

# FCC Radio Test Report

## FCC ID: 2AEUPBHARG041

This report concerns (check one): ☒ Original Grant ☐ Changed in ID

**Project No.** : 1703117  
**Equipment** : Ring  
**Test Model** : Video Doorbell 2  
**Series Model** : N/A  
**Applicant** : Bot Home Automation, Inc.  
**Address** : 1523 26th St, Santa Monica, CA 90404,USA

**Date of Receipt** : Mar. 22, 2017  
**Date of Test** : Mar. 22, 2017 ~ Mar. 30, 2017  
**Issued Date** : Apr. 06, 2017  
**Tested by** : BTL Inc.

**Testing Engineer** : Rush Kao  
(Rush Kao)  
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# **B T L I N C .**

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## REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1703117	Original Issue.	Apr. 06, 2017

## 1. CERTIFICATION

Equipment : Ring  
Brand Name : ring  
Test Model : Video Doorbell 2  
Series Model : N/A  
Applicant : Bot Home Automation, Inc.  
Manufacturer : Goldtek Technology CO.,LTD.  
Address : 16F., No166, Jian 1st Rd., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.)  
Factory : Goldtek Technology CO.,LTD.  
Address : 16F., No166, Jian 1st Rd., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.)  
Date of Test : Mar. 22, 2017 ~ Mar. 30, 2017  
Test Sample : Engineering Sample  
Standard(s) : FCC Part15, Subpart C (15.247) / ANSI C63.10-2013

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-1-1703117) 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):

FCC Part15 (15.247), Subpart C			
Standard(s) Section	Test Item	Judgment	Under Limit
15.207	Conducted Emission	N/A	
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	
15.247(d)	Band Edge Emissions	PASS	

NOTE:

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

### 2.1 TEST FACILITY

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

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

**CB15:** (FCC RN:674415; FCC DN:TW0659)

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

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

**CB15:** (FCC RN:674415; FCC DN:TW0659)

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



## 2.2 MEASUREMENT UNCERTAINTY

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

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

### A. Radiated emission test:

Test Site	Method	Measurement Frequency Range	U,(dB)
CB15 (3m)	CISPR	9kHz ~ 150kHz	2.96
		150kHz ~ 30MHz	2.74

Test Site	Method	Measurement Frequency Range	Ant.	U,(dB)
CB15 (3m)	CISPR	30MHz ~ 200MHz	V	4.76
		30MHz ~ 200MHz	H	4.28
		200MHz ~ 1,000MHz	V	5.08
		200MHz ~ 1,000MHz	H	4.50

Test Site	Method	Measurement Frequency Range	Ant.	U,(dB)
CB15 (3m)	CISPR	1GHz ~ 6GHz	V	4.48
		1GHz ~ 6GHz	H	4.50
		6GHz ~ 18GHz	V	4.30
		6GHz ~ 18GHz	H	4.14

Test Site	Method	Measurement Frequency Range	U,(dB)
CB15 (1m)	CISPR	18 ~ 26.5 GHz	4.72
		26.5 ~ 40 GHz	5.20

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

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

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

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

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

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

### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT


Equipment	Ring	
Brand Name	ring	
Test Model	Video Doorbell 2	
Series Model	N/A	
Model Difference	N/A	
Product Description	Operation Frequency	2412~2462 MHz
	Modulation Technology	802.11b:DSSS 802.11g:OFDM 802.11n:OFDM
	Bit Rate of Transmitter	802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n up to 300 Mbps
	Output Power (Max.)	802.11b: 15.39 dBm 802.11g: 19.16 dBm 802.11n(20MHz): 19.24 dBm
Power Source	Supplied from battery.( Model: U80532)	
Power Rating	DC 3.64V 6100mAh	

Note:

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

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

#### 3. Table for Filed Antenna:

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)
1	 INPAQ INPAQ TECHNOLOGY CO., LTD	WA-P-LA-02-186	PIFA Antenna	N/A	1.98

### 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

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

For Radiated Test	
Final Test Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11

For Band Edge Test	
Final Test Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11

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

Maximum Conducted Output Power	
Final Test Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11

Antenna conducted Spurious Emission	
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

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

**Note:**

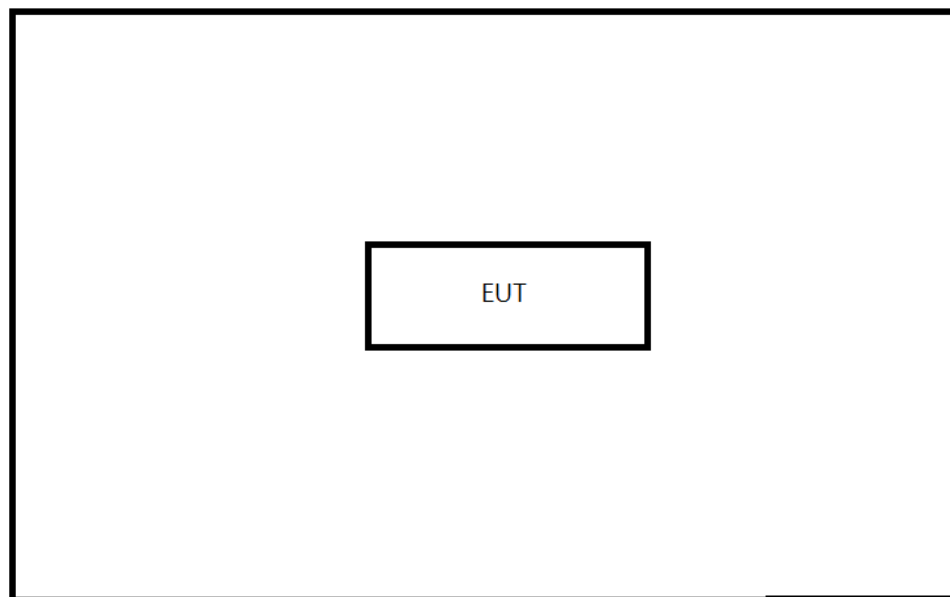
- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1Mbps)  
802.11g mode: OFDM (6Mbps)  
802.11n HT20 mode : BPSK (13Mbps)  
For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated below 1G test, the 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	Radio ToolGUI		
Frequency (MHz)	2412	2437	2462
802.11b	4	4	3
802.11g	0	1	0
802.11n (20MHz)	0	0	0

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



### 3.5 DESCRIPTION OF SUPPORT UNITS

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

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.
-	-	-	-	-	-

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 (dBμV)	
	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

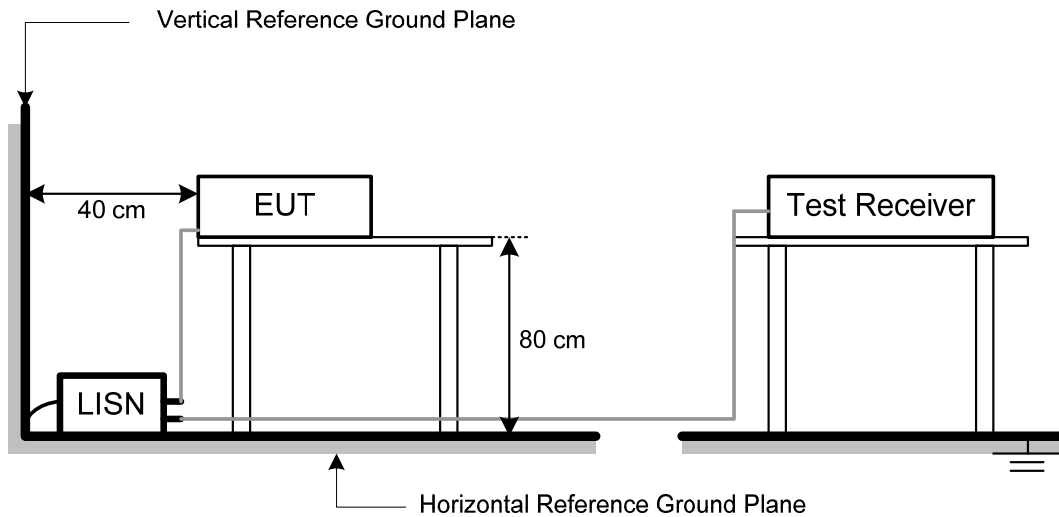
#### 4.1.2 TEST PROCEDURE

- 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 equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### 4.1.3 DEVIATION FROM TEST STANDARD

No deviation

#### 4.1.4 TEST SETUP



#### 4.1.5 EUT OPERATING CONDITIONS

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

#### 4.1.6 EUT TEST CONDITIONS

Temperature: N/A    Relative Humidity: N/A    Test Voltage: N/A

#### 4.1.7 TEST RESULTS

Please refer to the Attachment A.



## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 RADIATED EMISSION LIMITS

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

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

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

#### LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Frequency (MHz)	(dBuV/m) (at 3 meters)	
	PEAK	AVERAGE
Above 1000	74	54

#### Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) The test result calculated as following:  
 Measurement Value = Reading Level + Correct Factor  
 Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)  
 Margin Level = Measurement Value - Limit Value

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

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

#### 4.2.2 TEST PROCEDURE

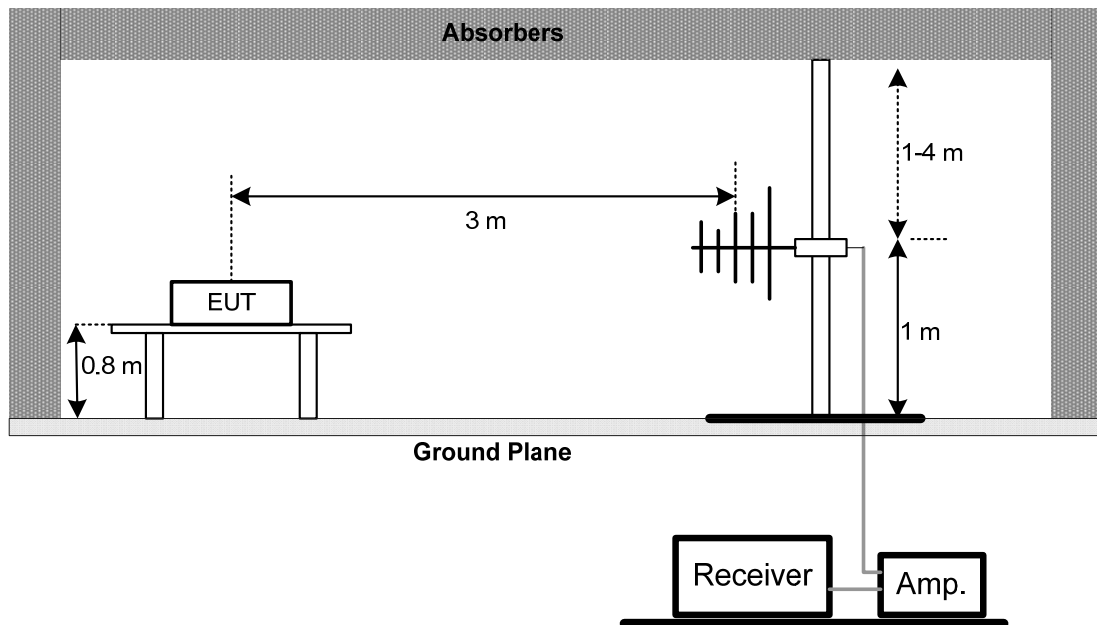
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- The height of the equipment or of the substitution antenna shall be 0.8 m or 1.5 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.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
- The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1GHz)
- All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1GHz)
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### 4.2.3 DEVIATION FROM TEST STANDARD

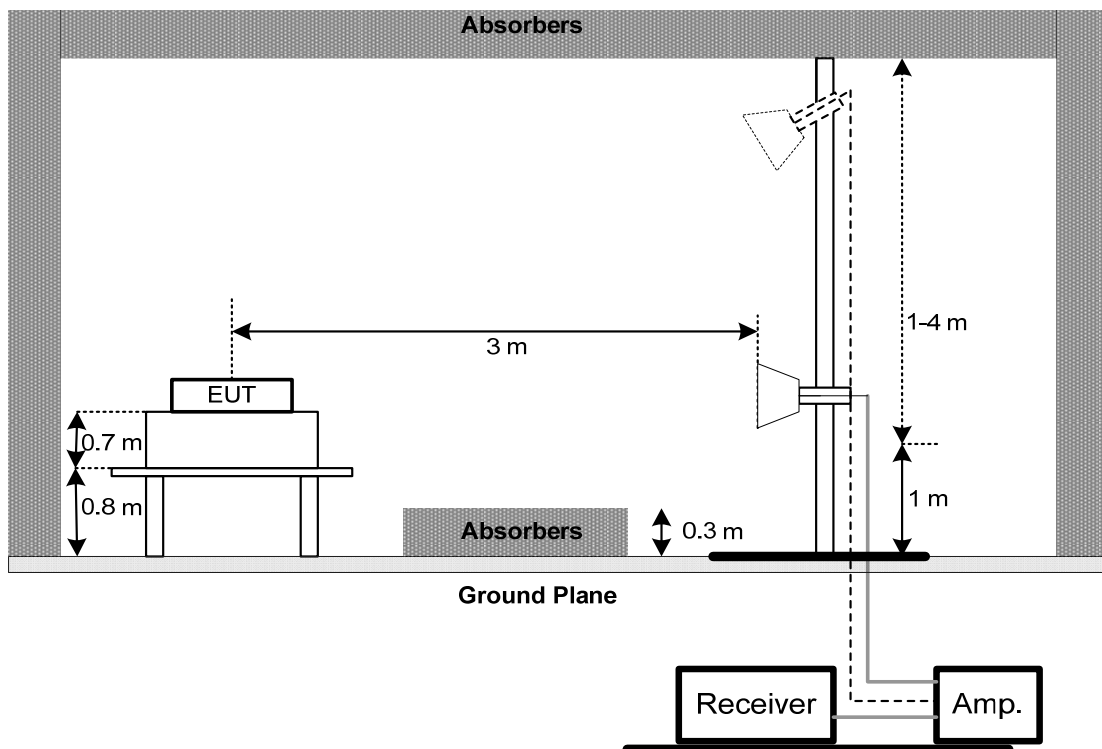
No deviation

#### 4.2.4 TEST SETUP

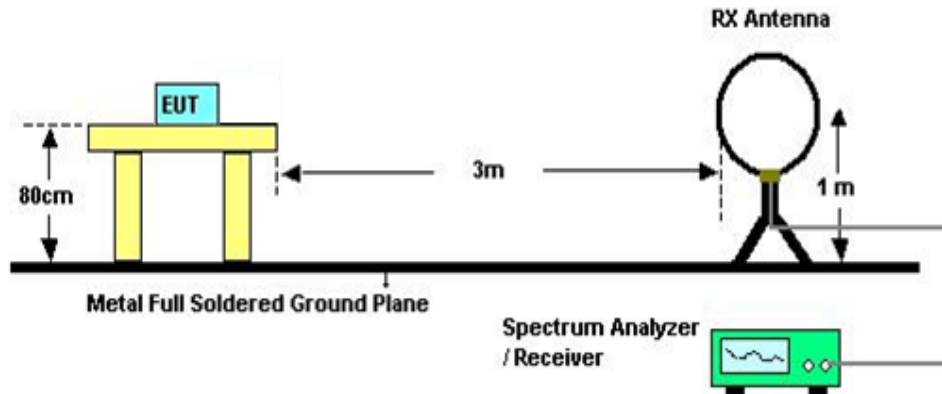
##### (A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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



(C) For Radiated Emissions Below 30MHz



#### 4.2.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 4.2.6 EUT TEST CONDITIONS

Temperature: 23°C    Relative Humidity: 70%    Test Voltage: DC 3.64V

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

Please refer to the Attachment B

Remark:

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

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

Please refer to the Attachment C.

#### **4.2.9 TEST RESULTS (1GHZ~10<sup>TH</sup> HARMONIC)**

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.

### 4.3 BAND EDGE MEASUREMENT

#### 4.3.1 RADIATED EMISSION LIMITS

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

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

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

##### LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Frequency (MHz)	(dBuV/m) (at 3 meters)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) The test result calculated as following:  
 Measurement Value = Reading Level + Correct Factor  
 Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)  
 Margin Level = Measurement Value - Limit Value

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

#### **4.3.2 TEST PROCEDURE**

For Radiated band edges Measurement:

- a. The test procedure is the same as section 4.2.2, only the frequency range investigated is limited to 100MHz around band edges.

For Radiated Out of Band Emission Measurement:

- a. Test was performed in accordance with KDB 558074 D01 v03r05 for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 10.1 Unwanted Emissions into Non-Restricted Frequency Bands Measurement Procedure.

#### **4.3.3 TEST SETUP LAYOUT**

For Radiated band edges Measurement:

This test setup layout is the same as that shown in section 4.2.4.

For Radiated Out of Band Emission Measurement:

This test setup layout is the same as that shown in section 4.2.4.

#### **4.3.4 DEVIATION FROM TEST STANDARD**

No deviation

#### **4.3.5 EUT OPERATING CONDITIONS**

The EUT was programmed to be in continuously transmitting mode.

#### **4.3.6 TEST RESULTS (BAND EDGE AND FUNDAMENTAL EMISSIONS)**

Please refer to the Attachment E.

Remark:

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

## 5. BANDWIDTH TEST

### 5.1 APPLIED PROCEDURES

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

#### 5.1.1 TEST PROCEDURE

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

#### 5.1.2 DEVIATION FROM STANDARD

No deviation.

#### 5.1.3 TEST SETUP



#### 5.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 5.1.5 EUT TEST CONDITIONS

Temperature: 25°C    Relative Humidity: 65%    Test Voltage: DC 3.64V

#### 5.1.6 TEST RESULTS

Please refer to the Attachment F.



## 6. MAXIMUM PEAK CONDUCTED OUTPUT POWER TEST

### 6.1 APPLIED PROCEDURES / LIMIT

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

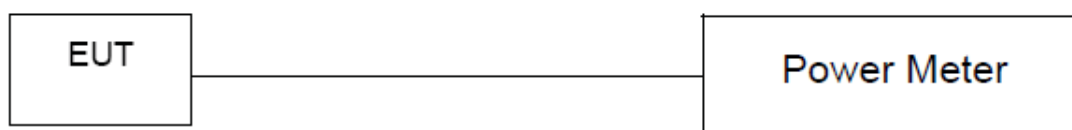
#### 6.1.1 TEST PROCEDURE

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

#### 6.1.2 DEVIATION FROM STANDARD

No deviation.

#### 6.1.3 TEST SETUP



#### 6.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 6.1.5 EUT TEST CONDITIONS

Temperature: 25°C    Relative Humidity: 65%    Test Voltage: DC 3.64V

#### 6.1.6 TEST RESULTS

Please refer to the Attachment G.

## 7. ANTENNA CONDUCTED SPURIOUS EMISSION

### 7.1 APPLIED PROCEDURES / LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits.

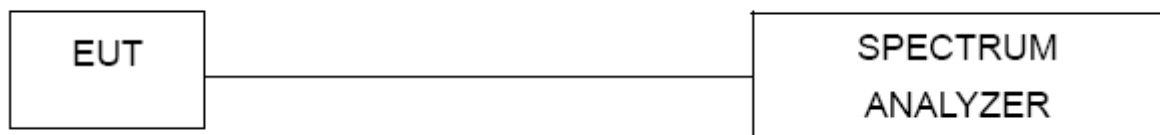
#### 7.1.1 TEST PROCEDURE

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

#### 7.1.2 DEVIATION FROM STANDARD

No deviation.

#### 7.1.3 TEST SETUP



#### 7.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 7.1.5 EUT TEST CONDITIONS

Temperature: 25°C    Relative Humidity: 65%    Test Voltage: DC 3.64V

#### 7.1.6 TEST RESULTS

Please refer to the Attachment H.

## 8. POWER SPECTRAL DENSITY TEST

### 8.1 APPLIED PROCEDURES / LIMIT

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

#### 8.1.1 TEST PROCEDURE

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

#### 8.1.2 DEVIATION FROM STANDARD

No deviation.

#### 8.1.3 TEST SETUP



#### 8.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 8.1.5 EUT TEST CONDITIONS

Temperature: 25°C    Relative Humidity: 65%    Test Voltage: DC 3.64V

#### 8.1.6 TEST RESULTS

Please refer to the Attachment I.

## 9. MEASUREMENT INSTRUMENTS LIST

Radiated Emission & Band edge Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Preamplifier	EMCI	012645B	980267	Feb. 28, 2018
2	Preamplifier	EMCI	EMC02325	980217	Dec. 29, 2017
3	Test Cable	EMCI	EMC104-SM-SM-8000	8m	Jan. 04, 2018
4	Test Cable	EMCI	EMC104-SM-SM-800	150207	Jan. 04, 2018
5	Test Cable	EMCI	EEMC104-SM-SM-3000	151205	Jan. 04, 2018
6	MXE EMI Receiver	Agilent	N9038A	MY55420127	Jan. 09, 2018
7	Signal Analyzer	Agilent	N9010A	MY52220990	Feb. 22, 2018
8	Loop Ant	EMCO	6502	42960	Nov. 24, 2017
9	Horn Ant	SCHWARZBECK	BBHA 9120D	9120D-1342	Feb. 28, 2018
10	Horn Ant	Schwarzbeck	BBHA 9170	187	May 12, 2017
11	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-548	Jan. 16, 2018
12	5dB Attenuator	EMCI	EMCI-N-6-05	AT-N0623	Jan. 16, 2018

6dB Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	R&S/FSP30	100854	May 26, 2017

Peak Output Power Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	R&S/FSP30	100854	May 26, 2017
2	Power Meter	Anritsu	ML2495A	1128008	Aug. 17, 2017
3	Power Sensor	Anritsu	MA2411B	1126001	Aug. 17, 2017

Antenna Conducted Spurious Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	R&S/FSP30	100854	May 26, 2017

Power Spectral Density Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	R&S/FSP30	100854	May 26, 2017

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

All calibration period of equipment list is one year.

## ATTACHMENT A - CONDUCTED EMISSION

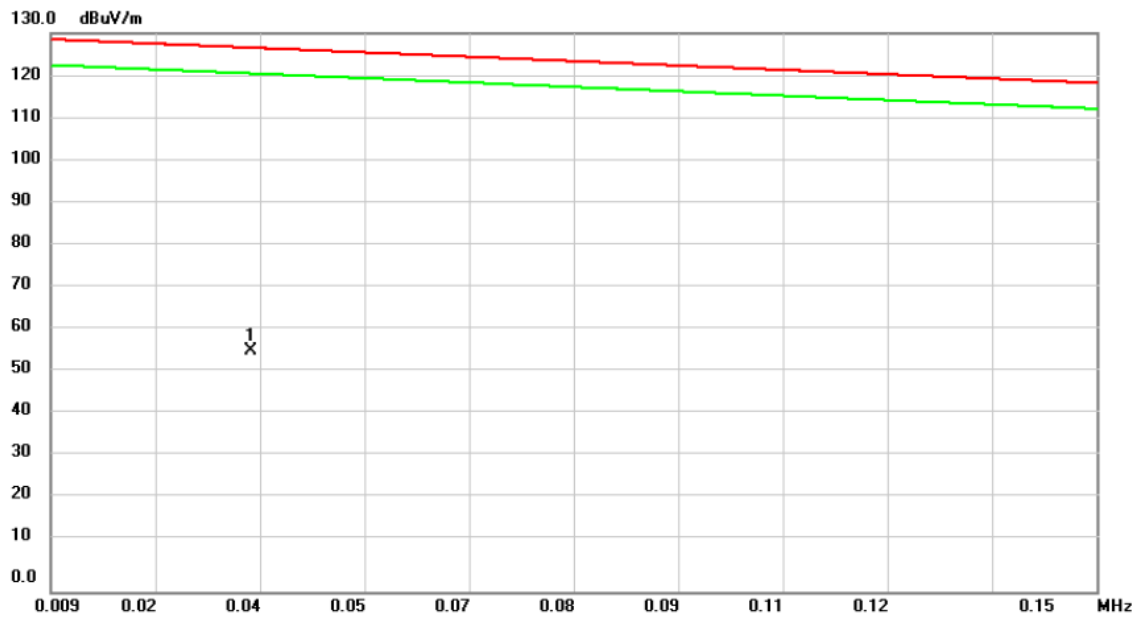
**Test Mode: N/A**

Note: "N/A" denotes test is not applicable to this device.

