

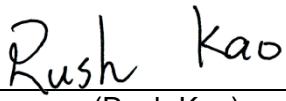
# FCC Radio Test Report

## FCC ID: 2AJ2LQJXJ01FJ

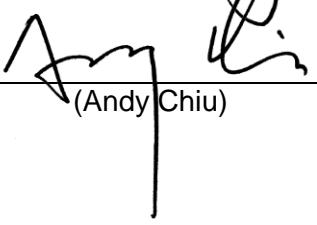
This report concerns (check one): Original Grant Class I Change Class II Change

**Project No.** : 1609199  
**Equipment** : Mi Sphere Camera  
**Test Model** : QJXJ01FJ  
**Series Model** : N/A  
**Applicant** : Beijing MadV Technology Co., Ltd  
**Address** : No.80, Floor 4, building17, Yard 30, Shixingdajie, Shijingshan District ,Beijing

**Date of Receipt** : Nov. 21, 2016  
**Date of Test** : Nov. 21, 2016 ~ Nov. 28, 2016  
**Issued Date** : Nov. 28, 2016  
**Tested by** : BTL Inc.

**Testing Engineer** :   
(Rush Kao)

**Technical Manager** :   
(Jeff Yang)

**Authorized Signatory** :   
(Andy Chiu)

## B T L I N C .

B1, No.37, Lane 365, Yang Guang St.,

Nei-Hu District, Taipei City 114, Taiwan.

TEL:+886-2-2657-3299 FAX: +886-2- 2657-3331

### 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.

**BTL**'s report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and **BTL-self**, extracts from the test report shall not be reproduced except in full with **BTL**'s authorized written approval.

**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.

### 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
<b>1 . CERTIFICATION</b>	<b>6</b>
<b>2 . SUMMARY OF TEST RESULTS</b>	<b>7</b>
<b>2.1 TEST FACILITY</b>	<b>8</b>
<b>2.2 MEASUREMENT UNCERTAINTY</b>	<b>9</b>
<b>3 . GENERAL INFORMATION</b>	<b>10</b>
<b>3.1 GENERAL DESCRIPTION OF EUT</b>	<b>10</b>
<b>3.2 DESCRIPTION OF TEST MODES</b>	<b>11</b>
<b>3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING</b>	<b>12</b>
<b>3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED</b>	<b>13</b>
<b>3.5 DESCRIPTION OF SUPPORT UNITS</b>	<b>13</b>
<b>4 . EMC EMISSION TEST</b>	<b>14</b>
<b>4.1 CONDUCTED EMISSION MEASUREMENT</b>	<b>14</b>
<b>4.1.1 POWER LINE CONDUCTED EMISSION LIMITS</b>	<b>14</b>
<b>4.1.2 TEST PROCEDURE</b>	<b>14</b>
<b>4.1.3 DEVIATION FROM TEST STANDARD</b>	<b>14</b>
<b>4.1.4 TEST SETUP</b>	<b>15</b>
<b>4.1.5 EUT OPERATING CONDITIONS</b>	<b>15</b>
<b>4.1.6 EUT TEST CONDITIONS</b>	<b>15</b>
<b>4.1.7 TEST RESULTS</b>	<b>15</b>
<b>4.2 RADIATED EMISSION MEASUREMENT</b>	<b>16</b>
<b>4.2.1 RADIATED EMISSION LIMITS</b>	<b>16</b>
<b>4.2.2 TEST PROCEDURE</b>	<b>17</b>
<b>4.2.3 DEVIATION FROM TEST STANDARD</b>	<b>17</b>
<b>4.2.4 TEST SETUP</b>	<b>18</b>
<b>4.2.5 EUT OPERATING CONDITIONS</b>	<b>19</b>
<b>4.2.6 EUT TEST CONDITIONS</b>	<b>19</b>
<b>4.2.7 TEST RESULTS (9KHZ TO 30MHZ)</b>	<b>19</b>
<b>4.2.8 TEST RESULTS (30MHZ TO 1000 MHZ)</b>	<b>19</b>
<b>4.2.9 TEST RESULTS (ABOVE 1000 MHZ)</b>	<b>19</b>
<b>5 . BANDWIDTH TEST</b>	<b>20</b>
<b>5.1 APPLIED PROCEDURES</b>	<b>20</b>
<b>5.1.1 TEST PROCEDURE</b>	<b>20</b>
<b>5.1.2 DEVIATION FROM STANDARD</b>	<b>20</b>
<b>5.1.3 TEST SETUP</b>	<b>20</b>
<b>5.1.4 EUT OPERATION CONDITIONS</b>	<b>20</b>
<b>5.1.5 EUT TEST CONDITIONS</b>	<b>20</b>
<b>5.1.6 TEST RESULTS</b>	<b>20</b>
<b>6 . MAXIMUM PEAK CONDUCTED OUTPUT POWER TEST</b>	<b>21</b>

**Table of Contents**

	<b>Page</b>
<b>6.1 APPLIED PROCEDURES / LIMIT</b>	<b>21</b>
<b>6.1.1 TEST PROCEDURE</b>	21
<b>6.1.2 DEVIATION FROM STANDARD</b>	21
<b>6.1.3 TEST SETUP</b>	21
<b>6.1.4 EUT OPERATION CONDITIONS</b>	21
<b>6.1.5 EUT TEST CONDITIONS</b>	21
<b>6.1.6 TEST RESULTS</b>	21
<b>7 . ANTENNA CONDUCTED SPURIOUS EMISSION</b>	<b>22</b>
<b>7.1 APPLIED PROCEDURES / LIMIT</b>	22
<b>7.1.1 TEST PROCEDURE</b>	22
<b>7.1.2 DEVIATION FROM STANDARD</b>	22
<b>7.1.3 TEST SETUP</b>	22
<b>7.1.4 EUT OPERATION CONDITIONS</b>	22
<b>7.1.5 EUT TEST CONDITIONS</b>	22
<b>7.1.6 TEST RESULTS</b>	22
<b>8 . POWER SPECTRAL DENSITY TEST</b>	<b>23</b>
<b>8.1 APPLIED PROCEDURES / LIMIT</b>	23
<b>8.1.1 TEST PROCEDURE</b>	23
<b>8.1.2 DEVIATION FROM STANDARD</b>	23
<b>8.1.3 TEST SETUP</b>	23
<b>8.1.4 EUT OPERATION CONDITIONS</b>	23
<b>8.1.5 EUT TEST CONDITIONS</b>	23
<b>8.1.6 TEST RESULTS</b>	23
<b>9 . MEASUREMENT INSTRUMENTS LIST</b>	<b>24</b>
<b>10 . EUT TEST PHOTO</b>	<b>26</b>
<b>ATTACHMENT A - CONDUCTED EMISSION</b>	<b>30</b>
<b>ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)</b>	<b>33</b>
<b>ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)</b>	<b>38</b>
<b>ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)</b>	<b>41</b>
<b>ATTACHMENT E - BANDWIDTH</b>	<b>78</b>
<b>ATTACHMENT F – MAXIMUM PEAK CONDUCTED OUTPUT POWER</b>	<b>85</b>
<b>ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION</b>	<b>87</b>
<b>ATTACHMENT H - POWER SPECTRAL DENSITY</b>	<b>106</b>

**REPORT ISSUED HISTORY**

Issued No.	Description	Issued Date
BTL-FCCP-2-1609199	Original Issue.	Nov. 28, 2016

## 1. CERTIFICATION

Equipment : Mi Sphere Camera  
Brand Name :   
Test Model : QJXJ01FJ  
Series Model : N/A  
Applicant : Beijing MadV Technology Co., Ltd  
Date of Test : Nov. 21, 2016 ~ Nov. 28, 2016  
Test Sample : Engineering Sample  
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-2-1609199) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

## 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
	15.207	Conducted Emission	PASS
	15.247(d)	Antenna conducted Spurious Emission	PASS
	15.247(a)(2)	6dB Bandwidth	PASS
	15.247(b)(3)	Peak Output Power	PASS
	15.247(e)	Power Spectral Density	PASS
	15.203	Antenna Requirement	PASS
	15.209/15.205	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:

### Conducted emission Test:

**C05:** (VCCI RN: C-4742; FCC RN:965108; FCC DN:TW1082)

No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

### Radiated emission Test (Below 1 GHz):

**CB11:** (VCCI RN: R-4260; FCC RN:949005; FCC DN:TW1082; IC Assigned Code:20088-2)

No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

### Radiated emission Test (Above 1 GHz):

**CB11:** (VCCI RN: G-868; FCC RN:949005; FCC DN:TW1082; IC Assigned Code:20088-2)

No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

## 2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2  $U_{\text{CISPR}}$  requirement.

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 %.

### A. Conducted emission test:

Test Site	Method	Measurement Frequency Range	$U, (\text{dB})$
C05	CISPR	150 kHz~30MHz	2.04

### B. Radiated emission test:

Test Site	Method	Measurement Frequency Range	$U, (\text{dB})$
CB11 (3m)	CISPR	9kHz ~ 150kHz	4.00
		150kHz ~ 30MHz	4.00

Test Site	Method	Measurement Frequency Range	Ant. H / V	$U, (\text{dB})$
CB11 (3m)	CISPR	30MHz ~ 200MHz	V	3.06
		30MHz ~ 200MHz	H	2.58
		200MHz ~ 1,000MHz	V	3.50
		200MHz ~ 1,000MHz	H	3.10

Test Site	Method	Measurement Frequency Range	Ant. H / V	$U, (\text{dB})$
CB11 (3m)	CISPR	1GHz ~ 6GHz	V	4.14
		1GHz ~ 6GHz	H	4.14

Test Site	Method	Measurement Frequency Range	Ant. H / V	$U, (\text{dB})$
CB11 (1m)	CISPR	6GHz ~ 18GHz	V	5.34
		6GHz ~ 18GHz	H	5.34

Test Site	Method	Measurement Frequency Range	$U, (\text{dB})$
CB11 (1m)	CISPR	18 ~ 26.5 GHz	4.66
		26.5 ~ 40 GHz	4.74

Our calculated Measurement Instrumentation Uncertainty is shown in the tables above. These are our  $U_{\text{lab}}$  values in CISPR 16-4-2 terminology.

Since Table 1 of CISPR 16-4-2 has values of measurement instrumentation uncertainty, called  $U_{\text{CISPR}}$ , as follows:

Conducted Disturbance (mains port) – 150 kHz – 30 MHz: 3.6 dB

Radiated Disturbance (electric field strength on an open area test site or alternative test site) – 30 MHz – 1000 MHz: 5.2 dB

It can be seen that our  $U_{\text{lab}}$  values are smaller than  $U_{\text{CISPR}}$ .

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	Mi Sphere Camera	
Brand Name		
Test Model	QJXJ01FJ	
Series Model	N/A	
Model Difference	N/A	
Product Description	Operation Frequency	2412~2462 MHz
	Modulation Technology	802.11b:DSSS 802.11g:OFDM 802.11n:OFDM
	Bit Rate of Transmitter	802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n up to 150 Mbps
	Output Power (Max.)	802.11b: 19.11 dBm 802.11g: 23.52 dBm 802.11n(20MHz): 22.69 dBm
Power Source	Battery supplied.	
Power Rating	DC 3.8V	

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)							
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	LYNwave	MVD010W	PIFA	N/A	2.15

### 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	Normal Link

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

For Conducted Test	
Final Test Mode	Description
Mode 4	Normal Link

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

Note:

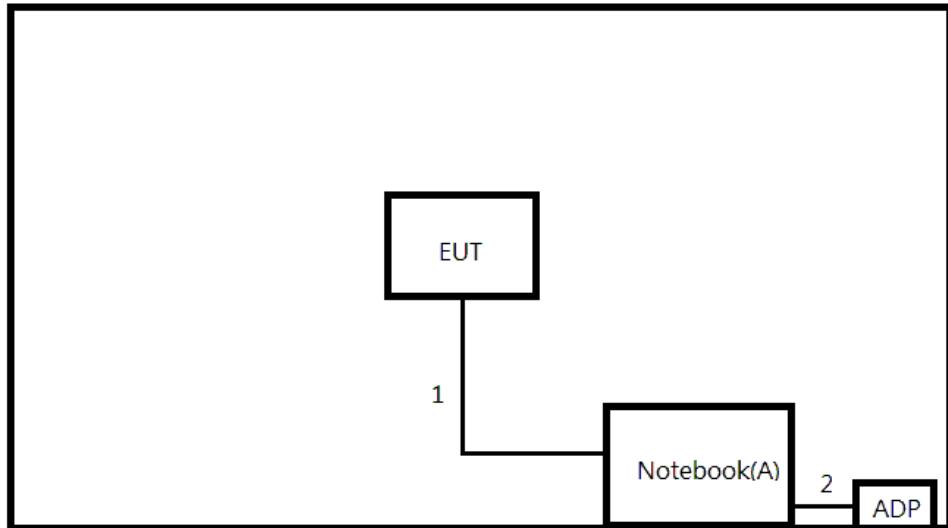
- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1Mbps)  
802.11g mode: OFDM (6Mbps)  
802.11n HT20 mode : BPSK (6.5Mbps)  
For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated below 1GHz test, the 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	Amba FW Debug Tool 01.03.20140804.OD		
Frequency (MHz)	2412	2437	2462
802.11b	16	16	16
802.11g	15	15	15
802.11n (20MHz)	14	14	14

### 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	Notebook PC	Acer	Z8C	DOC	N/A

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	0.8m	USB Cable
2	NO	NO	1.5m	Power Cable

## 4. EMC EMISSION TEST

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 POWER LINE CONDUCTED EMISSION LIMITS (Frequency Range 150KHz-30MHz)

Frequency of Emission (MHz)	Conducted Limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15 -0.50	66 to 56*	56 to 46*
0.50 -5.0	56	46
5.0 -30.0	60	50

Note:

(1) The limit of " \* " decreases with the logarithm of the frequency

(2) The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)

Margin Level = Measurement Value - Limit Value

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

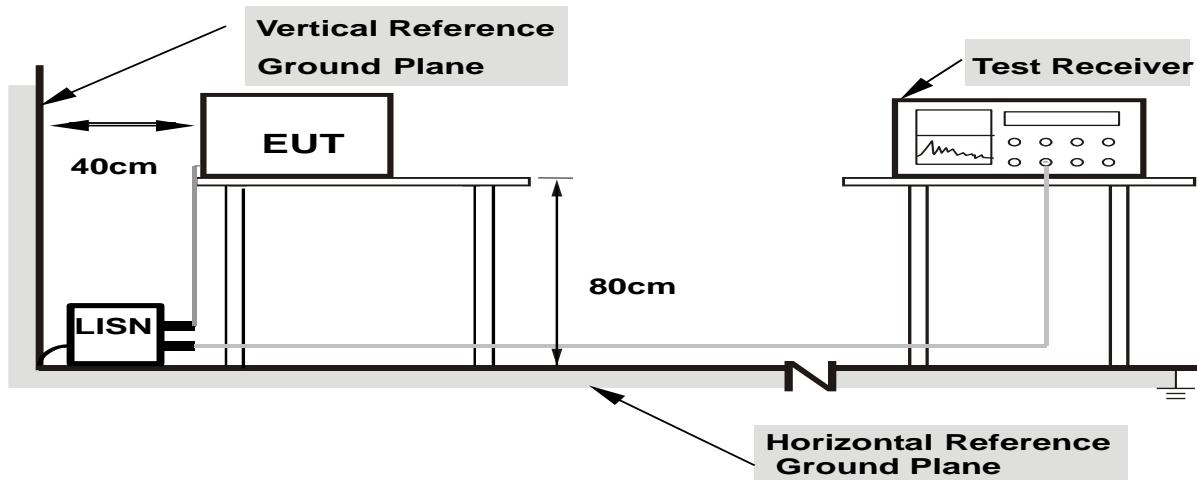
#### 4.1.2 TEST PROCEDURE

- The EUT was placed 0.8 meters from the horizontal 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/ 50uH 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.

#### 4.1.3 DEVIATION FROM TEST STANDARD

No deviation

#### 4.1.4 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 cm from other units and other metal planes

#### 4.1.5 EUT OPERATING CONDITIONS

The EUT was placed on the test table and programmed in normal function.

#### 4.1.6 EUT TEST CONDITIONS

Temperature: 25°C    Relative Humidity: 55%    Test Voltage: AC 120V/60Hz

#### 4.1.7 TEST RESULTS

Please refer to the Attachment A.

## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 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)	(dBuV/m) (at 3 meters)	
	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).
- (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

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

#### 4.2.2 TEST PROCEDURE

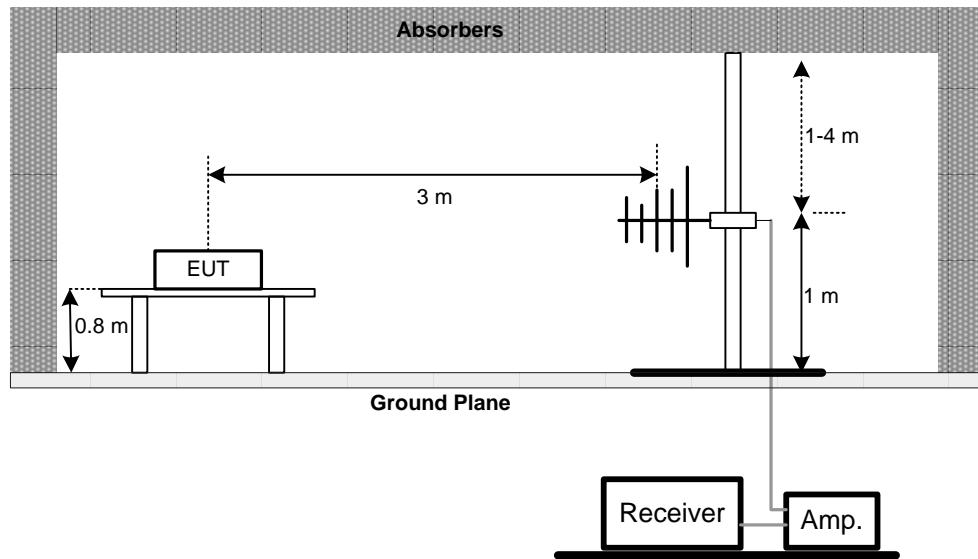
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- The measuring distance of 3 m 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)
- 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.
- 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).
- 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.
- 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.
- 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)
- 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)
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### 4.2.3 DEVIATION FROM TEST STANDARD

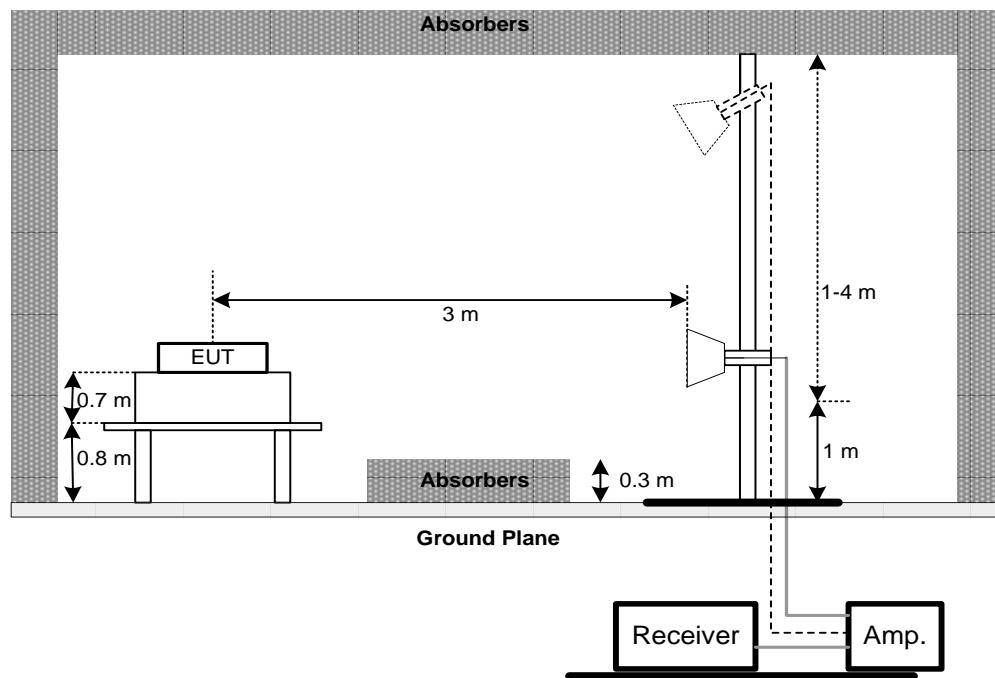
No deviation

#### 4.2.4 TEST SETUP

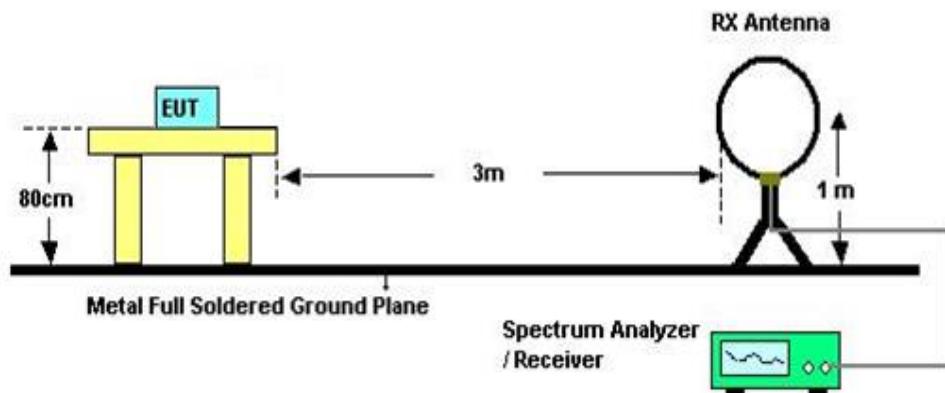
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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



### (C) For Radiated Emissions Below 30MHz



#### 4.2.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 4.2.6 EUT TEST CONDITIONS

Temperature: 25°C    Relative Humidity: 55%    Test Voltage: AC 120V/60Hz

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

Please refer to the Attachment B

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 =  $40 \log (\text{specific distance} / \text{test distance})$  (dB).
- (3) Limit line = specific limits (dBuV) + distance extrapolation factor.

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

Please refer to the Attachment C.

#### 4.2.9 TEST RESULTS (ABOVE 1000 MHZ)

Please refer to the Attachment D.

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

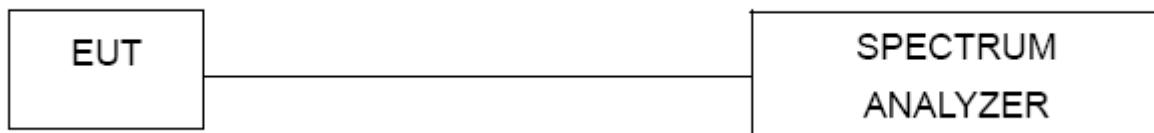
#### 5.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- 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: AC 120V/60Hz

#### 5.1.6 TEST RESULTS

Please refer to the Attachment E.

## 6. MAXIMUM PEAK CONDUCTED 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

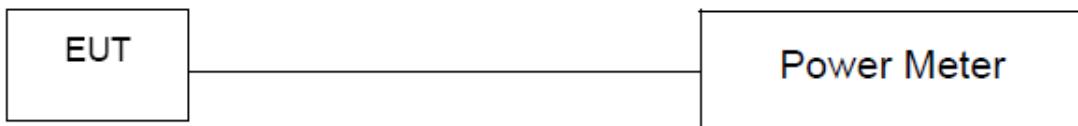
#### 6.1.1 TEST PROCEDURE

- The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
- The maximum peak conducted output power was performed in accordance with method 9.1.2 of FCC KDB 558074 D01 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: AC 120V/60Hz

#### 6.1.6 TEST RESULTS

Please refer to the Attachment F.

## 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.

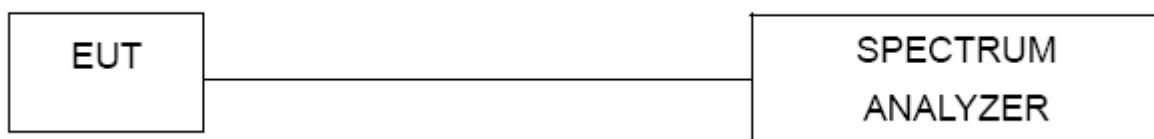
#### 7.1.1 TEST PROCEDURE

- 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: AC 120V/60Hz

#### 7.1.6 TEST RESULTS

Please refer to the Attachment G.

## 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

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- 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: AC 120V/60Hz

#### 8.1.6 TEST RESULTS

Please refer to the Attachment H.

