**SGS-CSTC Standards Technical Services Co., Ltd.**
**Shenzhen Branch**

No. 1 Workshop, M-10, Middle section, Science & Technology Park,
Shenzhen, Guangdong, China 518057

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# *TEST REPORT*

| | |
|---|---|
| **Application No.**: | SZEM1701000598CR |
| **Applicant:** | iLuun Inc |
| **Address of Applicant:** | 5005 Hillen Road, Baltimore, MD 21239 USA |
| **Manufacturer:** | Shenzhen Damai Technology Co., Ltd. |
| **Address of Manufacturer:** | 5/F. 1 Building, Financial Base, No.8 kefa Road, High-Tech Park, Shenzhen, China |
| **Factory:** | Global Brands Manufacture Ltd |
| **Address of Factory:** | Hunagjiang town, Dongguan City, Guangdong province |
| **Product Name:** | iLuun Air |
| **Model No.:** | IA1209 |
| **Trade mark:** | iLuun |
| **FCC ID:** | 2AK46-A4 |
| **Standards**: | 47 CFR Part 15, Subpart C 15.247 |
| **Date of Receipt**: | 2017-01-22(for original report SZEM170100059701) |
| **Date of Test**: | 2017-02-16 to 2017-03-06(for original report SZEM170100059701) |
| **Date of Issue**: | 2017-03-14(for original report SZEM170100059701)<br>2017-03-24(for new report SZEM SZEM170100059801) |
| **Test Result :** | **Pass*** |

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

Jack Zhang
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

| Revision Record | | | | |
|---|---|---|---|---|
| **Version** | **Chapter** | **Date** | **Modifier** | **Remark** |
| 01 | | 2017-03-24 | | Original |
| | | | | |
| | | | | |

| | | | | |
|---|---|---|---|---|
| **Authorized for issue by:** | | | | |
| **Tested By** | | Bill Chen | | 2017-03-06 |
| | | **Bill Chen /Project Engineer** | | **Date** |
| **Checked By** | | Eric Fu | | 2017-03-24 |
| | | **Eric Fu /Reviewer** | | **Date** |

# 2 Test Summary

| Radio Spectrum Technical Requirement | | | | |
|---|---|---|---|---|
| **Item** | **Standard** | **Method** | **Requirement** | **Result** |
| Antenna Requirement | 47 CFR Part 15, Subpart C 15.247 | N/A | 47 CFR Part 15, Subpart C 15.203 & 15.247(c) | Pass |

| Radio Spectrum Matter Part | | | | |
|---|---|---|---|---|
| **Item** | **Standard** | **Method** | **Requirement** | **Result** |
| Conducted Disturbance at AC Power Line(150kHz-30MHz) | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 6.2 | 47 CFR Part 15, Subpart C 15.207 | Pass |
| Conducted Peak Output Power | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 11.9.1.2 | 47 CFR Part 15, Subpart C 15.247(b)(3) | Pass |
| Minimum 6dB Bandwidth | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 11.8.1 | 47 CFR Part 15, Subpart C 15.247a(2) | Pass |
| Power Spectrum Density | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 11.10.2 | 47 CFR Part 15, Subpart C 15.247(e) | Pass |
| Conducted Spurious Emissions | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 11.11 | 47 CFR Part 15, Subpart C 15.247(d) | Pass |
| Radiated Spurious Emissions | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 6.10.4 | 47 CFR Part 15, Subpart C 15.209 & 15.247(d) | Pass |
| Radiated Emissions which fall in the restricted bands | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 6.10.5 | 47 CFR Part 15, Subpart C 15.209 & 15.247(d) | Pass |
| Conducted Band Edges Measurement | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 11.13.3.2 | 47 CFR Part 15, Subpart C 15.247(d) | Pass |

Remark:

Original model No. in report SZEM170100059701: A4

Only the model A4 was tested in report SZEM170100059701.

New model No. in report SZEM170100059801: IA1209

This report was an additional report copied from the report SZEM170100059701, just changed the inforamont of applicant, product name, model No. and trade mark, added the new pictures. Since the electrical circuit design, layout, components used and internal wiring for the model in the report SZEM170100059701 was exactly the same as the model in this report, only the different on model name. Therefore original data were kept in this report SZEM170100059801.

# 3 Contents

# 4 General Information

## 4.1 Details of E.U.T.

| | |
|---|---|
| Product Name: | Wireless Flash Drive - A4 |
| Model No.: | A4 |
| Trade Mark: | AirDisk |
| Operation Frequency: | IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz |
| Channel Numbers: | IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels |
| Channel Separation: | 5MHz |
| Type of Modulation: | IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK)<br>IEEE for 802.11g : OFDM(64QAM, 16QAM, QPSK, BPSK)<br>IEEE for 802.11n(HT20) : OFDM (64QAM, 16QAM,QPSK,BPSK) |
| Sample Type: | Portable production |
| Antenna Type: | Chip |
| Antenna Gain: | 1dBi |
| Power supply: | Test voltage:120V 60Hz<br>DC input:DC 5V<br>Rechargeable battery: 3.7V 400mAh 1.48Wh(Charge by USB) |

| Operation Frequency each of channel(802.11b/g/n HT20) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 1 | 2412MHz | 4 | 2427MHz | 7 | 2442MHz | 10 | 2457MHz |
| 2 | 2417MHz | 5 | 2432MHz | 8 | 2447MHz | 11 | 2462MHz |
| 3 | 2422MHz | 6 | 2437MHz | 9 | 2452MHz | | |

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

For 802.11b/g/n (HT20):

| Channel | Frequency |
|---|---|
| The Lowest channel | 2412MHz |
| The Middle channel | 2437MHz |
| The Highest channel | 2462MHz |

## 4.2 Test Environment and Mode

| | |
|---|---|
| **Operating Environment:** | |
| Temperature: | 25.0 °C |
| Humidity: | 55 % RH |
| Atmospheric Pressure: | 1015 mbar |
| **Test mode:** | |
| Transmitting mode: | Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate. |
| Transmitting+charge mode: | Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate ,being charing and adapter. |

## 4.3 Description of Support Units

The EUT has been tested with associated equipment below.

| Description | Manufacturer | Model No. |
|---|---|---|
| Laptop | Lenovo | T430u |
| Test board | Supply to SGS | FT232 |
| Adaptor | Apple | A1357 W010A051 |

## 4.4 Measurement Uncertainty

| No. | Item | Measurement Uncertainty |
|---|---|---|
| 1 | Radio Frequency | 7.25 x 10-8 |
| 2 | Timeout | 2s |
| 3 | Duty cycle | 0.37% |
| 4 | Occupied Bandwidth | 3% |
| 5 | RF conducted power | 0.75dB |
| 6 | RF power density | 2.84dB |
| 7 | Conducted Spurious emissions | 0.75dB |
| 8 | RF Radiated power | 4.5dB (below 1GHz) |
| | | 4.8dB (above 1GHz) |
| 9 | Radiated Spurious emission test | 4.5dB (30MHz-1GHz) |
| | | 4.8dB (1GHz-18GHz) |
| 10 | Temperature test | 1℃ |
| 11 | Humidity test | 3% |
| 12 | Supply voltages | 1.5% |
| 13 | Time | 3% |

## 4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

## 4.6 Test Facility

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

• **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• **VCCI**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

• **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen 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 No.: 556682.

• **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

## 4.7 Deviation from Standards

None

## 4.8 Abnormalities from Standard Conditions

None

# 5 Equipment List

| Conducted Disturbance at AC Power Line(150kHz-30MHz) | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No** | **Inventory No** | **Cal Date** | **Cal Due Date** |
| Shielding Room | ZhongYu Electron | GB-88 | SEM001-06 | 2016-05-13 | 2017-05-13 |
| LISN | Rohde & Schwarz | ENV216 | SEM007-01 | 2016-10-09 | 2017-10-09 |
| LISN | ETS-LINDGREN | 3816/2 | SEM007-02 | 2016-04-25 | 2017-04-25 |
| 8 Line ISN | Fischer Custom Communications Inc. | FCC-TLISN-T8-02 | EMC0120 | 2016-09-28 | 2017-09-28 |
| 4 Line ISN | Fischer Custom Communications Inc. | FCC-TLISN-T4-02 | EMC0121 | 2016-09-28 | 2017-09-28 |
| 2 Line ISN | Fischer Custom | FCC-TLISN-T2-02 | EMC0122 | 2016-09-28 | 2017-09-28 |

| Conducted Peak Output Power | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No** | **Inventory No** | **Cal Date** | **Cal Due Date** |
| DC Power Supply | ZhaoXin | RXN-305D | SEM011-02 | 2016-10-09 | 2017-10-09 |
| Spectrum Analyzer | Rohde & Schwarz | FSP | SEM004-06 | 2016-10-09 | 2017-10-09 |
| Signal Generator | Rohde & Schwarz | SML03 | SEM006-02 | 2016-04-25 | 2017-04-25 |
| Power Meter | Rohde & Schwarz | NRVS | SEM014-02 | 2016-10-09 | 2017-10-09 |

| Minimum 6dB Bandwidth | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No** | **Inventory No** | **Cal Date** | **Cal Due Date** |
| DC Power Supply | ZhaoXin | RXN-305D | SEM011-02 | 2016-10-09 | 2017-10-09 |
| Spectrum Analyzer | Rohde & Schwarz | FSP | SEM004-06 | 2016-10-09 | 2017-10-09 |
| Signal Generator | Rohde & Schwarz | SML03 | SEM006-02 | 2016-04-25 | 2017-04-25 |
| Power Meter | Rohde & Schwarz | NRVS | SEM014-02 | 2016-10-09 | 2017-10-09 |

| Power Spectrum Density | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No** | **Inventory No** | **Cal Date** | **Cal Due Date** |
| DC Power Supply | ZhaoXin | RXN-305D | SEM011-02 | 2016-10-09 | 2017-10-09 |
| Spectrum Analyzer | Rohde & Schwarz | FSP | SEM004-06 | 2016-10-09 | 2017-10-09 |
| Signal Generator | Rohde & Schwarz | SML03 | SEM006-02 | 2016-04-25 | 2017-04-25 |
| Power Meter | Rohde & Schwarz | NRVS | SEM014-02 | 2016-10-09 | 2017-10-09 |

| Conducted Spurious Emissions | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No** | **Inventory No** | **Cal Date** | **Cal Due Date** |
| DC Power Supply | ZhaoXin | RXN-305D | SEM011-02 | 2016-10-09 | 2017-10-09 |
| Spectrum Analyzer | Rohde & Schwarz | FSP | SEM004-06 | 2016-10-09 | 2017-10-09 |
| Signal Generator | Rohde & Schwarz | SML03 | SEM006-02 | 2016-04-25 | 2017-04-25 |
| Power Meter | Rohde & Schwarz | NRVS | SEM014-02 | 2016-10-09 | 2017-10-09 |

| Conducted Band Edges Measurement | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No** | **Inventory No** | **Cal Date** | **Cal Due Date** |
| DC Power Supply | ZhaoXin | RXN-305D | SEM011-02 | 2016-10-09 | 2017-10-09 |
| Spectrum Analyzer | Rohde & Schwarz | FSP | SEM004-06 | 2016-10-09 | 2017-10-09 |
| Signal Generator | Rohde & Schwarz | SML03 | SEM006-02 | 2016-04-25 | 2017-04-25 |
| Power Meter | Rohde & Schwarz | NRVS | SEM014-02 | 2016-10-09 | 2017-10-09 |

| General used equipment | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No** | **Inventory No** | **Cal Date** | **Cal Due Date** |
| Humidity/ Temperature Indicator | Shanghai Meteorological Industry Factory | ZJ1-2B | SEM002-03 | 2016-10-12 | 2017-10-12 |
| Humidity/ Temperature Indicator | Shanghai Meteorological Industry Factory | ZJ1-2B | SEM002-04 | 2016-10-12 | 2017-10-12 |
| Humidity/ Temperature Indicator | Mingle | N/A | SEM002-08 | 2016-10-12 | 2017-10-12 |
| Barometer | Changchun Meteorological Industry Factory | DYM3 | SEM002-01 | 2016-05-18 | 2017-05-18 |

# 6 Radio Spectrum Technical Requirement

## 6.1 Antenna Requirement

### 6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.247

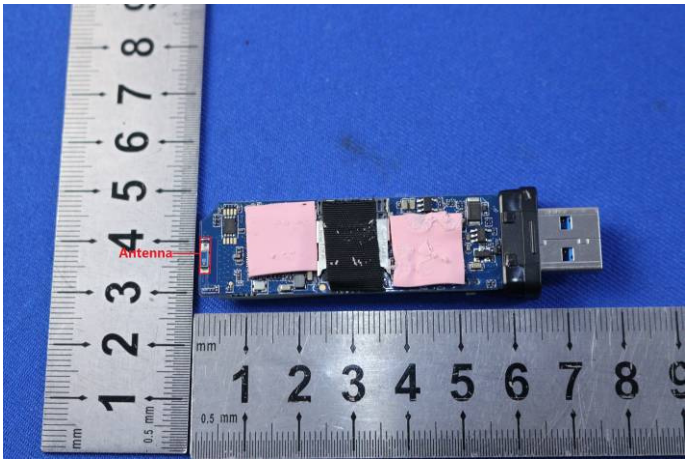
### 6.1.2 Conclusion

Standard Requirment:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

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




EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 1dBi.

# 7 Radio Spectrum Matter Test Results

## 7.1 Conducted Disturbance at AC Power Line(150kHz-30MHz)

Test Requirement: 47 CFR Part 15, Subpart C 15.247
Test Method: ANSI C63.10 (2013) Section 6.2
Limit:

| Frequency of emission(MHz) | Conducted limit(dBμV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15-0.5 | 66 to 56* | 56 to 46* |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |
| *Decreases with the logarithm of the frequency. | | |

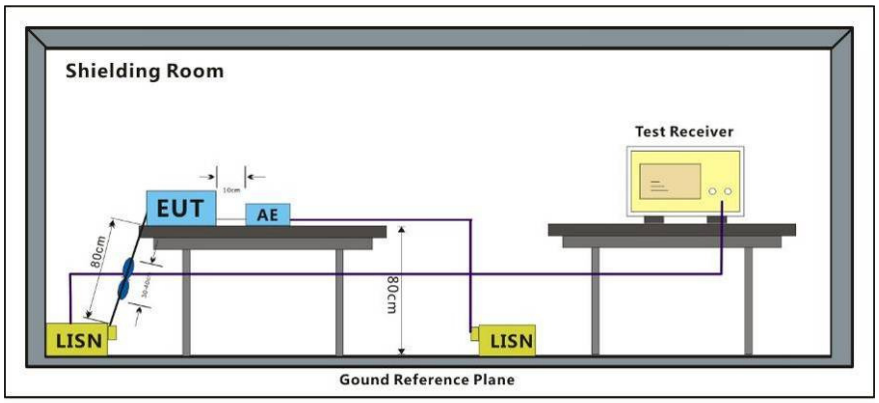
### 7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 25.0 °C Humidity: 56 % RH Atmospheric Pressure: 1020 mbar

Test mode: b:Tx+Charge mode

### 7.1.2 Test Setup Diagram




### 7.1.3 Measurement Data

1) The mains terminal disturbance voltage test was conducted in a shielded room.

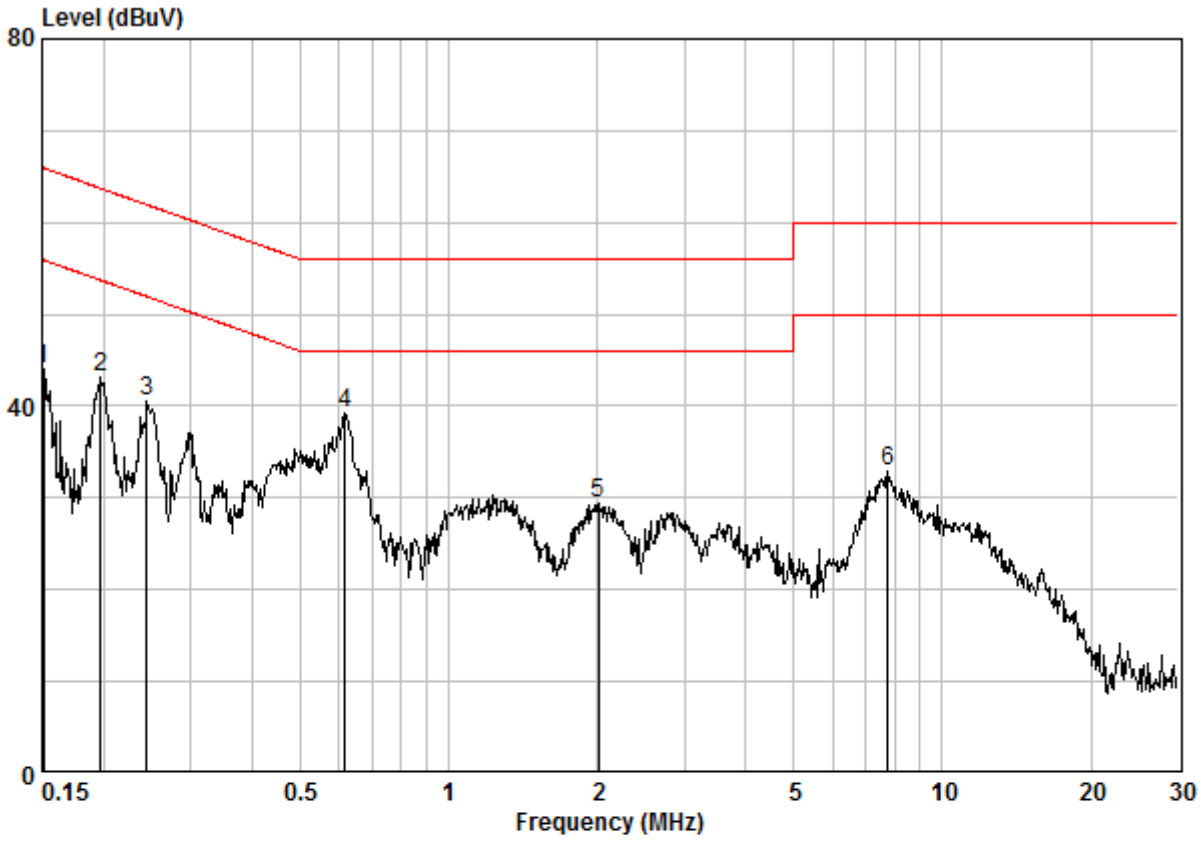
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.

3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,

4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.

5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.

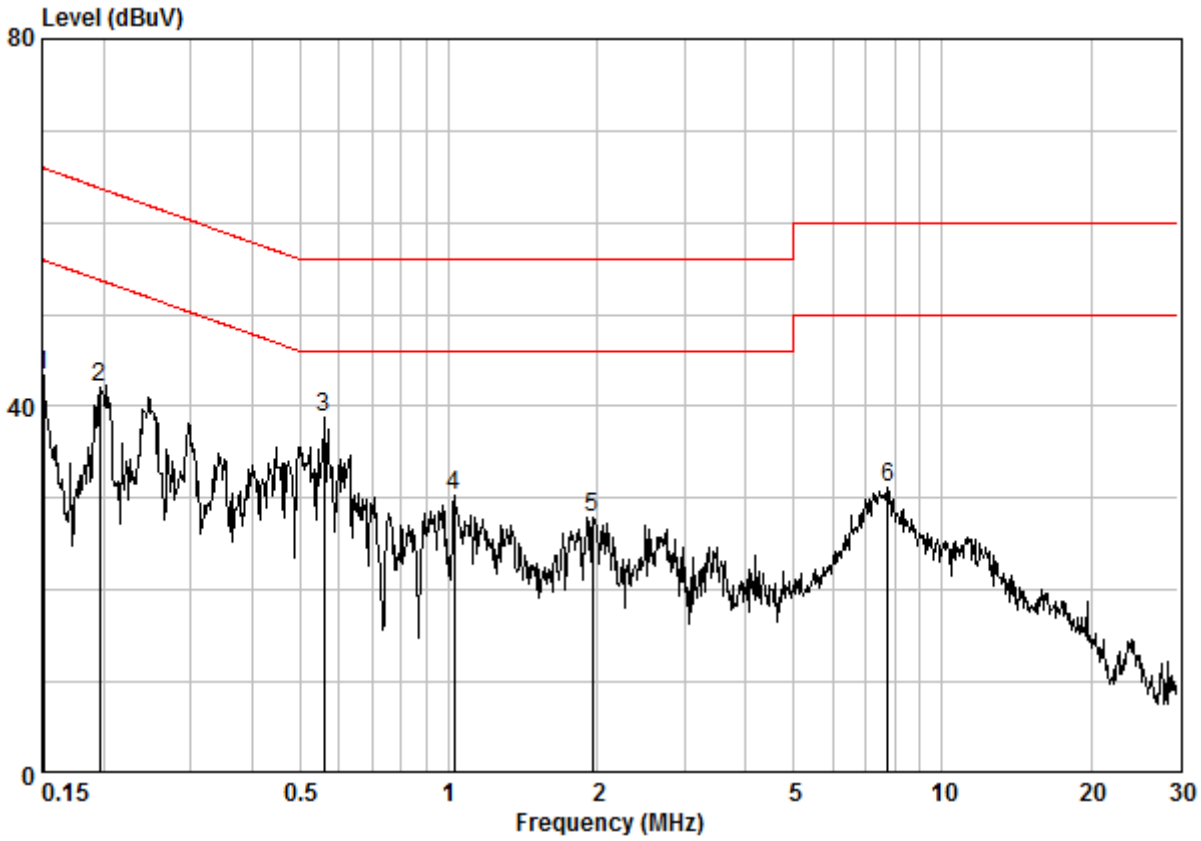
Mode:b;Line:Live Line




Site : Shielding Room
Condition : CE LINE
Job No. : 00597CR
Test Mode : b

| | Freq | Cable Loss | LISN Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB | dBuV | dBuV | dBuV | dB | |
| 1 @ | 0.15080 | 0.02 | 9.64 | 34.43 | 44.09 | 55.96 | -11.87 | Peak |
| 2 @ | 0.19758 | 0.02 | 9.64 | 33.51 | 43.17 | 53.71 | -10.54 | Peak |
| 3 @ | 0.24422 | 0.02 | 9.64 | 30.86 | 40.52 | 51.95 | -11.43 | Peak |
| 4 @ | 0.61726 | 0.02 | 9.65 | 29.56 | 39.24 | 46.00 | -6.76 | Peak |
| 5 @ | 2.012 | 0.03 | 9.67 | 19.68 | 29.38 | 46.00 | -16.62 | Peak |
| 6 @ | 7.769 | 0.10 | 9.81 | 22.93 | 32.83 | 50.00 | -17.17 | Peak |

Mode:b;Line:Neutral Line




Site : Shielding Room
Condition : CE NEUTRAL
Job No. : 00597CR
Test Mode : b

| | Freq | Cable Loss | LISN Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB | dBuV | dBuV | dBuV | dB | |
| 1 @ | 0.15080 | 0.02 | 9.64 | 33.64 | 43.30 | 55.96 | -12.66 | Peak |
| 2 @ | 0.19654 | 0.02 | 9.63 | 32.46 | 42.11 | 53.76 | -11.64 | Peak |
| 3 @ | 0.55814 | 0.02 | 9.63 | 29.17 | 38.83 | 46.00 | -7.17 | Peak |
| 4 @ | 1.027 | 0.03 | 9.64 | 20.68 | 30.35 | 46.00 | -15.65 | Peak |
| 5 | 1.959 | 0.03 | 9.66 | 18.17 | 27.86 | 46.00 | -18.14 | Peak |
| 6 | 7.769 | 0.10 | 9.79 | 21.39 | 31.27 | 50.00 | -18.73 | Peak |

## 7.2 Conducted Peak Output Power

Test Requirement: 47 CFR Part 15, Subpart C 15.247
Test Method: ANSI C63.10 (2013) Section 11.9.1.2
Limit:

| Frequency range(MHz) | Output power of the intentional radiator(watt) |
|---|---|
| 2400-2483.5 | 1 for ≥75 non-overlapping hopping channels |
| | 0.125 for all other frequency hopping systems |
| | 1 for digital modulation |

### 7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22.0 °C Humidity: 55 % RH Atmospheric Pressure: 1020 mbar

Exploratory Test Mode: Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.

Transmitting mode and Charge + Transmitting mode.

Final Test Mode: Pretest the EUT at Transmitting mode, found the Transmitting mode which it is worse case

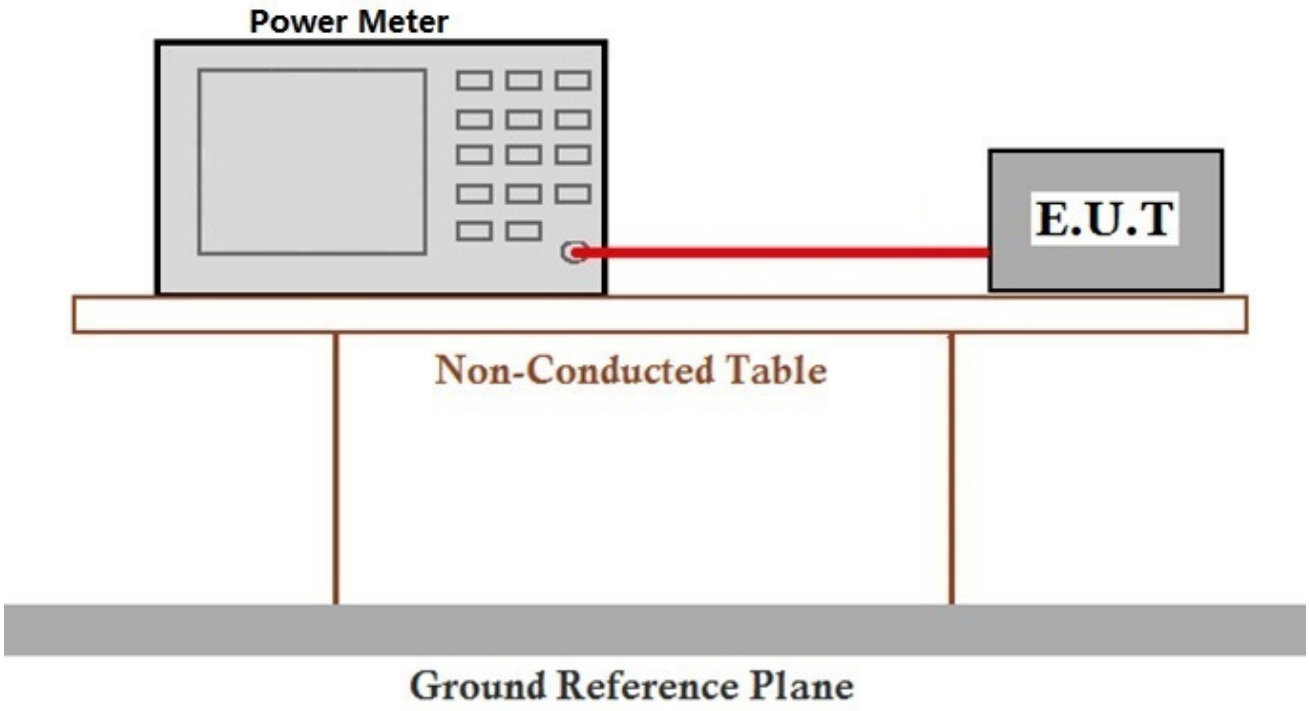
Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b;

6Mbps of rate is the worst case of 802.11g ; 6.5Mbps of rate is the worst case of 802.11n(HT20)

Transmitting mode.

