



## TEST REPORT

**Application No.:** ZR/2020/80006  
**Applicant:** Motorola Mobility LLC  
**Address of Applicant:** 222 W Merchandise Mart Plaza, Suite 1800, Chicago IL 60654, USA  
**Manufacturer:** Motorola Mobility LLC  
**Address of Manufacturer:** 222 W Merchandise Mart Plaza, Suite 1800, Chicago IL 60654, USA  
**EUT Description:** Mobile Phone  
**Model No.:** XT2091-4  
**Trade Mark:** Motorola  
**FCC ID:** IHDT56ZK1  
**Standard(s) :** 47 CFR Part 15, Subpart B  
**Date of Receipt:** 2020/8/27  
**Date of Test:** 2020/9/3 to 2020/9/18  
**Date of Issue:** 2020/9/21

|                     |              |
|---------------------|--------------|
| <b>Test Result:</b> | <b>Pass*</b> |
|---------------------|--------------|

\* In the configuration tested, the EUT complied with the standards specified above.

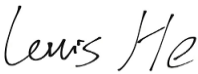
Authorized Signature:

Derek Yang

Wireless Laboratory Manager



| Revision Record |         |           |          |          |
|-----------------|---------|-----------|----------|----------|
| Version         | Chapter | Date      | Modifier | Remark   |
| 01              |         | 2020/9/21 |          | Original |
|                 |         |           |          |          |
|                 |         |           |          |          |

|                          |  |                                                                                                                   |  |  |
|--------------------------|--|-------------------------------------------------------------------------------------------------------------------|--|--|
| Authorized for issue by: |  |                                                                                                                   |  |  |
|                          |  | <br>(Louis He) /Project Engineer |  |  |
|                          |  | <br>(David Chen) /Reviewer       |  |  |

## 2 Test Summary

| Emission Part                                         |                           |                 |             |        |
|-------------------------------------------------------|---------------------------|-----------------|-------------|--------|
| Item                                                  | Standard                  | Method          | Requirement | Result |
| Conducted Emissions at Mains Terminals (150kHz-30MHz) | 47 CFR Part 15, Subpart B | ANSI C63.4:2014 | Class B     | Pass   |
| Radiated Emissions (30MHz-1GHz)                       | 47 CFR Part 15, Subpart B | ANSI C63.4:2014 | Class B     | Pass   |
| Radiated Emissions (above 1GHz)                       | 47 CFR Part 15, Subpart B | ANSI C63.4:2014 | Class B     | Pass   |

| Internal Source    | Upper Frequency                                                    |
|--------------------|--------------------------------------------------------------------|
| Below 1.705MHz     | 30MHz                                                              |
| 1.705MHz to 108MHz | 1GHz                                                               |
| 108MHz to 500MHz   | 2GHz                                                               |
| 500MHz to 1GHz     | 5GHz                                                               |
| Above 1GHz         | 5th harmonic of the highest frequency or 40GHz, whichever is lower |

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## 4 General Information

|                         |               |                                                                                           |           |
|-------------------------|---------------|-------------------------------------------------------------------------------------------|-----------|
| Product Name:           | Mobile Phone  |                                                                                           |           |
| Model No.(EUT):         | XT2091-4      |                                                                                           |           |
| Trade Mark:             | Motorola      |                                                                                           |           |
| FCC ID:                 | IHDT56ZK1     |                                                                                           |           |
| Hardware Version:       | DVT2          |                                                                                           |           |
| Software Version:       | QZC30.Q4-22   |                                                                                           |           |
| Frequency Bands:        | Band          | Tx (MHz)                                                                                  | Rx (MHz)  |
|                         | GSM850        | 824~849                                                                                   | 869~894   |
|                         | GSM1900       | 1850~1910                                                                                 | 1930~1990 |
|                         | WCDMA Band II | 1850~1910                                                                                 | 1930~1990 |
|                         | WCDMA Band IV | 1710~1755                                                                                 | 2110~2155 |
|                         | WCDMA Band V  | 824~849                                                                                   | 869~894   |
|                         | LTE Band 2    | 1850~1910                                                                                 | 1930~1990 |
|                         | LTE Band 4    | 1710~1755                                                                                 | 2110~2155 |
|                         | LTE Band 5    | 824~849                                                                                   | 869~894   |
|                         | LTE Band 7    | 2500~2570                                                                                 | 2620~2690 |
|                         | LTE Band 66   | 1716~1780                                                                                 | 2110~2200 |
|                         | WIFI 2.4G     | 2412~2462                                                                                 | 2412~2462 |
|                         | WIFI 5G       | 5150~5850                                                                                 | 5150~5850 |
|                         | BT            | 2402~2480                                                                                 | 2402~2480 |
|                         | FM            | 87.5~108                                                                                  |           |
|                         | GNSS          | 1559~1610                                                                                 |           |
| Adaptor Information 1#: | Model:        | MC-201                                                                                    |           |
|                         | Brand Name:   | Motorola(Acbel)                                                                           |           |
|                         | SEC:          | I/P: 100 - 240 Vac, 700mA,<br>O/P: 5/10/12Vdc, 3000/2000/16700mA                          |           |
| Adaptor Information 1#: | Model:        | MC-202                                                                                    |           |
|                         | Brand Name:   | Motorola(Acbel)                                                                           |           |
|                         | SEC:          | I/P: 100 - 240 Vac, 0.6 A,<br>O/P:5.0V,3A;9.0V,2.23A ;12.0V,2.23A ;12.0V,1.67 A;10V,2.25A |           |
| Adaptor Information 1#: | Model:        | MC-203                                                                                    |           |
|                         | Brand Name:   | Motorola(Acbel)                                                                           |           |
|                         | SEC:          | I/P: 100 - 240 Vac, 0.6 A,<br>O/P:5.0V,3A;9.0V,2.23A ;12.0V,2.23A ;12.0V,1.67 A;10V,2.25A |           |
| Adaptor Information 1#: | Model:        | MC-205                                                                                    |           |
|                         | Brand Name:   | Motorola(Acbel)                                                                           |           |
|                         | SEC:          | I/P: 100 - 240 Vac, 0.6 A,<br>O/P:5.0V,3A;9.0V,2.23A ;12.0V,2.23A ;12.0V,1.67 A;10V,2.25A |           |
| Adaptor Information 1#: | Model:        | MC-206                                                                                    |           |
|                         | Brand Name:   | Motorola(Acbel)                                                                           |           |
|                         | SEC:          | I/P: 100 - 240 Vac, 0.6 A,<br>O/P:5.0V,3A;9.0V,2.23A ;12.0V,2.23A ;12.0V,1.67 A;10V,2.25A |           |

