

# FCC Radio Test Report

## FCC ID: W59XAP810

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

**Project No.** : 1707C305  
**Equipment** : AC1200 Dual-Band Wireless Access Point  
**Test Model** : XAP-810  
**Series Model** : XWS-1810  
**Applicant** : Luxul Wireless  
**Address** : 12884 S Frontrunner Blvd Suite 201 Draper UT  
84020 USA

**Date of Receipt** : Jul. 26, 2017  
**Date of Test** : Jul. 26, 2017 ~ Aug. 16, 2017  
**Issued Date** : Aug. 17, 2017  
**Tested by** : BTL Inc.

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## REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1707C305	Original Issue.	Aug. 17, 2017

## 1. CERTIFICATION

Equipment : AC1200 Dual-Band Wireless Access Point  
Brand Name : LUXUL  
Test Model : XAP-810  
Series Model : XWS-1810  
Applicant : Luxul Wireless  
Manufacturer : Luxul Wireless  
Address : 12884 S Frontrunner Blvd Suite 201 Draper UT 84020 USA  
Date of Test : Jul. 26, 2017 ~ Aug. 16, 2017  
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-1-1707C305) 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).

## 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
15.207	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	
15.247(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: 319330

## 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 Measurement:

Test Site	Method	Measurement Frequency Range	U, (dB)
DG-C02	CISPR	150 KHz ~ 30MHz	2.32

### B. 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	AC1200 Dual-Band Wireless Access Point	
Brand Name	LUXUL	
Test Model	XAP-810	
Series Model	XWS-1810	
Model Difference	With two XAP-810 in gift box.	
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 300 Mbps
	Output Power (Max.)	802.11b: 25.32dBm 802.11g: 29.53dBm 802.11n(20MHz): 29.54dBm 802.11n(40MHz): 29.38dBm
Power Source	DC voltage supplied from AC/DC adapter. Brand / Model: LUXUL / XPE-2500	
Power Rating	Input: 100-240V~0.8A 50/60Hz Output: 51V---30W	

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) 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	3
2	N/A	N/A	Internal	N/A	3

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R).

### 4. The worst case for 1TX/ 2TX as follow:

Operating Mode TX Mode	1TX	2TX
802.11b	V (ANT 1)	-
802.11g	V (ANT 1)	-
802.11n(20MHz)	-	V (ANT 1+ANT 2)
802.11n(40MHz)	-	V (ANT 1+ANT 2)

### 3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly 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
Mode 5	TX Mode

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 5	TX Mode

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 Conducted 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:**

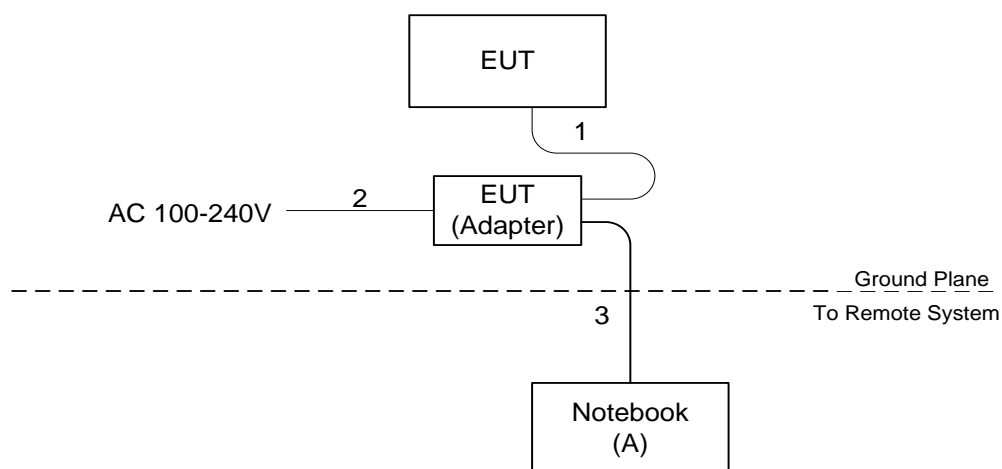
- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1Mbps)  
 802.11g mode: OFDM (6Mbps)  
 802.11n HT20 mode : BPSK (13Mbps)  
 802.11n HT40 mode : BPSK (27Mbps)  
 For radiated emission tests, the highest output powers were set for final test.
- (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	MTOOL		
Frequency (MHz)	2412	2437	2462
802.11b	75	67	68
802.11g	57	61	61
802.11n (20MHz)	50	50	50
Frequency (MHz)	2422	2437	2452
802.11n (40MHz)	41	51	40

### 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	HP	HP NB 331	DOC	NA

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	1.5m	RJ45
2	NO	NO	1.8m	AC Cable
3	NO	NO	10m	RJ45

## 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 (dBμV)	
	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

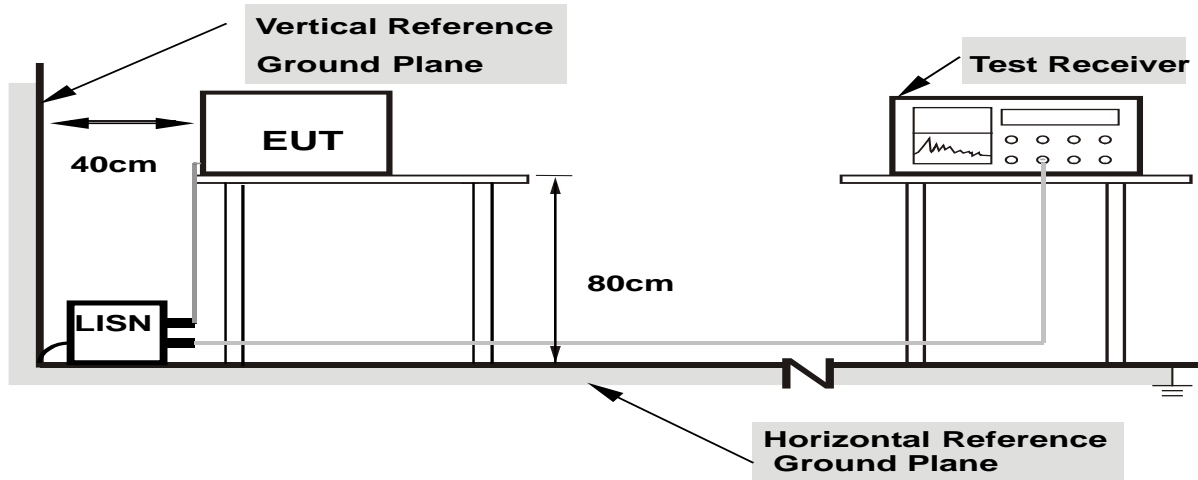
#### 4.1.2 TEST PROCEDURE

- a. 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 equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. 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.
- c. 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.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. 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 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 Appendix 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

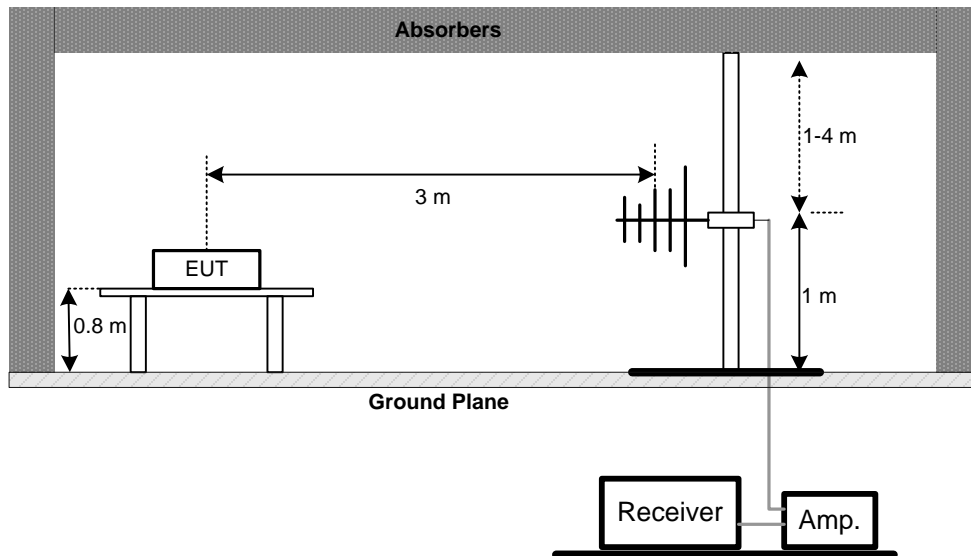
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- The measuring distance of 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

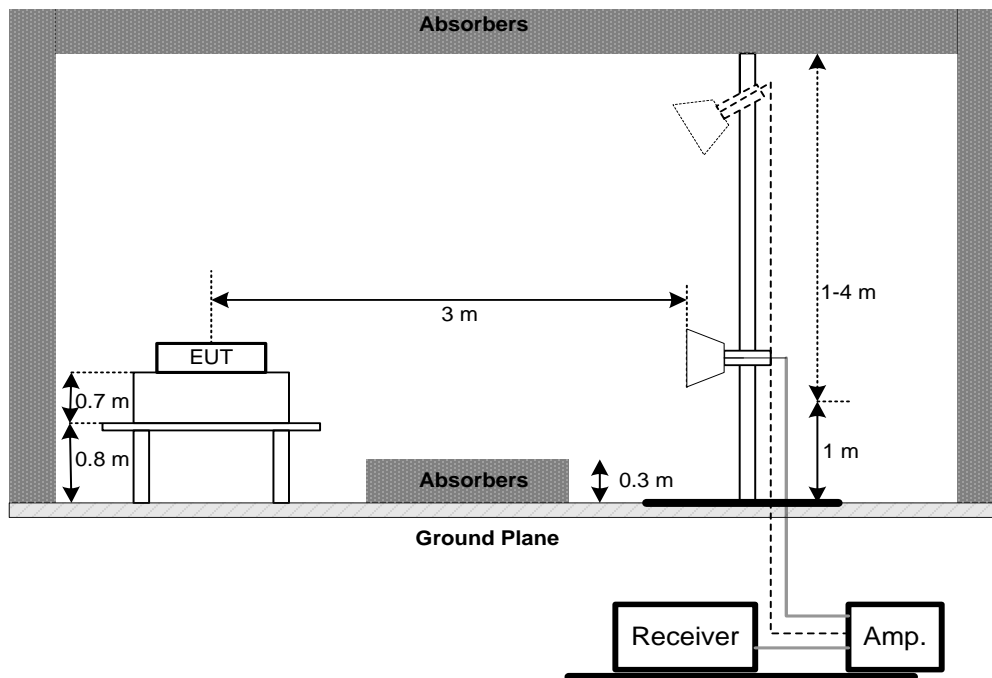
No deviation

#### 4.2.4 TEST SETUP

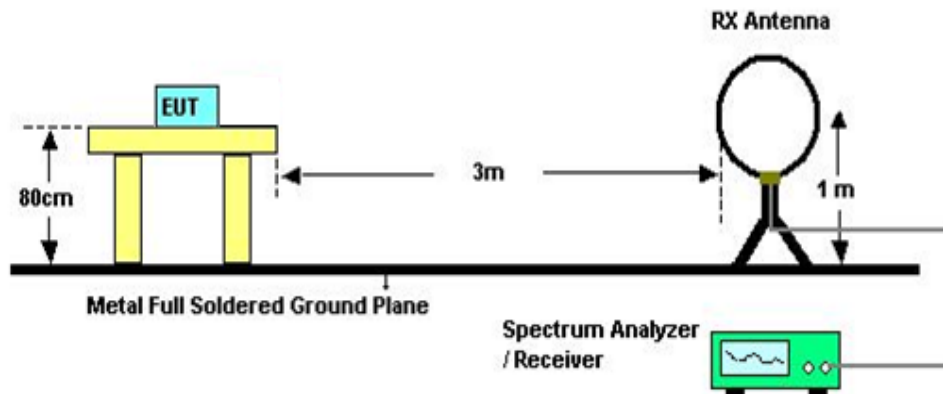
##### (A) Radiated Emission Test Set-Up Frequency Below 1 GHz



##### (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 Appendix 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 1000MHZ)

Please refer to the Appendix C.

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

Please refer to the Appendix 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 Appendix 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

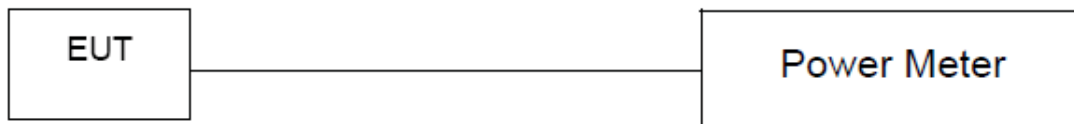
#### 6.1.1 TEST PROCEDURE

- 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 and FCC KDB 662911 D01 Multiple Transmitter Output.

#### 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 Appendix 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.

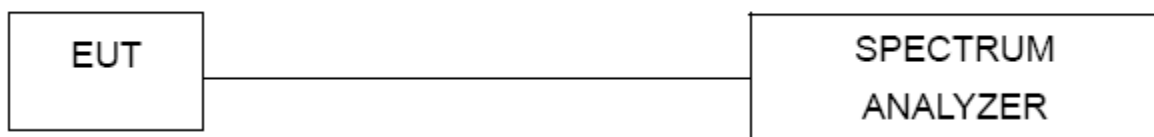
#### 7.1.1 TEST PROCEDURE

- 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 = Auto.
- 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 Appendix 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 Appendix H.



## 9. MEASUREMENT INSTRUMENTS LIST

Conducted Emission					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EMI Test Receiver	R&S	ESCI	100382	Mar. 26, 2018
2	LISN	EMCO	3816/2	52765	Mar. 26, 2018
3	50Ω Terminator	SHX	TF2-3G-A	8122901	Mar. 26, 2018
4	TWO-LINE V-NETWORK	R&S	ENV216	101447	Mar. 26, 2018
5	Cable	N/A	RG223	12m	Oct. 20, 2017
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emission Below 1GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 26, 2018
2	Amplifier	HP	8447D	2944A09673	Oct. 20, 2017
3	Receiver	Agilent	N9038A	MY52130039	Sep. 04, 2017
4	Cable	emci	LMR-400(30MHz-1 GHz)(8m+5m)	N/A	Jun. 26, 2018
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	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Sep. 06, 2017

### Radiated Emission Above 1GHz

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Double Ridged Guide Antenna	ETS	3115	75789	Mar. 26, 2018
2	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Jun. 08, 2018
3	Amplifier	Agilent	8449B	3008A02274	May. 16, 2018
4	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 26, 2018
5	Receiver	Agilent	N9038A	MY52130039	Sep. 04, 2017
6	Antenna	EM	EM-6876-1	230	Jul. 07, 2018
7	Controller	CT	SC100	N/A	N/A
8	Controller	MF	MF-7802	MF780208416	N/A
9	Cable	emci	EMC104-SM-SM-1 2000(12m)	N/A	Jun. 26, 2018
10	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	Sep. 04, 2017

### Peak Output Power

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	ANRITSU	ML2495A	1128009	Mar. 26, 2018
2	Pulse Power Sensor	ANRITSU	MA 2411B	1027500	Mar. 26, 2018

### Antenna Conducted Spurious Emission

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Sep. 04, 2017

### Power Spectral Density

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Sep. 04, 2017

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

All calibration period of equipment list is one year.

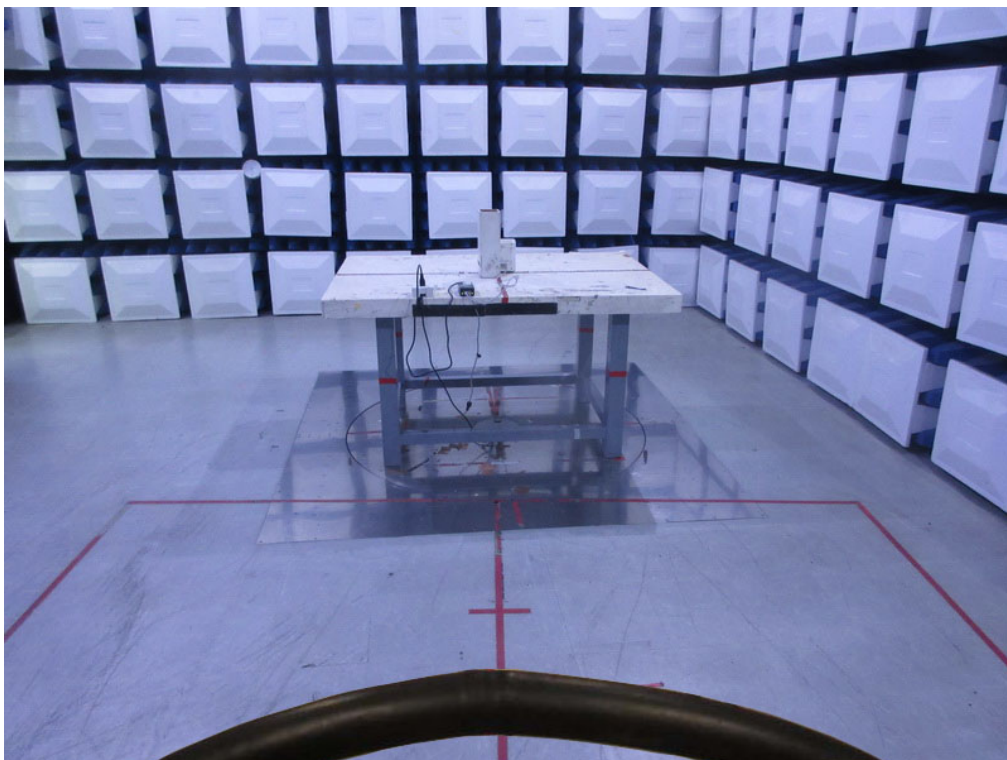
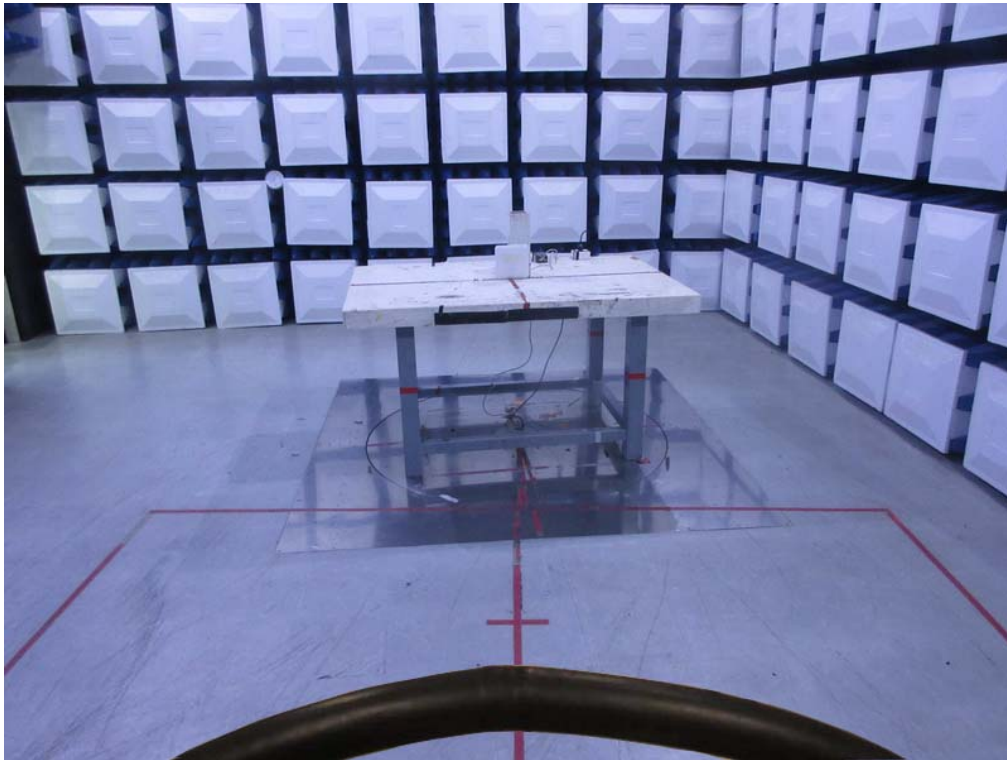
## 10. EUT TEST PHOTO

### Conducted Measurement Photos



## Radiated Measurement Photos

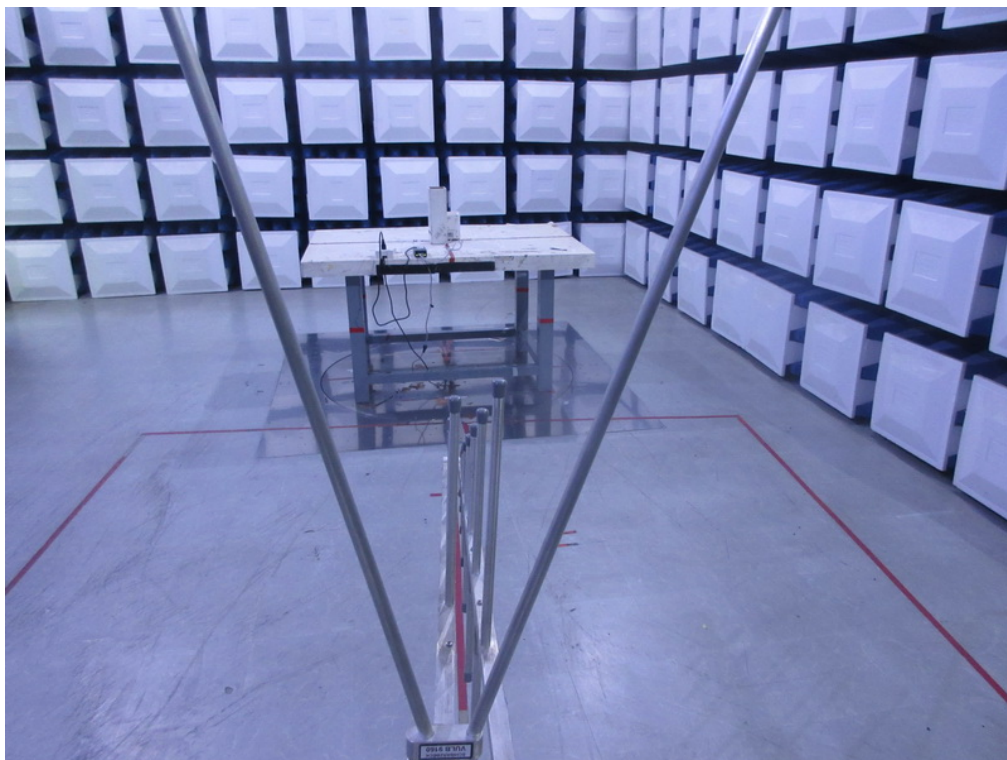
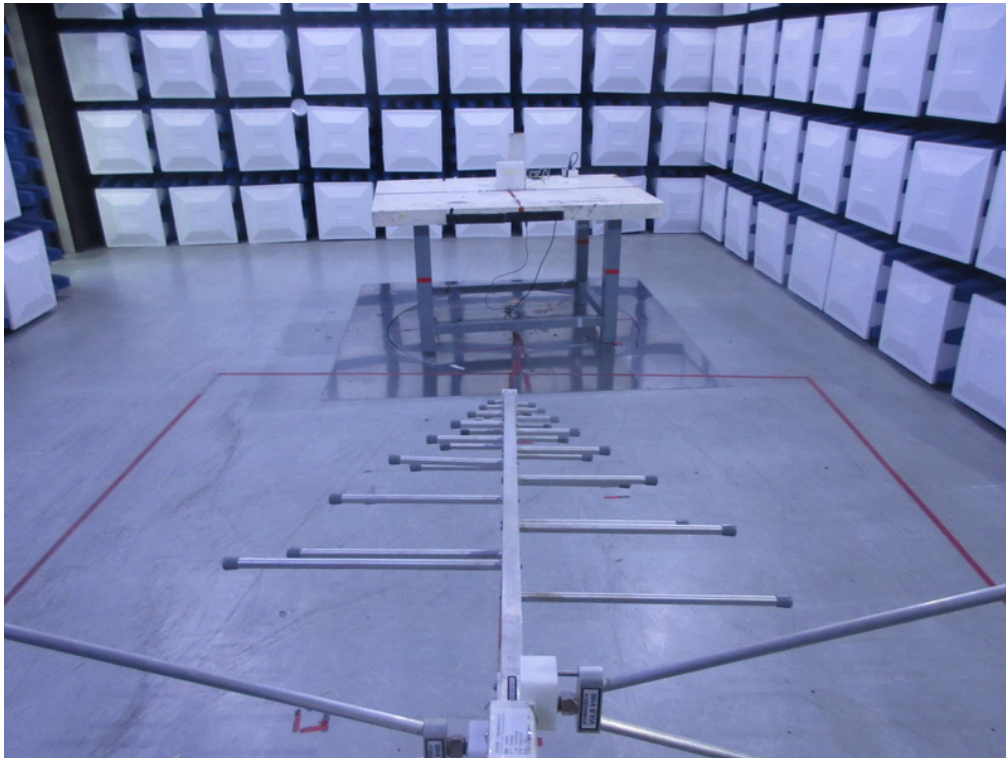
9KHz to 30MHz





## Radiated Measurement Photos

30MHz to 1000MHz



## Radiated Measurement Photos

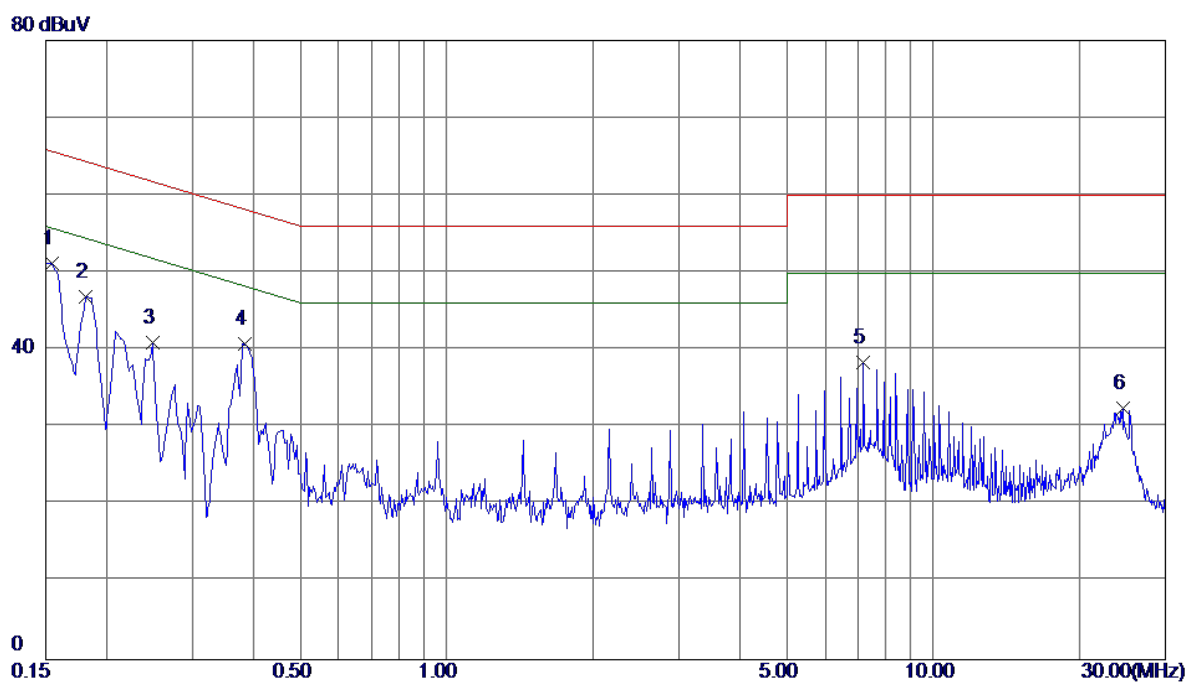
Above 1000MHz



## APPENDIX A - CONDUCTED EMISSION

Test Mode : TX Mode

# Line

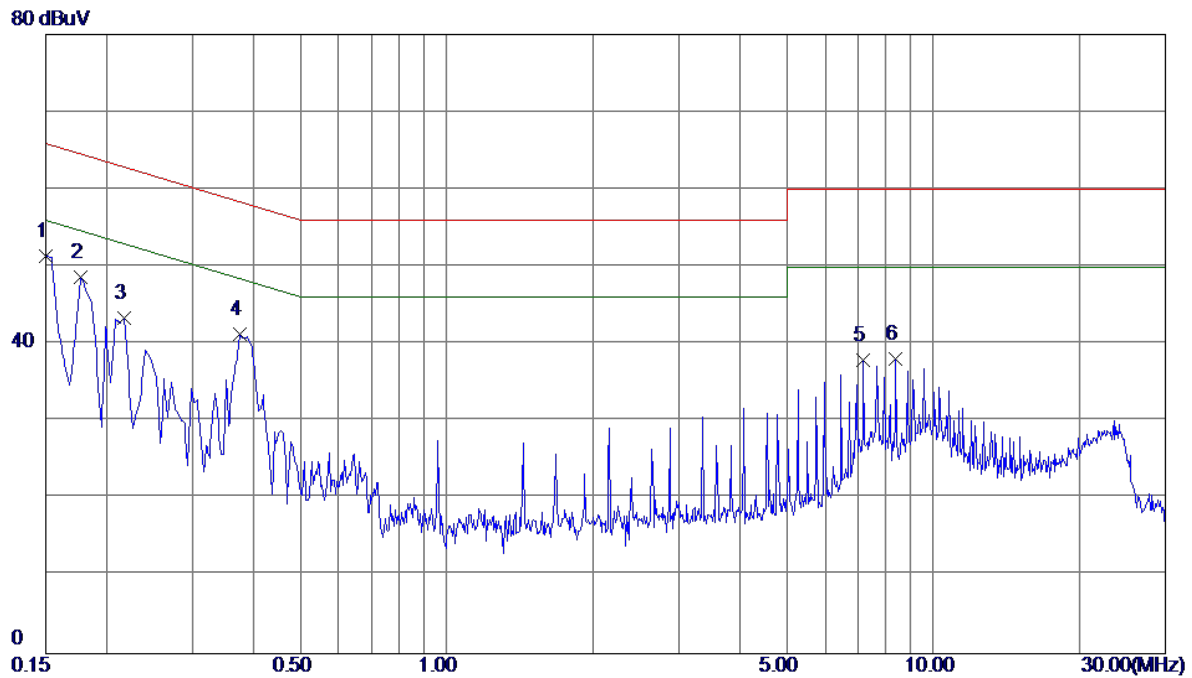


No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1 *	0.1545	41.46	9.79	51.25	65.75	-14.50	Peak	
2	0.1815	37.13	9.77	46.90	64.42	-17.52	Peak	
3	0.2490	31.19	9.76	40.95	61.79	-20.84	Peak	
4	0.3840	30.98	9.79	40.77	58.19	-17.42	Peak	
5	7.1880	28.14	10.20	38.34	60.00	-21.66	Peak	
6	24.5264	21.67	10.78	32.45	60.00	-27.55	Peak	