Only the worst case is recorded in the report.

### 7.2.2 Test Setup Diagram




### 7.2.3 Measurement Data

The detailed test data see: Appendix 15.247

## 7.3 Minimum 6dB Bandwidth

Test Requirement: 47 CFR Part 15, Subpart C 15.247
Test Method: ANSI C63.10 (2013) Section 11.8.1
Limit: ⩾500 kHz

### 7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 22.0 °C Humidity: 55 % RH Atmospheric Pressure: 1020 mbar

Exploratory Test Mode: Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.

Transmitting mode and Charge + Transmitting mode.

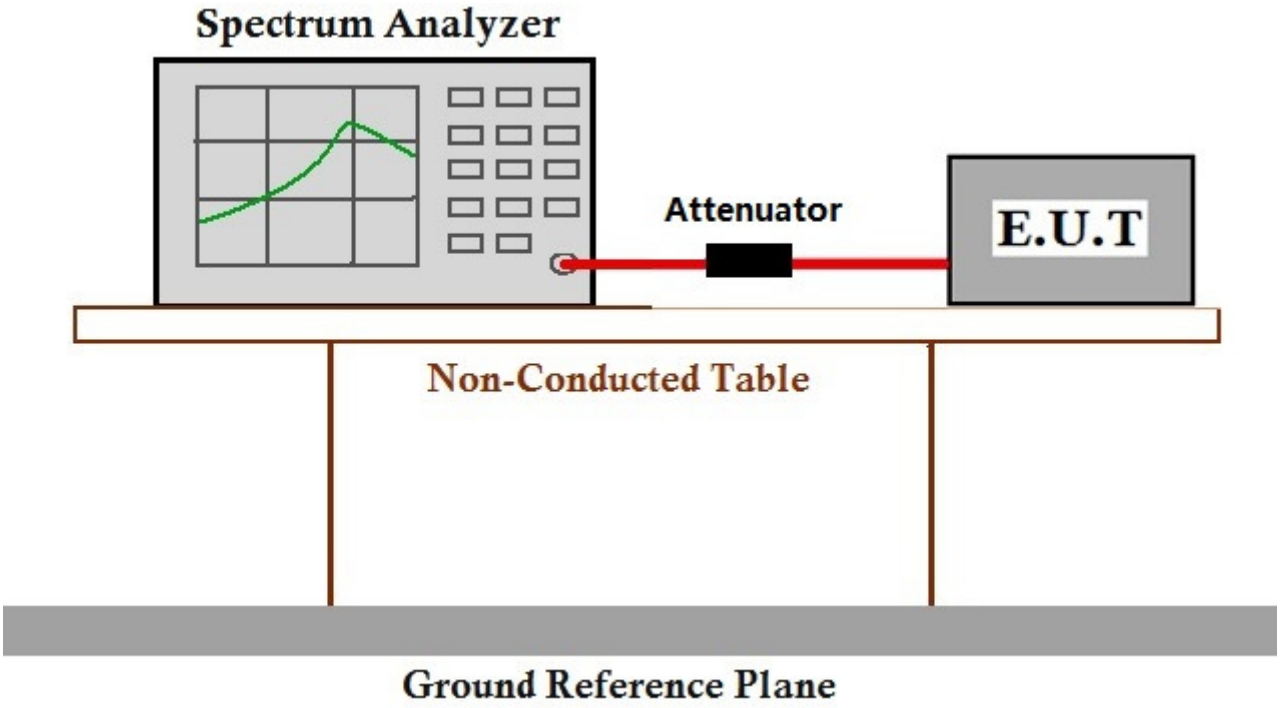
Final Test Mode: Transmitting mode.

Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b;

6Mbps of rate is the worst case of 802.11g ; 6.5Mbps of rate is the worst case of 802.11n(HT20)

Only the worst case is recorded in the report.

### 7.3.2 Test Setup Diagram




### 7.3.3 Measurement Data

The detailed test data see: Appendix 15.247

## 7.4 Power Spectrum Density

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15, Subpart C 15.247 |
| Test Method: | ANSI C63.10 (2013) Section 11.10.2 |
| Limit: | ≤8dBm in any 3 kHz band during any time interval of continuous transmission |

### 7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 22.0 °C Humidity: 55 % RH Atmospheric Pressure: 1020 mbar

Exploratory Test Mode: Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.

Transmitting mode and Charge + Transmitting mode.

Final Test Mode: Pretest the EUT at Transmitting mode, found the Transmitting mode which it is worse case

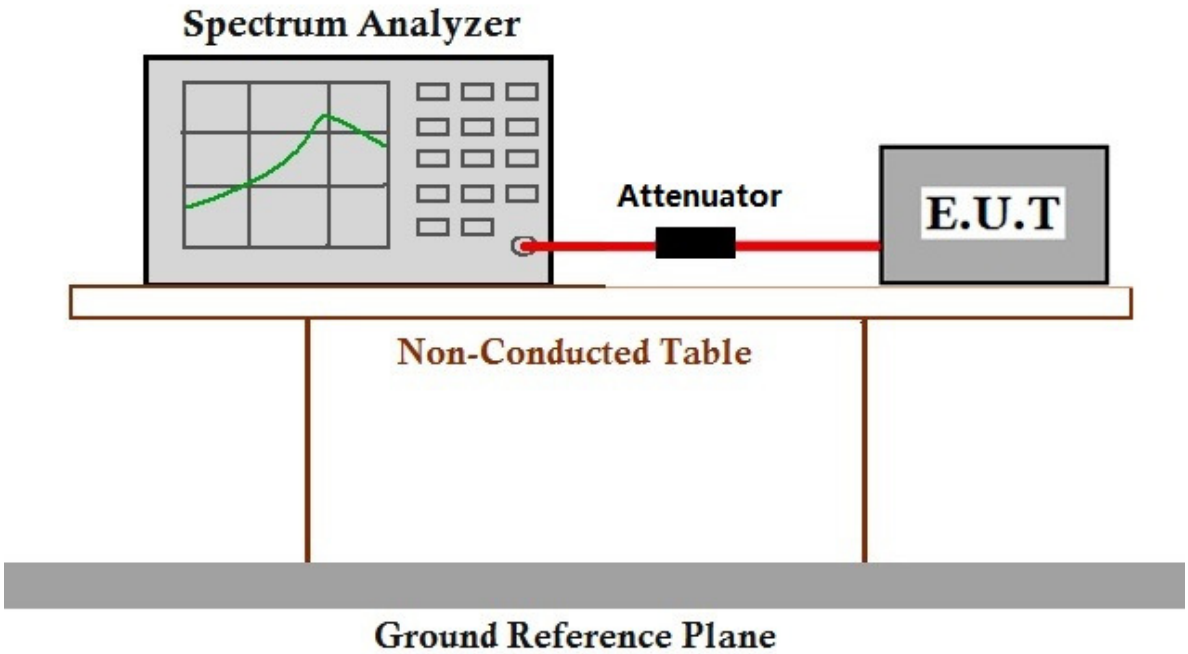
Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b;

6Mbps of rate is the worst case of 802.11g ; 6.5Mbps of rate is the worst case of 802.11n(HT20)

Transmitting mode.

Only the worst case is recorded in the report.

### 7.4.2 Test Setup Diagram




### 7.4.3 Measurement Data

The detailed test data see: Appendix 15.247

## 7.5 Conducted Spurious Emissions

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15, Subpart C 15.247 |
| Test Method: | ANSI C63.10 (2013) Section 11.11 |
| Limit: | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. |

### 7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 22.0 °C Humidity: 55 % RH Atmospheric Pressure: 1020 mbar

Exploratory Test Mode: Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.

Transmitting mode and Charge + Transmitting mode.

Final Test Mode: Pretest the EUT at Transmitting mode, found the Transmitting mode which it is worse case

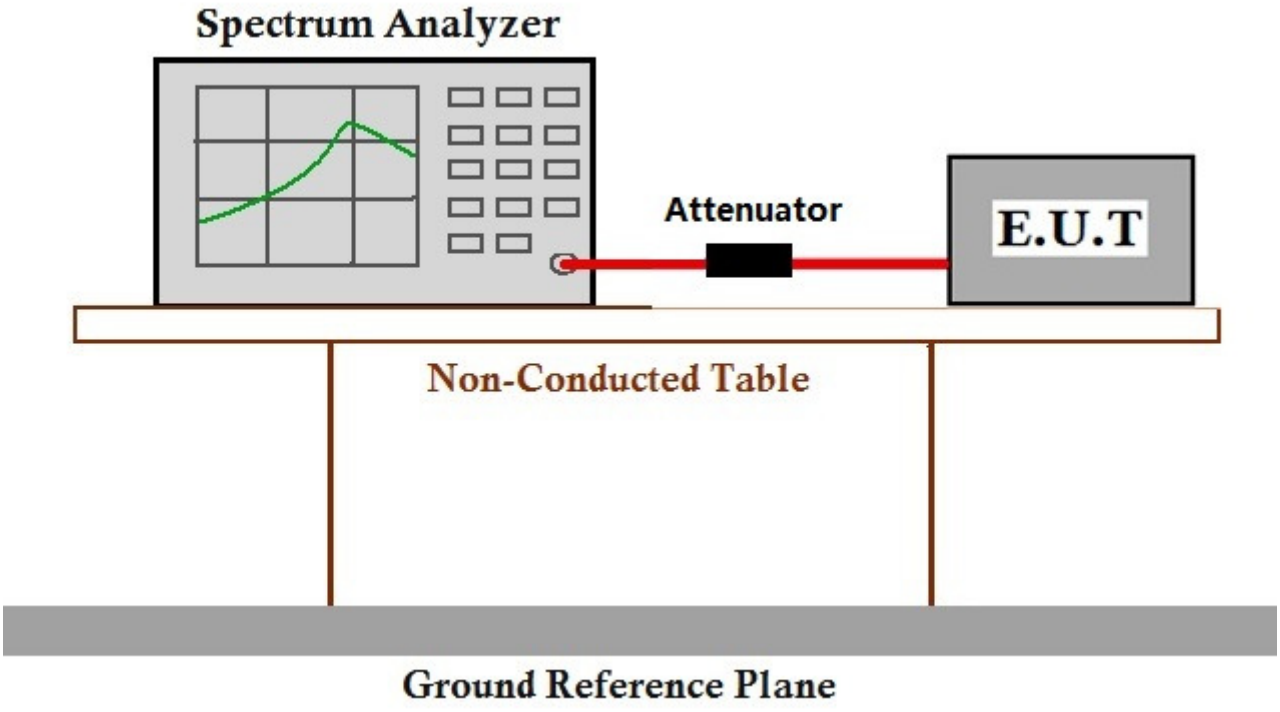
Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b;

6Mbps of rate is the worst case of 802.11g ; 6.5Mbps of rate is the worst case of 802.11n(HT20)

Transmitting mode.

Only the worst case is recorded in the report.

### 7.5.2 Test Setup Diagram




### 7.5.3 Measurement Data

The detailed test data see: Appendix 15.247

## 7.6 Radiated Spurious Emissions

Test Requirement: 47 CFR Part 15, Subpart C 15.247
Test Method: ANSI C63.10 (2013) Section 6.10.4
Measurement Distance: 3m
Limit:

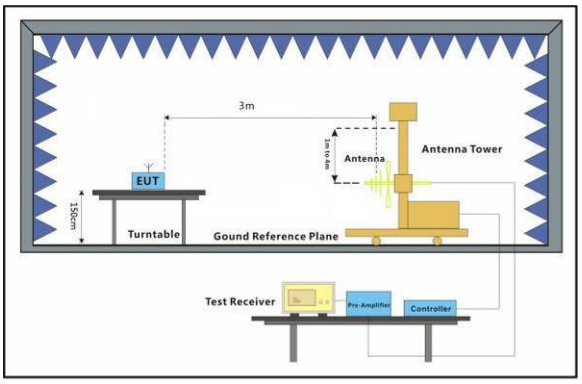
| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) |
|---|---|---|
| 0.009-0.490 | 2400/F(kHz) | 300 |
| 0.490-1.705 | 24000/F(kHz) | 30 |
| 1.705-30.0 | 30 | 30 |
| 30-88 | 100 | 3 |
| 88-216 | 150 | 3 |
| 216-960 | 200 | 3 |
| Above 960 | 500 | 3 |
| Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. | | |

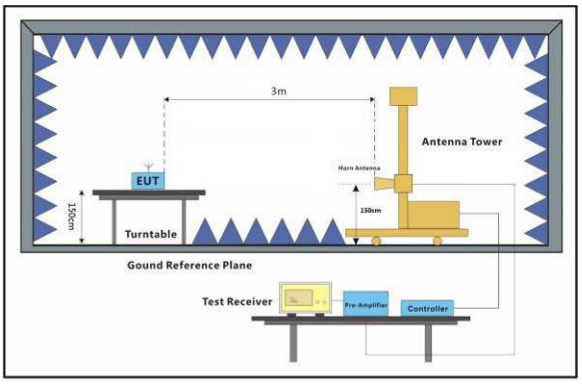
### 7.6.1 E.U.T. Operation

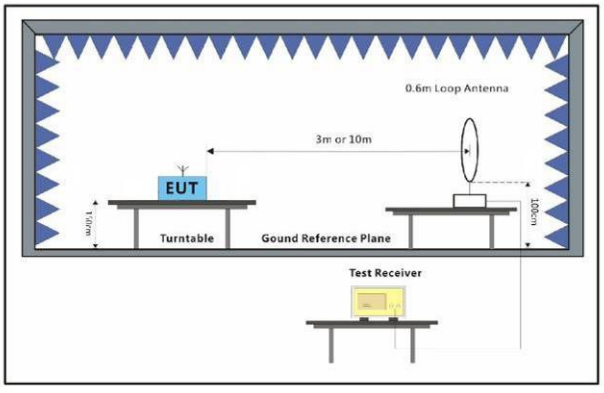
Operating Environment:

| | |
|---|---|
| Temperature: | 25.0 °C Humidity: 50 % RH Atmospheric Pressure: 1020 mbar |
| Pretest these mode to find the worst case: | Transmitting with all kind of modulations, data rates at lowest, middle and highest channel. |
| | Transmitting mode and Charge + Transmitting mode. |
| The worst case for final test: | Pretest the EUT at Transmitting mode, found the Transmitting mode which it is worse case |
| | Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; |
| | 6Mbps of rate is the worst case of 802.11g ; 6.5Mbps of rate is the worst case of 802.11n(HT20) |
| | Charge + Transmitting mode. |
| | Only the worst case is recorded in the report. |

### 7.6.2 Test Setup Diagram



### 7.6.3 Measurement Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

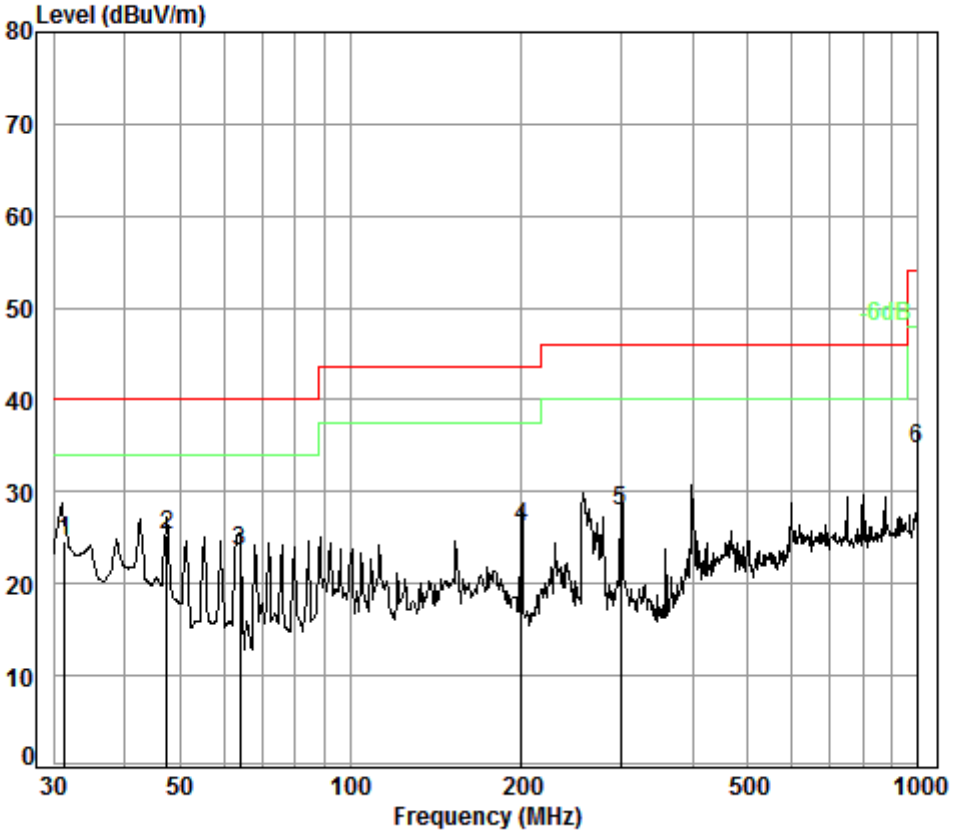
h. Test the EUT in the lowest channel (2402MHz),the middle channel (2441MHz),the Highest channel (2480MHz)

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j. Repeat above procedures until all frequencies measured was complete.

**Below 1GHz**

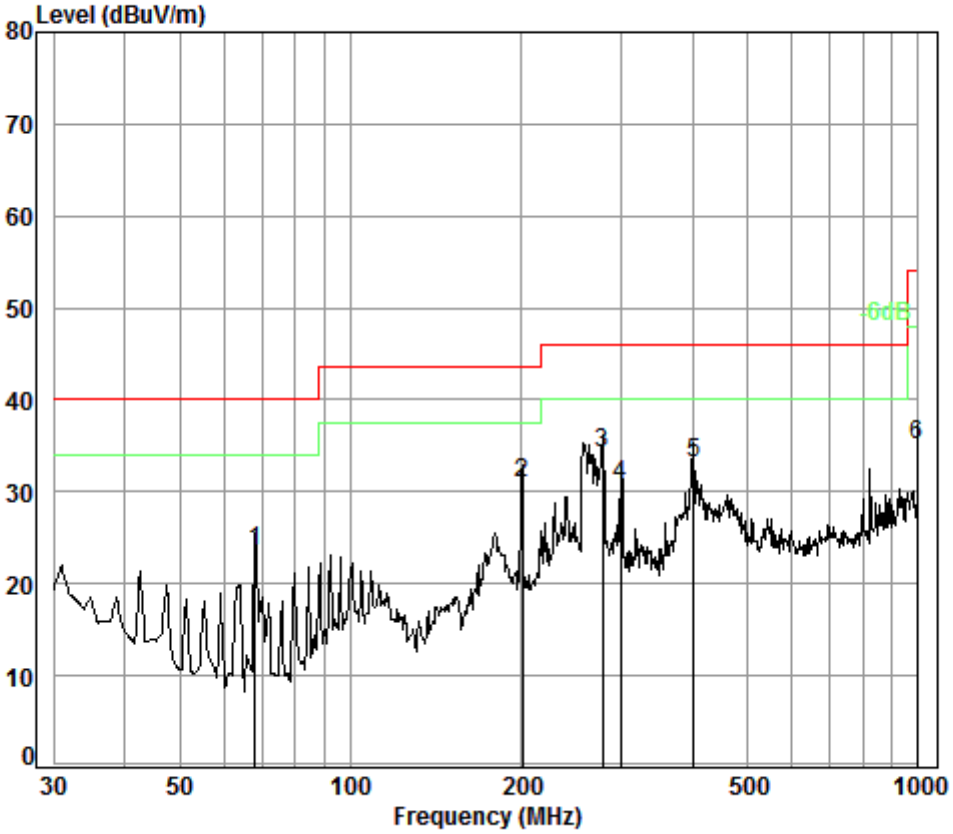
Mode:c; Polarization:Vertical




Condition: 3m VERTICAL
Job No. : 0597CR
Test mode: Charge + TX

| | Freq | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level | Limit Line | Over Limit |
|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB |
| 1 | 31.40 | 0.60 | 17.92 | 27.35 | 33.45 | 24.62 | 40.00 | -15.38 |
| 2 pp | 47.49 | 0.75 | 9.80 | 27.30 | 42.00 | 25.25 | 40.00 | -14.75 |
| 3 | 63.98 | 0.80 | 7.08 | 27.26 | 42.99 | 23.61 | 40.00 | -16.39 |
| 4 | 199.99 | 1.40 | 10.20 | 26.70 | 41.26 | 26.16 | 43.50 | -17.34 |
| 5 | 299.32 | 1.90 | 13.87 | 26.41 | 38.60 | 27.96 | 46.00 | -18.04 |
| 6 | 996.50 | 3.70 | 24.16 | 26.33 | 33.20 | 34.73 | 54.00 | -19.27 |

Mode:c;Polarization:Horizontal




Condition: 3m Horizontal
Job No. : 0597CR
Test mode: Charge + TX

| | Freq | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level | Limit Line | Over Limit |
|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB |
| 1 | 67.91 | 0.80 | 6.96 | 27.25 | 43.05 | 23.56 | 40.00 | -16.44 |
| 2 | 200.69 | 1.40 | 10.24 | 26.70 | 46.08 | 31.02 | 43.50 | -12.48 |
| 3 pp | 278.07 | 1.81 | 12.93 | 26.46 | 45.95 | 34.23 | 46.00 | -11.77 |
| 4 | 299.32 | 1.90 | 13.87 | 26.41 | 41.30 | 30.66 | 46.00 | -15.34 |
| 5 | 401.84 | 2.21 | 16.31 | 27.15 | 41.85 | 33.22 | 46.00 | -12.78 |
| 6 | 996.50 | 3.70 | 24.16 | 26.33 | 33.66 | 35.19 | 54.00 | -18.81 |

**Above 1GHz**

| Test mode: | 802.11b | Test channel: | Lowest | Remark: | Peak |
|---|---|---|---|---|---|

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3579.190 | 32.43 | 7.66 | 38.51 | 46.74 | 48.32 | 74.00 | -25.68 | Vertical |
| 4824.000 | 34.19 | 8.90 | 39.04 | 46.77 | 50.82 | 74.00 | -23.18 | Vertical |
| 6122.333 | 34.80 | 10.40 | 38.92 | 44.75 | 51.03 | 74.00 | -22.97 | Vertical |
| 7236.000 | 36.40 | 10.69 | 38.15 | 43.48 | 52.42 | 74.00 | -21.58 | Vertical |
| 9648.000 | 37.53 | 12.52 | 36.97 | 40.64 | 53.72 | 74.00 | -20.28 | Vertical |
| 12713.160 | 38.86 | 14.75 | 39.02 | 38.88 | 53.47 | 74.00 | -20.53 | Vertical |
| 3803.444 | 33.07 | 7.74 | 38.61 | 44.70 | 46.90 | 74.00 | -27.10 | Horizontal |
| 4824.000 | 34.19 | 8.90 | 39.04 | 47.43 | 51.48 | 74.00 | -22.52 | Horizontal |
| 6078.201 | 34.76 | 10.46 | 38.95 | 45.26 | 51.53 | 74.00 | -22.47 | Horizontal |
| 7236.000 | 36.40 | 10.69 | 38.15 | 43.62 | 52.56 | 74.00 | -21.44 | Horizontal |
| 9648.000 | 37.53 | 12.52 | 36.97 | 40.49 | 53.57 | 74.00 | -20.43 | Horizontal |
| 12713.160 | 38.86 | 14.75 | 39.02 | 38.26 | 52.85 | 74.00 | -21.15 | Horizontal |

| Test mode: | 802.11b | Test channel: | Middle | Remark: | Peak |
|---|---|---|---|---|---|

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3960.700 | 33.50 | 7.80 | 38.68 | 45.25 | 47.87 | 74.00 | -26.13 | Vertical |
| 4874.000 | 34.28 | 8.97 | 39.05 | 47.36 | 51.56 | 74.00 | -22.44 | Vertical |
| 6060.637 | 34.75 | 10.48 | 38.96 | 46.57 | 52.84 | 74.00 | -21.16 | Vertical |
| 7311.000 | 36.37 | 10.72 | 38.07 | 44.08 | 53.10 | 74.00 | -20.90 | Vertical |
| 9748.000 | 37.55 | 12.58 | 36.92 | 40.00 | 53.21 | 74.00 | -20.79 | Vertical |
| 12261.500 | 38.76 | 14.34 | 38.57 | 38.63 | 53.16 | 74.00 | -20.84 | Vertical |
| 3808.951 | 33.09 | 7.74 | 38.61 | 44.94 | 47.16 | 74.00 | -26.84 | Horizontal |
| 4874.000 | 34.28 | 8.97 | 39.05 | 46.91 | 51.11 | 74.00 | -22.89 | Horizontal |
| 5778.052 | 34.57 | 9.94 | 39.02 | 46.01 | 51.50 | 74.00 | -22.50 | Horizontal |
| 7311.000 | 36.37 | 10.72 | 38.07 | 43.81 | 52.83 | 74.00 | -21.17 | Horizontal |
| 9748.000 | 37.55 | 12.58 | 36.92 | 40.45 | 53.66 | 74.00 | -20.34 | Horizontal |
| 12440.210 | 38.86 | 14.20 | 38.75 | 38.43 | 52.74 | 74.00 | -21.26 | Horizontal |

| Test mode: | 802.11b | Test channel: | Highest | Remark: | Peak |
|---|---|---|---|---|---|

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3641.878 | 32.62 | 7.68 | 38.54 | 45.43 | 47.19 | 74.00 | -26.81 | Vertical |
| 4924.000 | 34.37 | 9.04 | 39.07 | 46.87 | 51.21 | 74.00 | -22.79 | Vertical |
| 5947.702 | 34.67 | 10.42 | 39.00 | 46.48 | 52.57 | 74.00 | -21.43 | Vertical |
| 7386.000 | 36.34 | 10.75 | 38.00 | 44.14 | 53.23 | 74.00 | -20.77 | Vertical |
| 9848.000 | 37.57 | 12.63 | 36.87 | 40.23 | 53.56 | 74.00 | -20.44 | Vertical |
| 12731.570 | 38.85 | 14.81 | 39.04 | 38.79 | 53.41 | 74.00 | -20.59 | Vertical |
| 3847.726 | 33.19 | 7.76 | 38.63 | 45.03 | 47.35 | 74.00 | -26.65 | Horizontal |
| 4924.000 | 34.37 | 9.04 | 39.07 | 47.61 | 51.95 | 74.00 | -22.05 | Horizontal |
| 6329.508 | 34.97 | 10.14 | 38.79 | 45.37 | 51.69 | 74.00 | -22.31 | Horizontal |
| 7386.000 | 36.34 | 10.75 | 38.00 | 44.75 | 53.84 | 74.00 | -20.16 | Horizontal |
| 9848.000 | 37.57 | 12.63 | 36.87 | 39.61 | 52.94 | 74.00 | -21.06 | Horizontal |
| 12494.320 | 38.90 | 14.15 | 38.80 | 39.24 | 53.49 | 74.00 | -20.51 | Horizontal |

| Test mode: | 802.11g | Test channel: | Lowest | Remark: | Peak |
|---|---|---|---|---|---|