## 9. MEASUREMENT INSTRUMENTS LIST

Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TWO-LINE V-NETWORK	R&S	ENV216	101050	Jan. 26, 2017
2	Test Cable	TIMES	CFD300-NL	C02	Jun. 15, 2017
3	EMI Test Receiver	R&S	ESR7	101433	Dec. 10, 2016
4	Measurement Software	EZ	EZ_EMC (Version NB-03A)	N/A	N/A

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EMI Receiver	Keysight	N9038A	MY55420127	Jan. 07, 2017
2	EXA Spectrum Analyzer	Keysight	N9010A	MY52220990	Feb. 23, 2017
3	Horn Antenna(1G~18G)	SCHWARZBECK	BBHA 9120 D	9120D-1342	Mar. 01, 2017
4	Trilog-Broadband Antenna(30M~1G)	Schwarzbeck	VULB9168	9168-548	Jan. 17, 2017
5	Pre-Amplifier(30M~1G)	EMCI	EMC02325	980217	Dec. 29, 2016
6	Pre-Amplifier(1G~2.6G)	EMCI	012645B	980267	Mar. 01, 2017
7	Test Cable	EMCI	EMC104-SM-S M-800	150207	Jan. 05, 2017
8	Test Cable	EMCI	EEMC104-SM-S M-3000	151205	Jan. 05, 2017
9	Test Cable	EMCI	S104-SMAP-2	M001220	Jan. 05, 2017
10	EXA Spectrum Analyzer	Agilent	N9010A	MY52220990	Feb. 24, 2017
11	EMI Test Receiver	Agilent	N9038A	MY51210215	Jan. 08, 2017
12	Loop Antenna	EMCO	6502	00042960	Nov. 24. 2017

**6dB Bandwidth Measurement**

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Jan. 18, 2017

**Peak Output Power Measurement**

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	Anritsu	ML2487A	6K00004714	May 18, 2017
2	Power Meter Sensor	Anritsu	MA2491A	034138	May 17, 2017

**Antenna Conducted Spurious Emission Measurement**

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Jan. 18, 2017

**Power Spectral Density Measurement**

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Jan. 18, 2017

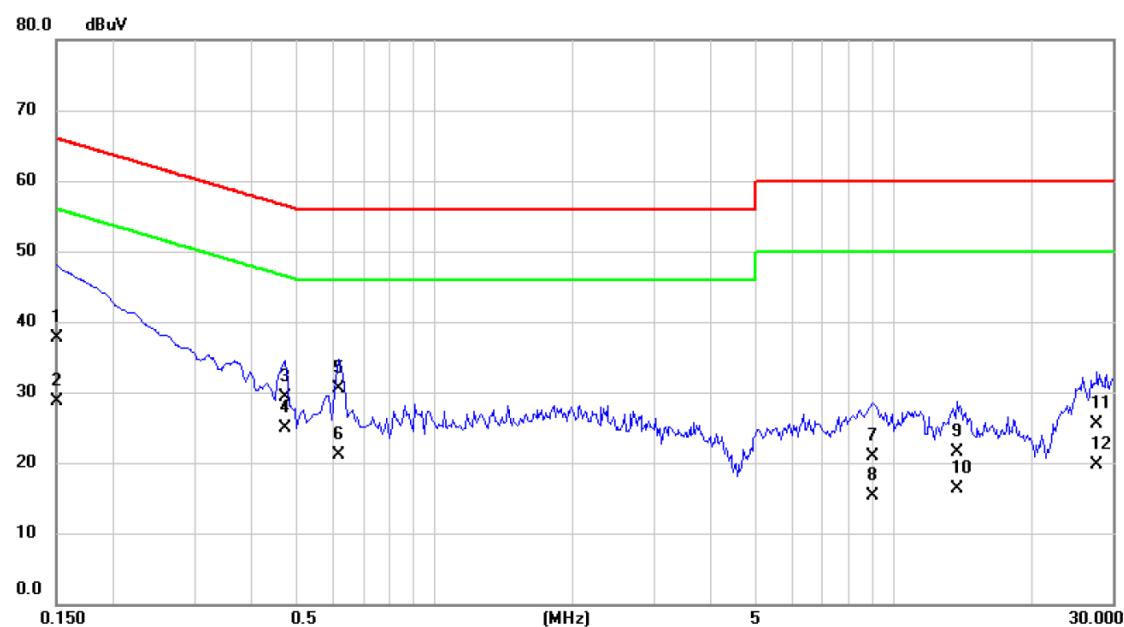
Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

**ATTACHMENT A - CONDUCTED EMISSION**

Test Mode : Normal Link

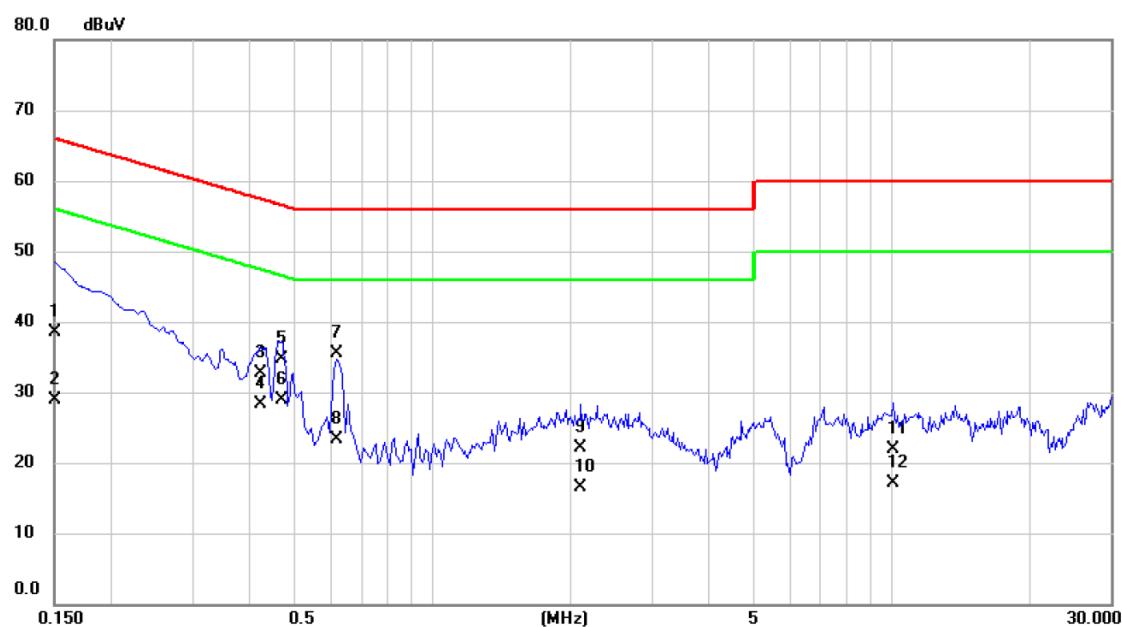
## Line



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
			Level	Factor	ment		dB	Detector
1		0.1500	28.10	9.66	37.76	66.00	-28.24	QP
2		0.1500	19.10	9.66	28.76	56.00	-27.24	AVG
3		0.4720	19.70	9.67	29.37	56.48	-27.11	QP
4	*	0.4720	15.20	9.67	24.87	46.48	-21.61	AVG
5		0.6170	20.90	9.67	30.57	56.00	-25.43	QP
6		0.6170	11.40	9.67	21.07	46.00	-24.93	AVG
7		9.0000	11.10	9.82	20.92	60.00	-39.08	QP
8		9.0000	5.50	9.82	15.32	50.00	-34.68	AVG
9		13.7000	11.60	9.91	21.51	60.00	-38.49	QP
10		13.7000	6.30	9.91	16.21	50.00	-33.79	AVG
11		27.6500	15.50	9.98	25.48	60.00	-34.52	QP
12		27.6500	9.80	9.98	19.78	50.00	-30.22	AVG

Test Mode : Normal Link

## Neutral

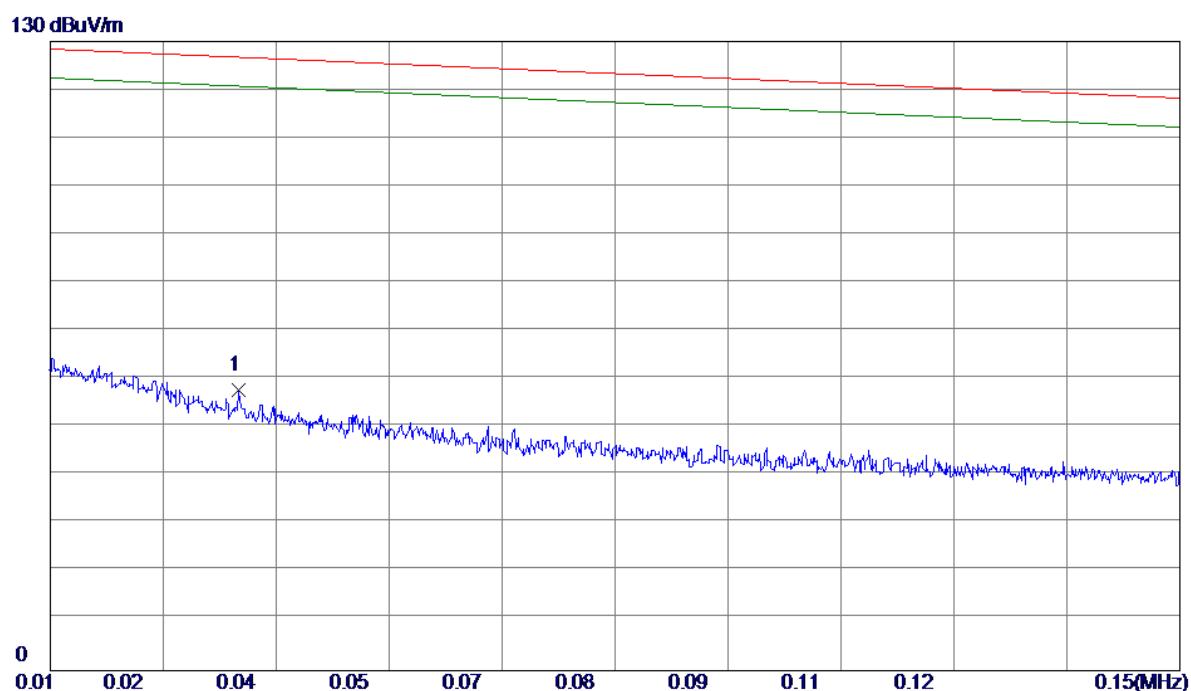


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
			Level	Factor	ment		dB	Detector
1		0.1500	28.80	9.67	38.47	66.00	-27.53	QP
2		0.1500	19.30	9.67	28.97	56.00	-27.03	AVG
3		0.4216	23.00	9.66	32.66	57.42	-24.76	QP
4		0.4216	18.60	9.66	28.26	47.42	-19.16	AVG
5		0.4692	25.00	9.67	34.67	56.53	-21.86	QP
6	*	0.4692	19.20	9.67	28.87	46.53	-17.66	AVG
7		0.6170	25.90	9.67	35.57	56.00	-20.43	QP
8		0.6170	13.60	9.67	23.27	46.00	-22.73	AVG
9		2.1020	12.30	9.74	22.04	56.00	-33.96	QP
10		2.1020	6.80	9.74	16.54	46.00	-29.46	AVG
11		10.1000	12.00	9.83	21.83	60.00	-38.17	QP
12		10.1000	7.30	9.83	17.13	50.00	-32.87	AVG

**ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)**

Test Mode: TX B MODE CHANNEL 01

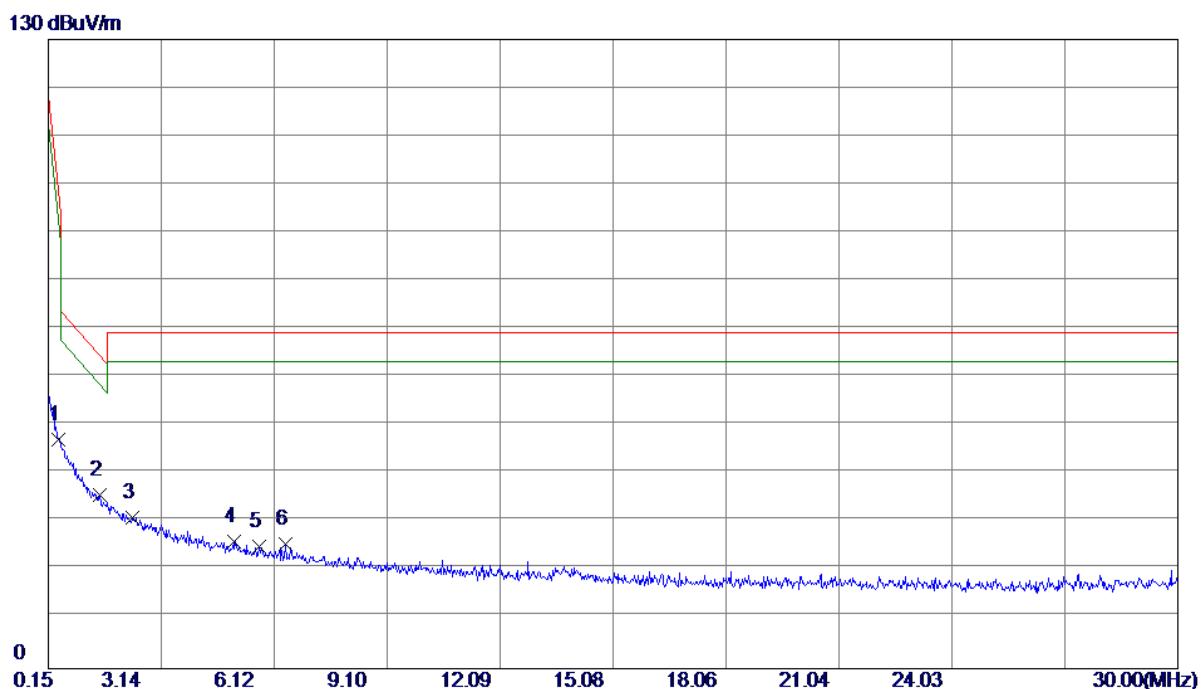
Ant 0°



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	
							Comment	Detector
1 *	0.0325	43.33	14.74	58.07	126.82	-68.75	Peak	

Test Mode: TX B MODE CHANNEL 01

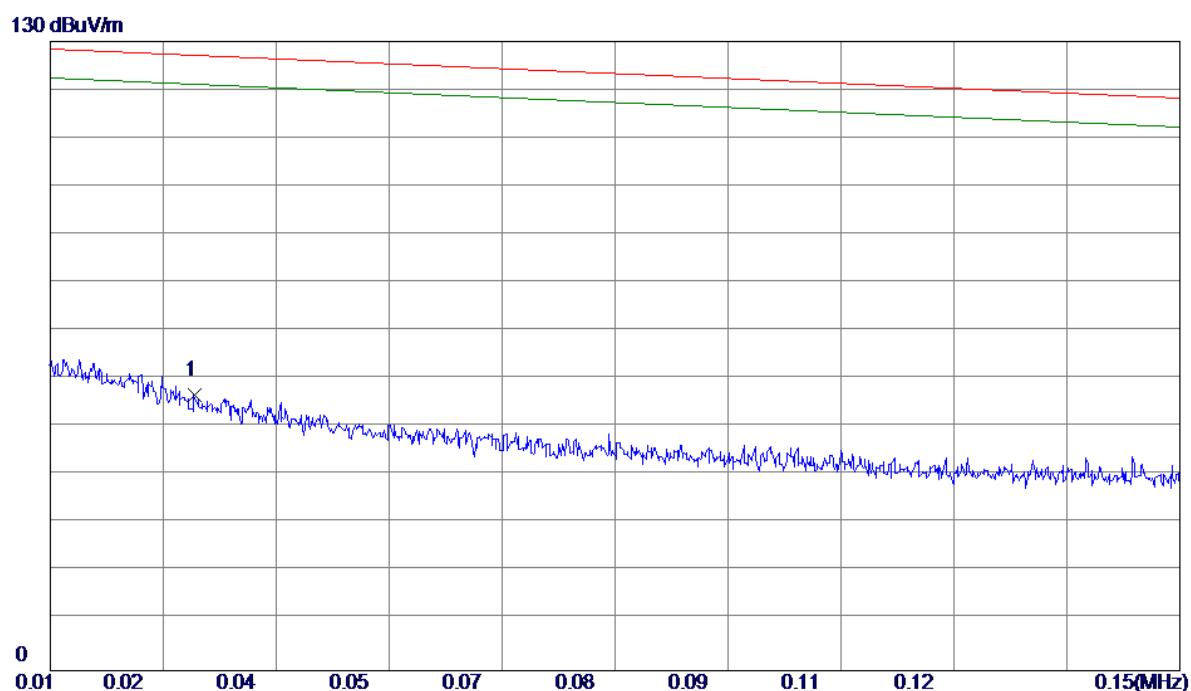
Ant 0°



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	0.4187	35.57	11.80	47.37	98.94	-51.57	Peak	
2 *	1.5230	24.14	11.76	35.90	64.59	-28.69	Peak	
3	2.3590	19.87	11.39	31.26	69.54	-38.28	Peak	
4	5.0453	14.83	11.40	26.23	69.54	-43.31	Peak	
5	5.7320	13.76	11.39	25.15	69.54	-44.39	Peak	
6	6.4184	14.43	11.37	25.80	69.54	-43.74	Peak	

Test Mode: TX B MODE CHANNEL 01

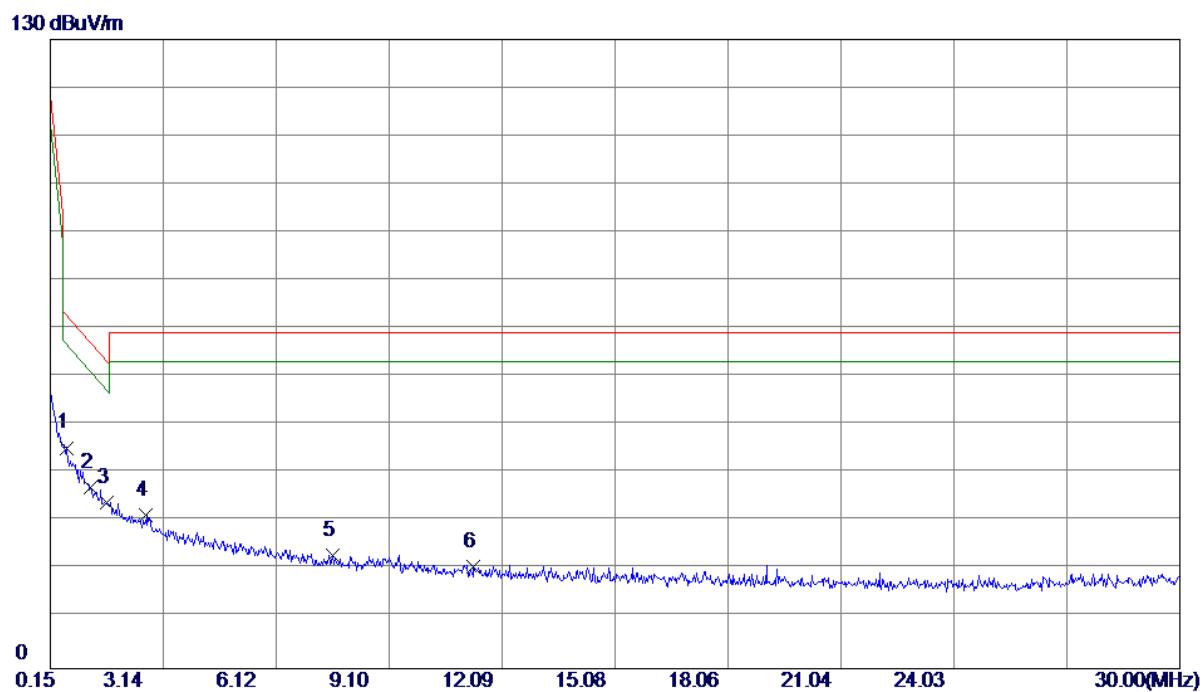
Ant 90°



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin								
							MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	0.0270	41.09	15.80	56.89	127.21	-70.32	Peak							

Test Mode: TX B MODE CHANNEL 01

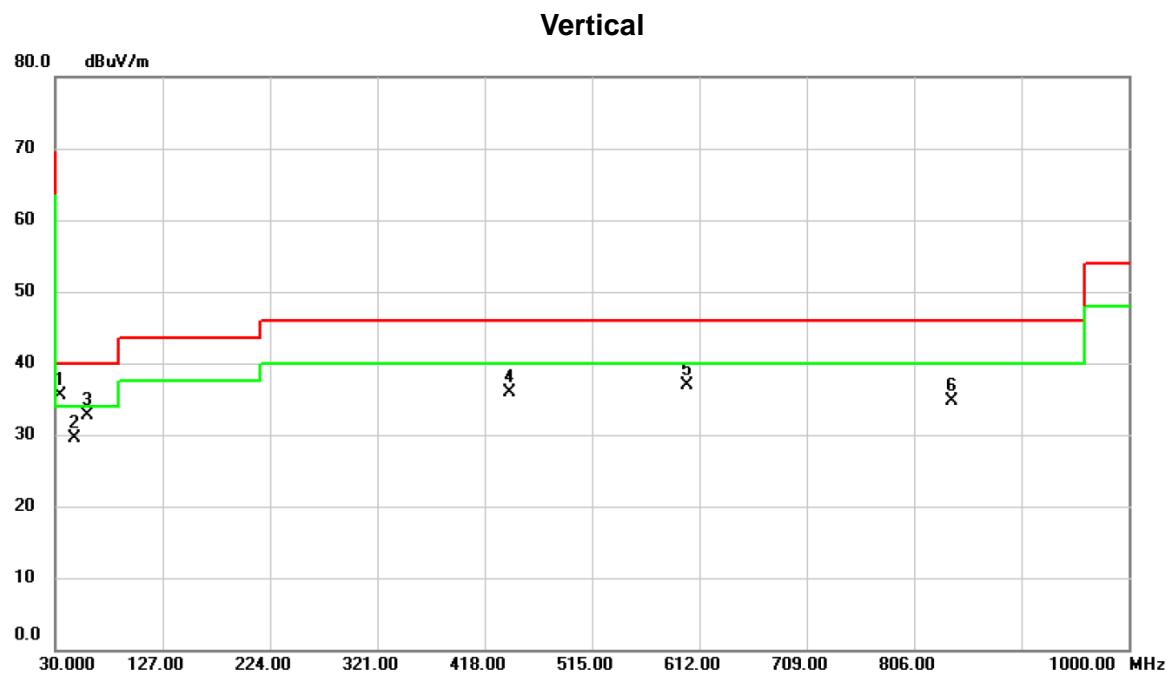
Ant 90°



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	0.5675	33.80	11.83	45.63	73.11	-27.48	Peak	
2	1.2240	25.52	11.90	37.42	67.26	-29.84	Peak	
3	1.6425	22.67	11.71	34.38	63.53	-29.15	Peak	
4	2.6872	20.36	11.24	31.60	69.54	-37.94	Peak	
5	7.6124	12.14	11.35	23.49	69.54	-46.05	Peak	
6	11.3437	9.83	11.26	21.09	69.54	-48.45	Peak	

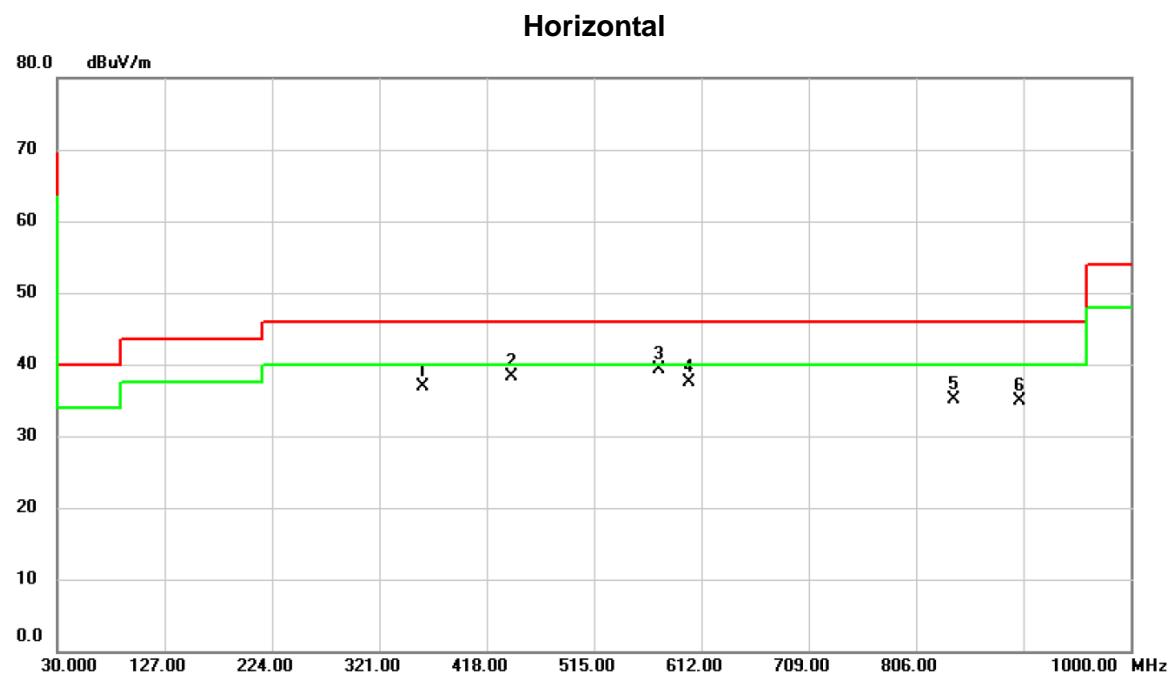
**ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)**

Test Mode: TX B MODE CHANNEL 01



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	34.8500	44.53	-9.10	35.43	40.00	-4.57	peak	
2		47.4600	37.95	-8.39	29.56	40.00	-10.44	peak	
3		59.1000	41.71	-8.95	32.76	40.00	-7.24	peak	
4		440.3100	40.03	-4.13	35.90	46.00	-10.10	peak	
5		600.3600	37.58	-0.62	36.96	46.00	-9.04	peak	
6		839.9500	31.77	2.98	34.75	46.00	-11.25	peak	

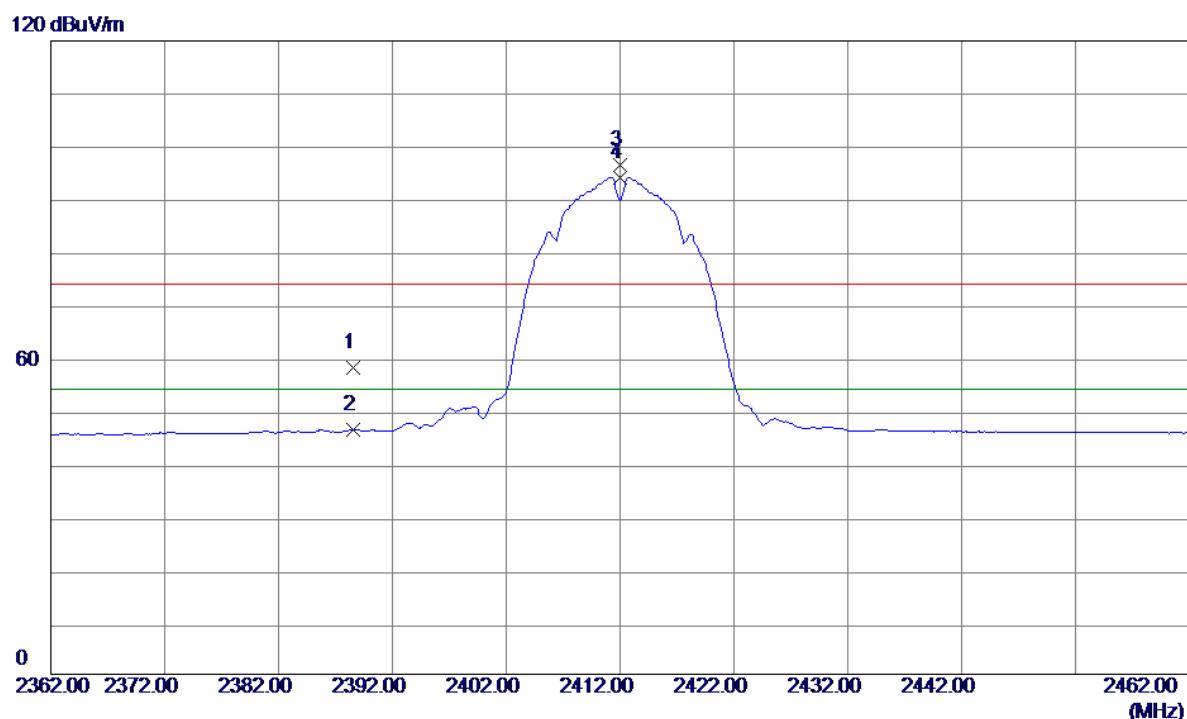
Test Mode: TX B MODE CHANNEL 01



No.	Mk.	Freq. MHz	Reading Level	Correct Factor	Measure- ment	Limit	Margin	Comment
			dBuV	dB	dBuV/m	dBuV/m	dB	
1		359.8000	42.97	-6.12	36.85	46.00	-9.15	peak
2		440.3100	42.49	-4.13	38.36	46.00	-7.64	peak
3	*	574.1700	40.53	-1.29	39.24	46.00	-6.76	peak
4		601.3300	38.13	-0.61	37.52	46.00	-8.48	peak
5		839.9500	32.06	2.98	35.04	46.00	-10.96	peak
6		900.0900	30.84	4.12	34.96	46.00	-11.04	peak

**ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)**

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

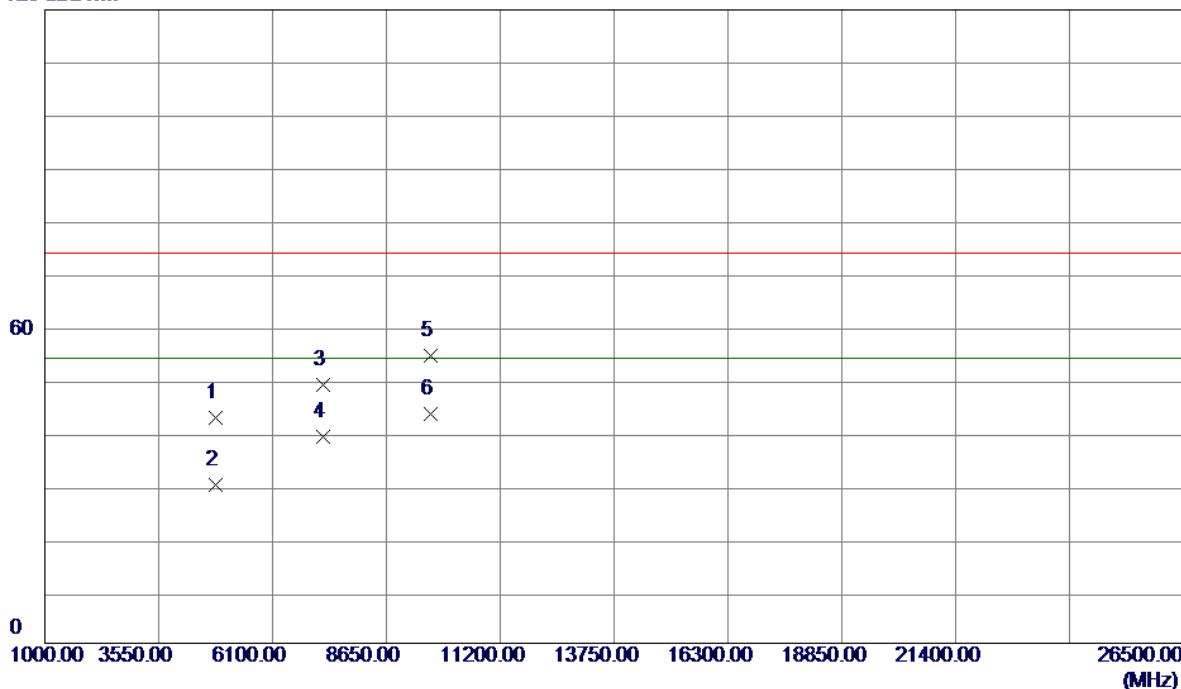
**Vertical**

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	2388.5720	27.18	30.96	58.14	74.00	-15.86	Peak	
2	2388.5720	15.42	30.96	46.38	54.00	-7.62	AVG	
3	2412.0000	65.36	31.05	96.41	74.00	22.41	Peak	No Limit
4 *	2412.0000	63.11	31.05	94.16	54.00	40.16	AVG	No Limit

