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FCC PART 15 SUBPART C TEST REPORT

Part 15.247

Report Reference No.: CTL1412042914-WF

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Date of issue: Jan. 13, 2015

Test Laboratory Name : Shenzhen CTL Testing Technology Co., Ltd.

Address : Floor 1-A, Baisha Technology Park, No.3011, Shaheji Road, Nanshan District, Shenzhen, China 518055

Applicant's name: DCOM Technology Co., LTD

Address : Room 8004, B/51, 2nd Dist, Shangtang Songzi Park, Minzhi, Longhua, Shenzhen, China

Test specification:

Standard : FCC Part 15.247: Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz.

TRF Originator : Shenzhen CTL Testing Technology Co., Ltd.

Master TRF : Dated 2011-01

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Test item description : 802.11b/g/n wireless ADSL Router

FCC ID : 2AD2HDWAN150USERIES

Trade Mark : N/A

Model/Type reference : DWA-N150USeries, DWA-N300USeries

Modulation : 802.11b DSSS, 802.11g/n: OFDM

Work Frequency Range : 802.11b/g/n(20MHz): 2412~2462MHz

Antenna Type : Undetectable

Antenna Gain : 5dBi

Result : Positive

TEST REPORT

| | |
|---|--------------------------------|
| Test Report No. : CTL1412042914-WF | Jan. 13, 2015 Date of issue |
|---|--------------------------------|

Equipment under Test : 802.11b/g/n wireless ADSL Router

Model /Type : DWA-N150USeries

Listed Modes : DWA-N300USeries

Difference Description : Only the color and model's name is different

Applicant : **DCOM Technology Co., LTD**

Address : Room 8004, B/51, 2nd Dist, Shangtang Songzi Park, Minzhi,
Longhua, Shenzhen, China

Manufacturer : **DCOM Technology Co., LTD**

Address : Room 8004, B/51, 2nd Dist, Shangtang Songzi Park, Minzhi,
Longhua, Shenzhen, China

Test Result according to the
standards on page 4:

Positive

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1. TEST STANDARDS

The tests were performed according to following standards:

FCC Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

ANSI C63.10-2009: American National Standard for Testing Unlicensed Wireless Devices.

ANSI C63.4-2009

KDB Publication No. 558074 D01 v03r02 Guidance on Measurements for Digital Transmission Systems



2. SUMMARY

2.1. General Remarks

| | | |
|--------------------------------|---|---------------|
| Date of receipt of test sample | : | Dec. 10, 2014 |
| | | |
| Testing commenced on | : | Dec. 10, 2014 |
| | | |
| Testing concluded on | : | Jan. 13, 2015 |

2.2. Equipment Under Test

Power supply system utilised

| | | | |
|----------------------|---|--|-----------------------------------|
| Power supply voltage | : | <input checked="" type="radio"/> 120V / 60 Hz | <input type="radio"/> 115V / 60Hz |
| | | <input type="radio"/> 12 V DC | <input type="radio"/> 24 V DC |
| | | <input type="radio"/> Other (specified in blank below) | |

Description of the test mode

IEEE 802.11b/g/n(HT20): Thirteen channels are provided to the EUT, but only eleventh channels used for USA and Canada.

| Channel | Frequency(MHz) | Channel | Frequency(MHz) |
|---------|----------------|---------|----------------|
| 1 | 2412 | 8 | 2447 |
| 2 | 2417 | 9 | 2452 |
| 3 | 2422 | 10 | 2457 |
| 4 | 2427 | 11 | 2462 |
| 5 | 2432 | | |
| 6 | 2437 | | |
| 7 | 2442 | | |

2.3. Short description of the Equipment under Test (EUT)

802.11b/g/n wireless ADSL Router, support 802.11b/g/n.

For more details, refer to the user's manual of the EUT.

Serial number: Prototype

2.4. EUT operation mode

Test Mode:

1. The EUT has been tested under normal operating condition.
2. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed. Channel low (2412MHz), mid (2437MHz) and high (2462MHz) for 802.11b/g/n(HT20) with highest data rate are chosen for full testing.
3. Test Mode:

| Test Mode(TM) | Description | Remark |
|---------------|--------------|--|
| 1 | Transmitting | 802.11 b 2412MHz, 2437MHz, 2462MHz |
| 2 | Transmitting | 802.11 g 2412MHz, 2437MHz, 2462MHz |
| 3 | Transmitting | 802.11 n HT20 2412MHz, 2437MHz, 2462MHz |

2.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

○ - supplied by the manufacturer

● - supplied by the lab

o AC Adapter

Manufacturer: DCOM Technology Co., LTD

Model No.: JOD-120100

2.6. NOTE

1. The EUT is an **802.11b/g/n wireless ADSL Router**,The functions of the EUT listed as below:

| | Test Standards | Reference Report |
|-------------------------|--|------------------|
| WLAN 802.11b/g, 802.11n | FCC Part 15 Subpart C (Section15.247) | CTL1412042914-WF |
| | FCC Per 47 CFR 2.1091(b) | CTL1412042914-WM |

2. The frequency bands used in this EUT are listed as follows:

| Frequency Band(MHz) | 2400-2483.5 | 5150-5350 | 5470-5725 | 5725-5850 |
|---------------------|-------------|-----------|-----------|-----------|
| 802.11b | ✓ | — | — | — |
| 802.11g | ✓ | — | — | — |
| 802.11n(20MHz) | ✓ | — | — | — |
| 802.11n(40MHz) | — | — | — | — |

3. The EUT incorporates a MIMO function,Physically,the EUT provides two completed transmitter and two completed receivers.

| Modulation Mode | TX Function |
|-----------------|-------------|
| 802.11b | 1TX |
| 802.11g | 1TX |
| 802.11n (20MHz) | 2TX |

2.7. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCCID: 2AD2HDWAN150USERIES filing to comply with of the FCC part15.247 Rules.

2.8. Modifications

No modifications were implemented to meet testing criteria.

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen CTL Testing Technology Co., Ltd.
Floor 1-A, Baisha Technology Park, No.3011, Shahexi Road, Nanshan District, Shenzhen, China 518055

The sites are constructed in conformance with the requirements of ANSI C6230, ANSI C63.4 (2009) and CISPR Publication 22.

3.2. Test Facility

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

IC Registration No.: 9618B

The 3m alternate test site of Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration No.: 9618B on November 13, 2013.

FCC-Registration No.: 970318

Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 970318, December 19, 2013.

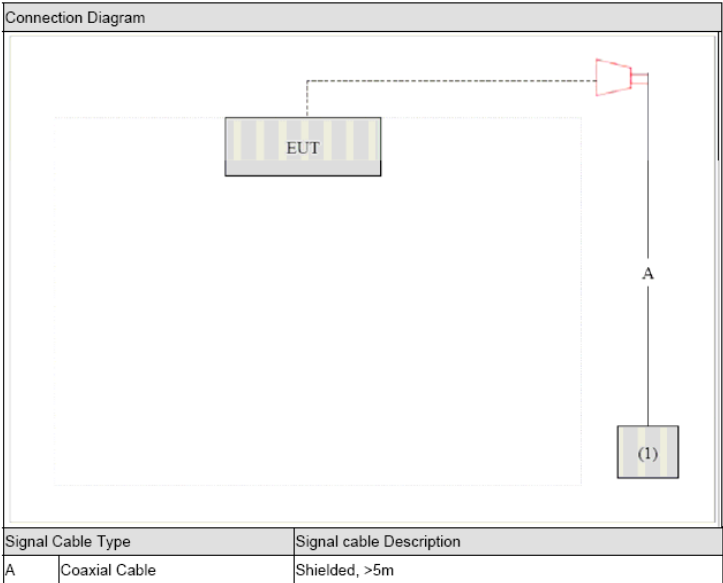
3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

| | |
|-----------------------|--------------|
| Temperature: | 15-35 ° C |
| Humidity: | 30-60 % |
| Atmospheric pressure: | 950-1050mbar |

3.4. Configuration of Tested System

Fig. 2-1 Configuration of Tested System



3.5. Duty Cycle

| Operated Mode for Worst Duty Cycle | | |
|---|----------------|------------------|
| <input type="checkbox"/> Operated normally mode for worst duty cycle | | |
| <input checked="" type="checkbox"/> Operated test mode for worst duty cycle | | |
| Mode | Duty Cycle (%) | Duty Factor (dB) |
| 11b | 100 | 0 |
| 11g | 100 | 0 |
| 11n HT20 | 100 | 0 |

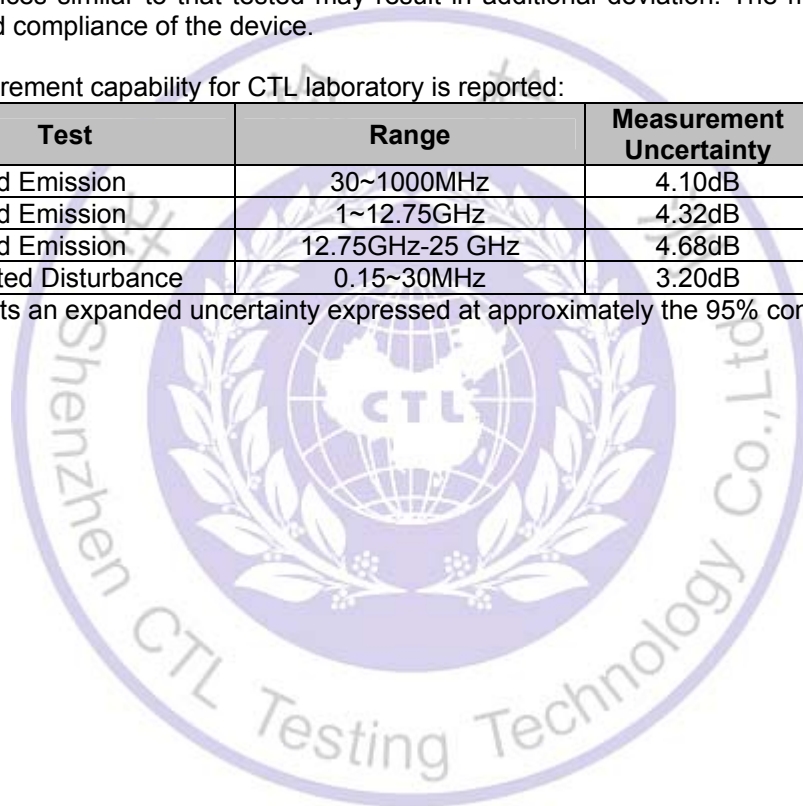
3.6. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen CTL Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CTL laboratory is reported:

| Test | Range | Measurement Uncertainty | Notes |
|-----------------------|-----------------|-------------------------|-------|
| Radiated Emission | 30~1000MHz | 4.10dB | (1) |
| Radiated Emission | 1~12.75GHz | 4.32dB | (1) |
| Radiated Emission | 12.75GHz-25 GHz | 4.68dB | (1) |
| Conducted Disturbance | 0.15~30MHz | 3.20dB | (1) |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



3.7. Equipments Used during the Test

| Test Equipment | Manufacturer | Model No. | Serial No. | Calibration Date | Calibration Due Date |
|----------------------------|----------------------|-----------------------|------------|------------------|----------------------|
| Bilog Antenna | Sunol Sciences Corp. | JB1 | A061713 | 2014/07/12 | 2015/07/11 |
| EMI Test Receiver | R&S | ESCI | 103710 | 2014/07/10 | 2015/07/09 |
| Spectrum Analyzer | Agilent | E4407B | MY45108355 | 2014/07/06 | 2015/07/05 |
| Controller | EM Electronics | Controller EM 1000 | N/A | 2014/07/06 | 2015/07/05 |
| Horn Antenna | Sunol Sciences Corp. | DRH-118 | A062013 | 2014/07/12 | 2015/07/11 |
| Horn Antenna | SCHWARZBECK | BBHA9170 | 1562 | 2014/07/12 | 2015/07/11 |
| Active Loop Antenna | SCHWARZBECK | FMZB1519 | 1519-037 | 2014/07/12 | 2015/07/11 |
| LISN | R&S | ENV216 | 101316 | 2014/07/10 | 2015/07/09 |
| LISN | SCHWARZBECK | NSLK8127 | 8127687 | 2014/07/10 | 2015/07/09 |
| Microwave Preamplifier | HP | 8349B | 3155A00882 | 2014/07/10 | 2015/07/09 |
| Amplifier | HP | 8447D | 3113A07663 | 2014/07/10 | 2015/07/09 |
| Transient Limiter | Com-Power | LIT-153 | 532226 | 2014/07/10 | 2015/07/09 |
| Radio Communication Tester | R&S | CMU200 | 3655A03522 | 2014/07/06 | 2015/07/05 |
| Temperature/Humidity Meter | zhicheng | ZC1-2 | 22522 | 2014/07/10 | 2015/07/09 |
| SIGNAL GENERATOR | HP | 8647A | 3200A00852 | 2014/07/10 | 2015/07/09 |
| Wideband Peak Power Meter | Anritsu | ML2495A | 220.23.35 | 2014/07/06 | 2015/07/05 |
| Power Sensor | Anritsu | MA2411B | 0738552 | 2014/07/06 | 2015/07/05 |
| Climate Chamber | ESPEC | EL-10KA | A20120523 | 2014/07/06 | 2015/07/05 |
| High-Pass Filter | K&L | 9SH10-2700/X12750-O/O | / | 2014/07/06 | 2015/07/05 |
| High-Pass Filter | K&L | 41H10-1375/U12750-O/O | / | 2014/07/06 | 2015/07/05 |
| RF Cable | HUBER+SUHNER | RG214 | / | 2014/07/09 | 2015/07/08 |

3.8. Summary of Test Result

| FCC PART 15 | | |
|---------------------------------|-------------------------------------|------|
| FCC Part 15.207 | AC Power Conducted Emission | PASS |
| FCC Part 15.247(a)(2) | 6dB Bandwidth | PASS |
| FCC Part 15.247(d) | Spurious RF Conducted Emission | PASS |
| FCC Part 15.247(b) | Maximum Peak Output Power | PASS |
| FCC Part 15.247(e) | Power Spectral Density | PASS |
| FCC Part 15.109/ 15.205/ 15.209 | Radiated Emissions | PASS |
| FCC Part 15.247(d) | Band Edge Compliance of RF Emission | PASS |
| FCC Part 15.203/15.247 (b) | Antenna Requirement | PASS |

Remark: The measurement uncertainty is not included in the test result.

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

| Test Items | Mode | Data Rate | Channel |
|--------------------------------------|-----------------|-----------|---------|
| AC Power Conducted Emission | Normal Link | 11 Mbps | 1 |
| Maximum Peak Conducted Output Power | 11b/DSSS | 11 Mbps | 1/6/11 |
| Power Spectral Density | 11g/OFDM | 54 Mbps | 1/6/11 |
| 6dB Bandwidth | 11n(20MHz)/OFDM | 65Mbps | 1/6/11 |
| Spurious RF conducted emission | 11b/DSSS | 11 Mbps | 1/6/11 |
| Radiated Emission 30MHz~1GHz | 11g/OFDM | 54 Mbps | 1/6/11 |
| | 11n(20MHz)/OFDM | 65Mbps | 1/6/11 |
| | 11b/DSSS | 11 Mbps | 1/6/11 |
| Radiated Emission 1GHz~10th Harmonic | 11g/OFDM | 54 Mbps | 1/6/11 |
| | 11n(20MHz)/OFDM | 65Mbps | 1/6/11 |
| | 11b/DSSS | 11 Mbps | 1/6/11 |
| Band Edge Compliance of RF Emission | 11g/OFDM | 54 Mbps | 1/11 |
| | 11n(20MHz)/OFDM | 65Mbps | 1/11 |
| | 11b/DSSS | 11 Mbps | 1/11 |

Note1: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.

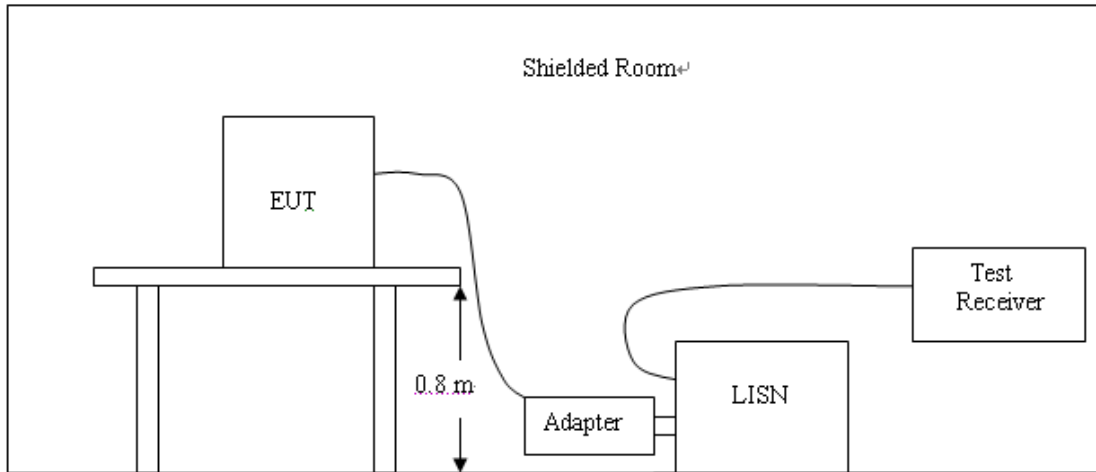
Note2: This device use MIMO 2X2 antennas, for 802.11n mode, SISO for 802.11 b/g mode, for SISO mode, Antenna 1 and Antenna 2 all tested on keeping transmit, the test results are not visible difference, antenna 1 is worst case, only report worst case in the report.

Based exploratory test, when transmit with Antenna 1 have worse emissions, so the final radiated spurious emissions were tested with Antenna 1. For 802.11n mode, all the radiated spurious emissions and band edge test were performed with two antennas transmit synchronous.

4. TEST CONDITIONS AND RESULTS

4.1. Conducted Emissions Test

TEST CONFIGURATION



TEST PROCEDURE

For unintentional device, according to § 15.107(a) Line Conducted Emission Limits is as following:

| Frequency (MHz) | Maximum RF Line Voltage (dBμV) | | | |
|--------------------|--------------------------------|------|---------|--------|
| | CLASS A | | CLASS B | |
| | Q.P. | Ave. | Q.P. | Ave. |
| 0.15 - 0.50 | 79 | 66 | 66-56* | 56-46* |
| 0.50 - 5.00 | 73 | 60 | 56 | 46 |
| 5.00 - 30.0 | 73 | 60 | 60 | 50 |

* Decreasing linearly with the logarithm of the frequency

For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

1. Please follow the guidelines in ANSI C63.4-2009.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 kHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

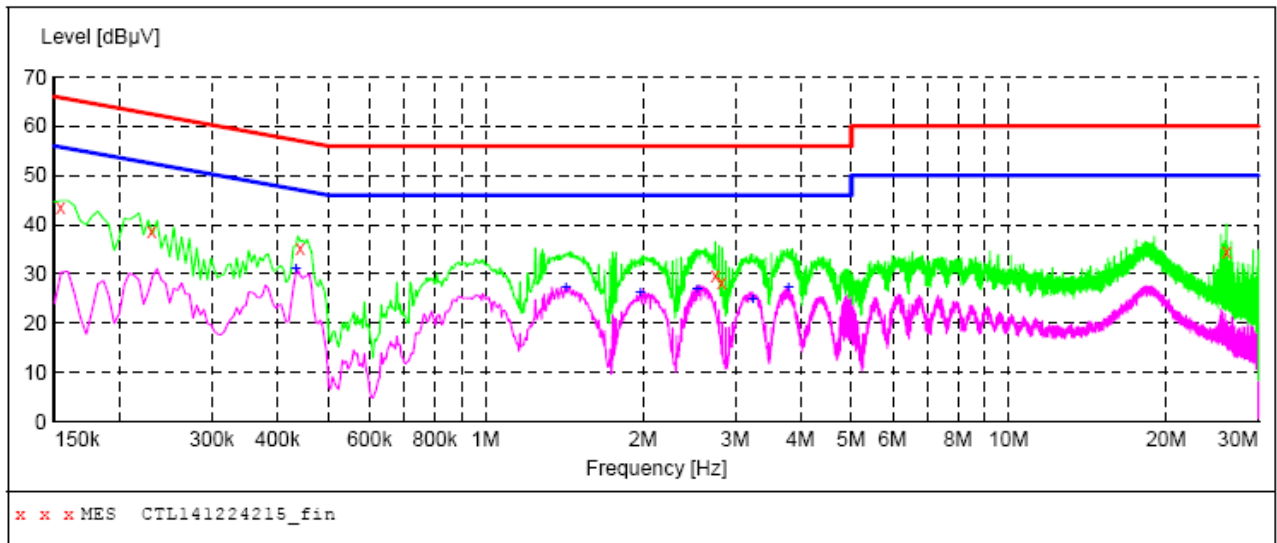
The RBW/VBW for 150KHz to 30MHz: 9KHz

TEST RESULTS

All the modes tested and report the worst case MIMO transmitting.

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "CTL141224215_fin"**

12/24/2014 9:59AM

| Frequency MHz | Level dBμV | Transd dB | Limit dBμV | Margin dB | Detector | Line | PE |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.154000 | 43.50 | 10.2 | 66 | 22.3 | QP | N | GND |
| 0.230000 | 38.80 | 10.2 | 62 | 23.6 | QP | N | GND |
| 0.442000 | 35.30 | 10.2 | 57 | 21.7 | QP | N | GND |
| 2.744000 | 29.60 | 10.4 | 56 | 26.4 | QP | N | GND |
| 2.822000 | 28.30 | 10.4 | 56 | 27.7 | QP | N | GND |
| 26.054000 | 34.40 | 11.2 | 60 | 25.6 | QP | N | GND |

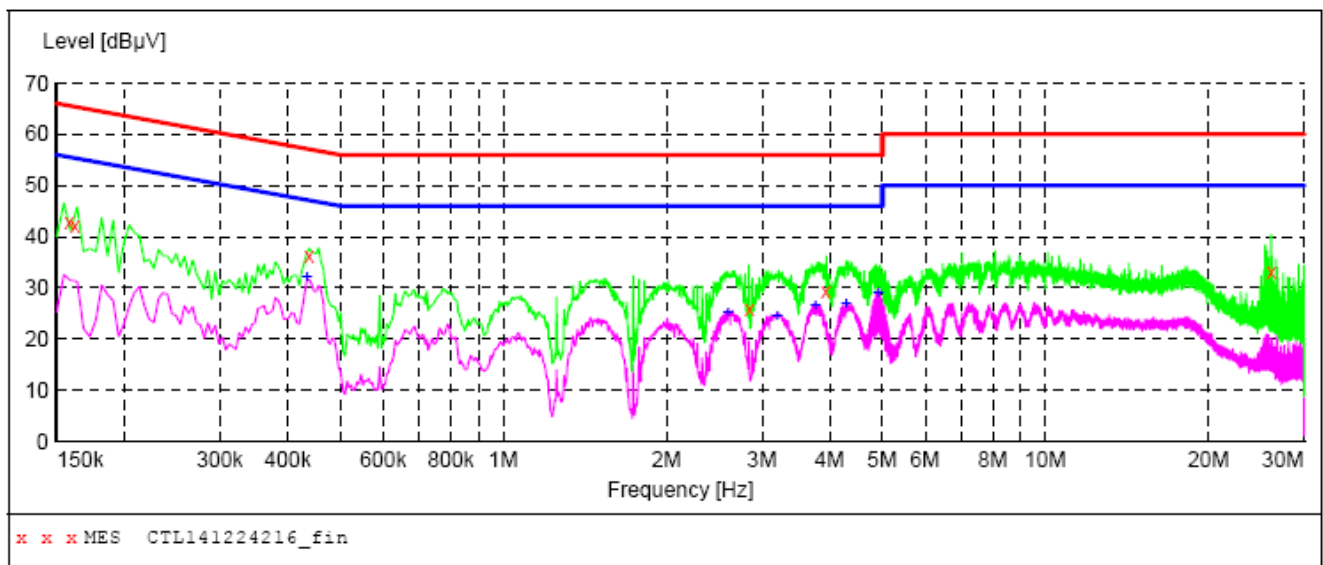
MEASUREMENT RESULT: "CTL141224215_fin2"

12/24/2014 9:59AM

| Frequency MHz | Level dBμV | Transd dB | Limit dBμV | Margin dB | Detector | Line | PE |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.434000 | 31.00 | 10.2 | 47 | 16.2 | AV | N | GND |
| 1.424000 | 27.40 | 10.3 | 46 | 18.6 | AV | N | GND |
| 1.976000 | 26.20 | 10.3 | 46 | 19.8 | AV | N | GND |
| 2.540000 | 27.00 | 10.4 | 46 | 19.0 | AV | N | GND |
| 3.248000 | 24.90 | 10.4 | 46 | 21.1 | AV | N | GND |
| 3.794000 | 27.10 | 10.4 | 46 | 18.9 | AV | N | GND |

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "CTL141224216_fin"**

12/24/2014 10:05AM

| Frequency MHz | Level dBμV | Transd dB | Limit dBμV | Margin dB | Detector | Line | PE |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.158000 | 42.80 | 10.2 | 66 | 22.8 | QP | L1 | GND |
| 0.162000 | 42.20 | 10.2 | 65 | 23.2 | QP | L1 | GND |
| 0.438000 | 36.40 | 10.2 | 57 | 20.7 | QP | L1 | GND |
| 2.840000 | 25.90 | 10.4 | 56 | 30.1 | QP | L1 | GND |
| 3.932000 | 29.40 | 10.4 | 56 | 26.6 | QP | L1 | GND |
| 26.054000 | 33.30 | 11.2 | 60 | 26.7 | QP | L1 | GND |

MEASUREMENT RESULT: "CTL141224216_fin2"

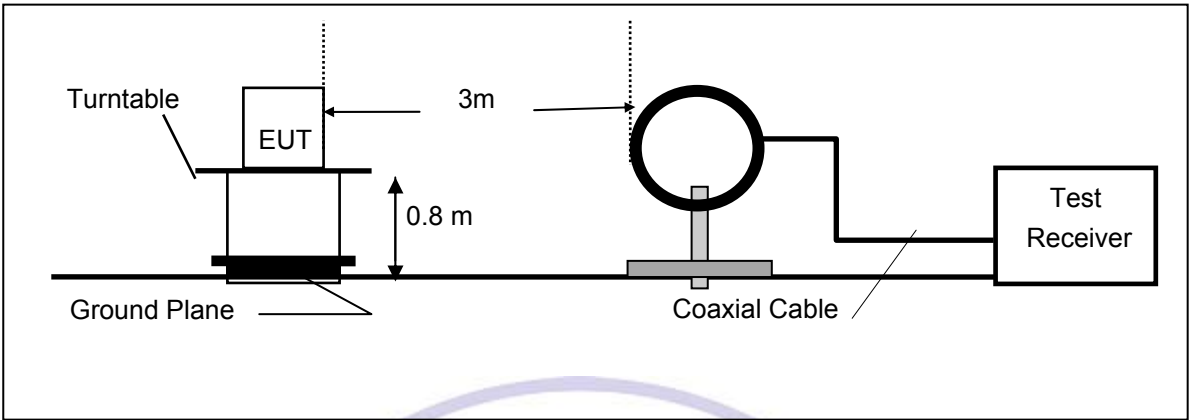
12/24/2014 10:05AM

| Frequency MHz | Level dBμV | Transd dB | Limit dBμV | Margin dB | Detector | Line | PE |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.434000 | 32.10 | 10.2 | 47 | 15.1 | AV | L1 | GND |
| 2.600000 | 25.10 | 10.4 | 46 | 20.9 | AV | L1 | GND |
| 3.206000 | 24.30 | 10.4 | 46 | 21.7 | AV | L1 | GND |
| 3.770000 | 26.50 | 10.4 | 46 | 19.5 | AV | L1 | GND |
| 4.286000 | 26.90 | 10.4 | 46 | 19.1 | AV | L1 | GND |
| 4.922000 | 29.10 | 10.4 | 46 | 16.9 | AV | L1 | GND |

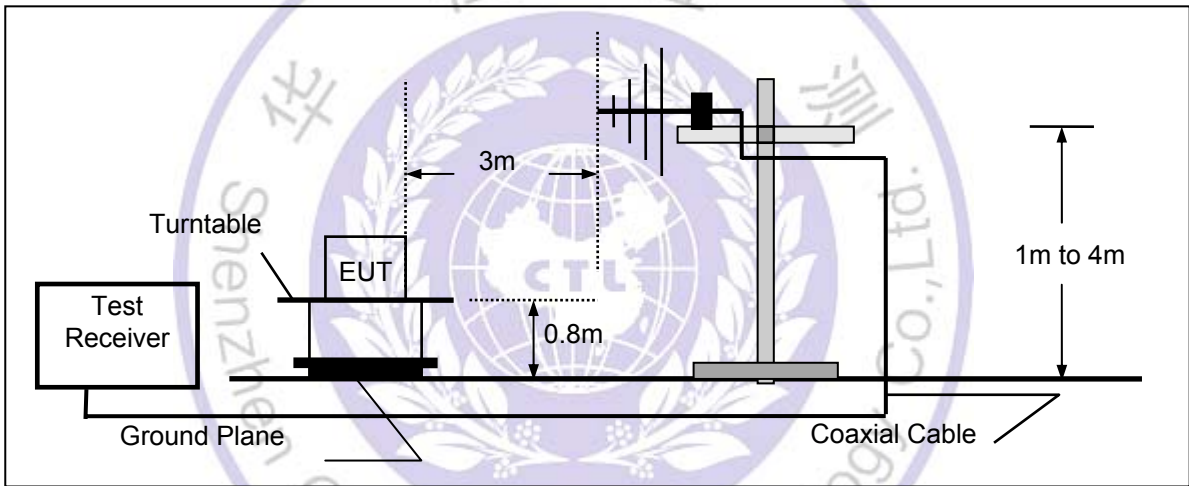
4.2. Radiated Emission Test

TEST CONFIGURATION

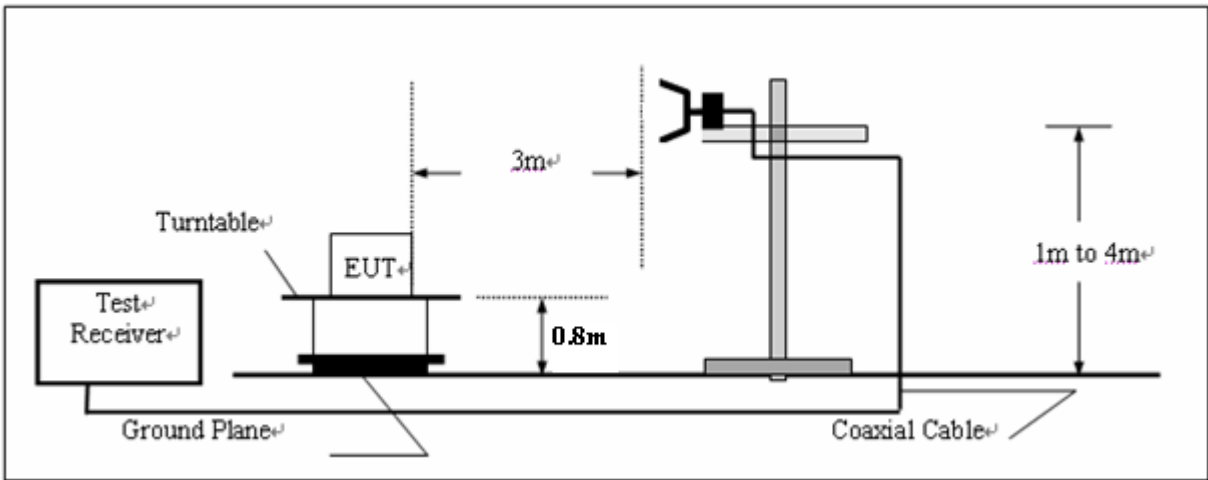
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



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



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

| | |
|---------------------------|--|
| Where FS = Field Strength | CL = Cable Attenuation Factor (Cable Loss) |
| RA = Reading Amplitude | AG = Amplifier Gain |
| AF = Antenna Factor | |

TEST PROCEDURE

1. The testing follows FCC KDB Publication No. 558074 D01 v03r02 (Measurement Guidelines of DTS).
2. The EUT was placed on a turn table which is 0.8m above ground plane.
3. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0° to 360° to acquire the highest emissions from EUT
4. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
5. Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for $f > 1$ GHz, 100 kHz for $f < 1$ GHz; VBW \geq RBW; Sweep = auto; Detector function = peak; Trace = max hold.
6. Repeat above procedures until all frequency measurements have been completed.

Note:

When doing emission measurement above 1GHz, the horn antenna will be bended down a little (as horn antenna has the narrow beamwidth) in order to keeping the antenna in the “cone of radiation” of EUT. The 3dB beamwidth is 60 degrees for H-plane and 90 degrees for E-plane.

Remark : For above 1GHz, RBW 1MHz, VBW 3MHz, Peak detector for PK value, RMS detector for AV value.

LIMIT

For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

| Frequency (MHz) | Distance (Meters) | Radiated (dBμV/m) | Radiated (μV/m) |
|--------------------|----------------------|----------------------|--------------------|
| 30-88 | 3 | 40.0 | 100 |
| 88-216 | 3 | 43.5 | 150 |
| 216-960 | 3 | 46.0 | 200 |
| Above 960 | 3 | 54.0 | 500 |

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table. According to § 15.247(d), in any 100kHz bandwidth outside the frequency band in which the EUT is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of desired power.

TEST RESULTS**9KHz-30MHz:**

| Freq. (MHz) | Level (dBuV) | Over Limit (dB) | Limit Line (dBuV) | Remark |
|----------------|-----------------|--------------------|----------------------|----------|
| - | - | - | - | See Note |

Note: The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor= 40 log (specific distance/ test distance) (dB);

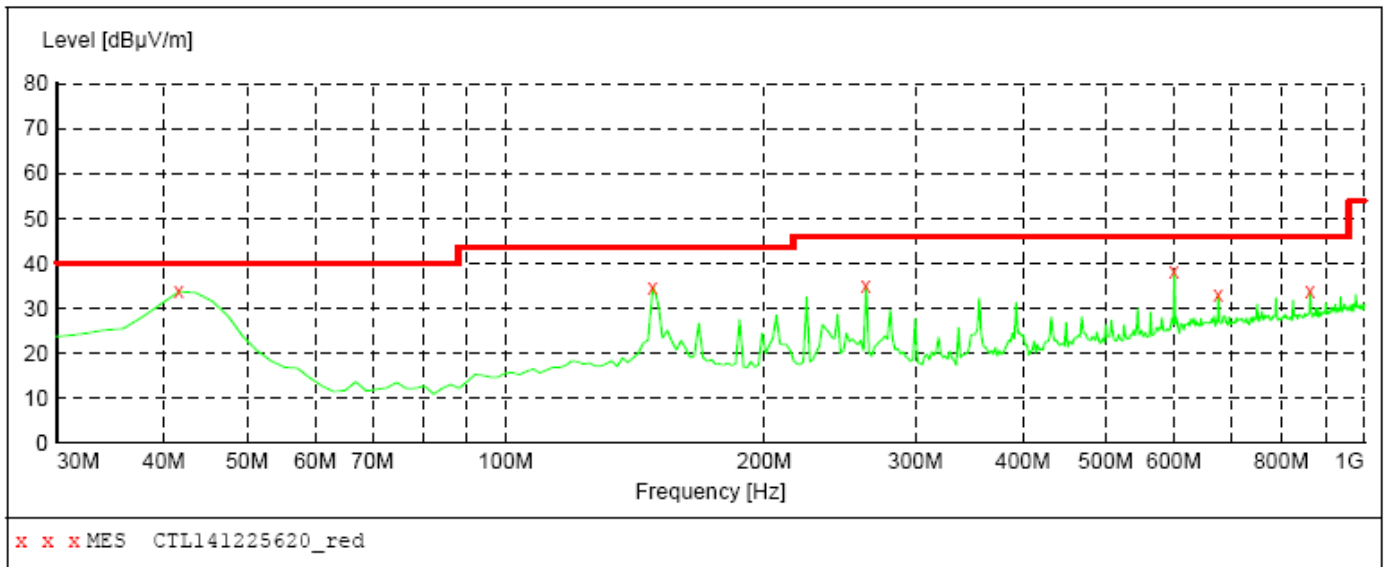
Limit line= specific limits (dBuV) + distance extrapolation factor.