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3759.672 | 32.95 | 7.73 | 38.59 | 46.08 | 48.17 | 74.00 | -25.83 | Vertical |
| 4824.000 | 34.19 | 8.90 | 39.04 | 46.88 | 50.93 | 74.00 | -23.07 | Vertical |
| 6069.413 | 34.76 | 10.47 | 38.96 | 45.08 | 51.35 | 74.00 | -22.65 | Vertical |
| 7236.000 | 36.40 | 10.69 | 38.15 | 43.81 | 52.75 | 74.00 | -21.25 | Vertical |
| 9648.000 | 37.53 | 12.52 | 36.97 | 40.42 | 53.50 | 74.00 | -20.50 | Vertical |
| 12731.570 | 38.85 | 14.81 | 39.04 | 38.76 | 53.38 | 74.00 | -20.62 | Vertical |
| 3960.700 | 33.50 | 7.80 | 38.68 | 45.94 | 48.56 | 74.00 | -25.44 | Horizontal |
| 4824.000 | 34.19 | 8.90 | 39.04 | 46.06 | 50.11 | 74.00 | -23.89 | Horizontal |
| 6016.949 | 34.71 | 10.54 | 38.99 | 44.77 | 51.03 | 74.00 | -22.97 | Horizontal |
| 7236.000 | 36.40 | 10.69 | 38.15 | 44.96 | 53.90 | 74.00 | -20.10 | Horizontal |
| 9648.000 | 37.53 | 12.52 | 36.97 | 40.43 | 53.51 | 74.00 | -20.49 | Horizontal |
| 12676.420 | 38.86 | 14.65 | 38.99 | 38.80 | 53.32 | 74.00 | -20.68 | Horizontal |

| Test mode: | 802.11g | Test channel: | Middle | Remark: | Peak |
|---|---|---|---|---|---|

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3819.990 | 33.12 | 7.75 | 38.62 | 44.94 | 47.19 | 74.00 | -26.81 | Vertical |
| 4874.000 | 34.28 | 8.97 | 39.05 | 47.13 | 51.33 | 74.00 | -22.67 | Vertical |
| 6320.356 | 34.96 | 10.15 | 38.80 | 45.15 | 51.46 | 74.00 | -22.54 | Vertical |
| 7311.000 | 36.37 | 10.72 | 38.07 | 44.21 | 53.23 | 74.00 | -20.77 | Vertical |
| 9748.000 | 37.55 | 12.58 | 36.92 | 40.13 | 53.34 | 74.00 | -20.66 | Vertical |
| 12694.780 | 38.86 | 14.70 | 39.00 | 38.92 | 53.48 | 74.00 | -20.52 | Vertical |
| 3781.495 | 33.01 | 7.73 | 38.60 | 45.70 | 47.84 | 74.00 | -26.16 | Horizontal |
| 4874.000 | 34.28 | 8.97 | 39.05 | 46.11 | 50.31 | 74.00 | -23.69 | Horizontal |
| 5853.787 | 34.61 | 10.15 | 39.01 | 45.75 | 51.50 | 74.00 | -22.50 | Horizontal |
| 7311.000 | 36.37 | 10.72 | 38.07 | 44.34 | 53.36 | 74.00 | -20.64 | Horizontal |
| 9748.000 | 37.55 | 12.58 | 36.92 | 40.56 | 53.77 | 74.00 | -20.23 | Horizontal |
| 12676.420 | 38.86 | 14.65 | 38.99 | 38.80 | 53.32 | 74.00 | -20.68 | Horizontal |

| Test mode: | 802.11g | Test channel: | Highest | Remark: | Peak |
|---|---|---|---|---|---|

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3870.060 | 33.25 | 7.77 | 38.64 | 44.56 | 46.94 | 74.00 | -27.06 | Vertical |
| 4924.000 | 34.37 | 9.04 | 39.07 | 46.17 | 50.51 | 74.00 | -23.49 | Vertical |
| 6329.508 | 34.97 | 10.14 | 38.79 | 45.66 | 51.98 | 74.00 | -22.02 | Vertical |
| 7386.000 | 36.34 | 10.75 | 38.00 | 44.38 | 53.47 | 74.00 | -20.53 | Vertical |
| 9848.000 | 37.57 | 12.63 | 36.87 | 39.95 | 53.28 | 74.00 | -20.72 | Vertical |
| 12458.220 | 38.88 | 14.18 | 38.77 | 39.24 | 53.53 | 74.00 | -20.47 | Vertical |
| 3870.060 | 33.25 | 7.77 | 38.64 | 45.48 | 47.86 | 74.00 | -26.14 | Horizontal |
| 4924.000 | 34.37 | 9.04 | 39.07 | 45.37 | 49.71 | 74.00 | -24.29 | Horizontal |
| 6211.563 | 34.87 | 10.29 | 38.87 | 44.67 | 50.96 | 74.00 | -23.04 | Horizontal |
| 7386.000 | 36.34 | 10.75 | 38.00 | 44.48 | 53.57 | 74.00 | -20.43 | Horizontal |
| 9848.000 | 37.57 | 12.63 | 36.87 | 40.42 | 53.75 | 74.00 | -20.25 | Horizontal |
| 12440.210 | 38.86 | 14.20 | 38.75 | 38.67 | 52.98 | 74.00 | -21.02 | Horizontal |

| Test mode: | 802.11n(HT20) | Test channel: | Lowest | Remark: | Peak |
|---|---|---|---|---|---|

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3836.607 | 33.16 | 7.75 | 38.63 | 44.93 | 47.21 | 74.00 | -26.79 | Vertical |
| 4824.000 | 34.19 | 8.90 | 39.04 | 44.96 | 49.01 | 74.00 | -24.99 | Vertical |
| 6069.413 | 34.76 | 10.47 | 38.96 | 45.08 | 51.35 | 74.00 | -22.65 | Vertical |
| 7236.000 | 36.40 | 10.69 | 38.15 | 43.53 | 52.47 | 74.00 | -21.53 | Vertical |
| 9648.000 | 37.53 | 12.52 | 36.97 | 40.45 | 53.53 | 74.00 | -20.47 | Vertical |
| 12731.570 | 38.85 | 14.81 | 39.04 | 38.76 | 53.38 | 74.00 | -20.62 | Vertical |
| 3836.607 | 33.16 | 7.75 | 38.63 | 45.33 | 47.61 | 74.00 | -26.39 | Horizontal |
| 4824.000 | 34.19 | 8.90 | 39.04 | 45.40 | 49.45 | 74.00 | -24.55 | Horizontal |
| 6016.949 | 34.71 | 10.54 | 38.99 | 44.77 | 51.03 | 74.00 | -22.97 | Horizontal |
| 7236.000 | 36.40 | 10.69 | 38.15 | 43.33 | 52.27 | 74.00 | -21.73 | Horizontal |
| 9648.000 | 37.53 | 12.52 | 36.97 | 40.24 | 53.32 | 74.00 | -20.68 | Horizontal |
| 12332.670 | 38.80 | 14.29 | 38.64 | 39.44 | 53.89 | 74.00 | -20.11 | Horizontal |

| Test mode: | 802.11n(HT20) | Test channel: | Middle | Remark: | Peak |
|---|---|---|---|---|---|

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3819.990 | 33.12 | 7.75 | 38.62 | 44.94 | 47.19 | 74.00 | -26.81 | Vertical |
| 4874.000 | 34.28 | 8.97 | 39.05 | 45.15 | 49.35 | 74.00 | -24.65 | Vertical |
| 5794.797 | 34.58 | 9.98 | 39.02 | 45.54 | 51.08 | 74.00 | -22.92 | Vertical |
| 7311.000 | 36.37 | 10.72 | 38.07 | 44.21 | 53.23 | 74.00 | -20.77 | Vertical |
| 9748.000 | 37.55 | 12.58 | 36.92 | 39.70 | 52.91 | 74.00 | -21.09 | Vertical |
| 12621.510 | 38.88 | 14.50 | 38.93 | 38.43 | 52.88 | 74.00 | -21.12 | Vertical |
| 3579.190 | 32.43 | 7.66 | 38.51 | 45.41 | 46.99 | 74.00 | -27.01 | Horizontal |
| 4874.000 | 34.28 | 8.97 | 39.05 | 46.11 | 50.31 | 74.00 | -23.69 | Horizontal |
| 5853.787 | 34.61 | 10.15 | 39.01 | 45.75 | 51.50 | 74.00 | -22.50 | Horizontal |
| 7311.000 | 36.37 | 10.72 | 38.07 | 43.98 | 53.00 | 74.00 | -21.00 | Horizontal |
| 9748.000 | 37.55 | 12.58 | 36.92 | 40.39 | 53.60 | 74.00 | -20.40 | Horizontal |
| 12243.770 | 38.75 | 14.36 | 38.55 | 38.63 | 53.19 | 74.00 | -20.81 | Horizontal |

| Test mode: | | 802.11n(HT20) | | Test channel: | Highest | | Remark: | Peak |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 3599.965 | 32.50 | 7.67 | 38.52 | 44.90 | 46.55 | 74.00 | -27.45 | Vertical |
| 4924.000 | 34.37 | 9.04 | 39.07 | 44.95 | 49.29 | 74.00 | -24.71 | Vertical |
| 5794.797 | 34.58 | 9.98 | 39.02 | 45.80 | 51.34 | 74.00 | -22.66 | Vertical |
| 7386.000 | 36.34 | 10.75 | 38.00 | 44.38 | 53.47 | 74.00 | -20.53 | Vertical |
| 9848.000 | 37.57 | 12.63 | 36.87 | 40.03 | 53.36 | 74.00 | -20.64 | Vertical |
| 12621.510 | 38.88 | 14.50 | 38.93 | 38.35 | 52.80 | 74.00 | -21.20 | Vertical |
| 3579.190 | 32.43 | 7.66 | 38.51 | 44.67 | 46.25 | 74.00 | -27.75 | Horizontal |
| 4924.000 | 34.37 | 9.04 | 39.07 | 45.37 | 49.71 | 74.00 | -24.29 | Horizontal |
| 6034.386 | 34.73 | 10.52 | 38.98 | 44.63 | 50.90 | 74.00 | -23.10 | Horizontal |
| 7386.000 | 36.34 | 10.75 | 38.00 | 44.09 | 53.18 | 74.00 | -20.82 | Horizontal |
| 9848.000 | 37.57 | 12.63 | 36.87 | 40.49 | 53.82 | 74.00 | -20.18 | Horizontal |
| 12279.260 | 38.77 | 14.33 | 38.59 | 39.19 | 53.70 | 74.00 | -20.30 | Horizontal |

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

2) Scan from 9kHz to 25GHz,The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported .

3） As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.

## 7.7 Radiated Emissions which fall in the restricted bands

Test Requirement: 47 CFR Part 15, Subpart C 15.247
Test Method: ANSI C63.10 (2013) Section 6.10.5
Measurement Distance: 3m
Limit:

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) |
|---|---|---|
| 0.009-0.490 | 2400/F(kHz) | 300 |
| 0.490-1.705 | 24000/F(kHz) | 30 |
| 1.705-30.0 | 30 | 30 |
| 30-88 | 100 | 3 |
| 88-216 | 150 | 3 |
| 216-960 | 200 | 3 |
| Above 960 | 500 | 3 |

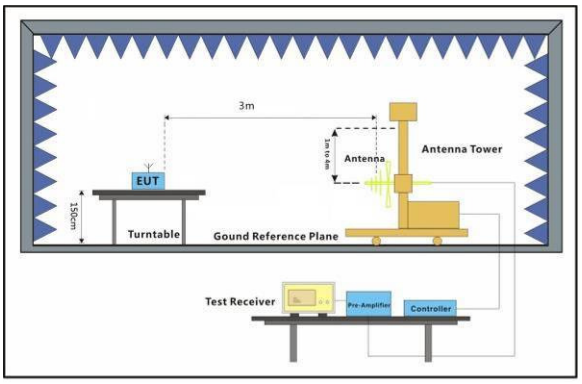
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

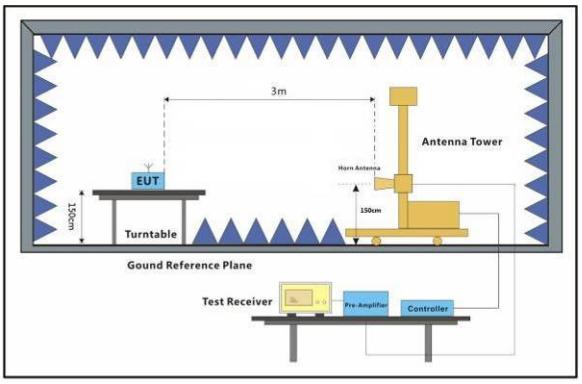
### 7.7.1 E.U.T. Operation

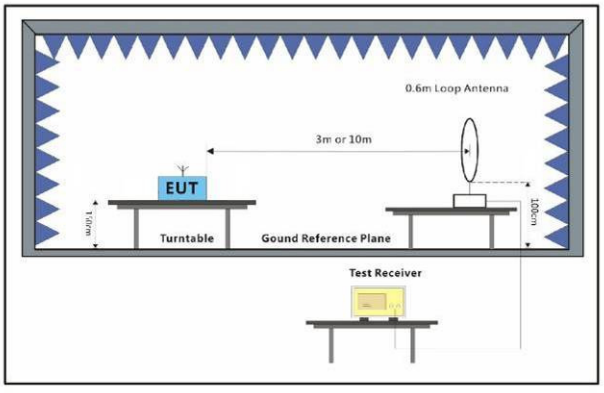
Operating Environment:

| | |
|---|---|
| Temperature: | 25.0 °C Humidity: 50 % RH Atmospheric Pressure: 1020 mbar |
| Pretest these mode to find the worst case: | Transmitting with all kind of modulations, data rates at lowest, middle and highest channel. |
| | Transmitting mode and Charge + Transmitting mode. |
| The worst case for final test: | Pretest the EUT at Transmitting mode, found the Transmitting mode which it is worse case |
| | Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; |
| | 6Mbps of rate is the worst case of 802.11g ; 6.5Mbps of rate is the worst case of 802.11n(HT20) |
| | Charge + Transmitting mode. |
| | Only the worst case is recorded in the report. |

### 7.7.2 Test Setup Diagram



### 7.7.3 Measurement Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

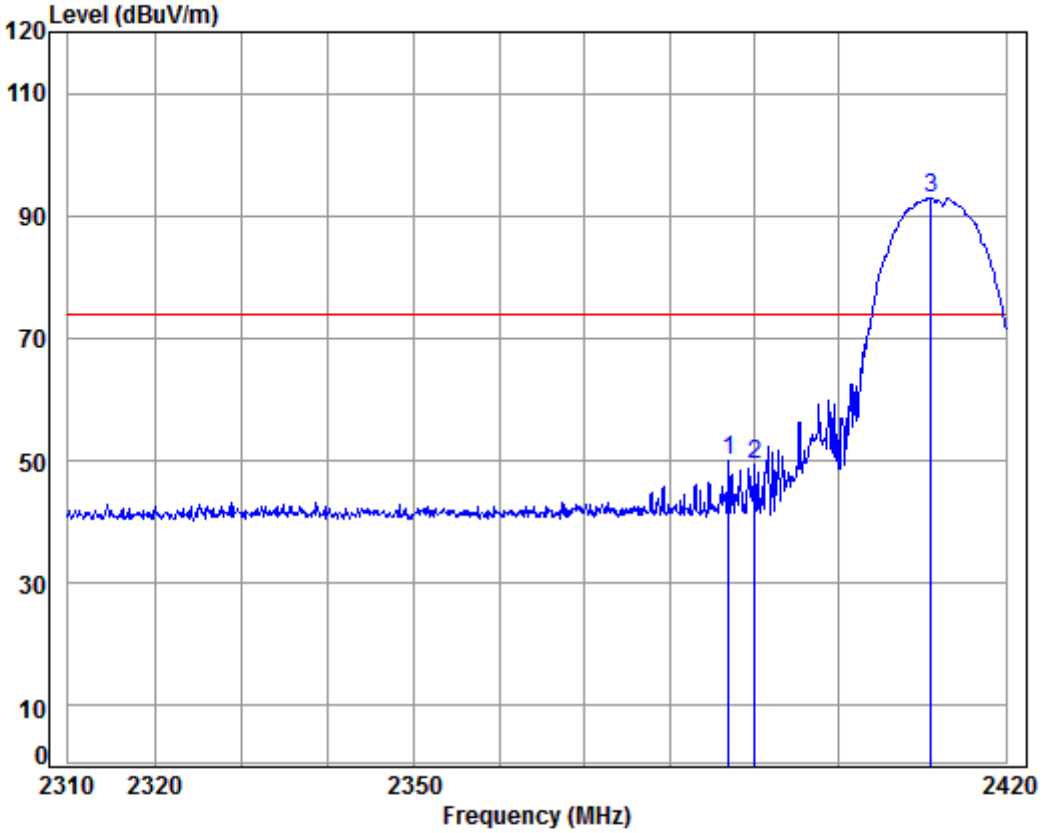
h. Test the EUT in the lowest channel (2402MHz),the middle channel (2441MHz),the Highest channel (2480MHz)

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j. Repeat above procedures until all frequencies measured was complete.

**Test plot as follows:**

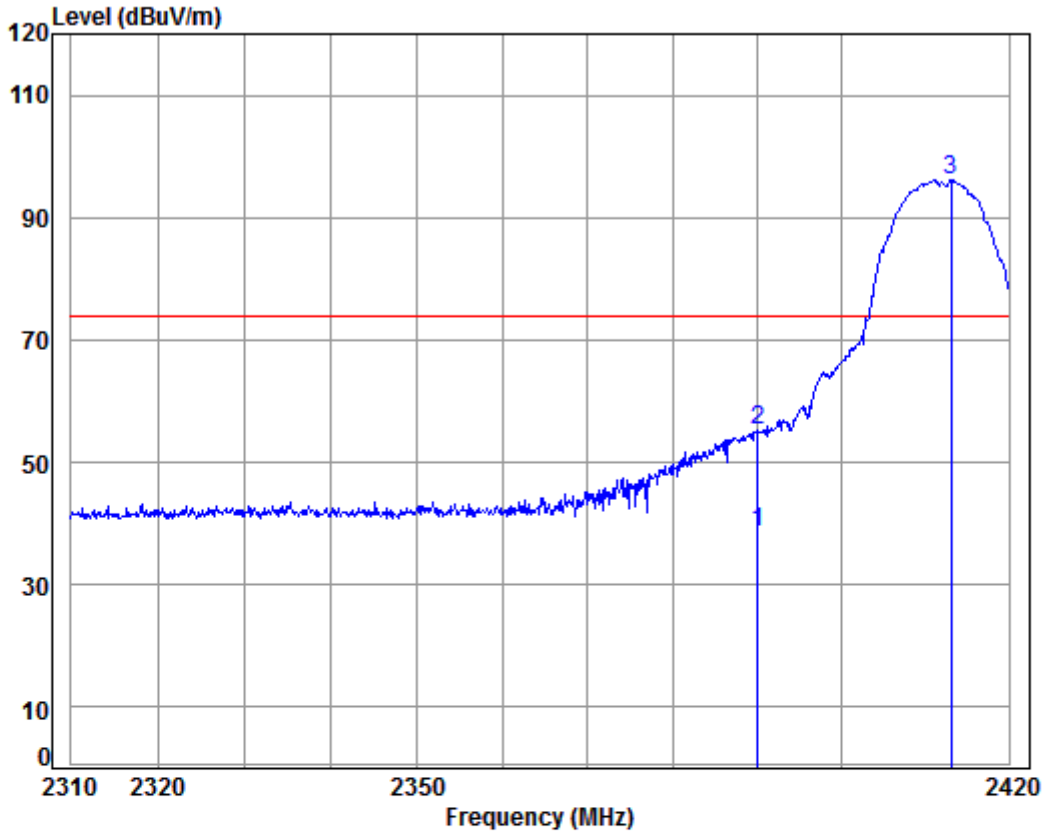
| Worse case mode: | 802.11b | Test channel: | Lowest | Remark: | Peak | Vertical |
|---|---|---|---|---|---|---|




Condition: 3m Vertical
Job No: : 0597CR
Mode: : 2412 Band edge
: B

| | Freq | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | 2386.905 | 5.33 | 29.07 | 38.14 | 53.88 | 50.14 | 74.00 | -23.86 | Peak |
| 2 | 2390.000 | 5.34 | 29.08 | 38.14 | 53.08 | 49.36 | 74.00 | -24.64 | Peak |
| 3 pp | 2411.010 | 5.35 | 29.14 | 38.15 | 96.63 | 92.97 | 74.00 | 18.97 | Peak |

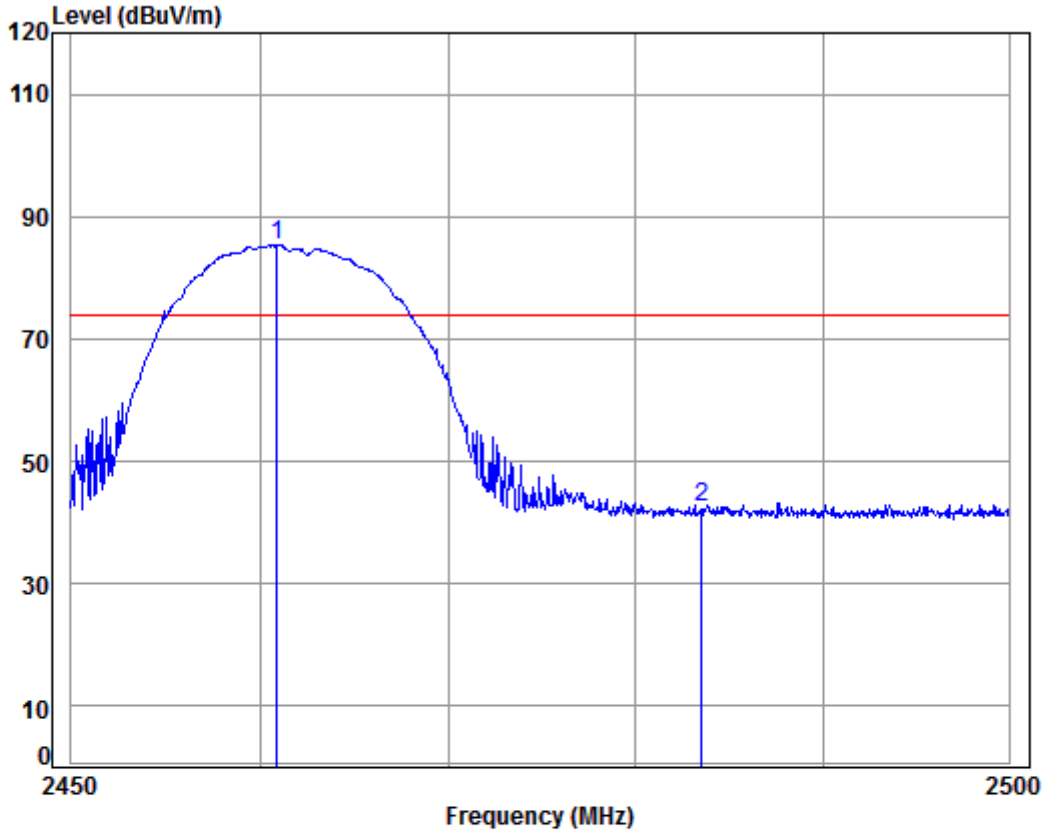
| Worse case mode: | 802.11b | Test channel: | Lowest | Remark: | Peak | Horizontal |
|---|---|---|---|---|---|---|




Condition: 3m Horizontal
Job No: : 0597CR
Mode: : 2412 Band edge
: B

| | Freq | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | av 2390.000 | 5.34 | 29.08 | 38.14 | 42.18 | 38.46 | 54.00 | -15.54 | Average |
| 2 | 2390.000 | 5.34 | 29.08 | 38.14 | 58.92 | 55.20 | 74.00 | -18.80 | Peak |
| 3 | pp 2413.030 | 5.35 | 29.15 | 38.15 | 99.79 | 96.14 | 74.00 | 22.14 | Peak |

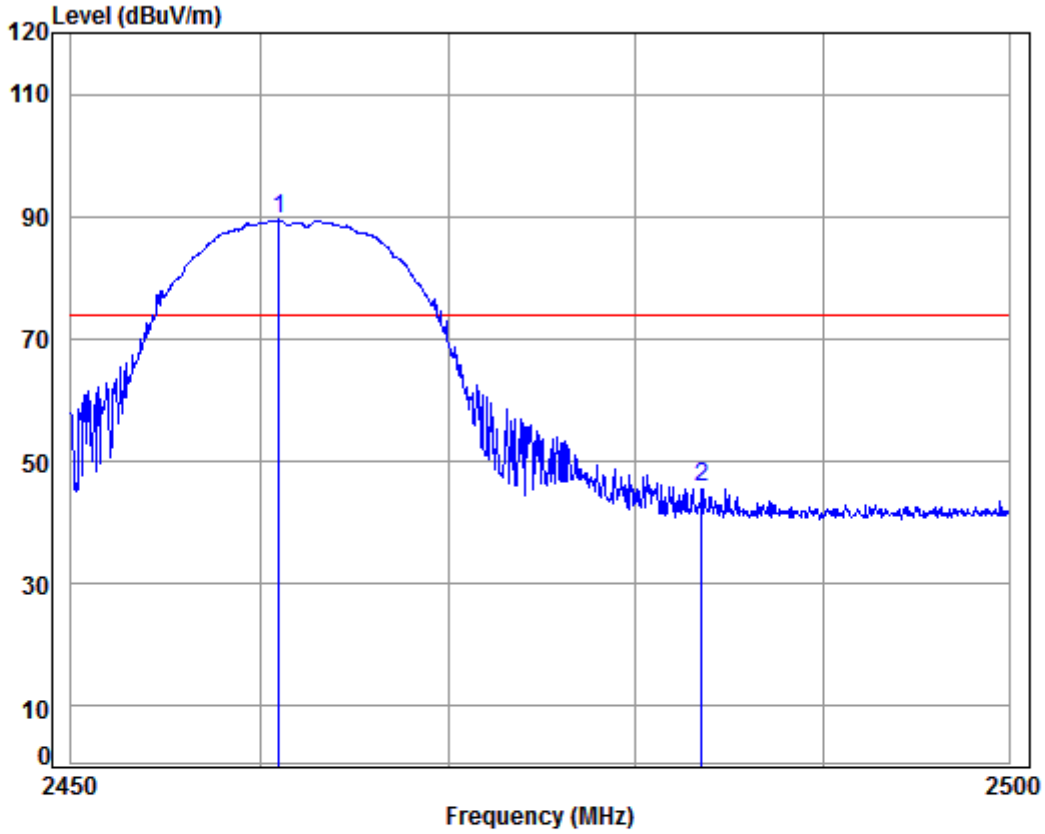
| Worse case mode: | 802.11b | Test channel: | Highest | Remark: | Peak | Vertical |
|---|---|---|---|---|---|---|




Condition: 3m Vertical
Job No: : 0597CR
Mode: : 2462 Band edge
: B

| | Freq | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 pp | 2460.914 | 5.39 | 29.29 | 38.15 | 88.80 | 85.33 | 74.00 | 11.33 | Peak |
| 2 | 2483.500 | 5.41 | 29.35 | 38.15 | 46.05 | 42.66 | 74.00 | -31.34 | Peak |