Test Mode : TX Mode

# Neutral

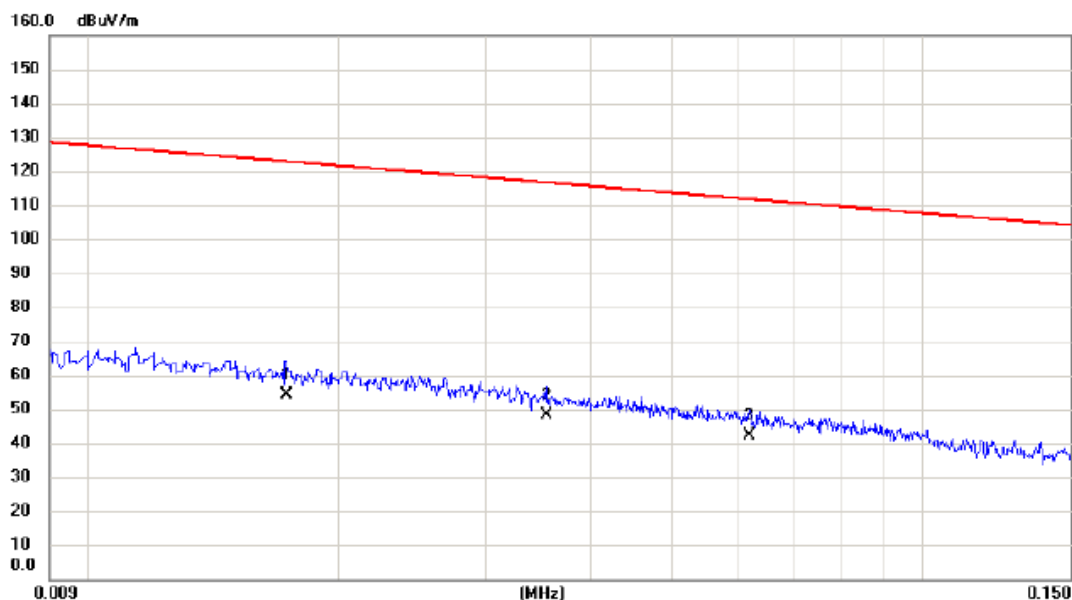


No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1 *	0.1500	41.70	9.68	51.38	66.00	-14.62	Peak	
2	0.1770	39.03	9.68	48.71	64.63	-15.92	Peak	
3	0.2175	33.71	9.68	43.39	62.91	-19.52	Peak	
4	0.3750	31.57	9.69	41.26	58.39	-17.13	Peak	
5	7.1880	27.87	10.12	37.99	60.00	-22.01	Peak	
6	8.3850	27.97	10.18	38.15	60.00	-21.85	Peak	

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

Test Mode: TX B MODE CHANNEL 01

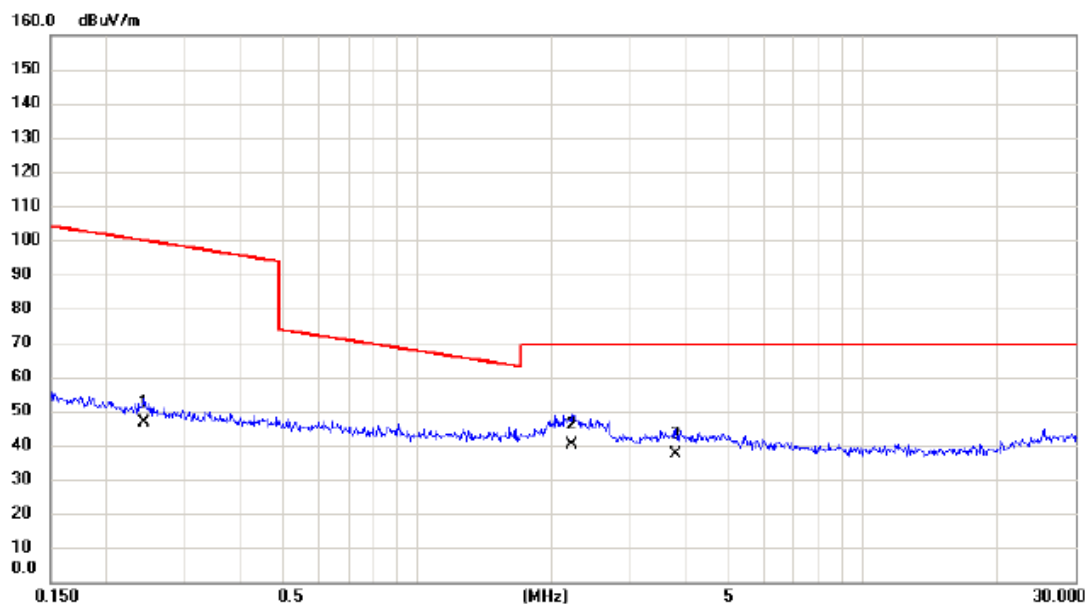
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.0173	34.15	19.97	54.12	122.84	-68.72	AVG	
2	*	0.0354	28.94	19.16	48.10	116.62	-68.52	AVG	
3		0.0620	23.67	18.49	42.16	111.76	-69.60	AVG	

Test Mode: TX B MODE CHANNEL 01

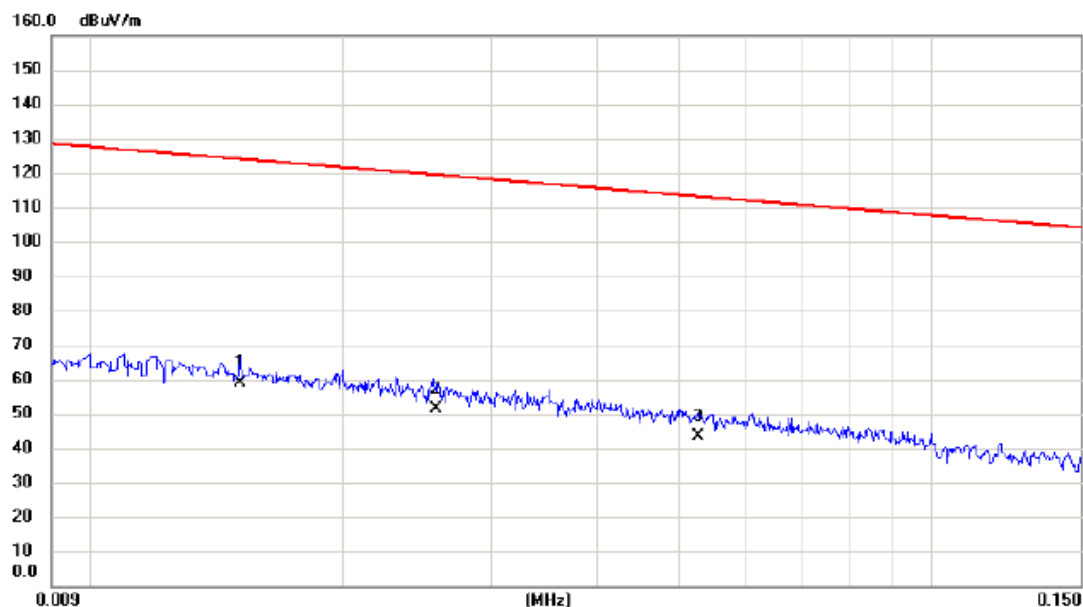
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.2442	29.86	16.68	46.54	99.85	-53.31	AVG	
2	*	2.2250	24.76	15.44	40.20	69.54	-29.34	QP	
3		3.7994	22.44	15.01	37.45	69.54	-32.09	QP	

Test Mode: TX B MODE CHANNEL 01

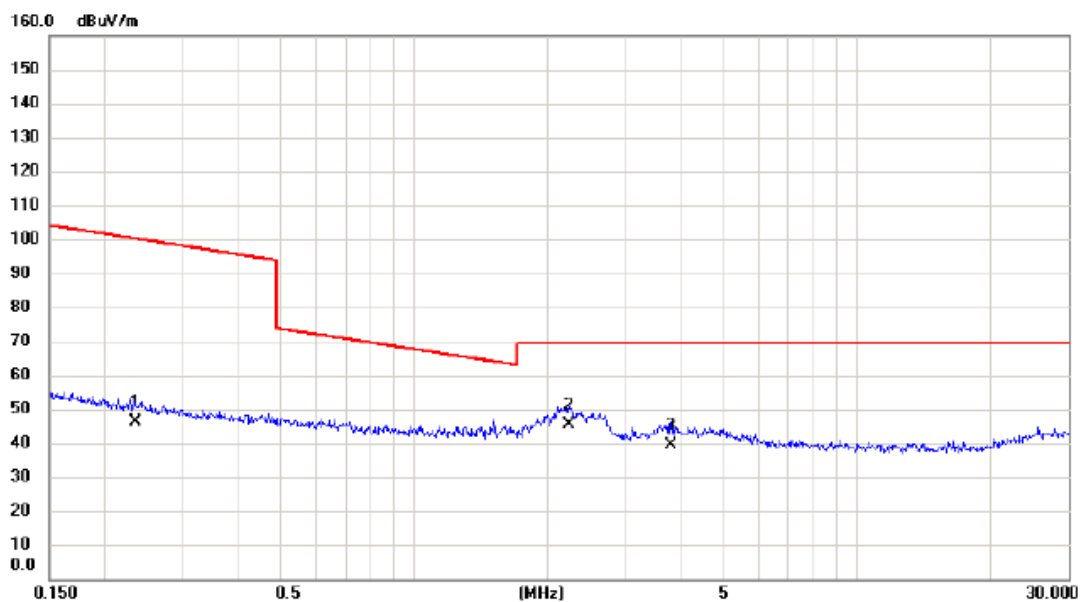
Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	0.0151	38.64	20.26	58.90	124.03	-65.13	AVG	
2		0.0258	31.94	19.45	51.39	119.37	-67.98	AVG	
3		0.0528	24.63	18.66	43.29	113.15	-69.86	AVG	

Test Mode: TX B MODE CHANNEL 01

Ant 90°

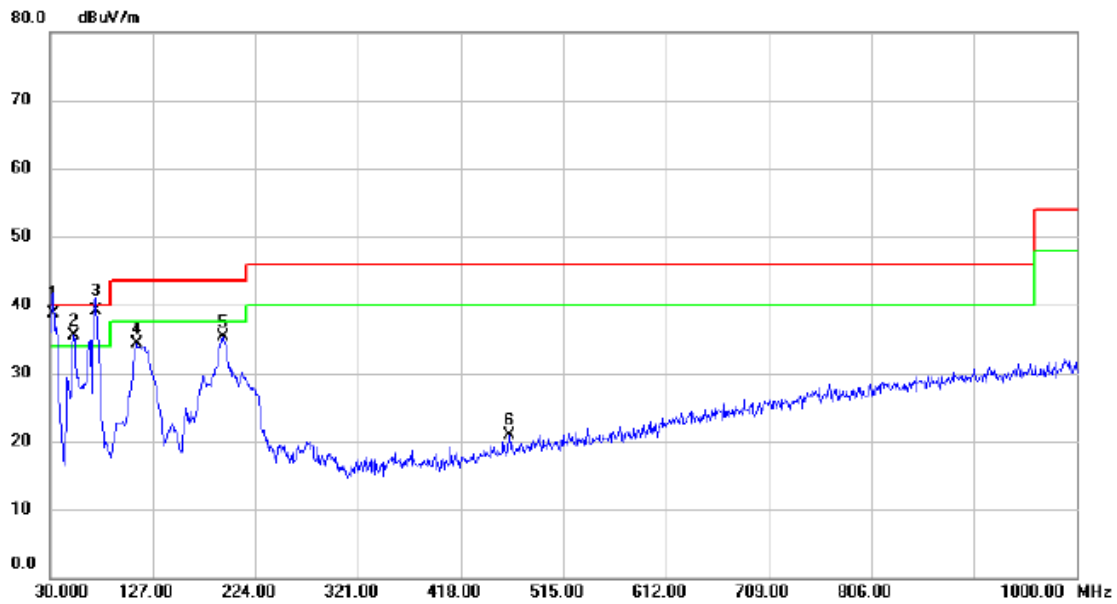


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.2341	29.46	16.70	46.16	100.22	-54.06	AVG	
2	*	2.2367	29.86	15.44	45.30	69.54	-24.24	QP	
3		3.7994	24.57	15.01	39.58	69.54	-29.96	QP	

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

Test Mode: TX B MODE CHANNEL 01

Vertical



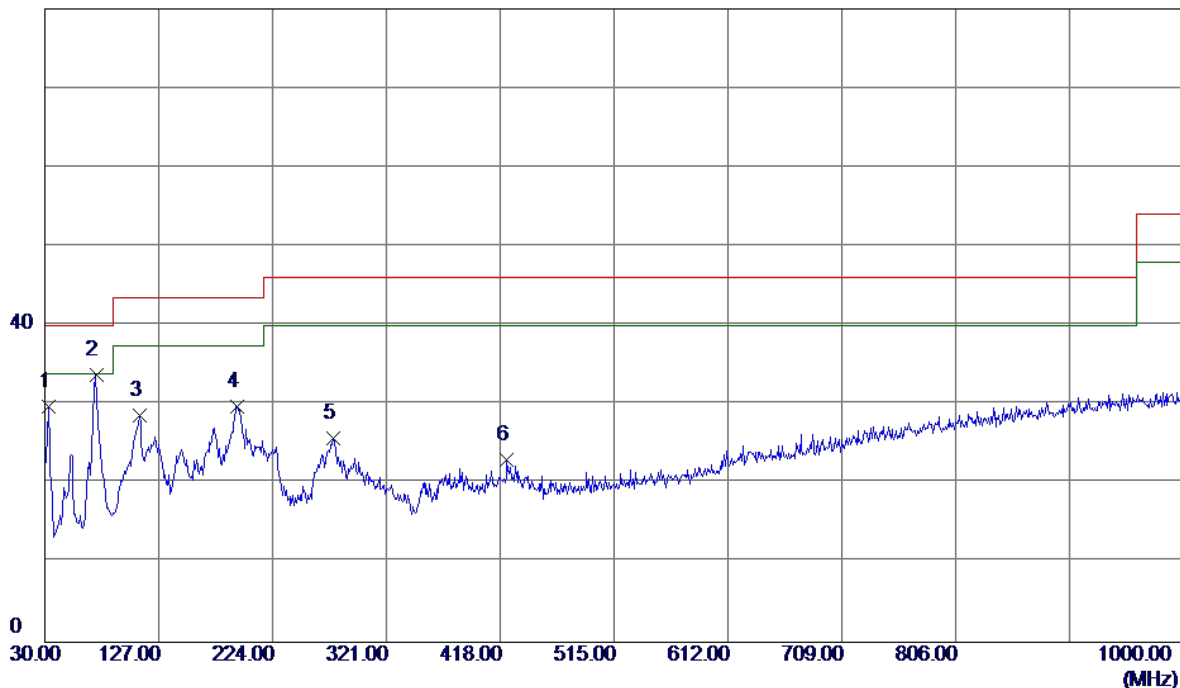
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	!	32.910	53.56	-14.89	38.67	40.00	-1.33	QP	
2	!	52.310	49.30	-13.79	35.51	40.00	-4.49	peak	
3	*	72.680	55.91	-16.82	39.09	40.00	-0.91	QP	
4		112.450	50.26	-16.00	34.26	43.50	-9.24	peak	
5		192.960	48.36	-13.12	35.24	43.50	-8.26	peak	
6		463.590	30.56	-9.61	20.95	46.00	-25.05	peak	



Test Mode: TX B MODE CHANNEL 01

# Horizontal

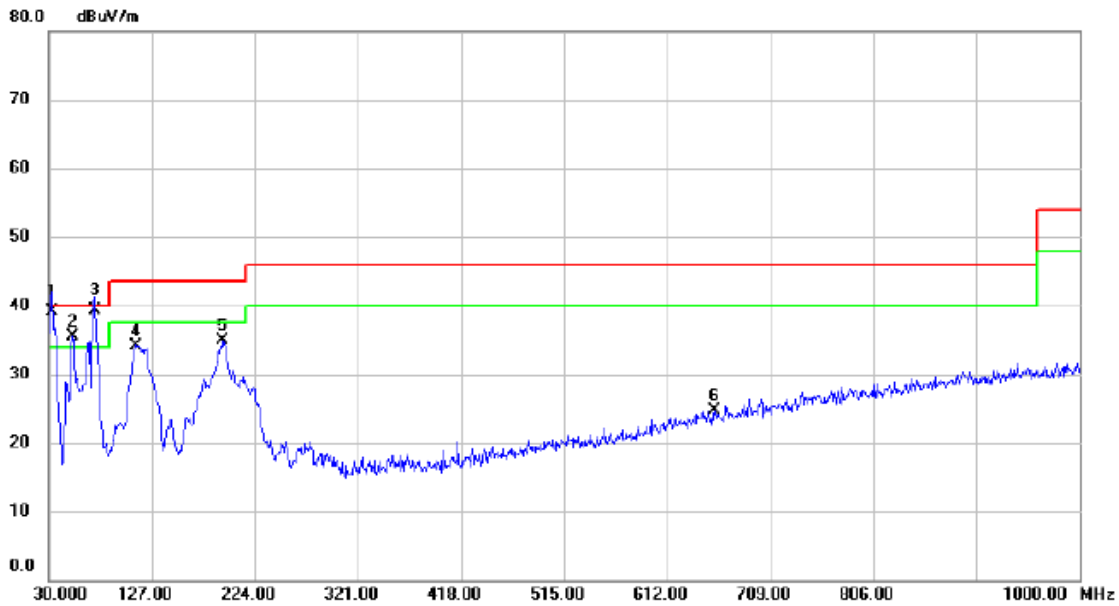
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	32.9100	44.60	-14.89	29.71	40.00	-10.29	Peak	
2 *	73.6500	50.71	-16.93	33.78	40.00	-6.22	Peak	
3	110.5100	44.81	-16.15	28.66	43.50	-14.84	Peak	
4	193.9299	43.03	-13.20	29.83	43.50	-13.67	Peak	
5	275.4100	40.96	-15.26	25.70	46.00	-20.30	Peak	
6	423.8200	33.68	-10.68	23.00	46.00	-23.00	Peak	

Test Mode: TX B MODE CHANNEL 06

Vertical

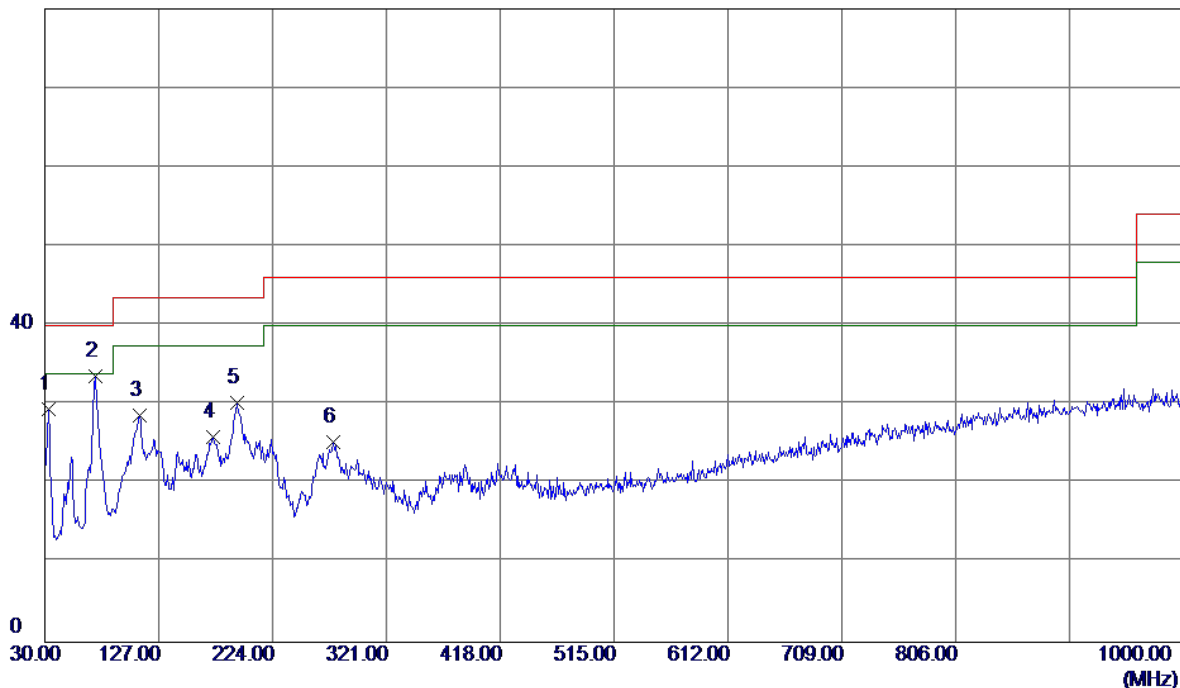


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	!	32.910	54.09	-14.89	39.20	40.00	-0.80	QP	
2	!	52.310	49.29	-13.79	35.50	40.00	-4.50	peak	
3	*	72.680	56.07	-16.82	39.25	40.00	-0.75	QP	
4		112.450	50.20	-16.00	34.20	43.50	-9.30	peak	
5		193.930	48.15	-13.19	34.96	43.50	-8.54	peak	
6		656.620	30.06	-5.27	24.79	46.00	-21.21	peak	

Test Mode: TX B MODE CHANNEL 06

# Horizontal

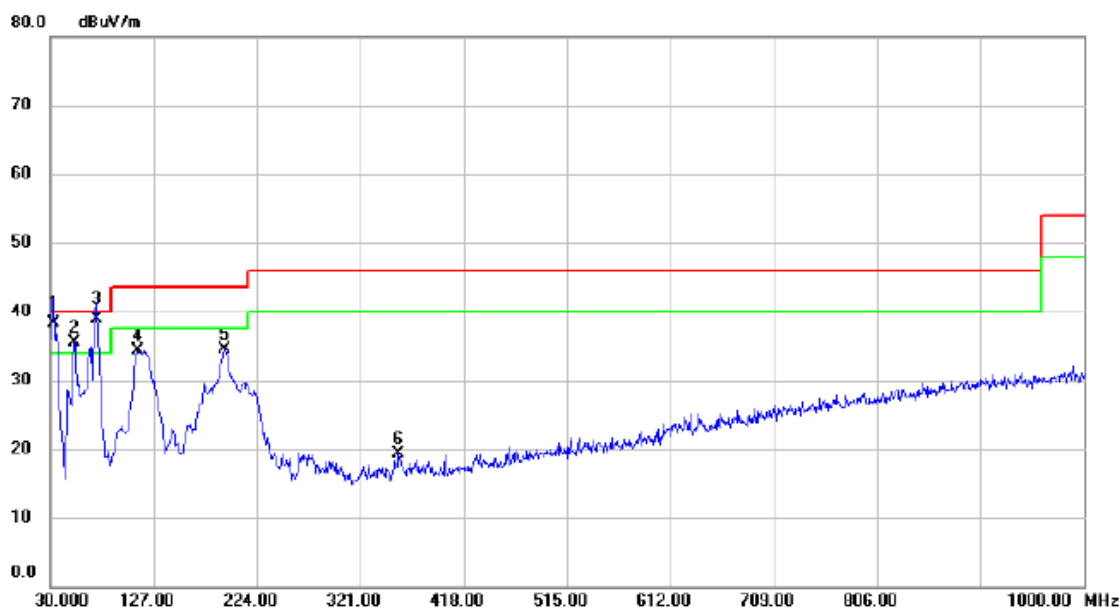
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	32.9100	44.26	-14.89	29.37	40.00	-10.63	Peak	
2 *	72.6800	50.46	-16.82	33.64	40.00	-6.36	Peak	
3	110.5100	44.72	-16.15	28.57	43.50	-14.93	Peak	
4	173.5600	38.15	-12.23	25.92	43.50	-17.58	Peak	
5	193.9299	43.49	-13.20	30.29	43.50	-13.21	Peak	
6	275.4100	40.50	-15.26	25.24	46.00	-20.76	Peak	

