

# FCC Test Report

Equipment : LCD Tablet  
Brand Name : Wacom  
Model No. : DTH-3220  
FCC ID : HV4DTH3220  
Standard : 47 CFR FCC Part 15.209  
RF Specification : SRD  
Operating Band : 667kHz  
FCC Classification : DCD  
Applicant / Manufacturer : Wacom Co., Ltd.  
2-510-1 Toyonodai, Kazo-shi, Saitama 349-1148 Japan

The product sample received on Oct. 25, 2017 and completely tested on Nov. 01, 2017. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:

  
Phoenix Chen / Assistant Manager



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### **APPENDIX A. TEST PHOTOS**

#### **PHOTOGRAPHS OF EUT V02**

## Summary of Test Result

| Conformance Test Specifications |                  |                                   |                                                                                |            |          |
|---------------------------------|------------------|-----------------------------------|--------------------------------------------------------------------------------|------------|----------|
| Report Clause                   | Ref. Std. Clause | Description                       | Measured                                                                       | Limit      | Result   |
| 1.1.2                           | 15.203           | Antenna Requirement               | Antenna connector mechanism complied                                           | FCC 15.203 | Complied |
| 3.1                             | 15.207           | AC Power-line Conducted Emissions | [dBuV]:0.38113MHz<br>45.78 (Margin 12.47dB) - QP<br>38.66 (Margin 9.59dB) - AV | FCC 15.207 | Complied |
| 3.2                             | 15.209           | Transmitter Radiated Emissions    | [dBuV/m at 3m]:743.92MHz<br>42.78(Margin 3.22dB) - QP                          | FCC 15.209 | Complied |
| 3.3                             | 15.215(c)        | Emission Bandwidth                | 99% Bandwidth: 31.19 [kHz]<br>20dB Bandwidth: 26.63 [kHz]                      | N/A        | Complied |



SPORTON INTERNATIONAL INC.  
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Report Template No.: HE1-C3 Ver1.0

# 1 General Description

## 1.1 Information

### 1.1.1 RF General Information

| RF General Information                             |                     |                |                           |
|----------------------------------------------------|---------------------|----------------|---------------------------|
| Modulation                                         | Ch. Frequency (kHz) | Channel Number | Field Strength (dBuV/@1m) |
| ASK                                                | 667                 | 1              | 77.33                     |
| Note 1: Field strength performed peak level at 1m. |                     |                |                           |

### 1.1.2 Antenna Information

| Antenna Category                    |                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | Integral antenna (antenna permanently attached)                                                                                                                                                                                                                                                                   |
| <input type="checkbox"/>            | Temporary RF connector provided                                                                                                                                                                                                                                                                                   |
| <input checked="" type="checkbox"/> | No temporary RF connector provided<br>Transmit chains bypass antenna and soldered temporary RF connector provided for connected measurement. In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator and correct for all losses in the RF path. |
| <input type="checkbox"/>            | External antenna (dedicated antennas)                                                                                                                                                                                                                                                                             |
| <input type="checkbox"/>            | Single power level with corresponding antenna(s).                                                                                                                                                                                                                                                                 |
| <input type="checkbox"/>            | Multiple power level and corresponding antenna(s).                                                                                                                                                                                                                                                                |

| No. | Ant. Cat. | Ant. Type           |
|-----|-----------|---------------------|
| 1   | Integral  | Array Coli Pointing |

### 1.1.3 Type of EUT

| Identify EUT                        |                                                                                                                                   |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Presentation of Equipment           | <input checked="" type="checkbox"/> Production ; <input type="checkbox"/> Pre-Production ; <input type="checkbox"/> Prototype     |
| Type of EUT                         |                                                                                                                                   |
| <input checked="" type="checkbox"/> | Stand-alone                                                                                                                       |
| <input type="checkbox"/>            | Combined (EUT where the radio part is fully integrated within another device)<br>Combined Equipment - Brand Name / Model No.: ... |
| <input type="checkbox"/>            | Plug-in radio (EUT intended for a variety of host systems)<br>Host System - Brand Name / Model No.: ...                           |
| <input type="checkbox"/>            | Other:                                                                                                                            |

### 1.1.4 Test Signal Duty Cycle

| Operated Mode for Worst Duty Cycle  |                                           |
|-------------------------------------|-------------------------------------------|
| <input checked="" type="checkbox"/> | Operated normal mode for worst duty cycle |
| <input type="checkbox"/>            | Operated test mode for worst duty cycle   |
| Test Signal Duty Cycle (x)          |                                           |
| <input checked="" type="checkbox"/> | 100.00%                                   |

### 1.1.5 EUT Operational Condition

|                          |                                                  |                                                         |                                      |
|--------------------------|--------------------------------------------------|---------------------------------------------------------|--------------------------------------|
| <b>Supply Voltage</b>    | <input checked="" type="checkbox"/> AC mains     | <input checked="" type="checkbox"/> DC                  |                                      |
| <b>Type of DC Source</b> | <input checked="" type="checkbox"/> From Battery | <input checked="" type="checkbox"/> External AC adapter | <input type="checkbox"/> From System |

## 1.2 Testing Applied Standards

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

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013

### 1.3 Testing Location Information

| Testing Location                    |               |                                                                           |                  |             |
|-------------------------------------|---------------|---------------------------------------------------------------------------|------------------|-------------|
| <input checked="" type="checkbox"/> | HWA YA        | ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) |                  |             |
|                                     |               | TEL : 886-3-327-3456 FAX : 886-3-327-0973                                 |                  |             |
| Test Condition                      | Test Site No. | Test Engineer                                                             | Test Environment | Test Date   |
| AC Conduction                       | CO04-HY       | Lynus                                                                     | 23.3°C / 56%     | 31/Oct/2017 |
| RF Conducted                        | TH01-HY       | Gary                                                                      | 22.4°C / 61.7%   | 01/Nov/2017 |
| Radiated Emission                   | 03CH02-HY     | Lynus                                                                     | 23.3°C / 56%     | 31/Oct/2017 |

Test site Designation No. TW1190 with FCC.

### 1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

| Measurement Uncertainty           |               |             |
|-----------------------------------|---------------|-------------|
| Test Item                         |               | Uncertainty |
| AC power-line conducted emissions |               | ±2.3 dB     |
| Emission bandwidth, 6dB bandwidth |               | ±0.6 %      |
| RF output power, conducted        |               | ±0.1 dB     |
| Power density, conducted          |               | ±0.6 dB     |
| Unwanted emissions, conducted     | 9 – 150 kHz   | ±0.4 dB     |
|                                   | 0.15 – 30 MHz | ±0.4 dB     |
|                                   | 30 – 1000 MHz | ±0.6 dB     |
|                                   | 1 – 18 GHz    | ±0.5 dB     |
|                                   | 18 – 40 GHz   | ±0.5 dB     |
|                                   | 40 – 200 GHz  | N/A         |
| All emissions, radiated           | 9 – 150 kHz   | ±2.5 dB     |
|                                   | 0.15 – 30 MHz | ±2.3 dB     |
|                                   | 30 – 1000 MHz | ±2.6 dB     |
|                                   | 1 – 18 GHz    | ±3.6 dB     |
|                                   | 18 – 40 GHz   | ±3.8 dB     |
|                                   | 40 – 200 GHz  | N/A         |
| Temperature                       |               | ±0.8 °C     |
| Humidity                          |               | ±5 %        |
| DC and low frequency voltages     |               | ±0.9 %      |
| Time                              |               | ±1.4 %      |
| Duty Cycle                        |               | ±0.6 %      |

## 2 Test Configuration of EUT

### 2.1 The Worst Case Modulation Configuration

| Transmitter Mode | Field Strength (dBuV/m@1m) | Field Strength (dBuV/m@3m) |
|------------------|----------------------------|----------------------------|
| Touch Panel      | 77.33                      | 58.25                      |

### 2.2 Test Channel Frequencies Configuration

| Modulation | Test Channel Frequencies (kHz) |
|------------|--------------------------------|
| ASK        | 667                            |

### 2.3 The Worst Case Measurement Configuration

| The Worst Case Mode for Following Conformance Tests |                                                                                         |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------|
| Tests Item                                          | AC power-line conducted emissions                                                       |
| Condition                                           | AC power-line conducted measurement for line and neutral<br>Test Voltage: 120Vac / 60Hz |
| Operating Mode                                      | Operating Mode Description                                                              |
| 1                                                   | Adapter Mode                                                                            |

| The Worst Case Mode for Following Conformance Tests |                                                                                                        |                                                                                       |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Tests Item                                          | Emission Bandwidth, Field Strength of Fundamental Emissions<br>Transmitter Radiated Unwanted Emissions |                                                                                       |
| Test Condition                                      | Radiated measurement                                                                                   |                                                                                       |
| Operating Mode                                      | Operating Mode Description                                                                             |                                                                                       |
| 1                                                   | Adapter Mode                                                                                           |                                                                                       |
| Transmitter Mode                                    | Touch Panel                                                                                            |                                                                                       |
| Orthogonal Planes of EUT                            | Y Plane                                                                                                | Z Plane                                                                               |
|                                                     |                     |  |
| Worst Planes of EUT                                 | V                                                                                                      |                                                                                       |

