# RF TEST REPORT

## FCC ID: 2A49R-UN12S

| | |
|---|---|
| Test Report No……..: | RF231108004-05-001 |
| Product(s) Name……...: | MINI PC |
| Model(s)……..: | UN1245, UN1260, UN1265, UN1270, UN1290, GD50, GD60, GD70, GD90 |
| Trade Mark……....: | N/A |
| Applicant……..…: | MICRO COMPUTER (HK) TECH LIMITED |
| Address……..…...: | RM 18, 28/F, Shui On Centre, 6-8 Harbour Road, WaterfRont, Wan Chai, HK |
| Receipt Date……..: | 2023.11.24 |
| Test Date……....: | 2024.02.19~2024.04.29 |
| Issued Date……..…: | 2024.04.29 |
| Standards……..…: | 47 CFR FCC Part 15, Subpart C(Section 15.247); ANSI C63.10:2013 |
| Testing Laboratory……: | Shenzhen Haiyun Standard Technical Co., Ltd. |

| Prepared By: | Checked By: | Approved By: | |
|---|---|---|---|
| Black Ding | Tim Zhang | Misue Su | |
| Black Ding | Tim.zhang | Misue Su | |

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# History of this test report

Original Report Issue Date: 2024.04.29

○ No additional attachment

● Additional attachments were issued following record

| Attachment No. | Issue Date | Description |
|---|---|---|
| RF200317E01 | 2020.09.17 | Module report<br>FCC ID: RAS-MT7921 |
| RF231108004-05-001 | 2024.04.29 | Compared to the original report of the module, this module is used for MINI PC with no change in antenna type and reduced gain. Therefore, the maximum conducted power and radiated emission and band edge and AC power conducted emission were tested with reference to the original report, while the rest remained unchanged. |
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# 1. General Information

## 1.1 Applicant

**MICRO COMPUTER (HK) TECH LIMITED**

RM 18, 28/F, Shui On Centre, 6-8 Harbour Road, Waterfront, Wan Chai, HK, China

## 1.2 Manufacturer

**MICRO COMPUTER (HK) TECH LIMITED**

RM 18, 28/F, Shui On Centre, 6-8 Harbour Road, Waterfront, Wan Chai, HK, China

## 1.3 Basic Description of Equipment Under Test

| | | |
|---|---|---|
| Product No. | POC231108004-S002 | |
| Equipment Name | MINI PC | |
| Model Name | UN1245, UN1260, UN1265, UN1270, UN1290, GD50, GD60, GD70, GD90 | |
| Test Model | UN1265 | |
| Model Difference | Only the appearance color and model name are difference | |
| Trade Mark | N/A | |
| Power Supply | DC 19V from adapter | |
| Adapter Information | Model: YHY-19004730<br>Input: 100-240V~, 50/60Hz 2.0A<br>Output: 19V⎓4.73A, 90W | |
| Operate temperature | 0℃-45℃ | |
| EUT Stage | ○ Product Unit | ● Final-Sample |
| Operating Band and Conducted Output Power (Max power) | 2400MHz ~ 2483.5MHz | ●IEEE 802.11b: 21.83dBm(0.152W) |
| Product Type | IEEE 802.11b: WLAN (MIMO)<br>IEEE 802.11g: WLAN(MIMO)<br>IEEE 802.11n: WLAN(MIMO)<br>IEEE 802.11ax: WLAN (MIMO) | |
| Nominal Bandwidth | 20MHz / 40MHz | |
| Modulation | IEEE 802.11b: DSSS (DBPSK / DQPSK / CCK)<br>IEEE 802.11g: OFDM (BPSK / QPSK / 16QAM / 64QAM)<br>IEEE 802.11n: OFDM (BPSK / QPSK / 16QAM / 64QAM)<br>IEEE 802.11ax: OFDMA (BPSK / QPSK / 16QAM / 64QAM) | |
| Data Rate (Mbps) | IEEE 802.11b mode: 1/2/5.5/11<br>IEEE 802.11g mode: 6/9/12/18/24/36/48/54<br>IEEE 802.11n mode: up to 300<br>IEEE 802.11ax mode: up to 573.5 | |
| Antenna gain | Ant1: 2.86dBi, Ant2: 1.26dBi | |
| Antenna type | PIFA Antenna | |

Eleven channels are provided for 802.11b, 802.11g, 802.11n (20MHz), 802.11ax (20MHz):

| Frequency Band | Channel No. | Frequency | Channel No. | Frequency |
|---|---|---|---|---|
| 2400MHz ~ 2483.5 MHz | 01 | 2412MHz | 07 | 2442MHz |
| | 02 | 2417MHz | 08 | 2447MHz |
| | 03 | 2422MHz | 09 | 2452MHz |
| | 04 | 2427MHz | 10 | 2457MHz |
| | 05 | 2432MHz | 11 | 2462MHz |
| | 06 | 2437MHz | / | / |

Seven channels are provided for 802.11n (40MHz), 802.11ax (40MHz):

| Frequency Band | Channel No. | Frequency | Channel No. | Frequency |
|---|---|---|---|---|
| 2400MHz ~ 2483.5 MHz | 03 | 2422 MHz | 07 | 2442MHz |
| | 04 | 2427MHz | 08 | 2447MHz |
| | 05 | 2432MHz | 09 | 2452MHz |
| | 06 | 2437MHz | / | / |

Note: For 802.11ax mode only support full RU mode.

## 1.4 Transmit Operating Mode

| Transmit Operating Mode | | | | | | | Transmit Multiple Antennas | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ○ | Operating mode 1 (single antenna) | | | | | | ○ | 1TX | | | | |
| ● | Operating mode 2 (multiple antenna, no beam forming) | | | | | | ● | 2TX | ○ | 3TX | ○ | 4TX |
| ○ | Operating mode 3 (multiple antenna, with beam forming) | | | | | | ○ | 2TX | ○ | 3TX | ○ | 4TX |
| ● | 802.11b | Operating mode | ○ | 1TX | ● | 2TX | ○ | 3TX | | | | |
| ● | 802.11g | Operating mode | ○ | 1TX | ● | 2TX | ○ | 3TX | | | | |
| ● | 802.11n(20MHz) | Operating mode | ○ | 1TX | ● | 2TX | ○ | 3TX | | | | |
| ● | 802.11n(40MHz) | Operating mode | ○ | 1TX | ● | 2TX | ○ | 3TX | | | | |
| ● | 802.11ax(20MHz) | Operating mode | ○ | 1TX | ● | 2TX | ○ | 3TX | | | | |
| ● | 802.11ax(40MHz) | Operating mode | ○ | 1TX | ● | 2TX | ○ | 3TX | | | | |

# 2. Summary of Test Results

## 2.1 Summary of Test Items

| 47 CFR FCC Part 15, Subpart C (Section 15.247) | | | |
|---|---|---|---|
| Test item | FCC Clause | Results | Remarks |
| AC Power Conducted Emission | 15.207 | Pass | Meet the requirement of the limit |
| Radiated Emission and Band Edge Measurement | 15.205/15.209 /15.247(d) | Pass | Meet the requirement of the limit |
| Spurious Emission at Antenna Port | 15.247(d) | Note2 | Meet the requirement of the limit |
| 6dB Bandwidth | 15.247(a)(2) | Note2 | Meet the requirement of the limit |
| Maximum Conducted Power | 15.247(b) | Pass | Meet the requirement of the limit |
| Power Spectral Density | 15.247(e) | Note2 | Meet the requirement of the limit |
| Antenna Requirements | 15.203 | Compliance | Note1 |
| Note:1. The EUT has 2 PIFA antennas arrangement which was permanently attached.<br>2. For test data, please refer to the report RF200317E01. | | | |

## 2.2 Application of Standard

47 CFR FCC Part 15, Subpart C (Section 15.247)

KDB 558074 D01 15.247 Meas Guidance v05r02

KDB 662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10:2013

## 2.3 Test Instruments

| Radiated Emissions | | | | | | |
|---|---|---|---|---|---|---|
| No. | Equipment | Manufacturer | Type No. | Serial No. | Cal. date (yyyy/mm/dd) | Cal. Due date (yyyy/mm/dd) |
| 1 | Test receiver | Rohde&Schwarz | ESU | 100184 | 2024/4/24 | 2025/4/23 |
| 2 | Horn Antenna | Schwarzbeck | BBHA 9120 D | 9120D-1273 | 2024/4/20 | 2025/4/19 |
| 3 | Low frequency amplifier | Unknown | LNA 0920N | 2014 | 2024/4/24 | 2025/4/23 |
| 4 | High frequency amplifier | Schwarzbeck | BBV 9718 | 284 | 2024/4/24 | 2025/4/23 |
| 5 | Loop Antenna | Schwarzbeck | FMZB1519 B | 00029 | 2023/7/16 | 2024/7/15 |
| 6 | Log periodic antenna | Schwarzbeck | VULB 9168 | 1151 | 2024/4/20 | 2025/4/19 |
| 7 | Horn Antenna | Schwarzbeck | BBHA 9120 D | 9120D-1273 | 2024/4/20 | 2025/4/19 |
| 8 | Horn Antenna | Schwarzbeck | BBHA 9170 | 9170#685 | 2023/7/16 | 2024/7/15 |
| 9 | Temp&Humidity Recorder | Meideshi | JR900 | / | 2024/4/24 | 2025/4/23 |
| 10 | RF cable(966 chamber)9kHz-1GHz | Unknown | Unknown | Unknown | 2024/4/24 | 2025/4/23 |
| 11 | RF cable(966 chamber)1GHz-18GHz | Unknown | Unknown | Unknown | 2024/4/24 | 2025/4/23 |
| 12 | RF cable(966 chamber)18GHz-40GHz | Unknown | Unknown | Unknown | 2024/4/24 | 2025/4/23 |
| 13 | Test software | Farad Technology Co., Ltd | EZ-EMC Ver.TW-03A2 | | | |
| **Conducted Emission** | | | | | | |
| 1 | Test receiver | Rohde&Schwarz | ESCI | 100718 | 2024/4/24 | 2025/4/23 |
| 2 | LISN | Rohde&Schwarz | ENV216 | 100075 | 2024/4/24 | 2025/4/23 |
| 3 | Pulse limiter | Rohde&Schwarz | ESH3-Z2 | 102299 | 2024/4/24 | 2025/4/23 |
| 4 | RF cable (9kHz-30MHz) | Unknown | Unknown | Unknown | 2024/4/24 | 2025/4/23 |
| 5 | Test software | Farad Technology Co., Ltd | EZ-EMC Ver.TW-03A2 | | | |
| **RF Conducted Emission** | | | | | | |
| 1 | MXA Signal Analyzer | Keysight | N9021B | MY60080169 | 2024/4/20 | 2025/4/19 |
| 2 | RF Control Unit | dsusoft | JS0806-2 | 21G8060449 | 2024/4/20 | 2025/4/19 |
| 3 | power supply unit | dsusoft | JS0806-4ADC | N/A | 2024/4/20 | 2025/4/19 |
| 4 | VXG Signal Generator | Keysight | M9384B | MY61270787 | 2024/4/20 | 2025/4/19 |
| 5 | EXG Analog Signal Generator | Keysight | N5173B | MY59101282 | 2024/4/20 | 2025/4/19 |
| 6 | Test software | dsusoft | JS1120-3 Ver.3.2.22.0 | | | |

## 2.4 Test Mode

| Test Items | Mode | Data Rate | Channel |
|---|---|---|---|
| Radiated Emission and Band Edge Measurement | 802.11B-CDD | 1Mbps | 01/06/11 |
| | 802.11G-CDD | 6Mbps | 01/06/11 |
| | 802.11N20MIMO | MCS0 | 01/06/11 |
| | 802.11N40MIMO | MCS0 | 03/06/09 |
| | 802.11AX20MIMO | MCS0 | 01/06/11 |
| | 802.11AX40MIMO | MCS0 | 03/06/09 |
| Maximum Conducted Power | 802.11B-CDD | 1Mbps | 01/06/11 |
| | 802.11G-CDD | 6Mbps | 01/06/11 |
| | 802.11N20MIMO | MCS0 | 01/06/11 |
| | 802.11N40MIMO | MCS0 | 03/06/09 |
| | 802.11AX20MIMO | MCS0 | 01/06/11 |
| | 802.11AX40MIMO | MCS0 | 03/06/09 |
| AC Power Conducted Emission | 802.11B-CDD | 1Mbps | 11 |

Note: For AC Power Conducted Emission and Radiated Emission below 1GHz, only worst case was recorded.

## 2.5 Test Condition

| Applicable to | Environmental conditions | Input Power | Tested by |
|---|---|---|---|
| AC Power Conducted Emission | 23.7°C, 49% RH | AC 120V/60Hz | Freedom Zhuo |
| Radiated Emission and Band Edge Measurement | 24.2°C, 49% RH | AC 120V/60Hz | Freedom Zhuo |
| Maximum Conducted Power | 23.5°C, 50% RH | DC 19V | Albert Fan |

Note: Adapter supply voltage AC 120V/60Hz.

The applicant declare the operating environment of EUT as below:

Normal conditions: 19V DC, 0~45°C

## 2.6 Duty Cycle of Test Signal

Test result: PASS
Note: For test data, please refer to the report RF200317E01.

## 2.7 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT.
This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

| Uncertainty | |
|---|---|
| Parameter | Uncertainty |
| Occupied Channel Bandwidth | ±143.88kHz |
| Power Spectral Density | ±0.743dB |
| Conducted Spurious Emission | ±1.328dB |
| RF power conducted | ±0.384dB |
| Conducted emission(9kHz~30MHz) AC main | ±2.72dB |
| Radiated emission(9kHz~30MHz) | ±2.66dB |
| Radiated emission (30MHz~1GHz) | ±4.62dB |
| Radiated emission (1GHz~18GHz) | ±4.86dB |
| Radiated emission (18GHz~40GHz) | ±3.80dB |

## 2.8 Test Location

| | |
|---|---|
| Company: | Shenzhen Haiyun Standard Technical CO., Ltd. |
| Address: | No. 110-113, 115, 116, Block B, Jinyuan Business Building, Bao'an District, Shenzhen, China |
| CNAS Registration Number: | CNAS L18252 |
| CAB identifier | CN0145 |
| A2LA Certificate Number | 6823.01 |
| Telephone: | 0755-26024411 |

## 2.9 SUPPORT UNITS

| Support Equipment | | | | |
|---|---|---|---|---|
| No. | Equipment | Model Name | Manufacturer | Remarks |
| 1 | Flat Panel Monitor | S2721QS | DELL | / |
| 2 | USB Disk1 | / | Kingston | / |
| 3 | USB Disk2 | / | Kingston | / |
| 4 | USB Disk3 | / | Kingston | / |
| 5 | Earphone | / | / | / |
| 6 | Mouse | DOK-680U | LENOVO | 701E8328 |
| 7 | Keyboard | SK-8827 | LENOVO | 21R1ADL |
| 8 | Printer | MJPMYTJHT01 | Xiaomi | / |

## 2.10 Description of Support Units

**None**

## 2.11 Deviation from Standards

**None**

# 3. Test Procedure And Results

## 3.1 AC Power Line Conducted Emission

### 3.1.1 Limit

| Frequency | Maximum RF Line Voltage | |
|---|---|---|
| | Quasi-Peak Level dB(μV) | Average Level dB(μV) |
| 150kHz ~ 500kHz | 66 ~ 56* | 56 ~ 46* |
| 500kHz ~ 5MHz | 56 | 46 |
| 5MHz ~ 30MHz | 60 | 50 |

Notes: 1. * Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

### 3.1.2 Test Procedure

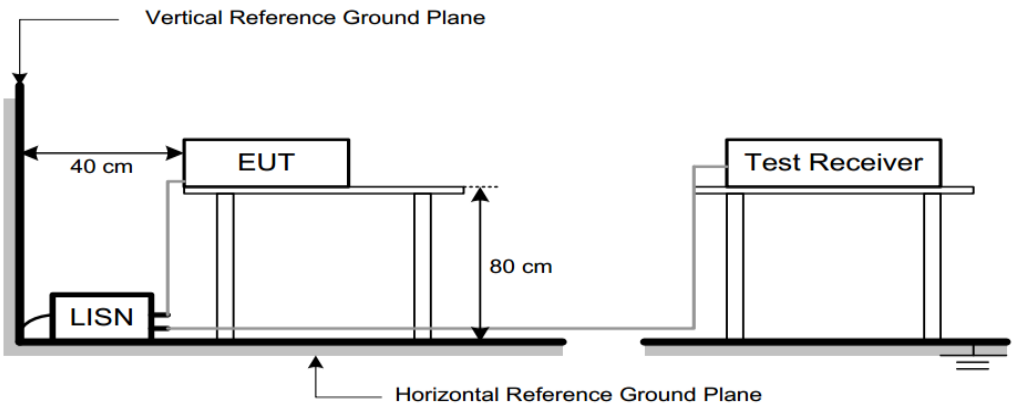
| Test Method | |
|---|---|
| ●Conducted Measurement | ○Radiated Measurement |
| Test Channels | |
| ○Lowest, Middle and Highest Channel | ○Lowest and Highest Channel |
| Environmental conditions | |
| ●Normal | ○Normal and Extreme |
| Note:●:Test ○:No Test | |

a) The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

b) Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c) The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

