

FCC Radio Test Report

FCC ID: OMOS85807

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

Project No. : 1607C258
Equipment : Professional Weather Station
Model Name : S85807
Applicant : La Crosse Technology Ltd.
Address : 2809 Losey Blvd. South La Crosse, WI 54601. U.S A.

Date of Receipt : Jul. 26, 2016
Date of Test : Jul. 26, 2016 ~ Aug. 25, 2016
Issued Date : Aug. 26, 2016
Tested by : BTL Inc.

Testing Engineer : Shawn Xiao
(Shawn Xiao)

Technical Manager : David Mao
(David Mao)

Authorized Signatory : 
(Steven Lu)

BTL INC.

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)	20
4.2.8 TEST RESULTS (30MHZ TO 1000 MHZ)	20
4.2.9 TEST RESULTS (ABOVE 1000 MHZ)	20
5 . BANDWIDTH TEST	21
5.1 APPLIED PROCEDURES	21
5.1.1 TEST PROCEDURE	21
5.1.2 DEVIATION FROM STANDARD	21
5.1.3 TEST SETUP	21
5.1.4 EUT OPERATION CONDITIONS	21
5.1.5 EUT TEST CONDITIONS	21
5.1.6 TEST RESULTS	21
6 . MAXIMUM PEAK CONDUCTED OUTPUT POWER TEST	22

Table of Contents	Page
6.1 APPLIED PROCEDURES / LIMIT	22
6.1.1 TEST PROCEDURE	22
6.1.2 DEVIATION FROM STANDARD	22
6.1.3 TEST SETUP	22
6.1.4 EUT OPERATION CONDITIONS	22
6.1.5 EUT TEST CONDITIONS	22
6.1.6 TEST RESULTS	22
7 . ANTENNA CONDUCTED SPURIOUS EMISSION	23
7.1 APPLIED PROCEDURES / LIMIT	23
7.1.1 TEST PROCEDURE	23
7.1.2 DEVIATION FROM STANDARD	23
7.1.3 TEST SETUP	23
7.1.4 EUT OPERATION CONDITIONS	23
7.1.5 EUT TEST CONDITIONS	23
7.1.6 TEST RESULTS	23
8 . POWER SPECTRAL DENSITY TEST	24
8.1 APPLIED PROCEDURES / LIMIT	24
8.1.1 TEST PROCEDURE	24
8.1.2 DEVIATION FROM STANDARD	24
8.1.3 TEST SETUP	24
8.1.4 EUT OPERATION CONDITIONS	24
8.1.5 EUT TEST CONDITIONS	24
8.1.6 TEST RESULTS	24
9 . MEASUREMENT INSTRUMENTS LIST	25
10 . EUT TEST PHOTO	27
ATTACHMENT A - CONDUCTED EMISSION	31
ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)	34
ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)	36
ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)	43
ATTACHMENT E - BANDWIDTH	80
ATTACHMENT F – MAXIMUM PEAK CONDUCTED OUTPUT POWER	87
ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION	89
ATTACHMENT H - POWER SPECTRAL DENSITY	108

REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1607C258	Original Issue.	Aug. 26, 2016

1. CERTIFICATION

Equipment : Professional Weather Station
Brand Name : La Crosse Technology
Model Name : S85807
Applicant : La Crosse Technology Ltd.
Manufacturer : La Crosse Technology Ltd.
Address : 2809 Losey Blvd. South La Crosse, WI 54601. U.S A.
Date of Test : Aug. 24, 2016 ~ Aug. 24, 2016
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-1-1607C258) 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	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	
15.209/15.205		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	Professional Weather Station	
Brand Name	La Crosse Technology	
Model Name	S85807	
Model Difference	N/A	
Product Description	Operation Frequency	2412~2462 MHz
	Modulation Technology	802.11b:DSSS 802.11g:OFDM 802.11n:OFDM
	Bit Rate of Transmitter	802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n up to 150 Mbps
	Output Power (Max.)	802.11b: 13.38dBm 802.11g: 19.29dBm 802.11n(20MHz): 19.86dBm
Power Source	1) DC voltage supplied from AC/DC adapter. Manufacturer / Model: HUA XU ELECTRONICS FACTORY / HX06-0500500-AU 2) Supplied from 3*AAA battery	
Power Rating	1) I/P: 100-240V~50/60Hz 0.3A O/P: 5.0V 500mA 2) DC 4.5V	

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	La Crosse Technology	N/A	Internal	N/A	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	Normal Link

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	Normal Link

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:

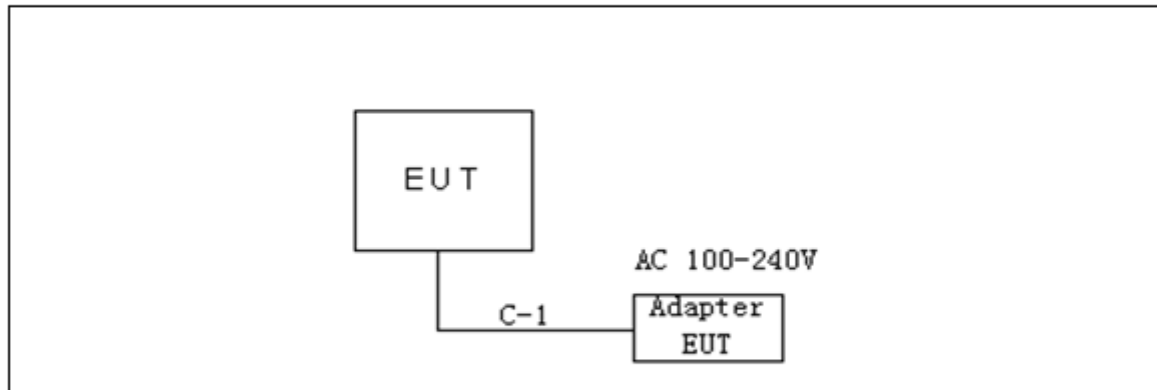
- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1Mbps)
 802.11g mode: OFDM (6Mbps)
 802.11n HT20 mode : BPSK (6.5Mbps)
 For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated below 1G test, the 802.11b 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	N/A		
Frequency (MHz)	2412	2437	2462
802.11b	8	4	252
802.11g	244	228	244
802.11n (20MHz)	244	224	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
C-1	NO	NO	1.8	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 (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

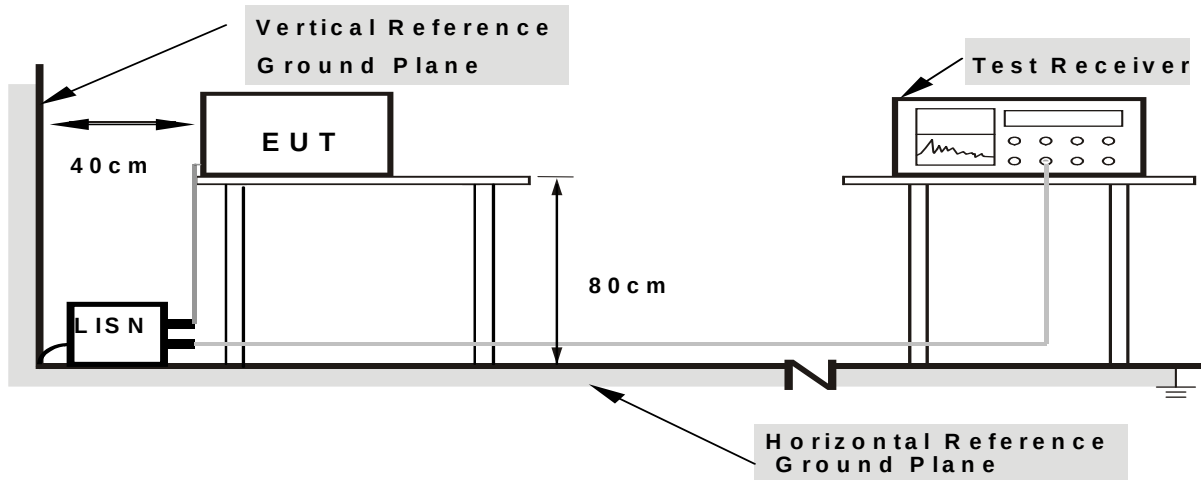
4.1.2 TEST PROCEDURE

- 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

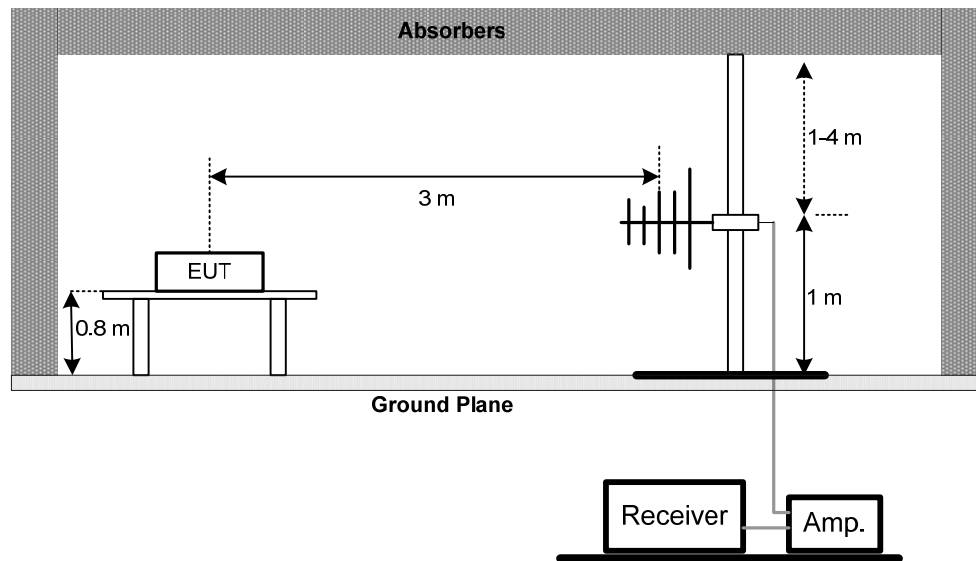
- The measuring distance of at 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- The measuring distance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

4.2.3 DEVIATION FROM TEST STANDARD

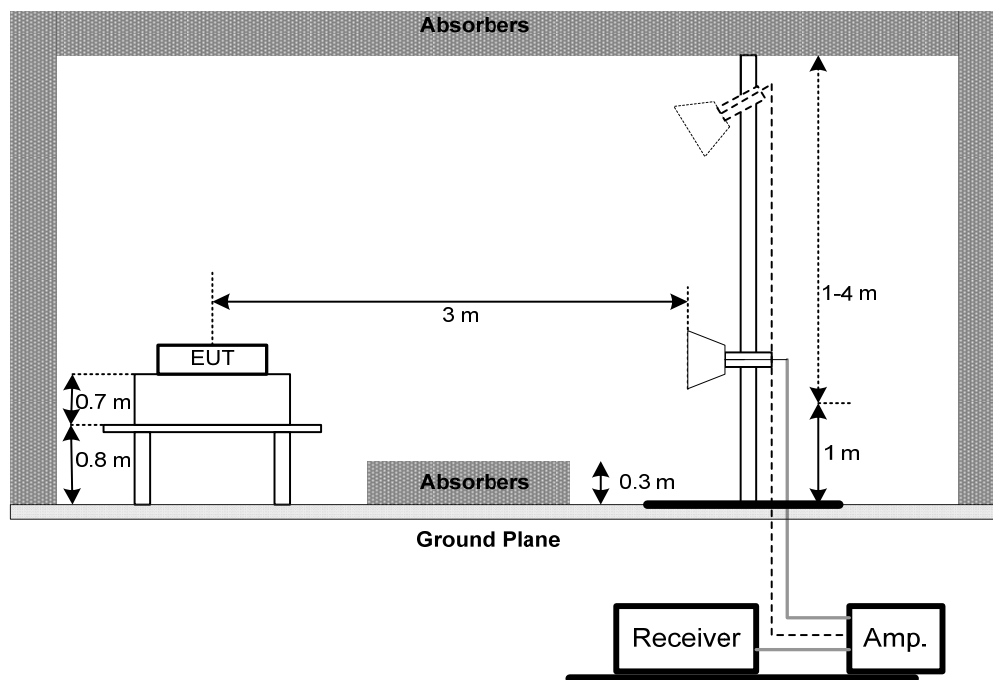
No deviation

4.2.4 TEST SETUP

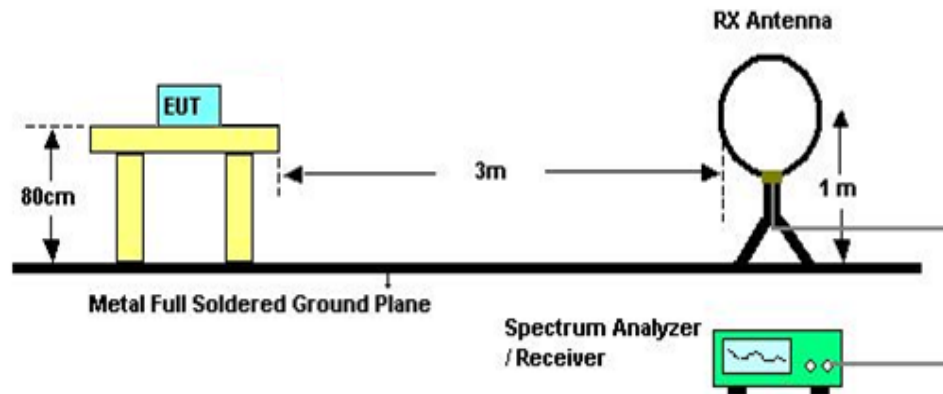
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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



(C) For Radiated Emissions Below 30MHz



4.2.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.2.6 EUT TEST CONDITIONS

Temperature: 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 v03r05.

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.

