

FCC Radio Test Report

FCC ID: WA5WH2902

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

Project No. : 1612C276A
Equipment : Weather Station
Model Name : WH2902
Applicant : Fine Offset Electronics Co., LTD
Address : 2/F., Building no.3, Ping Shan Mingqi Industrial Park,
Xili Town, Nanshan Distri. Shenzhen, Guangdong,
China

Date of Receipt : Dec. 28, 2016
Date of Test : Dec. 28, 2016 ~ Jan. 17, 2017
Issued Date : Jan. 18, 2017
Tested by : BTL Inc.

Testing Engineer : Nick Chen
(Nick Chen)

Technical Manager : David Mao
(David Mao)

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 standards traceable to international standard(s) and/or national standard(s).

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

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

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

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

Limitation

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

Table of Contents	Page
1 . CERTIFICATION	6
2 . SUMMARY OF TEST RESULTS	7
2.1 TEST FACILITY	8
2.2 MEASUREMENT UNCERTAINTY	8
3 . GENERAL INFORMATION	9
3.1 GENERAL DESCRIPTION OF EUT	9
3.2 DESCRIPTION OF TEST MODES	10
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
4 . EMC EMISSION TEST	14
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	18
4.2.5 EUT OPERATING CONDITIONS	19
4.2.6 EUT TEST CONDITIONS	19
4.2.7 TEST RESULTS (9KHZ TO 30MHZ)	19
4.2.8 TEST RESULTS (30MHZ TO 1000 MHZ)	19
4.2.9 TEST RESULTS (ABOVE 1000 MHZ)	19
5 . BANDWIDTH TEST	20
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
6 . MAXIMUM PEAK CONDUCTED OUTPUT POWER TEST	21

Table of Contents

	Page
6.1 APPLIED PROCEDURES / LIMIT	21
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
7 . ANTENNA CONDUCTED SPURIOUS EMISSION	22
7.1 APPLIED PROCEDURES / LIMIT	22
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
8 . POWER SPECTRAL DENSITY TEST	23
8.1 APPLIED PROCEDURES / LIMIT	23
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
9 . MEASUREMENT INSTRUMENTS LIST	24
10 . EUT TEST PHOTO	26
ATTACHMENT A - CONDUCTED EMISSION	30
ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)	33
ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)	38
ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)	45
ATTACHMENT E - BANDWIDTH	84
ATTACHMENT F – MAXIMUM PEAK CONDUCTED OUTPUT POWER	91
ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION	93
ATTACHMENT H - POWER SPECTRAL DENSITY	112

REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1612C276A	Original Issue.	Jan. 17, 2017

1. CERTIFICATION

Equipment : Weather Station
Brand Name : N/A
Model Name : WH2902
Applicant : Fine Offset Electronics Co., LTD
Manufacturer : Fine Offset Electronics Co., LTD
Address : 2/F., Building no.3, Ping Shan Mingqi Industrial Park, Xili Town, Nanshan Distri.
Shenzhen, Guangdong, China
Date of Test : Dec. 28, 2016 ~ Jan. 17, 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-1-1612C276A) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15 (15.247) , Subpart C			
Standard(s)	Section	Test Item	Judgment
	15.207	Conducted Emission	PASS
	15.247(d)	Antenna conducted Spurious Emission	PASS
	15.247(a)(2)	6dB Bandwidth	PASS
	15.247(b)(3)	Peak Output Power	PASS
	15.247(e)	Power Spectral Density	PASS
	15.203	Antenna Requirement	PASS
	15.247(d)/ 15.205/ 15.209	Transmitter Radiated Emissions	PASS

NOTE:

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

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3,Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

BTL's test firm number for FCC: 319330

2.2 MEASUREMENT UNCERTAINTY

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

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

A. Conducted Measurement:

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

B. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U , (dB)
DG-CB03	CISPR	9KHz~30MHz	V	3.79
		9KHz~30MHz	H	3.57
		30MHz ~ 200MHz	V	3.82
		30MHz ~ 200MHz	H	3.78
		200MHz ~ 1,000MHz	V	4.10
		200MHz ~ 1,000MHz	H	4.06
		1GHz~18GHz	V	3.12
		1GHz~18GHz	H	3.68
		18GHz~40GHz	V	4.15
		18GHz~40GHz	H	4.14

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Weather Station	
Brand Name	N/A	
Model Name	WH2902	
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 18M
	Output Power (Max.)	802.11b: 14.75dBm 802.11g: 24.72dBm 802.11n(20MHz): 24.99dBm
Power Source	#1 DC Voltage supplied from AC/DC adapter Model: HX06-0500500-AU #2 Battery supplied	
Power Rating	#1 I/P: AC 100-240V, 50/60Hz, 0.3A Max O/P: DC 5V, 500mA #2 DC 3V	

Note:

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

2. Channel List:

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

3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	N/A	N/A	Printed	N/A	2	N/A

3.2 DESCRIPTION OF TEST MODES

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

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

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

For Conducted Test	
Final Test Mode	Description
Mode 5	TX MODE

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

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

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:

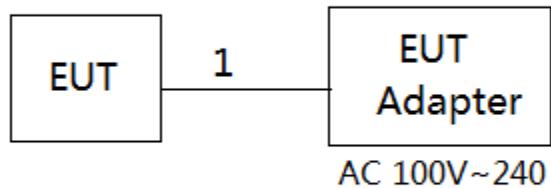
- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1Mbps)
802.11g mode: OFDM (6Mbps)
802.11n HT20 mode : BPSK (6.5Mbps)
- For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated below 1G test, the 802.11b 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	SecureCRT		
Frequency (MHz)	2412	2437	2462
802.11b	266	262	266
802.11g	252	236	240
802.11n (20MHz)	252	236	244

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
1	NO	NO	1.8m	Power Cable

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

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

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

Note:

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

(2) The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

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

Margin Level = Measurement Value - Limit Value

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

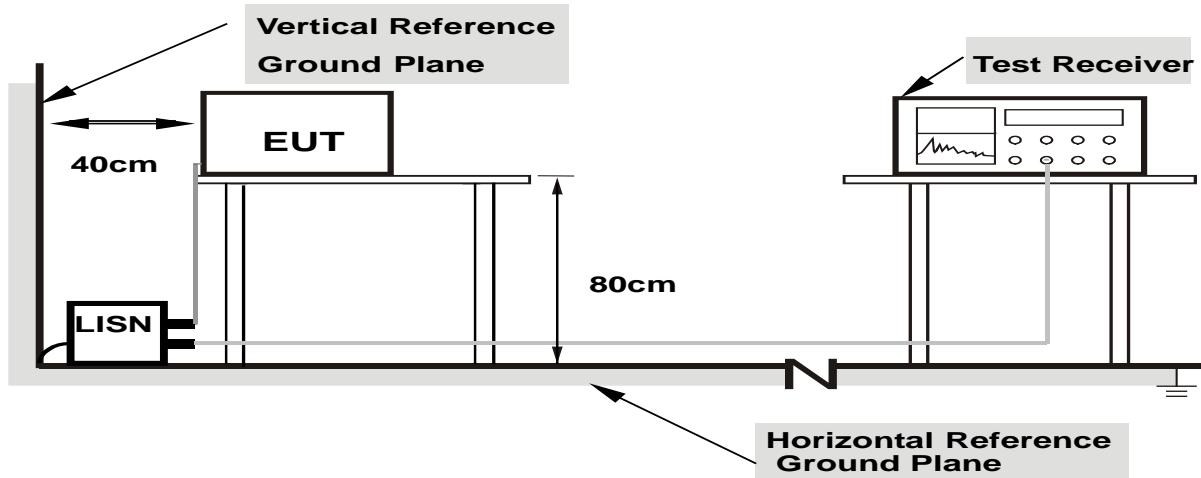
4.1.2 TEST PROCEDURE

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



Note:

1. Support units were connected to second LISN.
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

4.1.5 EUT OPERATING CONDITIONS

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

4.1.6 EUT TEST CONDITIONS

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

4.1.7 TEST RESULTS

Please refer to the Attachment A.

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS

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

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

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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Frequency (MHz)	Band edge at 3m (dB μ V/m)		Harmonic at 1.5m (dB μ V/m)	
	Peak	Average	Peak	Average
Above 1000	74	54	80 (Note 5)	60(Note 5)

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 (dB μ V/m)=20log Emission level (μ V/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

(5)

$$FS_{\text{limit}} = FS_{\text{max}} - 20 \log \left(\frac{d_{\text{limit}}}{d_{\text{measure}}} \right)$$

20log d limit/d measure=20log 3/1.5=6dB.

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

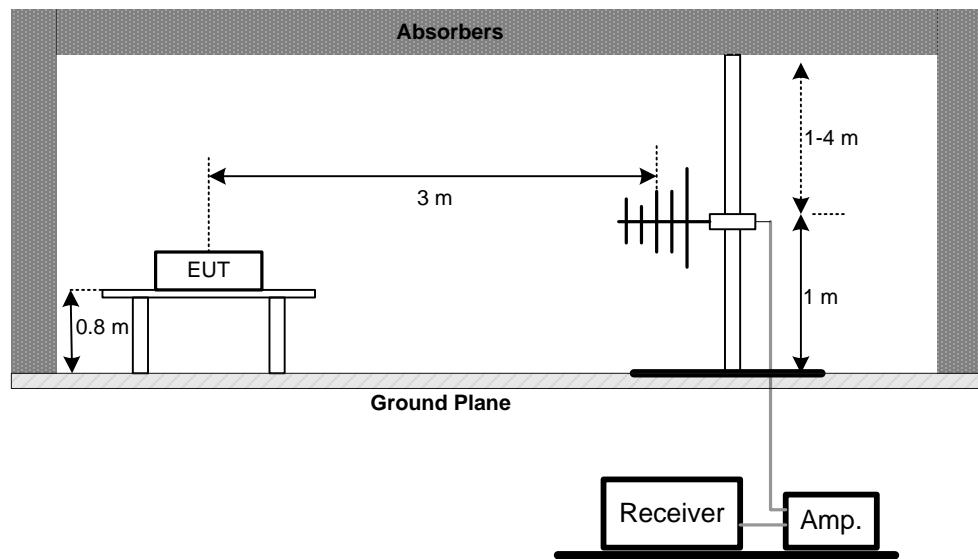
- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The measuring distance of 3 m or 1.5m 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)
- c. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. 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).
- e. 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.
- f. 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.
- g. 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)
- h. 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)
- i. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.3 DEVIATION FROM TEST STANDARD

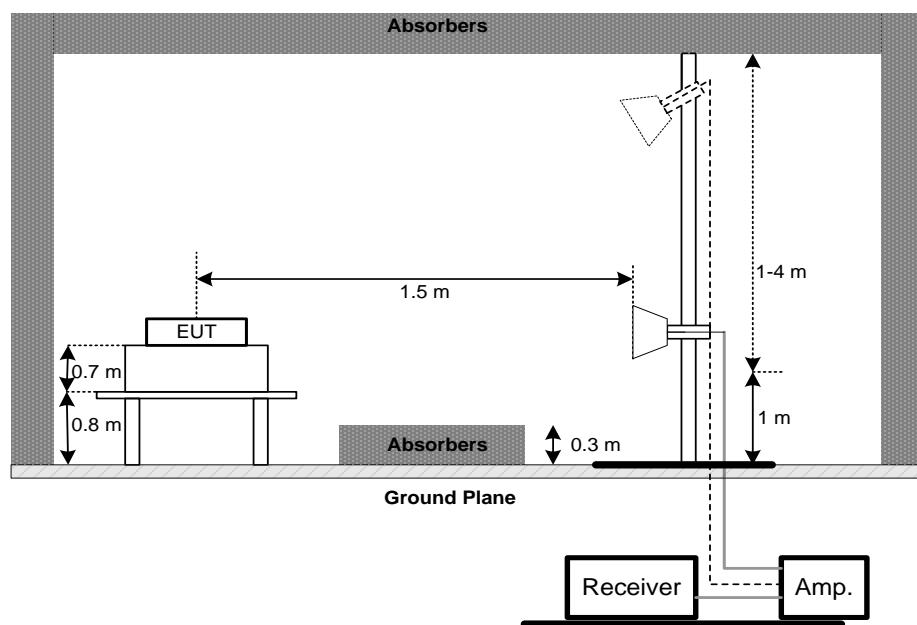
No deviation

4.2.4 TEST SETUP

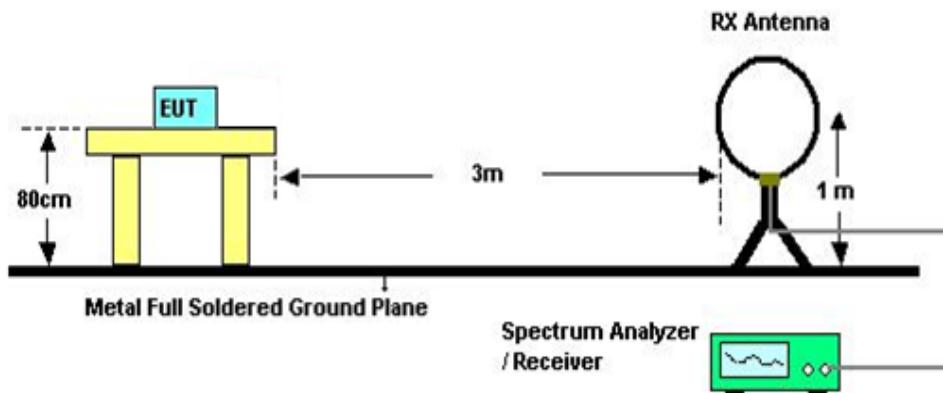
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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



(C) For Radiated Emissions Below 30MHz

**4.2.5 EUT OPERATING CONDITIONS**

The EUT was programmed to be in continuously transmitting mode.

4.2.6 EUT TEST CONDITIONS

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

4.2.7 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Attachment B

Remark:

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

4.2.8 TEST RESULTS (30MHZ TO 1000 MHZ)

Please refer to the Attachment C.

4.2.9 TEST RESULTS (ABOVE 1000 MHZ)

Please refer to the Attachment D.

Remark:

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

5. BANDWIDTH TEST

5.1 APPLIED PROCEDURES

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

5.1.1 TEST PROCEDURE

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

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.1.5 EUT TEST CONDITIONS

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

5.1.6 TEST RESULTS

Please refer to the Attachment E.

6. MAXIMUM PEAK CONDUCTED OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

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

6.1.1 TEST PROCEDURE

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

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.1.5 EUT TEST CONDITIONS

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

6.1.6 TEST RESULTS

Please refer to the Attachment F.

7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 APPLIED PROCEDURES / LIMIT

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

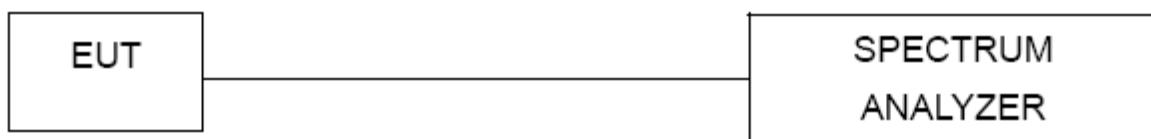
7.1.1 TEST PROCEDURE

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

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.1.5 EUT TEST CONDITIONS

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

7.1.6 TEST RESULTS

Please refer to the Attachment G.

8. POWER SPECTRAL DENSITY TEST

8.1 APPLIED PROCEDURES / LIMIT

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

8.1.1 TEST PROCEDURE

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

8.1.2 DEVIATION FROM STANDARD

No deviation.

8.1.3 TEST SETUP



8.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.1.5 EUT TEST CONDITIONS

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

8.1.6 TEST RESULTS

Please refer to the Attachment H.

9. MEASUREMENT INSTRUMENTS LIST

Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	EMCO	3816/2	0052765	Mar. 27, 2017
2	LISN	R&S	ENV216	101447	Mar. 27, 2017
3	Test Cable	emci	RG223(9KHz -30MHz)	C_17	Mar. 10, 2017
4	EMI Test Receiver	R&S	ESCI	100382	Mar. 27, 2017
5	50Ω Terminator	SHX	TF2-3G-A	08122901	Mar. 27, 2017
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	Schwarbeck	VULB9160	9160-3232	Mar. 27, 2017
2	Amplifier	HP	8447D	2944A09673	Oct. 20, 2017
3	Receiver	Agilent	N9038A	MY5213003 9	Sep. 04, 2017
4	Cable	emci	LMR-400(30MH z-1GHz)(8m+5m)	N/A	Jun. 27, 2017
5	Controller	CT	SC100	N/A	N/A
6	Controller	MF	MF-7802	MF78020841 6	N/A
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
8	Amplifier	Agilent	8449B	3008A02274	Mar. 10, 2017
9	Receiver	Agilent	N9038A	MY5213003 9	Sep. 04, 2017
10	Antenna	EM	EM-6876-1	230	Jul. 08, 2017
11	Controller	CT	SC100	N/A	N/A
12	Controller	MF	MF-7802	MF78020841 6	N/A
13	Cable	N/A	EMC104-SM-S M-12000(12m)	N/A	Jul. 06, 2017

6dB Bandwidth Measurement

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

Peak Output Power Measurement

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	ANRITSU	ML2495A	1128009	Apr. 26, 2017
2	Pulse Power Sensor	ANRITSU	MA 2411B	1027500	Apr. 26, 2017

Antenna Conducted Spurious Emission Measurement

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

Power Spectral Density Measurement

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

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

All calibration period of equipment list is one year.

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

Radiated Measurement Photos

9KHz to 30MHz



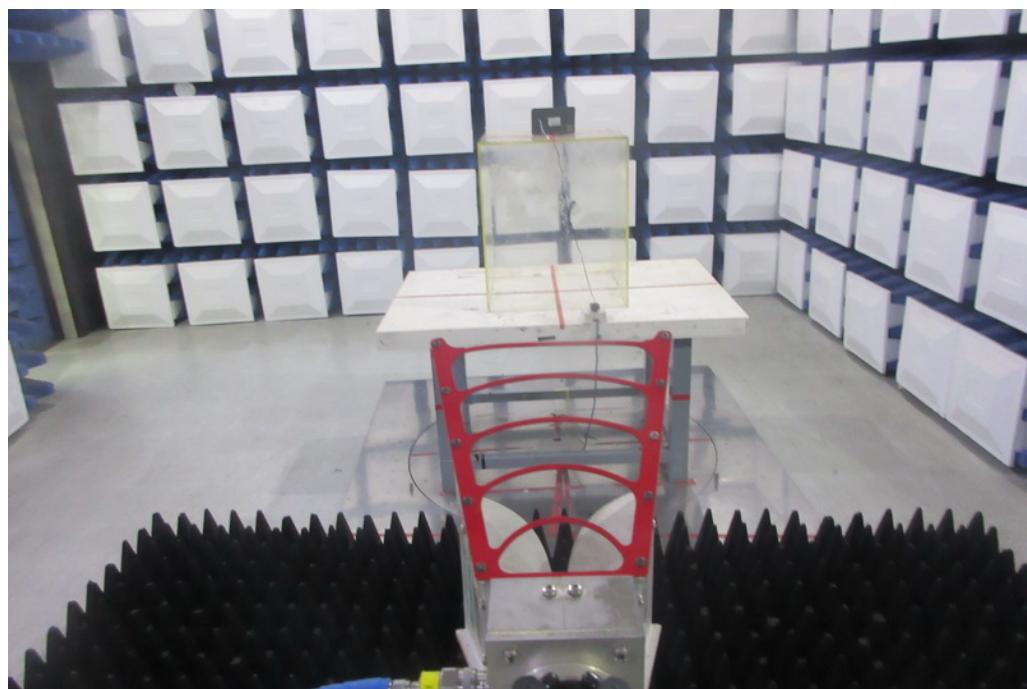
Radiated Measurement Photos

30MHz to 1000MHz



Radiated Measurement Photos

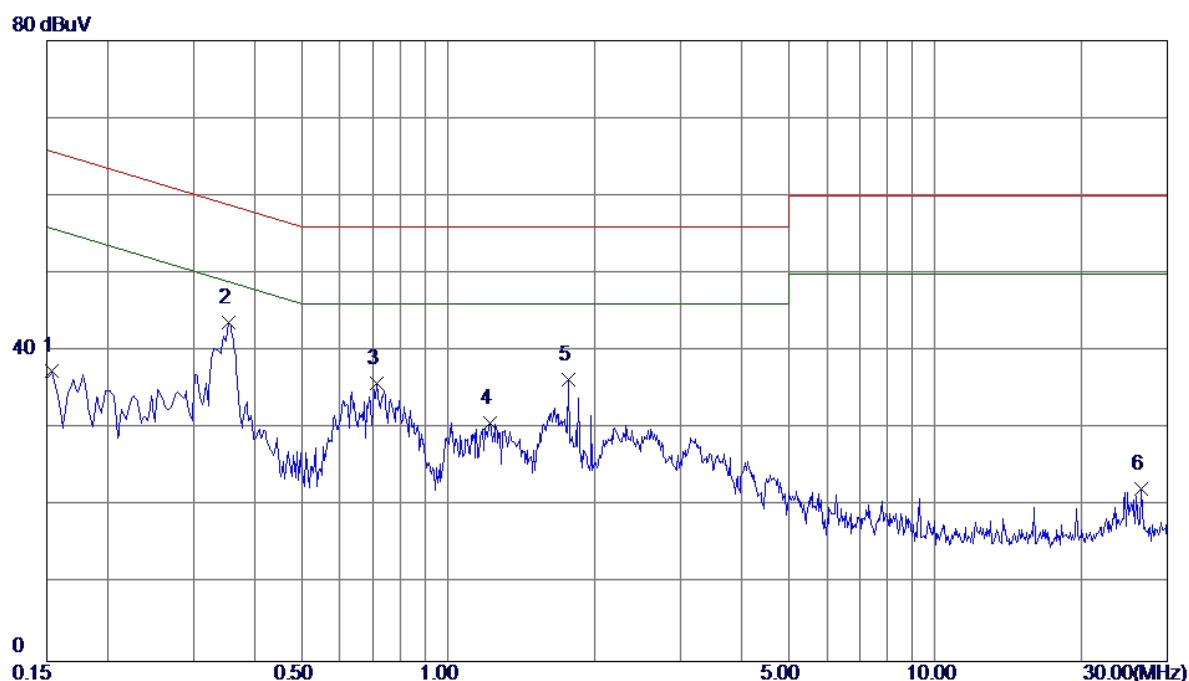
Above 1G



ATTACHMENT A - CONDUCTED EMISSION

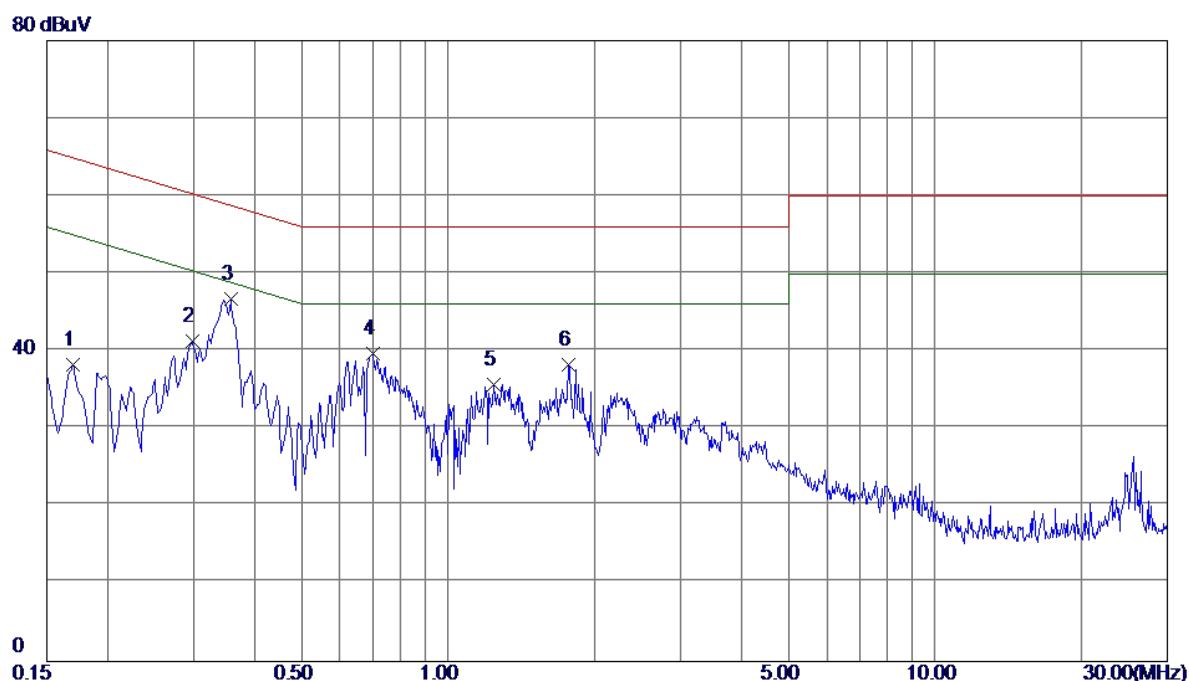
Test Mode : TX Mode

Line



No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	0.1539	27.81	9.57	37.38	65.79	-28.41	Peak	
2 *	0.3540	34.15	9.58	43.73	58.87	-15.14	Peak	
3	0.7140	26.08	9.73	35.81	56.00	-20.19	Peak	
4	1.2180	20.89	9.86	30.75	56.00	-25.25	Peak	
5	1.7700	26.30	9.99	36.29	56.00	-19.71	Peak	
6	26.5700	11.35	10.85	22.20	60.00	-37.80	Peak	

Test Mode : TX Mode

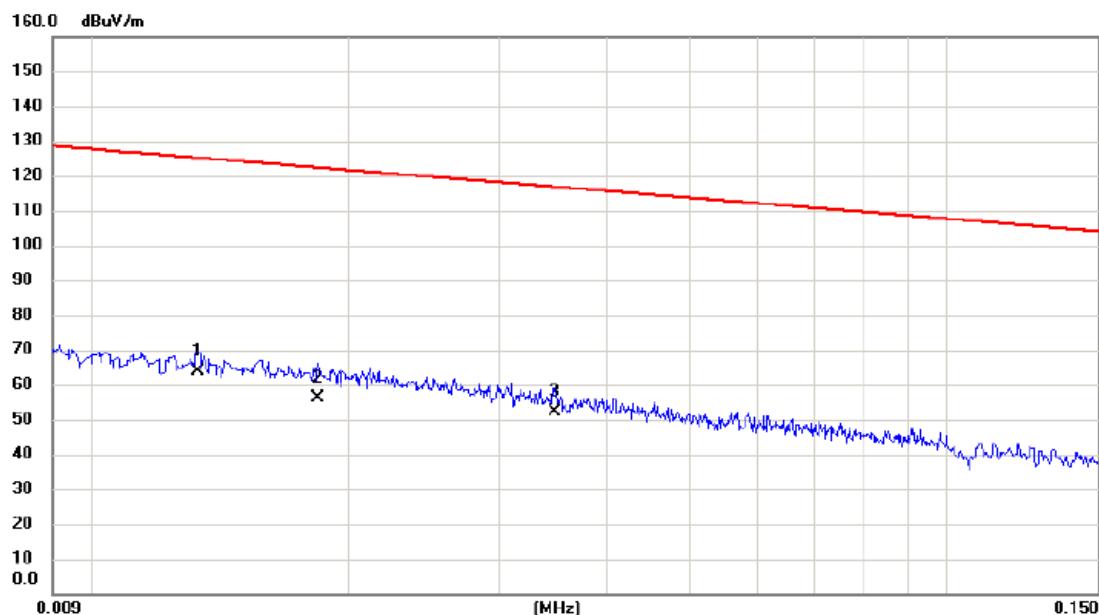
Neutral

No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	0.1700	28.72	9.47	38.19	64.96	-26.77	Peak	
2	0.2980	31.63	9.58	41.21	60.30	-19.09	Peak	
3 *	0.3580	37.11	9.56	46.67	58.77	-12.10	Peak	
4	0.7019	30.13	9.51	39.64	56.00	-16.36	Peak	
5	1.2380	25.85	9.76	35.61	56.00	-20.39	Peak	
6	1.7700	28.50	9.79	38.29	56.00	-17.71	Peak	

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

Test Mode: TX B MODE CHANNEL 01

Ant 0°



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Comment
			Level	Factor	ment			
		MHz	dB _B V	dB	dB _B V/m	dB	Detector	
1	*	0.0133	39.78	23.92	63.70	125.13	-61.43	AVG
2		0.0184	32.55	23.62	56.17	122.31	-66.14	AVG
3		0.0348	30.42	21.69	52.11	116.77	-64.66	AVG

Test Mode: TX B MODE CHANNEL 01

Ant 0°

Vertical

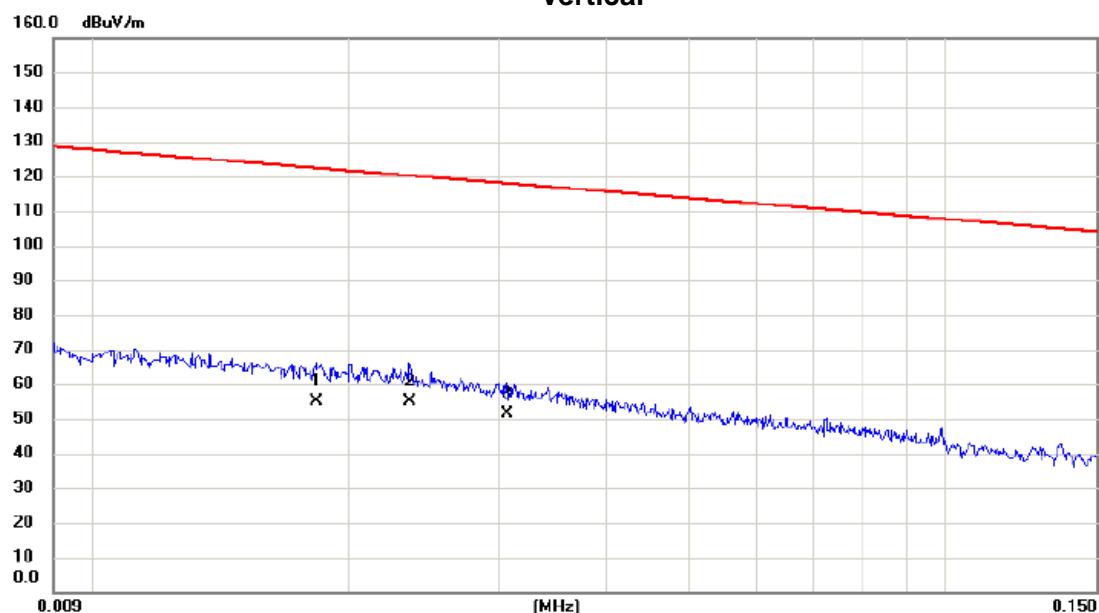


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dB			
1		0.2863	28.07	18.61	46.68	98.47	-51.79	AVG	
2	*	2.2486	35.08	17.59	52.67	69.54	-16.87	QP	
3		3.7395	27.30	18.20	45.50	69.54	-24.04	QP	

Test Mode: TX B MODE CHANNEL 01

Ant 90°

Vertical

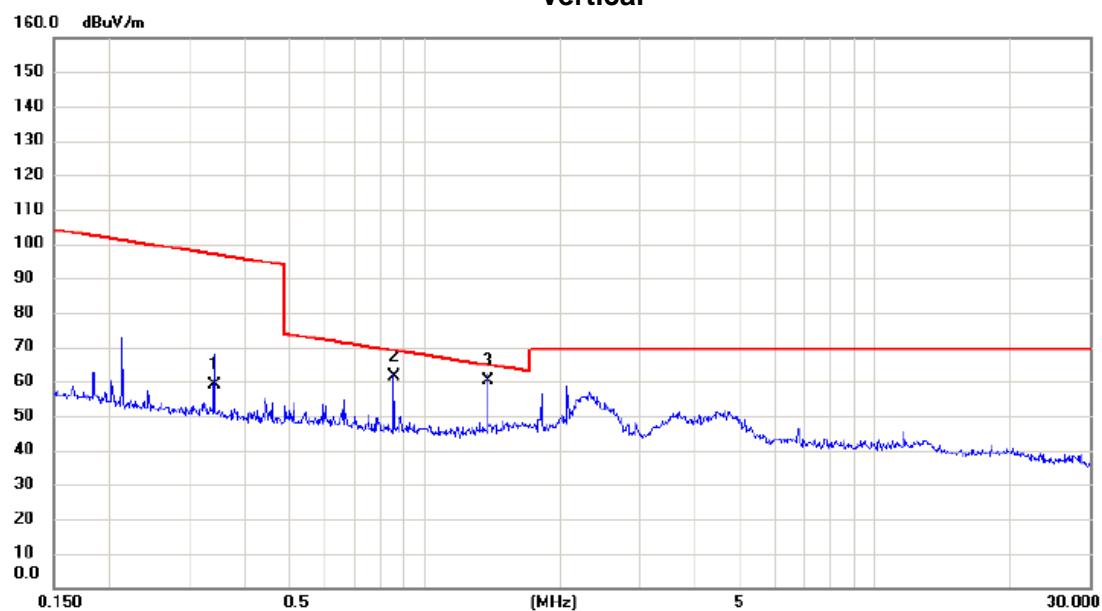


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.0183	31.41	23.62	55.03	122.36	-67.33	AVG	
2	*	0.0236	32.02	23.08	55.10	120.15	-65.05	AVG	
3		0.0306	29.27	22.21	51.48	117.89	-66.41	AVG	