### 3.1.3 Test Setup



### 3.1.4 Test Result

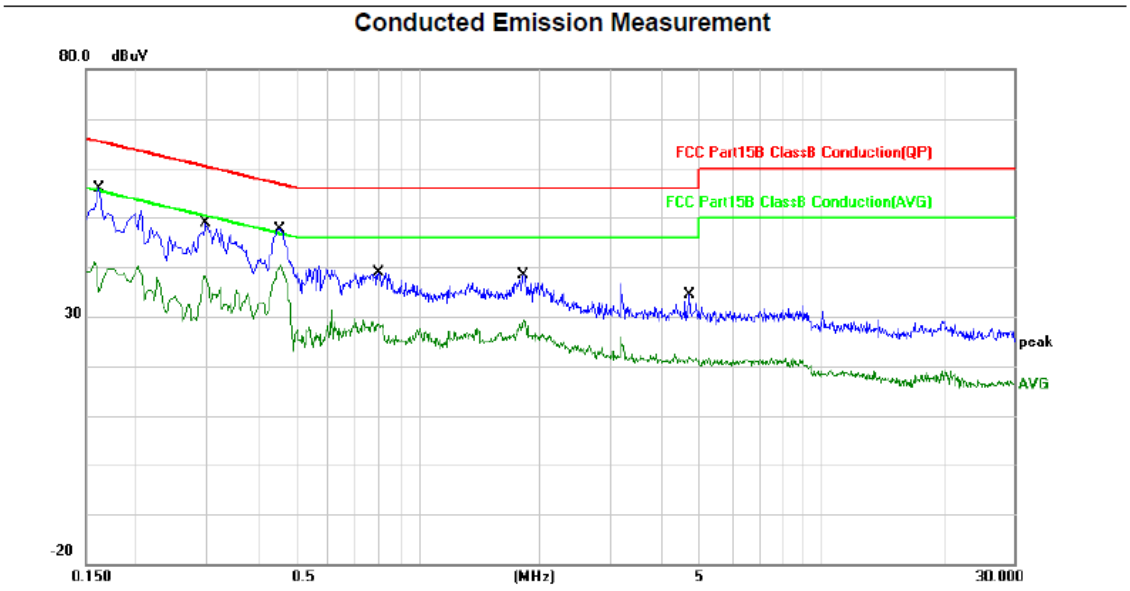
**Note:**

1. Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
2. Measurement = Reading + Correct Factor.
3. Over = Measurement – Limit

We only recorded the data of the worst mode. Please see the following:

| 150kHz~30MHz | Worst Case Operating Mode: 11B-CDD Channel 11 |
|---|---|

Line

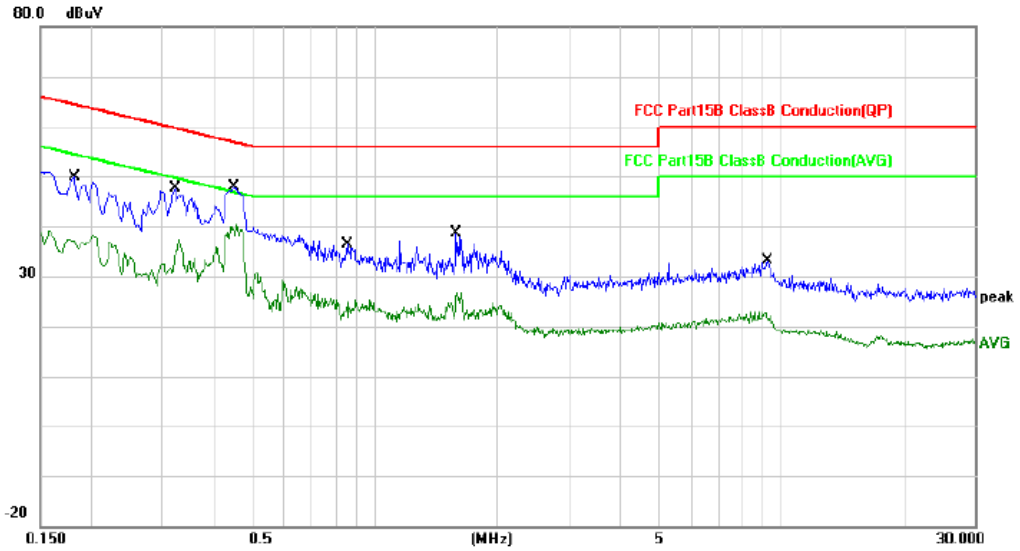



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.1620 | 28.30 | 20.09 | 48.39 | 65.36 | -16.97 | QP | |
| 2 | | 0.1620 | 17.00 | 20.09 | 37.09 | 55.36 | -18.27 | AVG | |
| 3 | | 0.2980 | 23.48 | 20.11 | 43.59 | 60.30 | -16.71 | QP | |
| 4 | | 0.2980 | 12.43 | 20.11 | 32.54 | 50.30 | -17.76 | AVG | |
| 5 | | 0.4540 | 25.68 | 20.28 | 45.96 | 56.80 | -10.84 | QP | |
| 6 | * | 0.4540 | 19.38 | 20.28 | 39.66 | 46.80 | -7.14 | AVG | |
| 7 | | 0.7980 | 14.97 | 20.28 | 35.25 | 56.00 | -20.75 | QP | |
| 8 | | 0.7980 | 7.09 | 20.28 | 27.37 | 46.00 | -18.63 | AVG | |
| 9 | | 1.8260 | 11.72 | 20.11 | 31.83 | 56.00 | -24.17 | QP | |
| 10 | | 1.8260 | 6.56 | 20.11 | 26.67 | 46.00 | -19.33 | AVG | |
| 11 | | 4.7180 | 8.32 | 20.02 | 28.34 | 56.00 | -27.66 | QP | |
| 12 | | 4.7180 | 1.70 | 20.02 | 21.72 | 46.00 | -24.28 | AVG | |

| 150kHz~30MHz | Worst Case Operating Mode: 11B-CDD Channel 11 |
|---|---|

Neutral

**Conducted Emission Measurement**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.1820 | 25.16 | 20.29 | 45.45 | 64.39 | -18.94 | QP | |
| 2 | | 0.1820 | 16.36 | 20.29 | 36.65 | 54.39 | -17.74 | AVG | |
| 3 | | 0.3220 | 22.24 | 19.99 | 42.23 | 59.66 | -17.43 | QP | |
| 4 | | 0.3220 | 11.28 | 19.99 | 31.27 | 49.66 | -18.39 | AVG | |
| 5 | | 0.4500 | 25.30 | 20.14 | 45.44 | 56.88 | -11.44 | QP | |
| 6 | * | 0.4500 | 19.30 | 20.14 | 39.44 | 46.88 | -7.44 | AVG | |
| 7 | | 0.8540 | 11.06 | 20.10 | 31.16 | 56.00 | -24.84 | QP | |
| 8 | | 0.8540 | 2.60 | 20.10 | 22.70 | 46.00 | -23.30 | AVG | |
| 9 | | 1.5860 | 6.34 | 20.32 | 26.66 | 56.00 | -29.34 | QP | |
| 10 | | 1.5860 | 1.16 | 20.32 | 21.48 | 46.00 | -24.52 | AVG | |
| 11 | | 9.2980 | 5.80 | 20.13 | 25.93 | 60.00 | -34.07 | QP | |
| 12 | | 9.2980 | 0.56 | 20.13 | 20.69 | 50.00 | -29.31 | AVG | |

## 3.2 Radiated Emission and Band Edge

### 3.2.1 Limit

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

| Frequency (MHz) | Distance Meters(m) | Field Strength Limit | |
|---|---|---|---|
| | | μV/m | dB(μV)/m |
| 0.009 – 0.49 | 300 | 2400/F(kHz) | - |
| 0.490 – 1.705 | 30 | 24000/F(kHz) | - |
| 1.705 – 30 | 30 | 30 | - |
| 30~88 | 3 | 100 | 40.0 |
| 88~216 | 3 | 150 | 43.5 |
| 216~960 | 3 | 200 | 46.0 |
| 960~1000 | 3 | 500 | 54.0 |
| Above 1000 | 3 | 74.0 dB(μV)/m (Peak)<br>54.0 dB(μV)/m (Average) | |

Note: (1) Emission level dBμV = 20 log Emission level μV/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

### 3.2.2 Test Procedure

| Test Method | |
|---|---|
| ○Conducted Measurement | ●Radiated Measurement |
| Test Channels | |
| ●Lowest, Middle and Highest Channel | ○ Lowest and Highest Channel |
| Environmental conditions | |
| ●Normal | ○Normal and Extreme |
| Note:●:Test ○:No Test | |

a) The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)

b) The measuring distance of 3 m or 1.5m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)

c) The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of

the antenna are set to make the measurement.

d) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).

e) The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.

f) The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

g) All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform. (below 1 GHz)

h) All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn‘t perform. (above 1 GHz)

i) For the actual test configuration, please refer to the related Item -EUT Test Photos.

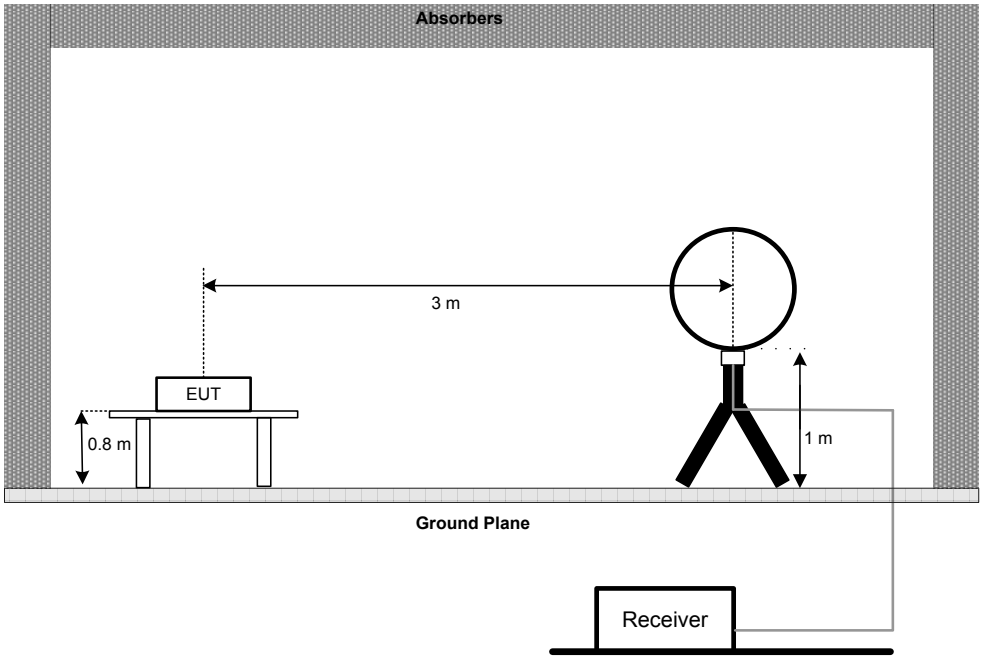
The following table is the setting of the receiver:

| Spectrum Parameters | Setting |
|---|---|
| Start ~ Stop Frequency | 9 kHz~150 kHz for RBW 200 Hz |
| Start ~ Stop Frequency | 0.15 MHz~30 MHz for RBW 9 kHz |
| Start ~ Stop Frequency | 30 MHz~1000 MHz for RBW 100 kHz |

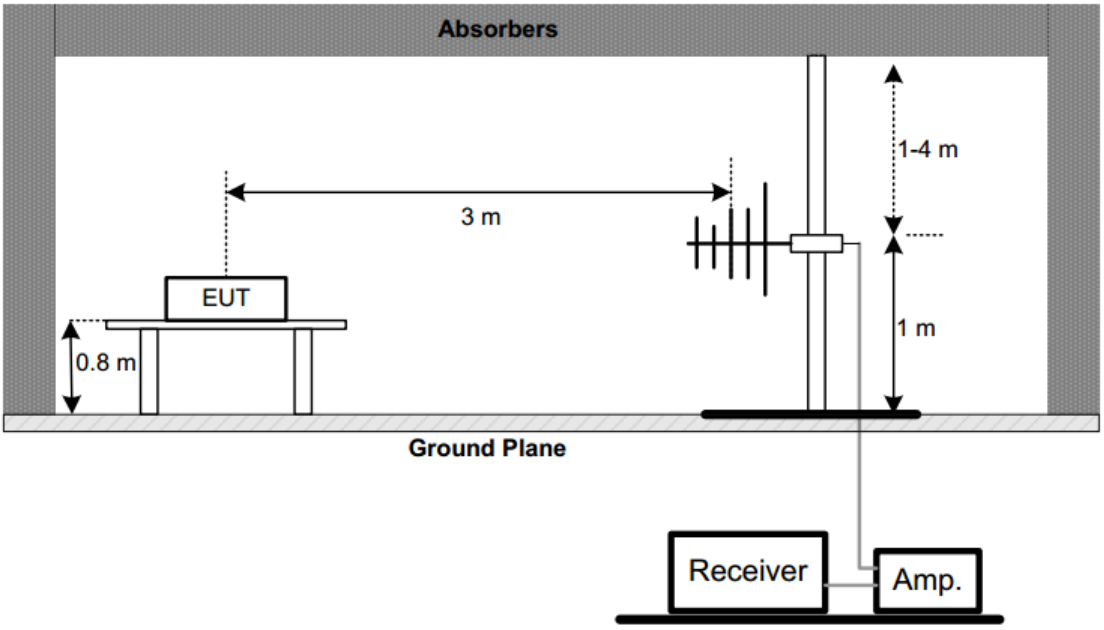
| Spectrum Parameters | Setting |
|---|---|
| Start Frequency | 1000 MHz |
| Stop Frequency | 10th carrier harmonic |
| RBW / VBW<br>(Emission in restricted band) | 1 MHz / 3 MHz for PK value<br>1 MHz / 1/T Hz for AVG value |

### 3.2.3 Test Setup

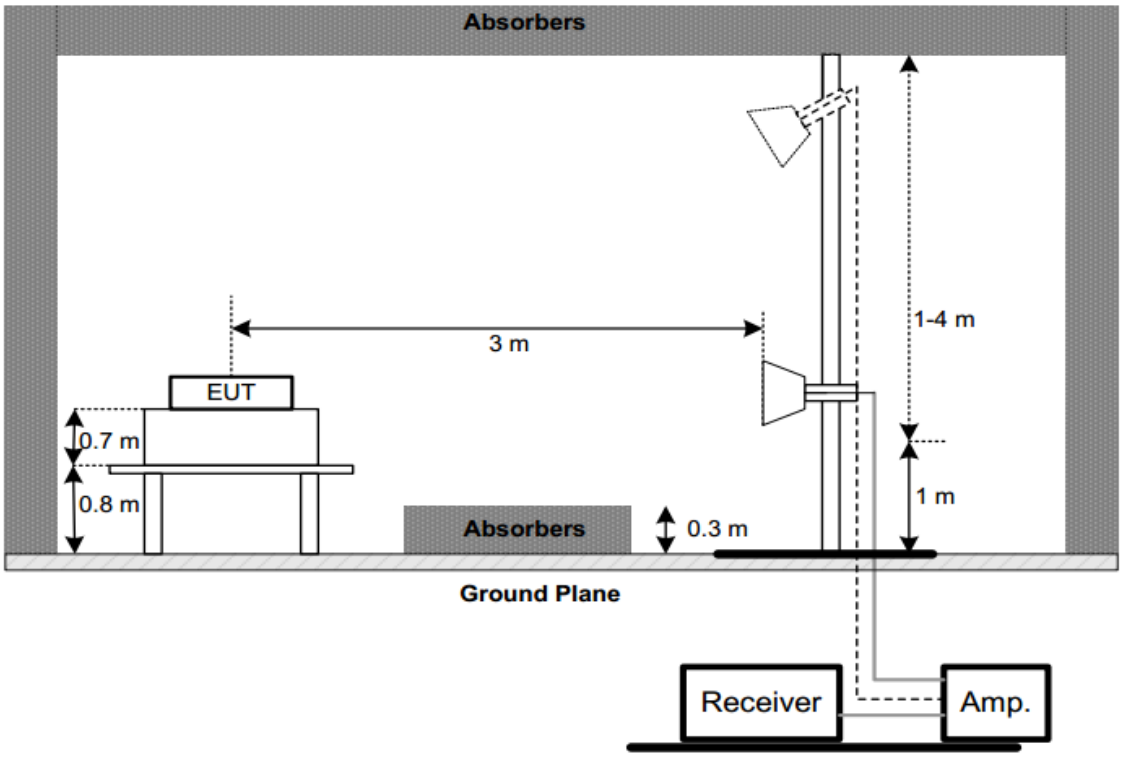
(A) Radiated Emission Test Set-Up Frequency Below 30MHz




(B) Radiated Emission Test Set-Up Frequency 30 MHz-1000 MHz



(C) Radiated Emission Test Set-Up Frequency Above 1 GHz




### 3.2.4 Test Result

1) Radiated emission: 9kHz-30MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not recorded in this report.

