

# EMC TEST REPORT



Report No.: 17070148-FCC-E

Supersede Report No: N/A

|  |  |  |
|--|--|--|
| Applicant  | 3Dconnexion  |  |
| Product Name   | CadMouse Wireless  |  |
| Model No.  | 3DX-600054   |  |
| Serial No.   | 3DX-700062   |  |
| Test Standard  | FCC Part 15 Subpart B Class B:2016, ANSI C63.4: 2014                   |  |
| Test Date  | August 05 to October 30, 2017  |  |
| Issue Date   | October 31, 2017   |  |
| Test Result  | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail |  |
| Equipment complied with the specification <input checked="" type="checkbox"/>  |  |  |
| Equipment did not comply with the specification <input type="checkbox"/>   |  |  |
| <i>Evans He</i>  | <i>David Huang</i>   |  |
| Evans He<br>Test Engineer  | David Huang<br>Checked By  |  |
| This test report may be reproduced in full only<br>Test result presented in this test report is applicable to the tested sample only |  |  |

Issued by:

**SIEMIC (SHENZHEN-CHINA) LABORATORIES**

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

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

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

## Laboratories Introduction

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



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

### Accreditations for Conformity Assessment

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

|             |                |
|-------------|----------------|
| Test Report | 17070148-FCC-E |
| Page        | 3 of 34        |

This page has been left blank intentionally.

## CONTENTS

|  |    |
|--|----|
| 1. REPORT REVISION HISTORY .....                                   | 5  |
| 2. CUSTOMER INFORMATION .....                                      | 5  |
| 3. TEST SITE INFORMATION .....                                     | 5  |
| 4. EQUIPMENT UNDER TEST (EUT) INFORMATION .....                    | 6  |
| 5. TEST SUMMARY .....  | 7  |
| 6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS .....             | 8  |
| 6.1 AC POWER LINE CONDUCTED EMISSIONS.....                         | 8  |
| 6.2 RADIATED EMISSIONS.....  | 14 |
| ANNEX A. TEST INSTRUMENT.....                                      | 19 |
| ANNEX B. EUT AND TEST SETUP PHOTOGRAPHS.....                       | 20 |
| ANNEX C. TEST SETUP AND SUPPORTING EQUIPMENT.....                  | 30 |
| ANNEX D. USER MANUAL / BLOCK DIAGRAM / SCHEMATICS / PARTLIST ..... | 33 |
| ANNEX E. DECLARATION OF SIMILARITY .....                           | 34 |

## 1. Report Revision History

| Report No.     | Report Version | Description | Issue Date       |
|----------------|----------------|-------------|------------------|
| 17070148-FCC-E | NONE           | Original    | October 31, 2017 |
|                |                |             |                  |
|                |                |             |                  |
|                |                |             |                  |
|                |                |             |                  |
|                |                |             |                  |
|                |                |             |                  |

## 2. Customer information

|                  |                                  |
|------------------|----------------------------------|
| Applicant Name   | 3Dconnexion                      |
| Applicant Add    | 33, Rue du Portier, 98000 Monaco |
| Manufacturer     | 3Dconnexion                      |
| Manufacturer Add | 33, Rue du Portier, 98000 Monaco |

## 3. Test site information

|                                     |  |
|-------------------------------------|--|
| Lab performing tests                | SIEMIC (Shenzhen-China) LABORATORIES   |
| Lab Address                         | Zone A, Floor 1, Building 2 Wan Ye Long Technology Park<br>South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China<br>518108 |
| FCC Test Site No.                   | 535293   |
| IC Test Site No.                    | 4842E-1  |
| Test Software of Radiated Emission  | Radiated Emission Program-To Shenzhen v2.0   |
| Test Software of Conducted Emission | EZ-EMC(ver.lcp-03A1)   |

#### 4. Equipment under Test (EUT) Information

|                               |   |
|-------------------------------|---|
| Description of EUT:           | CadMouse Wireless   |
| Main Model:                   | 3DX-600054  |
| Serial Model:                 | 3DX-700062  |
| Antenna Gain:                 | BLE: -2.72dBi<br>2.4G: -2.72dBi   |
| Antenna Type:                 | Patch antenna   |
| Input Power:                  | Battery:<br>Model: 603450<br>Spec: 3.7V, 4.07Wh, 1100mAh<br>Voltage: 4.2V |
| Equipment Category :          | JBP   |
| Type of Modulation:           | BLE/2.4G: GFSK  |
| RF Operating Frequency (ies): | 2.4G: 2404-2477 MHz<br>BLE: 2402-2480 MHz                                 |
| Number of Channels:           | 40CH  |
| Port:                         | USB Port  |
| Trade Name :                  | 3Dconnexion   |
| FCC ID:                       | 2AAHQ-CMW   |
| Date EUT received:            | August 04, 2017   |
| Test Date(s):                 | August 05 to October 30, 2017   |

## 5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

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

### Measurement Uncertainty


| Parameter   | Uncertainty |
|---|-------------|
| AC Power Line Conducted Emissions<br>(150kHz~30MHz) | ±3.11dB     |
| Radiated Emission(30MHz~1GHz)                       | ±5.12dB     |
| Radiated Emission(1GHz~6GHz)                        | ±5.34dB     |

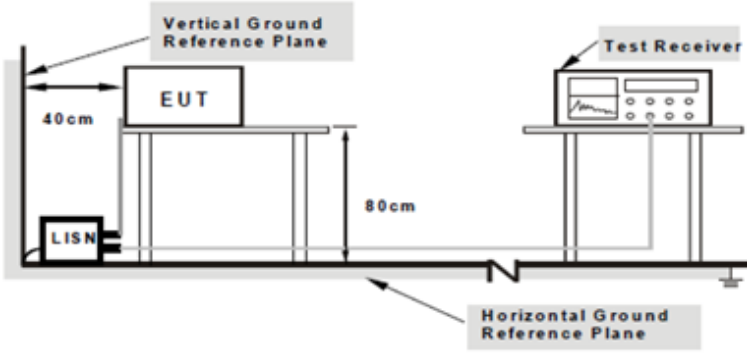
## 6. Measurements, Examination And Derived Results

### 6.1 AC Power Line Conducted Emissions

|                      |                  |
|----------------------|------------------|
| Temperature          | 26°C             |
| Relative Humidity    | 57%              |
| Atmospheric Pressure | 1025mbar         |
| Test date :          | October 25, 2017 |
| Tested By :          | Evans He         |

#### Requirement(s):

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

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

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

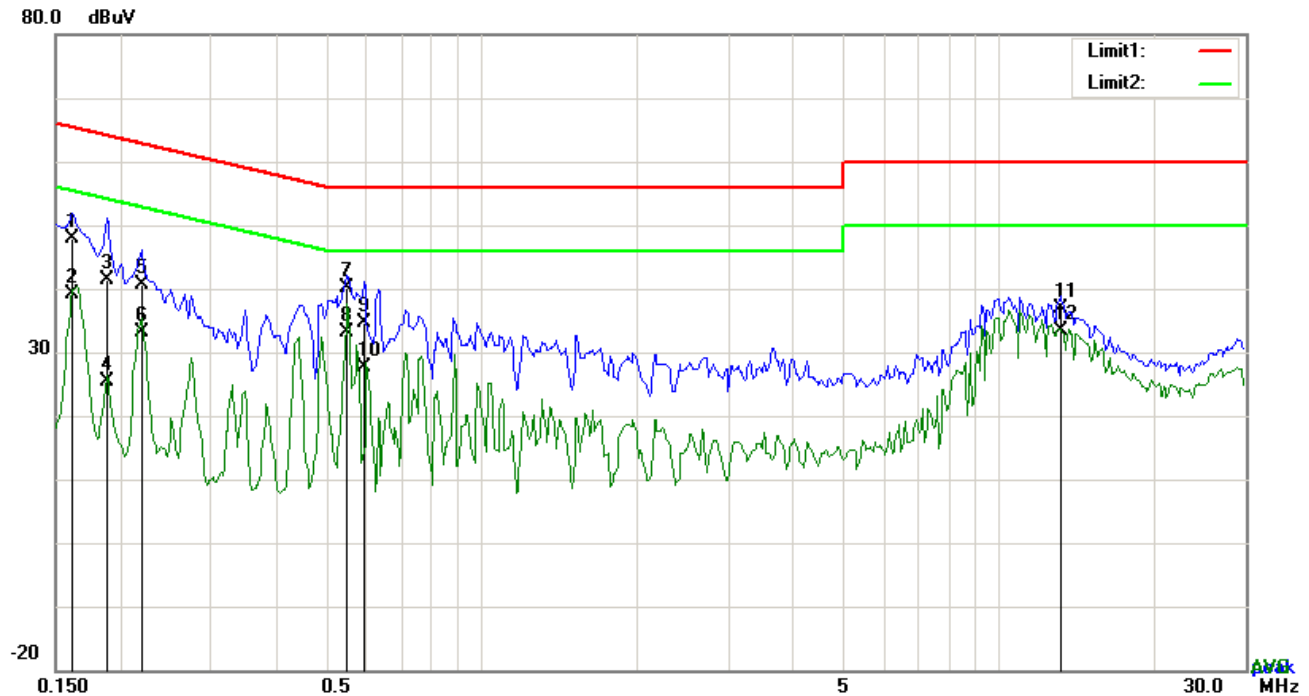


|        |   |
|--------|---|
|        | <p>3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable.</p> <p>4. All other supporting equipment were powered separately from another main supply.</p> <p>5. The EUT was switched on and allowed to warm up to its normal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