Below 1GHz:

The radiated measurement are performed the each test mode (802.11b/g SISO mode Ant 1, Ant2 Keeping TX mode, 802.11n keeping MIMO Tx MODE) and channel (low/mid/high), the datum recorded below (802.11b ANT 1 keeping TX mode) is the worst case for all the test mode and channel.

SWEEP TABLE: "test (30M-1G) "

| | | | | | |
|--------------------|-----------|----------------|----------|---------|------------|
| Short Description: | | Field Strength | | | |
| Start | Stop | Detector | Meas. | IF | Transducer |
| Frequency | Frequency | | Time | Bandw. | |
| 30.0 MHz | 1.0 GHz | MaxPeak | 300.0 ms | 120 kHz | JB1 |

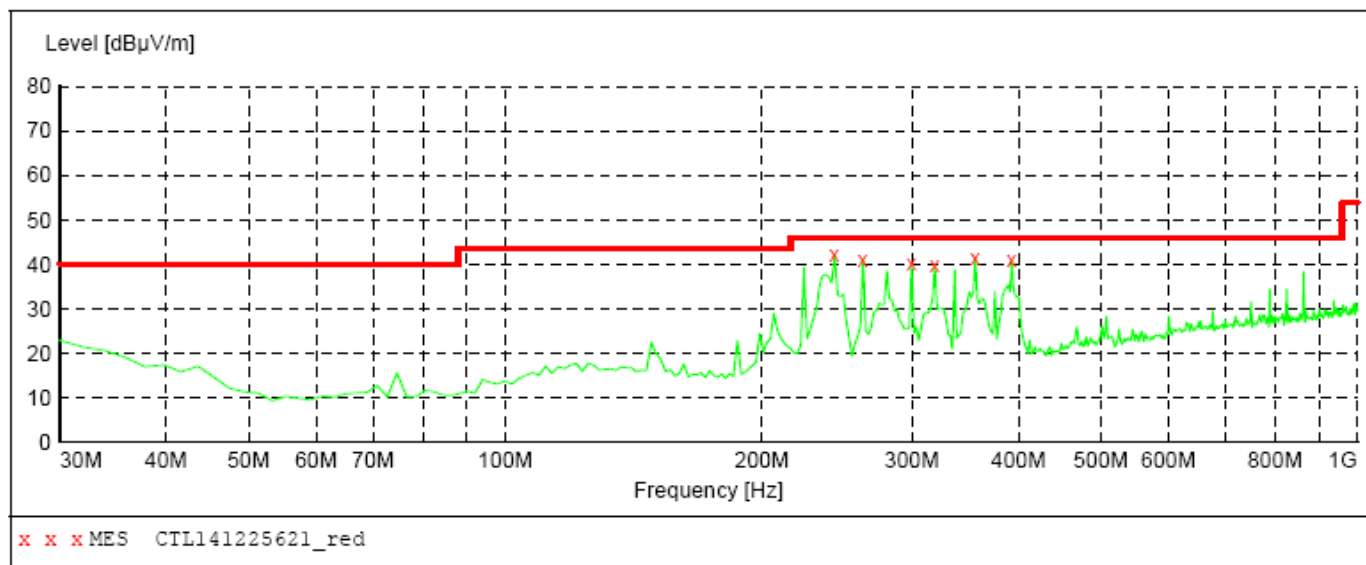
***MEASUREMENT RESULT: "CTL141225620_red"***

12/25/2014 9:45AM

| Frequency MHz | Level dBuV/m | Transd dB | Limit dBuV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 41.640000 | 33.70 | 12.5 | 40.0 | 6.3 | --- | 0.0 | 0.00 | VERTICAL |
| 148.340000 | 34.80 | 14.2 | 43.5 | 8.7 | --- | 0.0 | 0.00 | VERTICAL |
| 262.800000 | 34.90 | 15.1 | 46.0 | 11.1 | --- | 0.0 | 0.00 | VERTICAL |
| 600.360000 | 38.20 | 21.8 | 46.0 | 7.8 | --- | 0.0 | 0.00 | VERTICAL |
| 676.020000 | 33.00 | 23.0 | 46.0 | 13.0 | --- | 0.0 | 0.00 | VERTICAL |
| 864.200000 | 33.80 | 25.5 | 46.0 | 12.2 | --- | 0.0 | 0.00 | VERTICAL |

SWEEP TABLE: "test (30M-1G)"

| | | | | | |
|--------------------|-----------|----------------|----------|---------|------------|
| Short Description: | | Field Strength | | | |
| Start | Stop | Detector | Meas. | IF | Transducer |
| Frequency | Frequency | | Time | Bandw. | |
| 30.0 MHz | 1.0 GHz | MaxPeak | 300.0 ms | 120 kHz | JB1 |

***MEASUREMENT RESULT: "CTL141225621_red"***

12/25/2014 9:47AM

| Frequency MHz | Level dBμV/m | Transd dB | Limit dBμV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 243.400000 | 42.30 | 14.1 | 46.0 | 3.7 | --- | 0.0 | 0.00 | HORIZONTAL |
| 262.800000 | 41.20 | 15.1 | 46.0 | 4.8 | --- | 0.0 | 0.00 | HORIZONTAL |
| 299.660000 | 40.20 | 15.4 | 46.0 | 5.8 | --- | 0.0 | 0.00 | HORIZONTAL |
| 319.060000 | 39.90 | 15.9 | 46.0 | 6.1 | --- | 0.0 | 0.00 | HORIZONTAL |
| 355.920000 | 41.60 | 17.2 | 46.0 | 4.4 | --- | 0.0 | 0.00 | HORIZONTAL |
| 392.780000 | 40.90 | 18.0 | 46.0 | 5.1 | --- | 0.0 | 0.00 | HORIZONTAL |



Above 1GHz:

802.11b

SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.

| CH | Antenna | Frequency (MHz) | Reading Level (dBuV/m) | Factor (dB) | Measure Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|----|---------|-----------------|------------------------|-------------|------------------------|----------------|-------------|----------|
| 1 | V | 2411.9 | 72.9 | 30.8 | 103.7 | Fundamental | / | PK |
| | H | 123.1 | 14.9 | 14.8 | 29.7 | 46 | 16.3 | PK |
| | H | 625.9 | 14.5 | 19.7 | 34.2 | 46 | 11.8 | PK |
| | V | 3200 | 49.2 | -0.6 | 48.6 | 54(note3) | 5.4 | PK |
| | V | 4824 | 49.7 | 2.6 | 52.3 | 54(note3) | 1.7 | PK |
| | V | 7236 | 60.8 | 8.1 | 68.9 | 74 | 5.1 | PK |
| | V | 7239 | 41.7 | 8.9 | 50.6 | 54 | 3.4 | AV |
| | H | 24000 | 61.0 | -8.9 | 52.1 | 54 | 1.9 | PK |
| 6 | V | 2437 | 71.6 | 31.2 | 102.8 | Fundamental | / | PK |
| | H | 229.4 | 16.1 | 15.2 | 31.3 | 46 | 14.7 | PK |
| | H | 728.5 | 8.9 | 21.2 | 30.1 | 46 | 15.9 | PK |
| | V | 3200 | 50.4 | -0.6 | 49.8 | 54(note3) | 4.2 | PK |
| | V | 4876 | 44.9 | 2.8 | 47.7 | 54(note3) | 6.3 | PK |
| | V | 7298.5 | 60.1 | 8.8 | 68.9 | 74 | 5.1 | PK |
| | V | 7298.5 | 44.0 | 8.1 | 52.1 | 54 | 1.9 | AV |
| | H | 24000 | 62.0 | -8.9 | 53.1 | 54 | 0.9 | PK |
| 11 | V | 2462.3 | 71.5 | 30.9 | 102.4 | Fundamental | / | PK |
| | H | 114.3 | 13.2 | 14.9 | 28.1 | 46 | 17.9 | PK |
| | H | 552.4 | 10.5 | 21.2 | 31.7 | 46 | 14.3 | PK |
| | V | 3200 | 48.2 | -0.6 | 47.6 | 54(note3) | 6.4 | PK |
| | V | 4927 | 46.4 | 3.0 | 49.4 | 54(note3) | 4.6 | PK |
| | V | 7386 | 60.2 | 8.9 | 69.1 | 74 | 4.9 | PK |
| | V | 7386 | 43.0 | 8.9 | 51.9 | 54 | 2.1 | AV |
| | H | 24000 | 61.7 | -8.9 | 52.8 | 54 | 1.2 | PK |

Note: 1. Measure Level = Reading Level + Factor.

2. The test results which are attenuated more than 20 dB below the permissible value limit (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

4. RBW 1MHz VBW 3MHz peak detector for PK value, RMS detector for AV value.

802.11g

SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.

| CH | Antenna | Frequency (MHz) | Reading Level (dBUV/m) | Factor (dB) | Measure Level (dBUV/m) | Limit (dBUV/m) | Margin (dB) | Detector |
|----|---------|-----------------|------------------------|-------------|------------------------|----------------|-------------|----------|
| 1 | V | 2411.9 | 70.7 | 31.9 | 102.6 | Fundamental | / | PK |
| | H | 267.1 | 13.4 | 15.7 | 29.1 | 46 | 16.9 | PK |
| | H | 824.4 | 16.6 | 21.3 | 37.9 | 46 | 8.1 | PK |
| | V | 3200 | 48.2 | -0.6 | 47.6 | 54(note3) | 6.4 | PK |
| | V | 4824 | 48.6 | 2.6 | 51.2 | 54(note3) | 2.8 | PK |
| | V | 7236 | 61.0 | 8.9 | 69.9 | 74 | 4.1 | PK |
| | V | 7236 | 39.5 | 8.9 | 48.4 | 54 | 5.6 | AV |
| | H | 24000 | 61.1 | -8.9 | 52.2 | 54 | 1.8 | PK |
| 6 | V | 2437 | 72.4 | 31.2 | 103.6 | Fundamental | / | PK |
| | H | 302.3 | 13.1 | 14.8 | 27.9 | 46 | 18.1 | PK |
| | H | 775.1 | 14.9 | 21.2 | 36.1 | 46 | 9.9 | PK |
| | V | 3200 | 49.5 | -0.6 | 48.9 | 54(note3) | 5.1 | PK |
| | V | 4876 | 44.6 | 2.8 | 47.4 | 54(note3) | 6.6 | PK |
| | V | 7298.5 | 59.5 | 8.8 | 68.3 | 74 | 5.7 | PK |
| | V | 7298.5 | 42.5 | 8.8 | 51.3 | 54 | 2.7 | AV |
| | H | 24000 | 60.5 | -8.9 | 51.6 | 54 | 2.4 | PK |
| 11 | V | 2462.3 | 71.8 | 30.9 | 102.7 | Fundamental | / | PK |
| | H | 109.6 | 12.4 | 21.2 | 33.6 | 46 | 12.4 | PK |
| | H | 447.5 | 17.0 | 14.7 | 31.7 | 46 | 14.3 | PK |
| | V | 3200 | 49.5 | -0.6 | 48.9 | 54(note3) | 5.1 | PK |
| | V | 4927 | 44.1 | 3.0 | 47.1 | 54(note3) | 6.9 | PK |
| | V | 7386 | 60.3 | 8.9 | 69.2 | 74 | 4.8 | PK |
| | V | 7386 | 42.5 | 8.9 | 51.4 | 54 | 2.6 | AV |
| | H | 24000 | 61.0 | -8.9 | 52.1 | 54 | 1.9 | PK |

Note: 1. Measure Level = Reading Level + Factor.

2. The test results which are attenuated more than 20 dB below the permissible value limit (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

4. RBW 1MHz VBW 3MHz peak detector for PK value, RMS detector for AV value

802.11n(20MHz), KEEPING MIMO TX MODE

| CH | Antenna | Frequency (MHz) | Reading Level (dBuV/m) | Factor (dB) | Measure Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|----|---------|-----------------|------------------------|-------------|------------------------|----------------|-------------|----------|
| 1 | V | 2411.9 | 73.0 | 30.7 | 103.7 | Fundamental | / | PK |
| | H | 196.5 | 10.4 | 21.2 | 31.6 | 46 | 14.4 | PK |
| | H | 537.4 | 15.0 | 15.1 | 30.1 | 46 | 15.9 | PK |
| | V | 3200 | 48.8 | -0.6 | 48.2 | 54(note3) | 5.8 | PK |
| | V | 4824 | 49.0 | 2.6 | 51.6 | 54(note3) | 2.4 | PK |
| | V | 7236 | 60.3 | 8.9 | 69.2 | 74 | 4.8 | PK |
| | V | 7236 | 42.7 | 8.9 | 51.6 | 54 | 2.4 | AV |
| | H | 24000 | 61.8 | -8.9 | 52.9 | 54 | 1.1 | PK |
| 6 | V | 2437 | 71.7 | 31.2 | 102.9 | Fundamental | / | PK |
| | H | 276.1 | 8.4 | 21.2 | 29.6 | 46 | 16.4 | PK |
| | H | 735.9 | 10.9 | 16.0 | 26.9 | 46 | 19.1 | PK |
| | V | 3200 | 50.9 | -0.6 | 50.3 | 54(note3) | 3.7 | PK |
| | V | 4876 | 44.9 | 2.8 | 47.7 | 54(note3) | 6.3 | PK |
| | V | 7298.5 | 60.8 | 8.8 | 69.6 | 74 | 4.4 | PK |
| | V | 7298.5 | 41.3 | 8.8 | 50.1 | 54 | 3.9 | AV |
| | H | 24000 | 61.3 | -8.9 | 52.4 | 54 | 1.6 | PK |
| 11 | V | 2462.3 | 72.2 | 30.9 | 103.1 | Fundamental | / | PK |
| | H | 201.4 | 13.9 | 14.7 | 28.6 | 46 | 17.4 | PK |
| | H | 643.5 | 5.7 | 21.2 | 26.9 | 46 | 19.1 | PK |
| | V | 3200 | 49.8 | -0.6 | 49.2 | 54(note3) | 4.8 | PK |
| | V | 4927 | 46.7 | 3.0 | 49.7 | 54(note3) | 4.3 | PK |
| | V | 7386 | 60.8 | 9.0 | 69.8 | 74 | 4.2 | PK |
| | V | 7386 | 41.7 | 9.0 | 50.7 | 54 | 3.3 | AV |
| | H | 24000 | 60.7 | -8.9 | 51.8 | 54 | 2.2 | PK |

Note: 1. Measure Level = Reading Level + Factor.

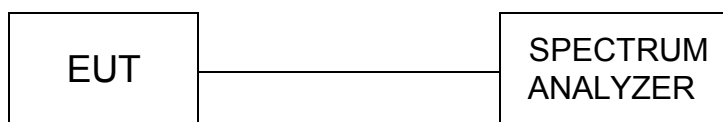
2. The test results which are attenuated more than 20 dB below the permissible value limit (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

4. RBW 1MHz VBW 3MHz peak detector for PK value, RMS detector for AV value

4.3. 6dB Bandwidth Measurement

TEST CONFIGURATION



TEST PROCEDURE

1. The testing follows FCC KDB Publication No. 558074 D01 v03r02 (Measurement Guidelines of DTS).
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW. The 6 dB bandwidth must be greater than 500 kHz.
4. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

LIMIT

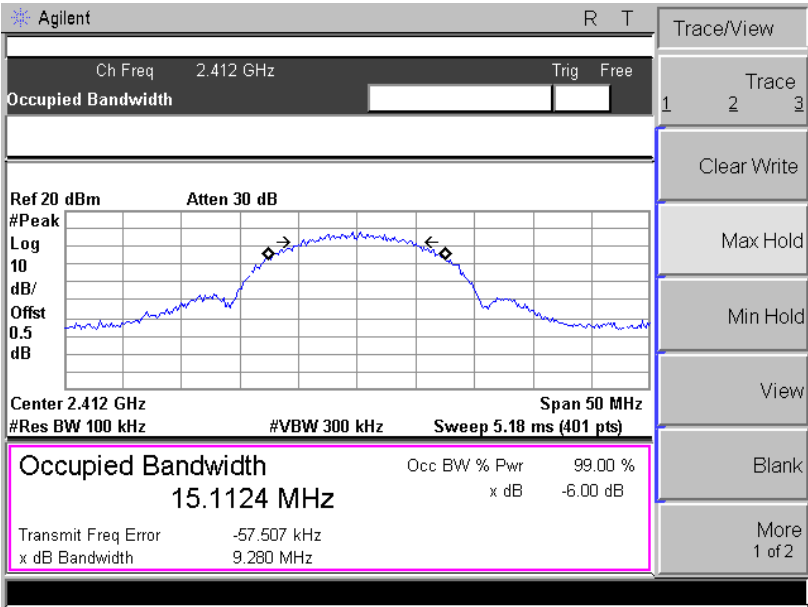
For digital modulation systems, the minimum 6 dB bandwidth shall be at least 500 kHz.

TEST RESULTS

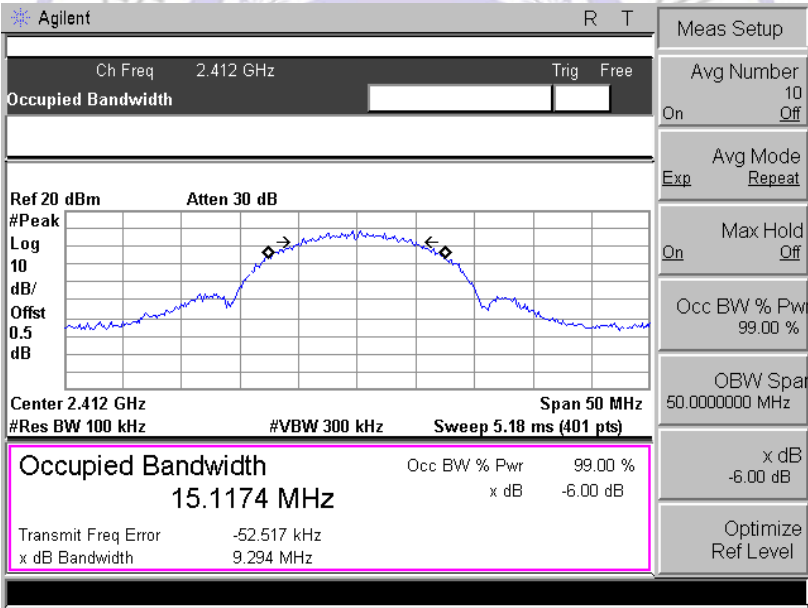
| Mode | CHANNEL | 6dB BANDWIDTH (MHz) | | MINIMUM LIMIT (MHz) | PASS/FAIL |
|--------------|---------|---------------------|-----------|---------------------|-----------|
| | | Ant 1 6dB | Ant 2 6dB | | |
| 802.11b | 1 | 9.280 | 9.294 | 0.5 | PASS |
| | 6 | 9.435 | 9.425 | 0.5 | PASS |
| | 11 | 9.284 | 9.768 | 0.5 | PASS |
| 802.11g | 1 | 16.538 | 16.575 | 0.5 | PASS |
| | 6 | 16.612 | 16.501 | 0.5 | PASS |
| | 11 | 16.585 | 16.610 | 0.5 | PASS |
| 802.11n HT20 | 1 | 17.632 | 17.580 | 0.5 | PASS |
| | 6 | 17.682 | 17.640 | 0.5 | PASS |
| | 11 | 17.674 | 16.658 | 0.5 | PASS |

For 802.11b:

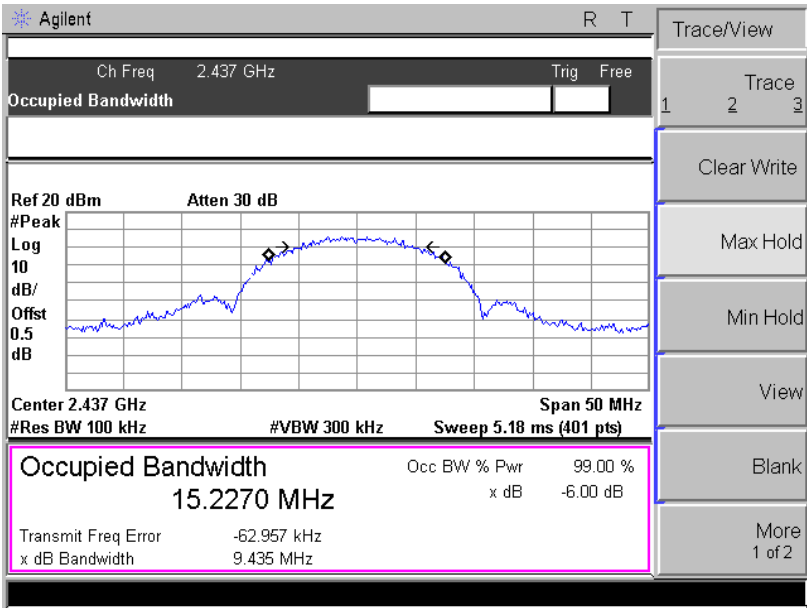
CH1 @ANT 1



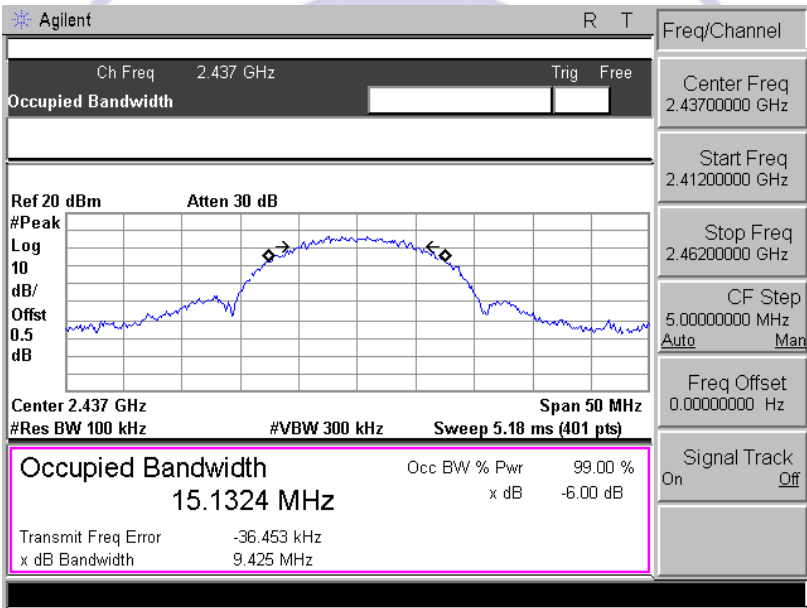
CH1 @ANT 2



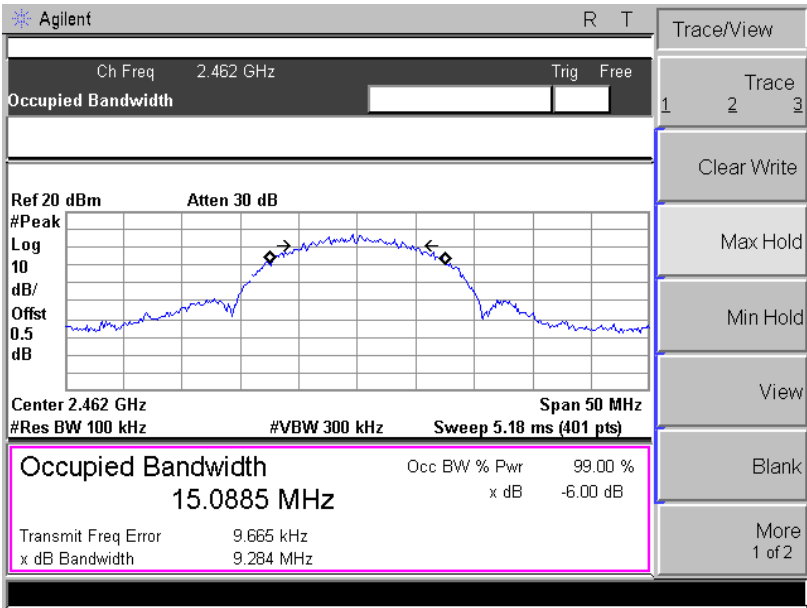
CH6 @ANT 1



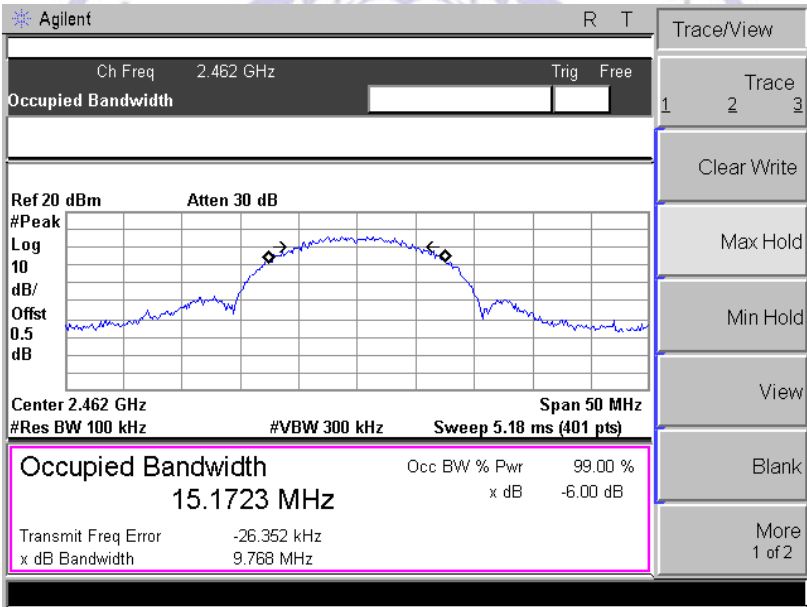
CH6 @ANT 2



CH11 @ANT 1

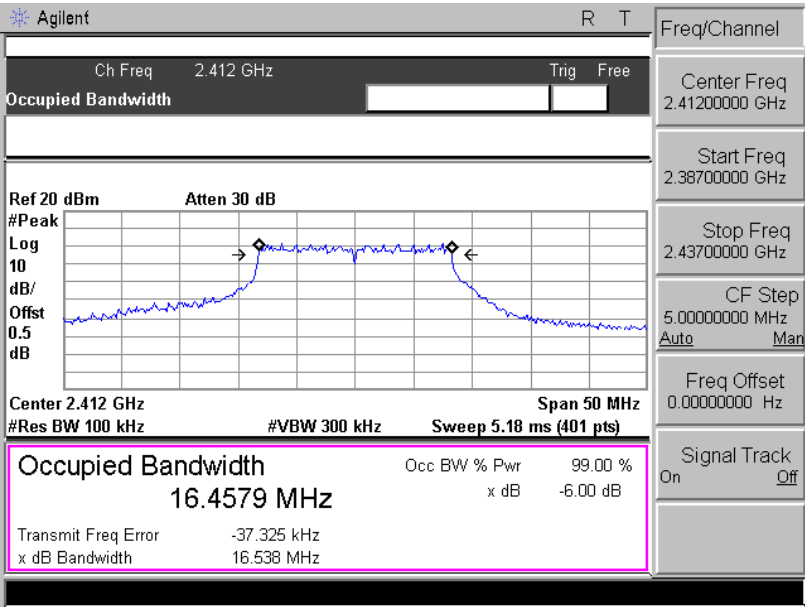


CH11 @ANT 2

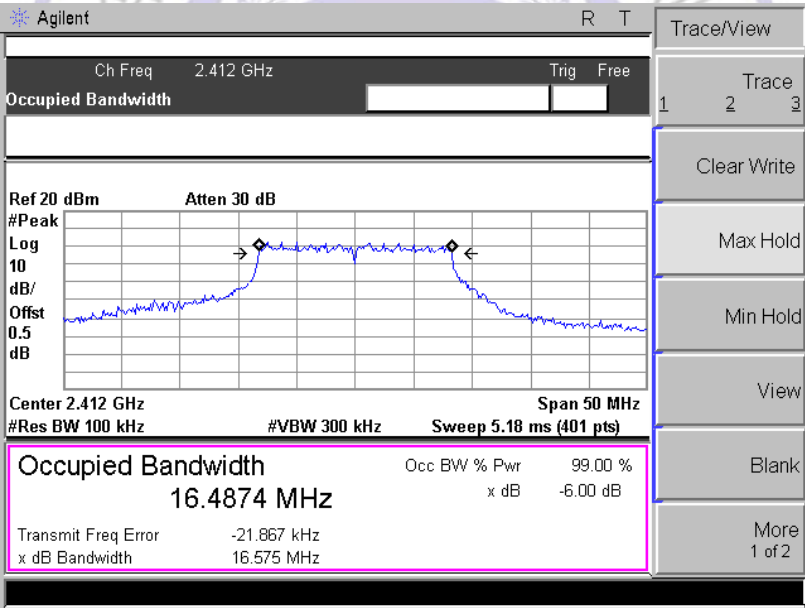


For 802.11g:

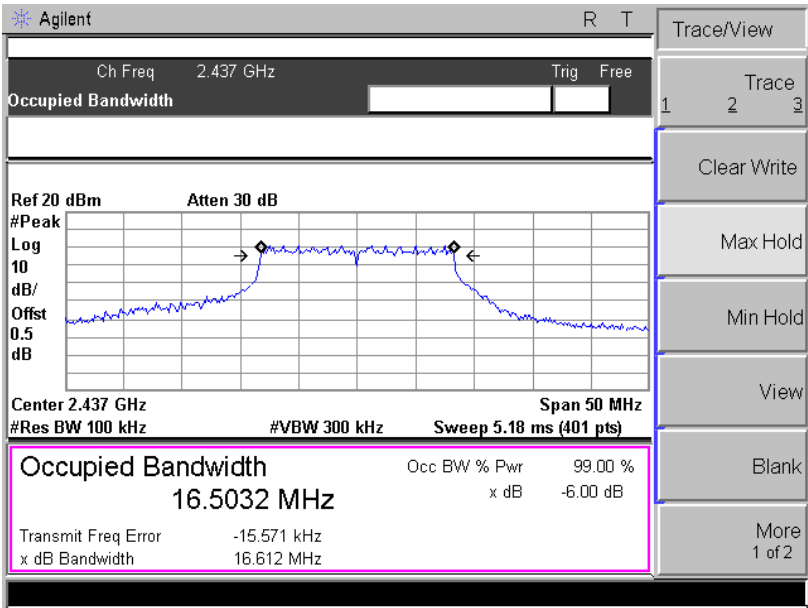
CH1 @ANT 1



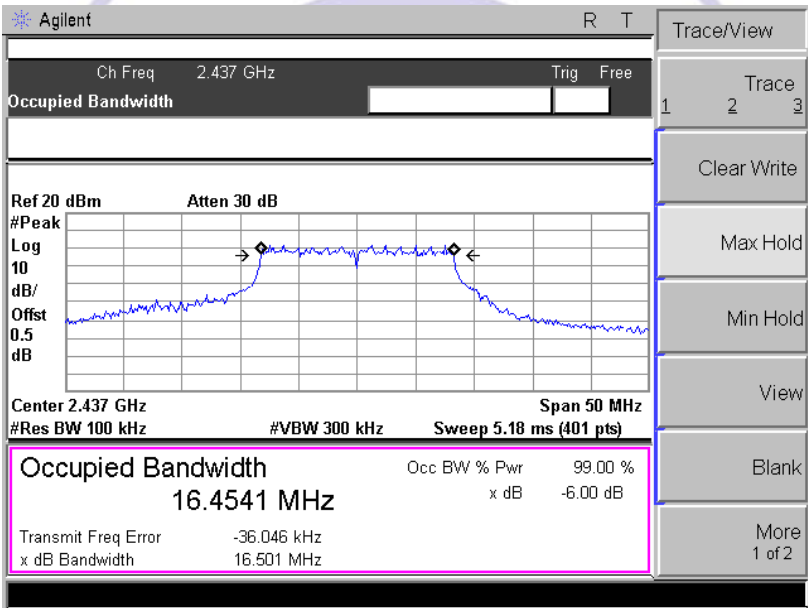
CH1 @ANT 2



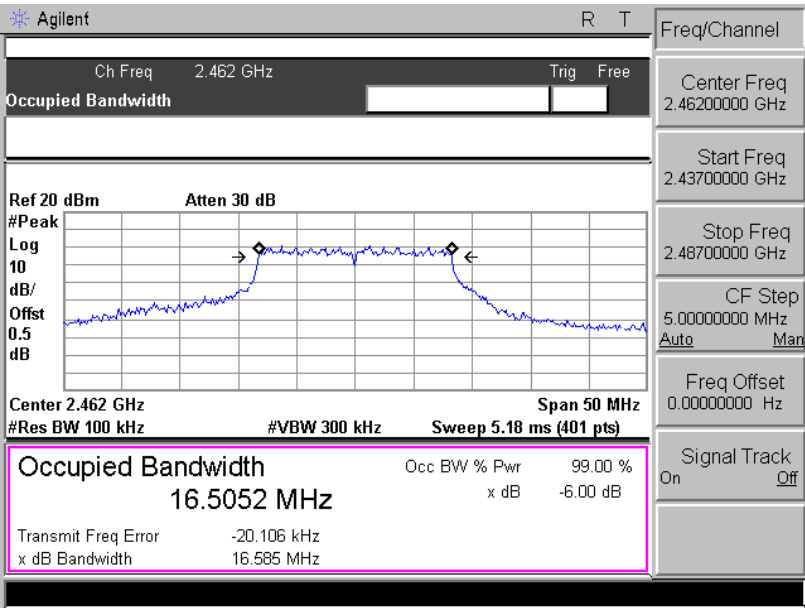
CH6 @ ANT 1



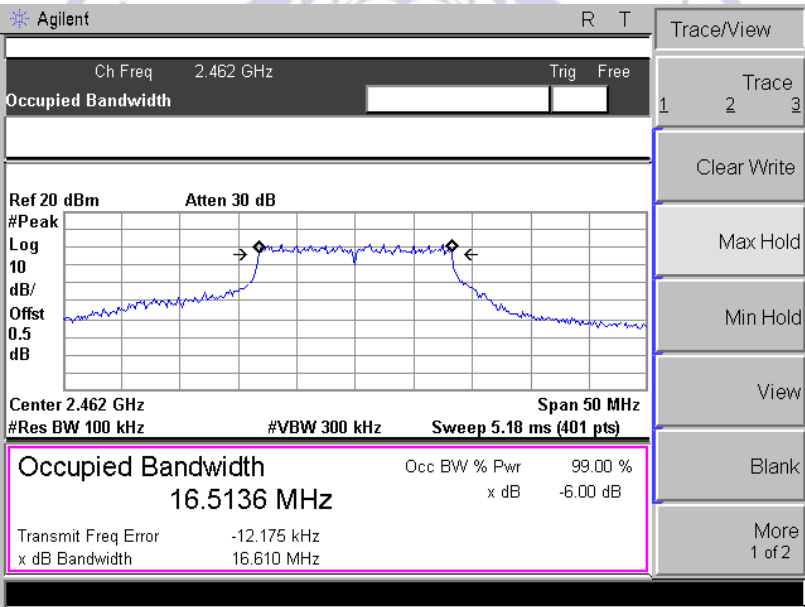
CH6 @ANT 2



CH11 @ANT 1

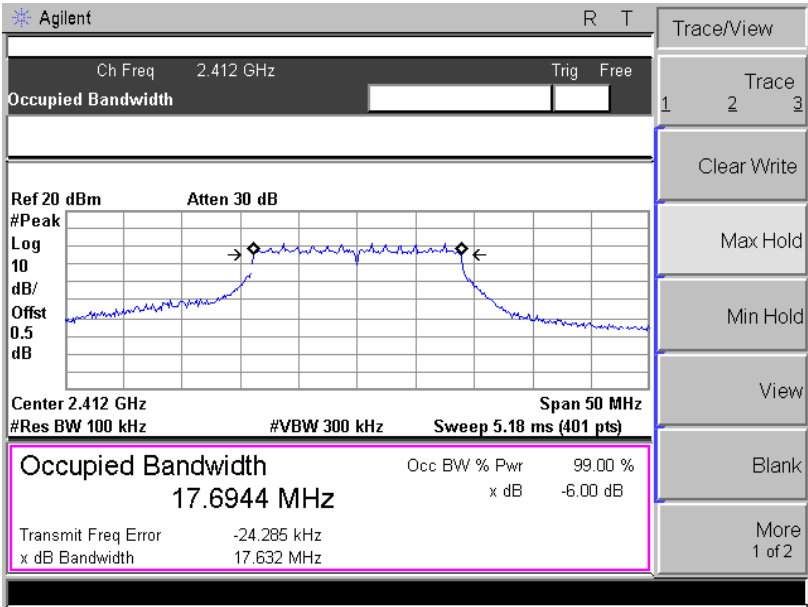


CH11 @ANT 2

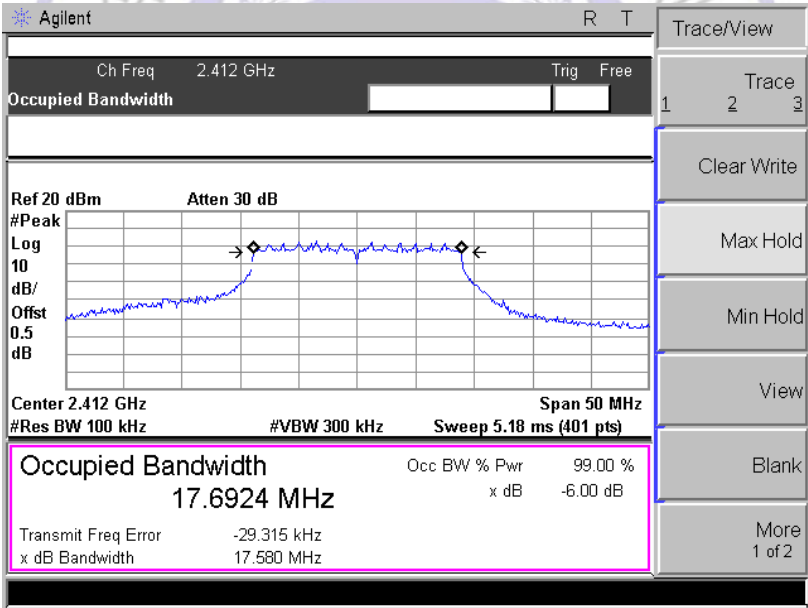


For 802.11n (20MHz) Mode:

