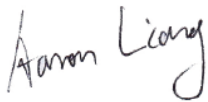
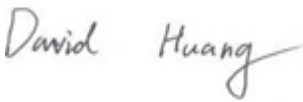


# RF TEST REPORT



Report No.: 18071069-FCC-R

Supersede Report No.: N/A

|                                                                                                                                      |                                                                                                                                            |                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Applicant                                                                                                                            | Southern Telecom Inc.                                                                                                                      |                                                                                       |
| Product Name                                                                                                                         | HD WI-FI Security Camera                                                                                                                   |                                                                                       |
| Model No.                                                                                                                            | SVC562                                                                                                                                     |                                                                                       |
| Serial No.                                                                                                                           | SVC563<br>(All models have same circuits diagram, PCB Layout, construction and rated power, only different was model name and appearance.) |                                                                                       |
| Test Standard                                                                                                                        | FCC Part 15.247, ANSI C63.10: 2013                                                                                                         |                                                                                       |
| Test Date                                                                                                                            | September 17 to 25, 2018                                                                                                                   |                                                                                       |
| Issue Date                                                                                                                           | September 26, 2018                                                                                                                         |                                                                                       |
| 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"/>                                                                                                                   |                                                                                       |
|                                                   |                                                         |  |
| Aaron Liang<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:

**SIEMIC (SHENZHEN-CHINA) LABORATORIES**

Zone A, Floor 1, Building 2 Wan Ye Long Technology Park

South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108

Phone: +86 0755 2601 4629801 Email: [China@siemic.com.cn](mailto:China@siemic.com.cn)

## 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.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

### 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      |

|                 |                |
|-----------------|----------------|
| Test Report No. | 18071069-FCC-R |
| Page            | 3 of 26        |

This page has been left blank intentionally.

## CONTENTS

|                                                                                                 |    |
|-------------------------------------------------------------------------------------------------|----|
| 1. REPORT REVISION HISTORY.....                                                                 | 5  |
| 2. CUSTOMER INFORMATION .....                                                                   | 5  |
| 3. TEST SITE INFORMATION .....                                                                  | 6  |
| 4. EQUIPMENT UNDER TEST (EUT) INFORMATION .....                                                 | 7  |
| 5. TEST SUMMARY .....                                                                           | 9  |
| 6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS .....                                          | 10 |
| 6.1 AC POWER LINE CONDUCTED EMISSIONS.....                                                      | 10 |
| 6.2 RADIATED SPURIOUS EMISSIONS & RESTRICTED BAND .....                                         | 16 |
| ANNEX A. TEST INSTRUMENT.....                                                                   | 22 |
| ANNEX B. TEST SETUP AND SUPPORTING EQUIPMENT .....                                              | 23 |
| ANNEX C. USER MANUAL / BLOCK DIAGRAM / SCHEMATICS / PARTLIST/ DECLARATION OF<br>SIMILARITY..... | 26 |

## 1. Report Revision History

| Report No.     | Report Version | Description | Issue Date         |
|----------------|----------------|-------------|--------------------|
| 18071069-FCC-R | NONE           | Original    | September 26, 2018 |
|                |                |             |                    |
|                |                |             |                    |
|                |                |             |                    |
|                |                |             |                    |
|                |                |             |                    |

## 2. Customer information

|                  |                                                         |
|------------------|---------------------------------------------------------|
| Applicant Name   | Southern Telecom Inc.                                   |
| Applicant Add    | 5601 1st Ave, 2nd Floor Brooklyn New York United States |
| Manufacturer     | Southern Telecom Inc.                                   |
| Manufacturer Add | 5601 1st Ave, 2nd Floor Brooklyn New York United States |

### 3. Test site information

Test Lab :

|                      |                                                                                                                                              |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 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 China<br>518108 |
| FCC Test Site No.    | 535293                                                                                                                                       |
| IC Test Site No.     | 4842E-1                                                                                                                                      |
| Test Software        | Radiated Emission Program-To Shenzhen v2.0                                                                                                   |

## 4. Equipment under Test (EUT) Information

|                               |                                                                                                                                            |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Description of EUT:           | HD WI-FI Security Camera                                                                                                                   |
| Main Model:                   | SVC562                                                                                                                                     |
| Serial Model:                 | SVC563<br>(All models have same circuits diagram, PCB Layout, construction and rated power, only different was model name and appearance.) |
| Date EUT received:            | September 17, 2018                                                                                                                         |
| Test Date(s):                 | September 17 to 25, 2018                                                                                                                   |
| Equipment Category :          | DTS                                                                                                                                        |
| Antenna Gain:                 | WIFI: 2.5dBi                                                                                                                               |
| Antenna Type:                 | PCB Antenna                                                                                                                                |
| Type of Modulation:           | 802.11b/g/n: DSSS, OFDM                                                                                                                    |
| RF Operating Frequency (ies): | WIFI: 802.11b/g/n(20M): 2412-2462 MHz                                                                                                      |
| Number of Channels:           | WIFI :802.11b/g/n(20M): 11CH                                                                                                               |
| Port:                         | Please refer to the user manual                                                                                                            |
| Input Power:                  | Adapter:<br>Model: A18A-050100U-US2<br>Input: AC100-240V~50/60Hz, Max. 0.2A<br>Output: DC 5V , 1A                                          |
| Trade Name :                  | SHARPER IMAGE                                                                                                                              |
| FCC ID:                       | 2ABV4SVC562                                                                                                                                |

**Mark:**

| Revision Number | Adapter Model    | Report Number  | Description of Revision | Date of Revision   |
|-----------------|------------------|----------------|-------------------------|--------------------|
| 0               | D31-05050100     | 18070685-FCC-R | Original Report         | July 18, 2018      |
| 1               | A18A-050100U-US2 | 18071069-FCC-R | Amended Report          | September 26, 2018 |

Note: This is the amended report application (18071069-FCC-R) of the device, the original submission (18070685-FCC-R) was granted on July 18, 2018. The difference between the original device and the current one was as following the detail information:

**The difference is for different Adapter**

And based on the above differences, we will retest the “ AC Power Line Conducted Emissions and Radiated Emissions” test data, and others please refer to report 18070685-FCC-R.