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

**Test Mode : USB Mode**

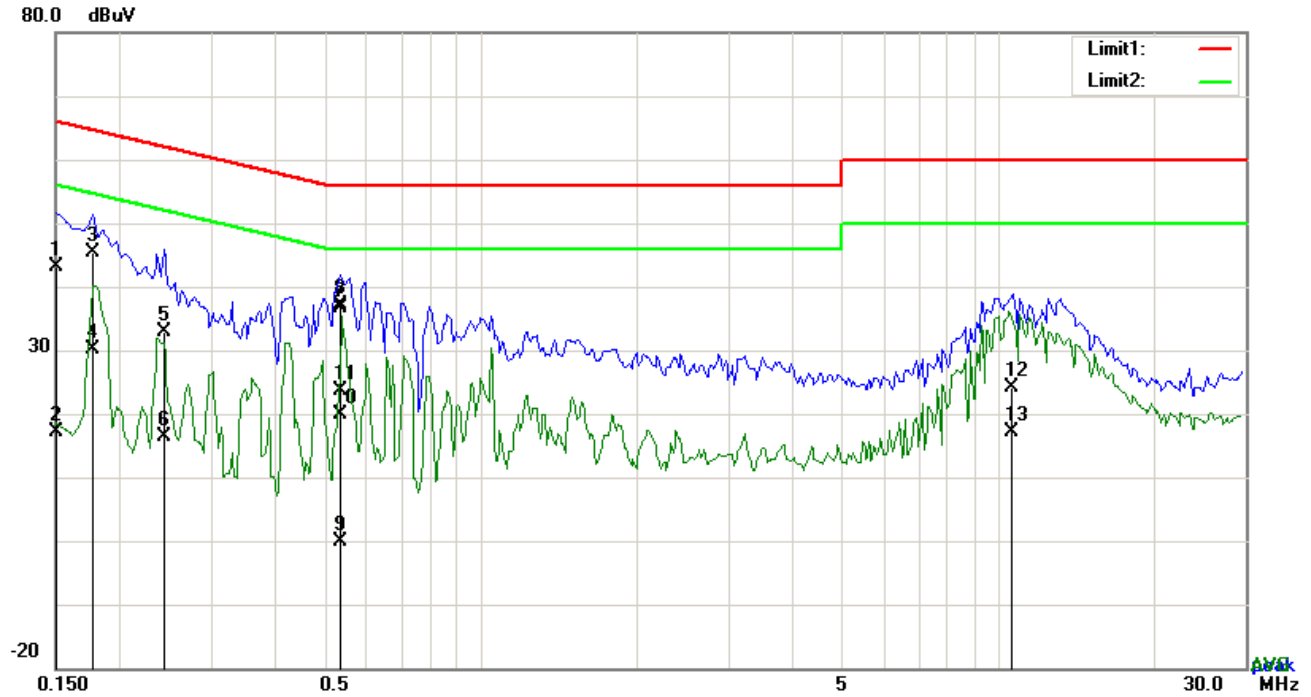


### Test Data

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

| No. | P/L | Frequency | Reading | Detector | Corrected | Result | Limit  | Margin |
|-----|-----|-----------|---------|----------|-----------|--------|--------|--------|
|     |     | (MHz)     | (dBuV)  |          | (dB)      | (dBuV) | (dBuV) | (dB)   |
| 1   | L1  | 0.1617    | 37.86   | QP       | 10.03     | 47.89  | 65.38  | -17.49 |
| 2   | L1  | 0.1617    | 29.17   | AVG      | 10.03     | 39.20  | 55.38  | -16.18 |
| 3   | L1  | 0.1890    | 31.44   | QP       | 10.03     | 41.47  | 64.08  | -22.61 |
| 4   | L1  | 0.1890    | 15.42   | AVG      | 10.03     | 25.45  | 54.08  | -28.63 |
| 5   | L1  | 0.2202    | 30.63   | QP       | 10.03     | 40.66  | 62.81  | -22.15 |
| 6   | L1  | 0.2202    | 23.14   | AVG      | 10.03     | 33.17  | 52.81  | -19.64 |
| 7   | L1  | 0.5478    | 30.03   | QP       | 10.03     | 40.06  | 56.00  | -15.94 |
| 8   | L1  | 0.5478    | 23.05   | AVG      | 10.03     | 33.08  | 46.00  | -12.92 |
| 9   | L1  | 0.5946    | 24.52   | QP       | 10.03     | 34.55  | 56.00  | -21.45 |
| 10  | L1  | 0.5946    | 17.48   | AVG      | 10.03     | 27.51  | 46.00  | -18.49 |
| 11  | L1  | 13.1478   | 26.74   | QP       | 10.20     | 36.94  | 60.00  | -23.06 |
| 12  | L1  | 13.1478   | 23.16   | AVG      | 10.20     | 33.36  | 50.00  | -16.64 |