Test Mode: TX B MODE CHANNEL 11

Vertical

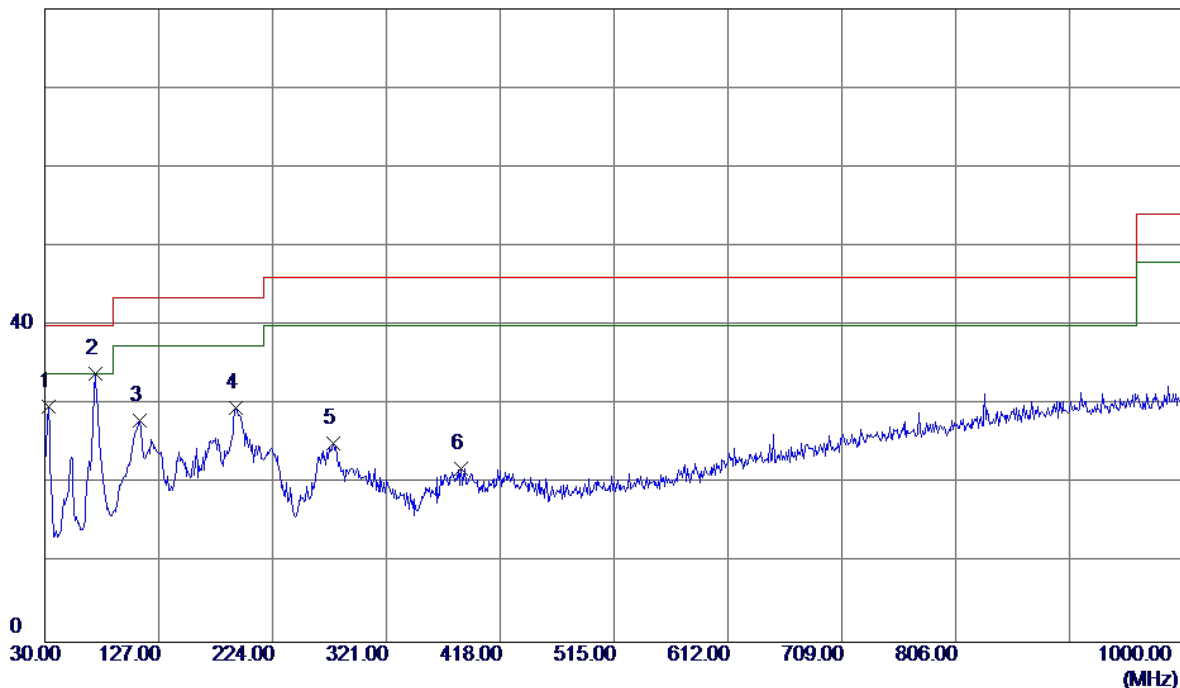


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	!	32.910	53.13	-14.89	38.24	40.00	-1.76	QP	
2	!	52.310	49.32	-13.79	35.53	40.00	-4.47	peak	
3	*	72.680	55.75	-16.82	38.93	40.00	-1.07	QP	
4		111.480	50.38	-16.08	34.30	43.50	-9.20	peak	
5		193.930	47.62	-13.19	34.43	43.50	-9.07	peak	
6		356.890	31.20	-11.87	19.33	46.00	-26.67	peak	

Test Mode: TX B MODE CHANNEL 11

# Horizontal

80 dBuV/m

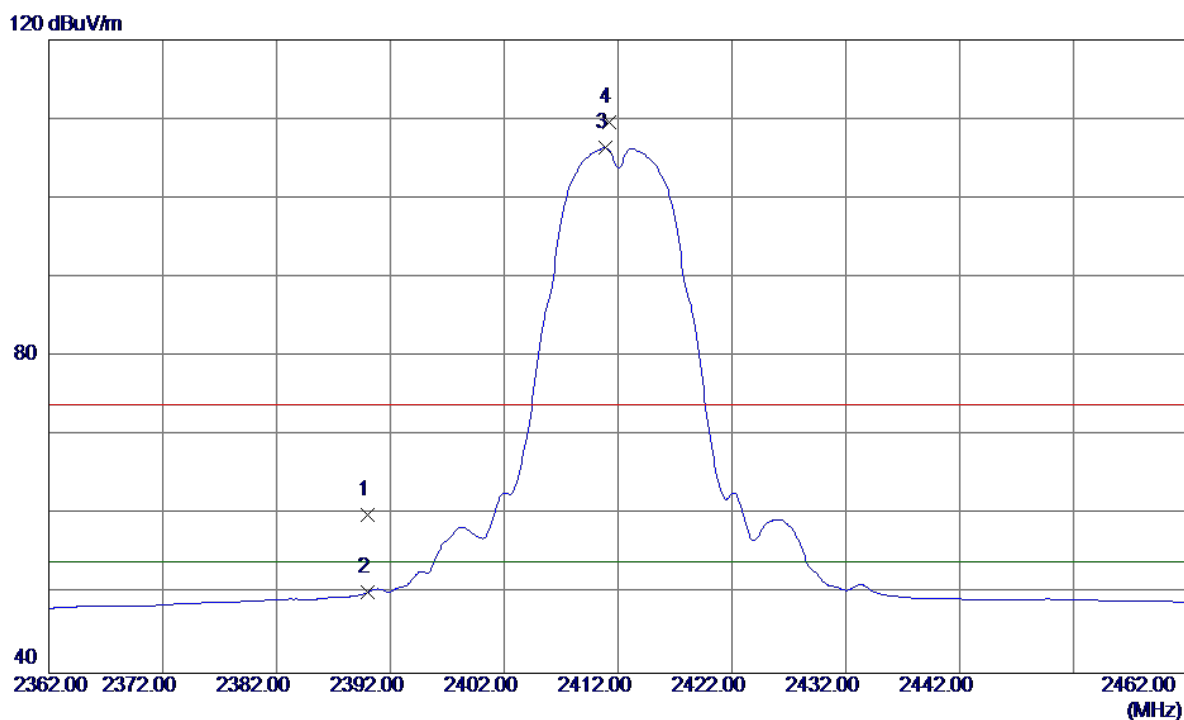


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	32.9100	44.65	-14.89	29.76	40.00	-10.24	Peak	
2 *	72.6800	50.71	-16.82	33.89	40.00	-6.11	Peak	
3	110.5100	44.08	-16.15	27.93	43.50	-15.57	Peak	
4	192.9600	42.64	-13.11	29.53	43.50	-13.97	Peak	
5	275.4100	40.38	-15.26	25.12	46.00	-20.88	Peak	
6	385.0200	33.48	-11.54	21.94	46.00	-24.06	Peak	

## APPENDIX D - RADIATED EMISSION (ABOVE 1000MHZ)

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

### Vertical

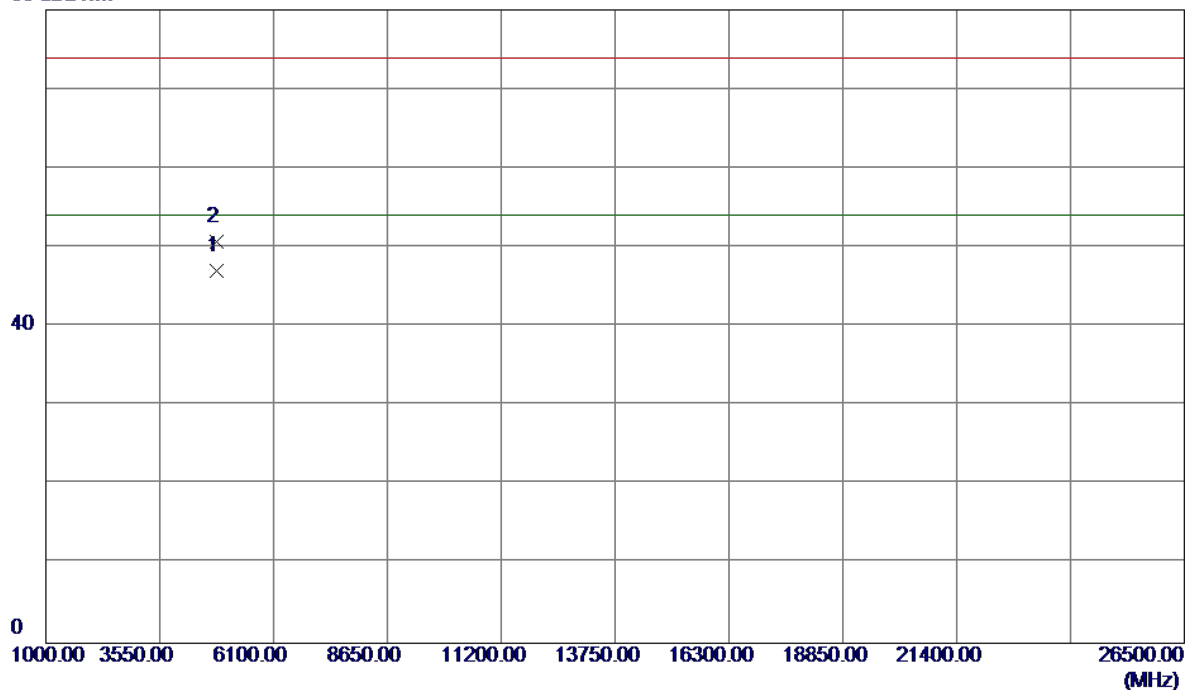


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	26.91	33.06	59.97	74.00	-14.03	Peak	
2	2390.0000	17.14	33.06	50.20	54.00	-3.80	AVG	
3 *	2410.9000	73.22	33.13	106.35	54.00	52.35	AVG	No Limit
4	2411.2000	76.43	33.14	109.57	74.00	35.57	Peak	No Limit

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

### Vertical

80 dBuV/m

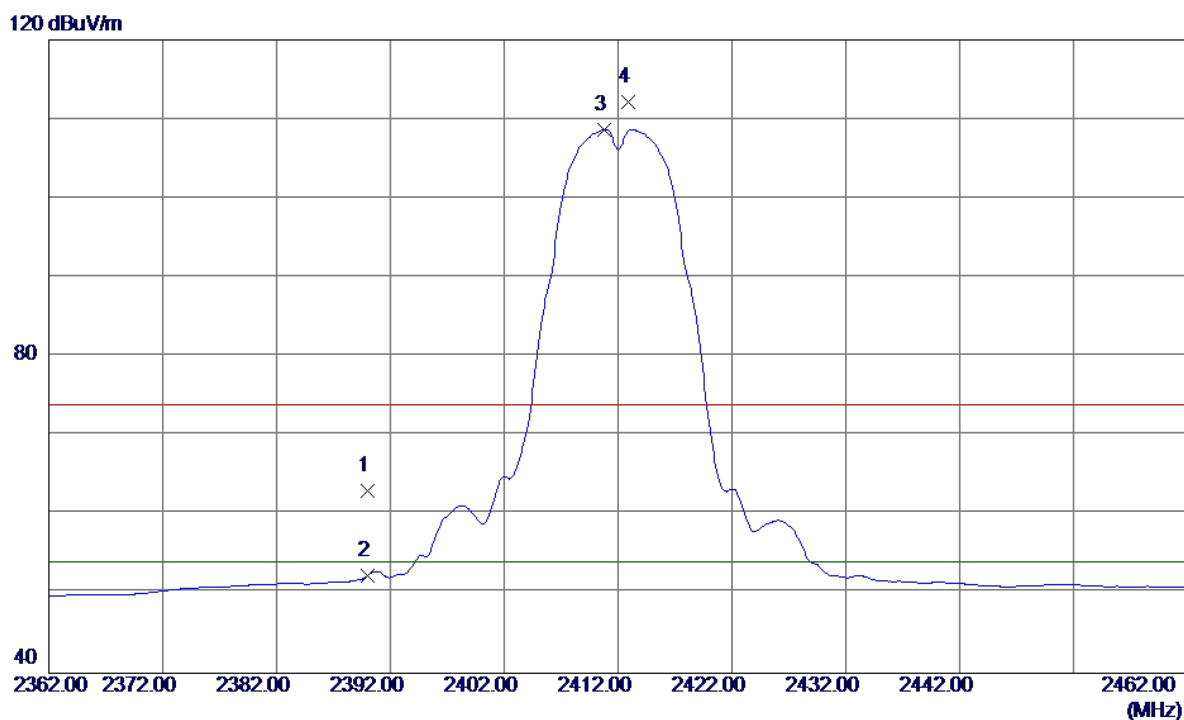


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4823.9160	40.77	6.32	47.09	54.00	-6.91	AVG	
2	4823.9260	44.33	6.32	50.65	74.00	-23.35	Peak	



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

### Horizontal

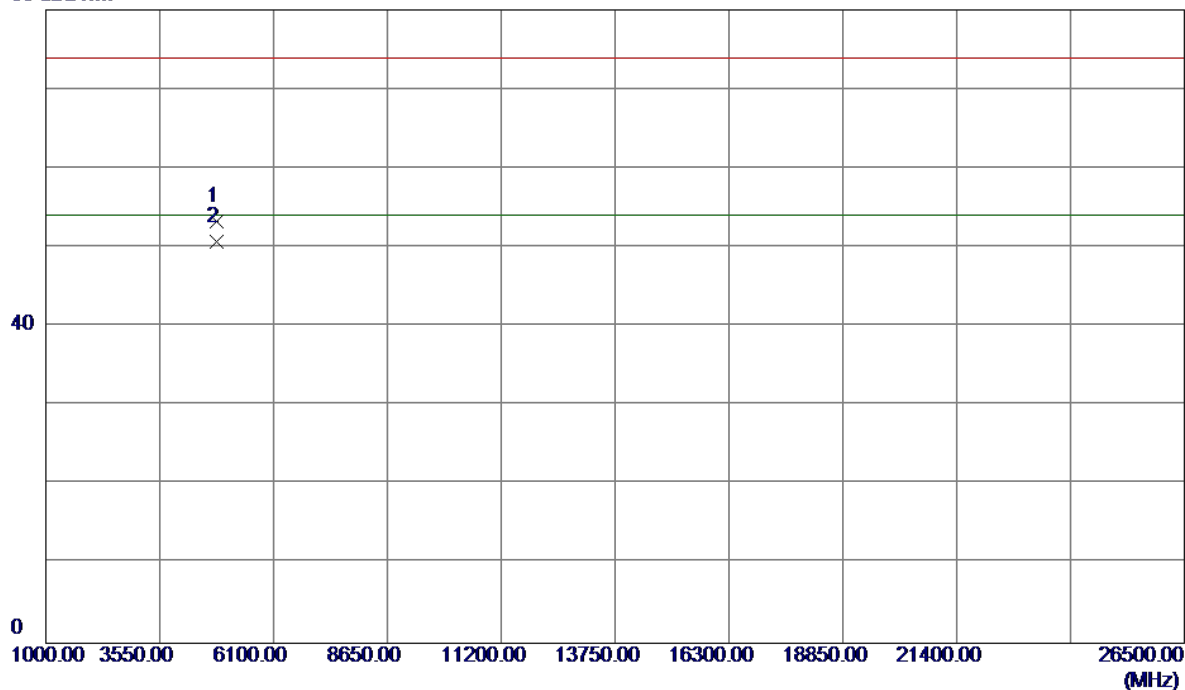


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	29.92	33.06	62.98	74.00	-11.02	Peak	
2	2390.0000	19.28	33.06	52.34	54.00	-1.66	AVG	
3 *	2410.8000	75.57	33.13	108.70	54.00	54.70	AVG	No Limit
4	2412.9000	79.01	33.14	112.15	74.00	38.15	Peak	No Limit

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

### Horizontal

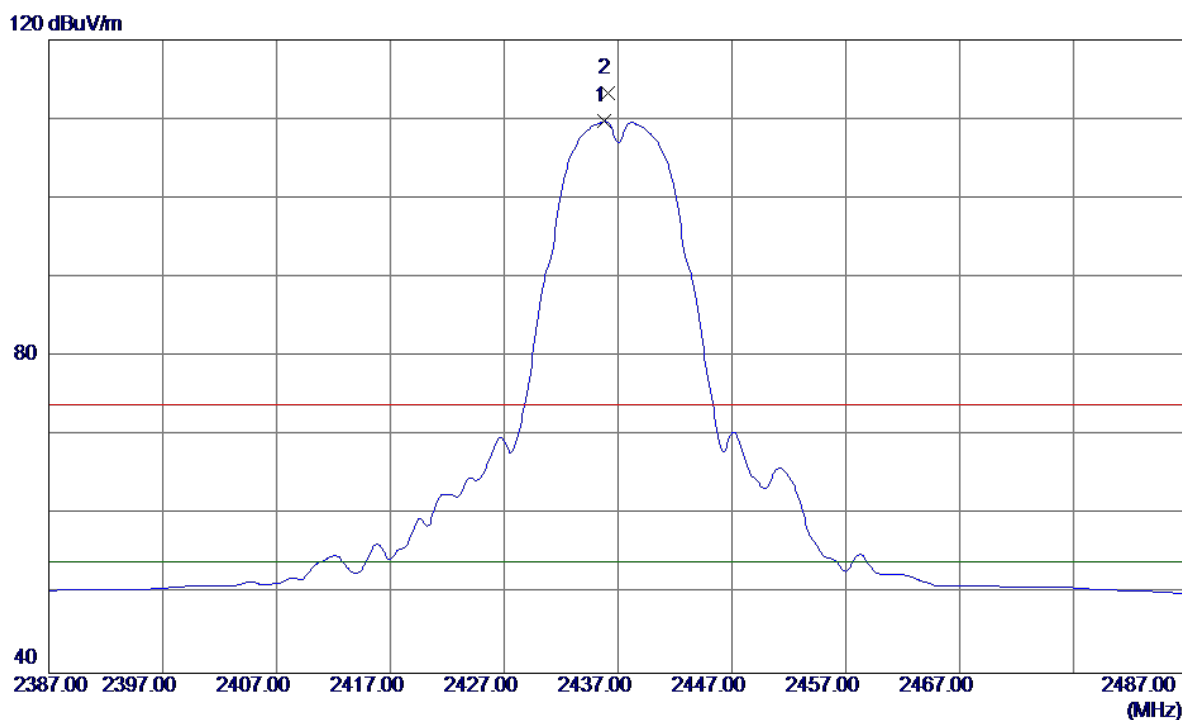
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4823.9290	47.03	6.32	53.35	74.00	-20.65	Peak	
2 *	4823.9490	44.41	6.32	50.73	54.00	-3.27	AVG	

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

# Vertical

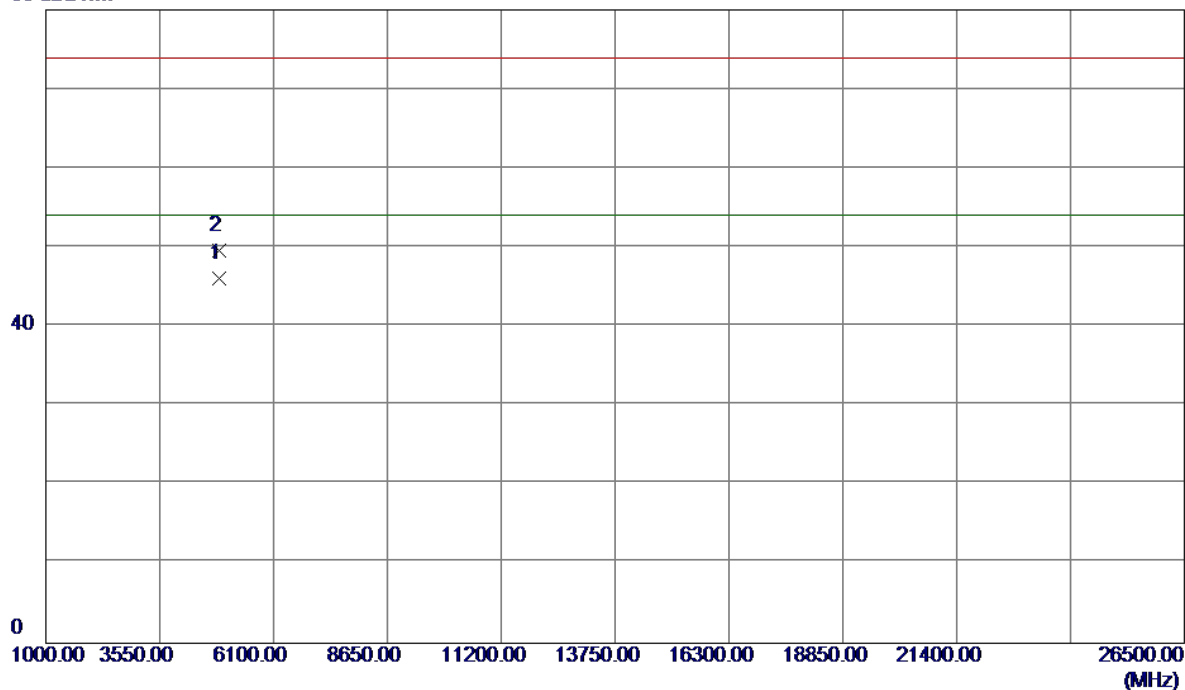


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2435.8000	76.46	33.23	109.69	54.00	55.69	AVG	No Limit
2	2436.1000	80.05	33.23	113.28	74.00	39.28	Peak	No Limit

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

### Vertical

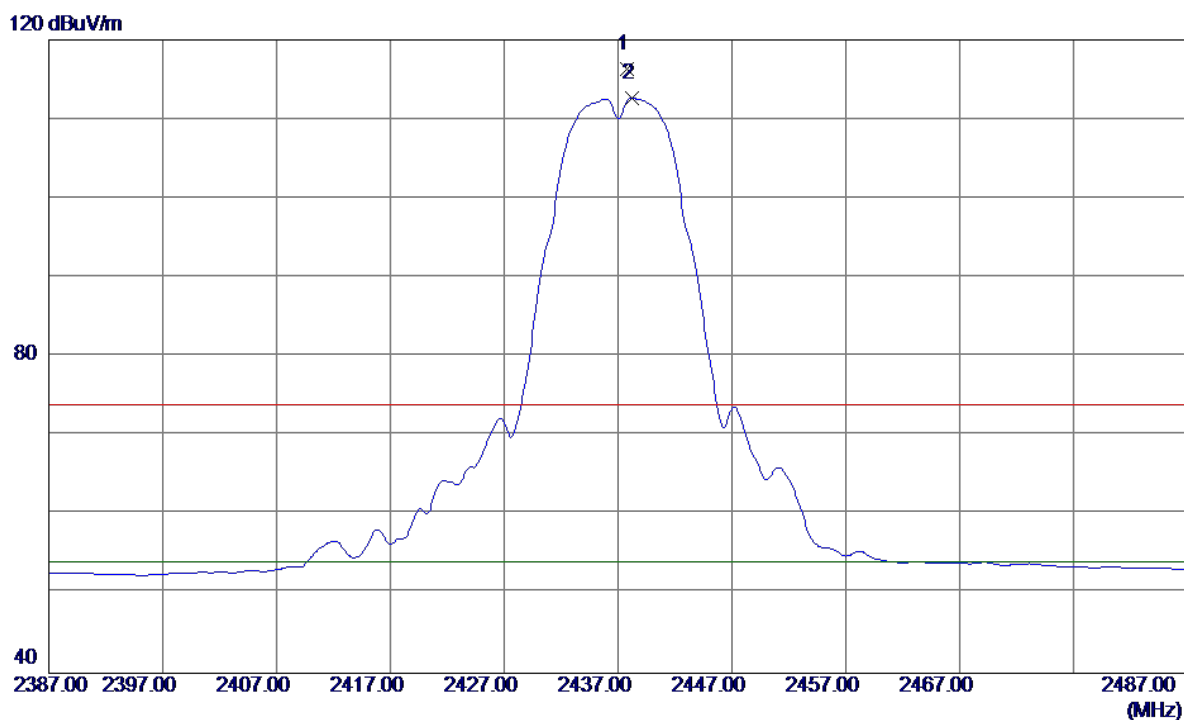
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4873.9240	39.70	6.44	46.14	54.00	-7.86	AVG	
2	4873.9960	43.20	6.44	49.64	74.00	-24.36	Peak	

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

### Horizontal

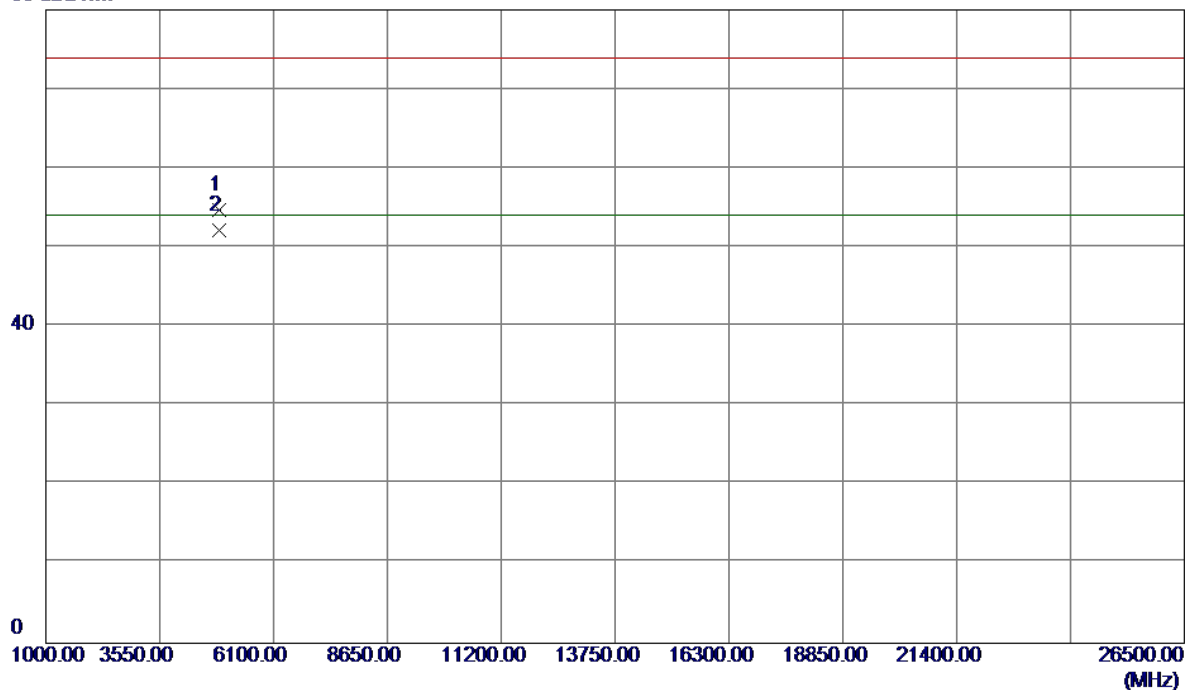


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2437.8000	83.13	33.24	116.37	74.00	42.37	Peak	No Limit
2 *	2438.2000	79.44	33.24	112.68	54.00	58.68	AVG	No Limit

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

### Horizontal

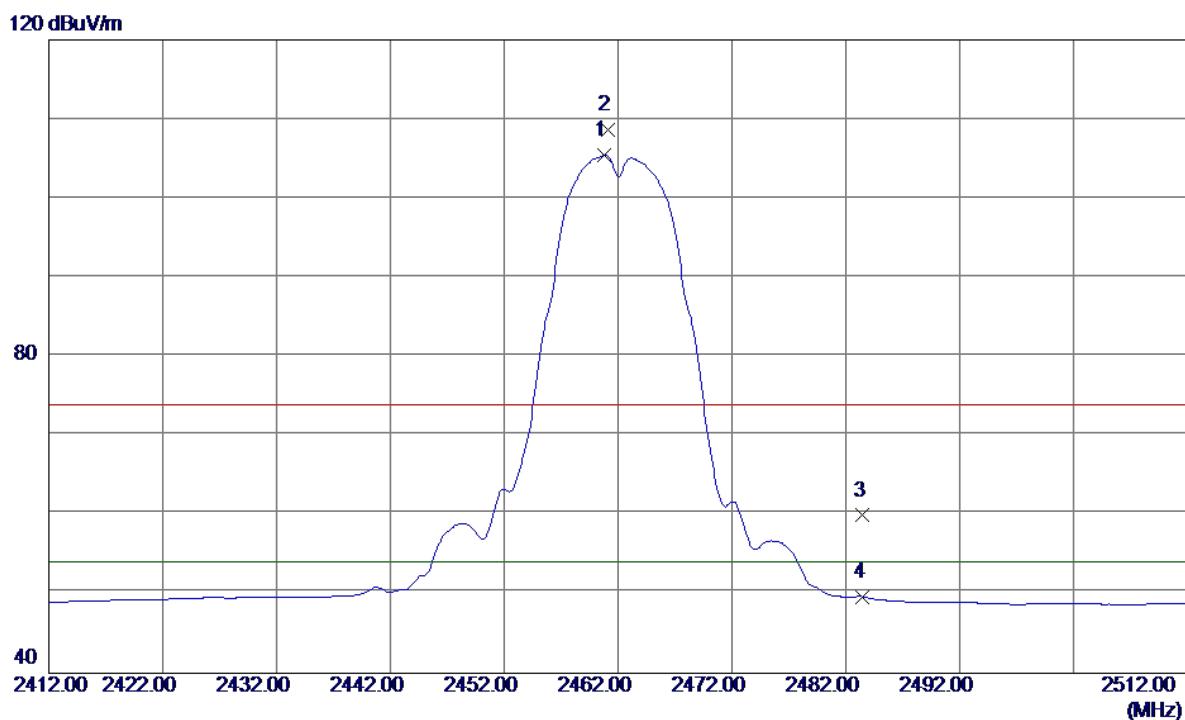
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4873.8720	48.35	6.44	54.79	74.00	-19.21	Peak	
2 *	4873.9270	45.77	6.44	52.21	54.00	-1.79	AVG	