## 2.4 Accessory and Support Equipment

| Accessories Information |              |                                                                                                                                  |            |                |
|-------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------|------------|----------------|
| AC Adapter              | Brand Name   | DELTA                                                                                                                            | Model Name | ADP-180MB      |
|                         | Power Rating | I/P: 100-240 Vac, 2.34 A, O/P: 19.5 Vdc, 9.23 A                                                                                  |            |                |
|                         | Power Cord   | DC output cable 1.76 meter, shielded cable, with ferrite core<br>AC output cable 1.7 meter, Non-Shielded cable, w/o ferrite core |            |                |
| Panel                   | Brand Name   | Sharp                                                                                                                            | Model Name | LQ315D1EG02    |
| Digital Pen             | Brand Name   | Wacom                                                                                                                            | Model Name | KP-504E series |
| Mini-DP to DP adaptor   | Brand Name   | Wacom                                                                                                                            | Model Name | INF-A145       |
|                         | Signal Line  | 5 cm, shielded                                                                                                                   |            |                |
| HDMI Cable              | Brand Name   | Wacom                                                                                                                            | Model Name | STJ-A391       |
|                         | Signal Line  | 3 meter, shielded cable, w/o ferrite core                                                                                        |            |                |
| USB-A Cable             | Brand Name   | Wacom                                                                                                                            | Model Name | STJ-A390       |
|                         | Signal Line  | 3 meter, shielded cable, w/o ferrite core                                                                                        |            |                |
| USB-C Cable             | Brand Name   | Wacom                                                                                                                            | Model Name | STJ-A388       |
|                         | Signal Line  | 1.8 meter, shielded cable, w/o ferrite core                                                                                      |            |                |
| DP Cable                | Brand Name   | Wacom                                                                                                                            | Model Name | STJ-A389       |
|                         | Signal Line  | 3 meter, shield cable, w/o ferrite core                                                                                          |            |                |
| Micro USB Cable         | Brand Name   | Wacom                                                                                                                            | Model Name | STJ-A347       |
|                         | Signal Line  | 30 cm, shielded cable, w/o ferrite core                                                                                          |            |                |

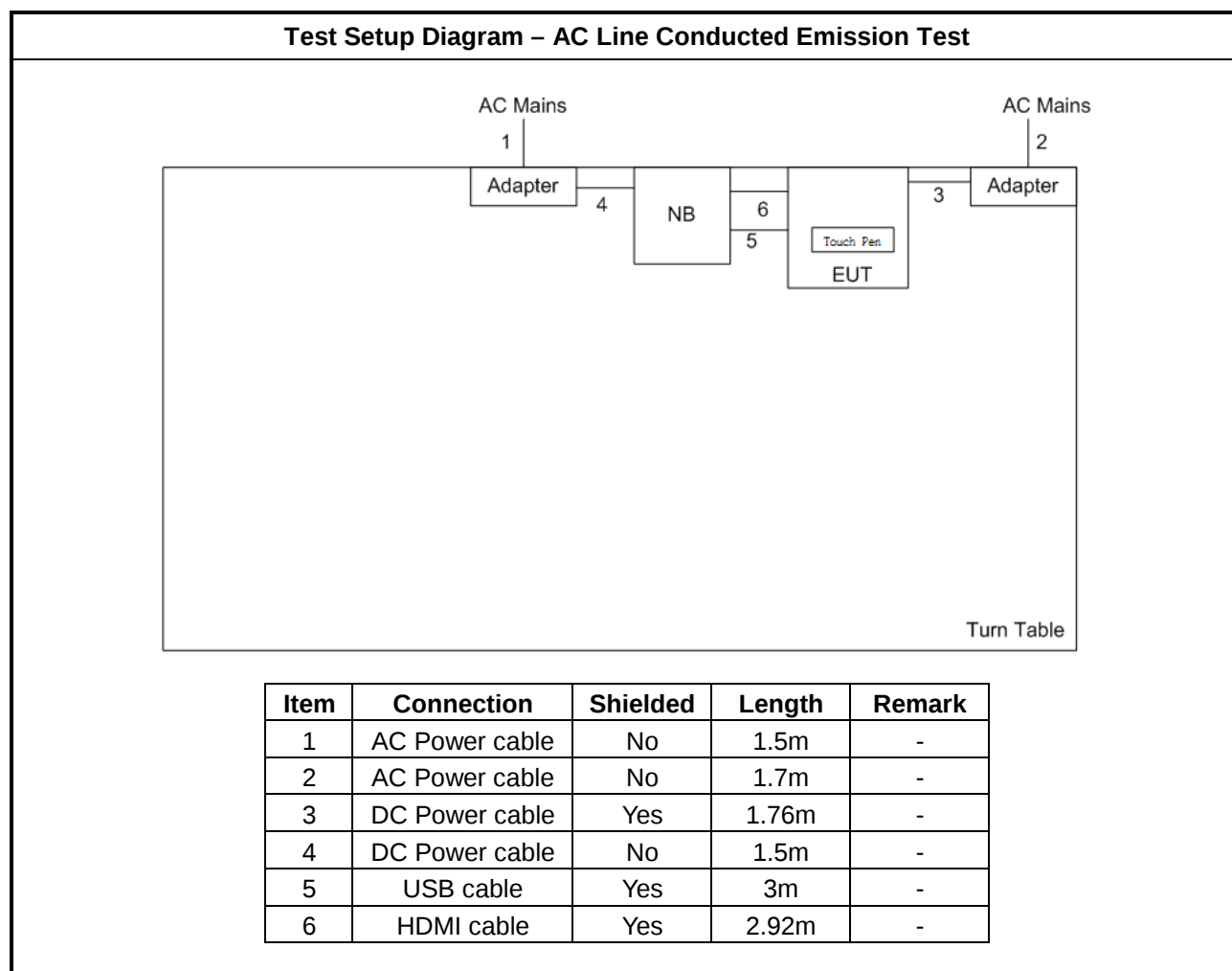
Note: Regarding to more detail and other information, please refer to user manual.

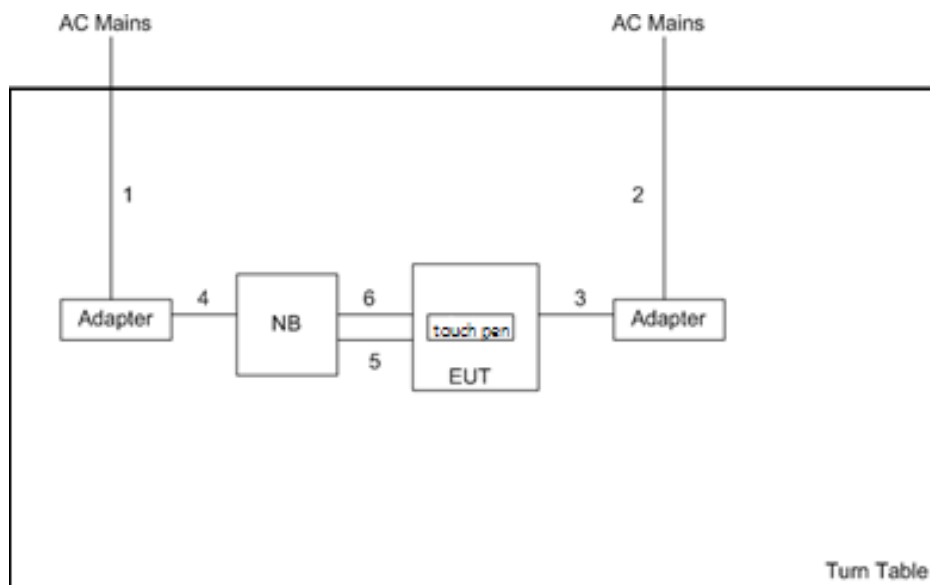
| Support Equipment – RF Conducted |                      |            |            |        |
|----------------------------------|----------------------|------------|------------|--------|
| No.                              | Equipment            | Brand Name | Model Name | FCC ID |
| 1                                | Notebook             | DELL       | E5410      | DOC    |
| 2                                | Adapter for Notebook | DELL       | HA65NM130  | DOC    |

| Support Equipment – AC Line Conducted Emission |                      |            |            |        |
|------------------------------------------------|----------------------|------------|------------|--------|
| No.                                            | Equipment            | Brand Name | Model Name | FCC ID |
| 1                                              | Notebook             | DELL       | E4300      | DOC    |
| 2                                              | Adapter for Notebook | DELL       | LA90PS1-00 | DOC    |

| Support Equipment – Radiated Emission |                      |            |            |        |
|---------------------------------------|----------------------|------------|------------|--------|
| No.                                   | Equipment            | Brand Name | Model Name | FCC ID |
| 1                                     | Notebook             | DELL       | E4300      | DOC    |
| 2                                     | Adapter for Notebook | DELL       | LA90PS1-00 | DOC    |

