

FCC Radio Test Report

FCC ID: Q78-ZXHNH389A

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

Project No. : 1701C100
Equipment : Home Gateway
Model Name : ZXHN H389A
Applicant : ZTE Corporation
Address : ZTE Plaza, Hi-Tech Park, Nanshan District,
Shenzhen, Guangdong, P.R.China

Date of Receipt : Jan. 09, 2017
Date of Test : Jan. 09, 2017 ~ May 25, 2017
Issued Date : May 26, 2017
Tested by : BTL Inc.

Testing Engineer : Shawn Xiao
(Shawn Xiao)

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	82
ATTACHMENT F – MAXIMUM PEAK CONDUCTED OUTPUT POWER	89
ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION	92
ATTACHMENT H - POWER SPECTRAL DENSITY	123

REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1701C100	Original Issue.	May 26, 2017

1. CERTIFICATION

Equipment : Home Gateway
Brand Name : ZTE 中兴, ZTE
Model Name : ZXHN H389A
Applicant : ZTE Corporation
Manufacturer: ZTE Corporation
Address : ZTE Plaza, Hi-Tech Park, Nanshan District, Shenzhen, Guangdong, P.R.China
Date of Test : Jan. 09, 2017 ~ May 25, 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-1-1701C100) 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).

Test result included in this report is only for the 2.4GHz part.

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

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

NOTE:

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

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.
 BTL's test firm number for FCC: 319330

2.2 MEASUREMENT UNCERTAINTY

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

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

A. Conducted Measurement:

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

B. Radiated Measurement:

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

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Home Gateway	
Brand Name	ZTE 中兴, ZTE	
Model Name	ZXHN H389A	
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 450 Mbps
	Output Power (Max.)	802.11b: 21.75dBm 802.11g: 26.03dBm 802.11n(20MHz): 28.97dBm
Power Source	DC voltage supplied from AC/DC adapter. Model Name: RD1202000-C55-29MG	
Power Rating	I/P: 100-240V~50/60Hz 0.6A O/P:12V---2.0A	

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- 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)
1	N/A	N/A	Internal	N/A	2
2	N/A	N/A	Internal	N/A	2
3	N/A	N/A	Internal	N/A	2

Note:

The EUT incorporates a MIMO function. Physically, the EUT provides three completed transmitters and receivers (3T3R), any transmit signals are uncorrelated with each other, So Directional gain = $G_{ANT}dBi$, that is Directional gain=2.

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 4	TX Mode

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

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:

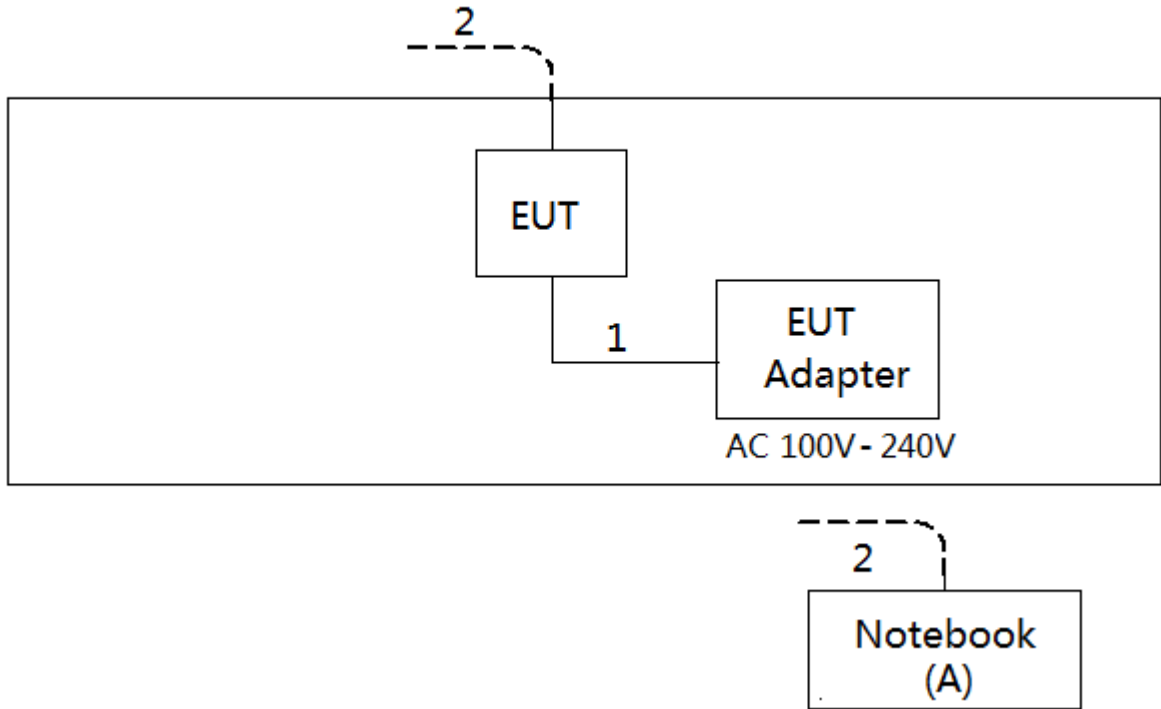
- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1Mbps)
 802.11g mode: OFDM (6Mbps)
 802.11n HT20 mode : BPSK (13Mbps)
 For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated below 1G test, the 802.11b 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	MTool		
Frequency (MHz)	2412	2437	2462
802.11b	70	68	68
802.11g	86	86	86
802.11n (20MHz)	73	71	71

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.5 DESCRIPTION OF SUPPORT UNITS

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

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.
A	Notebook	Dell	DCSM745	DOC	G7K832X

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	1.2m	Power Cable
2	YES	YES	10m	RJ45 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 (dBµV)	
	Quasi-peak	Average
0.15 -0.50	66 to 56*	56 to 46*
0.50 -5.0	56	46
5.0 -30.0	60	50

Note:

- (1) The limit of " * " decreases with the logarithm of the frequency
- (2) The test result calculated as following:
 Measurement Value = Reading Level + Correct Factor
 Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)
 Margin Level = Measurement Value - Limit Value

The following table is the setting of the receiver

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

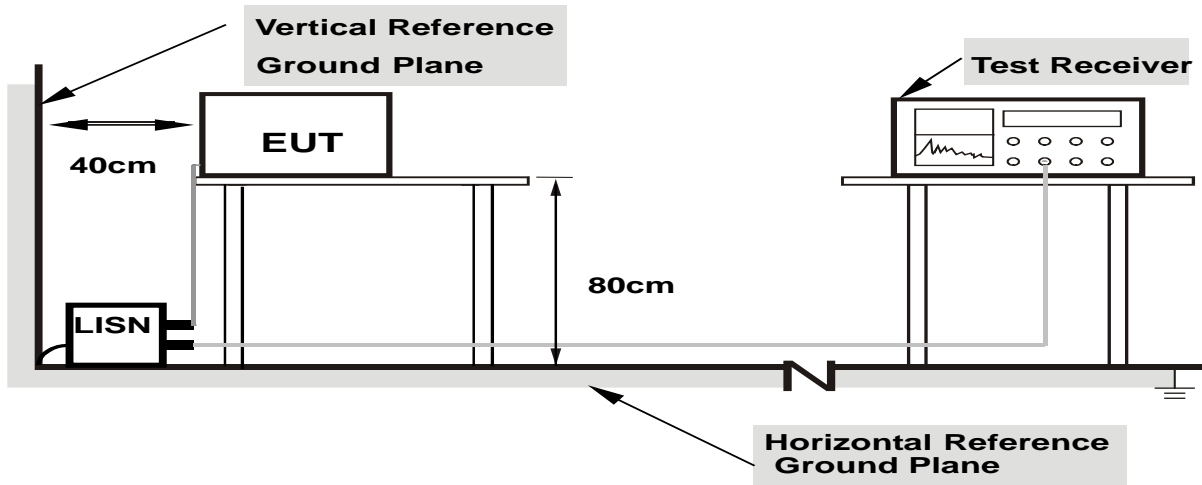
4.1.2 TEST PROCEDURE

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

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



- Note:**
1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 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)	(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

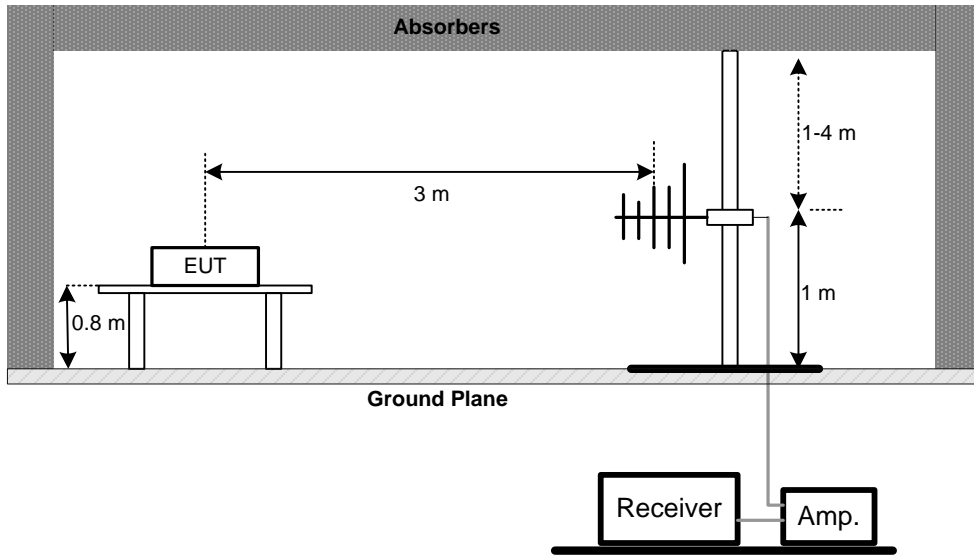
- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The measuring distance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

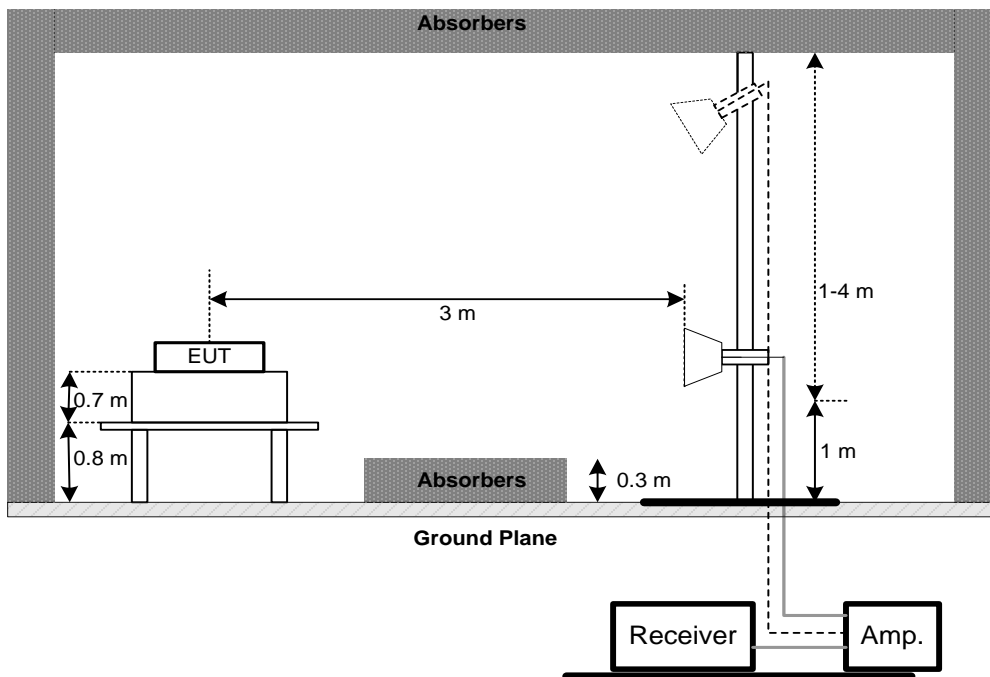
No deviation

4.2.4 TEST SETUP

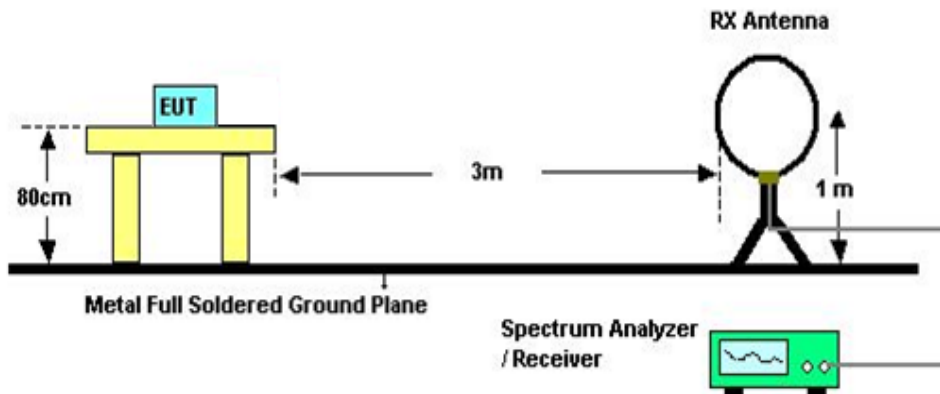
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(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

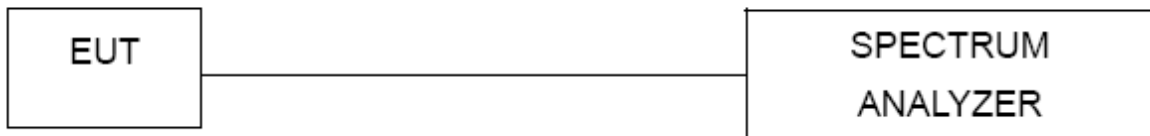
5.1.1 TEST PROCEDURE

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

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

The EUT 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

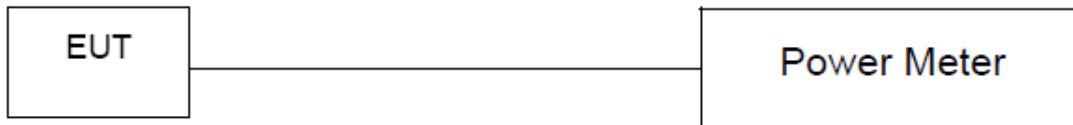
6.1.1 TEST PROCEDURE

- a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
- b. The maximum peak conducted output power was performed in accordance with method 9.1.2 of FCC KDB 558074 D01 DTS Meas Guidance and FCC KDB 662911 D01 Multiple Transmitter Output.

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.1.5 EUT TEST CONDITIONS

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

6.1.6 TEST RESULTS

Please refer to the 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.

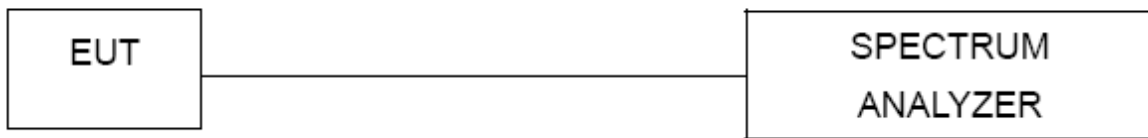
7.1.1 TEST PROCEDURE

- 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

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

8.1.2 DEVIATION FROM STANDARD

No deviation.

8.1.3 TEST SETUP



8.1.4 EUT OPERATION CONDITIONS

The EUT 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	EMI Test Receiver	R&S	ESCI	100382	Mar. 26, 2018
2	LISN	EMCO	3816/2	52765	Mar. 26, 2018
3	50Ω Terminator	SHX	TF2-3G-A	8122901	Mar. 26, 2018
4	TWO-LINE V-NETWORK	R&S	ENV216	101447	Mar. 26, 2018
5	Cable	emci	RG223(9KHz-30MHz)(5m)	N/A	Mar. 07, 2018
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. 26, 2018
2	Amplifier	HP	8447D	2944A09673	Oct. 20, 2017
3	Receiver	AGILENT	N9038A	MY52130039	Sep. 04, 2017
4	Cable	emci	LMR-400(30MHz-1GHz)(8m+5m)	N/A	Jun. 27, 2017
5	Control	CT	SC100	N/A	N/A
6	Position Control	MF	MF-7802	MF780208416	N/A
7	Antenna	ETS	3115	00075789	Mar. 26, 2018
8	Amplifier	Agilent	8449B	3008A02274	Feb. 22, 2018
9	Receiver	AGILENT	N9038A	MY52130039	Sep. 04, 2017
10	Test Cable	emci	EMC104-SM-SM-10000(1GHz-26.5GHz)	C-68	Jun. 26, 2017
11	Controller	CT	SC100	N/A	N/A
12	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Apr. 22, 2018
13	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 26, 2018
14	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Sep. 06, 2017
15	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

6dB Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Sep. 04, 2017

Peak Output Power Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	P-series Power meter	Agilent	N1911A	MY45100473	Mar. 26, 2018
2	Wireband Power sensor	Agilent	N1921A	MY51100041	Mar. 26, 2018

Antenna Conducted Spurious Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Sep. 04, 2017

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

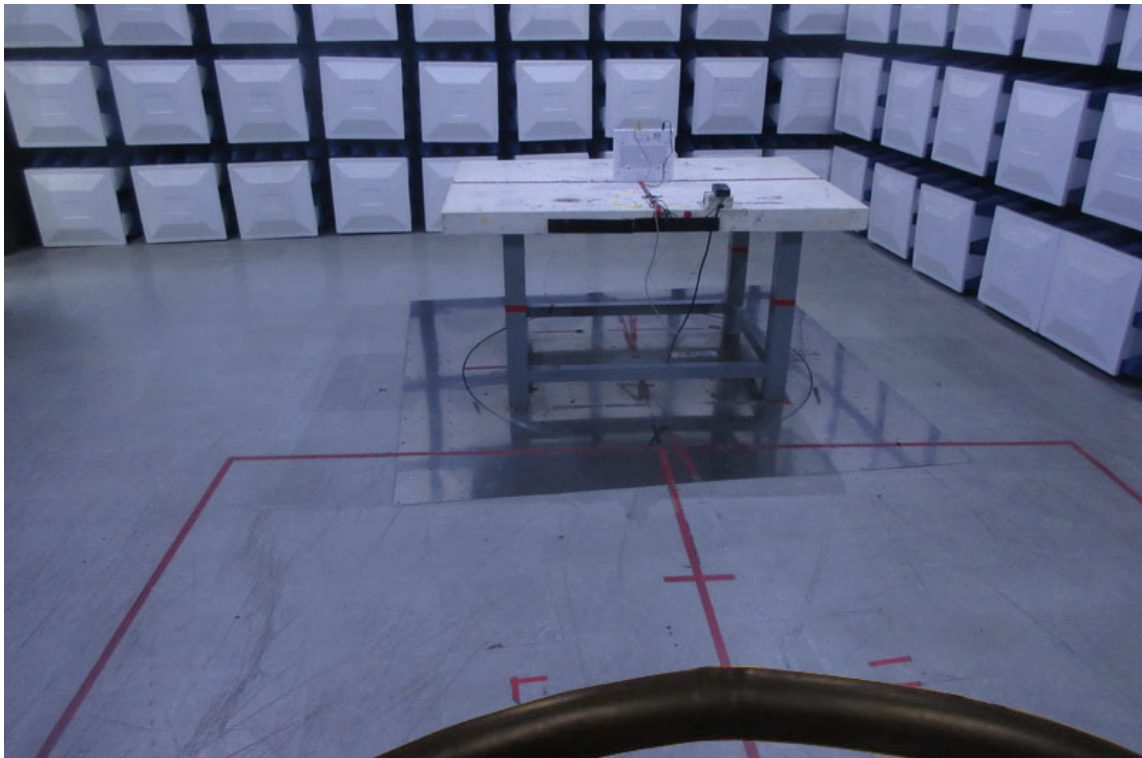
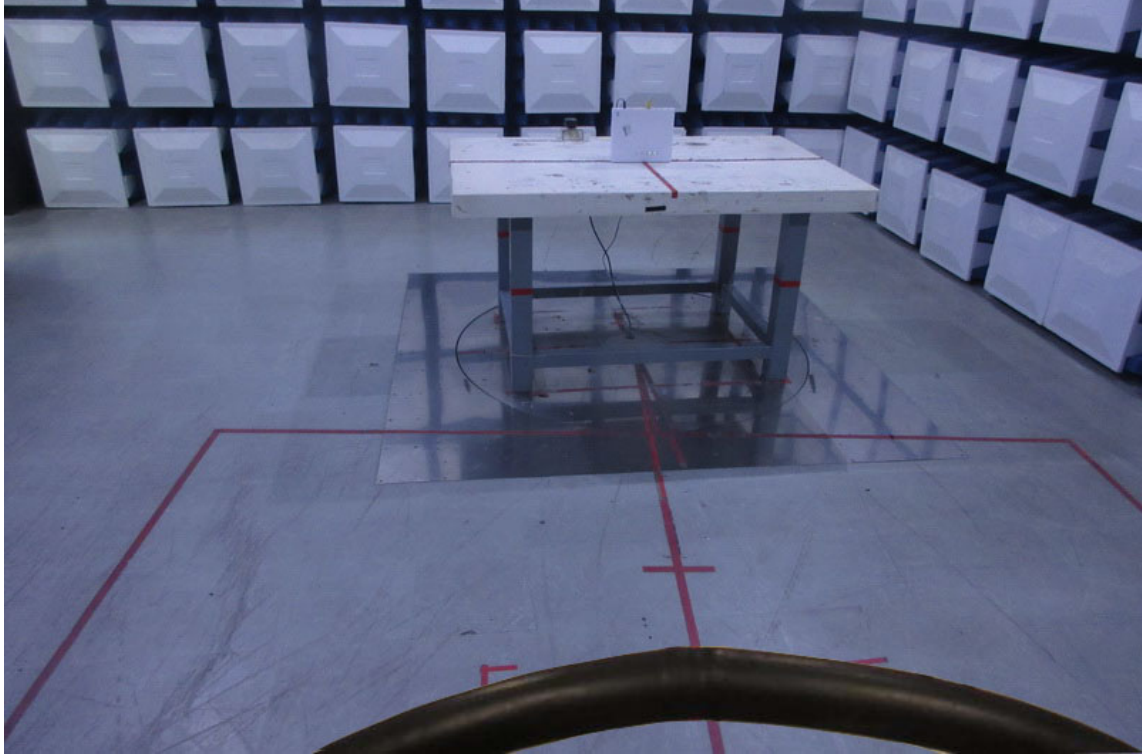
10. EUT TEST PHOTO