**Test Mode:** USB Mode

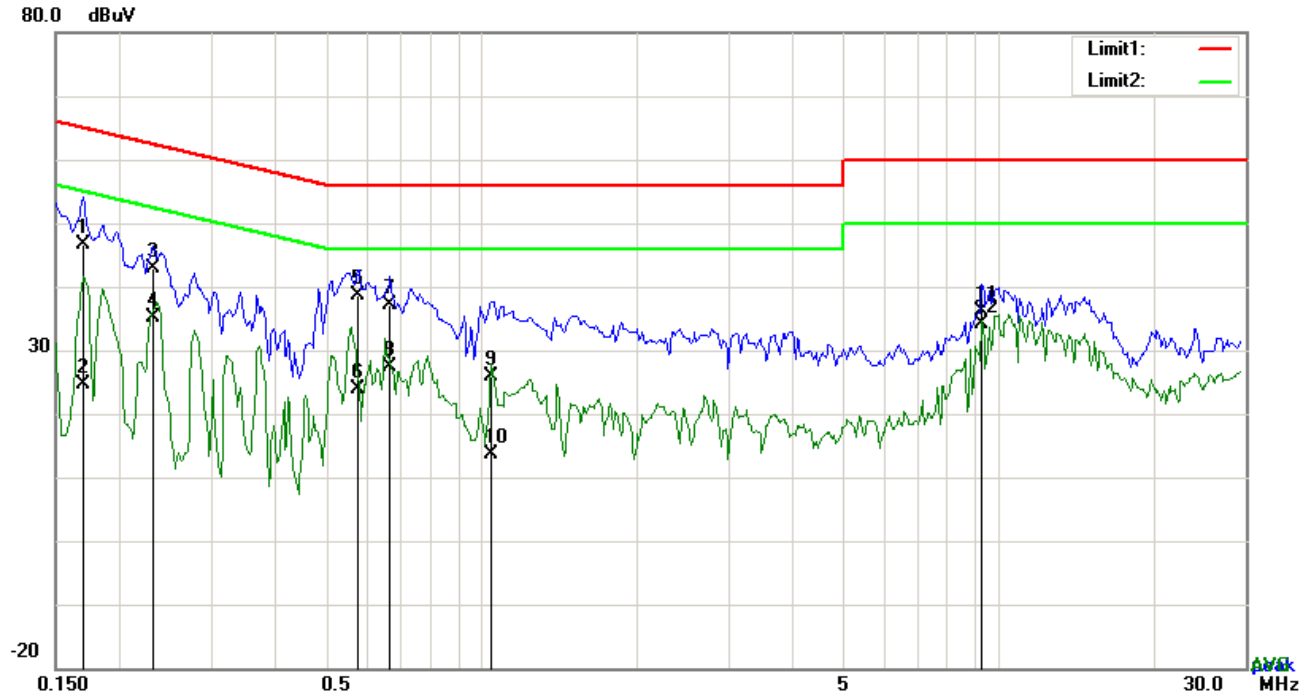


**Test Data**

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

| No. | P/L | Frequency | Reading | Detector | Corrected | Result | Limit  | Margin |
|-----|-----|-----------|---------|----------|-----------|--------|--------|--------|
|     |     | (MHz)     | (dBuV)  |          | (dB)      | (dBuV) | (dBuV) | (dB)   |
| 1   | N   | 0.1500    | 33.15   | QP       | 10.02     | 43.17  | 66.00  | -22.83 |
| 2   | N   | 0.1500    | 7.15    | AVG      | 10.02     | 17.17  | 56.00  | -38.83 |
| 3   | N   | 0.1773    | 35.25   | QP       | 10.02     | 45.27  | 64.61  | -19.34 |
| 4   | N   | 0.1773    | 20.20   | AVG      | 10.02     | 30.22  | 54.61  | -24.39 |
| 5   | N   | 0.2436    | 22.81   | QP       | 10.02     | 32.83  | 61.97  | -29.14 |
| 6   | N   | 0.2436    | 6.42    | AVG      | 10.02     | 16.44  | 51.97  | -35.53 |
| 7   | N   | 0.5322    | 26.62   | QP       | 10.02     | 36.64  | 56.00  | -19.36 |
| 8   | N   | 0.5322    | 27.11   | QP       | 10.02     | 37.13  | 56.00  | -18.87 |
| 9   | N   | 0.5322    | -10.02  | QP       | 10.02     | 0.00   | 56.00  | -56.00 |
| 10  | N   | 0.5322    | 9.93    | AVG      | 10.02     | 19.95  | 46.00  | -26.05 |
| 11  | N   | 0.5322    | 13.68   | AVG      | 10.02     | 23.70  | 46.00  | -22.30 |
| 12  | N   | 10.5638   | 13.87   | QP       | 10.15     | 24.02  | 60.00  | -35.98 |

Test Mode : USB Mode

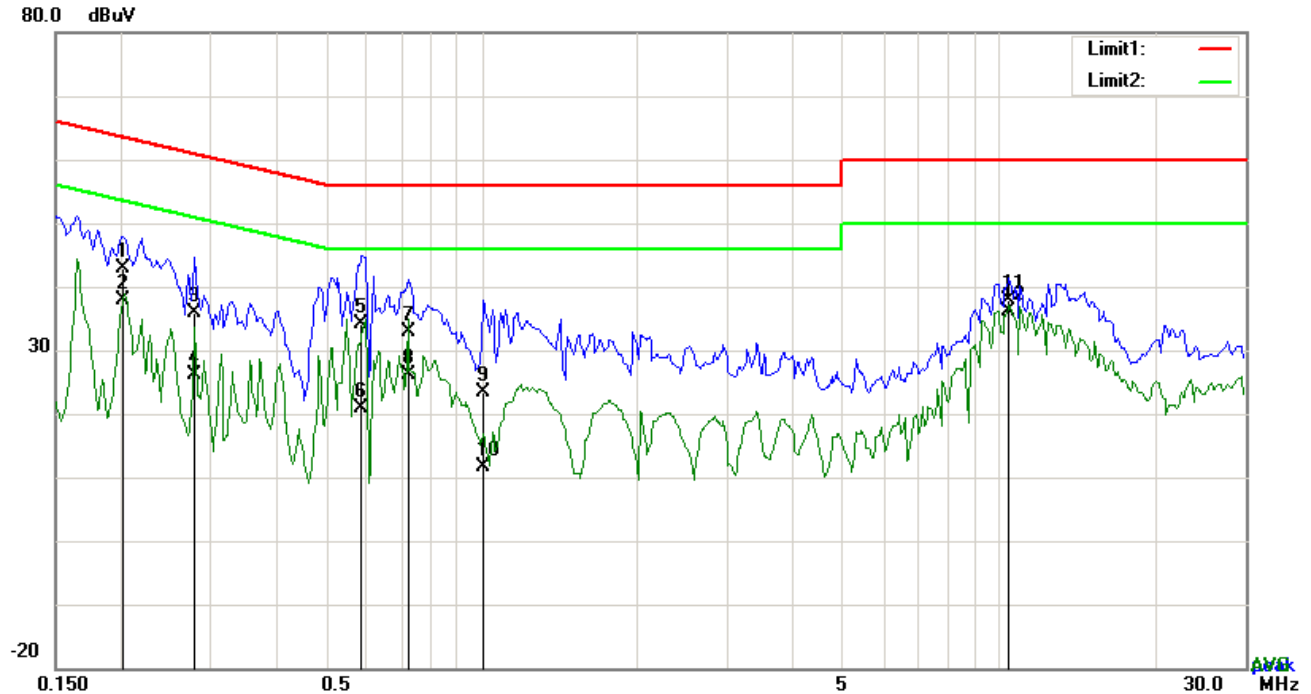


Test Data

Phase Line Plot at 240Vac, 60Hz

| No. | P/L | Frequency | Reading | Detector | Corrected | Result | Limit  | Margin |
|-----|-----|-----------|---------|----------|-----------|--------|--------|--------|
|     |     | (MHz)     | (dBuV)  |          | (dB}      | (dBuV) | (dBuV) | (dB)   |
| 1   | L1  | 0.1695    | 36.48   | QP       | 10.03     | 46.51  | 64.98  | -18.47 |
| 2   | L1  | 0.1695    | 14.51   | AVG      | 10.03     | 24.54  | 54.98  | -30.44 |
| 3   | L1  | 0.2319    | 32.86   | QP       | 10.03     | 42.89  | 62.38  | -19.49 |
| 4   | L1  | 0.2319    | 25.17   | AVG      | 10.03     | 35.20  | 52.38  | -17.18 |
| 5   | L1  | 0.5790    | 28.71   | QP       | 10.03     | 38.74  | 56.00  | -17.26 |
| 6   | L1  | 0.5790    | 13.75   | AVG      | 10.03     | 23.78  | 46.00  | -22.22 |
| 7   | L1  | 0.6648    | 27.05   | QP       | 10.03     | 37.08  | 56.00  | -18.92 |
| 8   | L1  | 0.6648    | 17.43   | AVG      | 10.03     | 27.46  | 46.00  | -18.54 |
| 9   | L1  | 1.0431    | 15.73   | QP       | 10.03     | 25.76  | 56.00  | -30.24 |
| 10  | L1  | 1.0431    | 3.49    | AVG      | 10.03     | 13.52  | 46.00  | -32.48 |
| 11  | L1  | 9.2907    | 26.03   | QP       | 10.14     | 36.17  | 60.00  | -23.83 |
| 12  | L1  | 9.2907    | 23.92   | AVG      | 10.14     | 34.06  | 50.00  | -15.94 |

Test Mode : USB Mode



### Test Data


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

| No. | P/L | Frequency | Reading | Detector | Corrected | Result | Limit  | Margin |
|-----|-----|-----------|---------|----------|-----------|--------|--------|--------|
|     |     | (MHz)     | (dBuV)  |          | (dB}      | (dBuV) | (dBuV) | (dB)   |
| 1   | N   | 0.2029    | 32.94   | QP       | 10.02     | 42.96  | 63.49  | -20.53 |
| 2   | N   | 0.2029    | 27.82   | AVG      | 10.02     | 37.84  | 53.49  | -15.65 |
| 3   | N   | 0.2787    | 25.86   | QP       | 10.02     | 35.88  | 60.85  | -24.97 |
| 4   | N   | 0.2787    | 16.00   | AVG      | 10.02     | 26.02  | 50.85  | -24.83 |
| 5   | N   | 0.5868    | 24.17   | QP       | 10.02     | 34.19  | 56.00  | -21.81 |
| 6   | N   | 0.5868    | 10.79   | AVG      | 10.02     | 20.81  | 46.00  | -25.19 |
| 7   | N   | 0.7233    | 22.75   | QP       | 10.02     | 32.77  | 56.00  | -23.23 |
| 8   | N   | 0.7233    | 16.15   | AVG      | 10.02     | 26.17  | 46.00  | -19.83 |
| 9   | N   | 1.0080    | 13.27   | QP       | 10.03     | 23.30  | 56.00  | -32.70 |
| 10  | N   | 1.0080    | 1.62    | AVG      | 10.03     | 11.65  | 46.00  | -34.35 |
| 11  | N   | 10.4763   | 27.77   | QP       | 10.15     | 37.92  | 60.00  | -22.08 |
| 12  | N   | 10.4763   | 26.09   | AVG      | 10.15     | 36.24  | 50.00  | -13.76 |

