



**CFR 47 FCC PART 15 SUBPART C**  
**CERTIFICATION TEST REPORT**

*For*

**Tablet**

**MODEL NUMBER: VT-TABLET-5082G**

**FCC ID: 2AAGE5081G6**

**REPORT NUMBER: 4789999654.1-10**

**ISSUE DATE: September 18, 2021**

*Prepared for*

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Revision History

| Rev. | Issue Date | Revisions     | Revised By |
|------|------------|---------------|------------|
| V0   | 09/18/2021 | Initial Issue |            |

Note: This is a spot check report base on 4789999654.1-3 which is issued by UL Verification Services (Guangzhou) Co., Ltd, Song Shan Lake Branch on September 15, 2021. The old version EUT had already applied for FCC ID (2AAGE5081GB486), the new version and old version are the same except to except for one less the LTE module, so we only follow the KDB KDB484596 D01 to add the spot check in this report. For other data, please refer to the original report 4789999654.1-3.

Parent Serial Number SI07, FCC ID: 2AAGE5081GB486

Variant Serial Number SI07A, FCC ID: 2AAGE5081G6

| Test Report | 802.11 2.4GHz<br>WIFI (DTS)    | BLE (DTS)                     | Bluetooth DSS                 | 802.11 5G WIFI<br>UNII         |
|-------------|--------------------------------|-------------------------------|-------------------------------|--------------------------------|
| old version | Report<br>#4789999654.1-<br>3  | Report<br>#4789999654.1-<br>1 | Report<br>#4789999654.1-<br>2 | Report<br>#4789999654.1-<br>4  |
| new version | Report<br>#4789999654.1-<br>10 | Report<br>#4789999654.1-<br>9 | Report<br>4789999654.1-<br>8  | Report<br>#4789999654.1-<br>11 |



| Summary of Test Results                                                                                                                                                                                                                                                                       |                                                    |                                                           |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------|--------------|
| Clause                                                                                                                                                                                                                                                                                        | Test Items                                         | FCC Rules                                                 | Test Results |
| 1                                                                                                                                                                                                                                                                                             | Conducted Output Power                             | FCC Part 15.247 (b) (3)                                   | Pass         |
| 2                                                                                                                                                                                                                                                                                             | Radiated Bandedge and Spurious Emission Spot Check | FCC Part 15.247 (d)<br>FCC Part 15.209<br>FCC Part 15.205 | Pass         |
| 3                                                                                                                                                                                                                                                                                             | Antenna Requirement                                | FCC Part 15.203                                           | Pass         |
| <b>Note:</b><br>1. This test report is only published to and used by the applicant, and it is not for evidence purpose in China.<br>2. The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 15 SUBPART C >when <Accuracy Method> decision rule is applied. |                                                    |                                                           |              |

| Test worst case of Conducted Output Power Spot Check |                 |             |                             |               |
|------------------------------------------------------|-----------------|-------------|-----------------------------|---------------|
| Test Mode                                            | Frequency (MHz) | Result[dBm] | original report Result[dBm] | Deviation(dB) |
| 11B                                                  | 2462            | 16.25       | 16.43                       | -0.18         |
| 11G                                                  | 2412            | 16.71       | 16.94                       | -0.23         |
| 11N20                                                | 2412            | 19.63       | 19.70                       | -0.07         |

| The worst case of Radiated Bandedge and Spurious Emission Spot Check |           |                 |                |                                |               |
|----------------------------------------------------------------------|-----------|-----------------|----------------|--------------------------------|---------------|
| Test Mode                                                            | Test Item | Frequency (MHz) | Result[dBuV/m] | original report Result[dBuV/m] | Deviation(dB) |
| 11n 20                                                               | Band Edge | 2483.7          | 68.39          | 69.91                          | -1.52         |
| 11b                                                                  | RSE       | 4815            | 51.95          | 52.80                          | -0.85         |

Note: Comparison of two models, upper deviation is within 3 dB range and all test results are under FCC Technical limits.



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## 1. ATTESTATION OF TEST RESULTS

### Applicant Information

Company Name: Chengdu Vantron Technology Co., Ltd.  
Address: No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, P.R.  
China

### Manufacturer Information

Company Name: Chengdu Vantron Technology Co., Ltd.  
Address: No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, P.R.  
China

### EUT Information

EUT Name: Tablet  
Model: VT-TABLET-5082G  
Brand: VANTRON  
Sample Received Date: June 23, 2021  
Sample Status: Normal  
Sample ID: 4030518  
Date of Tested: June 23, 2021~ July 02, 2021

| APPLICABLE STANDARDS         |              |
|------------------------------|--------------|
| STANDARD                     | TEST RESULTS |
| CFR 47 FCC PART 15 SUBPART C | PASS         |

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## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, KDB 662911 D01 Multiple Transmitter Output v02r01, CFR 47 FCC Part 2, CFR 47 FCC Part 15, ANSI C63.10-2013.

## 3. FACILITIES AND ACCREDITATION

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accreditation Certificate | <p><b>A2LA (Certificate No.: 4102.01)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.</p> <p><b>FCC (FCC Designation No.: CN1187)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules</p> <p><b>ISED (Company No.: 21320)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320.</p> <p><b>VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793.<br/>Facility Name:<br/>Chamber D, the VCCI registration No. is G-20019 and R-20004<br/>Shielding Room B, the VCCI registration No. is C-20012 and T-20011</p> |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Note 1: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

Note 2: The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3: For below 30 MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30 MHz had been correlated to measurements performed on an OFS.



## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognize national standards.

### 4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| Test Item                                                                                                                                     | Uncertainty               |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Conduction emission                                                                                                                           | 3.62 dB                   |
| Radiated Emission<br>(Included Fundamental Emission) (9 kHz ~ 30 MHz)                                                                         | 2.2 dB                    |
| Radiated Emission<br>(Included Fundamental Emission) (30 MHz ~ 1 GHz)                                                                         | 4.00 dB                   |
| Radiated Emission<br>(Included Fundamental Emission) (1 GHz to 26 GHz)                                                                        | 5.78 dB (1 GHz ~ 18 GHz)  |
|                                                                                                                                               | 5.23 dB (18 GHz ~ 26 GHz) |
| Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2. |                           |



## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

|                     |                                                                                                                              |
|---------------------|------------------------------------------------------------------------------------------------------------------------------|
| EUT Name            | Tablet                                                                                                                       |
| Model               | VT-TABLET-5082G                                                                                                              |
| Radio Technology    | IEEE802.11b/g/n HT20                                                                                                         |
| Operation frequency | IEEE 802.11b: 2412MHz—2462MHz<br>IEEE 802.11g: 2412MHz—2462MHz<br>IEEE 802.11n HT20: 2412MHz—2462MHz                         |
| Modulation          | IEEE 802.11b: DSSS(CCK)<br>IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK) |
| Rated Input         | DC 5 V                                                                                                                       |
| Li-ion Battery      | 3.8 V, 8000 mAh, 30.4Wh                                                                                                      |

### 5.2. CHANNEL LIST

| Channel List for 802.11b/g/n (20 MHz) |                 |         |                 |         |                 |         |                 |
|---------------------------------------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| Channel                               | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 1                                     | 2412            | 4       | 2427            | 7       | 2442            | 10      | 2457            |
| 2                                     | 2417            | 5       | 2432            | 8       | 2447            | 11      | 2462            |
| 3                                     | 2422            | 6       | 2437            | 9       | 2452            | /       | /               |

### 5.3. THE WORSE CASE POWER SETTING PARAMETER

| The Worst Case Power Setting Parameter under 2400 ~ 2483.5MHz Band |                         |              |         |         |            |      |      |
|--------------------------------------------------------------------|-------------------------|--------------|---------|---------|------------|------|------|
| Test Software                                                      |                         | RFTesttool   |         |         |            |      |      |
| Modulation Mode                                                    | Transmit Antenna Number | Test Channel |         |         |            |      |      |
|                                                                    |                         | NCB: 20MHz   |         |         | NCB: 40MHz |      |      |
|                                                                    |                         | CH 1         | CH 6    | CH 11   | CH 3       | CH 6 | CH 9 |
| 802.11b                                                            | 1                       | default      | default | default | /          |      |      |
| 802.11g                                                            | 1                       | default      | default | default |            |      |      |
| 802.11n HT20                                                       | 1                       | default      | default | default |            |      |      |



**5.4. MAXIMUM OUTPUT POWER**

| IEEE Std. 802.11 | Frequency (MHz) | Channel Number | Maximum Conducted AVG Output Power (dBm) |
|------------------|-----------------|----------------|------------------------------------------|
| b                | 2412 ~ 2462     | 1-11[11]       | 16.25                                    |
| g                | 2412 ~ 2462     | 1-11[11]       | 16.71                                    |
| n HT20           | 2412 ~ 2462     | 1-11[11]       | 19.63                                    |

**5.5. TEST CHANNEL CONFIGURATION**

| IEEE Std. 802.11 | Test Channel Number                                       | Frequency                    |
|------------------|-----------------------------------------------------------|------------------------------|
| b                | CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel) | 2412 MHz, 2437 MHz, 2462 MHz |
| g                | CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel) | 2412 MHz, 2437 MHz, 2462 MHz |
| n HT20           | CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel) | 2412 MHz, 2437 MHz, 2462 MHz |

## 5.6. THE WORSE CASE CONFIGURATIONS

The EUT was tested in the following configuration(s):

Controlled in test mode using a software application on the EUT supplied by customer. The application was used to enable a continuous transmission and to select the mode, test channels, bandwidth, data rates as required.

Test channels referring to section 5.2.

Maximum power setting referring to section 5.3.

Worst case Data Rates declared by the customer:

- IEEE 802.11b / SISO – DBPSK / 1 Mbps
- IEEE 802.11g / SISO – BPSK / 6 Mbps
- IEEE 802.11n HT20 / SISO – BPSK / MCS0

For Radiated test of 802.11b and g mode, the antenna with higher output power was selected to be test.

The EUT support Cyclic Shift Diversity(CDD), Space Time Coding(STBC), Spatial Division Multiplexing(SDM) modes. They use the same conducted power per chain in any given mode, so we only chose the worst case mode CDD for final testing.



