# FCC REPORT
## (Bluetooth)

| | |
|---|---|
| **Applicant:** | HUNG WAI HOLDINGS LIMITED |
| **Address of Applicant:** | Unit 11, 12/F., New Commerce Centre, 19 On Sum Street, Shatin, Hong Kong |

**Equipment Under Test (EUT)**

| | |
|---|---|
| Product Name: | 21.5" LCD touch screen android quad core player |
| Model No.: | DT215-AC4G1-1080-SL |
| **FCC ID:** | 2AB6Z-DT215-AC4G1 |
| **Applicable standards:** | FCC CFR Title 47 Part 15 Subpart C Section 15.247 |
| **Date of sample receipt:** | 28 Apr., 2018 |
| **Date of Test:** | 28 Apr., to 22 May., 2018 |
| **Date of report issued:** | 23 May., 2018 |
| **Test Result:** | PASS * |

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

Authorized Signature:

Bruce Zhang
Laboratory Manager

## 2 Version

| Version No. | Date | Description |
|---|---|---|
| *00* | *23 May., 2018* | *Android player Main board with wireless module (FCC ID: 2AB6Z-A18RK31) and same antenna were used by the device, only AC Power Line Conducted Emission and Radiated emission were re-tested.* |
| | | |
| | | |
| | | |
| | | |

***Tested by:*** Carey Chen ***Date:*** *23 May., 2018*

***Test Engineer***

***Reviewed by:*** Winner Zhang ***Date:*** *23 May., 2018*

***Project Engineer***

# 3 Contents

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# 4 Test Summary

| Test Items | Section in CFR 47 | Result |
|---|---|---|
| Antenna Requirement | 15.203 & 15.247 (c) | Pass* |
| AC Power Line Conducted Emission | 15.207 | Pass |
| Conducted Peak Output Power | 15.247 (b)(1) | Pass* |
| 20dB Occupied Bandwidth | 15.247 (a)(1) | Pass* |
| Carrier Frequencies Separation | 15.247 (a)(1) | Pass* |
| Hopping Channel Number | 15.247 (a)(1) | Pass* |
| Dwell Time | 15.247 (a)(1) | Pass* |
| Spurious Emission | 15.205 & 15.209 | Pass |
| Band Edge | 15.247(d) | Pass |

*Pass: The EUT complies with the essential requirements in the standard.*
*N/A: Not Applicable.*
*Pass*: The test data refer to FCC ID: 2AB6Z-A18RK31.*

# 5 General Information

## 5.1 Client Information

| | |
|---|---|
| Applicant: | HUNG WAI HOLDINGS LIMITED |
| Address: | Unit 11, 12/F., New Commerce Centre, 19 On Sum Street, Shatin, Hong Kong |
| Manufacturer/ Factory: | HUNG WAI ELECTRONICS (HUIZHOU) LTD |
| Address: | 3rd floor, NO. 1, Minfeng Road, Huinan High and New Technology Industry Park, Huiao Avenue, Huizhou City, Guangdong |

## 5.2 General Description of E.U.T.

| | |
|---|---|
| Product Name: | 21.5" LCD touch screen android quad core player |
| Model No.: | DT215-AC4G1-1080-SL |
| Operation Frequency: | 2402MHz~2480MHz |
| Transfer rate: | 1/2/3 Mbits/s |
| Number of channel: | 79 |
| Modulation type: | GFSK, π/4-DQPSK, 8DPSK |
| Modulation technology: | FHSS |
| Antenna Type: | External Antenna |
| Antenna gain: | 2.0 dBi |
| Power supply: | DC 12V |
| AC adapter: | Model No.:PS36A120Y3000S<br>Input: AC100-240V, 50/60Hz, 1.0A<br>Output: DC 12V, 3000mA |

| **Operation Frequency each of channel for GFSK, π/4-DQPSK, 8DPSK** | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 0 | 2402MHz | 20 | 2422MHz | 40 | 2442MHz | 60 | 2462MHz |
| 1 | 2403MHz | 21 | 2423MHz | 41 | 2443MHz | 61 | 2463MHz |
| 2 | 2404MHz | 22 | 2424MHz | 42 | 2444MHz | 62 | 2464MHz |
| 3 | 2405MHz | 23 | 2425MHz | 43 | 2445MHz | 63 | 2465MHz |
| 4 | 2406MHz | 24 | 2426MHz | 44 | 2446MHz | 64 | 2466MHz |
| 5 | 2407MHz | 25 | 2427MHz | 45 | 2447MHz | 65 | 2467MHz |
| … | … | … | … | … | … | … | … |
| 15 | 2417MHz | 35 | 2437MHz | 55 | 2457MHz | 75 | 2477MHz |
| 16 | 2418MHz | 36 | 2438MHz | 56 | 2458MHz | 76 | 2478MHz |
| 17 | 2419MHz | 37 | 2439MHz | 57 | 2459MHz | 77 | 2479MHz |
| 18 | 2420MHz | 38 | 2440MHz | 58 | 2460MHz | 78 | 2480MHz |
| 19 | 2421MHz | 39 | 2441MHz | 59 | 2461MHz | | |
| Remark: Channel 0, 39 &78 selected for GFSK, π/4-DQPSK and 8DPSK. | | | | | | | |

## 5.3 Test environment and test mode

| Operating Environment: | |
|---|---|
| Temperature: | 24.0 °C |
| Humidity: | 54 % RH |
| Atmospheric Pressure: | 1010 mbar |
| **Test Modes:** | |
| Non-hopping mode: | Keep the EUT in continuous transmitting mode with worst case data rate. |
| Hopping mode: | Keep the EUT in hopping mode. |
| Remark | GFSK (1 Mbps) is the worst case mode. |
| The sample was placed 0.8m (below 1GHz)/1.5m (above 1GHz) above the ground plane of 3m chamber*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working with a fresh battery, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. | |

## 5.4 Description of Support Units

The EUT has been tested as an independent unit.

## 5.5 Measurement Uncertainty

| Parameters | Expanded Uncertainty |
|---|---|
| Conducted Emission (9kHz ~ 30MHz) | 2.14 dB (k=2) |
| Radiated Emission (9kHz ~ 30MHz) | 4.24 dB (k=2) |
| Radiated Emission (30MHz ~ 1000MHz) | 4.35 dB (k=2) |
| Radiated Emission (1GHz ~ 18GHz) | 4.44 dB (k=2) |
| Radiated Emission (18GHz ~ 26.5GHz) | 4.56 dB (k=2) |

## 5.6 Laboratory Facility

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

- **FCC - Registration No.: 727551**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The Registration No. is 727551.

- **IC - Registration No.: 10106A-1**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf

## 5.7 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,
Bao'an District, Shenzhen, Guangdong, China
Tel: +86-755-23118282, Fax: +86-755-23116366
Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

## 5.8 Test Instruments list

| Radiated Emission: | | | | | |
|---|---|---|---|---|---|
| **Test Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Cal. Date (mm-dd-yy)** | **Cal. Due date (mm-dd-yy)** |
| 3m SAC | SAEMC | 9m*6m*6m | 966 | 07-22-2017 | 07-21-2020 |
| Loop Antenna | SCHWARZBECK | FMZB1519B | 00044 | 02-25-2018 | 02-24-2019 |
| BiConiLog Antenna | SCHWARZBECK | VULB9163 | 497 | 02-25-2018 | 02-24-2019 |
| Horn Antenna | SCHWARZBECK | BBHA9120D | 916 | 02-25-2018 | 02-24-2019 |
| EMI Test Software | AUDIX | E3 | 6.110919b | N/A | N/A |
| Pre-amplifier | HP | 8447D | 2944A09358 | 03-07-2018 | 03-06-2019 |
| Pre-amplifier | CD | PAP-1G18 | 11804 | 03-07-2018 | 03-06-2019 |
| Spectrum analyzer | Rohde & Schwarz | FSP30 | 101454 | 03-07-2018 | 03-06-2019 |
| EMI Test Receiver | Rohde & Schwarz | ESRP7 | 101070 | 03-07-2018 | 03-06-2019 |
| Cable | ZDECL | Z108-NJ-NJ-81 | 1608458 | 03-07-2018 | 03-06-2019 |
| Cable | MICRO-COAX | MFR64639 | K10742-5 | 03-07-2018 | 03-06-2019 |
| Cable | SUHNER | SUCOFLEX100 | 58193/4PE | 03-07-2018 | 03-06-2019 |

| Conducted Emission: | | | | | |
|---|---|---|---|---|---|
| **Test Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Cal. Date (mm-dd-yy)** | **Cal. Due date (mm-dd-yy)** |
| EMI Test Receiver | Rohde & Schwarz | ESCI | 101189 | 03-07-2018 | 03-06-2019 |
| Pulse Limiter | SCHWARZBECK | OSRAM 2306 | 9731 | 03-07-2018 | 03-06-2019 |
| LISN | CHASE | MN2050D | 1447 | 02-25-2018 | 02-24-2019 |
| LISN | Rohde & Schwarz | ESH3-Z5 | 8438621/010 | 07-21-2017 | 07-20-2018 |
| Cable | HP | 10503A | N/A | 03-07-2018 | 03-06-2019 |
| EMI Test Software | AUDIX | E3 | 6.110919b | N/A | N/A |

# 6 Test results and measurement data

## 6.1 Antenna Requirement

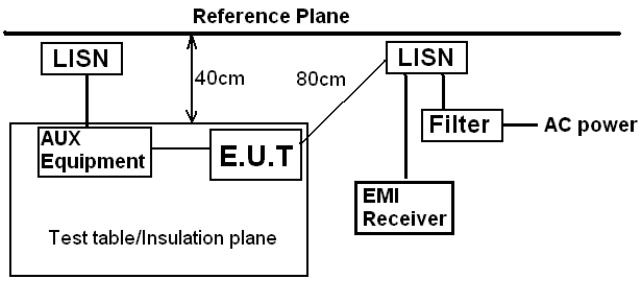
| Standard requirement: | FCC Part 15 C Section 15.203 & 247(c) |
|---|---|