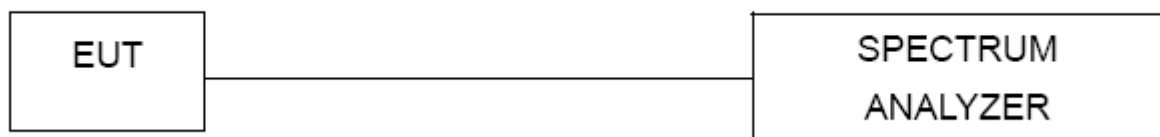
7.1.1 TEST PROCEDURE

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

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.1.5 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 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

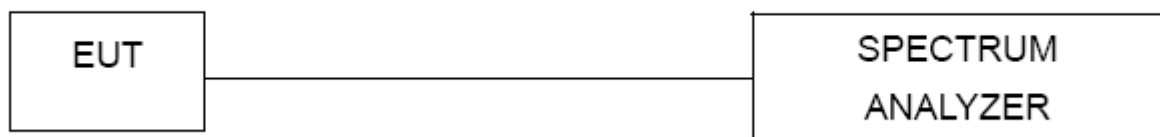
8.1.1 TEST PROCEDURE

- 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	Nov. 09, 2016
3	Receiver	AGILENT	N9038A	MY52130039	Oct. 11, 2016
4	Test Cable	emci	LMR-400(30MHz-1GHz)	C-01	Jun. 26, 2017
5	Control	CT	SC100	N/A	N/A
6	Position Control	MF	MF-7802	MF780208416	N/A
7	Antenna	ETS	3115	00075789	Mar. 27, 2017
8	Amplifier	Agilent	8449B	3008A02274	Nov. 01, 2016
9	Receiver	AGILENT	N9038A	MY52130039	Oct. 11, 2016
10	Test Cable	emci	EMC104-SM-S M-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. 23, 2017
13	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 27, 2017
14	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Sep. 07, 2016
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	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 27, 2017

Peak Output Power Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	P-series Power meter	Agilent	N1911A	MY45100473	Oct. 26, 2016
2	Wireband Power sensor	Agilent	N1921A	MY51100041	Oct. 26, 2016

Antenna Conducted Spurious Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 27, 2017

Power Spectral Density Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 27, 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



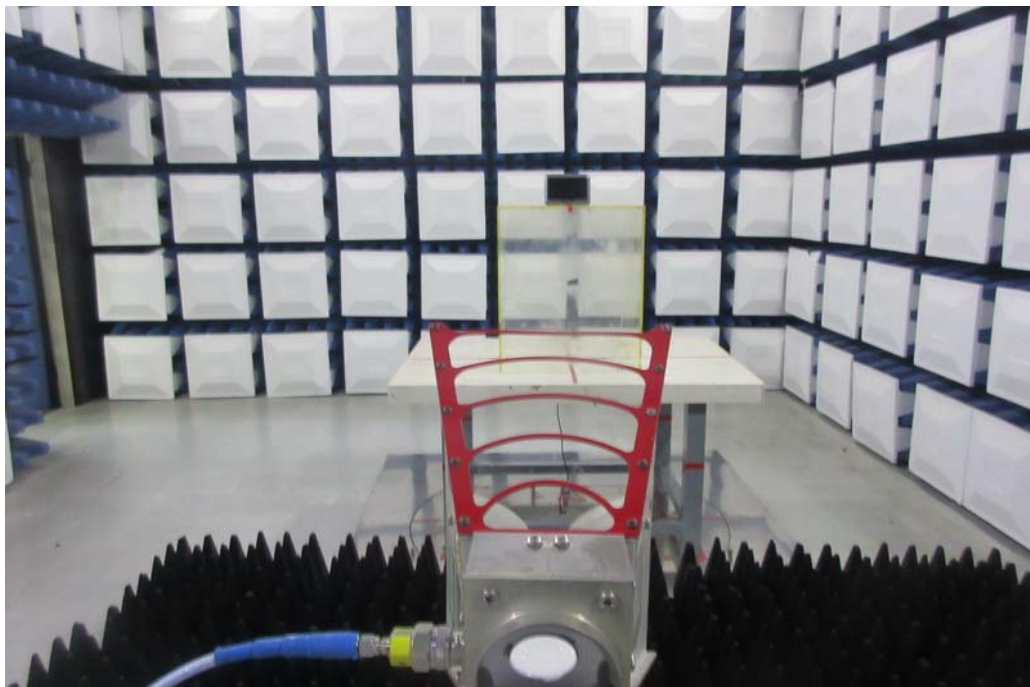
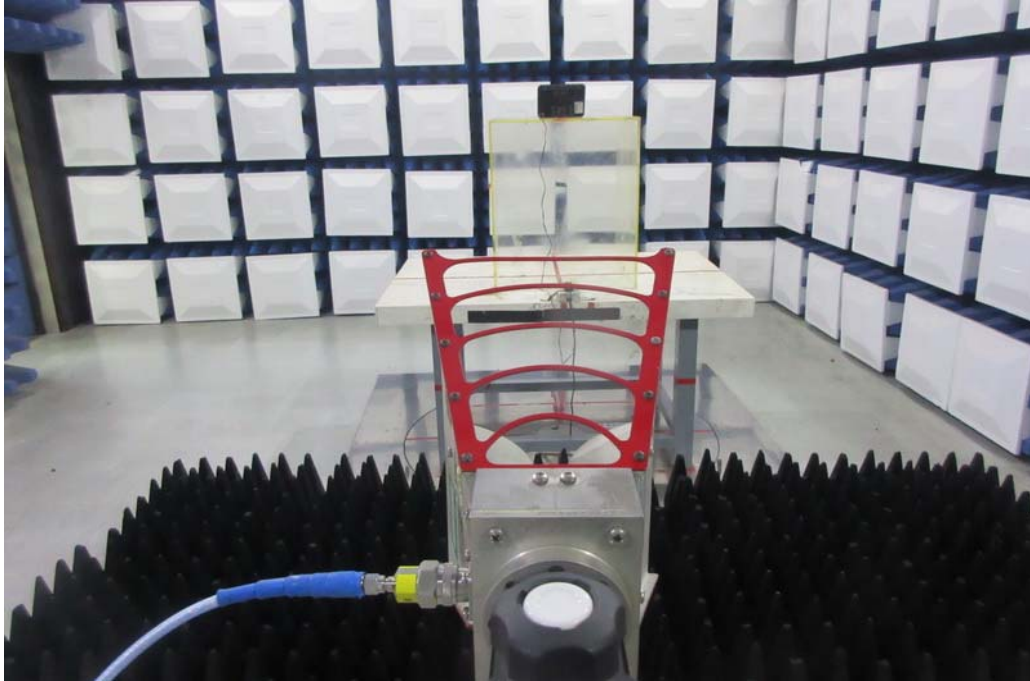
Radiated Measurement Photos

30MHz to 1000MHz



Radiated Measurement Photos

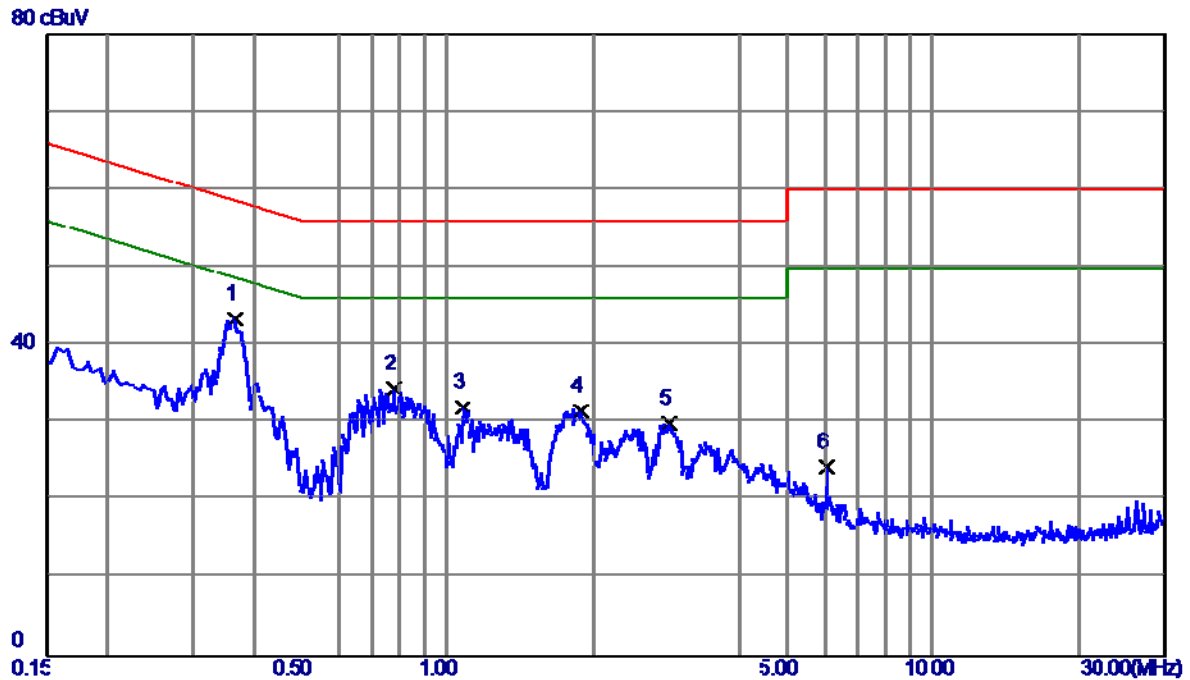
Above 1000MHz



ATTACHMENT A - CONDUCTED EMISSION

Test Mode : Normal Link

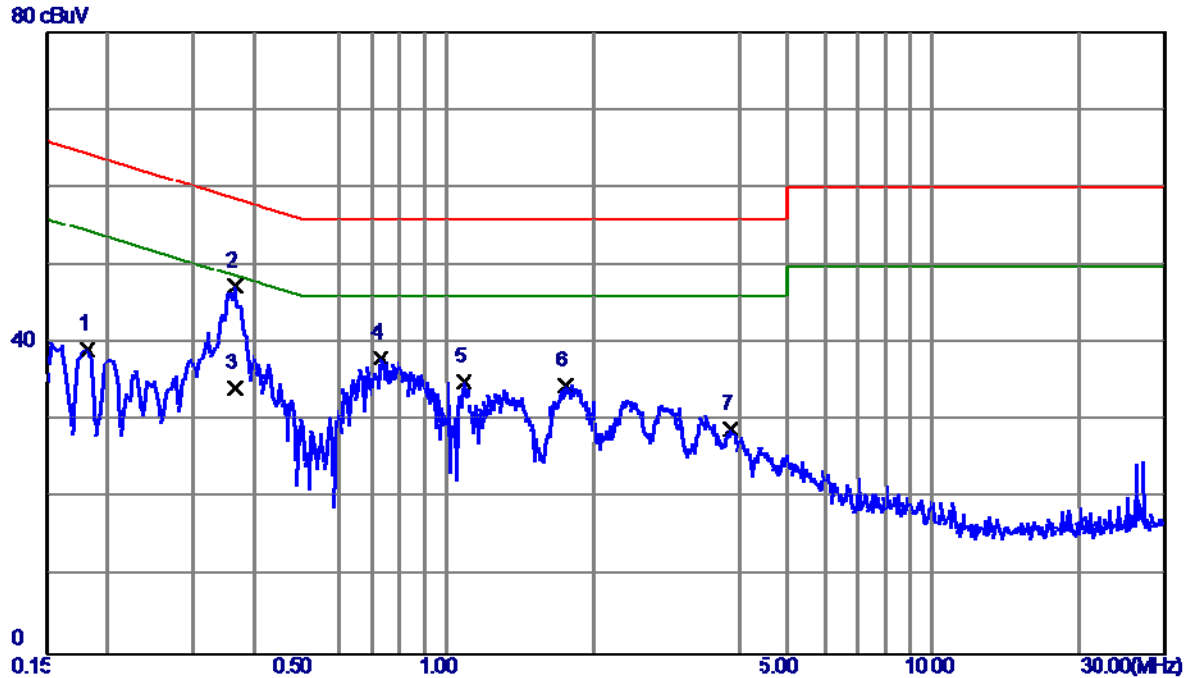
Line



No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1 *	0.3660	33.82	9.54	43.36	58.59	-15.23	Peak	
2	0.7780	24.62	9.73	34.35	56.00	-21.65	Peak	
3	1.0780	22.20	9.76	31.96	56.00	-24.04	Peak	
4	1.8820	21.59	9.89	31.48	56.00	-24.52	Peak	
5	2.8620	19.82	10.09	29.91	56.00	-26.09	Peak	
6	6.0340	14.20	10.07	24.27	60.00	-35.73	Peak	

Test Mode : Normal Link

Neutral



No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	0.1819	29.72	9.47	39.19	64.40	-25.21	Peak	
2 *	0.3660	37.81	9.50	47.31	58.59	-11.28	Peak	
3	0.3660	24.81	9.50	34.31	48.59	-14.28	AVG	
4	0.7300	28.62	9.48	38.10	56.00	-17.90	Peak	
5	1.0859	25.37	9.66	35.03	56.00	-20.97	Peak	
6	1.7540	24.84	9.68	34.52	56.00	-21.48	Peak	
7	3.8500	19.02	9.87	28.89	56.00	-27.11	Peak	