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

Test Mode: TX

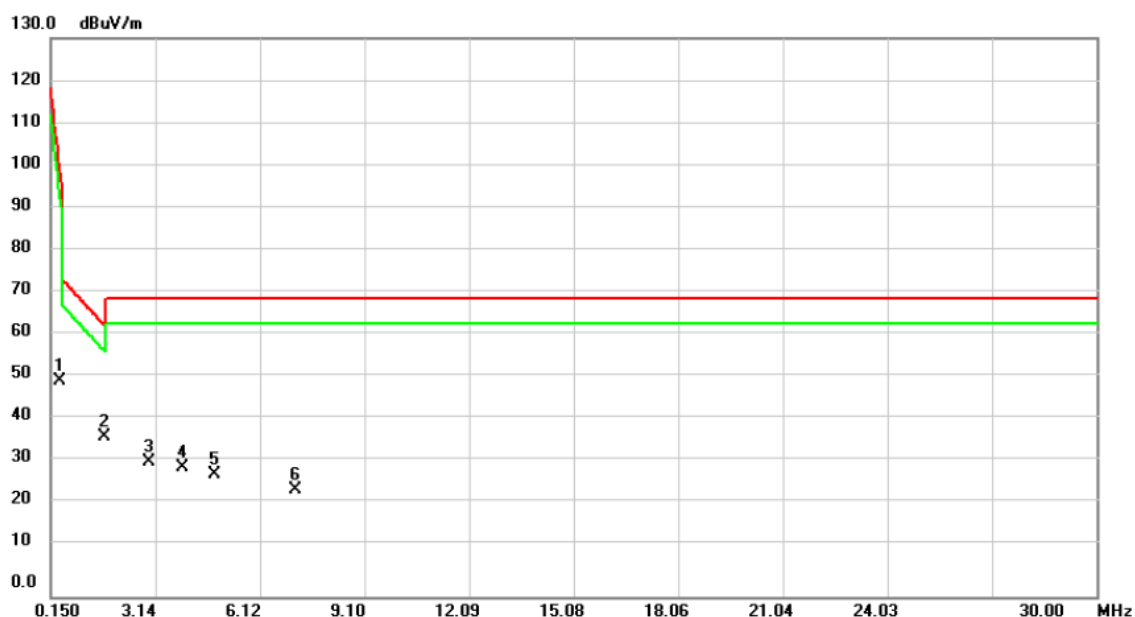
**OPEN**



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0360	41.75	14.40	56.15	126.57	-70.42	peak	

Test Mode: TX

**OPEN**

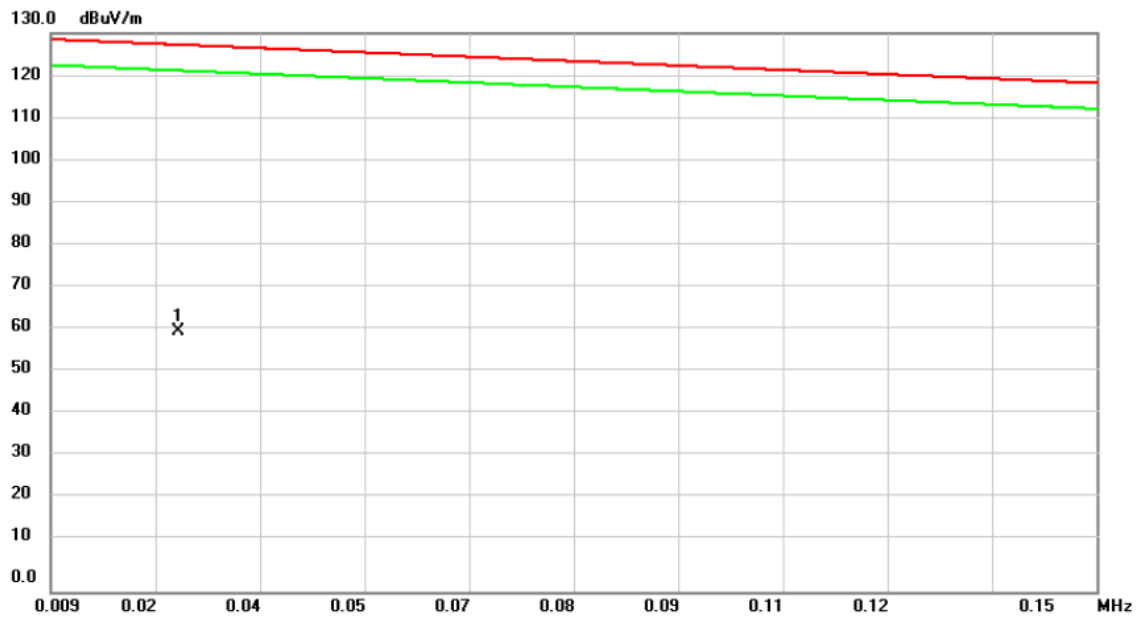


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.4187	38.46	11.80	50.26	98.95	-48.69	peak	
2	*	1.7020	25.41	11.68	37.09	63.00	-25.91	peak	
3		2.9560	20.15	11.12	31.27	69.54	-38.27	peak	
4		3.9110	18.67	11.24	29.91	69.54	-39.63	peak	
5		4.8066	16.98	11.37	28.35	69.54	-41.19	peak	
6		7.1350	13.60	11.36	24.96	69.54	-44.58	peak	



Test Mode: TX

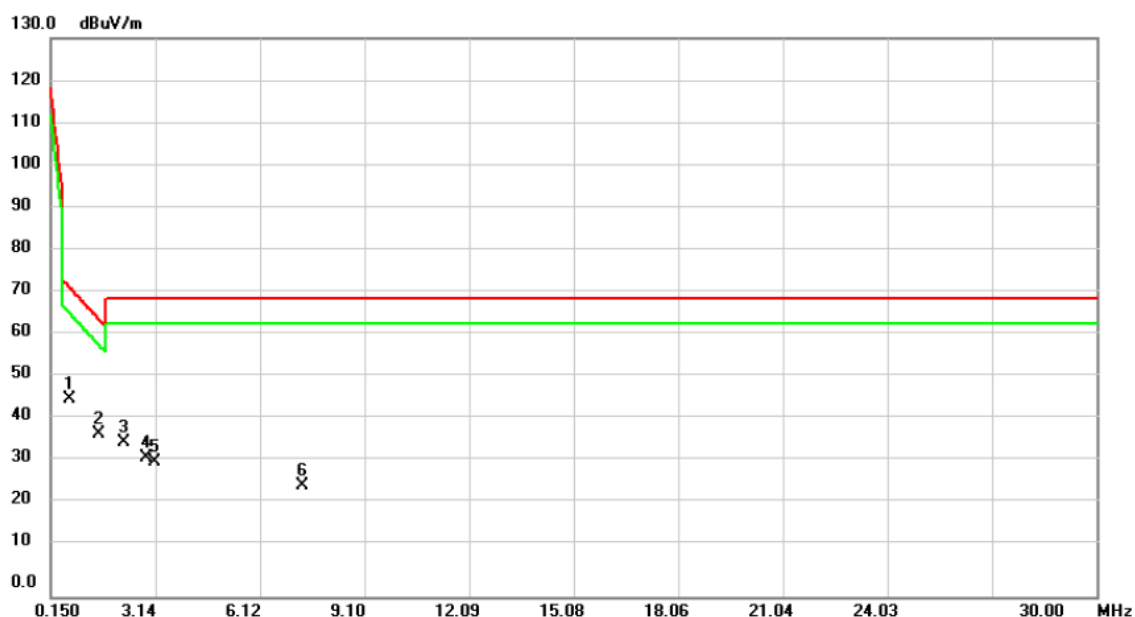
**CLOSE**



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0262	44.44	16.04	60.48	127.28	-66.80	peak	

Test Mode: TX

**CLOSE**

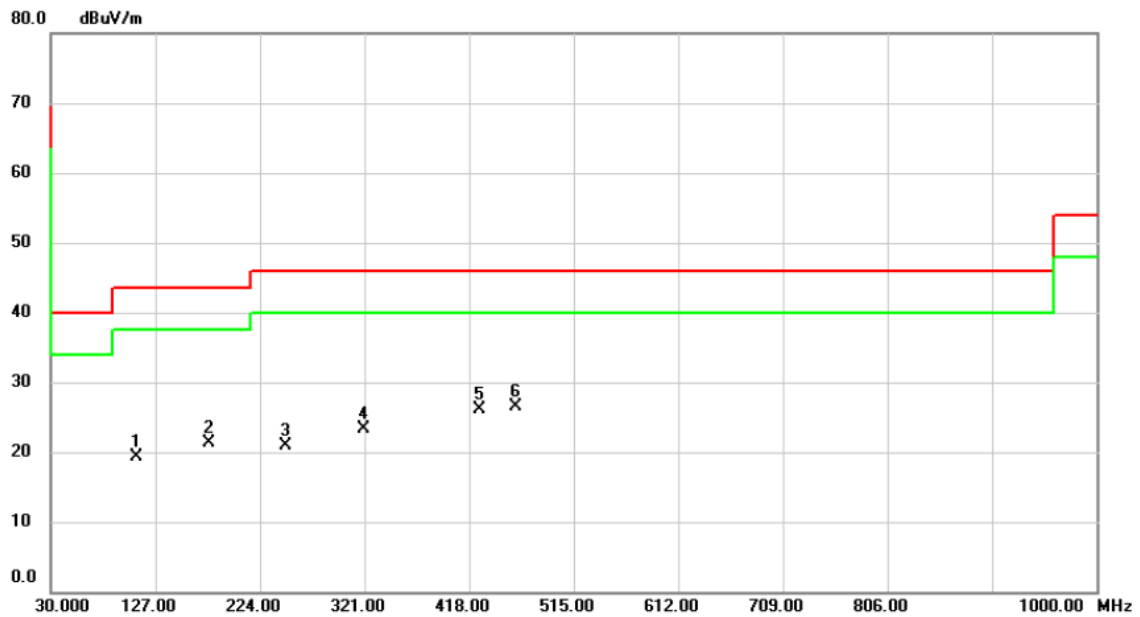


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	0.6873	34.17	11.87	46.04	72.04	-26.00	peak	
2		1.5230	26.24	11.76	38.00	64.59	-26.59	peak	
3		2.2395	24.62	11.44	36.06	69.54	-33.48	peak	
4		2.8664	21.25	11.16	32.41	69.54	-37.13	peak	
5		3.1051	20.33	11.12	31.45	69.54	-38.09	peak	
6		7.3437	14.47	11.35	25.82	69.54	-43.72	peak	

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

Test Mode: TX

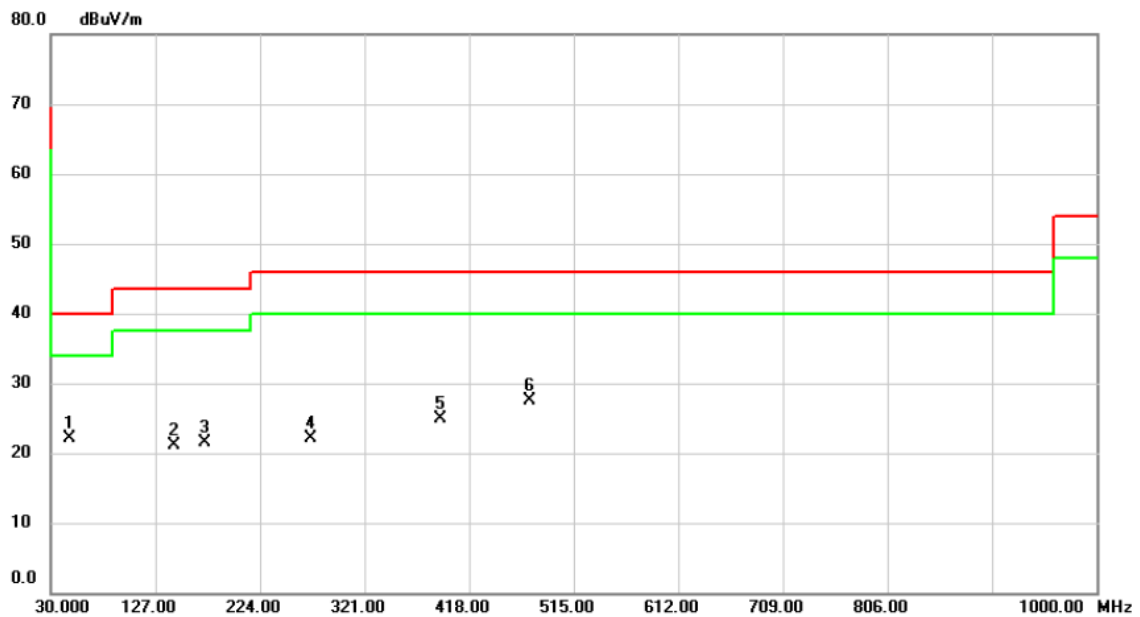
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		109.5400	30.06	-10.85	19.21	43.50	-24.29	peak	
2		176.4700	30.61	-9.25	21.36	43.50	-22.14	peak	
3		247.2800	30.06	-9.17	20.89	46.00	-25.11	peak	
4		320.0300	30.23	-6.99	23.24	46.00	-22.76	peak	
5		427.7000	30.34	-4.18	26.16	46.00	-19.84	peak	
6	*	460.6800	29.89	-3.38	26.51	46.00	-19.49	peak	

Test Mode: TX

### Horizontal

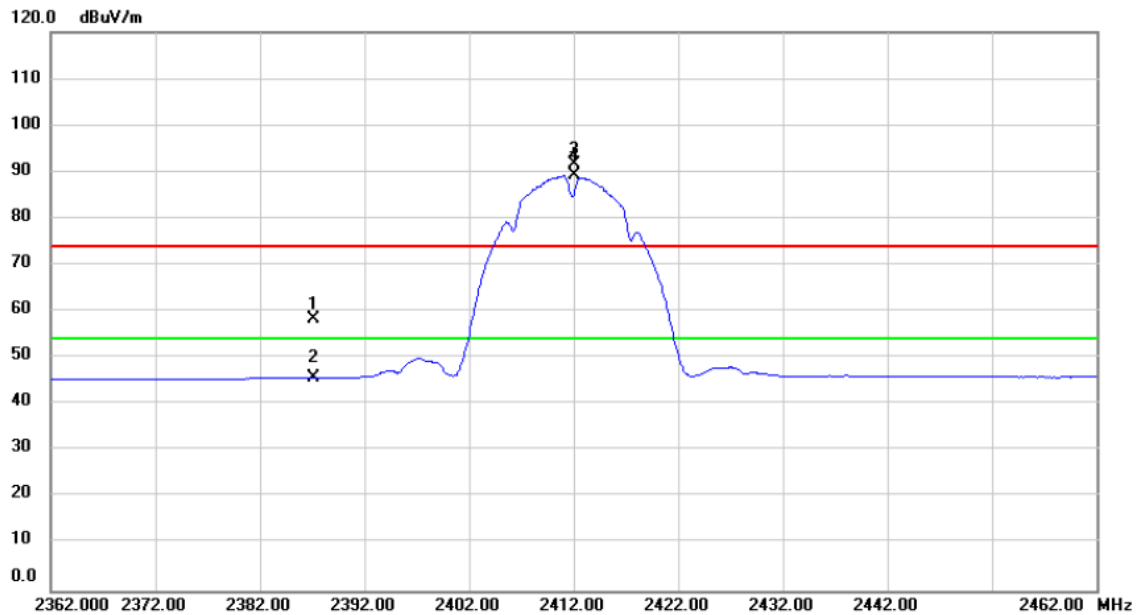


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin		
		MHz	Level	Factor	ment				
			dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	47.4600	30.59	-8.44	22.15	40.00	-17.85	peak	
2		144.4600	30.09	-9.07	21.02	43.50	-22.48	peak	
3		172.5900	30.33	-8.85	21.48	43.50	-22.02	peak	
4		271.5300	30.50	-8.38	22.12	46.00	-23.88	peak	
5		390.8400	30.05	-5.18	24.87	46.00	-21.13	peak	
6		474.2600	30.62	-3.16	27.46	46.00	-18.54	peak	

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

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

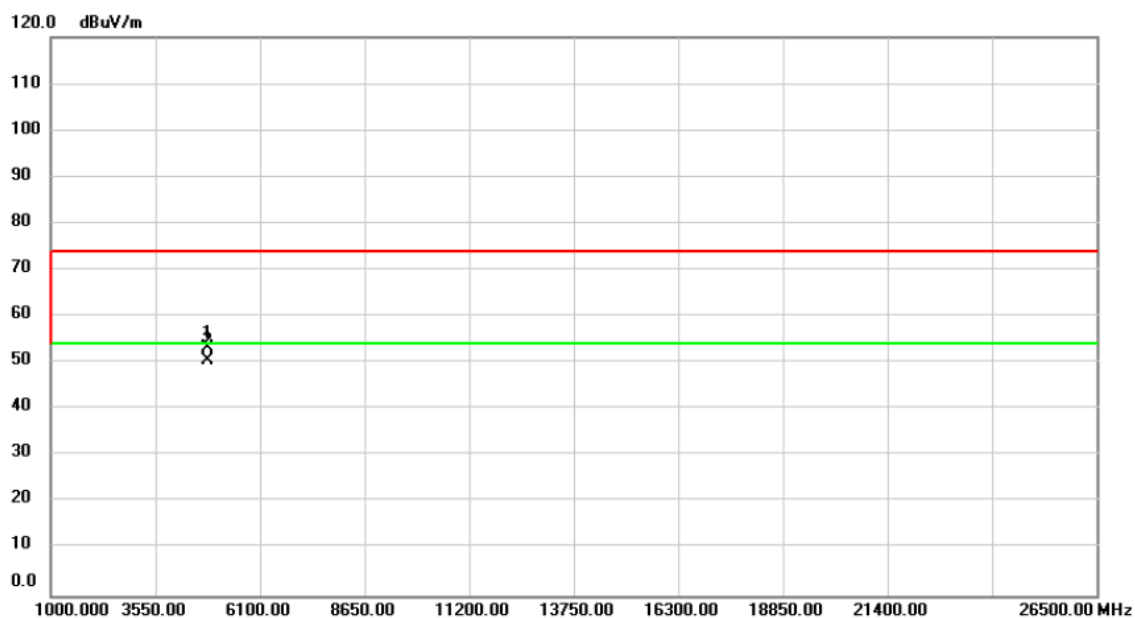
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2387.116	27.21	31.05	58.26	74.00	-15.74	peak	
2		2387.116	14.72	31.05	45.77	54.00	-8.23	AVG	
3	X	2412.000	60.38	31.14	91.52	74.00	17.52	peak	No Limit
4	*	2412.000	58.09	31.14	89.23	54.00	35.23	AVG	No Limit

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

### Vertical

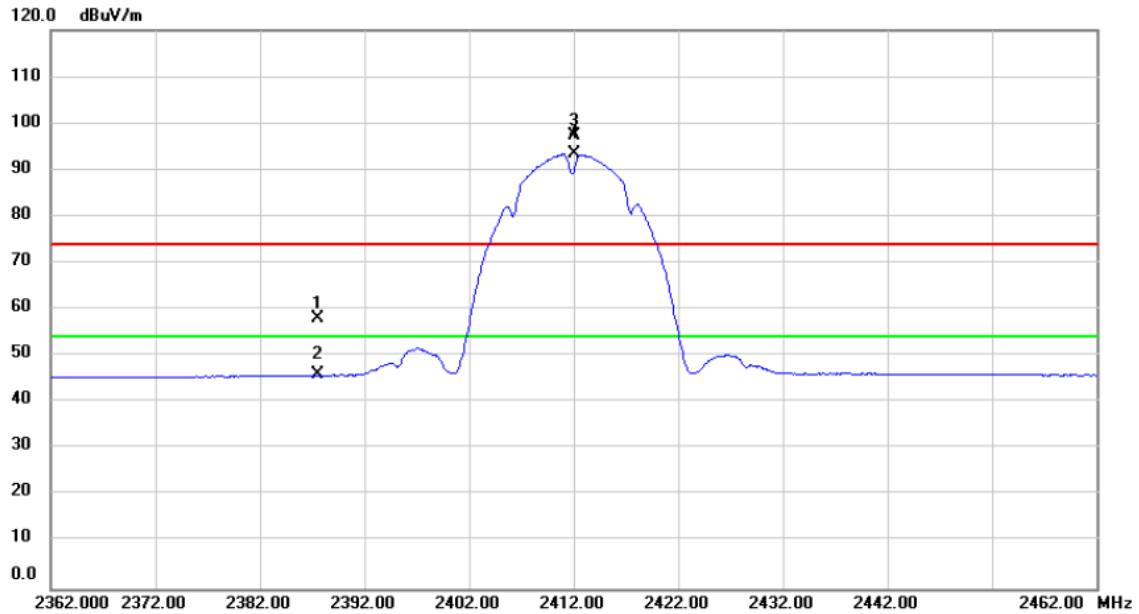


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4824.000	64.74	-11.37	53.37	74.00	-20.63	peak	
2	*	4824.000	61.80	-11.37	50.43	54.00	-3.57	AVG	



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

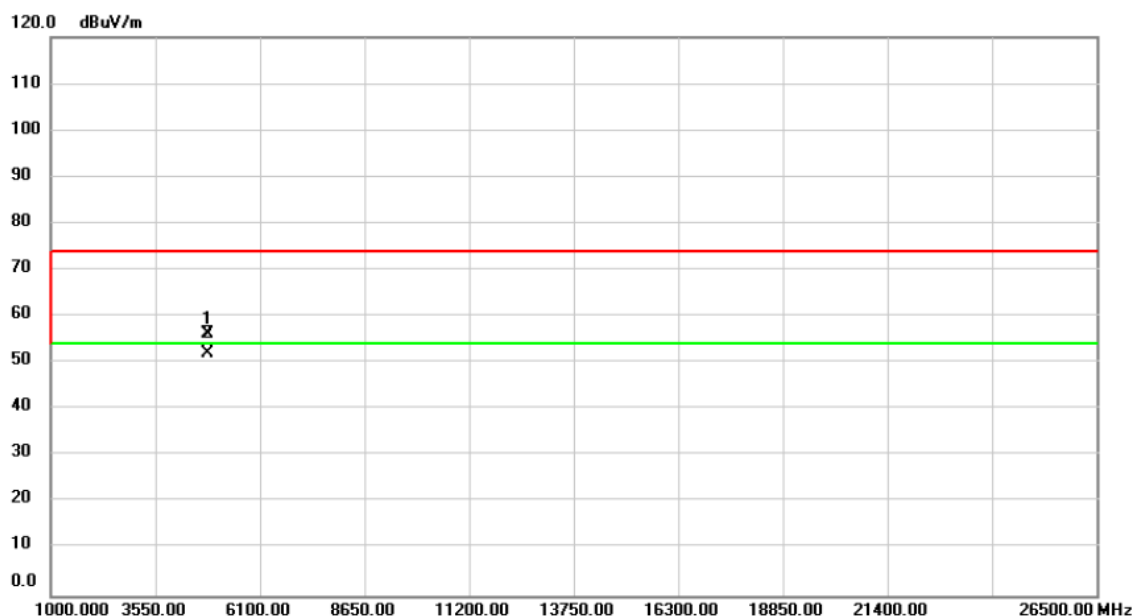
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2387.564	26.89	31.06	57.95	74.00	-16.05	peak	
2		2387.564	14.89	31.06	45.95	54.00	-8.05	AVG	
3	X	2412.000	66.16	31.14	97.30	74.00	23.30	peak	No Limit
4	*	2412.000	62.37	31.14	93.51	54.00	39.51	AVG	No Limit

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

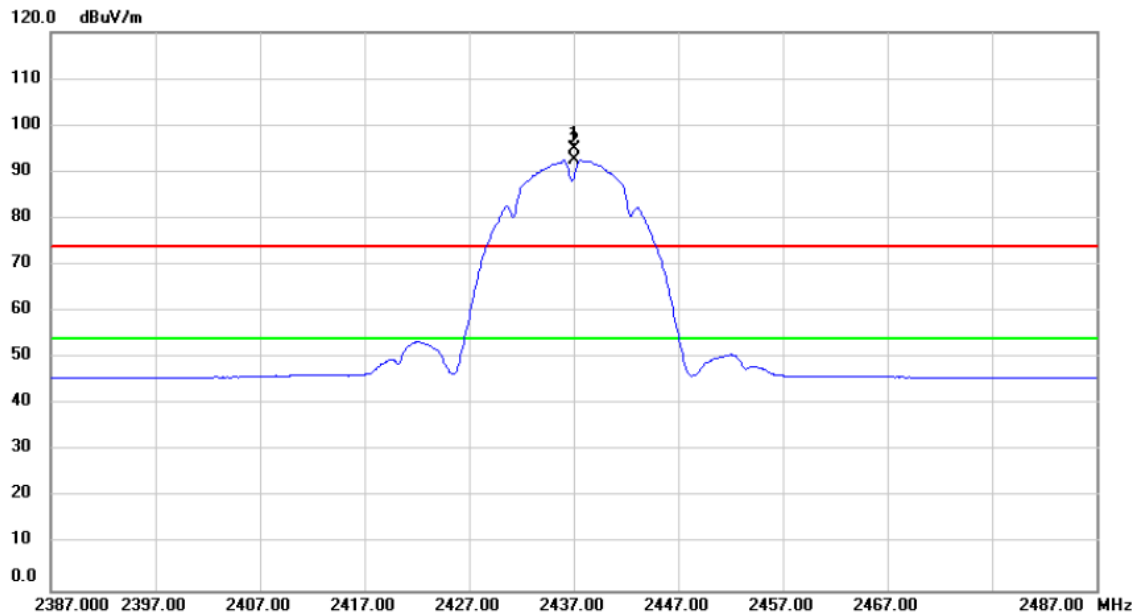
### Horizontal



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.000	67.77	-11.37	56.40	74.00	-17.60	peak	
2 *	4824.000	63.29	-11.37	51.92	54.00	-2.08	AVG	

