

# FCC Radio Test Report

## FCC ID: I46INF6501C

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

**Project No.** : 1412C151  
**Equipment** : TouchScreen Displays  
**Model Name** : INF6501c  
**Applicant** : InFocus Corporation  
**Address** : 13190 SW 68th Parkway Suite 200 Portland, OR  
97223-8368

**Date of Receipt** : Dec. 23, 2014  
**Date of Test** : Dec. 23, 2014 ~ Feb. 06, 2015  
**Issued Date** : Feb. 09, 2015  
**Tested by** : BTL Inc.

**Testing Engineer** : David Mao  
(David Mao)

**Technical Manager** : Leo Hung  
(Leo Hung)

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

# **B T L I N C .**

No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan,  
Guangdong, China.

TEL: +86-769-8318-3000 FAX: +86-769-8319-6000

### **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**.

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

**BTL's** reports must not be used by the client to claim product endorsement by the authorities or any agency of the Government.

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

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

### **Limitation**

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

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

<b>Table of Contents</b>	<b>Page</b>
<b>6 . MAXIMUM PEAK CONDUCTED OUTPUT POWER TEST</b>	<b>21</b>
<b>6.1 APPLIED PROCEDURES / LIMIT</b>	<b>21</b>
6.1.1 TEST PROCEDURE	21
6.1.2 DEVIATION FROM STANDARD	21
6.1.3 TEST SETUP	21
6.1.4 EUT OPERATION CONDITIONS	21
6.1.5 EUT TEST CONDITIONS	21
6.1.6 TEST RESULTS	21
<b>7 . ANTENNA CONDUCTED SPURIOUS EMISSION</b>	<b>22</b>
<b>7.1 APPLIED PROCEDURES / LIMIT</b>	<b>22</b>
7.1.1 TEST PROCEDURE	22
7.1.2 DEVIATION FROM STANDARD	22
7.1.3 TEST SETUP	22
7.1.4 EUT OPERATION CONDITIONS	22
7.1.5 EUT TEST CONDITIONS	22
7.1.6 TEST RESULTS	22
<b>8 . POWER SPECTRAL DENSITY TEST</b>	<b>23</b>
<b>8.1 APPLIED PROCEDURES / LIMIT</b>	<b>23</b>
8.1.1 TEST PROCEDURE	23
8.1.2 DEVIATION FROM STANDARD	23
8.1.3 TEST SETUP	23
8.1.4 EUT OPERATION CONDITIONS	23
8.1.5 EUT TEST CONDITIONS	23
8.1.6 TEST RESULTS	23
<b>9 . MEASUREMENT INSTRUMENTS LIST</b>	<b>24</b>
<b>10 . EUT TEST PHOTO</b>	<b>26</b>
<b>ATTACHMENT A - CONDUCTED EMISSION</b>	<b>30</b>
<b>ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)</b>	<b>33</b>
<b>ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)</b>	<b>35</b>
<b>ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)</b>	<b>42</b>
<b>ATTACHMENT E - BANDWIDTH</b>	<b>79</b>
<b>ATTACHMENT F – MAXIMUM PEAK CONDUCTED OUTPUT POWER</b>	<b>86</b>
<b>ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION</b>	<b>88</b>
<b>ATTACHMENT H - POWER SPECTRAL DENSITY</b>	<b>99</b>

### REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1412C151	Original Issue.	Feb. 09, 2015

## 1. CERTIFICATION

Equipment : TouchScreen Displays  
Brand Name : InFocus  
Model Name : INF6501c  
Applicant : InFocus Corporation  
Manufacturer : InFocus Corporation  
Address : 13190 SW 68th Parkway Suite 200 Portland, OR 97223-8368  
Factory : HONGFUJIN PRECISION ELECTRONICS (CHONGQING)CO.,LTD  
Address : NO.1 EAST DISTRICT 1ST RD.,SHAPINGBADISTRICT,CHONGQING  
Date of Test : Dec. 23, 2014 ~ Feb. 06, 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-1-1412C151) 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	Remark
<b>FCC</b>				
	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 is **DG-C02/DG-CB03** at the location of No.3,Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.523792  
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 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)	NOTE
DG-C02	CISPR	150 KHz ~ 30MHz	1.94	

### B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)	NOTE
DG-CB03	CISPR	9KHz~30MHz	V	3.79	
		9KHz~30MHz	H	3.57	
		30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	H	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	H	3.94	
		1GHz~18GHz	V	3.12	
		1GHz~18GHz	H	3.68	
		18GHz~40GHz	V	4.15	
		18GHz~40GHz	H	4.14	



### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

Equipment	TouchScreen Displays	
Brand Name	InFocus	
Model Name	INF6501c	
Model Difference	N/A	
Product Description	Operation Frequency	2412~2462 MHz
	Modulation Technology	802.11b:DSSS 802.11g:OFDM 802.11n:OFDM
	Bit Rate of Transmitter	802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n up to 150 Mbps
	Output Power (Max.)	802.11b: 16.38dBm 802.11g: 15.28dBm 802.11n(20MHz): 14.12dBm
Power Source	AC Mains.	
Power Rating	I/P: AC 100-240V 50-60Hz 4A	


Note:

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

2. Channel List:

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

3. Antenna Specification:

Ant.	Brand	Model	Antenna Type	Connector	Gain (dBi)	Note
1	 FOXCONN®	ANTS71L-DJ651-DH	Internal	N/A	-2.92	TX/RX

### 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 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 4	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:

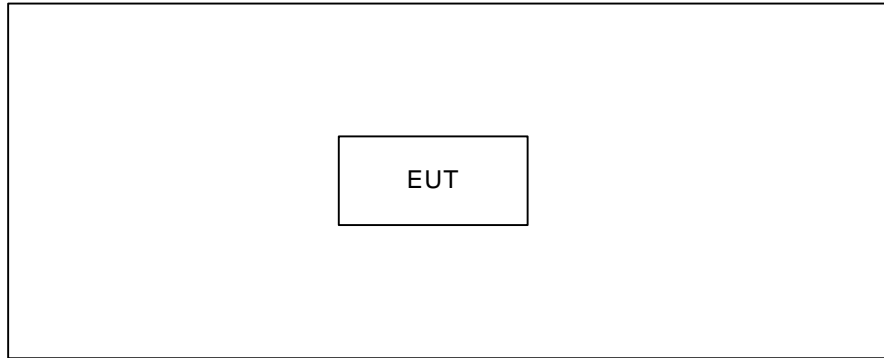
- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1Mbps)  
802.11g mode: OFDM (6Mbps)  
802.11n HT20 mode : BPSK (6.5Mbps)  
For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated below 1G test, the 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	RFTestTool		
Frequency (MHz)	2412	2437	2462
802.11b	NA	NA	NA
802.11g	NA	NA	NA
802.11n (20MHz)	NA	NA	NA

### 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
-	-	-	-	-	-	

Item	Shielded Type	Ferrite Core	Length	Note
-	-	-	-	

## 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

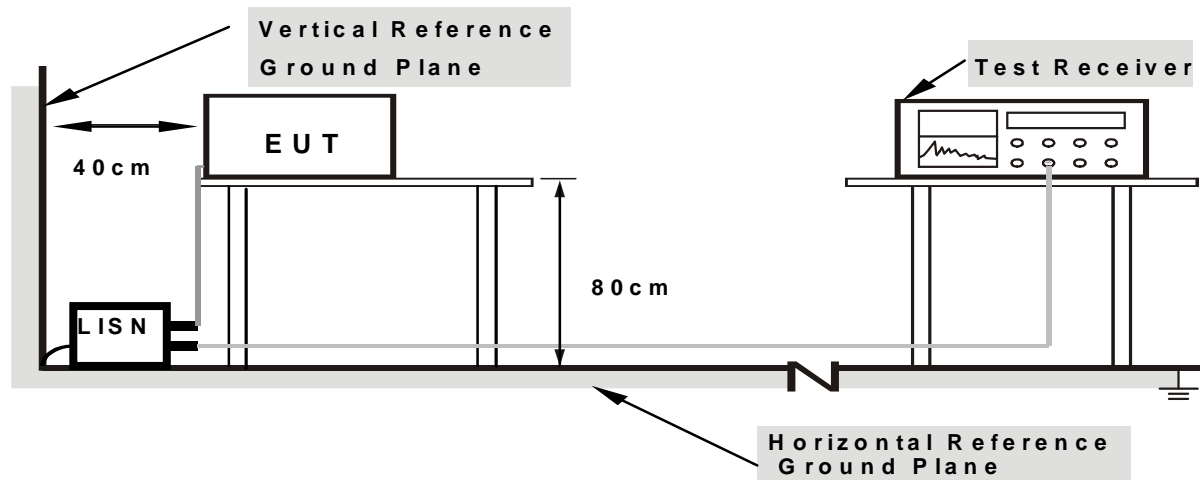
#### 4.1.2 TEST PROCEDURE

- 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 equipments 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 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: 60%    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

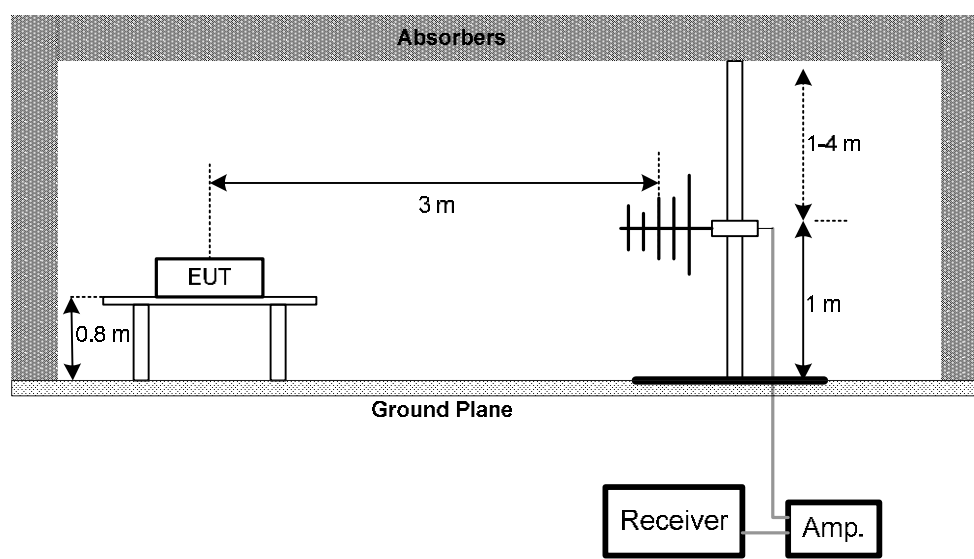
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 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

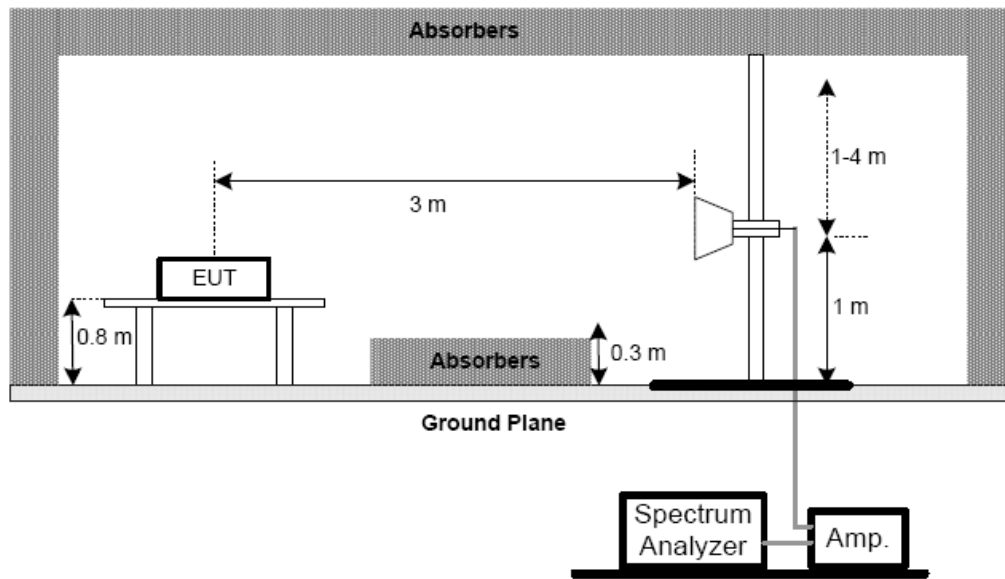
No deviation

#### 4.2.4 TEST SETUP

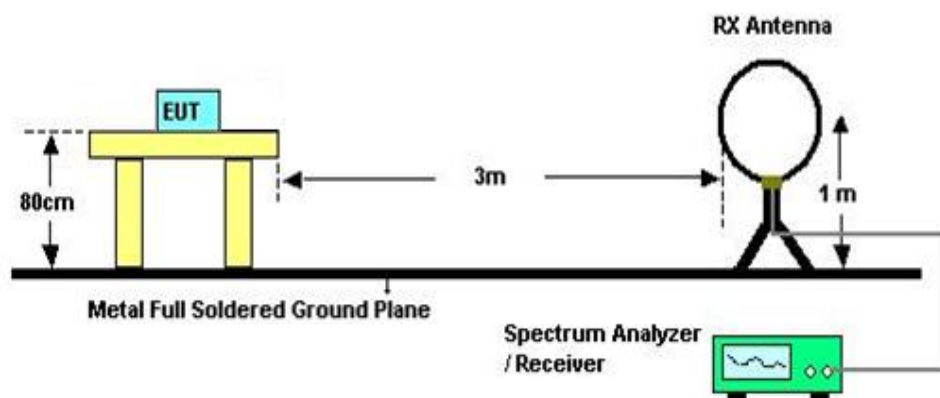
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(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: 62%    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: 58%    Test Voltage: AC 120V/60Hz

#### 5.1.6 TEST RESULTS

Please refer to the Attachment E.

## 6. MAXIMUM PEAK CONDUCTED OUTPUT POWER TEST

### 6.1 APPLIED PROCEDURES / LIMIT

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

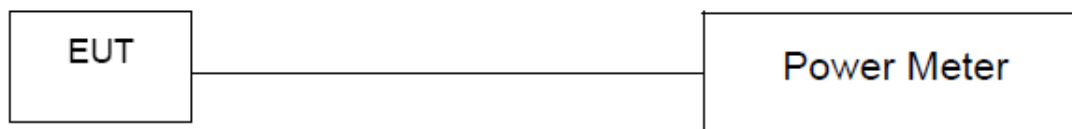
#### 6.1.1 TEST PROCEDURE

- The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
- The maximum peak conducted output power was performed in accordance with method 9.1.2 of FCC KDB 558074 D01 DTS Meas Guidance 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: 58%    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.

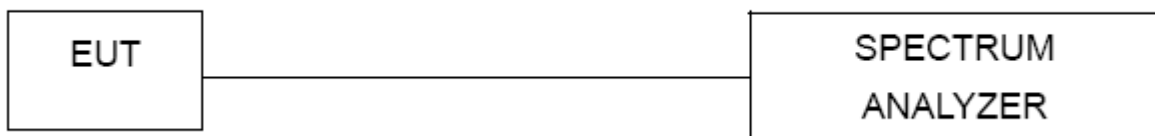
#### **7.1.1 TEST PROCEDURE**

- 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: 58%    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: 58%    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	EMCO	3816/2	00052765	Mar. 29, 2015
2	LISN	R&S	ENV216	101447	Mar. 29, 2015
3	Test Cable	N/A	C_17	N/A	Mar. 14, 2015
4	EMI TEST RECEIVER	R&S	ESCS30	833364/017	Mar. 29, 2015
5	50Ω Terminator	SHX	TF2-3G-A	08122902	Mar. 29, 2015
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1 -01	N/A	N/A

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarzbeck	VULB9160	9160-3232	Mar. 29, 2015
2	Amplifier	HP	8447D	2944A09673	Mar. 29, 2015
3	Receiver	AGILENT	N9038A	MY5213003 9	Sep. 30, 2015
4	Test Cable	N/A	C-01_CB03	N/A	Jul. 01, 2015
5	Controller	CT	SC100	N/A	N/A
6	Antenna	ETS	3115	00075789	Mar. 29, 2015
7	Amplifier	Agilent	8449B	3008A02274	Mar. 29, 2015
8	Receiver	AGILENT	N9038A	MY5213003 9	Sep. 30, 2015
9	Test Cable	HUBER+SUHNER	C-48	N/A	Apr. 30, 2015
10	Controller	CT	SC100	N/A	N/A
11	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Feb. 22, 2015
12	Microwave Pre-amplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Feb. 22, 2015
13	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Mar. 29, 2015
14	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A



6dB Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 02, 2015

Peak Output Power Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	P-series Power meter	Agilent	N1911A	MY45100473	Mar. 29, 2015
2	Wireband Power sensor	Agilent	N1921A	MY51100041	Mar. 29, 2015

Antenna Conducted Spurious Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 02, 2015

Power Spectral Density Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 02, 2015