2) Radiated emission: 30MHz-1G

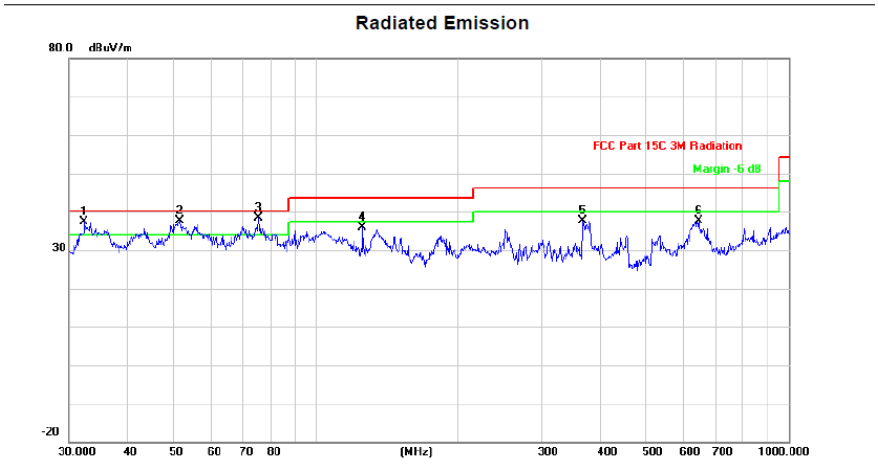
**Note:**

1. Measurement = Reading + Correct Factor.
2. Over = Measurement – Limit

We only recorded the data of the worst mode. Please see the following:

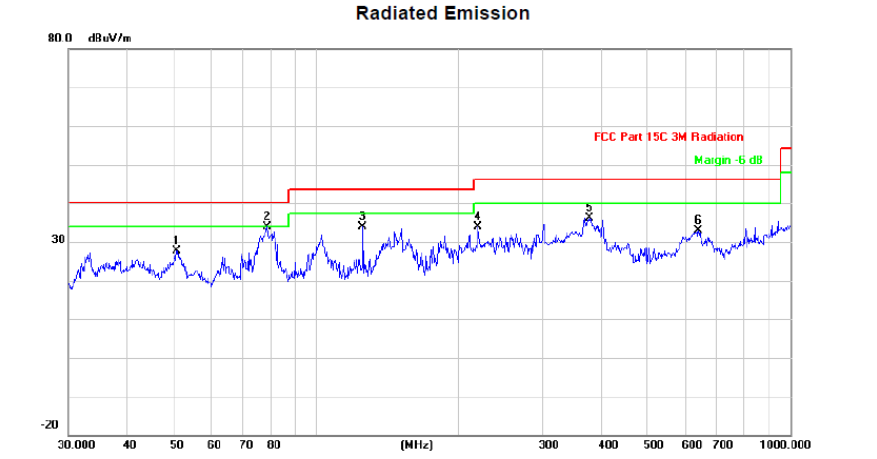
| Below 1G (30MHz~1GHz) | Worst Case Operating Mode: 11B-CDD Channel 11 |
|---|---|

VERTICAL




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | ! | 32.2971 | 49.30 | -12.02 | 37.28 | 40.00 | -2.72 | peak | | | |
| 2 | ! | 51.5363 | 48.78 | -11.18 | 37.60 | 40.00 | -2.40 | peak | | | |
| 3 | * | 75.5860 | 52.01 | -13.73 | 38.28 | 40.00 | -1.72 | peak | | | |
| 4 | | 125.3645 | 46.37 | -10.59 | 35.78 | 43.50 | -7.72 | peak | | | |
| 5 | | 367.3750 | 44.22 | -6.55 | 37.67 | 46.00 | -8.33 | peak | | | |
| 6 | | 644.5530 | 37.51 | 0.08 | 37.59 | 46.00 | -8.41 | peak | | | |

HORIZONTAL




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | | 50.8171 | 38.61 | -11.10 | 27.51 | 40.00 | -12.49 | peak | | | |
| 2 | * | 78.8410 | 48.06 | -14.17 | 33.89 | 40.00 | -6.11 | peak | | | |
| 3 | | 125.3645 | 44.40 | -10.59 | 33.81 | 43.50 | -9.69 | peak | | | |
| 4 | | 219.1785 | 44.72 | -10.75 | 33.97 | 46.00 | -12.03 | peak | | | |
| 5 | | 376.5227 | 42.46 | -6.32 | 36.14 | 46.00 | -9.86 | peak | | | |
| 6 | | 640.0394 | 32.91 | 0.01 | 32.92 | 46.00 | -13.08 | peak | | | |

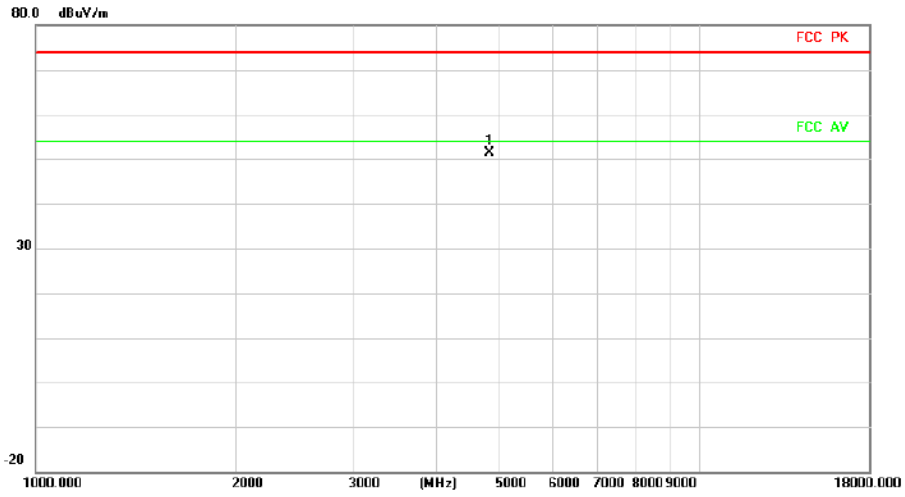
3) Radiated emission: Above 1G

**Note:**

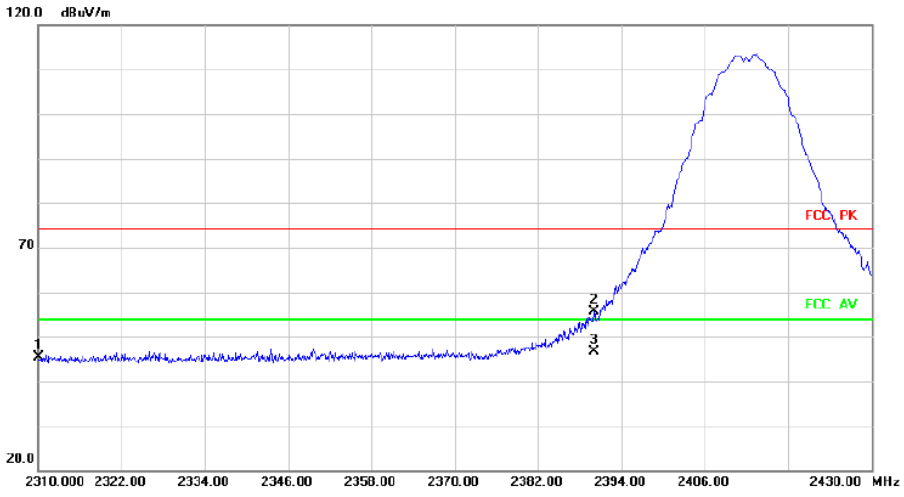
1. Measurement = Reading + Correct Factor.
2. Over = Measurement – Limit

| Above 1G (1GHz~18GHz) | Test mode:11B-CDD | Test Channel:1 |
|---|---|---|

VERTICAL




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4824.000 | 35.44 | 15.82 | 51.26 | 74.00 | -22.74 | peak |



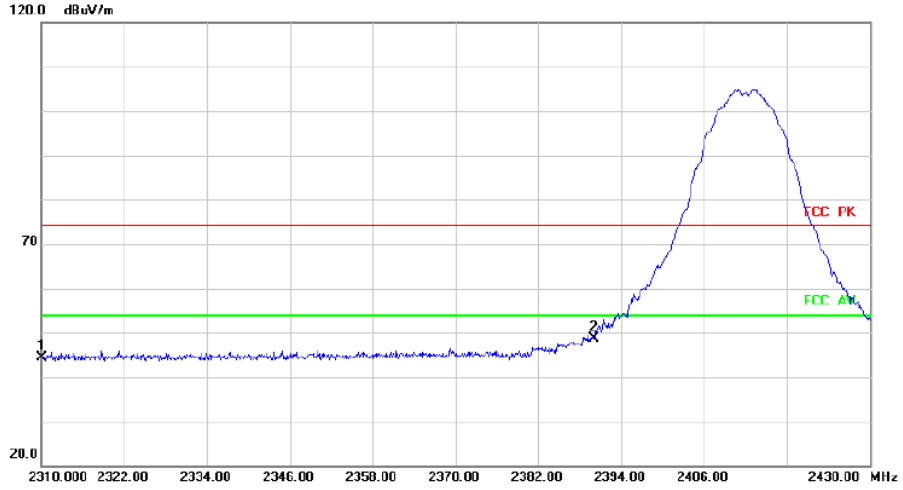

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2310.000 | 37.14 | 8.22 | 45.36 | 74.00 | -28.64 | peak |
| 2 | | 2390.000 | 47.12 | 8.46 | 55.58 | 74.00 | -18.42 | peak |
| 3 | * | 2390.000 | 38.29 | 8.46 | 46.75 | 54.00 | -7.25 | AVG |

HORIZONTA

**Radiated Emission**


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4824.000 | 33.85 | 15.82 | 49.67 | 74.00 | -24.33 | peak |

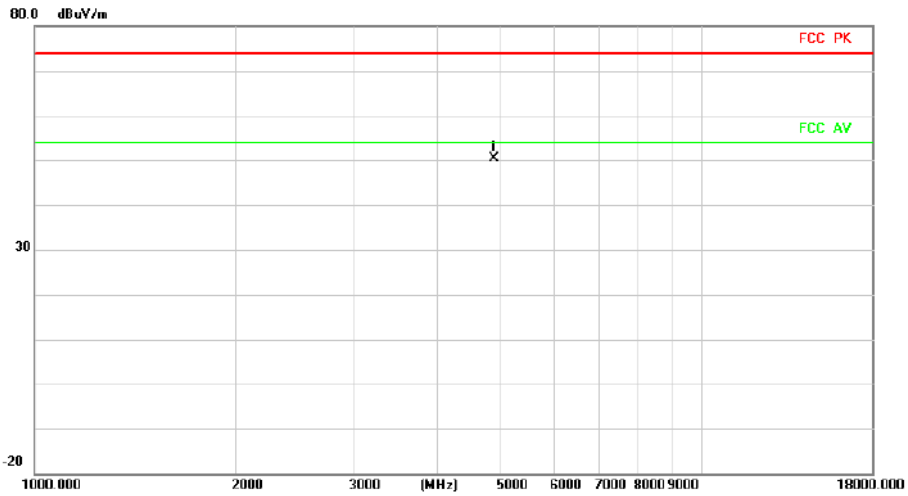
**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2310.000 | 36.05 | 8.22 | 44.27 | 74.00 | -29.73 | peak |
| 2 | * | 2390.000 | 40.25 | 8.46 | 48.71 | 74.00 | -25.29 | peak |

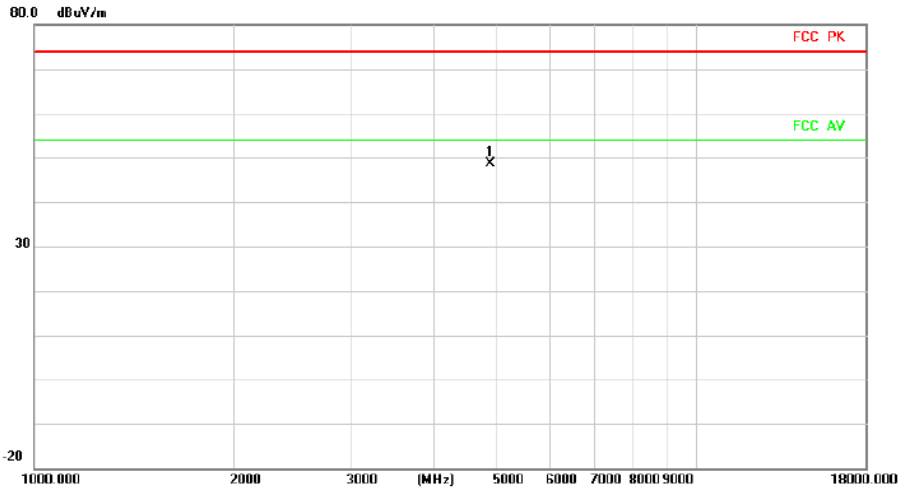
| Above 1G (1GHz~18GHz) | Test mode:11B-CDD | Test Channel:6 |
|---|---|---|

VERTICAL




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4874.000 | 34.98 | 15.44 | 50.42 | 74.00 | -23.58 | peak |

HORIZONTA




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4874.000 | 33.10 | 15.44 | 48.54 | 74.00 | -25.46 | peak |

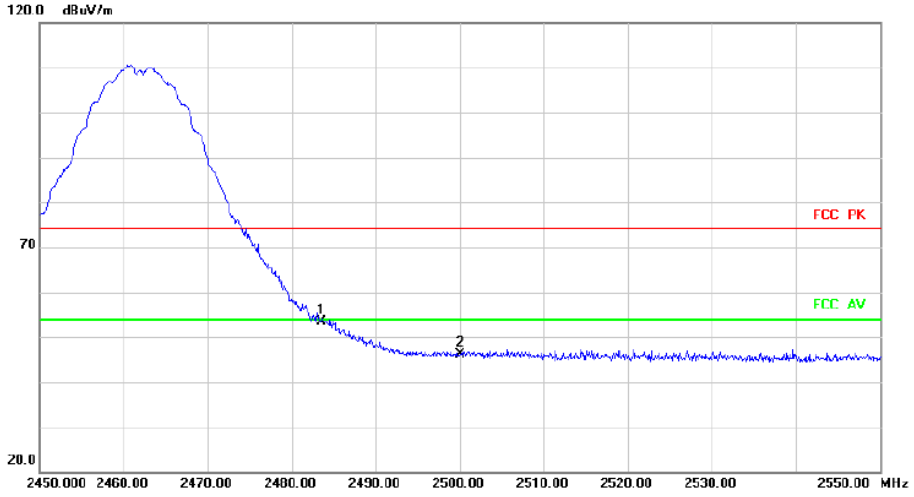
| Above 1G (1GHz~18GHz) | Test mode: 11B-CDD | Test Channel:11 |
|---|---|---|

VERTICAL

**Radiated Emission**


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4924.000 | 34.17 | 15.10 | 49.27 | 74.00 | -24.73 | peak |

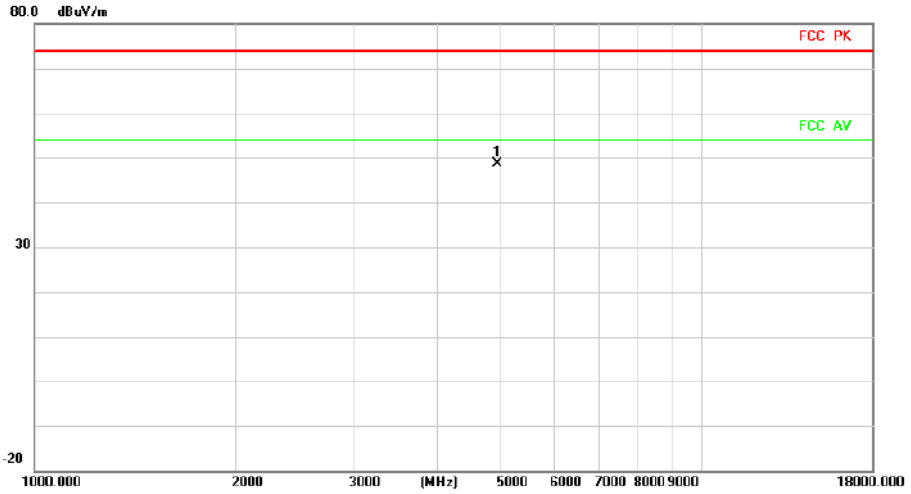
**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 2483.500 | 44.28 | 9.10 | 53.38 | 74.00 | -20.62 | peak |
| 2 | | 2500.000 | 36.83 | 9.26 | 46.09 | 74.00 | -27.91 | peak |

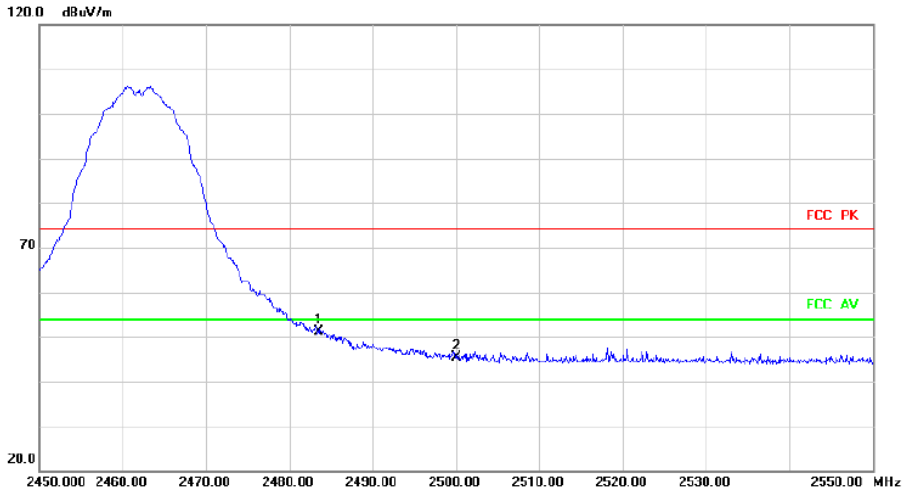
HORIZONTA

**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4924.000 | 33.65 | 15.10 | 48.75 | 74.00 | -25.25 | peak |

**Radiated Emission**

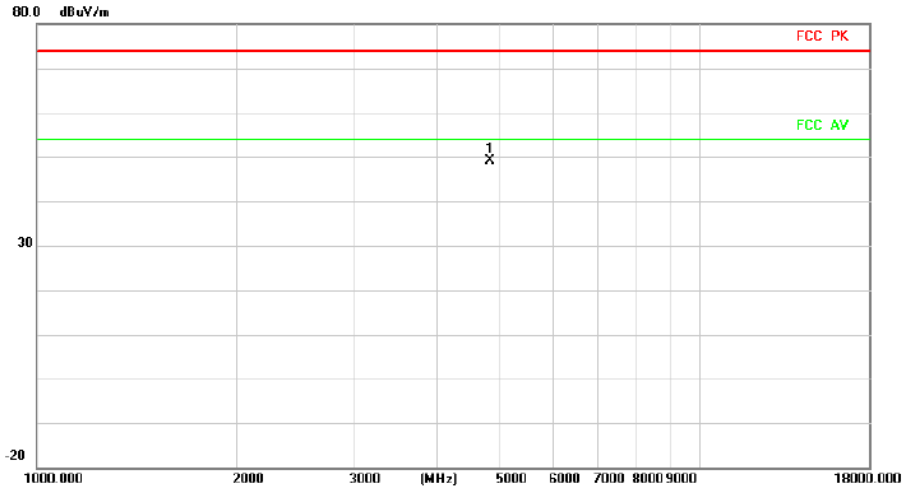



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 2483.500 | 42.05 | 9.10 | 51.15 | 74.00 | -22.85 | peak |
| 2 | | 2500.000 | 36.14 | 9.26 | 45.40 | 74.00 | -28.60 | peak |