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

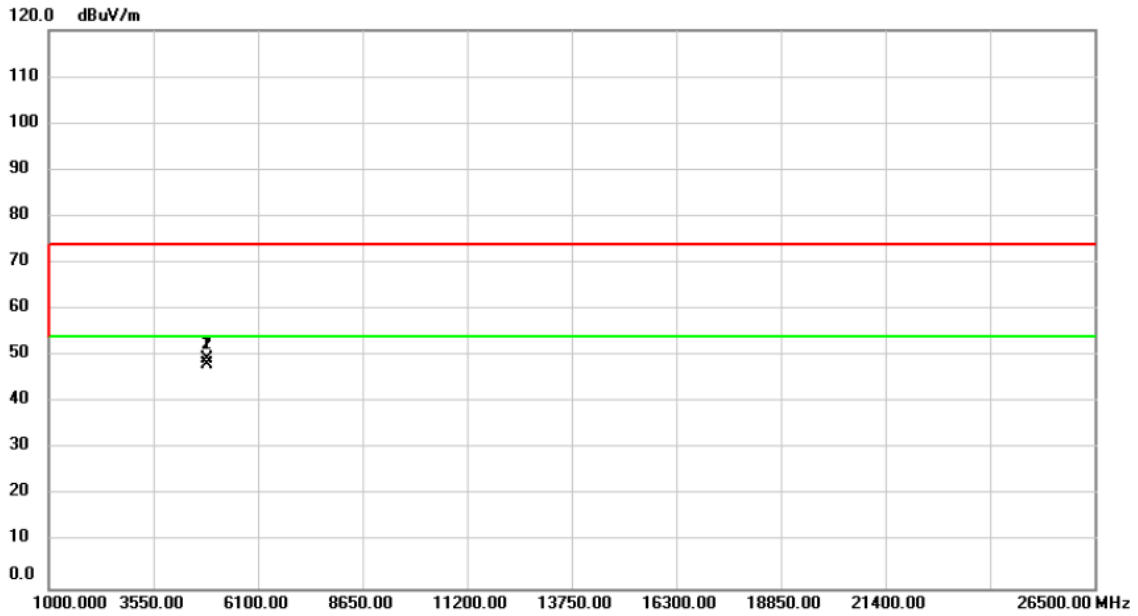
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2437.000	63.62	31.23	94.85	74.00	20.85	peak	No Limit
2	*	2437.000	61.23	31.23	92.46	54.00	38.46	A/VG	No Limit

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

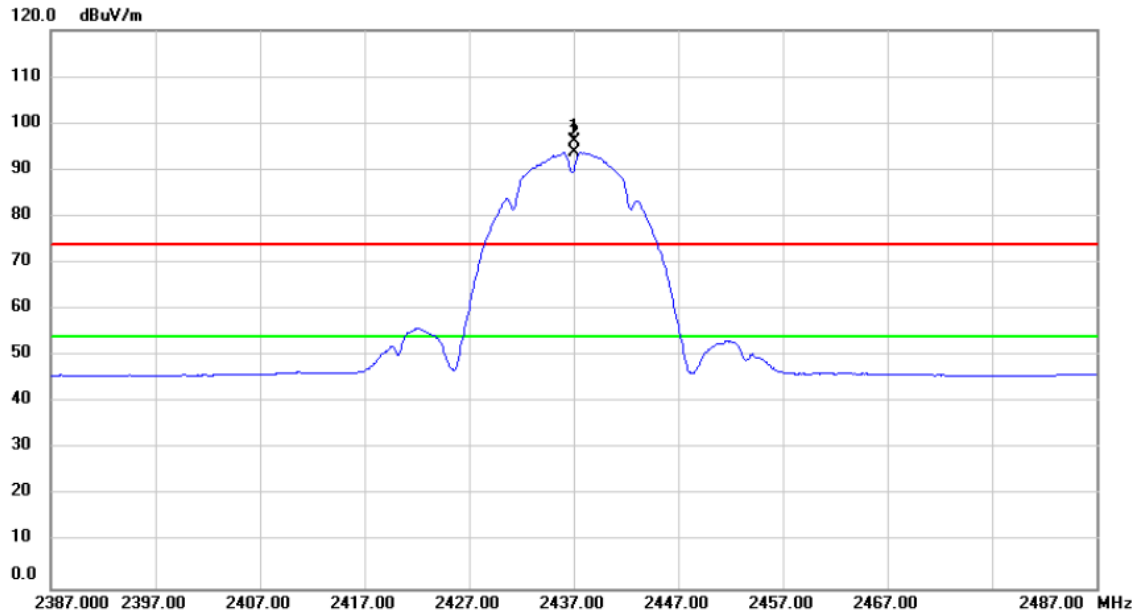
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4874.000	60.53	-11.29	49.24	74.00	-24.76	peak	
2	*	4874.000	59.42	-11.29	48.13	54.00	-5.87	AVG	

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

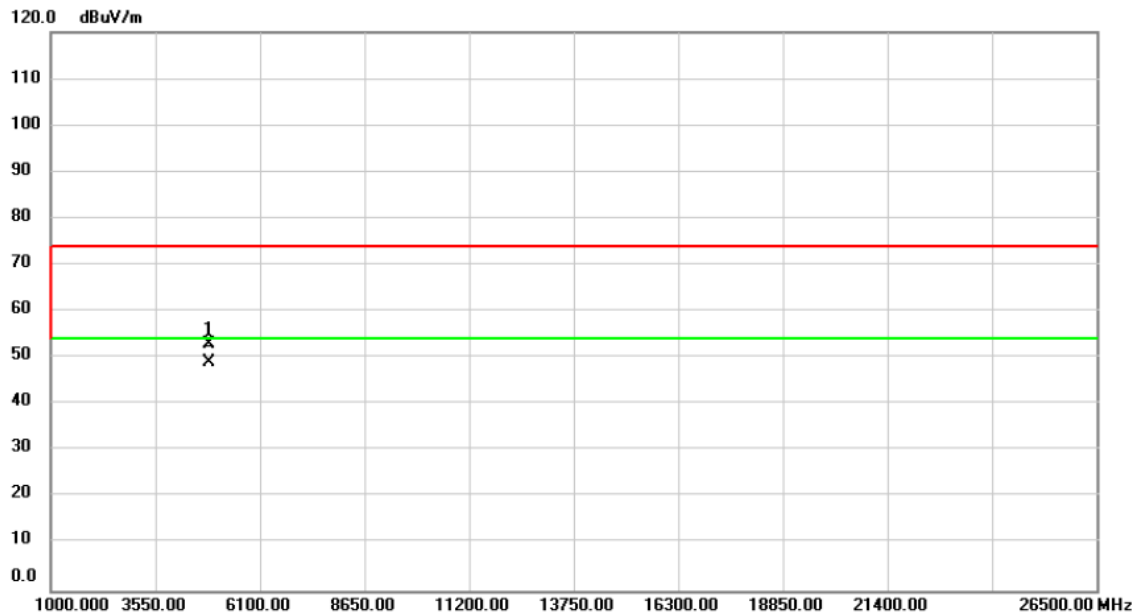
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2437.000	64.91	31.23	96.14	74.00	22.14	peak	No Limit
2	*	2437.000	62.49	31.23	93.72	54.00	39.72	AVG	No Limit

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

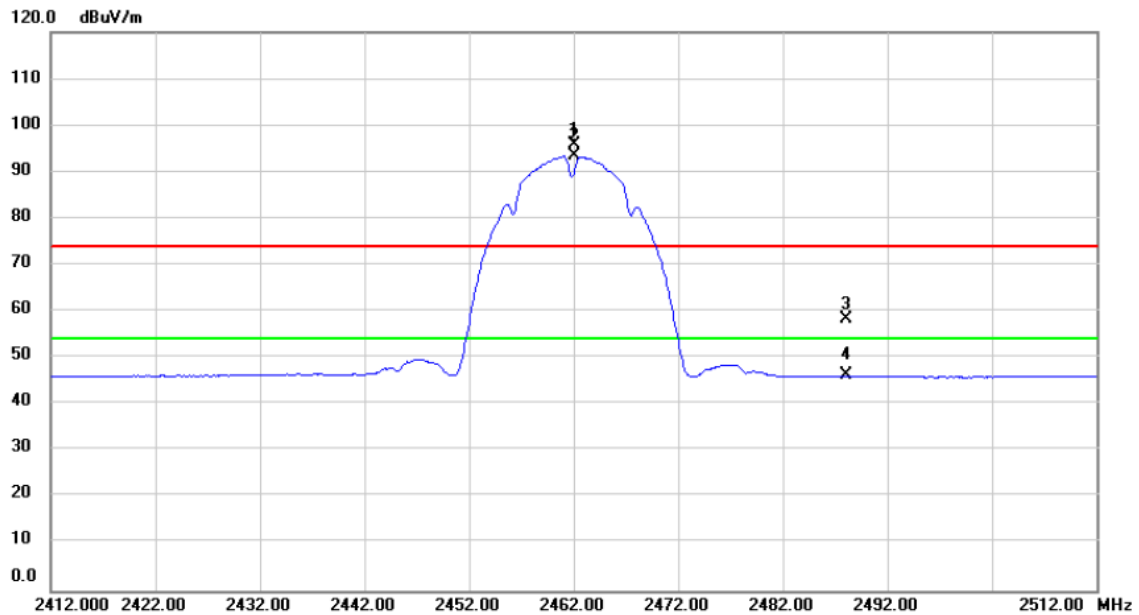
### Horizontal



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4874.000	64.12	-11.29	52.83	74.00	-21.17	peak	
2 *	4874.000	60.33	-11.29	49.04	54.00	-4.96	AVG	

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

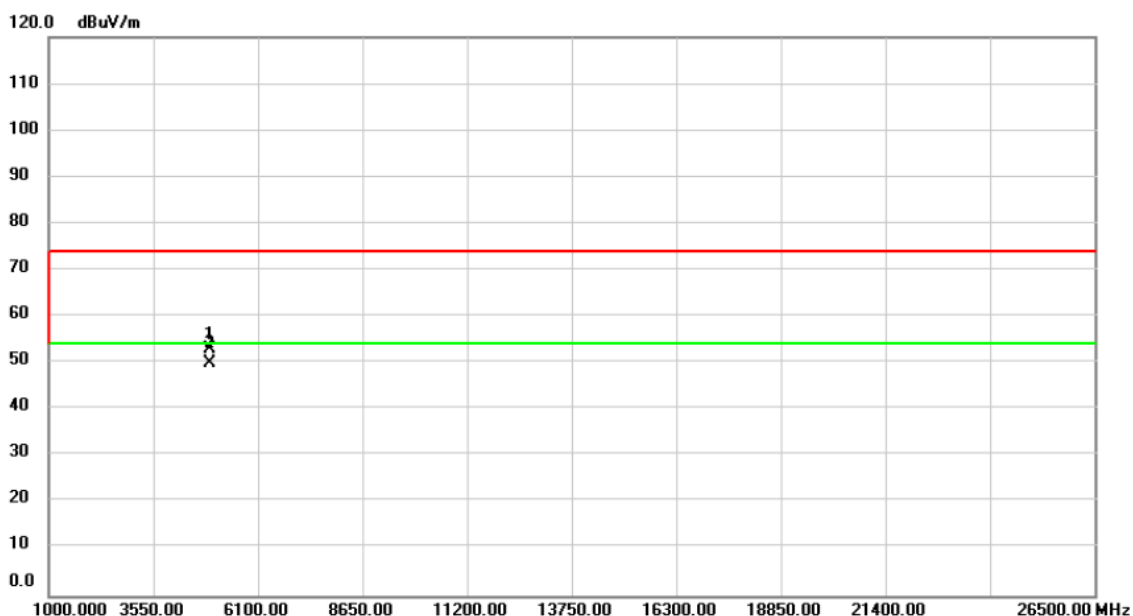
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2462.000	64.41	31.33	95.74	74.00	21.74	peak	No Limit
2	*	2462.000	62.04	31.33	93.37	54.00	39.37	AVG	No Limit
3		2488.021	27.04	31.43	58.47	74.00	-15.53	peak	
4		2488.021	14.80	31.43	46.23	54.00	-7.77	AVG	

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

### Vertical

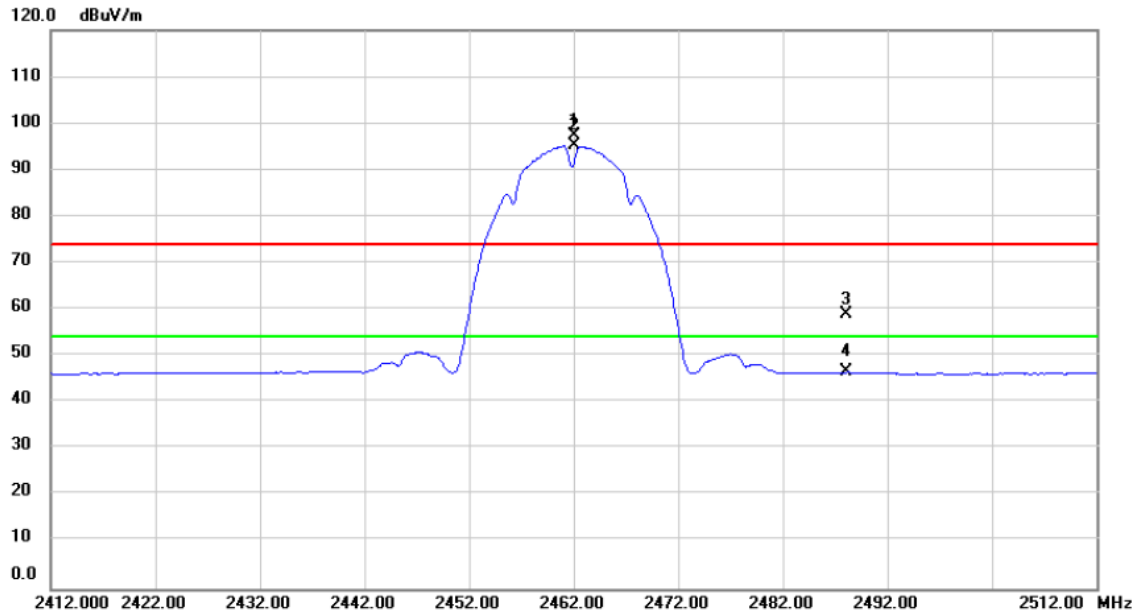


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4924.000	64.16	-11.22	52.94	74.00	-21.06	peak	
2	*	4924.000	61.05	-11.22	49.83	54.00	-4.17	AVG	



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

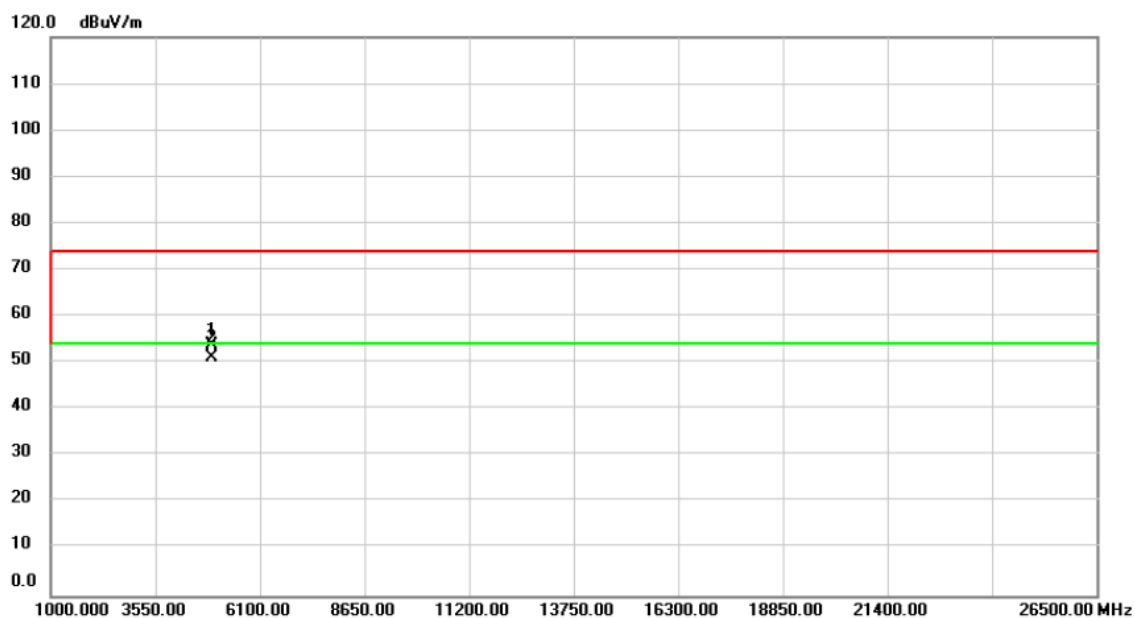
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2462.000	66.13	31.33	97.46	74.00	23.46	peak	No Limit
2	*	2462.000	63.84	31.33	95.17	54.00	41.17	AVG	No Limit
3		2488.054	27.59	31.43	59.02	74.00	-14.98	peak	
4		2488.054	15.14	31.43	46.57	54.00	-7.43	AVG	

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

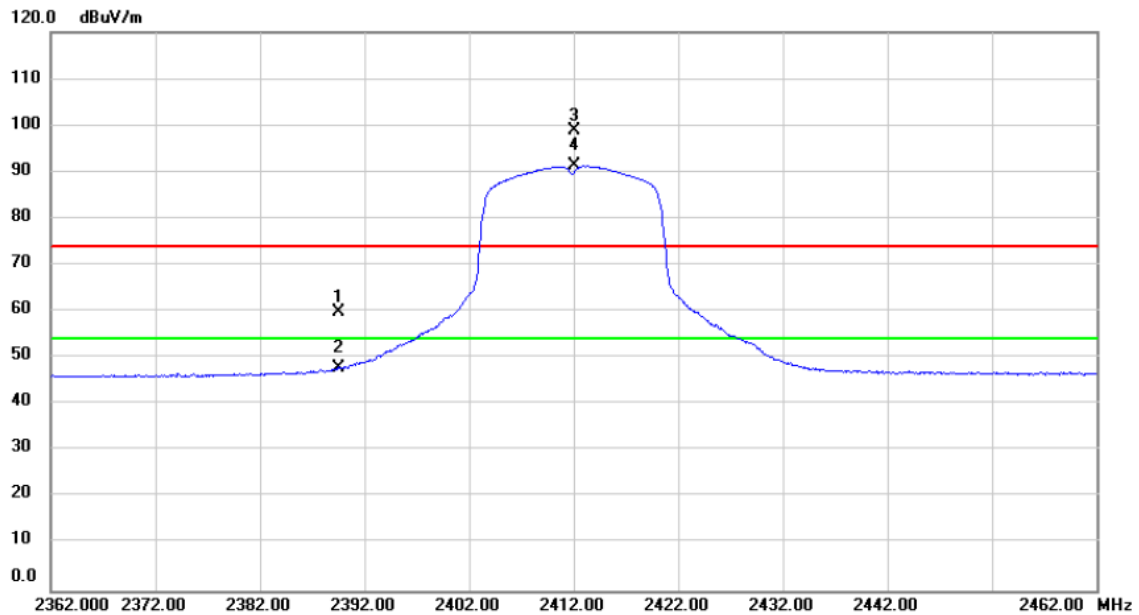
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4924.000	64.96	-11.22	53.74	74.00	-20.26	peak	
2	*	4924.000	62.26	-11.22	51.04	54.00	-2.96	AVG	

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

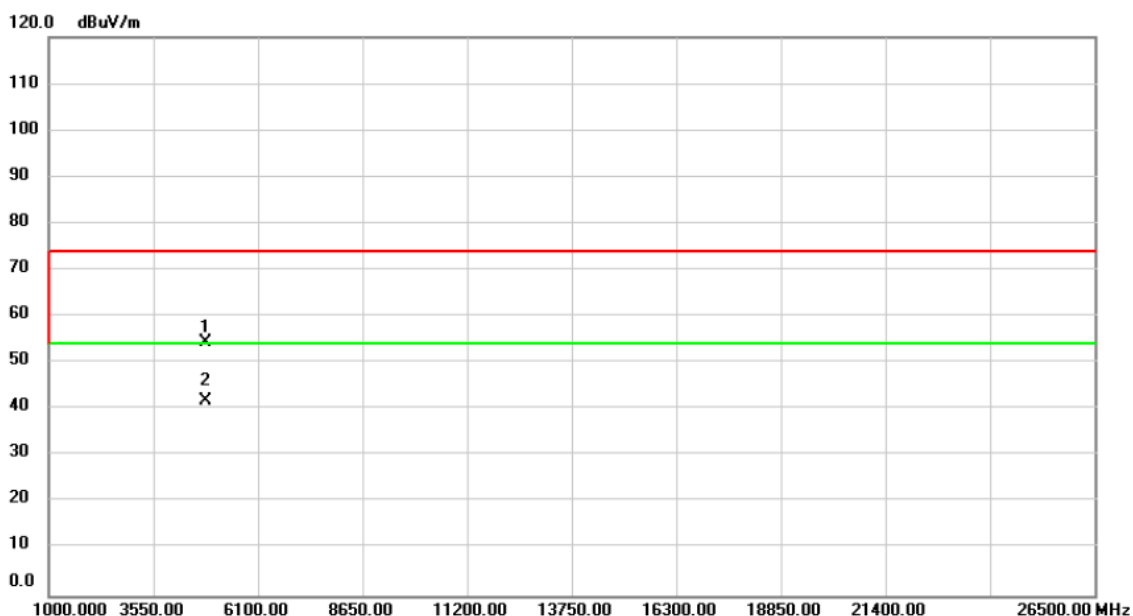
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2389.552	28.71	31.06	59.77	74.00	-14.23	peak	
2		2389.552	16.91	31.06	47.97	54.00	-6.03	AVG	
3	X	2412.000	67.76	31.14	98.90	74.00	24.90	peak	No Limit
4	*	2412.000	60.15	31.14	91.29	54.00	37.29	AVG	No Limit

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

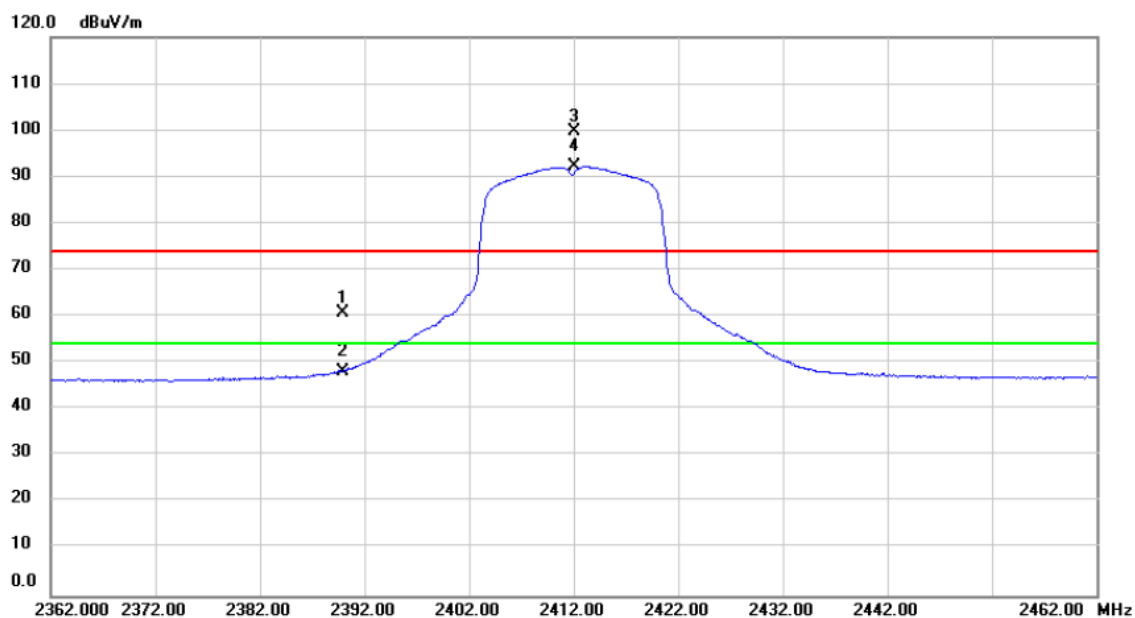
### Vertical



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.000	65.87	-11.37	54.50	74.00	-19.50	peak	
2 *	4824.000	53.16	-11.37	41.79	54.00	-12.21	AVG	