## 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     |
|---------------------------------|----------------------------------------------------------------------------|------------|
| §15.207 (a),                    | AC Power Line Conducted Emissions                                          | Compliance |
| §15.205, §15.209,<br>§15.247(d) | Radiated Emissions & Unwanted Emissions<br>into Restricted Frequency Bands | Compliance |

### Measurement Uncertainty

| Emissions                                                                                                                                  |                                                                                                                                                 |               |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Test Item                                                                                                                                  | Description                                                                                                                                     | Uncertainty   |
| Band-Edge & Unwanted Emissions into Restricted Frequency Bands and Radiated Emissions & Unwanted Emissions into Restricted Frequency Bands | 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 |
| -                                                                                                                                          | -                                                                                                                                               | -             |

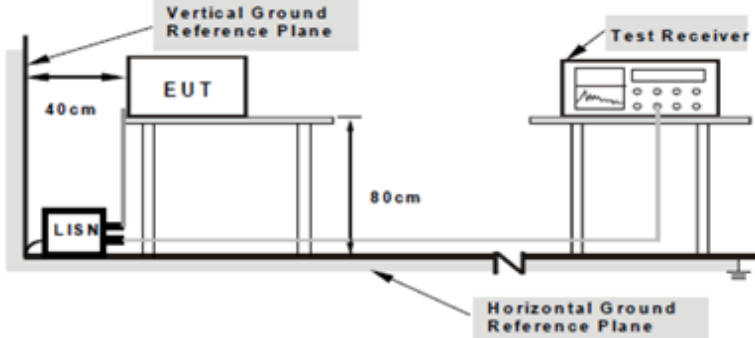
## 6. Measurements, Examination And Derived Results

### 6.1 AC Power Line Conducted Emissions

|                      |                    |
|----------------------|--------------------|
| Temperature          | 26 °C              |
| Relative Humidity    | 55%                |
| Atmospheric Pressure | 1017mbar           |
| Test date :          | September 26, 2018 |
| Tested By :          | Aaron Liang        |

#### Requirement(s):

| Spec                        | Item | Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Applicable                                                                            |              |         |
|-----------------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------|---------|
| 47CFR§15.207, RSS210 (A8.1) | 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. |  |              |         |
|                             |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                       |              |         |
|                             |      | Frequency ranges (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 50W/50mH EUT LISN, connected to filtered mains.</li> </ol> |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

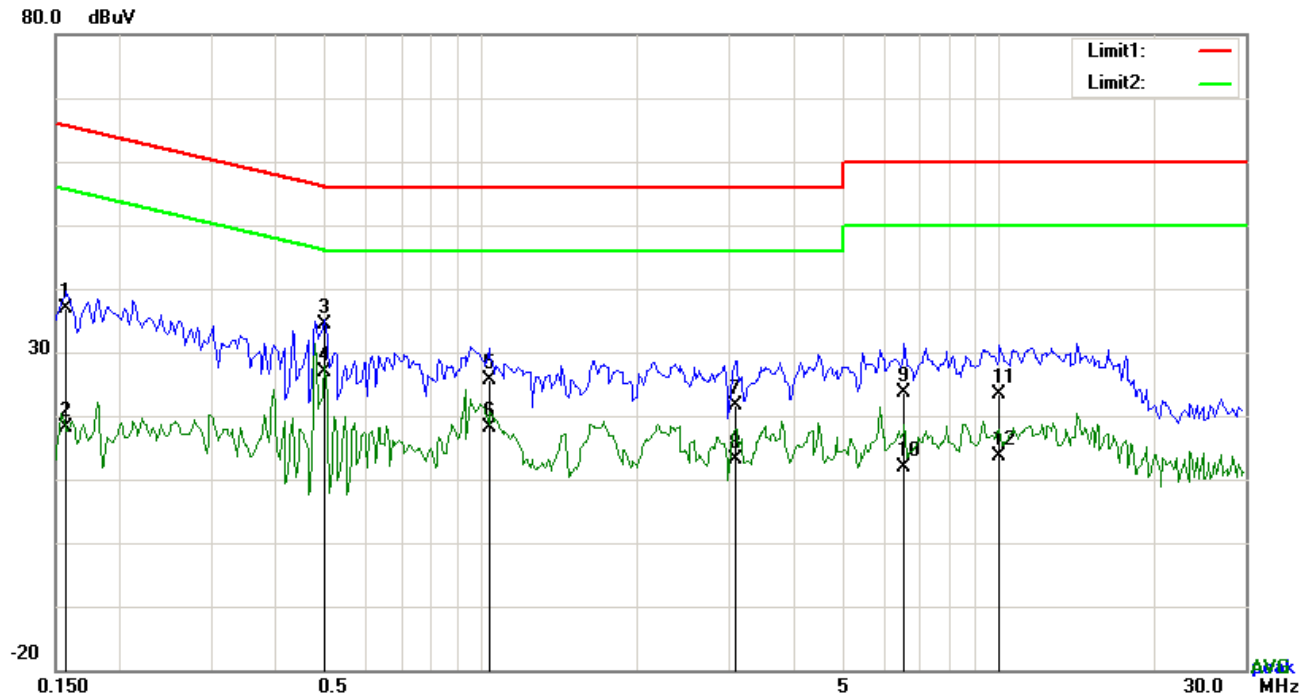
|                 |                |
|-----------------|----------------|
| Test Report No. | 18071069-FCC-R |
| Page            | 11 of 26       |

|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | <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:** Transmitting Mode