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

# Vertical

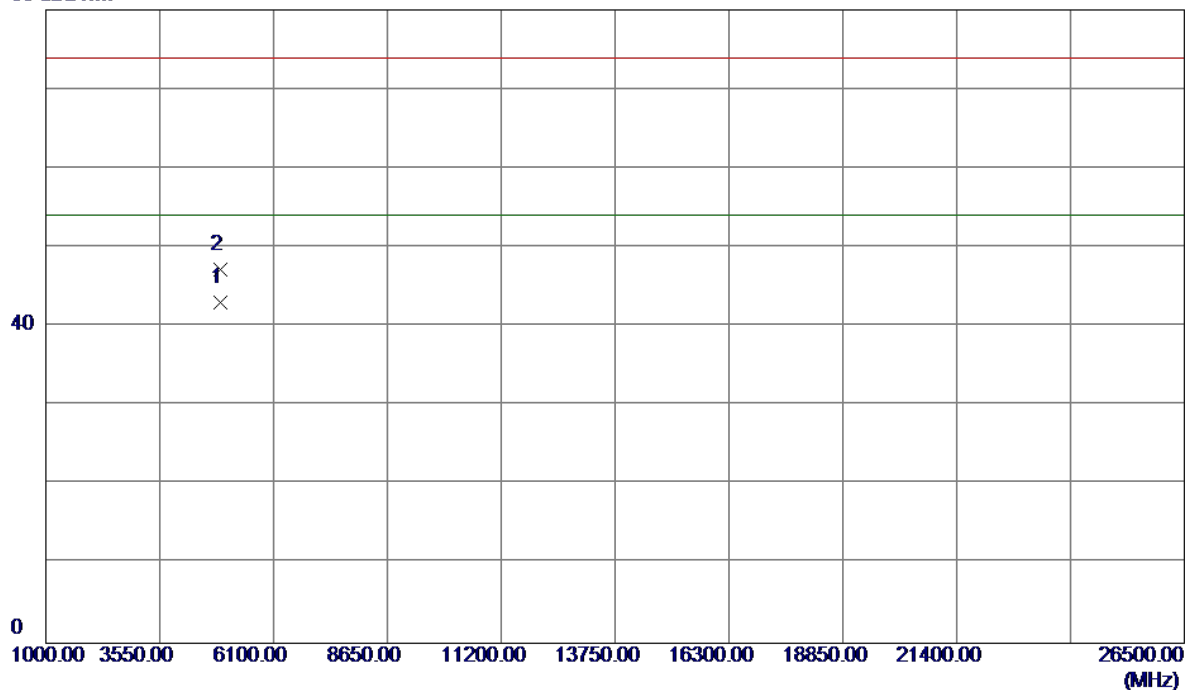


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2460.8000	72.11	33.32	105.43	54.00	51.43	AVG	No Limit
2	2461.1000	75.38	33.32	108.70	74.00	34.70	Peak	No Limit
3	2483.5000	26.51	33.41	59.92	74.00	-14.08	Peak	
4	2483.5000	16.24	33.41	49.65	54.00	-4.35	AVG	

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

### Vertical

80 dBuV/m

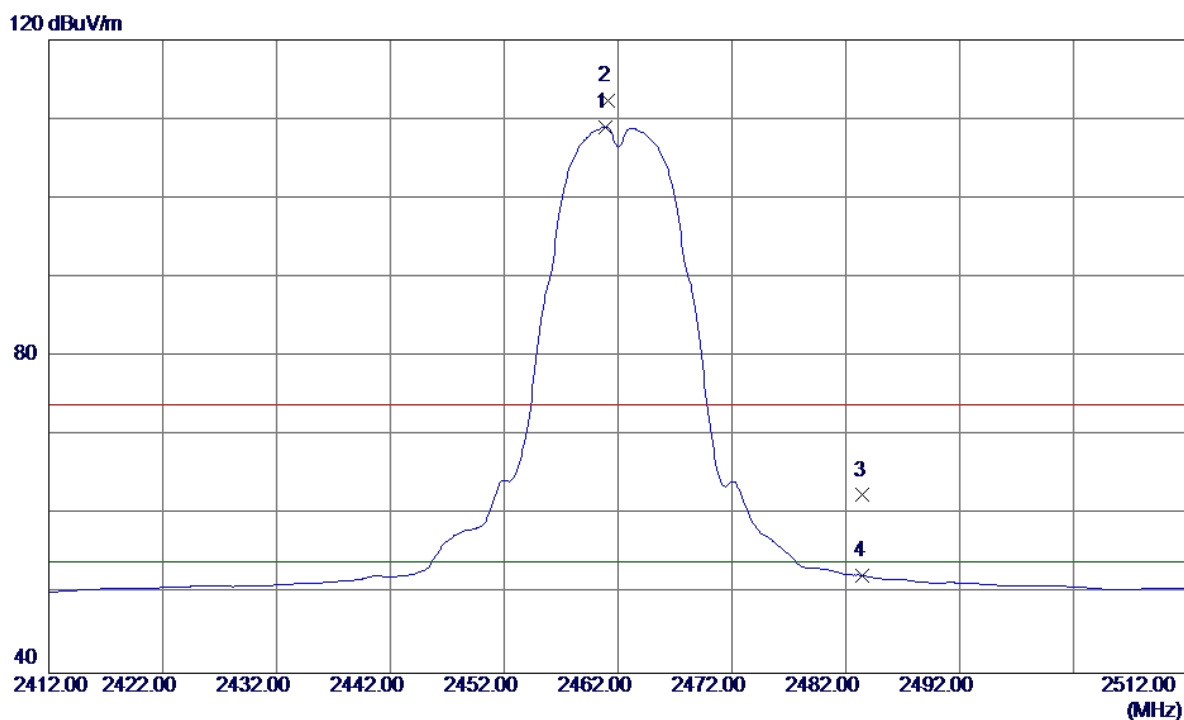


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4923.8800	36.46	6.57	43.03	54.00	-10.97	AVG	
2	4924.0320	40.62	6.57	47.19	74.00	-26.81	Peak	



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

### Horizontal

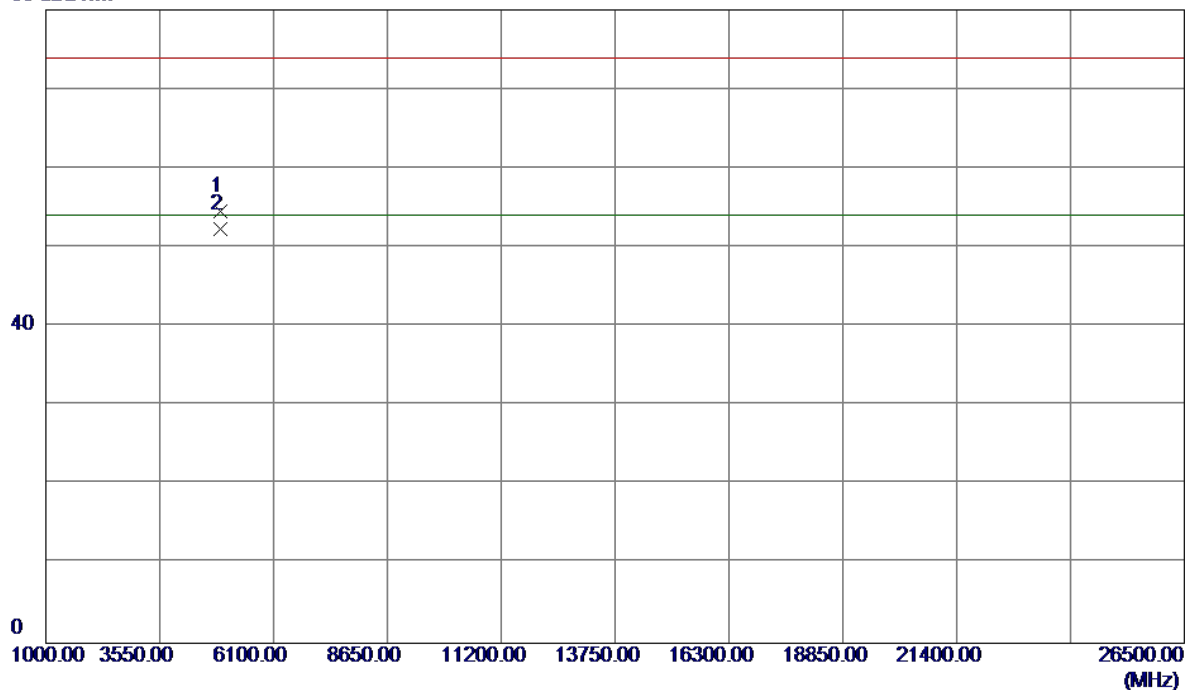


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2460.9000	75.67	33.32	108.99	54.00	54.99	AVG	No Limit
2	2461.1000	78.94	33.32	112.26	74.00	38.26	Peak	No Limit
3	2483.5000	29.07	33.41	62.48	74.00	-11.52	Peak	
4	2483.5000	18.93	33.41	52.34	54.00	-1.66	AVG	

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

### Horizontal

80 dBuV/m

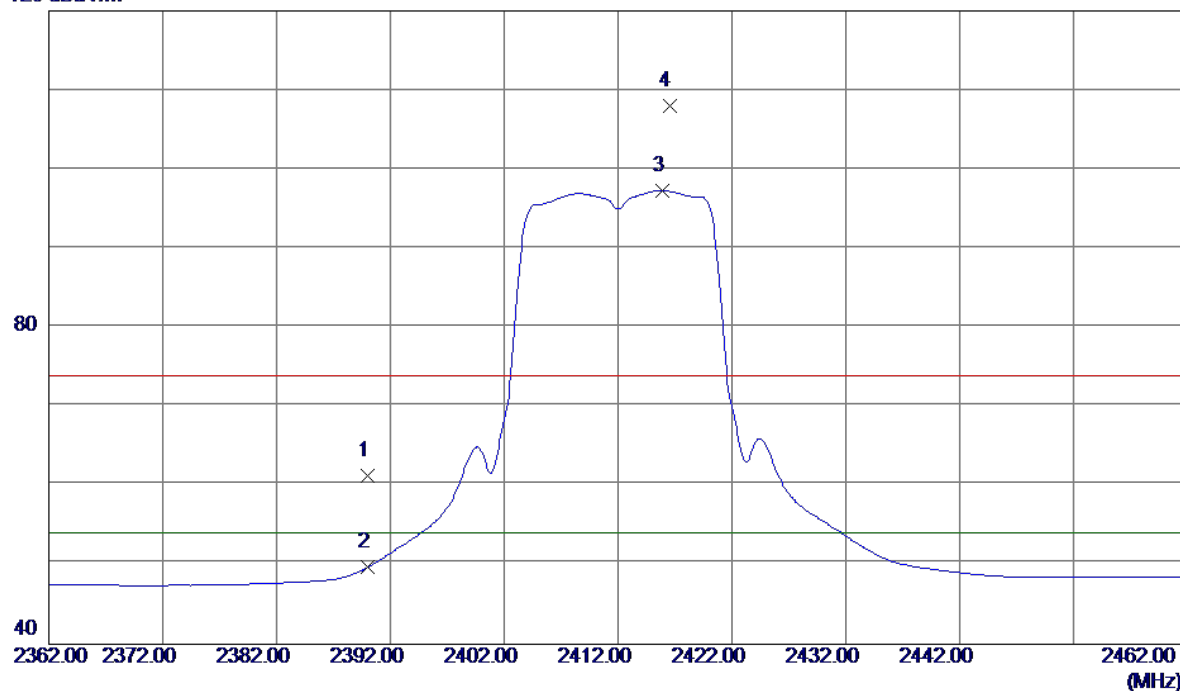


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4923.8740	47.98	6.57	54.55	74.00	-19.45	Peak	
2 *	4923.9100	45.80	6.57	52.37	54.00	-1.63	AVG	

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

### Vertical

120 dBuV/m

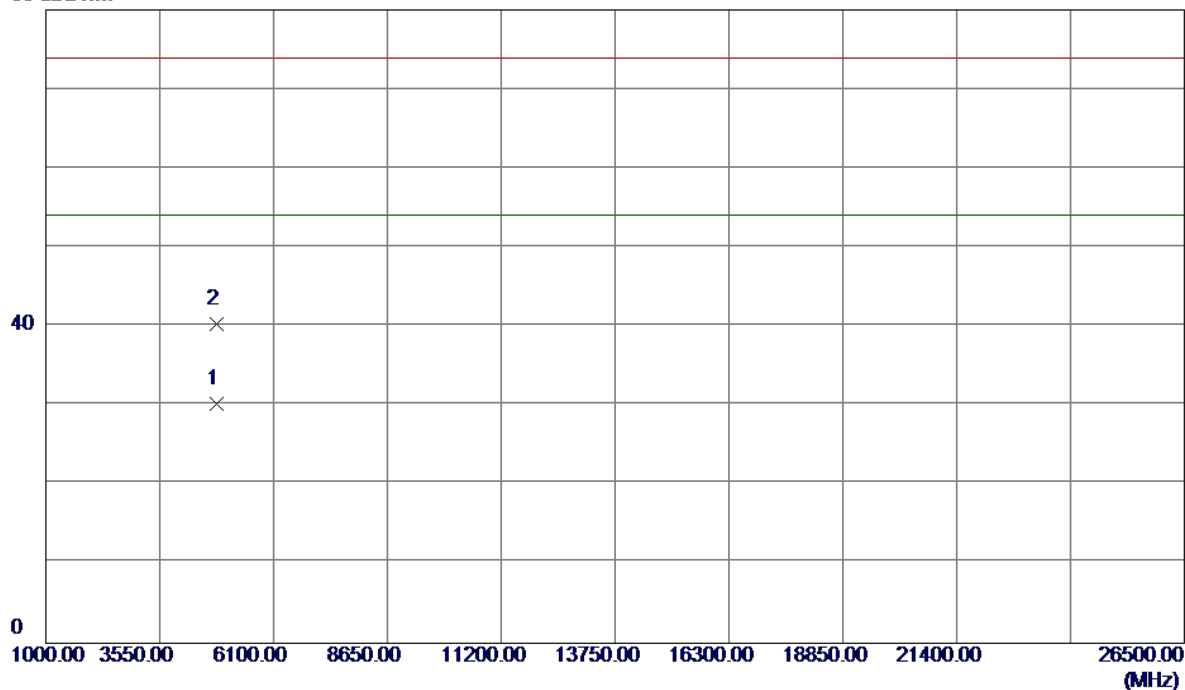


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	28.22	33.06	61.28	74.00	-12.72	Peak	
2	2390.0000	16.66	33.06	49.72	54.00	-4.28	AVG	
3 *	2415.9000	64.15	33.15	97.30	54.00	43.30	AVG	No Limit
4	2416.5000	74.79	33.16	107.95	74.00	33.95	Peak	No Limit

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

### Vertical

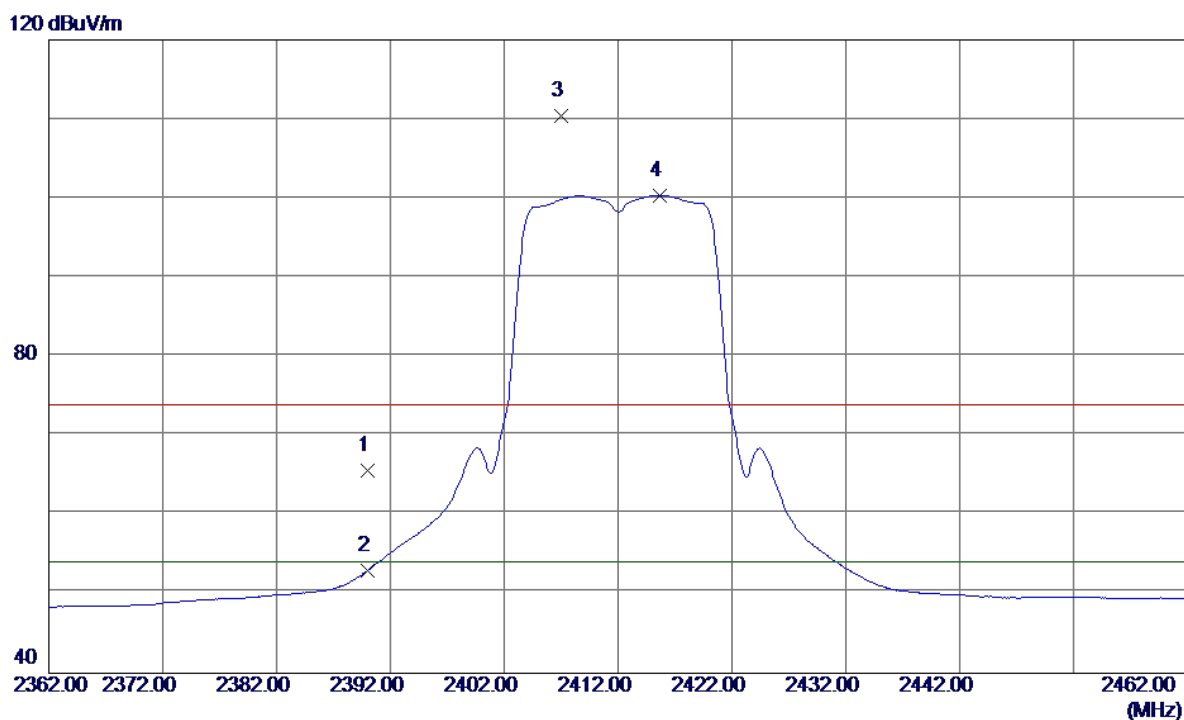
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4823.5500	23.90	6.32	30.22	54.00	-23.78	AVG	
2	4826.2500	33.93	6.32	40.25	74.00	-33.75	Peak	

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

### Horizontal

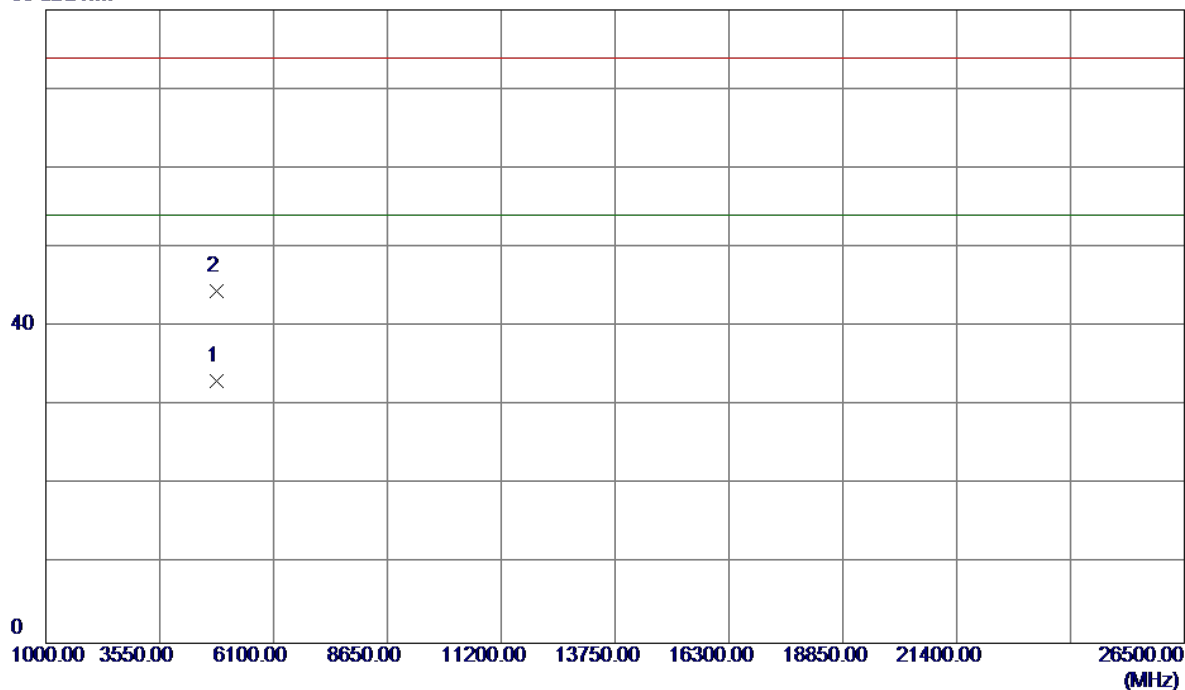


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	32.57	33.06	65.63	74.00	-8.37	Peak	
2	2390.0000	19.92	33.06	52.98	54.00	-1.02	AVG	
3	2407.0000	77.35	33.12	110.47	74.00	36.47	Peak	No Limit
4 *	2415.7000	67.22	33.15	100.37	54.00	46.37	AVG	No Limit

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

### Horizontal

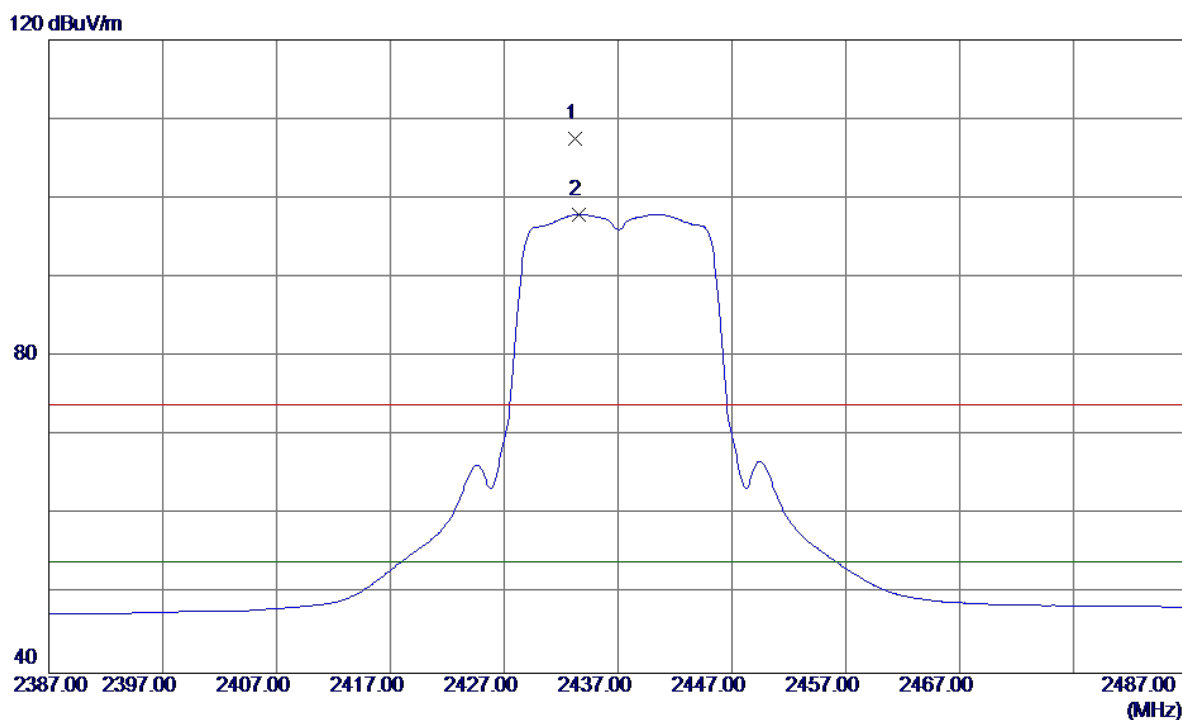
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4824.4800	26.79	6.32	33.11	54.00	-20.89	AVG	
2	4826.6800	38.18	6.32	44.50	74.00	-29.50	Peak	

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

### Vertical

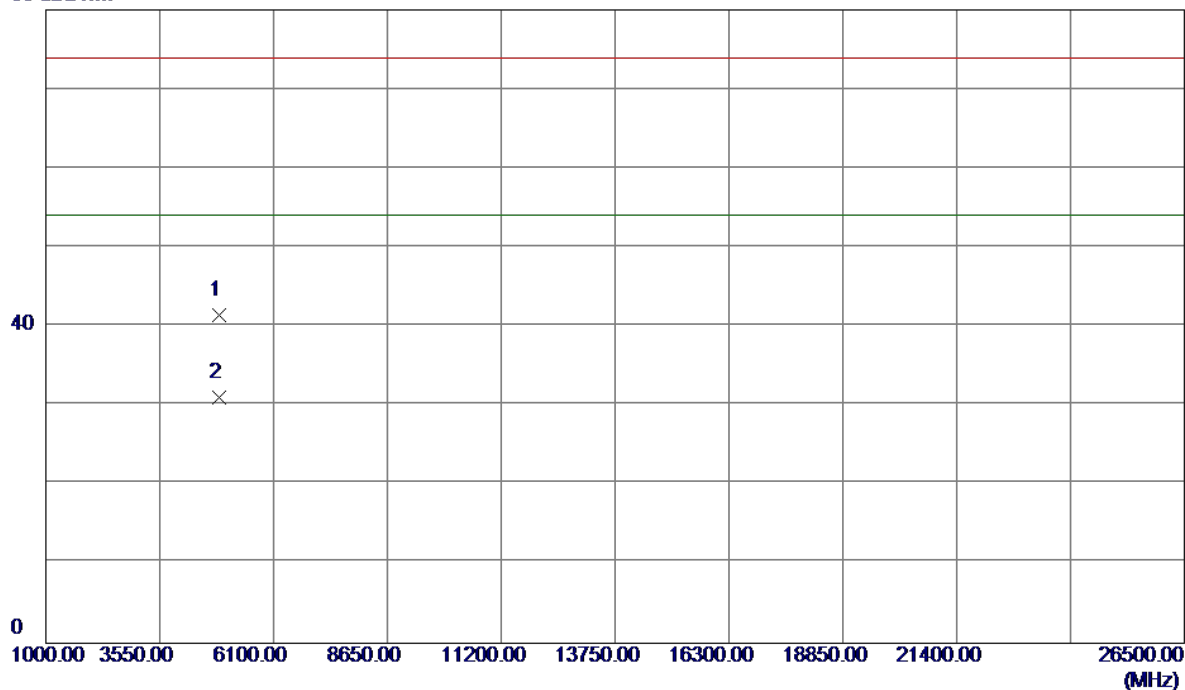


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2433.2000	74.36	33.22	107.58	74.00	33.58	Peak	No Limit
2 *	2433.6000	64.72	33.22	97.94	54.00	43.94	AVG	No Limit

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

### Vertical

80 dBuV/m

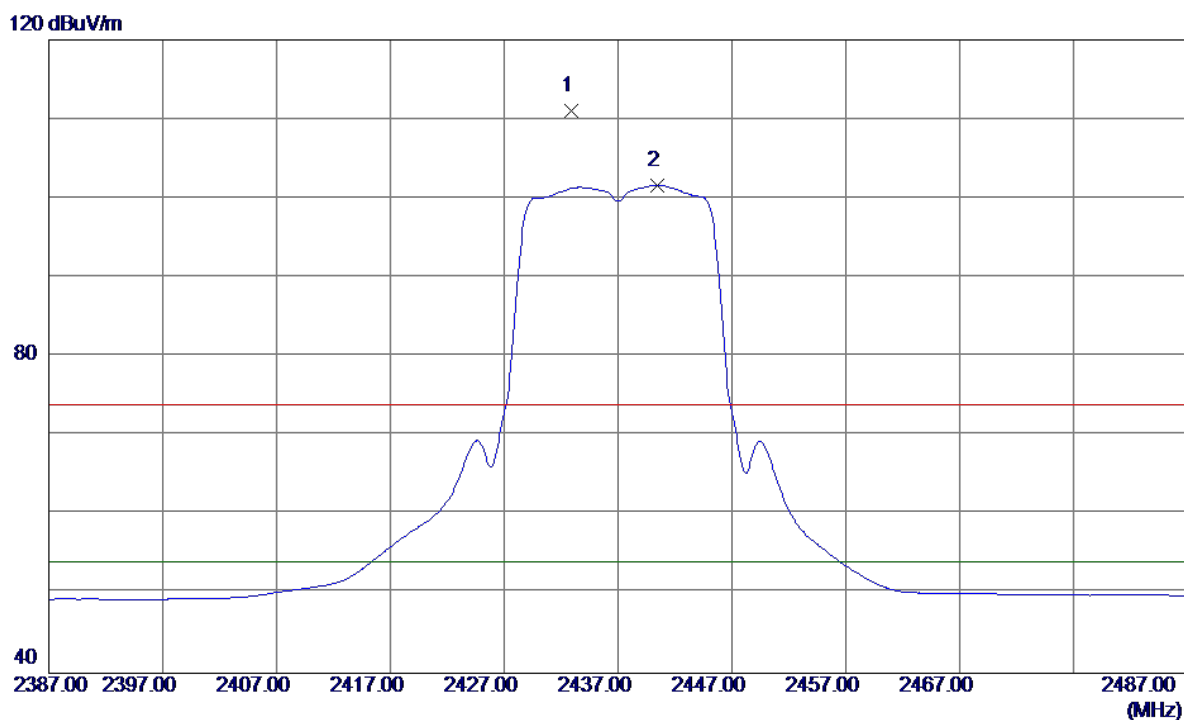


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4871.0000	34.98	6.43	41.41	74.00	-32.59	Peak	
2 *	4873.8500	24.65	6.44	31.09	54.00	-22.91	AVG	