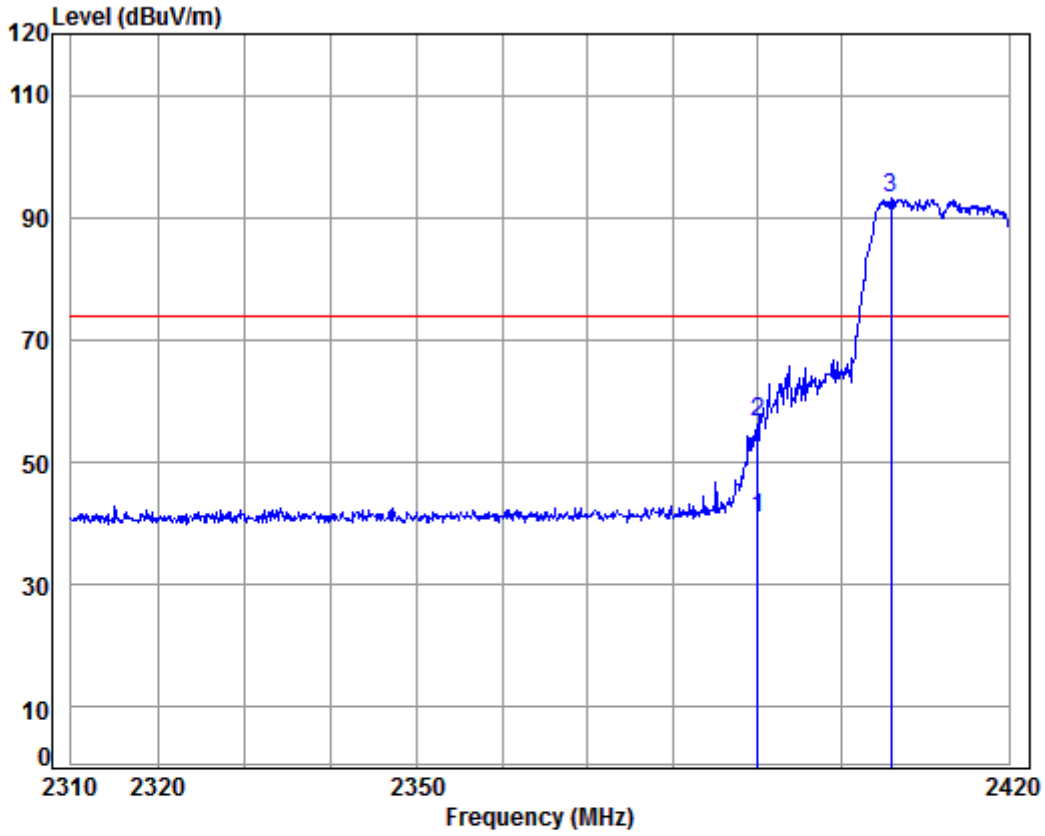
| Worse case mode: | 802.11b | Test channel: | Highest | Remark: | Peak | Horizontal |
|---|---|---|---|---|---|---|




Condition: 3m Horizontal
Job No: : 0597CR
Mode: : 2462 Band edge
: B

| | Freq | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 pp | 2461.013 | 5.39 | 29.29 | 38.15 | 92.91 | 89.44 | 74.00 | 15.44 | Peak |
| 2 | 2483.500 | 5.41 | 29.35 | 38.15 | 49.19 | 45.80 | 74.00 | -28.20 | Peak |

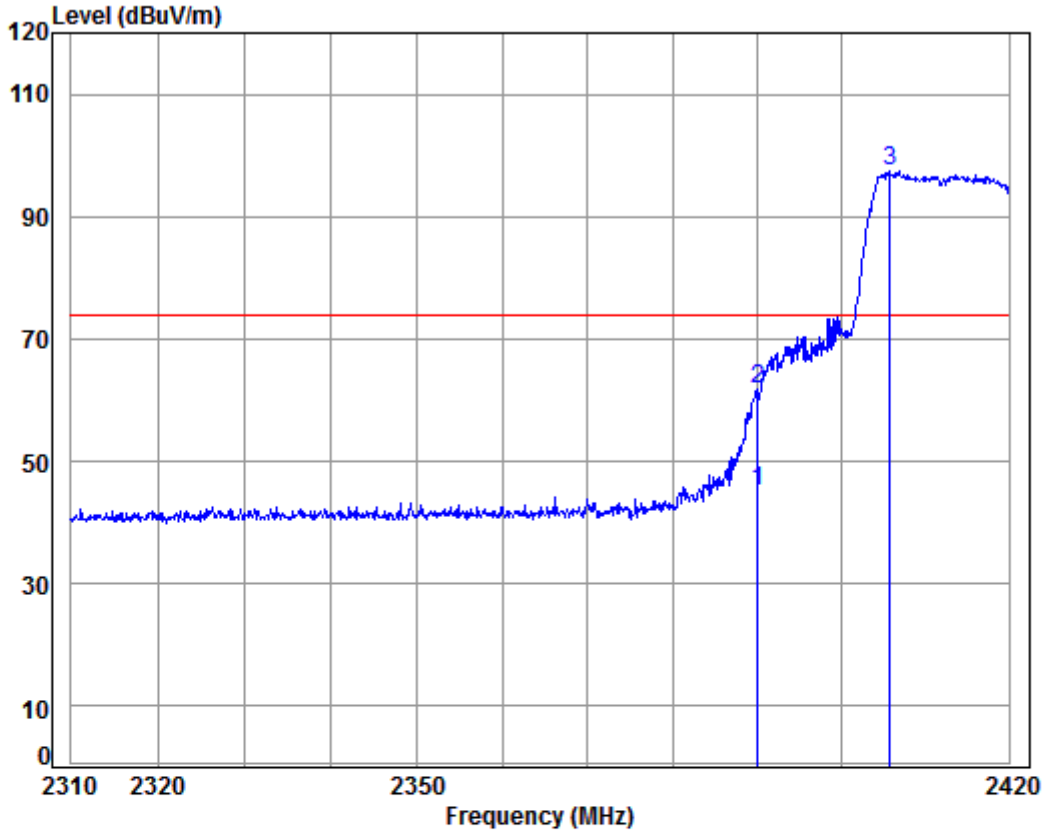
| Worse case mode: | 802.11g | Test channel: | Lowest | Remark: | Peak | Vertical |
|---|---|---|---|---|---|---|




Condition: 3m Vertical
Job No: : 0597CR
Mode: : 2412 Band edge
: G

| | Freq | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | av 2390.000 | 5.34 | 29.08 | 38.14 | 44.63 | 40.91 | 54.00 | -13.09 | Average |
| 2 | 2390.000 | 5.34 | 29.08 | 38.14 | 60.21 | 56.49 | 74.00 | -17.51 | Peak |
| 3 | pp 2405.857 | 5.35 | 29.12 | 38.15 | 96.71 | 93.03 | 74.00 | 19.03 | Peak |

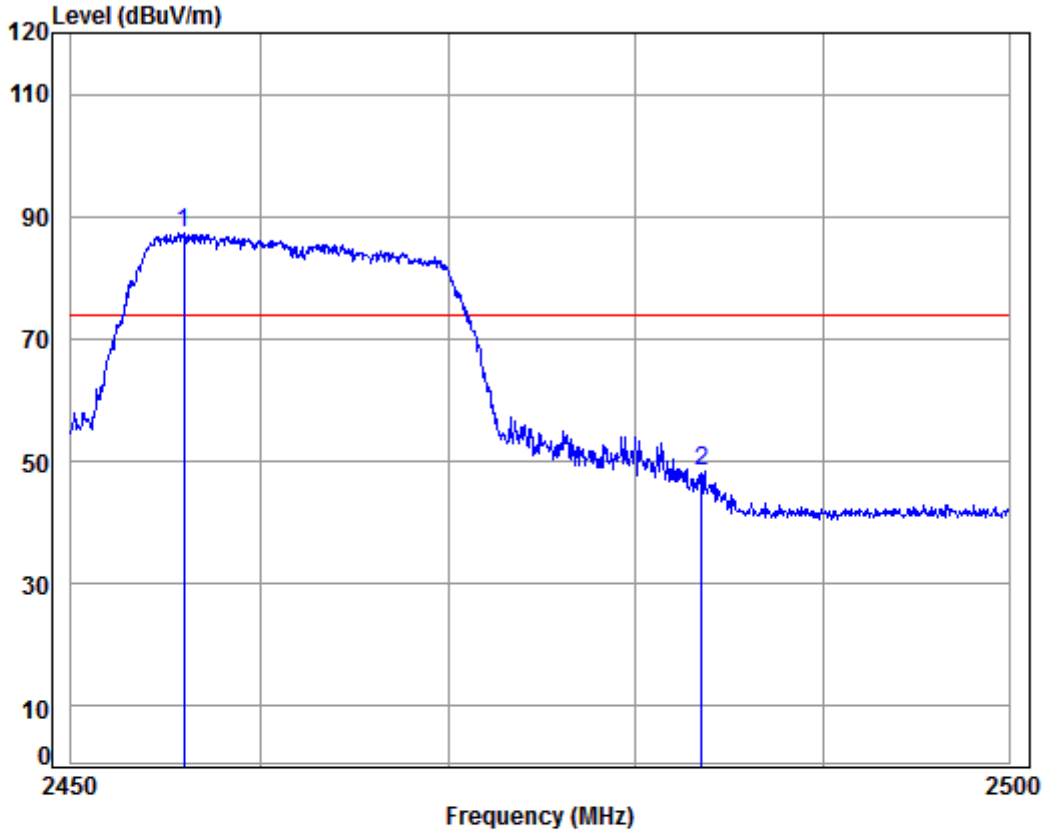
| Worse case mode: | 802.11g | Test channel: | Lowest | Remark: | Peak | Horizontal |
|---|---|---|---|---|---|---|




Condition: 3m Horizontal
Job No: : 0597CR
Mode: : 2412 Band edge
: G

| | | Freq | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | av | 2390.000 | 5.34 | 29.08 | 38.14 | 48.94 | 45.22 | 54.00 | -8.78 | Average |
| 2 | | 2390.000 | 5.34 | 29.08 | 38.14 | 65.48 | 61.76 | 74.00 | -12.24 | Peak |
| 3 | pp | 2405.745 | 5.35 | 29.12 | 38.15 | 101.14 | 97.46 | 74.00 | 23.46 | Peak |

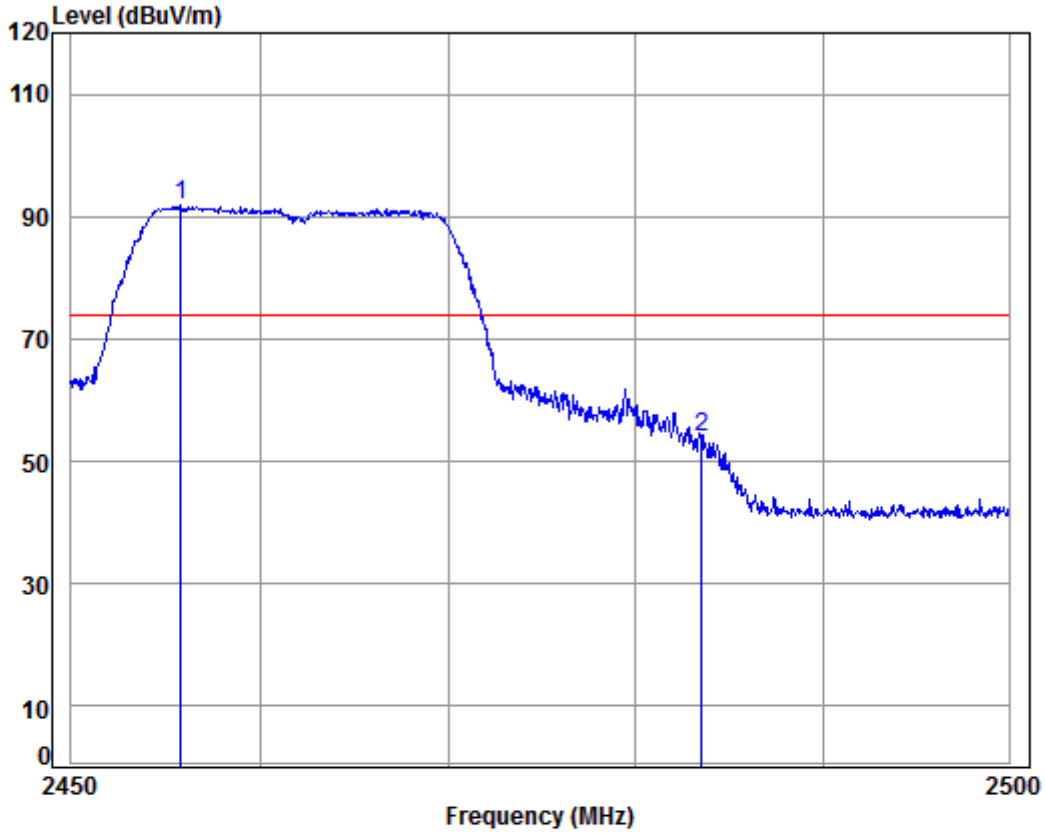
| Worse case mode: | 802.11g | Test channel: | Highest | Remark: | Peak | Vertical |
|---|---|---|---|---|---|---|




Condition: 3m Vertical
Job No: : 0597CR
Mode: : 2462 Band edge
: G

| | Freq | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 pp | 2455.947 | 5.39 | 29.27 | 38.15 | 90.78 | 87.29 | 74.00 | 13.29 | Peak |
| 2 | 2483.500 | 5.41 | 29.35 | 38.15 | 51.90 | 48.51 | 74.00 | -25.49 | Peak |

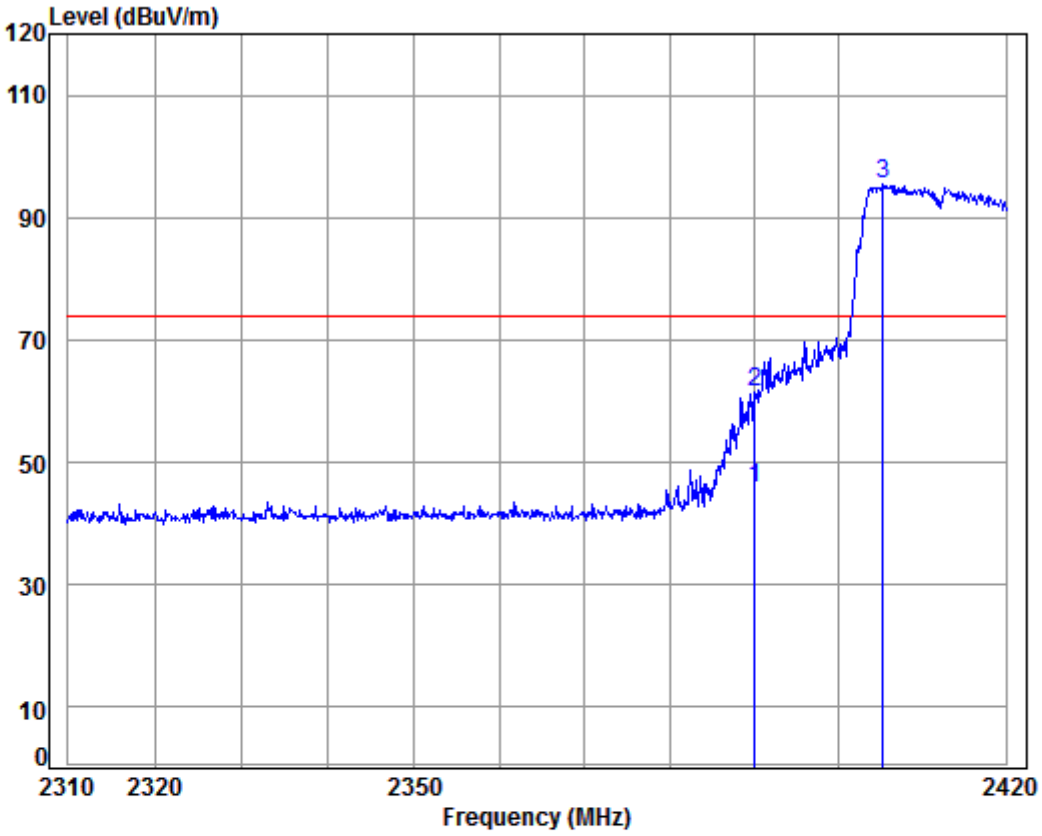
| Worse case mode: | 802.11g | Test channel: | Highest | Remark: | Peak | Horizontal |
|---|---|---|---|---|---|---|




Condition: 3m Horizontal
Job No: : 0597CR
Mode: : 2462 Band edge
: G

| | Freq | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 pp | 2455.798 | 5.39 | 29.27 | 38.15 | 95.25 | 91.76 | 74.00 | 17.76 | Peak |
| 2 | 2483.500 | 5.41 | 29.35 | 38.15 | 57.27 | 53.88 | 74.00 | -20.12 | Peak |

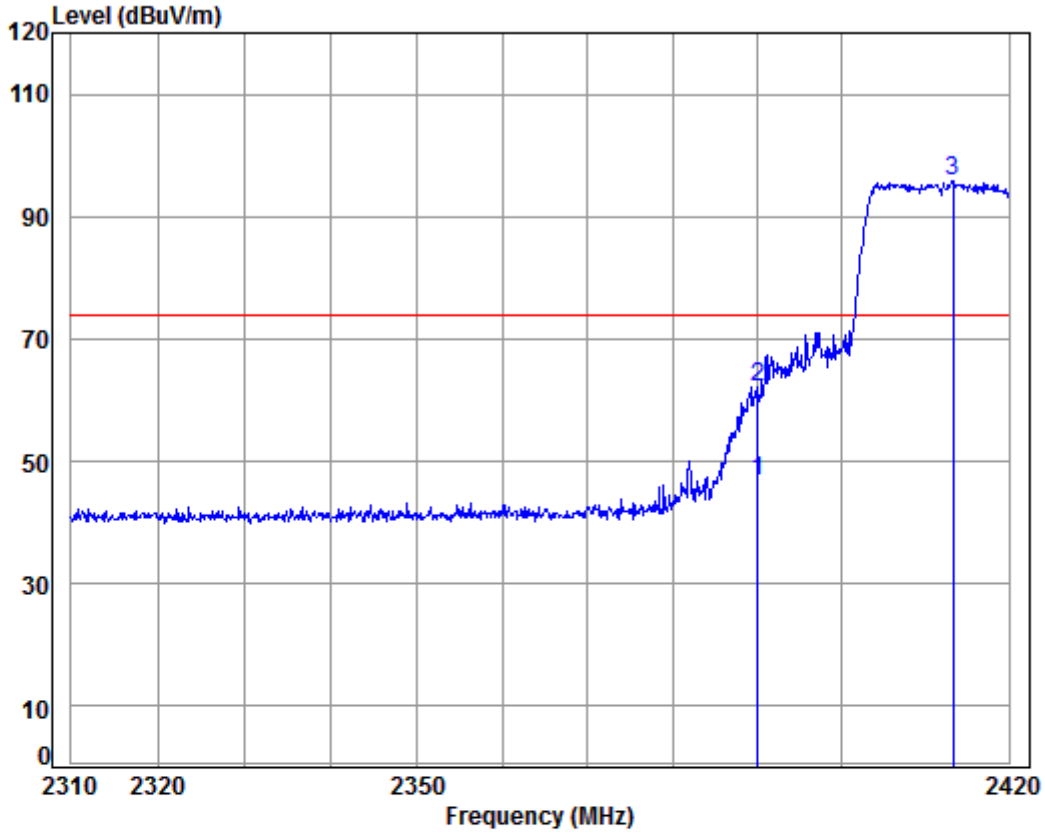
| Worse case mode: | 802.11n(HT20) | Test channel: | Lowest | Remark: | Peak | Vertical |
|---|---|---|---|---|---|---|




Condition: 3m Vertical
Job No: : 0597CR
Mode: : 2412 Band edge
: N20

| | | Freq | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | av | 2390.000 | 5.34 | 29.08 | 38.14 | 49.53 | 45.81 | 54.00 | -8.19 | Average |
| 2 | | 2390.000 | 5.34 | 29.08 | 38.14 | 65.21 | 61.49 | 74.00 | -12.51 | Peak |
| 3 | pp | 2405.297 | 5.35 | 29.12 | 38.15 | 99.04 | 95.36 | 74.00 | 21.36 | Peak |

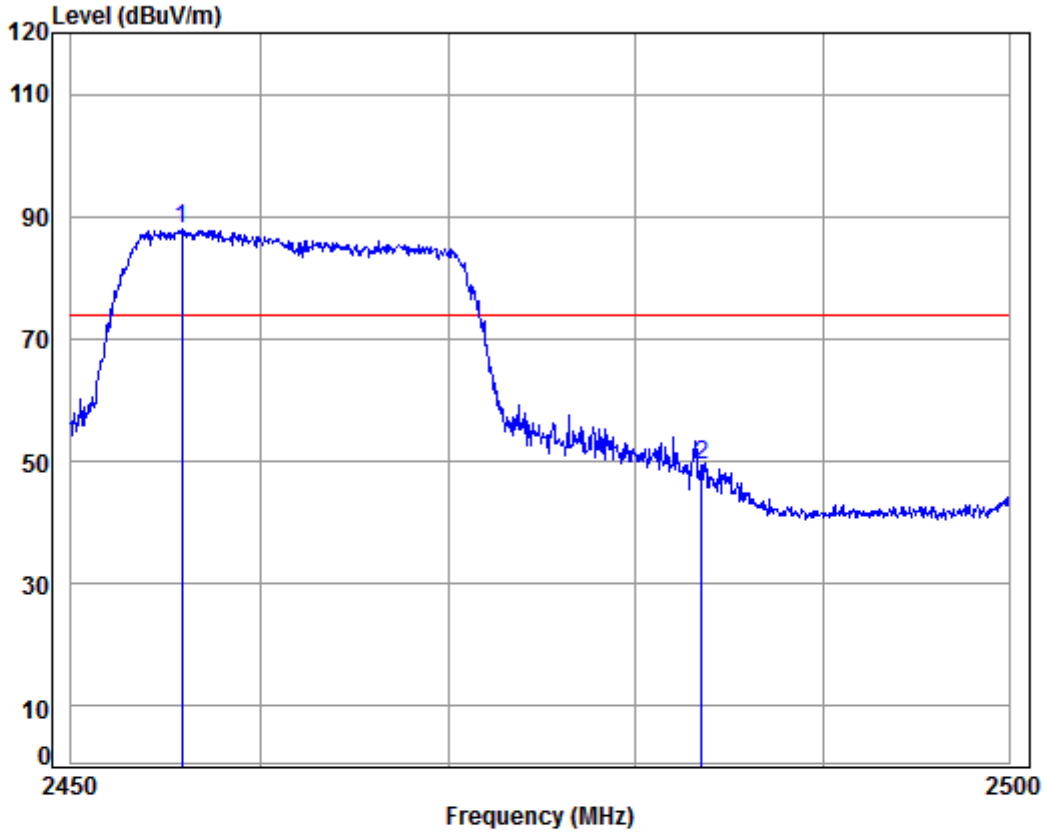
| Worse case mode: | 802.11n(HT20) | Test channel: | Lowest | Remark: | Peak | Horizontal |
|---|---|---|---|---|---|---|




Condition: 3m Horizontal
Job No: : 0597CR
Mode: : 2412 Band edge
: N20

| | Freq | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 av | 2390.000 | 5.34 | 29.08 | 38.14 | 50.55 | 46.83 | 54.00 | -7.17 | Average |
| 2 | 2390.000 | 5.34 | 29.08 | 38.14 | 65.98 | 62.26 | 74.00 | -11.74 | Peak |
| 3 pp | 2413.255 | 5.36 | 29.15 | 38.15 | 99.40 | 95.76 | 74.00 | 21.76 | Peak |

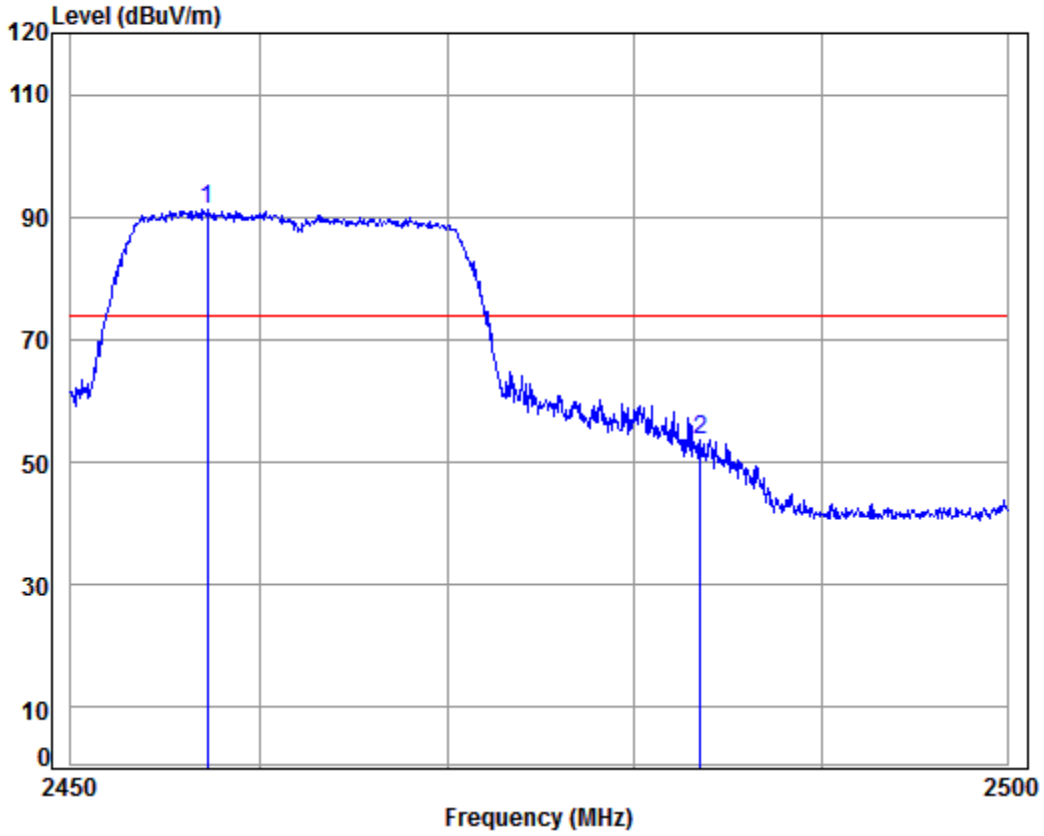
| Worse case mode: | 802.11n(HT20) | Test channel: | Highest | Remark: | Peak | Vertical |
|---|---|---|---|---|---|---|




Condition: 3m Vertical
Job No: : 0597CR
Mode: : 2462 Band edge
: N20

| | Freq | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 pp | 2455.848 | 5.39 | 29.27 | 38.15 | 91.32 | 87.83 | 74.00 | 13.83 | Peak |
| 2 | 2483.500 | 5.41 | 29.35 | 38.15 | 52.86 | 49.47 | 74.00 | -24.53 | Peak |

| Worse case mode: | 802.11n(HT20) | Test channel: | Highest | Remark: | Peak | Horizontal |
|---|---|---|---|---|---|---|




Condition: 3m Horizontal
Job No: : 0597CR
Mode: : 2462 Band edge
: N20

| | Freq | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 pp | 2457.237 | 5.39 | 29.28 | 38.15 | 94.73 | 91.25 | 74.00 | 17.25 | Peak |
| 2 | 2483.500 | 5.41 | 29.35 | 38.15 | 57.12 | 53.73 | 74.00 | -20.27 | Peak |

*Note:*
*The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:*

*Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor*

## 7.8 Conducted Band Edges Measurement

Test Requirement: 47 CFR Part 15, Subpart C 15.247

Test Method: ANSI C63.10 (2013) Section 11.13.3.2

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

### 7.8.1 E.U.T. Operation

Operating Environment:

Temperature: 22.0 °C Humidity: 55 % RH Atmospheric Pressure: 1020 mbar

Exploratory Test Mode: Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.

