



# **FCC RADIO TEST REPORT**

## **FCC ID:O86T1500**

**Product :** 10.1 Inch Full Ruggedized Tablet

**Trade Name :** N/A

**Model Name :** xTablet T1500

**Serial Model :** N/A

**Report No. :** NTEK-2015NT1211614F5

### **Prepared for**

MobileDemand, LC.

1501 Boyson Square Drive Suite 101 Hiawatha, Iowa 52233, United States.

### **Prepared by**

Shenzhen NTEK Testing Technology Co., Ltd.

1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street  
Bao'an District, Shenzhen P.R. China

Tel.: +86-0755-61156588 Fax.: +86-0755-61156599

Website: [www.ntek.org.cn](http://www.ntek.org.cn)

**TEST RESULT CERTIFICATION****Applicant's name** ..... : MobileDemand, LC.Address ..... : 1501 Boyson Square Drive Suite 101 Hiawatha, Iowa 52233,  
United States.**Manufacture's Name** ..... : Emdoor Information Co., Ltd.Address ..... : 3A 1/F Jinfulai Tower, No. 49-1, Dabao Road, Baoan 28  
District, Shenzhen, China.**Product description**

Product name ..... : 10.1 Inch Full Ruggedized Tablet

Model and/or type reference : xTablet T1500

Serial Model : N/A

**Standards** ..... : FCC Part 15.225:01 Oct. 2015

Test procedure ..... ANSI C63.10-2013

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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**Date of Test** .....

Date (s) of performance of tests ..... : 11 Dec. 2015 ~ 15 Jan. 2016

Date of Issue ..... : 15 Jan. 2016

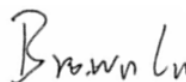
Test Result ..... : **Pass**

Testing Engineer :



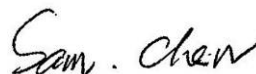
(Susan Su)

Technical Manager :



(Brown Lu)

Authorized Signatory :



(Sam Chen)

| Table of Contents                                           | Page      |
|-------------------------------------------------------------|-----------|
| <b>1 . SUMMARY OF TEST RESULTS</b>                          | <b>4</b>  |
| 1.1 TEST FACILITY                                           | 5         |
| 1.2 MEASUREMENT UNCERTAINTY                                 | 5         |
| <b>2 . GENERAL INFORMATION</b>                              | <b>6</b>  |
| 2.1 GENERAL DESCRIPTION OF EUT                              | 6         |
| 2.2 DESCRIPTION OF TEST MODES                               | 7         |
| 2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED | 8         |
| 2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)            | 10        |
| 2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS                      | 11        |
| <b>3 . ANTENNA REQUIREMENT</b>                              | <b>12</b> |
| 3.1 STANDARD REQUIREMENT                                    | 12        |
| 3.2 EUT ANTENNA                                             | 12        |
| <b>4 . EMC EMISSION TEST</b>                                | <b>13</b> |
| 4.1 CONDUCTED EMISSION MEASUREMENT                          | 13        |
| 4.1.1 POWER LINE CONDUCTED EMISSION LIMITS                  | 13        |
| 4.1.2 TEST PROCEDURE                                        | 14        |
| 4.1.3 DEVIATION FROM TEST STANDARD                          | 14        |
| 4.1.4 TEST SETUP                                            | 14        |
| 4.2 RADIATED EMISSION MEASUREMENT                           | 23        |
| 4.2.1 RADIATED EMISSION LIMITS                              | 23        |
| 4.2.2 TEST PROCEDURE                                        | 24        |
| 4.2.3 DEVIATION FROM TEST STANDARD                          | 24        |
| 4.2.4 TEST SETUP                                            | 25        |
| 4.2.5 TEST RESULTS (BELOW 30MHZ)                            | 26        |
| 4.2.6 TEST RESULTS (BETWEEN 30 – 1000 MHZ)                  | 28        |
| <b>5 . BANDWIDTH TEST</b>                                   | <b>30</b> |
| 5.1 TEST PROCEDURE                                          | 30        |
| 5.2 DEVIATION FROM STANDARD                                 | 30        |
| 5.3 TEST SETUP                                              | 30        |
| 5.4 TEST RESULTS                                            | 31        |
| <b>6. FREQUENCY TOLERANCE</b>                               | <b>32</b> |
| <b>7. EUT TEST PHOTO</b>                                    | <b>34</b> |
| APPENDIX-PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS          |           |

**1. SUMMARY OF TEST RESULTS**

Test procedures according to the technical standards:

| FCC Part15, Subpart C (15.231) |                            |          |        |
|--------------------------------|----------------------------|----------|--------|
| Standard Section               | Test Item                  | Judgment | Remark |
| 15.207                         | Conducted Emission         | Pass     |        |
| 15.205(a)<br>15.209<br>15.225  | Radiated Spurious Emission | Pass     |        |
| 15.225                         | 20dB Bandwidth             | Pass     |        |
| 15.225                         | Frequency Tolerance        | Pass     |        |
| 15.203                         | Antenna Requirement        | Pass     |        |

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report.

### 1.1 TEST FACILITY

NTEK Testing Technology Co., Ltd

Add. : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China.

FCC Registration No.:238937; IC Registration No.:9270A-1

CNAS Registration No.:L5516

### 1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

| No. | Item                         | Uncertainty               |
|-----|------------------------------|---------------------------|
| 1   | Conducted Emission Test      | $\pm 1.38\text{dB}$       |
| 2   | RF power,conducted           | $\pm 0.16\text{dB}$       |
| 3   | Spurious emissions,conducted | $\pm 0.21\text{dB}$       |
| 4   | All emissions,radiated(<1G)  | $\pm 4.68\text{dB}$       |
| 5   | All emissions,radiated(>1G)  | $\pm 4.89\text{dB}$       |
| 6   | Temperature                  | $\pm 0.5^{\circ}\text{C}$ |
| 7   | Humidity                     | $\pm 2\%$                 |

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

|                     |                                                                                  |              |
|---------------------|----------------------------------------------------------------------------------|--------------|
| Equipment           | 10.1 Inch Full Ruggedized Tablet                                                 |              |
| Trade Name          | N/A                                                                              |              |
| Model Name          | xTablet T1500                                                                    |              |
| Serial Model        | N/A                                                                              |              |
| Model Difference    | N/A                                                                              |              |
| Product Description | The EUT is a 10.1 Inch Full Ruggedized Tablet                                    |              |
|                     | Operation Frequency:                                                             | 13.56MHz     |
|                     | Modulation Type:                                                                 | ASK          |
|                     | Number Of Channel                                                                | 1CH.         |
|                     | Antenna Designation:                                                             | FPCB Antenna |
|                     | Antenna Gain(Peak)                                                               | 1.0 dBi      |
| Adapter             | Model:AW018WR-0500300UH<br>Input: AC100-240V~, 50/60Hz,0.5A<br>Output: 5V---, 3A |              |
| Battery             | DC 3.7V,10000mAh                                                                 |              |

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.

Table for Filed Antenna

| Ant | Brand | Model Name | Antenna Type | Connector | Gain (dBi) | NOTE    |
|-----|-------|------------|--------------|-----------|------------|---------|
| 1   | N/A   | N/A        | FPCB Antenna | N/A       | 1.0        | Antenna |

## 2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

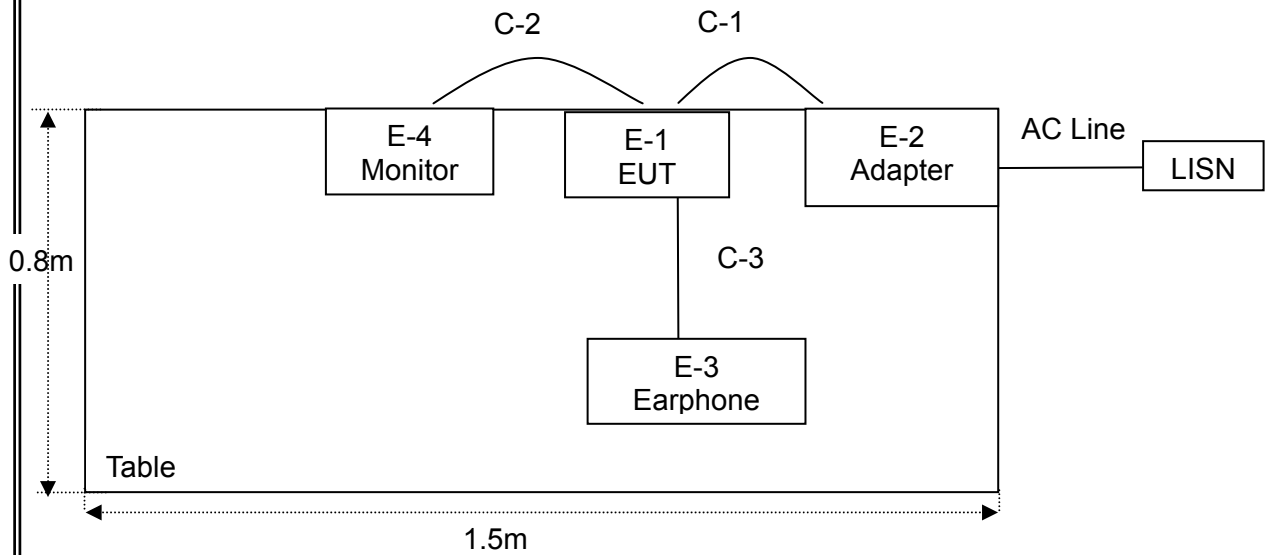
| Pretest Mode | Description |
|--------------|-------------|
| Mode 1       | TX          |

| For Conducted Emission |             |
|------------------------|-------------|
| Final Test Mode        | Description |
| Mode 1                 | TX          |

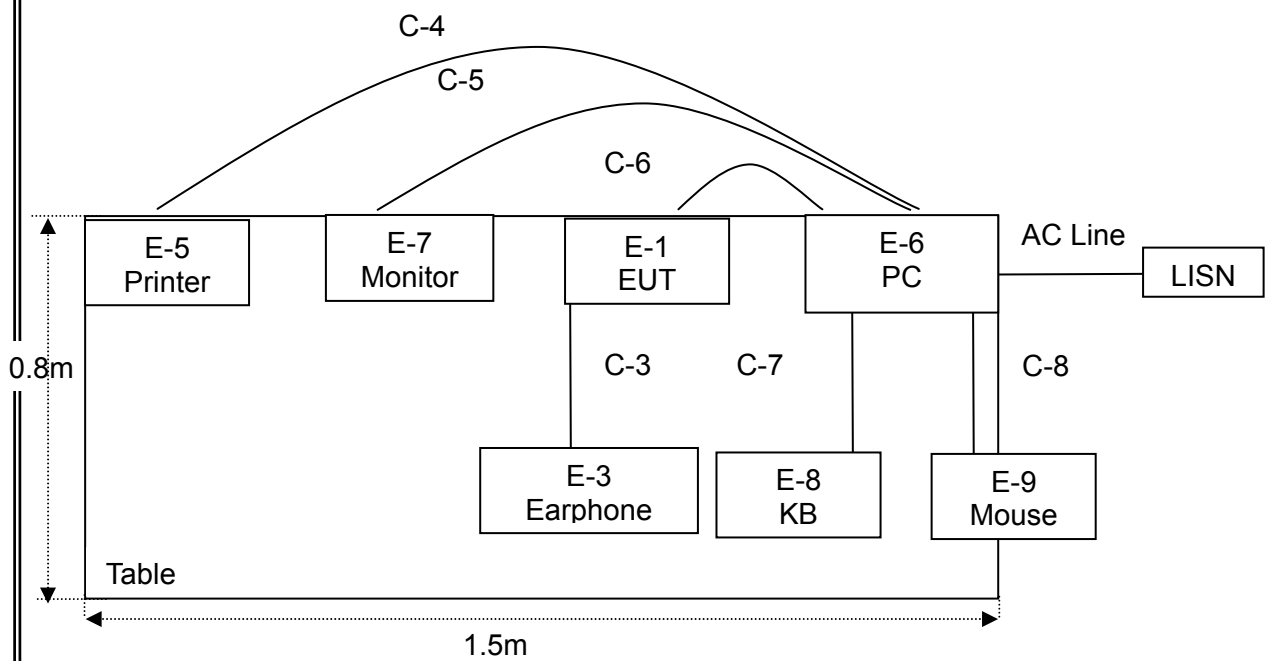
| For Radiated Emission |             |
|-----------------------|-------------|
| Final Test Mode       | Description |
| Mode 1                | TX          |