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

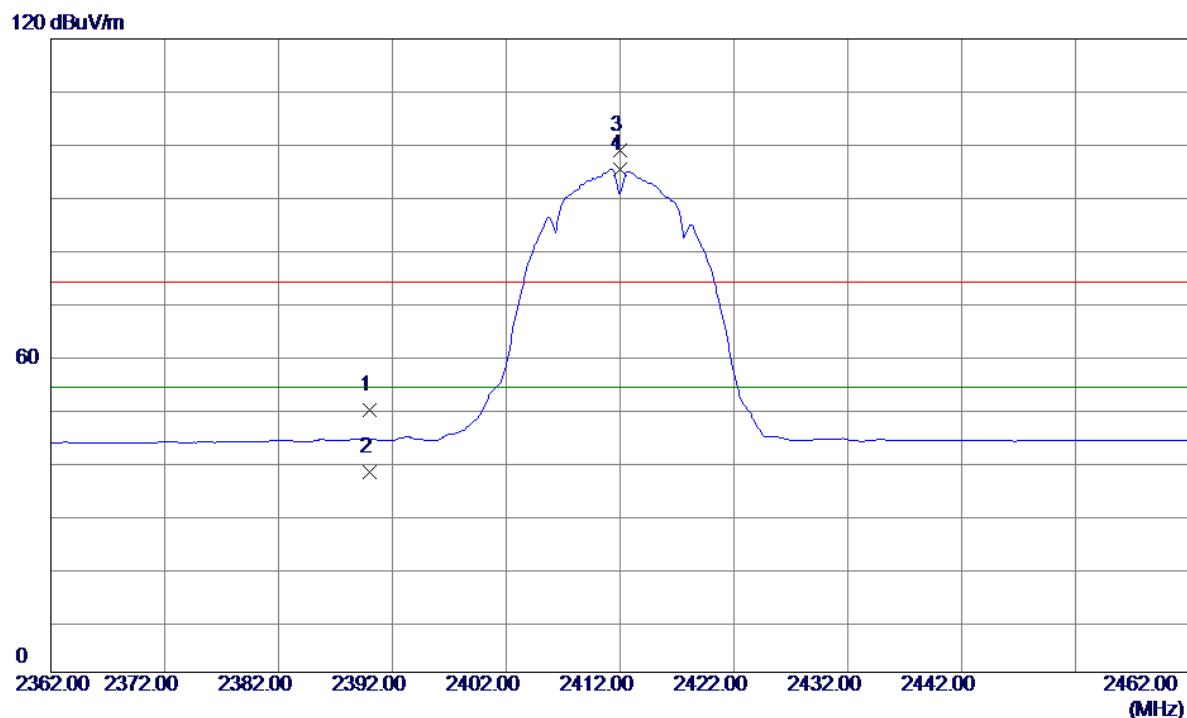
## Vertical

120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.0000	54.20	-11.47	42.73	74.00	-31.27	Peak	
2	4824.0000	41.55	-11.47	30.08	54.00	-23.92	AVG	
3	7236.0000	54.24	-5.36	48.88	74.00	-25.12	Peak	
4	7236.0000	44.50	-5.36	39.14	54.00	-14.86	AVG	
5	9648.0000	53.71	0.81	54.52	74.00	-19.48	Peak	
6 *	9648.0000	42.69	0.81	43.50	54.00	-10.50	AVG	

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

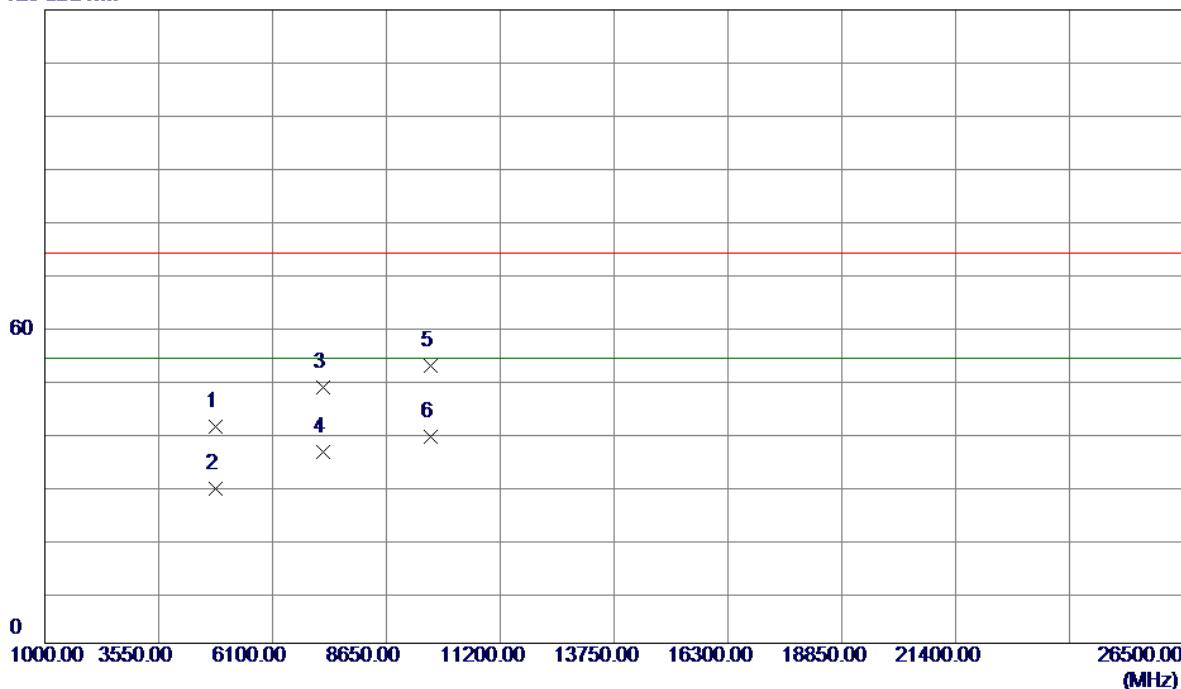
**Horizontal**

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2389.9720	18.66	30.96	49.62	74.00	-24.38	Peak	
2	2389.9720	6.91	30.96	37.87	54.00	-16.13	AVG	
3	2412.0000	67.79	31.05	98.84	74.00	24.84	Peak	No Limit
4 *	2412.0000	64.23	31.05	95.28	54.00	41.28	AVG	No Limit

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

### Horizontal

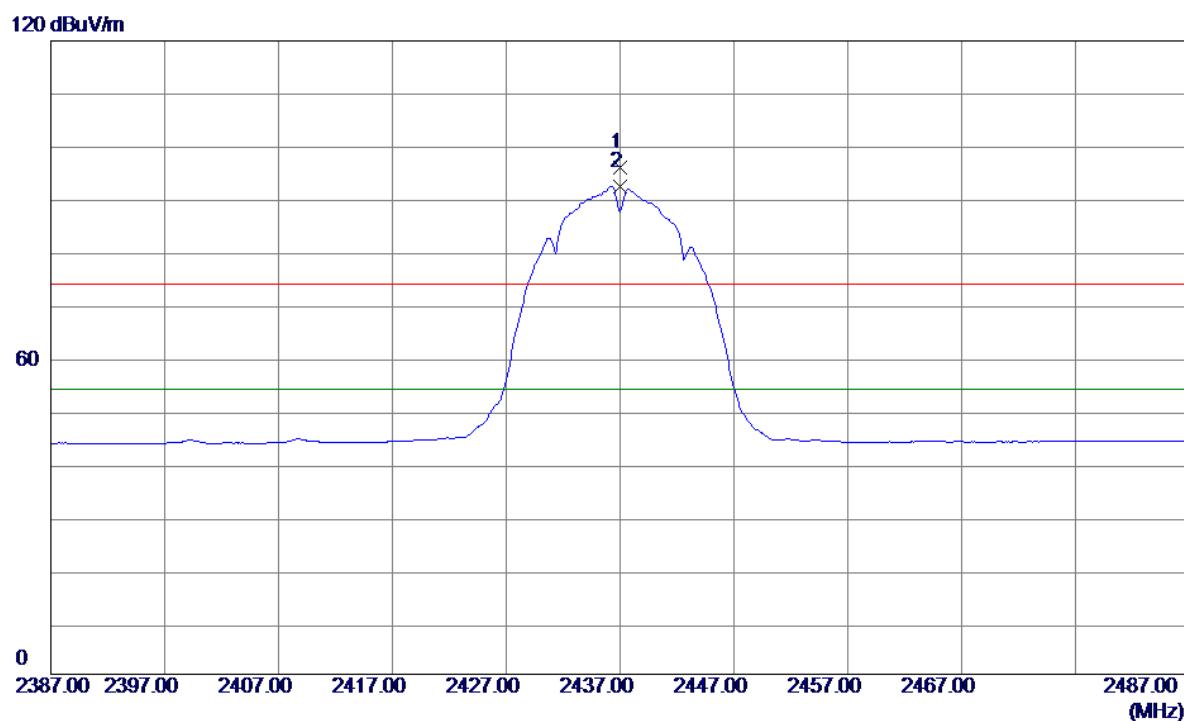
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.0000	52.52	-11.47	41.05	74.00	-32.95	Peak	
2	4824.0000	40.70	-11.47	29.23	54.00	-24.77	AVG	
3	7236.0000	53.79	-5.36	48.43	74.00	-25.57	Peak	
4	7236.0000	41.70	-5.36	36.34	54.00	-17.66	AVG	
5	9648.0000	51.85	0.81	52.66	74.00	-21.34	Peak	
6 *	9648.0000	38.31	0.81	39.12	54.00	-14.88	AVG	

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

## Vertical

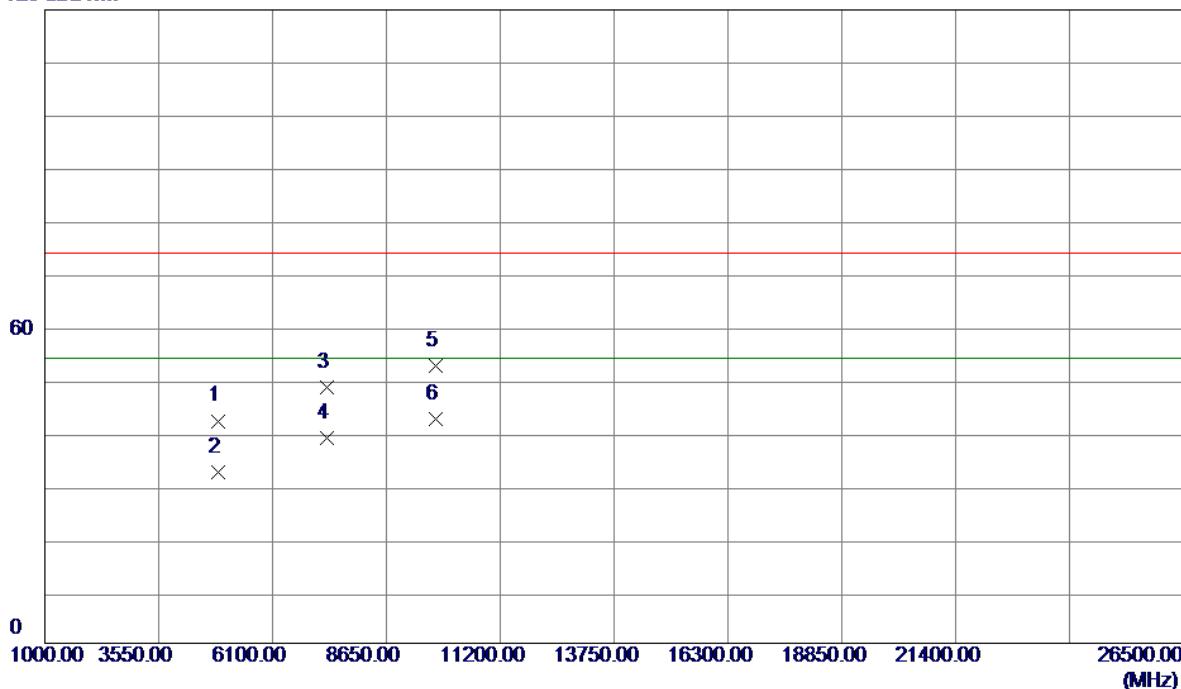


No.	Freq.	Reading	Correct	Measure	Limit	Margin	Detector	Comment
		Level	Factor	ment	dBuV/m	dB		
1	2437.0000	64.89	31.14	96.03	74.00	22.03	Peak	No Limit
2 *	2437.0000	61.25	31.14	92.39	54.00	38.39	AVG	No Limit

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

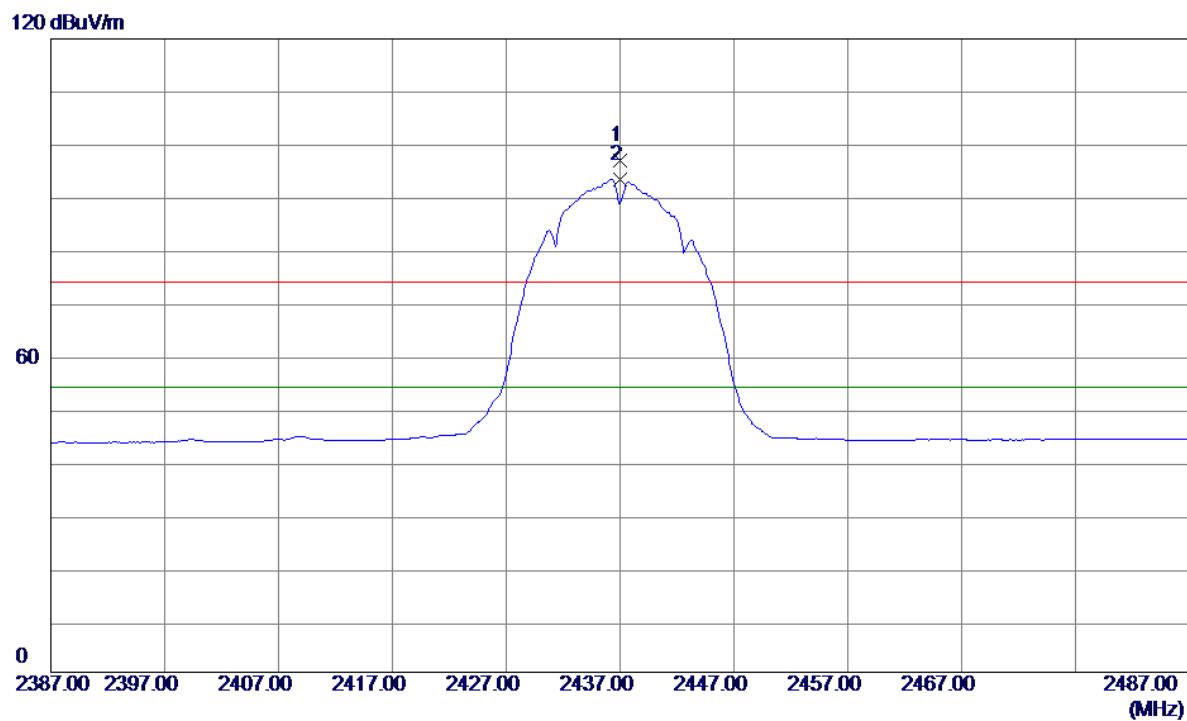
## Vertical

120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4874.0000	53.51	-11.39	42.12	74.00	-31.88	Peak	
2	4874.0000	43.82	-11.39	32.43	54.00	-21.57	AVG	
3	7311.0000	53.53	-5.08	48.45	74.00	-25.55	Peak	
4	7311.0000	43.88	-5.08	38.80	54.00	-15.20	AVG	
5	9748.0000	51.48	1.10	52.58	74.00	-21.42	Peak	
6 *	9748.0000	41.35	1.10	42.45	54.00	-11.55	AVG	

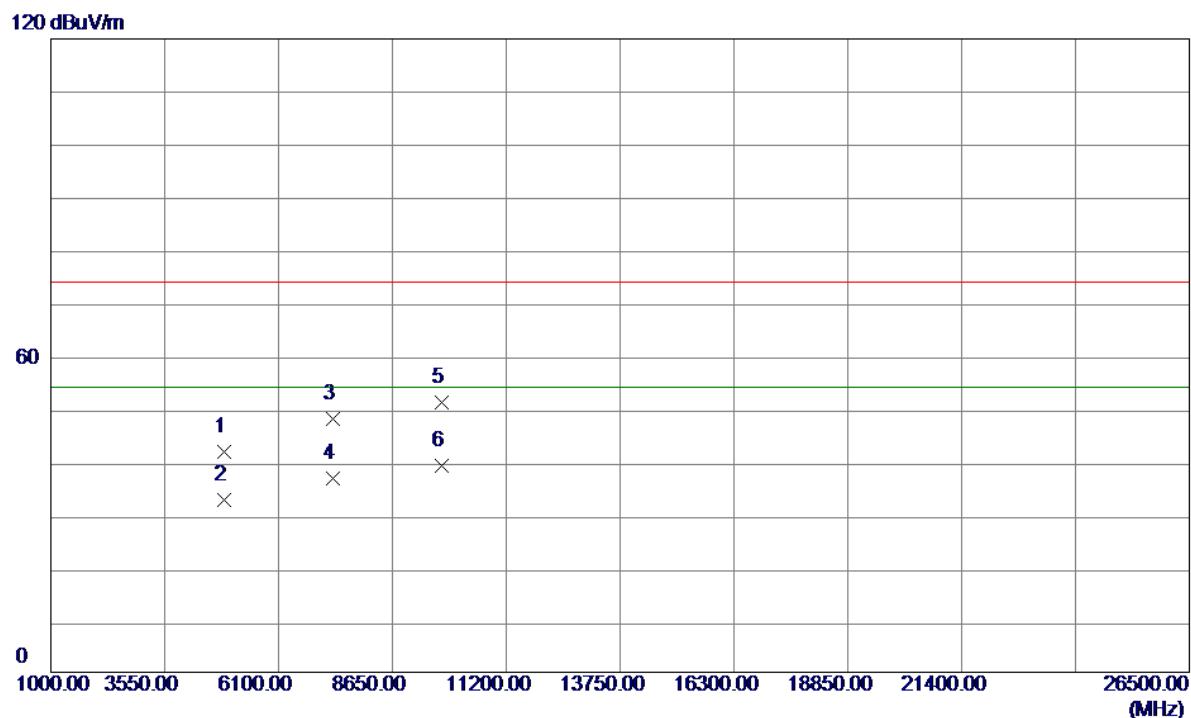
Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz

**Horizontal**

No.	Freq.	Reading	Correct	Measure	Limit	Margin	Detector	Comment
		Level	Factor	ment	dBuV/m	dB		
1	2437.0000	65.78	31.14	96.92	74.00	22.92	Peak	No Limit
2 *	2437.0000	62.27	31.14	93.41	54.00	39.41	AVG	No Limit

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

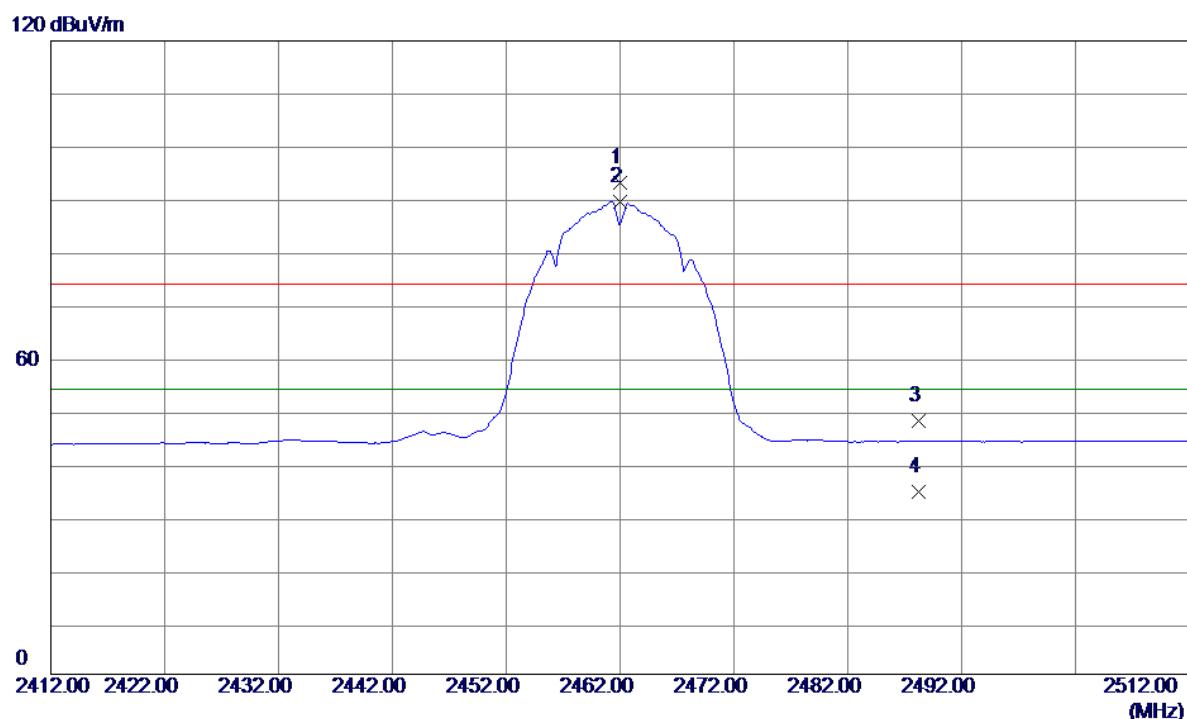
## Horizontal



No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		Detector	Comment
						MHz	dBuV/m	dB	dBuV/m
1	4874.0000	53.12	-11.39	41.73	74.00	-32.27	Peak		
2	4874.0000	44.06	-11.39	32.67	54.00	-21.33	AVG		
3	7311.0000	53.10	-5.08	48.02	74.00	-25.98	Peak		
4	7311.0000	41.72	-5.08	36.64	54.00	-17.36	AVG		
5	9748.0000	50.01	1.10	51.11	74.00	-22.89	Peak		
6 *	9748.0000	38.10	1.10	39.20	54.00	-14.80	AVG		

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

## Vertical

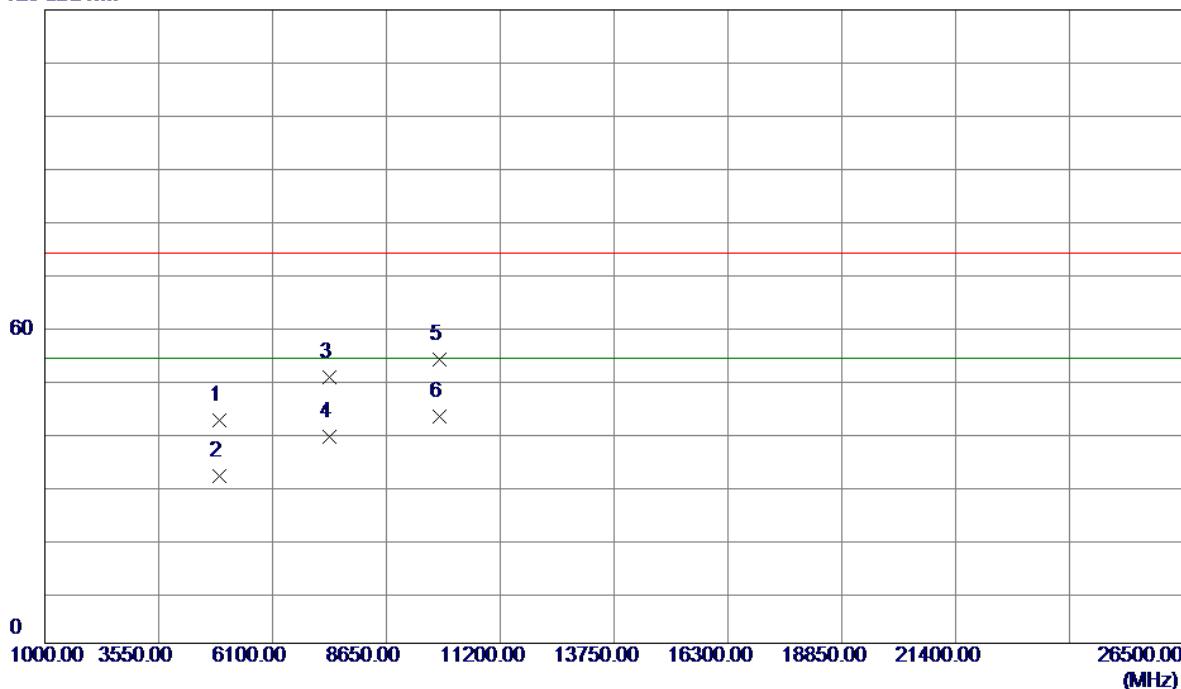


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	2462.0000	61.86	31.23	93.09	74.00	19.09	Peak	No Limit
2 *	2462.0000	58.32	31.23	89.55	54.00	35.55	AVG	No Limit
3	2488.2689	16.70	31.33	48.03	74.00	-25.97	Peak	
4	2488.2689	3.34	31.33	34.67	54.00	-19.33	AVG	

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

## Vertical

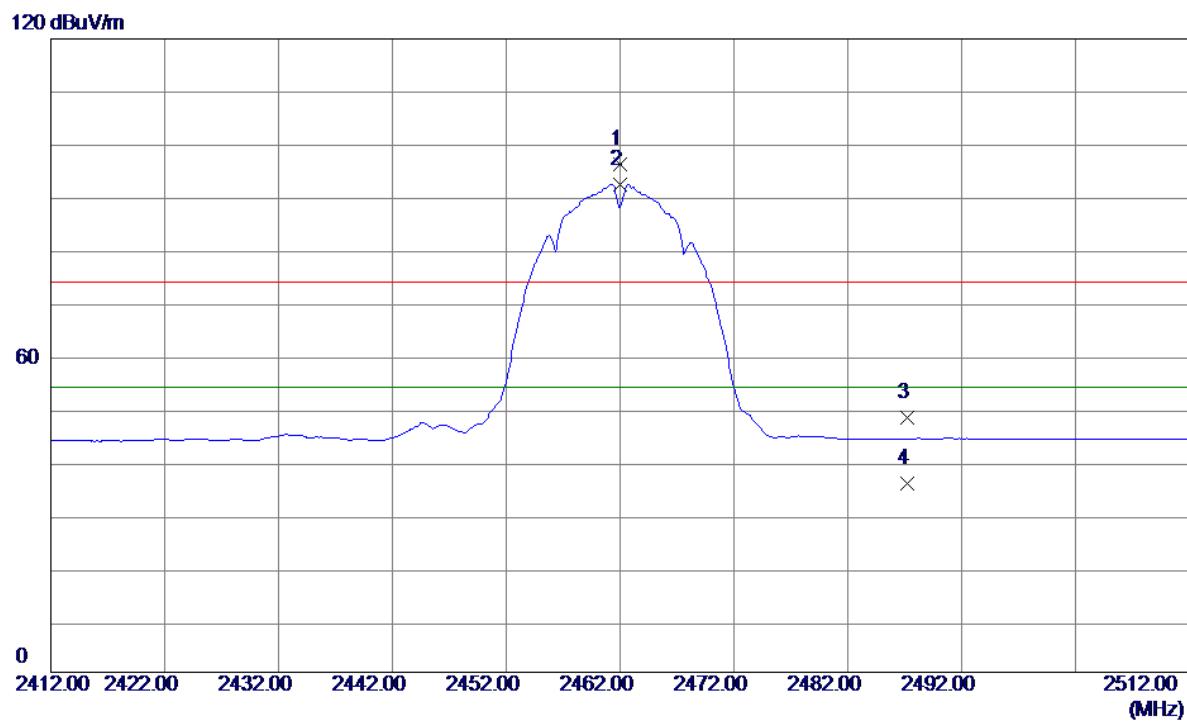
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.0000	53.55	-11.32	42.23	74.00	-31.77	Peak	
2	4924.0000	43.01	-11.32	31.69	54.00	-22.31	AVG	
3	7386.0000	55.23	-4.80	50.43	74.00	-23.57	Peak	
4	7386.0000	43.94	-4.80	39.14	54.00	-14.86	AVG	
5	9848.0000	52.33	1.39	53.72	74.00	-20.28	Peak	
6 *	9848.0000	41.65	1.39	43.04	54.00	-10.96	AVG	

