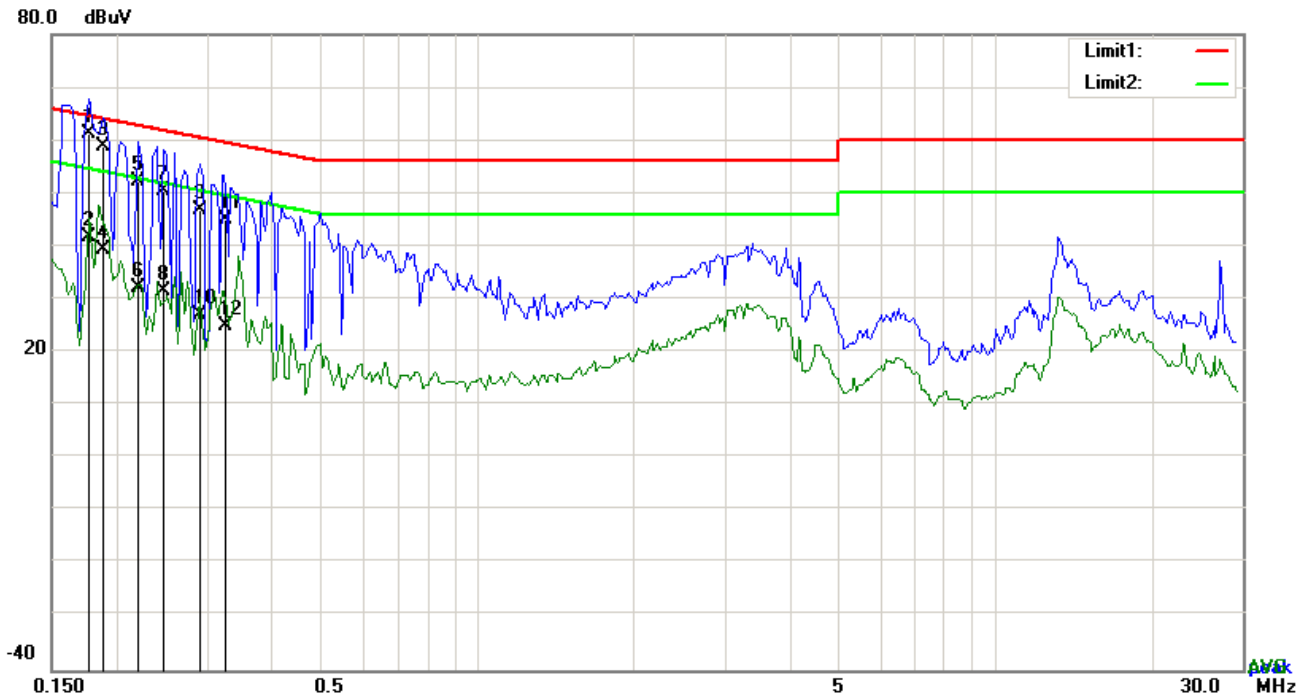
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|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | <p>3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable.</p> <p>4. All other supporting equipment were powered separately from another main supply.</p> <p>5. The EUT was switched on and allowed to warm up to its normal operating condition.</p> <p>6. A scan was made on the NEUTRAL line (for AC mains) or Earth line (for DC power) over the required frequency range using an EMI test receiver.</p> <p>7. High peaks, relative to the limit line, The EMI test receiver was then tuned to the selected frequencies and the necessary measurements made with a receiver bandwidth setting of 10 kHz.</p> <p>8. Step 7 was then repeated for the LIVE line (for AC mains) or DC line (for DC power).</p> |
| Remark |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Result | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

**Test Mode 1 : USB Mode**

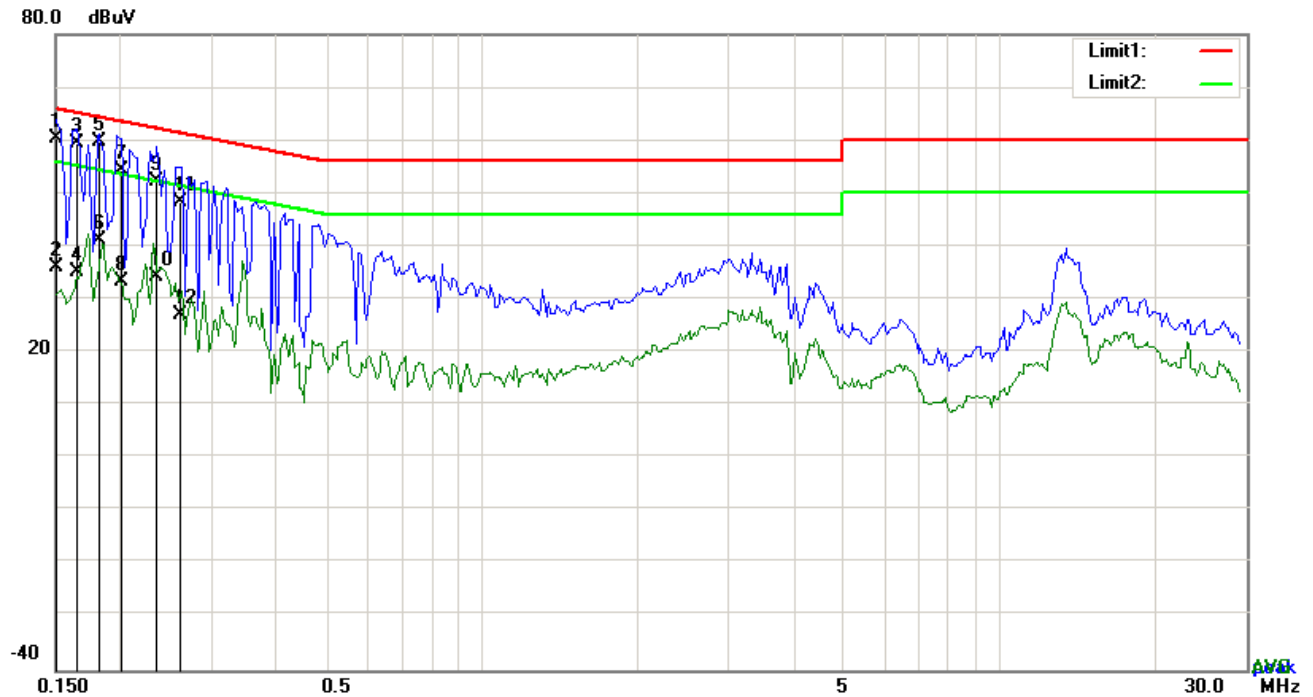


**Test Data**

**Phase Line Plot at 120Vac, 60Hz**

| No. | P/L | Frequency | Reading | Detector | Corrected | Result | Limit  | Margin |
|-----|-----|-----------|---------|----------|-----------|--------|--------|--------|
|     |     | (MHz)     | (dBuV)  |          | (dB}      | (dBuV) | (dBuV) | (dB)   |
| 1   | L1  | 0.1773    | 51.25   | QP       | 10.03     | 61.28  | 64.61  | -3.33  |
| 2   | L1  | 0.1773    | 31.84   | AVG      | 10.03     | 41.87  | 54.61  | -12.74 |
| 3   | L1  | 0.1890    | 48.72   | QP       | 10.03     | 58.75  | 64.08  | -5.33  |
| 4   | L1  | 0.1890    | 29.21   | AVG      | 10.03     | 39.24  | 54.08  | -14.84 |
| 5   | L1  | 0.2202    | 42.21   | QP       | 10.03     | 52.24  | 62.81  | -10.57 |
| 6   | L1  | 0.2202    | 22.13   | AVG      | 10.03     | 32.16  | 52.81  | -20.65 |
| 7   | L1  | 0.2475    | 40.51   | QP       | 10.03     | 50.54  | 61.84  | -11.30 |
| 8   | L1  | 0.2475    | 21.62   | AVG      | 10.03     | 31.65  | 51.84  | -20.19 |
| 9   | L1  | 0.2904    | 36.93   | QP       | 10.03     | 46.96  | 60.51  | -13.55 |
| 10  | L1  | 0.2904    | 17.06   | AVG      | 10.03     | 27.09  | 50.51  | -23.42 |
| 11  | L1  | 0.3255    | 34.95   | QP       | 10.03     | 44.98  | 59.57  | -14.59 |
| 12  | L1  | 0.3255    | 15.06   | AVG      | 10.03     | 25.09  | 49.57  | -24.48 |

