

Test Report No.:
FCC2021-0008-4

RF Test Report

EUT : LC300 LTE CPE
MODEL : LC300,LC300SV,LC300CA, LC300A,
 LC300B, LC300C, LC300D
BRAND NAME : sunvot
CLIENT : Ningbo Sunvot Technology Co., Ltd
Classification Of Test : Commission Test

Vkan Certification & Testing Co., Ltd.



Vkan Certification & Testing Co., Ltd.

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| | | | | | |
|--|--|--|--|--|--|
| Client | Name : Ningbo Sunvot Technology Co., Ltd Address : Building 3,NO 55 Longtan Shan Road, Beilun Daqi, Ningbo, Zhejiang | | | | |
| Manufacturer | Name : Ningbo Sunvot Technology Co., Ltd Address : Building 3,NO 55 Longtan Shan Road, Beilun Daqi, Ningbo, Zhejiang | | | | |
| Equipment Under Test | Name : LC300 LTE CPE Model/Type: LC300,LC300SV,LC300CA, LC300A, LC300B, LC300C, LC300D Trade mark : sunvot Serial NO.:N/A Sample NO.:1-1 | | | | |
| Date of Receipt. | 2021.04.27 | Date of Testing | 2021.03.19~2021.04.27 | | |
| Test Specification | | Test Result | | | |
| FCC Part 15, Subpart C, Section 15.247 | | PASS | | | |
| Evaluation of Test Result | The equipment under test was found to comply with the requirements of the standards applied. | | | | |
| | Issue Date: 2021.04.27 | | | | |
| Tested by: <u>Zhu Cheng</u> Name Signature | Reviewed by: <u>Cheng Xiaochuan</u> Name Signature | Approved by: <u>Dong San Bi</u> Name Signature | <u>Dong Sanbi</u> Name Signature | | |
| Other Aspects: NONE. | | | | | |
| Abbreviations:OK, Pass= passed | Fail = failed | N/A= not applicable | EUT= equipment, sample(s) under tested | | |
| This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC. | | | | | |



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RELEASE CONTROL RECORD

| ISSUE NO. | REASON FOR CHANGE | DATE ISSUED |
|----------------|-------------------|-------------|
| FCC2021-0008-4 | Original release | 2021.04.27 |



1 GENERAL INFORMATION

1.1 GENERAL PRODUCT INFORMATION

| | |
|-----------------------|--|
| PRODUCT | LC300 LTE CPE |
| BRAND | sunvot |
| MODEL | LC300 |
| ADDITIONAL MODEL | LC300SV,LC300CA, LC300A, LC300B, LC300C, LC300D |
| FCC ID | 2AZGN-LC300-202103 |
| POWER SUPPLY | DC 48V From Adapter input AC120V/60Hz |
| MODULATION TECHNOLOGY | DSSS, OFDM |
| MODULATION TYPE | CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM |
| OPERATING FREQUENCY | 2412MHz ~ 2462MHz for 11b/g/n(HT20) 2422MHz ~ 2452MHz for 11n(HT40) |
| NUMBER OF CHANNEL | 802.11b/g/n (HT20): 11 802.11n (HT40): 7 |
| PEAK OUTPUT POWER | WLAN: 23.25dBm (Maximum) |
| ANTENNA TYPE | External Antenna , 2dBi Gain |
| I/O PORTS | Refer to user's manual |
| CABLE SUPPLIED | N/A |

Remark:

1. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
3. Additional models (see about table)are identical with the test model LC300SV,LC300CA, LC300A, LC300B, LC300C, LC300D except the color of the appearance and model name for trading purpose.
4. Please refer to the EUT photo document (Reference No.: FCC2021-0008) for detailed product photo.
5. The EUT have SISO function, provides 2completed transmitter and 2 receiver.

| MODULATION MODE | TX FUNCTION |
|-----------------|-------------|
| 802.11b | 2TX/2RX |
| 802.11g | 2TX/2RX |
| 802.11n (HT20) | 2TX/2RX |
| 802.11n (HT40) | 2TX/2RX |



1.2 Description of Accessories

| Adapter | |
|-------------------|--|
| BRAND | N/A |
| Model No.: | KT241480050US |
| Input: | 100-240V~50/60Hz 0.8A |
| Output: | 48V - 0.5A |
| AC Cable: | N/A |
| DC Cable: | 1.40 Meter, Unshielded without ferrite |

1.3 OTHER INFORMATION

Operating frequency of each channel

| 2.4G WIFI | | | | | |
|--------------------|-------------|----------|-------------|-----------|-------------|
| 802.11b/g/n (HT20) | | | | | |
| CHANNEL | FREQ. (MHz) | CHANNEL | FREQ. (MHz) | CHANNEL | FREQ. (MHz) |
| 1 | 2412 | 5 | 2432 | 9 | 2452 |
| 2 | 2417 | 6 | 2437 | 10 | 2457 |
| 3 | 2422 | 7 | 2442 | 11 | 2462 |
| 4 | 2427 | 8 | 2447 | | |
| 802.11n (HT40) | | | | | |
| 3 | 2422 | 6 | 2437 | 9 | 2452 |
| 4 | 2427 | 7 | 2442 | | |
| 5 | 2432 | 8 | 2447 | | |

Note:

1. The channels which were indicated in bold type of the above channel list were selected as representative test channel. Therefore only the data of the test channels were recorded in this report.

1.4 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, xyz axis and antenna ports

| EUT CONFIGURE MODE | APPLICABLE TEST ITEMS | | | | DESCRIPTION |
|--------------------------|-----------------------|-------|-----|------|--------------------|
| | RE<1G | RE≥1G | PLC | APCM | |
| A | √ | √ | √ | √ | 2.4G WIFI Function |

Where **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission

RE≥1G: Radiated Emission above 1GHz
APCM: Antenna Port Conducted Measurement

**RADIATED EMISSION TEST (BELOW 1 GHz):**

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture) and packet type.
- The worst case was found when positioned on x axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

| EUT CONFIGURE MODE | MODE | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) |
|--------------------------|---------|----------------------|-------------------|--------------------------|--------------------|---------------------|
| A | 802.11b | 1 to 11 | 6 | DSSS | DBPSK | 6.0 |

For the test results, only the worst case was shown in test report.

RADIATED EMISSION TEST (ABOVE 1 GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture) and packet type.
- The worst case was found when positioned on x axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

| EUT CONFIGURE MODE | MODE | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) |
|--------------------------|---------------|----------------------|-------------------|--------------------------|--------------------|---------------------|
| A | 802.11b | 1 to 11 | 1, 6, 11 | DSSS | DBPSK | 1.0 |
| A | 802.11g | 1 to 11 | 1, 6, 11 | OFDM | BPSK | 6.0 |
| A | 802.11n(HT20) | 1 to 11 | 1, 6, 11 | OFDM | BPSK | 6.5 |
| A | 802.11n HT40 | 3 to 9 | 3, 6, 9 | OFDM | BPSK | 13.5 |

POWER LINE CONDUCTED EMISSION TEST:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and packet types.
- Following channel(s) was (were) selected for the final test as listed below.

| EUT CONFIGURE MODE | TESTED CONDITION |
|--------------------|------------------|
| - | WIFI (2.4G) Link |

ANTENNA PORT CONDUCTED MEASUREMENT:

- This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and packet types.
- Following channel(s) was (were) selected for the final test as listed below.



| EUT CONFIGURE MODE | MODE | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) |
|--------------------------|---------------|----------------------|-------------------|--------------------------|--------------------|---------------------|
| A | 802.11b | 1 to 11 | 1, 6, 11 | DSSS | DBPSK | 1.0 |
| A | 802.11g | 1 to 11 | 1, 6, 11 | OFDM | BPSK | 6.0 |
| A | 802.11n(HT20) | 1 to 11 | 1, 6, 11 | OFDM | BPSK | 6.5 |
| A | 802.11n HT40 | 3 to 9 | 3, 6, 9 | OFDM | BPSK | 13.5 |

TEST CONDITION:

| APPLICABLE TO | ENVIRONMENTAL CONDITIONS | TEST VOLTAGE (SYSTEM) | TESTED BY |
|---------------|--------------------------|--------------------------|------------|
| RE<1G | 25deg. C, 55%RH | AC 120V/60Hz | Zhu Yu Lin |
| RE≥1G | 25deg. C, 55%RH | AC 120V/60Hz | Zhu Yu Lin |
| PLC | 25deg. C, 55%RH | AC 120V/60Hz | Zhu Yu Lin |
| APCM | 25deg. C, 60%RH | AC 120V/60Hz | Zhu Yu Lin |



1.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product, according to the specifications of the manufacturers. It must comply with the requirements of the following standards:

FCC PART 15, Subpart C. Section 15.247
KDB 558074 D01 15.247 Meas Guidance v05r02
ANSI C63.10-2013

All test items have been performed and recorded as per the above standards

1.6 DESCRIPTION OF SUPPORT UNITS

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

| Support Equipment | | | | | |
|-------------------|-------------|-------|-----------|---------------|-------------|
| NO | Description | Brand | Model No. | Serial Number | Supplied by |
| N/A | N/A | N/A | N/A | N/A | N/A |
| | | | | | |

| Support Cable | | | | | | | |
|---------------|-------------|-------------------|-------------|----------------------|--------------------|----------------|-------------|
| NO | Description | Quantity (Number) | Length (cm) | Detachable (Yes/ No) | Shielded (Yes/ No) | Cores (Number) | Supplied by |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | | | | | | |



2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| APPLIED STANDARD: FCC Part 15, Subpart C | | | |
|--|-----------------------------|--------|--------------------------------|
| STANDARD SECTION | TEST TYPE AND LIMIT | RESULT | REMARK |
| 15.207 | AC Power Conducted Emission | PASS | Meet the requirement of limit. |
| 15.247(d) 15.209 | Radiated Emissions | PASS | Meet the requirement of limit. |
| 15.247(d) | Band Edge Measurement | PASS | Meet the requirement of limit. |
| 15.247(a)(2) | 6dB bandwidth | PASS | Meet the requirement of limit. |
| 15.247(b) | Conducted Output power | PASS | Meet the requirement of limit. |
| 15.247(e) | Power Spectral Density | PASS | Meet the requirement of limit. |
| 15.203 | Antenna Requirement | PASS | Meet the requirement of limit. |

2.1 LIST OF TEST AND MEASUREMENT INSTRUMENTS

Refer to Appendix B.

2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

| No. | ITEM | FREQUENCY | UNCERTAINTY |
|-----|---------------------|---------------|-------------|
| 1 | Conducted emissions | 9kHz~30MHz | 2.7dB |
| 2 | Radiated emissions | 9KHz ~ 30MHz | 5.6dB |
| | | 30MHz ~ 1GHz | 4.6dB |
| | | 1GHz ~ 18GHz | 4.4dB |
| | | 18GHz ~ 40GHz | 4.6dB |

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

2.3 TEST LOCATION

CVC Testing Technology Co., Ltd.
No.3, Tiantaiyi Road, Kaitai Avenue, Science City, Guangdong, China
Test Firm Registration Number: 937273

3 TEST TYPES AND RESULTS

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 Limit

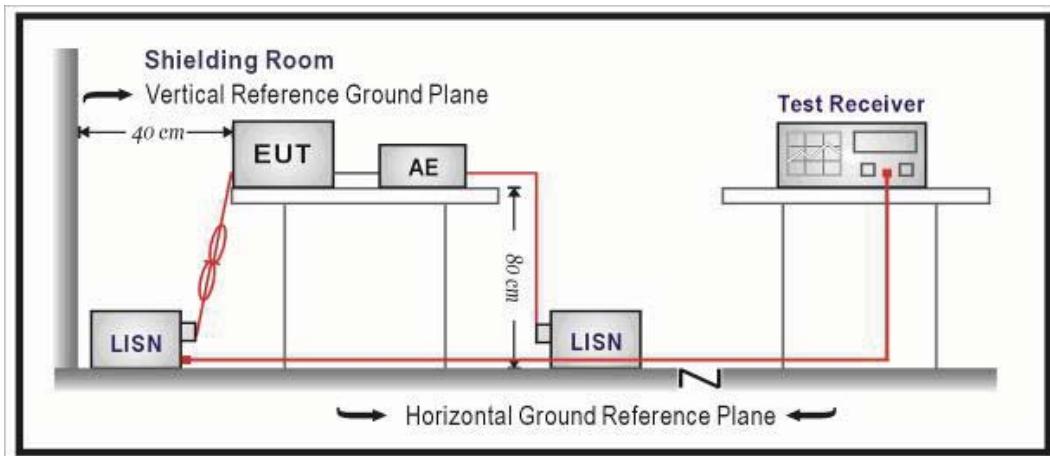
| Frequency (MHz) | Conducted Limits(dB μ V) | |
|--------------------|------------------------------|-----------|
| | Quasi-peak | Average |
| 0.15 - 0.5 | 66 to 56 * | 56 to 46* |
| 0.5 - 5 | 56 | 46 |
| 5 - 30 | 60 | 50 |

NOTE: 1. The lower limit shall apply at the transition frequencies.
NOTE: 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3.1.2 Measurement procedure

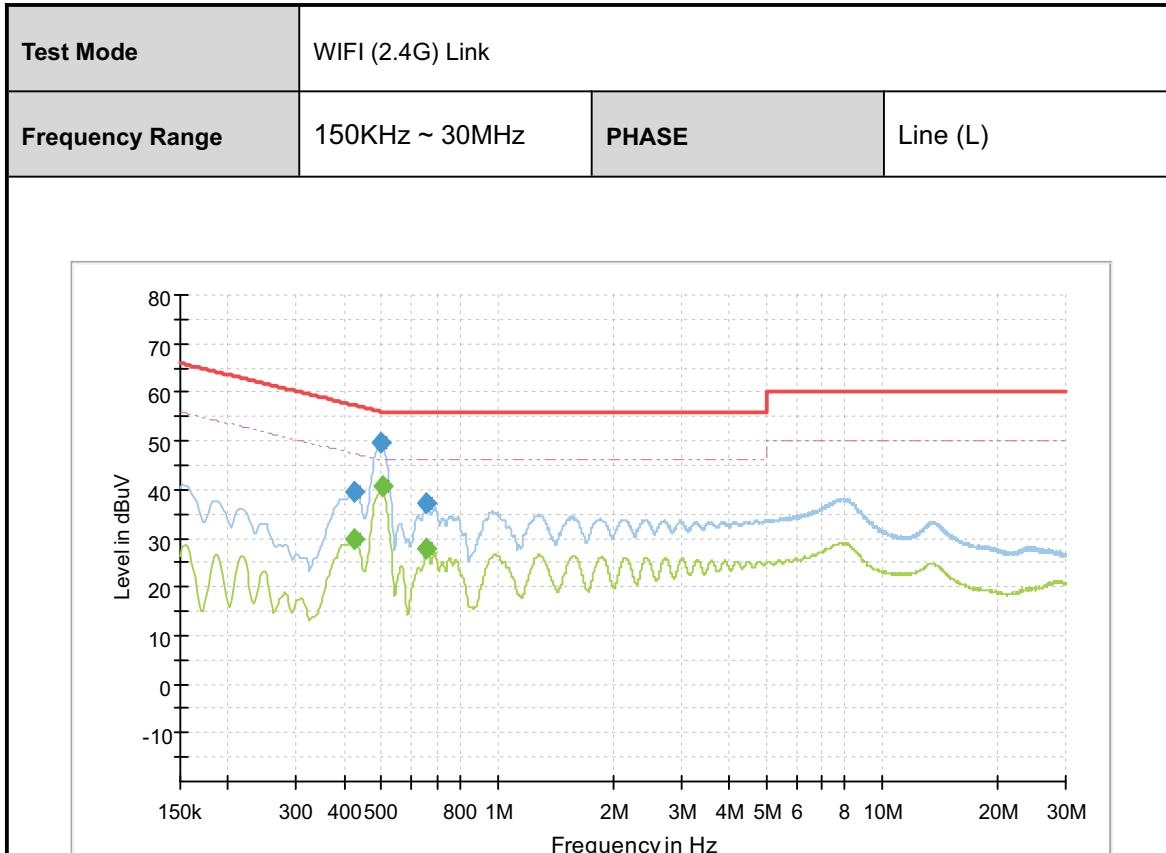
- a. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50 μ H coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the Test photographs) Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source. The equipment under test shall be placed on a support of non-metallic material, the height of which shall be 1.5m above the ground,
- b. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
- c. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

3.1.3 Test setup



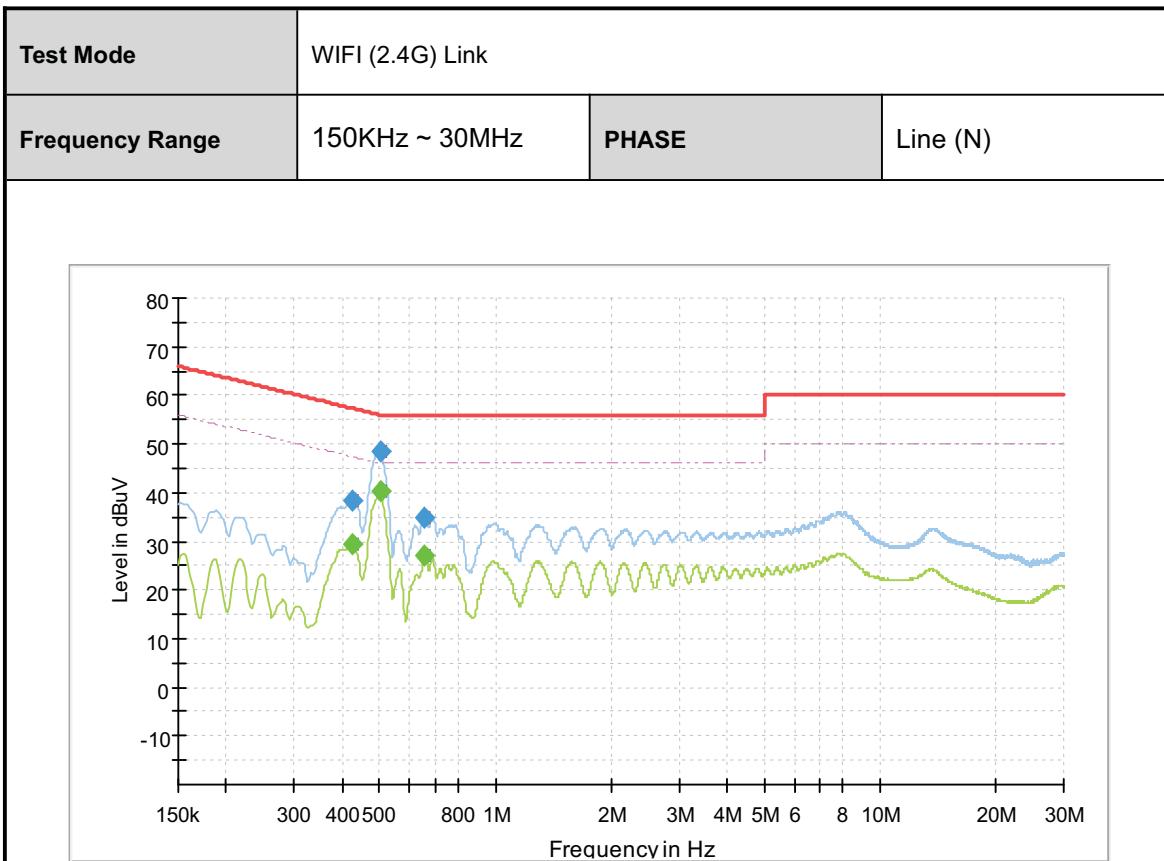
3.1.4 Test results

CONDUCTED WORST-CASE DATA: WIFI (2.4G) Link



| NO. | Frequency (MHz) | Result (dBuV) | Limit (dBuV) | Margin (dB) | Corr. (dB) | Remark |
|-----|-----------------|---------------|--------------|-------------|-------------|------------|
| 1 | 0.425 | 39.8 | 57.4 | 17.6 | 19.5 | QP |
| 2 | 0.425 | 29.9 | 47.4 | 17.4 | 19.5 | Avg |
| 3 | 0.499 | 49.6 | 56.0 | 6.5 | 19.5 | QP |
| 4 | 0.503 | 40.7- | 46.0 | 5.3 | 19.5 | Avg |
| 5 | 0.654 | 36.9 | 56.0 | 19.1 | 19.6 | QP |
| 6 | 0.656 | 27.9 | 46.0 | 18.1 | 19.6 | Avg |

Remark: The emission levels of other frequencies were very low against the limit.



| NO. | Frequency (MHz) | Result (dBuV) | Limit (dBuV) | Margin (dB) | Corr. (dB) | Remark |
|-----|-----------------|---------------|--------------|-------------|-------------|------------|
| 1 | 0.425 | 29.3 | 47.4 | 18.1 | 19.6 | AVG |
| 2 | 0.429 | 38.4 | 57.3 | 18.8 | 19.6 | QP |
| 3 | 0.501 | 48.7 | 56.0 | 7.3 | 19.6 | QP |
| 4 | 0.503 | 40.5 | 46.0 | 5.5 | 19.6 | AVG |
| 5 | 0.654 | 34.9 | 56.0 | 21.1 | 19.6 | QP |
| 6 | 0.654 | 27.3 | 46.0 | 18.7 | 19.6 | AVG |

Remark: The emission levels of other frequencies were very low against the limit.



3.2 RADIATED EMISSION AND BANDEdge MEASUREMENT

3.2.1 Limit

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).

| FREQUENCIES (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 |
| 30 ~ 88 | 100 | 3 |
| 88 ~ 216 | 150 | 3 |
| 216 ~ 960 | 200 | 3 |
| Above 960 | 500 | 3 |

NOTE: 1. The lower limit shall apply at the transition frequencies.

NOTE: 2. Emission level (dB_{uV/m}) = 20 log Emission level (uV/m).

NOTE: 3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

3.2.2 Measurement procedure

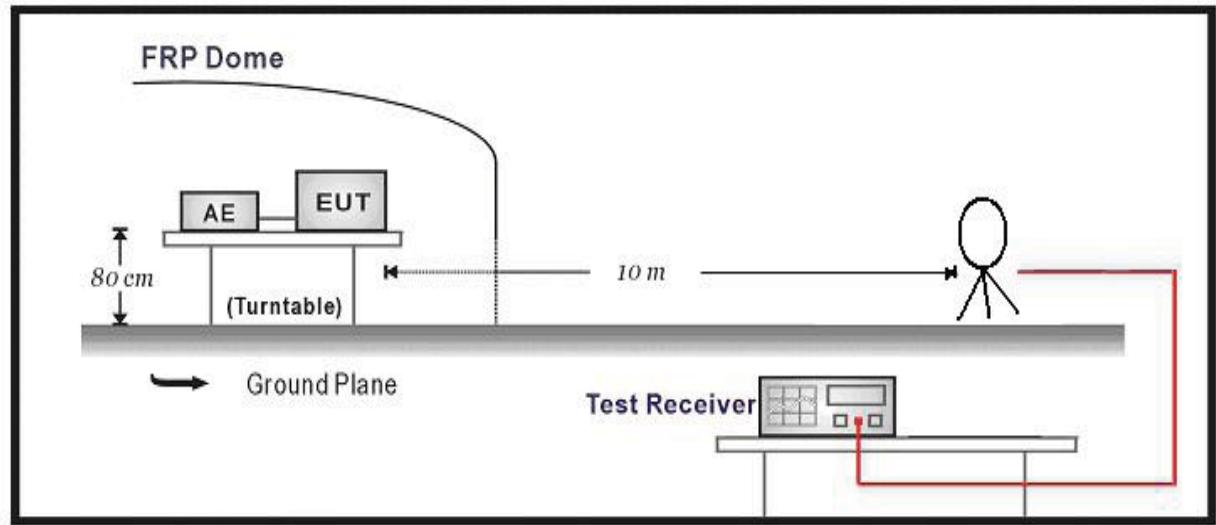
- a. The EUT was placed on the top of a rotating table 1.5 meters(above 1GHz) and 0.8 meters(below 1GHz) above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. For below 1GHz was used bilog antenna, and above 1GHz was used horn antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.
- g. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using fresh batteries. The turntable was rotated to maximize the emission level.

NOTE:

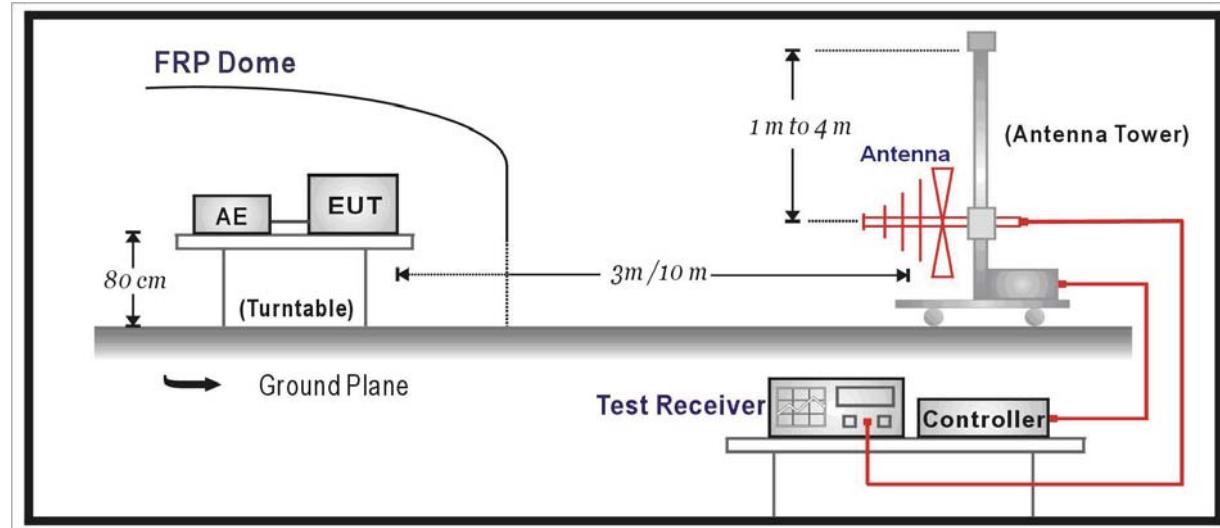
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is \geq 1/T (Duty cycle < 98%) or 10Hz(Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The testing of the EUT was performed on all 3 orthogonal axes; the worst-case test configuration was reported on the file test setup photo.
6. For the test results, the EUT had been tested with all conditions. But only the worst case (MIMO Mode) was shown in test report.