| Above 1G (1GHz~18GHz) | Test mode:11G-CDD | Test Channel:1 |
|---|---|---|

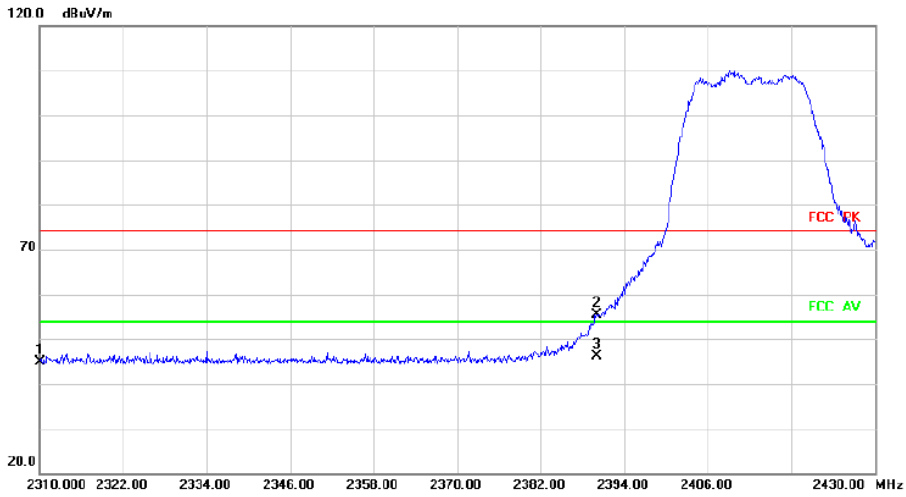
VERTICAL

**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4824.000 | 33.40 | 15.82 | 49.22 | 74.00 | -24.78 | peak |

**Radiated Emission**



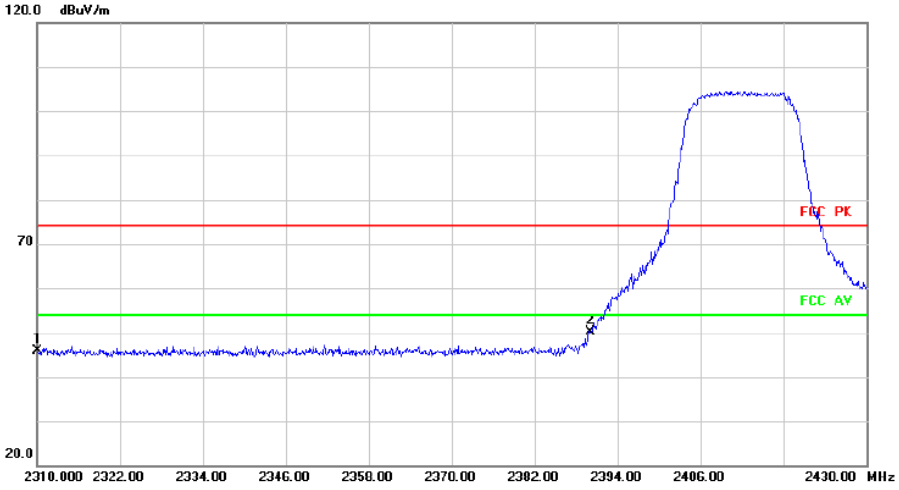

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2310.000 | 36.73 | 8.22 | 44.95 | 74.00 | -29.05 | peak |
| 2 | | 2390.000 | 46.91 | 8.46 | 55.37 | 74.00 | -18.63 | peak |
| 3 | * | 2390.000 | 37.68 | 8.46 | 46.14 | 54.00 | -7.86 | AVG |

HORIZONTA

**Radiated Emission**


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4824.000 | 33.11 | 15.82 | 48.93 | 74.00 | -25.07 | peak |

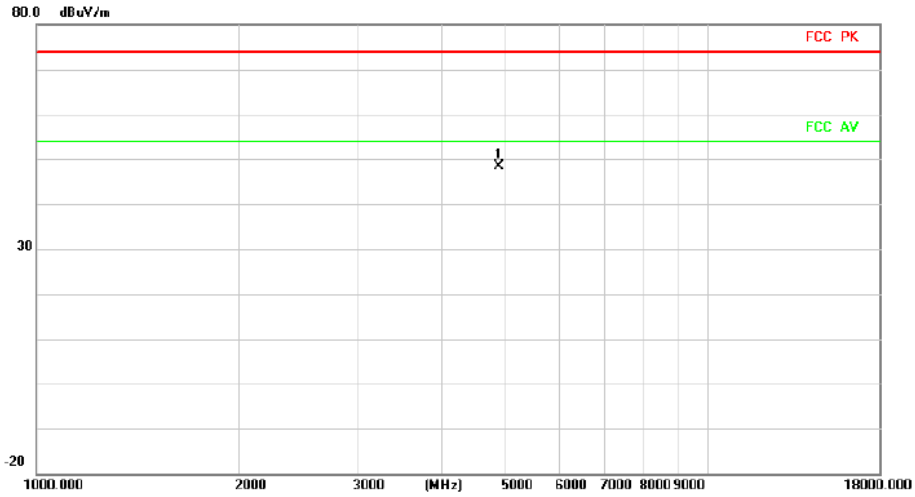
**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2310.000 | 45.74 | 0.19 | 45.93 | 74.00 | -28.07 | peak |
| 2 | * | 2390.000 | 49.61 | 0.41 | 50.02 | 74.00 | -23.98 | peak |

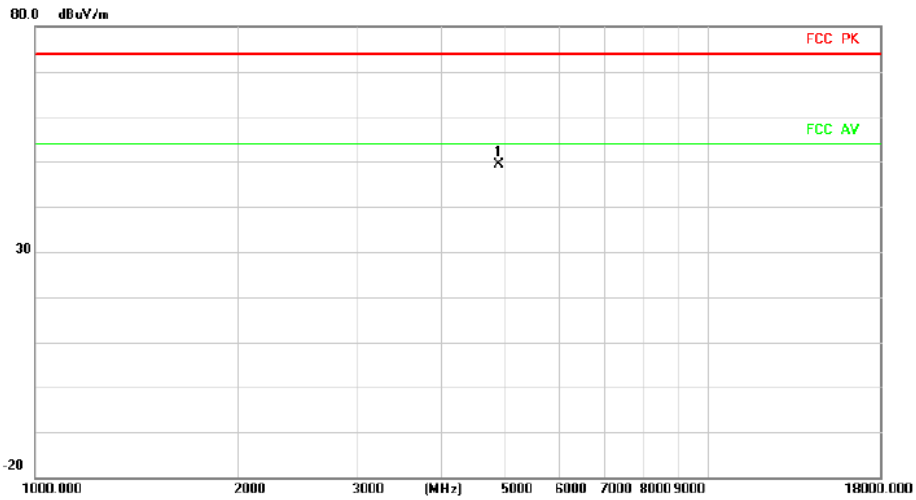
| Above 1G (1GHz~18GHz) | Test mode: 11G-CDD | Test Channel:6 |
|---|---|---|

VERTICAL




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4874.000 | 33.00 | 15.44 | 48.44 | 74.00 | -25.56 | peak |

HORIZONTA

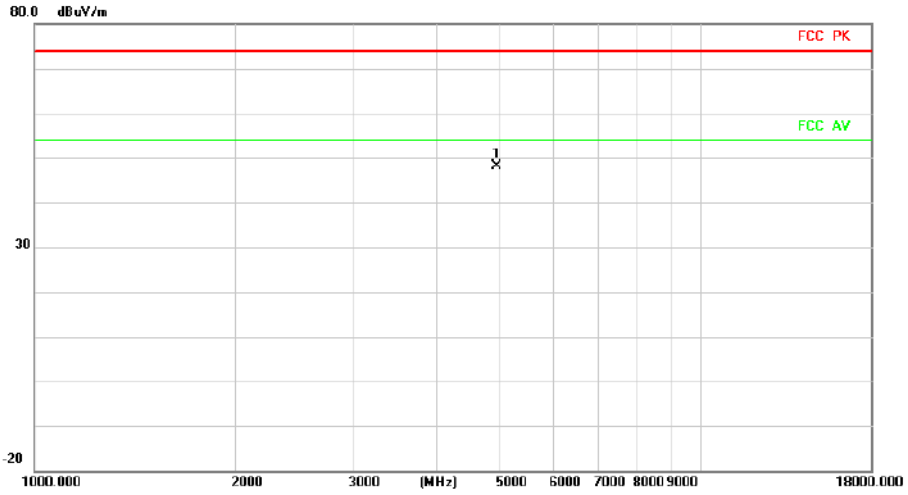



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4874.000 | 33.91 | 15.44 | 49.35 | 74.00 | -24.65 | peak |

| Above 1G (1GHz~18GHz) | Test mode: 11G-CDD | Test Channel:11 |
|---|---|---|

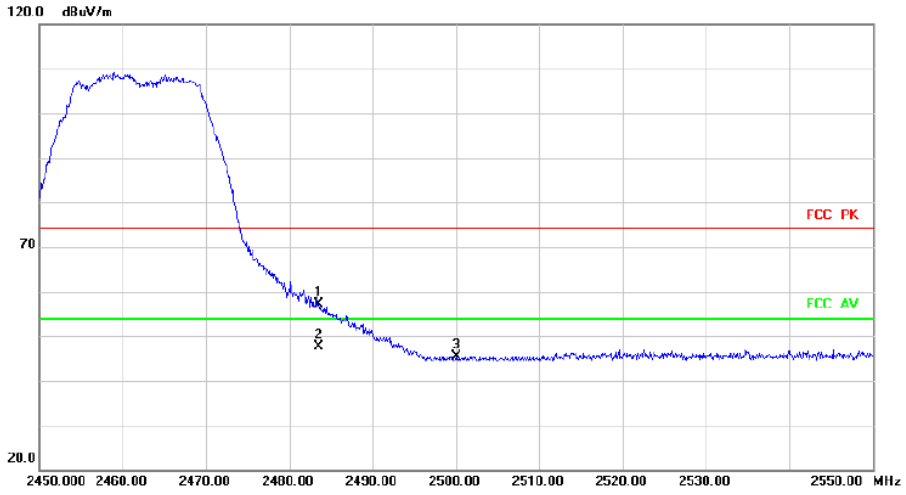
VERTICAL

**Radiated Emission**



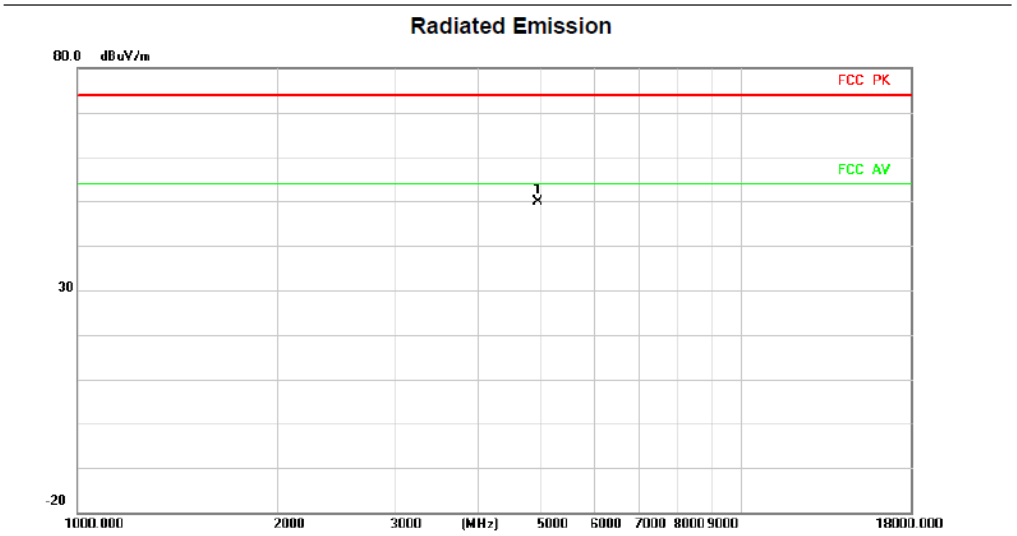

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4924.000 | 33.05 | 15.10 | 48.15 | 74.00 | -25.85 | peak |

**Radiated Emission**

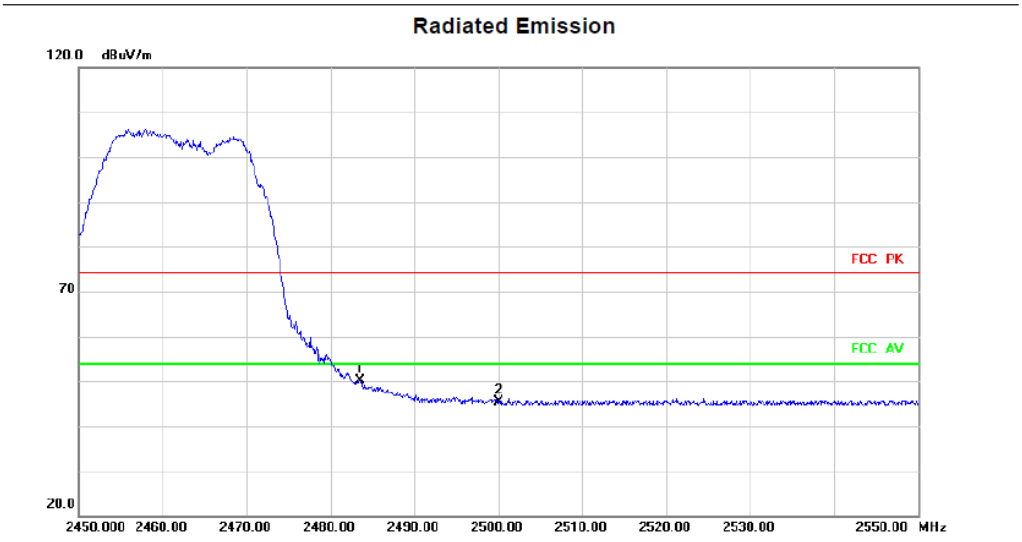



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2483.500 | 47.96 | 9.10 | 57.06 | 74.00 | -16.94 | peak |
| 2 | * | 2483.500 | 38.47 | 9.10 | 47.57 | 54.00 | -6.43 | AVG |
| 3 | | 2500.000 | 36.22 | 9.26 | 45.48 | 74.00 | -28.52 | peak |

HORIZONTA




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4924.000 | 34.68 | 15.10 | 49.78 | 74.00 | -24.22 | peak |

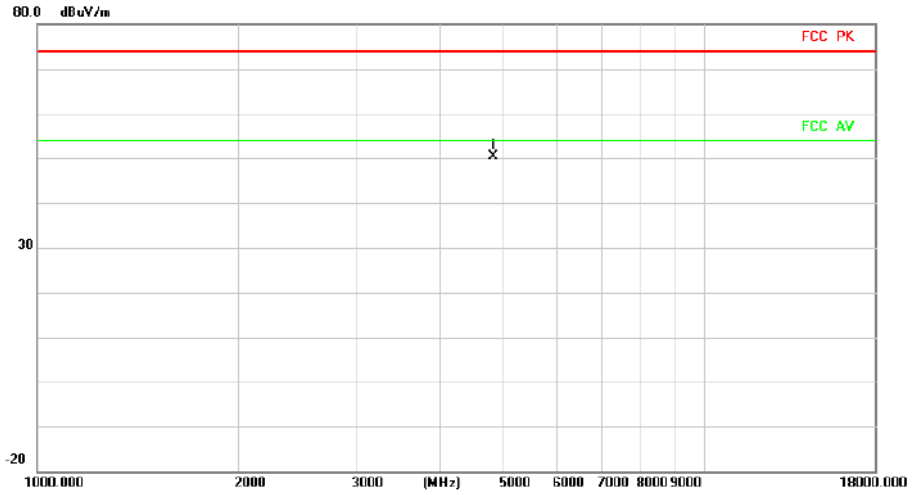



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 2483.500 | 41.10 | 9.10 | 50.20 | 74.00 | -23.80 | peak |
| 2 | | 2500.000 | 36.15 | 9.26 | 45.41 | 74.00 | -28.59 | peak |

| Above 1G (1GHz~18GHz) | Test mode: 11N20MIMO | Test Channel:1 |
|---|---|---|

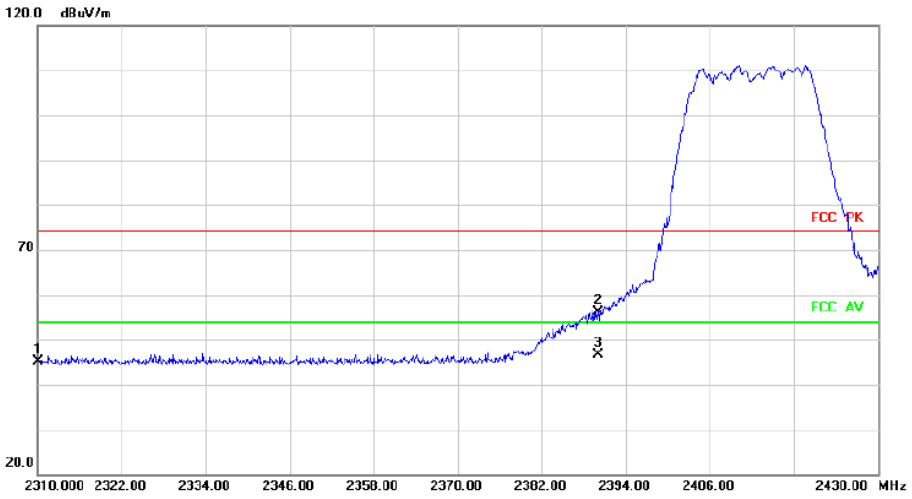
VERTICAL

**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4824.000 | 34.45 | 15.82 | 50.27 | 74.00 | -23.73 | peak |

**Radiated Emission**



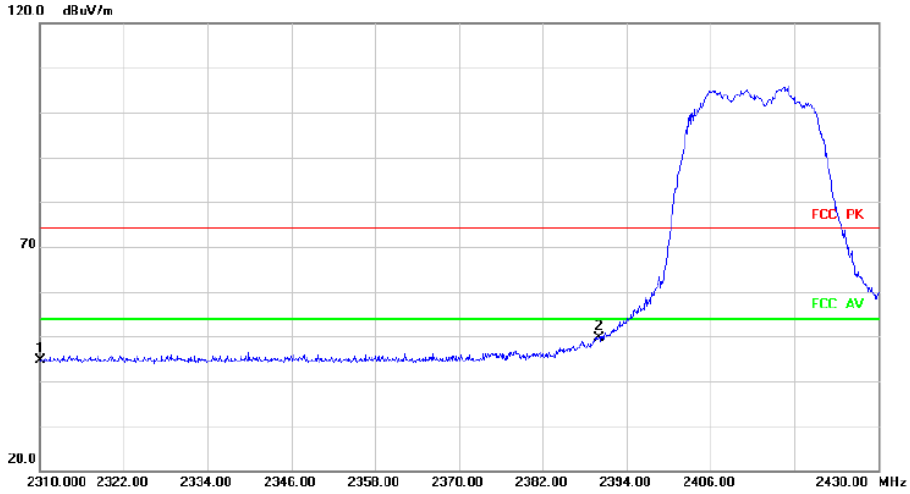

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2310.000 | 36.91 | 8.22 | 45.13 | 74.00 | -28.87 | peak |
| 2 | | 2390.000 | 47.71 | 8.46 | 56.17 | 74.00 | -17.83 | peak |
| 3 | * | 2390.000 | 38.22 | 8.46 | 46.68 | 54.00 | -7.32 | AVG |