15.203 requirement:
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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
15.247(c) (1)(i) requirement:
(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

| E.U.T Antenna: | |
|---|---|

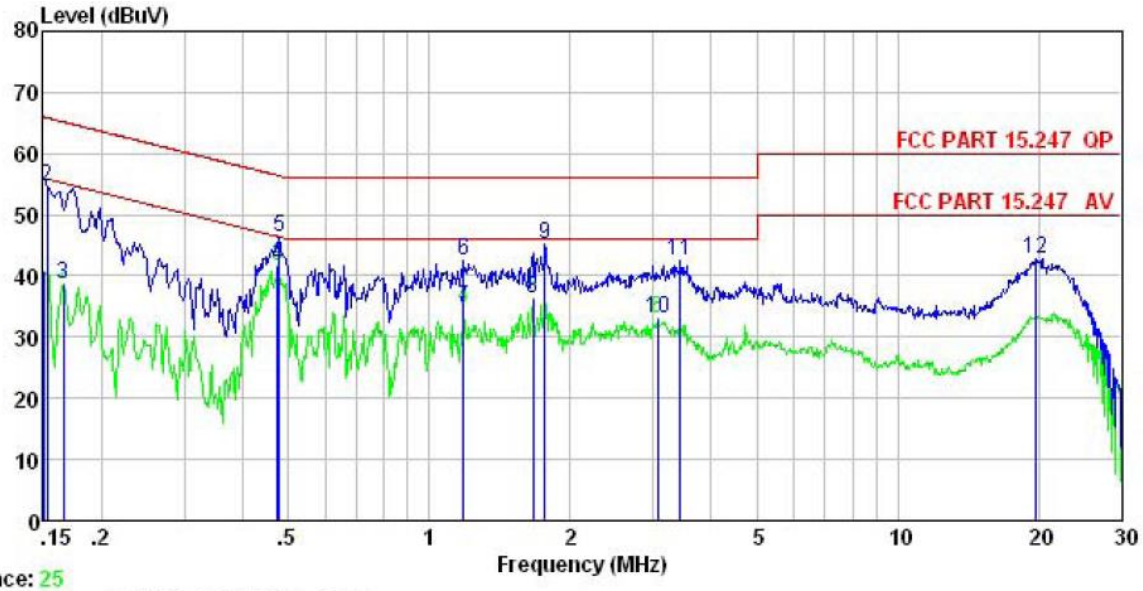
The Bluetooth antenna is an External antenna which permanently attached, and the best case gain of the antenna is 2.0 dBi.

## 6.2 Conducted Emissions

| | | | |
|---|---|---|---|
| Test Requirement: | FCC Part 15 C Section 15.207 | | |
| Test Method: | ANSI C63.10:2013 | | |
| Test Frequency Range: | 150 kHz to 30 MHz | | |
| Class / Severity: | Class B | | |
| Receiver setup: | RBW=9 kHz, VBW=30 kHz, Sweep time=auto | | |
| Limit: | Frequency range (MHz) | Limit (dBuV) | |
| | | Quasi-peak | Average |
| | 0.15-0.5 | 66 to 56* | 56 to 46* |
| | 0.5-5 | 56 | 46 |
| | 5-30 | 60 | 50 |
| | * Decreases with the logarithm of the frequency. | | |
| Test setup: |  <br>*Remark:*<br>*E.U.T: Equipment Under Test*<br>*LISN: Line Impedence Stabilization Network*<br>*Test table height=0.8m* | | |
| Test procedure: | 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.<br>2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).<br>3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement. | | |
| Test Instruments: | Refer to section 5.8 for details | | |
| Test mode: | Hopping mode | | |
| Test results: | Pass | | |

**Measurement Data:**

Test Phase: Line




Trace: 25

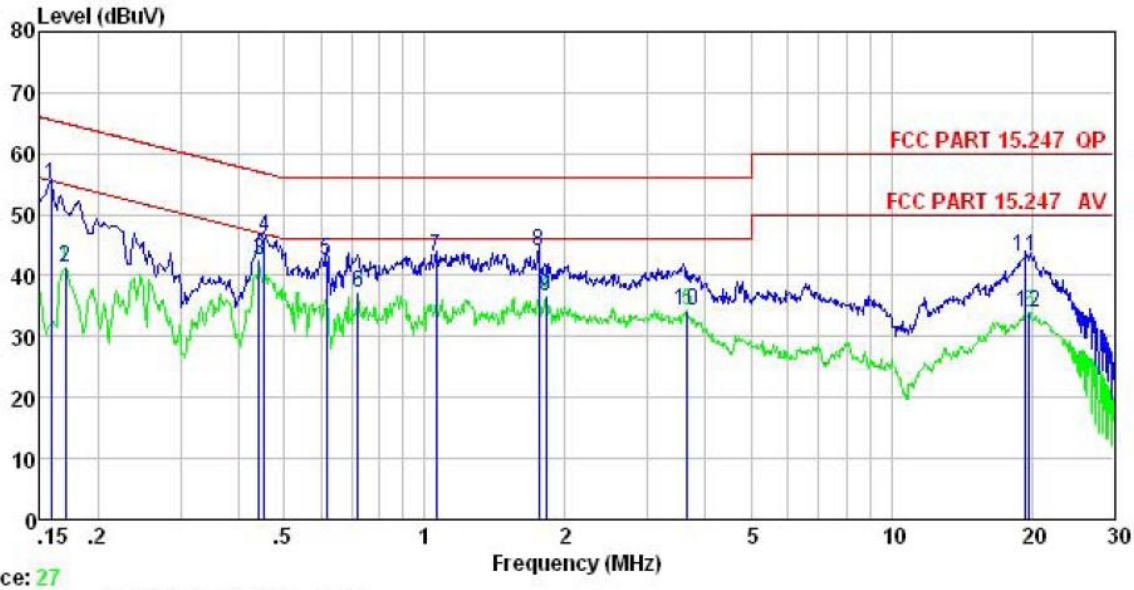
```
Site          : CCIS Shielding Room
Condition     : FCC PART 15.247  QP LISN LINE
EUT           : 21.5" LCD touch screen android quad
              : core player
Model         : DT215-AC4G1-1080-SL
Test mode     : BT Mode
Power Rating  : AC 230V/50Hz
Environment   : Temp:25.5'C Huni:55%
Test Engineer: Carey
Remark        :
```

| | Freq | Read Level | LISN Factor | Cable Loss | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dB | dBuV | dBuV | dB | |
| 1 | 0.150 | 29.71 | 0.18 | 10.78 | 40.67 | 56.00 | -15.33 | Average |
| 2 | 0.153 | 43.61 | 0.18 | 10.78 | 54.57 | 65.82 | -11.25 | QP |
| 3 | 0.166 | 27.60 | 0.17 | 10.77 | 38.54 | 55.16 | -16.62 | Average |
| 4 | 0.474 | 30.63 | 0.12 | 10.75 | 41.50 | 46.45 | -4.95 | Average |
| 5 | 0.479 | 35.45 | 0.12 | 10.75 | 46.32 | 56.36 | -10.04 | QP |
| 6 | 1.184 | 31.56 | 0.13 | 10.89 | 42.58 | 56.00 | -13.42 | QP |
| 7 | 1.184 | 23.91 | 0.13 | 10.89 | 34.93 | 46.00 | -11.07 | Average |
| 8 | 1.662 | 25.10 | 0.14 | 10.94 | 36.18 | 46.00 | -9.82 | Average |
| 9 | 1.762 | 34.16 | 0.14 | 10.94 | 45.24 | 56.00 | -10.76 | QP |
| 10 | 3.074 | 21.97 | 0.16 | 10.92 | 33.05 | 46.00 | -12.95 | Average |
| 11 | 3.436 | 31.37 | 0.17 | 10.91 | 42.45 | 56.00 | -13.55 | QP |
| 12 | 19.635 | 31.68 | 0.27 | 10.93 | 42.88 | 60.00 | -17.12 | QP |

*Notes:*

1. *An initial pre-scan was performed on the line and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Cable Loss.*

Test Phase: Neutral




Trace: 27

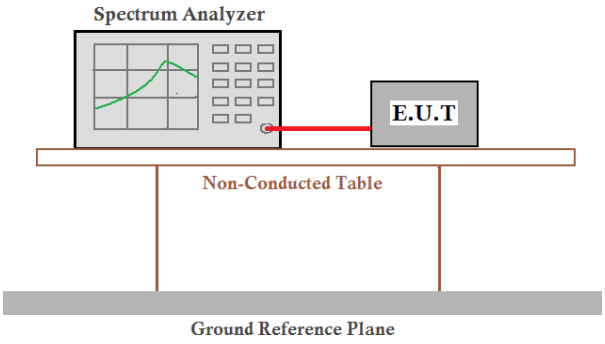
Site : CCIS Shielding Room
Condition : FCC PART 15.247 QP LISN NEUTRAL
EUT : 21.5" LCD touch screen android quad
: core player
Model : DT215-AC4G1-1080-SL
Test mode : BT Mode
Power Rating : AC 230V/50Hz
Environment : Temp:25.5°C Huni:55%
Test Engineer: Carey
Remark :

| | Freq | Read Level | LISN Factor | Cable Loss | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dB | dBuV | dBuV | dB | |
| 1 | 0.158 | 43.04 | 0.98 | 10.77 | 54.79 | 65.56 | -10.77 | QP |
| 2 | 0.170 | 29.65 | 0.96 | 10.77 | 41.38 | 54.94 | -13.56 | Average |
| 3 | 0.442 | 30.84 | 0.97 | 10.74 | 42.55 | 47.02 | -4.47 | Average |
| 4 | 0.454 | 34.57 | 0.97 | 10.74 | 46.28 | 56.80 | -10.52 | QP |
| 5 | 0.617 | 30.72 | 0.97 | 10.77 | 42.46 | 56.00 | -13.54 | QP |
| 6 | 0.720 | 25.48 | 0.97 | 10.78 | 37.23 | 46.00 | -8.77 | Average |
| 7 | 1.060 | 31.26 | 0.97 | 10.88 | 43.11 | 56.00 | -12.89 | QP |
| 8 | 1.753 | 32.17 | 0.98 | 10.94 | 44.09 | 56.00 | -11.91 | QP |
| 9 | 1.819 | 24.81 | 0.98 | 10.95 | 36.74 | 46.00 | -9.26 | Average |
| 10 | 3.661 | 22.40 | 1.00 | 10.90 | 34.30 | 46.00 | -11.70 | Average |
| 11 | 19.428 | 31.40 | 0.71 | 10.93 | 43.04 | 60.00 | -16.96 | QP |
| 12 | 19.740 | 22.29 | 0.70 | 10.93 | 33.92 | 50.00 | -16.08 | Average |

