

# FCC Radio Test Report

## FCC ID: YVR-DC-W50

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

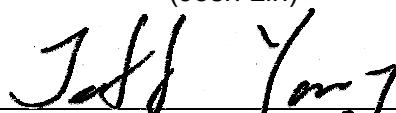
**Project No.** : 1412005  
**Equipment** : Wireless Docking  
**Model Name** : DC-W50  
**Applicant** : Lumens Digital Optics Inc.  
**Address** : 5F,No.35,Sintai Rd.,Jhubei City,Hsinchu County  
302,Taiwan

**Date of Receipt** : Dec. 11, 2014  
**Date of Test** : Dec. 11, 2014 ~Jan. 13, 2015  
**Issued Date** : Jan. 14, 2015  
**Tested by** : BTL Inc.

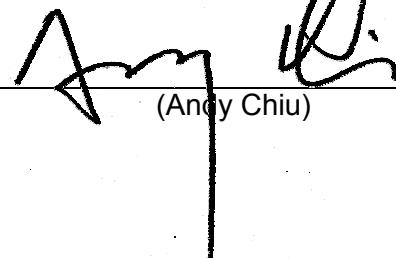
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## **Declaration**

**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 the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C**, or National Institute of Standards and Technology (**NIST**) of **U.S.A**.

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## **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.

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## REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1412005	Original Issue.	Jan. 14, 2015

## 1. CERTIFICATION

Equipment : Wireless Docking  
Brand Name : Lumens  
Model Name : DC-W50  
Applicant : Lumens Digital Optics Inc.  
Date of Test : Dec. 11, 2014 ~Jan. 13, 2015  
Test Sample : ENGINEERING SAMPLE  
Standard(s) : FCC Part15, Subpart C: 2013 (15.247) / ANSI C63.4-2009

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-1-1412005) 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):

<b>Applied Standard(s): FCC Part15 (15.247) , Subpart C: 2013</b>			
Standard(s)	Section	Test Item	Judgment
	FCC		
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) The test follows FCC KDB Publication No. 558074 D01 DTS Meas Guidance v03r02 (Measurement Guidelines of DTS)

## 2.1 TEST FACILITY

The test facilities used to collect the test data in this report:

### Conducted emission Test:

**C02:** FCC RN: 614388; FCC DN: TW1054

1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

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

**CB08:** FCC RN: 614388; FCC DN: TW1054

1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

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

**CB08:** FCC RN: 614388; FCC DN: TW1054

1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

## 2.2 MEASUREMENT UNCERTAINTY

### The measurement uncertainty is not specified by FCC rules for reference only.

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

The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2.

#### A. Conducted emission test:

Test Site	Measurement Frequency Range	U,(dB)	NOTE
C02	150 kHz ~ 30 MHz	2.59	

#### B. Radiated emission test:

Test Site	Item	Measurement Frequency Range	Uncertainty	NOTE
CB08	Radiated emission at 3m	Horizontal Polarization	30 - 200MHz	3.35 dB
			200 - 1000MHz	3.11 dB
			1 - 18GHz	3.97 dB
			18 - 40GHz	4.01 dB
	Vertical Polarization	Vertical Polarization	30 - 200MHz	3.22 dB
			200 - 1000MHz	3.24 dB
			1 - 18GHz	4.05 dB
			18 - 40GHz	4.04 dB

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

Since Table 1 of CISPR 16-4-2 has values of measurement instrumentation uncertainty, called  $U_{CISPR}$ , 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  $U_{lab}$  values are smaller than  $U_{CISPR}$ .

If  $U_{lab}$  is less than or equal to  $U_{CISPR}$ , then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If  $U_{lab}$  is greater than  $U_{CISPR}$ , then:

- compliance is deemed to occur if no measured disturbance level, increased by  $(U_{lab} - U_{CISPR})$ , exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by  $(U_{lab} - U_{CISPR})$ , exceeds the disturbance limit.

### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

Equipment	Wireless Docking	
Brand Name	Lumens	
Model Name	DC-W50	
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 72.2 Mbps
	Output Power (Max.)	802.11b: 19.65dBm 802.11g: 21.48dBm 802.11n(20MHz): 21.46dBm
Power Source	1# DC Voltage supplied from AC/DC adapter. 2# Battery supplied. Brand/Model: RPC/18650-2S2P	
Power Rating	1# I/P: AC100-240V , 1A, 47-63Hz O/P: DC 12V, 3A 2# 4400mAh 8.4V	

Note:

- 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)	Note
1	RainSun	AN14-000024-W	Internal	N/A	5.00	TX/RX

### 3.2 DESCRIPTION OF TEST MODES

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

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

Note:

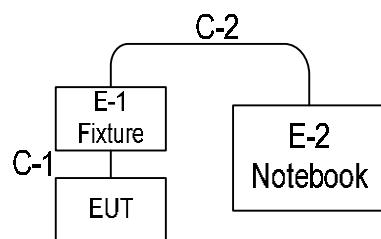
- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1Mbps)  
802.11g mode: OFDM (6Mbps)  
802.11n HT20 mode : BPSK (13Mbps)
- For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated below 1G test, the 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	ipop v3.32		
Frequency (MHz)	2412	2437	2462
802.11b	20	20	20
802.11g	17	17	17
802.11n (20MHz)	16	16	16

### 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/IC	Series No.	Note
E-1	Fixture Board	N/A	N/A	N/A	N/A	
E-2	Notebook	DELL	D620	DOC	7T390 A03	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	0.1M	DATA Cable
C-2	YES	NO	1.2M	RS232 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 -0.5	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

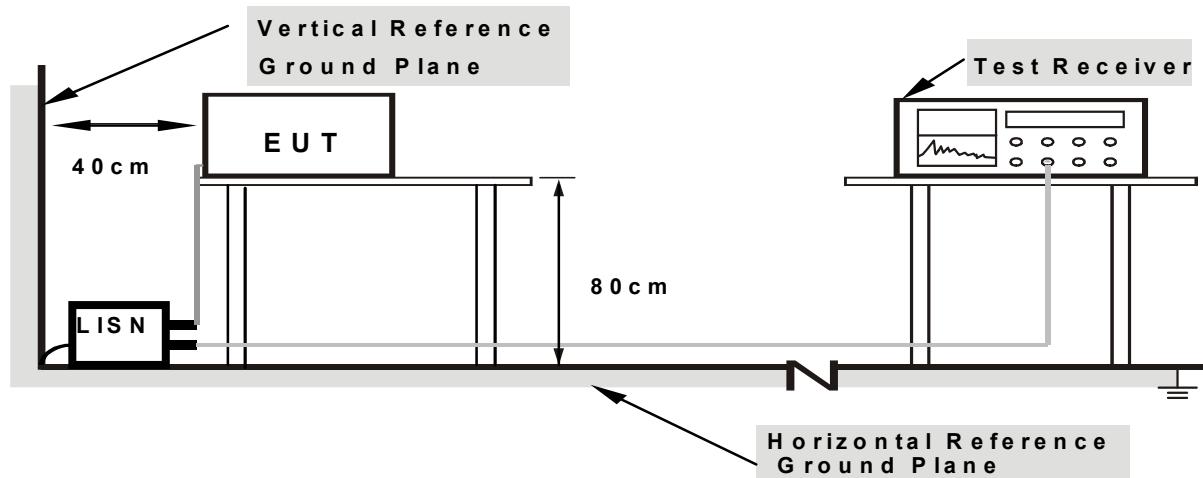
#### 4.1.2 TEST PROCEDURE

- 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 configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

#### 4.1.6 EUT TEST CONDITIONS

Temperature: 24°C    Relative Humidity: 59%    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

20dB in any 100 KHz bandwidth outside the operating frequency band. 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)	RBW 1MHz VBW 3MHz peak detector for Pk value RMS detector for AV value

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

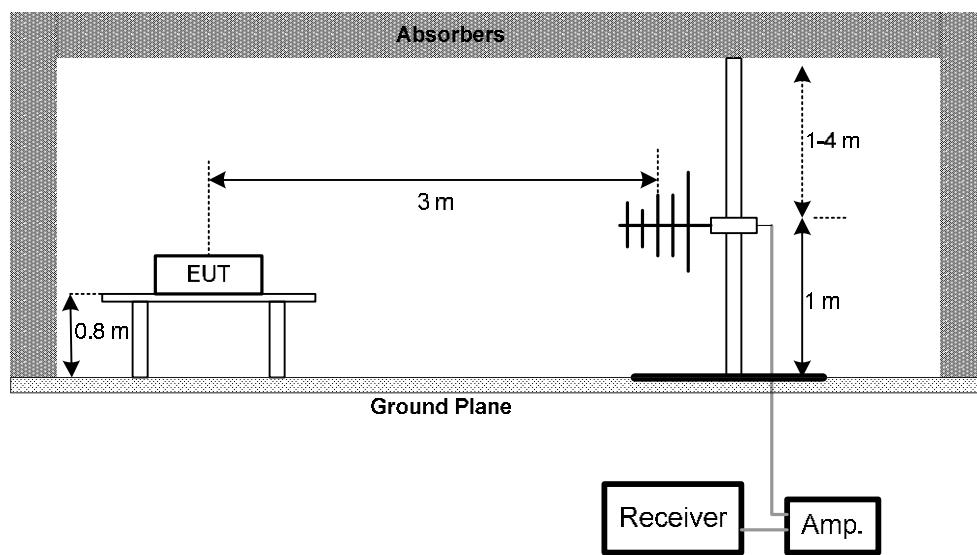
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3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

#### 4.2.3 DEVIATION FROM TEST STANDARD

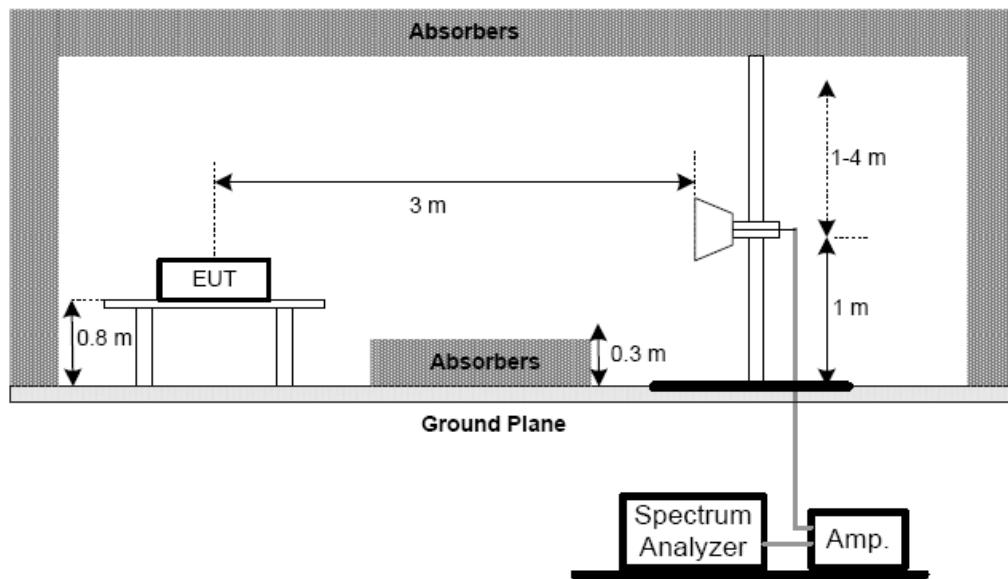
No deviation

#### 4.2.4 TEST SETUP

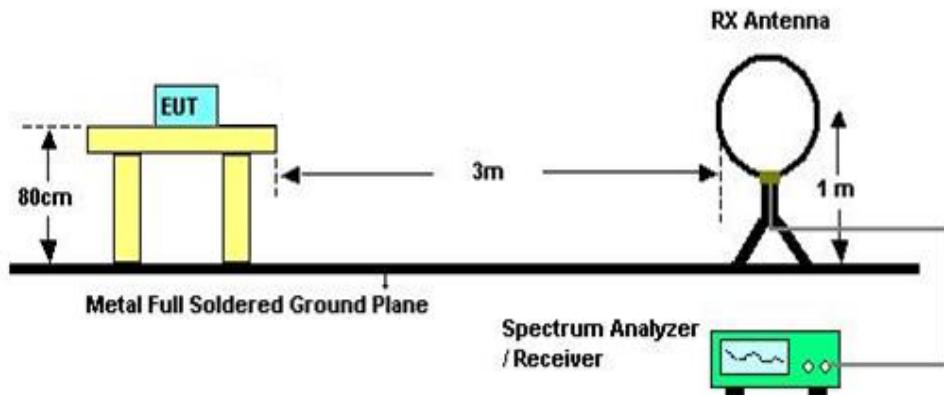
##### (A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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



(C) For radiated emissions below 30MHz



#### 4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.5 Unless** otherwise a special operating condition is specified in the follows during the testing.

#### 4.2.6 EUT TEST CONDITIONS

Temperature: 26°C    Relative Humidity: 60%    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 (BETWEEN 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

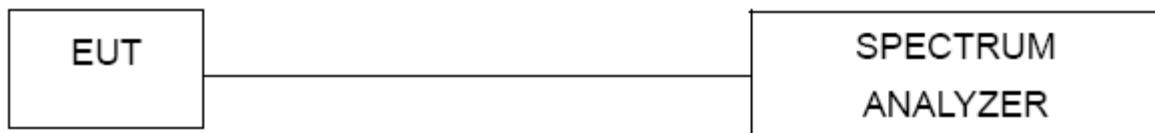
#### 5.1.1 TEST PROCEDURE

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

#### 5.1.2 DEVIATION FROM STANDARD

No deviation.

#### 5.1.3 TEST SETUP



#### 5.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 Unless otherwise a special operating condition is specified in the follows during the testing.

#### 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

- a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
- b. The maximum peak conducted output power was performed in accordance with method 9.1.2 of FCC KDB 558074 D01 DTS Meas Guidance v03r02.

#### 6.1.2 DEVIATION FROM STANDARD

No deviation.

#### 6.1.3 TEST SETUP



#### 6.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 Unless otherwise a special operating condition is specified in the follows during the testing.

Transmit output power was measured while the host equipment supply voltage was varied from 85 % to 115 % of the nominal rated supply voltage. No change in transmit output power was observed.

#### 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 intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

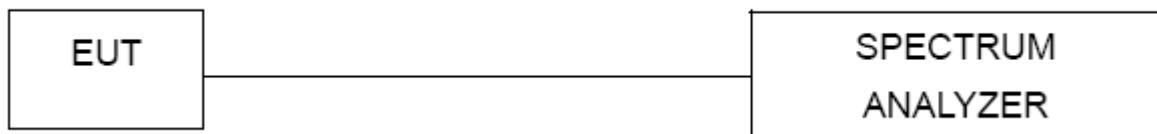
#### 7.1.1 TEST PROCEDURE

- 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.

#### 7.1.2 DEVIATION FROM STANDARD

No deviation.

#### 7.1.3 TEST SETUP



#### 7.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 Unless otherwise a special operating condition is specified in the follows during the testing.

#### 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

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

#### 8.1.2 DEVIATION FROM STANDARD

No deviation.

#### 8.1.3 TEST SETUP



#### 8.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 Unless otherwise a special operating condition is specified in the follows during the testing.

#### 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	LISN	R&S	ENV216	101050	Jan. 15, 2015
2	Test Cable	TIMES	CFD300-NL	C01	Jun. 15, 2015
3	EMI Test Receiver	R&S	ESCI	100082	Apr. 13, 2015
4	Measurement Software	EZ	EZ_EMC (Version NB-02A)	N/A	N/A

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-30	100854	Oct. 27, 2015
2	Horn Antenna	Schwarzbeck	BBHA 9120	D-325	Jan. 13, 2015
3	Microwave Pre_amplifier	Agilent	8449B	3008A01714	Apr. 16, 2015
4	Microflex Cable	Harbour industries	27478LL142	1m	May. 13, 2015
5	Microflex Cable	EMC	S104-SMA	10m	May. 15, 2015
6	Microflex Cable	Harbour industries	27478LL142	3m	May. 13, 2015
7	Test Cable	LMR	LMR-400	10m	May. 14, 2015
8	Test Cable	LMR	LMR-400	3m	May. 14, 2015
9	Pre-Amplifier	Anritsu	MH648A	M92649	Jun. 18, 2015
10	Log-Bicon Antenna	Schwarzbeck	VULB9168-352	9168-352	Jul. 10, 2015
11	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Feb. 22, 2015
12	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Feb. 22, 2015

<b>6dB Bandwidth Measurement</b>					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-30	100854	Oct. 27, 2015

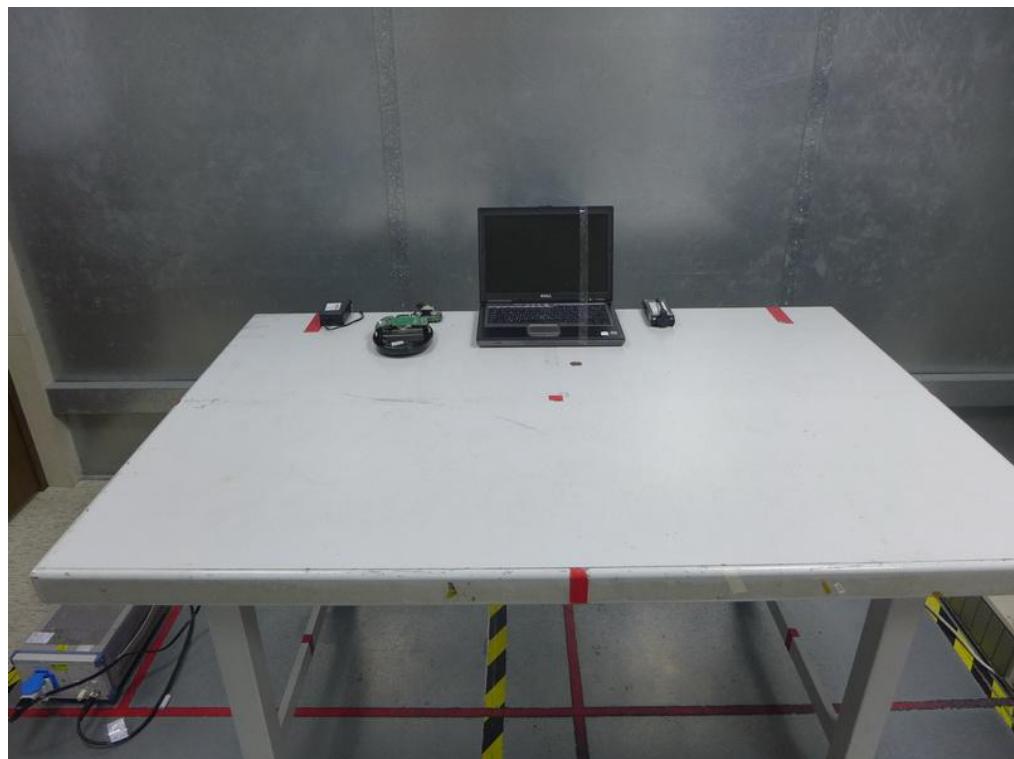
<b>Peak Output Power Measurement</b>					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-30	100854	Oct. 27, 2015

<b>Antenna Conducted Spurious Emission Measurement</b>					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-30	100854	Oct. 27, 2015

<b>Power Spectral Density Measurement</b>					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-30	100854	Oct. 27, 2015

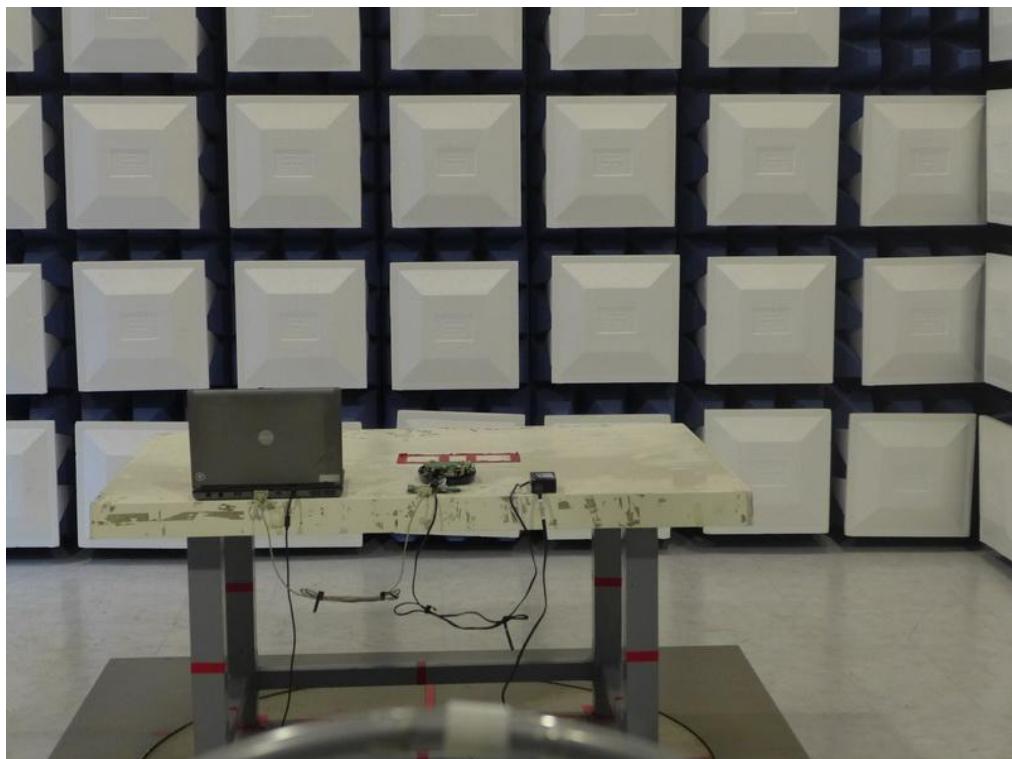
Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