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

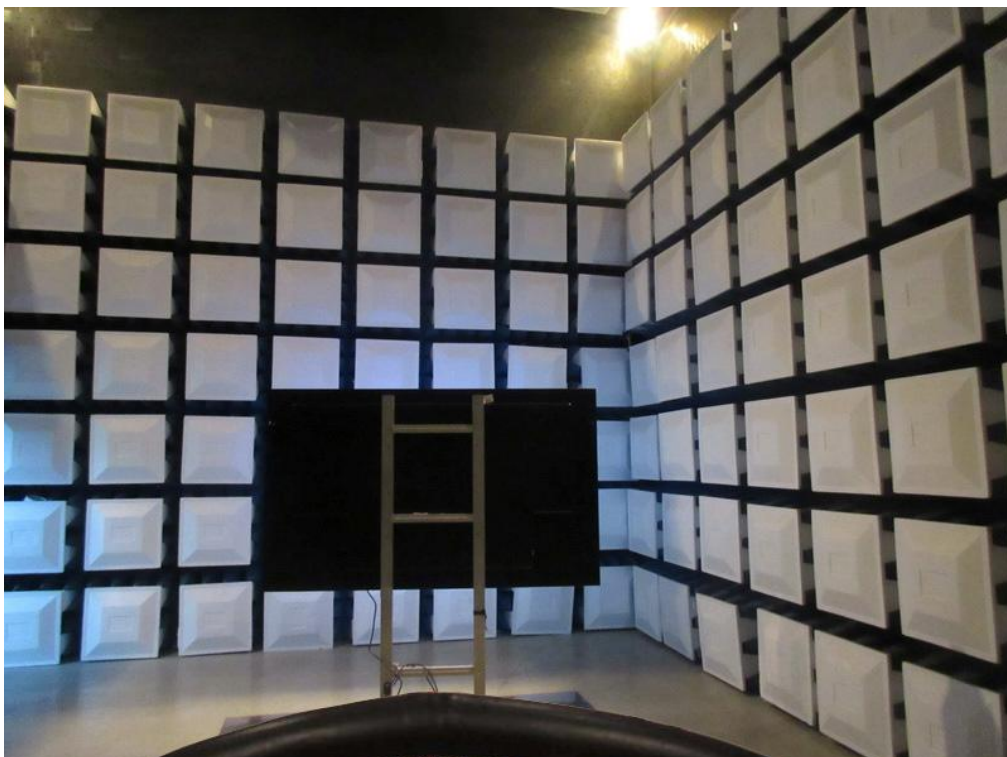
## 10. EUT TEST PHOTO

### Conducted Measurement Photos



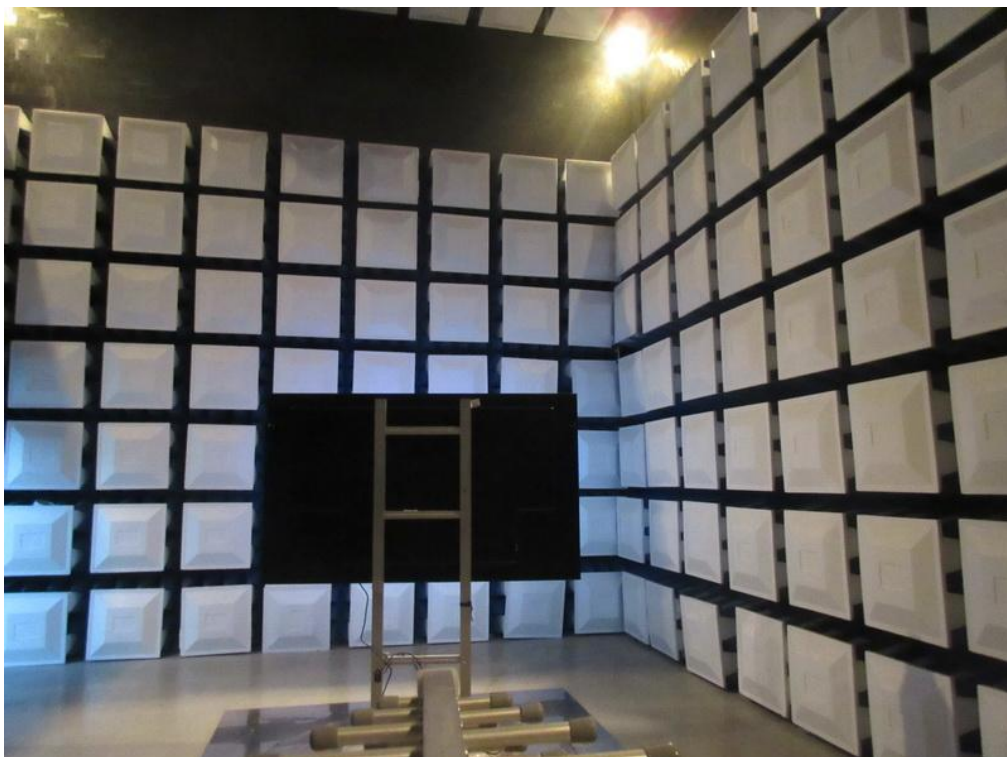
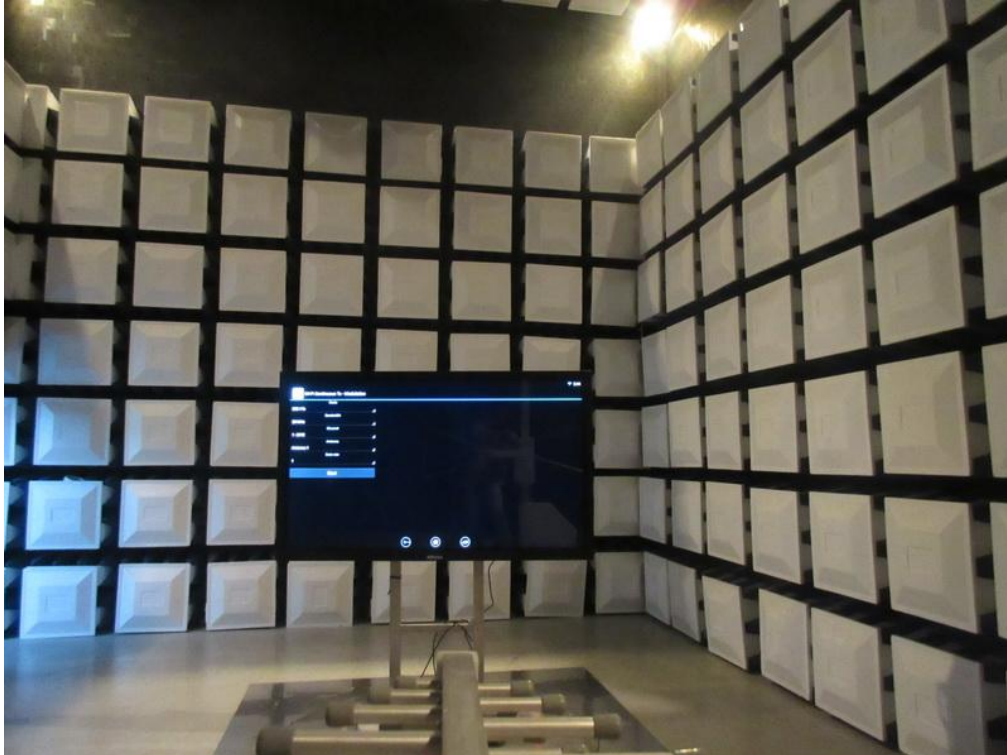
## Radiated Measurement Photos

9KHz to 30MHz



## Radiated Measurement Photos

30MHz to 1000MHz



## Radiated Measurement Photos

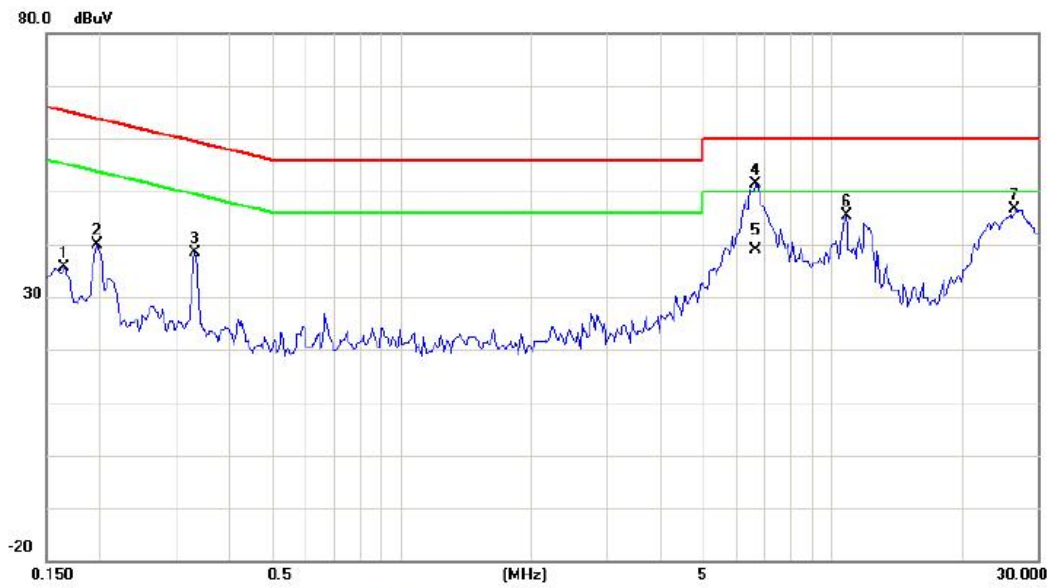
Above 1000MHz



## **ATTACHMENT A - CONDUCTED EMISSION**

Test Mode : TX MODE

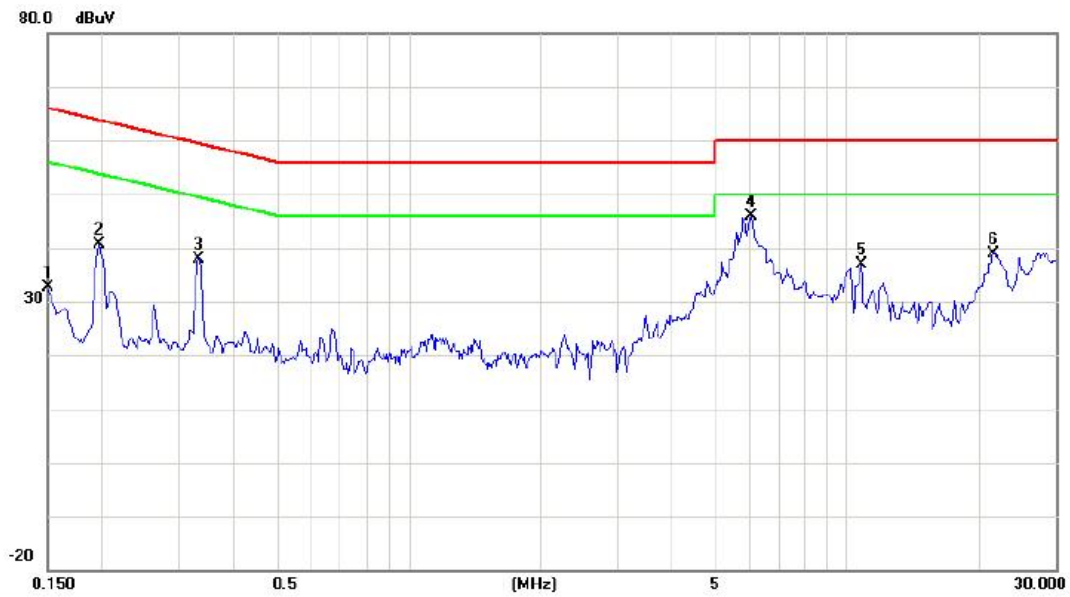
### Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1655	26.16	9.49	35.65	65.18	-29.53	peak	
2		0.1968	30.37	9.50	39.87	63.74	-23.87	peak	
3		0.3335	28.83	9.56	38.39	59.36	-20.97	peak	
4	*	6.6600	41.52	9.74	51.26	60.00	-8.74	peak	
5		6.6600	29.07	9.74	38.81	50.00	-11.19	AVG	
6		10.7930	35.48	9.80	45.28	60.00	-14.72	peak	
7		26.6914	36.39	10.22	46.61	60.00	-13.39	peak	

Test Mode : TX MODE

### Neutral



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1500	23.02	9.59	32.61	66.00	-33.39	peak	
2		0.1968	31.10	9.57	40.67	63.74	-23.07	peak	
3		0.3335	28.43	9.57	38.00	59.36	-21.36	peak	
4	*	6.0625	36.20	9.71	45.91	60.00	-14.09	peak	
5		10.7930	27.19	9.81	37.00	60.00	-23.00	peak	
6		21.6170	28.75	10.13	38.88	60.00	-21.12	peak	



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

Test Mode:	TX Mode 2412MHz
------------	-----------------

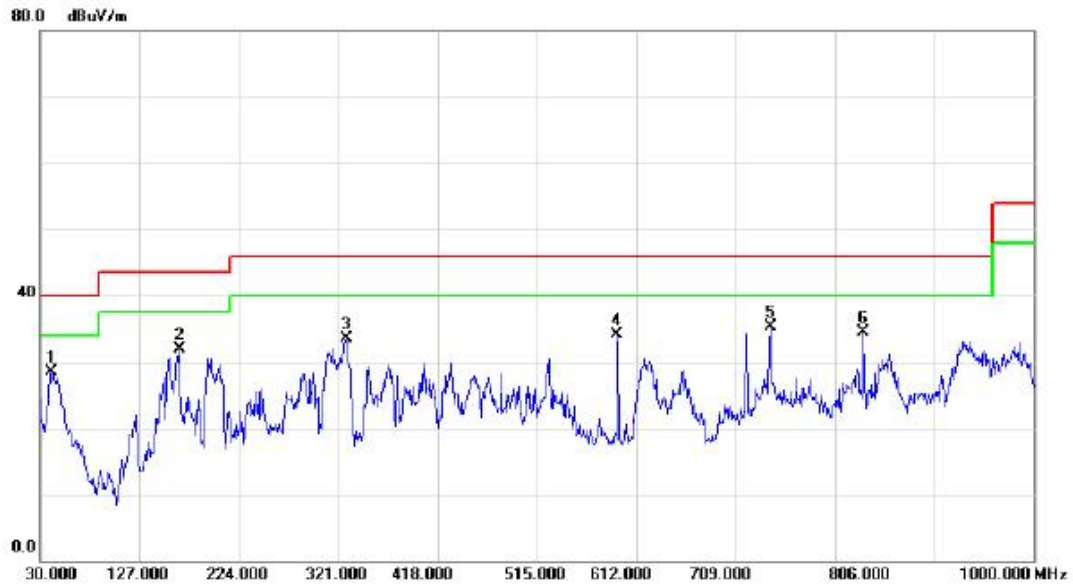
Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Note
0.0102	0°	7.21	24.30	31.51	127.43	-95.92	AVG
0.0102	0°	9.48	24.30	33.78	147.43	-113.65	PEAK
0.0136	0°	5.25	24.30	29.55	124.93	-95.38	AVG
0.0136	0°	7.29	24.30	31.59	144.93	-113.34	PEAK
0.0256	0°	5.48	23.95	29.43	119.44	-90.01	AVG
0.0256	0°	7.38	23.95	31.33	139.44	-108.11	PEAK
0.3470	0°	3.51	20.17	23.68	96.80	-73.12	AVG
0.3470	0°	5.64	20.17	25.81	116.80	-90.99	PEAK
2.0903	0°	17.74	19.45	37.19	69.54	-32.35	QP
3.4634	0°	25.99	18.95	44.94	69.54	-24.60	QP

Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Note
0.0101	90°	5.83	24.30	30.13	127.52	-97.39	AVG
0.0101	90°	7.36	24.30	31.66	147.52	-115.86	PEAK
0.0158	90°	4.67	24.30	28.97	123.63	-94.66	AVG
0.0158	90°	6.55	24.30	30.85	143.63	-112.78	PEAK
0.0253	90°	3.05	23.96	27.01	119.54	-92.53	AVG
0.0253	90°	5.94	23.96	29.90	139.54	-109.64	PEAK
0.0370	90°	0.39	23.22	23.61	116.24	-92.63	AVG
0.0370	90°	3.18	23.22	26.40	136.24	-109.84	PEAK
1.6125	90°	18.82	19.54	38.36	63.45	-25.10	QP
2.1798	90°	23.26	19.39	42.65	69.54	-26.89	QP

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

Test Mode: TX B MODE CHANNEL 01

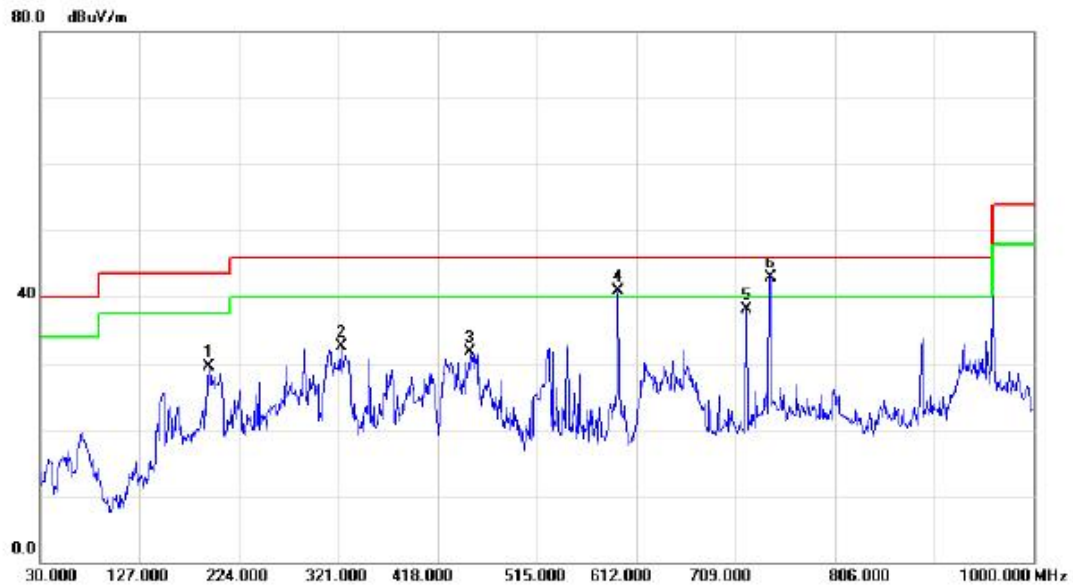
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		40.6700	49.33	-20.78	28.55	40.00	-11.45	peak	
2		165.8000	49.95	-18.11	31.84	43.50	-11.66	peak	
3		328.7600	51.18	-17.74	33.44	46.00	-12.56	peak	
4		593.5700	48.10	-14.02	34.08	46.00	-11.92	peak	
5	*	742.9500	42.14	-6.80	35.34	46.00	-10.66	peak	
6		834.1300	44.24	-9.70	34.54	46.00	-11.46	peak	

Test Mode: TX B MODE CHANNEL 01

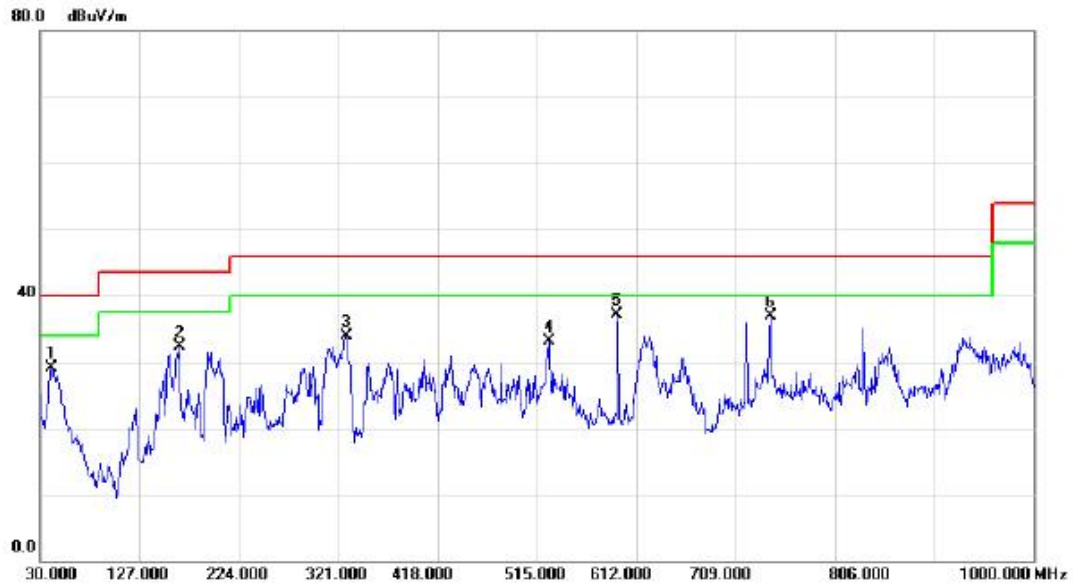
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		194.9000	52.33	-22.84	29.49	43.50	-14.01	peak	
2		323.9100	51.90	-19.43	32.47	46.00	-13.53	peak	
3		450.0100	45.13	-13.49	31.64	46.00	-14.36	peak	
4	!	594.5400	54.10	-13.28	40.82	46.00	-5.18	peak	
5		719.6700	47.51	-9.36	38.15	46.00	-7.85	peak	
6	*	742.9500	50.87	-7.91	42.96	46.00	-3.04	peak	

Test Mode: TX B MODE CHANNEL 06

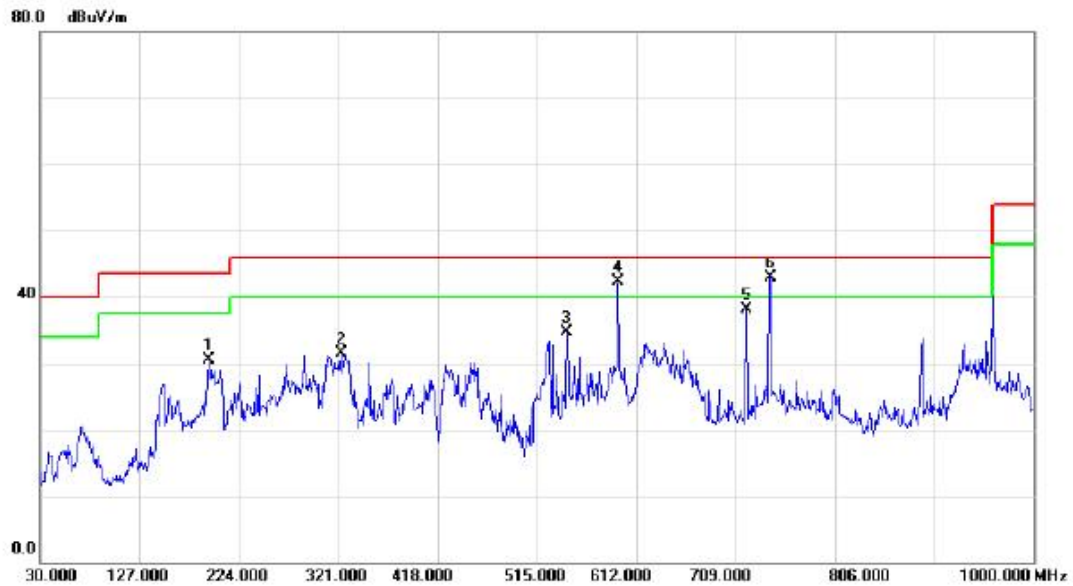
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		40.6700	49.83	-20.78	29.05	40.00	-10.95	peak	
2		165.8000	50.45	-18.11	32.34	43.50	-11.16	peak	
3		328.7600	51.68	-17.74	33.94	46.00	-12.06	peak	
4		526.6400	47.60	-14.55	33.05	46.00	-12.95	peak	
5	*	593.5700	51.10	-14.02	37.08	46.00	-8.92	peak	
6		742.9500	43.64	-6.80	36.84	46.00	-9.16	peak	