## 5.7. DESCRIPTION OF AVAILABLE ANTENNAS

| Antenna | Frequency (MHz) | Antenna Type     | MAX Antenna Gain (dBi) |
|---------|-----------------|------------------|------------------------|
| 1       | 2412-2462       | Integral Antenna | 3.4                    |
| 2       | 2412-2462       | Integral Antenna | 2.2                    |

Note: Note: Directional gain=  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT}]$  dBi=5.83 dBi.

$N_{ANT}$  : Antenna numbers

Note: The value of the antenna gain was declared by customer.

| Test Mode            | Transmit and Receive Mode                    | Description                                                   |
|----------------------|----------------------------------------------|---------------------------------------------------------------|
| IEEE 802.11b         | <input checked="" type="checkbox"/> 2TX, 2RX | ANT 1 or ANT 2 can be used as transmitting/receiving antenna. |
| IEEE 802.11g         | <input checked="" type="checkbox"/> 2TX, 2RX | ANT 1 or 2 can be used as transmitting/receiving antenna.     |
| IEEE 802.11n<br>HT20 | <input checked="" type="checkbox"/> 2TX, 2RX | ANT1&2 can be used as transmitting/receiving antenna.         |

Note: The value of the antenna gain was declared by customer.

## 5.8. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

| Item | Equipment | Brand Name | Model Name | P/N |
|------|-----------|------------|------------|-----|
| /    | /         | /          | /          | /   |

### I/O CABLES

| Cable No | Port | Connector Type | Cable Type | Cable Length(m) | Remarks |
|----------|------|----------------|------------|-----------------|---------|
| 1        | USB  | Type C         | /          | 1.0             | /       |

### ACCESSORIES

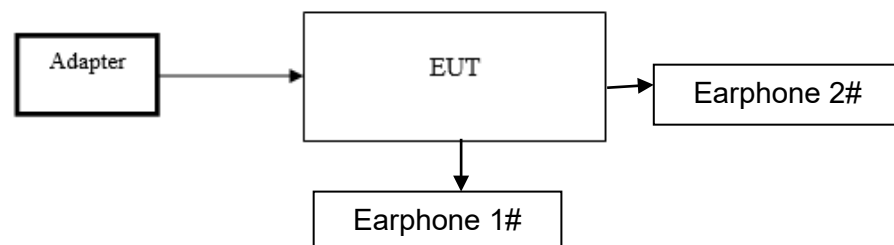
| Item | Accessory     | Brand Name | Model Name   | Description |
|------|---------------|------------|--------------|-------------|
| 1    | Power adapter | HUAWEI     | HW-100225C00 | 5V2A        |
| 2    | Earphone 1#   | /          | /            | /           |
| 3    | Earphone 2#   | /          | /            | /           |
| 4    | TF Card       | /          | /            | /           |

### TEST SETUP

The EUT can work in engineering mode with a software through a Laptop.

### SETUP DIAGRAM FOR TESTS

For Conducted Emission Test for AC Power Port test:



**6. MEASURING INSTRUMENT AND SOFTWARE USED**

| Radiated Emissions                   |              |                                     |               |                |                |
|--------------------------------------|--------------|-------------------------------------|---------------|----------------|----------------|
| Equipment                            | Manufacturer | Model No.                           | Serial No.    | Last Cal.      | Due Date       |
| MXE EMI Receiver                     | KESIGHT      | N9038A                              | MY56400036    | Nov. 12, 2020  | Nov. 11, 2021  |
| Hybrid Log Periodic Antenna          | TDK          | HLP-3003C                           | 130959        | Sept. 17, 2018 | Sept. 17, 2021 |
| Hybrid Log Periodic Antenna          | TDK          | HLP-3003C                           | 130960        | Aug. 11, 2018  | Aug. 11, 2021  |
| Preamplifier                         | HP           | 8447D                               | 2944A09099    | Nov. 12, 2020  | Nov. 11, 2021  |
| EMI Measurement Receiver             | R&S          | ESR26                               | 101377        | Nov. 12, 2020  | Nov. 11, 2021  |
| Horn Antenna                         | TDK          | HRN-0118                            | 130939        | Sept. 17, 2018 | Sept. 17, 2021 |
| Preamplifier                         | TDK          | PA-02-0118                          | TRS-305-00067 | Nov. 20, 2020  | Nov. 19, 2021  |
| Horn Antenna                         | Schwarzbeck  | BBHA9170                            | #691          | Aug. 11, 2018  | Aug. 11, 2021  |
| Preamplifier                         | TDK          | PA-02-2                             | TRS-307-00003 | Nov. 12, 2020  | Nov. 11, 2021  |
| Preamplifier                         | TDK          | PA-02-3                             | TRS-308-00002 | Nov. 12, 2020  | Nov. 11, 2021  |
| Loop antenna                         | Schwarzbeck  | 1519B                               | 00008         | Jan.17, 2019   | Jan.17,2022    |
| Preamplifier                         | TDK          | PA-02-001-3000                      | TRS-302-00050 | Nov. 12, 2020  | Nov. 11, 2021  |
| High Pass Filter                     | Wi           | WHKX10-2700-3000-18000-40SS         | 23            | Nov. 12, 2020  | Nov. 11, 2021  |
| Band Reject Filter                   | Wainwright   | WRCJV8-2350-2400-2483.5-2533.5-40SS | 4             | Nov. 12, 2020  | Nov. 11, 2021  |
| Software                             |              |                                     |               |                |                |
| Description                          |              |                                     | Manufacturer  | Name           | Version        |
| Test Software for Radiated Emissions |              |                                     | Farad         | EZ-EMC         | Ver. UL-3A1    |
| Tonsend RF Test System               |              |                                     |               |                |                |
| Equipment                            | Manufacturer | Model No.                           | Serial No.    | Last Cal.      | Due. Date      |
| Wideband Radio Communication Tester  | R&S          | CMW500                              | 155523        | Nov.20,2020    | Nov.19,2021    |
| PXA Signal Analyzer                  | Keysight     | N9030A                              | MY55410512    | Nov.20,2020    | Nov.19,2021    |
| MXG Vector Signal Generator          | Keysight     | N5182B                              | MY56200284    | Nov.20,2020    | Nov.19,2021    |
| MXG Vector Signal Generator          | Keysight     | N5172B                              | MY56200301    | Nov.20,2020    | Nov.19,2021    |



|                                |              |                           |            |               |               |
|--------------------------------|--------------|---------------------------|------------|---------------|---------------|
| DC power supply                | Keysight     | E3642A                    | MY55159130 | Nov.24,2020   | Nov.23,2021   |
| Temperature & Humidity Chamber | SANMOOD      | SG-80-CC-2                | 2088       | Nov.20,2020   | Nov.19,2021   |
| Software                       |              |                           |            |               |               |
| Description                    | Manufacturer | Name                      |            | Version       |               |
| Tonsend SRD Test System        | Tonsend      | JS1120-3 RF Test System   |            | 2.6.77.0518   |               |
| Other Instruments              |              |                           |            |               |               |
| Equipment                      | Manufacturer | Model No.                 | Serial No. | Last Cal.     | Next Cal.     |
| Dual Channel Power Meter       | Keysight     | N1912A                    | MY55416024 | Nov. 20, 2020 | Nov. 19, 2021 |
| Power Sensor                   | Keysight     | USB Wideband Power Sensor | MY5100022  | Nov. 20, 2020 | Nov. 19, 2021 |



## 7. ANTENNA PORT TEST RESULTS

### 7.1. CONDUCTED OUTPUT POWER

#### LIMITS

| CFR 47 FCC Part15 (15.247) Subpart C |                        |                  |                       |
|--------------------------------------|------------------------|------------------|-----------------------|
| Section                              | Test Item              | Limit            | Frequency Range (MHz) |
| CFR 47 FCC 15.247(b)(3)              | Conducted Output Power | 1 watt or 30 dBm | 2400-2483.5           |

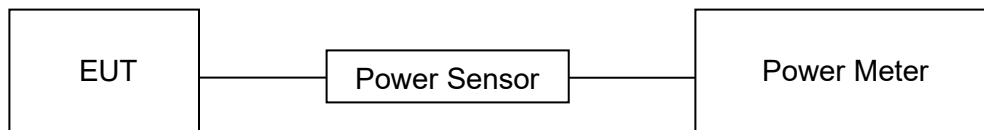
#### TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.9.

Connect the EUT to a low loss RF cable from the antenna port to the power sensor (video bandwidth is greater than the occupied bandwidth).

Measure peak emission level, the indicated level is the average output power, after any corrections for external attenuators and cables.

#### TEST SETUP



#### TEST ENVIRONMENT

|                     |         |                   |        |
|---------------------|---------|-------------------|--------|
| Temperature         | 24.5 °C | Relative Humidity | 69.5 % |
| Atmosphere Pressure | 101 kPa | Test Voltage      | DC 5 V |

#### RESULTS



| Test Mode | Antenna | Channel | Result[dBm] | Limit[dBm] | Verdict |
|-----------|---------|---------|-------------|------------|---------|
| 11B       | Ant1    | 2412    | 15.68       | <=30       | PASS    |
|           | Ant2    | 2412    | 16.23       | <=30       | PASS    |
|           | Ant1    | 2437    | 16.02       | <=30       | PASS    |
|           | Ant2    | 2437    | 15.57       | <=30       | PASS    |
|           | Ant1    | 2462    | 16.25       | <=30       | PASS    |
|           | Ant2    | 2462    | 15.22       | <=30       | PASS    |
| 11G       | Ant1    | 2412    | 16.65       | <=30       | PASS    |
|           | Ant2    | 2412    | 16.71       | <=30       | PASS    |
|           | Ant1    | 2437    | 16.24       | <=30       | PASS    |
|           | Ant2    | 2437    | 16.31       | <=30       | PASS    |
|           | Ant1    | 2462    | 16.19       | <=30       | PASS    |
|           | Ant2    | 2462    | 15.54       | <=30       | PASS    |
| 11N20MIMO | total   | 2412    | 19.63       | <=30       | PASS    |
|           | total   | 2437    | 19.10       | <=30       | PASS    |
|           | total   | 2462    | 19.37       | <=30       | PASS    |

| Test worst case results of Spot Check |         |         |             |                             |               |
|---------------------------------------|---------|---------|-------------|-----------------------------|---------------|
| Test Mode                             | Antenna | Channel | Result[dBm] | original report Result[dBm] | Deviation(dB) |
| 11B                                   | Ant1    | 2462    | 16.25       | 16.43                       | -0.18         |
| 11G                                   | Ant2    | 2412    | 16.71       | 16.94                       | -0.23         |
| 11N20MIMO                             | total   | 2412    | 19.63       | 19.70                       | -0.07         |



## 8. RADIATED TEST RESULTS

### LIMITS

Please refer to CFR 47 FCC §15.205 and §15.209.