Conducted Measurement Photos



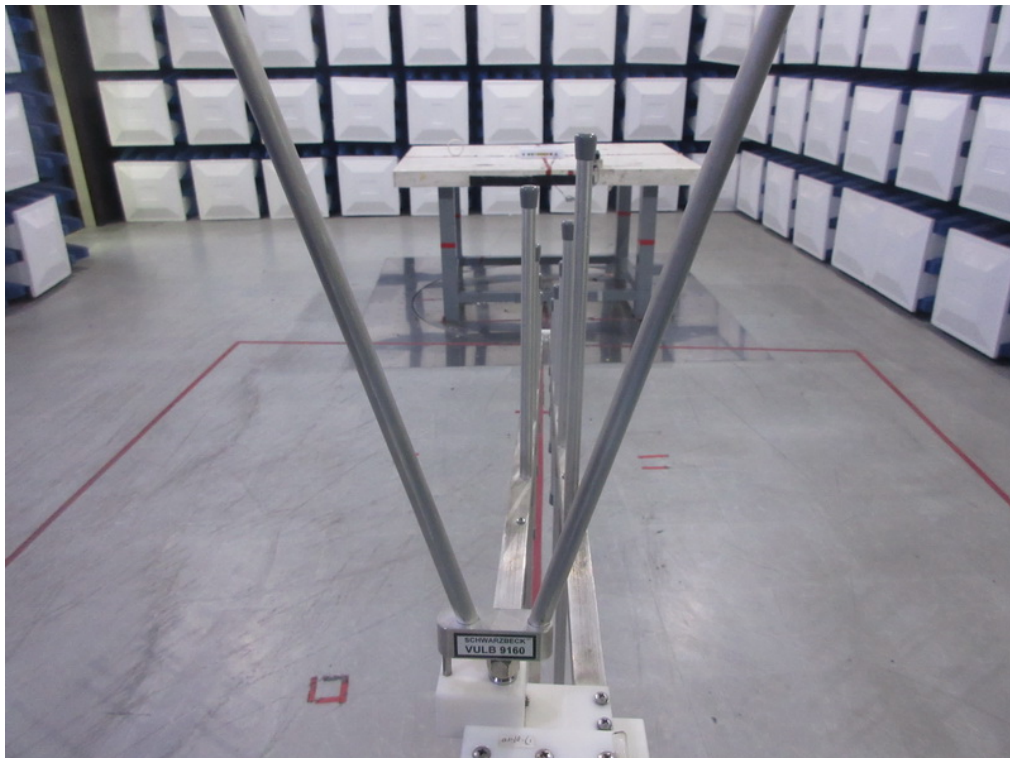
Radiated Measurement Photos

9KHz to 30MHz



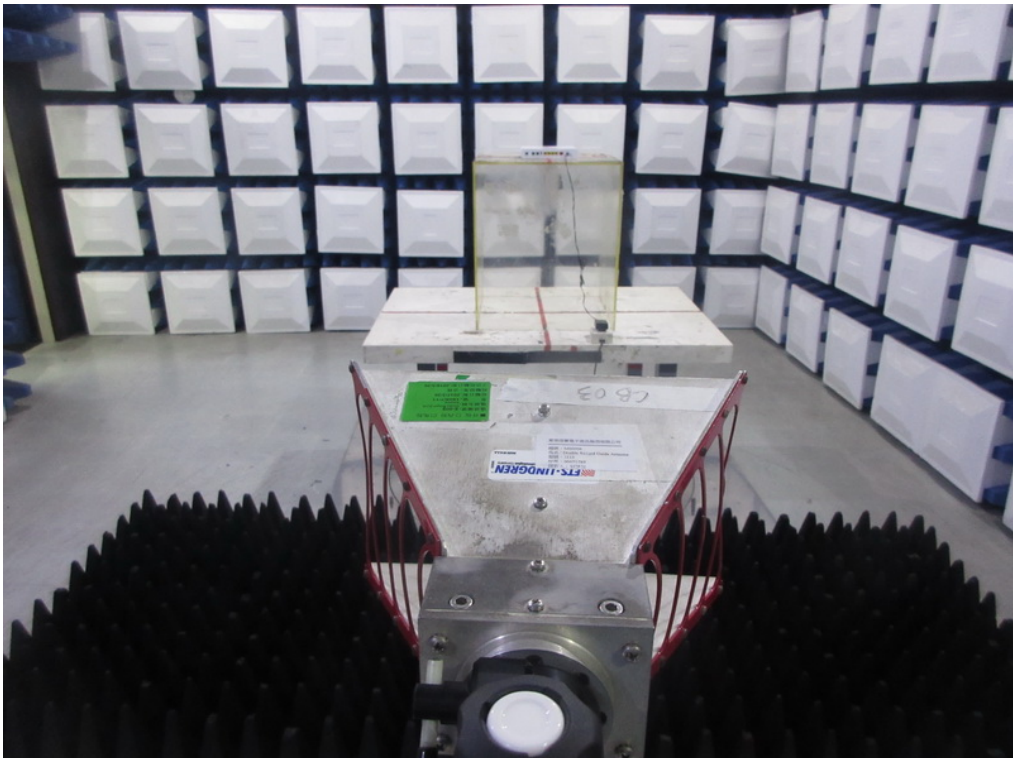
Radiated Measurement Photos

30MHz to 1000MHz



Radiated Measurement Photos

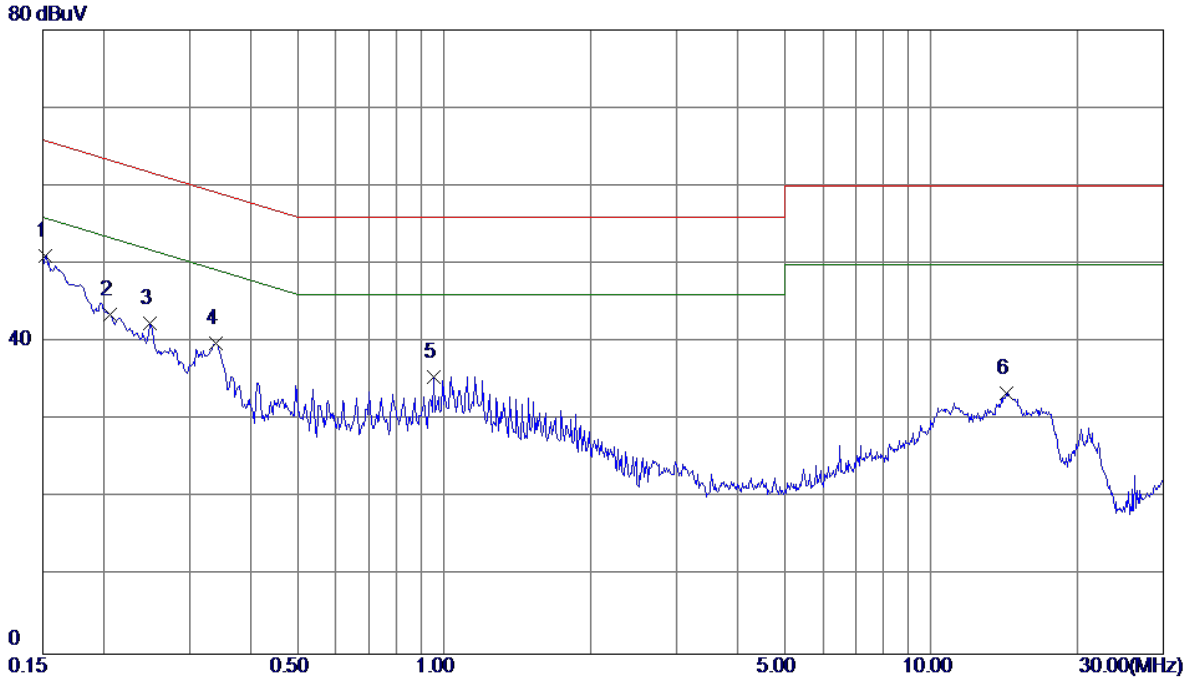
Above 1GHz



ATTACHMENT A - CONDUCTED EMISSION

Test Mode : TX Mode

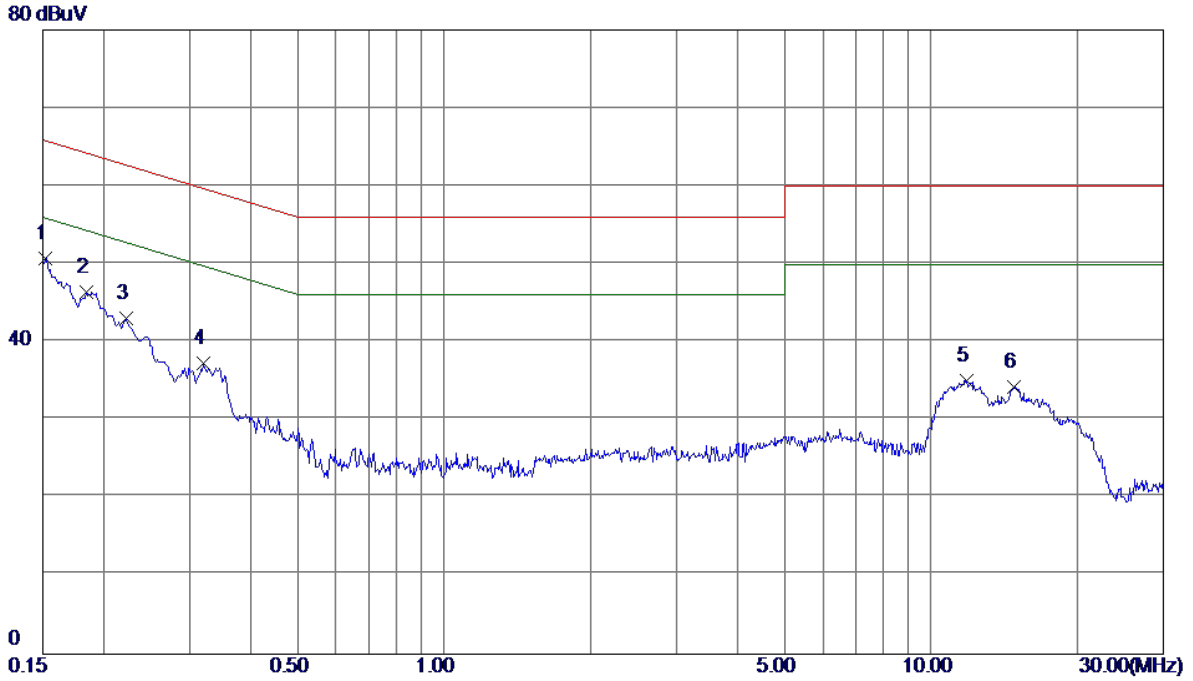
Line



No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1 *	0.1522	41.47	9.64	51.11	65.88	-14.77	Peak	
2	0.2062	33.90	9.69	43.59	63.36	-19.77	Peak	
3	0.2490	32.54	9.79	42.33	61.79	-19.46	Peak	
4	0.3390	29.92	9.91	39.83	59.23	-19.40	Peak	
5	0.9510	25.46	10.11	35.57	56.00	-20.43	Peak	
6	14.2732	22.75	10.65	33.40	60.00	-26.60	Peak	

Test Mode : TX Mode

Neutral



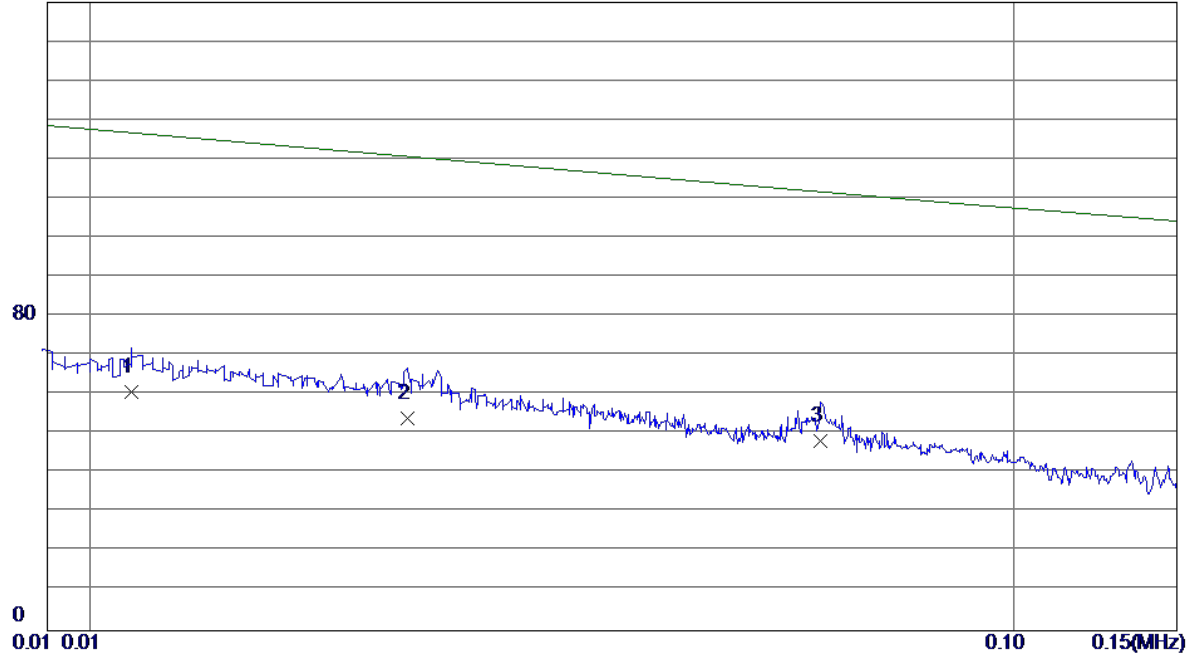
No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1 *	0.1522	41.23	9.54	50.77	65.88	-15.11	Peak	
2	0.1844	36.81	9.61	46.42	64.29	-17.87	Peak	
3	0.2220	33.43	9.68	43.11	62.74	-19.63	Peak	
4	0.3209	27.50	9.73	37.23	59.68	-22.45	Peak	
5	11.8342	24.73	10.38	35.11	60.00	-24.89	Peak	
6	14.8200	23.72	10.57	34.29	60.00	-25.71	Peak	

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

Test Mode: TX B MODE CHANNEL 01

Ant 0°

160 dBuV/m

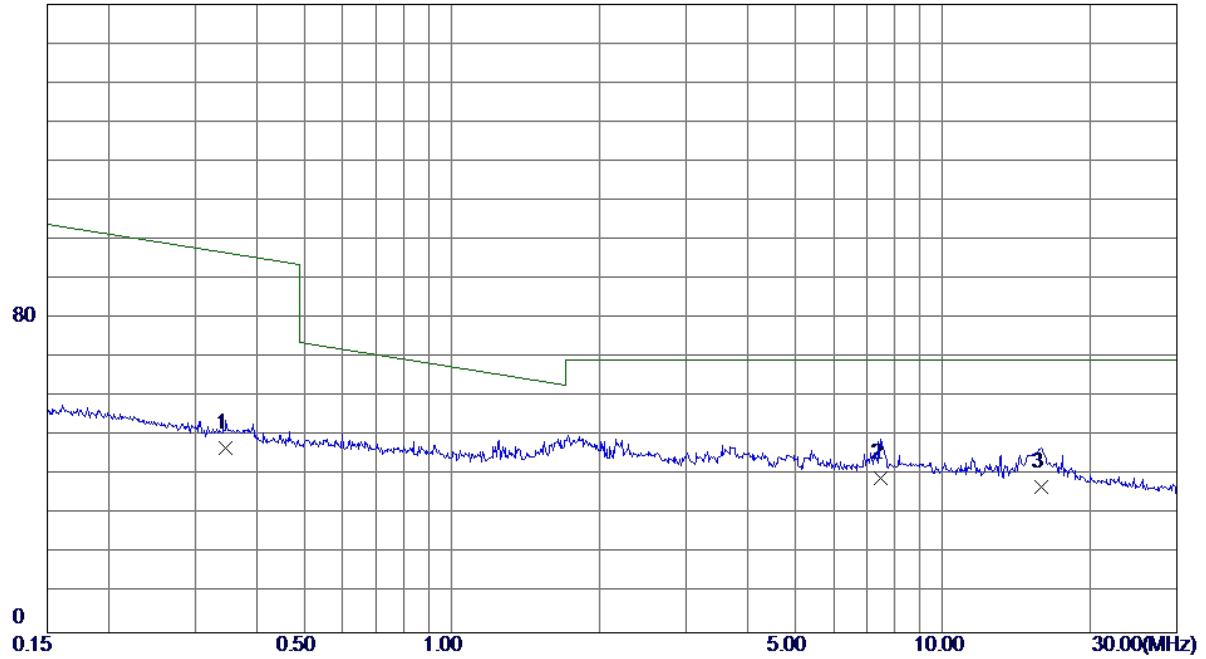


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	0.0111	36.87	24.05	60.92	127.98	-67.06	AVG	
2	0.0221	30.74	23.26	54.00	125.26	-71.26	AVG	
3	0.0618	28.65	19.68	48.33	115.46	-67.13	AVG	

Test Mode: TX B MODE CHANNEL 01

Ant 0°

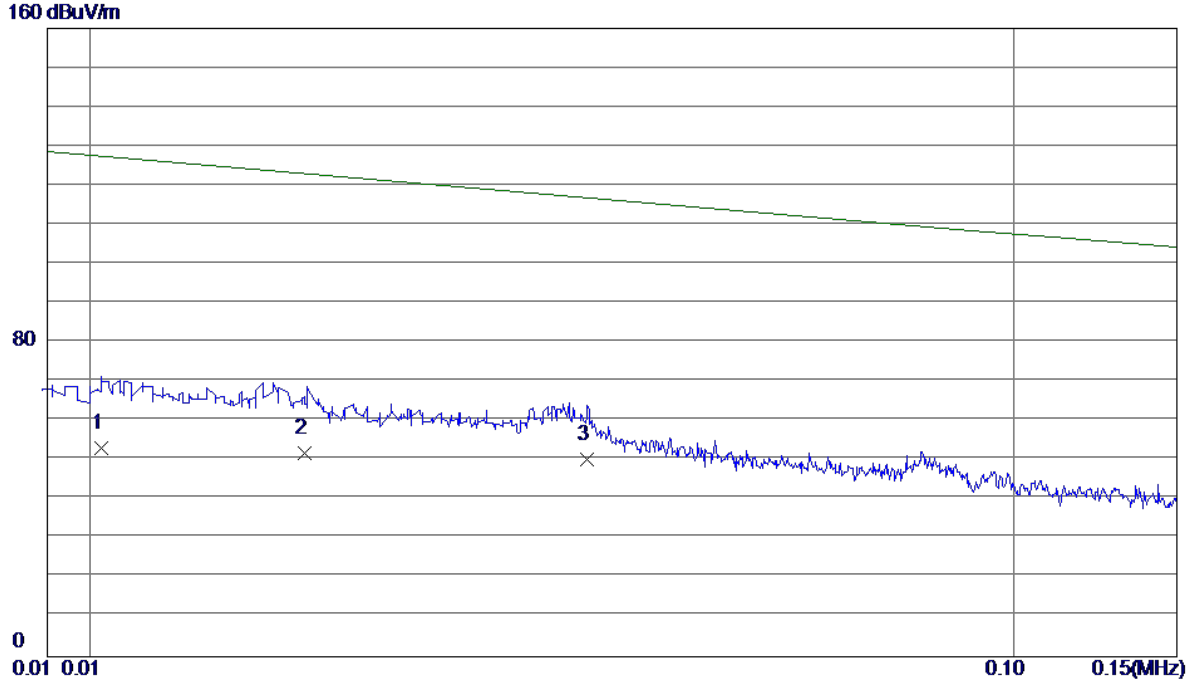
160 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	0.3462	28.52	18.54	47.06	98.71	-51.65	AVG	
2 *	7.4860	23.07	16.27	39.34	69.54	-30.20	QP	
3	15.8853	21.52	15.54	37.06	69.54	-32.48	QP	

Test Mode: TX B MODE CHANNEL 01

Ant 90°

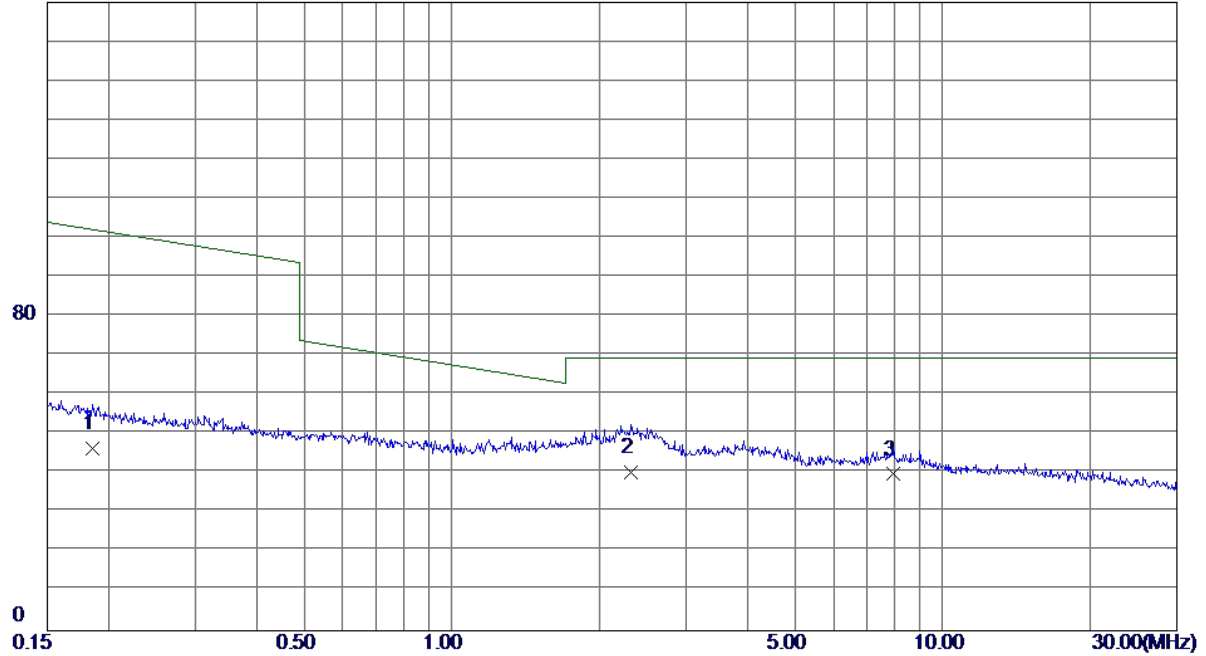


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	0.0103	29.10	24.10	53.20	128.17	-74.97	AVG	
2	0.0171	28.12	23.69	51.81	126.50	-74.69	AVG	
3 *	0.0345	28.37	21.73	50.10	122.20	-72.10	AVG	

Test Mode: TX B MODE CHANNEL 01

Ant 90°

160 dBuV/m



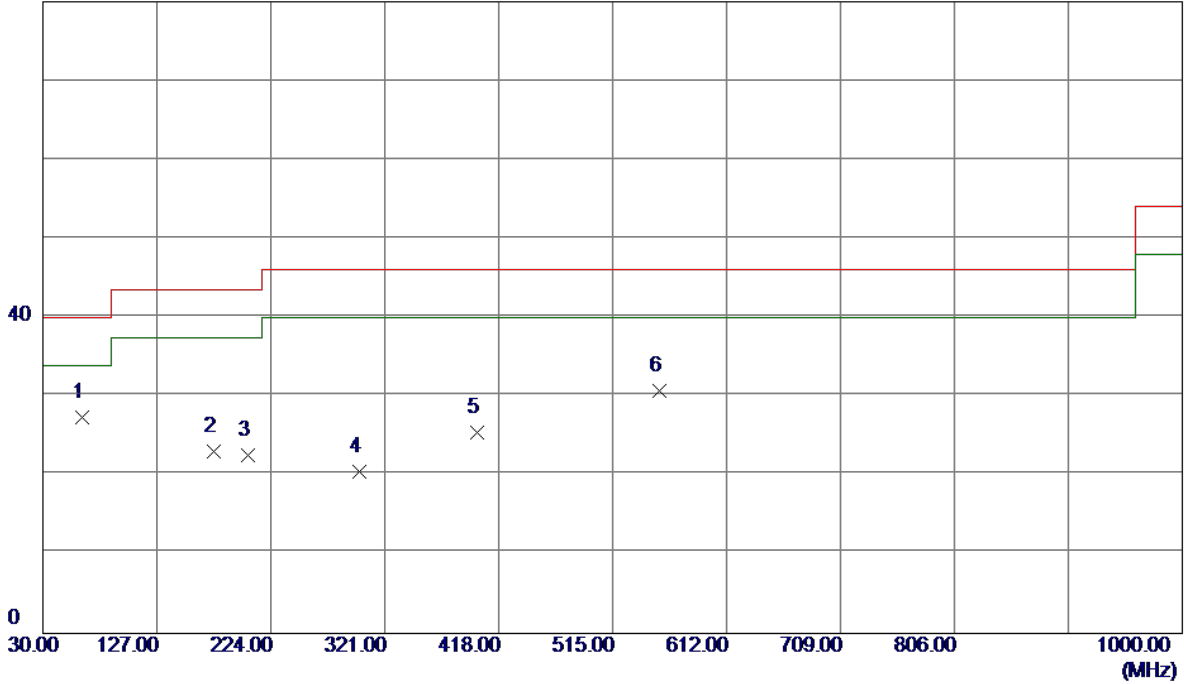
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	0.1853	27.74	18.71	46.45	104.21	-57.76	AVG	
2 *	2.3212	22.95	17.50	40.45	69.54	-29.09	QP	
3	7.9352	23.65	16.19	39.84	69.54	-29.70	QP	

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

Test Mode: TX B MODE CHANNEL 01

Vertical

80 dBuV/m

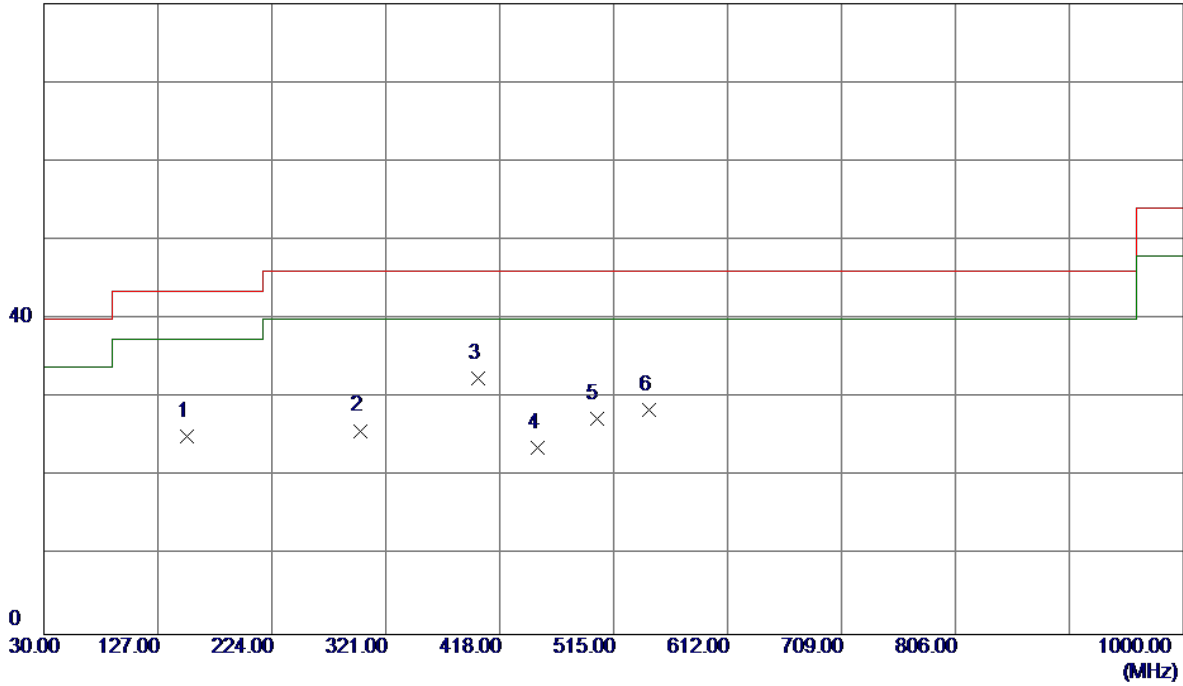


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	62.9800	41.98	-14.58	27.40	40.00	-12.60	Peak	
2	175.5000	35.62	-12.57	23.05	43.50	-20.45	Peak	
3	204.6000	37.14	-14.53	22.61	43.50	-20.89	Peak	
4	299.6600	30.69	-10.20	20.49	46.00	-25.51	Peak	
5	399.5700	33.29	-7.81	25.48	46.00	-20.52	Peak	
6	554.7700	35.53	-4.78	30.75	46.00	-15.25	Peak	

Test Mode: TX B MODE CHANNEL 01

Horizontal

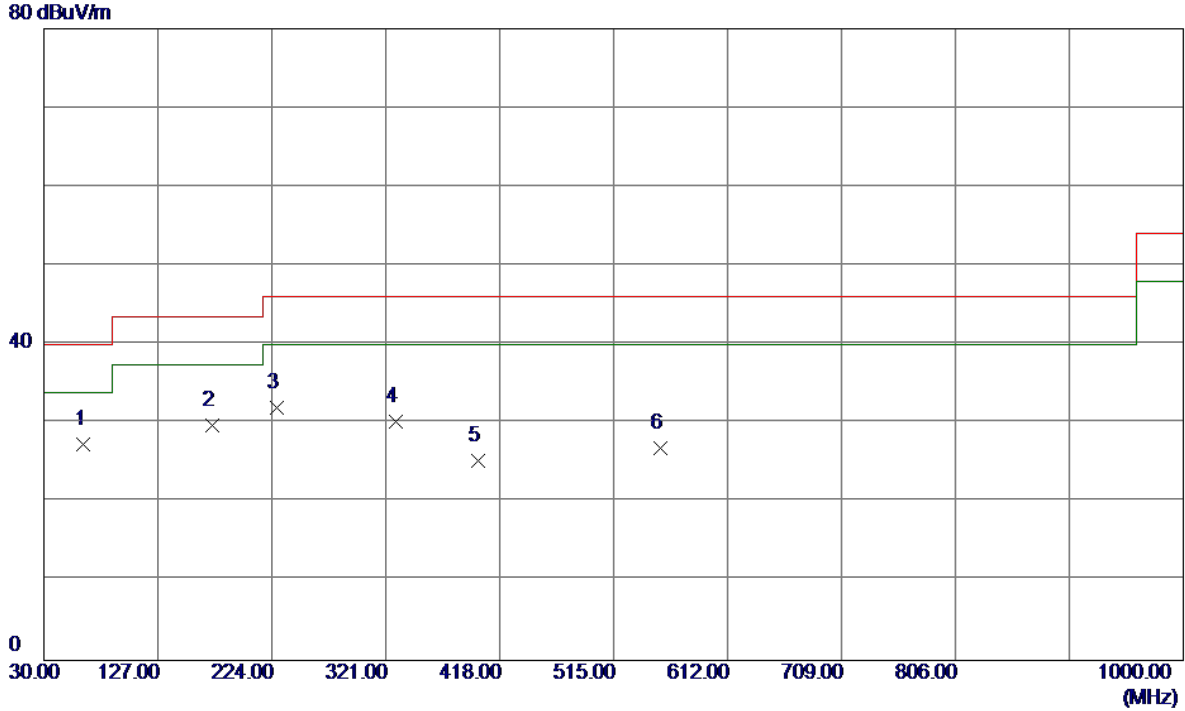
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	152.2200	37.93	-12.77	25.16	43.50	-18.34	Peak	
2	299.6600	36.04	-10.20	25.84	46.00	-20.16	Peak	
3 *	399.5700	40.28	-7.81	32.47	46.00	-13.53	Peak	
4	450.0100	31.61	-8.00	23.61	46.00	-22.39	Peak	
5	500.4500	36.96	-9.67	27.29	46.00	-18.71	Peak	
6	545.0700	33.60	-5.05	28.55	46.00	-17.45	Peak	