## 6.2 Radiated Emissions

|                      |                  |
|----------------------|------------------|
| Temperature          | 26°C             |
| Relative Humidity    | 57%              |
| Atmospheric Pressure | 1025mbar         |
| Test date :          | October 25, 2017 |
| Tested By :          | Evans He         |

### Requirement(s):

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

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

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

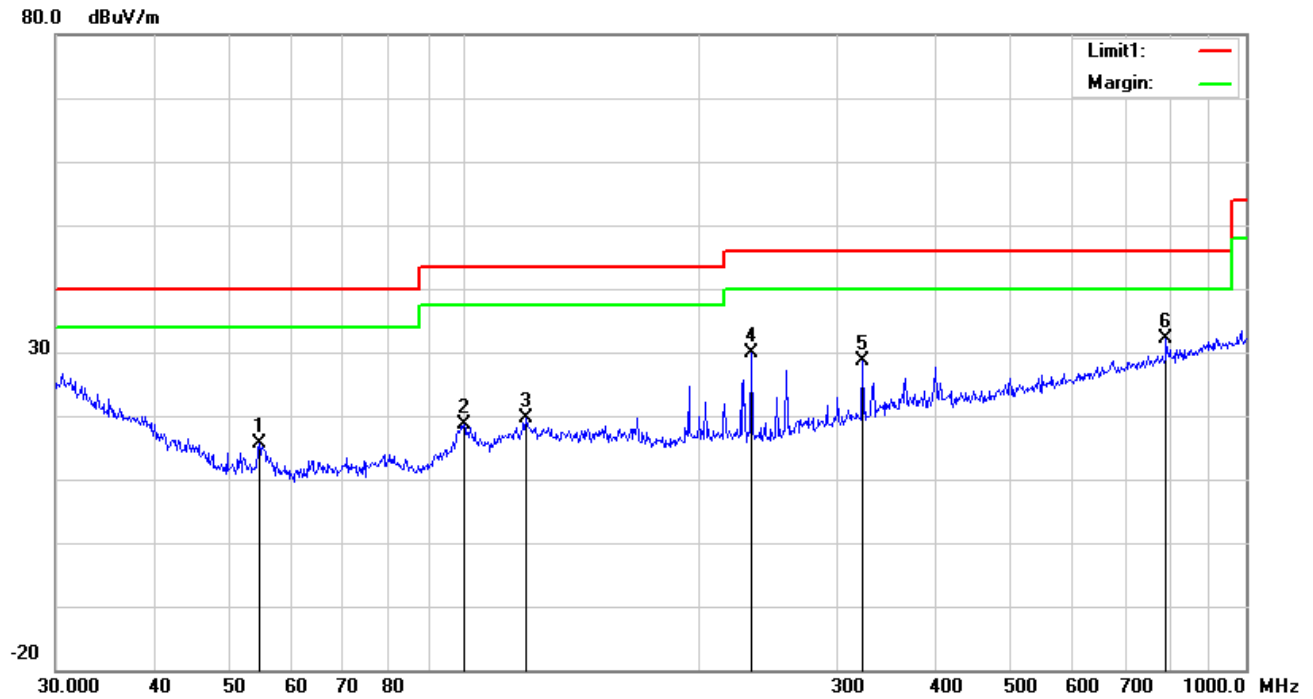
|        |  |
|--------|--|
|        | <p>over a full rotation of the EUT) was chosen.</p> <p>b. The EUT was then rotated to the direction that gave the maximum emission.</p> <p>c. Finally, the antenna height was adjusted to the height that gave the maximum emission.</p> <p>3. The resolution bandwidth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

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

**Test Mode : USB Mode**

**Below 1GHz**



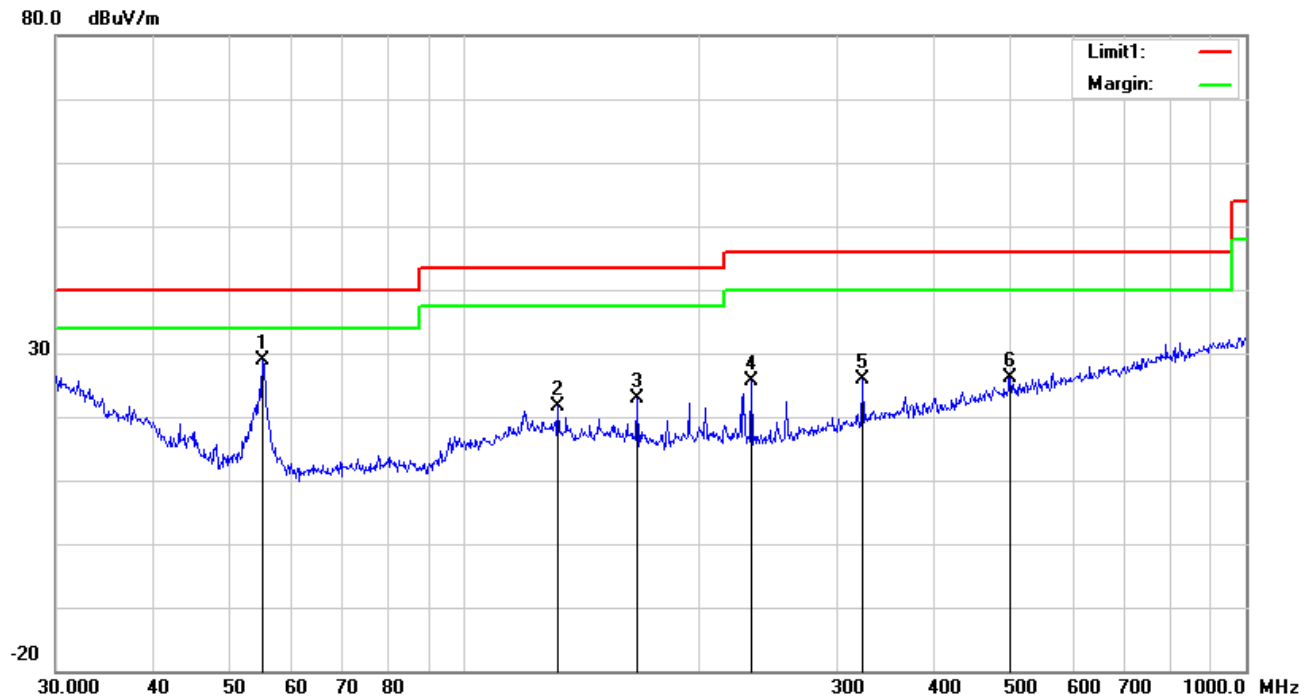
**Test Data**

**Horizontal Polarity Plot @3m**

| No. | P/L | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Detector | Ant_F<br>(dB/m) | PA_G<br>(dB) | Cab_L<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Height<br>(cm) | Degree<br>(°) |
|-----|-----|--------------------|---------------------|----------|-----------------|--------------|---------------|--------------------|-------------------|----------------|----------------|---------------|
| 1   | H   | 54.6429            | 29.38               | peak     | 7.89            | 22.39        | 0.78          | 15.66              | 40.00             | -24.34         | 100            | 346           |
| 2   | H   | 99.8777            | 29.43               | peak     | 10.37           | 22.32        | 1.12          | 18.60              | 43.50             | -24.90         | 100            | 164           |
| 3   | H   | 119.8556           | 26.89               | peak     | 13.87           | 22.36        | 1.16          | 19.56              | 43.50             | -23.94         | 100            | 110           |
| 4   | H   | 233.3487           | 38.98               | peak     | 11.63           | 22.32        | 1.65          | 29.94              | 46.00             | -16.06         | 100            | 340           |
| 5   | H   | 323.3204           | 34.73               | peak     | 14.09           | 22.22        | 1.91          | 28.51              | 46.00             | -17.49         | 100            | 130           |
| 6   | H   | 790.6188           | 28.99               | peak     | 21.29           | 21.17        | 2.94          | 32.05              | 46.00             | -13.95         | 100            | 298           |