Test Mode: TX B MODE CHANNEL 01

Ant 90°

Vertical

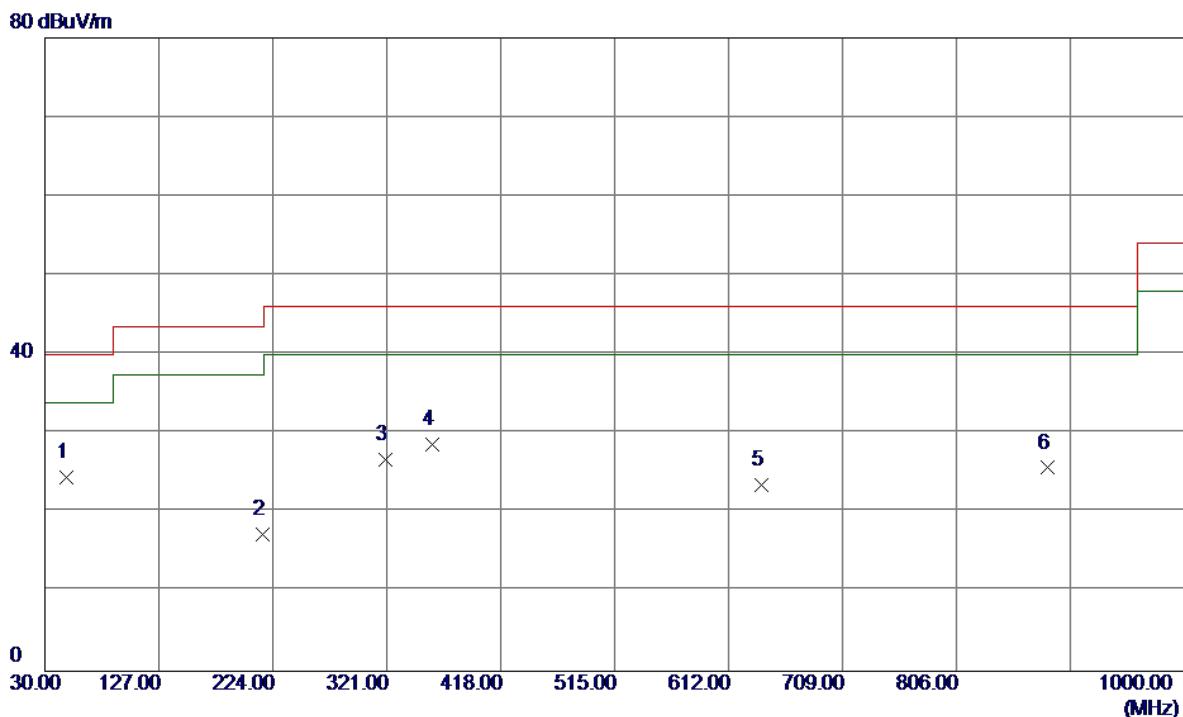


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		0.3410	40.28	18.55	58.83	96.95	-38.12	AVG	
2		0.8528	43.12	18.15	61.27	68.99	-7.72	QP	
3	*	1.3810	42.36	17.77	60.13	64.80	-4.67	QP	

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

Test Mode: TX B MODE CHANNEL 01

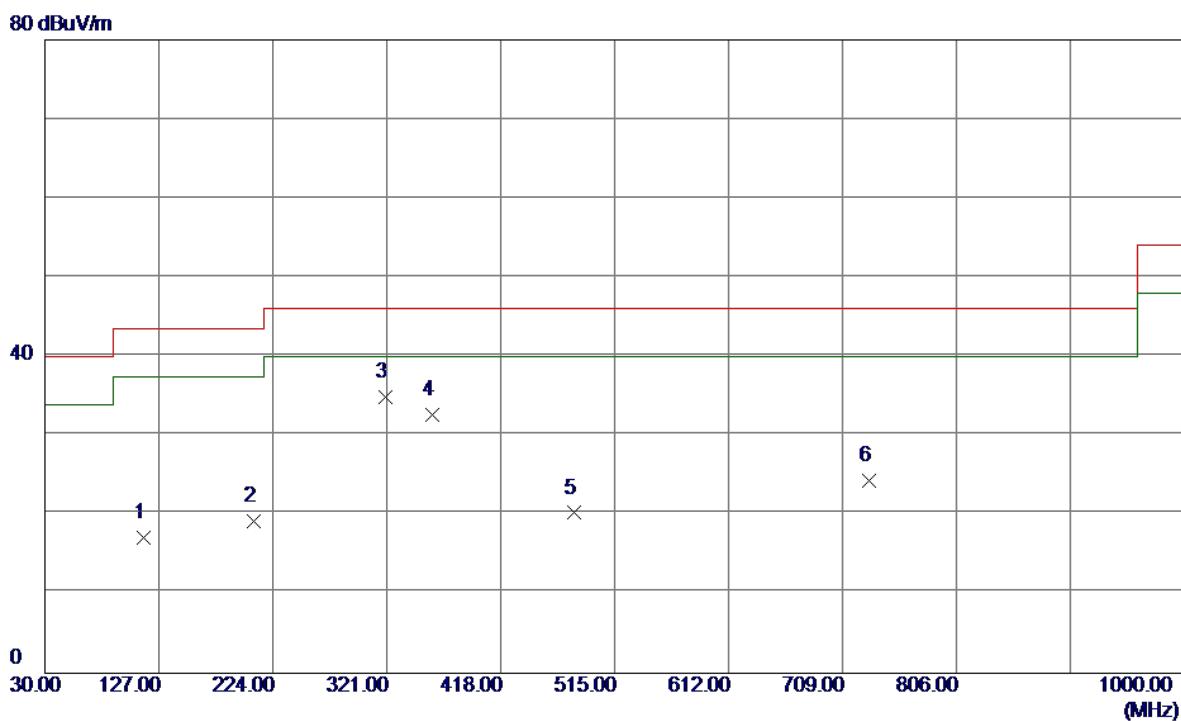
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dB	Margin Detector	Comment
1 *	48.4300	44.08	-19.62	24.46	40.00	-15.54	Peak
2	215.2700	36.46	-19.21	17.25	43.50	-26.25	Peak
3	320.0300	42.00	-15.35	26.65	46.00	-19.35	Peak
4	359.8000	42.15	-13.54	28.61	46.00	-17.39	Peak
5	640.1300	31.77	-8.18	23.59	46.00	-22.41	Peak
6	883.6000	30.10	-4.42	25.68	46.00	-20.32	Peak

Test Mode:	TX B MODE CHANNEL 01
------------	----------------------

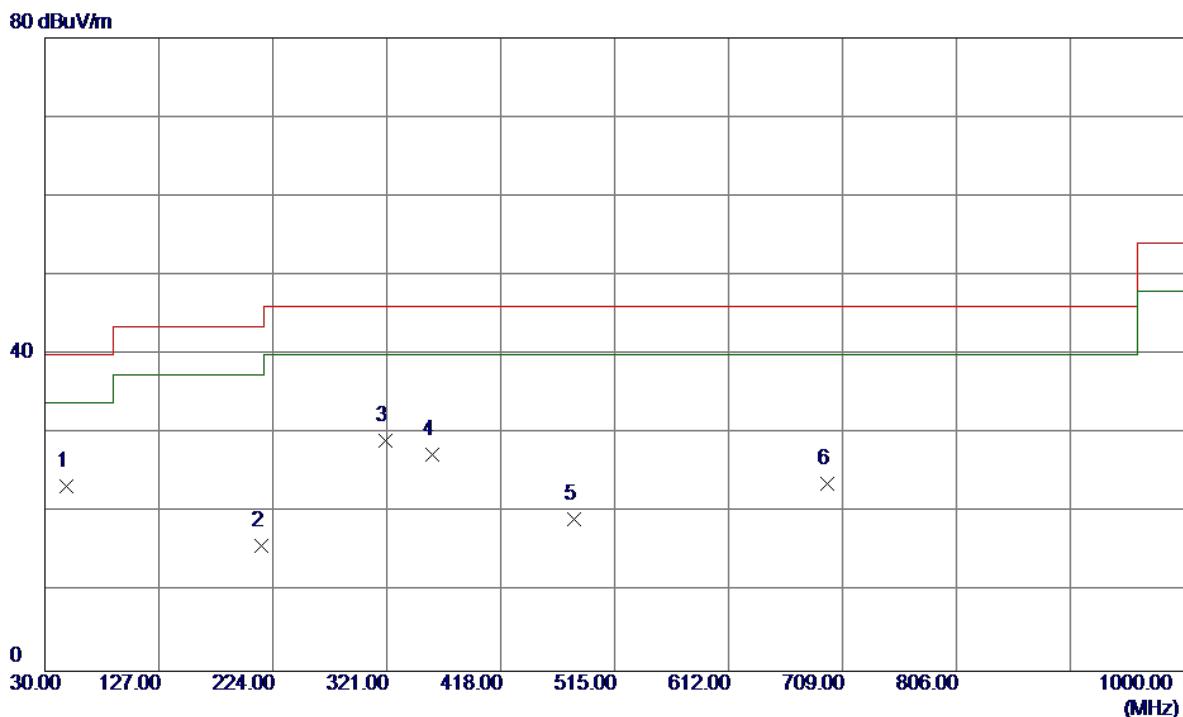
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dB	Margin dB	Detector	Comment
1	114.3900	39.36	-22.23	17.13	43.50	-26.37	Peak	
2	207.5100	38.70	-19.54	19.16	43.50	-24.34	Peak	
3 *	320.0300	50.17	-15.35	34.82	46.00	-11.18	Peak	
4	359.8000	46.23	-13.54	32.69	46.00	-13.31	Peak	
5	480.0800	32.21	-11.97	20.24	46.00	-25.76	Peak	
6	731.3100	30.28	-5.97	24.31	46.00	-21.69	Peak	

Test Mode: TX B MODE CHANNEL 06

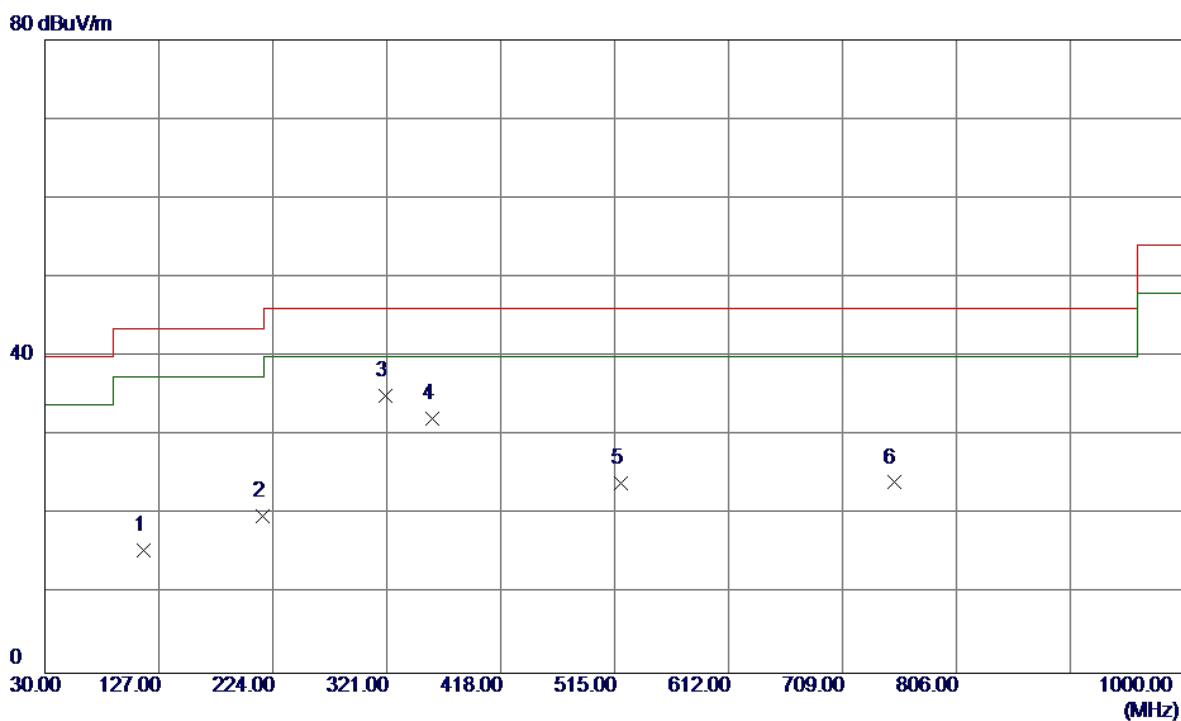
Vertical



No.	Freq.	Reading Level	Correct Factor	Measurement	Margin			
					MHz	dBuV/m	dB	dBuV/m
1 *	48. 4300	42. 94	-19. 62	23. 32	40. 00	-16. 68	Peak	
2	214. 3000	35. 15	-19. 26	15. 89	43. 50	-27. 61	Peak	
3	320. 0300	44. 48	-15. 35	29. 13	46. 00	-16. 87	Peak	
4	359. 8000	40. 84	-13. 54	27. 30	46. 00	-18. 70	Peak	
5	480. 0800	31. 21	-11. 97	19. 24	46. 00	-26. 76	Peak	
6	696. 3900	29. 86	-6. 20	23. 66	46. 00	-22. 34	Peak	

Test Mode:	TX B MODE CHANNEL 06
------------	----------------------

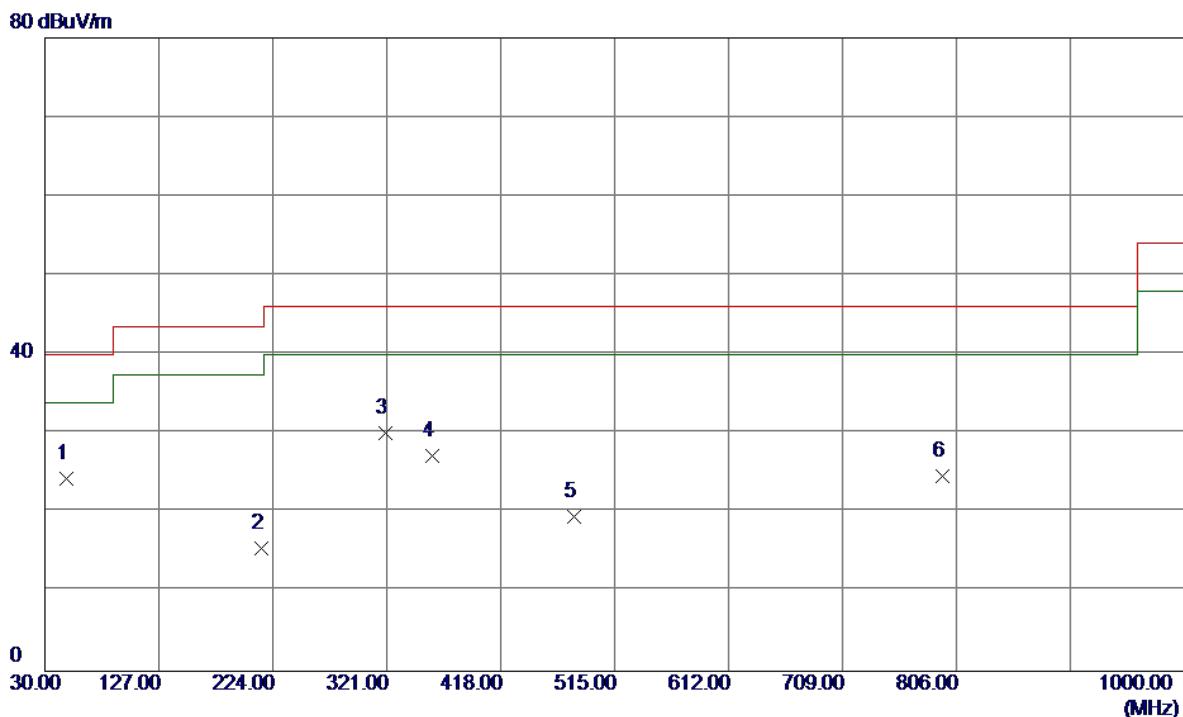
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	114.3900	37.72	-22.23	15.49	43.50	-28.01	Peak	
2	215.2700	39.08	-19.21	19.87	43.50	-23.63	Peak	
3 *	320.0300	50.35	-15.35	35.00	46.00	-11.00	Peak	
4	359.8000	45.63	-13.54	32.09	46.00	-13.91	Peak	
5	519.8500	34.82	-10.88	23.94	46.00	-22.06	Peak	
6	752.6500	29.99	-5.91	24.08	46.00	-21.92	Peak	

Test Mode: TX B MODE CHANNEL 11

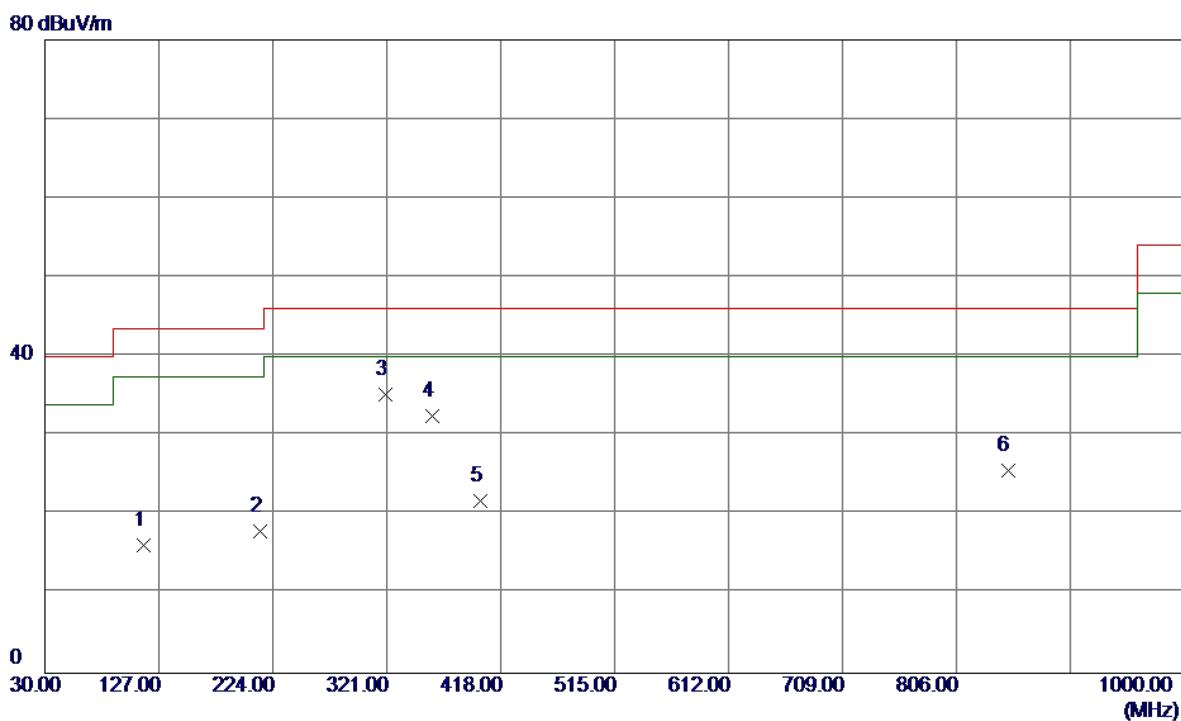
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure m	Limit Margin		Detector	Comment
					MHz	dBuV/m	dB	dBuV/m
1 *	48. 4300	43. 94	-19. 62	24. 32	40. 00	-15. 68	Peak	
2	214. 3000	34. 79	-19. 26	15. 53	43. 50	-27. 97	Peak	
3	320. 0300	45. 44	-15. 35	30. 09	46. 00	-15. 91	Peak	
4	359. 8000	40. 75	-13. 54	27. 21	46. 00	-18. 79	Peak	
5	480. 0800	31. 43	-11. 97	19. 46	46. 00	-26. 54	Peak	
6	794. 3600	30. 48	-5. 80	24. 68	46. 00	-21. 32	Peak	

Test Mode:	TX B MODE CHANNEL 11
------------	----------------------

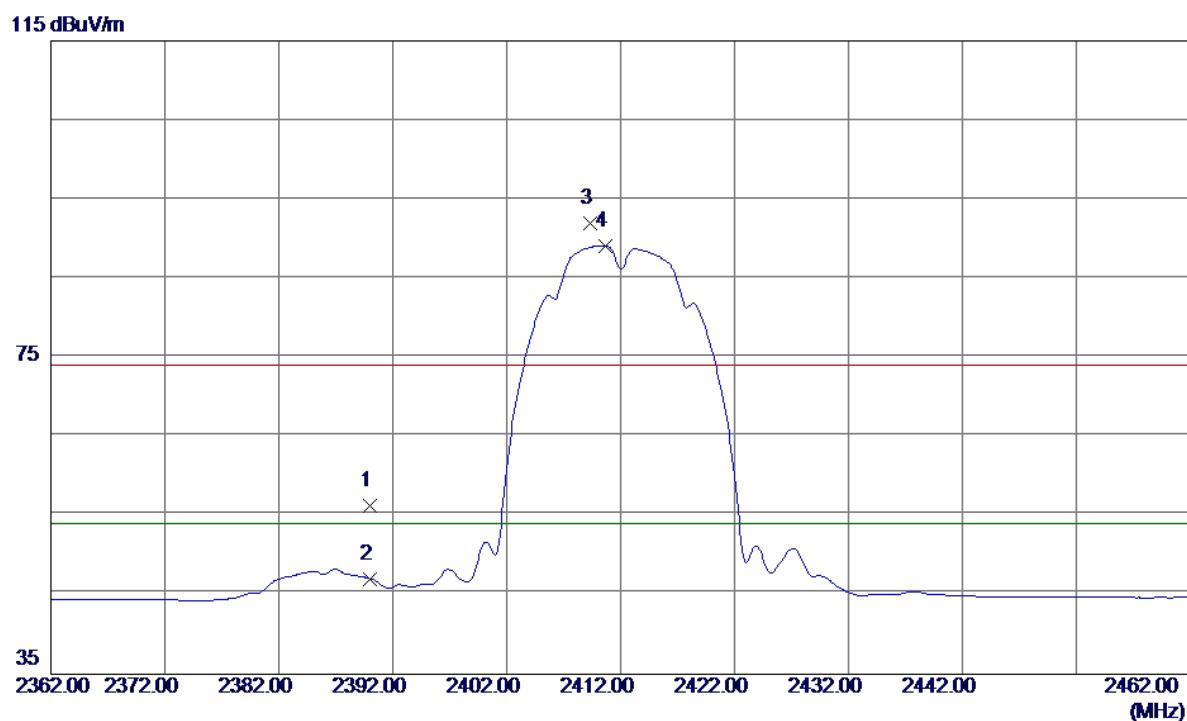
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	114.3900	38.38	-22.23	16.15	43.50	-27.35	Peak	
2	213.3300	37.28	-19.32	17.96	43.50	-25.54	Peak	
3 *	320.0300	50.52	-15.35	35.17	46.00	-10.83	Peak	
4	359.8000	46.05	-13.54	32.51	46.00	-13.49	Peak	
5	400.5400	34.52	-12.79	21.73	46.00	-24.27	Peak	
6	849.6500	29.92	-4.26	25.66	46.00	-20.34	Peak	

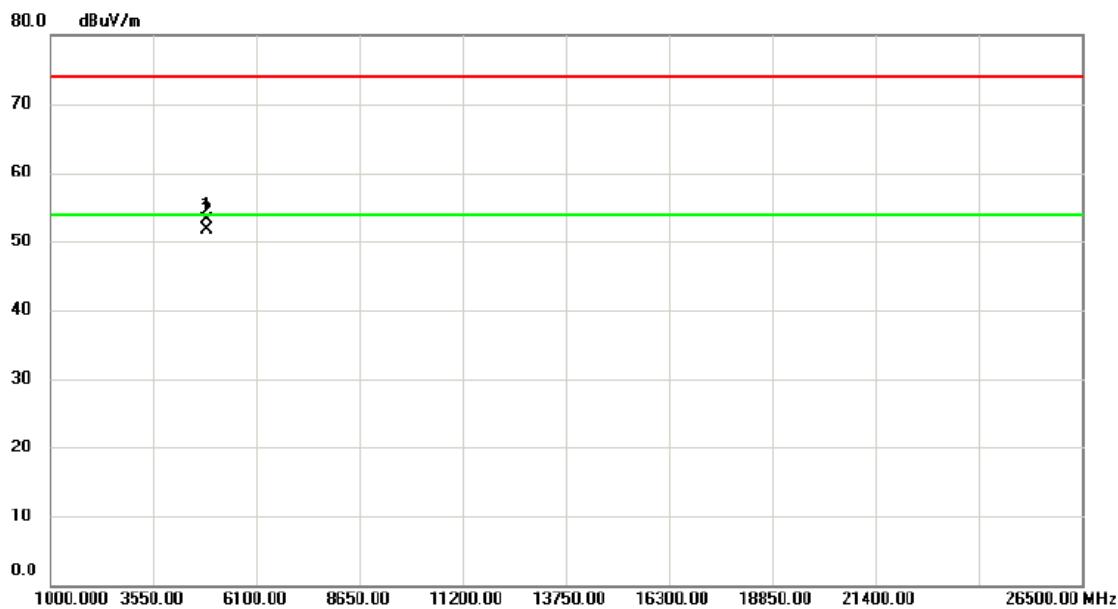
ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

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

Vertical

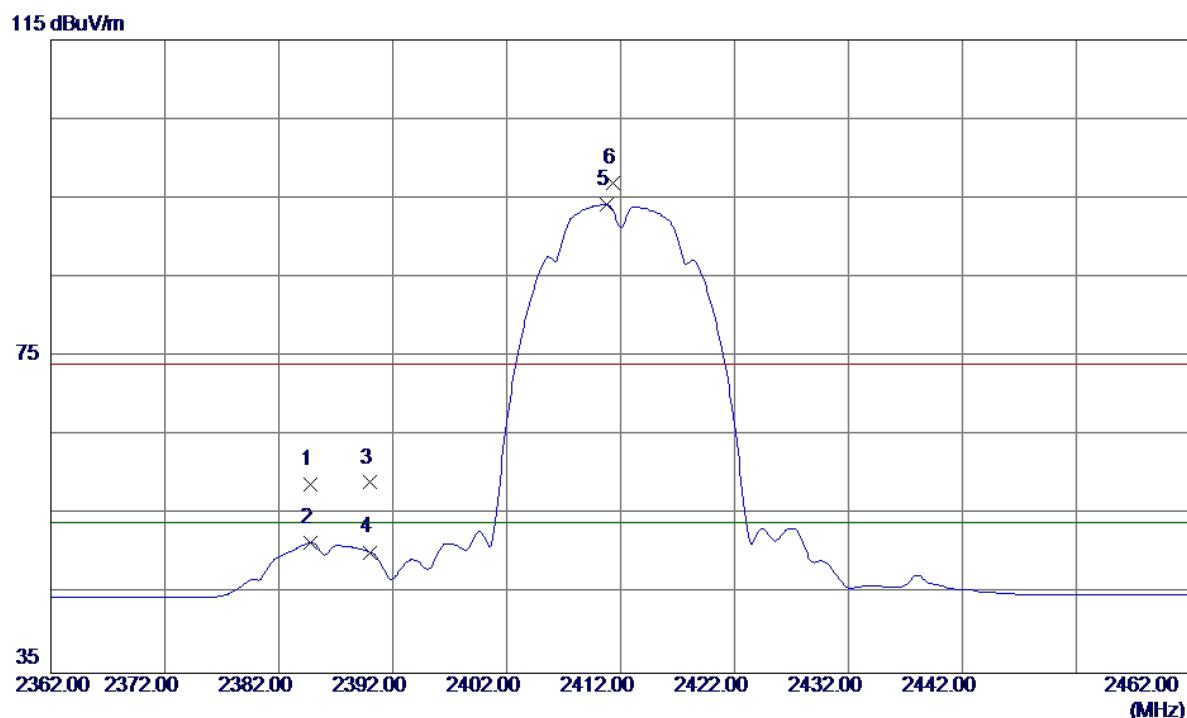
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	23.27	33.01	56.28	74.00	-17.72	Peak	
2	2390.0000	14.05	33.01	47.06	54.00	-6.94	AVG	
3	2409.3000	58.85	33.09	91.94	74.00	17.94	Peak	NO LIMIT
4 *	2410.7000	56.01	33.10	89.11	54.00	35.11	AVG	NO LIMIT

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

Vertical

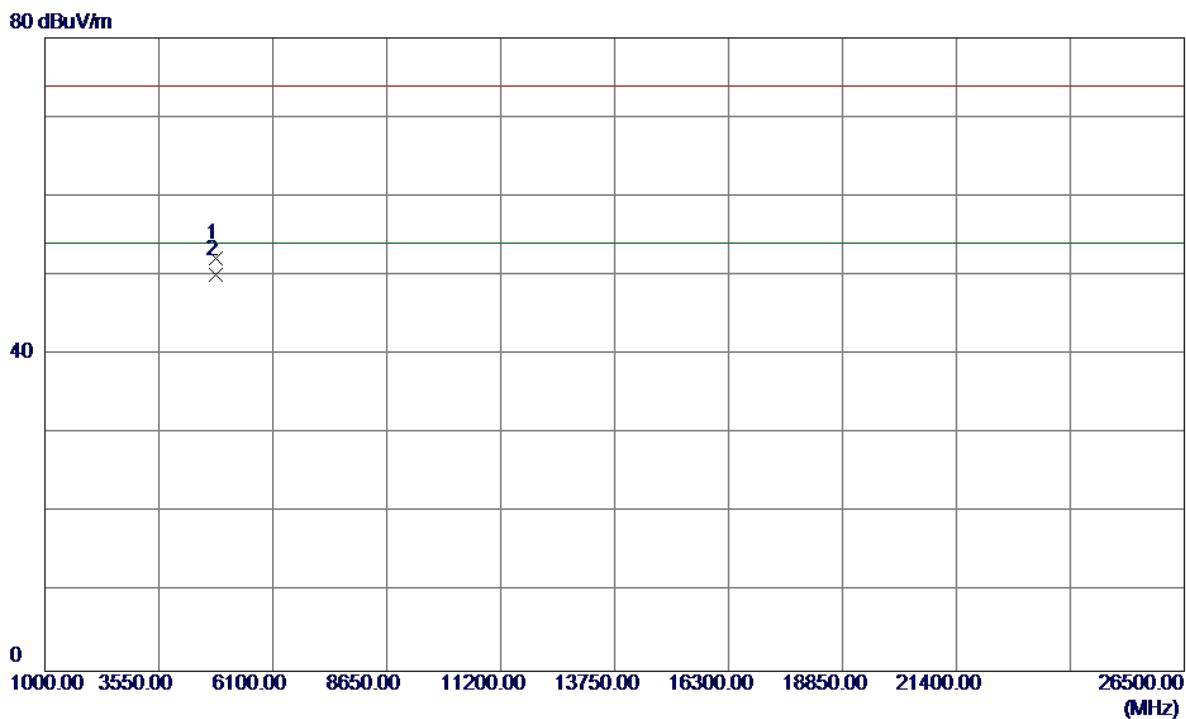
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	
			Level	Factor	ment			
		MHz	dBuV	dB	dBuV/m	dB	Detector	Comment
1		4873.840	48.07	5.06	53.13	74.00	-20.87	peak
2 *		4873.910	46.70	5.06	51.76	54.00	-2.24	AVG