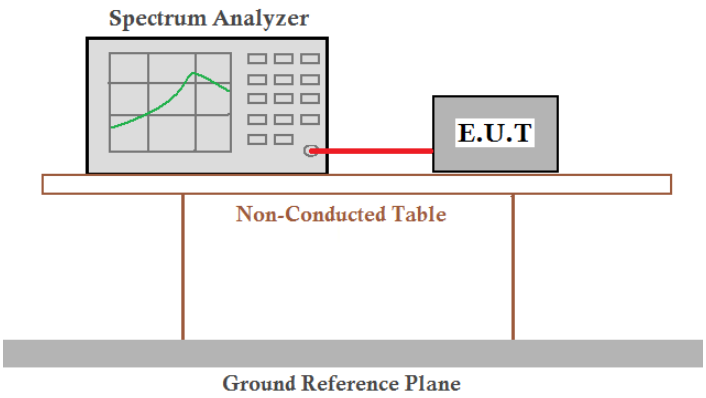
*Notes:*

1. *An initial pre-scan was performed on the line and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Cable Loss.*

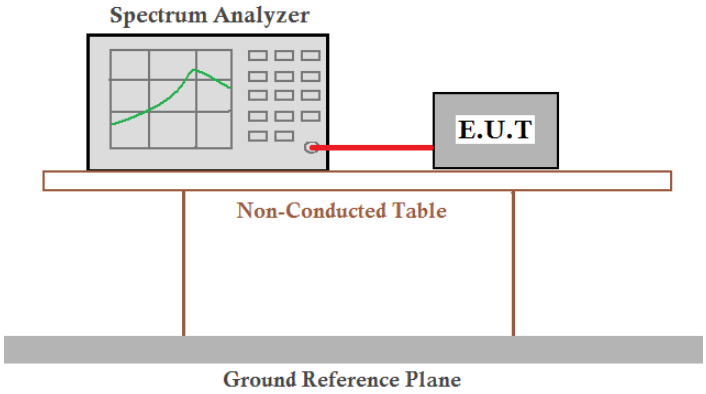
## 6.3 Conducted Output Power

| | |
|---|---|
| Test Requirement: | FCC Part 15 C Section 15.247 (b)(1) |
| Test Method: | ANSI C63.10:2013 and DA00-705 |
| Receiver setup: | RBW=1MHz, VBW=3MHz, Detector=Peak (If 20dB BW ≤1 MHz)<br>RBW=3MHz, VBW=10MHz, Detector=Peak (If 20dB BW > 1 MHz and < 3MHz) |
| Limit: | For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts. |
| Test setup: |  |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Non-hopping mode |
| Test results: | Refer to FCC ID: 2AB6Z-A18RK31 |

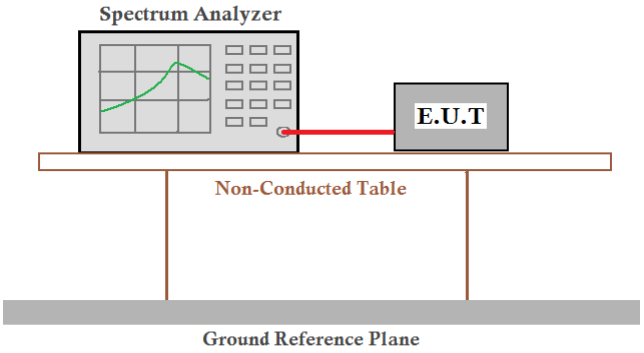
## 6.4 20dB Occupy Bandwidth

| | |
|---|---|
| Test Requirement: | FCC Part 15 C Section 15.247 (a)(1) |
| Test Method: | ANSI C63.10:2013 and DA00-705 |
| Receiver setup: | RBW=30 kHz, VBW=100 kHz, detector=Peak |
| Limit: | NA |
| Test setup: |  |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Non-hopping mode |
| Test results: | Refer to FCC ID: 2AB6Z-A18RK31 |

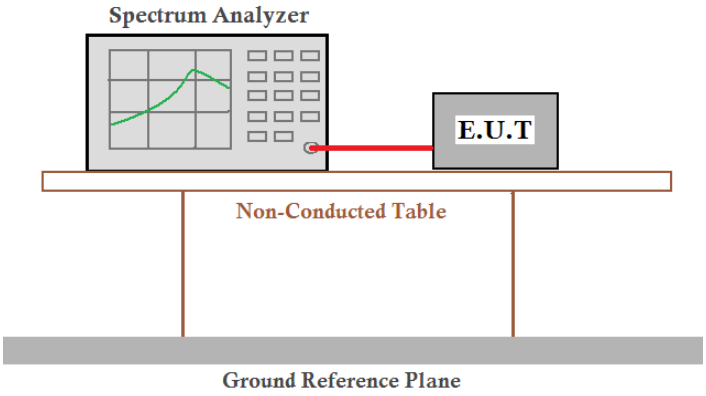
## 6.5 Carrier Frequencies Separation

| | |
|---|---|
| Test Requirement: | FCC Part 15 C Section 15.247 (a)(1) |
| Test Method: | ANSI C63.10:2013 and DA00-705 |
| Receiver setup: | RBW=100 kHz, VBW=300 kHz, detector=Peak |
| Limit: | a) 0.025MHz or the 20dB bandwidth (whichever is greater)<br>b) 0.025MHz or 2/3 of the 20dB bandwidth (whichever is greater) |
| Test setup: |  |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Hopping mode |
| Test results: | Refer to FCC ID: 2AB6Z-A18RK31 |

## 6.6 Hopping Channel Number

| | |
|---|---|
| Test Requirement: | FCC Part 15 C Section 15.247 (a)(1) |
| Test Method: | ANSI C63.10:2013 and DA00-705 |
| Receiver setup: | RBW=100 kHz, VBW=300 kHz, Frequency range=2400MHz-2483.5MHz, Detector=Peak |
| Limit: | 15 channels |
| Test setup: |  |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Hopping mode |
| Test results: | Refer to FCC ID: 2AB6Z-A18RK31 |

## 6.7 Dwell Time

| | |
|---|---|
| Test Requirement: | FCC Part 15 C Section 15.247 (a)(1) |
| Test Method: | ANSI C63.10:2013 and KDB DA00-705 |
| Receiver setup: | RBW=1 MHz, VBW=1 MHz, Span=0 Hz, Detector=Peak |
| Limit: | 0.4 Second |
| Test setup: |  |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Hopping mode |
| Test results: | Refer to FCC ID: 2AB6Z-A18RK31 |

## 6.8 Pseudorandom Frequency Hopping Sequence

| Test Requirement: | FCC Part 15 C Section 15.247 (a)(1) requirement: |
|---|---|

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

Alternatively. Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

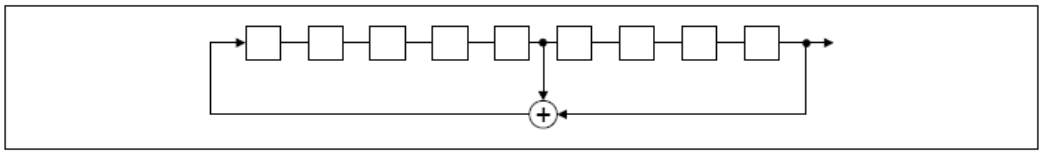
**EUT Pseudorandom Frequency Hopping Sequence**

The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized with nine ones.

• Number of shift register stages: 9

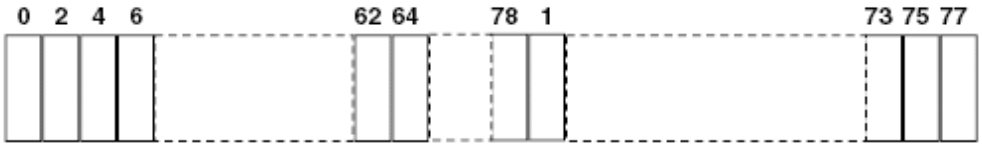
• Length of pseudo-random sequence: $2^9$ -1 = 511 bits

• Longest sequence of zeros: 8 (non-inverted signal)



*Linear Feedback Shift Register for Generation of the PRBS sequence*

An example of Pseudorandom Frequency Hopping Sequence as follow:

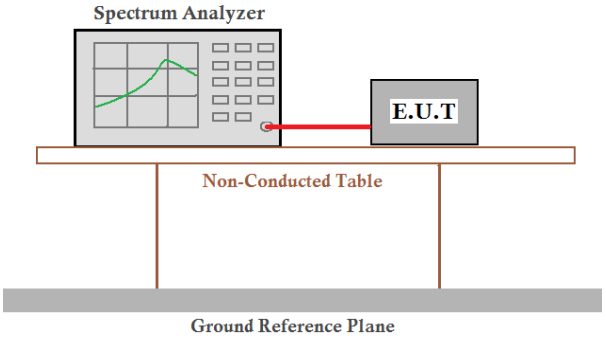



Each frequency used equally on the average by each transmitter.