Test Mode: TX B MODE CHANNEL 06

Vertical

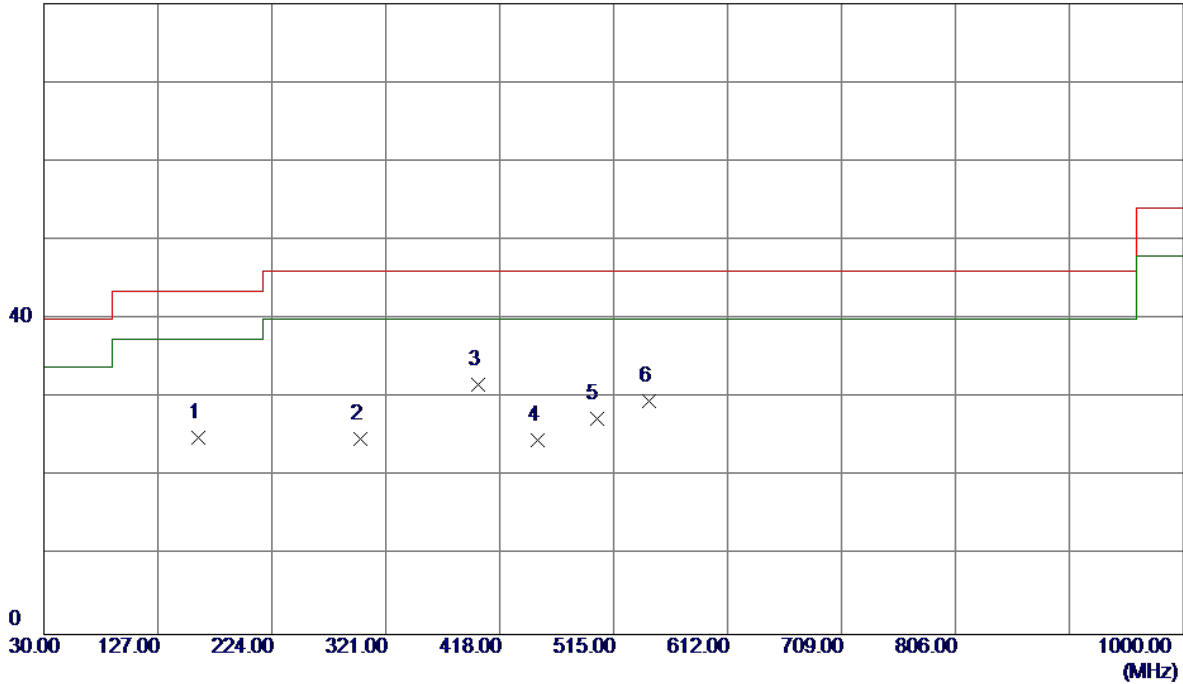


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	63.9500	42.20	-14.87	27.33	40.00	-12.67	Peak	
2	173.5600	42.28	-12.45	29.83	43.50	-13.67	Peak	
3	227.8800	45.63	-13.56	32.07	46.00	-13.93	Peak	
4	329.7300	41.02	-10.79	30.23	46.00	-15.77	Peak	
5	399.5700	33.02	-7.81	25.21	46.00	-20.79	Peak	
6	554.7700	31.63	-4.78	26.85	46.00	-19.15	Peak	

Test Mode: TX B MODE CHANNEL 06

Horizontal

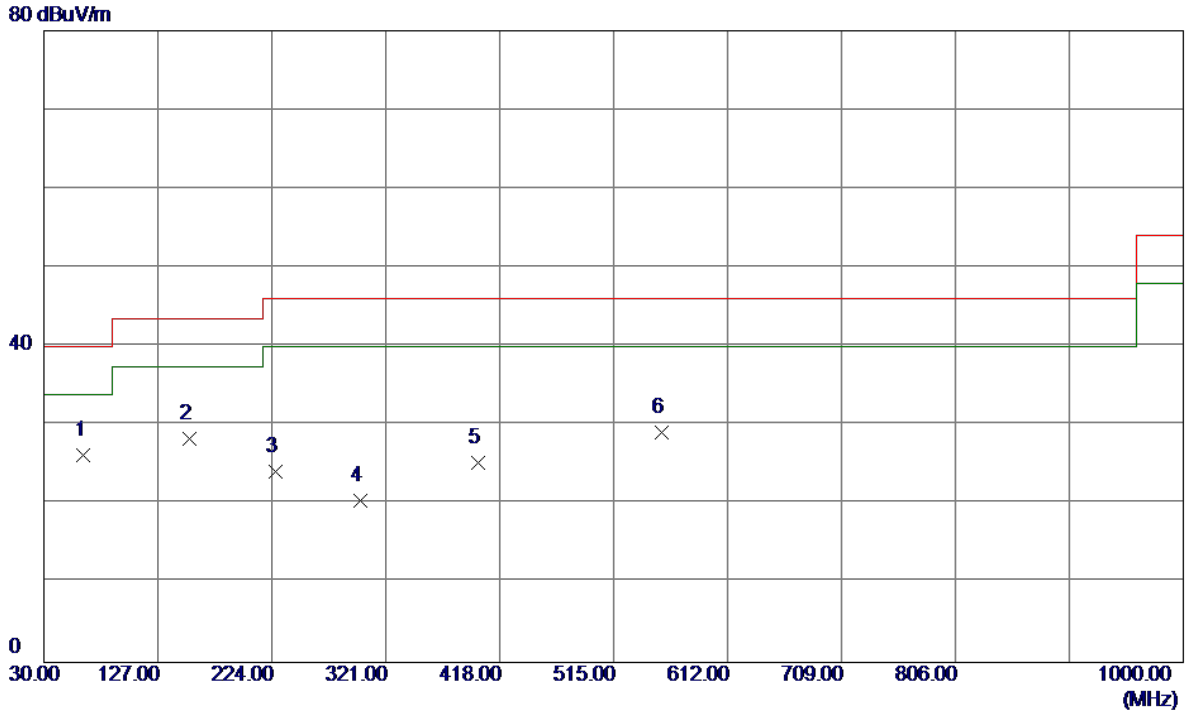
80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	161.9200	37.05	-12.16	24.89	43.50	-18.61	Peak	
2	299.6600	35.06	-10.20	24.86	46.00	-21.14	Peak	
3 *	399.5700	39.48	-7.81	31.67	46.00	-14.33	Peak	
4	450.0100	32.67	-8.00	24.67	46.00	-21.33	Peak	
5	500.4500	36.99	-9.67	27.32	46.00	-18.68	Peak	
6	545.0700	34.63	-5.05	29.58	46.00	-16.42	Peak	

Test Mode: TX B MODE CHANNEL 11

Vertical

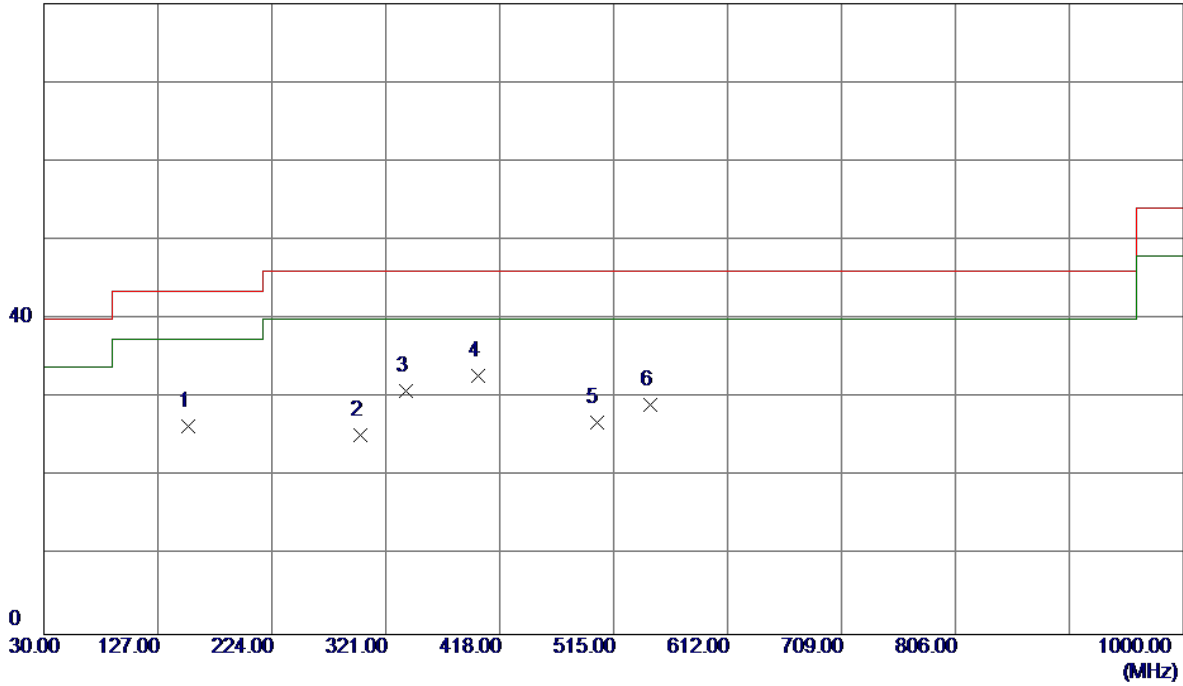


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	63.9500	41.04	-14.87	26.17	40.00	-13.83	Peak	
2	154.1600	40.87	-12.62	28.25	43.50	-15.25	Peak	
3	226.9100	37.79	-13.64	24.15	46.00	-21.85	Peak	
4	299.6600	30.66	-10.20	20.46	46.00	-25.54	Peak	
5	399.5700	33.05	-7.81	25.24	46.00	-20.76	Peak	
6	555.7400	33.99	-4.83	29.16	46.00	-16.84	Peak	

Test Mode: TX B MODE CHANNEL 11

Horizontal

80 dBuV/m

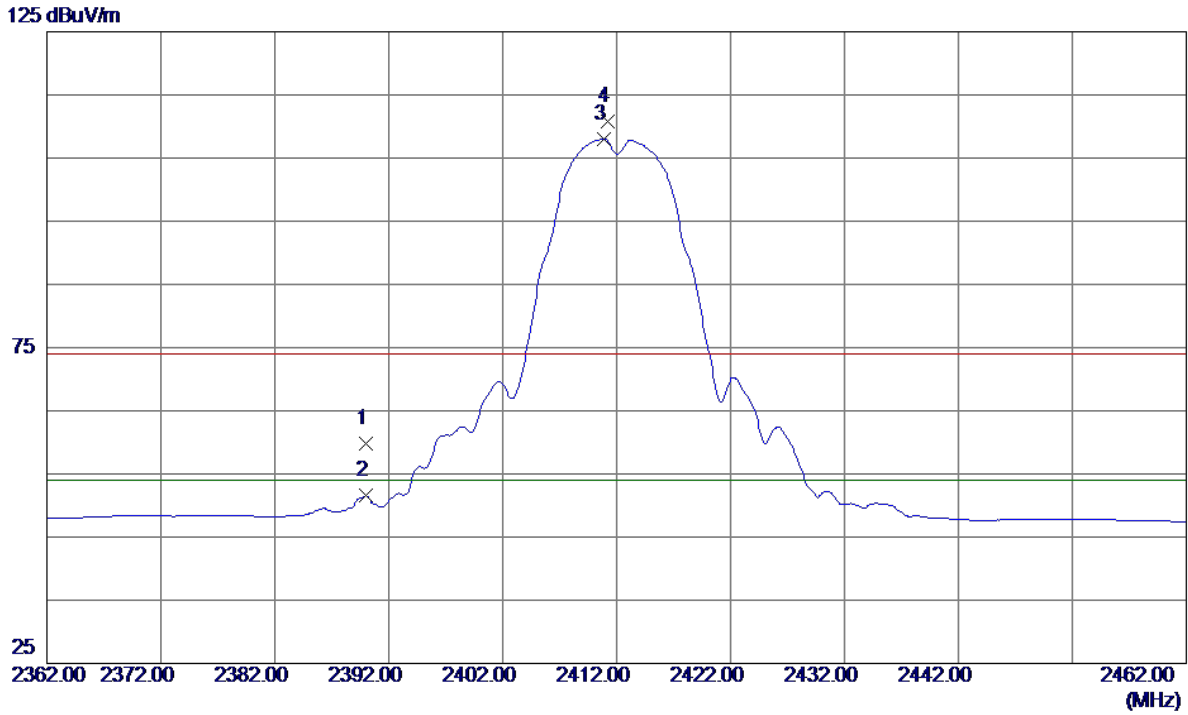


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	153.1900	39.03	-12.69	26.34	43.50	-17.16	Peak	
2	299.6600	35.47	-10.20	25.27	46.00	-20.73	Peak	
3	338.4600	41.87	-10.98	30.89	46.00	-15.11	Peak	
4 *	399.5700	40.57	-7.81	32.76	46.00	-13.24	Peak	
5	500.4500	36.51	-9.67	26.84	46.00	-19.16	Peak	
6	546.0400	34.13	-4.95	29.18	46.00	-16.82	Peak	

ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

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

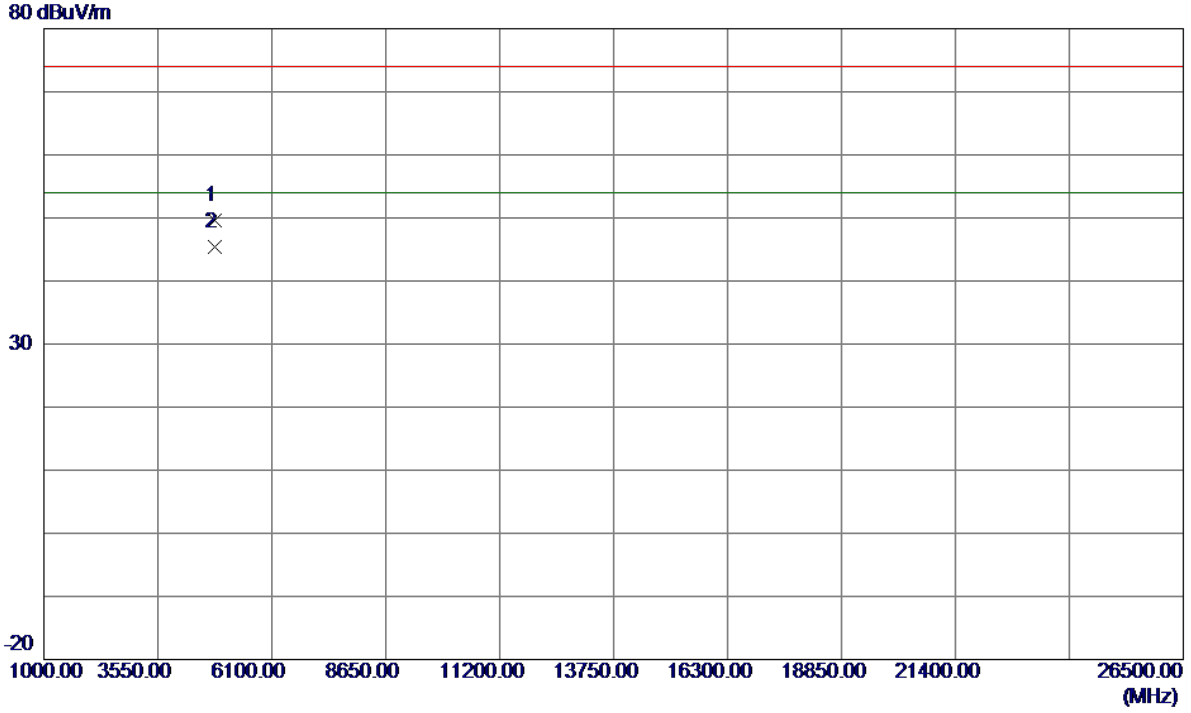
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	26.78	33.01	59.79	74.00	-14.21	Peak	
2	2390.0000	18.55	33.01	51.56	54.00	-2.44	AVG	
3 *	2410.8500	74.97	33.10	108.07	54.00	54.07	AVG	No Limit
4	2411.2000	77.79	33.10	110.89	74.00	36.89	Peak	No Limit

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

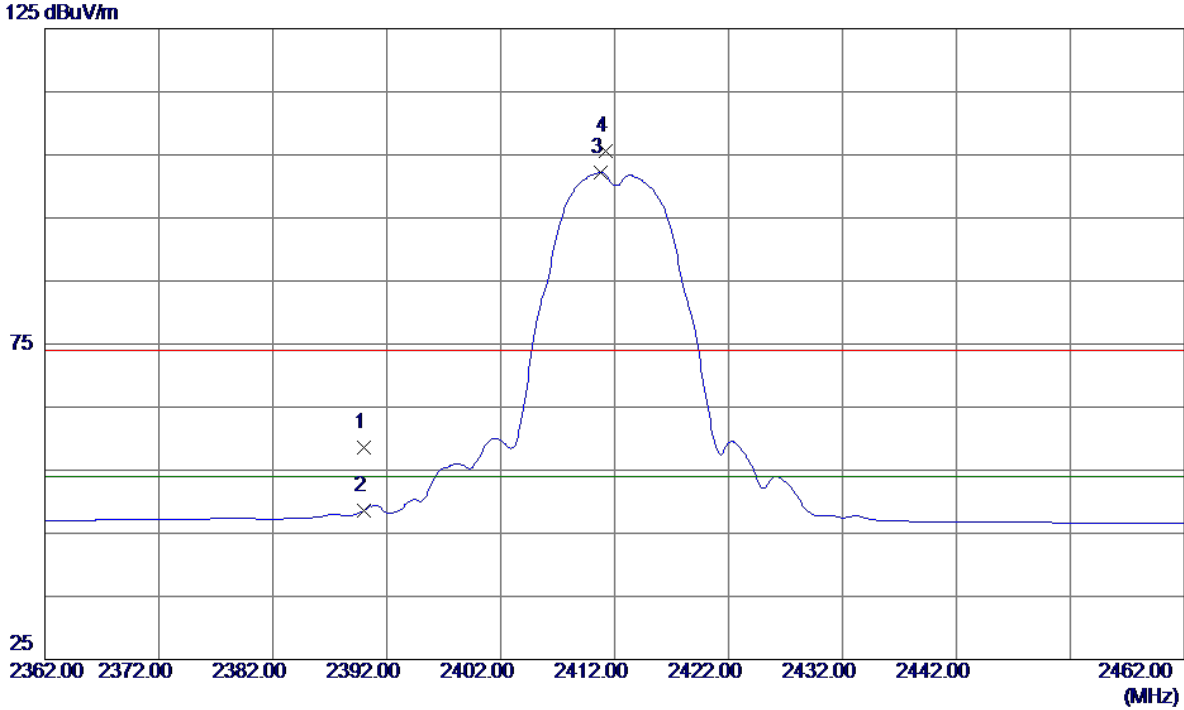
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.1900	44.76	4.85	49.61	74.00	-24.39	Peak	
2 *	4824.2300	40.64	4.85	45.49	54.00	-8.51	AVG	

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

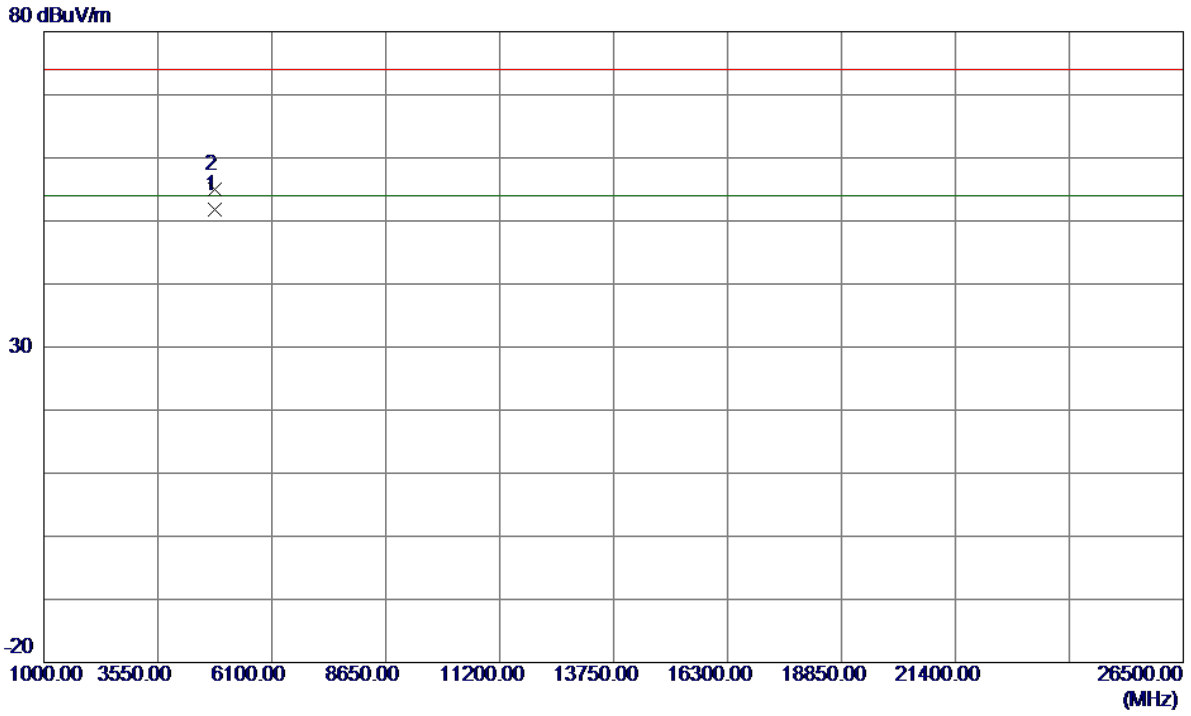
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	25.51	33.01	58.52	74.00	-15.48	Peak	
2	2390.0000	15.59	33.01	48.60	54.00	-5.40	AVG	
3 *	2410.8000	69.11	33.10	102.21	54.00	48.21	AVG	No Limit
4	2411.2000	72.50	33.10	105.60	74.00	31.60	Peak	No Limit

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

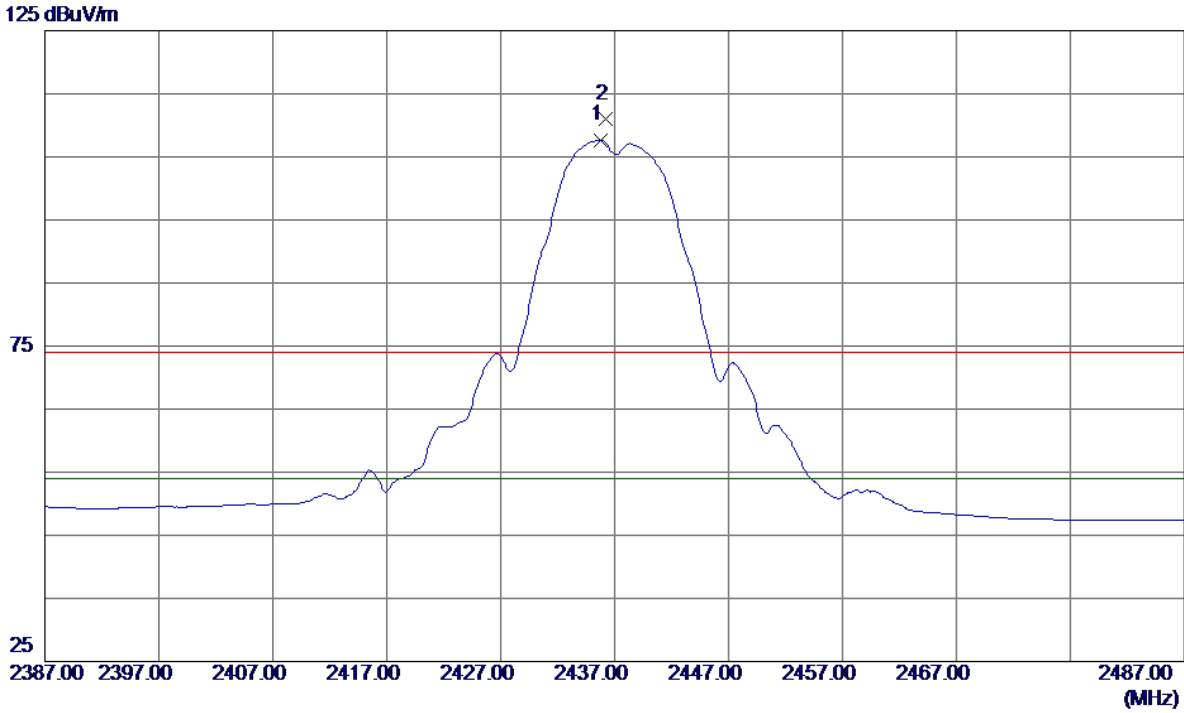
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4824.0400	46.97	4.85	51.82	54.00	-2.18	AVG	
2	4824.1000	50.12	4.85	54.97	74.00	-19.03	Peak	

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

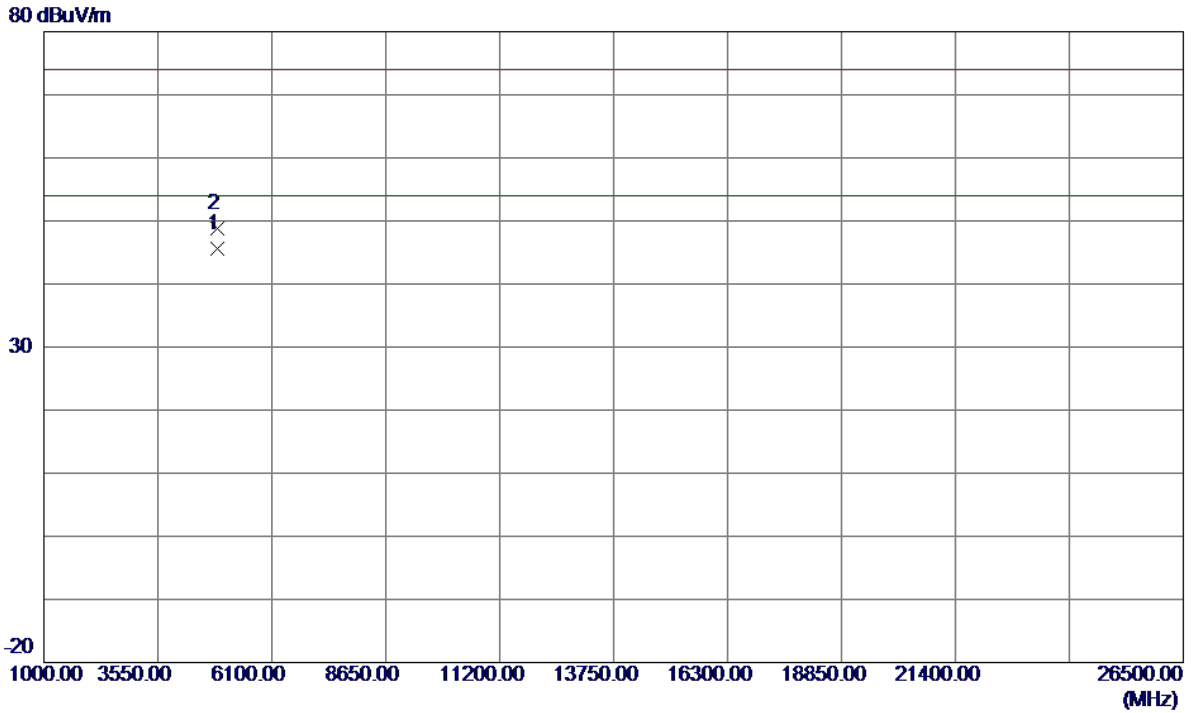
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2435.8000	74.50	33.20	107.70	54.00	53.70	AVG	No Limit
2	2436.2000	77.81	33.20	111.01	74.00	37.01	Peak	No Limit

