



# FCC Test Report

Report No: FCS202005008W02

Issued for

SHENZHEN ELOAM TECHNOLOGY CO.,LTD.

NO.208, Multipurpose Building Tsinghua Information Port,  
Hi-Tech Industrial Park,Nanshan Distirct, Shenzhen

|                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name:                                                                                                                                                                                                                                                               | Face Recognition Device                                                                                                                                                                            |
| Brand Name:                                                                                                                                                                                                                                                                 | eloam                                                                                                                                                                                              |
| Model Name:                                                                                                                                                                                                                                                                 | H1689R                                                                                                                                                                                             |
| Series Model:                                                                                                                                                                                                                                                               | H2000R,GW1000R, GW1000W, GW500A, GW500R, GW500W, GW10RS, H620A3D, H200D, H200XR, H520XR, S620A3D, F200, S200D, H886R, H996R, H868R, S500D, S920A3, S1020C, S520B, S520, S530B, T882, Z502, S1020BF |
| FCC ID:                                                                                                                                                                                                                                                                     | 2AWLQ-H1689R                                                                                                                                                                                       |
| Test Standard:                                                                                                                                                                                                                                                              | FCC Part 15.247                                                                                                                                                                                    |
| Issued By: Flux Compliance Service Laboratory<br>Add: Room 105 Floor Bao hao Technology Building 1 NO.15 Gong ye West Road<br>Hi-Tech Industrial, Song shan lake Dongguan<br>Tel: 769-27280901 Fax:769-27280901 <a href="http://www.FCS-lab.com">http://www.FCS-lab.com</a> |                                                                                                                                                                                                    |

## TEST RESULT CERTIFICATION

Applicant's Name ..... : SHENZHEN ELOAM TECHNOLOGY CO.,LTD.

Address ..... : NO.208, Multipurpose Building Tsinghua Information Port, Hi-Tech  
Industrial Park,Nanshan Distirct, Shenzhen

Manufacture's Name ..... : SHENZHEN ELOAM TECHNOLOGY CO.,LTD.

Address ..... : NO.208, Multipurpose Building Tsinghua Information Port, Hi-Tech  
Industrial Park,Nanshan Distirct, Shenzhen

### Product Description

Product Name ..... : Face Recognition Device

Brand Name ..... : eloam

Test Standards ..... : FCC Part15.247

Test Procedure ..... : ANSI C63.10-2013

This device described above has been tested by Flux Compliance Service Laboratory, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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### Date of Test .....

Date (s) of performance of tests ..: 25 May 2020 to 09 Jun. 2020

Date of Issue .....: 09 Jun. 2020

Test Result .....: Pass

Tested by

:

*Chris chen*

(Chris Chen)

Reviewed by

:

*Jack chen*

(Jack Chen)

Approved by

:

*Andy yue*

( Andy yue)



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**Revision History**

| Rev. | Issue Date   | Report NO.      | Effect Page | Contents      |
|------|--------------|-----------------|-------------|---------------|
| 00   | 09 Jun. 2020 | FCS202005008W02 | ALL         | Initial Issue |
|      |              |                 |             |               |

## 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:  
KDB 558074 D01 15.247 Meas Guidance v05r02

| FCC Part 15.247, Subpart C                 |                                              |          |        |
|--------------------------------------------|----------------------------------------------|----------|--------|
| Standard Section                           | Test Item                                    | Judgment | Remark |
| FCC 15.247 (a) (2)                         | 6dB Bandwidth                                | PASS     | --     |
| FCC 15.247 (b) (3)                         | Conducted Output Power                       | PASS     | --     |
| FCC 15.247 (e)                             | Power Spectral Density                       | PASS     | --     |
| FCC 15.247 (d)                             | Band-edge and Spurious Emissions (Conducted) | PASS     | --     |
| FCC 15.247 (d)<br>FCC 15.209<br>FCC 15.205 | Radiated Spurious Emissions                  | PASS     | --     |
| FCC 15.247 (d)<br>FCC 15.209<br>FCC 15.205 | Radiated Band Edge Compliance                | PASS     | --     |
| FCC 15.207                                 | Power Line Conducted Emission                | PASS     | --     |
| FCC 15.203                                 | Antenna requirement                          | PASS     | --     |
| 15.205                                     | Restricted Band Edge Emission                | PASS     | --     |

### NOTE:

- (1) "N/A" denotes test is not applicable in this Test Report
- (2) All tests are according to ANSI C63.10-2013

## 1.1 TEST FACTORY

|                                                                                                               |                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Company Name:                                                                                                 | Flux Compliance Service Laboratory                                                                               |
| Address:                                                                                                      | Room 105 Floor Bao hao Technology Building 1 NO.15 Gong ye West Road Hi-Tech Industrial, Song shan lake Dongguan |
| Telephone:                                                                                                    | +86-769-27280901                                                                                                 |
| Fax:                                                                                                          | +86-769-27280901                                                                                                 |
| FCC Test Firm Registration Number: 514908<br>Designation number: CN0127<br>A2LA accreditation number: 5545.01 |                                                                                                                  |

## 1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately **95 %**.

| No. | Item                                        | Uncertainty    |
|-----|---------------------------------------------|----------------|
| 1   | RF output power, conducted                  | $\pm 0.71$ dB  |
| 2   | Unwanted Emissions, conducted               | $\pm 2.988$ dB |
| 3   | Conducted Emission (9KHz-150KHz)            | $\pm 4.13$ dB  |
| 4   | Conducted Emission (150KHz-30MHz)           | $\pm 4.74$ dB  |
| 5   | All emissions, radiated (<1G) 30MHz-1000MHz | $\pm 5.2$ dB   |
| 6   | All emissions, radiated 1GHz -18GHz         | $\pm 4.66$ dB  |
| 7   | All emissions, radiated 18GHz -40GHz        | $\pm 4.31$ dB  |

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF THE EUT

|                         |                                                                                                                                                                                                     |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name            | Face Recognition Device                                                                                                                                                                             |
| Trade Name              | eloam                                                                                                                                                                                               |
| Model Name              | H1689R                                                                                                                                                                                              |
| Series Model            | H2000R, GW1000R, GW1000W, GW500A, GW500R, GW500W, GW10RS, H620A3D, H200D, H200XR, H520XR, S620A3D, F200, S200D, H886R, H996R, H868R, S500D, S920A3, S1020C, S520B, S520, S530B, T882, Z502, S1020BF |
| Model Difference        | All the model are the same circuit and RF module, except the appearance colour, this report only test mode name: H1689R                                                                             |
| Channel List            | Please refer to the Note 2.2.                                                                                                                                                                       |
| Operation frequency     | IEEE 802.11b: 2412MHz-2462MHz<br>IEEE 802.11g: 2412MHz-2462MHz<br>IEEE 802.11n HT20: 2412MHz-2462MHz                                                                                                |
| Modulation:             | IEEE 802.11b: DSSS (CCK, QPSK, BPSK)<br>IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11n HT20, OFDM (64QAM, 16QAM, QPSK, BPSK)                                                         |
| Transmitter rate:       | IEEE 802.11b: 1, 2, 5.5, 11 Mbps<br>IEEE 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>IEEE 802.11n HT20: up to 65 Mbps                                                                             |
| Power supply            | DC 12V from Adapter                                                                                                                                                                                 |
| Hardware version number | V1.0                                                                                                                                                                                                |
| Software version number | V1.0                                                                                                                                                                                                |
| Connecting I/O Port(s)  | Please refer to the User's Manual                                                                                                                                                                   |

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.

| Channel List |                 |         |                 |         |                 |
|--------------|-----------------|---------|-----------------|---------|-----------------|
| Channel      | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 01           | 2412            | 05      | 2432            | 09      | 2452            |
| 02           | 2417            | 06      | 2437            | 10      | 2457            |
| 03           | 2422            | 07      | 2442            | 11      | 2462            |
| 04           | 2427            | 08      | 2447            |         |                 |
|              |                 |         |                 |         |                 |

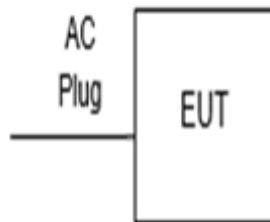
3. Table for Filed Antenna

| Ant. | Brand | Model Name | Antenna Type | Connector | Gain (dBi) | NOTE    |
|------|-------|------------|--------------|-----------|------------|---------|
| 1    | N/A   | LK763      | PCB antenna  | N/A       | 2.0 dBi    | Antenna |

## 2.2 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

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

Block diagram of EUT configuration for test



Test software: the FCC tool

Wifi test in the engineer mode

The test software was used to control EUT work in continuous TX mode, and select test channel, Wireless mode as below table

定频调试软件

串口号 20190516

波特率 115200 功率

打开串口
关闭串口

发送数据
清除发送缓存
清除接收缓存

[初始化系统]
[开启调制]
[关闭调制]

[11B 11M][ch:1]
[11B 11M][ch:7]
[11B 11M][ch:13]

[11G 54M][ch:1]
[11G 54M][ch:7]
[11G 54M][ch:13]

[N20][ch:1]
[N20][ch:7]
[N20][ch:13]

[N40][ch:3]
[N40][ch:7]
[N40][ch:11]

[关闭 Log]
[打开 Log]
[空]

[连接热点]
[查看网卡]
[开始发包]

[结束发包]

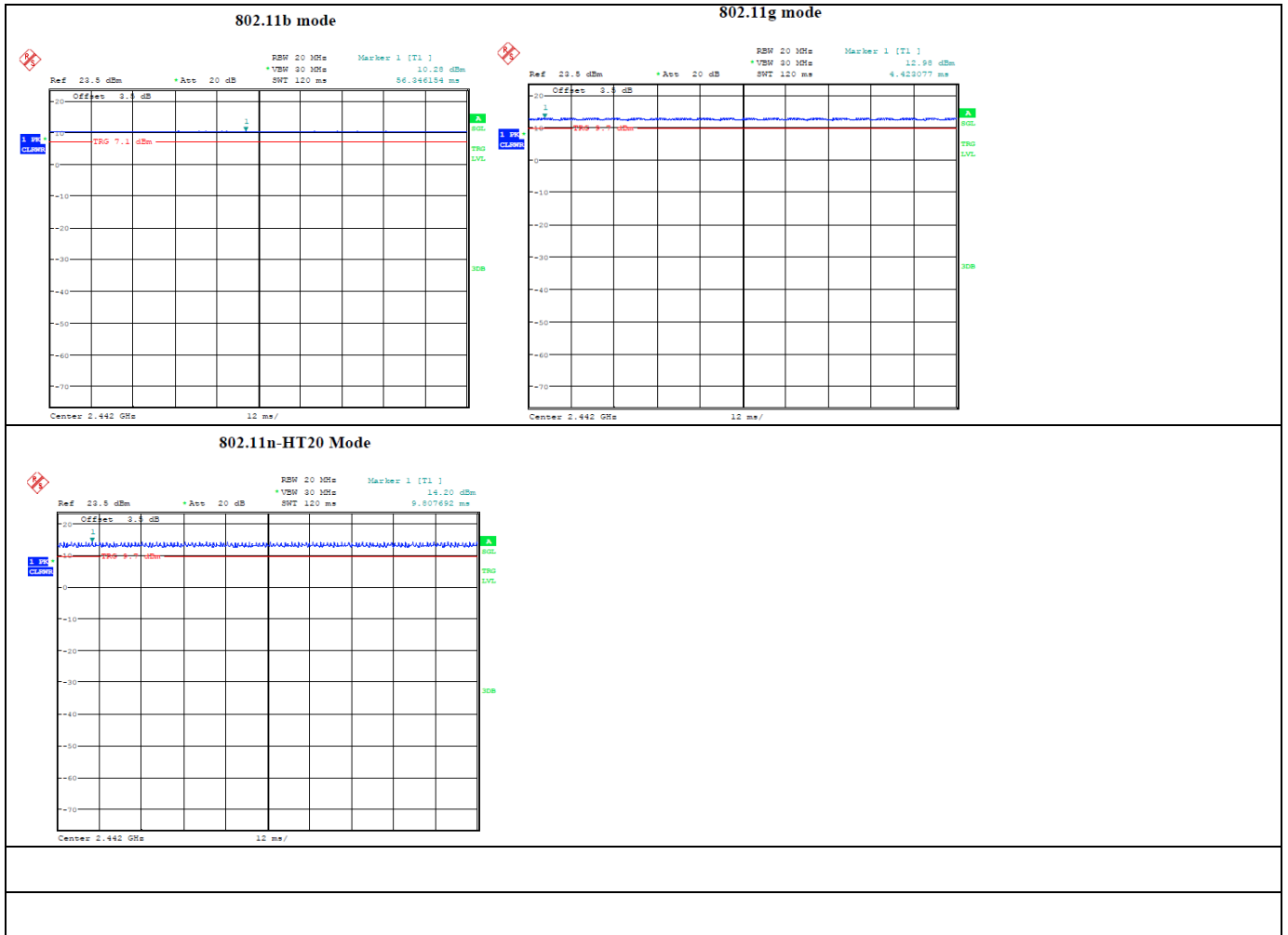
| Mode              | Setting Tx Power | data rate<br>(Mbps)<br>(see Note) | Channel   | Frequency<br>(MHz) |
|-------------------|------------------|-----------------------------------|-----------|--------------------|
| IEEE 802.11b      | 8                | 1                                 | LCH: CH1  | 2412               |
|                   | 8                | 1                                 | MCH: CH6  | 2437               |
|                   | 8                | 1                                 | HCH: CH11 | 2462               |
| IEEE 802.11g      | 20               | 6                                 | LCH: CH1  | 2412               |
|                   | 20               | 6                                 | MCH: CH6  | 2437               |
|                   | 20               | 6                                 | HCH: CH11 | 2462               |
| IEEE 802.11n HT20 | 20               | MCS 8                             | LCH: CH1  | 2412               |
|                   | 20               | MCS 8                             | MCH: CH6  | 2437               |
|                   | 20               | MCS 8                             | HCH: CH11 | 2462               |

Note:

(1) According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test,

(2) During the test, the dutycycle>98%, the test voltage was tuned from 85% to 115% of the Nominal rate supply votage, and found that the worst case was the nominal rated supply condition, So the report just shows that condition's data

Duty cycle data (worst case)



### 2.3 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

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

#### Necessary accessories

| Item | Equipment | Mfr/Brand | Model/Type No. | Serial No. | Note                                     |
|------|-----------|-----------|----------------|------------|------------------------------------------|
| 1    | Adapter   | HW        | FYC654327      | /          | The adapter only testing for this report |
|      |           |           |                |            |                                          |
|      |           |           |                |            |                                          |
|      |           |           |                |            |                                          |

#### Support units

| Item | Equipment | Mfr/Brand | Model/Type No. | Serial No. | Note |
|------|-----------|-----------|----------------|------------|------|
|      |           |           |                |            |      |
|      |           |           |                |            |      |
|      |           |           |                |            |      |
|      |           |           |                |            |      |

#### Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

## 2.4 EQUIPMENTS LIST

### Radiation Test equipment

| Kind of Equipment                | Manufacturer | Type No.     | Company No. | Last calibration | Calibrated until |
|----------------------------------|--------------|--------------|-------------|------------------|------------------|
| EMI Test Receiver                | R&S          | ESRP 3       | FCS-E001    | 2019.10.26       | 2020.10.25       |
| Signal Analyzer                  | R&S          | FSV40-N      | FCS-E012    | 2019.06.05       | 2020.06.04       |
| Active loop Antenna              | ZHINAN       | ZN30900C     | FCS-E013    | 2019.10.09       | 2020.10.10       |
| Bilog Antenna                    | SCHWARZBECK  | VULB 9168    | FCS-E002    | 2019.10.26       | 2020.10.25       |
| Horn Antenna                     | SCHWARZBECK  | BBHA 9120D   | FCS-E003    | 2019.10.26       | 2020.10.25       |
| SHF-EHF Horn Antenna (18G-40GHz) | A-INFO       | LB-180400-KF | FCS-E018    | 2019.10.26       | 2020.10.25       |
| Pre-Amplifier(0.1M-3G Hz)        | EMCI         | EM330N       | FCS-E004    | 2019.10.26       | 2020.10.25       |
| Pre-Amplifier (1G-18GHz)         | N/A          | TSAMP-0518SE | FCS-E014    | 2019.10.03       | 2020.10.02       |
| Pre-Amplifier (18G-40GHz)        | TERA-MW      | TRLA-0400    | FCS-E019    | 2019.10.08       | 2020.10.07       |
| Temperature & Humidity           | HTC-1        | victor       | FCS-E005    | 2019.10.26       | 2020.10.25       |

### Conduction Test equipment

| Kind of Equipment      | Manufacturer | Type No. | Company No. | Last calibration | Calibrated until |
|------------------------|--------------|----------|-------------|------------------|------------------|
| EMI Test Receiver      | R&S          | ESPI     | FCS-E020    | 2019.10.26       | 2020.10.25       |
| LISN                   | R&S          | ENV216   | FCS-E007    | 2019.10.26       | 2020.10.25       |
| LISN                   | ETS          | 3810/2NM | FCS-E009    | 2019.10.15       | 2020.10.14       |
| Temperature & Humidity | HTC-1        | victor   | FCS-E008    | 2019.10.15       | 2020.10.14       |

### RF Connected Test

| Kind of Equipment   | Manufacturer | Type No. | Company No. | Last calibration | Calibrated until |
|---------------------|--------------|----------|-------------|------------------|------------------|
| MXA SIGNAL Analyzer | Keysight     | N9020A   | FCS-E015    | 2019.10.02       | 2020.10.01       |
| Spectrum Analyzer   | Agilent      | E4447A   | MY50180039  | 2019.11.08       | 2020.11.07       |
| Spectrum Analyzer   | R&S          | FSV-40   | 101499      | 2019.10.10       | 2020.10.09       |

### 3. 6DB BANDWIDTH

#### 3.1 Limit

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

#### 3.2 Test Procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Set the spectrum analyzer as follows

RBW: 100kHz

VBW: 300kHz

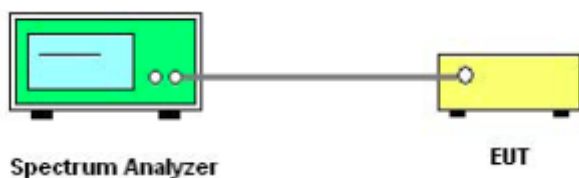
Detector Mode: Peak

Sweep time: auto

Trace mode Max hold

(3) Allow the trace to stabilize, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

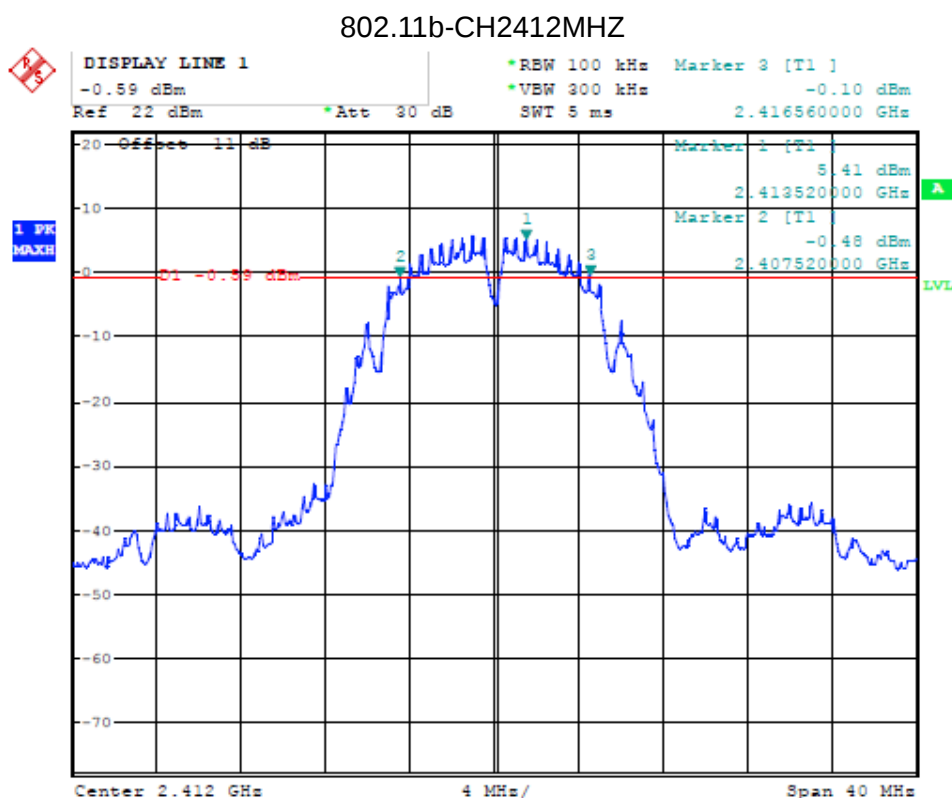
#### 3.3 Test setup



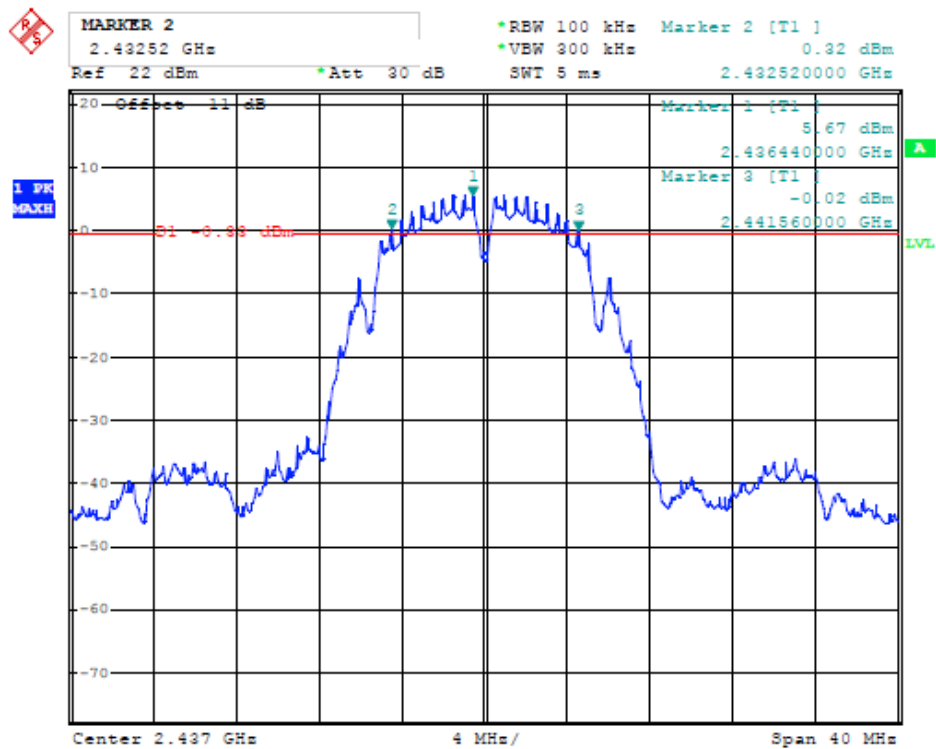
### 3.4 Test results

| TestMode   | Channel (MHz) | 6dB Bandwidth (MHz) | Limit [MHz] | Verdict |
|------------|---------------|---------------------|-------------|---------|
| 802.11b    | 2412MHz       | 9.04                | 0.5         | Pass    |
| 802.11b    | 2437MHz       | 9.04                | 0.5         | Pass    |
| 802.11b    | 2462MHz       | 9.04                | 0.5         | Pass    |
| 802.11g    | 2412MHz       | 16.40               | 0.5         | Pass    |
| 802.11g    | 2437MHz       | 16.32               | 0.5         | Pass    |
| 802.11g    | 2462MHz       | 16.36               | 0.5         | Pass    |
| 802.11n 20 | 2412MHz       | 17.52               | 0.5         | Pass    |
| 802.11n 20 | 2437MHz       | 17.68               | 0.5         | Pass    |
| 802.11n 20 | 2462MHz       | 17.60               | 0.5         | Pass    |