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

### Horizontal

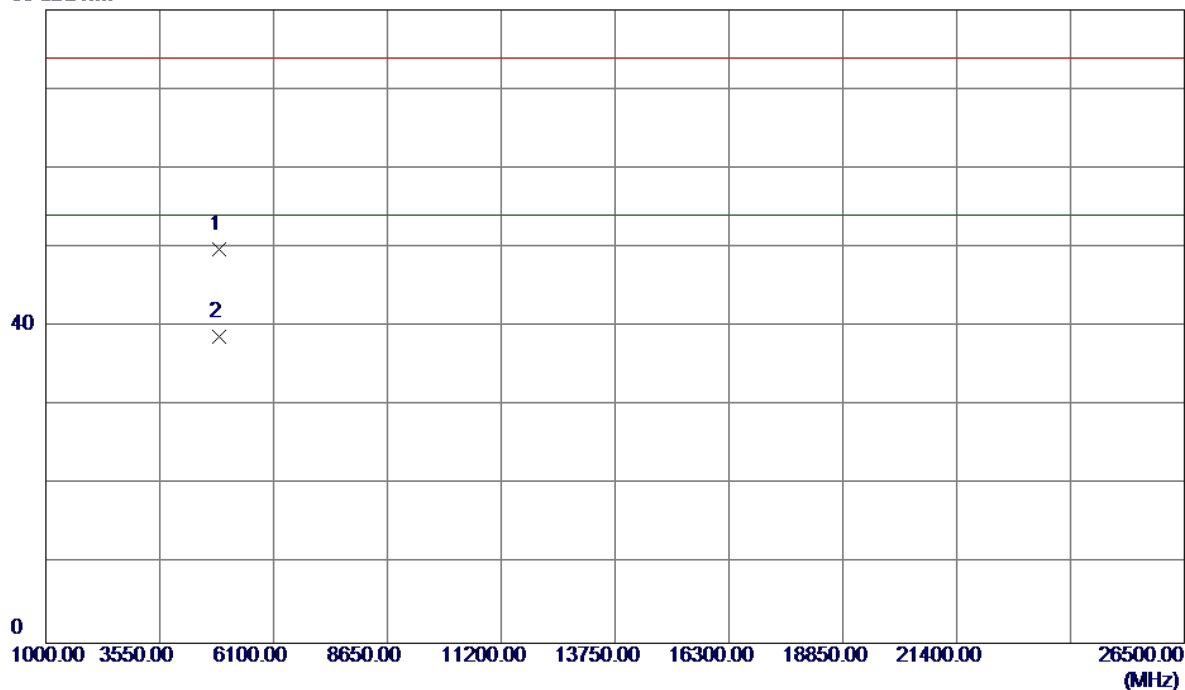


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2432.9000	77.76	33.22	110.98	74.00	36.98	Peak	No Limit
2 *	2440.4000	68.37	33.25	101.62	54.00	47.62	AVG	No Limit

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

### Horizontal

80 dBuV/m

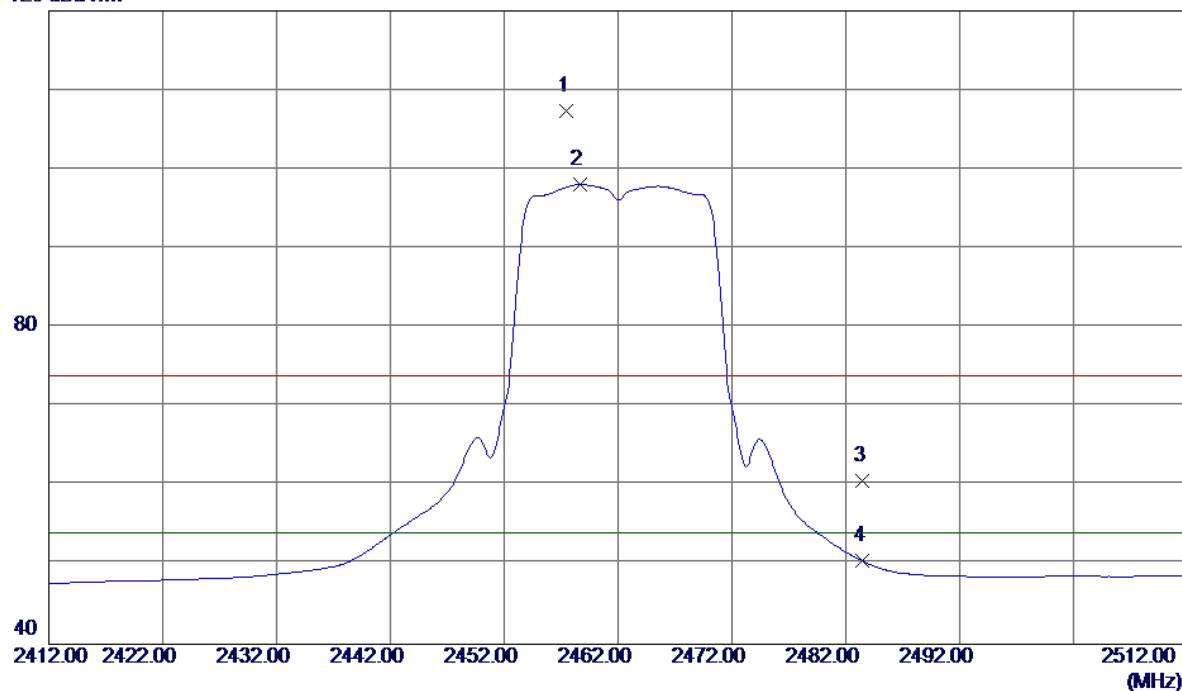


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4872.8400	43.27	6.44	49.71	74.00	-24.29	Peak	
2 *	4873.5800	32.27	6.44	38.71	54.00	-15.29	AVG	

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

# Vertical

120 dBuV/m

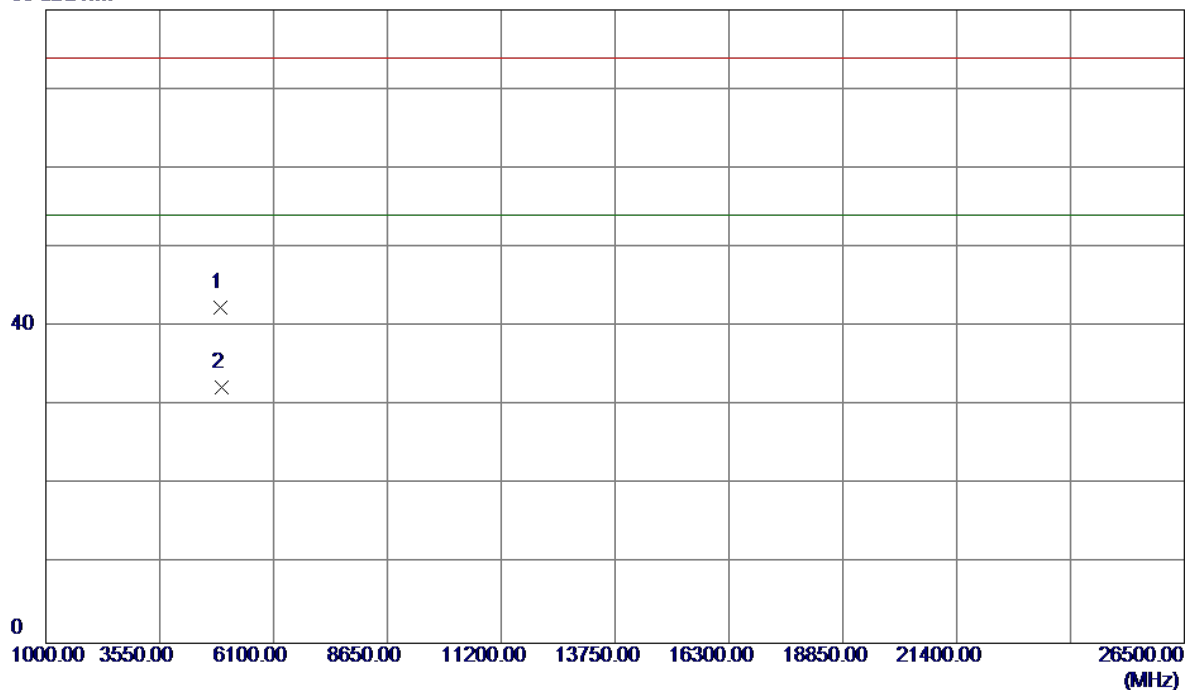


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2457.5000	73.98	33.31	107.29	74.00	33.29	Peak	No Limit
2 *	2458.7000	64.74	33.31	98.05	54.00	44.05	AVG	No Limit
3	2483.5000	27.23	33.41	60.64	74.00	-13.36	Peak	
4	2483.5000	17.09	33.41	50.50	54.00	-3.50	AVG	

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

### Vertical

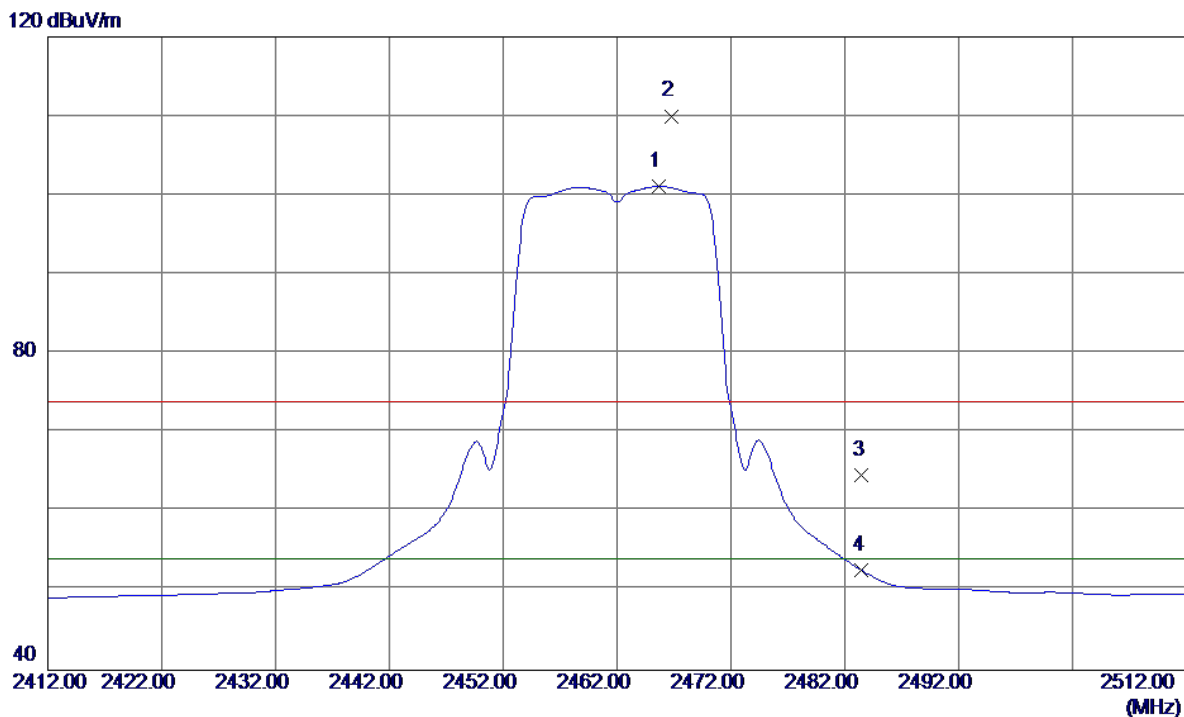
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4922.9000	35.84	6.57	42.41	74.00	-31.59	Peak	
2 *	4926.7000	25.77	6.58	32.35	54.00	-21.65	AVG	

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

### Horizontal

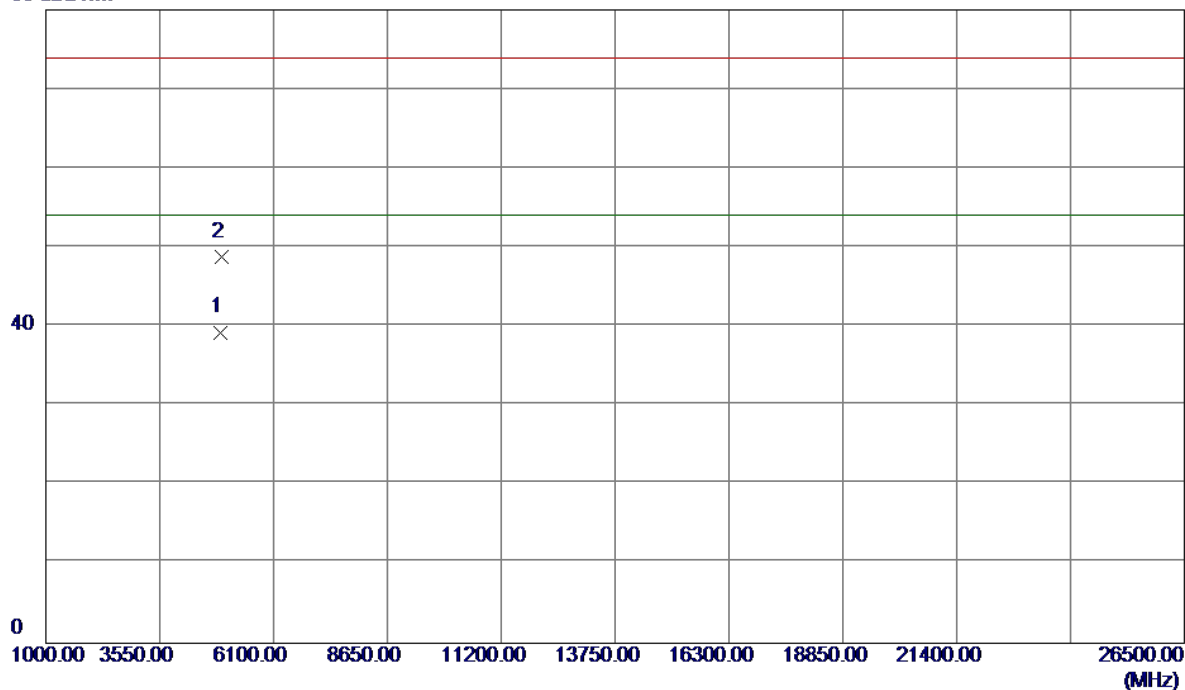


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2465.7000	67.77	33.34	101.11	54.00	47.11	AVG	No Limit
2	2466.8000	76.65	33.35	110.00	74.00	36.00	Peak	No Limit
3	2483.5000	31.18	33.41	64.59	74.00	-9.41	Peak	
4	2483.5000	19.18	33.41	52.59	54.00	-1.41	AVG	

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

### Horizontal

80 dBuV/m

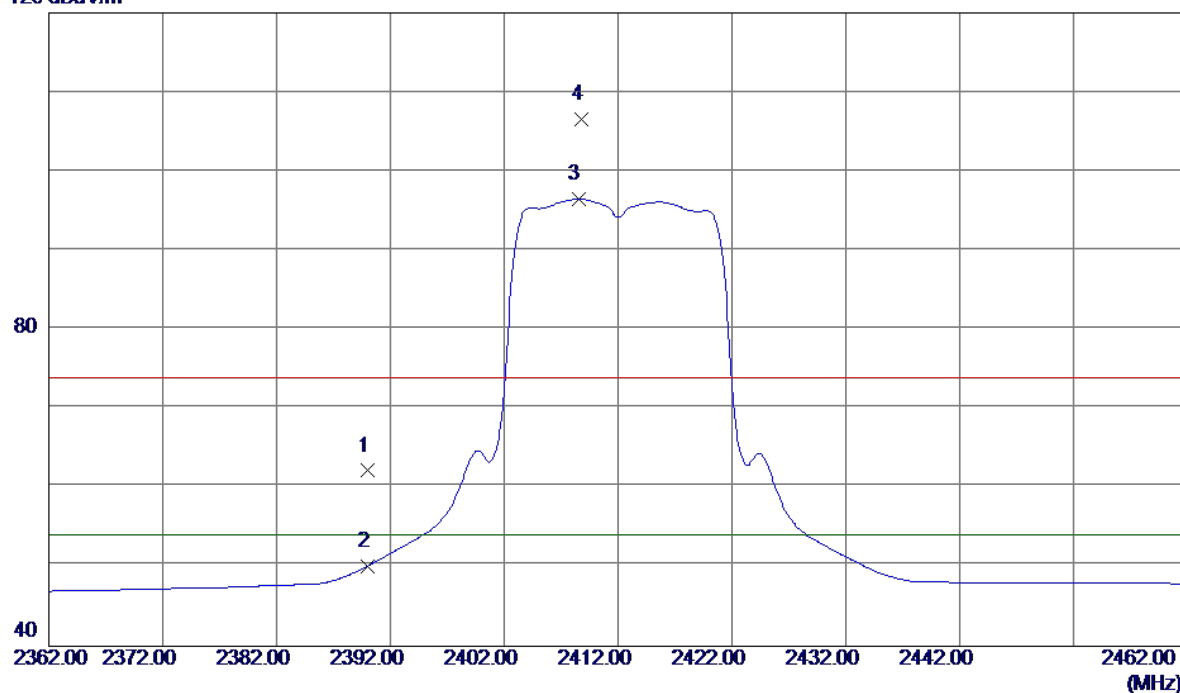


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4923.3400	32.71	6.57	39.28	54.00	-14.72	AVG	
2	4924.6600	42.25	6.57	48.82	74.00	-25.18	Peak	

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

### Vertical

120 dBuV/m

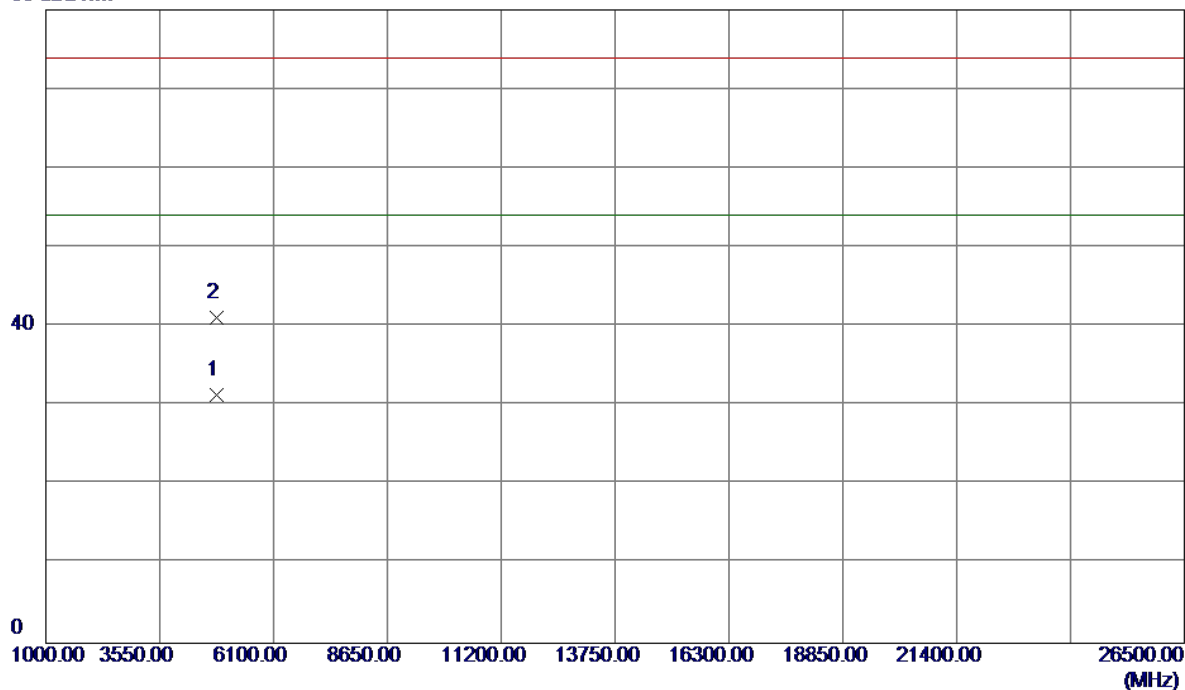


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	29.10	33.06	62.16	74.00	-11.84	Peak	
2	2390.0000	17.07	33.06	50.13	54.00	-3.87	AVG	
3 *	2408.5000	63.36	33.13	96.49	54.00	42.49	AVG	No Limit
4	2408.8000	73.49	33.13	106.62	74.00	32.62	Peak	No Limit

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

### Vertical

80 dBuV/m

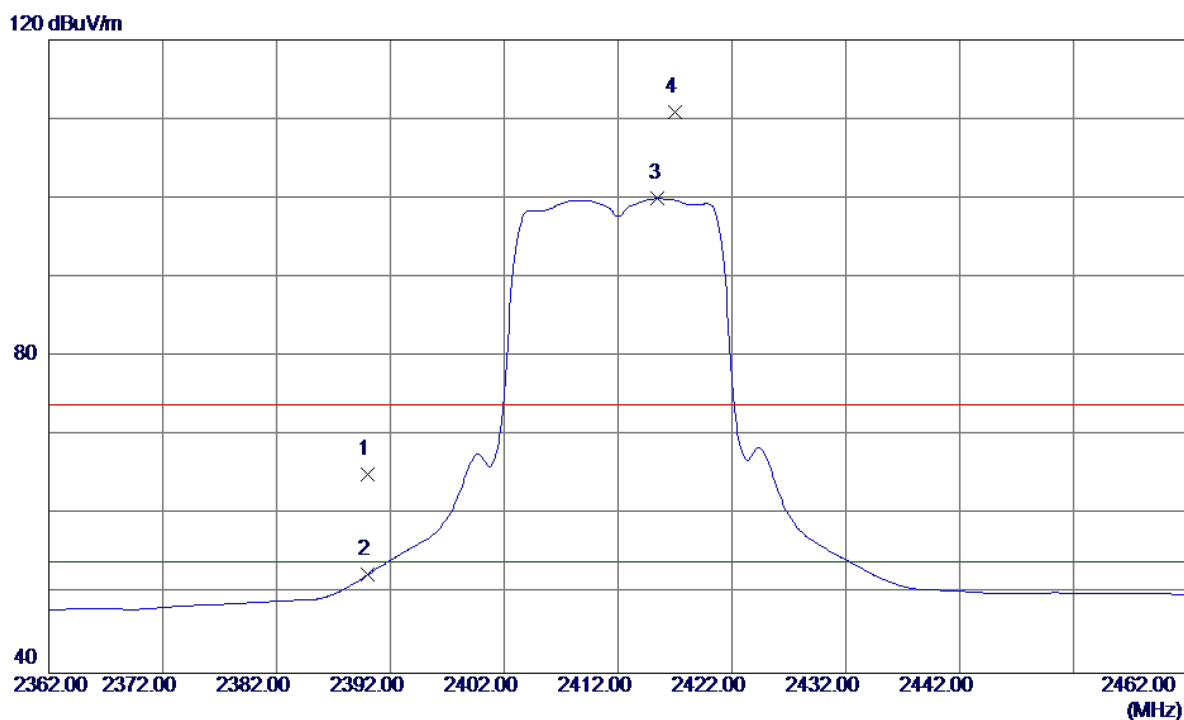


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4825.1000	25.10	6.32	31.42	54.00	-22.58	AVG	
2	4827.6000	34.72	6.33	41.05	74.00	-32.95	Peak	



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

# Horizontal

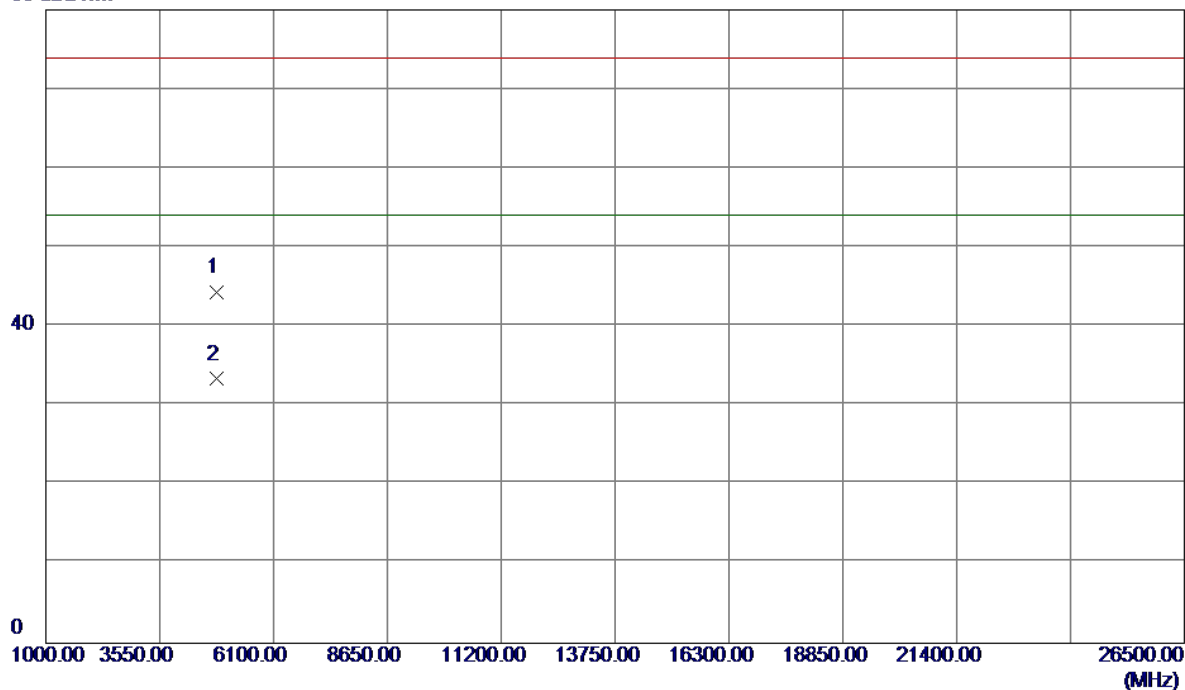


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	32.01	33.06	65.07	74.00	-8.93	Peak	
2	2390.0000	19.41	33.06	52.47	54.00	-1.53	AVG	
3 *	2415.5000	66.79	33.15	99.94	54.00	45.94	AVG	No Limit
4	2417.0000	77.77	33.16	110.93	74.00	36.93	Peak	No Limit