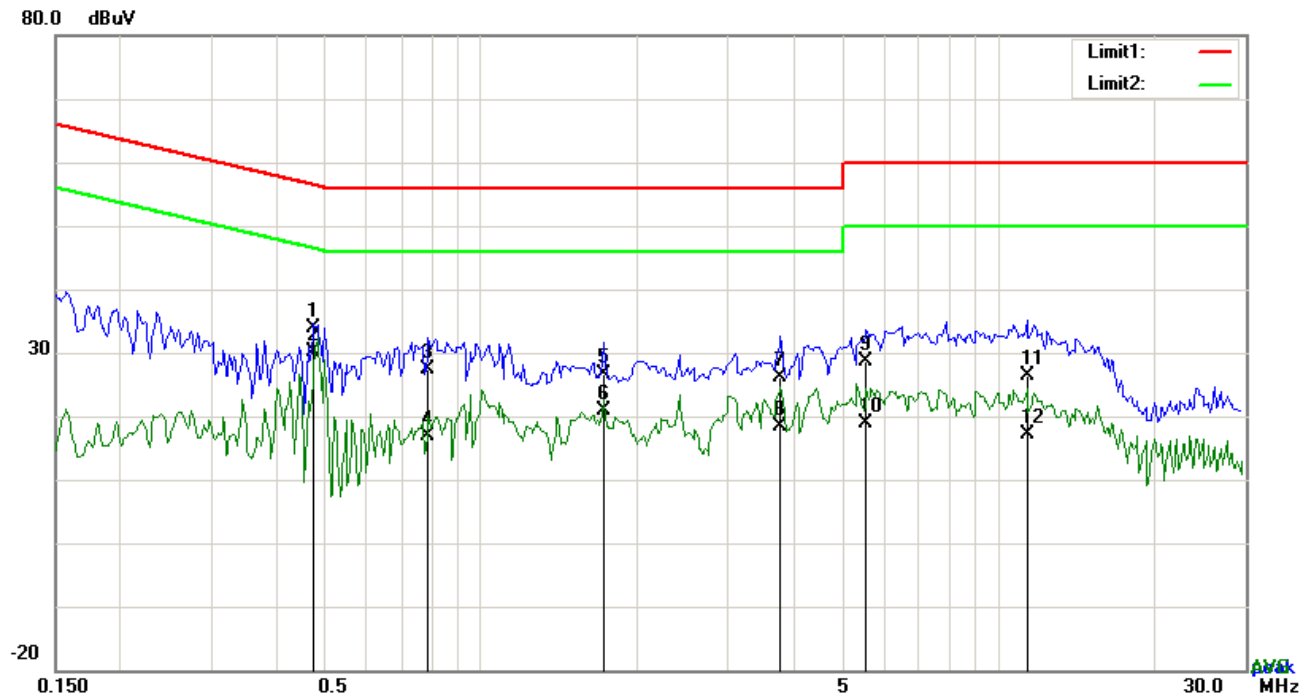


### Test Data

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

| No. | P/L | Frequency (MHz) | Reading (dBμV) | Detector | Corrected (dB) | Result (dBμV) | Limit (dBμV) | Margin (dB) |
|-----|-----|-----------------|----------------|----------|----------------|---------------|--------------|-------------|
| 1   | L1  | 0.1578          | 26.77          | QP       | 10.03          | 36.80         | 65.58        | -28.78      |
| 2   | L1  | 0.1578          | 8.17           | AVG      | 10.03          | 18.20         | 55.58        | -37.38      |
| 3   | L1  | 0.4971          | 24.43          | QP       | 10.03          | 34.46         | 56.05        | -21.59      |
| 4   | L1  | 0.4971          | 16.76          | AVG      | 10.03          | 26.79         | 46.05        | -19.26      |
| 5   | L1  | 1.0353          | 15.57          | QP       | 10.03          | 25.60         | 56.00        | -30.40      |
| 6   | L1  | 1.0353          | 7.98           | AVG      | 10.03          | 18.01         | 46.00        | -27.99      |
| 7   | L1  | 3.1053          | 11.52          | QP       | 10.06          | 21.58         | 56.00        | -34.42      |
| 8   | L1  | 3.1053          | 3.11           | AVG      | 10.06          | 13.17         | 46.00        | -32.83      |
| 9   | L1  | 6.5607          | 13.61          | QP       | 10.10          | 23.71         | 60.00        | -36.29      |
| 10  | L1  | 6.5607          | 1.90           | AVG      | 10.10          | 12.00         | 50.00        | -38.00      |
| 11  | L1  | 10.0200         | 13.30          | QP       | 10.15          | 23.45         | 60.00        | -36.55      |
| 12  | L1  | 10.0200         | 3.51           | AVG      | 10.15          | 13.66         | 50.00        | -36.34      |

**Test Mode:** Transmitting Mode

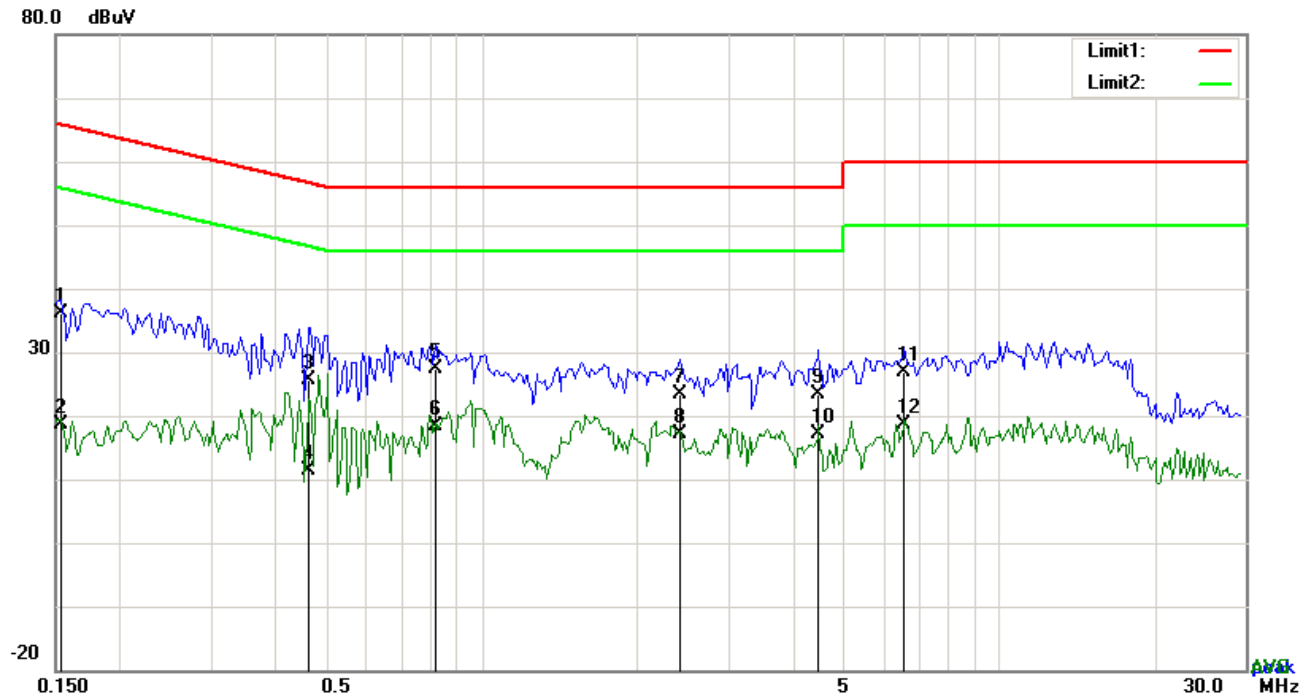


### Test Data

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

| No. | P/L | Frequency (MHz) | Reading (dBμV) | Detector | Corrected (dB) | Result (dBμV) | Limit (dBμV) | Margin (dB) |
|-----|-----|-----------------|----------------|----------|----------------|---------------|--------------|-------------|
| 1   | N   | 0.4737          | 23.94          | QP       | 10.02          | 33.96         | 56.45        | -22.49      |
| 2   | N   | 0.4737          | 20.18          | AVG      | 10.02          | 30.20         | 46.45        | -16.25      |
| 3   | N   | 0.7896          | 17.41          | QP       | 10.03          | 27.44         | 56.00        | -28.56      |
| 4   | N   | 0.7896          | 6.89           | AVG      | 10.03          | 16.92         | 46.00        | -29.08      |
| 5   | N   | 1.7217          | 16.57          | QP       | 10.04          | 26.61         | 56.00        | -29.39      |
| 6   | N   | 1.7217          | 10.81          | AVG      | 10.04          | 20.85         | 46.00        | -25.15      |
| 7   | N   | 3.7917          | 16.16          | QP       | 10.06          | 26.22         | 56.00        | -29.78      |
| 8   | N   | 3.7917          | 8.25           | AVG      | 10.06          | 18.31         | 46.00        | -27.69      |
| 9   | N   | 5.5389          | 18.66          | QP       | 10.08          | 28.74         | 60.00        | -31.26      |
| 10  | N   | 5.5389          | 8.80           | AVG      | 10.08          | 18.88         | 50.00        | -31.12      |
| 11  | N   | 11.3733         | 16.31          | QP       | 10.16          | 26.47         | 60.00        | -33.53      |
| 12  | N   | 11.3733         | 6.88           | AVG      | 10.16          | 17.04         | 50.00        | -32.96      |

