# FCC Radio Test Report

## FCC ID: YBN-AIVIL42P0

**This report concerns (check one):** ☒**Original Grant** ☐**Class I Change** ☐**Class II Change**

| | | |
|---|---|---|
| **Project No.** | : | 1807C078 |
| **Equipment** | : | Car Radio with navigation, BT and WLAN |
| **Test Model** | : | AIVIL42P0 |
| **Series Model** | : | N/A |
| **Applicant** | : | Bosch Car Multimedia GmbH |
| **Address** | : | Robert-Bosch-Straße 200; 31139 Hildesheim |

| | | |
|---|---|---|
| **Date of Receipt** | : | Jul. 11, 2018 |
| **Date of Test** | : | Jul. 11, 2018 ~ Jul. 17, 2018 |
| **Issued Date** | : | Jul. 25, 2018 |
| **Tested by** | : | BTL Inc. |

**Testing Engineer** : Chay . Cai
(Chay Cai)

**Technical Manager** : David Mao
(David Mao)

**Authorized Signatory** : Steven Lu
(Steven Lu)


**BTL INC.**

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NVLAP TESTING
NVLAP LAB CODE 200788-0

## Declaration

**BTL** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

**BTL**'s reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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**BTL**'s laboratory quality assurance procedures are in compliance with the **ISO Guide 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

**BTL** is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements in all the possible configurations as representative of its intended use.

## Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Table of Contents Page

Table of Contents Page

## REPORT ISSUED HISTORY

| Issued No. | Description | Issued Date |
|---|---|---|
| BTL-FCCP-2-1807C078 | Original Issue. | Jul. 25, 2018 |

## 1. CERTIFICATION

| | | |
|---|---|---|
| Equipment | : | Car Radio with navigation, BT and WLAN |
| Brand Name | : | Bosch |
| Test Model | : | AIVIL42P0 |
| Series Model | : | N/A |
| Applicant | : | Bosch Car Multimedia GmbH |
| Manufacturer | : | #1 Bosch Car Multimedia GmbH<br>#2 Bosch Car Multimedia Portugal, S.A. |
| Address | : | #1 Robert-Bosch-Straße 200; 31139 Hildesheim<br>#2 Rua Max Grundig, 35-Lomar, 4705-820 Braga |
| Factory | : | Robert Bosch (Malaysia) |
| Address | : | Free Trade Zone 11900, Bayan Lepas, Penang |
| Date of Test | : | Jul. 11, 2018 ~ Jul. 17, 2018 |
| Test Sample | : | Engineering Sample No.: D180705792 for conducted, D180705794 for radiated |
| Standard(s) | : | FCC Part15, Subpart C (15.247) / ANSI C63.10-2013 |

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-2-1807C078) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP according to the ISO-17025 quality assessment standard and technical standard(s).

**Test results included in this report is only for the WLAN 2.4G part.**

## 2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

| Applied Standard(s): FCC Part15 (15.247) , Subpart C | | | |
|---|---|---|---|
| Standard(s) Section | Test Item | Judgment | Remark |
| 15.247(d) | Antenna conducted Spurious Emission | PASS | |
| 15.247(a)(2) | 6dB Bandwidth | PASS | |
| 15.247(b)(3) | AVG Output Power | PASS | |
| 15.247(e) | Power Spectral Density | PASS | |
| 15.203 | Antenna Requirement | PASS | |
| 15.247(d)/ 15.205/ 15.209 | Transmitter Radiated Emissions | PASS | |

NOTE:

(1)" N/A" denotes test is not applicable in this test report.

## 2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3,Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.
BTL's test firm number for FCC: 854385
BTL's designation number for FCC: CN5020

## 2.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty figures shall be calculated according the methods described in the ETSI TR 100 028 and shall correspond to an expansion factor (coverage factor) k=1.96 or k=2(which provide confidence levels of respectively 90% and 95.45% in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)). Measurement Uncertainty for a Level of Confidence of 95 %, U=2xUc(y).

The BTL measurement uncertainty as below table:

A. Radiated Measurement:

| Test Site | Method | Measurement Frequency Range | Ant. H / V | U, (dB) |
|---|---|---|---|---|
| DG-CB03 | CISPR | 9KHz~30MHz | V | 3.79 |
| | | 9KHz~30MHz | H | 3.57 |
| | | 30MHz ~ 200MHz | V | 3.82 |
| | | 30MHz ~ 200MHz | H | 3.78 |
| | | 200MHz ~ 1,000MHz | V | 4.10 |
| | | 200MHz ~ 1,000MHz | H | 4.06 |
| | | 1GHz~18GHz | V | 3.12 |
| | | 1GHz~18GHz | H | 3.68 |
| | | 18GHz~40GHz | V | 4.15 |
| | | 18GHz~40GHz | H | 4.14 |

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

# 3. GENERAL INFORMATION

## 3.1 GENERAL DESCRIPTION OF EUT

| | | |
|---|---|---|
| Equipment | Car Radio with navigation, BT and WLAN | |
| Brand Name | Bosch | |
| Test Model | AIVIL42P0 | |
| Series Model | N/A | |
| Model Difference | N/A | |
| Product Description | Operation Frequency | 2412 ~ 2462 MHz |
| | Modulation Technology | 802.11b:DSSS<br>802.11g:OFDM<br>802.11n:OFDM |
| | Bit Rate of Transmitter | 802.11b: 11/5.5/2/1 Mbps<br>802.11g: 54/48/36/24/18/12/9/6 Mbps<br>802.11n up to 150 Mbps |
| | Average Output Power (Max.) | 802.11b: 8.90 dBm<br>802.11g: 6.60 dBm<br>802.11n(20MHz): 6.50 dBm<br>802.11n(40MHz): 6.10 dBm |
| Power Source | DC voltage supplied from external power supply. | |
| Power Rating | DC 13.5V | |

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. Channel List:

| CH01 - CH11 for 802.11b, 802.11g, 802.11n(20MHz)<br>CH03 - CH09 for 802.11n(40MHz) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 01 | 2412 | 04 | 2427 | 07 | 2442 | 10 | 2457 |
| 02 | 2417 | 05 | 2432 | 08 | 2447 | 11 | 2462 |
| 03 | 2422 | 06 | 2437 | 09 | 2452 | | |

3. Table for Filed Antenna

| Ant. | Brand | Model Name | Antenna Type | Connector | Gain (dBi) |
|---|---|---|---|---|---|
| 1 | N/A | N/A | Internal | N/A | 6.60 |

Note:
Antenna Gain=6.6 dBi. So, the out power limit is 30-6.6+6=29.4, the power density limit is 8-6.6+6=7.4.

## 3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

| Pretest Mode | Description |
|---|---|
| Mode 1 | TX B MODE CHANNEL 01/06/11 |
| Mode 2 | TX G MODE CHANNEL 01/06/11 |
| Mode 3 | TX N-20MHZ MODE CHANNEL 01/06/11 |
| Mode 4 | TX N-40MHZ MODE CHANNEL 03/06/09 |

The EUT system operated these modes were found to be the worst case during the pre-scanning test as following:

| **For Radiated Test** | |
|---|---|
| Final Test Mode | Description |
| Mode 1 | TX B MODE CHANNEL 01/06/11 |
| Mode 2 | TX G MODE CHANNEL 01/06/11 |
| Mode 3 | TX N-20MHZ MODE CHANNEL 01/06/11 |
| Mode 4 | TX N-40MHZ MODE CHANNEL 03/06/09 |

| **For Band Edge Test** | |
|---|---|
| Final Test Mode | Description |
| Mode 1 | TX B MODE CHANNEL 01/06/11 |
| Mode 2 | TX G MODE CHANNEL 01/06/11 |
| Mode 3 | TX N-20MHZ MODE CHANNEL 01/06/11 |
| Mode 4 | TX N-40MHZ MODE CHANNEL 03/06/09 |

| 6dB Spectrum Bandwidth | |
|---|---|
| Final Test Mode | Description |
| Mode 1 | TX B MODE CHANNEL 01/06/11 |
| Mode 2 | TX G MODE CHANNEL 01/06/11 |
| Mode 3 | TX N-20MHZ MODE CHANNEL 01/06/11 |
| Mode 4 | TX N-40MHZ MODE CHANNEL 03/06/09 |

| Maximum AVG Output Power | |
|---|---|
| Final Test Mode | Description |
| Mode 1 | TX B MODE CHANNEL 01/06/11 |
| Mode 2 | TX G MODE CHANNEL 01/06/11 |
| Mode 3 | TX N-20MHZ MODE CHANNEL 01/06/11 |
| Mode 4 | TX N-40MHZ MODE CHANNEL 03/06/09 |

| Power Spectral Density | |
|---|---|
| Final Test Mode | Description |
| Mode 1 | TX B MODE CHANNEL 01/06/11 |
| Mode 2 | TX G MODE CHANNEL 01/06/11 |
| Mode 3 | TX N-20MHZ MODE CHANNEL 01/06/11 |
| Mode 4 | TX N-40MHZ MODE CHANNEL 03/06/09 |

Note:

(1) The measurements are performed at the high, middle, low available channels.

(2) 802.11b mode: DSSS(11/5.5/2/1 Mbps)
802.11g mode: OFDM (54/48/36/24/18/12/9/6 Mbps)
802.11n HT20 mode : OFDM (MCS0/1/2/3/4/5/6/7)
802.11n HT40 mode : OFDM (MCS0/1/2/3/4/5/6/7)
For all tests except conducted output power, the highest output powers were set for final test.

(3) For radiated below 1G test, the 802.11b is found to be the worst case and recorded.

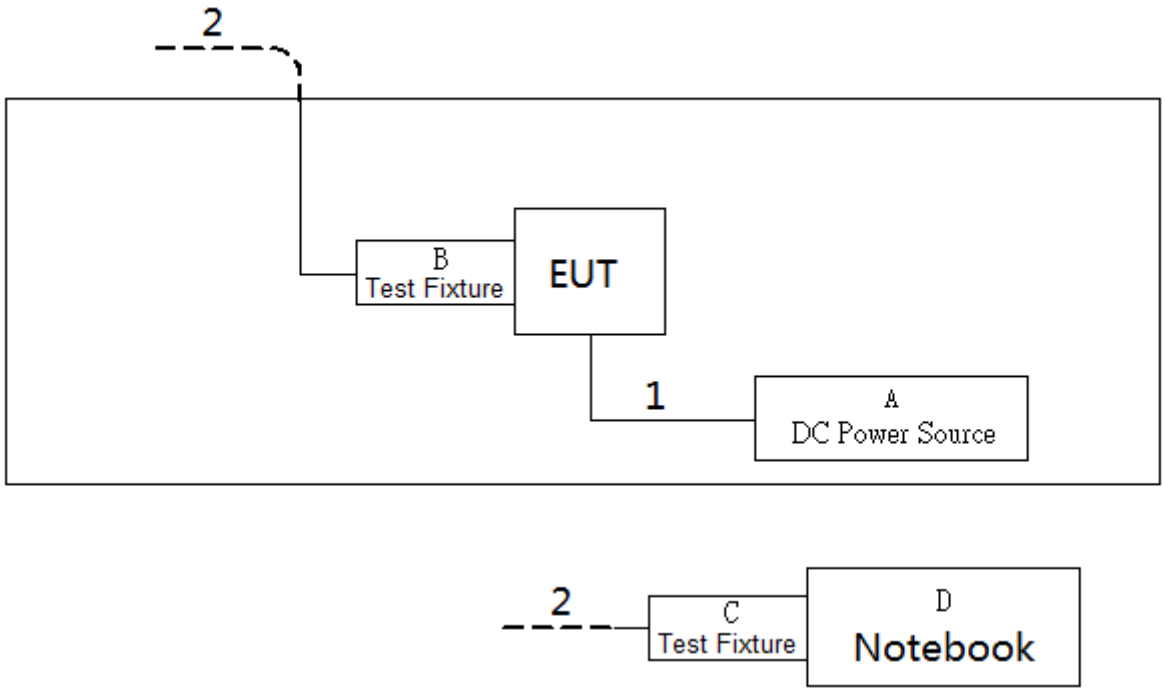
(4) The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

### 3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

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

| Test software version | DutApi_w8887_BrdigeEth | | |
|---|---|---|---|
| Frequency (MHz) | 2412 | 2437 | 2462 |
| 802.11b | 14 | 14 | 14 |
| 802.11g | 11 | 11 | 11 |
| 802.11n (20MHz) | 11 | 11 | 11 |
| Frequency (MHz) | 2422 | 2437 | 2452 |
| 802.11n (40MHz) | 11 | 11 | 11 |

### 3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED




### 3.5 DESCRIPTION OF SUPPORT UNITS

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

| Item | Equipment | Mfr/Brand | Model/Type No. | FCC ID | Series No. |
|---|---|---|---|---|---|
| A | DC Power Source | TRUE-POWER | GPC30300N | N/A | N/A |
| B | Test Fixture | N/A | N/A | N/A | N/A |
| C | Test Fixture | N/A | N/A | N/A | N/A |
| D | Notebook | DELL | DCSM | DOC | G7K832X |

| Item | Shielded Type | Ferrite Core | Length | Note |
|---|---|---|---|---|
| 1 | NO | NO | 1m | DC Cable |
| 2 | NO | NO | 10m | RJ45 Cable |

# 4. EMC EMISSION TEST

## 4.1 RADIATED EMISSION MEASUREMENT

### 4.1.1 RADIATED EMISSION LIMITS

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (9KHz-1000MHz)

| 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 |
| 960~1000 | 500 | 3 |

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

| Frequency (MHz) | Band edge at 3m (dBµV/m) | | Harmonic at 1.5m (dBµV/m) | |
|---|---|---|---|---|
| | Peak | Average | Peak | Average |
| Above 1000 | 74 | 54 | 80 (Note 5) | 60(Note 5) |

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).

(4) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value

(5)

$$FS_{\text{limit}} = FS_{\max} - 20\log\left(\frac{d_{\text{limit}}}{d_{\text{measure}}}\right)$$

20log d limit/d measure=20log 3/1.5=6dB.

| Spectrum Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Start Frequency | 1000 MHz |
| Stop Frequency | 10th carrier harmonic |
| RBW / VBW<br>(Emission in restricted band) | 1MHz / 3MHz for Peak,<br>1MHz / 1/T for Average |

| Receiver Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Start ~ Stop Frequency | 9KHz~90KHz for PK/AVG detector |
| Start ~ Stop Frequency | 90KHz~110KHz for QP detector |
| Start ~ Stop Frequency | 110KHz~490KHz for PK/AVG detector |
| Start ~ Stop Frequency | 490KHz~30MHz for QP detector |
| Start ~ Stop Frequency | 30MHz~1000MHz for QP detector |

### 4.1.2 TEST PROCEDURE

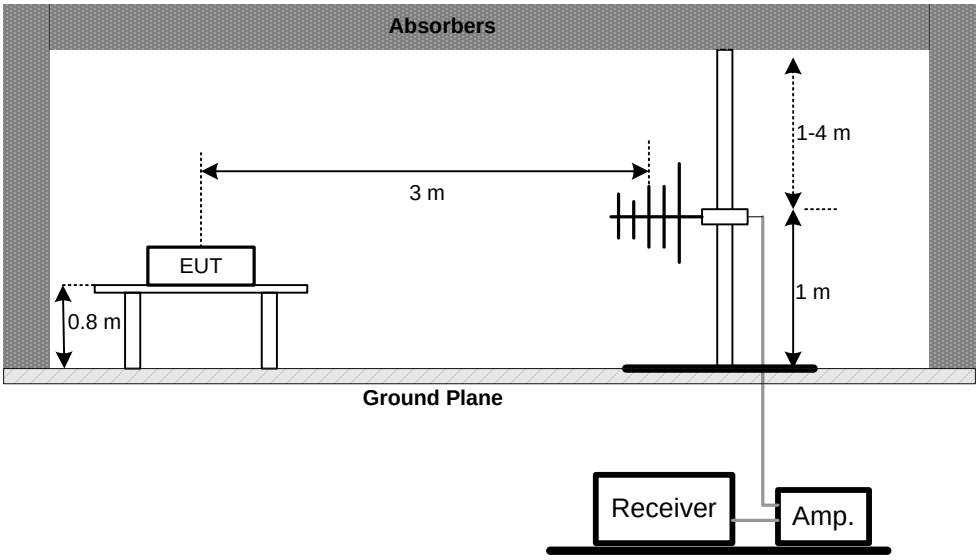
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The measuring distance of 3 m or 1.5m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform. (below 1GHz)
h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn‘t perform. (above 1GHz)
i. For the actual test configuration, please refer to the related Item -EUT Test Photos.

### 4.1.3 DEVIATION FROM TEST STANDARD

No deviation

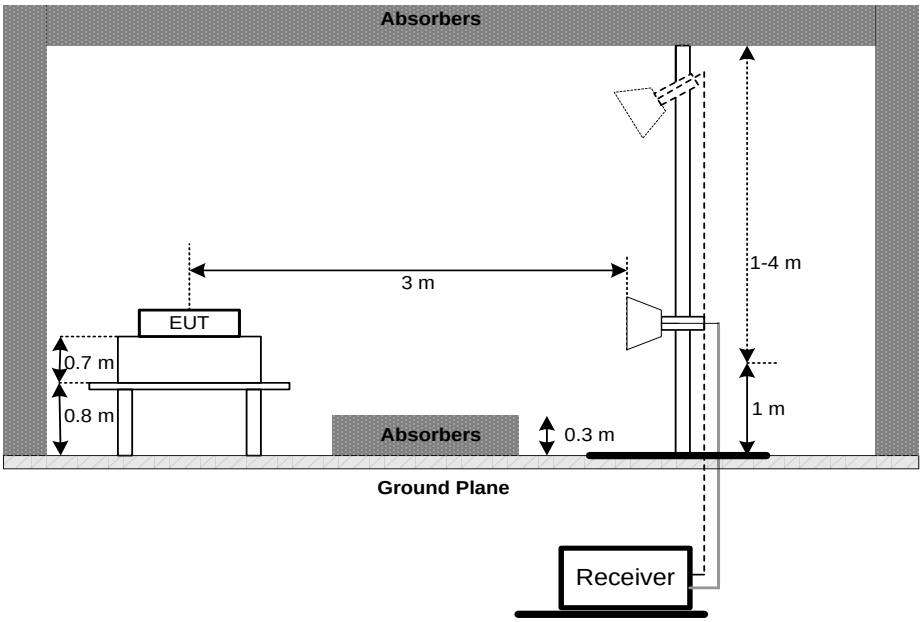
### 4.1.4 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz

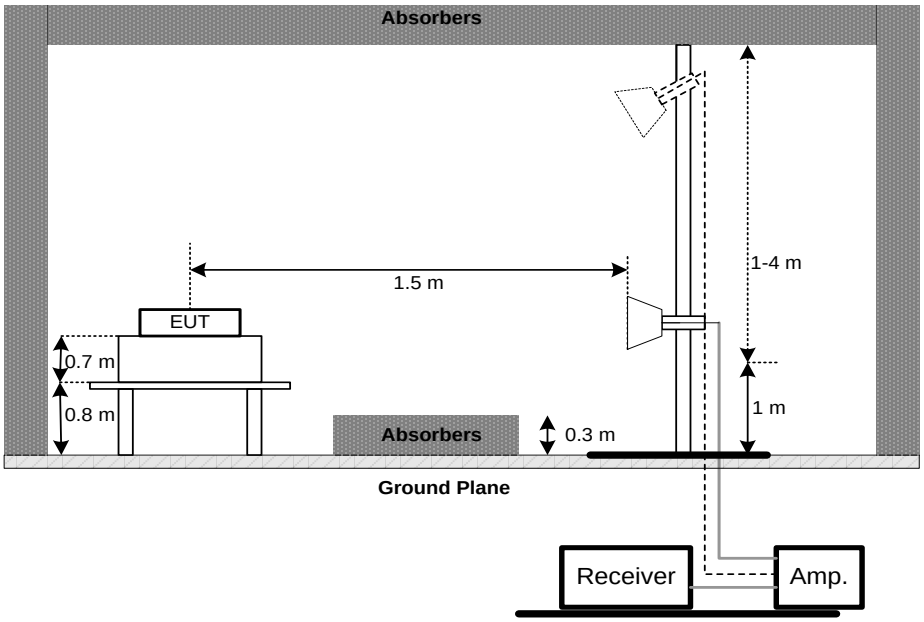


(B) Radiated Emission Test Set-Up Frequency Above 1 GHz

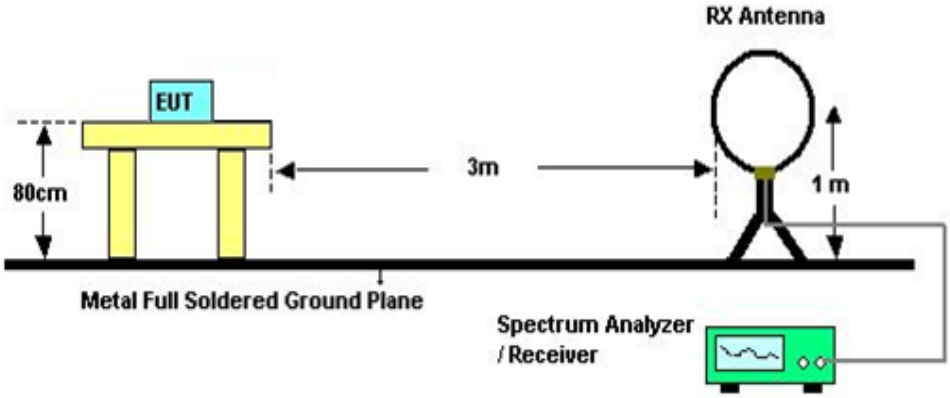
Band edge




Harmonic



(C) For Radiated Emissions Below 30MHz




### 4.1.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

### 4.1.6 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: DC 13.5V

### 4.1.7 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Appendix A.

Remark:

(1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
(2) Distance extrapolation factor = 40 log (specific distance / test distance) (dB).
(3) Limit line = specific limits (dBuV) + distance extrapolation factor.

### 4.1.8 TEST RESULTS (30MHZ TO 1000MHZ)

Please refer to the Appendix B.

### 4.1.9 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the Appendix C.

Remark:

(1) No limit: This is fundamental signal, the judgment is not applicable.
For fundamental signal judgment was referred to Peak output test.

## 5. BANDWIDTH TEST

### 5.1 APPLIED PROCEDURES

| FCC Part15 (15.247) , Subpart C | | | |
|---|---|---|---|
| Section | Test Item | Frequency Range (MHz) | Result |
| 15.247(a)(2) | Bandwidth | 2400-2483.5 | PASS |

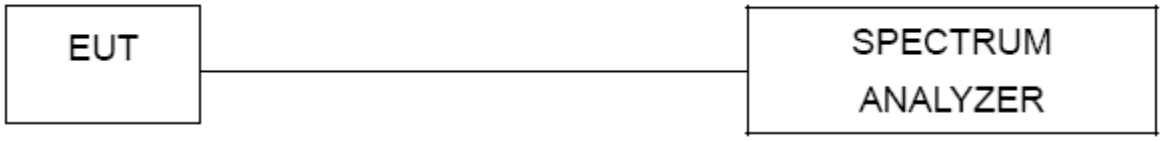
#### 5.1.1 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting: RBW= 100KHz, VBW=300KHz, Sweep time = 2.5 ms.

#### 5.1.2 DEVIATION FROM STANDARD

No deviation.

#### 5.1.3 TEST SETUP




#### 5.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 5.1.5 EUT TEST CONDITIONS

Temperature: 25°C  Relative Humidity: 55%  Test Voltage: DC 13.5V

#### 5.1.6 TEST RESULTS

Please refer to the Appendix D.

## 6. MAXIMUM AVG OUTPUT POWER TEST

### 6.1 APPLIED PROCEDURES / LIMIT

| FCC Part15 (15.247) , Subpart C | | | | |
|---|---|---|---|---|
| Section | Test Item | Limit | Frequency Range (MHz) | Result |
| 15.247(b)(3) | Maximum Output Power | 1 Watt or 30dBm | 2400-2483.5 | PASS |

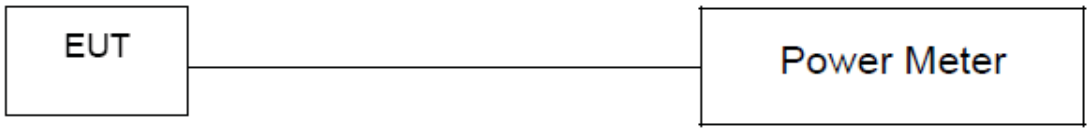
#### 6.1.1 TEST PROCEDURE

a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
b. The maximum average conducted output power was performed in accordance with method 9.1.2 of FCC KDB 558074 D01 v04 DTS Meas Guidance.

#### 6.1.2 DEVIATION FROM STANDARD

No deviation.

#### 6.1.3 TEST SETUP




#### 6.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 6.1.5 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: DC 13.5V

#### 6.1.6 TEST RESULTS

Please refer to the Appendix E.

# 7. ANTENNA CONDUCTED SPURIOUS EMISSION

## 7.1 APPLIED PROCEDURES / LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c))

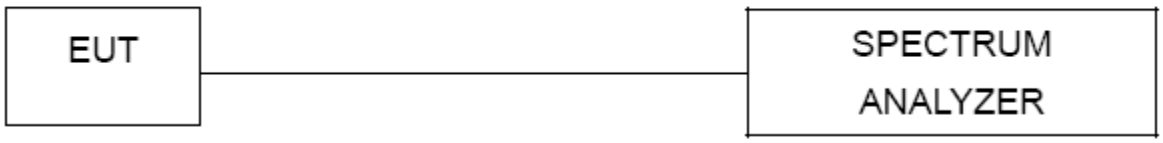
### 7.1.1 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting: RBW= 100KHz, VBW=300KHz, Sweep time = Auto.
c. Offset=antenna gain+cable loss

### 7.1.2 DEVIATION FROM STANDARD

No deviation.

### 7.1.3 TEST SETUP




### 7.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

### 7.1.5 EUT TEST CONDITIONS

Temperature: 25°C  Relative Humidity: 55%  Test Voltage: DC 13.5V

### 7.1.6 TEST RESULTS

Please refer to the Appendix F.

# 8. POWER SPECTRAL DENSITY TEST

## 8.1 APPLIED PROCEDURES / LIMIT

| FCC Part15 (15.247) , Subpart C | | | | |
|---|---|---|---|---|
| Section | Test Item | Limit | Frequency Range (MHz) | Result |
| 15.247(e) | Power Spectral Density | 8 dBm (in any 3KHz) | 2400-2483.5 | PASS |

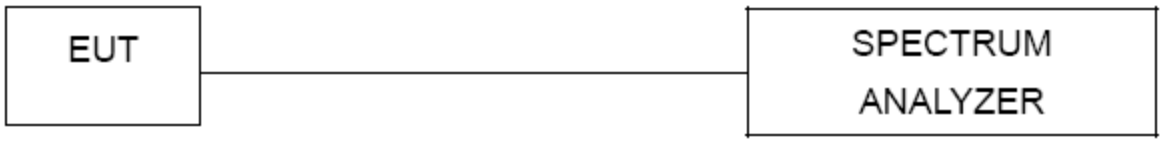
### 8.1.1 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting: RBW=3KHz, VBW=10KHz, Sweep time = Auto.

### 8.1.2 DEVIATION FROM STANDARD

No deviation.

### 8.1.3 TEST SETUP




### 8.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

### 8.1.5 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: DC 13.5V

### 8.1.6 TEST RESULTS

Please refer to the Appendix G.