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

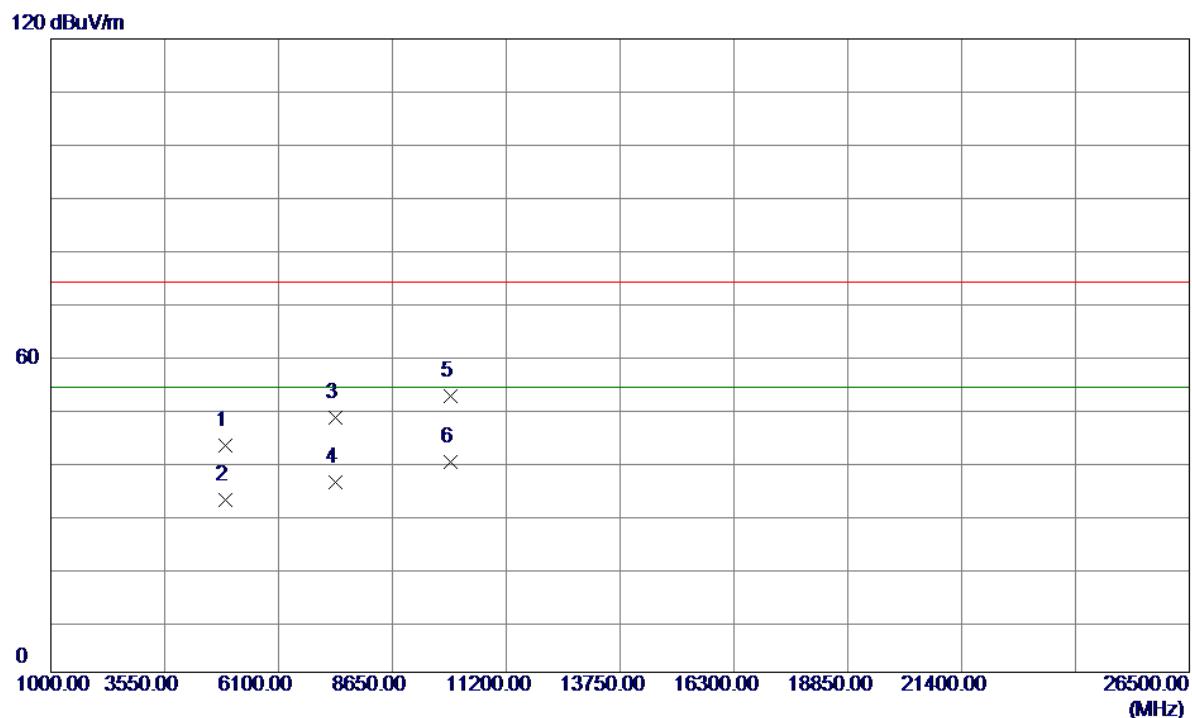
## Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure	ment	Limit Margin		Detector	Comment
						MHz	dBuV/m	dB	dBuV/m
1	2462.0000	64.96	31.23	96.19	74.00	22.19	Peak		No Limit
2 *	2462.0000	61.25	31.23	92.48	54.00	38.48	AVG		No Limit
3	2487.2290	16.89	31.32	48.21	74.00	-25.79	Peak		
4	2487.2290	4.35	31.32	35.67	54.00	-18.33	AVG		

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

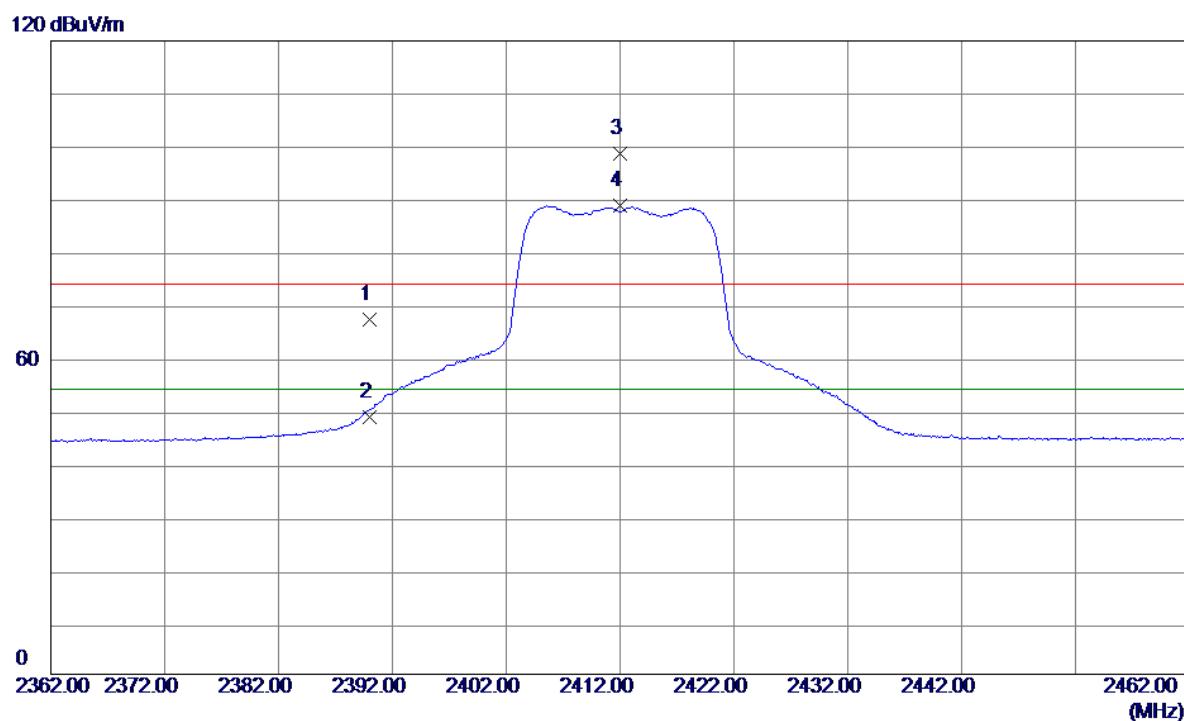
## Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure	ment	Limit	Margin	
							dBuV/m	dB
1	4924.0000	54.30	-11.32	42.98	74.00	-31.02	Peak	
2	4924.0000	44.05	-11.32	32.73	54.00	-21.27	AVG	
3	7386.0000	52.98	-4.80	48.18	74.00	-25.82	Peak	
4	7386.0000	40.81	-4.80	36.01	54.00	-17.99	AVG	
5	9948.0000	50.59	1.68	52.27	74.00	-21.73	Peak	
6 *	9948.0000	38.08	1.68	39.76	54.00	-14.24	AVG	

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

## Vertical

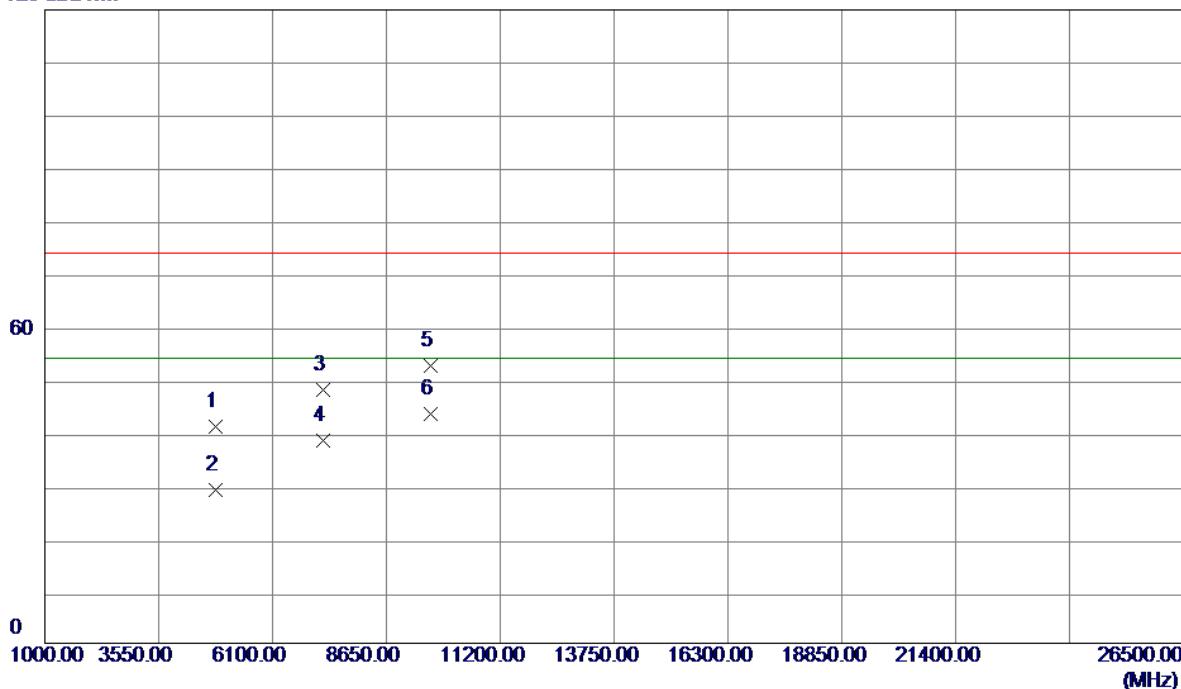


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	36.31	30.97	67.28	74.00	-6.72	Peak	
2	2390.0000	17.70	30.97	48.67	54.00	-5.33	AVG	
3	2412.0000	67.51	31.05	98.56	74.00	24.56	Peak	No Limit
4 *	2412.0000	57.78	31.05	88.83	54.00	34.83	AVG	No Limit

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

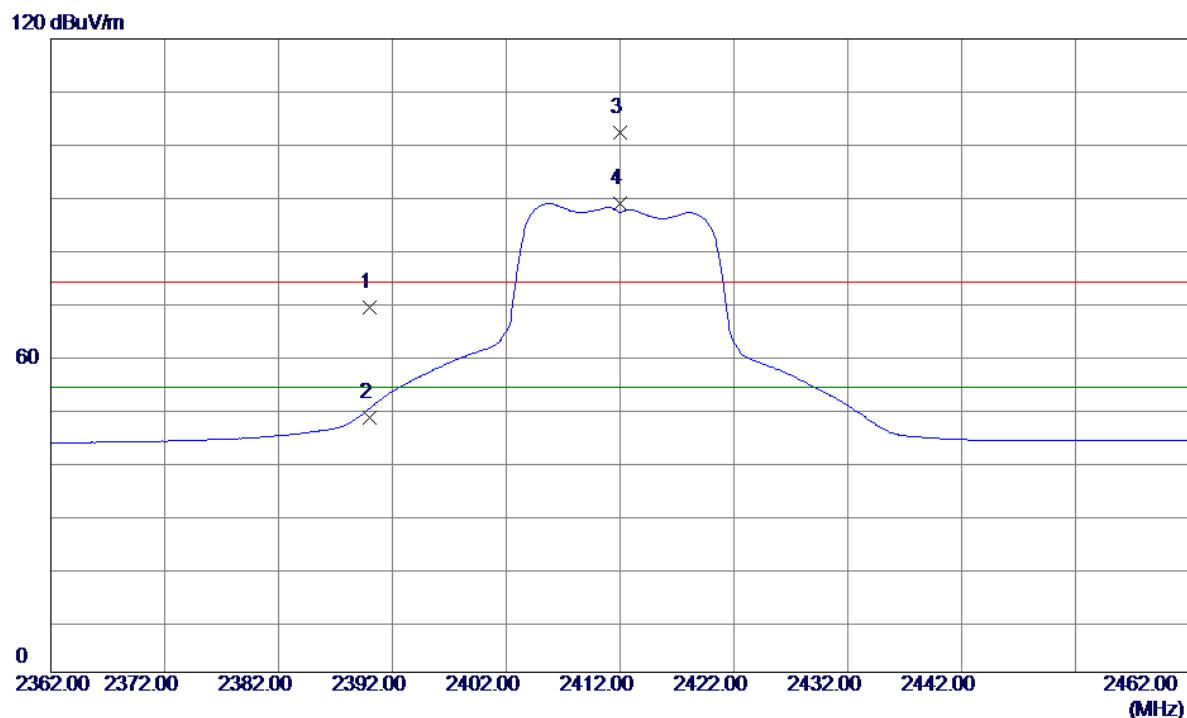
## Vertical

120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.0000	52.56	-11.47	41.09	74.00	-32.91	Peak	
2	4824.0000	40.45	-11.47	28.98	54.00	-25.02	AVG	
3	7236.0000	53.27	-5.36	47.91	74.00	-26.09	Peak	
4	7236.0000	43.83	-5.36	38.47	54.00	-15.53	AVG	
5	9648.0000	51.81	0.81	52.62	74.00	-21.38	Peak	
6 *	9648.0000	42.57	0.81	43.38	54.00	-10.62	AVG	

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

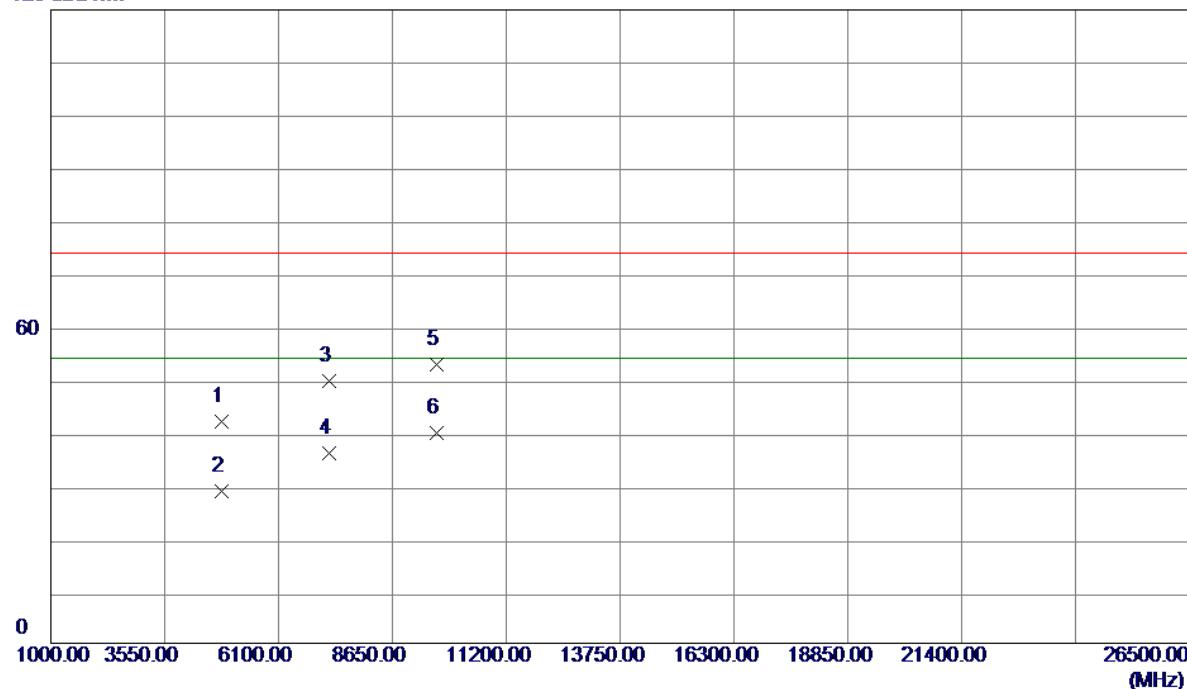
**Horizontal**

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	2390.0000	38.17	30.97	69.14	74.00	-4.86	Peak	
2	2390.0000	17.16	30.97	48.13	54.00	-5.87	AVG	
3	2412.0000	71.18	31.05	102.23	74.00	28.23	Peak	No Limit
4 *	2412.0000	57.78	31.05	88.83	54.00	34.83	AVG	No Limit

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

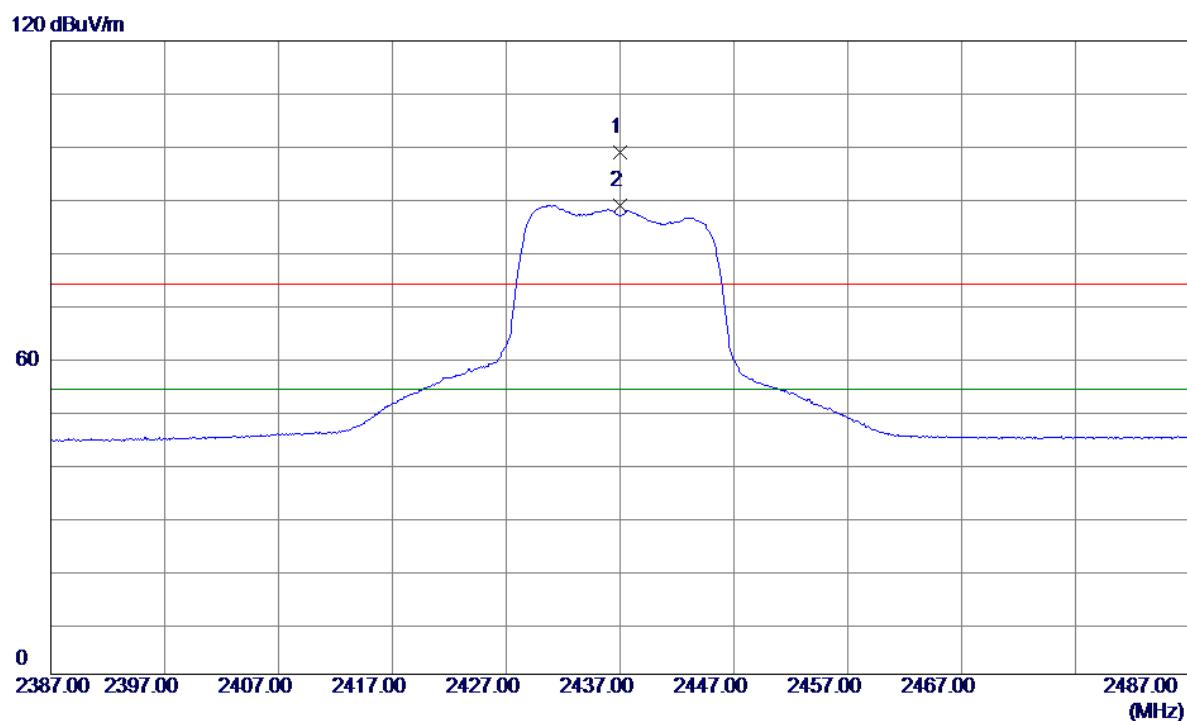
### Horizontal

120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.0000	53.45	-11.47	41.98	74.00	-32.02	Peak	
2	4824.0000	40.22	-11.47	28.75	54.00	-25.25	AVG	
3	7236.0000	55.06	-5.36	49.70	74.00	-24.30	Peak	
4	7236.0000	41.46	-5.36	36.10	54.00	-17.90	AVG	
5	9648.0000	52.10	0.81	52.91	74.00	-21.09	Peak	
6 *	9648.0000	38.93	0.81	39.74	54.00	-14.26	AVG	

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

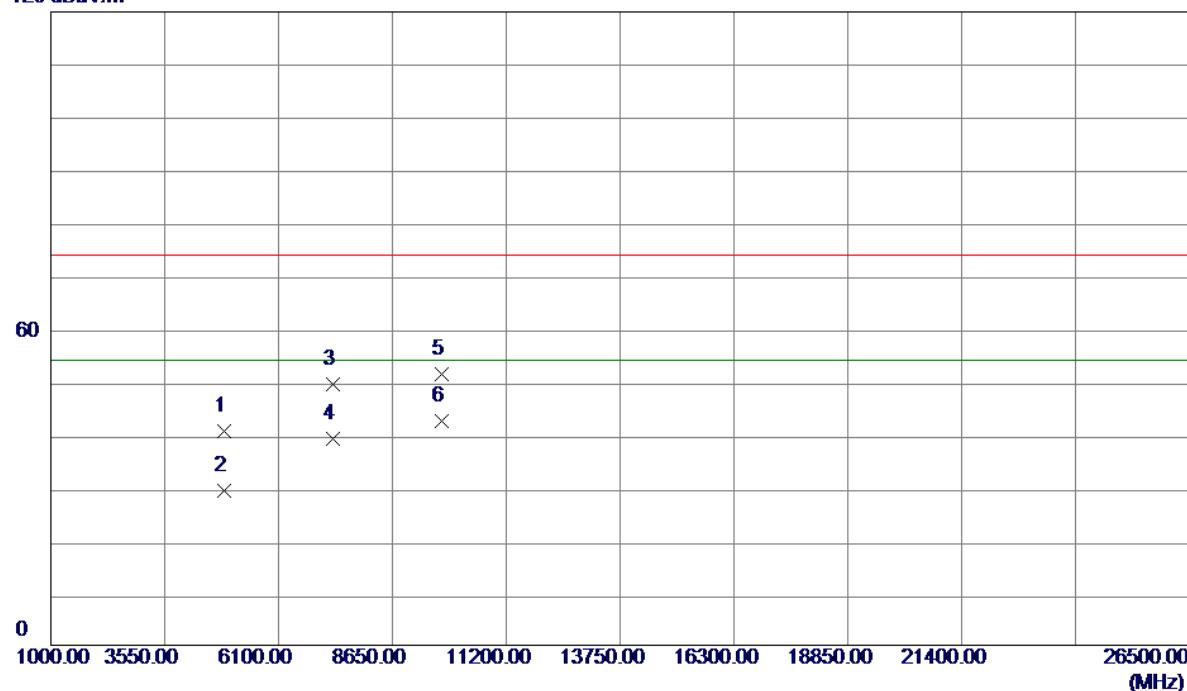
**Vertical**

No.	Freq.	Reading	Correct	Measure	Limit	Margin	Detector	Comment
		Level	Factor	ment	dBuV/m	dB		
1	2437.0000	67.82	31.14	98.96	74.00	24.96	Peak	No Limit
2 *	2437.0000	57.70	31.14	88.84	54.00	34.84	AVG	No Limit

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

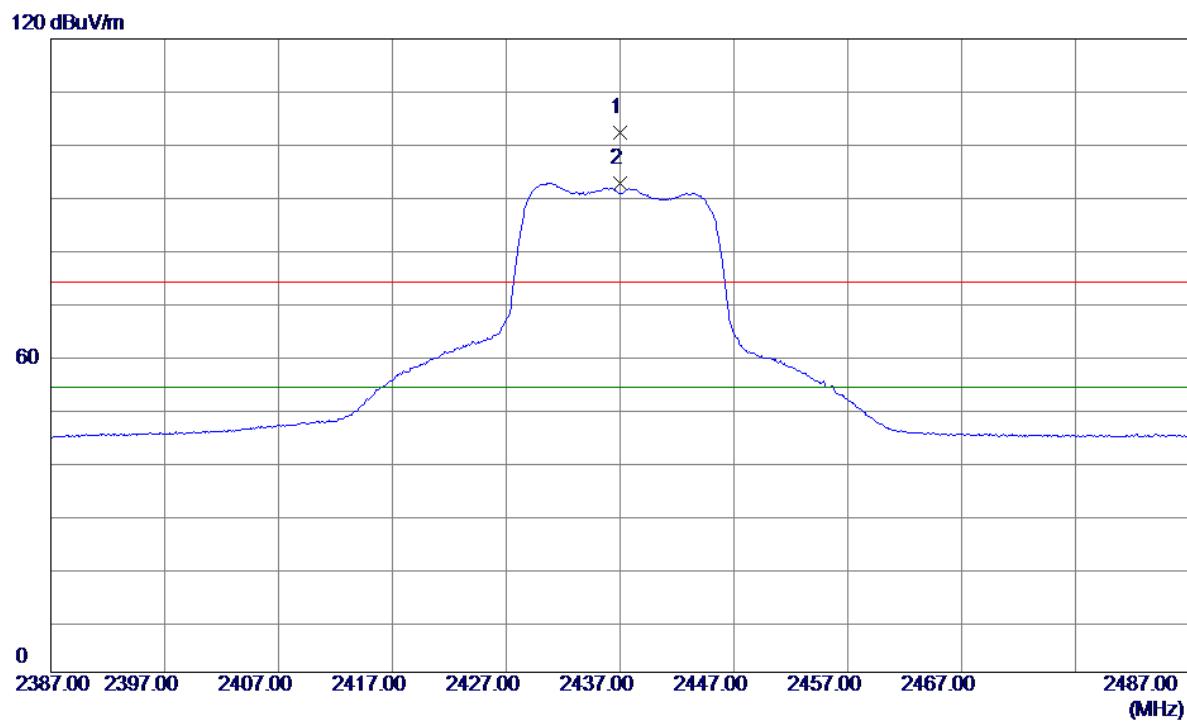
## Vertical

120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4874.0000	52.06	-11.39	40.67	74.00	-33.33	Peak	
2	4874.0000	40.69	-11.39	29.30	54.00	-24.70	AVG	
3	7311.0000	54.46	-5.08	49.38	74.00	-24.62	Peak	
4	7311.0000	44.18	-5.08	39.10	54.00	-14.90	AVG	
5	9748.0000	50.30	1.10	51.40	74.00	-22.60	Peak	
6 *	9748.0000	41.27	1.10	42.37	54.00	-11.63	AVG	

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

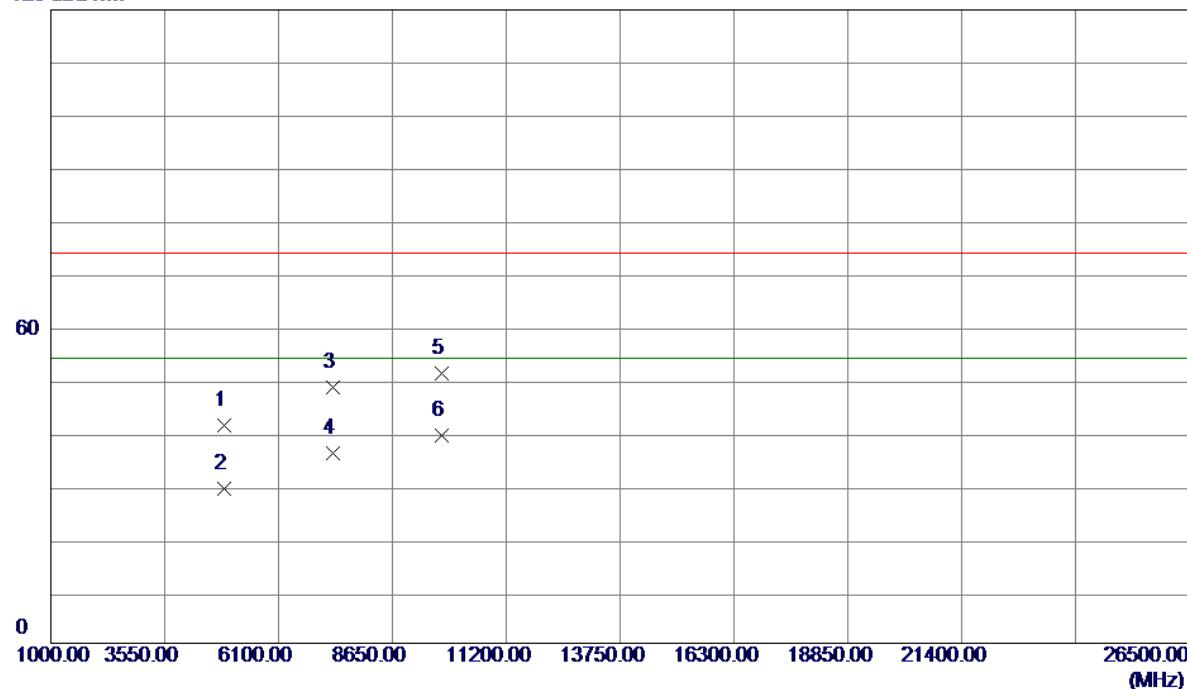
**Horizontal**

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin	
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector
1	2437.0000	71.18	31.14	102.32	74.00	28.32	Peak
2 *	2437.0000	61.57	31.14	92.71	54.00	38.71	AVG