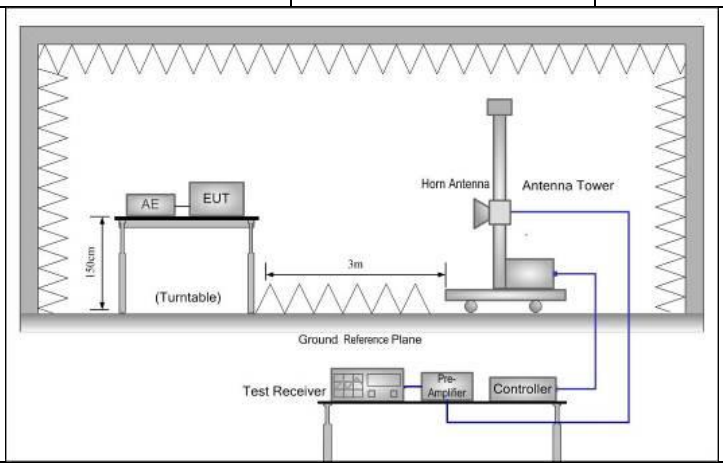
The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

## 6.9 Band Edge

### 6.9.1 Conducted Emission Method

| | |
|---|---|
| Test Requirement: | FCC Part 15 C Section 15.247 (d) |
| Test Method: | ANSI C63.10:2013 and DA00-705 |
| Receiver setup: | RBW=100 kHz, VBW=300 kHz, Detector=Peak |
| Limit: | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. |
| Test setup: |  |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Non-hopping mode and hopping mode |
| Test results: | Refer to FCC ID: 2AB6Z-A18RK31 |

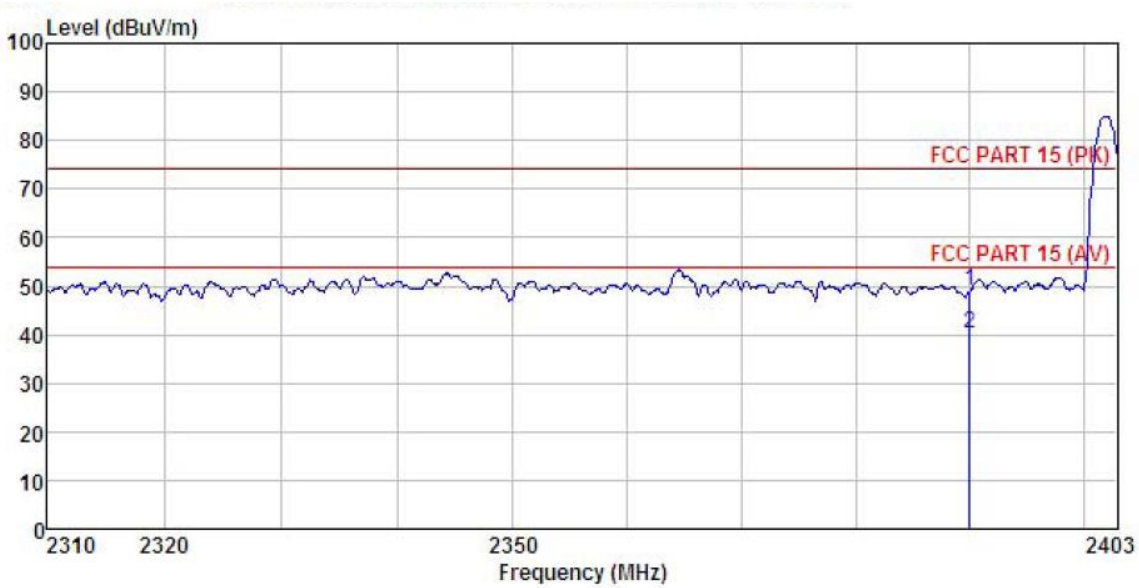
### 6.9.2 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td colspan="5">FCC Part 15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td colspan="5">ANSI C63.10: 2013</td></tr>
<tr><td>Test Frequency Range:</td><td colspan="5">2.3GHz to 2.5GHz</td></tr>
<tr><td>Test Distance:</td><td colspan="5">3m</td></tr>
<tr><td>Receiver setup:</td><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td rowspan="2"></td><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
<tr><td>Limit:</td><td colspan="2">Frequency</td><td colspan="2">Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td rowspan="2"></td><td colspan="2" rowspan="2">Above 1GHz</td><td colspan="2">54.00</td><td>Average Value</td></tr>
<tr><td colspan="2">74.00</td><td>Peak Value</td></tr>
<tr><td>Test setup:</td><td colspan="5"> 
</td></tr>
<tr><td>Test Procedure:</td><td colspan="5">1. The EUT was placed on the top of a rotating table 1.5meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.<br>3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.<br>4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.<br>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.<br>6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</td></tr>
<tr><td>Test Instruments:</td><td colspan="5">Refer to section 5.8 for details</td></tr>
<tr><td>Test mode:</td><td colspan="5">Non-hopping mode</td></tr>
<tr><td>Test results:</td><td colspan="5">Passed</td></tr>
</table>

**GFSK mode**

**Test channel: Lowest channel**

Test Polarization: Horizontal



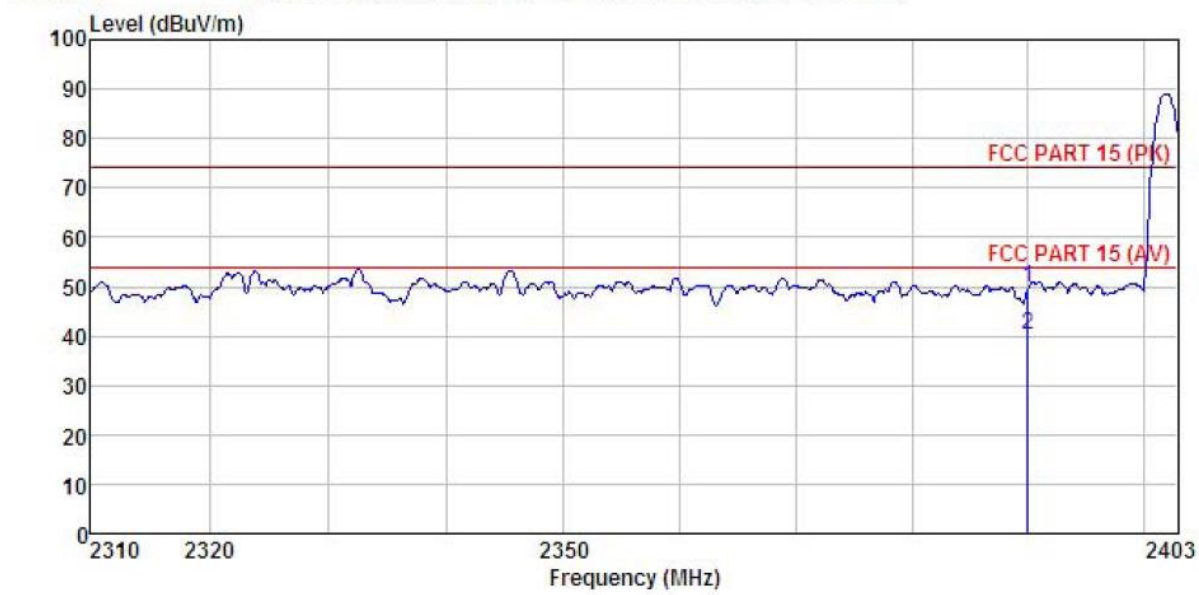

```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) HORIZONTAL
EUT           : 21.5" LCD touch screen android
              : quad core player
Model         : DT215-AC4G1-1080-SL
Test mode     : DH1-L mode
Power Rating  : AC 120V60Hz
Environment   : Temp:25.5'C  Huni:55%
Test Engineer: Yaro
Remark        :
```

| | Freq | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2390.000 | 17.13 | 27.37 | 4.69 | 0.00 | 49.19 | 74.00 | -24.81 | Peak |
| 2 | 2390.000 | 8.25 | 27.37 | 4.69 | 0.00 | 40.31 | 54.00 | -13.69 | Average |

*Remark:*

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test Polarization: Vertical




```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) VERTICAL
EUT           : 21.5" LCD touch screen android
              : quad core player
Model         : DT215-AC4G1-1080-SL
Test mode     : DH1-L mode
Power Rating  : AC 120V60Hz
Environment   : Temp:25.5'C  Huni:55%
Test Engineer: Yaro
Remark        :
```

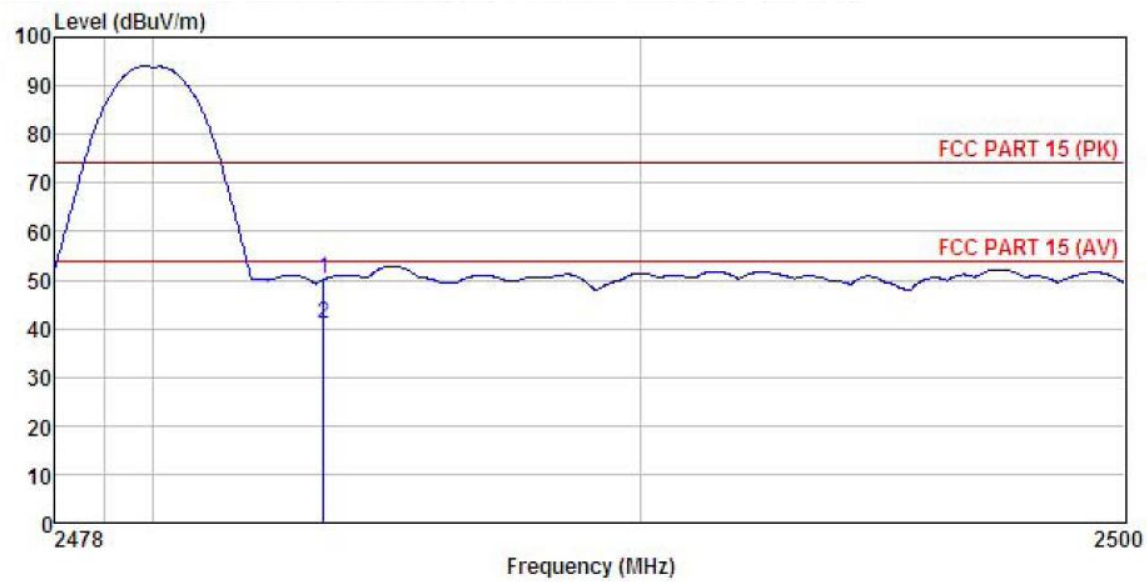
| | Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2390.000 | 17.85 | 27.37 | 4.69 | 0.00 | 49.91 | 74.00 | -24.09 | Peak |
| 2 | 2390.000 | 8.27 | 27.37 | 4.69 | 0.00 | 40.33 | 54.00 | -13.67 | Average |