3.2.3 Test setup

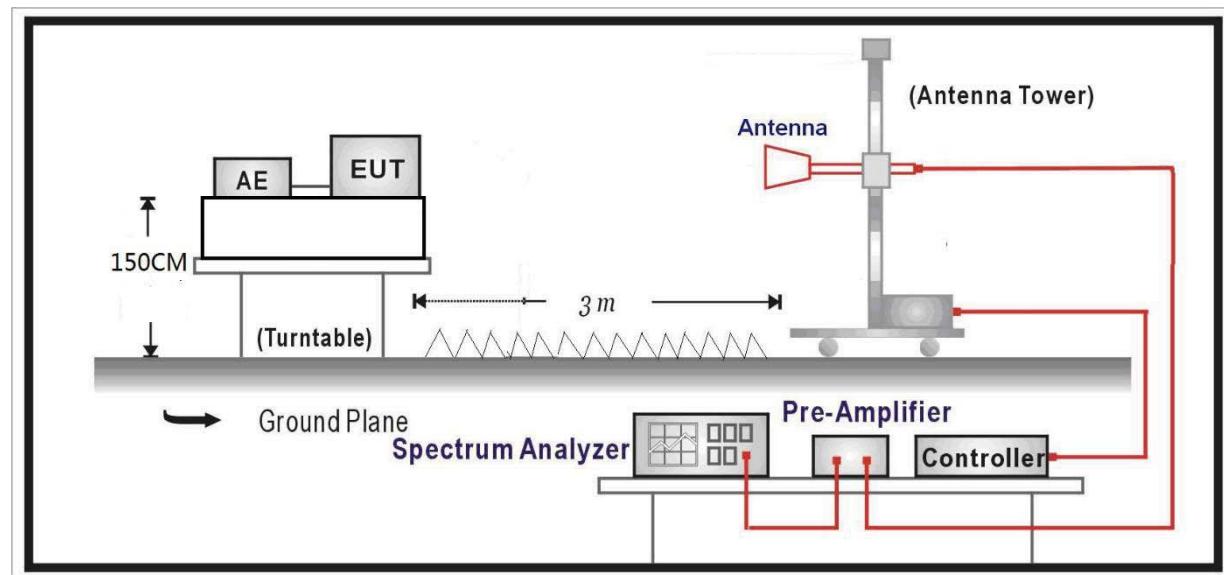
Below 30MHz Test Setup:



Below 1GHz Test Setup:

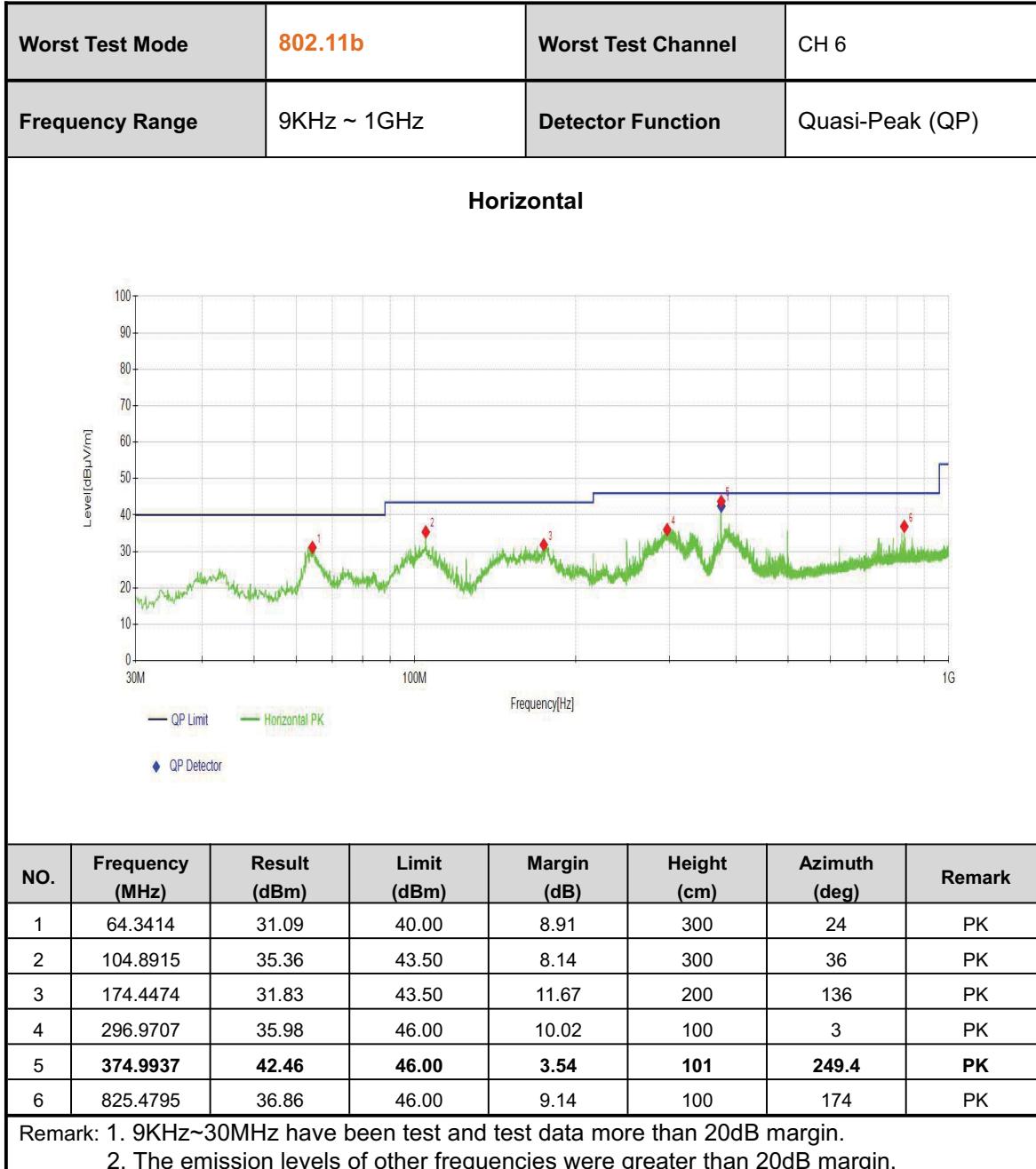


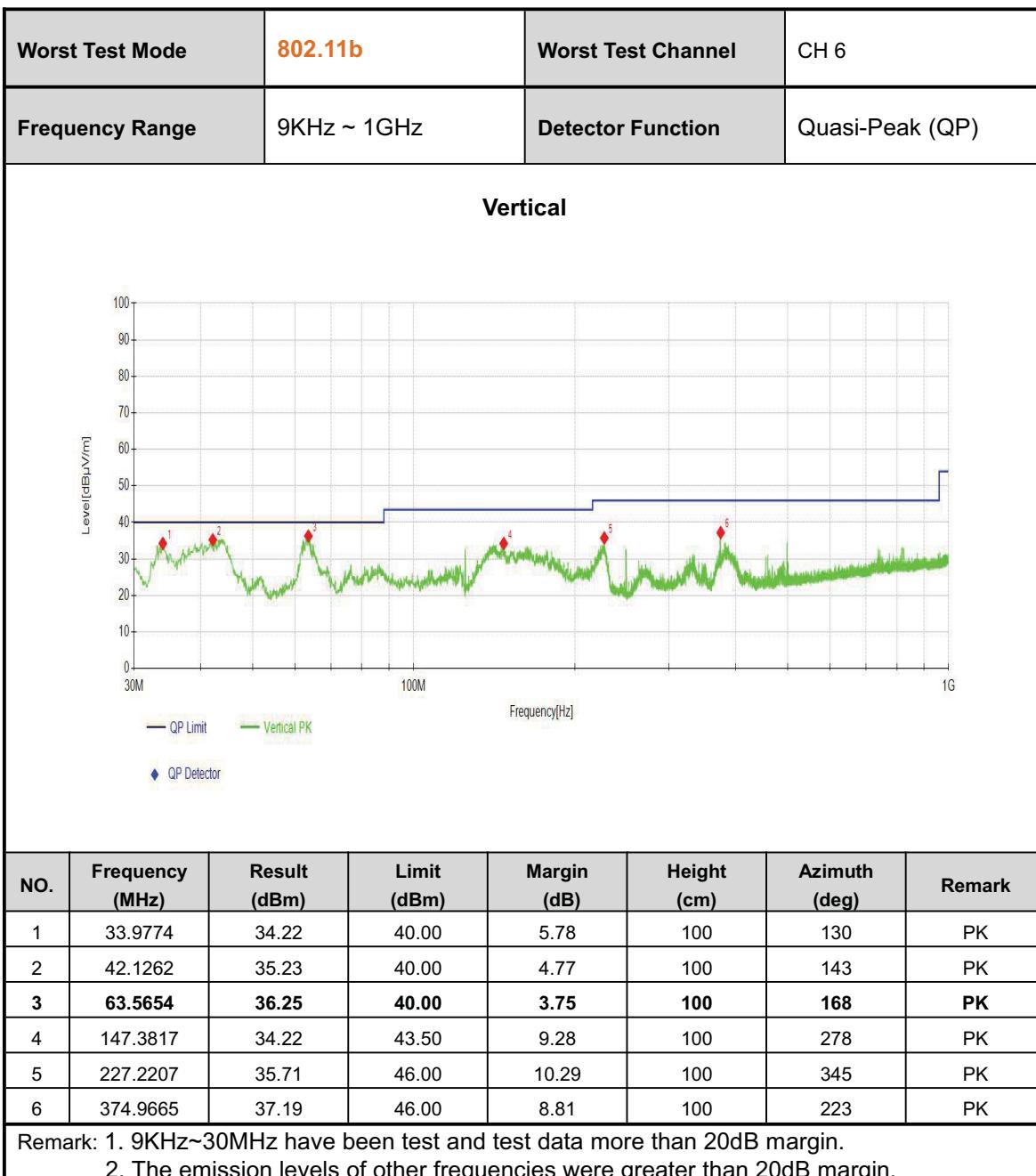
Above 1GHz Test Setup:



3.2.4 Test results

BELOW 1GHz WORST-CASE DATA:

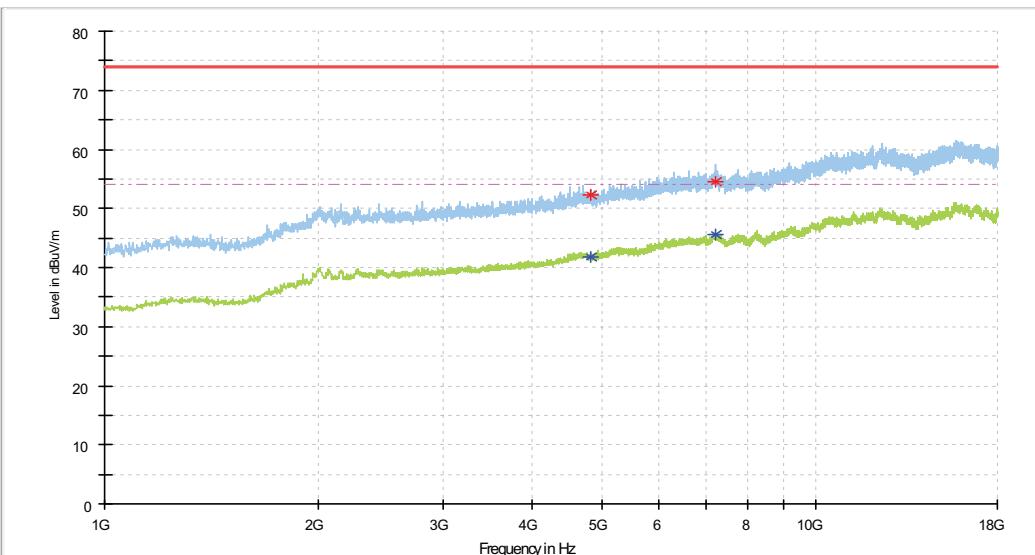




ABOVE 1GHz DATA

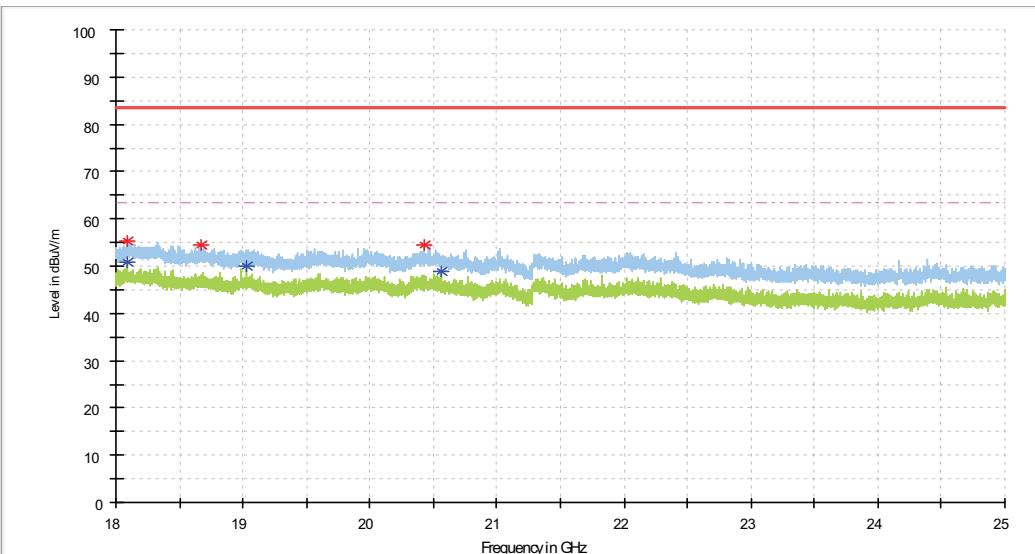
| | | | |
|---|------------------|--------------------------|---------------------------|
| Test Mode | 802.11b | Channel | CH 1 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|--------------|---------------|--------------|------------|
| 1 | 4825.000 | 41.8 | 54.0 | 12.2 | 200.0 | 172.0 | 6.9 | Avg |
| 2 | 4825.000 | 52.3 | 74.0 | 21.7 | 200.0 | 172.0 | 6.9 | Peak |
| 3 | 7235.600 | 45.5 | 54.0 | 8.5 | 200.0 | 91.0 | 10.2 | Avg |
| 4 | 7235.600 | 54.6 | 74.0 | 19.4 | 100.0 | 314.0 | 10.2 | Peak |

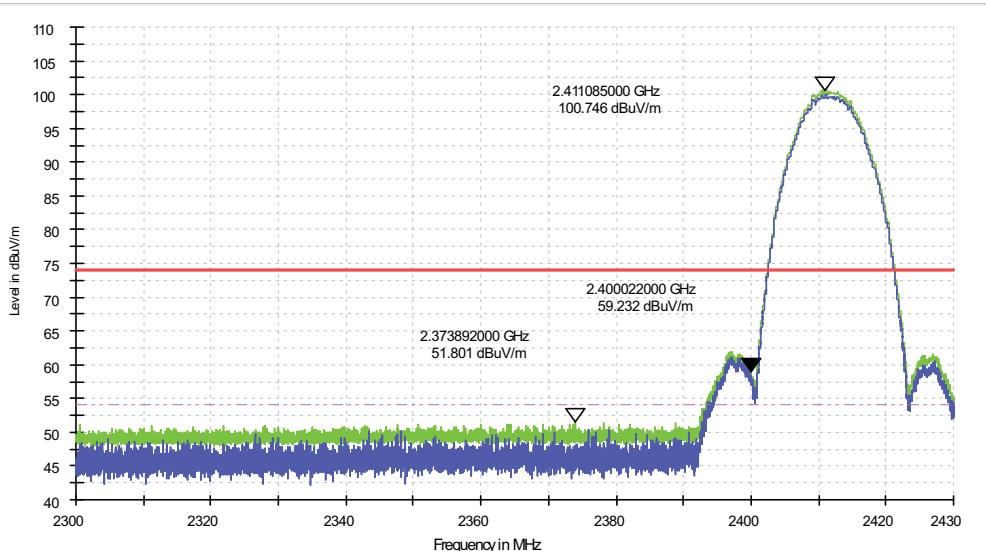
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

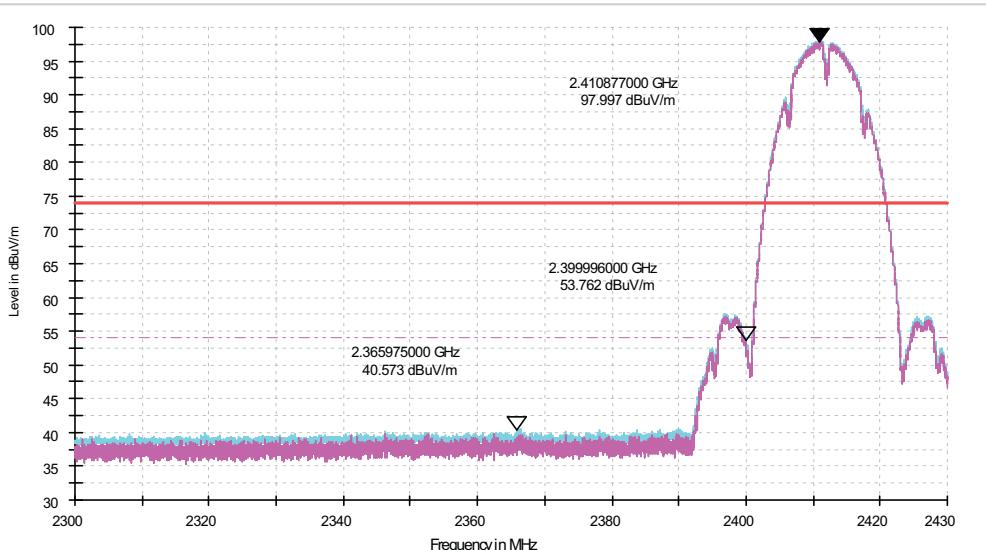
| | | | |
|---|------------------|--------------------------|-----------|
| Test Mode | 802.11b | Channel | CH 1 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) |

Test frequency range :2300 MHz-2430MHz



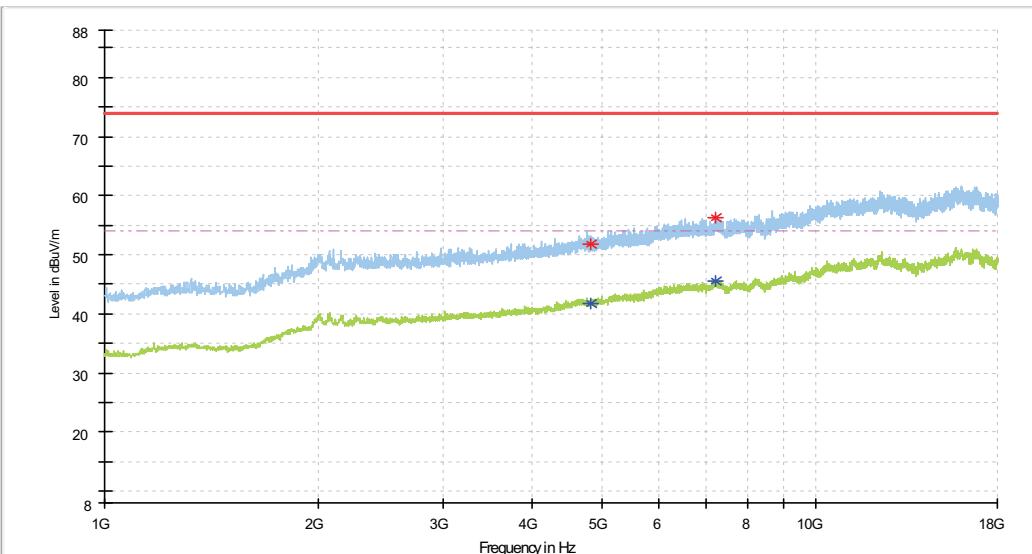
| | | | |
|---|------------------|--------------------------|--------------|
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Average (AV) |
|---|------------------|--------------------------|--------------|

Test frequency range :2300 MHz-2430MHz



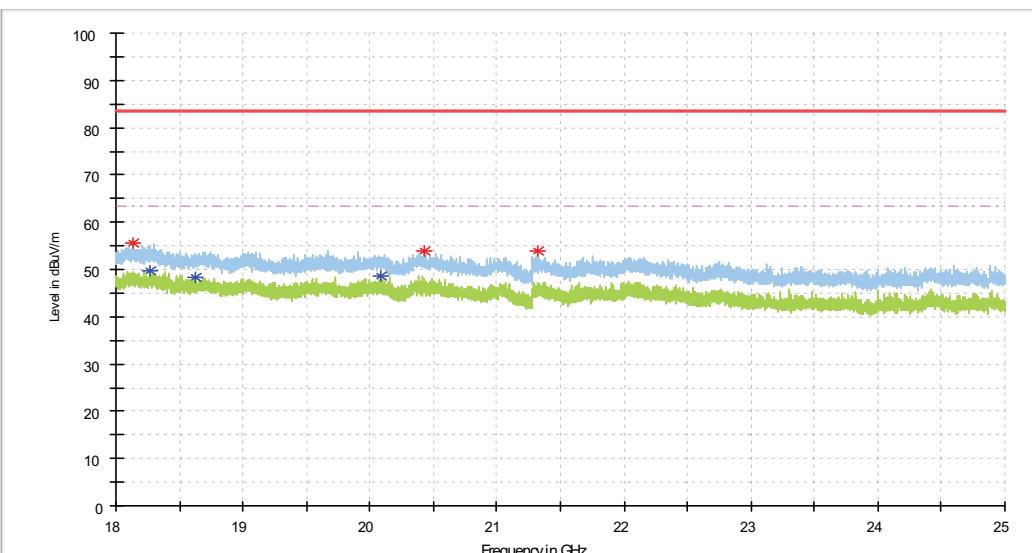
| | | | |
|---|----------------|--------------------------|---------------------------|
| Test Mode | 802.11b | Channel | CH 1 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|-------------|---------------|--------------|--------|
| 1 | 4825.000 | 41.4 | 54.0 | 12.6 | 100.0 | 62.0 | 6.9 | Avg |
| 2 | 4825.000 | 52.0 | 74.0 | 22.0 | 200.0 | 354.0 | 6.9 | Peak |
| 3 | 7233.900 | 46.3 | 54.0 | 7.7 | 100.0 | 0.0 | 10.2 | Avg |
| 4 | 7235.600 | 55.6 | 74.0 | 18.4 | 200.0 | 322.0 | 10.2 | Peak |

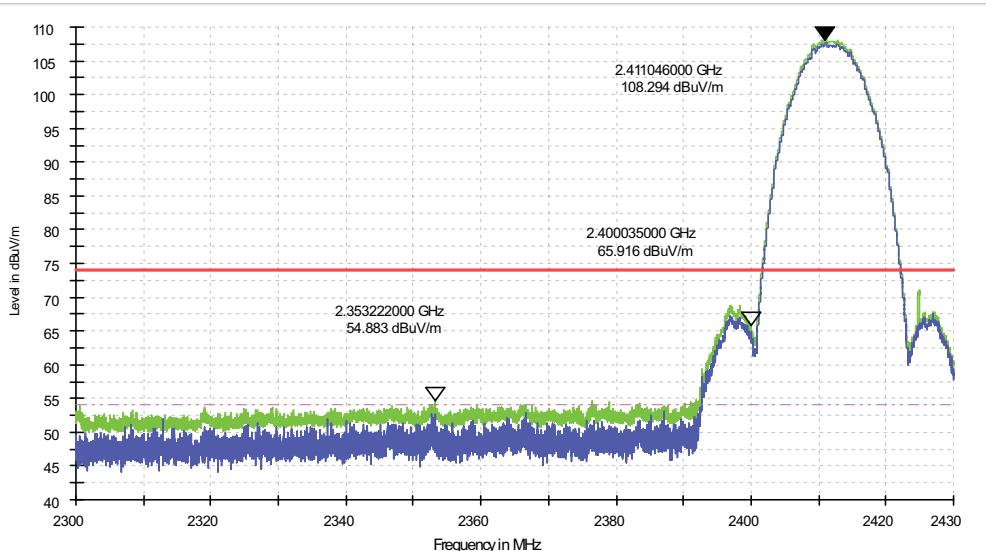
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

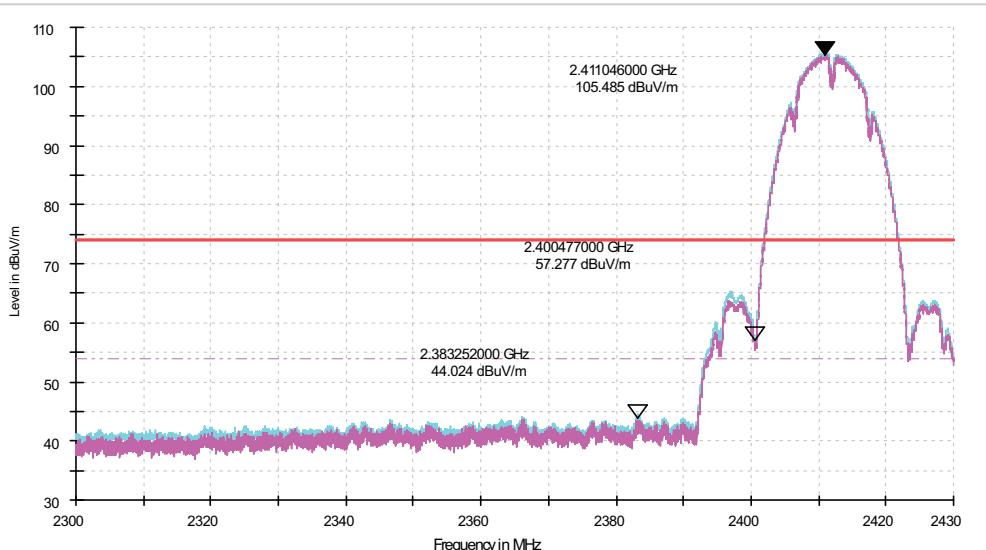
| | | | |
|---|----------------|--------------------------|-----------|
| Test Mode | 802.11b | Channel | CH 1 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) |

Test frequency range :2300 MHz-2430MHz



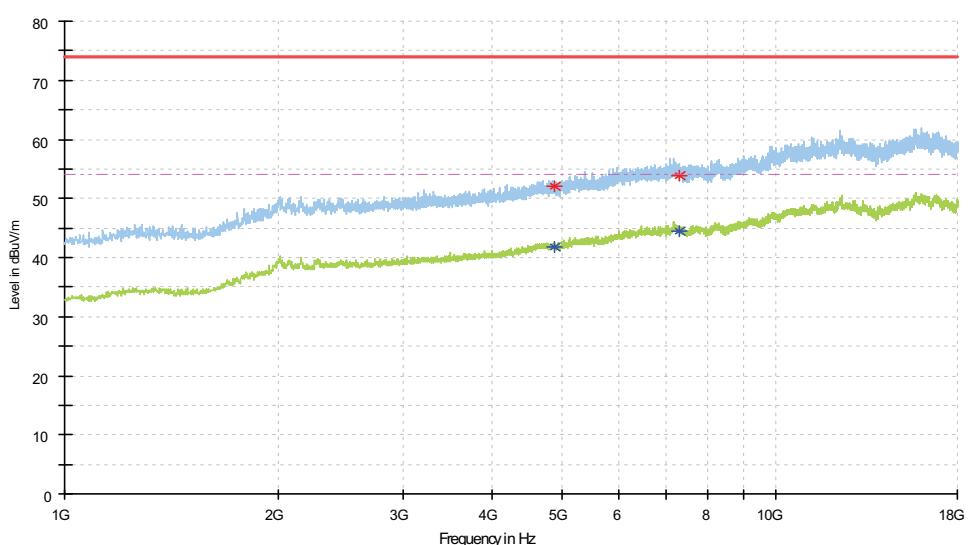
| | | | |
|---|----------------|--------------------------|--------------|
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Average (AV) |
|---|----------------|--------------------------|--------------|

Test frequency range :2300 MHz-2430MHz



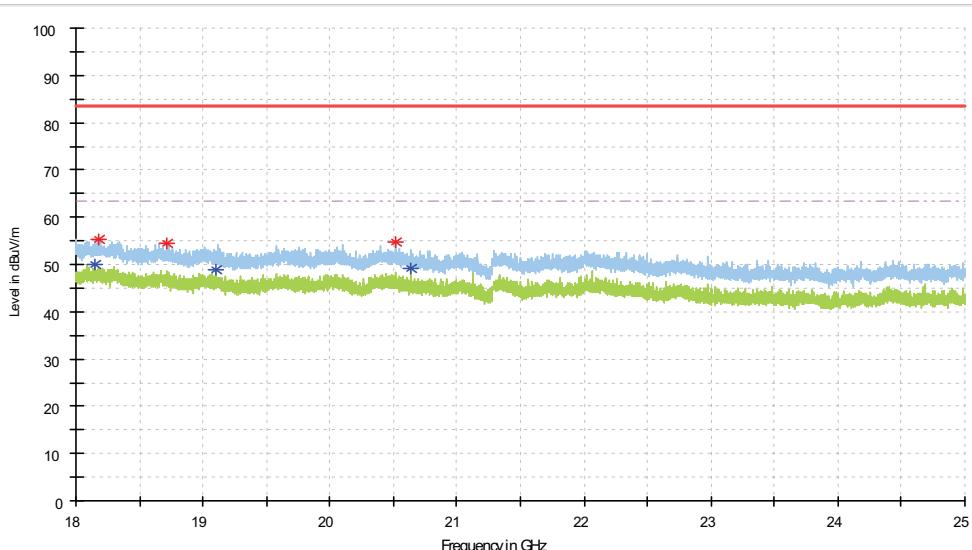
| | | | |
|---|------------------|--------------------------|---------------------------|
| Test Mode | 802.11b | Channel | CH 6 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|--------------|---------------|--------------|-------------|
| 1 | 4874.300 | 41.9 | 54.0 | 12.1 | 100.0 | 224.0 | 6.9 | Avg |
| 2 | 4874.300 | 52.1 | 74.0 | 21.9 | 100.0 | 224.0 | 6.9 | Peak |
| 3 | 7310.400 | 53.9 | 74.0 | 20.1 | 200.0 | 11.0 | 9.9 | Avg |
| 4 | 7310.400 | 44.4 | 54.0 | 9.6 | 100.0 | 324.0 | 9.9 | Peak |

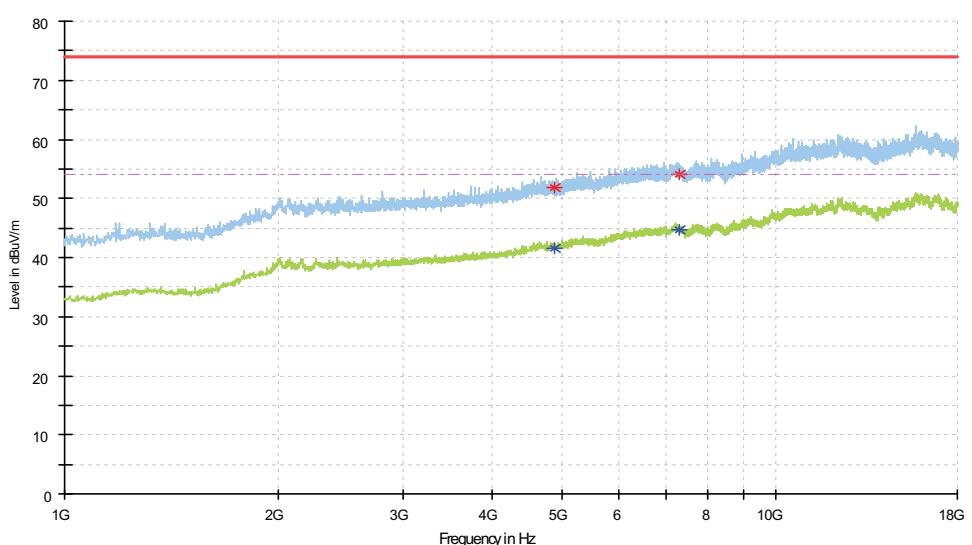
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

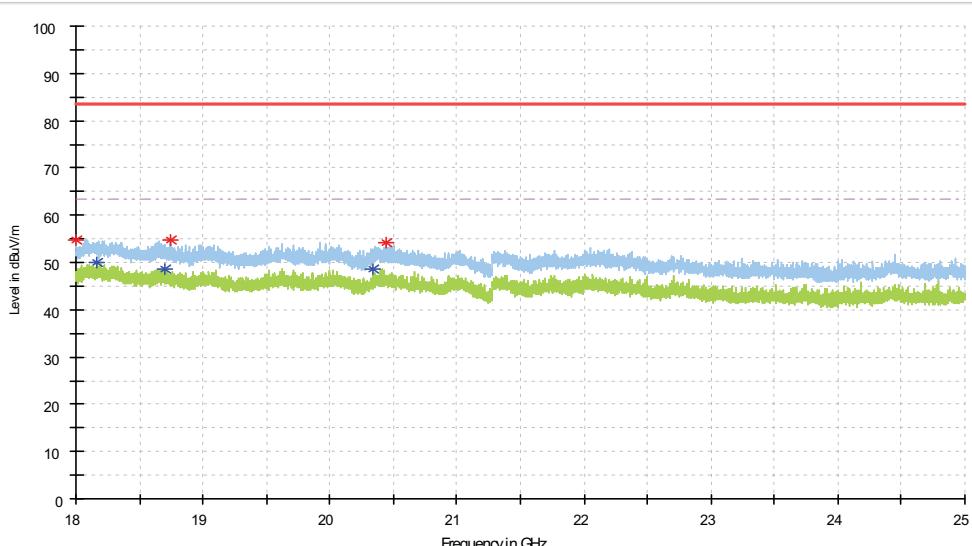
| | | | |
|---|----------------|--------------------------|---------------------------|
| Test Mode | 802.11b | Channel | CH 6 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|--------------|---------------|--------------|-------------|
| 1 | 4874.300 | 41.6 | 54.0 | 12.4 | 100.0 | 207.0 | 6.9 | Avg |
| 2 | 4874.300 | 51.9 | 74.0 | 22.1 | 100.0 | 207.0 | 6.9 | Peak |
| 3 | 7310.400 | 44.6 | 54.0 | 9.4 | 200.0 | 205.0 | 9.9 | Peak |
| 4 | 7310.400 | 54.1 | 74.0 | 19.9 | 100.0 | 234.0 | 9.9 | Avg |