## Below 1GHz



## Test Data

### Vertical Polarity Plot @3m

| No. | P/L | Frequency | Reading  | Detector | Ant_F  | PA_G  | Cab_L | Result   | Limit    | Margin | Height | Degree |
|-----|-----|-----------|----------|----------|--------|-------|-------|----------|----------|--------|--------|--------|
|     |     | (MHz)     | (dBuV/m) |          | (dB/m) | (dB)  | (dB)  | (dBuV/m) | (dBuV/m) | (dB)   | (cm)   | (°)    |
| 1   | V   | 55.2207   | 42.65    | peak     | 7.83   | 22.40 | 0.78  | 28.86    | 40.00    | -11.14 | 100    | 15     |
| 2   | V   | 131.7577  | 29.63    | peak     | 13.14  | 22.39 | 1.21  | 21.59    | 43.50    | -21.91 | 100    | 276    |
| 3   | V   | 166.6514  | 31.58    | peak     | 12.07  | 22.26 | 1.37  | 22.76    | 43.50    | -20.74 | 200    | 193    |
| 4   | V   | 232.5318  | 34.61    | peak     | 11.64  | 22.32 | 1.64  | 25.57    | 46.00    | -20.43 | 100    | 136    |
| 5   | V   | 323.3204  | 32.04    | peak     | 14.09  | 22.22 | 1.91  | 25.82    | 46.00    | -20.18 | 100    | 180    |
| 6   | V   | 499.4247  | 27.94    | peak     | 17.69  | 21.81 | 2.42  | 26.24    | 46.00    | -19.76 | 200    | 236    |

### *Above 1GHz*

| Frequency<br>(MHz) | Read_level<br>(dBμV/m) | Azimuth | Height<br>(cm) | Polarity<br>(H/V) | Level<br>(dBμV/m) | Factors<br>(dB) | Limit<br>(dBμV/m) | Margin<br>(dB) | Detector<br>(PK/AV) |
|--------------------|------------------------|---------|----------------|-------------------|-------------------|-----------------|-------------------|----------------|---------------------|
| 1426.9             | 67.2                   | 99      | 100            | V                 | -18.97            | 48.23           | 74                | -25.77         | PK                  |
| 1527.8             | 62.76                  | 157     | 100            | V                 | -18.55            | 44.21           | 74                | -29.79         | PK                  |
| 1965.2             | 58.92                  | 103     | 100            | V                 | -15.25            | 43.67           | 74                | -30.33         | PK                  |
| 1743.2             | 62.88                  | 247     | 100            | H                 | -17.76            | 45.12           | 74                | -28.88         | PK                  |
| 2017.4             | 64.48                  | 165     | 100            | H                 | -14.97            | 49.51           | 74                | -24.49         | PK                  |
| 2613.5             | 56.18                  | 109     | 100            | H                 | -13.31            | 42.87           | 74                | -31.13         | PK                  |

*Note1: The highest frequency of the EUT is 2480 MHz, so the testing has been conformed to 5\*2480MHz  
=12,400MHz.*

*Note2: The frequency that above 3GHz is mainly from the environment noise.*

*Note3: The AV measurement performed, more than 20dB below limit so AV test data was not presented.*

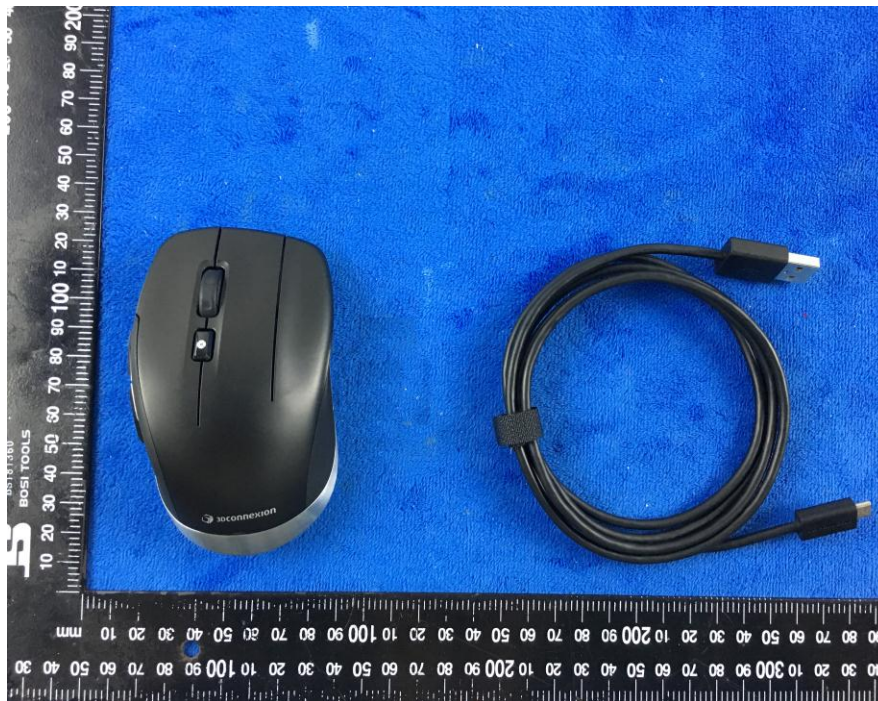
## Annex A. TEST INSTRUMENT

| Instrument                              | Model    | Serial #   | Cal Date   | Cal Due    | In use                              |
|---|----------|------------|------------|------------|-------------------------------------|
| <b>AC Line Conducted Emissions</b>      |          |            |            |            |                                     |
| EMI test receiver                       | ESCS30   | 8471241027 | 09/15/2017 | 09/14/2018 | <input checked="" type="checkbox"/> |
| Line Impedance Stabilization Network    | LI-125A  | 191106     | 09/23/2017 | 09/22/2018 | <input checked="" type="checkbox"/> |
| Line Impedance Stabilization Network    | LI-125A  | 191107     | 09/23/2017 | 09/22/2018 | <input checked="" type="checkbox"/> |
| LISN                                    | ISN T800 | 34373      | 09/23/2017 | 09/22/2018 | <input checked="" type="checkbox"/> |
| Transient Limiter                       | LIT-153  | 531118     | 08/30/2017 | 08/29/2018 | <input checked="" type="checkbox"/> |
| <b>Radiated Emissions</b>               |          |            |            |            |                                     |
| EMI test receiver                       | ESL6     | 100262     | 09/15/2017 | 09/14/2018 | <input checked="" type="checkbox"/> |
| OPT 010 AMPLIFIER<br>(0.1-1300MHz)      | 8447E    | 2727A02430 | 08/30/2017 | 08/29/2018 | <input checked="" type="checkbox"/> |
| Microwave Preamplifier<br>(1 ~ 26.5GHz) | 8449B    | 3008A02402 | 03/23/2017 | 03/22/2018 | <input checked="" type="checkbox"/> |
| Bilog Antenna<br>(30MHz~6GHz)           | JB6      | A110712    | 09/19/2017 | 09/18/2018 | <input checked="" type="checkbox"/> |
| Double Ridge Horn Antenna               | AH-118   | 71259      | 09/22/2017 | 09/21/2018 | <input checked="" type="checkbox"/> |