|                         |             |                                                                                           |
|-------------------------|-------------|-------------------------------------------------------------------------------------------|
| Adaptor Information 1#: | Model:      | MC-209                                                                                    |
|                         | Brand Name: | Motorola(Acbel)                                                                           |
|                         | SEC:        | I/P: 100 - 240 Vac, 0.6 A,<br>O/P:5.0V,3A;9.0V,2.23A ;12.0V,2.23A ;12.0V,1.67 A;10V,2.25A |
| Adaptor Information 2#: | Model:      | MC-201                                                                                    |
|                         | Brand Name: | Motorola(Chenyang)                                                                        |
|                         | SEC:        | I/P: 100 - 240 Vac, 0.6 A,<br>O/P:5.0V,3A;9.0V,2.23A ;12.0V,2.23A ;12.0V,1.67 A;10V,2.25A |
| Adaptor Information 2#: | Model:      | MC-202                                                                                    |
|                         | Brand Name: | Motorola(Chenyang)                                                                        |
|                         | SEC:        | I/P: 100 - 240 Vac, 0.6 A,<br>O/P:5.0V,3A;9.0V,2.23A ;12.0V,2.23A ;12.0V,1.67 A;10V,2.25A |
| Adaptor Information 2#: | Model:      | MC-203                                                                                    |
|                         | Brand Name: | Motorola(Chenyang)                                                                        |
|                         | SEC:        | I/P: 100 - 240 Vac, 0.6 A,<br>O/P:5.0V,3A;9.0V,2.23A ;12.0V,2.23A ;12.0V,1.67 A;10V,2.25A |
| Adaptor Information 2#: | Model:      | MC-204                                                                                    |
|                         | Brand Name: | Motorola(Chenyang)                                                                        |
|                         | SEC:        | I/P: 100 - 240 Vac, 0.6 A,<br>O/P:5.0V,3A;9.0V,2.23A ;12.0V,2.23A ;12.0V,1.67 A;10V,2.25A |
| Adaptor Information 2#: | Model:      | MC-205                                                                                    |
|                         | Brand Name: | Motorola(Chenyang)                                                                        |
|                         | SEC:        | I/P: 100 - 240 Vac, 0.6 A,<br>O/P:5.0V,3A;9.0V,2.23A ;12.0V,2.23A ;12.0V,1.67 A;10V,2.25A |
| Adaptor Information 2#: | Model:      | MC-206                                                                                    |
|                         | Brand Name: | Motorola(Chenyang)                                                                        |
|                         | SEC:        | I/P: 100 - 240 Vac, 0.6 A,<br>O/P:5.0V,3A;9.0V,2.23A ;12.0V,2.23A ;12.0V,1.67 A;10V,2.25A |
| Adaptor Information 2#: | Model:      | MC-207                                                                                    |
|                         | Brand Name: | Motorola(Chenyang)                                                                        |
|                         | SEC:        | I/P: 100 - 240 Vac, 0.6 A,<br>O/P:5.0V,3A;9.0V,2.23A ;12.0V,2.23A ;12.0V,1.67 A;10V,2.25A |
| Adaptor Information 3#: | Model:      | MC-207                                                                                    |
|                         | Brand Name: | Motorola(Flex)                                                                            |
|                         | SEC:        | I/P: 100 - 240 Vac, 0.6 A,<br>O/P:5.0V,3A;9.0V,2.23A ;12.0V,2.23A ;12.0V,1.67 A;10V,2.25A |
| Adaptor Information 4#: | Model:      | MC-207                                                                                    |
|                         | Brand Name: | Motorola(Salcomp)                                                                         |
|                         | SEC:        | I/P: 100 - 240 Vac, 0.6 A,                                                                |

|                                   |                 |                                                             |
|-----------------------------------|-----------------|-------------------------------------------------------------|
|                                   |                 | O/P:5.0V,3A;9.0V,2.23A ;12.0V,2.23A ;12.0V,1.67 A;10V,2.25A |
| Battery Information 1#:           | Model:          | MC50                                                        |
|                                   | Brand Name:     | Motorola (ATL)                                              |
|                                   | Normal Voltage: | 3.87V                                                       |
|                                   | Rated capacity: | 5640mAh                                                     |
| USB cable Information1#:          | Model:          | SC18C24367                                                  |
|                                   | Brand Name:     | Motorola (Saibao)                                           |
| USB cable Information2#:          | Model:          | SC18C24368                                                  |
|                                   | Brand Name:     | Motorola (Luxshare)                                         |
| USB cable Information3#:          | Model:          | SC18C28955                                                  |
|                                   | Brand Name:     | Motorola (I SHENG)                                          |
| USB cable Information4#:          | Model:          | SC18C78708                                                  |
|                                   | Brand Name:     | Motorola (Elcoa)                                            |
| Earphone Information1#:           | Model:          | NLD-EM301K-15SF v1                                          |
|                                   | Brand Name:     | Motorola (New Leader)                                       |
| Bluetooth earphone Information1#: | Model:          | SHO69                                                       |
|                                   | Brand Name:     | Motorola                                                    |

**Note:** The adapter has multiple models from one manufacturer, only the pins are different and the other components are the same

\* GNSS = GPS + Glonass + Galileo

#### 4.1 Description of Support Units

| Description | Manufacturer | Model No. | Serial No.       |
|-------------|--------------|-----------|------------------|
| Laptop      | Lenovo       | T430u     | REF. No.SEA1800  |
| Mouse       | Lenovo       | M-U0025-O | REF. No.:SEA2400 |
| Router      | NETGEAR      | DGN2200   | REF. No.SEA2200  |