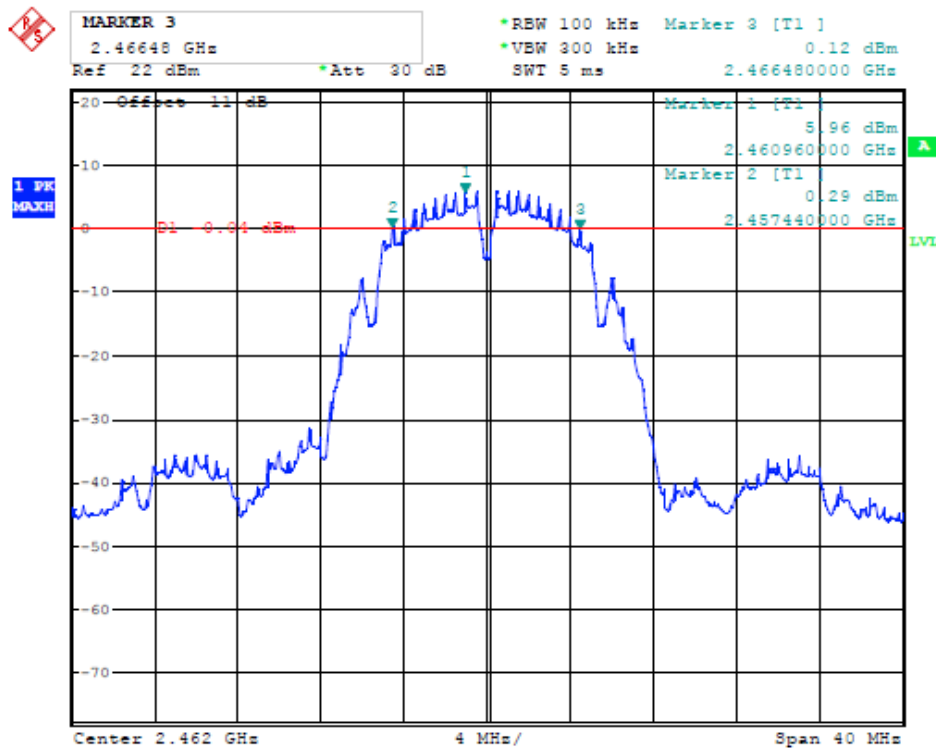
### 3.5 Original Test Data



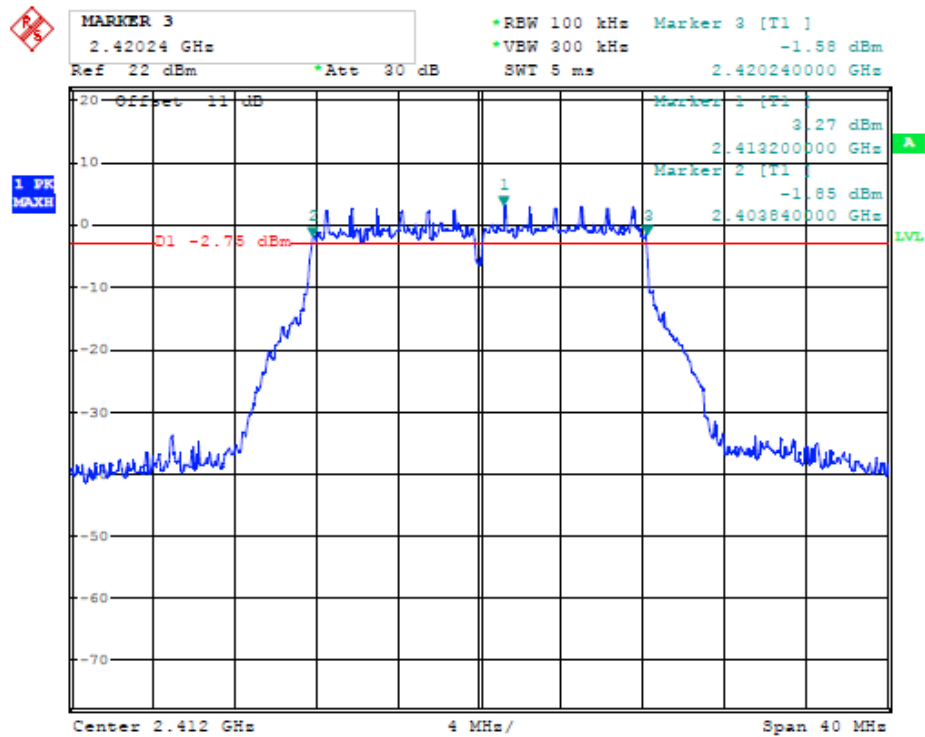
## 802.11b-CH2437MHZ



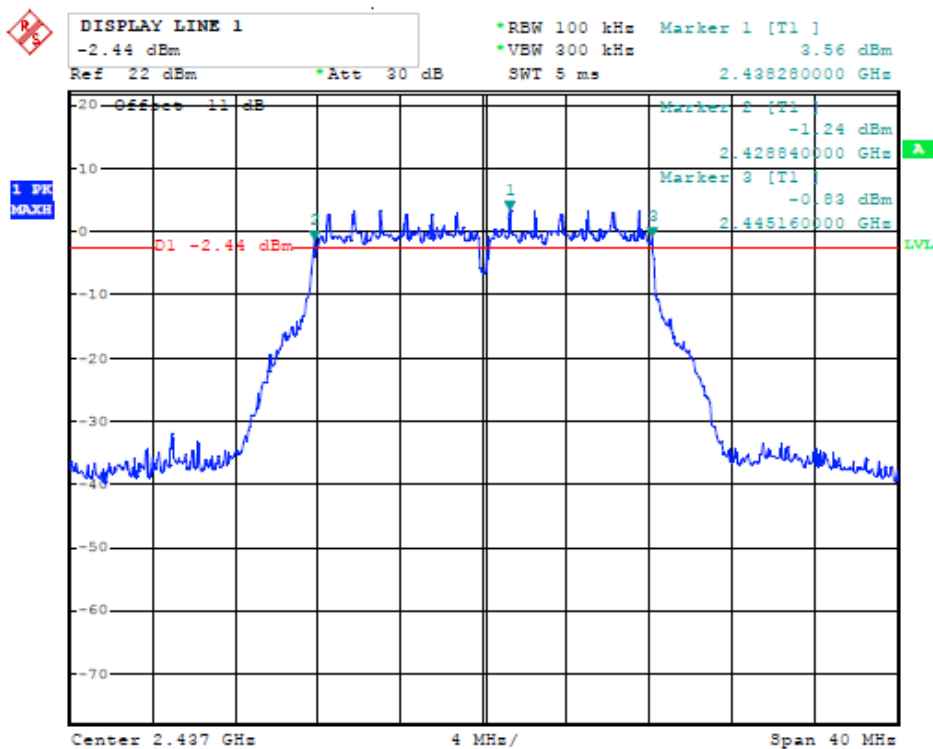
## 802.11b-CH2462MHZ



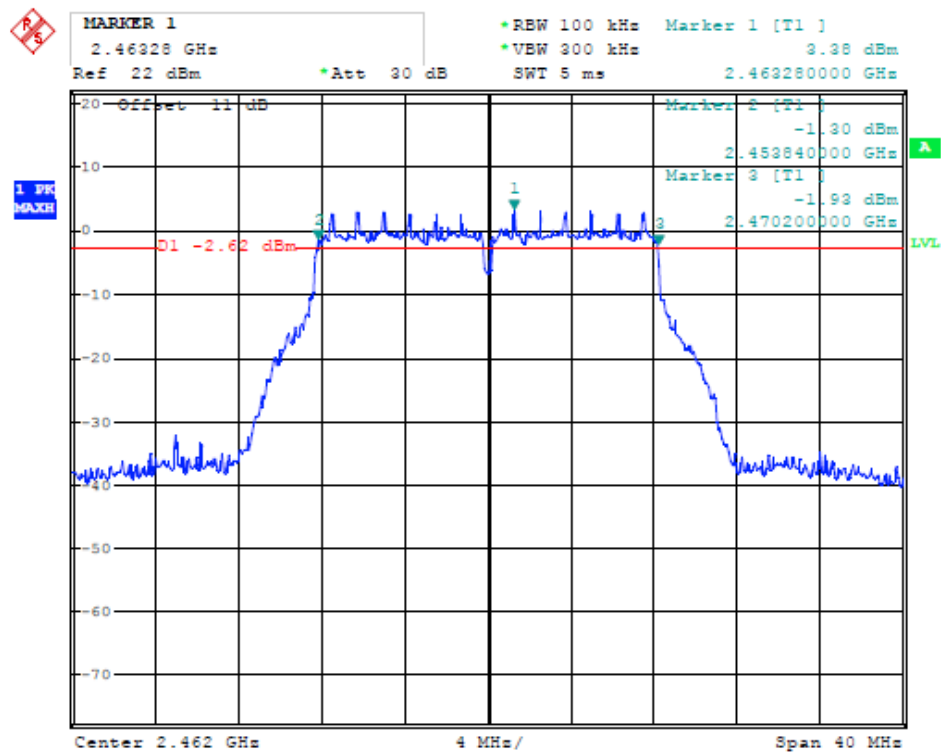
### 802.11g CH2412MHZ



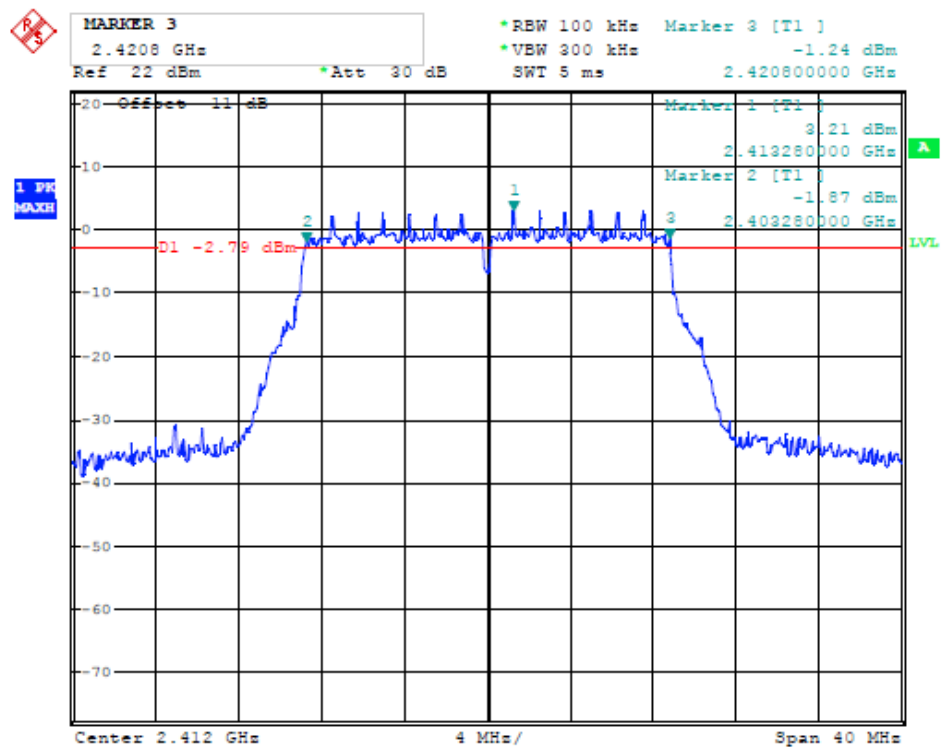
### 802.11g CH2437MHZ



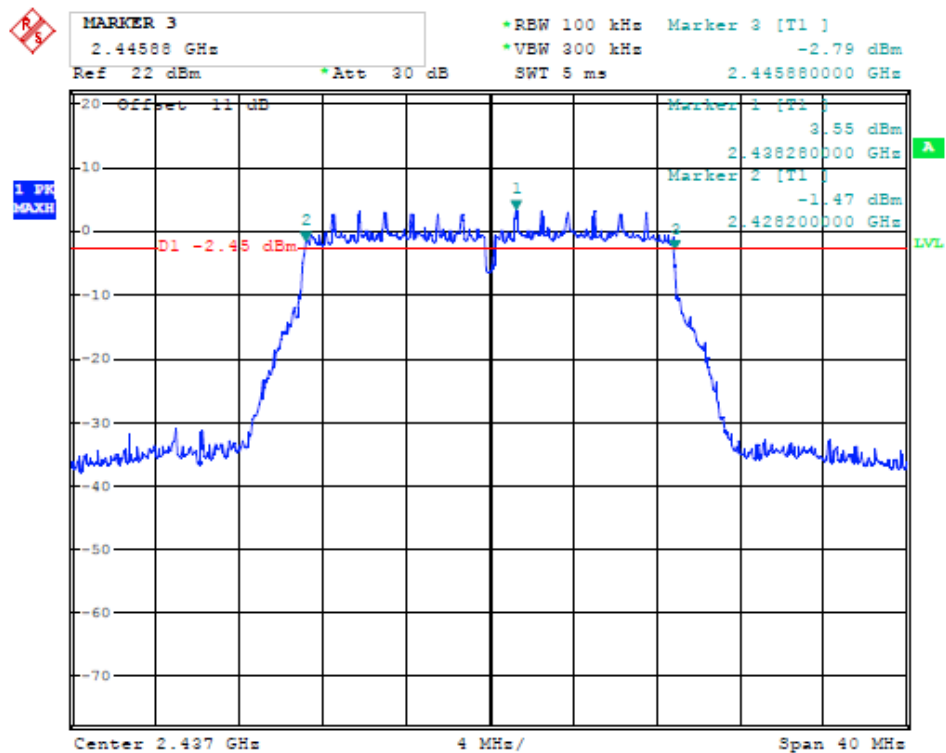
### 802.11g CH2462MHZ



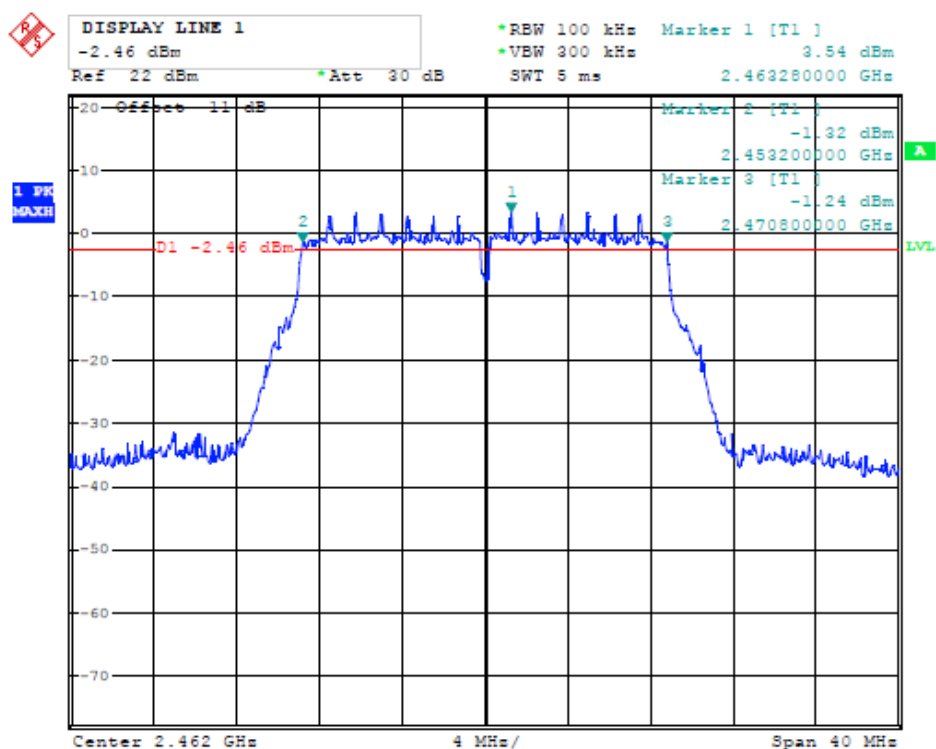
### 802.11n 20-2412MHz



## 802.11n 20-2437MHz



## 802.11n 20-2462MHz



## 4 CONDUCTED OUTPUT POWER

### 4.1 limit

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. 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 as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 4.2 test procedure

4.2.1. Connect each EUT's antenna output to power sensor by RF cable and attenuator

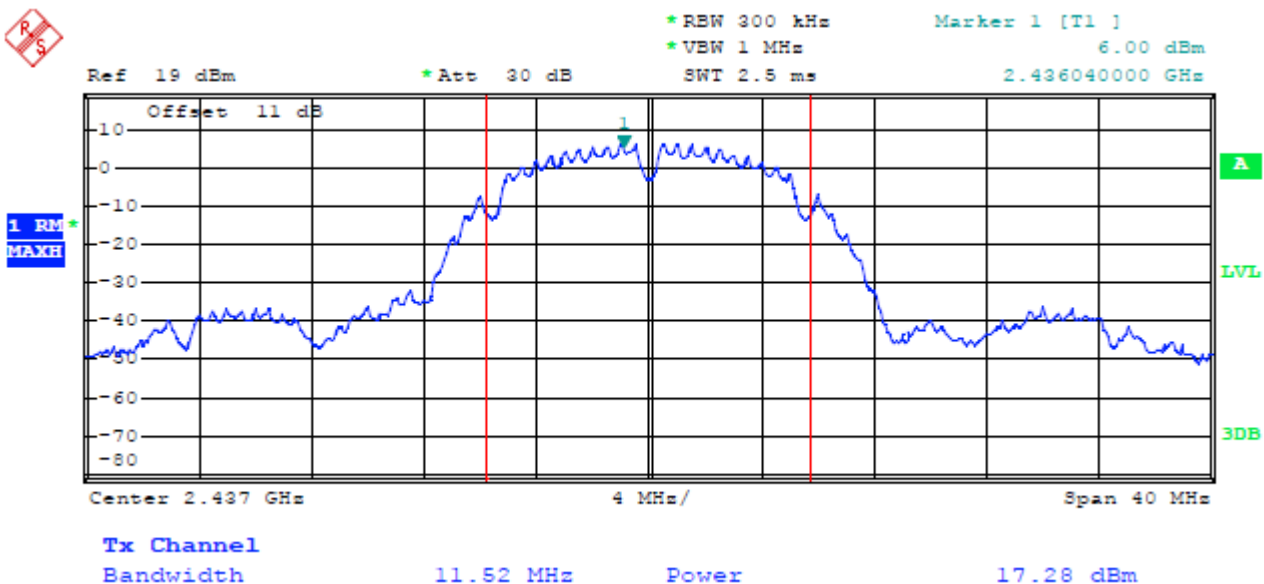
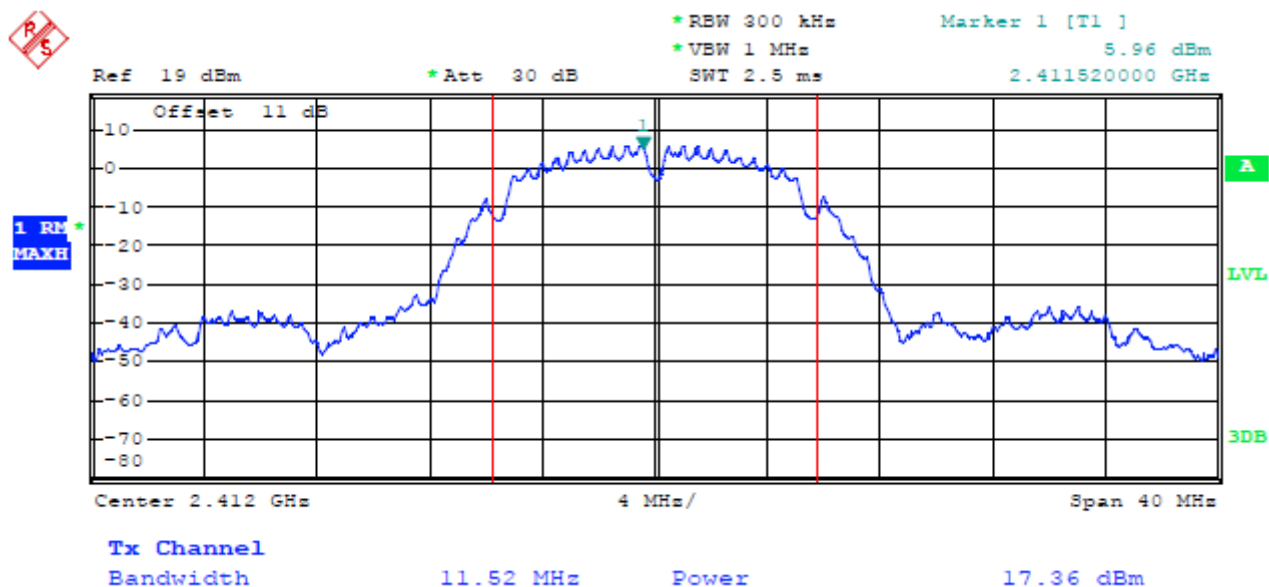
- Set the RBW = 1 MHz.
- Set the VBW  $\geq [3 \times \text{RBW}]$
- Set the span  $\geq [1.5 \times \text{DTS bandwidth}]$ .
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.

### 4.3 TEST SETUP

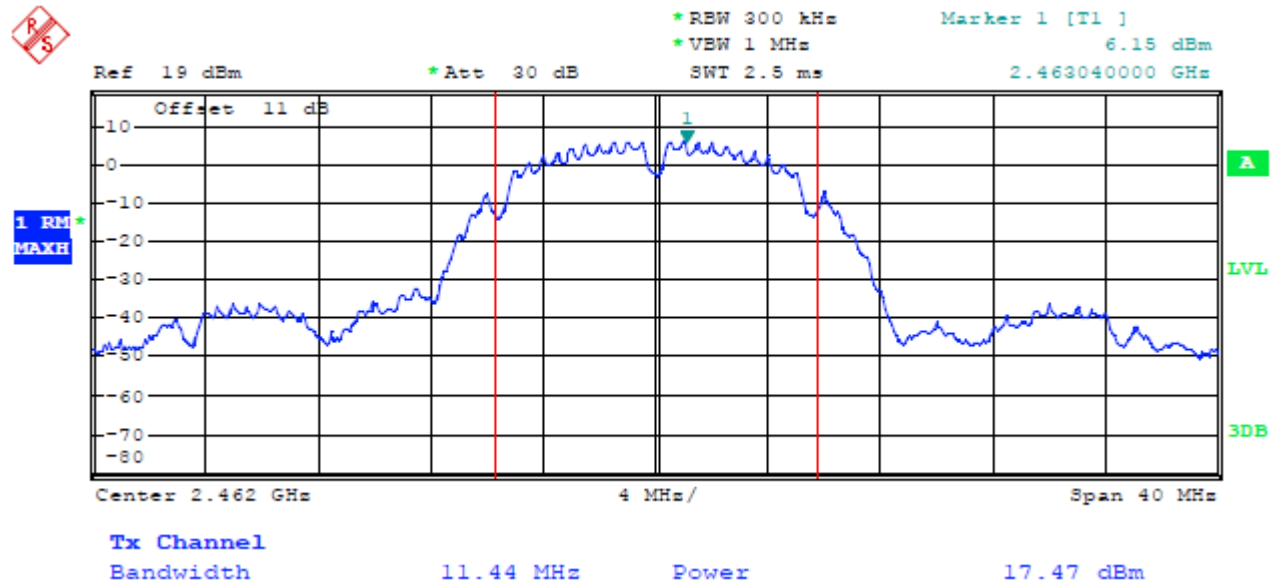


### 4.5 test results

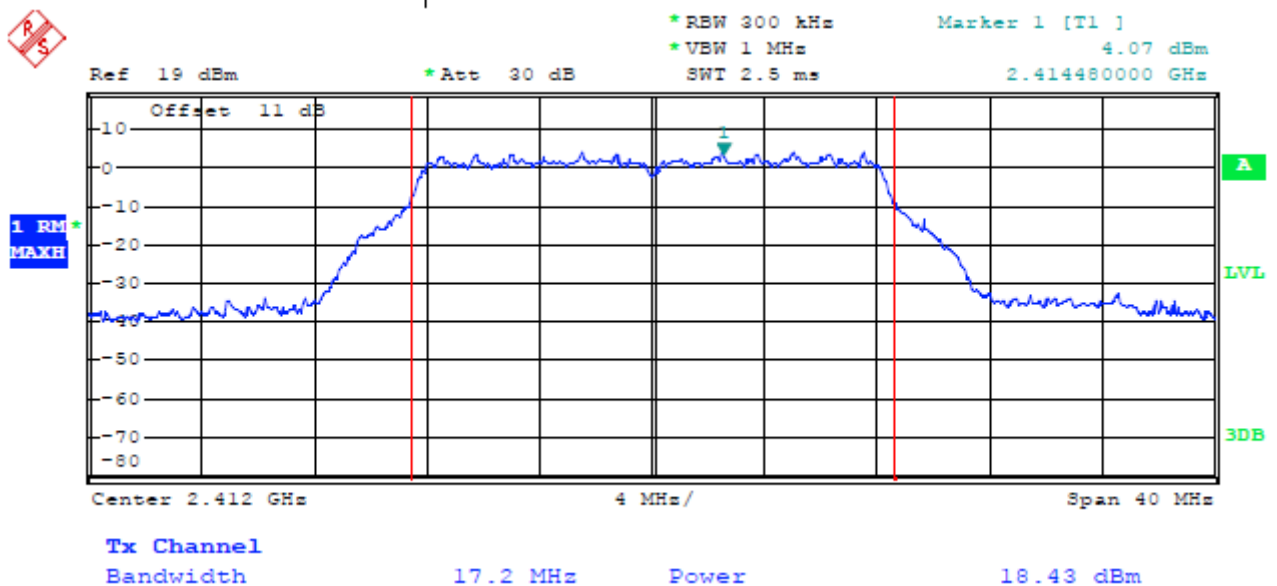
| TestMode   | Channel (MHz) | Result (dBm) | Limit (dBm) | Verdict |
|------------|---------------|--------------|-------------|---------|
| 802.11b    | 2412MHz       | 17.36        | 30          | Pass    |
| 802.11b    | 2437MHz       | 17.40        | 30          | Pass    |
| 802.11b    | 2462MHz       | 17.43        | 30          | Pass    |
| 802.11g    | 2412MHz       | 18.51        | 30          | Pass    |
| 802.11g    | 2437MHz       | 18.80        | 30          | Pass    |
| 802.11g    | 2462MHz       | 18.70        | 30          | Pass    |
| 802.11n 20 | 2412MHz       | 18.66        | 30          | Pass    |
| 802.11n 20 | 2437MHz       | 18.70        | 30          | Pass    |
| 802.11n 20 | 2462MHz       | 18.63        | 30          | Pass    |