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

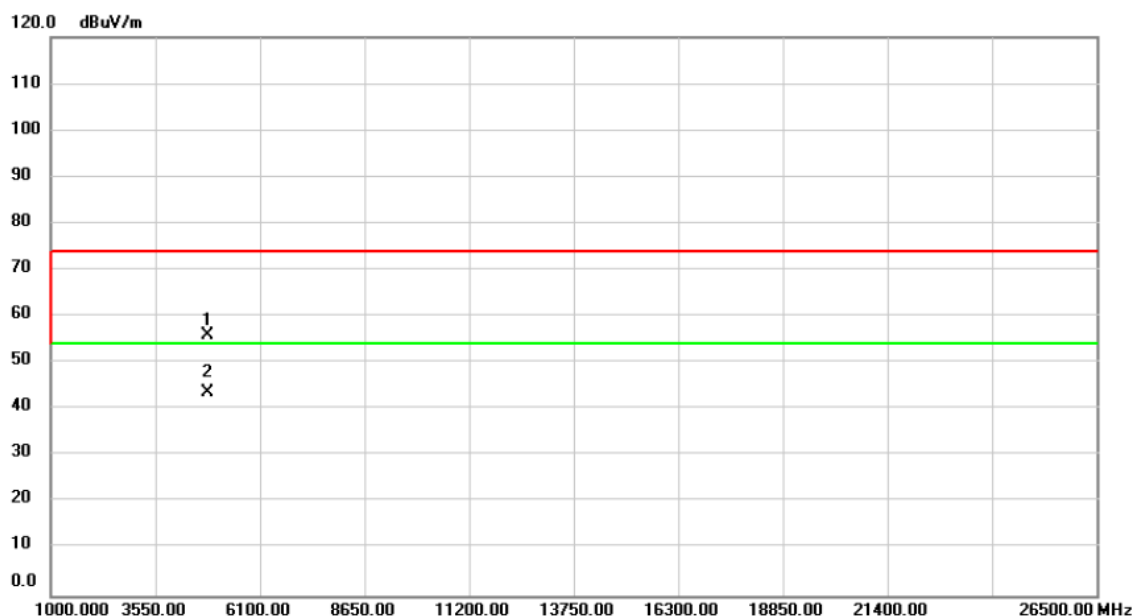
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2389.944	29.73	31.06	60.79	74.00	-13.21	peak	
2		2389.944	17.24	31.06	48.30	54.00	-5.70	AVG	
3	X	2412.000	68.61	31.14	99.75	74.00	25.75	peak	No Limit
4	*	2412.000	61.03	31.14	92.17	54.00	38.17	AVG	No Limit

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

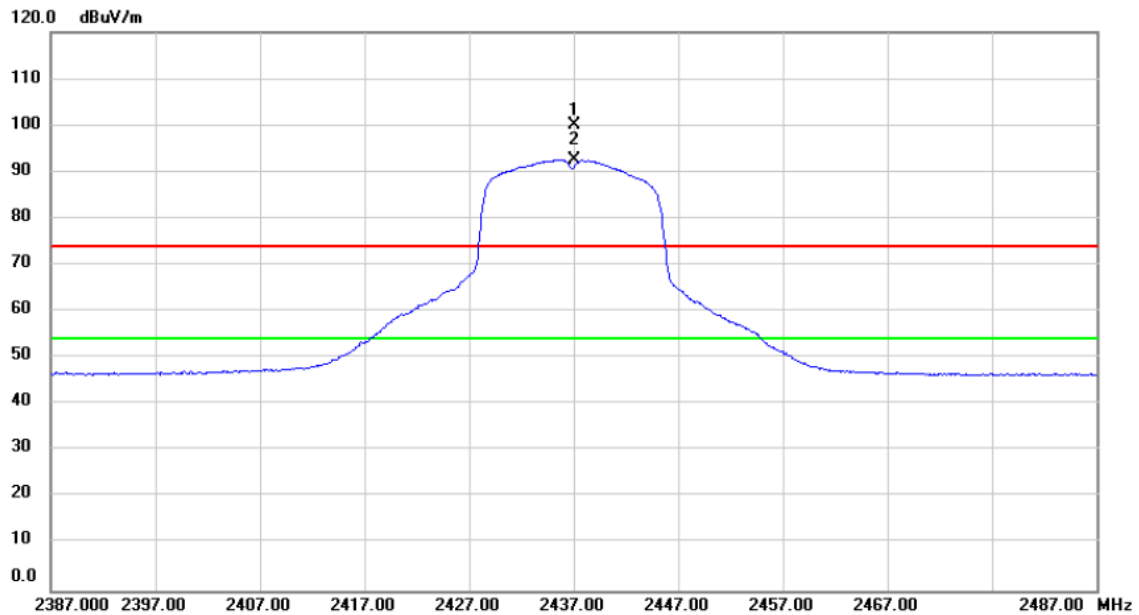
### Horizontal



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.000	67.32	-11.37	55.95	74.00	-18.05	peak	
2 *	4824.000	54.94	-11.37	43.57	54.00	-10.43	AVG	

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

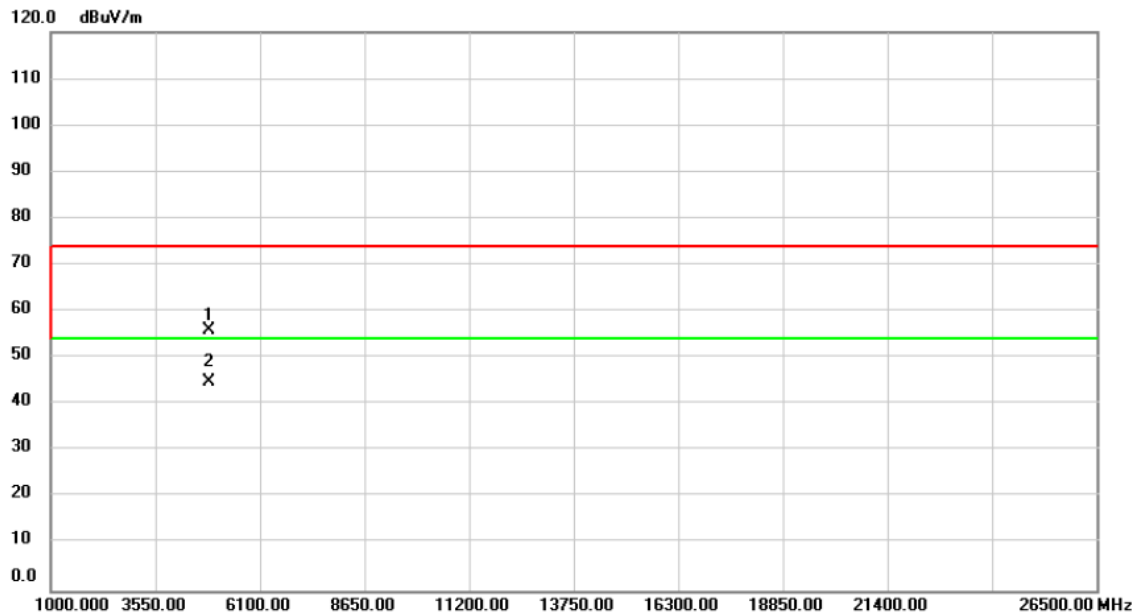
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2437.000	68.67	31.23	99.90	74.00	25.90	peak	No Limit
2	*	2437.000	61.26	31.23	92.49	54.00	38.49	A/G	No Limit

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

### Vertical

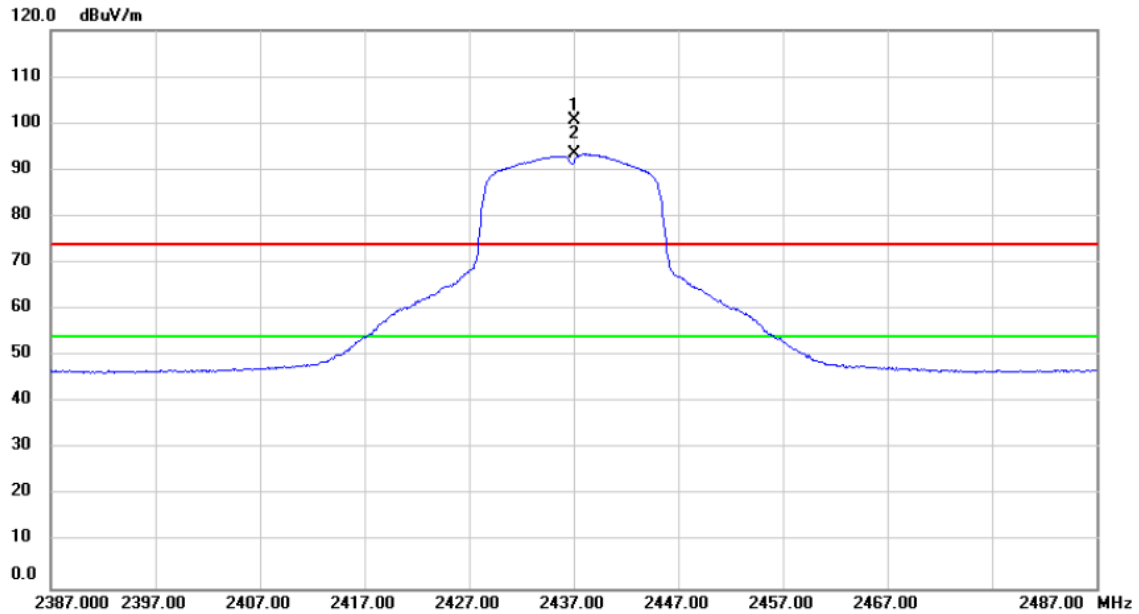


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4874.000	67.17	-11.29	55.88	74.00	-18.12	peak	
2 *	4874.000	56.06	-11.29	44.77	54.00	-9.23	AVG	



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

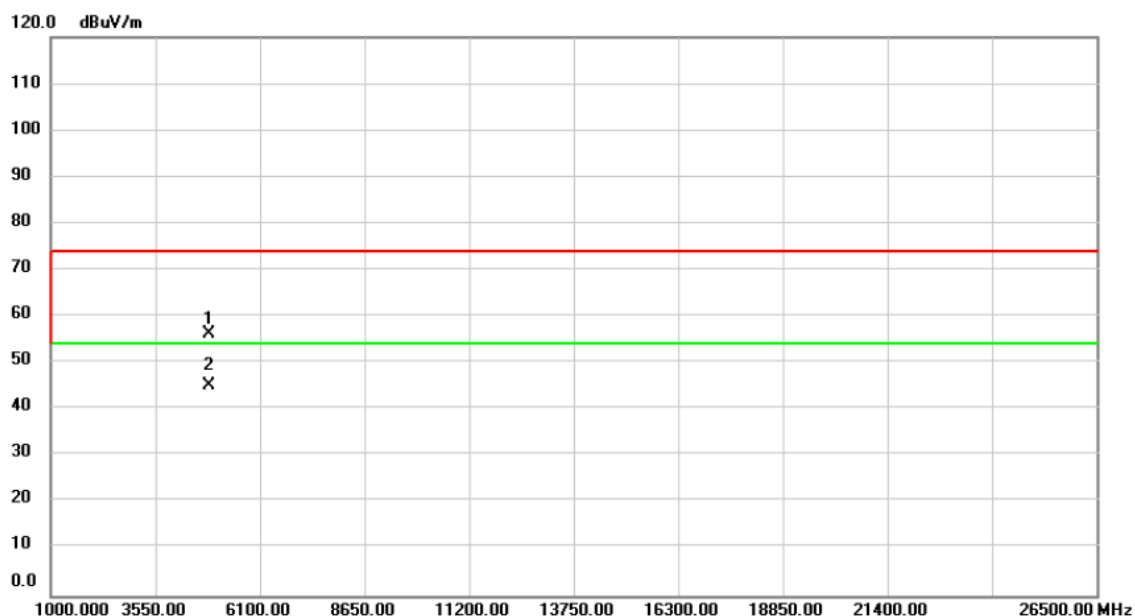
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2437.000	69.57	31.23	100.80	74.00	26.80	peak	No Limit
2	*	2437.000	62.12	31.23	93.35	54.00	39.35	AVG	No Limit

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

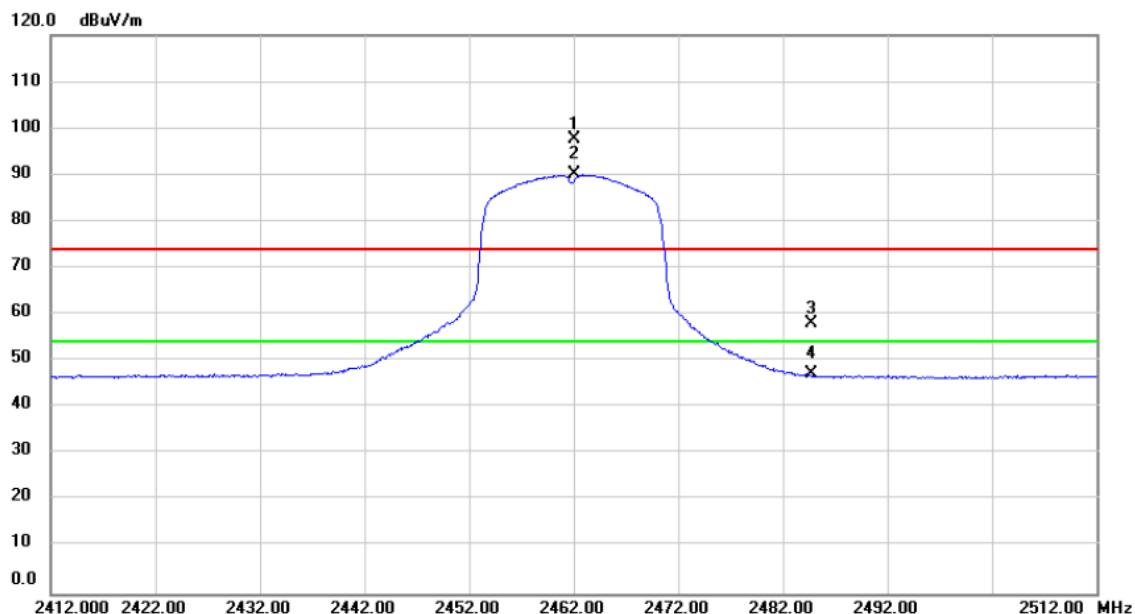
### Horizontal



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4874.000	67.67	-11.29	56.38	74.00	-17.62	peak	
2 *	4874.000	56.39	-11.29	45.10	54.00	-8.90	AVG	

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

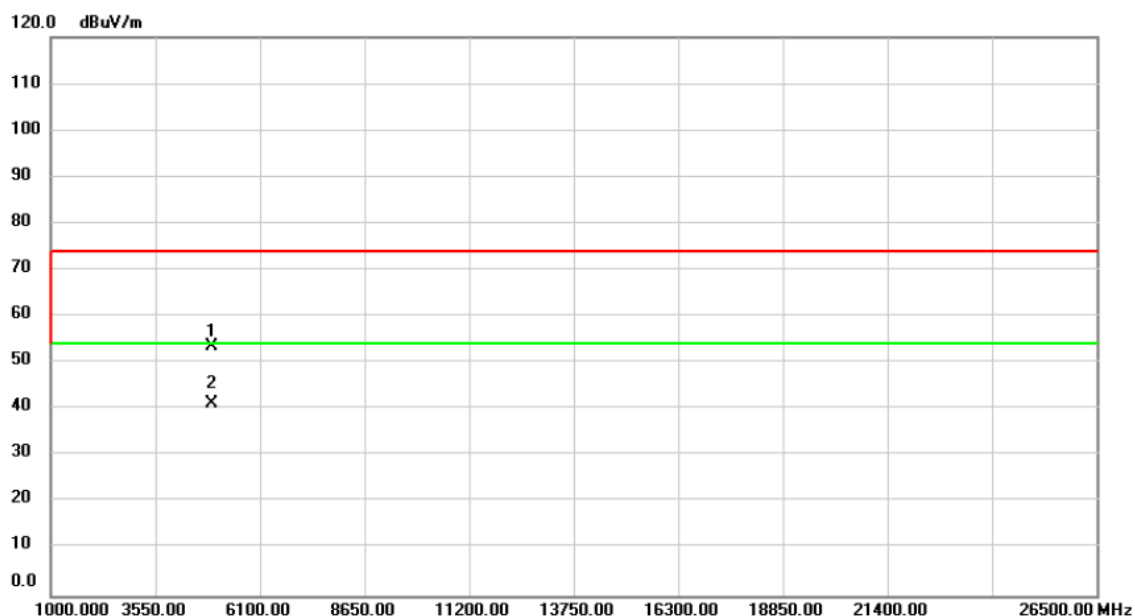
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2462.000	66.24	31.33	97.57	74.00	23.57	peak	No Limit
2	*	2462.000	58.70	31.33	90.03	54.00	36.03	A/VG	No Limit
3		2484.754	26.50	31.42	57.92	74.00	-16.08	peak	
4		2484.754	15.79	31.42	47.21	54.00	-6.79	A/VG	

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

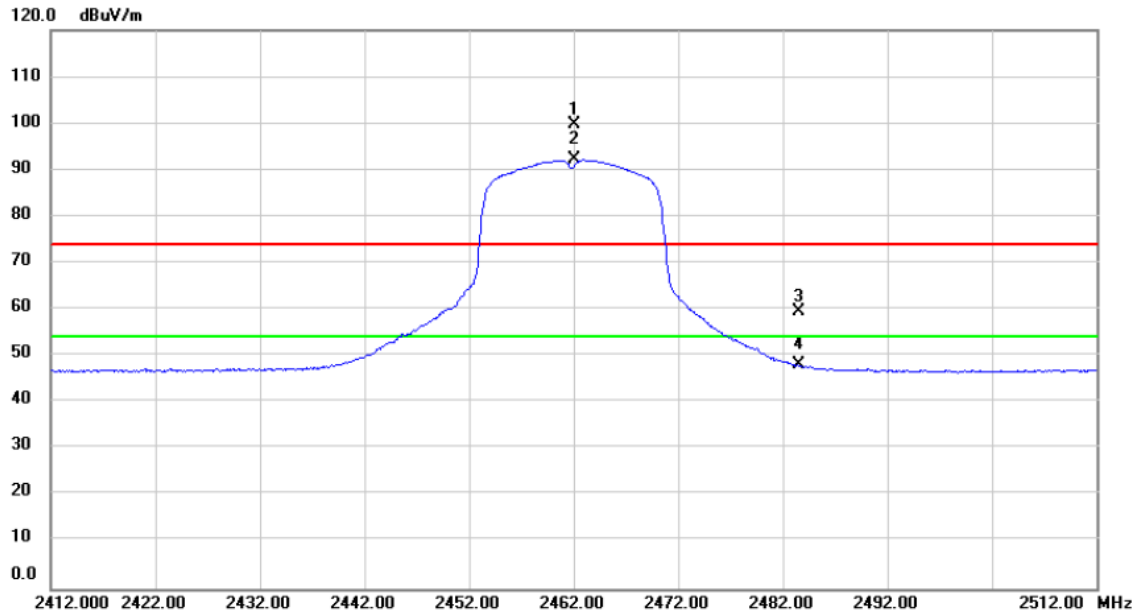
### Vertical



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.000	64.66	-11.22	53.44	74.00	-20.56	peak	
2 *	4924.000	52.50	-11.22	41.28	54.00	-12.72	AVG	

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

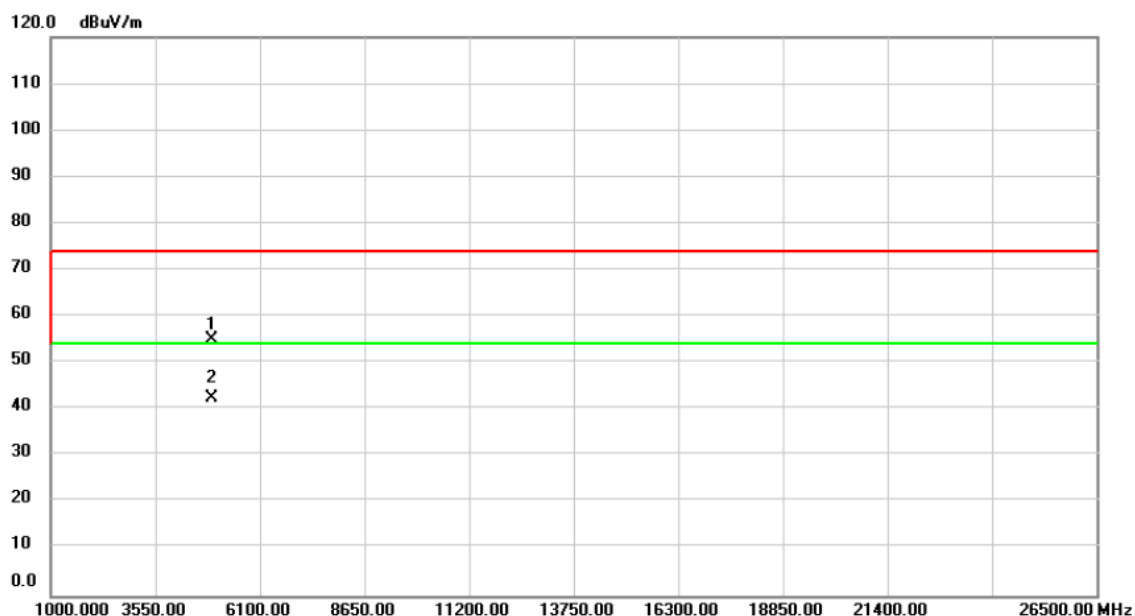
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2462.000	68.44	31.33	99.77	74.00	25.77	peak	No Limit
2	*	2462.000	60.86	31.33	92.19	54.00	38.19	AVG	No Limit
3		2483.517	28.01	31.41	59.42	74.00	-14.58	peak	
4		2483.517	16.73	31.41	48.14	54.00	-5.86	AVG	

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

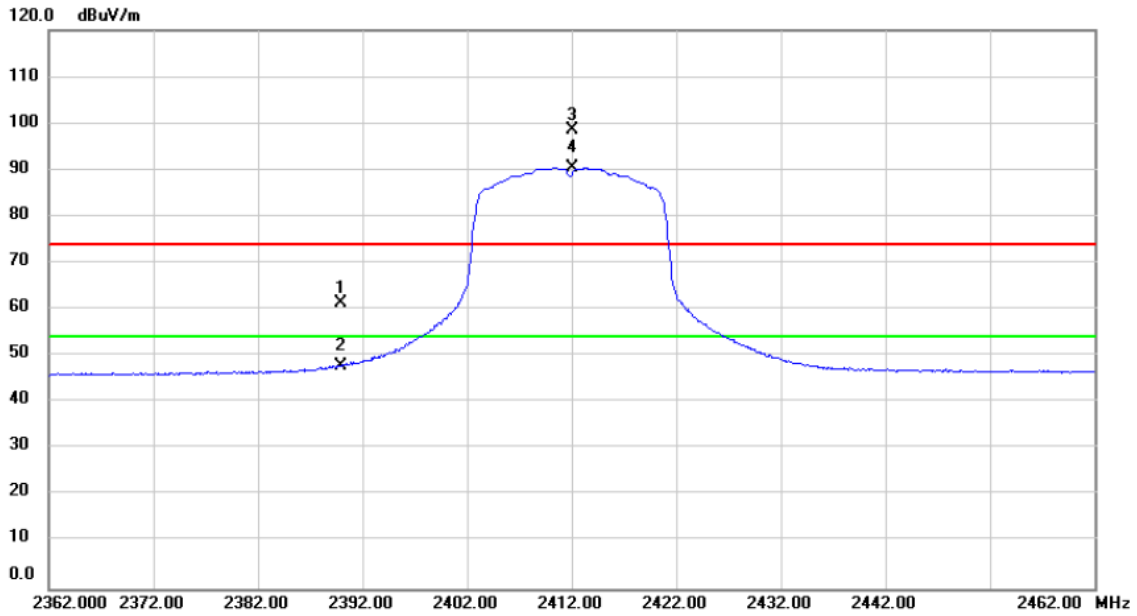
### Horizontal



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.000	66.20	-11.22	54.98	74.00	-19.02	peak	
2 *	4924.000	53.61	-11.22	42.39	54.00	-11.61	AVG	