## 2.5 Test Setup Diagram



**Test Setup Diagram - Radiated Test**


| Item | Connection     | Shielded | Length | Remark |
|------|----------------|----------|--------|--------|
| 1    | AC Power cable | No       | 1.5m   | -      |
| 2    | AC Power cable | No       | 1.7m   | -      |
| 3    | DC Power cable | Yes      | 1.76m  | -      |
| 4    | DC Power cable | No       | 1.5m   | -      |
| 5    | USB cable      | Yes      | 3m     | -      |
| 6    | HDMI cable     | Yes      | 2.92m  | -      |

### 3 Transmitter Test Result

#### 3.1 AC Power-line Conducted Emissions

##### 3.1.1 AC Power-line Conducted Emissions Limit

| AC Power-line Conducted Emissions Limit |            |           |
|-----------------------------------------|------------|-----------|
| Frequency Emission (MHz)                | Quasi-Peak | Average   |
| 0.15-0.5                                | 66 - 56 *  | 56 - 46 * |
| 0.5-5                                   | 56         | 46        |
| 5-30                                    | 60         | 50        |

Note 1: \* Decreases with the logarithm of the frequency.

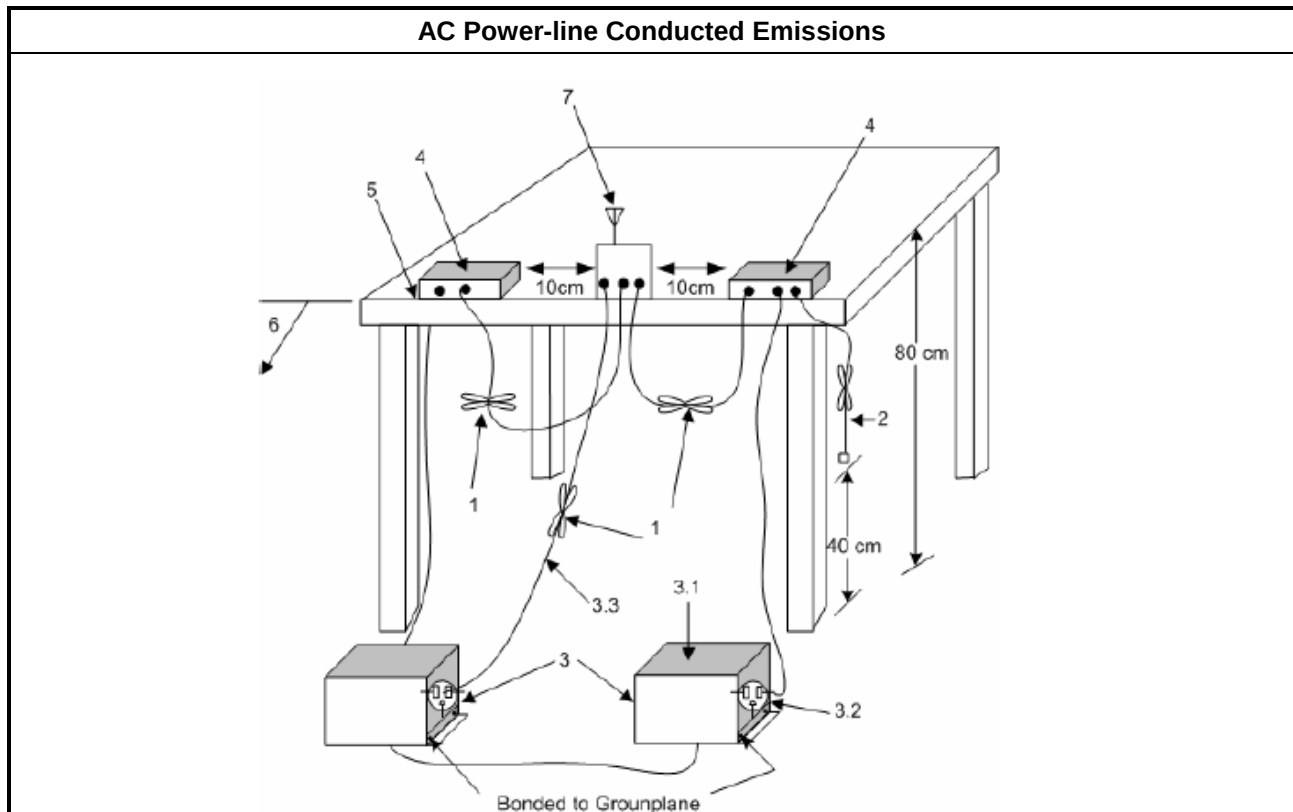
##### 3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

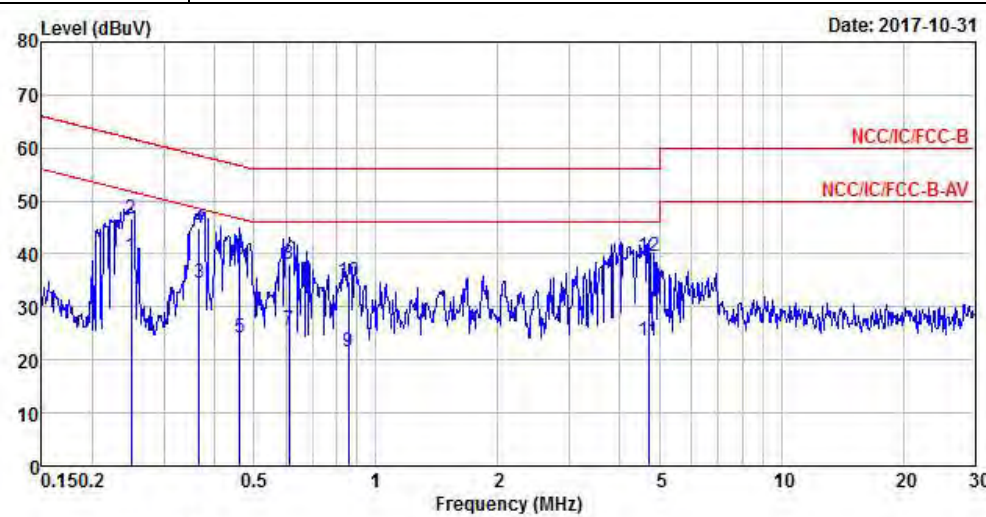
##### 3.1.3 Test Procedures

| Test Method                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <input checked="" type="checkbox"/> | If AC conducted emissions fall in operating band, then following below test method confirm final result.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <input type="checkbox"/>            | Accept measurements done with a suitable dummy load replacing the antenna under the following conditions:<br>(1) Perform the AC line conducted tests with the antenna connected to determine compliance with FCC 15.207 limits outside the transmitter's fundamental emission band;<br>(2) Retest with a dummy load to determine compliance with FCC 15.207 limits within the transmitter's fundamental emission band.                                                                                                                          |
| <input checked="" type="checkbox"/> | For a device with a permanent antenna operating at or below 30 MHz, accept measurements done with a suitable dummy load, in lieu of the permanent antenna under the following conditions:<br>(1) Perform the AC line conducted tests with the permanent antenna to determine compliance with the FCC 15.207 limits outside the transmitter's fundamental emission band;<br>(2) Retest with a dummy load in lieu of the permanent antenna to determine compliance with the FCC 15.207 limits within the transmitter's fundamental emission band. |