Test Mode: TX B MODE CHANNEL 06

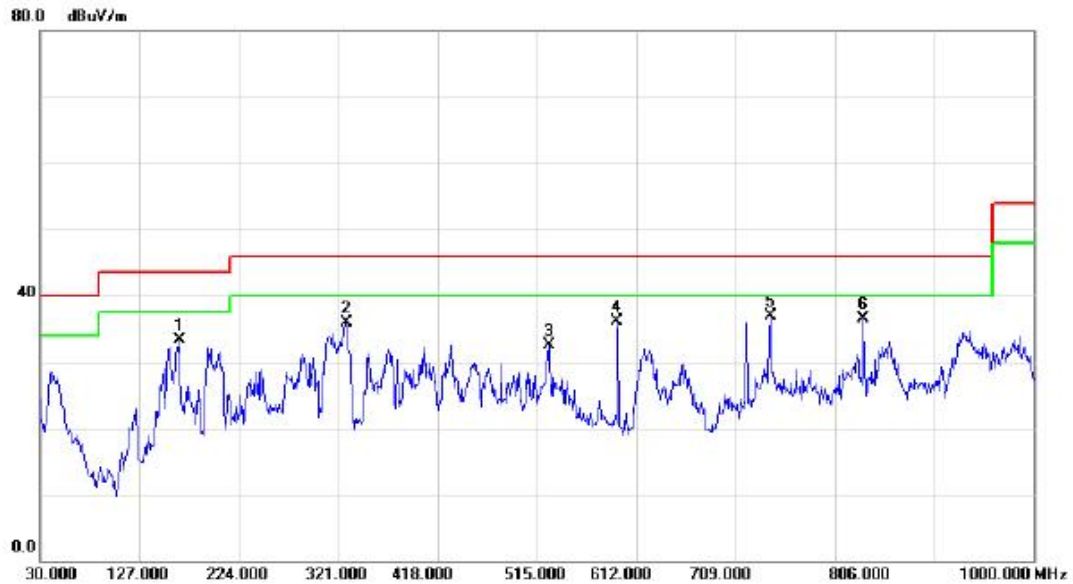
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		194.9000	53.33	-22.84	30.49	43.50	-13.01	peak	
2		323.9100	50.90	-19.43	31.47	46.00	-14.53	peak	
3		544.1000	47.03	-12.42	34.61	46.00	-11.39	peak	
4	!	594.5400	55.60	-13.28	42.32	46.00	-3.68	peak	
5		719.6700	47.51	-9.36	38.15	46.00	-7.85	peak	
6	*	742.9500	50.87	-7.91	42.96	46.00	-3.04	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		165.8000	51.45	-18.11	33.34	43.50	-10.16	peak	
2		328.7600	53.68	-17.74	35.94	46.00	-10.06	peak	
3		526.6400	47.10	-14.55	32.55	46.00	-13.45	peak	
4		593.5700	50.10	-14.02	36.08	46.00	-9.92	peak	
5	*	742.9500	43.64	-6.80	36.84	46.00	-9.16	peak	
6		834.1300	46.24	-9.70	36.54	46.00	-9.46	peak	



Test Mode: TX B MODE CHANNEL 11

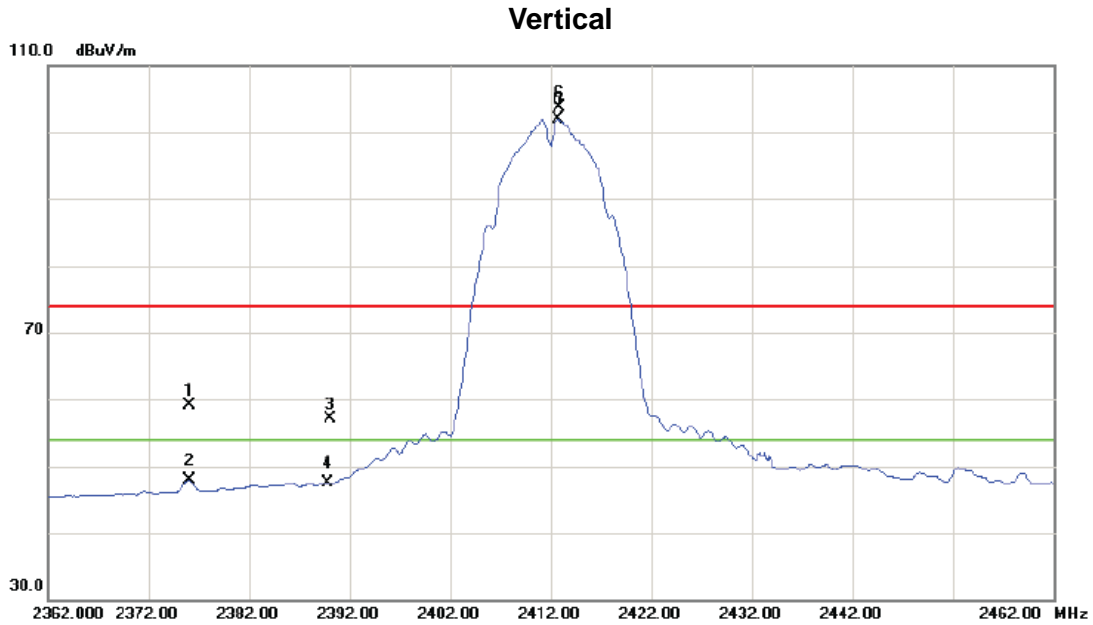
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		194.9000	53.83	-22.84	30.99	43.50	-12.51	peak	
2		323.9100	52.90	-19.43	33.47	46.00	-12.53	peak	
3		450.0100	46.13	-13.49	32.64	46.00	-13.36	peak	
4	!	594.5400	55.10	-13.28	41.82	46.00	-4.18	peak	
5		719.6700	47.51	-9.36	38.15	46.00	-7.85	peak	
6	*	742.9500	50.37	-7.91	42.46	46.00	-3.54	peak	

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

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



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2376.000	27.19	31.86	59.05	74.00	-14.95	peak	
2		2376.000	15.97	31.86	47.83	54.00	-6.17	AVG	
3		2390.000	25.18	31.88	57.06	74.00	-16.94	peak	
4		2390.000	15.65	31.88	47.53	54.00	-6.47	AVG	
5	*	2412.700	69.98	31.91	101.89	54.00	47.89	AVG	No Limit
6	X	2412.900	71.78	31.91	103.69	74.00	29.69	peak	No Limit

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

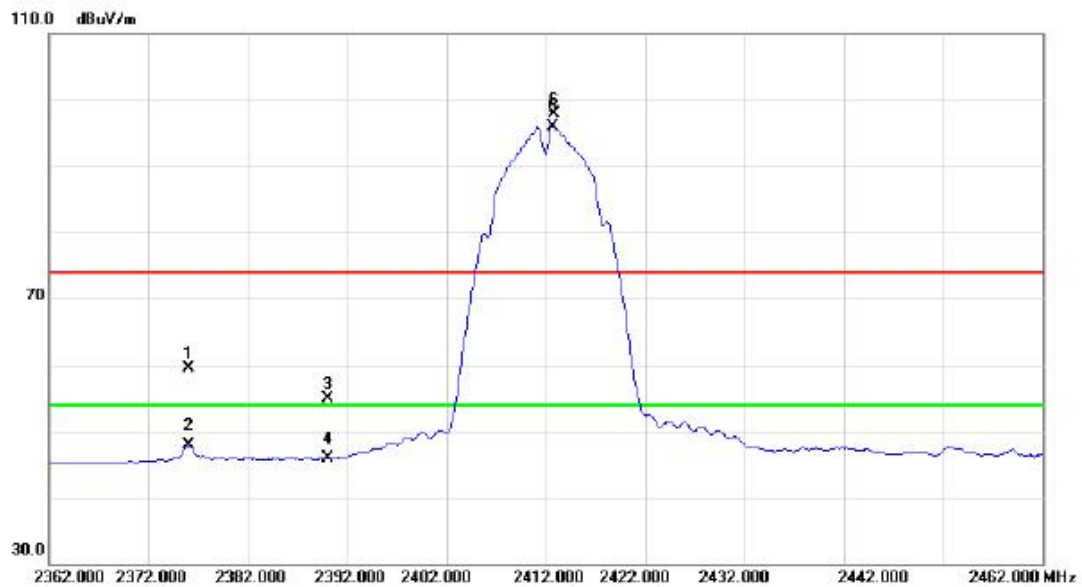
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4823.880	40.59	3.62	44.21	74.00	-29.79	peak	
2	*	4823.960	36.81	3.62	40.43	54.00	-13.57	AVG	

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

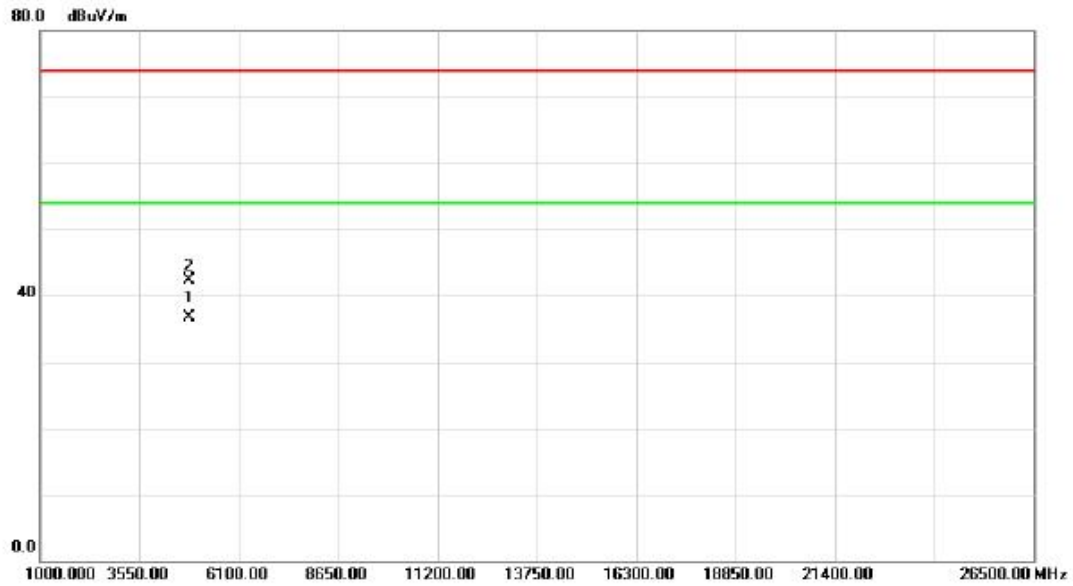
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2376.000	27.68	31.86	59.54	74.00	-14.46	peak	
2		2376.000	16.01	31.86	47.87	54.00	-6.13	AVG	
3		2390.000	23.08	31.88	54.96	74.00	-19.04	peak	
4		2390.000	14.03	31.88	45.91	54.00	-8.09	AVG	
5	*	2412.700	64.06	31.91	95.97	54.00	41.97	AVG	No Limit
6	X	2412.900	66.01	31.91	97.92	74.00	23.92	peak	No Limit

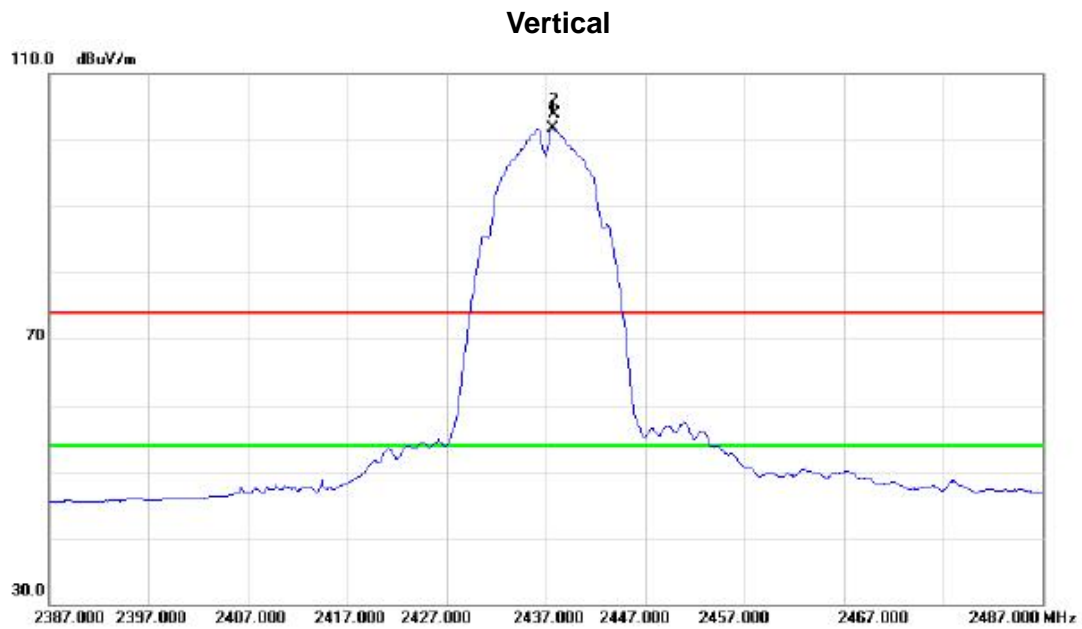
Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz

### Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	4823.920	32.99	3.62	36.61	54.00	-17.39	AVG	
2		4823.960	38.60	3.62	42.22	74.00	-31.78	peak	

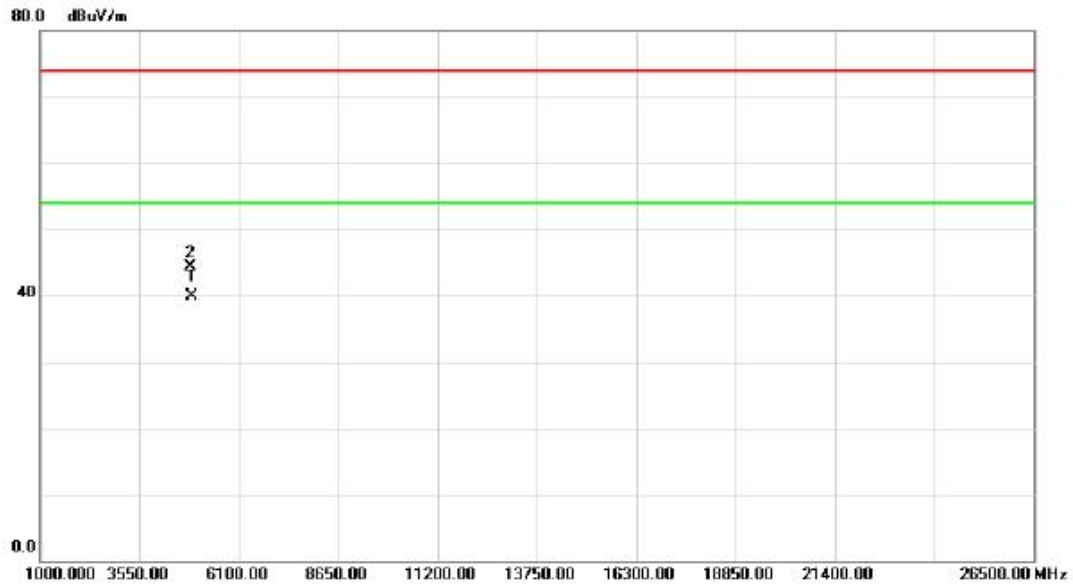
Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	2437.700	69.72	31.94	101.66	54.00	47.66	AVG	No Limit
2	X	2437.900	71.91	31.94	103.85	74.00	29.85	peak	No Limit

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

### Vertical

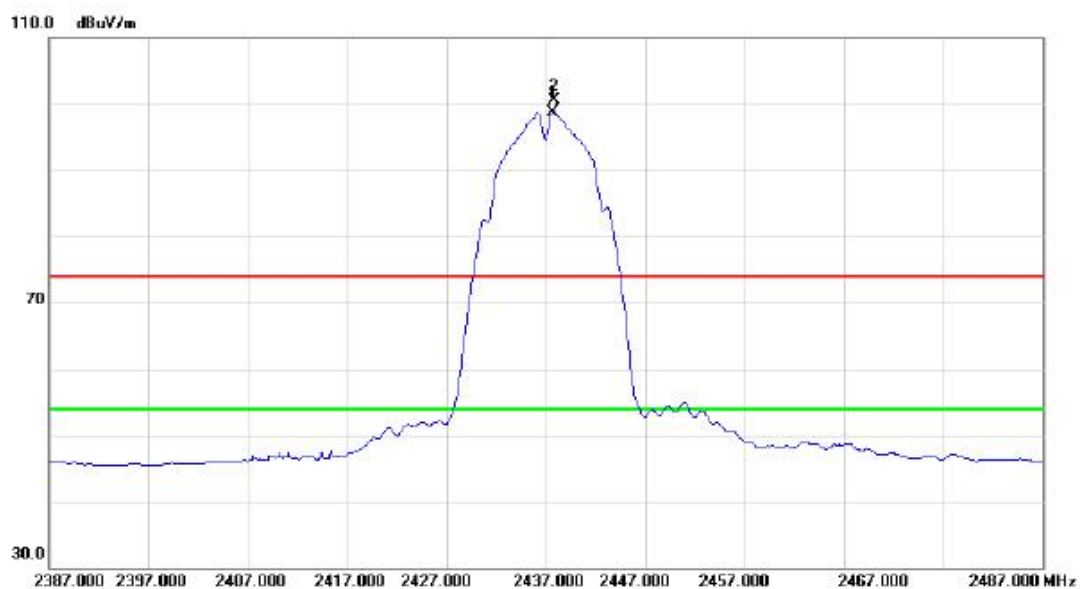


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	4873.420	36.17	3.72	39.89	54.00	-14.11	AVG	
2		4874.270	40.65	3.72	44.37	74.00	-29.63	peak	



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

### Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	2437.700	66.77	31.94	98.71	54.00	44.71	AVG	No Limit
2	X	2437.900	68.63	31.94	100.57	74.00	26.57	peak	No Limit

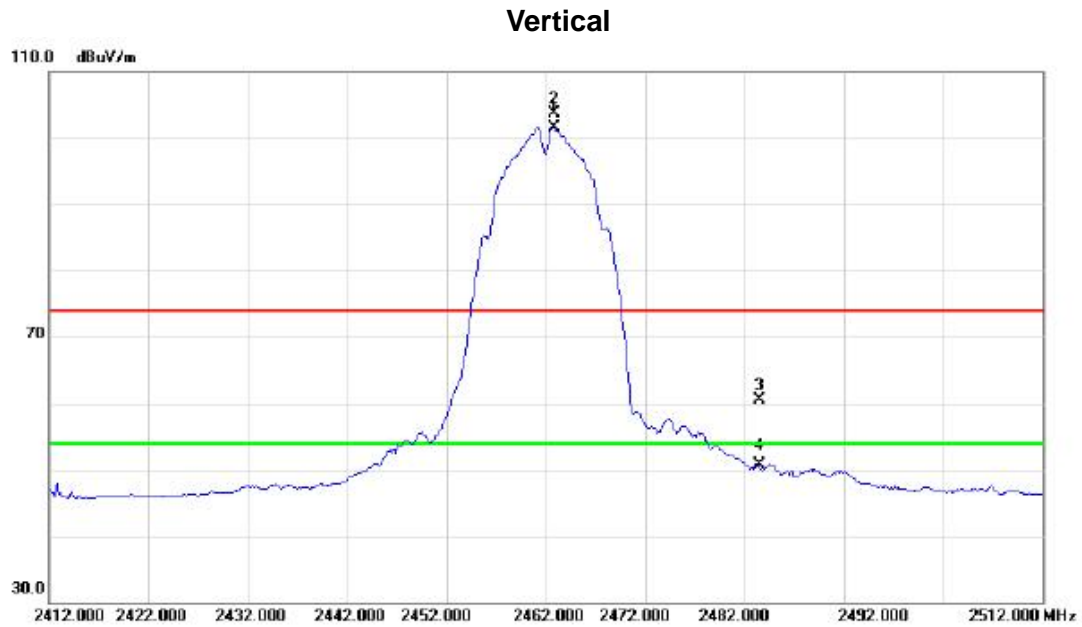
Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz

### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	4874.080	33.72	3.72	37.44	54.00	-16.56	AVG	
2		4874.580	37.98	3.72	41.70	74.00	-32.30	peak	

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



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	2462.800	69.60	31.98	101.58	54.00	47.58	AVG	No Limit
2	X	2462.900	71.64	31.98	103.62	74.00	29.62	peak	No Limit
3		2483.500	28.48	32.01	60.49	74.00	-13.51	peak	
4		2483.500	18.78	32.01	50.79	54.00	-3.21	AVG	

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

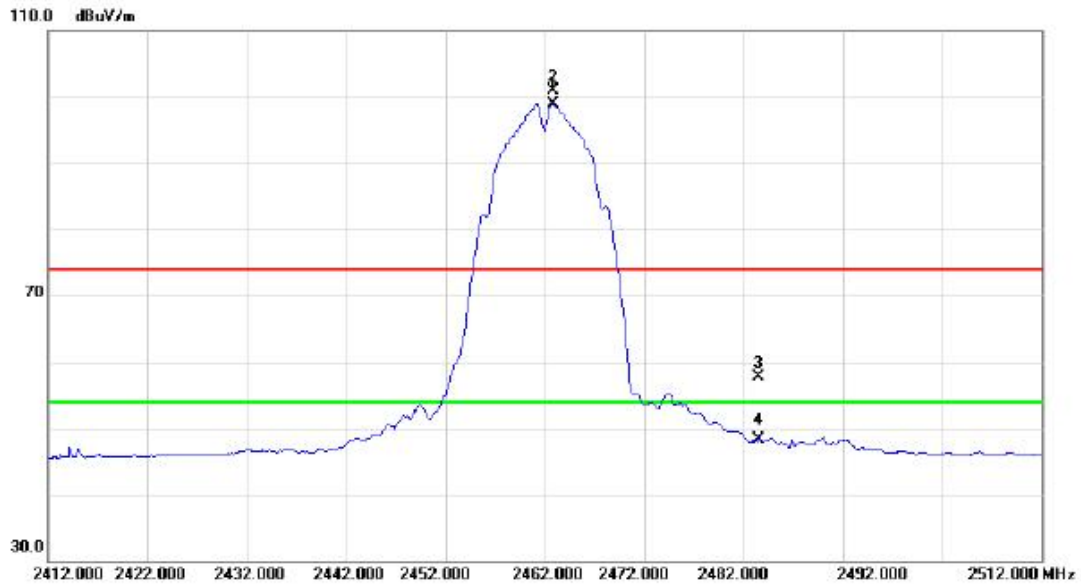
### Vertical



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	4924.630	38.24	3.80	42.04	74.00	-31.96	peak	
2 *	4924.680	32.67	3.80	36.47	54.00	-17.53	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	*	2462.800	66.97	31.98	98.95	54.00	44.95	AVG	No Limit
2	X	2462.900	68.91	31.98	100.89	74.00	26.89	peak	No Limit
3		2483.500	25.72	32.01	57.73	74.00	-16.27	peak	
4		2483.500	16.30	32.01	48.31	54.00	-5.69	AVG	

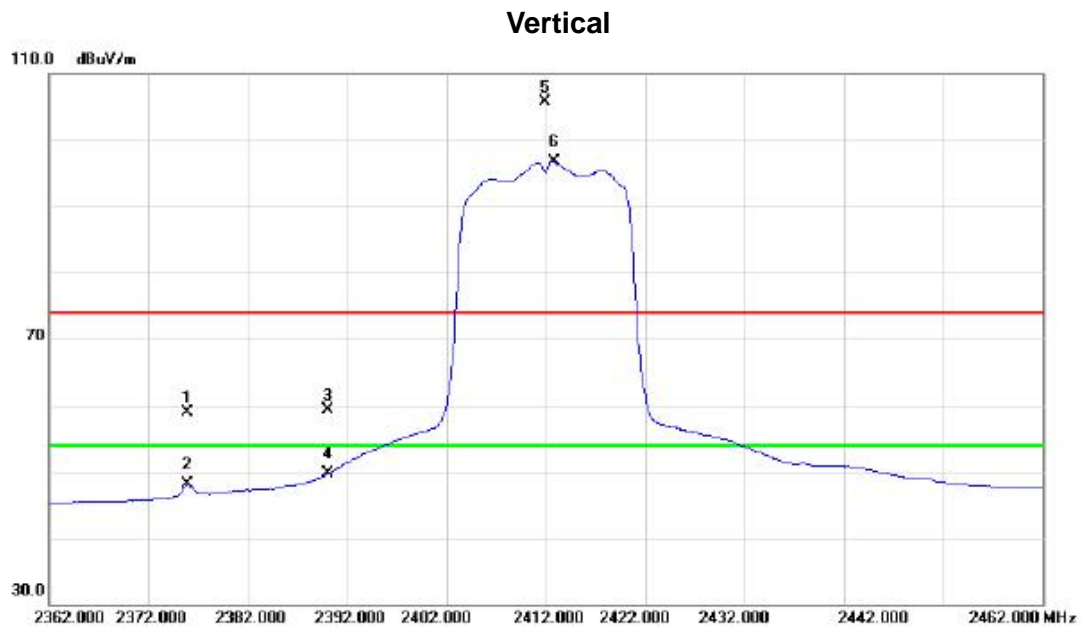
Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4923.870	38.07	3.80	41.87	74.00	-32.13	peak	
2	*	4924.860	31.08	3.80	34.88	54.00	-19.12	AVG	

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



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2375.900	27.09	31.86	58.95	74.00	-15.05	peak	
2		2375.900	16.23	31.86	48.09	54.00	-5.91	AVG	
3		2390.000	27.50	31.88	59.38	74.00	-14.62	peak	
4		2390.000	17.85	31.88	49.73	54.00	-4.27	AVG	
5	X	2411.900	73.82	31.91	105.73	74.00	31.73	peak	No Limit
6	*	2412.900	64.76	31.91	96.67	54.00	42.67	AVG	No Limit

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

### Vertical

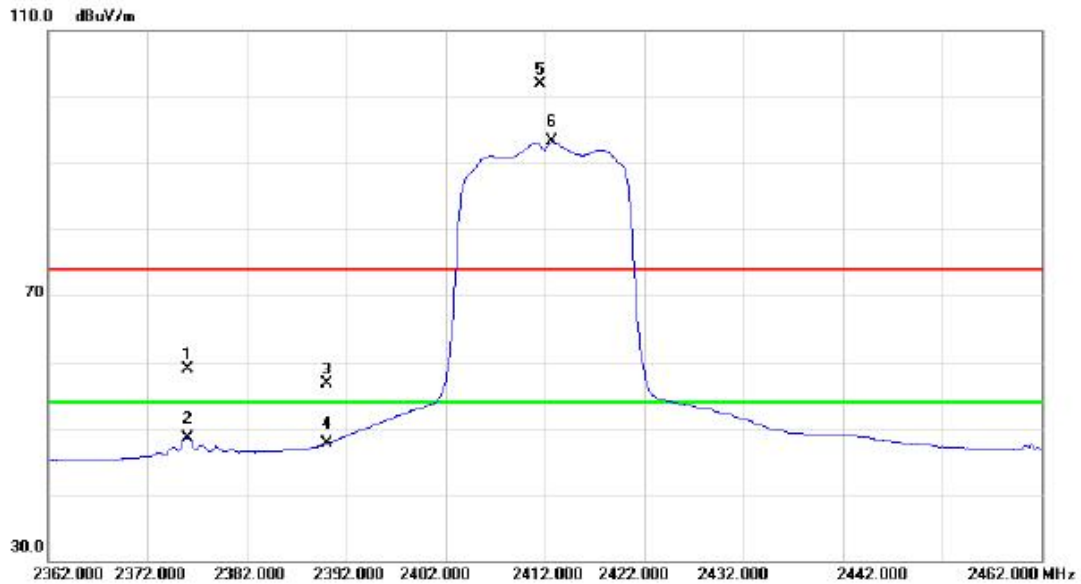


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	4823.980	29.18	3.62	32.80	54.00	-21.20	AVG	
2		4824.610	35.47	3.62	39.09	74.00	-34.91	peak	



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		2376.000	27.09	31.86	58.95	74.00	-15.05	peak	
2		2376.000	16.72	31.86	48.58	54.00	-5.42	AVG	
3		2390.000	24.73	31.88	56.61	74.00	-17.39	peak	
4		2390.000	15.76	31.88	47.64	54.00	-6.36	AVG	
5	X	2411.500	69.93	31.91	101.84	74.00	27.84	peak	No Limit
6	*	2412.700	61.31	31.91	93.22	54.00	39.22	AVG	No Limit

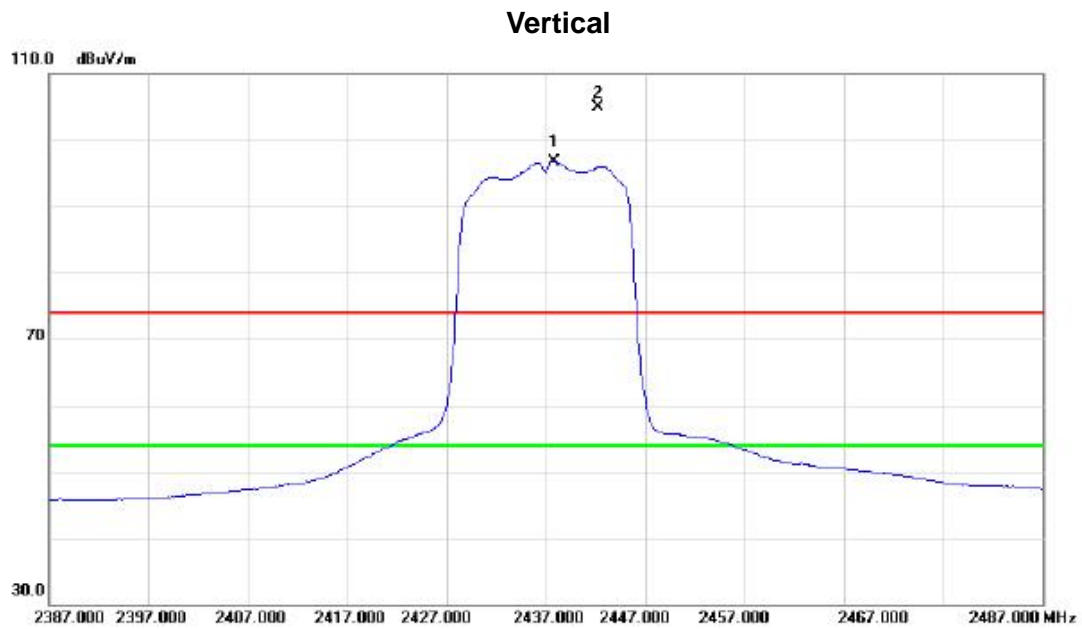
Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz

### Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	4824.080	28.17	3.62	31.79	54.00	-22.21	AVG	
2		4824.670	33.67	3.62	37.29	74.00	-36.71	peak	

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



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	2437.800	64.81	31.94	96.75	54.00	42.75	AVG	No Limit
2	X	2442.300	72.87	31.95	104.82	74.00	30.82	peak	No Limit

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

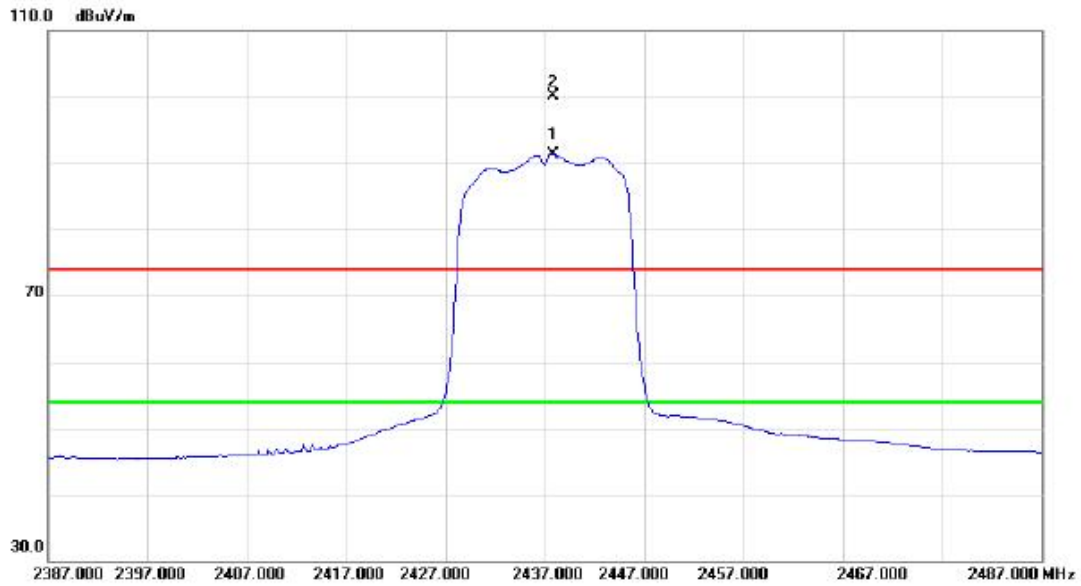
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4873.070	29.16	3.72	32.88	74.00	-41.12	peak	
2	*	4874.920	35.36	3.72	39.08	54.00	-14.92	AVG	

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

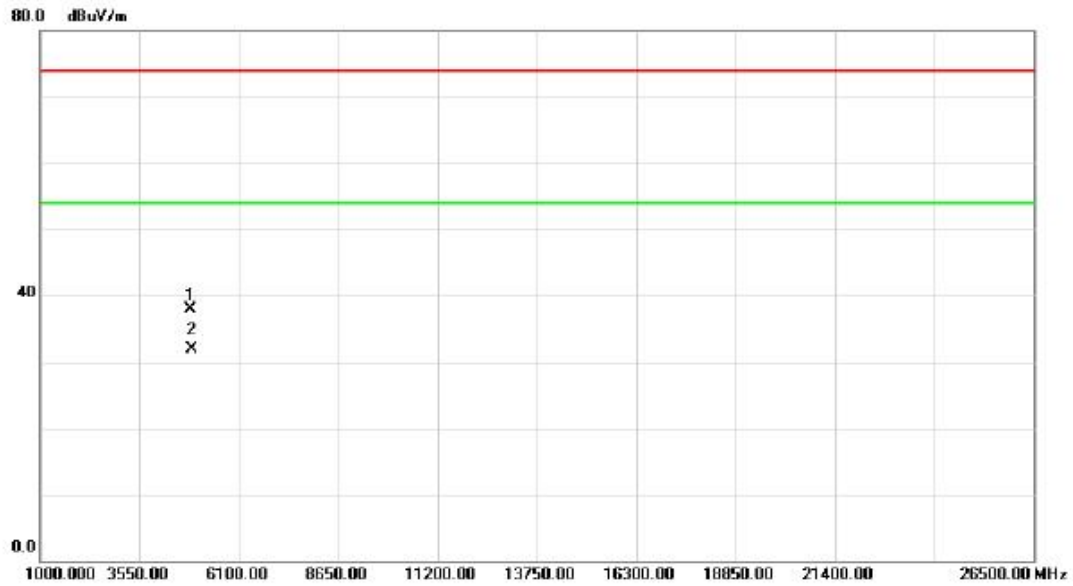
### Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	2437.800	59.37	31.94	91.31	54.00	37.31	AVG	No Limit
2	X	2437.900	68.09	31.94	100.03	74.00	26.03	peak	No Limit

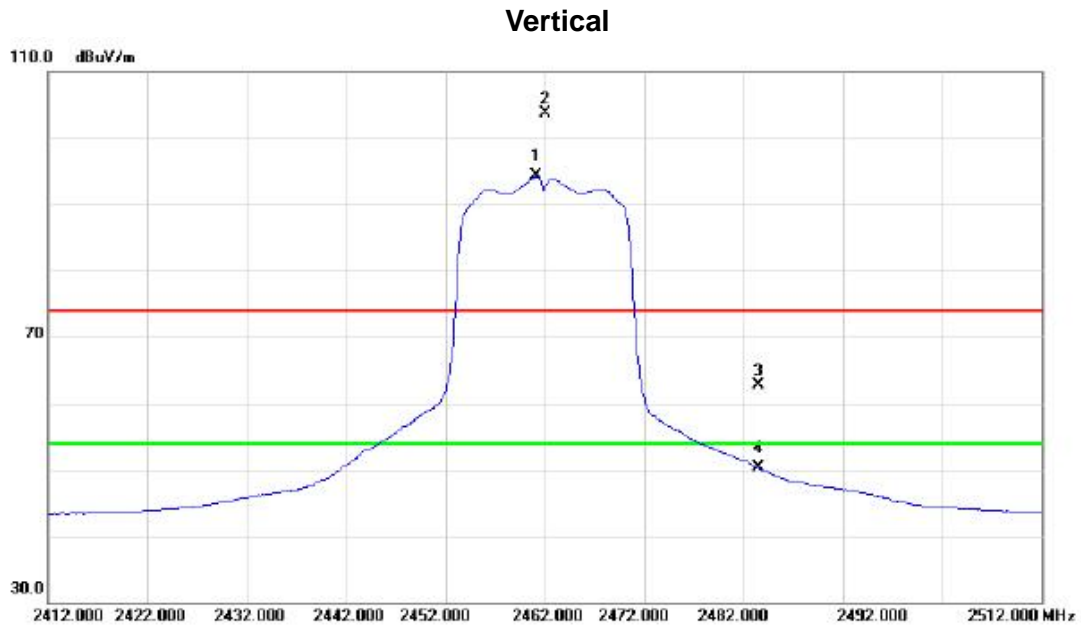
Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.050	34.09	3.72	37.81	74.00	-36.19	peak	
2	*	4874.670	28.17	3.72	31.89	54.00	-22.11	AVG	

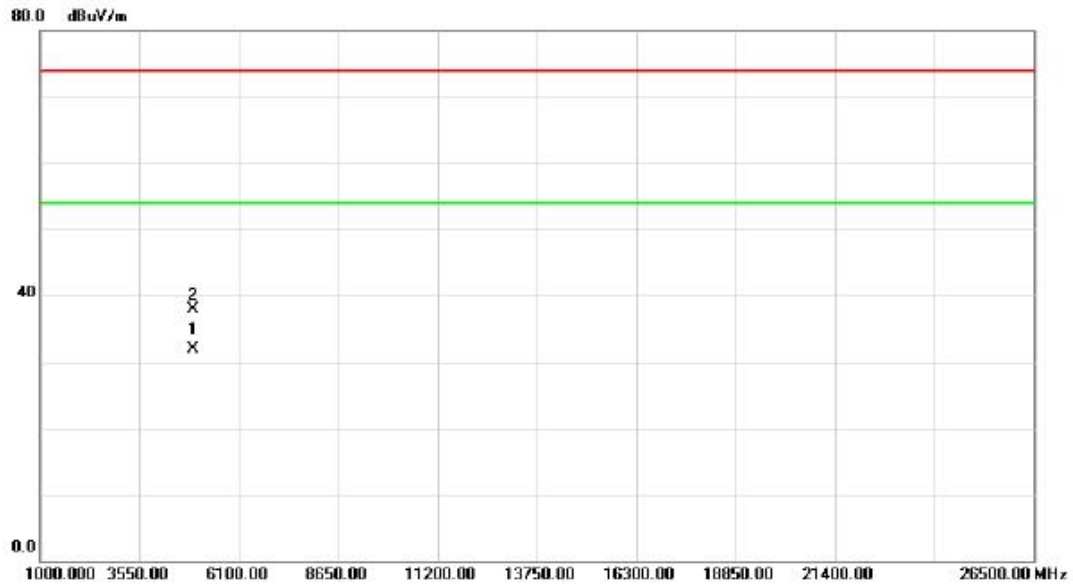
Orthogonal Axis :	X
Test Mode :	TX G MODE 2462MHz



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	2461.200	62.23	31.98	94.21	54.00	40.21	AVG	No Limit
2	X	2462.000	71.80	31.98	103.78	74.00	29.78	peak	No Limit
3		2483.500	30.60	32.01	62.61	74.00	-11.39	peak	
4		2483.500	18.33	32.01	50.34	54.00	-3.66	AVG	