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

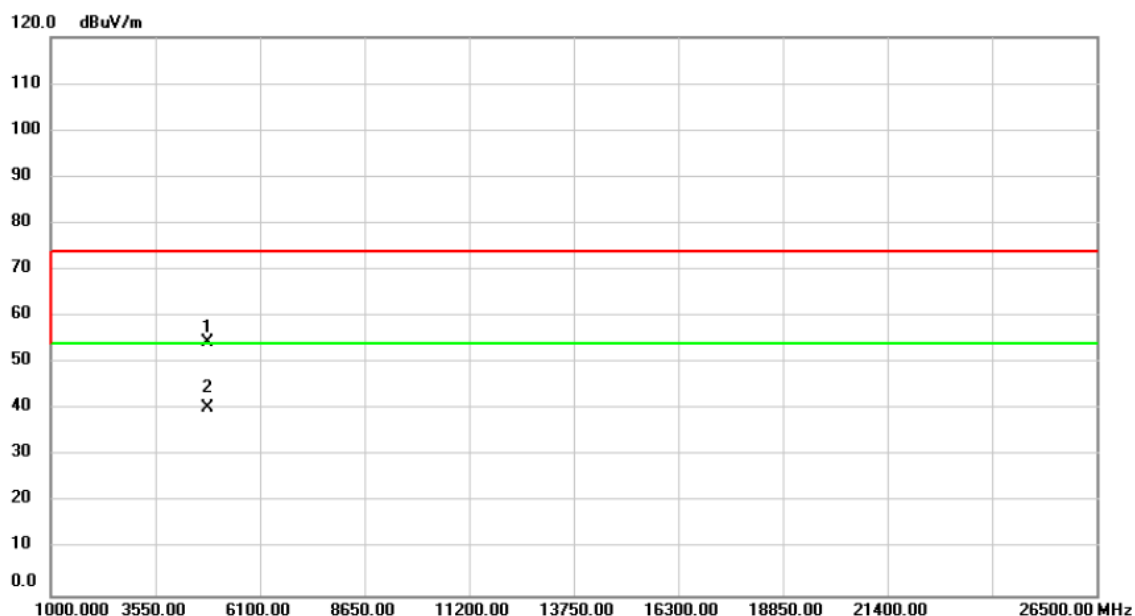
**Vertical**



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2389.916	30.18	31.06	61.24	74.00	-12.76	peak	
2		2389.916	16.90	31.06	47.96	54.00	-6.04	AVG	
3	X	2412.000	67.28	31.14	98.42	74.00	24.42	peak	No Limit
4	*	2412.000	59.27	31.14	90.41	54.00	36.41	AVG	No Limit

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

### Vertical

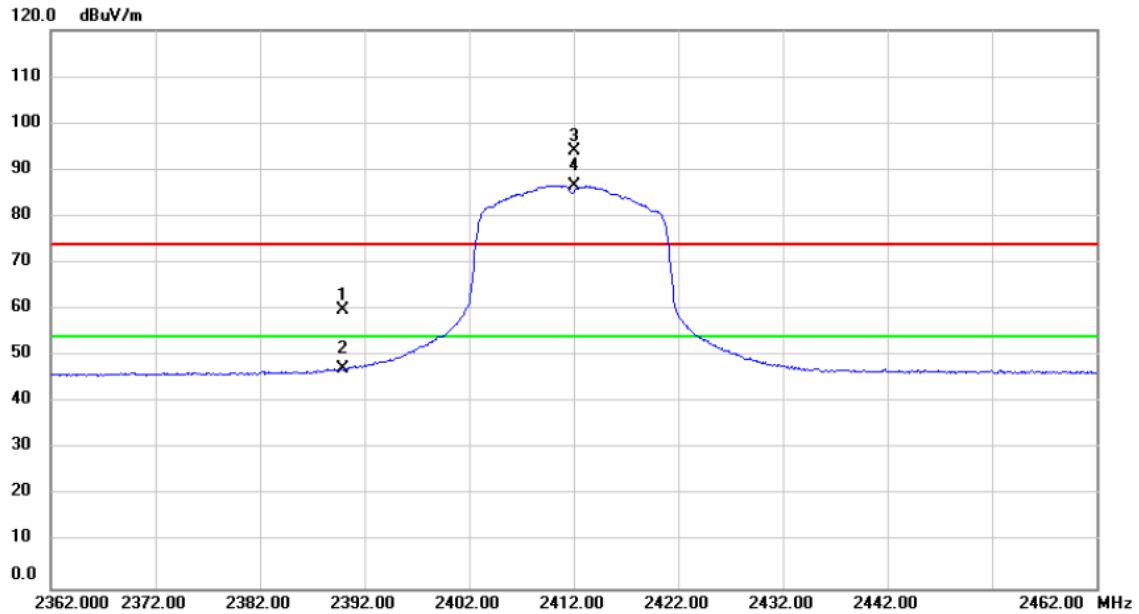


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.000	65.92	-11.37	54.55	74.00	-19.45	peak	
2 *	4824.000	51.86	-11.37	40.49	54.00	-13.51	AVG	



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

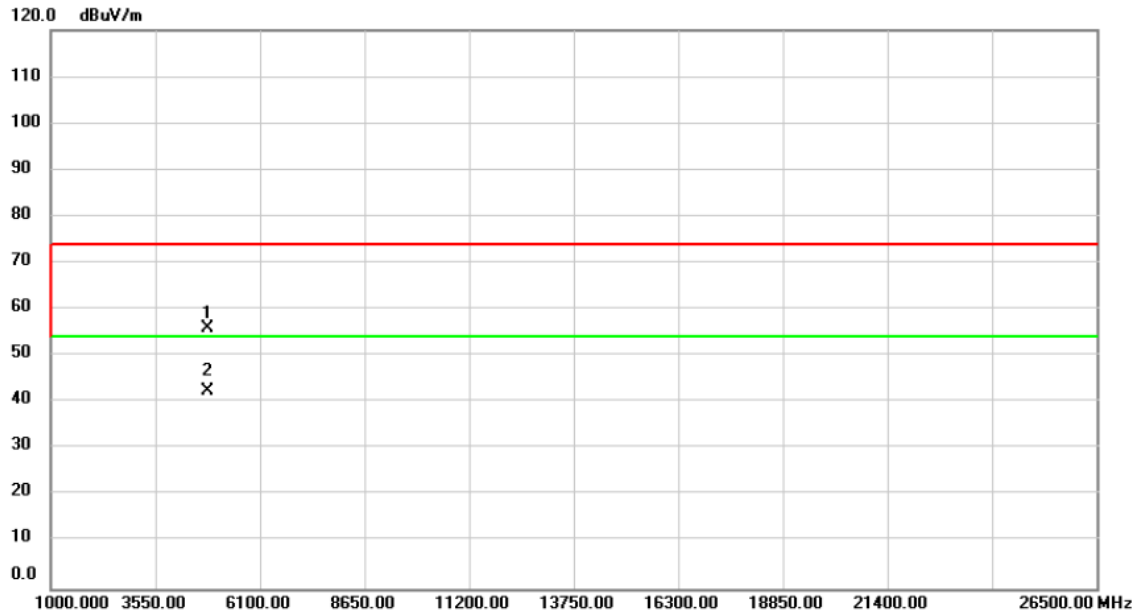
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2389.944	28.93	31.06	59.99	74.00	-14.01	peak	
2		2389.944	16.25	31.06	47.31	54.00	-6.69	AVG	
3	X	2412.000	62.84	31.14	93.98	74.00	19.98	peak	No Limit
4	*	2412.000	55.51	31.14	86.65	54.00	32.65	AVG	No Limit

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

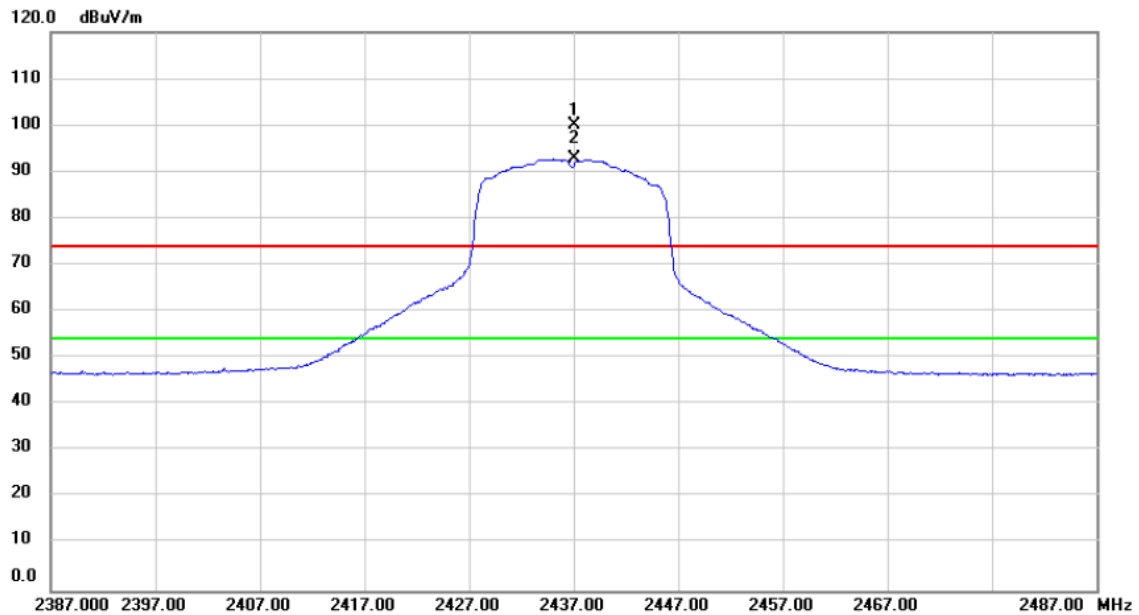
### Horizontal



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.000	67.46	-11.37	56.09	74.00	-17.91	peak	
2 *	4824.000	53.91	-11.37	42.54	54.00	-11.46	AVG	

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

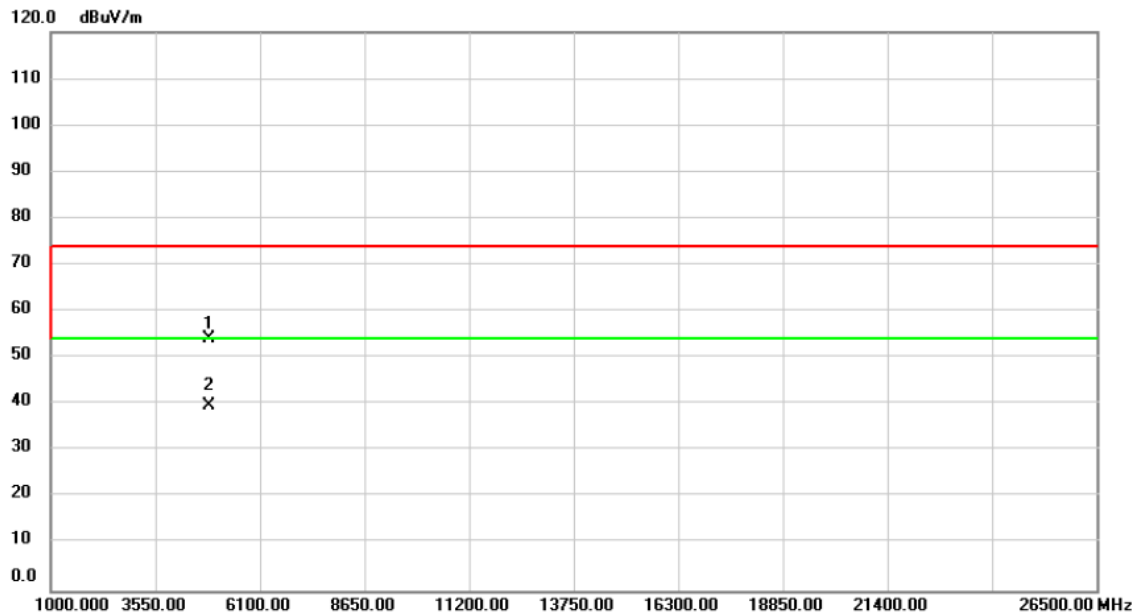
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2437.000	68.85	31.23	100.08	74.00	26.08	peak	No Limit
2	*	2437.000	61.49	31.23	92.72	54.00	38.72	A/VG	No Limit

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

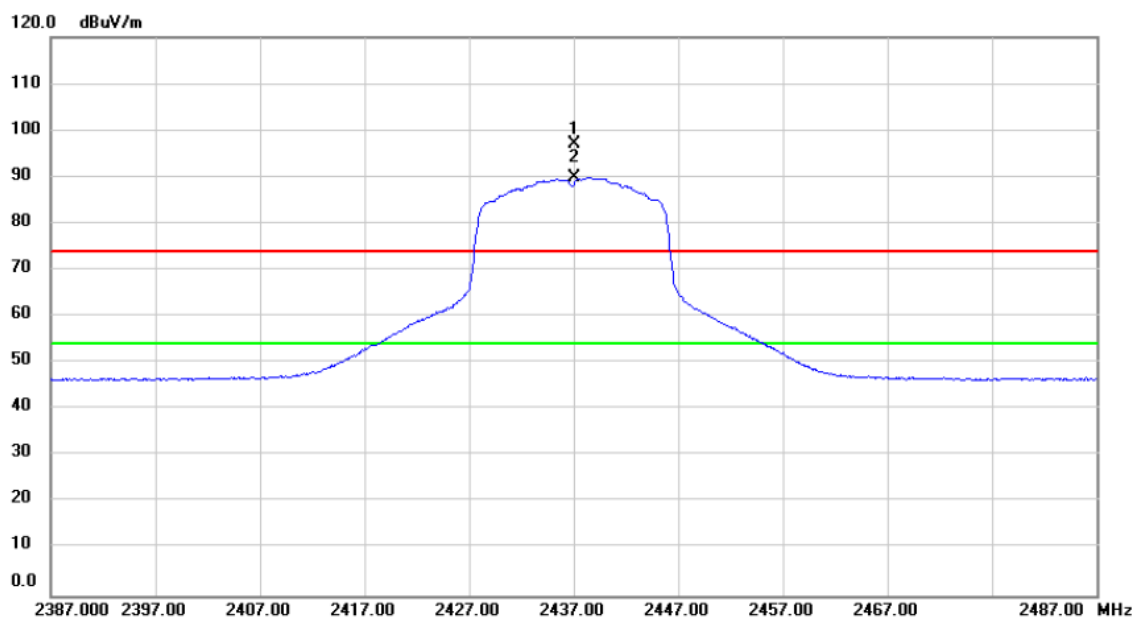
### Vertical



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4874.000	65.54	-11.29	54.25	74.00	-19.75	peak	
2 *	4874.000	50.99	-11.29	39.70	54.00	-14.30	AVG	

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

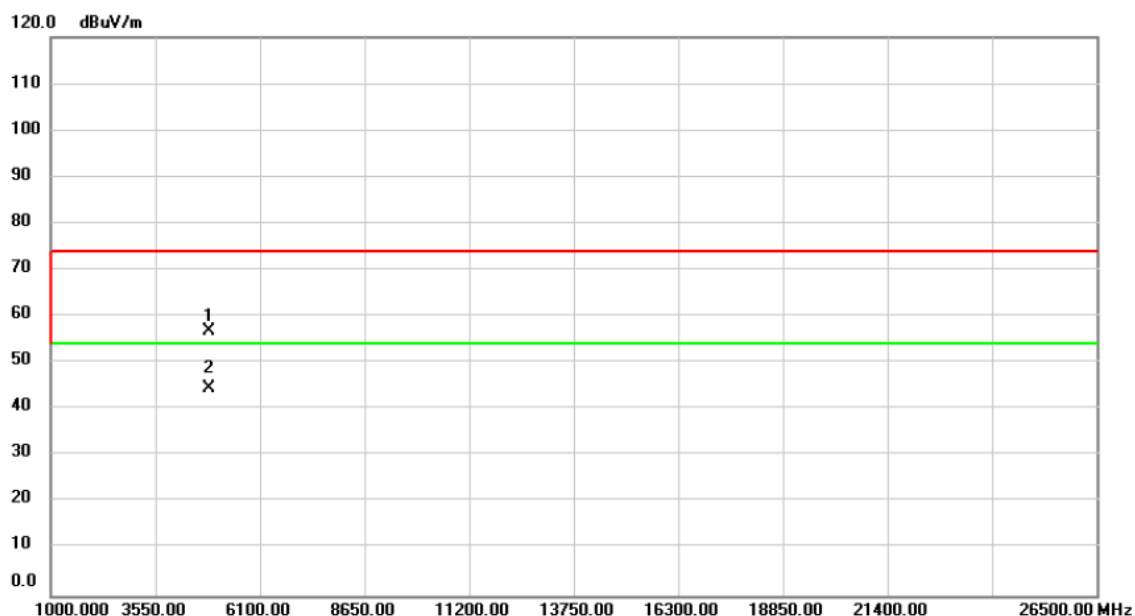
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2437.000	65.76	31.23	96.99	74.00	22.99	peak	No Limit
2	*	2437.000	58.56	31.23	89.79	54.00	35.79	AVG	No Limit

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

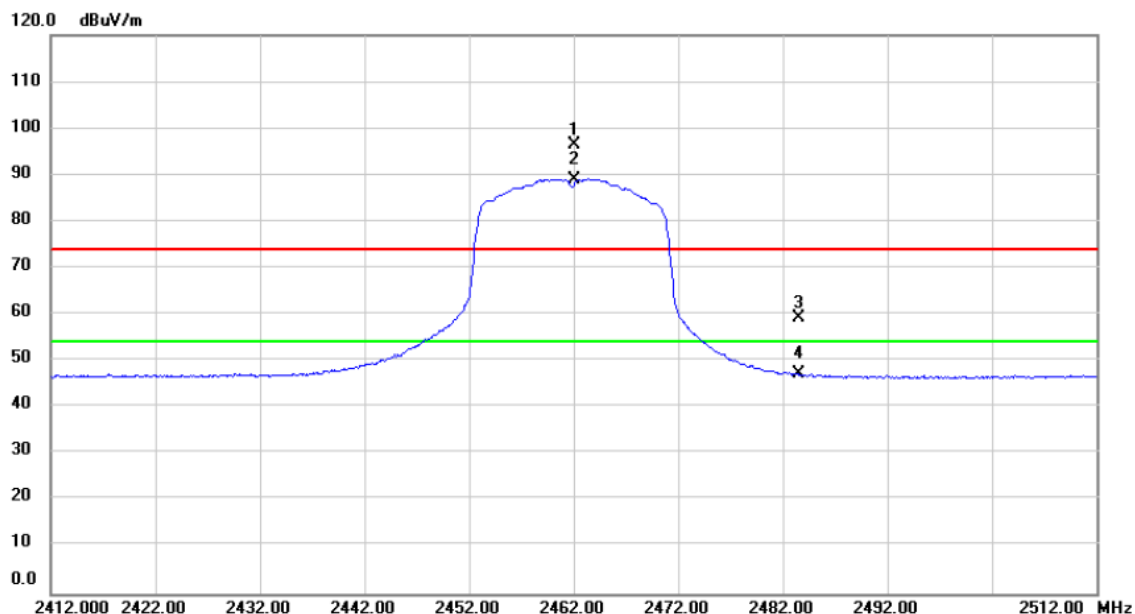
### Horizontal



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4874.000	68.26	-11.29	56.97	74.00	-17.03	peak	
2 *	4874.000	55.79	-11.29	44.50	54.00	-9.50	AVG	

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

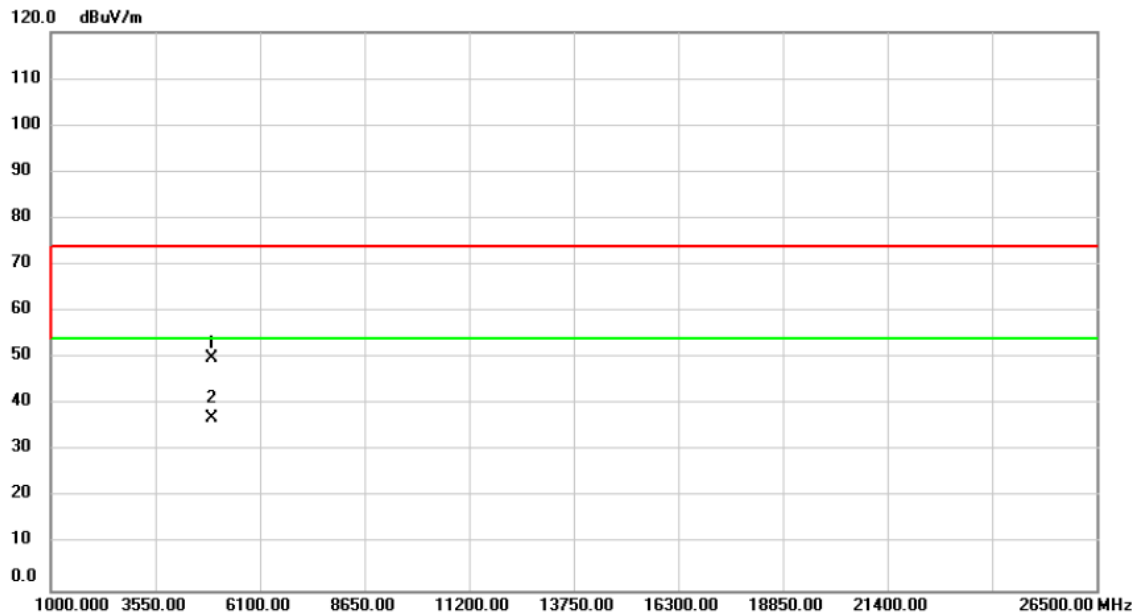
### Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2462.000	65.09	31.33	96.42	74.00	22.42	peak	No Limit
2	*	2462.000	57.77	31.33	89.10	54.00	35.10	AVG	No Limit
3		2483.582	27.95	31.41	59.36	74.00	-14.64	peak	
4		2483.582	15.75	31.41	47.16	54.00	-6.84	AVG	

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

### Vertical

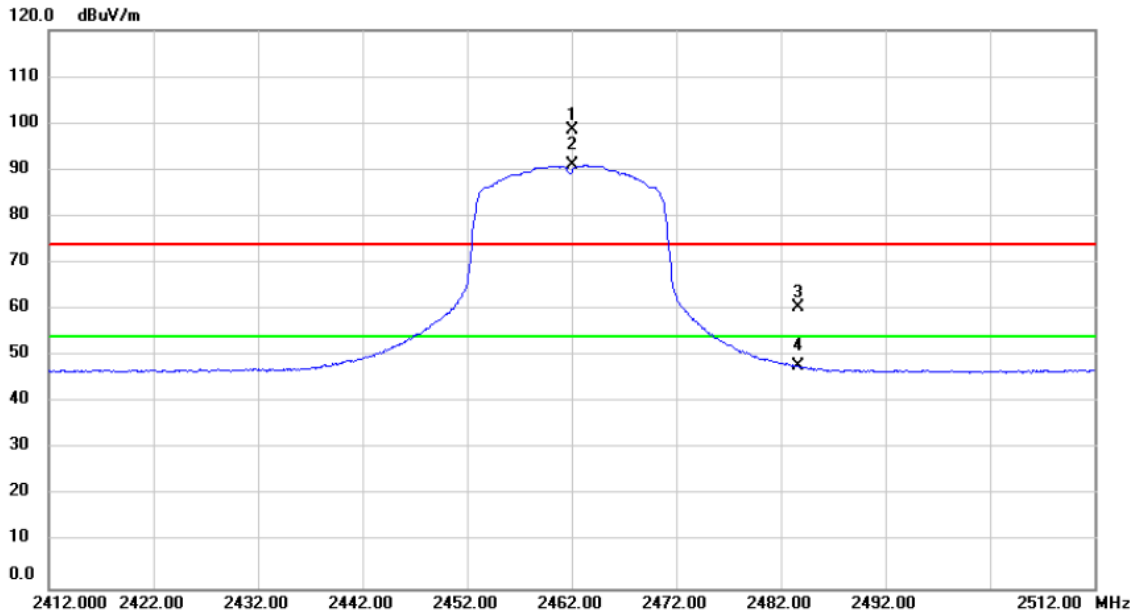


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		4922.540	61.03	-11.22	49.81	74.00	-24.19	peak	
2	*	4922.540	48.27	-11.22	37.05	54.00	-16.95	AVG	



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

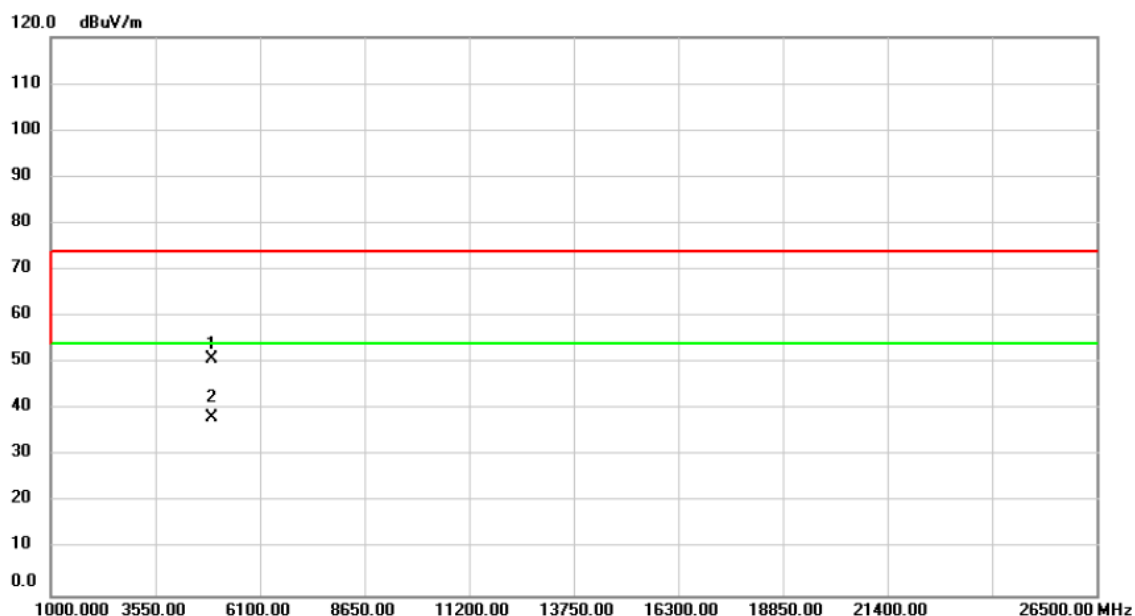
### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	X	2462.000	67.15	31.33	98.48	74.00	24.48	peak	No Limit
2	*	2462.000	59.69	31.33	91.02	54.00	37.02	AVG	No Limit
3		2483.665	28.90	31.41	60.31	74.00	-13.69	peak	
4		2483.665	16.45	31.41	47.86	54.00	-6.14	AVG	