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

### Horizontal

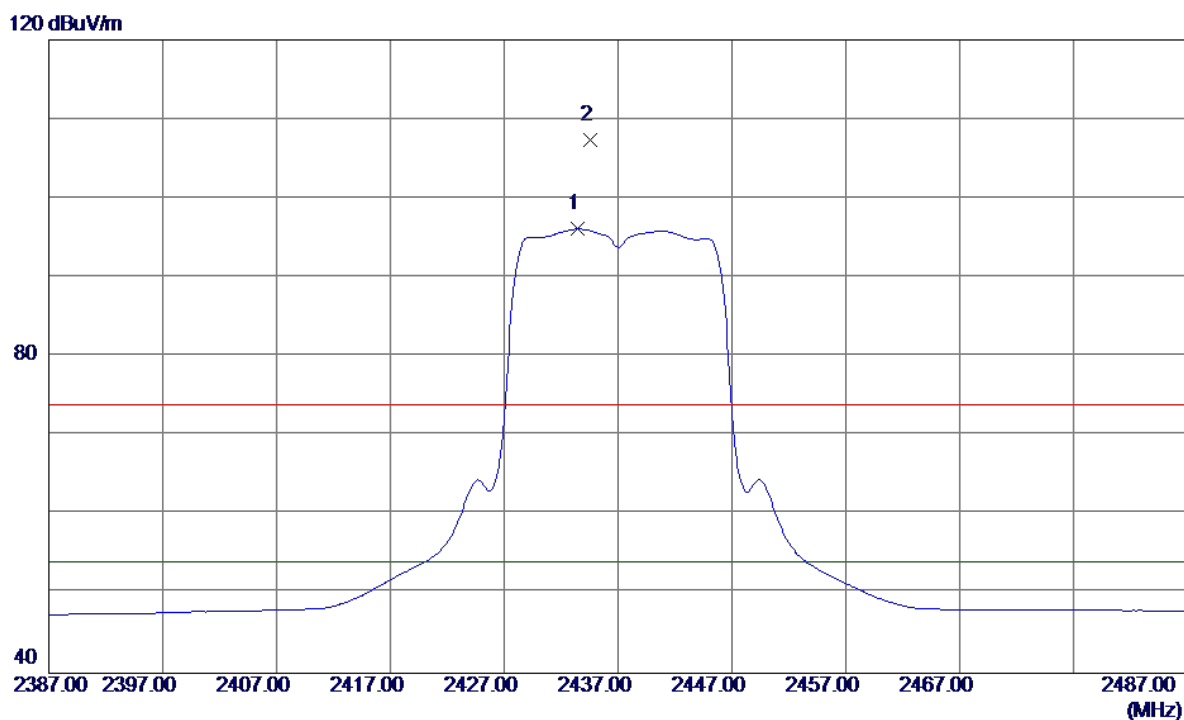
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4822.2000	37.99	6.31	44.30	74.00	-29.70	Peak	
2 *	4825.1400	27.04	6.32	33.36	54.00	-20.64	AVG	

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

### Vertical

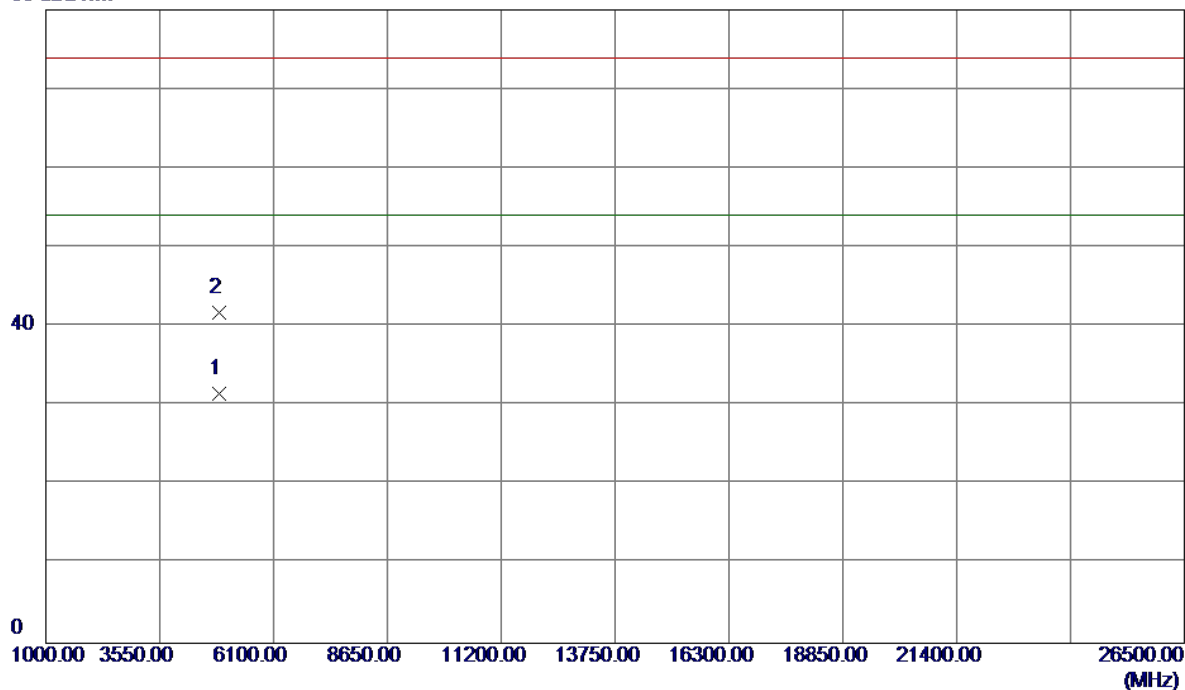


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2433.4000	62.90	33.22	96.12	54.00	42.12	AVG	No Limit
2	2434.6000	74.22	33.22	107.44	74.00	33.44	Peak	No Limit

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

### Vertical

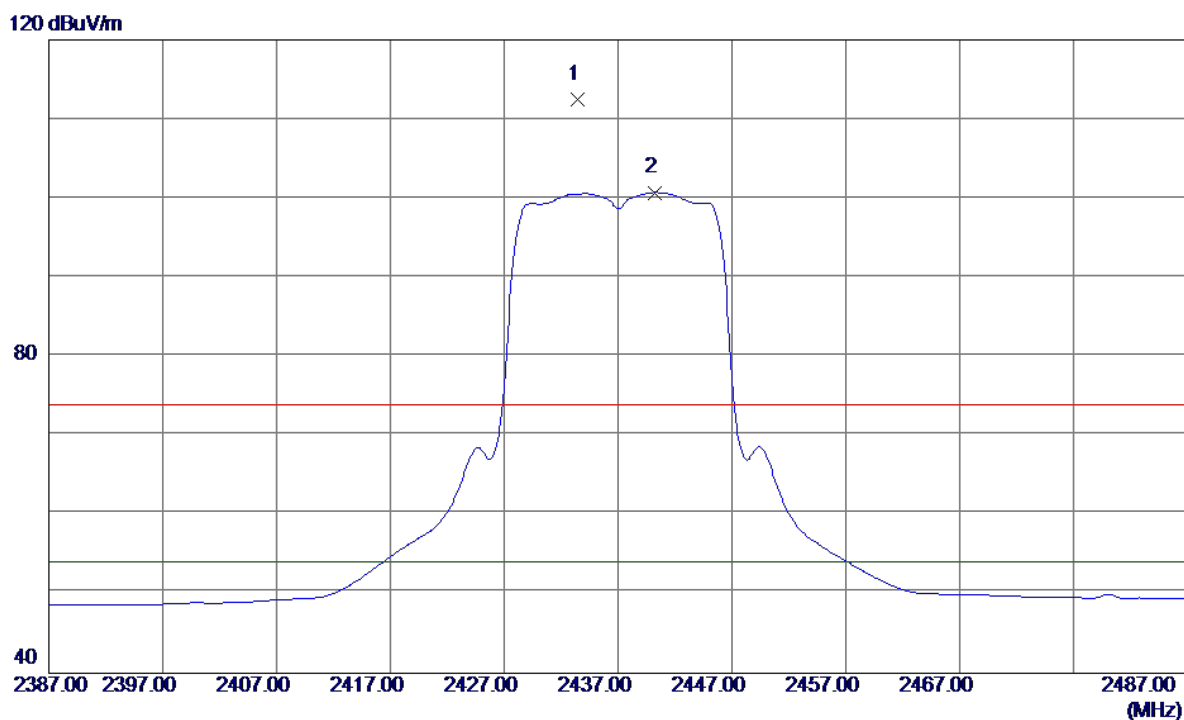
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4873.1400	25.05	6.44	31.49	54.00	-22.51	AVG	
2	4874.4200	35.33	6.44	41.77	74.00	-32.23	Peak	

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

### Horizontal

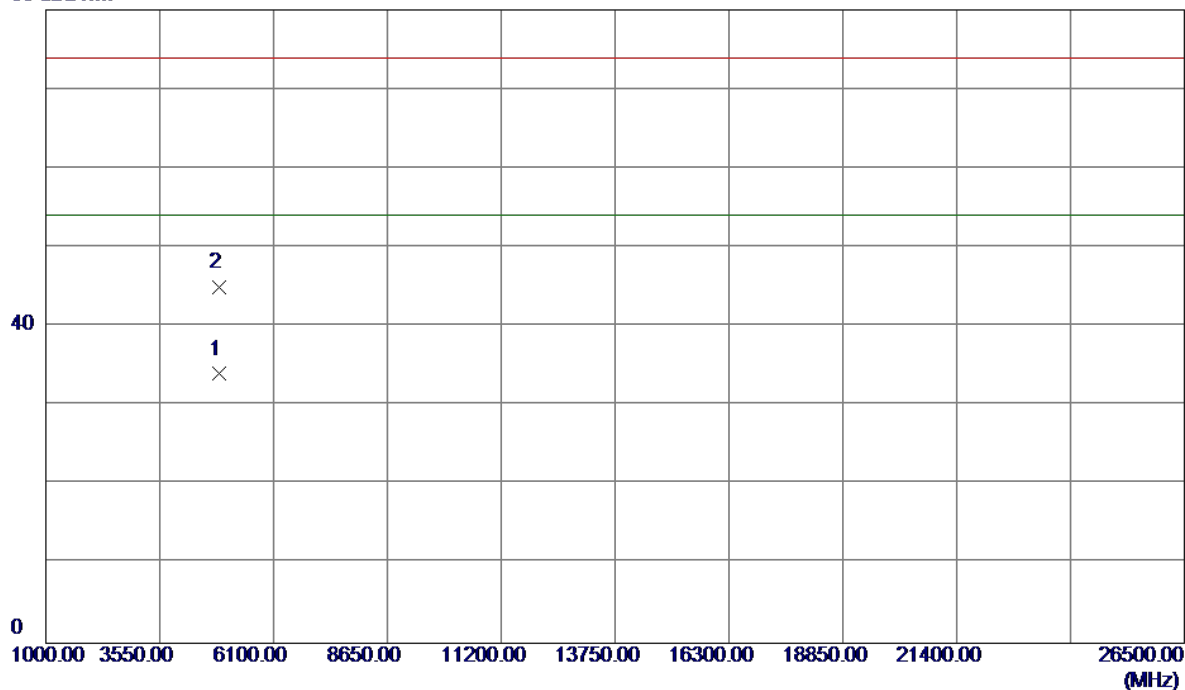


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2433.4000	79.28	33.22	112.50	74.00	38.50	Peak	No Limit
2 *	2440.2000	67.47	33.25	100.72	54.00	46.72	AVG	No Limit

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

### Horizontal

80 dBuV/m

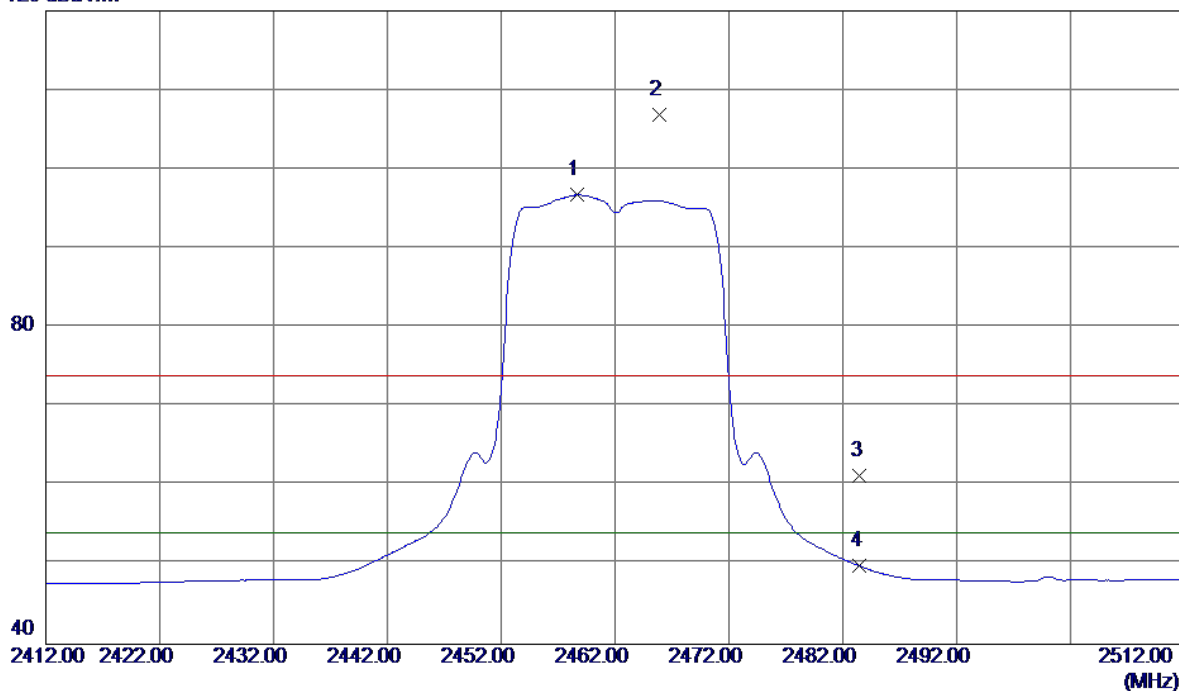


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4873.8800	27.56	6.44	34.00	54.00	-20.00	AVG	
2	4874.5400	38.54	6.44	44.98	74.00	-29.02	Peak	

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

### Vertical

120 dBuV/m

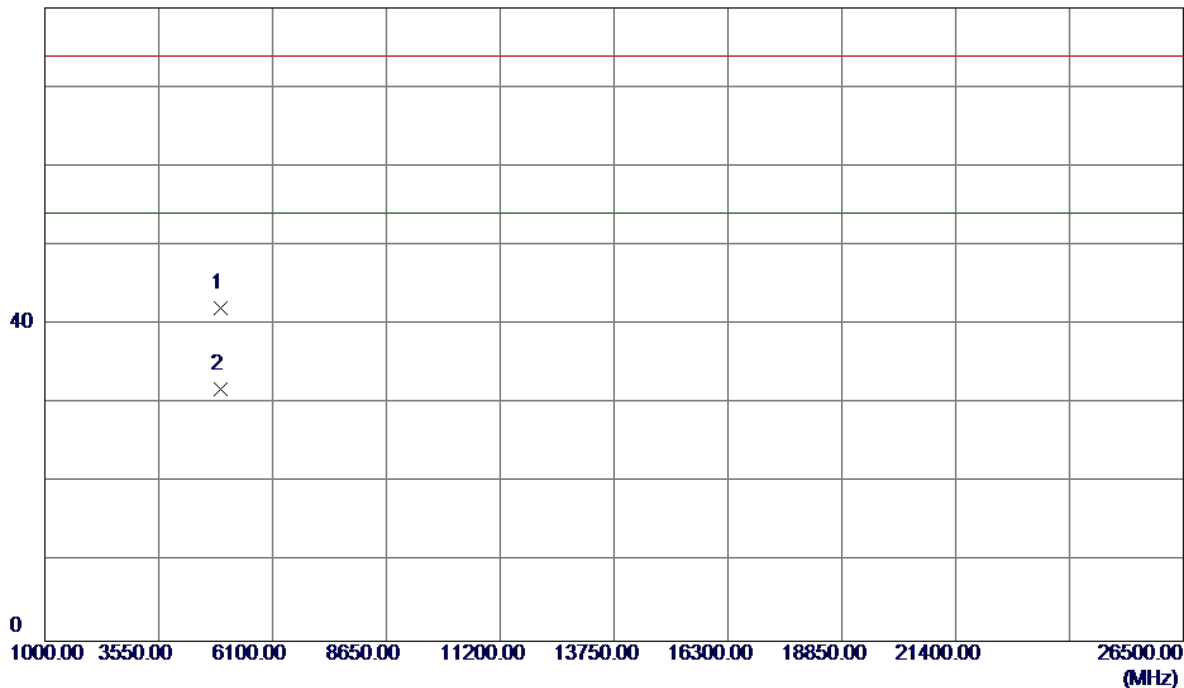


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2458.7000	63.43	33.31	96.74	54.00	42.74	AVG	No Limit
2	2465.9000	73.48	33.34	106.82	74.00	32.82	Peak	No Limit
3	2483.5000	27.88	33.41	61.29	74.00	-12.71	Peak	
4	2483.5000	16.46	33.41	49.87	54.00	-4.13	AVG	

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

### Vertical

80 dBuV/m

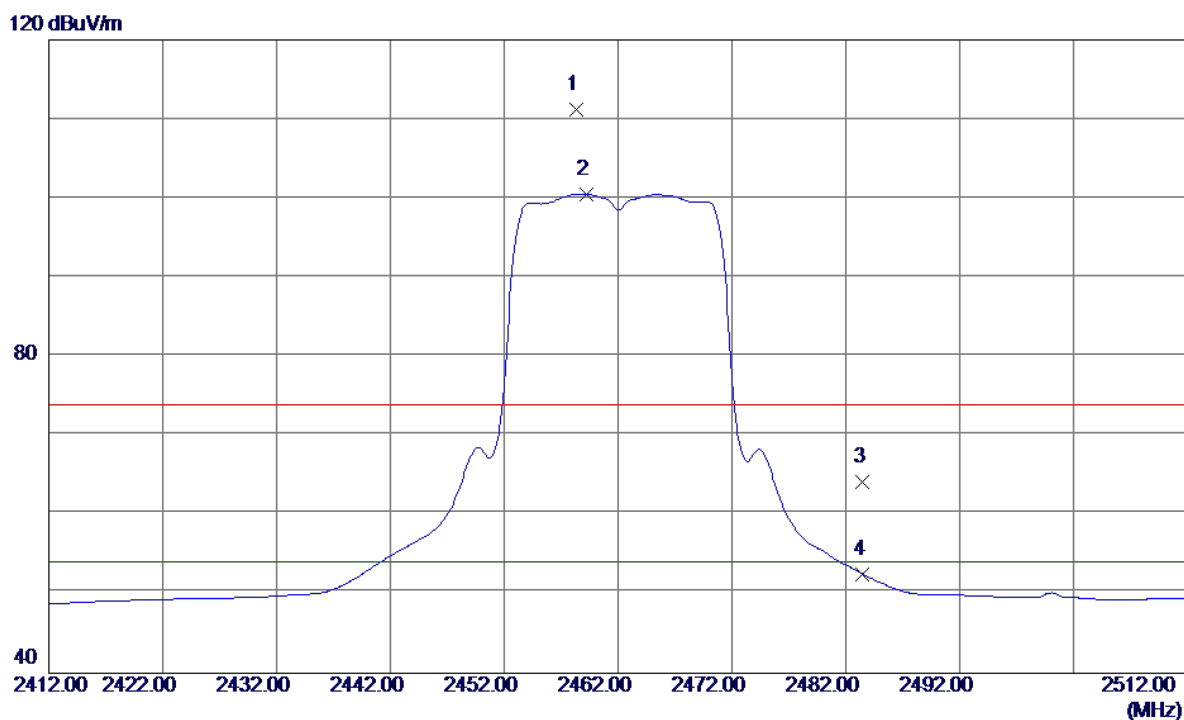


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.3800	35.57	6.57	42.14	74.00	-31.86	Peak	
2 *	4926.0800	25.20	6.57	31.77	54.00	-22.23	AVG	



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

# Horizontal

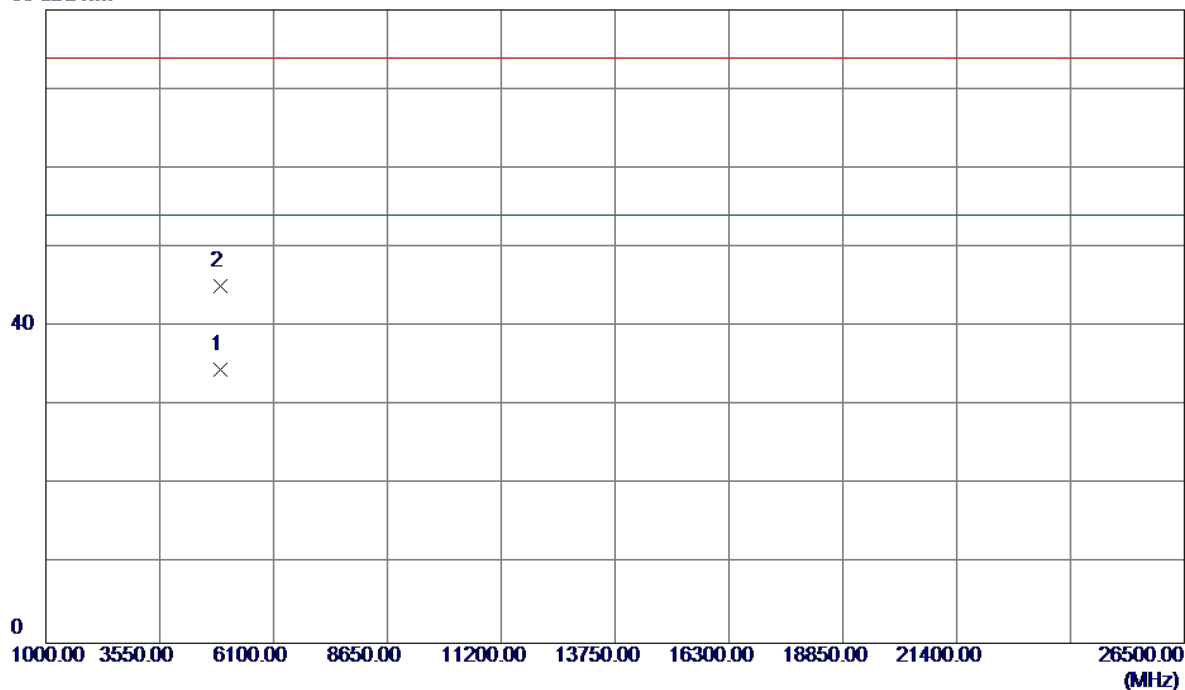


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2458.3000	77.95	33.31	111.26	74.00	37.26	Peak	No Limit
2 *	2459.2000	67.20	33.32	100.52	54.00	46.52	AVG	No Limit
3	2483.5000	30.75	33.41	64.16	74.00	-9.84	Peak	
4	2483.5000	19.14	33.41	52.55	54.00	-1.45	AVG	

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

### Horizontal

80 dBuV/m

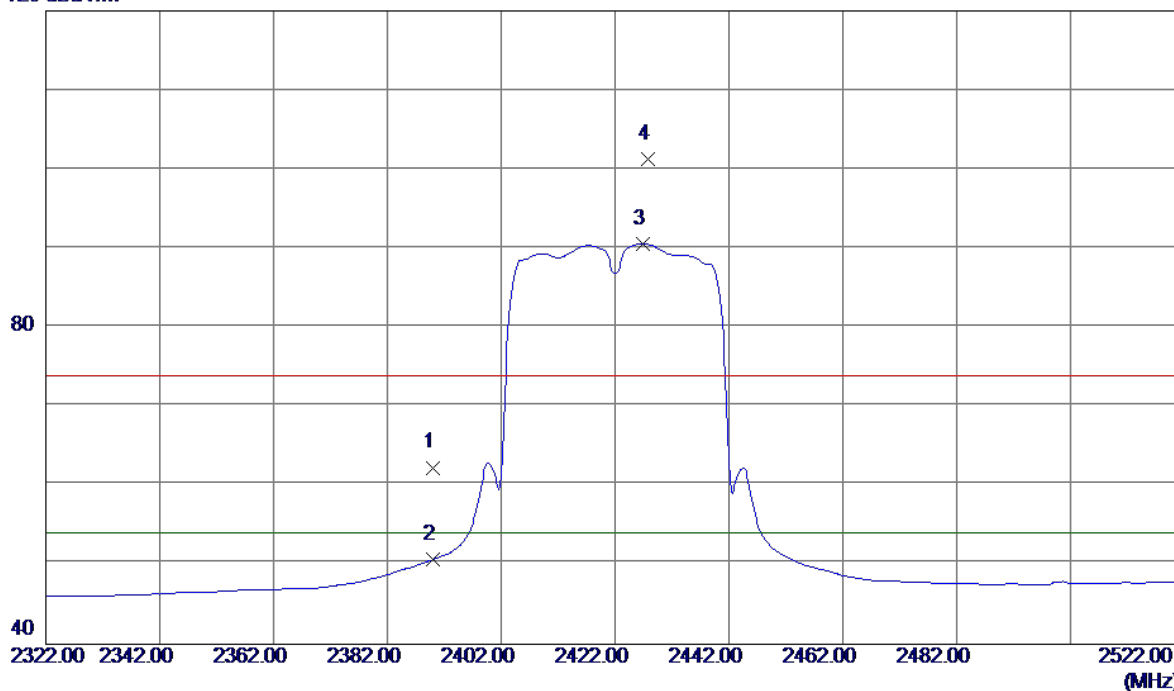


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4923.2799	27.92	6.57	34.49	54.00	-19.51	AVG	
2	4923.8400	38.58	6.57	45.15	74.00	-28.85	Peak	

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2422MHz

# Vertical

120 dBuV/m

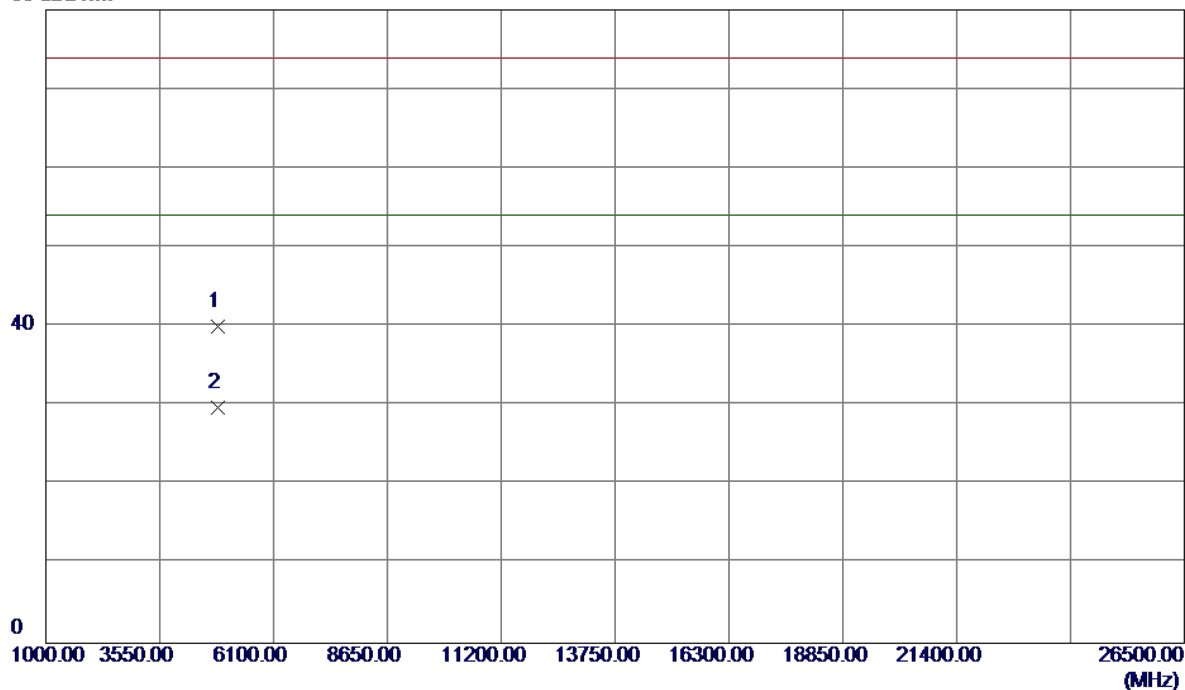


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	29.26	33.06	62.32	74.00	-11.68	Peak	
2	2390.0000	17.64	33.06	50.70	54.00	-3.30	AVG	
3 *	2426.8000	57.41	33.19	90.60	54.00	36.60	AVG	No Limit
4	2427.8000	68.12	33.20	101.32	74.00	27.32	Peak	No Limit