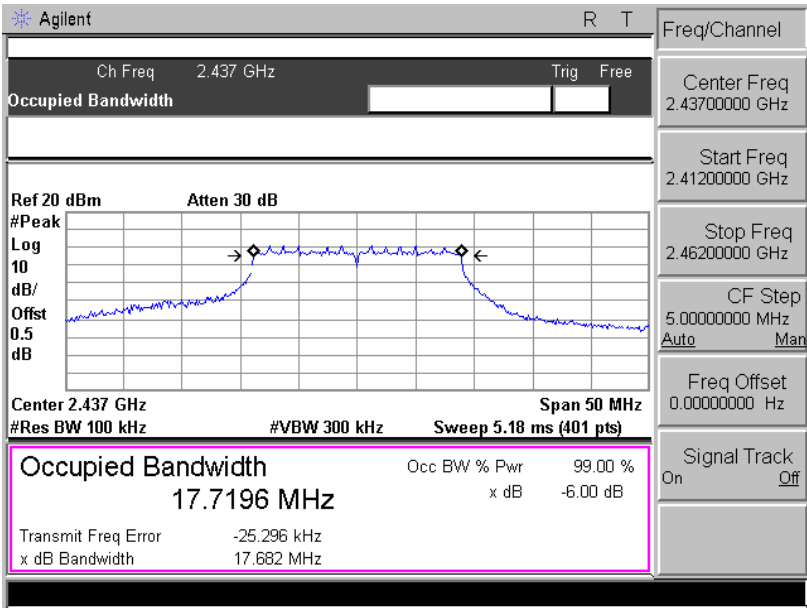
CH1 @ANT 1



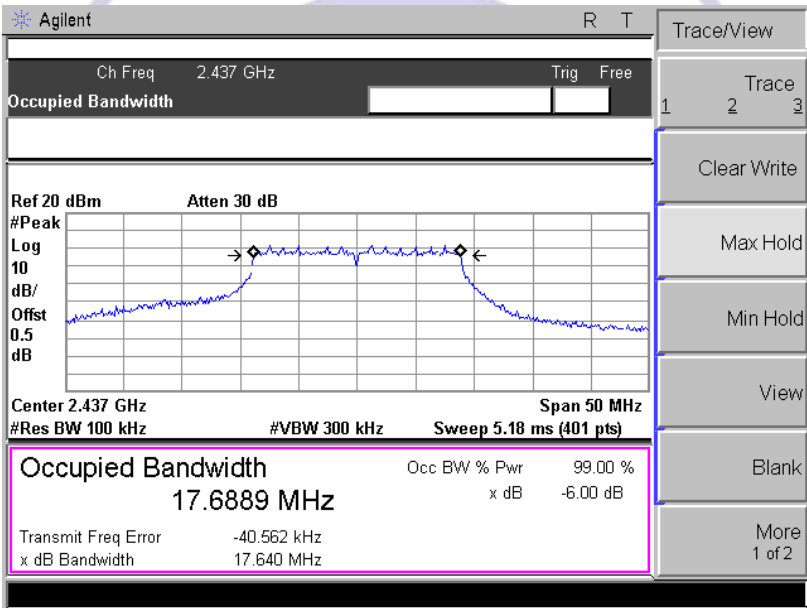
CH1 @ANT 2



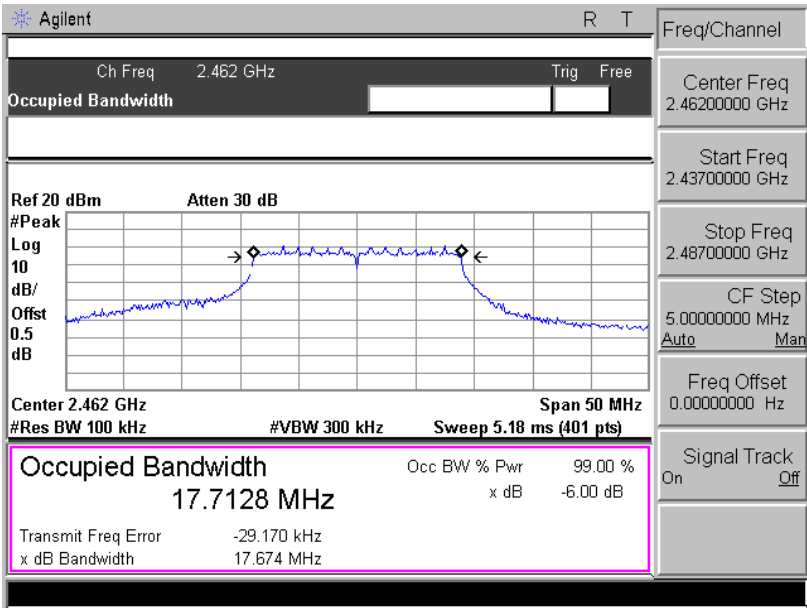
CH6 @ANT 1



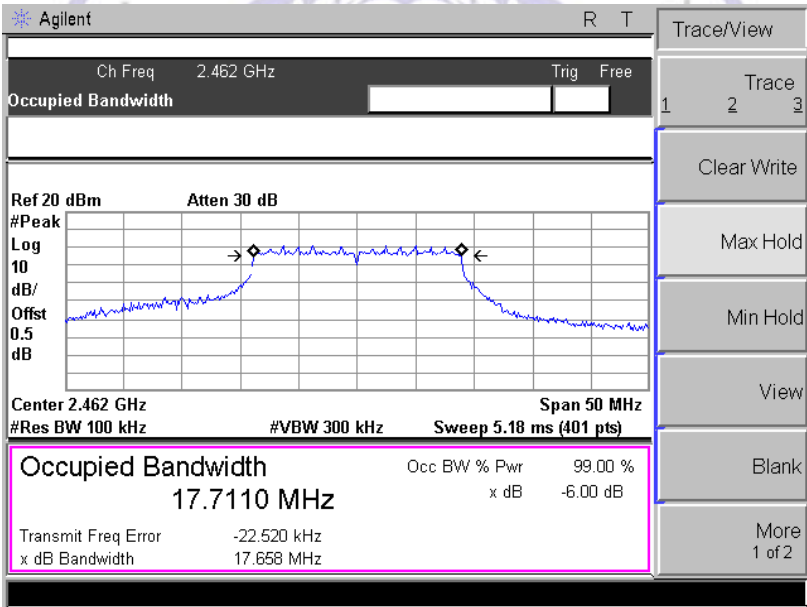
CH6 @ANT 2



CH11 @ANT 1

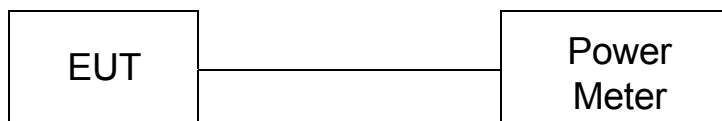


CH11 @ANT 2



4.4. Maximum Peak Output Power

TEST CONFIGURATION



TEST PROCEDURE

According to C63.10 -2009 and KDB558074 D01 v03r02, The EUT was directly connected to the power meter / spectrum analyzer and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

Use the wideband power meter to test peak power and record the result.

LIMIT

The Peak Output Power Measurement limits are 30dBm.

TEST RESULTS

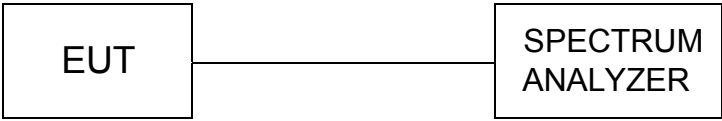
| Mode | Channel | Peak Power Output (dBm) | | | Peak Power Limit (dBm) | PASS / FAIL |
|-----------------|---------|-------------------------|-------|-------|------------------------|-------------|
| | | Ant1 | Ant 2 | Total | | |
| 802.11b | 1 | 9.36 | 9.07 | N/A | 30 | PASS |
| | 6 | 9.43 | 9.29 | N/A | 30 | PASS |
| | 11 | 9.31 | 9.26 | N/A | 30 | PASS |
| 802.11g | 1 | 9.14 | 9.26 | N/A | 30 | PASS |
| | 6 | 9.23 | 9.09 | N/A | 30 | PASS |
| | 11 | 9.11 | 9.21 | N/A | 30 | PASS |
| 802.11n HT20 | 1 | 6.42 | 6.49 | 9.47 | 27.49 | PASS |
| | 6 | 6.39 | 6.41 | 9.41 | 27.49 | PASS |
| | 11 | 6.50 | 6.38 | 9.45 | 27.49 | PASS |

Note: The test results including the cable lose.

Remark: $30 - (8.51 - 6) = 27.49\text{dBm}$

4.5. Band Edge Measurement

TEST CONFIGURATION



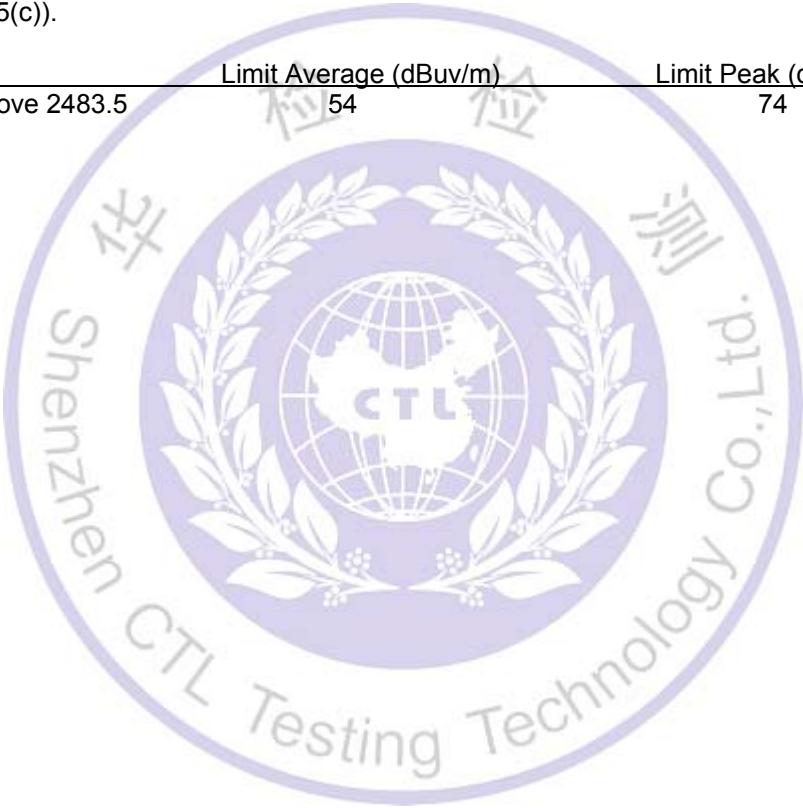
TEST PROCEDURE

According to FCC KDB Publication No. 558074 D01 v03r02 (Measurement Guidelines of DTS)
Set RBW 1MHz VBW 3MHz PEAK detector for PK value, RMS detector for AV value.

LIMIT

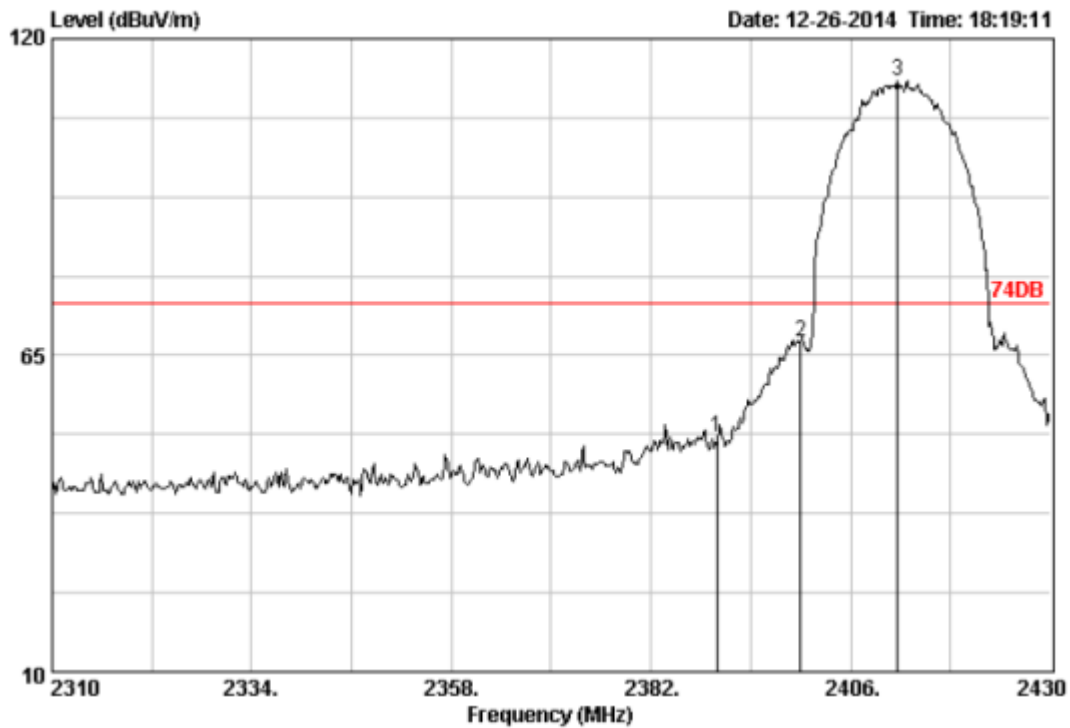
- 1. Below -20dB of the highest emission level in operating band.
- 2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209(see Section 15.205(c)).

| Frequency (MHz) | Limit Average (dBuv/m) | Limit Peak (dBuv/m) |
|----------------------------|------------------------|---------------------|
| Below 2390 or Above 2483.5 | 54 | 74 |



TEST RESULTS

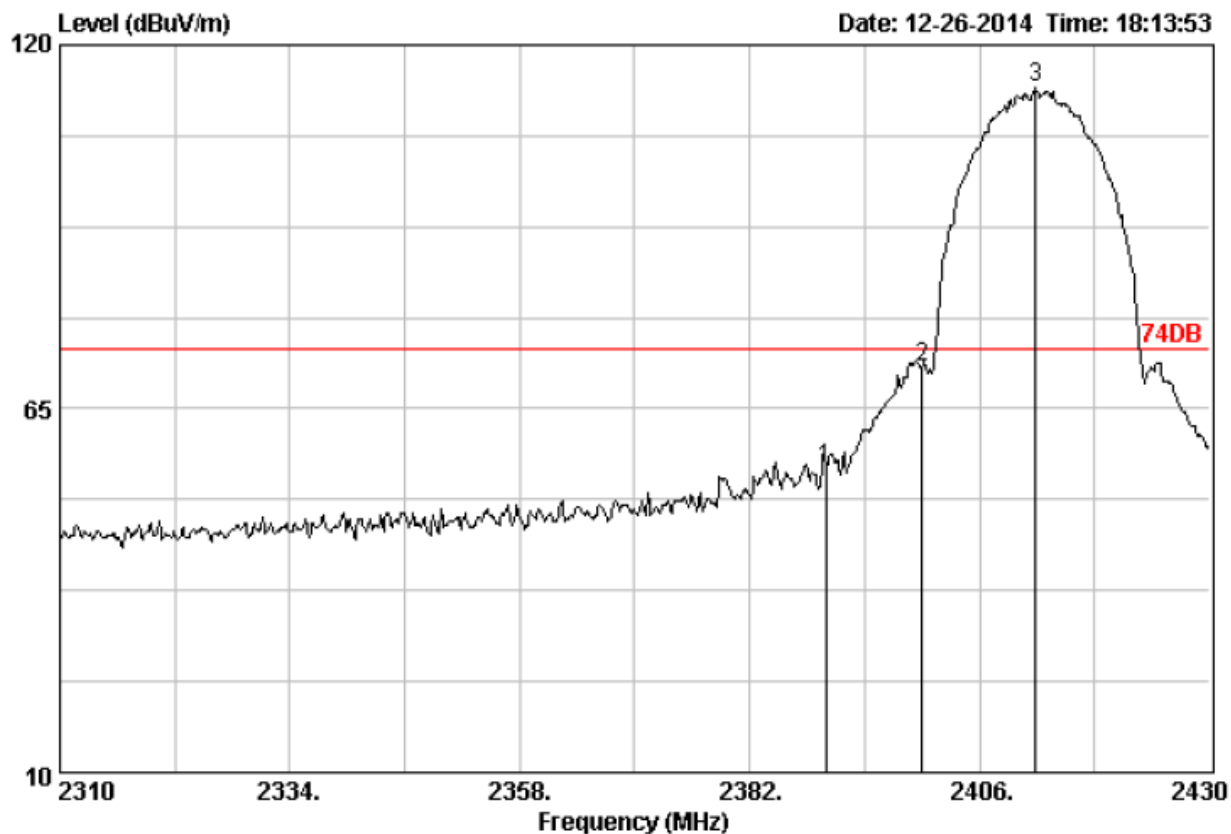
Transmitting mode: 802.11b



| | | | |
|-------------|--------------|-----------|--------------|
| Site no. | : 3m Chamber | Data no. | : 1396 |
| Dis. / Ant. | : 3m DRH-118 | Ant. pol. | : HORIZONTAL |
| Limit | : 74DB | | |
| Env. / Ins. | : 23°C/54% | | |
| Engineer | : | | |
| EUT | : | | |
| Power | : | | |
| M/N | : | | |
| Test Mode | : | | |

| | Freq. | Ant. | Cable | | Emission | | | |
|---|---------|--------|-------|---------|----------|----------|--------|--------|
| | (MHz) | Factor | Loss | Reading | Level | Limits | Margin | Remark |
| | | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2390.00 | 28.78 | 4.61 | 52.86 | 50.89 | 74.00 | 23.11 | Peak |
| 2 | 2400.00 | 28.78 | 4.61 | 69.33 | 67.36 | 74.00 | 6.64 | Peak |
| 3 | 2411.64 | 28.81 | 4.63 | 114.57 | 112.65 | 74.00 | -38.65 | Peak |

Remark : SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.

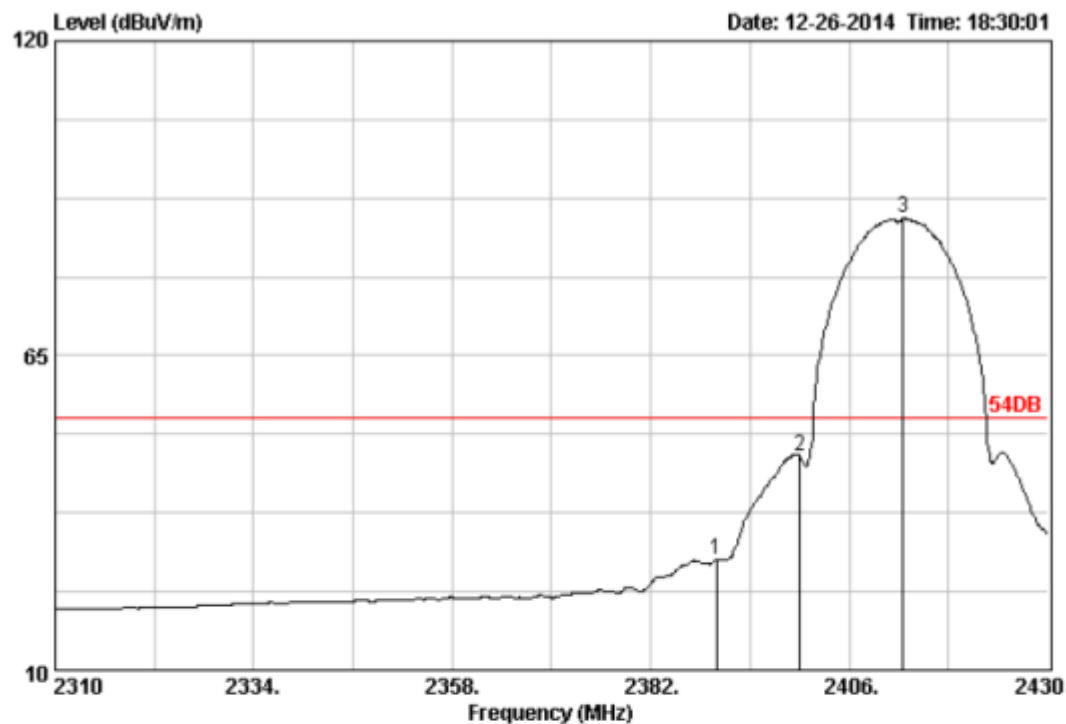


Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 74DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

Data no. : 1395
 Ant. pol. : VERTICAL

| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2390.00 | 28.78 | 4.61 | 58.02 | 56.05 | 74.00 | 17.95 | Peak |
| 2 | 2400.00 | 28.78 | 4.61 | 73.31 | 71.34 | 74.00 | 2.66 | Peak |
| 3 | 2411.88 | 28.81 | 4.63 | 115.38 | 113.46 | 74.00 | -39.46 | Peak |

Remark : SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.



Site no. : 3m Chamber

Dis. / Ant. : 3m DRH-118

Limit : 54DB

Env. / Ins. : 23°C/54%

Engineer :

EUT :

Power :

M/N :

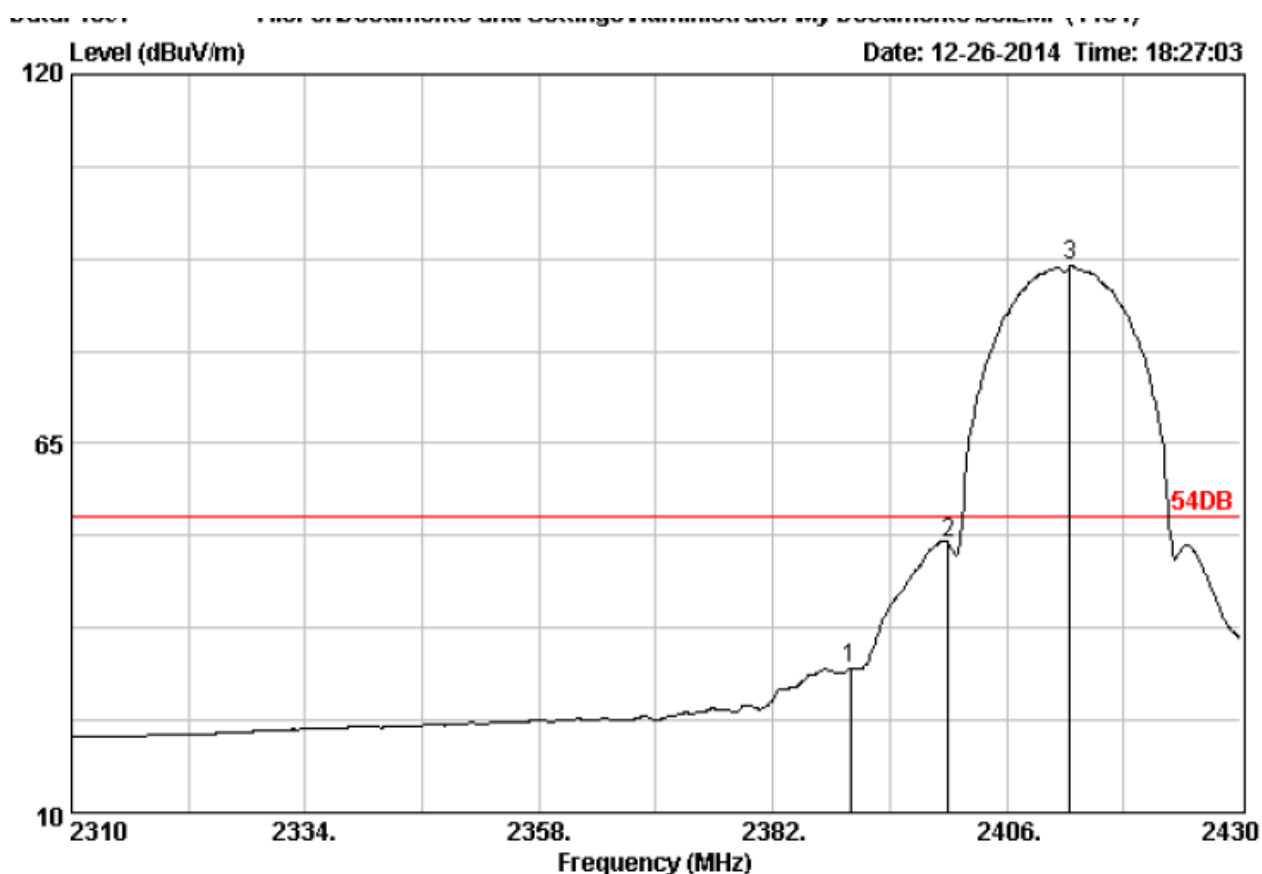
Test Mode :

Data no. : 1398

Ant. pol. : HORIZONTAL

| | Ant. | | Cable | | Emission | | | Remark |
|---|----------------|----------------|--------------|-------------------|-------------------|--------------------|----------------|---------|
| | Freq. (MHz) | Factor (dB) | Loss (dB) | Reading (dBuV) | Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | |
| 1 | 2390.00 | 28.78 | 4.61 | 31.33 | 29.36 | 54.00 | 24.64 | Average |
| 2 | 2400.00 | 28.78 | 4.61 | 49.32 | 47.35 | 54.00 | 6.65 | Average |
| 3 | 2412.48 | 28.81 | 4.63 | 90.94 | 89.02 | 54.00 | -35.02 | Average |

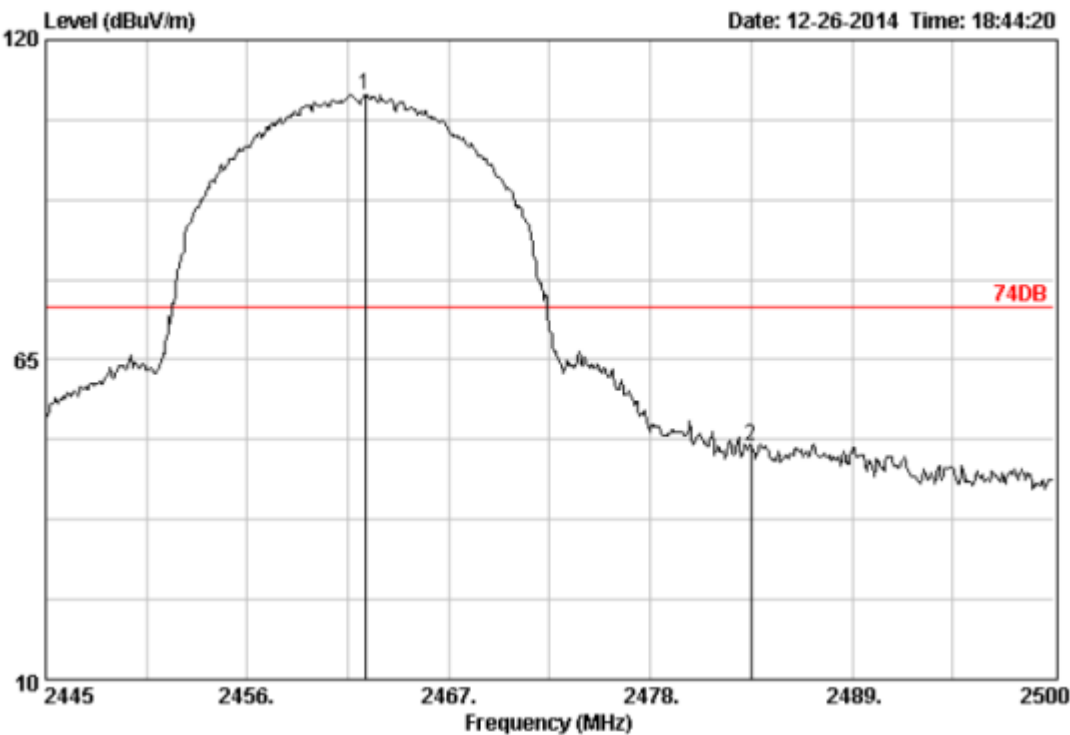
Remark : SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.



| | | | |
|-------------|--------------|-------------|----------|
| Site no. | : 3m Chamber | Data no. : | 1397 |
| Dis. / Ant. | : 3m DRH-118 | Ant. pol. : | VERTICAL |
| Limit | : 54DB | | |
| Env. / Ins. | : 23*C/54% | | |
| Engineer | : | | |
| EUT | : | | |
| Power | : | | |
| M/N | : | | |
| Test Mode | : | | |

| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 2390.00 | 28.78 | 4.61 | 33.52 | 31.55 | 54.00 | 22.45 | Average |
| 2 | 2400.00 | 28.78 | 4.61 | 52.07 | 50.10 | 54.00 | 3.90 | Average |
| 3 | 2412.48 | 28.81 | 4.63 | 93.36 | 91.44 | 54.00 | -37.44 | Average |

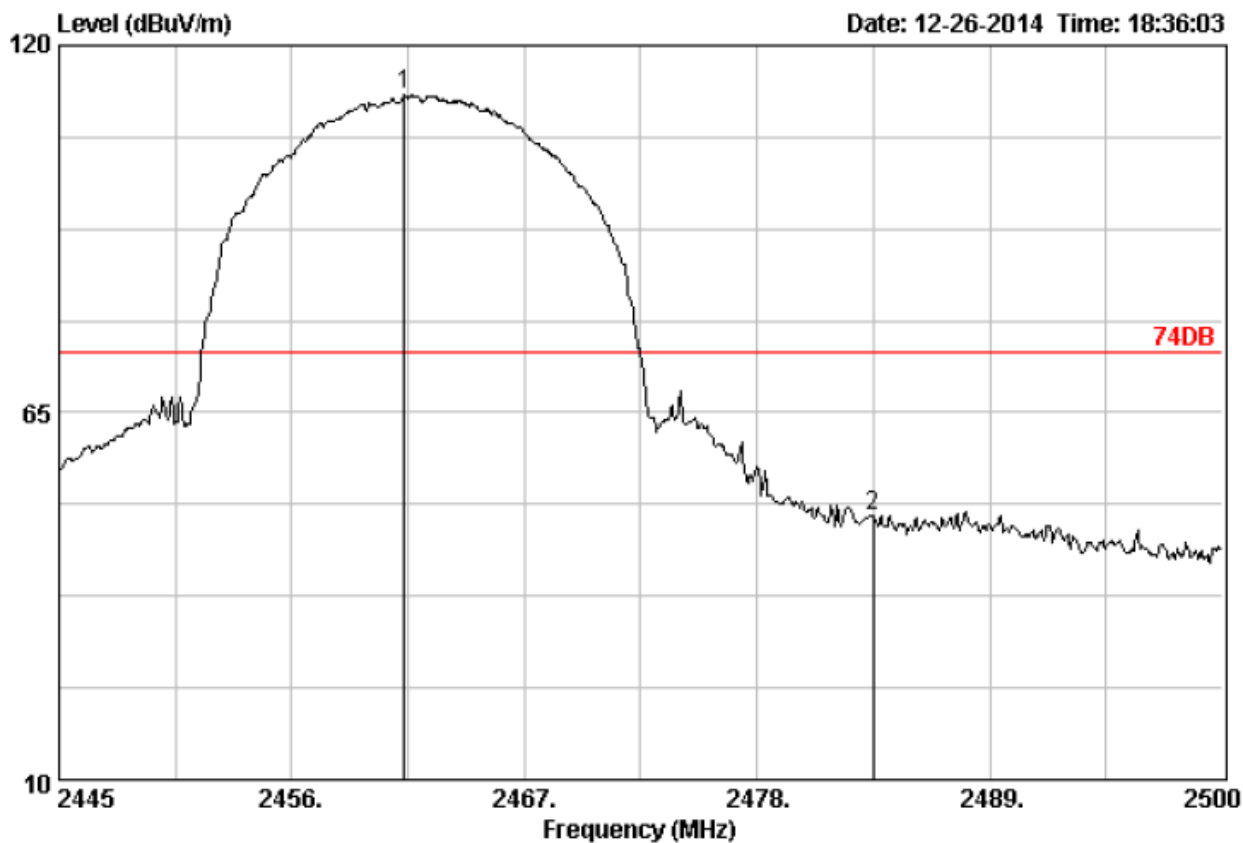
Remark : SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.



Site no. : 3m Chamber Data no. : 1402
Dis. / Ant. : 3m DRH-118 Ant. pol. : HORIZONTAL
Limit : 74DB
Env. / Ins. : 23°C/54%
Engineer :
EUT :
Power :
M/N :
Test Mode :

| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission | | | Remark |
|---|----------------|------------------------|-----------------------|-------------------|-------------------|--------------------|----------------|--------|
| | | | | | Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | |
| 1 | 2462.44 | 28.90 | 4.68 | 112.34 | 110.55 | 74.00 | -36.55 | Peak |
| 2 | 2483.50 | 28.93 | 4.70 | 51.92 | 50.17 | 74.00 | 23.83 | Peak |

Remark : SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.