**10. EUT TEST PHOTO****Conducted Measurement Photos**

## Radiated Measurement Photos

**9KHz to 30MHz**



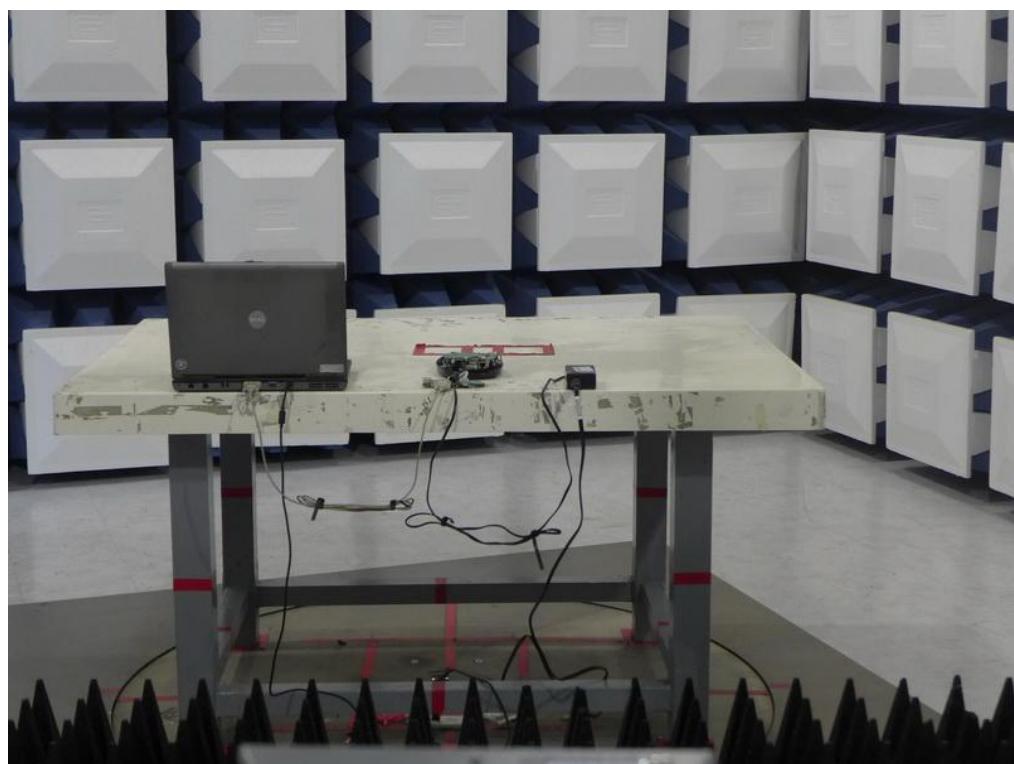
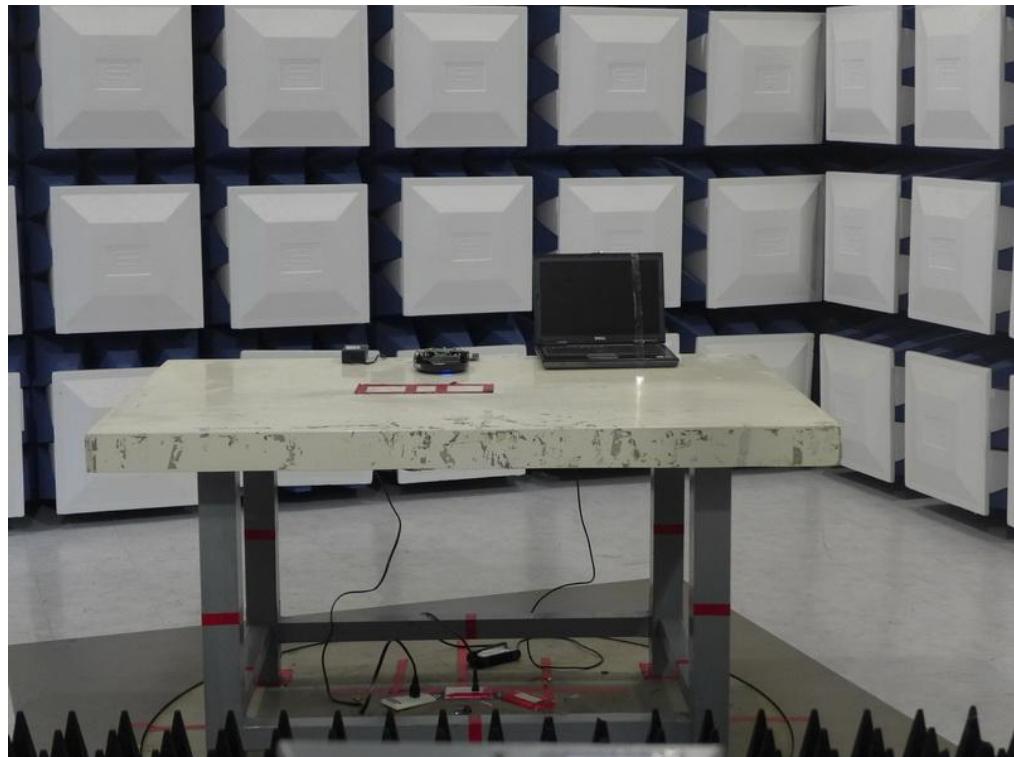
## Radiated Measurement Photos

30MHz to 1000MHz



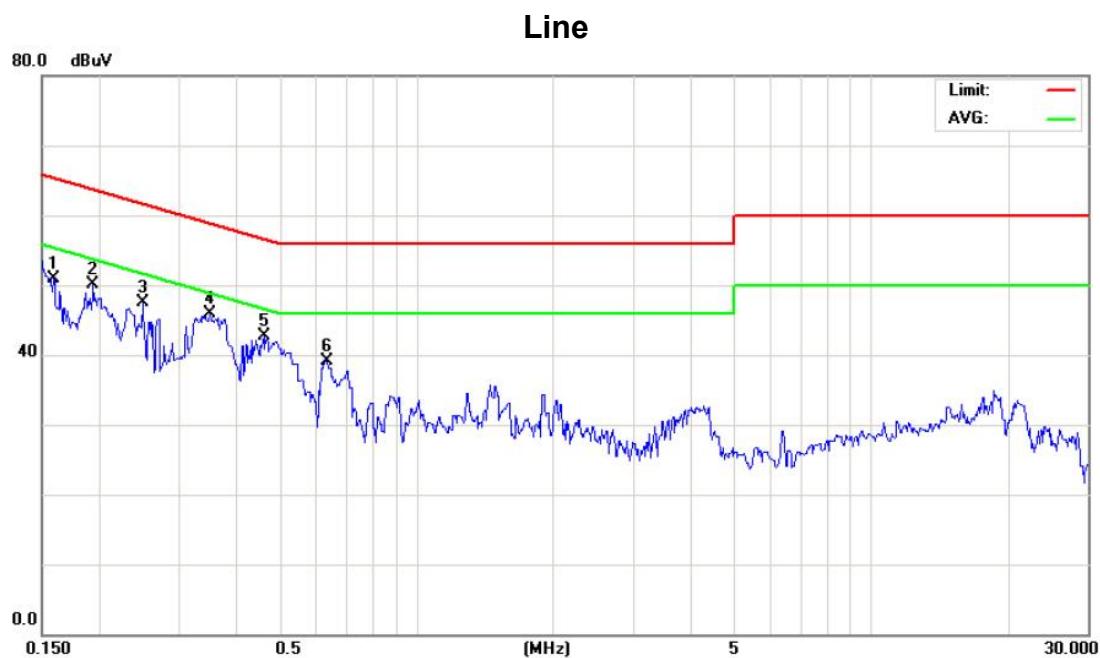
## Radiated Measurement Photos

### Above 1000MHz



## ATTACHMENT A - CONDUCTED EMISSION

Test Mode : TX MODE



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1589	41.18	9.65	50.83	65.52	-14.69	peak	
2		0.1940	40.50	9.65	50.15	63.86	-13.71	peak	
3		0.2500	37.85	9.70	47.55	61.75	-14.20	peak	
4	*	0.3508	36.12	9.82	45.94	58.94	-13.00	peak	
5		0.4611	32.66	9.95	42.61	56.67	-14.06	peak	
6		0.6349	29.26	9.79	39.05	56.00	-16.95	peak	

Test Mode : TX MODE

**Neutral**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dB	Margin Detector	Comment
1		0.1513	42.19	9.64	51.83	65.92	-14.09	peak
2		0.1975	40.24	9.64	49.88	63.71	-13.83	peak
3		0.2466	38.73	9.64	48.37	61.87	-13.50	peak
4	*	0.3310	36.29	9.65	45.94	59.42	-13.48	peak
5		0.4796	32.77	9.67	42.44	56.35	-13.91	peak
6		1.4449	27.10	9.72	36.82	56.00	-19.18	peak

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

Test Mode:	TX Mode 2412MHz
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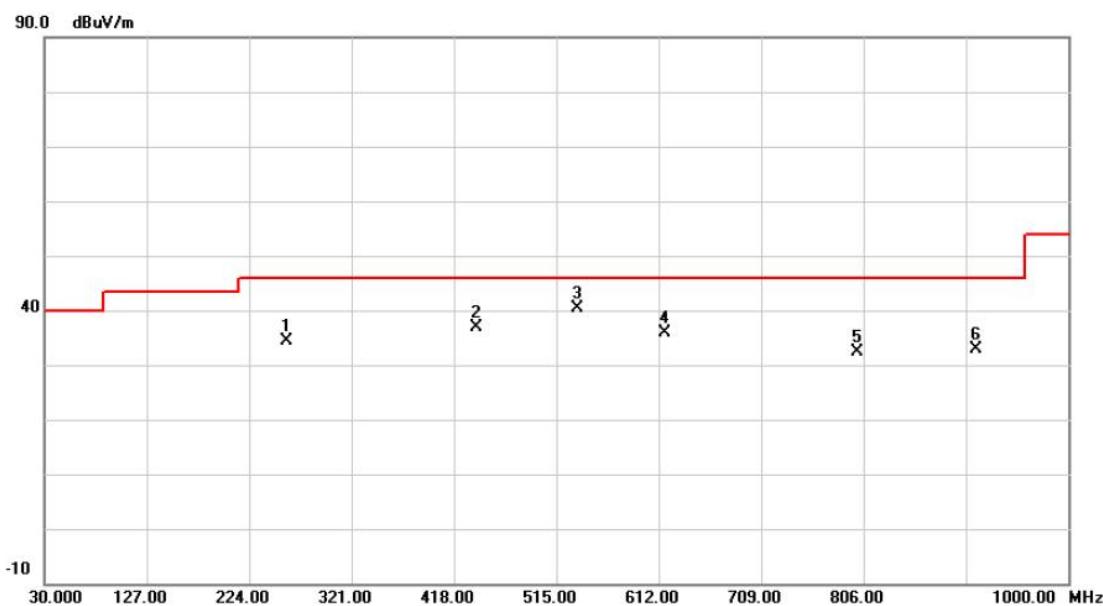
Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.2510	0°	45.99	11.41	57.40	79.61	-22.21	AVG
0.2510	0°	52.45	11.41	63.86	99.61	-35.75	PK
0.3750	0°	38.64	11.14	49.78	76.12	-26.34	AVG
0.3750	0°	45.62	11.14	56.76	96.12	-39.36	PK
0.4330	0°	40.48	11.18	51.66	74.87	-23.22	AVG
0.4330	0°	48.34	11.18	59.52	94.87	-35.36	PK
0.7550	0°	43.52	11.30	54.82	90.55	-35.73	QP
0.7710	0°	40.12	11.33	51.45	69.86	-18.41	QP
1.3500	0°	39.64	11.52	51.16	65.00	-13.83	QP

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.2510	90°	46.03	11.41	57.44	79.61	-22.17	AVG
0.2510	90°	52.55	11.41	63.96	99.61	-35.65	PK
0.3750	90°	39.37	11.14	50.51	76.12	-25.61	AVG
0.3750	90°	45.58	11.14	56.72	96.12	-39.40	PK
0.4330	90°	40.24	11.18	51.42	74.87	-23.46	AVG
0.4330	90°	47.36	11.18	58.54	94.87	-36.34	PK
0.7550	90°	43.48	11.30	54.78	90.55	-35.77	QP
0.7710	90°	40.06	11.33	51.39	69.86	-18.47	QP
1.3500	90°	39.75	11.52	51.27	65.00	-13.72	QP

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

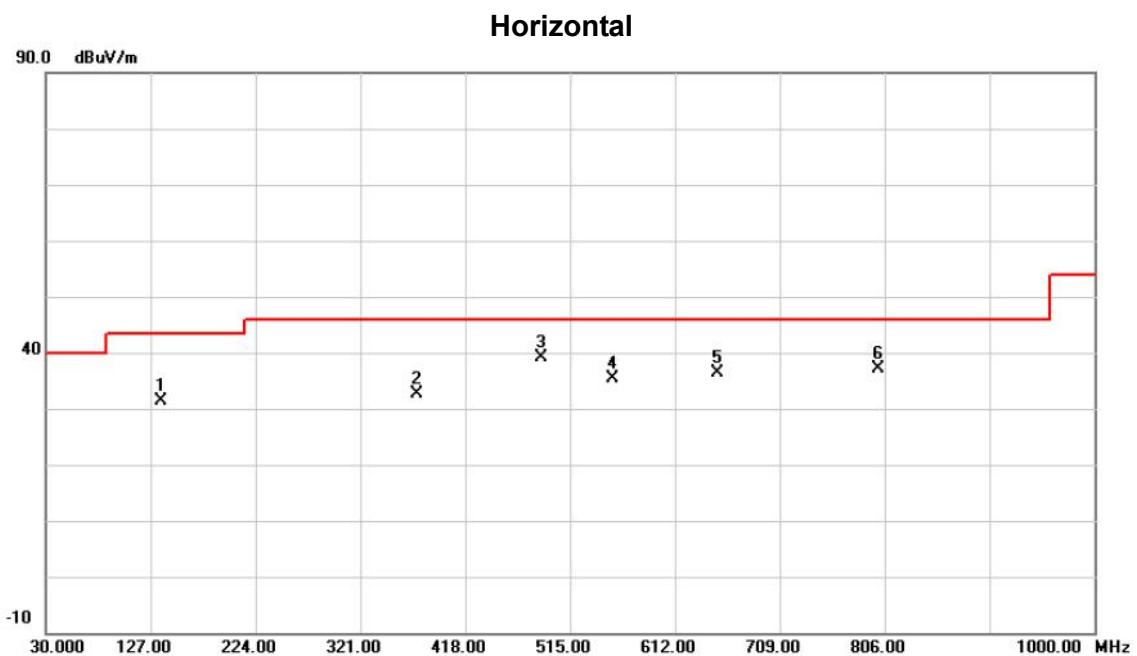
Test Mode: TX B MODE CHANNEL 06

**Vertical**



No.	Mk.	Freq. MHz	Reading Level dB <sub>UV</sub>	Correct Factor dB	Measure- ment dB <sub>UV/m</sub>	Limit dB <sub>UV/m</sub>	Margin dB	Detector	Comment
1		258.9200	54.58	-20.19	34.39	46.00	-11.61	peak	
2		439.3400	52.84	-16.03	36.81	46.00	-9.19	peak	
3	*	534.4000	53.50	-13.01	40.49	46.00	-5.51	peak	
4		617.8200	45.54	-9.68	35.86	46.00	-10.14	peak	
5		800.1800	41.25	-8.92	32.33	46.00	-13.67	peak	
6		912.7000	43.04	-10.12	32.92	46.00	-13.08	peak	

Test Mode: TX B MODE CHANNEL 06

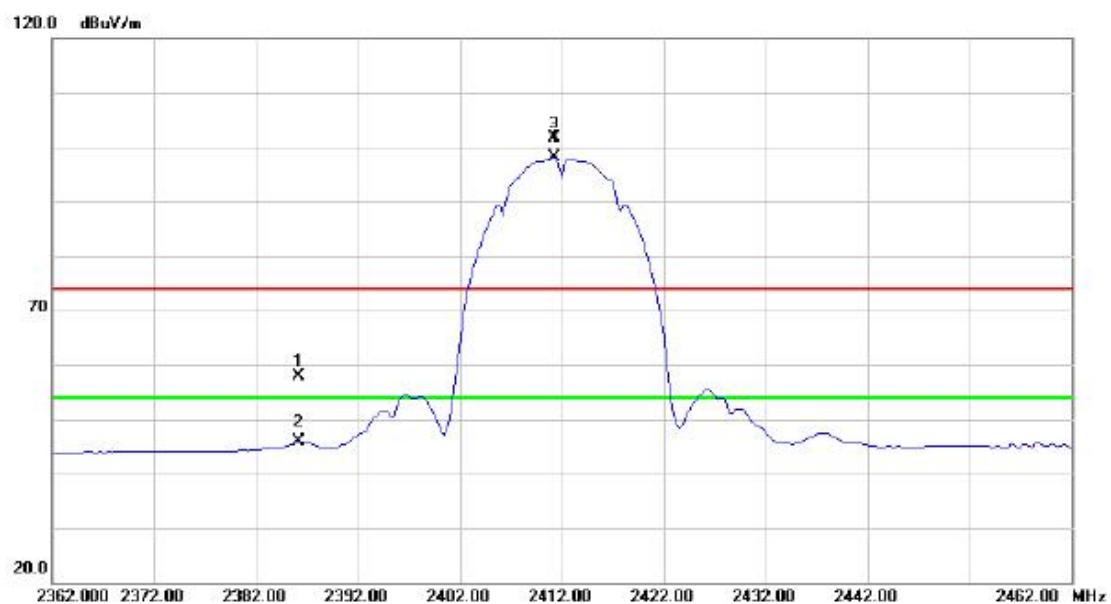


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		136.7000	56.69	-25.33	31.36	43.50	-12.14	peak	
2		373.3800	51.41	-18.67	32.74	46.00	-13.26	peak	
3	*	487.8400	52.14	-13.01	39.13	46.00	-6.87	peak	
4		553.8000	46.03	-10.77	35.26	46.00	-10.74	peak	
5		650.8000	46.13	-9.87	36.26	46.00	-9.74	peak	
6		800.1800	44.38	-7.16	37.22	46.00	-8.78	peak	

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

Orthogonal Axis : X

Test Mode : TX B MODE 2412MHz

**Vertical**

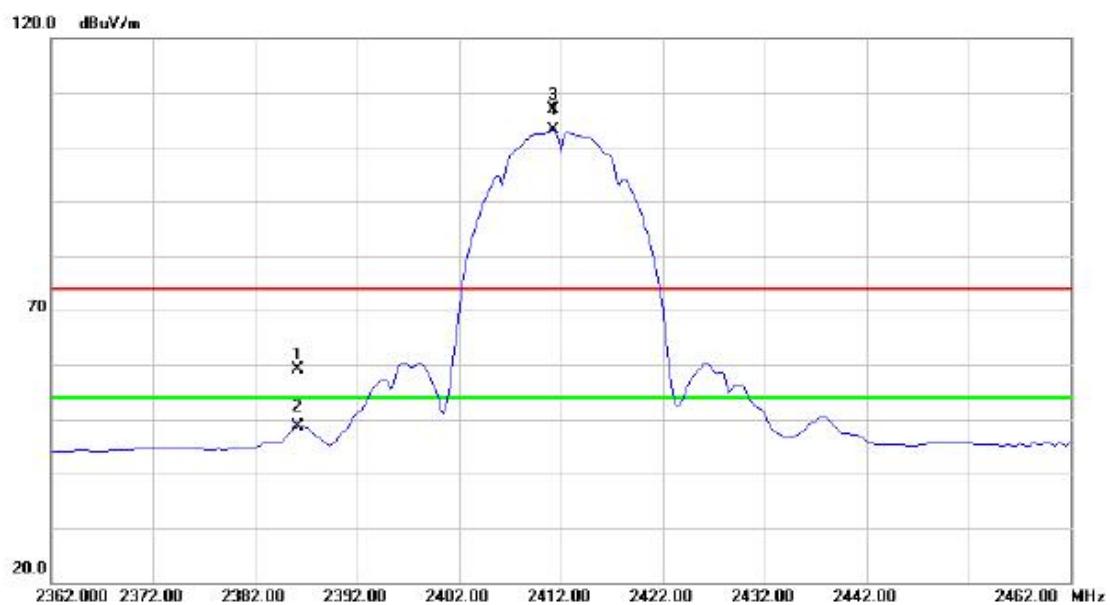
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB	Margin	Detector	Comment
1		2386.250	26.84	31.00	57.84	74.00	-16.16	peak	
2		2386.250	14.89	31.00	45.89	54.00	-8.11	AVG	
3	X	2411.250	70.59	31.12	101.71	74.00	27.71	peak	NO LIMIT
4	*	2411.250	66.99	31.12	98.11	54.00	44.11	AVG	NO LIMIT