Transmitting mode and Charge + Transmitting mode.

Final Test Mode: Pretest the EUT at Transmitting mode, found the Transmitting mode which it is worse case

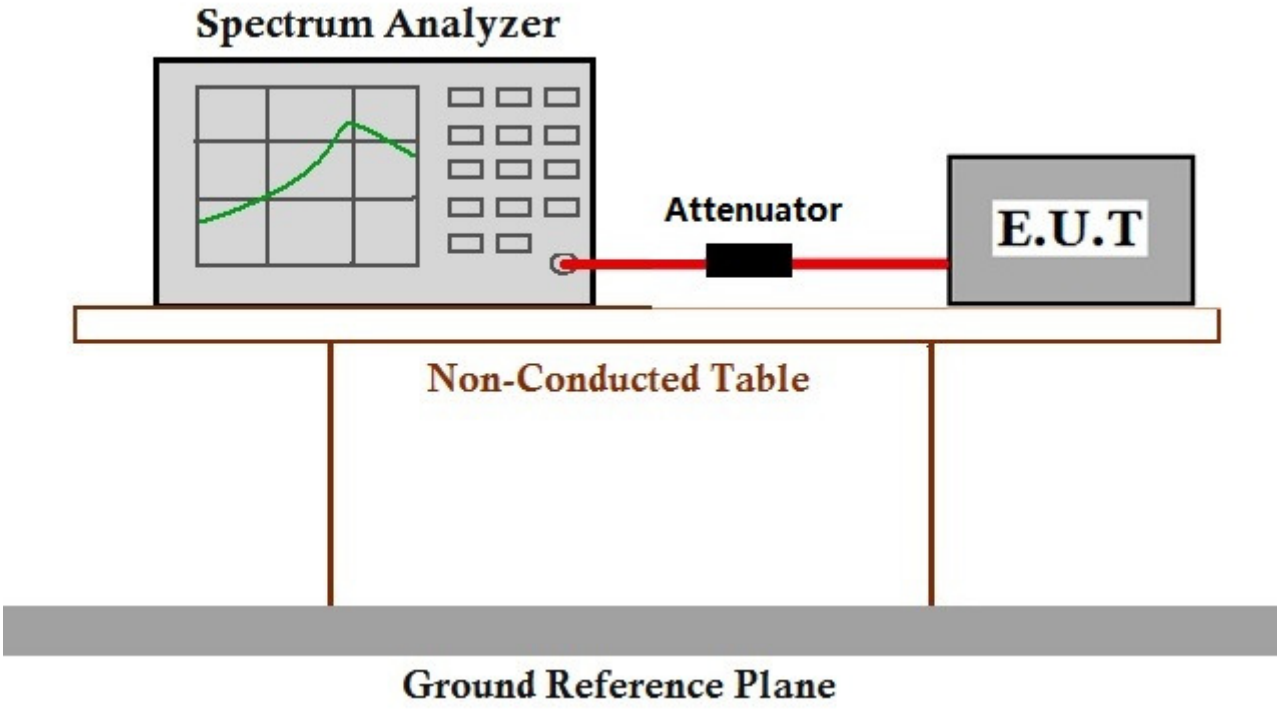
Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b;

6Mbps of rate is the worst case of 802.11g ; 6.5Mbps of rate is the worst case of 802.11n(HT20)

Transmitting mode.

Only the worst case is recorded in the report.

### 7.8.2 Test Setup Diagram



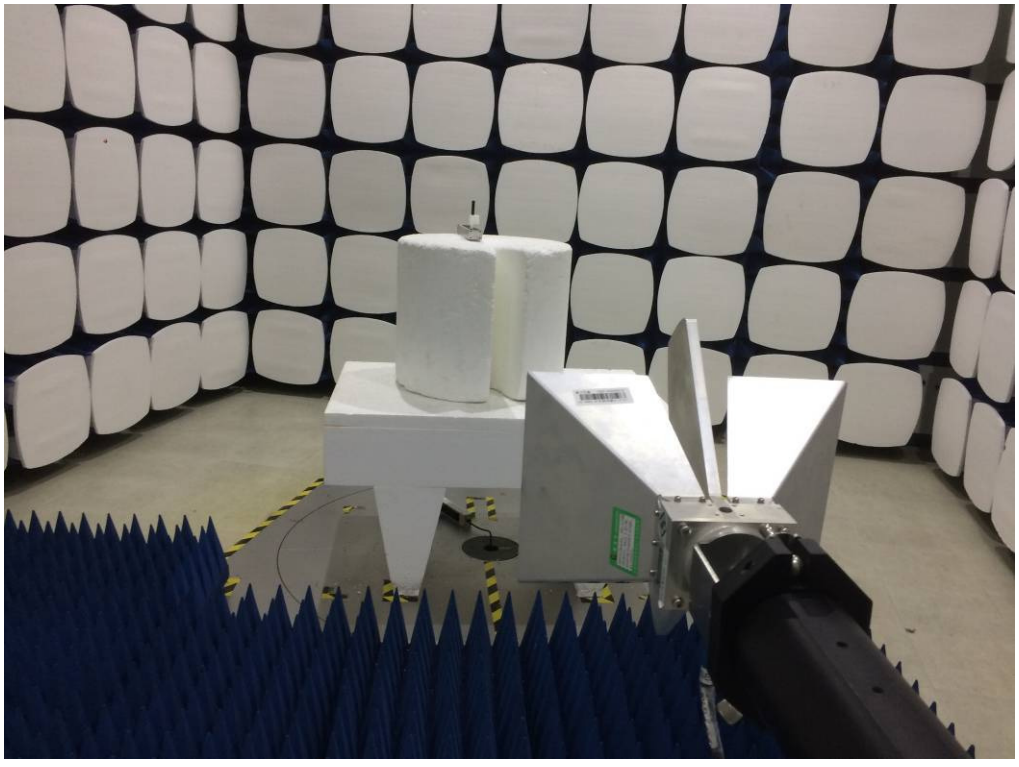

### 7.8.3 Measurement Data

The detailed test data see: Appendix 15.247

# 8 Photographs

## 8.1 Conducted Disturbance at AC Power Line(150kHz-30MHz) Test Setup

## 8.2 Radiated Spurious Emission



## 8.3 EUT Constructional Details

Refer to Appendix A - Photographs of EUT Constructional Details for SZEM1701000597CR.

# 9 Appendix

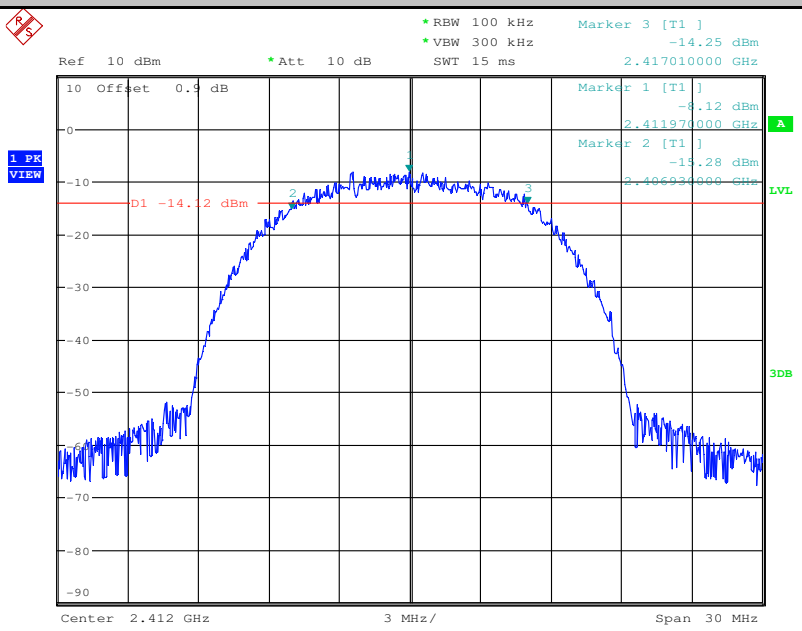
## 9.1 Appendix 15.247

**1.6dB Bandwidth**

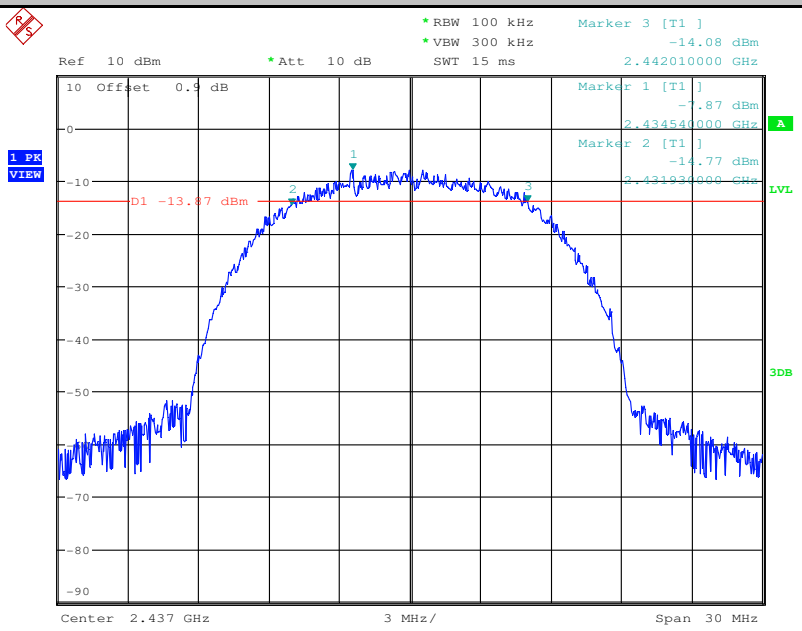
| Test Mode | Test Channel[MHz] | EBW[MHz] | Limit[MHz] | Verdict |
|---|---|---|---|---|
| 11B | 2412 | 10.080 | >=0.5 | PASS |
| 11B | 2437 | 10.080 | >=0.5 | PASS |
| 11B | 2462 | 10.080 | >=0.5 | PASS |
| 11G | 2412 | 16.530 | >=0.5 | PASS |
| 11G | 2437 | 16.530 | >=0.5 | PASS |
| 11G | 2462 | 16.455 | >=0.5 | PASS |
| 11N20SISO | 2412 | 17.790 | >=0.5 | PASS |
| 11N20SISO | 2437 | 17.760 | >=0.5 | PASS |
| 11N20SISO | 2462 | 17.790 | >=0.5 | PASS |

## TEST PLOT

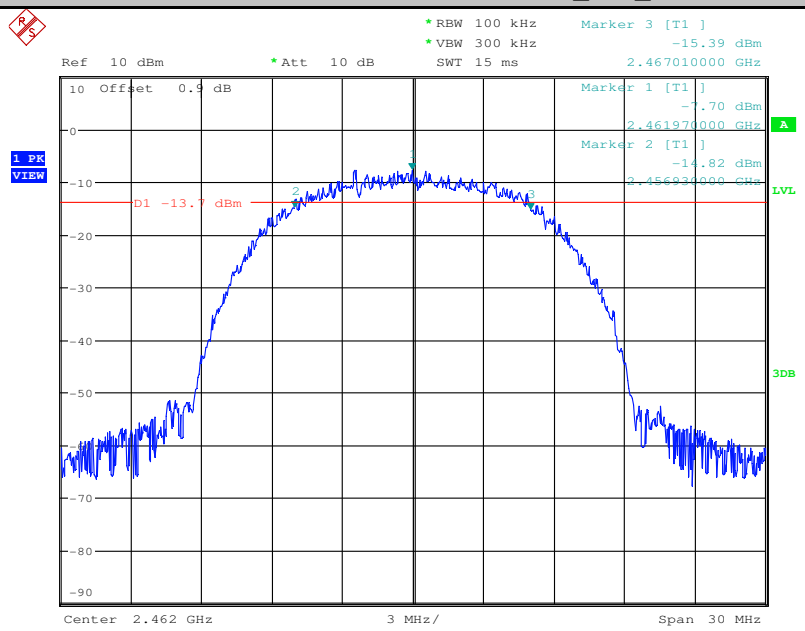
### 6dB Bandwidth_11B_2412



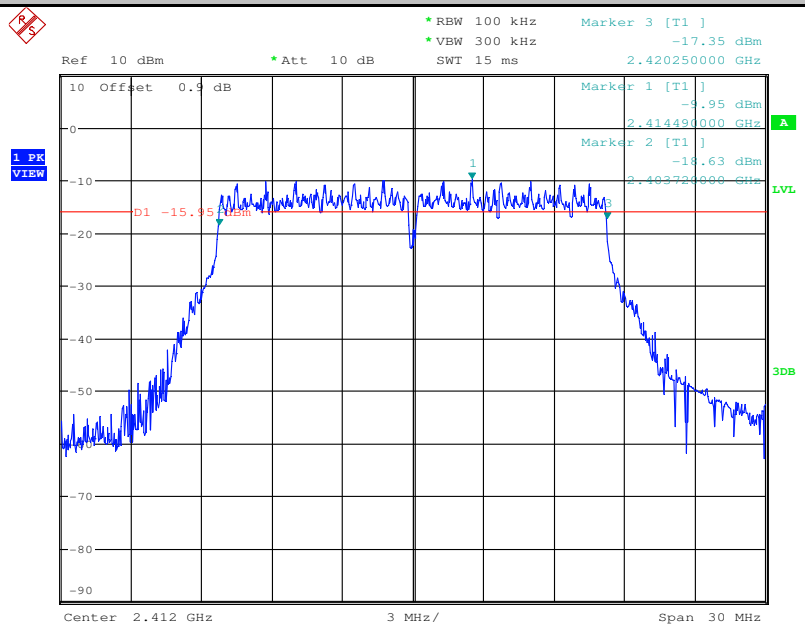

### 6dB Bandwidth_11B_2437



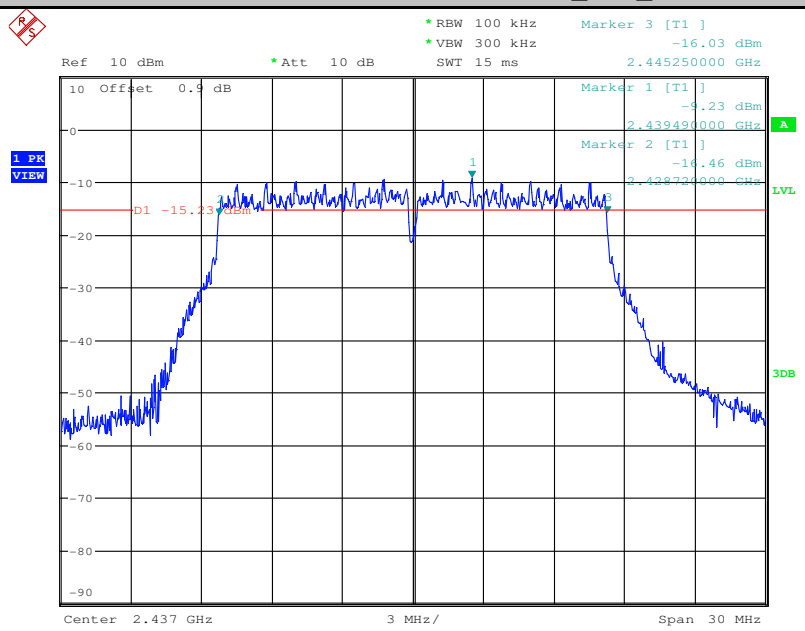
## 6dB Bandwidth_11B_2462



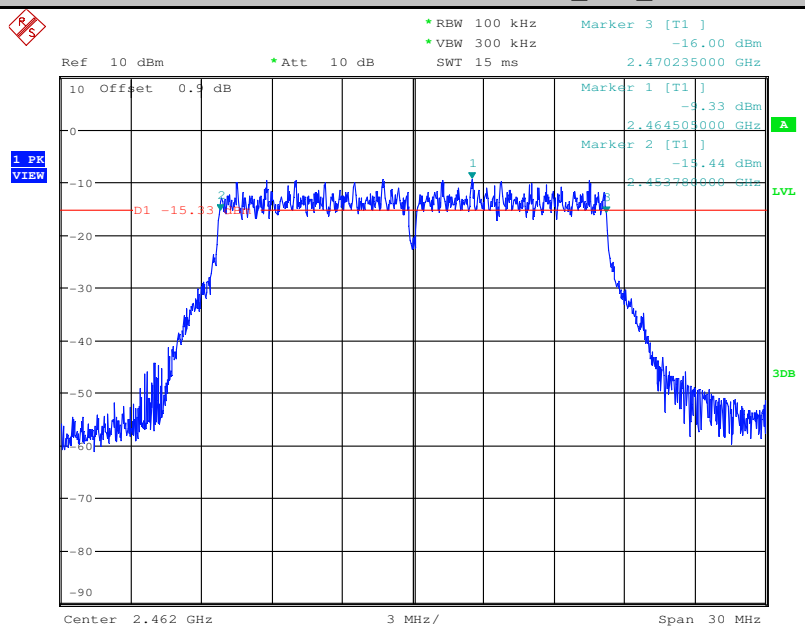

## 6dB Bandwidth_11G_2412



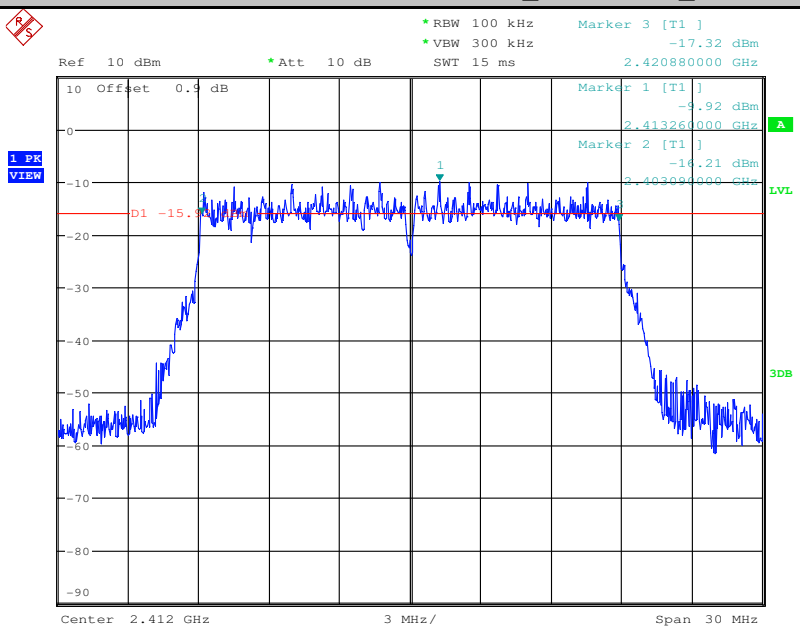
## 6dB Bandwidth_11G_2437



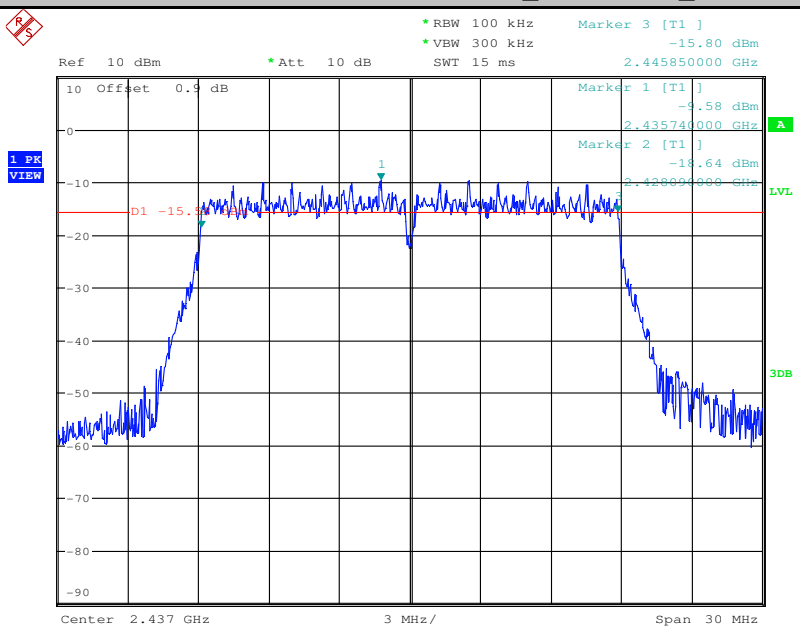

## 6dB Bandwidth_11G_2462



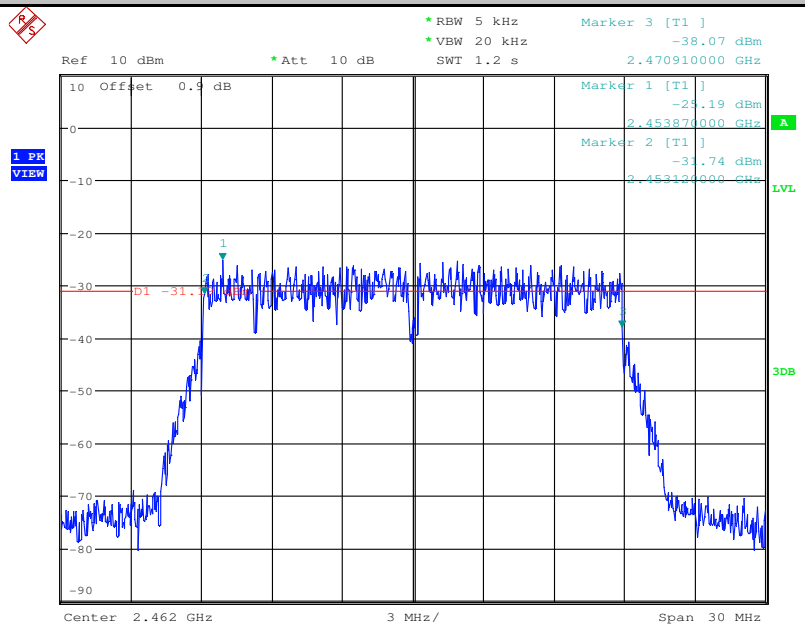
## 6dB Bandwidth_11N20SISO_2412




## 6dB Bandwidth_11N20SISO_2437



6dB Bandwidth_11N20SISO_2462



**2.Maximum peak conducted output power**

Pre-scan under all rate

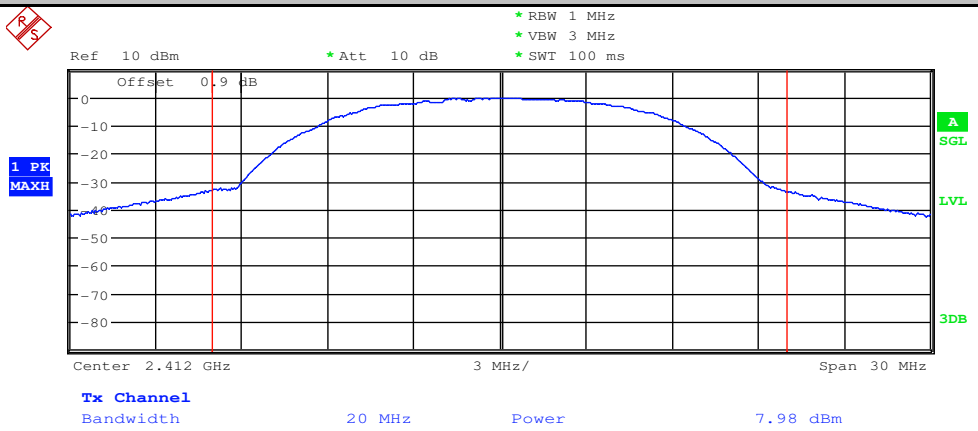
| Mode | 802.11b | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Data Rate | 1Mbps | 2Mbps | 5.5Mbps | 11Mbps | | | | |
| Power (dBm) | 8.28 | 8.19 | 8.15 | 8.09 | | | | |
| Mode | 802.11g | | | | | | | |
| Data Rate | 6Mbps | 9Mbps | 12Mbps | 18Mbps | 24Mbps | 36Mbps | 48Mbps | 54Mbps |
| Power (dBm) | 9.72 | 9.69 | 9.67 | 9.64 | 9.61 | 9.59 | 9.57 | 9.54 |
| Mode | 802.11n(HT20) | | | | | | | |
| Data Rate | 6.5Mbps | 13Mbps | 19.5Mbps | 26Mbps | 39Mbps | 52Mbps | 58.5Mbps | 65Mbps |
| Power (dBm) | 9.78 | 9.73 | 9.69 | 9.64 | 9.59 | 9.55 | 9.52 | 9.49 |

Through Pre-scan, 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20).