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

Horizontal

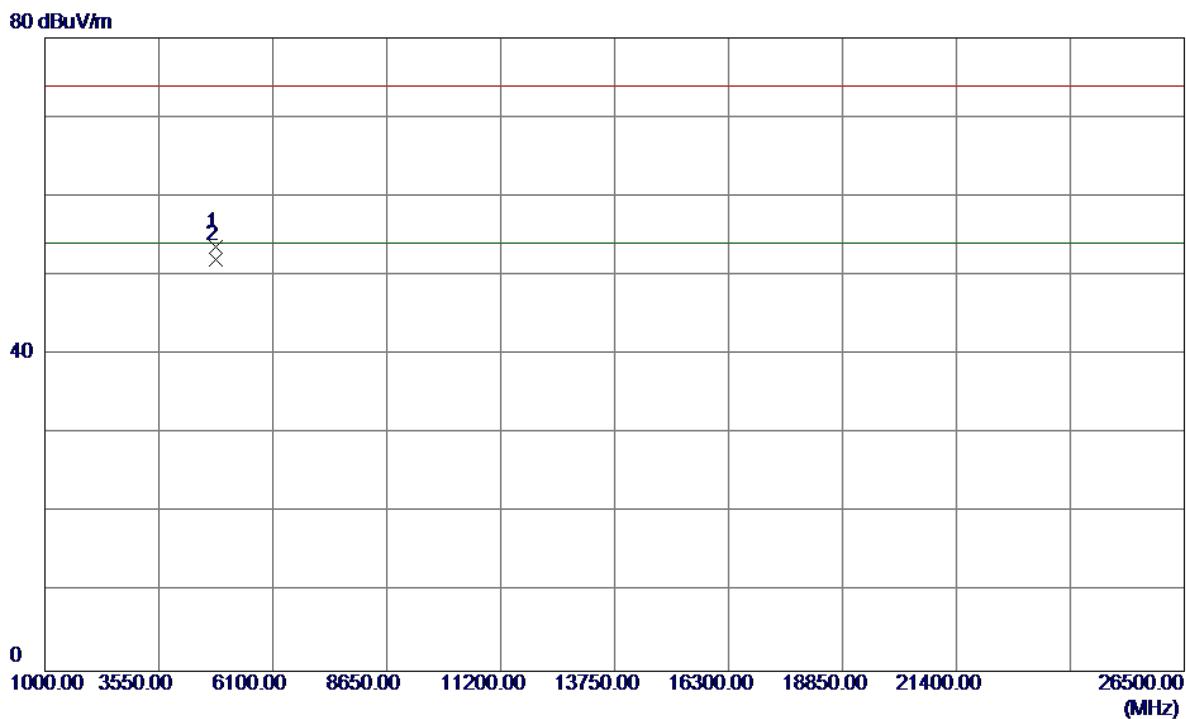
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2384.8000	25.79	32.99	58.78	74.00	-15.22	Peak	
2	2384.8000	18.46	32.99	51.45	54.00	-2.55	Avg	
3	2390.0000	26.07	33.01	59.08	74.00	-14.92	Peak	
4	2390.0000	17.27	33.01	50.28	54.00	-3.72	Avg	
5	2410.8000	61.09	33.10	94.19	74.00	20.19	Peak	NO LIMIT
6 *	2411.3000	63.83	33.10	96.93	74.00	22.93	Peak	NO LIMIT

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

Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4823.3000	47.31	4.85	52.16	74.00	-21.84	Peak	
2 *	4824.1500	45.25	4.85	50.10	54.00	-3.90	AVG	

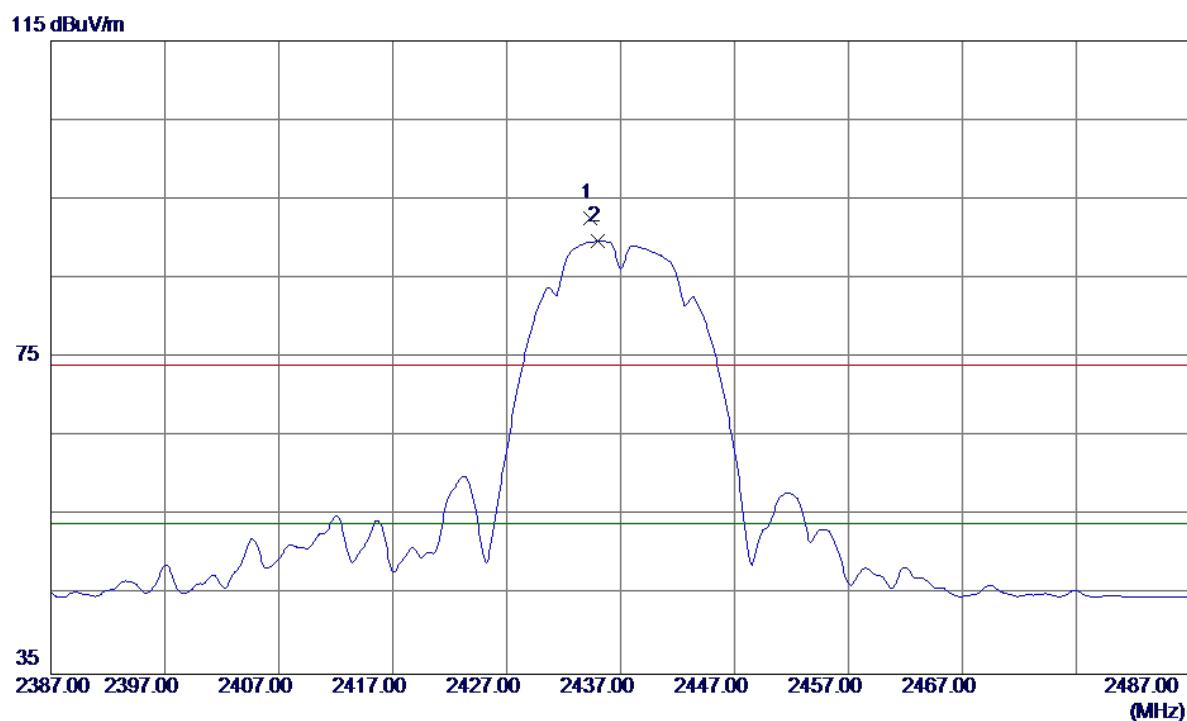
Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz

Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4823.8250	48.80	4.85	53.65	74.00	-20.35	Peak	
2 *	4823.9049	47.15	4.85	52.00	54.00	-2.00	AVG	

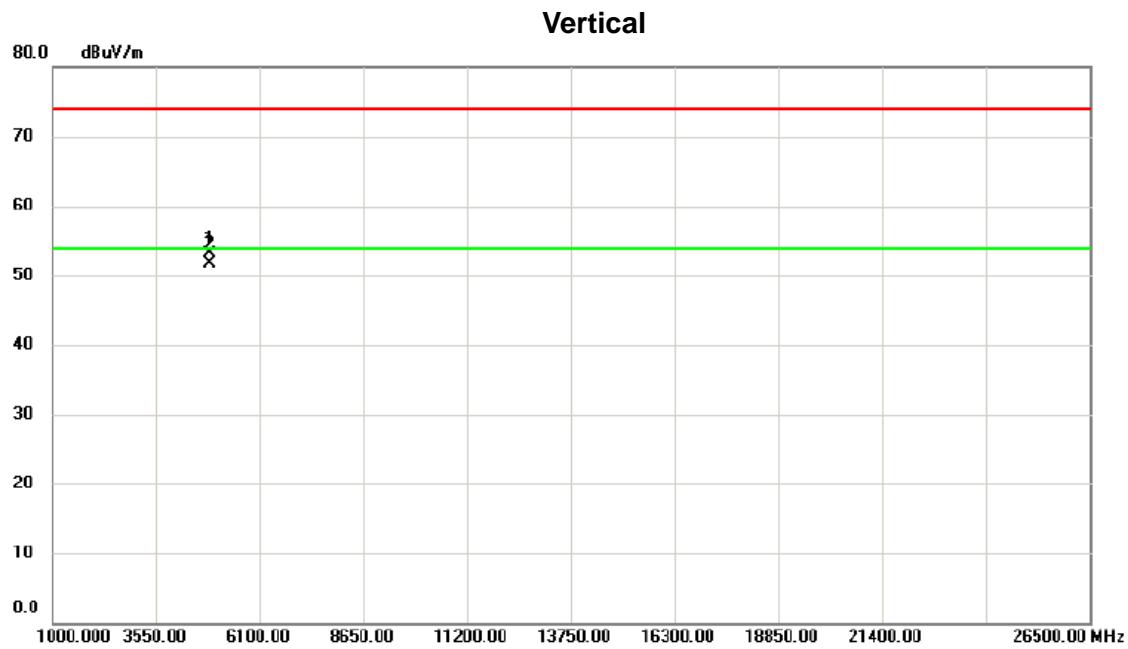
Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz

Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2434.3000	59.41	33.20	92.61	74.00	18.61	Peak	NO LIMIT
2 *	2435.0000	56.51	33.20	89.71	54.00	35.71	AVG	NO LIMIT

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

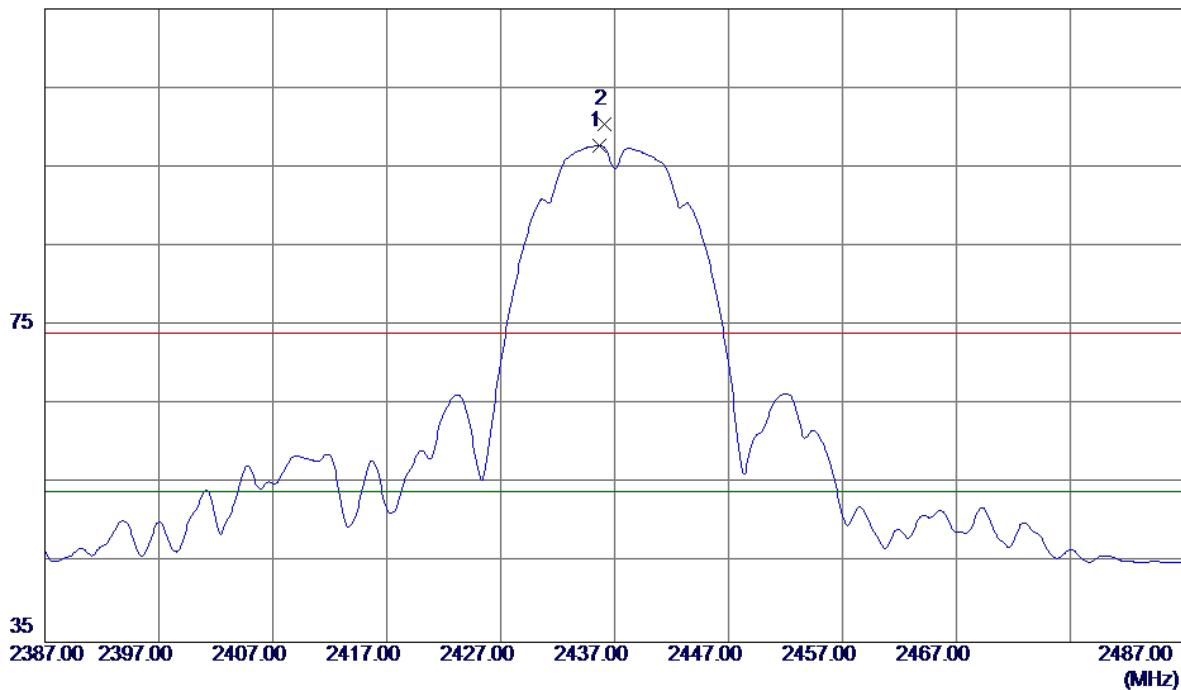


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		4873.840	48.07	5.06	53.13	74.00	-20.87	peak	
2 *		4873.910	46.70	5.06	51.76	54.00	-2.24	AVG	

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

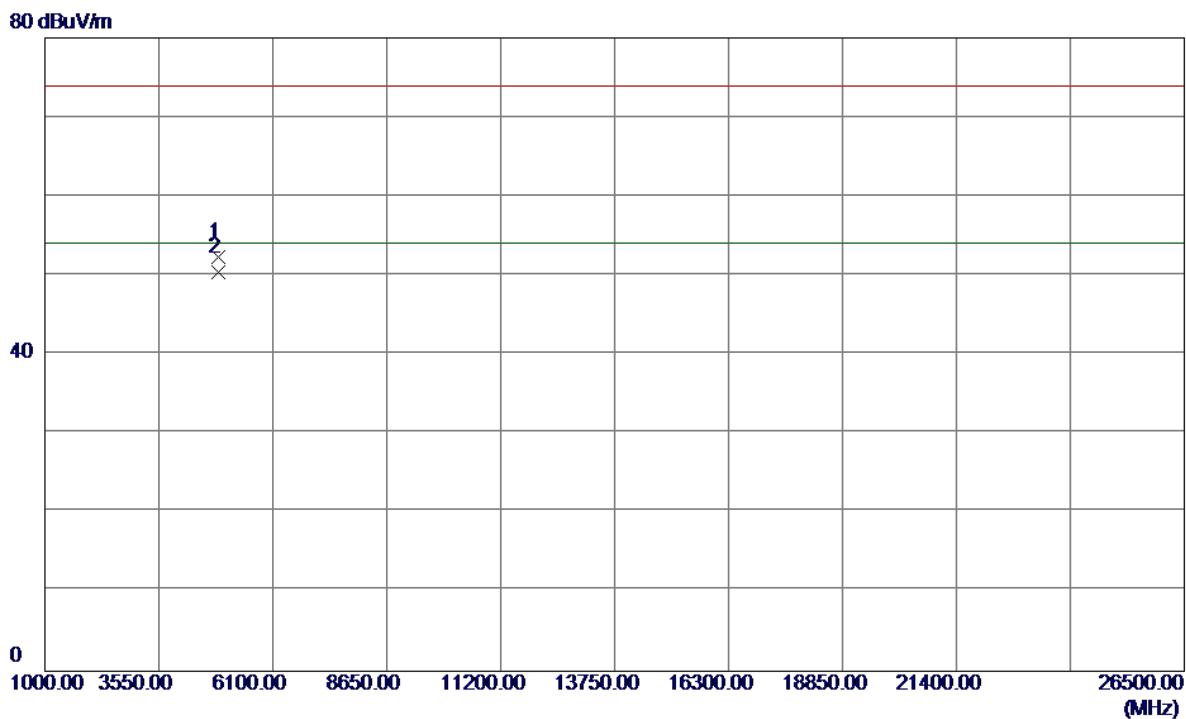
Horizontal

115 dBuV/m



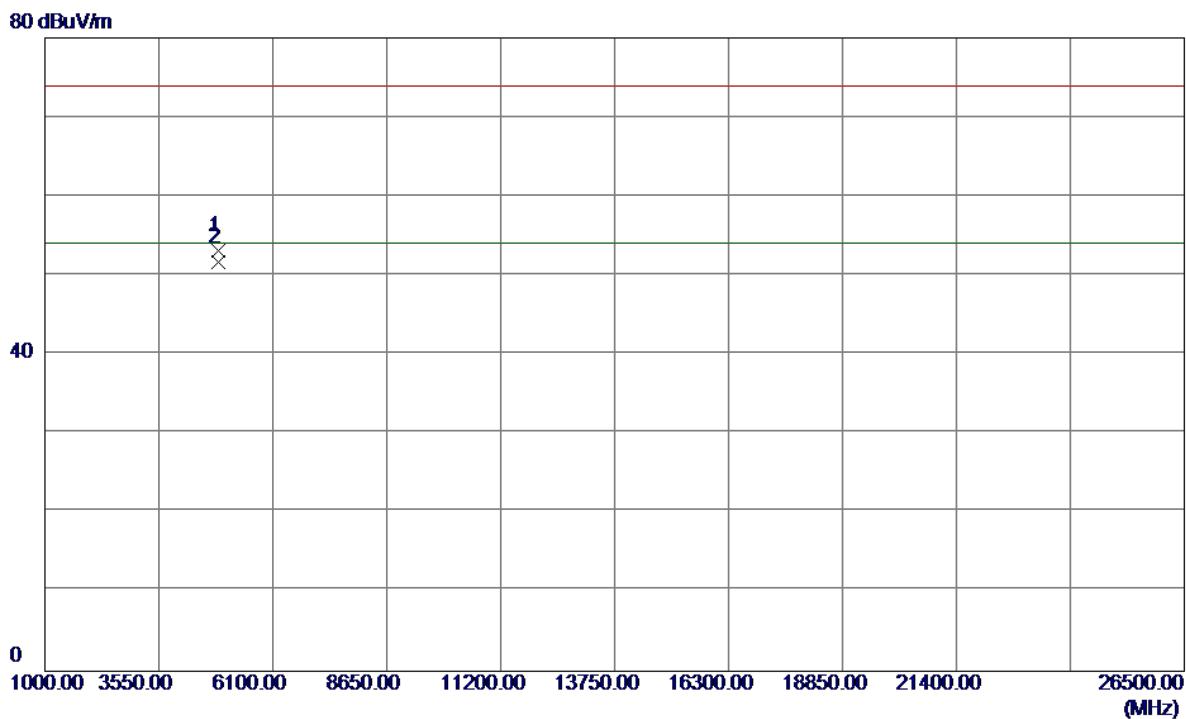
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2435.7000	64.50	33.20	97.70	54.00	43.70	AVG	NO LIMIT
2	2436.1000	67.22	33.20	100.42	74.00	26.42	Peak	NO LIMIT

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

Horizontal

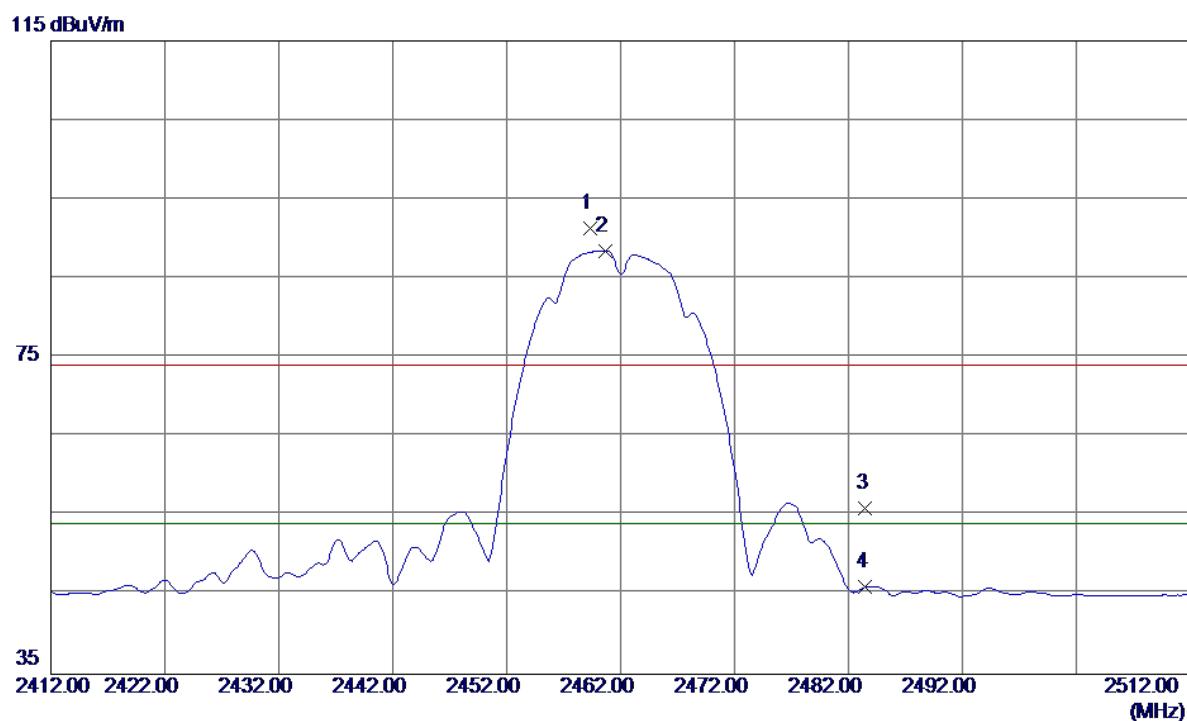
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4873.7850	47.25	5.06	52.31	74.00	-21.69	Peak	
2 *	4873.8500	45.33	5.06	50.39	54.00	-3.61	AVG	

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

Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4873.8400	48.07	5.06	53.13	74.00	-20.87	Peak	
2 *	4873.9100	46.69	5.07	51.76	54.00	-2.24	AVG	

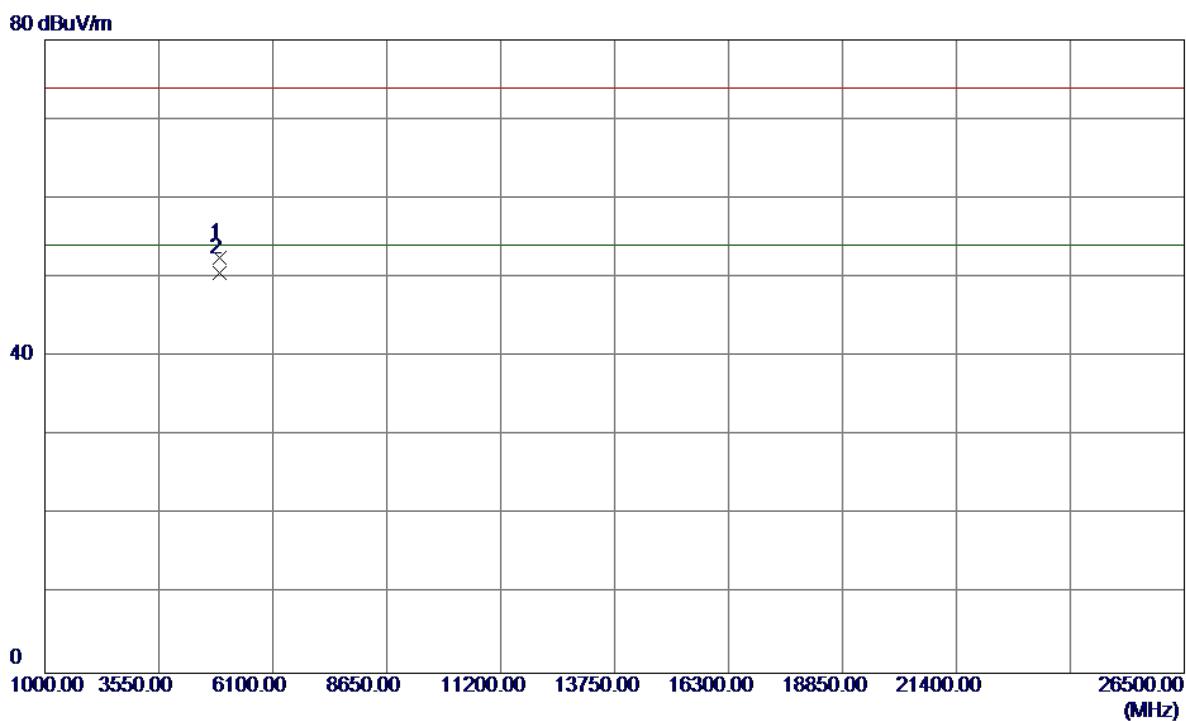
Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

Vertical

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2459.3000	58.02	33.30	91.32	74.00	17.32	Peak	NO LIMIT
2 *	2460.7000	55.19	33.31	88.50	54.00	34.50	AVG	NO LIMIT
3	2483.5000	22.57	33.40	55.97	74.00	-18.03	Peak	
4	2483.5000	12.64	33.40	46.04	54.00	-7.96	AVG	

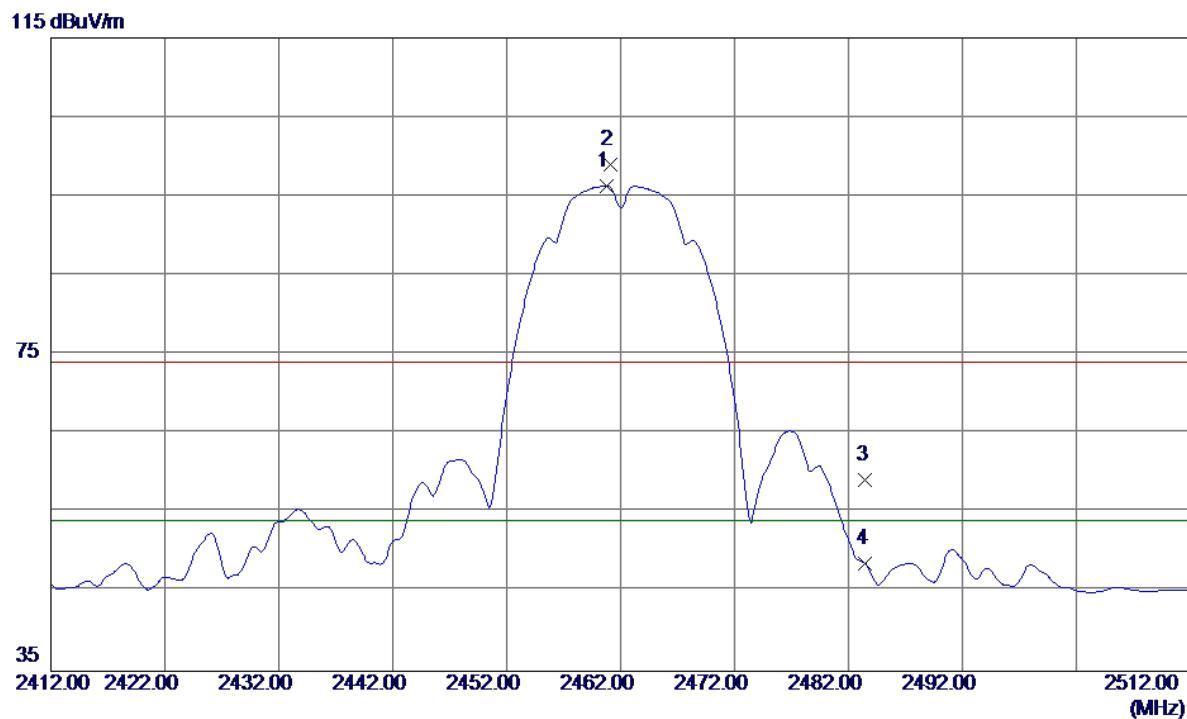
Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

Vertical



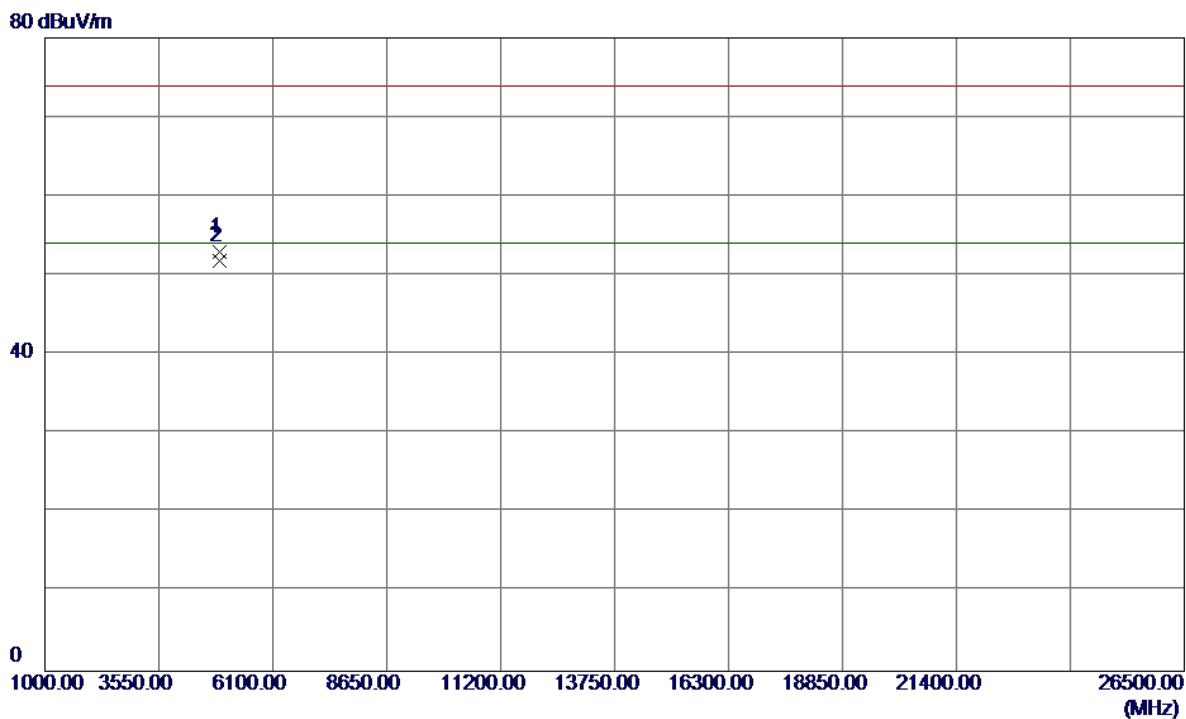
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4923.8500	47.16	5.28	52.44	74.00	-21.56	Peak	
2 *	4923.8950	45.24	5.28	50.52	54.00	-3.48	AVG	

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

Horizontal

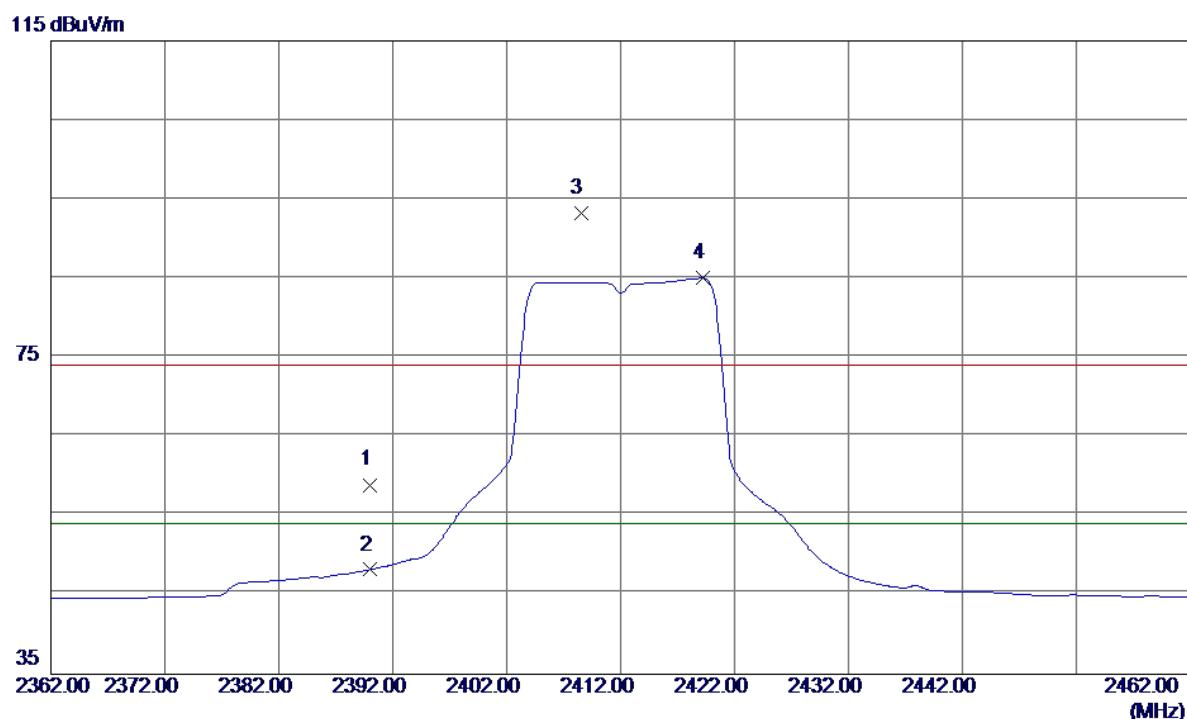
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2460.8000	63.02	33.31	96.33	54.00	42.33	AVG	NO LIMIT
2	2461.1000	65.76	33.31	99.07	74.00	25.07	Peak	NO LIMIT
3	2483.5000	25.74	33.40	59.14	74.00	-14.86	Peak	
4	2483.5000	15.19	33.40	48.59	54.00	-5.41	AVG	

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

Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4923.8800	47.74	5.28	53.02	74.00	-20.98	Peak	
2 *	4923.8950	46.49	5.28	51.77	54.00	-2.23	AVG	

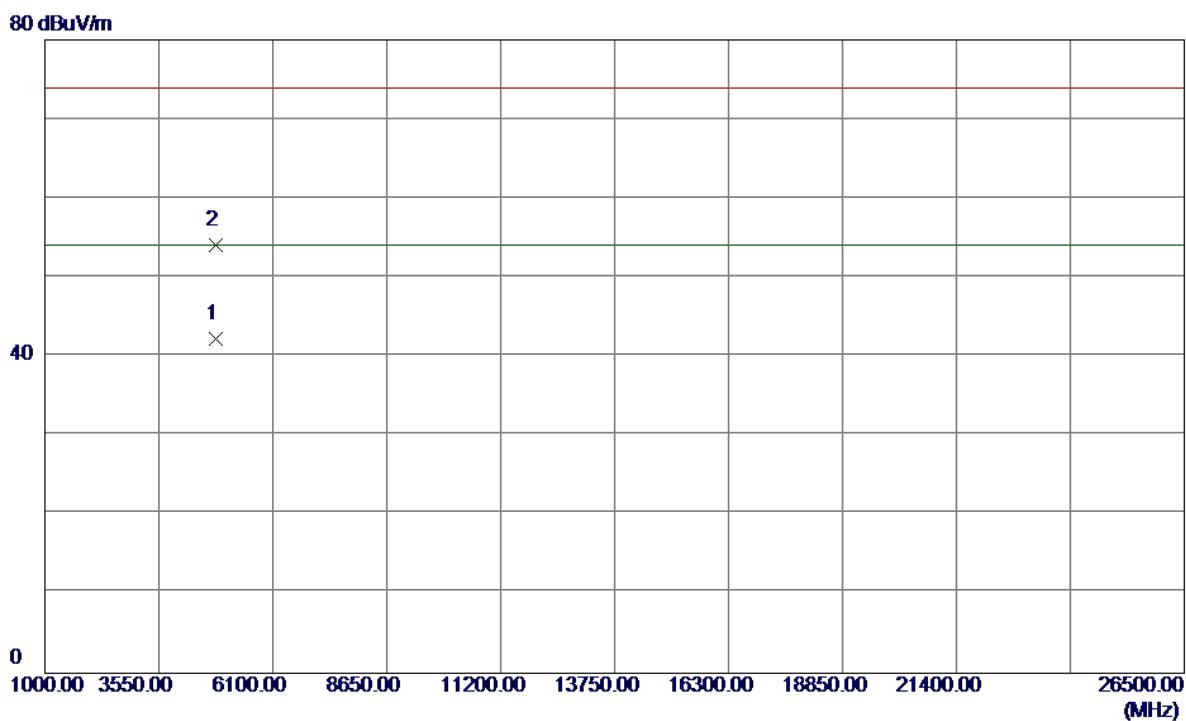
Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz

Vertical

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	25.91	33.01	58.92	74.00	-15.08	Peak	
2	2390.0000	15.19	33.01	48.20	54.00	-5.80	Avg	
3	2408.5000	60.22	33.09	93.31	74.00	19.31	Peak	NO LIMIT
4 *	2419.2000	51.89	33.13	85.02	54.00	31.02	Avg	NO LIMIT

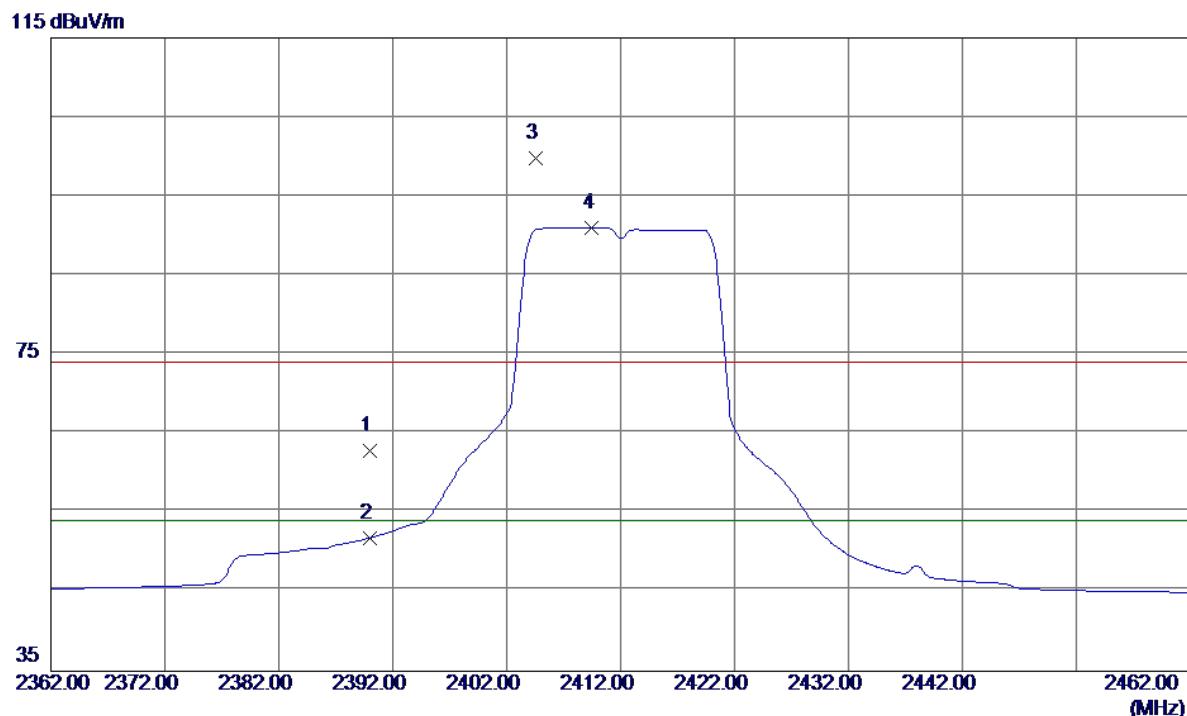
Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz

Vertical



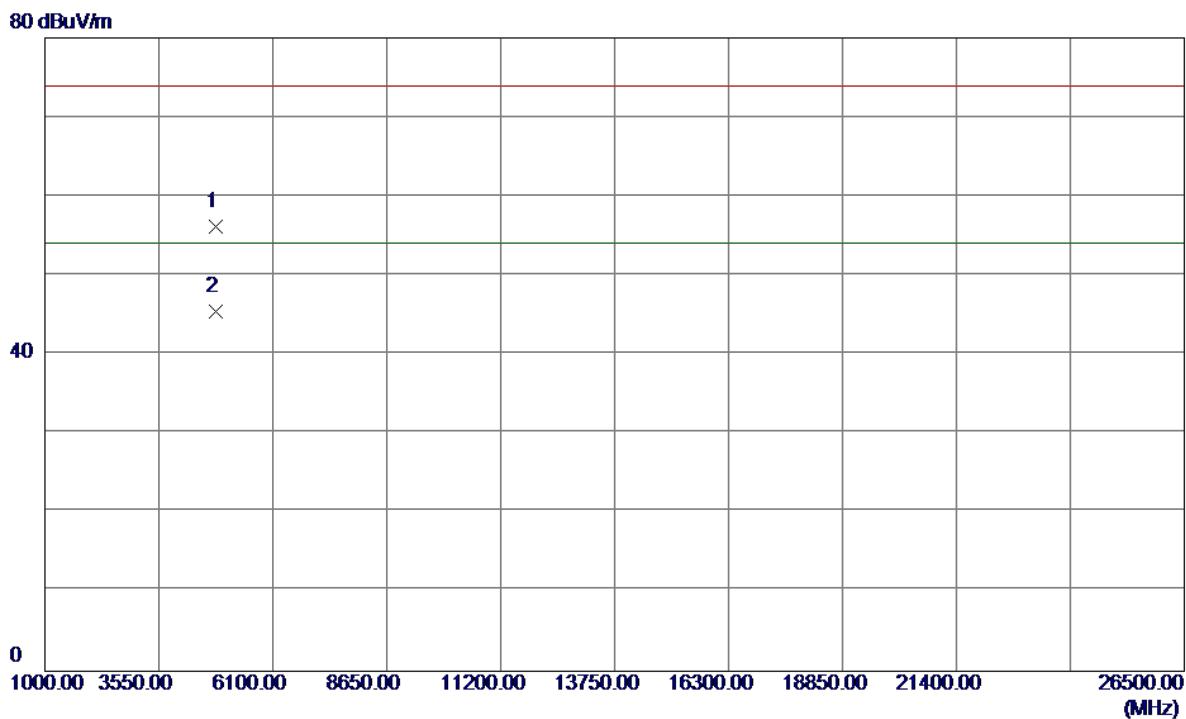
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4823.4000	37.38	4.85	42.23	54.00	-11.77	AVG	
2	4827.6500	49.26	4.87	54.13	74.00	-19.87	Peak	

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

Horizontal

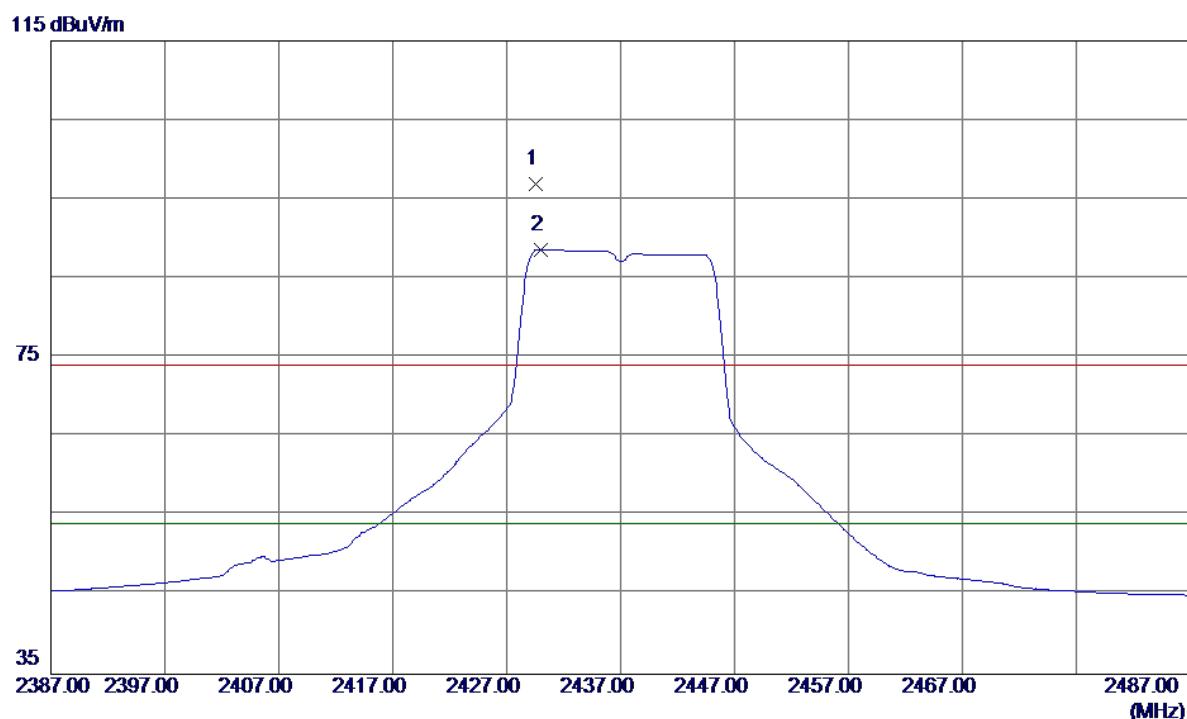
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	29.90	33.01	62.91	74.00	-11.09	Peak	
2	2390.0000	18.83	33.01	51.84	54.00	-2.16	Avg	
3	2404.6000	66.75	33.07	99.82	74.00	25.82	Peak	NO LIMIT
4 *	2409.5000	57.97	33.09	91.06	54.00	37.06	Avg	NO LIMIT

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

Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4823.4000	51.25	4.85	56.10	74.00	-17.90	Peak	
2 *	4824.0500	40.58	4.85	45.43	54.00	-8.57	AVG	

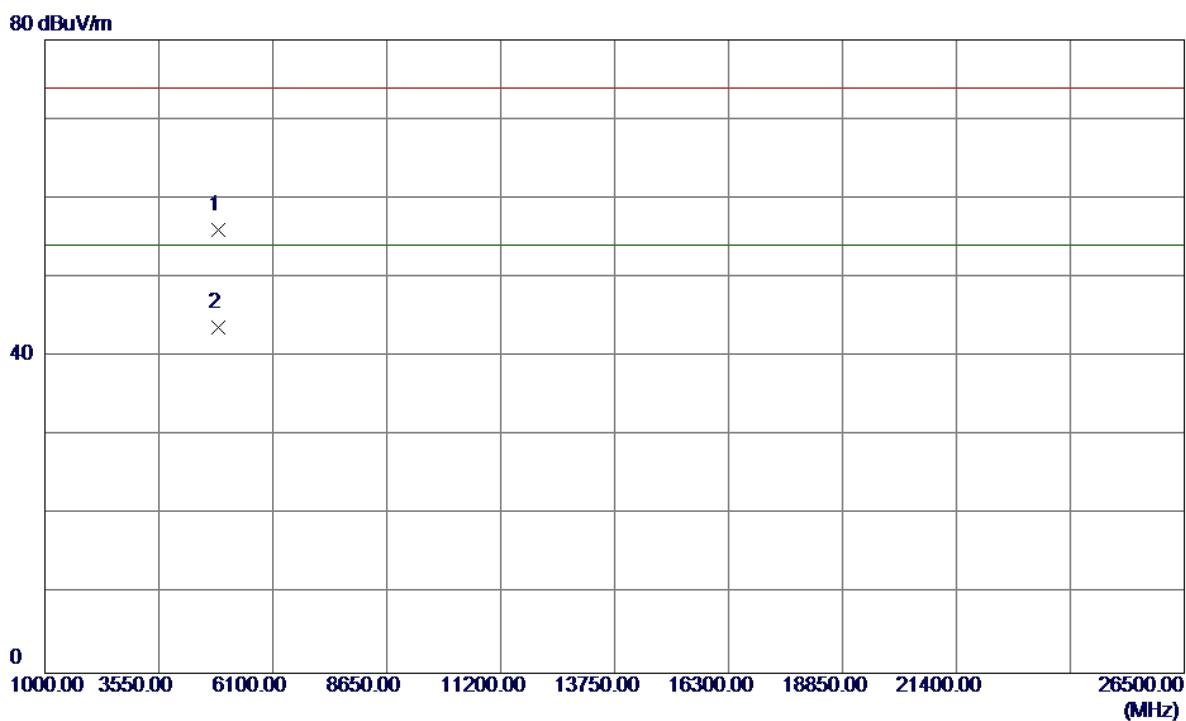
Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

Vertical

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2429.6000	63.75	33.18	96.93	74.00	22.93	Peak	NO LIMIT
2 *	2430.0000	55.49	33.18	88.67	54.00	34.67	AVG	NO LIMIT

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

Vertical

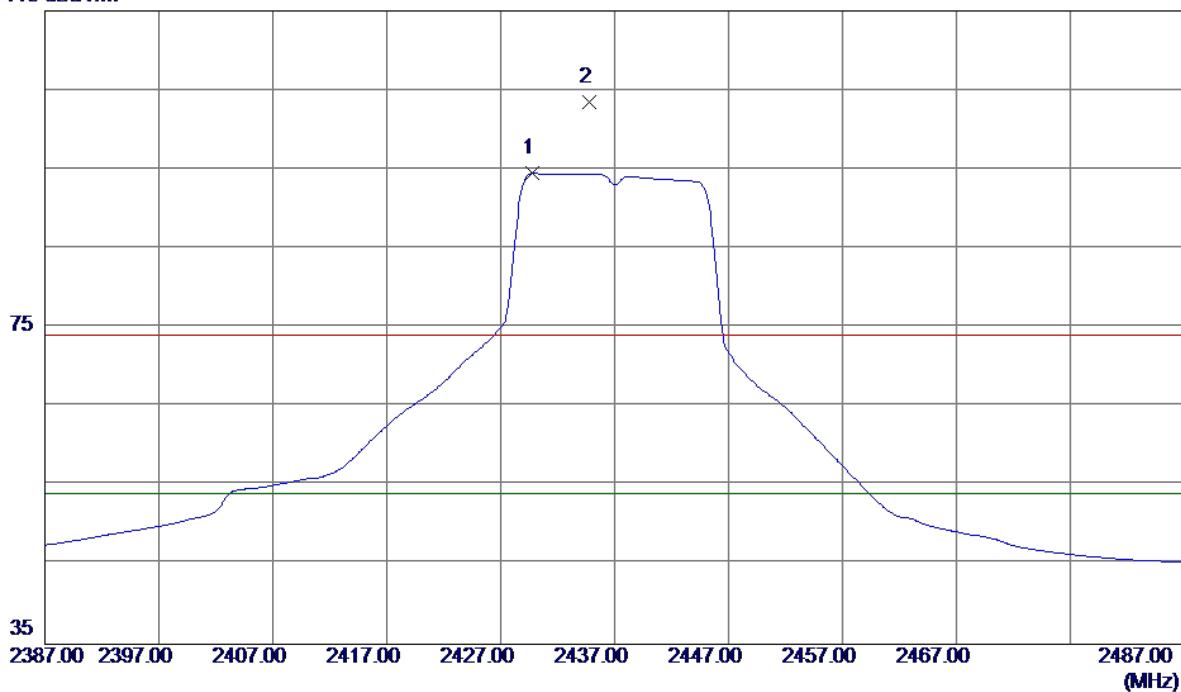


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4869.7500	50.98	5.05	56.03	74.00	-17.97	Peak	
2 *	4878.5500	38.64	5.08	43.72	54.00	-10.28	AVG	

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

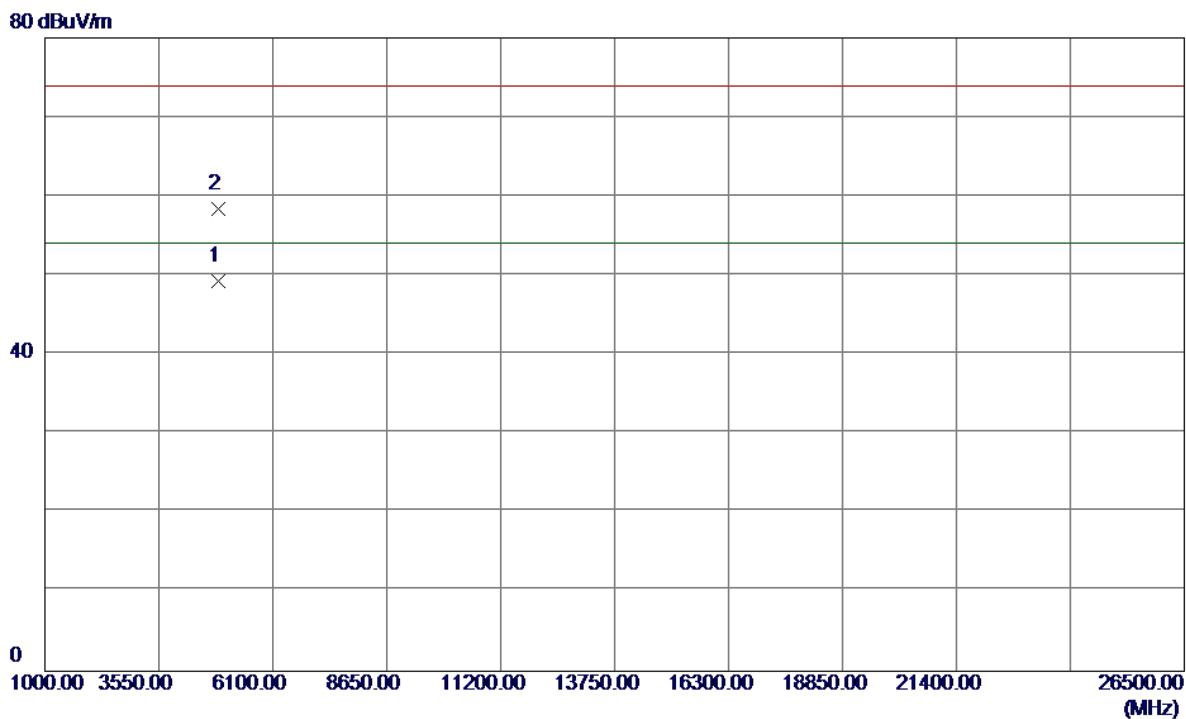
Horizontal

115 dBuV/m



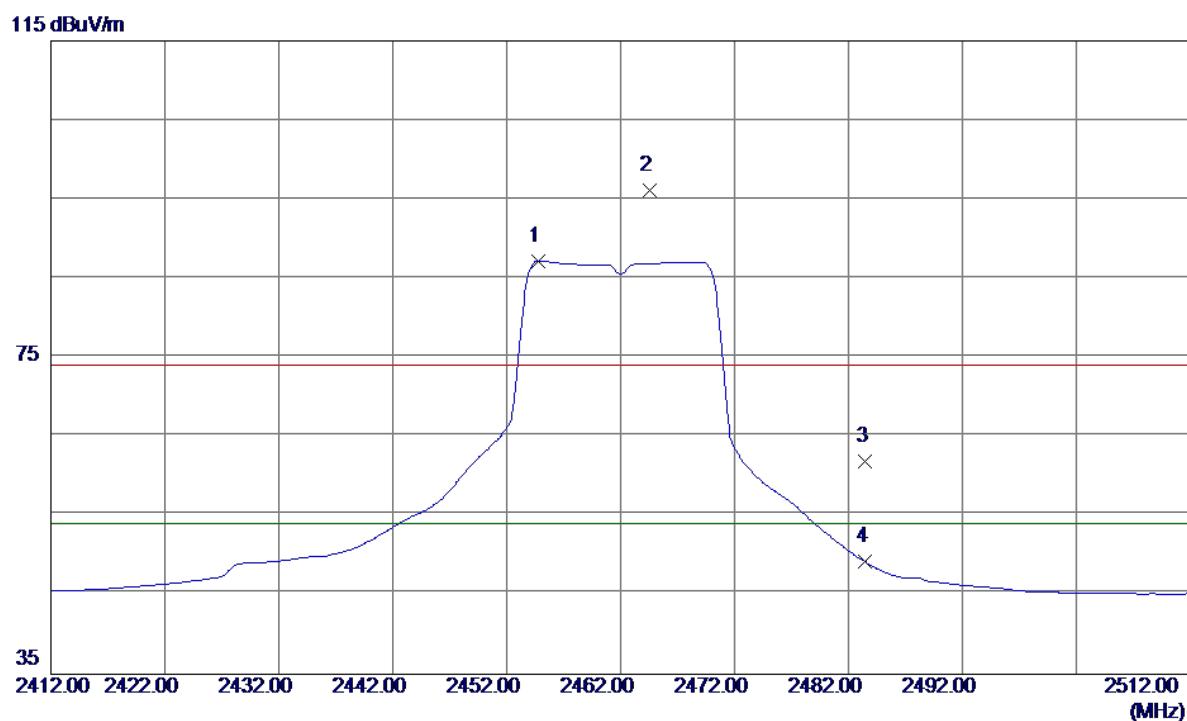
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2429.8000	61.28	33.18	94.46	54.00	40.46	AVG	NO LIMIT
2	2434.8000	70.24	33.20	103.44	74.00	29.44	Peak	NO LIMIT

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

Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4873.2500	44.23	5.06	49.29	54.00	-4.71	AVG	
2	4878.5500	53.39	5.08	58.47	74.00	-15.53	Peak	

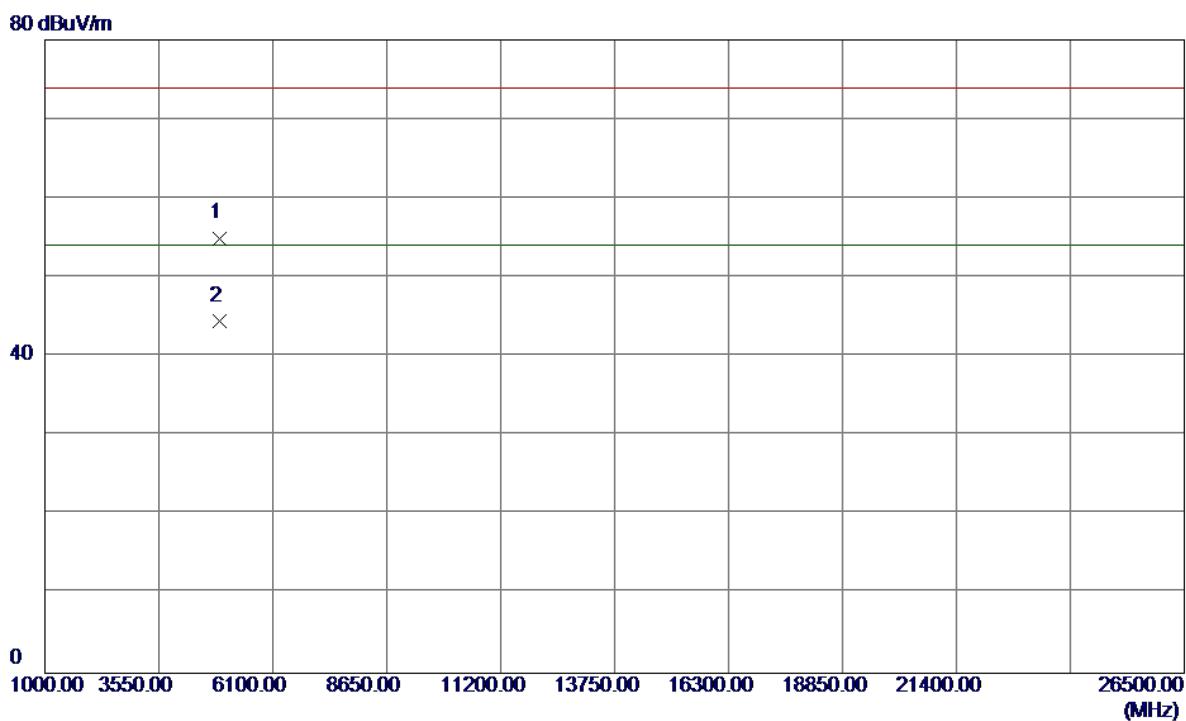
Orthogonal Axis :	X
Test Mode :	TX G MODE 2462MHz

Vertical

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2454.8000	53.93	33.28	87.21	54.00	33.21	AVG	NO LIMIT
2	2464.6000	62.87	33.32	96.19	74.00	22.19	Peak	NO LIMIT
3	2483.5000	28.53	33.40	61.93	74.00	-12.07	Peak	
4	2483.5000	15.77	33.40	49.17	54.00	-4.83	AVG	

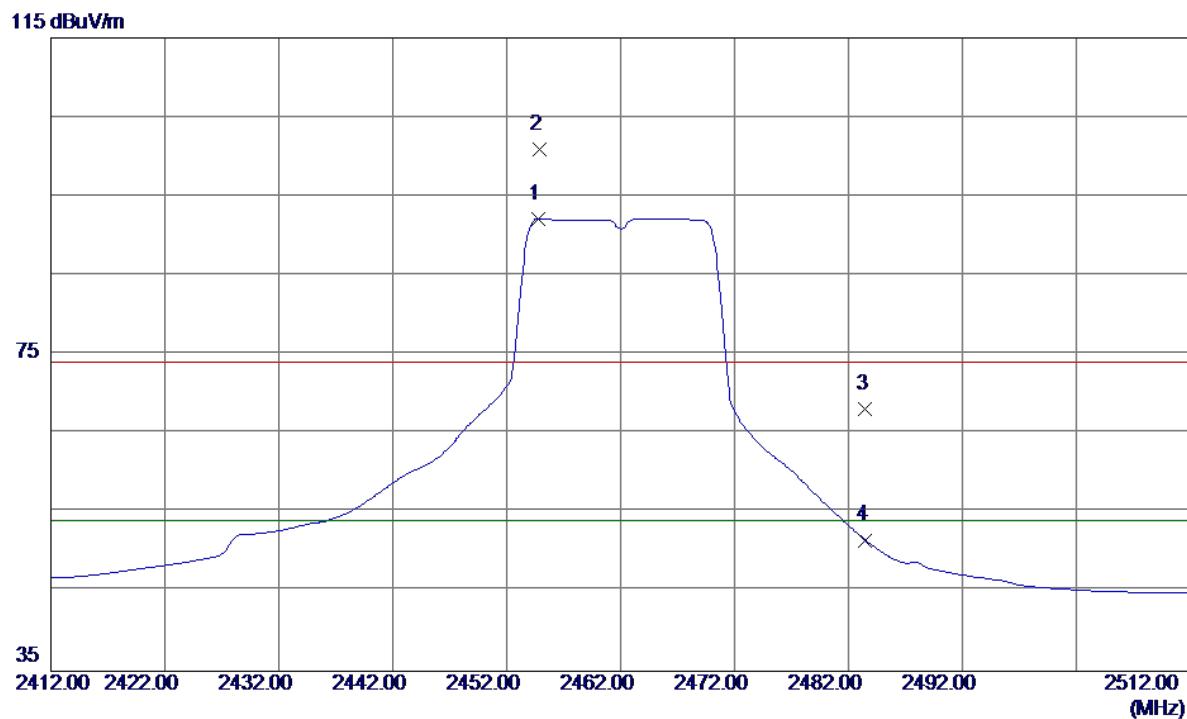
Orthogonal Axis :	X
Test Mode :	TX G MODE 2462MHz

Vertical



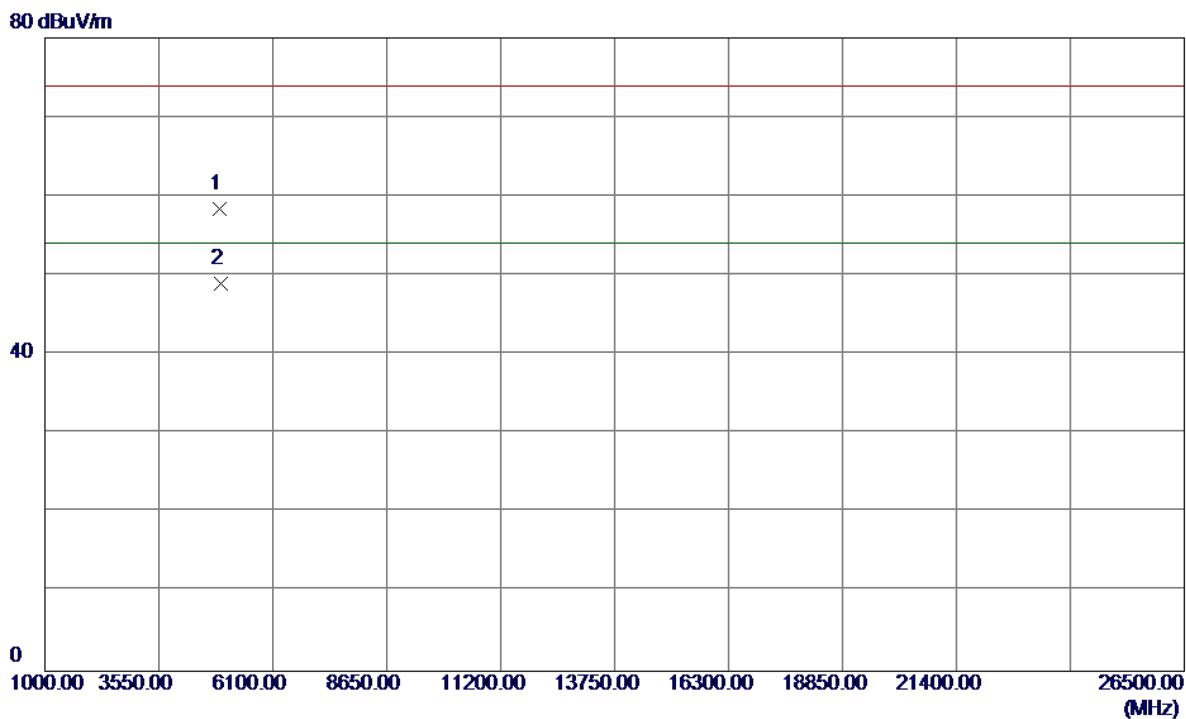
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4917.1500	49.71	5.25	54.96	74.00	-19.04	Peak	
2 *	4924.0500	39.21	5.28	44.49	54.00	-9.51	AVG	

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

Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2454.8000	58.87	33.28	92.15	54.00	38.15	AVG	NO LIMIT
2	2454.9000	67.70	33.28	100.98	74.00	26.98	Peak	NO LIMIT
3	2483.5000	34.78	33.40	68.18	74.00	-5.82	Peak	
4	2483.5000	18.16	33.40	51.56	54.00	-2.44	AVG	

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

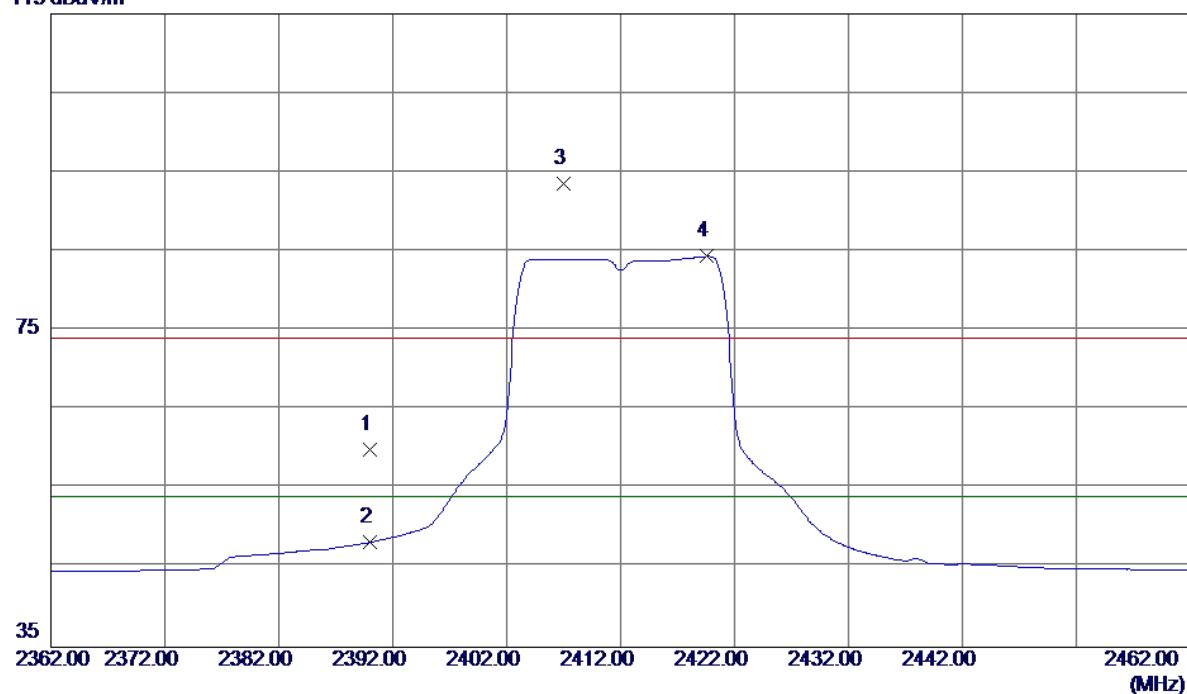
Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4923.1000	53.13	5.27	58.40	74.00	-15.60	Peak	
2 *	4924.6000	43.70	5.28	48.98	54.00	-5.02	AVG	