**Test Mode : USB Mode**

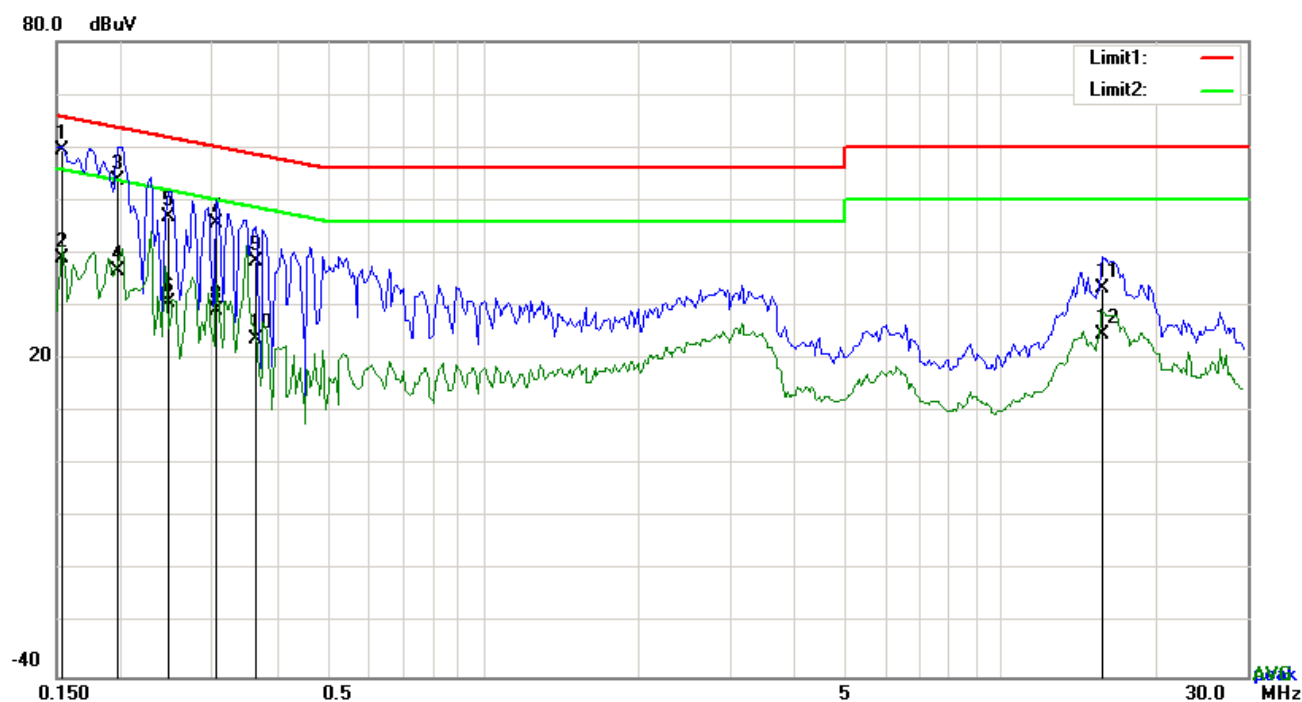


### Test Data

### Phase Neutral Plot at 120Vac, 60Hz

| No. | P/L | Frequency | Reading | Detector | Corrected | Result | Limit  | Margin |
|-----|-----|-----------|---------|----------|-----------|--------|--------|--------|
|     |     | (MHz)     | (dBuV)  |          | (dB}      | (dBuV) | (dBuV) | (dB)   |
| 1   | N   | 0.1500    | 50.21   | QP       | 10.02     | 60.23  | 66.00  | -5.77  |
| 2   | N   | 0.1500    | 25.93   | AVG      | 10.02     | 35.95  | 56.00  | -20.05 |
| 3   | N   | 0.1656    | 49.45   | QP       | 10.02     | 59.47  | 65.18  | -5.71  |
| 4   | N   | 0.1656    | 25.24   | AVG      | 10.02     | 35.26  | 55.18  | -19.92 |
| 5   | N   | 0.1815    | 49.64   | QP       | 10.02     | 59.66  | 64.42  | -4.76  |
| 6   | N   | 0.1815    | 31.18   | AVG      | 10.02     | 41.20  | 54.42  | -13.22 |
| 7   | N   | 0.2007    | 44.29   | QP       | 10.02     | 54.31  | 63.58  | -9.27  |
| 8   | N   | 0.2007    | 23.25   | AVG      | 10.02     | 33.27  | 53.58  | -20.31 |
| 9   | N   | 0.2358    | 42.31   | QP       | 10.02     | 52.33  | 62.24  | -9.91  |
| 10  | N   | 0.2358    | 24.27   | AVG      | 10.02     | 34.29  | 52.24  | -17.95 |
| 11  | N   | 0.2616    | 38.33   | QP       | 10.02     | 48.35  | 61.38  | -13.03 |
| 12  | N   | 0.2616    | 17.13   | AVG      | 10.02     | 27.15  | 51.38  | -24.23 |