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2422MHz

### Vertical

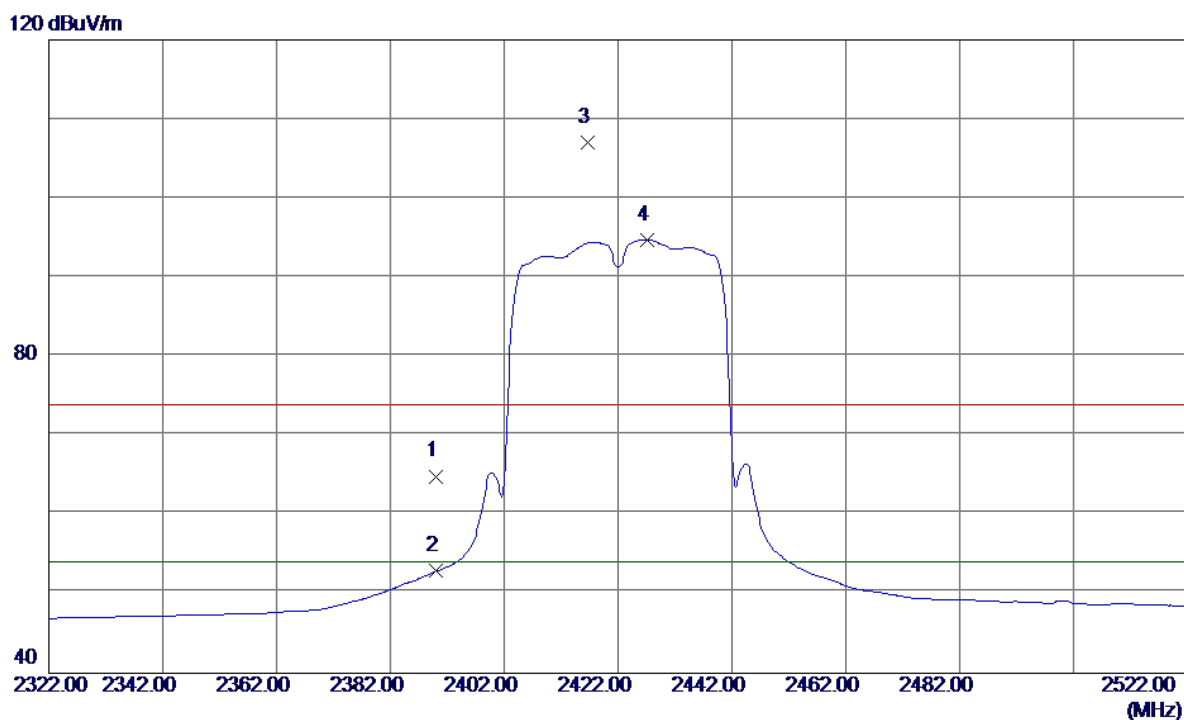
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4840.2500	33.70	6.36	40.06	74.00	-33.94	Peak	
2 *	4843.5000	23.40	6.37	29.77	54.00	-24.23	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2422MHz

### Horizontal

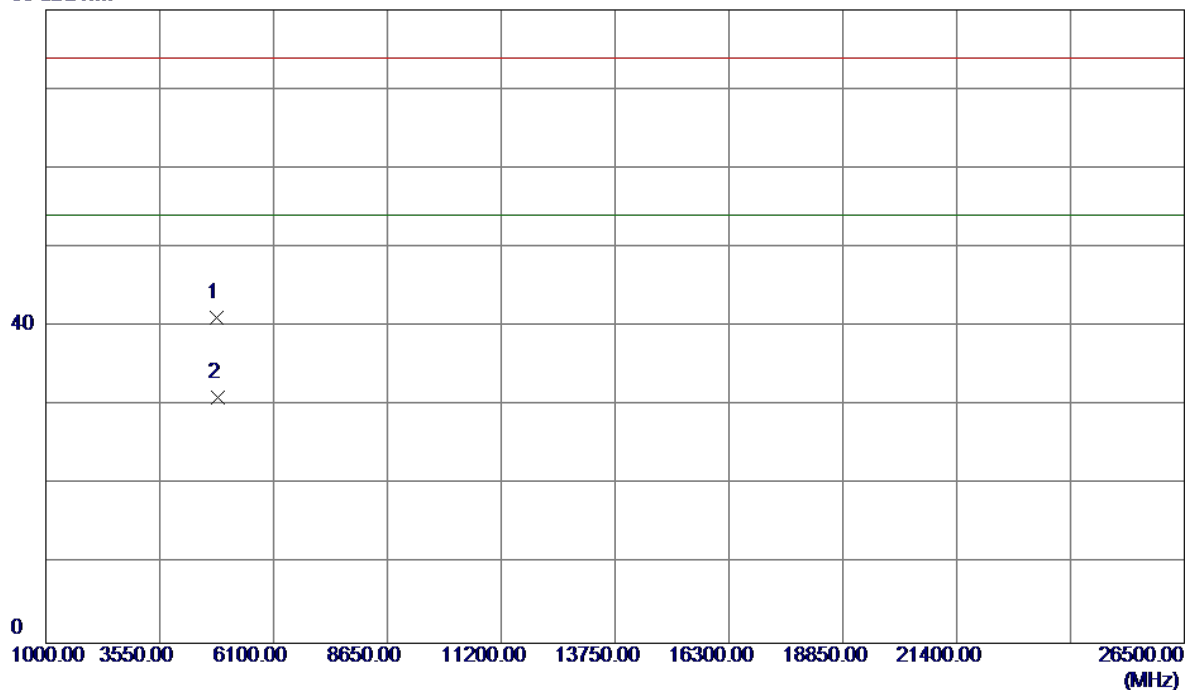


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	31.82	33.06	64.88	74.00	-9.12	Peak	
2	2390.0000	19.84	33.06	52.90	54.00	-1.10	AVG	
3	2416.6000	73.90	33.16	107.06	74.00	33.06	Peak	No Limit
4 *	2427.2000	61.58	33.20	94.78	54.00	40.78	AVG	No Limit

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2422MHz

### Horizontal

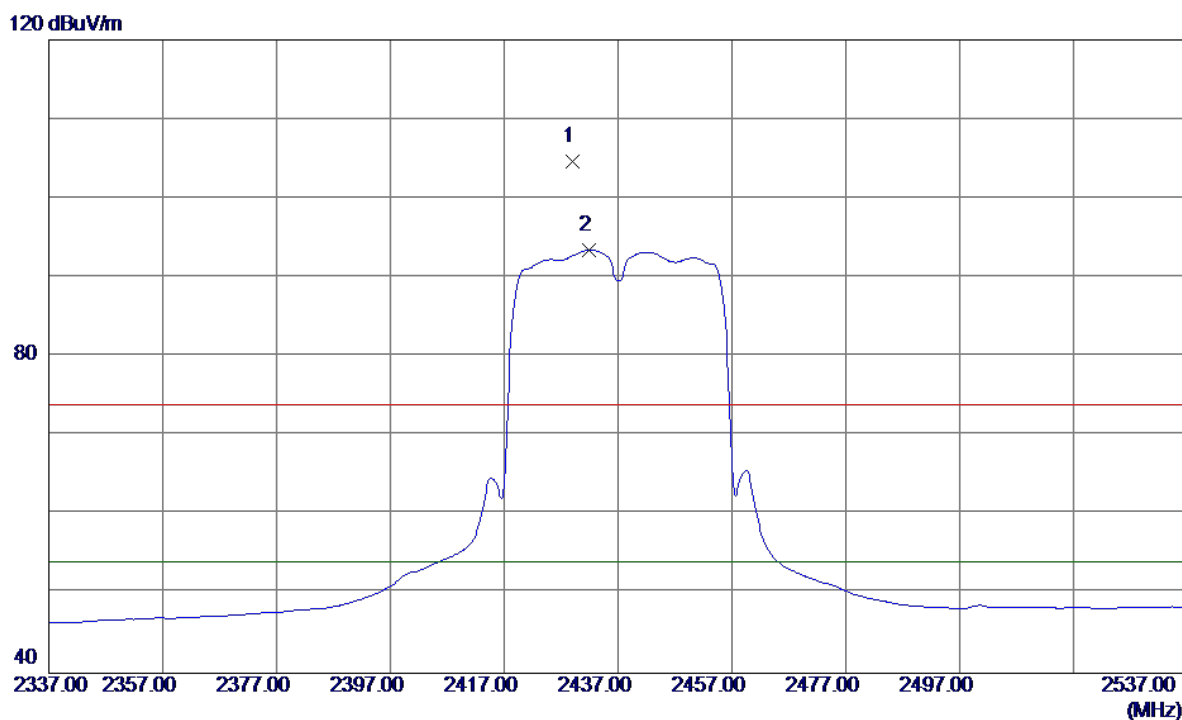
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4837.4400	34.71	6.35	41.06	74.00	-32.94	Peak	
2 *	4842.8600	24.67	6.36	31.03	54.00	-22.97	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2437MHz

### Vertical

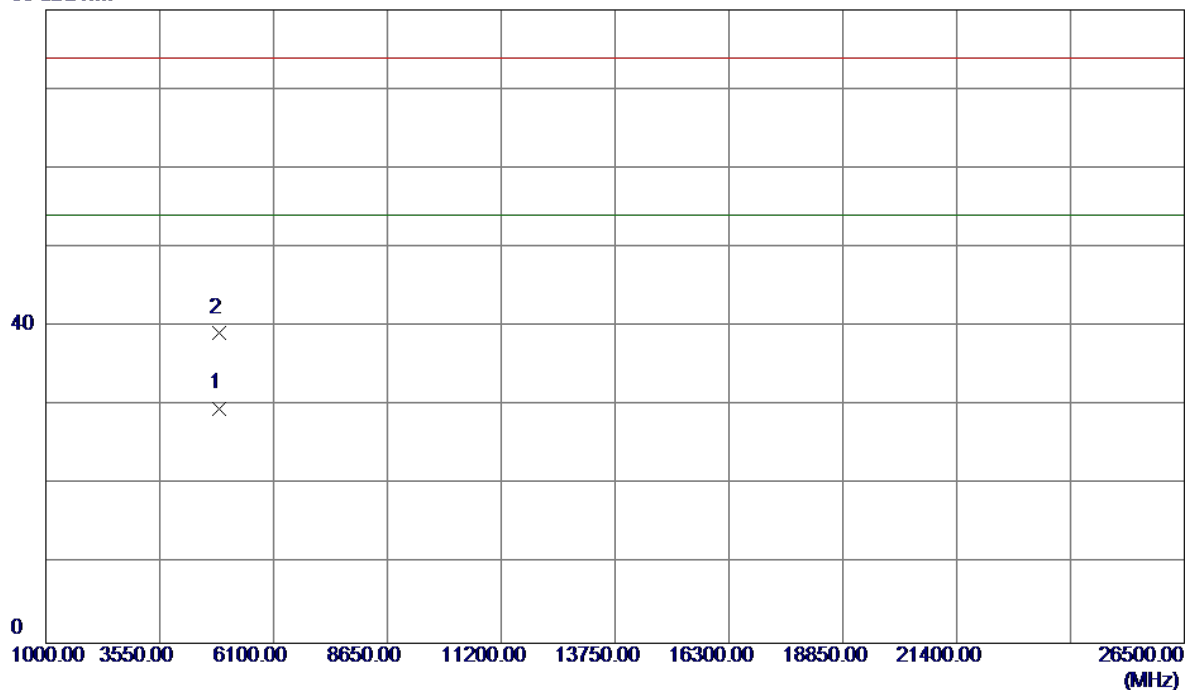


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2429.0000	71.45	33.20	104.65	74.00	30.65	Peak	No Limit
2 *	2431.8000	60.25	33.21	93.46	54.00	39.46	AVG	No Limit

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2437MHz

### Vertical

80 dBuV/m

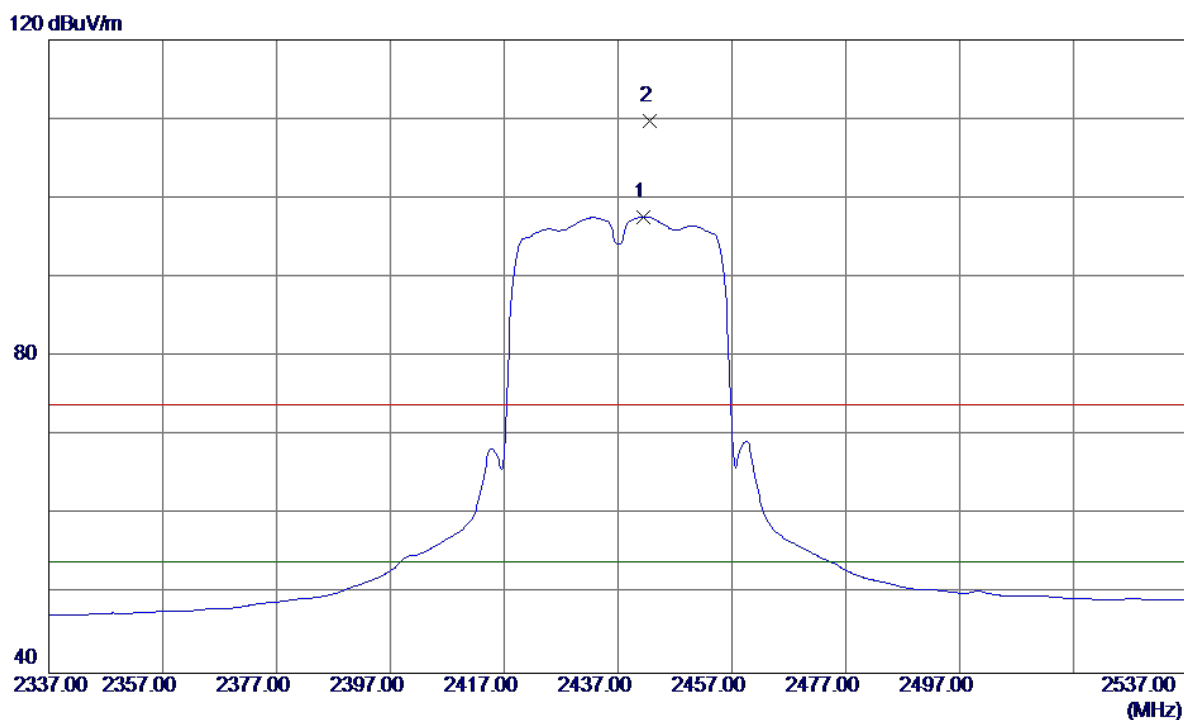


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4870.7000	23.25	6.43	29.68	54.00	-24.32	AVG	
2	4876.2100	32.68	6.45	39.13	74.00	-34.87	Peak	



Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2437MHz

### Horizontal

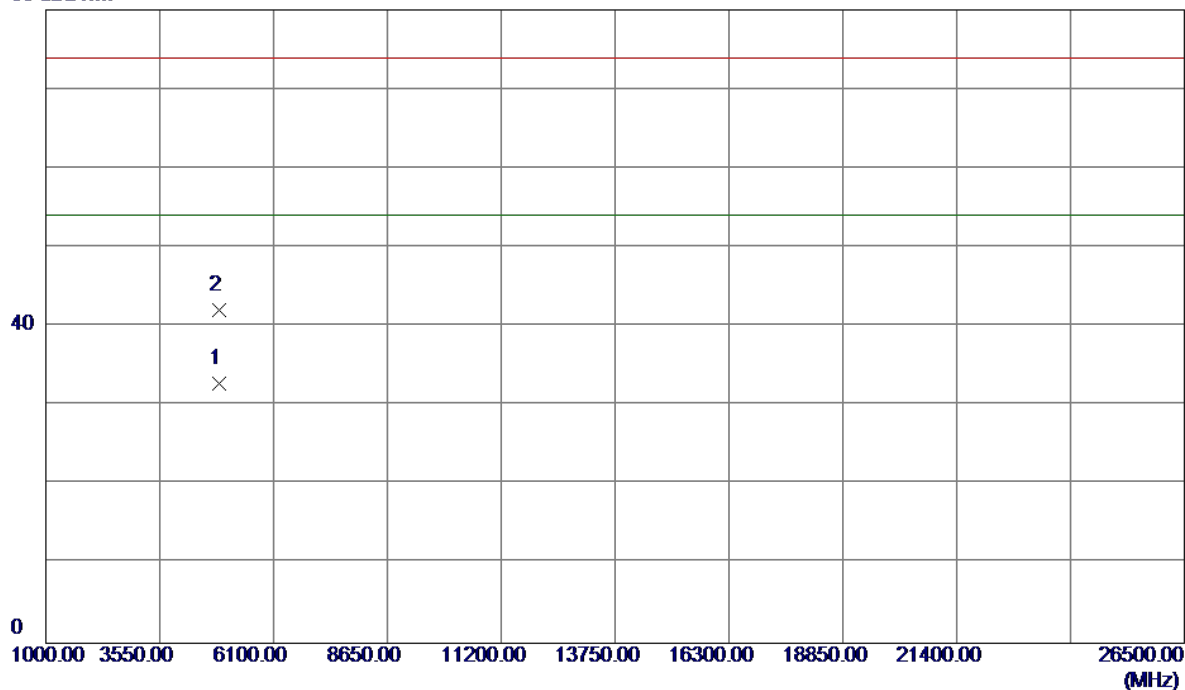


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2441.4000	64.42	33.25	97.67	54.00	43.67	AVG	No Limit
2	2442.6000	76.47	33.25	109.72	74.00	35.72	Peak	No Limit

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2437MHz

### Horizontal

80 dBuV/m

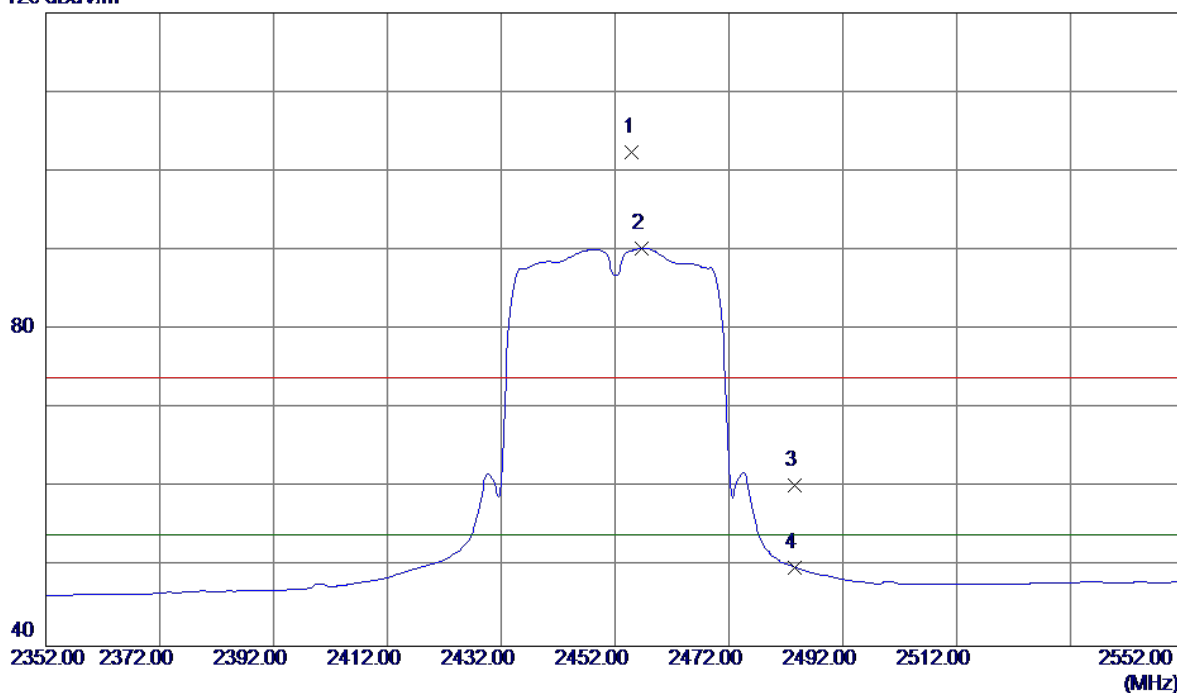


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4874.8500	26.43	6.44	32.87	54.00	-21.13	AVG	
2	4875.2000	35.60	6.45	42.05	74.00	-31.95	Peak	

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2452MHz

### Vertical

120 dBuV/m

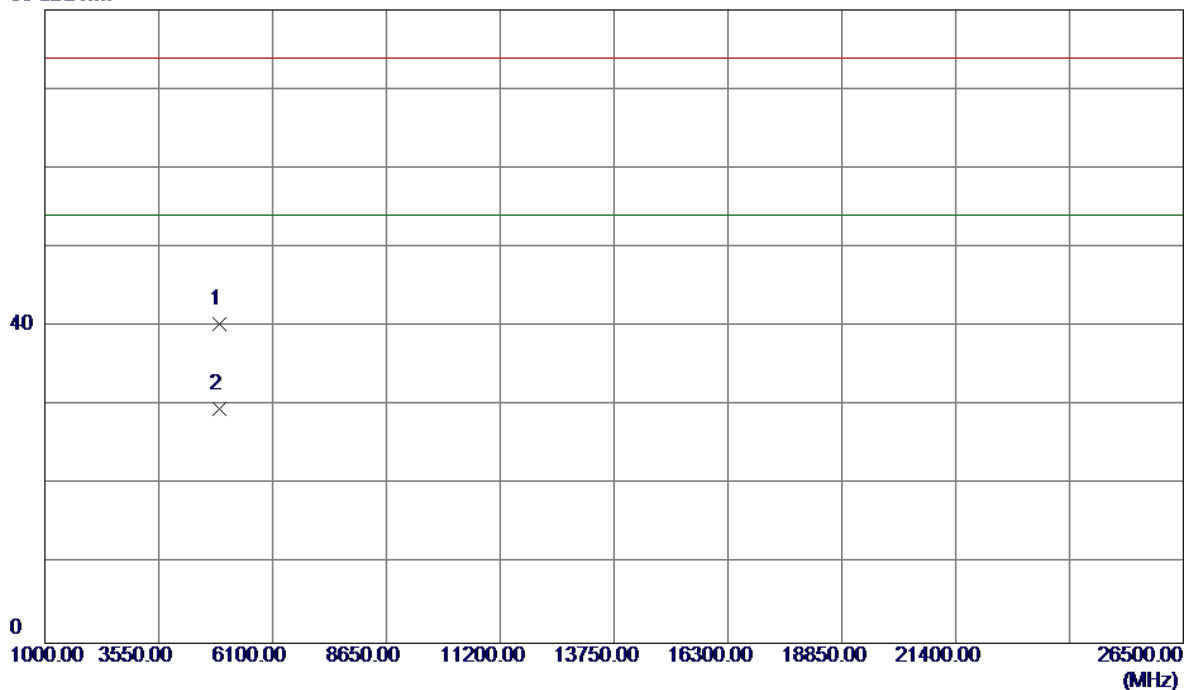


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2455.0000	69.13	33.30	102.43	74.00	28.43	Peak	No Limit
2 *	2456.6000	56.98	33.31	90.29	54.00	36.29	AVG	No Limit
3	2483.5000	26.96	33.41	60.37	74.00	-13.63	Peak	
4	2483.5000	16.54	33.41	49.95	54.00	-4.05	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2452MHz

### Vertical

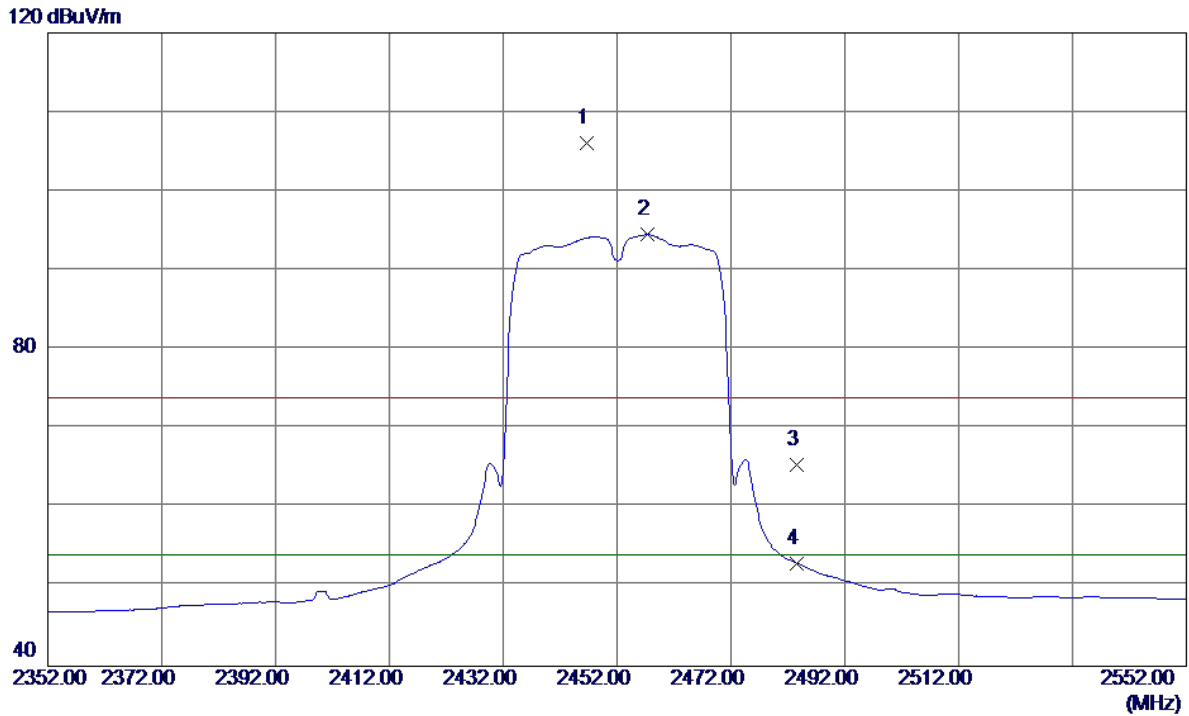
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4900.0800	33.86	6.51	40.37	74.00	-33.63	Peak	
2 *	4904.4400	23.02	6.52	29.54	54.00	-24.46	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2452MHz

### Horizontal

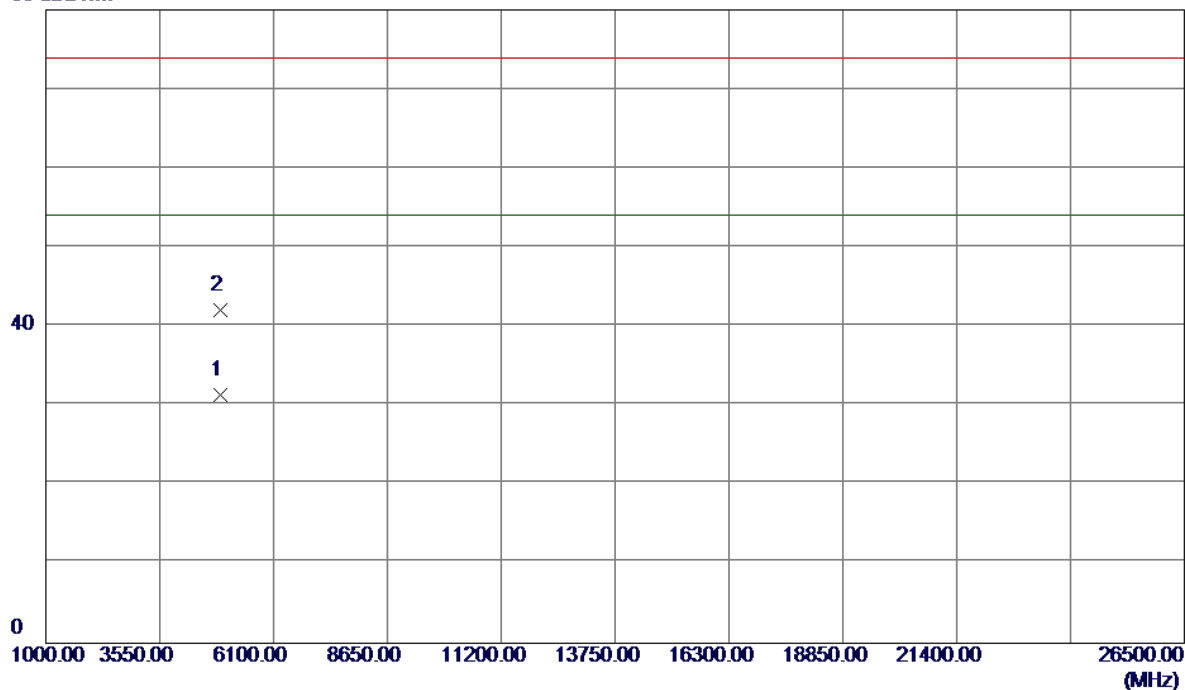


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2446.6000	72.87	33.27	106.14	74.00	32.14	Peak	No Limit
2 *	2457.4000	61.21	33.31	94.52	54.00	40.52	AVG	No Limit
3	2483.5000	32.03	33.41	65.44	74.00	-8.56	Peak	
4	2483.5000	19.59	33.41	53.00	54.00	-1.00	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2452MHz