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

### Vertical

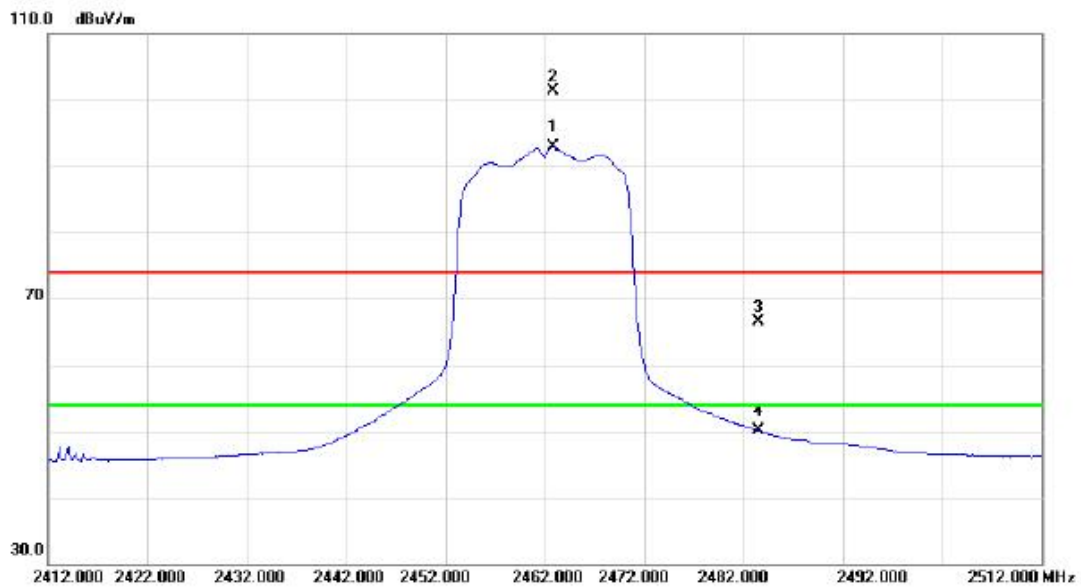


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	4923.670	28.15	3.80	31.95	54.00	-22.05	AVG	
2		4924.070	34.08	3.80	37.88	74.00	-36.12	peak	



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	*	2462.800	60.86	31.98	92.84	54.00	38.84	AVG	No Limit
2	X	2462.900	69.24	31.98	101.22	74.00	27.22	peak	No Limit
3		2483.500	34.50	32.01	66.51	74.00	-7.49	peak	
4		2483.500	18.13	32.01	50.14	54.00	-3.86	AVG	

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

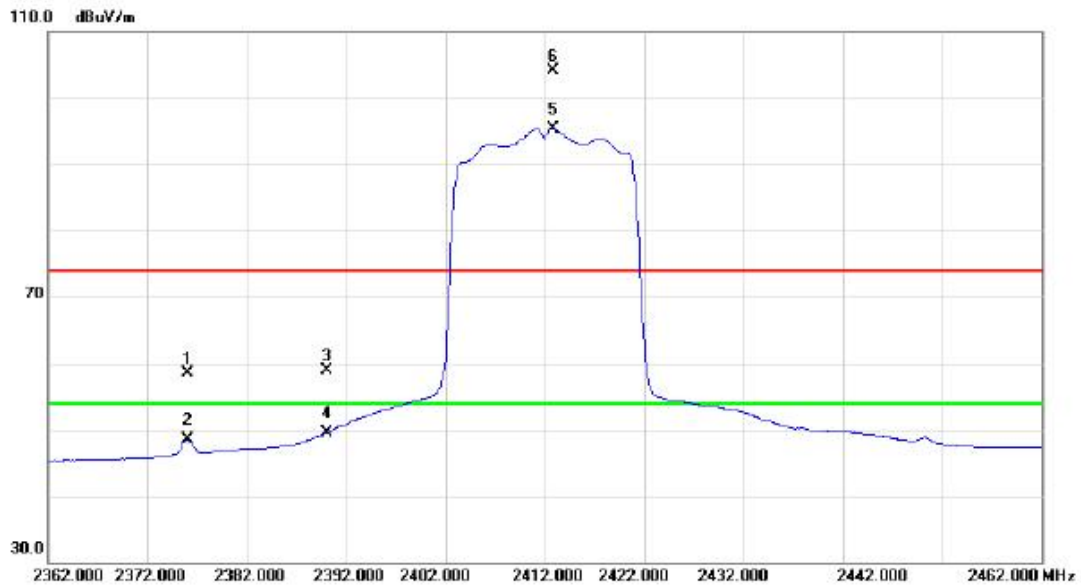
### Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	4923.120	28.67	3.80	32.47	54.00	-21.53	AVG	
2		4924.080	33.81	3.80	37.61	74.00	-36.39	peak	

Orthogonal Axis :	X
Test Mode :	TX N-20M 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		2376.000	26.57	31.86	58.43	74.00	-15.57	peak	
2		2376.000	16.64	31.86	48.50	54.00	-5.50	AVG	
3		2390.000	27.08	31.88	58.96	74.00	-15.04	peak	
4		2390.000	17.62	31.88	49.50	54.00	-4.50	AVG	
5	*	2412.800	63.43	31.91	95.34	54.00	41.34	AVG	No Limit
6	X	2412.900	72.11	31.91	104.02	74.00	30.02	peak	No Limit

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

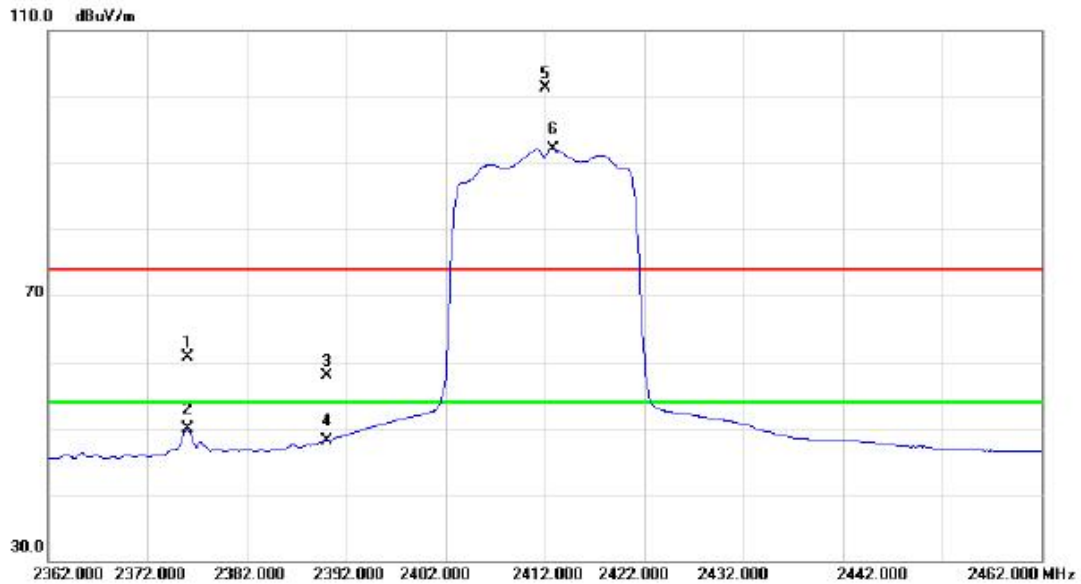
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.030	33.17	3.62	36.79	74.00	-37.21	peak	
2	*	4824.390	28.61	3.62	32.23	54.00	-21.77	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 dBuV/m	Margin dB	Detector	Comment
1		2376.000	28.87	31.86	60.73	74.00	-13.27	peak	
2		2376.000	18.01	31.86	49.87	54.00	-4.13	AVG	
3		2390.000	26.05	31.88	57.93	74.00	-16.07	peak	
4		2390.000	16.14	31.88	48.02	54.00	-5.98	AVG	
5	X	2412.000	69.45	31.91	101.36	74.00	27.36	peak	No Limit
6	*	2412.800	60.27	31.91	92.18	54.00	38.18	AVG	No Limit

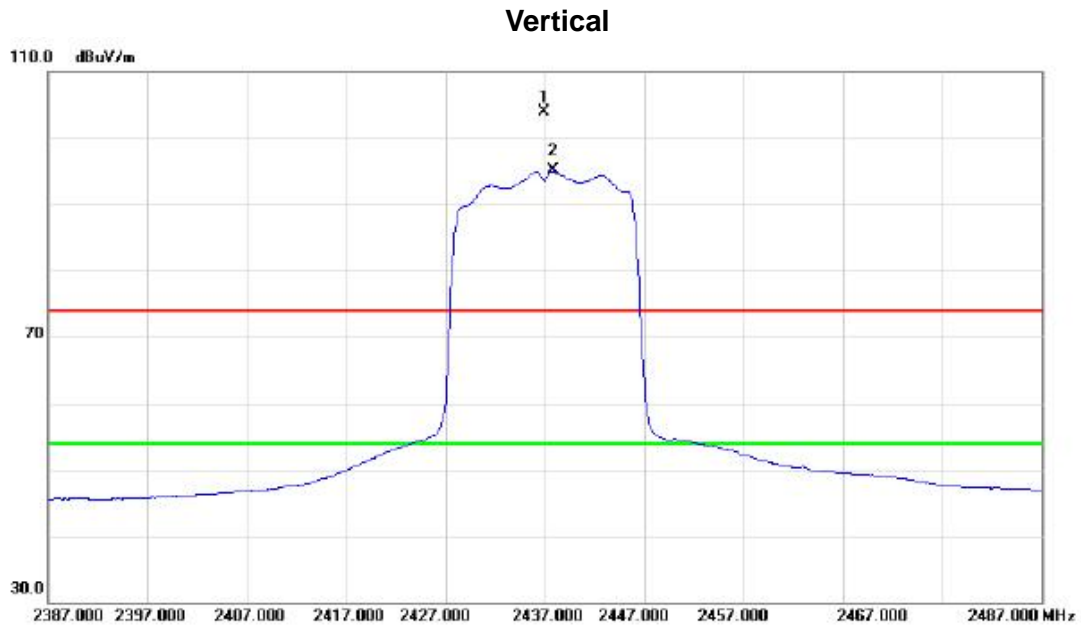
Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2412MHz

### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4823.070	32.48	3.62	36.10	74.00	-37.90	peak	
2	*	4824.610	27.16	3.62	30.78	54.00	-23.22	AVG	

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



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2436.900	72.02	31.94	103.96	74.00	29.96	peak	No Limit
2	*	2437.800	63.07	31.94	95.01	54.00	41.01	AVG	No Limit

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

### Vertical

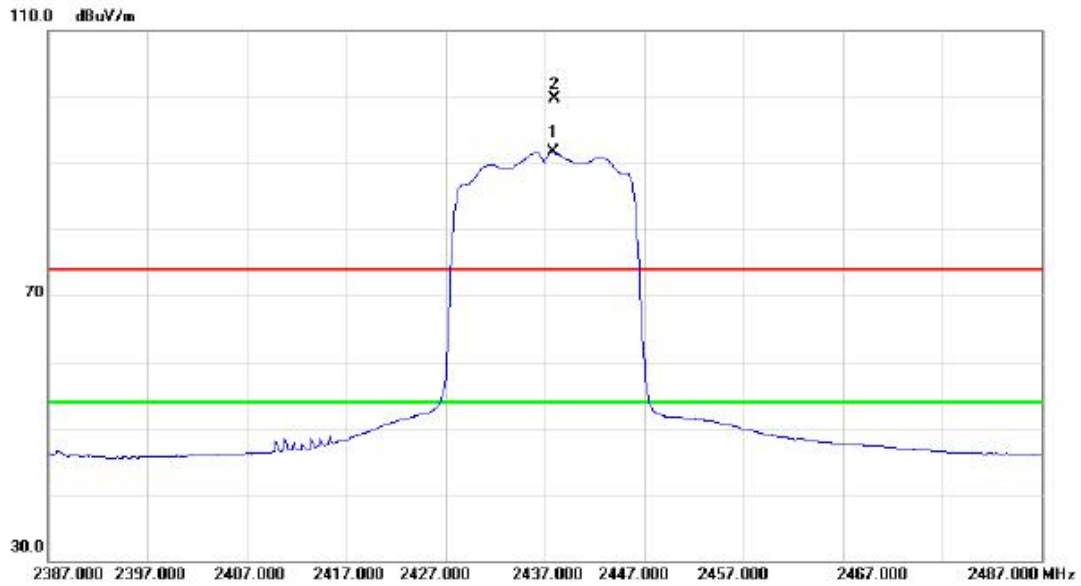


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	4873.210	28.06	3.72	31.78	54.00	-22.22	AVG	
2		4874.280	33.81	3.72	37.53	74.00	-36.47	peak	



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

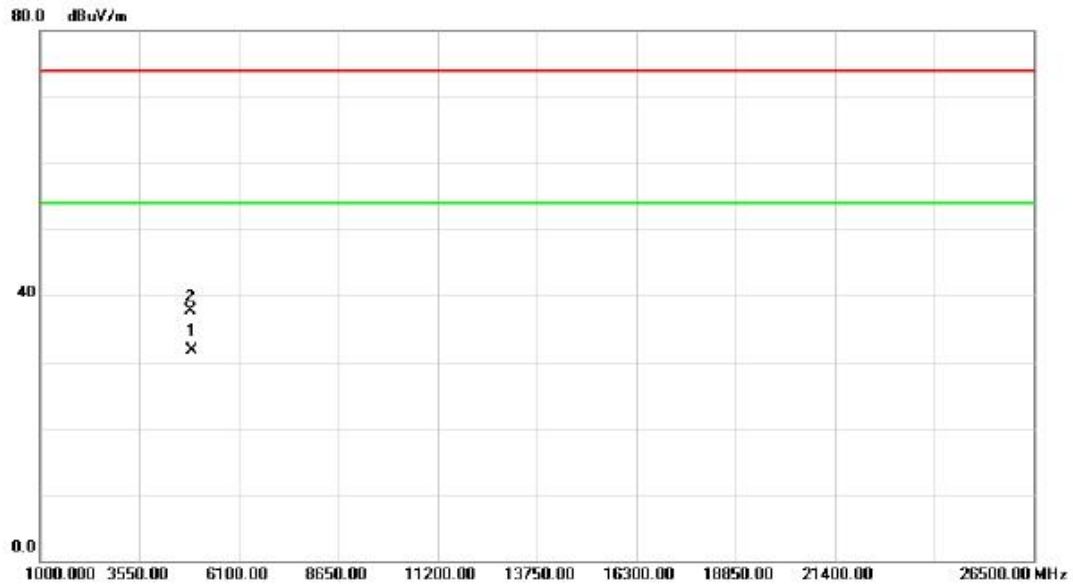
### Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	2437.800	59.68	31.94	91.62	54.00	37.62	AVG	No Limit
2	X	2438.000	67.78	31.94	99.72	74.00	25.72	peak	No Limit

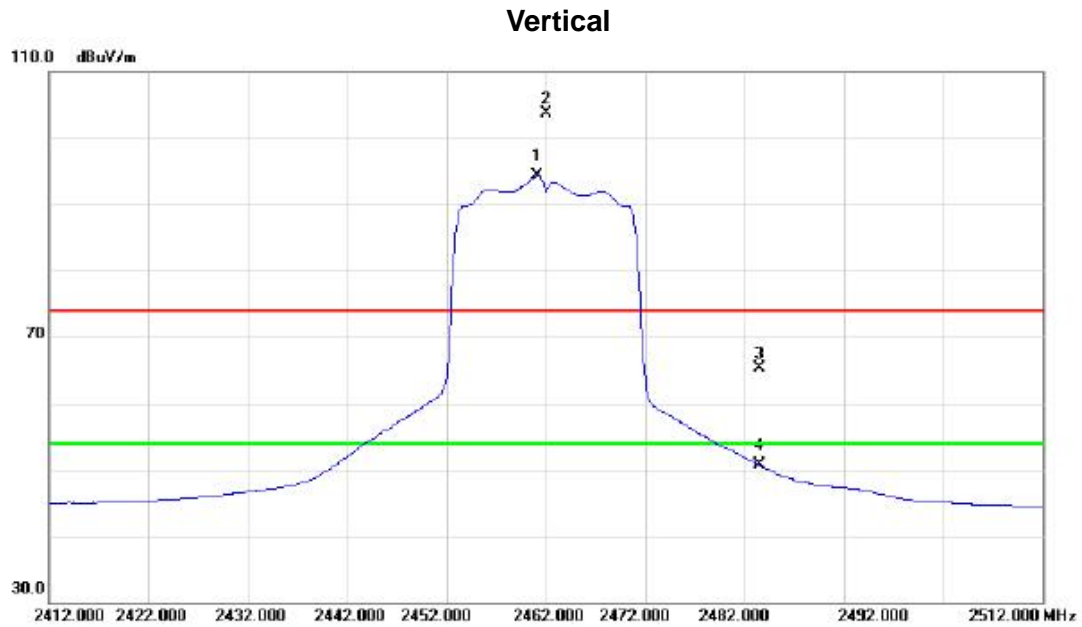
Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2437MHz

### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	4874.390	27.92	3.72	31.64	54.00	-22.36	AVG	
2		4874.620	34.07	3.72	37.79	74.00	-36.21	peak	

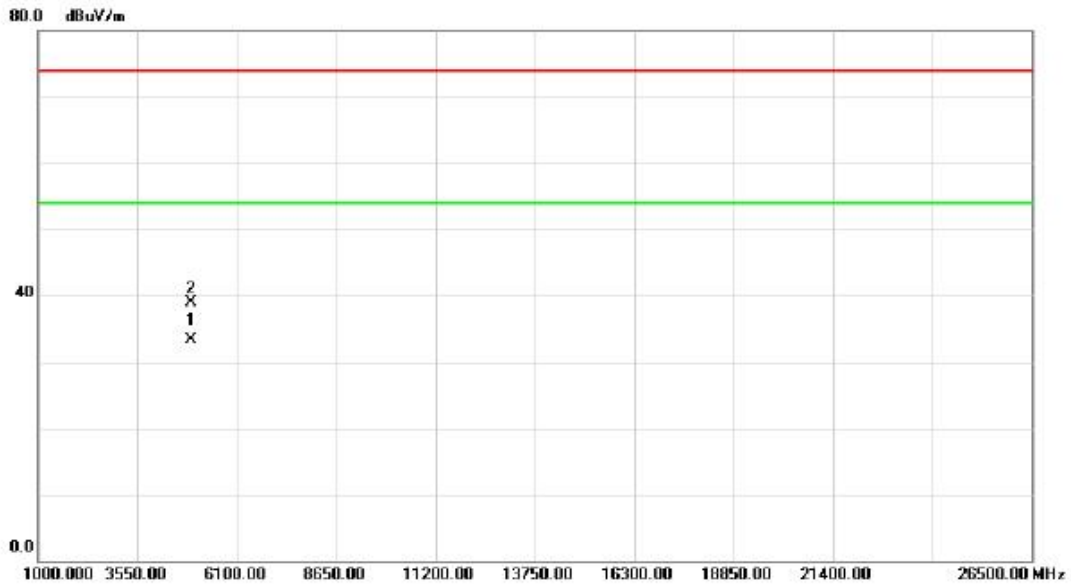
Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2462MHz



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	2461.200	62.26	31.98	94.24	54.00	40.24	AVG	No Limit
2	X	2462.000	71.81	31.98	103.79	74.00	29.79	peak	No Limit
3		2483.500	33.38	32.01	65.39	74.00	-8.61	peak	
4		2483.500	18.71	32.01	50.72	54.00	-3.28	AVG	