## 9. MEASUREMENT INSTRUMENTS LIST

| Radiated Emission Measurement - Below 1GHz | | | | | |
|---|---|---|---|---|---|
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
| 1 | Antenna | Schwarbeck | VULB9160 | 9160-3232 | Mar. 11, 2019 |
| 2 | Amplifier | HP | 8447D | 2944A09673 | Oct. 19, 2018 |
| 3 | Receiver | Agilent | N9038A | MY52130039 | Aug. 20, 2018 |
| 4 | Cable | emci | LMR-400(30MHz-1 GHz)(8m+5m) | N/A | May. 25, 2019 |
| 5 | Controller | CT | SC100 | N/A | N/A |
| 6 | Controller | MF | MF-7802 | MF780208416 | N/A |
| 7 | Measurement Software | Farad | EZ-EMC Ver.NB-03A1-01 | N/A | N/A |
| 8 | Antenna | EM | EM-6876-1 | 230 | Feb. 07, 2019 |

| Radiated Emission Measurement - Above 1GHz | | | | | |
|---|---|---|---|---|---|
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
| 1 | Double Ridged Guide Antenna | ETS | 3115 | 75789 | Mar. 11, 2019 |
| 2 | Broad-Band Horn Antenna | Schwarzbeck | BBHA 9170 | 9170319 | Jun. 30, 2019 |
| 3 | Amplifier | Agilent | 8449B | 3008A02274 | Mar. 11, 2019 |
| 4 | Microwave Preamplifier With Adaptor | EMC INSTRUMENT | EMC2654045 | 980039 & HA01 | Mar. 11, 2019 |
| 5 | Receiver | Agilent | N9038A | MY52130039 | Aug. 20, 2018 |
| 6 | Controller | CT | SC100 | N/A | N/A |
| 7 | Controller | MF | MF-7802 | MF780208416 | N/A |
| 8 | Cable | N/A | CA500-SMSM-12M (1-26.5GHz) | N/A | Sep. 29, 2018 |
| 9 | Measurement Software | Farad | EZ-EMC Ver.NB-03A1-01 | N/A | N/A |

| 6dB Bandwidth | | | | | |
|---|---|---|---|---|---|
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
| 1 | Spectrum Analyzer | R&S | FSP40 | 100185 | Aug. 20, 2018 |

| AVG Output Power | | | | | |
|---|---|---|---|---|---|
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
| 1 | Cable | emci | EMC104-SM-SM-9000(0.01GHz－26.5GHz) | N/A | N/A |
| 2 | Power Sensor | Agilent | U2021XA | MY53020007 | Mar. 11, 2019 |
| 3 | Measurement Software | Keysight | EN300328v2.1.1(V1.01.40) | N/A | N/A |

| Antenna Conducted Spurious Emission | | | | | |
|---|---|---|---|---|---|
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
| 1 | Spectrum Analyzer | R&S | FSP40 | 100185 | Aug. 20, 2018 |

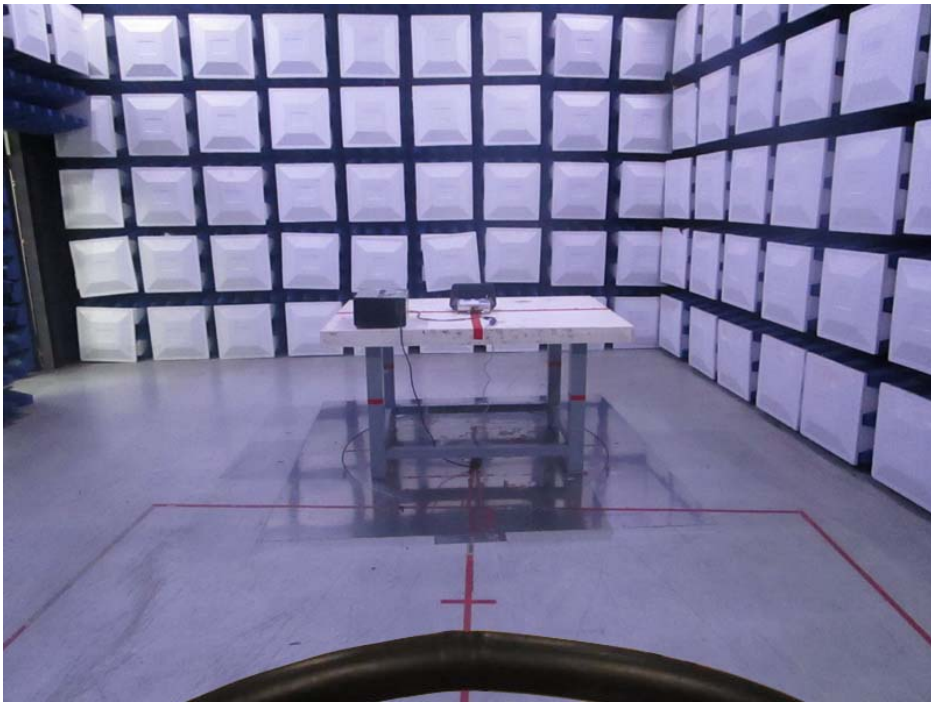
| Power Spectral Density | | | | | |
|---|---|---|---|---|---|
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
| 1 | Spectrum Analyzer | R&S | FSP40 | 100185 | Aug. 20, 2018 |

Remark: ”N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

## 10. EUT TEST PHOTO

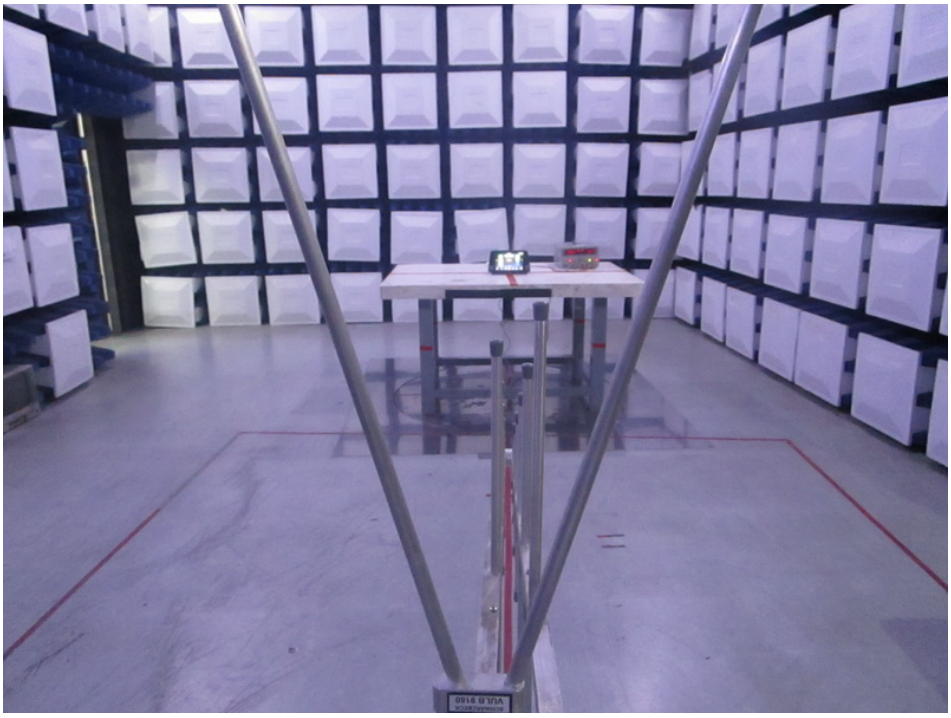
**Radiated Measurement Photos**

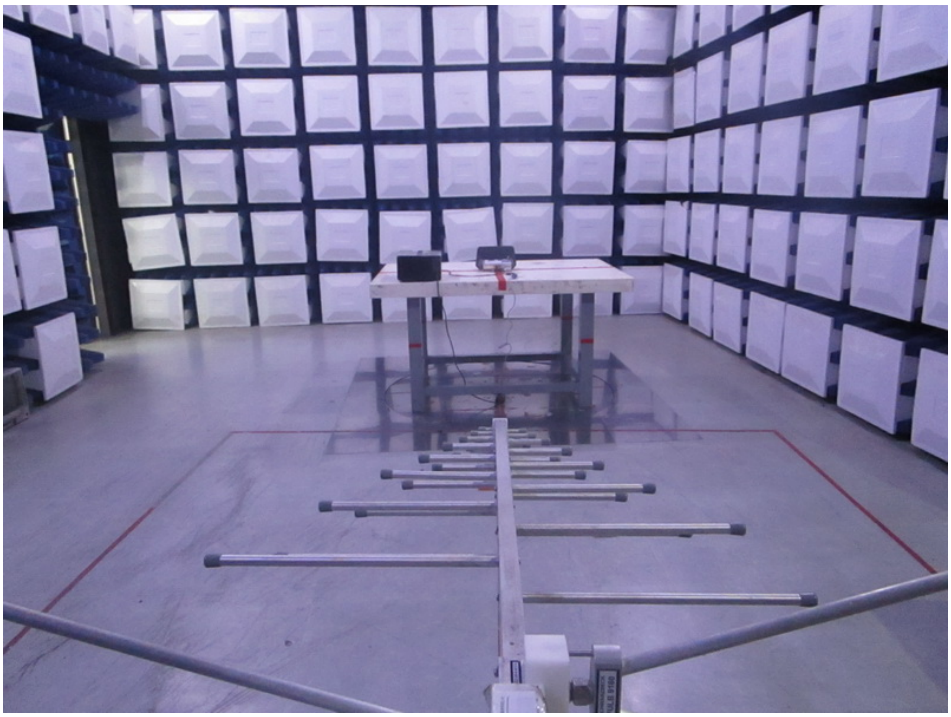
**9KHz to 30MHz**



## Radiated Measurement Photos

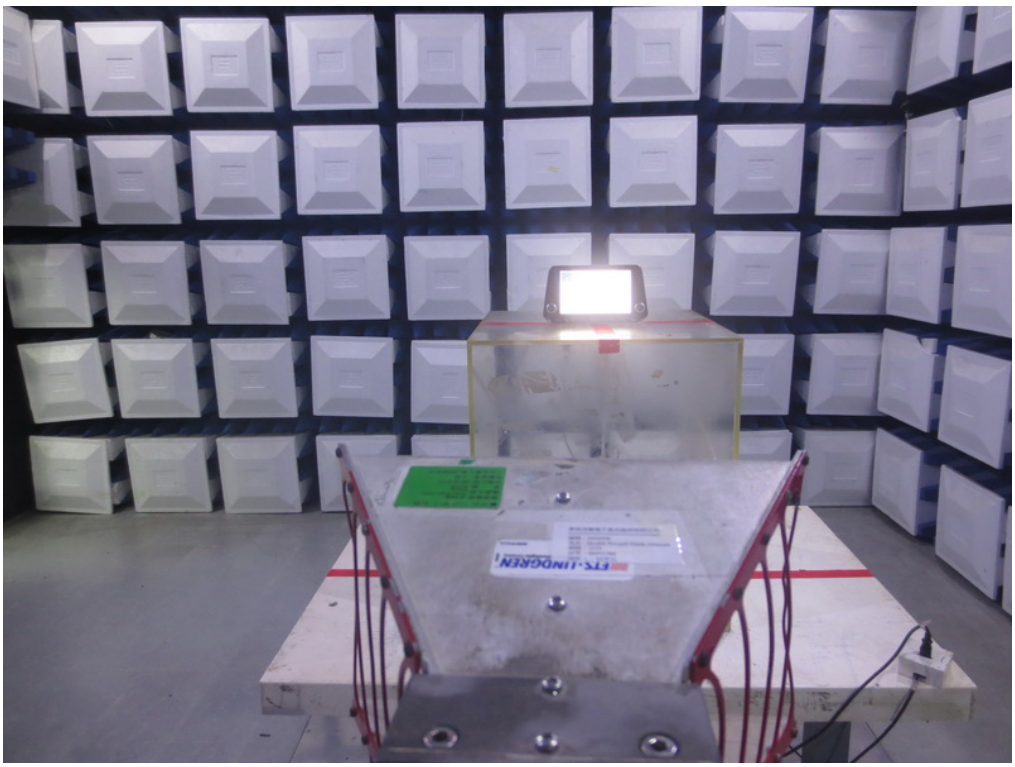
### 30MHz to 1000MHz

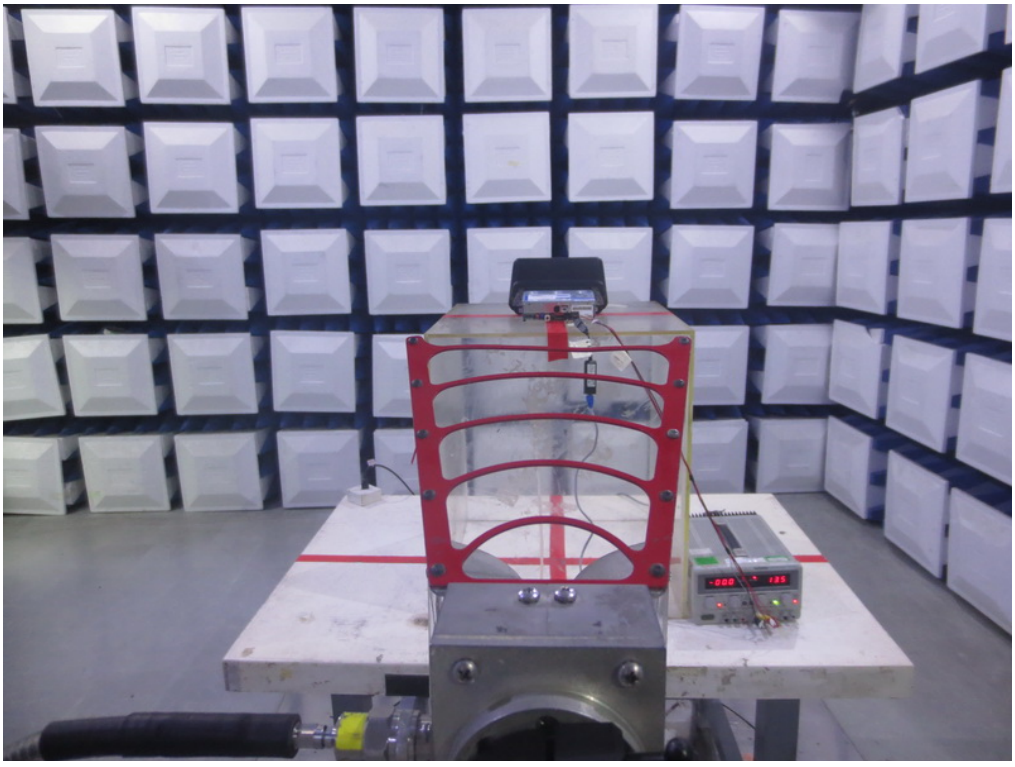




## Radiated Measurement Photos

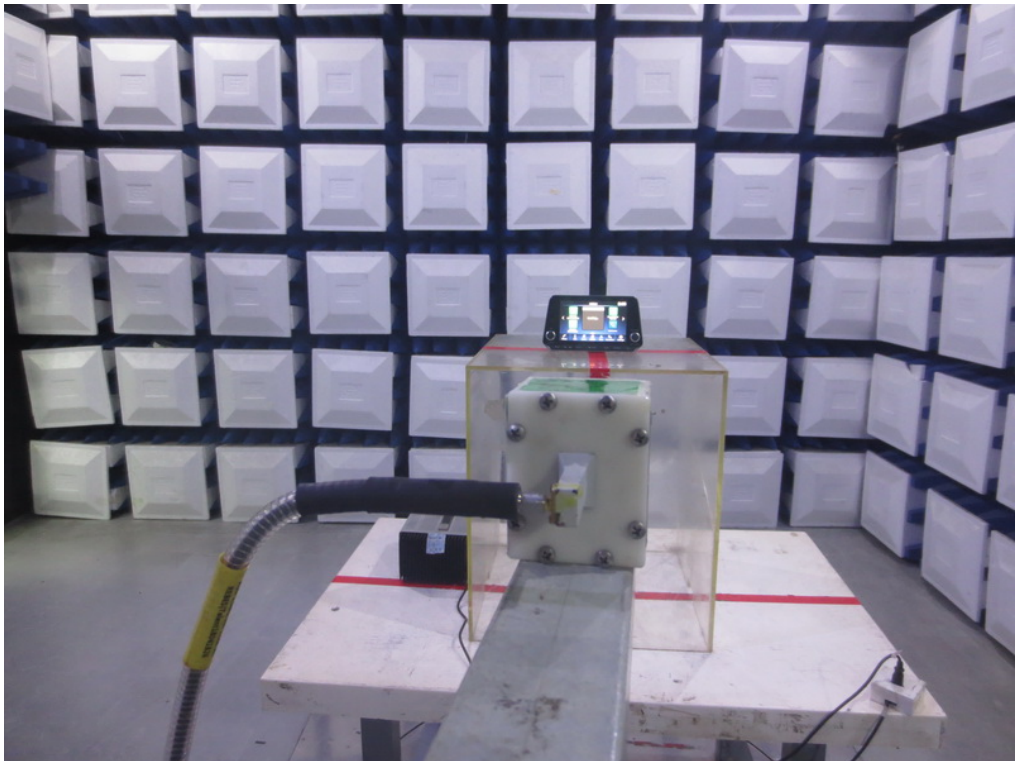
### 1GHz to 18GHz

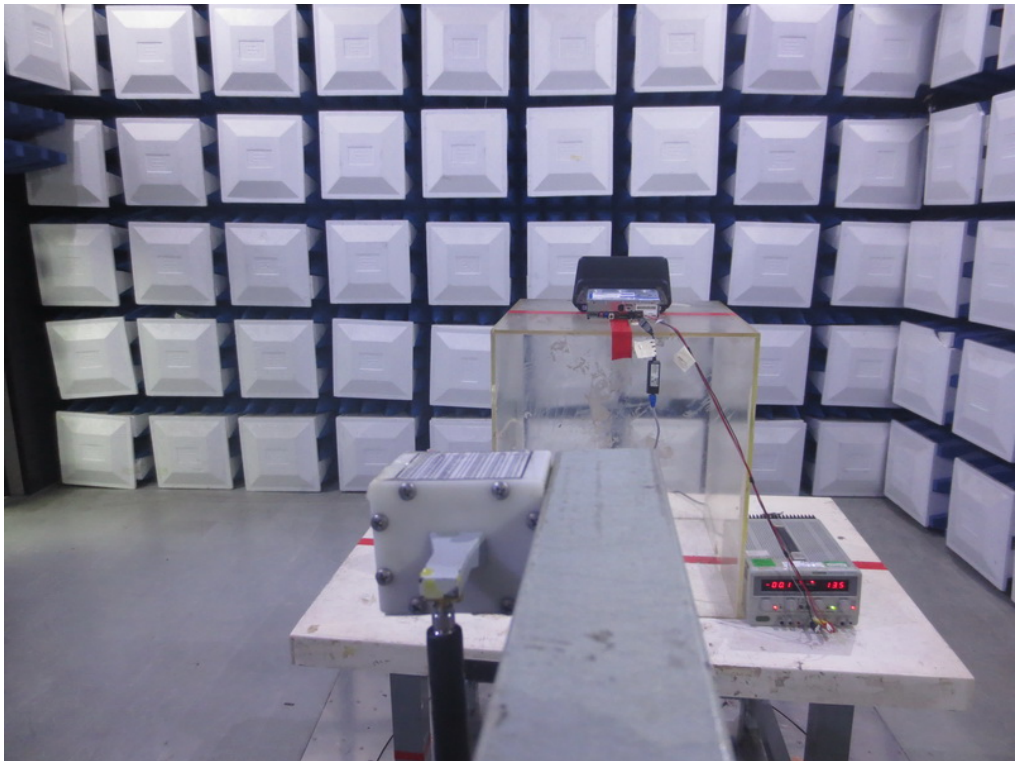




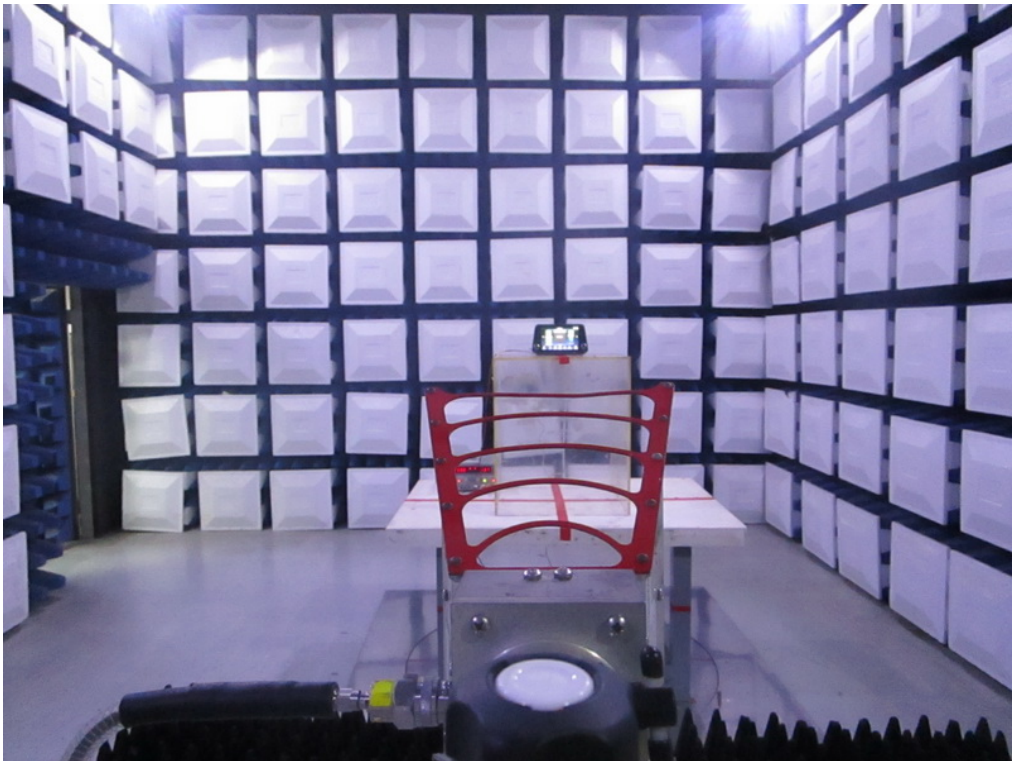
## Radiated Measurement Photos

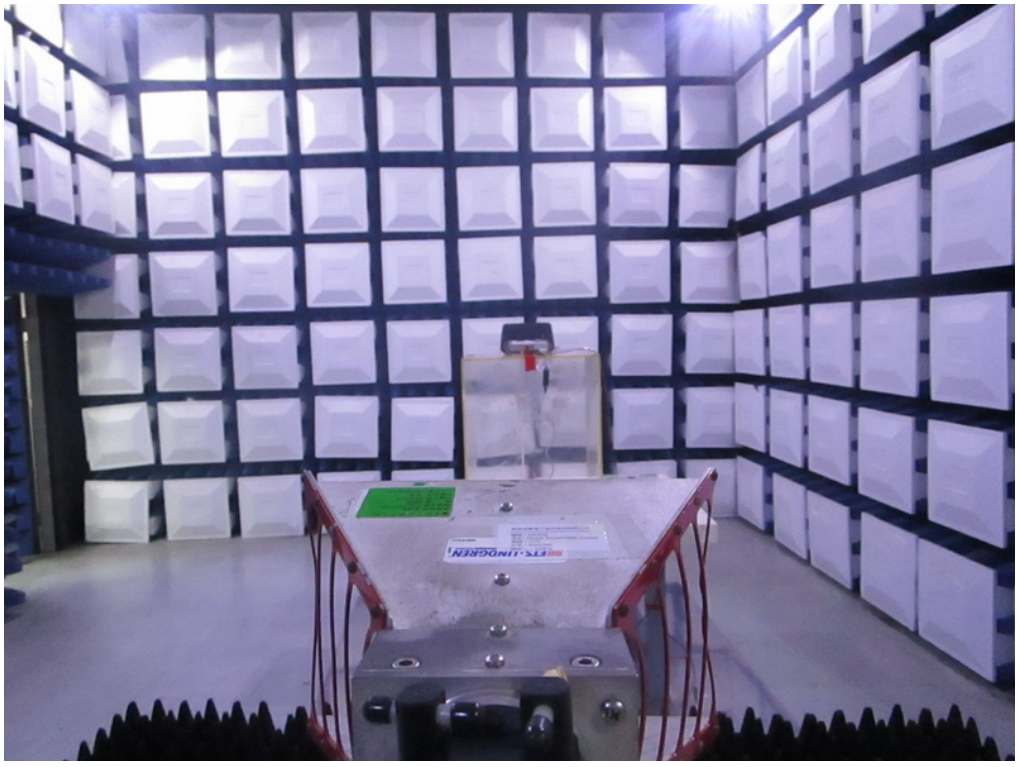
### 18GHz to 26.5GHz





## Band Edge Measurement Photos

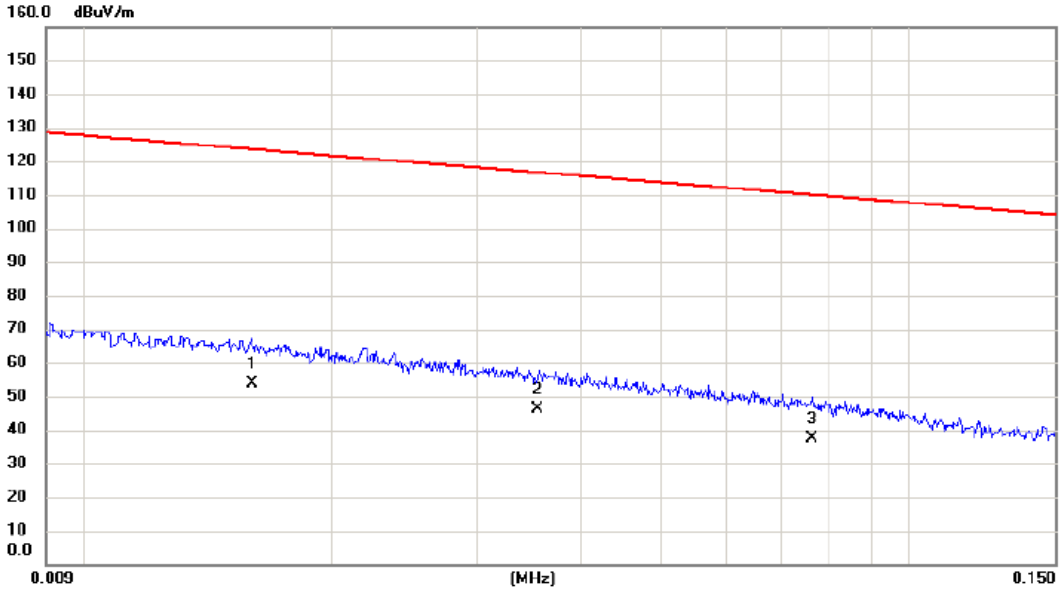




# APPENDIX A - RADIATED EMISSION (9KHZ TO 30MHZ)

| Test Mode: | TX MODE |
|---|---|

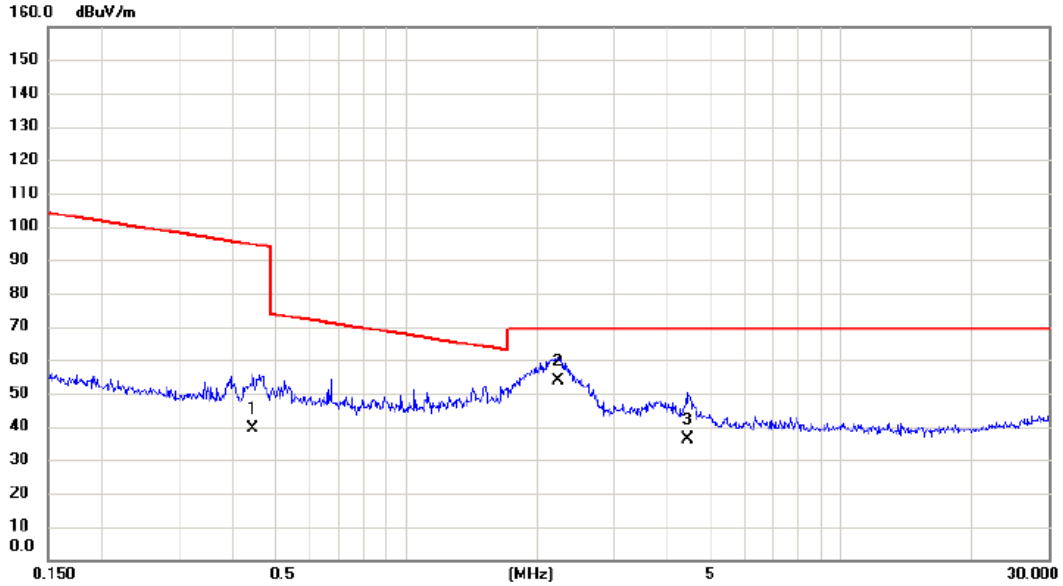
Ant 0°




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | * | 0.0160 | 33.21 | 20.58 | 53.79 | 123.52 | -69.73 | AVG | |
| 2 | | 0.0355 | 26.50 | 19.76 | 46.26 | 116.60 | -70.34 | AVG | |
| 3 | | 0.0761 | 18.60 | 19.00 | 37.60 | 109.98 | -72.38 | AVG | |

| Test Mode: | TX MODE |
|---|---|

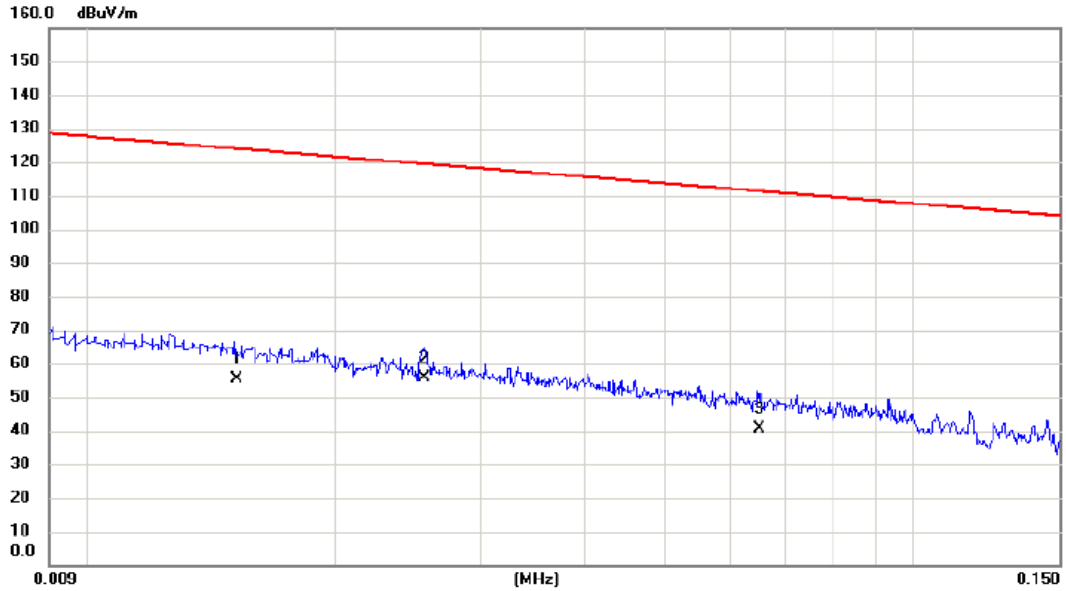
Ant 0°




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 0.4444 | 22.50 | 16.99 | 39.49 | 94.65 | -55.16 | AVG | |
| 2 | * | 2.2367 | 36.80 | 16.97 | 53.77 | 69.54 | -15.77 | QP | |
| 3 | | 4.4305 | 20.60 | 15.50 | 36.10 | 69.54 | -33.44 | QP | |

| Test Mode: | TX MODE |
|---|---|

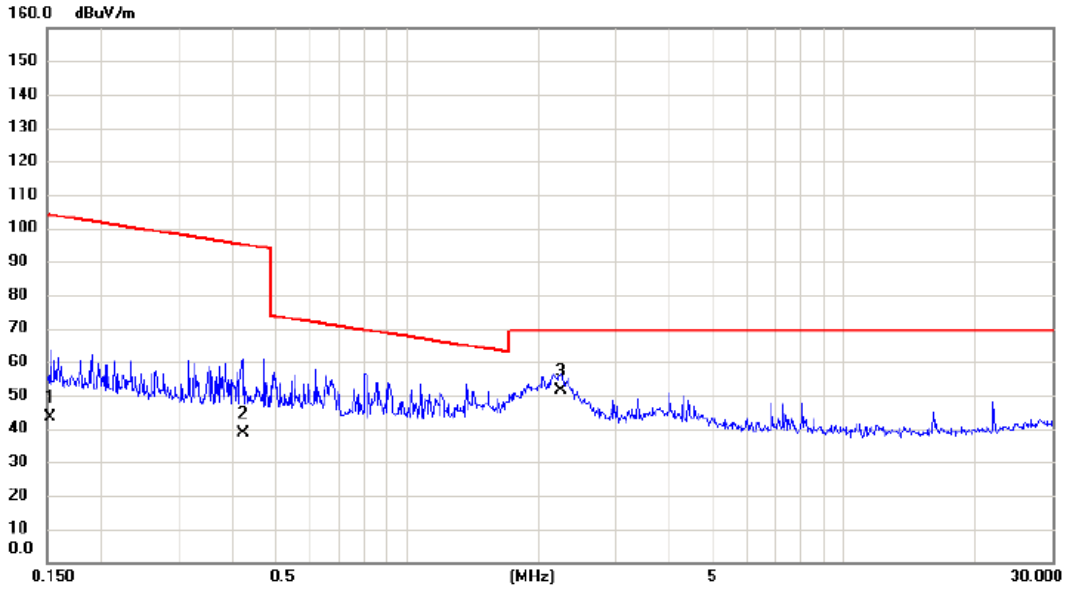
Ant 90°




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 0.0152 | 34.80 | 20.69 | 55.49 | 123.97 | -68.48 | AVG | |
| 2 | * | 0.0256 | 35.70 | 19.93 | 55.63 | 119.44 | -63.81 | AVG | |
| 3 | | 0.0650 | 21.40 | 19.23 | 40.63 | 111.35 | -70.72 | AVG | |

| Test Mode: | TX MODE |
|---|---|

Ant 90°

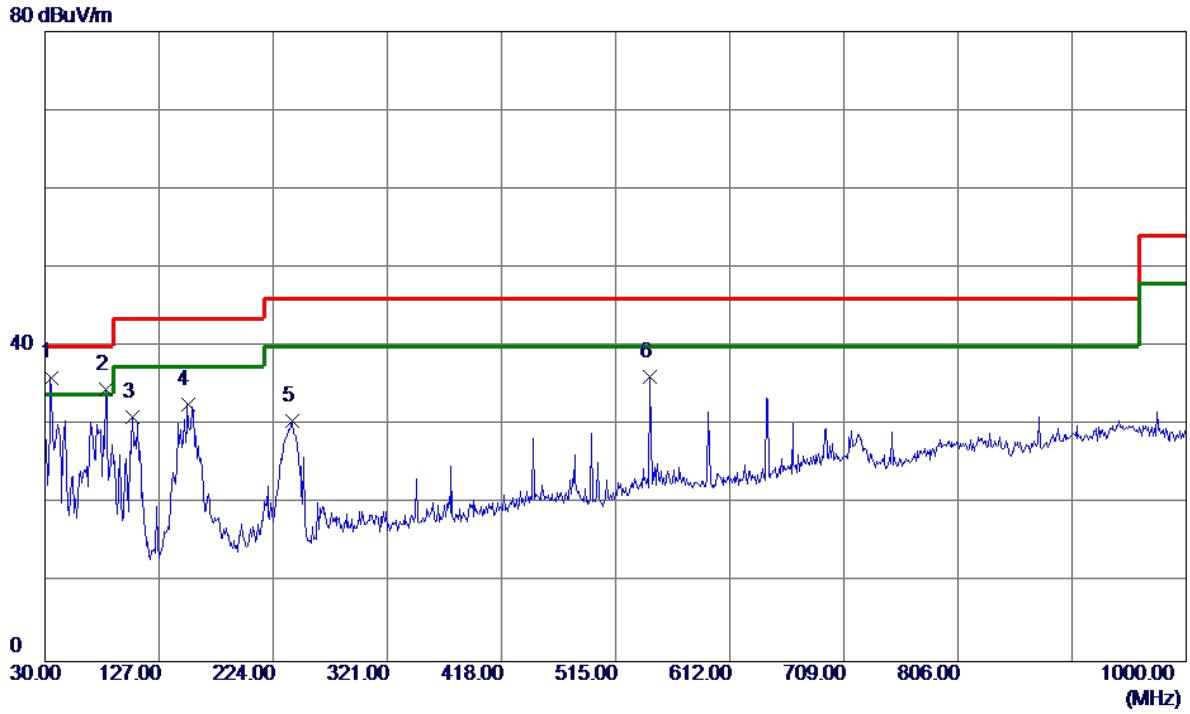



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 0.1532 | 26.30 | 17.24 | 43.54 | 103.90 | -60.36 | AVG | |
| 2 | | 0.4214 | 21.80 | 17.00 | 38.80 | 95.11 | -56.31 | AVG | |
| 3 | * | 2.2486 | 34.60 | 16.96 | 51.56 | 69.54 | -17.98 | QP | |