Radiation Disturbance Test Limit for FCC (Class B) (9 kHz ~ 1 GHz)

| Emissions radiated outside of the specified frequency bands above 30 MHz |                                       |                                         |         |
|--------------------------------------------------------------------------|---------------------------------------|-----------------------------------------|---------|
| Frequency Range<br>(MHz)                                                 | Field Strength Limit<br>(uV/m) at 3 m | Field Strength Limit<br>(dBuV/m) at 3 m |         |
|                                                                          |                                       | Quasi-Peak                              |         |
| 30 - 88                                                                  | 100                                   | 40                                      |         |
| 88 - 216                                                                 | 150                                   | 43.5                                    |         |
| 216 - 960                                                                | 200                                   | 46                                      |         |
| Above 960                                                                | 500                                   | 54                                      |         |
| Above 1000                                                               | 500                                   | Peak                                    | Average |
|                                                                          |                                       | 74                                      | 54      |

| FCC Emissions radiated outside of the specified frequency bands below 30 MHz |                                   |                               |
|------------------------------------------------------------------------------|-----------------------------------|-------------------------------|
| Frequency (MHz)                                                              | Field strength (microvolts/meter) | Measurement distance (meters) |
| 0.009-0.490                                                                  | 2400/F(kHz)                       | 300                           |
| 0.490-1.705                                                                  | 24000/F(kHz)                      | 30                            |
| 1.705-30.0                                                                   | 30                                | 30                            |

FCC Restricted bands of operation refer to FCC §15.205 (a):

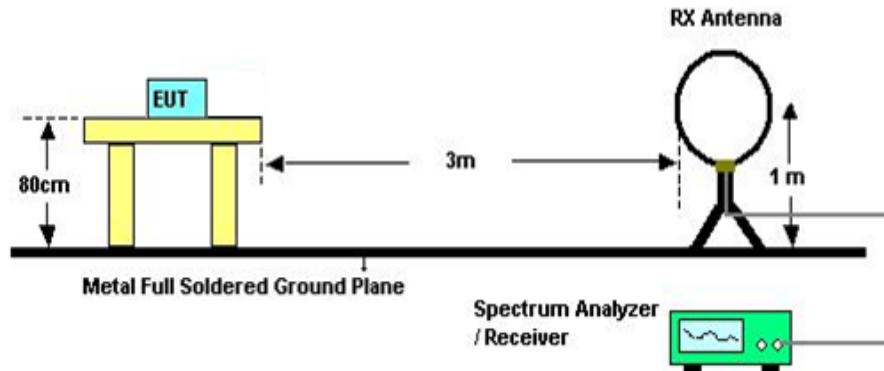
| MHz                      | MHz                 | MHz           | GHz              |
|--------------------------|---------------------|---------------|------------------|
| 0.090-0.110              | 16.42-16.423        | 399.9-410     | 4.5-5.15         |
| <sup>1</sup> 0.495-0.505 | 16.69475-16.69525   | 608-614       | 5.35-5.46        |
| 2.1735-2.1905            | 16.80425-16.80475   | 960-1240      | 7.25-7.75        |
| 4.125-4.128              | 25.5-25.67          | 1300-1427     | 8.025-8.5        |
| 4.17725-4.17775          | 37.5-38.25          | 1435-1626.5   | 9.0-9.2          |
| 4.20725-4.20775          | 73-74.6             | 1645.5-1646.5 | 9.3-9.5          |
| 6.215-6.218              | 74.8-75.2           | 1660-1710     | 10.6-12.7        |
| 6.26775-6.26825          | 108-121.94          | 1718.8-1722.2 | 13.25-13.4       |
| 6.31175-6.31225          | 123-138             | 2200-2300     | 14.47-14.5       |
| 8.291-8.294              | 149.9-150.05        | 2310-2390     | 15.35-16.2       |
| 8.362-8.366              | 156.52475-156.52525 | 2483.5-2500   | 17.7-21.4        |
| 8.37625-8.38675          | 156.7-156.9         | 2690-2900     | 22.01-23.12      |
| 8.41425-8.41475          | 162.0125-167.17     | 3260-3267     | 23.6-24.0        |
| 12.29-12.293             | 167.72-173.2        | 3332-3339     | 31.2-31.8        |
| 12.51975-12.52025        | 240-285             | 3345.8-3358   | 36.43-36.5       |
| 12.57675-12.57725        | 322-335.4           | 3600-4400     | ( <sup>2</sup> ) |
| 13.36-13.41              |                     |               |                  |

Note: <sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup>Above 38.6c

## TEST SETUP AND PROCEDURE

Below 30 MHz

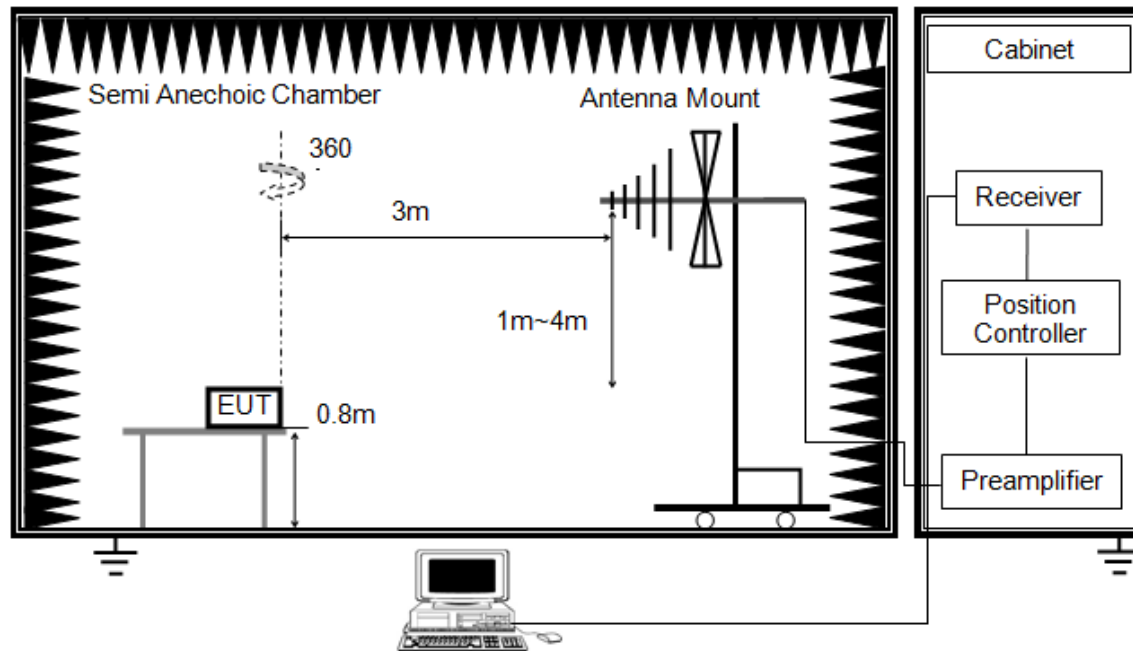


The setting of the spectrum analyzer

|       |                                                                   |
|-------|-------------------------------------------------------------------|
| RBW   | 200 Hz (From 9 kHz to 0.15 MHz) / 9 kHz (From 0.15 MHz to 30 MHz) |
| VBW   | 200 Hz (From 9 kHz to 0.15 MHz) / 9 kHz (From 0.15 MHz to 30 MHz) |
| Sweep | Auto                                                              |
| Trace | Max hold                                                          |

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.
2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 80cm above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.
5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
6. For measurement below 1 GHz, 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 and average detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak and average detector and reported.
7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30 m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.

Below 1 GHz and above 30 MHz

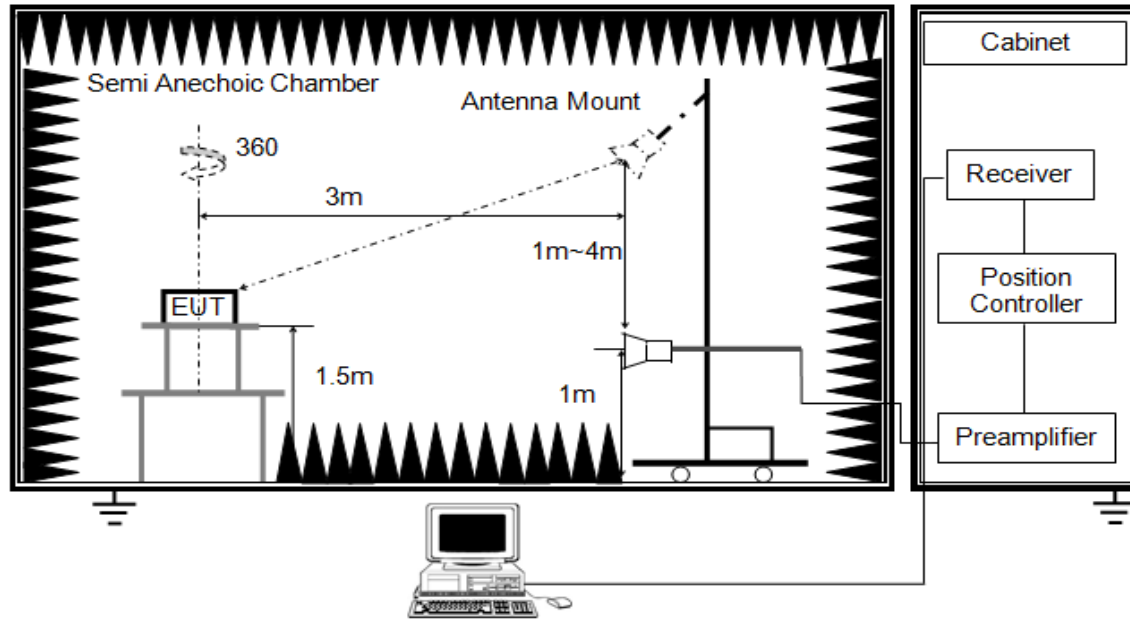


The setting of the spectrum analyzer

|          |          |
|----------|----------|
| RBW      | 120 kHz  |
| VBW      | 300 kHz  |
| Sweep    | Auto     |
| Detector | Peak/QP  |
| Trace    | Max hold |