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

**Vertical**

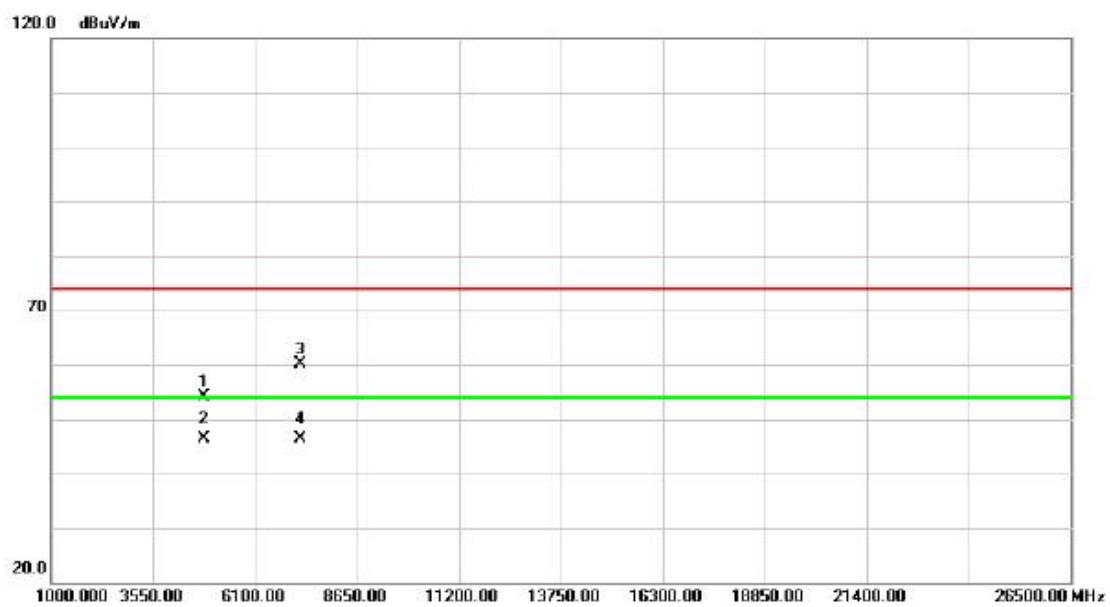
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4823.965	48.68	6.78	55.46	74.00	-18.54	peak	
2	*	4823.965	42.62	6.78	49.40	54.00	-4.60	AVG	
3		7235.980	44.07	15.17	59.24	74.00	-14.76	peak	
4		7235.980	31.26	15.17	46.43	54.00	-7.57	AVG	

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

**Horizontal**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2386.250	28.02	31.00	59.02	74.00	-14.98	peak	
2		2386.250	17.65	31.00	48.65	54.00	-5.35	AVG	
3	X	2411.250	75.65	31.12	106.77	74.00	32.77	peak	NO LIMIT
4	*	2411.250	71.89	31.12	103.01	54.00	49.01	AVG	NO LIMIT

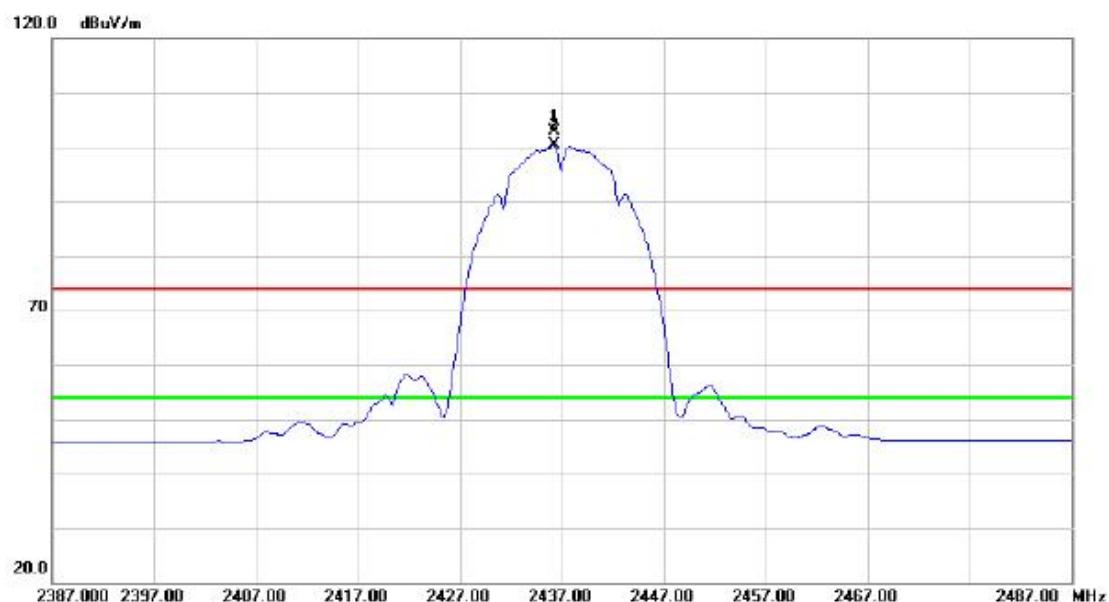
Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz

**Horizontal**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4823.945	47.40	6.78	54.18	74.00	-19.82	peak	
2		4823.945	39.60	6.78	46.38	54.00	-7.62	AVG	
3		7236.055	45.05	15.17	60.22	74.00	-13.78	peak	
4	*	7236.055	31.27	15.17	46.44	54.00	-7.56	AVG	

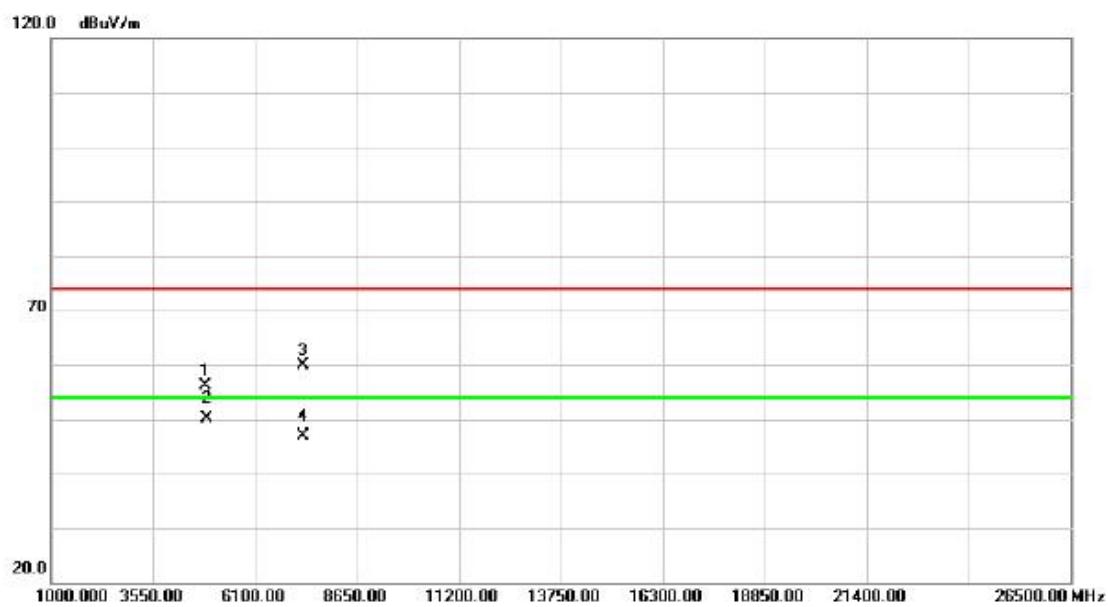
Orthogonal Axis : X

Test Mode : TX B MODE 2437MHz

**Vertical**

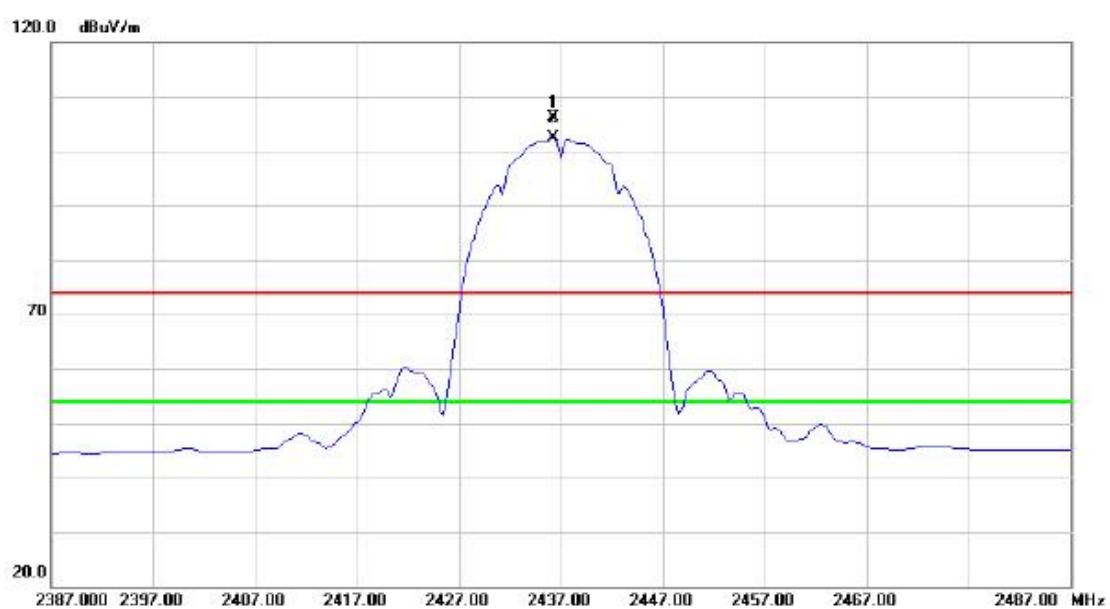
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dB	Detector	Comment
1	X	2436.200	71.55	31.24	102.79	74.00	28.79	peak NO LIMIT
2	*	2436.200	69.03	31.24	100.27	54.00	46.27	AVG NO LIMIT

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

**Vertical**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4873.980	49.35	6.78	56.13	74.00	-17.87	peak	
2	*	4873.980	43.47	6.78	50.25	54.00	-3.75	AVG	
3		7311.090	44.39	15.57	59.96	74.00	-14.04	peak	
4		7311.090	31.33	15.57	46.90	54.00	-7.10	AVG	

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

**Horizontal**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB	Margin Detector	Comment
1	X	2436.250	74.85	31.24	106.09	74.00	32.09	peak NO LIMIT
2	*	2436.250	71.13	31.24	102.37	54.00	48.37	AVG NO LIMIT

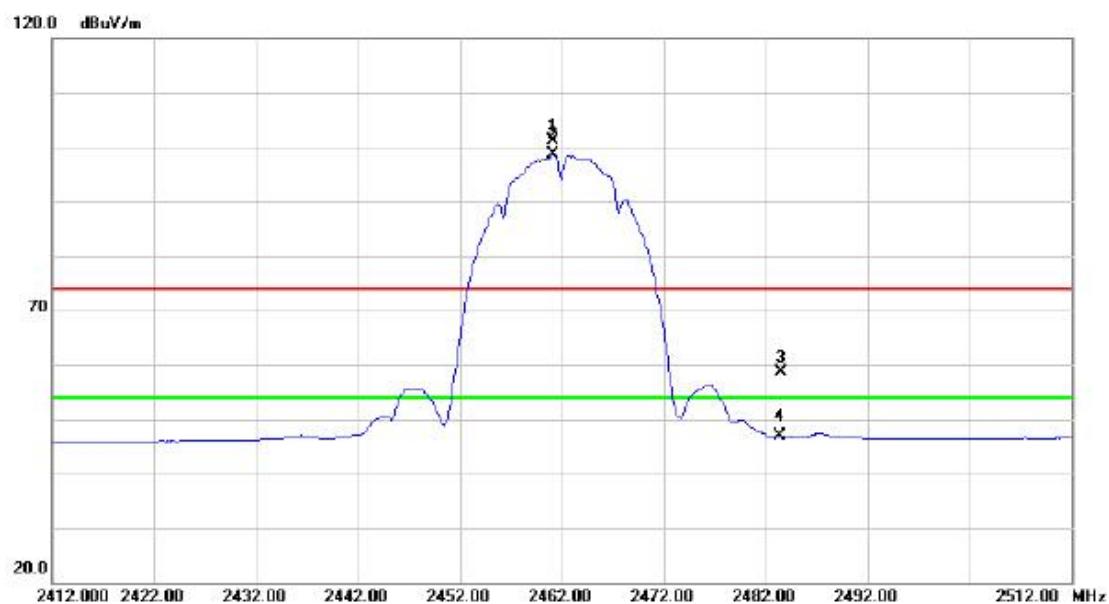
Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz

**Horizontal**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4873.985	46.86	6.78	53.64	74.00	-20.36	peak	
2		4873.985	38.74	6.78	45.52	54.00	-8.48	AVG	
3		7310.920	44.97	15.57	60.54	74.00	-13.46	peak	
4	*	7310.920	31.34	15.57	46.91	54.00	-7.09	AVG	

Orthogonal Axis : X

Test Mode : TX B MODE 2462MHz

**Vertical**

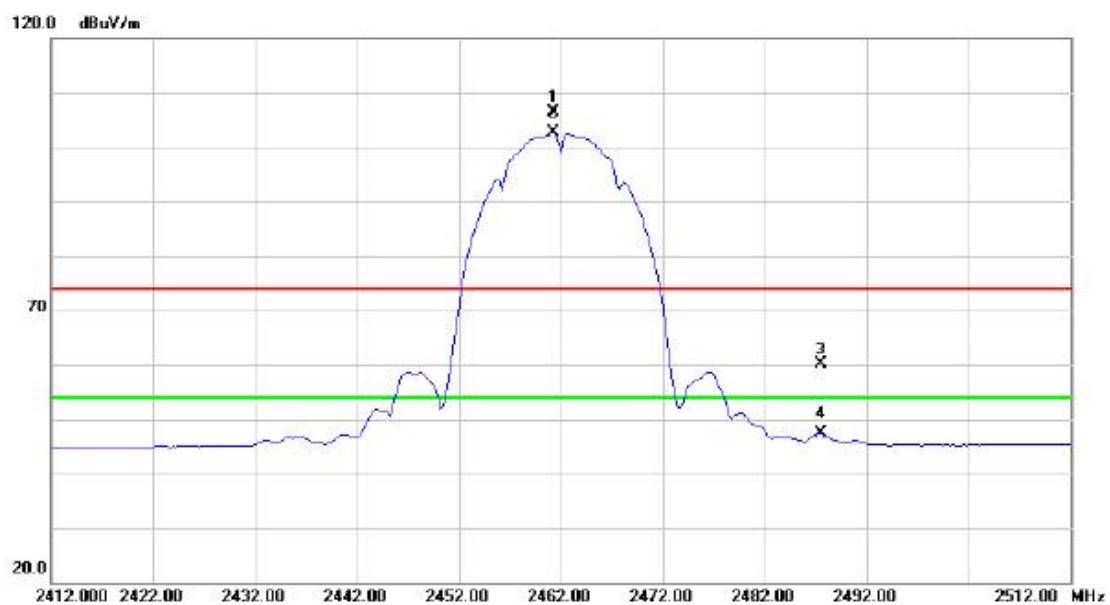
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dB	Detector	Comment
1	X	2461.100	69.85	31.36	101.21	74.00	27.21	peak NO LIMIT
2	*	2461.100	67.20	31.36	98.56	54.00	44.56	AVG NO LIMIT
3		2483.500	27.25	31.46	58.71	74.00	-15.29	peak
4		2483.500	15.51	31.46	46.97	54.00	-7.03	AVG

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

**Vertical**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4923.985	47.25	6.77	54.02	74.00	-19.98	peak	
2		4923.985	40.50	6.77	47.27	54.00	-6.73	AVG	
3		7386.400	45.03	15.98	61.01	74.00	-12.99	peak	
4	*	7386.400	31.48	15.98	47.46	54.00	-6.54	AVG	

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

**Horizontal**

No.	Mk.	Freq. MHz	Reading Level dB <sub>B</sub> V	Correct Factor dB	Measure- ment dB <sub>B</sub> V/m	Limit dB <sub>B</sub> V/m	Margin dB	Detector	Comment
1	X	2461.250	74.98	31.36	106.34	74.00	32.34	peak	NO LIMIT
2	*	2461.250	71.30	31.36	102.66	54.00	48.66	AVG	NO LIMIT
3		2487.500	28.64	31.48	60.12	74.00	-13.88	peak	
4		2487.500	15.83	31.48	47.31	54.00	-6.69	AVG	

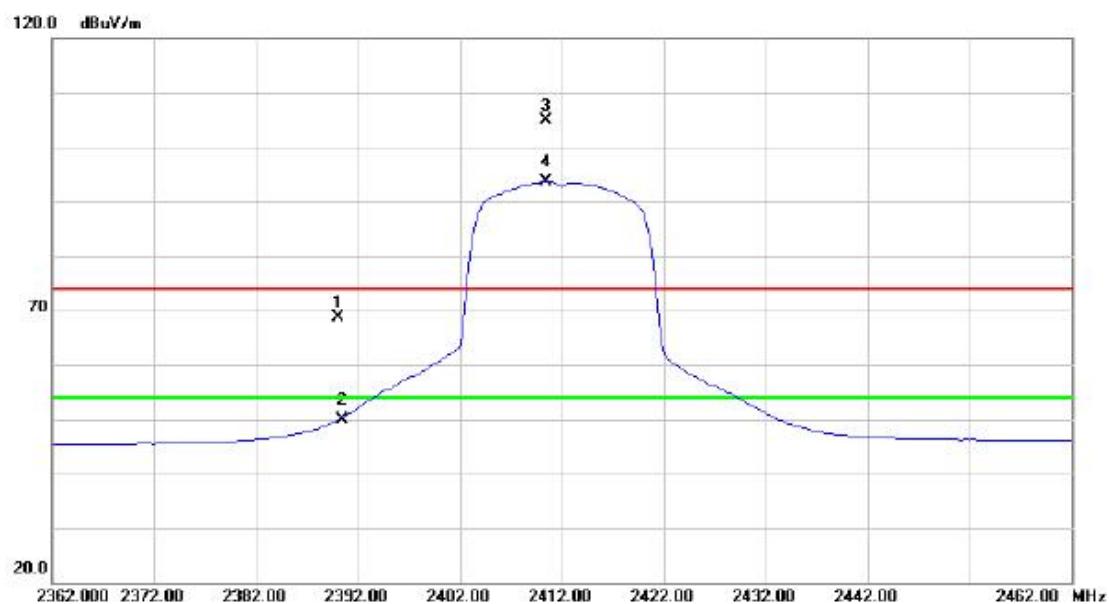
Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

**Horizontal**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4923.965	50.63	6.77	57.40	74.00	-16.60	peak	
2	*	4923.965	45.94	6.77	52.71	54.00	-1.29	AVG	
3		7385.714	44.78	15.98	60.76	74.00	-13.24	peak	
4		7385.714	31.40	15.98	47.38	54.00	-6.62	AVG	