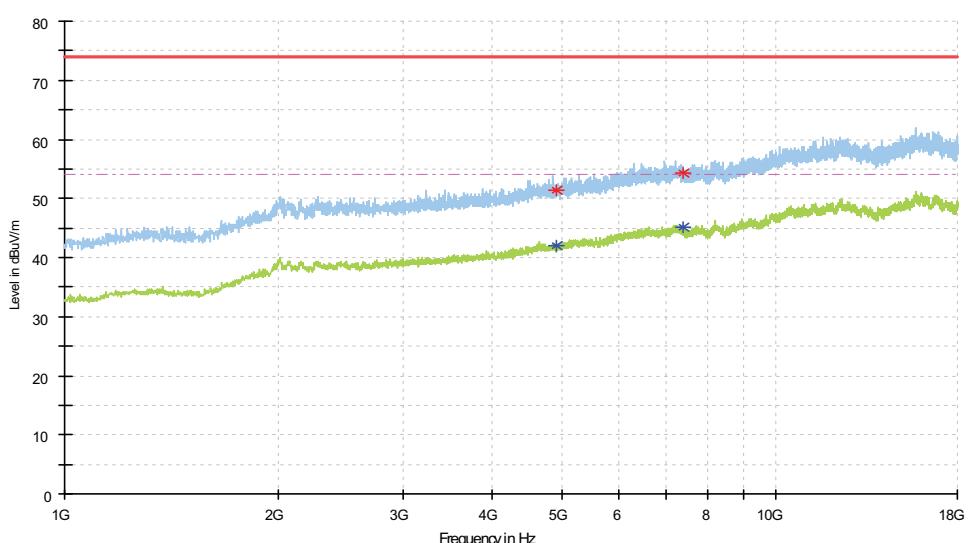
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

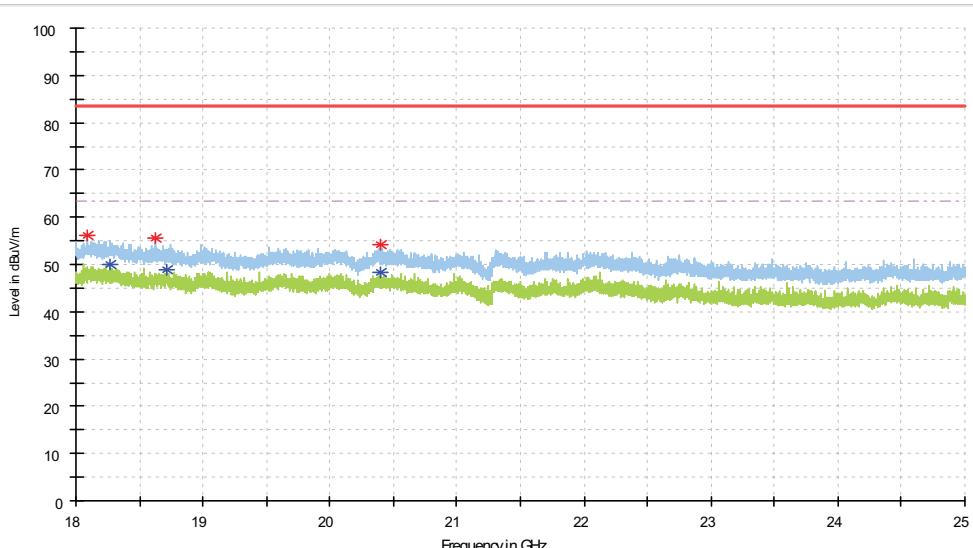
| | | | |
|---|------------------|--------------------------|---------------------------|
| Test Mode | 802.11b | Channel | CH 11 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|--------------|---------------|--------------|------------|
| 1 | 4925.300 | 41.9 | 54.0 | 12.1 | 100.0 | 0.0 | 7.1 | Avg |
| 2 | 4925.300 | 51.5 | 74.0 | 22.5 | 100.0 | 0.0 | 7.1 | Peak |
| 3 | 7386.900 | 45.1 | 54.0 | 8.9 | 100.0 | 235.0 | 10.1 | Avg |
| 4 | 7386.900 | 54.2 | 74.0 | 19.8 | 100.0 | 235.0 | 10.1 | Peak |

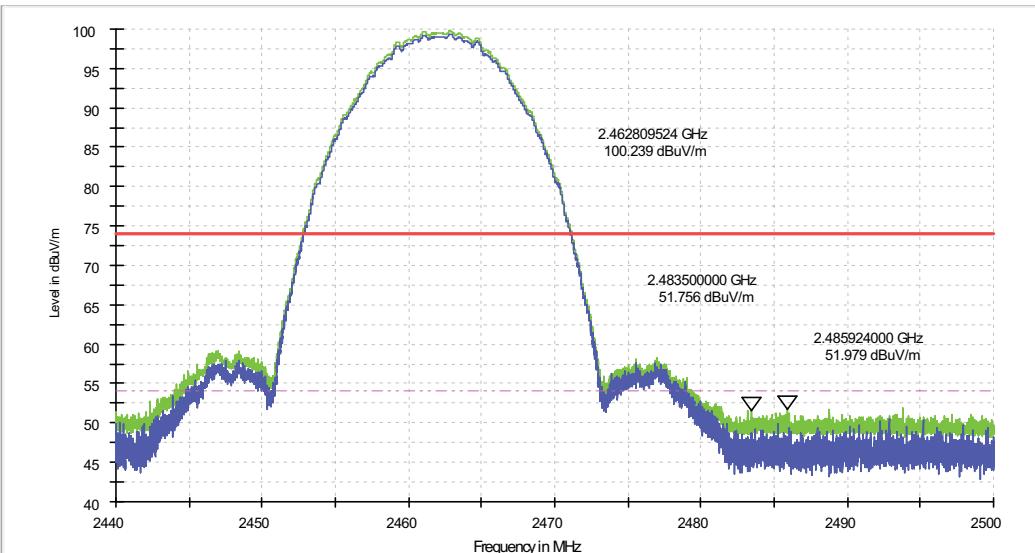
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

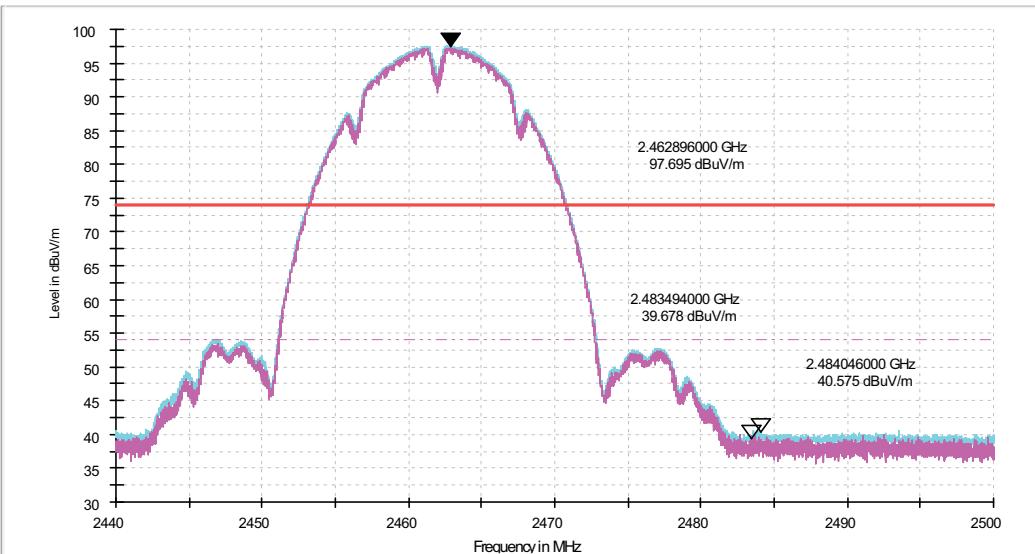
| | | | |
|---|------------------|--------------------------|-----------|
| Test Mode | 802.11b | Channel | CH 11 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) |

Test frequency range :2440 MHz-2500MHz



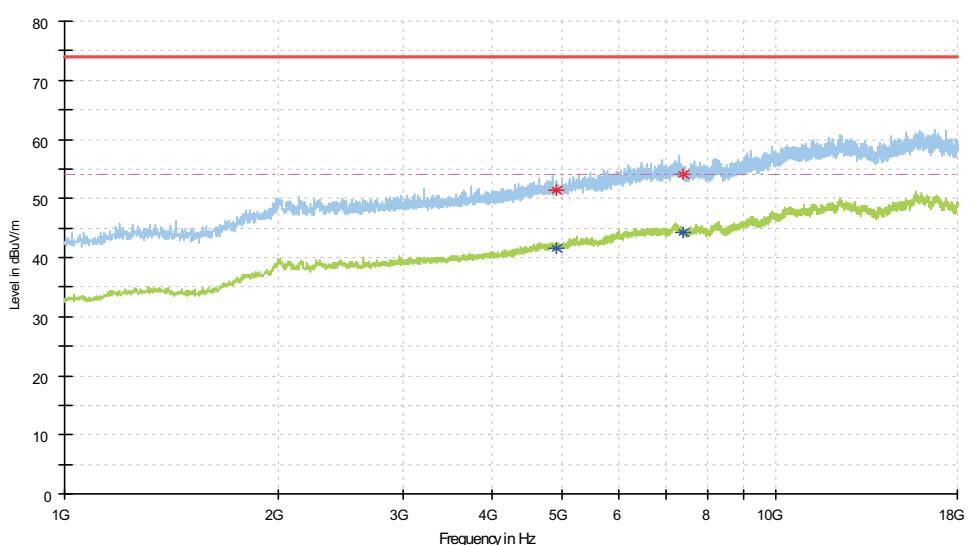
| | | | |
|---|------------------|--------------------------|--------------|
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Average (AV) |
|---|------------------|--------------------------|--------------|

Test frequency range :2440 MHz-2500MHz



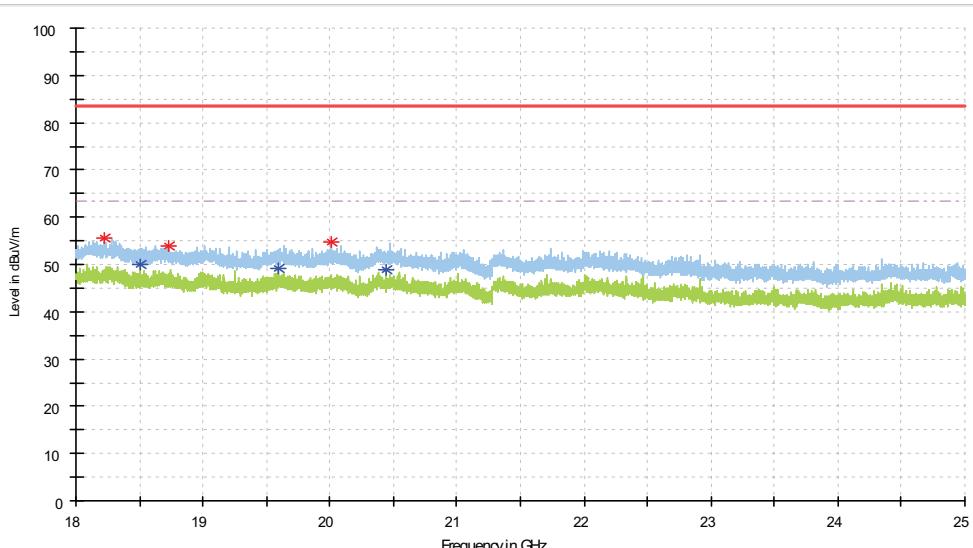
| | | | |
|---|----------------|--------------------------|---------------------------|
| Test Mode | 802.11b | Channel | CH 11 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|--------------|---------------|--------------|------------|
| 1 | 4923.600 | 41.6 | 54.0 | 12.4 | 200.0 | 256.0 | 7.1 | Avg |
| 2 | 4923.600 | 51.4 | 74.0 | 22.6 | 200.0 | 256.0 | 7.1 | Peak |
| 3 | 7386.900 | 44.3 | 54.0 | 9.7 | 200.0 | 90.0 | 10.1 | Avg |
| 4 | 7386.900 | 54.1 | 74.0 | 19.9 | 100.0 | 346.0 | 10.1 | Peak |

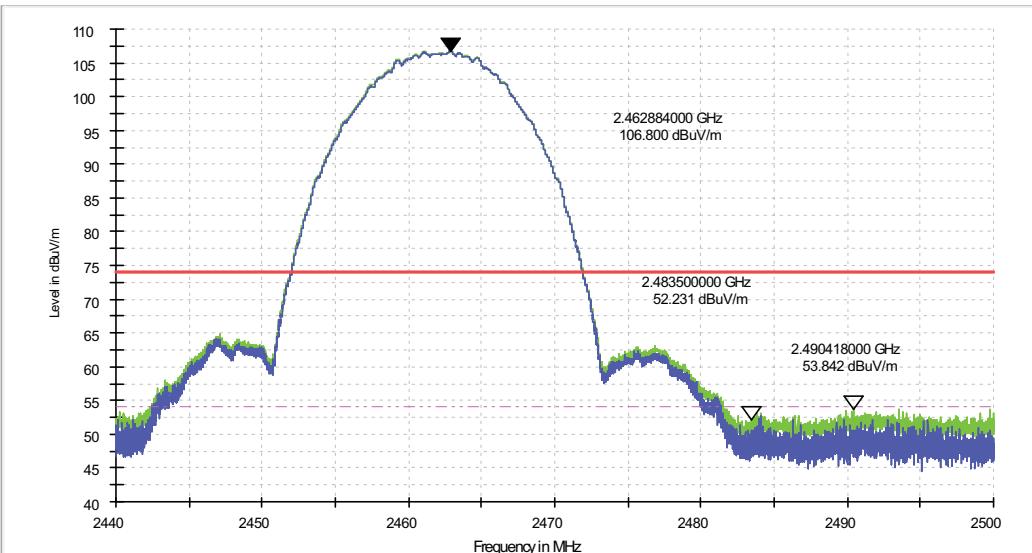
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

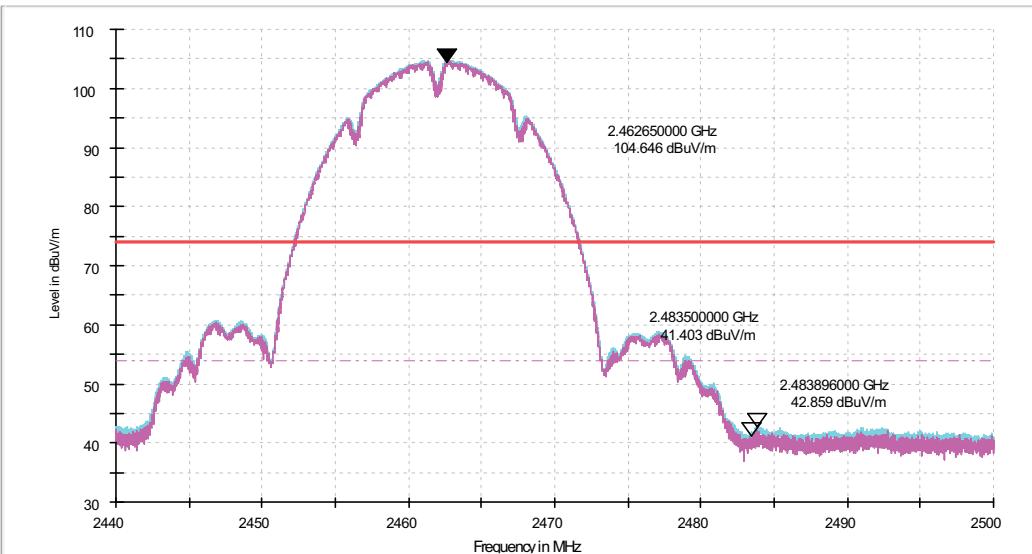
| | | | |
|---|----------------|--------------------------|-----------|
| Test Mode | 802.11b | Channel | CH 11 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) |

Test frequency range :2440 MHz-2500MHz



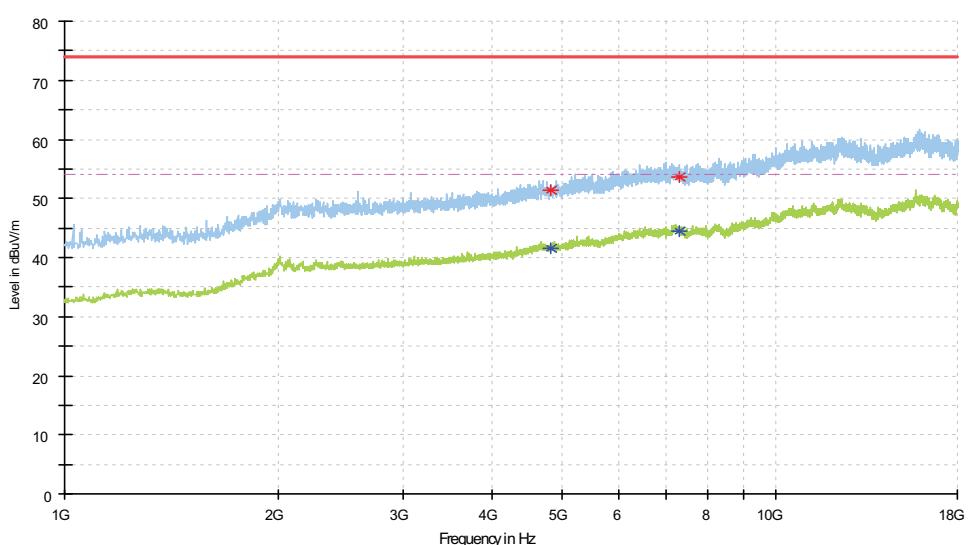
| | | | |
|---|----------------|--------------------------|--------------|
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Average (AV) |
|---|----------------|--------------------------|--------------|

Test frequency range :2440 MHz-2500MHz



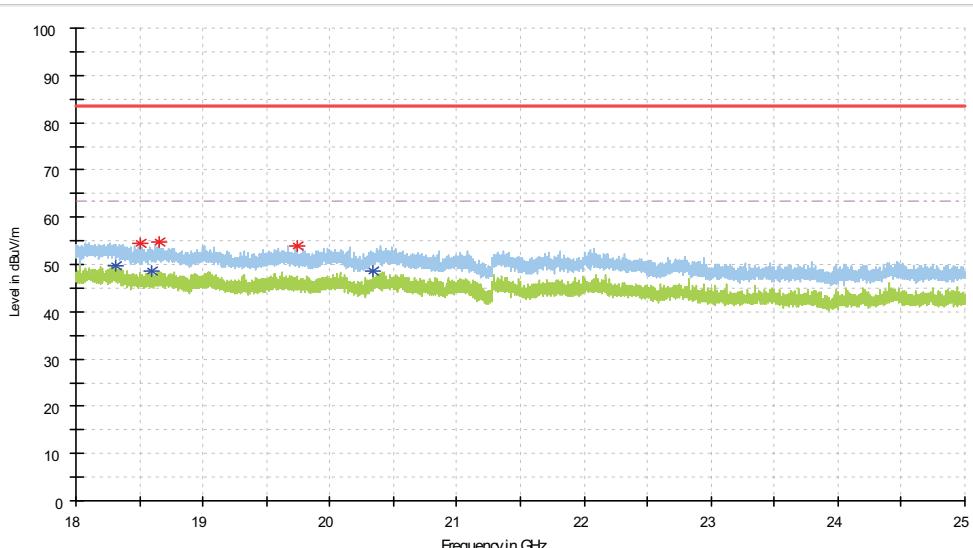
| | | | |
|---|------------------|--------------------------|---------------------------|
| Test Mode | 802.11g | Channel | CH 1 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G

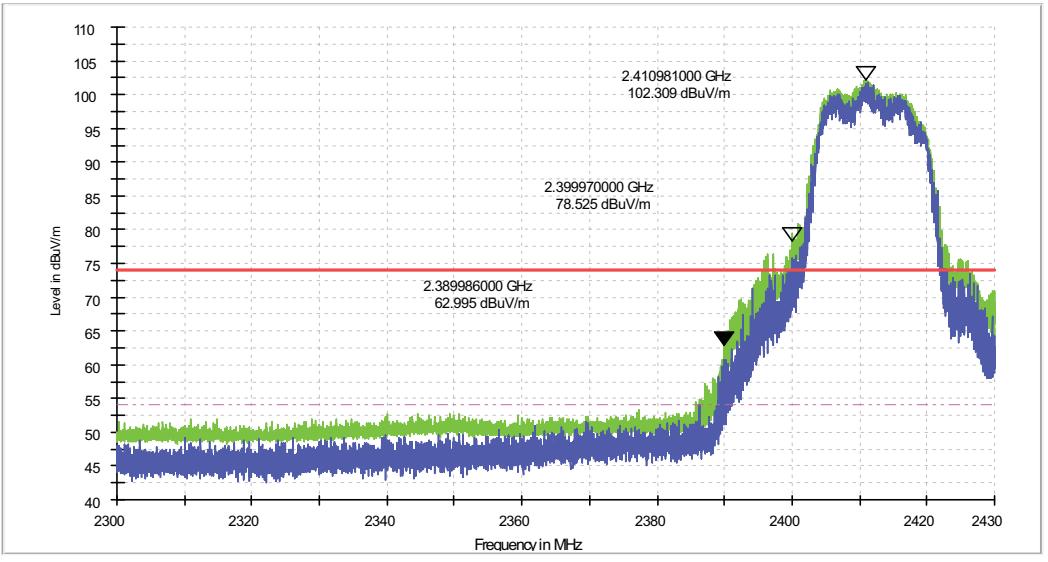
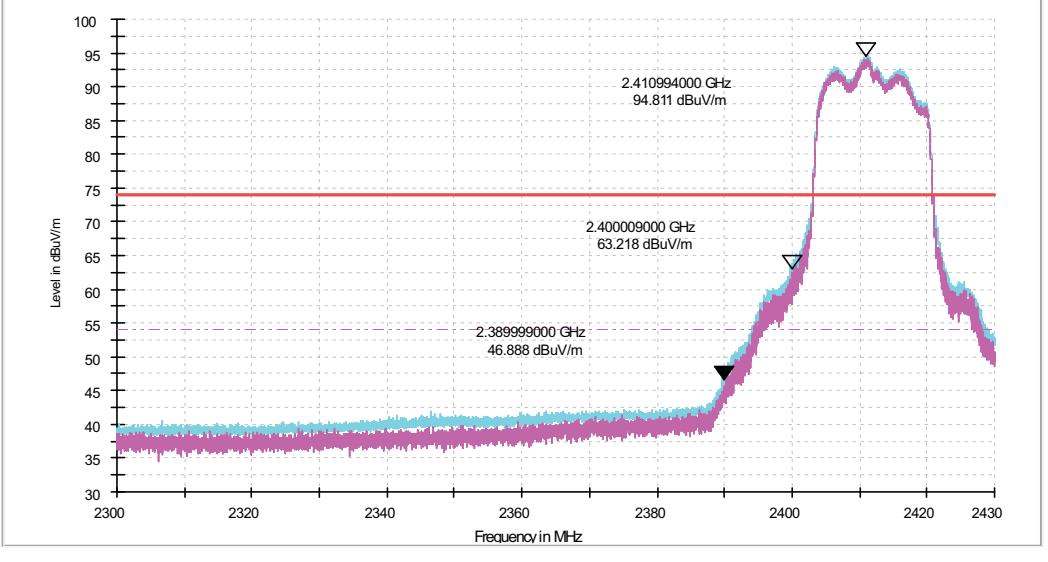


| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|-------------|---------------|--------------|--------|
| 1 | 4825.000 | 41.7 | 54.0 | 12.3 | 100.0 | 186.0 | 6.9 | Avg |
| 2 | 4825.000 | 51.4 | 74.0 | 22.6 | 100.0 | 186.0 | 6.9 | Peak |
| 3 | 7325.700 | 44.6 | 54.0 | 9.4 | 100.0 | 206.0 | 9.9 | Peak |
| 4 | 7325.700 | 53.6 | 74.0 | 20.4 | 100.0 | 206.0 | 9.9 | Avg |

Test frequency range :18G-25G

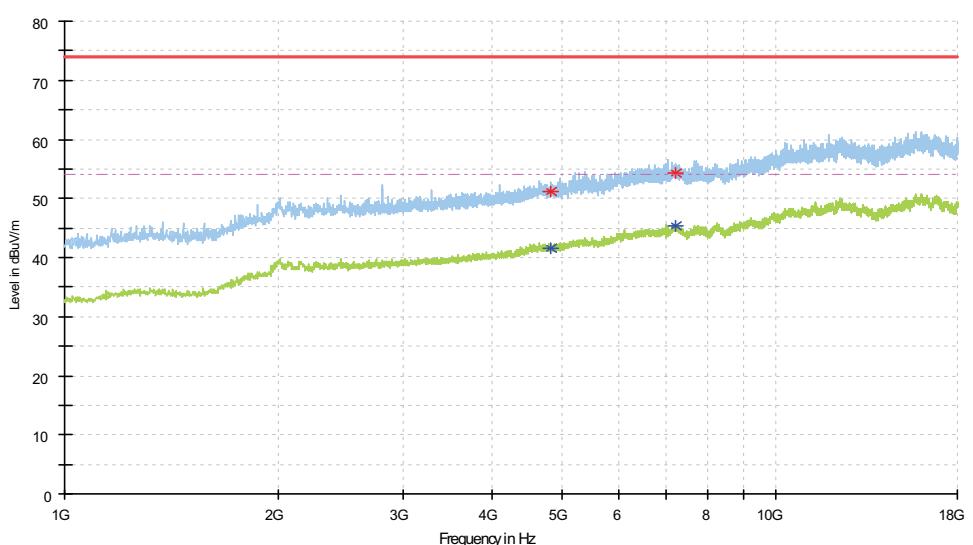


Remark: The emission levels of other frequencies were greater than 10dB margin.

| | | | |
|--|------------------|--------------------------|--------------|
| Test Mode | 802.11g | Channel | CH 1 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) |
| Test frequency range :2300 MHz-2430MHz | | | |
|  | | | |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Average (AV) |
| Test frequency range :2300 MHz-2430MHz | | | |
|  | | | |

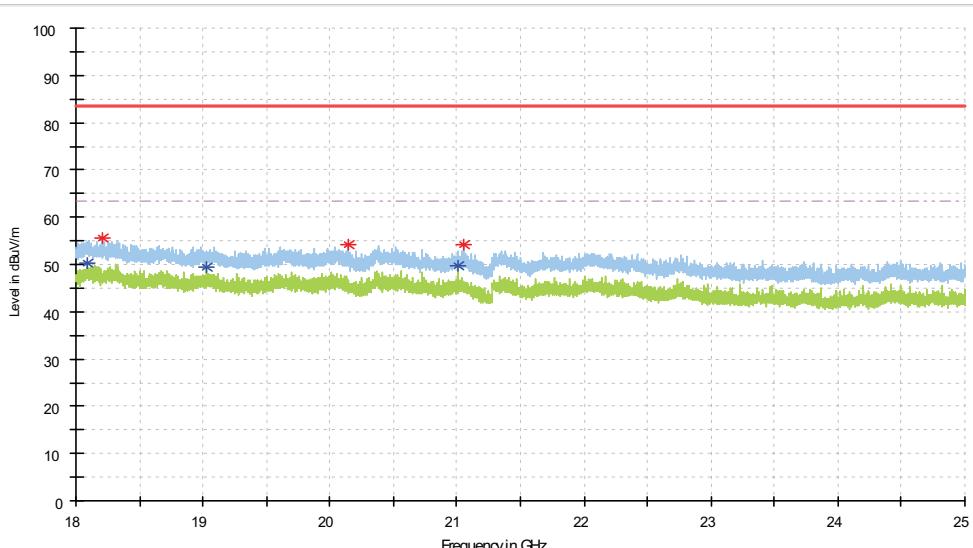
| | | | |
|---|----------------|--------------------------|---------------------------|
| Test Mode | 802.11g | Channel | CH 1 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|-------------|---------------|--------------|--------|
| 1 | 4825.000 | 41.6 | 54.0 | 12.4 | 100.0 | 0.0 | 6.9 | Avg |
| 2 | 4825.000 | 51.1 | 74.0 | 22.9 | 100.0 | 0.0 | 6.9 | Peak |
| 3 | 7237.300 | 45.3 | 54.0 | 8.7 | 100.0 | 164.0 | 10.2 | Peak |
| 4 | 7237.300 | 54.2 | 74.0 | 19.8 | 100.0 | 164.0 | 10.2 | Avg |

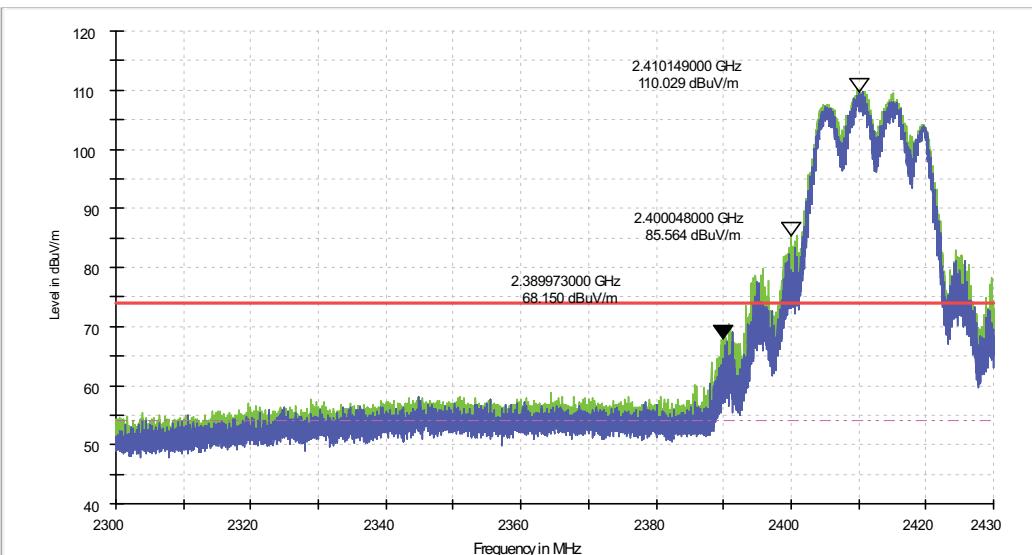
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