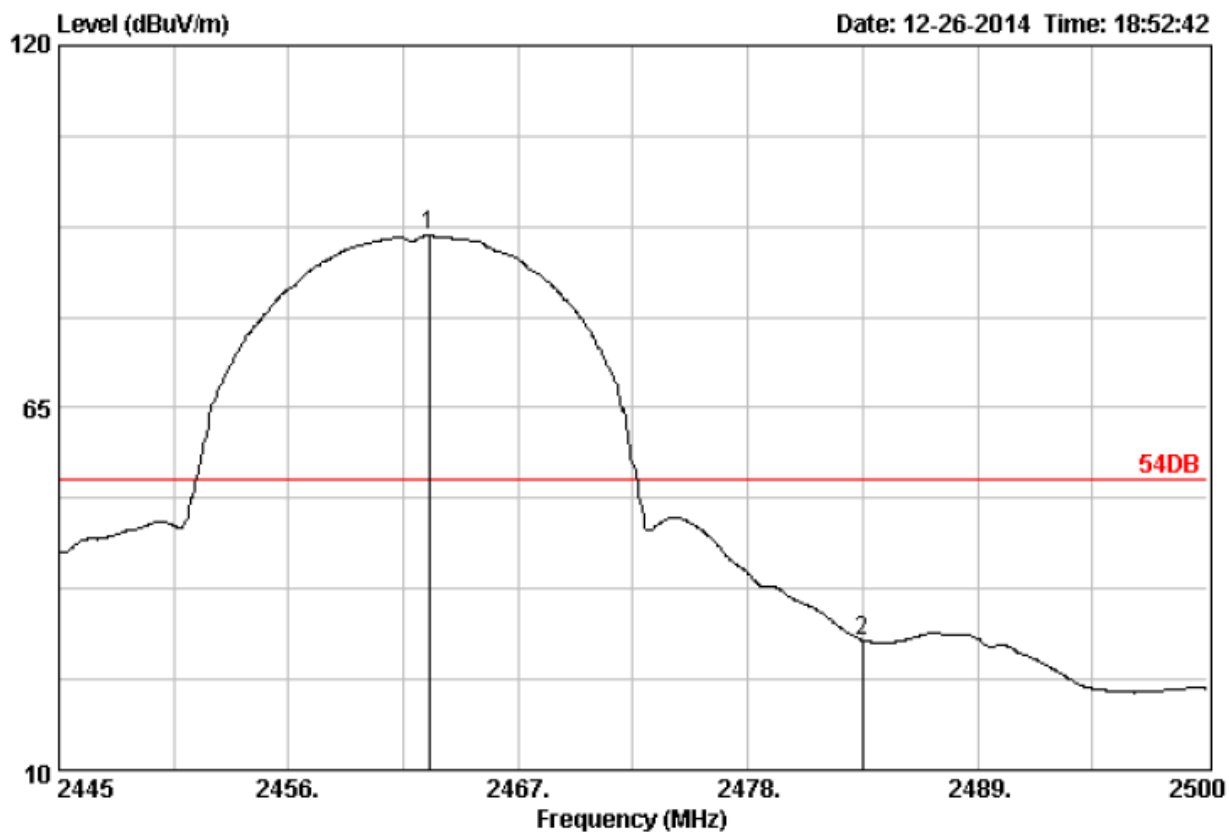


Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 74DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

Data no. : 1400
 Ant. pol. : VERTICAL

| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2461.34 | 28.90 | 4.68 | 114.34 | 112.55 | 74.00 | -38.55 | Peak |
| 2 | 2483.50 | 28.93 | 4.70 | 51.19 | 49.44 | 74.00 | 24.56 | Peak |

Remark : SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.

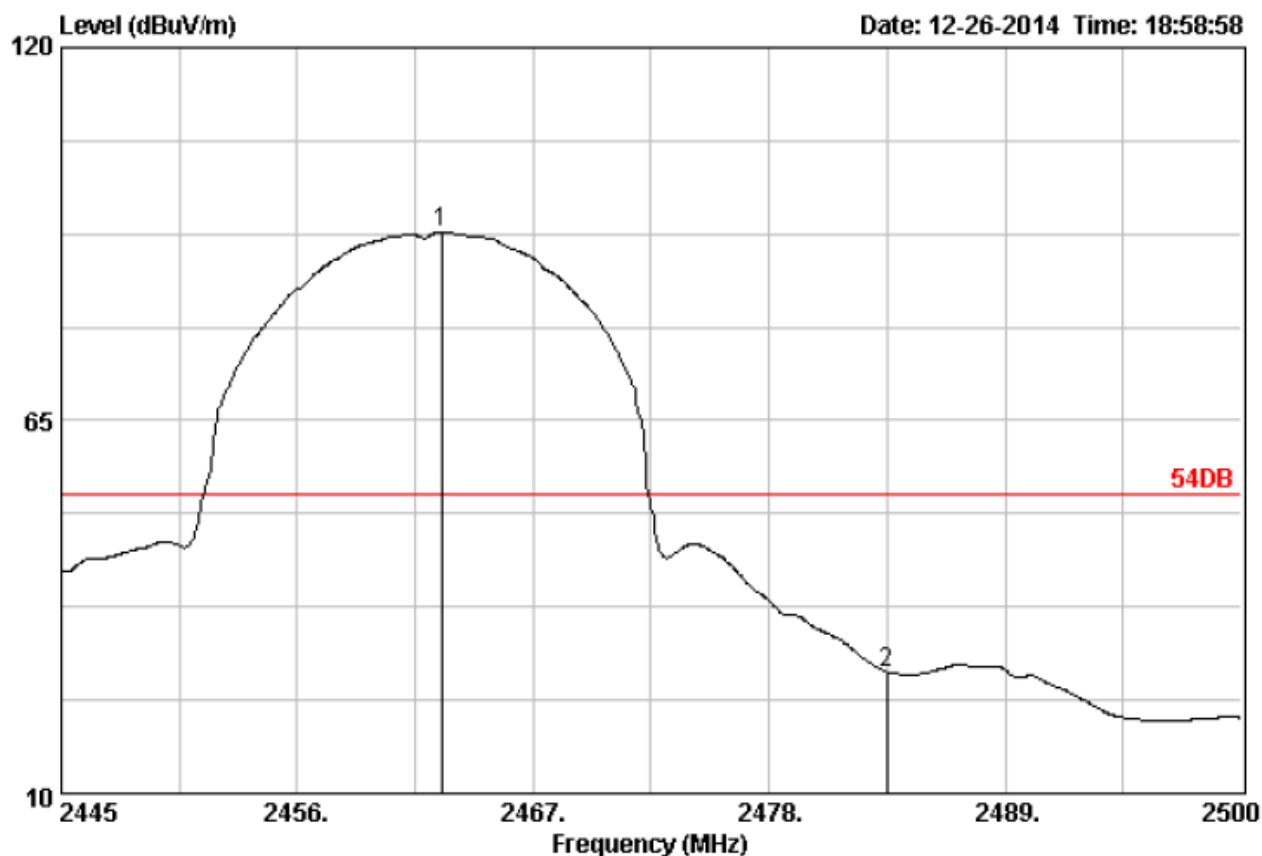


Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 54DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

Data no. : 1403
 Ant. pol. : HORIZONTAL

| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Emission Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 2462.71 | 28.90 | 4.68 | 93.08 | 91.29 | 54.00 | -37.29 | Average |
| 2 | 2483.50 | 28.93 | 4.70 | 31.47 | 29.72 | 54.00 | 24.28 | Average |

Remark : SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.

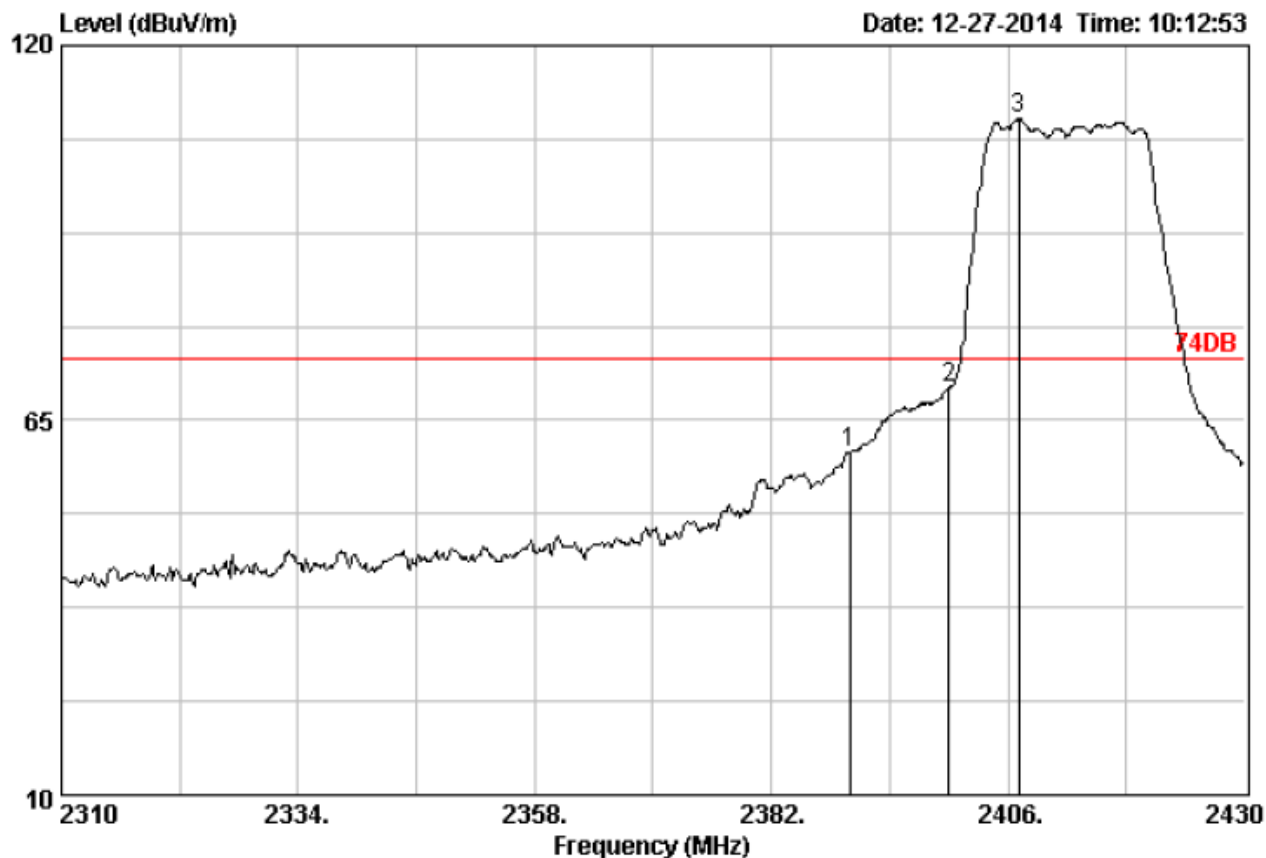


| | | | |
|-------------|--------------|-----------|------------|
| Site no. | : 3m Chamber | Data no. | : 1404 |
| Dis. / Ant. | : 3m DRH-118 | Ant. pol. | : VERTICAL |
| Limit | : 54DB | | |
| Env. / Ins. | : 23°C/54% | | |
| Engineer | : | | |
| EUT | : | | |
| Power | : | | |
| M/N | : | | |
| Test Mode | : | | |

| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission | | | Remark |
|---|----------------|------------------------|-----------------------|-------------------|-------------------|--------------------|----------------|---------|
| | | | | | Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | |
| 1 | 2462.71 | 28.90 | 4.68 | 94.66 | 92.87 | 54.00 | -38.87 | Average |
| 2 | 2483.50 | 28.93 | 4.70 | 29.67 | 27.92 | 54.00 | 26.08 | Average |

Remark : SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.

Note : For 802.11g Mode:

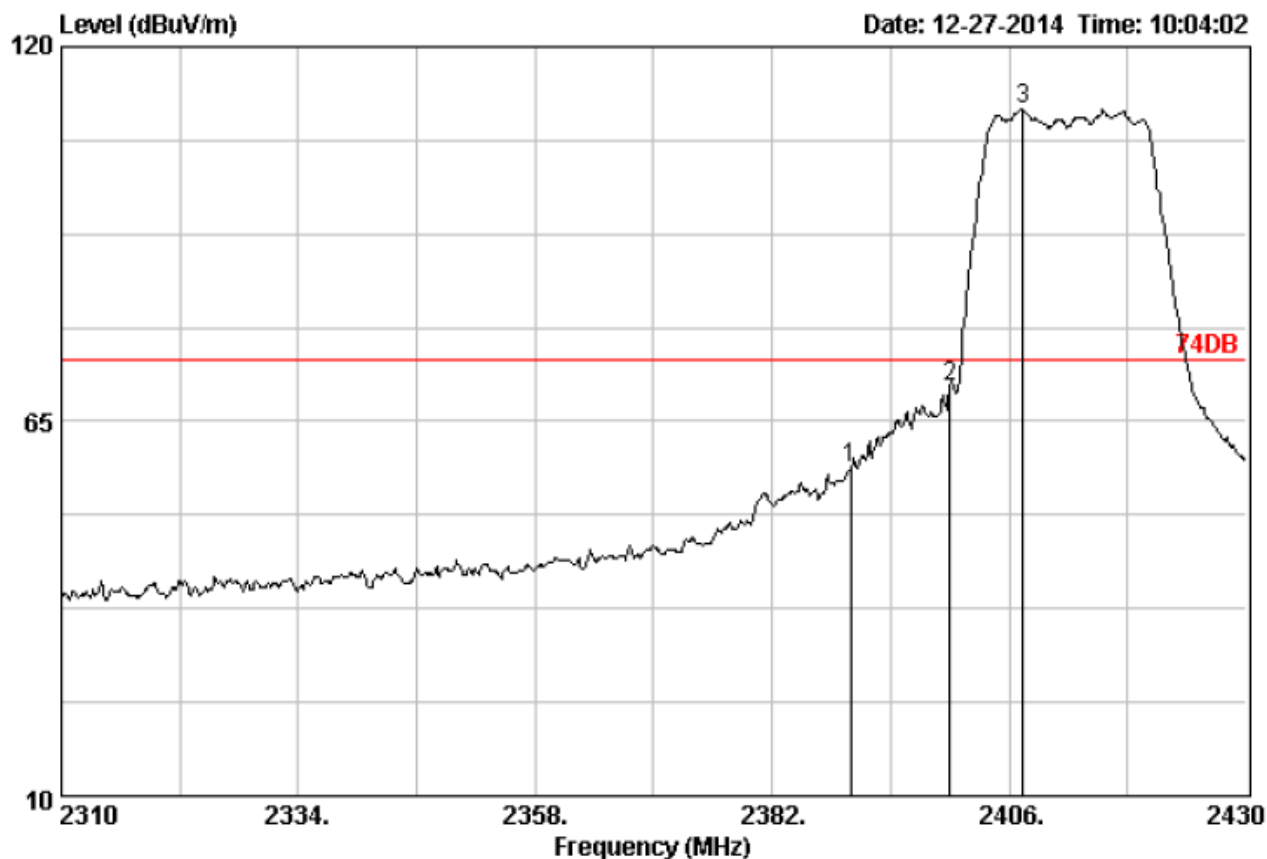


Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 74DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

Data no. : 1407
 Ant. pol. : HORIZONTAL

| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2390.00 | 28.78 | 4.61 | 62.27 | 60.30 | 74.00 | 13.70 | Peak |
| 2 | 2400.00 | 28.78 | 4.61 | 71.71 | 69.74 | 74.00 | 4.26 | Peak |
| 3 | 2407.08 | 28.81 | 4.63 | 111.24 | 109.32 | 74.00 | -35.32 | Peak |

Remark : SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.

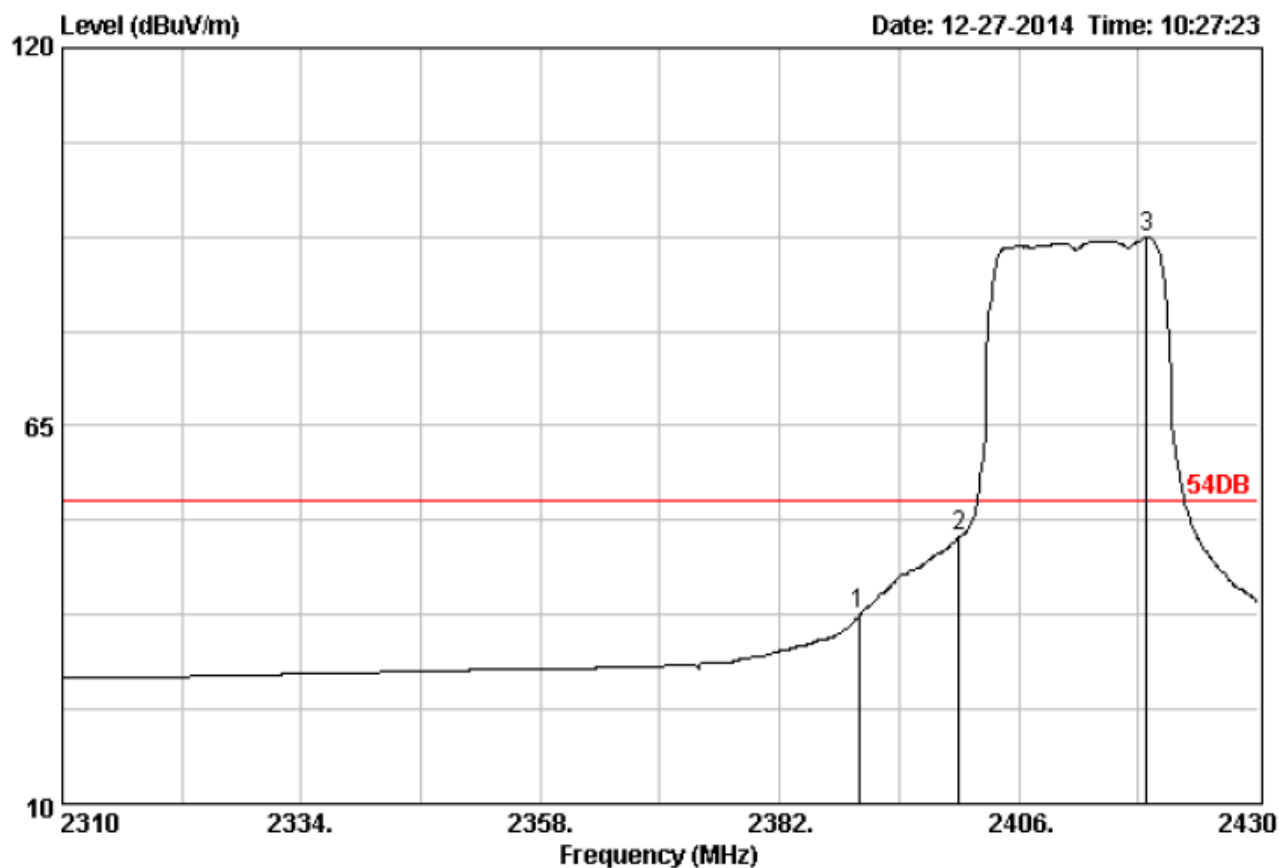


Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 74DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

Data no. : 1406
 Ant. pol. : VERTICAL

| | Freq. | Ant. | Cable | | Emission | | | |
|---|---------|--------|-------|---------|----------|----------|--------|--------|
| | (MHz) | Factor | Loss | Reading | Level | Limits | Margin | Remark |
| | | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2390.00 | 28.78 | 4.61 | 60.16 | 58.19 | 74.00 | 15.81 | Peak |
| 2 | 2400.00 | 28.78 | 4.61 | 72.02 | 70.05 | 74.00 | 3.95 | Peak |
| 3 | 2407.44 | 28.81 | 4.63 | 112.76 | 110.84 | 74.00 | -36.84 | Peak |

Remark : SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.

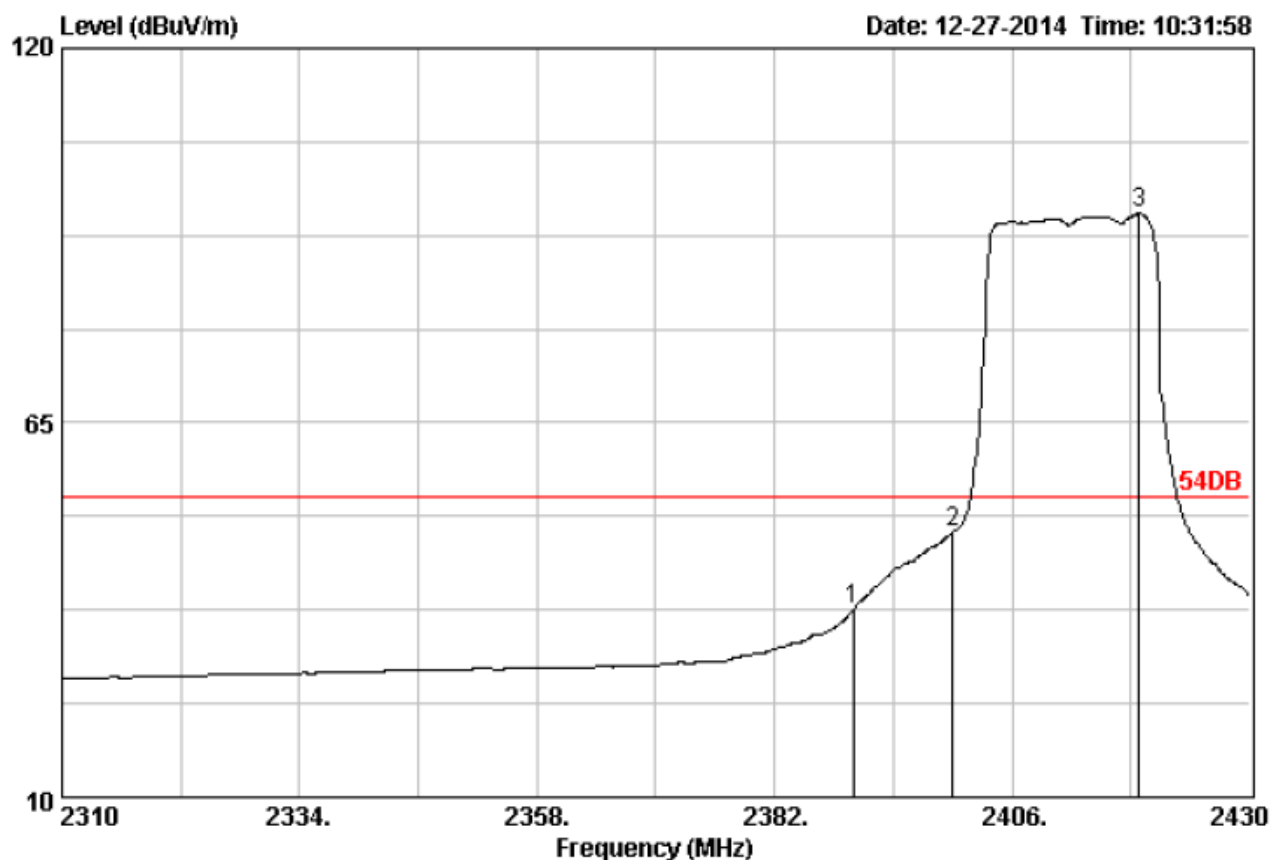


Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 54DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

Data no. : 1408
 Ant. pol. : HORIZONTAL

| | Freq. | Ant. | Cable | | Emission | | | |
|---|---------|--------|-------|---------|----------|----------|--------|---------|
| | (MHz) | Factor | Loss | Reading | Level | Limits | Margin | Remark |
| | | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2390.00 | 28.78 | 4.61 | 39.40 | 37.43 | 54.00 | 16.57 | Average |
| 2 | 2400.00 | 28.78 | 4.61 | 50.76 | 48.79 | 54.00 | 5.21 | Average |
| 3 | 2418.84 | 28.81 | 4.63 | 94.46 | 92.54 | 54.00 | -38.54 | Average |

Remark : SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.

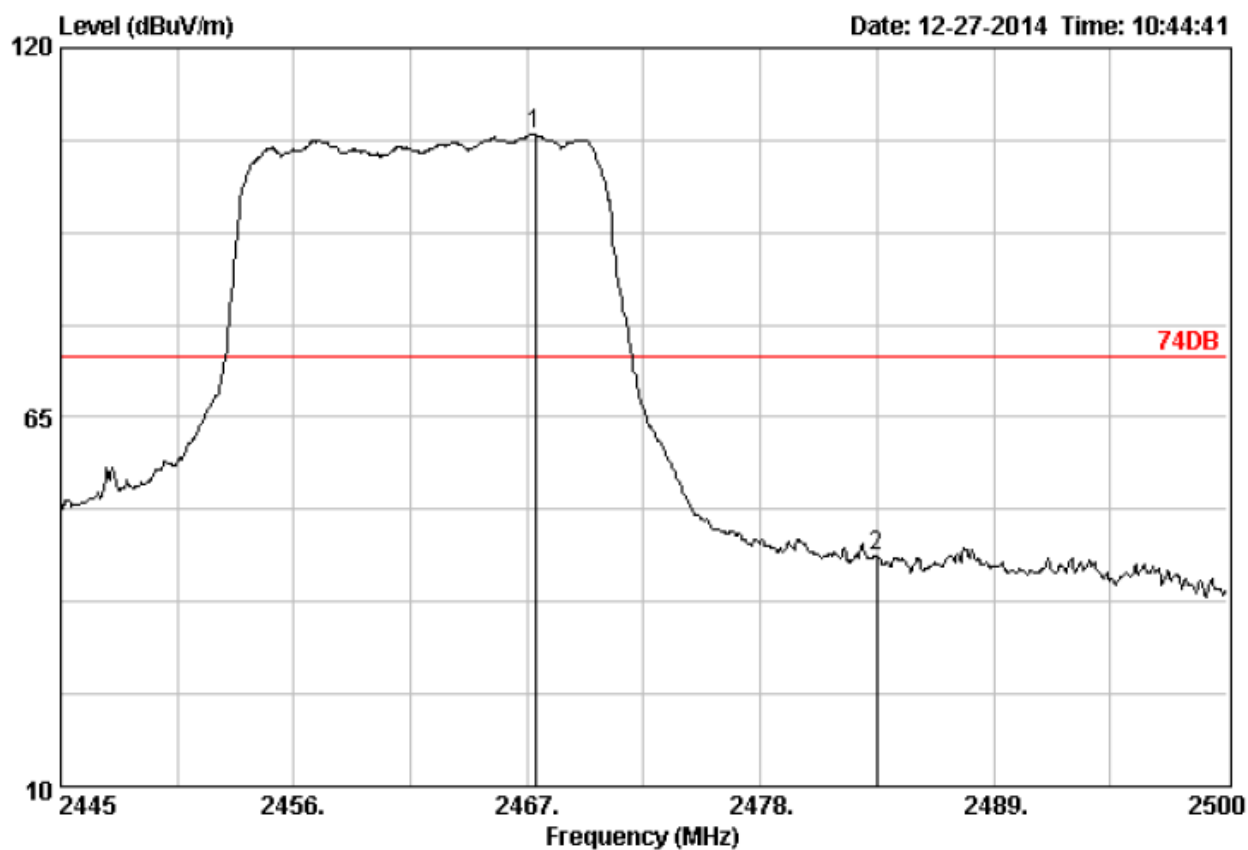


Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 54DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

Data no. : 1409
 Ant. pol. : VERTICAL

| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 2390.00 | 28.78 | 4.61 | 39.66 | 37.69 | 54.00 | 16.31 | Average |
| 2 | 2400.00 | 28.78 | 4.61 | 50.95 | 48.98 | 54.00 | 5.02 | Average |
| 3 | 2418.84 | 28.81 | 4.63 | 97.79 | 95.87 | 54.00 | -41.87 | Average |

Remark : SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.

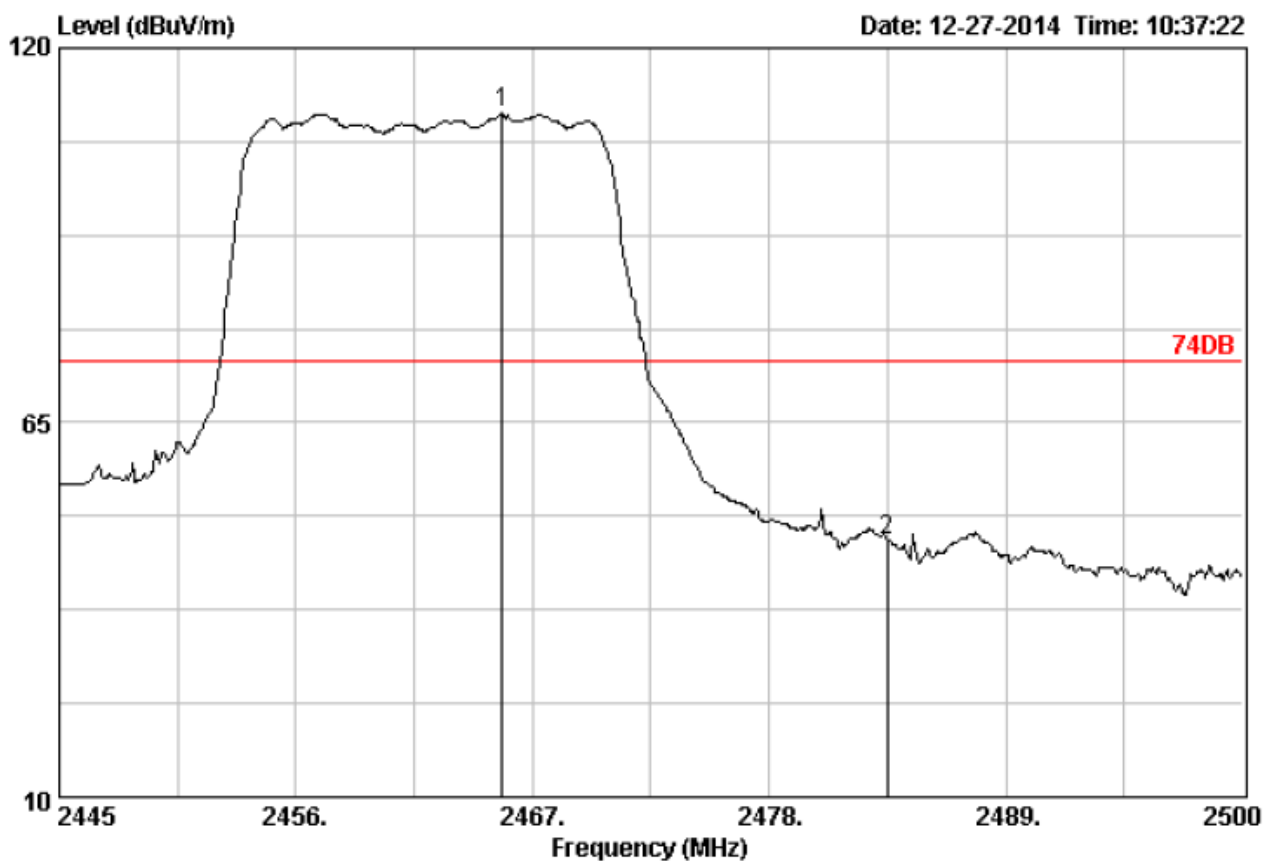


Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 74DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

Data no. : 1411
 Ant. pol. : HORIZONTAL

| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2467.39 | 28.90 | 4.68 | 109.02 | 107.23 | 74.00 | -33.23 | Peak |
| 2 | 2483.50 | 28.93 | 4.70 | 45.97 | 44.22 | 74.00 | 29.78 | Peak |

Remark : SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.

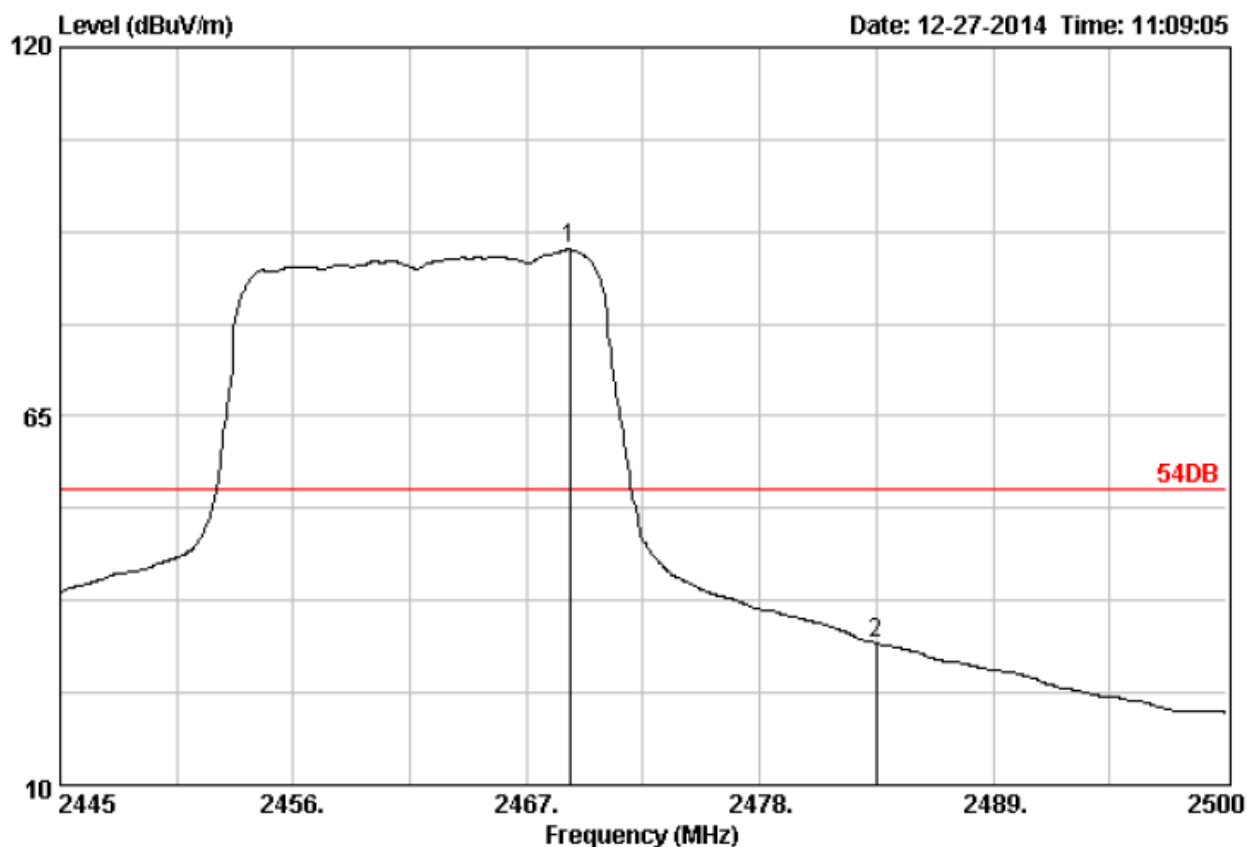


Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 74DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

Data no. : 1410
 Ant. pol. : VERTICAL

| | Ant. | | Cable | | Emission | | | |
|---|----------------|----------------|--------------|-------------------|-------------------|--------------------|----------------|--------|
| | Freq. (MHz) | Factor (dB) | Loss (dB) | Reading (dBuV) | Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
| 1 | 2465.57 | 28.90 | 4.68 | 112.20 | 110.41 | 74.00 | -36.41 | Peak |
| 2 | 2483.50 | 28.93 | 4.70 | 49.49 | 47.74 | 74.00 | 26.26 | Peak |

Remark : SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.

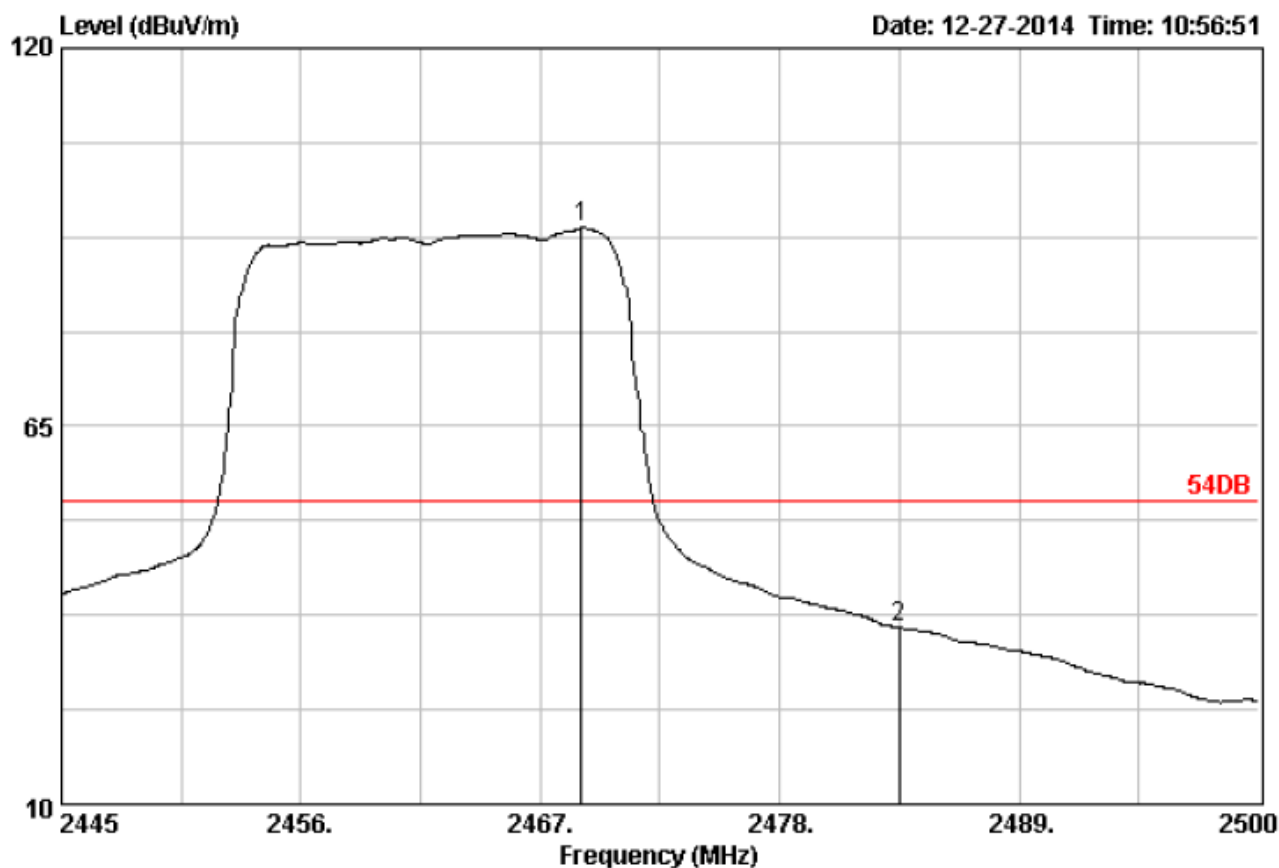


Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 54DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

Data no. : 1414
 Ant. pol. : HORIZONTAL

| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 2469.04 | 28.90 | 4.68 | 91.65 | 89.86 | 54.00 | -35.86 | Average |
| 2 | 2483.50 | 28.93 | 4.70 | 32.87 | 31.12 | 54.00 | 22.88 | Average |

Remark : SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.