## Annex B. EUT And Test Setup Photographs

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

Whole Package View



EUT - Front View





EUT - Rear View



EUT – Top View



EUT - Bottom View



EUT - Left View

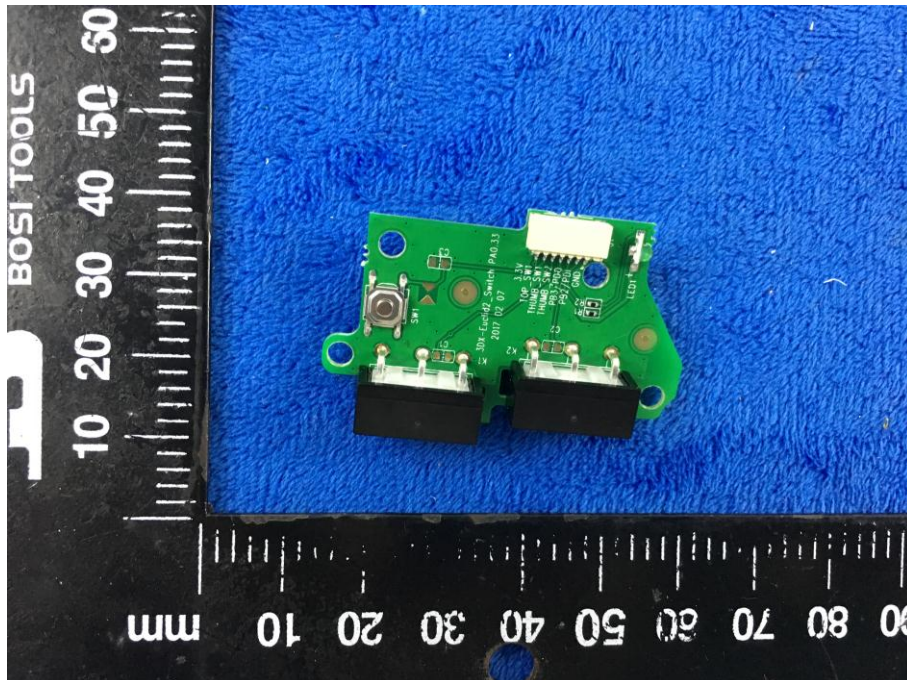
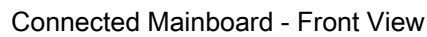