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

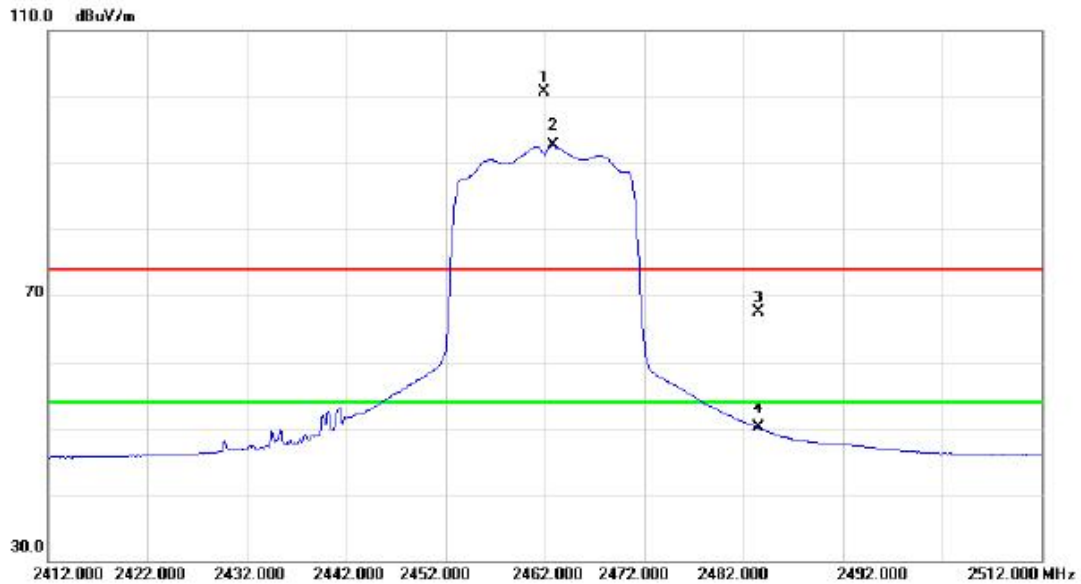
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	4924.680	29.42	3.80	33.22	54.00	-20.78	AVG	
2		4925.520	35.01	3.80	38.81	74.00	-35.19	peak	

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 dBuV/m	Margin dB	Detector	Comment
1	X	2461.900	68.75	31.98	100.73	74.00	26.73	peak	No Limit
2	*	2462.800	60.71	31.98	92.69	54.00	38.69	AVG	No Limit
3		2483.500	35.43	32.01	67.44	74.00	-6.56	peak	
4		2483.500	18.02	32.01	50.03	54.00	-3.97	AVG	

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

### Horizontal



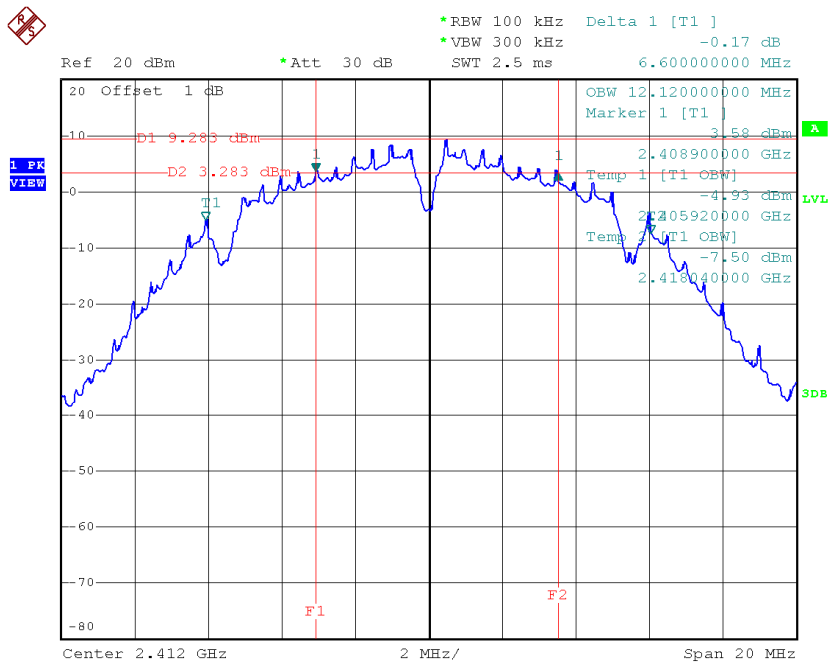
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	4923.070	29.37	3.80	33.17	54.00	-20.83	AVG	
2		4924.620	35.64	3.80	39.44	74.00	-34.56	peak	

## 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	6.60	12.12	500	Complies
2437	6.99	12.12	500	Complies
2462	7.06	12.08	500	Complies

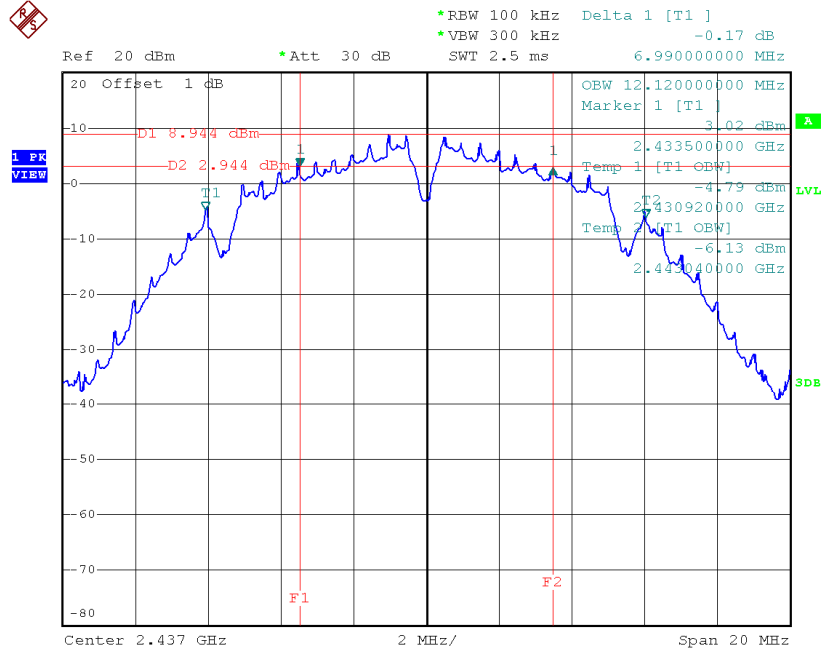
**TX CH01**



Date: 7.JAN.2015 08:57:57

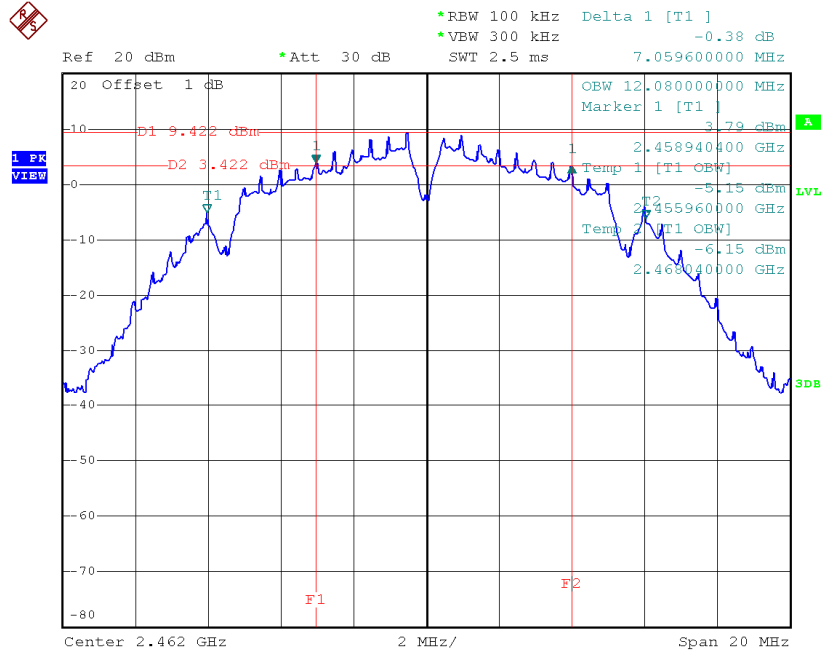


### TX CH06



Date: 7.JAN.2015 08:59:47

### TX CH11

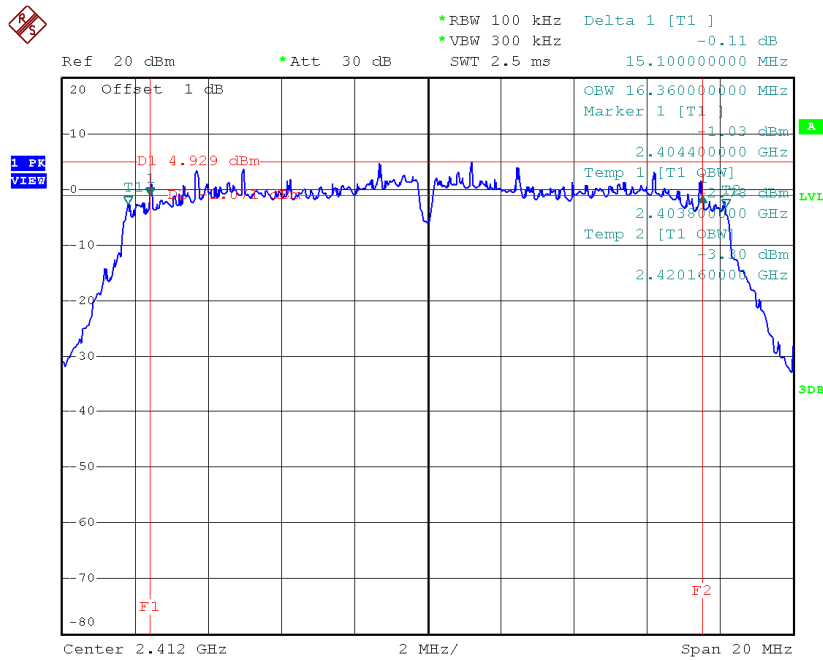


Date: 7.JAN.2015 09:00:32

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

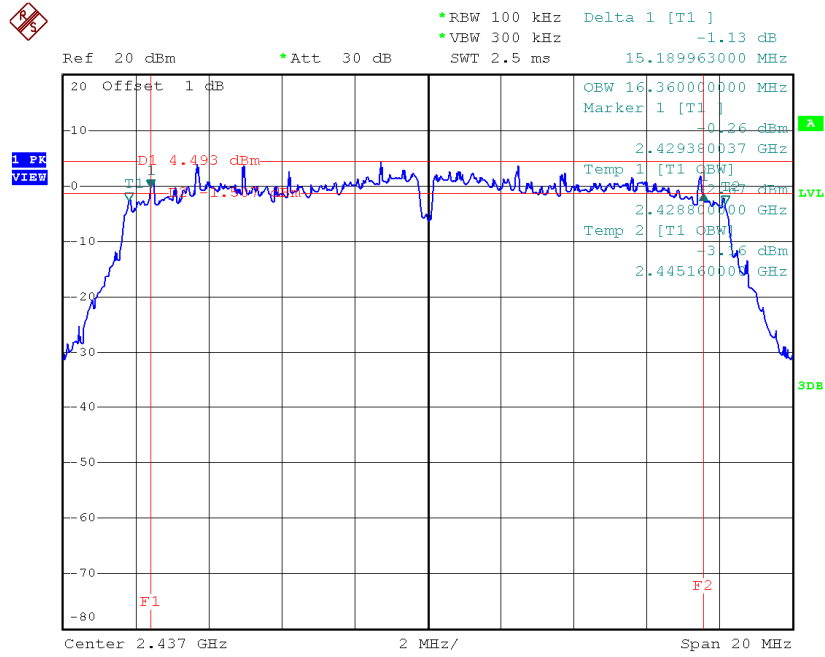
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	15.10	16.36	500	Complies
2437	15.19	16.36	500	Complies
2462	15.12	16.36	500	Complies

**TX CH01**



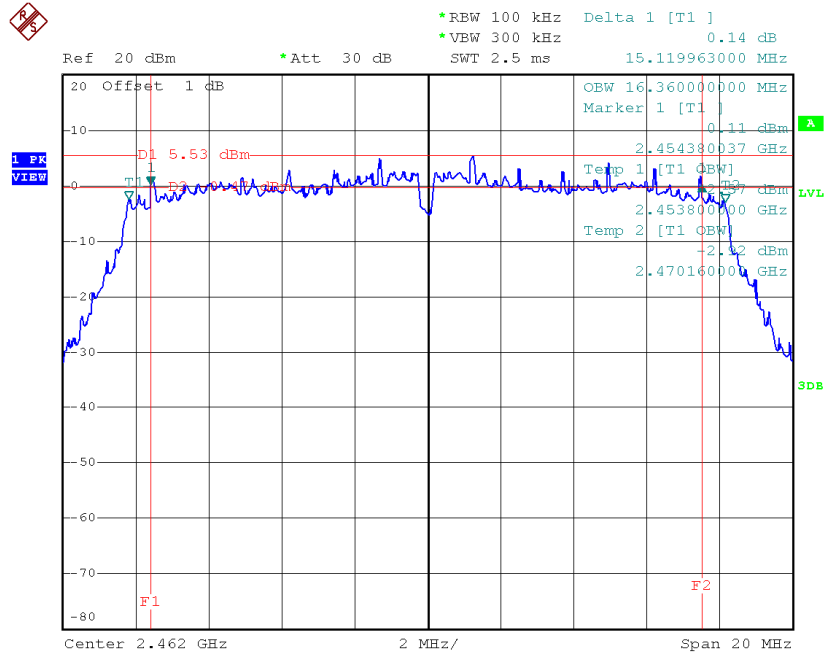
Date: 7.JAN.2015 09:01:18

### TX CH06



Date: 7.JAN.2015 09:02:06

### TX CH11

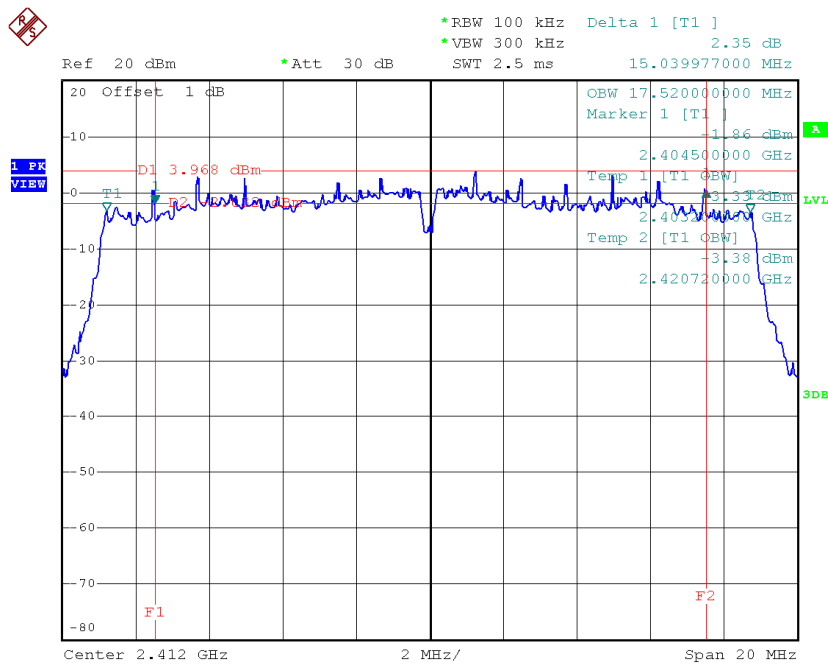


Date: 7.JAN.2015 09:02:45

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

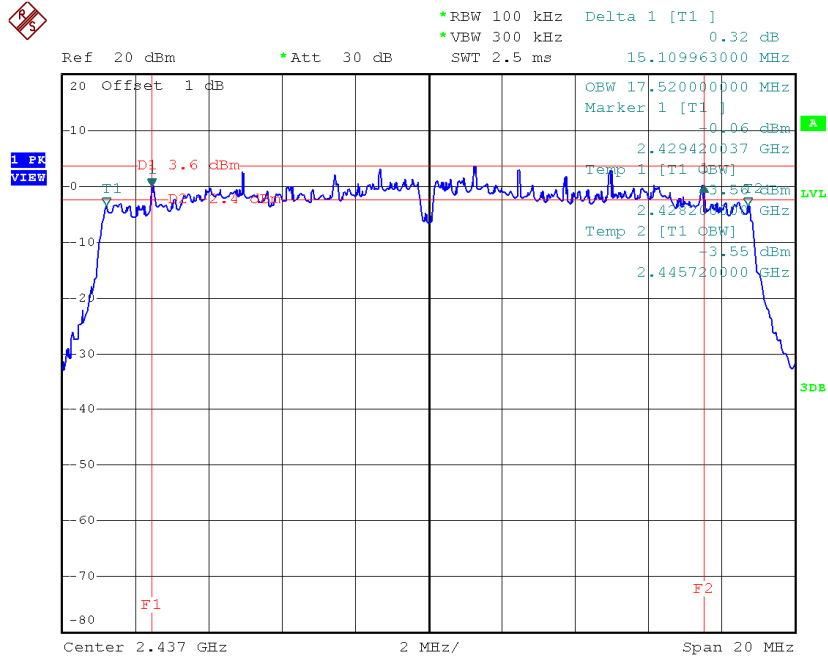
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	15.04	17.52	500	Complies
2437	15.11	17.52	500	Complies
2462	14.08	17.52	500	Complies

**TX CH01**



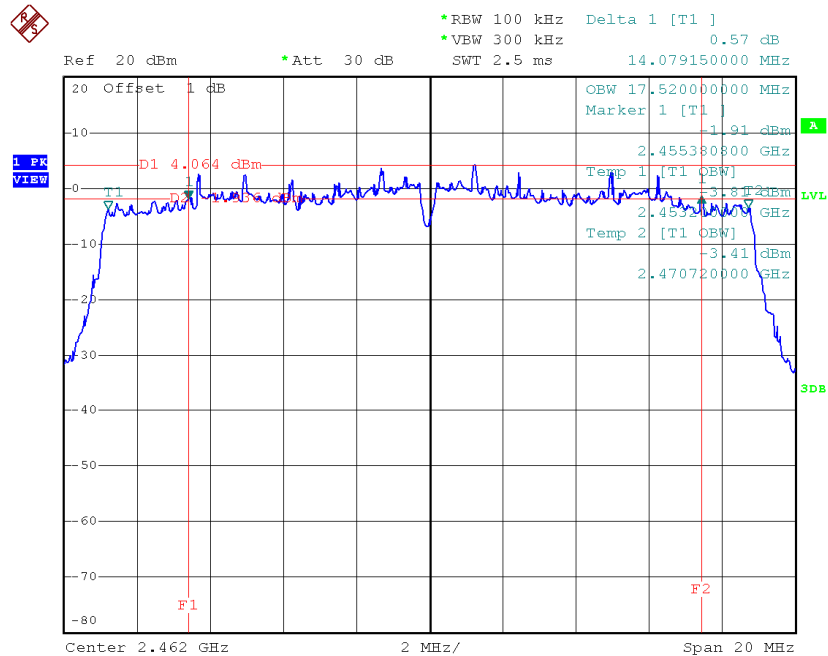
Date: 7.JAN.2015 09:03:34

### TX CH06



Date: 7.JAN.2015 09:04:27

### TX CH11



Date: 7.JAN.2015 09:05:10

## **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	16.37	0.04	30.00	1.00	Complies
2437	16.34	0.04	30.00	1.00	Complies
2462	16.38	0.04	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	15.28	0.03	30.00	1.00	Complies
2437	15.21	0.03	30.00	1.00	Complies
2462	15.23	0.03	30.00	1.00	Complies

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

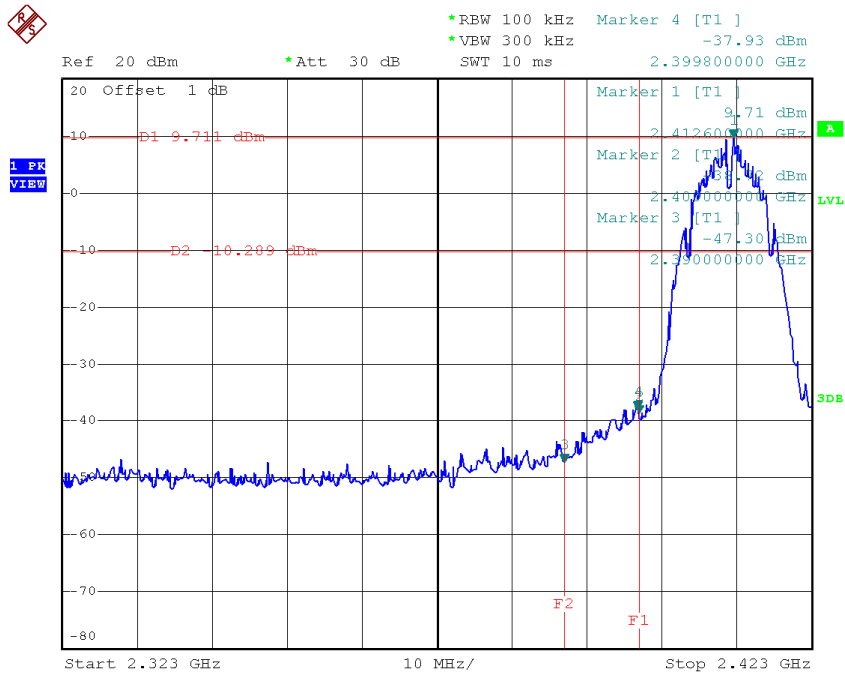
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	14.07	0.03	30.00	1.00	Complies
2437	14.11	0.03	30.00	1.00	Complies
2462	14.12	0.03	30.00	1.00	Complies

**ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS  
EMISSION**



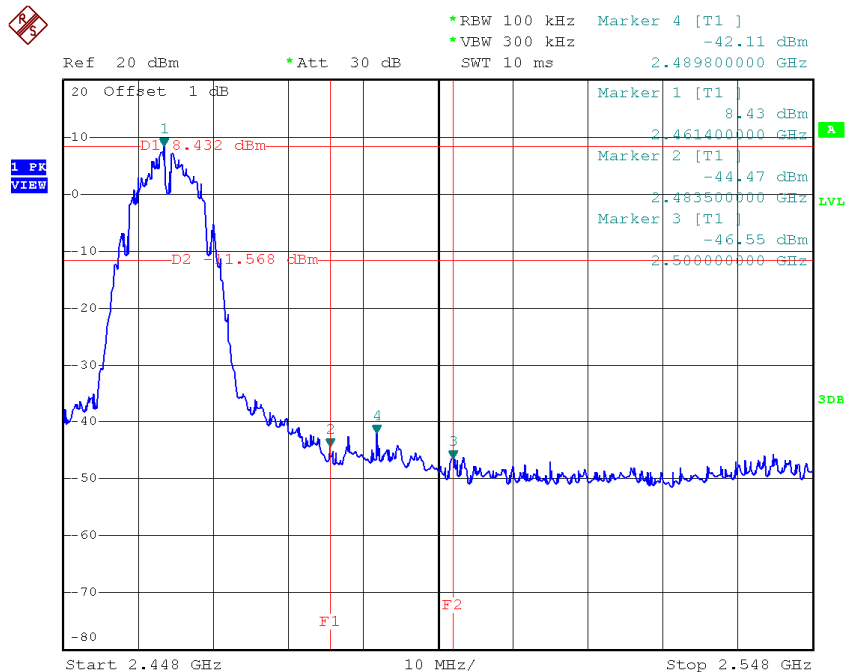
<b>Test Mode :</b>	<b>TX B Mode</b>
--------------------	------------------