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

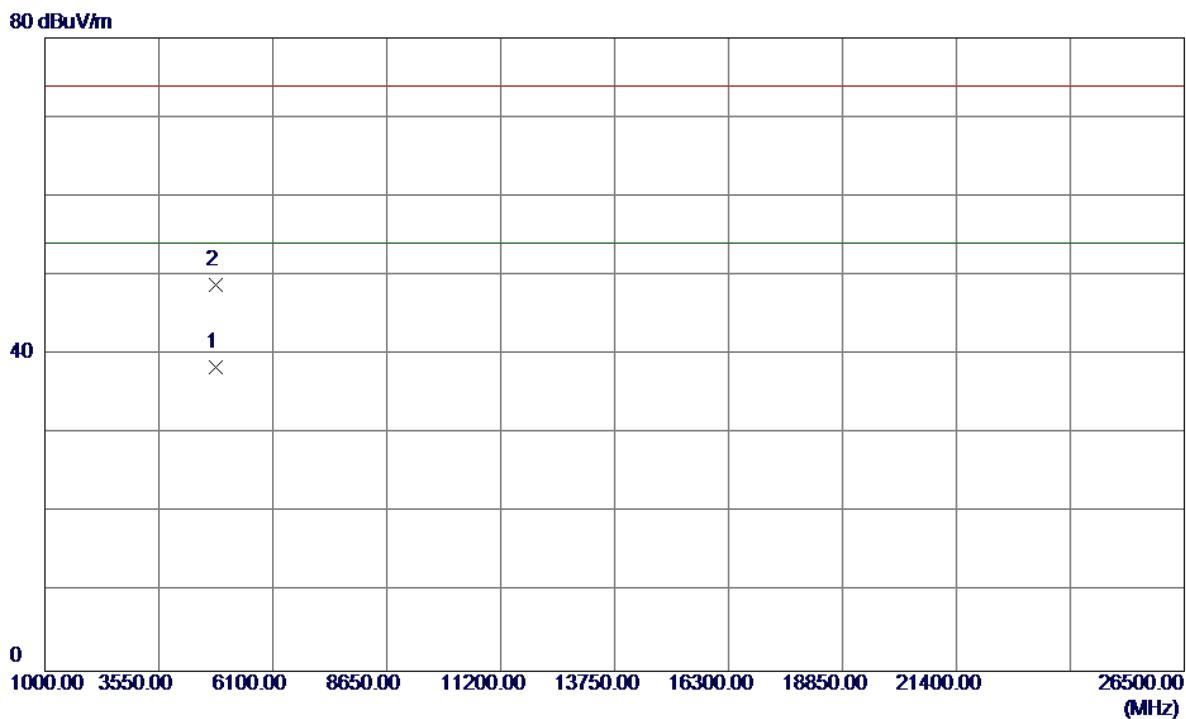
Vertical

115 dBuV/m



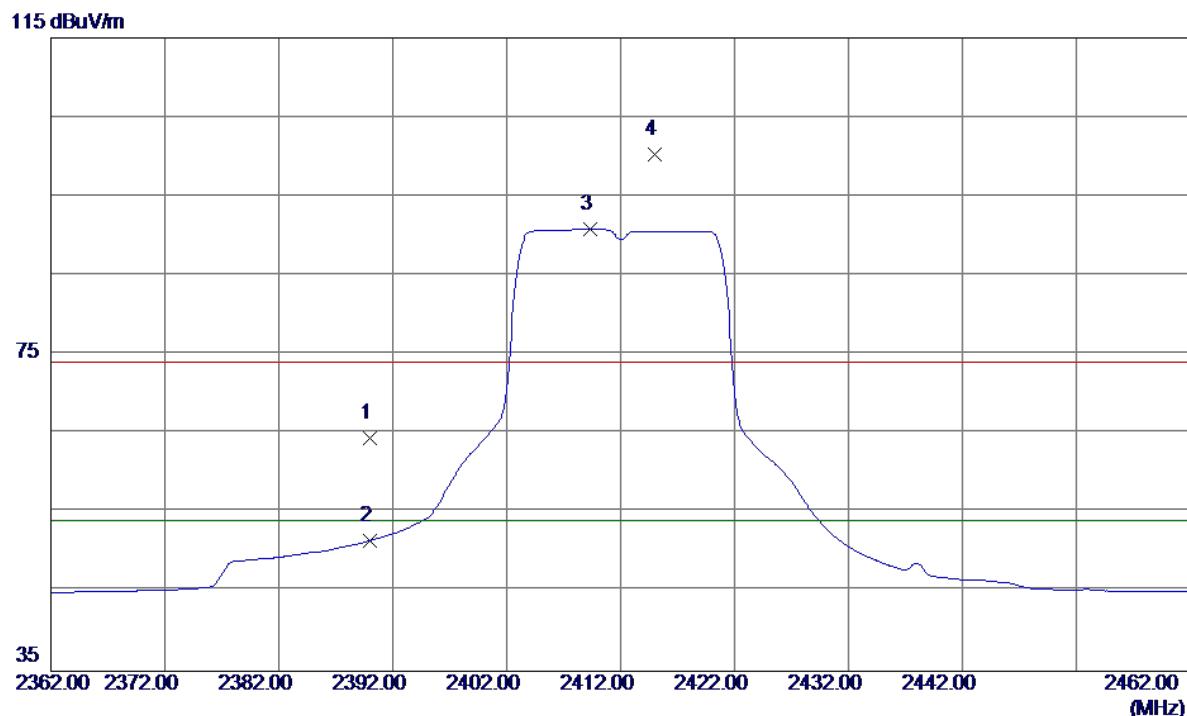
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	26.98	33.01	59.99	74.00	-14.01	Peak	
2	2390.0000	15.24	33.01	48.25	54.00	-5.75	AVG	
3	2407.0000	60.41	33.08	93.49	74.00	19.49	Peak	NO LIMIT
4 *	2419.6000	51.24	33.13	84.37	54.00	30.37	AVG	NO LIMIT

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

Vertical

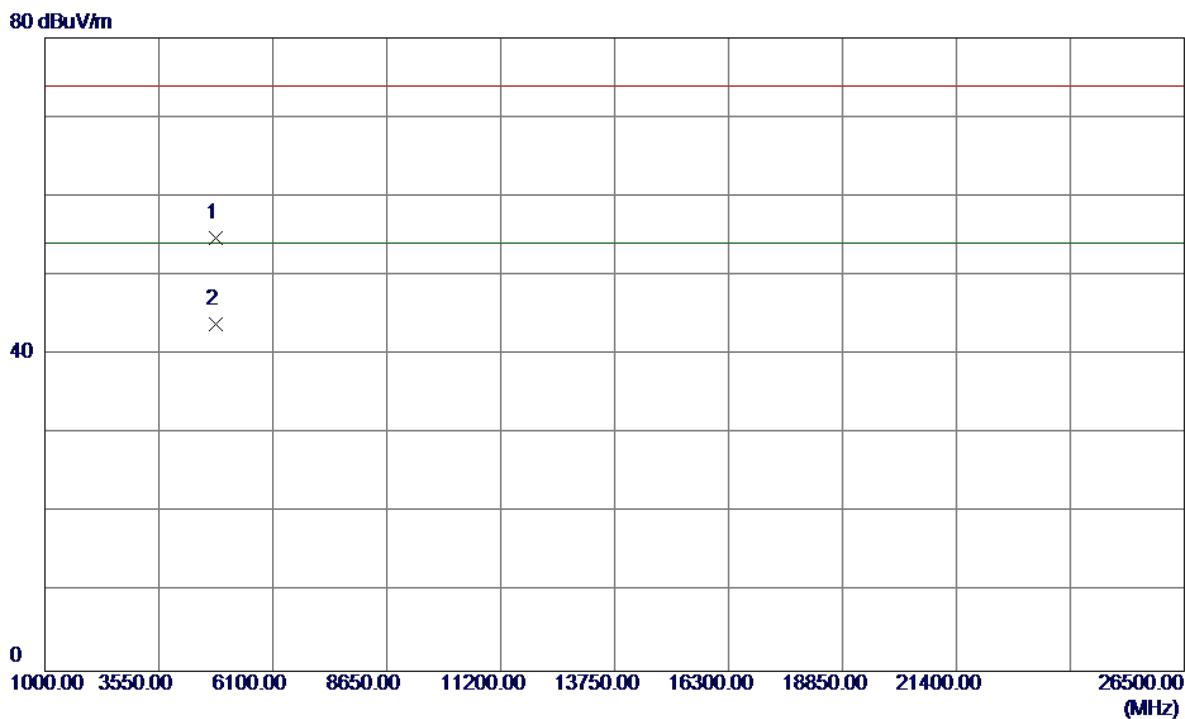
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4824.3000	33.55	4.85	38.40	54.00	-15.60	AVG	
2	4824.8500	43.89	4.86	48.75	74.00	-25.25	Peak	

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

Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	31.37	33.01	64.38	74.00	-9.62	Peak	
2	2390.0000	18.50	33.01	51.51	54.00	-2.49	Avg	
3 *	2409.3000	57.73	33.09	90.82	54.00	36.82	Avg	NO LIMIT
4	2415.0000	67.12	33.11	100.23	74.00	26.23	Peak	NO LIMIT

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

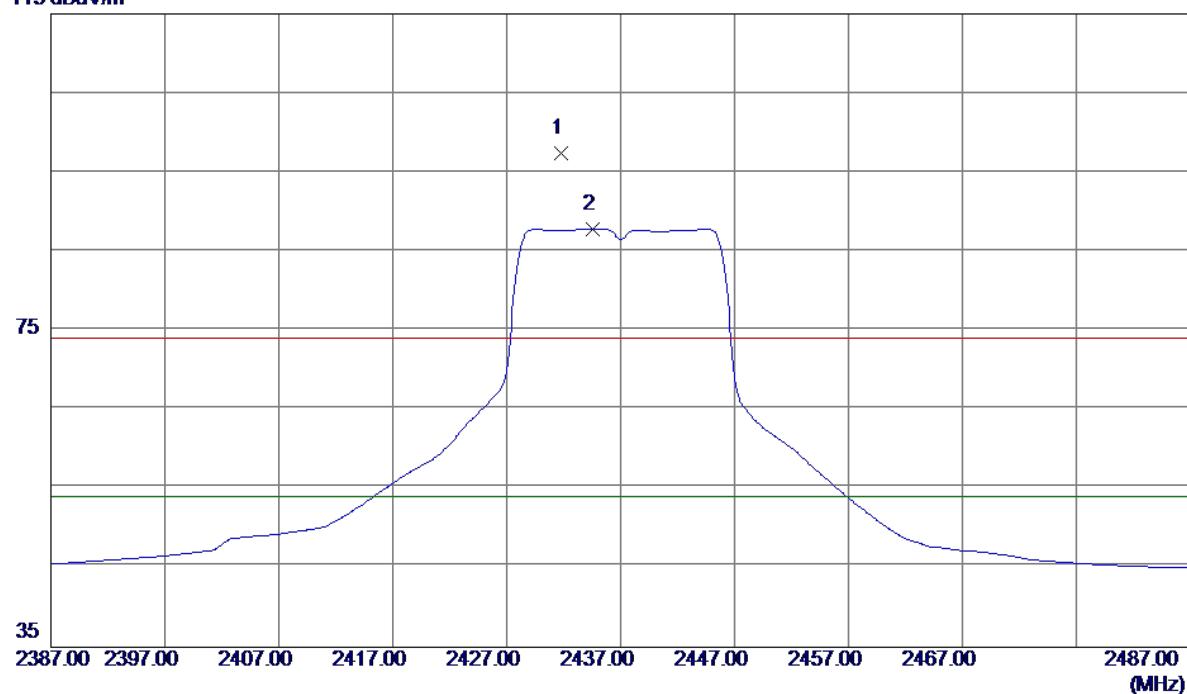
Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.3000	49.92	4.85	54.77	74.00	-19.23	Peak	
2 *	4824.6500	39.05	4.86	43.91	54.00	-10.09	AVG	

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

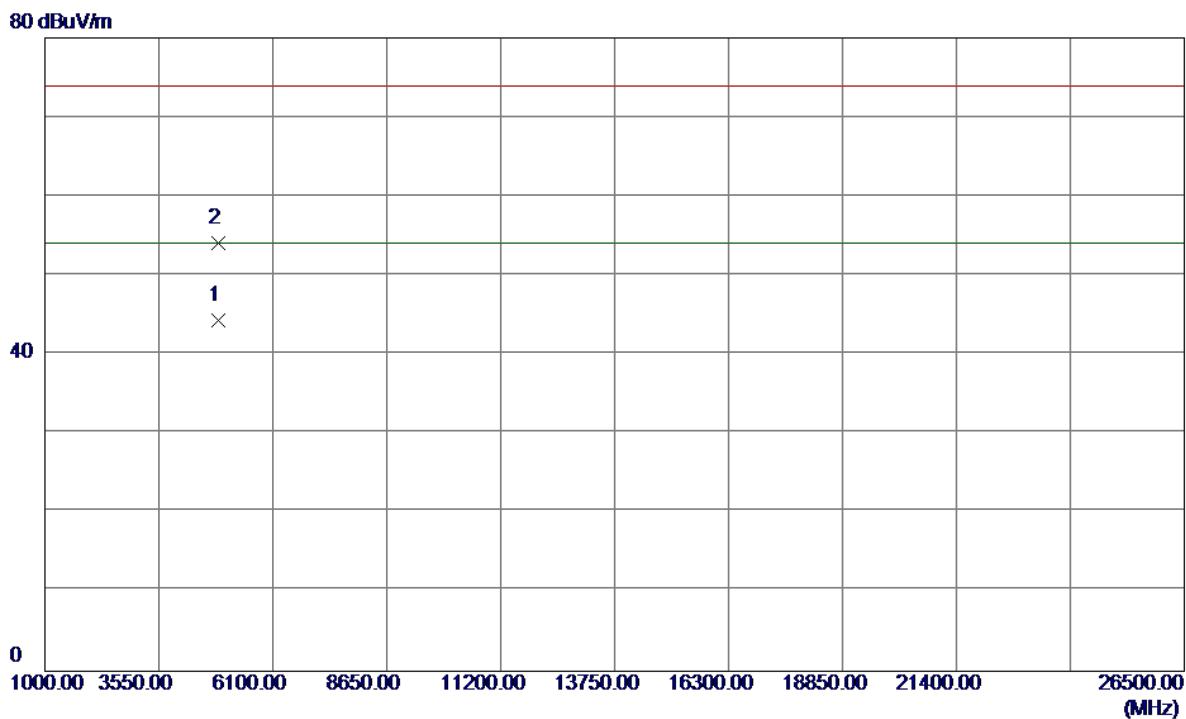
Vertical

115 dBuV/m



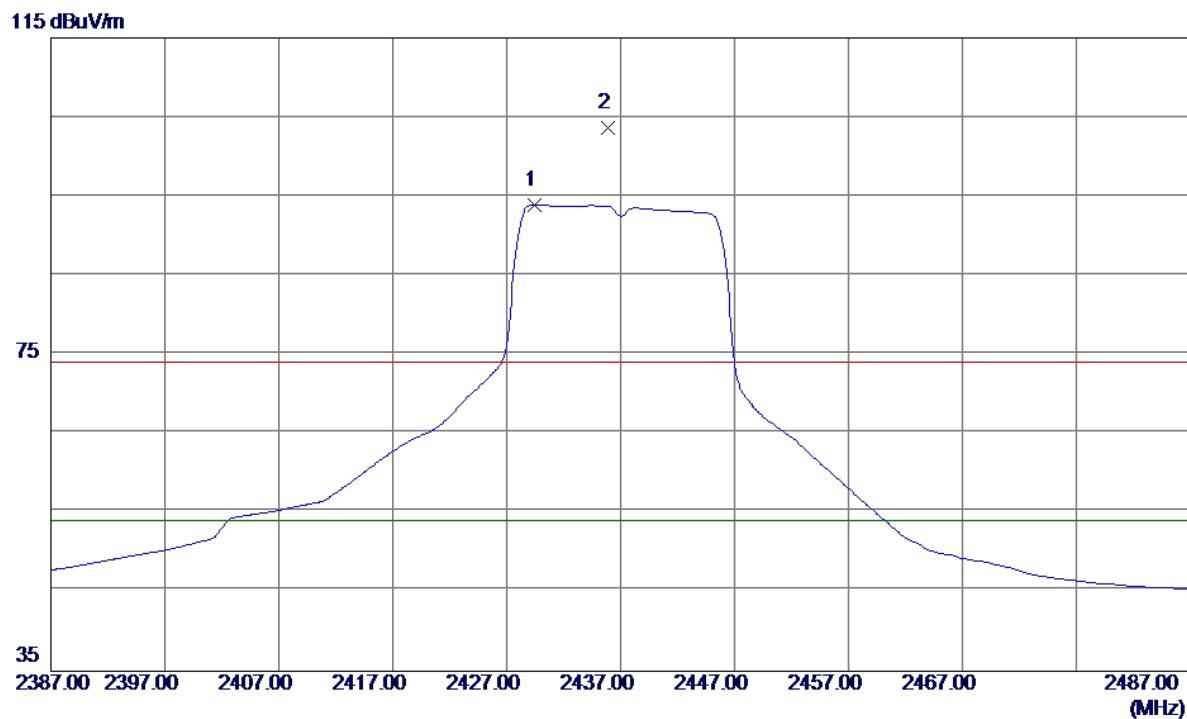
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2431.8000	64.28	33.18	97.46	74.00	23.46	Peak	NO LIMIT
2 *	2434.6000	54.59	33.20	87.79	54.00	33.79	AVG	NO LIMIT

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

Vertical

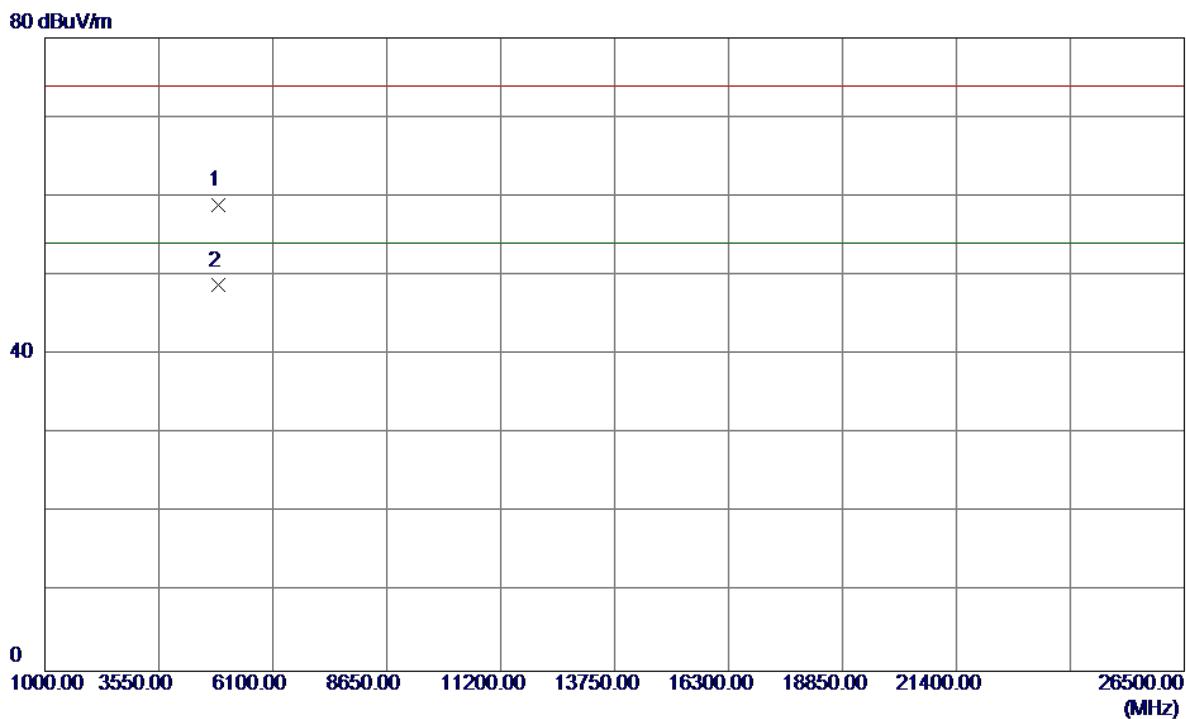
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4872.5500	39.32	5.06	44.38	54.00	-9.62	AVG	
2	4873.3500	49.07	5.06	54.13	74.00	-19.87	Peak	

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

Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2429.4000	60.70	33.17	93.87	54.00	39.87	AVG	NO LIMIT
2	2435.9000	70.42	33.20	103.62	74.00	29.62	Peak	NO LIMIT

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

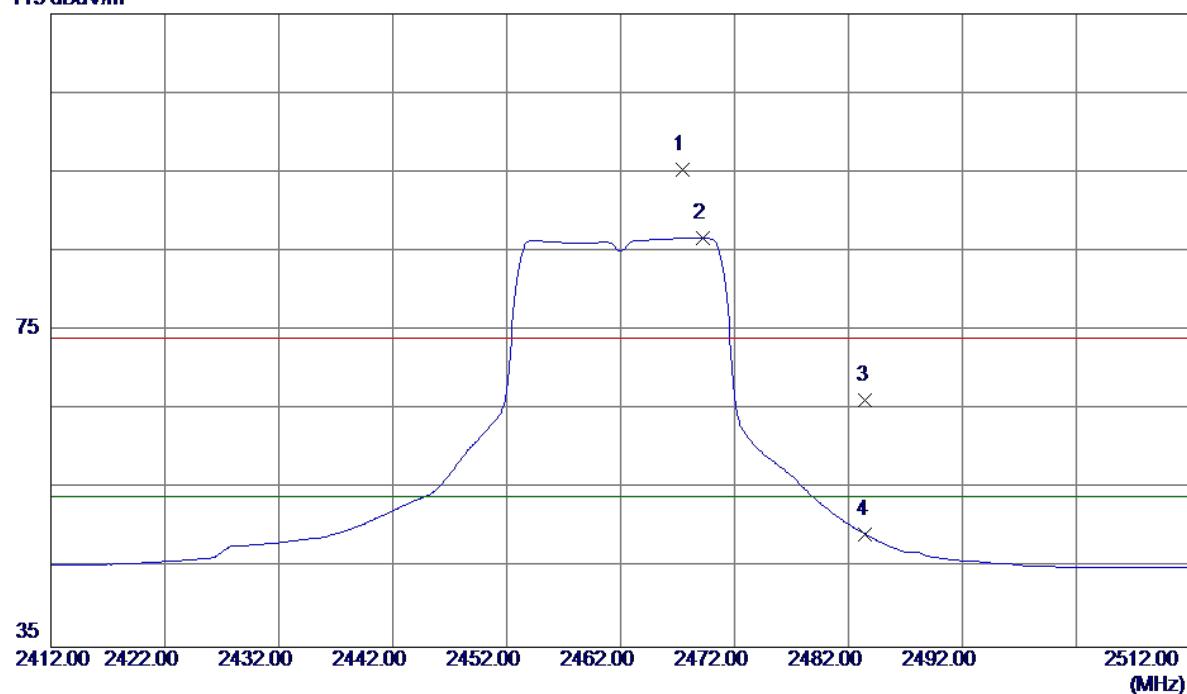
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	4873.3000	53.85	5.06	58.91	74.00	-15.09	Peak	
2 *	4874.0000	43.65	5.07	48.72	54.00	-5.28	AVG	

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

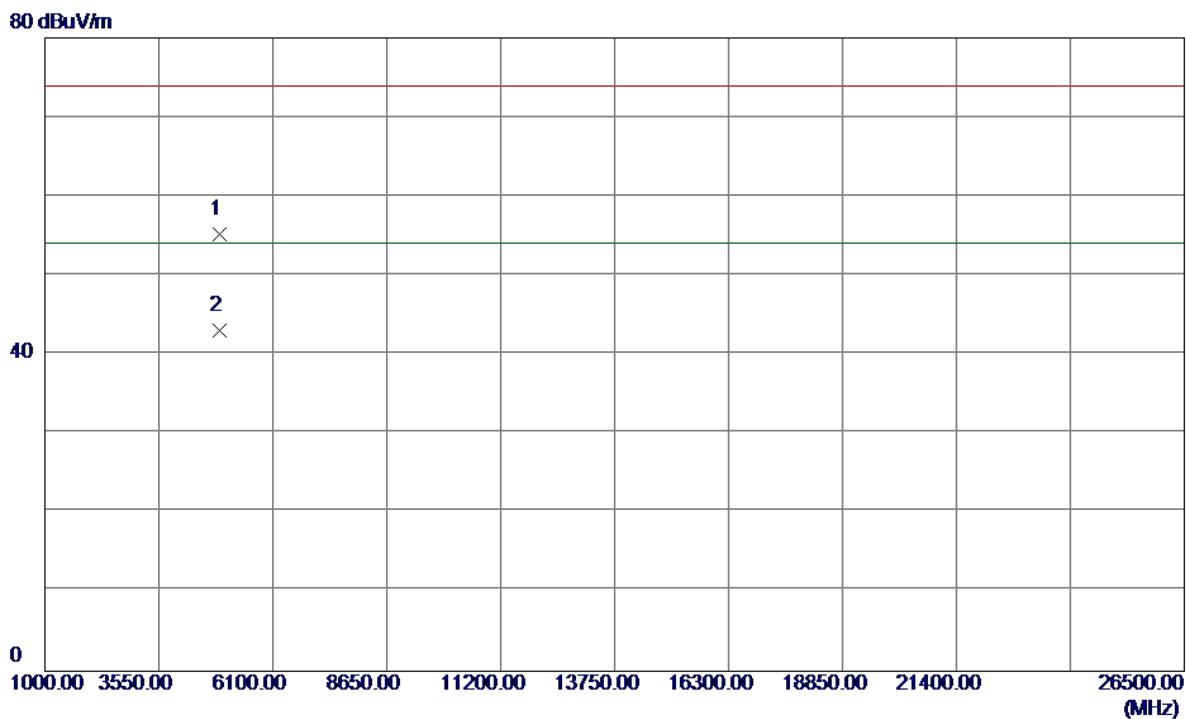
Vertical

115 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2467.4000	61.97	33.33	95.30	74.00	21.30	Peak	NO LIMIT
2 *	2469.2000	53.34	33.34	86.68	54.00	32.68	AVG	NO LIMIT
3	2483.5000	32.78	33.40	66.18	74.00	-7.82	Peak	
4	2483.5000	15.85	33.40	49.25	54.00	-4.75	AVG	

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

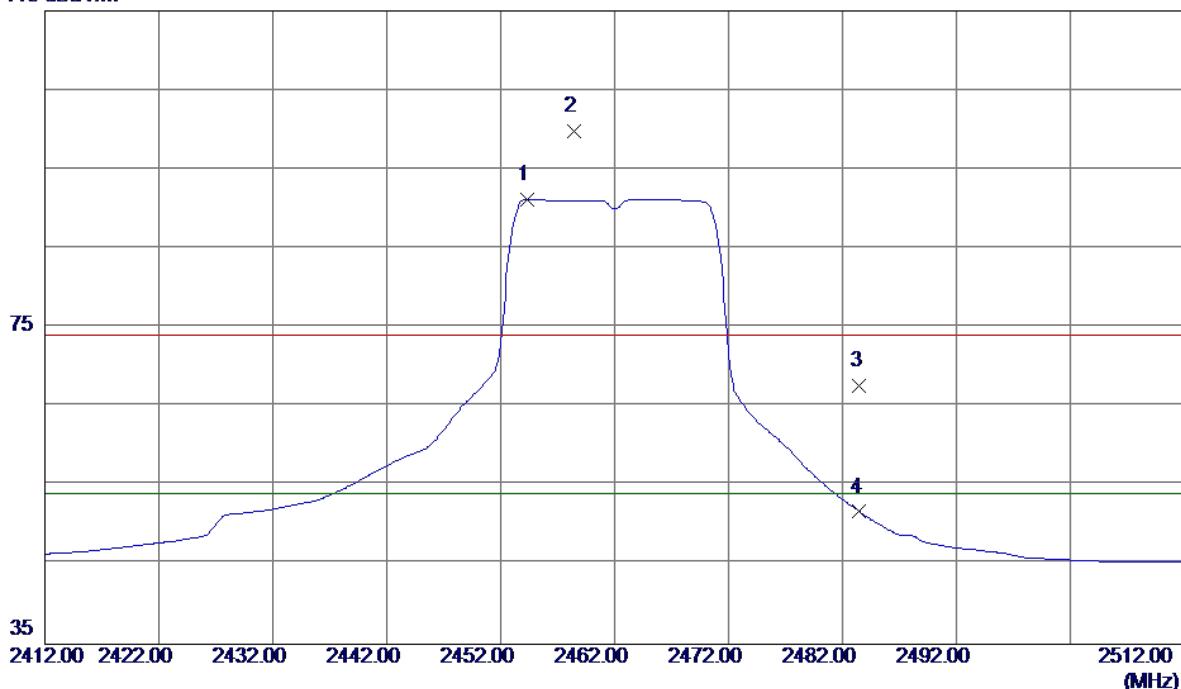
Vertical

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4919.7500	49.94	5.26	55.20	74.00	-18.80	Peak	
2 *	4922.0000	37.81	5.27	43.08	54.00	-10.92	AVG	

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

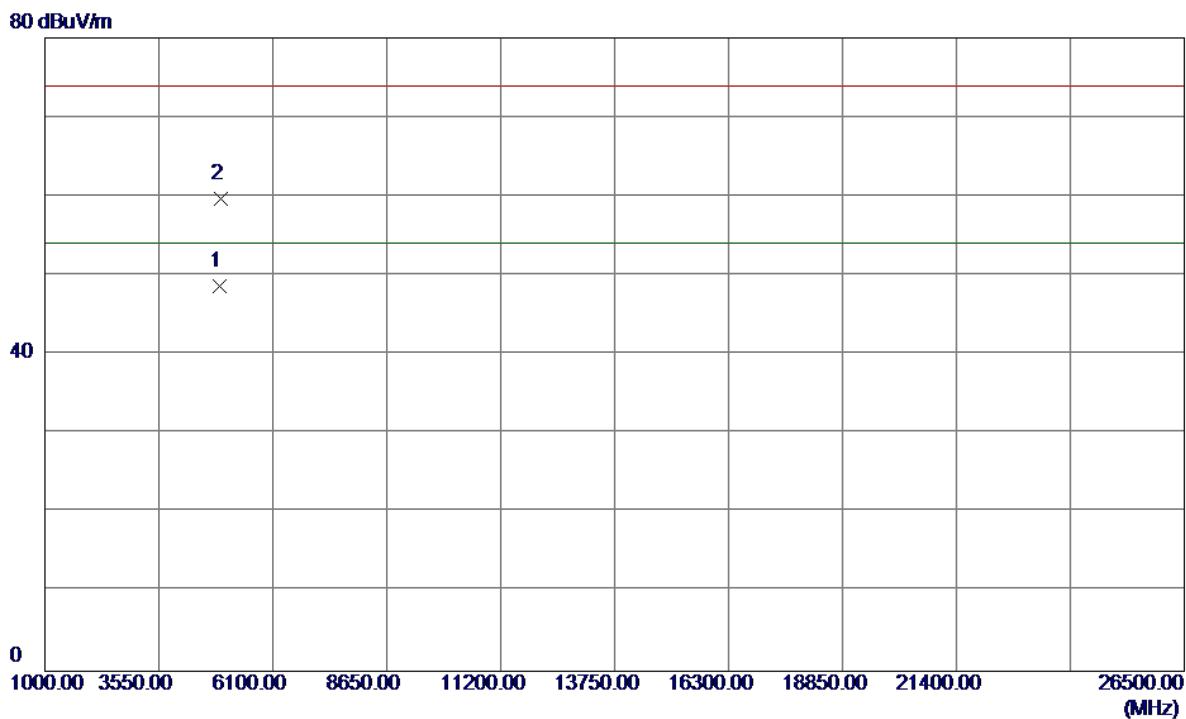
Horizontal

115 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2454.3000	57.92	33.28	91.20	54.00	37.20	AVG	NO LIMIT
2	2458.4000	66.56	33.30	99.86	74.00	25.86	Peak	NO LIMIT
3	2483.5000	34.24	33.40	67.64	74.00	-6.36	Peak	
4	2483.5000	18.32	33.40	51.72	54.00	-2.28	AVG	