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

### Horizontal



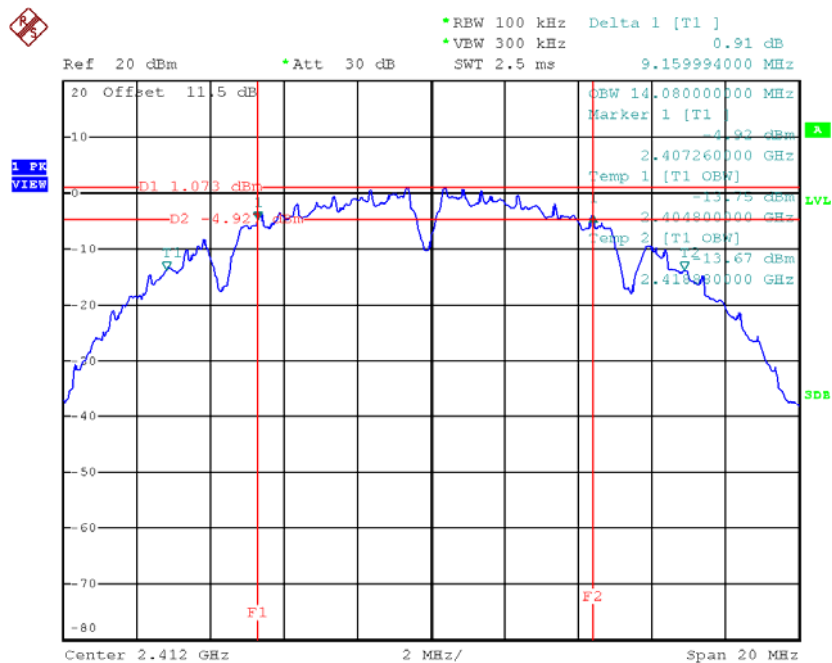
No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.000	62.12	-11.22	50.90	74.00	-23.10	peak	
2 *	4924.000	49.33	-11.22	38.11	54.00	-15.89	AVG	

## ATTACHMENT E - BANDWIDTH

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

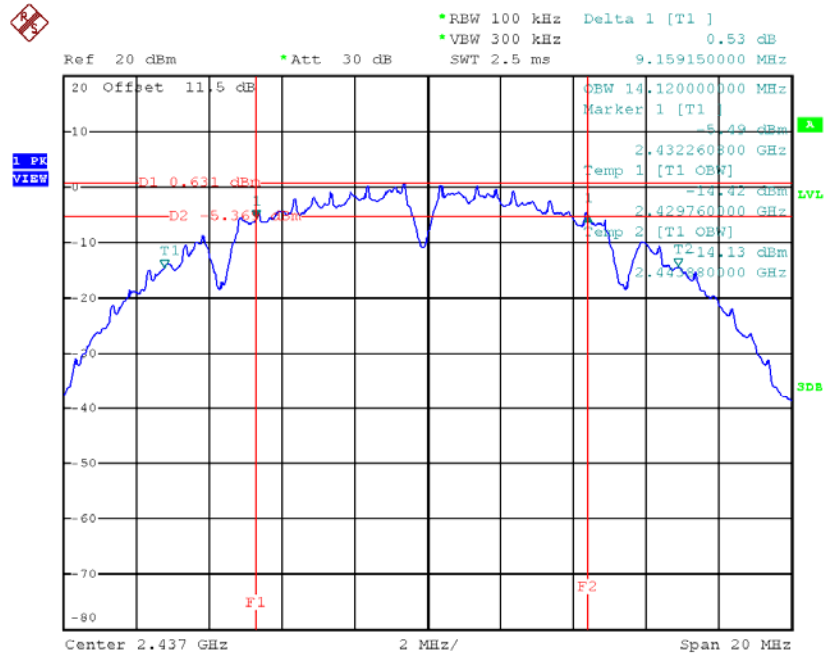
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	9.16	14.08	500	Complies
2437	9.16	14.12	500	Complies
2462	9.16	14.04	500	Complies

TX CH01



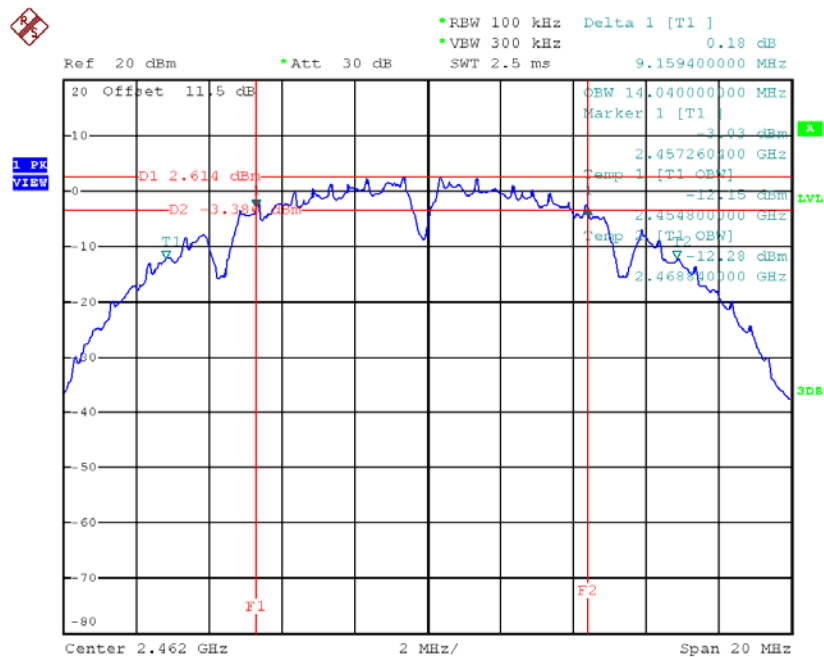
Date: 27.MAR.2017 12:04:19

### TX CH06



Date: 27.MAR.2017 12:08:02

### TX CH11

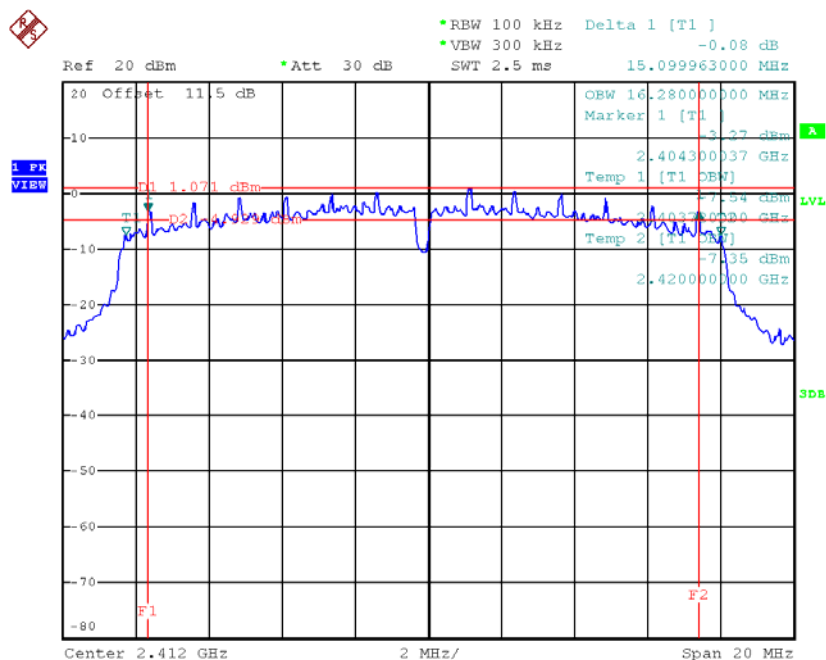


Date: 27.MAR.2017 12:13:37

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

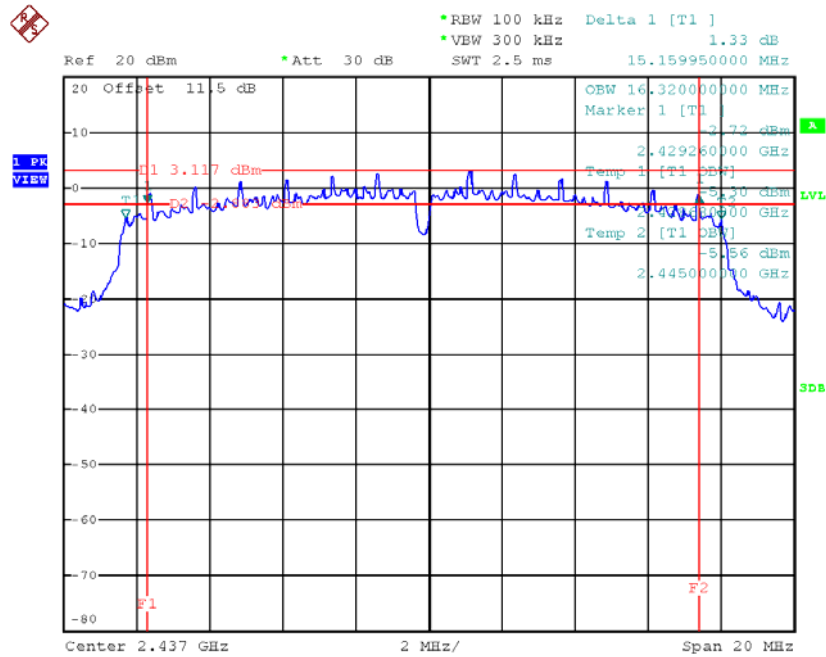
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	15.10	16.28	500	Complies
2437	15.16	16.32	500	Complies
2462	15.17	16.28	500	Complies

TX CH01



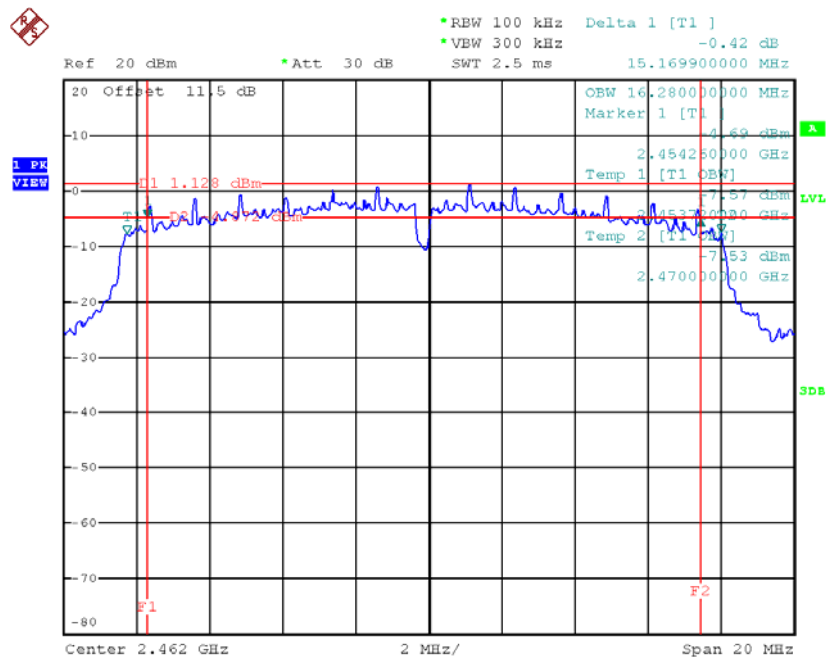
Date: 27.MAR.2017 12:18:56

### TX CH06



Date: 27.MAR.2017 12:23:32

### TX CH11

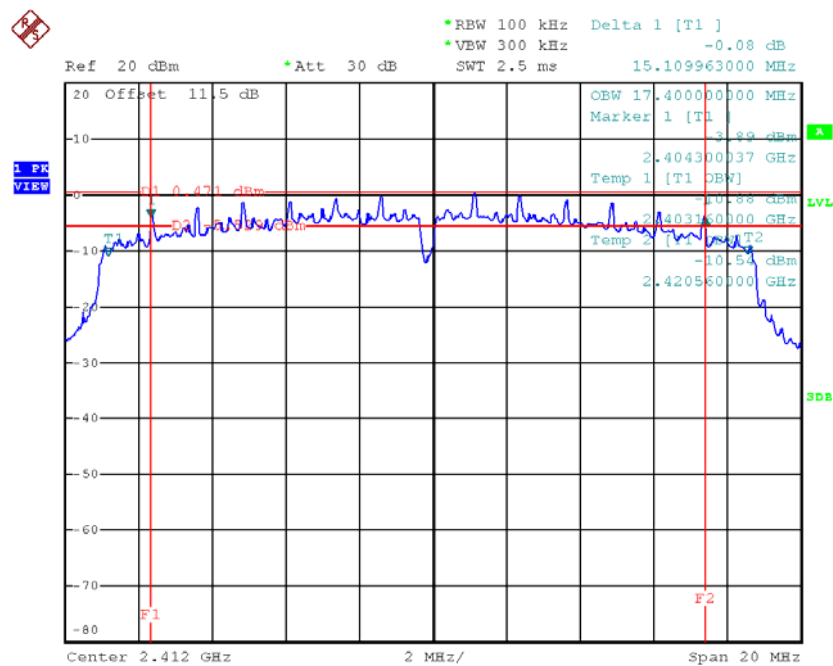


Date: 27.MAR.2017 12:30:12

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	17.40	500	Complies
2437	15.11	17.44	500	Complies
2462	15.17	17.44	500	Complies

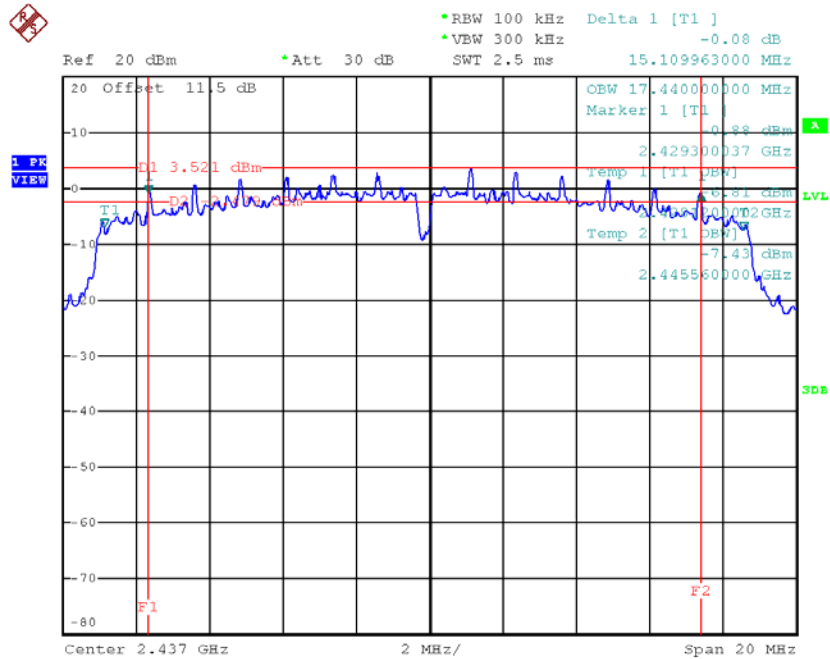
TX CH01



Date: 27.MAR.2017 12:43:24

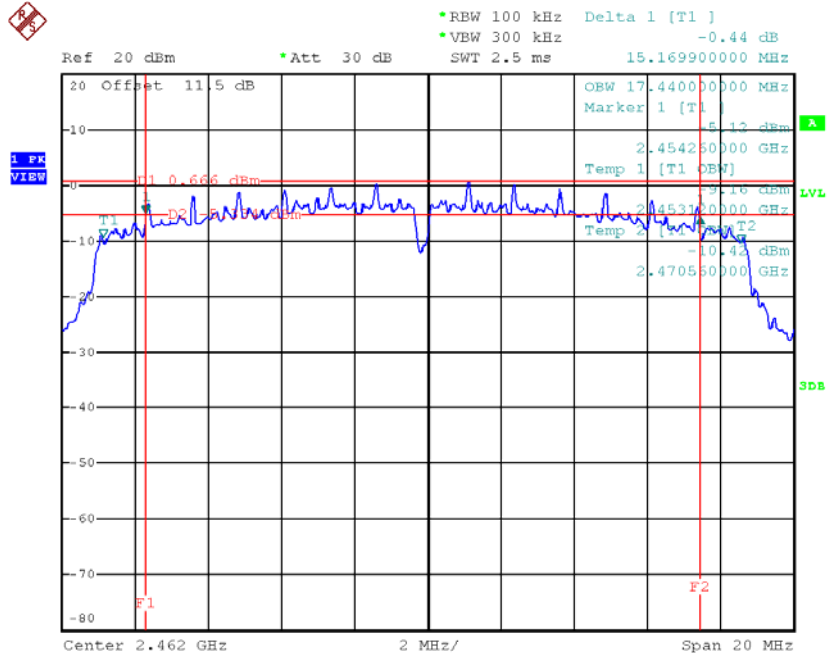


## TX CH06



Date: 27.MAR.2017 12:49:44

## TX CH11



Date: 27.MAR.2017 13:01:34

## 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	13.81	0.0240	30.00	1.0000	Complies
2437	14.02	0.0252	30.00	1.0000	Complies
2462	15.39	0.0346	30.00	1.0000	Complies

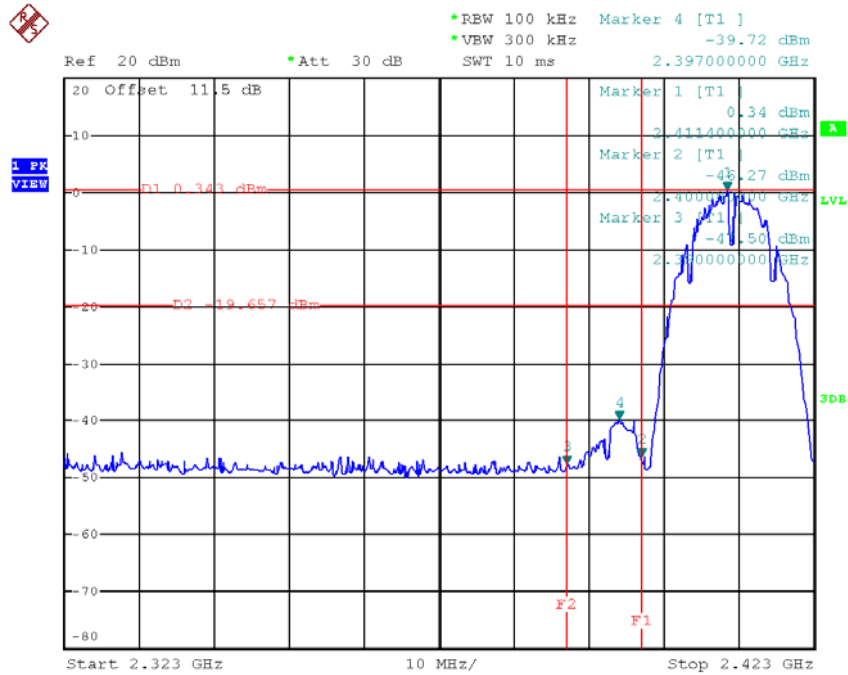
Test Mode :TX G Mode_CH01/06/11					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	19.03	0.0800	30.00	1.0000	Complies
2437	19.16	0.0824	30.00	1.0000	Complies
2462	18.76	0.0752	30.00	1.0000	Complies

Test Mode :TX N20 Mode_CH01/06/11					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	18.78	0.0755	30.00	1.0000	Complies
2437	19.24	0.0839	30.00	1.0000	Complies
2462	18.57	0.0719	30.00	1.0000	Complies

## ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION

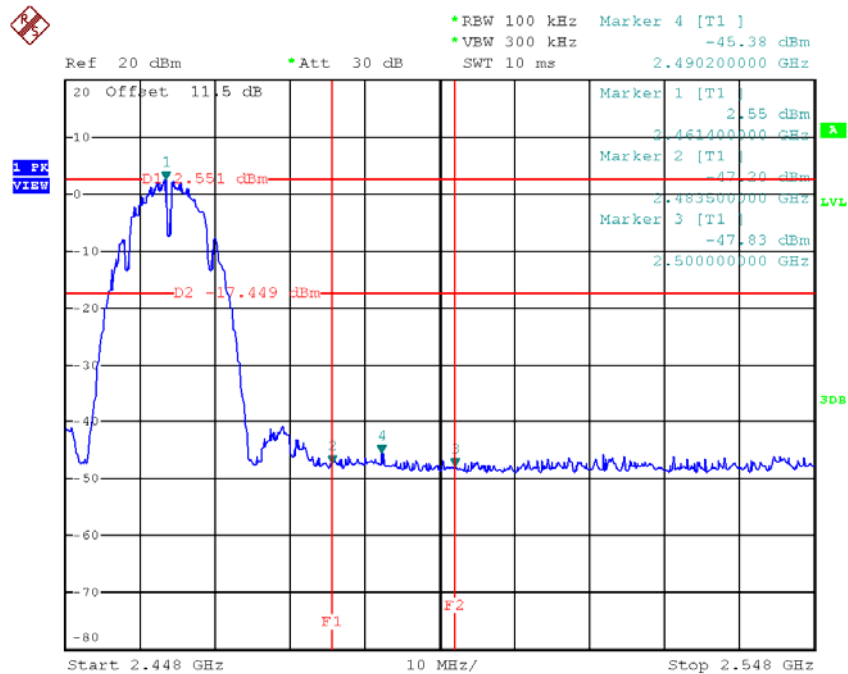
Test Mode :	TX B Mode
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### TX B mode CH01



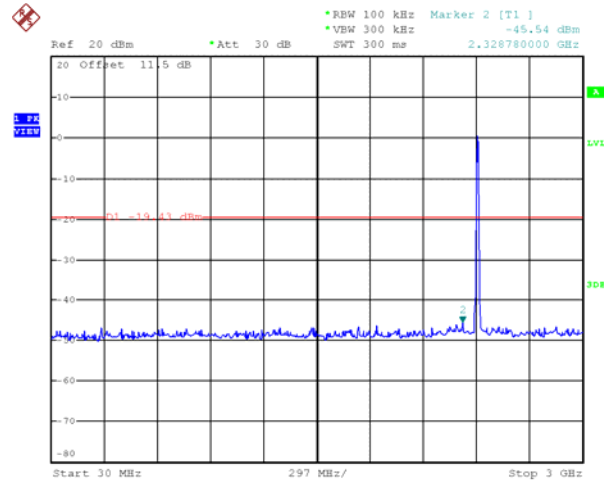
Date: 27.MAR.2017 12:05:32

### TX B mode CH11

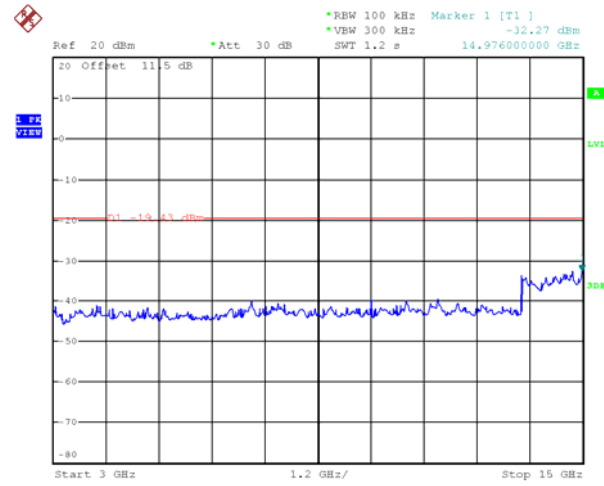


Date: 27.MAR.2017 12:14:51

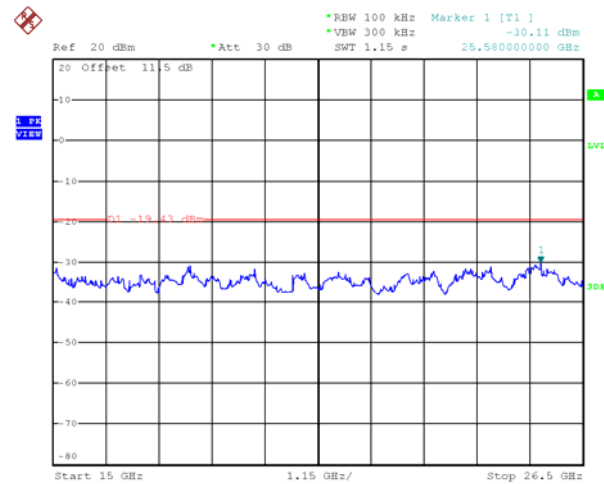
### TX B mode CH01 (10 Harmonic of the frequency)