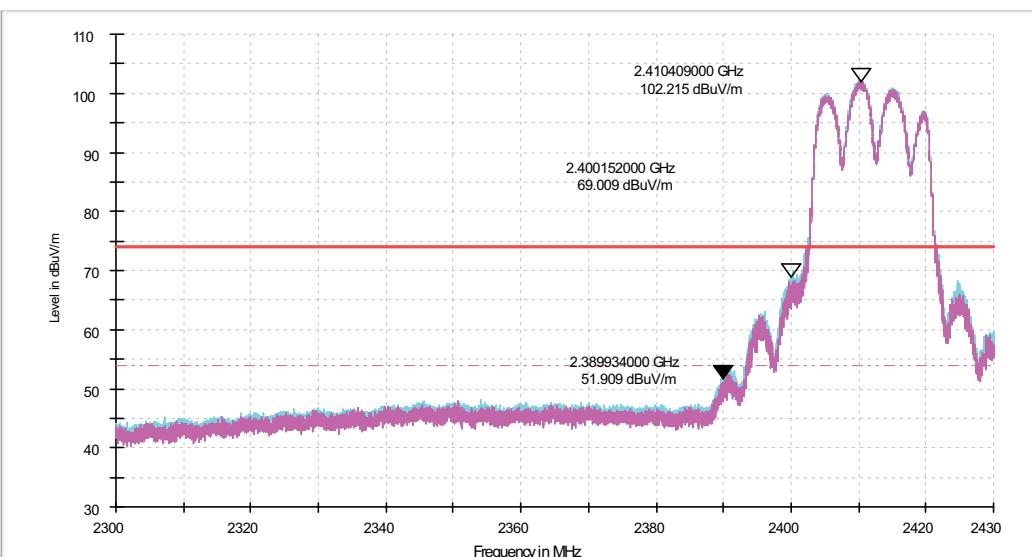
| | | | |
|---|----------------|--------------------------|-----------|
| Test Mode | 802.11g | Channel | CH 1 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) |

Test frequency range :2300 MHz-2430MHz



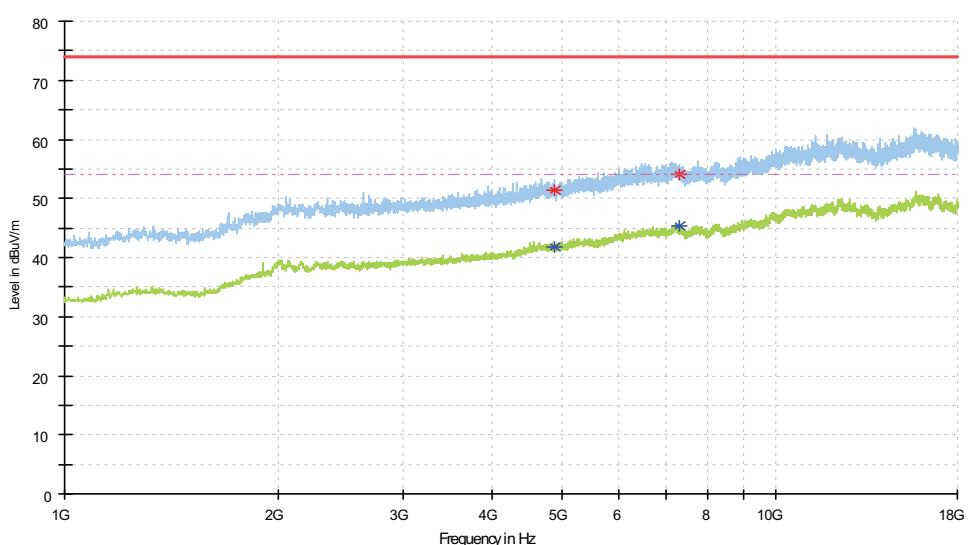
| | | | |
|---|----------------|--------------------------|--------------|
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Average (AV) |
|---|----------------|--------------------------|--------------|

Test frequency range :2300 MHz-2430MHz



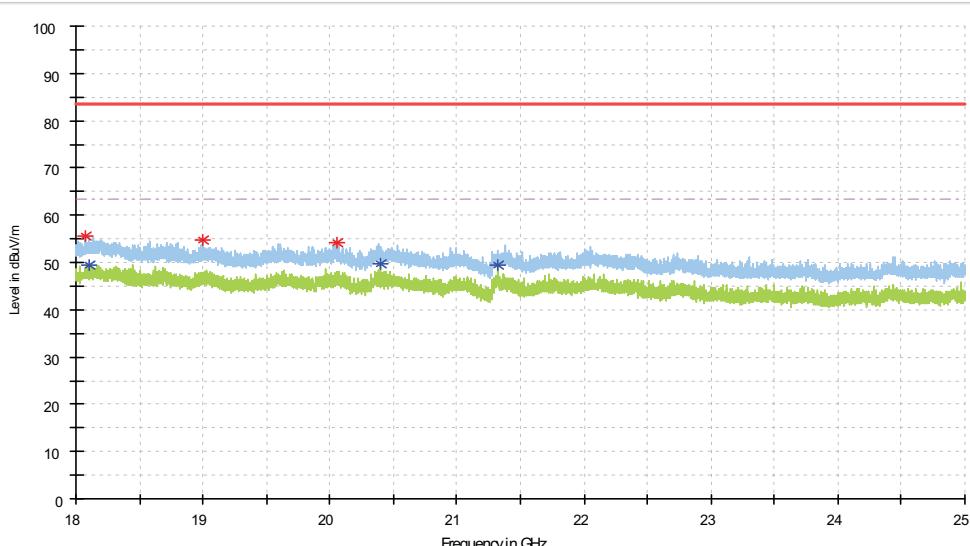
| | | | |
|---|------------------|--------------------------|---------------------------|
| Test Mode | 802.11g | Channel | CH 6 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|--------------|---------------|--------------|------------|
| 1 | 4874.300 | 41.9 | 54.0 | 12.1 | 100.0 | 206.0 | 6.9 | Avg |
| 2 | 4874.300 | 51.4 | 74.0 | 22.6 | 100.0 | 206.0 | 6.9 | Peak |
| 3 | 7310.400 | 45.3 | 54.0 | 8.7 | 100.0 | 118.0 | 9.9 | Avg |
| 4 | 7310.400 | 54.1 | 74.0 | 19.9 | 100.0 | 118.0 | 9.9 | Peak |

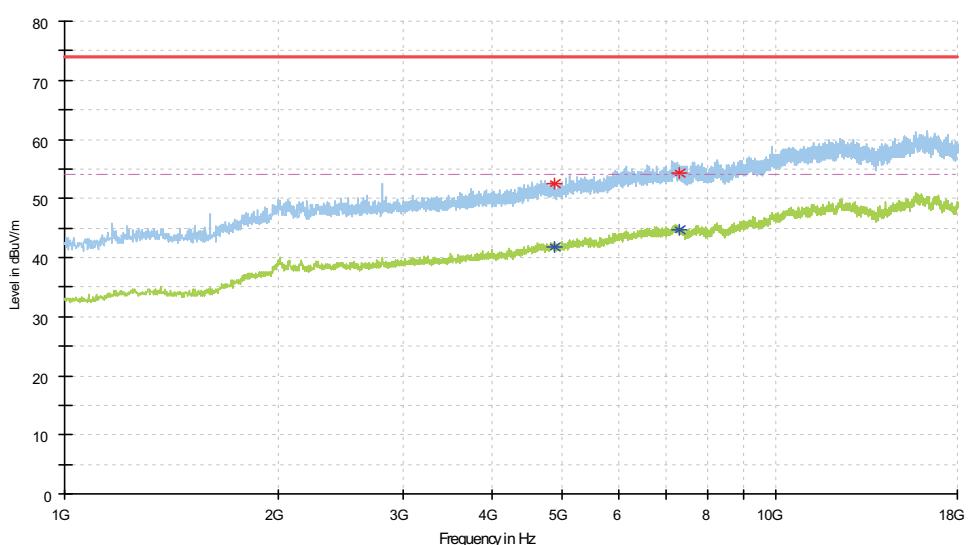
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

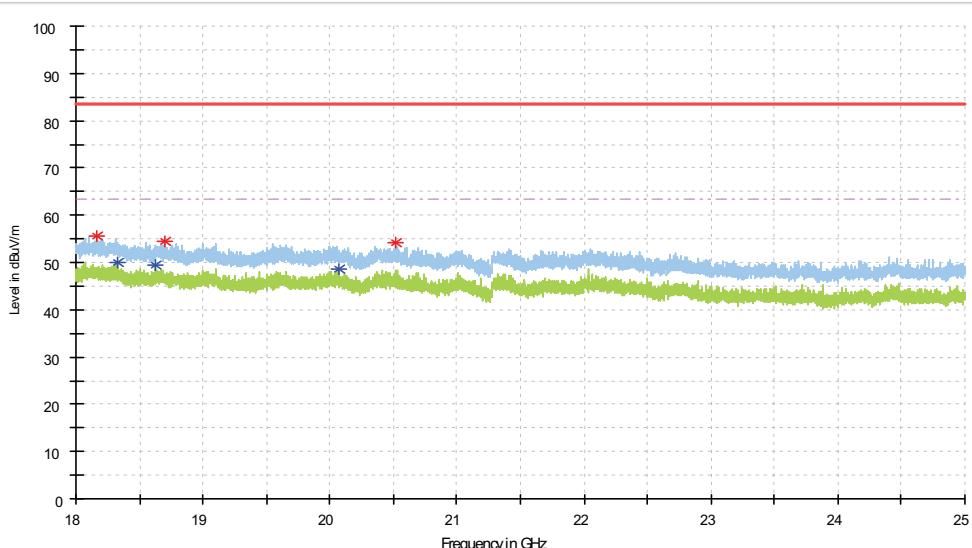
| | | | |
|---|----------------|--------------------------|---------------------------|
| Test Mode | 802.11g | Channel | CH 6 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|--------------|---------------|--------------|-------------|
| 1 | 4874.300 | 41.9 | 54.0 | 12.2 | 100.0 | 129.0 | 6.9 | Avg |
| 2 | 4874.300 | 52.6 | 74.0 | 21.4 | 100.0 | 129.0 | 6.9 | Peak |
| 3 | 7310.400 | 44.7 | 54.0 | 9.3 | 100.0 | 269.0 | 9.9 | Peak |
| 4 | 7310.400 | 54.2 | 74.0 | 19.8 | 100.0 | 269.0 | 9.9 | Avg |

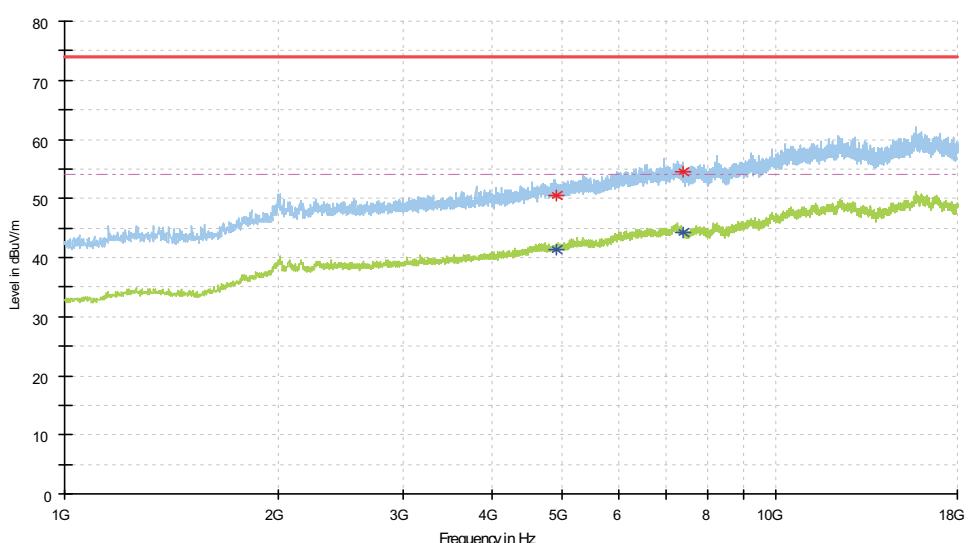
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

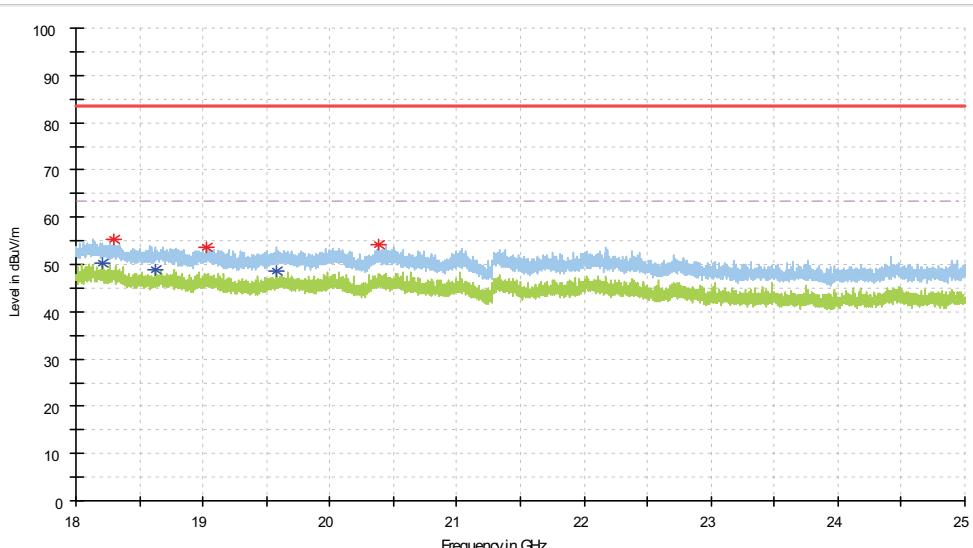
| | | | |
|---|------------------|--------------------------|---------------------------|
| Test Mode | 802.11g | Channel | CH 11 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|--------------|---------------|--------------|------------|
| 1 | 4925.300 | 41.4 | 54.0 | 12.6 | 100.0 | 62.0 | 7.1 | Avg |
| 2 | 4925.300 | 50.6 | 74.0 | 23.4 | 100.0 | 62.0 | 7.1 | Peak |
| 3 | 7386.900 | 44.3 | 54.0 | 9.7 | 100.0 | 102.0 | 10.1 | Avg |
| 4 | 7386.900 | 54.5 | 74.0 | 19.5 | 100.0 | 102.0 | 10.1 | Peak |

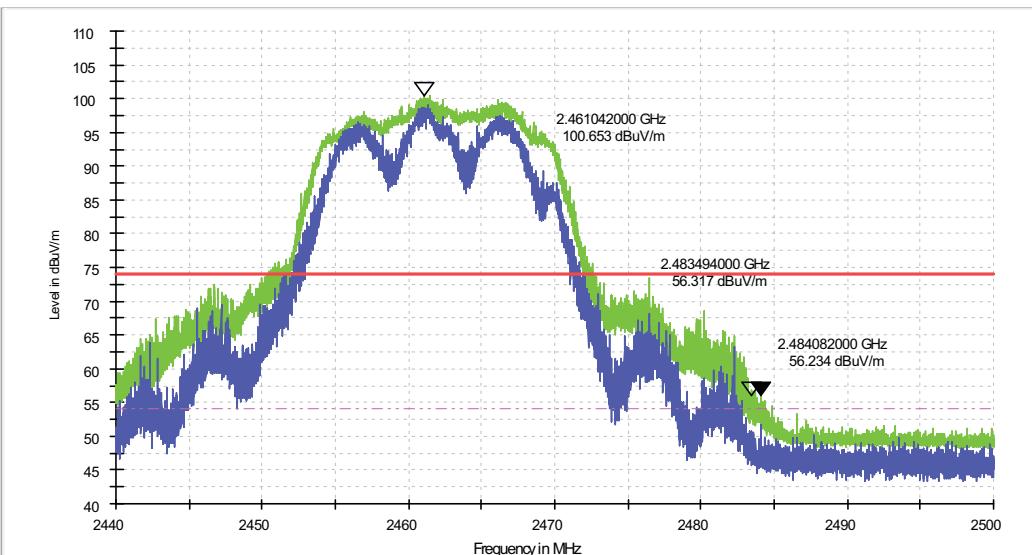
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

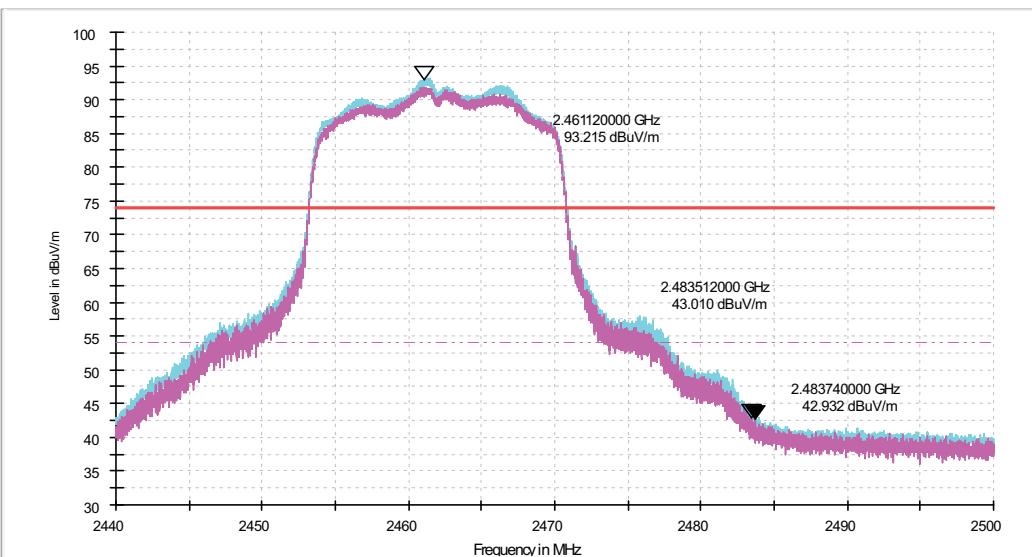
| | | | |
|---|------------------|--------------------------|-----------|
| Test Mode | 802.11g | Channel | CH 11 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) |

Test frequency range :2440 MHz-2500MHz



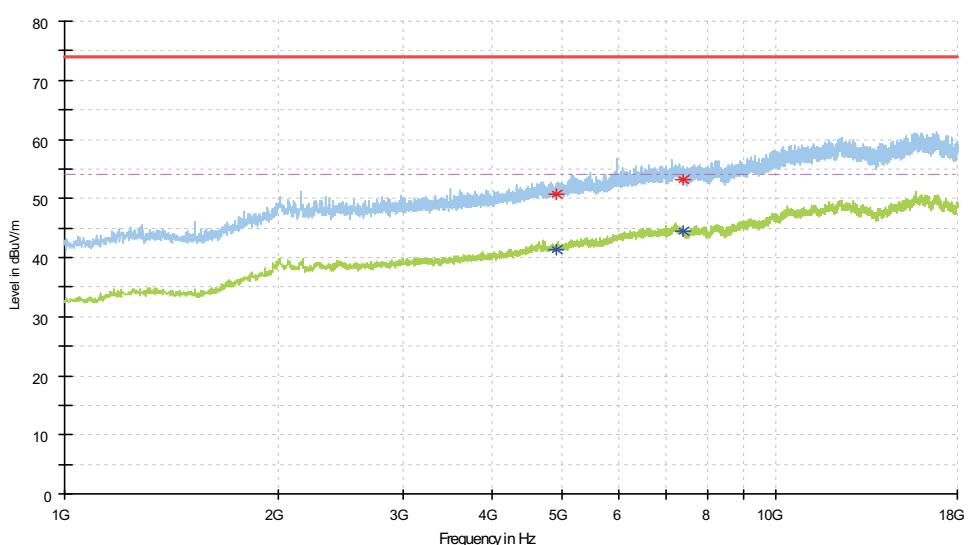
| | | | |
|---|------------------|--------------------------|--------------|
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Average (AV) |
|---|------------------|--------------------------|--------------|

Test frequency range :2440 MHz-2500MHz



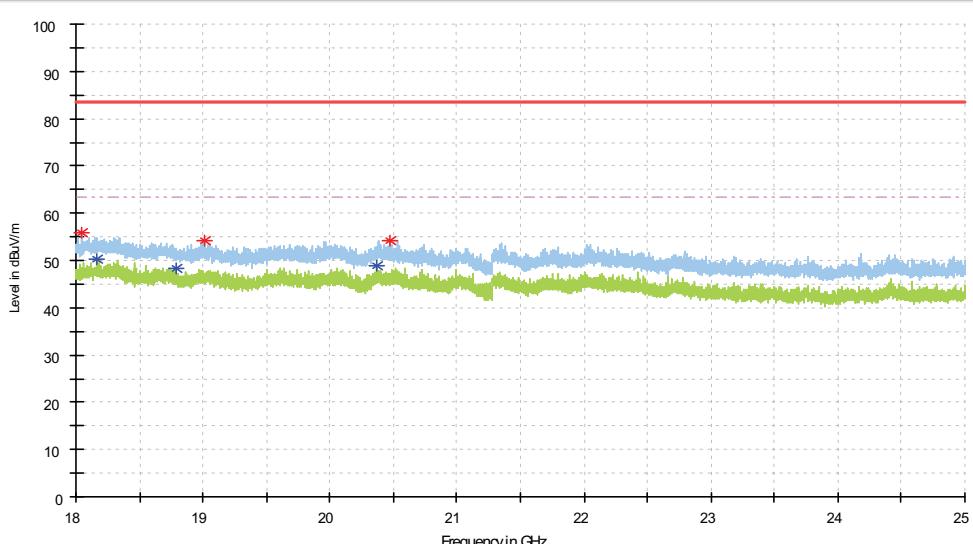
| | | | |
|---|----------------|--------------------------|---------------------------|
| Test Mode | 802.11g | Channel | CH 11 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|-------------|---------------|--------------|--------|
| 1 | 4925.300 | 41.4 | 54.0 | 12.6 | 100.0 | 171.0 | 7.1 | Avg |
| 2 | 4925.300 | 50.8 | 74.0 | 23.2 | 100.0 | 171.0 | 7.1 | Peak |
| 3 | 7385.200 | 53.3 | 74.0 | 20.7 | 100.0 | 259.0 | 10.1 | Peak |
| 4 | 7386.900 | 44.4 | 54.0 | 9.6 | 100.0 | 84.0 | 10.1 | Avg |

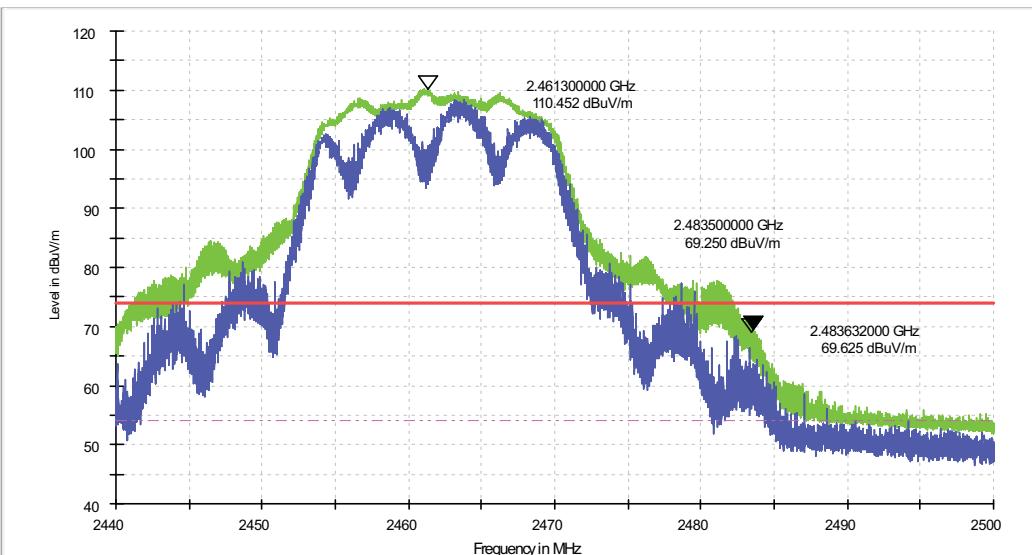
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

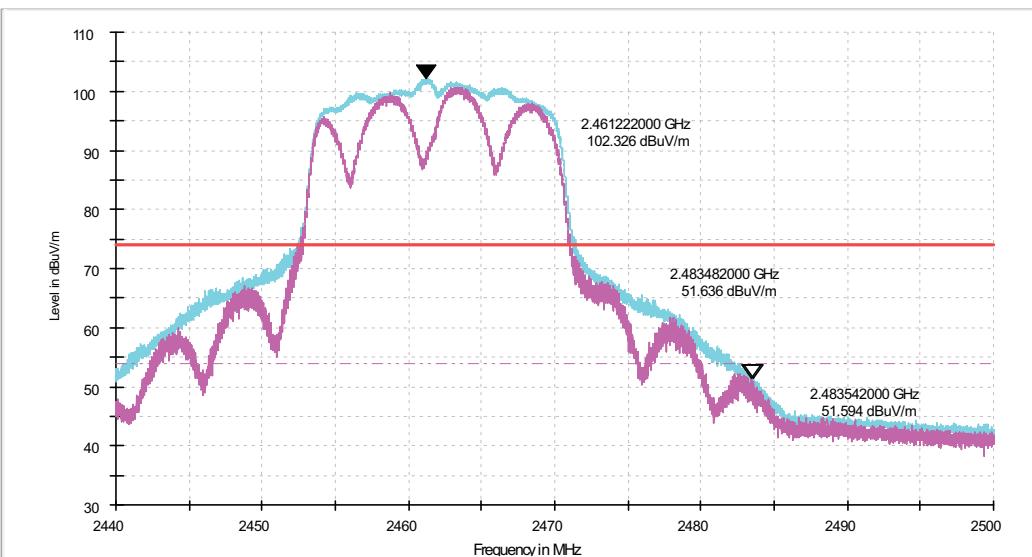
| | | | |
|---|----------------|--------------------------|-----------|
| Test Mode | 802.11g | Channel | CH 11 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) |

Test frequency range :2440 MHz-2500MHz



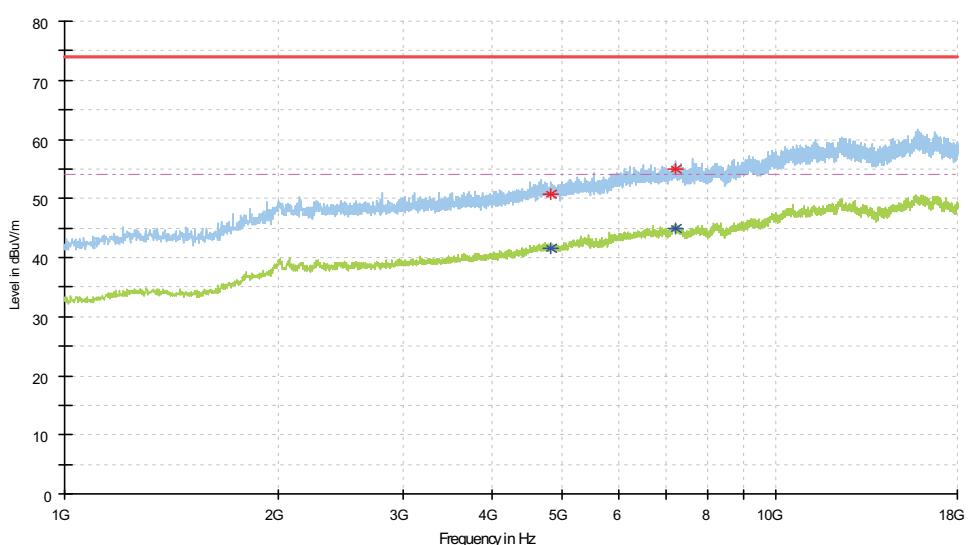
| | | | |
|---|----------------|--------------------------|--------------|
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Average (AV) |
|---|----------------|--------------------------|--------------|

Test frequency range :2440 MHz-2500MHz



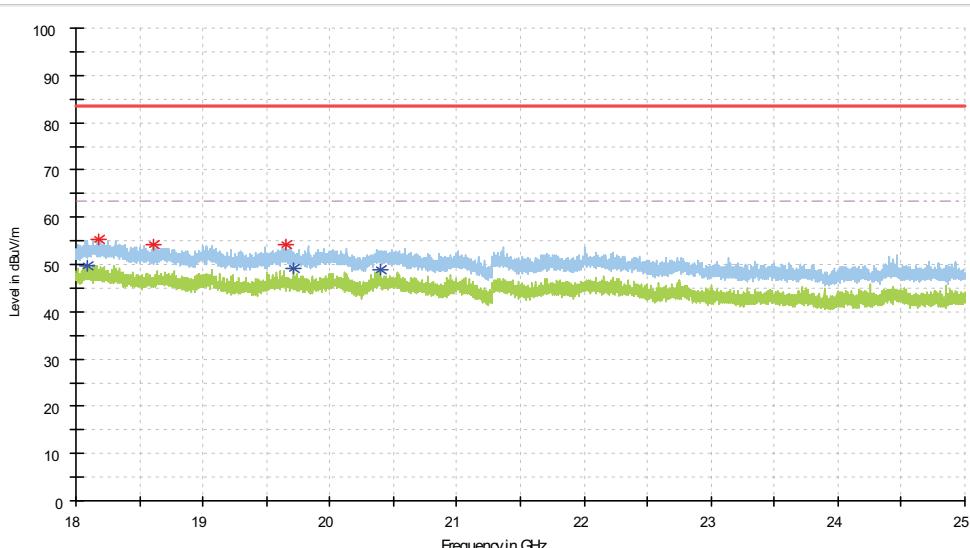
| | | | |
|---|----------------------|--------------------------|---------------------------|
| Test Mode | 802.11n(HT20) | Channel | CH 1 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|--------------|---------------|--------------|-------------|
| 1 | 4825.000 | 41.5 | 54.0 | 12.5 | 100.0 | 0.0 | 6.9 | Avg |
| 2 | 4825.000 | 50.7 | 74.0 | 23.3 | 100.0 | 0.0 | 6.9 | Peak |
| 3 | 7235.600 | 44.8 | 54.0 | 9.2 | 100.0 | 245.0 | 10.2 | Peak |
| 4 | 7235.600 | 55.0 | 74.0 | 19.0 | 100.0 | 245.0 | 10.2 | Avg |