HORIZONTA

**Radiated Emission**


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4824.000 | 33.56 | 15.82 | 49.38 | 74.00 | -24.62 | peak |

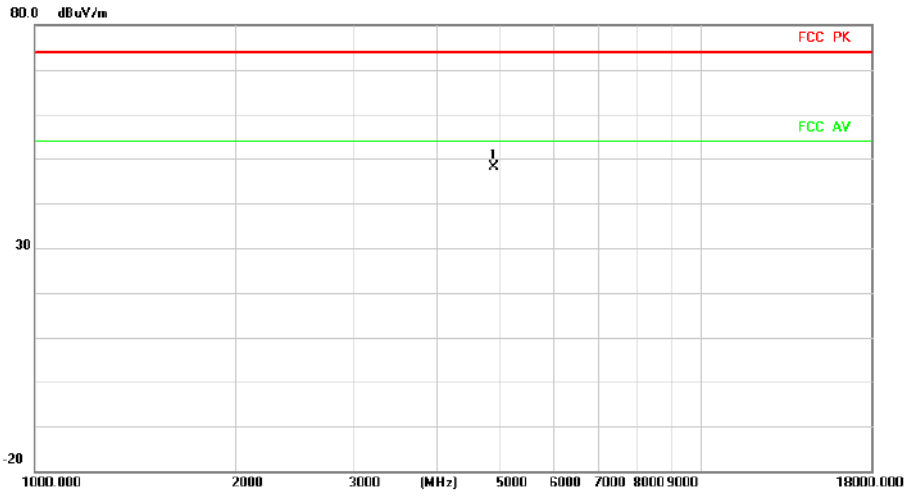
**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2310.000 | 36.53 | 8.22 | 44.75 | 74.00 | -29.25 | peak |
| 2 | * | 2390.000 | 41.20 | 8.46 | 49.66 | 74.00 | -24.34 | peak |

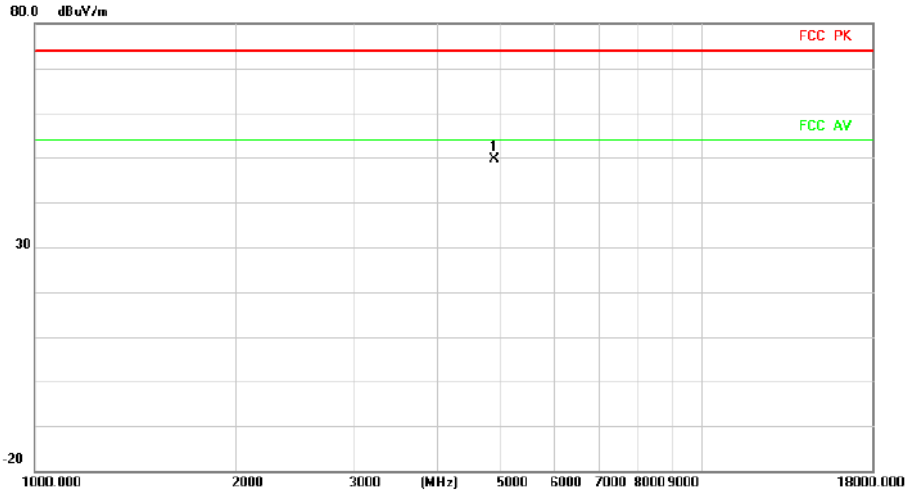
| Above 1G (1GHz~18GHz) | Test mode: 11N20MIMO | Test Channel:6 |
|---|---|---|

VERTICAL




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4874.000 | 32.79 | 15.44 | 48.23 | 74.00 | -25.77 | peak |

HORIZONTA

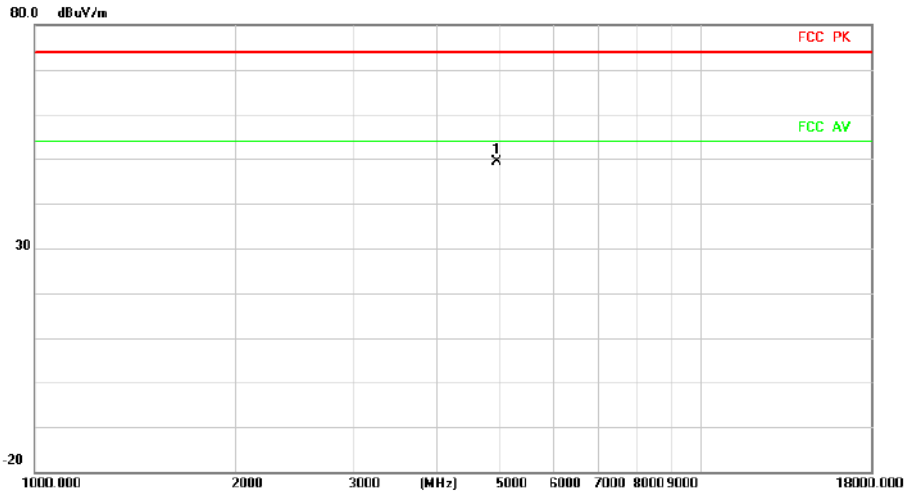



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4874.000 | 34.14 | 15.44 | 49.58 | 74.00 | -24.42 | peak |

| Above 1G (1GHz~18GHz) | Test mode: 11N20MIMO | Test Channel:11 |
|---|---|---|

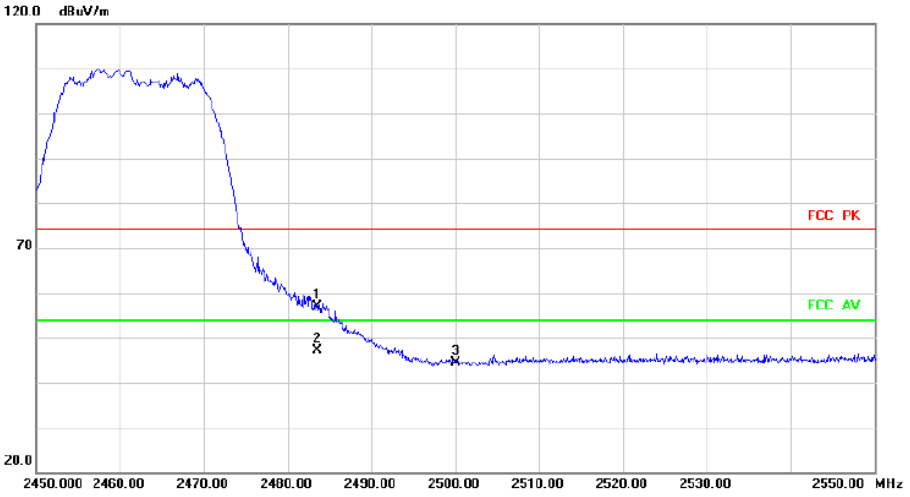
VERTICAL

**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | Antenna |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4924.000 | 34.40 | 15.10 | 49.50 | 74.00 | -24.50 | peak |

**Radiated Emission**



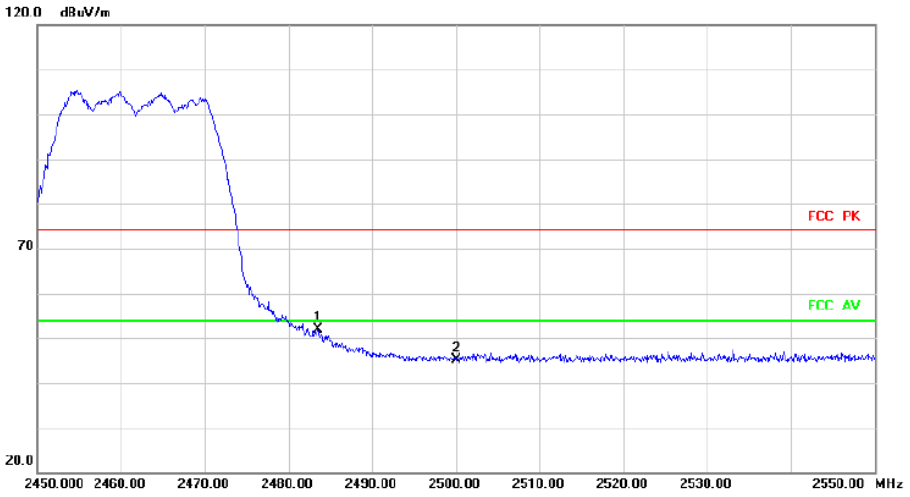

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2483.500 | 47.81 | 9.10 | 56.91 | 74.00 | -17.09 | peak |
| 2 | * | 2483.500 | 38.13 | 9.10 | 47.23 | 54.00 | -6.77 | AVG |
| 3 | | 2500.000 | 35.11 | 9.26 | 44.37 | 74.00 | -29.63 | peak |

HORIZONTA

**Radiated Emission**


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4924.000 | 32.76 | 15.10 | 47.86 | 74.00 | -26.14 | peak |

**Radiated Emission**

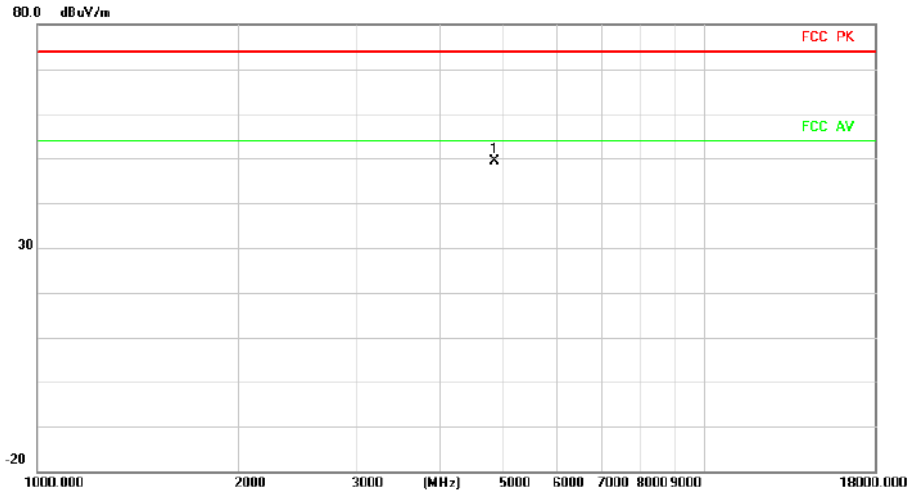



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 2483.500 | 42.75 | 9.10 | 51.85 | 74.00 | -22.15 | peak |
| 2 | | 2500.000 | 35.94 | 9.26 | 45.20 | 74.00 | -28.80 | peak |

| Above 1G (1GHz~18GHz) | Test mode: 11N40MIMO | Test Channel:3 |
|---|---|---|

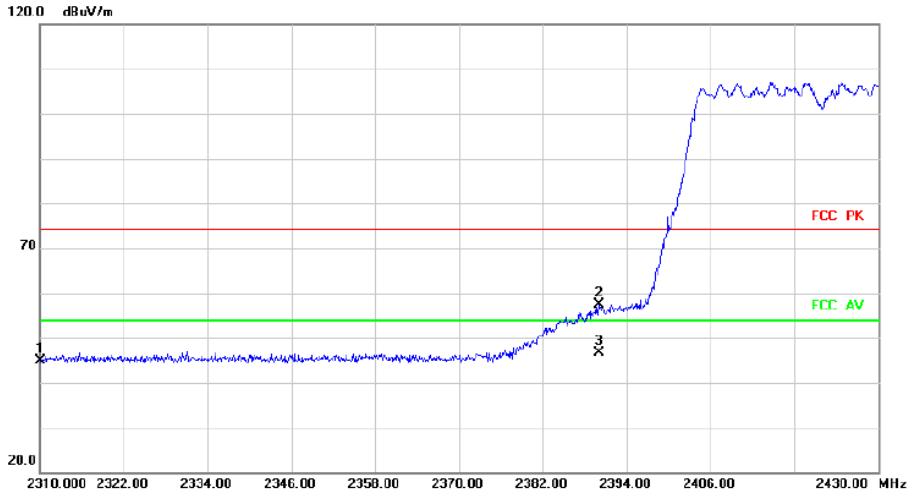
VERTICAL

**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4844.000 | 33.78 | 15.62 | 49.40 | 74.00 | -24.60 | peak |

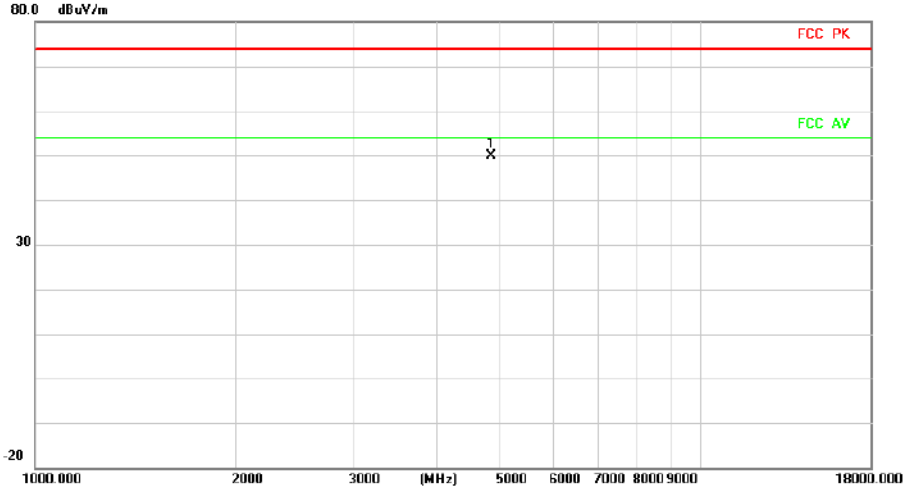
**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2310.000 | 36.73 | 8.22 | 44.95 | 74.00 | -29.05 | peak |
| 2 | | 2390.000 | 48.82 | 8.46 | 57.28 | 74.00 | -16.72 | peak |
| 3 | * | 2390.000 | 38.12 | 8.46 | 46.58 | 54.00 | -7.42 | AVG |

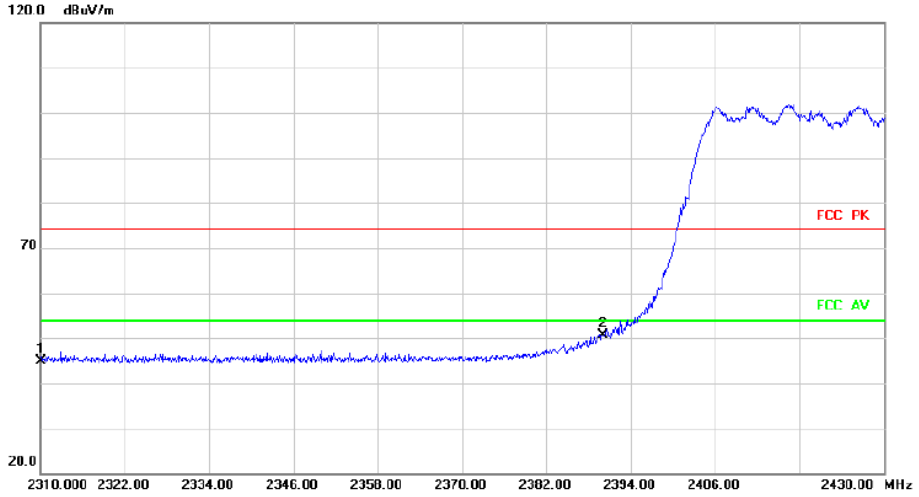
HORIZONTA

**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4844.000 | 34.14 | 15.62 | 49.76 | 74.00 | -24.24 | peak |

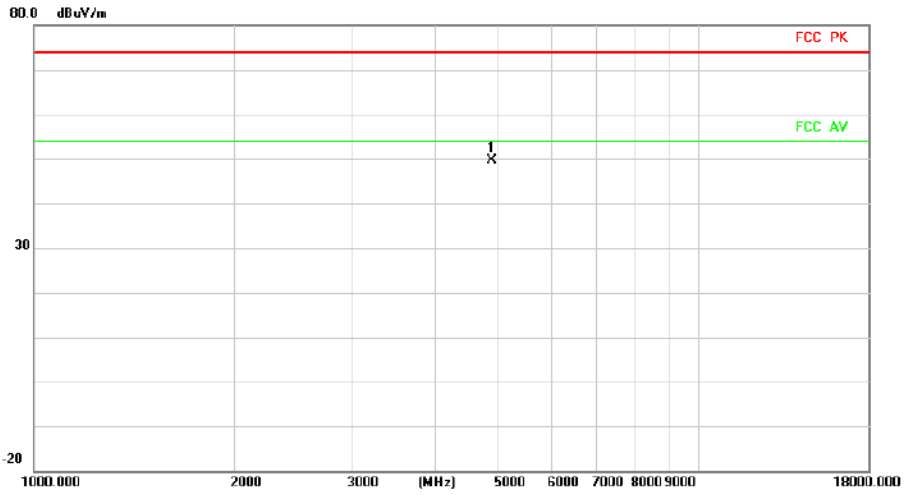
**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2310.000 | 36.78 | 8.22 | 45.00 | 74.00 | -29.00 | peak |
| 2 | * | 2390.000 | 42.20 | 8.46 | 50.66 | 74.00 | -23.34 | peak |