### 3.1.4 Test Setup

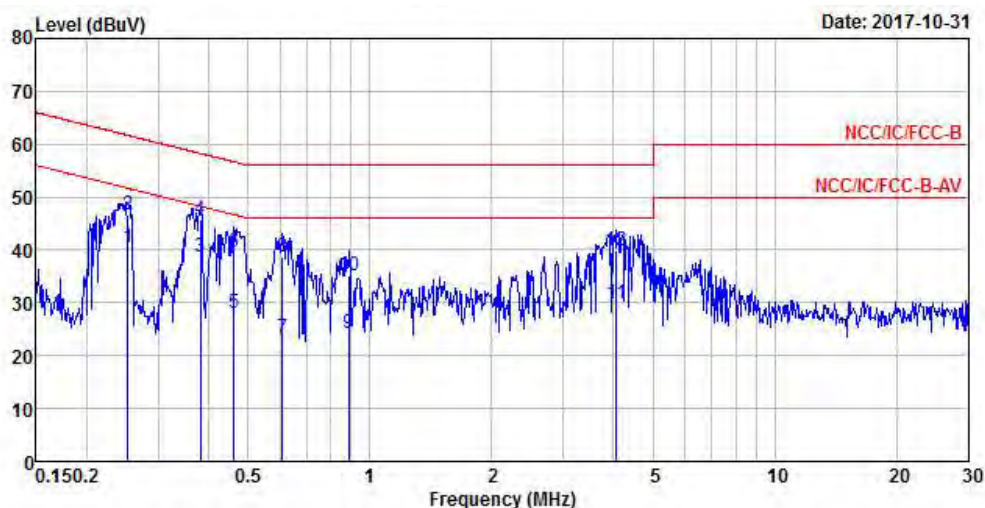


### 3.1.5 Test Result of AC Power-line Conducted Emissions

| AC Power-line Conducted Emissions Result                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |       |            |             |            |             |            |         |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------|------------|-------------|------------|-------------|------------|---------|------|-------|------------|------------|------------|-------------|------------|--------|--|-----|------|----|------|------|----|----|--|-------|---------|-------|--------|-------|-------|------|------|---------|---|---------|-------|--------|-------|-------|------|------|----|---|---------|-------|--------|-------|-------|------|------|---------|---|---------|-------|--------|-------|-------|------|------|----|---|---------|-------|--------|-------|-------|------|------|---------|---|---------|-------|--------|-------|-------|------|------|----|---|---------|-------|--------|-------|-------|------|------|---------|---|---------|-------|--------|-------|-------|------|------|----|---|---------|-------|--------|-------|-------|------|------|---------|----|---------|-------|--------|-------|-------|------|------|----|----|---------|-------|--------|-------|-------|------|------|---------|----|---------|-------|--------|-------|-------|------|------|----|
| Operating Mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1       |       |            | Power Phase |            | Neutral     |            |         |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
| Ch. Frequency (kHz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 667     |       |            |             |            |             |            |         |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
| <div><div><div>Level (dBuV)</div><div>Date: 2017-10-31</div></div><div><table><tr><th></th><th>Freq</th><th>Level</th><th>Over Limit</th><th>Limit Line</th><th>Read Level</th><th>LISN Factor</th><th>Cable Loss</th><th>Remark</th></tr><tr><th></th><th>MHz</th><th>dBuV</th><th>dB</th><th>dBuV</th><th>dBuV</th><th>dB</th><th>dB</th><th></th></tr><tr><td>1 MAX</td><td>0.24945</td><td>39.51</td><td>-12.27</td><td>51.78</td><td>29.85</td><td>9.66</td><td>0.00</td><td>Average</td></tr><tr><td>2</td><td>0.24945</td><td>46.51</td><td>-15.27</td><td>61.78</td><td>36.85</td><td>9.66</td><td>0.00</td><td>QP</td></tr><tr><td>3</td><td>0.36725</td><td>34.67</td><td>-13.89</td><td>48.56</td><td>25.03</td><td>9.64</td><td>0.00</td><td>Average</td></tr><tr><td>4</td><td>0.36725</td><td>44.89</td><td>-13.67</td><td>58.56</td><td>35.25</td><td>9.64</td><td>0.00</td><td>QP</td></tr><tr><td>5</td><td>0.46122</td><td>24.20</td><td>-22.47</td><td>46.67</td><td>14.58</td><td>9.62</td><td>0.00</td><td>Average</td></tr><tr><td>6</td><td>0.46122</td><td>38.97</td><td>-17.70</td><td>56.67</td><td>29.35</td><td>9.62</td><td>0.00</td><td>QP</td></tr><tr><td>7</td><td>0.61075</td><td>25.65</td><td>-20.35</td><td>46.00</td><td>16.04</td><td>9.61</td><td>0.00</td><td>Average</td></tr><tr><td>8</td><td>0.61075</td><td>38.06</td><td>-17.94</td><td>56.00</td><td>28.45</td><td>9.61</td><td>0.00</td><td>QP</td></tr><tr><td>9</td><td>0.85730</td><td>21.59</td><td>-24.41</td><td>46.00</td><td>11.99</td><td>9.60</td><td>0.00</td><td>Average</td></tr><tr><td>10</td><td>0.85730</td><td>34.98</td><td>-21.02</td><td>56.00</td><td>25.38</td><td>9.60</td><td>0.00</td><td>QP</td></tr><tr><td>11</td><td>4.69635</td><td>23.57</td><td>-22.43</td><td>46.00</td><td>13.85</td><td>9.72</td><td>0.00</td><td>Average</td></tr><tr><td>12</td><td>4.69635</td><td>39.68</td><td>-16.32</td><td>56.00</td><td>29.96</td><td>9.72</td><td>0.00</td><td>QP</td></tr></table></div></div> |         |       |            |             |            |             |            |         | Freq | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark |  | MHz | dBuV | dB | dBuV | dBuV | dB | dB |  | 1 MAX | 0.24945 | 39.51 | -12.27 | 51.78 | 29.85 | 9.66 | 0.00 | Average | 2 | 0.24945 | 46.51 | -15.27 | 61.78 | 36.85 | 9.66 | 0.00 | QP | 3 | 0.36725 | 34.67 | -13.89 | 48.56 | 25.03 | 9.64 | 0.00 | Average | 4 | 0.36725 | 44.89 | -13.67 | 58.56 | 35.25 | 9.64 | 0.00 | QP | 5 | 0.46122 | 24.20 | -22.47 | 46.67 | 14.58 | 9.62 | 0.00 | Average | 6 | 0.46122 | 38.97 | -17.70 | 56.67 | 29.35 | 9.62 | 0.00 | QP | 7 | 0.61075 | 25.65 | -20.35 | 46.00 | 16.04 | 9.61 | 0.00 | Average | 8 | 0.61075 | 38.06 | -17.94 | 56.00 | 28.45 | 9.61 | 0.00 | QP | 9 | 0.85730 | 21.59 | -24.41 | 46.00 | 11.99 | 9.60 | 0.00 | Average | 10 | 0.85730 | 34.98 | -21.02 | 56.00 | 25.38 | 9.60 | 0.00 | QP | 11 | 4.69635 | 23.57 | -22.43 | 46.00 | 13.85 | 9.72 | 0.00 | Average | 12 | 4.69635 | 39.68 | -16.32 | 56.00 | 29.96 | 9.72 | 0.00 | QP |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Freq    | Level | Over Limit | Limit Line  | Read Level | LISN Factor | Cable Loss | Remark  |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MHz     | dBuV  | dB         | dBuV        | dBuV       | dB          | dB         |         |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
| 1 MAX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.24945 | 39.51 | -12.27     | 51.78       | 29.85      | 9.66        | 0.00       | Average |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.24945 | 46.51 | -15.27     | 61.78       | 36.85      | 9.66        | 0.00       | QP      |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.36725 | 34.67 | -13.89     | 48.56       | 25.03      | 9.64        | 0.00       | Average |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.36725 | 44.89 | -13.67     | 58.56       | 35.25      | 9.64        | 0.00       | QP      |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.46122 | 24.20 | -22.47     | 46.67       | 14.58      | 9.62        | 0.00       | Average |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.46122 | 38.97 | -17.70     | 56.67       | 29.35      | 9.62        | 0.00       | QP      |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.61075 | 25.65 | -20.35     | 46.00       | 16.04      | 9.61        | 0.00       | Average |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.61075 | 38.06 | -17.94     | 56.00       | 28.45      | 9.61        | 0.00       | QP      |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.85730 | 21.59 | -24.41     | 46.00       | 11.99      | 9.60        | 0.00       | Average |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
| 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.85730 | 34.98 | -21.02     | 56.00       | 25.38      | 9.60        | 0.00       | QP      |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
| 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4.69635 | 23.57 | -22.43     | 46.00       | 13.85      | 9.72        | 0.00       | Average |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
| 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4.69635 | 39.68 | -16.32     | 56.00       | 29.96      | 9.72        | 0.00       | QP      |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |
| <div>Note 1: "&gt;20dB" means emission levels that exceed the level of 20 dB below the applicable limit.<br/>Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)<br/>Note 3: When emissions are in operating band over limits, retest with a dummy load for final in-band results.</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |       |            |             |            |             |            |         |      |       |            |            |            |             |            |        |  |     |      |    |      |      |    |    |  |       |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |   |         |       |        |       |       |      |      |    |   |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |    |         |       |        |       |       |      |      |         |    |         |       |        |       |       |      |      |    |