**Test Mode:** Transmitting Mode

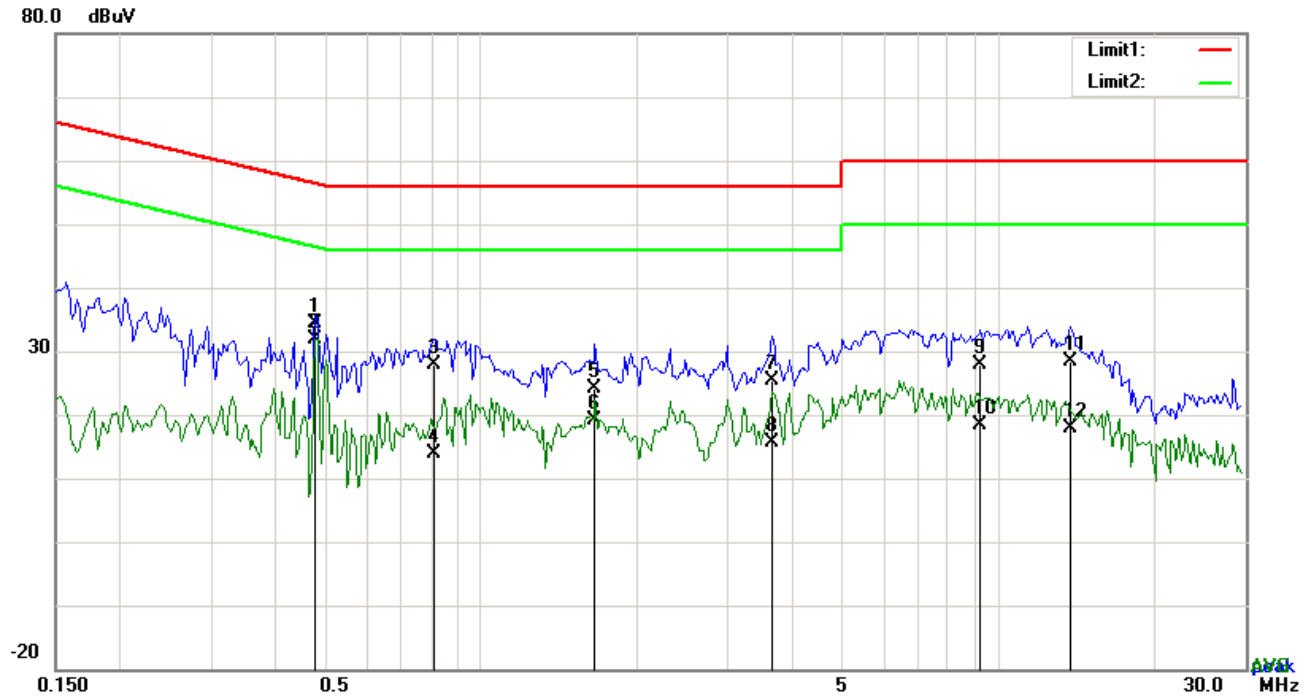


### Test Data

#### Phase Line Plot at 240Vac, 60Hz

| No. | P/L | Frequency (MHz) | Reading (dBμV) | Detector | Corrected (dB) | Result (dBμV) | Limit (dBμV) | Margin (dB) |
|-----|-----|-----------------|----------------|----------|----------------|---------------|--------------|-------------|
| 1   | L1  | 0.1539          | 26.02          | QP       | 10.03          | 36.05         | 65.79        | -29.74      |
| 2   | L1  | 0.1539          | 8.66           | AVG      | 10.03          | 18.69         | 55.79        | -37.10      |
| 3   | L1  | 0.4659          | 15.58          | QP       | 10.03          | 25.61         | 56.59        | -30.98      |
| 4   | L1  | 0.4659          | 1.32           | AVG      | 10.03          | 11.35         | 46.59        | -35.24      |
| 5   | L1  | 0.8169          | 17.29          | QP       | 10.03          | 27.32         | 56.00        | -28.68      |
| 6   | L1  | 0.8169          | 8.40           | AVG      | 10.03          | 18.43         | 46.00        | -27.57      |
| 7   | L1  | 2.4198          | 13.34          | QP       | 10.05          | 23.39         | 56.00        | -32.61      |
| 8   | L1  | 2.4198          | 6.97           | AVG      | 10.05          | 17.02         | 46.00        | -28.98      |
| 9   | L1  | 4.4976          | 13.35          | QP       | 10.07          | 23.42         | 56.00        | -32.58      |
| 10  | L1  | 4.4976          | 7.13           | AVG      | 10.07          | 17.20         | 46.00        | -28.80      |
| 11  | L1  | 6.5763          | 16.78          | QP       | 10.10          | 26.88         | 60.00        | -33.12      |
| 12  | L1  | 6.5763          | 8.53           | AVG      | 10.10          | 18.63         | 50.00        | -31.37      |

**Test Mode:** Transmitting Mode



### Test Data

#### Phase Neutral Plot at 240Vac, 60Hz

| No. | P/L | Frequency (MHz) | Reading (dBμV) | Detector | Corrected (dB) | Result (dBμV) | Limit (dBμV) | Margin (dB) |
|-----|-----|-----------------|----------------|----------|----------------|---------------|--------------|-------------|
| 1   | N   | 0.4776          | 24.46          | QP       | 10.02          | 34.48         | 56.38        | -21.90      |
| 2   | N   | 0.4776          | 21.75          | AVG      | 10.02          | 31.77         | 46.38        | -14.61      |
| 3   | N   | 0.8130          | 17.94          | QP       | 10.03          | 27.97         | 56.00        | -28.03      |
| 4   | N   | 0.8130          | 3.84           | AVG      | 10.03          | 13.87         | 46.00        | -32.13      |
| 5   | N   | 1.6554          | 13.97          | QP       | 10.04          | 24.01         | 56.00        | -31.99      |
| 6   | N   | 1.6554          | 9.08           | AVG      | 10.04          | 19.12         | 46.00        | -26.88      |
| 7   | N   | 3.6552          | 15.42          | QP       | 10.06          | 25.48         | 56.00        | -30.52      |
| 8   | N   | 3.6552          | 5.65           | AVG      | 10.06          | 15.71         | 46.00        | -30.29      |
| 9   | N   | 9.2088          | 17.82          | QP       | 10.13          | 27.95         | 60.00        | -32.05      |
| 10  | N   | 9.2088          | 8.31           | AVG      | 10.13          | 18.44         | 50.00        | -31.56      |
| 11  | N   | 13.7679         | 18.11          | QP       | 10.19          | 28.30         | 60.00        | -31.70      |
| 12  | N   | 13.7679         | 7.61           | AVG      | 10.19          | 17.80         | 50.00        | -32.20      |