### 2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

#### Conducted Emission Test 1



#### Conducted Emission Test 2



Radiated Spurious Emission Test

E-1  
EUT

## 2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Item | Equipment                        | Brand | Model/Type No.    | Series No.               | Note |
|------|----------------------------------|-------|-------------------|--------------------------|------|
| E-1  | 10.1 Inch Full Ruggedized Tablet | N/A   | xTablet T1500     | N/A                      | E-1  |
| E-2  | ADAPTER                          | N/A   | AW018WR-0500300UH | N/A                      | E-2  |
| E-3  | Earphone                         | N/A   | 2688              | N/A                      | E-3  |
| E-4  | Monitor                          | SONY  | KDL-24EX520       | N/A                      | E-4  |
| E-5  | Printer                          | Canon | L11121E           | LBP2900                  | E-5  |
| E-6  | Personal computer                | DELL  | FT4Y23X           | 34413561645              | E-6  |
| E-7  | Monitor                          | DELL  | IN2020MB          | cn-0y6mhx-74261-11f-67es | E-7  |
| E-8  | Keyboard                         | DELL  | SK-8185           | OY526KUS                 | E-8  |
| E-9  | Mouse                            | DELL  | MS111-P           | cn-011d3v-71581-11e-1th7 | E-9  |
|      |                                  |       |                   |                          |      |

| Item | Cable Type | Shielded Type | Ferrite Core | Length | Note |
|------|------------|---------------|--------------|--------|------|
| C-1  | Power line | NO            | YES          | 1.2m   |      |
| C-2  | HDMI       | NO            | NO           | 1.0m   |      |
| C-3  | Earphone   | NO            | NO           | 1.0m   |      |
| C-4  | USB Cable  | NO            | NO           | 1.0m   |      |
| C-5  | HDMI       | NO            | NO           | 1.0m   |      |
| C-6  | USB Cable  | NO            | NO           | 1.0m   |      |
| C-7  | USB Cable  | NO            | NO           | 1.0m   |      |
| C-8  | USB Cable  | NO            | NO           | 1.0m   |      |

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

## 2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

### Radiation Test equipment

| Item | Kind of Equipment  | Manufacturer | Type No.    | Serial No.   | Last calibration | Calibrated until | Calibration period |
|------|--------------------|--------------|-------------|--------------|------------------|------------------|--------------------|
| 1    | Spectrum Analyzer  | Agilent      | E4407B      | MY45108040   | 2015.07.06       | 2016.07.05       | 1 year             |
| 2    | Test Receiver      | R&S          | ESPI        | 101318       | 2015.06.07       | 2016.06.06       | 1 year             |
| 3    | Bilog Antenna      | TESEQ        | CBL6111D    | 31216        | 2015.07.06       | 2016.07.05       | 1 year             |
| 4    | 50Ω Coaxial Switch | Anritsu      | MP59B       | 6200264416   | 2015.06.07       | 2016.06.06       | 1 year             |
| 5    | Spectrum Analyzer  | ADVANTEST    | R3132       | 150900201    | 2015.06.07       | 2016.06.06       | 1 year             |
| 6    | Horn Antenna       | EM           | EM-AH-10180 | 2011071402   | 2015.07.06       | 2016.07.05       | 1 year             |
| 7    | Horn Ant           | Schwarzbeck  | BBHA 9170   | 9170-181     | 2015.07.06       | 2016.07.05       | 1 year             |
| 8    | Amplifier          | EM           | EM-30180    | 060538       | 2015.12.22       | 2016.12.21       | 1 year             |
| 9    | Loop Antenna       | ARA          | PLA-1030/B  | 1029         | 2015.06.08       | 2016.06.07       | 1 year             |
| 10   | Power Meter        | R&S          | NRVS        | 100696       | 2015.07.06       | 2016.07.05       | 1 year             |
| 11   | Power Sensor       | R&S          | URV5-Z4     | 0395.1619.05 | 2015.07.06       | 2016.07.05       | 1 year             |

### Conduction Test equipment

| Item | Kind of Equipment     | Manufacturer | Type No. | Serial No. | Last calibration | Calibrated until | Calibration period |
|------|-----------------------|--------------|----------|------------|------------------|------------------|--------------------|
| 1    | Test Receiver         | R&S          | ESCI     | 101160     | 2015.06.06       | 2016.06.05       | 1 year             |
| 2    | LISN                  | R&S          | ENV216   | 101313     | 2015.08.24       | 2016.08.23       | 1 year             |
| 3    | LISN                  | EMCO         | 3816/2   | 00042990   | 2015.08.24       | 2016.08.23       | 1 year             |
| 4    | 50Ω Coaxial Switch    | Anritsu      | MP59B    | 6200264417 | 2015.06.07       | 2016.06.06       | 1 year             |
| 5    | Passive Voltage Probe | R&S          | ESH2-Z3  | 100196     | 2015.06.07       | 2016.06.06       | 1 year             |
| 6    | Absorbing clamp       | R&S          | MOS-21   | 100423     | 2015.06.08       | 2016.06.07       | 1 year             |

### **3. ANTENNA REQUIREMENT**

#### **3.1 STANDARD REQUIREMENT**

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

#### **3.2 EUT ANTENNA**

The EUT antenna is permanent attached antenna. It comply with the standard requirement.

#### 4. EMC EMISSION TEST

##### 4.1 CONDUCTED EMISSION MEASUREMENT

##### 4.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

| FREQUENCY (MHz) | Class A (dBuV) |         | Class B (dBuV) |           | Standard |
|-----------------|----------------|---------|----------------|-----------|----------|
|                 | Quasi-peak     | Average | Quasi-peak     | Average   |          |
| 0.15 -0.5       |                |         | 66 - 56 *      | 56 - 46 * | CISPR    |
| 0.50 -5.0       |                |         | 56.00          | 46.00     | CISPR    |
| 5.0 -30.0       |                |         | 60.00          | 50.00     | CISPR    |

|           |  |  |           |           |        |
|-----------|--|--|-----------|-----------|--------|
| 0.15 -0.5 |  |  | 66 - 56 * | 56 - 46 * | LP002. |
| 0.50 -5.0 |  |  | 56.00     | 46.00     | LP002. |
| 5.0 -30.0 |  |  | 60.00     | 50.00     | LP002. |

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

| Receiver Parameters | Setting  |
|---------------------|----------|
| Attenuation         | 10 dB    |
| Start Frequency     | 0.15 MHz |
| Stop Frequency      | 30 MHz   |
| IF Bandwidth        | 9 kHz    |

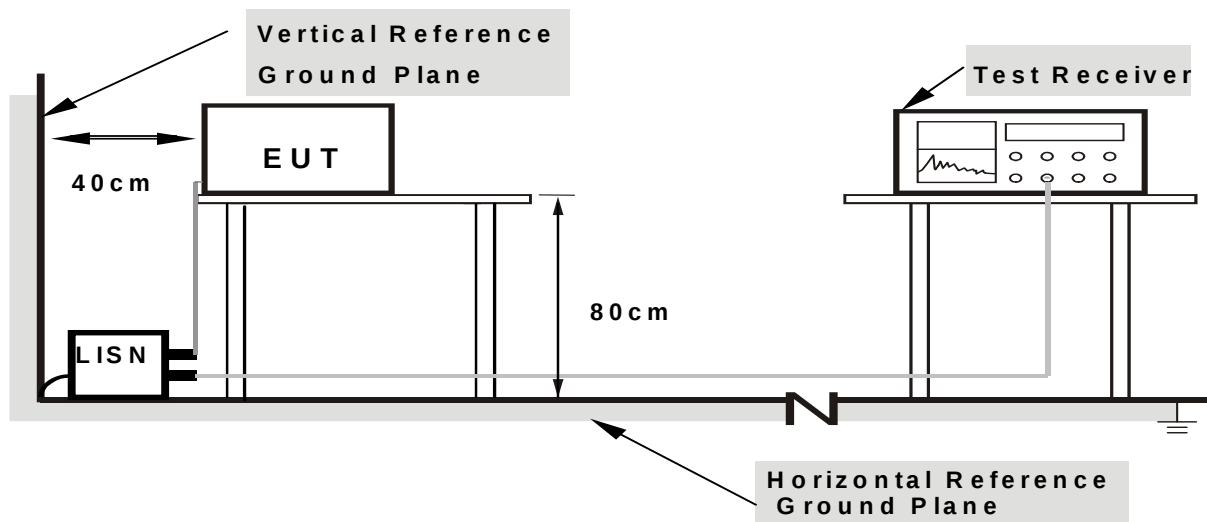
#### 4.1.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