*Remark:*

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

**Test channel: Highest channel**

Test Polarization: Horizontal



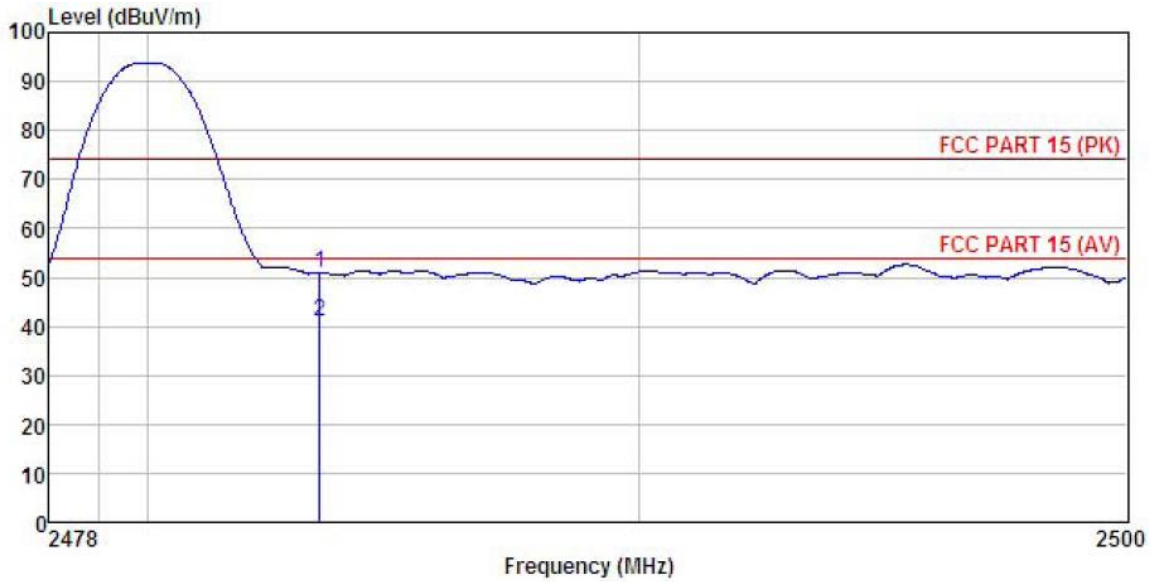

```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) HORIZONTAL
EUT           : 21.5" LCD touch screen android
              : quad core player
Model         : DT215-AC4G1-1080-SL
Test mode     : DH1-H mode
Power Rating  : AC 120V60Hz
Environment   : Temp:25.5'C  Huni:55%
Test Engineer: Yaro
Remark        :
```

| | Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2483.500 | 17.77 | 27.57 | 4.81 | 0.00 | 50.15 | 74.00 | -23.85 | Peak |
| 2 | 2483.500 | 8.62 | 27.57 | 4.81 | 0.00 | 41.00 | 54.00 | -13.00 | Average |

*Remark:*

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test Polarization: Vertical



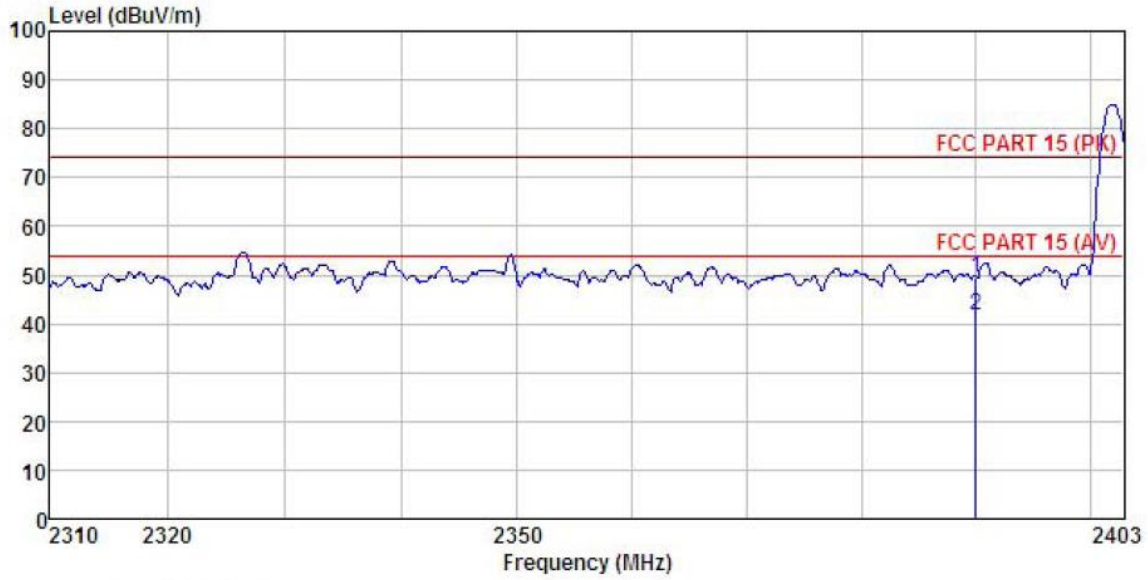

```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) VERTICAL
EUT           : 21.5" LCD touch screen android
              : quad core player
Model         : DT215-AC4G1-1080-SL
Test mode     : DH1-H mode
Power Rating  : AC 120V60Hz
Environment   : Temp:25.5℃  Huni:55%
Test Engineer: Yaro
Remark        :
```

| | Freq | ReadLevel | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2483.500 | 18.53 | 27.57 | 4.81 | 0.00 | 50.91 | 74.00 | -23.09 | Peak |
| 2 | 2483.500 | 8.61 | 27.57 | 4.81 | 0.00 | 40.99 | 54.00 | -13.01 | Average |

*Remark:*

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

| π/4-DQPSK mode |
|---|
| **Test channel: Lowest channel** |
| Test Polarization: Horizontal |



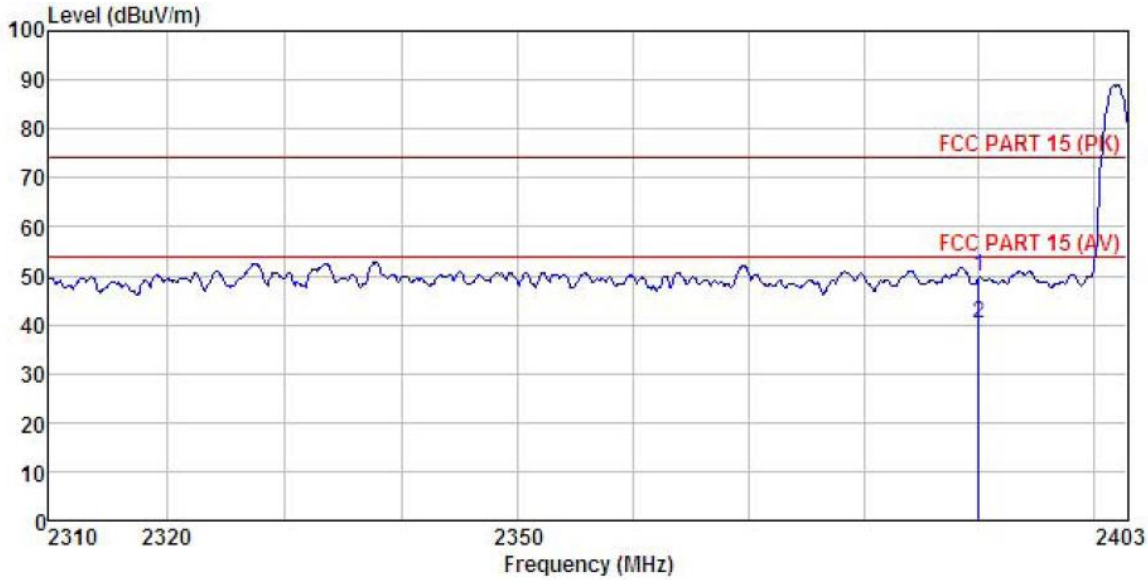

```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) HORIZONTAL
EUT           : 21.5" LCD touch screen android
              : quad core player
Model         : DT215-AC4G1-1080-SL
Test mode     : 2DH1-L mode
Power Rating  : AC 120V60Hz
Environment   : Temp:25.5'C  Huni:55%
Test Engineer: Yaro
Remark        :
```

| | Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2390.000 | 17.54 | 27.37 | 4.69 | 0.00 | 49.60 | 74.00 | -24.40 | Peak |
| 2 | 2390.000 | 9.60 | 27.37 | 4.69 | 0.00 | 41.66 | 54.00 | -12.34 | Average |

*Remark:*

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test Polarization: Vertical




```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) VERTICAL
EUT           : 21.5" LCD touch screen android
              : quad core player
Model         : DT215-AC4G1-1080-SL
Test mode     : 2DH1-L mode
Power Rating  : AC 120V60Hz
Environment   : Temp:25.5℃  Huni:55%
Test Engineer: Yaro
Remark        :
```