EUT - Right View

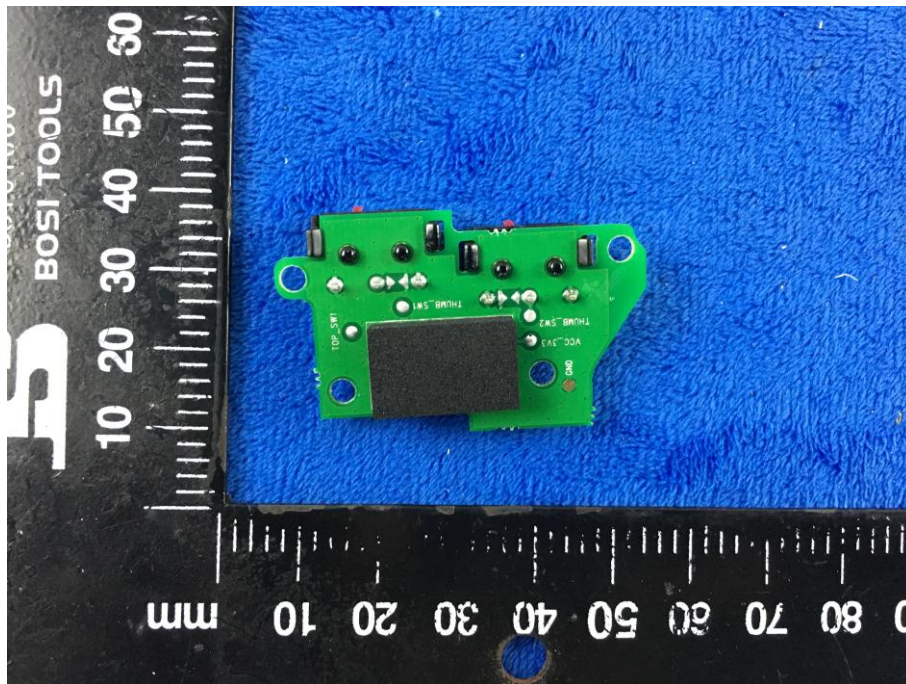


### Cover Off - Top View

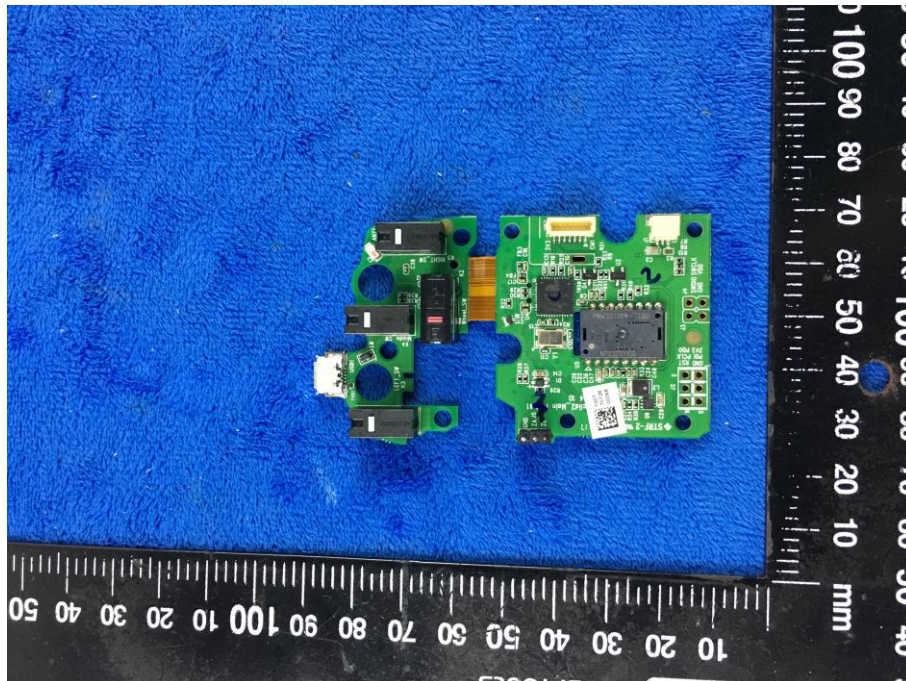




Connected Mainboard - Rear View

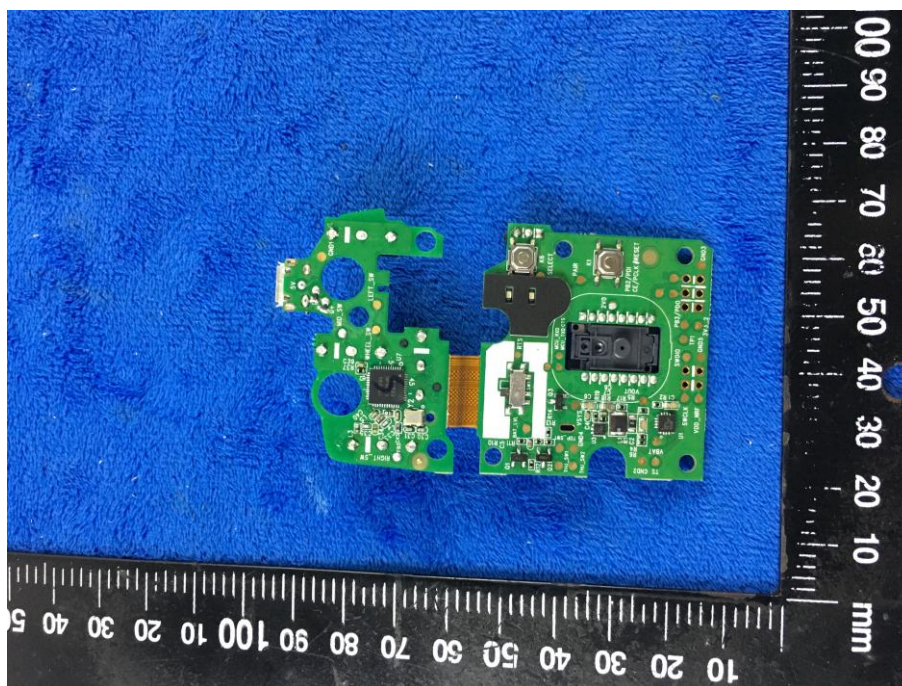


Mainboard - Front View

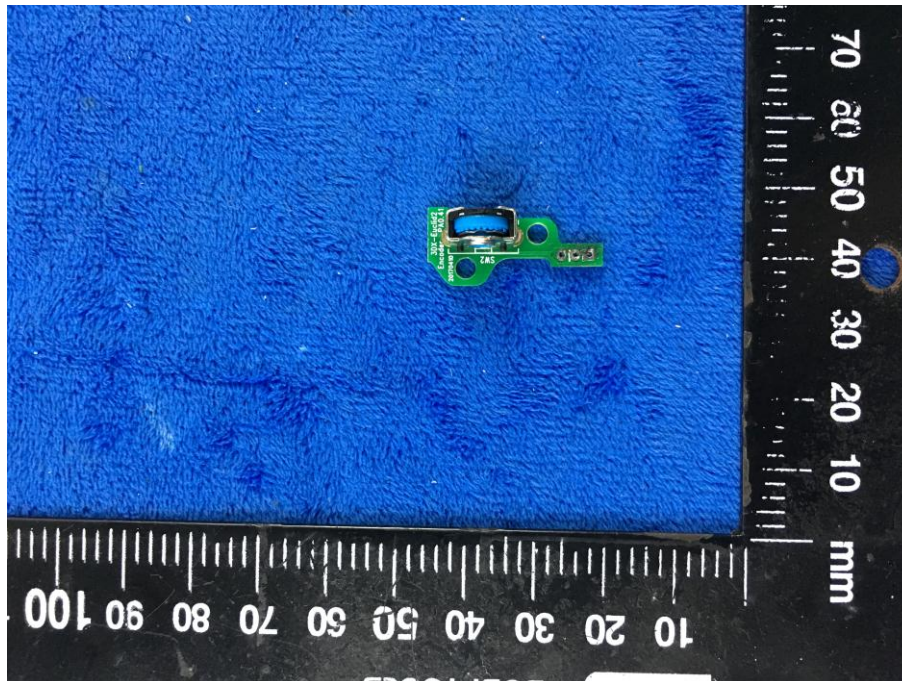




Mainboard - Rear View

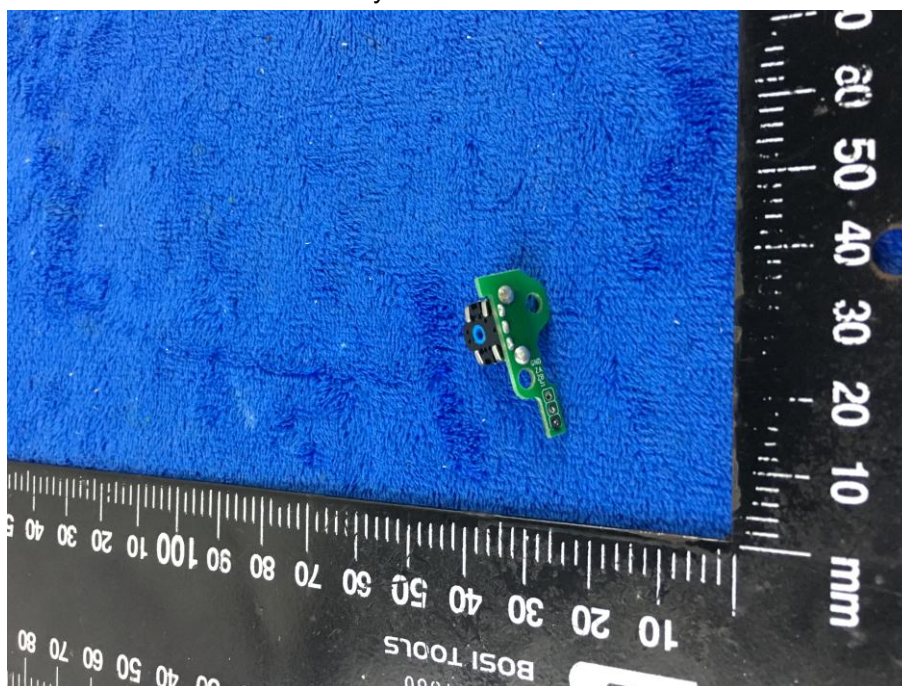


Pulley board - Front View





Pulley board - Rear View

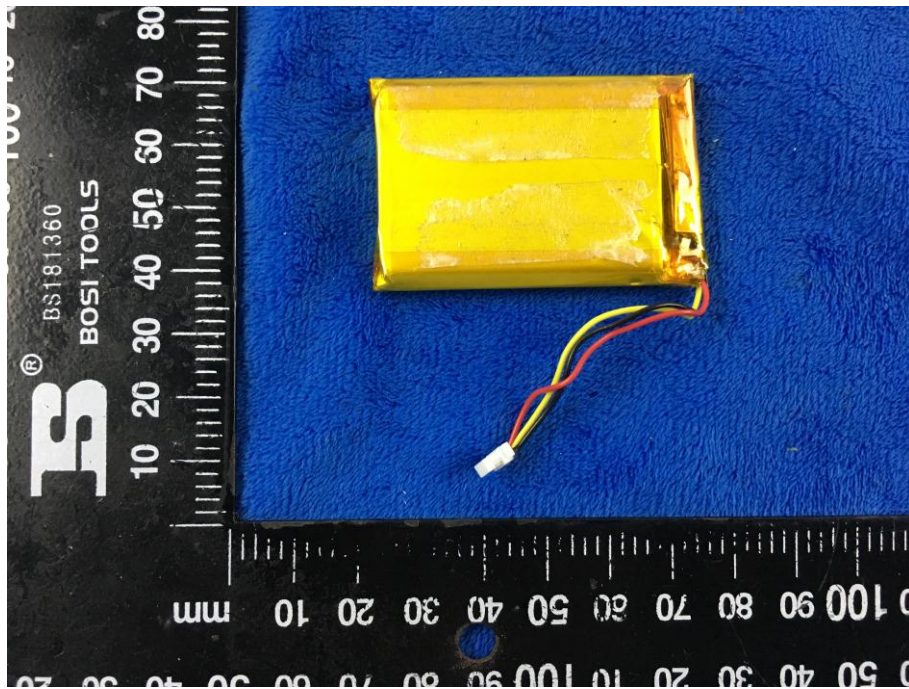


Battery - Front View





Battery - Rear View



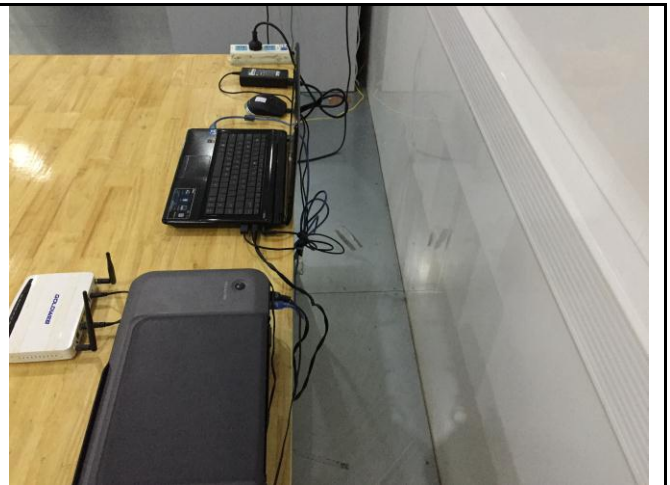
BT - Antenna View



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



Conducted Emissions Test Setup – Front View



Conducted Emissions Test Setup – Side View



Radiated Emissions Test Setup Below 1GHz

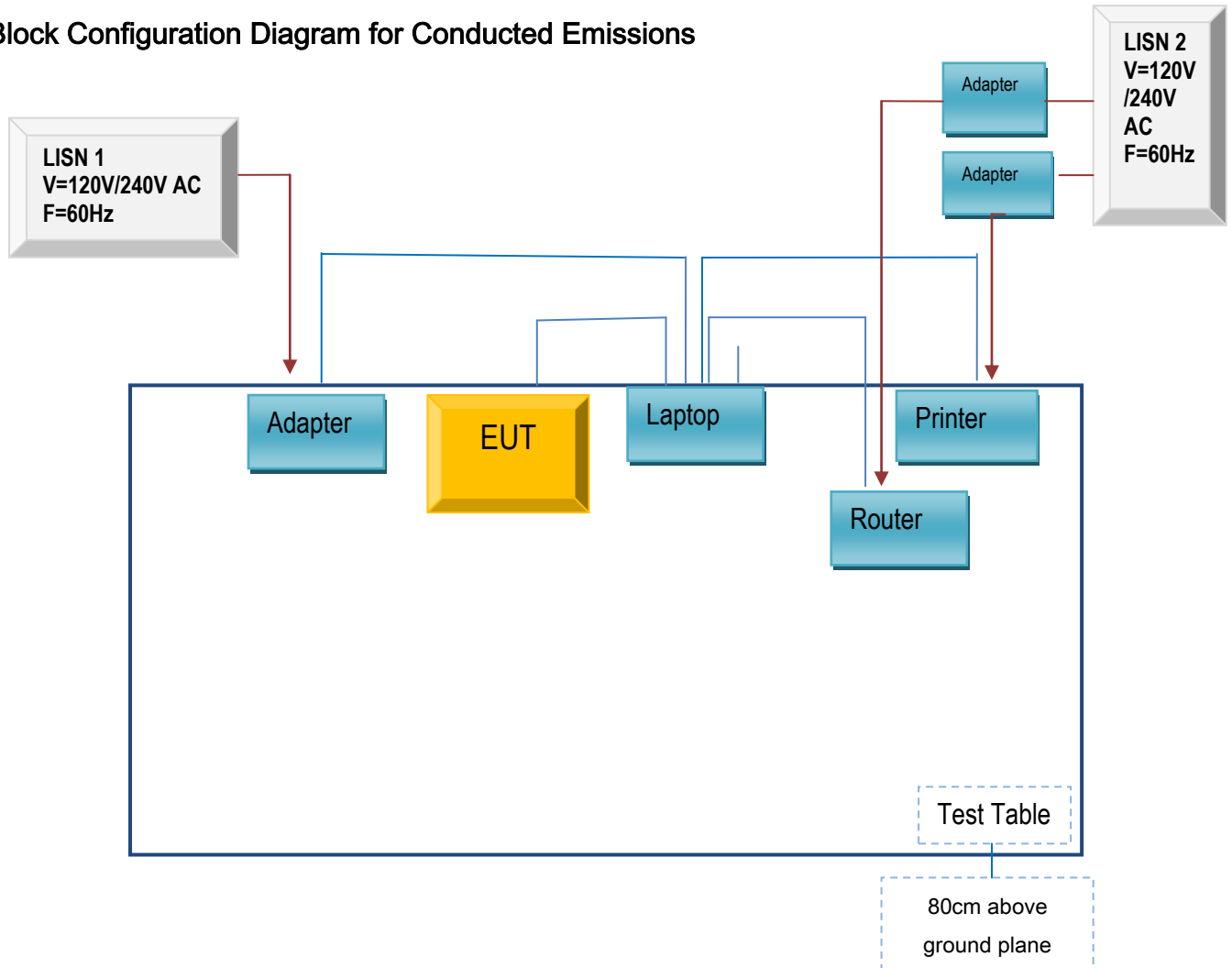


Radiated Emissions Test Setup Above 1GHz

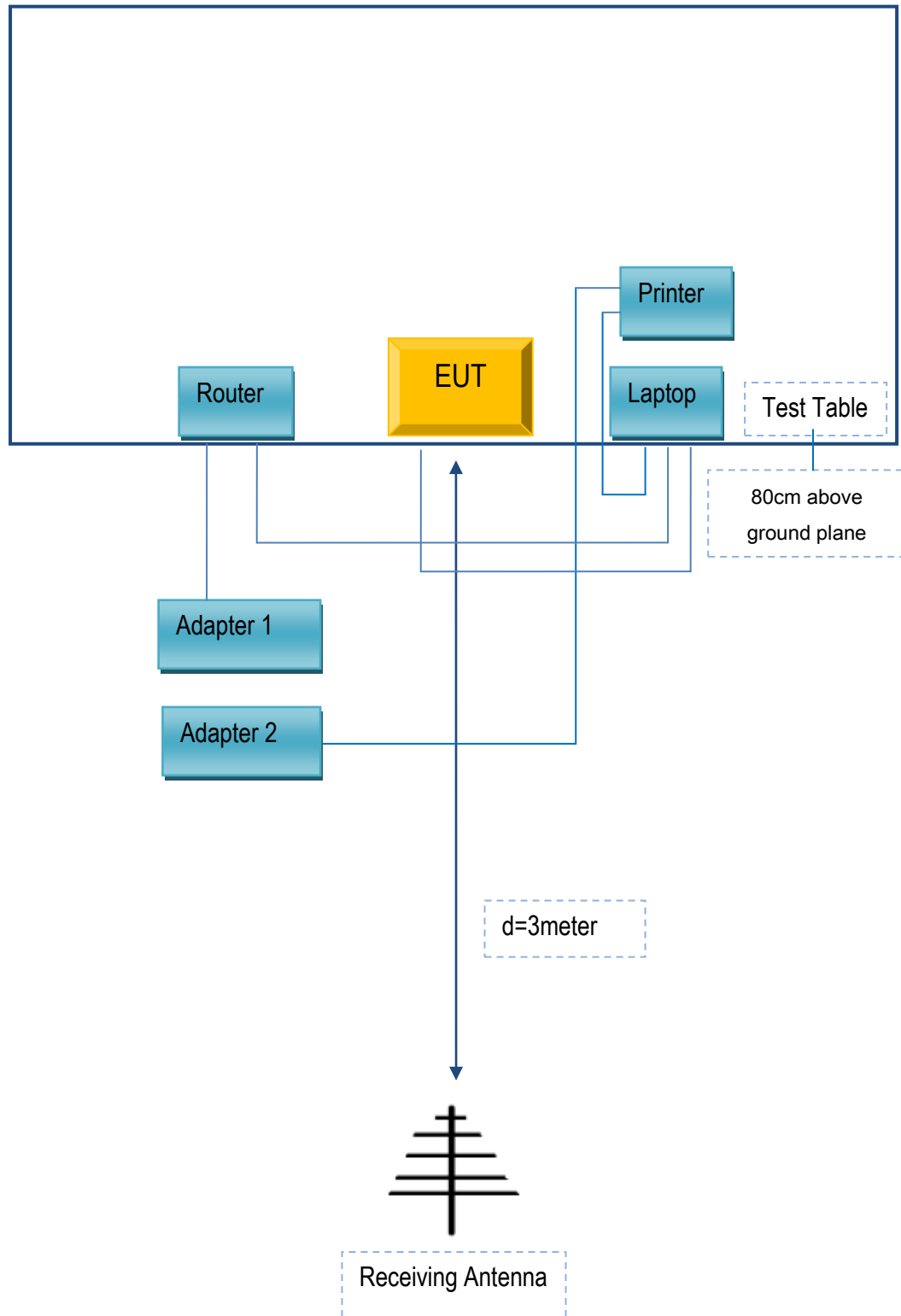
## Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

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

#### Block Configuration Diagram for Conducted Emissions



## Block Configuration Diagram for Radiated Emissions



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

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

### **Supporting Equipment:**

| Manufacturer | Equipment Description | Model      | Serial No     |
|--------------|-----------------------|------------|---------------|
| Lenovo       | Laptop                | E40        | LR-1EHRX      |
| GOLDWEB      | Router                | R102       | 1202032094    |
| Lenovo       | AC Adapter            | 42T4416    | 21D9JU        |
| HP           | Printer               | VCVRA-1003 | CN36M19JWX    |