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

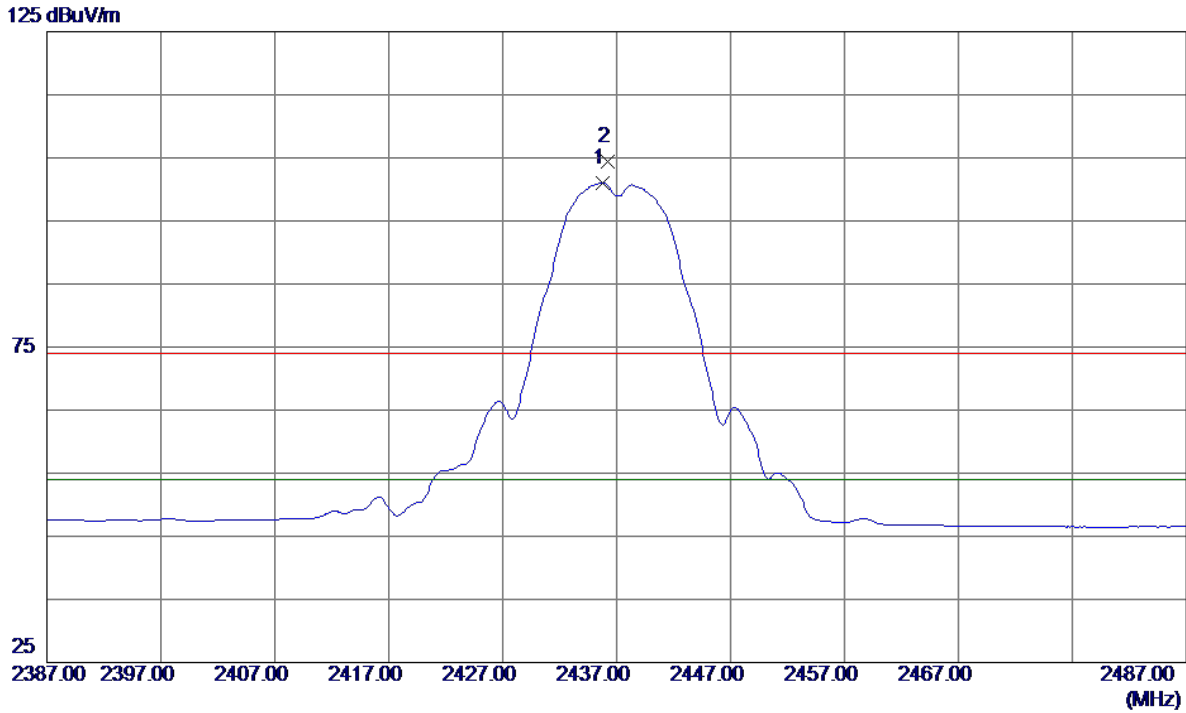
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4874.1800	40.56	5.07	45.63	54.00	-8.37	AVG	
2	4874.3400	43.67	5.07	48.74	74.00	-25.26	Peak	

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

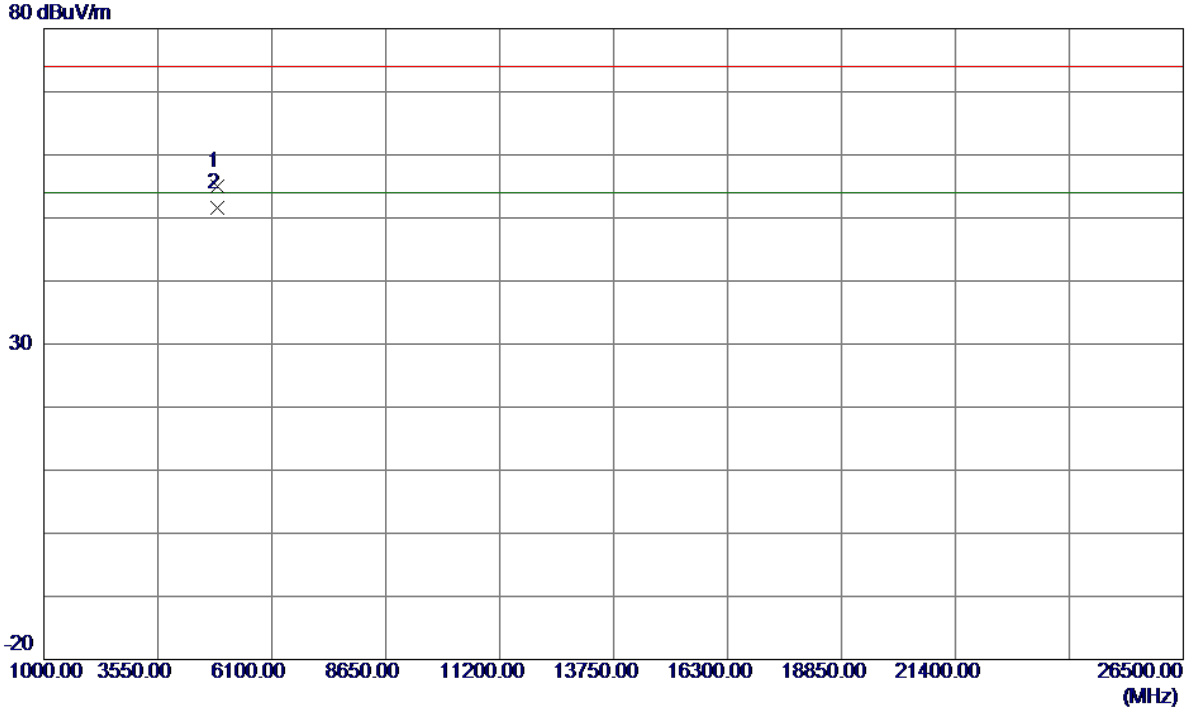
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2435.8000	67.87	33.20	101.07	54.00	47.07	AVG	No Limit
2	2436.2000	71.12	33.20	104.32	74.00	30.32	Peak	No Limit

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

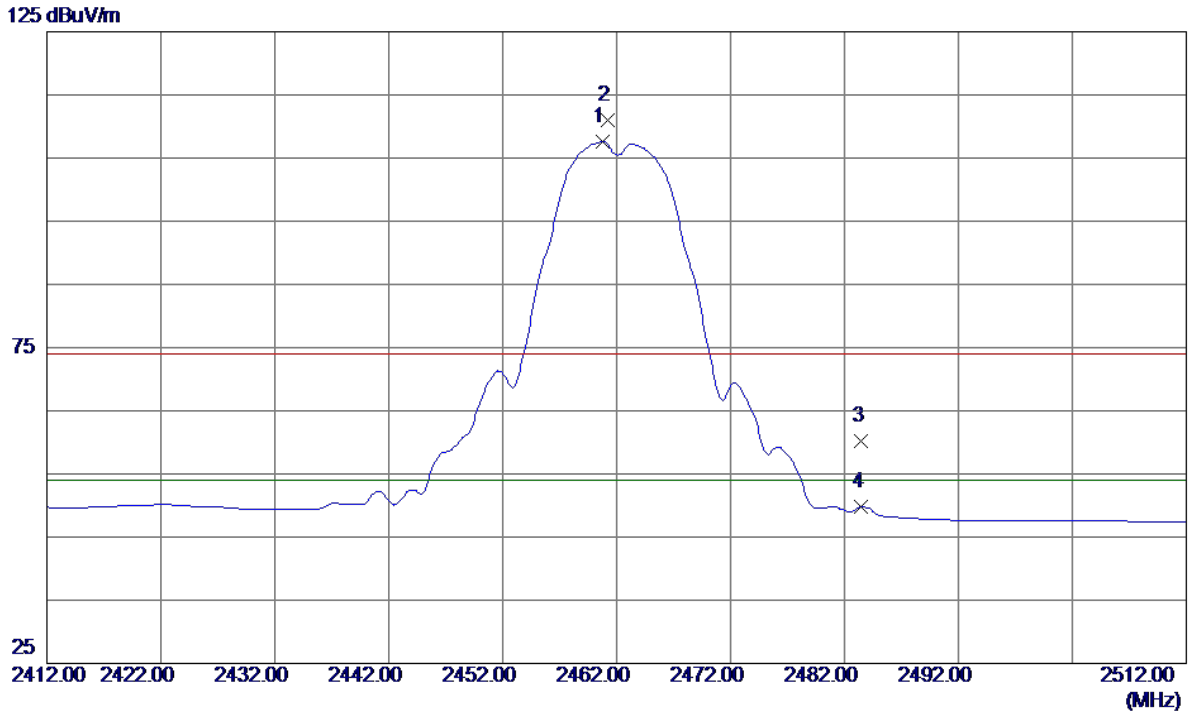
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4874.0299	50.02	5.07	55.09	74.00	-18.91	Peak	
2 *	4874.0950	46.49	5.07	51.56	54.00	-2.44	AVG	

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

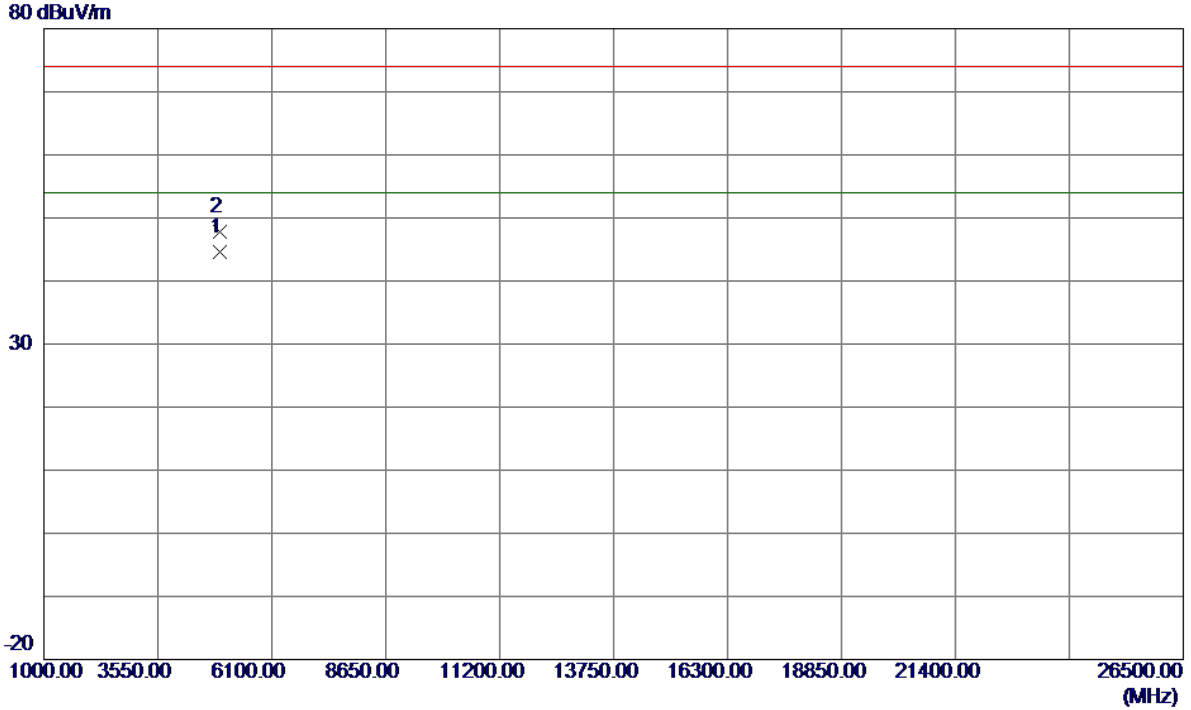
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2460.8000	74.30	33.31	107.61	54.00	53.61	AVG	No Limit
2	2461.2000	77.62	33.31	110.93	74.00	36.93	Peak	No Limit
3	2483.5000	26.77	33.40	60.17	74.00	-13.83	Peak	
4	2483.5000	16.38	33.40	49.78	54.00	-4.22	AVG	

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

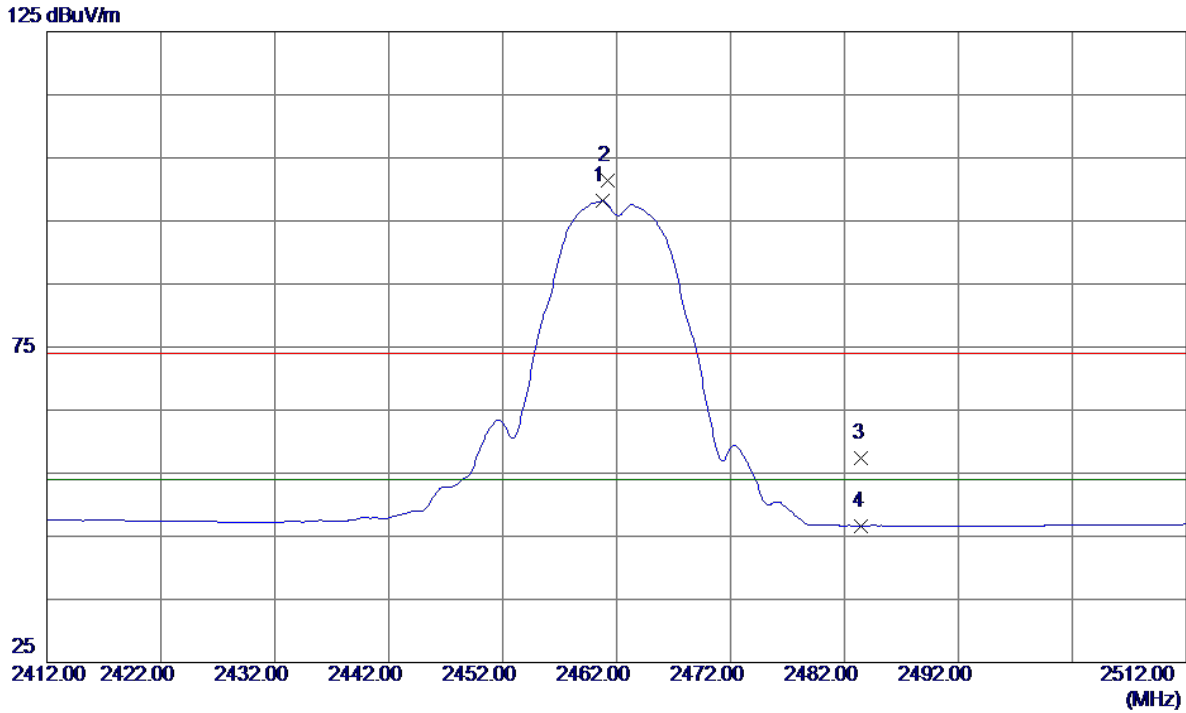
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4924.2500	39.41	5.28	44.69	54.00	-9.31	AVG	
2	4924.6000	42.56	5.28	47.84	74.00	-26.16	Peak	

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

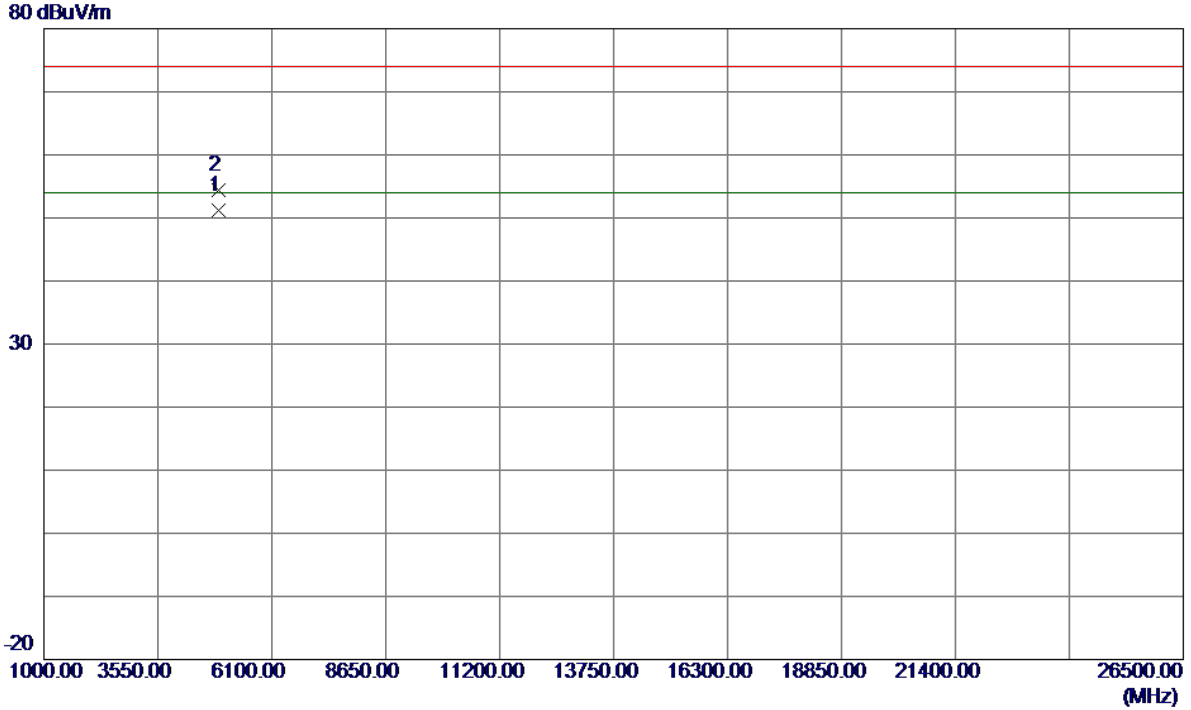
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2460.8000	64.81	33.31	98.12	54.00	44.12	AVG	No Limit
2	2461.2000	68.08	33.31	101.39	74.00	27.39	Peak	No Limit
3	2483.5000	23.91	33.40	57.31	74.00	-16.69	Peak	
4	2483.5000	13.27	33.40	46.67	54.00	-7.33	AVG	

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

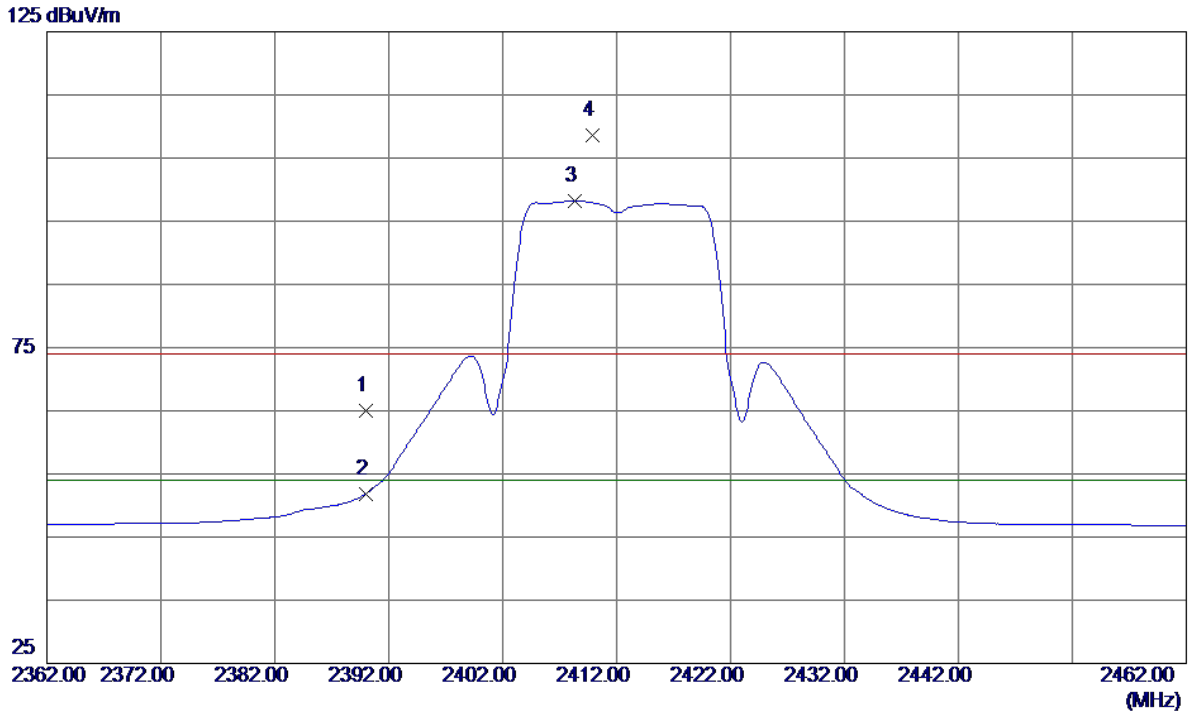
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4924.0450	45.95	5.28	51.23	54.00	-2.77	AVG	
2	4924.0600	49.17	5.28	54.45	74.00	-19.55	Peak	

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

Vertical

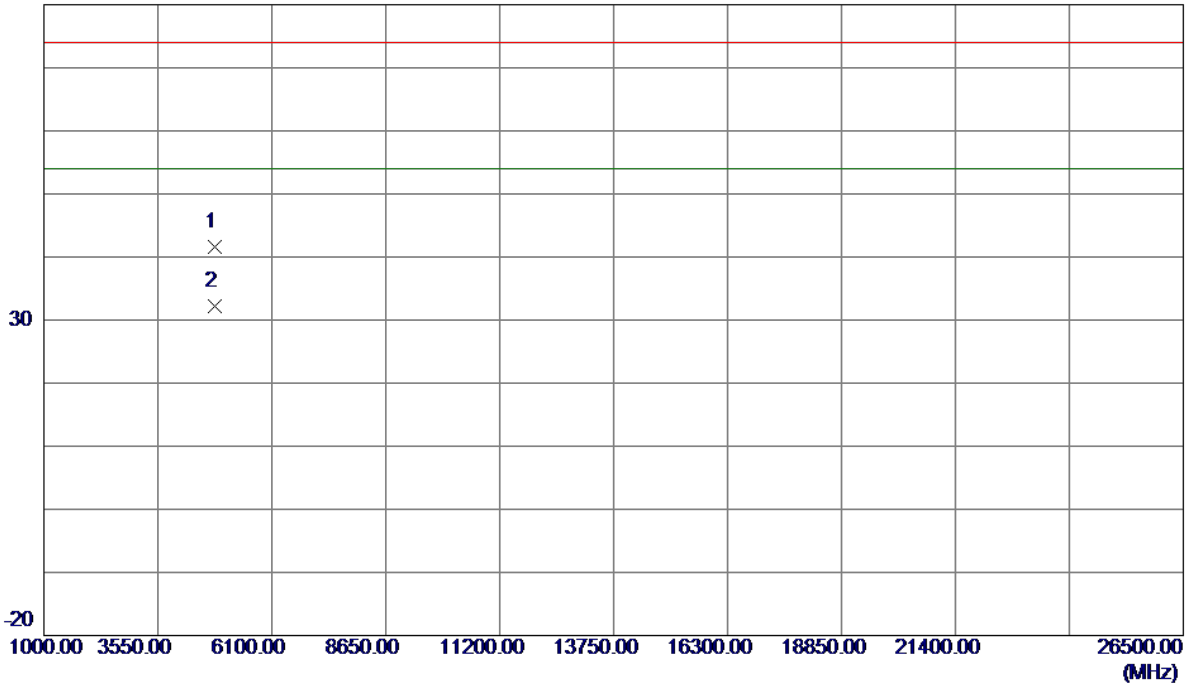


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	32.03	33.01	65.04	74.00	-8.96	Peak	
2	2390.0000	18.87	33.01	51.88	54.00	-2.12	AVG	
3	2408.3000	65.13	33.09	98.22	74.00	24.22	Peak	No Limit
4 *	2409.9000	75.56	33.09	108.65	74.00	34.65	Peak	No Limit

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

Vertical

80 dBuV/m

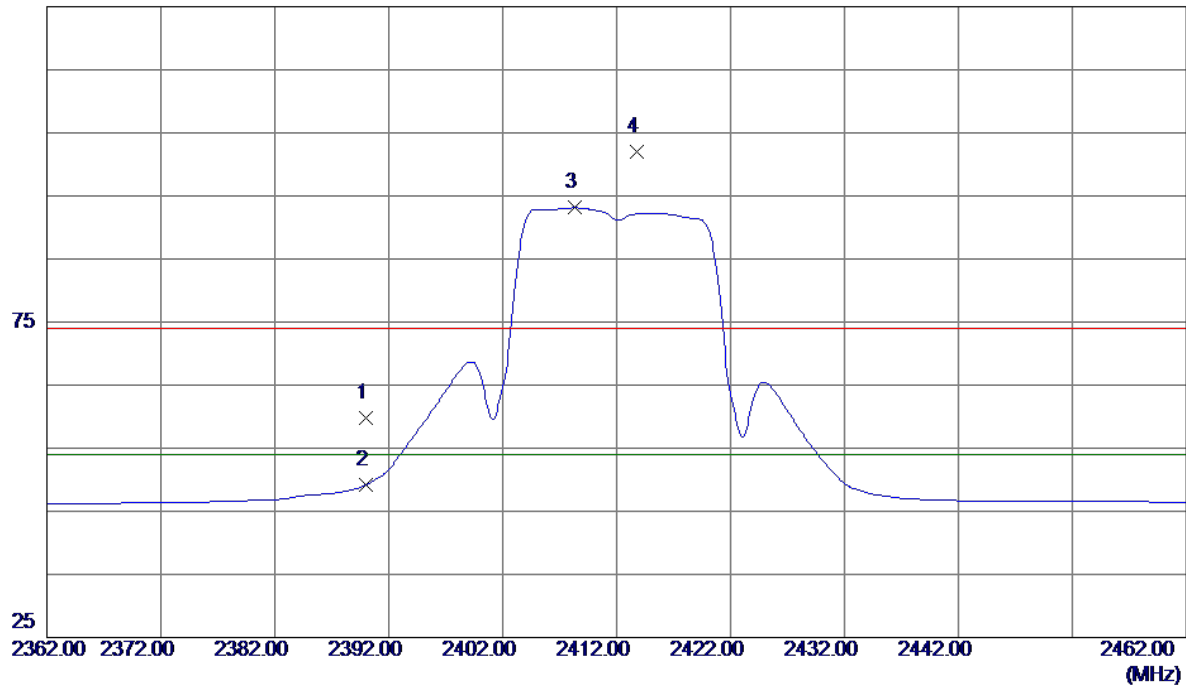


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4823.2700	36.67	4.85	41.52	74.00	-32.48	Peak	
2 *	4823.8500	27.42	4.85	32.27	54.00	-21.73	AVG	