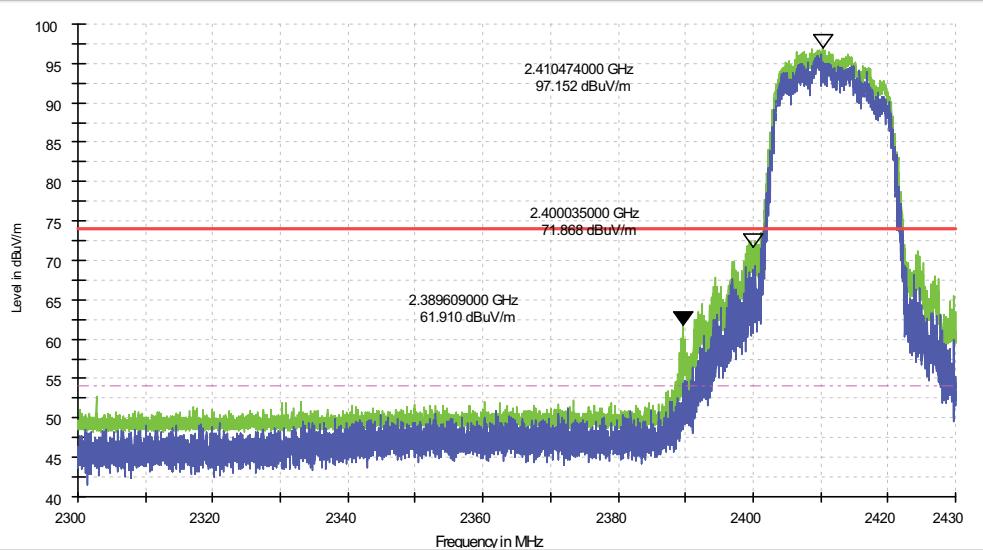
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

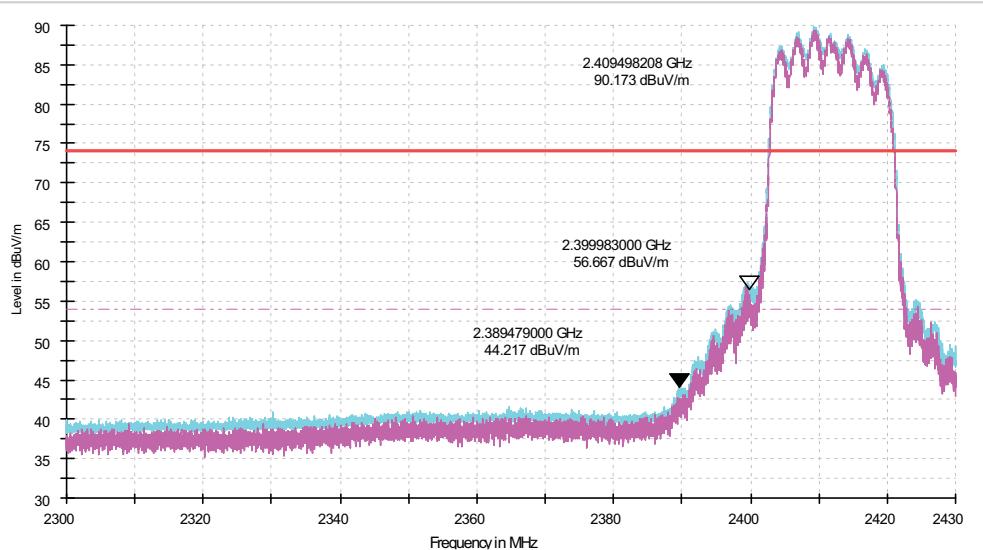
| | | | |
|---|----------------------|--------------------------|-----------|
| Test Mode | 802.11n(HT20) | Channel | CH 1 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) |

Test frequency range :2300 MHz-2430MHz



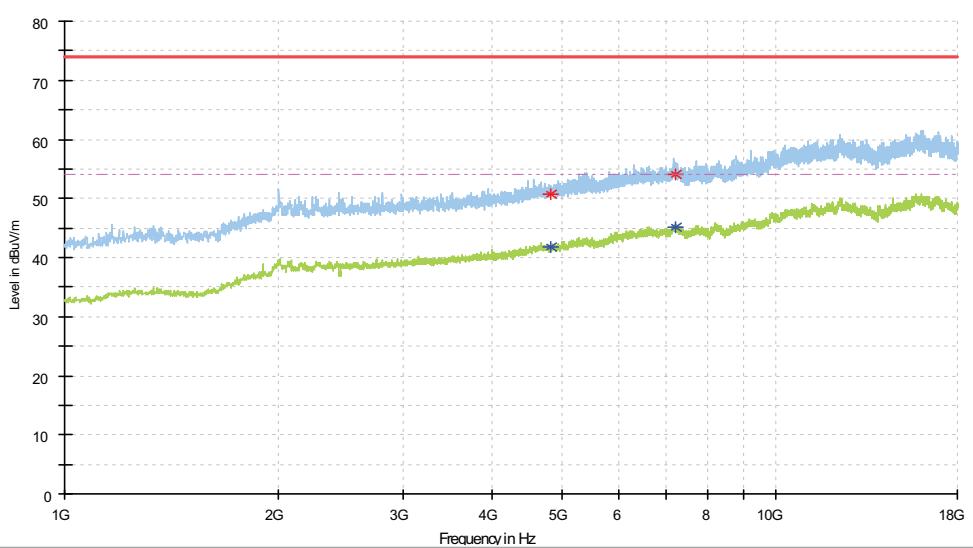
| | | | |
|---|------------------|--------------------------|--------------|
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Average (AV) |
|---|------------------|--------------------------|--------------|

Test frequency range :2300 MHz-2430MHz



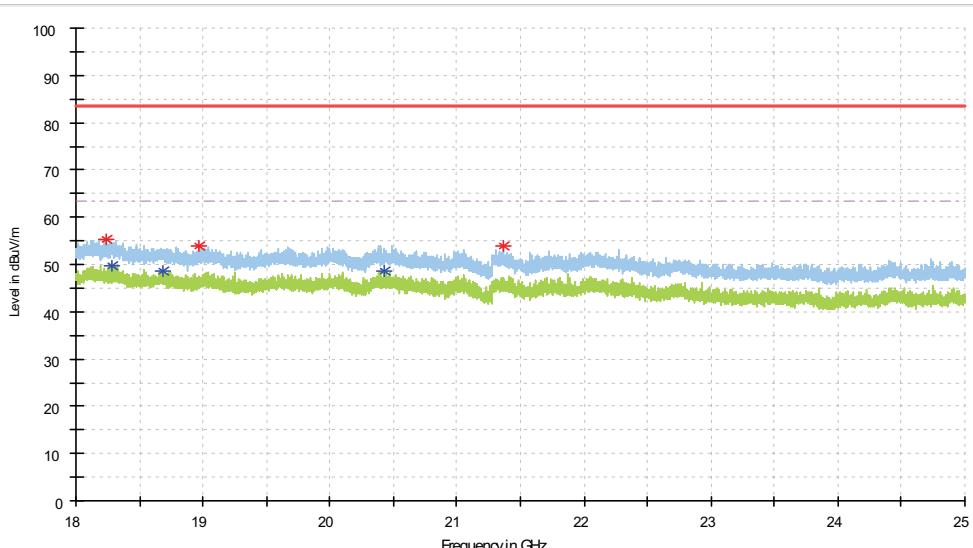
| | | | |
|----------------------------------|----------------|-------------------|---------------------------|
| Test Mode | 802.11n(HT20) | Channel | CH 1 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|-------------|---------------|--------------|--------|
| 1 | 4823.300 | 41.9 | 54.0 | 12.1 | 100.0 | 29.0 | 6.9 | Avg |
| 2 | 4823.300 | 50.7 | 74.0 | 23.3 | 100.0 | 29.0 | 6.9 | Peak |
| 3 | 7235.600 | 45.1 | 54.0 | 8.9 | 100.0 | 116.0 | 10.2 | Avg |
| 4 | 7235.600 | 54.0 | 74.0 | 20.0 | 100.0 | 116.0 | 10.2 | Peak |

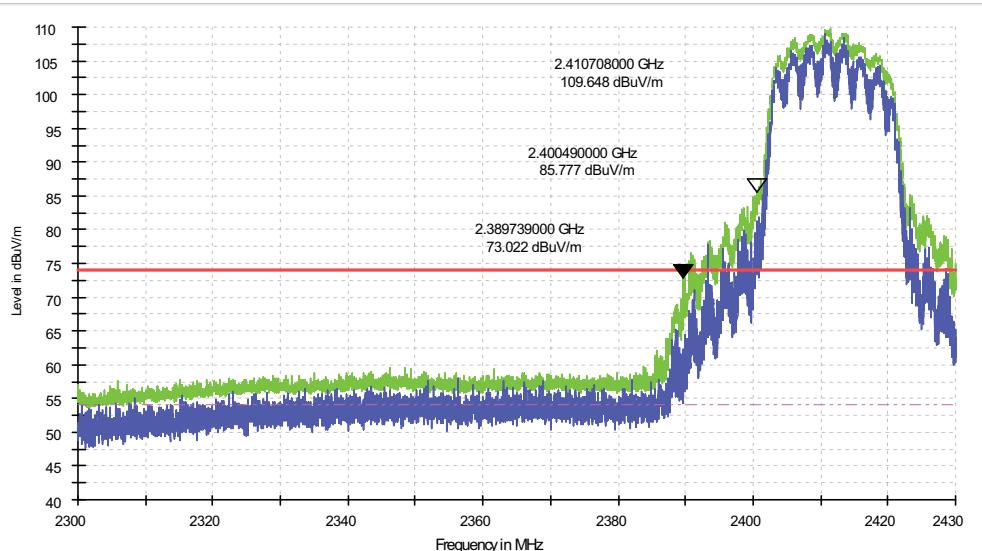
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

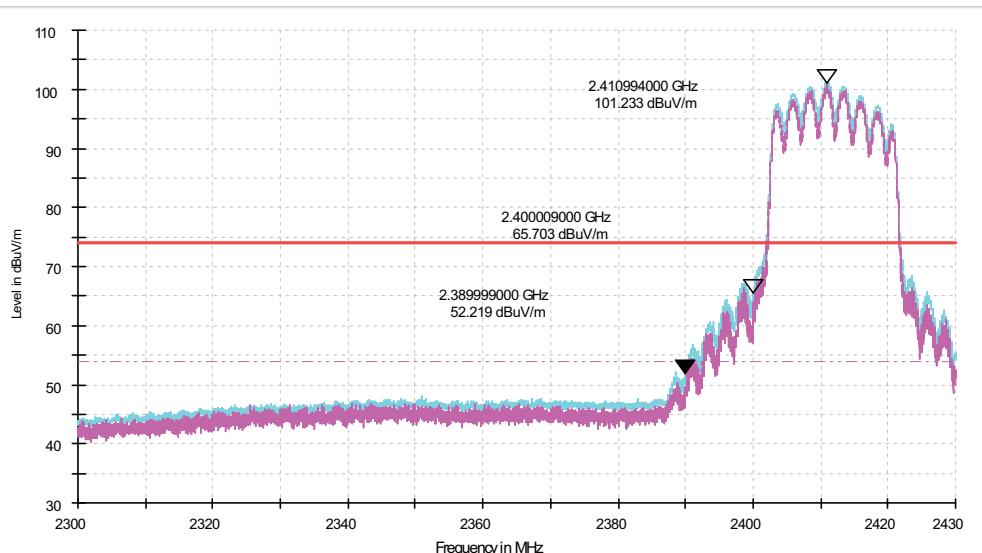
| | | | |
|---|----------------------|--------------------------|-----------|
| Test Mode | 802.11n(HT20) | Channel | CH 1 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) |

Test frequency range :2300 MHz-2430MHz



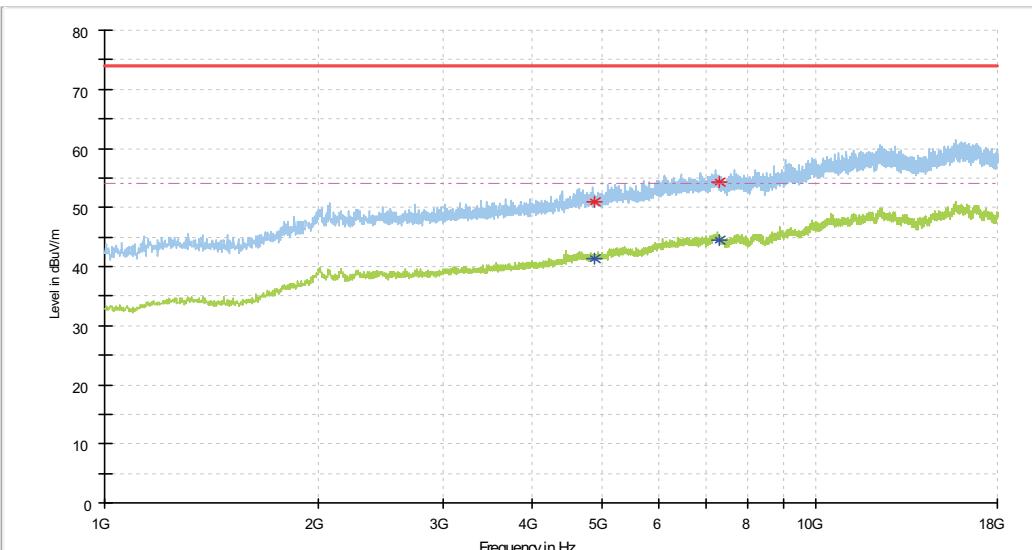
| | | | |
|---|----------------|--------------------------|--------------|
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Average (AV) |
|---|----------------|--------------------------|--------------|

Test frequency range :2300 MHz-2430MHz



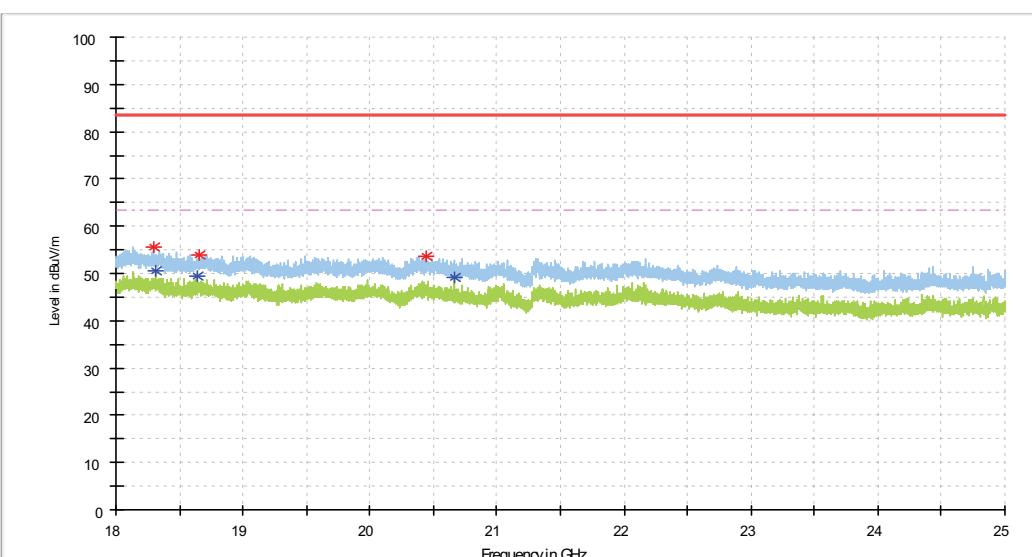
| | | | |
|---|----------------------|--------------------------|---------------------------|
| Test Mode | 802.11n(HT20) | Channel | CH 6 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|--------------|---------------|--------------|------------|
| 1 | 4874.300 | 41.4 | 54.0 | 12.6 | 100.0 | 15.0 | 6.9 | Avg |
| 2 | 4874.300 | 51.1 | 74.0 | 23.0 | 100.0 | 15.0 | 6.9 | Peak |
| 3 | 7310.400 | 54.4 | 74.0 | 19.6 | 100.0 | 122.0 | 9.9 | Peak |
| 4 | 7310.400 | 44.4 | 54.0 | 9.6 | 100.0 | 122.0 | 9.9 | Avg |

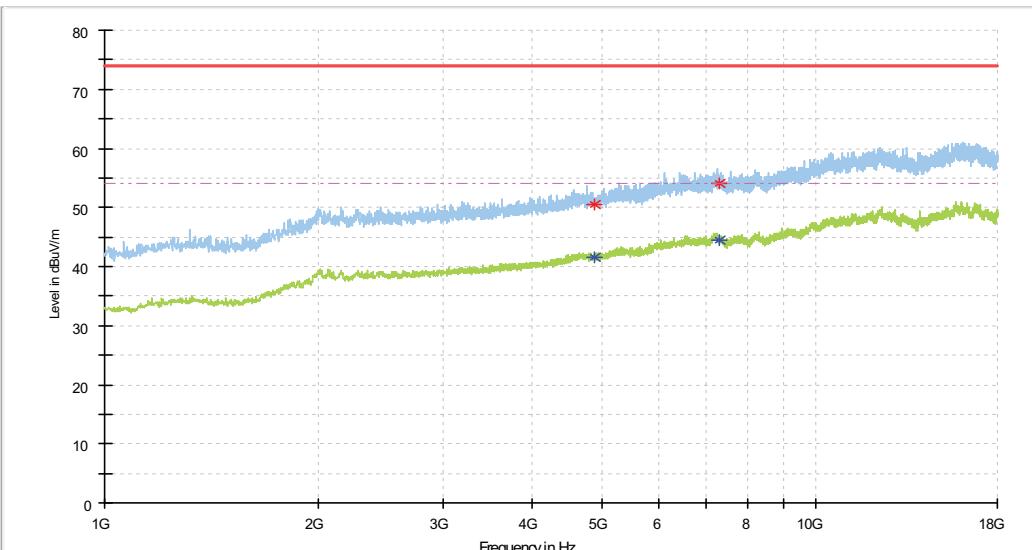
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

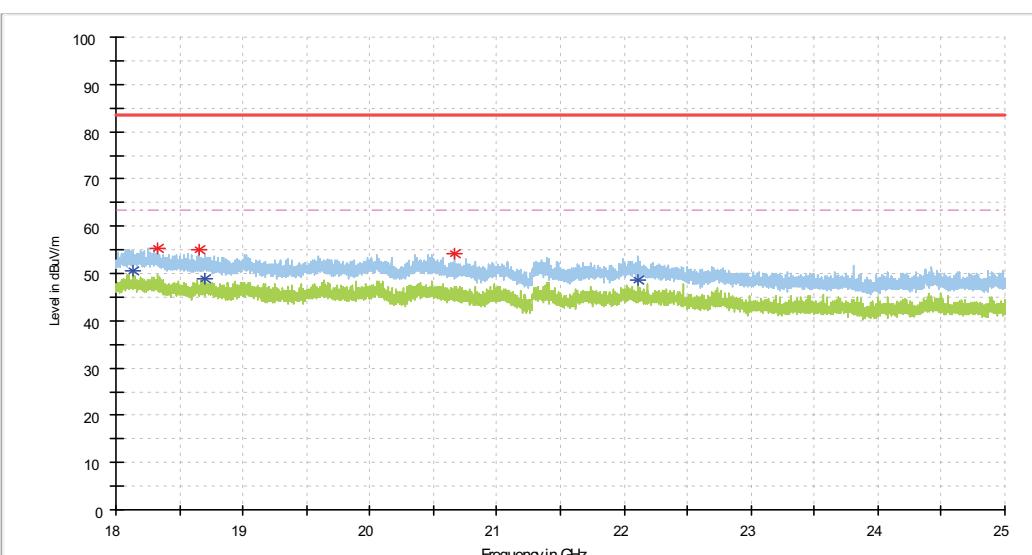
| | | | |
|---|----------------------|--------------------------|---------------------------|
| Test Mode | 802.11n(HT20) | Channel | CH 6 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|--------------|---------------|--------------|------------|
| 1 | 4874.300 | 41.6 | 54.0 | 12.4 | 100.0 | 210.0 | 6.9 | Avg |
| 2 | 4874.300 | 50.6 | 74.0 | 23.4 | 100.0 | 210.0 | 6.9 | Peak |
| 3 | 7312.100 | 44.5 | 54.0 | 9.5 | 100.0 | 314.0 | 9.9 | Avg |
| 4 | 7312.100 | 54.2 | 74.0 | 19.8 | 100.0 | 314.0 | 9.9 | Peak |

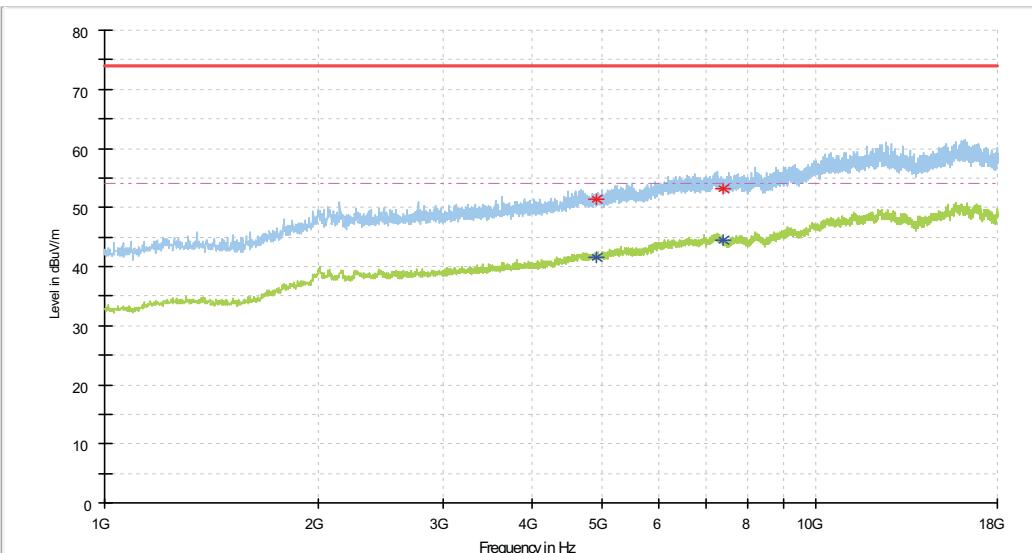
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

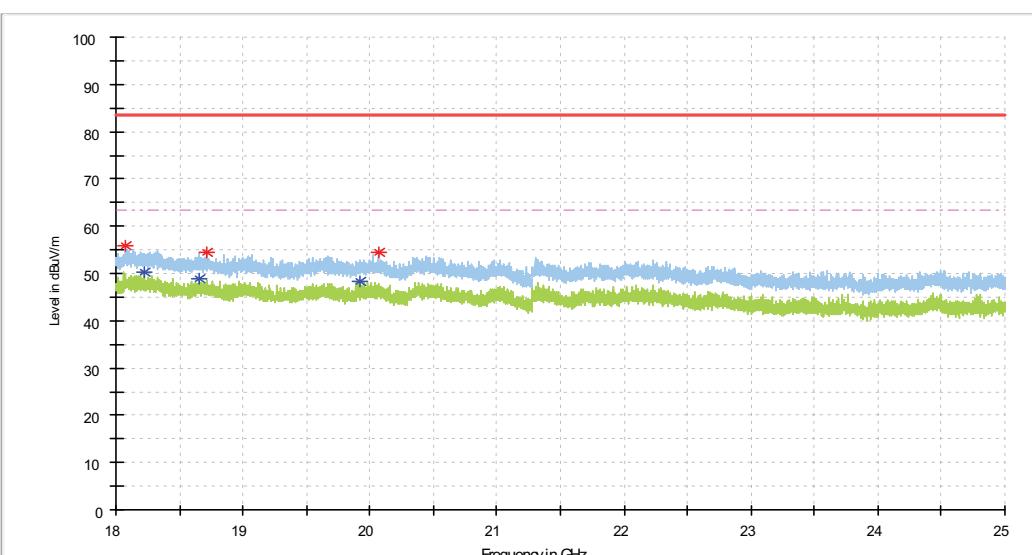
| | | | |
|---|----------------------|--------------------------|---------------------------|
| Test Mode | 802.11n(HT20) | Channel | CH 11 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|--------------|---------------|--------------|--------|
| 1 | 4925.300 | 41.6 | 54.0 | 12.4 | 100.0 | 196.0 | 7.1 | Avg |
| 2 | 4925.300 | 51.3 | 74.0 | 22.7 | 100.0 | 196.0 | 7.1 | Peak |
| 3 | 7386.900 | 44.4 | 54.0 | 9.6 | 100.0 | 169.0 | 10.1 | Avg |
| 4 | 7386.900 | 53.2 | 74.0 | 20.8 | 100.0 | 169.0 | 10.1 | Peak |

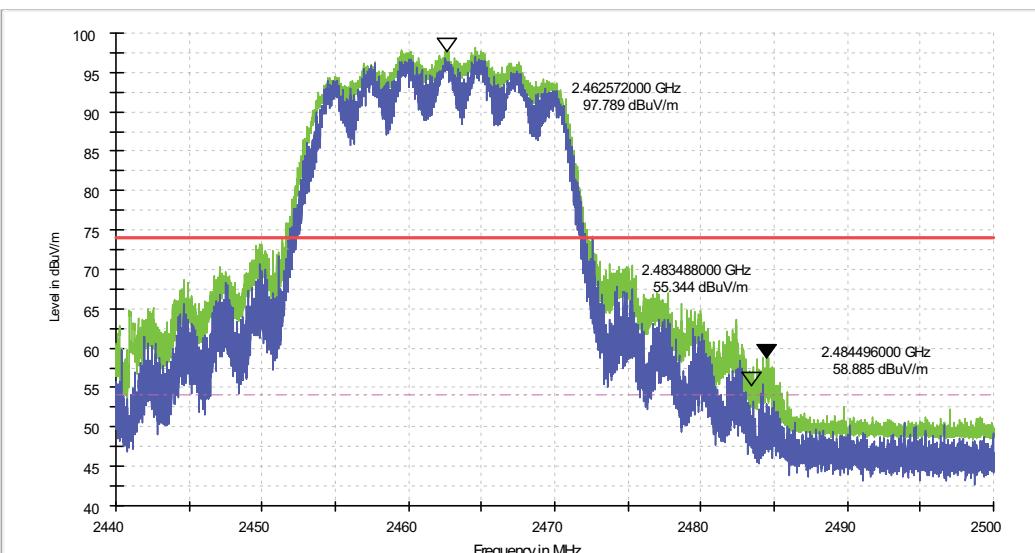
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

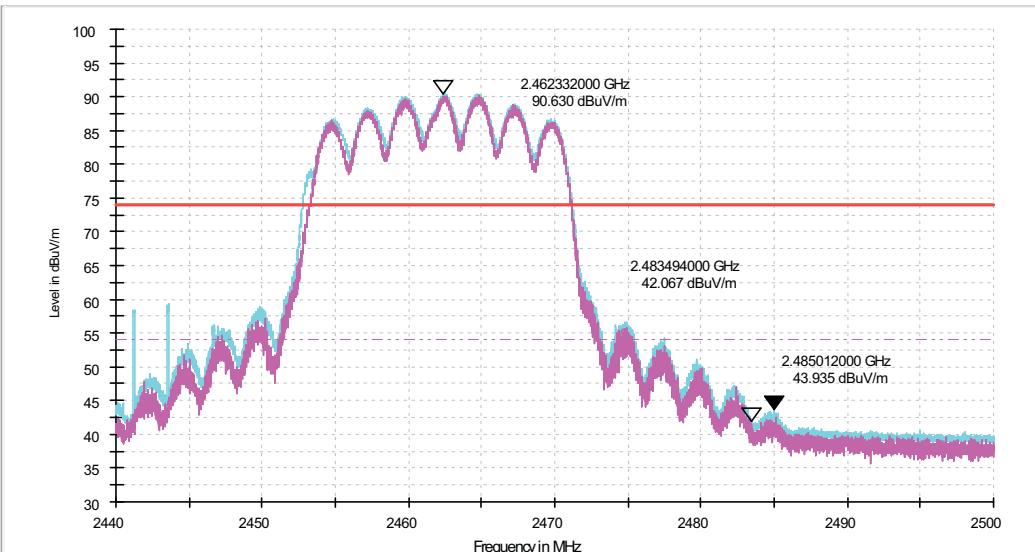
| | | | |
|---|----------------------|--------------------------|-----------|
| Test Mode | 802.11n(HT20) | Channel | CH 11 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) |