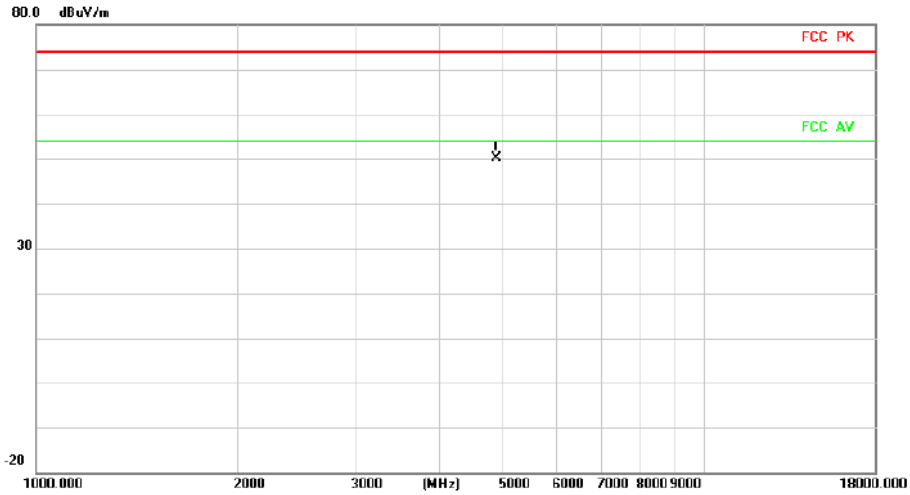
| Above 1G (1GHz~18GHz) | Test mode: 11N40MIMO | Test Channel:6 |
|---|---|---|

VERTICAL




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4874.000 | 34.29 | 15.44 | 49.73 | 74.00 | -24.27 | peak |

HORIZONTA

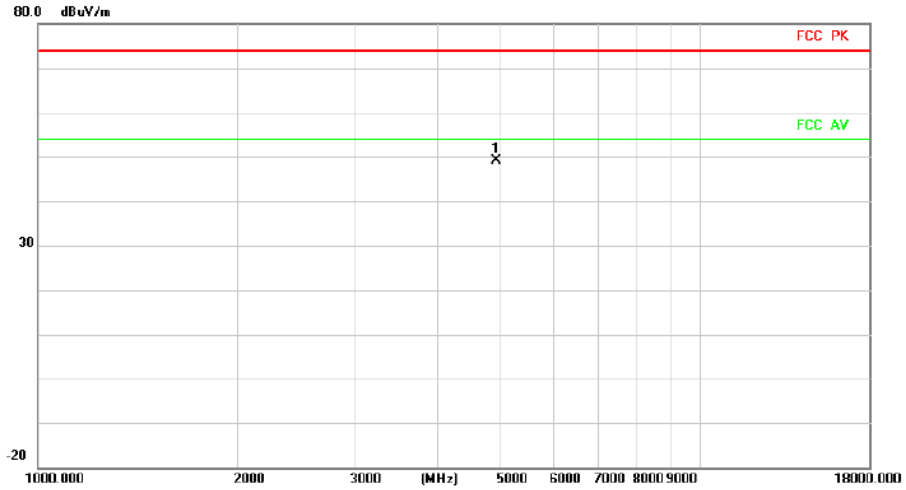



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4874.000 | 34.68 | 15.44 | 50.12 | 74.00 | -23.88 | peak |

| Above 1G (1GHz~18GHz) | Test mode: 11N40MIMO | Test Channel:9 |
|---|---|---|

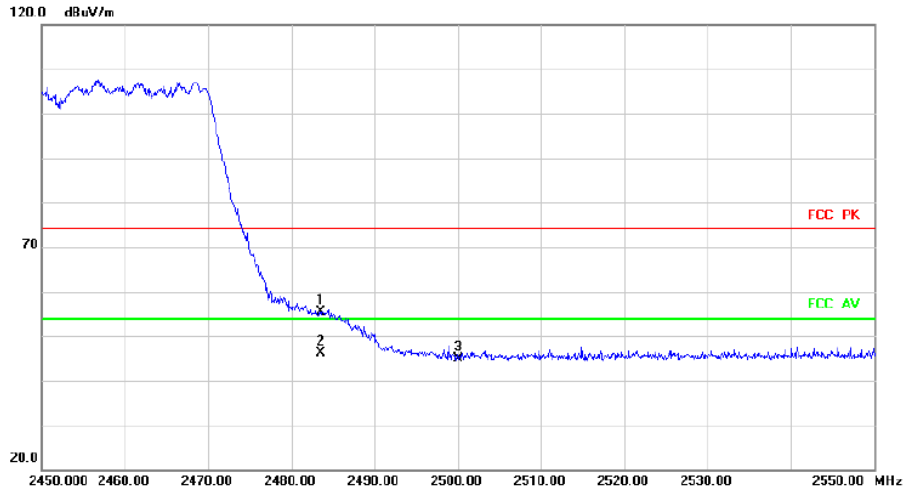
VERTICAL

**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4904.000 | 33.84 | 15.26 | 49.10 | 74.00 | -24.90 | peak |

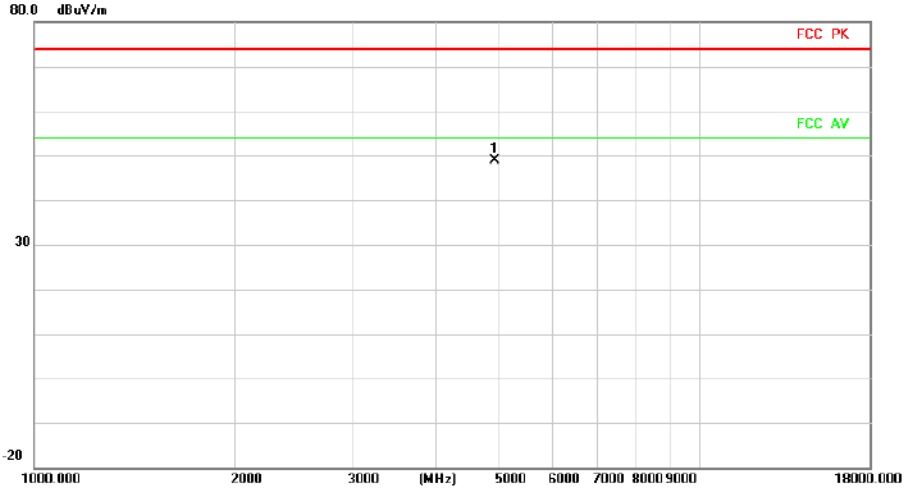
**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2483.500 | 46.22 | 9.10 | 55.32 | 74.00 | -18.68 | peak |
| 2 | * | 2483.500 | 37.10 | 9.10 | 46.20 | 54.00 | -7.80 | AVG |
| 3 | | 2500.000 | 35.73 | 9.26 | 44.99 | 74.00 | -29.01 | peak |

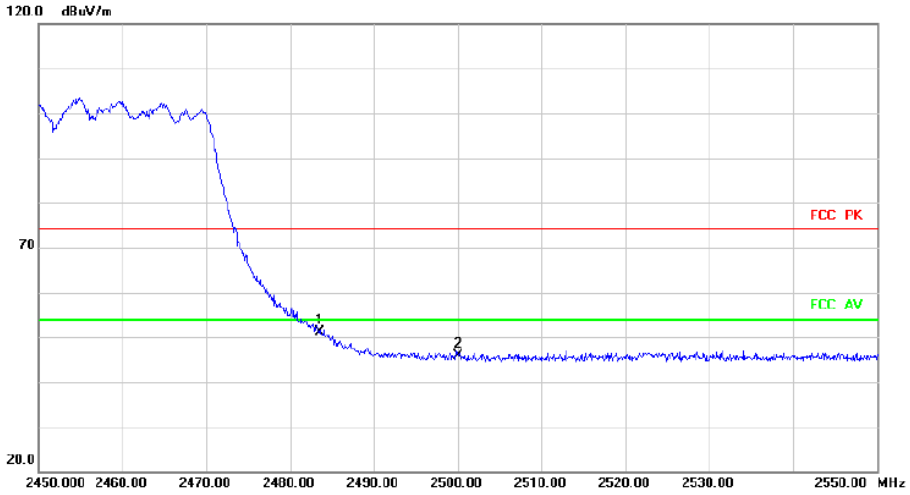
HORIZONTA

**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4904.000 | 33.72 | 15.26 | 48.98 | 74.00 | -25.02 | peak |

**Radiated Emission**

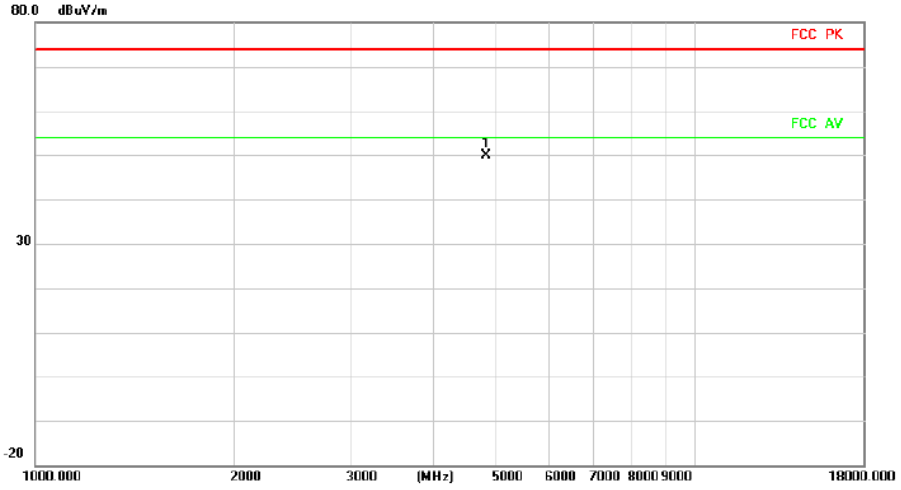



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 2483.500 | 41.95 | 9.10 | 51.05 | 74.00 | -22.95 | peak |
| 2 | | 2500.000 | 36.59 | 9.26 | 45.85 | 74.00 | -28.15 | peak |

| Above 1G (1GHz~18GHz) | Test mode: 11AX20MIMO | Test Channel:1 |
|---|---|---|

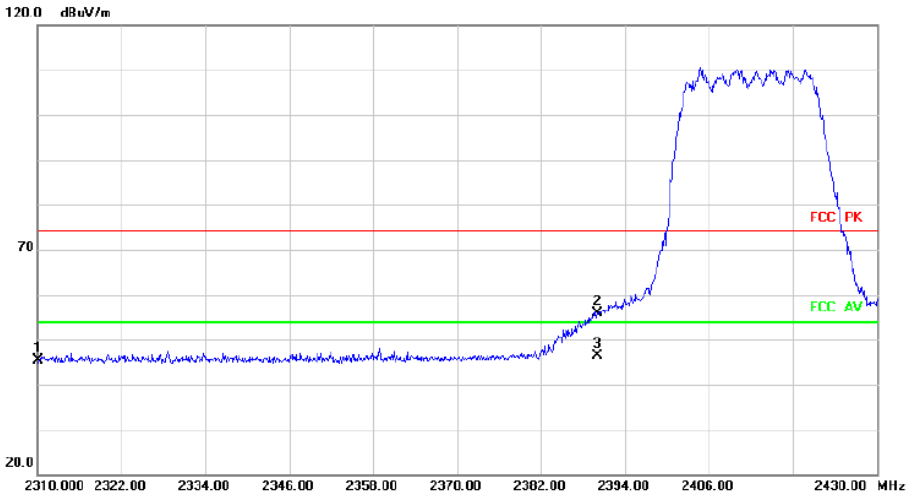
VERTICAL

**Radiated Emission**



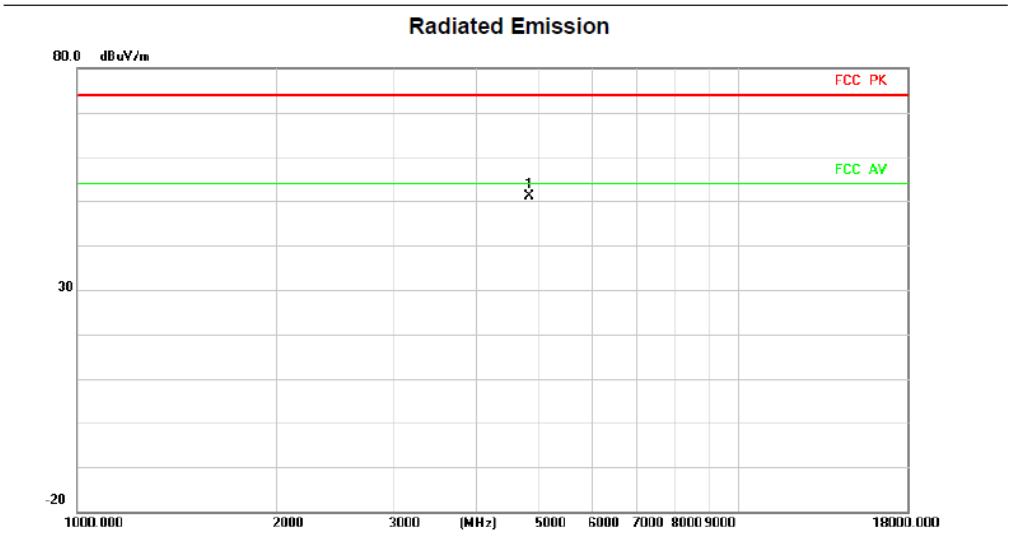

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4824.000 | 34.05 | 15.82 | 49.87 | 74.00 | -24.13 | peak |

**Radiated Emission**

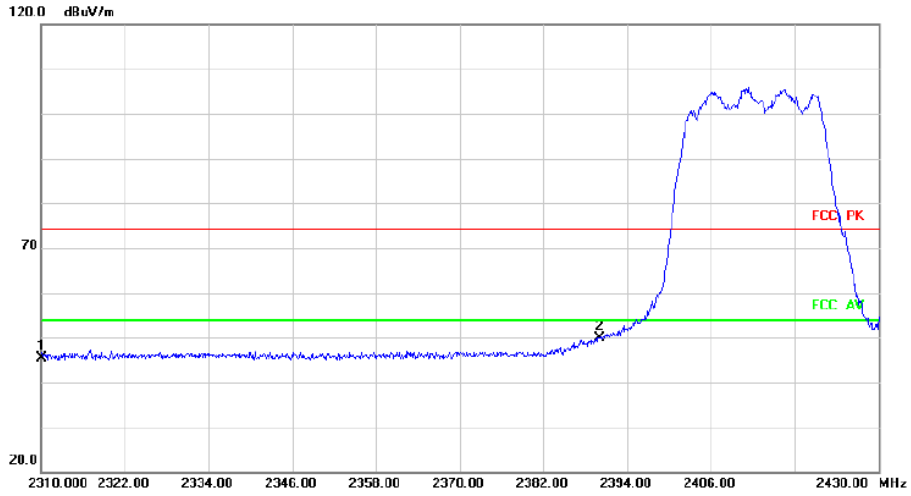



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2310.000 | 37.17 | 8.22 | 45.39 | 74.00 | -28.61 | peak |
| 2 | | 2390.000 | 47.45 | 8.46 | 55.91 | 74.00 | -18.09 | peak |
| 3 | * | 2390.000 | 37.98 | 8.46 | 46.44 | 54.00 | -7.56 | AVG |

HORIZONTA



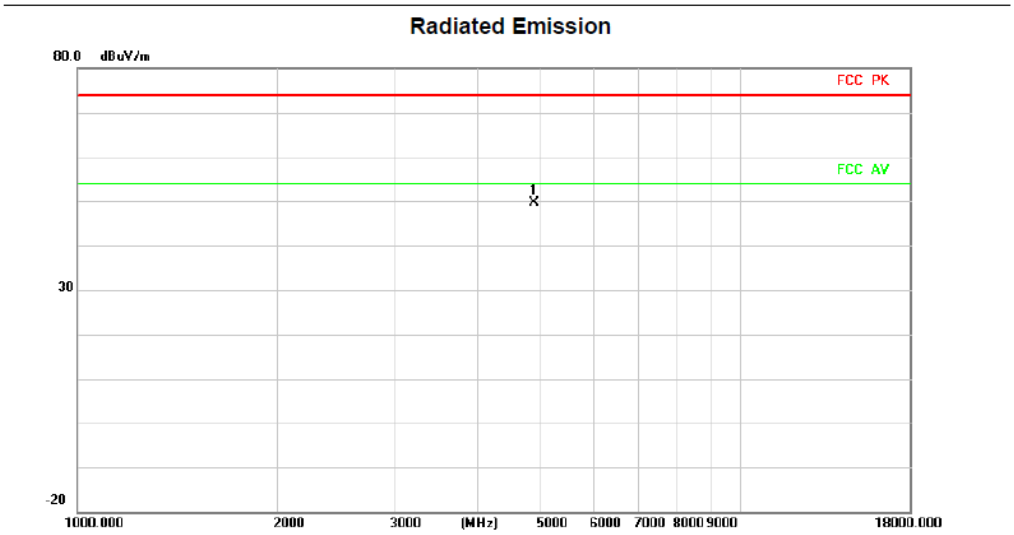

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4824.000 | 35.19 | 15.82 | 51.01 | 74.00 | -22.99 | peak |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2310.000 | 37.24 | 8.22 | 45.46 | 74.00 | -28.54 | peak |
| 2 | * | 2390.000 | 41.47 | 8.46 | 49.93 | 74.00 | -24.07 | peak |