### AC Power-line Conducted Emissions Result

|                     |     |             |      |
|---------------------|-----|-------------|------|
| Operating Mode      | 1   | Power Phase | Line |
| Ch. Frequency (kHz) | 667 |             |      |



|       | Freq    | Level | Over   | Limit | Read  | LISN   | Cable |         |
|-------|---------|-------|--------|-------|-------|--------|-------|---------|
|       | MHz     | dBuV  | Limit  | Line  | Level | Factor | Loss  | Remark  |
|       |         |       | dB     | dBuV  | dBuV  | dB     | dB    |         |
| 1     | 0.25211 | 40.44 | -11.25 | 51.69 | 30.78 | 9.66   | 0.00  | Average |
| 2     | 0.25211 | 46.65 | -15.04 | 61.69 | 36.99 | 9.66   | 0.00  | QP      |
| 3 MAX | 0.38113 | 38.66 | -9.59  | 48.25 | 28.98 | 9.68   | 0.00  | Average |
| 4     | 0.38113 | 45.78 | -12.47 | 58.25 | 36.10 | 9.68   | 0.00  | QP      |
| 5     | 0.46122 | 28.11 | -18.56 | 46.67 | 18.44 | 9.67   | 0.00  | Average |
| 6     | 0.46122 | 39.50 | -17.17 | 56.67 | 29.83 | 9.67   | 0.00  | QP      |
| 7     | 0.60752 | 23.44 | -22.56 | 46.00 | 13.78 | 9.66   | 0.00  | Average |
| 8     | 0.60752 | 38.69 | -17.31 | 56.00 | 29.03 | 9.66   | 0.00  | QP      |
| 9     | 0.88499 | 24.32 | -21.68 | 46.00 | 14.68 | 9.64   | 0.00  | Average |
| 10    | 0.88499 | 35.28 | -20.72 | 56.00 | 25.64 | 9.64   | 0.00  | QP      |
| 11    | 4.07036 | 29.83 | -16.17 | 46.00 | 20.06 | 9.77   | 0.00  | Average |
| 12    | 4.07036 | 39.76 | -16.24 | 56.00 | 29.99 | 9.77   | 0.00  | QP      |

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

Note 3: When emissions are in operating band over limits, retest with a dummy load for final in-band results.

## 3.2 Transmitter Radiated Emissions

### 3.2.1 Transmitter Radiated Emissions Limit

| Transmitter Radiated Emissions Limit |                       |                         |                      |
|--------------------------------------|-----------------------|-------------------------|----------------------|
| Frequency Range (MHz)                | Field Strength (uV/m) | Field Strength (dBuV/m) | Measure Distance (m) |
| 0.009~0.490                          | 2400/F(kHz)           | 48.5 - 13.8             | 300                  |
| 0.490~1.705                          | 24000/F(kHz)          | 33.8 - 23               | 30                   |
| 1.705~30.0                           | 30                    | 29                      | 30                   |
| 30~88                                | 100                   | 40                      | 3                    |
| 88~216                               | 150                   | 43.5                    | 3                    |
| 216~960                              | 200                   | 46                      | 3                    |
| Above 960                            | 500                   | 54                      | 3                    |

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: the frequency bands 9-90 kHz, 110-490 kHz measurements employing an average detector and other below 1GHz measurements employing a CISPR quasi-peak detector.

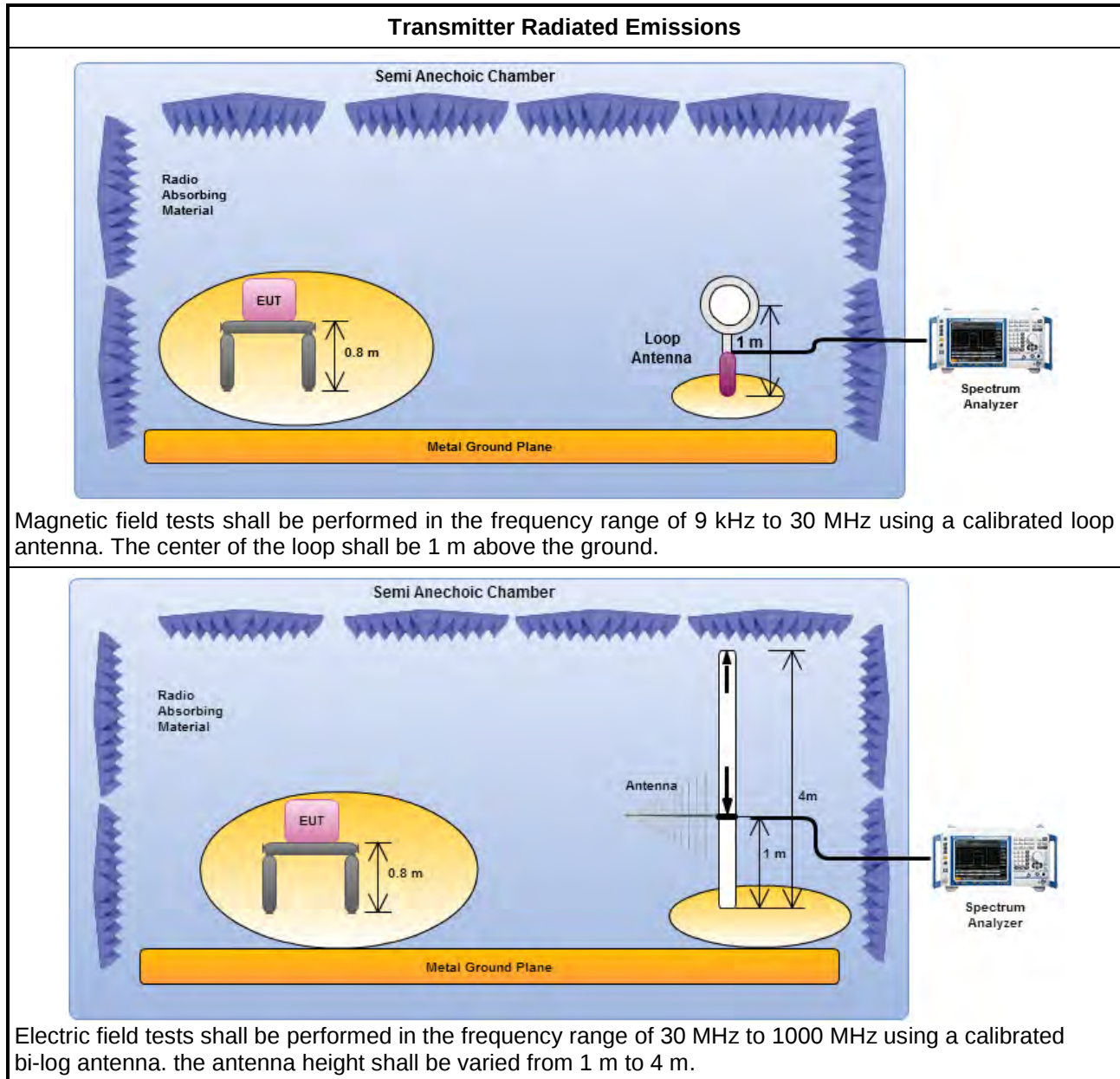
### 3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