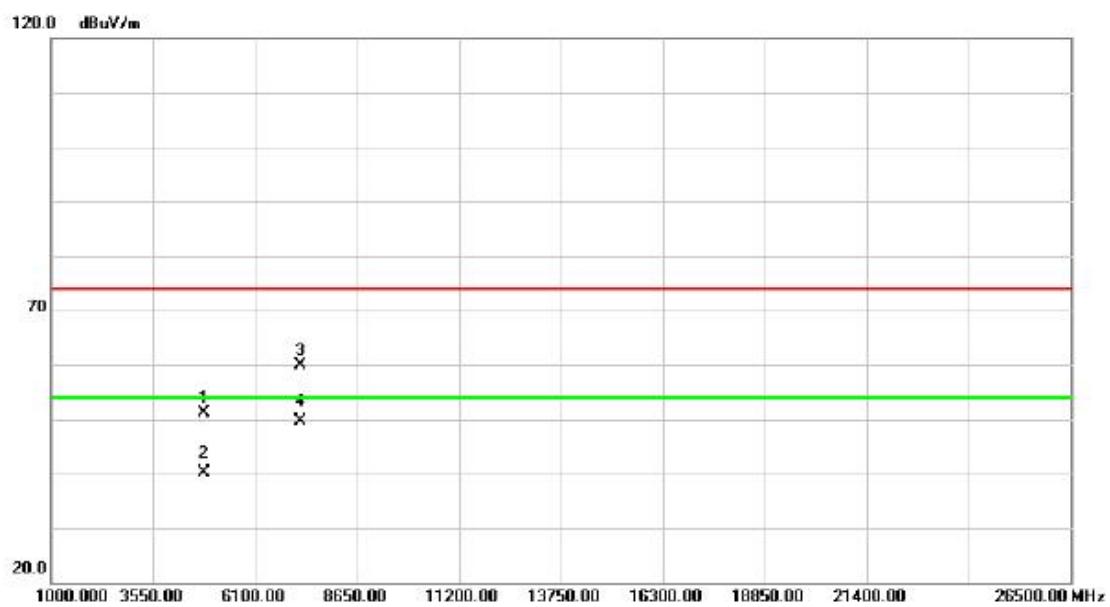
Orthogonal Axis : X

Test Mode : TX G MODE 2412MHz

**Vertical**

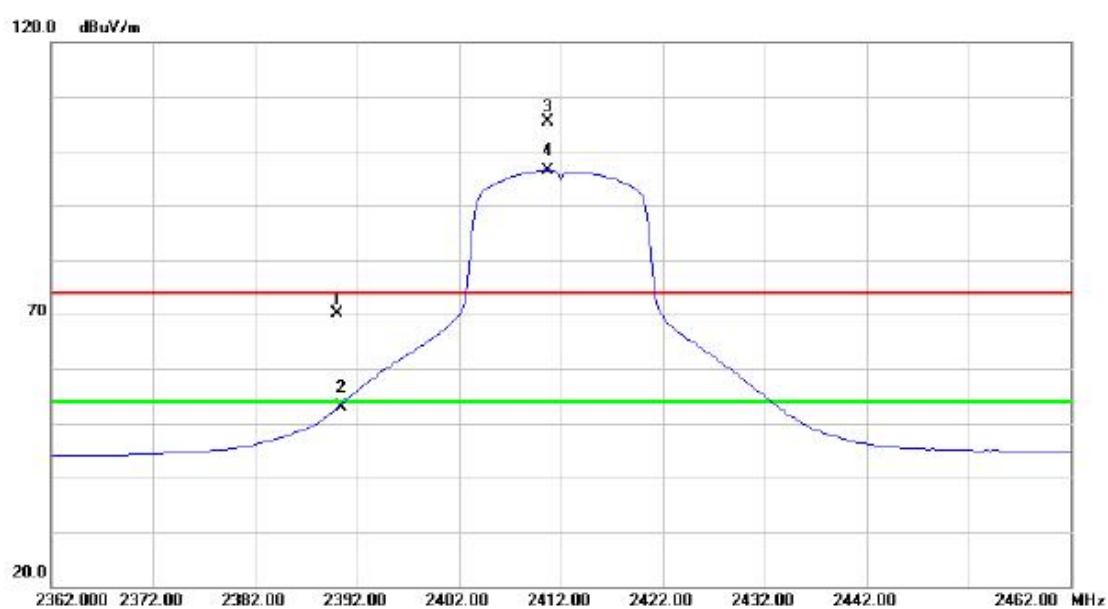
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2390.000	37.72	31.02	68.74	74.00	-5.26	peak	
2		2390.000	18.79	31.02	49.81	54.00	-4.19	AVG	
3	X	2410.500	73.82	31.12	104.94	74.00	30.94	peak	NO LIMIT
4	*	2410.500	62.48	31.12	93.60	54.00	39.60	AVG	NO LIMIT

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

**Vertical**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4824.032	44.33	6.78	51.11	74.00	-22.89	peak	
2		4824.032	33.28	6.78	40.06	54.00	-13.94	AVG	
3		7236.103	44.62	15.17	59.79	74.00	-14.21	peak	
4	*	7236.103	34.38	15.17	49.55	54.00	-4.45	AVG	

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

**Horizontal**

No.	Mk.	Freq. MHz	Reading Level	Correct Factor	Measure- ment	Limit dBuV/m	Margin dB	Detector	Comment
			dBuV	dB	dBuV/m				
1		2390.000	39.02	31.02	70.04	74.00	-3.96	peak	
2		2390.000	21.77	31.02	52.79	54.00	-1.21	AVG	
3	X	2410.750	74.26	31.12	105.38	74.00	31.38	peak	NO LIMIT
4	*	2410.750	65.27	31.12	96.39	54.00	42.39	AVG	NO LIMIT

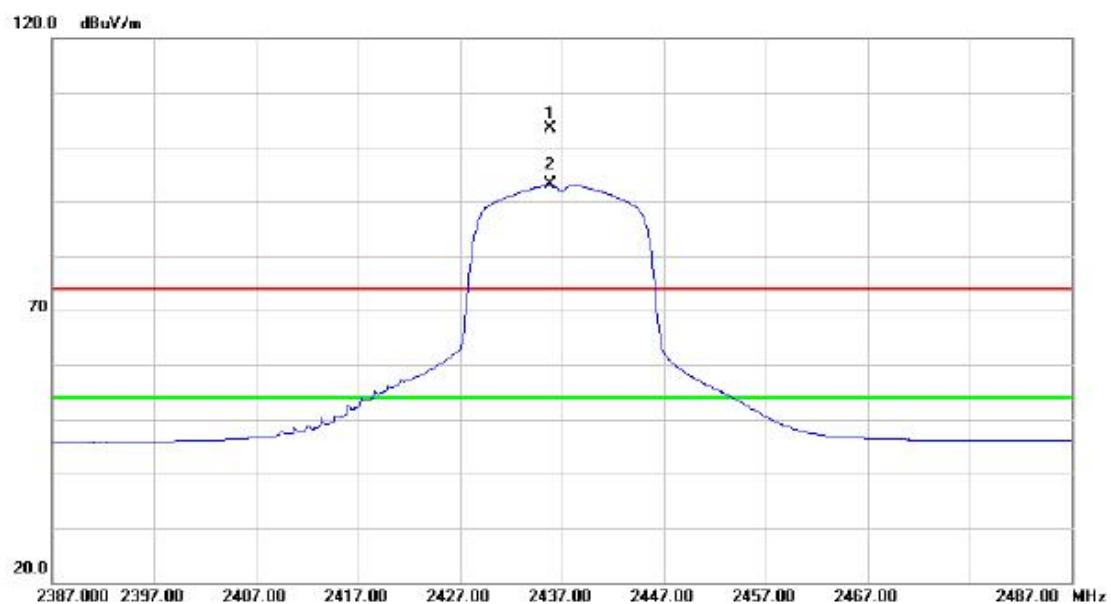
Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz

**Horizontal**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4824.000	42.27	6.78	49.05	74.00	-24.95	peak	
2		4824.000	30.95	6.78	37.73	54.00	-16.27	AVG	
3		7236.265	41.88	15.17	57.05	74.00	-16.95	peak	
4	*	7236.265	31.24	15.17	46.41	54.00	-7.59	AVG	

Orthogonal Axis : X

Test Mode : TX G MODE 2437MHz

**Vertical**

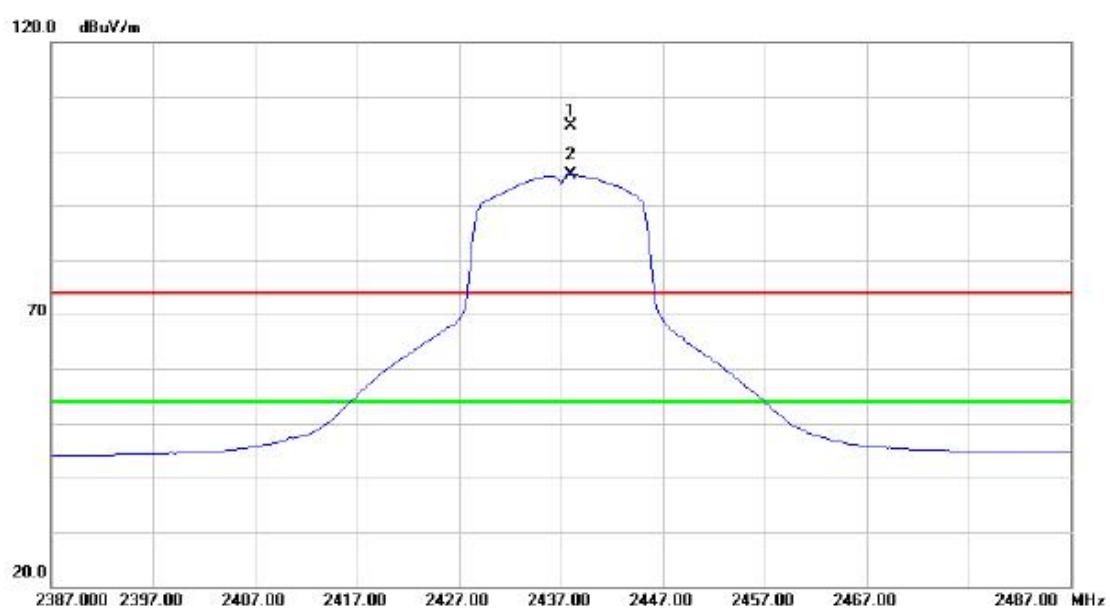
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dB	Detector	Comment
1	X	2435.800	72.26	31.24	103.50	74.00	29.50	peak NO LIMIT
2	*	2435.800	61.78	31.24	93.02	54.00	39.02	AVG NO LIMIT

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

**Vertical**

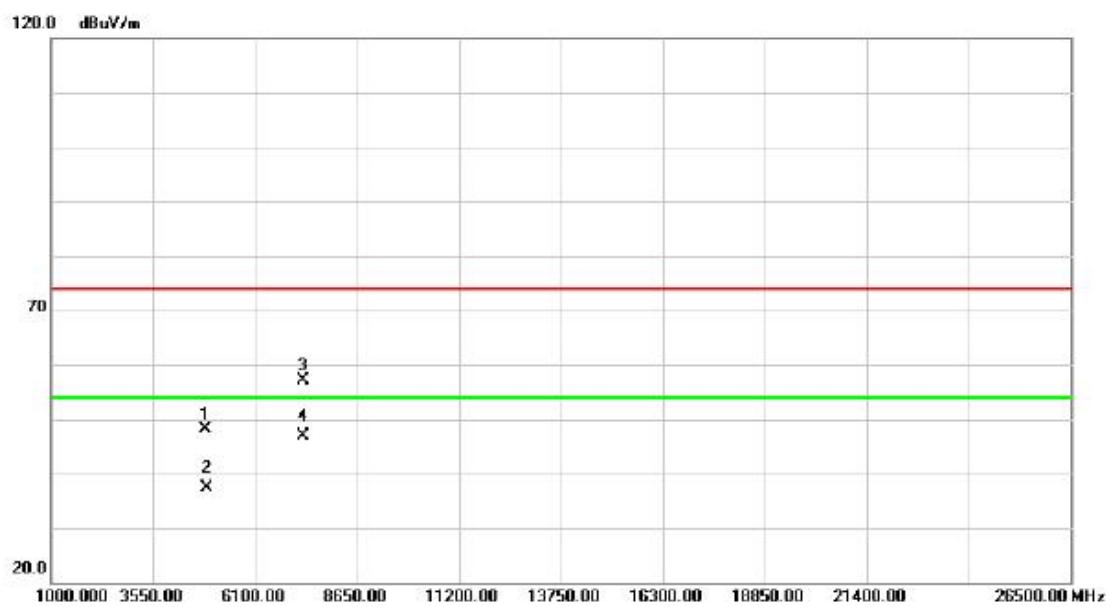
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4874.060	44.26	6.78	51.04	74.00	-22.96	peak	
2		4874.060	33.19	6.78	39.97	54.00	-14.03	AVG	
3		7311.040	44.09	15.57	59.66	74.00	-14.34	peak	
4	*	7311.040	34.47	15.57	50.04	54.00	-3.96	AVG	

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

**Horizontal**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB	Margin	Detector	Comment
1	X	2438.000	73.35	31.25	104.60	74.00	30.60	peak	NO LIMIT
2	*	2438.000	64.31	31.25	95.56	54.00	41.56	AVG	NO LIMIT

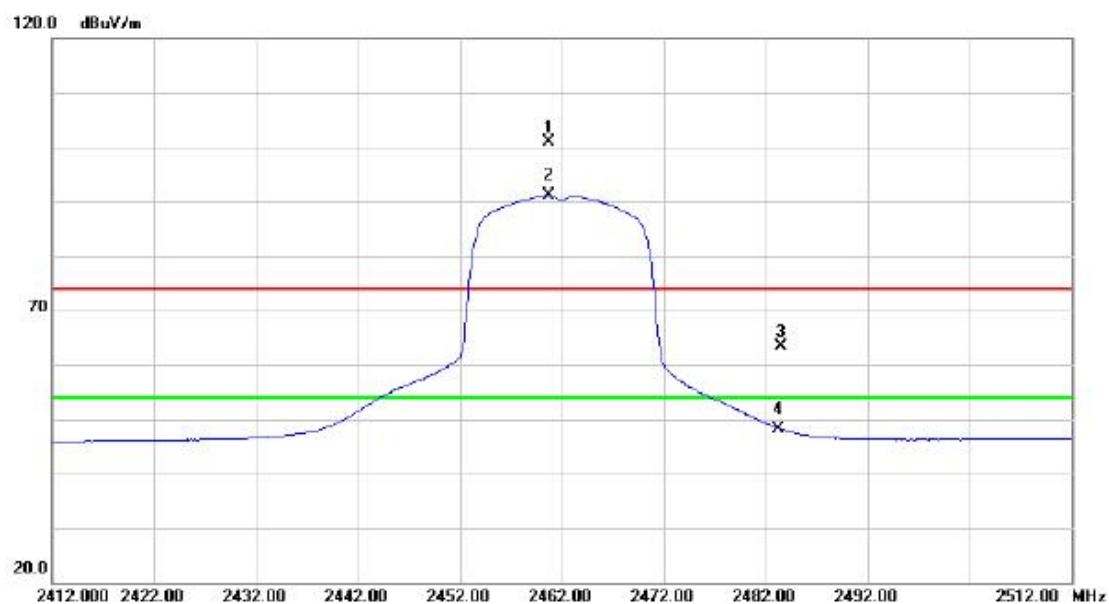
Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

**Horizontal**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4873.880	41.43	6.78	48.21	74.00	-25.79	peak	
2		4873.880	30.70	6.78	37.48	54.00	-16.52	AVG	
3		7311.010	41.45	15.57	57.02	74.00	-16.98	peak	
4	*	7311.010	31.26	15.57	46.83	54.00	-7.17	AVG	

Orthogonal Axis : X

Test Mode : TX G MODE 2462MHz

**Vertical**

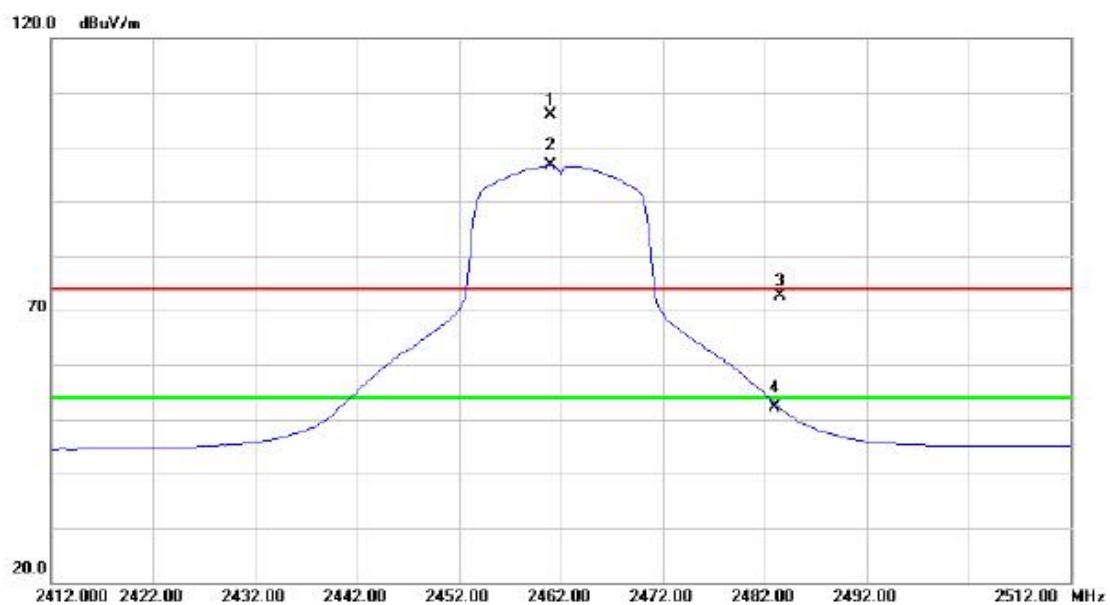
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dB	Detector	Comment
1	X	2460.700	69.60	31.36	100.96	74.00	26.96	peak NO LIMIT
2	*	2460.700	59.69	31.36	91.05	54.00	37.05	Avg NO LIMIT
3		2483.500	31.91	31.46	63.37	74.00	-10.63	peak
4		2483.500	16.74	31.46	48.20	54.00	-5.80	Avg

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

**Vertical**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4924.130	45.34	6.77	52.11	74.00	-21.89	peak	
2		4924.130	33.92	6.77	40.69	54.00	-13.31	AVG	
3		7386.000	44.99	15.98	60.97	74.00	-13.03	peak	
4	*	7386.000	34.59	15.98	50.57	54.00	-3.43	AVG	

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

**Horizontal**

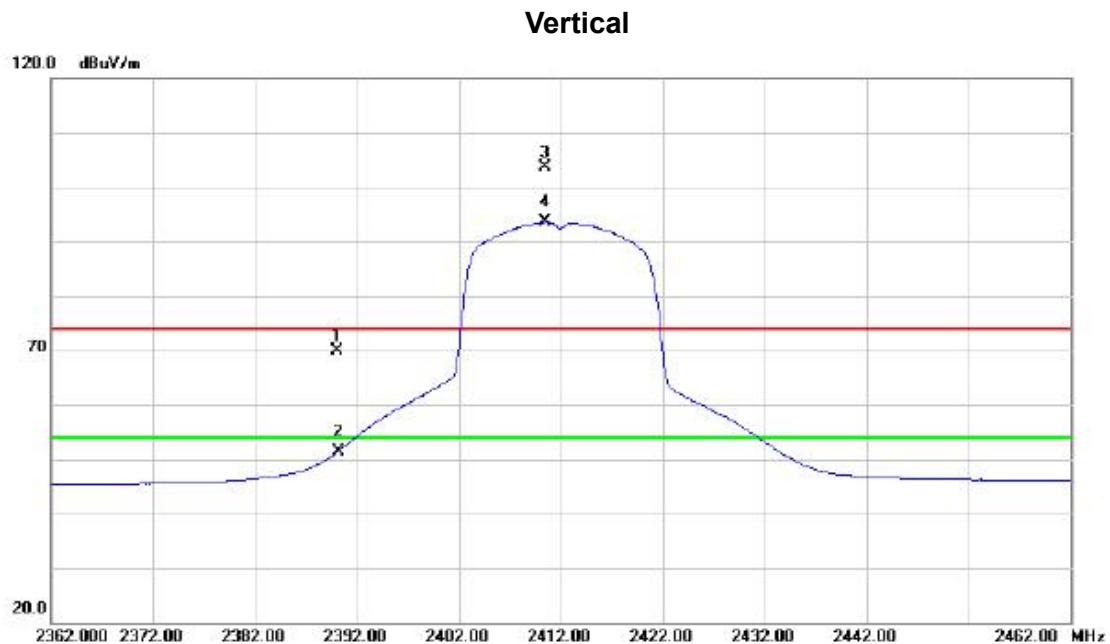
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor	Measure- ment dBuV/m	Limit dB	Margin Detector	Comment
1	X	2461.000	74.59	31.36	105.95	74.00	31.95	peak NO LIMIT
2	*	2461.000	65.16	31.36	96.52	54.00	42.52	AVG NO LIMIT
3		2483.500	41.19	31.46	72.65	74.00	-1.35	peak
4		2483.500	20.68	31.46	52.14	54.00	-1.86	AVG

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

**Horizontal**

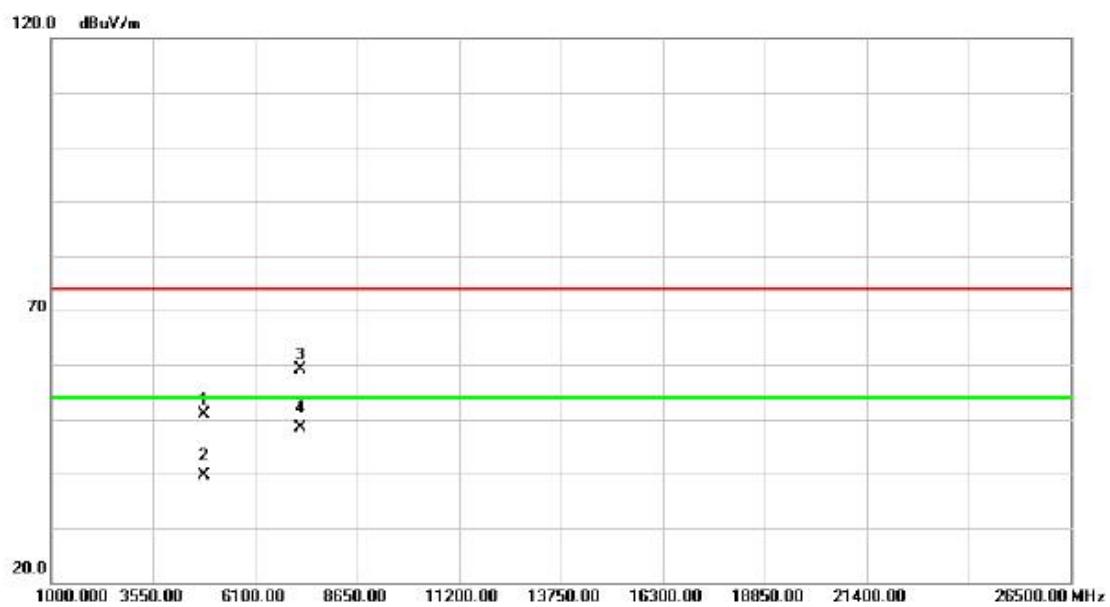
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4924.005	41.12	6.77	47.89	74.00	-26.11	peak	
2		4924.005	31.08	6.77	37.85	54.00	-16.15	AVG	
3		7385.940	42.58	15.98	58.56	74.00	-15.44	peak	
4	*	7385.940	31.52	15.98	47.50	54.00	-6.50	AVG	