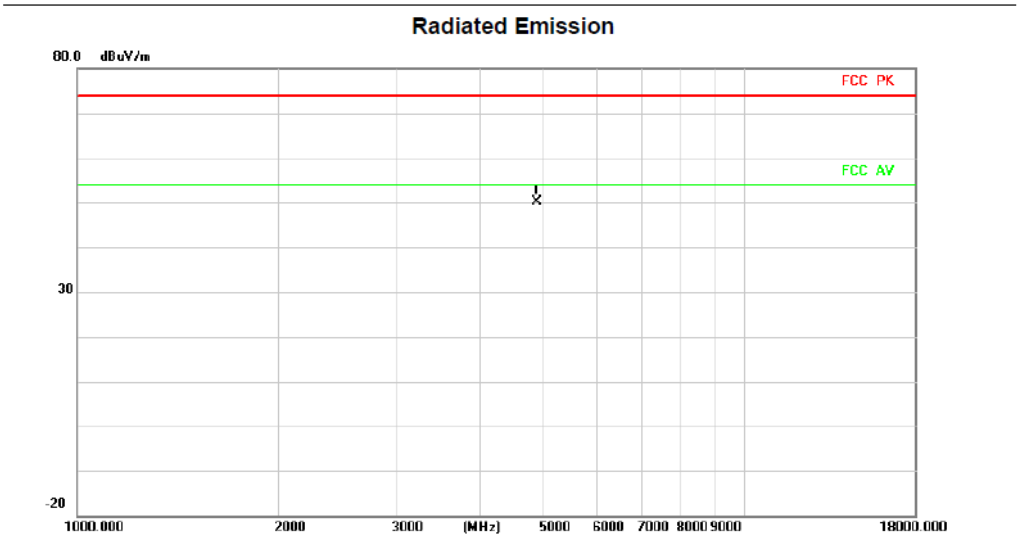
| Above 1G (1GHz~18GHz) | Test mode: 11AX20MIMO | Test Channel:6 |
|---|---|---|

VERTICAL




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4874.000 | 34.13 | 15.44 | 49.57 | 74.00 | -24.43 | peak |

HORIZONTA




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4874.000 | 34.80 | 15.44 | 50.24 | 74.00 | -23.76 | peak |

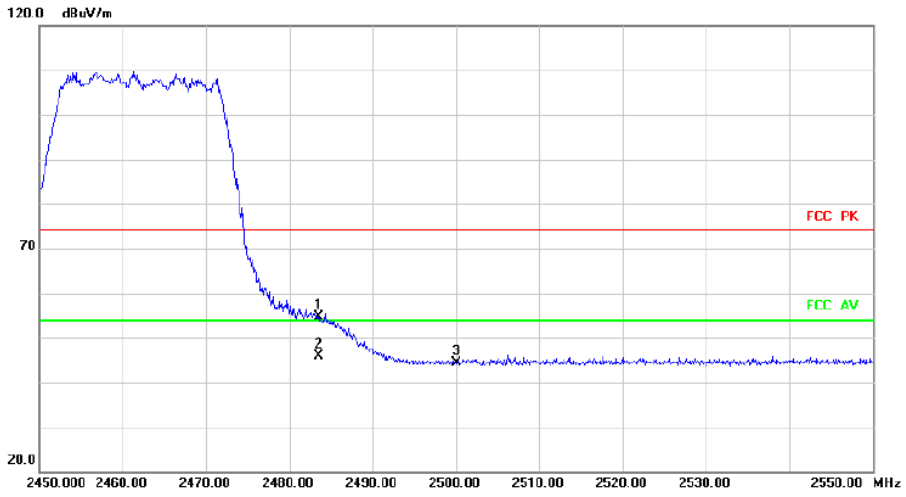
| Above 1G (1GHz~18GHz) | Test mode: 11AX20MIMO | Test Channel:11 |
|---|---|---|

VERTICAL

**Radiated Emission**


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4924.000 | 33.41 | 15.10 | 48.51 | 74.00 | -25.49 | peak |

**Radiated Emission**



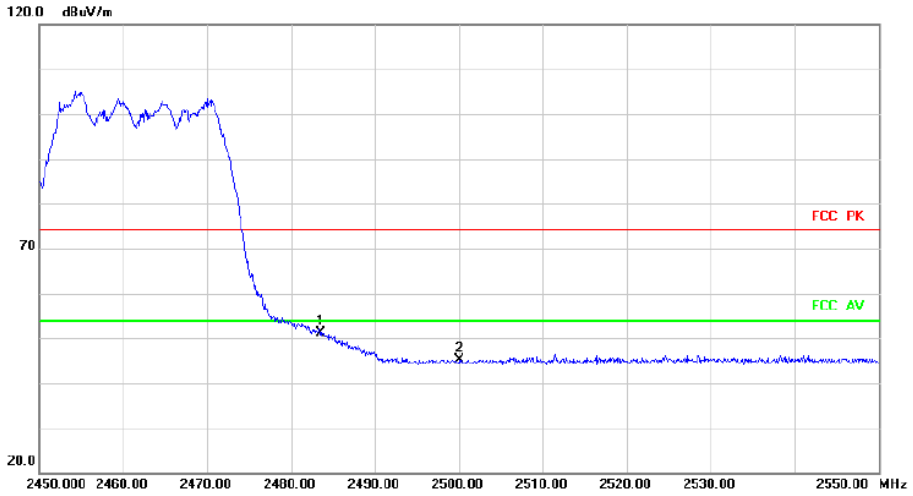

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2483.500 | 45.57 | 9.10 | 54.67 | 74.00 | -19.33 | peak |
| 2 | * | 2483.500 | 36.84 | 9.10 | 45.94 | 54.00 | -8.06 | AVG |
| 3 | | 2500.000 | 35.22 | 9.26 | 44.48 | 74.00 | -29.52 | peak |

HORIZONTA

**Radiated Emission**


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4924.000 | 33.09 | 15.10 | 48.19 | 74.00 | -25.81 | peak |

**Radiated Emission**

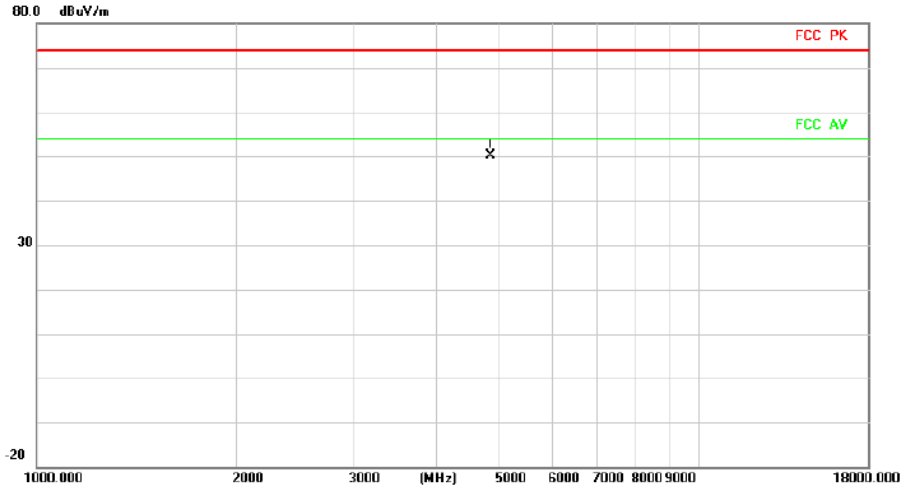



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 2483.500 | 41.96 | 9.10 | 51.06 | 74.00 | -22.94 | peak |
| 2 | | 2500.000 | 35.80 | 9.26 | 45.06 | 74.00 | -28.94 | peak |

| Above 1G (1GHz~18GHz) | Test mode: 11AX40MIMO | Test Channel:3 |
|---|---|---|

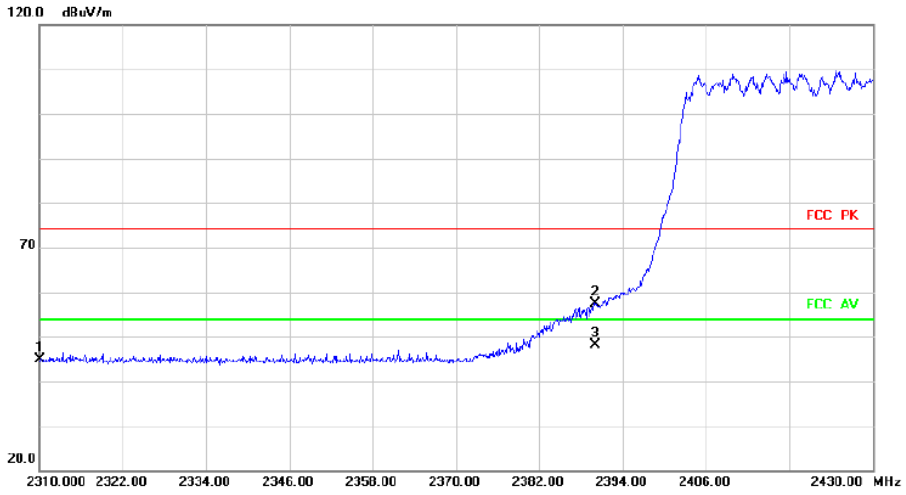
VERTICAL

**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4844.000 | 34.59 | 15.62 | 50.21 | 74.00 | -23.79 | peak |

**Radiated Emission**



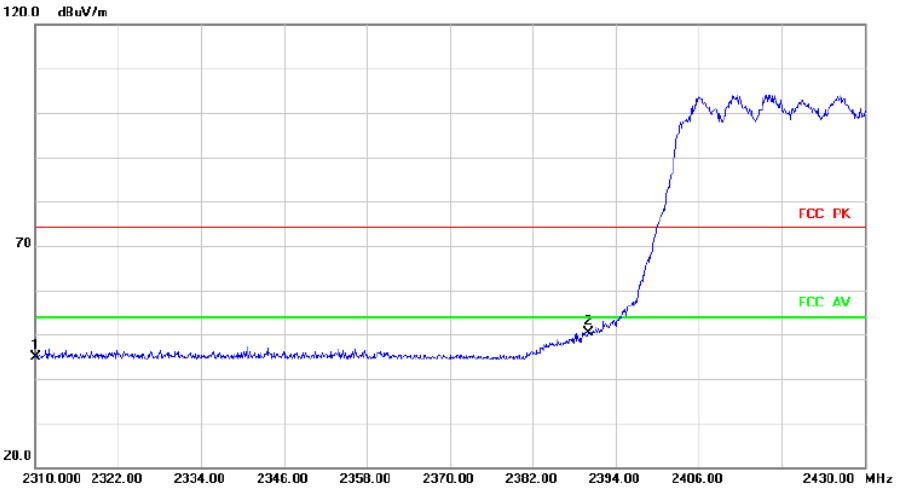

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2310.000 | 36.68 | 8.22 | 44.90 | 74.00 | -29.10 | peak |
| 2 | | 2390.000 | 48.96 | 8.46 | 57.42 | 74.00 | -16.58 | peak |
| 3 | * | 2390.000 | 39.78 | 8.46 | 48.24 | 54.00 | -5.76 | AVG |

HORIZONTA

**Radiated Emission**


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4844.000 | 33.04 | 15.62 | 48.66 | 74.00 | -25.34 | peak |

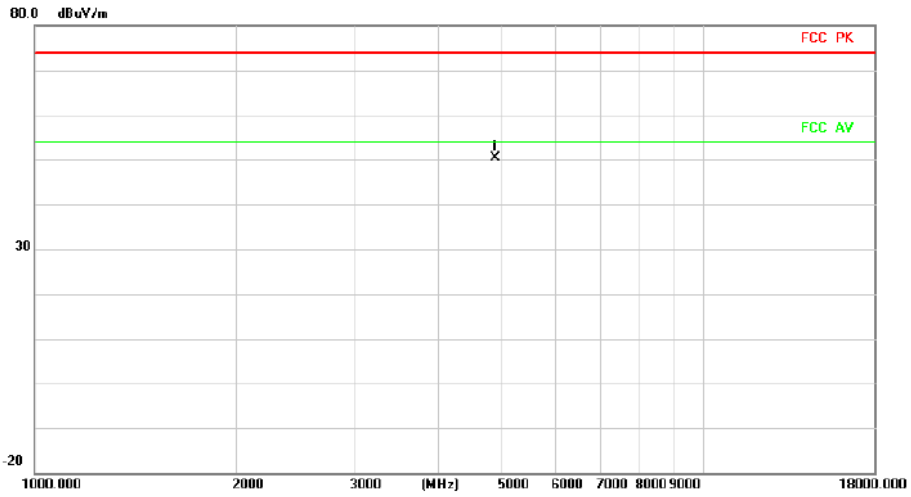
**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2310.000 | 36.58 | 8.22 | 44.80 | 74.00 | -29.20 | peak |
| 2 | * | 2390.000 | 41.84 | 8.46 | 50.30 | 74.00 | -23.70 | peak |

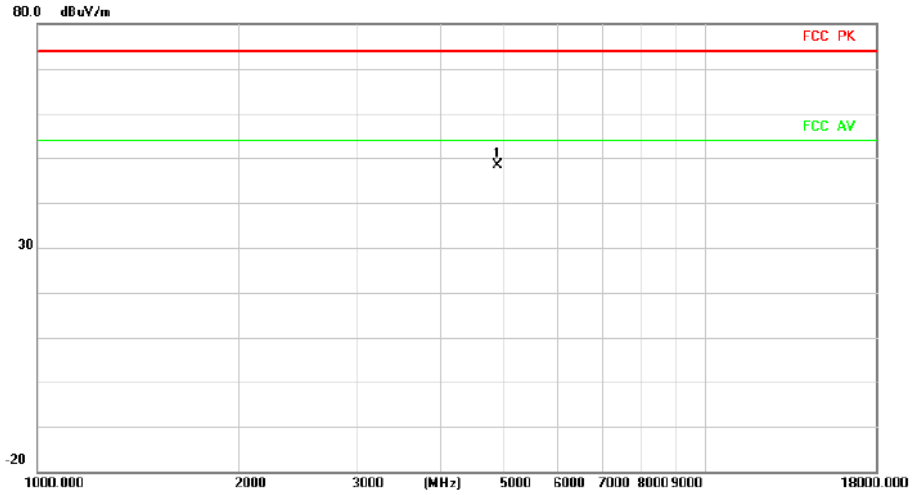
| Above 1G (1GHz~18GHz) | Test mode: 11AX40MIMO | Test Channel:6 |
|---|---|---|

VERTICAL




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4874.000 | 34.91 | 15.44 | 50.35 | 74.00 | -23.65 | peak |

HORIZONTA




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4874.000 | 32.83 | 15.44 | 48.27 | 74.00 | -25.73 | peak |

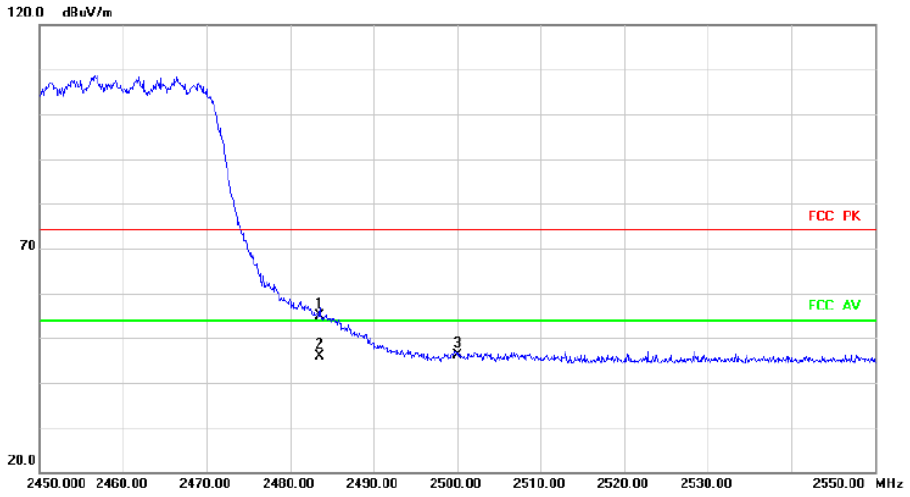
| Above 1G (1GHz~18GHz) | Test mode: 11AX40MIMO | Test Channel:9 |
|---|---|---|

VERTICAL

**Radiated Emission**


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4904.000 | 32.92 | 15.26 | 48.18 | 74.00 | -25.82 | peak |

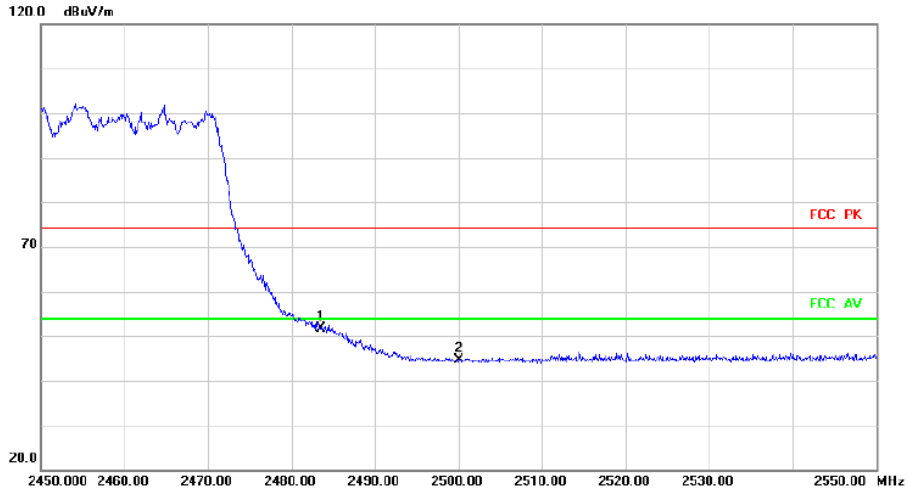
**Radiated Emission**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 2483.500 | 45.71 | 9.10 | 54.81 | 74.00 | -19.19 | peak |
| 2 | * | 2483.500 | 36.85 | 9.10 | 45.95 | 54.00 | -8.05 | AVG |
| 3 | | 2500.000 | 36.91 | 9.26 | 46.17 | 74.00 | -27.83 | peak |

HORIZONTA


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 4904.000 | 34.31 | 15.26 | 49.57 | 74.00 | -24.43 | peak |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 2483.500 | 42.54 | 9.10 | 51.64 | 74.00 | -22.36 | peak |
| 2 | | 2500.000 | 35.31 | 9.26 | 44.57 | 74.00 | -29.43 | peak |

The high frequency, which started from 18GHz to 25GHz, was pre-scanned and the result which was 20dB lower than the limit line was not recorded in this report.