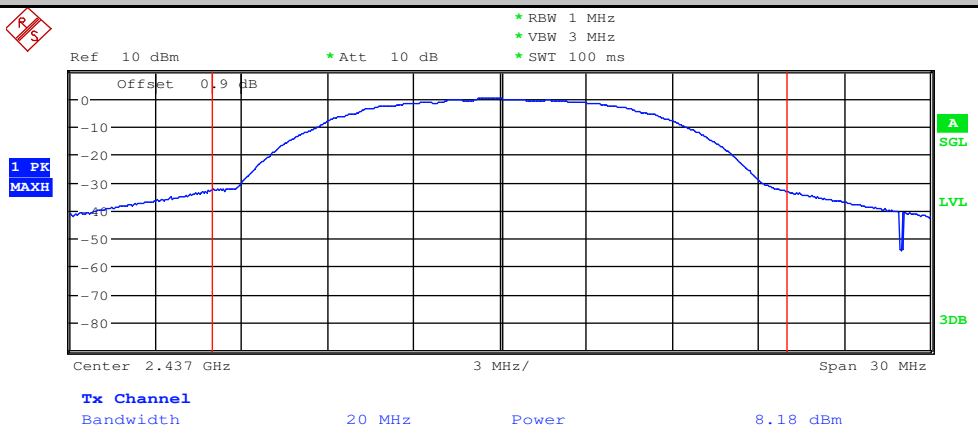
| Test Mode | Test Channel | Power[dBm] | Limit[dBm] | Verdict |
|---|---|---|---|---|
| 11B | 2412 | 7.98 | <30 | PASS |
| 11B | 2437 | 8.18 | <30 | PASS |
| 11B | 2462 | 8.28 | <30 | PASS |
| 11G | 2412 | 9.51 | <30 | PASS |
| 11G | 2437 | 9.72 | <30 | PASS |
| 11G | 2462 | 9.44 | <30 | PASS |
| 11N20SISO | 2412 | 9.78 | <30 | PASS |
| 11N20SISO | 2437 | 9.47 | <30 | PASS |
| 11N20SISO | 2462 | 9.05 | <30 | PASS |

## TEST PLOT

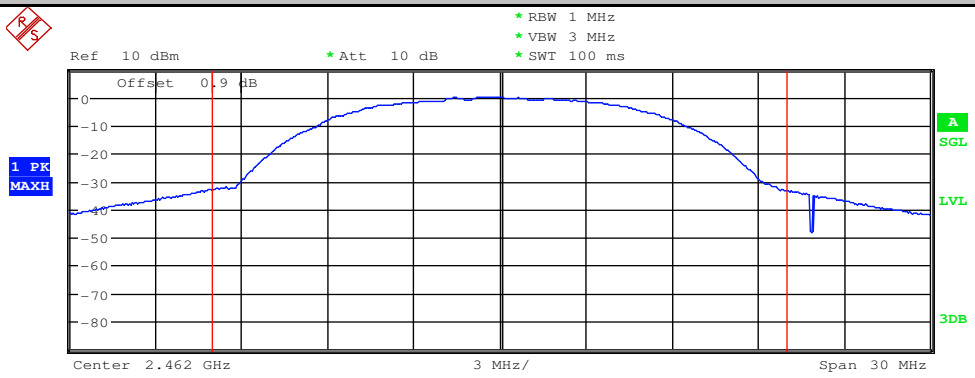
### Maximum peak conducted output power_11B_2412




### Maximum peak conducted output power_11B_2437

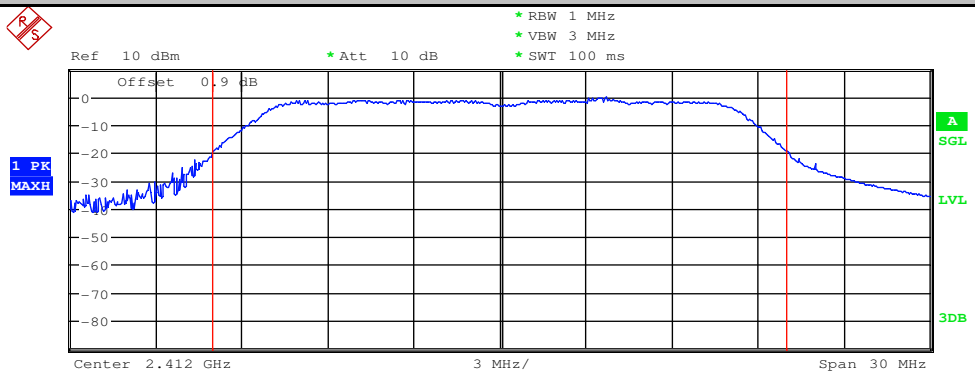


## Maximum peak conducted output power_11B_2462



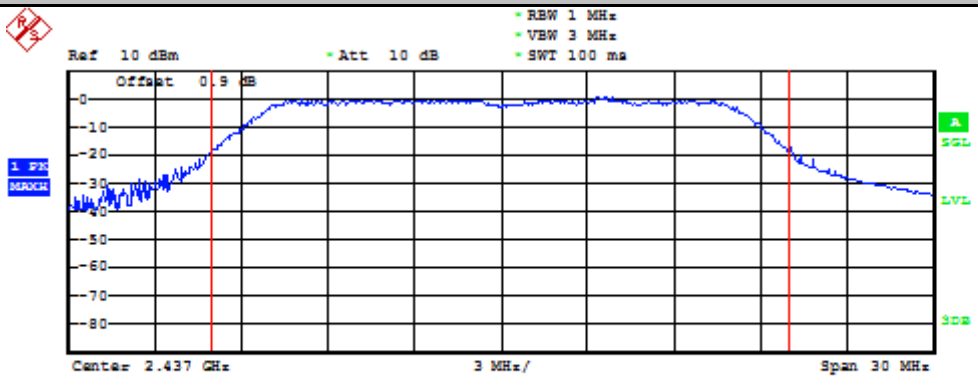

Tx Channel
Bandwidth 20 MHz Power 8.28 dBm

## Maximum peak conducted output power_11G_2412



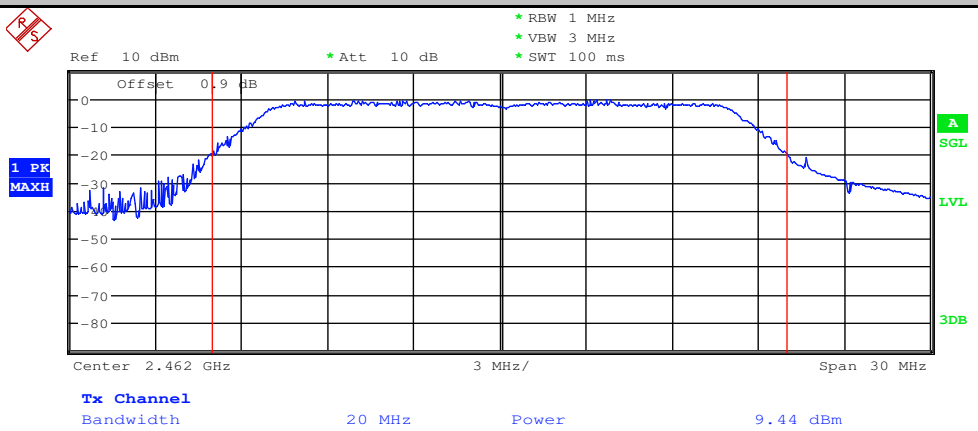

Tx Channel
Bandwidth 20 MHz Power 9.51 dBm

## Maximum peak conducted output power_11G_2437

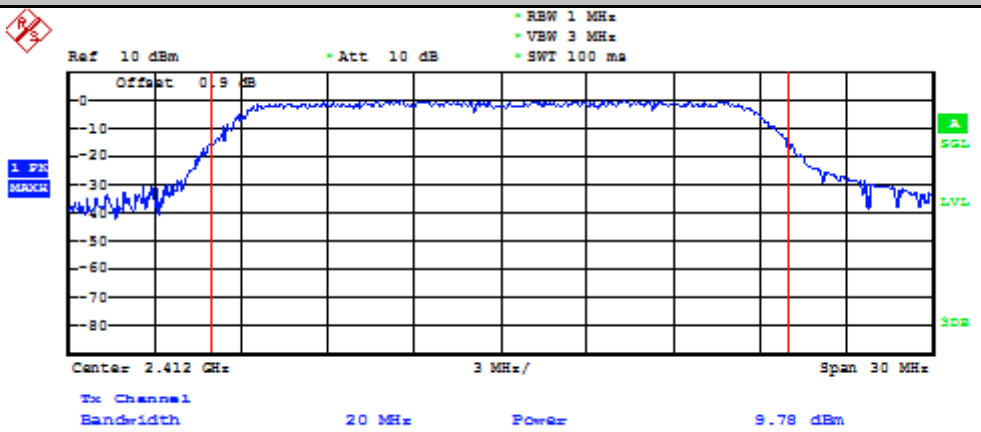



Tx Channel
Bandwidth 20 MHz Power 9.72 dBm

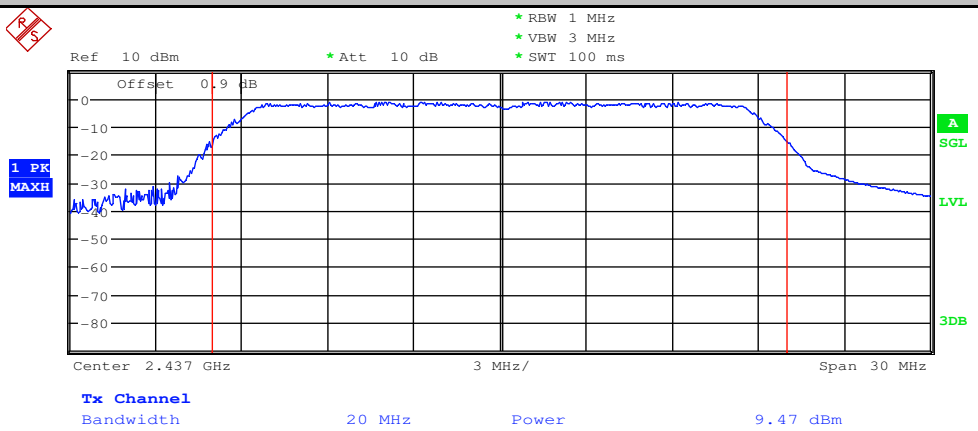
## Maximum peak conducted output power_11G_2462



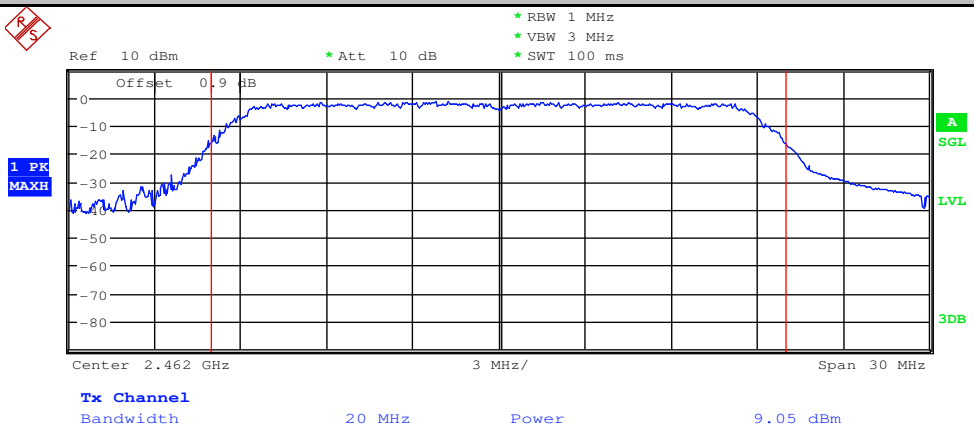

## Maximum peak conducted output power_11N20SISO_2412




## Maximum peak conducted output power_11N20SISO_2437



Maximum peak conducted output power_11N20SISO_2462

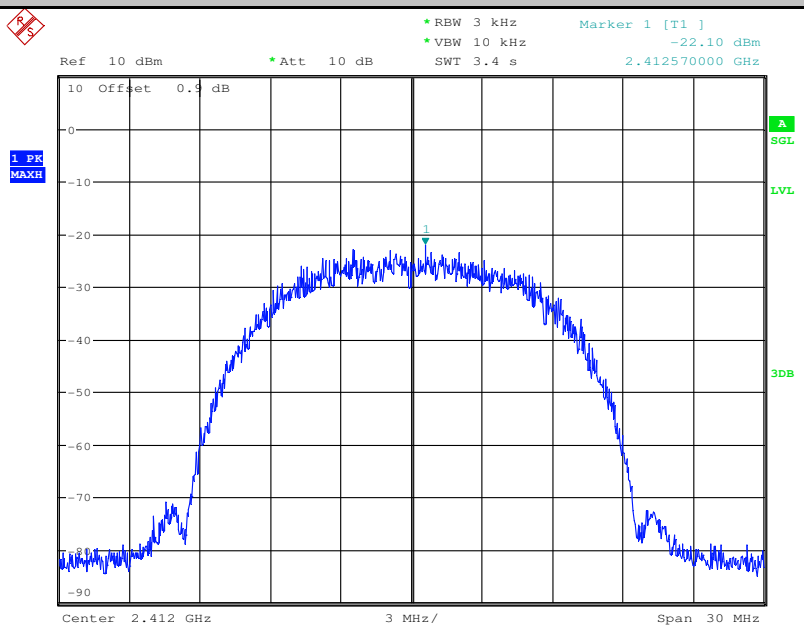


**3.Maximum Peak power spectral density**

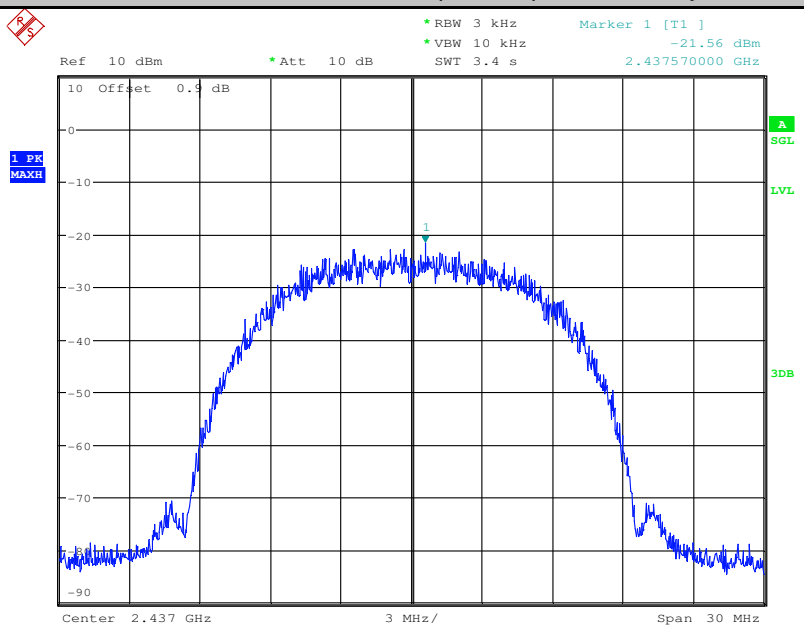
| Test Mode | Test Channel | PSD[dBm/MHz] | Limit[dBm/MHz] | Verdict |
|---|---|---|---|---|
| 11B | 2412 | -22.1 | <8.00 | PASS |
| 11B | 2437 | -21.56 | <8.00 | PASS |
| 11B | 2462 | -21.45 | <8.00 | PASS |
| 11G | 2412 | -24.5 | <8.00 | PASS |
| 11G | 2437 | -23.03 | <8.00 | PASS |
| 11G | 2462 | -24.22 | <8.00 | PASS |
| 11N20SISO | 2412 | -25.8 | <8.00 | PASS |
| 11N20SISO | 2437 | -24.54 | <8.00 | PASS |
| 11N20SISO | 2462 | -25.76 | <8.00 | PASS |

## TEST PLOT

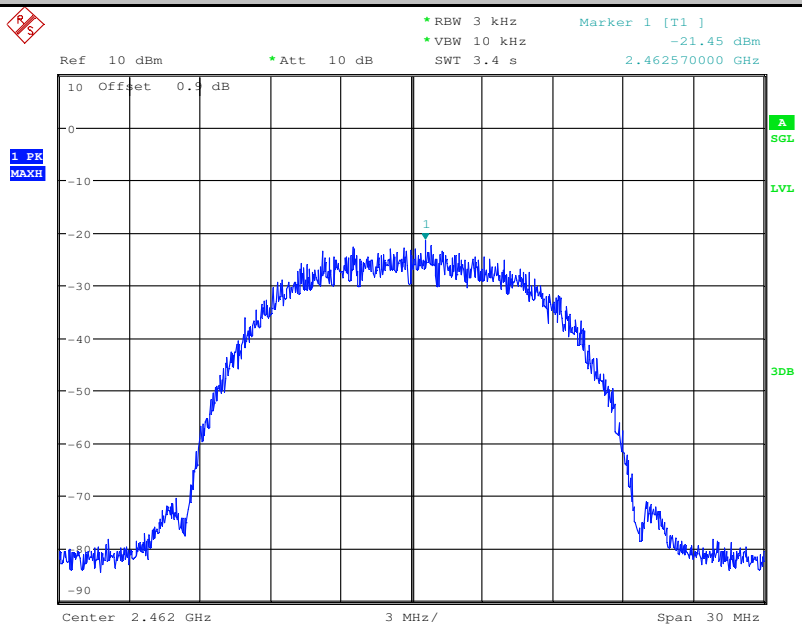
### Maximum Peak power spectral density_11B_2412



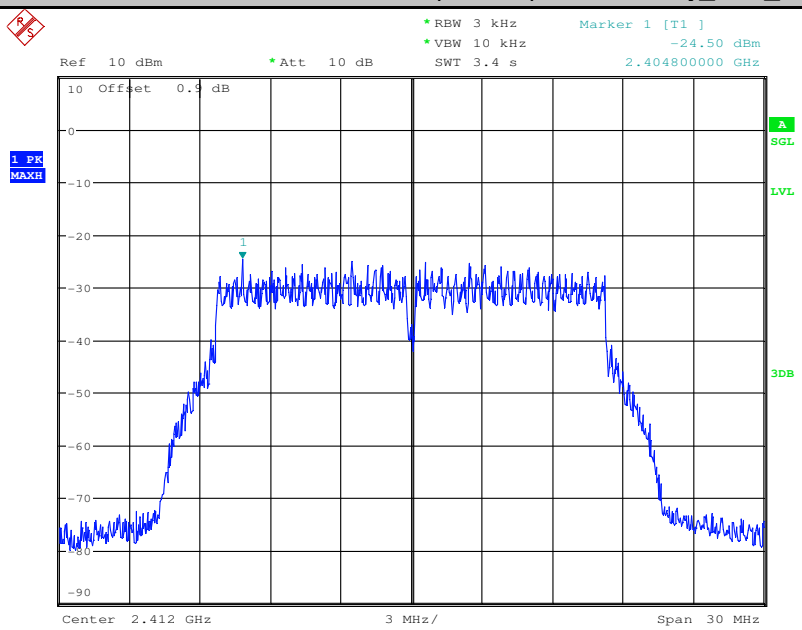

### Maximum Peak power spectral density_11B_2437



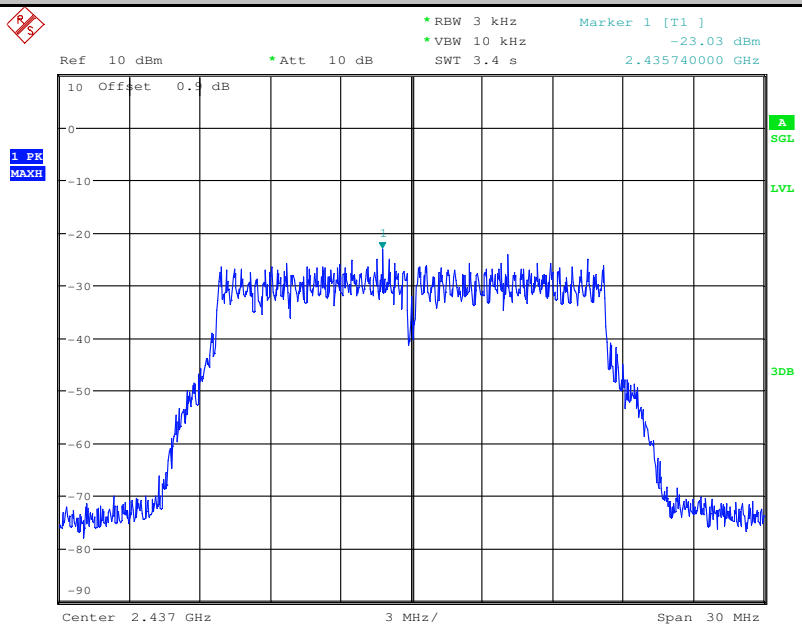
## Maximum Peak power spectral density_11B_2462



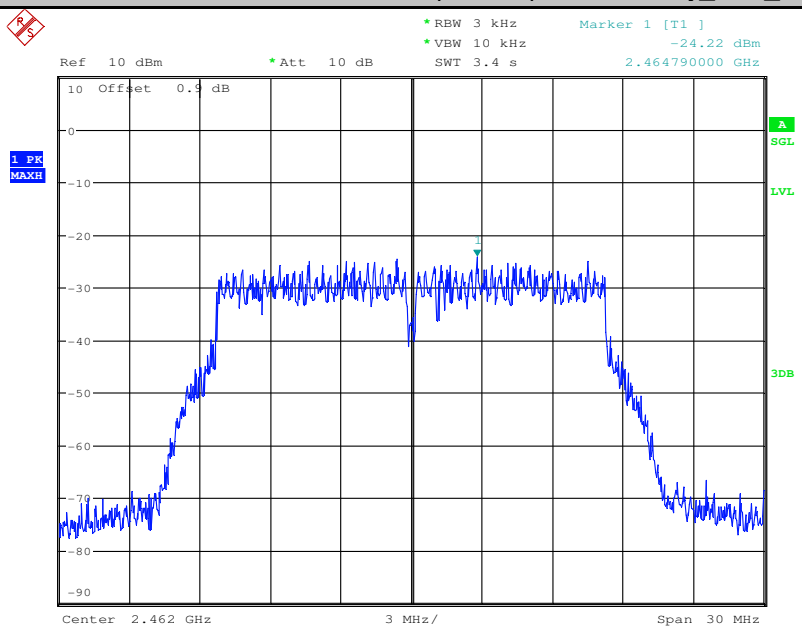

## Maximum Peak power spectral density_11G_2412



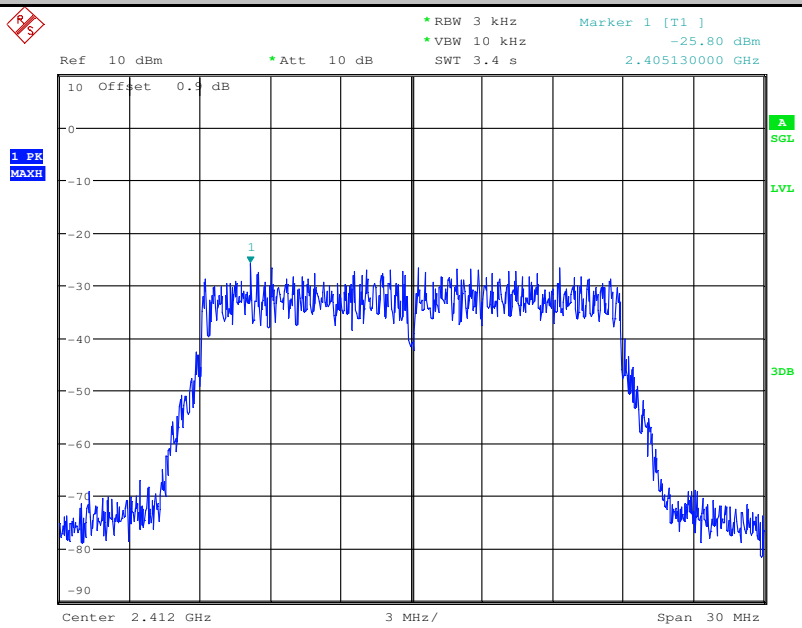
## Maximum Peak power spectral density_11G_2437



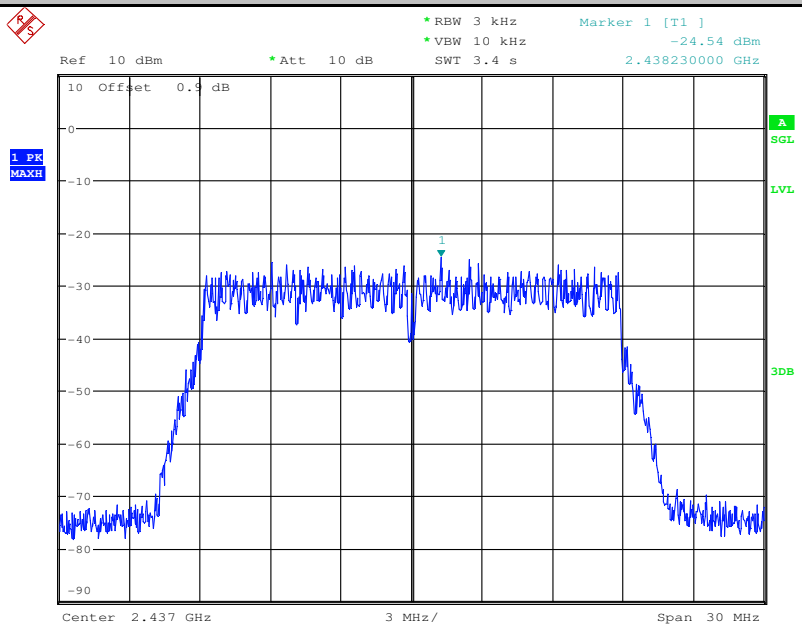

## Maximum Peak power spectral density_11G_2462



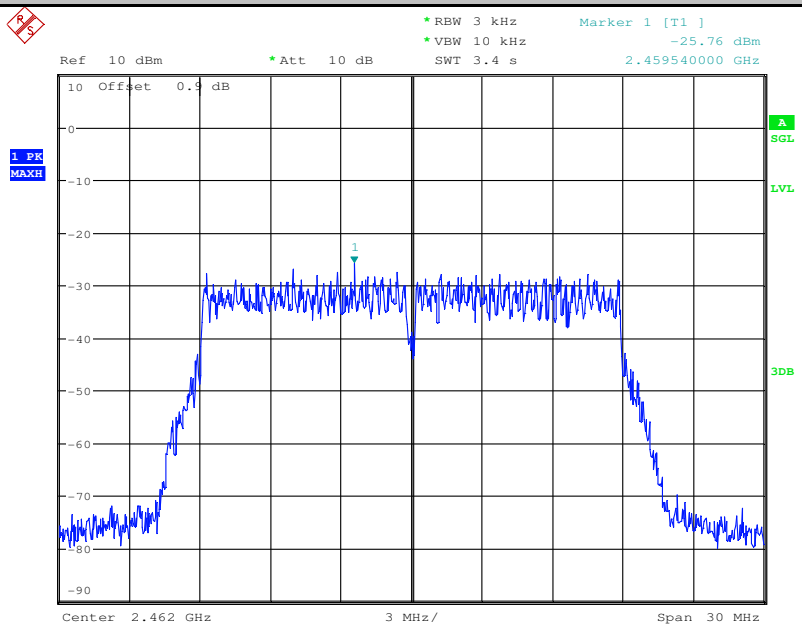
## Maximum Peak power spectral density_11N20SISO_2412




## Maximum Peak power spectral density_11N20SISO_2437



Maximum Peak power spectral density_11N20SISO_2462

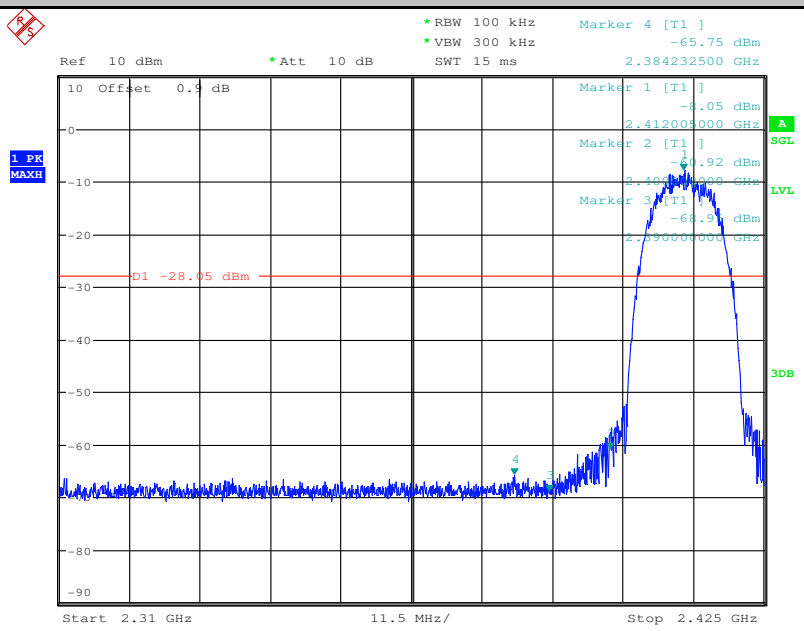


**4.Band-edge for RF Conducted Emissions**

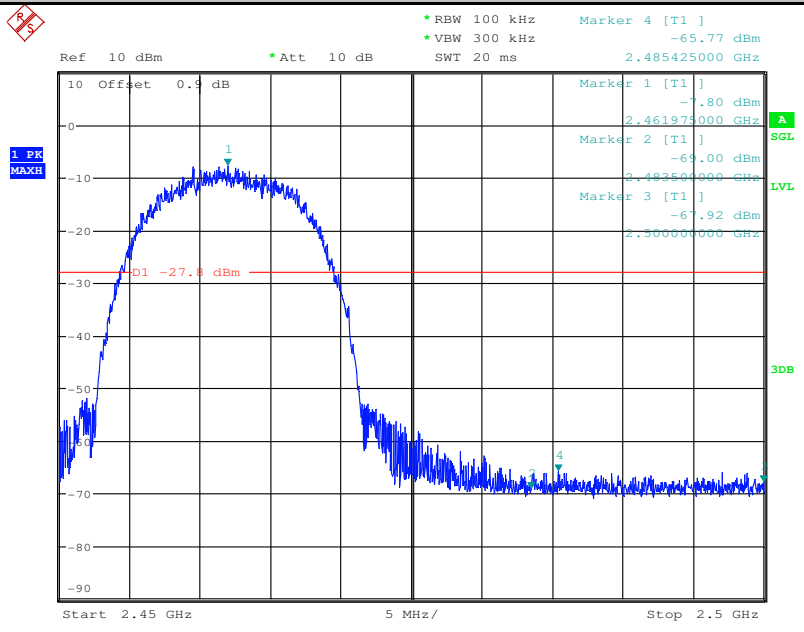
| Test Mode | Test Channel | Carrier Power[dBm] | Max. Spurious Level [dBm] | Limit [dBm] | Verdict |
|---|---|---|---|---|---|
| 11B | 2412 | -8.050 | -65.750 | <-28.05 | PASS |
| 11B | 2462 | -7.800 | -65.772 | <-27.8 | PASS |
| 11G | 2412 | -10.230 | -64.006 | <-30.23 | PASS |
| 11G | 2462 | -9.310 | -63.390 | <-29.31 | PASS |
| 11N20SISO | 2412 | -10.380 | -63.305 | <-30.38 | PASS |
| 11N20SISO | 2462 | -11.130 | -65.298 | <-31.13 | PASS |