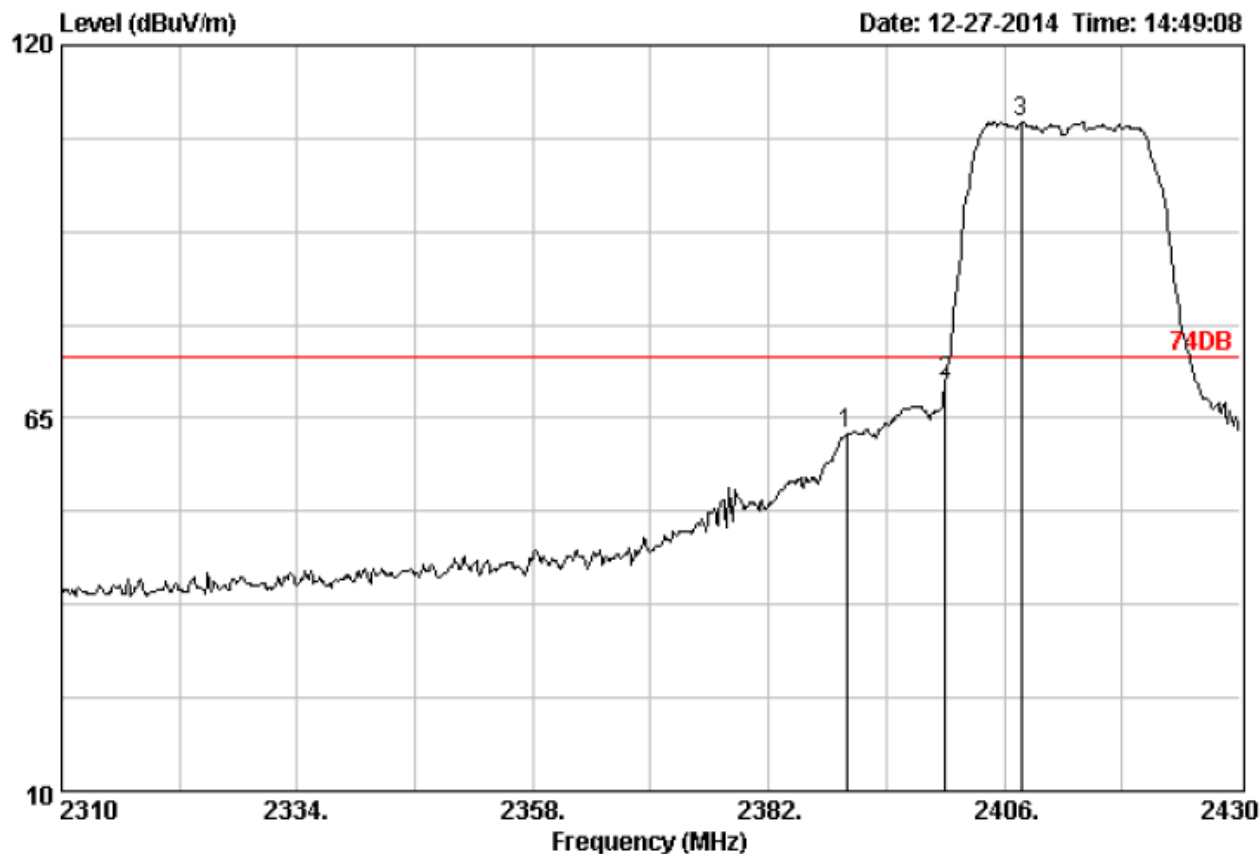


| | | | |
|-------------|--------------|-----------|------------|
| Site no. | : 3m Chamber | Data no. | : 1412 |
| Dis. / Ant. | : 3m DRH-118 | Ant. pol. | : VERTICAL |
| Limit | : 54DB | | |
| Env. / Ins. | : 23°C/54% | | |
| Engineer | : | | |
| EUT | : | | |
| Power | : | | |
| M/N | : | | |
| Test Mode | : | | |

| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission | | | Margin (dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|-------------------|--------------------|--------|----------------|--------|
| | | | | | Level (dBuV/m) | Limits (dBuV/m) | | | |
| 1 | 2468.87 | 28.90 | 4.68 | 95.66 | 93.87 | 54.00 | -39.87 | Average | |
| 2 | 2483.50 | 28.93 | 4.70 | 37.42 | 35.67 | 54.00 | 18.33 | Average | |

Remark : SISO mode ANT 1, ANT2 keeping TX mode all have been tested, only report worse case ANT1 mode.

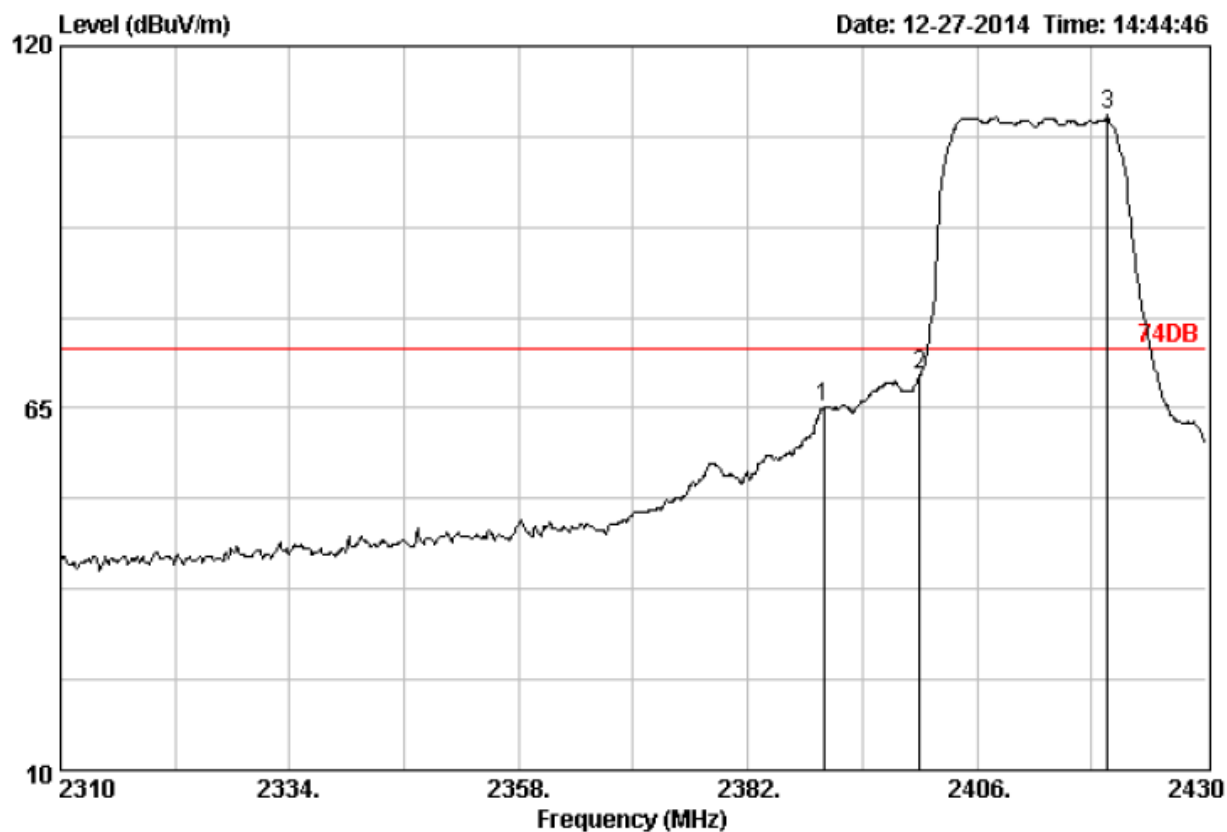
Note : For 802.11n (20MHz, KEEPING MIMO TX MODE) Mode:



Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 74DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

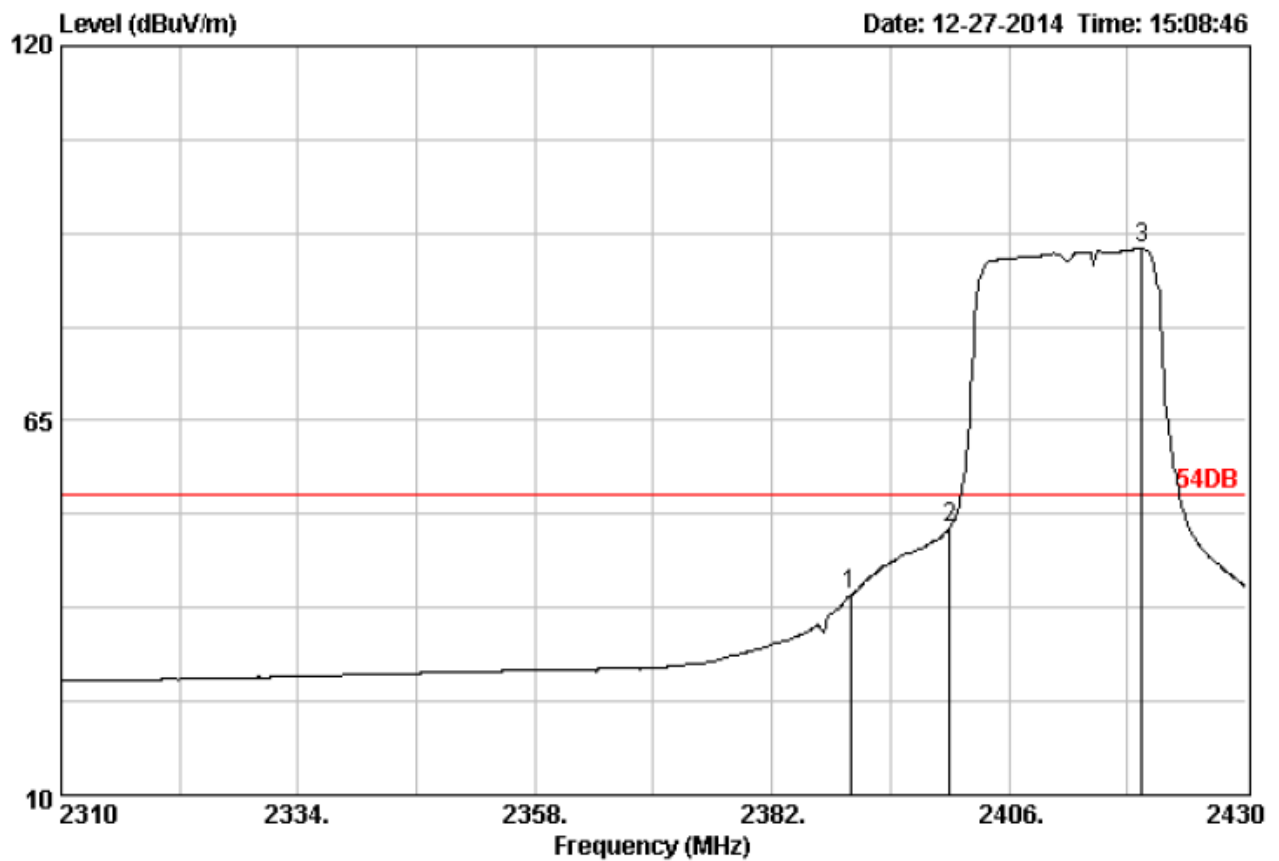
Data no. : 1417
 Ant. pol. : HORIZONTAL

| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2390.00 | 28.78 | 4.61 | 64.60 | 62.63 | 74.00 | 11.37 | Peak |
| 2 | 2400.00 | 28.78 | 4.61 | 72.26 | 70.29 | 74.00 | 3.71 | Peak |
| 3 | 2407.68 | 28.81 | 4.63 | 110.61 | 108.69 | 74.00 | -34.69 | Peak |



| | | | |
|-------------|--------------|-----------|------------|
| Site no. | : 3m Chamber | Data no. | : 1416 |
| Dis. / Ant. | : 3m DRH-118 | Ant. pol. | : VERTICAL |
| Limit | : 74DB | | |
| Env. / Ins. | : 23°C/54% | | |
| Engineer | : | | |
| EUT | : | | |
| Power | : | | |
| M/N | : | | |
| Test Mode | : | | |

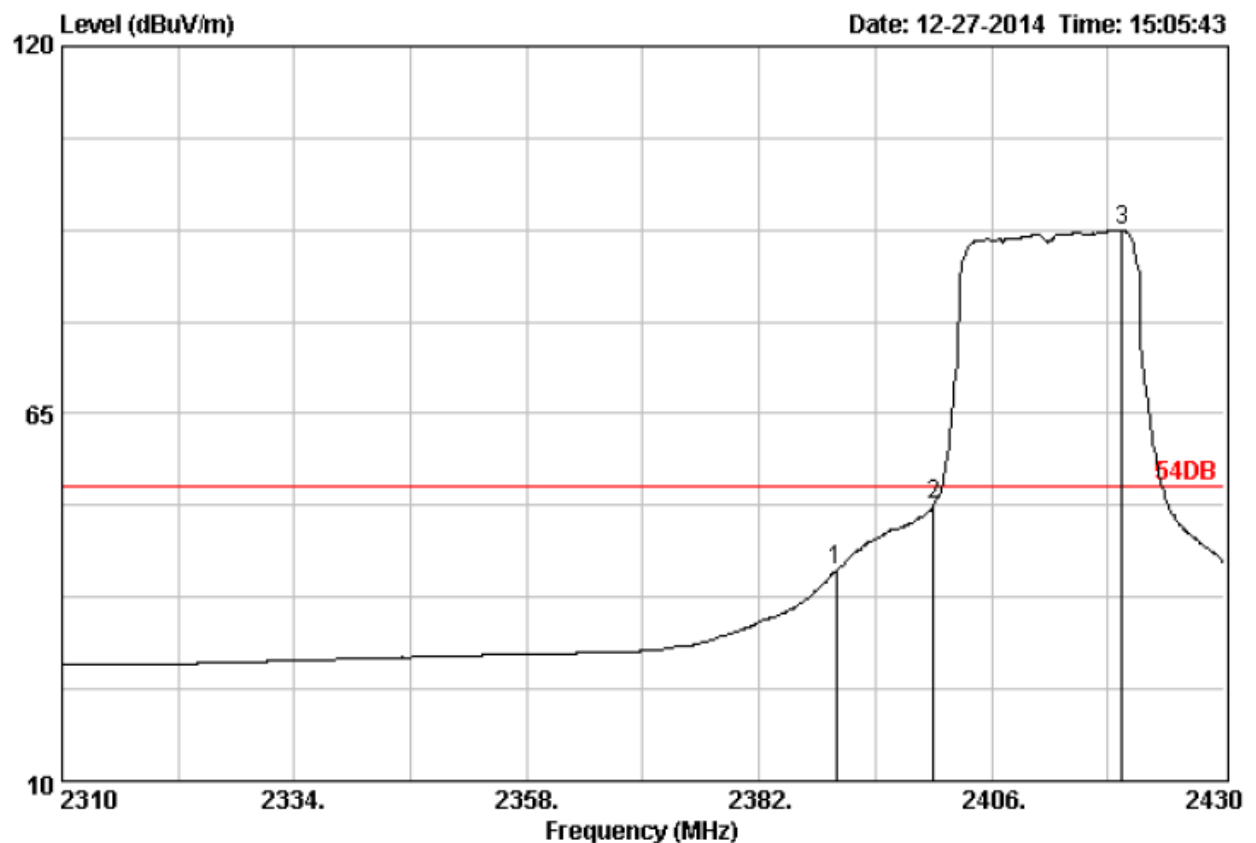
| | Ant. | | Cable | | Emission | | | Remark |
|---|----------------|----------------|--------------|-------------------|-------------------|--------------------|----------------|--------|
| | Freq. (MHz) | Factor (dB) | Loss (dB) | Reading (dBuV) | Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | |
| 1 | 2390.00 | 28.78 | 4.61 | 67.05 | 65.08 | 74.00 | 8.92 | Peak |
| 2 | 2400.00 | 28.78 | 4.61 | 72.02 | 70.05 | 74.00 | 3.95 | Peak |
| 3 | 2419.68 | 28.84 | 4.64 | 111.48 | 109.60 | 74.00 | -35.60 | Peak |



Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 54DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

Data no. : 1420
 Ant. pol. : HORIZONTAL

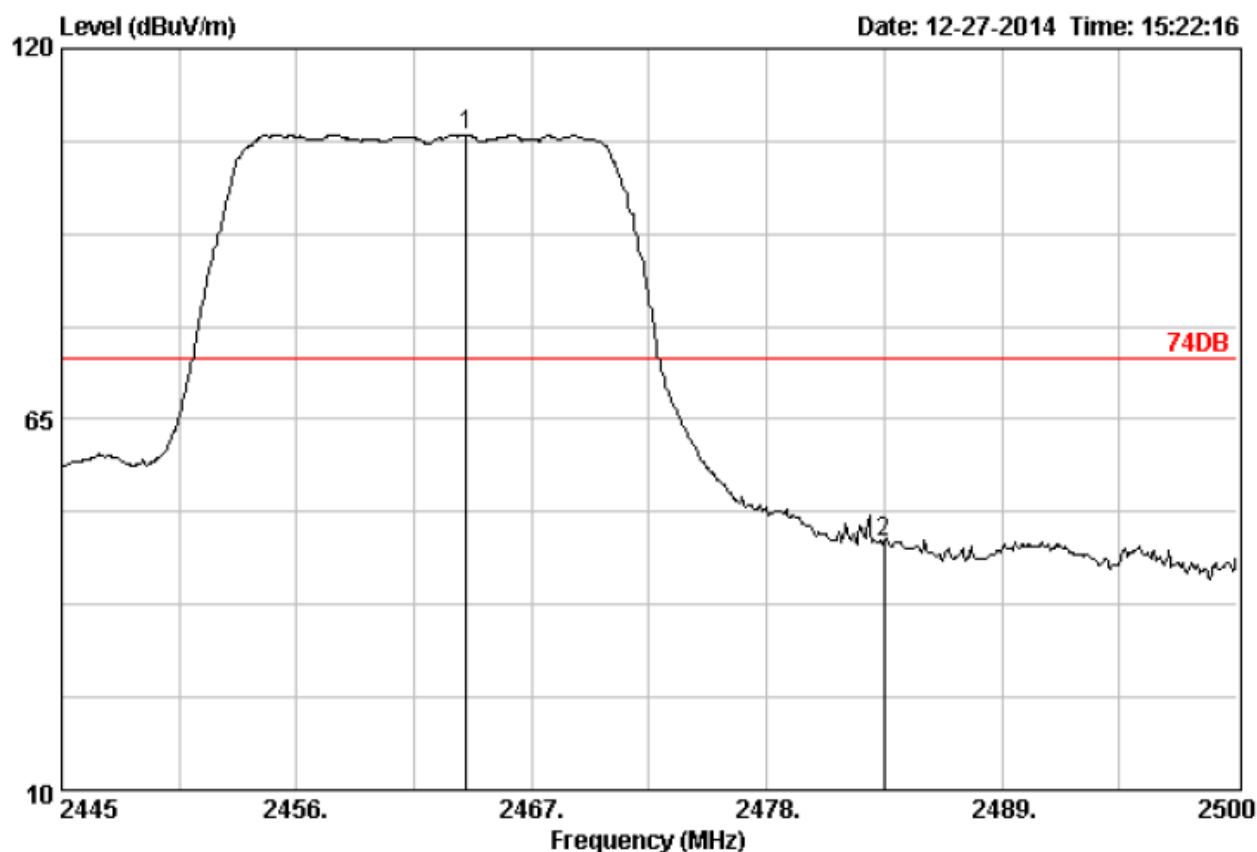
| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 2390.00 | 28.78 | 4.61 | 41.30 | 39.33 | 54.00 | 14.67 | Average |
| 2 | 2400.00 | 28.78 | 4.61 | 51.30 | 49.33 | 54.00 | 4.67 | Average |
| 3 | 2419.44 | 28.81 | 4.63 | 92.21 | 90.29 | 54.00 | -36.29 | Average |



Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 54DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

Data no. : 1419
 Ant. pol. : VERTICAL

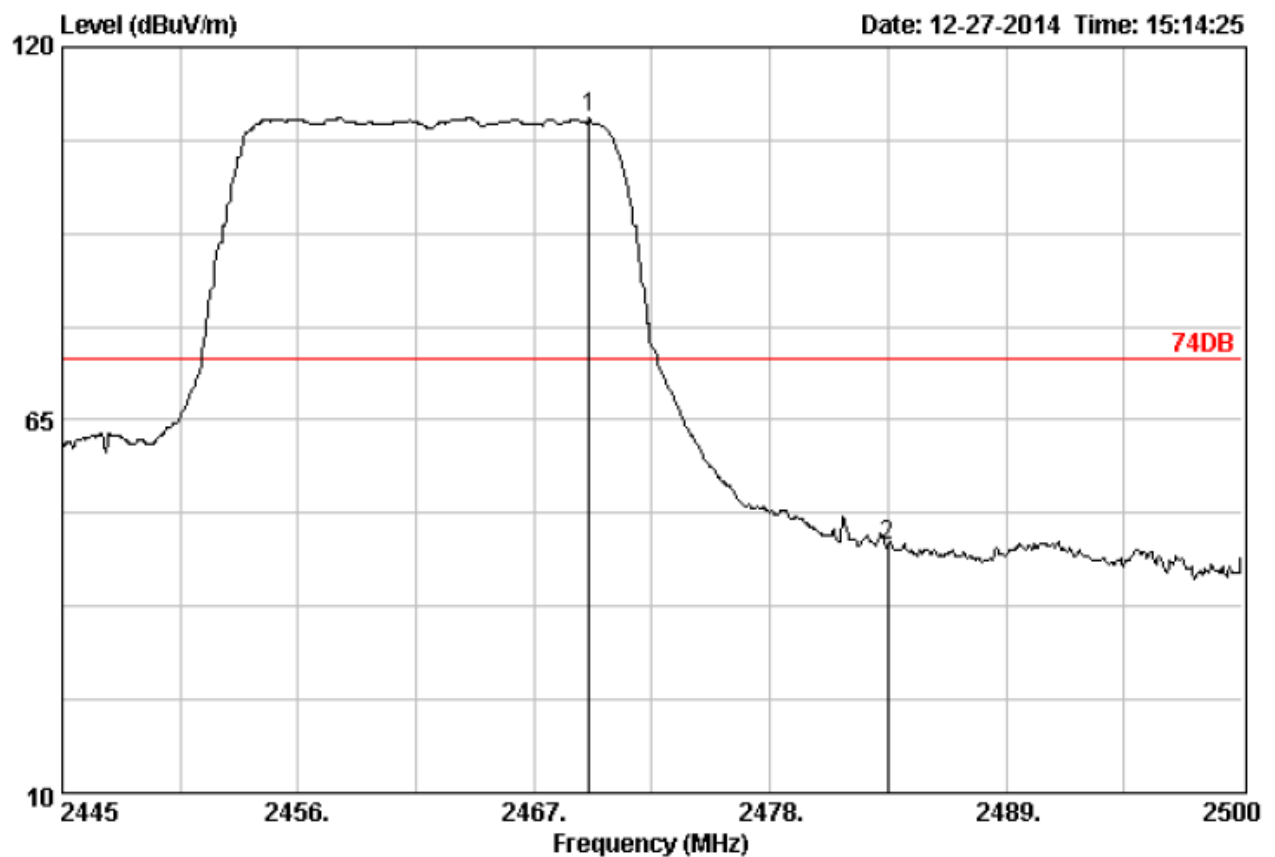
| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission | | Margin (dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|-------------------|--------------------|----------------|---------|
| | | | | | Level (dBuV/m) | Limits (dBuV/m) | | |
| 1 | 2390.00 | 28.78 | 4.61 | 43.63 | 41.66 | 54.00 | 12.34 | Average |
| 2 | 2400.00 | 28.78 | 4.61 | 53.27 | 51.30 | 54.00 | 2.70 | Average |
| 3 | 2419.44 | 28.81 | 4.63 | 94.43 | 92.51 | 54.00 | -38.51 | Average |



Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 74DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

Data no. : 1422
 Ant. pol. : HORIZONTAL

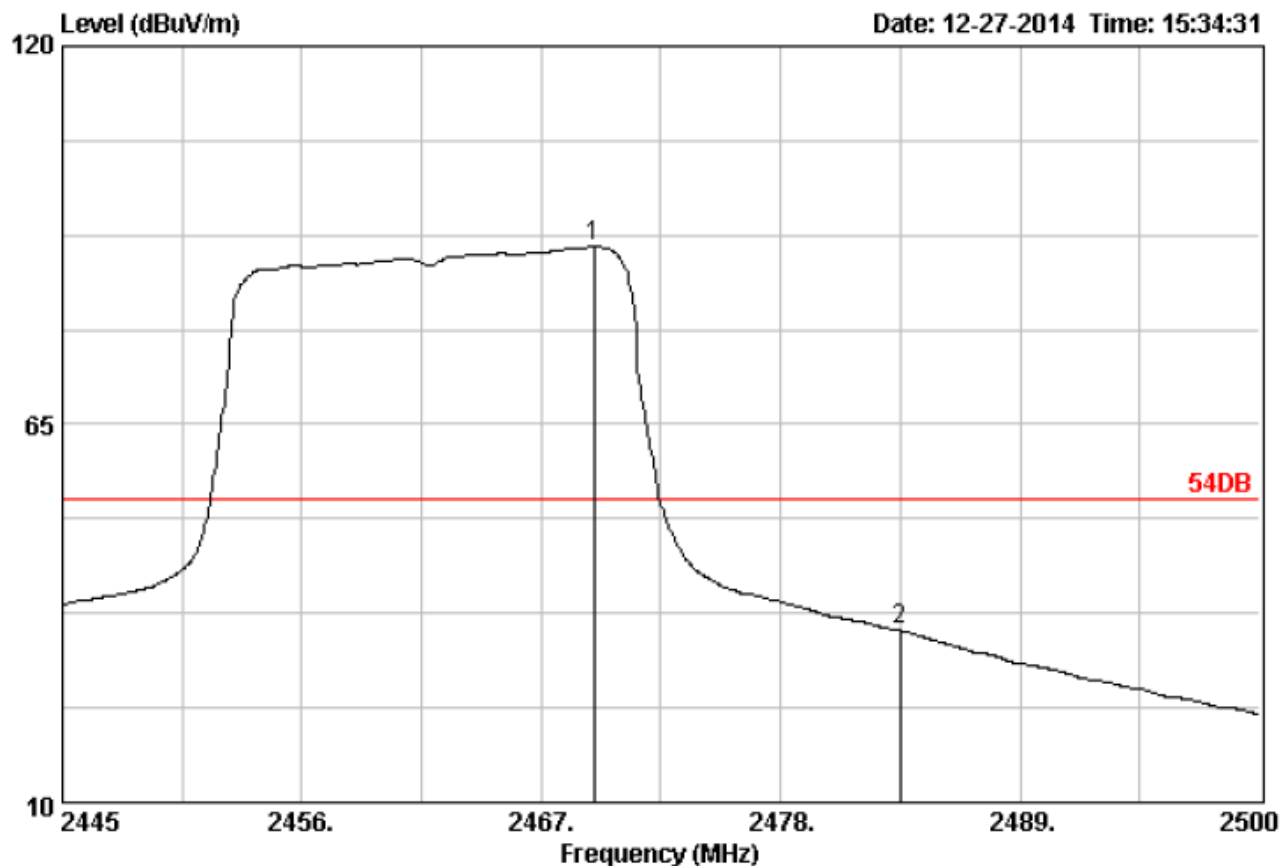
| | Freq. (MHz) | Ant. | Cable | Emission | | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|----------------|--------------|-------------------|-------------------|--------------------|----------------|--------|
| | | Factor (dB) | Loss (dB) | Reading (dBuV) | Level (dBuV/m) | | | |
| 1 | 2463.92 | 28.90 | 4.68 | 109.04 | 107.25 | 74.00 | -33.25 | Peak |
| 2 | 2483.50 | 28.93 | 4.70 | 48.54 | 46.79 | 74.00 | 27.21 | Peak |



Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 74DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

Data no. : 1421
 Ant. pol. : VERTICAL

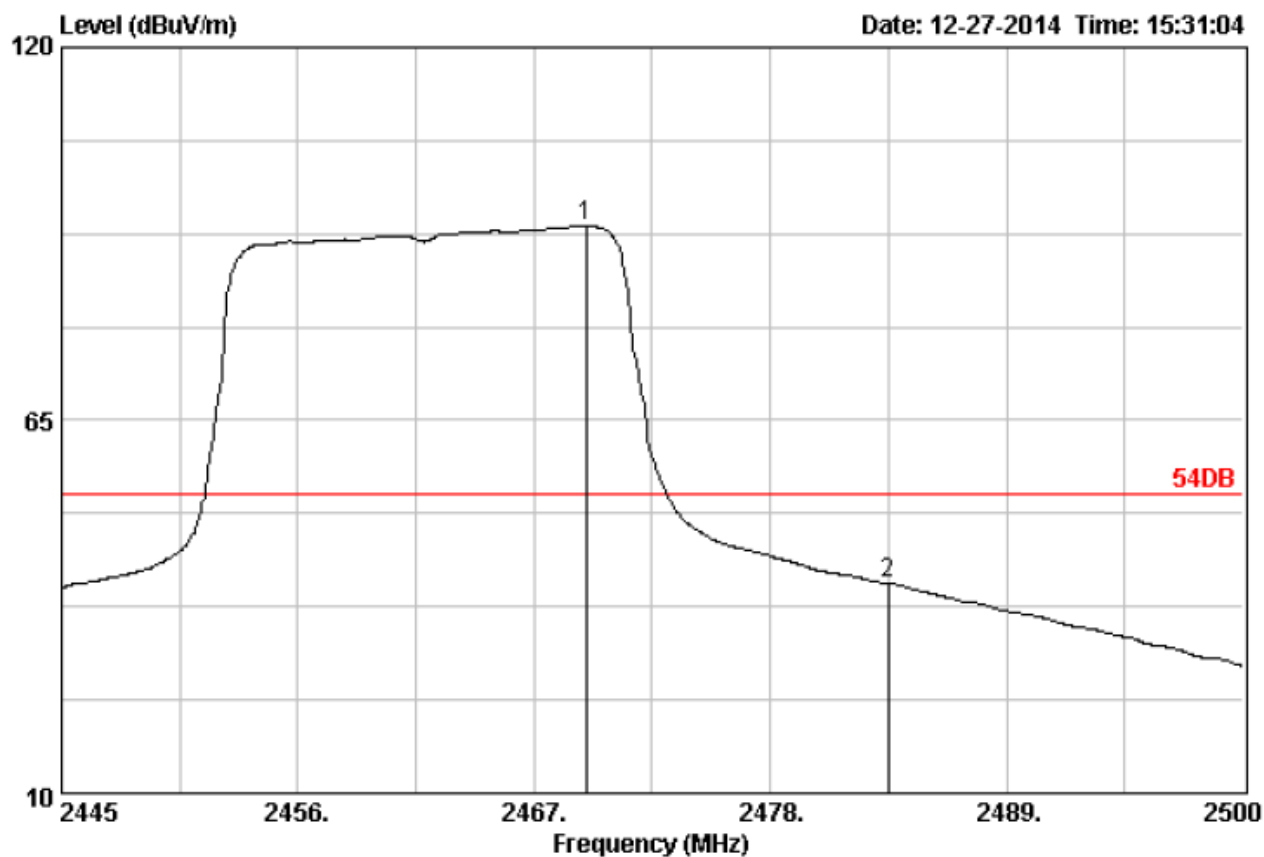
| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2469.59 | 28.90 | 4.68 | 111.46 | 109.67 | 74.00 | -35.67 | Peak |
| 2 | 2483.50 | 28.93 | 4.70 | 48.08 | 46.33 | 74.00 | 27.67 | Peak |



Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 54DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

Data no. : 1424
 Ant. pol. : HORIZONTAL

| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 2469.42 | 28.90 | 4.68 | 92.65 | 90.86 | 54.00 | -36.86 | Average |
| 2 | 2483.50 | 28.93 | 4.70 | 36.74 | 34.99 | 54.00 | 19.01 | Average |



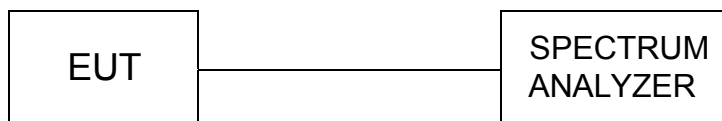
Site no. : 3m Chamber
 Dis. / Ant. : 3m DRH-118
 Limit : 54DB
 Env. / Ins. : 23°C/54%
 Engineer :
 EUT :
 Power :
 M/N :
 Test Mode :

Data no. : 1423
 Ant. pol. : VERTICAL

| | Freq. (MHz) | Ant. Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1 | 2469.42 | 28.90 | 4.68 | 95.52 | 93.73 | 54.00 | -39.73 | Average |
| 2 | 2483.50 | 28.93 | 4.70 | 42.69 | 40.94 | 54.00 | 13.06 | Average |

4.6. Power Spectral Density Measurement

TEST CONFIGURATION



TEST PROCEDURE

The EUT was tested according to KDB558074 D01 v03r02 for compliance to FCC 47CFR 15.247 requirements.

Set RBW= 3 kHz, VBW \geq 10KHz, SPAN to 1.5 times greater than the EBW,.