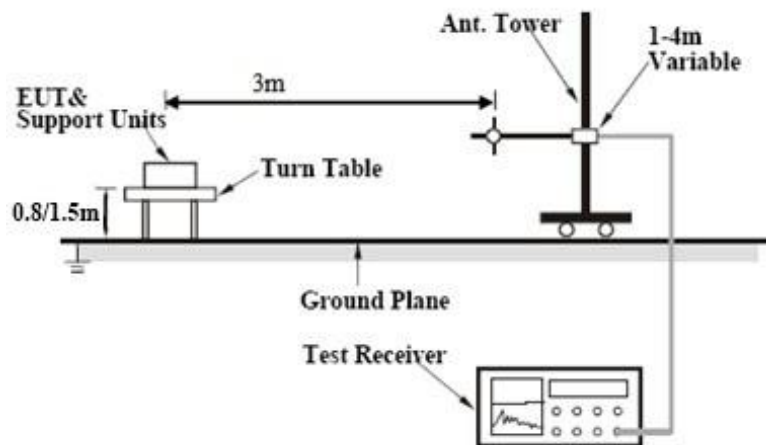
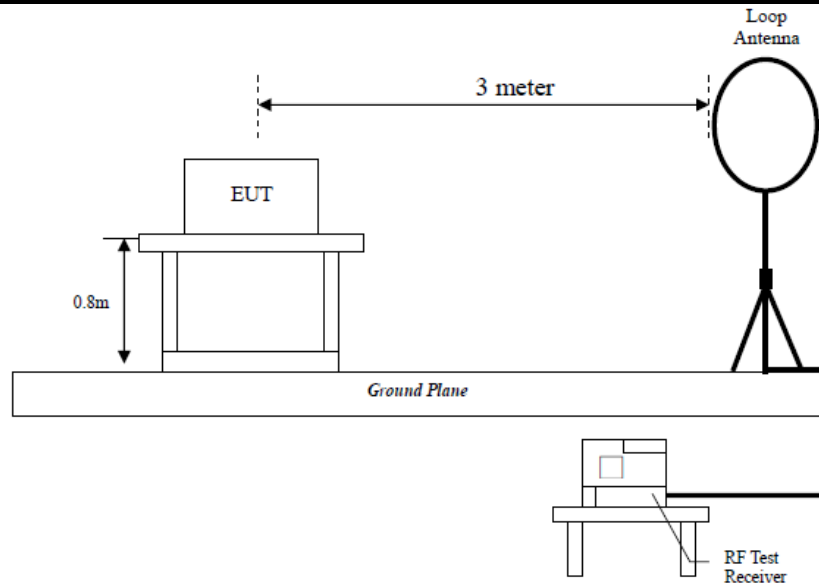
## 6.2 Radiated Spurious Emissions & Restricted Band

|                      |                    |
|----------------------|--------------------|
| Temperature          | 26 °C              |
| Relative Humidity    | 55%                |
| Atmospheric Pressure | 1017mbar           |
| Test date :          | September 26, 2018 |
| Tested By :          | Aaron Liang        |

### Requirement(s):

| Spec                                 | Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Requirement                                                                                                                                                                                                                                                                                                                                                                           | Applicable                                                                                          |                                     |                       |             |             |             |              |            |    |         |     |          |     |         |     |           |     |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------|-----------------------|-------------|-------------|-------------|--------------|------------|----|---------|-----|----------|-----|---------|-----|-----------|-----|
| 47CFR§15.247(d),<br>RSS210<br>(A8.5) | 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                                         | <input checked="" type="checkbox"/>                                                                 |                                     |                       |             |             |             |              |            |    |         |     |          |     |         |     |           |     |
|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <table><tr><th>Frequency range (MHz)</th><th>Field Strength (µV/m)</th></tr><tr><td>0.009~0.490</td><td>2400/F(KHz)</td></tr><tr><td>0.490~1.705</td><td>24000/F(KHz)</td></tr><tr><td>1.705~30.0</td><td>30</td></tr><tr><td>30 – 88</td><td>100</td></tr><tr><td>88 – 216</td><td>150</td></tr><tr><td>216 960</td><td>200</td></tr><tr><td>Above 960</td><td>500</td></tr></table> |                                                                                                     | Frequency range (MHz)               | Field Strength (µV/m) | 0.009~0.490 | 2400/F(KHz) | 0.490~1.705 | 24000/F(KHz) | 1.705~30.0 | 30 | 30 – 88 | 100 | 88 – 216 | 150 | 216 960 | 200 | Above 960 | 500 |
|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Frequency range (MHz)                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                     | Field Strength (µV/m)               |                       |             |             |             |              |            |    |         |     |          |     |         |     |           |     |
|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.009~0.490                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                     | 2400/F(KHz)                         |                       |             |             |             |              |            |    |         |     |          |     |         |     |           |     |
|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.490~1.705                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                     | 24000/F(KHz)                        |                       |             |             |             |              |            |    |         |     |          |     |         |     |           |     |
|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1.705~30.0                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                     | 30                                  |                       |             |             |             |              |            |    |         |     |          |     |         |     |           |     |
|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 30 – 88                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                     | 100                                 |                       |             |             |             |              |            |    |         |     |          |     |         |     |           |     |
|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 88 – 216                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                     | 150                                 |                       |             |             |             |              |            |    |         |     |          |     |         |     |           |     |
|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 216 960                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                     | 200                                 |                       |             |             |             |              |            |    |         |     |          |     |         |     |           |     |
|                                      | Above 960                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 500                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                     |                                     |                       |             |             |             |              |            |    |         |     |          |     |         |     |           |     |
| b)                                   | For non-restricted band, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB or 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, determined by the measurement method on output power to be used. Attenuation below the general limits specified in § 15.209(a) is not required | <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                   |                                                                                                     |                                     |                       |             |             |             |              |            |    |         |     |          |     |         |     |           |     |
|                                      | <input checked="" type="checkbox"/> 20 dB down <input type="checkbox"/> 30 dB down                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                     |                                     |                       |             |             |             |              |            |    |         |     |          |     |         |     |           |     |
|                                      | c)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                       | or restricted band, emission must also comply with the radiated emission limits specified in 15.209 | <input checked="" type="checkbox"/> |                       |             |             |             |              |            |    |         |     |          |     |         |     |           |     |

## Test Setup



## Procedure

1. The EUT was switched on and allowed to warm up to its normal operating condition.
2. 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:
  - a. Vertical or horizontal polarization (whichever gave the higher emission level over a full rotation of the EUT) was chosen.
  - b. The EUT was then rotated to the direction that gave the maximum emission.
  - c. Finally, the antenna height was adjusted to the height that gave the maximum emission.
3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi Peak detection at frequency below 1GHz.
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.