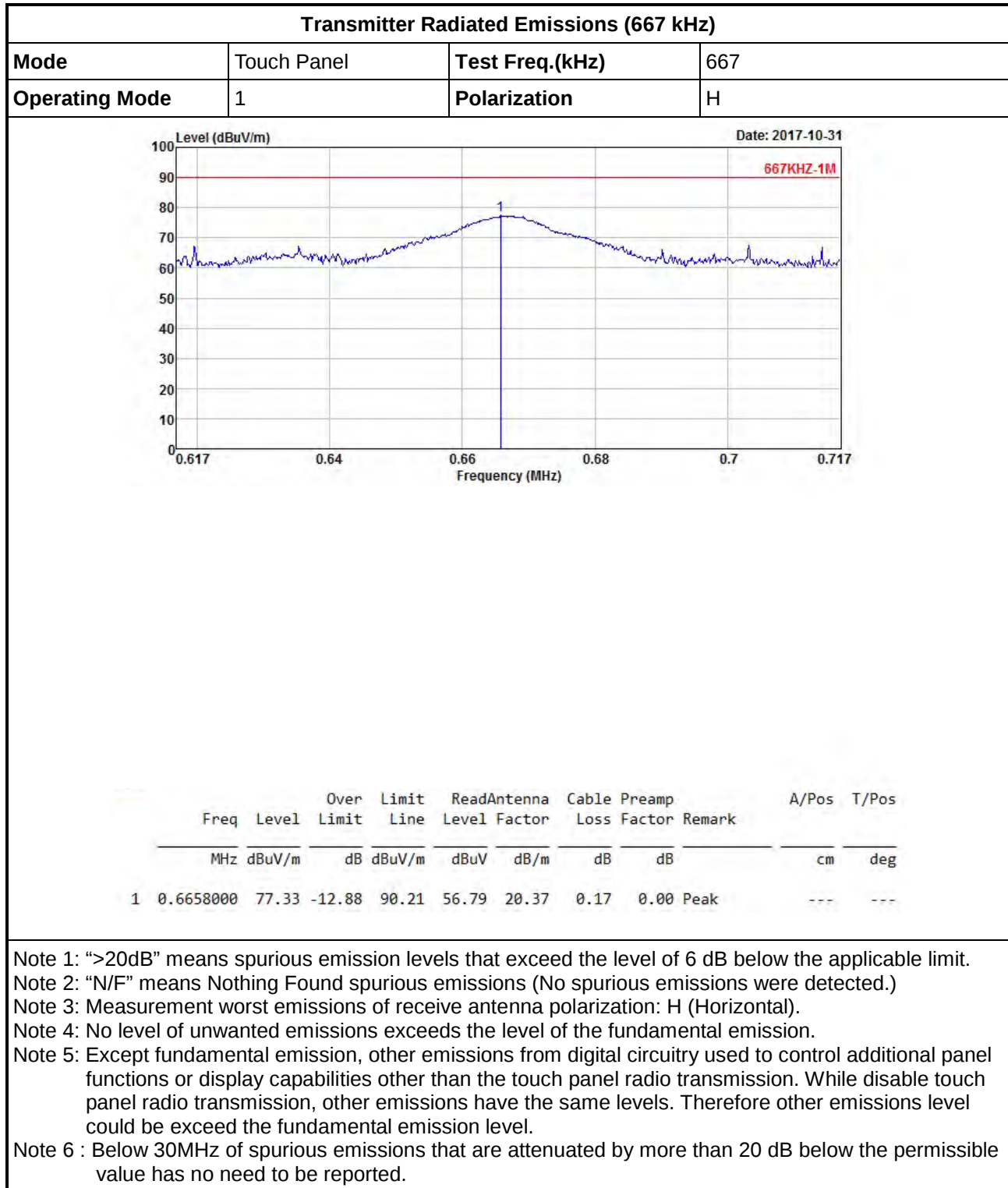
### 3.2.3 Test Procedures

| Test Method                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.5 for radiated emissions from 30 MHz to 1 GHz and test distance is 3m.<br>Note : The test distance of radiated emissions from 617kHz to 717kHz is 1m.                                                                                                                                                                                                                                                                                                                                                     |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.4 for radiated emissions from below 30 MHz. The frequency bands 9-90 kHz, 110-490 kHz measurements employing an average detector and other below 30MHz measurements employing a CISPR quasi-peak detector. Test distance is 3m.                                                                                                                                                                                                                                                                           |
| <input checked="" type="checkbox"/> | At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the requirements; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be following below methods.<br>Note: If fundamental emission level is smaller than noise at 3m , we will change distance to 1m. |
| <input type="checkbox"/>            | The results shall be extrapolated to the specified distance by making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor.                                                                                                                                                                                                                                                                                                                                                    |
| <input checked="" type="checkbox"/> | The results shall be by using the square of an inverse linear distance extrapolation factor (40 dB/decade).                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <input checked="" type="checkbox"/> | For radiated measurement. Loop antenna was rotated about the horizontal and vertical axis and the equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted field strength level.                                                                                                                                                                                                                                                                                                                    |
| <input checked="" type="checkbox"/> | The any unwanted emissions level shall not exceed the fundamental emission level.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <input checked="" type="checkbox"/> | All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.                                                                                                                                                                                                                                                                                                                                                                                                       |

### 3.2.4 Test Setup

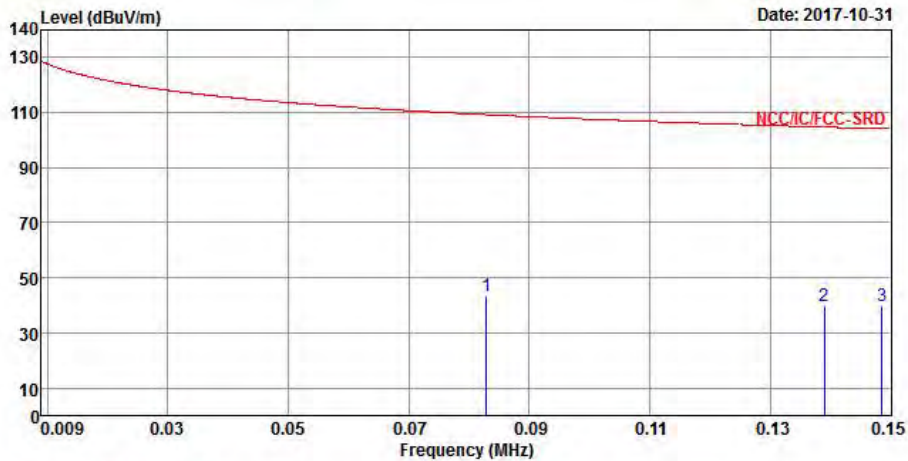


### 3.2.5 Transmitter Radiated Emissions (Below 30MHz)



## Transmitter Radiated Emissions (9kHz~150kHz)

|                |             |                 |     |
|----------------|-------------|-----------------|-----|
| Mode           | Touch Panel | Test Freq.(kHz) | 667 |
| Operating Mode | 1           | Polarization    | H   |



|   | Freq      | Level  | Over   | Limit  | ReadAntenna | Cable  | Preamp |        | A/Pos  | T/Pos |
|---|-----------|--------|--------|--------|-------------|--------|--------|--------|--------|-------|
|   | MHz       | dBuV/m | Limit  | Line   | Level       | Factor | Loss   | Factor | Remark |       |
|   |           |        | dB     | dBuV/m | dBuV        | dB/m   | dB     | dB     |        | cm    |
| 1 | 0.0828840 | 43.24  | -66.00 | 109.24 | 22.33       | 20.84  | 0.07   | 0.00   | Peak   | ---   |
| 2 | 0.1390020 | 39.93  | -64.82 | 104.75 | 19.19       | 20.66  | 0.08   | 0.00   | Peak   | ---   |
| 3 | 0.1485900 | 39.55  | -64.62 | 104.17 | 18.82       | 20.65  | 0.08   | 0.00   | Peak   | ---   |

Note 1: ">20dB" means spurious emission levels that exceed the level of 6 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement worst emissions of receive antenna polarization: H (Horizontal).

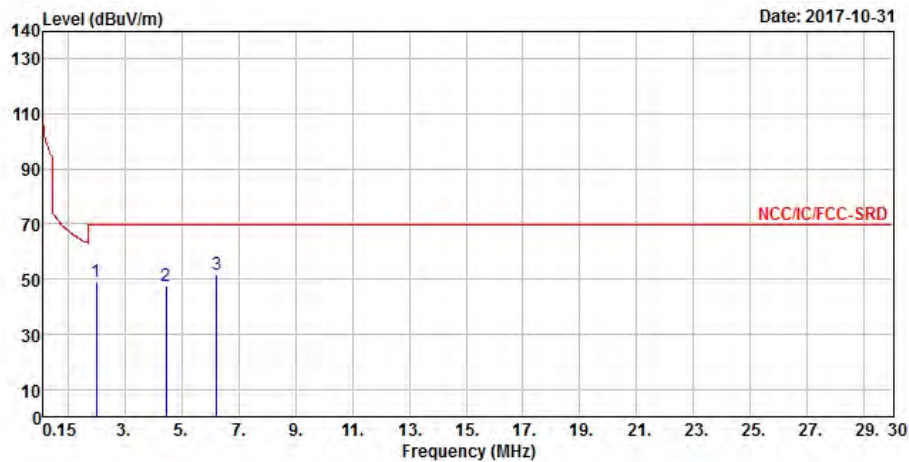
Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.

Note 5: Except fundamental emission, other emissions from digital circuitry used to control additional panel functions or display capabilities other than the touch panel radio transmission. While disable touch panel radio transmission, other emissions have the same levels. Therefore other emissions level could be exceed the fundamental emission level.

Note 6 : Below 30MHz of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

**Transmitter Radiated Emissions (150kHz~30MHz)**

|                       |             |                        |     |
|-----------------------|-------------|------------------------|-----|
| <b>Mode</b>           | Touch Panel | <b>Test Freq.(kHz)</b> | 667 |
| <b>Operating Mode</b> | 1           | <b>Polarization</b>    | H   |



|   | Freq      | Level  | Over Limit | Limit Line | ReadAntenna Level | Cable Preamp Loss Factor | Remark         | A/Pos | T/Pos |
|---|-----------|--------|------------|------------|-------------------|--------------------------|----------------|-------|-------|
|   | MHz       | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m                     |                | cm    | deg   |
| 1 | 2.0007000 | 49.26  | -20.28     | 69.54      | 28.46             | 20.55                    | 0.25 0.00 Peak | ---   | ---   |
| 2 | 4.4484000 | 47.42  | -22.12     | 69.54      | 26.44             | 20.62                    | 0.36 0.00 Peak | ---   | ---   |
| 3 | 6.2394000 | 51.61  | -17.93     | 69.54      | 30.27             | 20.90                    | 0.44 0.00 Peak | ---   | ---   |

Note 1: ">20dB" means spurious emission levels that exceed the level of 6 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