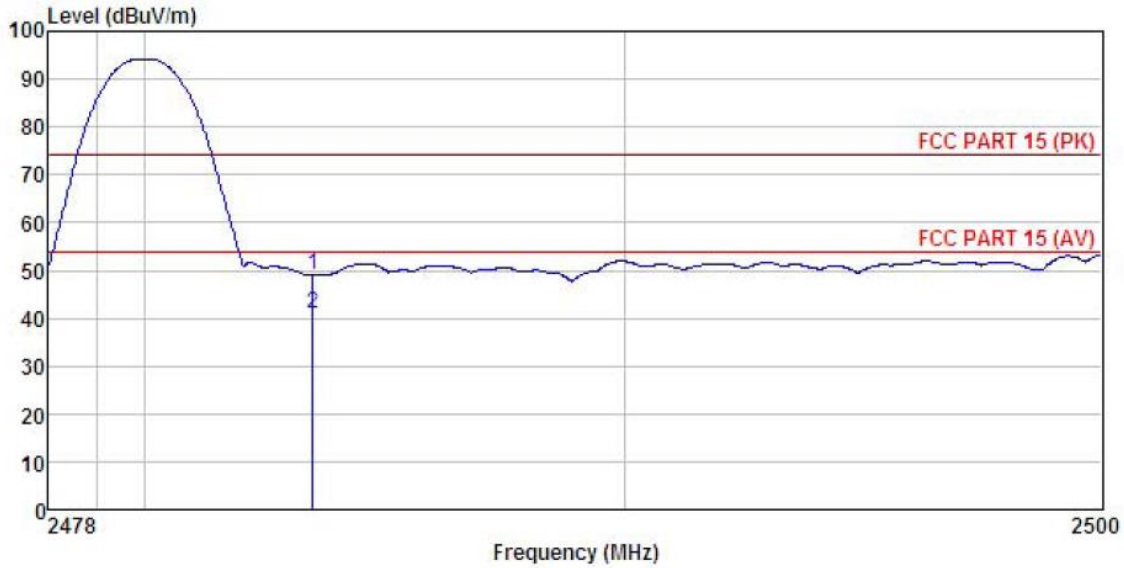
| | Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2390.000 | 17.68 | 27.37 | 4.69 | 0.00 | 49.74 | 74.00 | -24.26 | Peak |
| 2 | 2390.000 | 8.28 | 27.37 | 4.69 | 0.00 | 40.34 | 54.00 | -13.66 | Average |

*Remark:*

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

**Test channel: Highest channel**

Test Polarization: Horizontal



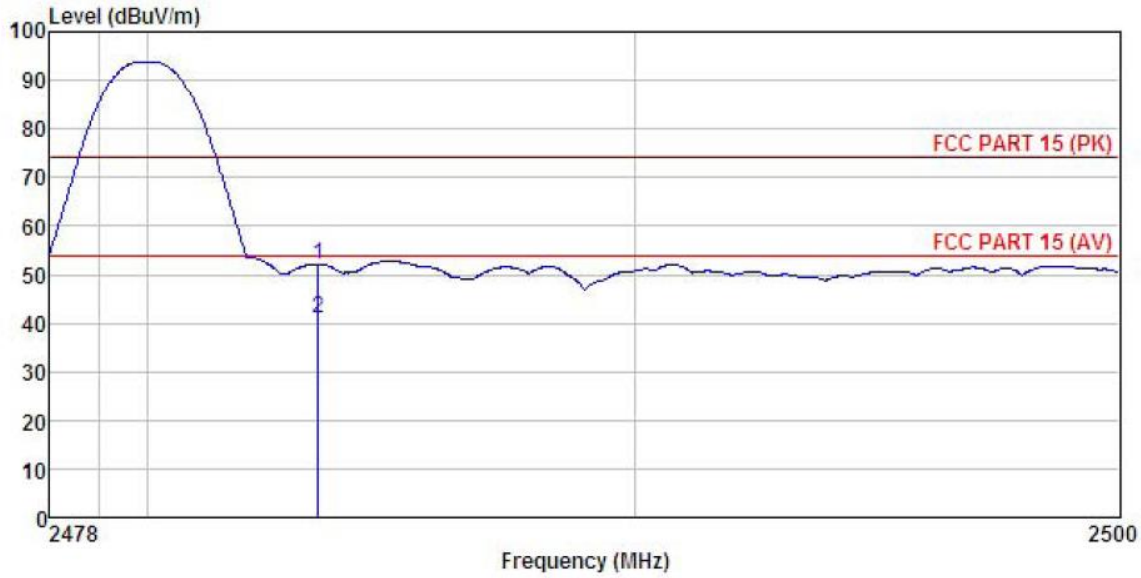

```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) HORIZONTAL
EUT           : 21.5" LCD touch screen android
              : quad core player
Model         : DT215-AC4G1-1080-SL
Test mode     : 2DH1-H mode
Power Rating  : AC 120V60Hz
Environment   : Temp:25.5'C  Huni:55%
Test Engineer: Yaro
Remark        :
```

| | Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2483.500 | 16.77 | 27.57 | 4.81 | 0.00 | 49.15 | 74.00 | -24.85 | Peak |
| 2 | 2483.500 | 8.61 | 27.57 | 4.81 | 0.00 | 40.99 | 54.00 | -13.01 | Average |

*Remark:*

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test Polarization: Vertical




```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) VERTICAL
EUT           : 21.5" LCD touch screen android
              : quad core player
Model         : DT215-AC4G1-1080-SL
Test mode     : 2DH1-H mode
Power Rating  : AC 120V60Hz
Environment   : Temp:25.5'C  Huni:55%
Test Engineer: Yaro
Remark        :
```

| | Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2483.500 | 19.79 | 27.57 | 4.81 | 0.00 | 52.17 | 74.00 | -21.83 | Peak |
| 2 | 2483.500 | 8.59 | 27.57 | 4.81 | 0.00 | 40.97 | 54.00 | -13.03 | Average |

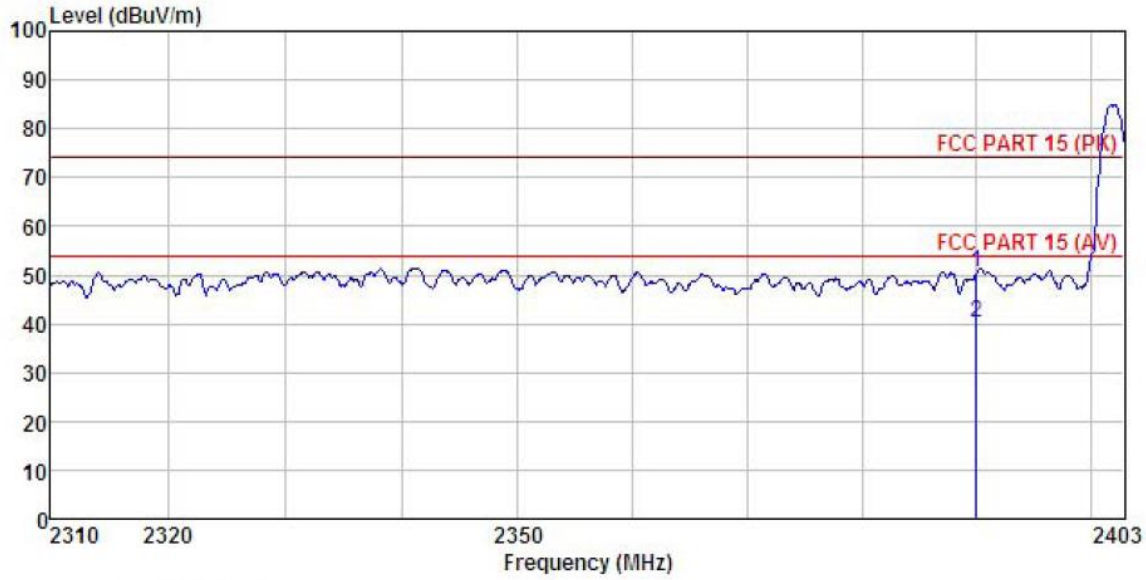
*Remark:*

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

**8DPSK mode**

**Test channel: Lowest channel**

Test Polarization: Horizontal



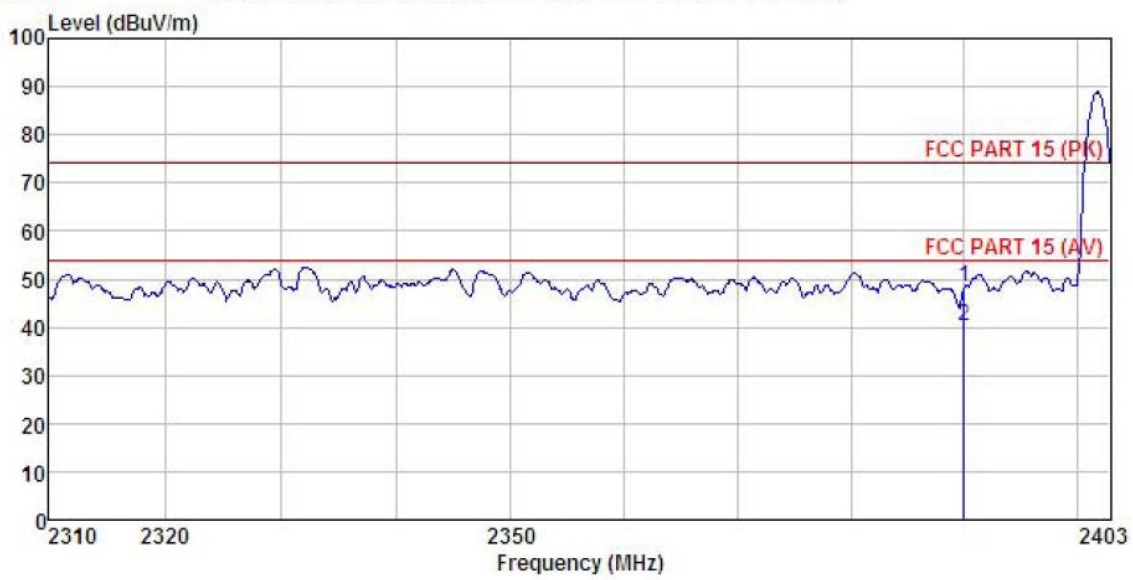

```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) HORIZONTAL
EUT           : 21.5" LCD touch screen android
              : quad core player
Model         : DT215-AC4G1-1080-SL
Test mode     : 3DH1-L mode
Power Rating  : AC 120V60Hz
Environment   : Temp:25.5'C  Huni:55%
Test Engineer: Yaro
Remark        :
```

| | Freq | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2390.000 | 18.64 | 27.37 | 4.69 | 0.00 | 50.70 | 74.00 | -23.30 | Peak |
| 2 | 2390.000 | 8.22 | 27.37 | 4.69 | 0.00 | 40.28 | 54.00 | -13.72 | Average |

*Remark:*

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test Polarization: Vertical




```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) VERTICAL
EUT           : 21.5" LCD touch screen android
              : quad core player
Model         : DT215-AC4G1-1080-SL
Test mode     : 3DH1-L mode
Power Rating  : AC 120V60Hz
Environment   : Temp:25.5'C  Huni:55%
Test Engineer: Yaro
Remark        :
```