## TEST PLOT

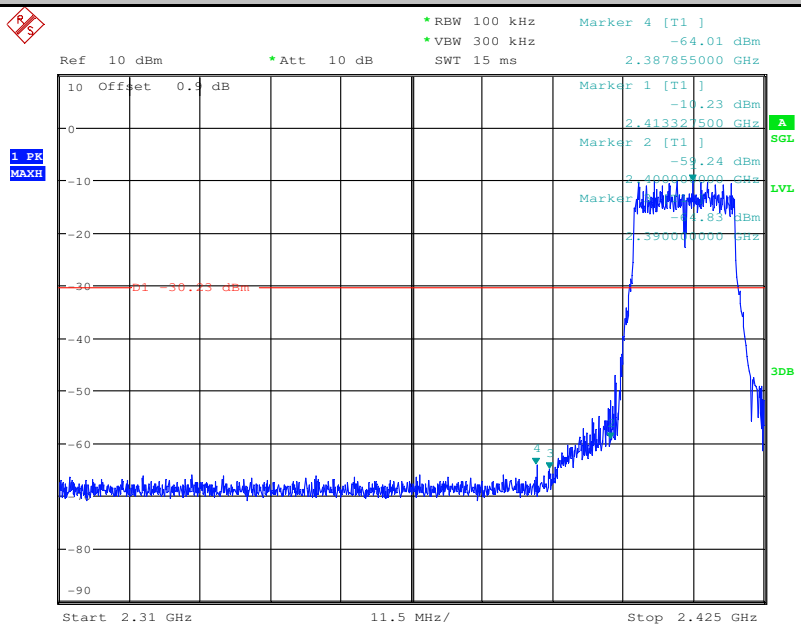
### Band-edge for RF Conducted Emissions_11B_2412



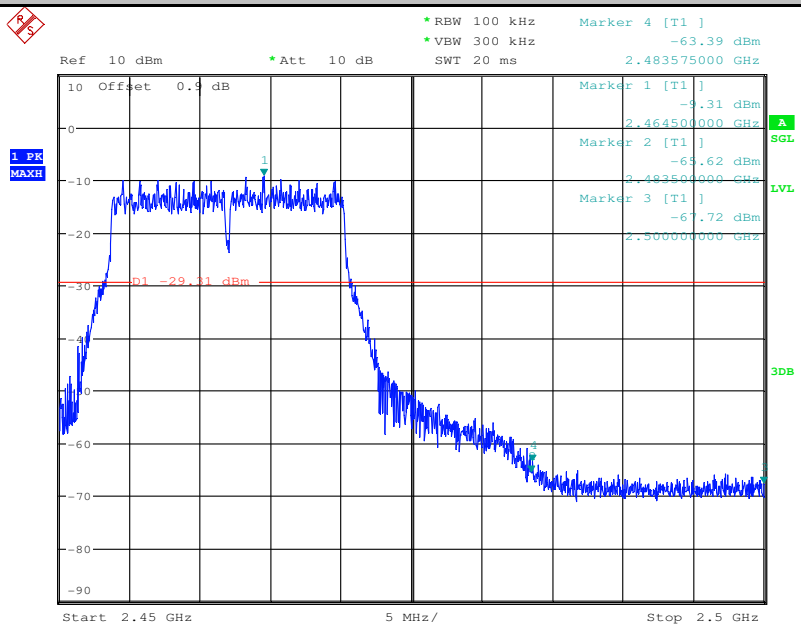

### Band-edge for RF Conducted Emissions_11B_2462



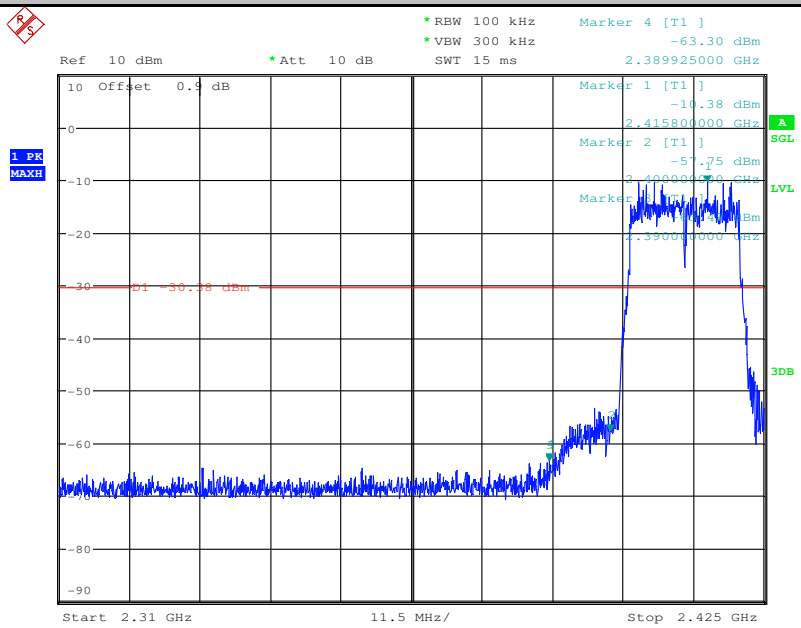
## Band-edge for RF Conducted Emissions_11G_2412



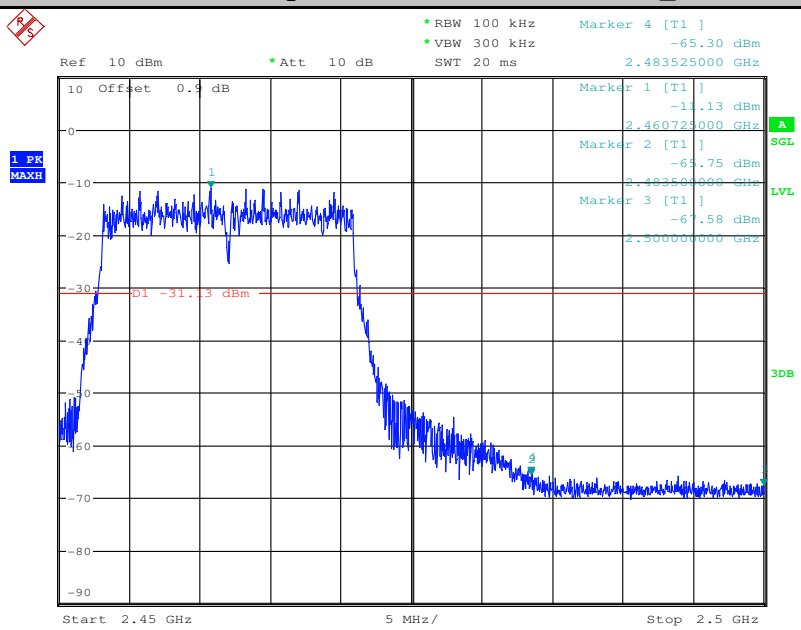

## Band-edge for RF Conducted Emissions_11G_2462



## Band-edge for RF Conducted Emissions_11N20SISO_2412

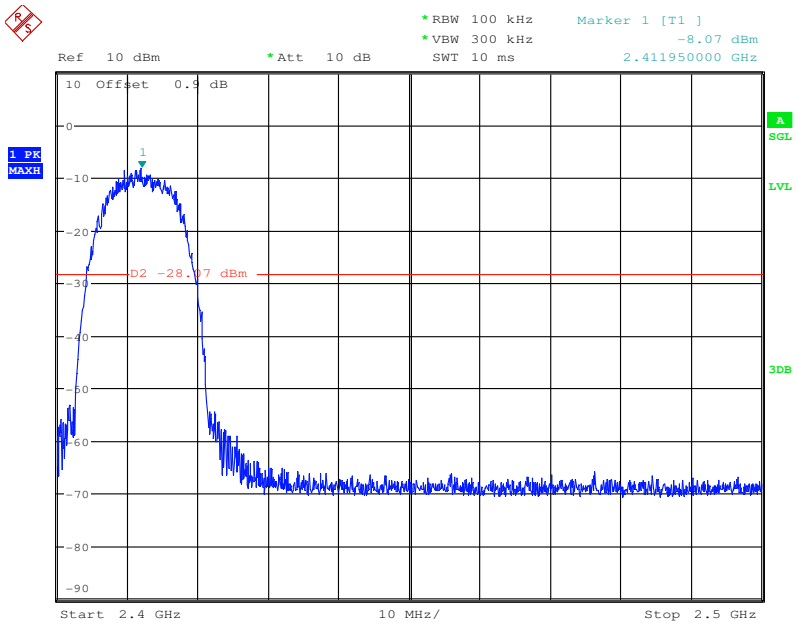
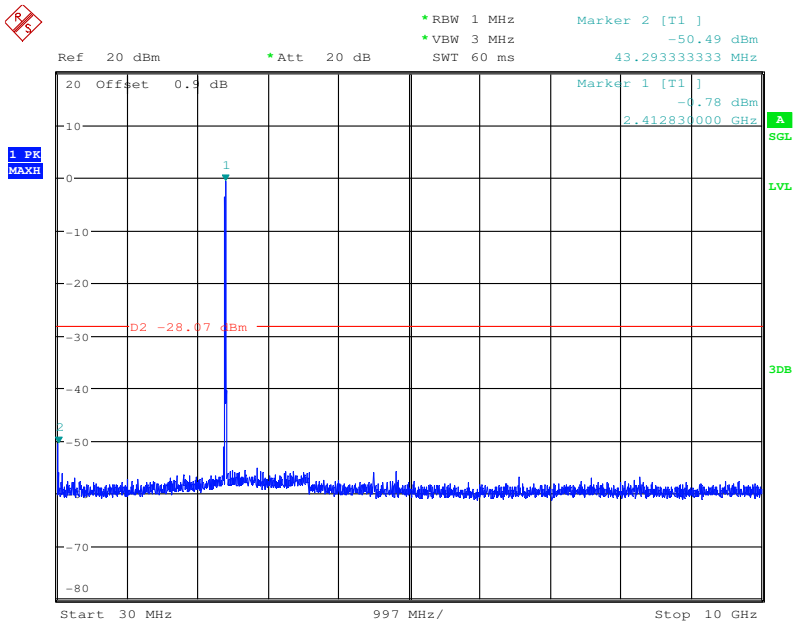



## Band-edge for RF Conducted Emissions_11N20SISO_2462

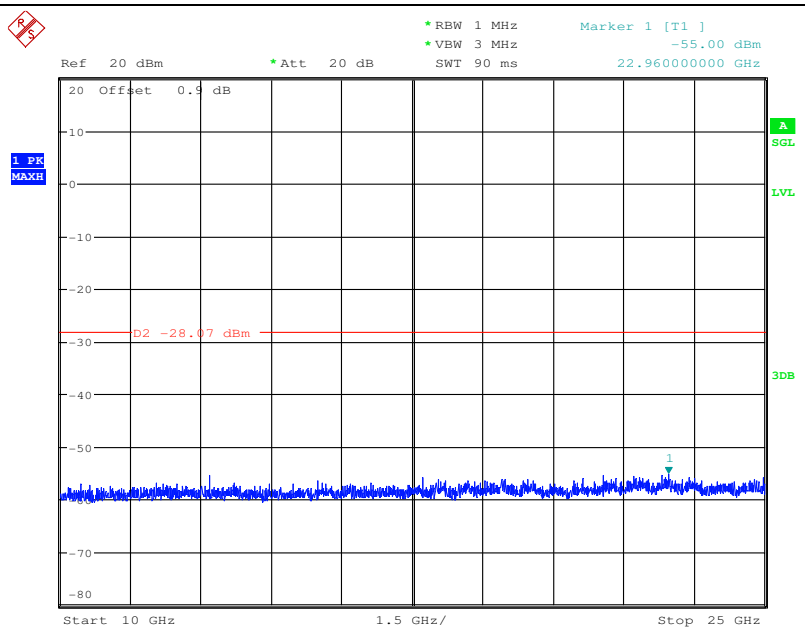


**5.RF Conducted Spurious Emissions**

| Test Mode | Test Channel | StartFre [MHz] | StopFre [MHz] | RBW [kHz] | VBW [kHz] | Pref[dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|---|---|---|---|---|---|---|---|---|---|
| 11B | 2412 | 10000 | 25000 | 1000 | 3000 | -8.07 | -55.000 | <-28.07 | PASS |
| 11B | 2437 | 30 | 10000 | 1000 | 3000 | -7.92 | -46.350 | <-27.92 | PASS |
| 11B | 2437 | 10000 | 25000 | 1000 | 3000 | -7.92 | -55.510 | <-27.92 | PASS |
| 11B | 2462 | 30 | 10000 | 1000 | 3000 | -7.77 | -54.400 | <-27.77 | PASS |
| 11B | 2462 | 10000 | 25000 | 1000 | 3000 | -7.77 | -55.340 | <-27.77 | PASS |
| 11G | 2412 | 30 | 10000 | 1000 | 3000 | -10.33 | -47.260 | <-30.33 | PASS |
| 11G | 2412 | 10000 | 25000 | 1000 | 3000 | -10.33 | -55.020 | <-30.33 | PASS |
| 11G | 2437 | 30 | 10000 | 1000 | 3000 | -9.34 | -53.290 | <-29.34 | PASS |
| 11G | 2437 | 10000 | 25000 | 1000 | 3000 | -9.34 | -55.380 | <-29.34 | PASS |
| 11G | 2462 | 30 | 10000 | 1000 | 3000 | -9.64 | -47.710 | <-29.64 | PASS |
| 11B | 2412 | 30 | 10000 | 1000 | 3000 | -8.07 | -50.490 | <-28.07 | PASS |
| 11G | 2462 | 10000 | 25000 | 1000 | 3000 | -9.64 | -54.630 | <-29.64 | PASS |
| 11N20SISO | 2412 | 30 | 10000 | 1000 | 3000 | -10.66 | -50.660 | <-30.66 | PASS |
| 11N20SISO | 2412 | 10000 | 25000 | 1000 | 3000 | -10.66 | -55.230 | <-30.66 | PASS |
| 11N20SISO | 2437 | 30 | 10000 | 1000 | 3000 | -9.96 | -46.990 | <-29.96 | PASS |
| 11N20SISO | 2437 | 10000 | 25000 | 1000 | 3000 | -9.96 | -54.530 | <-29.96 | PASS |
| 11N20SISO | 2462 | 30 | 10000 | 1000 | 3000 | -10.81 | -55.220 | <-30.81 | PASS |
| 11N20SISO | 2462 | 10000 | 25000 | 1000 | 3000 | -10.81 | -54.620 | <-30.81 | PASS |

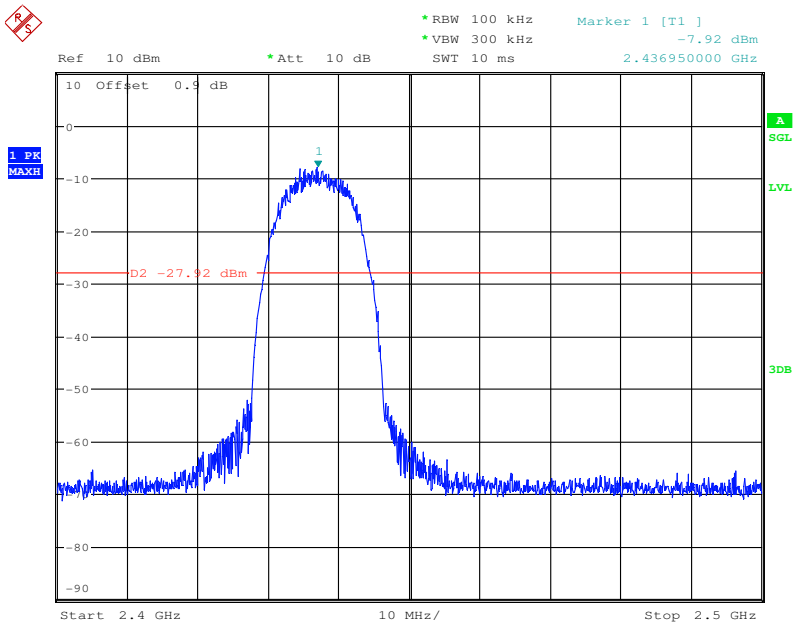
| TEST PLOT | |
|---|---|
| RF Conducted Spurious Emissions_11B_2412 | |
| Pref |  |
| CSE_1 |  |

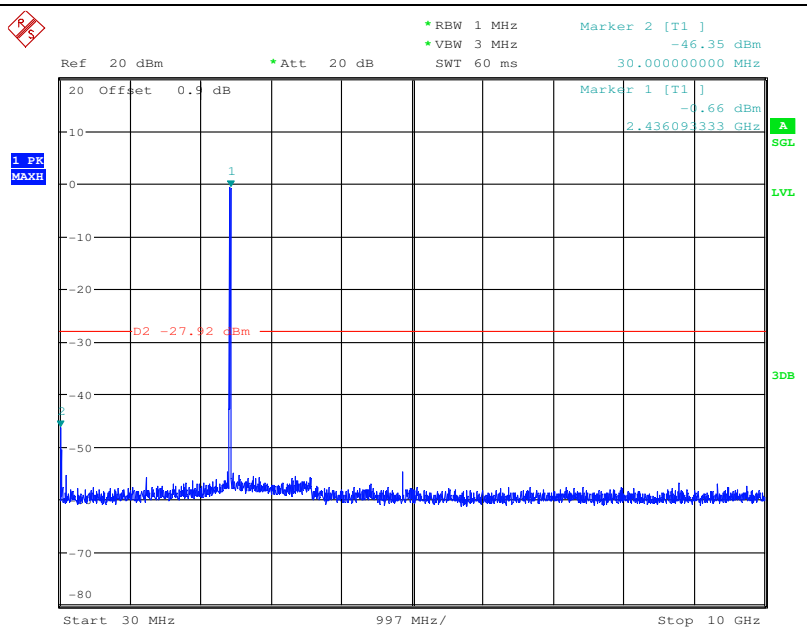
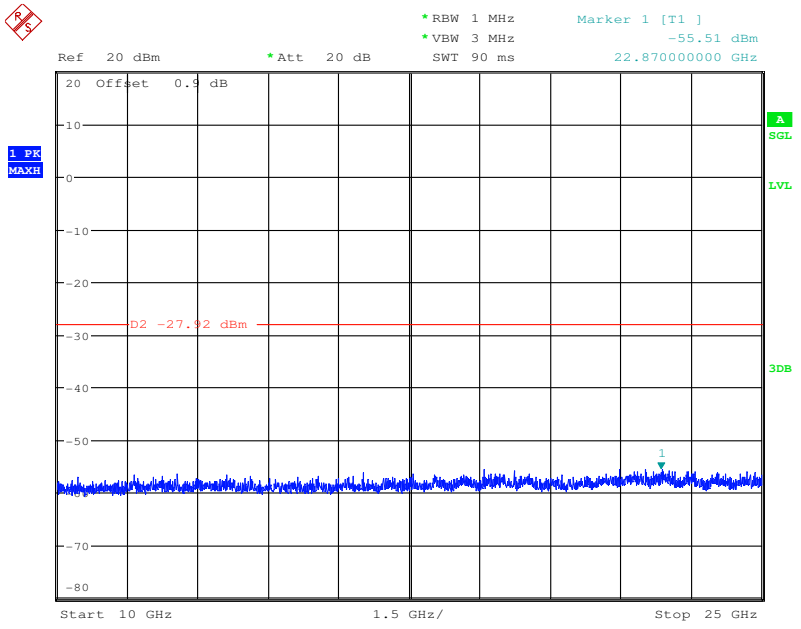
CSE_2

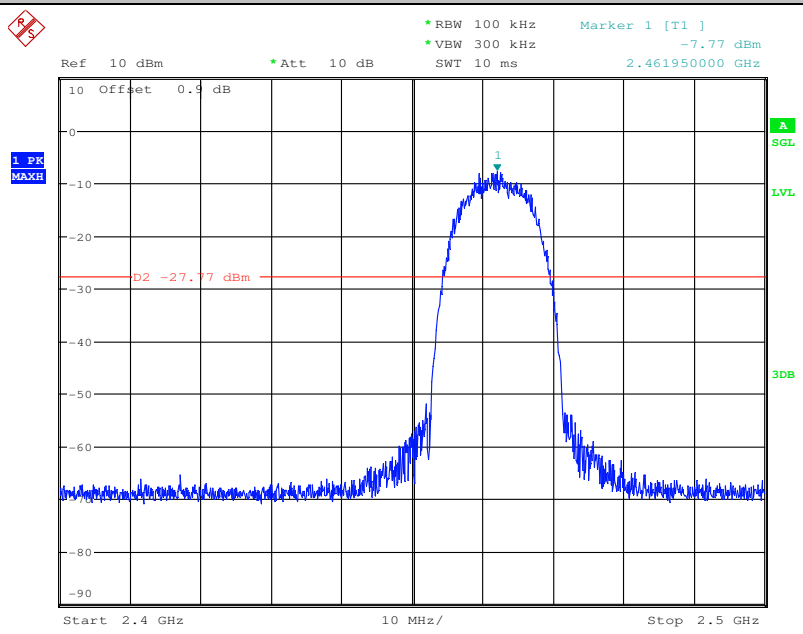
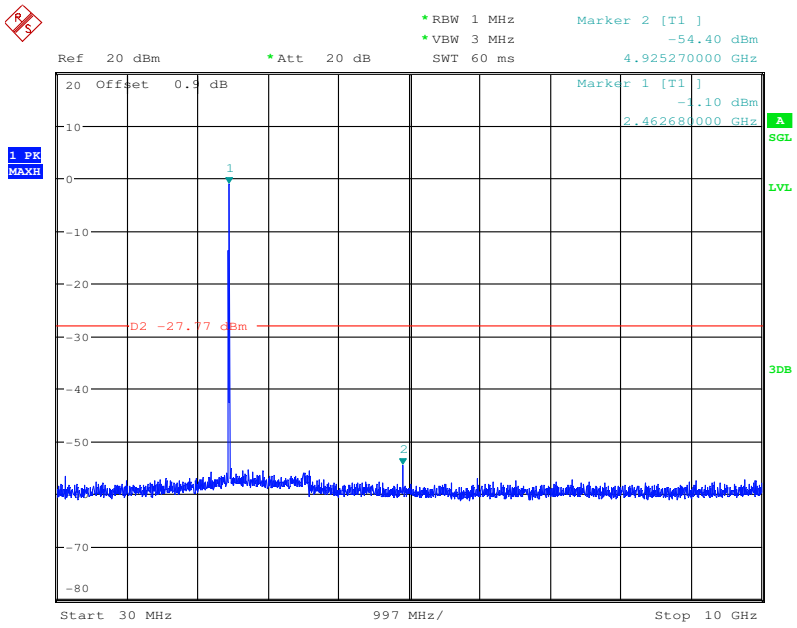


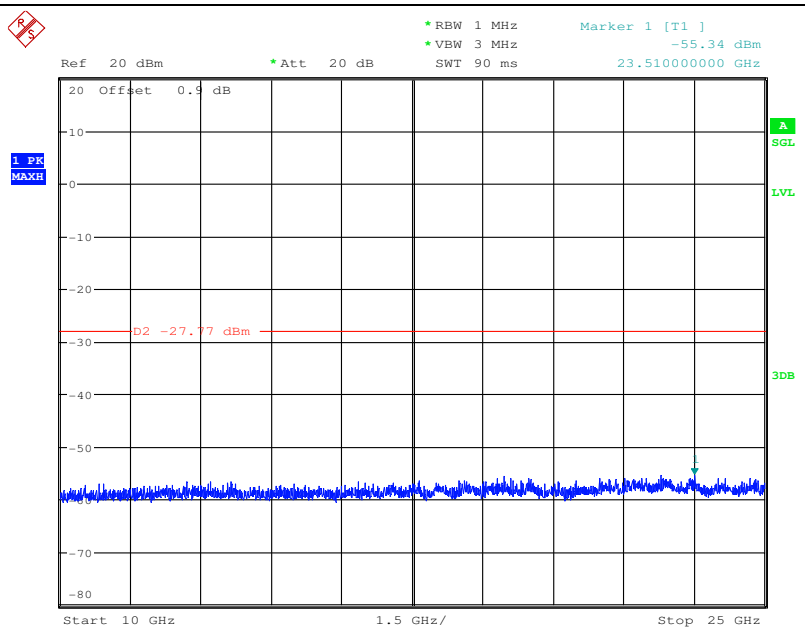
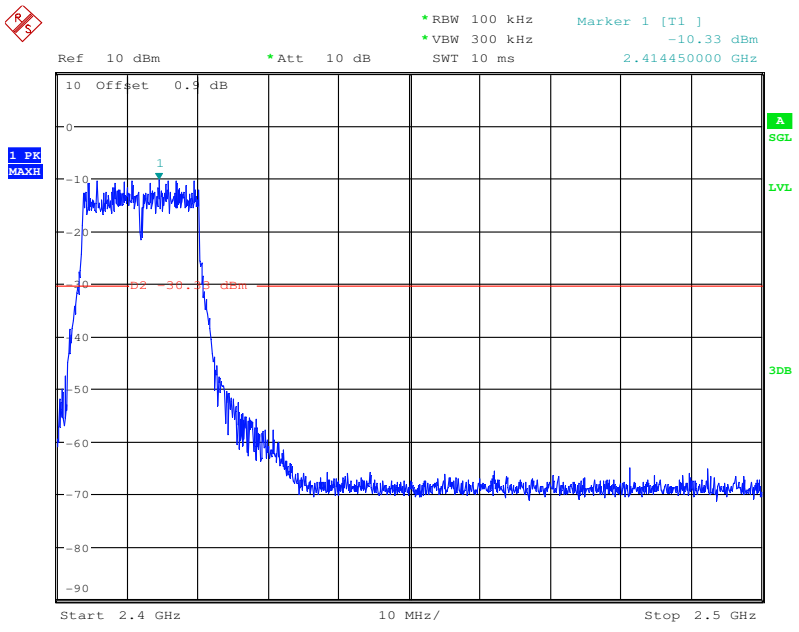