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

Horizontal

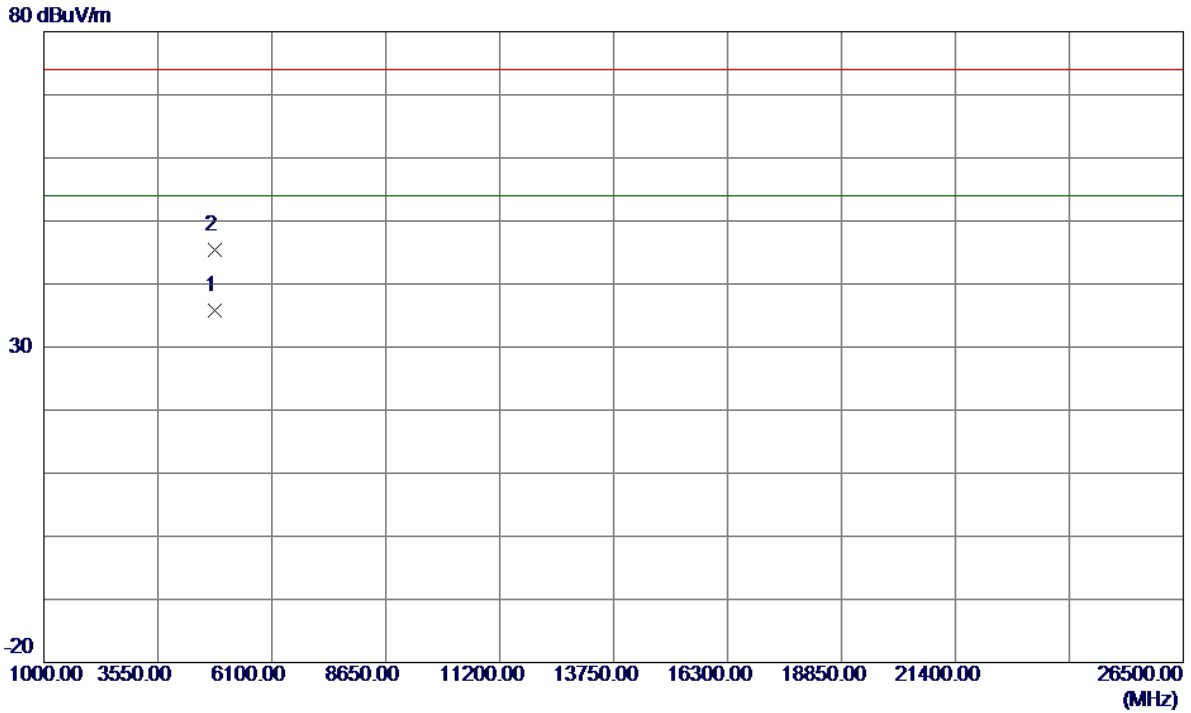
125 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	26.77	33.01	59.78	74.00	-14.22	Peak	
2	2390.0000	16.18	33.01	49.19	54.00	-4.81	AVG	
3 *	2408.3000	60.02	33.09	93.11	54.00	39.11	AVG	No Limit
4	2413.8000	68.94	33.11	102.05	74.00	28.05	Peak	No Limit

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

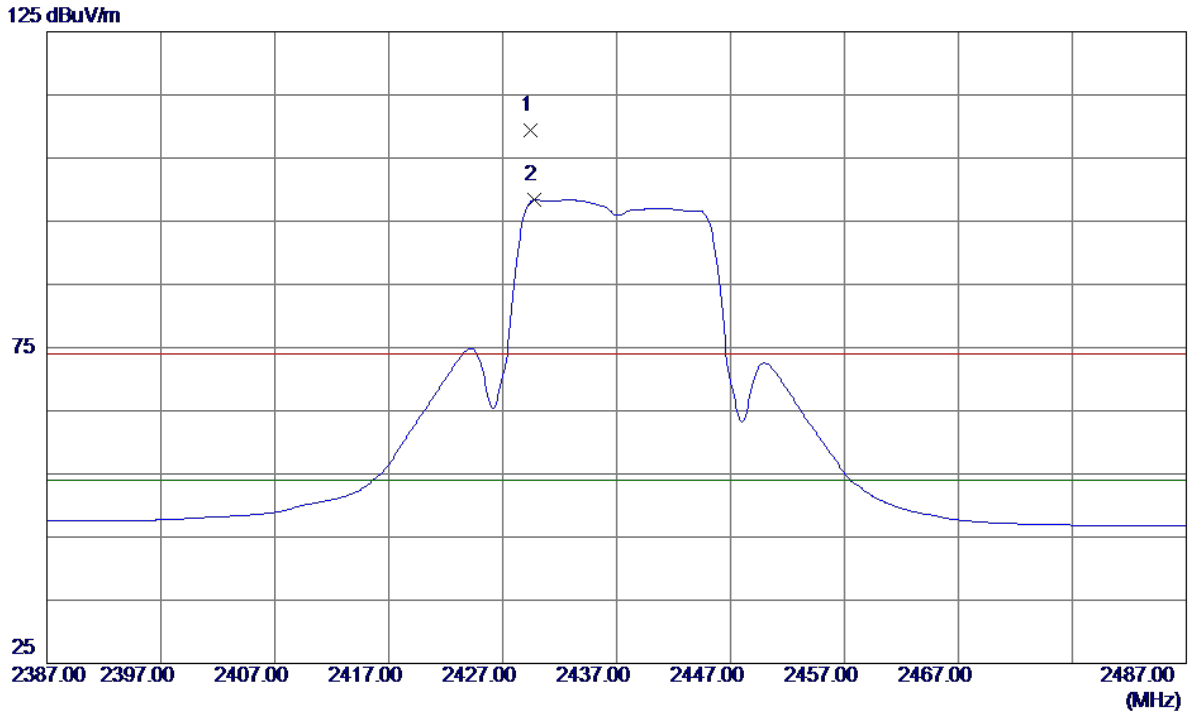
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4823.4500	31.00	4.85	35.85	54.00	-18.15	AVG	
2	4823.6000	40.47	4.85	45.32	74.00	-28.68	Peak	

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

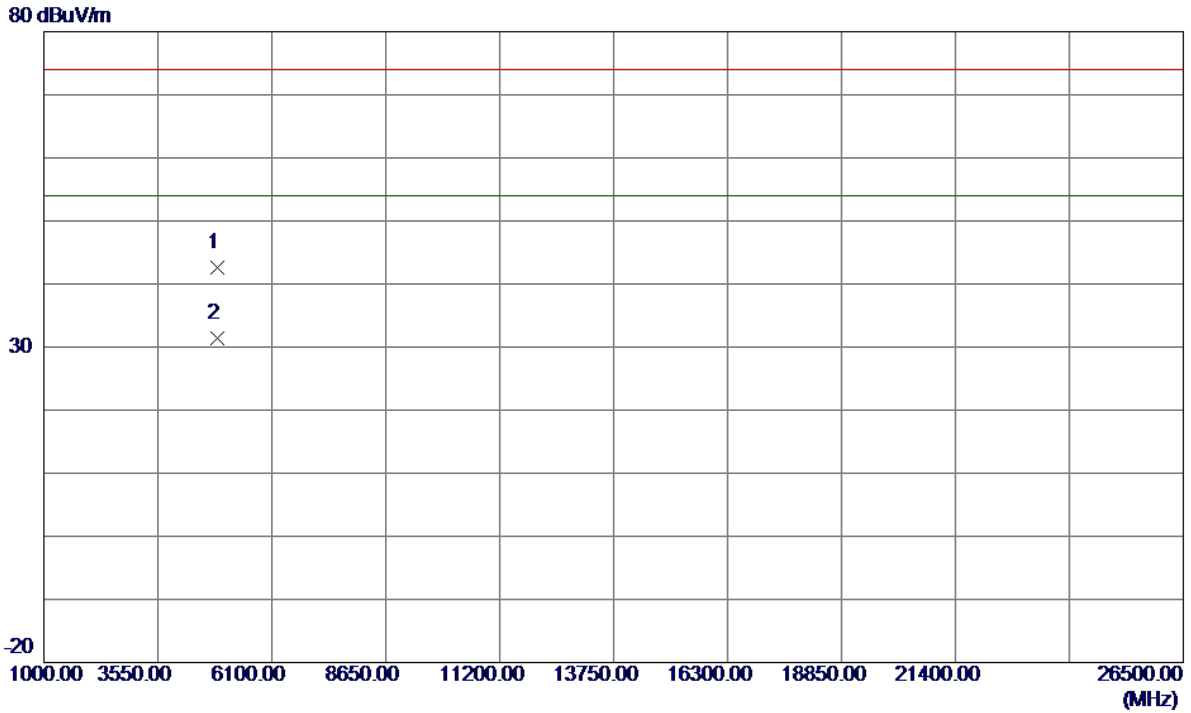
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2429.4000	76.19	33.17	109.36	74.00	35.36	Peak	No Limit
2 *	2429.8000	65.19	33.18	98.37	54.00	44.37	AVG	No Limit

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

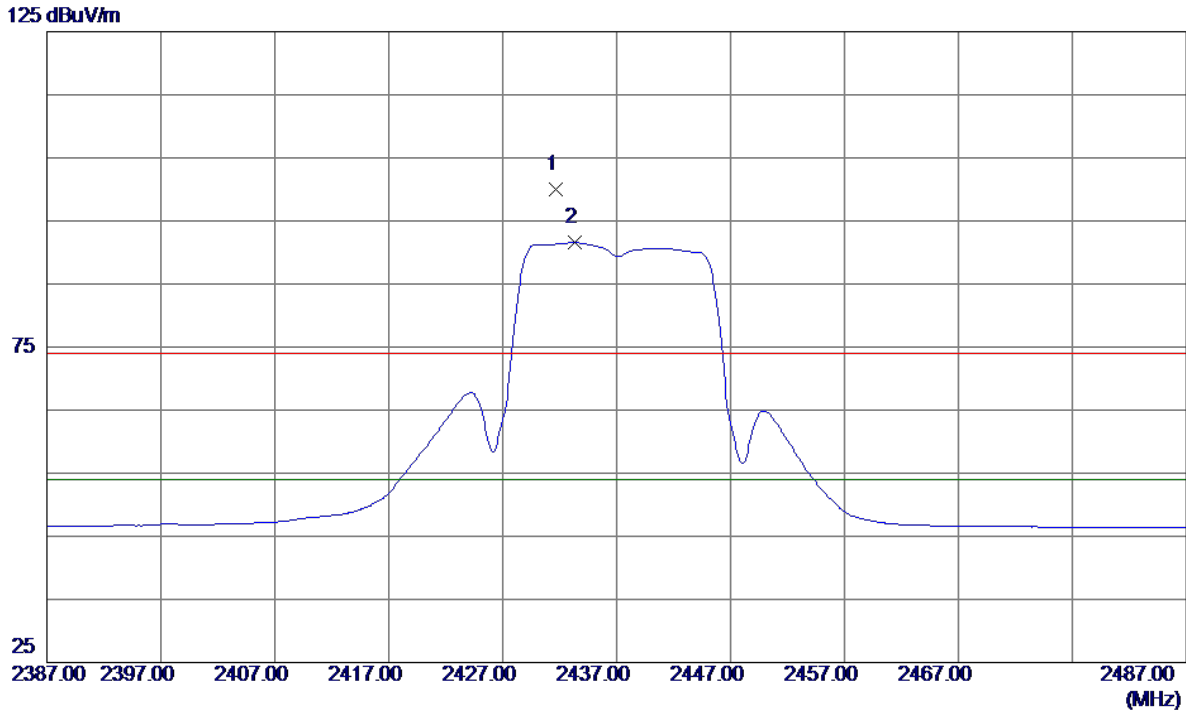
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4873.1700	37.59	5.06	42.65	74.00	-31.35	Peak	
2 *	4873.2900	26.42	5.06	31.48	54.00	-22.52	AVG	

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

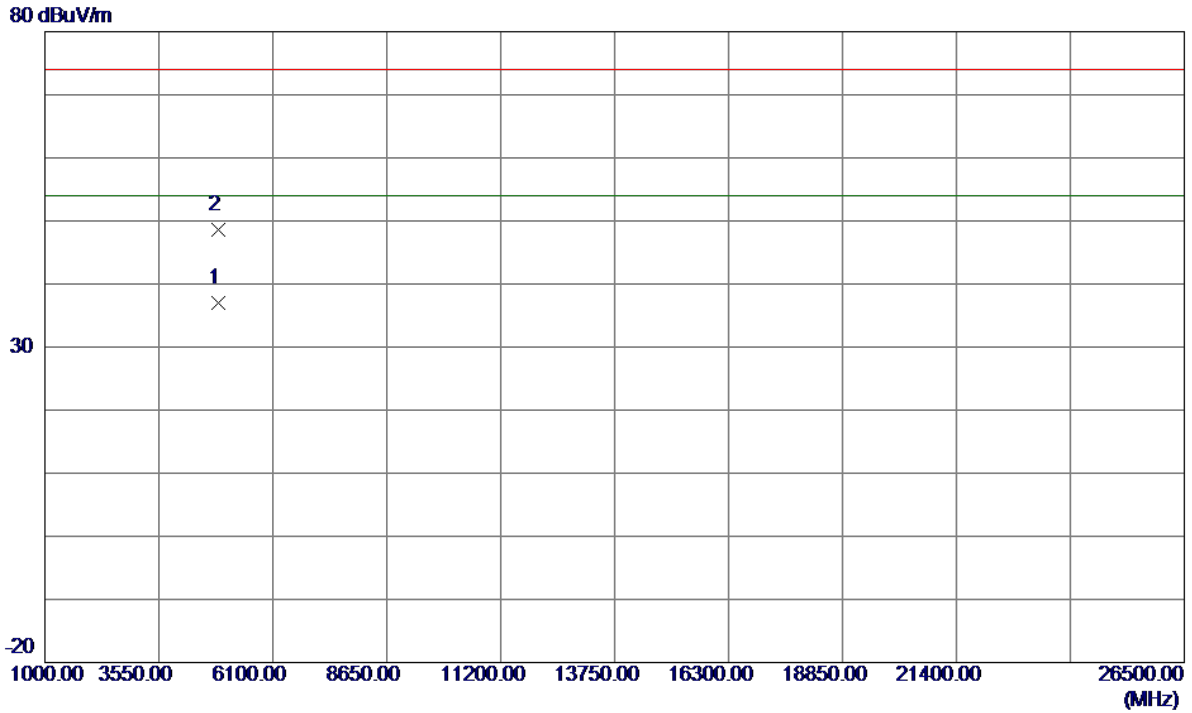
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2431.7000	66.82	33.18	100.00	74.00	26.00	Peak	No Limit
2 *	2433.3000	58.37	33.19	91.56	54.00	37.56	AVG	No Limit

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

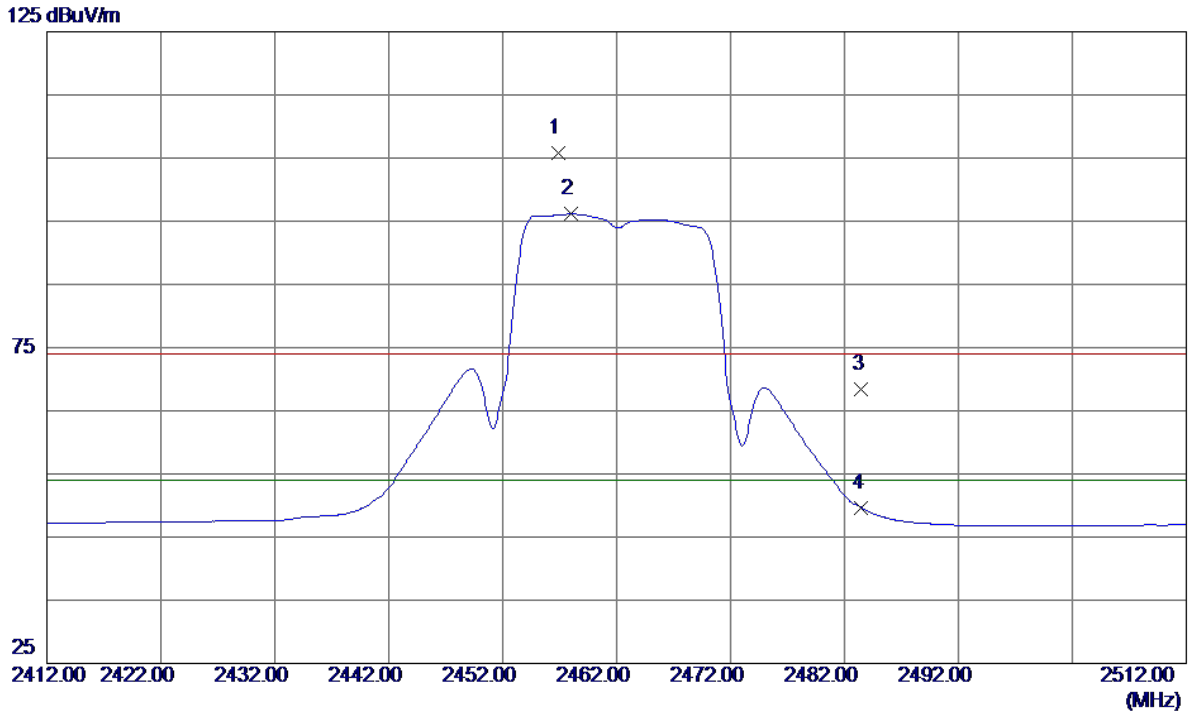
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4873.6500	32.03	5.06	37.09	54.00	-16.91	AVG	
2	4873.7000	43.47	5.06	48.53	74.00	-25.47	Peak	

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

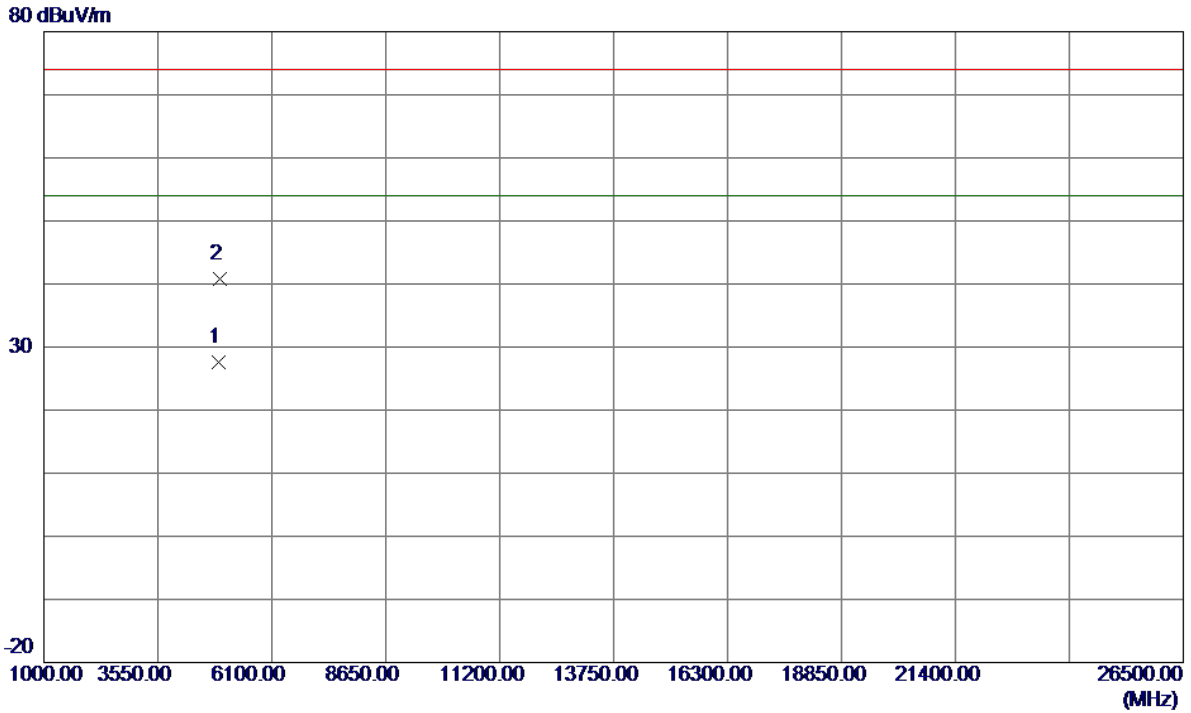
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2456.9000	72.49	33.29	105.78	74.00	31.78	Peak	No Limit
2 *	2458.0000	62.84	33.29	96.13	54.00	42.13	AVG	No Limit
3	2483.5000	34.91	33.40	68.31	74.00	-5.69	Peak	
4	2483.5000	16.22	33.40	49.62	54.00	-4.38	AVG	

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

Vertical

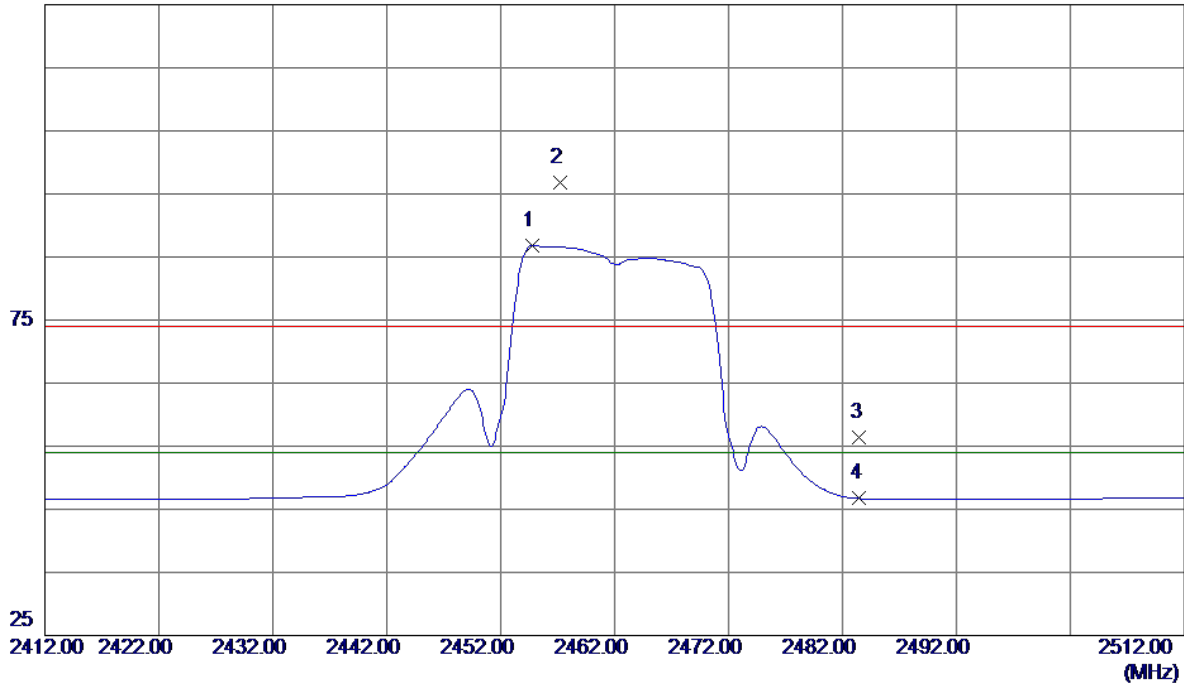


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4923.2700	22.36	5.27	27.63	54.00	-26.37	AVG	
2	4924.7900	35.46	5.28	40.74	74.00	-33.26	Peak	

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

Horizontal

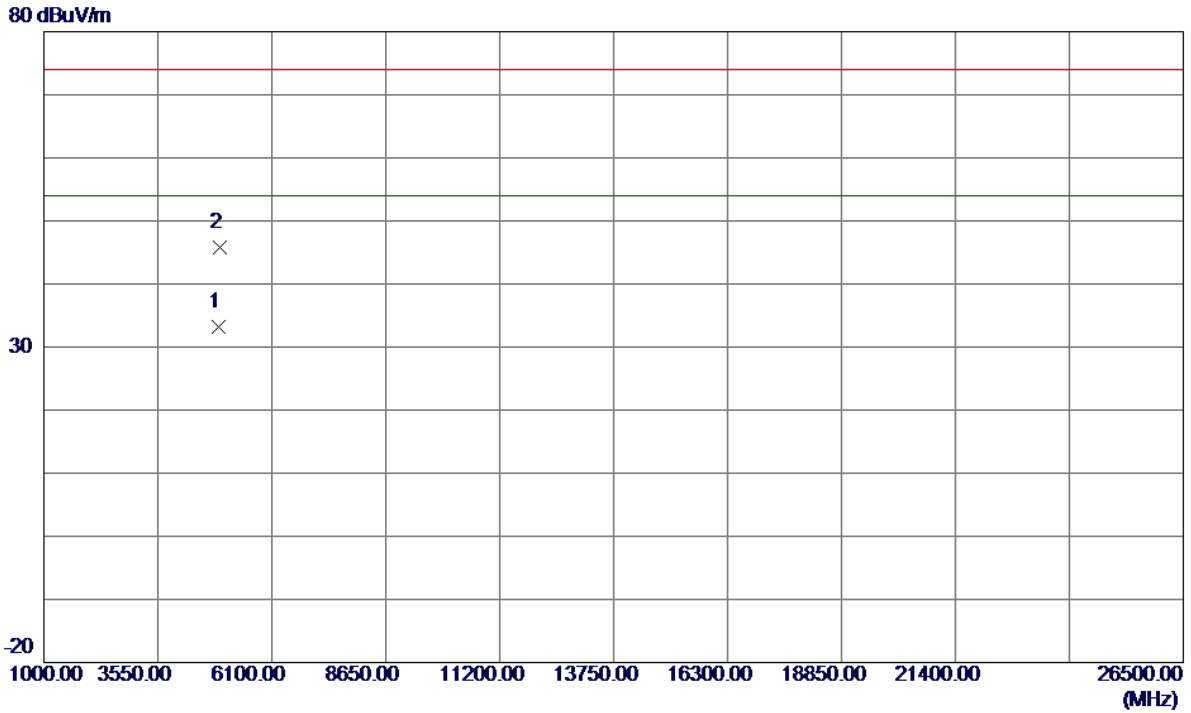
125 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2454.8000	53.55	33.28	86.83	54.00	32.83	AVG	No Limit
2	2457.2000	63.46	33.29	96.75	74.00	22.75	Peak	No Limit
3	2483.5000	23.03	33.40	56.43	74.00	-17.57	Peak	
4	2483.5000	13.32	33.40	46.72	54.00	-7.28	AVG	