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

### Horizontal

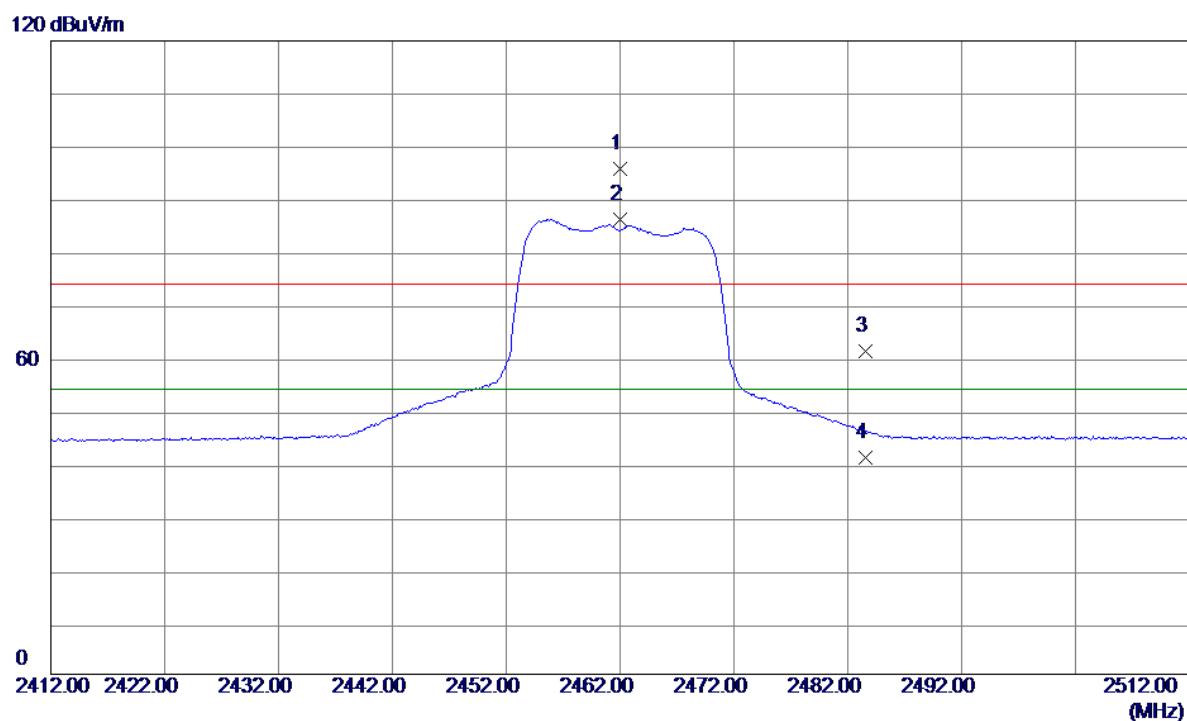
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4874.0000	52.67	-11.39	41.28	74.00	-32.72	Peak	
2	4874.0000	40.68	-11.39	29.29	54.00	-24.71	AVG	
3	7311.0000	53.59	-5.08	48.51	74.00	-25.49	Peak	
4	7311.0000	41.14	-5.08	36.06	54.00	-17.94	AVG	
5	9748.0000	50.08	1.10	51.18	74.00	-22.82	Peak	
6 *	9748.0000	38.33	1.10	39.43	54.00	-14.57	AVG	

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

## Vertical

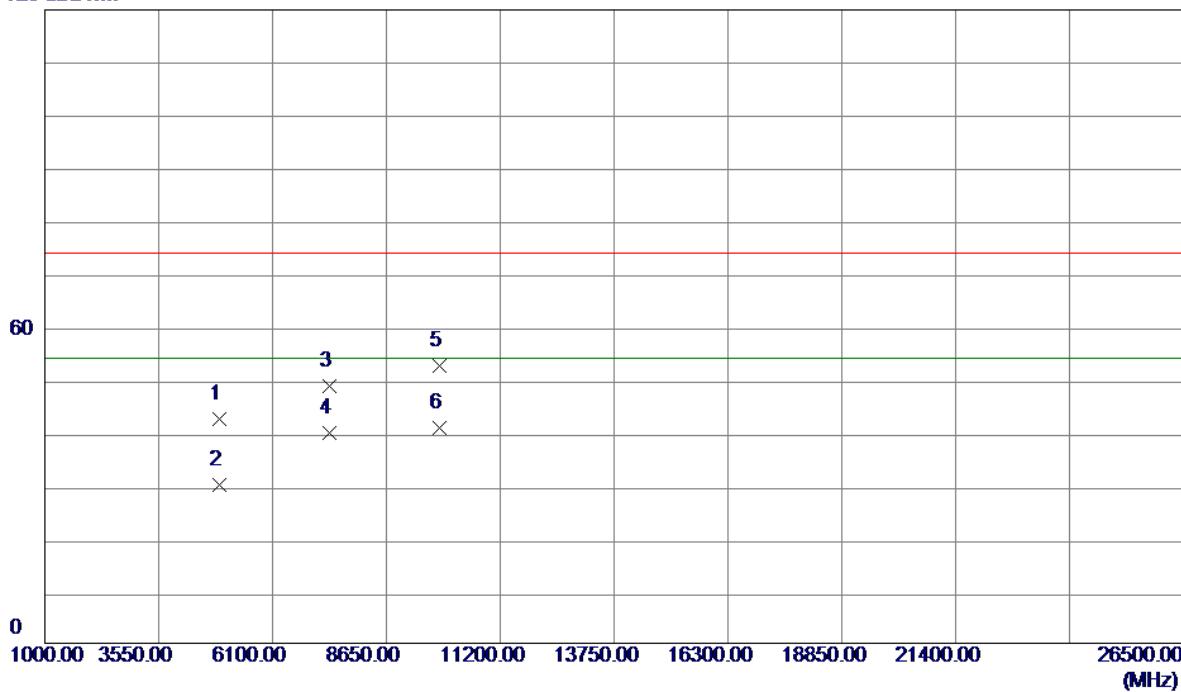


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	2462.0000	64.43	31.23	95.66	74.00	21.66	Peak	No Limit
2 *	2462.0000	54.90	31.23	86.13	54.00	32.13	AVG	No Limit
3	2483.5169	30.00	31.31	61.31	74.00	-12.69	Peak	
4	2483.5169	9.63	31.31	40.94	54.00	-13.06	AVG	

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

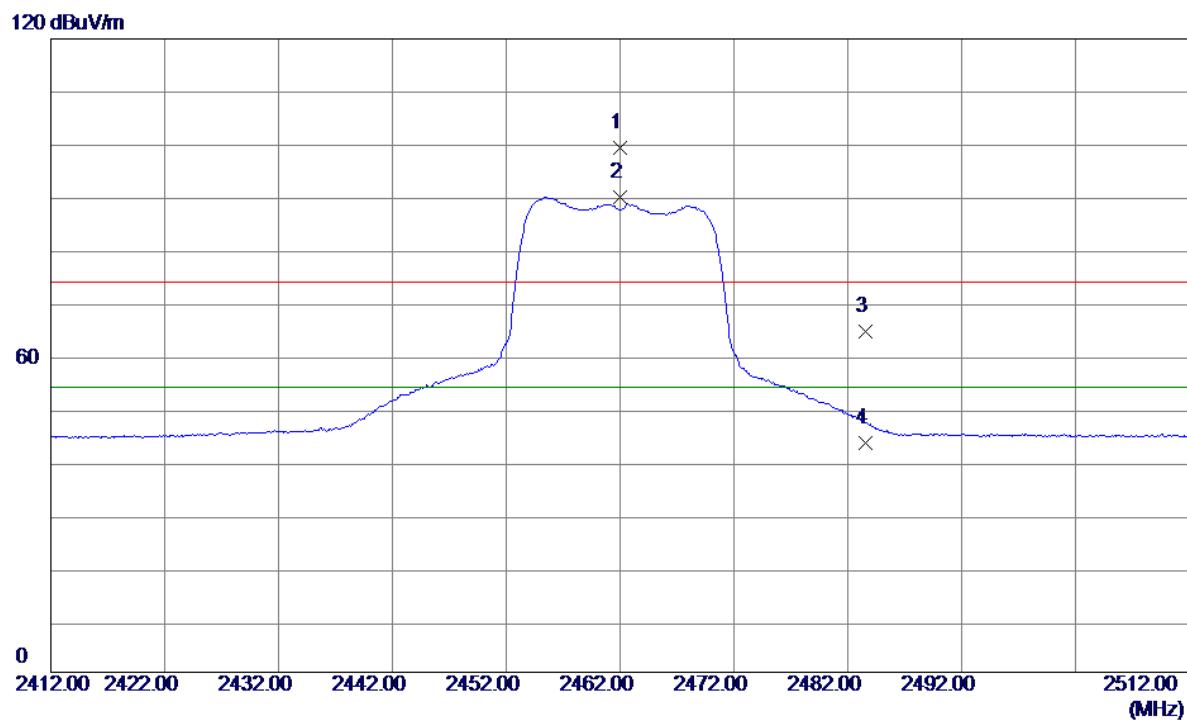
## Vertical

120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.0000	53.76	-11.32	42.44	74.00	-31.56	Peak	
2	4924.0000	41.41	-11.32	30.09	54.00	-23.91	AVG	
3	7386.0000	53.48	-4.80	48.68	74.00	-25.32	Peak	
4	7386.0000	44.75	-4.80	39.95	54.00	-14.05	AVG	
5	9848.0000	51.12	1.39	52.51	74.00	-21.49	Peak	
6 *	9848.0000	39.49	1.39	40.88	54.00	-13.12	AVG	

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

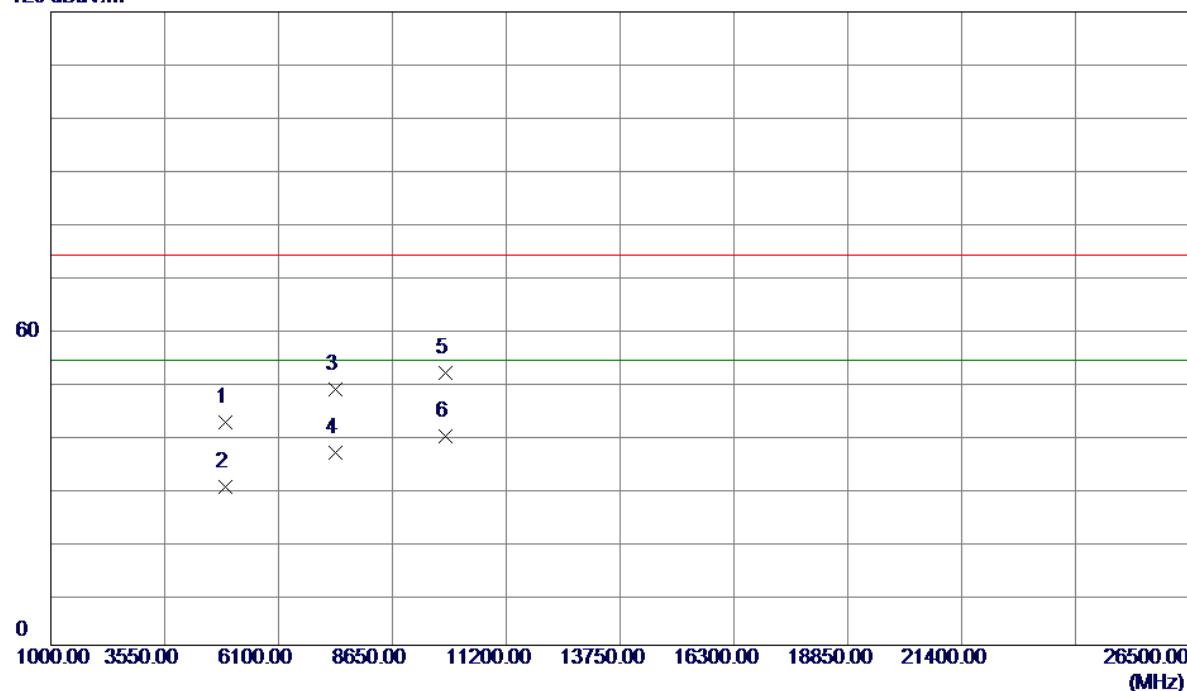
**Horizontal**

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin	
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector
1	2462.0000	68.14	31.23	99.37	74.00	25.37	Peak
2 *	2462.0000	58.72	31.23	89.95	54.00	35.95	AVG
3	2483.5169	33.20	31.31	64.51	74.00	-9.49	Peak
4	2483.5169	12.24	31.31	43.55	54.00	-10.45	AVG

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

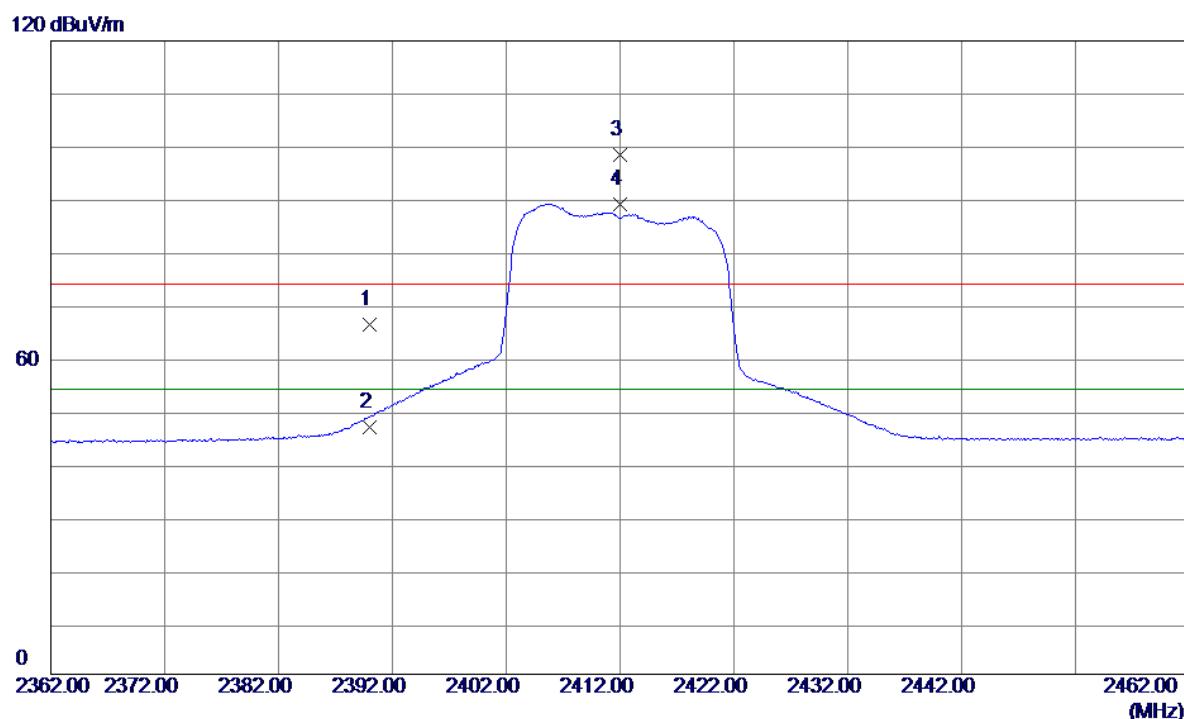
### Horizontal

120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.0000	53.49	-11.32	42.17	74.00	-31.83	Peak	
2	4924.0000	41.37	-11.32	30.05	54.00	-23.95	AVG	
3	7386.0000	53.36	-4.80	48.56	74.00	-25.44	Peak	
4	7386.0000	41.35	-4.80	36.55	54.00	-17.45	AVG	
5	9848.0000	50.16	1.39	51.55	74.00	-22.45	Peak	
6 *	9848.0000	38.30	1.39	39.69	54.00	-14.31	AVG	

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

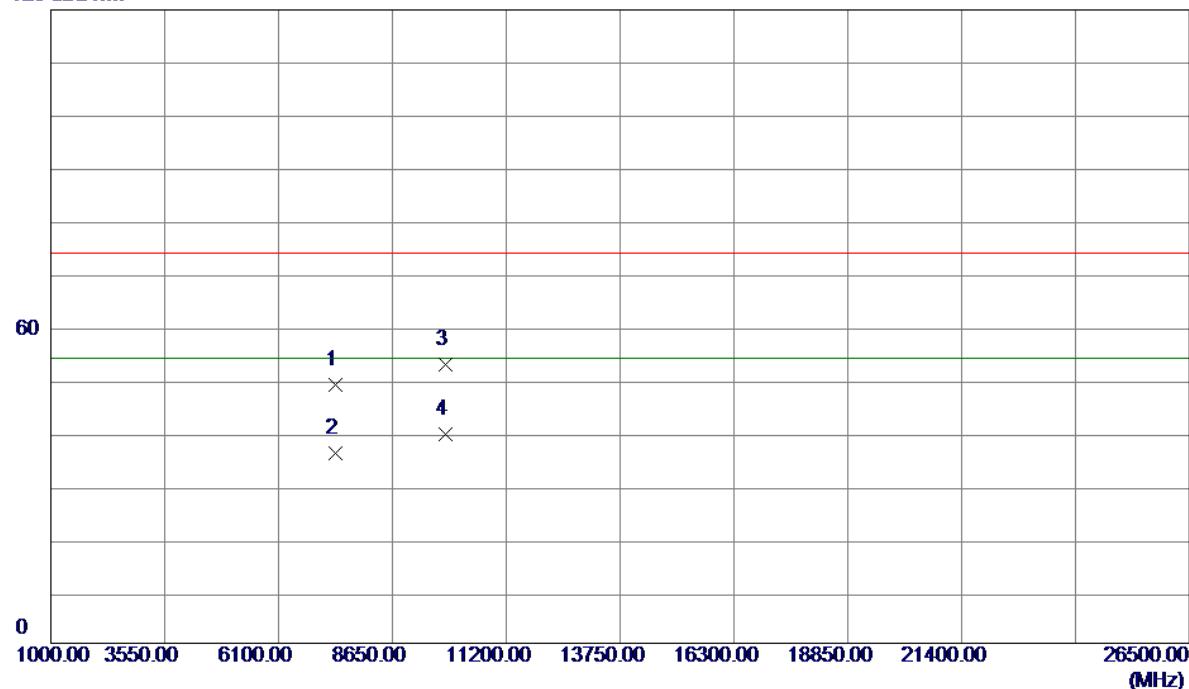
**Vertical**

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	35.22	30.97	66.19	74.00	-7.81	Peak	
2	2390.0000	15.91	30.97	46.88	54.00	-7.12	AVG	
3	2412.0000	67.30	31.05	98.35	74.00	24.35	Peak	No Limit
4 *	2412.0000	58.04	31.05	89.09	54.00	35.09	AVG	No Limit

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

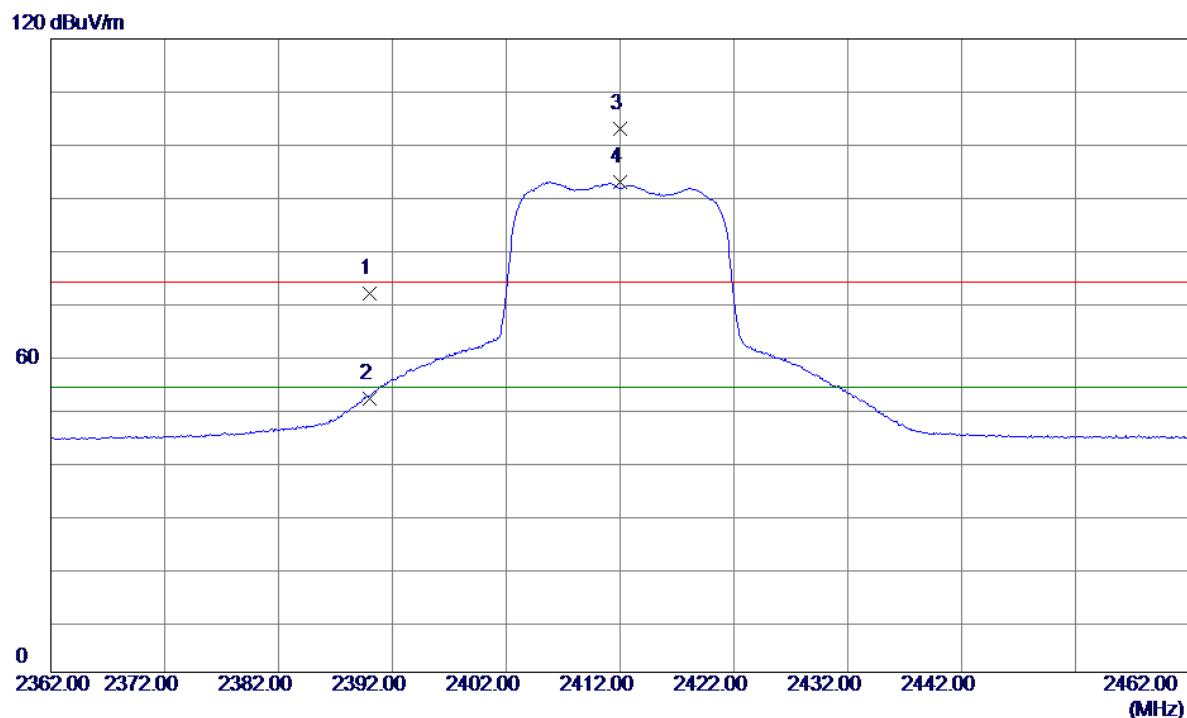
### Vertical

120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Margin	
							Detector	Comment
1	7386.0000	53.68	-4.80	48.88	74.00	-25.12	Peak	
2	7386.0000	40.81	-4.80	36.01	54.00	-17.99	AVG	
3	9848.0000	51.42	1.39	52.81	74.00	-21.19	Peak	
4 *	9848.0000	38.11	1.39	39.50	54.00	-14.50	AVG	

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

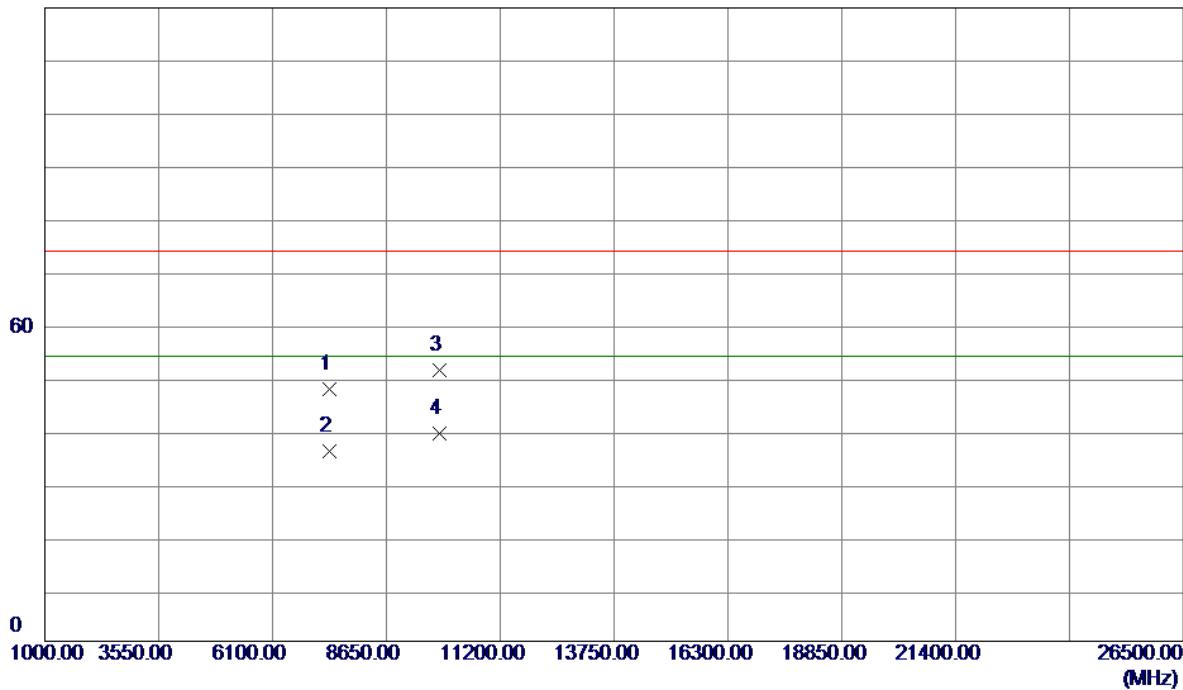
**Horizontal**

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	2390.0000	40.81	30.97	71.78	74.00	-2.22	Peak	
2	2390.0000	20.80	30.97	51.77	54.00	-2.23	AVG	
3	2412.0000	71.83	31.05	102.88	74.00	28.88	Peak	No Limit
4 *	2412.0000	61.77	31.05	92.82	54.00	38.82	AVG	No Limit

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

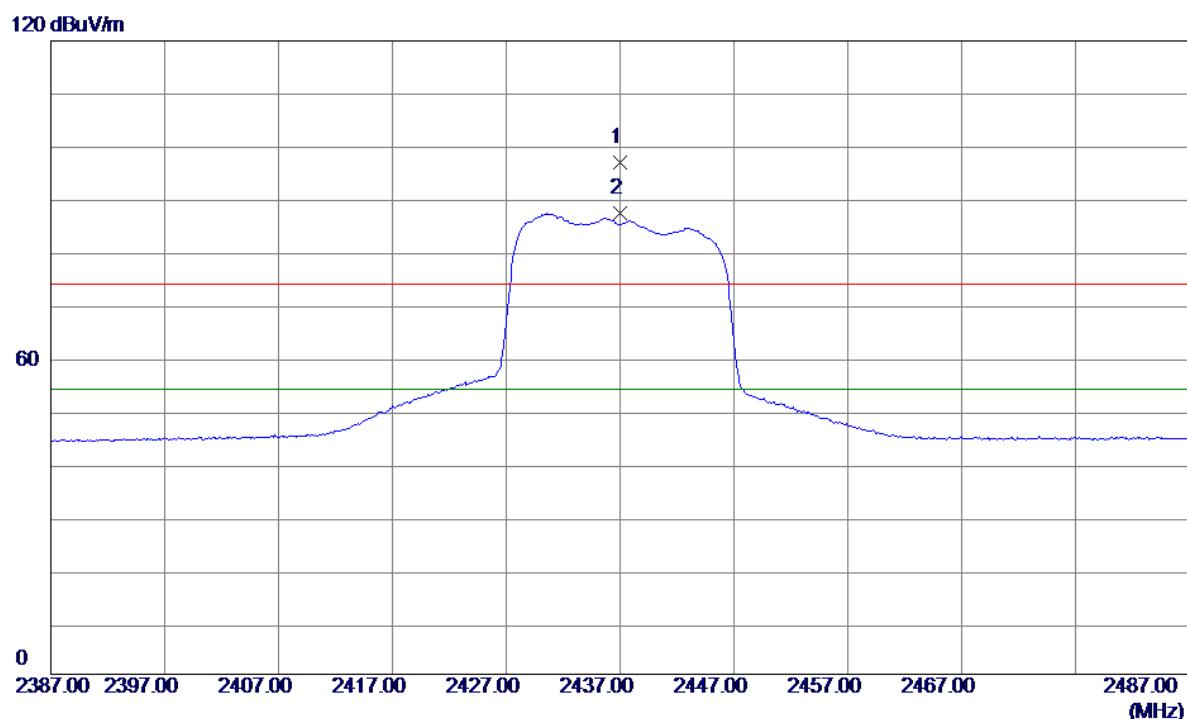
### Horizontal

120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Margin	
							Detector	Comment
1	7386.0000	52.53	-4.80	47.73	74.00	-26.27	Peak	
2	7386.0000	40.78	-4.80	35.98	54.00	-18.02	AVG	
3	9848.0000	50.03	1.39	51.42	74.00	-22.58	Peak	
4 *	9848.0000	38.01	1.39	39.40	54.00	-14.60	AVG	