Test Mode : USB Mode

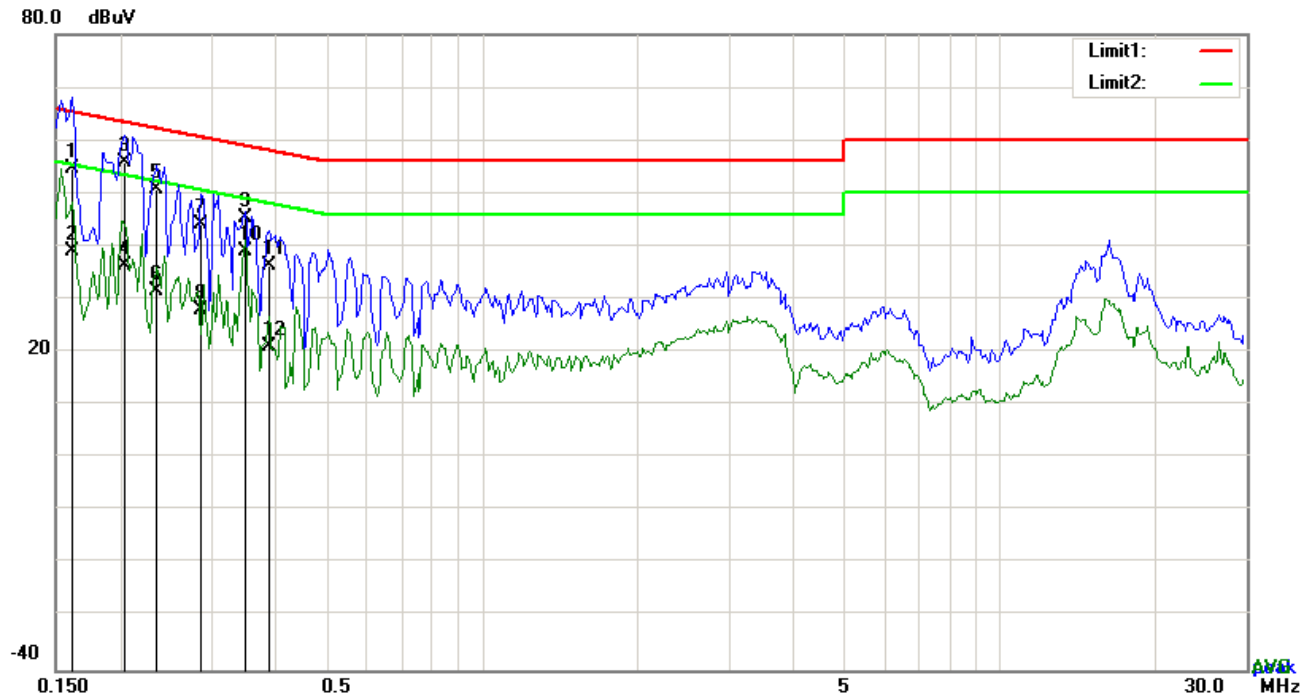


Test Data

Phase Line Plot at 240Vac, 60Hz

| No. | P/L | Frequency | Reading | Detector | Corrected | Result | Limit  | Margin |
|-----|-----|-----------|---------|----------|-----------|--------|--------|--------|
|     |     | (MHz)     | (dBuV)  |          | (dB}      | (dBuV) | (dBuV) | (dB)   |
| 1   | L1  | 0.1539    | 49.38   | QP       | 10.03     | 59.41  | 65.79  | -6.38  |
| 2   | L1  | 0.1539    | 28.89   | AVG      | 10.03     | 38.92  | 55.79  | -16.87 |
| 3   | L1  | 0.1968    | 43.69   | QP       | 10.03     | 53.72  | 63.74  | -10.02 |
| 4   | L1  | 0.1968    | 26.74   | AVG      | 10.03     | 36.77  | 53.74  | -16.97 |
| 5   | L1  | 0.2475    | 36.93   | QP       | 10.03     | 46.96  | 61.84  | -14.88 |
| 6   | L1  | 0.2475    | 20.70   | AVG      | 10.03     | 30.73  | 51.84  | -21.11 |
| 7   | L1  | 0.3060    | 35.66   | QP       | 10.03     | 45.69  | 60.08  | -14.39 |
| 8   | L1  | 0.3060    | 19.25   | AVG      | 10.03     | 29.28  | 50.08  | -20.80 |
| 9   | L1  | 0.3645    | 28.47   | QP       | 10.03     | 38.50  | 58.63  | -20.13 |
| 10  | L1  | 0.3645    | 13.80   | AVG      | 10.03     | 23.83  | 48.63  | -24.80 |
| 11  | L1  | 15.7335   | 23.06   | QP       | 10.24     | 33.30  | 60.00  | -26.70 |
| 12  | L1  | 15.7335   | 14.44   | AVG      | 10.24     | 24.68  | 50.00  | -25.32 |

Test Mode : USB Mode



Test Data

Phase Neutral Plot at 240Vac, 60Hz

| No. | P/L | Frequency | Reading | Detector | Corrected | Result | Limit  | Margin |
|-----|-----|-----------|---------|----------|-----------|--------|--------|--------|
|     |     | (MHz)     | (dBuV)  |          | (dB}      | (dBuV) | (dBuV) | (dB)   |
| 1   | N   | 0.1617    | 44.78   | QP       | 10.02     | 54.80  | 65.38  | -10.58 |
| 2   | N   | 0.1617    | 28.90   | AVG      | 10.02     | 38.92  | 55.38  | -16.46 |
| 3   | N   | 0.2046    | 45.96   | QP       | 10.02     | 55.98  | 63.42  | -7.44  |
| 4   | N   | 0.2046    | 26.48   | AVG      | 10.02     | 36.50  | 53.42  | -16.92 |
| 5   | N   | 0.2358    | 40.64   | QP       | 10.02     | 50.66  | 62.24  | -11.58 |
| 6   | N   | 0.2358    | 21.63   | AVG      | 10.02     | 31.65  | 52.24  | -20.59 |
| 7   | N   | 0.2865    | 34.16   | QP       | 10.02     | 44.18  | 60.63  | -16.45 |
| 8   | N   | 0.2865    | 18.04   | AVG      | 10.02     | 28.06  | 50.63  | -22.57 |
| 9   | N   | 0.3489    | 35.38   | QP       | 10.02     | 45.40  | 58.99  | -13.59 |
| 10  | N   | 0.3489    | 29.06   | AVG      | 10.02     | 39.08  | 48.99  | -9.91  |
| 11  | N   | 0.3879    | 26.44   | QP       | 10.02     | 36.46  | 58.11  | -21.65 |
| 12  | N   | 0.3879    | 11.15   | AVG      | 10.02     | 21.17  | 48.11  | -26.94 |

## 6.2 Radiated Emissions

|                      |                  |
|----------------------|------------------|
| Temperature          | 24°C             |
| Relative Humidity    | 56%              |
| Atmospheric Pressure | 1023mbar         |
| Test date :          | October 23, 2015 |
| Tested By :          | Winnie Zhang     |

### Requirement(s):

| Spec            | Item | Requirement                                                                                                                                                                                                                                                                                                                                   | Applicable                                                                            |                       |
|-----------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------------|
| 47CFR§15.109(d) | a)   | Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges |  |                       |
|                 |      | Frequency range (MHz)                                                                                                                                                                                                                                                                                                                         |                                                                                       | Field Strength (µV/m) |
|                 |      | 30 – 88                                                                                                                                                                                                                                                                                                                                       |                                                                                       | 100                   |
|                 |      | 88 – 216                                                                                                                                                                                                                                                                                                                                      |                                                                                       | 150                   |
|                 |      | 216 960                                                                                                                                                                                                                                                                                                                                       |                                                                                       | 200                   |
|                 |      | Above 960                                                                                                                                                                                                                                                                                                                                     |                                                                                       | 500                   |