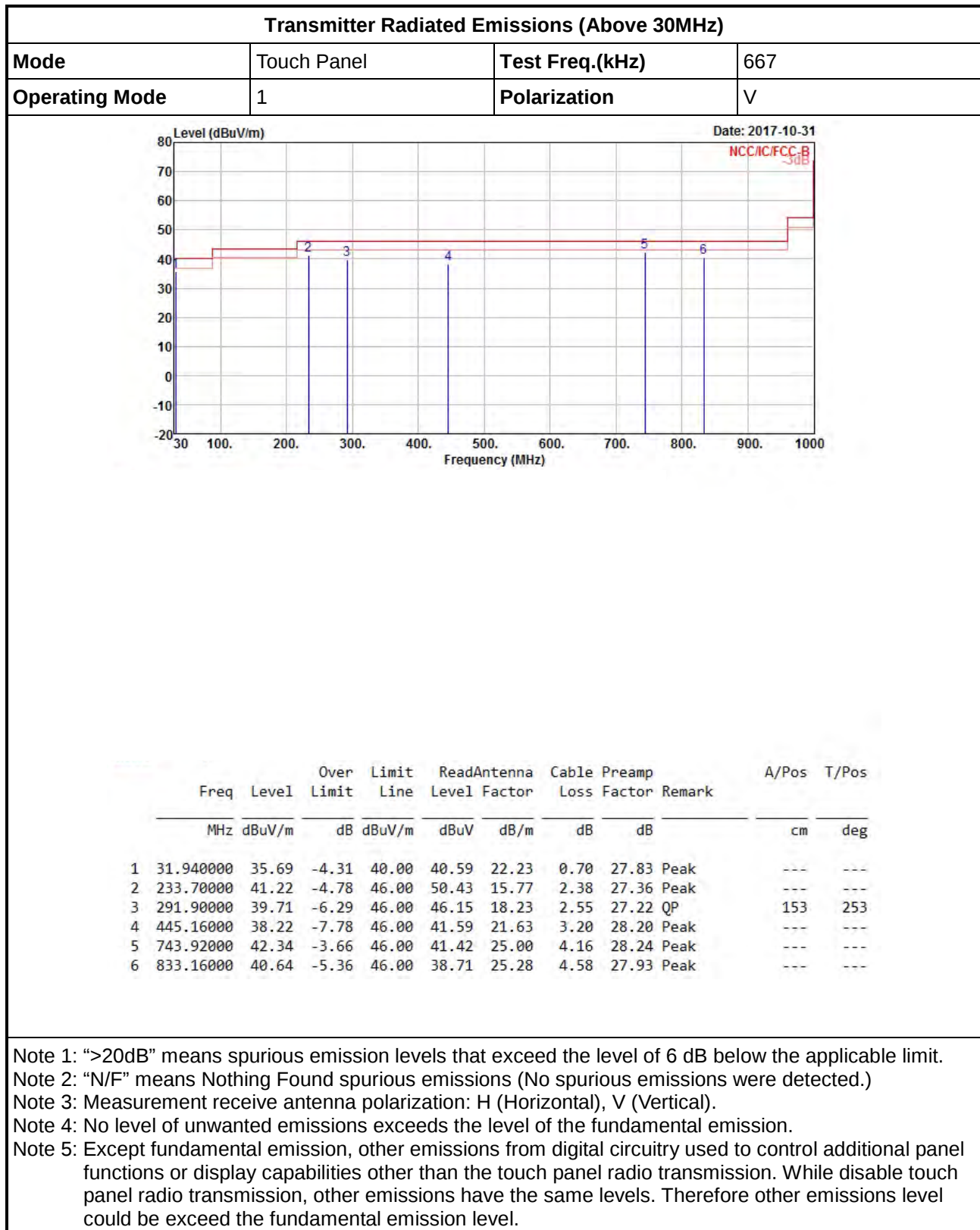
Note 3: Measurement worst emissions of receive antenna polarization: H (Horizontal).

Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.

Note 5: Except fundamental emission, other emissions from digital circuitry used to control additional panel functions or display capabilities other than the touch panel radio transmission. While disable touch panel radio transmission, other emissions have the same levels. Therefore other emissions level could be exceed the fundamental emission level.

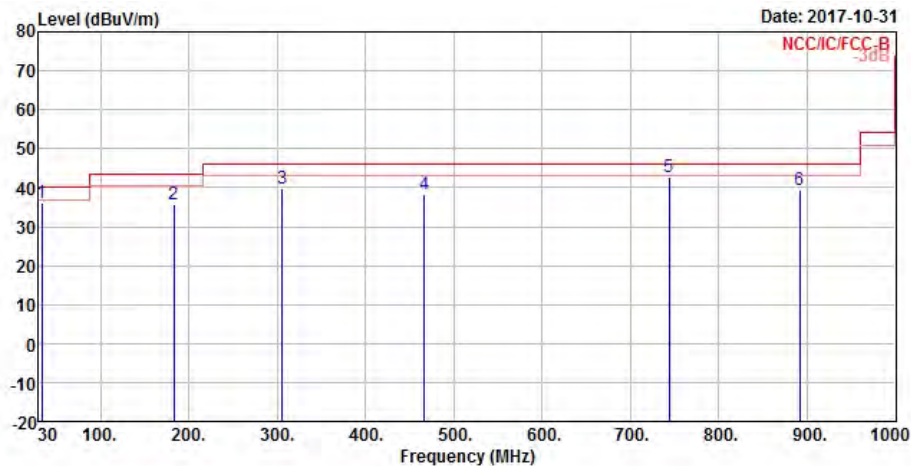
Note 6 : Below 30MHz of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

### 3.2.6 Transmitter Radiated Emissions (Above 30MHz)



**Transmitter Radiated Emissions (Above 30MHz)**

|                       |             |                        |     |
|-----------------------|-------------|------------------------|-----|
| <b>Mode</b>           | Touch Panel | <b>Test Freq.(kHz)</b> | 667 |
| <b>Operating Mode</b> | 1           | <b>Polarization</b>    | H   |



|   | Freq      | Level  | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | Remark     | A/Pos | T/Pos |
|---|-----------|--------|------------|------------|-------------------|--------------|-------------|------------|-------|-------|
|   | MHz       | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m         | dB          | dB         | cm    | deg   |
| 1 | 33.880000 | 36.14  | -3.86      | 40.00      | 41.95             | 21.25        | 0.74        | 27.80 Peak | ---   | ---   |
| 2 | 183.26000 | 35.64  | -7.86      | 43.50      | 46.75             | 14.29        | 2.10        | 27.50 Peak | ---   | ---   |
| 3 | 305.48000 | 39.67  | -6.33      | 46.00      | 45.73             | 18.57        | 2.61        | 27.24 QP   | 100   | 347   |
| 4 | 466.50000 | 38.42  | -7.58      | 46.00      | 41.19             | 22.25        | 3.29        | 28.31 Peak | ---   | ---   |
| 5 | 743.92000 | 42.78  | -3.22      | 46.00      | 41.86             | 25.00        | 4.16        | 28.24 QP   | 120   | 315   |
| 6 | 891.36000 | 39.24  | -6.76      | 46.00      | 36.75             | 25.51        | 4.68        | 27.70 Peak | ---   | ---   |

Note 1: ">20dB" means spurious emission levels that exceed the level of 6 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical).

Note 4: No level of unwanted emissions exceeds the level of the fundamental emission.

Note 5: Except fundamental emission, other emissions from digital circuitry used to control additional panel functions or display capabilities other than the touch panel radio transmission. While disable touch panel radio transmission, other emissions have the same levels. Therefore other emissions level could be exceed the fundamental emission level.

### 3.3 Emission Bandwidth

#### 3.3.1 Emission Bandwidth Limit

| Emission Bandwidth Limit |
|--------------------------|
| N/A                      |