Test frequency range :2440 MHz-2500MHz



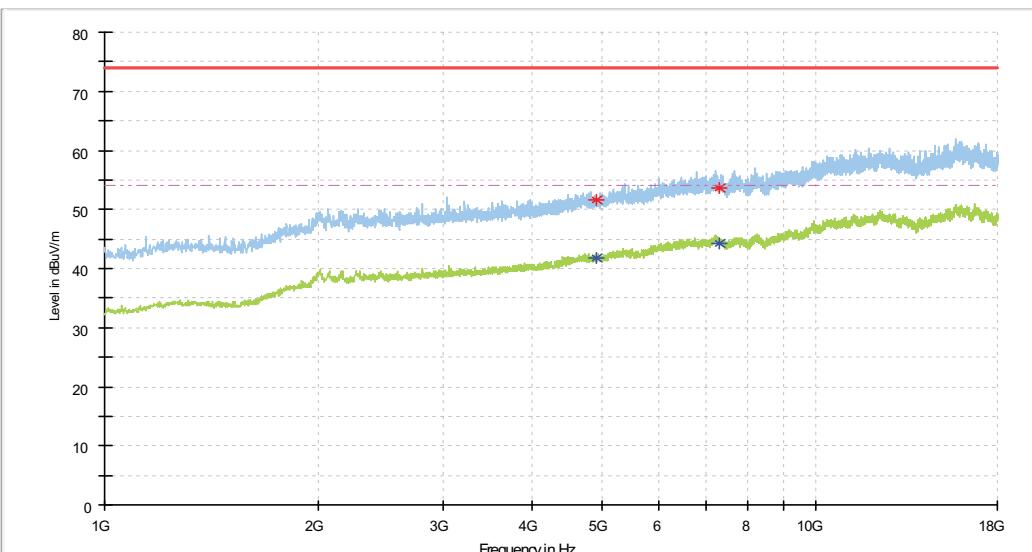
| | | | |
|---|------------------|--------------------------|--------------|
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Average (AV) |
|---|------------------|--------------------------|--------------|

Test frequency range :2440 MHz-2500MHz



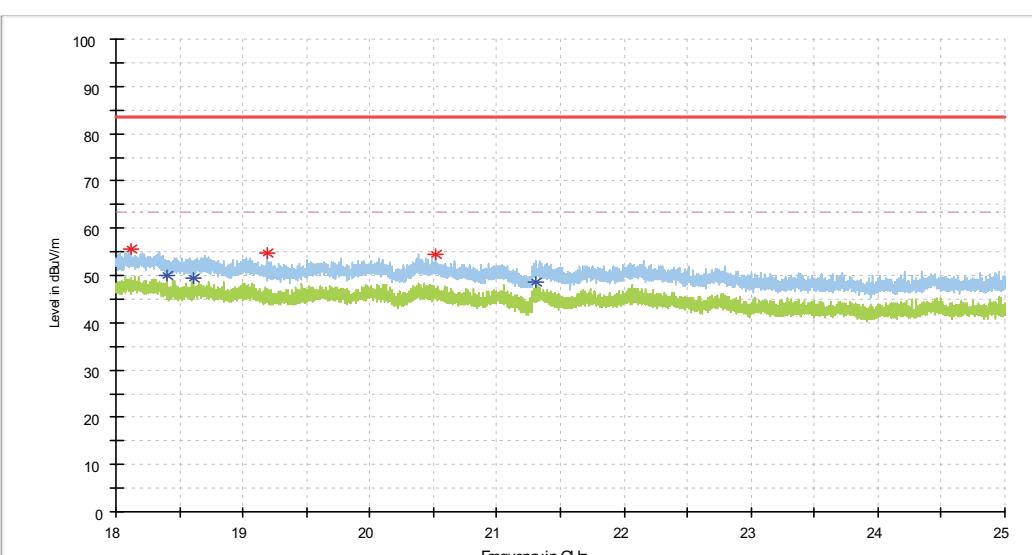
| | | | |
|---|----------------------|--------------------------|---------------------------|
| Test Mode | 802.11n(HT20) | Channel | CH 11 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|--------------|---------------|--------------|------------|
| 1 | 4925.300 | 41.8 | 54.0 | 12.2 | 100.0 | 94.0 | 7.1 | Peak |
| 2 | 4925.300 | 51.7 | 74.0 | 22.3 | 100.0 | 94.0 | 7.1 | Avg |
| 3 | 7327.400 | 44.2 | 54.0 | 9.8 | 100.0 | 30.0 | 9.9 | Avg |
| 4 | 7327.400 | 53.7 | 74.0 | 20.3 | 100.0 | 30.0 | 9.9 | Peak |

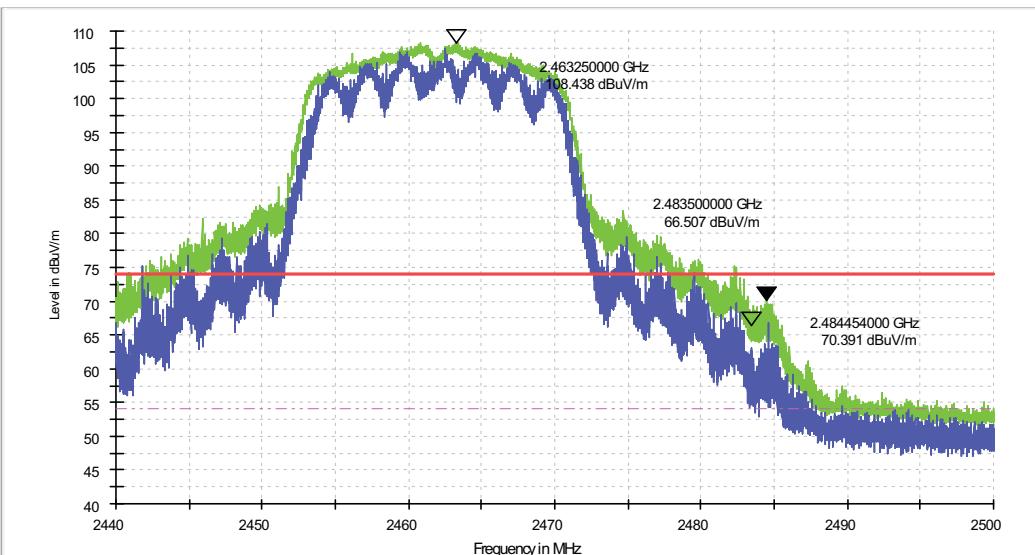
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

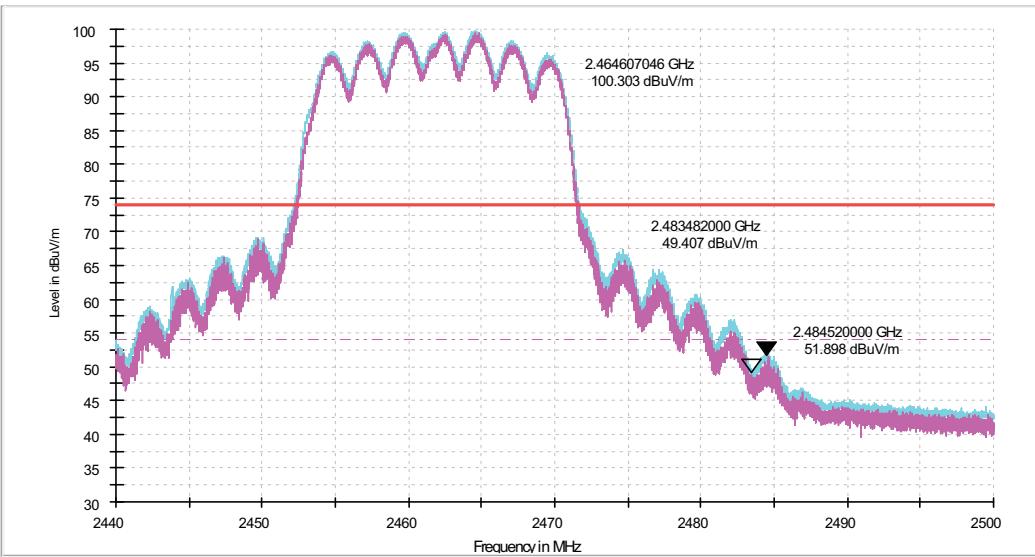
| | | | |
|---|----------------------|--------------------------|-----------|
| Test Mode | 802.11n(HT20) | Channel | CH 11 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) |

Test frequency range :2440 MHz-2500MHz



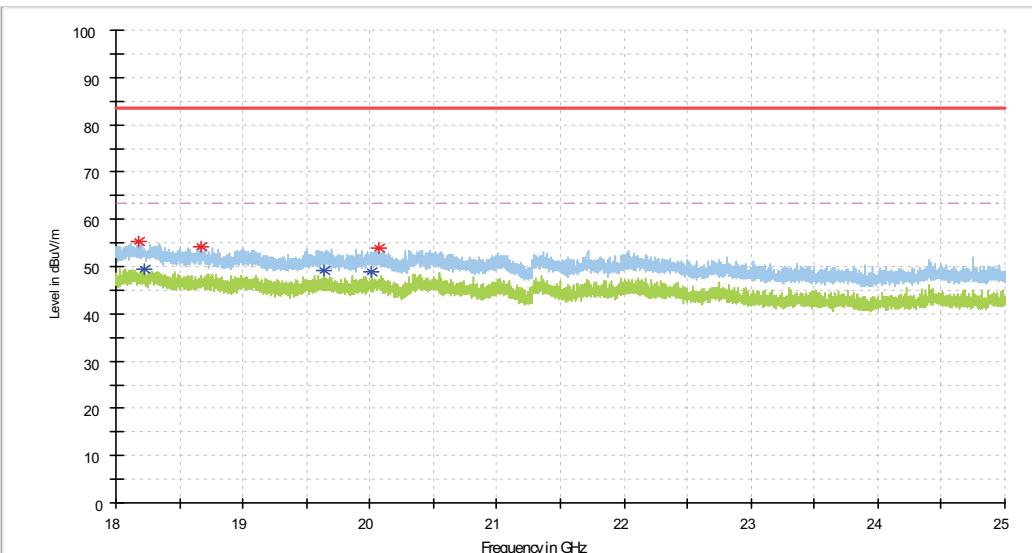
| | | | |
|---|----------------|--------------------------|--------------|
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Average (AV) |
|---|----------------|--------------------------|--------------|

Test frequency range :2440 MHz-2500MHz



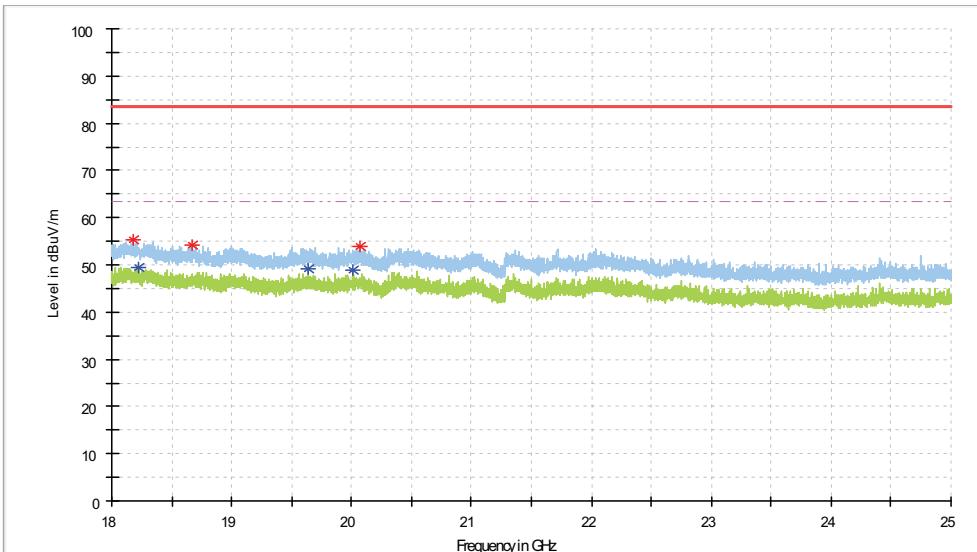
| | | | |
|---|----------------------|--------------------------|---------------------------|
| Test Mode | 802.11n(HT40) | Channel | CH 3 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|------------------|-------------------------|----------------|-------------|--------------|---------------|--------------|------------|
| 1 | 18179.200 | 55.4 | 83.5 | 28.1 | 200.0 | 37.0 | 0.3 | Peak |
| 2 | 20067.800 | 53.8 | 83.5 | 29.7 | 200.0 | 54.0 | 0.9 | Peak |
| 3 | 18672.000 | 54.2 | 83.5 | 29.3 | 100.0 | 108.0 | 0.1 | Peak |
| 4 | 18223.300 | 49.6 | 63.5 | 13.9 | 100.0 | 141.0 | 0.2 | Avg |
| 5 | 19636.600 | 49.1 | 63.5 | 14.4 | 100.0 | 241.0 | 0.9 | Avg |
| 6 | 20017.400 | 49.0 | 63.5 | 14.5 | 100.0 | 294.0 | 0.8 | Avg |

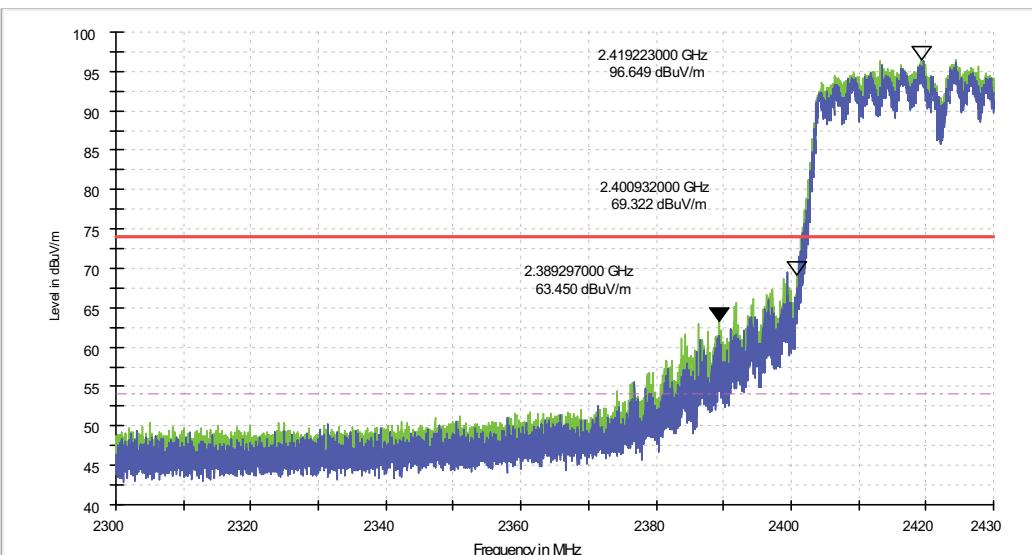
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

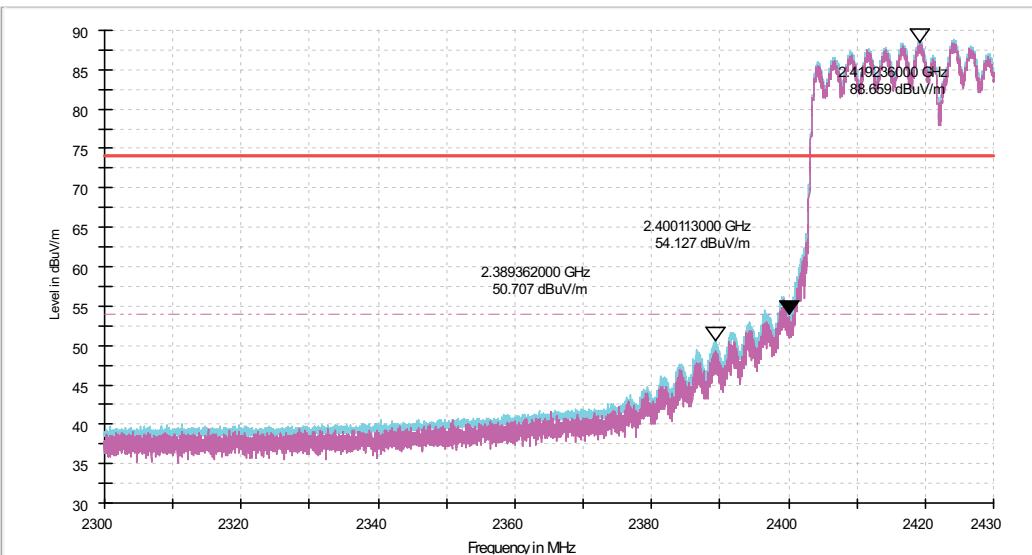
| | | | |
|---|----------------------|--------------------------|-----------|
| Test Mode | 802.11n(HT40) | Channel | CH 3 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) |

Test frequency range :2300 MHz-2430MHz



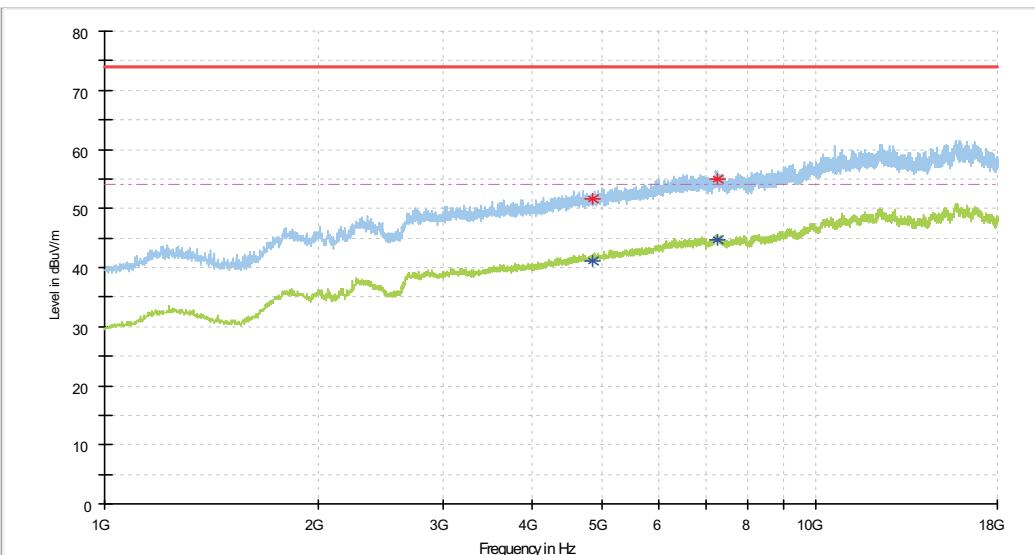
| | | | |
|---|------------------|--------------------------|--------------|
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Average (AV) |
|---|------------------|--------------------------|--------------|

Test frequency range :2300 MHz-2430MHz



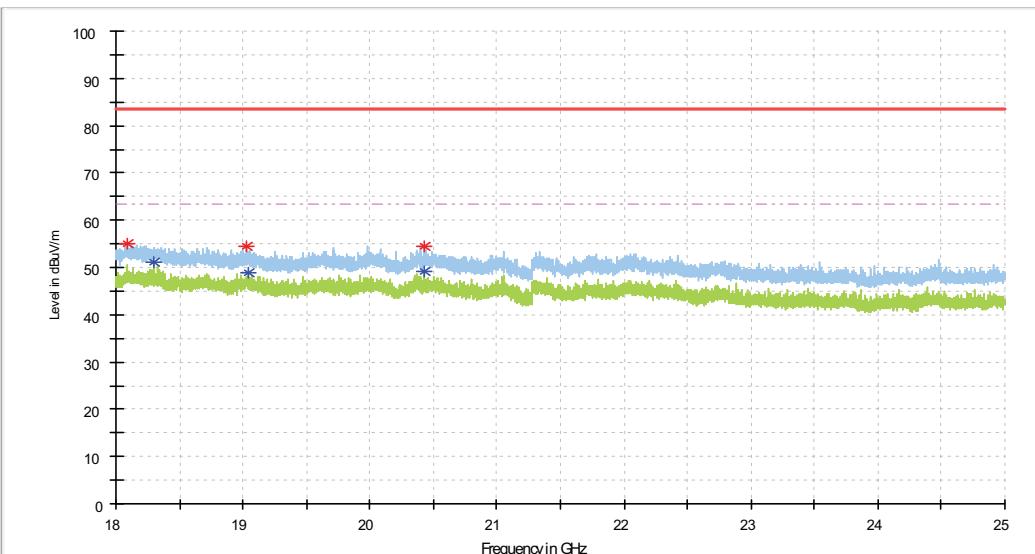
| | | | |
|---|----------------------|--------------------------|---------------------------|
| Test Mode | 802.11n(HT40) | Channel | CH 3 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|-------------|---------------|--------------|--------|
| 1 | 4845.400 | 41.0 | 54.0 | 13.0 | 100.0 | 158.0 | 6.9 | Avg |
| 2 | 4845.400 | 51.6 | 74.0 | 22.4 | 200.0 | 0.0 | 6.9 | Peak |
| 3 | 7266.200 | 44.7 | 54.0 | 9.3 | 200.0 | 206.0 | 10.1 | Avg |
| 4 | 7266.200 | 55.0 | 74.0 | 19.0 | 100.0 | 37.0 | 10.1 | Peak |

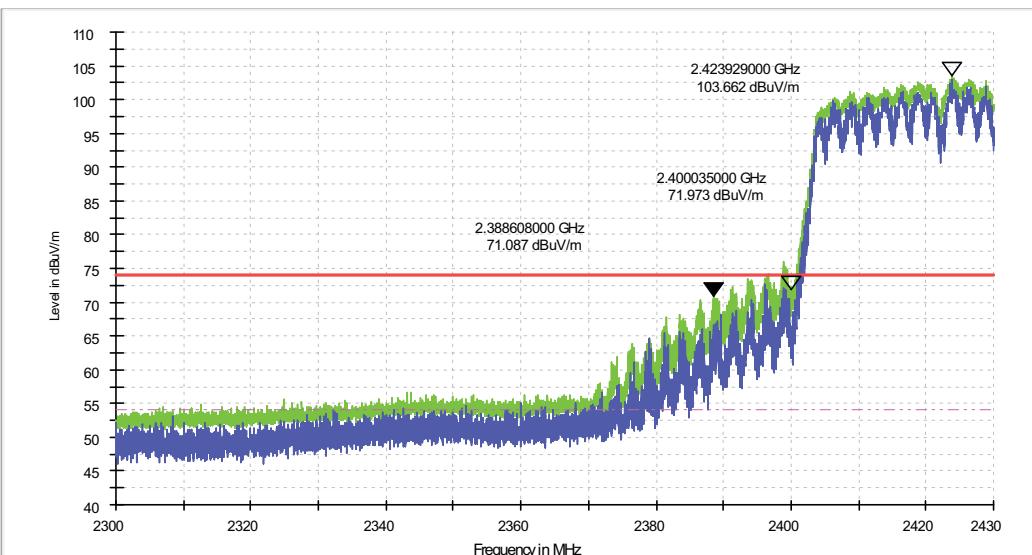
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

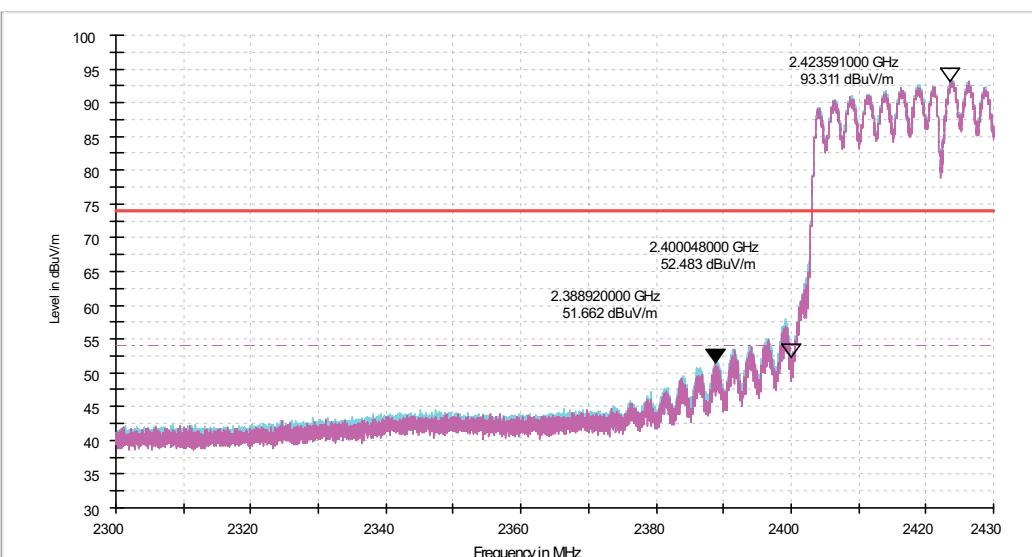
| | | | |
|---|----------------------|--------------------------|-----------|
| Test Mode | 802.11n(HT40) | Channel | CH 3 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) |

Test frequency range :2300 MHz-2430MHz



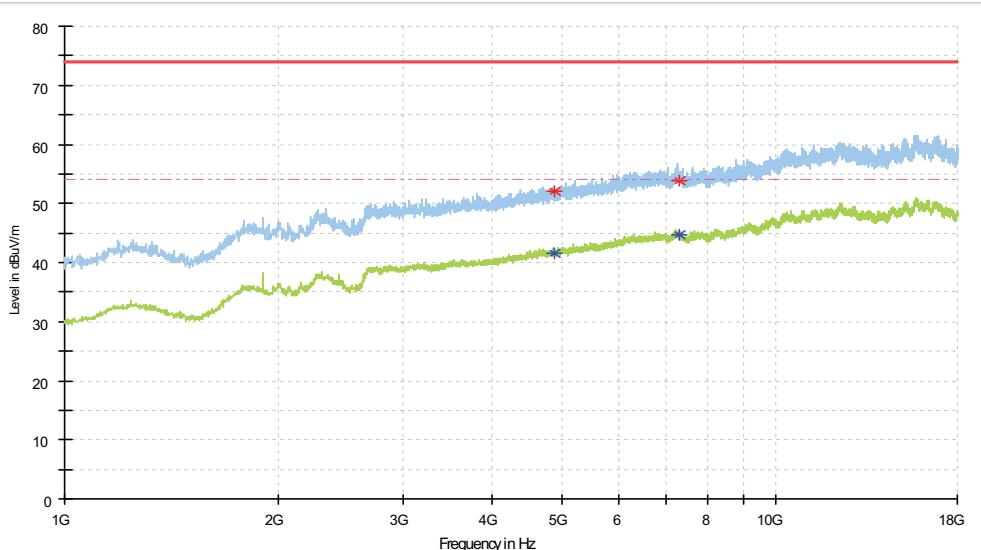
| | | | |
|---|----------------|--------------------------|--------------|
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Average (AV) |
|---|----------------|--------------------------|--------------|

Test frequency range :2300 MHz-2430MHz



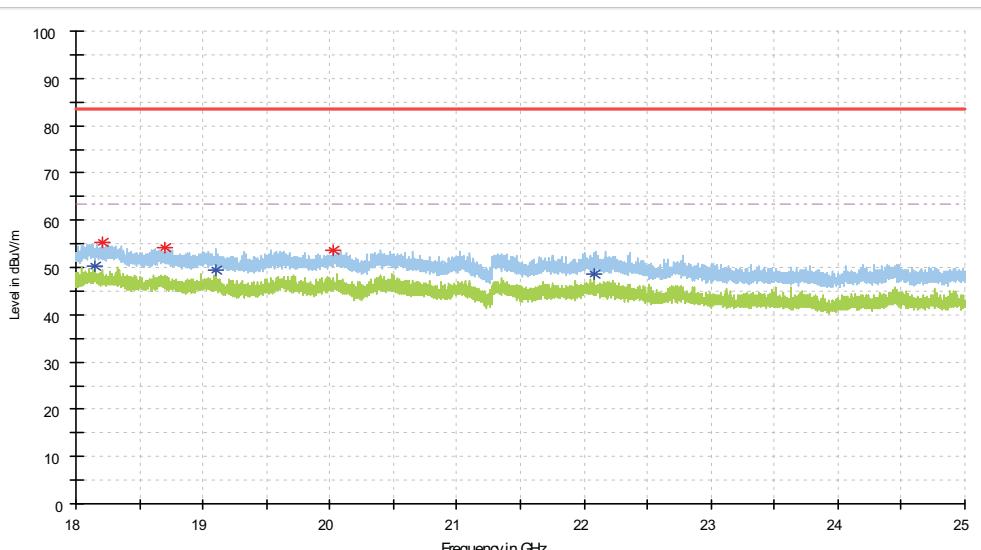
| | | | |
|---|----------------------|--------------------------|---------------------------|
| Test Mode | 802.11n(HT40) | Channel | CH 6 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|--------------|---------------|--------------|------------|
| 1 | 4874.300 | 41.5 | 54.0 | 12.5 | 100.0 | 120.0 | 6.9 | Avg |
| 2 | 4874.300 | 52.1 | 74.0 | 21.9 | 100.0 | 120.0 | 6.9 | Peak |
| 3 | 7311.400 | 44.7 | 54.0 | 9.3 | 200.0 | 5.0 | 9.9 | Avg |
| 4 | 7311.400 | 53.9 | 74.0 | 20.1 | 200.0 | 5.0 | 9.9 | Peak |

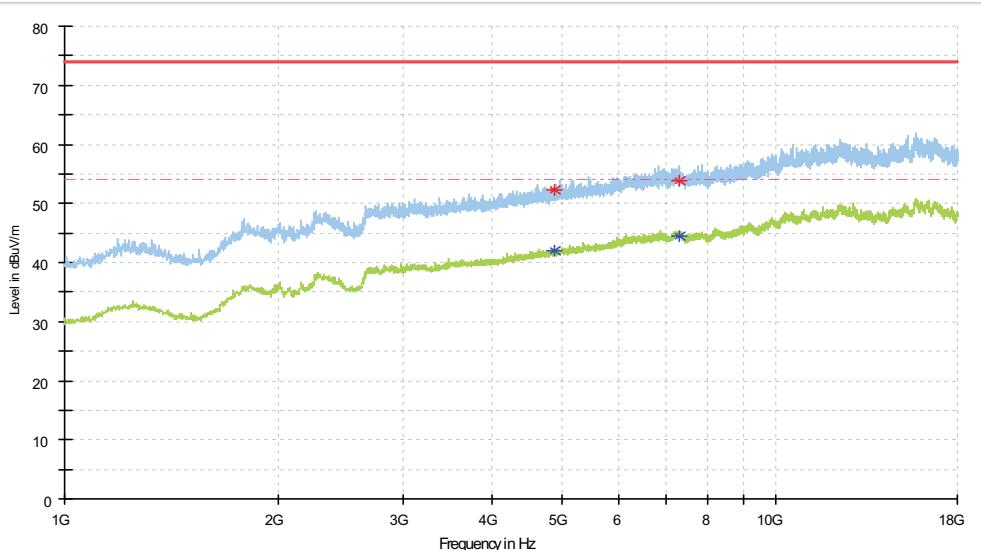
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