### 4.1.3 DEVIATION FROM TEST STANDARD

No deviation

#### 4.1.4 TEST SETUP



**Note: 1.Support units were connected to second LISN.**

**2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes**

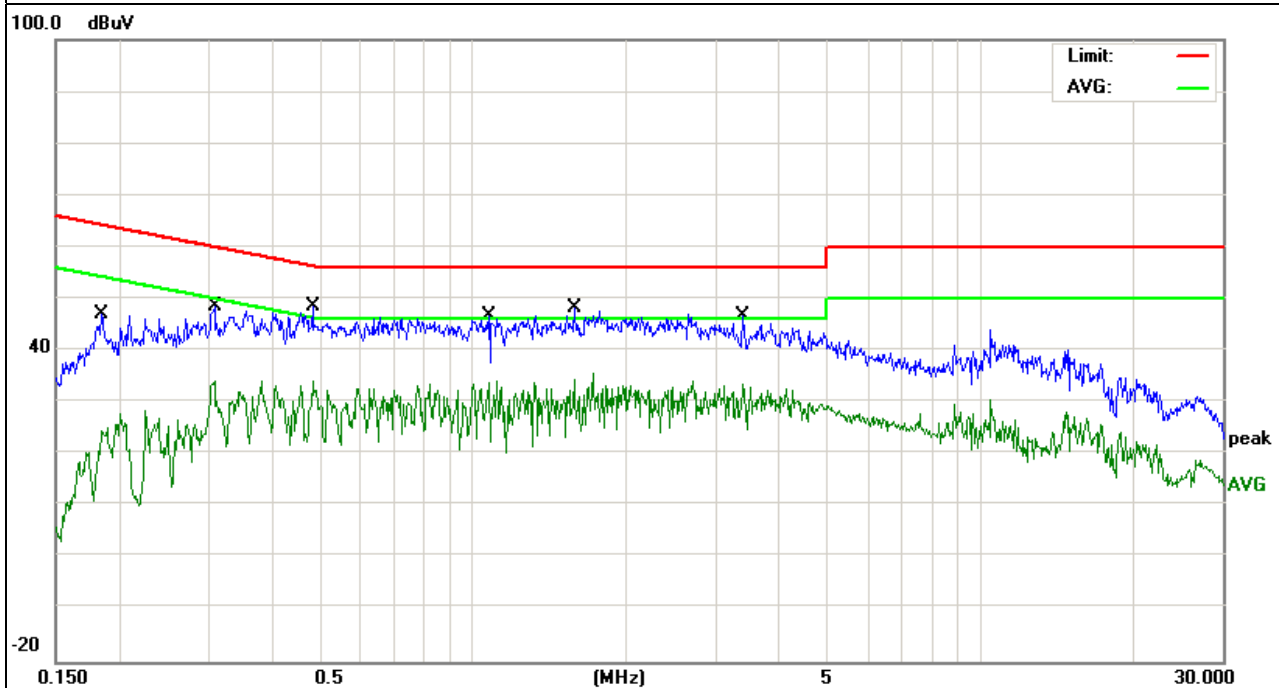
#### 4.1.5 TEST RESULT

|                |                                   |                     |               |
|----------------|-----------------------------------|---------------------|---------------|
| EUT :          | 10.1 Inch Full Ruggedized Tablet  | Model Name :        | xTablet T1500 |
| Temperature :  | 26 °C                             | Relative Humidity : | 54%           |
| Pressure :     | 1010hPa                           | Phase :             | L             |
| Test Voltage : | DC 5.0V from adapter AC 120V/60Hz | Test Mode :         | Mode 1        |

| Frequency | Reading Level | Correct Factor | Measure-ment | Limits | Margin | Remark |
|-----------|---------------|----------------|--------------|--------|--------|--------|
| (MHz)     | (dBμV)        | (dB)           | (dBμV)       | (dBμV) | (dB)   |        |
| 0.1844    | 37.64         | 9.46           | 47.10        | 64.28  | -17.18 | QP     |
| 0.1844    | 10.46         | 9.46           | 19.92        | 54.28  | -34.36 | AVG    |
| 0.3082    | 38.96         | 9.54           | 48.50        | 60.02  | -11.52 | QP     |
| 0.3082    | 23.97         | 9.54           | 33.51        | 50.02  | -16.51 | AVG    |
| 0.4818    | 39.22         | 9.48           | 48.70        | 56.31  | -7.61  | QP     |
| 0.4818    | 19.82         | 9.48           | 29.30        | 46.31  | -17.01 | AVG    |
| 1.0740    | 37.14         | 9.56           | 46.70        | 56.00  | -9.30  | QP     |
| 1.0740    | 21.16         | 9.56           | 30.72        | 46.00  | -15.28 | AVG    |
| 1.5820    | 38.64         | 9.56           | 48.20        | 56.00  | -7.80  | QP     |
| 1.5820    | 20.63         | 9.56           | 30.19        | 46.00  | -15.81 | AVG    |
| 3.3820    | 37.13         | 9.64           | 46.77        | 56.00  | -9.23  | QP     |
| 3.3820    | 23.83         | 9.64           | 33.47        | 46.00  | -12.53 | AVG    |

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

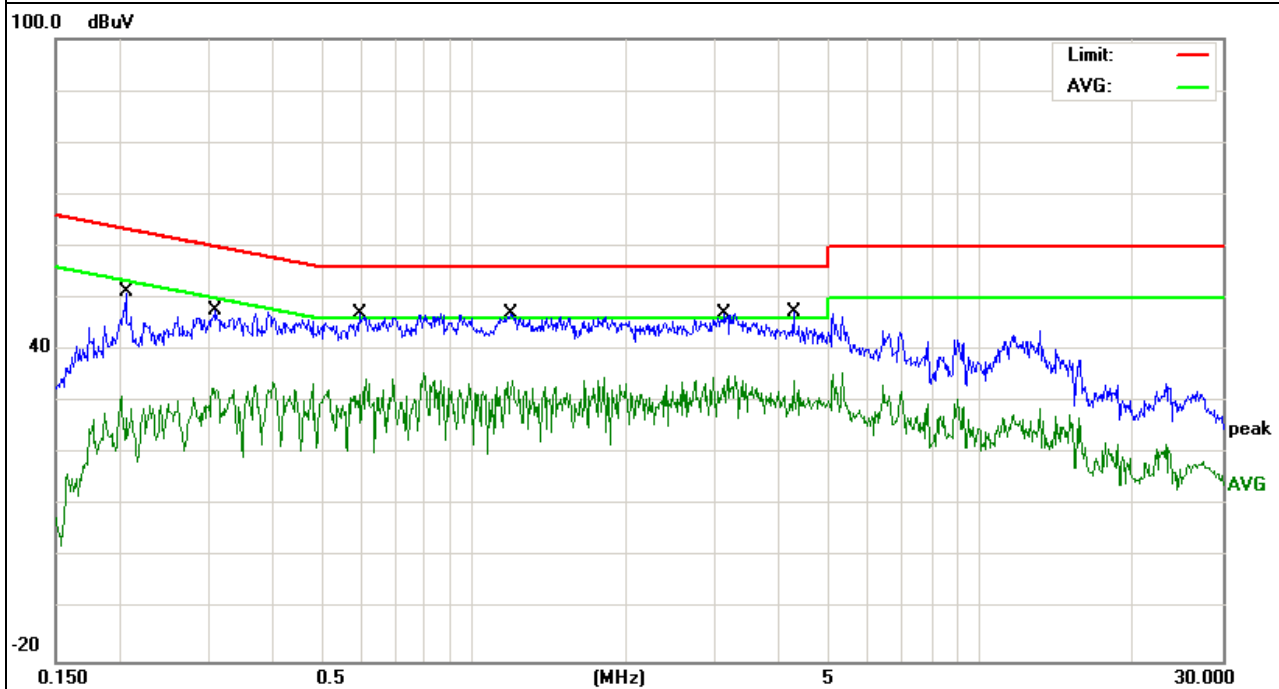


|                |                                   |                     |               |
|----------------|-----------------------------------|---------------------|---------------|
| EUT :          | 10.1 Inch Full Ruggedized Tablet  | Model Name :        | xTablet T1500 |
| Temperature :  | 26 °C                             | Relative Humidity : | 54%           |
| Pressure :     | 1010hPa                           | Phase :             | N             |
| Test Voltage : | DC 5.0V from adapter AC 120V/60Hz | Test Mode :         | Mode 1        |

| Frequency | Reading Level | Correct Factor | Measure-ment | Limits | Margin | Remark |
|-----------|---------------|----------------|--------------|--------|--------|--------|
| (MHz)     | (dBμV)        | (dB)           | (dBμV)       | (dBμV) | (dB)   |        |
| 0.2061    | 41.64         | 9.46           | 51.10        | 63.36  | -12.26 | QP     |
| 0.2061    | 13.45         | 9.46           | 22.91        | 53.36  | -30.45 | AVG    |
| 0.3099    | 38.36         | 9.44           | 47.80        | 59.97  | -12.17 | QP     |
| 0.3099    | 22.57         | 9.44           | 32.01        | 49.97  | -17.96 | AVG    |
| 0.5947    | 37.55         | 9.45           | 47.00        | 56.00  | -9.00  | QP     |
| 0.5947    | 19.54         | 9.45           | 28.99        | 46.00  | -17.01 | AVG    |
| 1.1895    | 37.56         | 9.44           | 47.00        | 56.00  | -9.00  | QP     |
| 1.1895    | 20.86         | 9.44           | 30.30        | 46.00  | -15.70 | AVG    |
| 3.1299    | 37.73         | 9.47           | 47.20        | 56.00  | -8.80  | QP     |
| 3.1299    | 23.76         | 9.47           | 33.23        | 46.00  | -12.77 | AVG    |
| 4.2738    | 37.72         | 9.48           | 47.20        | 56.00  | -8.80  | QP     |
| 4.2738    | 21.27         | 9.48           | 30.75        | 46.00  | -15.25 | AVG    |

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

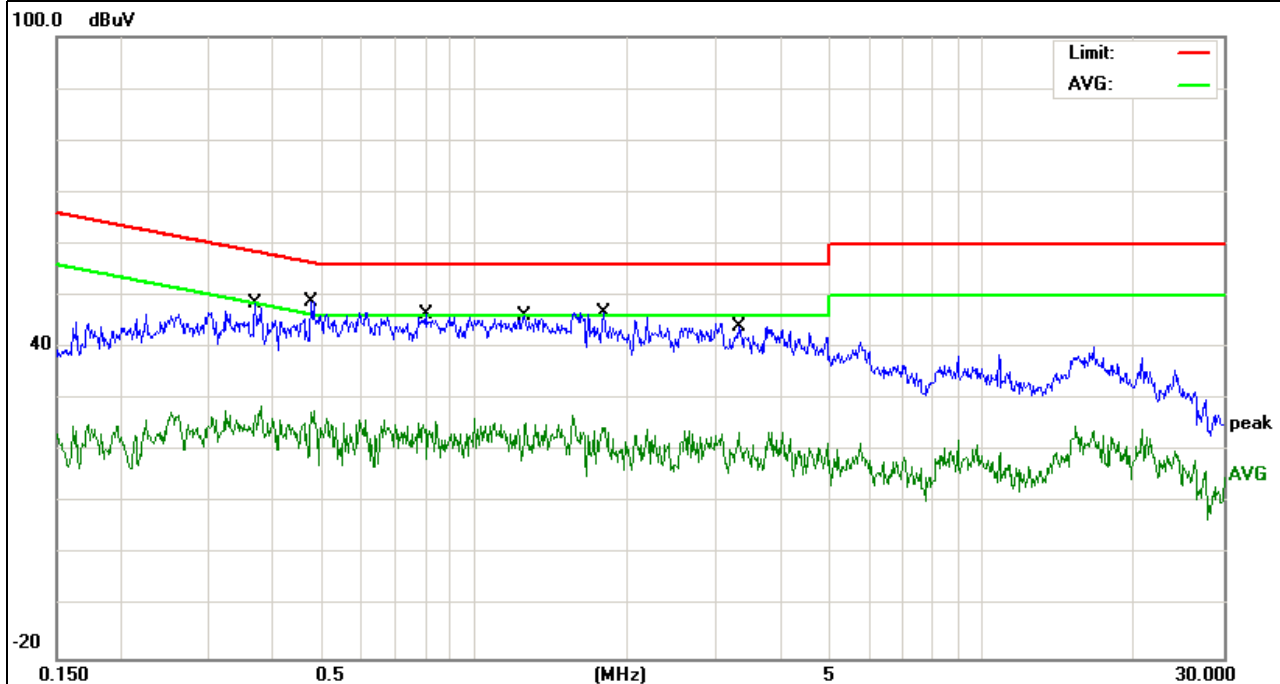


|                |                                   |                     |               |
|----------------|-----------------------------------|---------------------|---------------|
| EUT :          | 10.1 Inch Full Ruggedized Tablet  | Model Name :        | xTablet T1500 |
| Temperature :  | 26 °C                             | Relative Humidity : | 54%           |
| Pressure :     | 1010hPa                           | Phase :             | L             |
| Test Voltage : | DC 5.0V from adapter AC 240V/60Hz | Test Mode :         | Mode 1        |