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



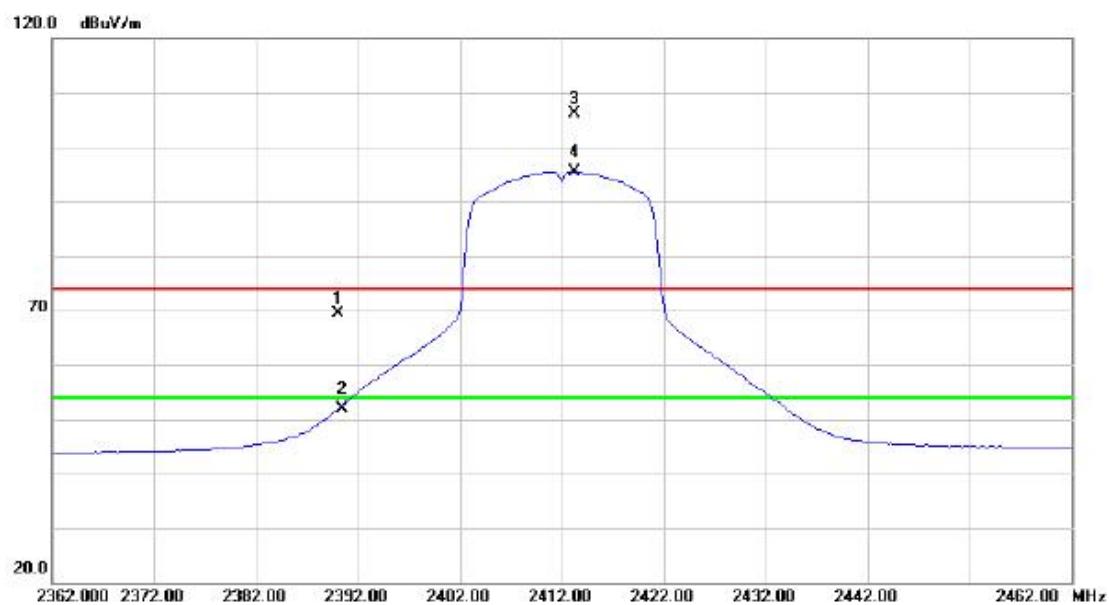
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dB			
1		2390.000	38.75	31.02	69.77	74.00	-4.23	peak	
2		2390.000	20.28	31.02	51.30	54.00	-2.70	Avg	
3	X	2410.500	72.59	31.12	103.71	74.00	29.71	peak	NO LIMIT
4	*	2410.500	62.45	31.12	93.57	54.00	39.57	Avg	NO LIMIT

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

**Vertical**

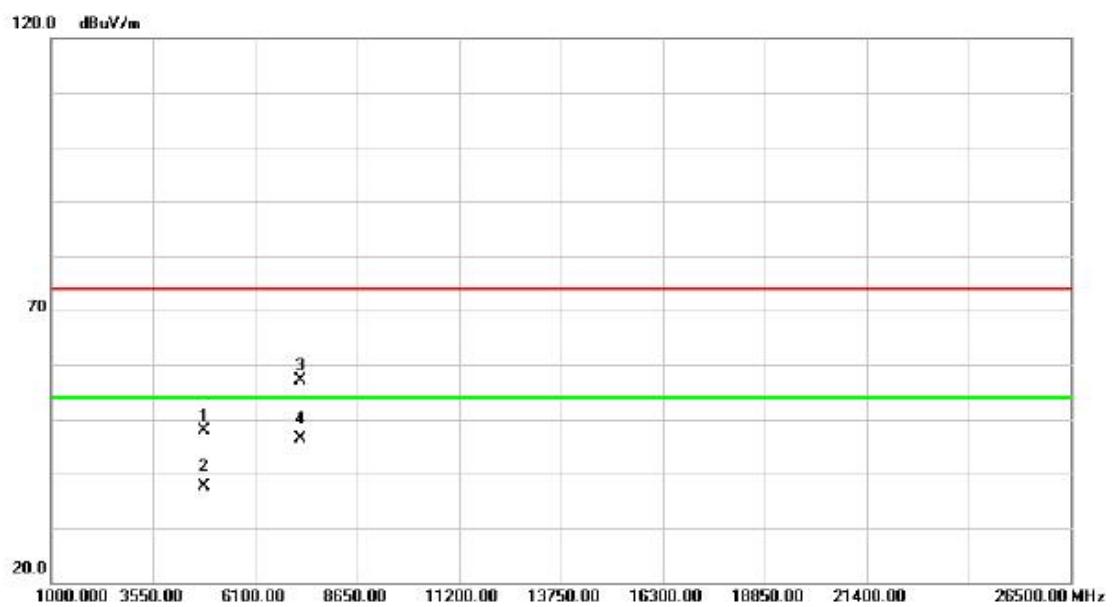
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4823.076	44.10	6.78	50.88	74.00	-23.12	peak	
2		4823.076	32.74	6.78	39.52	54.00	-14.48	AVG	
3		7236.662	43.86	15.17	59.03	74.00	-14.97	peak	
4	*	7236.662	33.24	15.17	48.41	54.00	-5.59	AVG	

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

**Horizontal**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB	Margin Detector	Comment
1		2390.000	38.25	31.02	69.27	74.00	-4.73	peak
2		2390.000	20.84	31.02	51.86	54.00	-2.14	AVG
3	X	2413.250	75.04	31.14	106.18	74.00	32.18	peak NO LIMIT
4	*	2413.250	64.28	31.14	95.42	54.00	41.42	AVG NO LIMIT

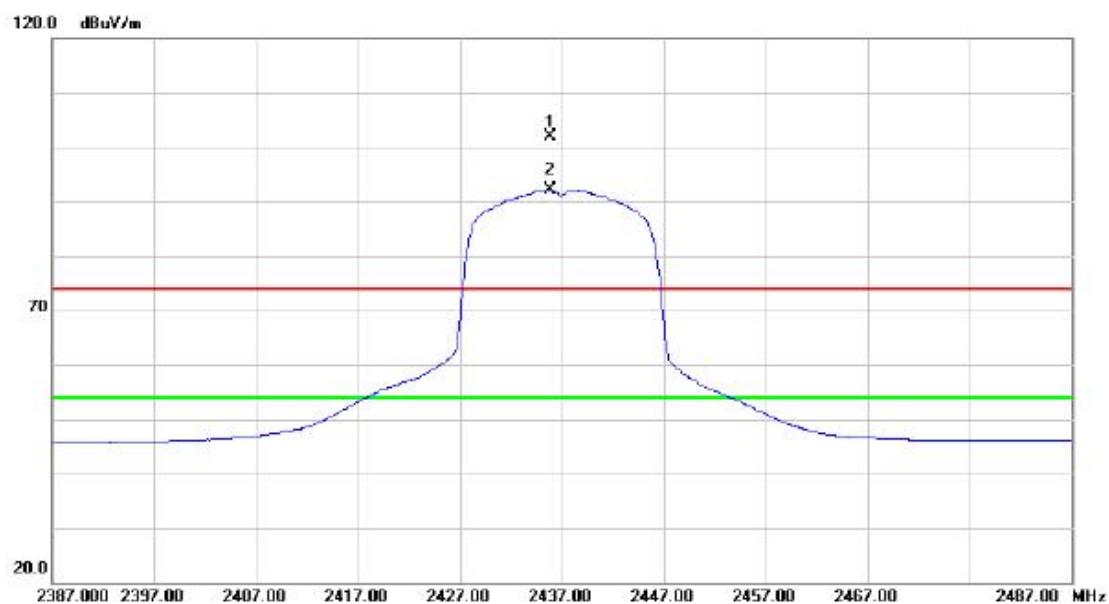
Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2412MHz

**Horizontal**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4824.045	41.08	6.78	47.86	74.00	-26.14	peak	
2		4824.045	30.74	6.78	37.52	54.00	-16.48	AVG	
3		7236.155	42.07	15.17	57.24	74.00	-16.76	peak	
4	*	7236.155	31.25	15.17	46.42	54.00	-7.58	AVG	

Orthogonal Axis : X

Test Mode : TX N-20M MODE 2437MHz

**Vertical**

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dB	Detector	Comment
1	X	2435.800	70.62	31.24	101.86	74.00	27.86	peak NO LIMIT
2	*	2435.800	60.87	31.24	92.11	54.00	38.11	AVG NO LIMIT

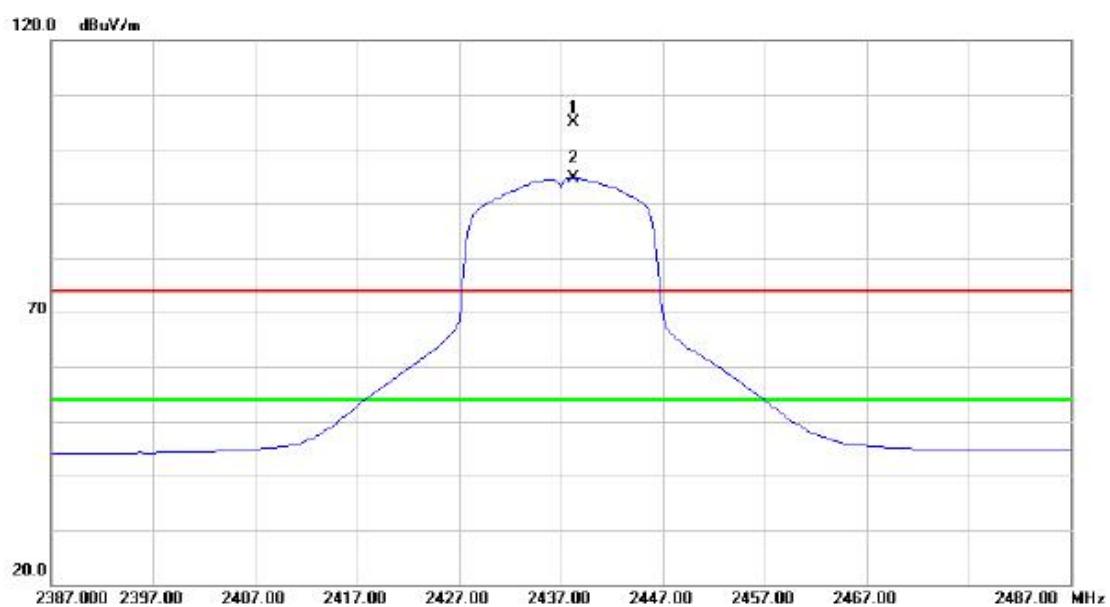
Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2437MHz

**Vertical**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4874.374	43.32	6.78	50.10	74.00	-23.90	peak	
2		4874.374	32.78	6.78	39.56	54.00	-14.44	AVG	
3		7311.096	44.44	15.57	60.01	74.00	-13.99	peak	
4	*	7311.096	33.37	15.57	48.94	54.00	-5.06	AVG	

Orthogonal Axis : X

Test Mode : TX N-20M MODE 2437MHz

**Horizontal**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB	Margin Detector	Comment
1	X	2438.250	73.57	31.25	104.82	74.00	30.82	peak NO LIMIT
2	*	2438.250	63.36	31.25	94.61	54.00	40.61	AVG NO LIMIT

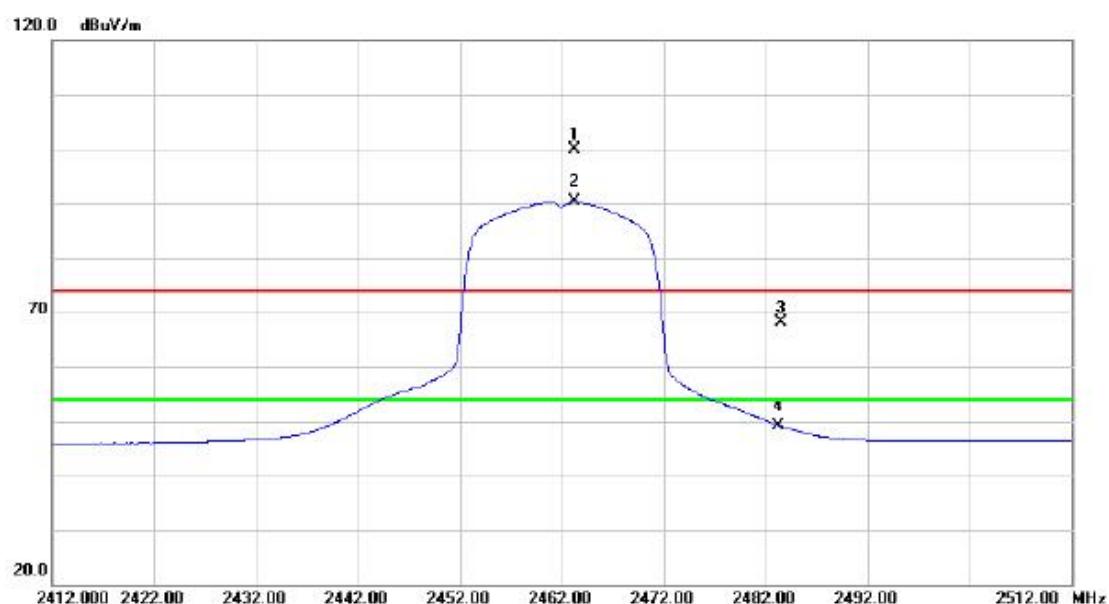
Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2437MHz

**Horizontal**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB	Margin	Detector	Comment
1		4873.820	43.39	6.78	50.17	74.00	-23.83	peak	
2		4873.955	30.59	6.78	37.37	54.00	-16.63	AVG	
3		7310.925	41.41	15.57	56.98	74.00	-17.02	peak	
4	*	7310.925	31.29	15.57	46.86	54.00	-7.14	AVG	

Orthogonal Axis : X

Test Mode : TX N-20M MODE 2462MHz

**Vertical**

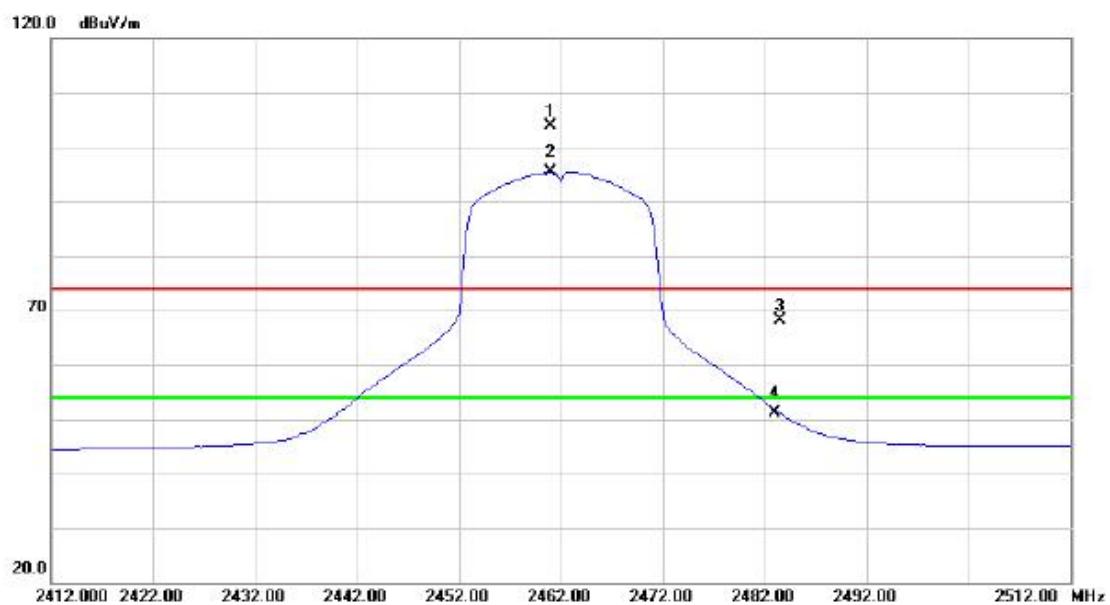
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dB	Detector	Comment
1	X	2463.200	68.59	31.36	99.95	74.00	25.95	peak NO LIMIT
2	*	2463.200	58.92	31.36	90.28	54.00	36.28	Avg NO LIMIT
3		2483.500	36.79	31.46	68.25	74.00	-5.75	peak
4		2483.500	17.67	31.46	49.13	54.00	-4.87	Avg

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

**Vertical**

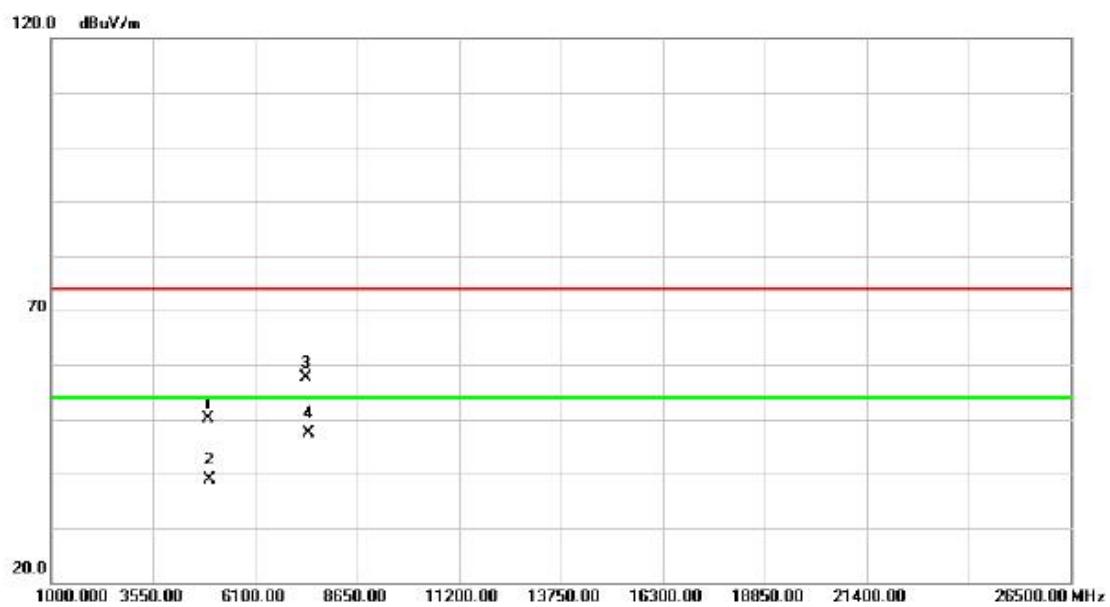
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4923.970	44.30	6.77	51.07	74.00	-22.93	peak	
2		4923.970	33.54	6.77	40.31	54.00	-13.69	AVG	
3		7385.058	44.84	15.98	60.82	74.00	-13.18	peak	
4	*	7385.058	34.10	15.98	50.08	54.00	-3.92	AVG	

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

**Horizontal**

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB	Margin	Detector	Comment
1	X	2461.000	72.59	31.36	103.95	74.00	29.95	peak	NO LIMIT
2	*	2461.000	64.04	31.36	95.40	54.00	41.40	AVG	NO LIMIT
3		2483.500	36.60	31.46	68.06	74.00	-5.94	peak	
4		2483.500	19.68	31.46	51.14	54.00	-2.86	AVG	