|            |  |
|------------|--|
| Test Setup |  |
|------------|--|

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Procedure | <ol style="list-style-type: none"> <li>The EUT was switched on and allowed to warm up to its normal operating condition.</li> <li>The test was carried out at the selected frequency points obtained from the EUT characterization. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner: <ol style="list-style-type: none"> <li>Vertical or horizontal polarization (whichever gave the higher emission level</li> </ol> </li> </ol> |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|             |                |
|-------------|----------------|
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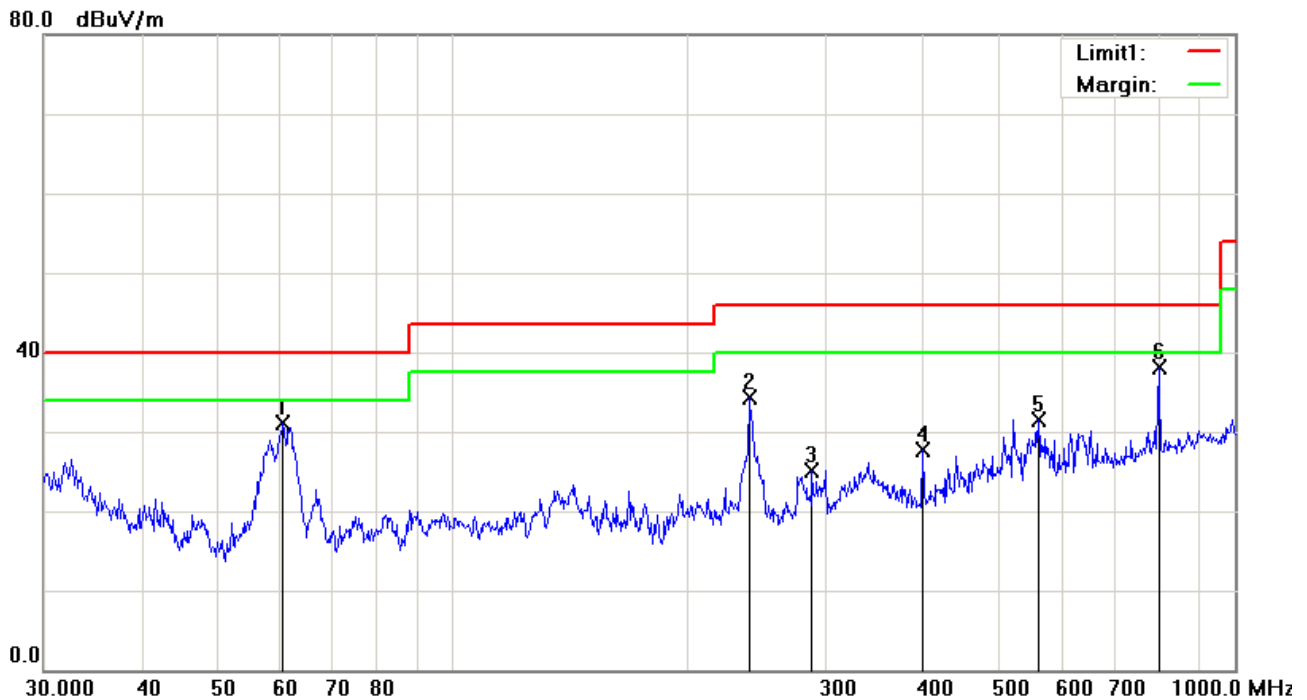
|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | <p>over a full rotation of the EUT) was chosen.</p> <p>b. The EUT was then rotated to the direction that gave the maximum emission.</p> <p>c. Finally, the antenna height was adjusted to the height that gave the maximum emission.</p> <p>3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi Peak detection at frequency below 1GHz.</p> <p>4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz with Peak detection for Peak measurement at frequency above 1GHz.</p> <p>The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth with Peak detection for Average Measurement as below at frequency above 1GHz.</p> <p>■ 1 kHz (Duty cycle &lt; 98%) □ 10 Hz (Duty cycle &gt; 98%)</p> <p>5. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.</p> |
| Remark |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Result | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

**Test Mode 1: USB Mode**

**Below 1GHz**



**Test Data**

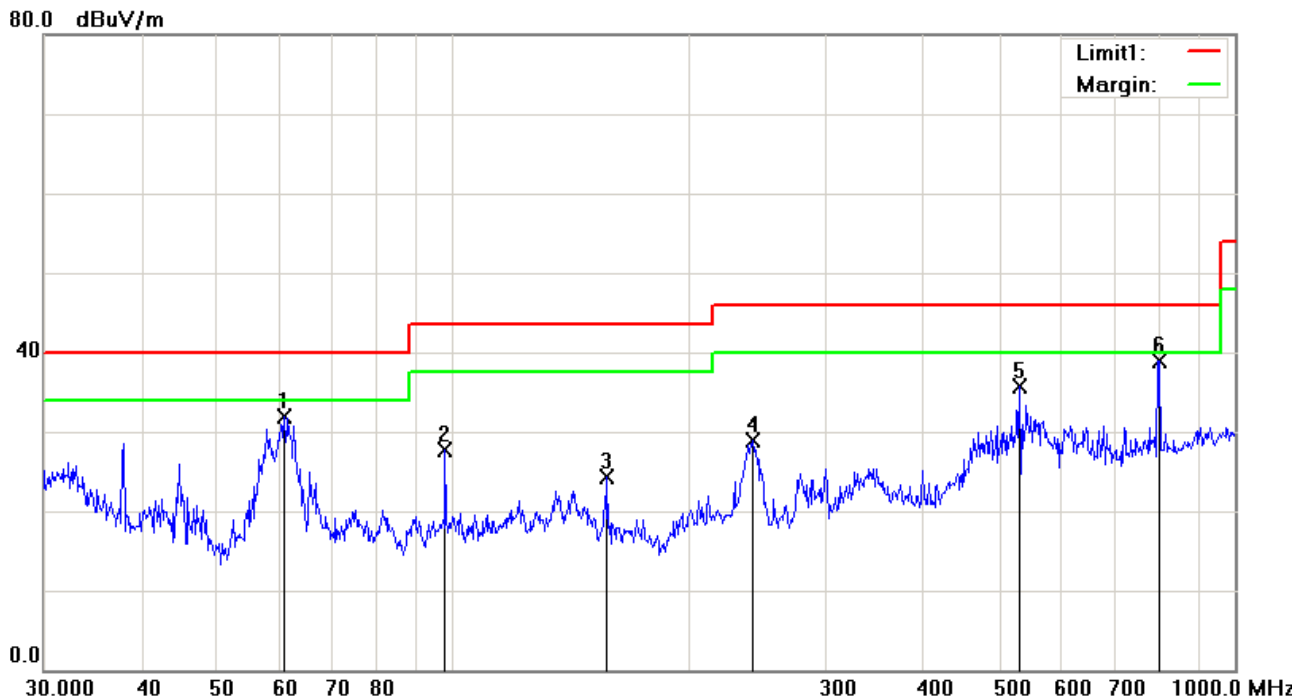
**Horizontal Polarity Plot @3m**

| No. | P/L | Frequency | Reading  | Detector | Corrected | Result   | Limit    | Margin | Height | Degree |
|-----|-----|-----------|----------|----------|-----------|----------|----------|--------|--------|--------|
|     |     | (MHz)     | (dBuV/m) |          | (dB/m)    | (dBuV/m) | (dBuV/m) | (dB)   | (cm)   | (°)    |
| 1   | H   | 60.7044   | 45.46    | peak     | -14.30    | 31.16    | 40.00    | -8.84  | 100    | 327    |
| 2   | H   | 239.1473  | 43.30    | peak     | -9.09     | 34.21    | 46.00    | -11.79 | 100    | 345    |
| 3   | H   | 287.9904  | 32.61    | peak     | -7.45     | 25.16    | 46.00    | -20.84 | 100    | 214    |
| 4   | H   | 399.0302  | 31.93    | peak     | -4.32     | 27.61    | 46.00    | -18.39 | 100    | 1      |
| 5   | H   | 560.6928  | 32.15    | peak     | -0.64     | 31.51    | 46.00    | -14.49 | 100    | 225    |
| 6   | H   | 798.9797  | 34.92    | peak     | 3.20      | 38.12    | 46.00    | -7.88  | 100    | 358    |

**Above 1GHz**

Note: The frequency that above 1GHz is mainly from the environment noise.