| Frequency | Reading Level | Correct Factor | Measure-ment | Limits | Margin | Remark |
|-----------|---------------|----------------|--------------|--------|--------|--------|
| (MHz)     | (dBμV)        | (dB)           | (dBμV)       | (dBμV) | (dB)   |        |
| 0.3699    | 39.32         | 9.28           | 48.60        | 58.50  | -9.90  | QP     |
| 0.3699    | 17.80         | 9.28           | 27.08        | 48.50  | -21.42 | AVG    |
| 0.4778    | 39.44         | 9.46           | 48.90        | 56.38  | -7.48  | QP     |
| 0.4778    | 17.99         | 9.46           | 27.45        | 46.38  | -18.93 | AVG    |
| 0.8020    | 36.93         | 9.57           | 46.50        | 56.00  | -9.50  | QP     |
| 0.8020    | 9.07          | 9.57           | 18.64        | 46.00  | -27.36 | AVG    |
| 1.2540    | 36.63         | 9.57           | 46.20        | 56.00  | -9.80  | QP     |
| 1.2540    | 9.95          | 9.57           | 19.52        | 46.00  | -26.48 | AVG    |
| 1.8020    | 37.23         | 9.57           | 46.80        | 56.00  | -9.20  | QP     |
| 1.8020    | 14.90         | 9.57           | 24.47        | 46.00  | -21.53 | AVG    |
| 3.3180    | 34.46         | 9.64           | 44.10        | 56.00  | -11.90 | QP     |
| 3.3180    | 11.34         | 9.64           | 20.98        | 46.00  | -25.02 | AVG    |

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

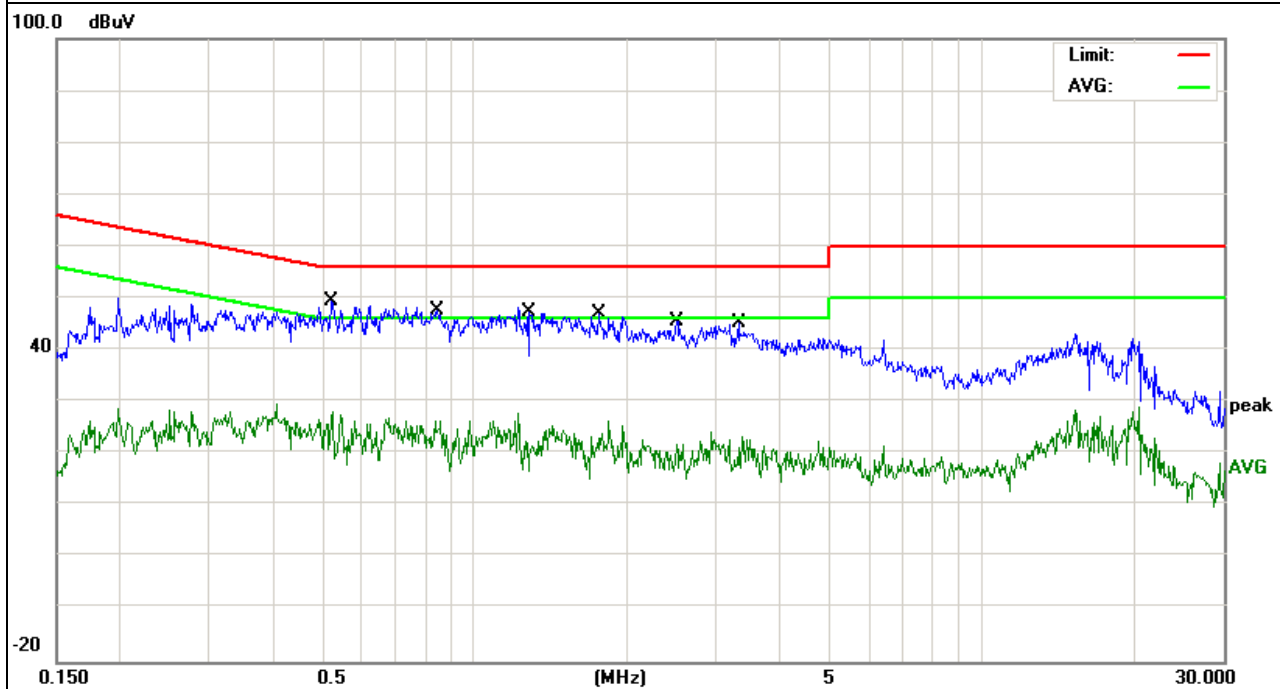


|                |                                   |                     |               |
|----------------|-----------------------------------|---------------------|---------------|
| EUT :          | 10.1 Inch Full Ruggedized Tablet  | Model Name :        | xTablet T1500 |
| Temperature :  | 26 °C                             | Relative Humidity : | 54%           |
| Pressure :     | 1010hPa                           | Phase :             | N             |
| Test Voltage : | DC 5.0V from adapter AC 240V/60Hz | Test Mode :         | Mode 1        |

| Frequency | Reading Level | Correct Factor | Measure-ment | Limits | Margin | Remark |
|-----------|---------------|----------------|--------------|--------|--------|--------|
| (MHz)     | (dBμV)        | (dB)           | (dBμV)       | (dBμV) | (dB)   |        |
| 0.5220    | 40.04         | 9.46           | 49.50        | 56.00  | -6.50  | QP     |
| 0.5220    | 16.60         | 9.46           | 26.06        | 46.00  | -19.94 | AVG    |
| 0.8457    | 38.17         | 9.43           | 47.60        | 56.00  | -8.40  | QP     |
| 0.8457    | 14.72         | 9.43           | 24.15        | 46.00  | -21.85 | AVG    |
| 1.2860    | 37.75         | 9.45           | 47.20        | 56.00  | -8.80  | QP     |
| 1.2860    | 10.09         | 9.45           | 19.54        | 46.00  | -26.46 | AVG    |
| 1.7580    | 37.54         | 9.46           | 47.00        | 56.00  | -9.00  | QP     |
| 1.7580    | 11.89         | 9.46           | 21.35        | 46.00  | -24.65 | AVG    |
| 2.5099    | 36.13         | 9.47           | 45.60        | 56.00  | -10.40 | QP     |
| 2.5099    | 7.97          | 9.47           | 17.44        | 46.00  | -28.56 | AVG    |
| 3.3140    | 35.93         | 9.47           | 45.40        | 56.00  | -10.60 | QP     |
| 3.3140    | 7.83          | 9.47           | 17.30        | 46.00  | -28.70 | AVG    |

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

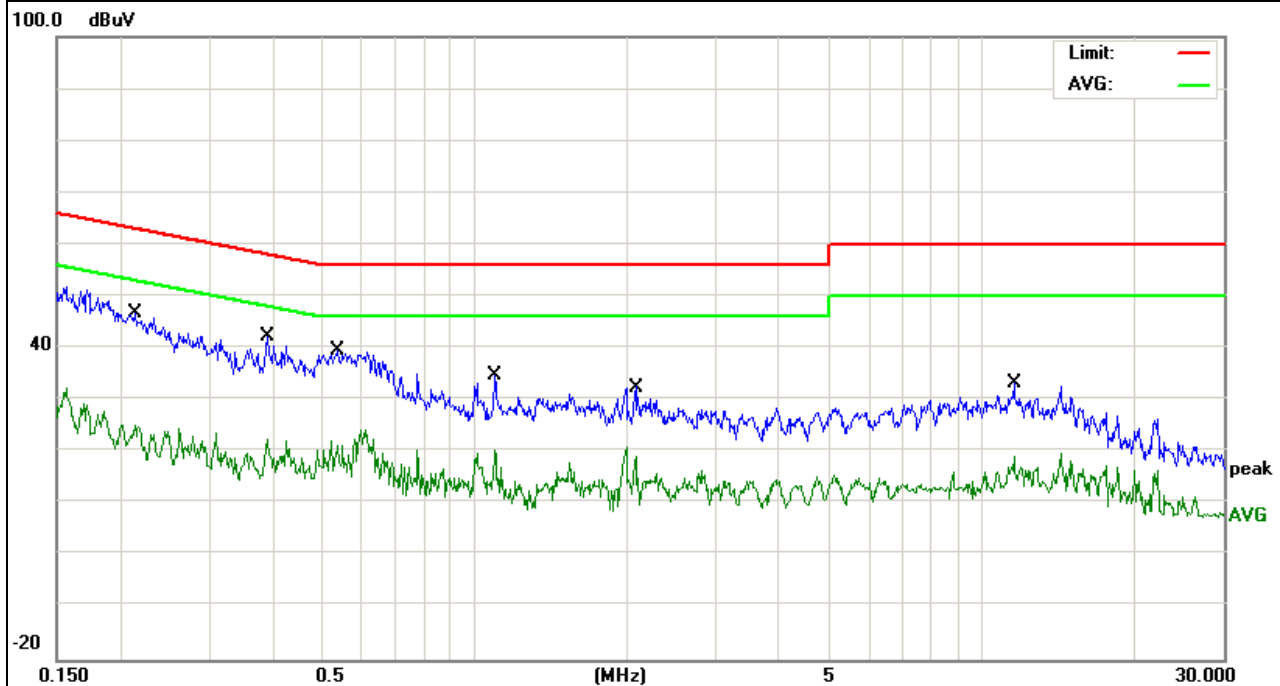


|                |                                  |                     |               |
|----------------|----------------------------------|---------------------|---------------|
| EUT :          | 10.1 Inch Full Ruggedized Tablet | Model Name :        | xTablet T1500 |
| Temperature :  | 26 °C                            | Relative Humidity : | 54%           |
| Pressure :     | 1010hPa                          | Phase :             | L             |
| Test Voltage : | DC 5.0V from PC AC 120V/60Hz     | Test Mode :         | Mode 1        |

| Frequency | Reading Level | Correct Factor | Measure-ment | Limits | Margin | Remark |
|-----------|---------------|----------------|--------------|--------|--------|--------|
| (MHz)     | (dBμV)        | (dB)           | (dBμV)       | (dBμV) | (dB)   |        |
| 0.2139    | 37.34         | 9.46           | 46.80        | 63.05  | -16.25 | QP     |
| 0.2139    | 13.94         | 9.46           | 23.40        | 53.05  | -29.65 | AVG    |
| 0.3911    | 32.96         | 9.44           | 42.40        | 58.04  | -15.64 | QP     |
| 0.3911    | 12.97         | 9.44           | 22.41        | 48.04  | -25.63 | AVG    |
| 0.5380    | 30.05         | 9.45           | 39.50        | 56.00  | -16.50 | QP     |
| 0.5380    | 10.71         | 9.45           | 20.16        | 46.00  | -25.84 | AVG    |
| 1.0980    | 25.36         | 9.44           | 34.80        | 56.00  | -21.20 | QP     |
| 1.0980    | 10.86         | 9.44           | 20.30        | 46.00  | -25.70 | AVG    |
| 2.0859    | 23.04         | 9.46           | 32.50        | 56.00  | -23.50 | QP     |
| 2.0859    | 4.37          | 9.46           | 13.83        | 46.00  | -32.17 | AVG    |
| 11.5859   | 23.59         | 9.71           | 33.30        | 60.00  | -26.70 | QP     |
| 11.5859   | 6.46          | 9.71           | 16.17        | 50.00  | -33.83 | AVG    |