|                 |                |
|-----------------|----------------|
| Test Report No. | 18071069-FCC-R |
| Page            | 18 of 26       |

|        |                                                                                                                                                                                                                                                                                                                 |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | <p>The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz with Peak detection for Average Measurement as below at frequency above 1GHz.</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 Result:

|            |                   |
|------------|-------------------|
| Test Mode: | Transmitting Mode |
|------------|-------------------|

Frequency range: 9KHz - 30MHz

| Freq. | Detection | Factor | Reading  | Result   | Limit@3m | Margin |
|-------|-----------|--------|----------|----------|----------|--------|
| (MHz) | value     | (dB/m) | (dBuV/m) | (dBuV/m) | (dBuV/m) | (dB)   |
| --    | --        | --     | --       | --       | --       | >20    |
| --    | --        | --     | --       | --       | --       | >20    |

### Note:

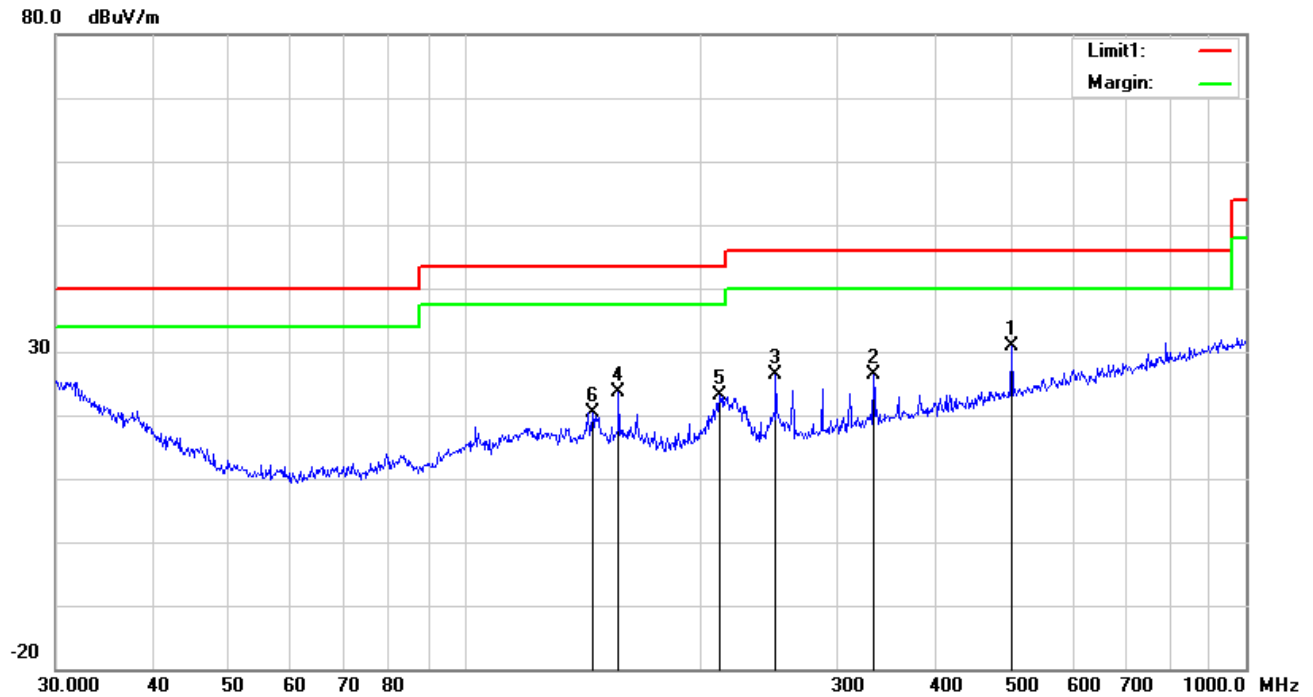
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =  $40 \log (\text{specific distance}/\text{test distance})$ (dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.