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

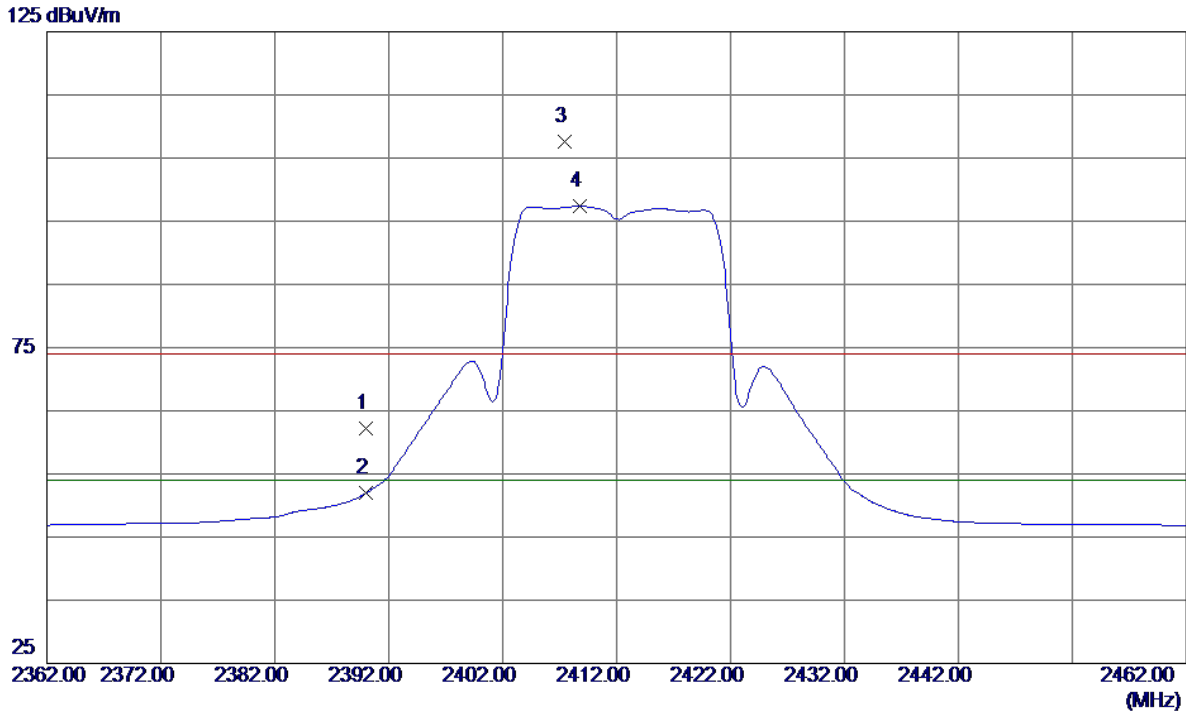
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4921.5000	27.90	5.27	33.17	54.00	-20.83	AVG	
2	4924.9000	40.57	5.28	45.85	74.00	-28.15	Peak	

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

Vertical

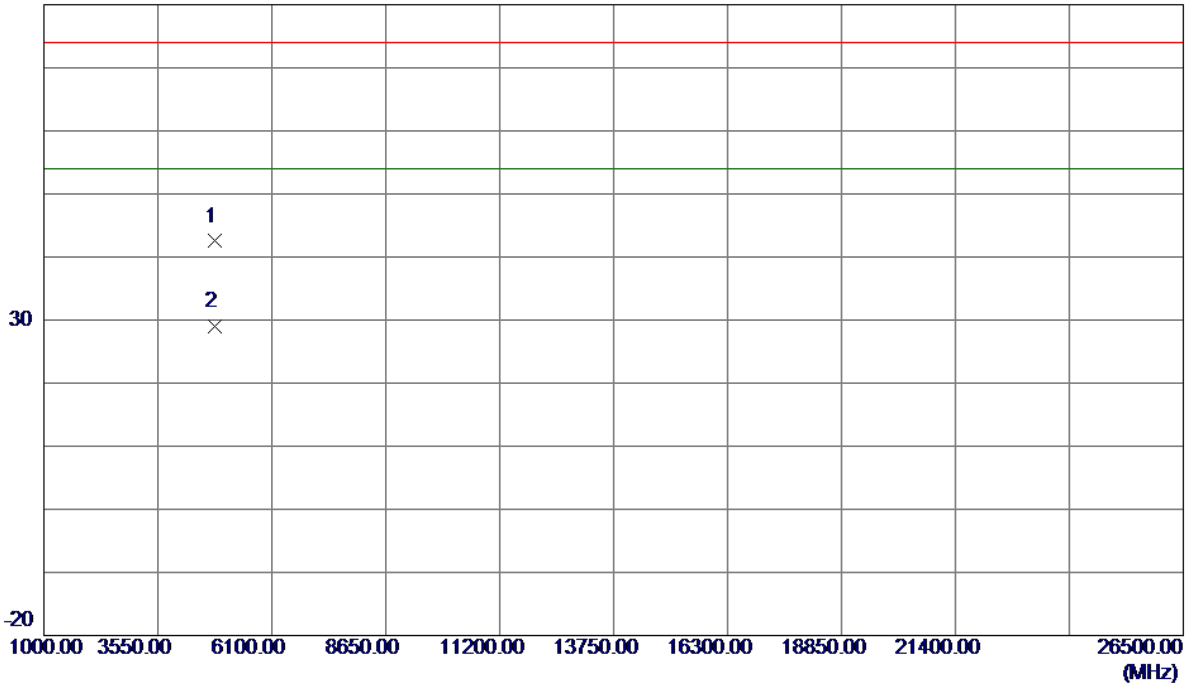


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	29.24	33.01	62.25	74.00	-11.75	Peak	
2	2390.0000	18.90	33.01	51.91	54.00	-2.09	AVG	
3	2407.4000	74.57	33.08	107.65	74.00	33.65	Peak	No Limit
4 *	2408.8000	64.29	33.09	97.38	54.00	43.38	AVG	No Limit

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

Vertical

80 dBuV/m

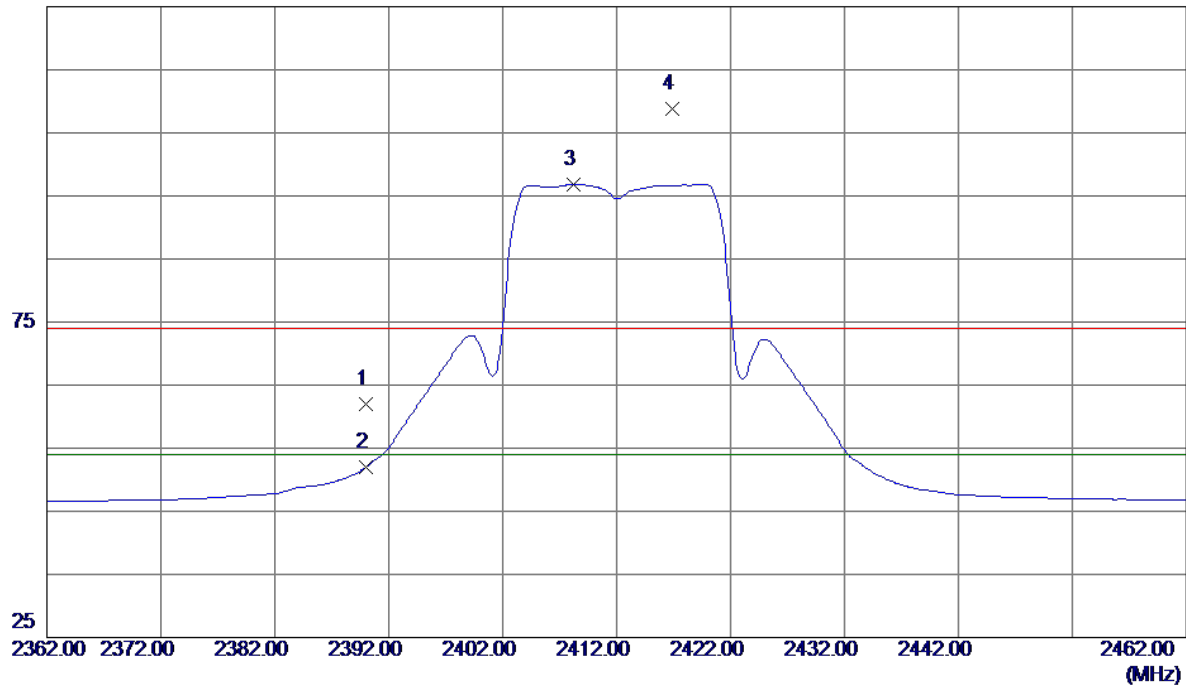


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4823.5000	37.65	4.85	42.50	74.00	-31.50	Peak	
2 *	4824.1000	24.21	4.85	29.06	54.00	-24.94	AVG	

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

Horizontal

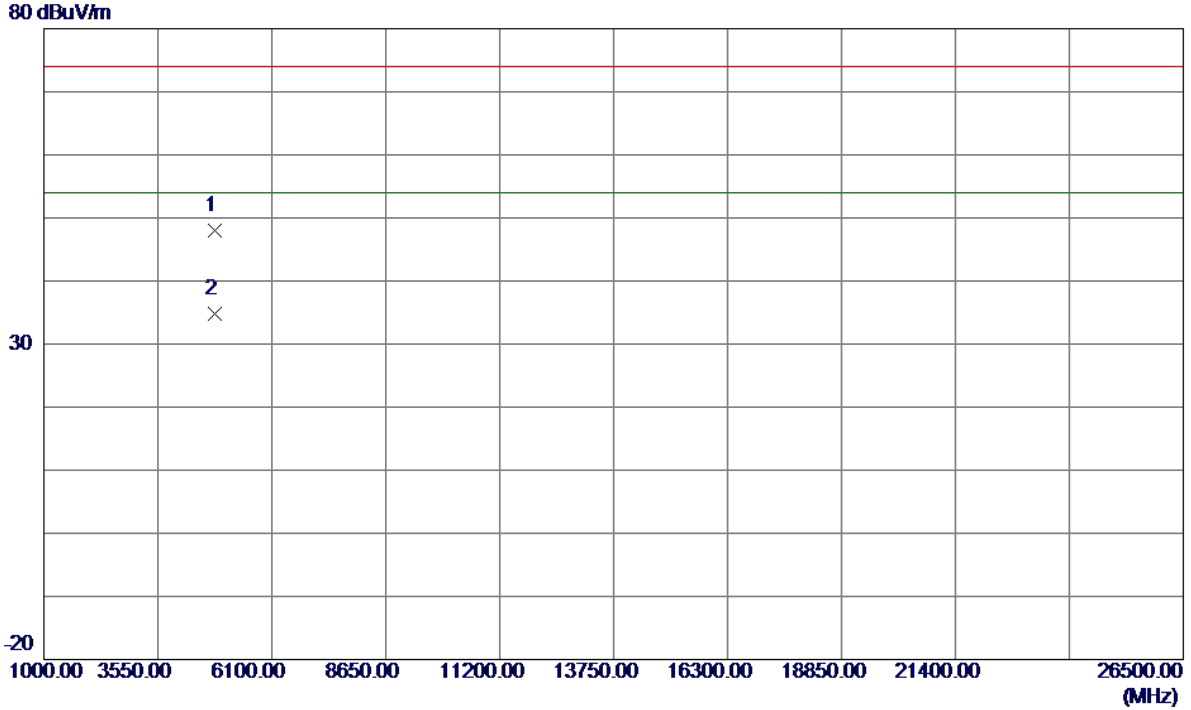
125 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	28.99	33.01	62.00	74.00	-12.00	Peak	
2	2390.0000	18.98	33.01	51.99	54.00	-2.01	AVG	
3 *	2408.2000	63.78	33.09	96.87	54.00	42.87	AVG	No Limit
4	2416.9000	75.69	33.12	108.81	74.00	34.81	Peak	No Limit

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

Horizontal

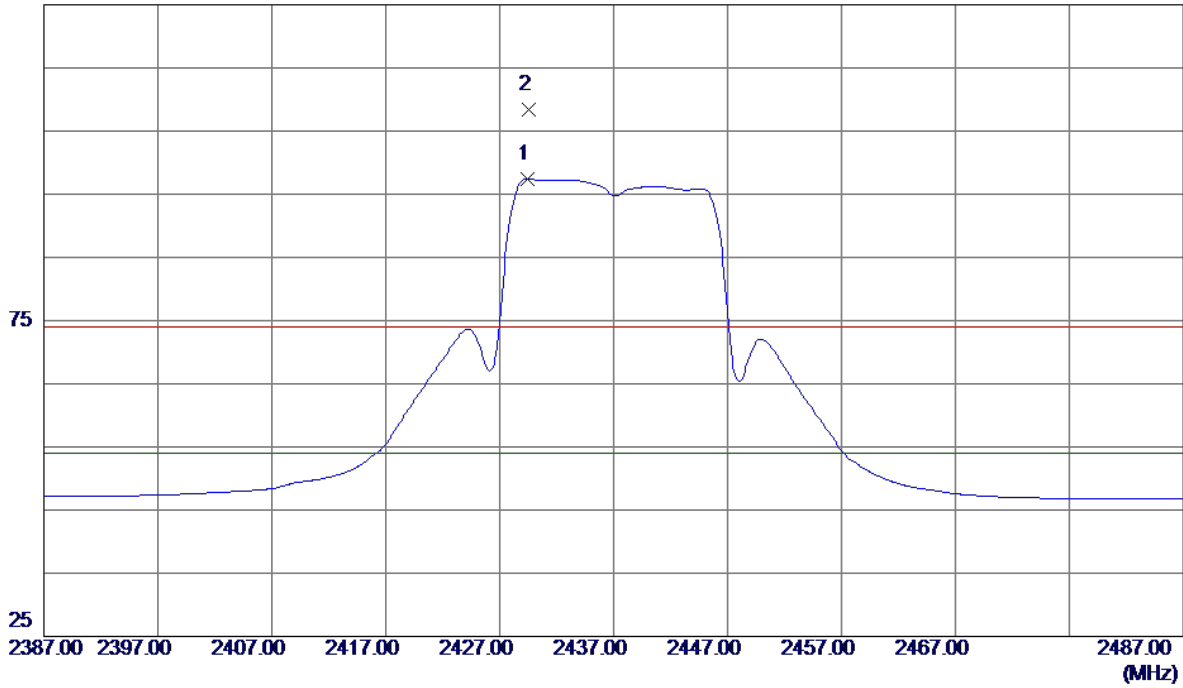


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4822.6000	43.11	4.85	47.96	74.00	-26.04	Peak	
2 *	4822.8800	30.03	4.85	34.88	54.00	-19.12	AVG	

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

Vertical

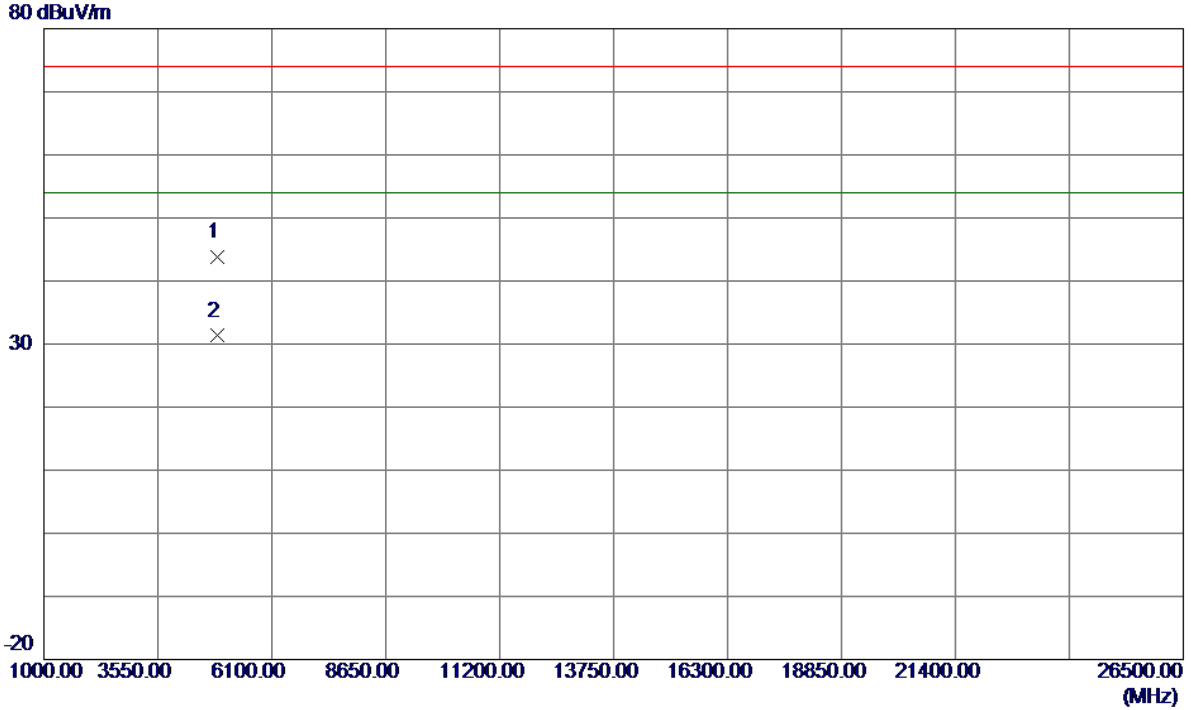
125 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2429.4000	64.25	33.17	97.42	54.00	43.42	AVG	No Limit
2	2429.6000	75.25	33.18	108.43	74.00	34.43	Peak	No Limit

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

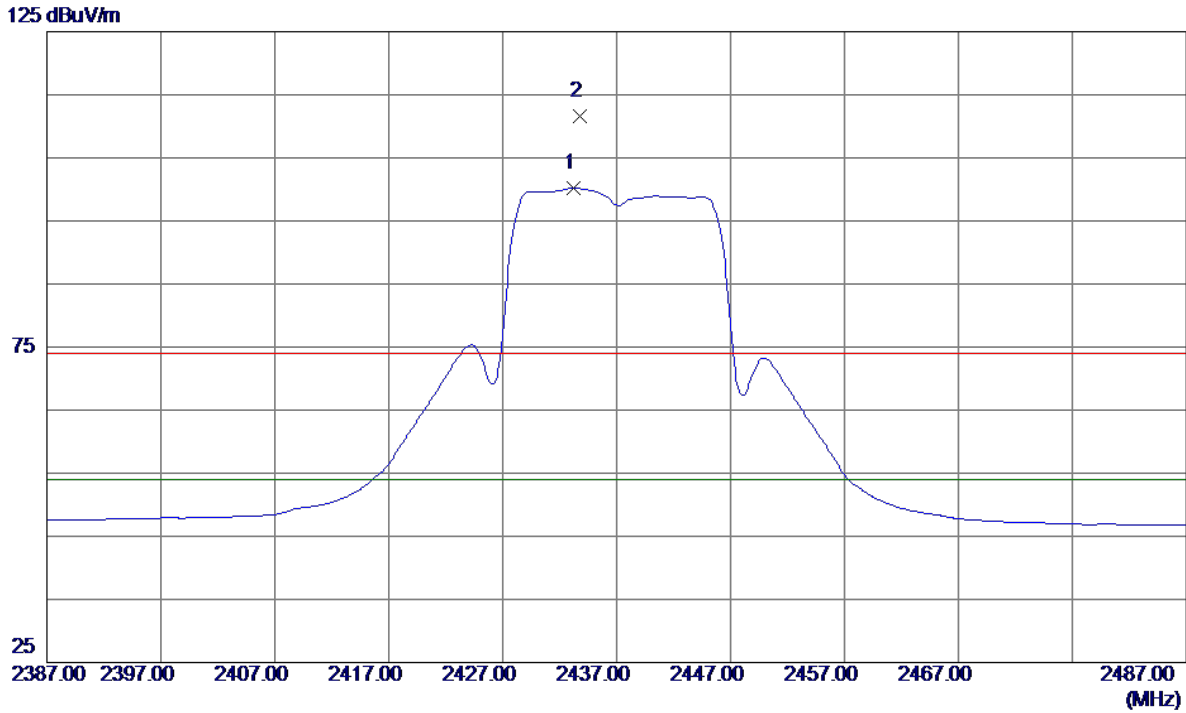
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4873.3000	38.79	5.06	43.85	74.00	-30.15	Peak	
2 *	4873.8700	26.23	5.07	31.30	54.00	-22.70	AVG	

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

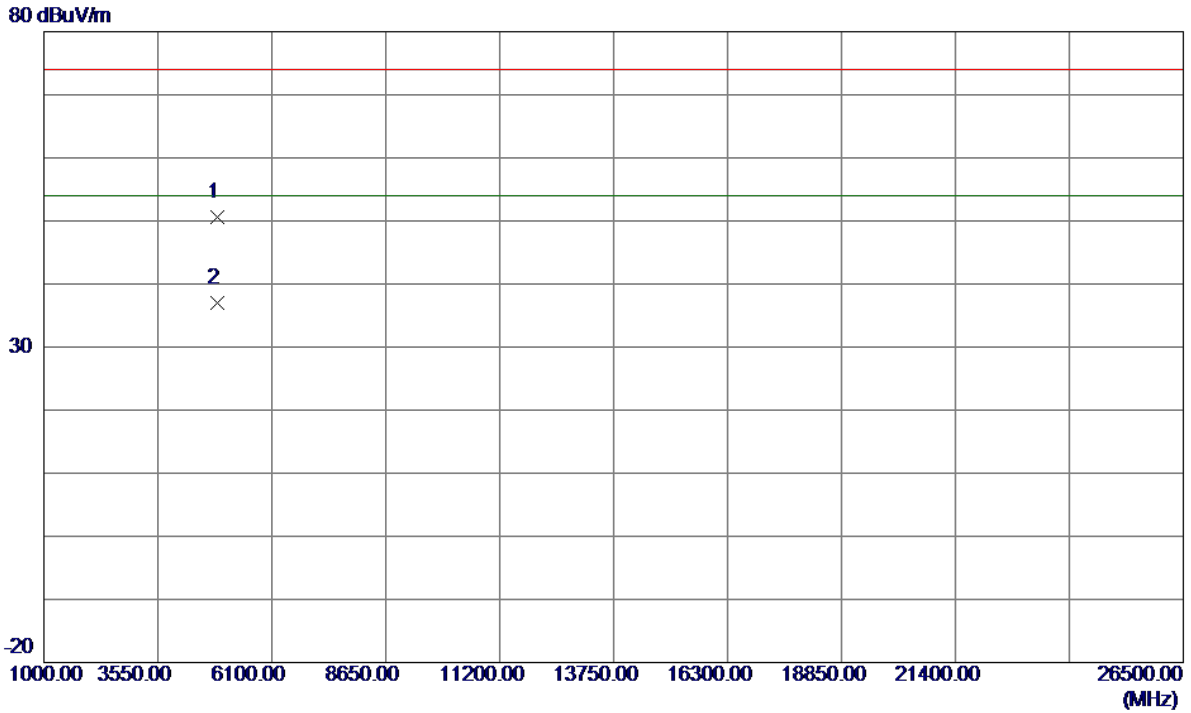
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2433.2000	66.98	33.19	100.17	54.00	46.17	AVG	No Limit
2	2433.8000	78.39	33.19	111.58	74.00	37.58	Peak	No Limit

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

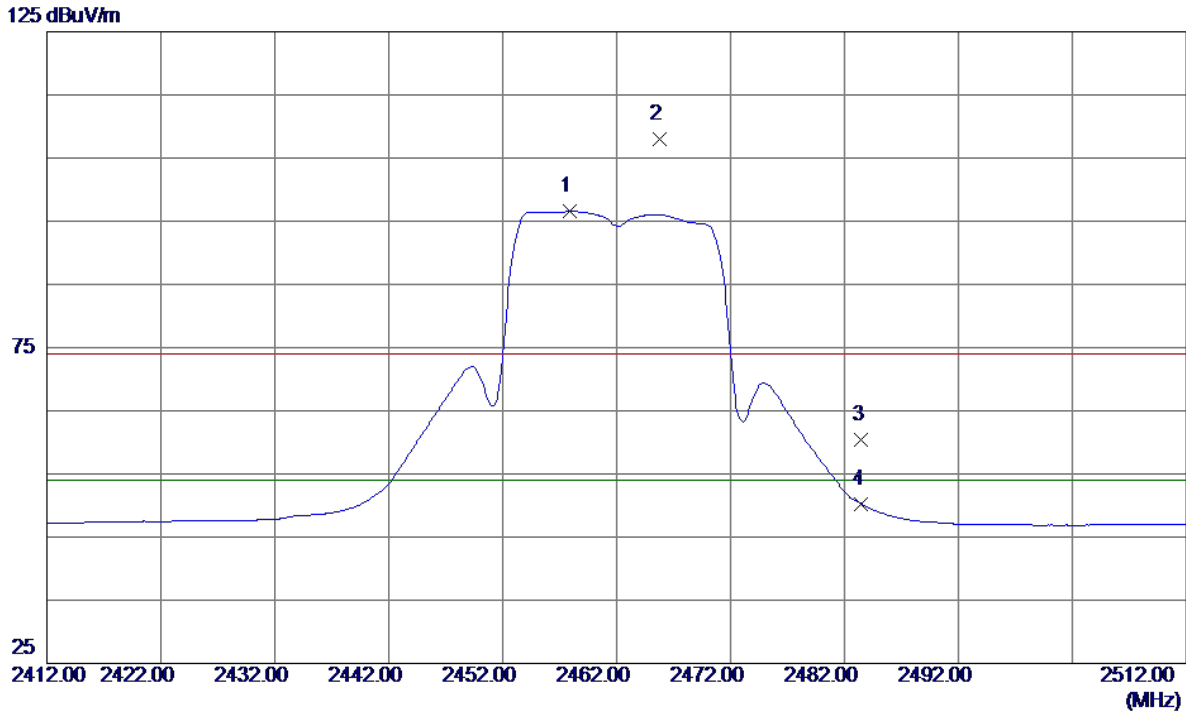
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4872.8000	45.45	5.06	50.51	74.00	-23.49	Peak	
2 *	4872.9200	31.98	5.06	37.04	54.00	-16.96	AVG	

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

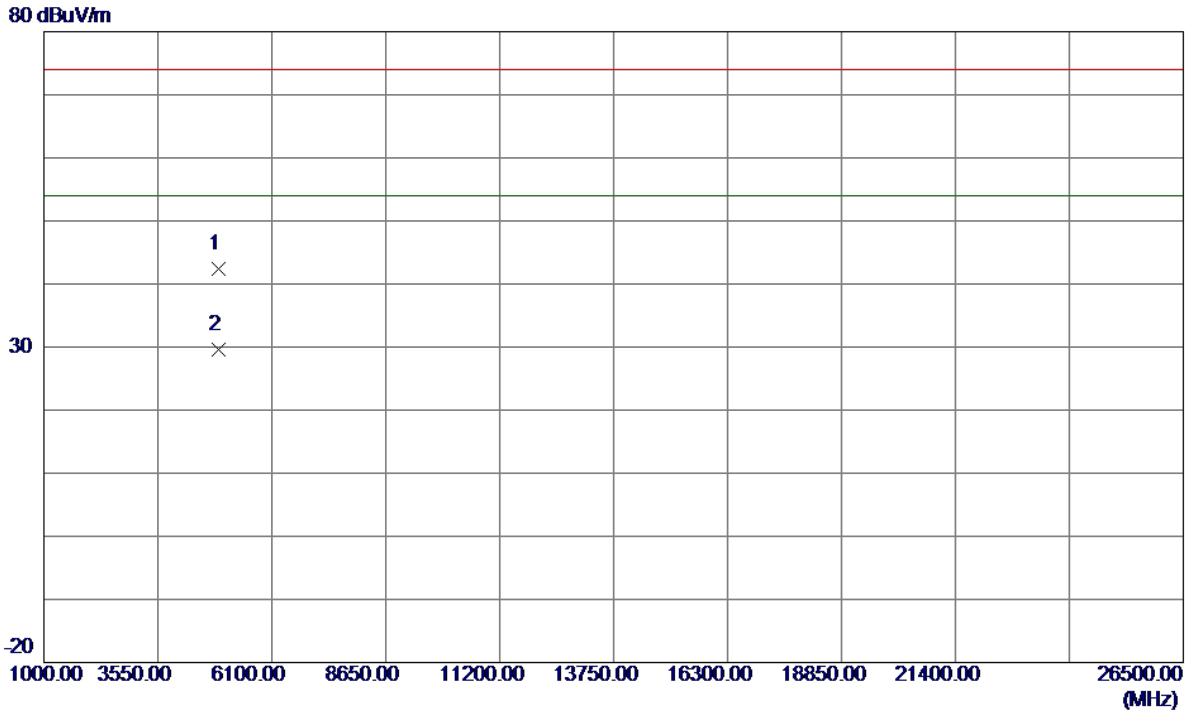
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2457.9000	63.26	33.29	96.55	54.00	42.55	AVG	No Limit
2	2465.8000	74.68	33.33	108.01	74.00	34.01	Peak	No Limit
3	2483.5000	27.09	33.40	60.49	74.00	-13.51	Peak	
4	2483.5000	16.87	33.40	50.27	54.00	-3.73	AVG	