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

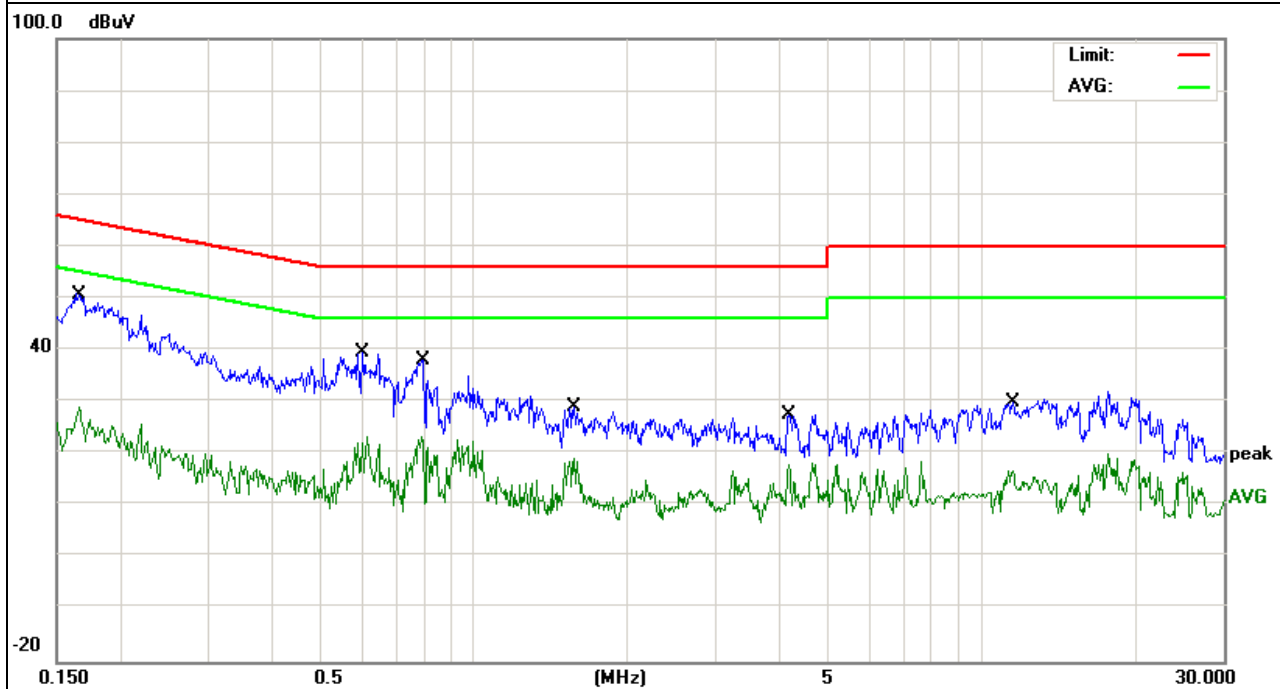


|                |                                  |                     |               |
|----------------|----------------------------------|---------------------|---------------|
| EUT :          | 10.1 Inch Full Ruggedized Tablet | Model Name :        | xTablet T1500 |
| Temperature :  | 26 °C                            | Relative Humidity : | 54%           |
| Pressure :     | 1010hPa                          | Phase :             | N             |
| Test Voltage : | DC 5.0V from PC AC 120V/60Hz     | Test Mode :         | Mode 1        |

| Frequency | Reading Level | Correct Factor | Measure-ment | Limits | Margin | Remark |
|-----------|---------------|----------------|--------------|--------|--------|--------|
| (MHz)     | (dBμV)        | (dB)           | (dBμV)       | (dBμV) | (dB)   |        |
| 0.1660    | 41.14         | 9.46           | 50.60        | 65.15  | -14.55 | QP     |
| 0.1660    | 19.49         | 9.46           | 28.95        | 55.15  | -26.20 | AVG    |
| 0.6018    | 30.26         | 9.44           | 39.70        | 56.00  | -16.30 | QP     |
| 0.6018    | 6.92          | 9.44           | 16.36        | 46.00  | -29.64 | AVG    |
| 0.7940    | 28.67         | 9.43           | 38.10        | 56.00  | -17.90 | QP     |
| 0.7940    | 0.94          | 9.43           | 10.37        | 46.00  | -35.63 | AVG    |
| 1.5700    | 19.75         | 9.45           | 29.20        | 56.00  | -26.80 | QP     |
| 1.5700    | 6.16          | 9.45           | 15.61        | 46.00  | -30.39 | AVG    |
| 4.1619    | 18.23         | 9.47           | 27.70        | 56.00  | -28.30 | QP     |
| 4.1619    | 8.53          | 9.47           | 18.00        | 46.00  | -28.00 | AVG    |
| 11.5297   | 20.19         | 9.71           | 29.90        | 60.00  | -30.10 | QP     |
| 11.5297   | 7.05          | 9.71           | 16.76        | 50.00  | -33.24 | AVG    |

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

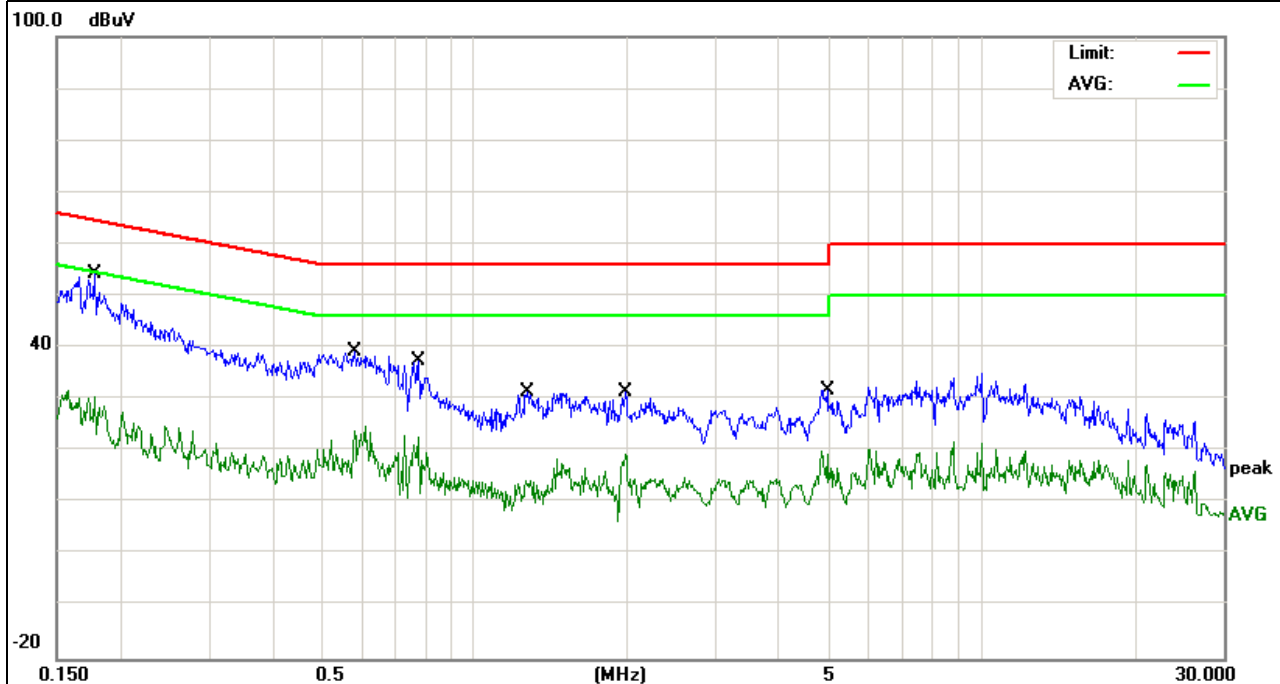


|                |                                  |                     |               |
|----------------|----------------------------------|---------------------|---------------|
| EUT :          | 10.1 Inch Full Ruggedized Tablet | Model Name :        | xTablet T1500 |
| Temperature :  | 26 °C                            | Relative Humidity : | 54%           |
| Pressure :     | 1010hPa                          | Phase :             | L             |
| Test Voltage : | DC 5.0V from PC AC 240V/60Hz     | Test Mode :         | Mode 1        |

| Frequency | Reading Level | Correct Factor | Measure-ment | Limits | Margin | Remark |
|-----------|---------------|----------------|--------------|--------|--------|--------|
| (MHz)     | (dBμV)        | (dB)           | (dBμV)       | (dBμV) | (dB)   |        |
| 0.1779    | 44.94         | 9.46           | 54.40        | 64.58  | -10.18 | QP     |
| 0.1779    | 13.87         | 9.46           | 23.33        | 54.58  | -31.25 | AVG    |
| 0.5816    | 29.85         | 9.45           | 39.30        | 56.00  | -16.70 | QP     |
| 0.5816    | 14.49         | 9.45           | 23.94        | 46.00  | -22.06 | AVG    |
| 0.7780    | 28.07         | 9.43           | 37.50        | 56.00  | -18.50 | QP     |
| 0.7780    | 2.40          | 9.43           | 11.83        | 46.00  | -34.17 | AVG    |
| 1.2700    | 21.95         | 9.45           | 31.40        | 56.00  | -24.60 | QP     |
| 1.2700    | 3.93          | 9.45           | 13.38        | 46.00  | -32.62 | AVG    |
| 1.9899    | 22.04         | 9.46           | 31.50        | 56.00  | -24.50 | QP     |
| 1.9899    | 10.02         | 9.46           | 19.48        | 46.00  | -26.52 | AVG    |
| 4.9579    | 22.41         | 9.49           | 31.90        | 56.00  | -24.10 | QP     |
| 4.9579    | 4.63          | 9.49           | 14.12        | 46.00  | -31.88 | AVG    |