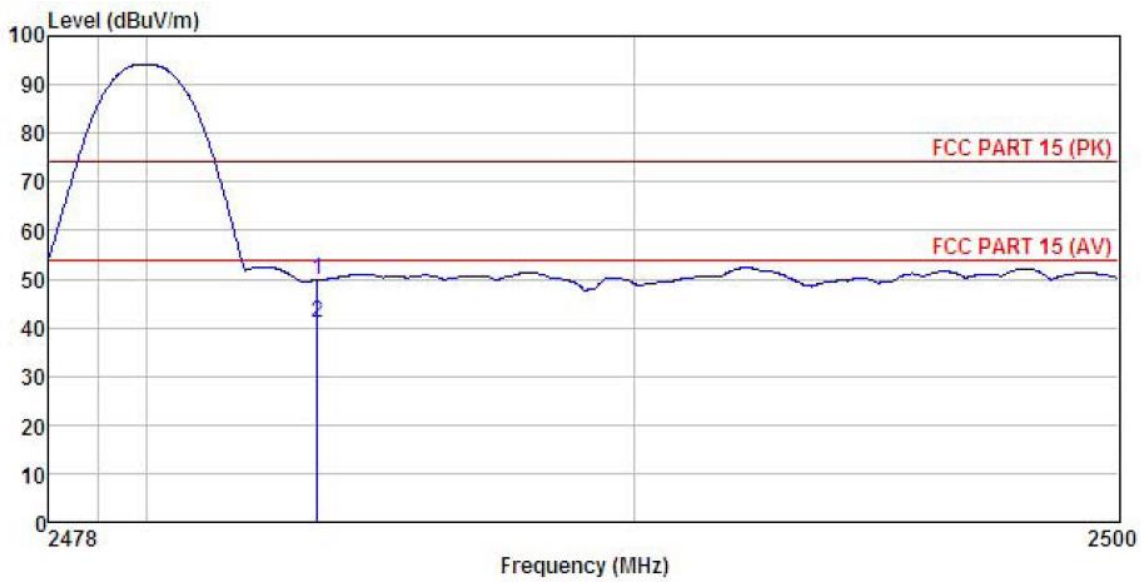
| | Freq | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2390.000 | 16.36 | 27.37 | 4.69 | 0.00 | 48.42 | 74.00 | -25.58 | Peak |
| 2 | 2390.000 | 8.26 | 27.37 | 4.69 | 0.00 | 40.32 | 54.00 | -13.68 | Average |

*Remark:*

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

**Test channel: Highest channel**

Test Polarization: Horizontal



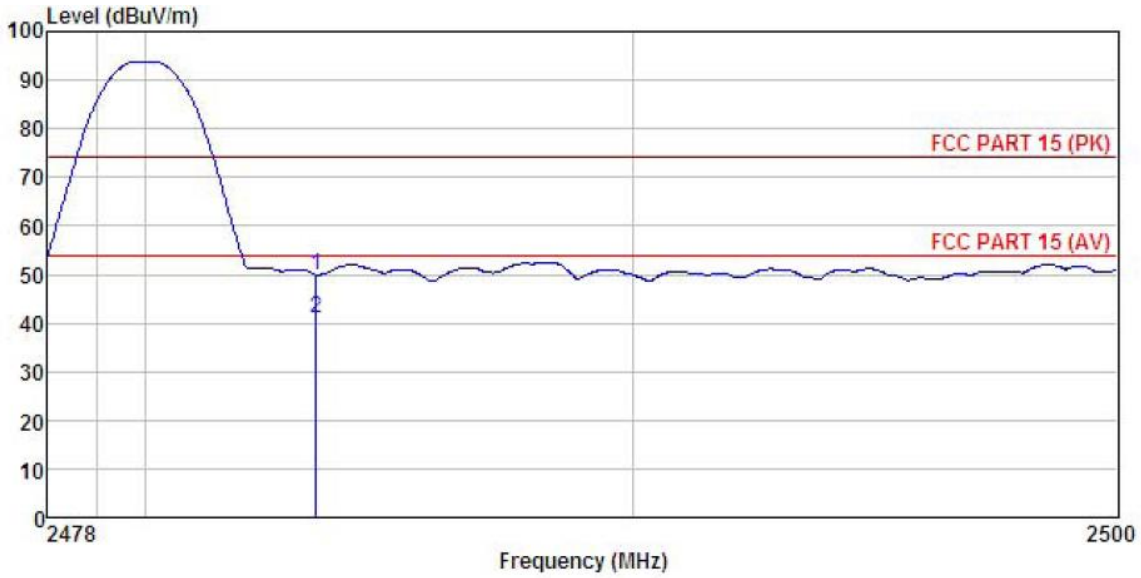

```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) HORIZONTAL
EUT           : 21.5" LCD touch screen android
              : quad core player
Model         : DT215-AC4G1-1080-SL
Test mode     : 3DH1-H mode
Power Rating  : AC 120V60Hz
Environment   : Temp:25.5'C  Huni:55%
Test Engineer: Yaro
Remark        :
```

| | Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2483.500 | 17.37 | 27.57 | 4.81 | 0.00 | 49.75 | 74.00 | -24.25 | Peak |
| 2 | 2483.500 | 8.59 | 27.57 | 4.81 | 0.00 | 40.97 | 54.00 | -13.03 | Average |

*Remark:*

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test Polarization: Vertical




Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18G) VERTICAL
EUT : 21.5" LCD touch screen android
: quad core player
Model : DT215-AC4G1-1080-SL
Test mode : 3DH1-H mode
Power Rating : AC 120V60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: Yaro
Remark :

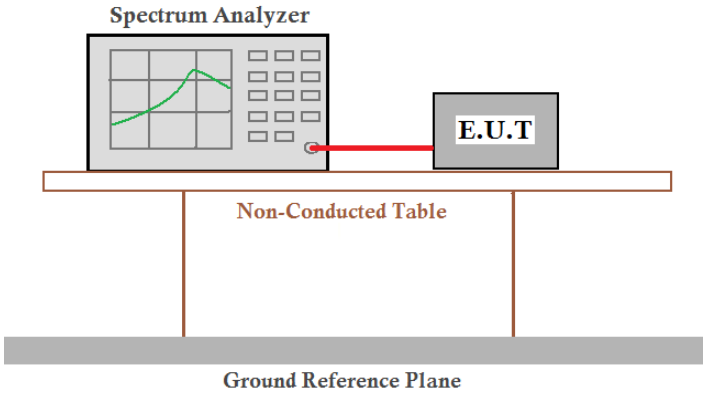
| | Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2483.500 | 17.49 | 27.57 | 4.81 | 0.00 | 49.87 | 74.00 | -24.13 | Peak |
| 2 | 2483.500 | 8.63 | 27.57 | 4.81 | 0.00 | 41.01 | 54.00 | -12.99 | Average |

*Remark:*

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

# 6.10 Spurious Emission

## 6.10.1 Conducted Emission Method

| | |
|---|---|
| Test Requirement: | FCC Part 15 C Section 15.247 (d) |
| Test Method: | ANSI C63.10:2013 and DA00-705 |
| Limit: | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. |
| Test setup: |  |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Non-hopping mode |
| Test results: | Refer to FCC ID: 2AB6Z-A18RK31 |

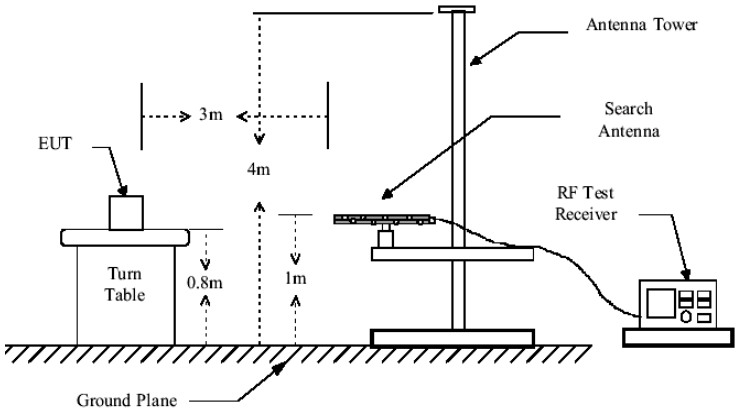
### 6.10.2 Radiated Emission Method

| | | | | | |
|---|---|---|---|---|---|
| Test Requirement: | FCC Part 15 C Section 15.209 | | | | |
| Test Method: | ANSI C63.10: 2013 | | | | |
| Test Frequency Range: | 9 kHz to 25 GHz | | | | |
| Test Distance: | 3m | | | | |
| Receiver setup: | Frequency | Detector | RBW | VBW | Remark |
| | 30MHz-1GHz | Quasi-peak | 120kHz | 300kHz | Quasi-peak Value |
| | Above 1GHz | Peak | 1MHz | 3MHz | Peak Value |
| | | RMS | 1MHz | 3MHz | Average Value |

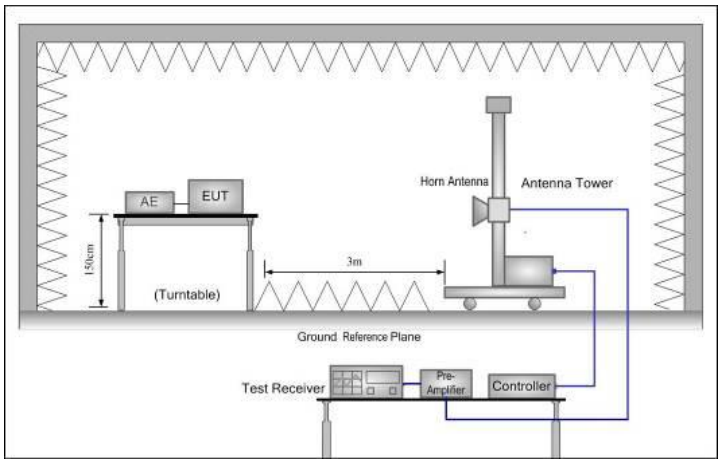
| Limit: | Frequency | Limit (dBuV/m @3m) | Remark |
|---|---|---|---|
| | 30MHz-88MHz | 40.0 | Quasi-peak Value |
| | 88MHz-216MHz | 43.5 | Quasi-peak Value |
| | 216MHz-960MHz | 46.0 | Quasi-peak Value |
| | 960MHz-1GHz | 54.0 | Quasi-peak Value |
| | Above 1GHz | 54.0 | Average Value |
| | | 74.0 | Peak Value |