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

Vertical

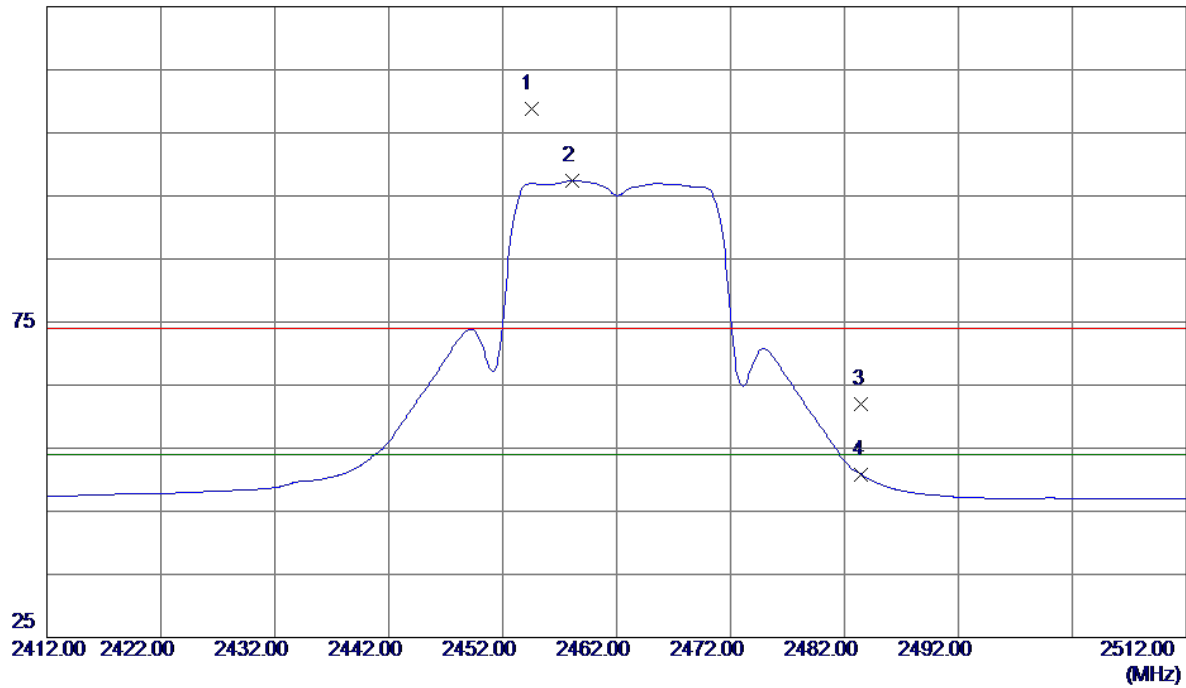


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4922.9100	37.15	5.27	42.42	74.00	-31.58	Peak	
2 *	4923.1500	24.37	5.27	29.64	54.00	-24.36	AVG	

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

Horizontal

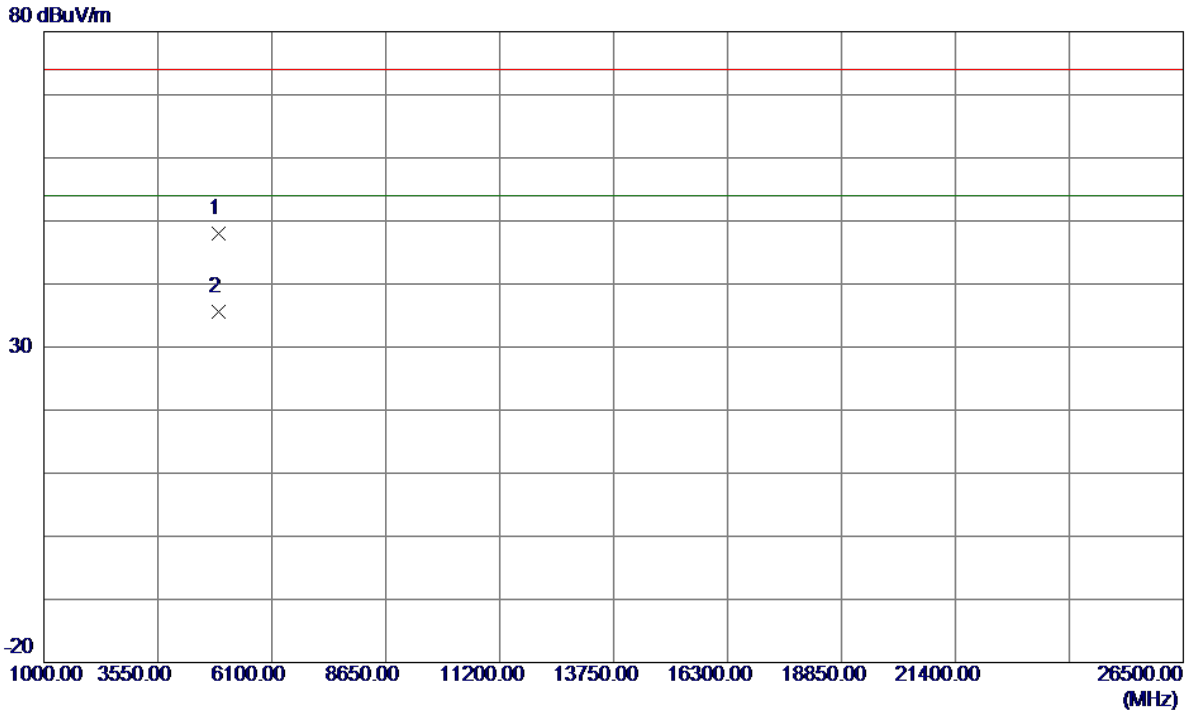
125 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2454.5000	75.46	33.28	108.74	74.00	34.74	Peak	No Limit
2 *	2458.1000	64.11	33.29	97.40	54.00	43.40	AVG	No Limit
3	2483.5000	28.59	33.40	61.99	74.00	-12.01	Peak	
4	2483.5000	17.43	33.40	50.83	54.00	-3.17	AVG	

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

Horizontal

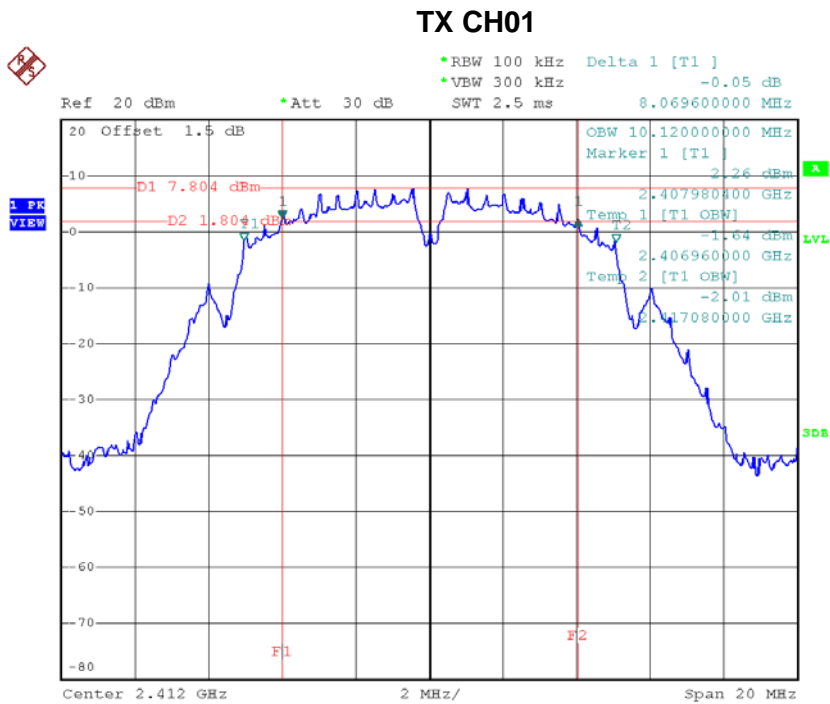


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4920.5200	42.73	5.26	47.99	74.00	-26.01	Peak	
2 *	4922.8000	30.26	5.27	35.53	54.00	-18.47	AVG	

ATTACHMENT E - BANDWIDTH

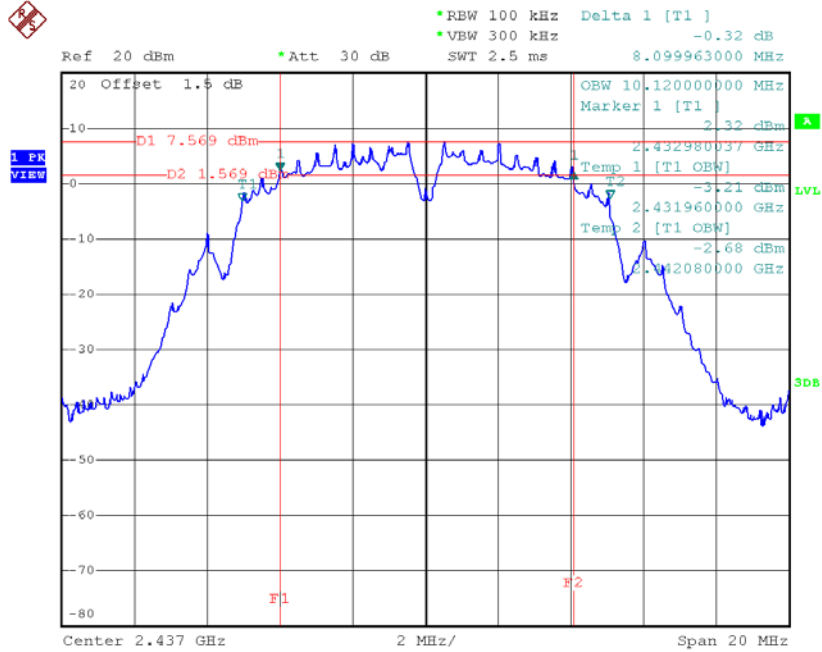
Test Mode : TX B Mode_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	8.07	10.12	500	Complies
2437	8.10	10.12	500	Complies
2462	8.13	10.12	500	Complies



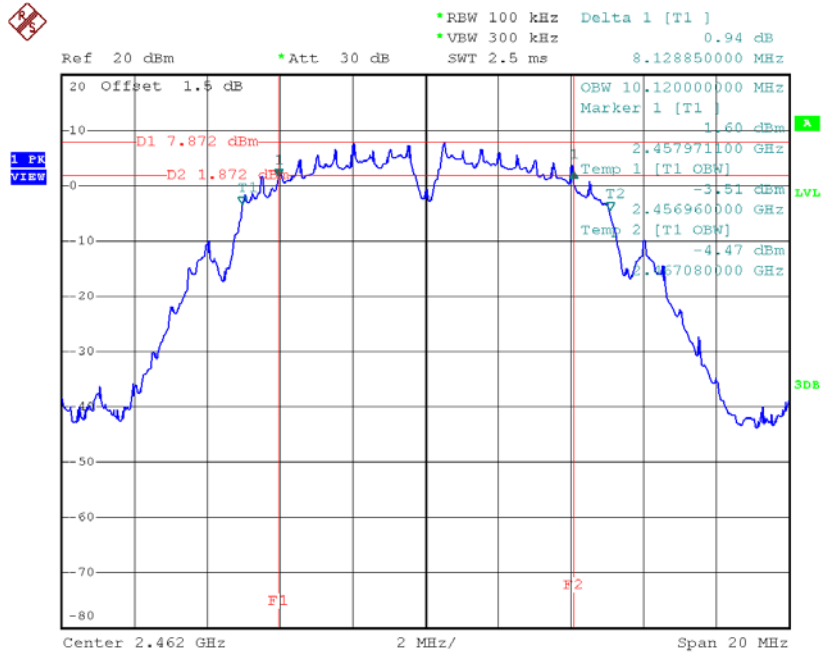
Date: 17.JAN.2017 13:41:09

TX CH06



Date: 17.JAN.2017 13:43:16

TX CH11

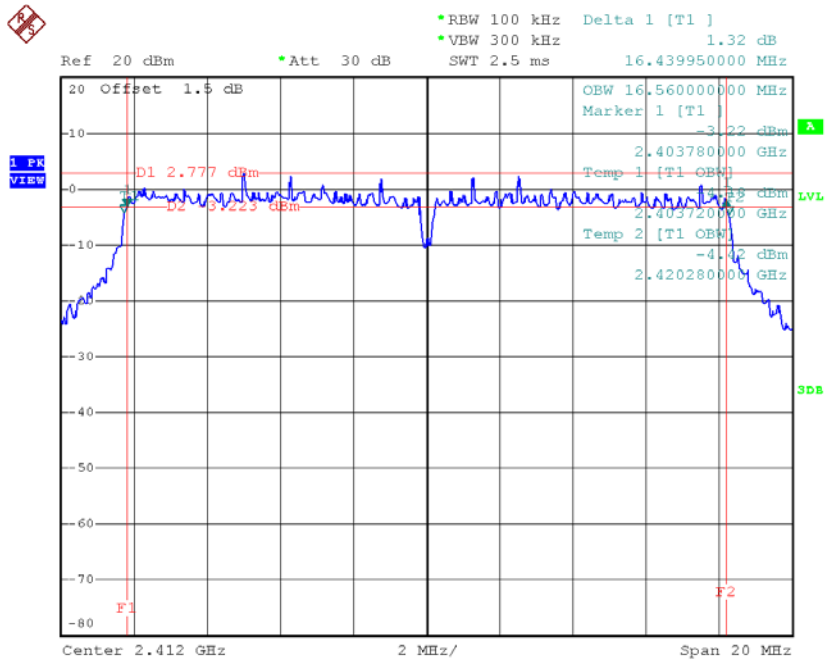


Date: 17.JAN.2017 13:44:54

Test Mode: TX G Mode_CH01/06/11

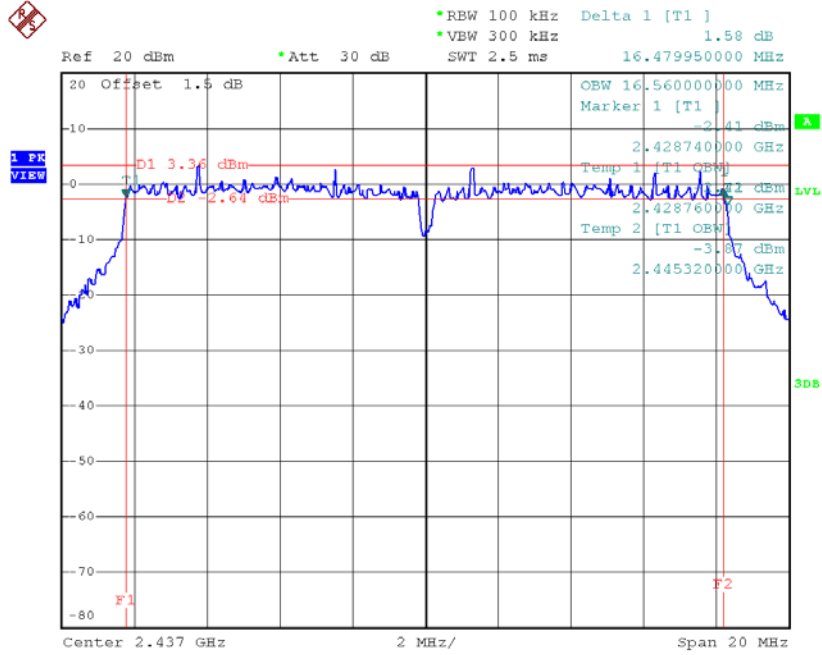
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	16.44	16.56	500	Complies
2437	16.48	16.56	500	Complies
2462	16.51	16.56	500	Complies

TX CH01



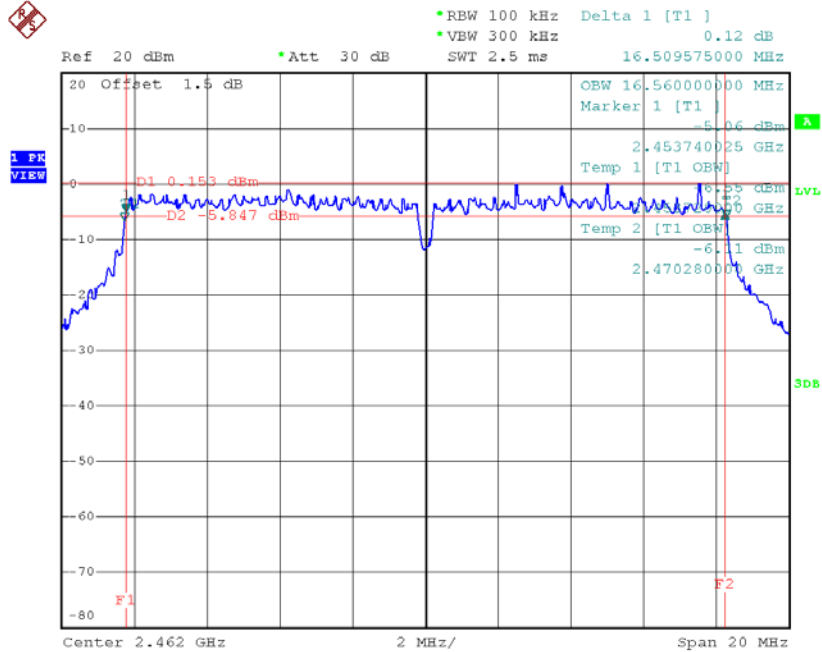
Date: 17.JAN.2017 13:47:08

TX CH06



Date: 17.JAN.2017 13:49:50

TX CH11

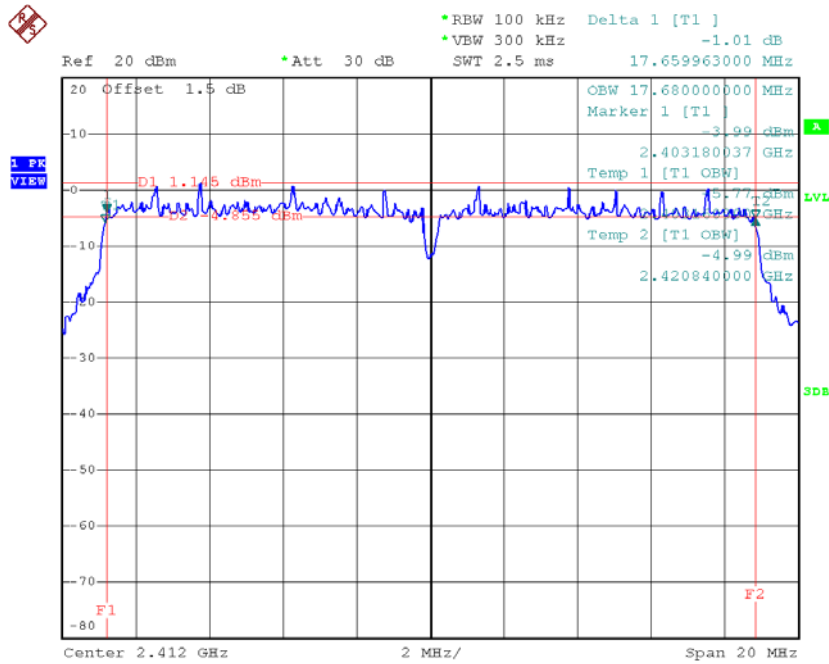


Date: 17.JAN.2017 13:51:37

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

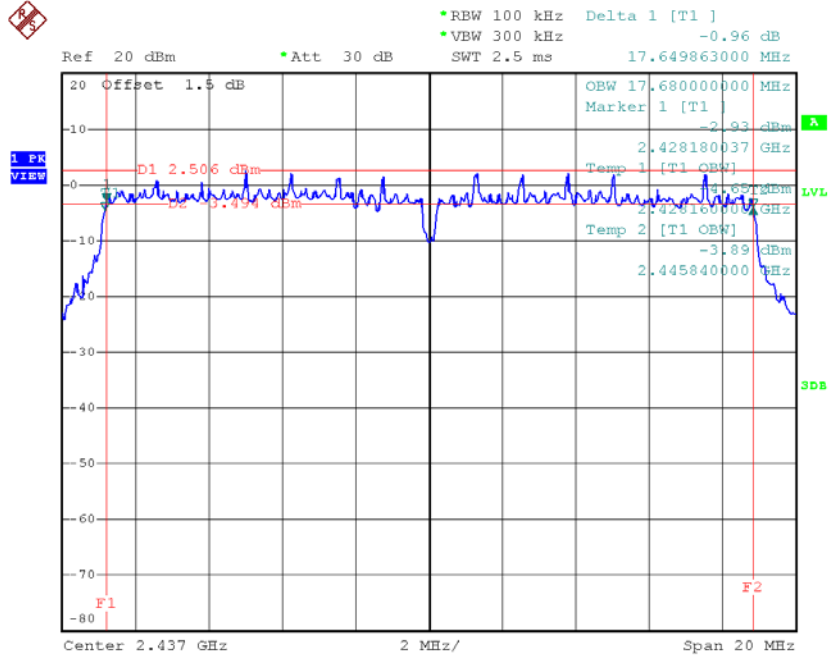
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	17.66	17.68	500	Complies
2437	17.65	17.68	500	Complies
2462	17.64	17.68	500	Complies

TX CH01



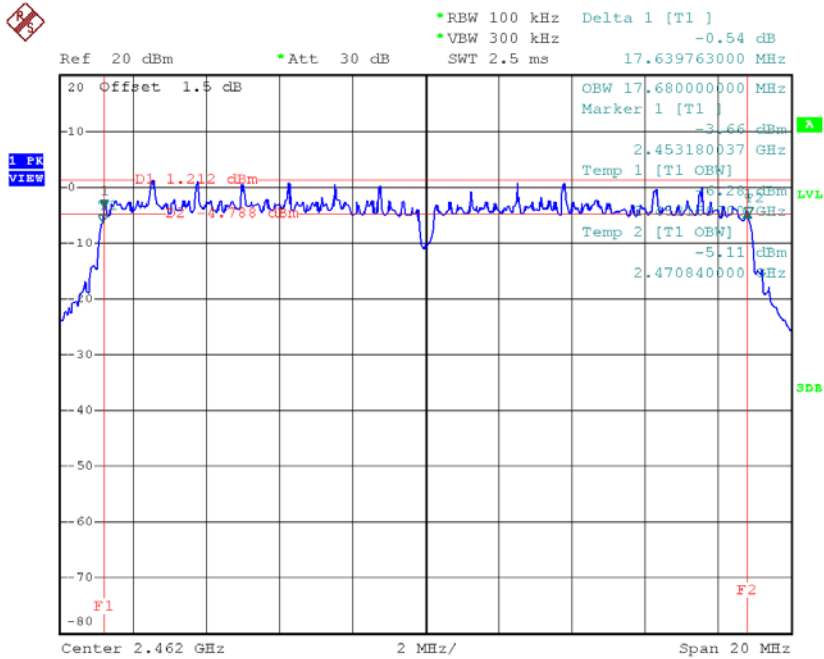
Date: 17.JAN.2017 13:54:37

TX CH06



Date: 17.JAN.2017 13:55:54

TX CH11



Date: 17.JAN.2017 13:57:48

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	21.75	0.15	30.00	1.00	Complies
2437	21.27	0.13	30.00	1.00	Complies
2462	21.23	0.13	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	26.03	0.40	30.00	1.00	Complies
2437	25.72	0.37	30.00	1.00	Complies
2462	25.67	0.37	30.00	1.00	Complies

Test Mode :TX N20 Mode_CH01/06/11_ANT 1					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	24.14	0.26	30.00	1.00	Complies
2437	24.01	0.25	30.00	1.00	Complies
2462	24.22	0.26	30.00	1.00	Complies

Test Mode :TX N20 Mode_CH01/06/11_ANT 2					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	24.18	0.26	30.00	1.00	Complies
2437	24.11	0.26	30.00	1.00	Complies
2462	24.23	0.26	30.00	1.00	Complies

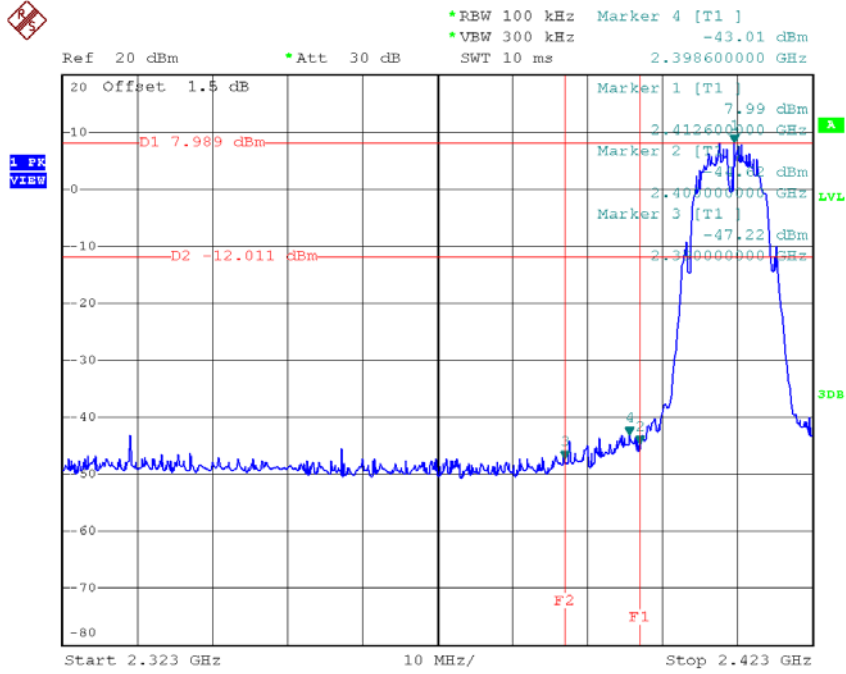
Test Mode :TX N20 Mode_CH01/06/11_ANT 3					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	24.02	0.25	30.00	1.00	Complies
2437	24.16	0.26	30.00	1.00	Complies
2462	24.14	0.26	30.00	1.00	Complies

Test Mode :TX N20 Mode_CH01/06/11_Total					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	28.89	0.77	30.00	1.00	Complies
2437	28.87	0.77	30.00	1.00	Complies
2462	28.97	0.79	30.00	1.00	Complies

ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION

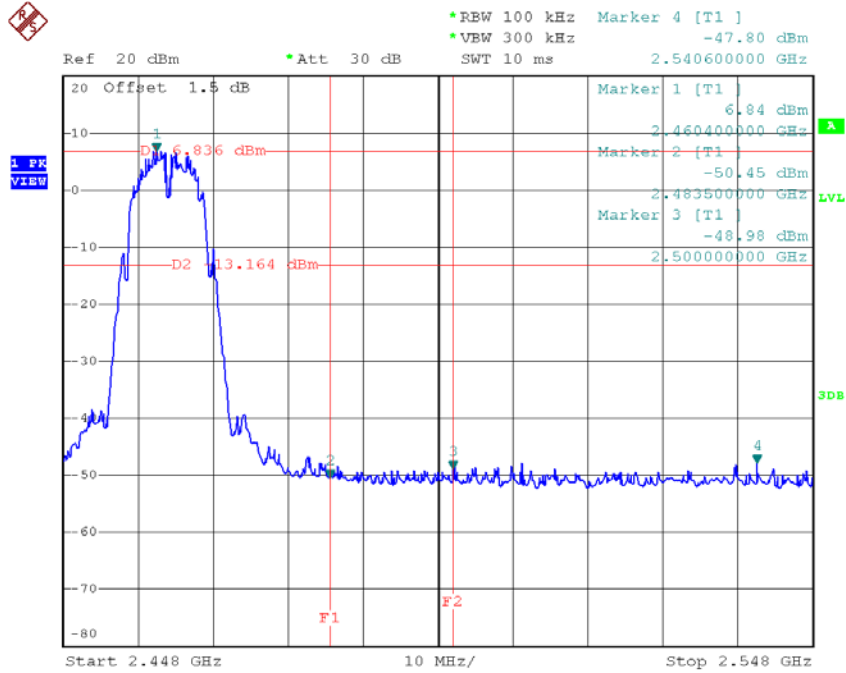
Test Mode : TX B Mode_ANT 1

TX B mode CH01



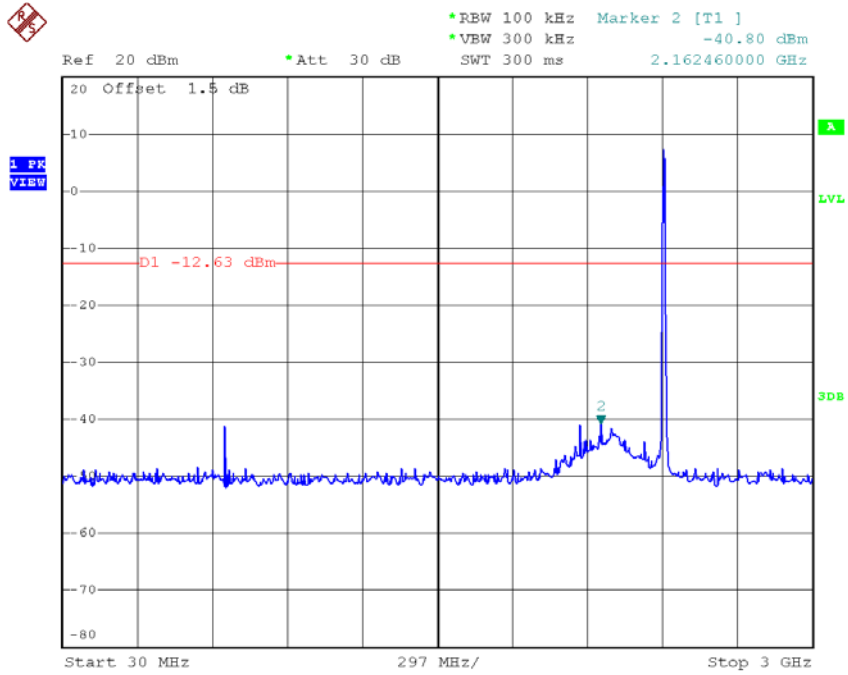
Date: 17.JAN.2017 13:41:48

TX B mode CH11

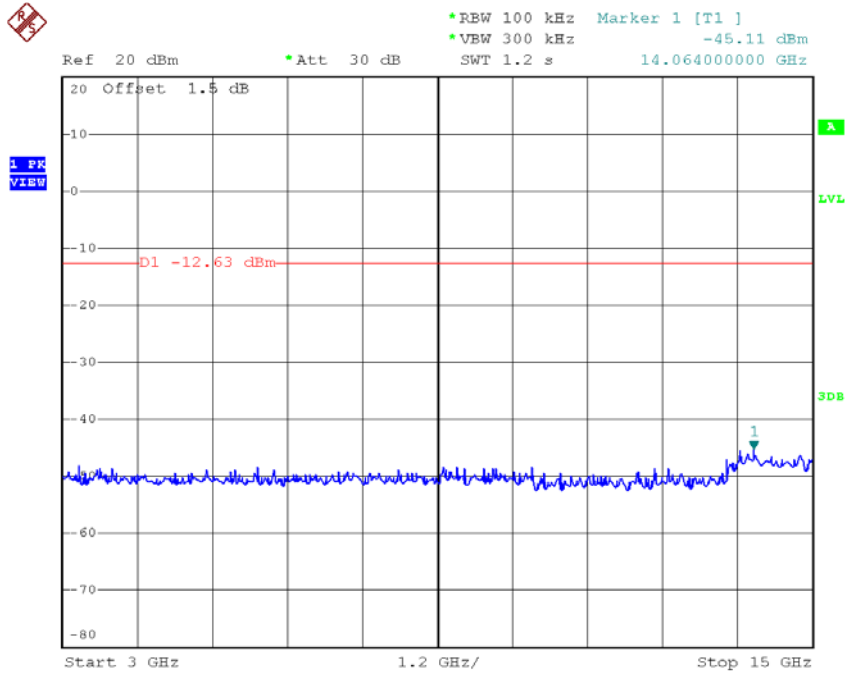


Date: 17.JAN.2017 13:45:33

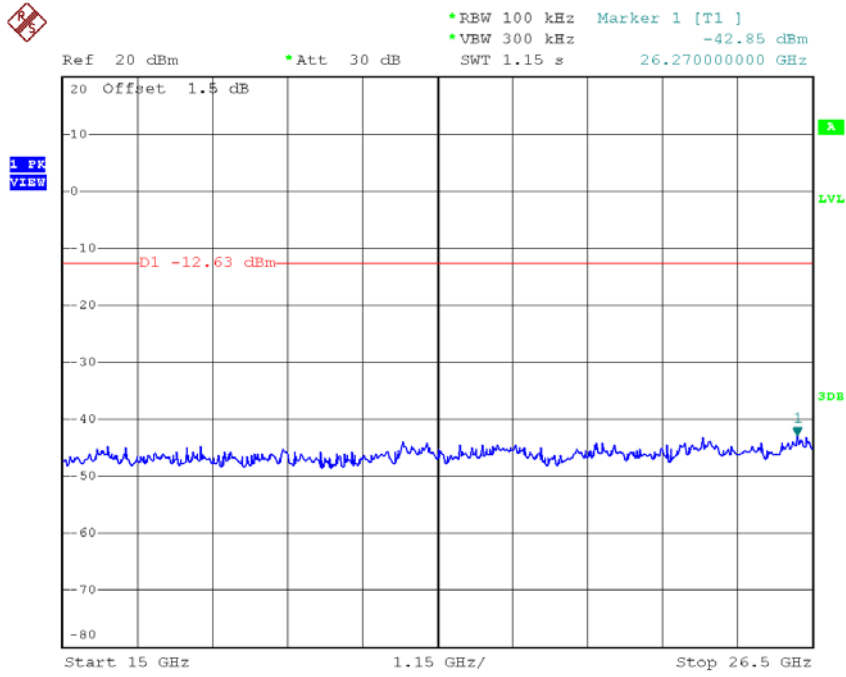
TX B mode CH01 (10 Harmonic of the frequency)



Date: 17.JAN.2017 13:41:23

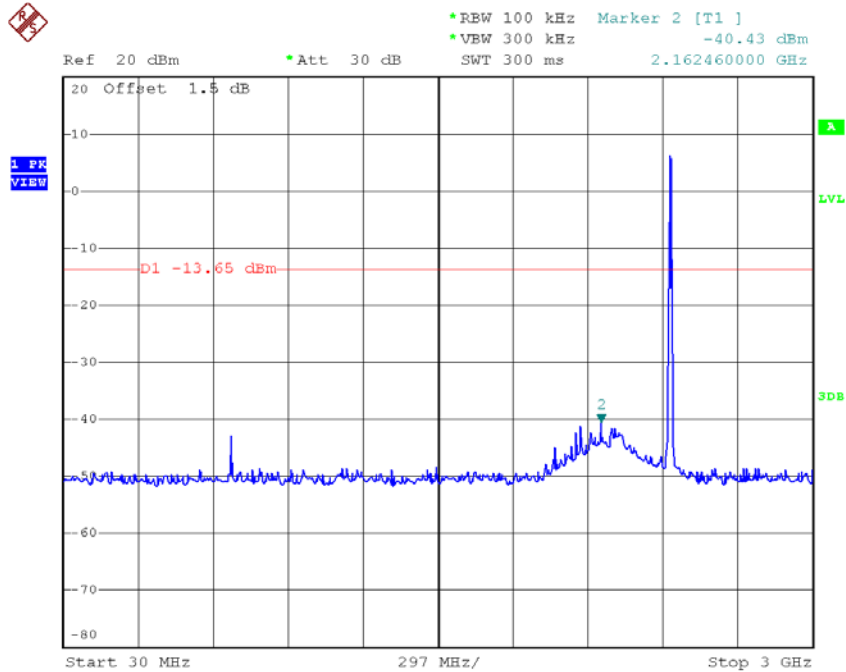


Date: 17.JAN.2017 13:41:31

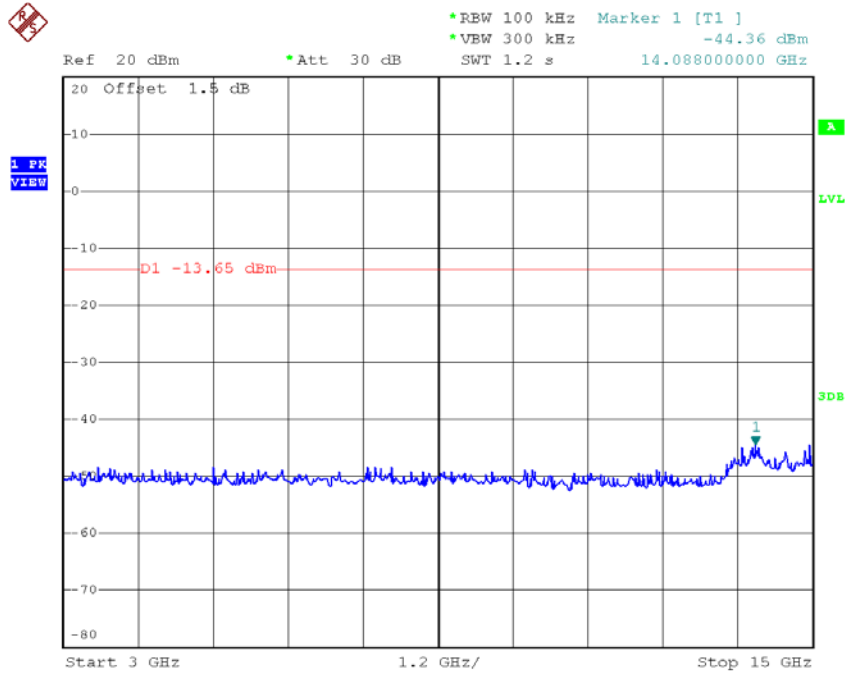


Date: 17.JAN.2017 13:41:40

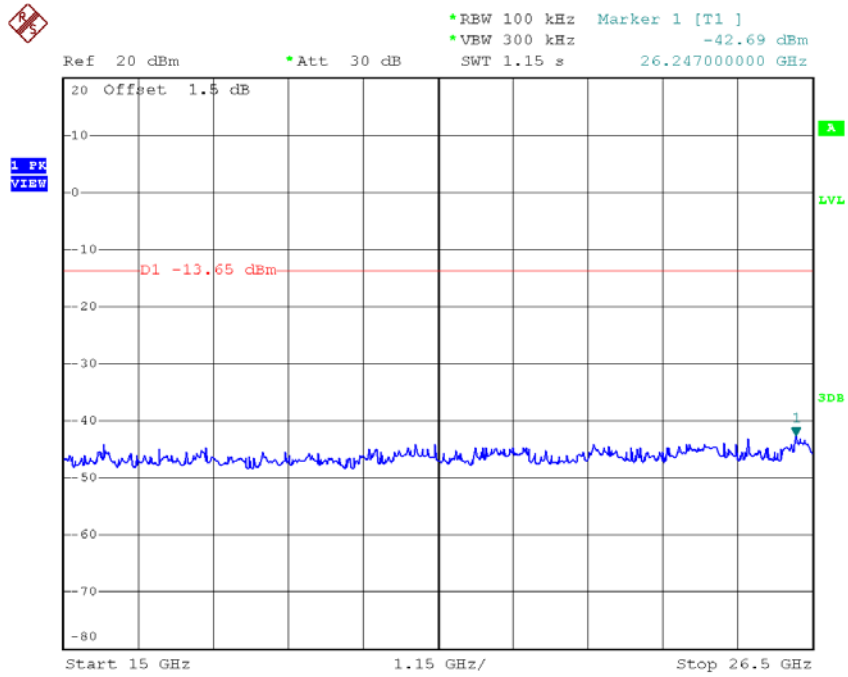
TX B mode CH06 (10 Harmonic of the frequency)



Date: 17.JAN.2017 13:43:30

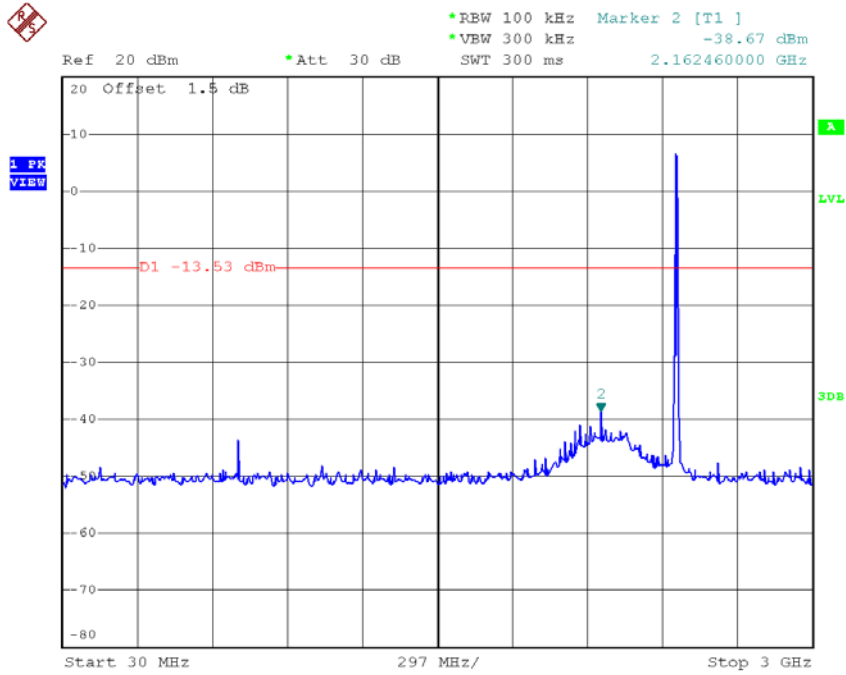


Date: 17.JAN.2017 13:43:38

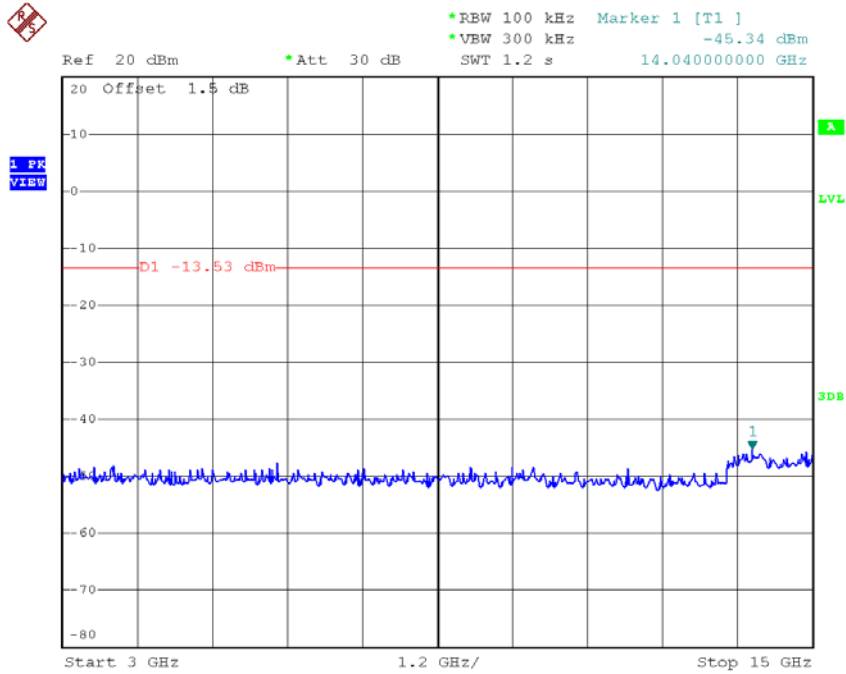


Date: 17.JAN.2017 13:43:47

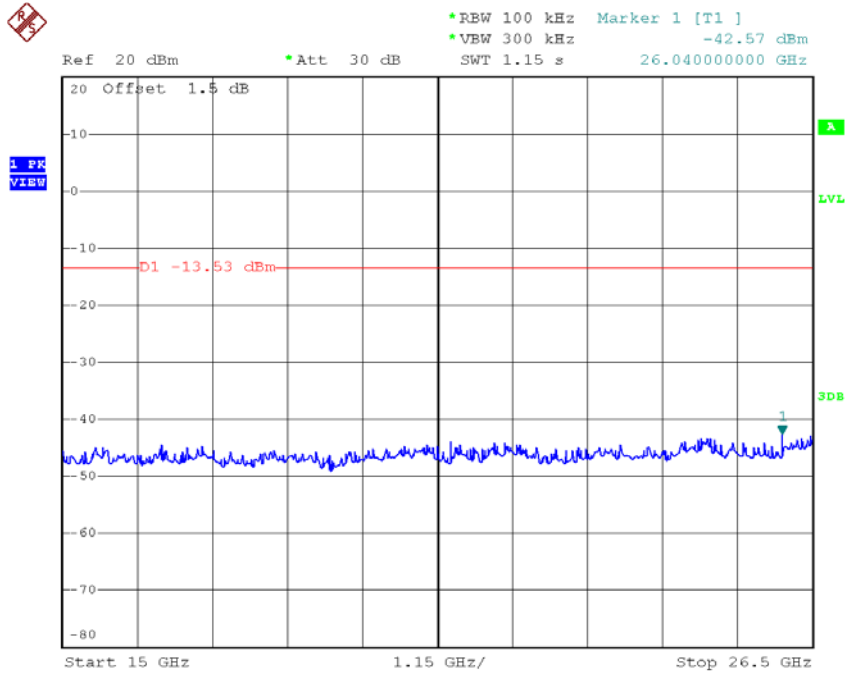
TX B mode CH11 (10 Harmonic of the frequency)



Date: 17.JAN.2017 13:45:08



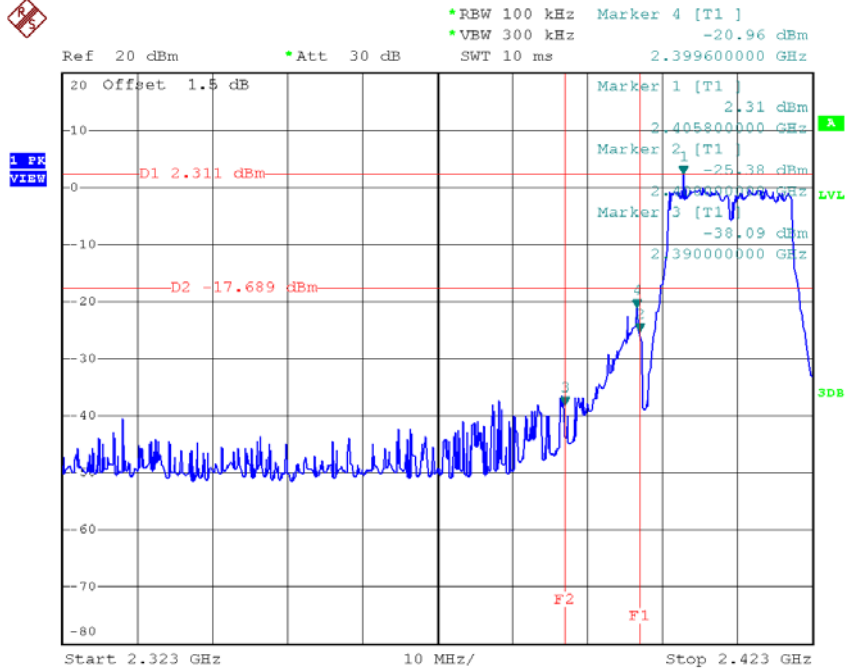
Date: 17.JAN.2017 13:45:17



Date: 17.JAN.2017 13:45:25

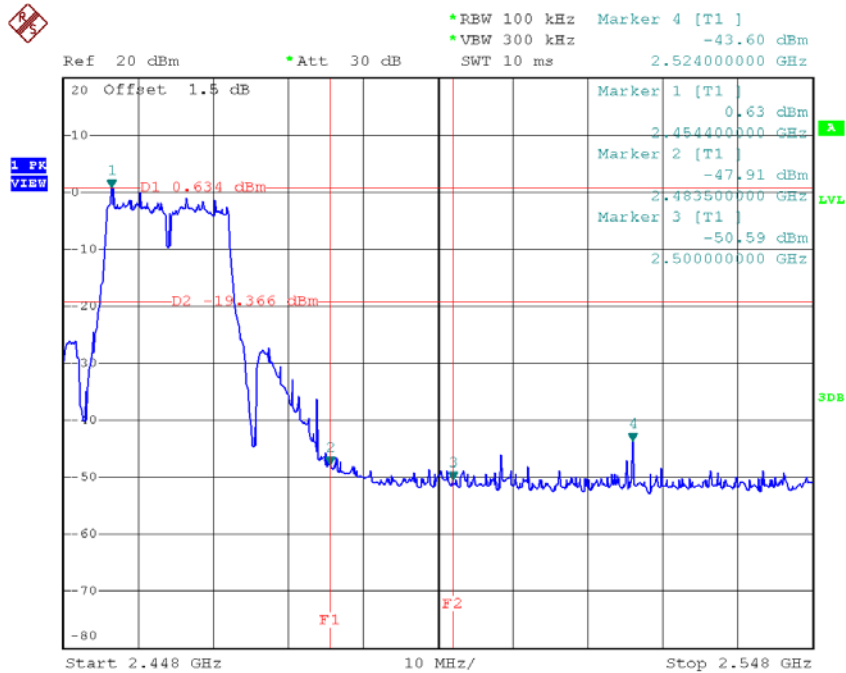
Test Mode : TX G Mode_ANT 1

TX G mode CH01



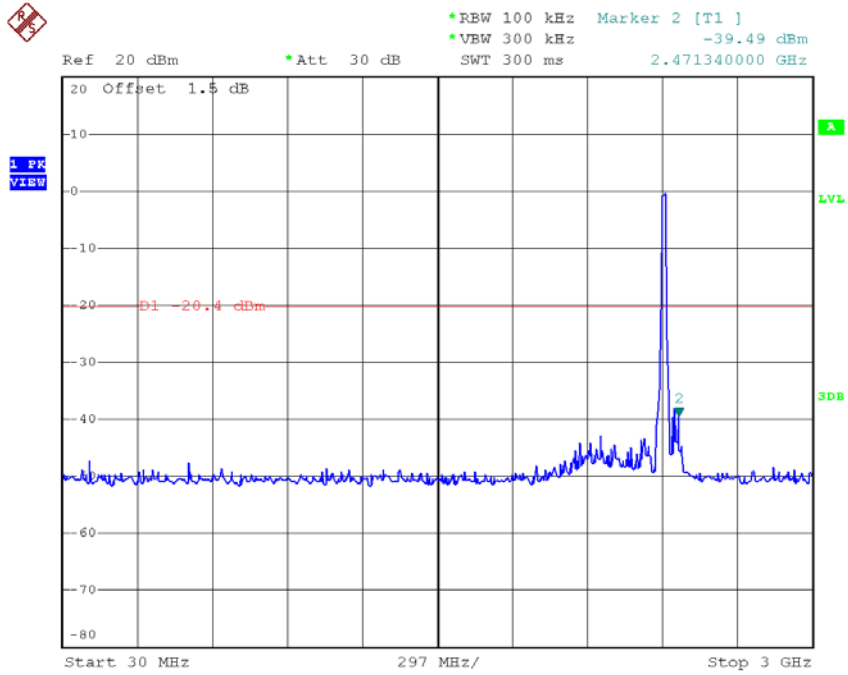
Date: 17.JAN.2017 13:48:38

TX G mode CH11

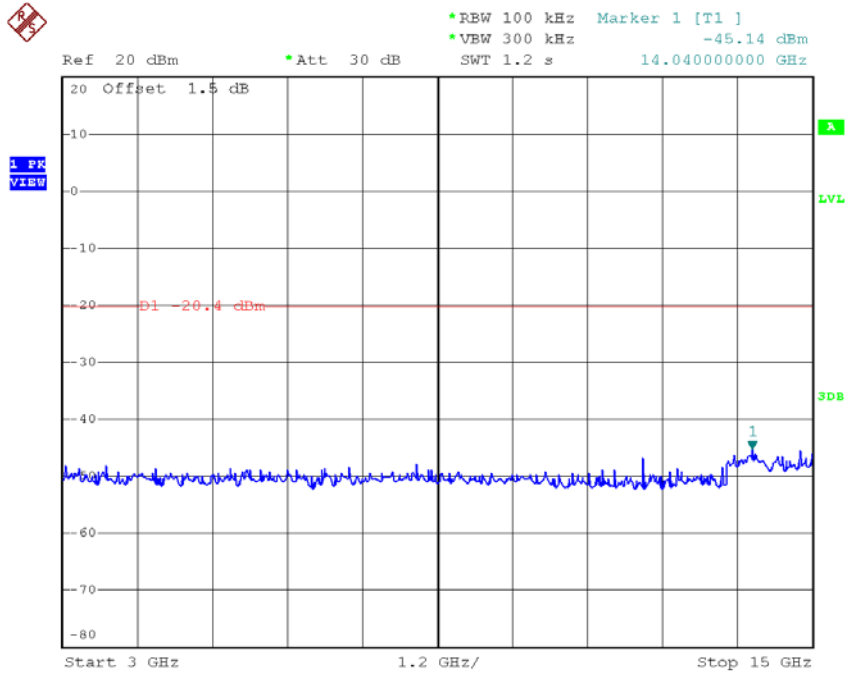


Date: 17.JAN.2017 13:52:16

TX G mode CH01 (10 Harmonic of the frequency)



Date: 17.JAN.2017 13:47:22



Date: 17.JAN.2017 13:48:20