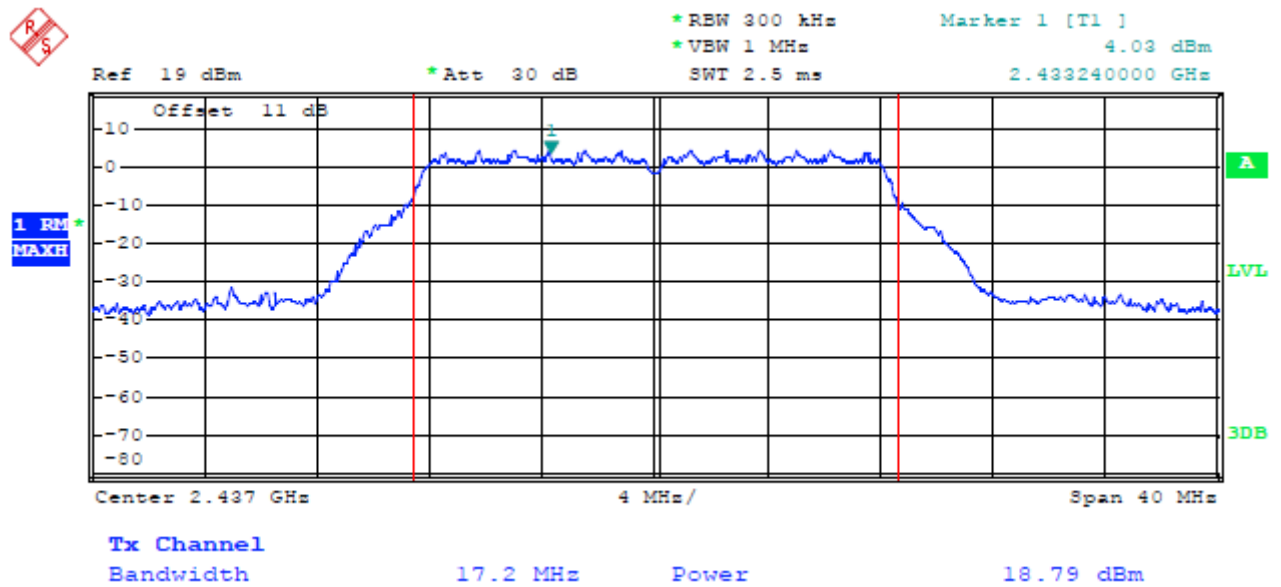
## 802.11B- 2462MHZ



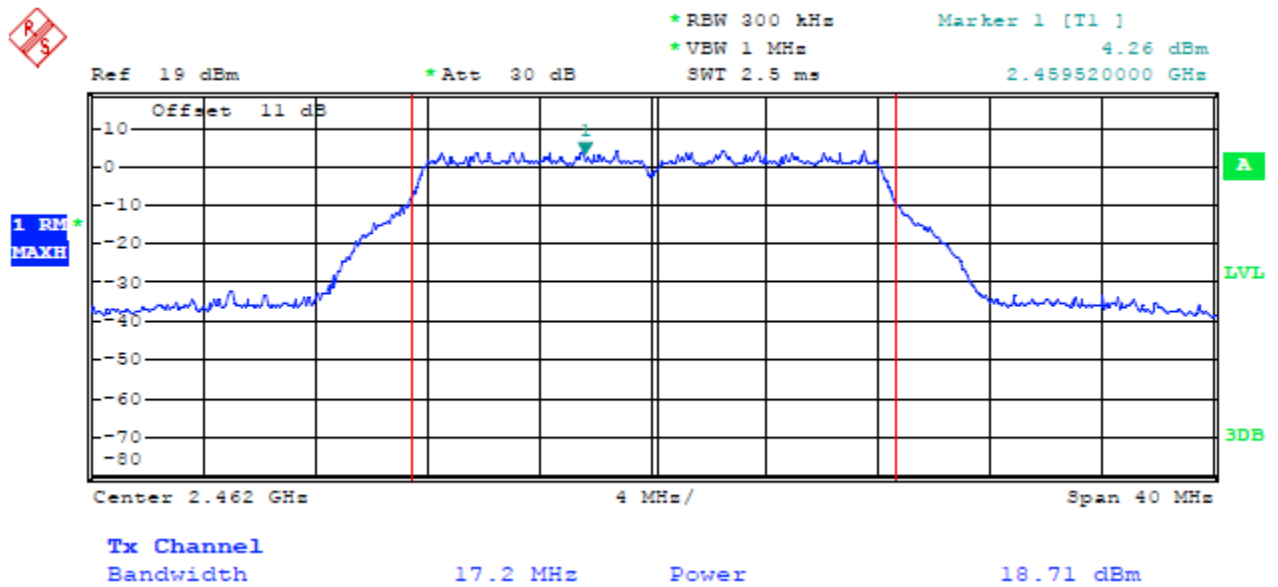
## 802.11G-2412MHZ



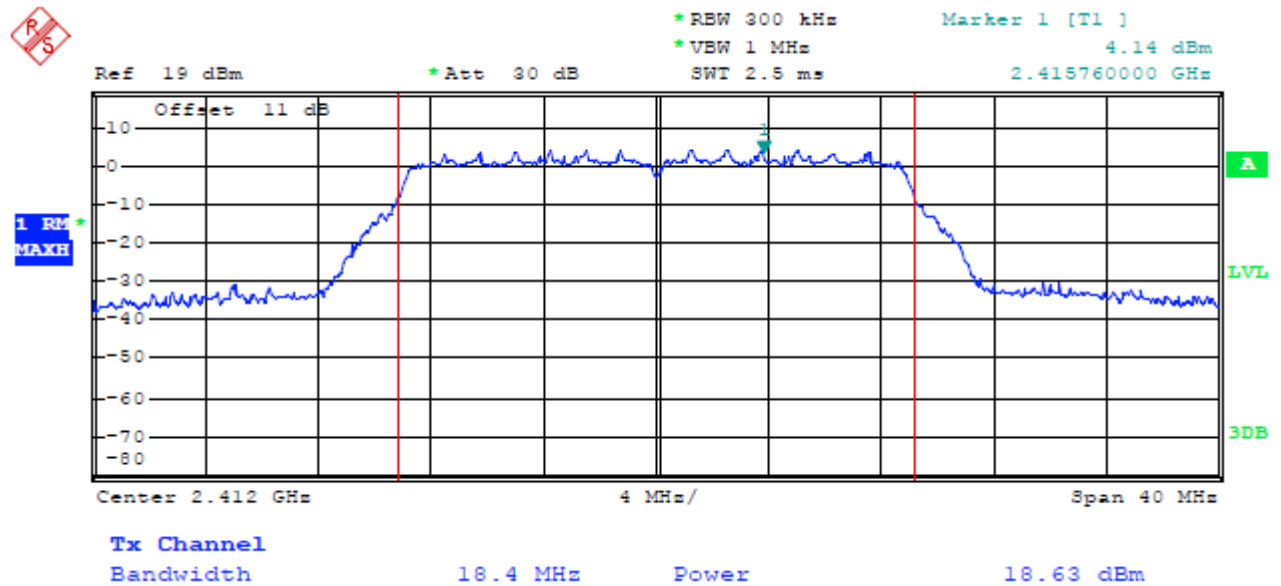
## 802.11G-2437MHZ



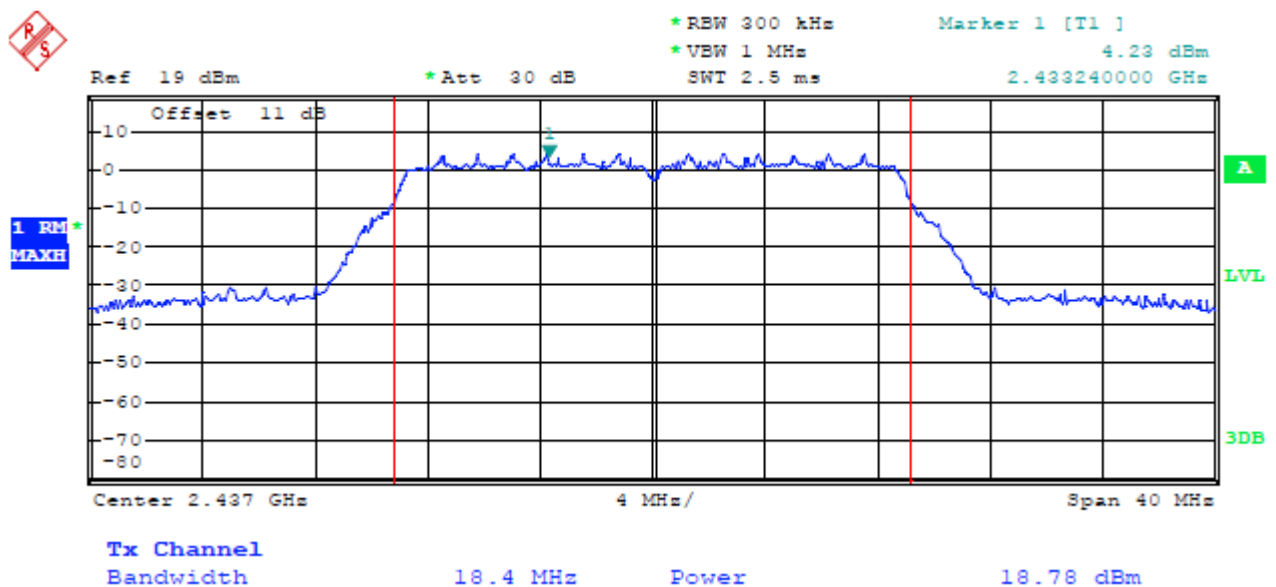
## 802.11G-2462MHZ



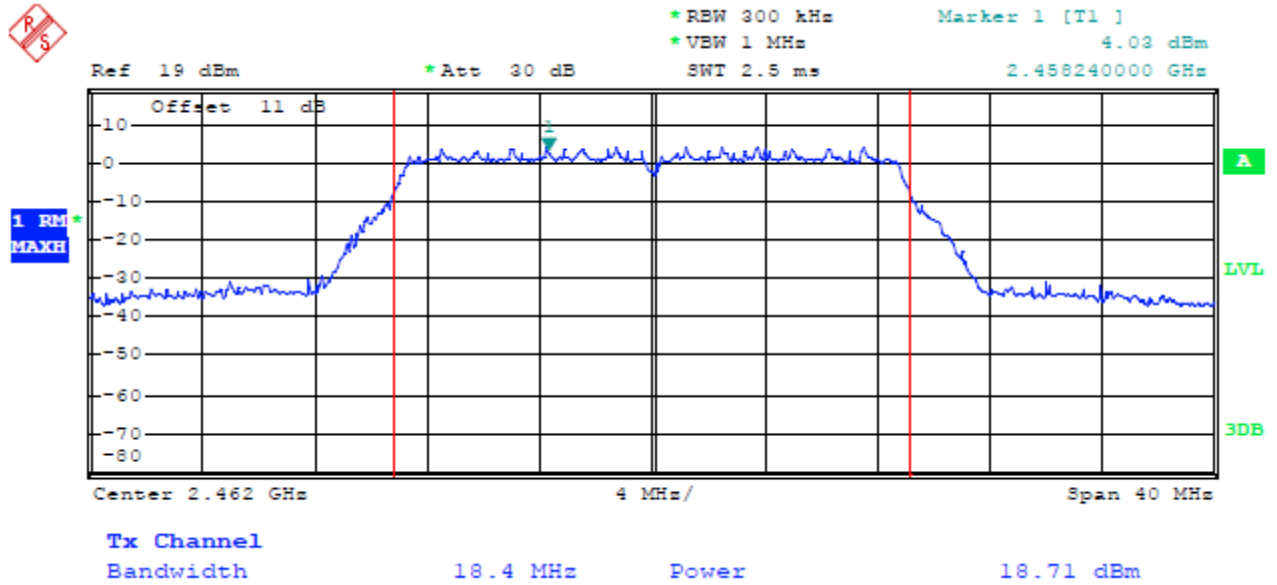
## 802.11N 20-2412MHZ



## 802.11N 20-2437MHZ



802.11N 20-2462MHZ



## 5. POWER SPECTRAL DENSITY

### 5.1 LIMIT

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

### 5.2 TEST PROCEDURE

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

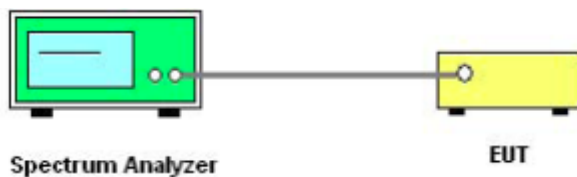
(2) Set the spectrum analyzer as follows:

|                  |                                                      |
|------------------|------------------------------------------------------|
| Center frequency | DTS Channel center frequency                         |
| RBW:             | $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ |
| VBW:             | $\geq 3\text{RBW}$                                   |
| Span             | 1.5 times the DTS bandwidth                          |
| Detector Mode:   | RMS                                                  |
| Sweep time:      | auto                                                 |
| Trace mode       | Max hold                                             |

(3) Allow the trace to stabilize, use the peak marker function to determine the maximum amplitude level within the RBW

(4) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

### 5.3 TEST SETUP

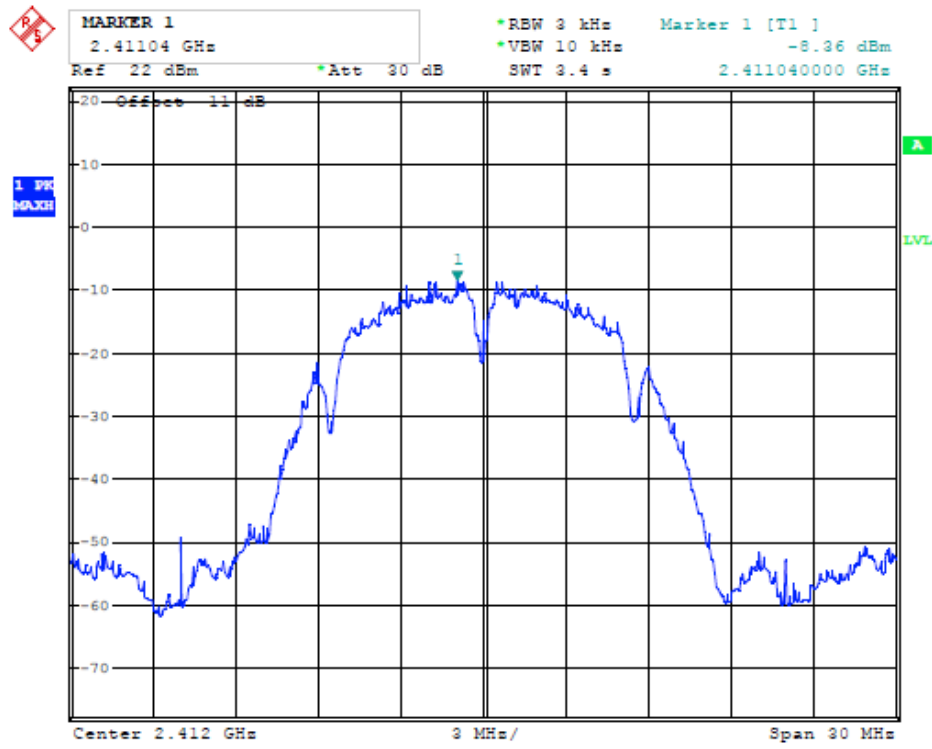


## 5.5 TEST RESULTS

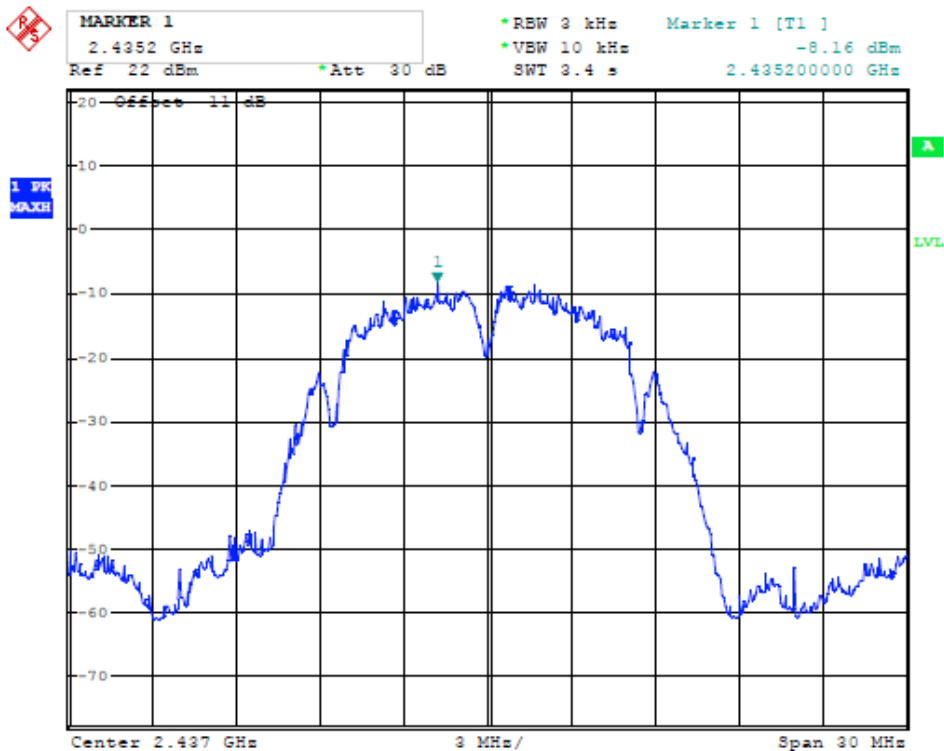
| TestMode   | Channel (MHz) | Result<br>(dBm/3KHz) | Limit<br>(dBm/3KHz) | Verdict |
|------------|---------------|----------------------|---------------------|---------|
| 802.11b    | 2412MHz       | -8.36                | 8                   | Pass    |
| 802.11b    | 2437MHz       | -8.16                | 8                   | Pass    |
| 802.11b    | 2462MHz       | -8.32                | 8                   | Pass    |
| 802.11g    | 2412MHz       | -10.37               | 8                   | Pass    |
| 802.11g    | 2437MHz       | -11.02               | 8                   | Pass    |
| 802.11g    | 2462MHz       | -10.17               | 8                   | Pass    |
| 802.11n 20 | 2412MHz       | -11.86               | 8                   | Pass    |
| 802.11n 20 | 2437MHz       | -10.85               | 8                   | Pass    |
| 802.11n 20 | 2462MHz       | -11.00               | 8                   | Pass    |

## 5.6 original test data

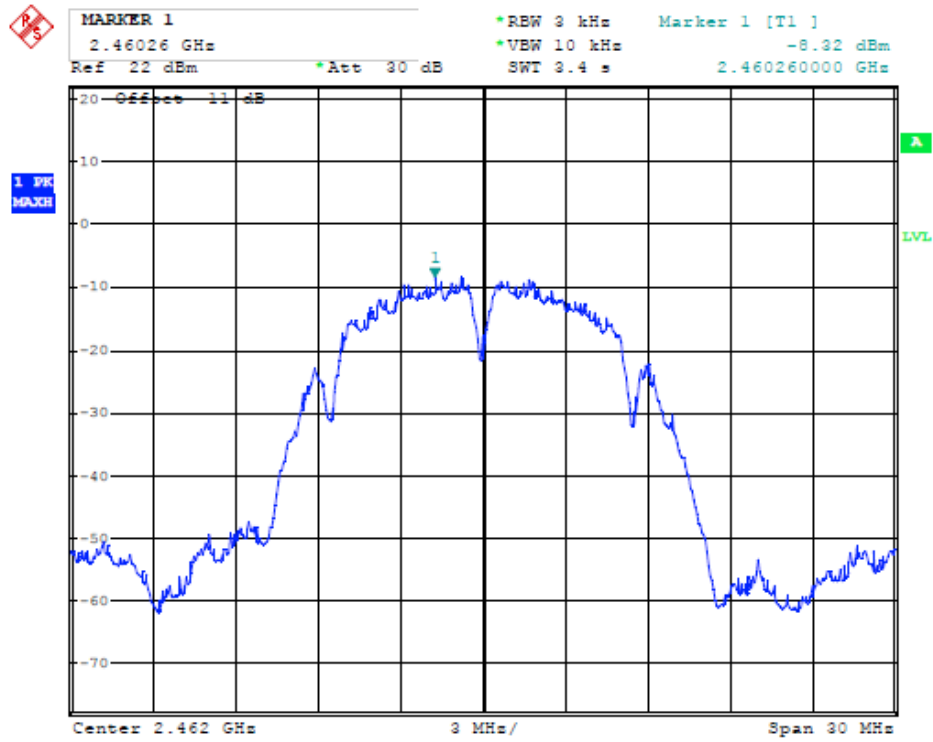
### 802.11b-2412MHz



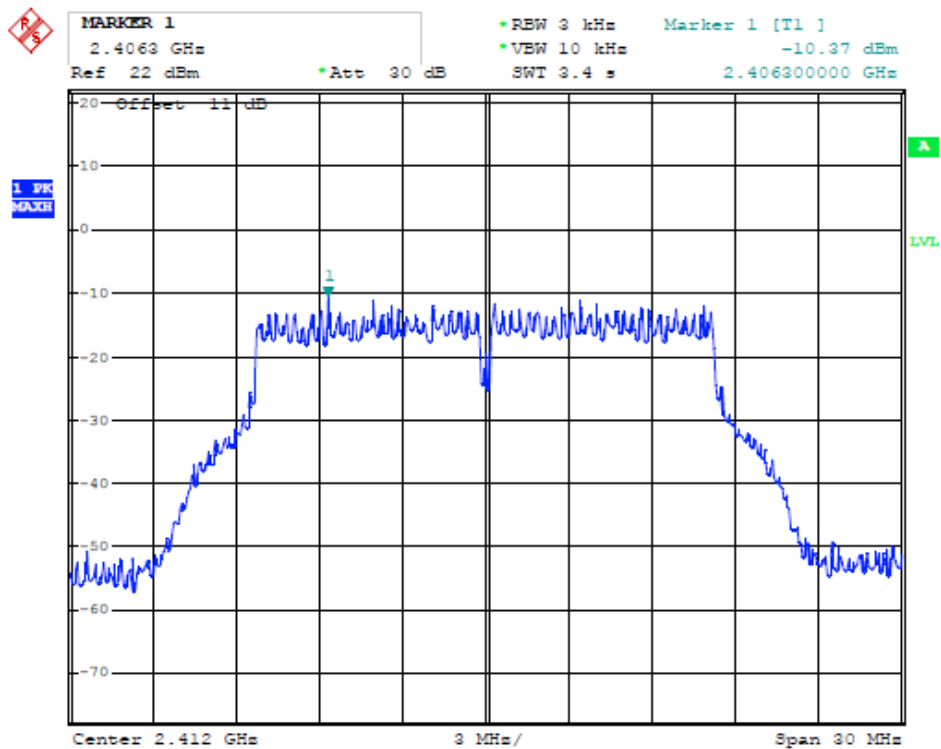
### 802.11b-2437MHz



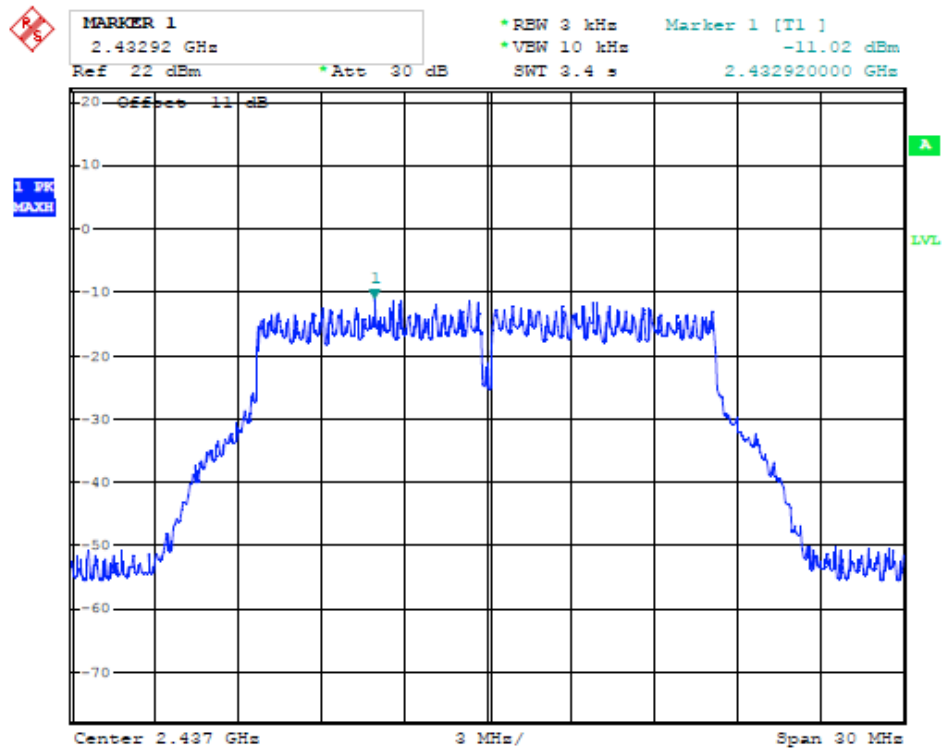
### 802.11b-2462MHz



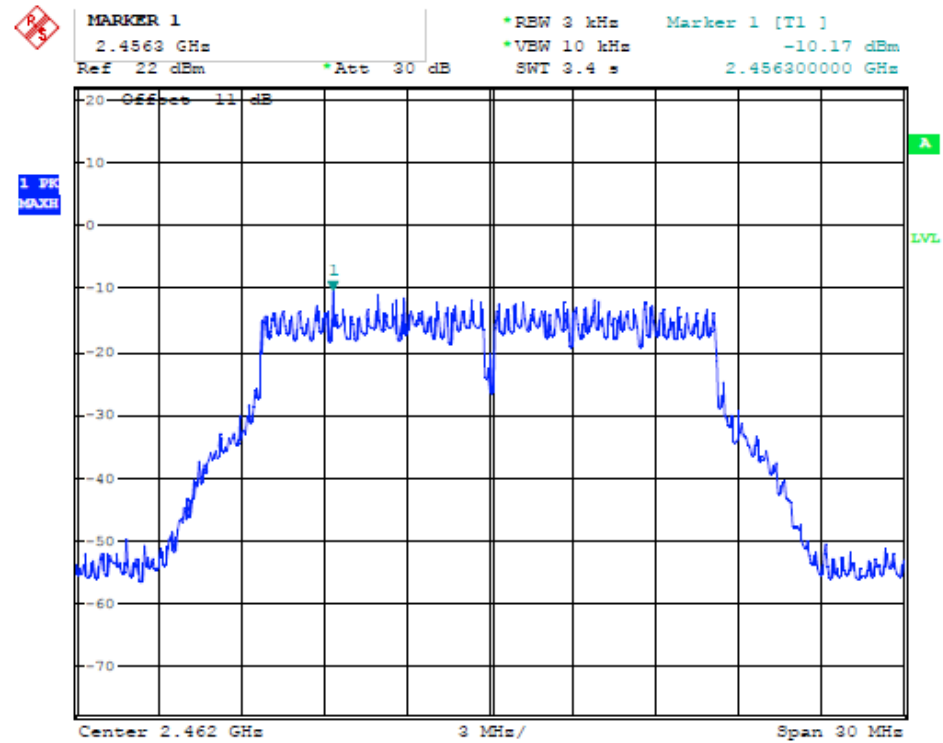
### 802.11g-2412MHz



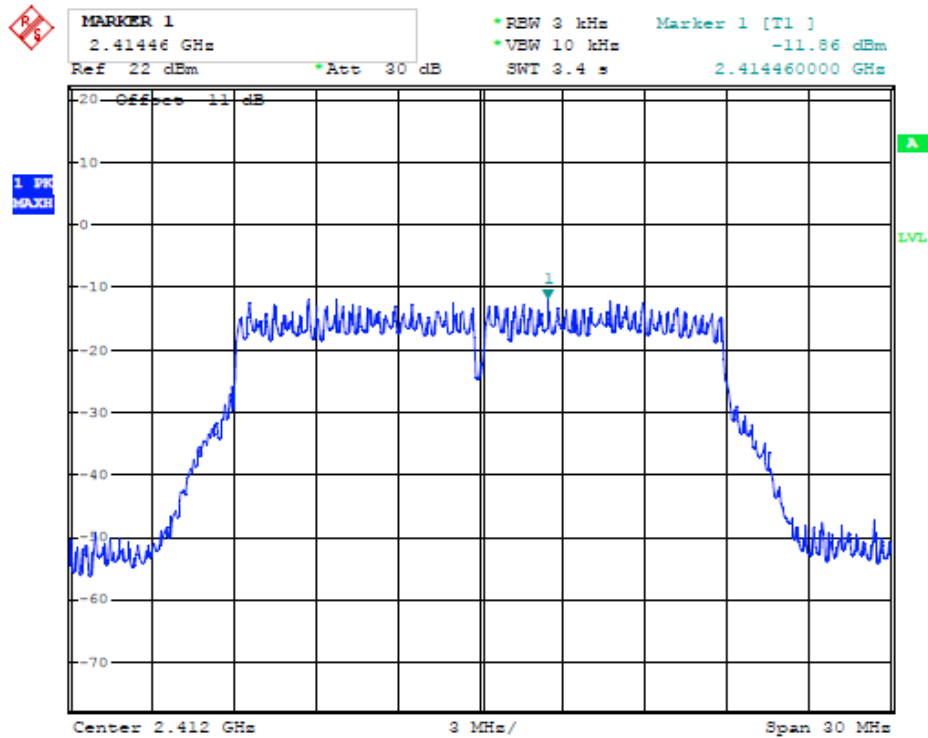
## 802.11g-2437MHz



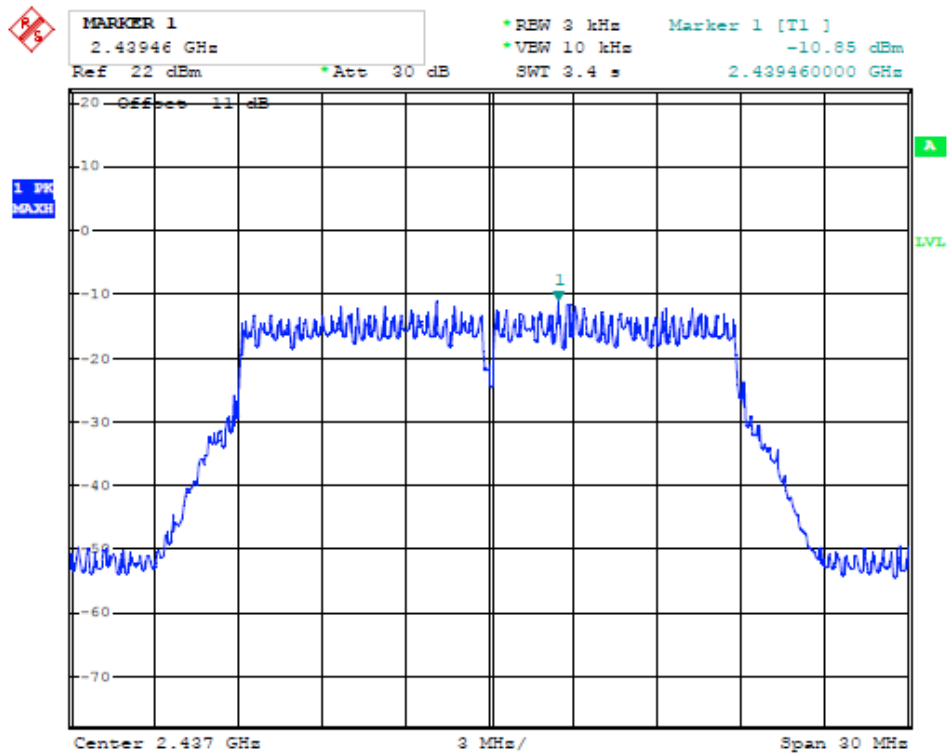
## 802.11g-2462MHz



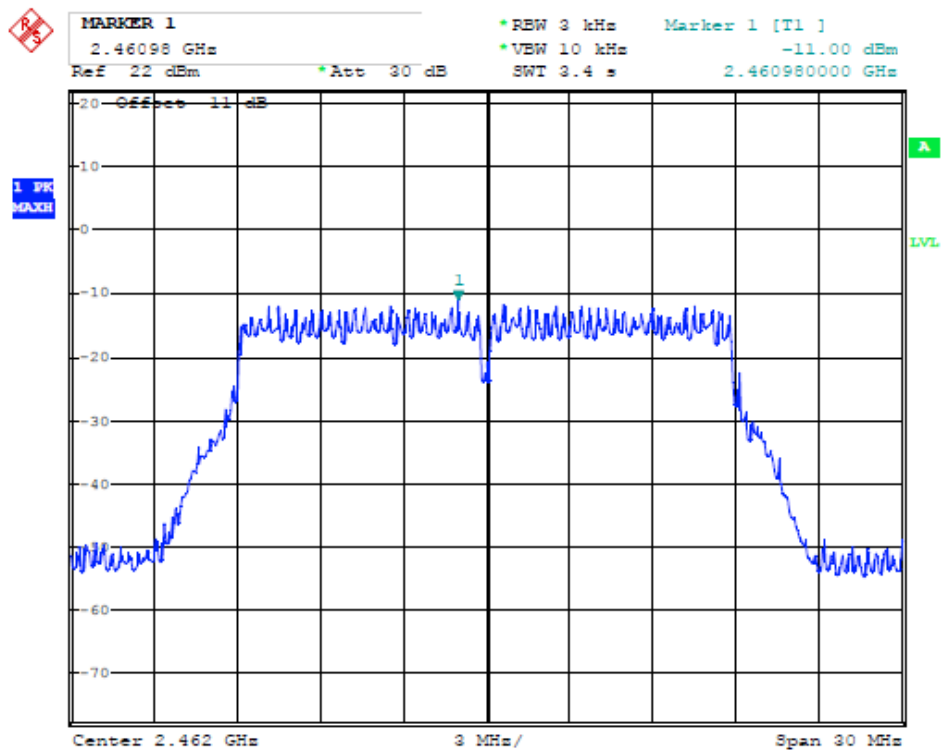
## 802.11n 20-2412MHz



## 802.11n 20-2437MHz



## 802.11n 20-2462MHz



## 6. Band edge and spurious(conducted)

### 6.1 LIMIT

In any 100kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30Db below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.

### 6.2 TEST PROCEDURE

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Establish a reference level by using the following procedure:

|                  |                              |
|------------------|------------------------------|
| Center frequency | DTS Channel center frequency |
| RBW:             | 100kHz                       |
| VBW:             | 300kHz                       |
| Span             | 1.5times the DTS bandwidth   |
| Detector Mode:   | Peak                         |
| Sweep time:      | auto                         |
| Trace mode       | Max hold                     |

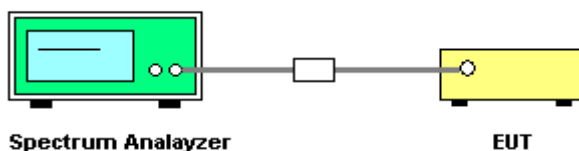
(3) Establish Allow the trace to stabilize, use the peak marker function to determine the maximum peak power level to establish the reference level.