Test setup:

Below 1GHz




Above 1GHz




Test Procedure:

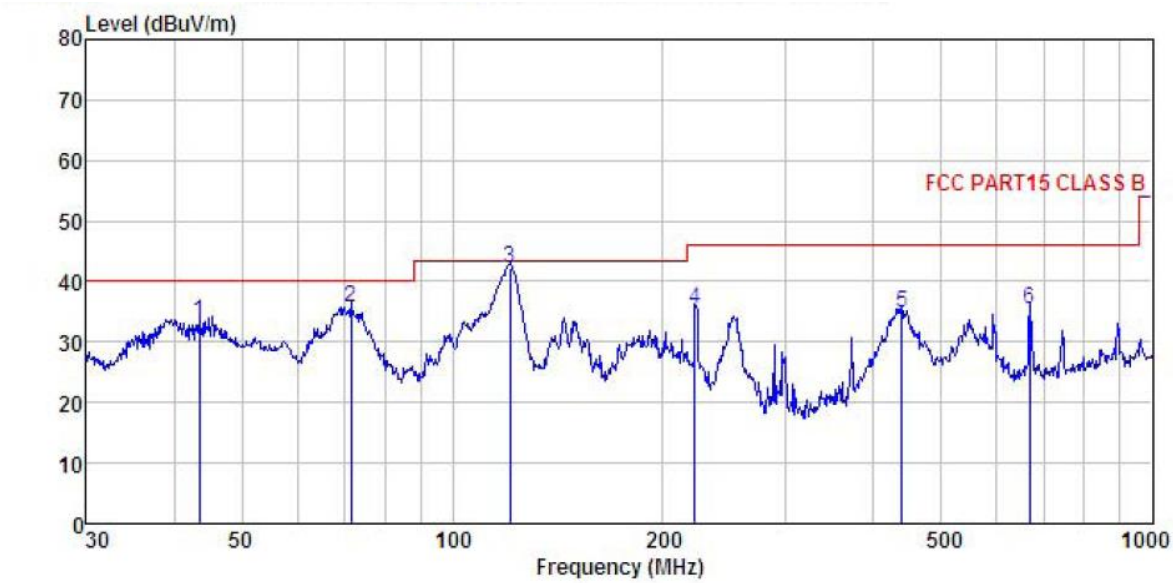
1. The EUT was placed on the top of a rotating table 0.8m(below 1GHz) /1.5m(above 1GHz) above the ground at a 3 meter chamber. The table

| | |
|---|---|
| | was rotated 360 degrees to determine the position of the highest radiation.<br>2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.<br>3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.<br>4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.<br>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.<br>6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. |
| Test Instruments: | Refer to section 5.8 for details |
| Test mode: | Non-hopping mode |
| Test results: | Pass |
| Remark: | 1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case.<br>2. 9 kHz to 30 MHz is noise floor, so only shows the data of above 30MHz in this report. |

**Measurement Data (worst case):**

**Below 1GHz:**

Test Polarization: Vertical




```
Site          : 3m chamber
Condition     : FCC PART15 CLASS B 3m VULB9163(30M2G) VERTICAL
EUT           : 21.5" LCD touch screen android
              : quad core player
Model         : DT215-AC4G1-1080-SL
Test mode     : BT mode
Power Rating  : AC 120V60Hz
Environment   : Temp:25.5'C  Huni:55%
Test Engineer: Yaro
Remark        :
```

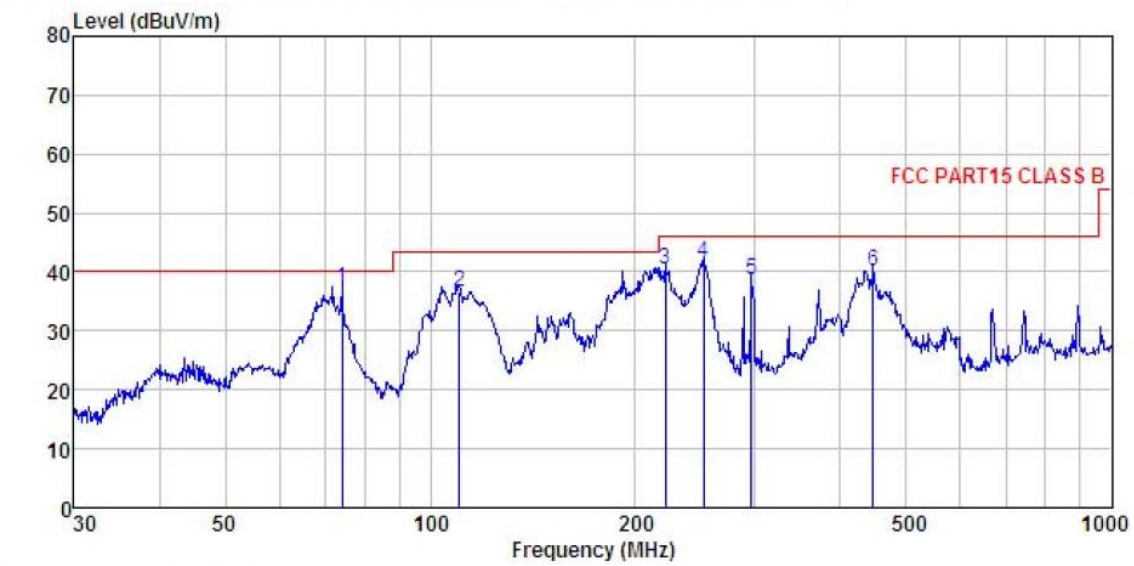
| | Freq | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 43.506 | 48.41 | 13.44 | 1.26 | 29.87 | 33.24 | 40.00 | -6.76 | QP |
| 2 | 71.581 | 54.80 | 8.93 | 1.56 | 29.71 | 35.58 | 40.00 | -4.42 | QP |
| 3 | 120.699 | 59.19 | 10.09 | 2.18 | 29.39 | 42.07 | 43.50 | -1.43 | QP |
| 4 | 222.170 | 48.89 | 12.35 | 2.84 | 28.69 | 35.39 | 46.00 | -10.61 | QP |
| 5 | 438.655 | 44.58 | 15.97 | 3.17 | 28.85 | 34.87 | 46.00 | -11.13 | QP |
| 6 | 668.142 | 40.28 | 19.80 | 3.97 | 28.74 | 35.31 | 46.00 | -10.69 | QP |

*Remark:*

*1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*

2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test Polarization: Horizontal




Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M2G) HORIZONTAL
EUT : 21.5" LCD touch screen android
: quad core player
Model : DT215-AC4G1-1080-SL
Test mode : BT mode
Power Rating : AC 120V60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: Yaro
Remark :

| | Freq | ReadAntenna Level | Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 74.135 | 56.66 | 8.67 | 1.61 | 29.69 | 37.25 | 40.00 | -2.75 | QP |
| 2 | 110.182 | 51.85 | 12.26 | 2.05 | 29.46 | 36.70 | 43.50 | -6.80 | QP |
| 3 | 221.392 | 54.05 | 12.32 | 2.84 | 28.70 | 40.51 | 46.00 | -5.49 | QP |
| 4 | 252.063 | 54.01 | 13.31 | 2.82 | 28.54 | 41.60 | 46.00 | -4.40 | QP |
| 5 | 296.184 | 50.60 | 13.58 | 2.93 | 28.46 | 38.65 | 46.00 | -7.35 | QP |
| 6 | 446.414 | 49.75 | 16.06 | 3.19 | 28.86 | 40.14 | 46.00 | -5.86 | QP |

*Remark:*

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

**Above 1GHz:**

| Test channel: Lowest channel | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Detector: Peak Value | | | | | | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4804.00 | 47.89 | 30.85 | 6.80 | 41.81 | 43.73 | 74.00 | -30.27 | Vertical |
| 4804.00 | 47.98 | 30.85 | 6.80 | 41.81 | 43.82 | 74.00 | -30.18 | Horizontal |
| Detector: Average Value | | | | | | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4804.00 | 37.46 | 30.85 | 6.80 | 41.81 | 33.30 | 54.00 | -20.70 | Vertical |
| 4804.00 | 37.44 | 30.85 | 6.80 | 41.81 | 33.28 | 54.00 | -20.72 | Horizontal |
| | | | | | | | | |
| Test channel: Middle channel | | | | | | | | |
| Detector: Peak Value | | | | | | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4884.00 | 46.32 | 31.20 | 6.86 | 41.84 | 42.54 | 74.00 | -31.46 | Vertical |
| 4884.00 | 46.82 | 31.20 | 6.86 | 41.84 | 43.04 | 74.00 | -30.96 | Horizontal |
| Detector: Average Value | | | | | | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4884.00 | 37.22 | 31.20 | 6.86 | 41.84 | 33.44 | 54.00 | -20.56 | Vertical |
| 4884.00 | 36.76 | 31.20 | 6.86 | 41.84 | 32.98 | 54.00 | -21.02 | Horizontal |
| | | | | | | | | |
| Test channel: Highest channel | | | | | | | | |
| Detector: Peak Value | | | | | | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4960.00 | 46.79 | 31.63 | 6.91 | 41.87 | 43.46 | 74.00 | -30.54 | Vertical |
| 4960.00 | 47.11 | 31.63 | 6.91 | 41.87 | 43.78 | 74.00 | -30.22 | Horizontal |
| Detector: Average Value | | | | | | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4960.00 | 36.86 | 31.63 | 6.91 | 41.87 | 33.53 | 54.00 | -20.47 | Vertical |
| 4960.00 | 37.22 | 31.63 | 6.91 | 41.87 | 33.89 | 54.00 | -20.11 | Horizontal |

*Remark:*

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*