# APPENDIX B - RADIATED EMISSION (30MHZ TO 1000MHZ)

| Test Mode: | TX B MODE CHANNEL 01 |
|---|---|

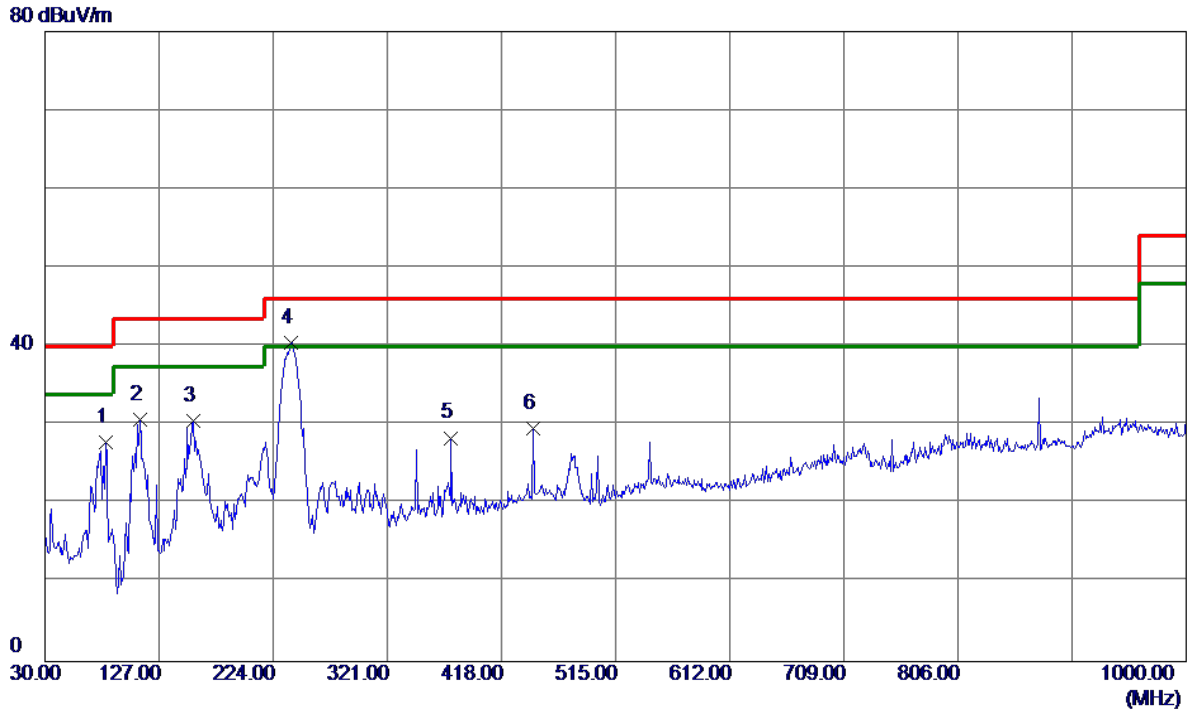
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 34.8500 | 50.97 | -14.89 | 36.08 | 40.00 | -3.92 | Peak | |
| 2 | 81.4100 | 53.26 | -18.73 | 34.53 | 40.00 | -5.47 | Peak | |
| 3 | 104.6900 | 48.40 | -17.34 | 31.06 | 43.50 | -12.44 | Peak | |
| 4 | 151.2500 | 44.05 | -11.38 | 32.67 | 43.50 | -10.83 | Peak | |
| 5 | 240.4900 | 45.22 | -14.66 | 30.56 | 46.00 | -15.44 | Peak | |
| 6 | 544.1000 | 41.91 | -5.82 | 36.09 | 46.00 | -9.91 | Peak | |

| Test Mode: | TX B MODE CHANNEL 01 |
|---|---|

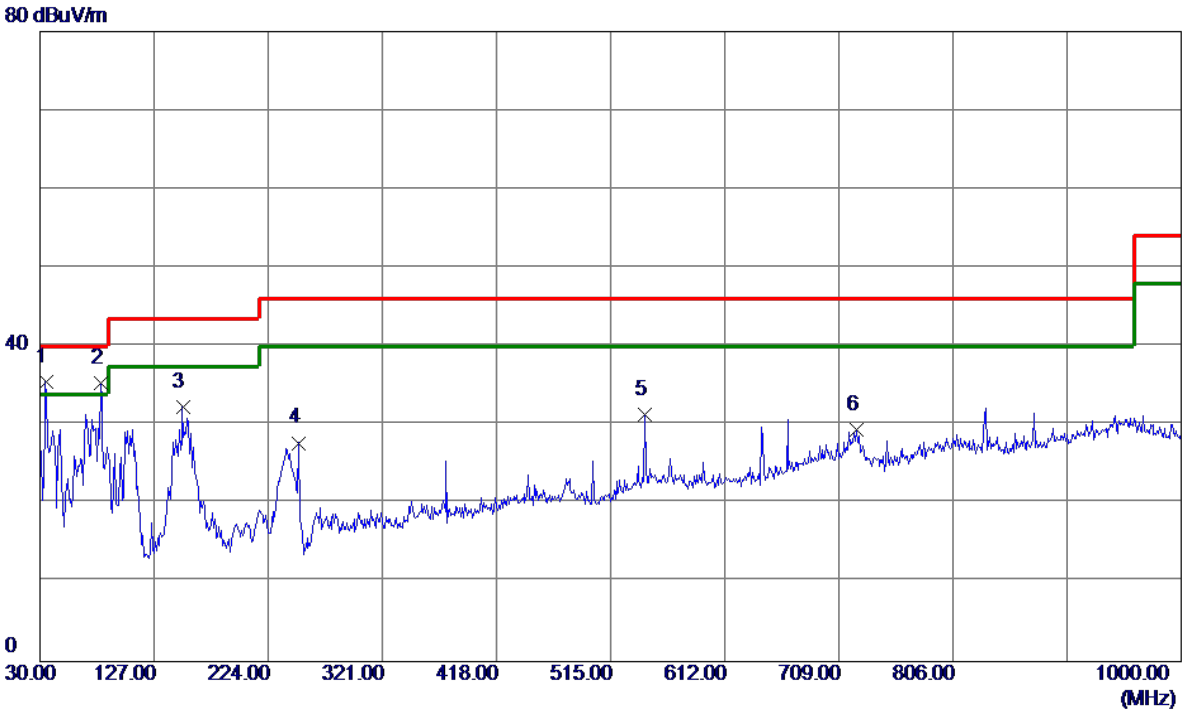
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 81.4100 | 46.59 | -18.73 | 27.86 | 40.00 | -12.14 | Peak | |
| 2 | 110.5100 | 46.88 | -16.20 | 30.68 | 43.50 | -12.82 | Peak | |
| 3 | 156.1000 | 41.57 | -10.95 | 30.62 | 43.50 | -12.88 | Peak | |
| 4 * | 239.5200 | 55.14 | -14.69 | 40.45 | 46.00 | -5.55 | Peak | |
| 5 | 375.3200 | 38.62 | -10.22 | 28.40 | 46.00 | -17.60 | Peak | |
| 6 | 445.1600 | 37.13 | -7.60 | 29.53 | 46.00 | -16.47 | Peak | |

| Test Mode: | TX B MODE CHANNEL 06 |
|---|---|

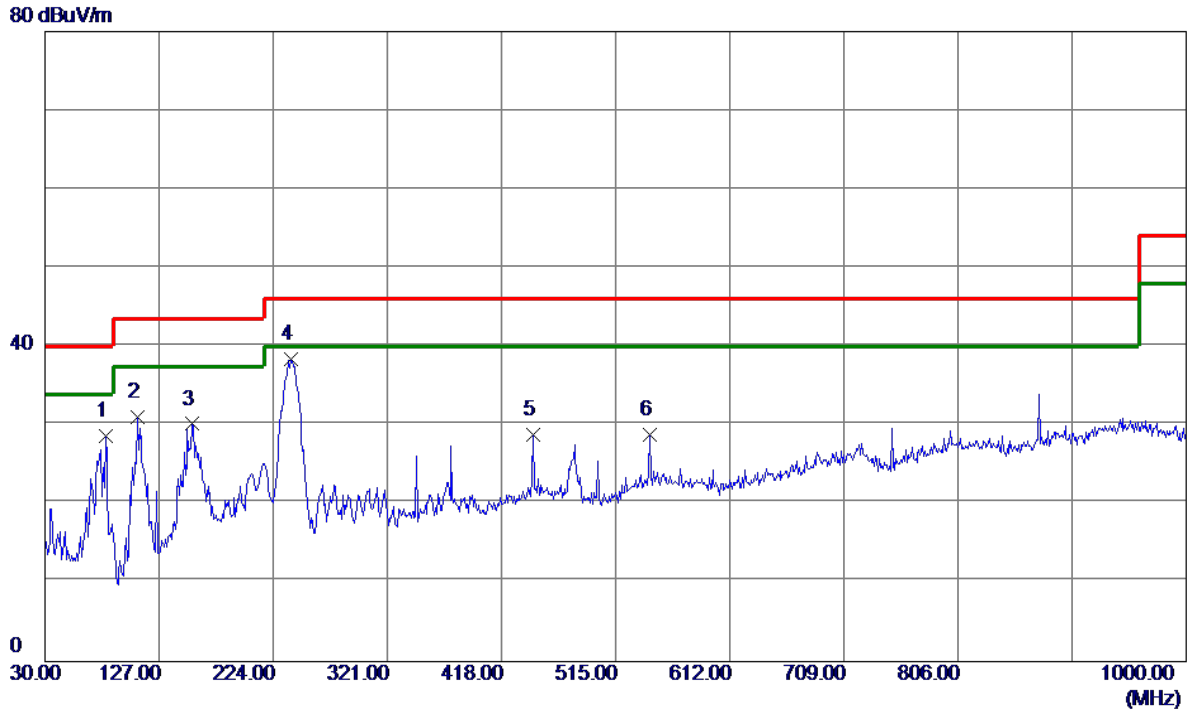
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 34.8500 | 50.46 | -14.89 | 35.57 | 40.00 | -4.43 | Peak | |
| 2 | 81.4100 | 54.03 | -18.73 | 35.30 | 40.00 | -4.70 | Peak | |
| 3 | 151.2500 | 43.74 | -11.38 | 32.36 | 43.50 | -11.14 | Peak | |
| 4 | 250.1900 | 42.04 | -14.28 | 27.76 | 46.00 | -18.24 | Peak | |
| 5 | 544.1000 | 37.13 | -5.82 | 31.31 | 46.00 | -14.69 | Peak | |
| 6 | 724.5200 | 32.79 | -3.38 | 29.41 | 46.00 | -16.59 | Peak | |

| Test Mode: | TX B MODE CHANNEL 06 |
|---|---|

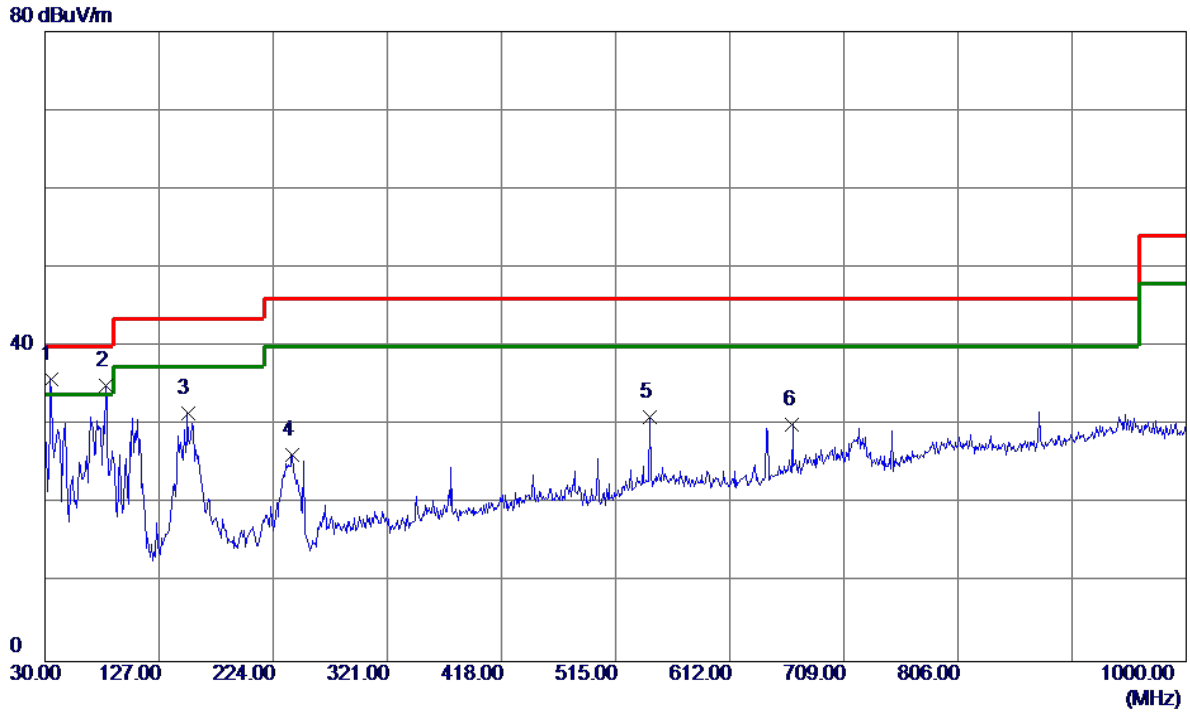
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 81.4100 | 47.39 | -18.73 | 28.66 | 40.00 | -11.34 | Peak | |
| 2 | 108.5700 | 47.63 | -16.57 | 31.06 | 43.50 | -12.44 | Peak | |
| 3 | 155.1300 | 41.19 | -11.03 | 30.16 | 43.50 | -13.34 | Peak | |
| 4 * | 239.5200 | 53.08 | -14.69 | 38.39 | 46.00 | -7.61 | Peak | |
| 5 | 445.1600 | 36.37 | -7.60 | 28.77 | 46.00 | -17.23 | Peak | |
| 6 | 544.1000 | 34.68 | -5.82 | 28.86 | 46.00 | -17.14 | Peak | |

| Test Mode: | TX B MODE CHANNEL 11 |
|---|---|

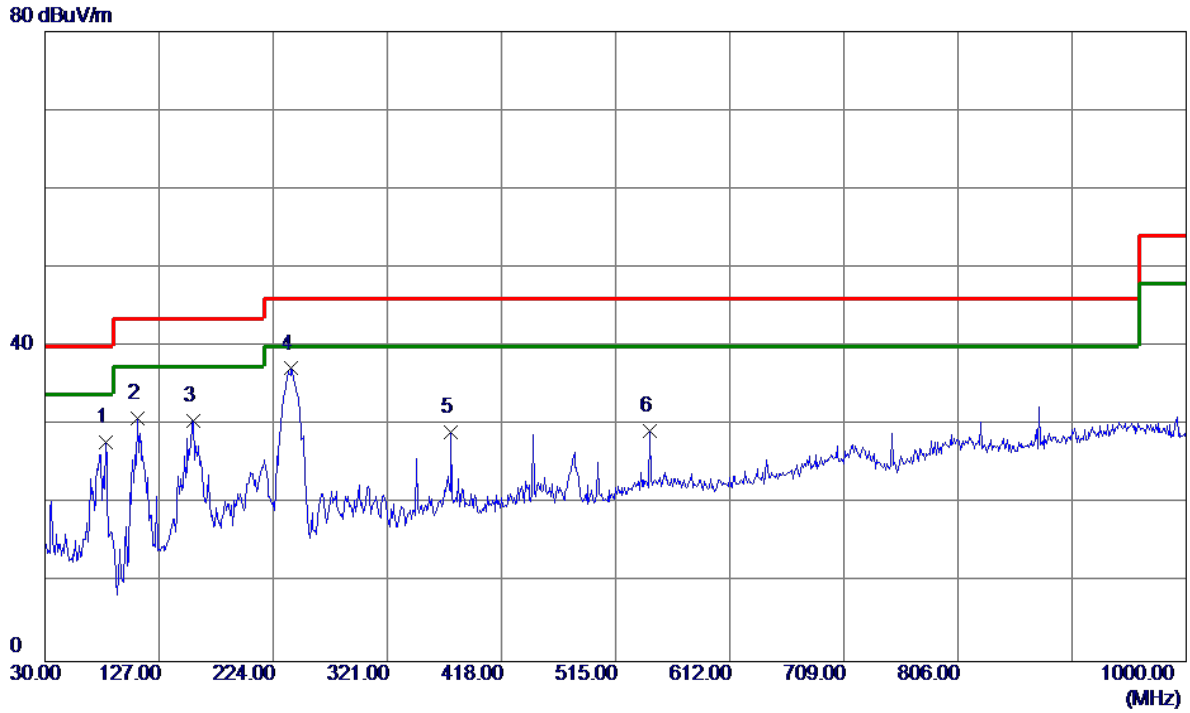
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 34.8500 | 50.80 | -14.89 | 35.91 | 40.00 | -4.09 | Peak | |
| 2 | 81.4100 | 53.79 | -18.73 | 35.06 | 40.00 | -4.94 | Peak | |
| 3 | 151.2500 | 42.85 | -11.38 | 31.47 | 43.50 | -12.03 | Peak | |
| 4 | 240.4900 | 40.87 | -14.66 | 26.21 | 46.00 | -19.79 | Peak | |
| 5 | 544.1000 | 36.82 | -5.82 | 31.00 | 46.00 | -15.00 | Peak | |
| 6 | 665.3500 | 34.49 | -4.43 | 30.06 | 46.00 | -15.94 | Peak | |

| Test Mode: | TX B MODE CHANNEL 11 |
|---|---|

**Horizontal**

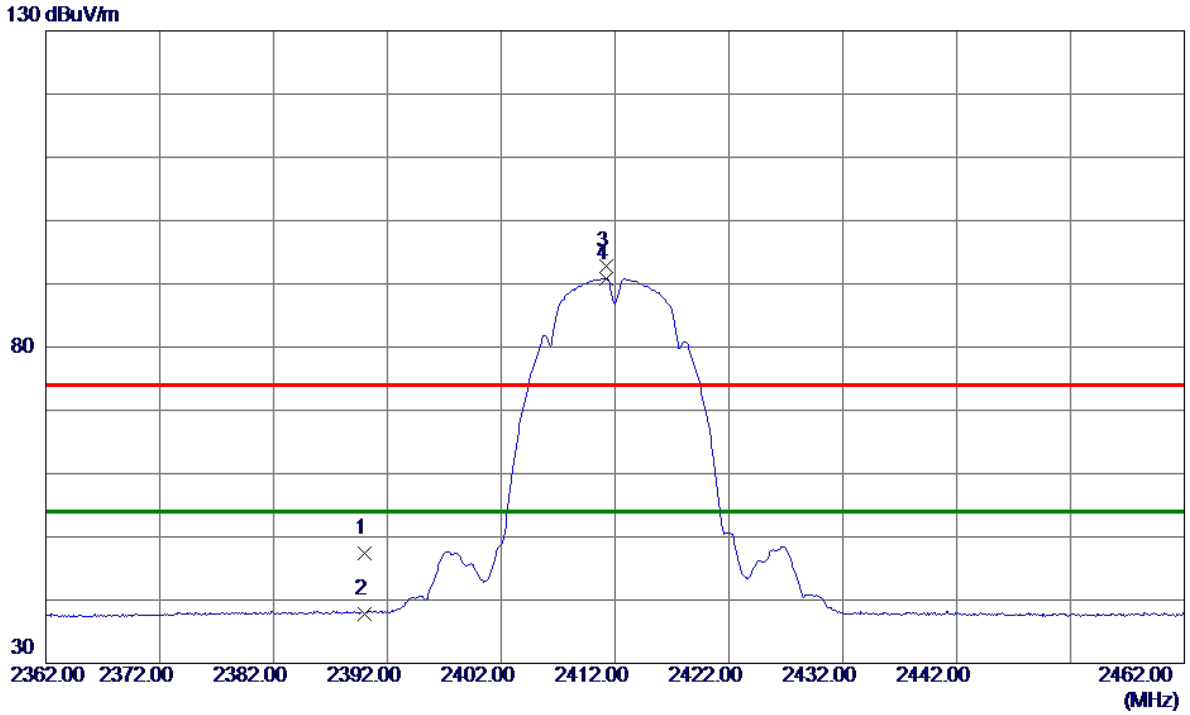



| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 81.4100 | 46.50 | -18.73 | 27.77 | 40.00 | -12.23 | Peak | |
| 2 | 108.5700 | 47.46 | -16.57 | 30.89 | 43.50 | -12.61 | Peak | |
| 3 | 156.1000 | 41.58 | -10.95 | 30.63 | 43.50 | -12.87 | Peak | |
| 4 * | 239.5200 | 51.89 | -14.69 | 37.20 | 46.00 | -8.80 | Peak | |
| 5 | 375.3200 | 39.31 | -10.22 | 29.09 | 46.00 | -16.91 | Peak | |
| 6 | 544.1000 | 35.04 | -5.82 | 29.22 | 46.00 | -16.78 | Peak | |

# APPENDIX C - RADIATED EMISSION (ABOVE 1000MHZ)

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2412MHz |

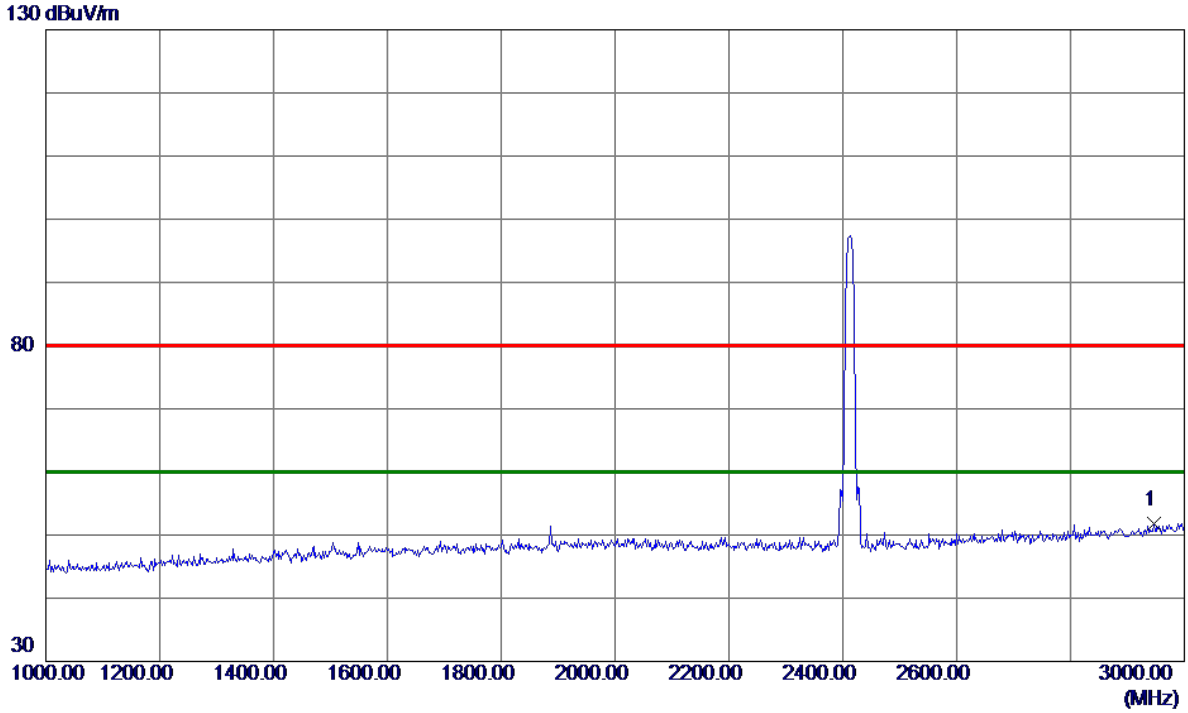
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2390.0000 | 36.12 | 11.32 | 47.44 | 74.00 | -26.56 | Peak | |
| 2 | 2390.0000 | 26.53 | 11.32 | 37.85 | 54.00 | -16.15 | AVG | |
| 3 | 2411.2000 | 81.55 | 11.33 | 92.88 | 74.00 | 18.88 | Peak | No Limit |
| 4 * | 2411.2000 | 79.53 | 11.33 | 90.86 | 54.00 | 36.86 | AVG | No Limit |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2412MHz |

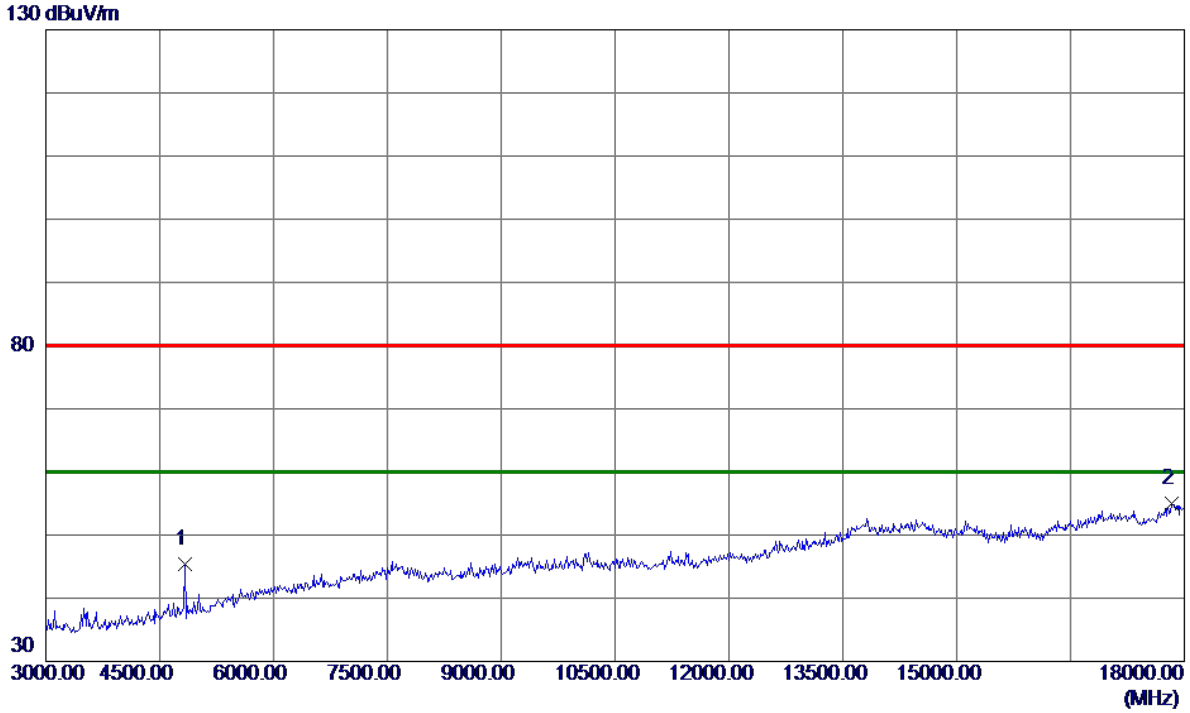
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2946.0000 | 37.09 | 14.61 | 51.70 | 80.00 | -28.30 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2412MHz |

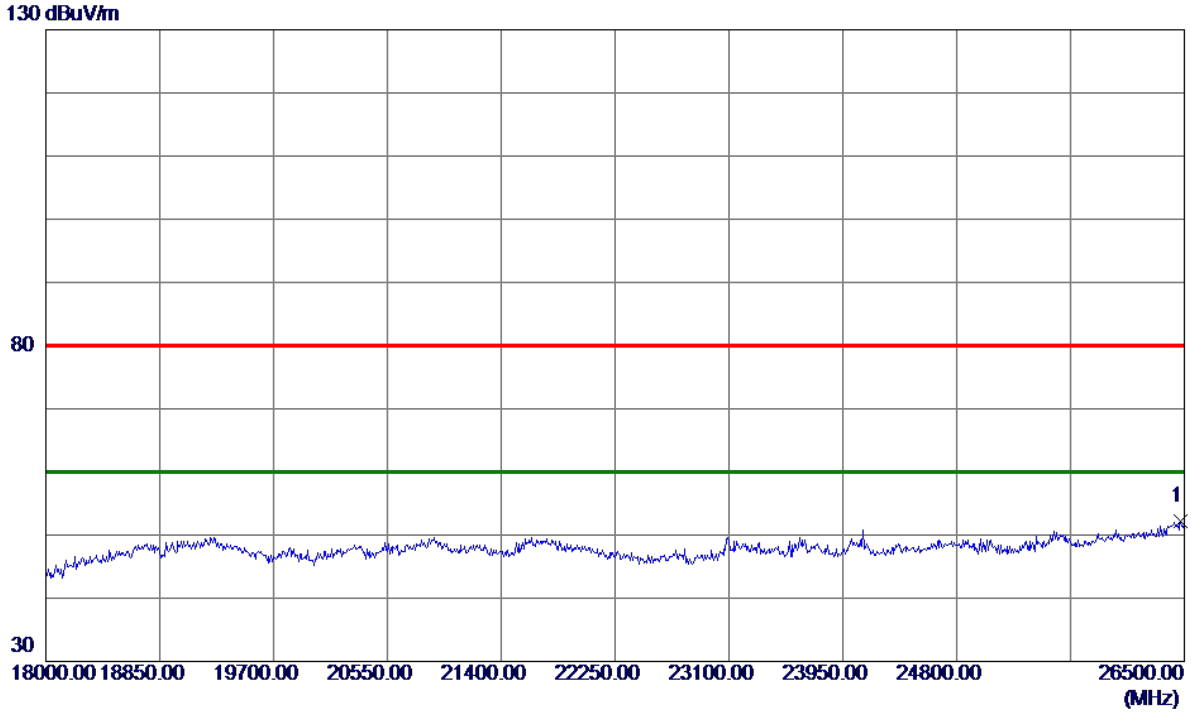
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 4830.0000 | 35.36 | 10.03 | 45.39 | 80.00 | -34.61 | Peak | |
| 2 * | 17835.0000 | 26.40 | 28.63 | 55.03 | 80.00 | -24.97 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2412MHz |