(4) Set the spectrum analyzer as follows:

|                              |                                          |
|------------------------------|------------------------------------------|
| RBW:                         | 100kHz                                   |
| VBW:                         | 300kHz                                   |
| Span                         | Encompass frequency range to be measured |
| Number of measurement points | $\geq \text{span}/\text{RBW}$            |
| Detector Mode:               | Peak                                     |
| Sweep time:                  | auto                                     |
| Trace mode                   | Max hold                                 |

(5) Allow the trace to stabilize, use the peak marker function to determine the maximum amplitude of all unwanted emissions outside of the authorized frequency band

### 6.3 TEST SETUP

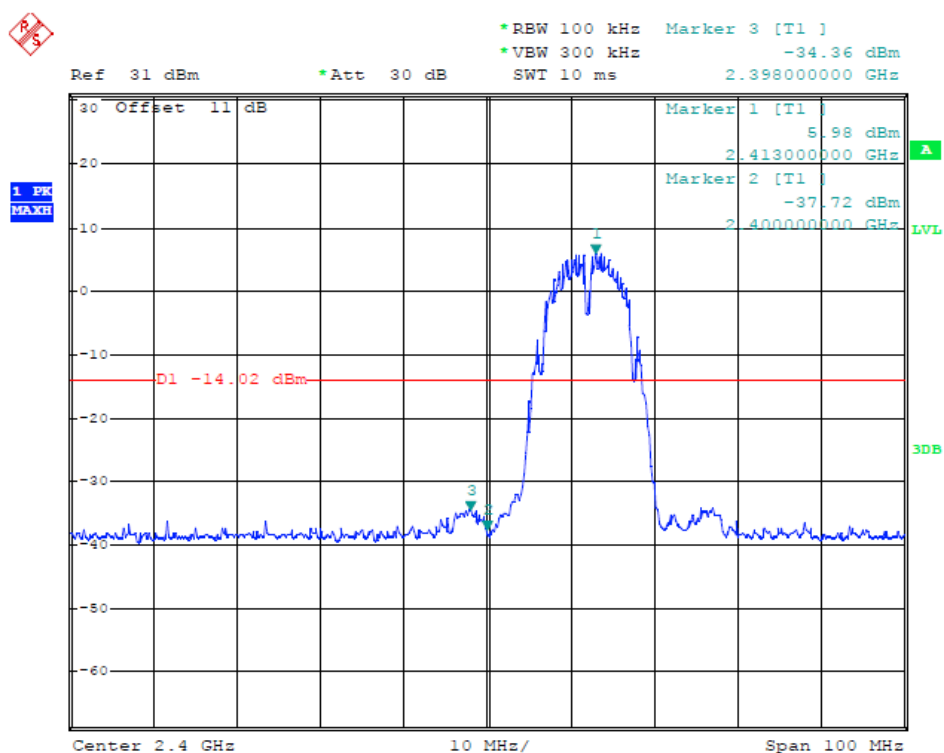


## 6.5 TEST RESULTS

| Eut set mode | CH or Frequency | Result |
|--------------|-----------------|--------|
| 802.11b      | CH1             | Pass   |
|              | CH13            | Pass   |
| 802.11g      | CH1             | Pass   |
|              | CH13            | Pass   |
| 802.11n 20   | CH1             | Pass   |
|              | CH13            | Pass   |

## 6.5 Original test data

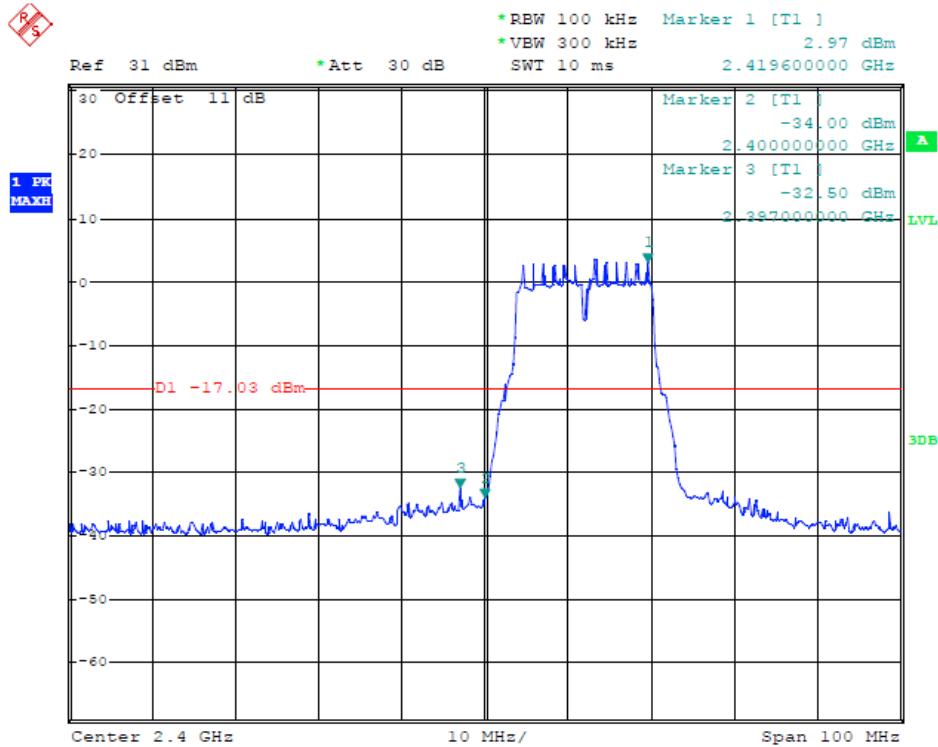
### 802.11b Low CH



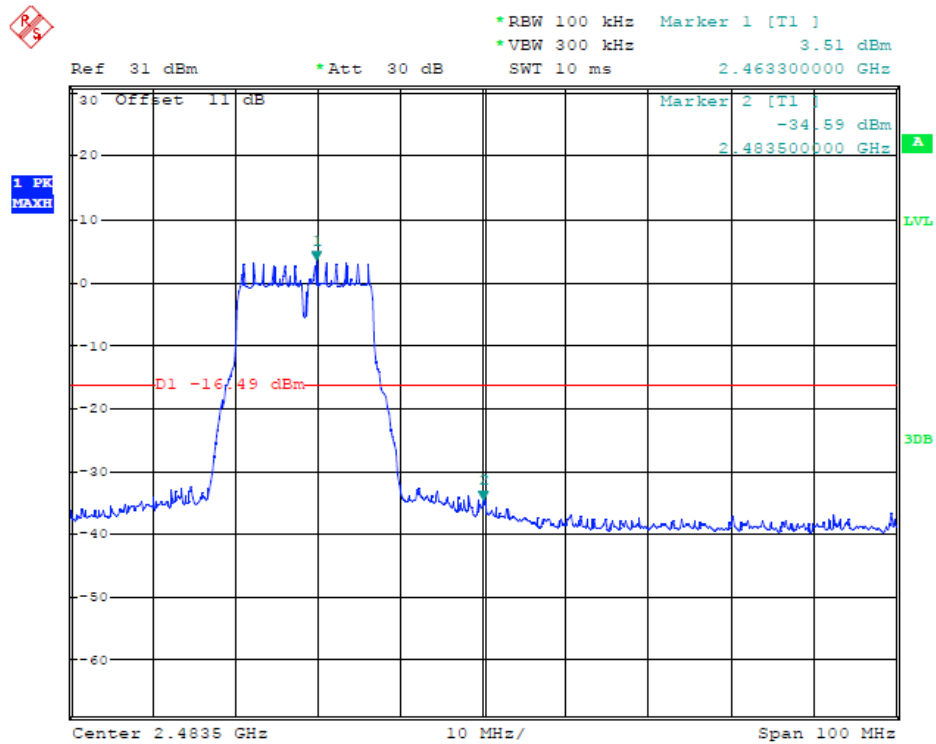
### 802.11b High CH



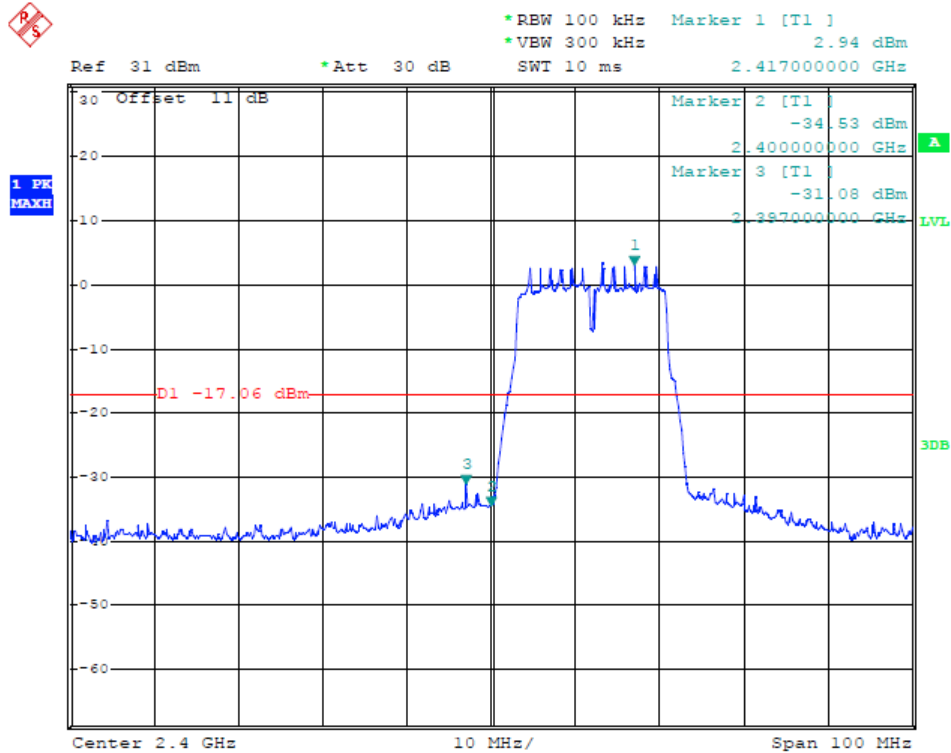
### 802.11g low CH



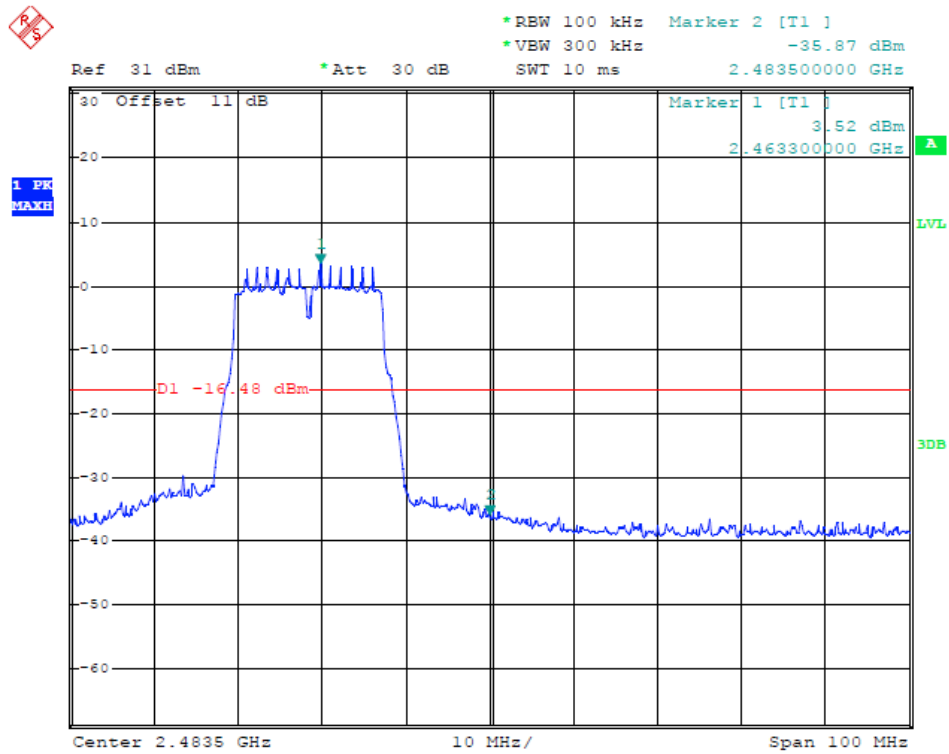
### 802.11g high CH



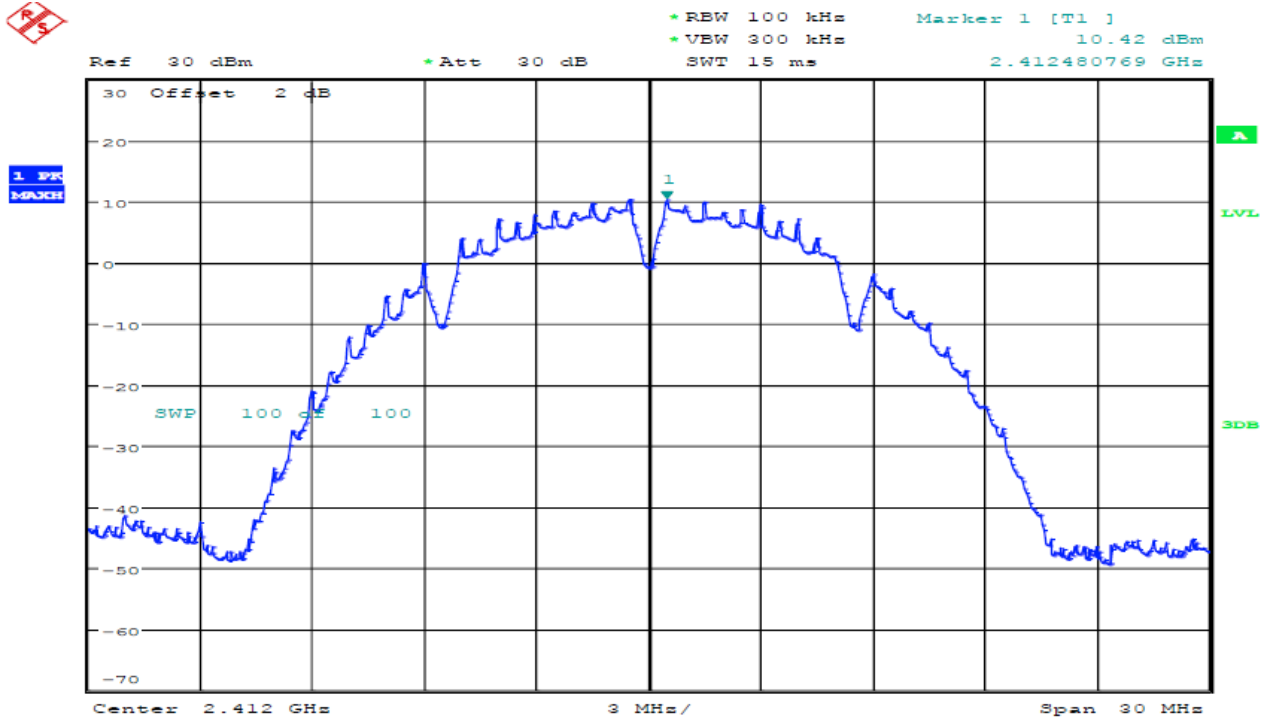
### 802.11n20 Low CH



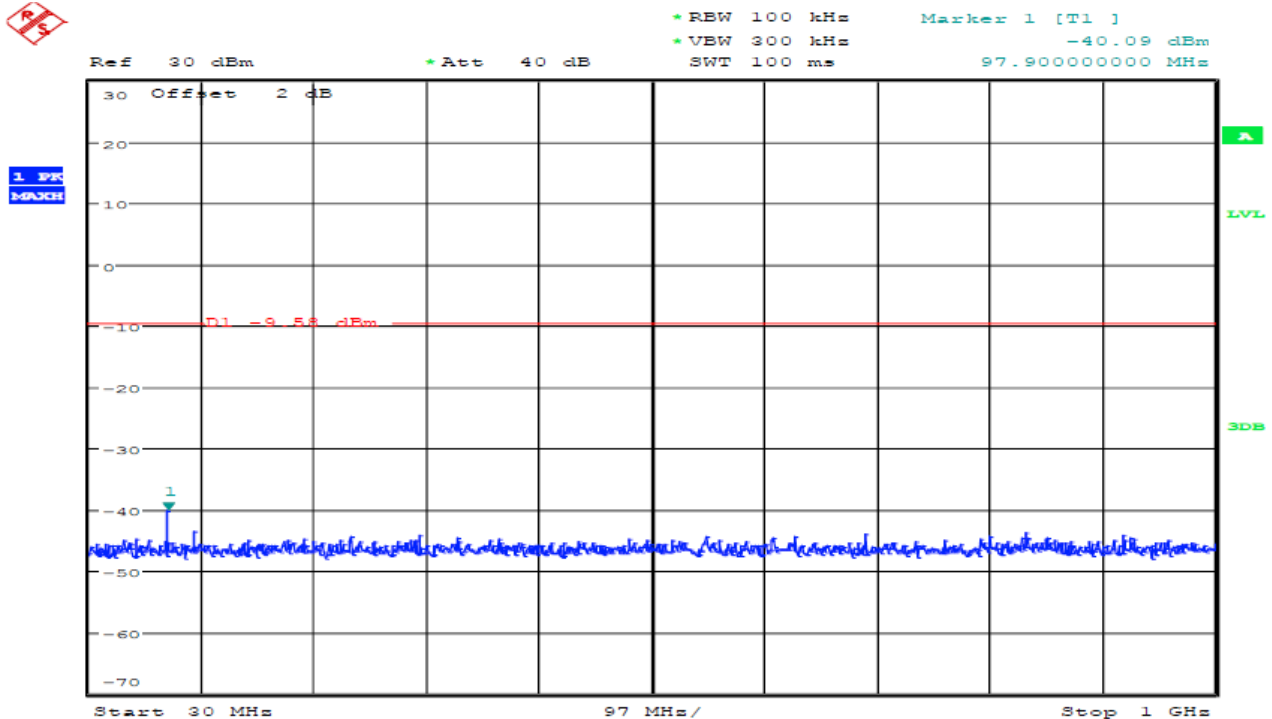
# 802.11n20 High CH



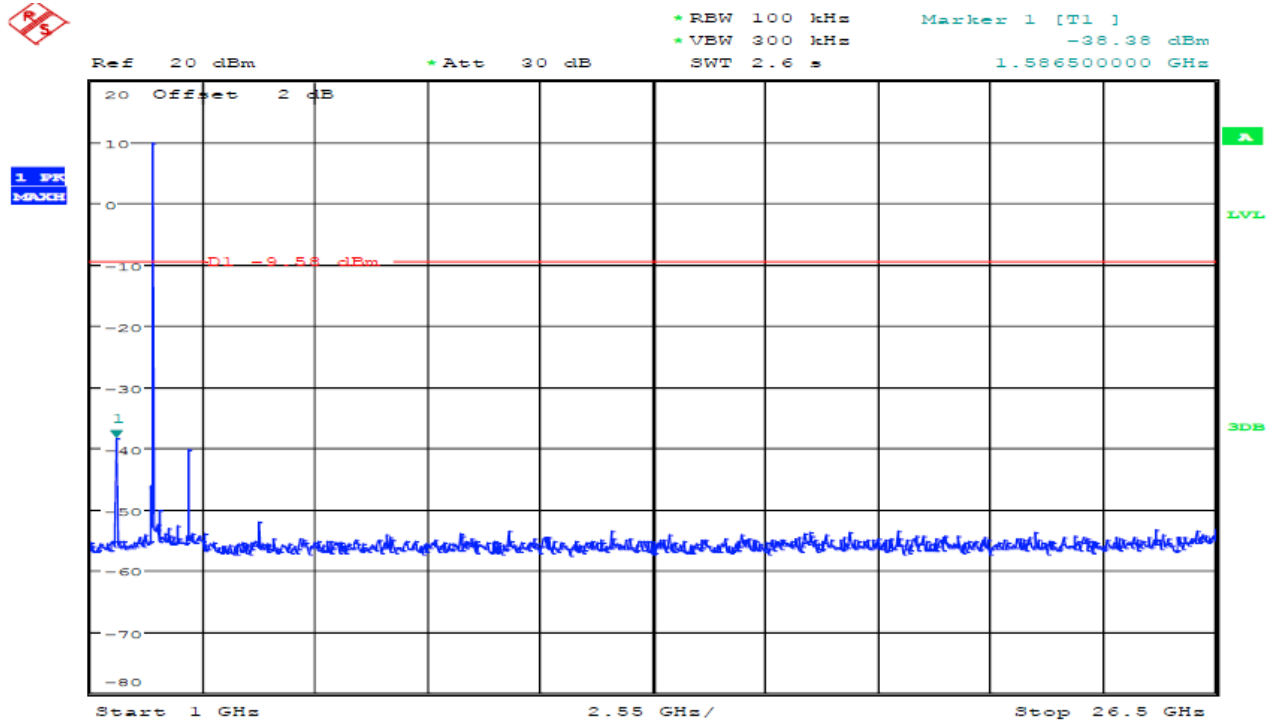
# Spurious emissions (802.11b Low CH Ref.)



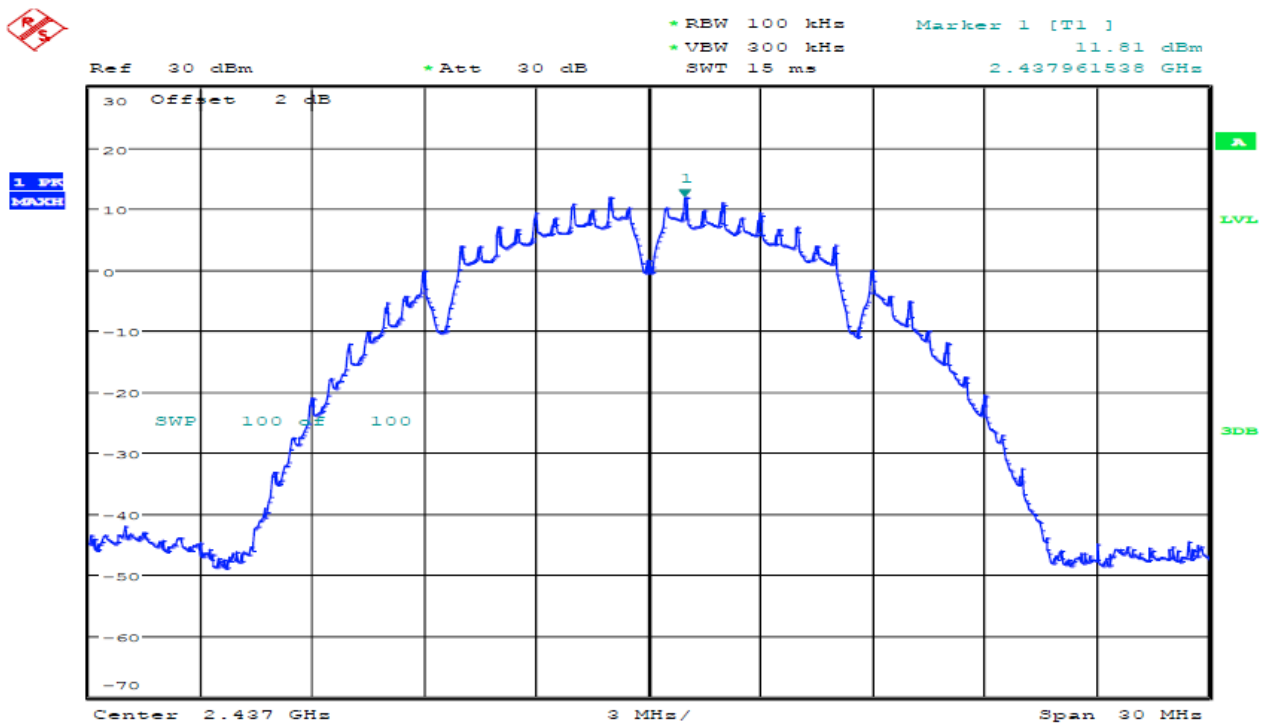
## 802.11b Low CH, 2412MHZ 30MHz-1000MHz