#### 4.2 Measurement Uncertainty

| No. | Item                | Measurement Uncertainty   |
|-----|---------------------|---------------------------|
| 1   | Conduction Emission | ± 3.4dB (150kHz to 30MHz) |
| 2   | Radiated Emission   | ± 4.8dB (30MHz-1GHz)      |
|     |                     | ± 5.2dB (1GHz-6GHz)       |
|     |                     | ± 5.5dB (6GHz-18GHz)      |
|     |                     | ± 5.02dB (18GHz-40GHz)    |
| 3   | Temperature test    | ± 1°C                     |
| 4   | Humidity test       | ± 3%                      |



#### **4.3 Test Location**

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Xi'an Branch

Single floor D, building 1, Kanghong orange square science and technology park, No.137 keyuan 3rd road, fengdong new town, Xi 'an city, shanxi China. 518057.

Tel: +86 (0) 29 6282 7885 Fax: +86 (0) 29 6282 7885

No tests were sub-contracted.

#### **4.4 Test Facility**

The test facility is recognized, certified, or accredited by the following organizations:

- **A2LA (Certificate No. 4854.01)**

SGS-CSTC STANDARDS TECHNICAL SERVICES CO., LTD. XIAN BRANCH

is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4854.01.

| Test Site No.: | SGS Xian Site No. |           | FCC Designation No. |
|----------------|-------------------|-----------|---------------------|
|                | CO01-XA           | 03CH01-XA | CN1271              |

#### **4.5 Deviation from Standards**

None

#### **4.6 Abnormalities from Standard Conditions**

None

## 5 Equipment List

| Radiated Emissions (30MHz~ 40GHz) |                 |             |               |              |              |
|-----------------------------------|-----------------|-------------|---------------|--------------|--------------|
| Test Equipment                    | Manufacturer    | Model No.   | Inventory No. | Cal. date    | Cal.Due date |
|                                   |                 |             |               | (yyyy-mm-dd) | (yyyy-mm-dd) |
| 966 Test chamber                  | Brilliant-emc   | NA          | XAW040101     | 2019/6/11    | 2022/6/9     |
| BiConiLog Antenna (30MHz-3GHz)    | rosenberge      | VULB 9163   | XAW010901     | 2018/8/8     | 2021/8/7     |
| Horn Antenna (800MHz-18GHz)       | rosenberger     | BBHA 9120D  | XAW010902     | 2018/7/18    | 2021/7/17    |
| Horn Antenna (18-40GHz)           | rosenberge      | BBHA 9170   | XAW010903     | 2018/8/1     | 2021/7/31    |
| Amplifier(9kHz-3GHz)              | Tonscend        | TAP00903040 | XAW030601     | 2019/11/18   | 2020/11/18   |
| Amplifier(100MHz-18GHz)           | Tonscend        | TAP01018048 | XAW030602     | 2019/11/18   | 2020/11/18   |
| Amplifier(18-40GHz)               | Tonscend        | TAP18040048 | XAW030603     | 2019/11/18   | 2020/11/18   |
| Radio communication analyzer      | ROHDE&SCHWARZ   | CMW 500     | XAW01-03-02   | 2020/4/2     | 2021/4/2     |
| Test receiver                     | Rohde & Schwarz | ESR         | XAW010801     | 2020/9/2     | 2021/9/2     |
| MXA signal analyzer               | Rohde & Schwarz | FSV         | XAW040103     | 2020/4/2     | 2021/4/3     |
| Measurement Software              | Tonscend        | TS+         | N/A           | N/A          | N/A          |
| Filter bank                       | Tonscend        | JS0806-F    | N/A           | N/A          | N/A          |
| Filter bank                       | Tonscend        | JS0806s     | N/A           | N/A          | N/A          |

| Conducted Emissions at Mains Terminals (150kHz-30MHz) |                 |           |               |              |              |
|-------------------------------------------------------|-----------------|-----------|---------------|--------------|--------------|
| Test Equipment                                        | Manufacturer    | Model No. | Inventory No. | Cal. date    | Cal.Due date |
|                                                       |                 |           |               | (yyyy-mm-dd) | (yyyy-mm-dd) |
| Shield Room                                           | Brilliant-emc   | NA        | XAW08043      | NA           | NA           |
| Test receiver                                         | Rohde & Schwarz | ESR       | XAW010801     | 2020/9/2     | 2021/9/2     |
| Artificial network                                    | Rohde & Schwarz | ENV216    | XAW01-19-02   | 2020/07/16   | 2021/7/15    |
| Artificial network                                    | Rohde & Schwarz | ENV216    | XAW013001     | 2020/7/16    | 2021/7/15    |
| Cabel                                                 | SGS             | NA        | NA            | NA           | NA           |

## 6 Emission Test Results

### 6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

|                   |                                                              |
|-------------------|--------------------------------------------------------------|
| Test Requirement: | 47 CFR Part 15, Subpart B                                    |
| Test Method:      | ANSI C63.4:2014                                              |
| Frequency Range:  | 150kHz to 30MHz                                              |
| Limit:            |                                                              |
| 0.15M-0.5MHz      | 66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average      |
| 0.5M-5MHz         | 56dB(μV) quasi-peak, 46dB(μV) average                        |
| 5M-30MHz          | 60dB(μV) quasi-peak, 50dB(μV) average                        |
| Detector:         | Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz |

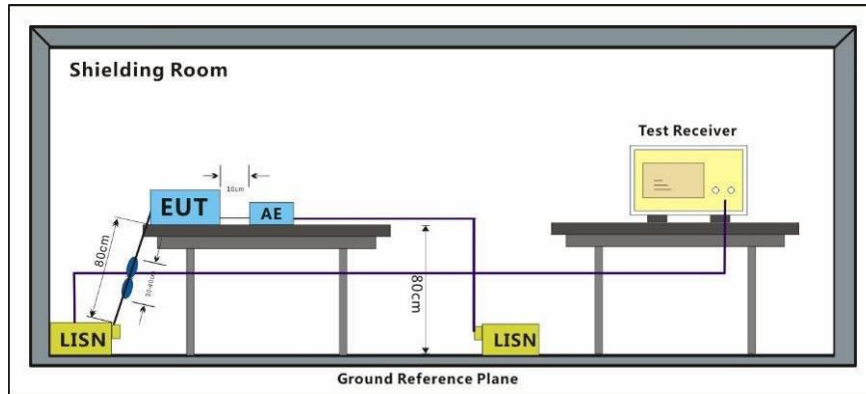
#### 6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 18.9 °C Humidity: 55.1 % RH Atmospheric Pressure: 1000 mbar

|                                             |                                                                                      |
|---------------------------------------------|--------------------------------------------------------------------------------------|
| Pretest these modes to find the worst case: | a:Transfer data between the EUT and the PC+USB cable 1                               |
|                                             | b:Transfer data between the EUT and the PC+USB cable 2                               |
|                                             | c:Transfer data between the EUT and the PC+USB cable 3                               |
|                                             | d:Transfer data between the EUT and the PC+USB cable 4                               |
|                                             | e: GSM850 Link+BT+WLAN2.4G+GPS Rx+playing MP4+earphone+EUT+USB cable1+adapter1       |
|                                             | f:GSM1900 Link +BT+WLAN5G+GPS Rx+camera (Back)+earphone+EUT+USB cable1+adapter2      |
|                                             | g:WCDMA II Link +BT+WLAN2.4G+GPS Rx+camera (Front)+earphone+EUT1+USB cable1+adapter3 |
|                                             | h:WCDMA VI Link +BT+WLAN5G+GPS Rx+camera (Back)+earphone+EUT+USB cable1+adapter4     |
|                                             | i:WCDMA V Link +BT+WLAN5G+GPS Rx+camera (Back)+earphone+EUT+USB cable1+adapter1      |
|                                             | j:LTE band 2 Idle +BT+ WLAN5G+GNSS Rx +earphone+EUT+USB cable1+adapter1              |
|                                             | k:LTE band 4 Idle +BT+FM +WLAN2.4G+GNSS Rx+earphone+EUT+USB cable1+adapter1          |
|                                             | l:LTE band 5 Idle +BT+FM+WLAN5G+GNSS Rx+earphone+EUT+USB cable1+adapter1             |
|                                             | m:LTE band 7 Idle +BT+FM+WLAN2.4G+GNSS Rx+earphone+EUT+USB cable1+adapter1           |
|                                             | n:LTE band 66 Idle +BT+FM+WLAN5G+GNSS Rx +earphone+EUT+USB cable1+adapter1           |
| The worst case for final test:              | g:WCDMA II Link +BT+WLAN2.4G+GPS Rx+camera (Front)+earphone+EUT1+USB cable1+adapter3 |