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

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

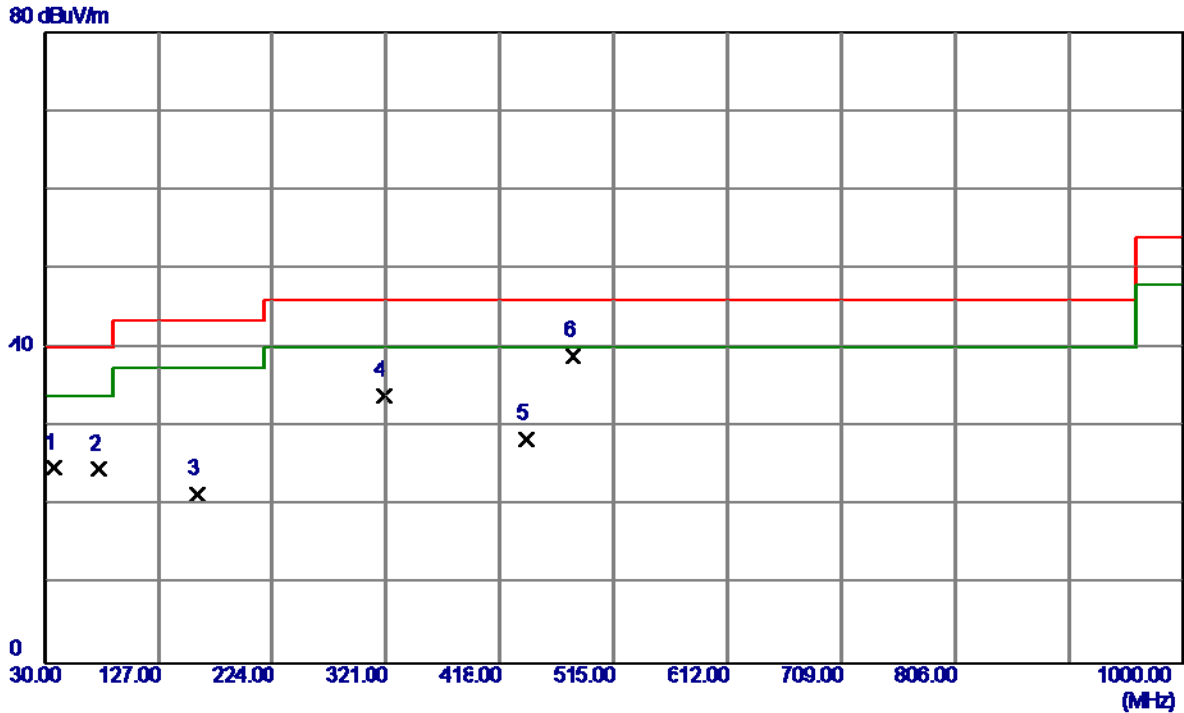
Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Note
0.0155	0°	13.41	24.5850	37.9950	123.7976	-85.8026	AVG
0.0155	0°	14.28	24.5850	38.8650	143.7976	-104.9326	PEAK
0.0279	0°	6.73	23.7997	30.5297	118.6921	-88.1625	AVG
0.0279	0°	8.12	23.7997	31.9197	138.6921	-106.7725	PEAK
0.0371	0°	3.17	23.2170	26.3870	116.2167	-89.8297	AVG
0.0371	0°	5.58	23.2170	28.7970	136.2167	-107.4197	PEAK
0.0569	0°	1.16	22.2620	23.4220	112.5020	-89.0800	AVG
0.0569	0°	2.53	22.2620	24.7920	132.5020	-107.7100	PEAK
0.5087	0°	19.36	19.8278	39.1878	73.4750	-34.2872	QP
1.9533	0°	23.71	19.5047	43.2147	69.5400	-26.3253	QP

Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Note
0.0124	90°	13.16	24.3000	37.4600	125.7358	-88.2758	AVG
0.0124	90°	14.89	24.3000	39.1900	145.7358	-106.5458	PEAK
0.0271	90°	7.28	23.8503	31.1303	118.9448	-87.8145	AVG
0.0271	90°	8.94	23.8503	32.7903	138.9448	-106.1545	PEAK
0.0429	90°	5.23	22.8497	28.0797	114.9551	-86.8754	AVG
0.0429	90°	6.19	22.8497	29.0397	134.9551	-105.9154	PEAK
0.0577	90°	1.54	22.2460	23.7860	112.3807	-88.5947	AVG
0.0577	90°	2.86	22.2460	25.1060	132.3807	-107.2747	PEAK
0.6221	90°	22.17	20.1907	42.3607	71.7270	-29.3663	QP
2.0551	90°	24.56	19.4669	44.0269	69.5400	-25.5131	QP

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

Test Mode: TX B MODE CHANNEL 01

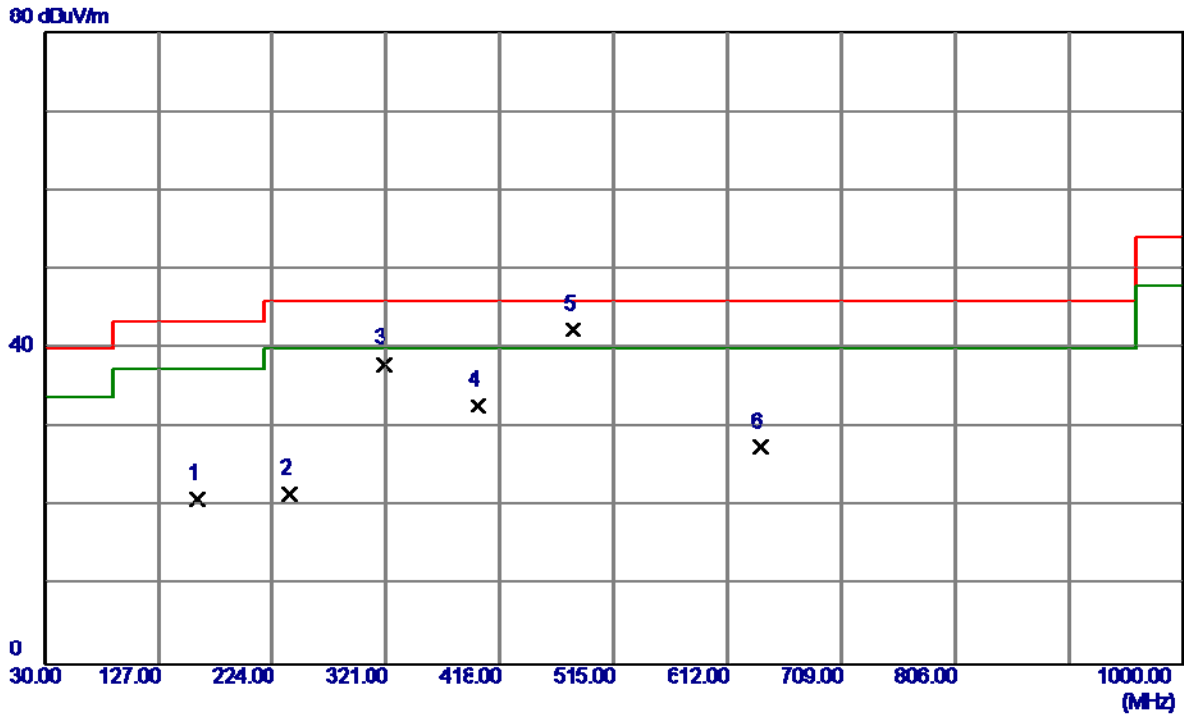
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	37.7599	38.91	-14.09	24.82	40.00	-15.18	Peak	
2	76.5600	41.06	-16.42	24.64	40.00	-15.36	Peak	
3	159.9800	33.62	-12.15	21.47	43.50	-22.03	Peak	
4	320.0300	44.51	-10.58	33.93	46.00	-12.07	Peak	
5	440.3100	36.41	-7.96	28.45	46.00	-17.55	Peak	
6 *	480.0800	47.99	-9.03	38.96	46.00	-7.04	Peak	

Test Mode: TX B MODE CHANNEL 01

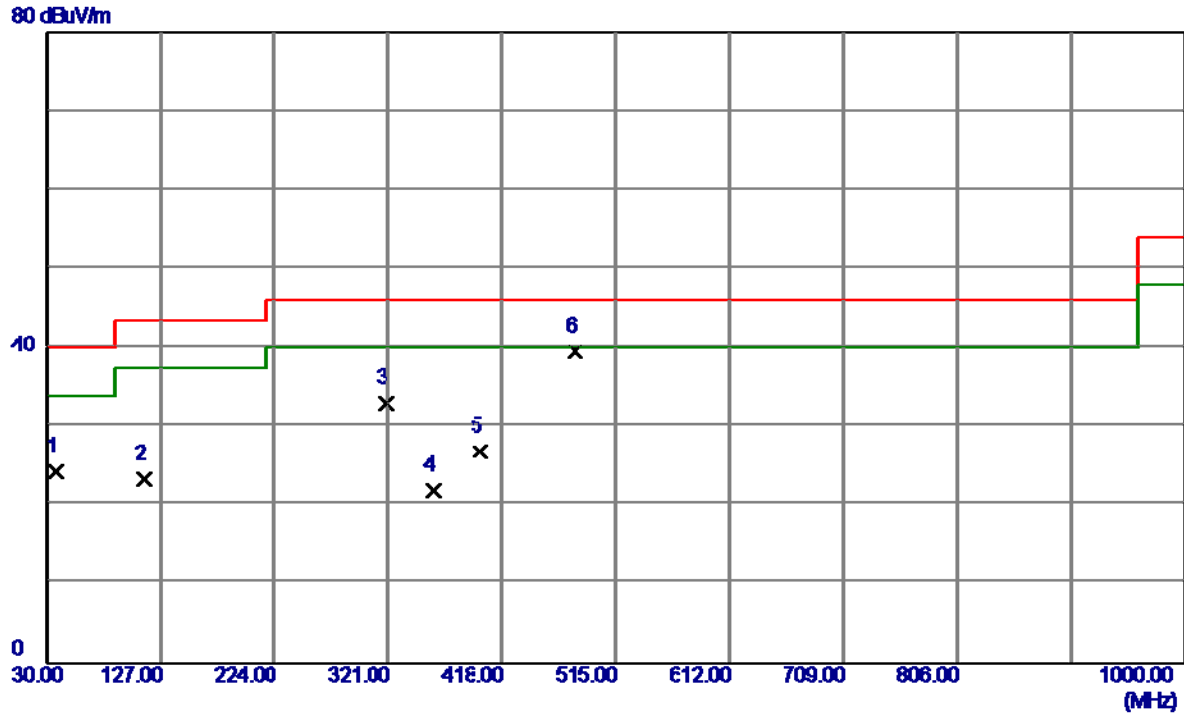
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	159.9800	33.18	-12.15	21.03	43.50	-22.47	Peak	
2	239.5200	35.41	-13.76	21.65	46.00	-24.35	Peak	
3	320.0300	48.58	-10.58	38.00	46.00	-8.00	Peak	
4	399.5700	40.67	-7.81	32.86	46.00	-13.14	Peak	
5 *	480.0800	51.45	-9.03	42.42	46.00	-3.58	Peak	
6	640.1300	32.32	-4.75	27.57	46.00	-18.43	Peak	

Test Mode: TX B MODE CHANNEL 06

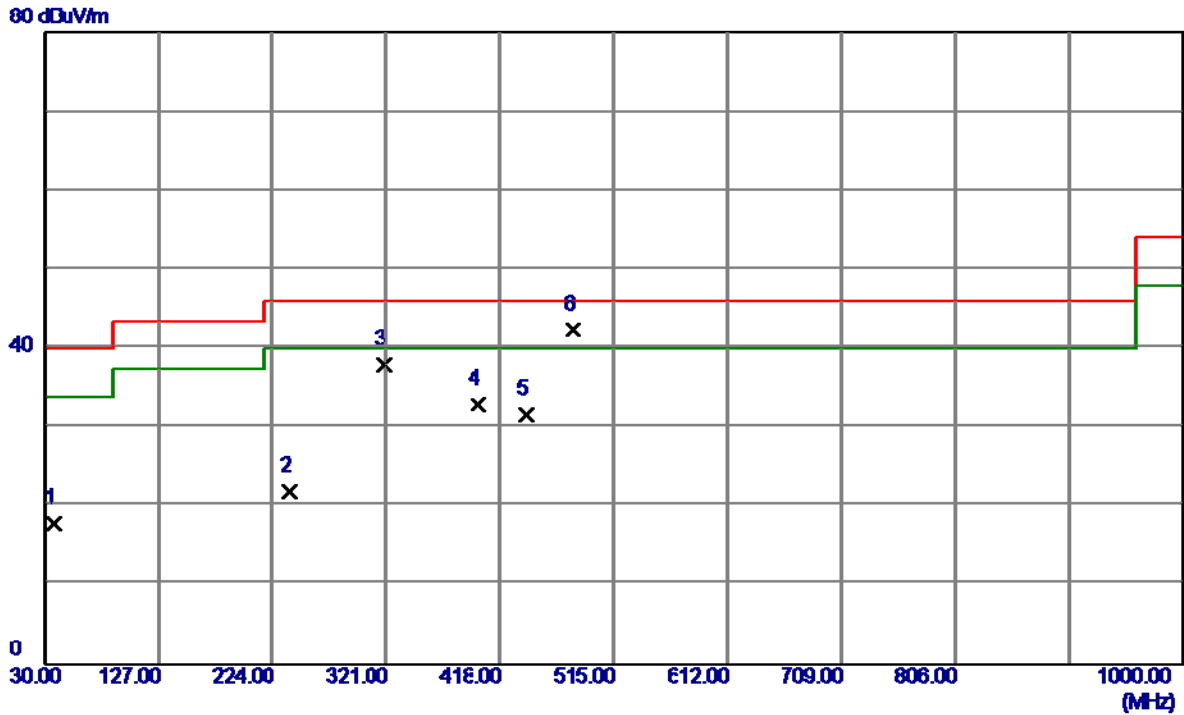
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	37.7599	38.43	-14.09	24.34	40.00	-15.66	Peak	
2	113.4200	37.59	-14.25	23.34	43.50	-20.16	Peak	
3	320.0300	43.61	-10.58	33.03	46.00	-12.97	Peak	
4	359.8000	32.50	-10.55	21.95	46.00	-24.05	Peak	
5	399.5700	34.72	-7.81	26.91	46.00	-19.09	Peak	
6 *	480.0800	48.51	-9.03	39.48	46.00	-6.52	Peak	