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

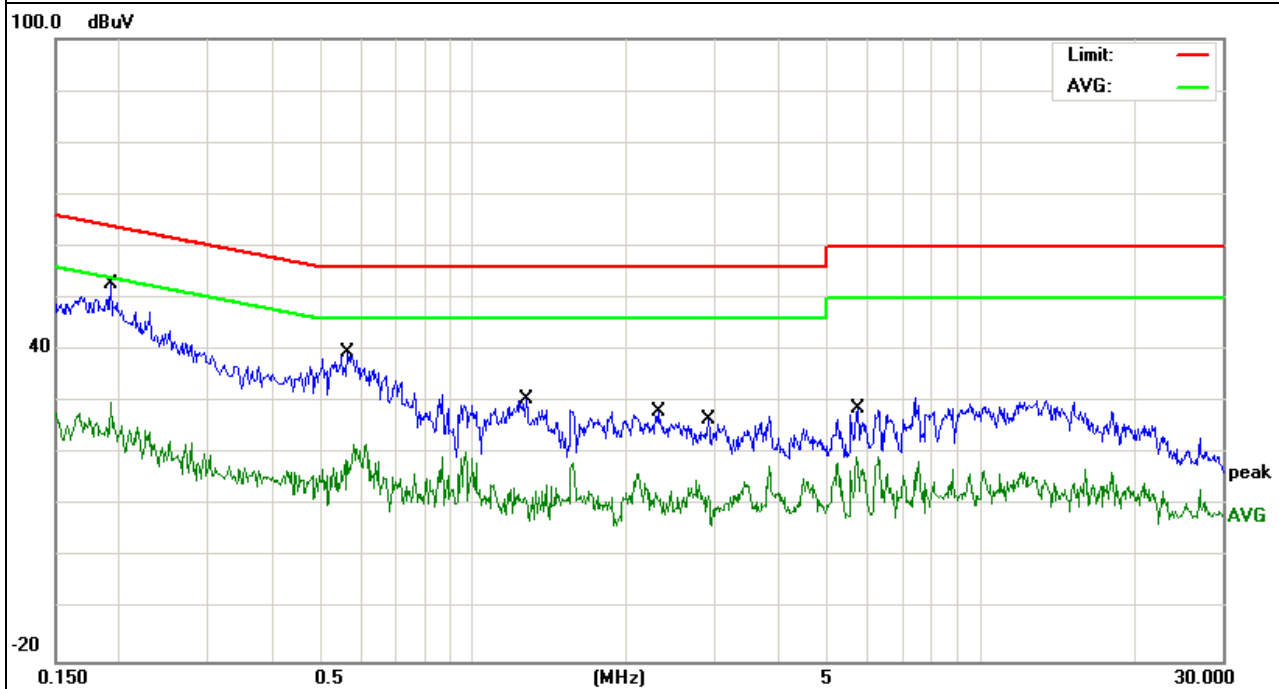


|                |                                  |                     |               |
|----------------|----------------------------------|---------------------|---------------|
| EUT :          | 10.1 Inch Full Ruggedized Tablet | Model Name :        | xTablet T1500 |
| Temperature :  | 26 °C                            | Relative Humidity : | 54%           |
| Pressure :     | 1010hPa                          | Phase :             | N             |
| Test Voltage : | DC 5.0V from PC AC 240V/60Hz     | Test Mode :         | Mode 1        |

| Frequency | Reading Level | Correct Factor | Measure-ment | Limits | Margin | Remark |
|-----------|---------------|----------------|--------------|--------|--------|--------|
| (MHz)     | (dBμV)        | (dB)           | (dBμV)       | (dBμV) | (dB)   |        |
| 0.1922    | 43.24         | 9.46           | 52.70        | 63.94  | -11.24 | QP     |
| 0.1922    | 17.85         | 9.46           | 27.31        | 53.94  | -26.63 | AVG    |
| 0.5655    | 30.05         | 9.45           | 39.50        | 56.00  | -16.50 | QP     |
| 0.5655    | 3.72          | 9.45           | 13.17        | 46.00  | -32.83 | AVG    |
| 1.2700    | 21.19         | 9.45           | 30.64        | 56.00  | -25.36 | QP     |
| 1.2700    | 2.26          | 9.45           | 11.71        | 46.00  | -34.29 | AVG    |
| 2.3140    | 18.74         | 9.46           | 28.20        | 56.00  | -27.80 | QP     |
| 2.3140    | 1.81          | 9.46           | 11.27        | 46.00  | -34.73 | AVG    |
| 2.9100    | 17.12         | 9.47           | 26.59        | 56.00  | -29.41 | QP     |
| 2.9100    | 2.38          | 9.47           | 11.85        | 46.00  | -34.15 | AVG    |
| 5.7217    | 19.40         | 9.50           | 28.90        | 60.00  | -31.10 | QP     |
| 5.7217    | 4.88          | 9.50           | 14.38        | 50.00  | -35.62 | AVG    |

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 Radiated Emission Limits ( FCC 15.209 )

| Frequencies<br>(MHz) | Field Strength<br>(microvolts/meter) | Measurement Distance<br>(meters) |
|----------------------|--------------------------------------|----------------------------------|
| 0.009~0.490          | 2400/F(KHz)                          | 300                              |
| 0.490~1.705          | 24000/F(KHz)                         | 30                               |
| 1.705~30.0           | 30                                   | 30                               |
| 30~88                | 100                                  | 3                                |
| 88~216               | 150                                  | 3                                |
| 216~960              | 200                                  | 3                                |
| Above 960            | 500                                  | 3                                |

Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission level (dBuV/m)=20log Emission level (uV/m).

### LIMITS OF RADIATED EMISSION MEASUREMENT ( FCC 15.225)

- (a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters, equal to 124dBuV/m at 3 meters.
- (b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters, equal to 90.5dBuV/m at 3 meters.
- (c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters, equal to 80.5dBuV/m at 3 meters..
- (d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

| Spectrum Parameter                    | Setting               |
|---------------------------------------|-----------------------|
| Attenuation                           | Auto                  |
| Start Frequency                       | 1000 MHz              |
| Stop Frequency                        | 10th carrier harmonic |
| RB / VB (emission in restricted band) | 1MHz / 1MHz for Peak  |

| Receiver Parameter     | Setting                          |
|------------------------|----------------------------------|
| Attenuation            | Auto                             |
| Start ~ Stop Frequency | 9kHz~150kHz / RB 200Hz for QP    |
| Start ~ Stop Frequency | 150kHz~30MHz / RB 9kHz for QP    |
| Start ~ Stop Frequency | 30MHz~1000MHz / RB 120kHz for QP |

#### 4.2.2 TEST PROCEDURE

- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz And above 1GHz,
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m meter test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

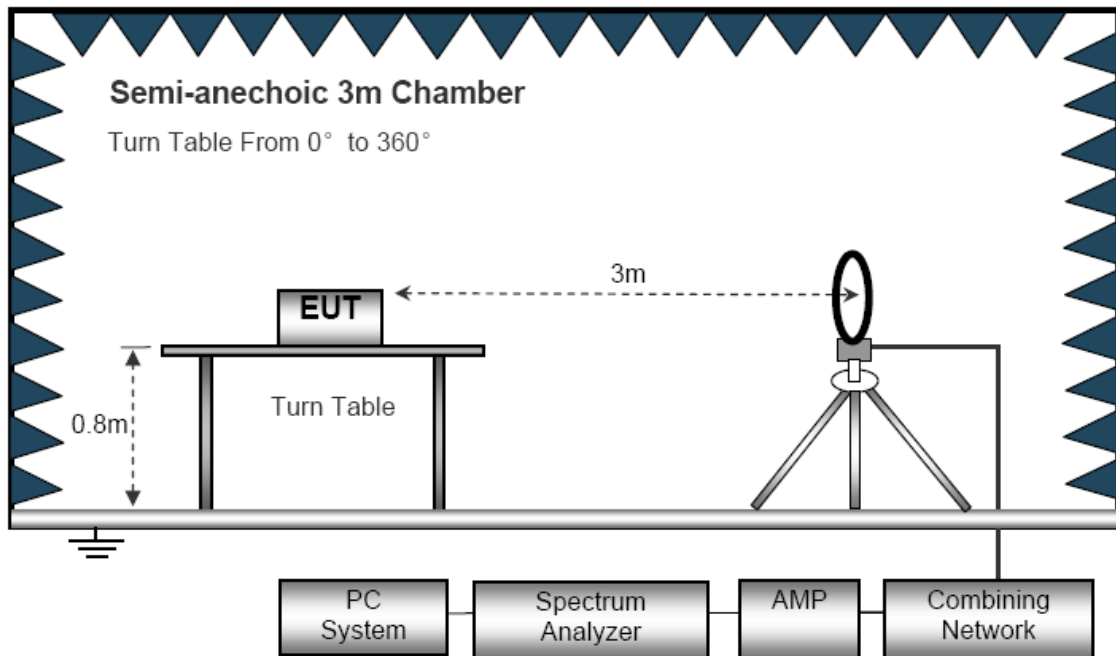
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

#### 4.2.3 DEVIATION FROM TEST STANDARD

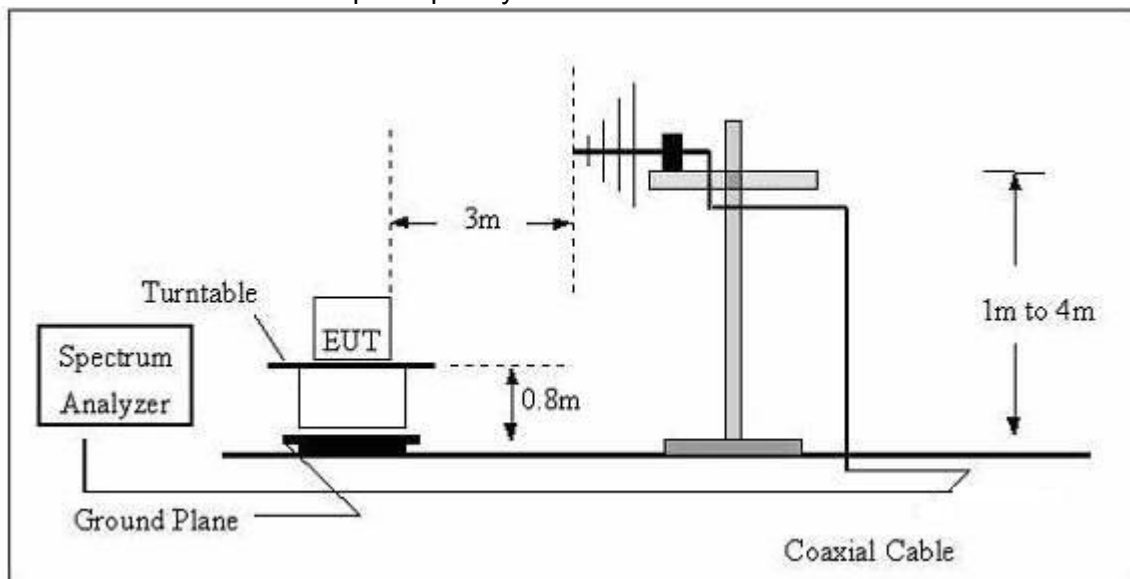
No deviation

#### 4.2.4 TEST SETUP

##### (A) Radiated Emission Test-Up Frequency Below 30MHz



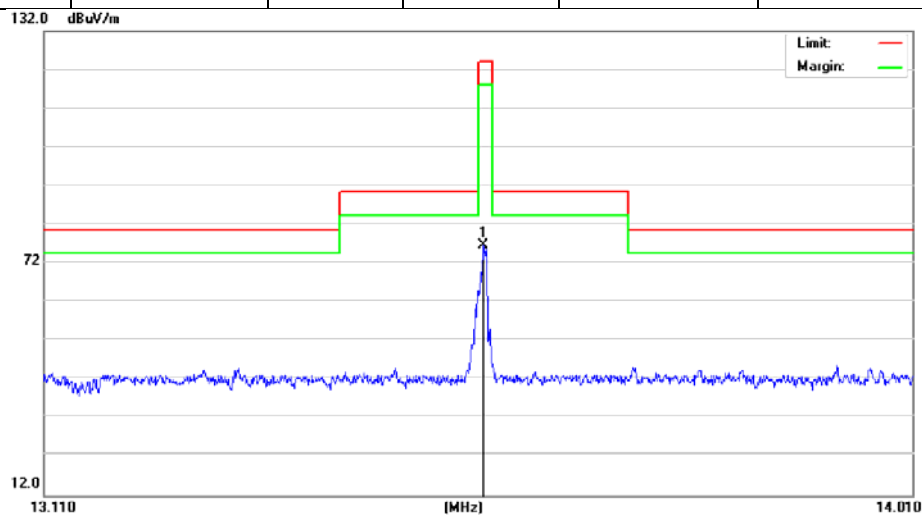
##### (B) Radiated Emission Test-Up Frequency 30MHz~1GHz