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 80 cm above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement below 1 GHz, 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 emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

Above 1 GHz

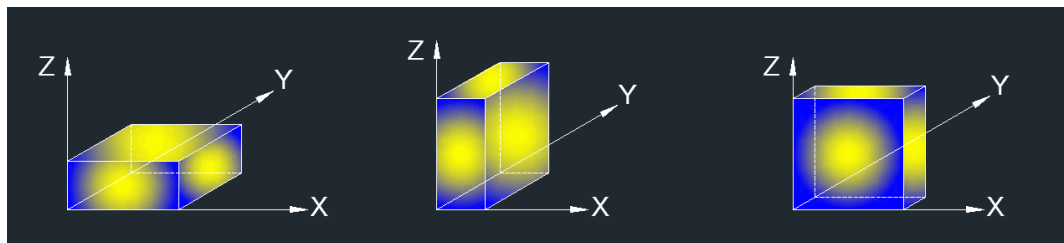


The setting of the spectrum analyzer

|          |                                |
|----------|--------------------------------|
| RBW      | 1 MHz                          |
| VBW      | PEAK: 3 MHz<br>AVG: see note 6 |
| Sweep    | Auto                           |
| Detector | Peak                           |
| Trace    | Max hold                       |

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.6.
2. The EUT was arranged to its worst case and then tune the antenna tower (1- 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 1.5 m above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement above 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.
6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.1.ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

Note 2: The EUT was fully exercised with external accessories during the test. In the case of multiple accessory external ports, an external accessory shall be connected to one of each type of port.

### **TEST ENVIRONMENT**

|                     |         |                   |        |
|---------------------|---------|-------------------|--------|
| Temperature         | 26.1 °C | Relative Humidity | 46 %   |
| Atmosphere Pressure | 101 kPa | Test Voltage      | DC 5 V |

### **RESULTS**

| Test worst case results of Spot Check |           |                 |                |                                |               |
|---------------------------------------|-----------|-----------------|----------------|--------------------------------|---------------|
| Test Mode                             | Test Item | Frequency (MHz) | Result[dBuV/m] | original report Result[dBuV/m] | Deviation(dB) |
| 11n 20                                | Band Edge | 2483.7          | 68.39          | 69.91                          | -1.52         |
| 11b                                   | RSE       | 4815            | 51.95          | 52.80                          | -0.85         |

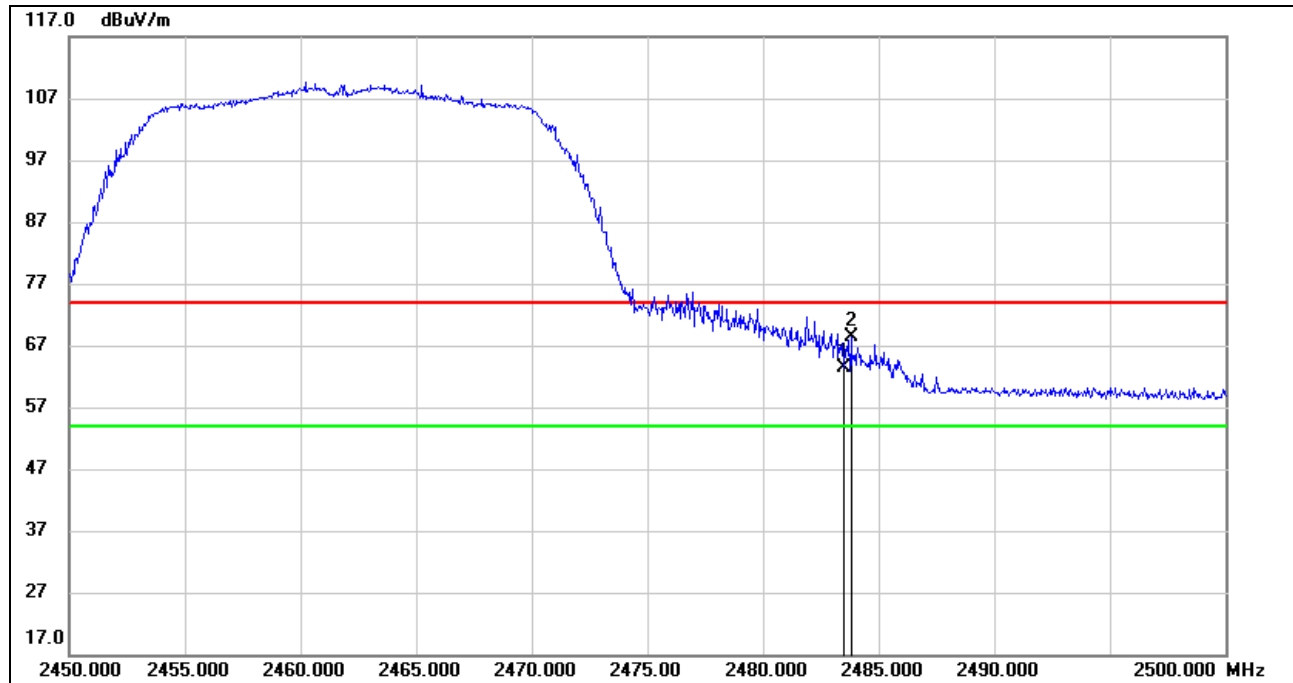
Note: Comparison of two models, upper deviation is within 3 dB range and all test results are under FCC Technical limits.

## 8.1. RESTRICTED BANDEDGE

### 8.1.1. 802.11n HT20 MIMO MODE

#### RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

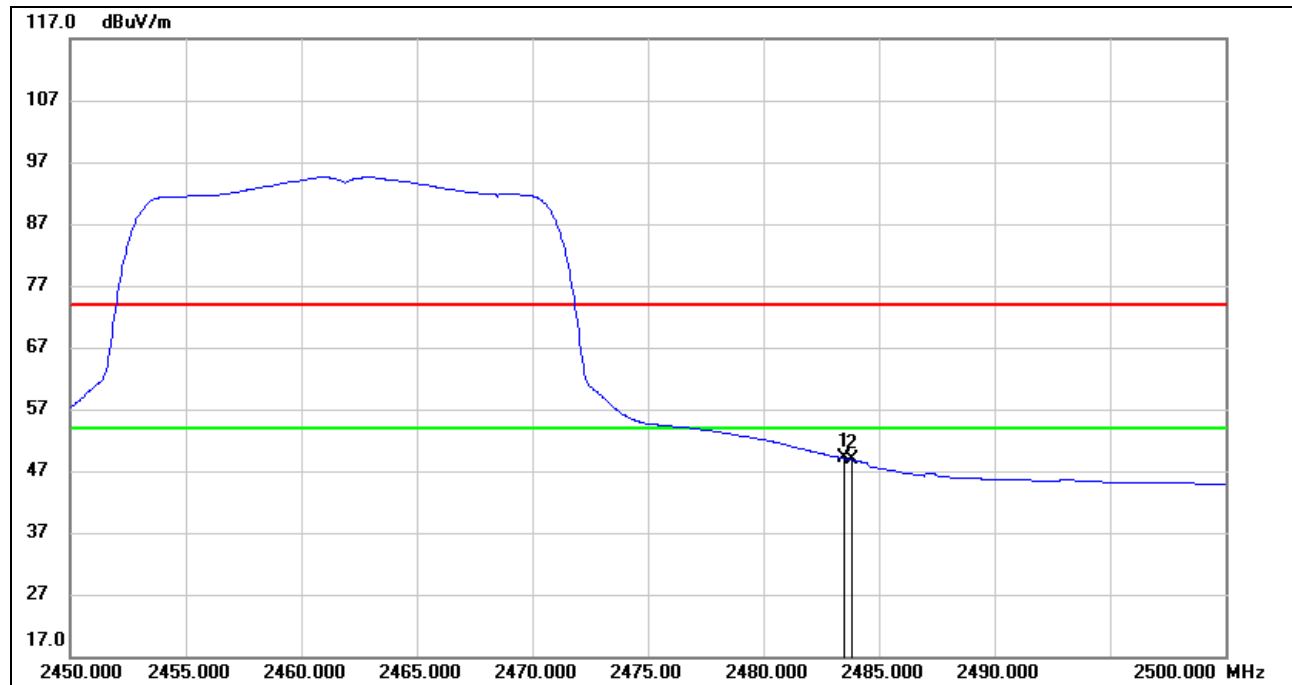
##### PEAK



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|-----------------|----------------|----------------|-----------------|----------------|-------------|--------|
| 1   | 2483.500        | 29.68          | 33.71          | 63.39           | 74.00          | -10.61      | peak   |
| 2   | 2483.700        | 34.68          | 33.71          | 68.39           | 74.00          | -5.61       | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.  
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

### AVG



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 2483.500           | 15.52             | 33.71             | 49.23              | 74.00             | -24.77         | peak   |
| 2   | 2483.700           | 15.12             | 33.71             | 48.83              | 74.00             | -25.17         | peak   |