LIMIT

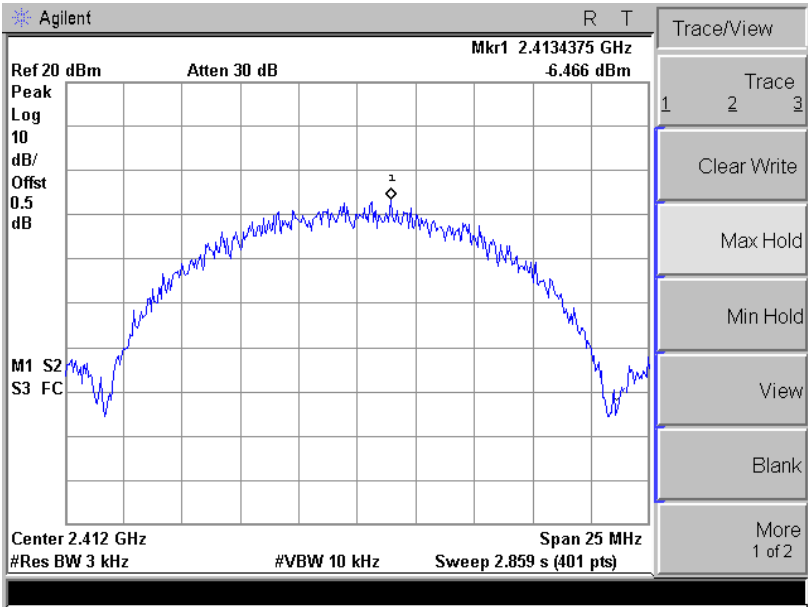
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

TEST RESULTS

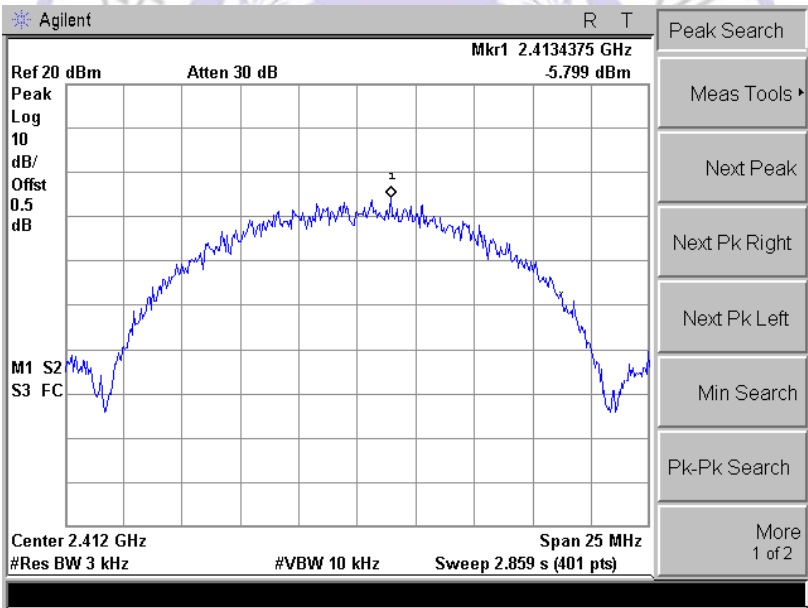
| Channel | Channel Frequency (MHz) | PSD (dBm/3KHz) | | | Maximum limit (dBm/3KHz) | PASS / FAIL |
|---------|-------------------------|----------------|--------|--------|--------------------------|-------------|
| | | Ant1 | Ant 2 | Total | | |
| 1 | 2412 | -6.466 | -5.799 | N/A | 8 | PASS |
| 6 | 2437 | -7.131 | -6.029 | N/A | 8 | PASS |
| 11 | 2462 | -7.380 | -7.125 | N/A | 8 | PASS |
| 1 | 2412 | -12.51 | -12.49 | N/A | 8 | PASS |
| 6 | 2437 | -12.95 | -13.04 | N/A | 8 | PASS |
| 11 | 2462 | -13.46 | -12.83 | N/A | 8 | PASS |
| 1 | 2412 | -14.24 | -12.23 | -10.11 | 8 | PASS |
| 6 | 2437 | -14.77 | -13.99 | -11.35 | 8 | PASS |
| 11 | 2462 | -16.57 | -13.56 | -11.80 | 8 | PASS |

For 802.11b Mode:

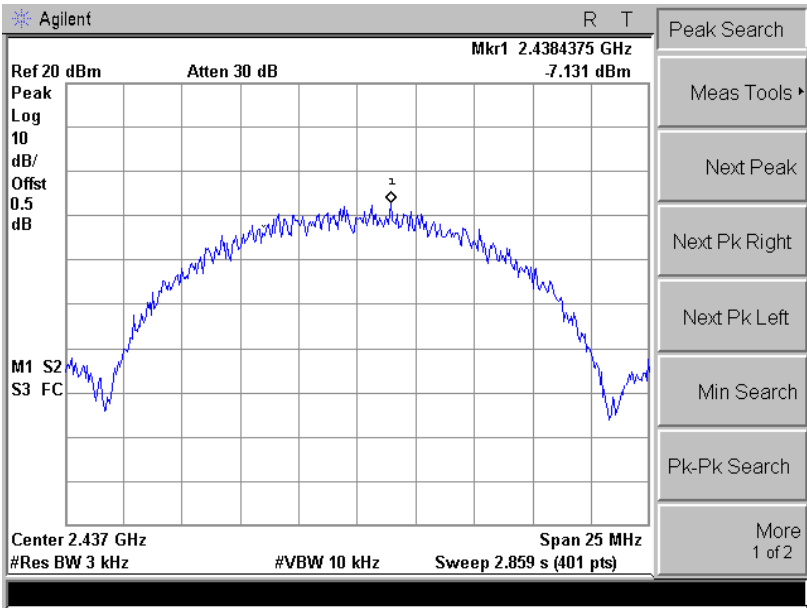
CH1 @ANT 1



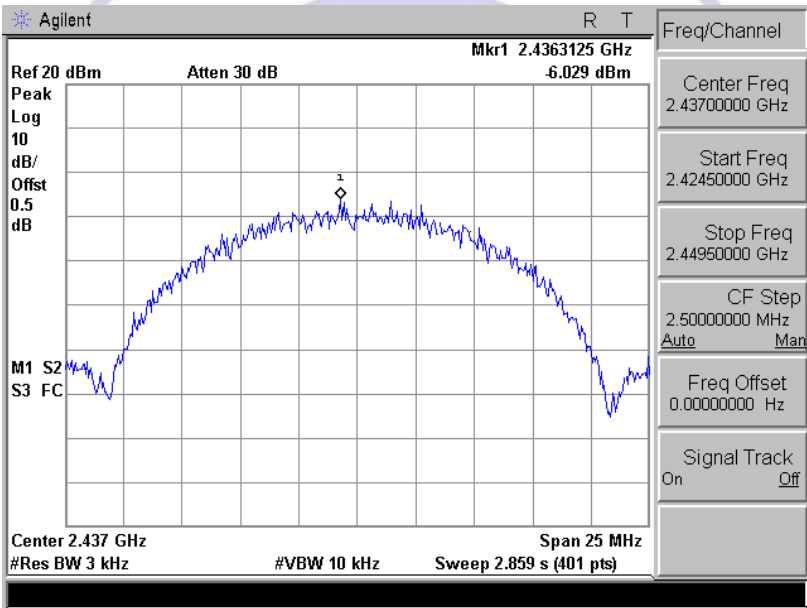
CH1 @ANT 2



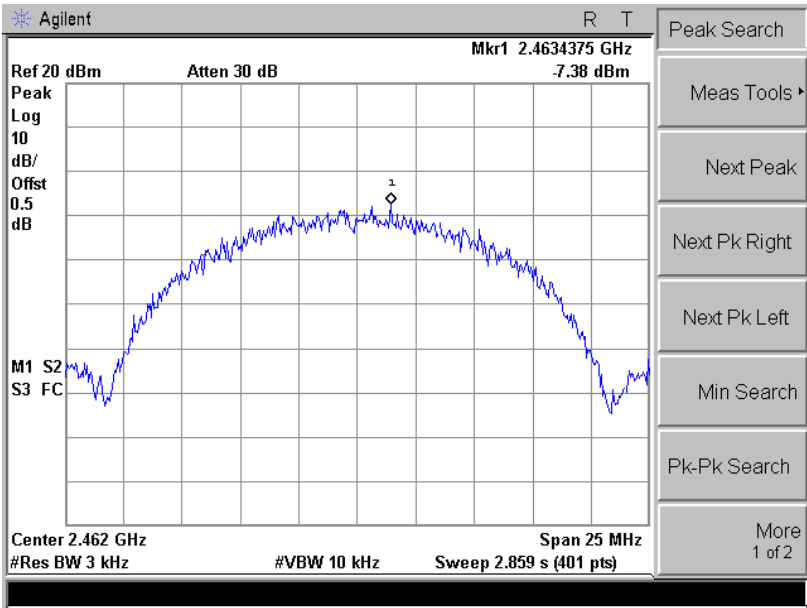
CH6 @ANT 1



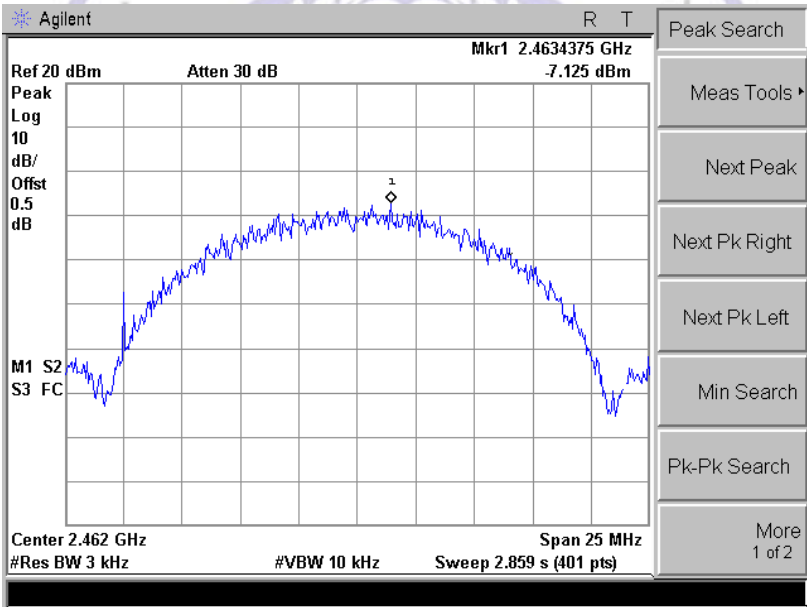
CH6 @ANT 2



CH11 @ANT 1

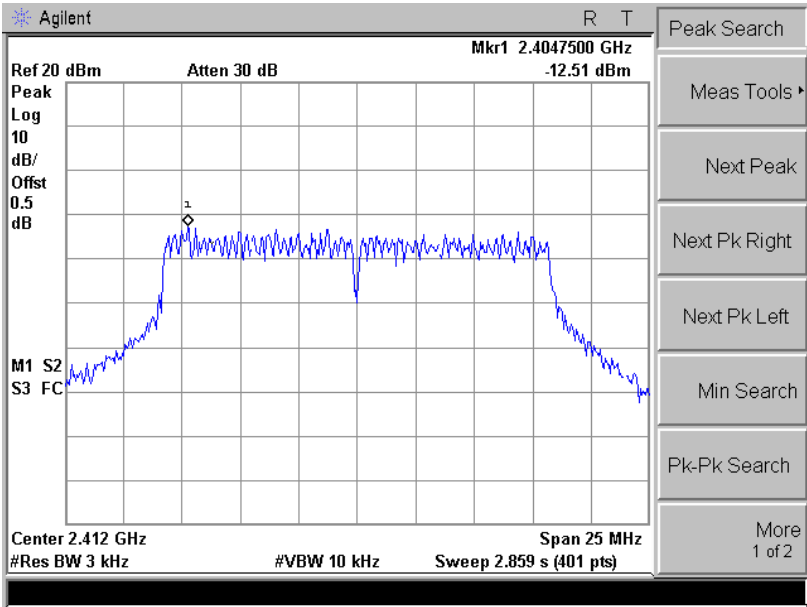


CH11 @ANT 2

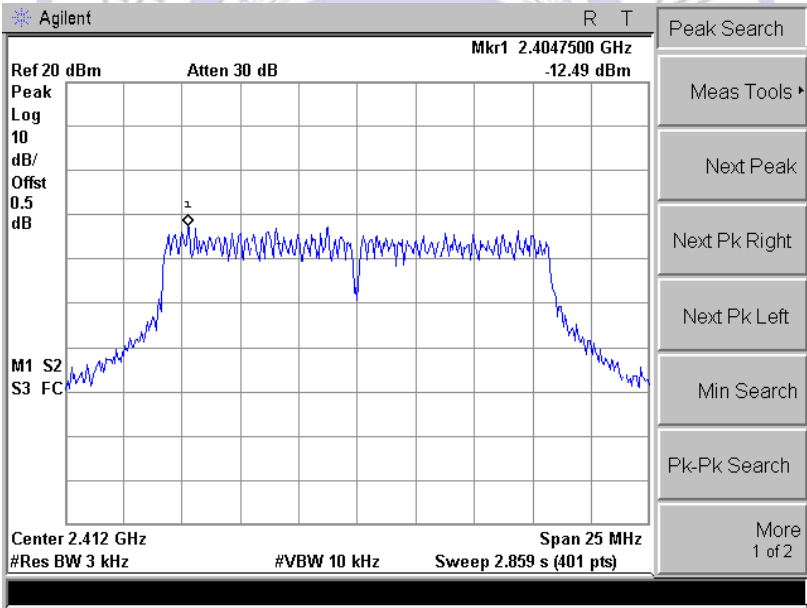


For 802.11g Mode:

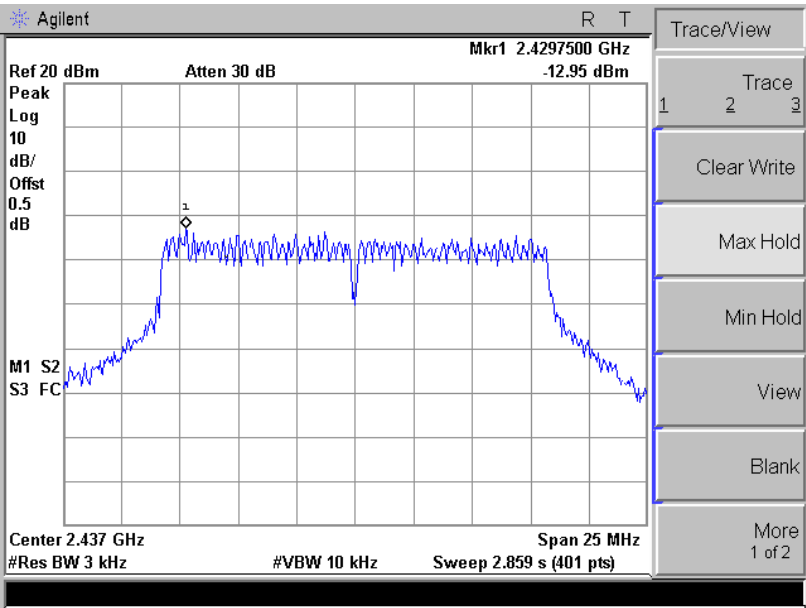
CH1 @ANT 1



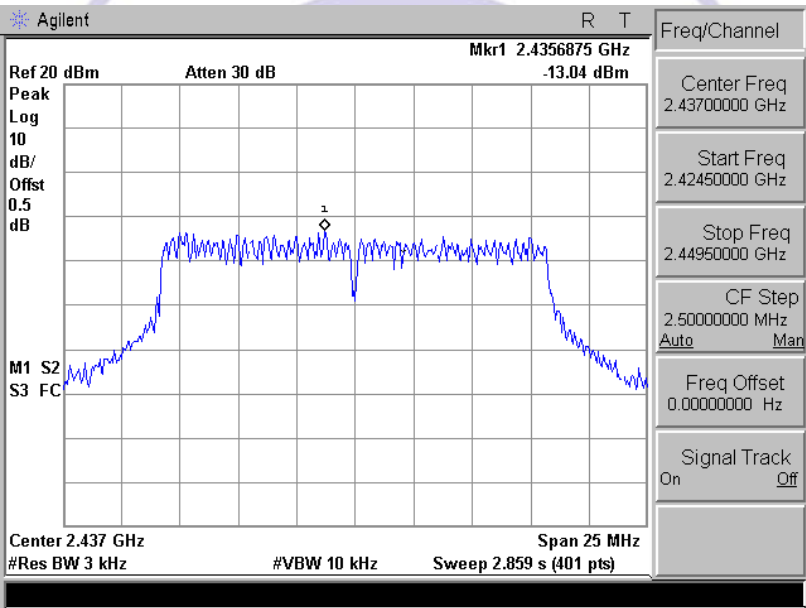
CH1 @ANT 2



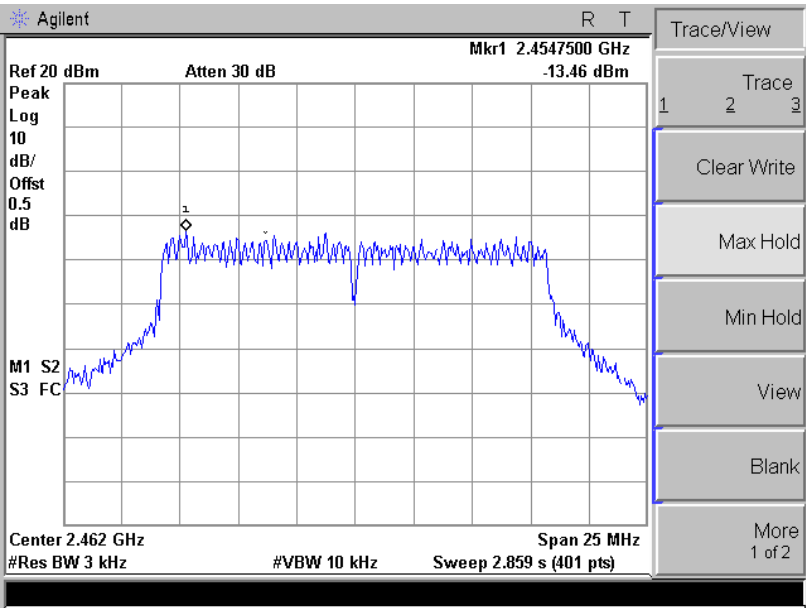
CH6 @ANT 1



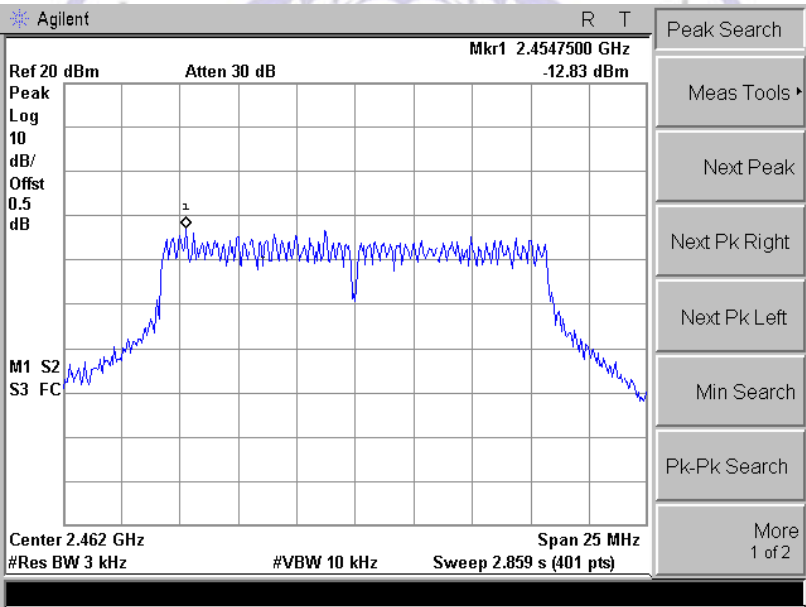
CH6 @ANT 2



CH11 @ANT 1

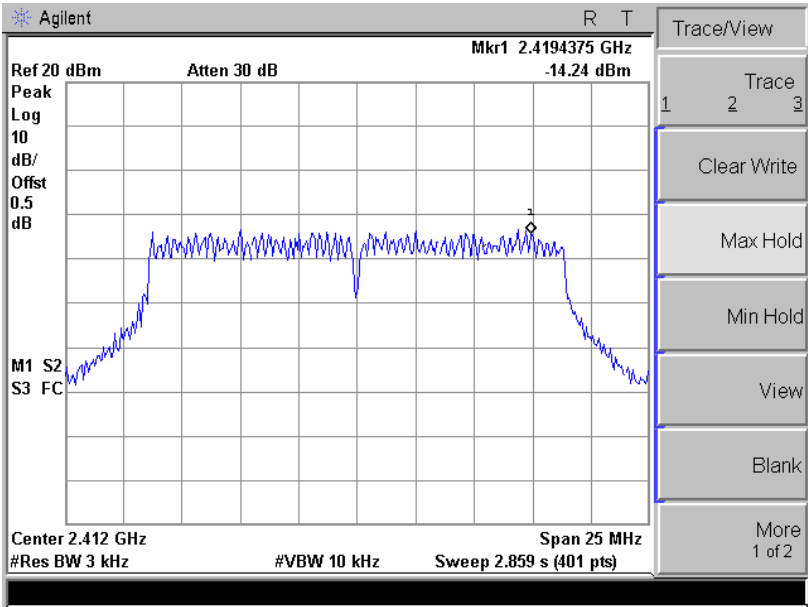


CH11 @ANT 2

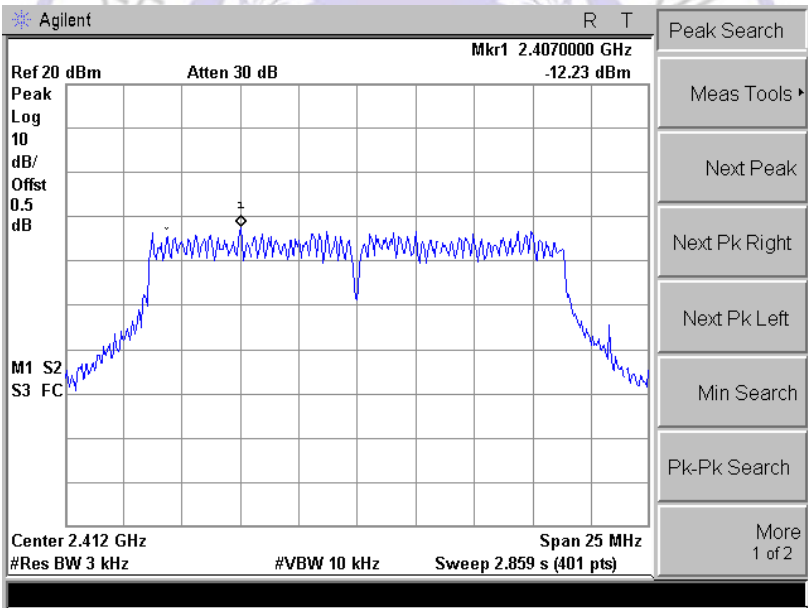


For 802.11n (20MHz) Mode:

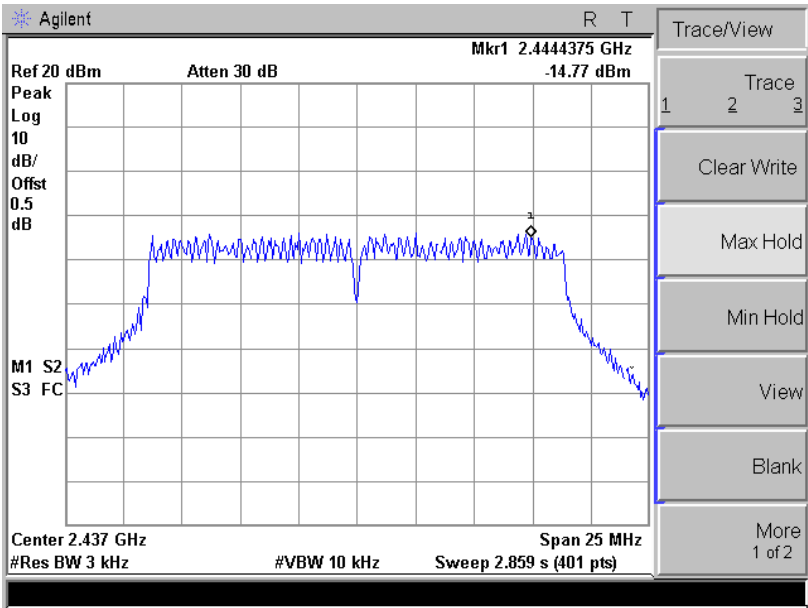
CH1 @ANT 1



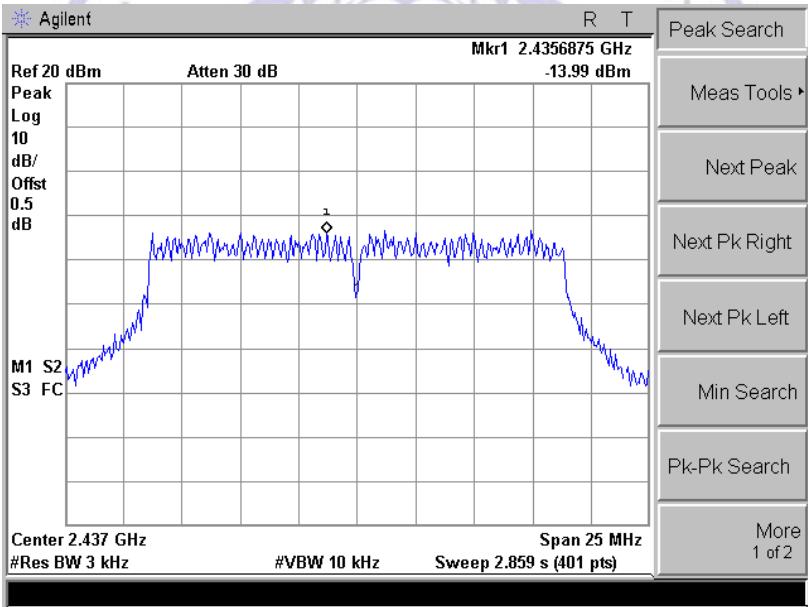
CH1 @ANT 2



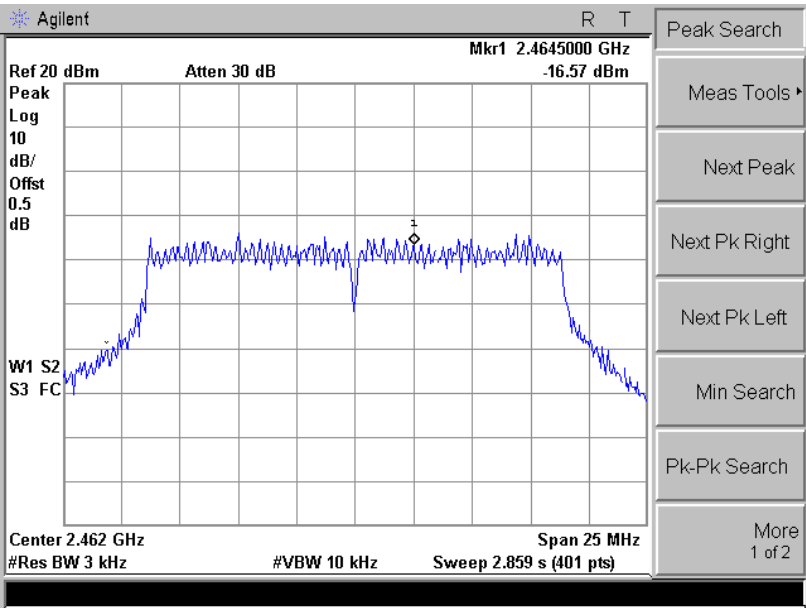
CH6 @ANT 1



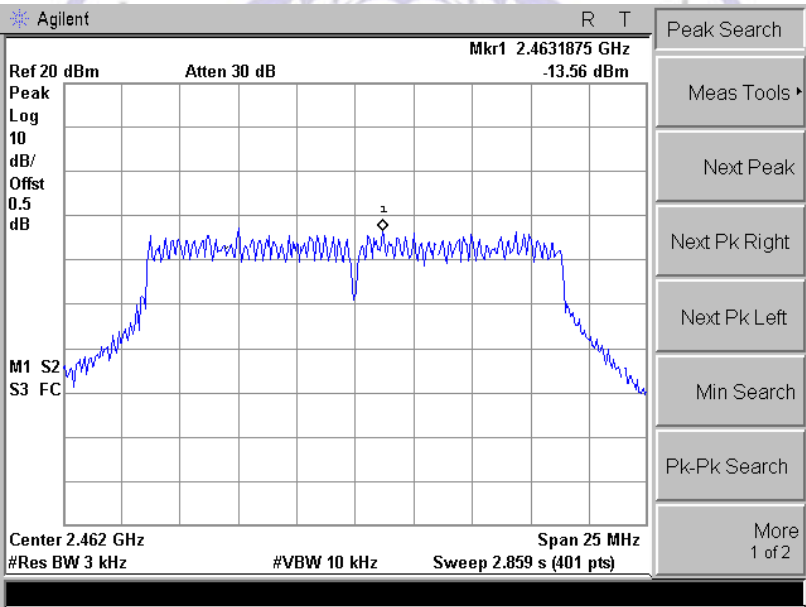
CH6 @ANT 2



CH11 @ANT 1

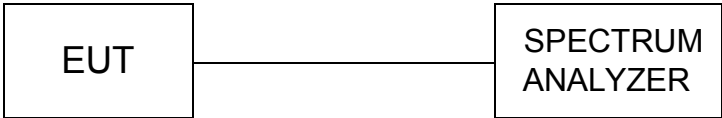


CH11 @ANT 2



4.7. Spurious RF Conducted Emission

TEST CONFIGURATION



TEST PROCEDURE

The EUT was tested according to KDB558074 D01 v03r02 for compliance to FCC 47CFR 15.247 requirements.

The Spurious RF conducted emissions compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10-2009 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW=100kHz and VBM= 300KHz to measure the peak field strength , and measure frequency range from 30MHz to 26.5GHz.

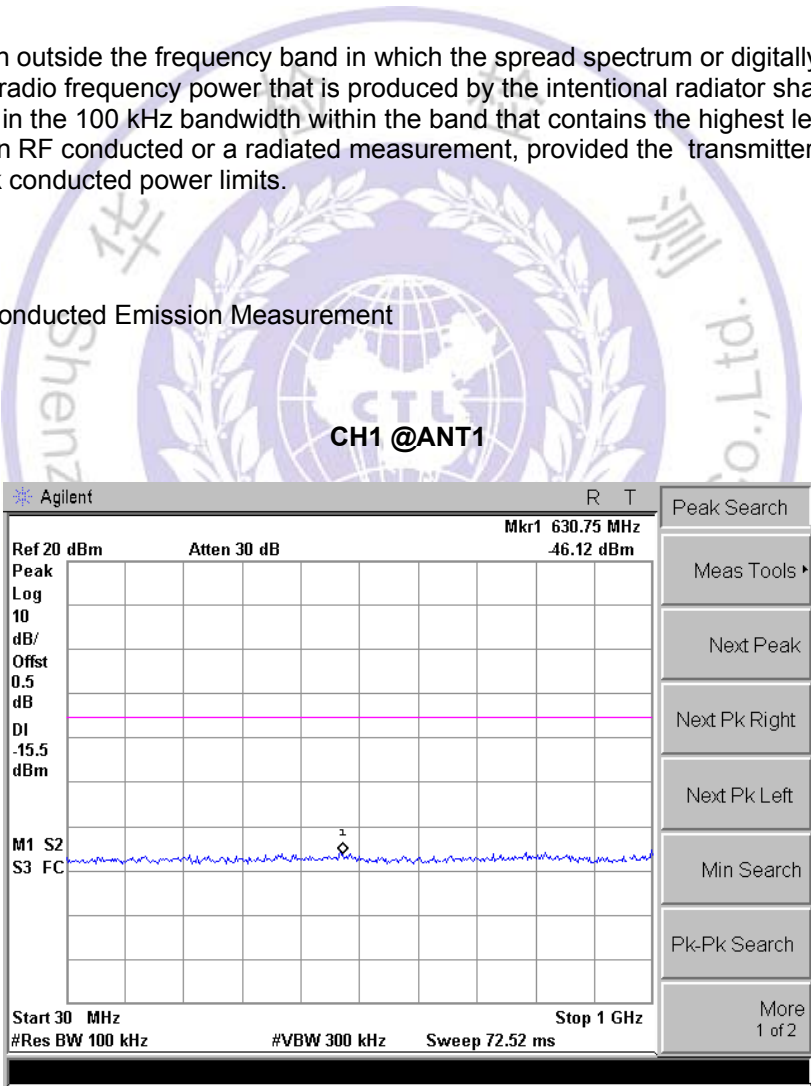
LIMIT

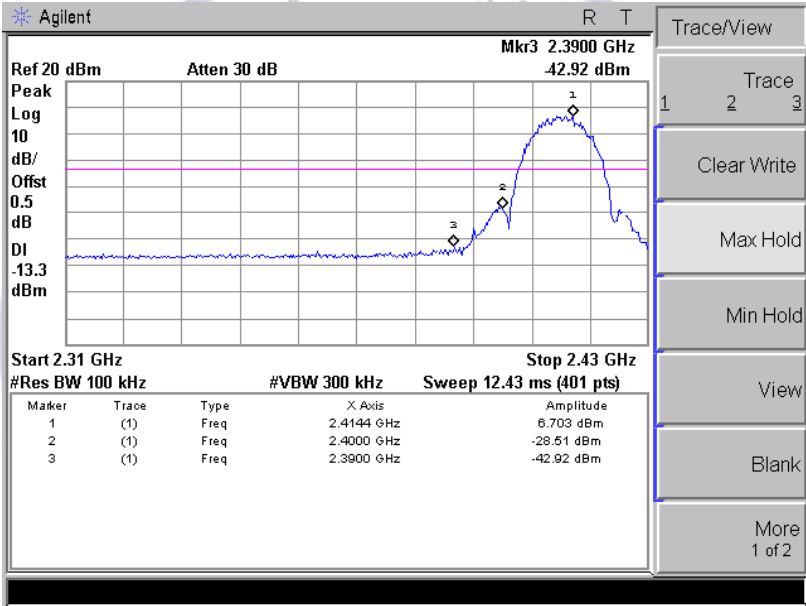
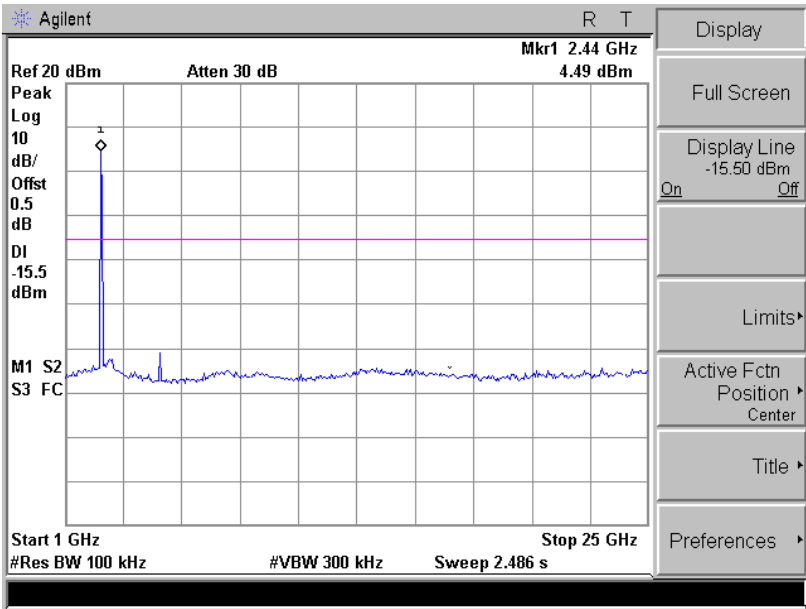
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

TEST RESULTS

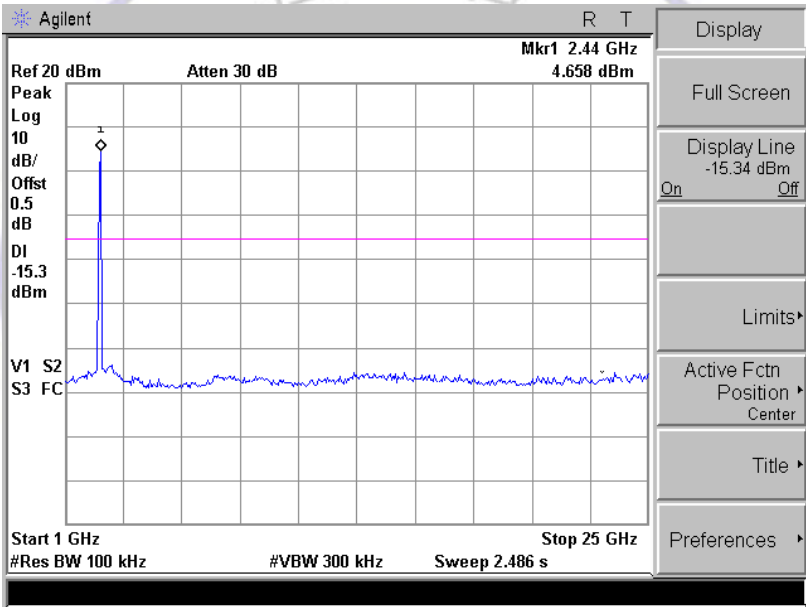
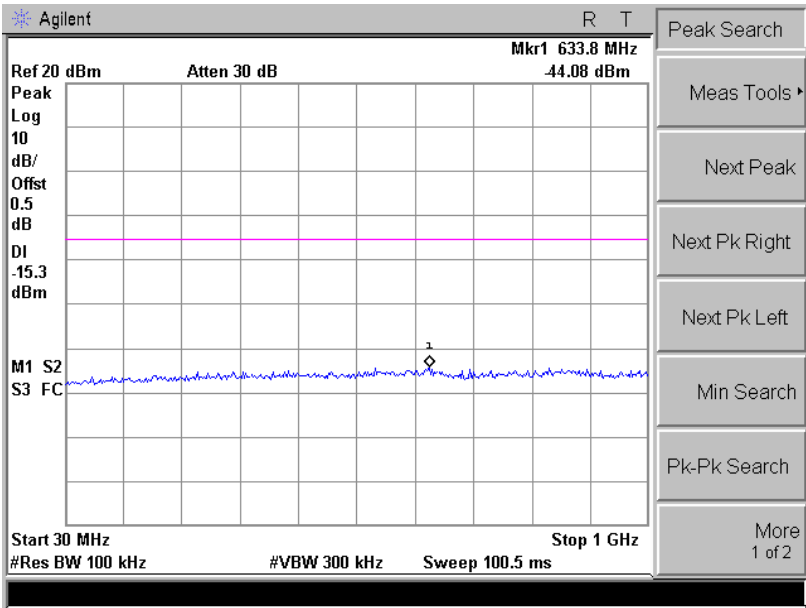
Photos of Spurious RF Conducted Emission Measurement