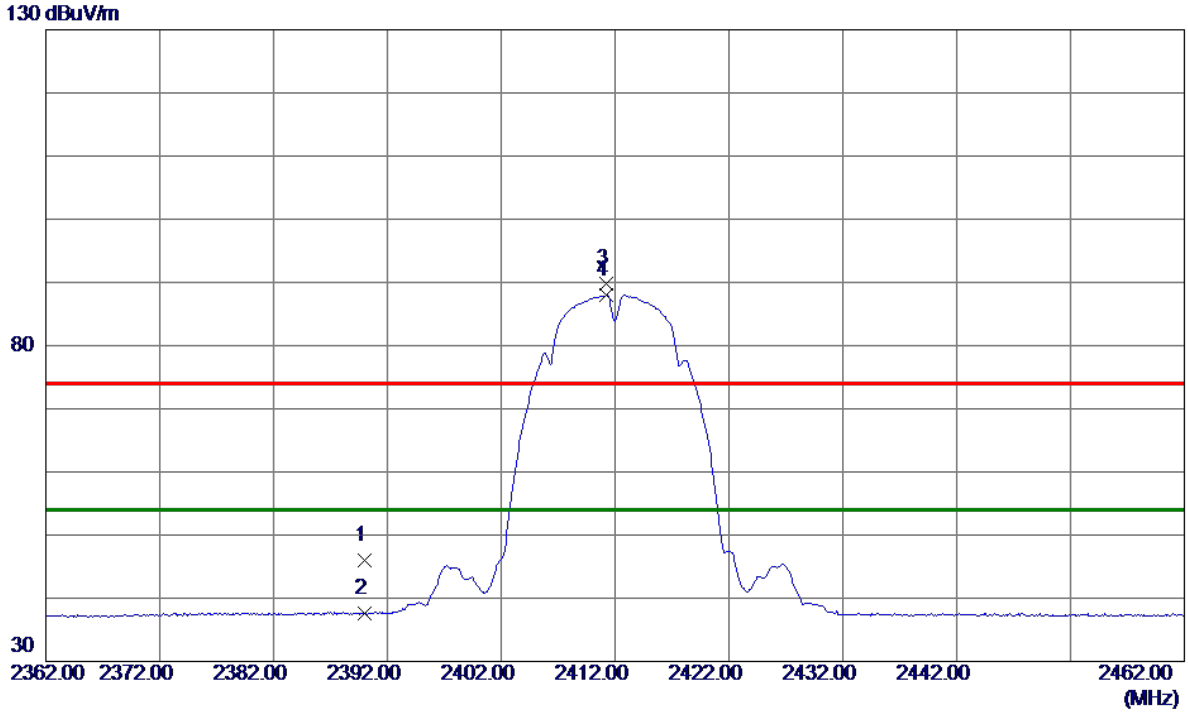
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 26474.5000 | 52.14 | 0.00 | 52.14 | 80.00 | -27.86 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2412MHz |

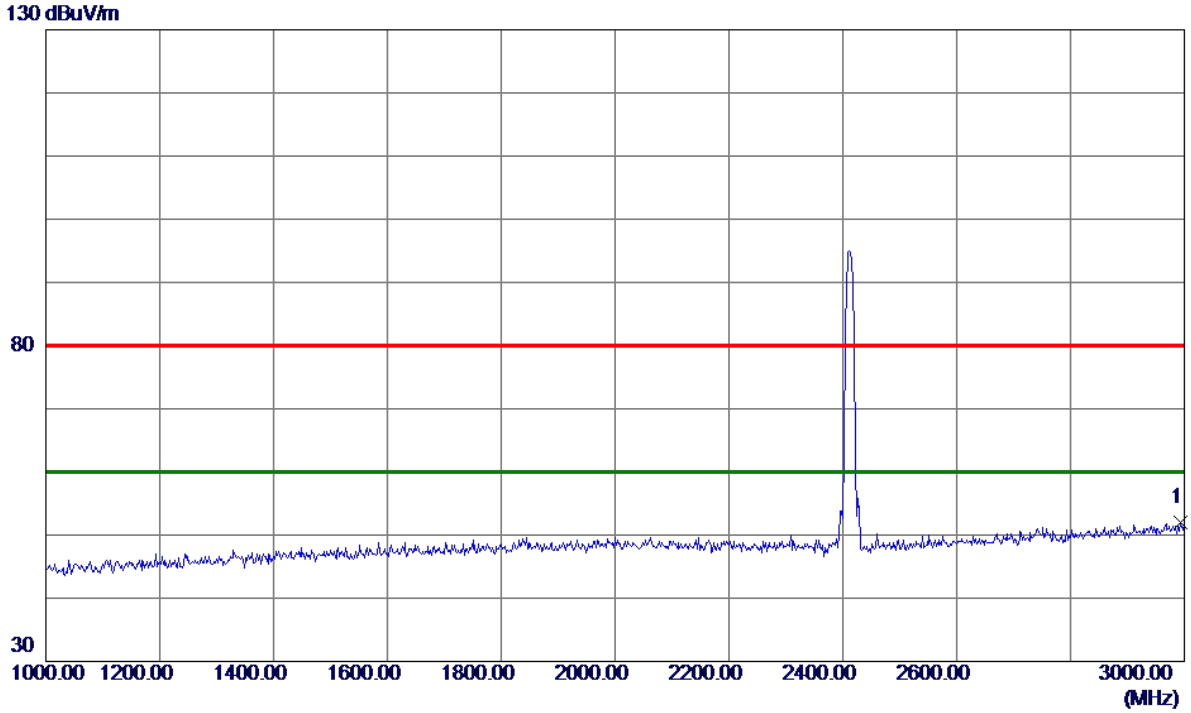
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2390.0000 | 34.66 | 11.32 | 45.98 | 74.00 | -28.02 | Peak | |
| 2 | 2390.0000 | 26.34 | 11.32 | 37.66 | 54.00 | -16.34 | AVG | |
| 3 | 2411.2000 | 78.54 | 11.33 | 89.87 | 74.00 | 15.87 | Peak | No Limit |
| 4 * | 2411.2000 | 76.64 | 11.33 | 87.97 | 54.00 | 33.97 | AVG | No Limit |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2412MHz |

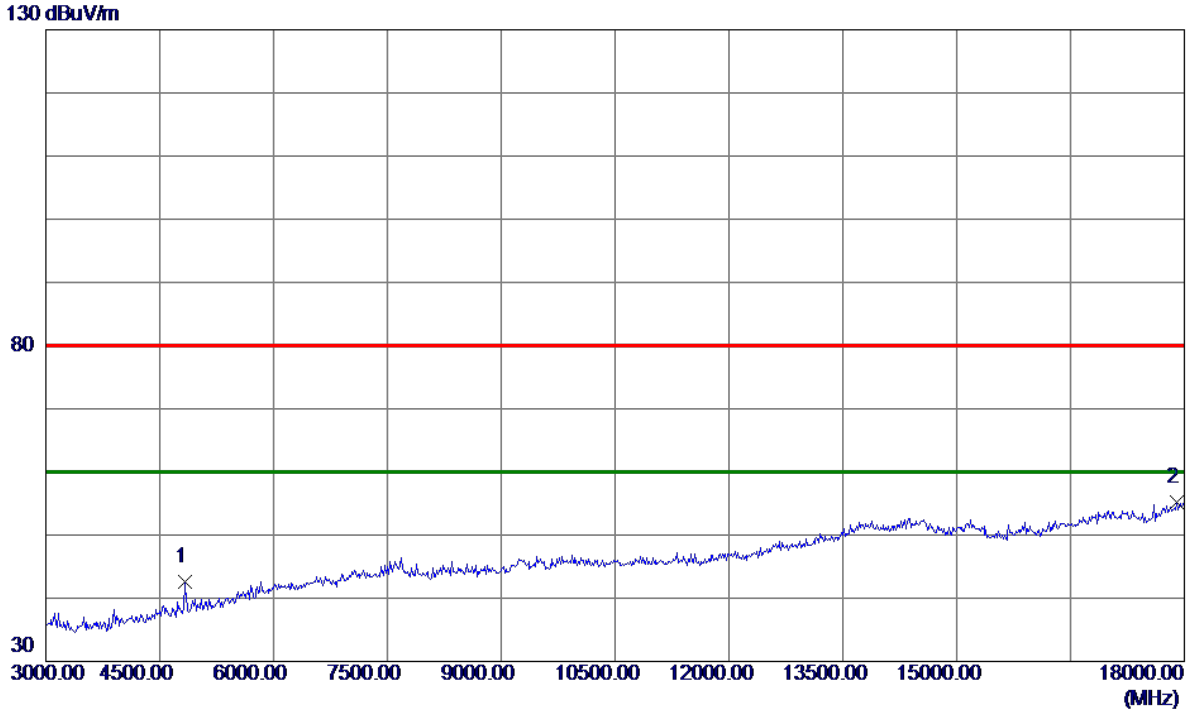
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2994.0000 | 37.05 | 14.96 | 52.01 | 80.00 | -27.99 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2412MHz |

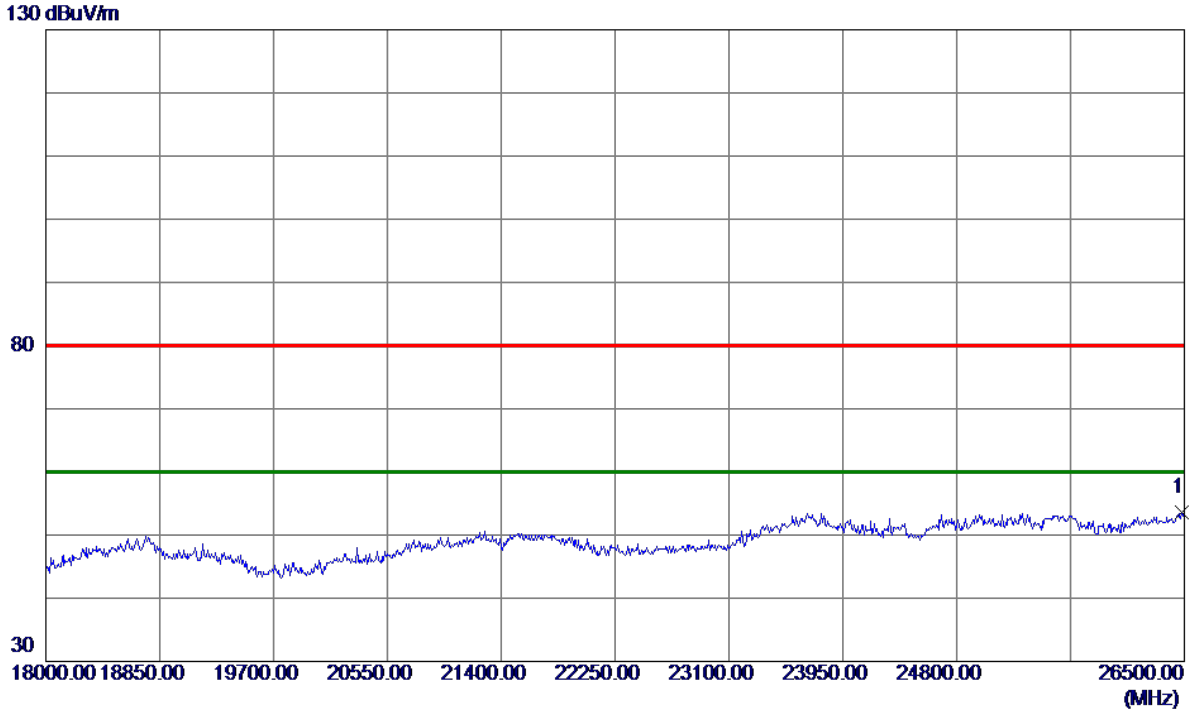
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 4830.0000 | 32.58 | 10.03 | 42.61 | 80.00 | -37.39 | Peak | |
| 2 * | 17895.0000 | 26.31 | 28.82 | 55.13 | 80.00 | -24.87 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2412MHz |

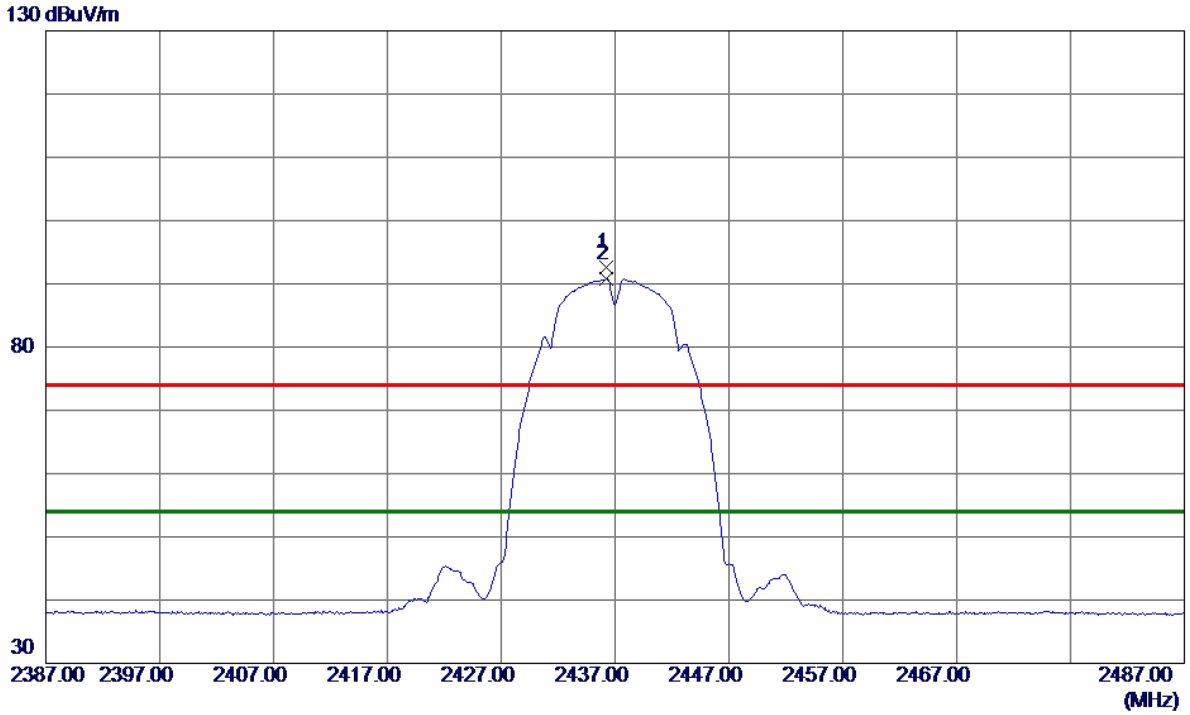
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 26483.0000 | 53.56 | 0.00 | 53.56 | 80.00 | -26.44 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2437MHz |

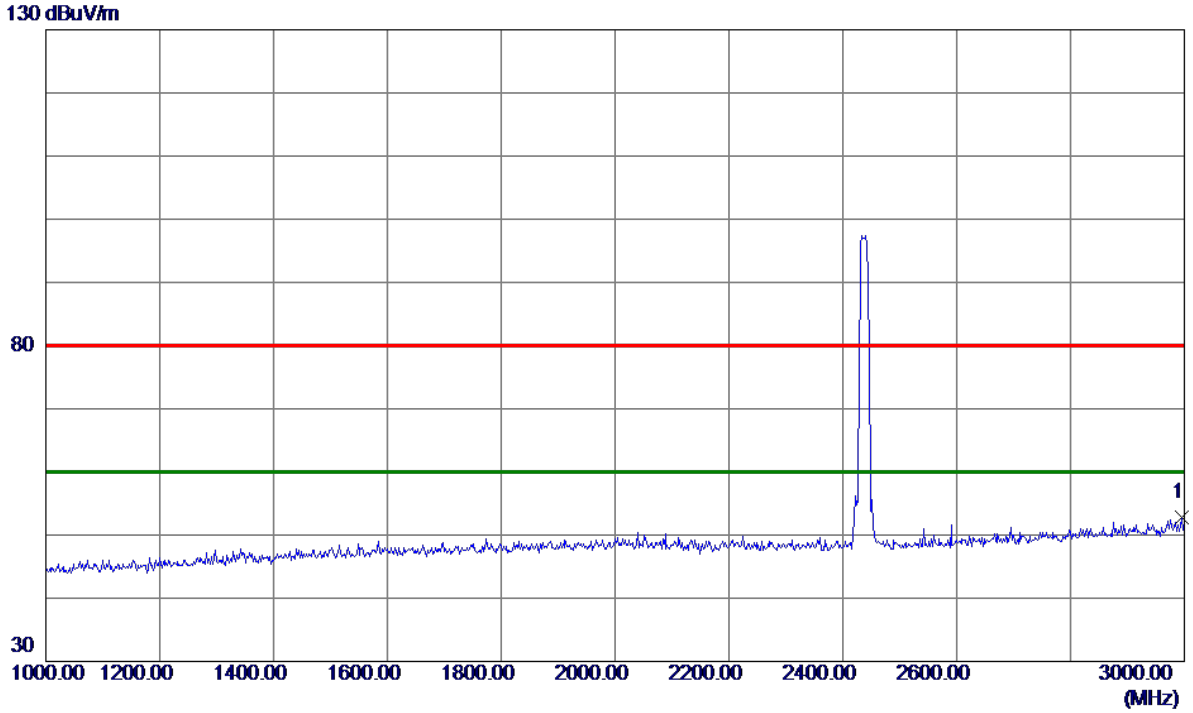
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2436.2000 | 81.34 | 11.33 | 92.67 | 74.00 | 18.67 | Peak | No Limit |
| 2 * | 2436.2000 | 79.40 | 11.33 | 90.73 | 54.00 | 36.73 | AVG | No Limit |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2437MHz |

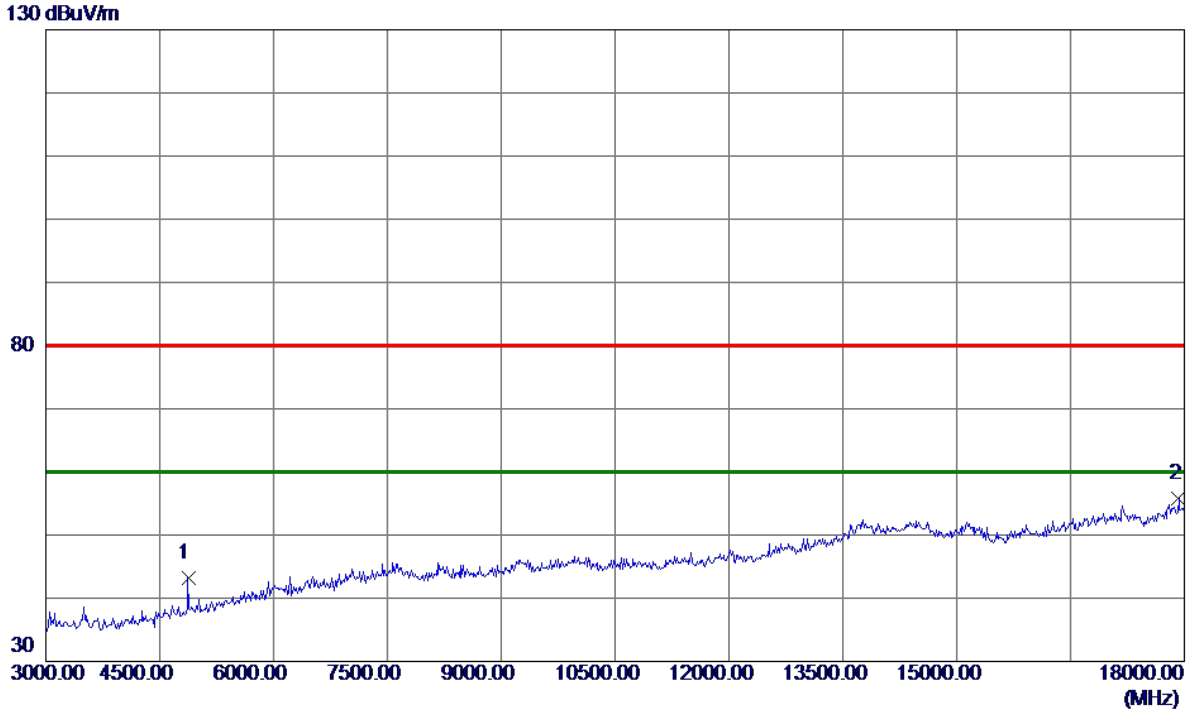
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2996.0000 | 37.78 | 14.97 | 52.75 | 80.00 | -27.25 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2437MHz |

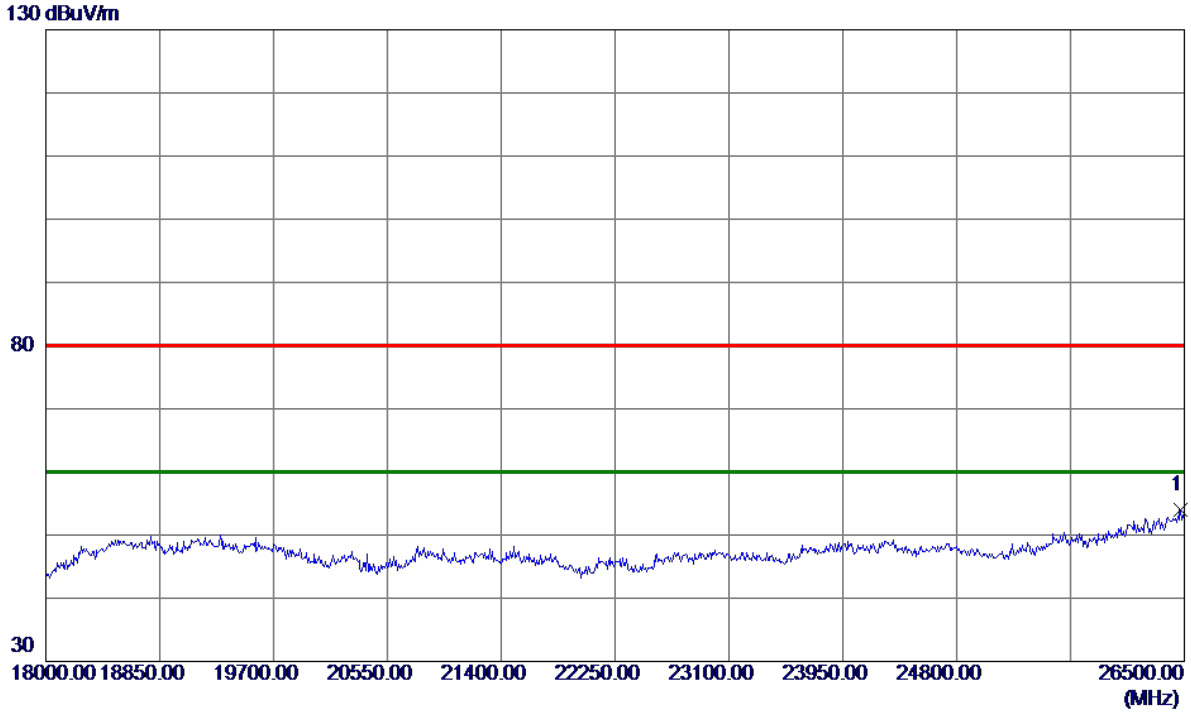
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 4875.0000 | 33.06 | 10.15 | 43.21 | 80.00 | -36.79 | Peak | |
| 2 * | 17925.0000 | 26.86 | 28.92 | 55.78 | 80.00 | -24.22 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2437MHz |

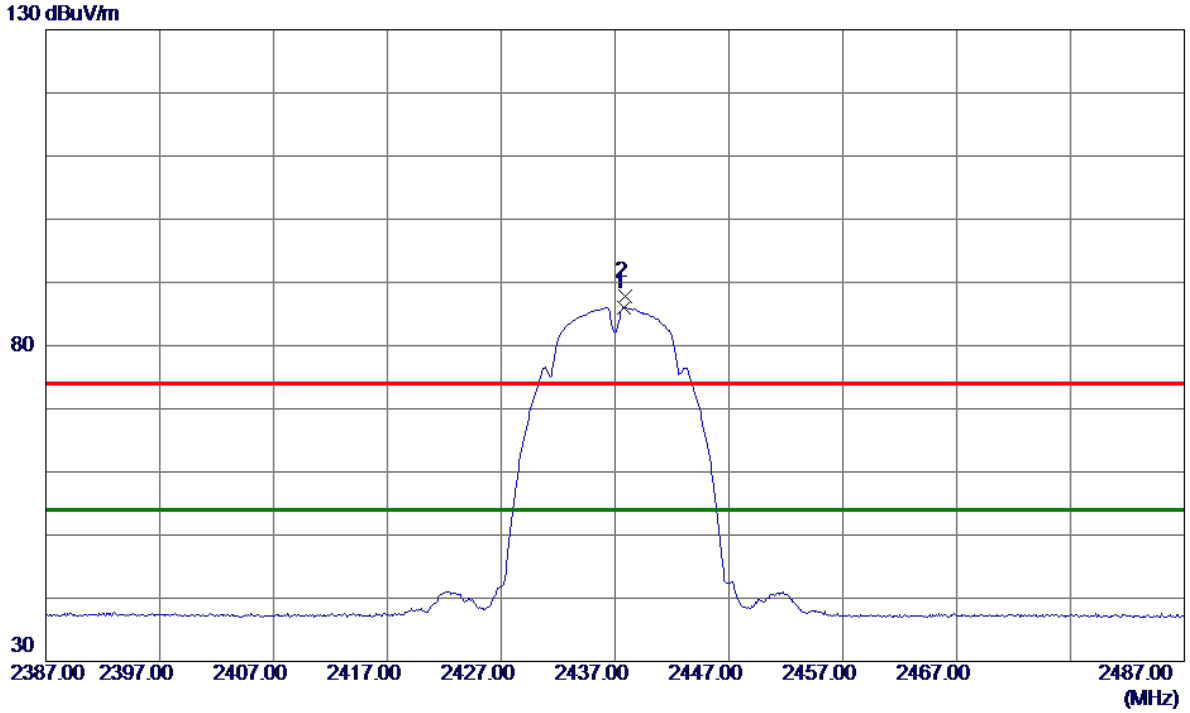
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 26474.5000 | 54.06 | 0.00 | 54.06 | 80.00 | -25.94 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2437MHz |

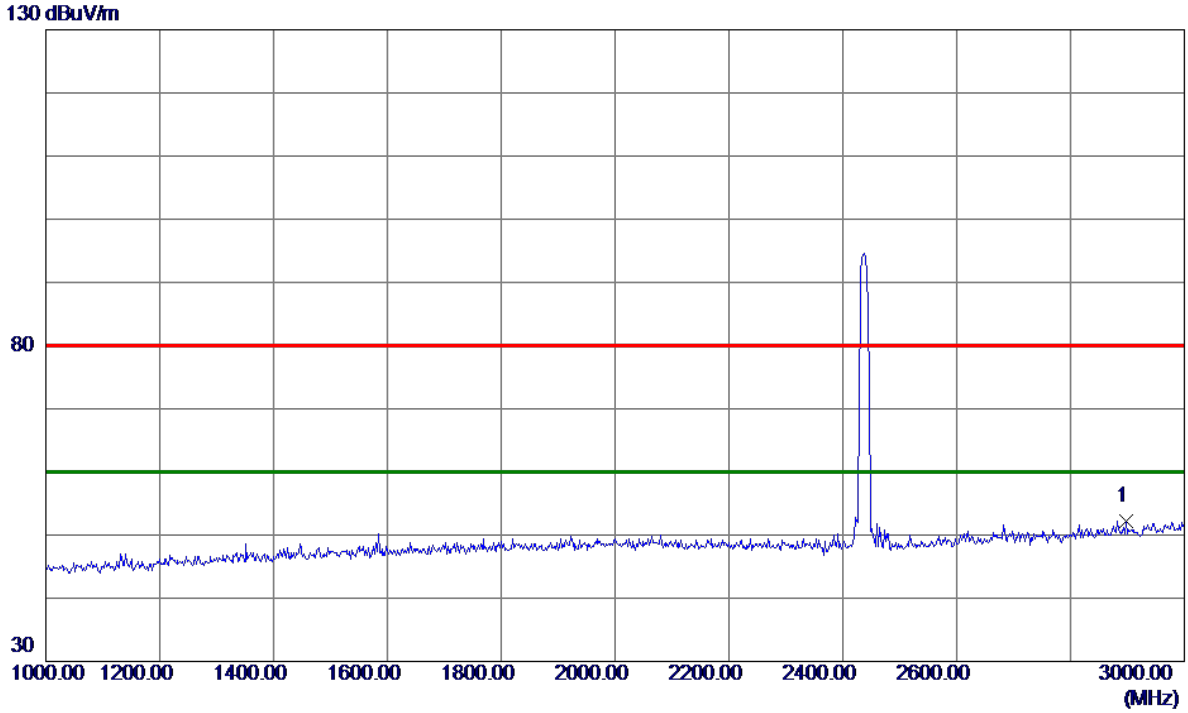
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2437.8000 | 74.73 | 11.33 | 86.06 | 54.00 | 32.06 | AVG | No Limit |
| 2 | 2437.9000 | 76.55 | 11.33 | 87.88 | 74.00 | 13.88 | Peak | No Limit |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2437MHz |

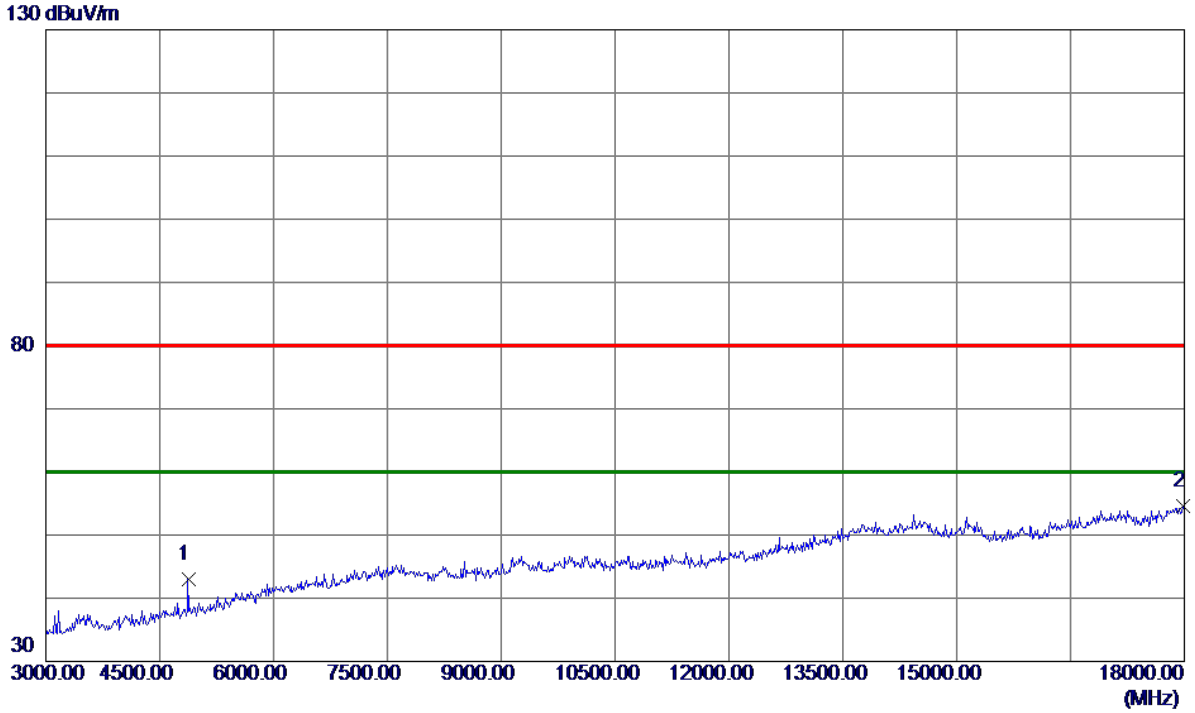
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2898.0000 | 37.97 | 14.26 | 52.23 | 80.00 | -27.77 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2437MHz |