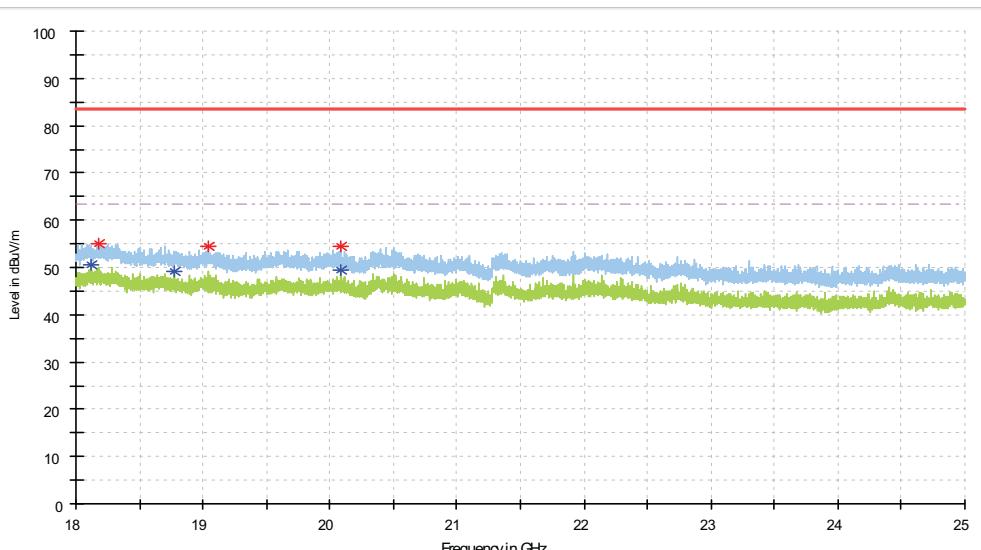
| | | | |
|---|----------------------|--------------------------|---------------------------|
| Test Mode | 802.11n(HT40) | Channel | CH 6 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|--------------|---------------|--------------|------------|
| 1 | 4874.300 | 42.1 | 54.0 | 11.9 | 200.0 | 80.0 | 6.9 | Avg |
| 2 | 4874.300 | 52.3 | 74.0 | 21.7 | 200.0 | 80.0 | 6.9 | Peak |
| 3 | 7311.100 | 44.5 | 54.0 | 9.5 | 200.0 | 281.0 | 9.9 | Avg |
| 4 | 7311.100 | 54.0 | 74.0 | 20.0 | 200.0 | 281.0 | 9.9 | Peak |

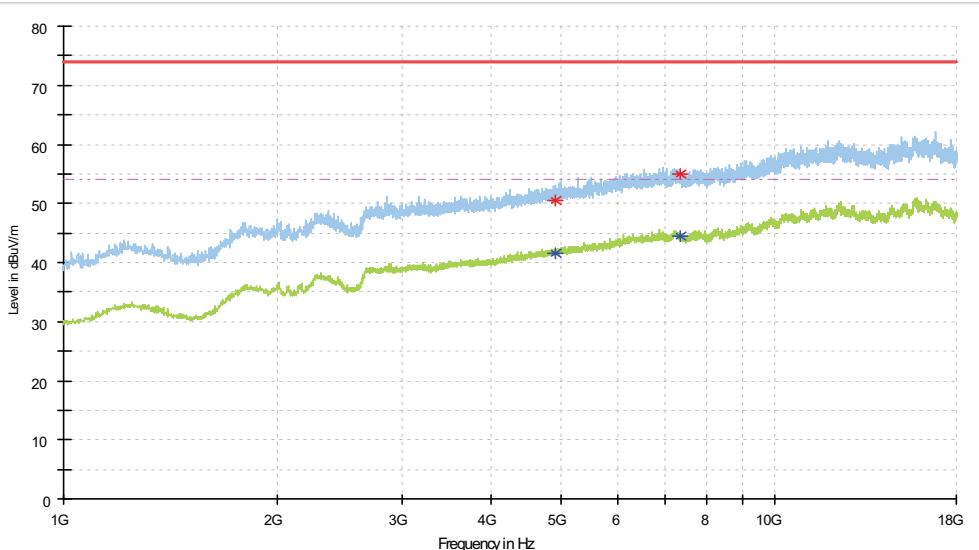
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

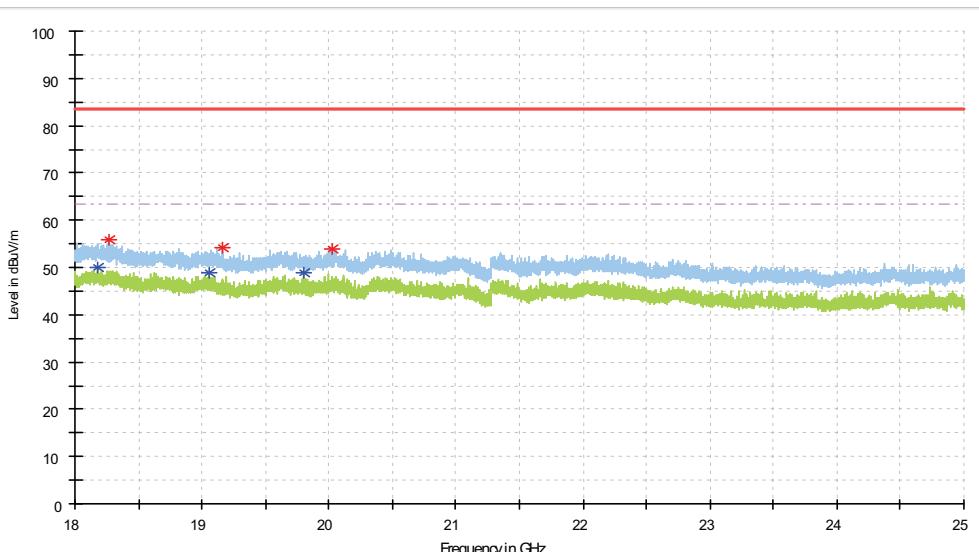
| | | | |
|---|----------------------|--------------------------|---------------------------|
| Test Mode | 802.11n(HT40) | Channel | CH 9 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G



| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|-------------|---------------|--------------|--------|
| 1 | 4904.200 | 41.6 | 54.0 | 12.4 | 100.0 | 279.0 | 7.0 | Avg |
| 2 | 4904.600 | 50.6 | 74.0 | 23.4 | 200.0 | 12.0 | 7.0 | Peak |
| 3 | 7356.900 | 44.5 | 54.0 | 9.5 | 100.0 | 0.0 | 10.0 | Avg |
| 4 | 7356.600 | 54.9 | 74.0 | 19.1 | 200.0 | 330.0 | 10.0 | Peak |

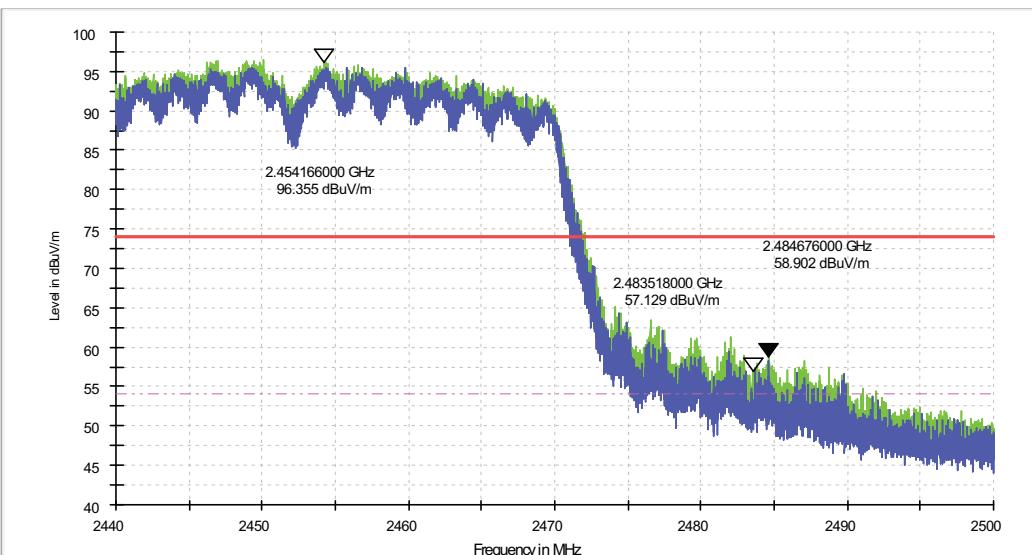
Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

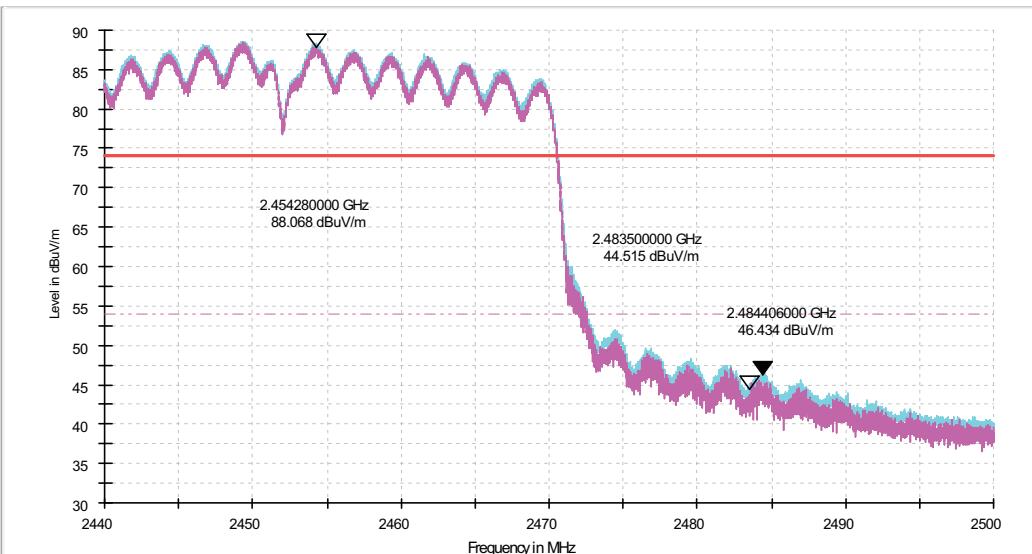
| | | | |
|---|----------------------|--------------------------|-----------|
| Test Mode | 802.11n(HT40) | Channel | CH 9 |
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Peak (PK) |

Test frequency range :2440 MHz-2500MHz



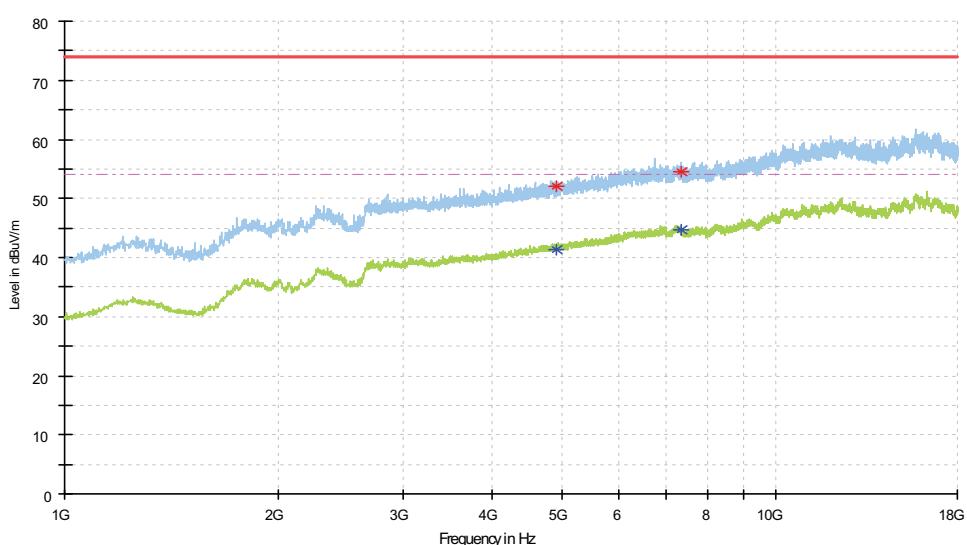
| | | | |
|---|------------------|--------------------------|--------------|
| Antenna Polarity & Test Distance | Horizontal at 3m | Detector Function | Average (AV) |
|---|------------------|--------------------------|--------------|

Test frequency range :2440 MHz-2500MHz



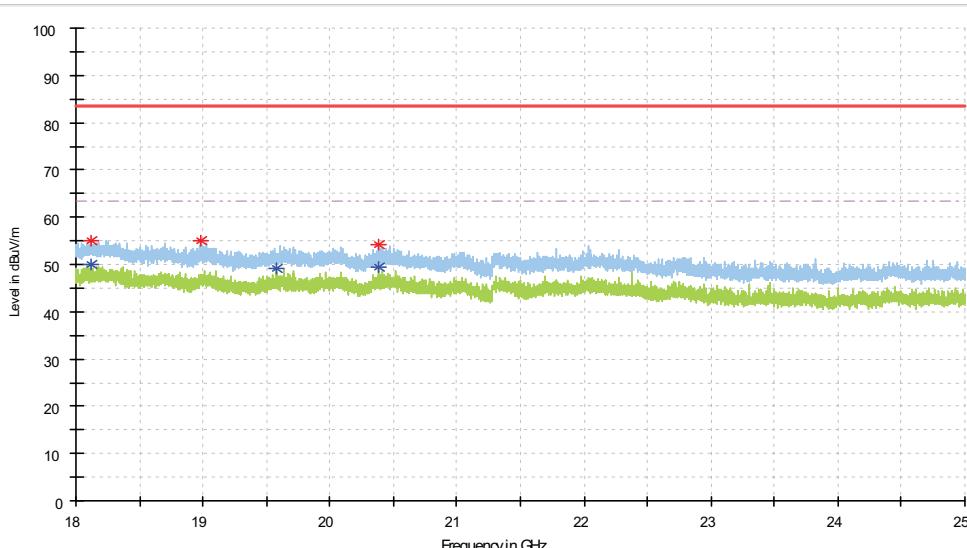
| | | | |
|---|----------------------|--------------------------|---------------------------|
| Test Mode | 802.11n(HT40) | Channel | CH 9 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) Average (AV) |

Test frequency range :1G-18G

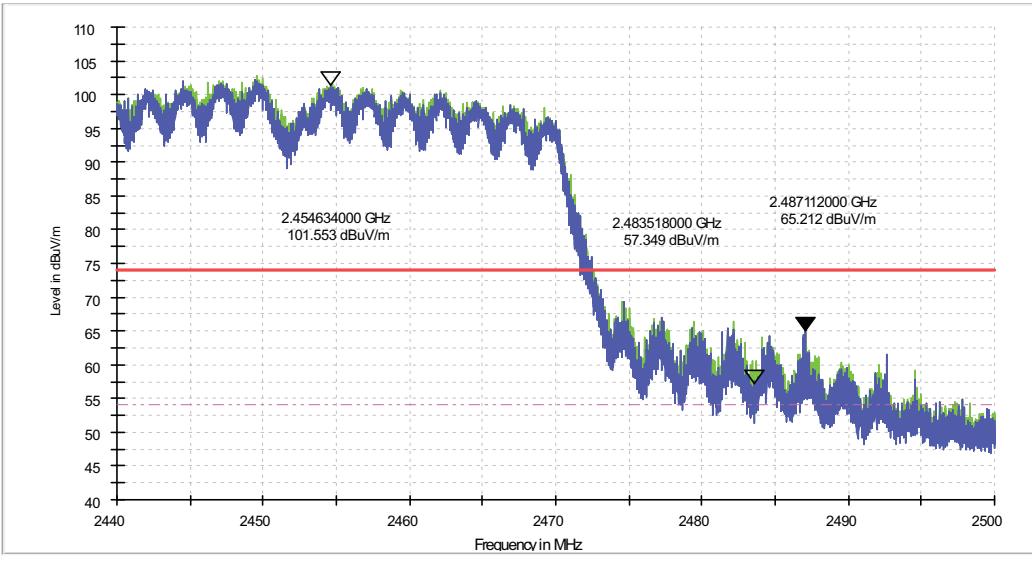
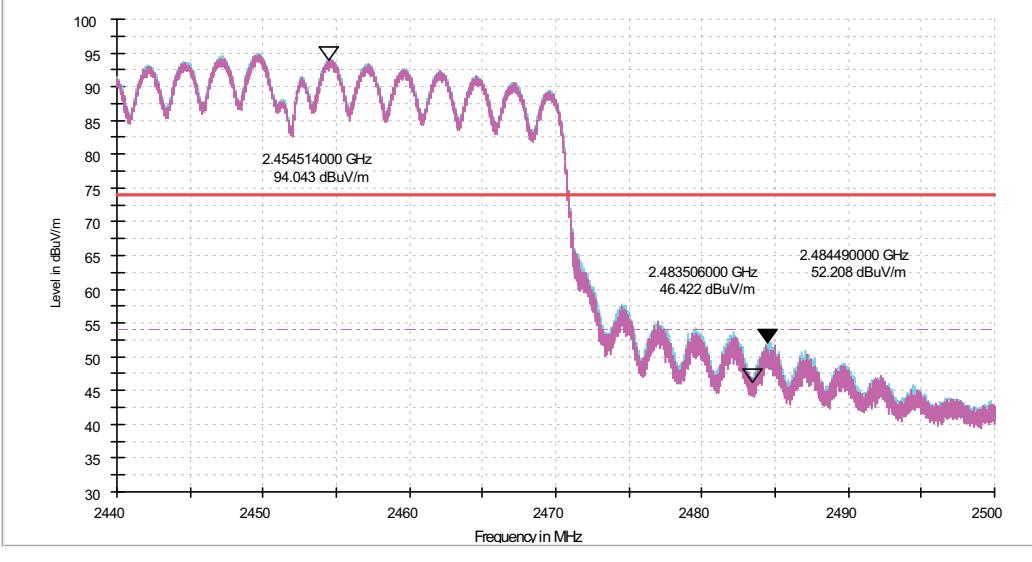


| NO. | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Corr. (dB/m) | Remark |
|-----|-----------------|-------------------------|----------------|-------------|-------------|---------------|--------------|--------|
| 1 | 4904.400 | 41.4 | 54.0 | 12.6 | 200.0 | 96.0 | 7.0 | Avg |
| 2 | 4904.400 | 52.0 | 74.0 | 22.0 | 200.0 | 96.0 | 7.0 | Peak |
| 3 | 7356.300 | 44.7 | 54.0 | 9.3 | 200.0 | 11.0 | 10.0 | Avg |
| 4 | 7356.300 | 54.6 | 74.0 | 19.4 | 200.0 | 11.0 | 10.0 | Peak |

Test frequency range :18G-25G



Remark: The emission levels of other frequencies were greater than 10dB margin.

| | | | |
|--|----------------------|--------------------------|--------------|
| Test Mode | 802.11n(HT40) | Channel | CH 9 |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Peak (PK) |
| Test frequency range :2440 MHz-2500MHz | | | |
|  | | | |
| Antenna Polarity & Test Distance | Vertical at 3m | Detector Function | Average (AV) |
| Test frequency range :2440 MHz-2500MHz | | | |
|  | | | |

3.2 6dB BANDWIDTH MEASUREMENT

3.2.1 Limits

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

3.2.2 Measurement procedure

- a. Set resolution bandwidth (RBW) = 100KHz
- b. Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- c. Trace mode = max hold.
- d. Sweep = auto couple.
- e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3.2.3 Test setup





3.2.4 Test result

Please refer Annex A.

3.3 CONDUCTED OUTPUT POWER

3.3.1 Limits

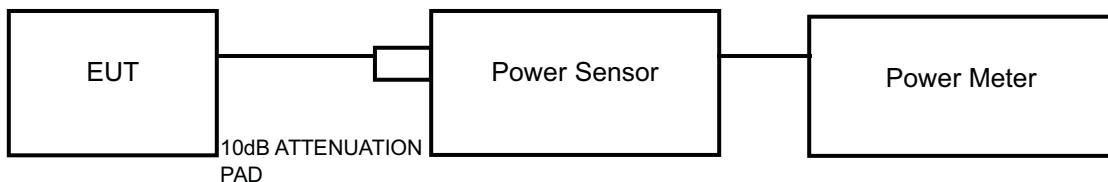
For systems using digital modulation in the 2400–2483.5 MHz band: 1 Watt (30dBm).

3.3.2 Measurement procedure

- a. A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor and set the detector to PEAK. Record the power level.
- b. An average power sensor was used on the output port of the EUT. A power meter was used to read the response of the average power sensor and set the detector to AVERAGE. Record the power level.

3.3.3 Test setup

Please refer Annex A.





3.3.4 Test result

Please refer Annex A.

3.4 POWER SPECTRAL DENSITY MEASUREMENT

3.4.1 Limits

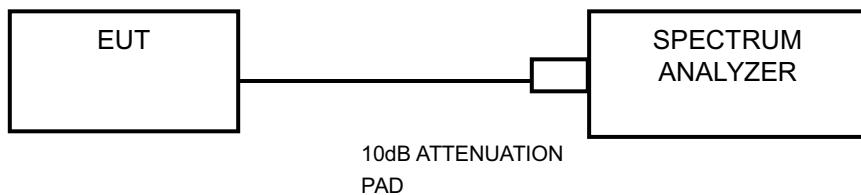
The Maximum of Power Spectral Density Measurement is 8dBm/3KHz.

3.4.2 Measurement procedure

- a. Set instrument center frequency to DTS channel center frequency.
- b. Set the span to 1.5 times the DTS bandwidth.
- c. Set RBW to: 3KHz
- d. Set VBW $\geq 3 \times$ RBW.
- e. Detector = peak
- f. Ensure that the number of measurement points in the sweep $\geq 2 \times$ span/RBW.
- g. Sweep time = auto couple.
- h. Use the peak marker function to determine the maximum amplitude level.

3.4.3 Test setup

Please refer Annex A.





3.4.4 Test result

Please refer Annex A.

3.5 OUT OF BAND EMISSION MEASUREMENT

3.5.1 Limits

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

3.5.2 Measurement procedure

Measurement Procedure -Reference Level

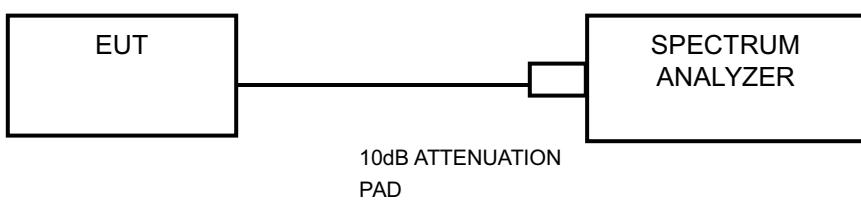
- a. Set the RBW = 100 kHz.
- b. Set the VBW \geq 300 kHz.
- c. Detector = peak.
- d. Sweep time = auto couple.
- e. Trace mode = max hold.
- f. Allow trace to fully stabilize.
- g. Use the peak marker function to determine the maximum power level in any 100 kHzband segment within the fundamental EBW.

Measurement Procedure –Unwanted Emission Level

- a. Set RBW = 100 kHz.
- b. Set VBW \geq 300 kHz.
- c. Set span to encompass the spectrum to be examined
- d. Detector = peak.
- e. Trace Mode = max hold.
- f. Sweep = auto couple.

3.5.3 Test setup

Please refer Annex A.





3.5.4 Test result

Please refer Annex A.



4 PHOTOGRAPHS OF TEST SETUP

Please refer to the attached file (Test Setup Photo).



5 Appendix A. Test Results

Please refer to the following pages for test results.

**5.1 DTS Bandwidth****5.1.1 Test Result**

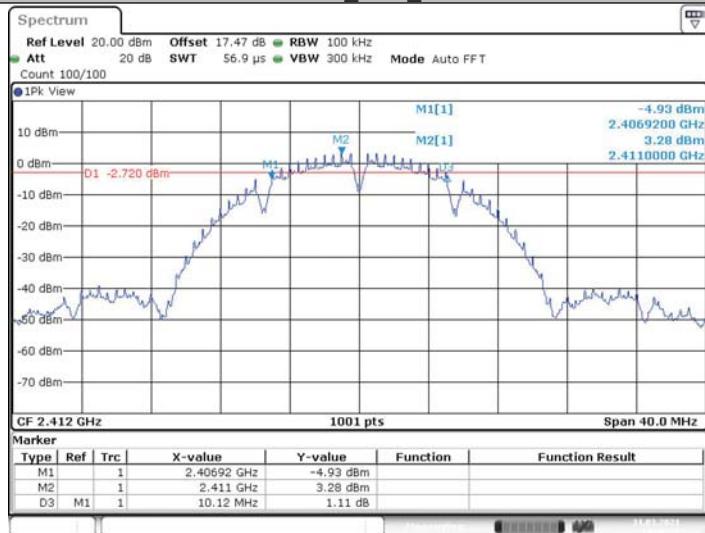
| TestMode | Antenna | Channel | DTS BW [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|-----------|---------|---------|--------------|----------|----------|------------|---------|
| 11B-CDD | Ant1 | 2412 | 10.120 | 2406.920 | 2417.040 | 0.5 | PASS |
| | Ant2 | 2412 | 9.160 | 2407.400 | 2416.560 | 0.5 | PASS |
| | Ant1 | 2437 | 9.640 | 2431.920 | 2441.560 | 0.5 | PASS |
| | Ant2 | 2437 | 9.640 | 2431.920 | 2441.560 | 0.5 | PASS |
| | Ant1 | 2462 | 10.120 | 2456.920 | 2467.040 | 0.5 | PASS |
| | Ant2 | 2462 | 10.120 | 2456.920 | 2467.040 | 0.5 | PASS |
| 11G-CDD | Ant1 | 2412 | 16.400 | 2403.800 | 2420.200 | 0.5 | PASS |
| | Ant2 | 2412 | 16.400 | 2403.800 | 2420.200 | 0.5 | PASS |
| | Ant1 | 2437 | 16.160 | 2428.760 | 2444.920 | 0.5 | PASS |
| | Ant2 | 2437 | 16.400 | 2428.760 | 2445.160 | 0.5 | PASS |
| | Ant1 | 2462 | 16.400 | 2453.800 | 2470.200 | 0.5 | PASS |
| | Ant2 | 2462 | 16.400 | 2453.800 | 2470.200 | 0.5 | PASS |
| 11N20MIMO | Ant1 | 2412 | 17.640 | 2403.160 | 2420.800 | 0.5 | PASS |
| | Ant2 | 2412 | 17.640 | 2403.160 | 2420.800 | 0.5 | PASS |
| | Ant1 | 2437 | 17.400 | 2428.160 | 2445.560 | 0.5 | PASS |
| | Ant2 | 2437 | 17.040 | 2428.160 | 2445.200 | 0.5 | PASS |
| | Ant1 | 2462 | 17.640 | 2453.160 | 2470.800 | 0.5 | PASS |
| | Ant2 | 2462 | 17.000 | 2453.800 | 2470.800 | 0.5 | PASS |
| 11N40MIMO | Ant1 | 2422 | 35.200 | 2403.760 | 2438.960 | 0.5 | PASS |
| | Ant2 | 2422 | 34.560 | 2403.760 | 2438.320 | 0.5 | PASS |
| | Ant1 | 2437 | 36.080 | 2418.760 | 2454.840 | 0.5 | PASS |
| | Ant2 | 2437 | 35.200 | 2418.760 | 2453.960 | 0.5 | PASS |
| | Ant1 | 2452 | 36.240 | 2433.760 | 2470.000 | 0.5 | PASS |
| | Ant2 | 2452 | 35.200 | 2433.760 | 2468.960 | 0.5 | PASS |

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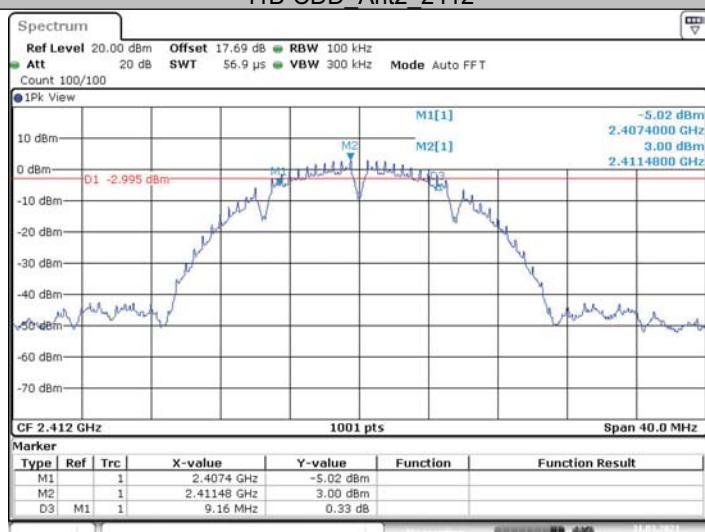
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5.1.2 Test Graphs