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

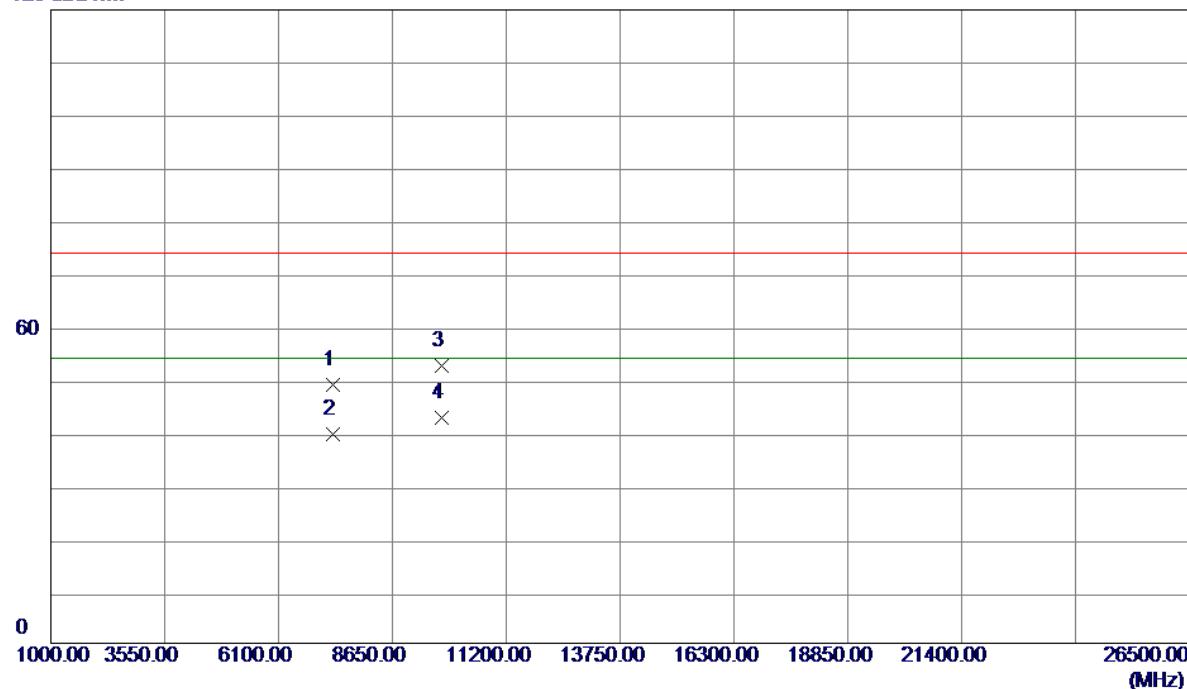
**Vertical**

No.	Freq.	Reading	Correct	Measure	Limit	Margin	Detector	Comment
		Level	Factor	ment	dBuV/m	dB		
1	2437.0000	65.82	31.14	96.96	74.00	22.96	Peak	No Limit
2 *	2437.0000	56.27	31.14	87.41	54.00	33.41	AVG	No Limit

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

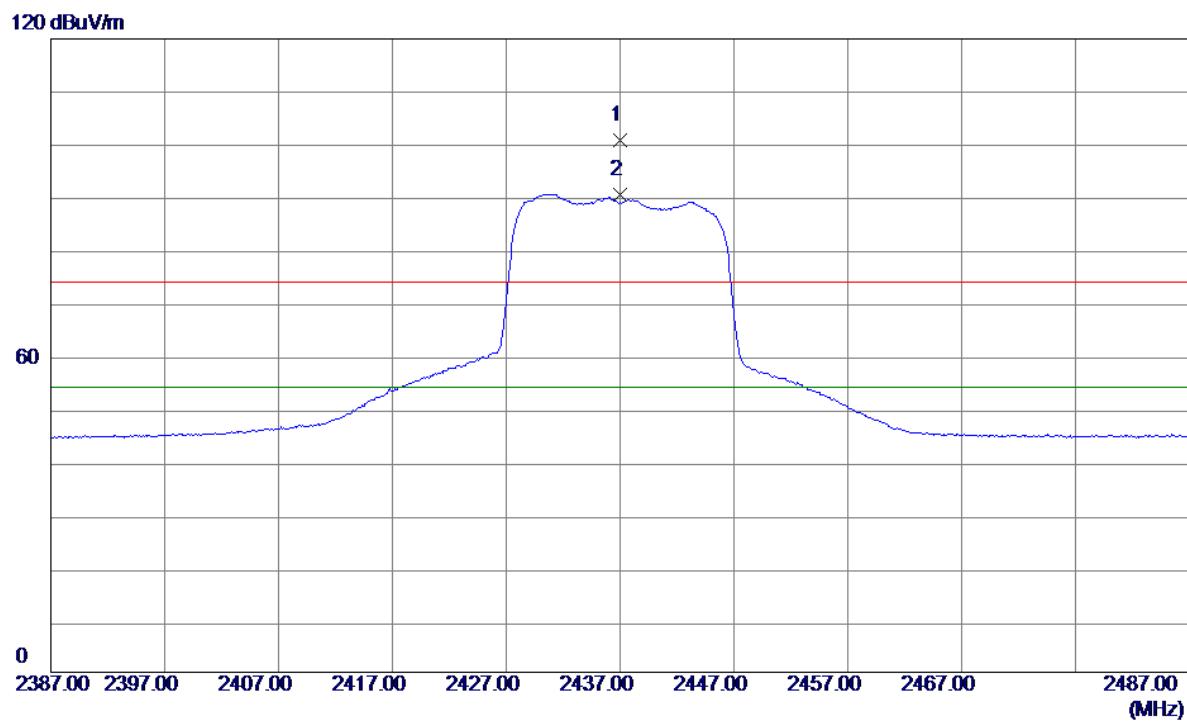
### Vertical

120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dB	Margin dB	Margin	
							Detector	Comment
1	7311.0000	53.98	-5.08	48.90	74.00	-25.10	Peak	
2	7311.0000	44.63	-5.08	39.55	54.00	-14.45	AVG	
3	9748.0000	51.49	1.10	52.59	74.00	-21.41	Peak	
4 *	9748.0000	41.52	1.10	42.62	54.00	-11.38	AVG	

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

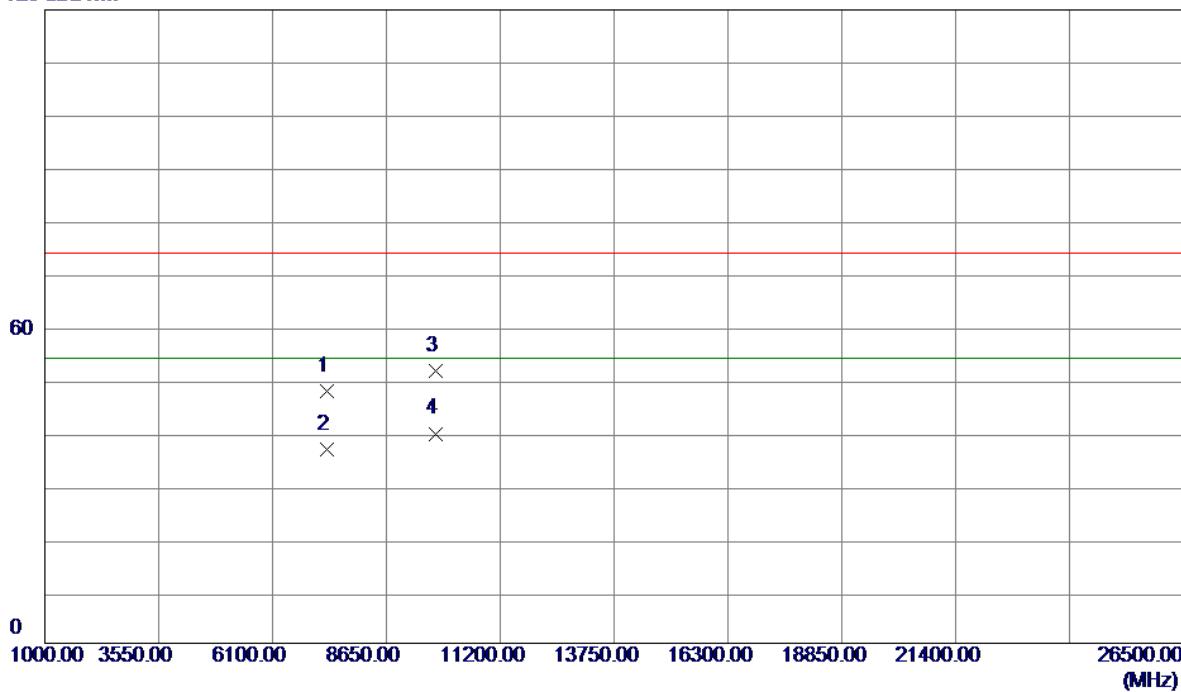
**Horizontal**

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin	
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector
1	2437.0000	69.70	31.14	100.84	74.00	26.84	Peak
2 *	2437.0000	59.45	31.14	90.59	54.00	36.59	AVG

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

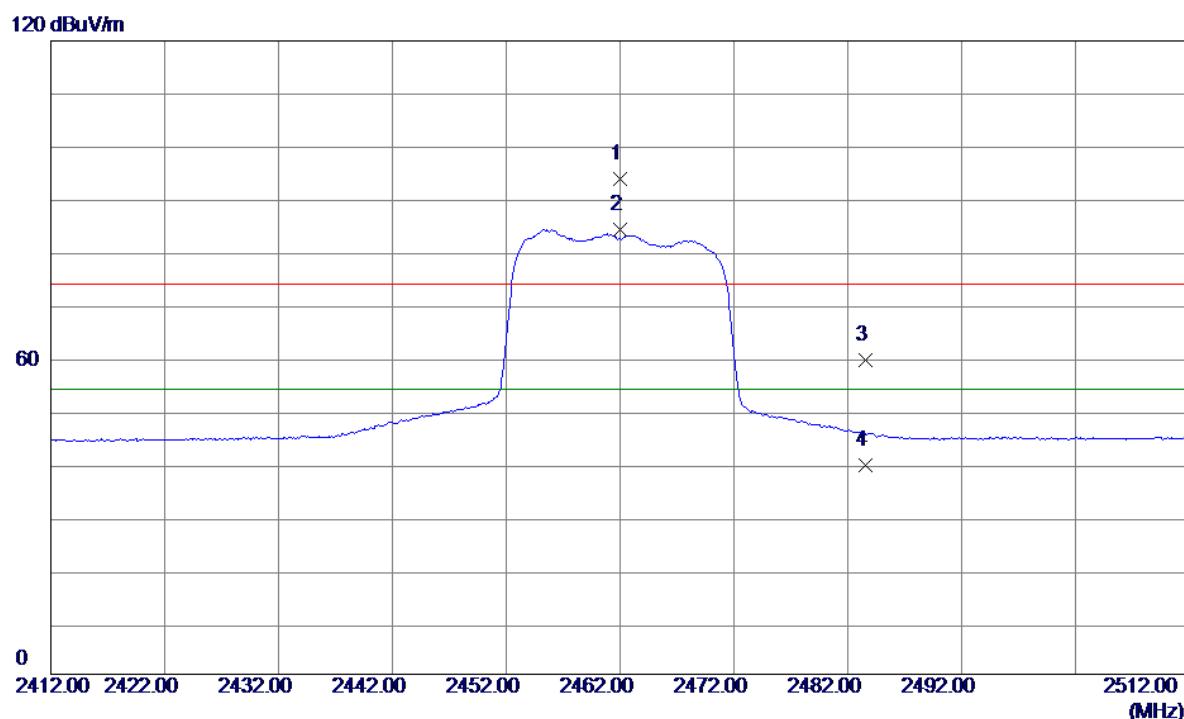
### Horizontal

120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Margin	
							Detector	Comment
1	7311.0000	52.85	-5.08	47.77	74.00	-26.23	Peak	
2	7311.0000	41.79	-5.08	36.71	54.00	-17.29	AVG	
3	9748.0000	50.43	1.10	51.53	74.00	-22.47	Peak	
4 *	9748.0000	38.62	1.10	39.72	54.00	-14.28	AVG	

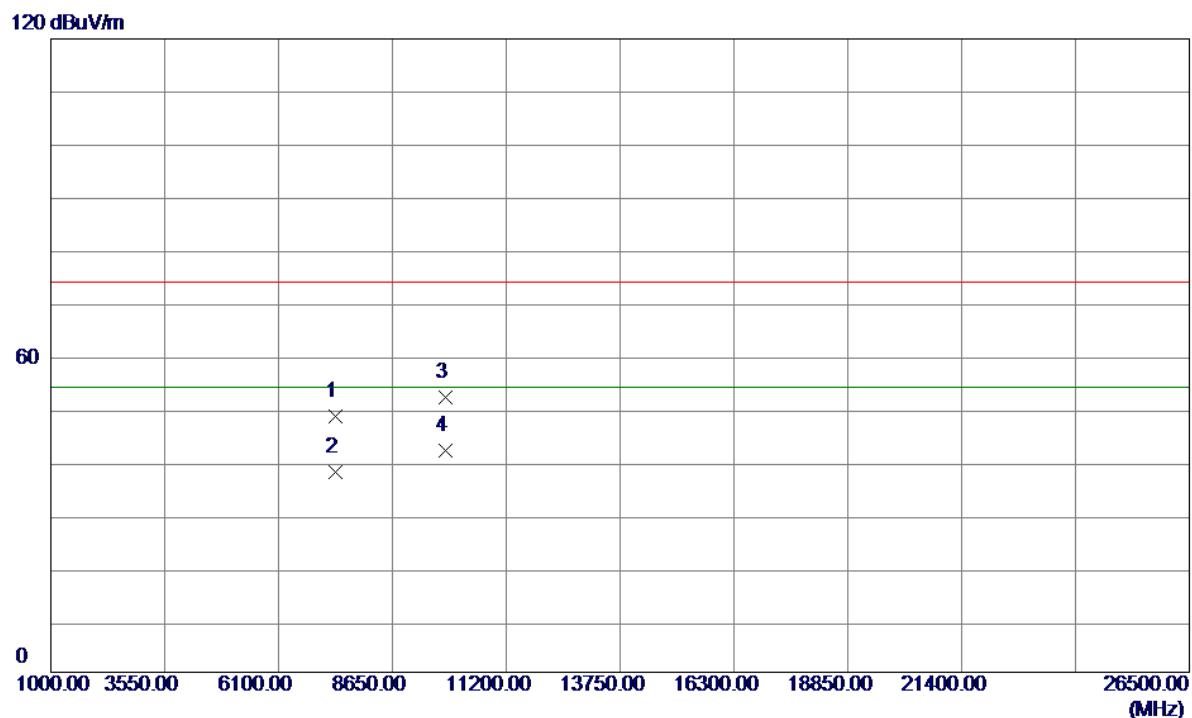
Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2462MHz

**Vertical**

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	2462.0000	62.57	31.23	93.80	74.00	19.80	Peak	No Limit
2 *	2462.0000	53.02	31.23	84.25	54.00	30.25	AVG	No Limit
3	2483.5169	28.30	31.31	59.61	74.00	-14.39	Peak	
4	2483.5169	8.33	31.31	39.64	54.00	-14.36	AVG	

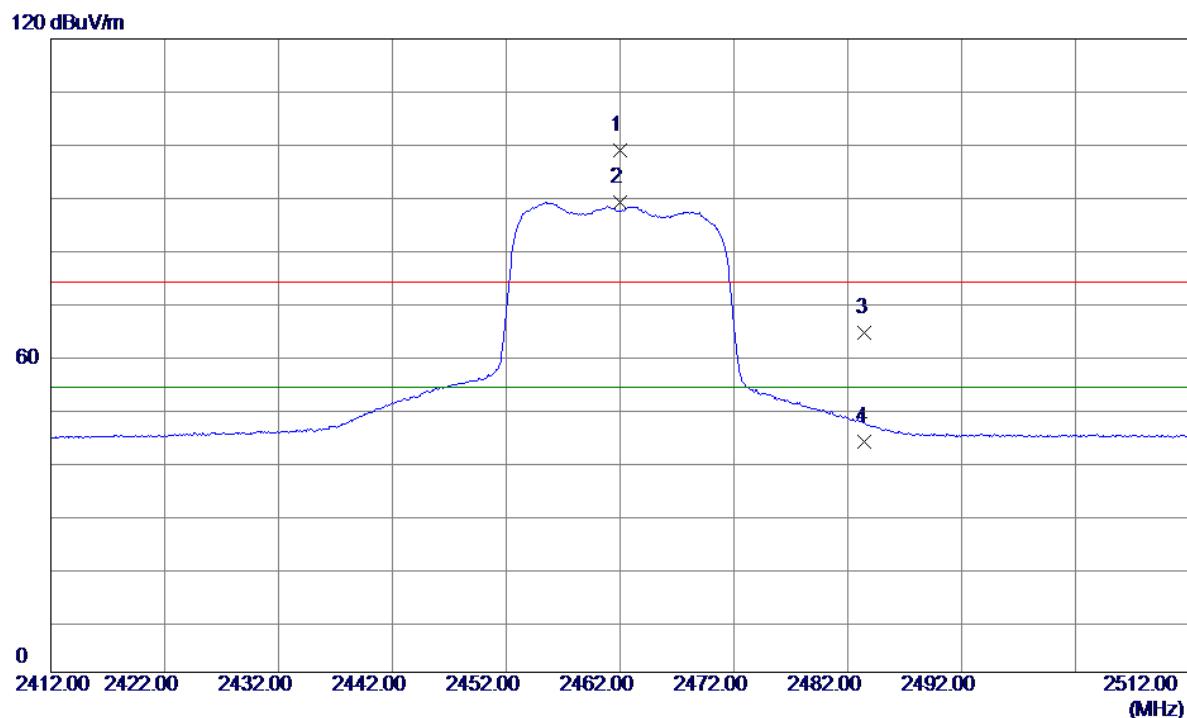
Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2462MHz

### Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Margin	
							Detector	Comment
1	7386.0000	53.17	-4.80	48.37	74.00	-25.63	Peak	
2	7386.0000	42.76	-4.80	37.96	54.00	-16.04	AVG	
3	9848.0000	50.76	1.39	52.15	74.00	-21.85	Peak	
4 *	9848.0000	40.52	1.39	41.91	54.00	-12.09	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2462MHz

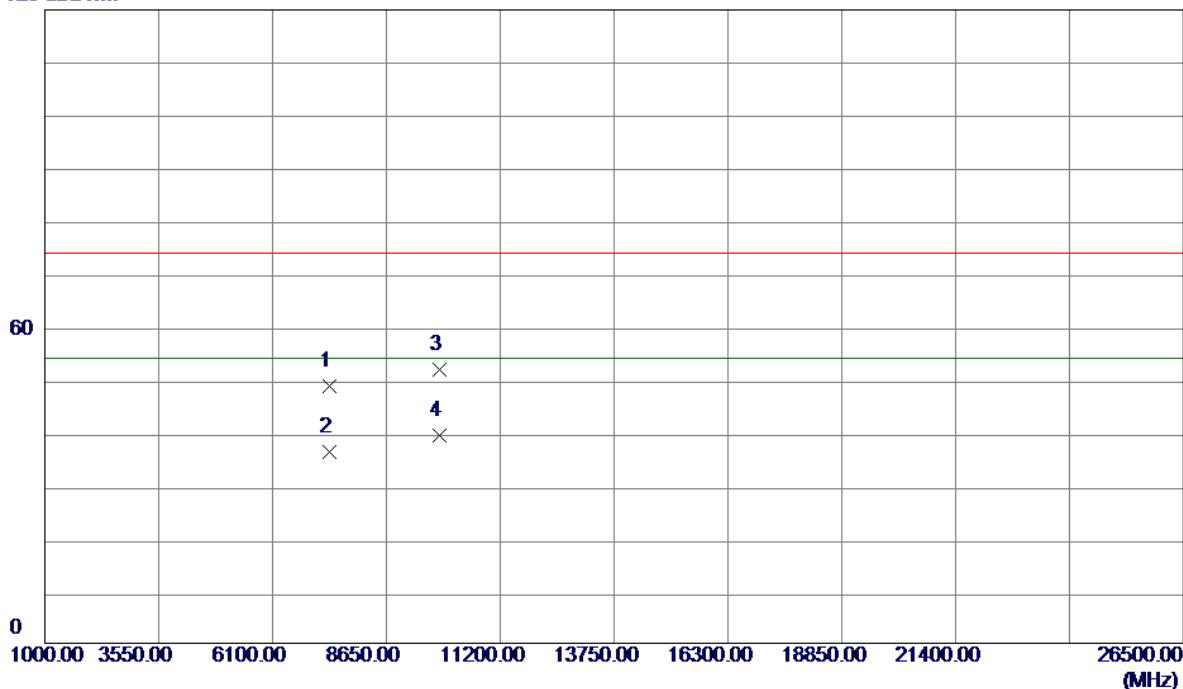
**Horizontal**

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2462.0000	67.74	31.23	98.97	74.00	24.97	Peak	No Limit
2 *	2462.0000	57.88	31.23	89.11	54.00	35.11	AVG	No Limit
3	2483.5000	32.98	31.31	64.29	74.00	-9.71	Peak	
4	2483.5000	12.28	31.31	43.59	54.00	-10.41	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2462MHz

### Horizontal

120 dBuV/m

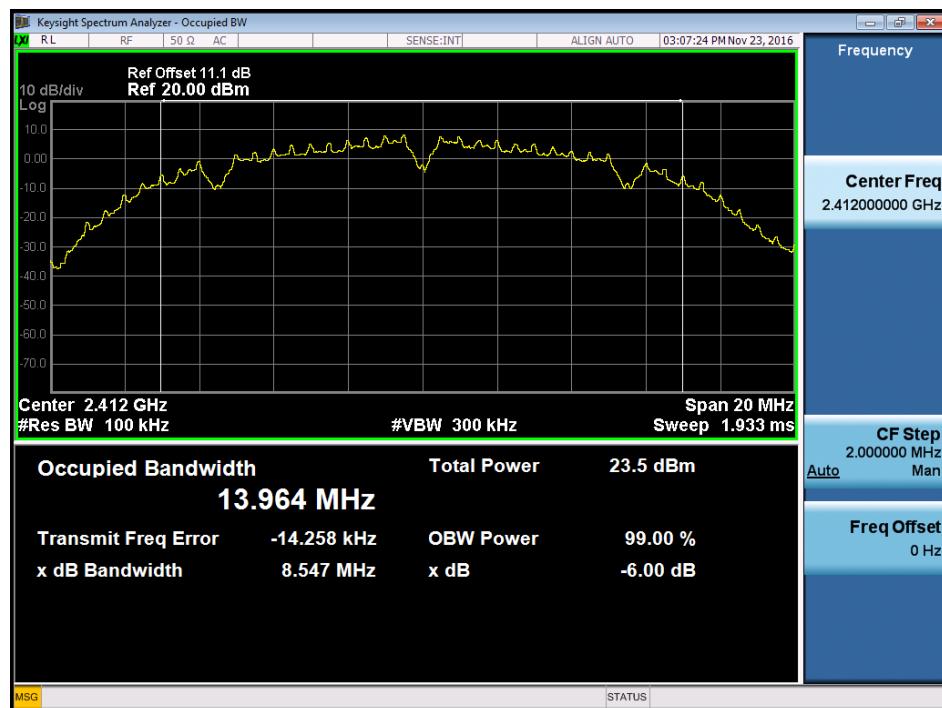


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Margin	
							Detector	Comment
1	7386.0000	53.44	-4.80	48.64	74.00	-25.36	Peak	
2	7386.0000	41.07	-4.80	36.27	54.00	-17.73	AVG	
3	9848.0000	50.53	1.39	51.92	74.00	-22.08	Peak	
4 *	9848.0000	38.07	1.39	39.46	54.00	-14.54	AVG	

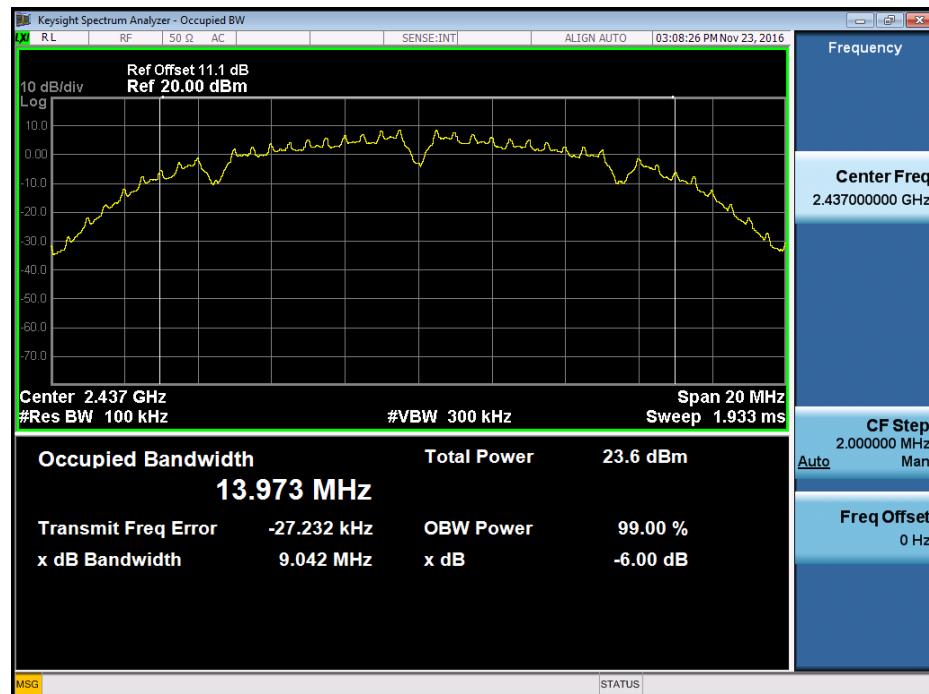
## ATTACHMENT E - BANDWIDTH

**Test Mode : TX B Mode\_CH01/06/11**

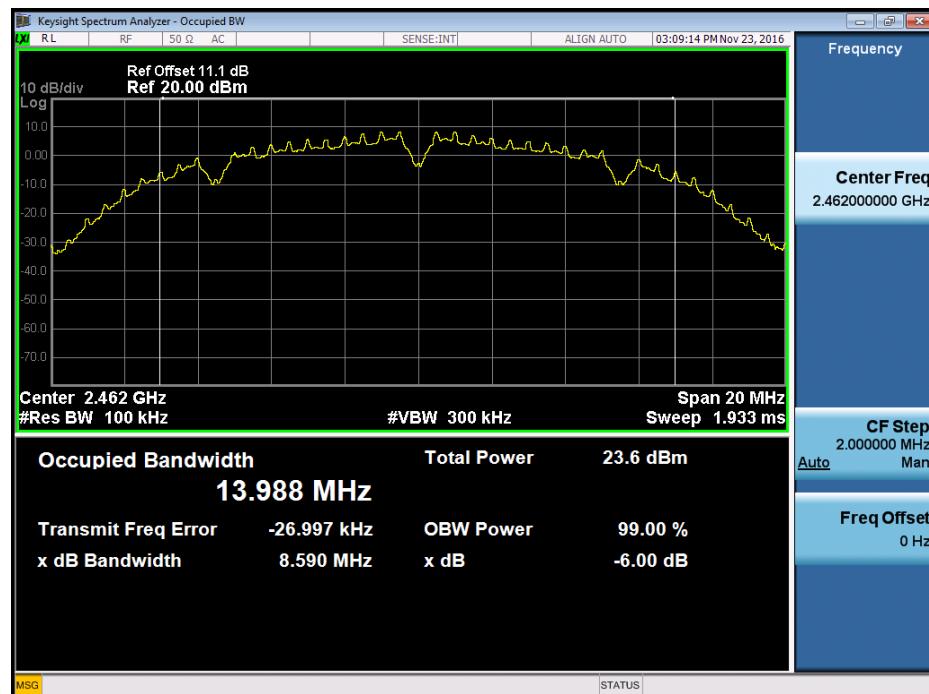
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	8.55	13.96	500	Complies
2437	9.04	13.97	500	Complies
2462	8.59	13.99	500	Complies