# 1GHZ-26.5GHZ

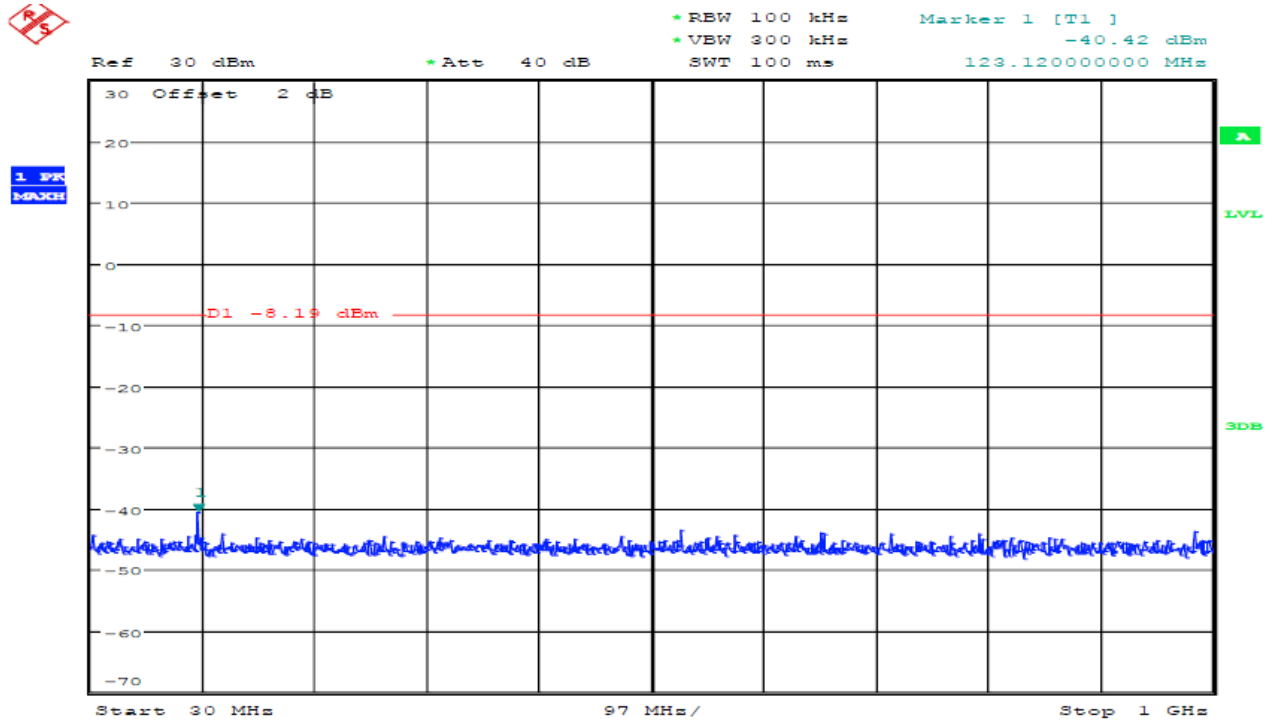


## 802.11b Middle CH, 2437MHz (802.11b Middle CH Ref.)

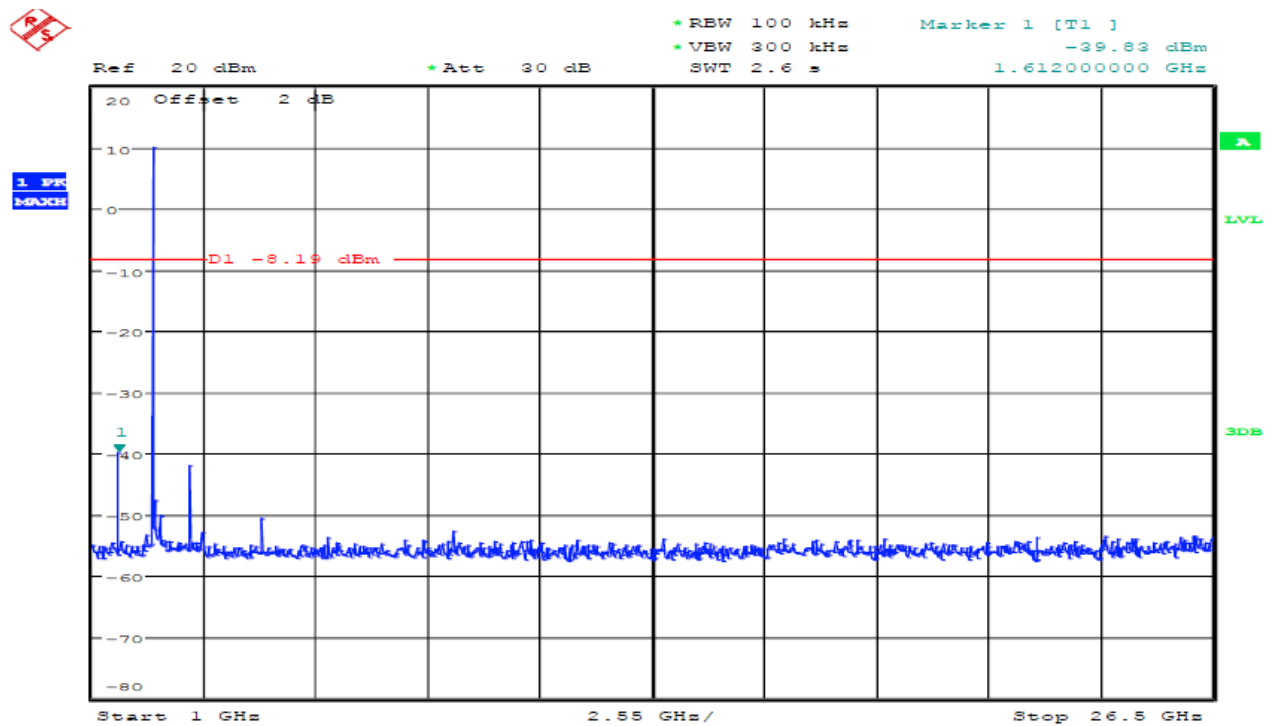


802.11b Middle CH, 2437MHz

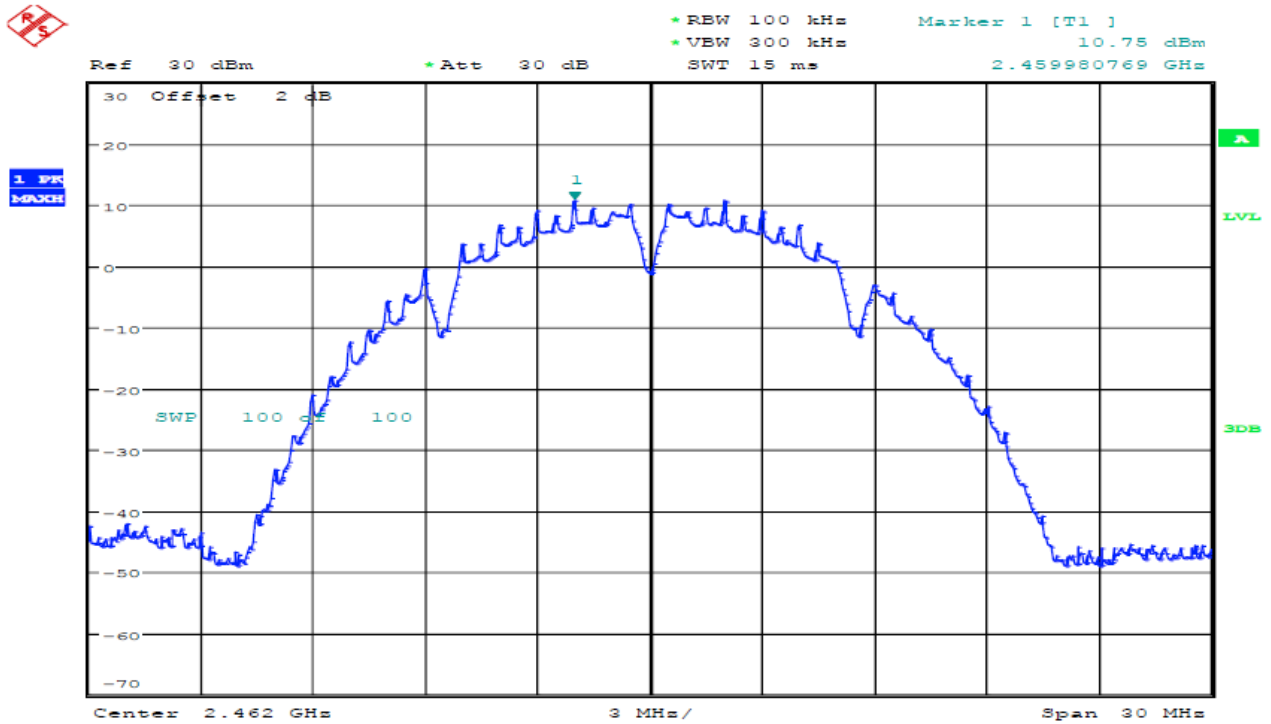
30MHZ-1000MHZ



1GHZ-26.5GHZ

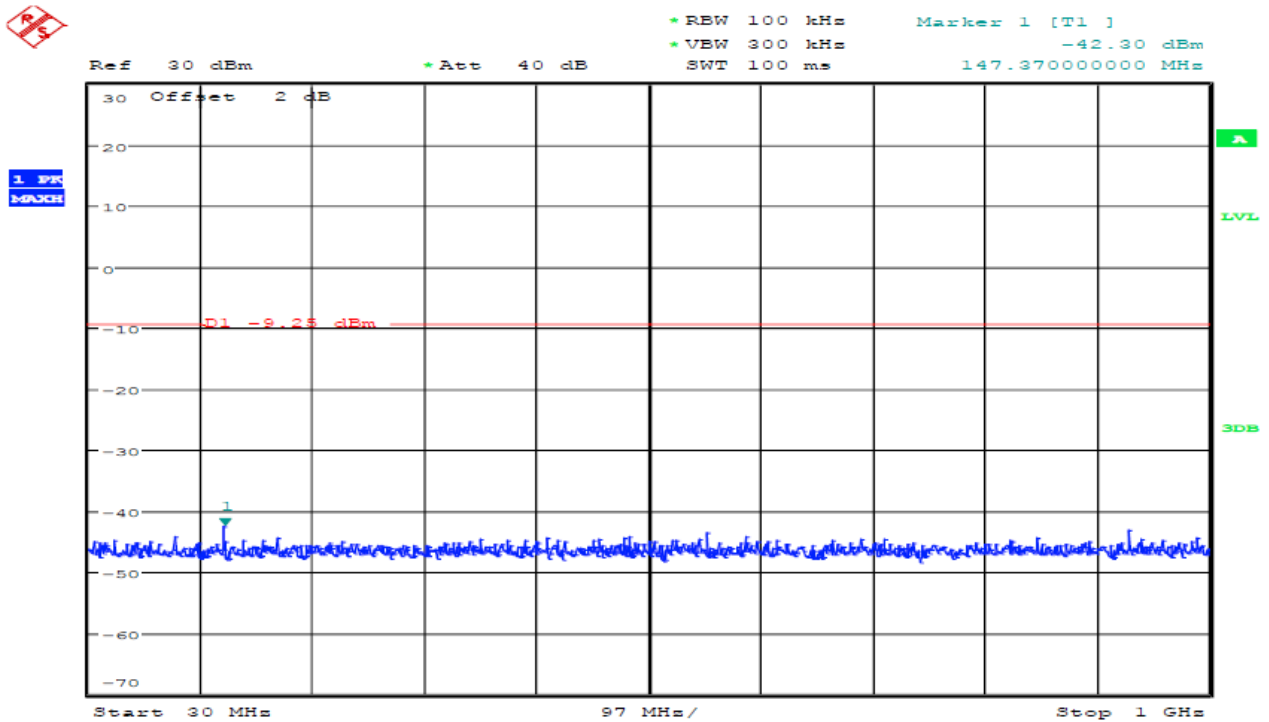


### 802.11b High CH, 2462MHz (802.11b,High CH Ref.)

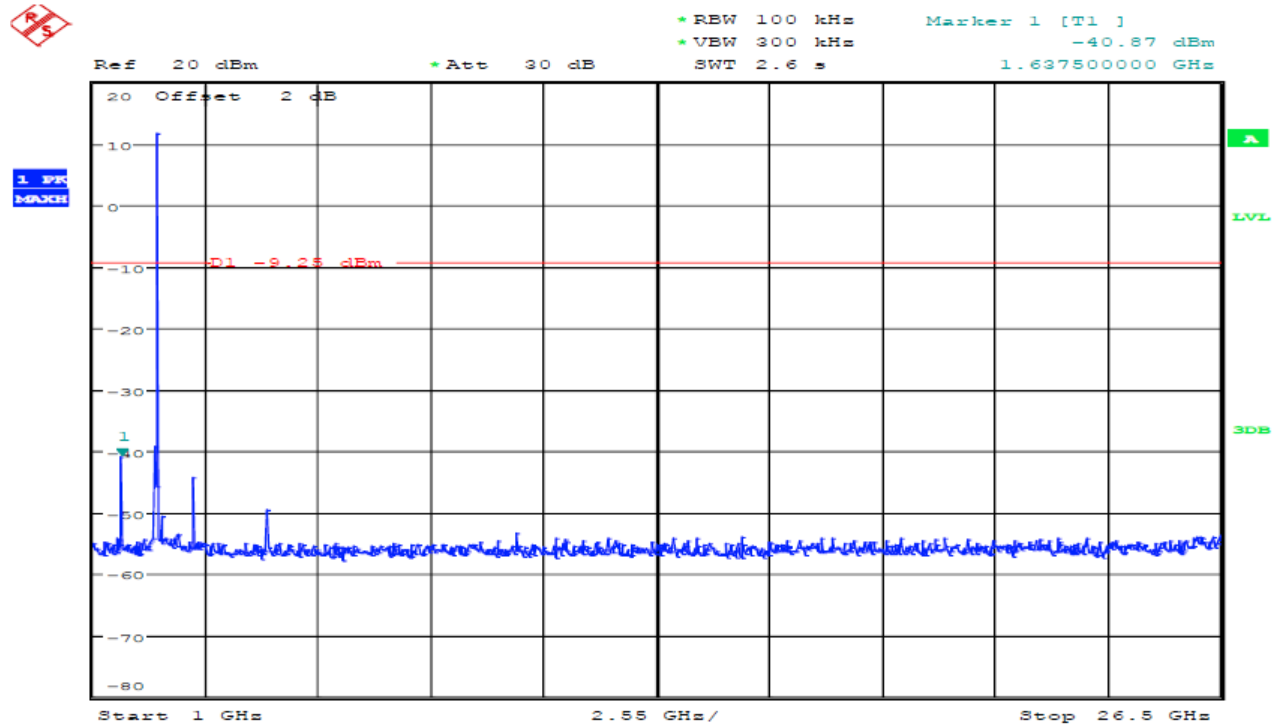


### 802.11b High CH, 2462MHz

### 30MHZ-1000MHZ

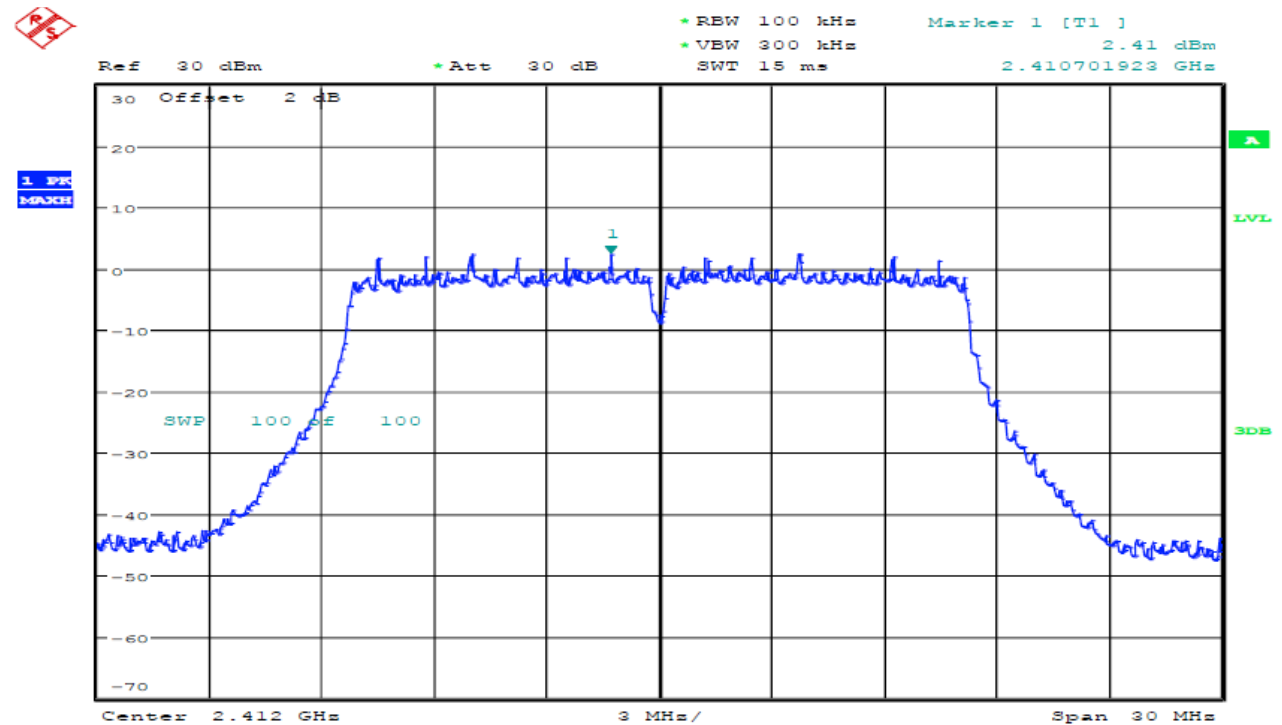


# 1GHZ-26.5GHZ

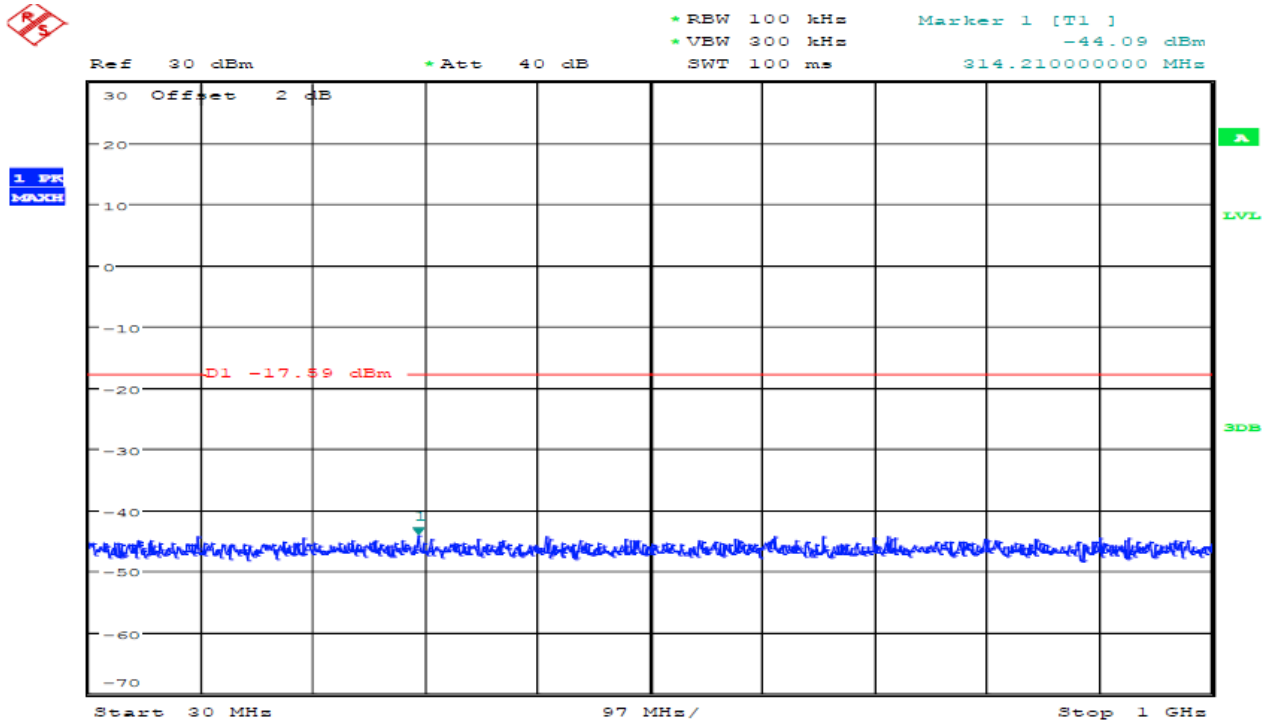


## 802.11g Low CH, 2412MHz

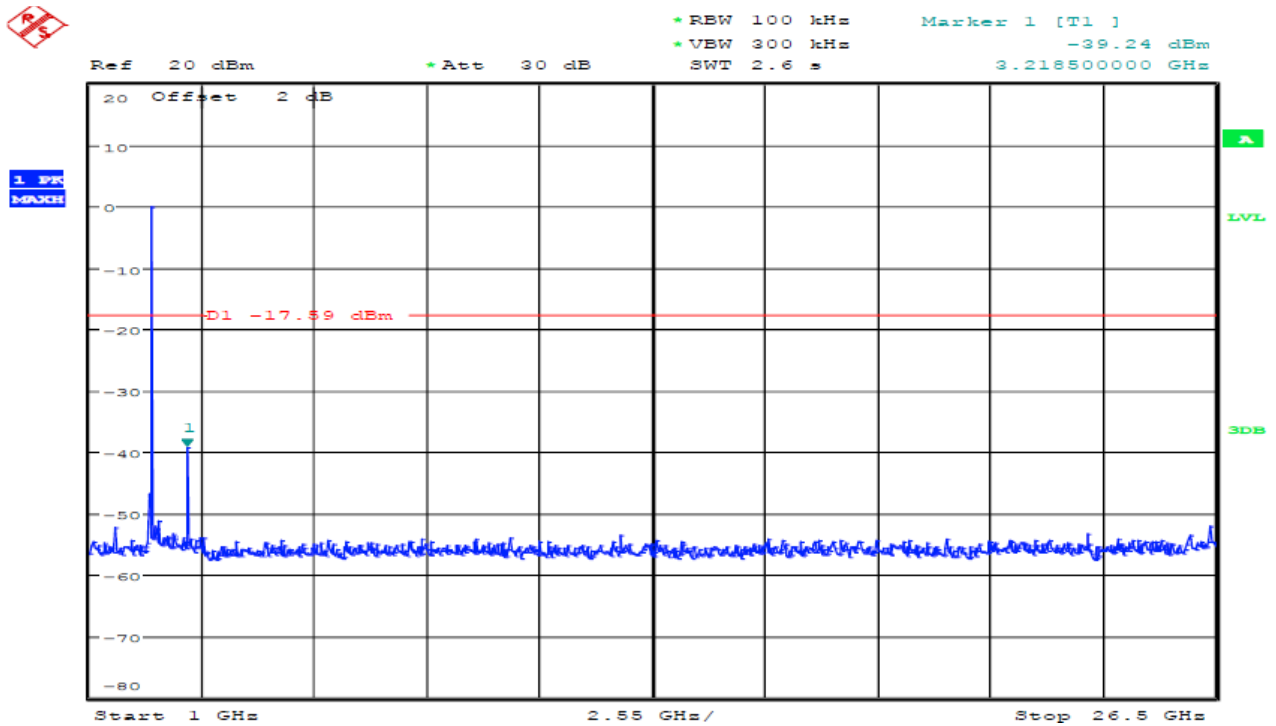
Ref.



### 30-1000MHz

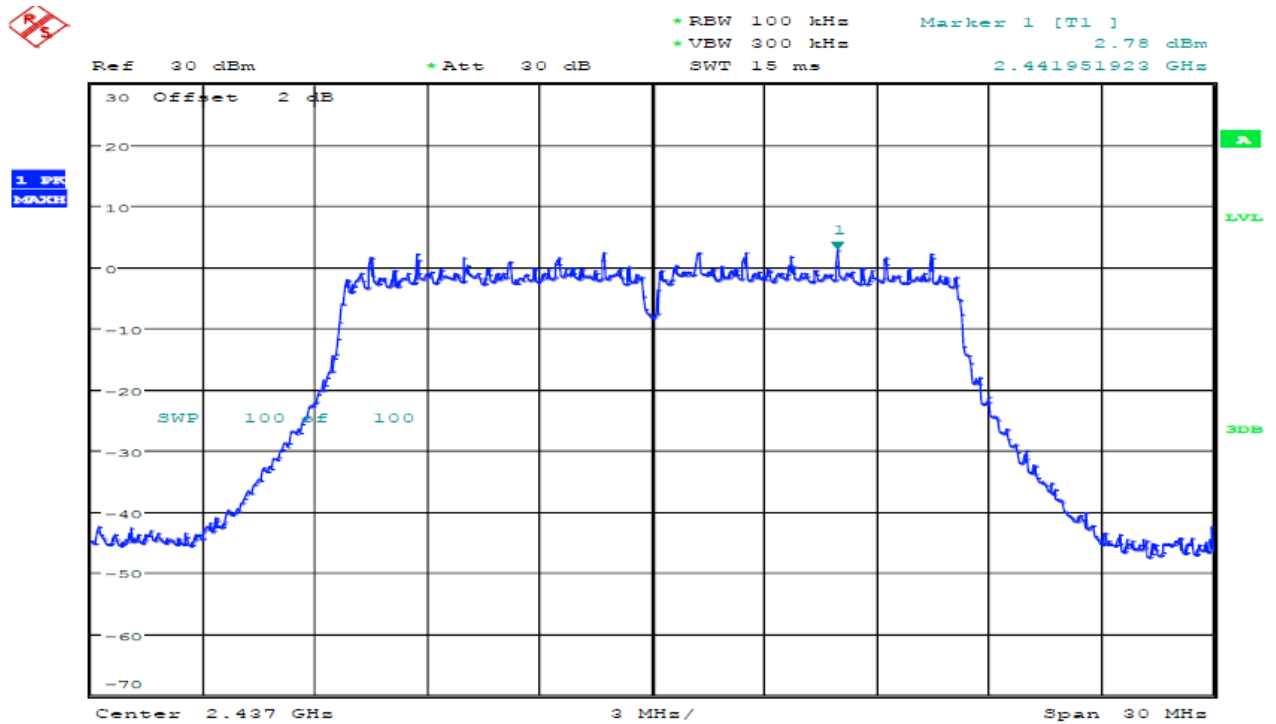


### 1GHZ-26.5GHZ

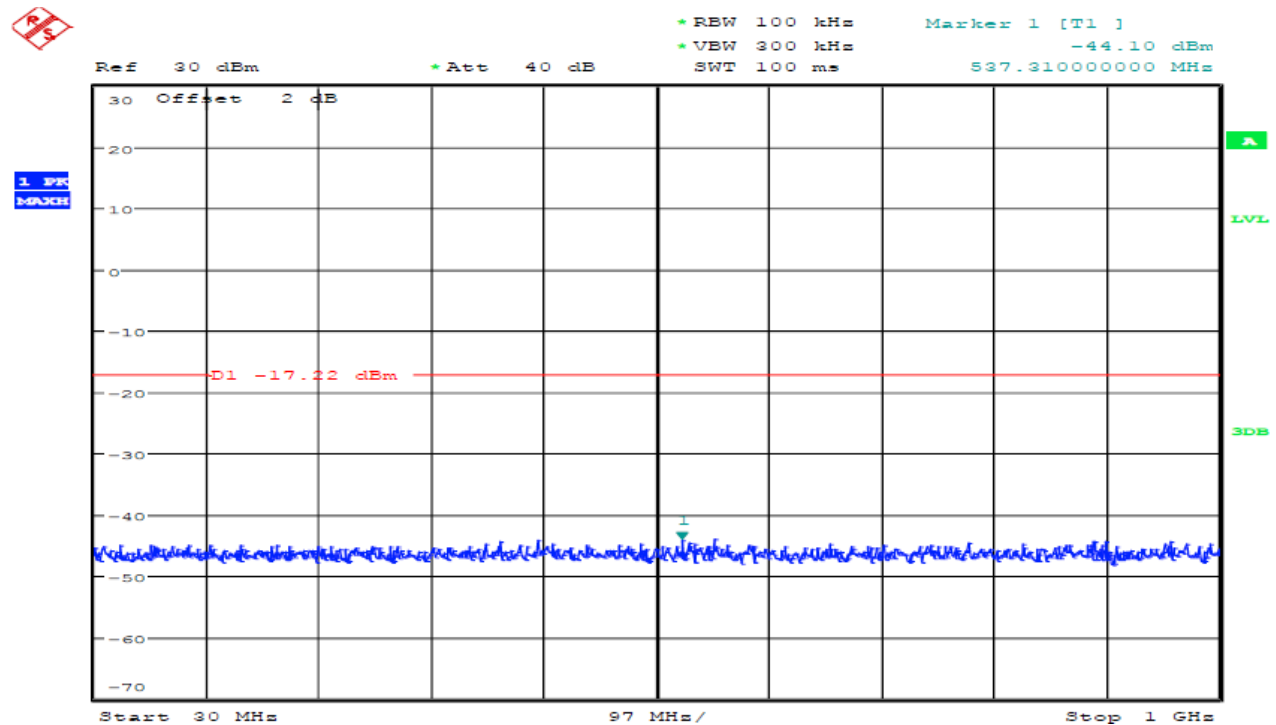


# 802.11g Middle CH, 2437MHz

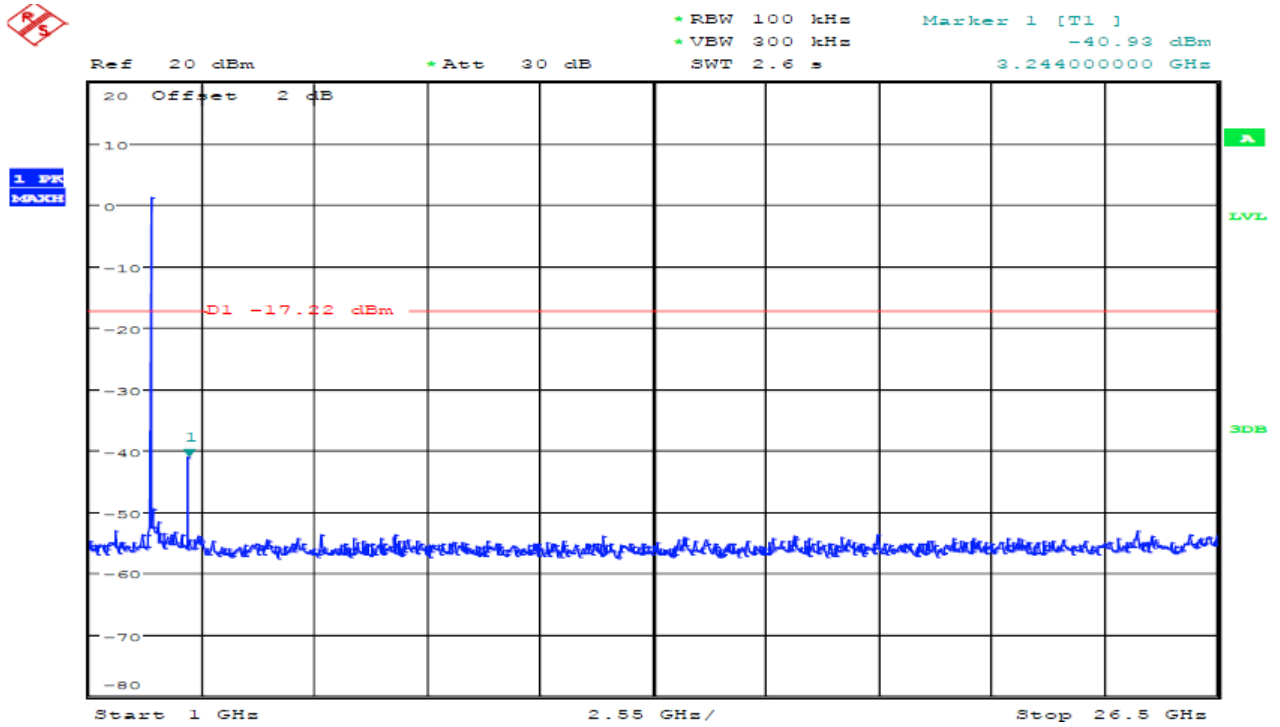
Ref.