Test Mode: TX B MODE CHANNEL 06

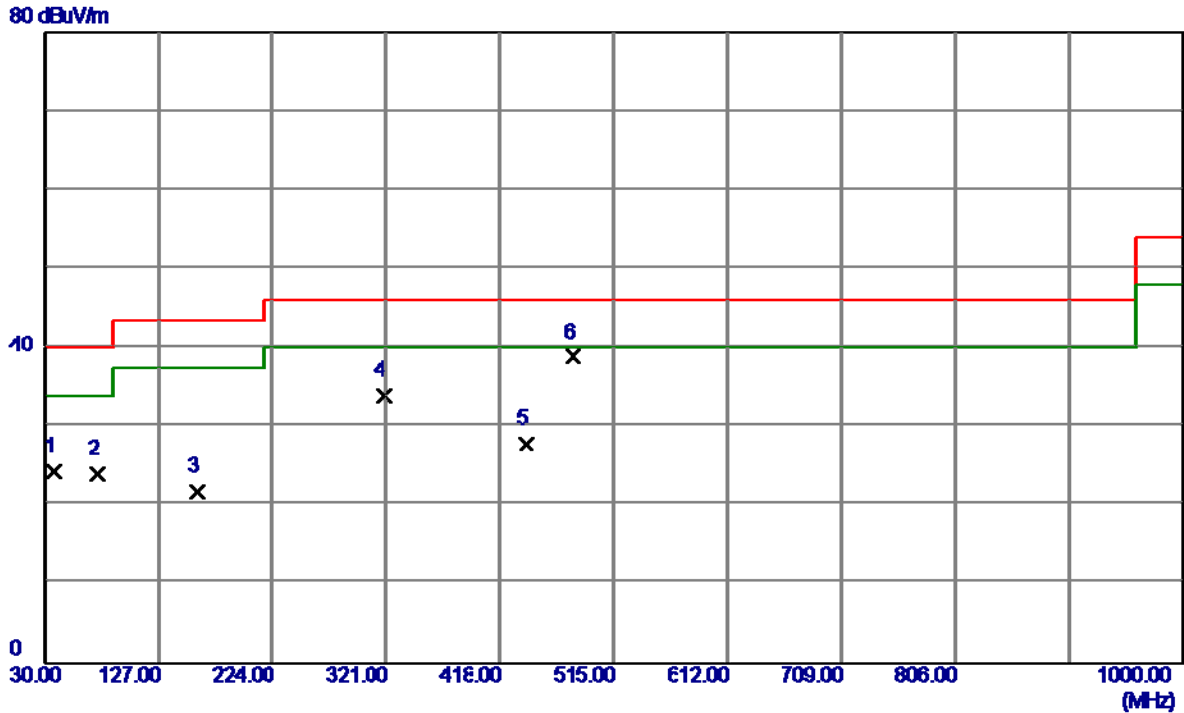
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	37.7599	31.99	-14.09	17.90	40.00	-22.10	Peak	
2	239.5200	35.67	-13.76	21.91	46.00	-24.09	Peak	
3	320.0300	48.54	-10.58	37.96	46.00	-8.04	Peak	
4	399.5700	40.84	-7.81	33.03	46.00	-12.97	Peak	
5	440.3100	39.62	-7.96	31.66	46.00	-14.34	Peak	
6 *	480.0800	51.44	-9.03	42.41	46.00	-3.59	Peak	

Test Mode: TX B MODE CHANNEL 11

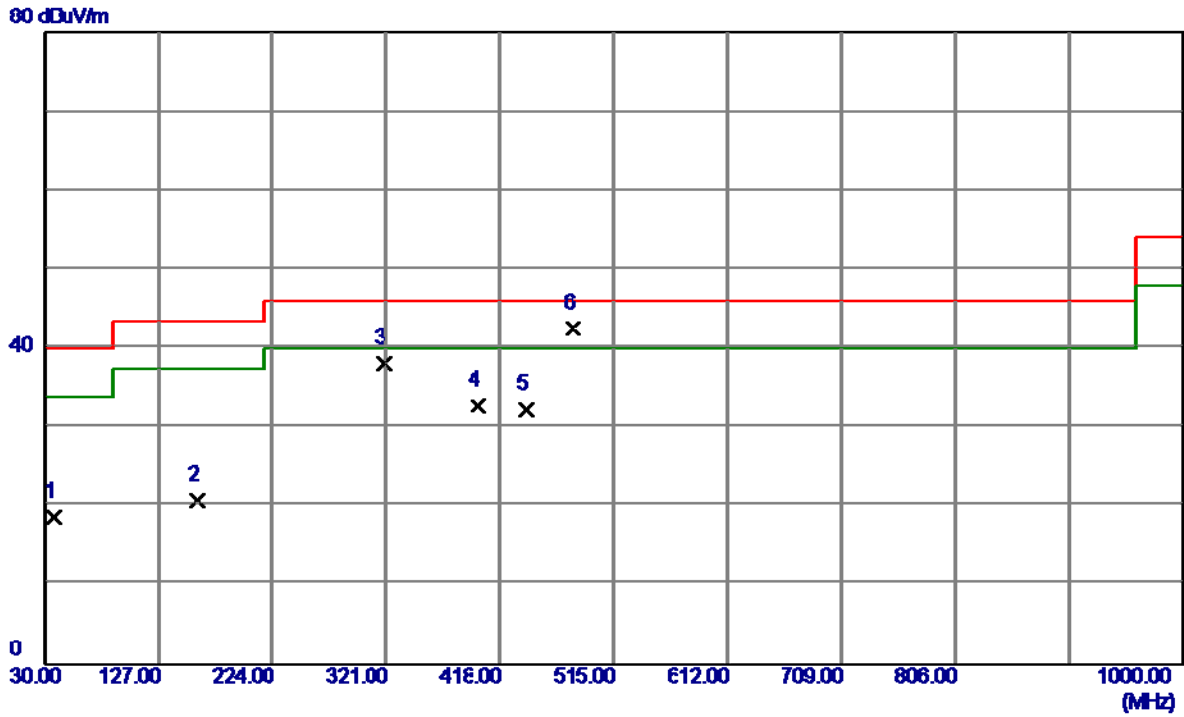
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	37.7599	38.34	-14.09	24.25	40.00	-15.75	Peak	
2	75.5899	40.49	-16.52	23.97	40.00	-16.03	Peak	
3	159.9800	33.84	-12.15	21.69	43.50	-21.81	Peak	
4	320.0300	44.50	-10.58	33.92	46.00	-12.08	Peak	
5	440.3100	35.81	-7.96	27.85	46.00	-18.15	Peak	
6 *	480.0800	47.83	-9.03	38.80	46.00	-7.20	Peak	

Test Mode: TX B MODE CHANNEL 11

Horizontal

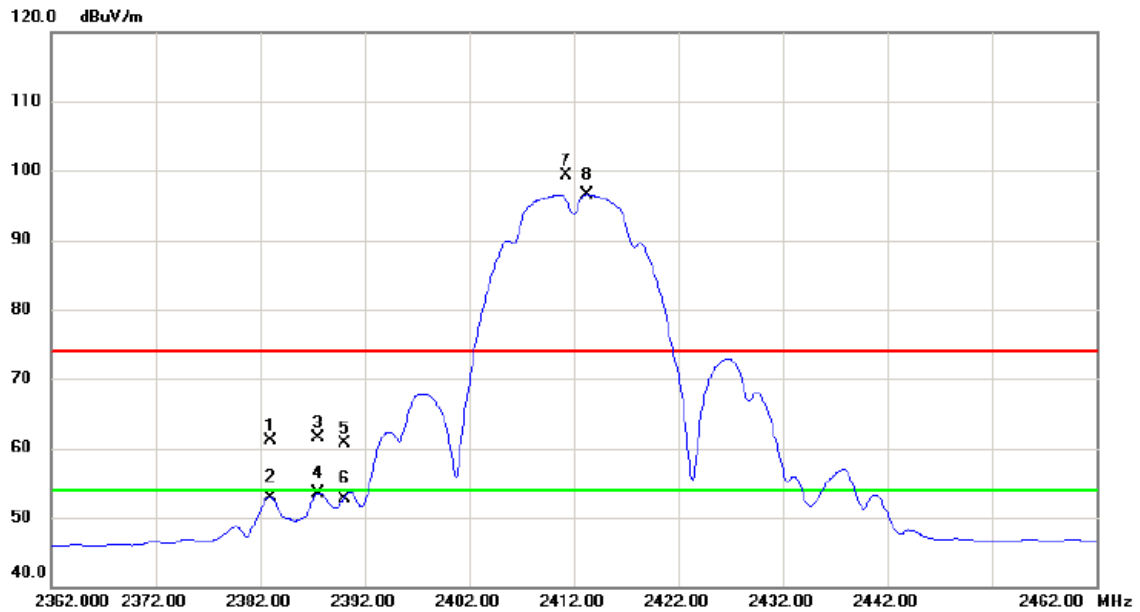


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	37.7599	32.80	-14.09	18.71	40.00	-21.29	Peak	
2	159.9800	32.97	-12.15	20.82	43.50	-22.68	Peak	
3	320.0300	48.62	-10.58	38.04	46.00	-7.96	Peak	
4	399.5700	40.66	-7.81	32.85	46.00	-13.15	Peak	
5	440.3100	40.24	-7.96	32.28	46.00	-13.72	Peak	
6 *	480.0800	51.62	-9.03	42.59	46.00	-3.41	Peak	

ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

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

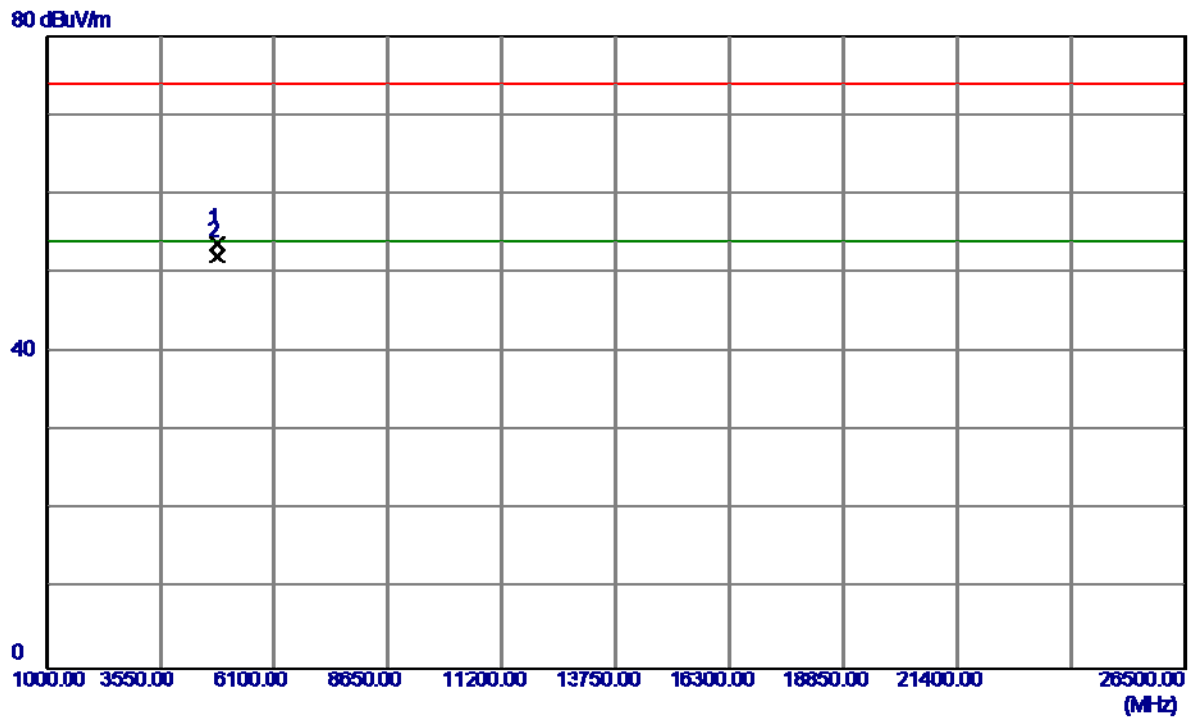
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2383.000	28.04	32.99	61.03	74.00	-12.97	peak	
2		2383.000	19.94	32.99	52.93	54.00	-1.07	AVG	
3		2387.600	28.55	33.00	61.55	74.00	-12.45	peak	
4		2387.600	20.54	33.00	53.54	54.00	-0.46	AVG	
5		2390.000	27.68	33.01	60.69	74.00	-13.31	peak	
6		2390.000	19.69	33.01	52.70	54.00	-1.30	AVG	
7	X	2411.300	66.24	33.10	99.34	74.00	25.34	peak	No Limit
8	*	2413.300	63.49	33.11	96.60	54.00	42.60	AVG	No Limit

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

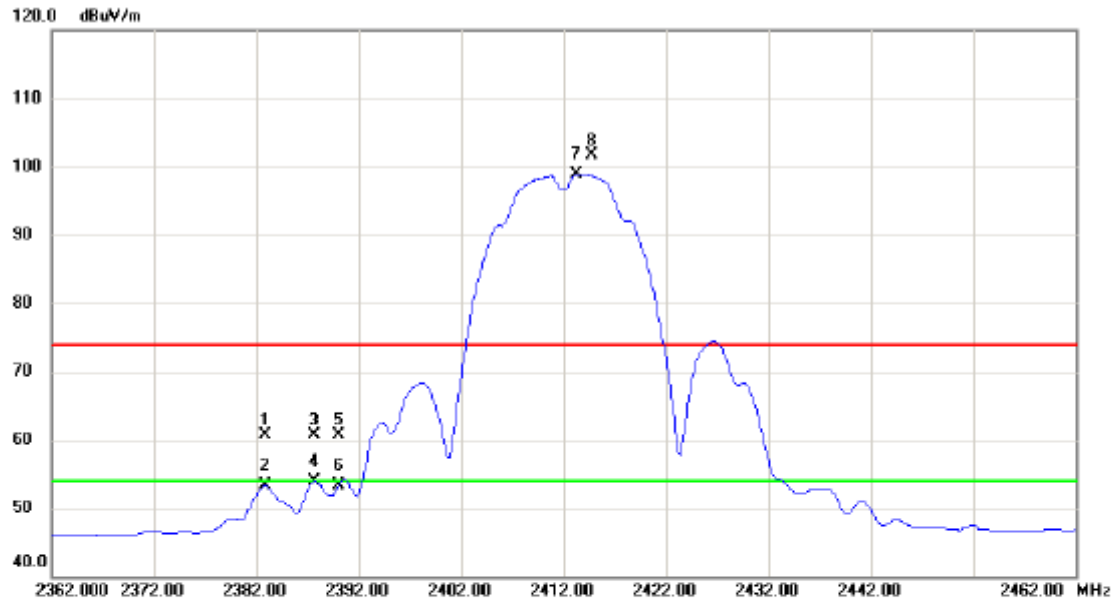
Vertical



No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823.9200	48.94	4.85	53.79	74.00	-20.21	Peak	
2 *	4823.9200	47.26	4.85	52.11	54.00	-1.89	AVG	