### Horizontal

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4903.8000	24.85	6.52	31.37	54.00	-22.63	AVG	
2	4910.9500	35.53	6.54	42.07	74.00	-31.93	Peak	

## APPENDIX E - BANDWIDTH

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	8.06	10.36	500	Complies
2437	8.07	10.36	500	Complies
2462	8.11	10.28	500	Complies

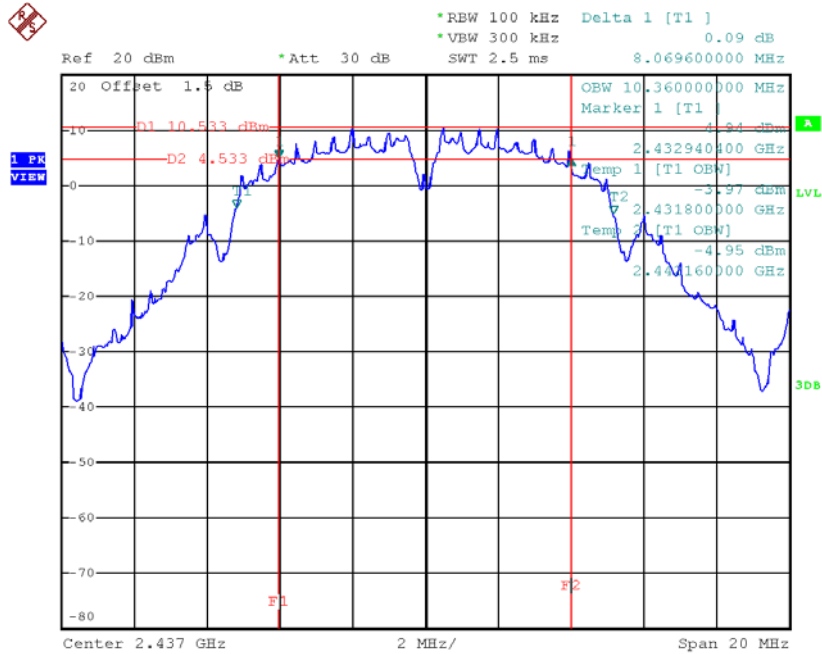
\*RBW 100 kHz Delta 1 [T1]  
 \*VBW 300 kHz -0.42 dB  
 Ref 20 dBm \*Att 30 dB SWT 2.5 ms 8.060000000 MHz

20 Offset 1.5 dB  
 D1 11.039 dBm  
 D2 5.039 dBm  
 1 PK VIEW  
 OBW 10.360000000 MHz  
 Marker 1 [T1]  
 2.407940000 GHz  
 Temp 1 [T1 OBW]  
 F2 2.406800000 GHz  
 Temp 2 [T1 OBW]  
 -4.35 dBm  
 2.411600000 GHz  
 3dB  
 Center 2.412 GHz 2 MHz/ Span 20 MHz

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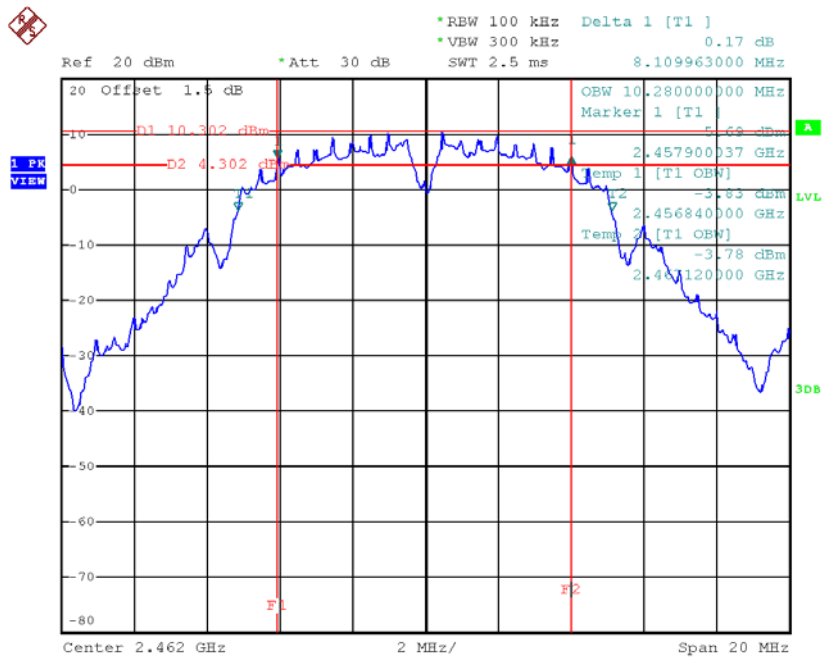


### TX CH06



Date: 12.AUG.2017 10:24:18

### TX CH11

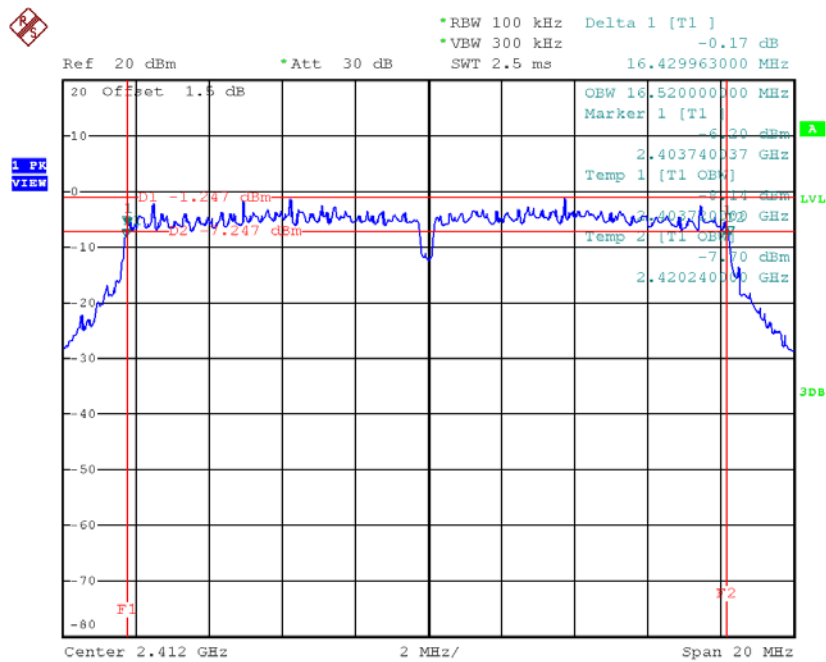


Date: 12.AUG.2017 10:25:57

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

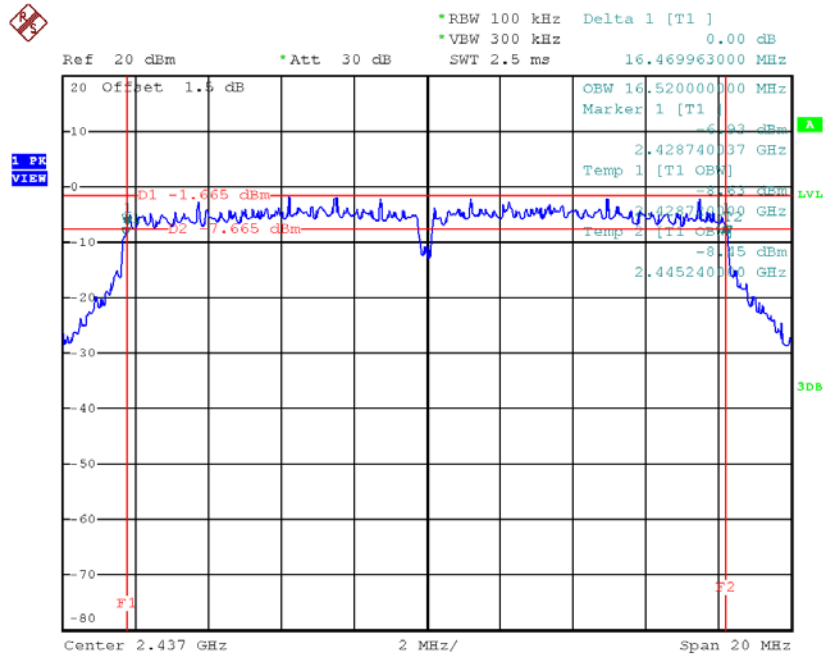
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	16.43	16.52	500	Complies
2437	16.47	16.52	500	Complies
2462	16.43	16.52	500	Complies

TX CH01



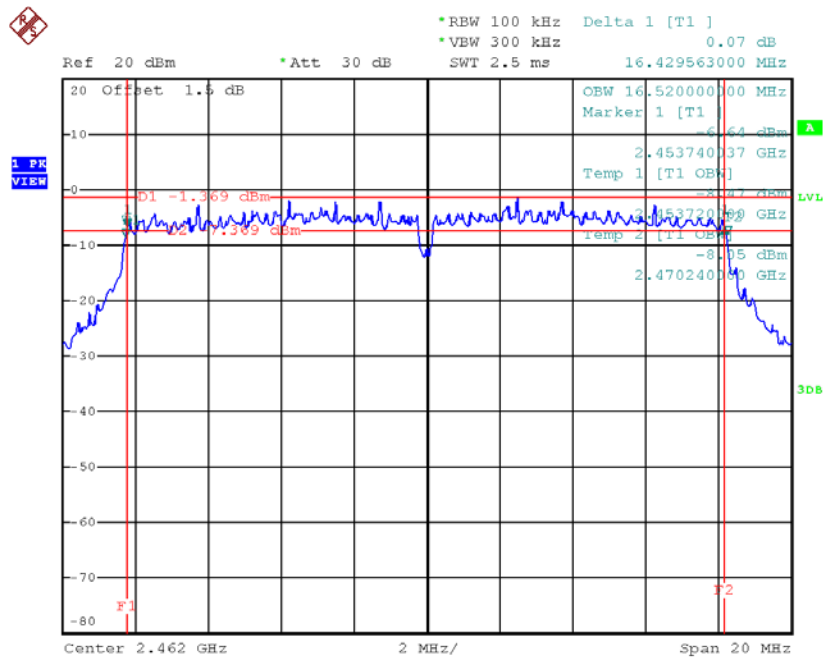
Date: 12.AUG.2017 10:27:28

### TX CH06



Date: 12.AUG.2017 10:29:06

### TX CH11

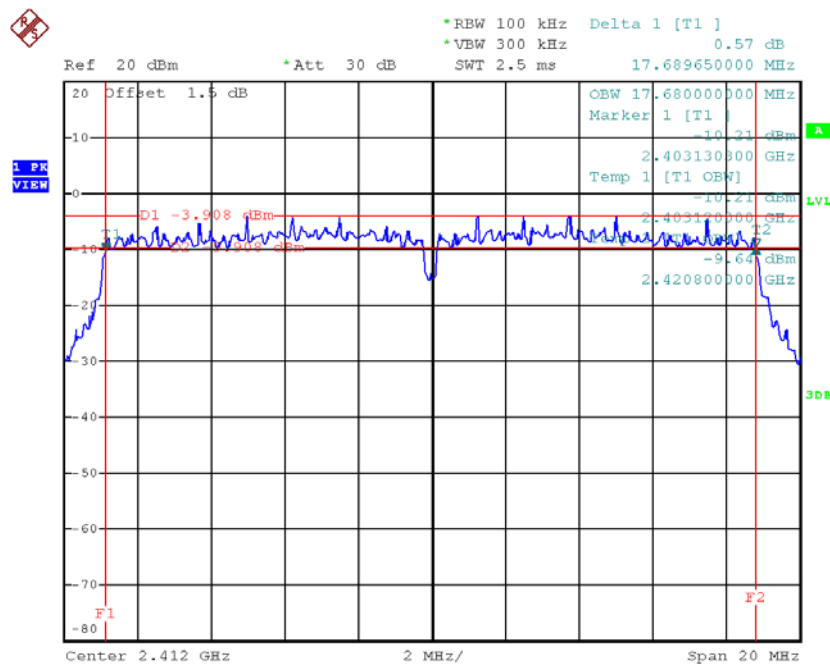


Date: 12.AUG.2017 10:30:15

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

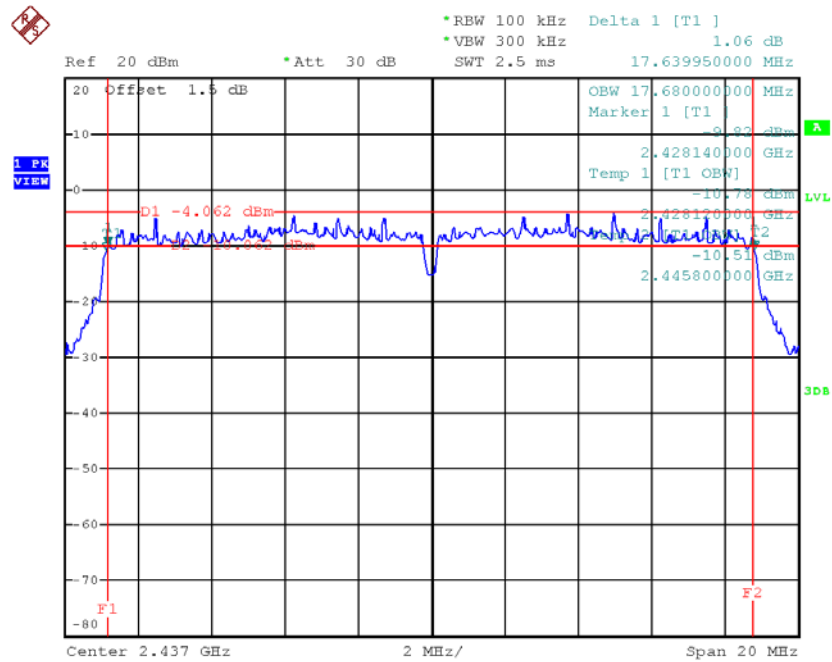
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	17.69	17.68	500	Complies
2437	17.64	17.68	500	Complies
2462	17.63	17.64	500	Complies

TX CH01



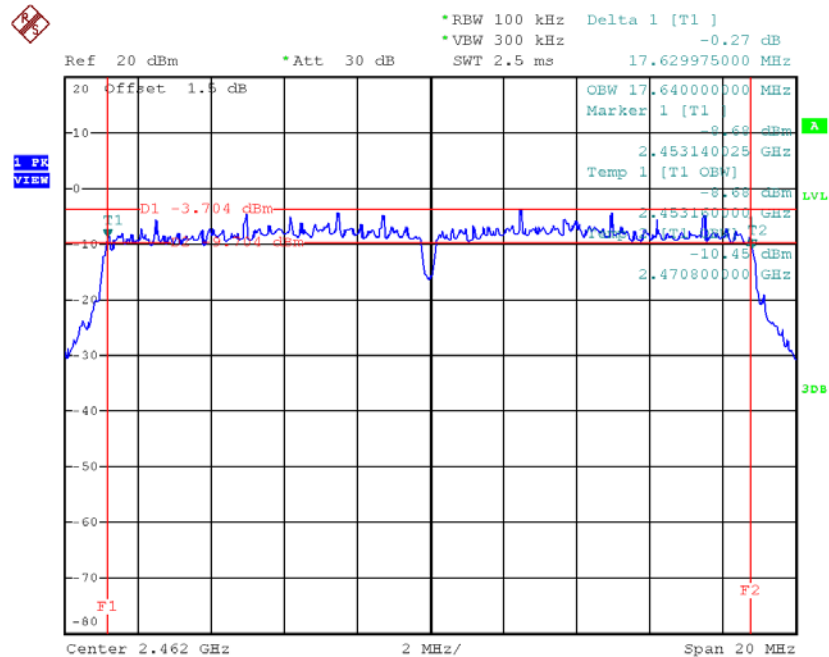
Date: 12.AUG.2017 10:32:35

## TX CH06



Date: 12.AUG.2017 10:36:39

## TX CH11

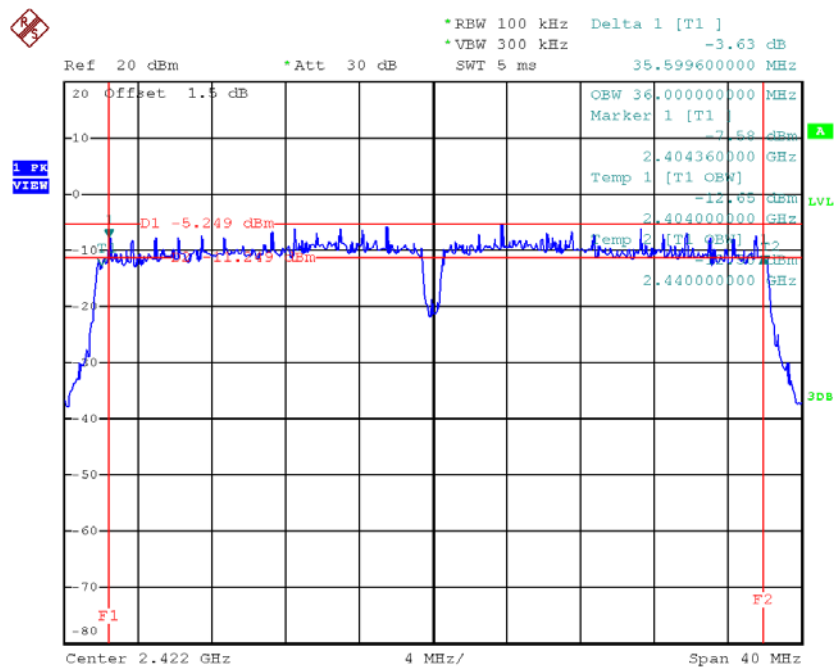


Date: 12.AUG.2017 10:39:12

Test Mode : TX N-40MHz Mode\_CH03/06/09

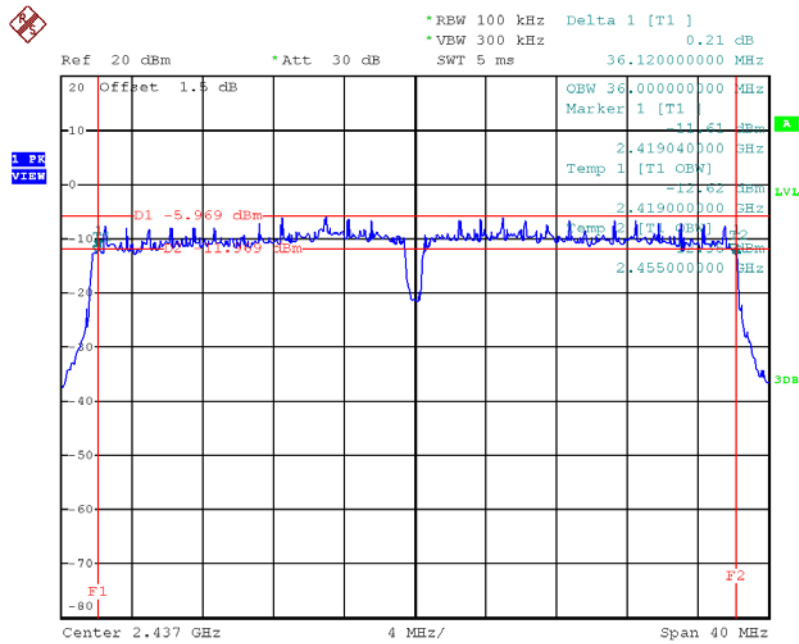
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2422	35.60	36.00	500	Complies
2437	36.12	36.00	500	Complies
2452	36.04	36.08	500	Complies

TX CH03



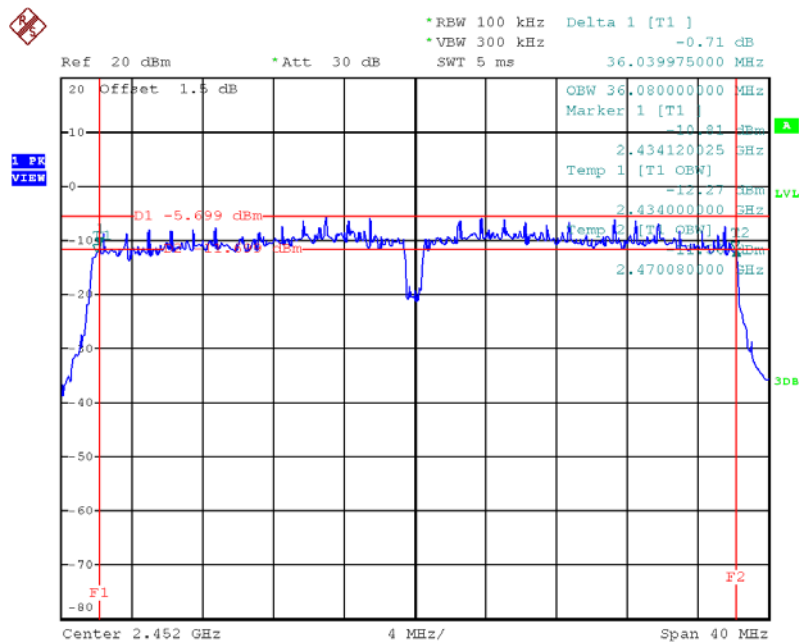
Date: 12.AUG.2017 10:44:53

### TX CH06



Date: 12.AUG.2017 10:49:20

### TX CH09



Date: 12.AUG.2017 10:51:18

## APPENDIX F - MAXIMUM PEAK CONDUCTED OUTPUT POWER



**Test Mode :TX B Mode\_CH01/06/11\_ANT 1**

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	25.32	0.34	30.00	1.00	Complies
2437	23.90	0.25	30.00	1.00	Complies
2462	23.92	0.25	30.00	1.00	Complies

**Test Mode :TX G Mode\_CH01/06/11\_ANT 1**

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	28.11	0.65	30.00	1.00	Complies
2437	29.33	0.86	30.00	1.00	Complies
2462	29.53	0.90	30.00	1.00	Complies

Test Mode :TX N20 Mode_CH01/06/11_ANT 1					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	26.43	0.44	30.00	1.00	Complies
2437	26.21	0.42	30.00	1.00	Complies
2462	26.30	0.43	30.00	1.00	Complies

Test Mode :TX N20 Mode_CH01/06/11_ANT 2					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	26.33	0.43	30.00	1.00	Complies
2437	26.83	0.48	30.00	1.00	Complies
2462	26.61	0.46	30.00	1.00	Complies

Test Mode :TX N20 Mode_CH01/06/11_Total					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	29.39	0.87	30.00	1.00	Complies
2437	29.54	0.90	30.00	1.00	Complies
2462	29.47	0.88	30.00	1.00	Complies

Test Mode :TX N40 Mode_CH03/06/09_ANT 1					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2422	22.63	0.18	30.00	1.00	Complies
2437	26.19	0.42	30.00	1.00	Complies
2452	22.41	0.17	30.00	1.00	Complies

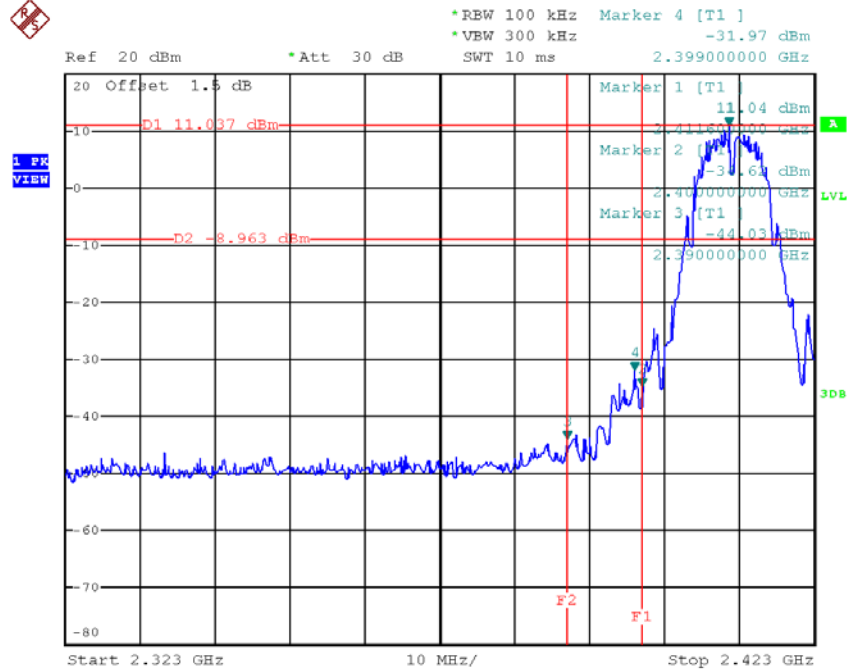
Test Mode :TX N40 Mode_CH03/06/09_ANT 2					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2422	23.55	0.23	30.00	1.00	Complies
2437	26.55	0.45	30.00	1.00	Complies
2452	23.02	0.20	30.00	1.00	Complies

Test Mode :TX N40 Mode_CH03/06/09_Total					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2422	26.12	0.41	30.00	1.00	Complies
2437	29.38	0.87	30.00	1.00	Complies
2452	25.74	0.37	30.00	1.00	Complies

## APPENDIX G - ANTENNA CONDUCTED SPURIOUS EMISSION

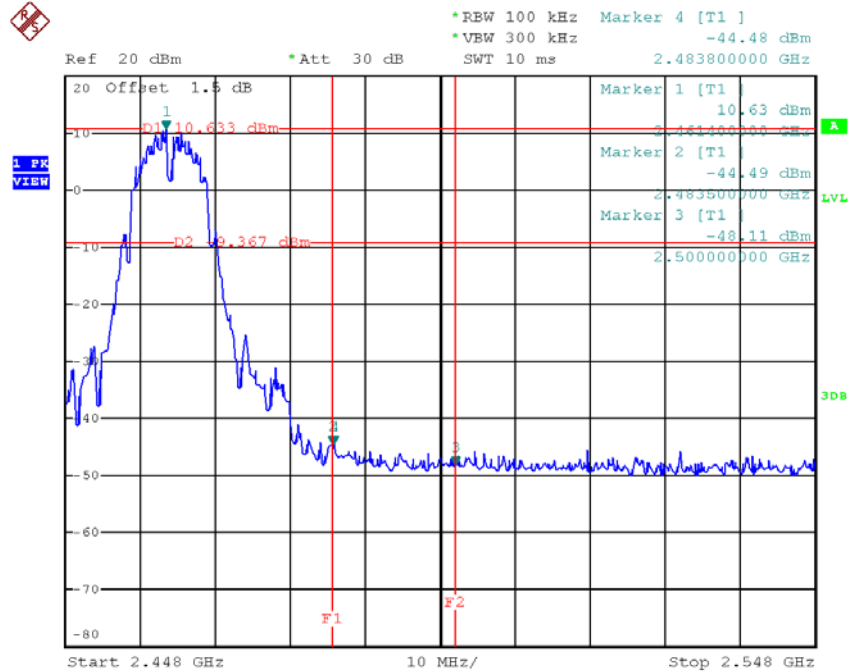
Test Mode : TX B Mode\_ANT 1

### TX B mode CH01



Date: 12.AUG.2017 10:22:34

### TX B mode CH11



Date: 12.AUG.2017 10:26:31