# 30MHZ-1000MHZ

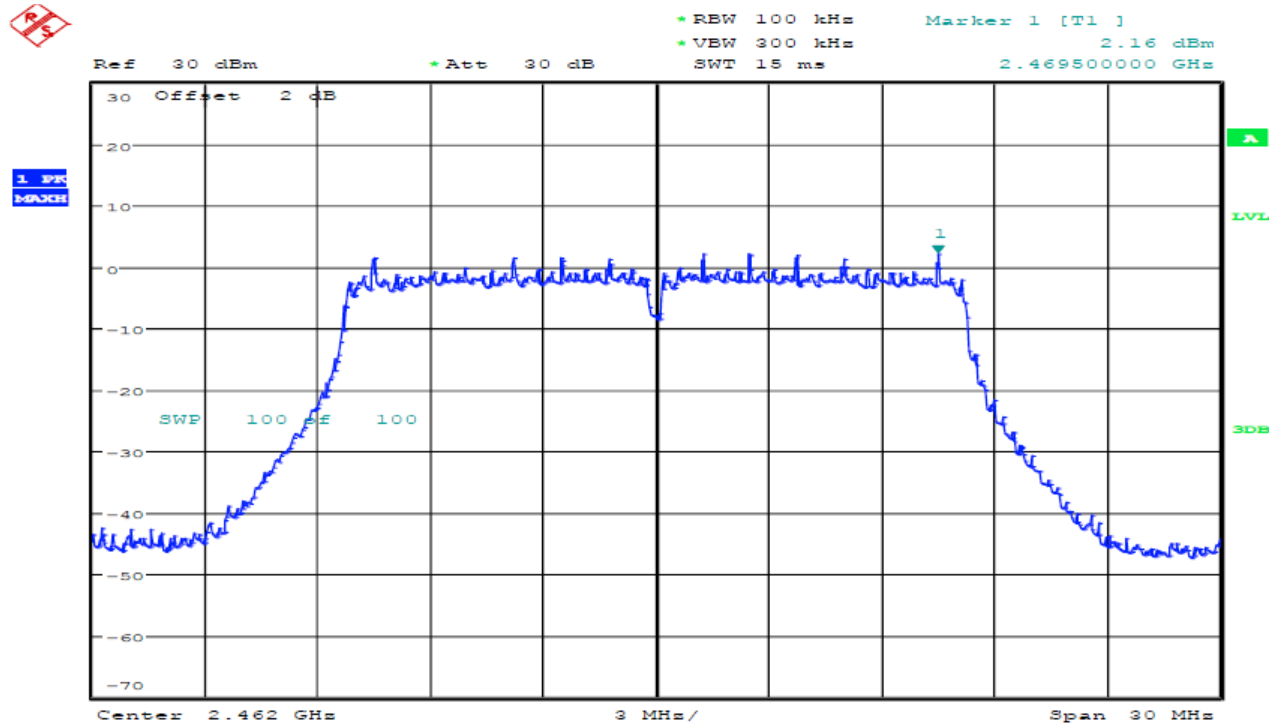


### 1GHZ-26.5GHZ



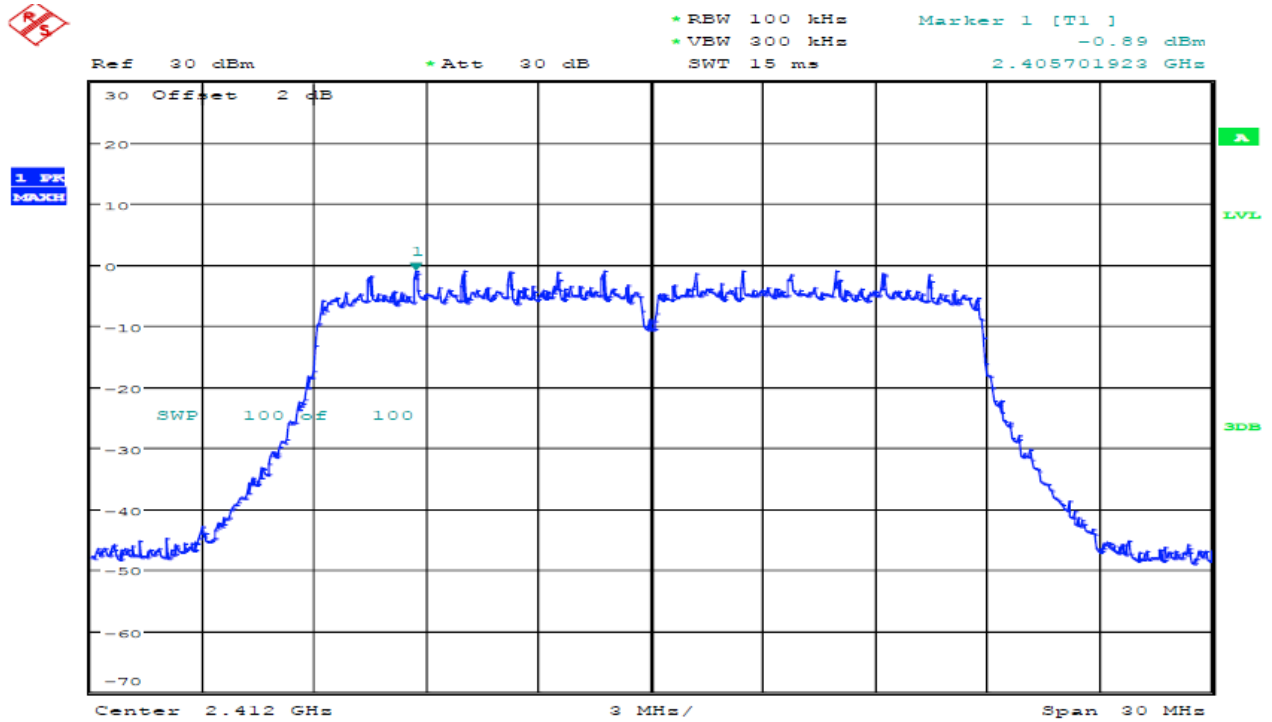
### 802.11g High CH, 2462MHz

Ref.

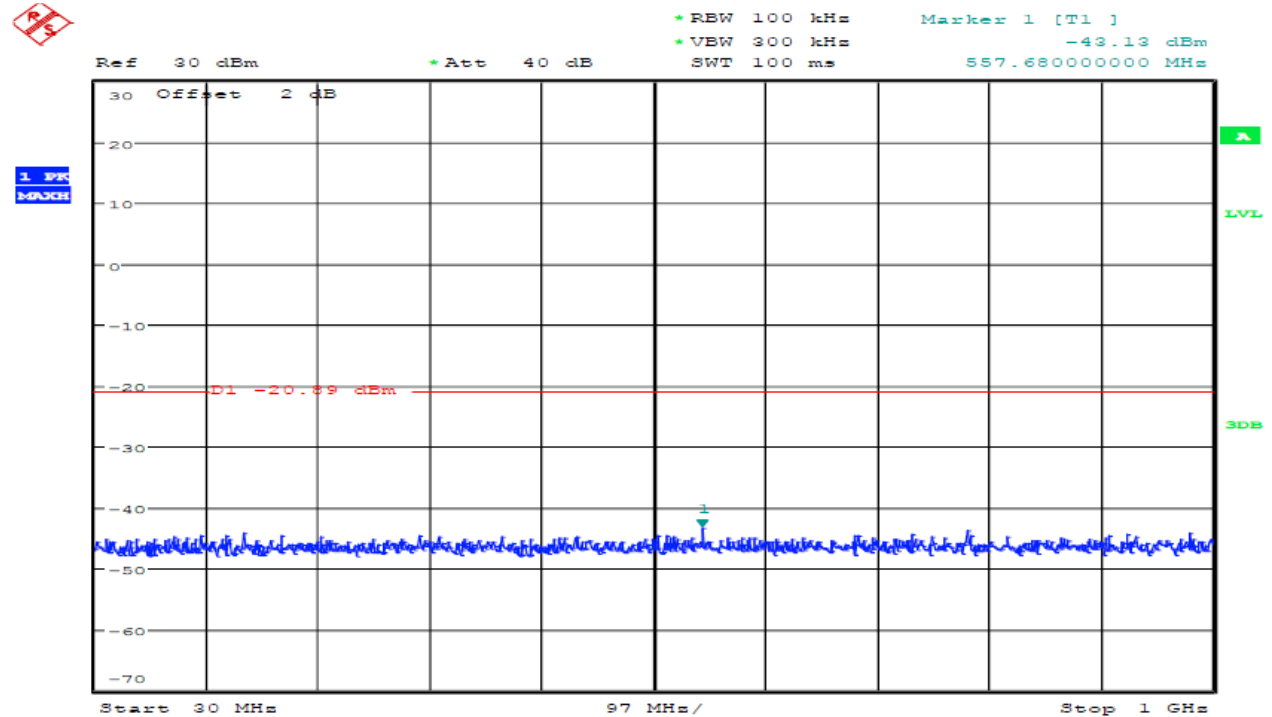


# 802.11N 20 Low CH, 2412MHZ

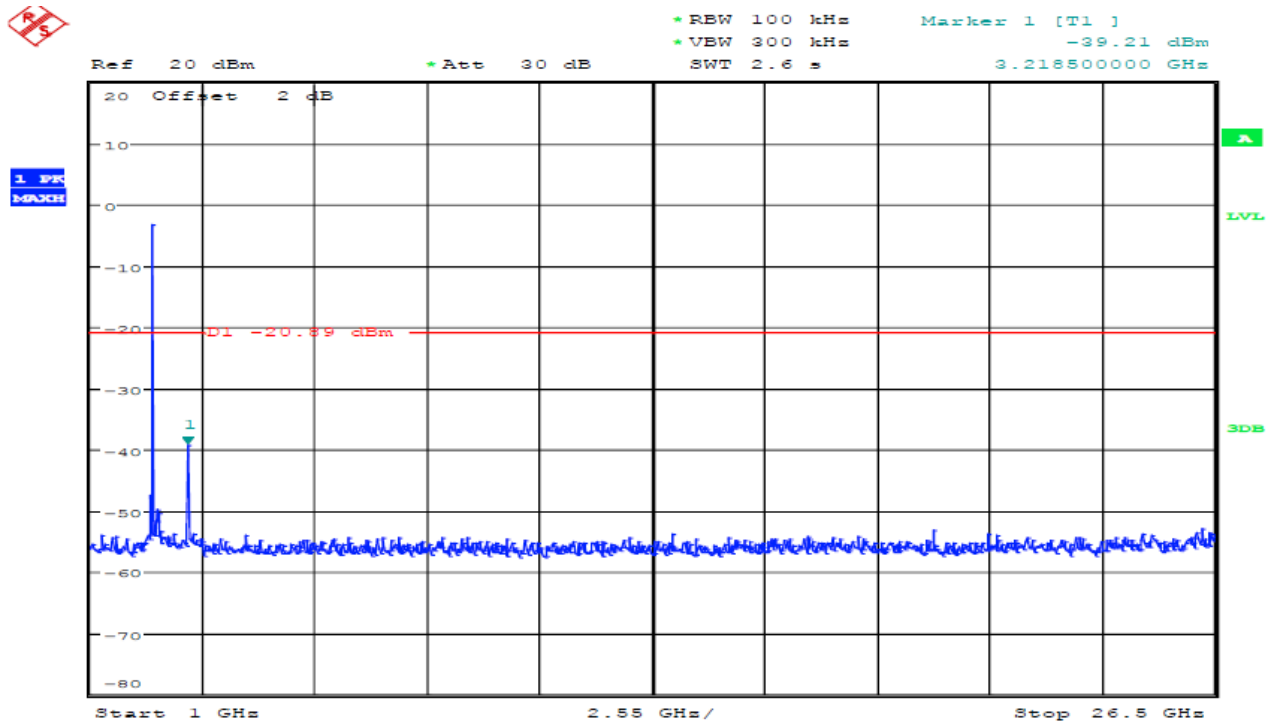
Ref.



# 30MHz-1000MHz

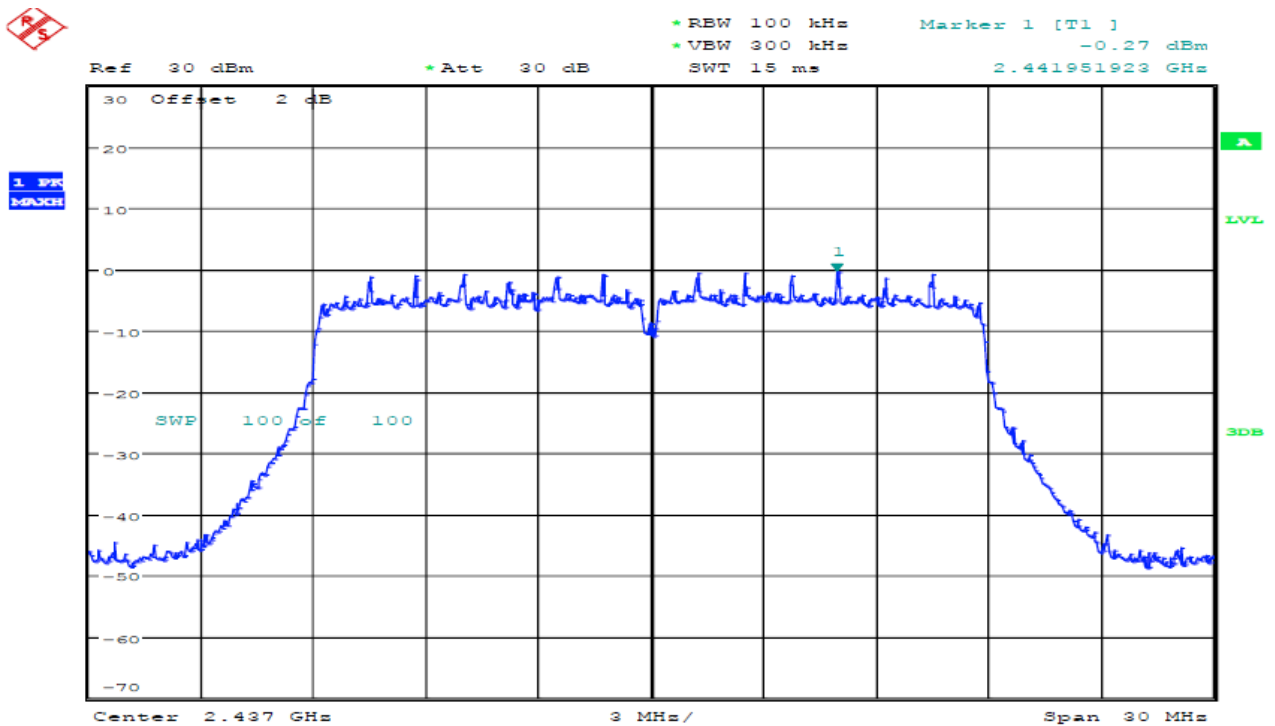


### 1GHz -26.5GHz

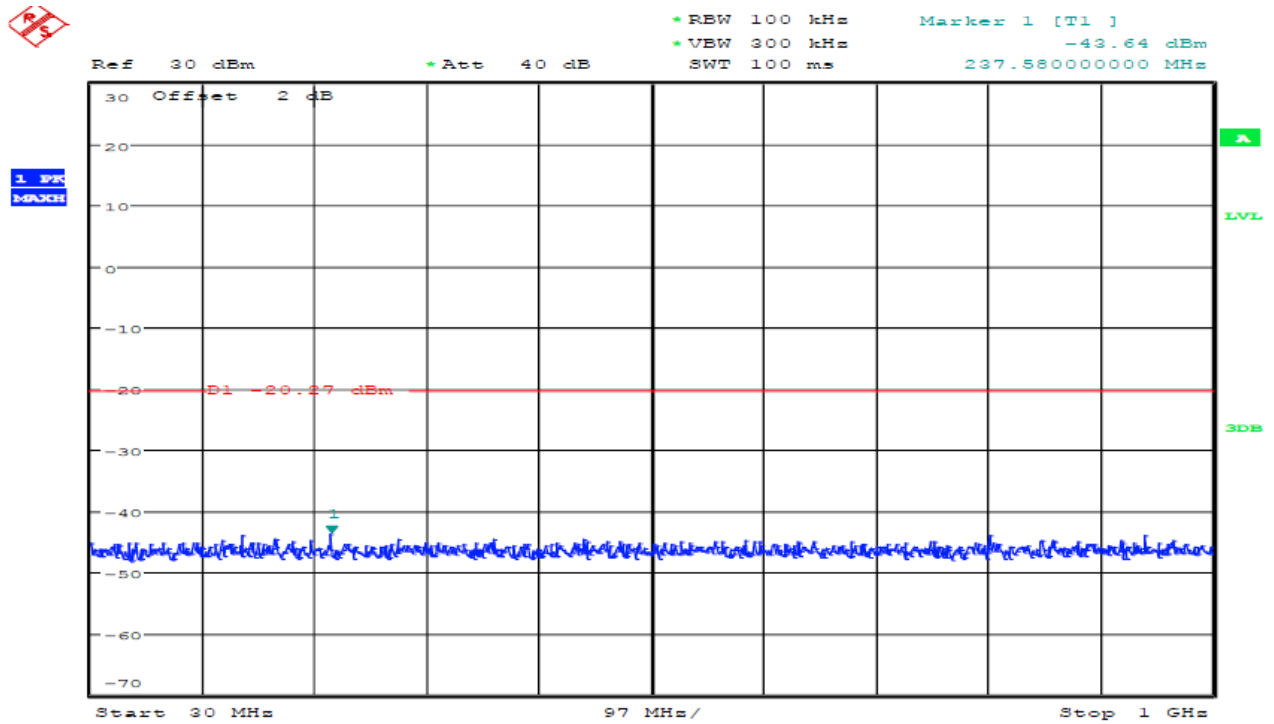


### 802.11N 20 Middle CH, 2437MHZ

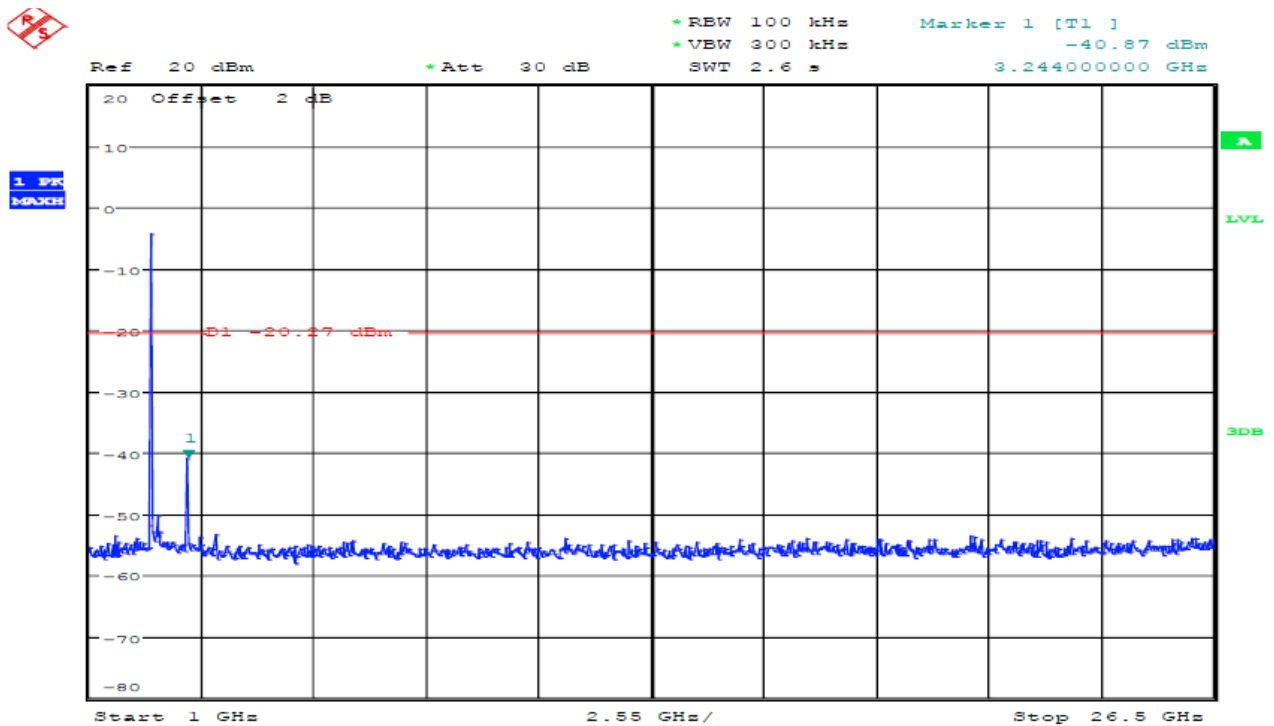
Ref.



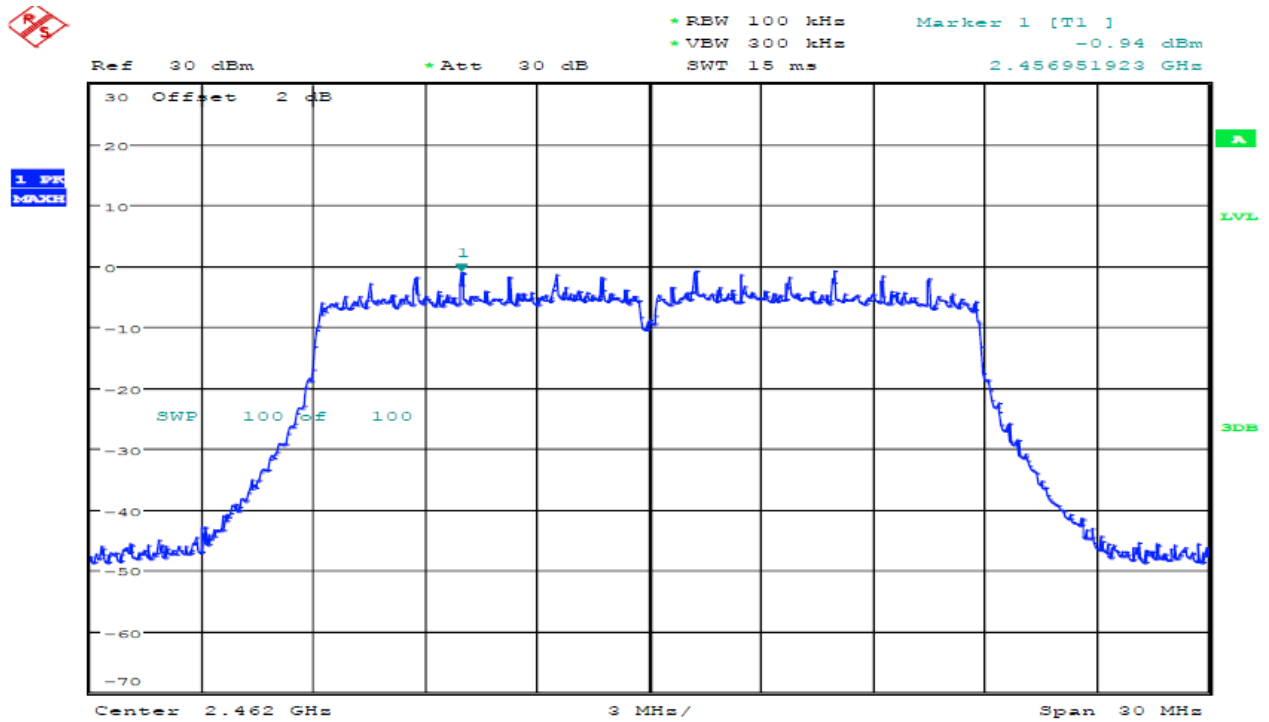
### 30-1000MHz



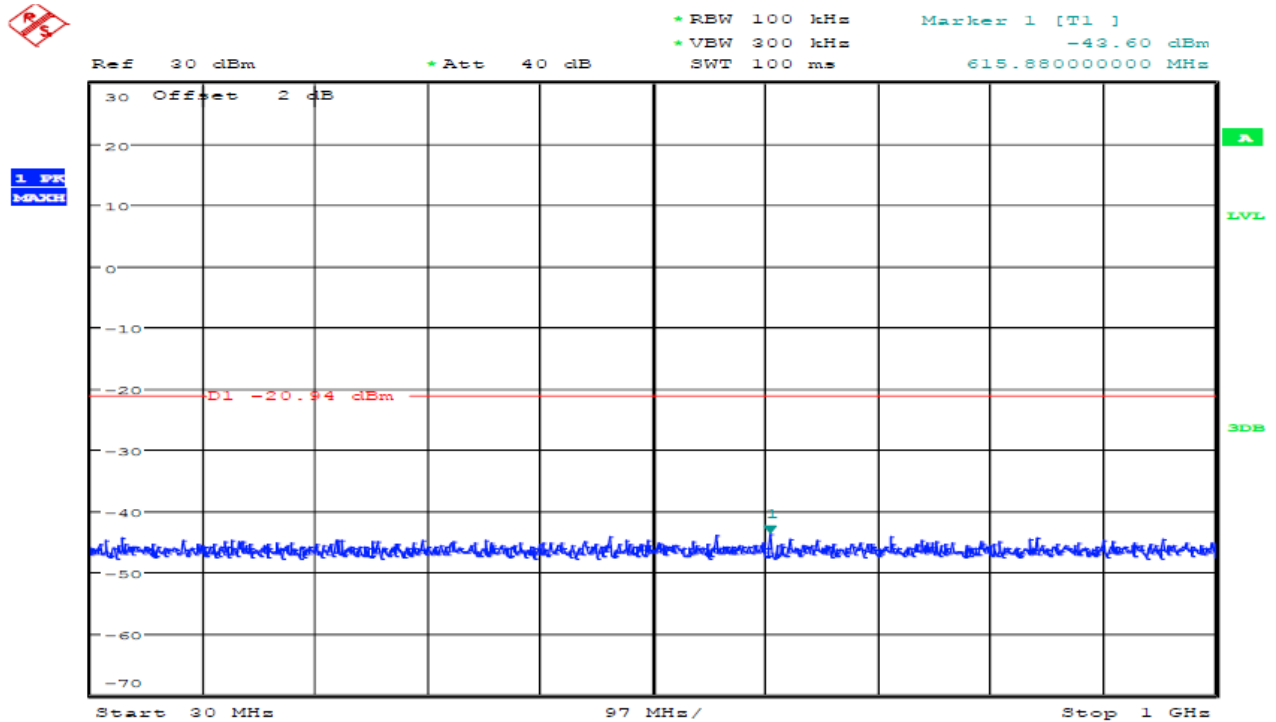
### 1G-26.5GHz



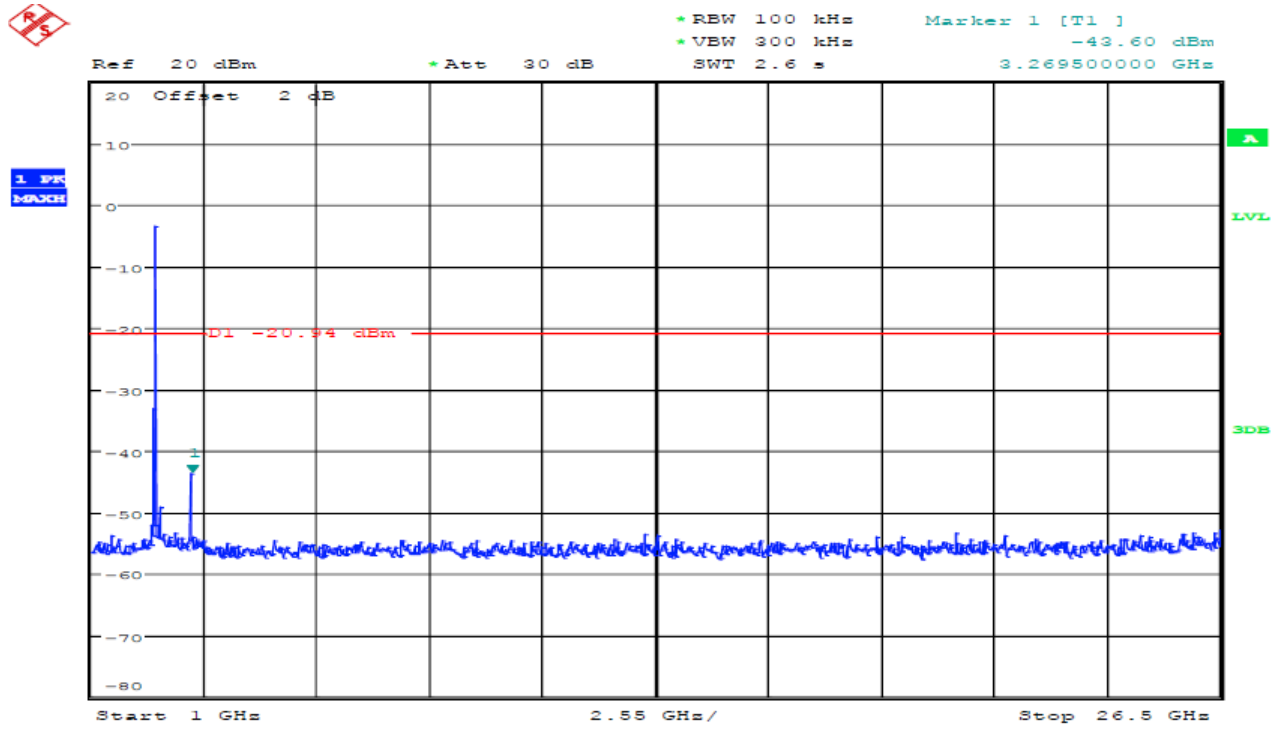
### 802.11N 20 High CH, 2462MHZ Ref.