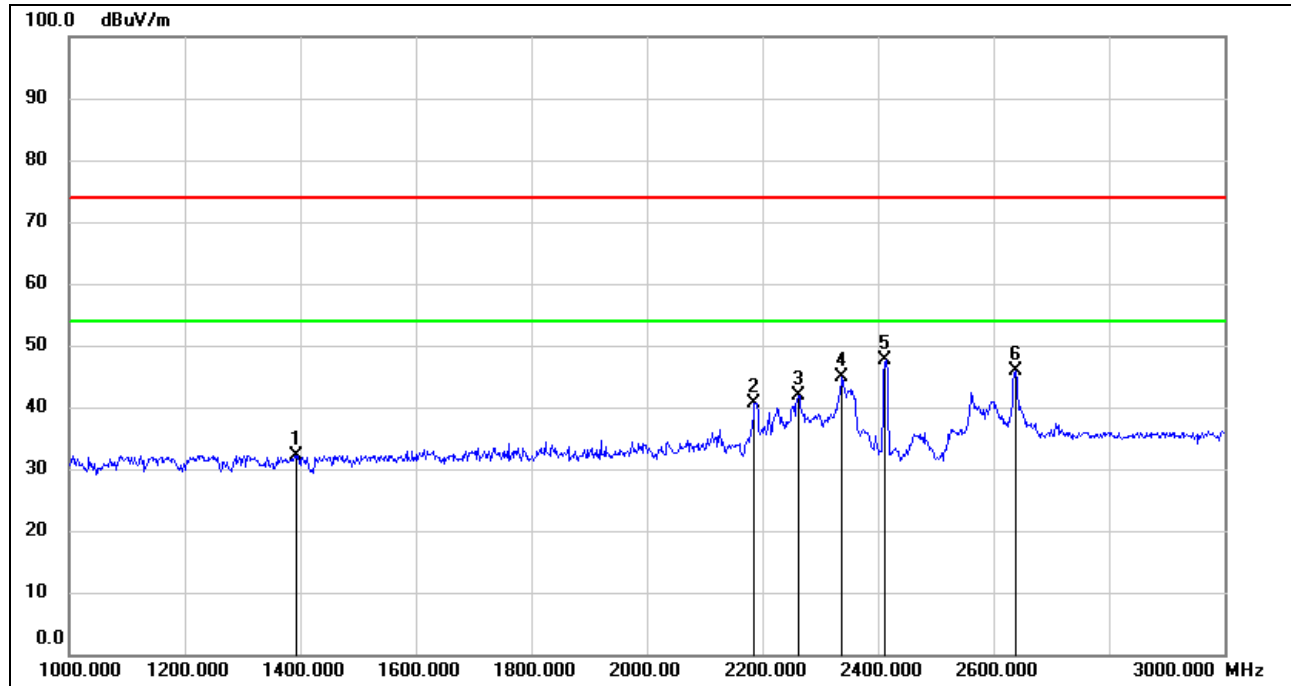
- Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.  
4. For the transmitting duration, please refer to clause 7.1.  
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Note: All the polarities (vertical and horizontal) had been tested, only the worst data was recorded in the report.

## 8.2. SPURIOUS EMISSIONS (1 GHz ~ 3 GHz)

### 8.2.1. 802.11b SISO MODE

#### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark      |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|-------------|
| 1   | 1392.000           | 44.85             | -12.71            | 32.14              | 74.00             | -41.86         | peak        |
| 2   | 2186.000           | 49.86             | -9.13             | 40.73              | 74.00             | -33.27         | peak        |
| 3   | 2262.000           | 50.80             | -8.85             | 41.95              | 74.00             | -32.05         | peak        |
| 4   | 2338.000           | 53.55             | -8.60             | 44.95              | 74.00             | -29.05         | peak        |
| 5   | 2412.000           | 55.99             | -8.37             | 47.62              | /                 | /              | fundamental |
| 6   | 2638.000           | 53.56             | -7.61             | 45.95              | 74.00             | -28.05         | peak        |

Note: 1. Measurement = Reading Level + Correct Factor.

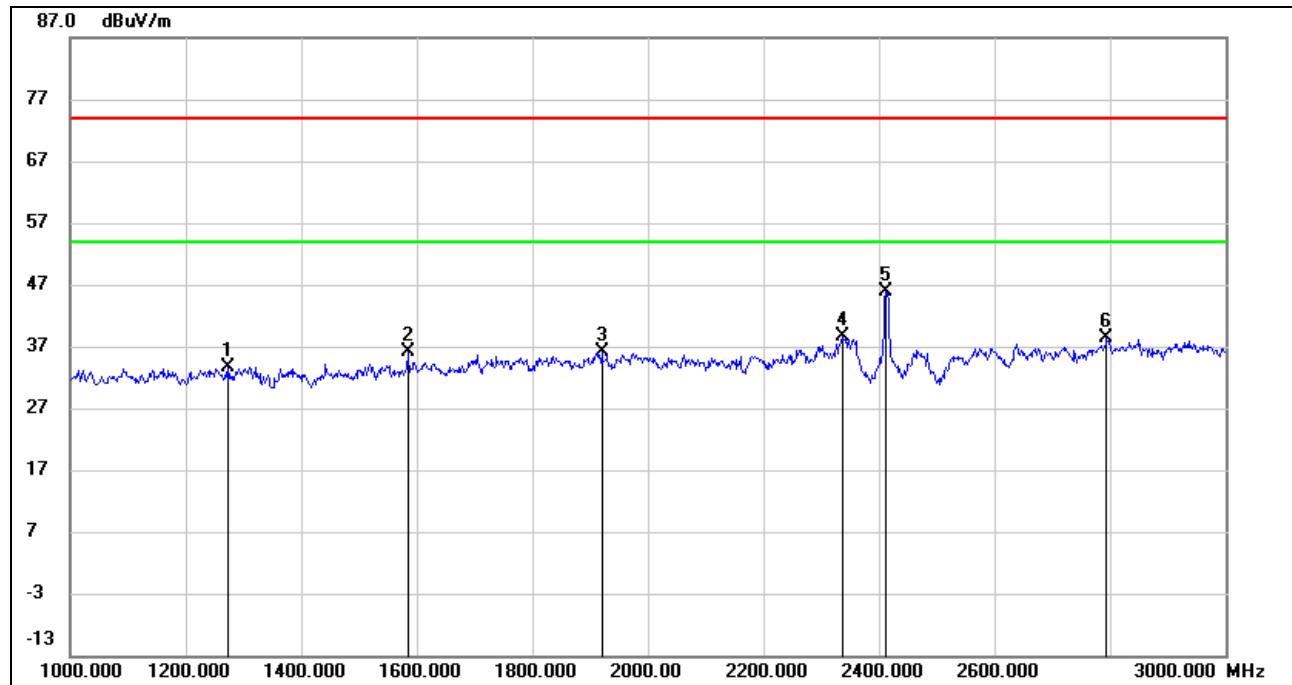
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector

4. The Band Reject filter loss factor already add into the correct factor.

5. Proper operation of the transmitter prior to adding the filter to the measurement chain.



**HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)**

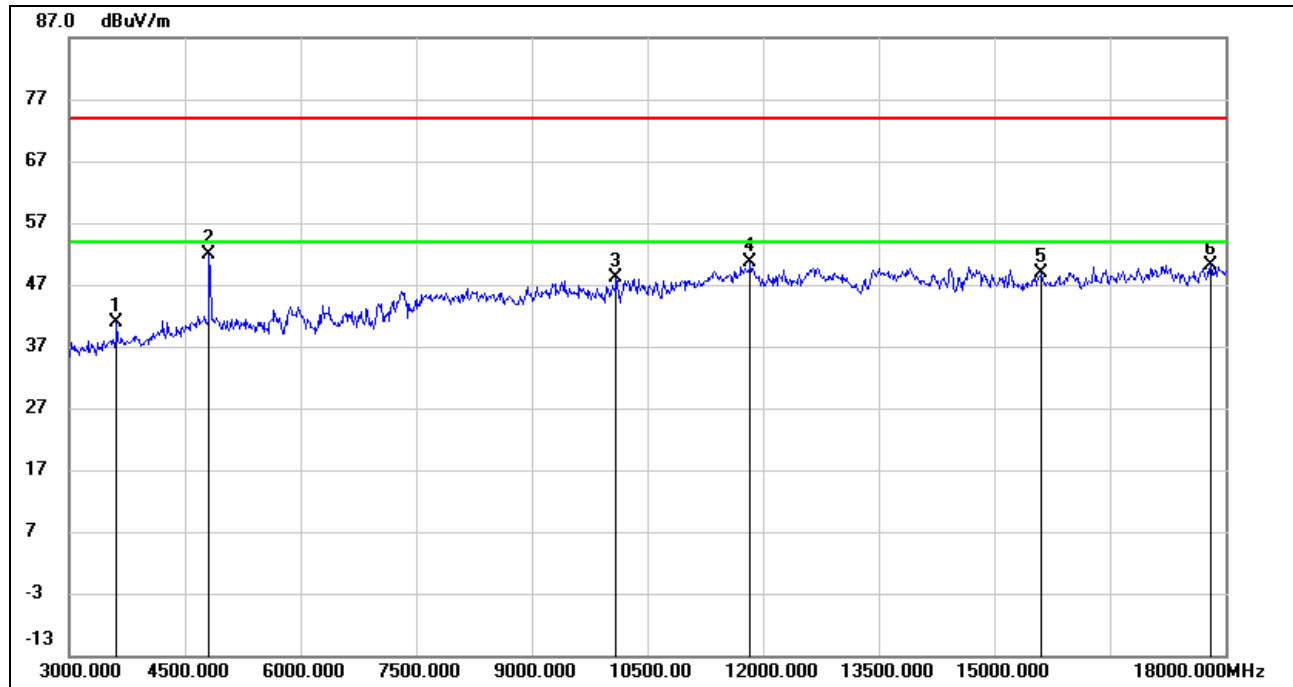
| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark      |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|-------------|
| 1   | 1274.000           | 46.63             | -12.89            | 33.74              | 74.00             | -40.26         | peak        |
| 2   | 1584.000           | 47.88             | -11.66            | 36.22              | 74.00             | -37.78         | peak        |
| 3   | 1920.000           | 46.29             | -10.13            | 36.16              | 74.00             | -37.84         | peak        |
| 4   | 2336.000           | 47.31             | -8.61             | 38.70              | 74.00             | -35.30         | peak        |
| 5   | 2412.000           | 54.20             | -8.37             | 45.83              | /                 | /              | fundamental |
| 6   | 2794.000           | 44.94             | -6.59             | 38.35              | 74.00             | -35.65         | peak        |

- Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.  
4. The Band Reject filter loss factor already add into the correct factor.  
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