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

**Horizontal**

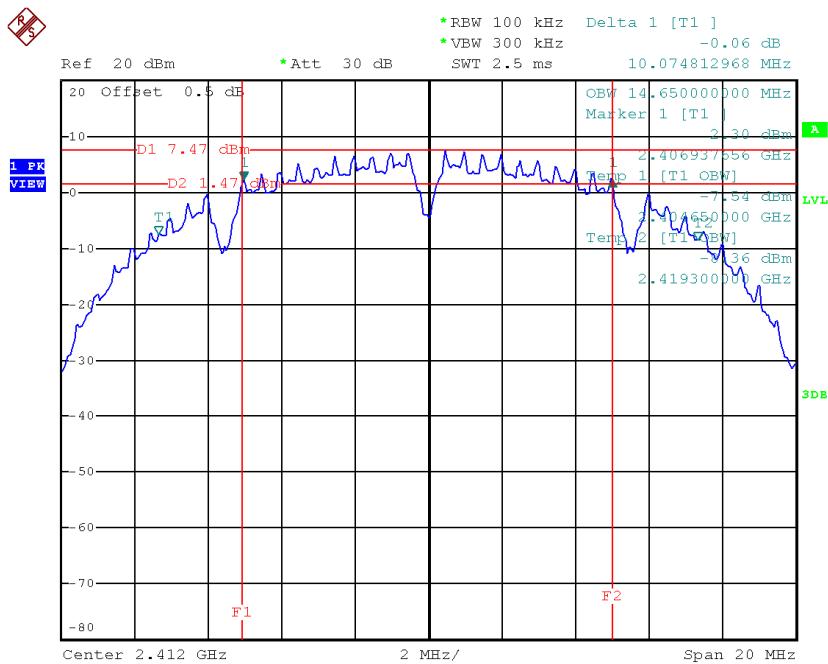
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB	Margin Detector	Comment
1		4924.000	43.31	6.77	50.08	74.00	-23.92	peak
2		4924.000	32.12	6.77	38.89	54.00	-15.11	AVG
3		7386.030	41.57	15.98	57.55	74.00	-16.45	peak
4	*	7386.030	31.45	15.98	47.43	54.00	-6.57	AVG

## ATTACHMENT E - BANDWIDTH

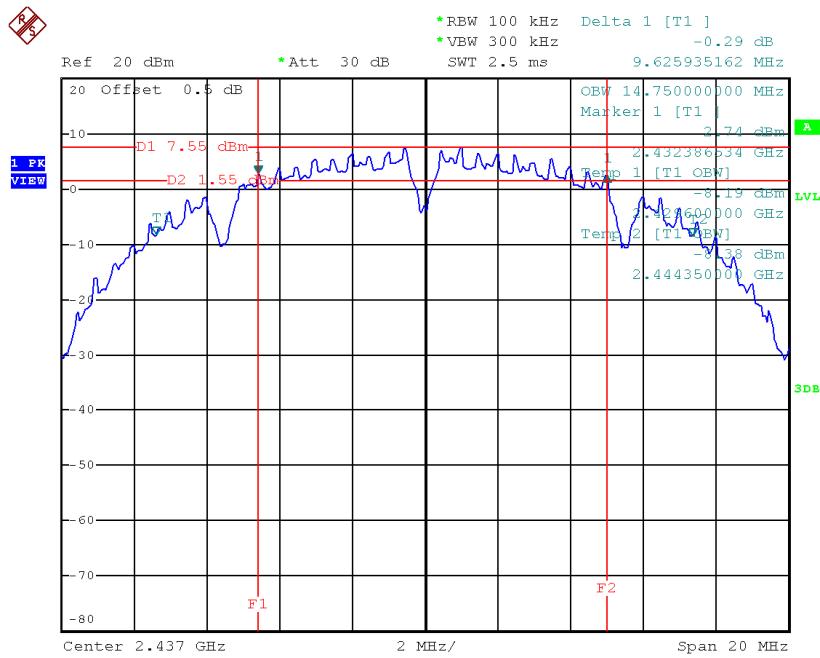
### Test Mode : TX B Mode\_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	10.07	14.65	500	Complies
2437	9.63	14.75	500	Complies
2462	9.68	14.65	500	Complies

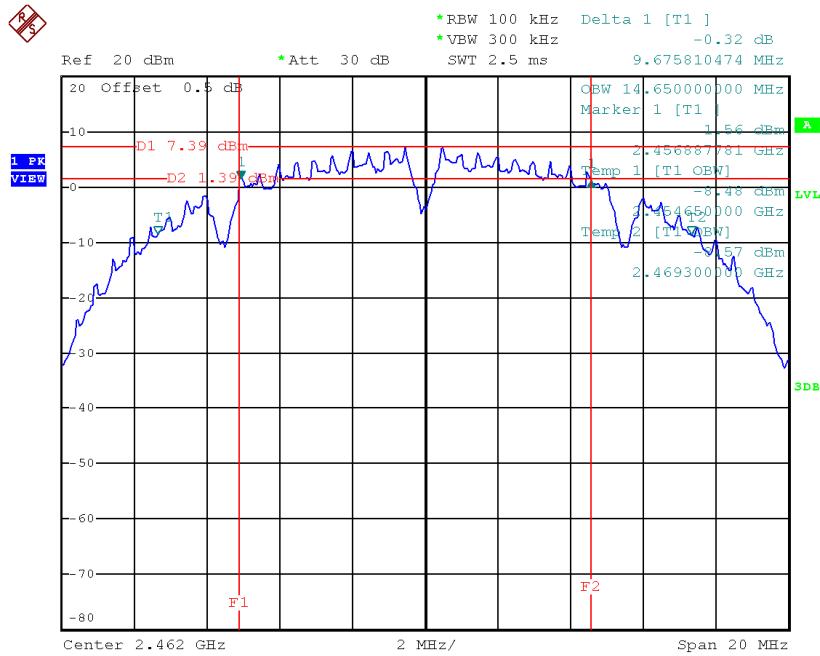
### TX CH01



Date: 9.JAN.2015 11:15:39

**TX CH06**

Date: 9.JAN.2015 11:18:04

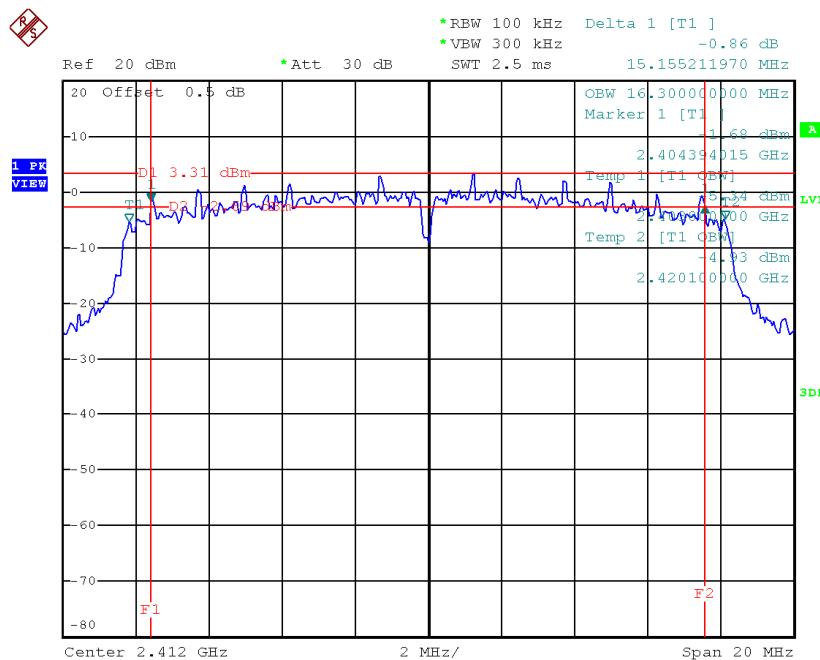
**TX CH11**

Date: 9.JAN.2015 14:06:42

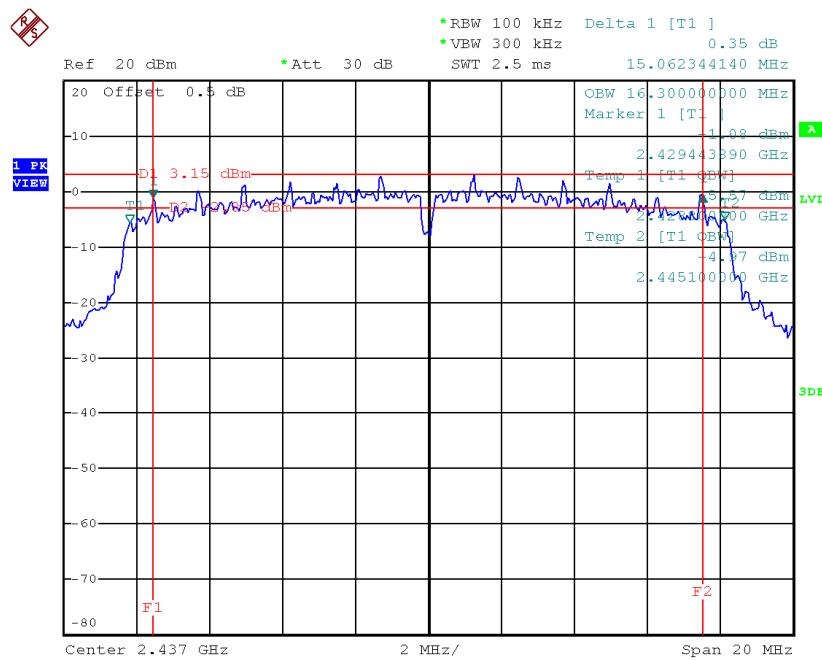
### Test Mode: TX G Mode\_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	15.16	16.30	500	Complies
2437	15.06	16.30	500	Complies
2462	15.16	16.30	500	Complies

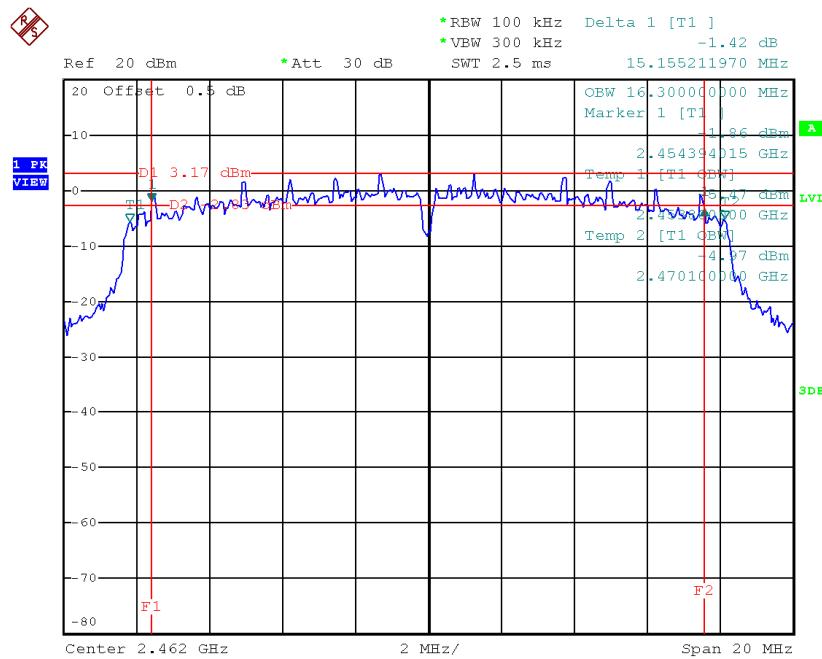
#### TX CH01



Date: 9.JAN.2015 14:10:36

**TX CH06**

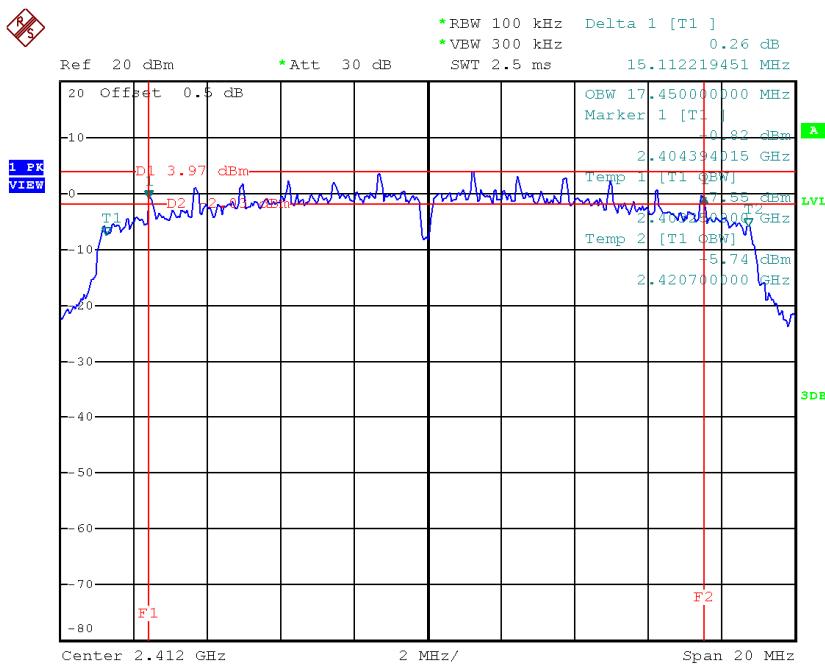
Date: 9.JAN.2015 14:11:50

**TX CH11**

Date: 9.JAN.2015 14:07:36

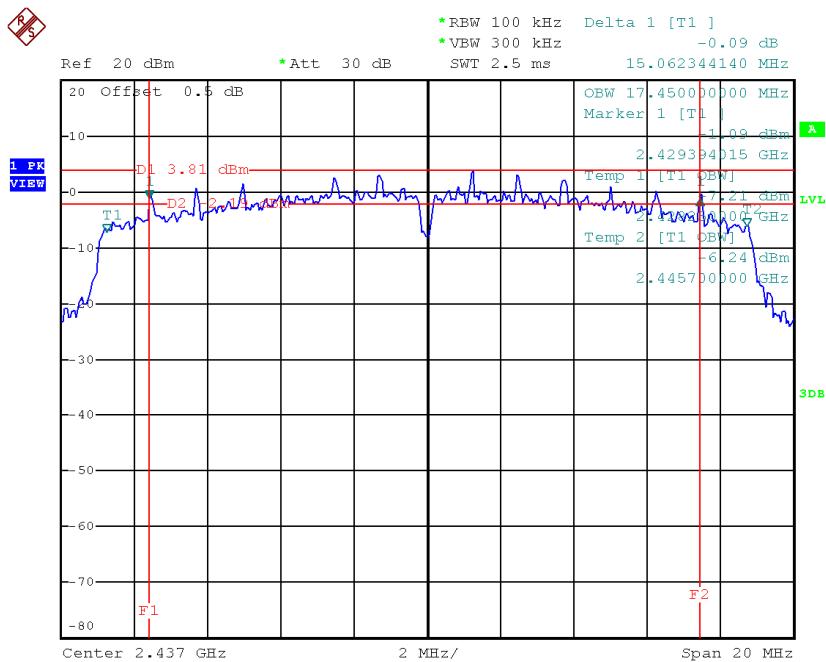
**Test Mode : TX N-20MHz Mode\_CH01/06/11**

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	15.11	17.45	500	Complies
2437	15.06	17.45	500	Complies
2462	15.11	17.40	500	Complies

**TX CH01**


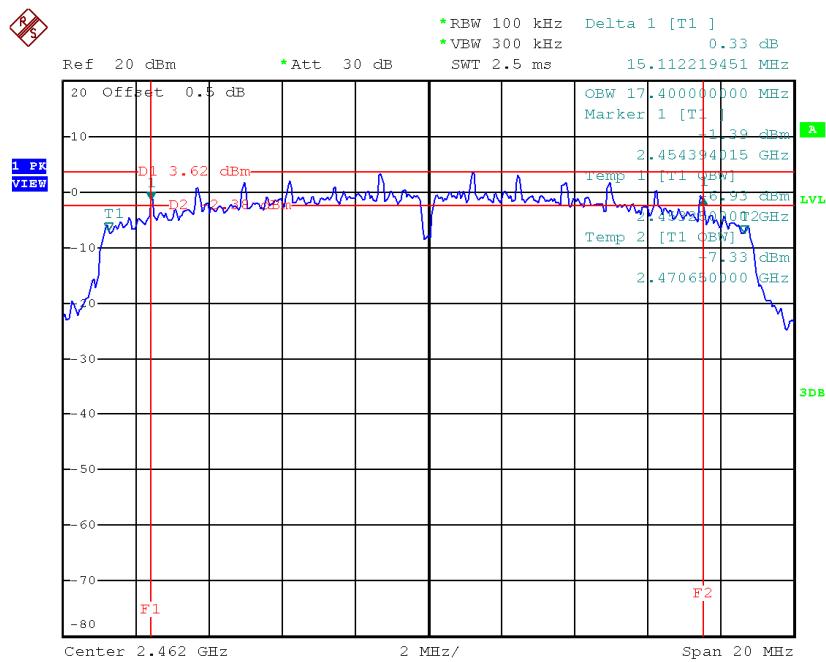
Date: 9.JAN.2015 11:23:07

## TX CH06



Date: 9.JAN.2015 14:13:01

## TX CH11



Date: 9.JAN.2015 14:08:14

**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	17.36	0.05	30.00	1.00	Complies
2437	19.56	0.09	30.00	1.00	Complies
2462	19.65	0.09	30.00	1.00	Complies

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

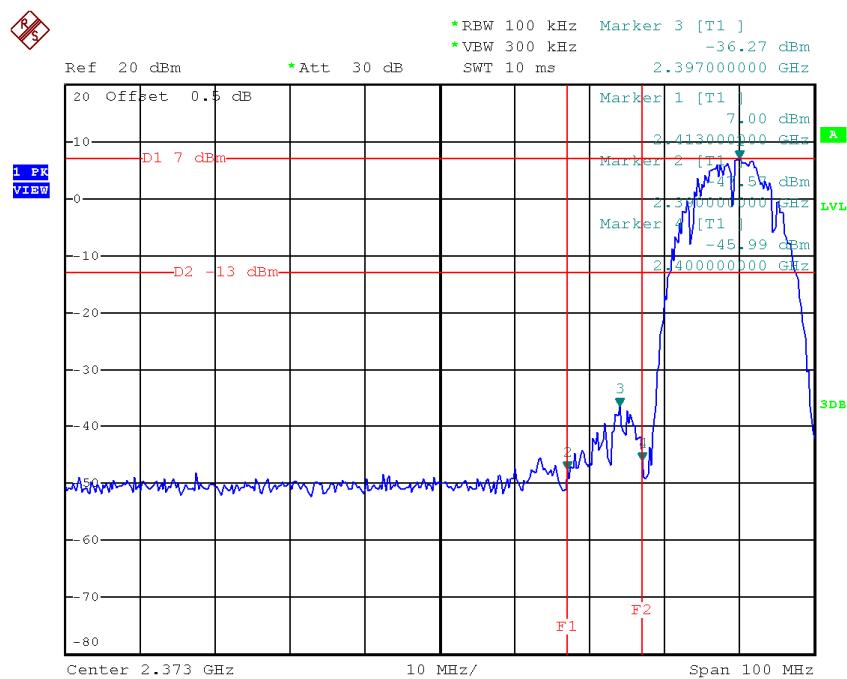
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	21.41	0.14	30.00	1.00	Complies
2437	21.44	0.14	30.00	1.00	Complies
2462	21.48	0.14	30.00	1.00	Complies

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

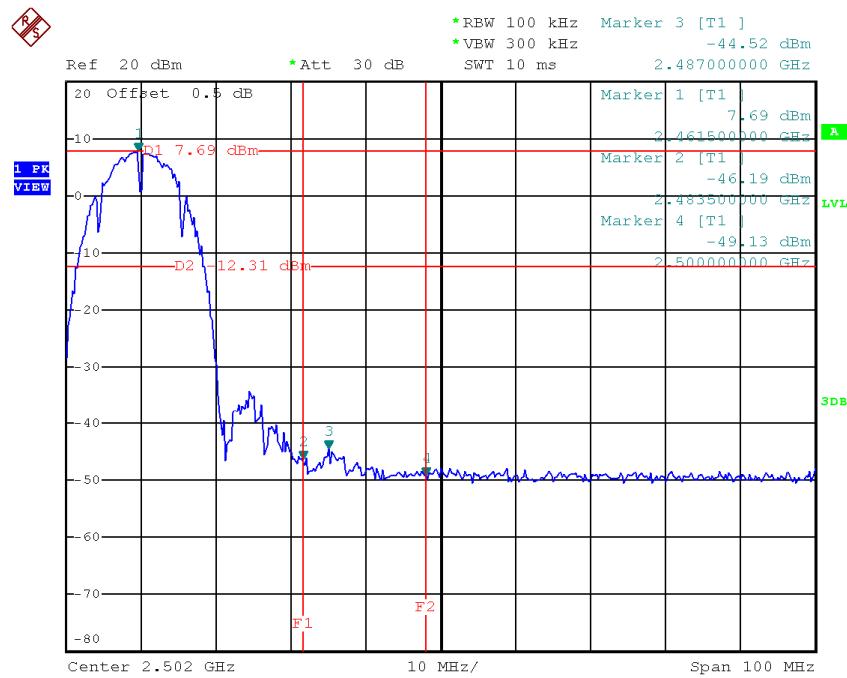
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	21.37	0.14	30.00	1.00	Complies
2437	21.46	0.14	30.00	1.00	Complies
2462	21.42	0.14	30.00	1.00	Complies