## 3.3 Spurious Emission at Antenna Port

### 3.3.1 Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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, provided the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

### 3.3.2 Test Procedure

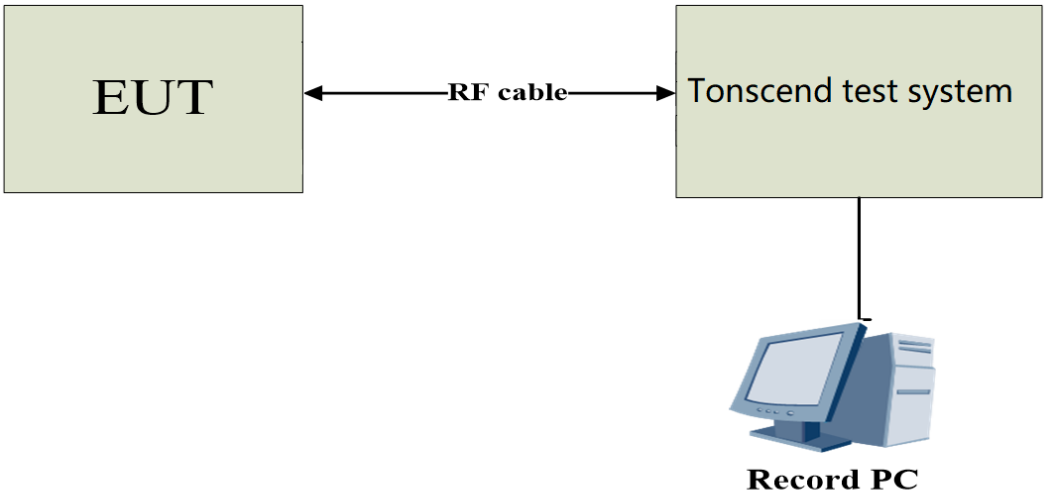
| Test Method | |
|---|---|
| ●Conducted Measurement | ○Radiated Measurement |
| Test Channels | |
| ● Lowest, Middle and Highest Channel | ○ Lowest and Highest Channel |
| Environmental conditions | |
| ●Normal | ○Normal and Extreme |
| Note:●:Test ○:No Test | |

a) The EUT was directly connected to the tonscend test system and antenna output port as show in the block diagram below.

b) Spectrum Setting as below:

| | |
|---|---|
| Centre Frequency | The centre frequency of the channel under test |
| Spectrum Parameters | Setting |
| Start Frequency | 30 MHz |
| Stop Frequency | 26.5 GHz |
| RBW | 100 kHz |
| VBW | 300 kHz |
| Detector | Peak |
| Trace | Max Hold |
| Sweep Time | Auto |

### 3.3.3 Test Setup




### 3.3.4 The Result

#### 3.3.4.1 Conducted Spurious Emission

Test result: PASS
Note: For test data, please refer to the report RF200317E01.

#### 3.3.4.2 Band edge

Test result: PASS
Note: For test data, please refer to the report RF200317E01.

## 3.4 6dB Bandwidth

### 3.4.1 Limit

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz

### 3.4.2 Test Procedure

| Test Method | |
|---|---|
| ●Conducted Measurement | ○Radiated Measurement |
| Test Channels | |
| ●Lowest, Middle and Highest Channel | ○ Lowest and Highest Channel |
| Environmental conditions | |
| ●Normal | ○Normal and Extreme |
| Note:●:Test ○:No Test | |

a) The EUT was connected to the tonscend test system, and the spectrum analyser is set as follow:

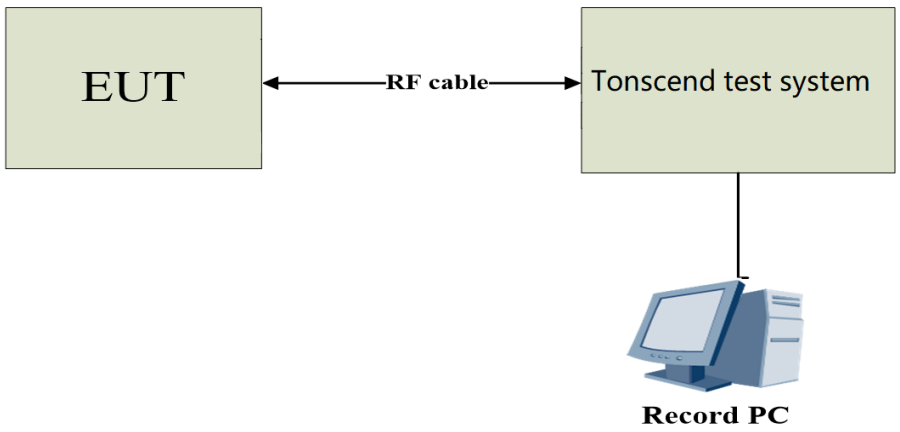
| | |
|---|---|
| Centre Frequency | The centre frequency of the channel under test |
| RBW | 100kHz |
| VBW | 300kHz |
| Frequency span | 2x Nominal Channel Bandwidth |
| Detector Mode | Peak |
| Trace Mode | Max Hold |
| Sweep Time | Auto Couple |

b) Wait for the trace to stabilize then find the peak value of the trace and place the analyser marker on this peak.

c) Use the -6dB bandwidth function of the spectrum analyser to measure the 6dB Bandwidth of the EUT. This value shall be recorded.

d) Make sure that the power envelope is sufficiently above the noise floor of the analyser to avoid the noise signals left and right from the power envelope being taken into account by this measurement.

### 3.4.3 Test Setup



### 3.4.4 Test Result

Test result: PASS

Note: For test data, please refer to the report RF200317E01.

## 3.5 Maximum conducted output power

### 3.5.1 Limit

For systems using digital modulation in the 2400~2483.5MHz, The Maximum output Power shall not exceed 1W(30dBm)

### 3.5.2 Test Procedure

| Test Method | |
|---|---|
| ●Conducted Measurement | ○Radiated Measurement |
| Test Channels | |
| ●Lowest, Middle and Highest Channel | ○ Lowest and Highest Channel |
| Environmental conditions | |
| ●Normal | ○Normal and Extreme |
| Note:●:Test ○:No Test | |

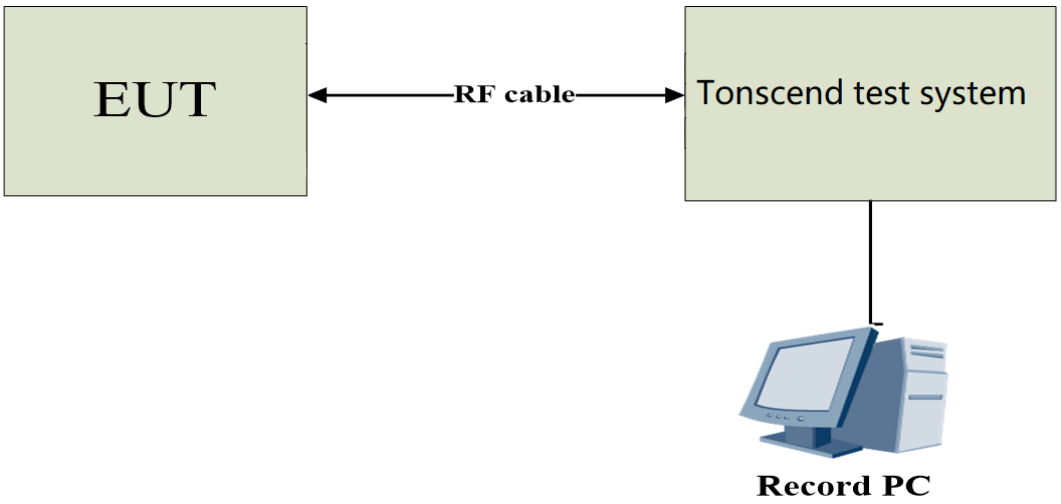
a) The EUT was directly connected to the tonscend test system and antenna output port as show in the block diagram below.

b) The maximum conducted output power was performed in accordance with method 11.9.2.3 (for average power) of ANSI C63.10-2013 and FCC KDB 662911 D01 v02r01 Multiple Transmitter Output.

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any $N_{ANT}$;
Array Gain = 5 log($N_{ANT}$/$N_{SS}$) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = 10 log($N_{ANT}$/$N_{SS}$) dB.

### 3.5.3 Test Setup



### 3.5.4 Table of Parameters of Text Software Setting

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

| Test Software | cmd.exe | | |
|---|---|---|---|
| Frequency (MHz) | 2412 | 2437 | 2462 |
| IEEE 802.11b | Default | Default | Default |
| IEEE 802.11g | Default | Default | Default |
| IEEE 802.11n (20MHz) | Default | Default | Default |
| IEEE 802.11ax (20MHz) | Default | Default | Default |
| Frequency (MHz) | 2422 | 2437 | 2452 |
| IEEE 802.11n (40MHz) | Default | Default | Default |
| IEEE 802.11ax (40MHz) | Default | Default | Default |

### 3.5.5 The Result

| Test Mode | Antenna | Frequency[MHz] | Maximum conducted output Power [dBm] | Limit [dBm] | Verdict |
|---|---|---|---|---|---|
| 11B-CDD | Ant1 | 2412 | 18.91 | ≤30.00 | PASS |
| | Ant2 | 2412 | 18.59 | ≤30.00 | PASS |
| | total | 2412 | 21.77 | ≤30.00 | PASS |
| | Ant1 | 2437 | 19.02 | ≤30.00 | PASS |
| | Ant2 | 2437 | 18.40 | ≤30.00 | PASS |
| | total | 2437 | 21.73 | ≤30.00 | PASS |
| | Ant1 | 2462 | 18.98 | ≤30.00 | PASS |
| | Ant2 | 2462 | 18.64 | ≤30.00 | PASS |
| | total | 2462 | **21.83** | ≤30.00 | PASS |
| 11G-CDD | Ant1 | 2412 | 16.85 | ≤30.00 | PASS |
| | Ant2 | 2412 | 16.51 | ≤30.00 | PASS |
| | total | 2412 | 19.69 | ≤30.00 | PASS |
| | Ant1 | 2437 | 16.74 | ≤30.00 | PASS |
| | Ant2 | 2437 | 16.39 | ≤30.00 | PASS |
| | total | 2437 | 19.58 | ≤30.00 | PASS |
| | Ant1 | 2462 | 16.78 | ≤30.00 | PASS |
| | Ant2 | 2462 | 16.32 | ≤30.00 | PASS |
| | total | 2462 | 19.57 | ≤30.00 | PASS |
| 11N20MIMO | Ant1 | 2412 | 16.92 | ≤30.00 | PASS |
| | Ant2 | 2412 | 16.56 | ≤30.00 | PASS |
| | total | 2412 | 19.75 | ≤30.00 | PASS |
| | Ant1 | 2437 | 17.03 | ≤30.00 | PASS |
| | Ant2 | 2437 | 16.54 | ≤30.00 | PASS |
| | total | 2437 | 19.80 | ≤30.00 | PASS |
| | Ant1 | 2462 | 16.95 | ≤30.00 | PASS |
| | Ant2 | 2462 | 16.50 | ≤30.00 | PASS |
| | total | 2462 | 19.74 | ≤30.00 | PASS |
| 11N40MIMO | Ant1 | 2422 | 15.01 | ≤30.00 | PASS |
| | Ant2 | 2422 | 14.64 | ≤30.00 | PASS |
| | total | 2422 | 17.84 | ≤30.00 | PASS |
| | Ant1 | 2437 | 14.73 | ≤30.00 | PASS |
| | Ant2 | 2437 | 14.54 | ≤30.00 | PASS |
| | total | 2437 | 17.65 | ≤30.00 | PASS |
| | Ant1 | 2452 | 15.13 | ≤30.00 | PASS |
| | Ant2 | 2452 | 14.50 | ≤30.00 | PASS |
| | total | 2452 | 17.84 | ≤30.00 | PASS |

| | | | | | |
|---|---|---|---|---|---|
| 11AX20MIMO | Ant1 | 2412 | 15.88 | ≤30.00 | PASS |
| | Ant2 | 2412 | 15.55 | ≤30.00 | PASS |
| | total | 2412 | 18.73 | ≤30.00 | PASS |
| | Ant1 | 2437 | 15.87 | ≤30.00 | PASS |
| | Ant2 | 2437 | 15.62 | ≤30.00 | PASS |
| | total | 2437 | 18.76 | ≤30.00 | PASS |
| | Ant1 | 2462 | 15.95 | ≤30.00 | PASS |
| | Ant2 | 2462 | 15.58 | ≤30.00 | PASS |
| | total | 2462 | 18.78 | ≤30.00 | PASS |
| 11AX40MIMO | Ant1 | 2422 | 14.82 | ≤30.00 | PASS |
| | Ant2 | 2422 | 14.58 | ≤30.00 | PASS |
| | total | 2422 | 17.72 | ≤30.00 | PASS |
| | Ant1 | 2437 | 14.97 | ≤30.00 | PASS |
| | Ant2 | 2437 | 14.54 | ≤30.00 | PASS |
| | total | 2437 | 17.77 | ≤30.00 | PASS |
| | Ant1 | 2452 | 14.81 | ≤30.00 | PASS |
| | Ant2 | 2452 | 14.51 | ≤30.00 | PASS |
| | total | 2452 | 17.67 | ≤30.00 | PASS |

Note: The duty cycle factor and line loss are compensated in the average conducted output power.

## 3.6 Power Spectral Density

### 3.6.1 Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmitting.

### 3.6.2 Test Procedure

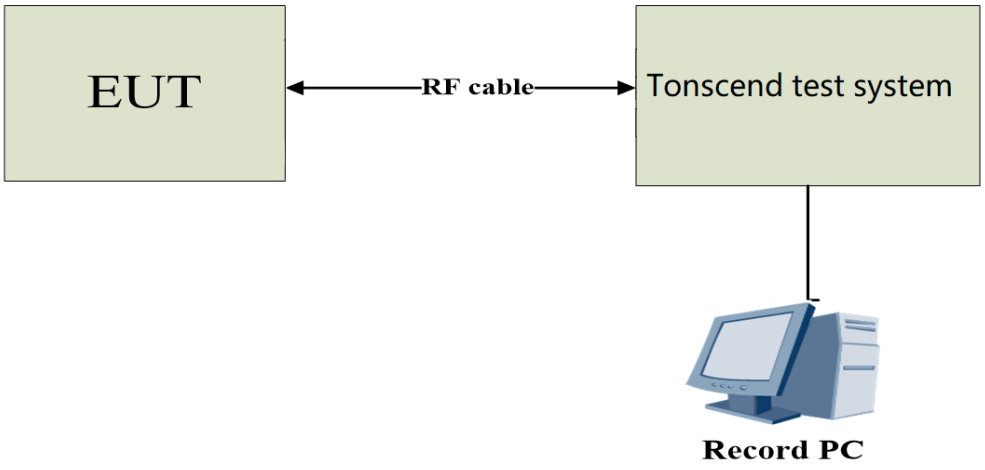
| Test Method | |
|---|---|
| ●Conducted Measurement | ○Radiated Measurement |
| Test Channels | |
| ●Lowest, Middle and Highest Channel | ○ Lowest and Highest Channel |
| Environmental conditions | |
| ●Normal | ○Normal and Extreme |
| Note:●:Test ○:No Test | |

a) The EUT was directly connected to the tonscend test system and antenna output port as show in the block diagram below.

b) Spectrum analyser settings as following:

| Spectrum Parameters | Setting |
|---|---|
| Span Frequency | 1.5 times the DTS bandwidth |
| RBW | 3 kHz |
| VBW | 10 kHz |
| Detector | Peak |
| Trace | Max Hold |
| Sweep Time | Auto |

### 3.6.3 Test Setup



### 3.6.4 The Result

Test result: PASS

Note: For test data, please refer to the report RF200317E01.

# Statement

1. The report is invalid without the official seal or special seal of Shenzhen Haiyun Standard Technology Co., Ltd. (hereinafter referred to as the unit).
2. The report is invalid without the signature of the approver.
3. The report is invalid if altered arbitrarily.
4. The report shall not be partially copied without the written approval of the unit.
5. The reported test results are only valid for the tested samples.
6. If there is any objection to the test report, it shall be submitted to the test unit within 15 days from the date of receiving the report, and the overdue shall not be accepted.

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**End of Test Report**