### 8.3. SPURIOUS EMISSIONS (3 GHz ~ 18 GHz)

#### 8.3.1. 802.11b SISO MODE

##### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|-----------------|----------------|----------------|-----------------|----------------|-------------|--------|
| 1   | 3615.000        | 44.95          | -4.12          | 40.83           | 74.00          | -33.17      | peak   |
| 2   | 4815.000        | 51.34          | 0.61           | 51.95           | 74.00          | -22.05      | peak   |
| 3   | 10095.000       | 37.65          | 10.47          | 48.12           | 74.00          | -25.88      | peak   |
| 4   | 11835.000       | 35.05          | 15.56          | 50.61           | 74.00          | -23.39      | peak   |
| 5   | 15615.000       | 32.14          | 16.71          | 48.85           | 74.00          | -25.15      | peak   |
| 6   | 17805.000       | 27.53          | 22.72          | 50.25           | 74.00          | -23.75      | peak   |

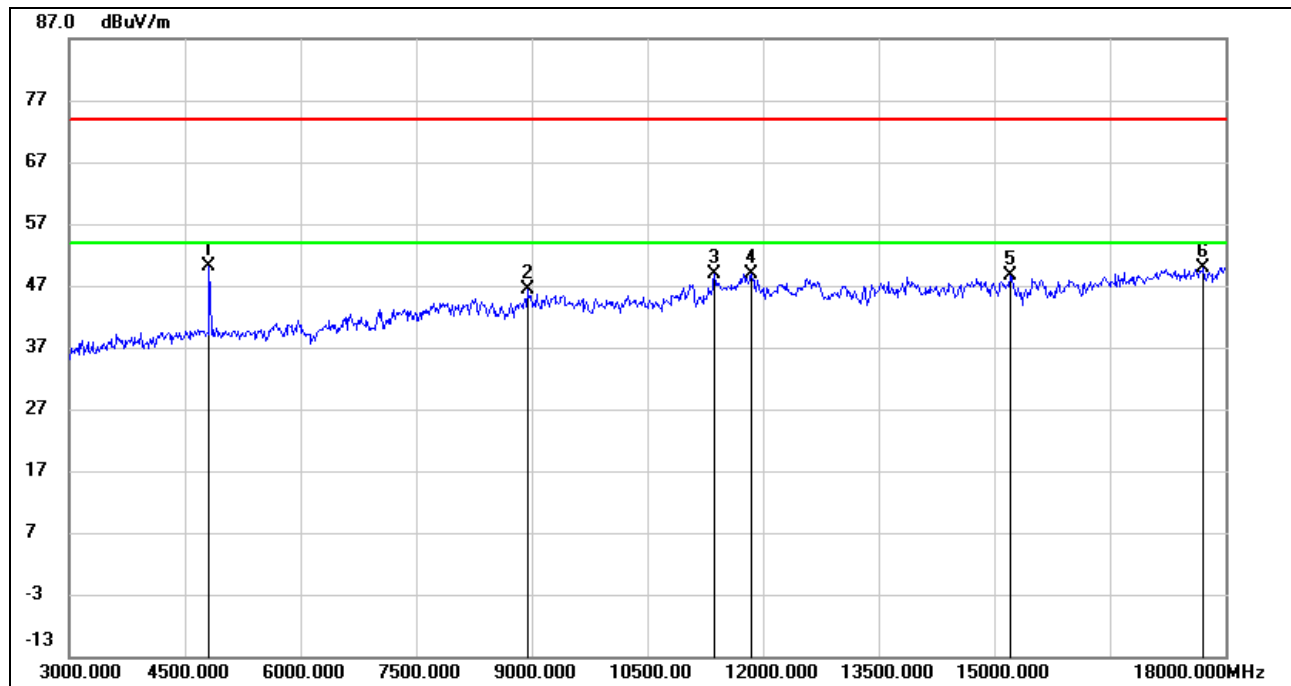
Note: 1. Peak Result = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

**HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)**

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 4815.000           | 49.45             | 0.61              | 50.06              | 74.00             | -23.94         | peak   |
| 2   | 8940.000           | 36.41             | 9.99              | 46.40              | 74.00             | -27.60         | peak   |
| 3   | 11370.000          | 34.76             | 14.14             | 48.90              | 74.00             | -25.10         | peak   |
| 4   | 11850.000          | 33.32             | 15.53             | 48.85              | 74.00             | -25.15         | peak   |
| 5   | 15210.000          | 32.38             | 16.19             | 48.57              | 74.00             | -25.43         | peak   |
| 6   | 17715.000          | 27.81             | 22.06             | 49.87              | 74.00             | -24.13         | peak   |

Note: 1. Peak Result = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

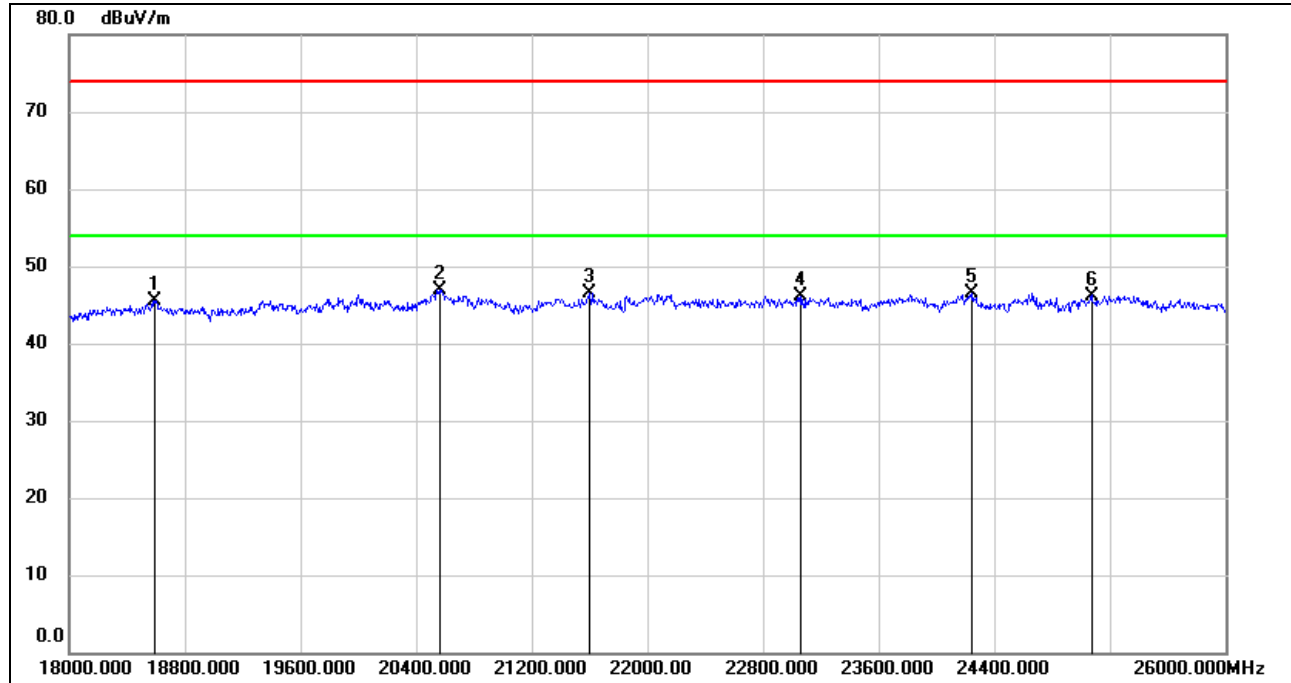
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

## 8.4. SPURIOUS EMISSIONS (18 GHz ~ 26 GHz)

### 8.4.1. 802.11b SISO MODE

#### SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)

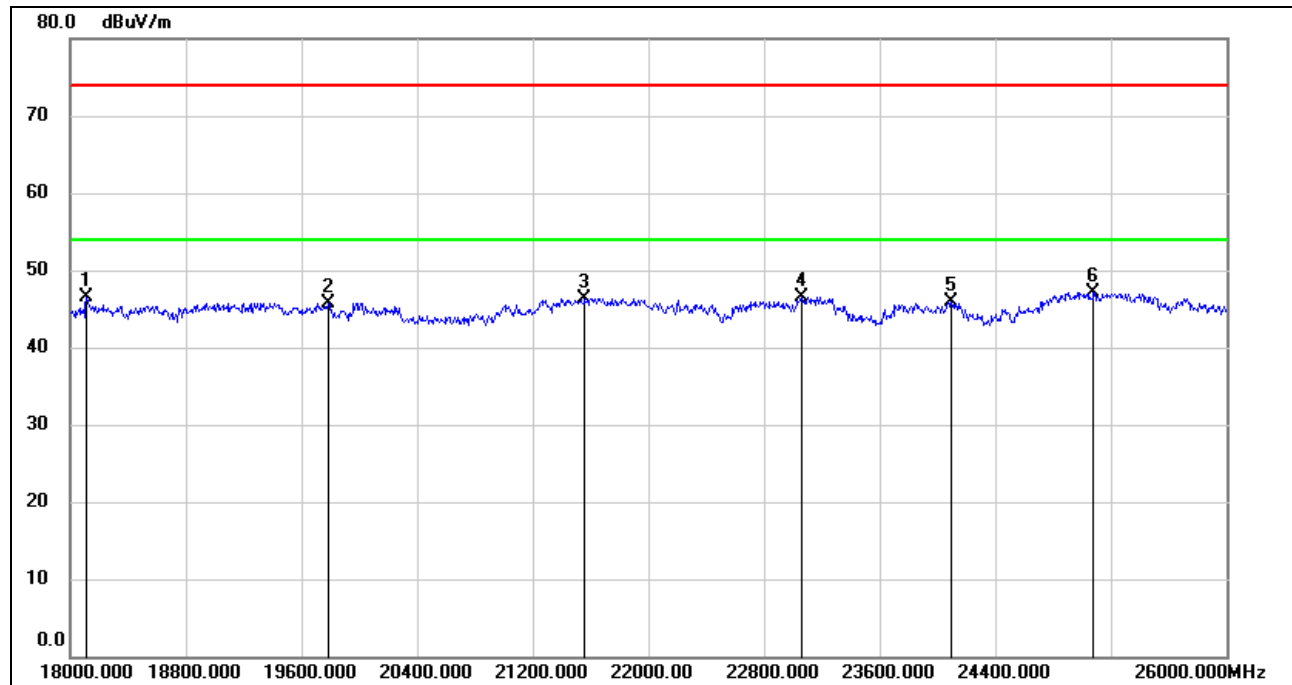


| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 18592.000          | 50.75             | -5.31             | 45.44              | 74.00             | -28.56         | peak   |
| 2   | 20560.000          | 52.23             | -5.30             | 46.93              | 74.00             | -27.07         | peak   |
| 3   | 21600.000          | 51.02             | -4.54             | 46.48              | 74.00             | -27.52         | peak   |
| 4   | 23064.000          | 49.49             | -3.42             | 46.07              | 74.00             | -27.93         | peak   |
| 5   | 24248.000          | 49.32             | -2.83             | 46.49              | 74.00             | -27.51         | peak   |
| 6   | 25072.000          | 48.17             | -1.97             | 46.20              | 74.00             | -27.80         | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

**SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)**

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 18112.000          | 51.96             | -5.47             | 46.49              | 74.00             | -27.51         | peak   |
| 2   | 19784.000          | 51.07             | -5.28             | 45.79              | 74.00             | -28.21         | peak   |
| 3   | 21560.000          | 50.99             | -4.60             | 46.39              | 74.00             | -27.61         | peak   |
| 4   | 23056.000          | 49.95             | -3.42             | 46.53              | 74.00             | -27.47         | peak   |
| 5   | 24096.000          | 48.61             | -2.78             | 45.83              | 74.00             | -28.17         | peak   |
| 6   | 25080.000          | 49.10             | -1.96             | 47.14              | 74.00             | -26.86         | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

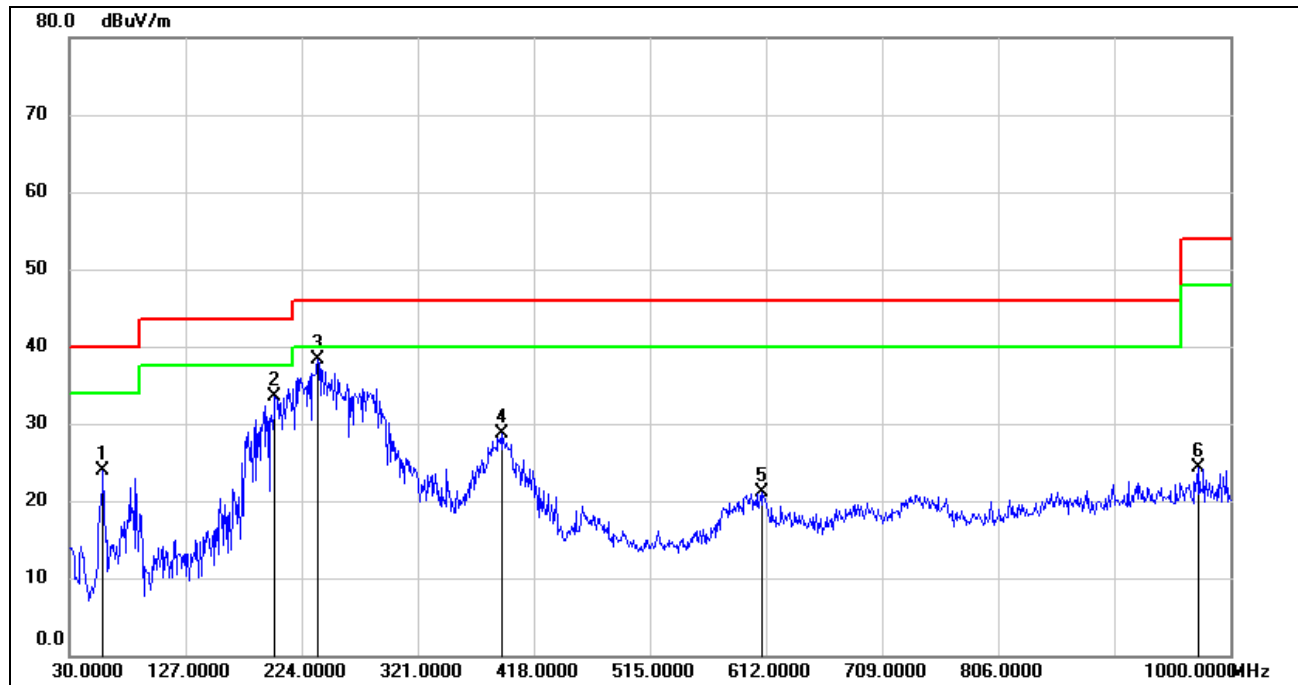
Note: All the modes and channels had been tested, but only the worst data was recorded in the report.



## 8.5. SPURIOUS EMISSIONS (30 MHz ~ 1 GHz)

### 8.5.1. 802.11b SISO MODE

#### SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



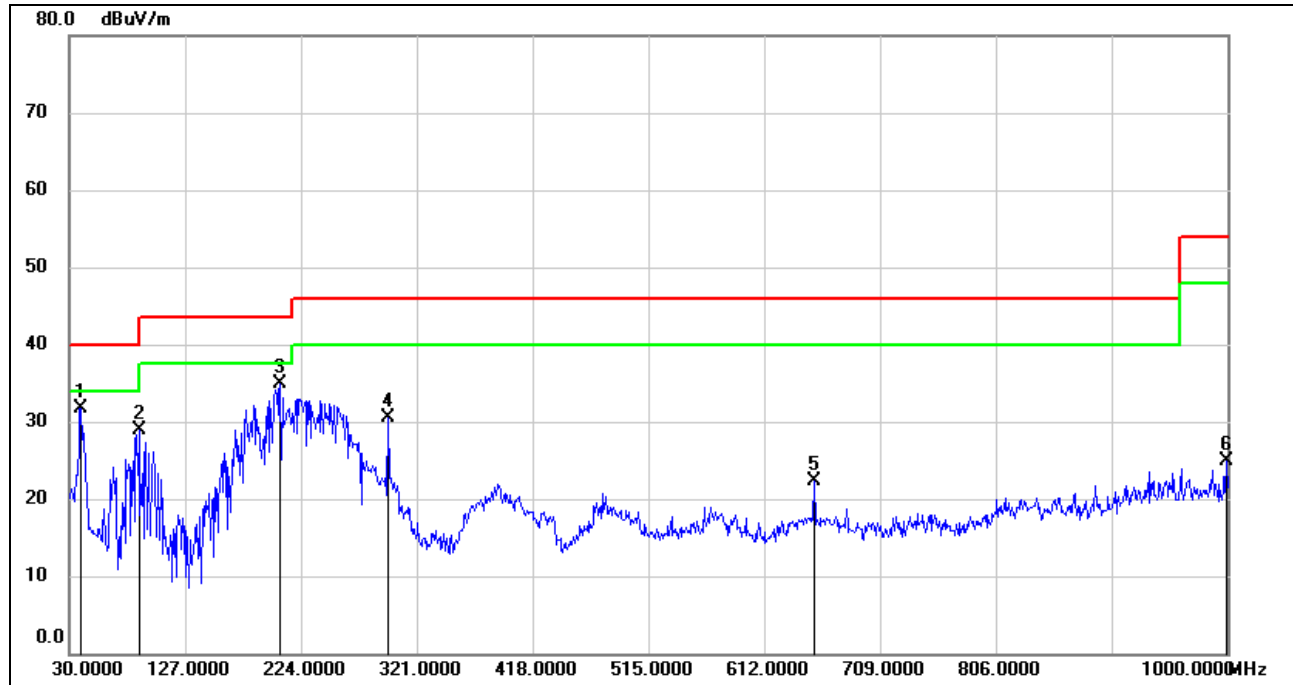
| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|-----------------|----------------|----------------|-----------------|----------------|-------------|--------|
| 1   | 58.1300         | 44.45          | -20.55         | 23.90           | 40.00          | -16.10      | QP     |
| 2   | 201.6900        | 50.00          | -16.53         | 33.47           | 43.50          | -10.03      | QP     |
| 3   | 237.5800        | 57.37          | -19.06         | 38.31           | 46.00          | -7.69       | QP     |
| 4   | 390.8400        | 42.12          | -13.47         | 28.65           | 46.00          | -17.35      | QP     |
| 5   | 609.0900        | 30.49          | -9.41          | 21.08           | 46.00          | -24.92      | QP     |
| 6   | 973.8100        | 28.75          | -4.38          | 24.37           | 54.00          | -29.63      | QP     |

Note: 1. Result Level = Read Level + Correct Factor.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

### SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 39.7000            | 51.74             | -19.96            | 31.78              | 40.00             | -8.22          | QP     |
| 2   | 88.2000            | 50.73             | -21.85            | 28.88              | 43.50             | -14.62         | QP     |
| 3   | 206.5399           | 51.89             | -16.97            | 34.92              | 43.50             | -8.58          | QP     |
| 4   | 296.7500           | 45.98             | -15.50            | 30.48              | 46.00             | -15.52         | QP     |
| 5   | 653.7100           | 31.22             | -8.92             | 22.30              | 46.00             | -23.70         | QP     |
| 6   | 999.0300           | 29.10             | -4.16             | 24.94              | 54.00             | -29.06         | QP     |

Note: 1. Result Level = Read Level + Correct Factor.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto

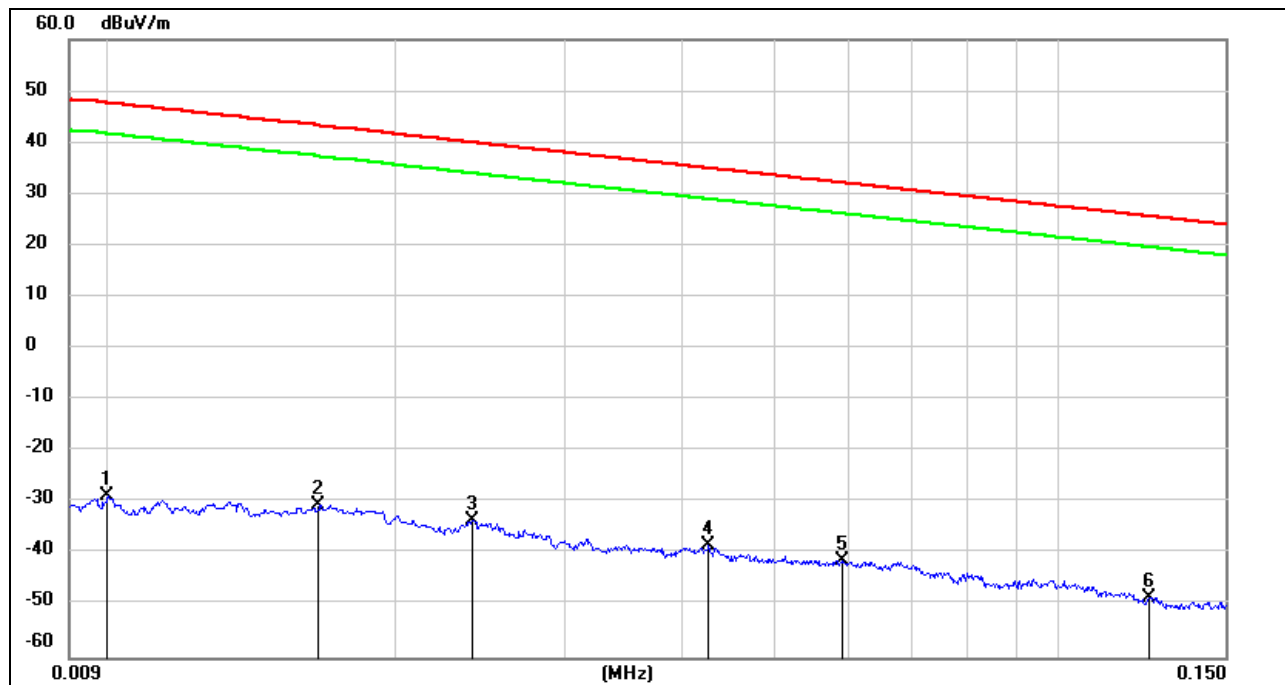
Note: All the modes and channels had been tested, but only the worst data was recorded in the report.

## 8.6. SPURIOUS EMISSIONS BELOW 30 MHz

### 8.6.1. 802.11b SISO MODE

#### SPURIOUS EMISSIONS (LOW CHANNEL, LOOP ANTENNA FACE ON TO THE EUT, WORST-CASE CONFIGURATION)

9 kHz~ 150 kHz



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|-----------------|----------------|----------------|-----------------|----------------|-------------|--------|
| 1   | 0.0100          | 72.72          | -101.40        | -28.68          | 47.60          | -76.28      | peak   |
| 2   | 0.0165          | 70.84          | -101.37        | -30.53          | 43.25          | -73.78      | peak   |
| 3   | 0.0240          | 67.82          | -101.36        | -33.54          | 40.00          | -73.54      | peak   |
| 4   | 0.0427          | 63.14          | -101.45        | -38.31          | 34.99          | -73.30      | peak   |
| 5   | 0.0589          | 60.31          | -101.52        | -41.21          | 32.20          | -73.41      | peak   |
| 6   | 0.1246          | 53.39          | -101.72        | -48.33          | 25.70          | -74.03      | peak   |

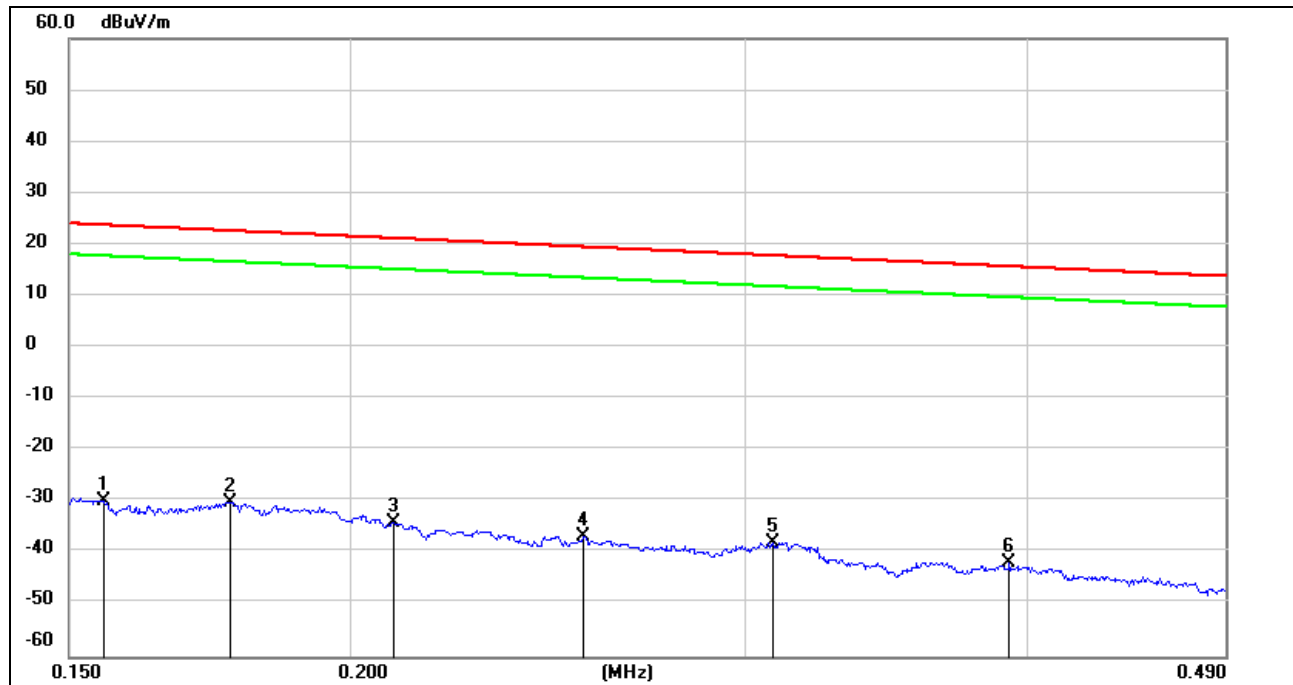
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.



### 150 kHz ~ 490 kHz



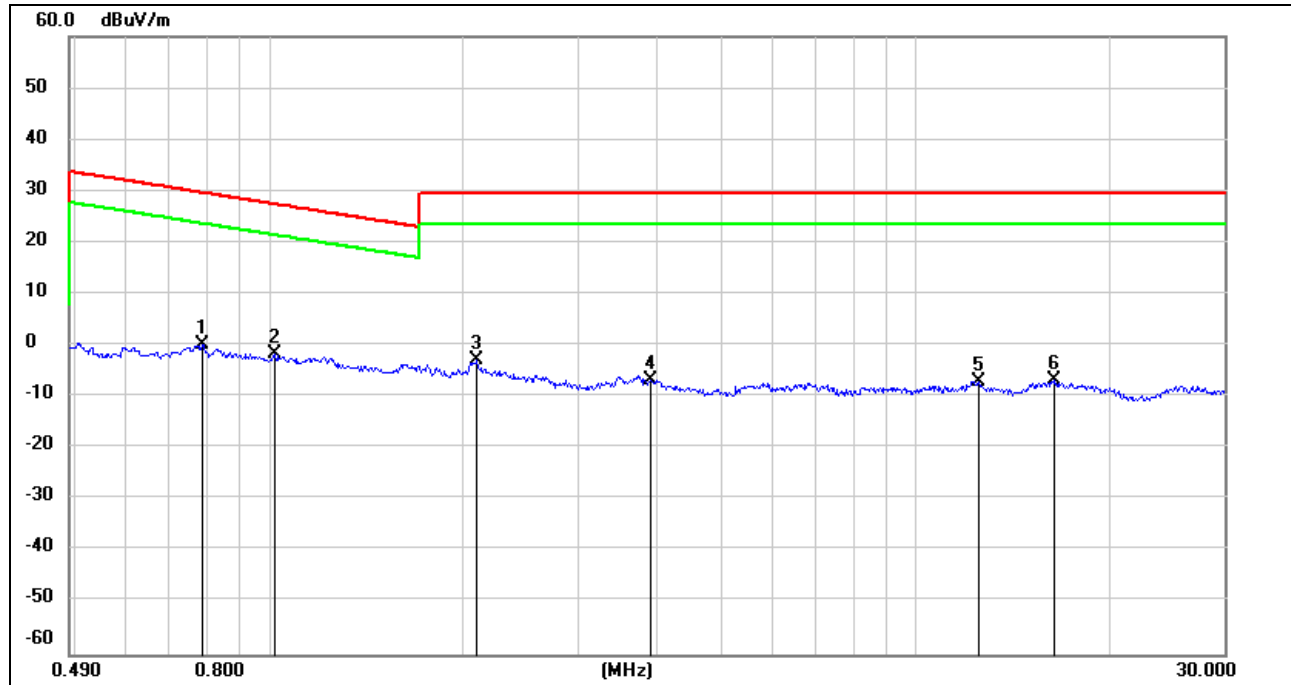
| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 0.1554             | 71.77             | -101.65           | -29.88             | 23.77             | -53.65         | peak   |
| 2   | 0.1768             | 71.49             | -101.68           | -30.19             | 22.66             | -52.85         | peak   |
| 3   | 0.2091             | 67.82             | -101.73           | -33.91             | 21.19             | -55.10         | peak   |
| 4   | 0.2540             | 65.10             | -101.80           | -36.70             | 19.50             | -56.20         | peak   |
| 5   | 0.3084             | 63.95             | -101.86           | -37.91             | 17.82             | -55.73         | peak   |
| 6   | 0.3930             | 60.05             | -101.96           | -41.91             | 15.71             | -57.62         | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

### 490 kHz ~ 30 MHz



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 0.7861             | 62.33             | -62.14            | 0.19               | 29.69             | -29.50         | peak   |
| 2   | 1.0212             | 60.49             | -62.25            | -1.76              | 27.42             | -29.18         | peak   |
| 3   | 2.0939             | 58.89             | -61.79            | -2.90              | 29.54             | -32.44         | peak   |
| 4   | 3.8837             | 54.49             | -61.36            | -6.87              | 29.54             | -36.41         | peak   |
| 5   | 12.5006            | 53.82             | -60.91            | -7.09              | 29.54             | -36.63         | peak   |
| 6   | 16.3959            | 54.17             | -60.96            | -6.79              | 29.54             | -36.33         | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

Note: All the modes and channels had been tested, but only the worst data was recorded in the report.

## 9. ANTENNA REQUIREMENTS

### APPLICABLE REQUIREMENTS

Please refer to FCC §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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. 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.

Please refer to FCC §15.247(b)(4)

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### RESULTS

Complies

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**END OF REPORT**