RF Conducted Spurious Emissions_11B_2437

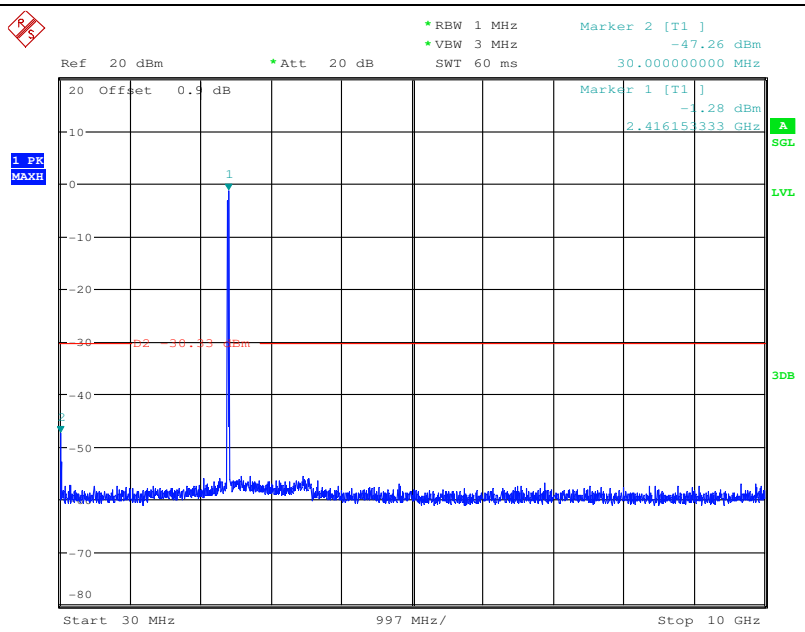
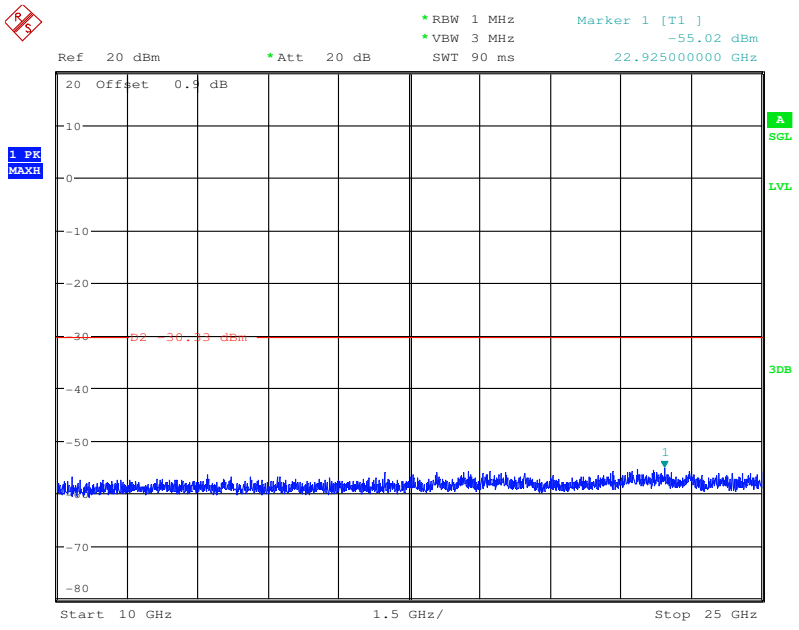
Pref

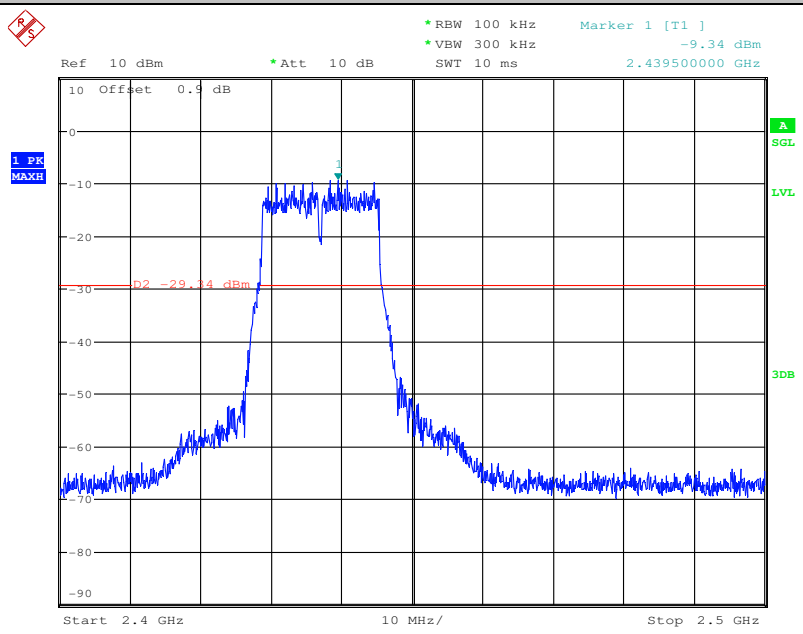
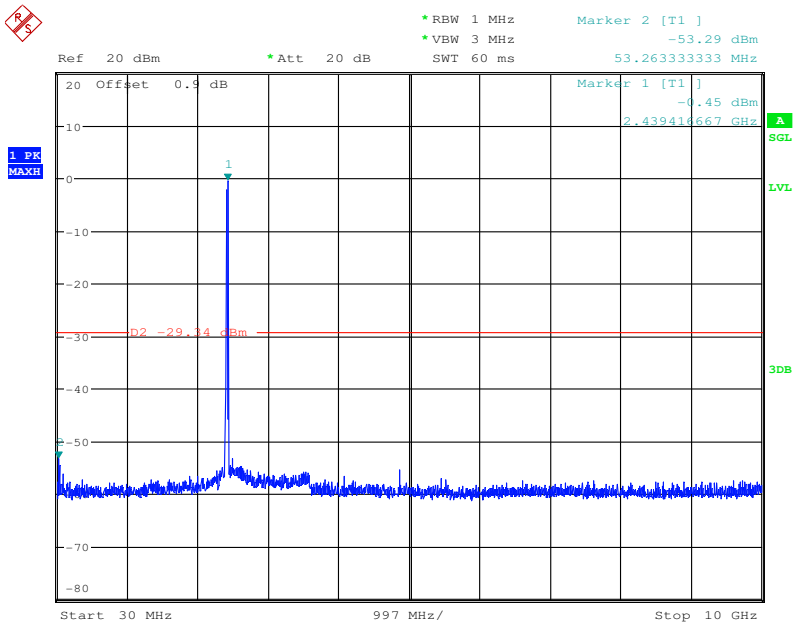


| | |
|---|---|
| CSE_1 |  |
| CSE_2 |  |

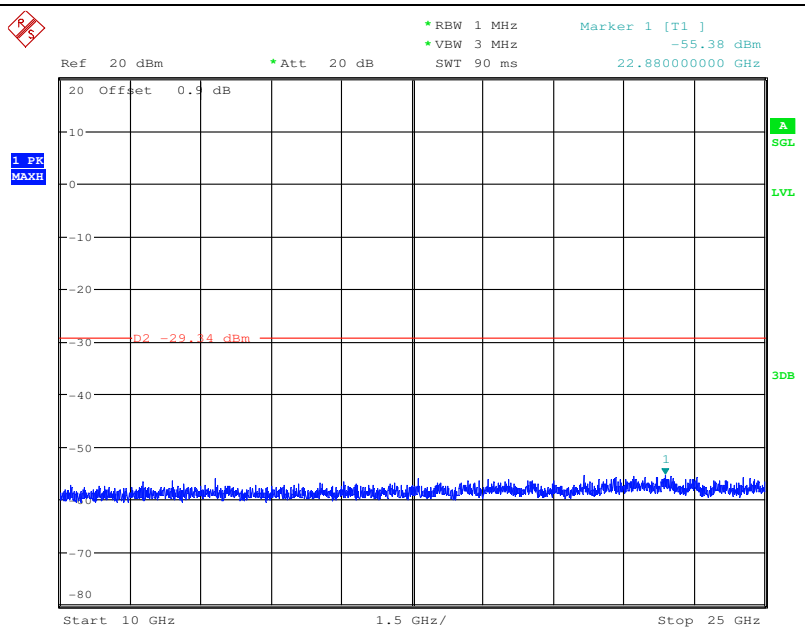
| RF Conducted Spurious Emissions_11B_2462 | |
|---|---|
| Pref |  |
| CSE_1 |  |

| | |
|---|---|
| CSE_2 |  |
| RF Conducted Spurious Emwssions_11G_2412 | |
| Pref |  |

| | |
|---|---|
| CSE_1 |  |
| CSE_2 |  |

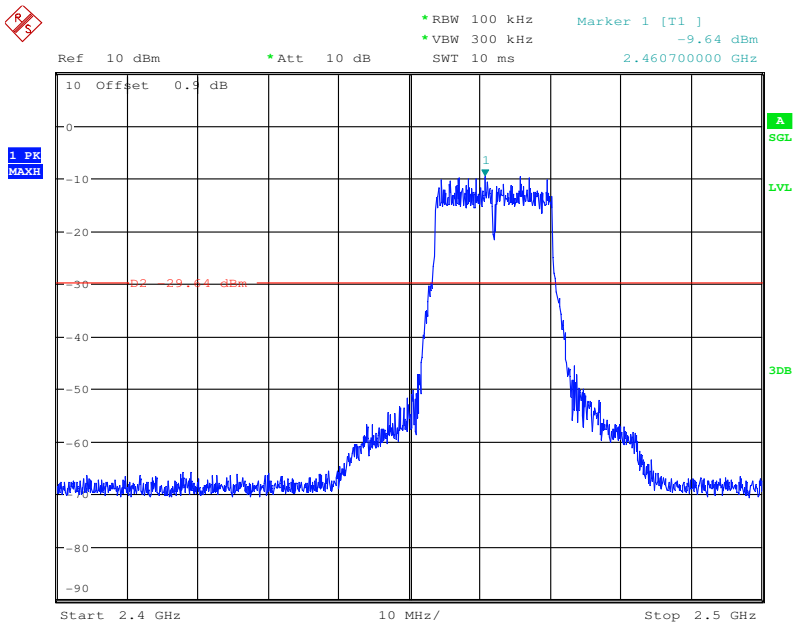
| RF Conducted Spurious Emissions_11G_2437 | |
|---|---|
| Pref |  |
| CSE_1 |  |

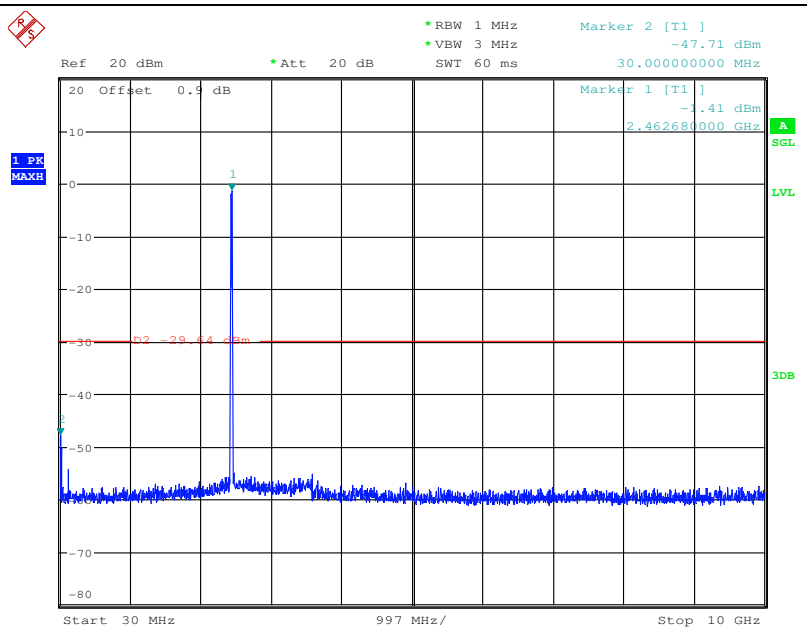
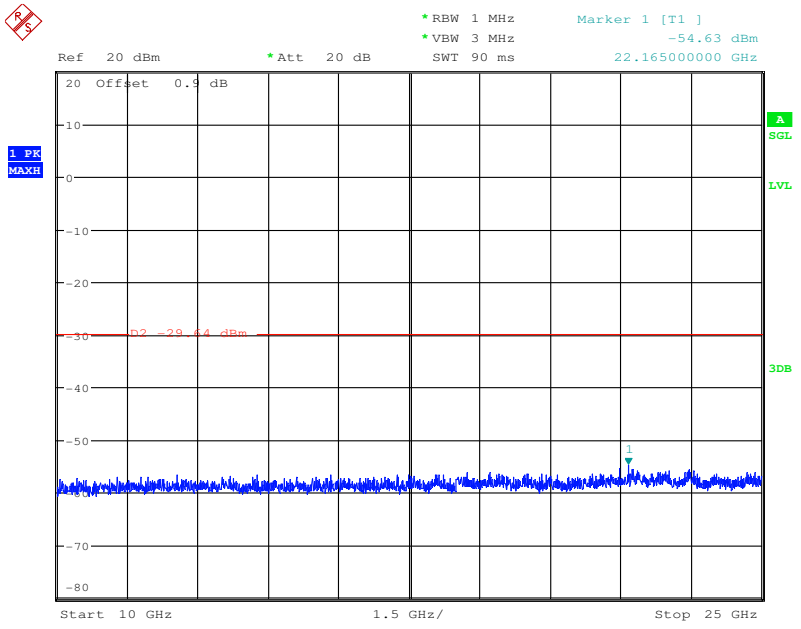
CSE_2




RF Conducted Spurious Emissions_11G_2462

Pref



| | |
|---|---|
| CSE_1 |  |
| CSE_2 |  |

| RF Conducted Spurious Emissions_11N20SISO_2412 | |
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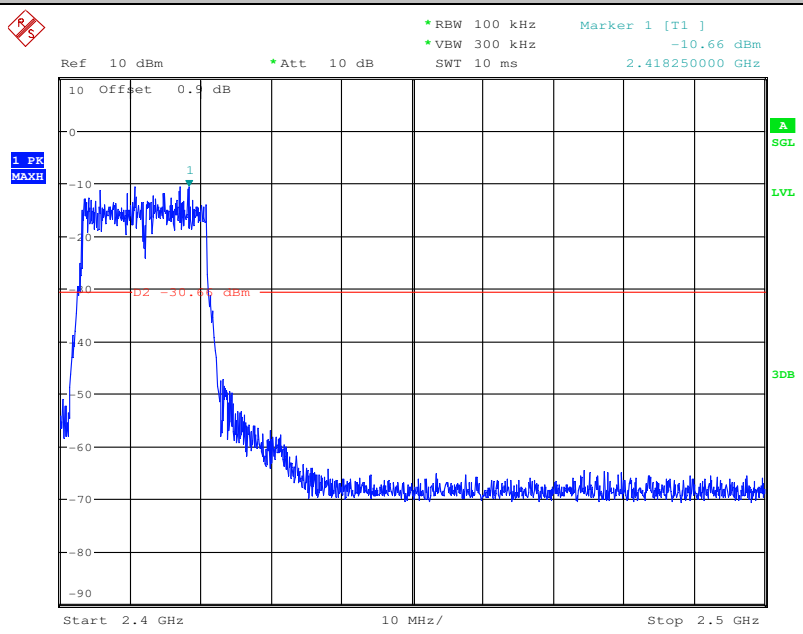
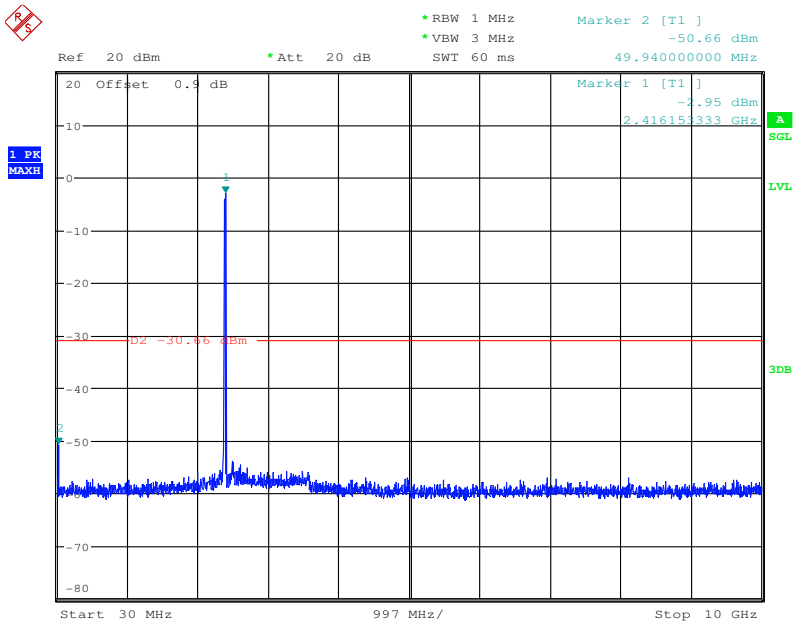
| Pref |  |
| CSE_1 |  |

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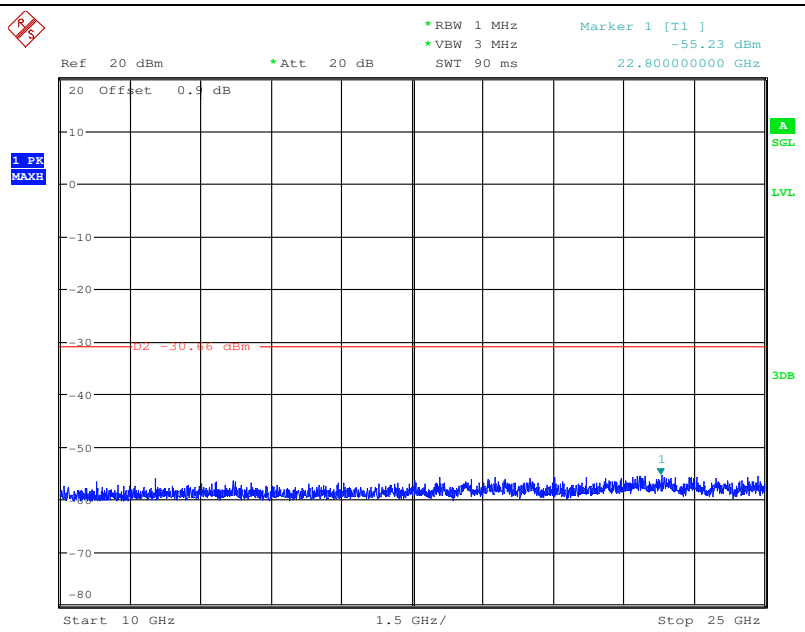
| CSE_2 |  |
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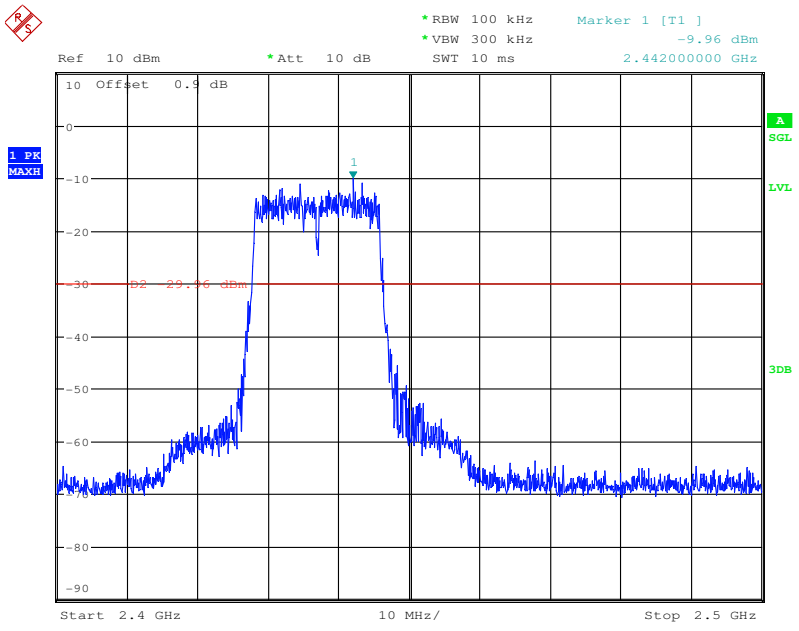
| Pref |  |

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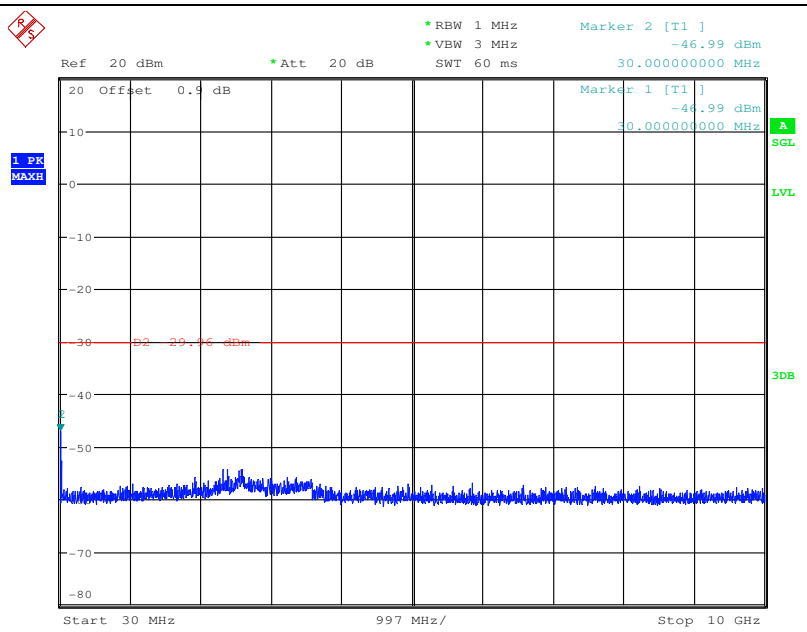
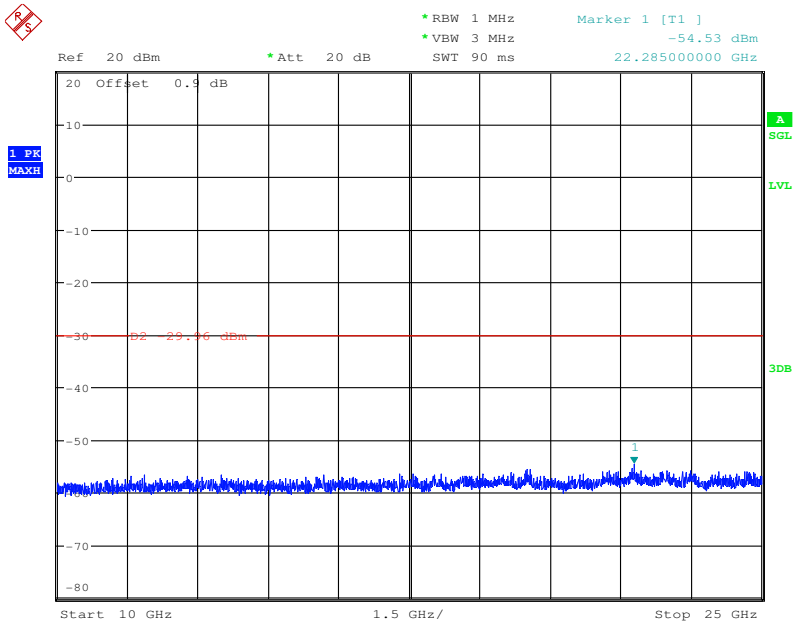
| CSE_1 |  |
| CSE_2 |  |

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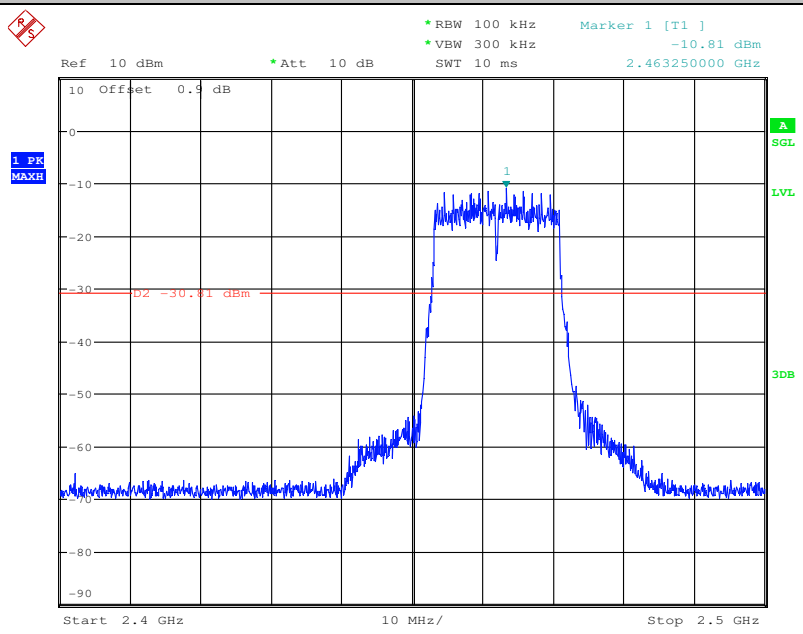
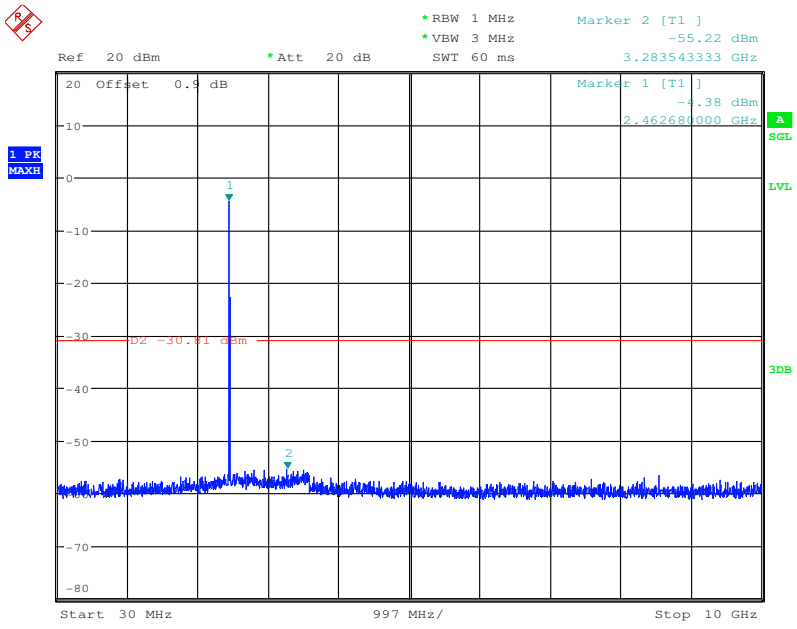
| Pref |  |
| CSE_1 |  |

CSE_2