### Below 1GHz



### Test Data

#### Vertical Polarity Plot @3m

| No. | P/L | Frequency | Reading  | Detector | Corrected | Result   | Limit    | Margin | Height | Degree |
|-----|-----|-----------|----------|----------|-----------|----------|----------|--------|--------|--------|
|     |     | (MHz)     | (dBuV/m) |          | (dB/m)    | (dBuV/m) | (dBuV/m) | (dB)   | (cm)   | ( )    |
| 1   | V   | 60.9176   | 46.25    | peak     | -14.29    | 31.96    | 40.00    | -8.04  | 100    | 272    |
| 2   | V   | 97.7983   | 39.04    | peak     | -11.39    | 27.65    | 43.50    | -15.85 | 100    | 227    |
| 3   | V   | 157.5589  | 32.58    | peak     | -8.31     | 24.27    | 43.50    | -19.23 | 100    | 92     |
| 4   | V   | 241.6763  | 38.01    | peak     | -9.11     | 28.90    | 46.00    | -17.10 | 100    | 145    |
| 5   | V   | 530.1014  | 36.93    | peak     | -1.16     | 35.77    | 46.00    | -10.23 | 100    | 167    |
| 6   | V   | 801.7863  | 35.75    | peak     | 3.23      | 38.98    | 46.00    | -7.02  | 100    | 347    |

### Above 1GHz

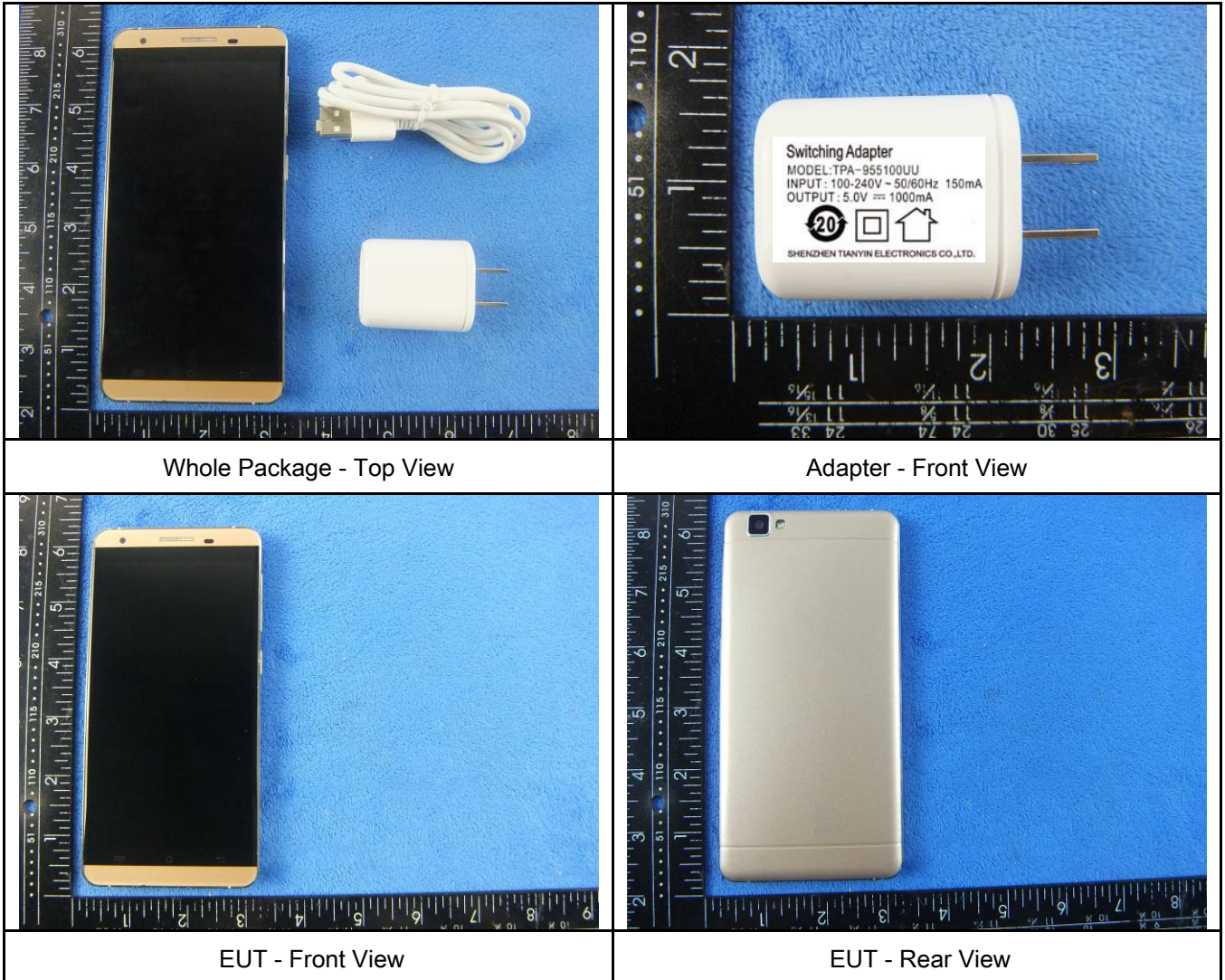
Note: The frequency that above 1GHz is mainly from the environment noise.

## Annex A. TEST INSTRUMENT

| Instrument                              | Model    | Serial #   | Cal Date   | Cal Due    | In use                              |
|-----------------------------------------|----------|------------|------------|------------|-------------------------------------|
| <b>AC Line Conducted Emissions</b>      |          |            |            |            |                                     |
| EMI test receiver                       | ESCS30   | 8471241027 | 09/17/2015 | 09/16/2016 | <input checked="" type="checkbox"/> |
| Line Impedance Stabilization Network    | LI-125A  | 191106     | 09/25/2015 | 09/24/2016 | <input checked="" type="checkbox"/> |
| Line Impedance Stabilization Network    | LI-125A  | 191107     | 09/25/2015 | 09/24/2016 | <input checked="" type="checkbox"/> |
| LISN                                    | ISN T800 | 34373      | 09/25/2015 | 09/24/2016 | <input checked="" type="checkbox"/> |
| Transient Limiter                       | LIT-153  | 531118     | 09/01/2015 | 08/31/2016 | <input checked="" type="checkbox"/> |
| <b>Radiated Emissions</b>               |          |            |            |            |                                     |
| EMI test receiver                       | ESL6     | 100262     | 09/17/2015 | 09/16/2016 | <input checked="" type="checkbox"/> |
| OPT 010 AMPLIFIER<br>(0.1-1300MHz)      | 8447E    | 2727A02430 | 09/01/2015 | 08/31/2016 | <input checked="" type="checkbox"/> |
| Microwave Preamplifier<br>(1 ~ 26.5GHz) | 8449B    | 3008A02402 | 03/25/2015 | 03/24/2016 | <input checked="" type="checkbox"/> |
| Bilog Antenna<br>(30MHz~6GHz)           | JB6      | A110712    | 09/21/2015 | 09/20/2016 | <input checked="" type="checkbox"/> |
| Double Ridge Horn Antenna               | AH-118   | 71259      | 09/24/2015 | 09/23/2016 | <input checked="" type="checkbox"/> |