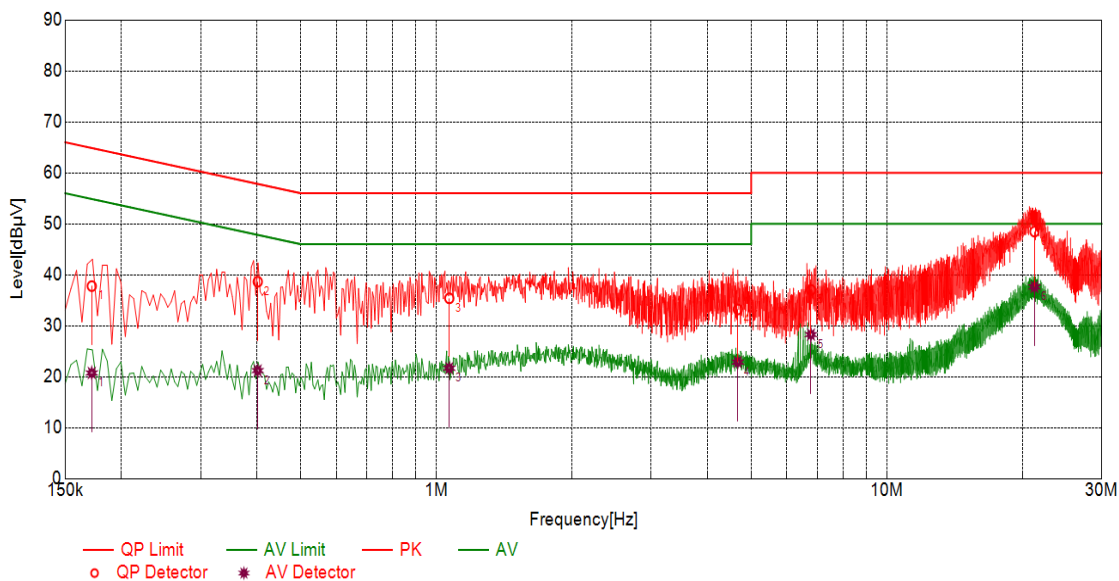
### 6.1.2 Test Setup Diagram



### 6.1.3 Measurement Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

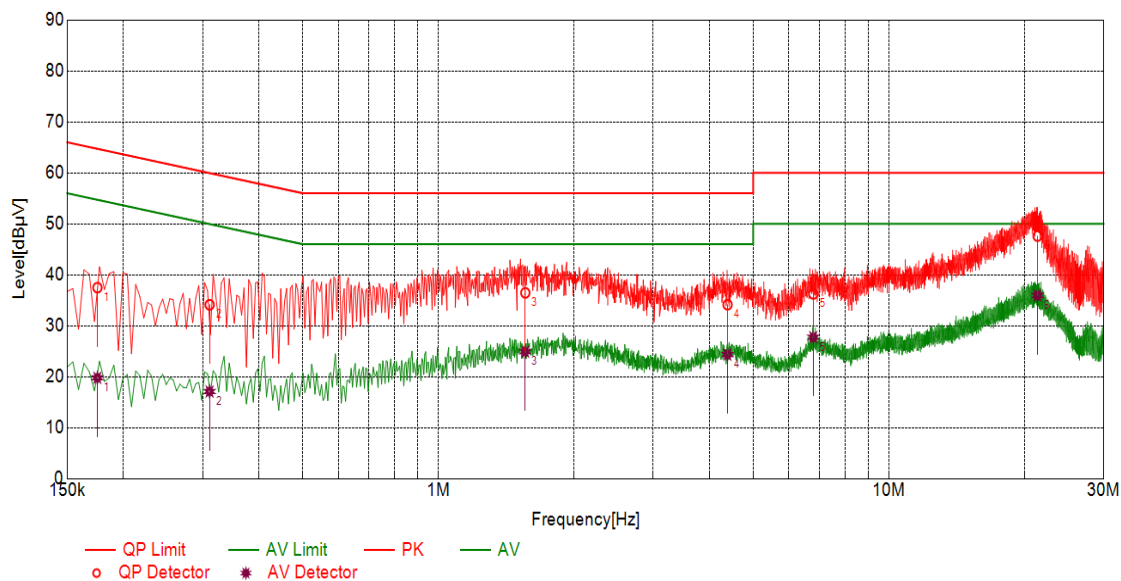
Mode:g; Line:Live Line



### Final Data List

| NO. | Freq.<br>[MHz] | Factor<br>[dB] | QP<br>Value<br>[dBμV] | QP<br>Limit<br>[dBμV] | QP<br>Margin<br>[dB] | AV<br>Value<br>[dBμV] | AV<br>Limit<br>[dBμV] | AV<br>Margin<br>[dB] | Type |
|-----|----------------|----------------|-----------------------|-----------------------|----------------------|-----------------------|-----------------------|----------------------|------|
| 1   | 0.1719         | 10.10          | 37.78                 | 64.87                 | 27.09                | 20.73                 | 54.87                 | 34.14                | L    |
| 2   | 0.4014         | 10.10          | 38.64                 | 57.82                 | 19.18                | 21.20                 | 47.82                 | 26.62                | L    |
| 3   | 1.0686         | 10.10          | 35.39                 | 56.00                 | 20.61                | 21.67                 | 46.00                 | 24.33                | L    |
| 4   | 4.6692         | 10.10          | 33.21                 | 56.00                 | 22.79                | 22.87                 | 46.00                 | 23.13                | L    |
| 5   | 6.7873         | 10.10          | 37.02                 | 60.00                 | 22.98                | 28.26                 | 50.00                 | 21.74                | L    |
| 6   | 21.2666        | 10.11          | 48.47                 | 60.00                 | 11.53                | 37.62                 | 50.00                 | 12.38                | L    |

Mode:g; Line:Neutral Line



## Final Data List

| NO. | Freq.<br>[MHz] | Factor<br>[dB] | QP<br>Value<br>[dBμV] | QP<br>Limit<br>[dBμV] | QP<br>Margin<br>[dB] | AV<br>Value<br>[dBμV] | AV<br>Limit<br>[dBμV] | AV<br>Margin<br>[dB] | Type |
|-----|----------------|----------------|-----------------------|-----------------------|----------------------|-----------------------|-----------------------|----------------------|------|
| 1   | 0.1751         | 10.10          | 37.47                 | 64.71                 | 27.24                | 19.78                 | 54.71                 | 34.93                | N    |
| 2   | 0.3107         | 10.10          | 34.11                 | 59.95                 | 25.84                | 17.09                 | 49.95                 | 32.86                | N    |
| 3   | 1.5597         | 10.10          | 36.45                 | 56.00                 | 19.55                | 24.90                 | 46.00                 | 21.10                | N    |
| 4   | 4.3846         | 10.10          | 34.13                 | 56.00                 | 21.87                | 24.34                 | 46.00                 | 21.66                | N    |
| 5   | 6.7961         | 10.10          | 36.25                 | 60.00                 | 23.75                | 27.75                 | 50.00                 | 22.25                | N    |
| 6   | 21.3800        | 10.11          | 47.60                 | 60.00                 | 12.40                | 35.94                 | 50.00                 | 14.06                | N    |

## 6.2 Radiated Emissions (30MHz-1GHz)

|                       |                                                               |
|-----------------------|---------------------------------------------------------------|
| Test Requirement:     | 47 CFR Part 15, Subpart B                                     |
| Test Method:          | ANSI C63.4:2014                                               |
| Frequency Range:      | 30MHz to 1GHz                                                 |
| Measurement Distance: | 3m                                                            |
| Limit:                |                                                               |
| 30MHz -88MHz          | 40.0(dBμV/m) quasi-peak                                       |
| 88MHz-216MHz          | 43.5(dBμV/m) quasi-peak                                       |
| 216MHz-960MHz         | 46.0(dBμV/m) quasi-peak                                       |
| 960MHz-1000MHz        | 54.0(dBμV/m) quasi-peak                                       |
| Detector:             | Peak for pre-scan (120kHz resolution bandwidth) 30M to1000MHz |

### 6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 66.5 % RH Atmospheric Pressure: 1010 mbar

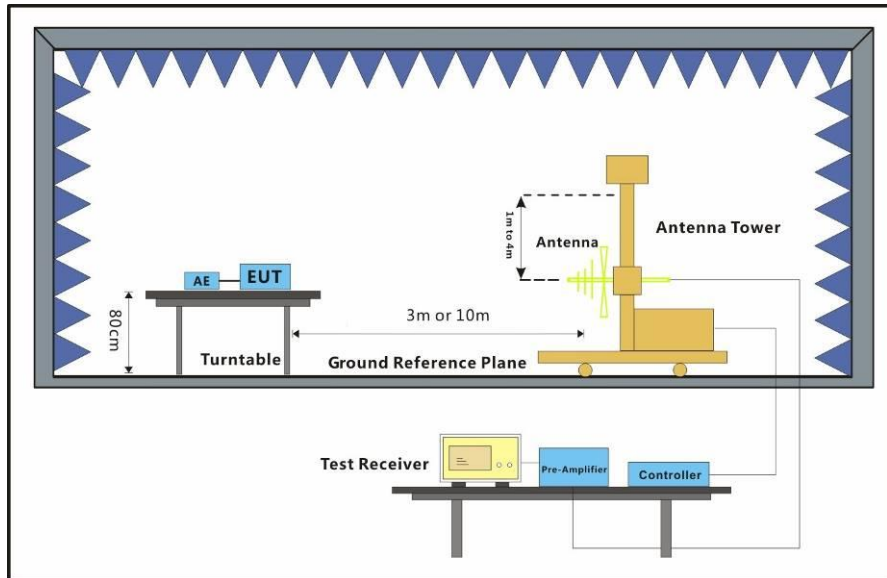
Pretest these modes to find the worst case:

- a:Transfer data between the EUT and the PC+USB cable 1
- b:Transfer data between the EUT and the PC+USB cable 2
- c:Transfer data between the EUT and the PC+USB cable 3
- d:Transfer data between the EUT and the PC+USB cable 4
- e: GSM850 Idle +BT+WLAN2.4G+GPS Rx+playing MP4+earphone+EUT+USB cable1+adapter1
- f:GSM1900 Idle +BT+WLAN5G+GPS Rx+camera (Back)+earphone+EUT+USB cable1+adapter2
- g:WCDMA II Idle +BT+WLAN2.4G+GPS Rx+camera (Front)+earphone+EUT1+USB cable1+adapter3
- h:WCDMA VI Idle +BT+WLAN5G+GPS Rx+camera (Back)+earphone+EUT+USB cable1+adapter4
- i:WCDMA V Idle +BT+WLAN5G+GPS Rx+camera (Back)+earphone+EUT+USB cable1+adapter1
- j:LTE band 2 Idle +BT+ WLAN5G+GNSS Rx +earphone+EUT+USB cable1+adapter1
- k:LTE band 4 Idle +BT+FM +WLAN2.4G+GNSS Rx+earphone+EUT+USB cable1+adapter1
- l:LTE band 5 Idle +BT+FM+WLAN5G+GNSS Rx+earphone+EUT+USB cable1+adapter1
- m:LTE band 7 Idle +BT+FM+WLAN2.4G+GNSS Rx+earphone+EUT+USB cable1+adapter1
- n:LTE band 66 Idle +BT+FM+WLAN5G+GNSS Rx +earphone+EUT+USB cable1+adapter1

The worst case for final test:

- a:Transfer data between the EUT and the PC+USB cable 1

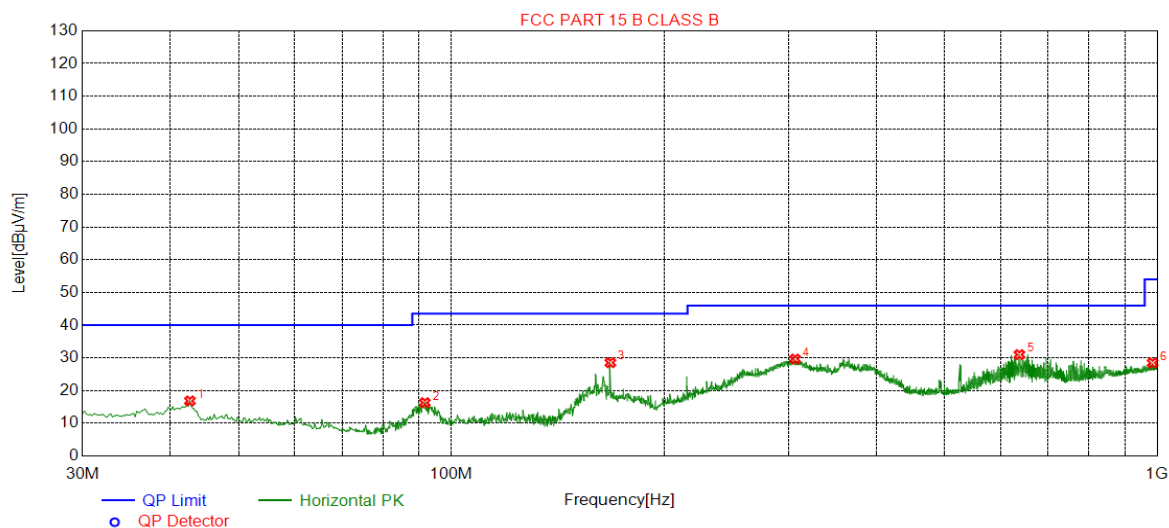
### 6.2.2 Test Setup Diagram



### 6.2.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

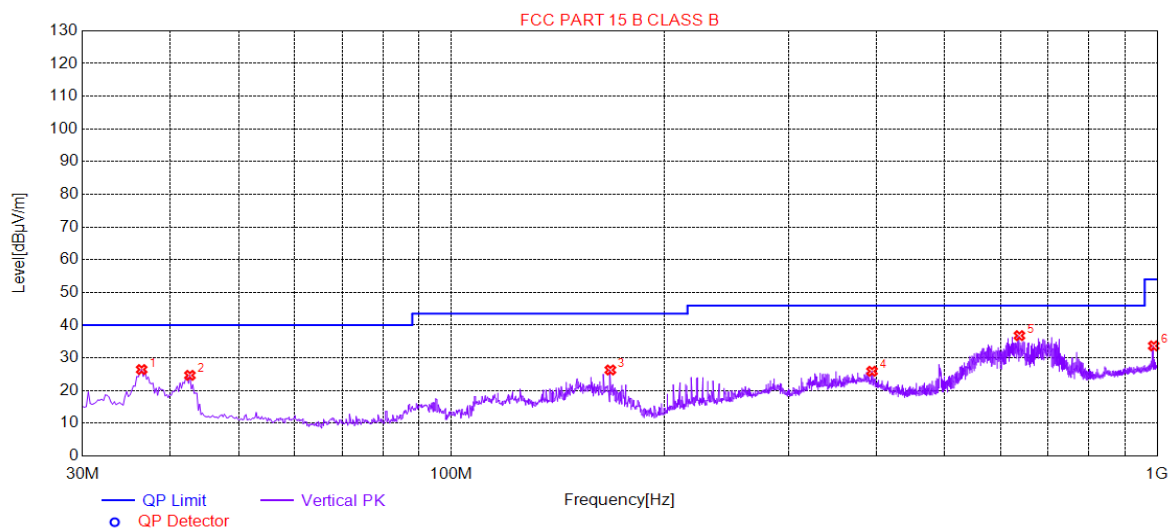
Mode:a; Polarization:Horizontal



#### Suspected List

| NO. | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
|-----|-------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|
| 1   | 42.6125     | 16.85          | -29.43      | 40.00          | 23.15       | 200         | 127       | Horizontal |
| 2   | 91.7043     | 16.31          | -33.43      | 43.50          | 27.19       | 200         | 48        | Horizontal |
| 3   | 167.961     | 28.54          | -34.16      | 43.50          | 14.96       | 200         | 80        | Horizontal |
| 4   | 306.893     | 29.65          | -28.07      | 46.00          | 16.35       | 100         | 58        | Horizontal |
| 5   | 637.923     | 31.00          | -20.17      | 46.00          | 15.00       | 100         | 60        | Horizontal |
| 6   | 985.059     | 28.47          | -15.00      | 54.00          | 25.53       | 100         | 75        | Horizontal |

Mode:a; Polarization:Vertical



| Suspected List |             |                |             |                |             |             |           |          |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1              | 36.4033     | 26.44          | -29.51      | 40.00          | 13.56       | 100         | 323       | Vertical |
| 2              | 42.6125     | 24.67          | -29.43      | 40.00          | 15.33       | 100         | 259       | Vertical |
| 3              | 167.961     | 26.31          | -34.16      | 43.50          | 17.19       | 100         | 56        | Vertical |
| 4              | 394.404     | 25.92          | -25.63      | 46.00          | 20.08       | 100         | 1         | Vertical |
| 5              | 637.923     | 36.81          | -20.17      | 46.00          | 9.19        | 100         | 171       | Vertical |
| 6              | 988.745     | 33.68          | -14.95      | 54.00          | 20.32       | 100         | 12        | Vertical |

### 6.3 Radiated Emissions (above 1GHz)

Test Requirement: 47 CFR Part 15, Subpart B  
 Test Method: ANSI C63.4:2014  
 Frequency Range: Above 1GHz  
 Measurement Distance: 3m  
 Limit:  
 Above 1GHz 74(dBμV/m) peak, 54(dBμV/m) average  
 Detector: Peak for pre-scan (1000kHz resolution bandwidth) 1000M to18000MHz

#### 6.3.1 E.U.T. Operation

Operating Environment:

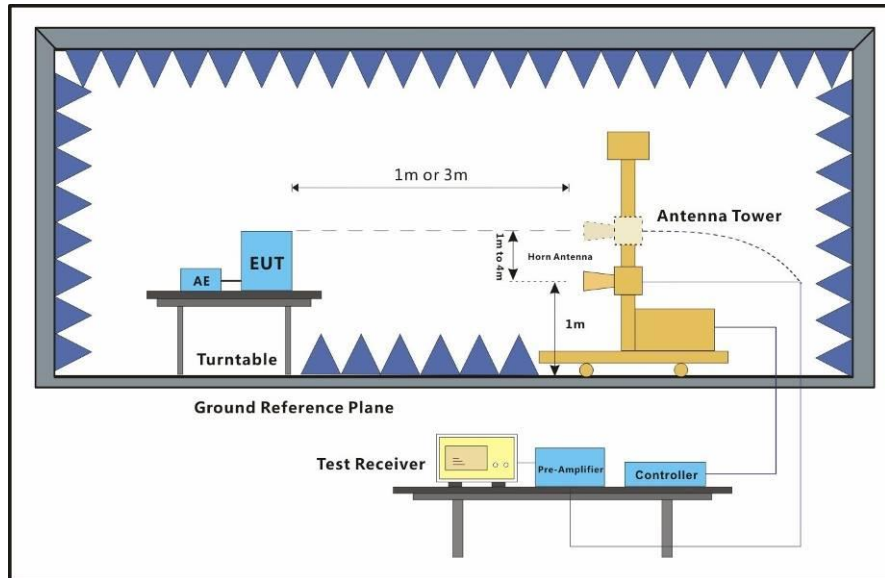
Temperature: 21.7 °C Humidity: 56.4 % RH Atmospheric Pressure: 1010 mbar

Pretest these modes to find the worst case:

- a: Transfer data between the EUT and the PC+USB cable 1
- b: Transfer data between the EUT and the PC+USB cable 2
- c: Transfer data between the EUT and the PC+USB cable 3
- d: Transfer data between the EUT and the PC+USB cable 4
- e: GSM850 Idle +BT+WLAN2.4G+GPS Rx+playing MP4+earphone+EUT+USB cable1+adapter1
- f: GSM1900 Idle +BT+WLAN5G+GPS Rx+camera (Back)+earphone+EUT+USB cable1+adapter2
- g: WCDMA II Idle +BT+WLAN2.4G+GPS Rx+camera (Front)+earphone+EUT1+USB cable1+adapter3
- h: WCDMA VI Idle +BT+WLAN5G+GPS Rx+camera (Back)+earphone+EUT+USB cable1+adapter4
- i: WCDMA V Idle +BT+WLAN5G+GPS Rx+camera (Back)+earphone+EUT+USB cable1+adapter1
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- k: LTE band 4 Idle +BT+FM +WLAN2.4G+GNSS Rx+earphone+EUT+USB cable1+adapter1
- l: LTE band 5 Idle +BT+FM+WLAN5G+GNSS Rx+earphone+EUT+USB cable1+adapter1
- m: LTE band 7 Idle +BT+FM+WLAN2.4G+GNSS Rx+earphone+EUT+USB cable1+adapter1
- n: LTE band 66 Idle +BT+FM+WLAN5G+GNSS Rx +earphone+EUT+USB cable1+adapter1

The worst case for final test: a: Transfer data between the EUT and the PC+USB cable 1