## **ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION**

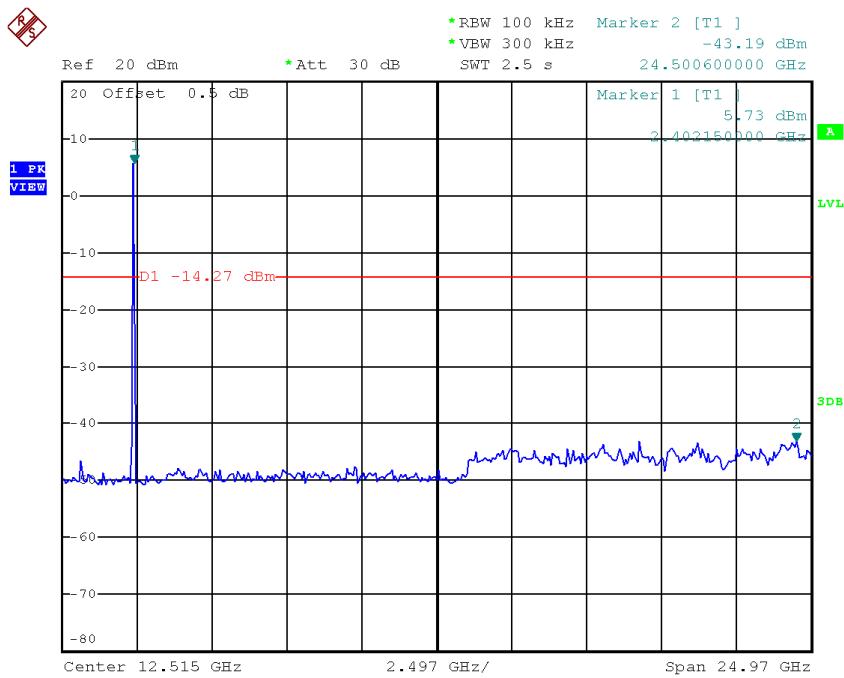
<b>Test Mode :</b>	<b>TX B Mode</b>
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**TX B mode CH01**

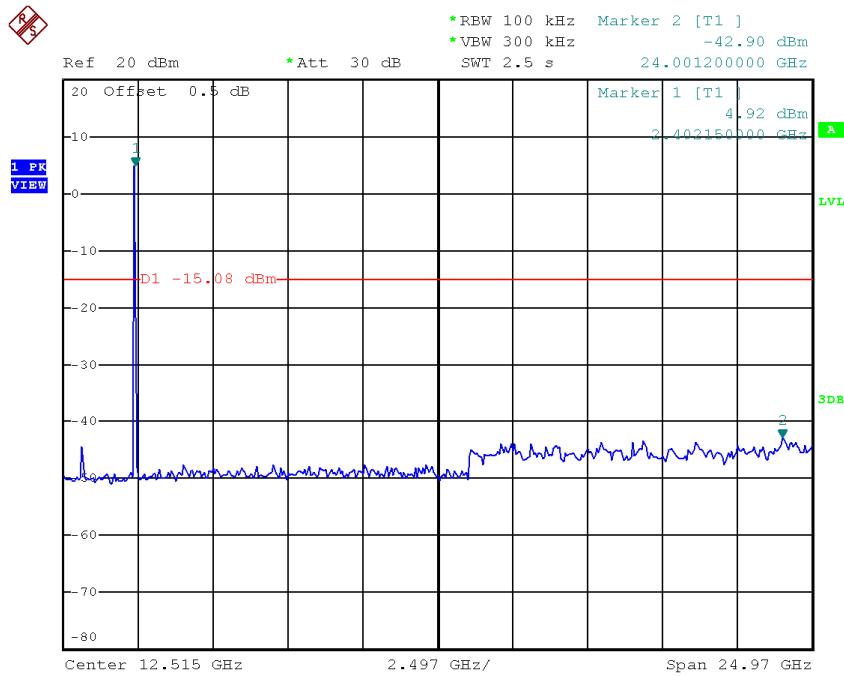
Date: 9.JAN.2015 14:04:50

**TX B mode CH11**

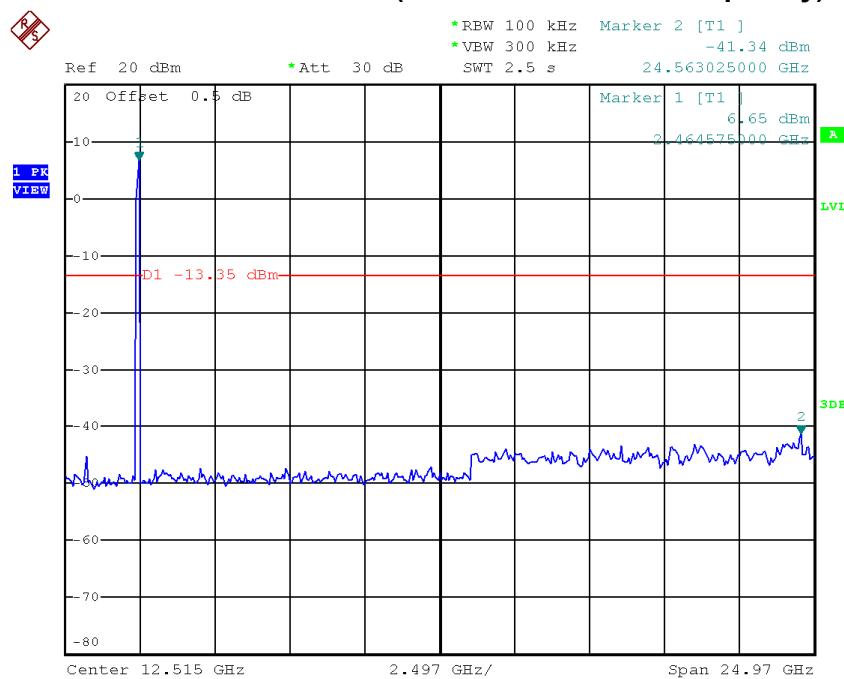
Date: 9.JAN.2015 11:20:45

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

Date: 9.JAN.2015 11:15:21

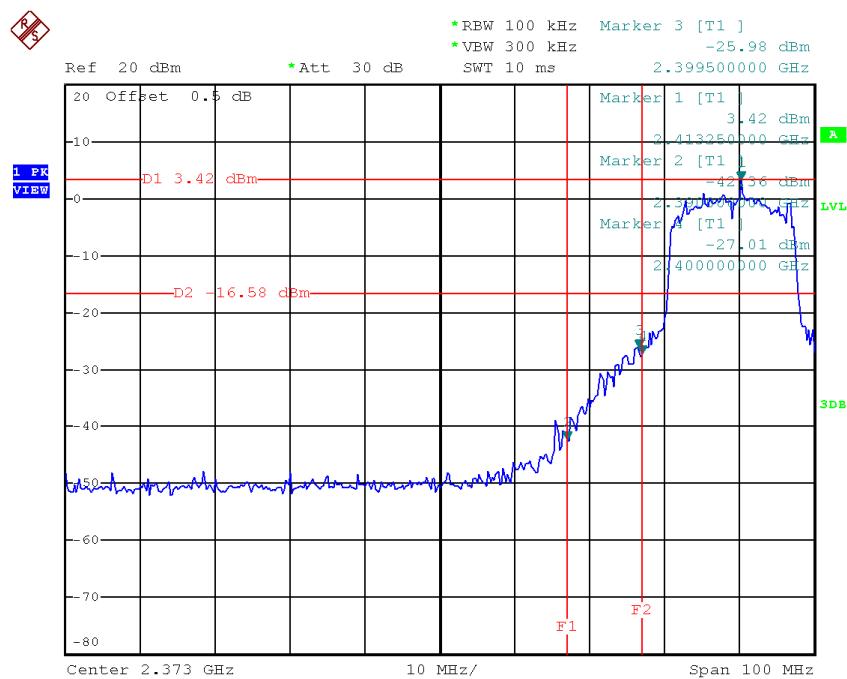
**TX B mode CH06 (10 Harmonic of the frequency)**

Date: 9.JAN.2015 11:17:48

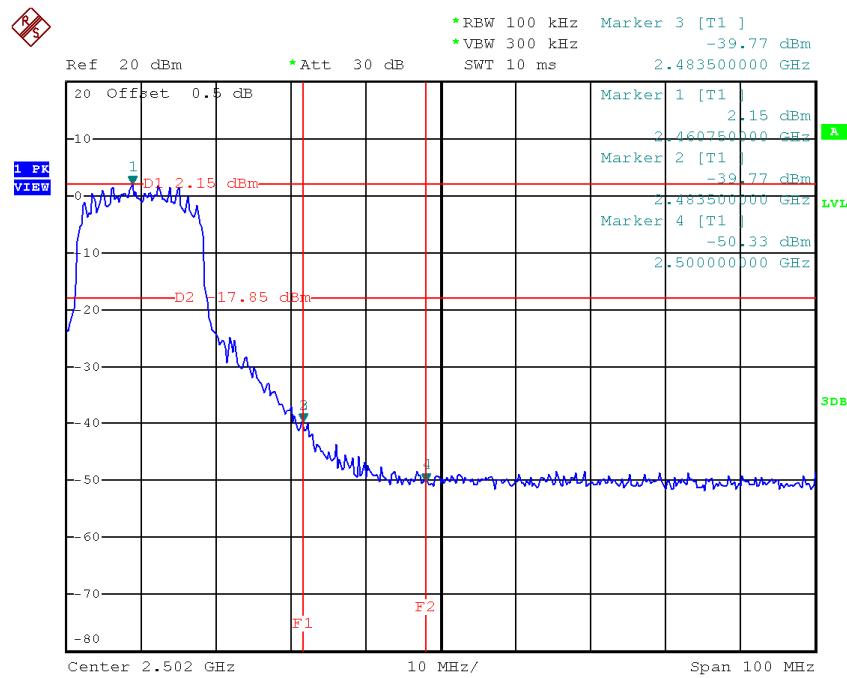
**TX B mode CH11 (10 Harmonic of the frequency)**

Date: 9.JAN.2015 11:19:46

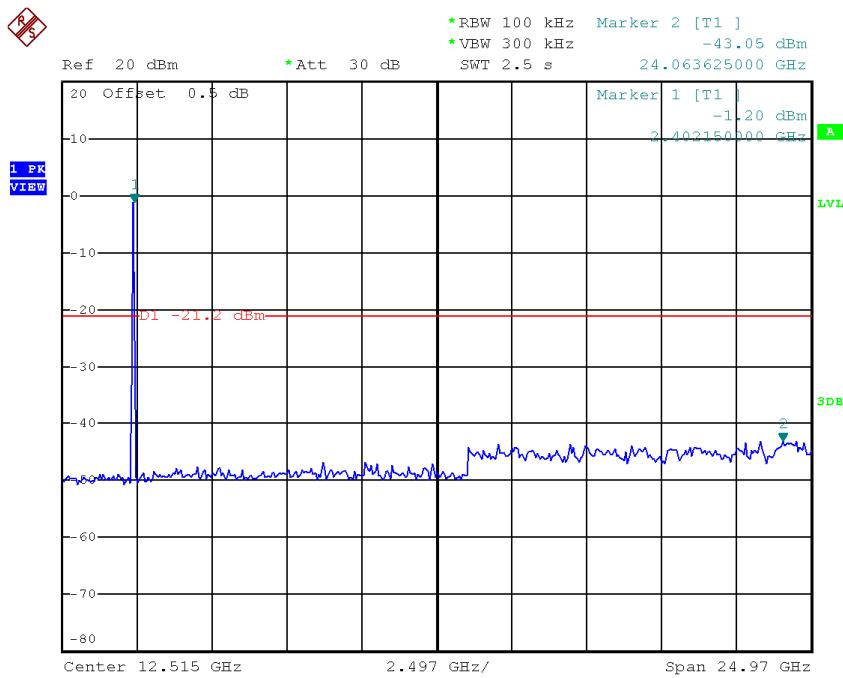
<b>Test Mode :</b>	<b>TX G Mode</b>
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**TX G mode CH01**

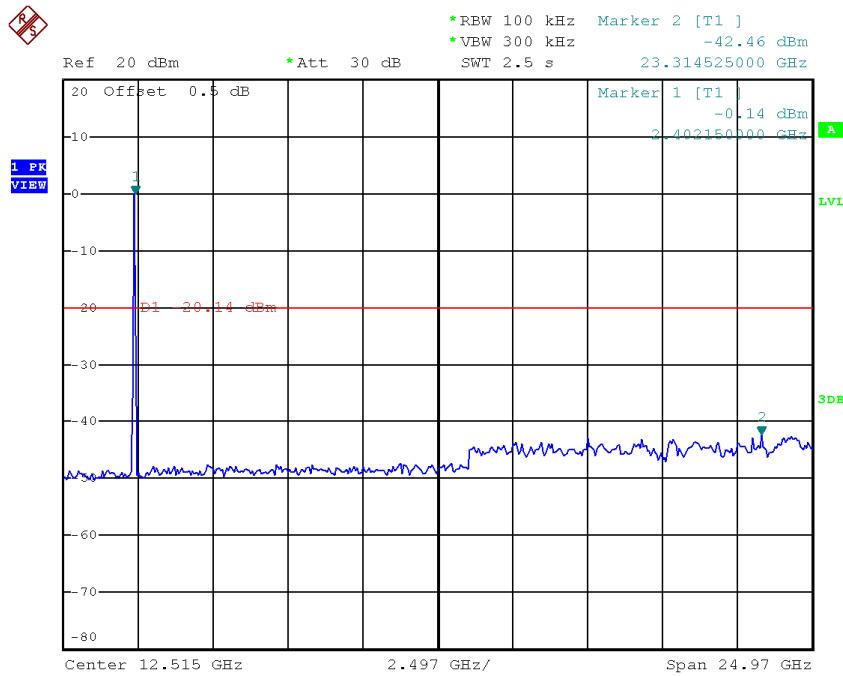
Date: 9.JAN.2015 14:05:20

**TX G mode CH11**

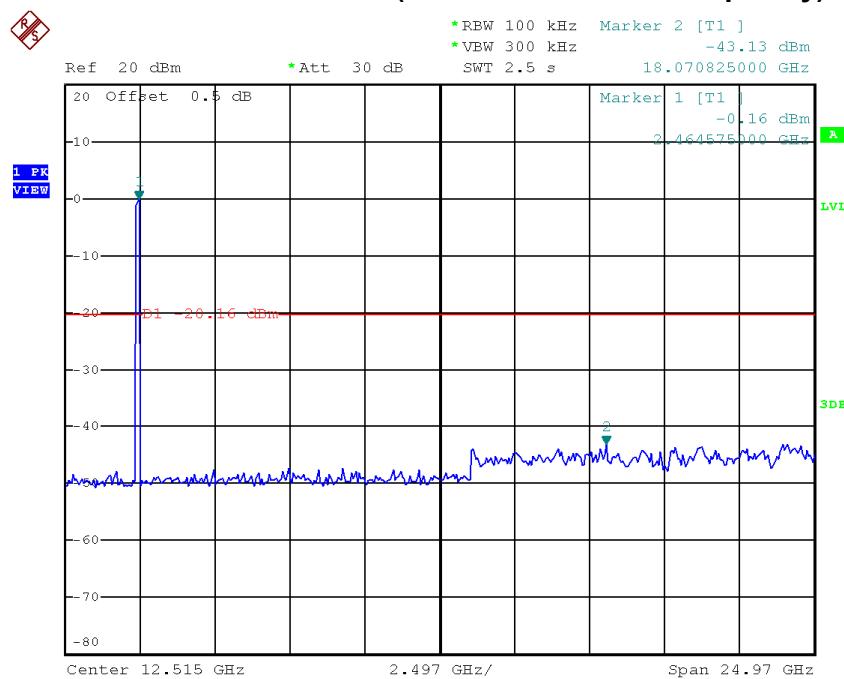
Date: 9.JAN.2015 11:13:18

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

Date: 9.JAN.2015 11:06:34

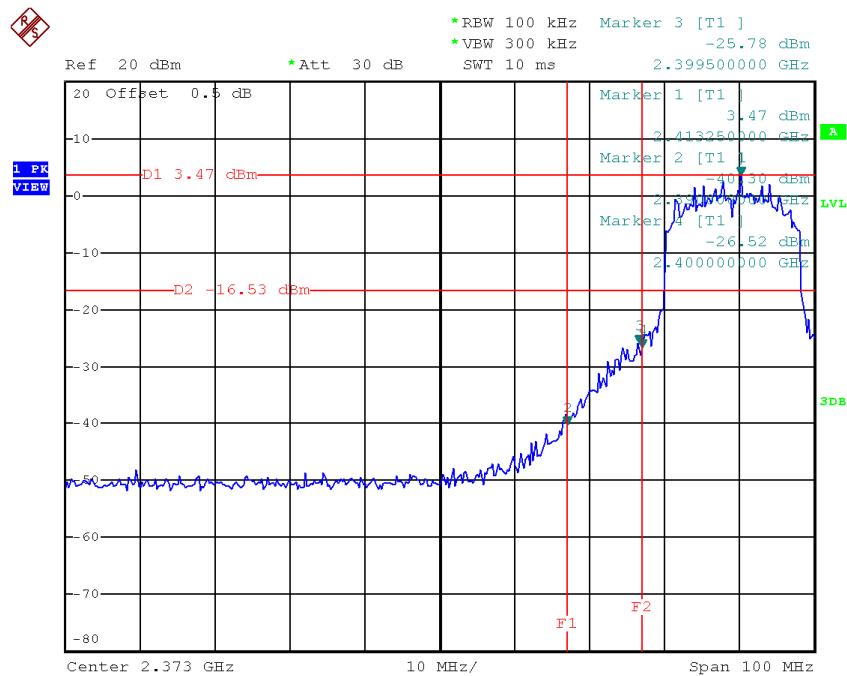
**TX G mode CH06 (10 Harmonic of the frequency)**

Date: 9.JAN.2015 11:09:08

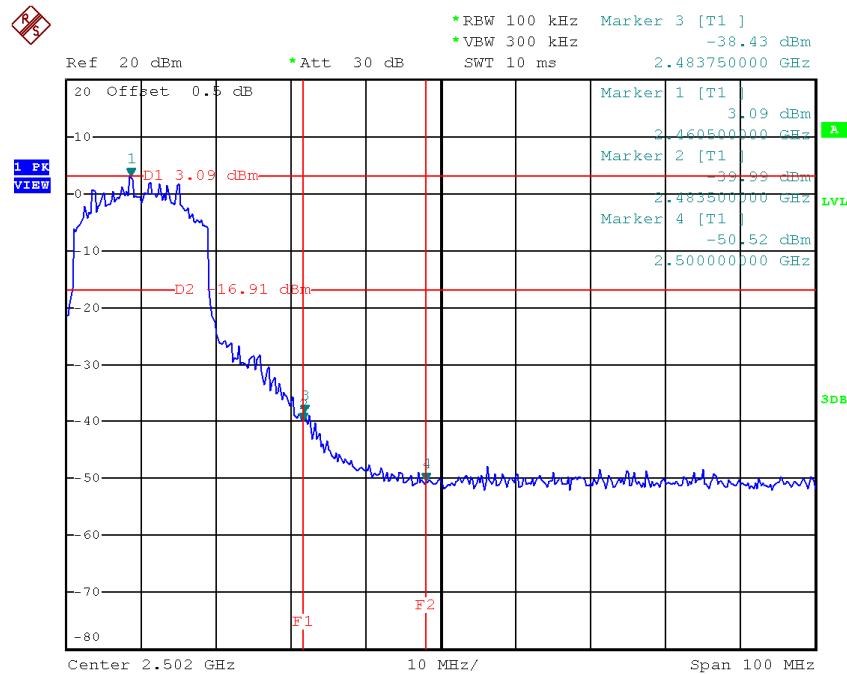
**TX G mode CH11 (10 Harmonic of the frequency)**

Date: 9.JAN.2015 11:12:04

<b>Test Mode :</b>	<b>TX N-20M Mode</b>
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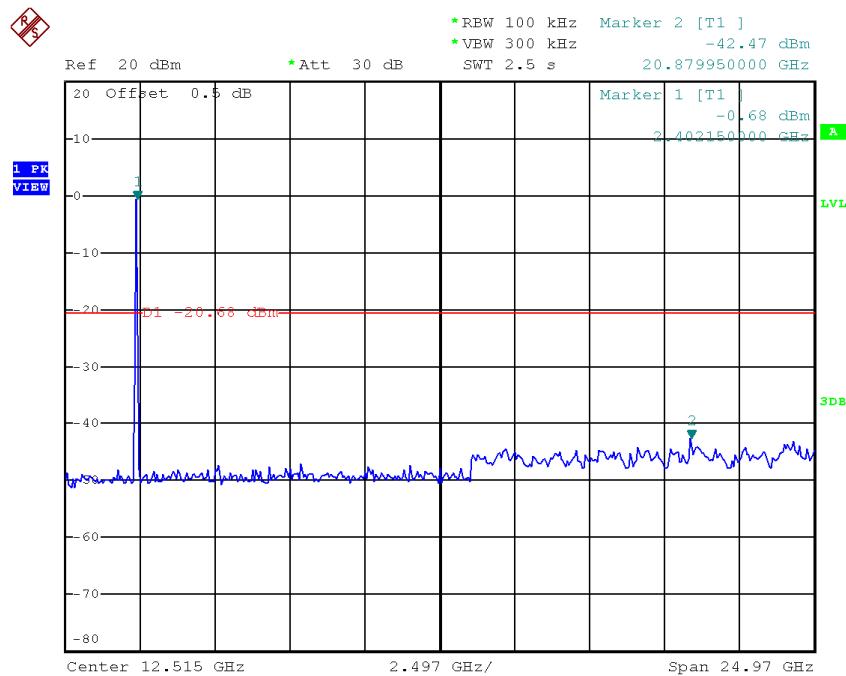
**TX HT20 mode CH01**