**TX CH01**

## TX CH06

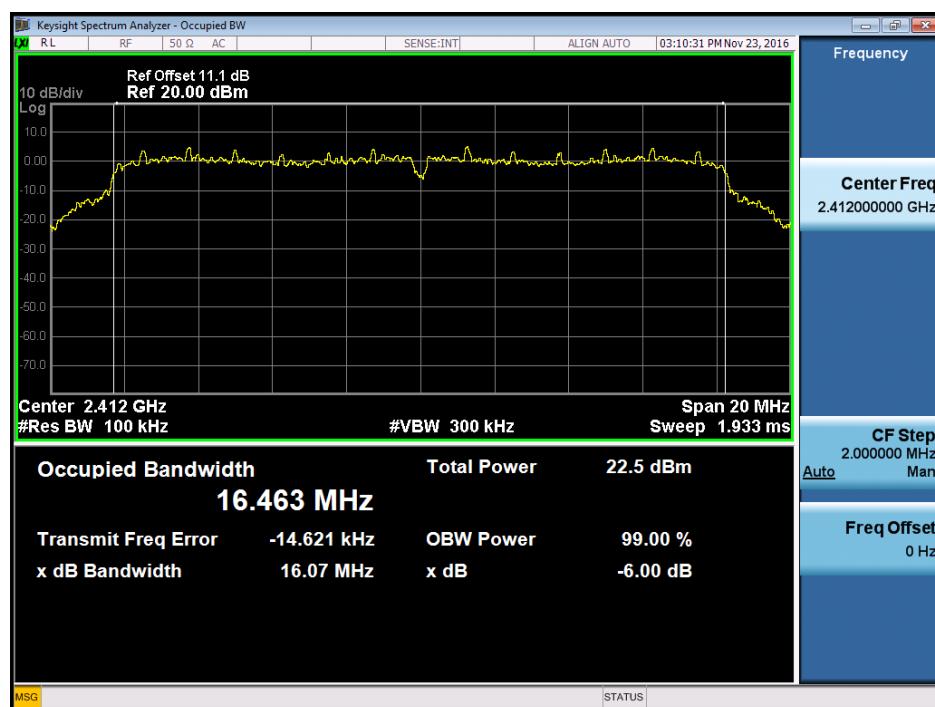


## TX CH11

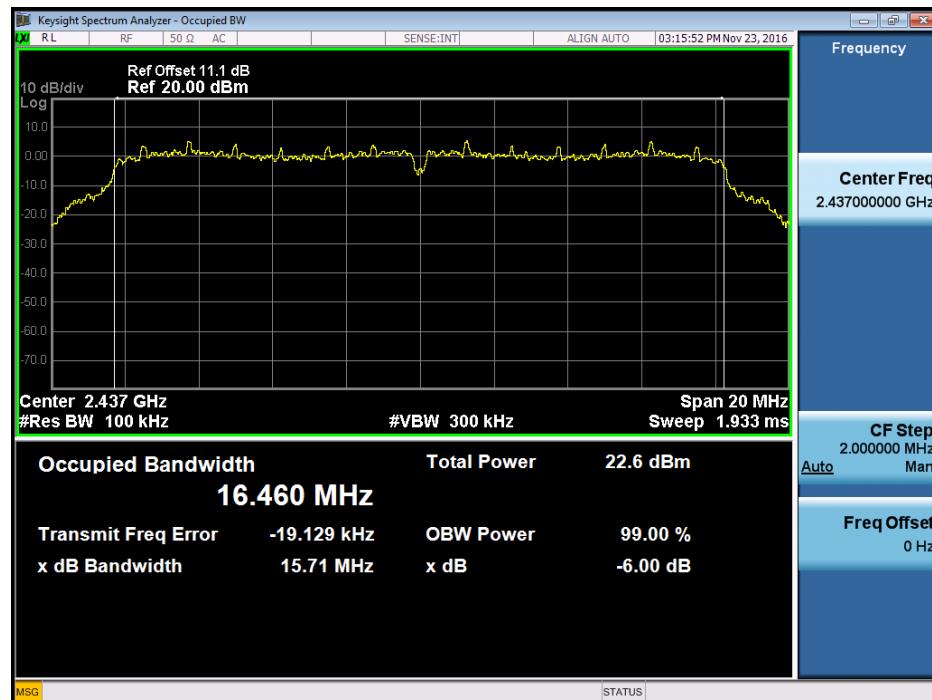


**Test Mode: TX G Mode\_CH01/06/11**

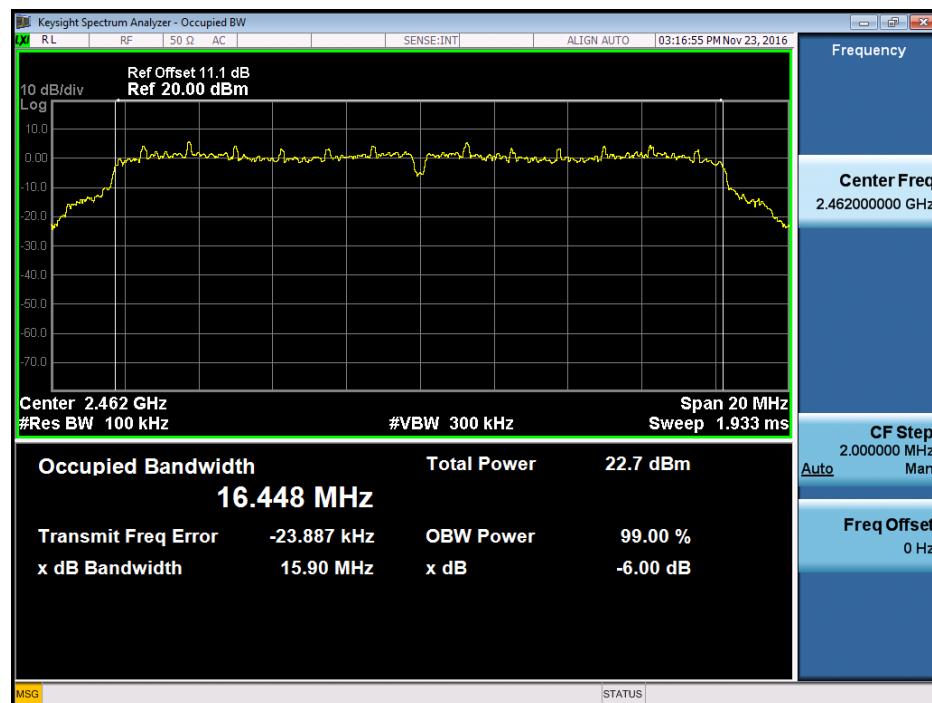
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	16.07	16.46	500	Complies
2437	15.71	16.46	500	Complies
2462	15.90	16.45	500	Complies

**TX CH01**

## TX CH06



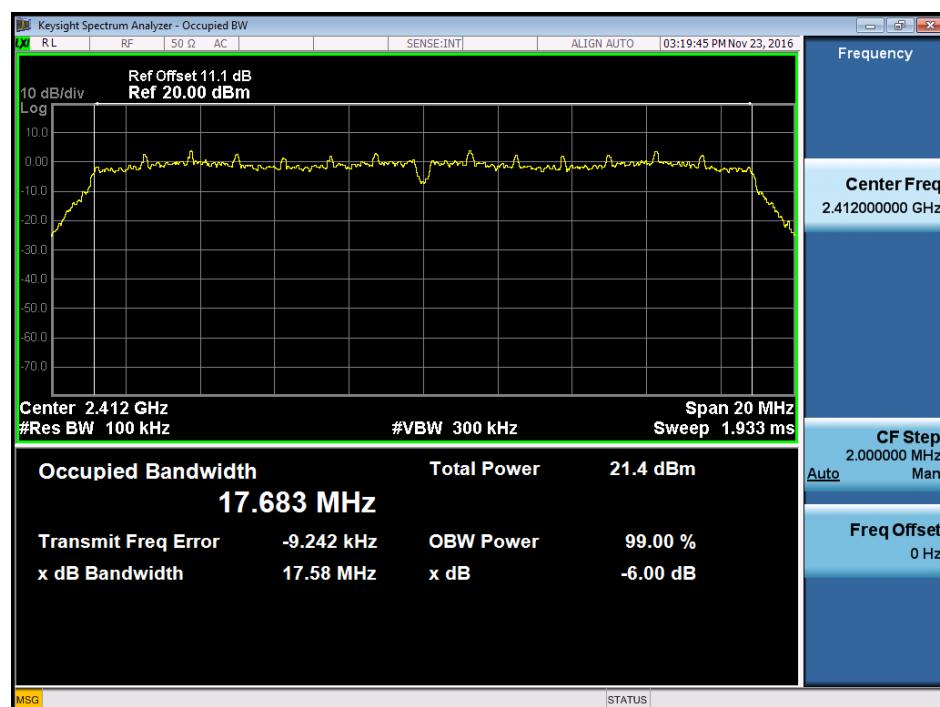
## TX CH11



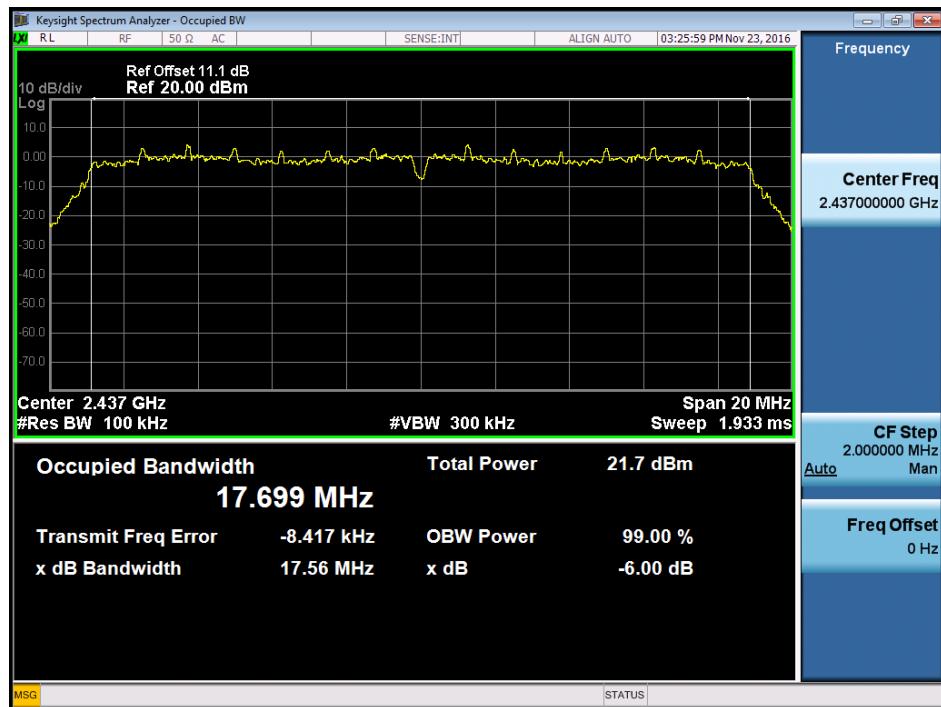
## Test Mode : TX N-20MHz Mode\_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	17.58	17.68	500	Complies
2437	17.56	17.70	500	Complies
2462	17.52	17.69	500	Complies

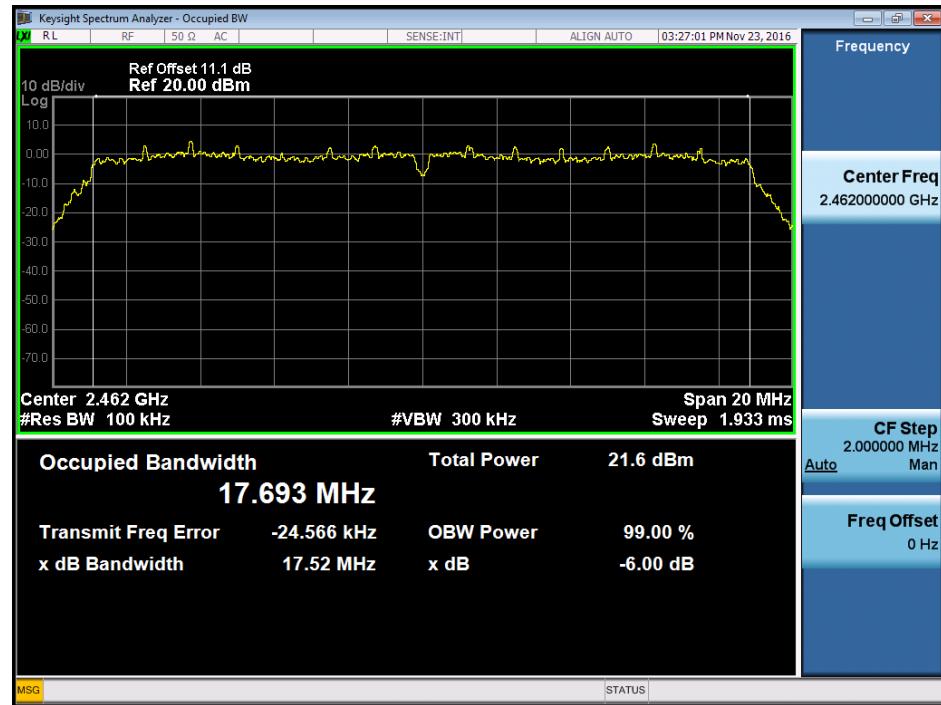
## TX CH01



## TX CH06



## TX CH11



## ATTACHMENT F – MAXIMUM PEAK CONDUCTED OUTPUT POWER

**Test Mode :TX B Mode\_CH01/06/11**

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	18.34	0.07	30.00	1.00	Complies
2437	18.85	0.08	30.00	1.00	Complies
2462	19.11	0.08	30.00	1.00	Complies

**Test Mode :TX G Mode\_CH01/06/11**

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	21.78	0.15	30.00	1.00	Complies
2437	22.76	0.19	30.00	1.00	Complies
2462	23.52	0.22	30.00	1.00	Complies

**Test Mode :TX N20 Mode\_CH01/06/11**

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	21.44	0.14	30.00	1.00	Complies
2437	22.21	0.17	30.00	1.00	Complies
2462	22.69	0.19	30.00	1.00	Complies

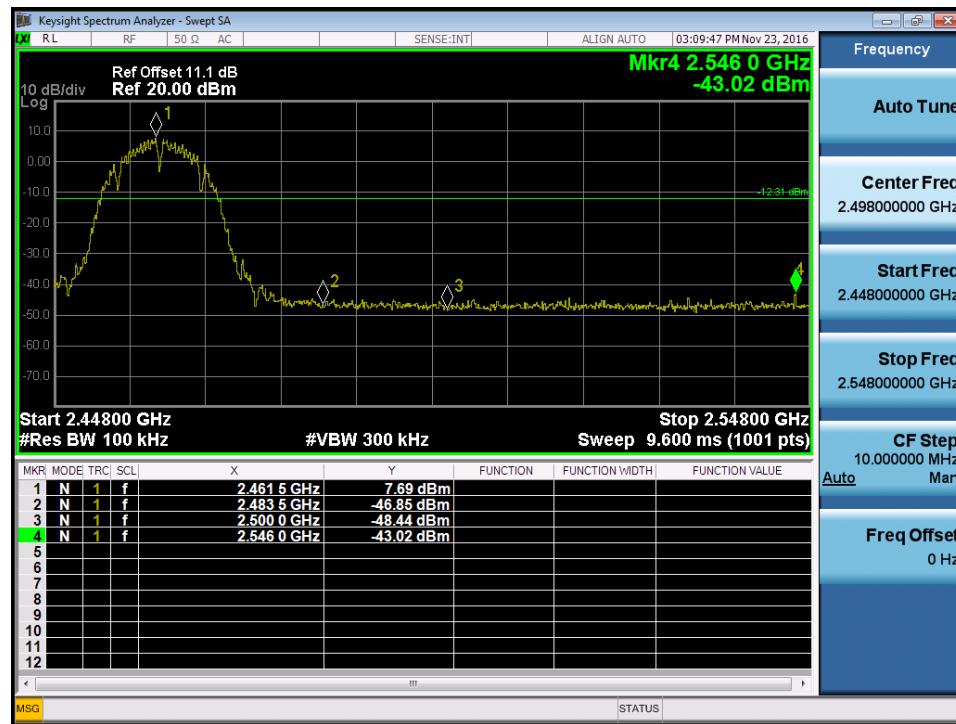
## ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION

Test Mode :	TX B Mode
-------------	-----------

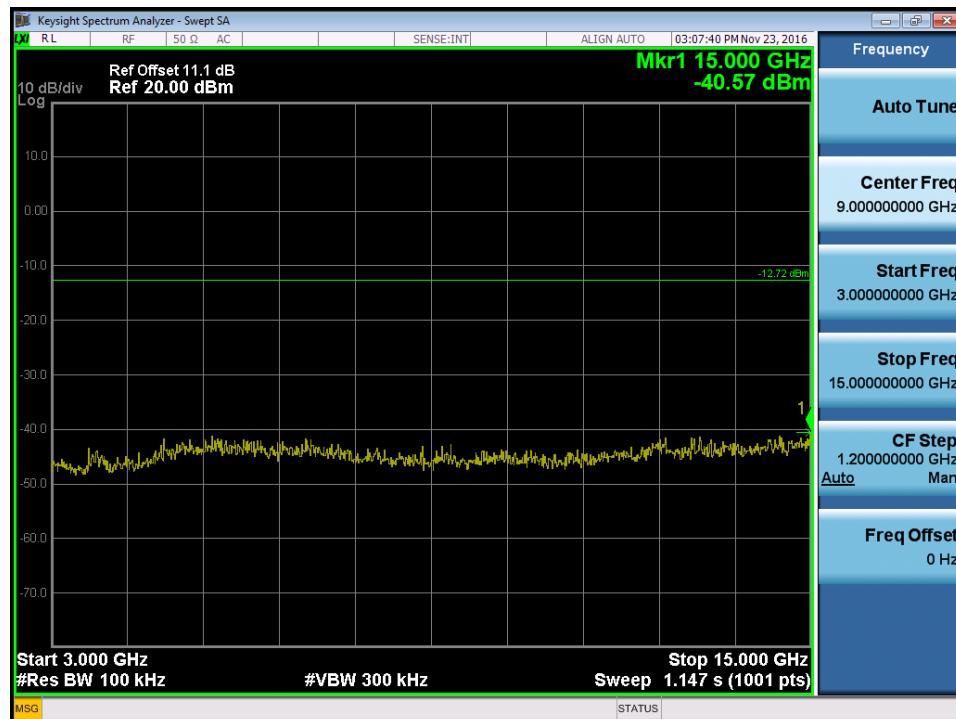
### TX B mode CH01

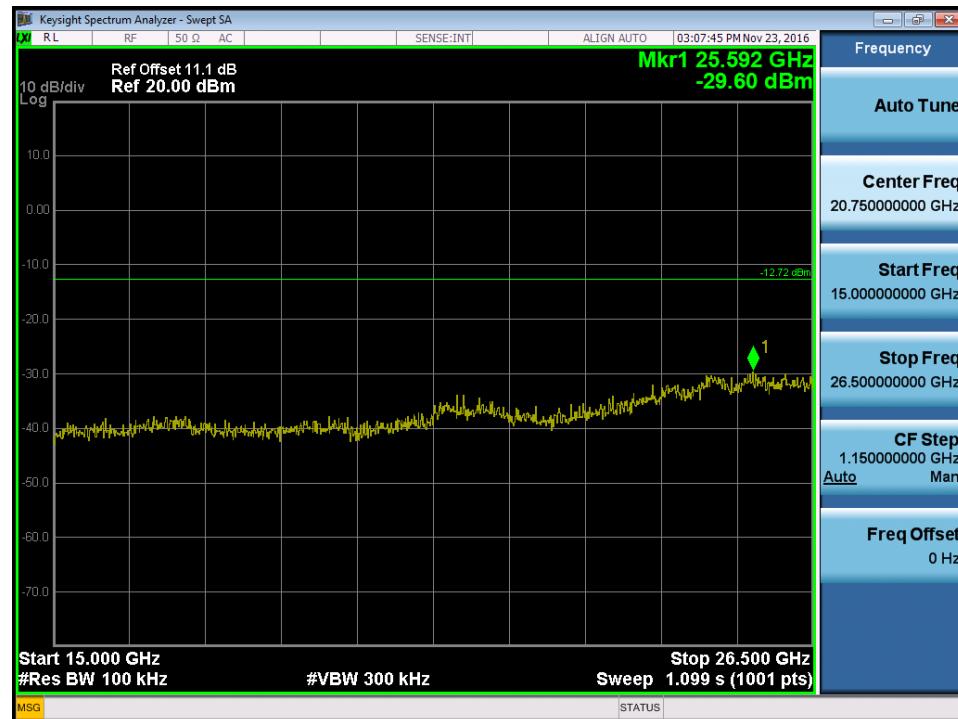


### TX B mode CH11

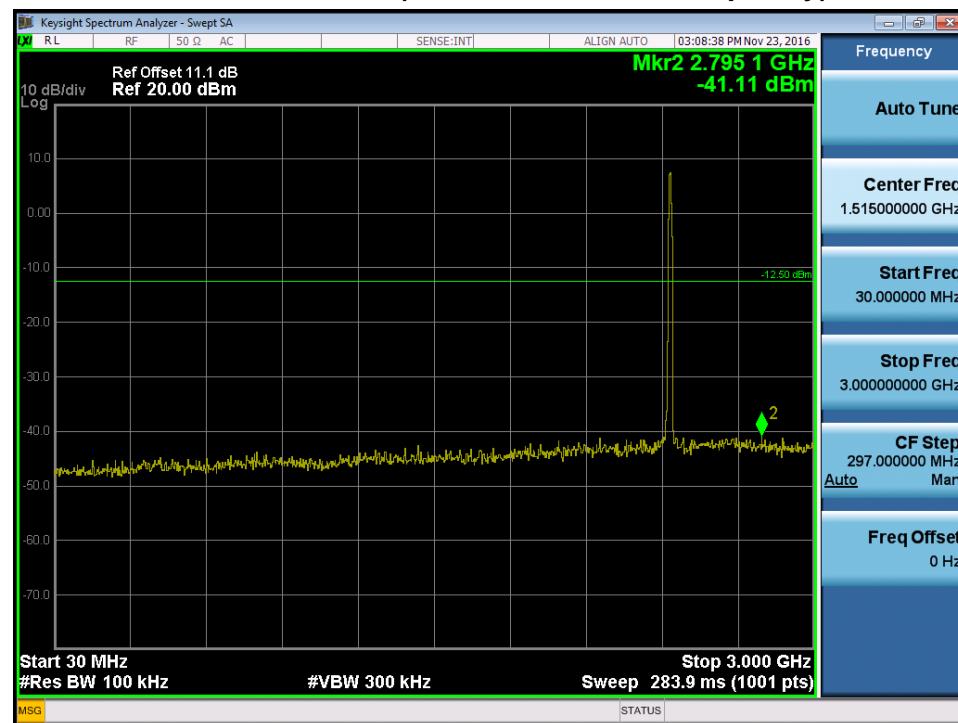


## TX B mode CH01 (10 Harmonic of the frequency)





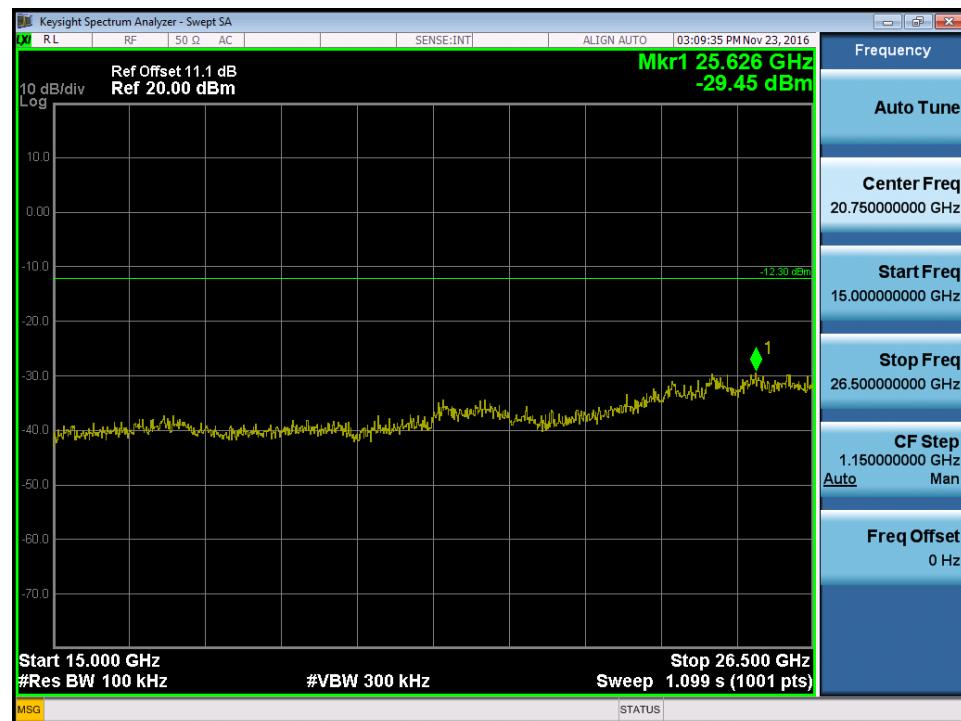
TX B mode CH06 (10 Harmonic of the frequency)





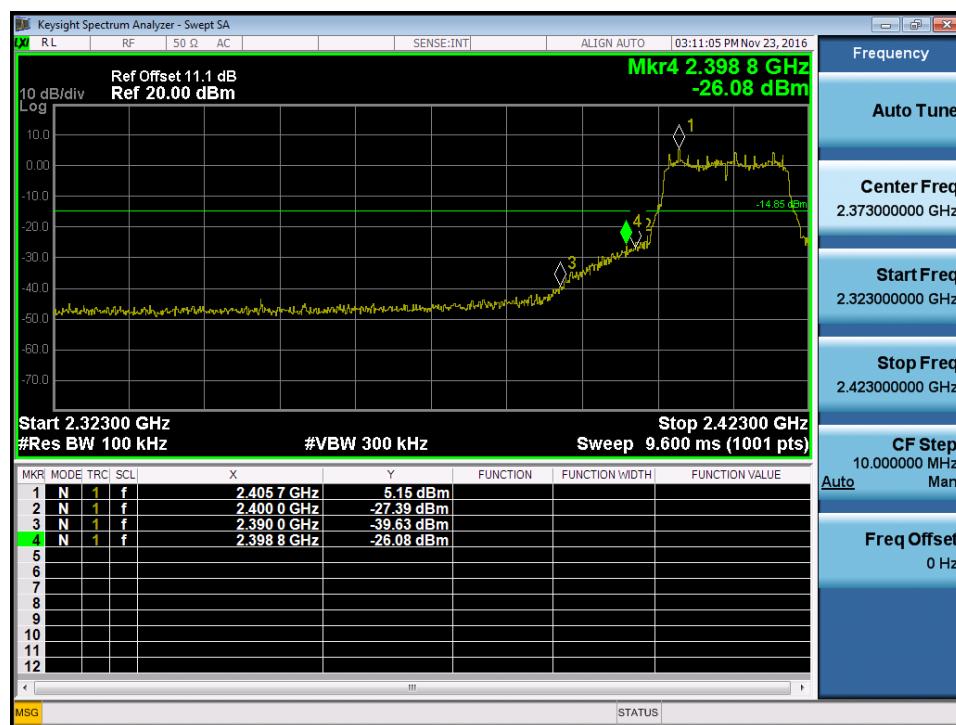
## TX B mode CH11 (10 Harmonic of the frequency)