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

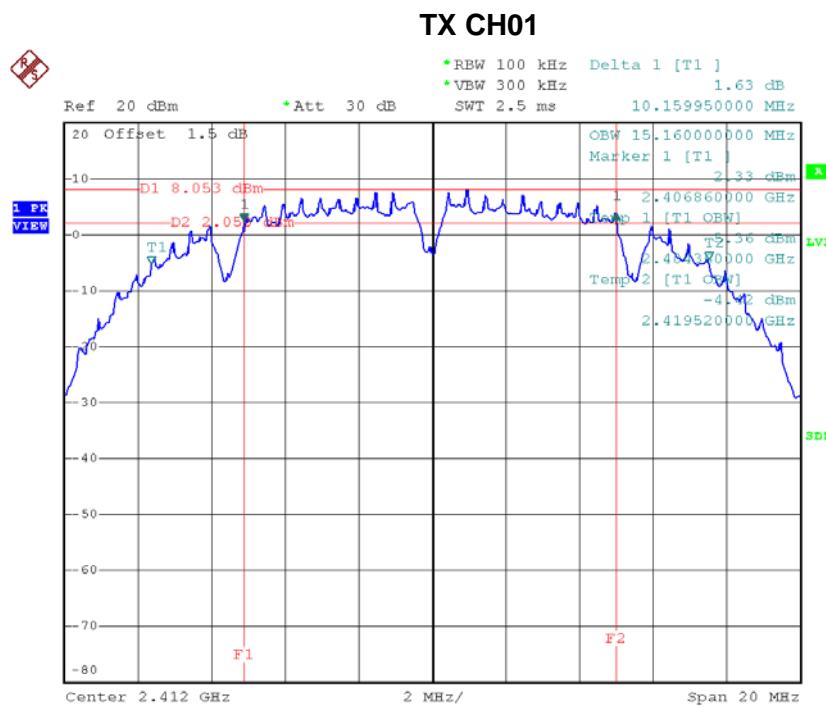
Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4923.5000	43.42	5.28	48.70	54.00	-5.30	AVG	
2	4924.4000	54.40	5.28	59.68	74.00	-14.32	Peak	

ATTACHMENT E - BANDWIDTH

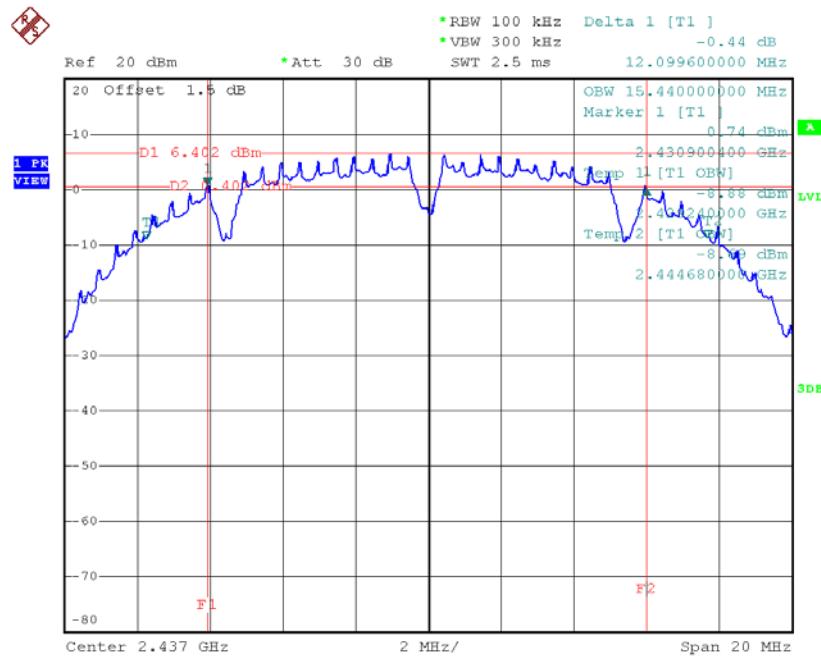
Test Mode : TX B Mode_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	10.16	15.16	500	Complies
2437	12.10	15.44	500	Complies
2462	12.12	15.36	500	Complies



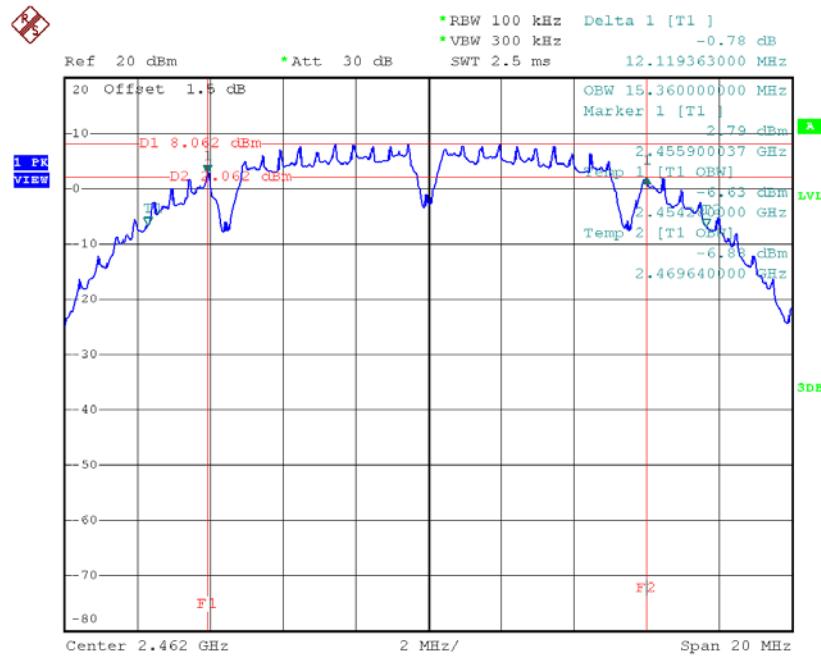
Date: 11.JAN.2017 19:50:16

TX CH06



Date: 11.JAN.2017 19:52:04

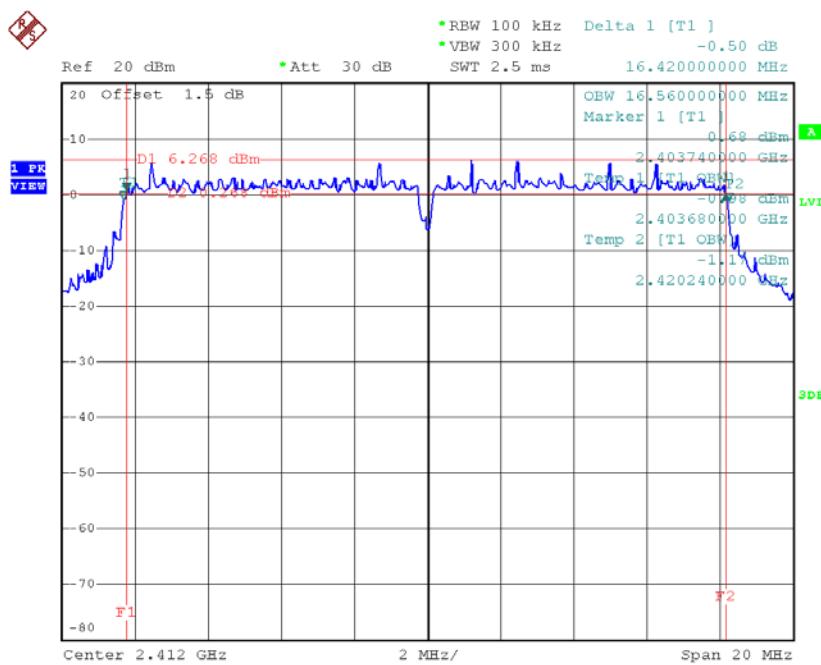
TX CH11



Date: 11.JAN.2017 19:55:06

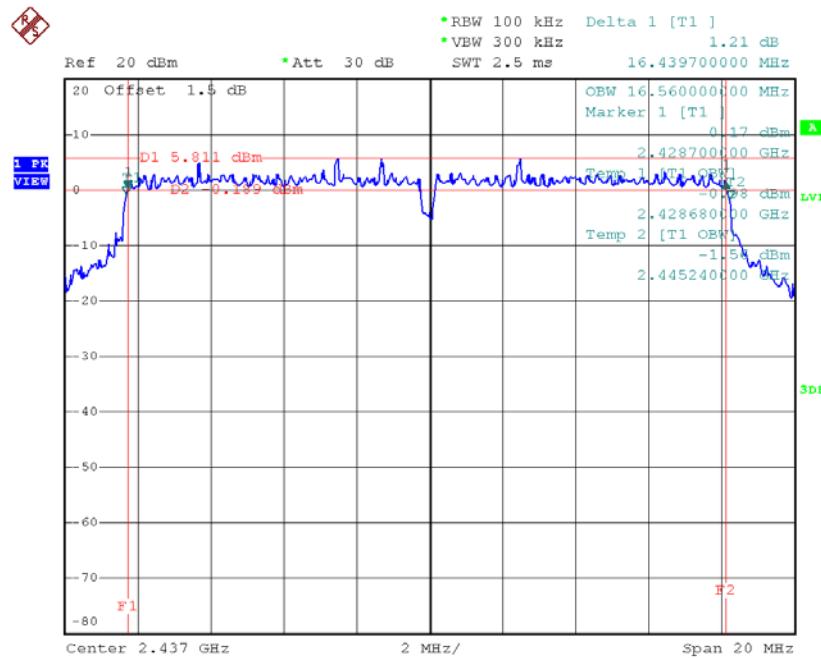
Test Mode: TX G Mode_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	16.42	16.56	500	Complies
2437	16.44	16.56	500	Complies
2462	16.43	16.6	500	Complies

TX CH01


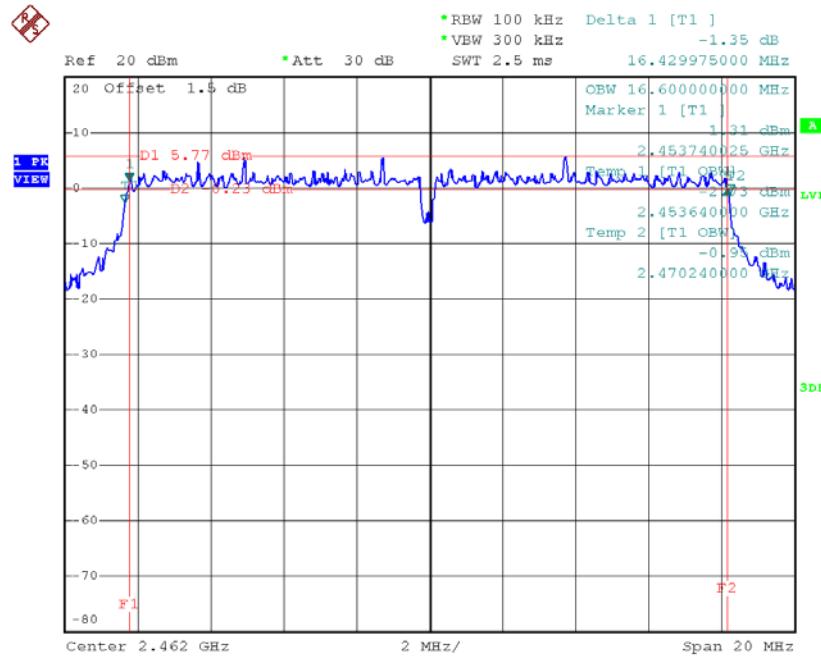
Date: 11.JAN.2017 20:02:57

TX CH06



Date: 11.JAN.2017 20:04:11

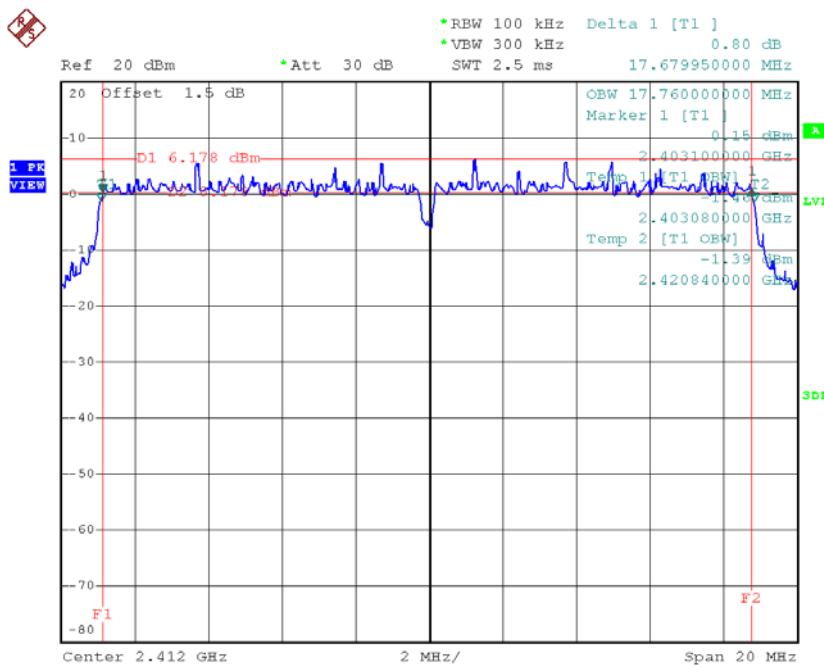
TX CH11



Date: 11.JAN.2017 20:05:17

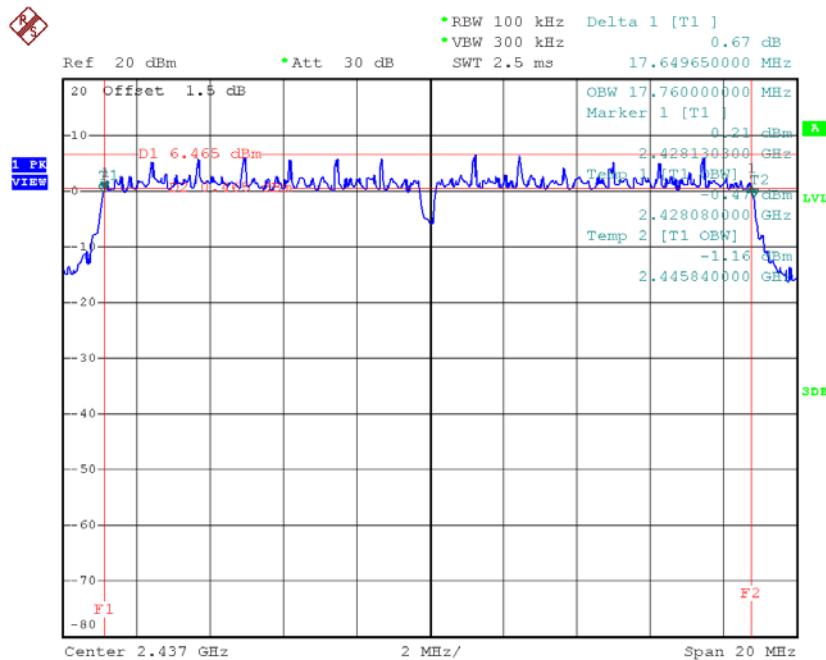
Test Mode : TX N-20MHz Mode_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	17.68	17.76	500	Complies
2437	17.65	17.76	500	Complies
2462	17.68	17.76	500	Complies

TX CH01


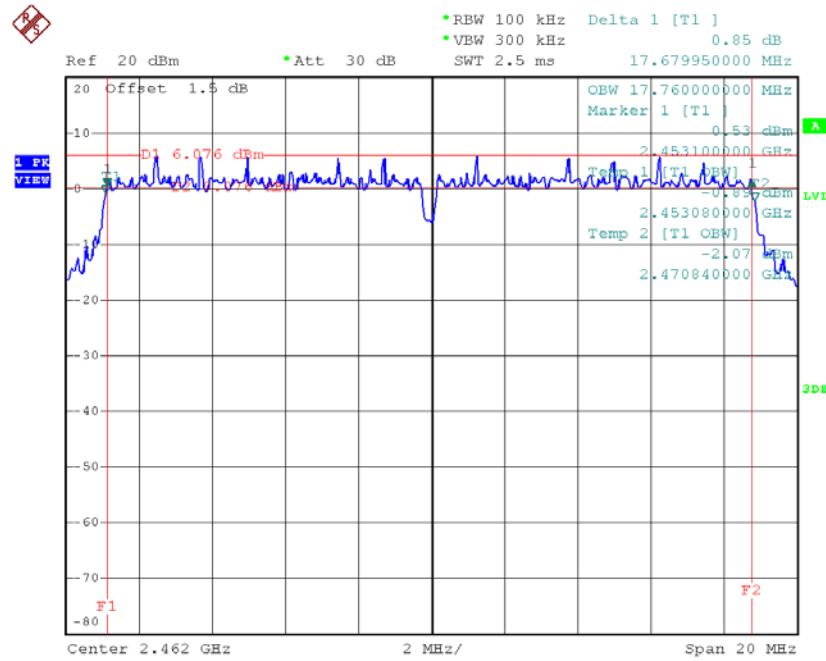
Date: 11.JAN.2017 20:07:21

TX CH06



Date: 11.JAN.2017 20:08:51

TX CH11



Date: 11.JAN.2017 20:10:01

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	13.65	0.02	30.00	1.00	Complies
2437	14.75	0.03	30.00	1.00	Complies
2462	13.64	0.02	30.00	1.00	Complies

Test Mode :TX G Mode_CH01/06/11

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	21.92	0.16	30.00	1.00	Complies
2437	24.72	0.30	30.00	1.00	Complies
2462	24.58	0.29	30.00	1.00	Complies

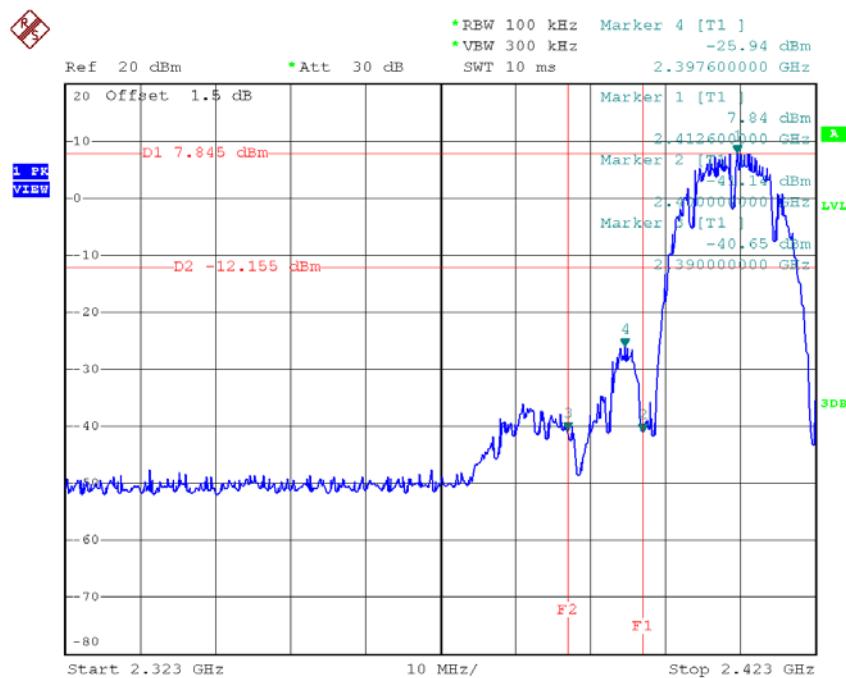
Test Mode :TX N20 Mode_CH01/06/11

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	21.40	0.14	30.00	1.00	Complies
2437	24.99	0.32	30.00	1.00	Complies
2462	23.50	0.22	30.00	1.00	Complies

ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION

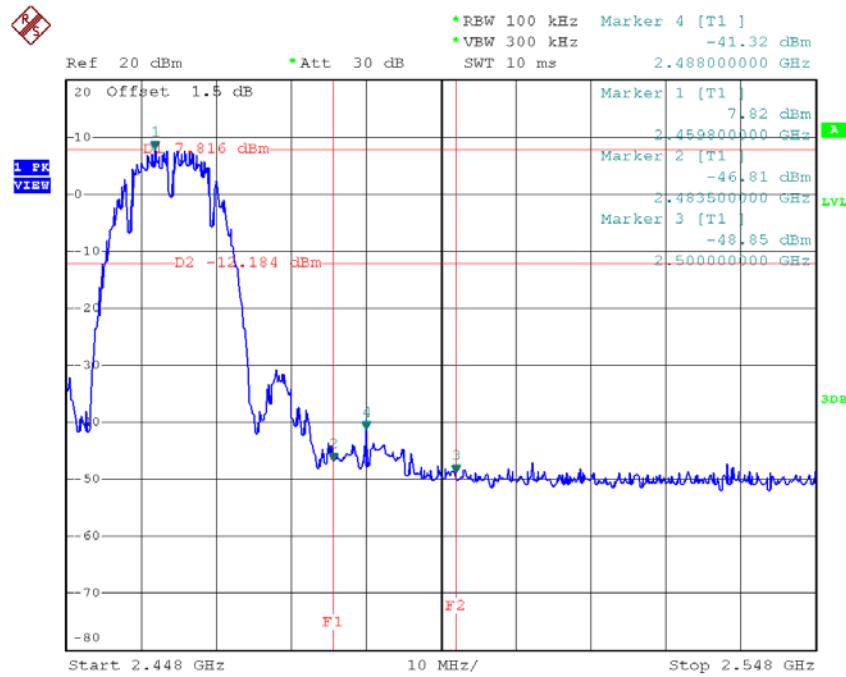
Test Mode : TX B Mode

TX B mode CH01



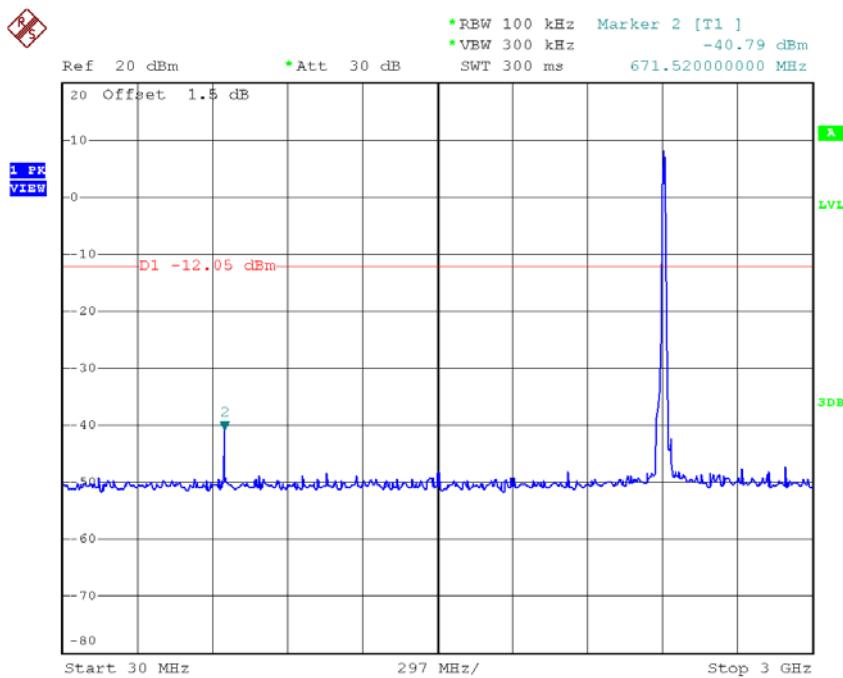
Date: 11.JAN.2017 19:50:55

TX B mode CH11

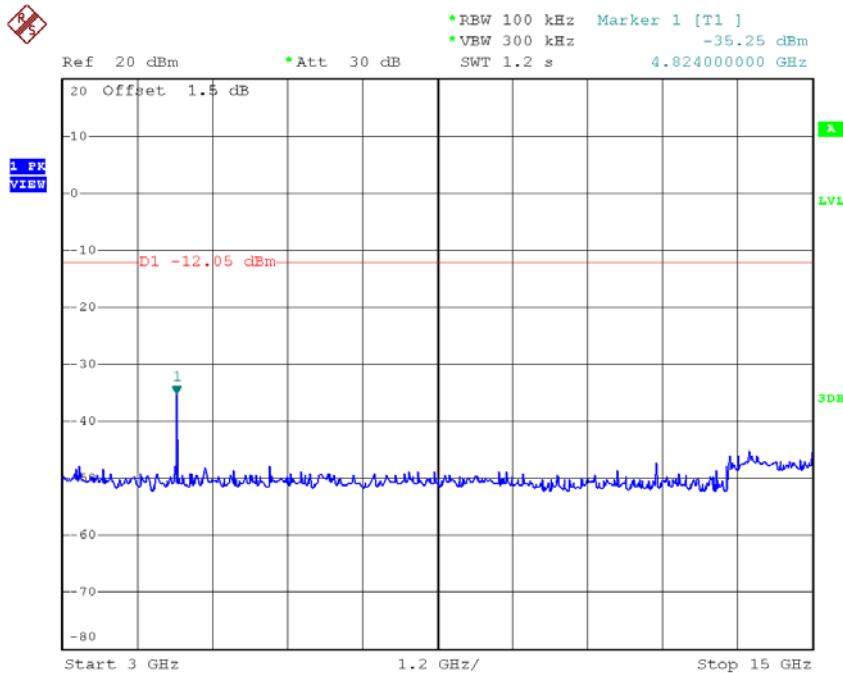


Date: 11.JAN.2017 19:55:44

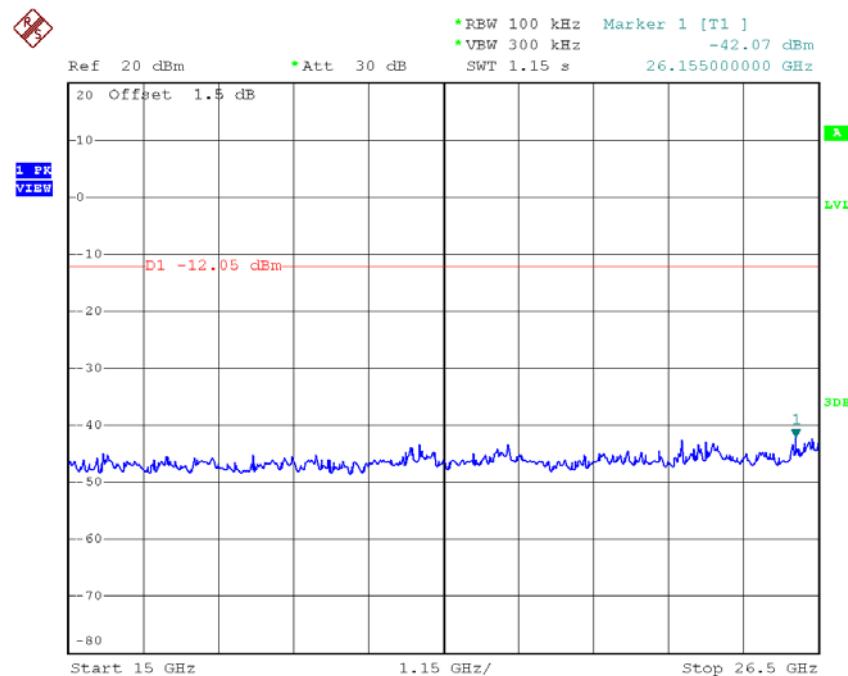
TX B mode CH01 (10 Harmonic of the frequency)



Date: 11.JAN.2017 19:50:30

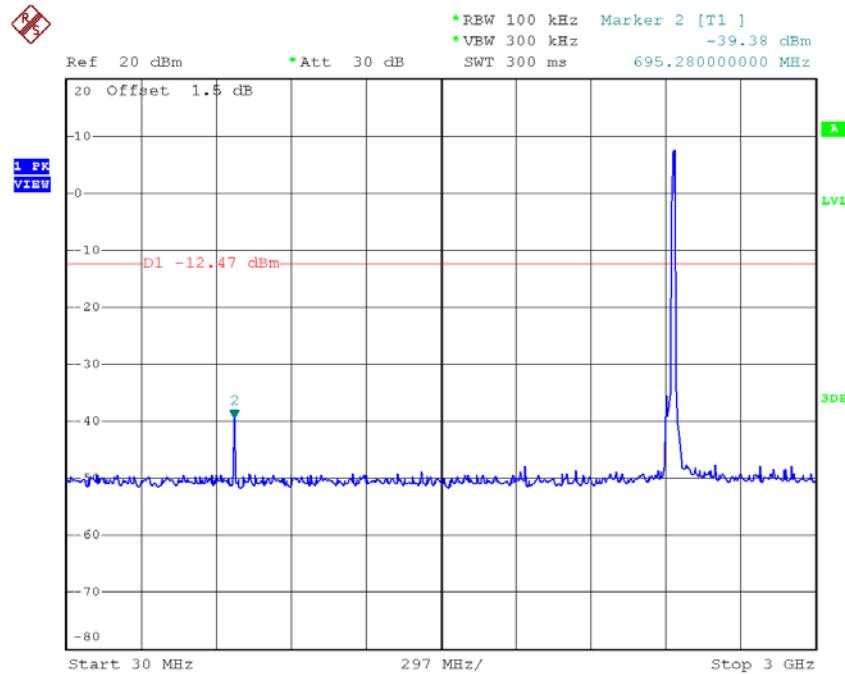


Date: 11.JAN.2017 19:50:39

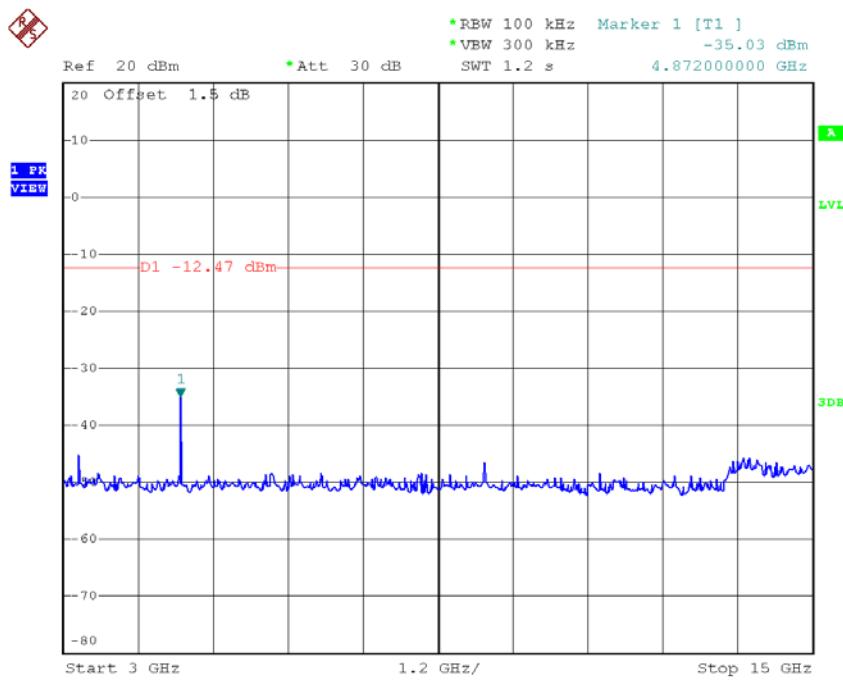


Date: 11.JAN.2017 19:50:47

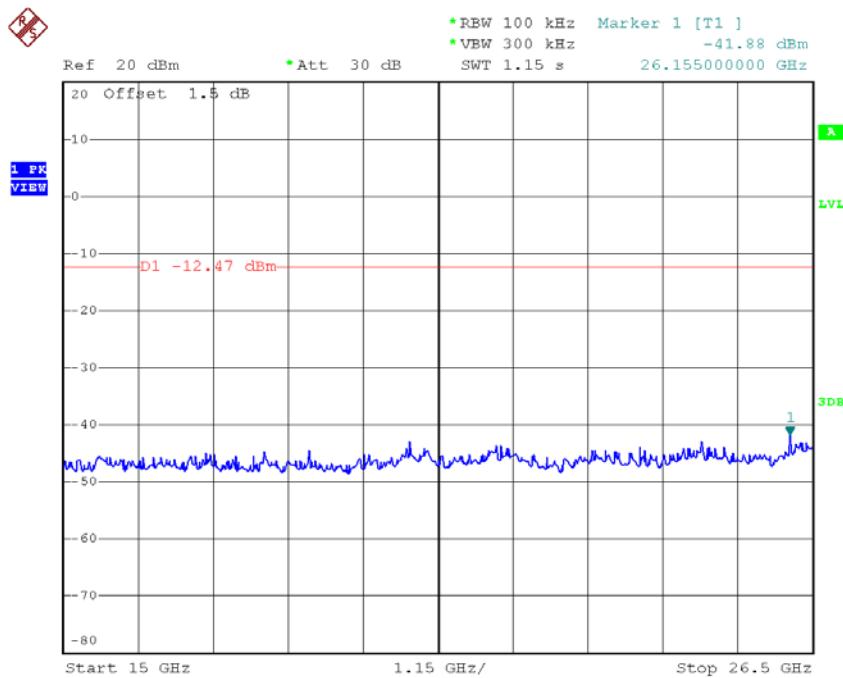
TX B mode CH06 (10 Harmonic of the frequency)