Date: 27.MAR.2017 12:04:42

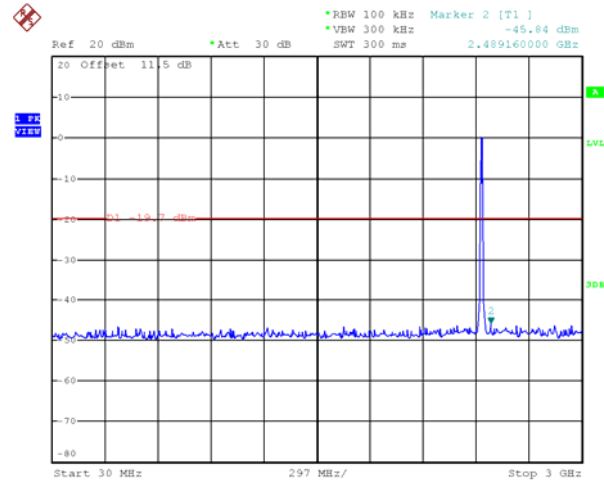


Date: 27.MAR.2017 12:04:59

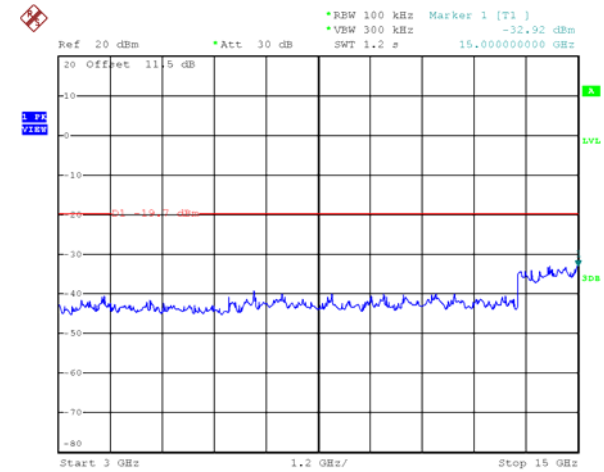


Date: 27.MAR.2017 12:05:16

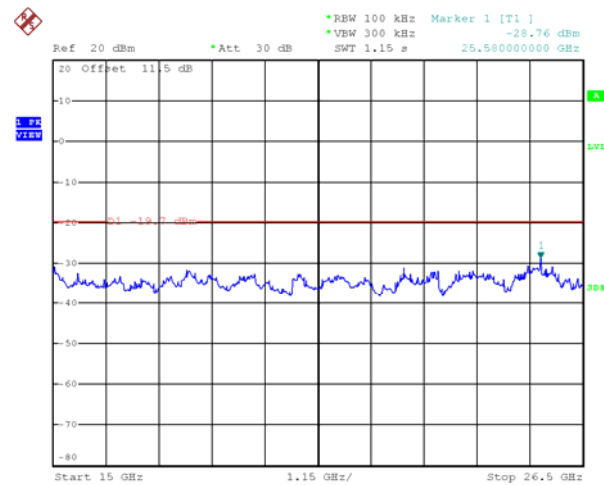
### TX B mode CH06 (10 Harmonic of the frequency)



Date: 27.MAR.2017 12:08:25



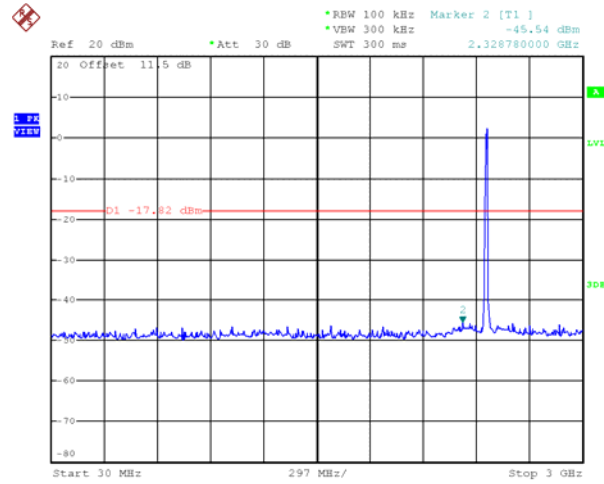
Date: 27.MAR.2017 12:08:42



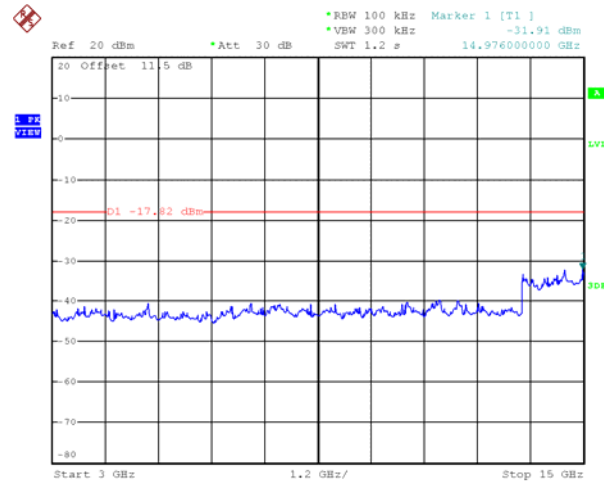
Date: 27.MAR.2017 12:08:59



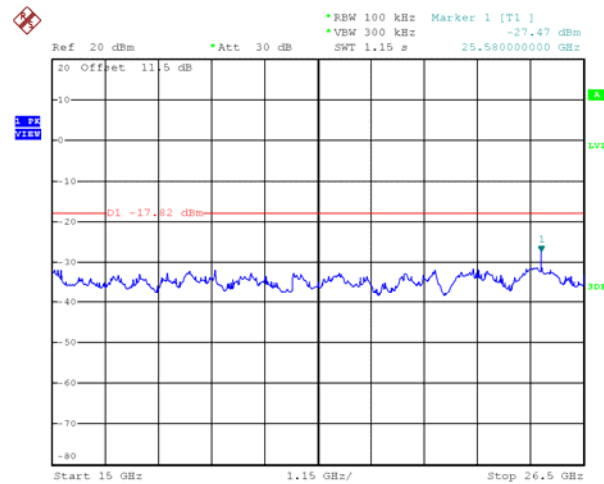
### TX B mode CH11 (10 Harmonic of the frequency)



Date: 27.MAR.2017 12:14:00



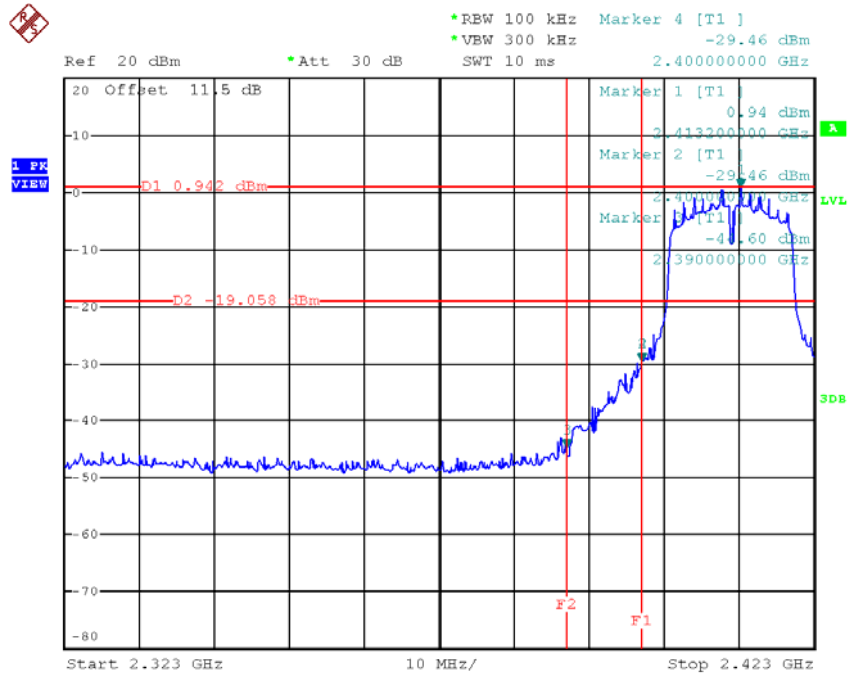
Date: 27.MAR.2017 12:14:17



Date: 27.MAR.2017 12:14:34

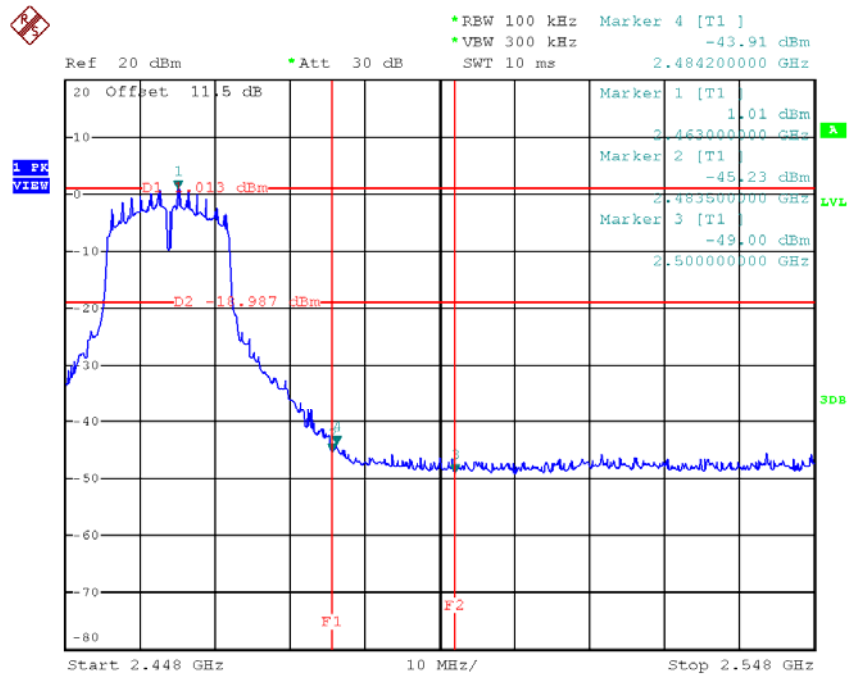
Test Mode :	TX G Mode
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### TX G mode CH01



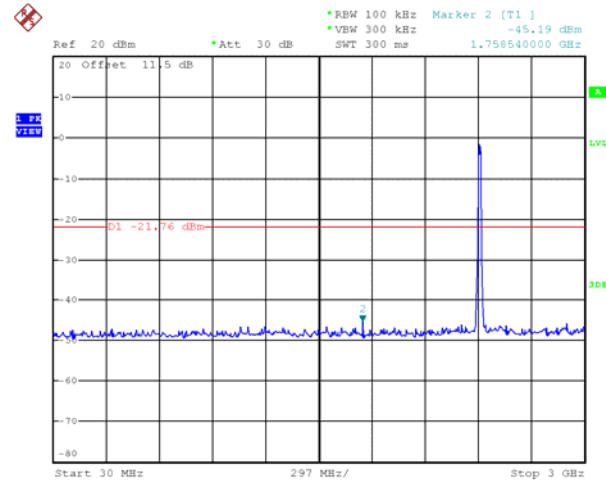
Date: 27.MAR.2017 12:21:07

### TX G mode CH11

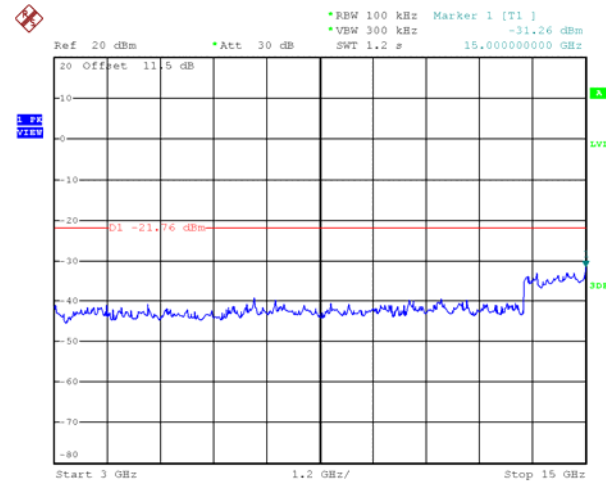


Date: 27.MAR.2017 12:32:06

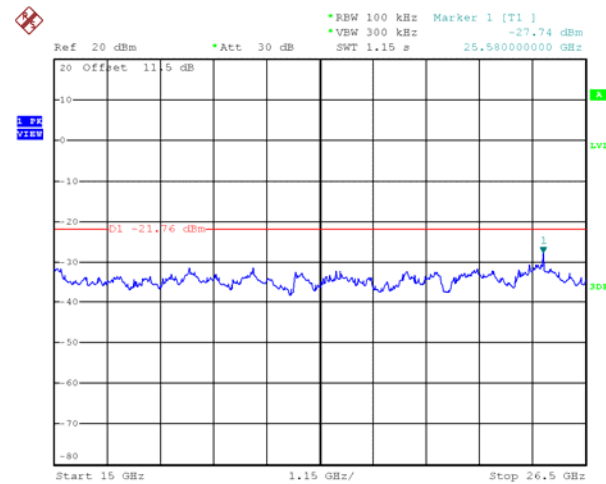
# TX G mode CH01 (10 Harmonic of the frequency)



Date: 27.MAR.2017 12:19:29

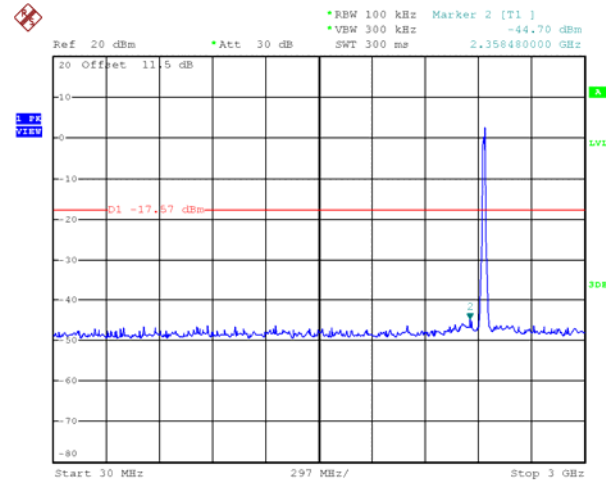


Date: 27.MAR.2017 12:19:56

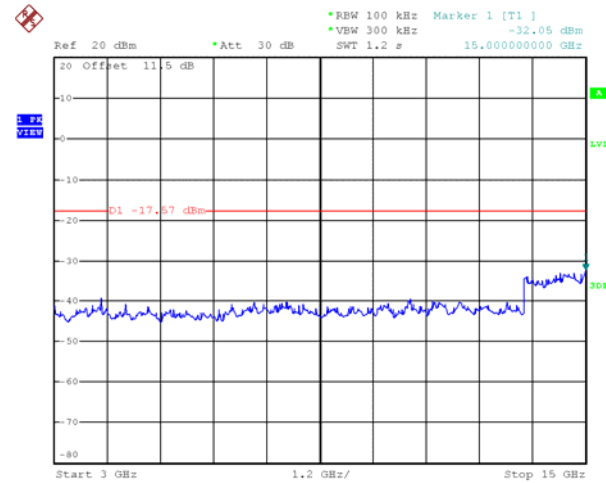


Date: 27.MAR.2017 12:20:23

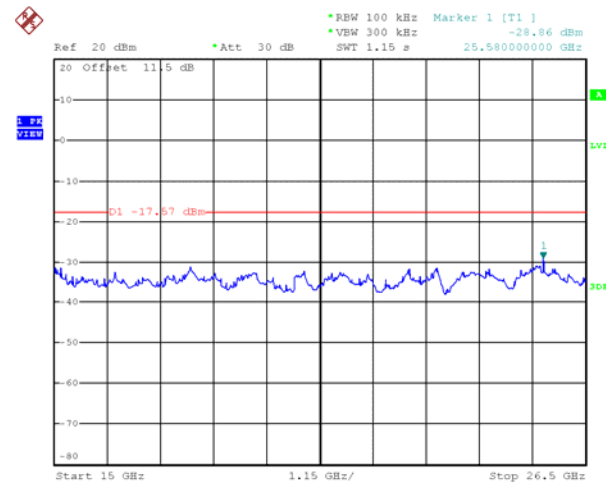
# TX G mode CH06 (10 Harmonic of the frequency)



Date: 27.MAR.2017 12:24:06

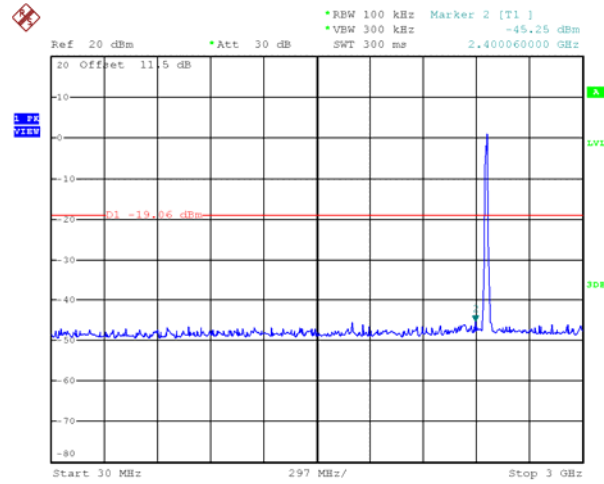


Date: 27.MAR.2017 12:24:33

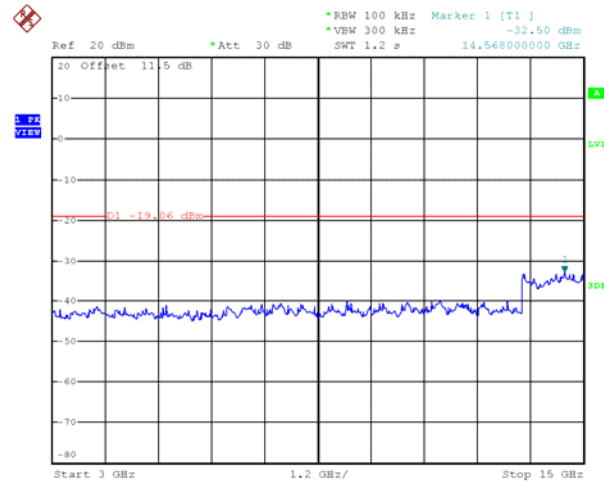


Date: 27.MAR.2017 12:25:00

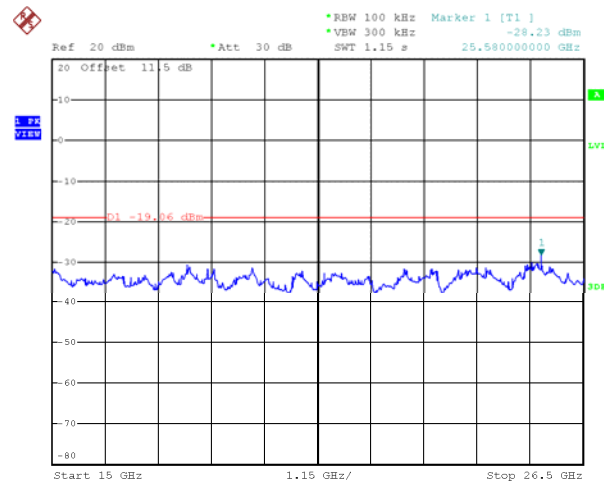
### TX G mode CH11 (10 Harmonic of the frequency)



Date: 27.MAR.2017 12:30:45



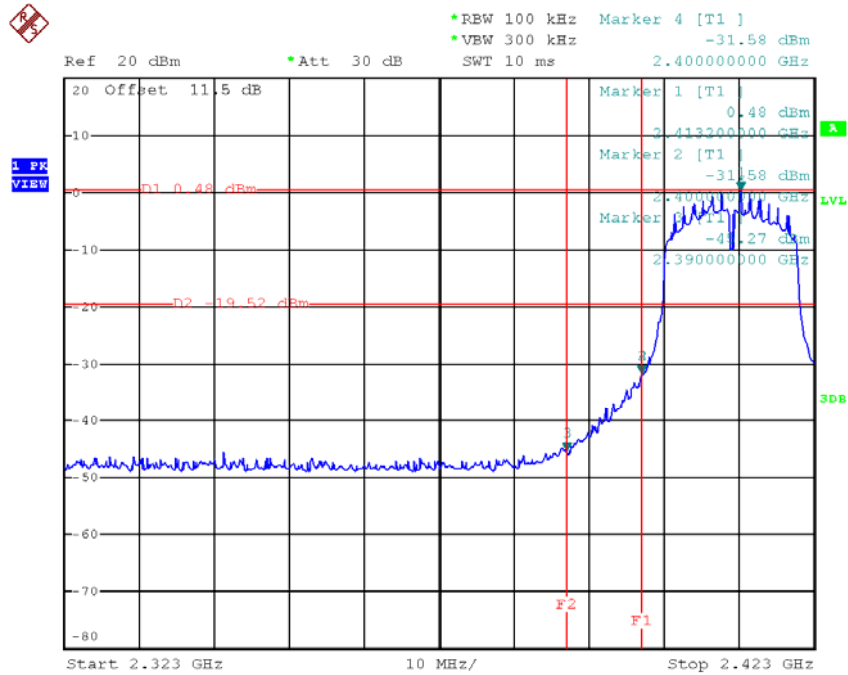
Date: 27.MAR.2017 12:31:12



Date: 27.MAR.2017 12:31:39

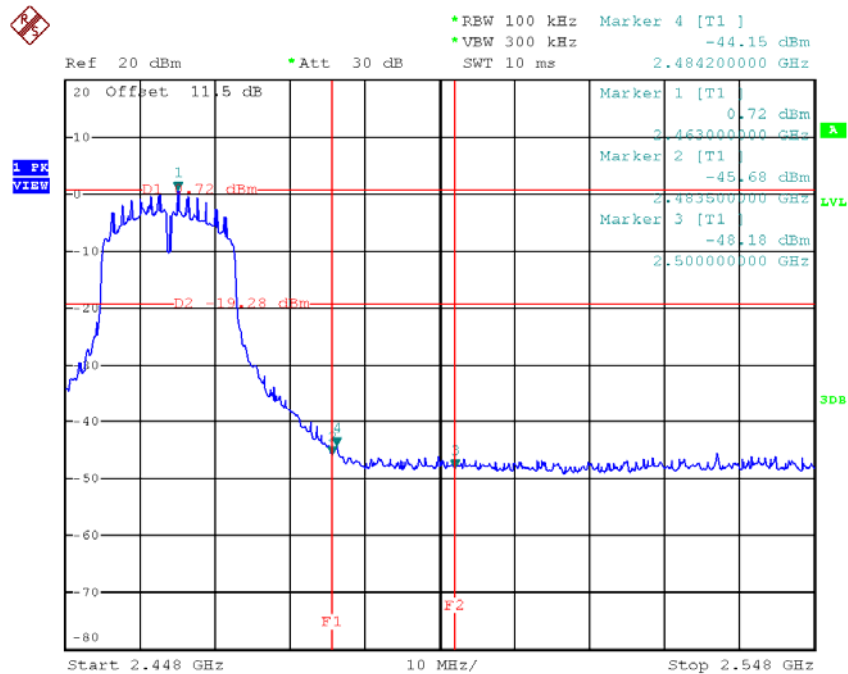
Test Mode :	TX N-20M Mode
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### TX N-20M mode CH01