Test Mode :	TX G Mode
-------------	-----------

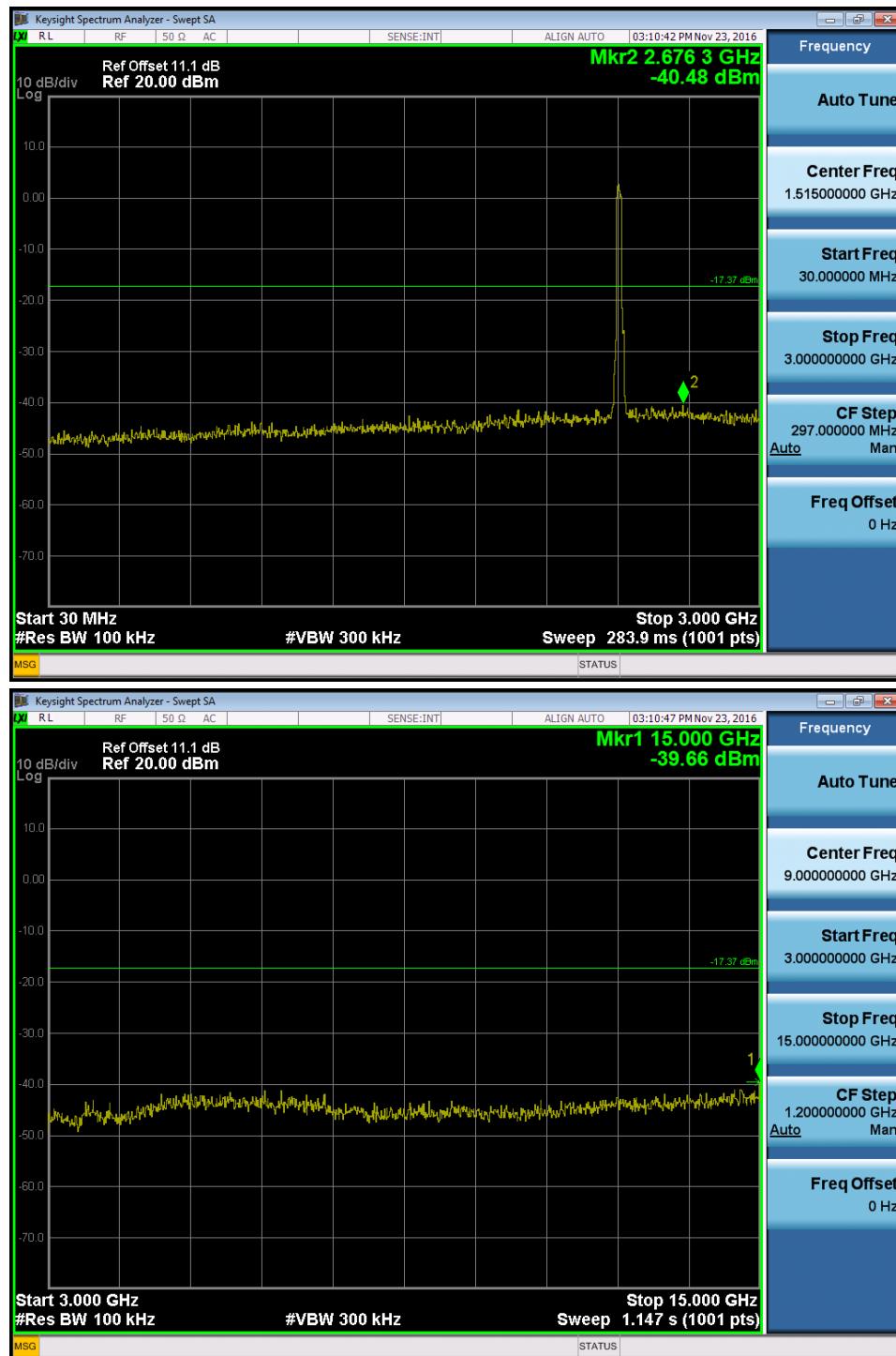
### TX G mode CH01

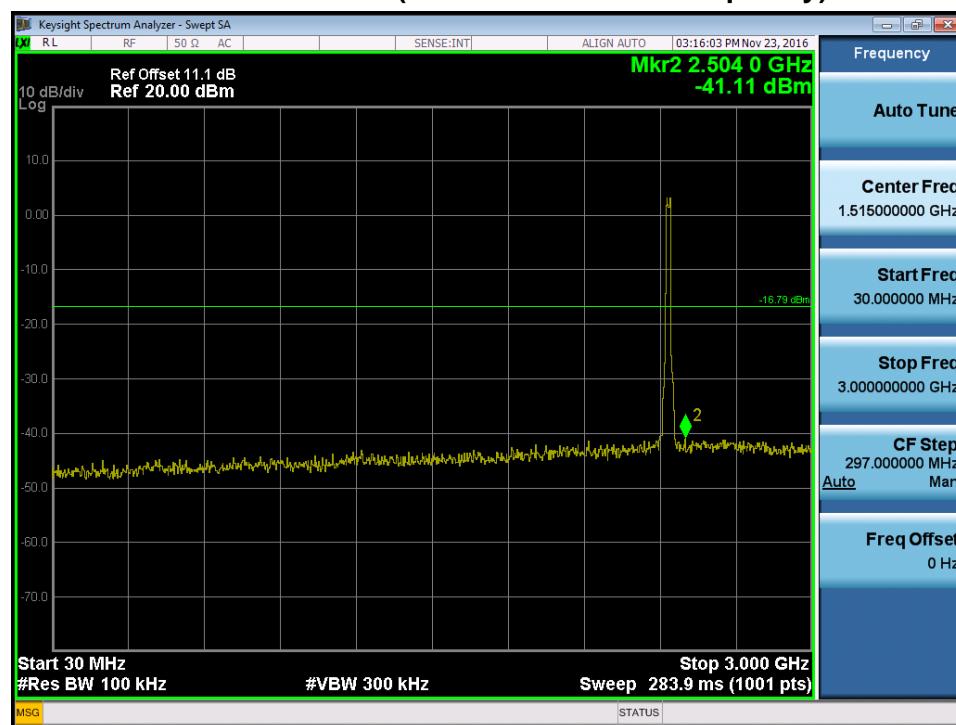


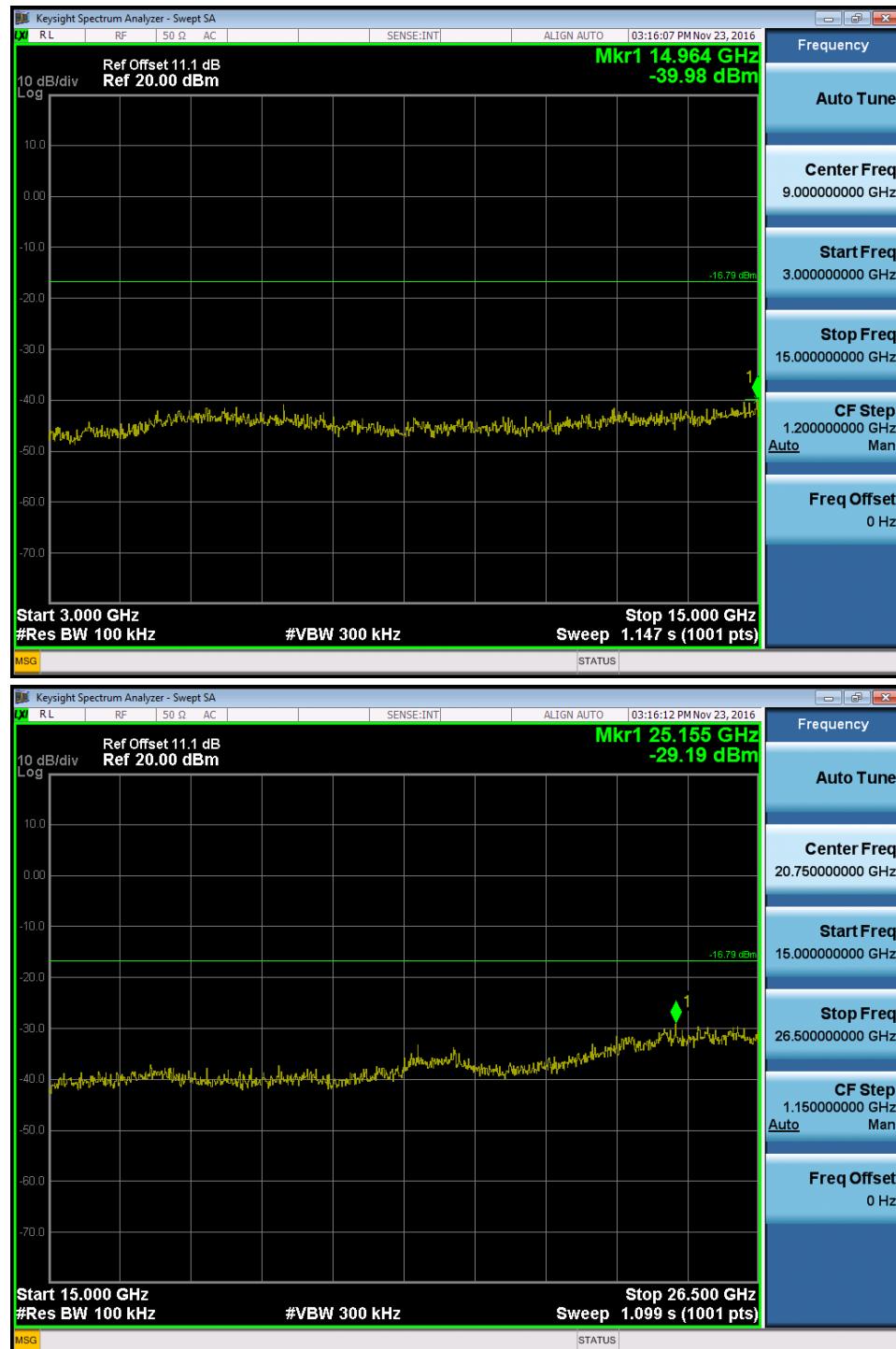
### TX G mode CH11



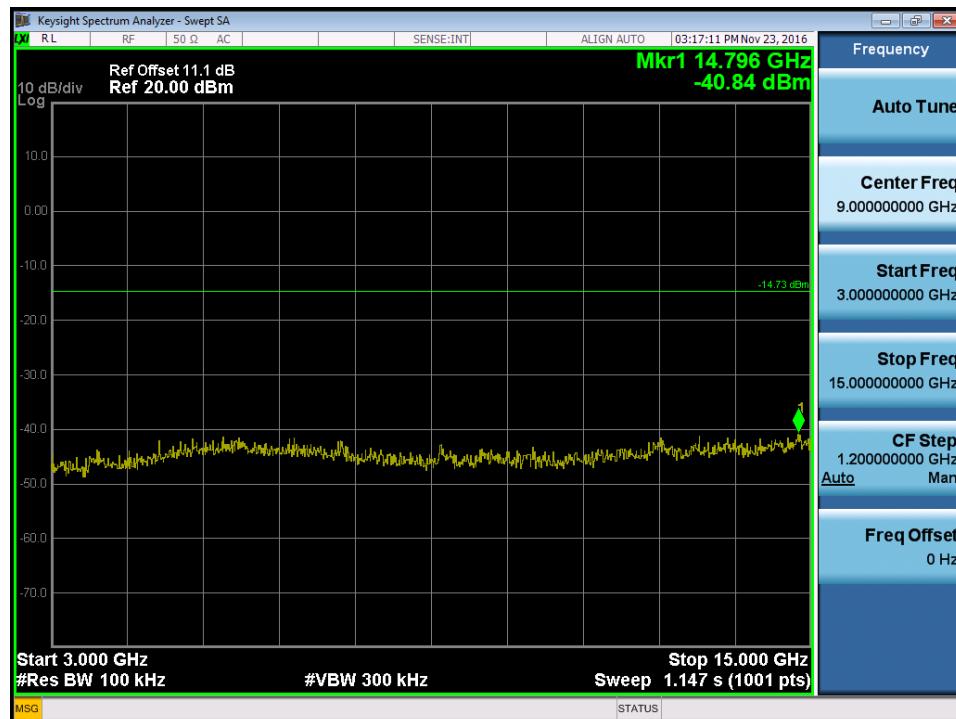
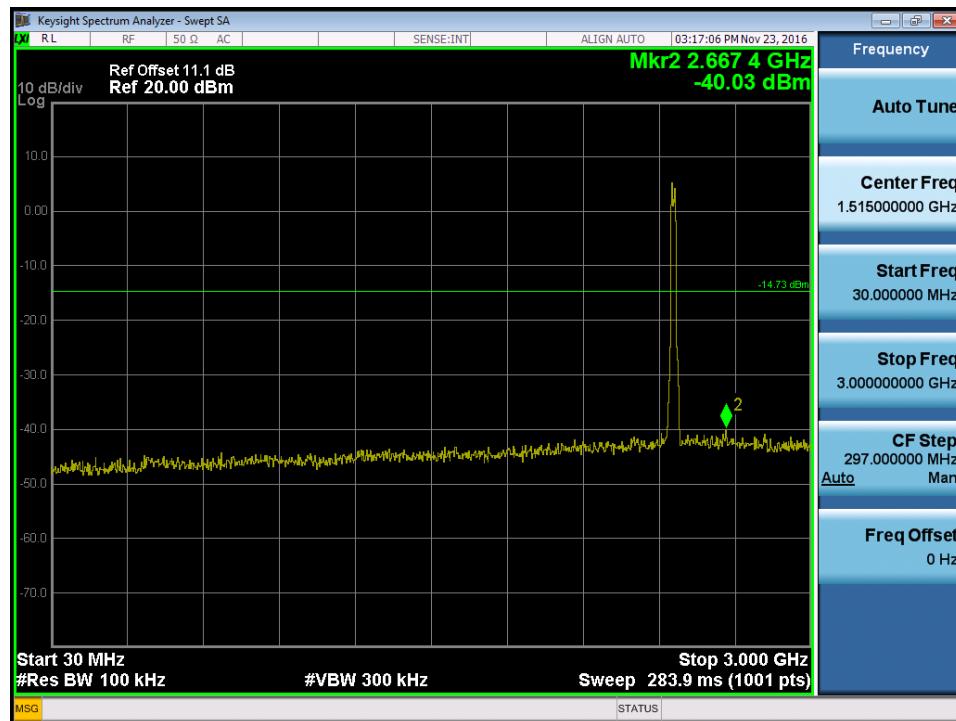
## TX G mode CH01 (10 Harmonic of the frequency)

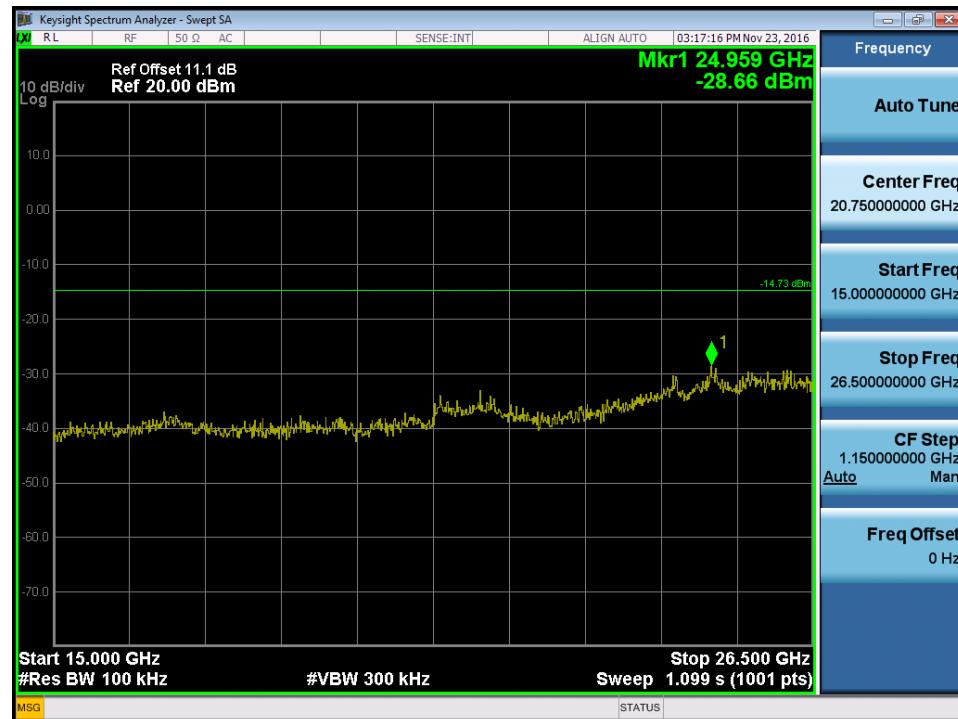






## TX G mode CH11 (10 Harmonic of the frequency)





Test Mode :	TX N-20M Mode
-------------	---------------

### TX HT20 mode CH01



### TX HT20 mode CH11

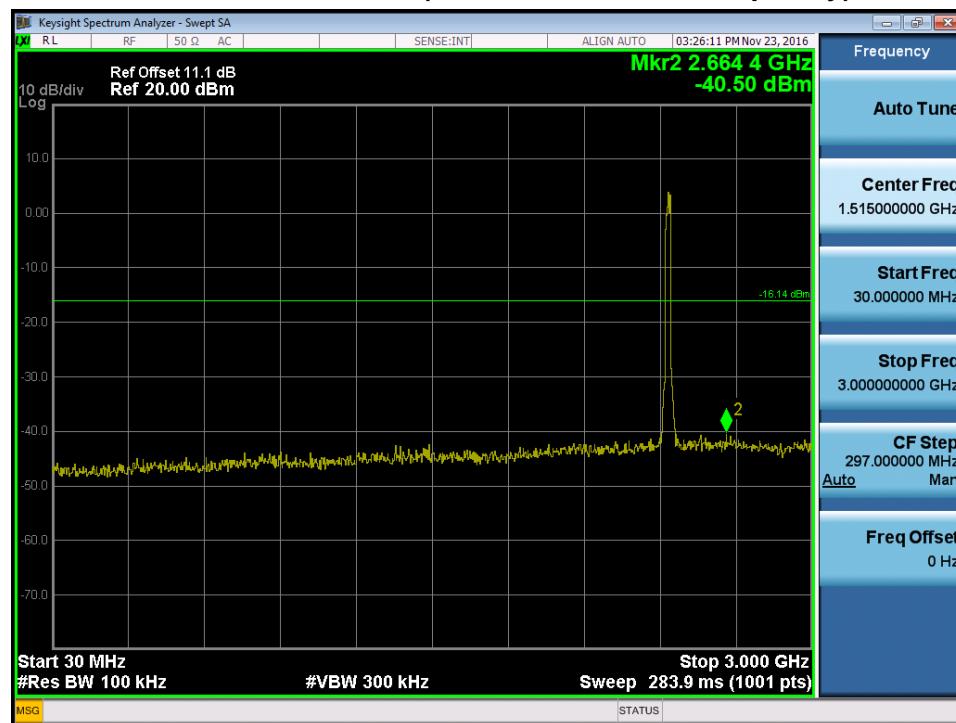


## TX HT20 mode CH01 (10 Harmonic of the frequency)





TX HT20 mode CH06 (10 Harmonic of the frequency)





## TX HT20 mode CH11 (10 Harmonic of the frequency)





## ATTACHMENT H - POWER SPECTRAL DENSITY

## Test Mode :TX B Mode \_CH01/06/11

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-7.54	0.1762	8.00	Complies
2437	-6.51	0.2234	8.00	Complies
2462	-4.46	0.3581	8.00	Complies

## TX CH01



## TX CH06



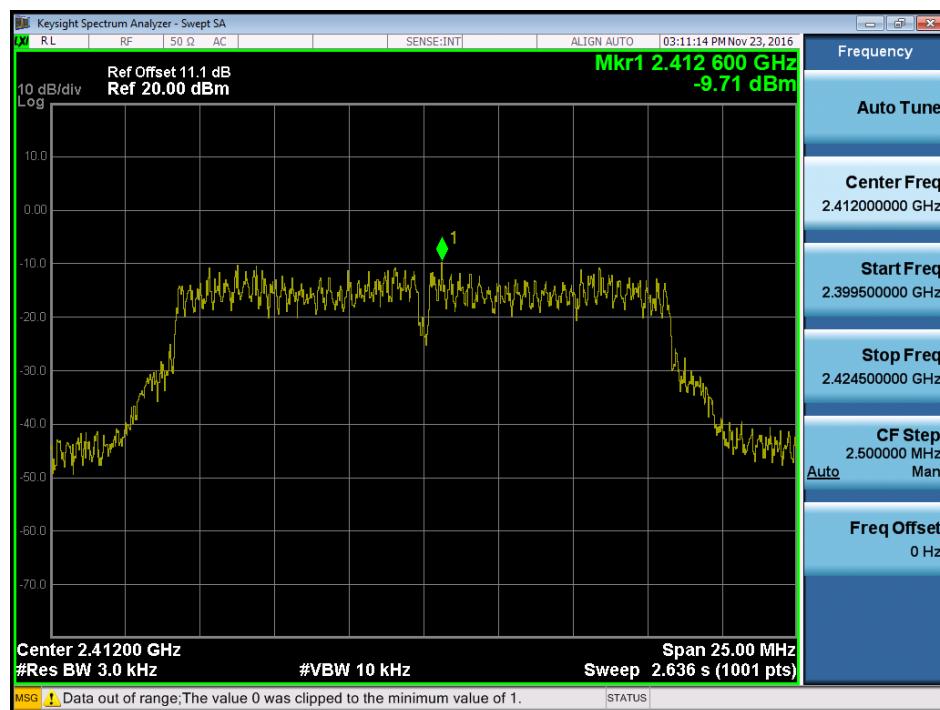
## TX CH11



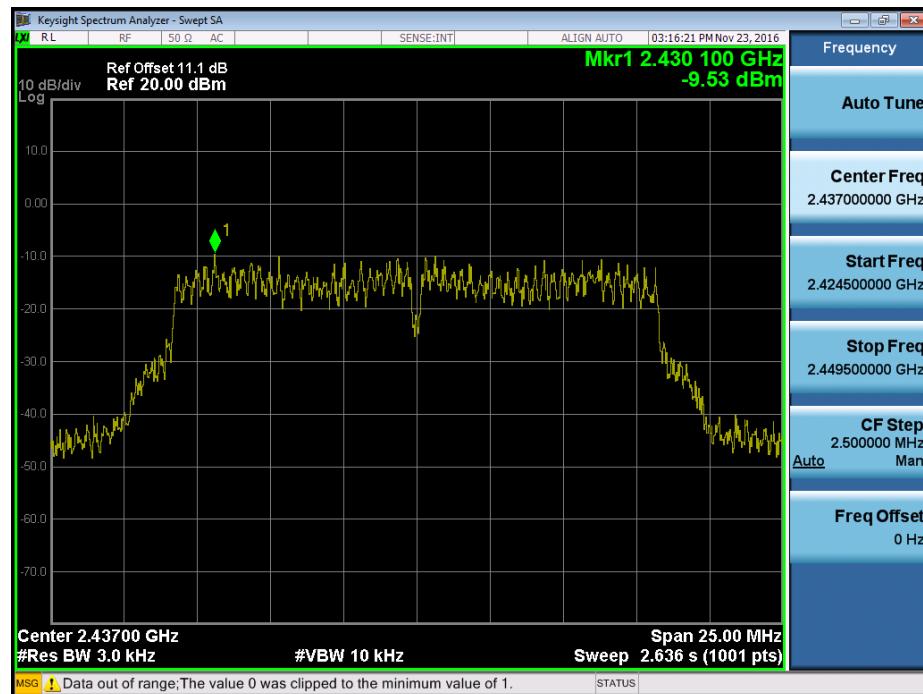
## Test Mode :TX G Mode\_CH01/06/11

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-9.71	0.1069	8.00	Complies
2437	-9.53	0.1114	8.00	Complies
2462	-9.68	0.1076	8.00	Complies

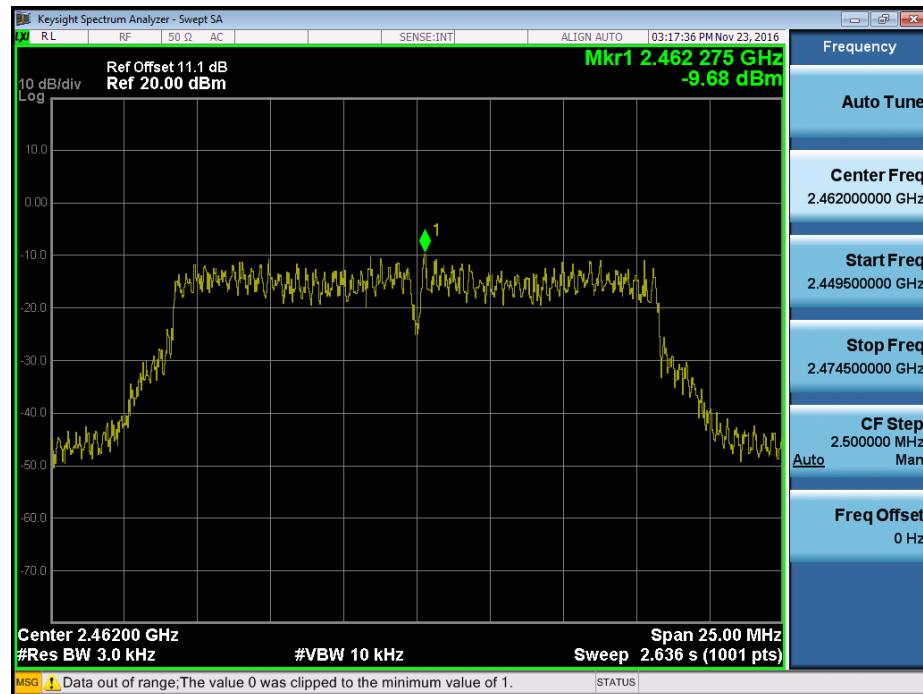
## TX CH01



## TX CH06



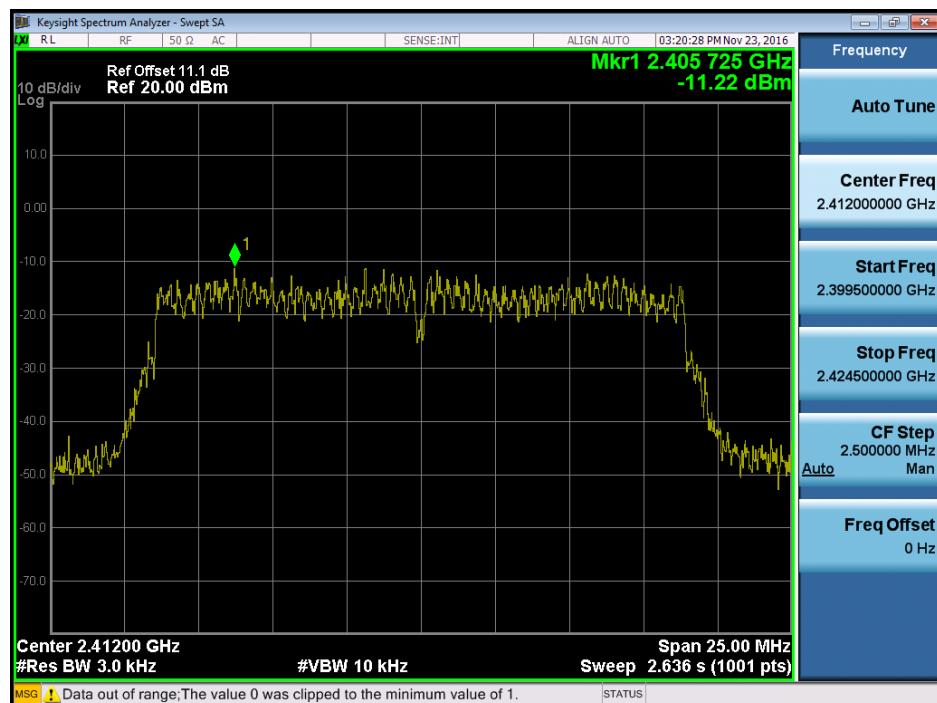
## TX CH11



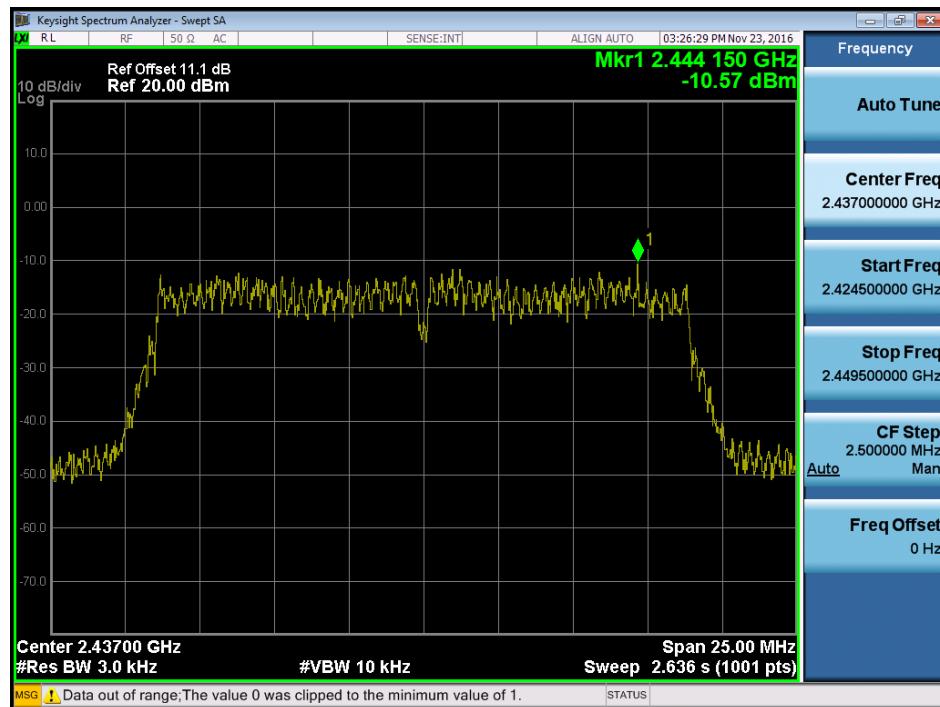
## Test Mode : TX N-20M Mode\_CH01/06/11

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-11.22	0.0755	8.00	Complies
2437	-10.57	0.0877	8.00	Complies
2462	-9.78	0.1052	8.00	Complies

## TX CH01



## TX CH06



## TX CH11