### TX B mode CH01



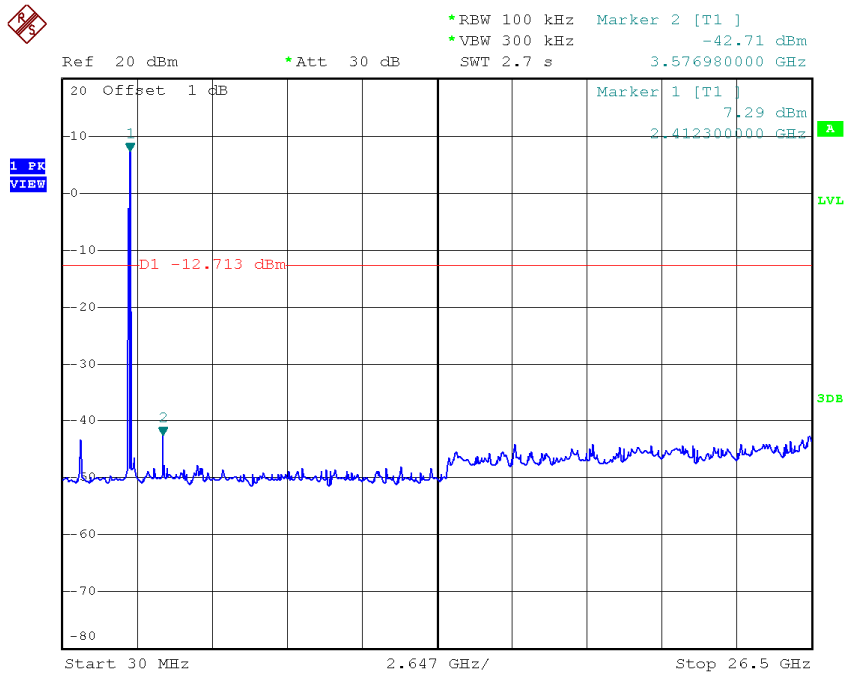
Date: 7.JAN.2015 08:58:18

### TX B mode CH11



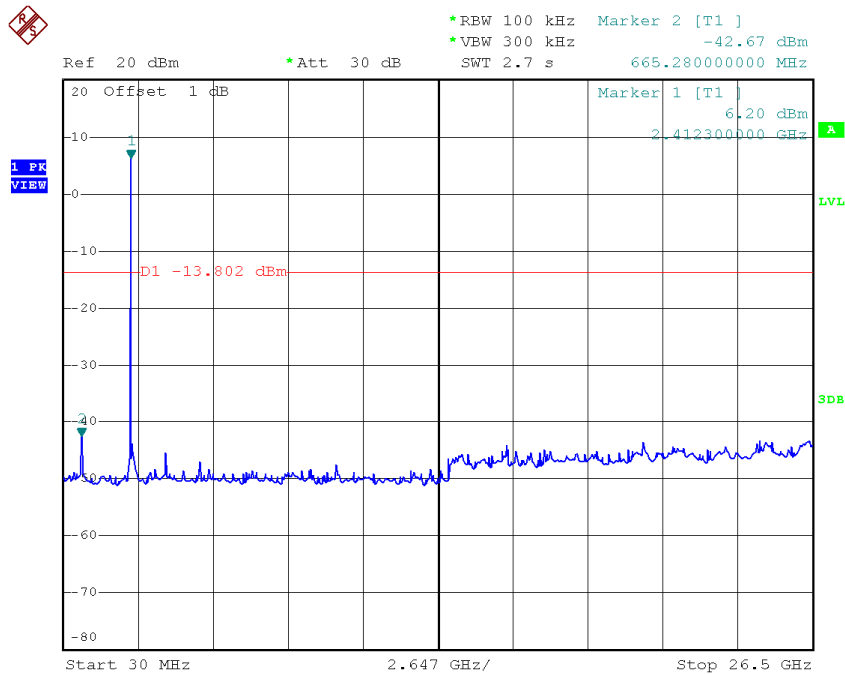
Date: 7.JAN.2015 09:00:52

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



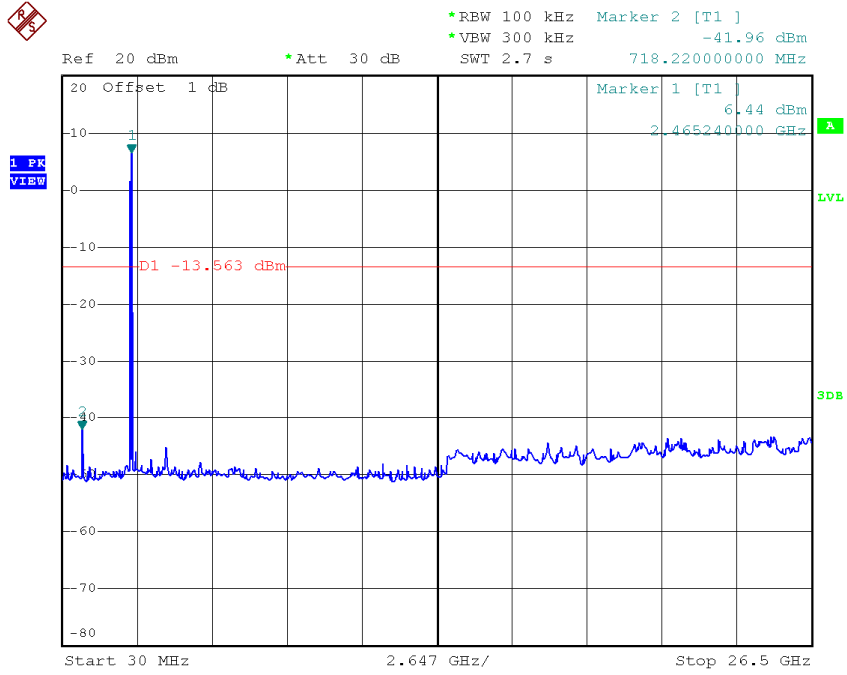
Date: 7.JAN.2015 08:58:11

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



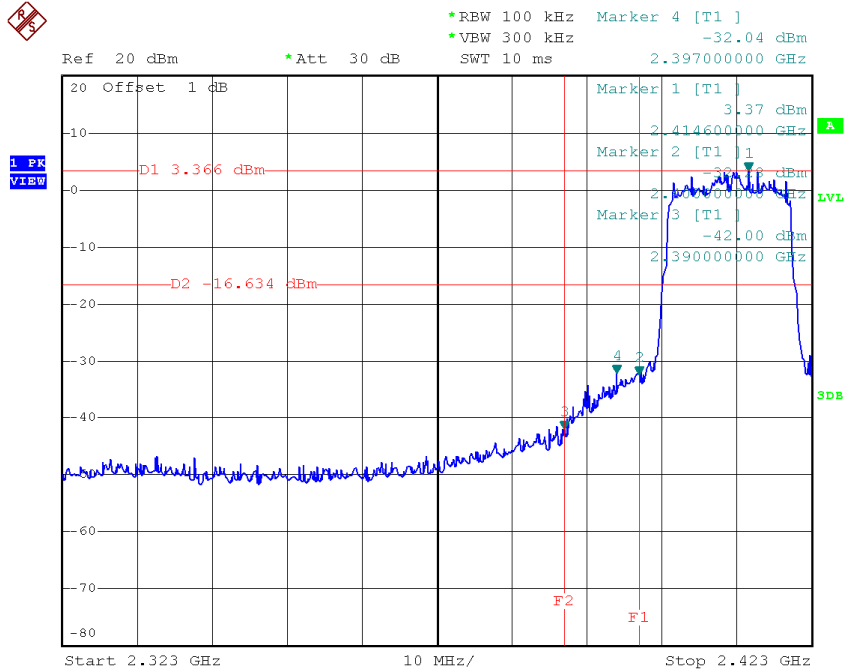
Date: 7.JAN.2015 09:00:01

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



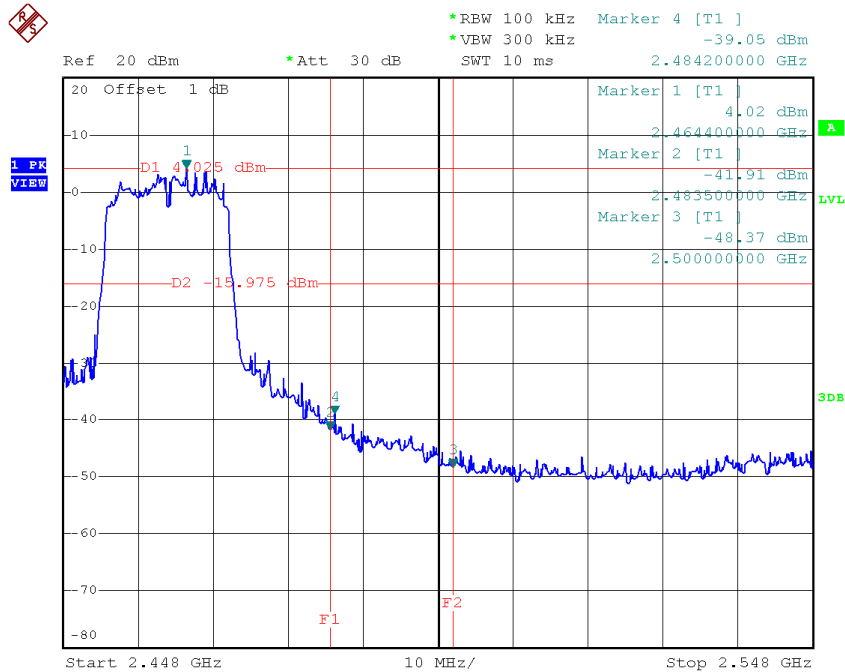
Date: 7.JAN.2015 09:00:45

### TX G mode CH01



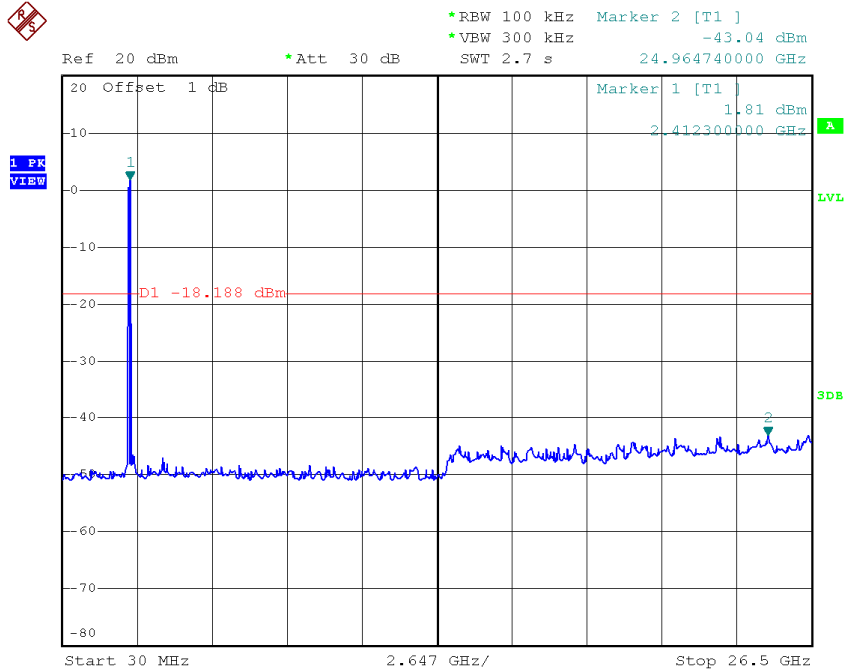
Date: 7.JAN.2015 09:01:39

### TX G mode CH11



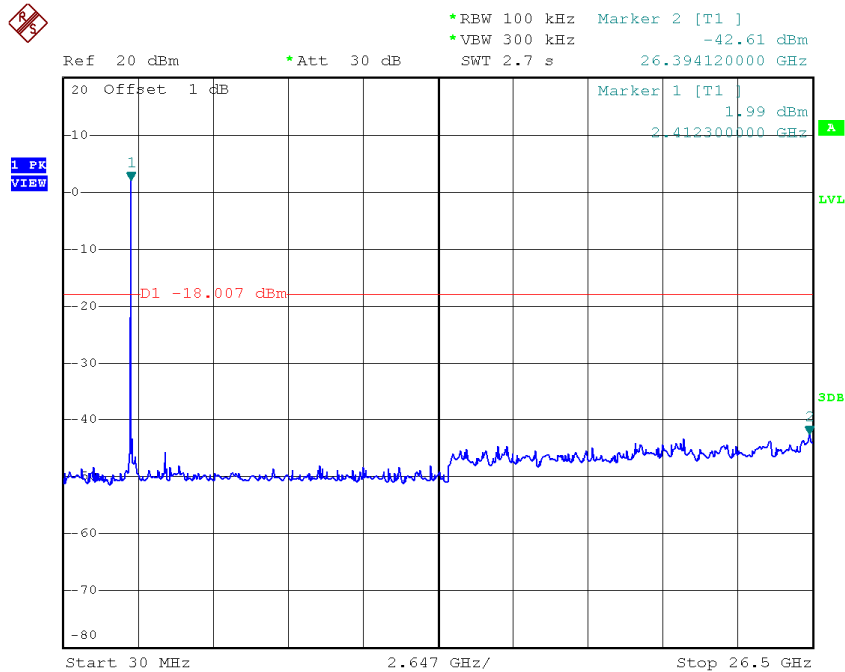
Date: 7.JAN.2015 09:03:06

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



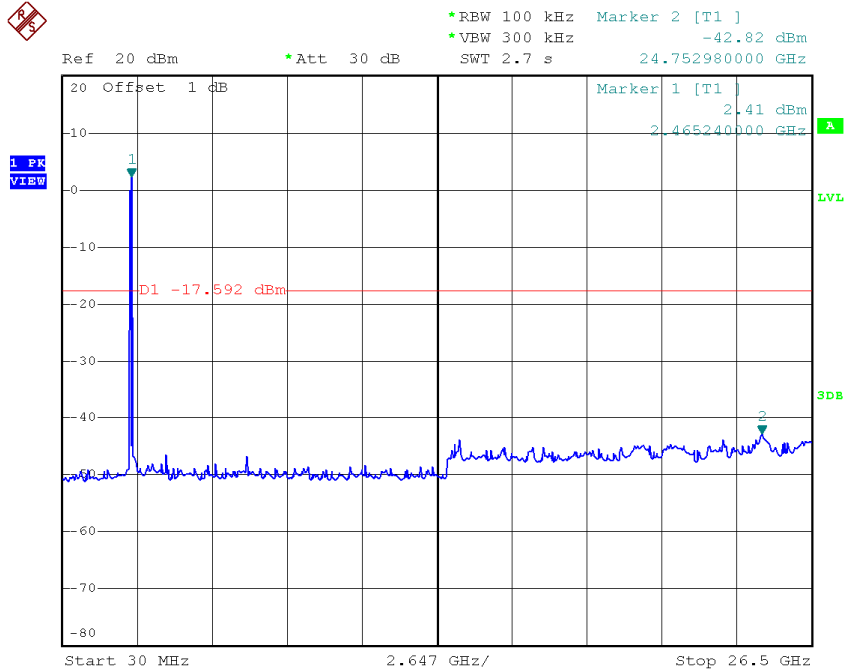
Date: 7.JAN.2015 09:01:31

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



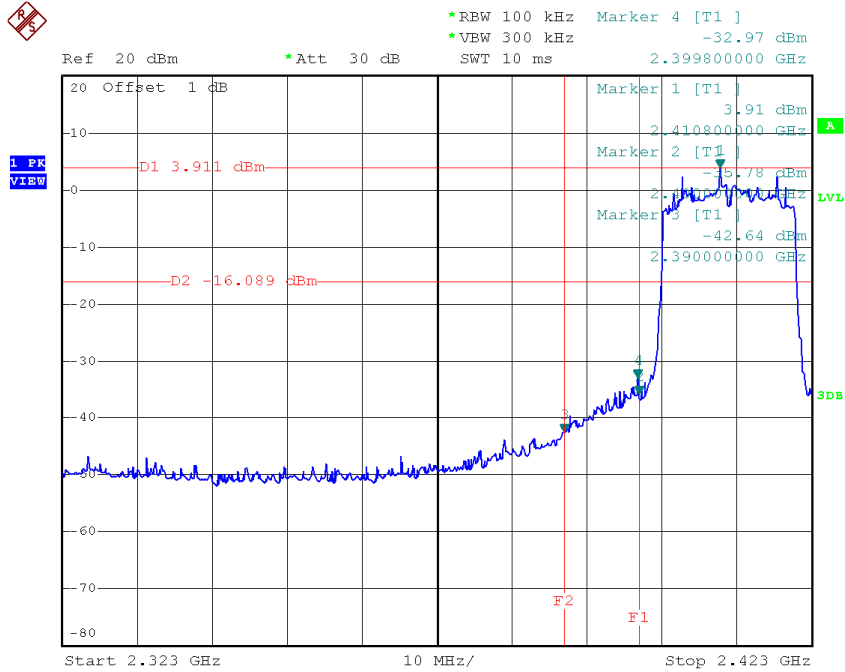
Date: 7.JAN.2015 09:02:19

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



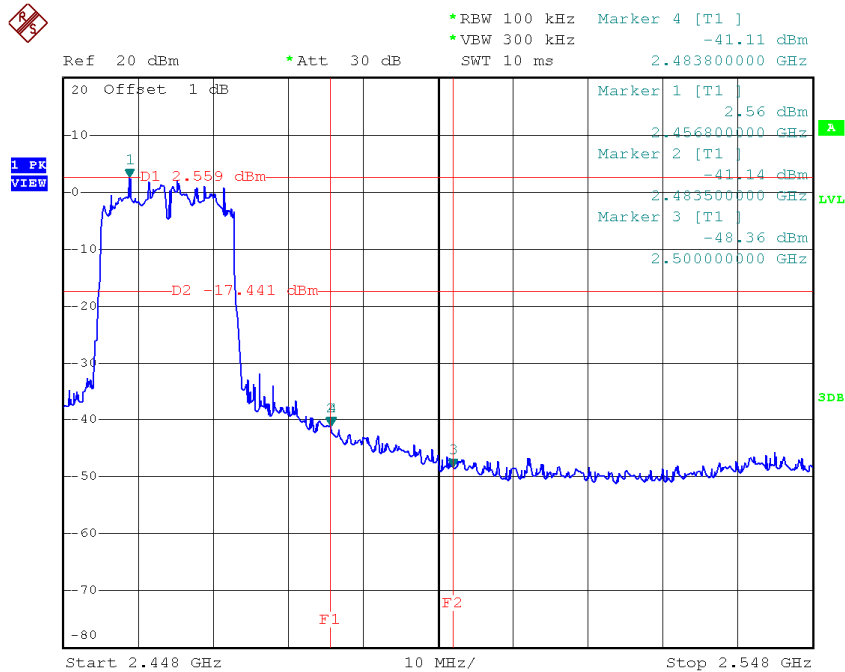
Date: 7.JAN.2015 09:02:59

### TX HT20 mode CH01



Date: 7.JAN.2015 09:03:55

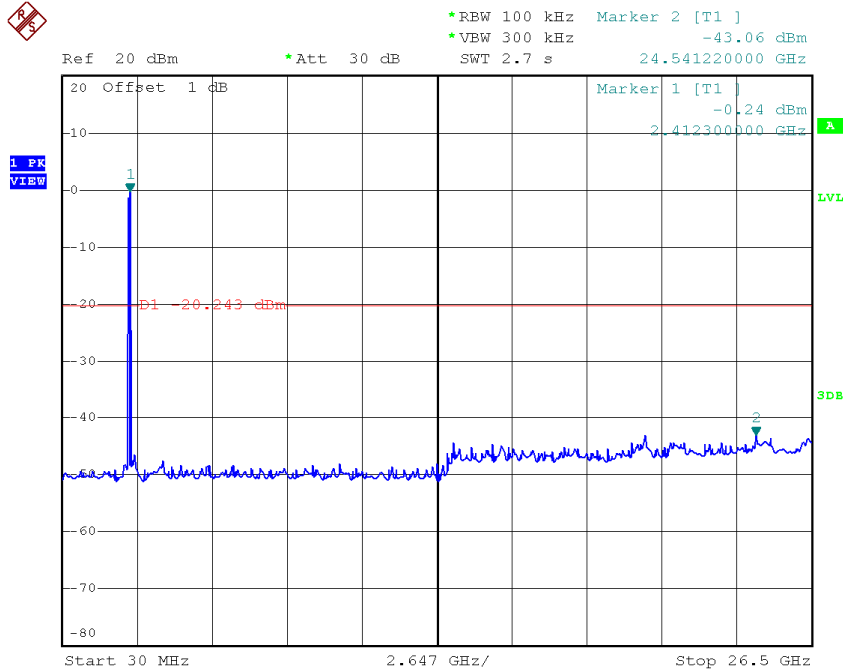
### TX HT20 mode CH11



Date: 7.JAN.2015 09:05:31

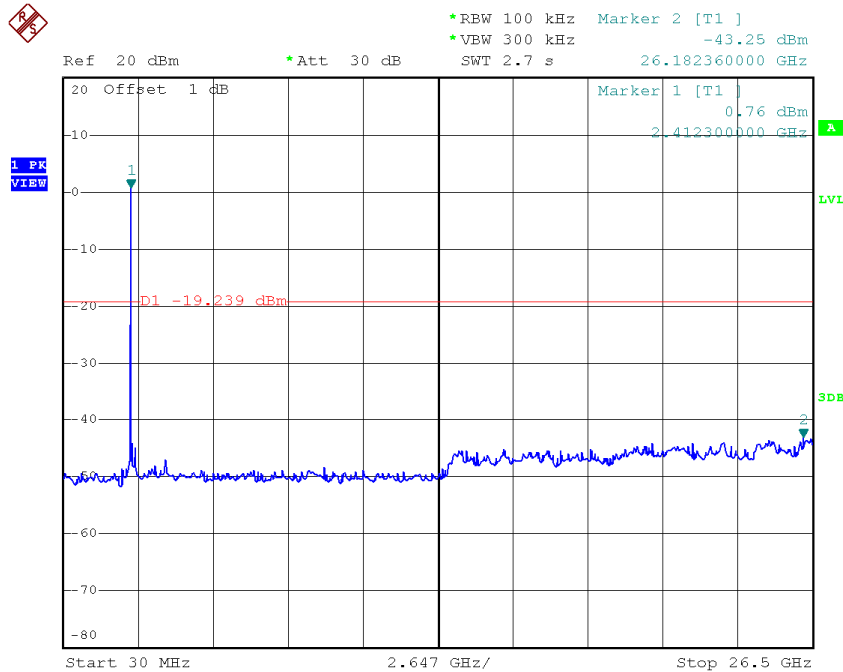


### TX HT20 mode CH01 (10 Harmonic of the frequency)



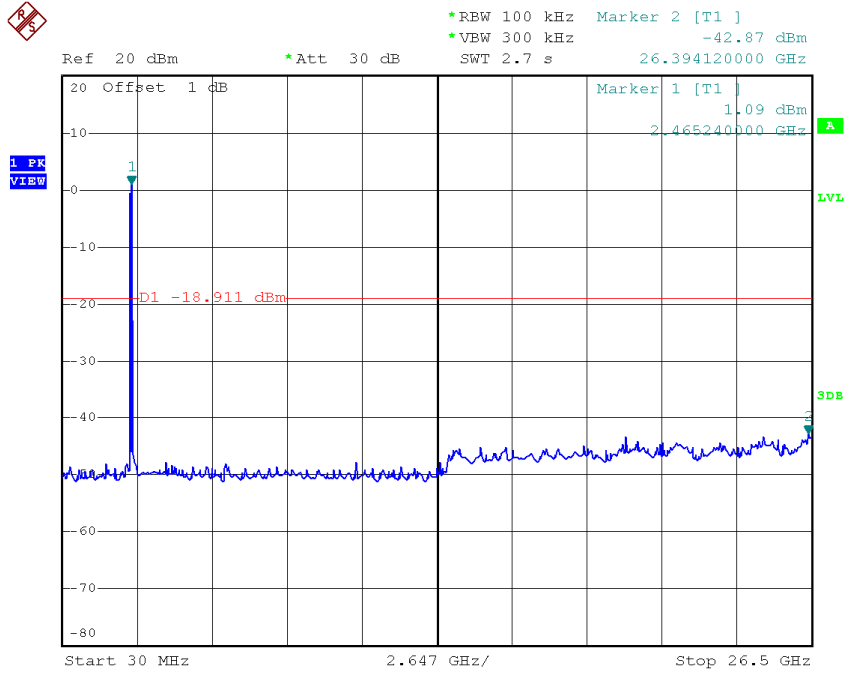
Date: 7.JAN.2015 09:03:47

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



Date: 7.JAN.2015 09:04:40

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

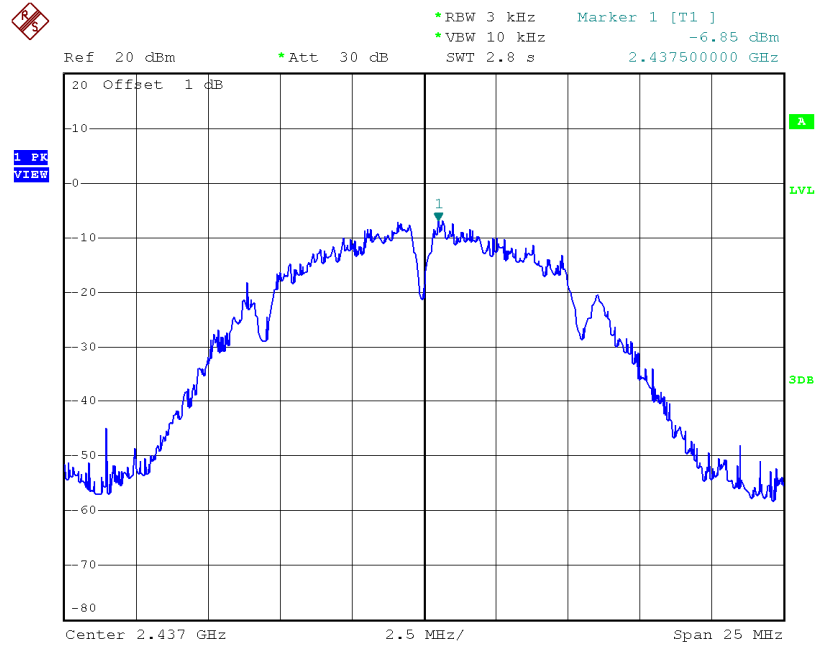


Date: 7.JAN.2015 09:05:24

## ATTACHMENT H - POWER SPECTRAL DENSITY

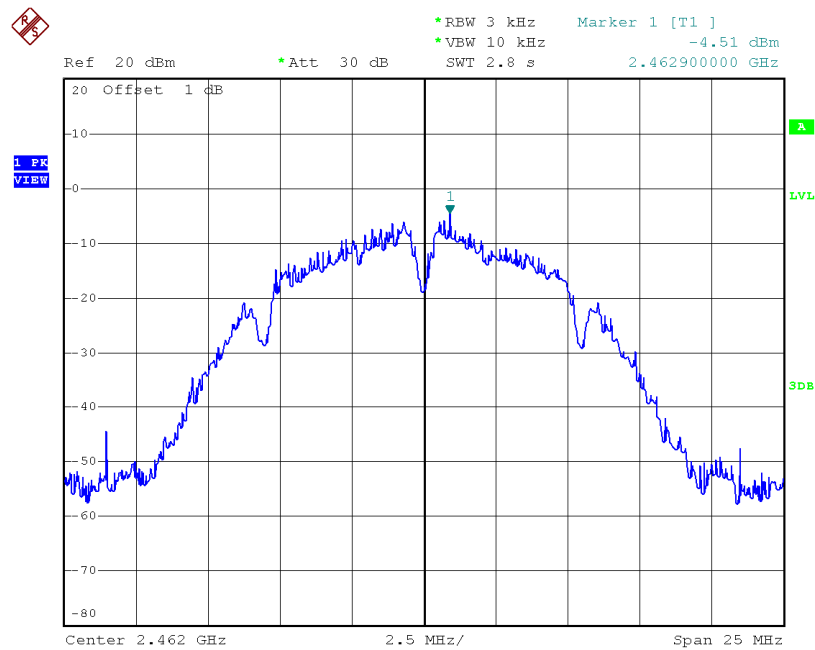


### TX CH06



Date: 7.JAN.2015 09:00:10

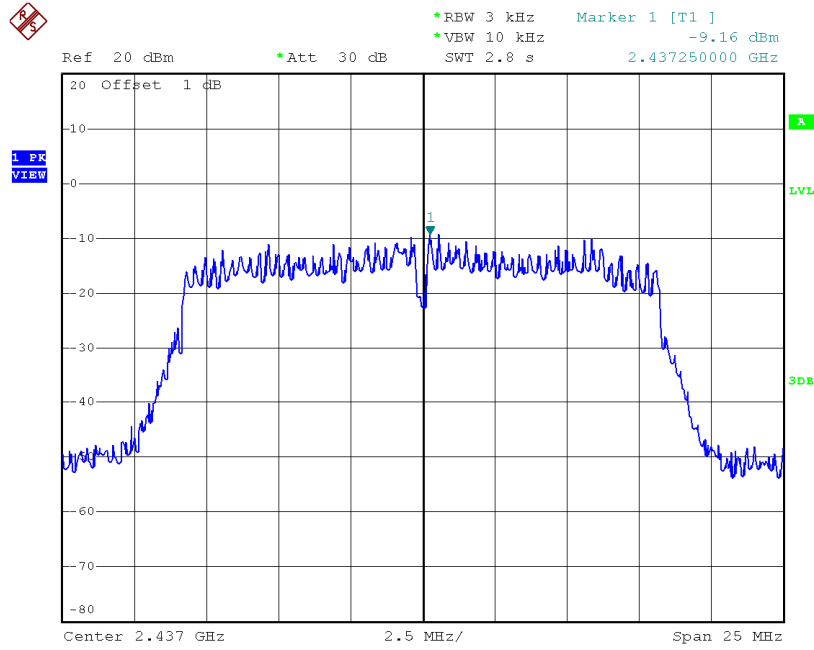
### TX CH11



Date: 7.JAN.2015 09:01:01

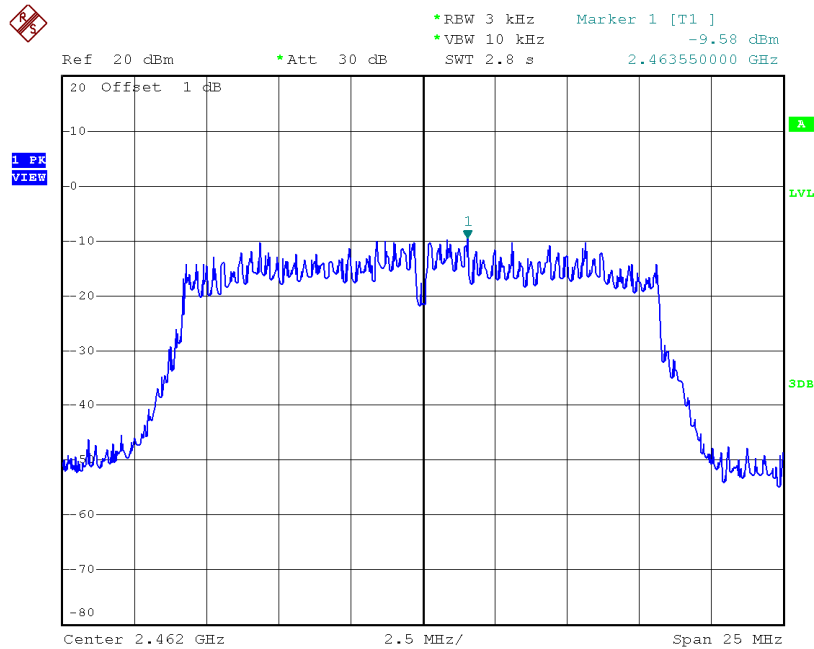


### TX CH06



Date: 7.JAN.2015 09:02:28

### TX CH11

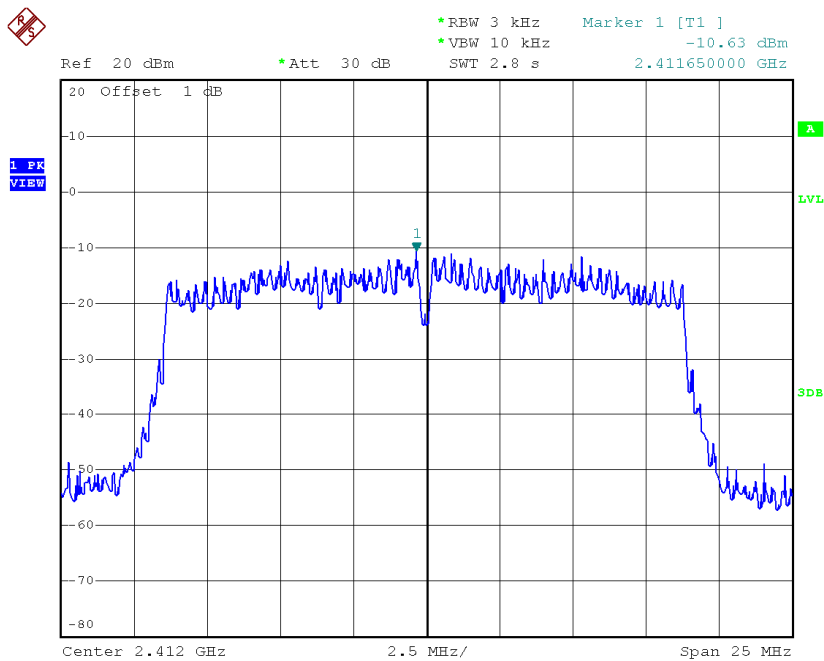


Date: 7.JAN.2015 09:03:15

**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	-10.63	0.09	8.00	Complies
2437	-10.45	0.09	8.00	Complies
2462	-10.68	0.09	8.00	Complies

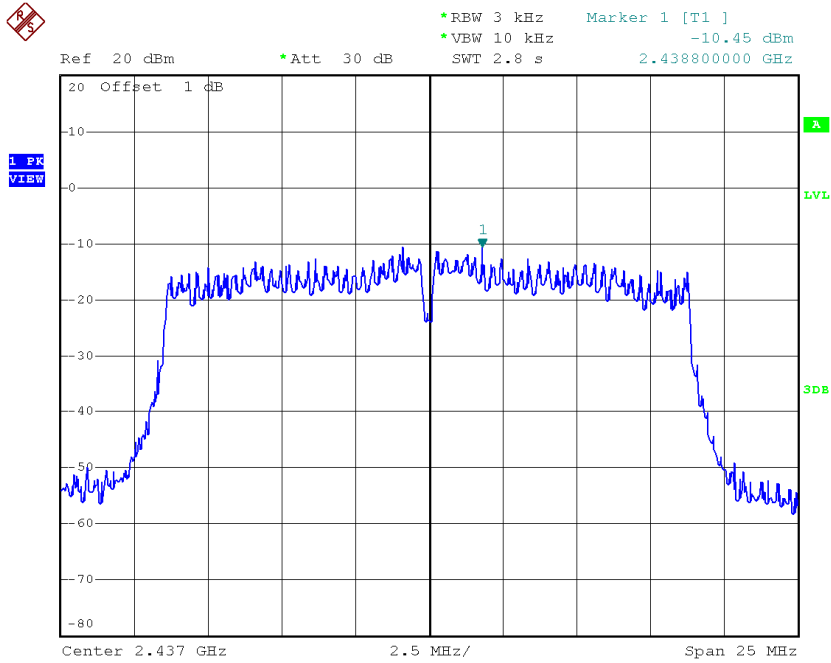
**TX CH01**



Date: 7.JAN.2015 09:04:03

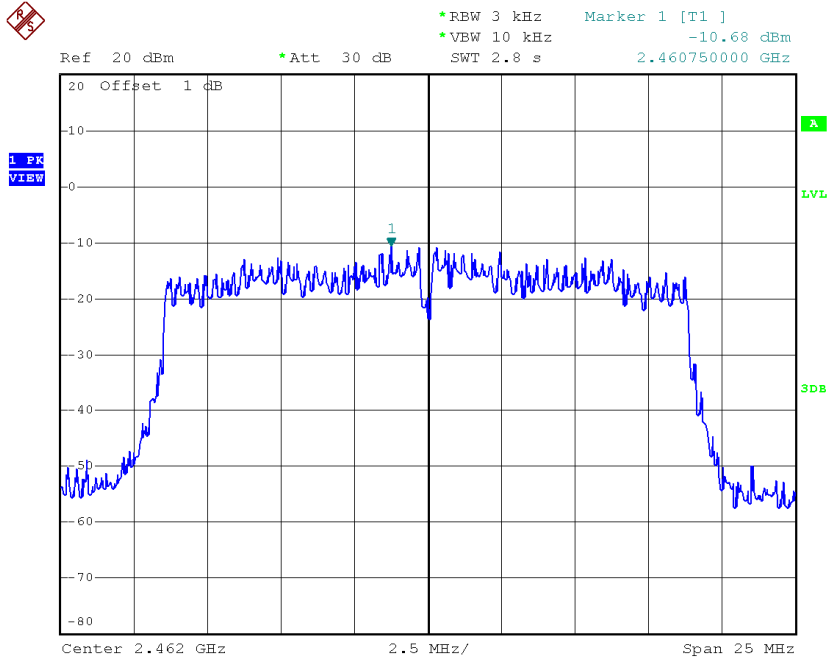


### TX CH06



Date: 7.JAN.2015 09:04:49

### TX CH11



Date: 7.JAN.2015 09:05:40