11B-CDD_Ant1_2412



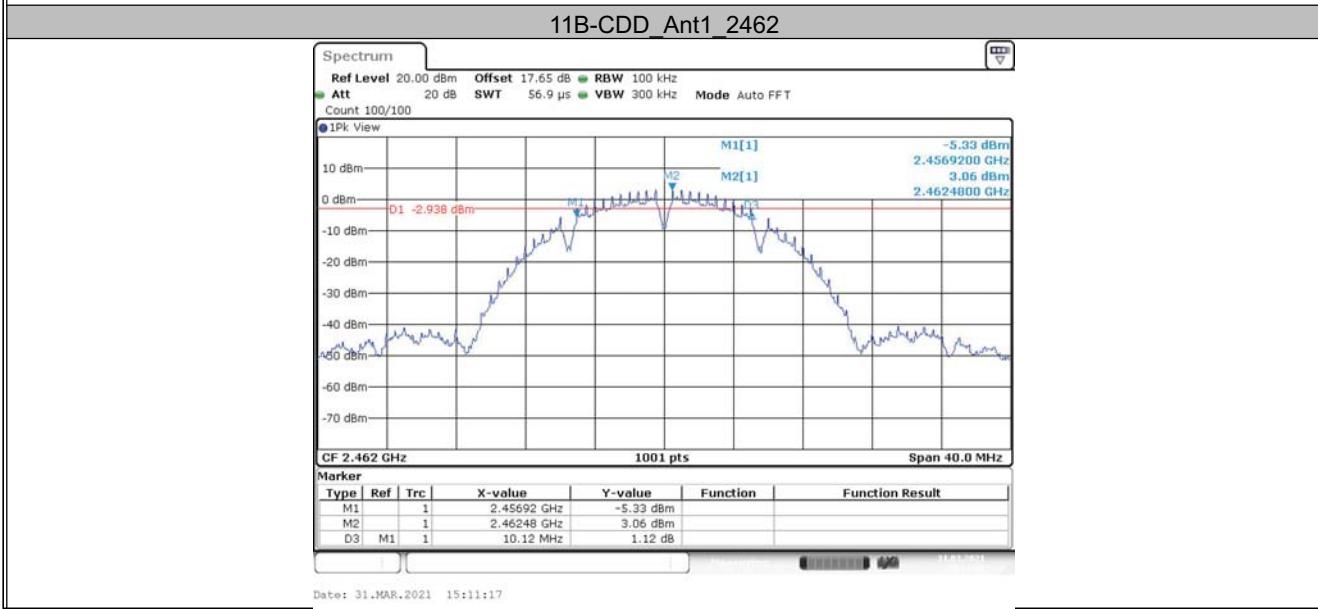
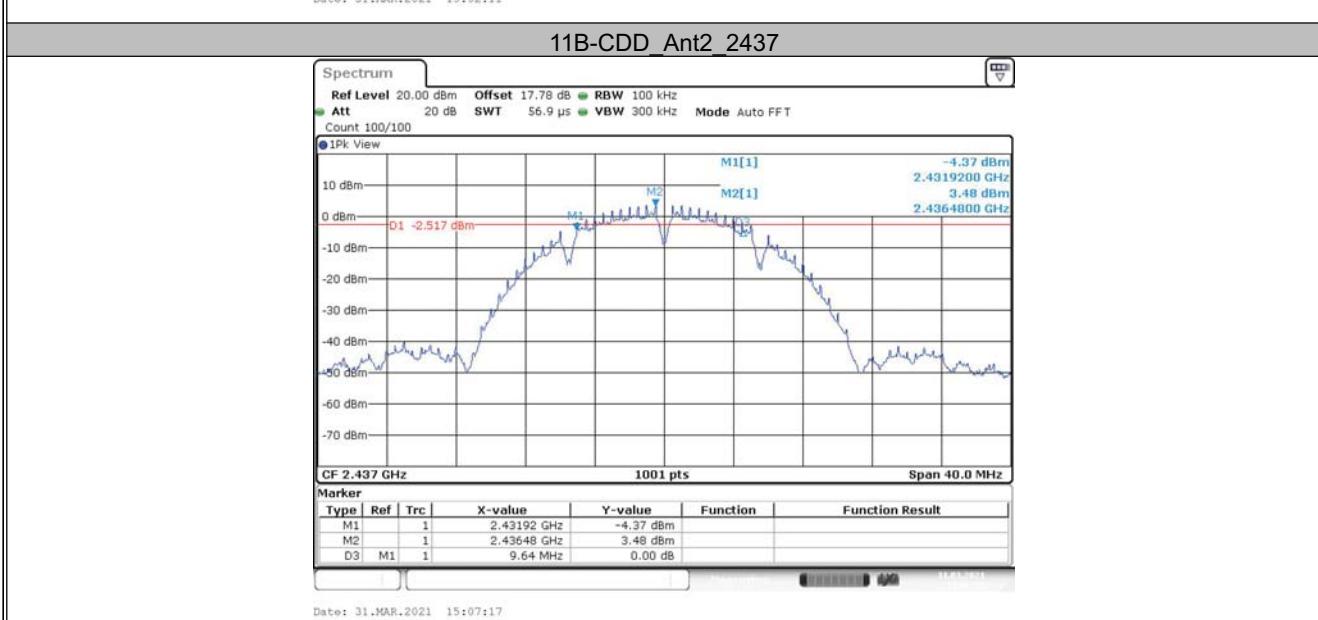
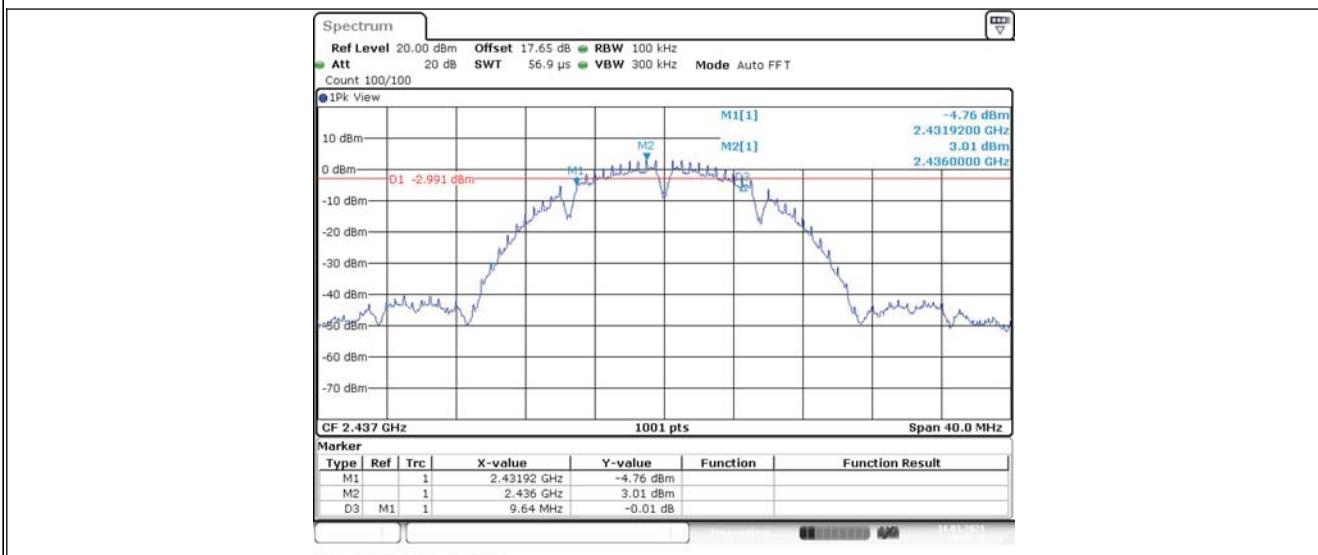
11B-CDD_Ant2_2412



11B-CDD_Ant1_2437

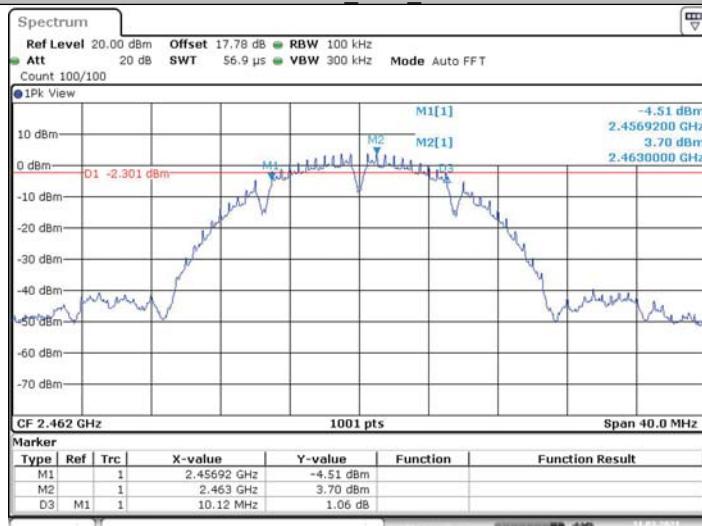
Test Report No.: FCC2021-0008-4

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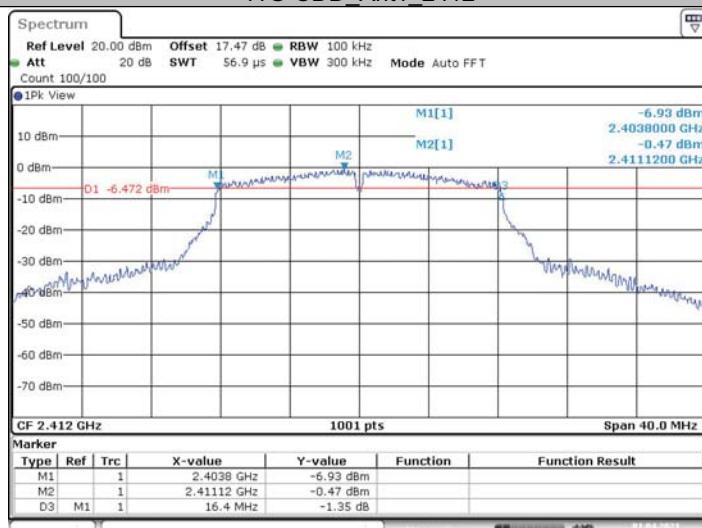


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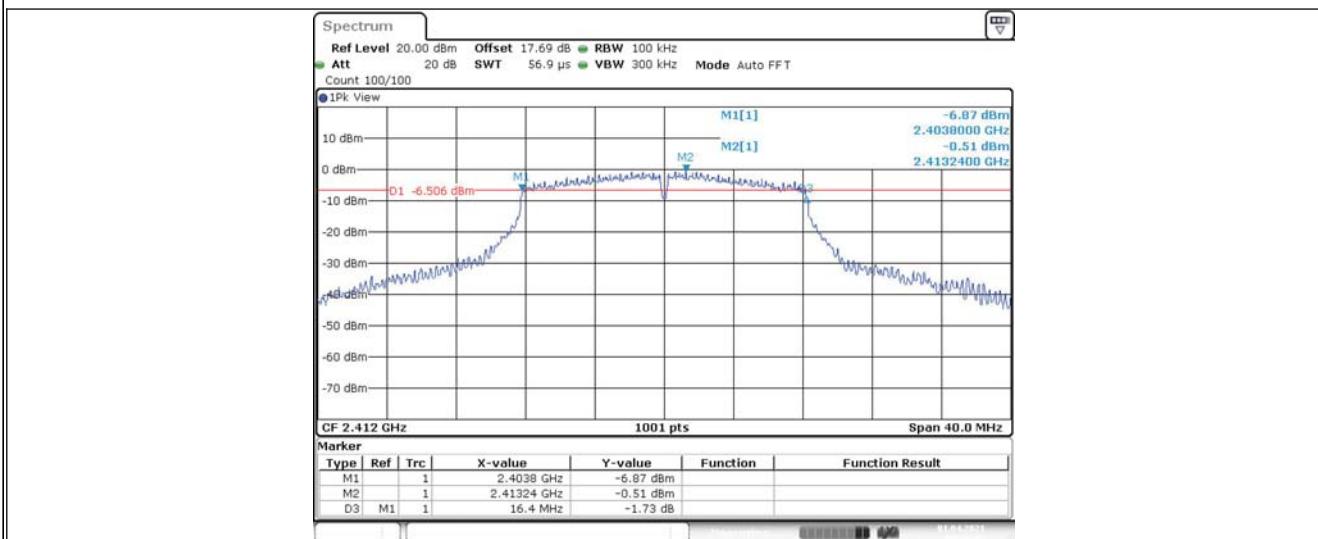
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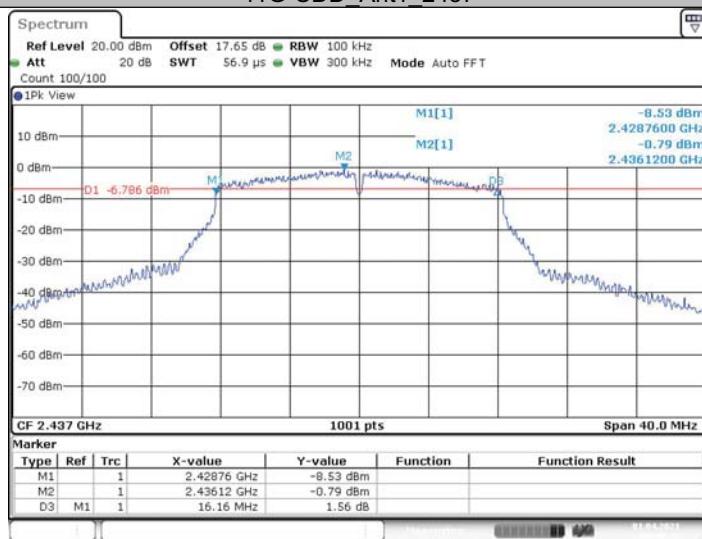
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Test Report No.: FCC2021-0008-4

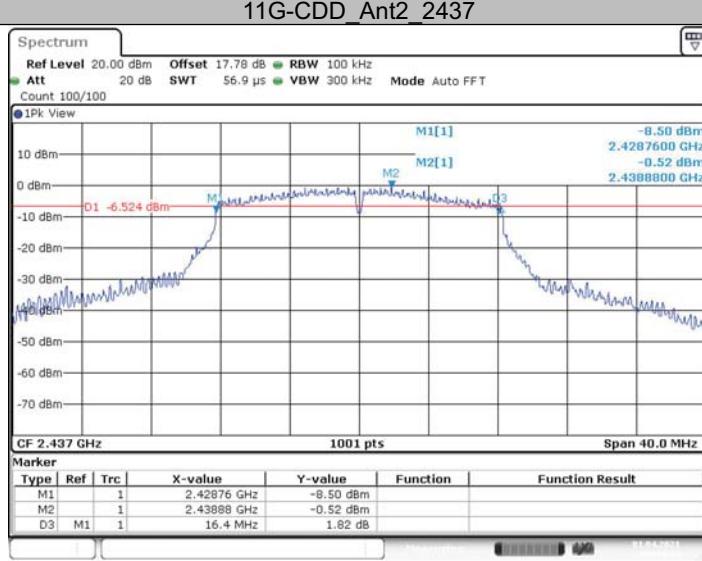
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11G-CDD_Ant1_2437



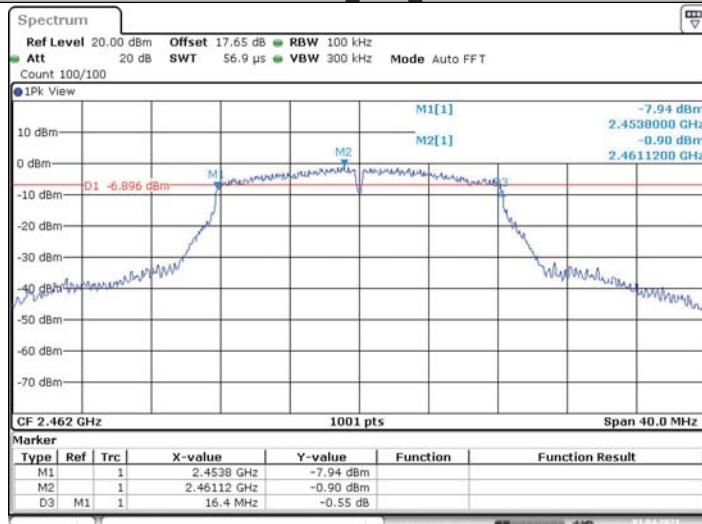
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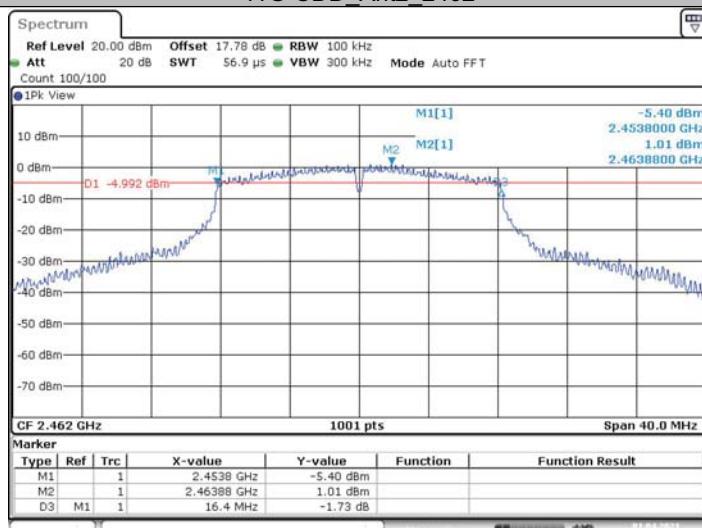
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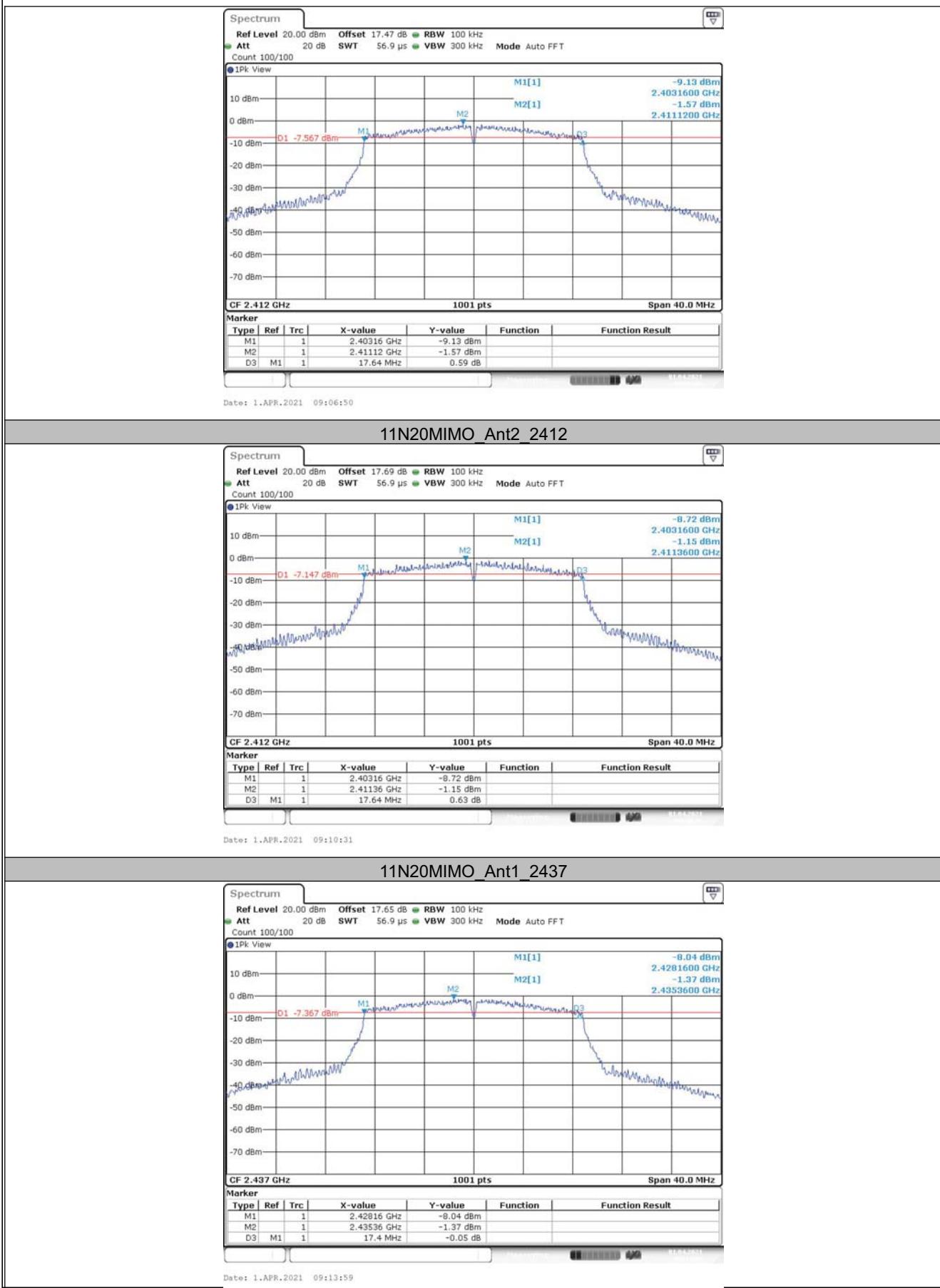


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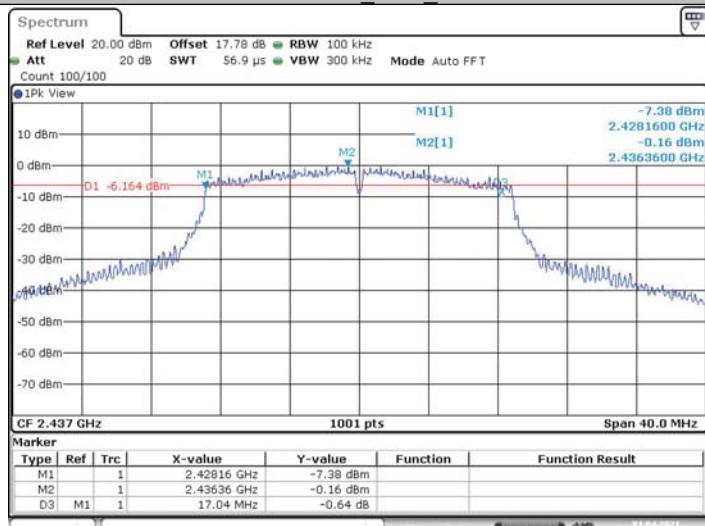
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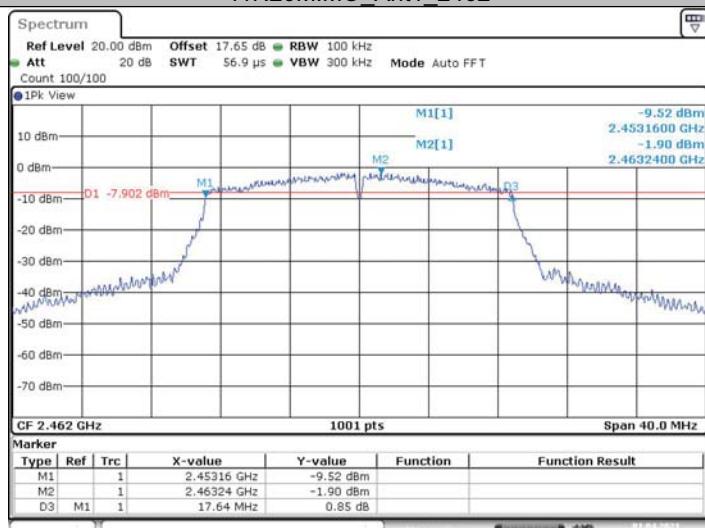


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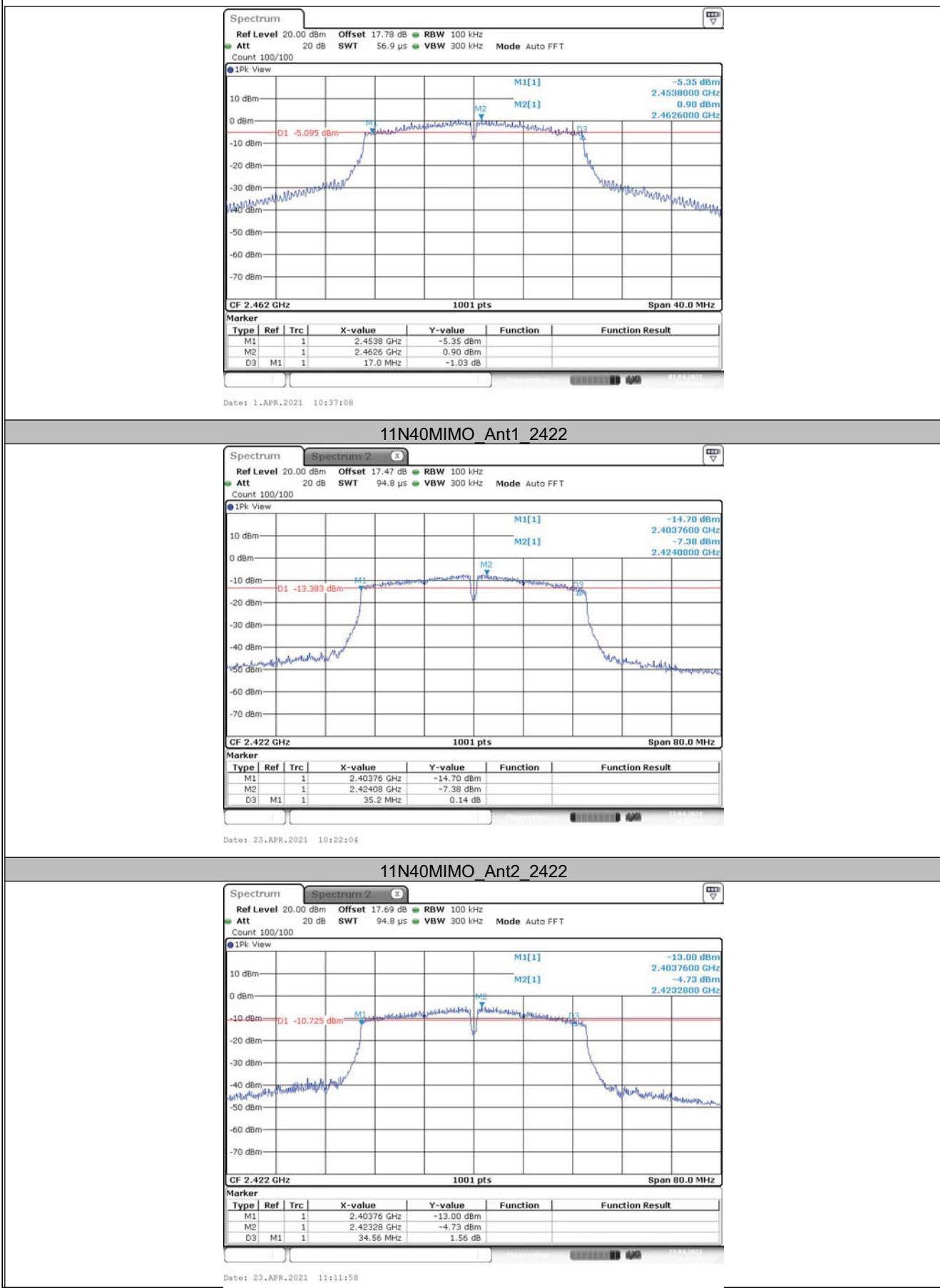
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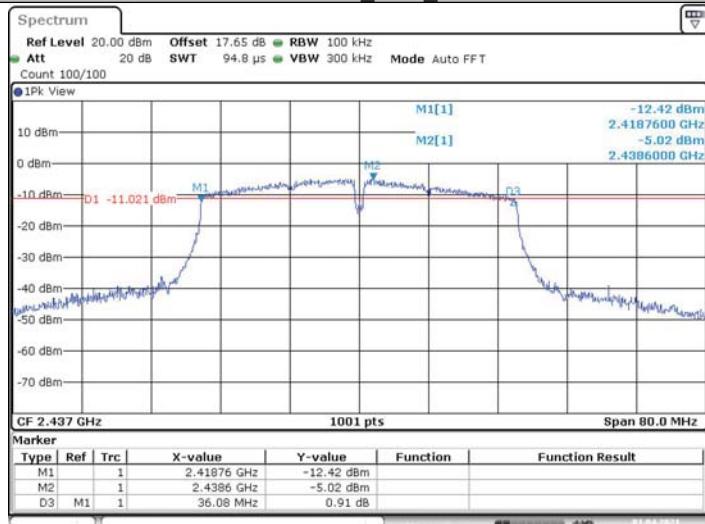
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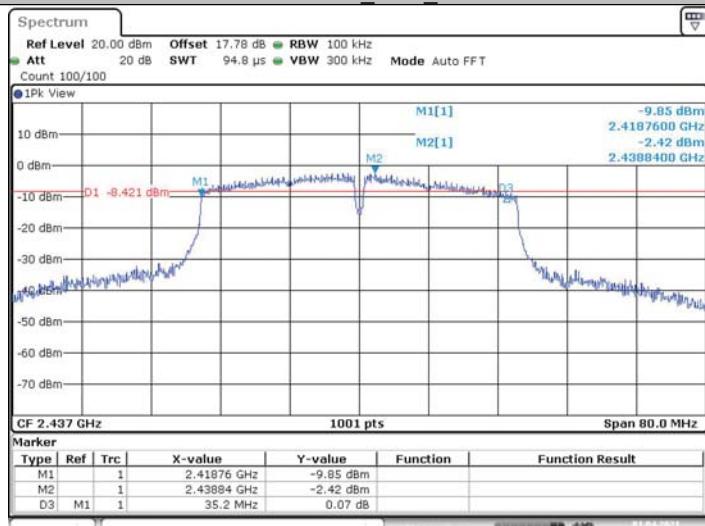


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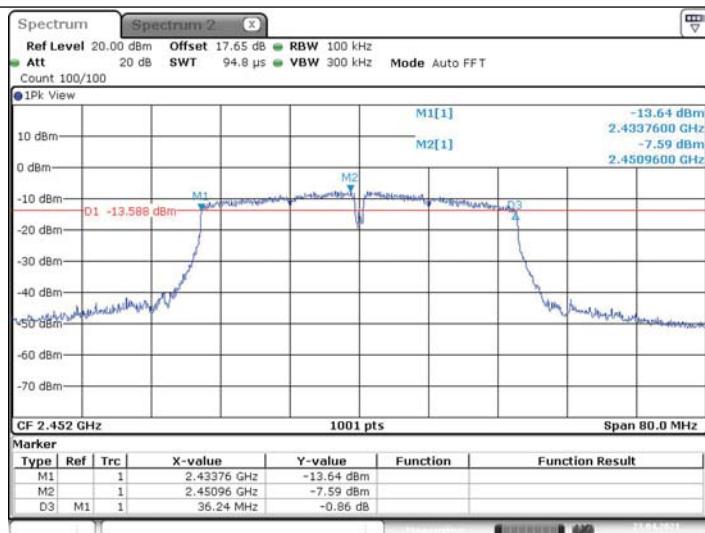
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11N40MIMO_Ant1_2452

Test Report No.: FCC2021-0008-4

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11N40MIMO_Ant2_2452