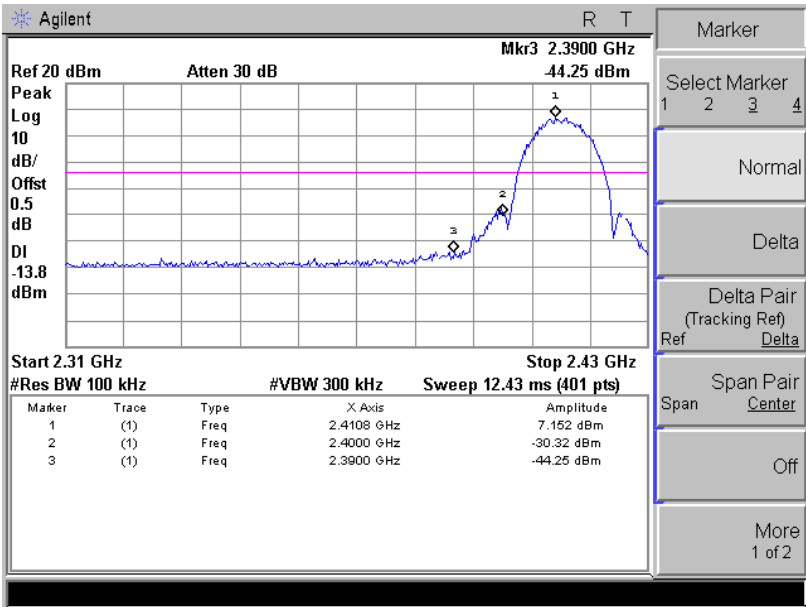
For 802.11b Mode:



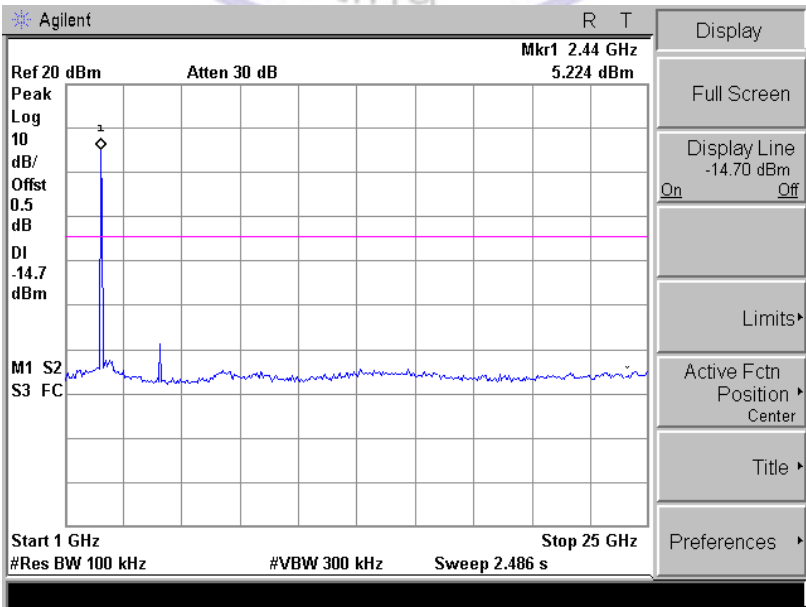
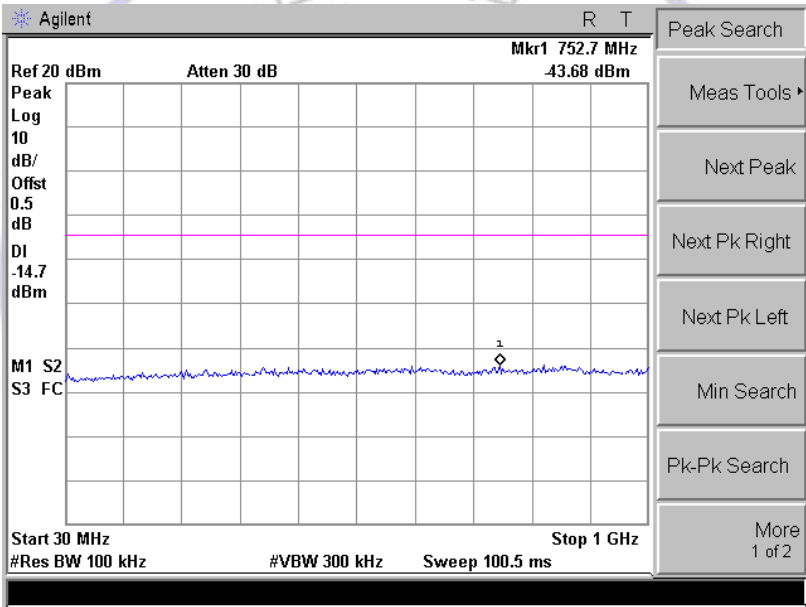


CH1 @ANT 2

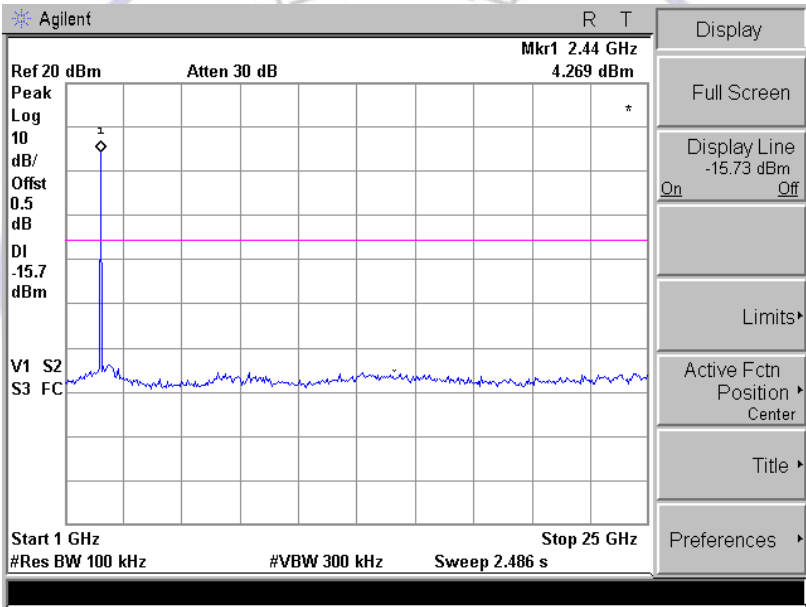
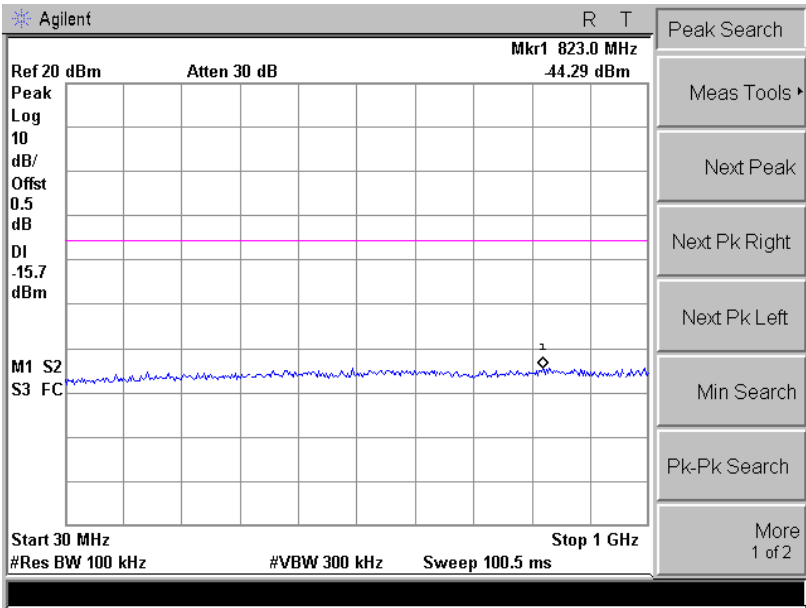




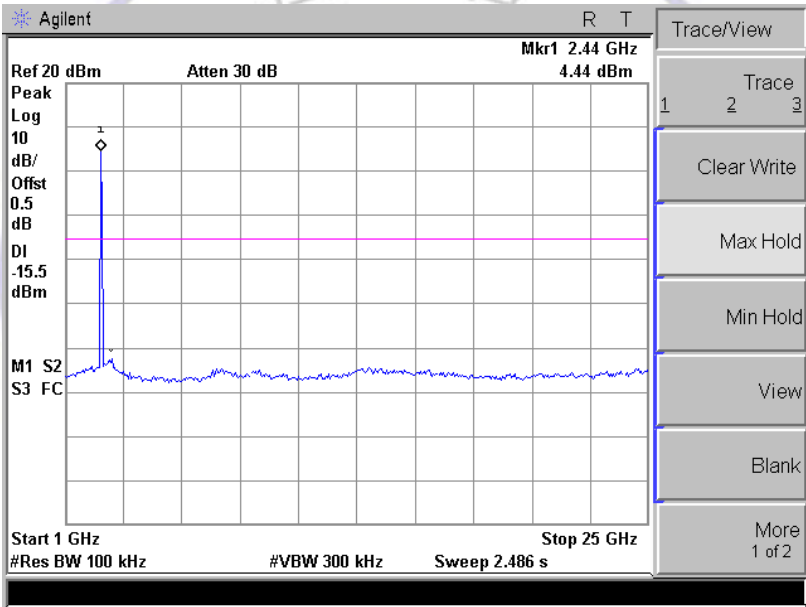
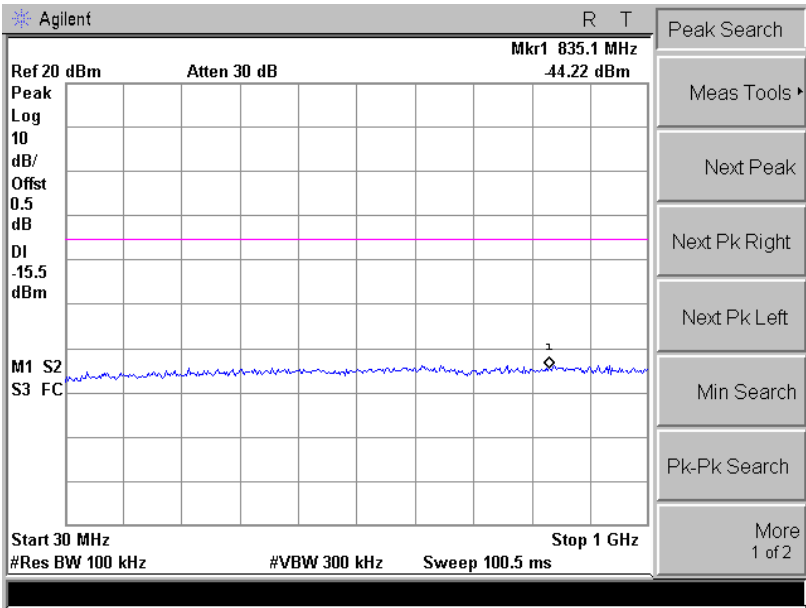
CH6 @ANT 1

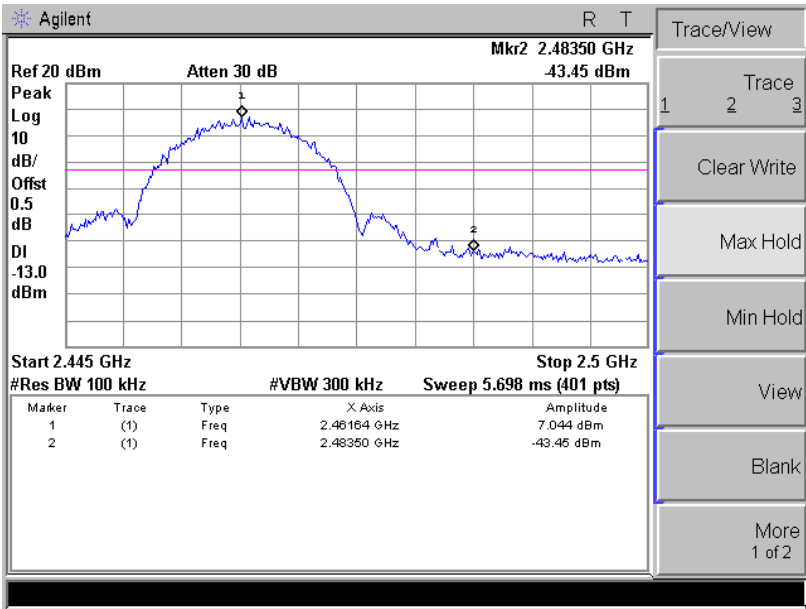


CH6 @ANT 2

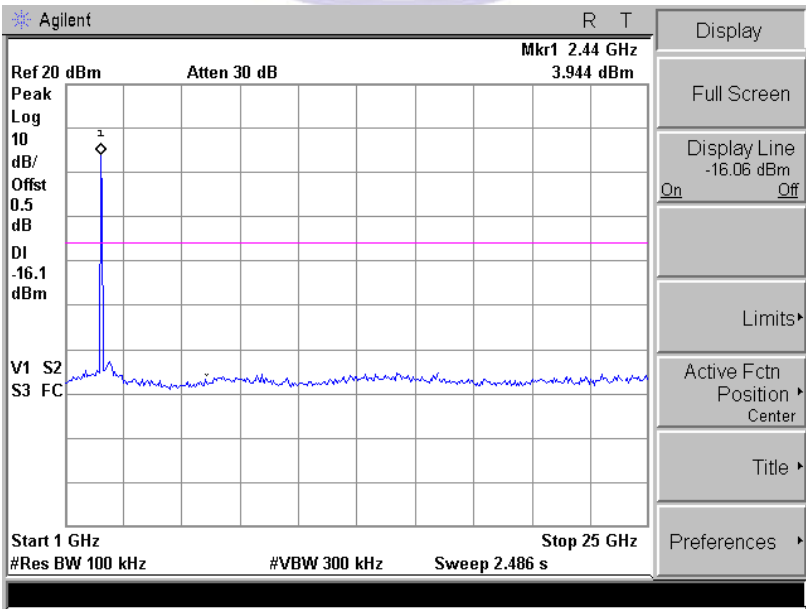
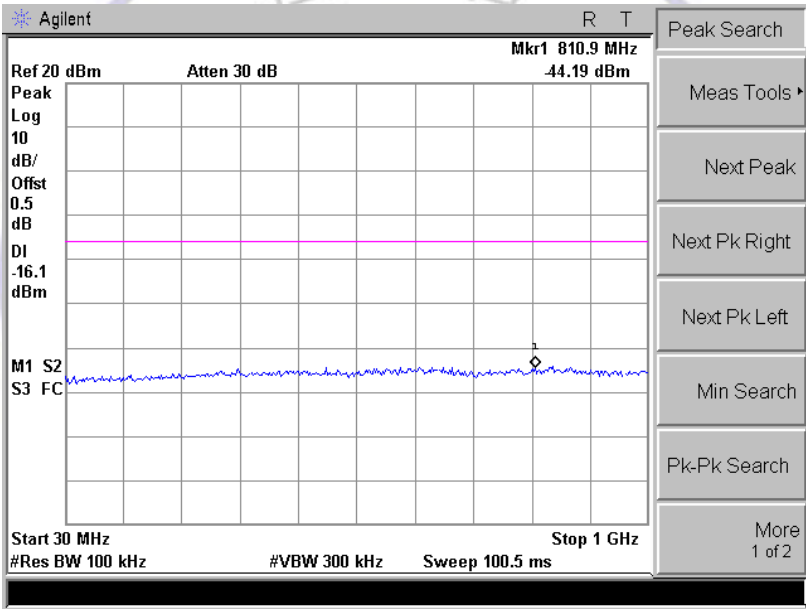


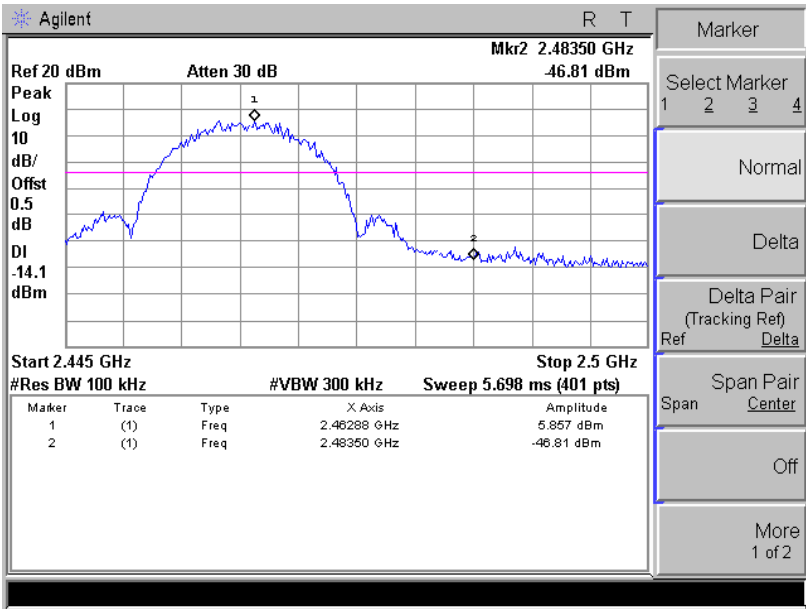
CH11 @ANT 1



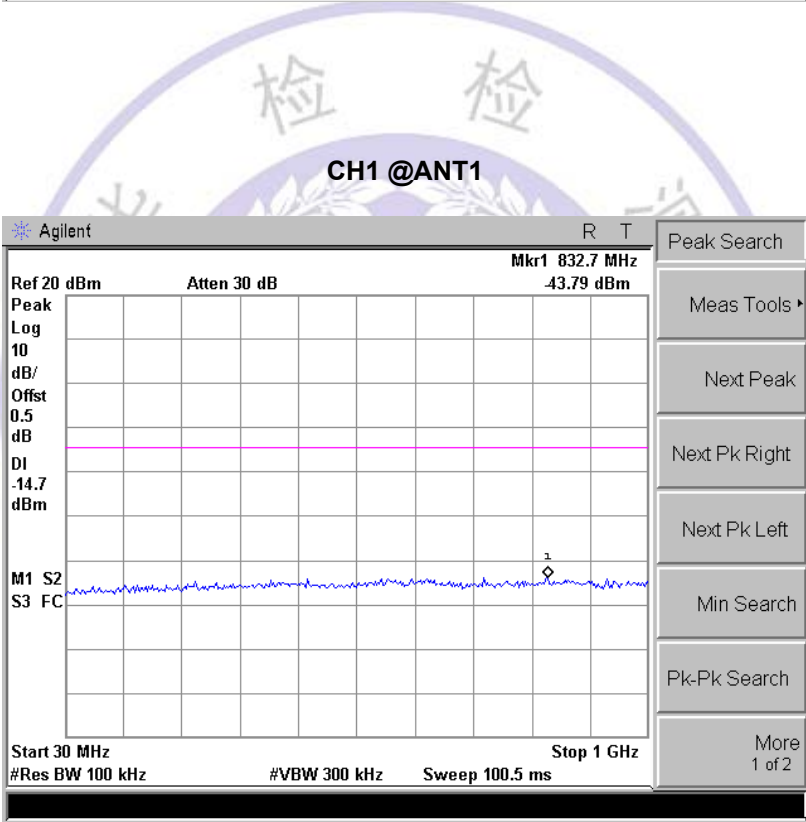


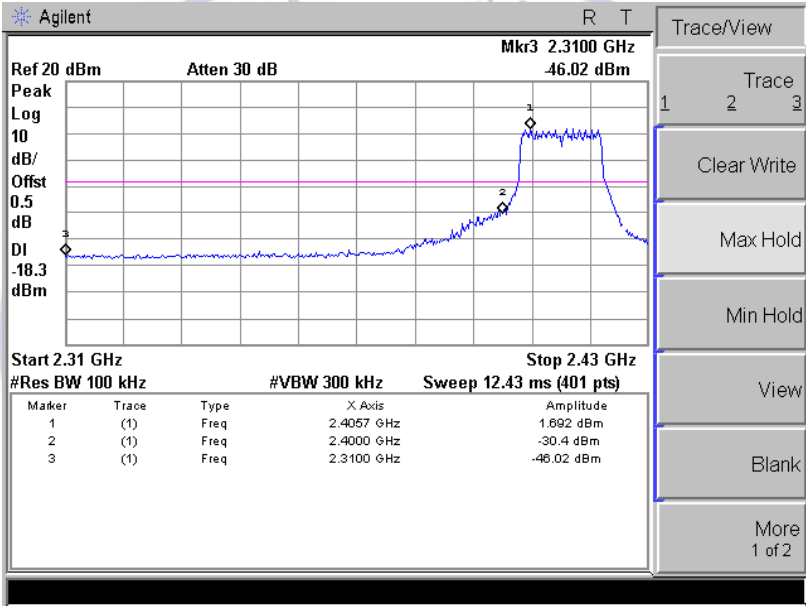
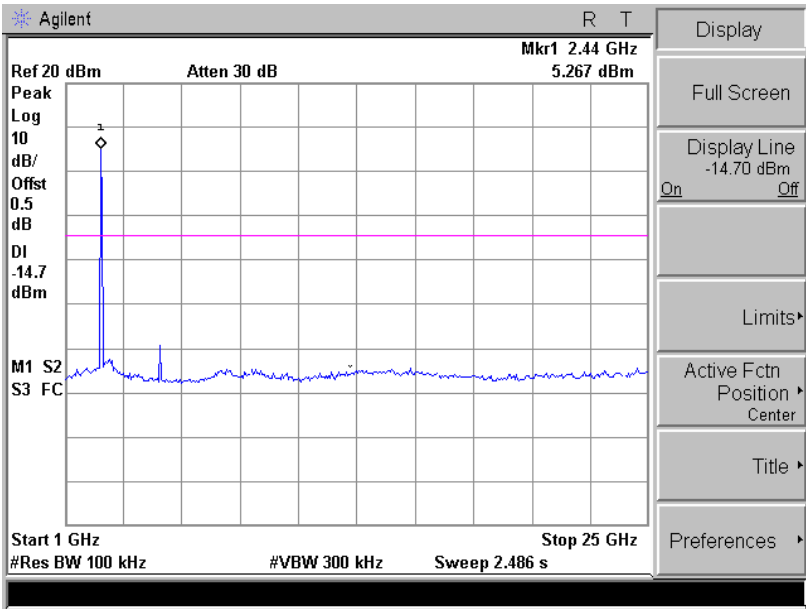
CH11 @ANT 2



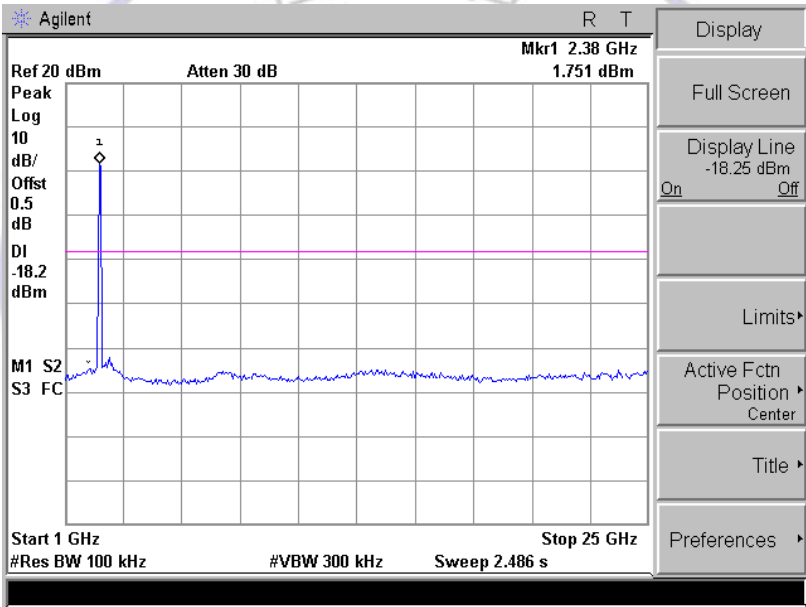
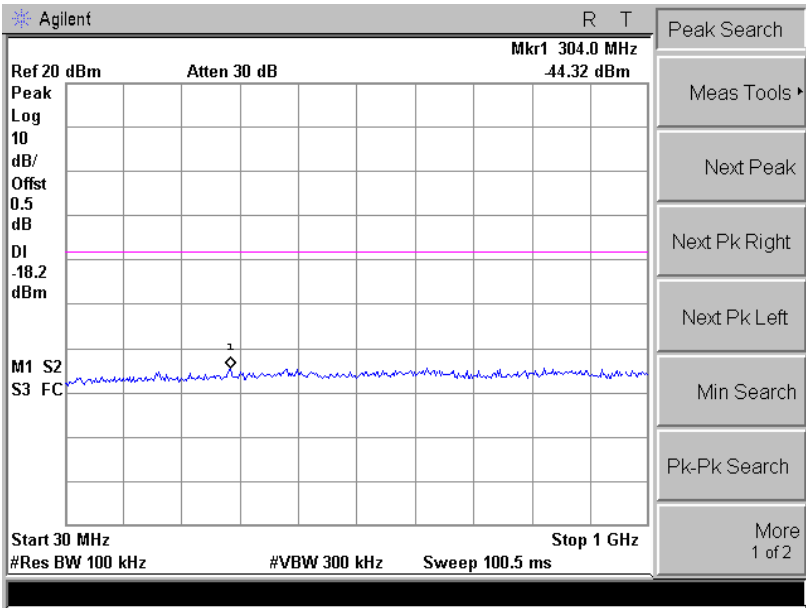


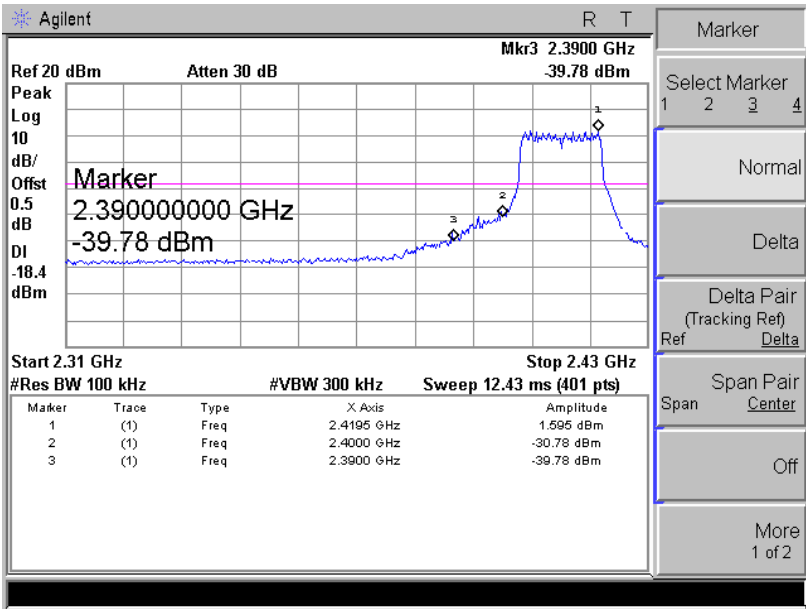
For 802.11g Mode:



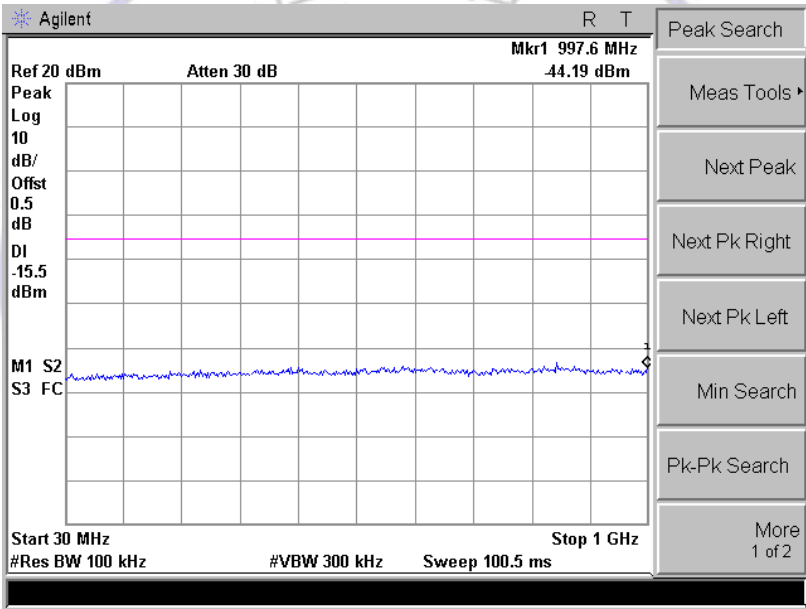


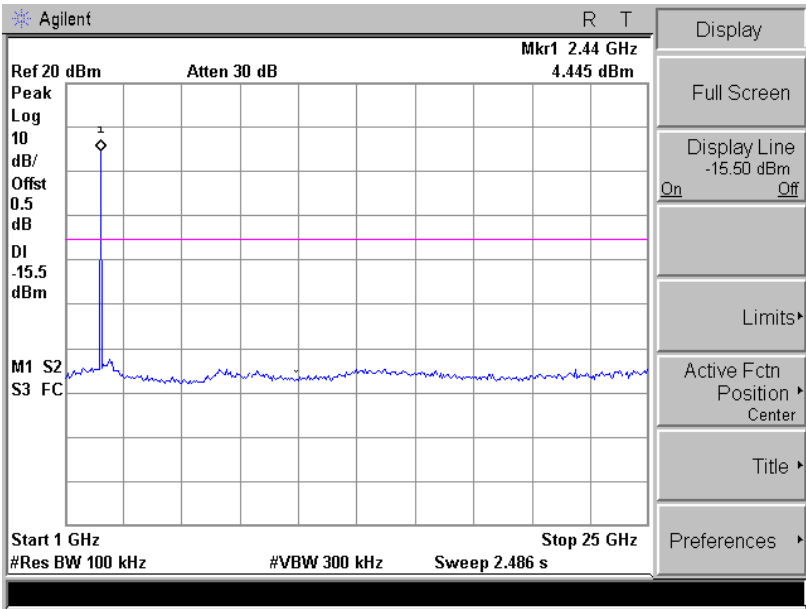
CH1 @ANT 2



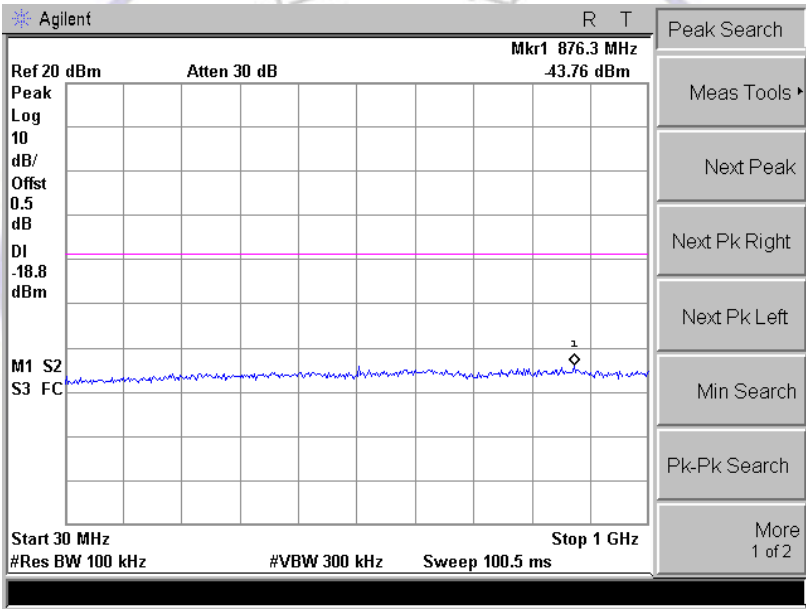


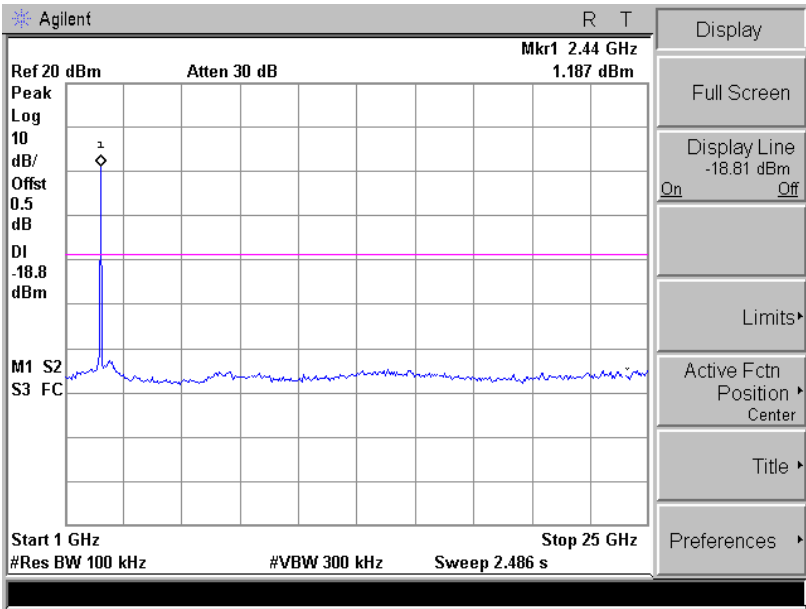
CH6 @ANT 1



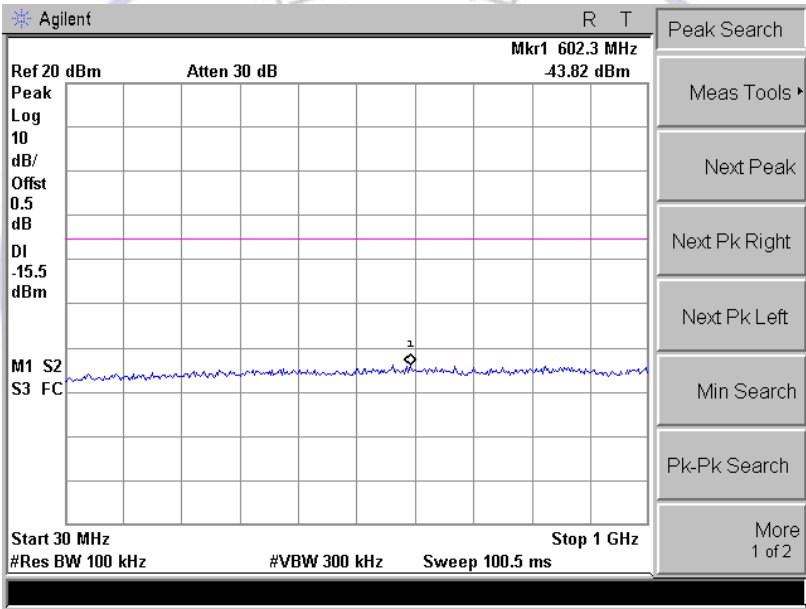


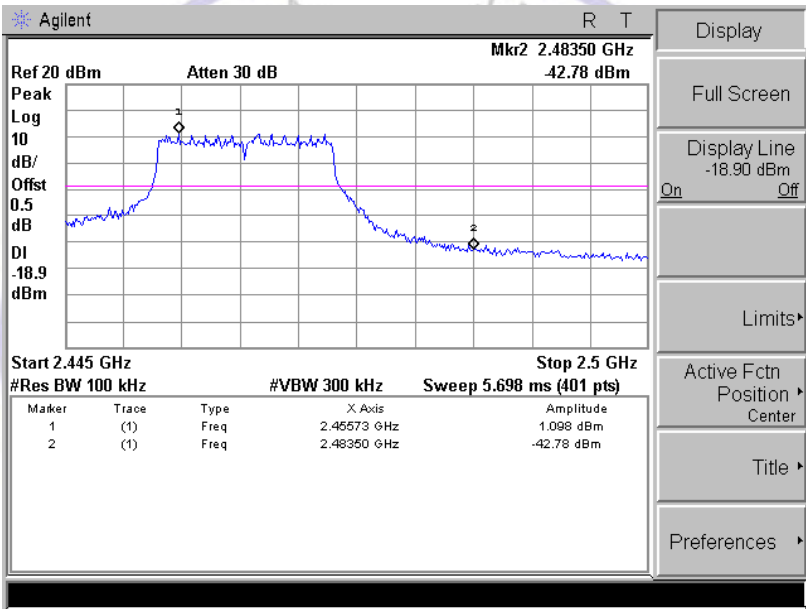
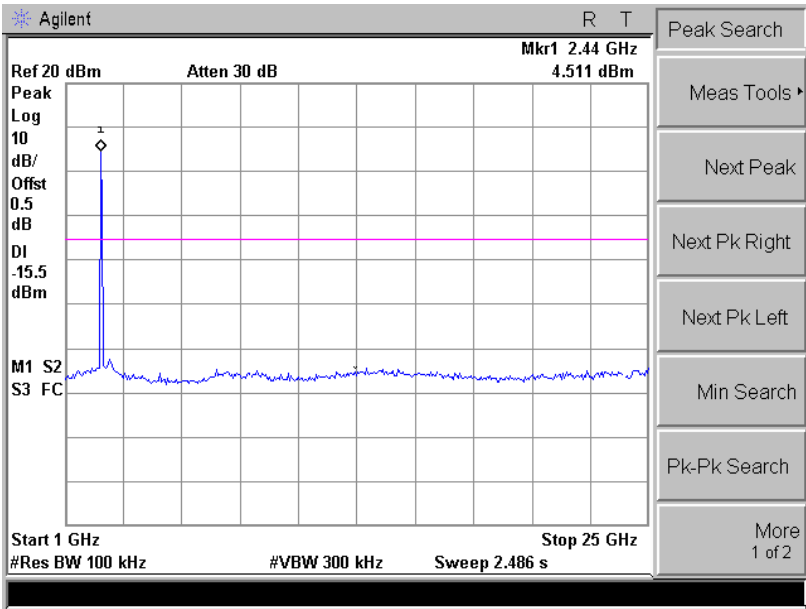
CH6 @ANT 2