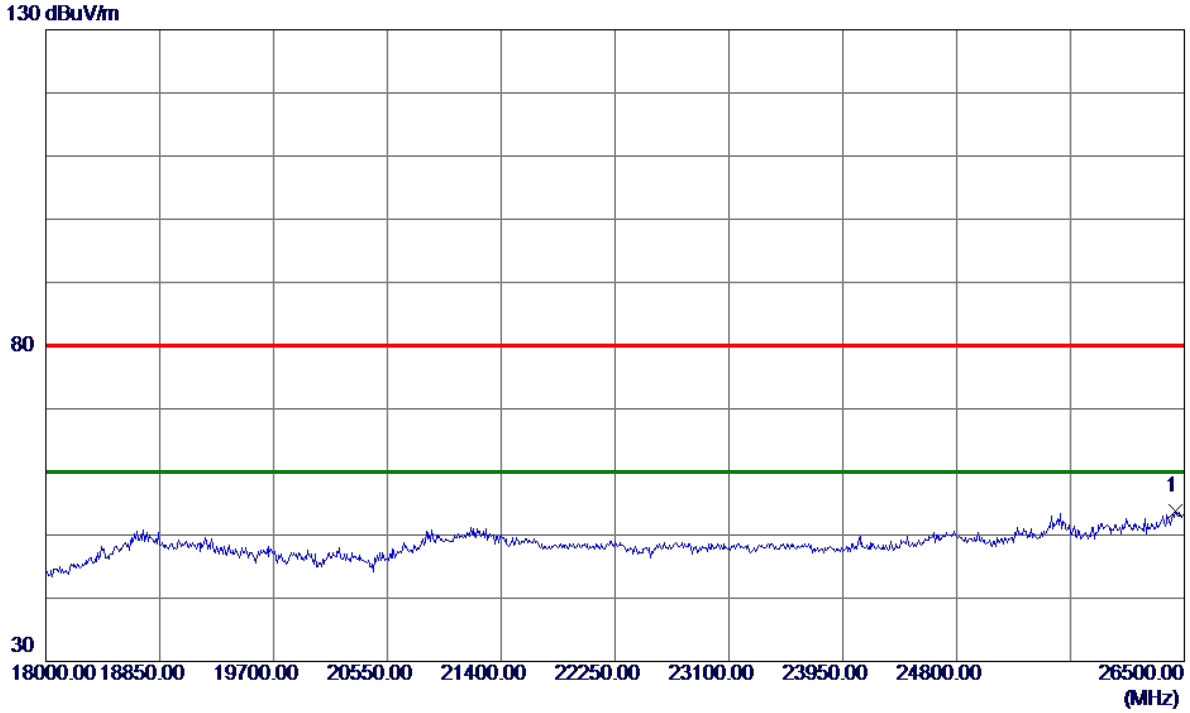
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 4875.0000 | 32.81 | 10.15 | 42.96 | 80.00 | -37.04 | Peak | |
| 2 * | 17985.0000 | 25.41 | 29.11 | 54.52 | 80.00 | -25.48 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2437MHz |

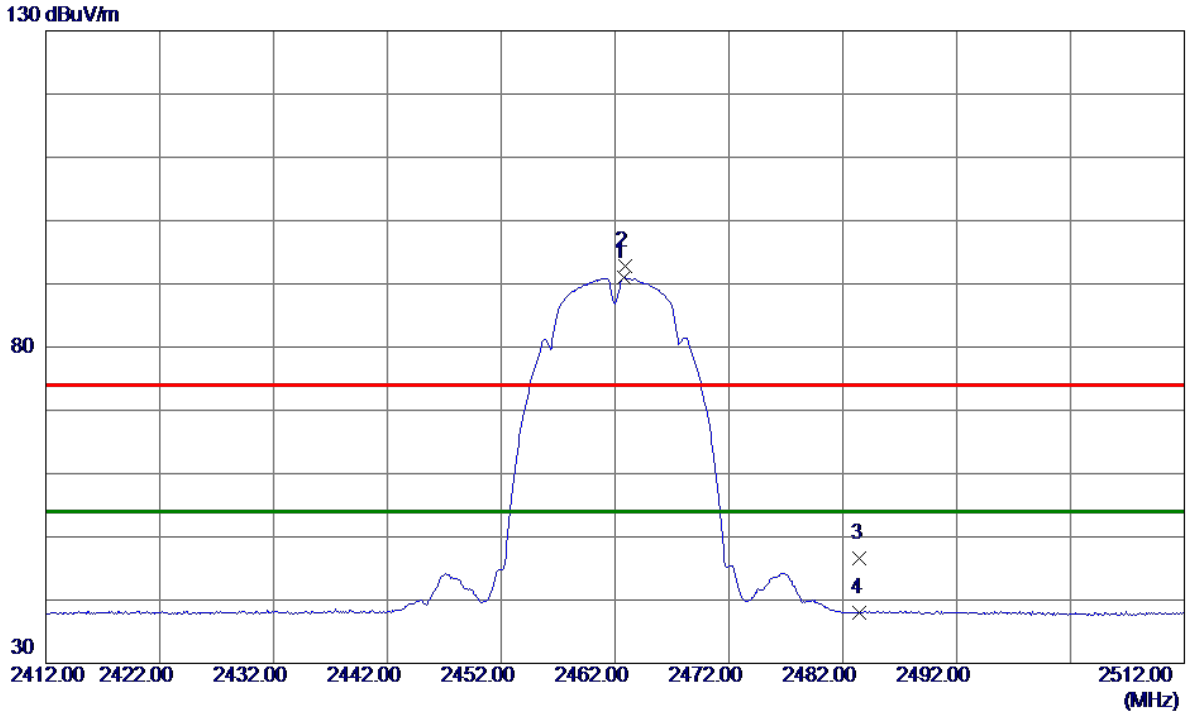
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 26432.0000 | 53.72 | 0.00 | 53.72 | 80.00 | -26.28 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2462MHz |

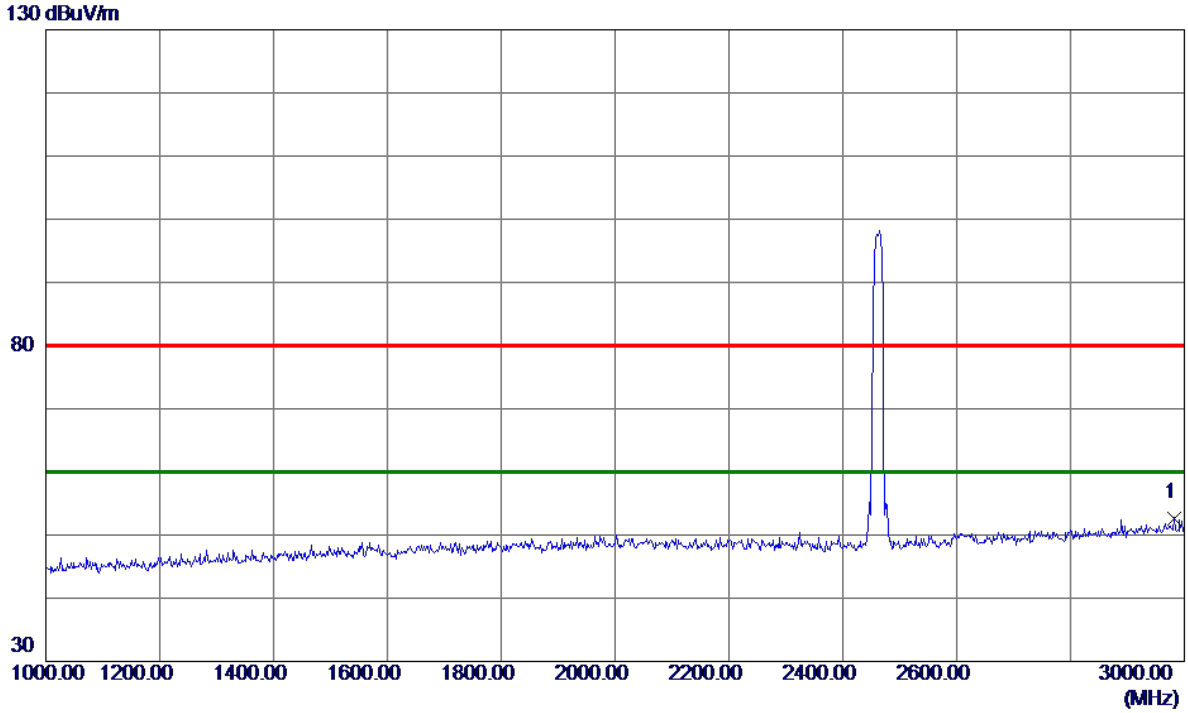
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2462.8000 | 79.61 | 11.34 | 90.95 | 54.00 | 36.95 | AVG | No Limit |
| 2 | 2462.9000 | 81.48 | 11.34 | 92.82 | 74.00 | 18.82 | Peak | No Limit |
| 3 | 2483.5000 | 35.24 | 11.35 | 46.59 | 74.00 | -27.41 | Peak | |
| 4 | 2483.5000 | 26.69 | 11.35 | 38.04 | 54.00 | -15.96 | AVG | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2462MHz |

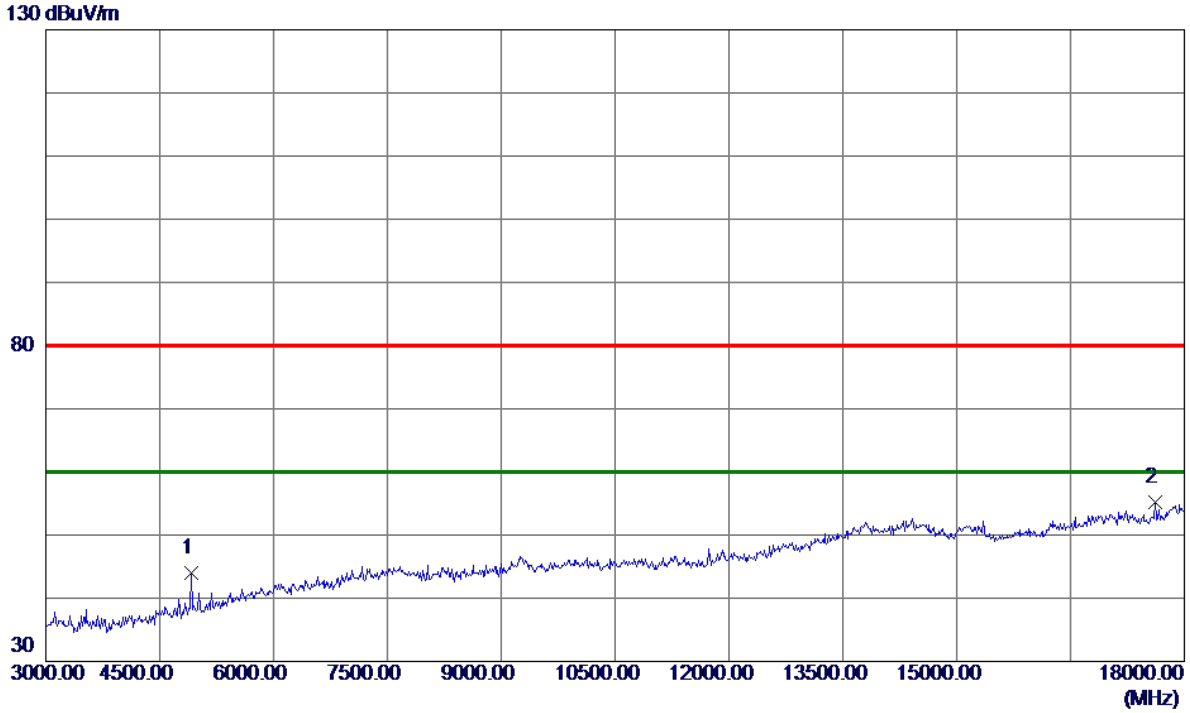
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2982.0000 | 37.83 | 14.87 | 52.70 | 80.00 | -27.30 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2462MHz |

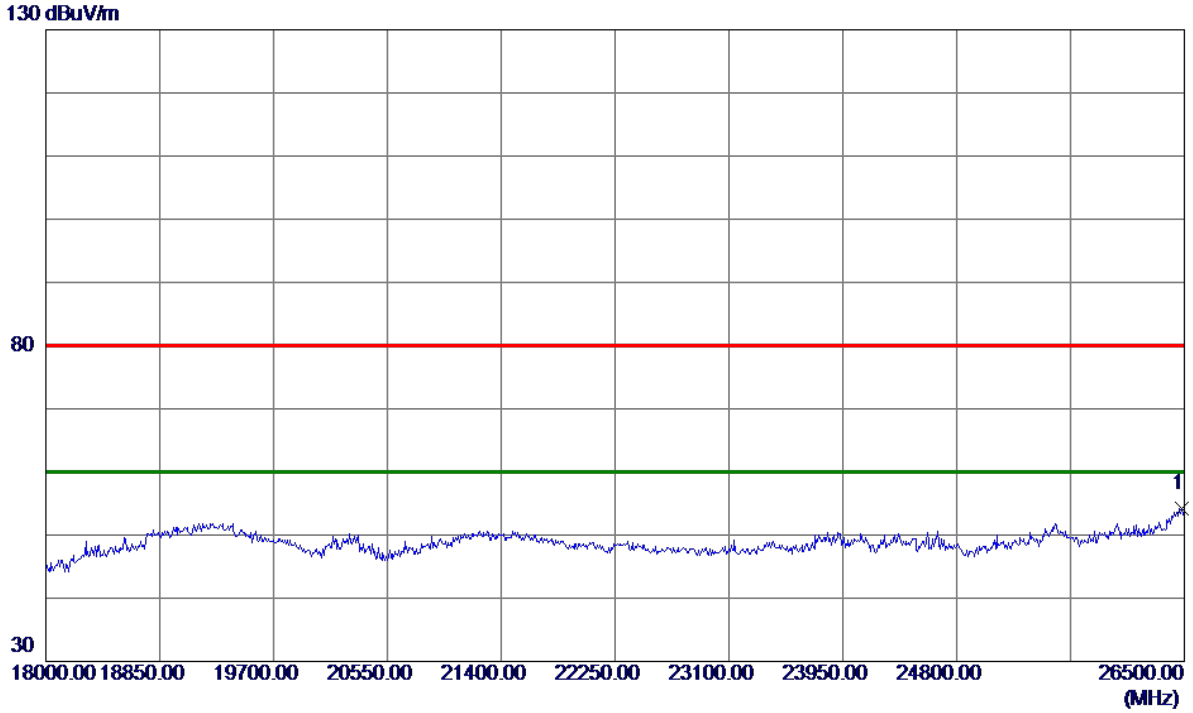
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 4920.0000 | 33.64 | 10.27 | 43.91 | 80.00 | -36.09 | Peak | |
| 2 * | 17610.0000 | 27.27 | 27.91 | 55.18 | 80.00 | -24.82 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2462MHz |

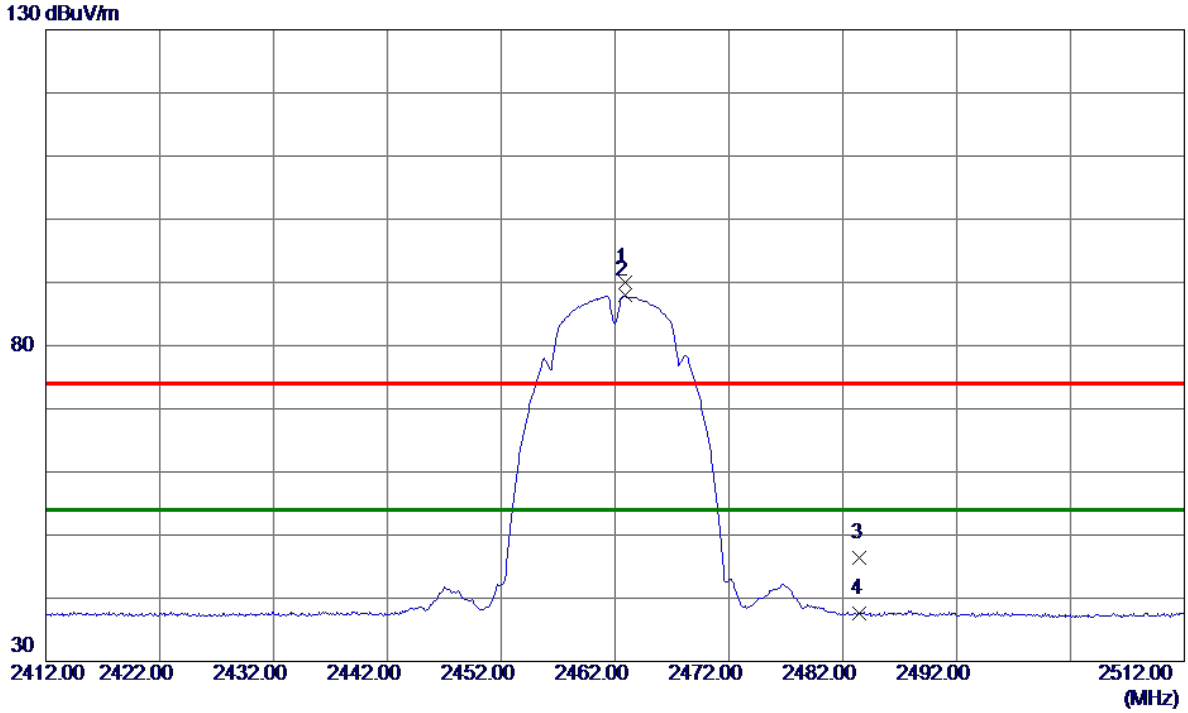
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 26483.0000 | 54.16 | 0.00 | 54.16 | 80.00 | -25.84 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2462MHz |

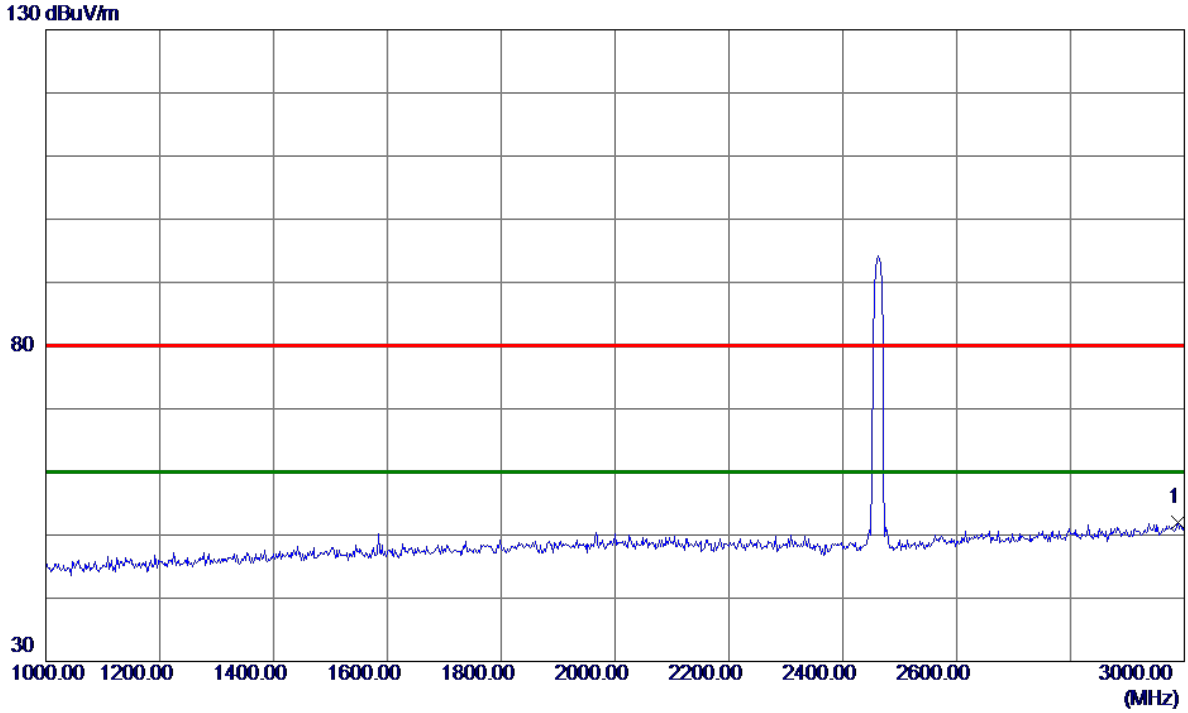
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2462.9000 | 78.67 | 11.34 | 90.01 | 74.00 | 16.01 | Peak | No Limit |
| 2 * | 2462.9000 | 76.64 | 11.34 | 87.98 | 54.00 | 33.98 | AVG | No Limit |
| 3 | 2483.5000 | 35.00 | 11.35 | 46.35 | 74.00 | -27.65 | Peak | |
| 4 | 2483.5000 | 26.26 | 11.35 | 37.61 | 54.00 | -16.39 | AVG | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2462MHz |

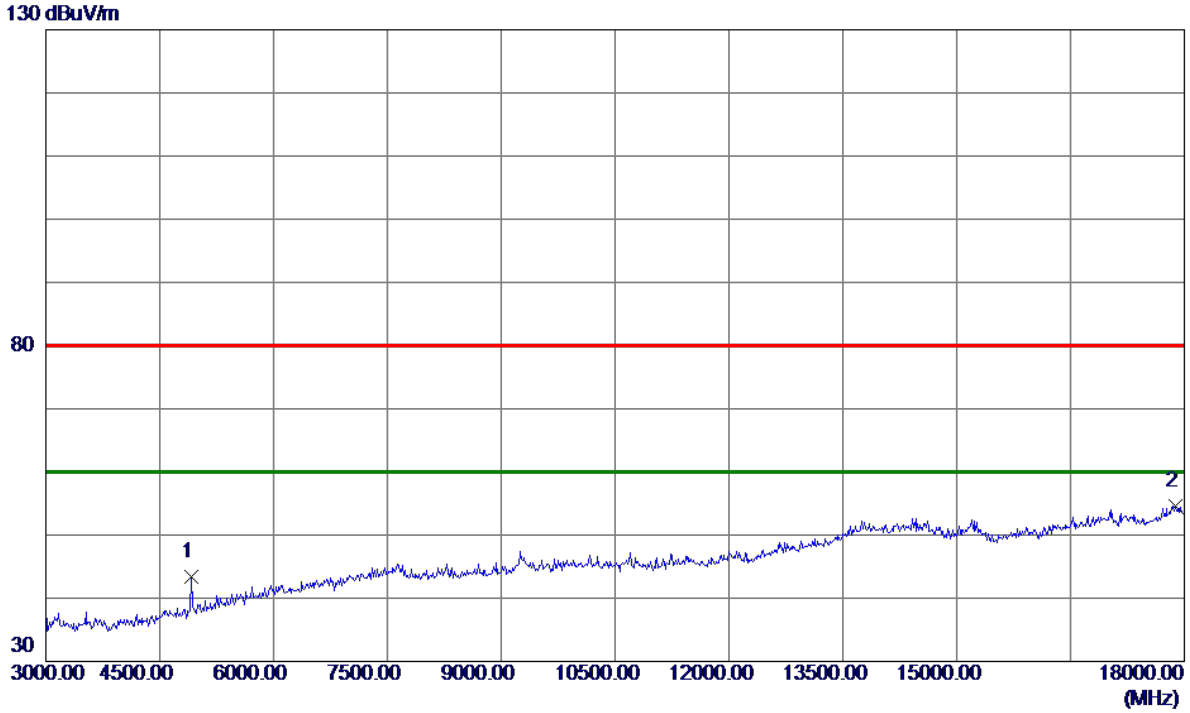
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2988.0000 | 37.00 | 14.91 | 51.91 | 80.00 | -28.09 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2462MHz |

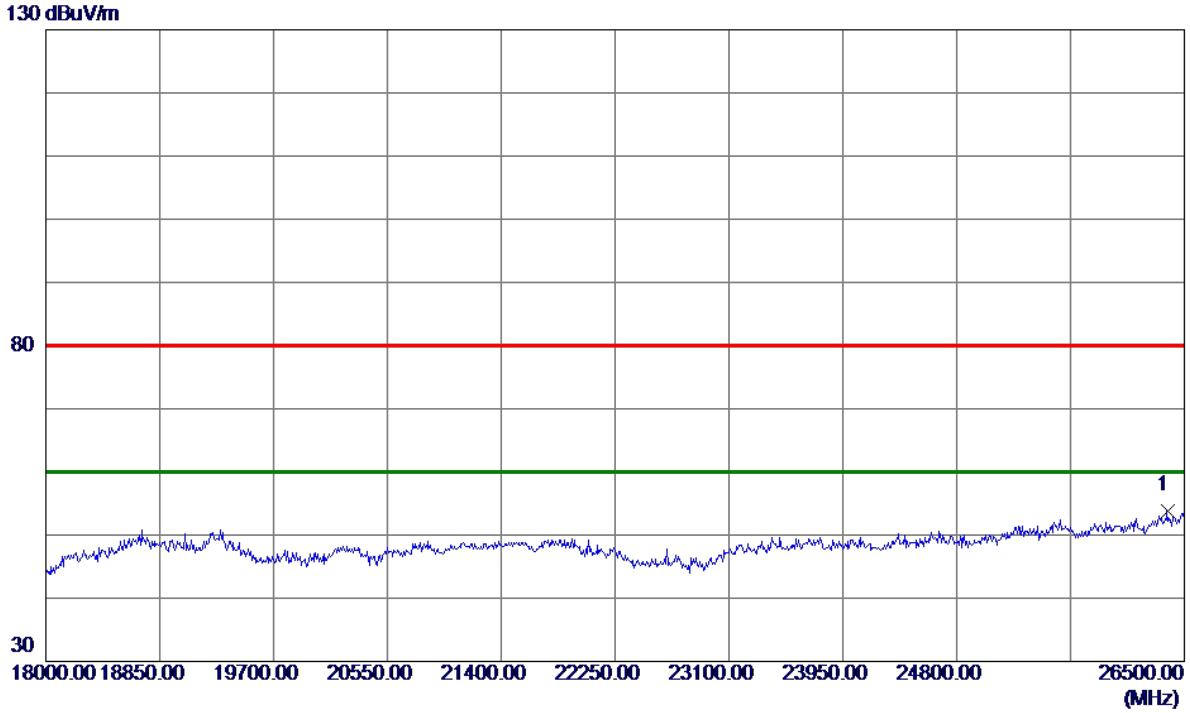
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 4920.0000 | 33.04 | 10.27 | 43.31 | 80.00 | -36.69 | Peak | |
| 2 * | 17880.0000 | 25.91 | 28.77 | 54.68 | 80.00 | -25.32 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX B MODE 2462MHz |

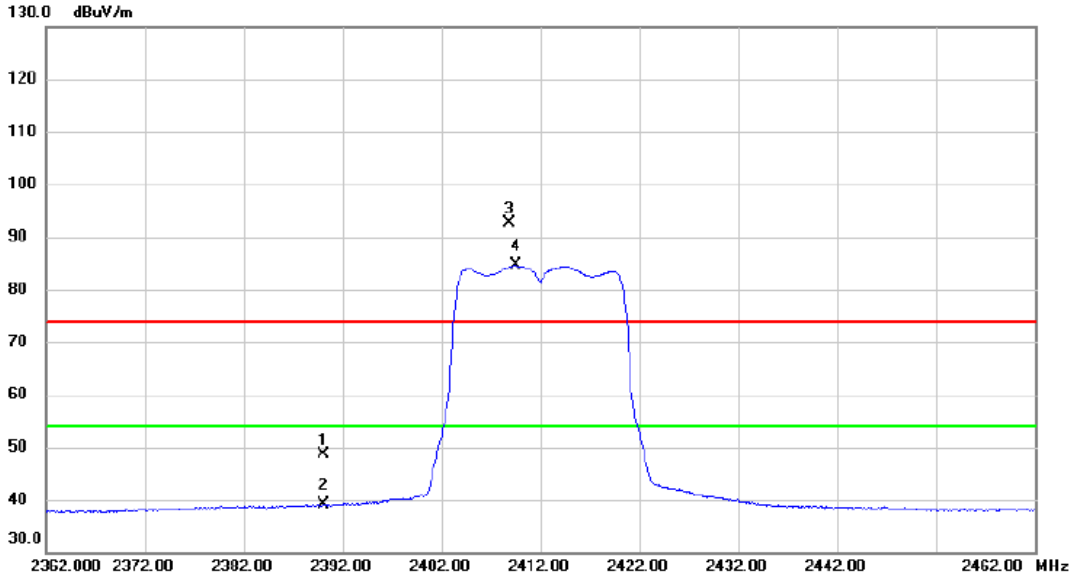
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 26372.5000 | 53.90 | 0.00 | 53.90 | 80.00 | -26.10 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2412MHz |

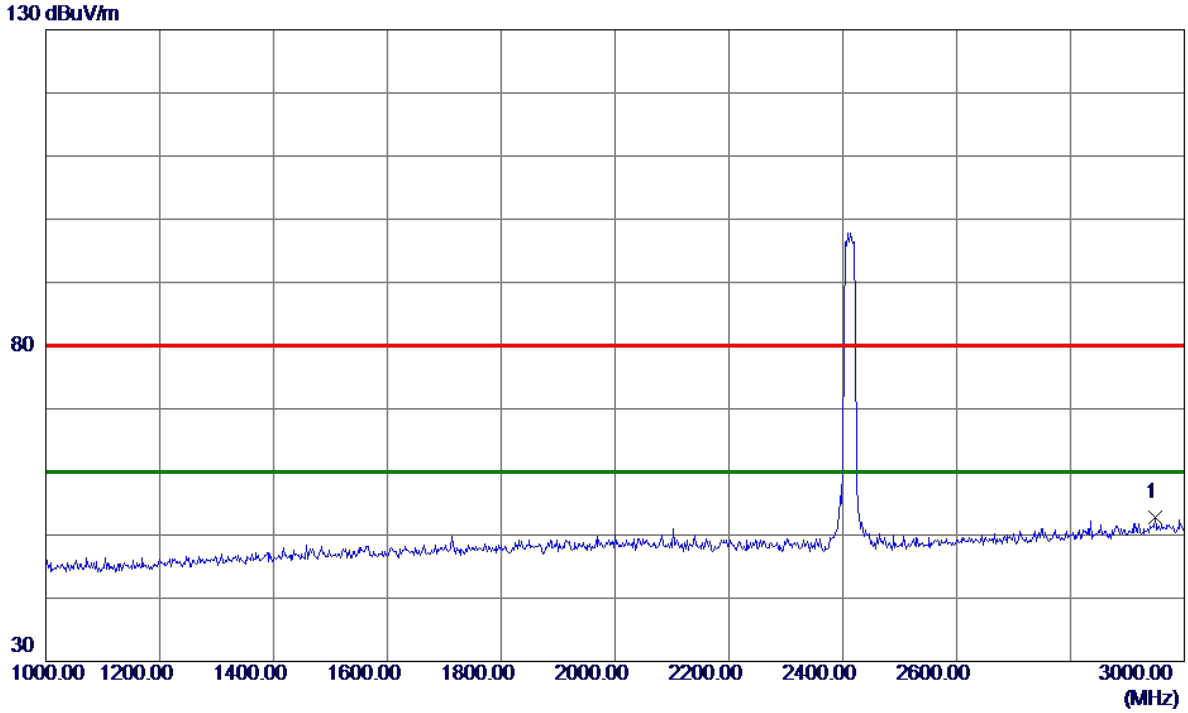
**Vertical**




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 2390.000 | 37.35 | 11.31 | 48.66 | 74.00 | -25.34 | peak | |
| 2 | | 2390.000 | 27.70 | 11.31 | 39.01 | 54.00 | -14.99 | AVG | |
| 3 | X | 2408.800 | 81.32 | 11.33 | 92.65 | 74.00 | 18.65 | peak | No Limit |
| 4 | * | 2409.600 | 73.25 | 11.33 | 84.58 | 54.00 | 30.58 | AVG | No Limit |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2412MHz |