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

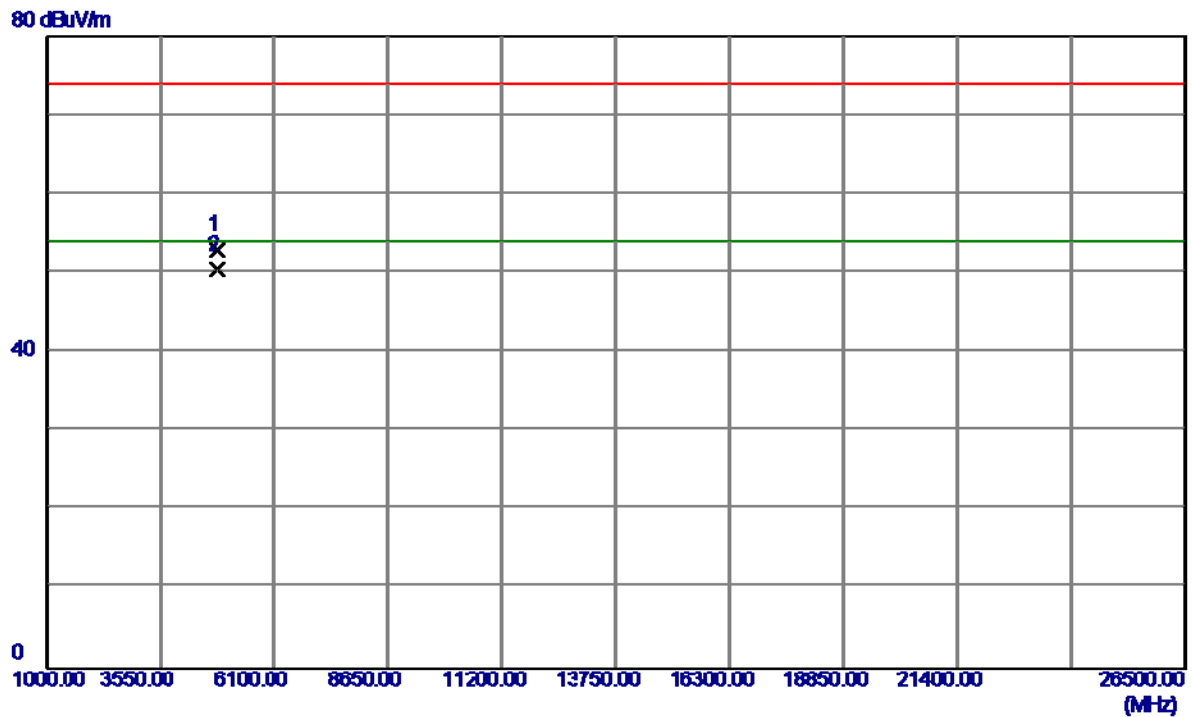
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2382.900	27.77	32.99	60.76	74.00	-13.24	peak	
2		2382.900	20.26	32.99	53.25	54.00	-0.75	AVG	
3		2387.700	27.80	33.00	60.80	74.00	-13.20	peak	
4		2387.700	20.83	33.00	53.83	54.00	-0.17	AVG	
5		2390.000	27.61	33.01	60.62	74.00	-13.38	peak	
6		2390.000	20.20	33.01	53.21	54.00	-0.79	AVG	
7	*	2413.300	65.89	33.11	99.00	54.00	45.00	AVG	No Limit
8	X	2414.700	68.67	33.12	101.79	74.00	27.79	peak	No Limit

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

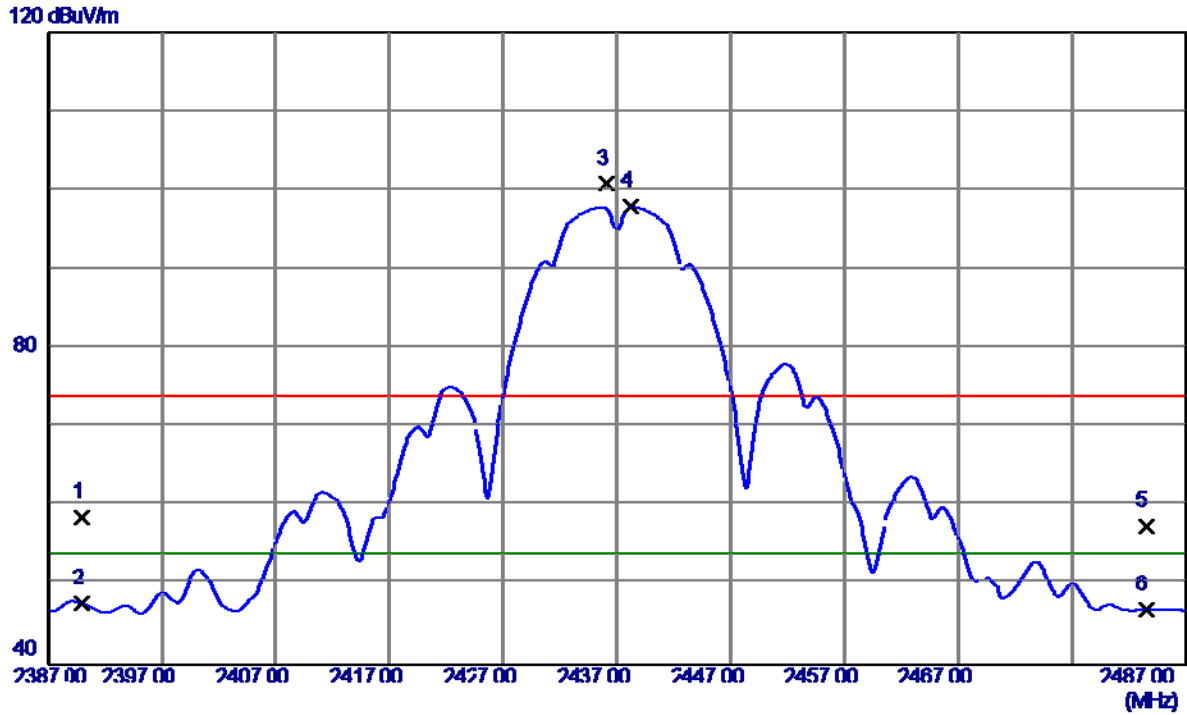
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4823.8300	48.12	4.85	52.97	74.00	-21.03	Peak	
2 *	4823.9200	45.54	4.85	50.39	54.00	-3.61	AVG	

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

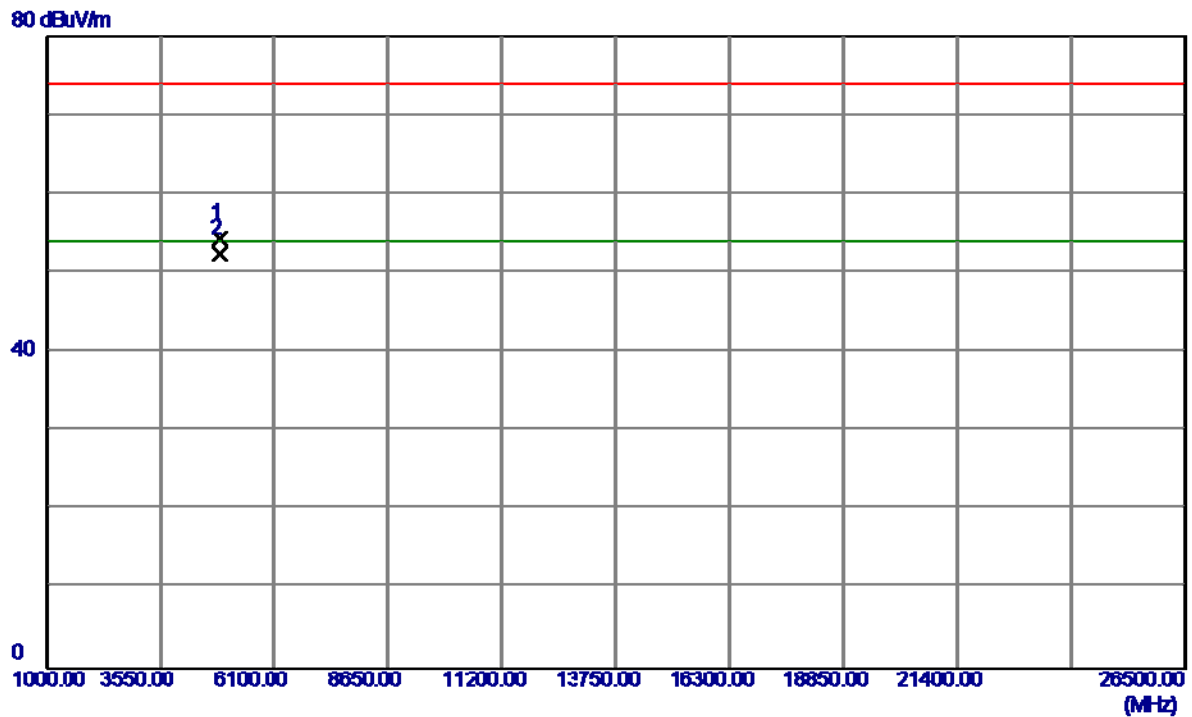
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	25.58	33.01	58.59	74.00	-15.41	Peak	
2	2390.0000	14.62	33.01	47.63	54.00	-6.37	AVG	
3	2436.1000	67.55	33.20	100.75	74.00	26.75	Peak	No Limit.
4 *	2438.2000	64.67	33.21	97.88	54.00	43.88	AVG	No Limit
5	2483.5000	24.09	33.40	57.49	74.00	-16.51	Peak	
6	2483.5000	13.51	33.40	46.91	54.00	-7.09	AVG	

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

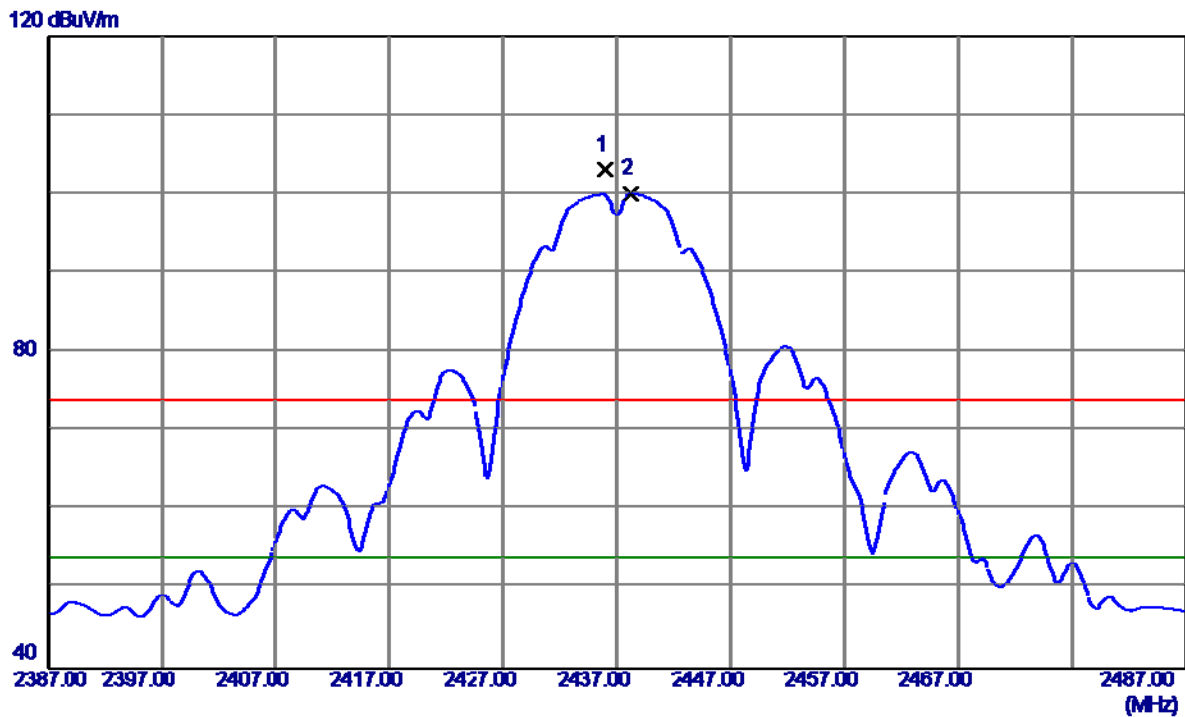
Vertical



No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873.9100	49.28	5.07	54.35	74.00	-19.65	Peak	
2 *	4873.9100	47.41	5.07	52.48	54.00	-1.52	AVG	

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

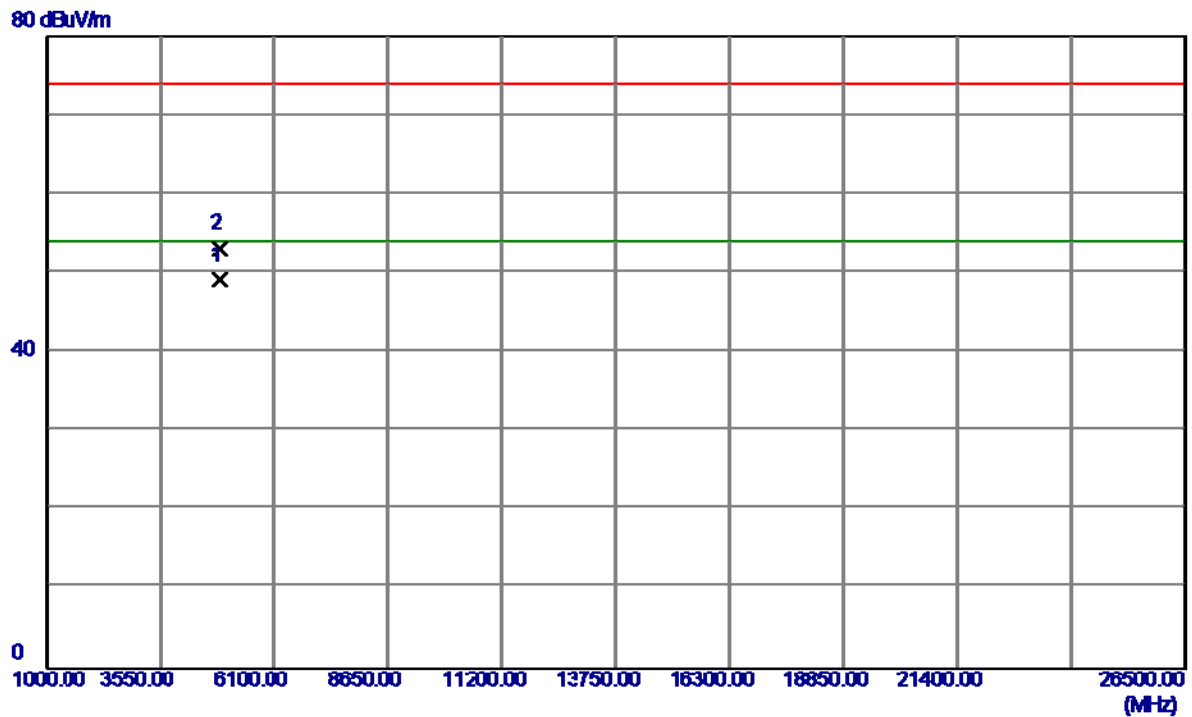
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2436.0000	69.84	33.20	103.04	74.00	29.04	Peak	No Limit
2 *	2438.2000	66.84	33.21	100.05	54.00	46.05	AVG	No Limit