Date: 9.JAN.2015 14:06:03

**TX HT20 mode CH11**

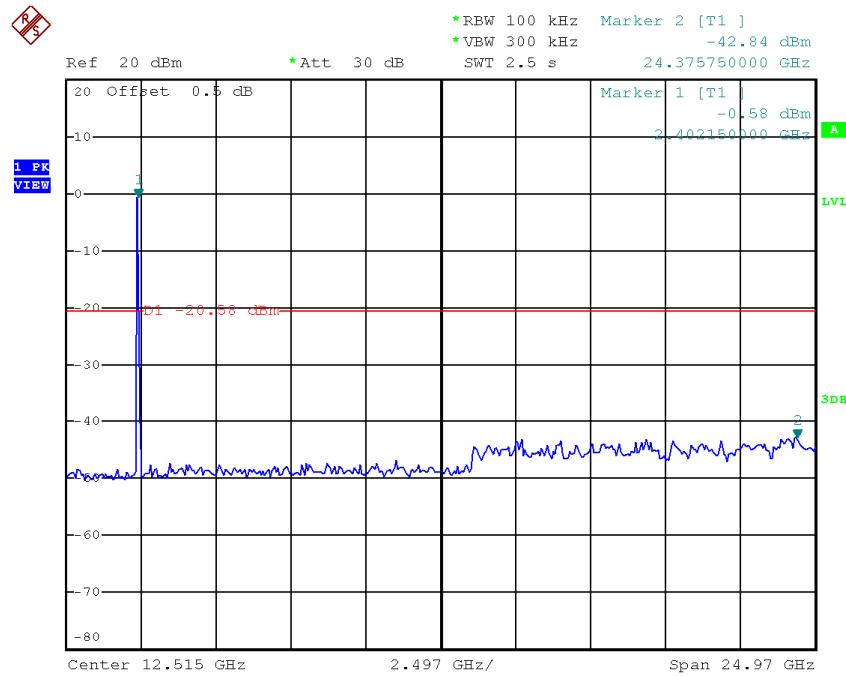
Date: 9.JAN.2015 11:28:43

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

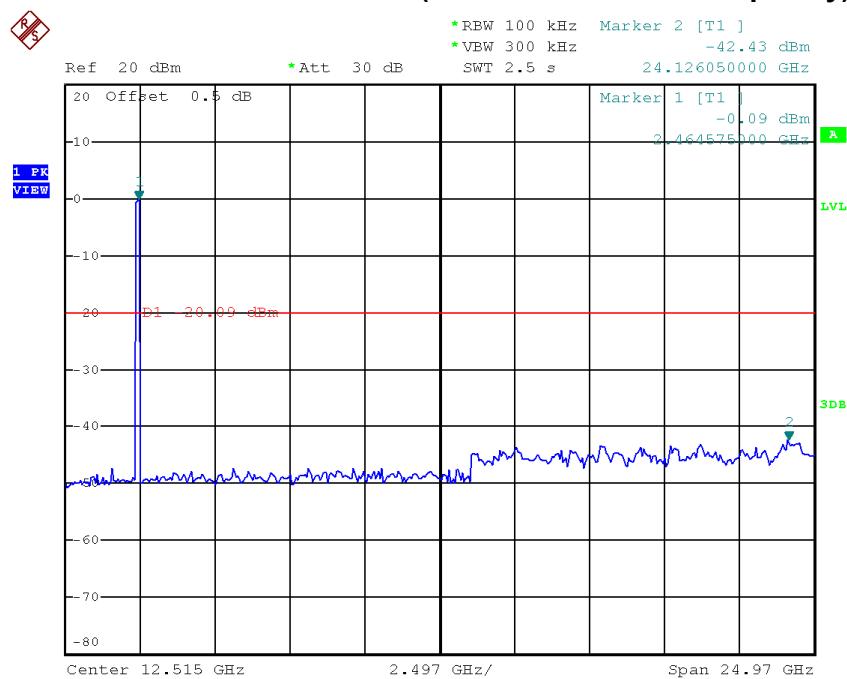


Date: 9.JAN.2015 11:22:48

### TX HT20 mode CH06 (10 Harmonic of the frequency)



Date: 9.JAN.2015 11:25:11

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

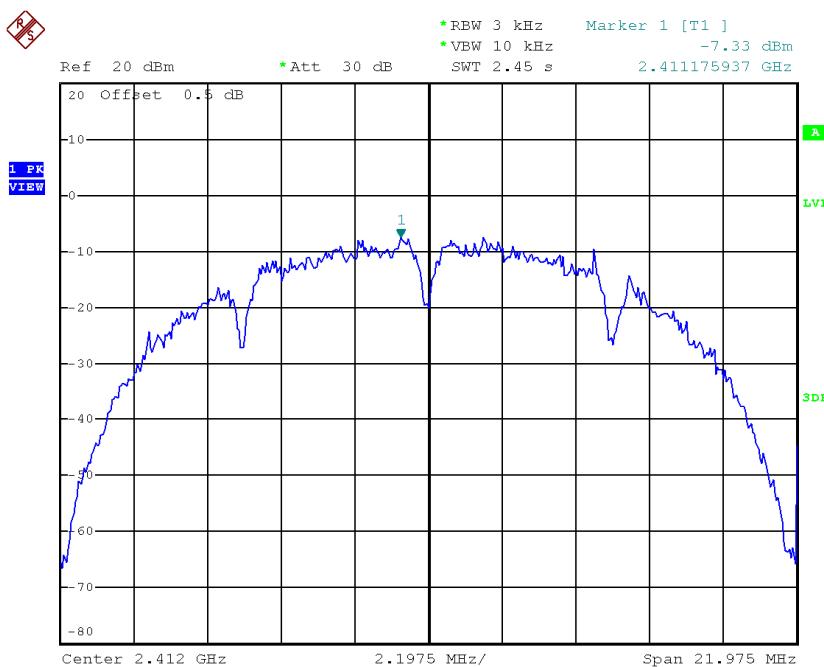
Date: 9.JAN.2015 11:27:52

## ATTACHMENT H - POWER SPECTRAL DENSITY

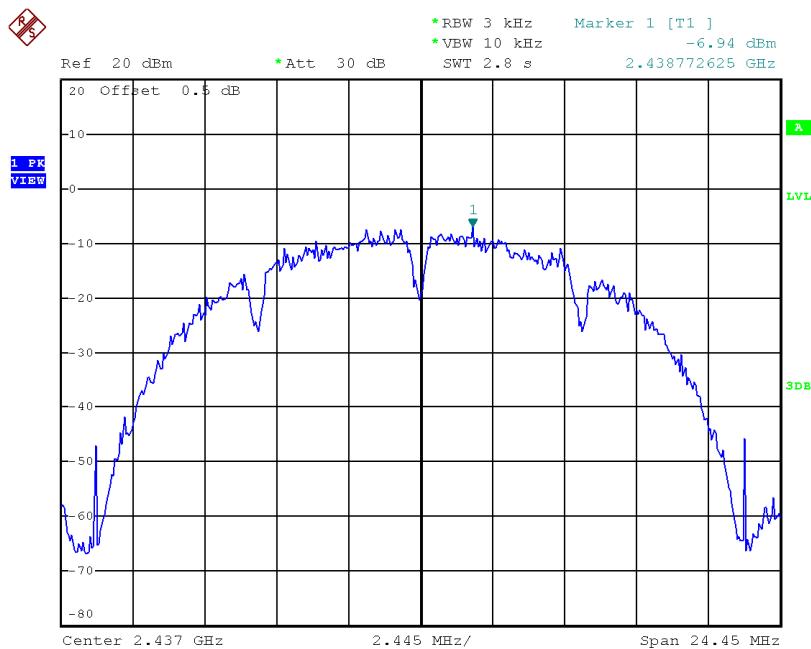
### Test Mode :TX B Mode\_CH01/06/11

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-7.33	0.18	8.00	Complies
2437	-6.94	0.20	8.00	Complies
2462	-7.91	0.16	8.00	Complies

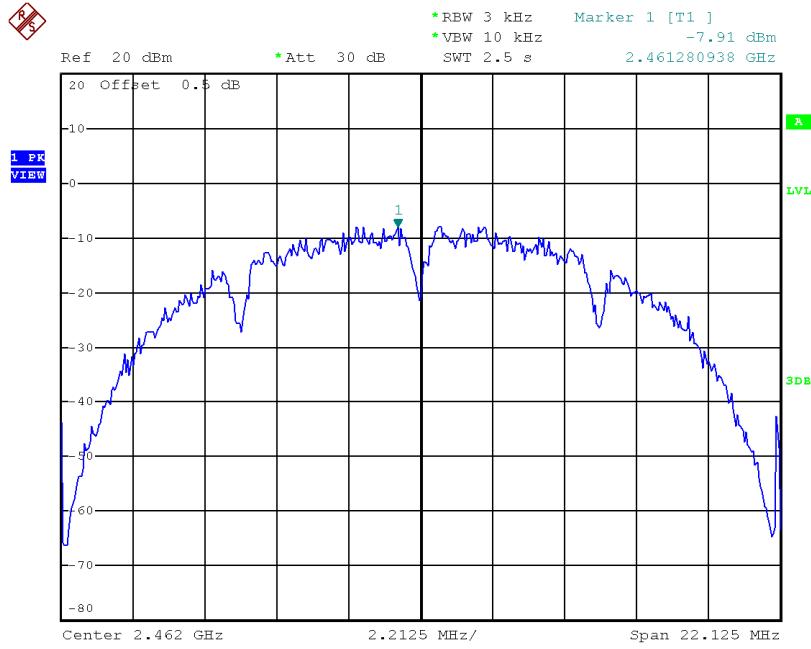
#### TX CH01



Date: 9.JAN.2015 11:17:01

**TX CH06**

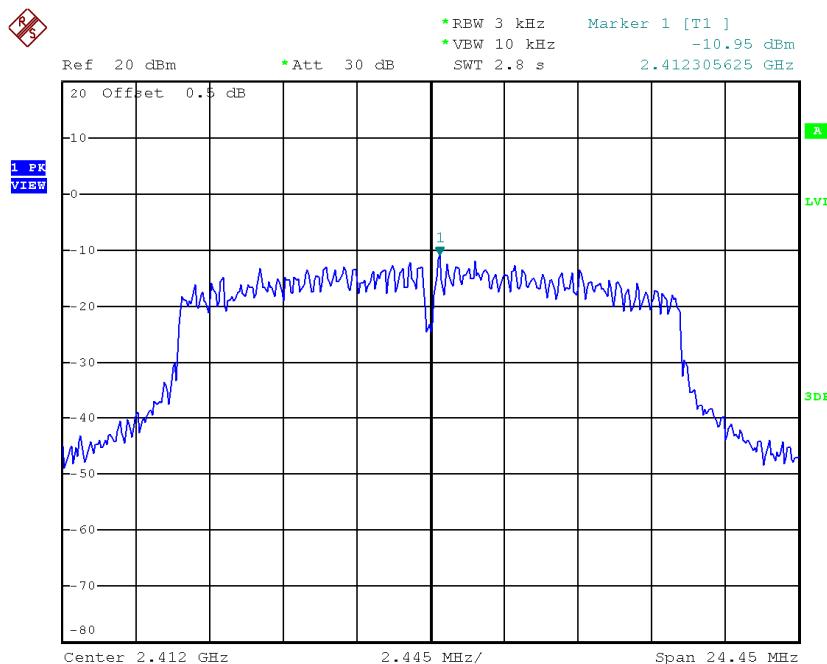
Date: 9.JAN.2015 11:18:52

**TX CH11**

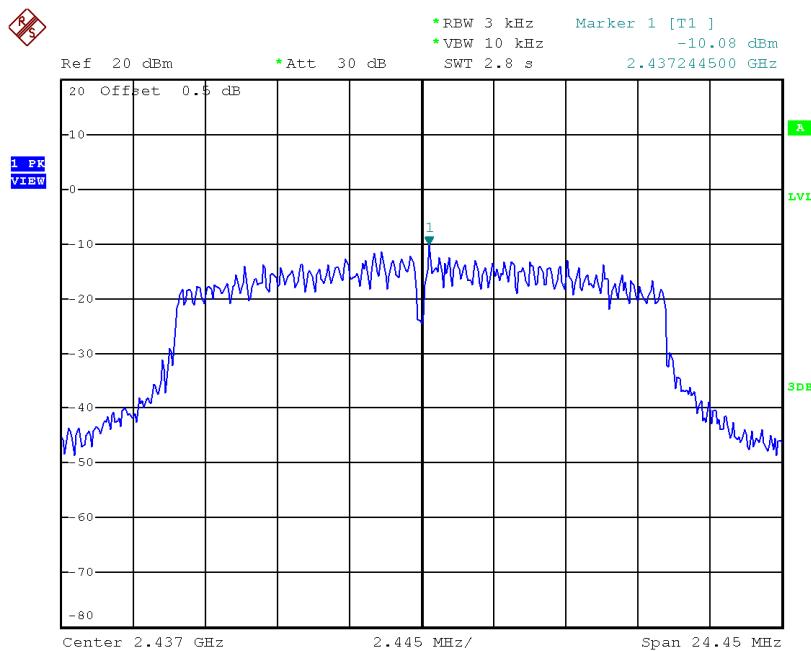
Date: 9.JAN.2015 11:21:16

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

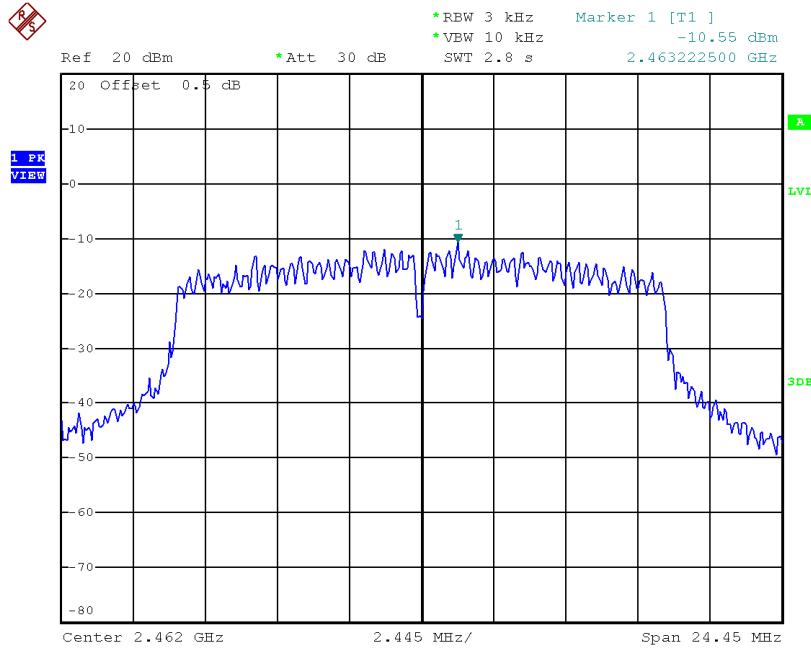
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-10.95	0.08	8.00	Complies
2437	-10.08	0.10	8.00	Complies
2462	-10.55	0.09	8.00	Complies

**TX CH01**

Date: 9.JAN.2015 11:08:27

**TX CH06**

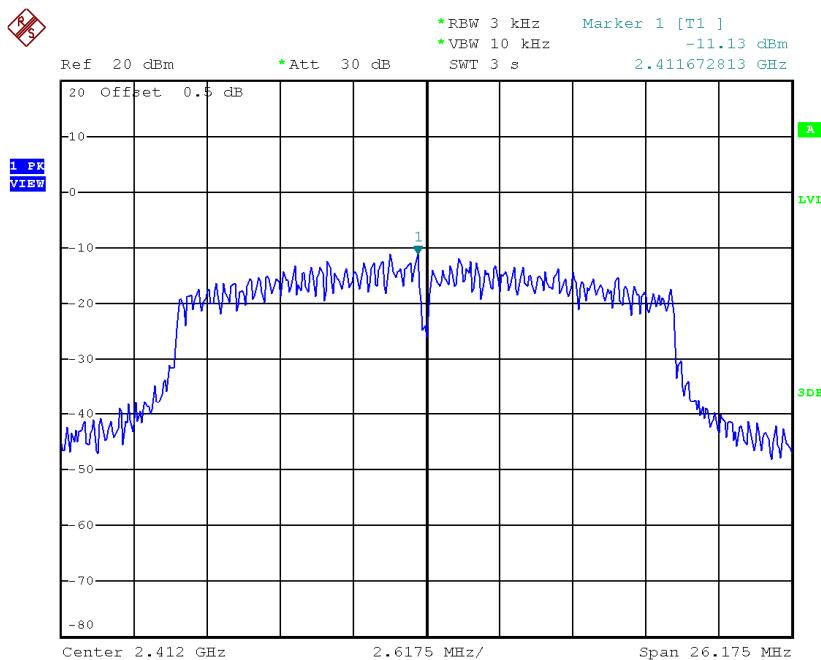
Date: 9.JAN.2015 11:11:14

**TX CH11**

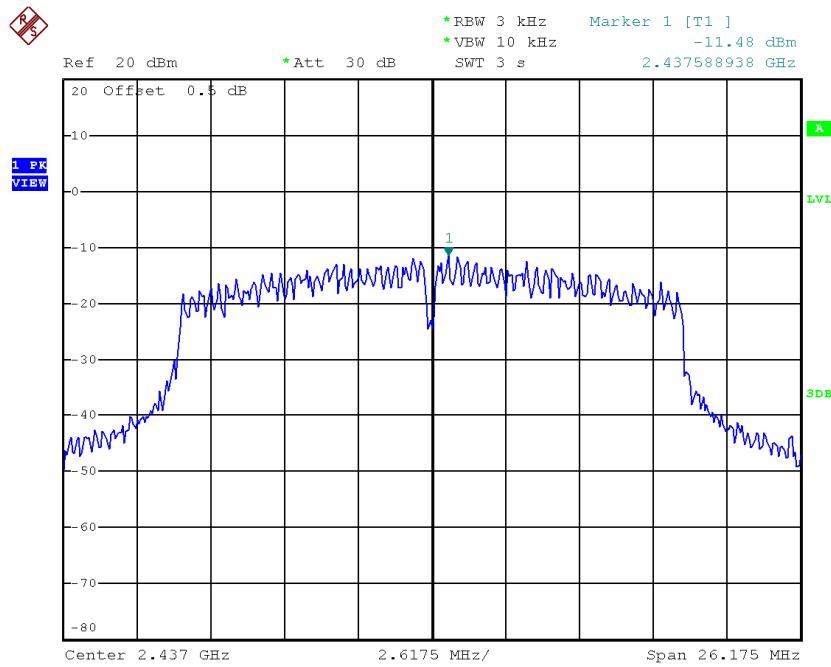
Date: 9.JAN.2015 11:14:00

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

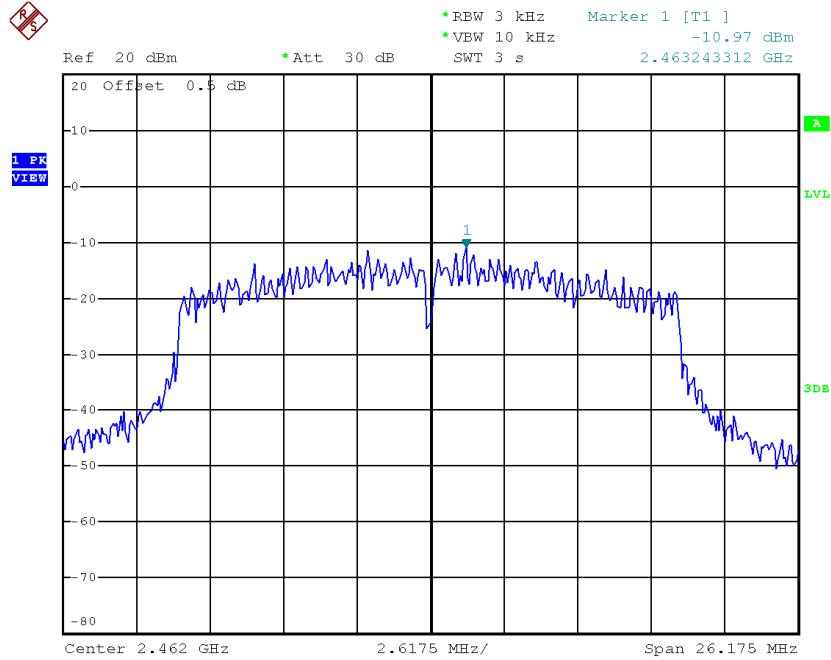
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-11.13	0.08	8.00	Complies
2437	-11.48	0.07	8.00	Complies
2462	-10.97	0.08	8.00	Complies

**TX CH01**

Date: 9.JAN.2015 11:24:11

**TX CH06**

Date: 9.JAN.2015 11:26:06

**TX CH11**

Date: 9.JAN.2015 11:30:06