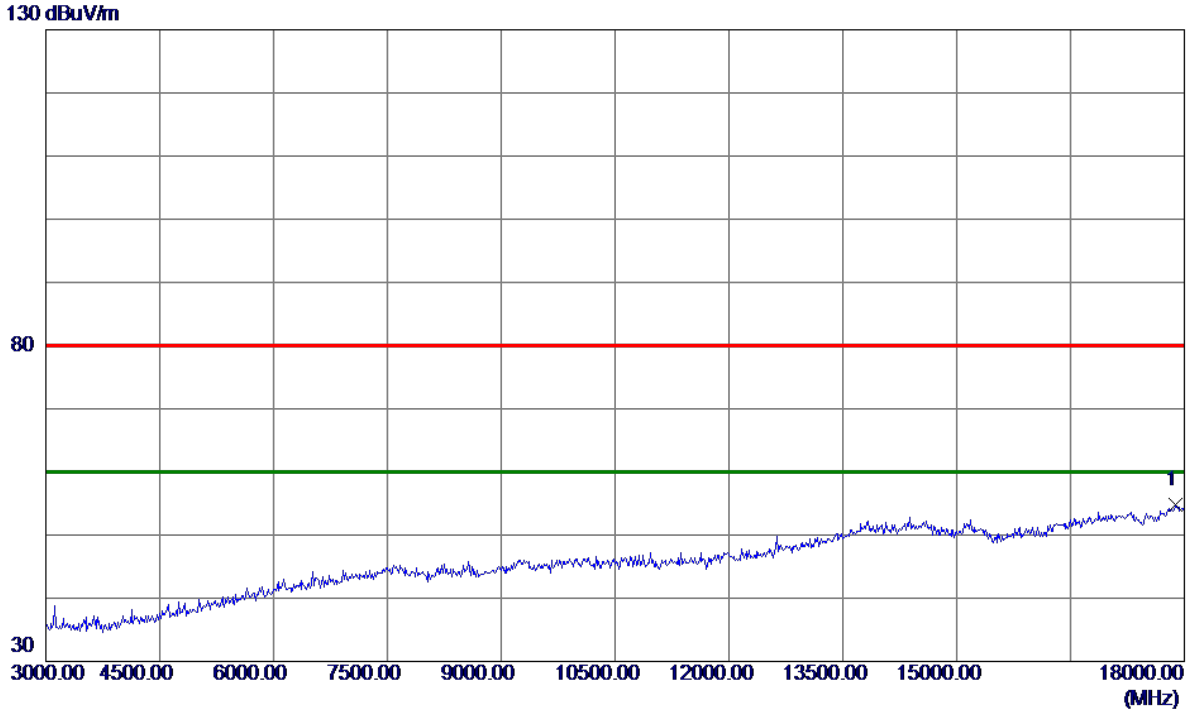
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2948.0000 | 38.25 | 14.62 | 52.87 | 80.00 | -27.13 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2412MHz |

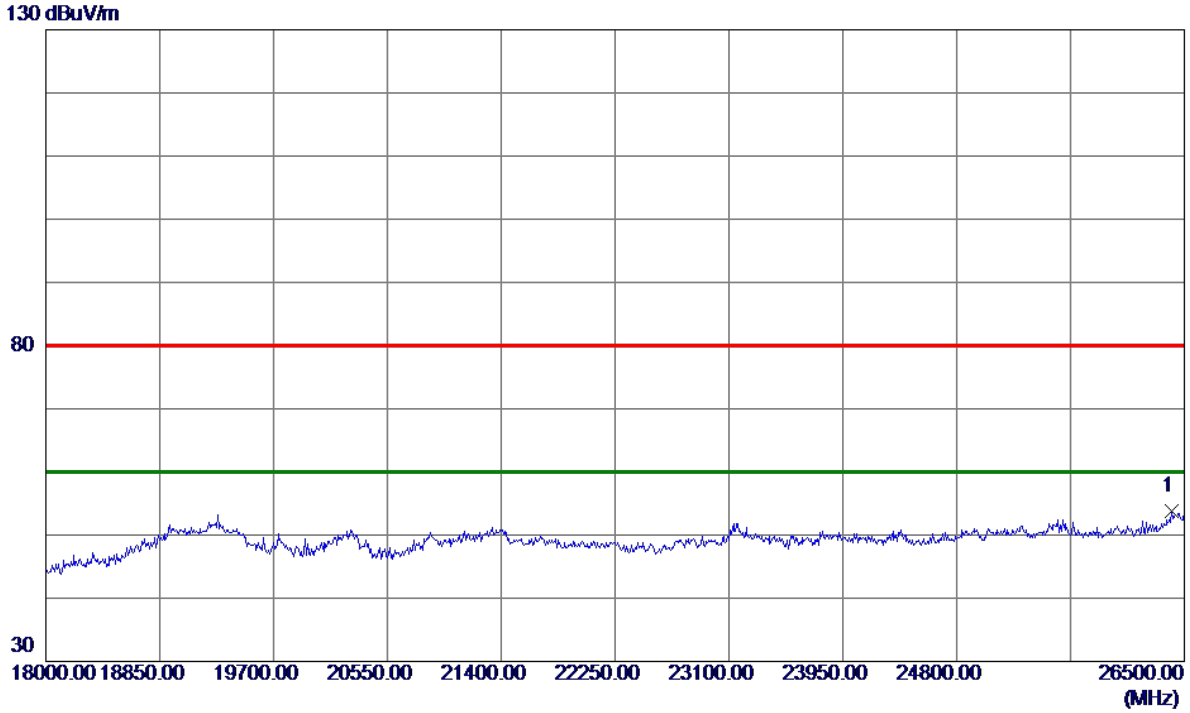
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 17880.0000 | 26.11 | 28.77 | 54.88 | 80.00 | -25.12 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2412MHz |

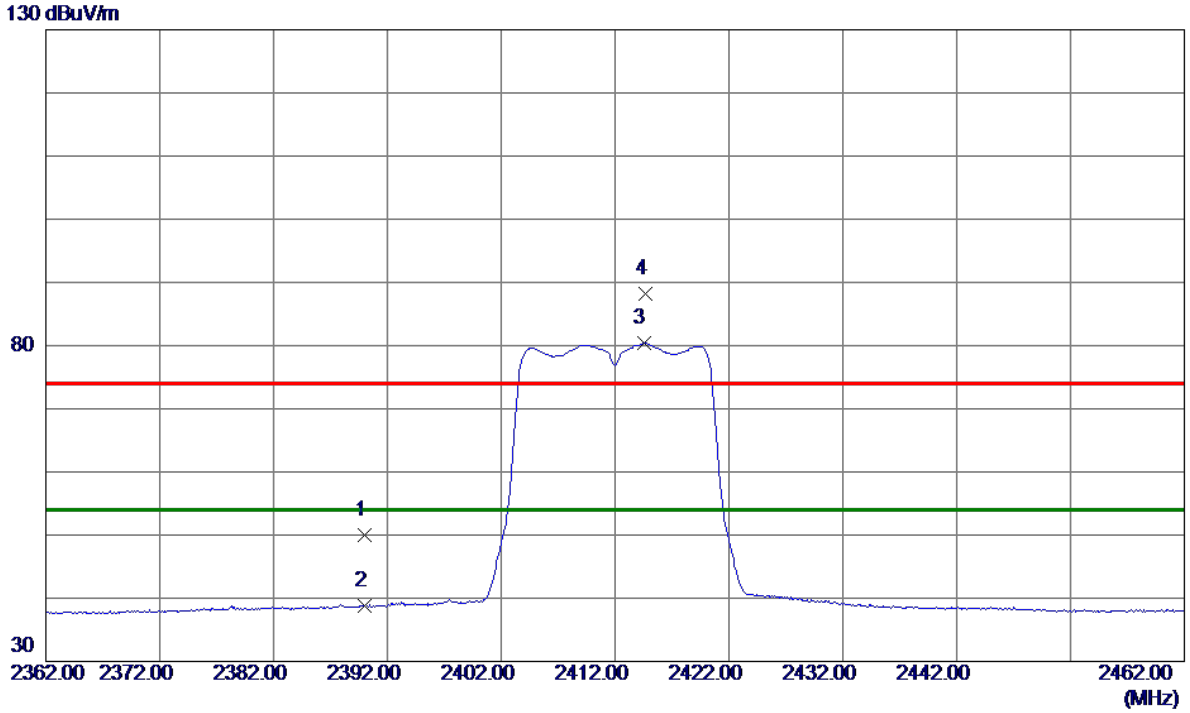
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 26406.5000 | 53.81 | 0.00 | 53.81 | 80.00 | -26.19 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2412MHz |

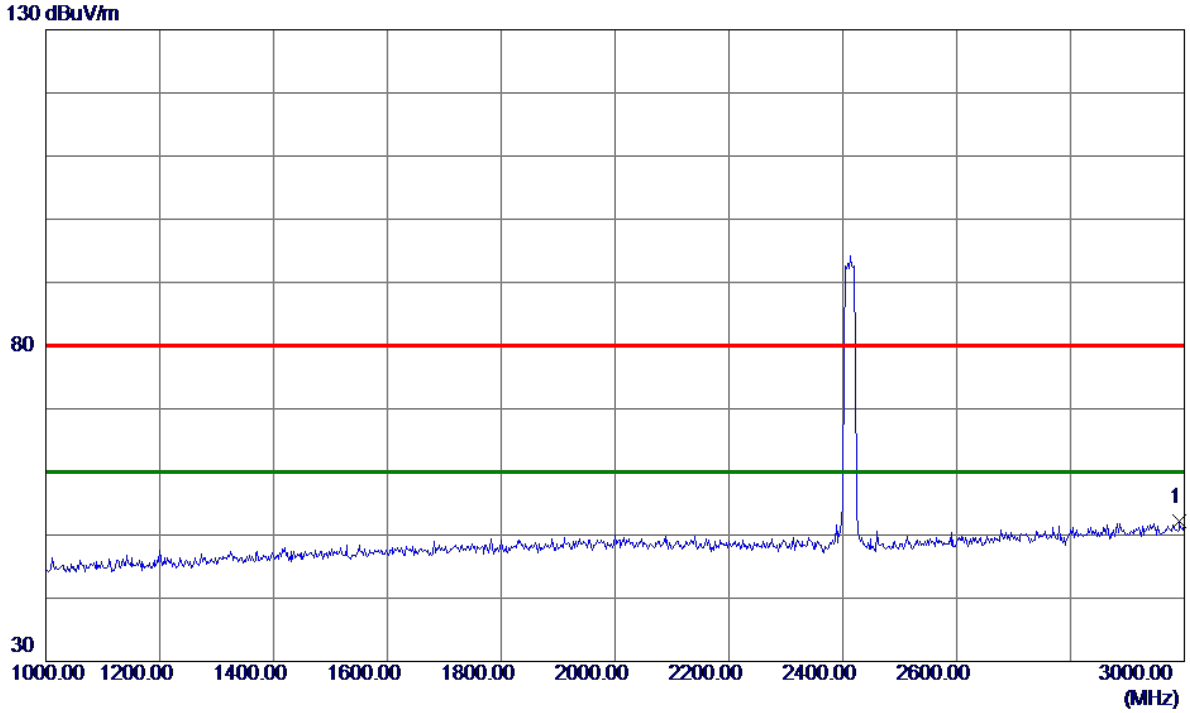
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2390.0000 | 38.66 | 11.32 | 49.98 | 74.00 | -24.02 | Peak | |
| 2 | 2390.0000 | 27.46 | 11.32 | 38.78 | 54.00 | -15.22 | AVG | |
| 3 * | 2414.5000 | 69.01 | 11.33 | 80.34 | 54.00 | 26.34 | AVG | No Limit |
| 4 | 2414.7000 | 76.91 | 11.33 | 88.24 | 74.00 | 14.24 | Peak | No Limit |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2412MHz |

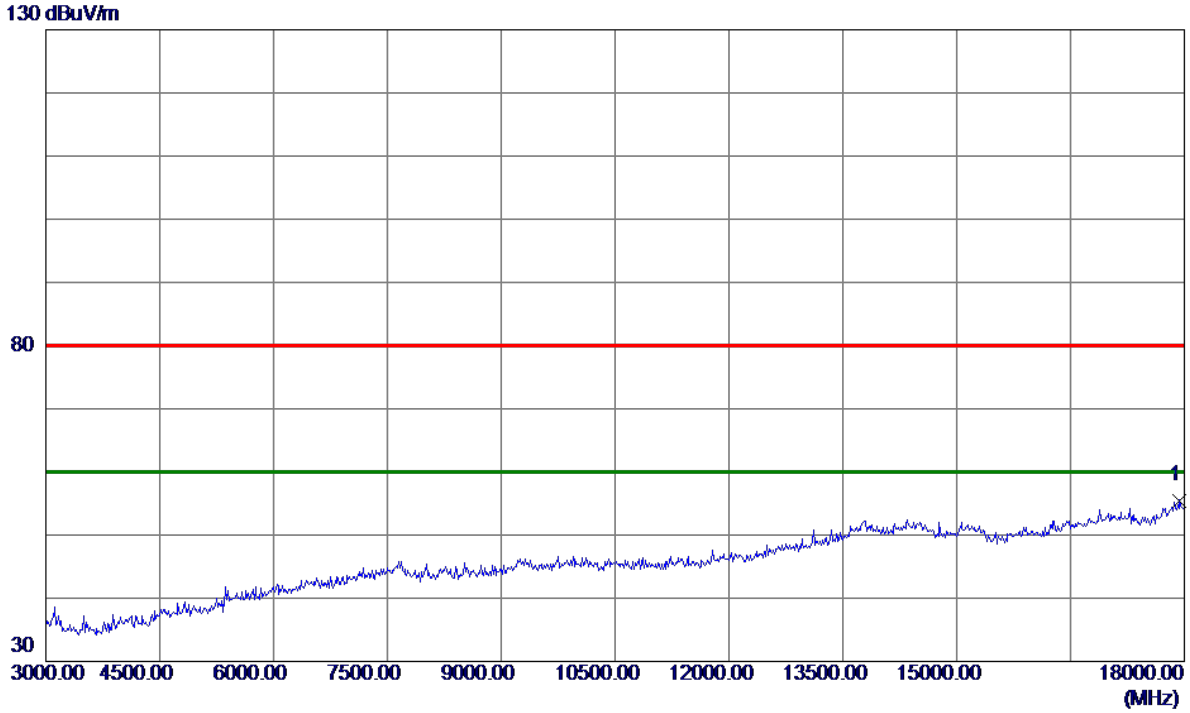
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2992.0000 | 37.16 | 14.94 | 52.10 | 80.00 | -27.90 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2412MHz |

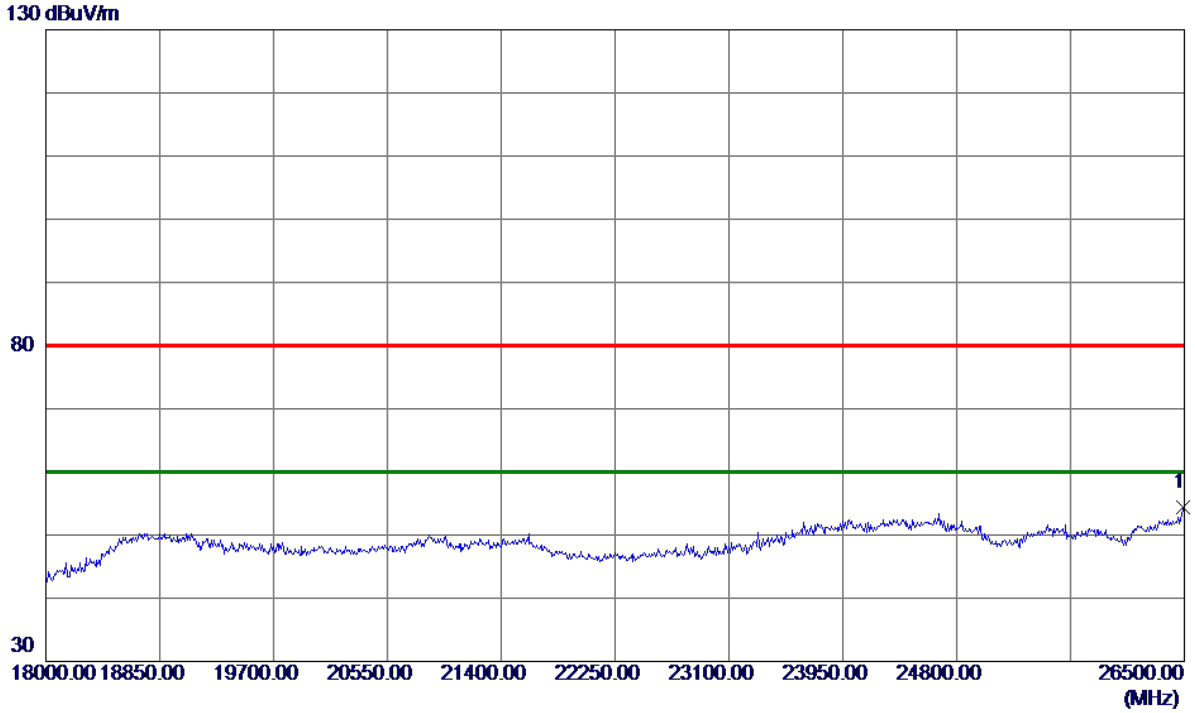
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 17940.0000 | 26.53 | 28.97 | 55.50 | 80.00 | -24.50 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2412MHz |

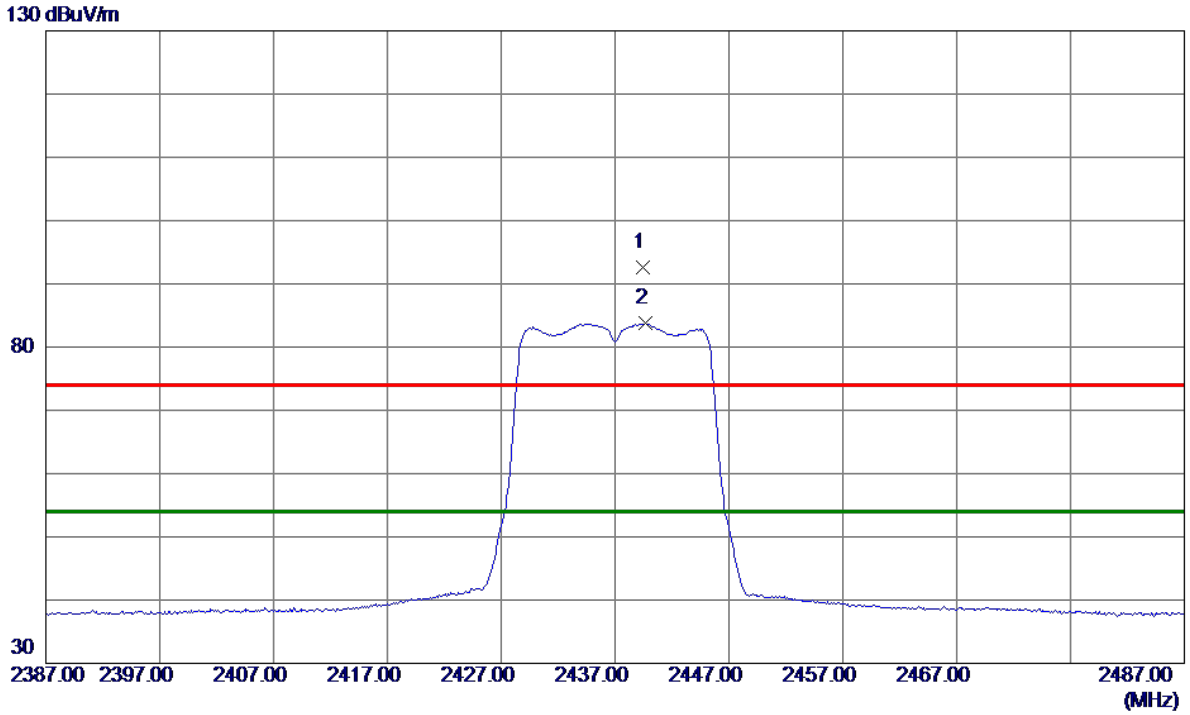
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 26491.5000 | 54.42 | 0.00 | 54.42 | 80.00 | -25.58 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2437MHz |

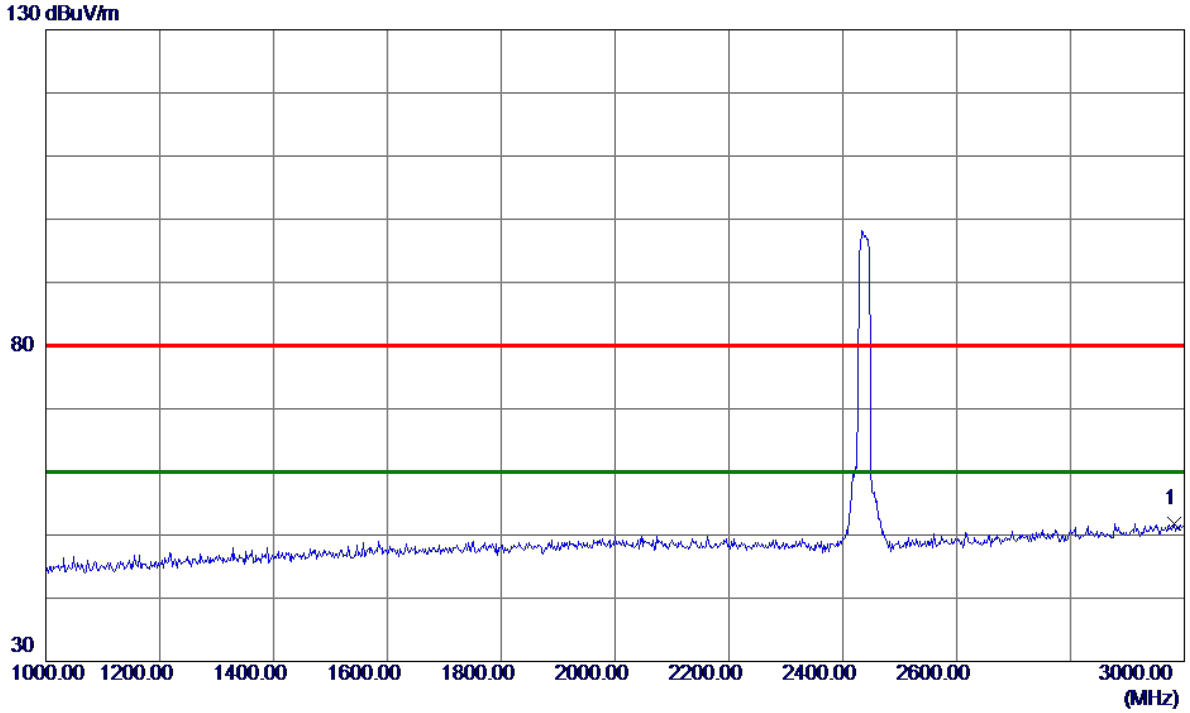
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2439.4000 | 81.20 | 11.33 | 92.53 | 74.00 | 18.53 | Peak | No Limit |
| 2 * | 2439.7000 | 72.40 | 11.33 | 83.73 | 54.00 | 29.73 | AVG | No Limit |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2437MHz |

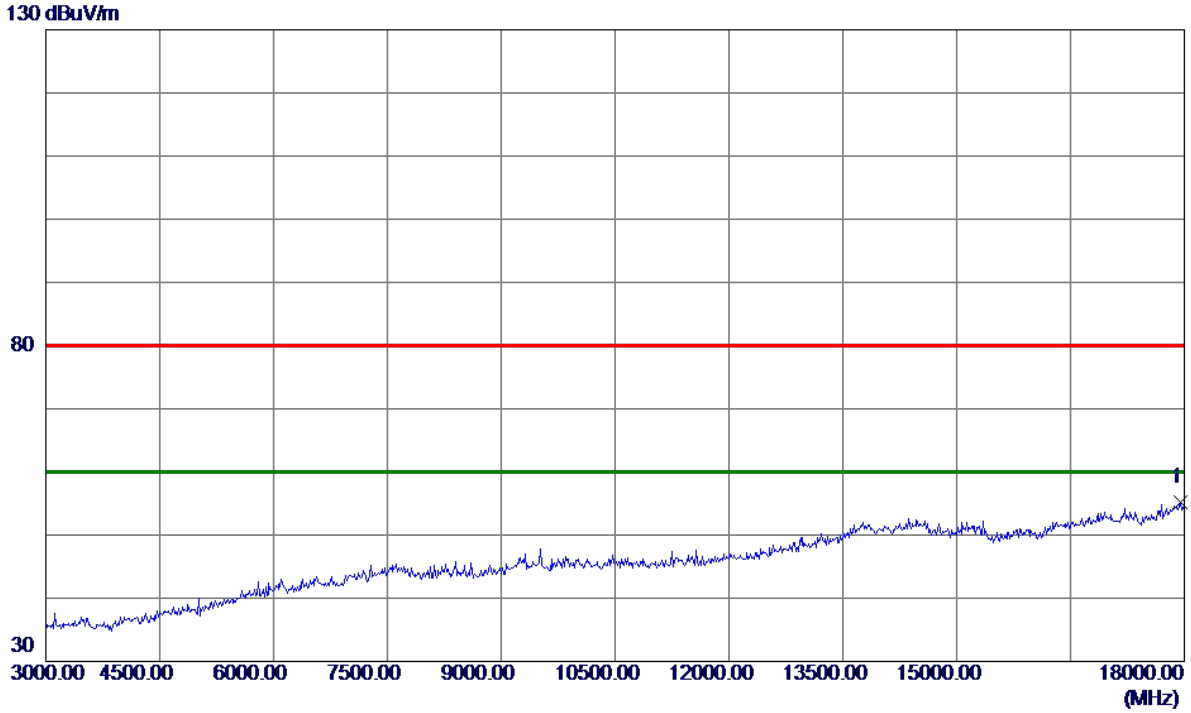
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2982.0000 | 36.96 | 14.87 | 51.83 | 80.00 | -28.17 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2437MHz |

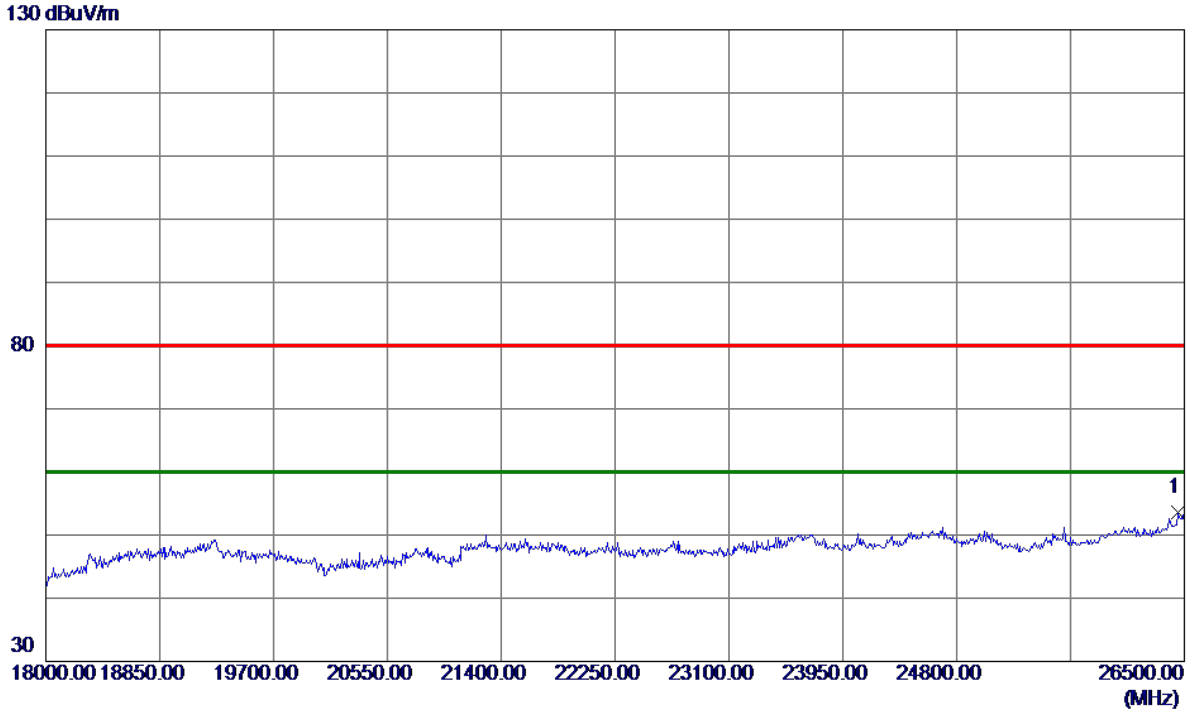
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 17955.0000 | 26.15 | 29.02 | 55.17 | 80.00 | -24.83 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2437MHz |