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

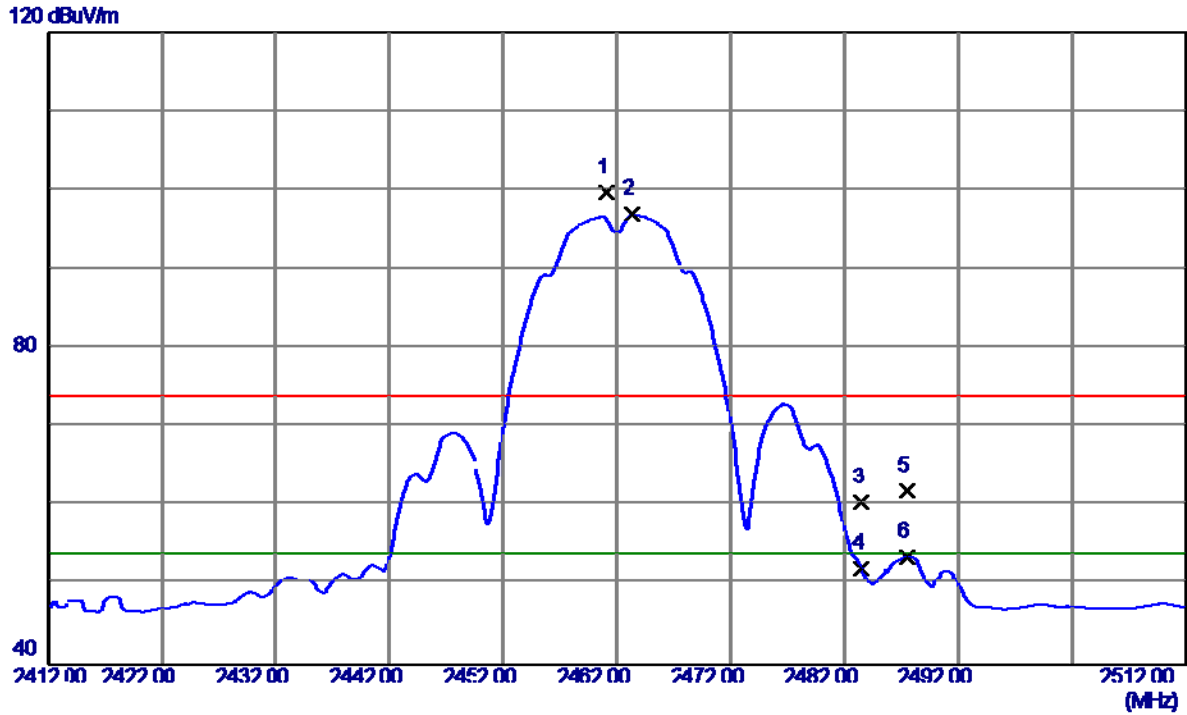
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4873.9049	44.08	5.07	49.15	54.00	-4.85	AVG	
2	4873.8650	48.07	5.07	53.14	74.00	-20.86	Peak	

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

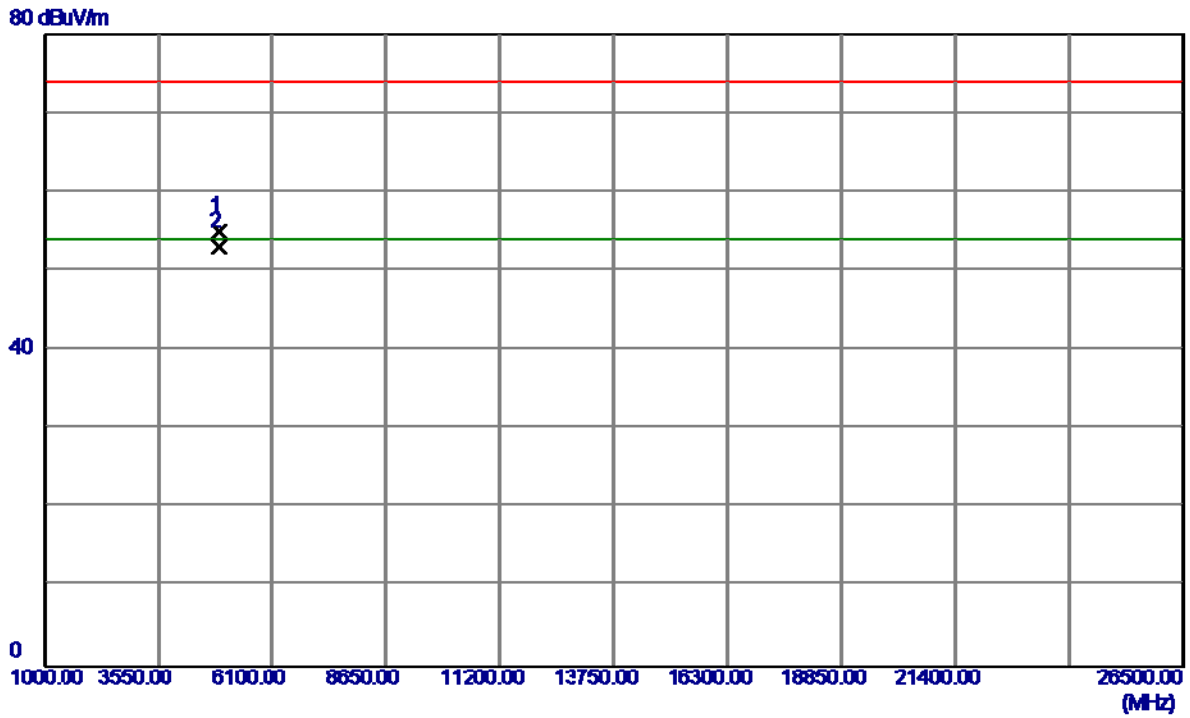
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2461.1000	66.44	33.31	99.75	74.00	25.75	Peak	No Limit
2 *	2463.3000	63.57	33.32	96.89	54.00	42.89	AVG	No Limit
3	2483.5000	27.12	33.40	60.52	74.00	-13.48	Peak	
4	2483.5000	18.70	33.40	52.10	54.00	-1.90	AVG	
5	2487.6000	28.53	33.42	61.95	74.00	-12.05	Peak	
6	2487.6000	20.24	33.42	53.66	54.00	-0.34	AVG	

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

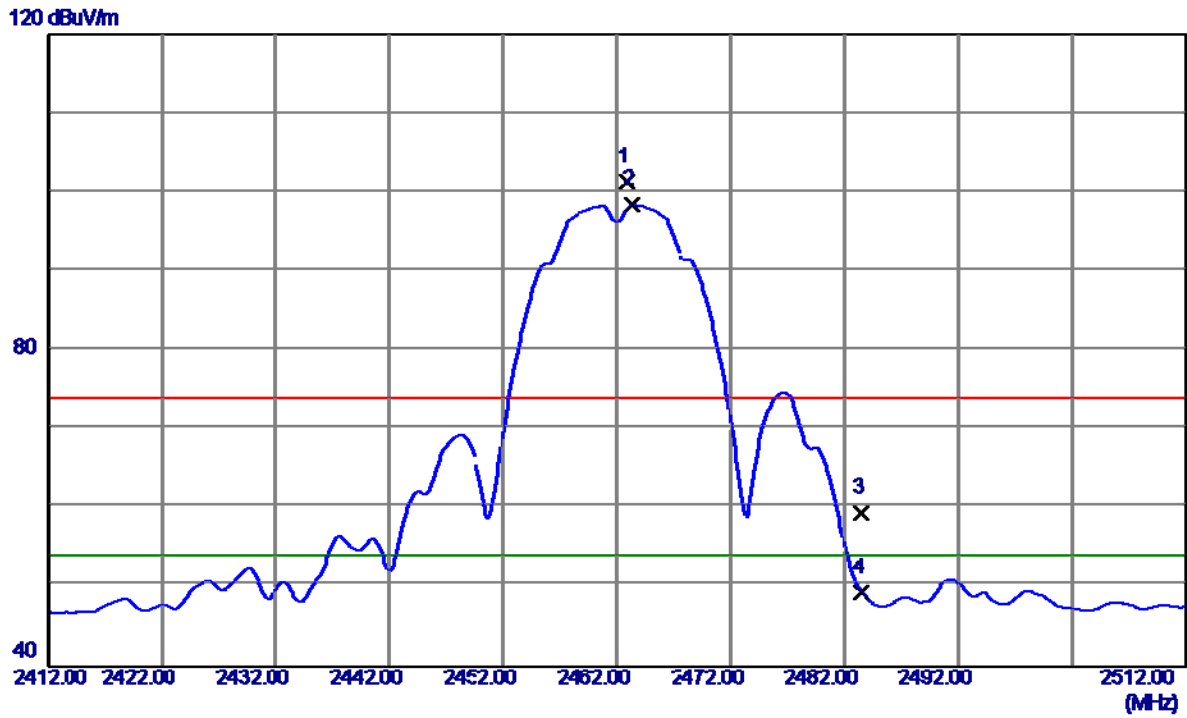
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4923.8900	49.78	5.28	55.06	74.00	-18.94	Peak	
2 *	4923.9200	47.78	5.28	53.06	54.00	-0.94	AVG	

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

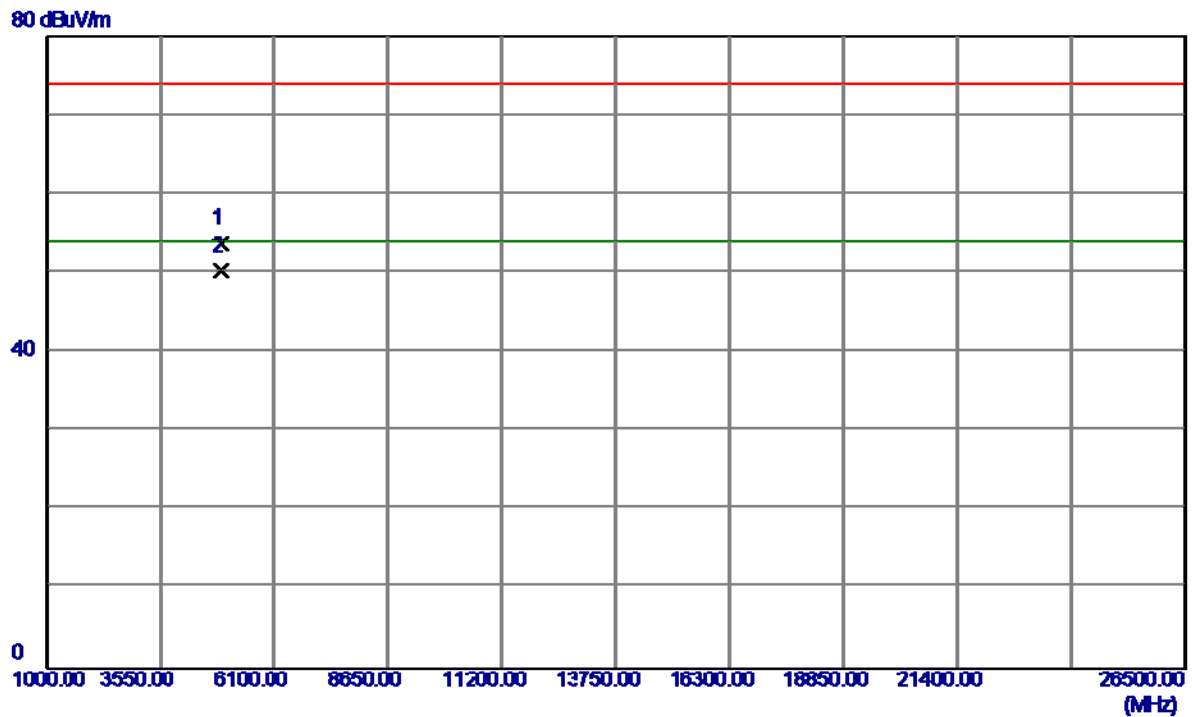
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2462.9000	67.94	33.31	101.25	74.00	27.25	Peak	No Limit
2 *	2463.3000	65.07	33.32	98.39	54.00	44.39	AVG	No Limit
3	2483.5000	25.92	33.40	59.32	74.00	-14.68	Peak	
4	2483.5000	15.95	33.40	49.35	54.00	-4.65	AVG	