### 30MHZ-1000MHZ



# 1G-26.5GHZ



## 7 RADIATED EMISSION MEASUREMENT

### 7.1 RADIATED EMISSION LIMITS

In any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on Part15.205(a)&209(a) limit in the table and according to ANSI C63.10-2013 below has to be followed

LIMITS OF RADIATED EMISSION MEASUREMENT (0.009MHz – 1000MHz)

| Frequencies<br>(MHz) | Field Strength<br>(micorvolts/meter) | Measurement Distance<br>(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                                |

LIMITS OF RADIATED EMISSION MEASUREMENT (1GHz-25 GHz)

| FREQUENCY (MHz) | (dBuV/m) (at 3M) |         |
|-----------------|------------------|---------|
|                 | PEAK             | AVERAGE |
| Above 1000      | 74               | 54      |

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (Uv/m).

For Radiated Emission

| Spectrum Parameter                    | Setting                                     |
|---------------------------------------|---------------------------------------------|
| Attenuation                           | Auto                                        |
| Detector                              | Peak/AV                                     |
| Start Frequency                       | 1000 MHz(Peak/AV)                           |
| Stop Frequency                        | 10 <sup>th</sup> carrier 51armonic(Peak/AV) |
| RB / VB (emission in restricted band) | PK=1MHz / 1MHz, AV=1 MHz /10 Hz             |

For Band edge

| Spectrum Parameter                    | Setting                                                                |
|---------------------------------------|------------------------------------------------------------------------|
| Detector                              | Peak/AV                                                                |
| Start/Stop Frequency                  | Lower Band Edge: 2300 to 2403 MHz<br>Upper Band Edge: 2479 to 2500 MHz |
| RB / VB (emission in restricted band) | PK=1MHz / 1MHz, AV=1 MHz / 10 Hz                                       |

| Receiver Parameter     | Setting                              |
|------------------------|--------------------------------------|
| Attenuation            | Auto                                 |
| Start ~ Stop Frequency | 9kHz~90kHz / RB 200Hz for PK & AV    |
| Start ~ Stop Frequency | 90kHz~110kHz / RB 200Hz for QP       |
| Start ~ Stop Frequency | 110kHz~490kHz / RB 200Hz for PK & AV |
| Start ~ Stop Frequency | 490kHz~30MHz / RB 9kHz for QP        |
| Start ~ Stop Frequency | 30MHz~1000MHz / RB 120kHz for QP     |

## 7.2 TEST PROCEDURE

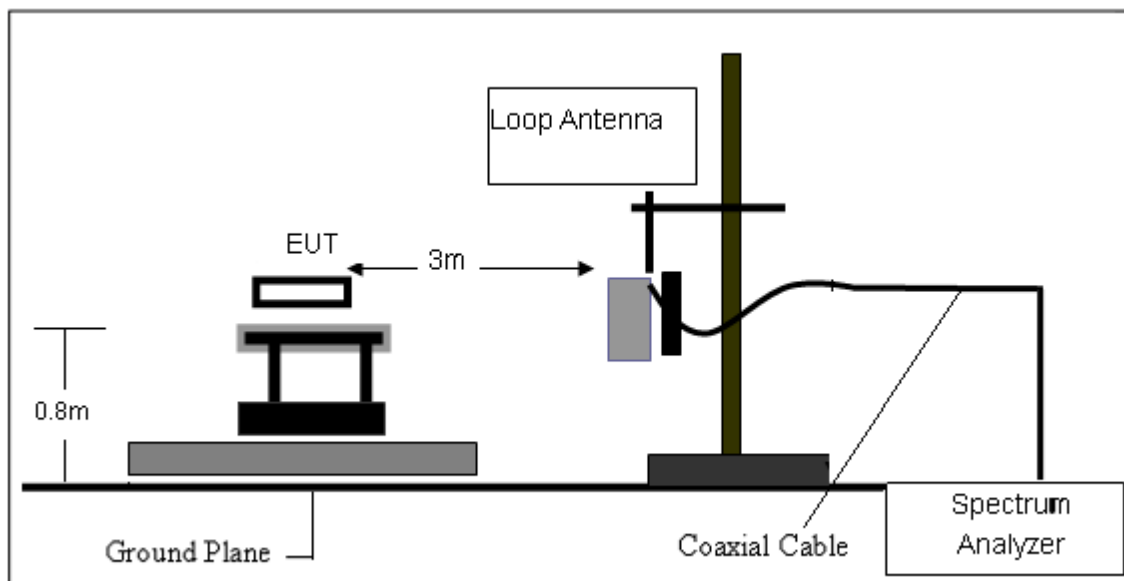
- The measuring distance of at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
- The EUT was placed on the top of a rotating table 0.8 meters (above 1GHz is 1.5 m) above the ground at a 3 meter anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment shall be 0.8 m (above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then QuasiPeak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

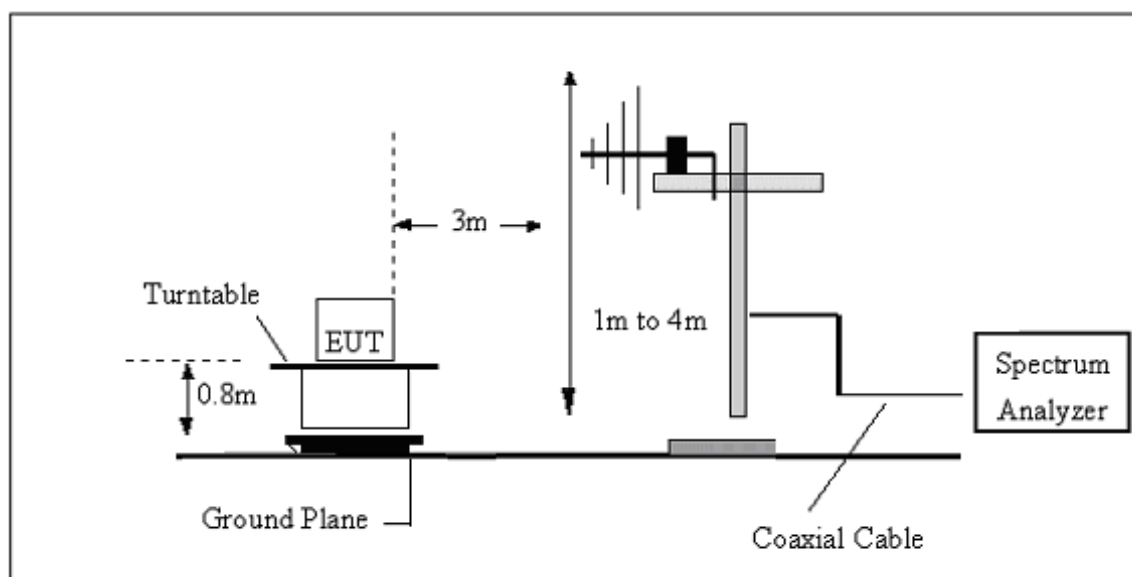
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

### 7.3 TESTSETUP

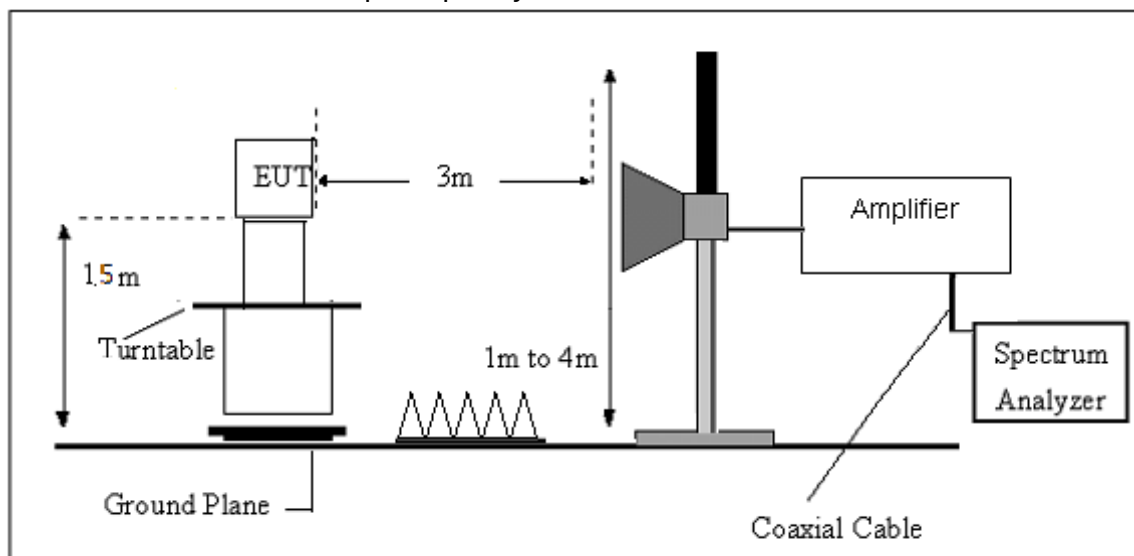
#### 802. Radiated Emission Test-Up Frequency Below 30MHz



#### (B) Radiated Emission Test-Up Frequency 30MHz~1GHz



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



#### 7.4. TEST RESULTS

(9KHz-30MHz)

|               |           |                    |                       |
|---------------|-----------|--------------------|-----------------------|
| Temperature:  | 22.7°C    | Relative Humidity: | 61%                   |
| Test Voltage: | 120V/60HZ | Test Mode:         | 802.11 b (Worst mode) |

| Freq. | Reading  | Limit    | Margin | State | Test Result |
|-------|----------|----------|--------|-------|-------------|
| (MHz) | (dBuV/m) | (dBuV/m) | (Db)   | P/F   |             |
| --    | --       | --       | --     | --    | PASS        |
| --    | --       | --       | --     | --    | PASS        |

**Note:**

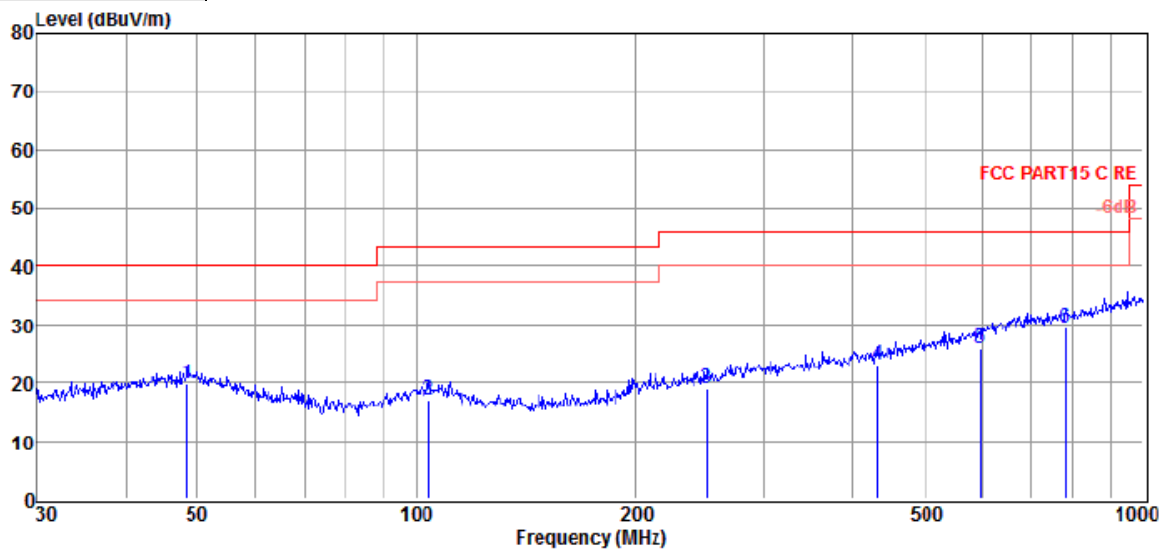
The amplitude of spurious emissions which are attenuated by more than 20Db below the permissible value has no need to be reported.

Distance extrapolation factor =  $40 \log (\text{specific distance/test distance})$ (Db);

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

(30MHz-1000MHz)

|               |                       |                    |            |
|---------------|-----------------------|--------------------|------------|
| Temperature:  | 24.7°C                | Relative Humidity: | 61%        |
| Test Voltage: | AC 120/60HZ           | Phase:             | Horizontal |
| Test Mode:    | 802.11 b (Worst mode) |                    |            |



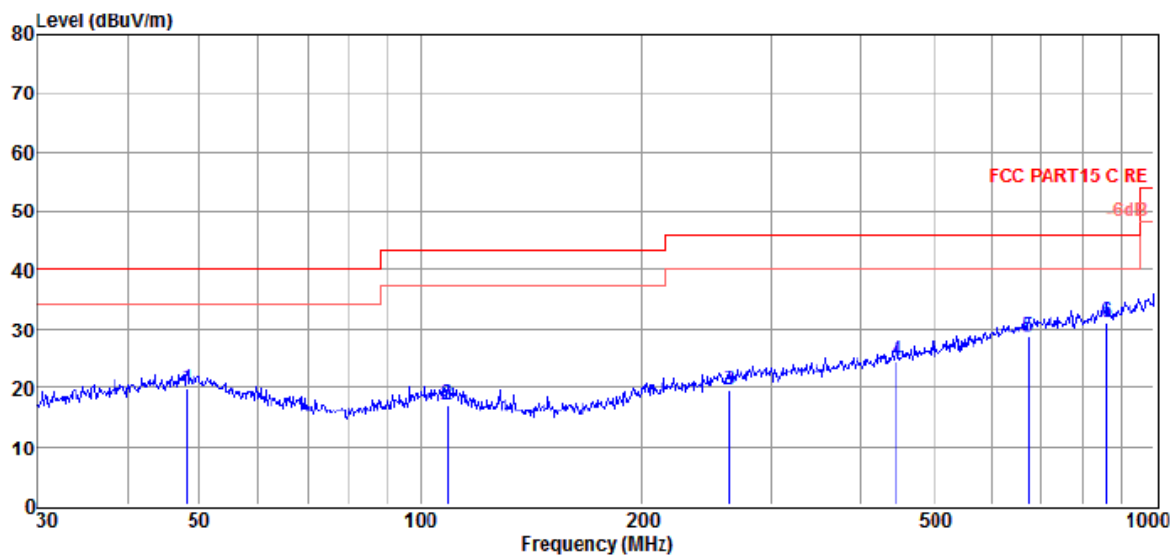
| Item<br>(Mark) | Freq.<br>(MHz) | Read<br>Level<br>(dBuV) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>dB | Result<br>Level<br>(dBuV/m) | Limit<br>Line<br>(dBuV/m) | Over<br>Limit<br>(dB) | Detector | Polarization |
|----------------|----------------|-------------------------|-----------------------------|---------------------|-----------------------------|---------------------------|-----------------------|----------|--------------|
| 1              | 48.33          | 1.63                    | 14.42                       | 3.85                | 19.90                       | 40.00                     | -20.10                | QP       | HORIZONTAL   |
| 2              | 104.17         | 1.14                    | 11.74                       | 4.23                | 17.11                       | 43.50                     | -26.39                | QP       | HORIZONTAL   |
| 3              | 251.18         | 1.03                    | 12.86                       | 5.01                | 18.90                       | 46.00                     | -27.10                | QP       | HORIZONTAL   |
| 4              | 431.03         | 1.40                    | 16.10                       | 5.61                | 23.11                       | 46.00                     | -22.89                | QP       | HORIZONTAL   |
| 5              | 597.22         | 1.23                    | 18.46                       | 6.08                | 25.77                       | 46.00                     | -20.23                | QP       | HORIZONTAL   |
| 6              | 782.35         | 2.36                    | 20.60                       | 6.57                | 29.53                       | 46.00                     | -16.47                | QP       | HORIZONTAL   |

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

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

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

|               |                       |                    |          |
|---------------|-----------------------|--------------------|----------|
| Temperature:  | 22.7°C                | Relative Humidity: | 61%      |
| Test Voltage: | AC 120/60HZ           | Phase:             | Vertical |
| Test Mode:    | 802.11 b (Worst mode) |                    |          |



| Item<br>(Mark) | Freq.<br>(MHz) | Read<br>Level<br>(dBμV) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>dB | Result<br>Level<br>(dBμV/m) | Limit<br>Line<br>(dBμV/m) | Over<br>Limit<br>(dB) | Detector | Polarization |
|----------------|----------------|-------------------------|-----------------------------|---------------------|-----------------------------|---------------------------|-----------------------|----------|--------------|
| 1              | 47.99          | 1.68                    | 14.38                       | 3.85                | 19.91                       | 40.00                     | -20.09                | QP       | VERTICAL     |
| 2              | 109.03         | 1.09                    | 11.79                       | 4.25                | 17.13                       | 43.50                     | -26.37                | QP       | VERTICAL     |
| 3              | 263.82         | 1.34                    | 13.18                       | 5.05                | 19.57                       | 46.00                     | -26.43                | QP       | VERTICAL     |
| 4              | 446.41         | 2.41                    | 16.34                       | 5.66                | 24.41                       | 46.00                     | -21.59                | QP       | VERTICAL     |
| 5              | 675.21         | 2.52                    | 19.73                       | 6.31                | 28.56                       | 46.00                     | -17.44                | QP       | VERTICAL     |
| 6              | 863.06         | 2.91                    | 21.34                       | 6.77                | 31.02                       | 46.00                     | -14.98                | QP       | VERTICAL     |

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

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

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

## (1GHz~25GHz) Restricted band and Spurious emission Requirements

| Freq (MHz)      | Read level (dBμV) | Antenna Factor (dB/m) | PRM Factor(dB) | Cable Loss (dB) | Result Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Detector type | Polarization |
|-----------------|-------------------|-----------------------|----------------|-----------------|-----------------------|----------------|-------------|---------------|--------------|
| <b>11b CH1</b>  |                   |                       |                |                 |                       |                |             |               |              |
| 4859.00         | 48.02             | 34.77                 | 43.88          | 7.44            | 46.35                 | 74.00          | -27.65      | Peak          | HORIZONTAL   |
| 6219.00         | 46.83             | 35.70                 | 43.27          | 8.24            | 47.50                 | 74.00          | -26.50      | Peak          | HORIZONTAL   |
| 7511.00         | 46.25             | 37.00                 | 43.65          | 8.79            | 48.39                 | 74.00          | -25.61      | Peak          | HORIZONTAL   |
| 8378.00         | 45.76             | 37.28                 | 43.91          | 9.66            | 48.79                 | 74.00          | -25.21      | Peak          | HORIZONTAL   |
| 8871.00         | 46.54             | 37.45                 | 44.06          | 10.22           | 50.15                 | 74.00          | -23.85      | Peak          | HORIZONTAL   |
| 10044.00        | 46.63             | 38.23                 | 44.39          | 10.90           | 51.37                 | 74.00          | -22.63      | Peak          | HORIZONTAL   |
| 4689.00         | 47.99             | 34.50                 | 43.99          | 7.27            | 45.77                 | 74.00          | -28.23      | Peak          | VERTICAL     |
| 5726.00         | 47.93             | 35.59                 | 43.36          | 8.04            | 48.20                 | 74.00          | -25.80      | Peak          | VERTICAL     |
| 7324.00         | 47.58             | 36.93                 | 43.60          | 8.62            | 49.53                 | 74.00          | -24.47      | Peak          | VERTICAL     |
| 8837.00         | 46.00             | 37.43                 | 44.05          | 10.18           | 49.56                 | 74.00          | -24.44      | Peak          | VERTICAL     |
| 9908.00         | 47.18             | 38.11                 | 44.37          | 10.84           | 51.76                 | 74.00          | -22.24      | Peak          | VERTICAL     |
| 11302.00        | 47.13             | 38.68                 | 44.20          | 11.03           | 52.64                 | 74.00          | -21.36      | Peak          | VERTICAL     |
| <b>11b CH6</b>  |                   |                       |                |                 |                       |                |             |               |              |
| 4451.00         | 47.49             | 34.03                 | 44.13          | 7.03            | 44.42                 | 74.00          | -29.58      | Peak          | HORIZONTAL   |
| 5471.00         | 48.27             | 35.47                 | 43.52          | 7.88            | 48.10                 | 74.00          | -25.90      | Peak          | HORIZONTAL   |
| 6865.00         | 47.54             | 36.50                 | 43.46          | 8.31            | 48.89                 | 74.00          | -25.11      | Peak          | HORIZONTAL   |
| 7528.00         | 46.45             | 37.01                 | 43.66          | 8.81            | 48.61                 | 74.00          | -25.39      | Peak          | HORIZONTAL   |
| 8956.00         | 46.98             | 37.48                 | 44.09          | 10.32           | 50.69                 | 74.00          | -23.31      | Peak          | HORIZONTAL   |
| 9857.00         | 47.24             | 38.06                 | 44.36          | 10.82           | 51.76                 | 74.00          | -22.24      | Peak          | HORIZONTAL   |
| 4604.00         | 48.72             | 34.37                 | 44.04          | 7.18            | 46.23                 | 74.00          | -27.77      | Peak          | VERTICAL     |
| 5675.00         | 47.79             | 35.57                 | 43.40          | 8.01            | 47.97                 | 74.00          | -26.03      | Peak          | VERTICAL     |
| 6185.00         | 47.53             | 35.70                 | 43.26          | 8.23            | 48.20                 | 74.00          | -25.80      | Peak          | VERTICAL     |
| 7528.00         | 46.45             | 37.01                 | 43.66          | 8.81            | 48.61                 | 74.00          | -25.39      | Peak          | VERTICAL     |
| 8531.00         | 46.24             | 37.31                 | 43.96          | 9.84            | 49.43                 | 74.00          | -24.57      | Peak          | VERTICAL     |
| 9398.00         | 46.81             | 37.66                 | 44.22          | 10.58           | 50.83                 | 74.00          | -23.17      | Peak          | VERTICAL     |
| <b>11b CH11</b> |                   |                       |                |                 |                       |                |             |               |              |
| 4247.00         | 47.24             | 33.34                 | 44.25          | 6.83            | 43.16                 | 74.00          | -30.84      | Peak          | HORIZONTAL   |
| 5471.00         | 47.91             | 35.47                 | 43.52          | 7.88            | 47.74                 | 74.00          | -26.26      | Peak          | HORIZONTAL   |
| 6610.00         | 46.39             | 35.94                 | 43.38          | 8.28            | 47.23                 | 74.00          | -26.77      | Peak          | HORIZONTAL   |
| 7443.00         | 46.96             | 36.98                 | 43.63          | 8.73            | 49.04                 | 74.00          | -24.96      | Peak          | HORIZONTAL   |
| 8837.00         | 45.79             | 37.43                 | 44.05          | 10.18           | 49.35                 | 74.00          | -24.65      | Peak          | HORIZONTAL   |
| 9891.00         | 46.08             | 38.09                 | 44.37          | 10.83           | 50.63                 | 74.00          | -23.37      | Peak          | HORIZONTAL   |
| 3635.00         | 48.70             | 32.06                 | 44.38          | 6.29            | 42.67                 | 74.00          | -31.33      | Peak          | VERTICAL     |
| 5250.00         | 47.22             | 35.25                 | 43.65          | 7.74            | 46.56                 | 74.00          | -27.44      | Peak          | VERTICAL     |
| 6185.00         | 47.06             | 35.70                 | 43.26          | 8.23            | 47.73                 | 74.00          | -26.27      | Peak          | VERTICAL     |
| 7409.00         | 46.57             | 36.96                 | 43.62          | 8.70            | 48.61                 | 74.00          | -25.39      | Peak          | VERTICAL     |
| 8327.00         | 45.96             | 37.27                 | 43.90          | 9.60            | 48.93                 | 74.00          | -25.07      | Peak          | VERTICAL     |
| 9789.00         | 45.93             | 37.99                 | 44.34          | 10.78           | 50.36                 | 74.00          | -23.64      | Peak          | VERTICAL     |

Note:

A. Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 3th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured. The measurements greater than 20dB below the limit from 9kHz to 30MHz

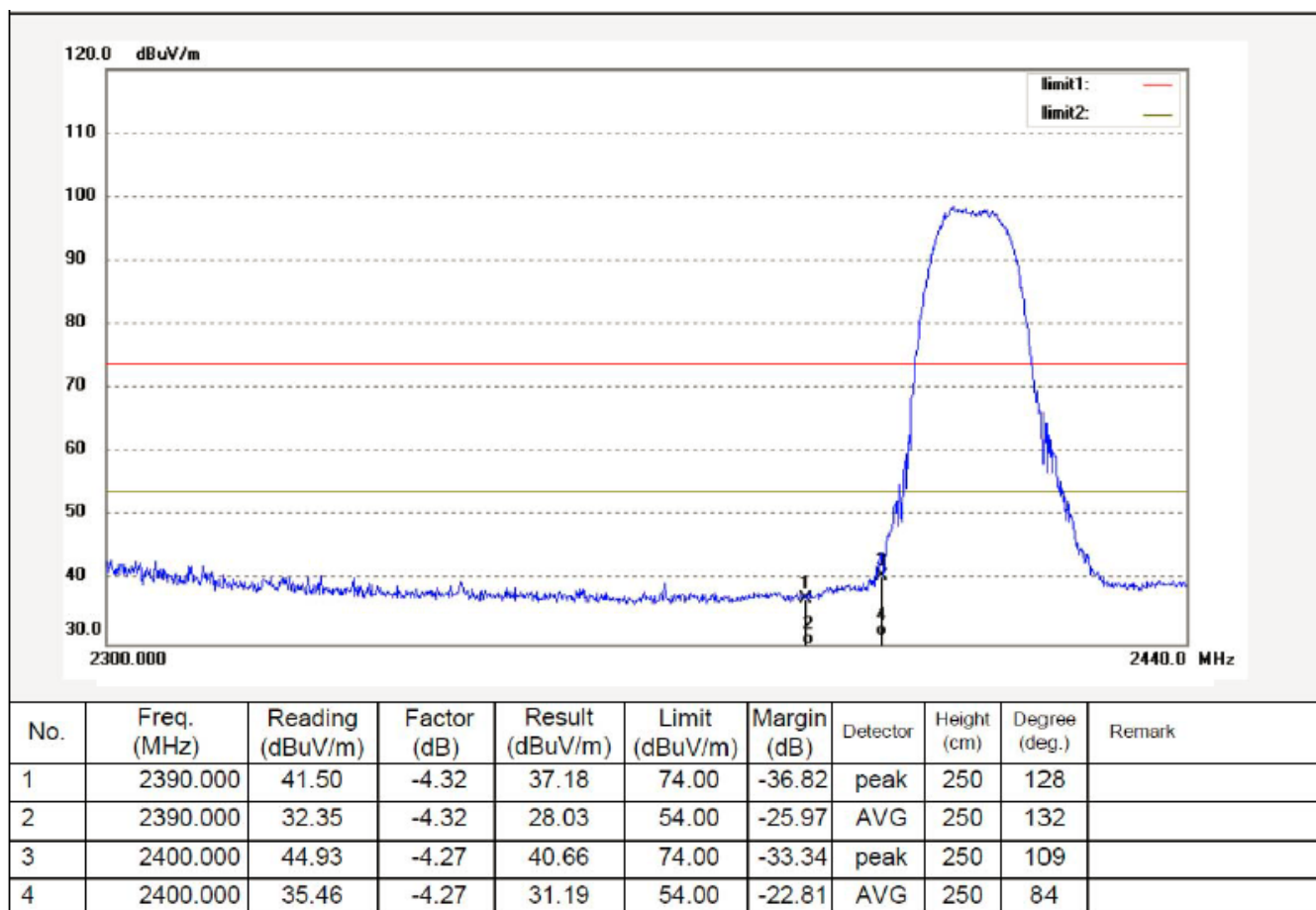
B. 30MHZ-25GHZ (Scan with 11b mode, 11g mode, 11N H20, The worst mode is 11bmode)  
Result level =Read level+ antennal factor +cable loss

## Radiated Band Edge data

Remark: All restriction band have been tested, and only the worst case is shown in report