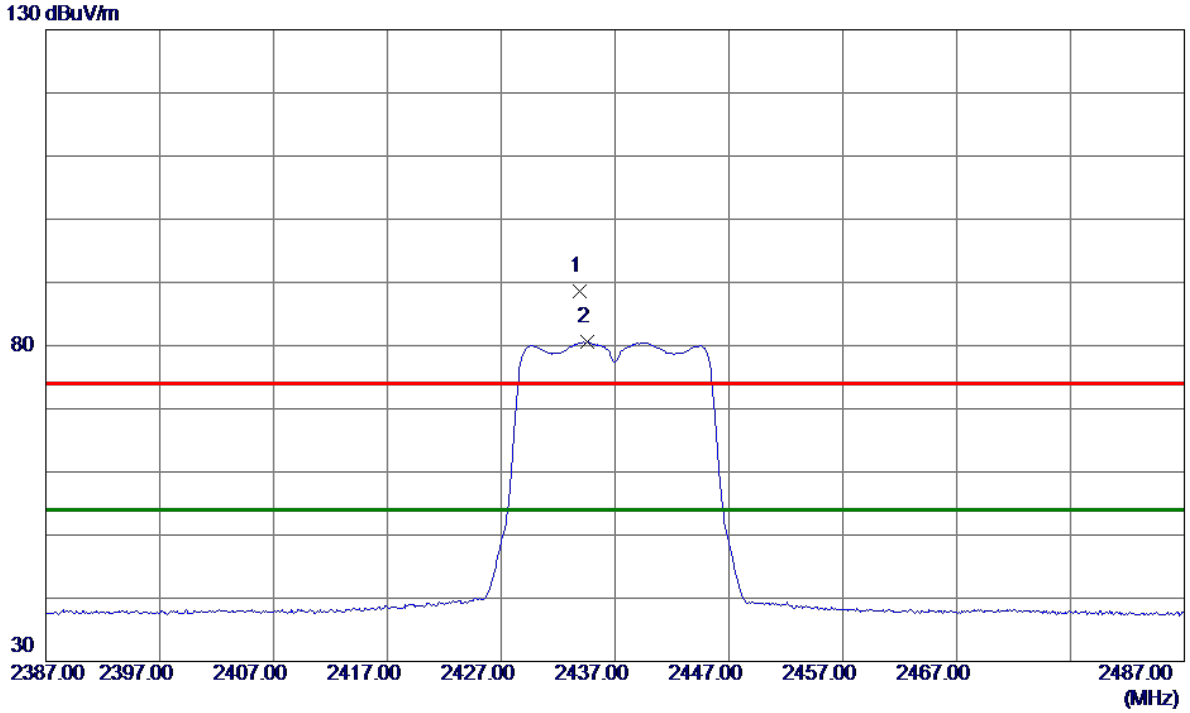
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 26449.0000 | 53.55 | 0.00 | 53.55 | 80.00 | -26.45 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2437MHz |

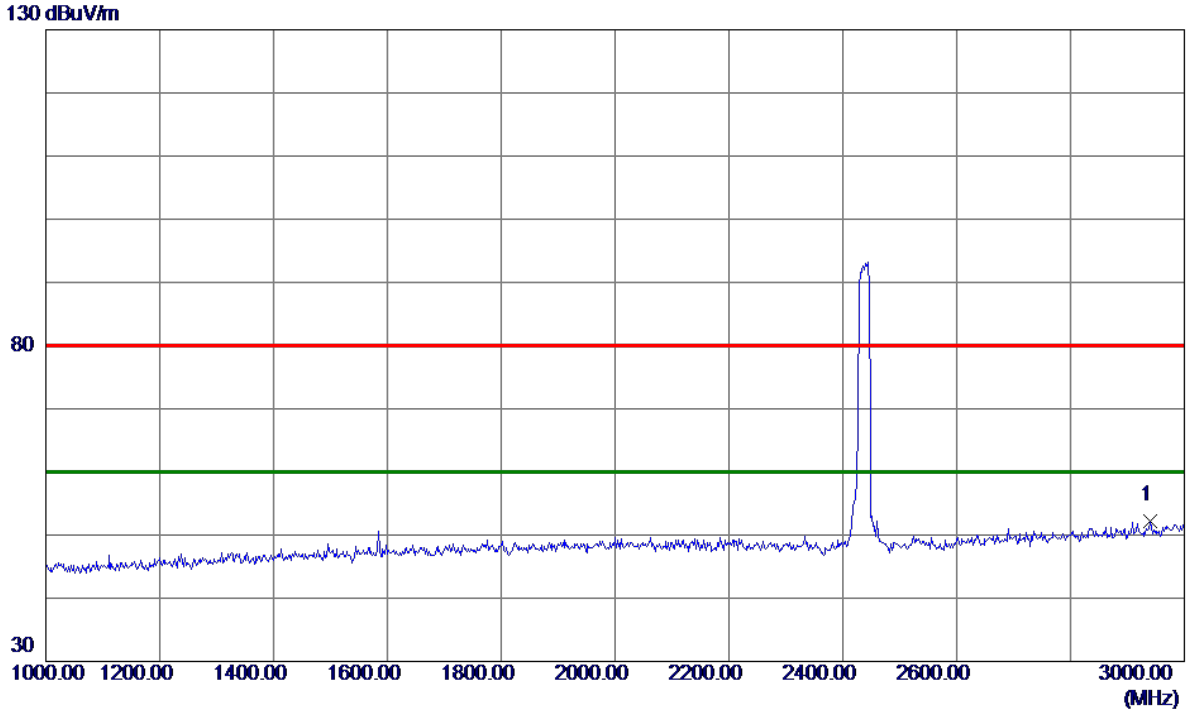
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2433.9000 | 77.24 | 11.33 | 88.57 | 74.00 | 14.57 | Peak | No Limit |
| 2 * | 2434.6000 | 69.25 | 11.33 | 80.58 | 54.00 | 26.58 | AVG | No Limit |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2437MHz |

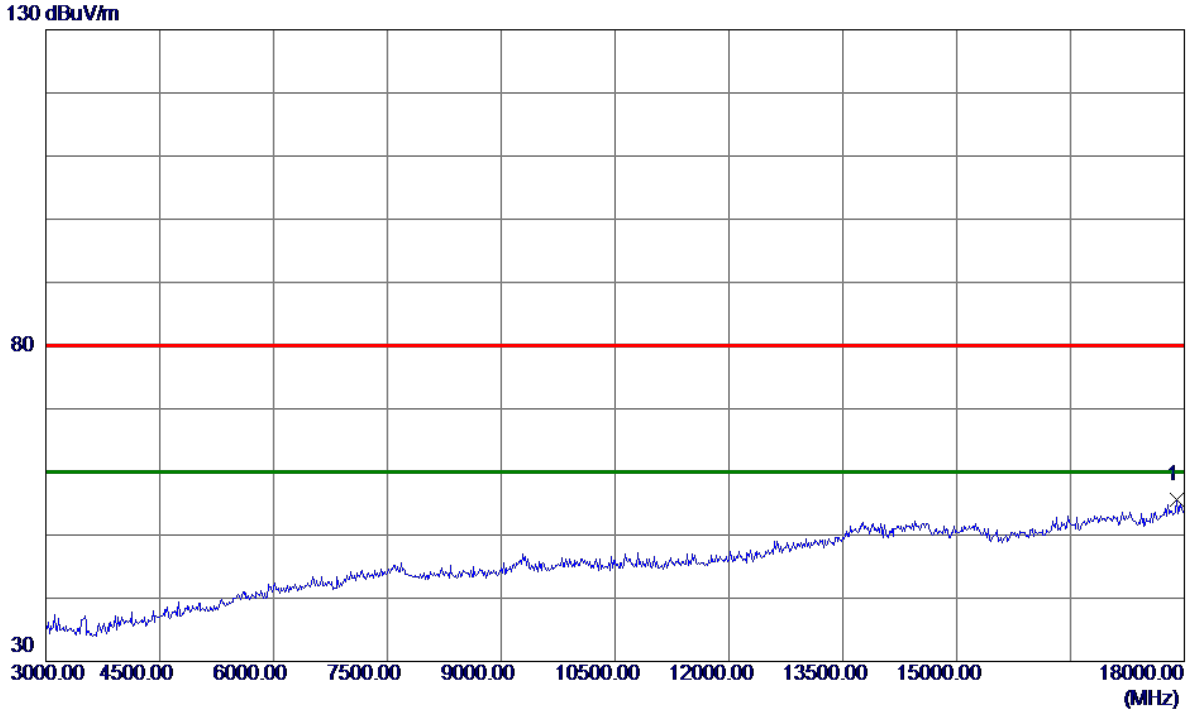
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2940.0000 | 37.74 | 14.56 | 52.30 | 80.00 | -27.70 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2437MHz |

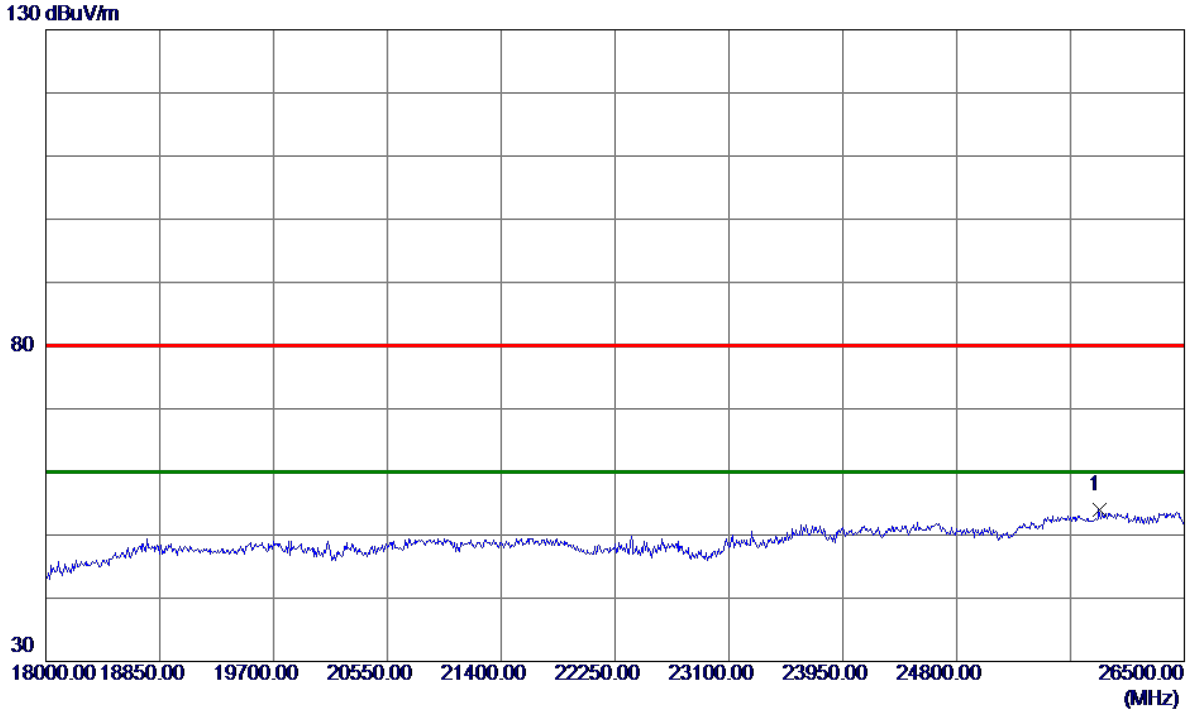
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 17895.0000 | 26.84 | 28.82 | 55.66 | 80.00 | -24.34 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2437MHz |

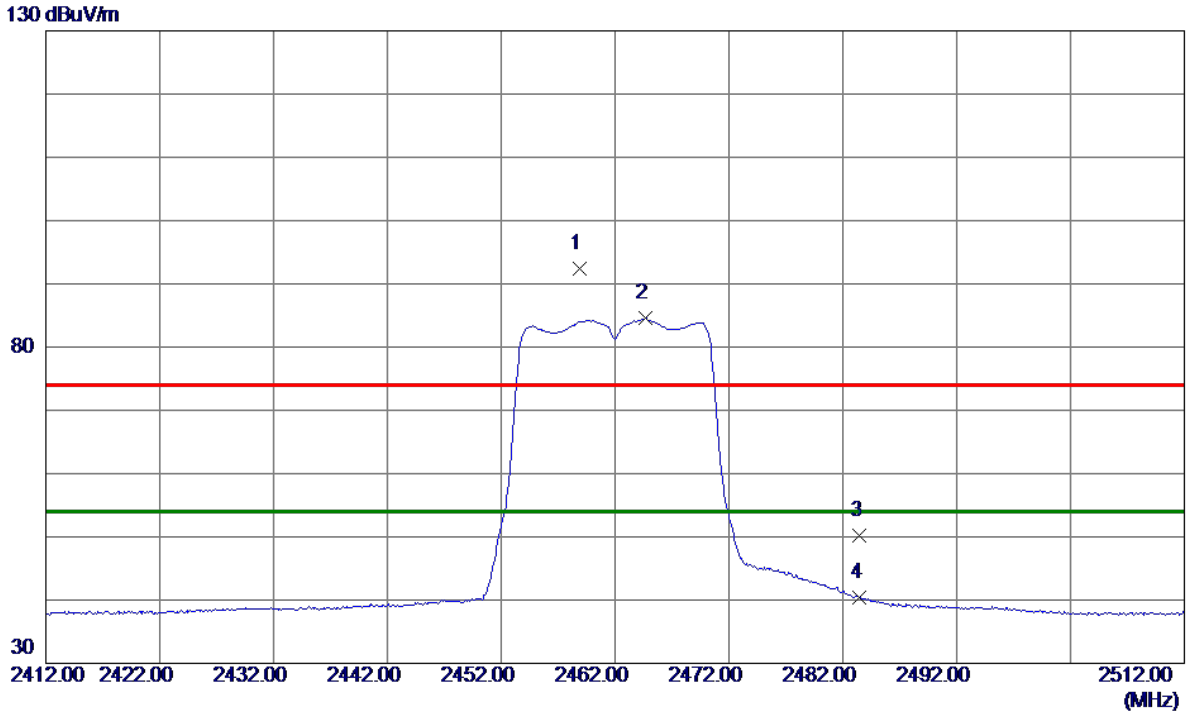
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 25862.5000 | 87.06 | -33.10 | 53.96 | 80.00 | -26.04 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2462MHz |

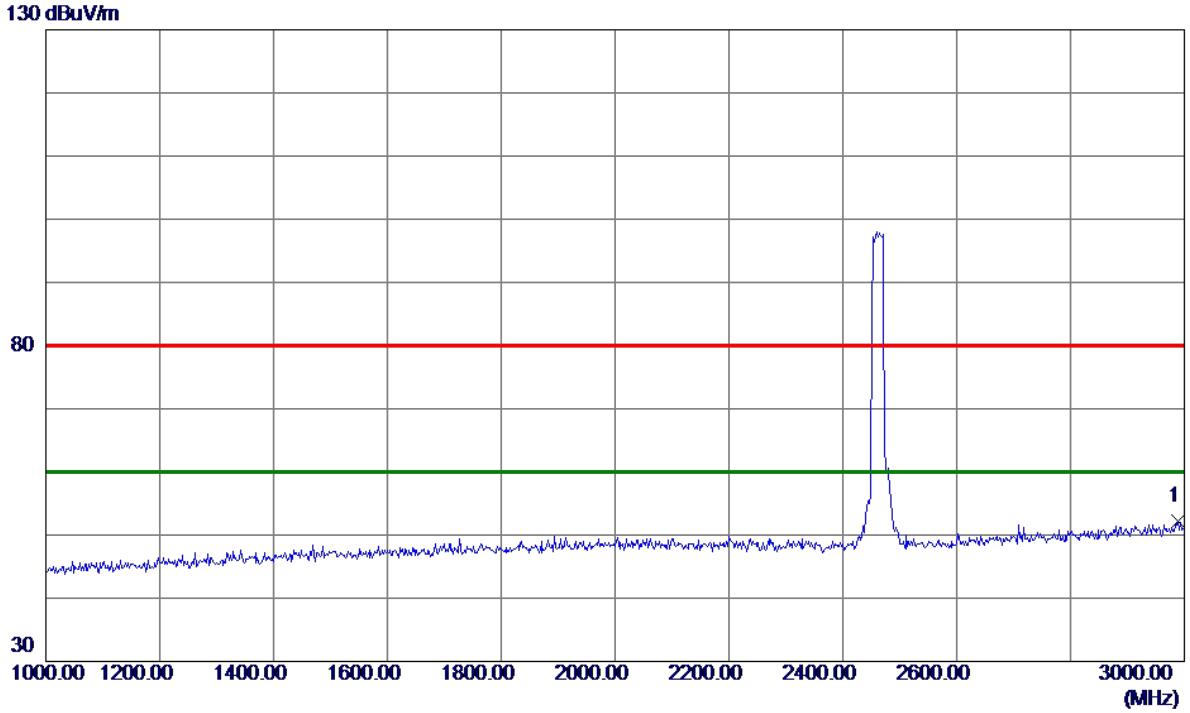
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2458.9000 | 80.99 | 11.34 | 92.33 | 74.00 | 18.33 | Peak | No Limit |
| 2 * | 2464.7000 | 73.18 | 11.34 | 84.52 | 54.00 | 30.52 | AVG | No Limit |
| 3 | 2483.5000 | 38.94 | 11.35 | 50.29 | 74.00 | -23.71 | Peak | |
| 4 | 2483.5000 | 29.08 | 11.35 | 40.43 | 54.00 | -13.57 | AVG | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2462MHz |

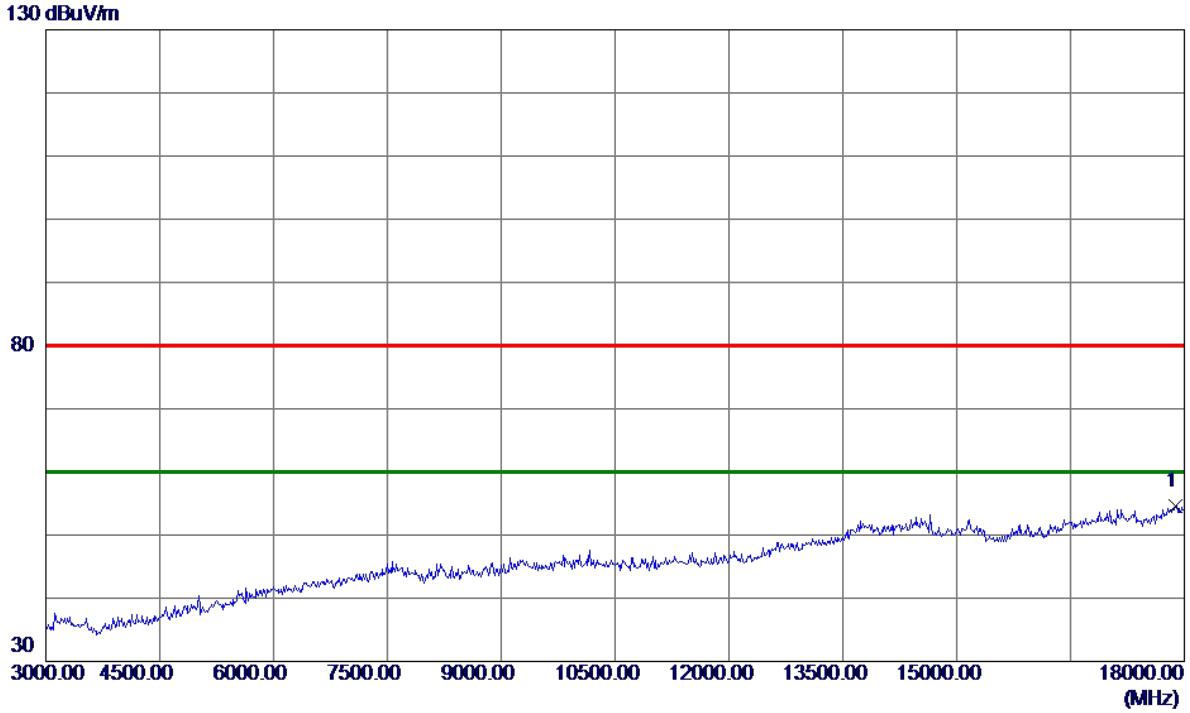
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2988.0000 | 37.20 | 14.91 | 52.11 | 80.00 | -27.89 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2462MHz |

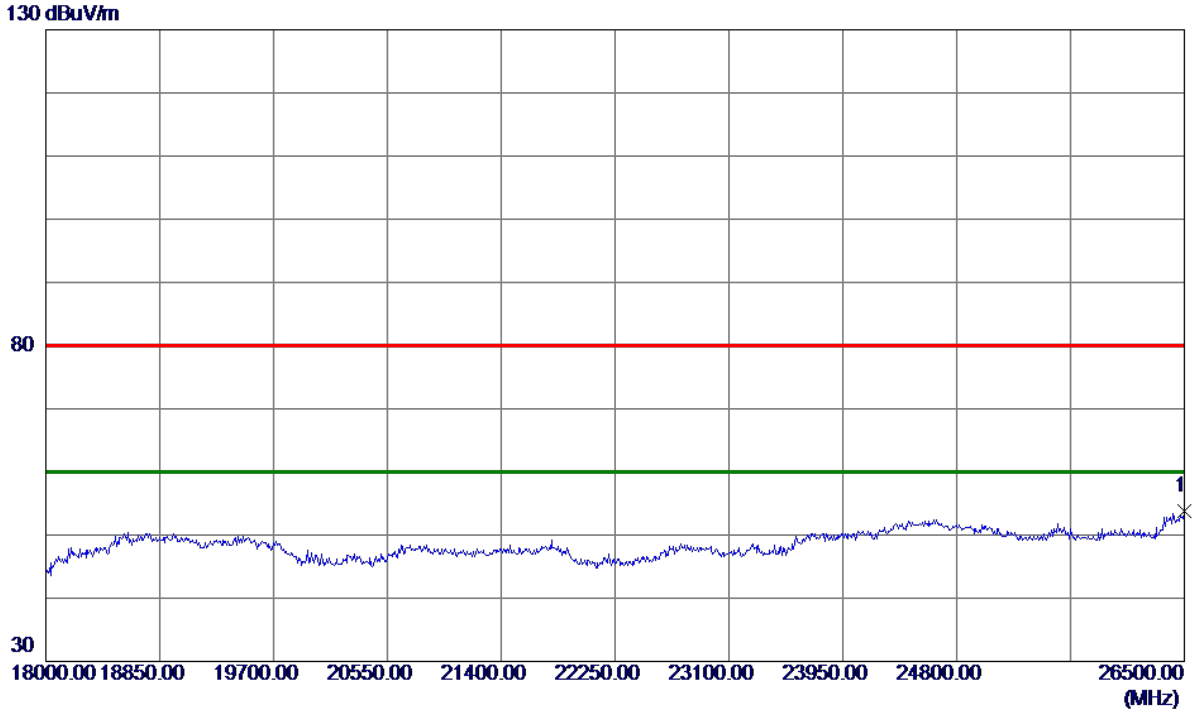
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 17880.0000 | 25.90 | 28.77 | 54.67 | 80.00 | -25.33 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2462MHz |

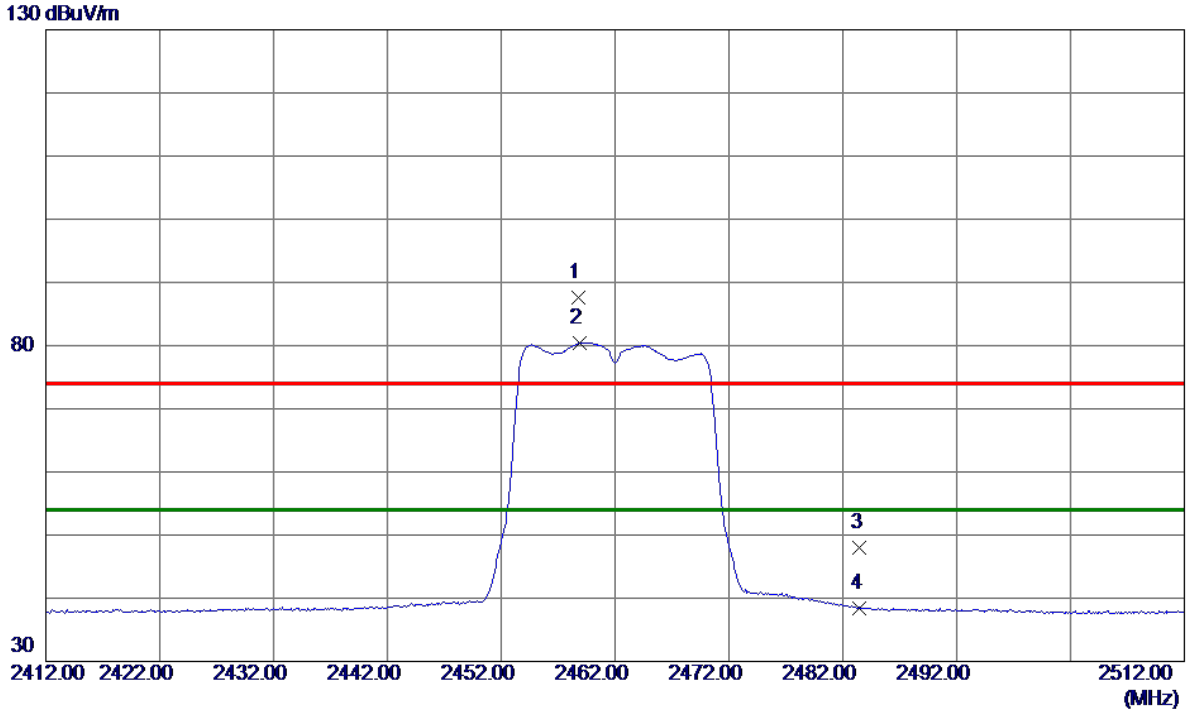
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 26500.0000 | 53.82 | 0.00 | 53.82 | 80.00 | -26.18 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2462MHz |

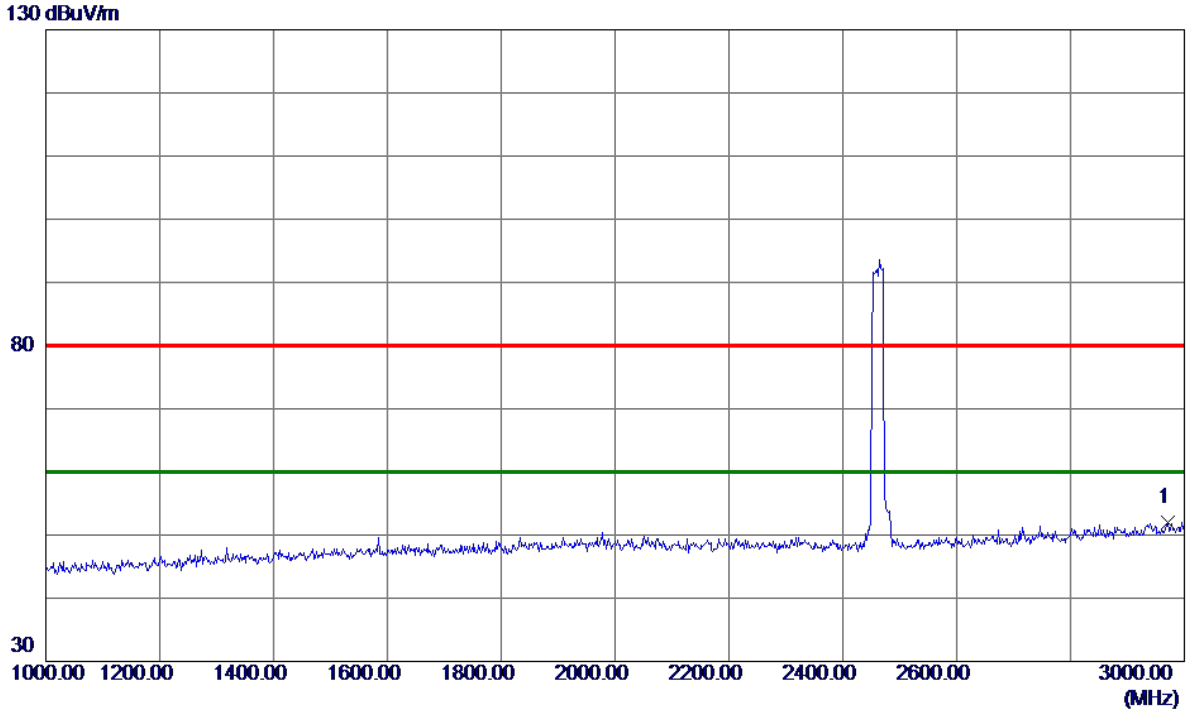
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2458.8000 | 76.29 | 11.34 | 87.63 | 74.00 | 13.63 | Peak | No Limit |
| 2 * | 2458.9000 | 69.14 | 11.34 | 80.48 | 54.00 | 26.48 | AVG | No Limit |
| 3 | 2483.5000 | 36.56 | 11.35 | 47.91 | 74.00 | -26.09 | Peak | |
| 4 | 2483.5000 | 27.12 | 11.35 | 38.47 | 54.00 | -15.53 | AVG | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2462MHz |

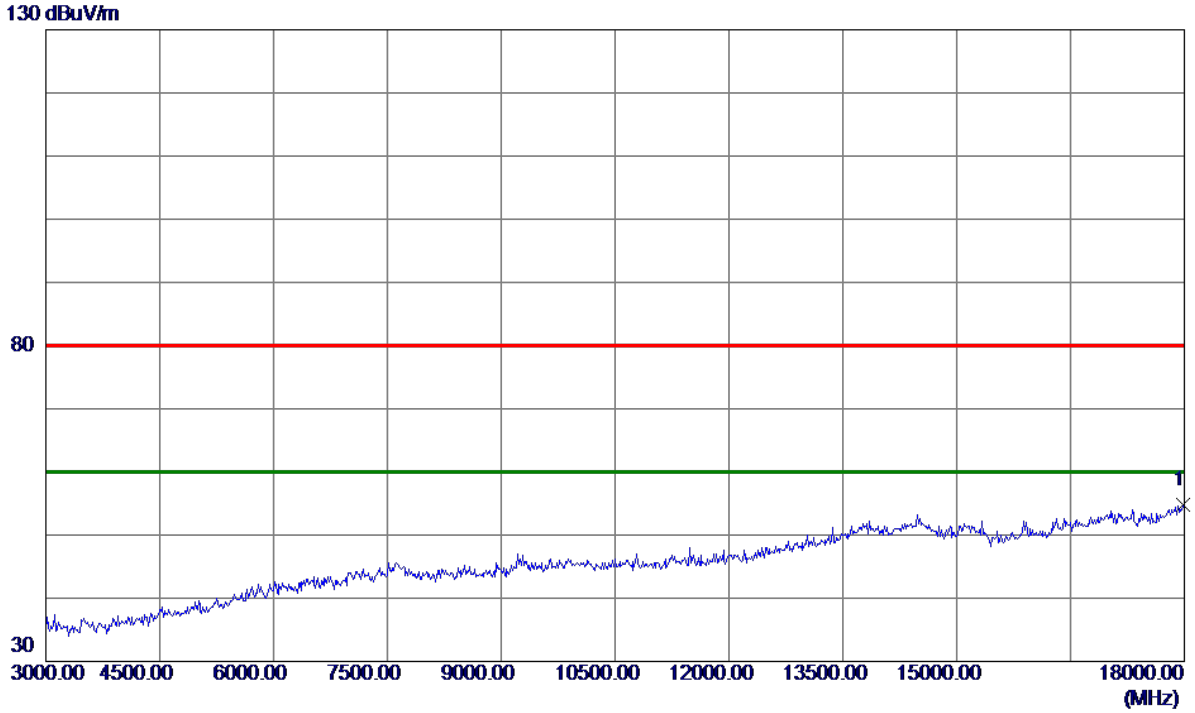
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2972.0000 | 37.22 | 14.80 | 52.02 | 80.00 | -27.98 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2462MHz |