| DELL         | Mouse                 | E100       | 912NMTUT41481 |
| BULL         | Socket                | GN-403     | GN201203      |

### **Supporting Cable:**

| Cable type          | Shield Type  | Ferrite Core | Length | Serial No |
|---------------------|--------------|--------------|--------|-----------|
| USB Cable           | Un-shielding | No           | 2m     | N/A       |
| USB Cable           | Un-shielding | No           | 2m     | N/A       |
| RJ45 Cable          | Un-shielding | No           | 2m     | N/A       |
| Router Power cable  | Un-shielding | No           | 2m     | N/A       |
| Printer Power cable | Un-shielding | No           | 2m     | N/A       |
| Power Cable         | Un-shielding | No           | 0.8m   | N/A       |



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

Please see the attachment

## Annex E. DECLARATION OF SIMILARITY

### 3D Connexion

To: SIEMIC

### Declaration Letter

Dear Sir,

For our business issue and marketing requirement, we would like to list serial model numbers on The CE reports, as following:

Model No: 3DX-600054

Serial Model No: 3DX-700062

Trade Name: 3Dconnexion

We declare that : 3DX-600054, 3DX-700062 all models the same PCB and Appearance shape, accessories ,the difference of these is listed as below:

| Main Model No | Serial Model No | Difference  |
|---------------|-----------------|---|
| 3DX-600054    | 3DX-700062      | 3DX-600054 is Product model<br>3DX-700062 is Market model |

Thank you!

Sincerely,

Client's signature :



Client's name: Xiaobing. lin

Title: Manager

Date:10/27/2017

Contact information : 3Dconnexion

Address : 33,Rue du Portier,9800 Monaco.