Date: 11.JAN.2017 19:53:55

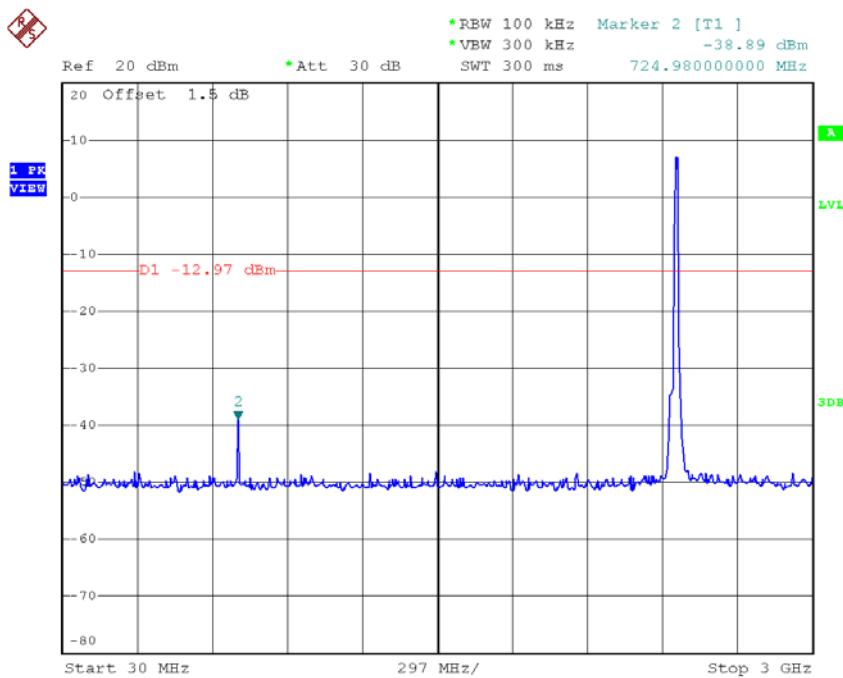


Date: 11.JAN.2017 19:54:03

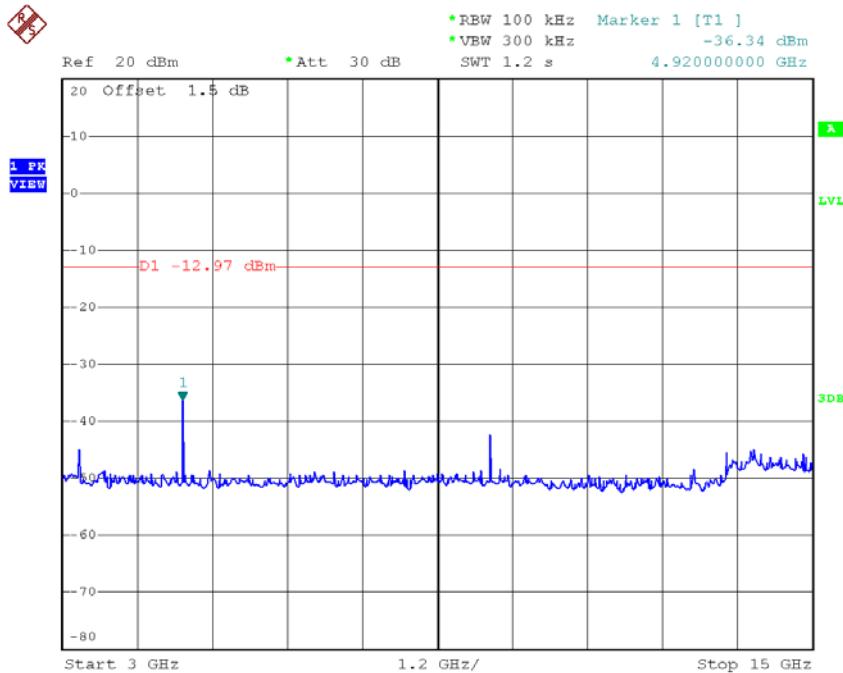


Date: 11.JAN.2017 19:54:12

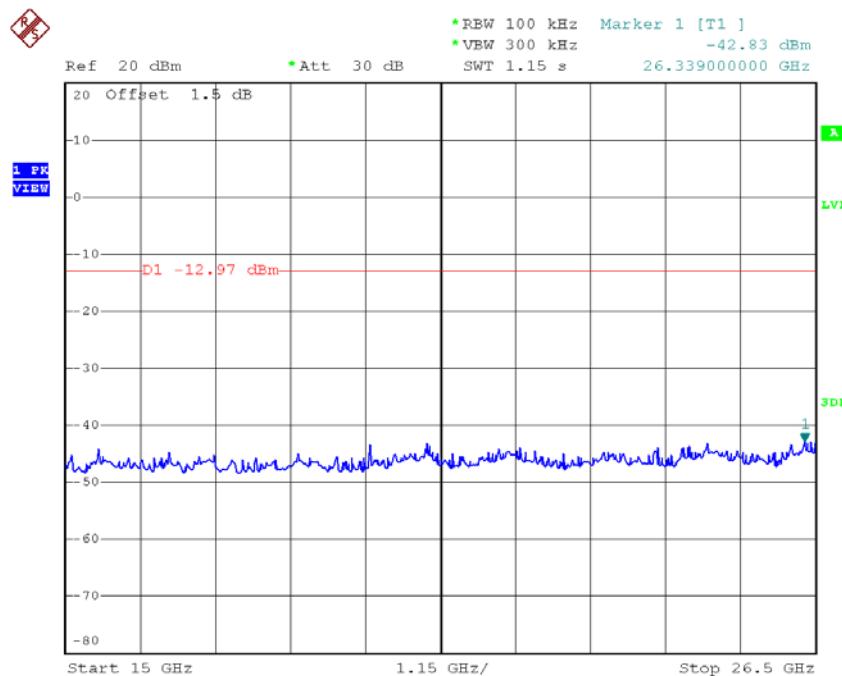
TX B mode CH11 (10 Harmonic of the frequency)



Date: 11.JAN.2017 19:55:20



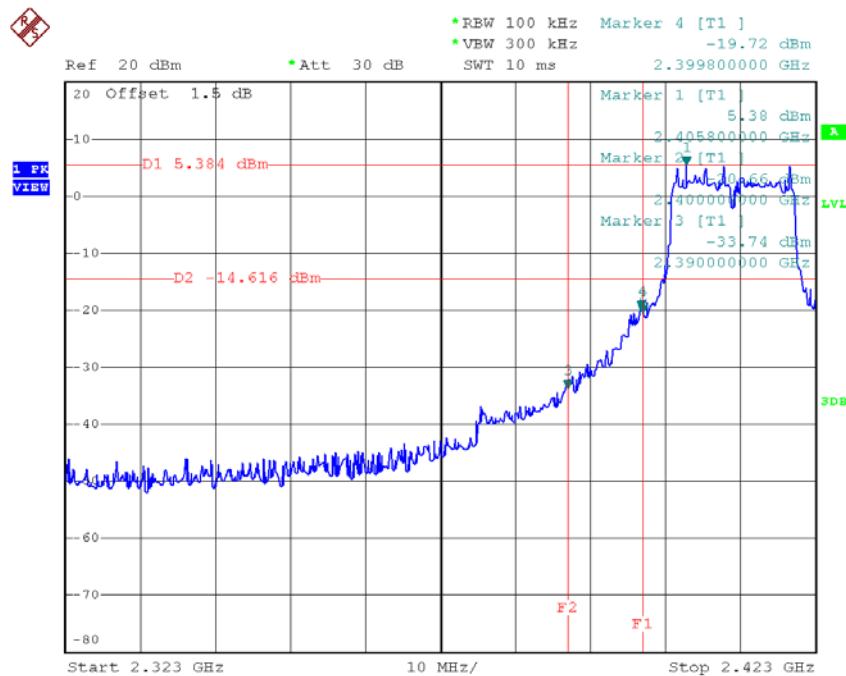
Date: 11.JAN.2017 19:55:28



Date: 11.JAN.2017 19:55:37

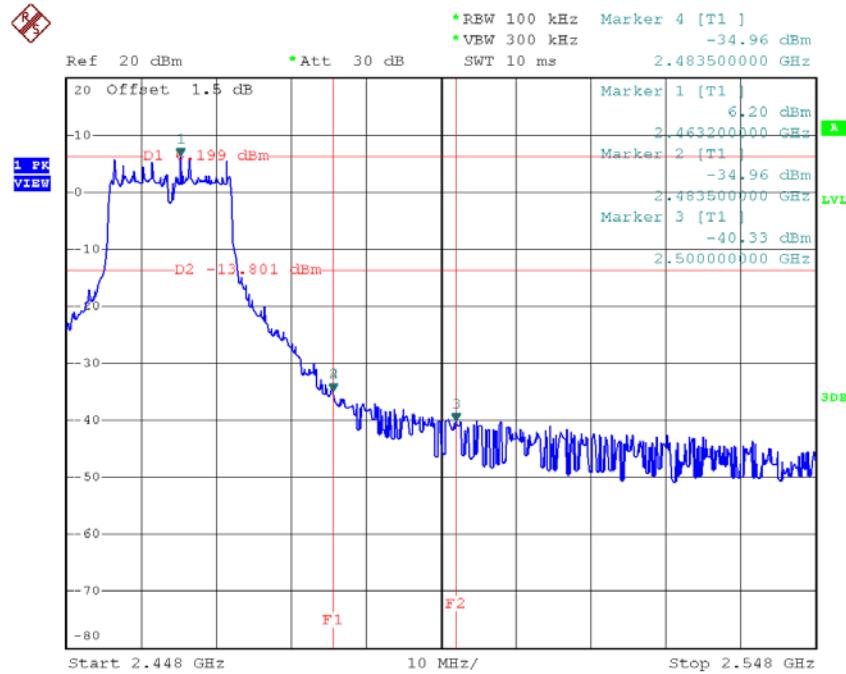
Test Mode :	TX G Mode
-------------	-----------

TX G mode CH01



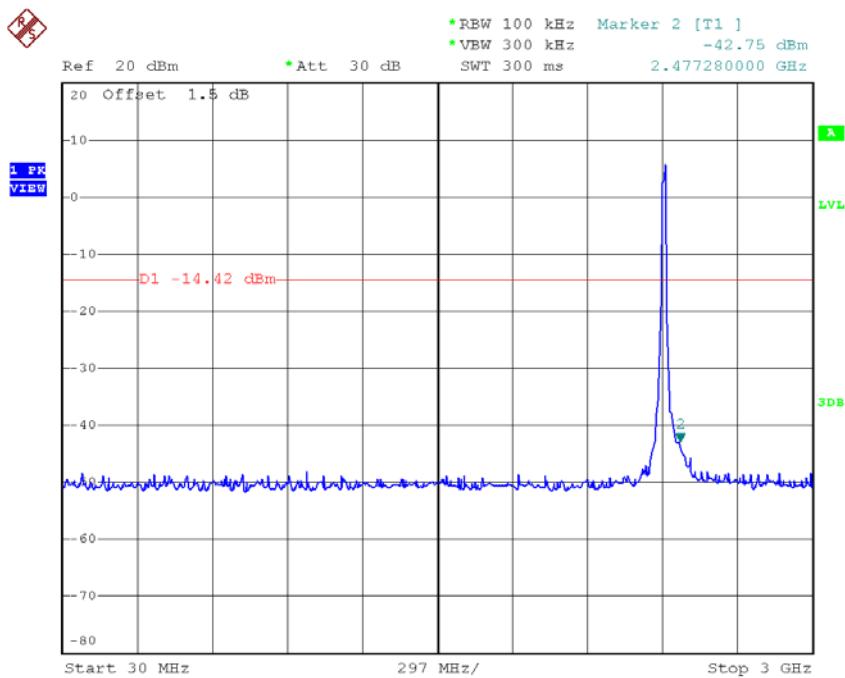
Date: 11.JAN.2017 20:03:37

TX G mode CH11

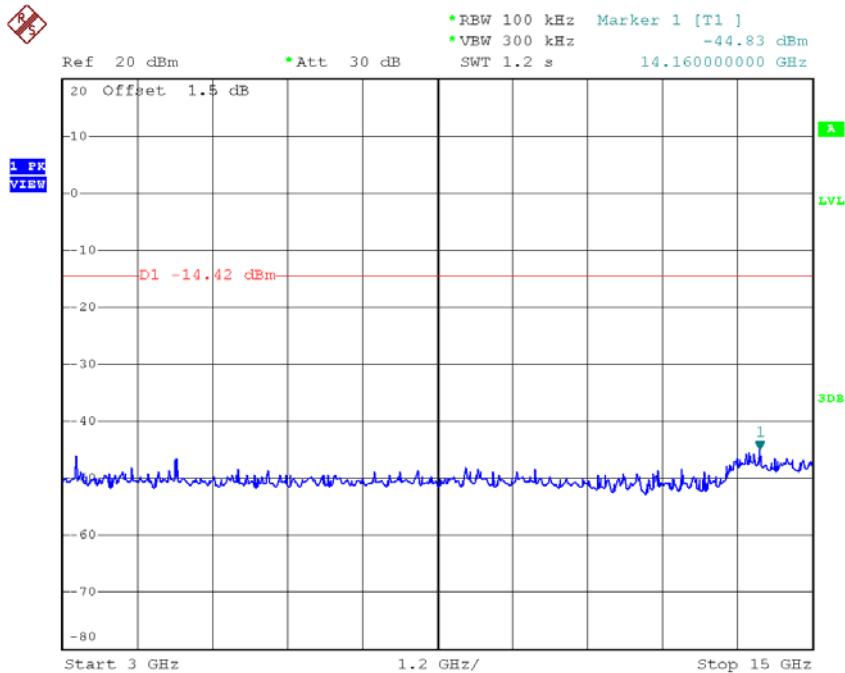


Date: 11.JAN.2017 20:05:57

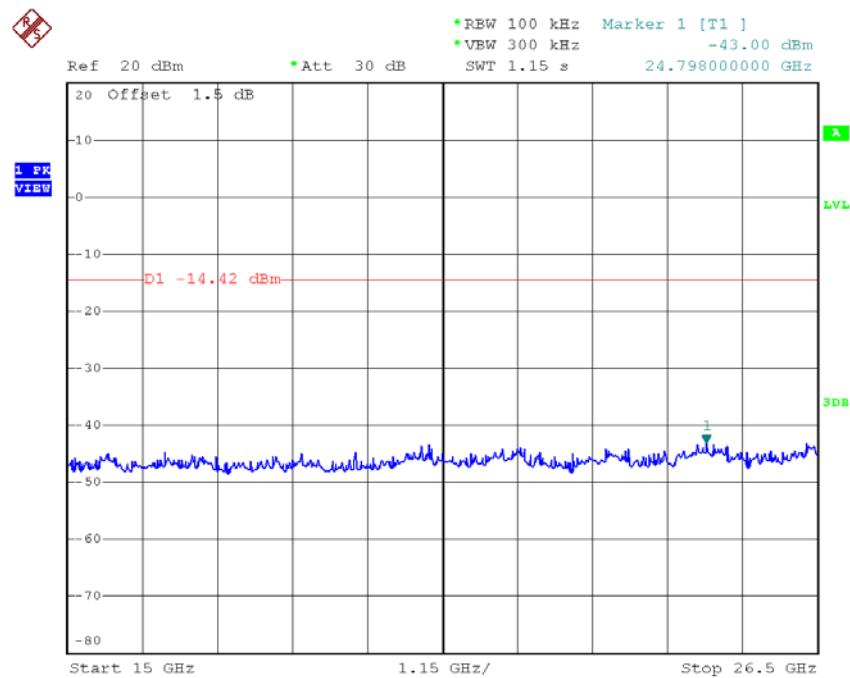
TX G mode CH01 (10 Harmonic of the frequency)



Date: 11.JAN.2017 20:03:12

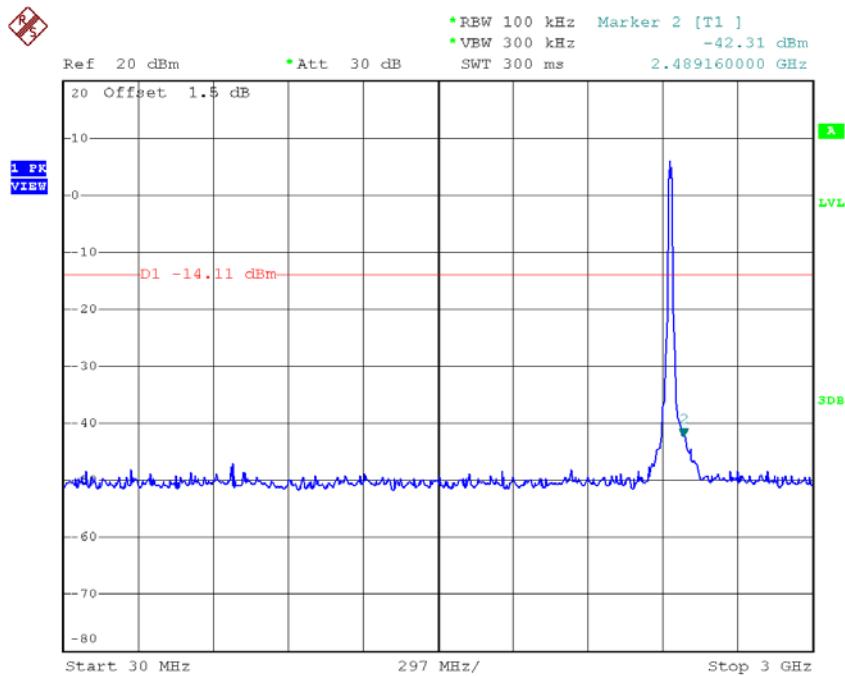


Date: 11.JAN.2017 20:03:20

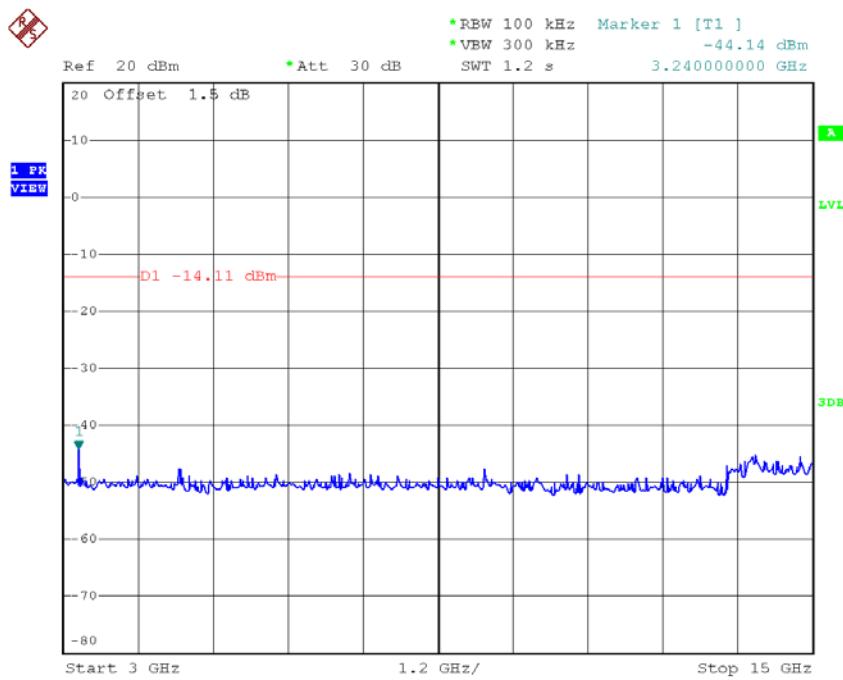


Date: 11.JAN.2017 20:03:29

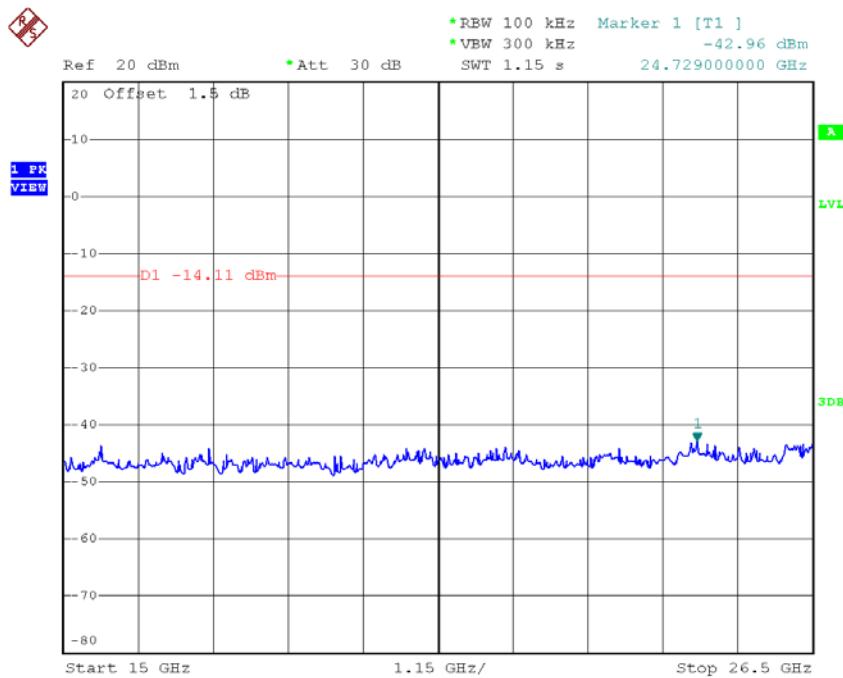
TX G mode CH06 (10 Harmonic of the frequency)



Date: 11.JAN.2017 20:04:25

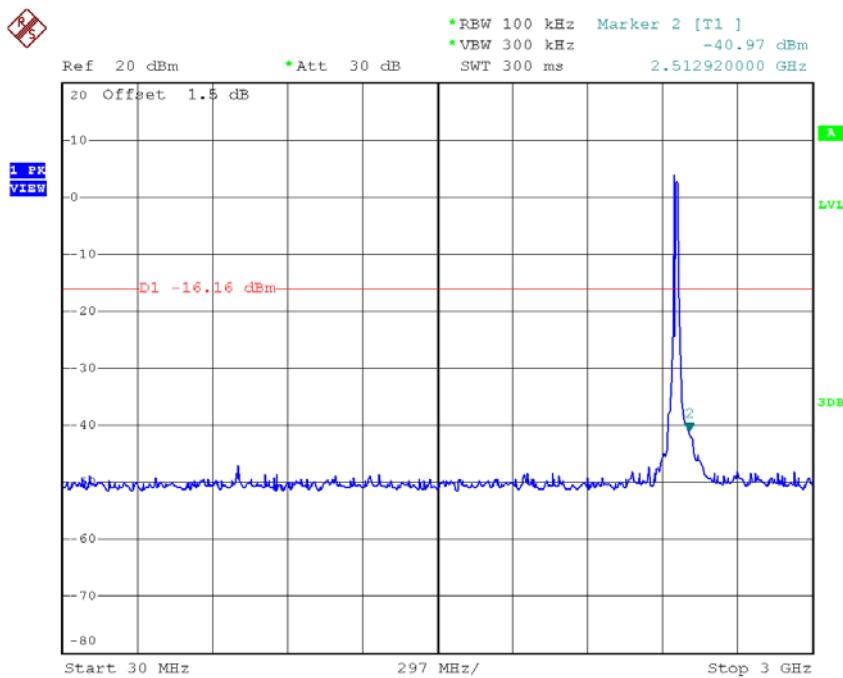


Date: 11.JAN.2017 20:04:33

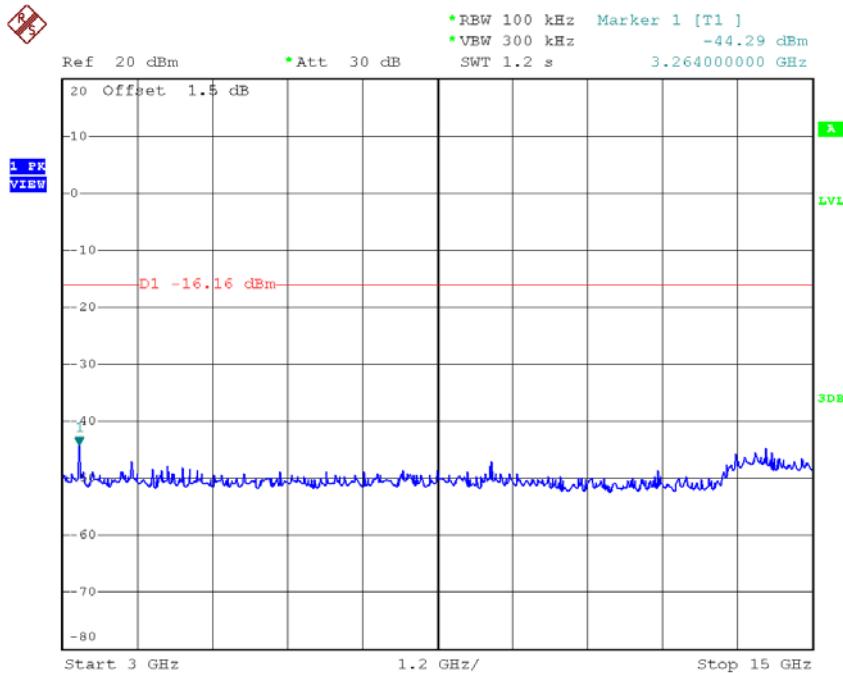


Date: 11.JAN.2017 20:04:41

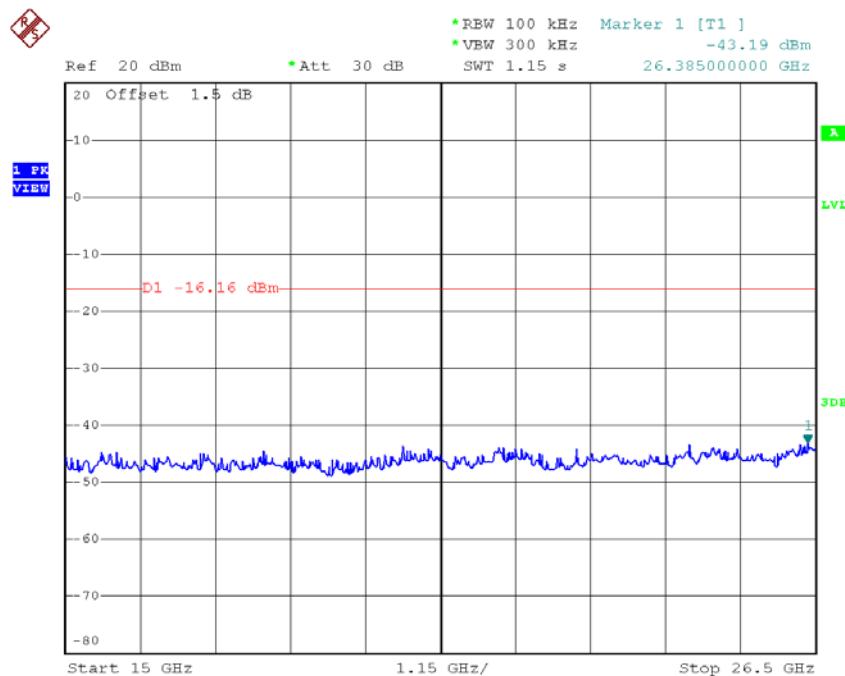
TX G mode CH11 (10 Harmonic of the frequency)



Date: 11.JAN.2017 20:05:31



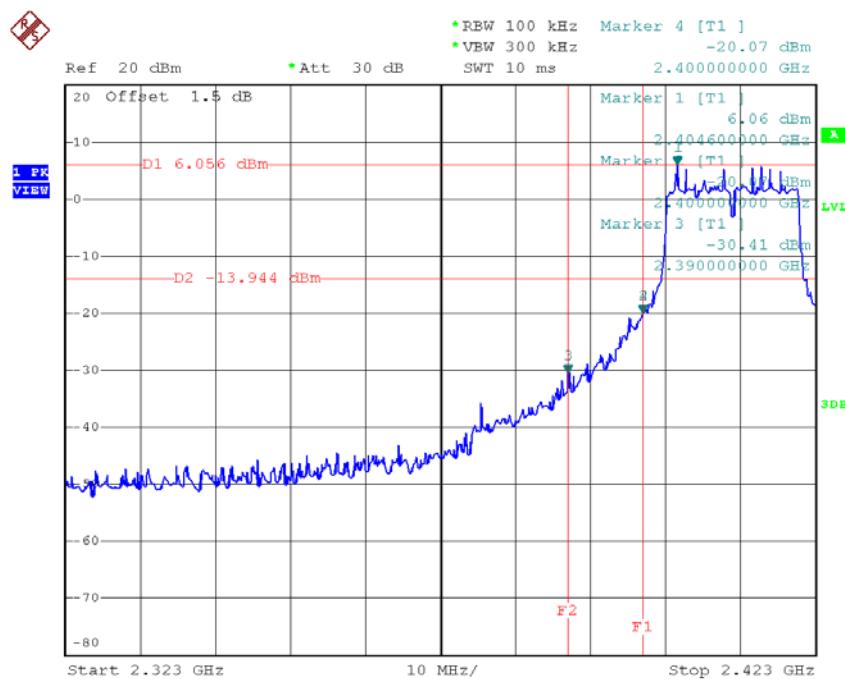
Date: 11.JAN.2017 20:05:40



Date: 11.JAN.2017 20:05:48

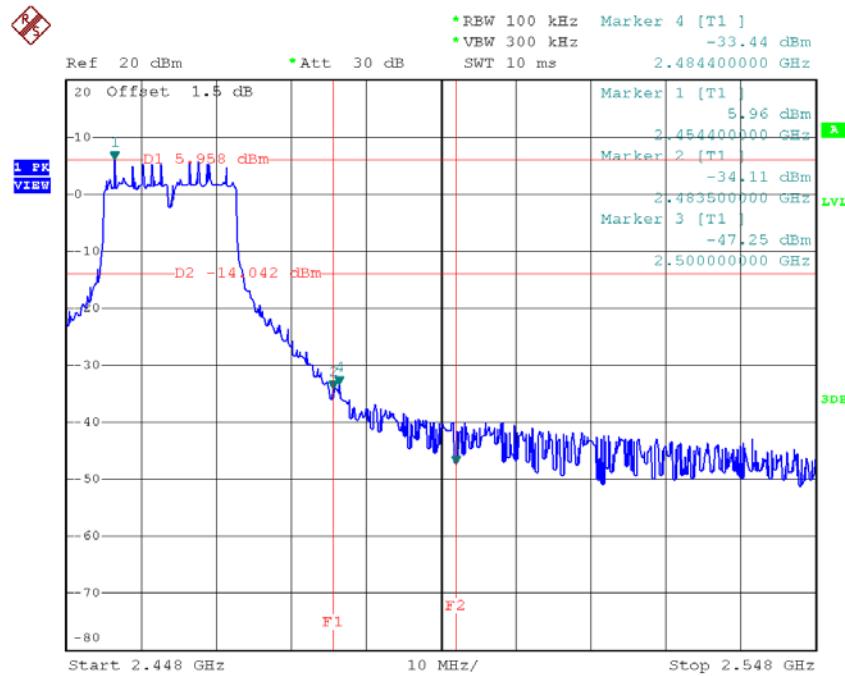
Test Mode : TX N-20M Mode

TX HT20 mode CH01



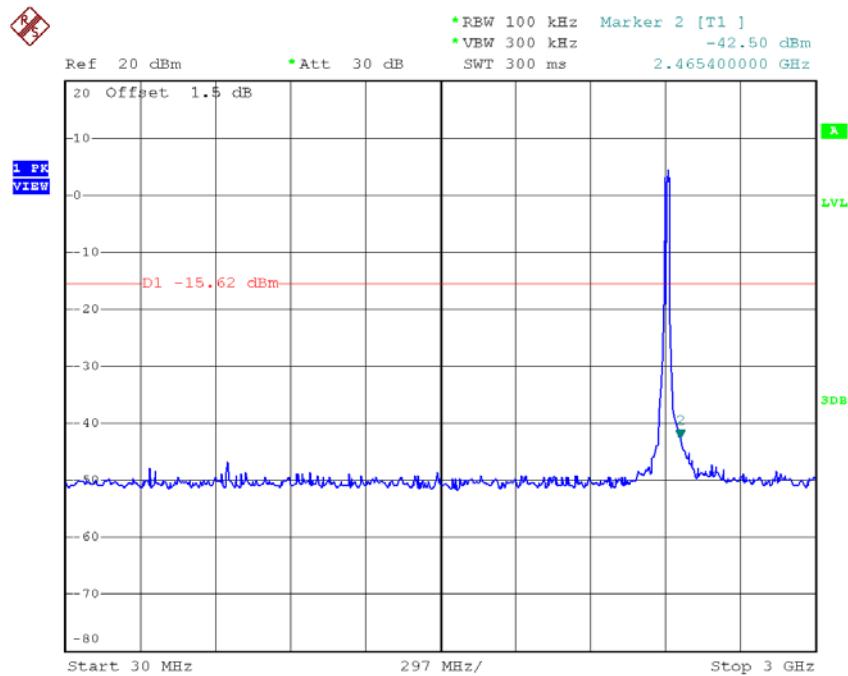
Date: 11.JAN.2017 20:07:59

TX HT20 mode CH11

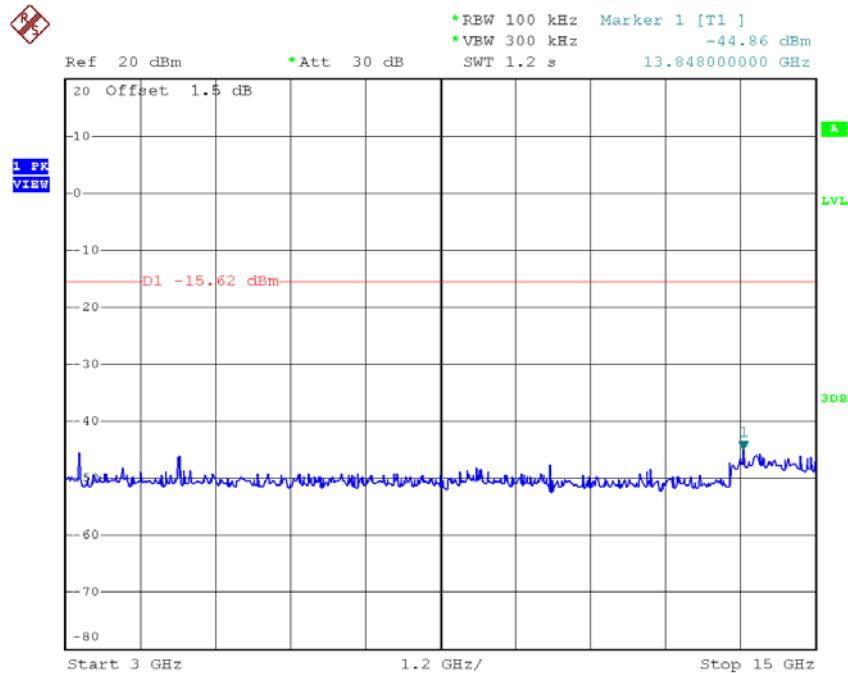


Date: 11.JAN.2017 20:10:41

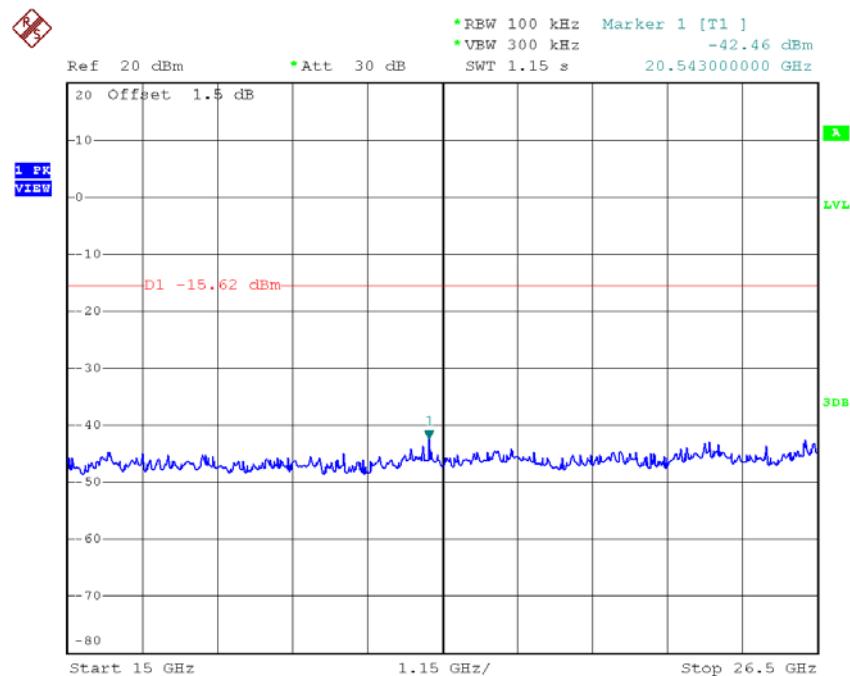
TX HT20 mode CH01 (10 Harmonic of the frequency)