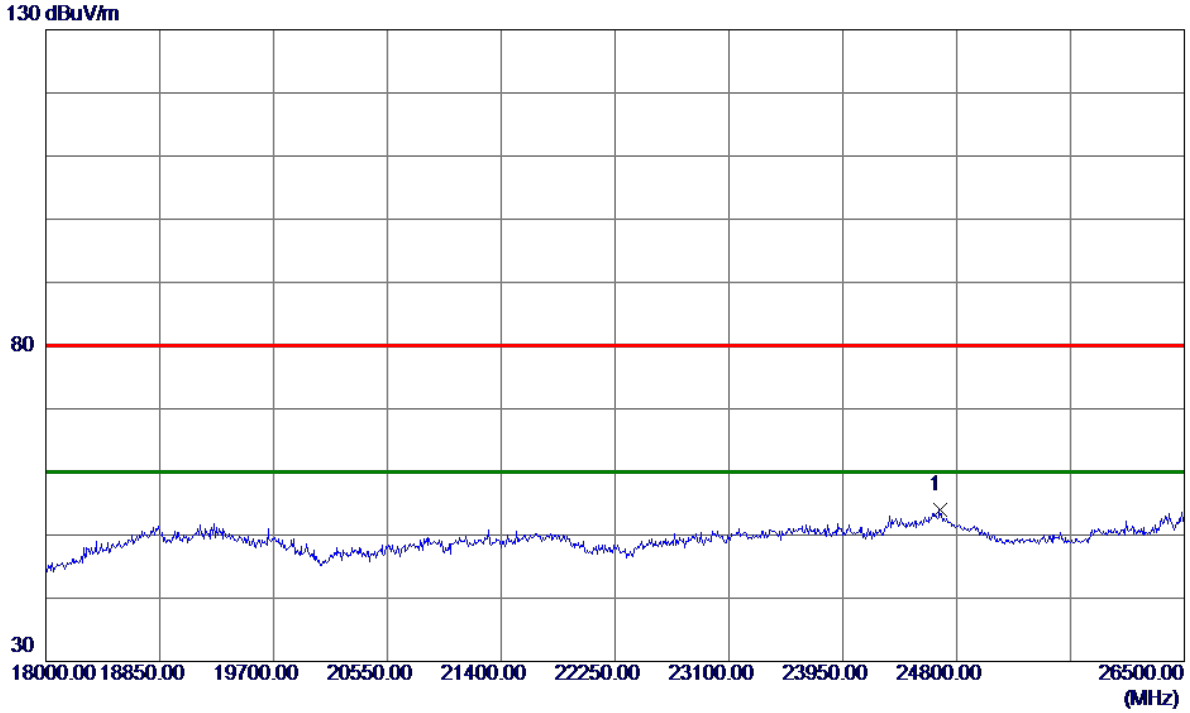
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 17985.0000 | 25.61 | 29.11 | 54.72 | 80.00 | -25.28 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX G MODE 2462MHz |

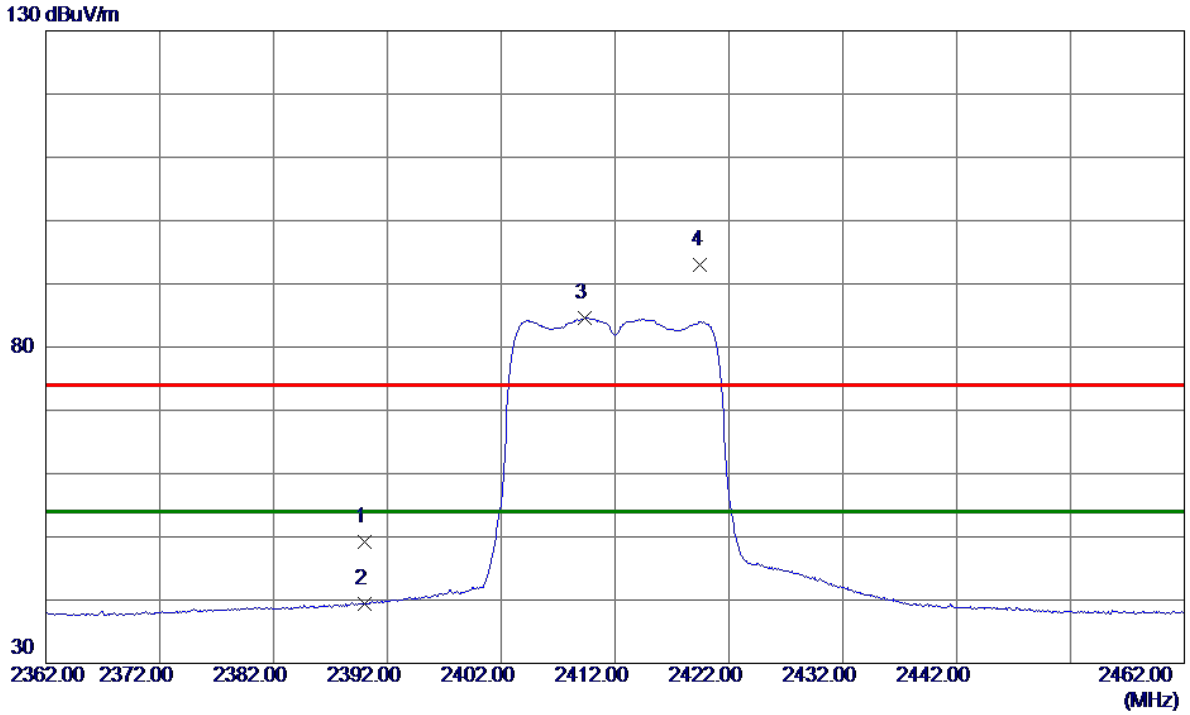
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 24672.5000 | 87.10 | -33.10 | 54.00 | 80.00 | -26.00 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX N-20M MODE 2412MHz |

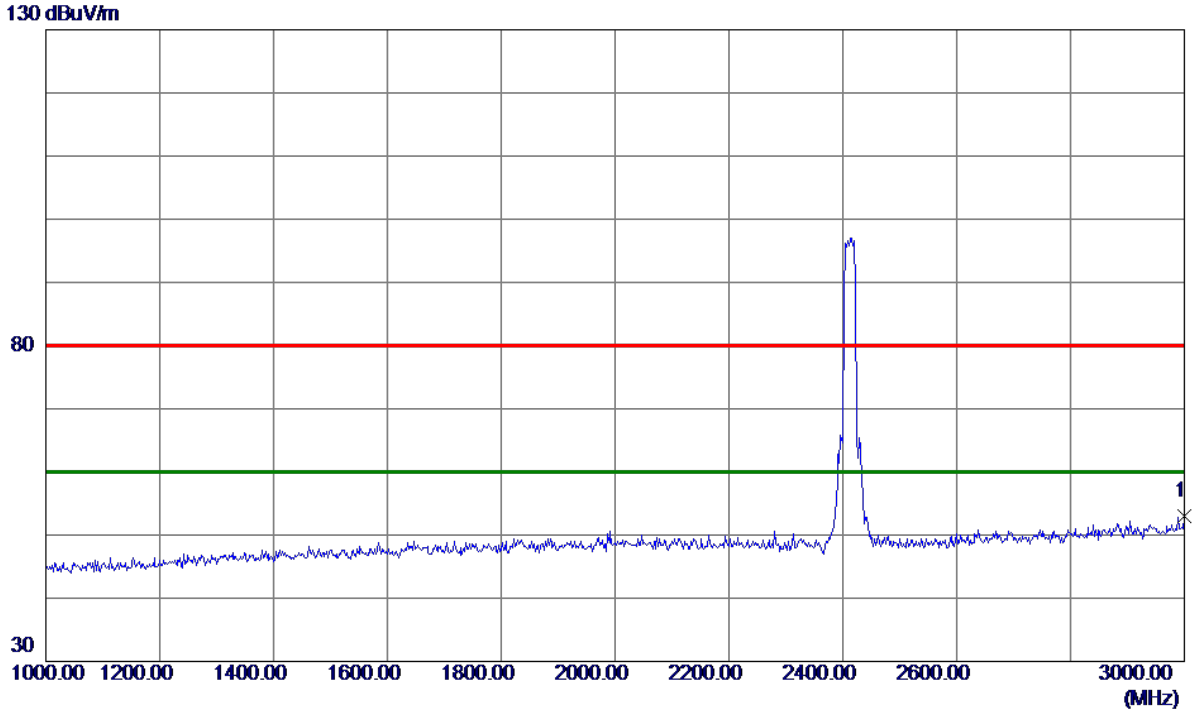
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2390.0000 | 37.80 | 11.32 | 49.12 | 74.00 | -24.88 | Peak | |
| 2 | 2390.0000 | 28.17 | 11.32 | 39.49 | 54.00 | -14.51 | AVG | |
| 3 * | 2409.3000 | 73.22 | 11.32 | 84.54 | 54.00 | 30.54 | AVG | No Limit |
| 4 | 2419.5000 | 81.61 | 11.33 | 92.94 | 74.00 | 18.94 | Peak | No Limit |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX N-20M MODE 2412MHz |

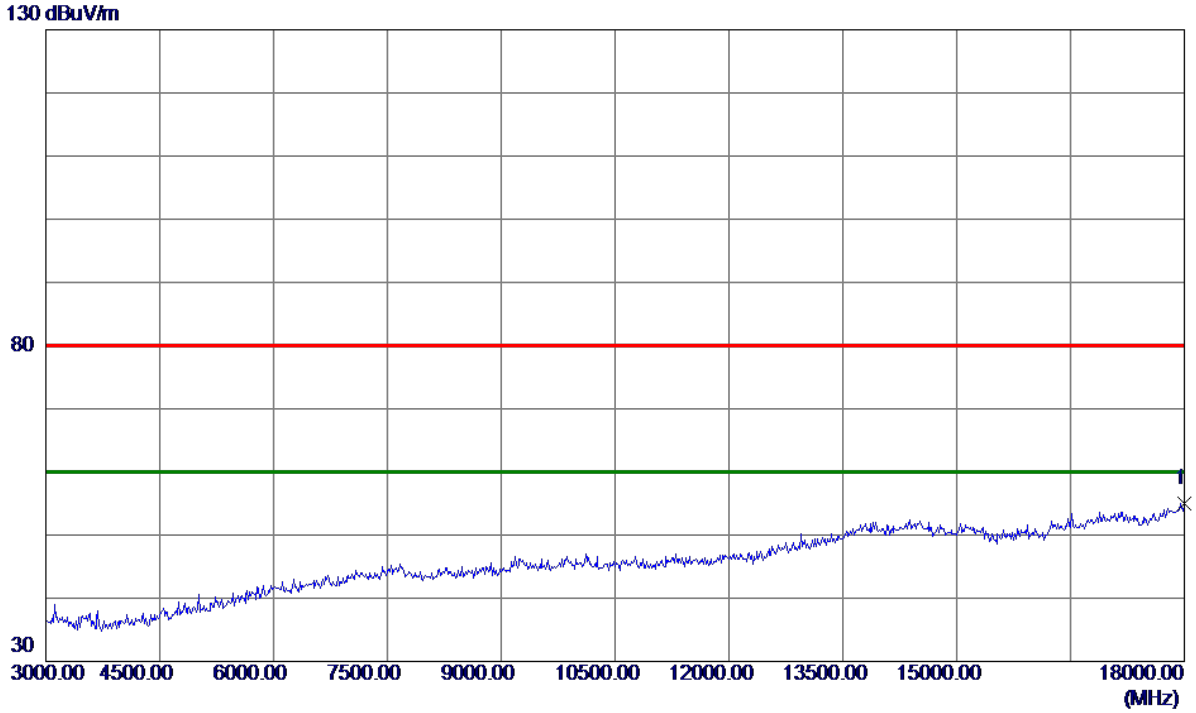
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 3000.0000 | 37.97 | 15.00 | 52.97 | 80.00 | -27.03 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX N-20M MODE 2412MHz |

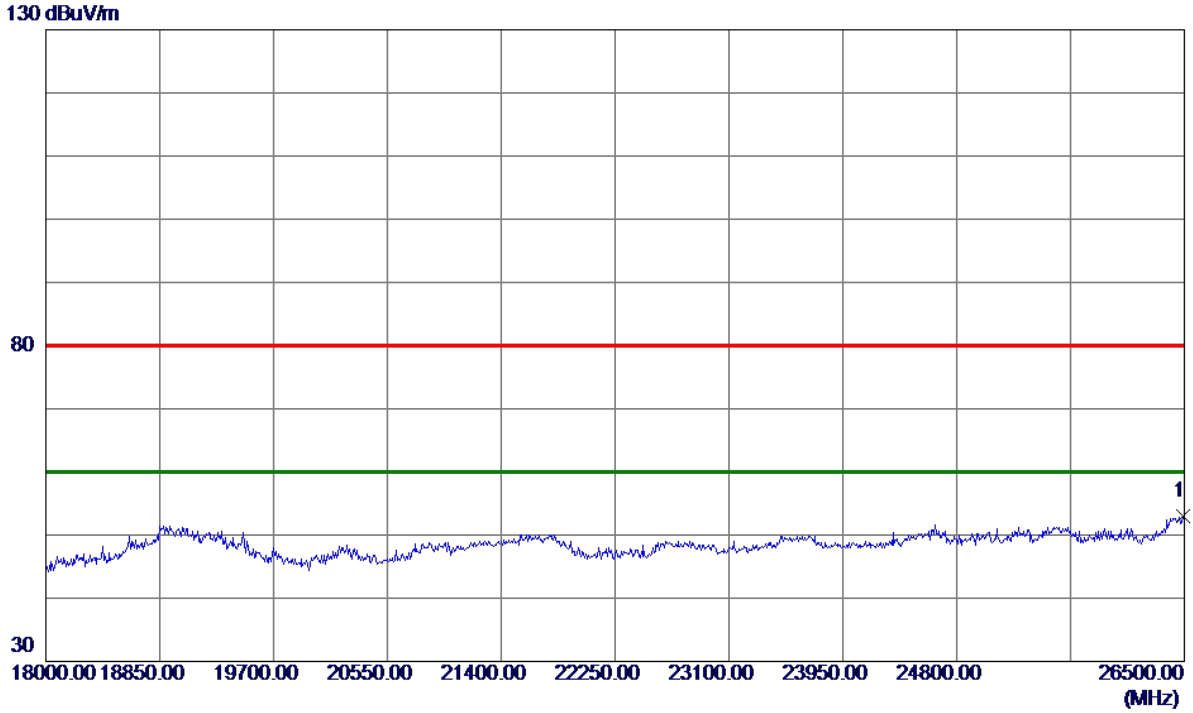
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 18000.0000 | 25.87 | 29.16 | 55.03 | 80.00 | -24.97 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX N-20M MODE 2412MHz |

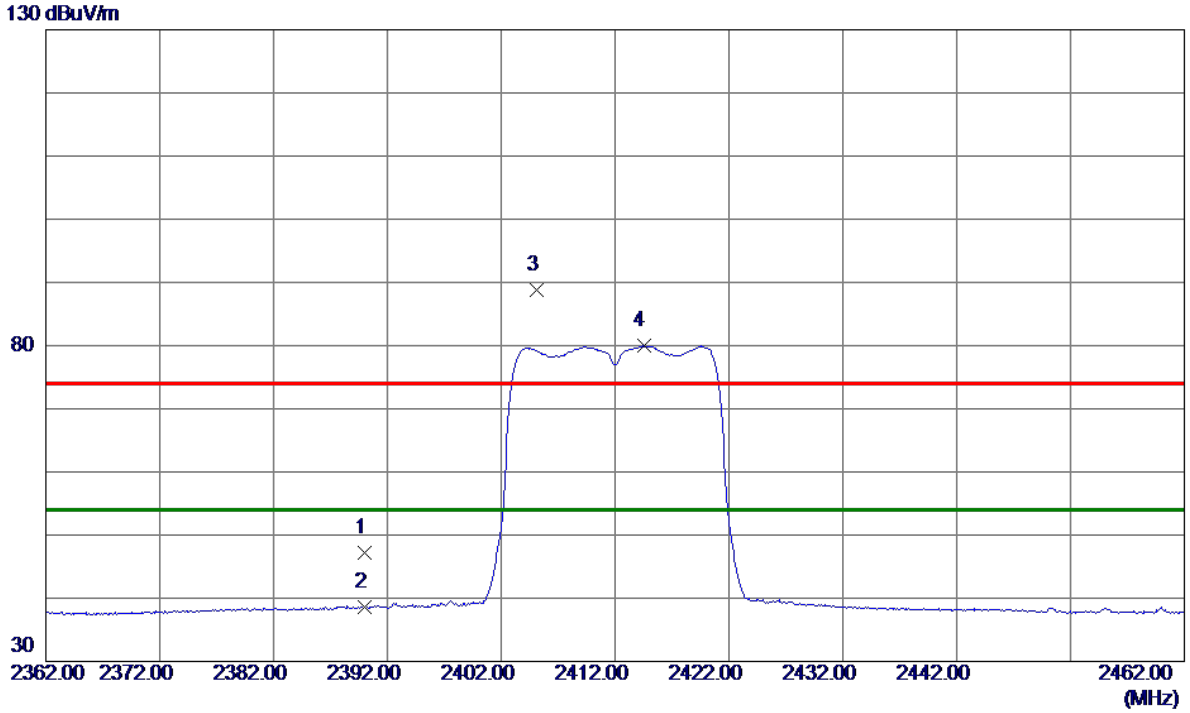
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 26491.5000 | 53.06 | 0.00 | 53.06 | 80.00 | -26.94 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX N-20M MODE 2412MHz |

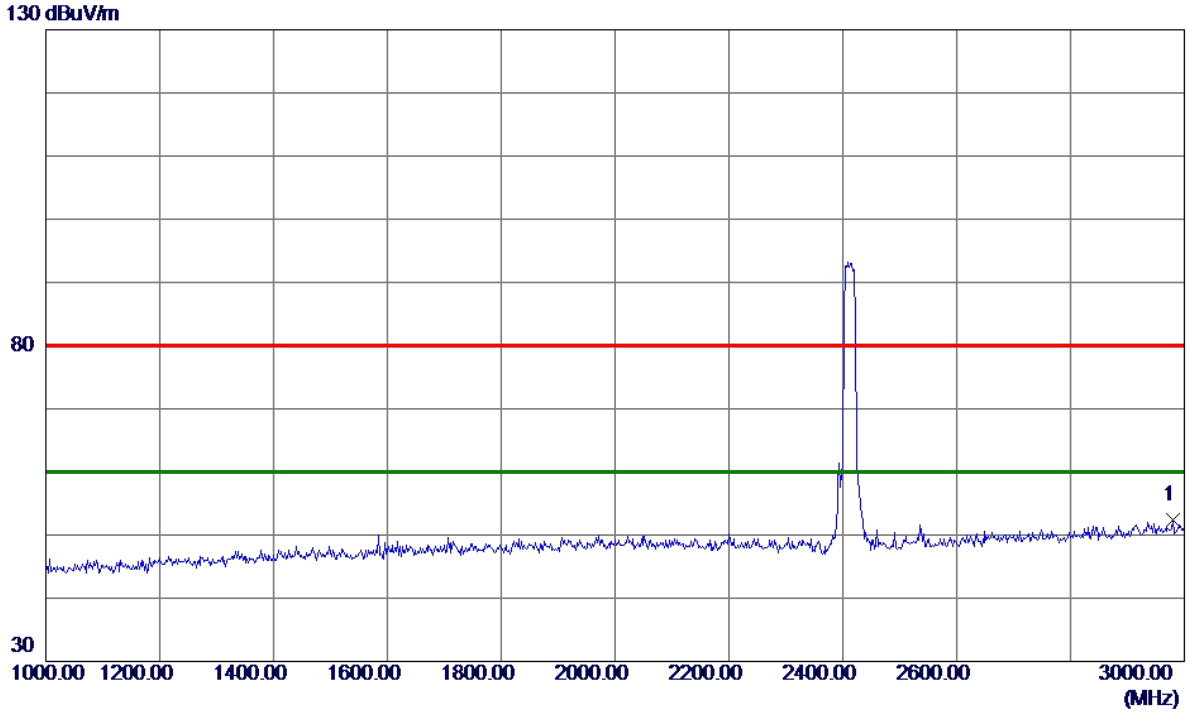
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2390.0000 | 35.85 | 11.32 | 47.17 | 74.00 | -26.83 | Peak | |
| 2 | 2390.0000 | 27.23 | 11.32 | 38.55 | 54.00 | -15.45 | AVG | |
| 3 | 2405.1000 | 77.54 | 11.32 | 88.86 | 74.00 | 14.86 | Peak | No Limit |
| 4 * | 2414.5000 | 68.60 | 11.33 | 79.93 | 54.00 | 25.93 | AVG | No Limit |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX N-20M MODE 2412MHz |

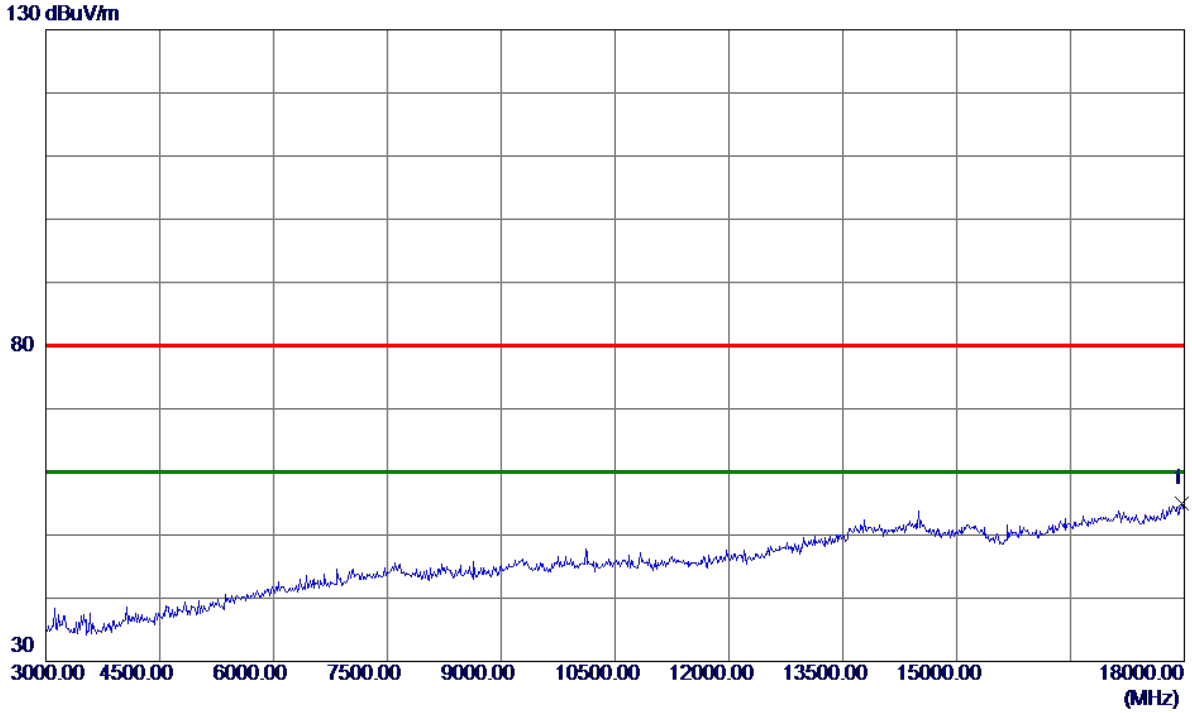
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2980.0000 | 37.62 | 14.85 | 52.47 | 80.00 | -27.53 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX N-20M MODE 2412MHz |

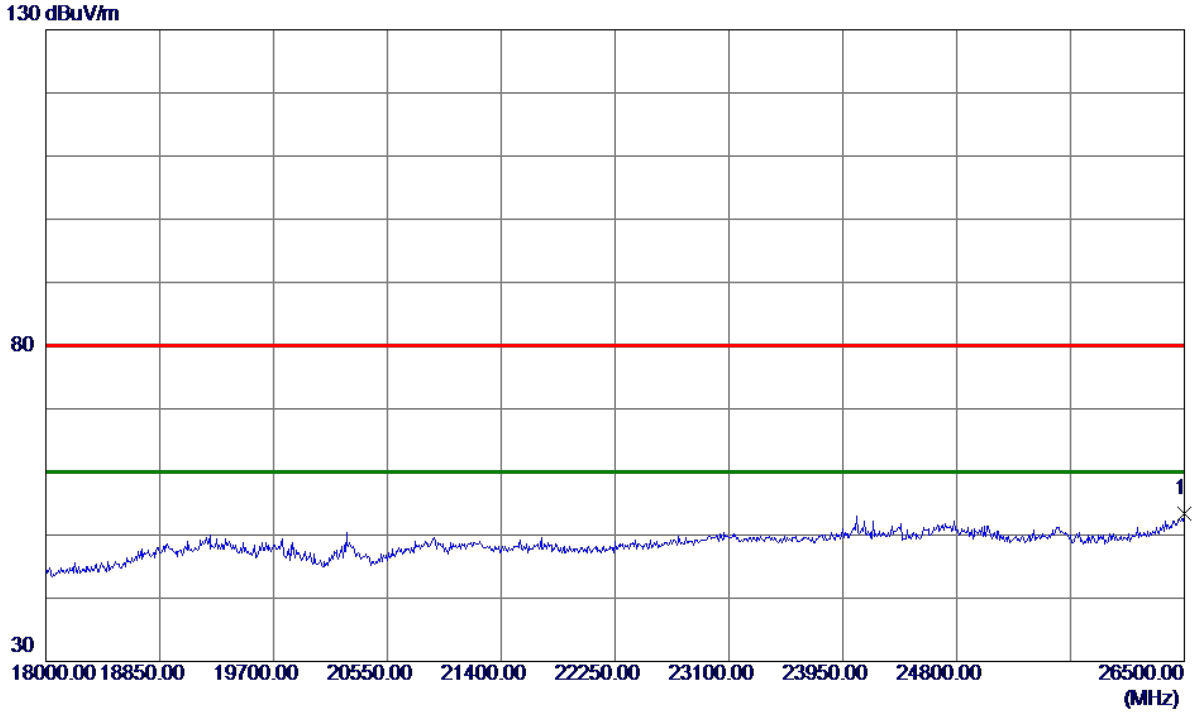
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 17970.0000 | 25.92 | 29.06 | 54.98 | 80.00 | -25.02 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX N-20M MODE 2412MHz |

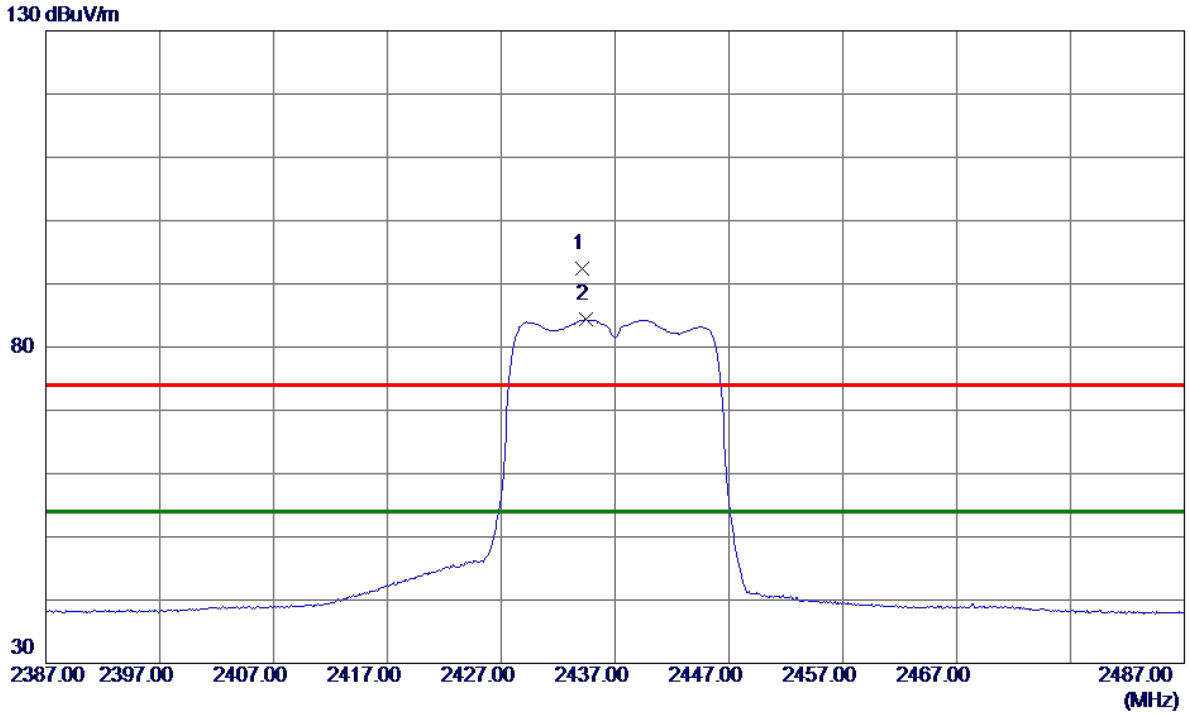
**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 26500.0000 | 53.32 | 0.00 | 53.32 | 80.00 | -26.68 | Peak | |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX N-20M MODE 2437MHz |

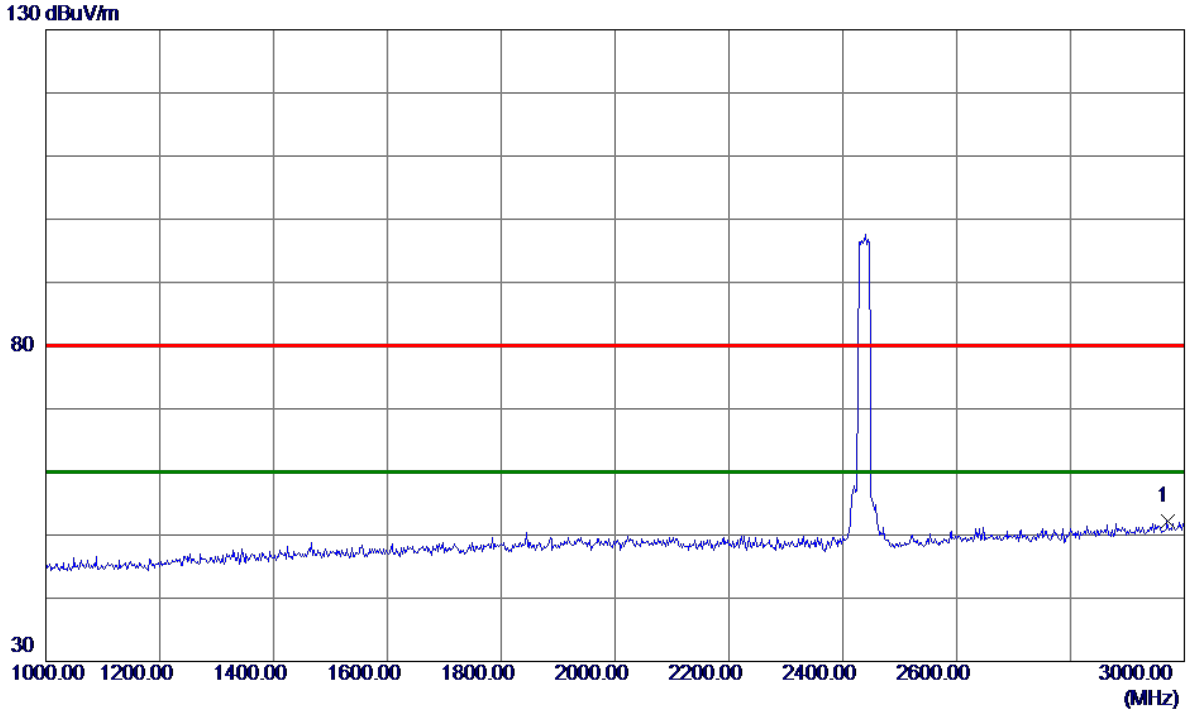
**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2434.1000 | 80.99 | 11.33 | 92.32 | 74.00 | 18.32 | Peak | No Limit |
| 2 * | 2434.4000 | 73.06 | 11.33 | 84.39 | 54.00 | 30.39 | AVG | No Limit |

| | |
|---|---|
| Orthogonal Axis : | X |
| Test Mode : | TX N-20M MODE 2437MHz |

**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2970.0000 | 37.34 | 14.78 | 52.12 | 80.00 | -27.88 | Peak | |