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

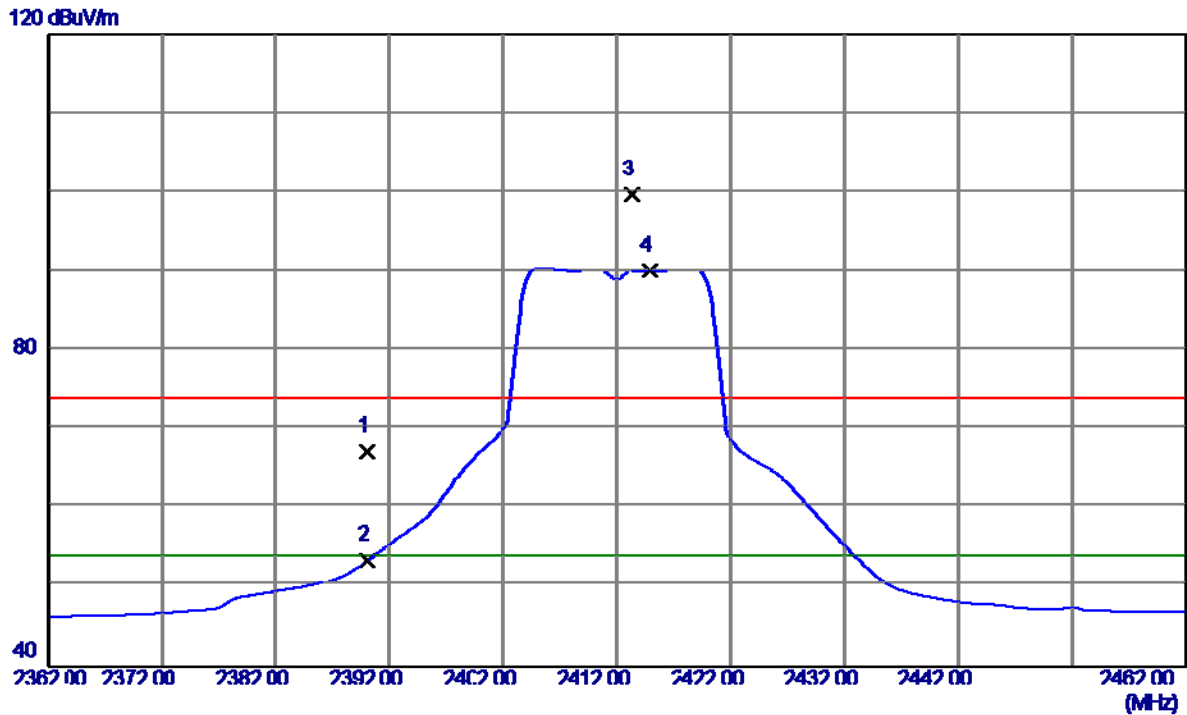
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4923.8600	48.42	5.28	53.70	74.00	-20.30	Peak	
2 *	4923.9100	44.90	5.28	50.18	54.00	-3.82	AVG	

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

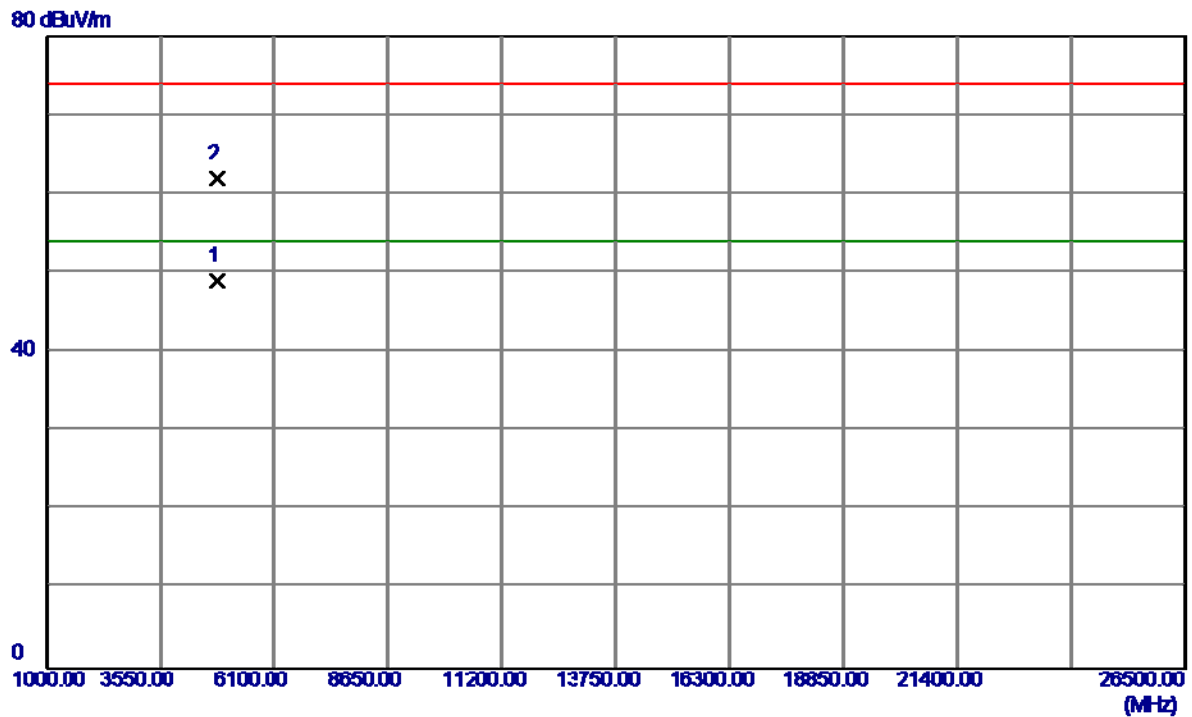
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	34.12	33.01	67.13	74.00	-6.87	Peak	
2	2390.0000	20.37	33.01	53.38	54.00	-0.62	AVG	
3	2413.3000	66.52	33.11	99.63	74.00	25.63	Peak	No Limit.
4 *	2414.9000	56.96	33.11	90.07	54.00	36.07	AVG	No Limit

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

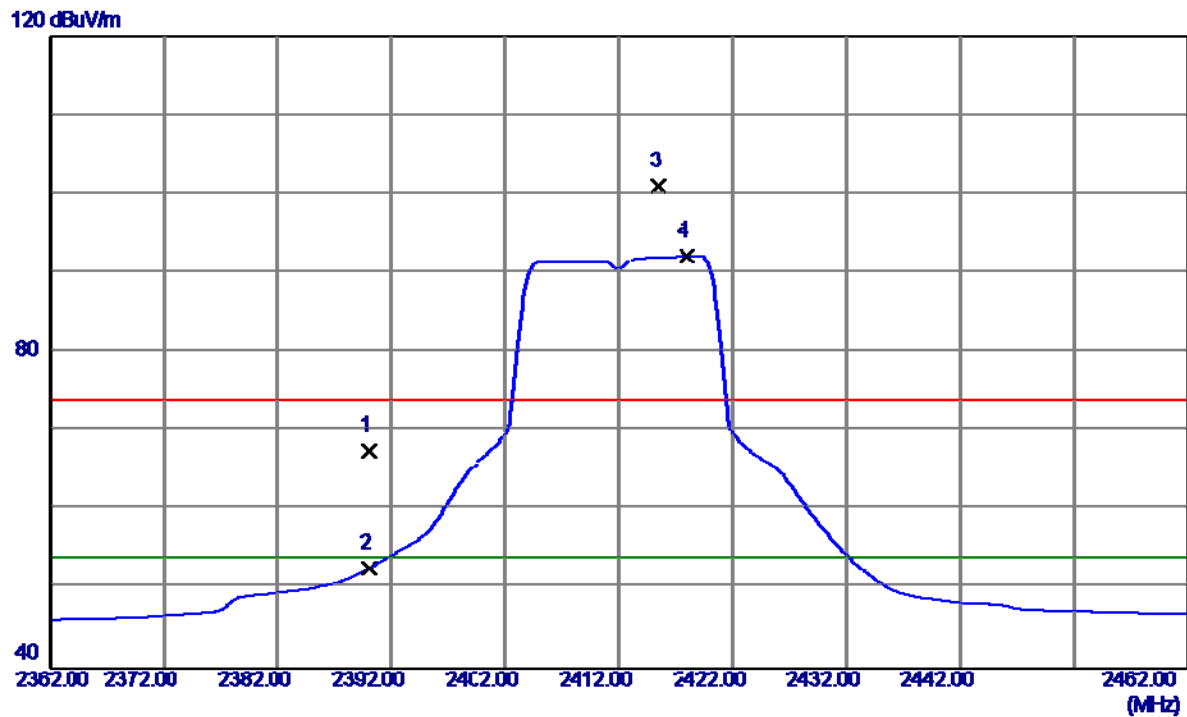
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4824.7000	44.06	4.86	48.92	54.00	-5.08	AVG	
2	4826.6000	57.06	4.86	61.92	74.00	-12.08	Peak	

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

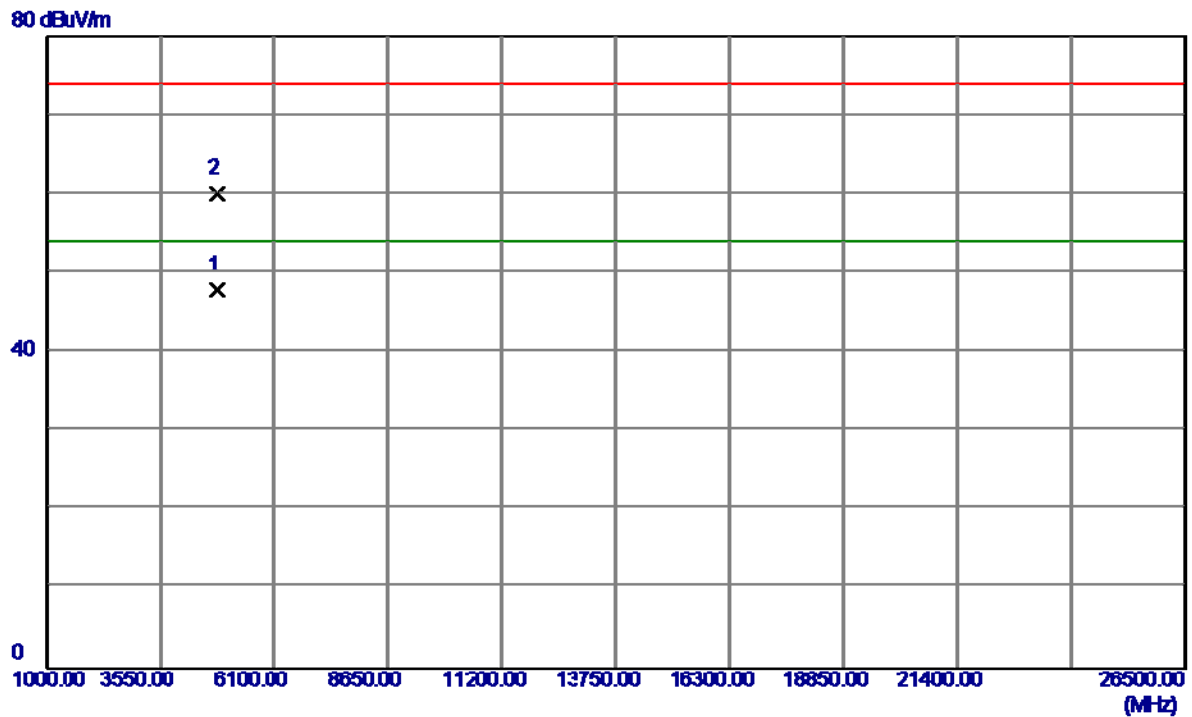
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	34.47	33.01	67.48	74.00	-6.52	Peak	
2	2390.0000	19.63	33.01	52.64	54.00	-1.36	AVG	
3	2415.5000	67.81	33.12	100.93	74.00	26.93	Peak	No Limit
4 *	2418.0000	59.01	33.13	92.14	54.00	38.14	AVG	No Limit

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

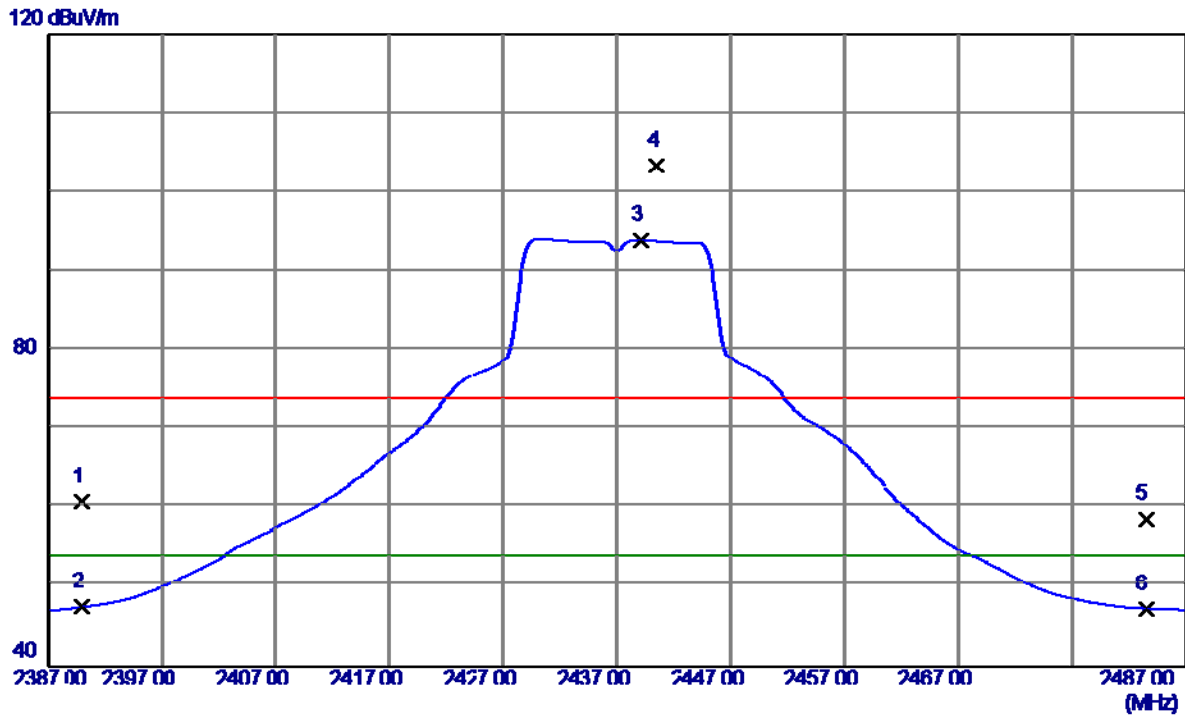
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4823.8000	43.06	4.85	47.91	54.00	-6.09	AVG	
2	4825.4000	55.11	4.86	59.97	74.00	-14.03	Peak	