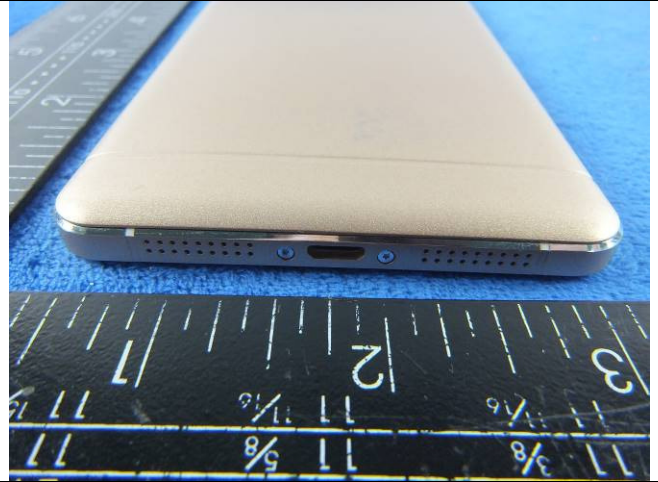
## Annex B. EUT And Test Setup Photographs

### Annex B.i. Photograph: EUT External Photo





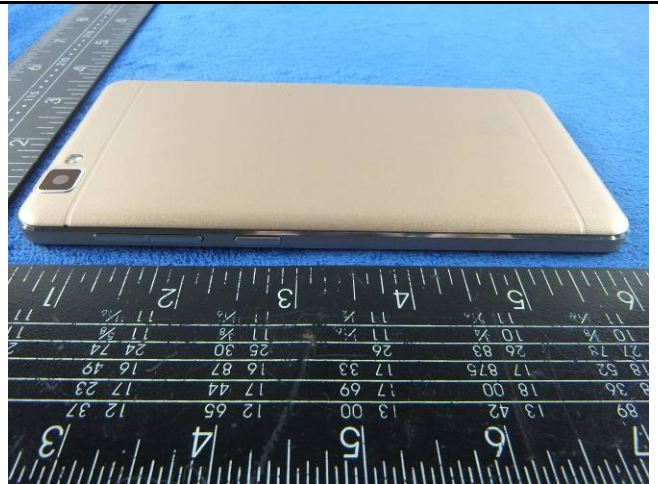
EUT - Top View



EUT - Bottom View

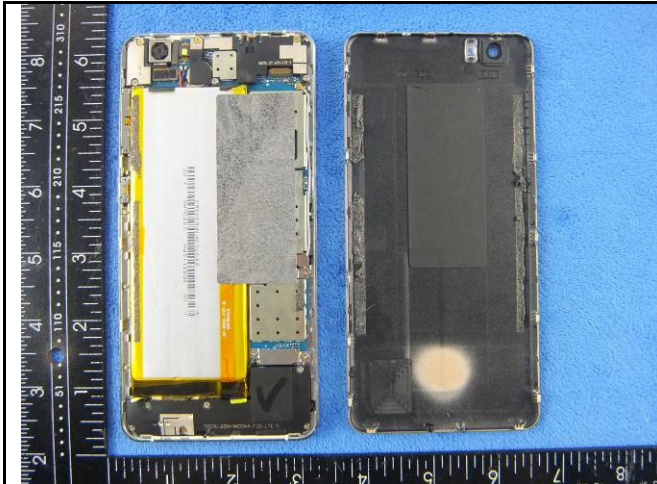


EUT - Left View



EUT - Right View

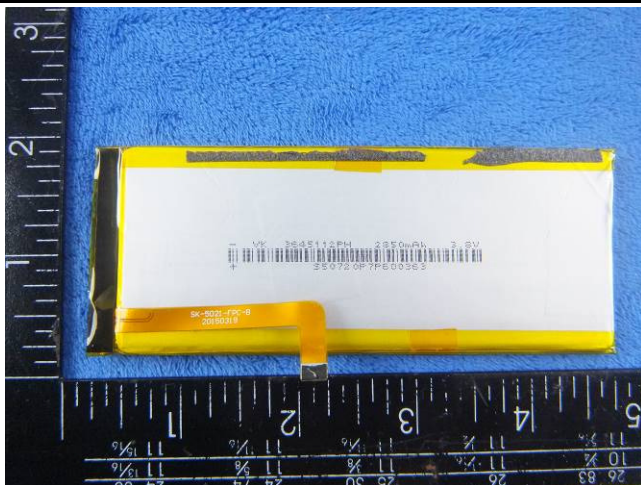
**Annex B.ii. Photograph: EUT Internal Photo**