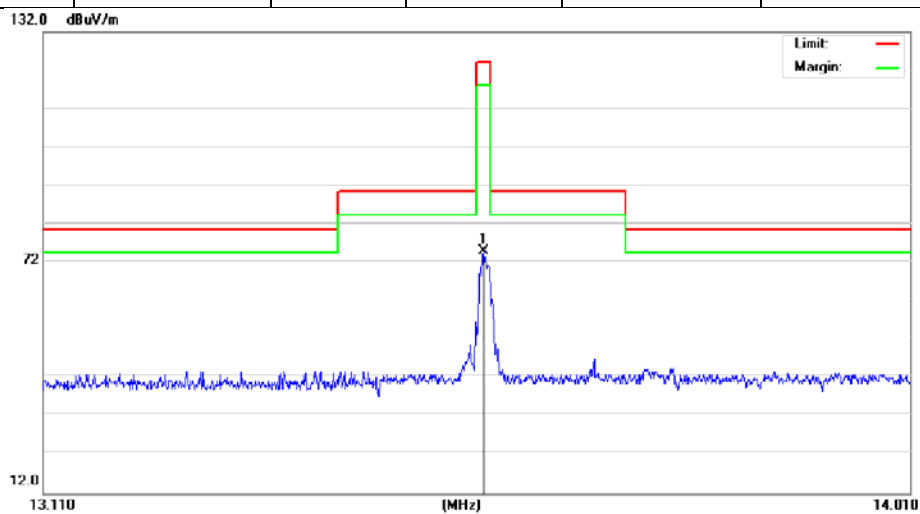
#### 4.2.5 TEST RESULTS (BELOW 30MHz)

|               |                                  |                     |               |
|---------------|----------------------------------|---------------------|---------------|
| EUT :         | 10.1 Inch Full Ruggedized Tablet | Model Name. :       | xTablet T1500 |
| Temperature : | 20 °C                            | Relative Humidity : | 54%           |
| Pressure :    | 1010 hPa                         | Test Voltage :      | DC 3.7V       |
| Test Mode :   | TX                               |                     |               |

| Freq. | Reading  | Factor | Emission Level | Limit      | Margin | Polar |
|-------|----------|--------|----------------|------------|--------|-------|
| (MHz) | (dBuV/m) | (dB)   | (dBuV/m)       | (dBuV/@3m) | (dB)   |       |
| 13.56 | 61.73    | 13.03  | 74.76          | 124        | -49.24 | H     |



| Freq. | Reading  | Factor | Emission Level | Limit      | Margin | Polar |
|-------|----------|--------|----------------|------------|--------|-------|
| (MHz) | (dBuV/m) | (dB)   | (dBuV/m)       | (dBuV/@3m) | (dB)   |       |
| 13.56 | 58.65    | 13.03  | 71.68          | 124        | -52.32 | V     |



| Freq. | Reading       | Factor | Emission Level | Extrapolation factor | Measurement results (calculated) | Limits            | Margin |
|-------|---------------|--------|----------------|----------------------|----------------------------------|-------------------|--------|
| (MHz) | dB $\mu$ V@3m | (dB)   | (dB $\mu$ V/m) | (dB)                 | dB $\mu$ V/m @30m                | dB $\mu$ V/m @30m | (dB)   |
| 27.05 | 15.24         | 13.17  | 28.41          | 40                   | -11.59                           | 30                | -41.13 |

| Frequency Range | Frequency | Reading        | Factor | Extrapolation factor | Measurement results (calculated) | Limits            | Margin |
|-----------------|-----------|----------------|--------|----------------------|----------------------------------|-------------------|--------|
| (MHz)           | (MHz)     | dB $\mu$ V @3m | (dB)   | (dB)                 | dB $\mu$ V/m &30m                | dB $\mu$ V/m @30m | (dB)   |
| 13.110~13.41    | 13.375    | 28.57          | 21.55  | 40                   | 10.12                            | 40.50             | -30.38 |
| 13.410~13.553   | 13.517    | 36.54          | 21.55  | 40                   | 18.09                            | 50.50             | -32.41 |
| 13.553~13.567   | 13.559    | 62.75          | 21.55  | 40                   | 44.3                             | 84.00             | -39.7  |
| 13.567~13.71    | 13.568    | 37.48          | 21.55  | 40                   | 19.03                            | 50.50             | -31.47 |
| 13.710~14.01    | 13.818    | 31.69          | 21.55  | 40                   | 13.24                            | 40.50             | -27.26 |

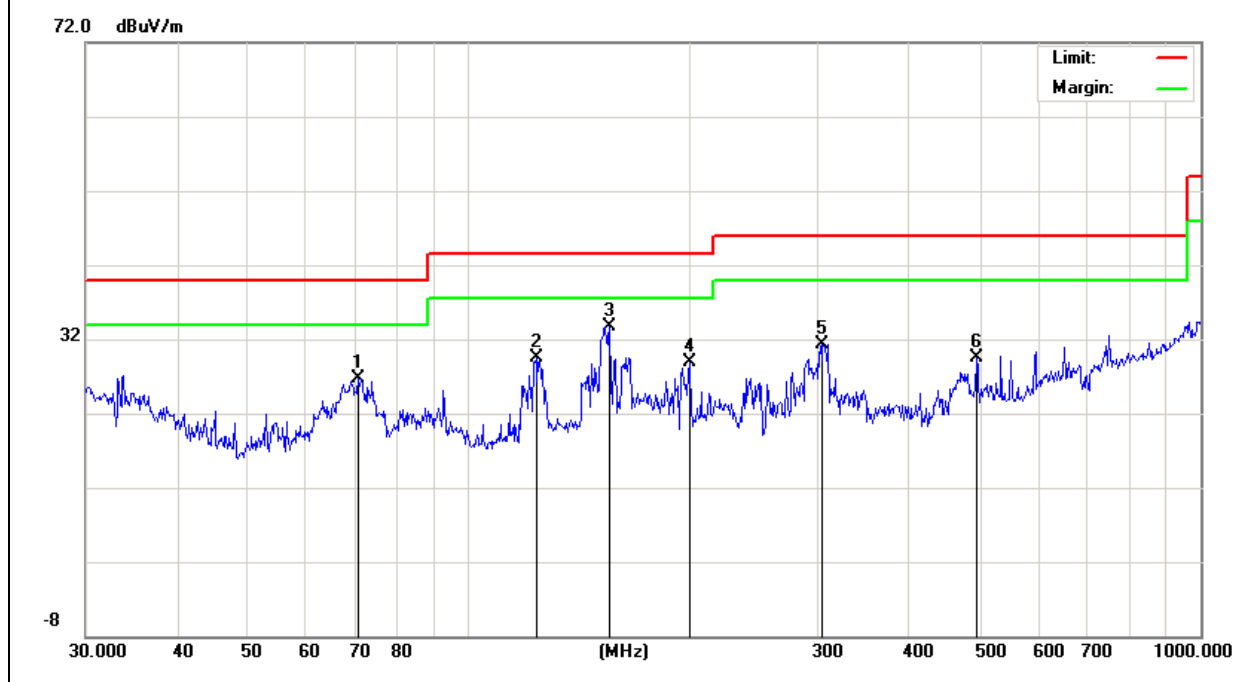
#### 4.2.6 TEST RESULTS (BETWEEN 30 – 1000 MHZ)

|               |                                  |                     |               |
|---------------|----------------------------------|---------------------|---------------|
| EUT :         | 10.1 Inch Full Ruggedized Tablet | Model Name :        | xTablet T1500 |
| Temperature : | 20 °C                            | Relative Humidity : | 54%           |
| Pressure :    | 1010 hPa                         | Test Voltage :      | DC 3.7V       |
| Test Mode :   | TX                               | Polarization :      | Horizontal    |

| Freq.<br>(MHz) | Reading<br>(dBμV/m) | Factor<br>(dB) | Measurement<br>(dBμV/m) | Limit<br>(dBμV/m) | Over<br>(dB) | Detector |
|----------------|---------------------|----------------|-------------------------|-------------------|--------------|----------|
| 70.58          | 17.67               | 9.13           | 26.80                   | 40.00             | -13.20       | QP       |
| 123.70         | 18.88               | 10.62          | 29.50                   | 43.50             | -14.00       | QP       |
| 155.91         | 21.91               | 11.79          | 33.70                   | 43.50             | -9.80        | QP       |
| 200.69         | 17.52               | 11.48          | 29.00                   | 43.50             | -14.50       | QP       |
| 304.6099       | 18.62               | 12.78          | 31.40                   | 46.00             | -14.60       | QP       |
| 494.1983       | 12.19               | 17.31          | 29.50                   | 46.00             | -16.50       | QP       |

Remark:

Factor = Antenna Factor + Cable Loss.

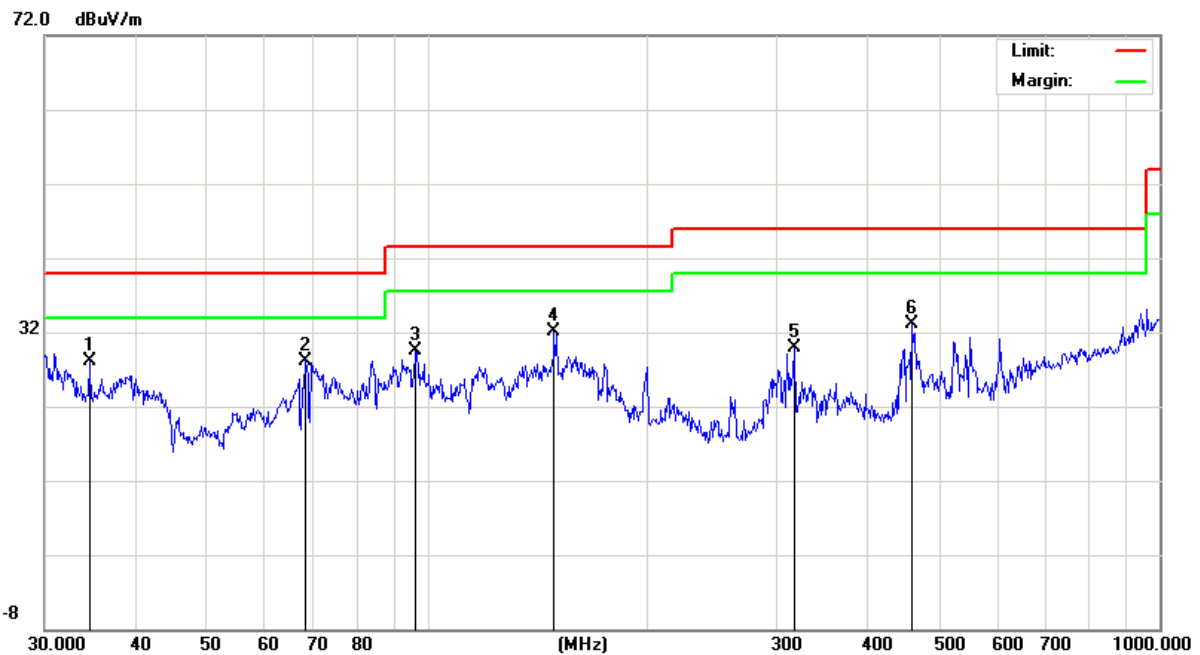


|               |                                  |                     |               |
|---------------|----------------------------------|---------------------|---------------|
| EUT :         | 10.1 Inch Full Ruggedized Tablet | Model Name :        | xTablet T1500 |
| Temperature : | 20 °C                            | Relative Humidity : | 54%           |
| Pressure :    | 1010 hPa                         | Test Voltage :      | DC 3.7V       |
| Test Mode :   | TX                               | Polarization :      | Vertical      |

| Freq.<br>(MHz) | Reading<br>(dBμV/m) | Factor<br>(dB) | Measurement<br>(dBμV/m) | Limit<br>(dBμV/m) | Over<br>(dB) | Detector |
|----------------|---------------------|----------------|-------------------------|-------------------|--------------|----------|
| 34.52          | 10.72               | 17.38          | 28.10                   | 40.00             | -11.90       | QP       |
| 68.15          | 20.05               | 8.13           | 28.18                   | 40.00             | -11.82       | QP       |
| 96.44          | 19.35               | 10.22          | 29.57                   | 43.50             | -13.93       | QP       |
| 148.96         | 20.49               | 11.61          | 32.10                   | 43.50             | -11.40       | QP       |
| 316.5889       | 16.76               | 13.14          | 29.90                   | 46.00             | -16.10       | QP       |
| 459.1143       | 16.99               | 16.11          | 33.10                   | 46.00             | -12.90       | QP       |

Remark:

Factor = Antenna Factor + Cable Loss.