Date: 11.JAN.2017 20:07:35

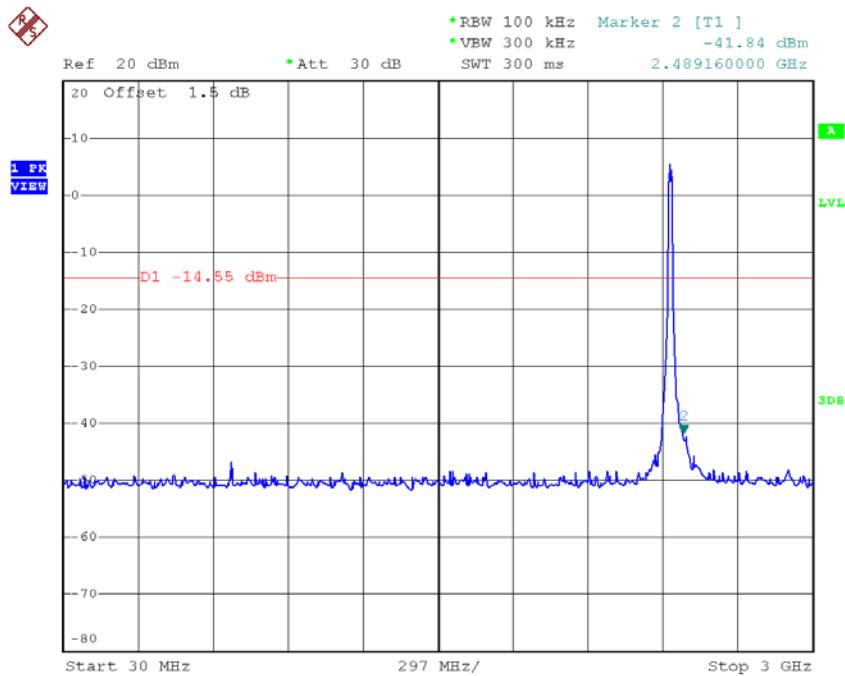


Date: 11.JAN.2017 20:07:43

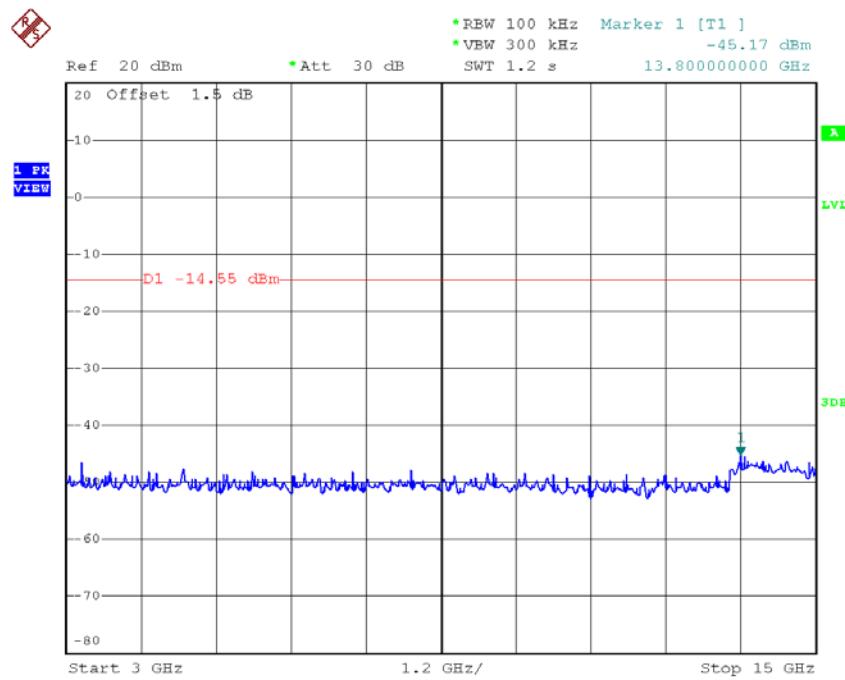


Date: 11.JAN.2017 20:07:52

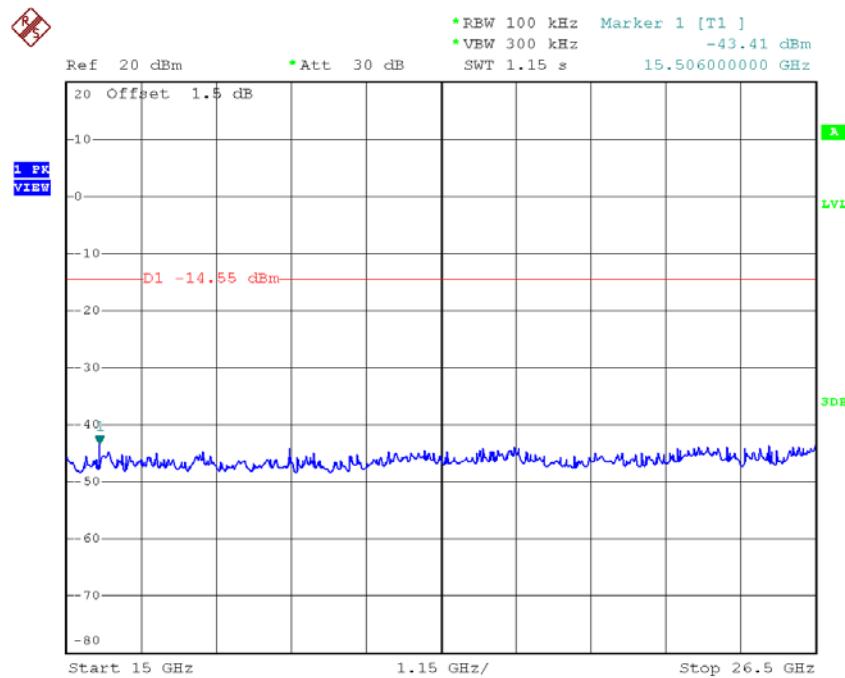
TX HT20 mode CH06 (10 Harmonic of the frequency)



Date: 11.JAN.2017 20:09:06

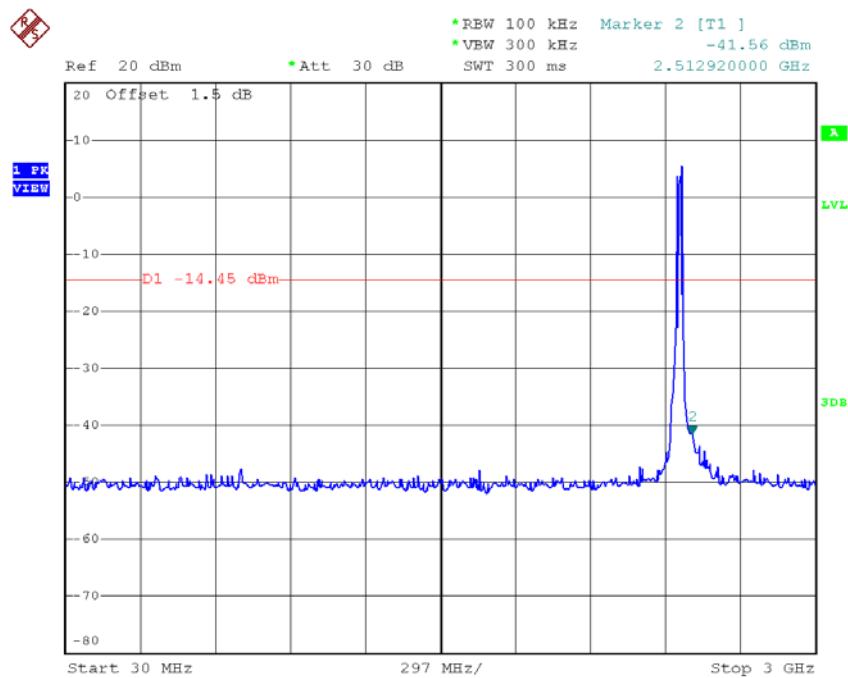


Date: 11.JAN.2017 20:09:14

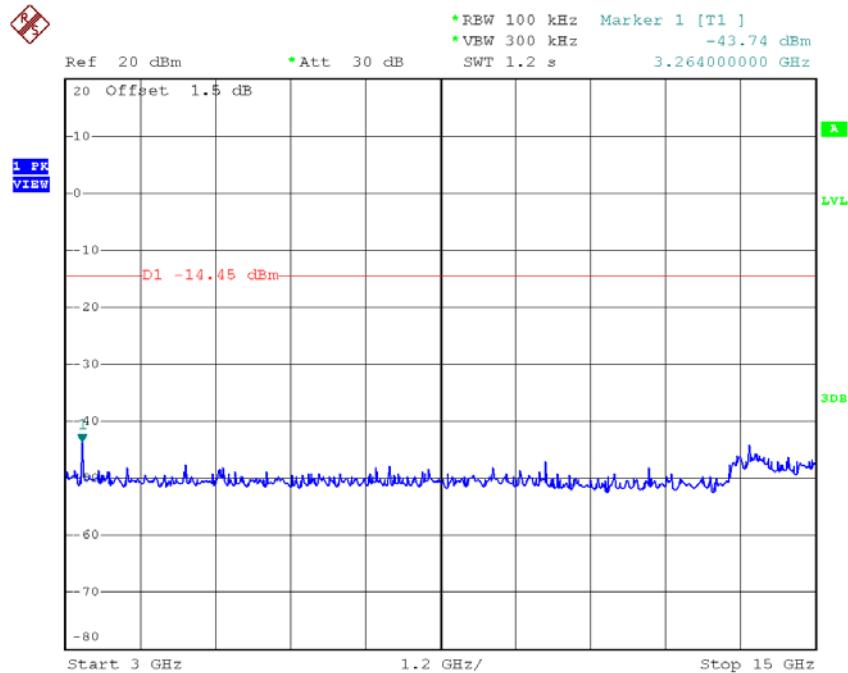


Date: 11.JAN.2017 20:09:22

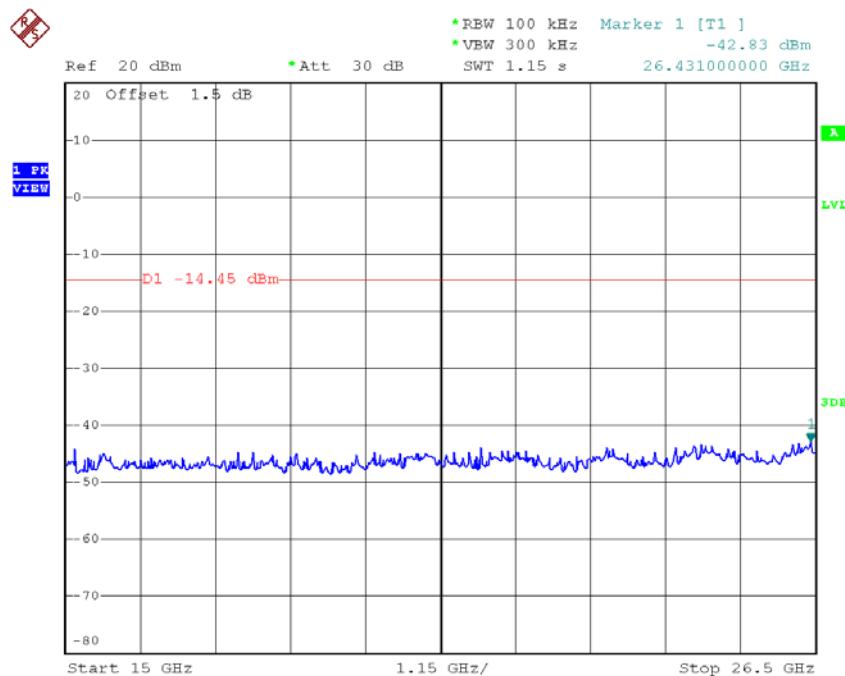
TX HT20 mode CH11 (10 Harmonic of the frequency)



Date: 11.JAN.2017 20:10:15



Date: 11.JAN.2017 20:10:24



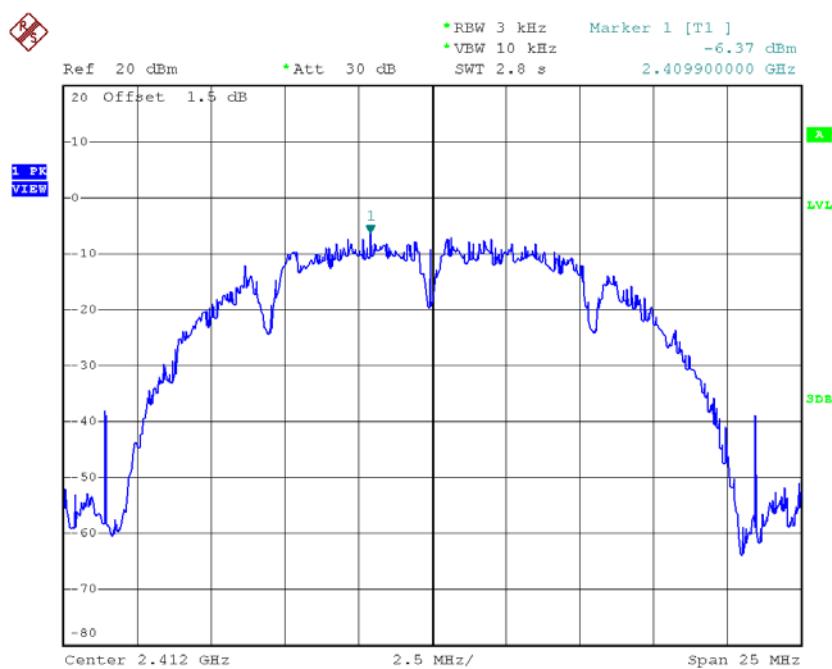
Date: 11.JAN.2017 20:10:32

ATTACHMENT H - POWER SPECTRAL DENSITY

Test Mode :TX B Mode _CH01/06/11

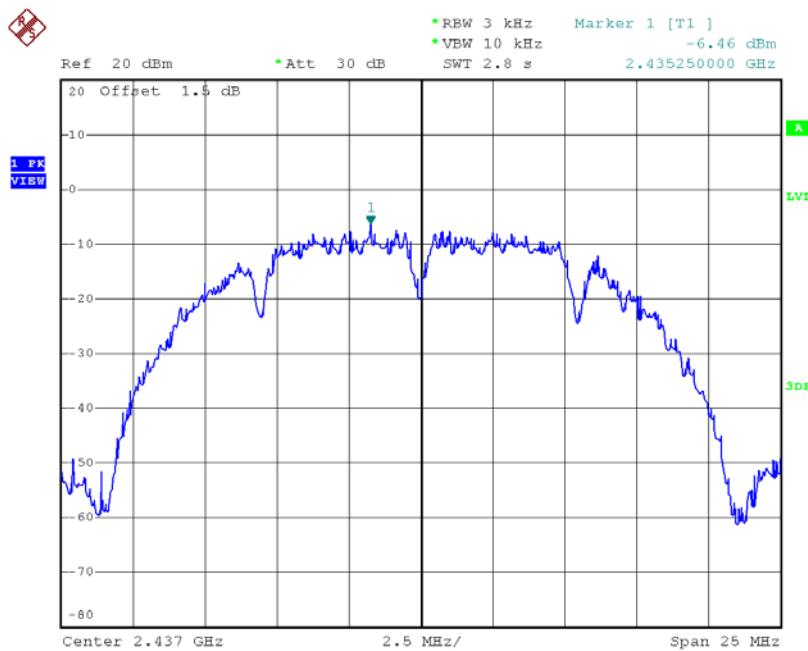
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-6.37	0.2307	8.00	Complies
2437	-6.46	0.2259	8.00	Complies
2462	-5.98	0.2523	8.00	Complies

TX CH01



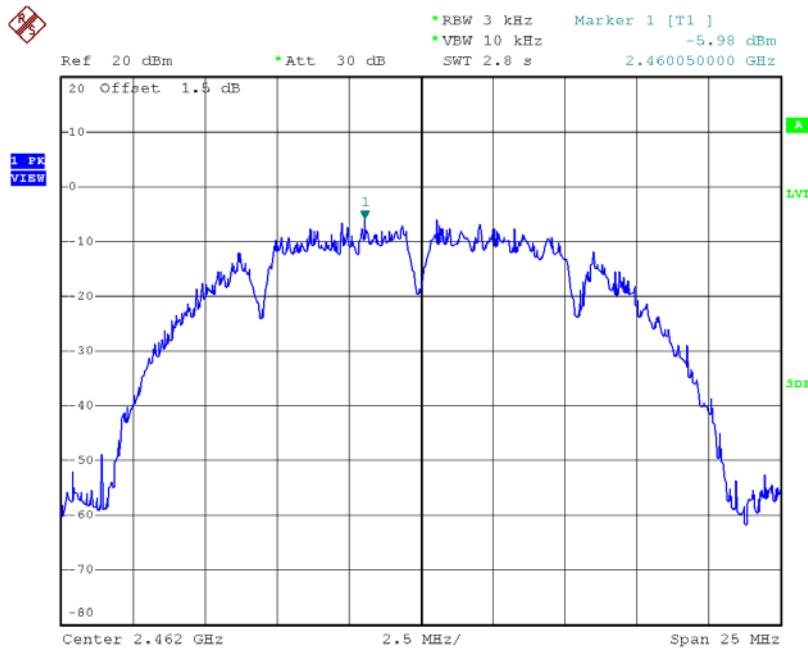
Date: 11.JAN.2017 19:51:04

TX CH06



Date: 11.JAN.2017 19:54:21

TX CH11

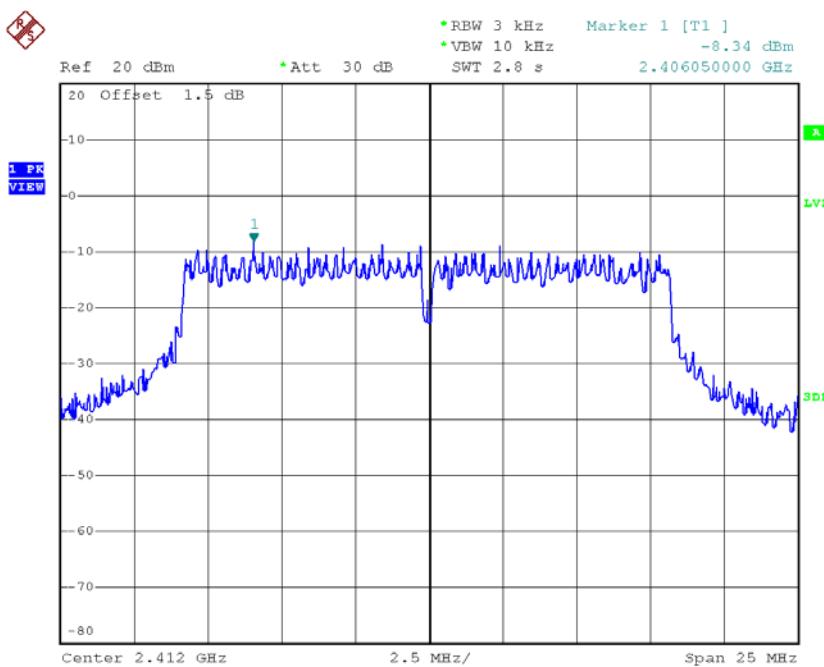


Date: 11.JAN.2017 19:55:53

Test Mode :TX G Mode_CH01/06/11

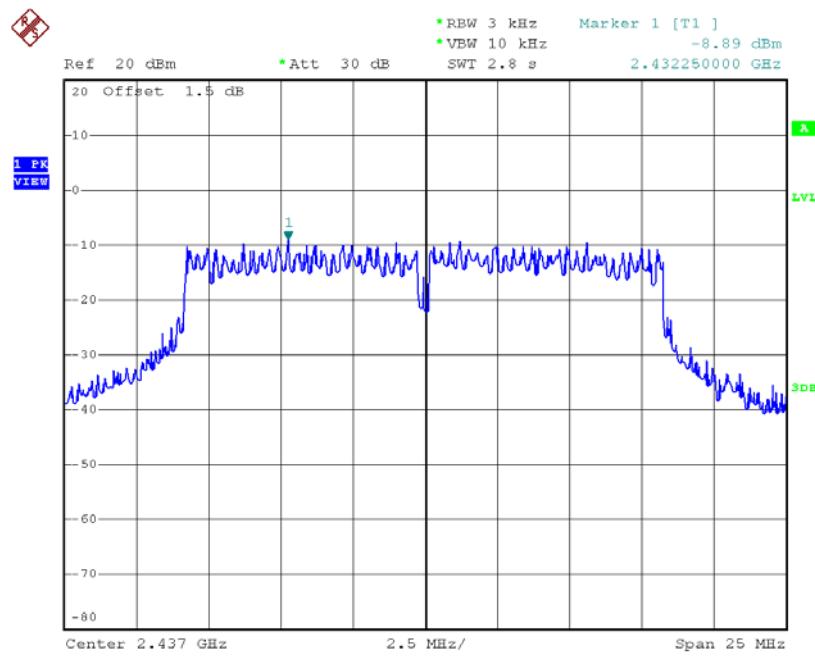
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-8.34	0.1466	8.00	Complies
2437	-8.89	0.1291	8.00	Complies
2462	-8.48	0.1419	8.00	Complies

TX CH01



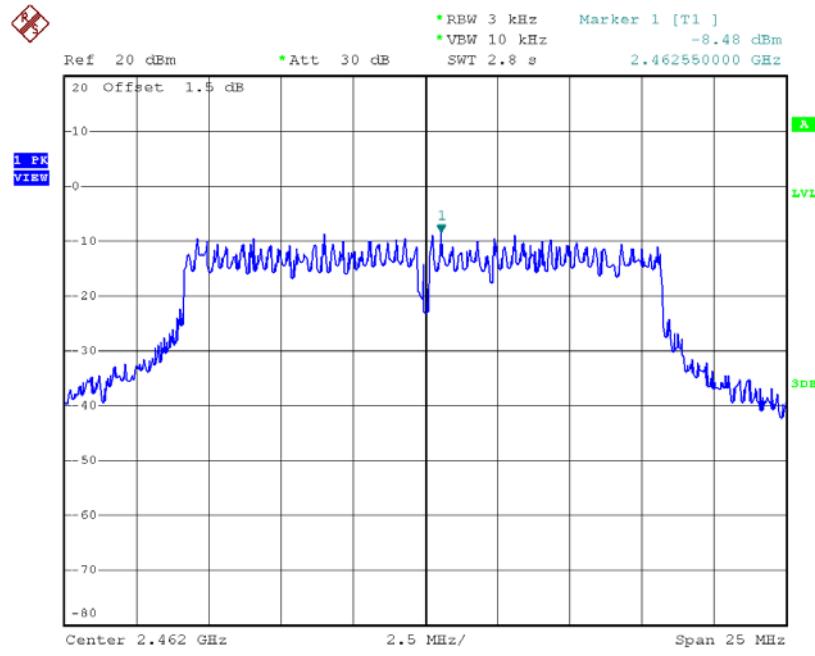
Date: 11.JAN.2017 20:03:46

TX CH06



Date: 11.JAN.2017 20:04:50

TX CH11

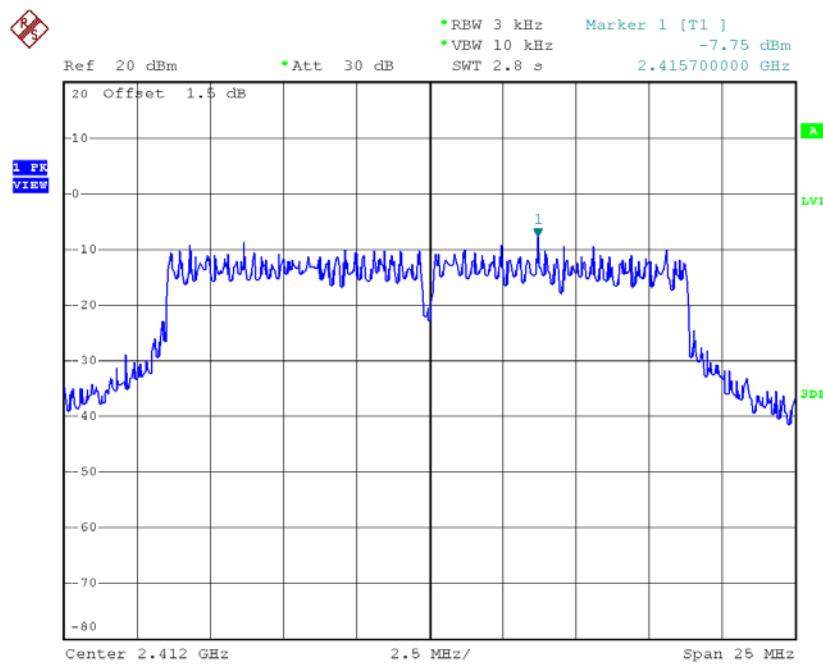


Date: 11.JAN.2017 20:06:07

Test Mode : TX N-20M Mode_CH01/06/11

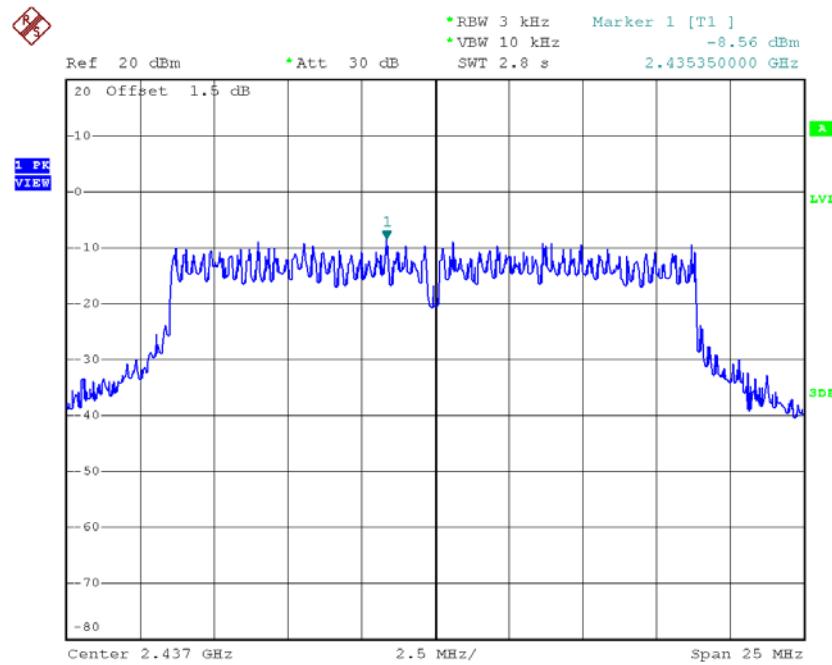
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-7.75	0.1679	8.00	Complies
2437	-8.56	0.1393	8.00	Complies
2462	-9.45	0.1135	8.00	Complies

TX CH01



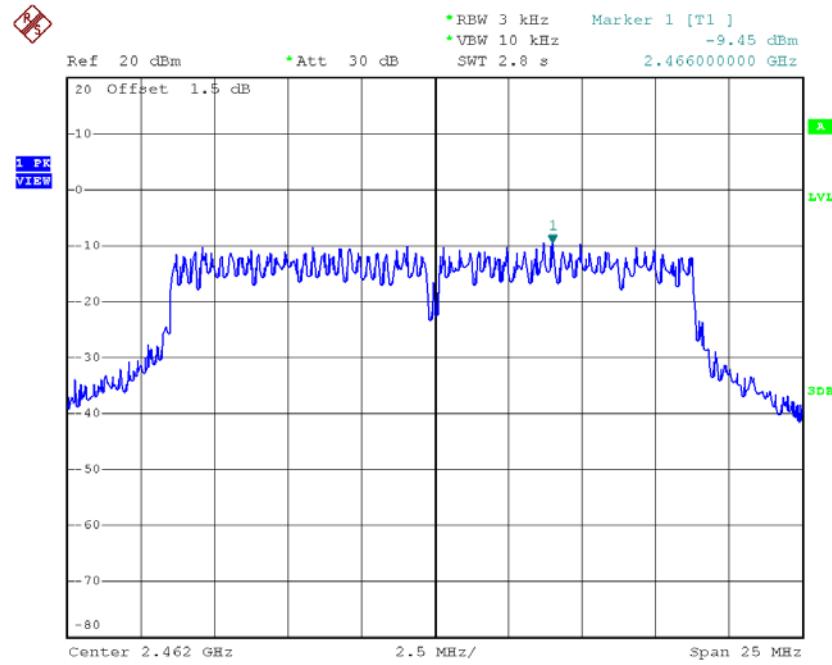
Date: 11.JAN.2017 20:08:08

TX CH06



Date: 11.JAN.2017 20:09:32

TX CH11



Date: 11.JAN.2017 20:10:50