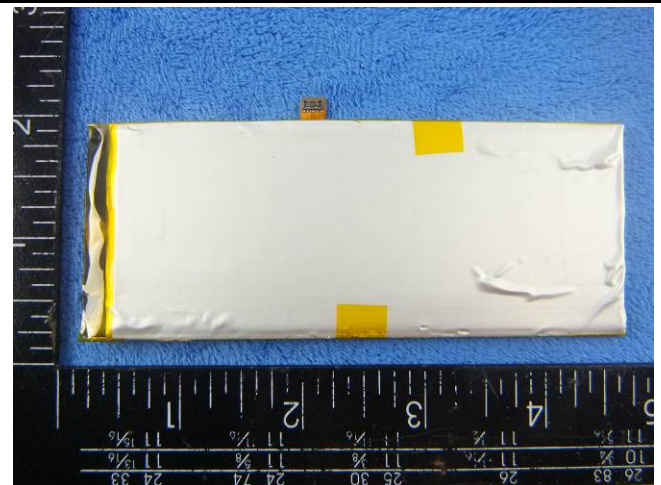
Cover Off - Top View 1



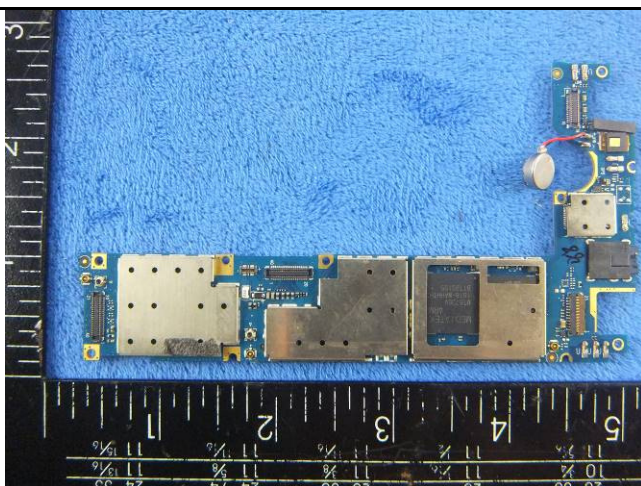
Cover Off - Top View 2



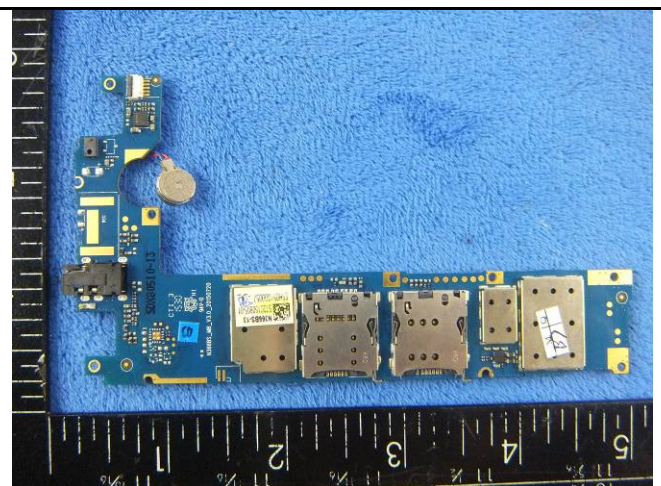
Battery - Top View



Battery - Bottom View

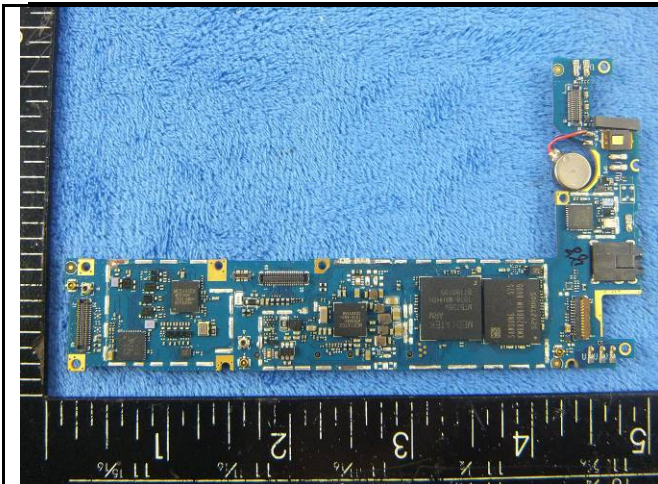


Mainboard With Shielding - Front View

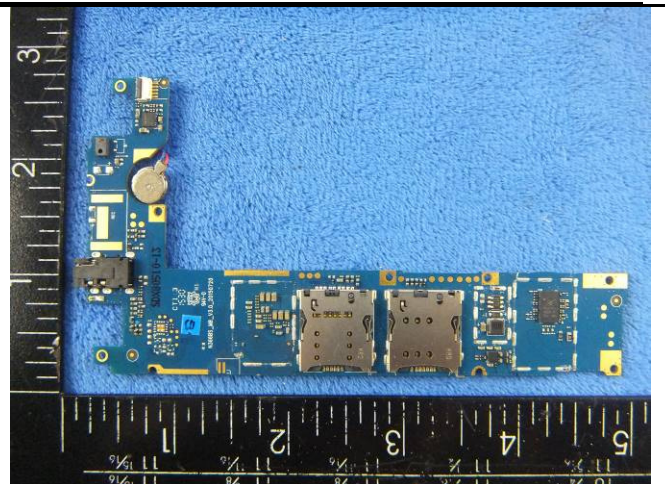


Mainboard With Shielding - Rear View

|             |                |
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Mainboard Without Shielding - Front View



Mainboard Without Shielding - Rear View



LCD - Front View



LCD - Rear View

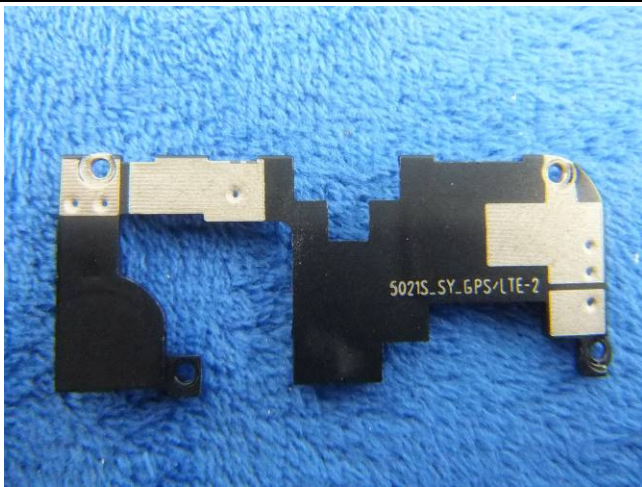


GSM/PCS/UMTS-FDD Antenna View



WIFI/BT/BLE - Antenna View

|             |                |
|-------------|----------------|
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GPS/LTE - Antenna View

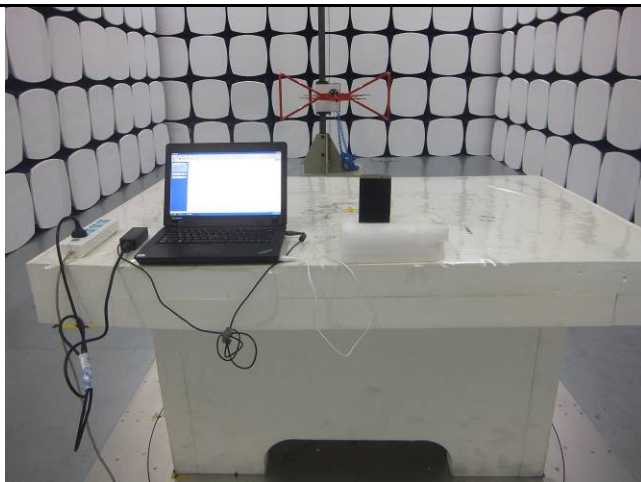
**Annex B.iii. Photograph: Test Setup Photo**



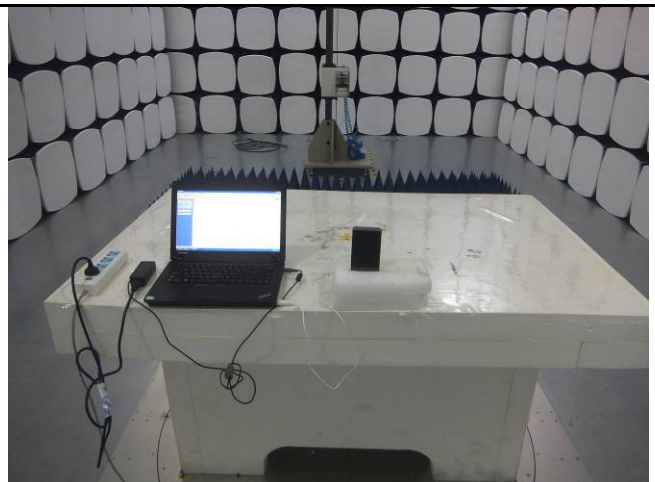
Conducted Emissions Test Setup – Front View