## 5. BANDWIDTH TEST

### 5.1 TEST PROCEDURE

1. The transmitter output (antenna port) was connected to the spectrum analyzer in peak mode.
2. 20dB Bandwidth the resolution bandwidth of 1 kHz and the video bandwidth of 1 kHz were used.
3. Measured the spectrum width with power higher than 20dB below carrier.

### 5.2 DEVIATION FROM STANDARD

FCC Part15.225

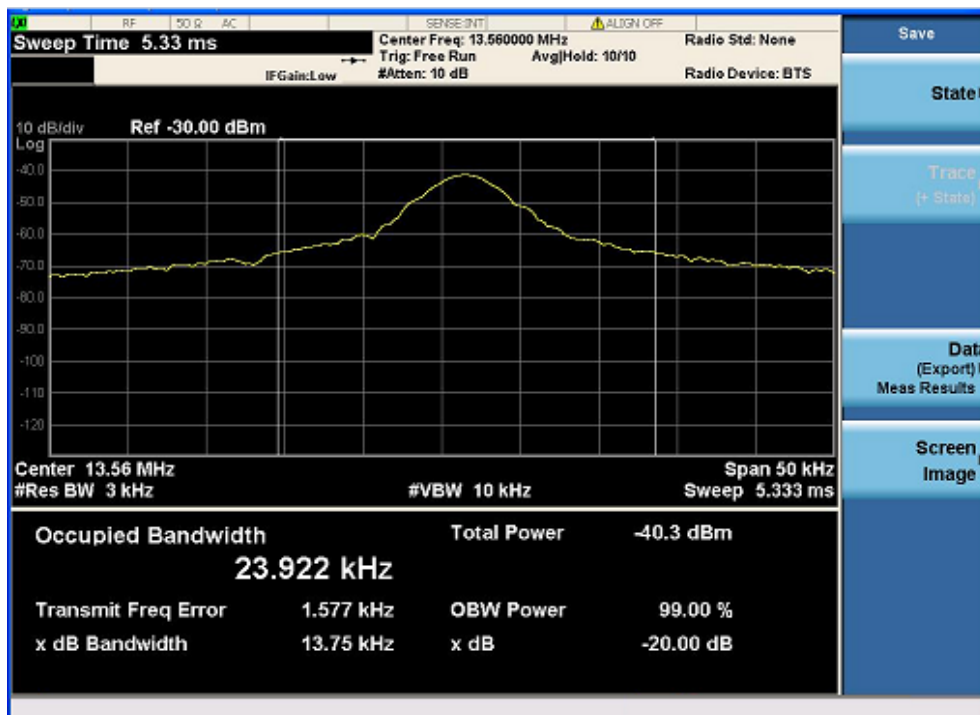
### 5.3 TEST SETUP



## 5.4 TEST RESULTS

|               |                                  |                     |               |
|---------------|----------------------------------|---------------------|---------------|
| EUT :         | 10.1 Inch Full Ruggedized Tablet | Model Name :        | xTablet T1500 |
| Temperature : | 26 °C                            | Relative Humidity : | 54%           |
| Pressure :    | 1020 hPa                         | Test Power :        | DC 3.7V       |
| Test Mode :   | TX CH 1                          |                     |               |

|              |                 |                        |
|--------------|-----------------|------------------------|
| Test Channel | Frequency (MHz) | 20 dBc Bandwidth (kHz) |
| CH01         | 13.56           | 13.75                  |



## 6. FREQUENCY TOLERANCE

### 6.1 Requirement:

Test Requirement: FCC Part15.225

Requirement:

Test Method: ANSI C63.4:2003

Requirement: The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

### 6.2 Test Procedure

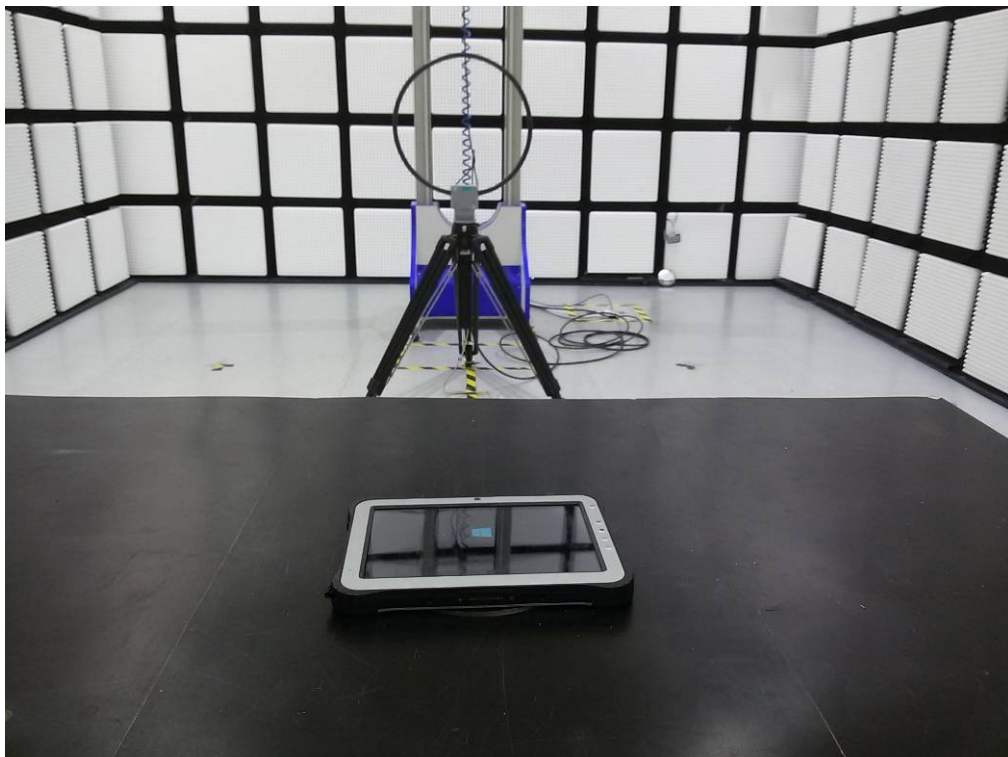
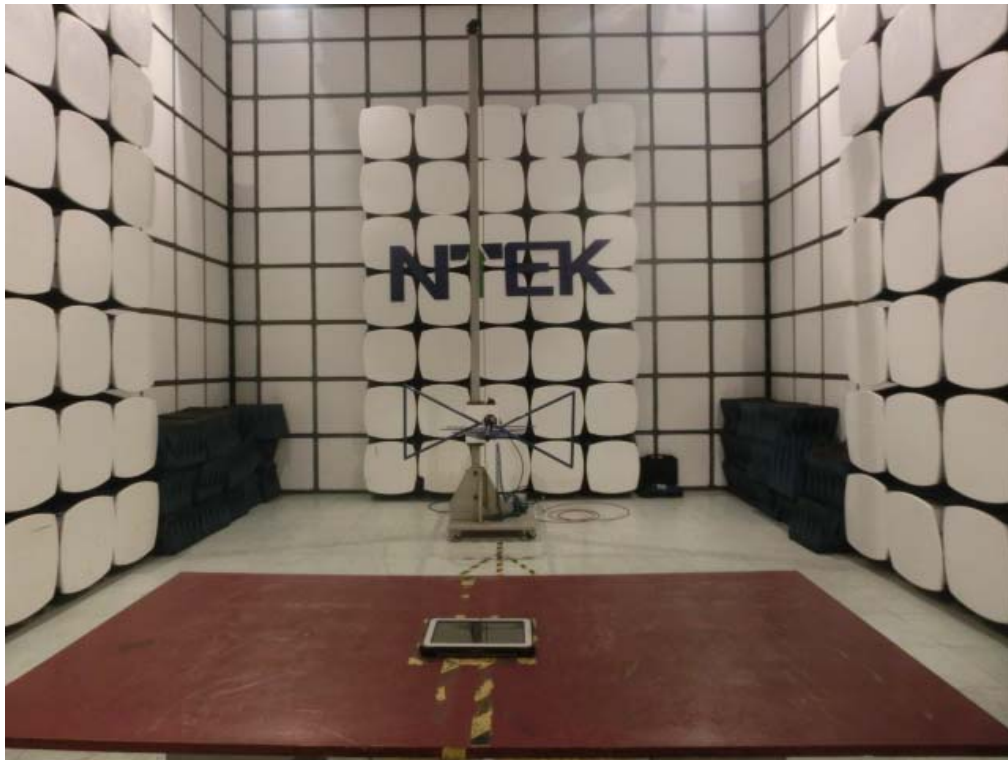
- 1.The EUT was placed on a turn table which is 0.8m above ground plane.
- 2.Set EUT as normal operation
- 3.Set SPA Center Frequency = fundamental frequency, RBW, VBW= 10kHz, Span =100kHz.
- 4.Set SPA Max hold. Mark peak.

## Test Result

| Power Supply | Temperature (°C) | Measured Frequency (MHz) | Frequency Error (MHz) | Result % | Part 15.225 Limit |
|--------------|------------------|--------------------------|-----------------------|----------|-------------------|
| DC 5.0V      | -20              | 13.560072                | 0.000072              | 0.00053  | +/- 0.01%         |
|              | 20               | 13.560077                | 0.000077              | 0.00057  | +/- 0.01%         |
|              | 50               | 13.560075                | 0.000075              | 0.00055  | +/- 0.01%         |
| DC 4.25V     | -20              | 13.560076                | 0.000076              | 0.00056  | +/- 0.01%         |
|              | 20               | 13.560074                | 0.000074              | 0.00055  | +/- 0.01%         |
|              | 50               | 13.560075                | 0.000075              | 0.00055  | +/- 0.01%         |
| DC 5.75V     | -20              | 13.560070                | 0.000070              | 0.00052  | +/- 0.01%         |
|              | 20               | 13.560074                | 0.000074              | 0.00055  | +/- 0.01%         |
|              | 50               | 13.560069                | 0.000069              | 0.00051  | +/- 0.01%         |

## 7. EUT TEST PHOTO

### Radiated Measurement Photos



**Conducted Measurement Photos**