Date: 27.MAR.2017 12:45:19

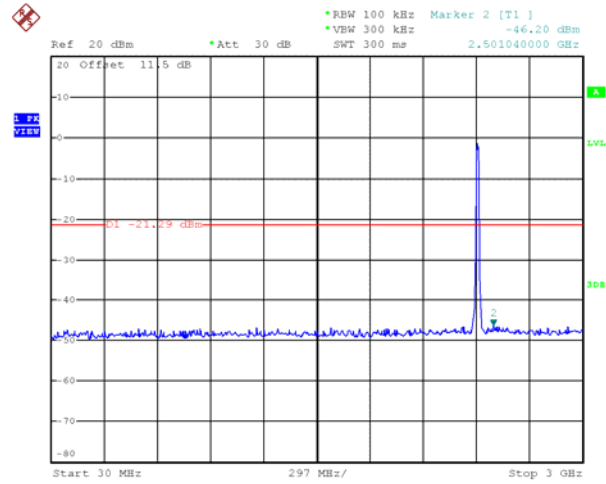
### TX N-20M mode CH11



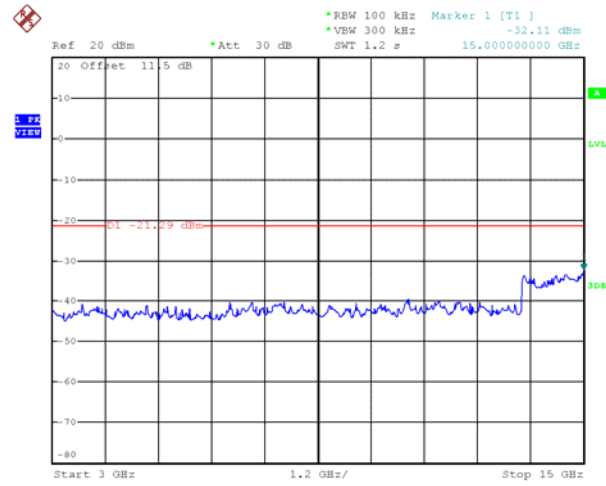
Date: 27.MAR.2017 13:03:28



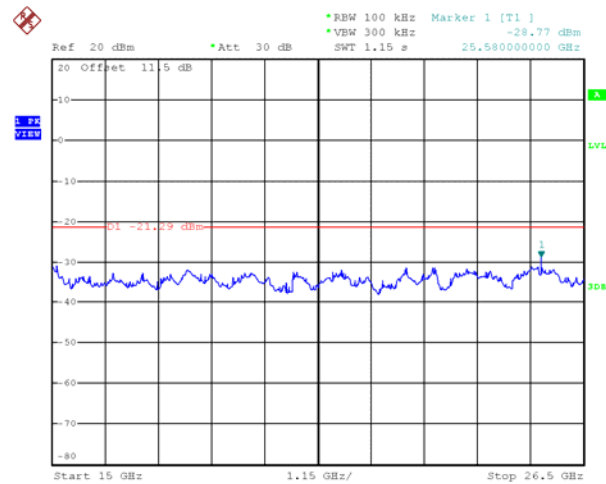
## TX N-20M mode CH01 (10 Harmonic of the frequency)



Date: 27.MAR.2017 12:43:58

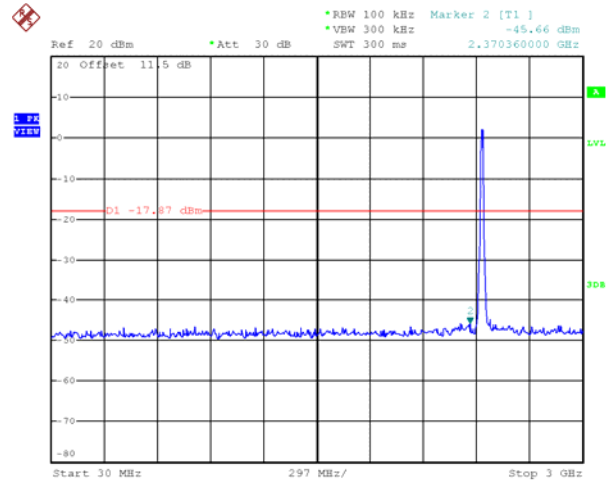


Date: 27.MAR.2017 12:44:26

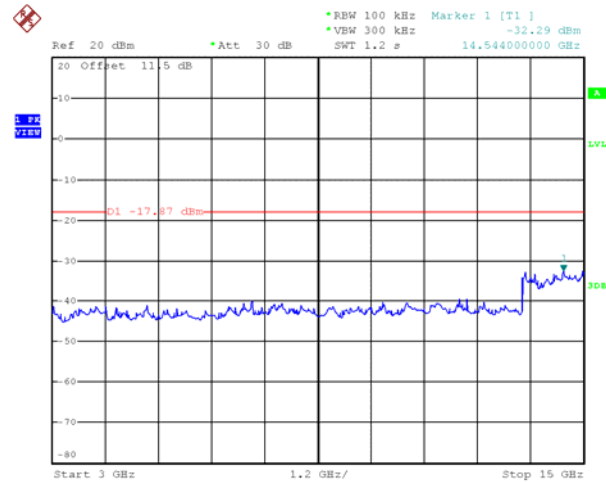


Date: 27.MAR.2017 12:44:53

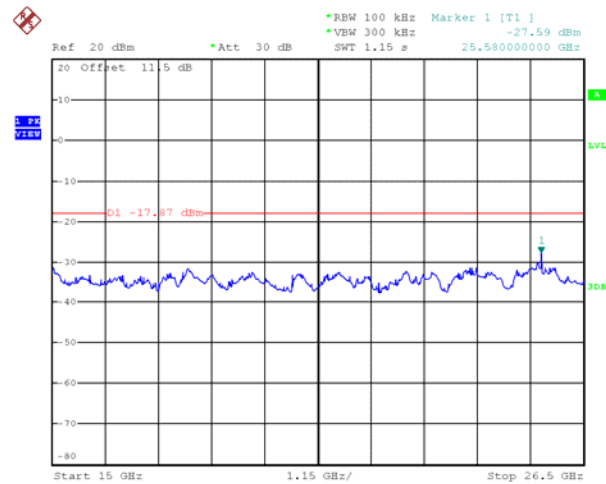
## TX N-20M mode CH06 (10 Harmonic of the frequency)



Date: 27.MAR.2017 12:50:18

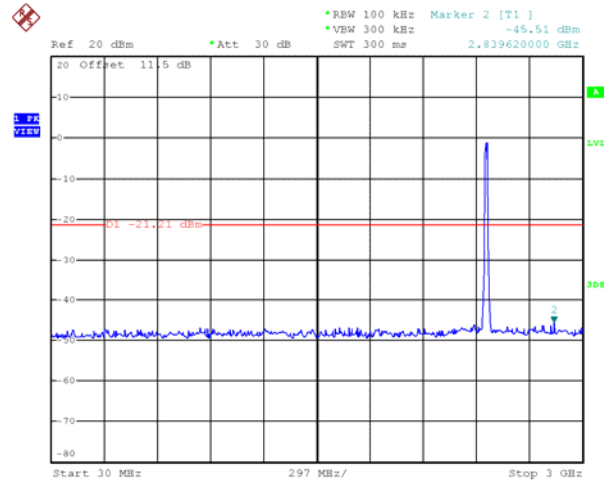


Date: 27.MAR.2017 12:50:45

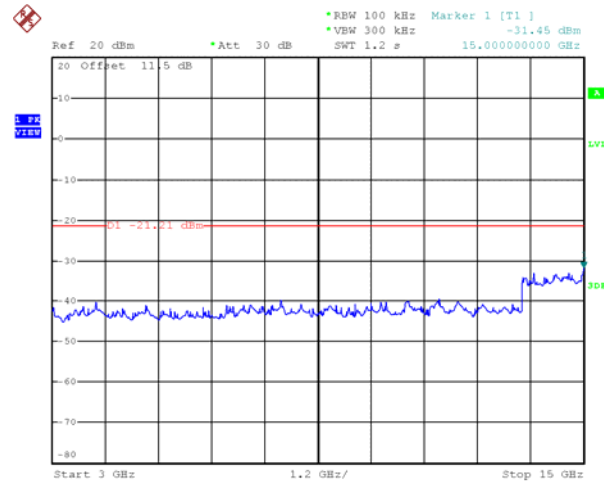


Date: 27.MAR.2017 12:51:12

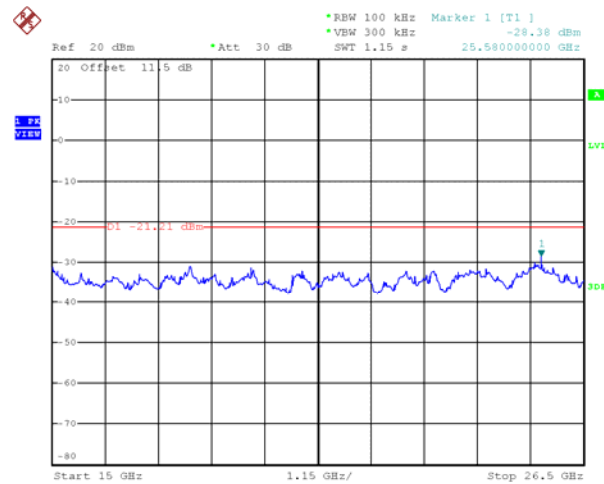
## TX N-20M mode CH11 (10 Harmonic of the frequency)



Date: 27.MAR.2017 13:02:08



Date: 27.MAR.2017 13:02:34



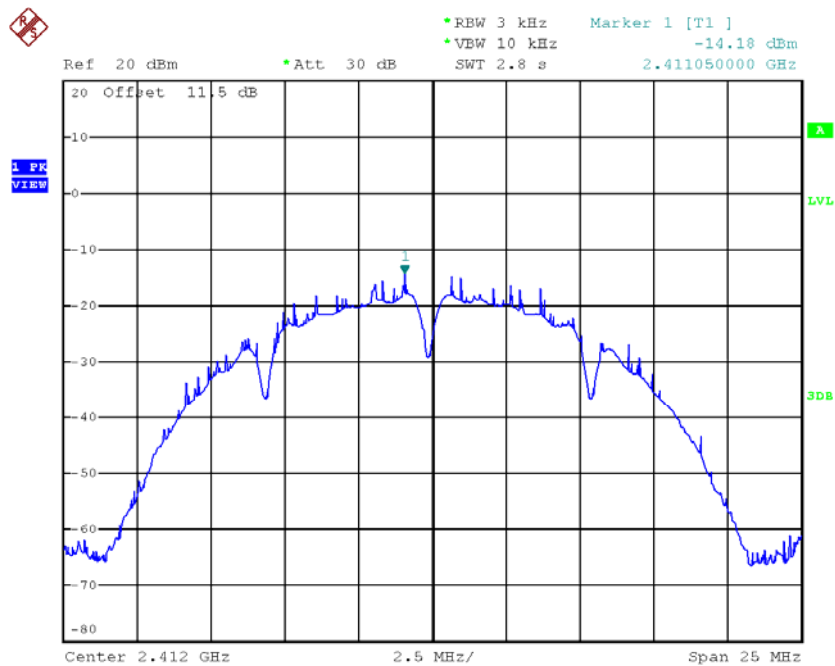
Date: 27.MAR.2017 13:03:01

## ATTACHMENT H - POWER SPECTRAL DENSITY

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

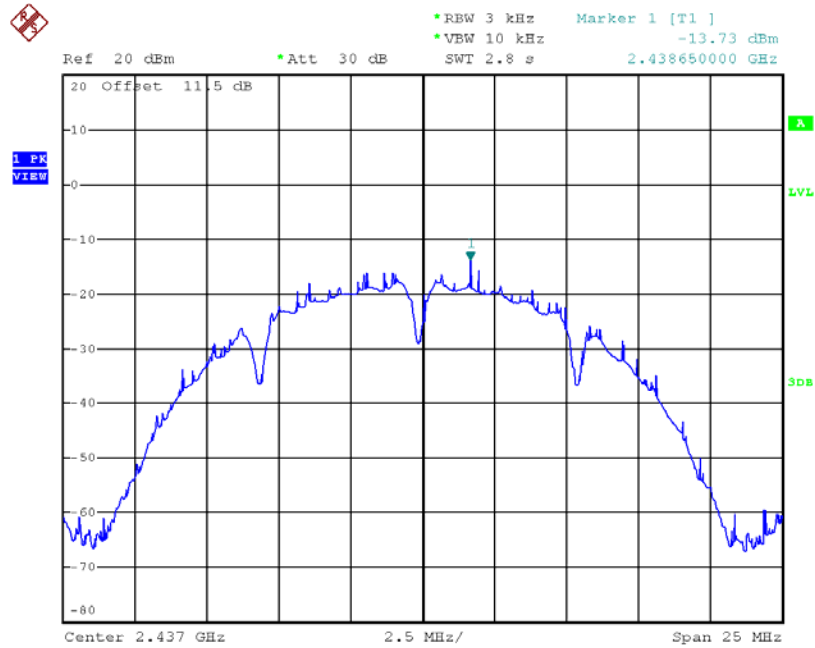
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-14.18	0.04	8.00	Complies
2437	-13.73	0.04	8.00	Complies
2462	-11.95	0.06	8.00	Complies

TX CH01



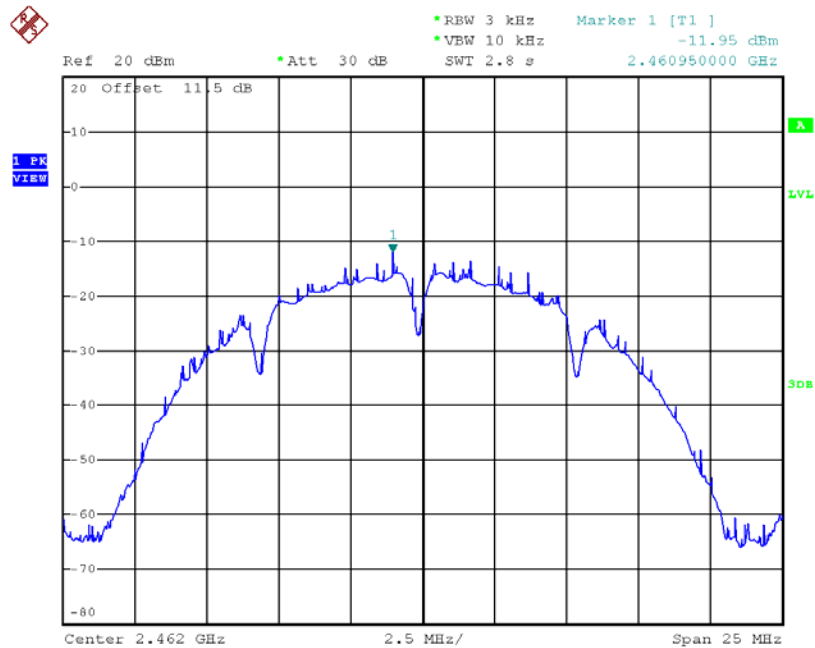
Date: 27.MAR.2017 12:05:51

### TX CH06



Date: 27.MAR.2017 12:09:17

### TX CH11

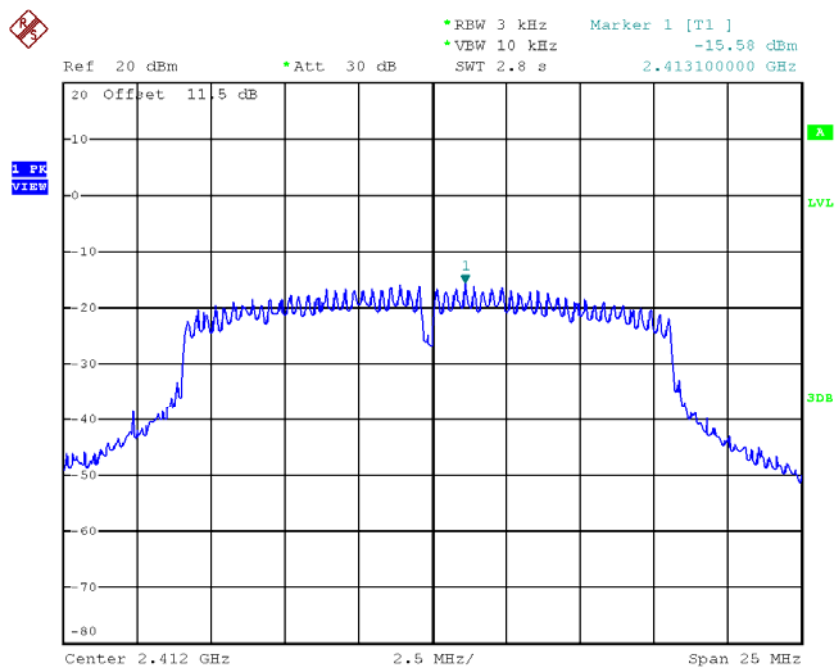


Date: 27.MAR.2017 12:15:09

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

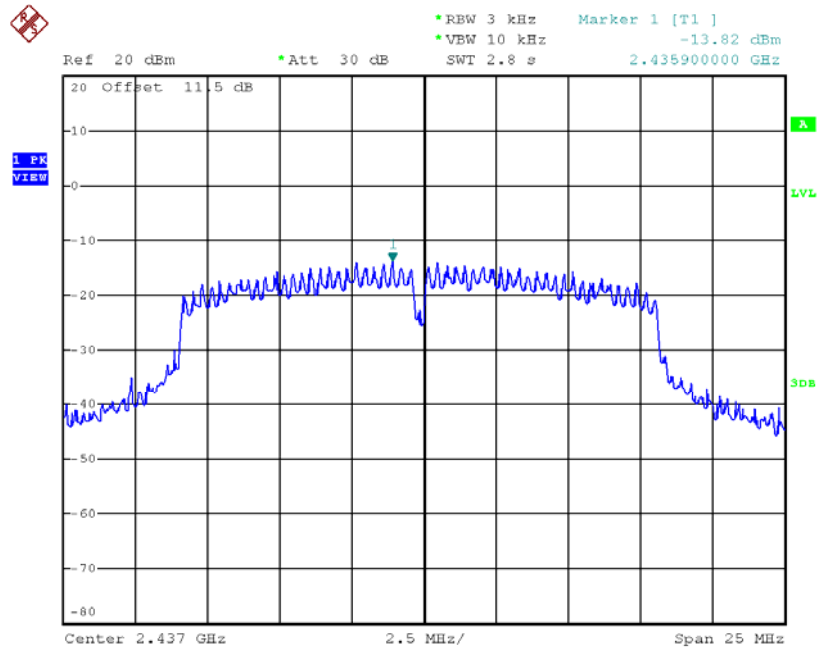
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-15.58	0.03	8.00	Complies
2437	-13.82	0.04	8.00	Complies
2462	-15.63	0.03	8.00	Complies

**TX CH01**



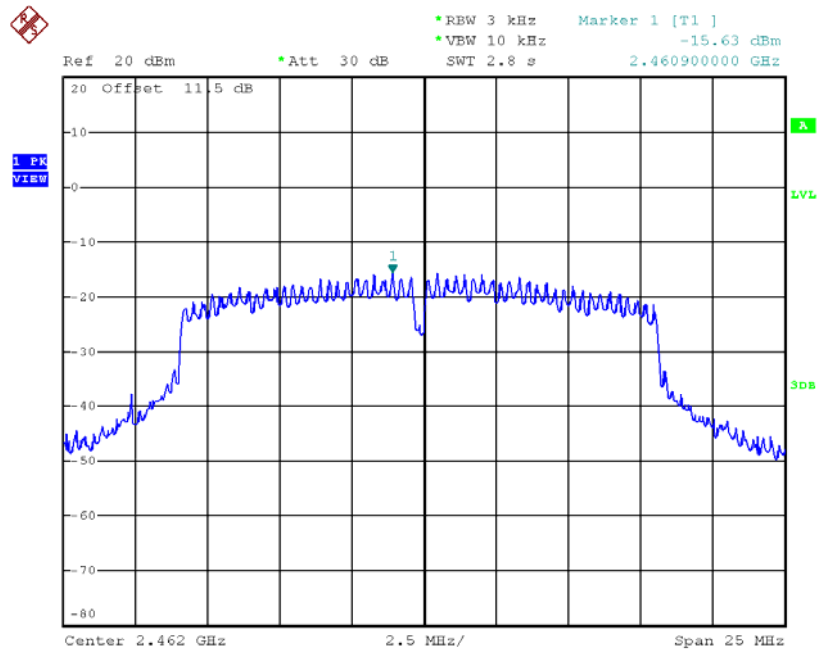
Date: 27.MAR.2017 12:21:35

### TX CH06



Date: 27.MAR.2017 12:25:28

### TX CH11



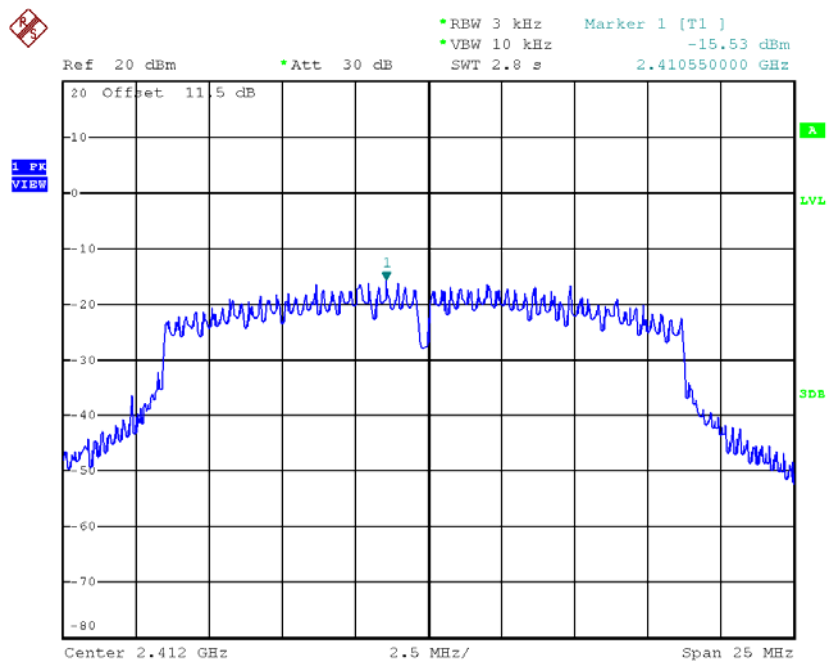
Date: 27.MAR.2017 12:32:34



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

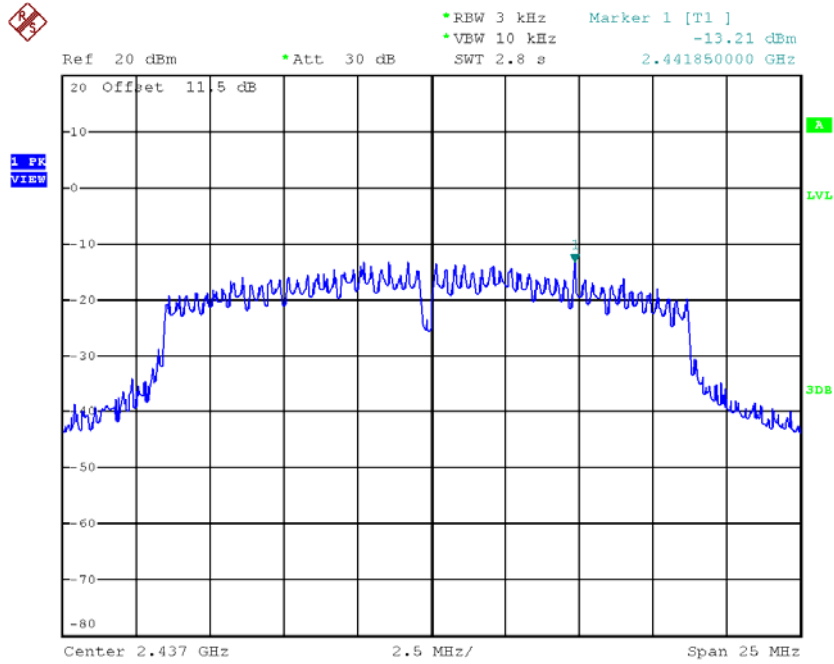
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-15.53	0.03	8.00	Complies
2437	-13.21	0.05	8.00	Complies
2462	-15.53	0.03	8.00	Complies

**TX CH01**



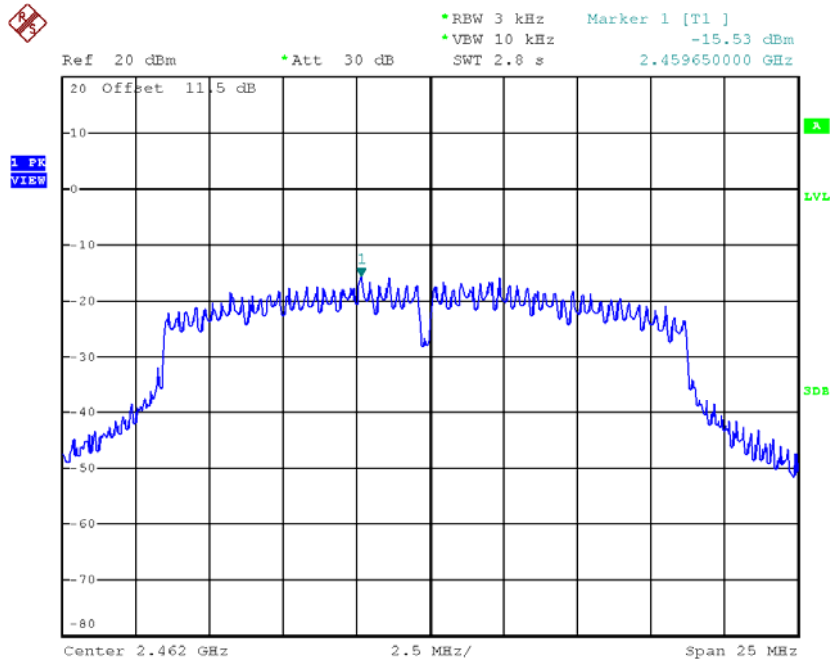
Date: 27.MAR.2017 12:45:48

### TX CH06



Date: 27.MAR.2017 12:51:40

### TX CH11



Date: 27.MAR.2017 13:03:57