Conducted Emissions Test Setup – Side View



Radiated Spurious Emissions Test Setup Below 1GHz

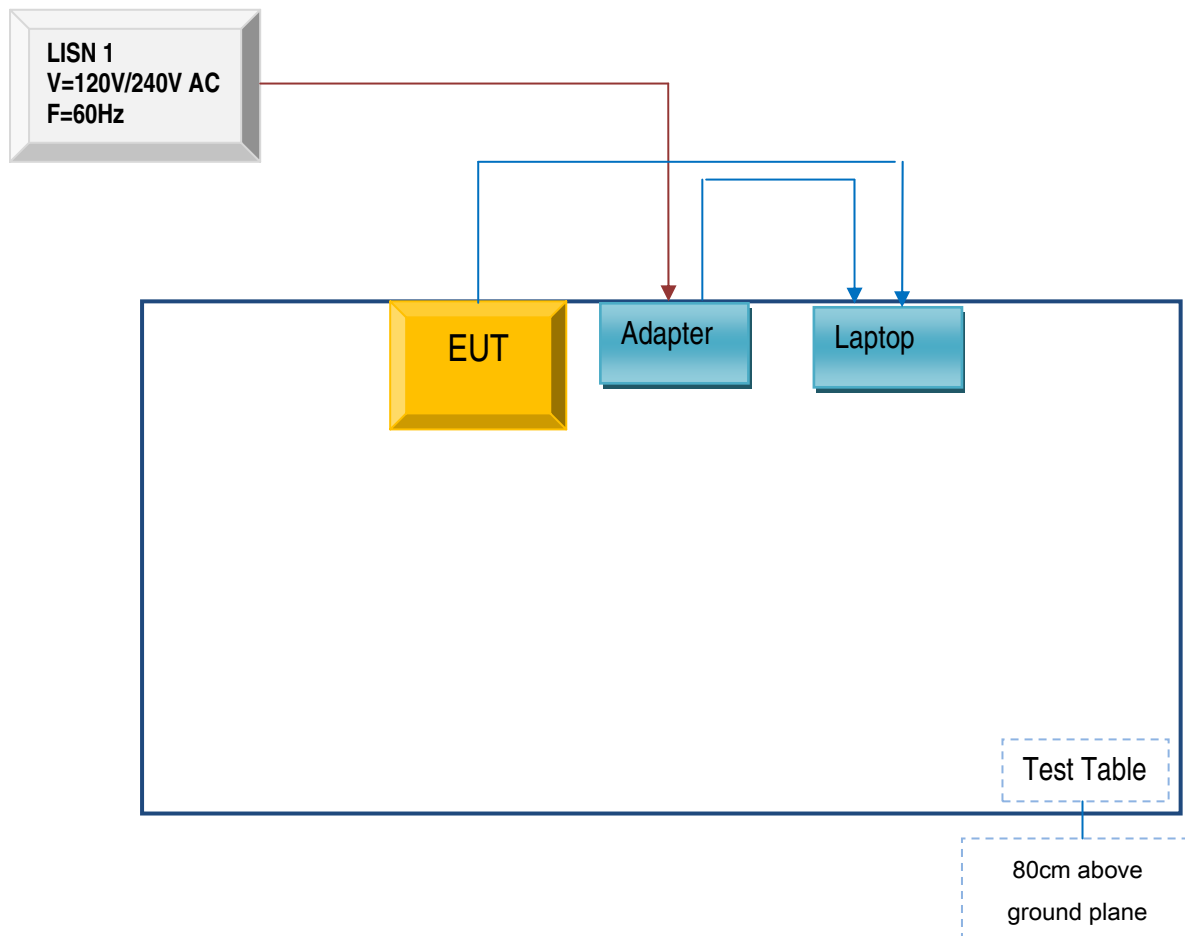


Radiated Spurious Emissions Test Setup Above  
1GHz

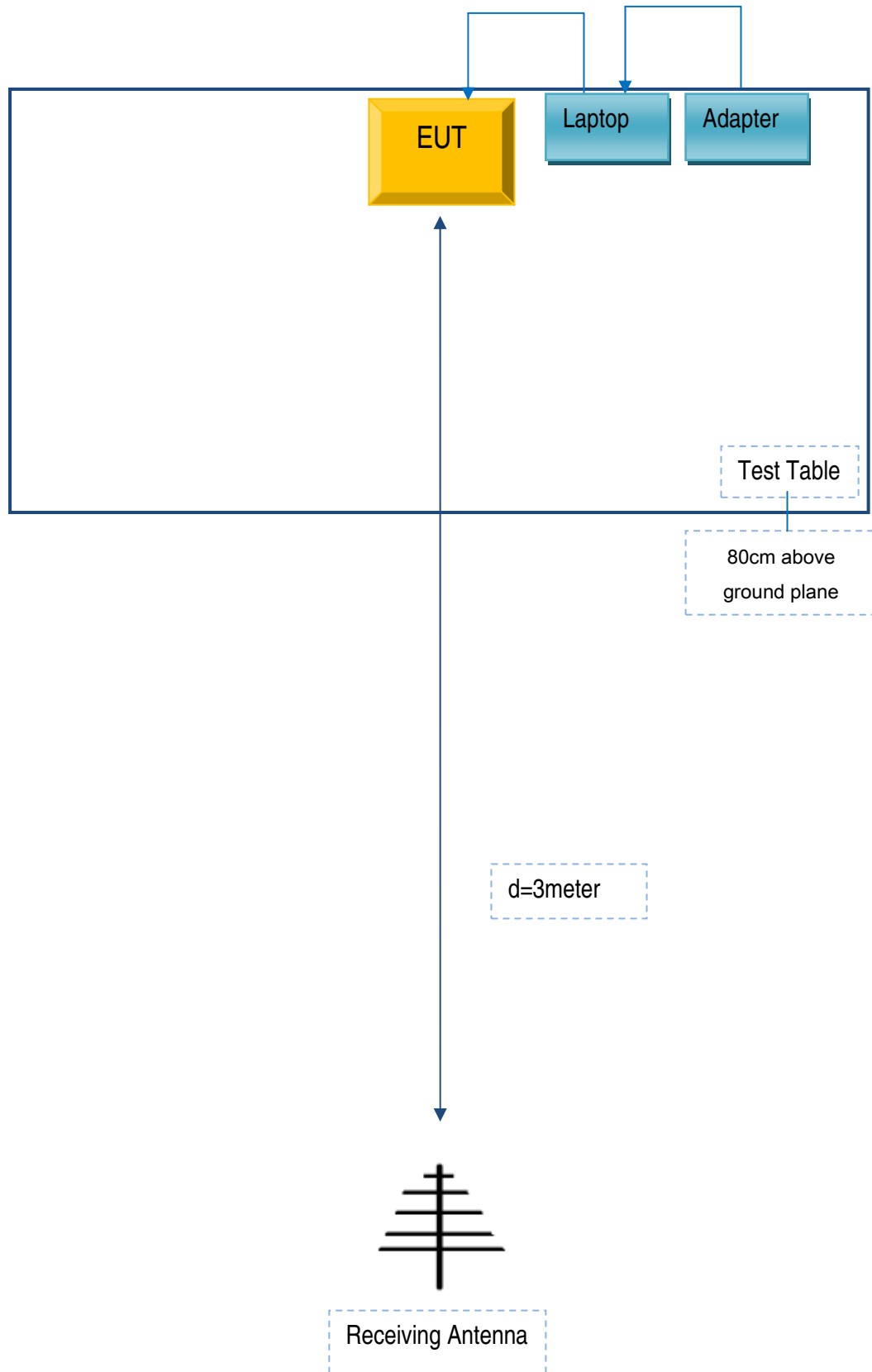
## Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

### Annex C.ii. TEST SET UP BLOCK

#### Block Configuration Diagram for Conducted Emissions



## Block Configuration Diagram for Radiated Emissions



|             |                |
|-------------|----------------|
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## **Annex C. ii. SUPPORTING EQUIPMENT DESCRIPTION**

The following is a description of supporting equipment and details of cables used with the EUT.

| Manufacturer | Equipment Description | Model        | Calibration Date | Calibration Due Date |
|--------------|-----------------------|--------------|------------------|----------------------|
| Lenovo       | Lenovo Laptop         | E40& 0579A52 | N/A              | N/A                  |

|             |                |
|-------------|----------------|
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## Annex D. User Manual / Block Diagram / Schematics / Partlist

Please see Attachment

|             |                |
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## Annex E. DECLARATION OF SIMILARITY

N/A