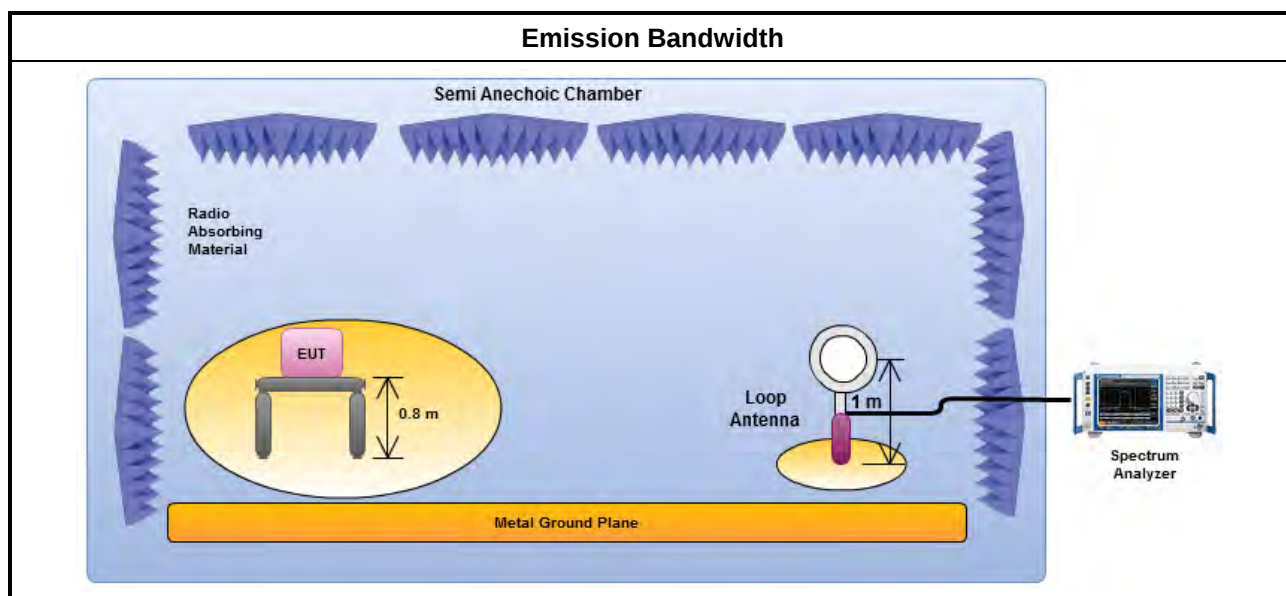
#### 3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

#### 3.3.3 Test Procedures

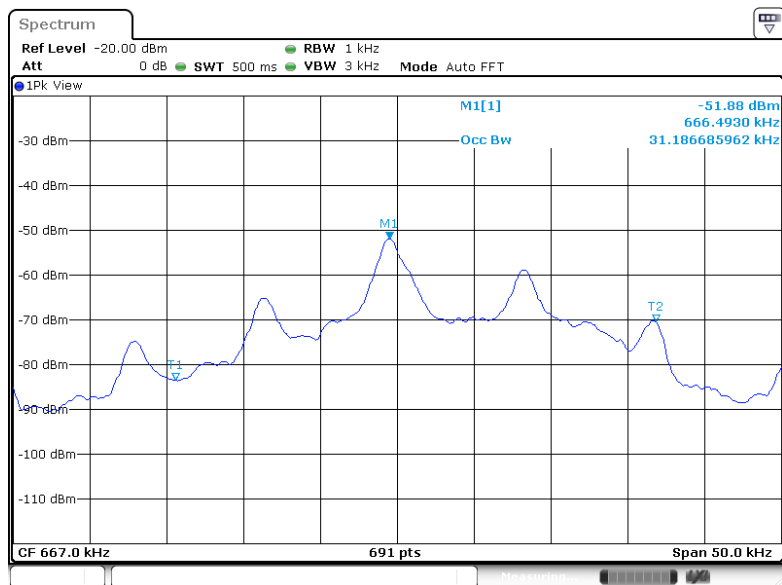
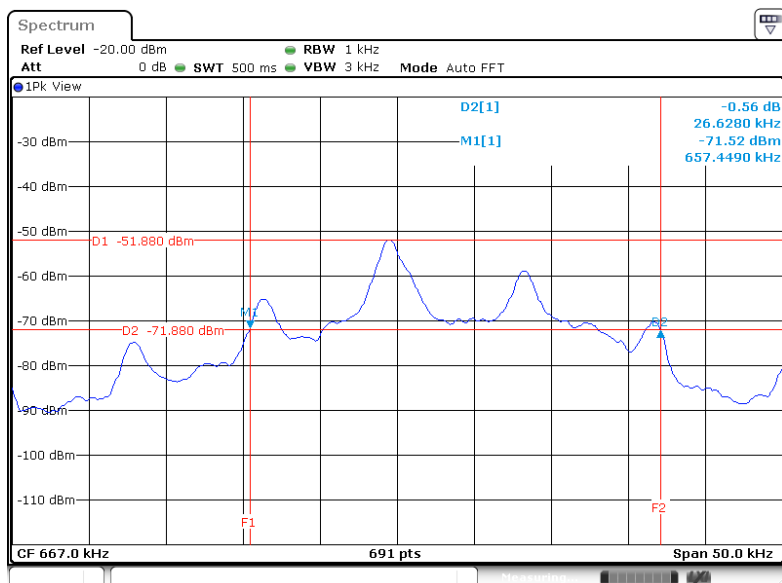
| Test Method                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> For the emission bandwidth refer ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.                                                                                                                            |
| <input checked="" type="checkbox"/> For radiated measurement. Loop antenna was rotated about the horizontal and vertical axis and the equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted field strength level. |

#### 3.3.4 Test Setup



### 3.3.5 Test Result of Emission Bandwidth

| Occupied Channel Bandwidth Result |                 |                     |                      |
|-----------------------------------|-----------------|---------------------|----------------------|
| Transmitter Mode                  | Frequency (kHz) | 99% Bandwidth (kHz) | 20dB Bandwidth (kHz) |
| Touch Panel                       | 667             | 31.19               | 26.63                |
| Limit                             |                 | N/A                 |                      |
| Result                            |                 | Complied            |                      |

**Emission Bandwidth Plot - 99% Bandwidth**

**Emission Bandwidth Plot - 20dB Bandwidth**


## 4 Test Equipment and Calibration Data

### <AC Power-line Conducted Emissions>

| Instrument                           | Manufacturer                   | Model No.   | Serial No.     | Characteristics     | Calibration Date | Calibration Due Date |
|--------------------------------------|--------------------------------|-------------|----------------|---------------------|------------------|----------------------|
| EMC Receiver                         | R&S                            | ESR3        | 102052         | 9kHz ~ 3.6GHz       | 29/Apr/2017      | 28/Apr/2018          |
| LISN                                 | R&S                            | ENV216      | 101295         | 9kHz ~ 30MHz        | 15/Nov/2016      | 14/Nov/2017          |
| RF Cable-CON                         | HUBER+SUHNER                   | RG213/U     | 07611832020001 | 9kHz ~ 30MHz        | 06/Oct/2017      | 05/Oct/2018          |
| LISN<br>(Support Unit)               | EMCO                           | 3810/2      | 9703-1839      | 9kHz ~ 30MHz        | NCR              | NCR                  |
| LISN                                 | SCHWARZBECK<br>MESS-ELEKTRONIK | NSLK 8127   | 8127-477       | 9kHz ~ 30MHz        | 14/ Feb/2017     | 13/ Feb/2018         |
| AC POWER                             | APC                            | AFC-11005G  | F310050055     | 47Hz~63Hz<br>5~300V | NCR              | NCR                  |
| Impuls<br>Begrenzer Pulse<br>Limiter | SCHWARZBECK                    | VTSD 9561-F | 9561-F041      | 9 kHz ~ 30 MHz      | 05/Oct/2017      | 04/Oct/2018          |

NCR : Non-Calibration Require

### <RF Conducted>

| Instrument        | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Calibration Due Date |
|-------------------|--------------|-----------|------------|-----------------|------------------|----------------------|
| Spectrum Analyzer | R&S          | FSV 40    | 101500     | 9KHz~40GHz      | 06/Feb/2017      | 05/Feb/2018          |

### <Radiated Emission>

| Instrument                  | Manufacturer      | Model No. | Serial No. | Characteristics    | Calibration Date | Calibration Due Date |
|-----------------------------|-------------------|-----------|------------|--------------------|------------------|----------------------|
| Spectrum Analyzer           | R&S               | FSP 40    | 100305     | 9kHz~40GHz         | 30/Dec/2016      | 29/Dec/2017          |
| 3m Semi Anechoic<br>Chamber | SIDT<br>FRANKONIA | SAC-3M    | 03CH02-HY  | 30MHz ~ 1GHz<br>3m | 20/Oct/2017      | 19/Oct/2018          |
| 3m Semi Anechoic<br>Chamber | SIDT<br>FRANKONIA | SAC-3M    | 03CH02-HY  | 1GHz ~ 18GHz<br>3m | 12/Dec/2016      | 11/Dec/2017          |
| Amplifier                   | Agilent           | 8447D     | 2944A11149 | 100kHz ~<br>1.3GHz | 29/Jun/2017      | 28/Jun/2018          |
| RF Cable-R03m               | Jye Bao           | RG142     | CB017      | 9kHz ~ 1GHz        | 26/Jan/2017      | 25/Jan/2018          |
| Bilog Antenna               | SCHAFFNER         | CBL 6112B | 2723       | 30MHz ~ 1GHz       | 09/Sep/2017      | 8/Sep/2018           |
| Receiver                    | R&S               | ESU3      | 102052     | 9kHz ~ 3.6GHz      | 29/Apr/2017      | 28/Apr/2018          |
| Loop Antenna                | TESEQ             | HLA 6120  | 24155      | 9 kHz~30 MHz       | 03/Feb/2017      | 02/Feb/2018          |