**Test Mode:** Transmitting Mode

**30MHz -1GHz**



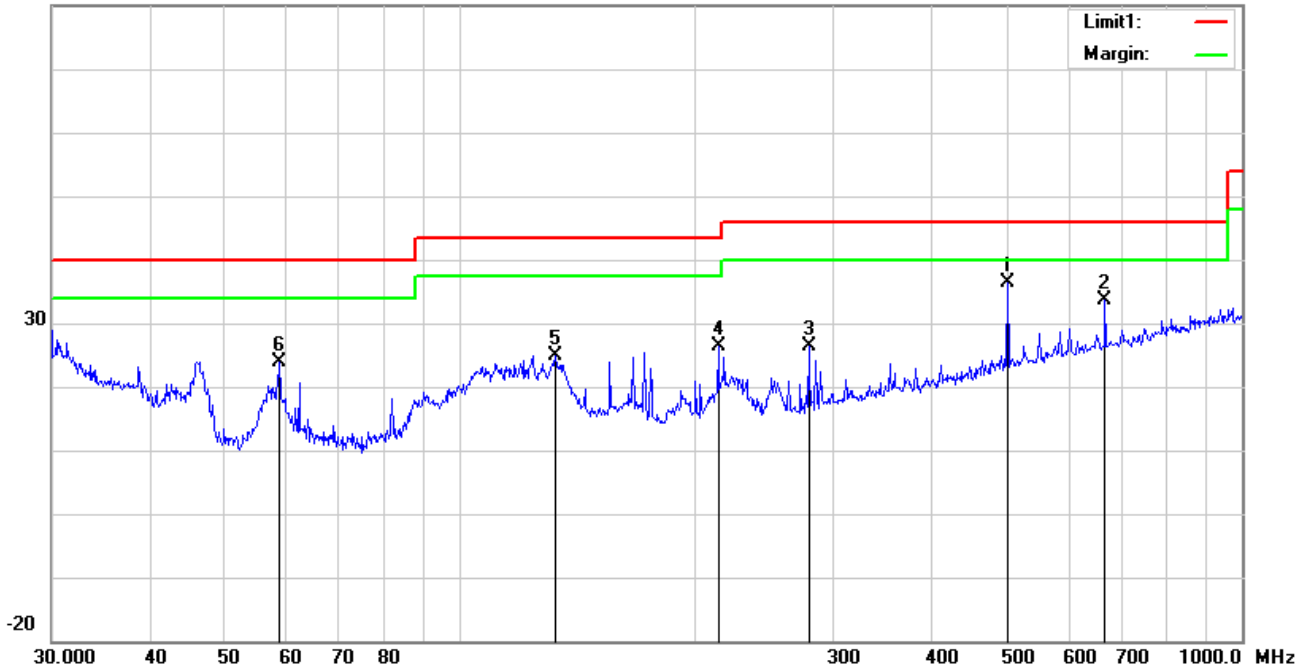
### Test Data

#### Horizontal Polarity Plot @3m

| No. | P/L | Frequency | Reading  | Ant_F  | PA_G  | Cab_L | Result   | Limit    | Margin | Height | Degree |
|-----|-----|-----------|----------|--------|-------|-------|----------|----------|--------|--------|--------|
|     |     | (MHz)     | (dBuV/m) | (dB/m) | (dB)  | (dB)  | (dBuV/m) | (dBuV/m) | (dB)   | (cm)   | (°)    |
| 1   | H   | 501.1790  | 32.54    | 17.72  | 21.81 | 2.42  | 30.87    | 46.00    | -15.13 | 100    | 142    |
| 2   | H   | 333.6867  | 32.39    | 14.31  | 22.20 | 1.96  | 26.46    | 46.00    | -19.54 | 100    | 144    |
| 3   | H   | 250.3012  | 35.54    | 11.41  | 22.29 | 1.70  | 26.36    | 46.00    | -19.64 | 100    | 178    |
| 4   | H   | 157.5589  | 32.01    | 12.60  | 22.29 | 1.38  | 23.70    | 43.50    | -19.80 | 100    | 318    |
| 5   | H   | 212.2695  | 31.92    | 11.93  | 22.36 | 1.58  | 23.07    | 43.50    | -20.43 | 100    | 192    |
| 6   | H   | 145.8611  | 28.74    | 12.60  | 22.37 | 1.31  | 20.28    | 43.50    | -23.22 | 100    | 310    |

## 30MHz -1GHz

80.0 dBuV/m



### Test Data

#### Vertical Polarity Plot @3m

| N<br>o. | P/<br>L | Frequency<br>(MHz) | Reading<br>(dBuV/m ) | Ant_F<br>(dB/m) | PA_G<br>(dB) | Cab_L<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Height<br>(cm) | Degr<br>ee<br>( ) |
|---------|---------|--------------------|----------------------|-----------------|--------------|---------------|--------------------|-------------------|----------------|----------------|-------------------|
| 1       | V       | 501.1790           | 38.01                | 17.72           | 21.81        | 2.42          | 36.34              | 46.00             | -9.66          | 100            | 45                |
| 2       | V       | 668.1423           | 32.49                | 19.85           | 21.43        | 2.60          | 33.51              | 46.00             | -12.49         | 100            | 280               |
| 3       | V       | 279.0436           | 34.35                | 12.68           | 22.29        | 1.75          | 26.49              | 46.00             | -19.51         | 100            | 165               |
| 4       | V       | 213.7634           | 35.13                | 11.91           | 22.36        | 1.58          | 26.26              | 43.50             | -17.24         | 100            | 321               |
| 5       | V       | 132.2206           | 32.96                | 13.11           | 22.39        | 1.22          | 24.90              | 43.50             | -18.60         | 100            | 157               |
| 6       | V       | 58.6126            | 38.09                | 7.45            | 22.41        | 0.76          | 23.89              | 40.00             | -16.11         | 100            | 93                |