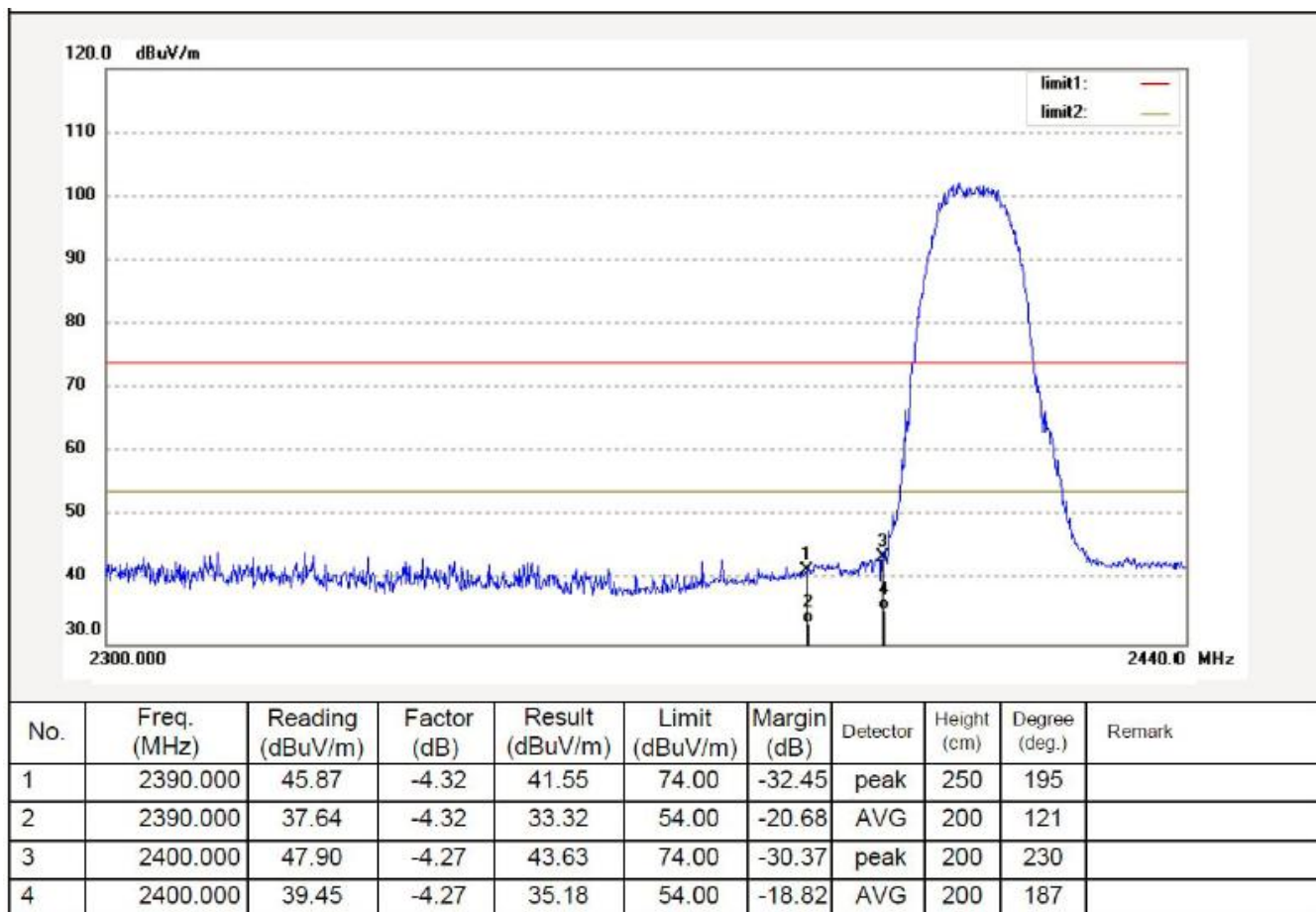
802.11 b low CH

Vertical (worst case)



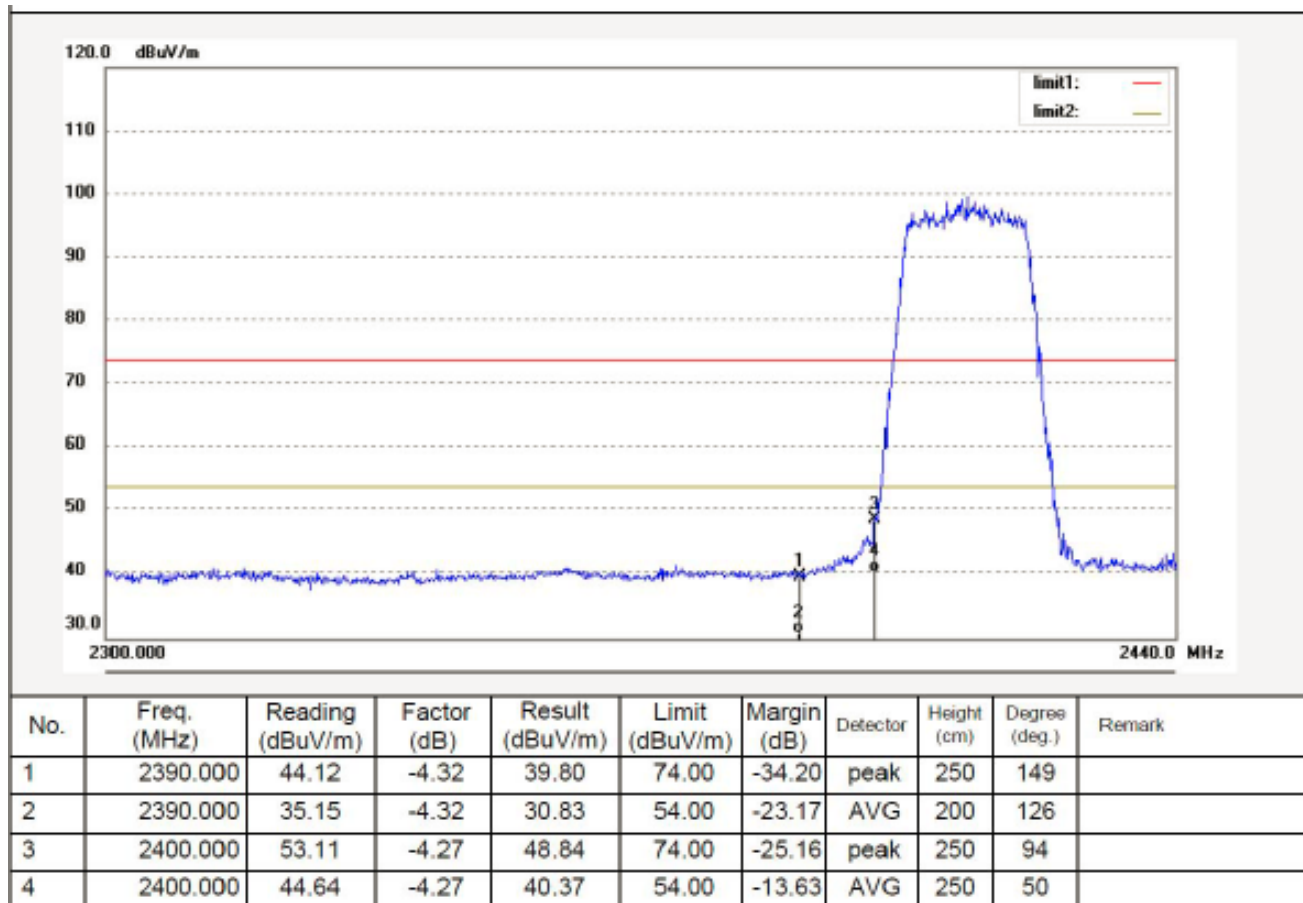
802.11 b High CH

Vertical (worst case)



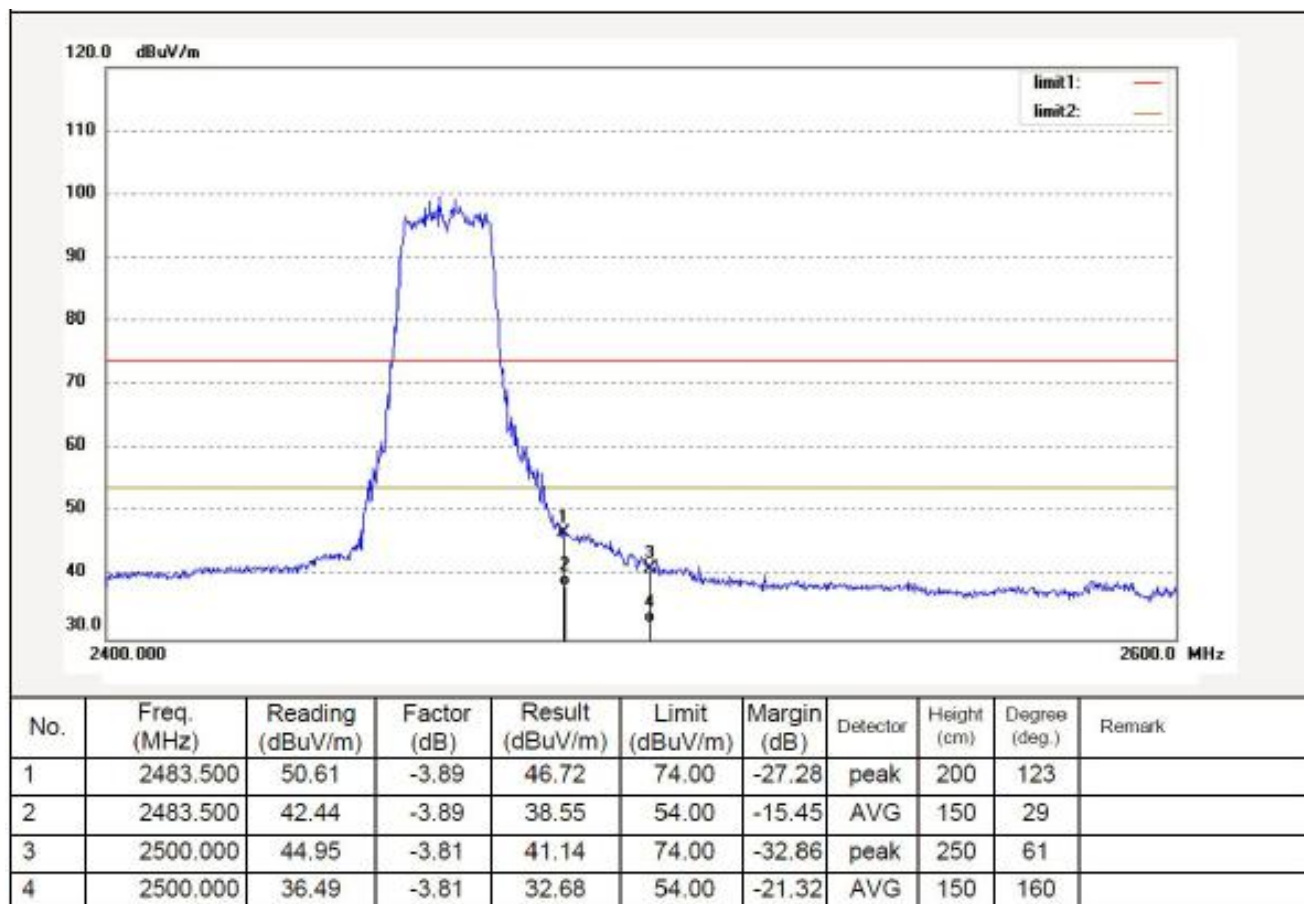
802.11 g Low CH

Vertical (worst case)

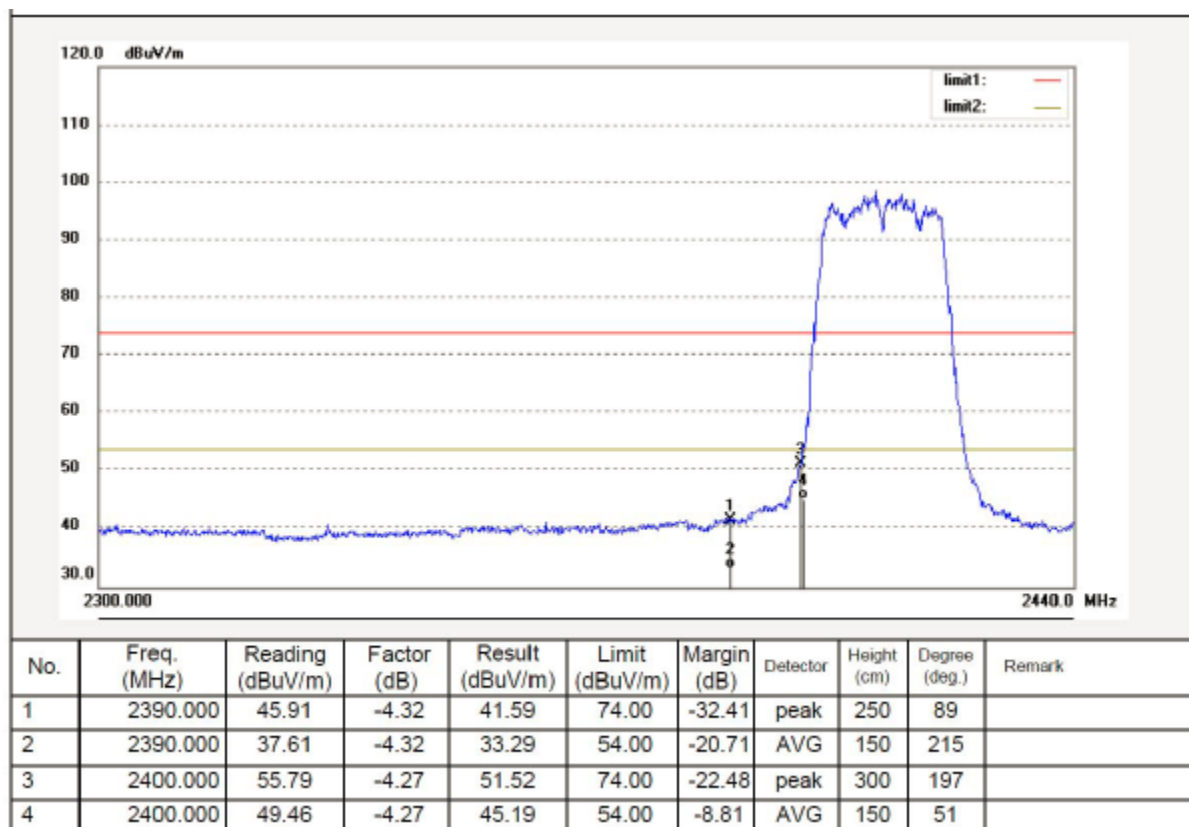


802.11 g High CH

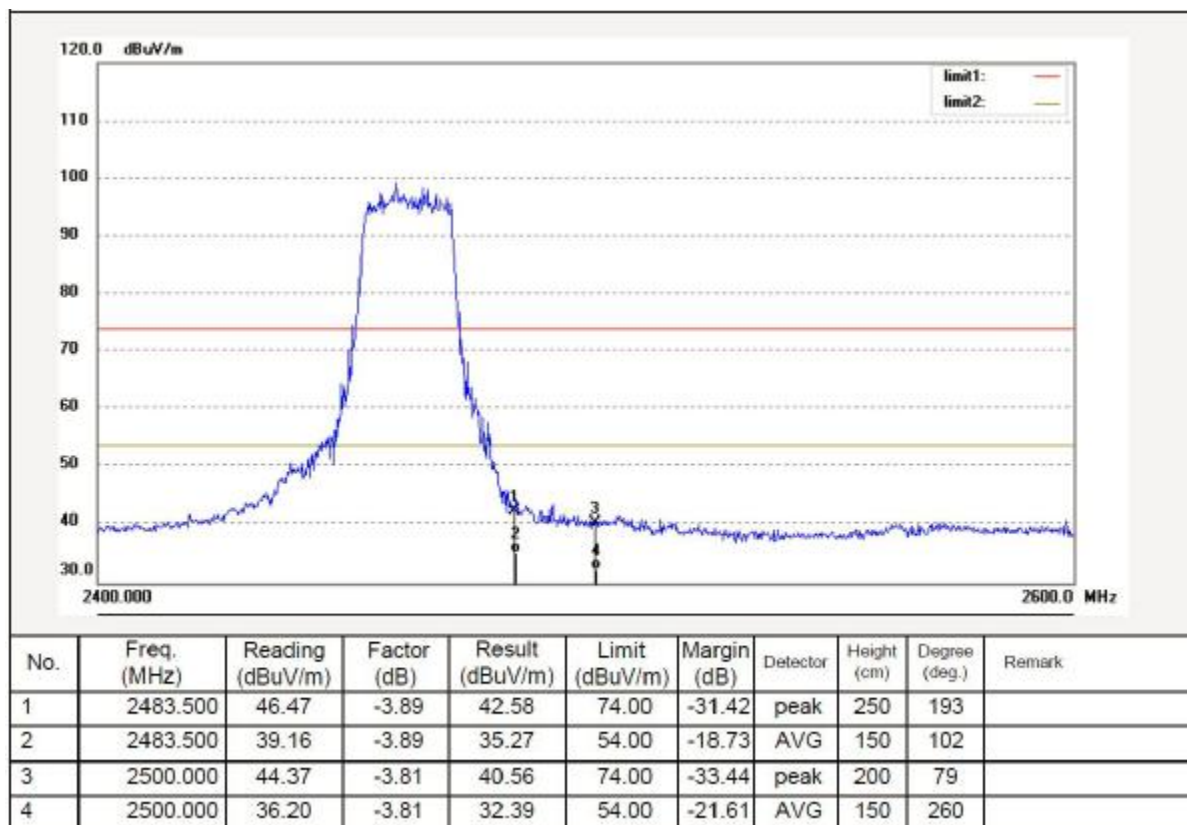
Vertical (worst case)



802.11 N 20 Low CH  
Vertical (worst case)



802.11 N 20 High CH  
Vertical (worst case)



## 8 CONDUCTED EMISSION TEST

### 8.1.1 POWER LINE CONDUCTED EMISSION LIMITS

Operating frequency band. In case the emission fall within the restricted band specified on Part 207(a) limit in the table below has to be followed.

| FREQUENCY (MHz) | Conducted Emissionlimit (dBuV) |           |
|-----------------|--------------------------------|-----------|
|                 | Quasi-peak                     | Average   |
| 0.15 -0.5       | 66 – 56 *                      | 56 – 46 * |
| 0.50 -5.0       | 56.00                          | 46.00     |
| 5.0 -30.0       | 60.00                          | 50.00     |

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of “ \* “ marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

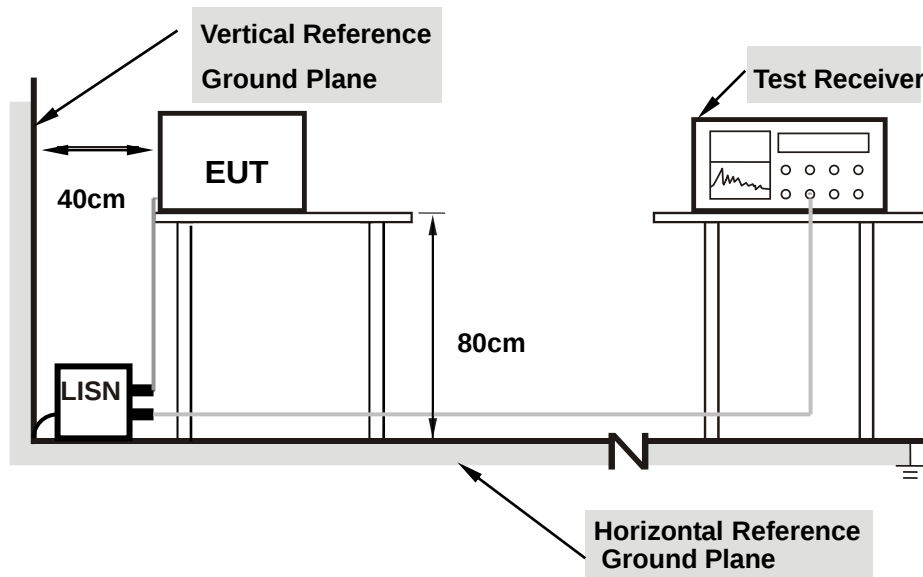
The following table is the setting of the receiver

| Receiver Parameters | Setting  |
|---------------------|----------|
| Attenuation         | 10 Db    |
| Start Frequency     | 0.15 MHz |
| Stop Frequency      | 30 MHz   |
| IF Bandwidth        | 9 kHz    |

### 8.1.2 TEST PROCEDURE

- The EUT was 0.8 meters from the horizontal ground plane and 0.4 meters from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50U<sub>H</sub> of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

### 8.1.3 TEST SETUP



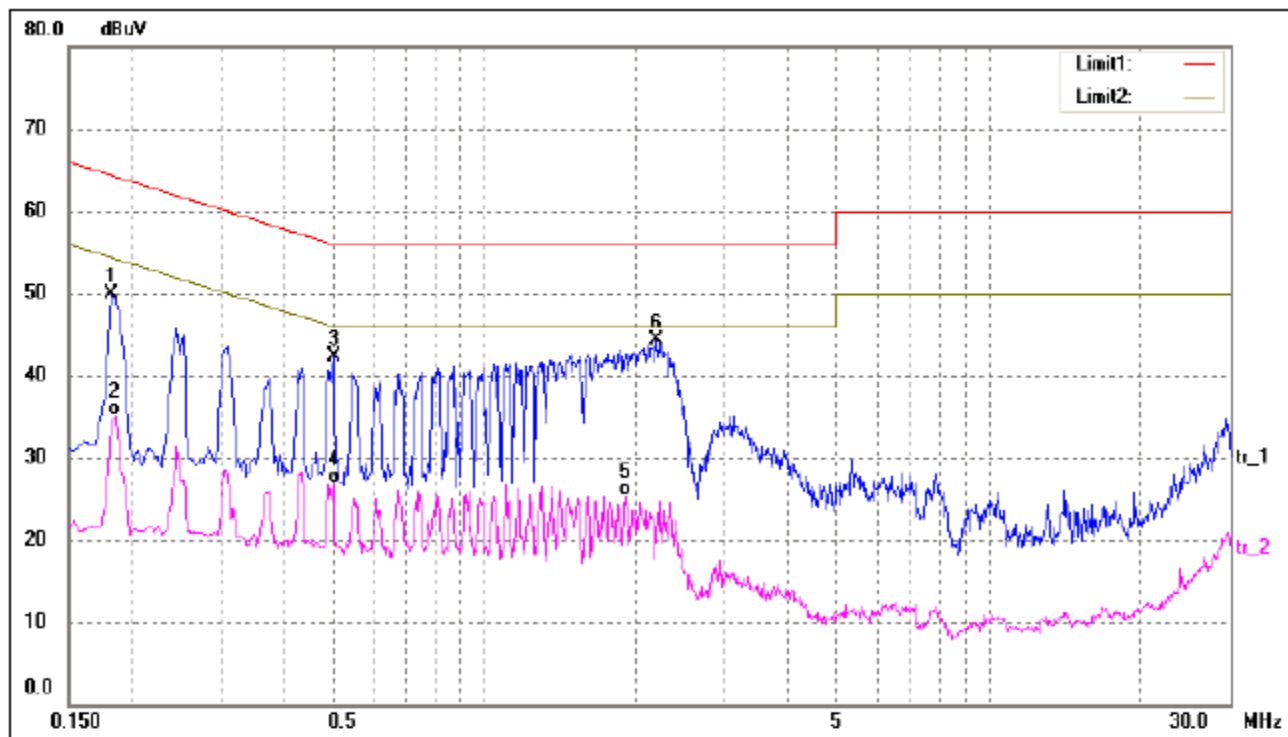
**Note: 1.Support units were connected to second LISN.**

**2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes**

### 8.1.4 TEST RESULT

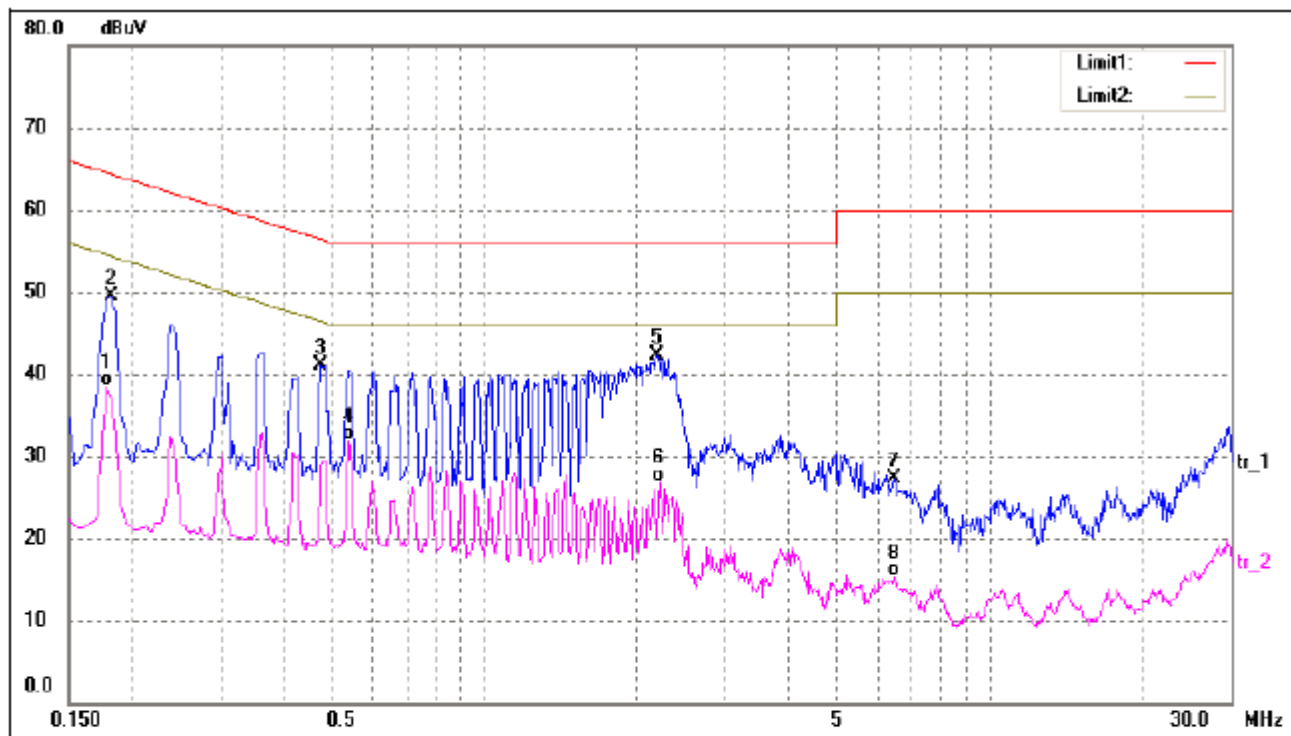
|               |                                                                  |                    |     |
|---------------|------------------------------------------------------------------|--------------------|-----|
| Temperature:  | 22.1 °C                                                          | Relative Humidity: | 56% |
| Test Voltage: | 120V/60HZ                                                        | Phase:             | L/N |
| Test Mode:    | 802.11 b (Worst mode)                                            |                    |     |
| Remark        | All test mode are tested, only showed worst mode data on report. |                    |     |

# L-LINE



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Detector |
|-----|--------------------|-------------------|-------------------|------------------|-----------------|----------------|----------|
| 1   | 0.1820             | 40.48             | 9.50              | 49.98            | 64.39           | -14.41         | peak     |
| 2   | 0.1860             | 25.60             | 9.50              | 35.10            | 54.21           | -19.11         | AVG      |
| 3   | 0.5020             | 32.79             | 9.50              | 42.29            | 56.00           | -13.71         | peak     |
| 4   | 0.5020             | 17.48             | 9.50              | 26.98            | 46.00           | -19.02         | AVG      |
| 5   | 1.9060             | 15.22             | 10.00             | 25.22            | 46.00           | -20.78         | AVG      |
| 6   | 2.1980             | 34.31             | 10.00             | 44.31            | 56.00           | -11.69         | peak     |

# N-LINE



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Detector |
|-----|--------------------|-------------------|-------------------|------------------|-----------------|----------------|----------|
| 1   | 0.1780             | 28.91             | 9.50              | 38.41            | 54.58           | -16.17         | AVG      |
| 2   | 0.1820             | 39.98             | 9.50              | 49.48            | 64.39           | -14.91         | peak     |
| 3   | 0.4740             | 31.56             | 9.50              | 41.06            | 56.44           | -15.38         | peak     |
| 4   | 0.5380             | 22.39             | 9.54              | 31.93            | 46.00           | -14.07         | AVG      |
| 5   | 2.1980             | 32.27             | 10.00             | 42.27            | 56.00           | -13.73         | peak     |
| 6   | 2.2220             | 16.86             | 10.00             | 26.86            | 46.00           | -19.14         | AVG      |
| 7   | 6.4820             | 17.30             | 10.00             | 27.30            | 60.00           | -32.70         | peak     |
| 8   | 6.4820             | 5.29              | 10.00             | 15.29            | 50.00           | -34.71         | AVG      |

## 9. ANTENNA REQUIREMENT

### 9.1 STANDARD REQUIREMENT

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 (b), 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.

### 9.2 RESULT

The antennas used for this product are PCB antenna and other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is 2.0dBi.

\*\*\*\*\*END OF THE REPORT\*\*\*\*\*