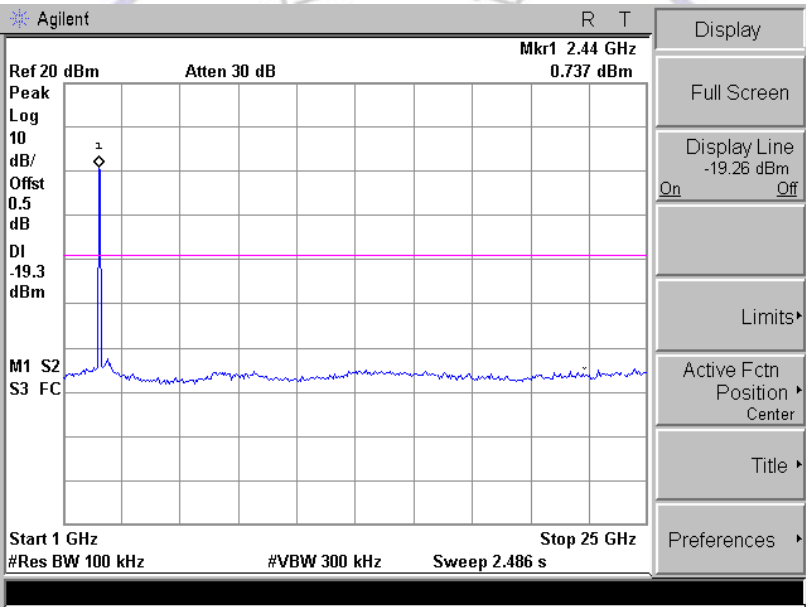
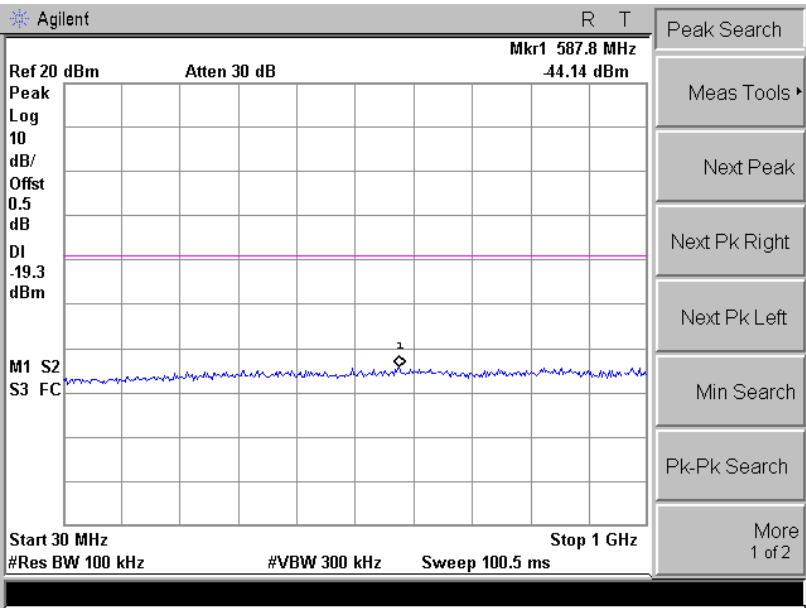


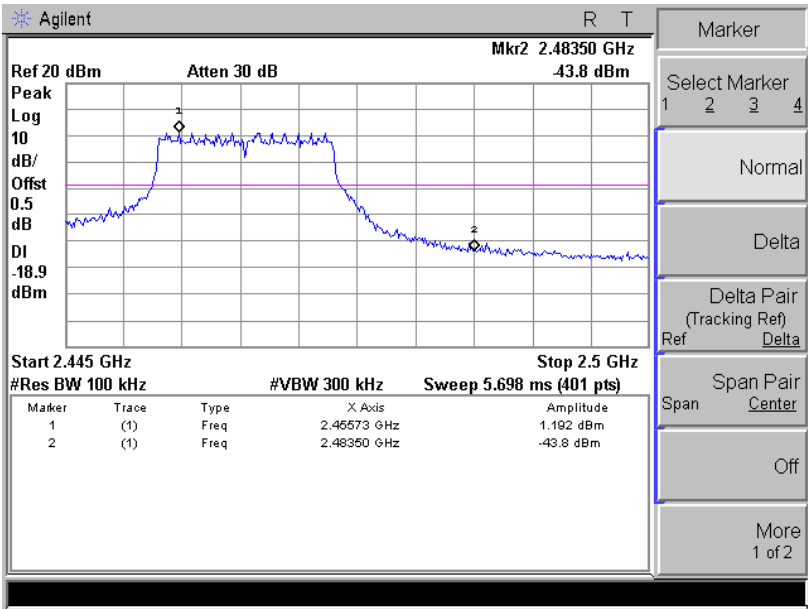
CH11 @ANT 1



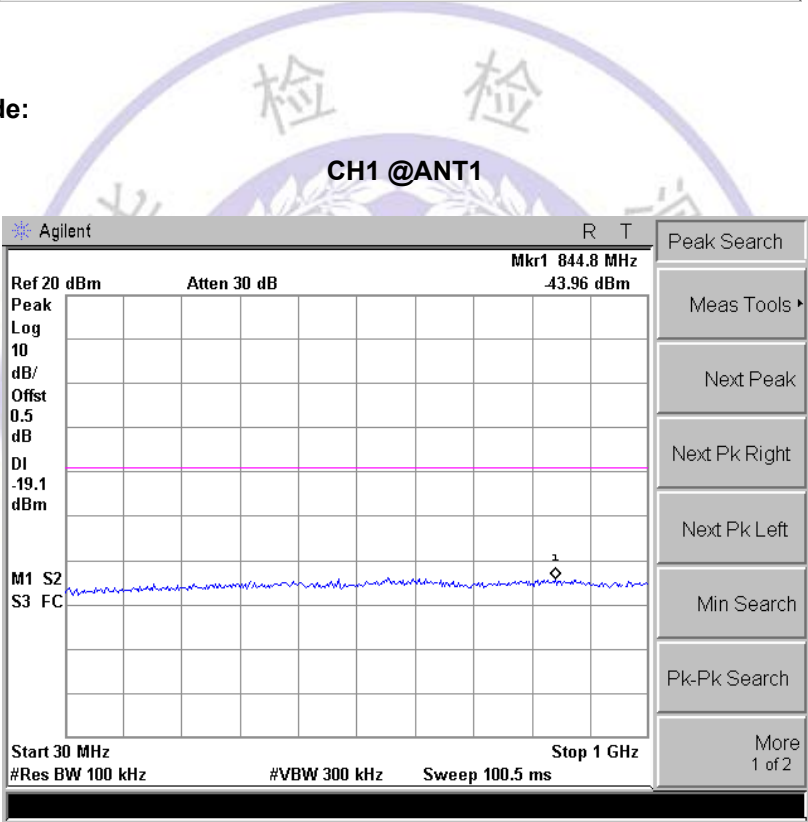


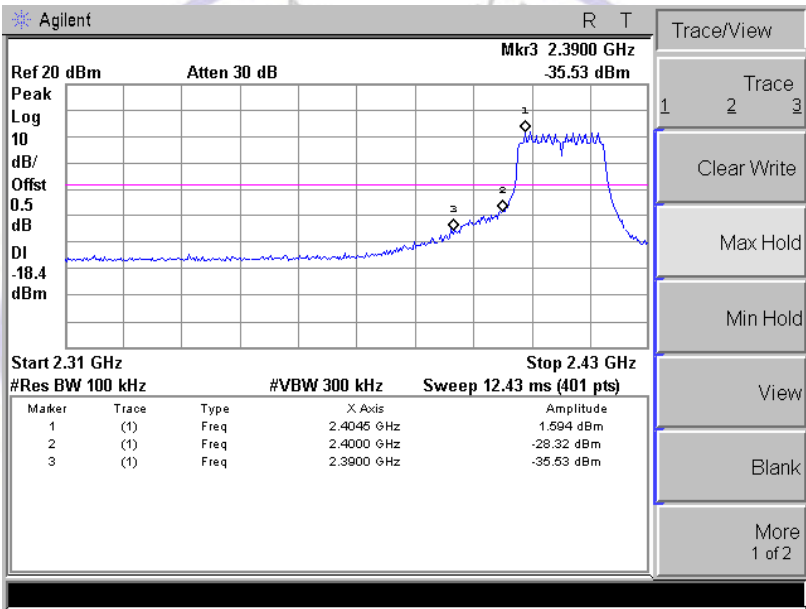
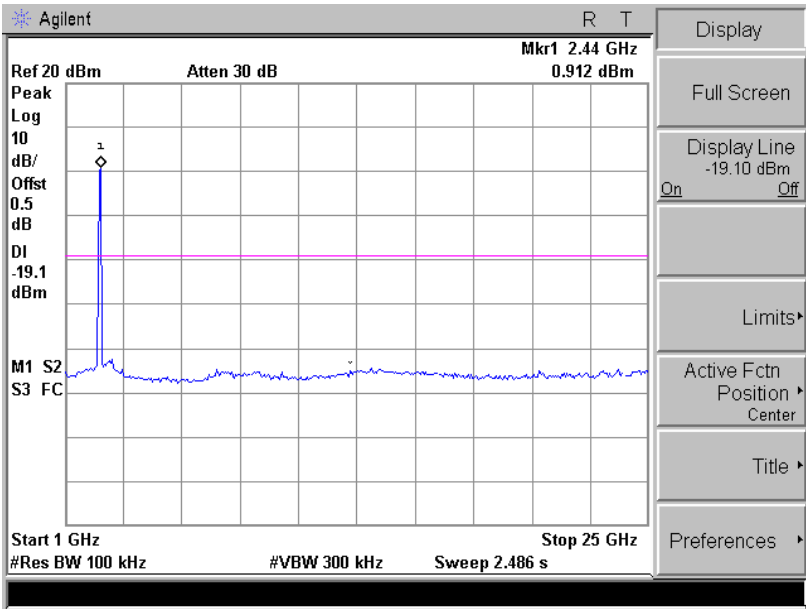
CH11 @ANT 2



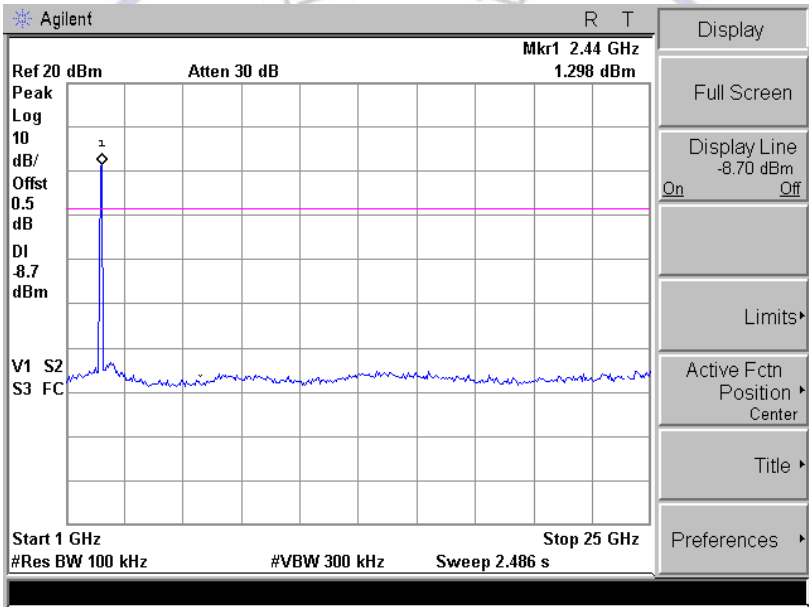
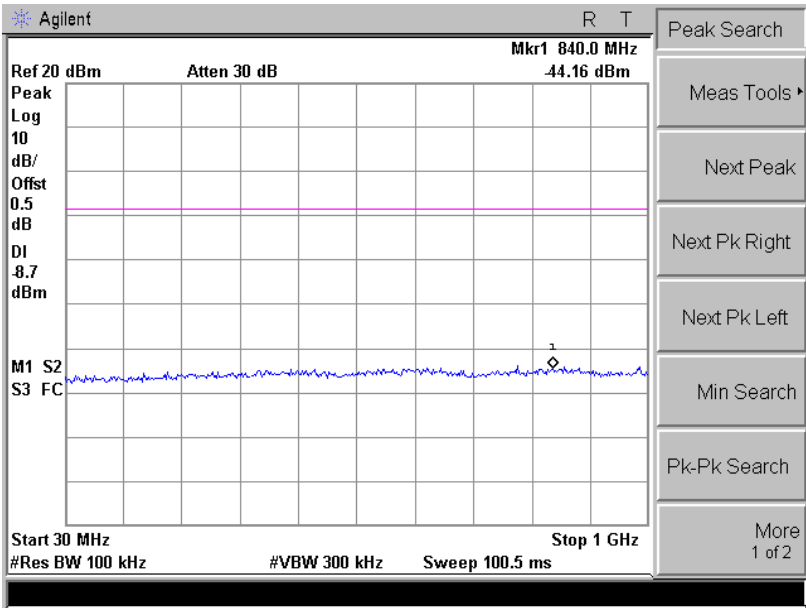


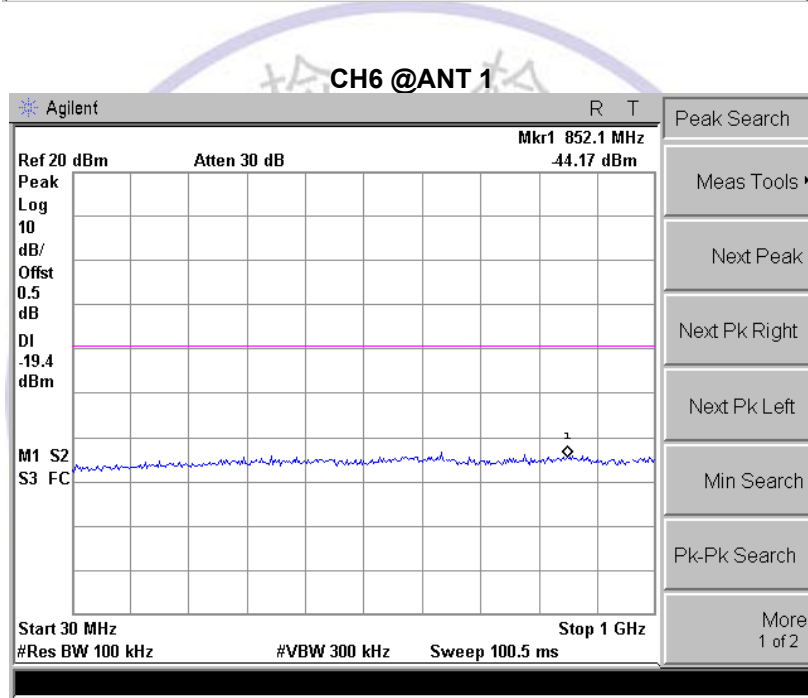
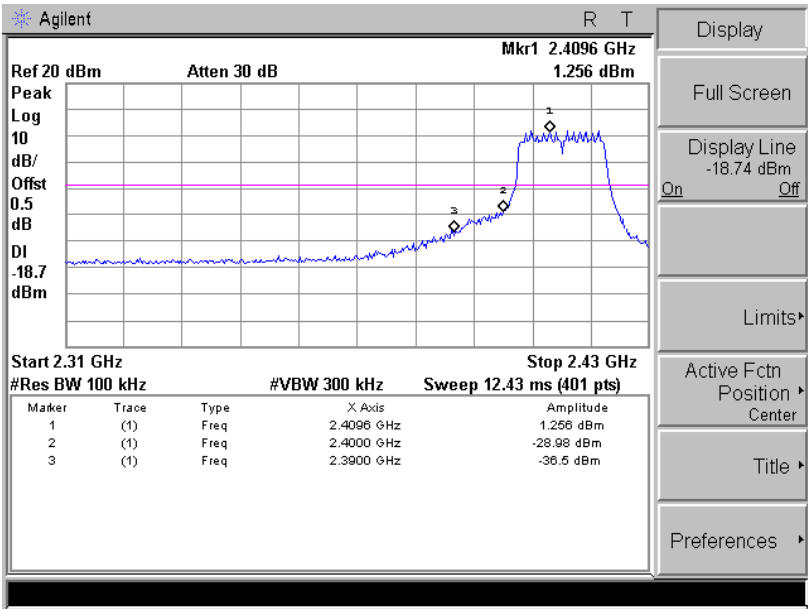
For 802.11n (20MHz) Mode:

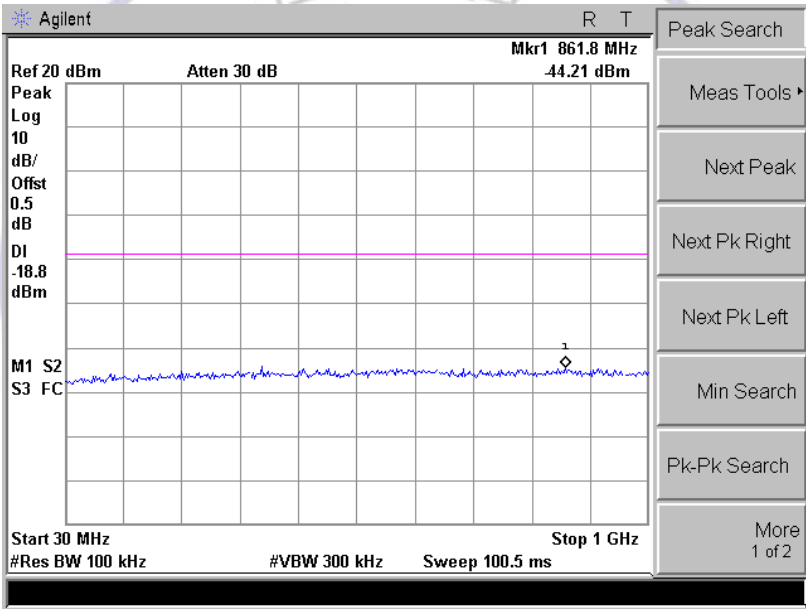
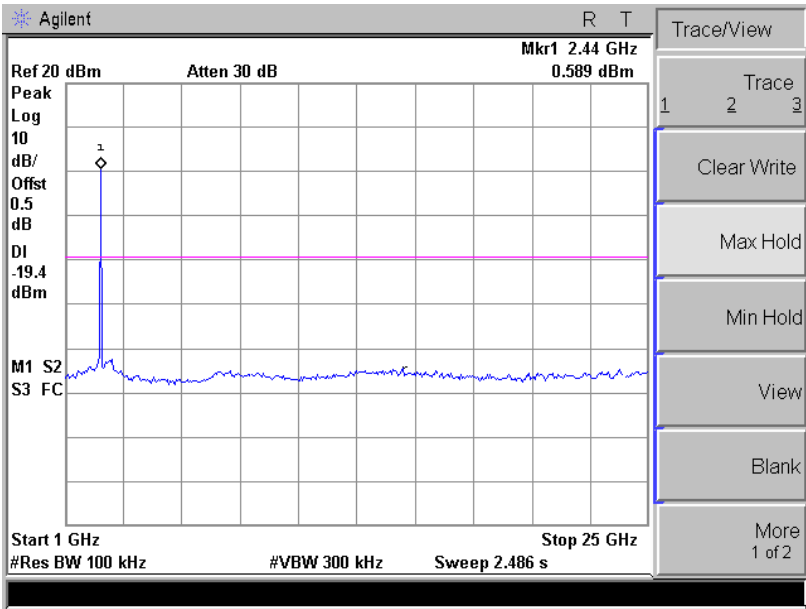


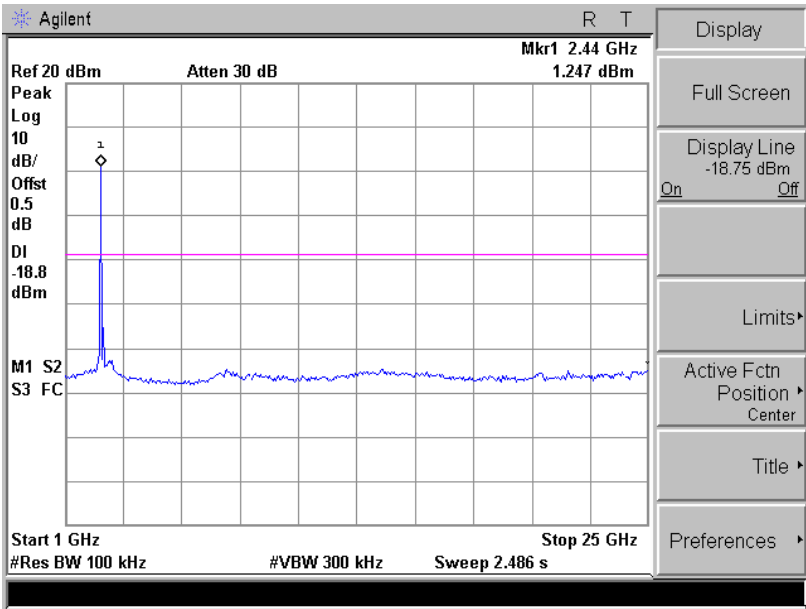


CH1 @ANT 2

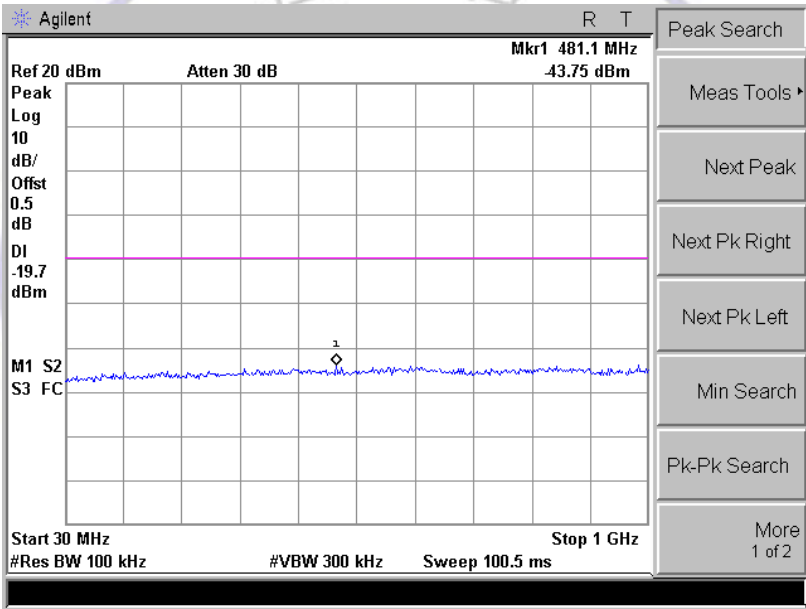


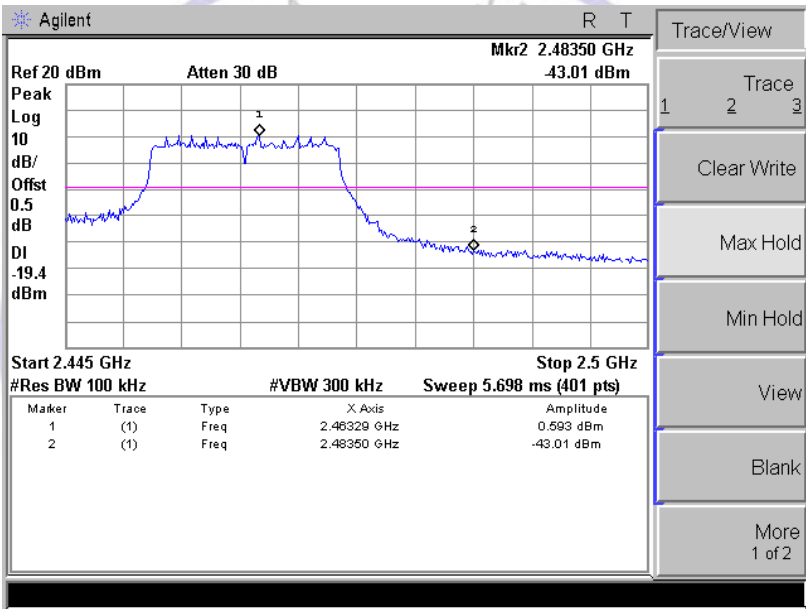
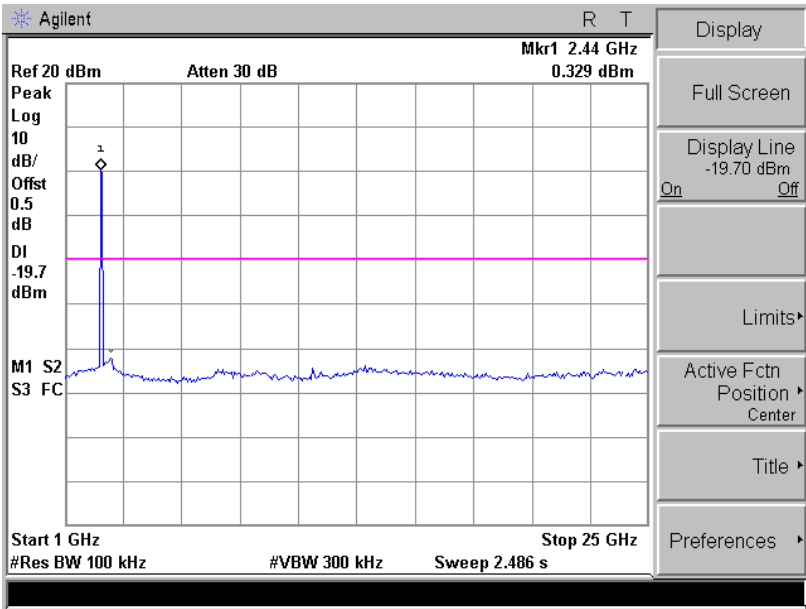




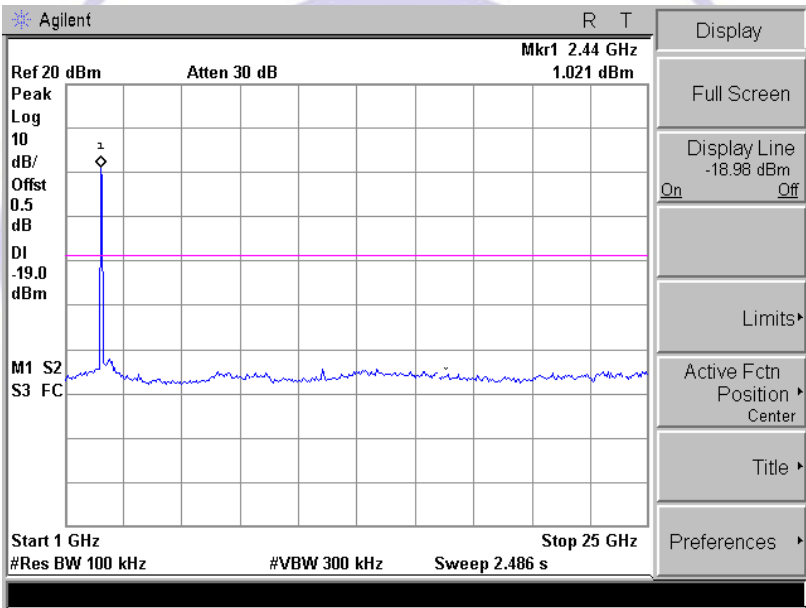
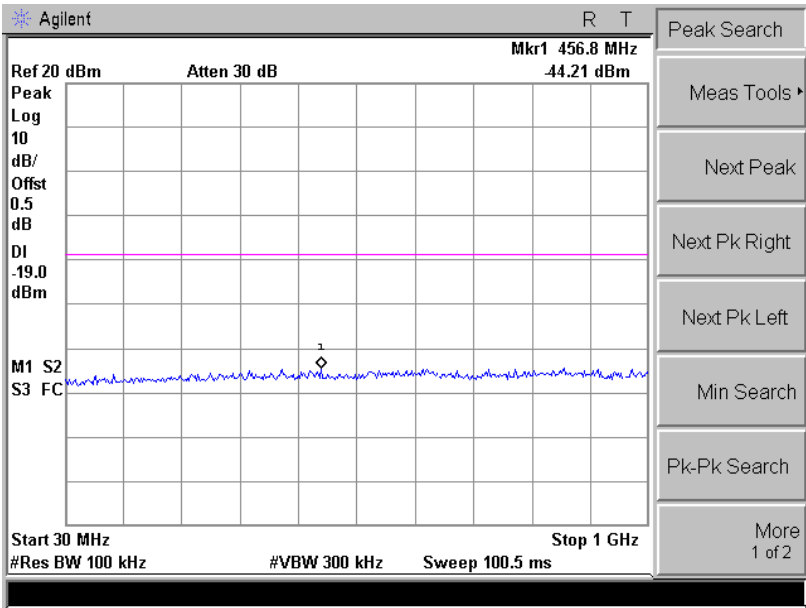


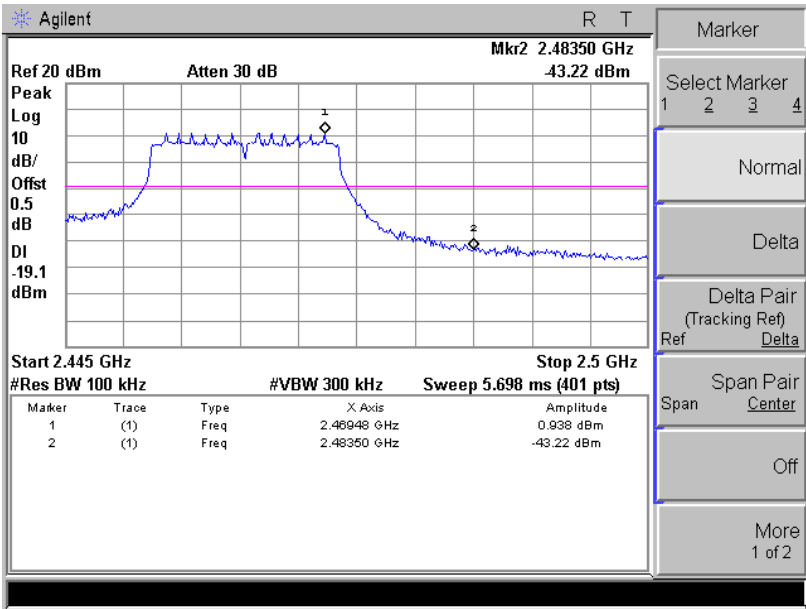
CH11 @ANT 1





CH11 @ANT 2





4.8. Antenna Requirement

STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (c), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Refer to statement below for compliance.

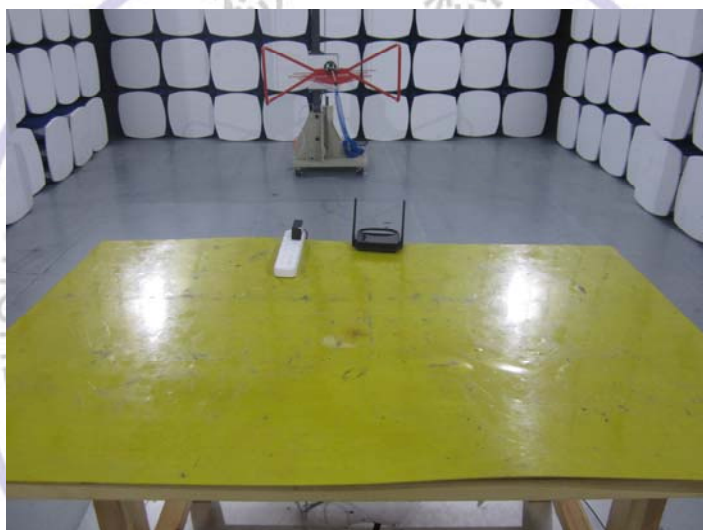
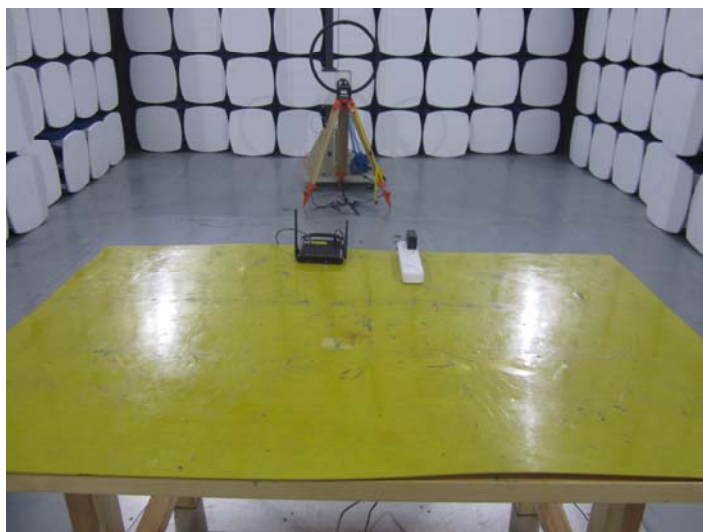
The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

ANTENNA CONNECTED CONSTRUCTION

The directional gains of antenna used for transmitting is 5dBi, for MIMO mode, Antenna Directional gain is $5+10\log 2=8.01\text{dBi}$ and the antenna connector is designed with permanent attachment and no consideration of replacement. Please see EUT photo for details.



5. Test Setup Photos of the EUT





6. External and Internal Photos of the EUT

External Photos of EUT







Internal Photos of EUT