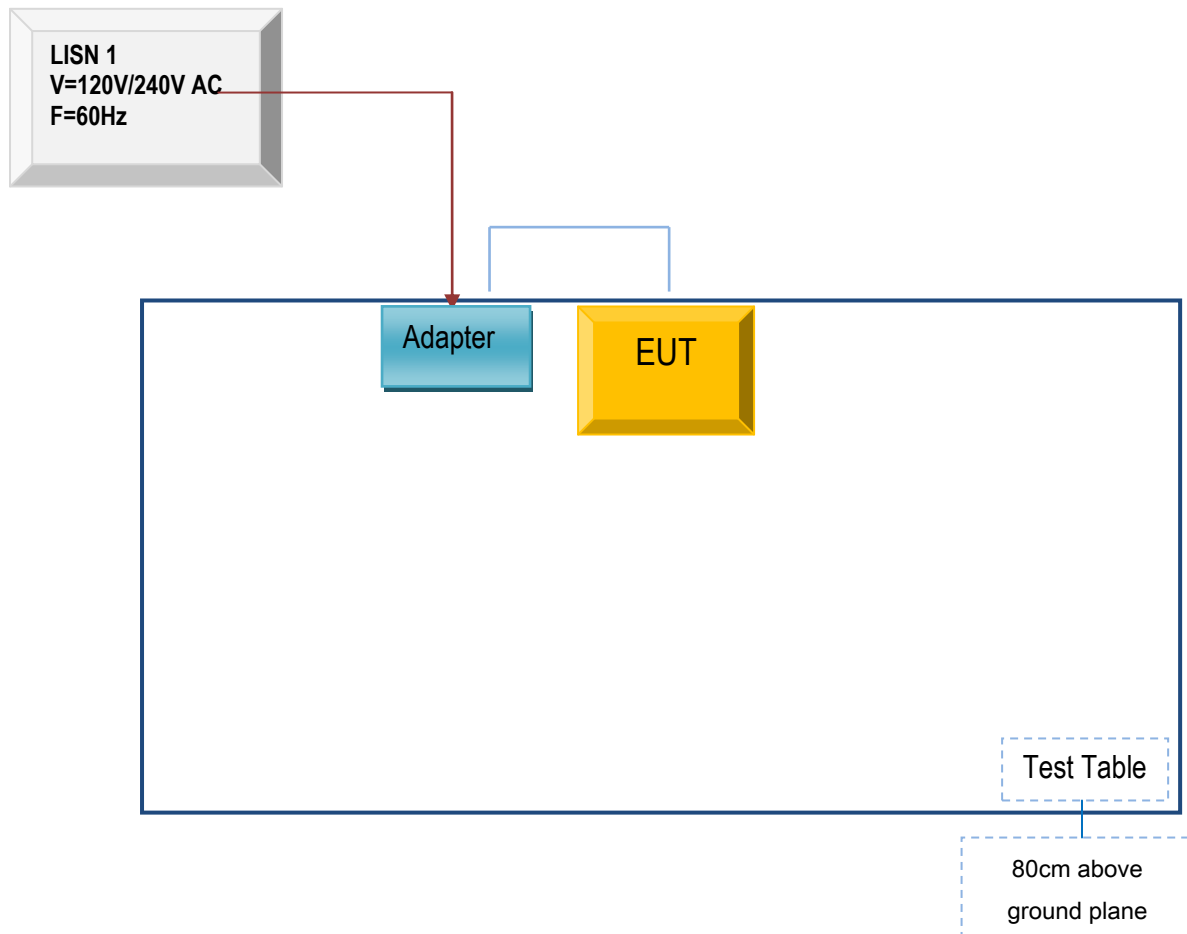
## Annex A. TEST INSTRUMENT

| Instrument                              | Model    | Serial #    | Cal Date   | Cal Due    | In use                              |
|-----------------------------------------|----------|-------------|------------|------------|-------------------------------------|
| <b>AC Line Conducted</b>                |          |             |            |            |                                     |
| EMI test receiver                       | ESCS30   | 8471241027  | 09/15/2017 | 09/14/2018 | <input checked="" type="checkbox"/> |
| Line Impedance                          | LI-125A  | 191106      | 09/23/2017 | 09/22/2018 | <input checked="" type="checkbox"/> |
| Line Impedance                          | LI-125A  | 191107      | 09/23/2017 | 09/22/2018 | <input checked="" type="checkbox"/> |
| ISN                                     | ISN T800 | 34373       | 09/23/2017 | 09/22/2018 | <input type="checkbox"/>            |
| Transient Limiter                       | LIT-153  | 531118      | 08/30/2017 | 08/29/2018 | <input type="checkbox"/>            |
| <b>Radiated Emissions</b>               |          |             |            |            |                                     |
| EMI test receiver                       | ESL6     | 100262      | 09/15/2017 | 09/14/2018 | <input checked="" type="checkbox"/> |
| Positioning Controller                  | UC3000   | MF780208282 | 11/17/2017 | 11/16/2018 | <input checked="" type="checkbox"/> |
| OPT 010 AMPLIFIER<br>(0.1-1300MHz)      | 8447E    | 2727A02430  | 08/30/2017 | 08/29/2018 | <input checked="" type="checkbox"/> |
| Microwave Preamplifier<br>(1 ~ 26.5GHz) | 8449B    | 3008A02402  | 03/22/2018 | 03/21/2019 | <input checked="" type="checkbox"/> |
| Horn Antenna                            | BBHA9170 | 3145226D1   | 09/27/2017 | 09/26/2018 | <input checked="" type="checkbox"/> |
| Active Antenna<br>(9kHz-30MHz)          | AL-130   | 121031      | 10/12/2017 | 10/11/2018 | <input checked="" type="checkbox"/> |
| Bilog Antenna<br>(30MHz~6GHz)           | JB6      | A110712     | 09/19/2017 | 09/18/2018 | <input checked="" type="checkbox"/> |
| Double Ridge Horn<br>Antenna (1 ~18GHz) | AH-118   | 71283       | 09/22/2017 | 09/21/2018 | <input checked="" type="checkbox"/> |
| Universal Radio<br>Communication Tester | CMU200   | 121393      | 09/23/2017 | 09/22/2018 | <input checked="" type="checkbox"/> |

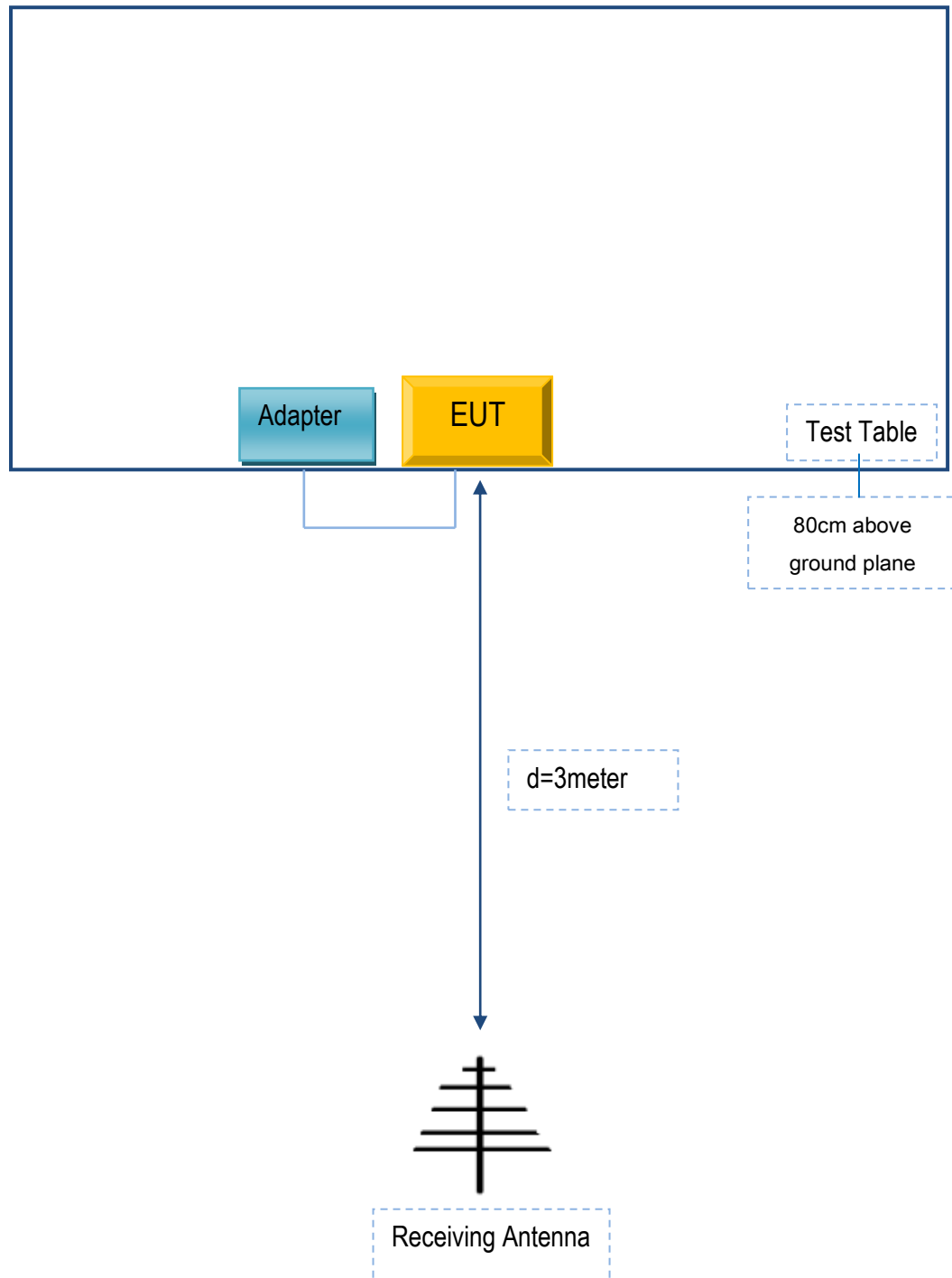
## Annex B. TEST SETUP AND SUPPORTING EQUIPMENT

### Annex B.i. TEST SET UP BLOCK

#### Block Configuration Diagram for AC Line Conducted Emissions



**Block Configuration Diagram for Radiated Emissions ( Below 1GHz ) .**



## **Annex B. ii. SUPPORTING EQUIPMENT DESCRIPTION**

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

### **Supporting Equipment:**

| Manufacturer                            | Equipment Description | Model            | Serial No |
|-----------------------------------------|-----------------------|------------------|-----------|
| DongGuan AoHai Power Technology Co.,Ltd | Adapter               | A18A-050100U-US2 | N/A       |

### **Supporting Cable:**

| Cable type | Shield Type  | Ferrite Core | Length | Serial No |
|------------|--------------|--------------|--------|-----------|
| USB Cable  | Un-shielding | No           | 0.8m   | N/A       |

## **Annex C. User Manual / Block Diagram / Schematics / Partlist/**

### **DECLARATION OF SIMILARITY**

**Please see the attachment**