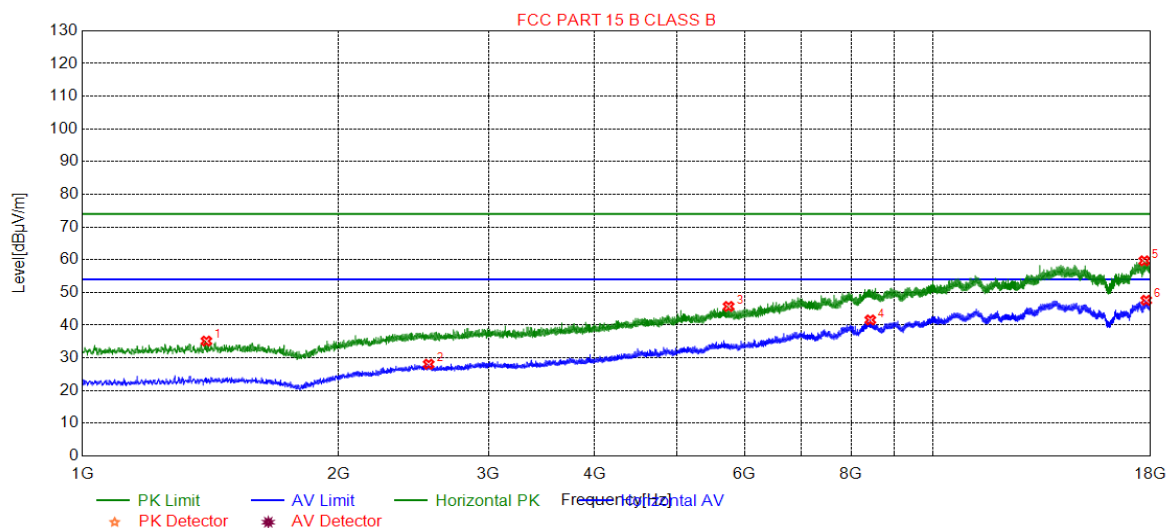
### 6.3.2 Test Setup Diagram



### 6.3.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.

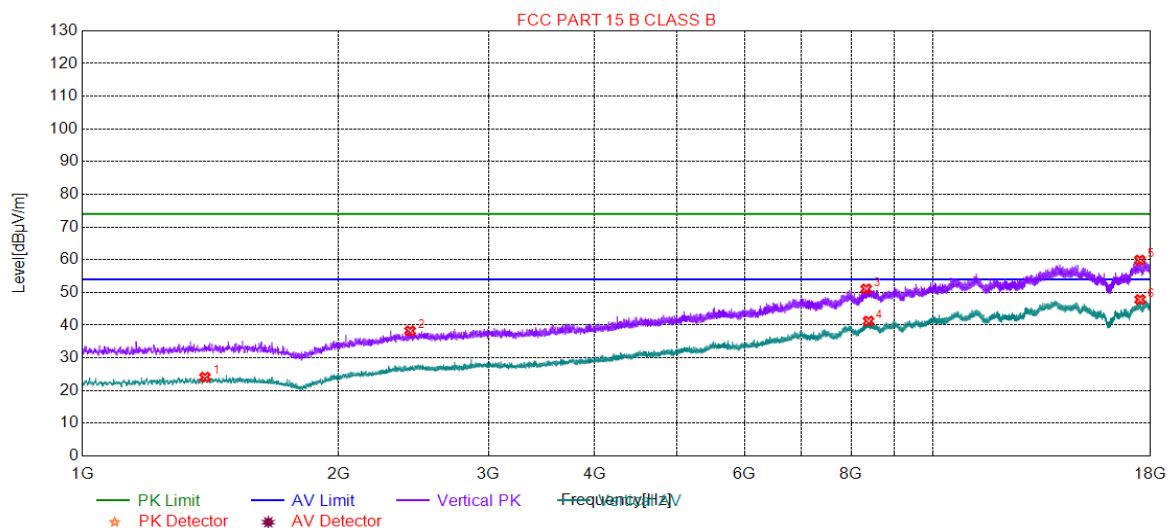
Mode:a; Polarization:Horizontal



#### Suspected List

| NO. | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
|-----|-------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|
| 1   | 1398.66     | 35.15          | -30.30      | 74.00          | 38.85       | 200         | 242       | Horizontal |
| 2   | 2552.17     | 28.07          | -25.90      | 54.00          | 25.93       | 100         | 4         | Horizontal |
| 3   | 5745.78     | 45.73          | -15.69      | 74.00          | 28.27       | 100         | 156       | Horizontal |
| 4   | 8431.07     | 41.60          | -7.73       | 54.00          | 12.40       | 100         | 156       | Horizontal |
| 5   | 17697.3     | 59.68          | 1.03        | 74.00          | 14.32       | 100         | 194       | Horizontal |
| 6   | 17786.6     | 47.62          | 0.74        | 54.00          | 6.38        | 200         | 166       | Horizontal |

Mode:a; Polarization:Vertical



| Suspected List |             |                |             |                |             |             |           |          |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1              | 1393.56     | 24.11          | -30.32      | 54.00          | 29.89       | 100         | 269       | Vertical |
| 2              | 2427.22     | 38.25          | -26.32      | 74.00          | 35.75       | 100         | 156       | Vertical |
| 3              | 8337.56     | 51.09          | -7.76       | 74.00          | 22.91       | 100         | 156       | Vertical |
| 4              | 8391.11     | 41.27          | -7.79       | 54.00          | 12.73       | 100         | 344       | Vertical |
| 5              | 17480.6     | 59.91          | 1.39        | 74.00          | 14.09       | 100         | 232       | Vertical |
| 6              | 17496.7     | 47.85          | 1.60        | 54.00          | 6.15        | 200         | 53        | Vertical |

Remark:

1) Scan from 1GHz to 30GHz, The disturbance above 18GHz was very low and all noise floor. The above radiated emissions were the highest point could be found when testing, so only the above radiated emissions had been displayed.



## **7 Photographs**

### **7.1 Conducted Emissions at Mains Terminals (150kHz-30MHz) Test Setup**

### **7.2 Radiated Emissions (30MHz-1GHz) Test Setup**

### **7.3 Radiated Emissions (above 1GHz ) Test Setup**

### **7.4 EUT Constructional Details (EUT Photos)**

Refer to Photographs of EUT Constructional Details

- End of the Report -