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

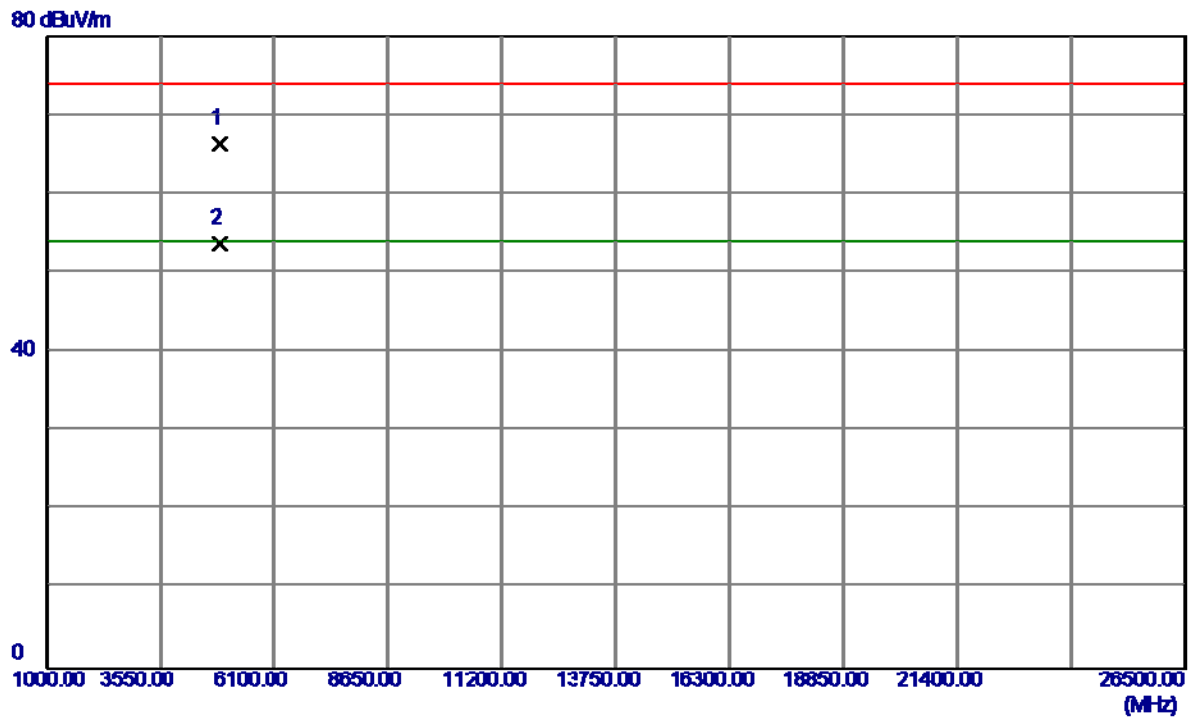
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	27.85	33.01	60.86	74.00	-13.14	Peak	
2	2390.0000	14.44	33.01	47.45	54.00	-6.55	AVG	
3 *	2439.1000	60.70	33.22	93.92	54.00	39.92	AVG	No Limit.
4	2440.5000	70.20	33.22	103.42	74.00	29.42	Peak	No Limit
5	2483.5000	25.13	33.40	58.53	74.00	-15.47	Peak	
6	2483.5000	13.85	33.40	47.25	54.00	-6.75	AVG	

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

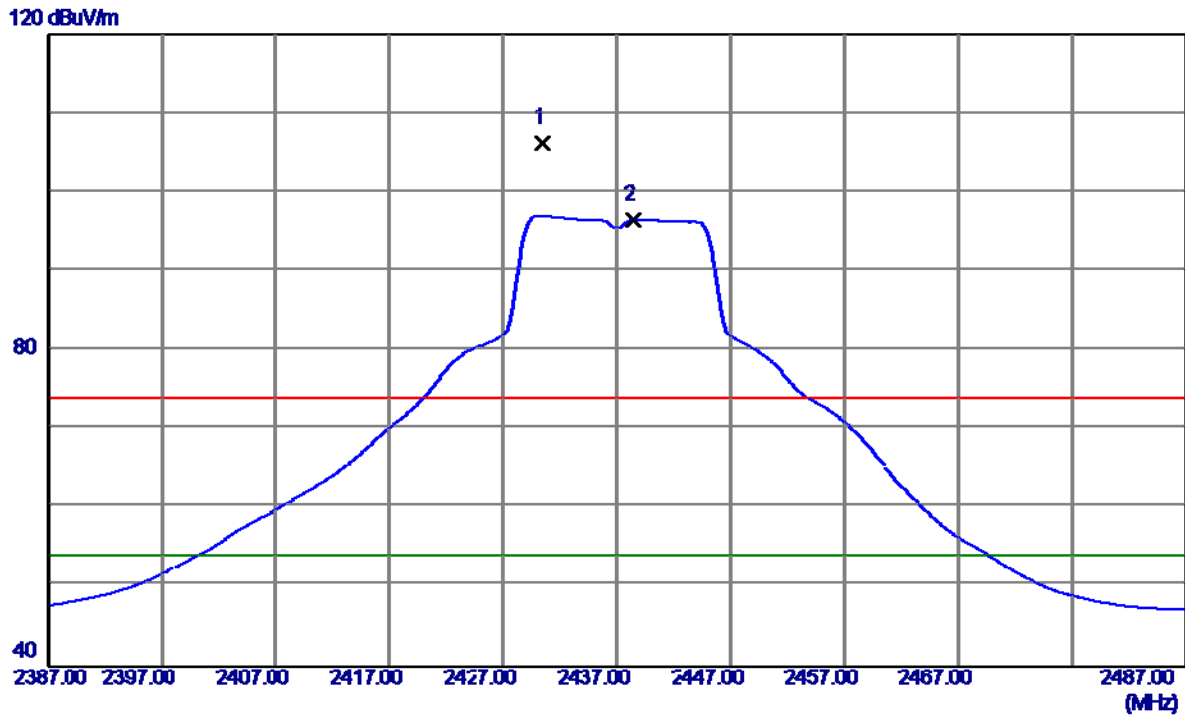
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4872.0000	61.27	5.06	66.33	74.00	-7.67	Peak	
2 *	4873.4000	48.70	5.06	53.76	54.00	-0.24	AVG	

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

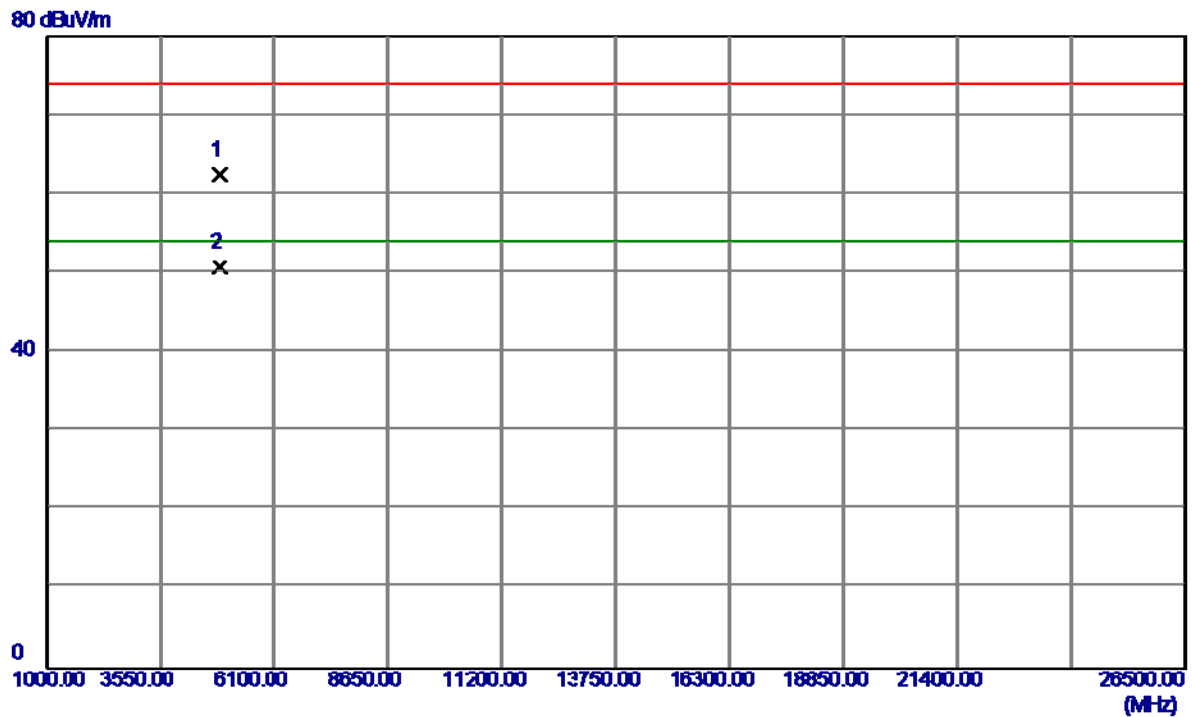
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2430.4000	73.11	33.18	106.29	74.00	32.29	Peak	No Limit
2 *	2438.4000	63.30	33.21	96.51	54.00	42.51	AVG	No Limit

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

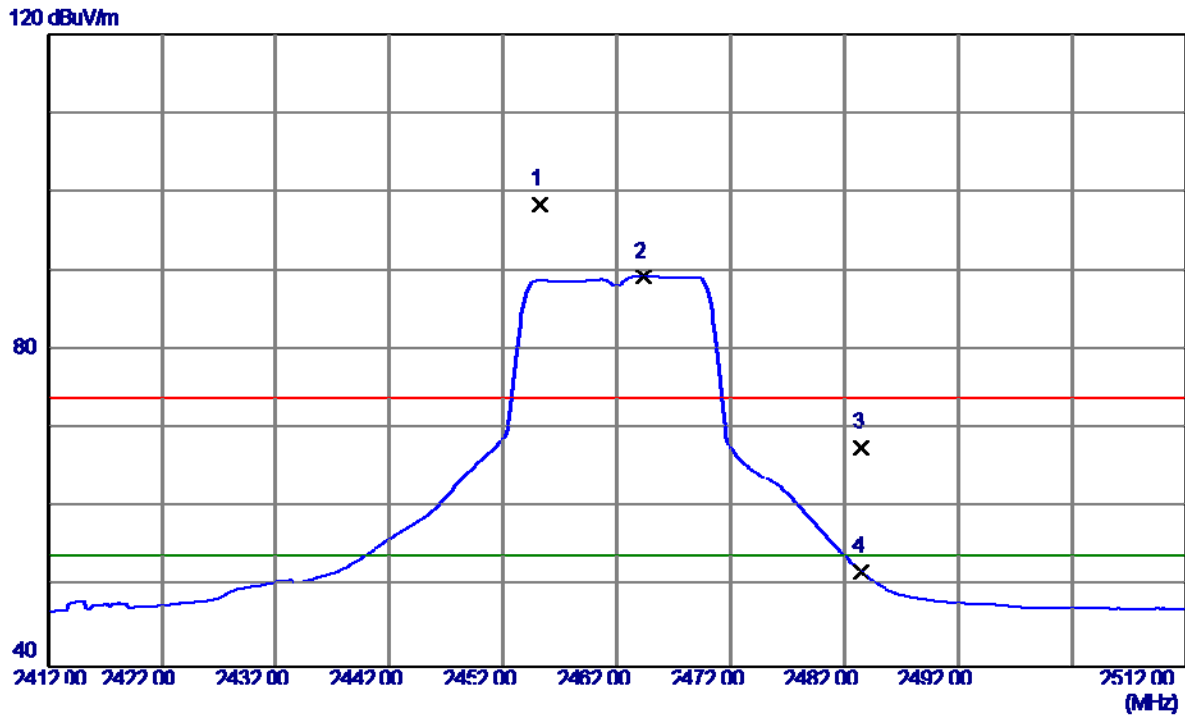
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4869.4000	57.42	5.05	62.47	74.00	-11.53	Peak	
2 *	4872.9000	45.60	5.06	50.66	54.00	-3.34	AVG	

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

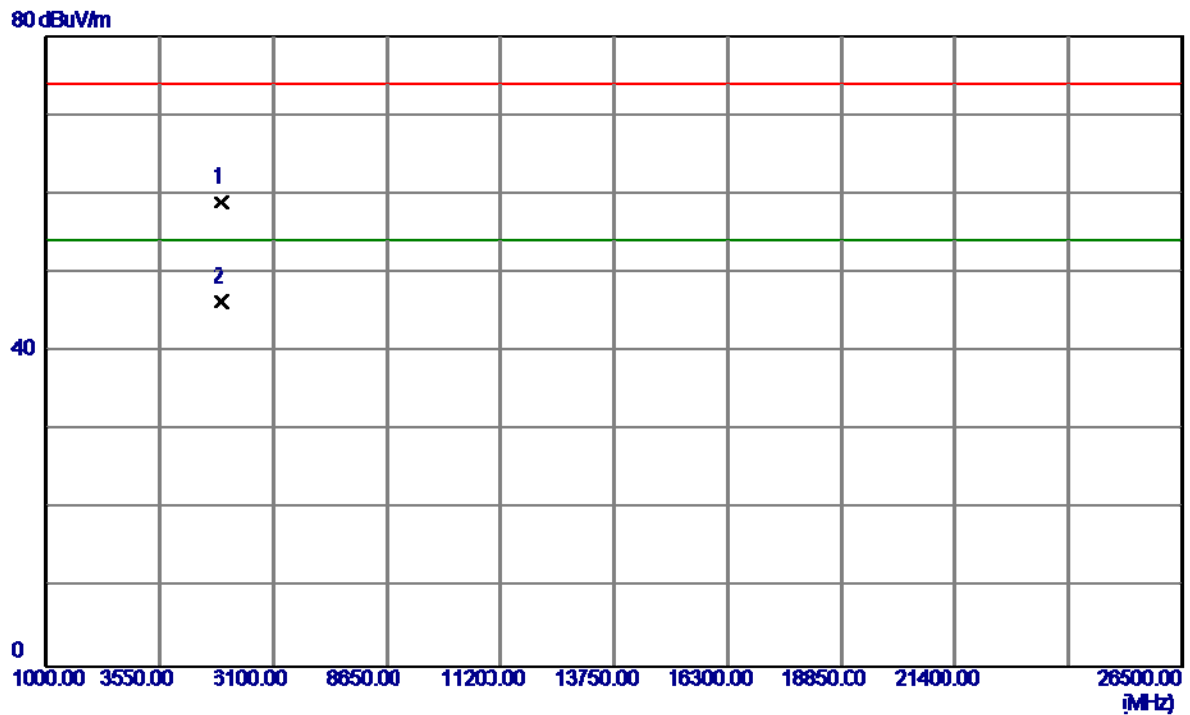
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2455.2000	65.13	33.28	98.41	74.00	24.41	Peak	No Limit
2 *	2464.3000	55.93	33.32	89.25	54.00	35.25	AVG	No Limit
3	2483.5000	34.29	33.40	67.69	74.00	-6.31	Peak	
4	2483.5000	18.56	33.40	51.96	54.00	-2.04	AVG	

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

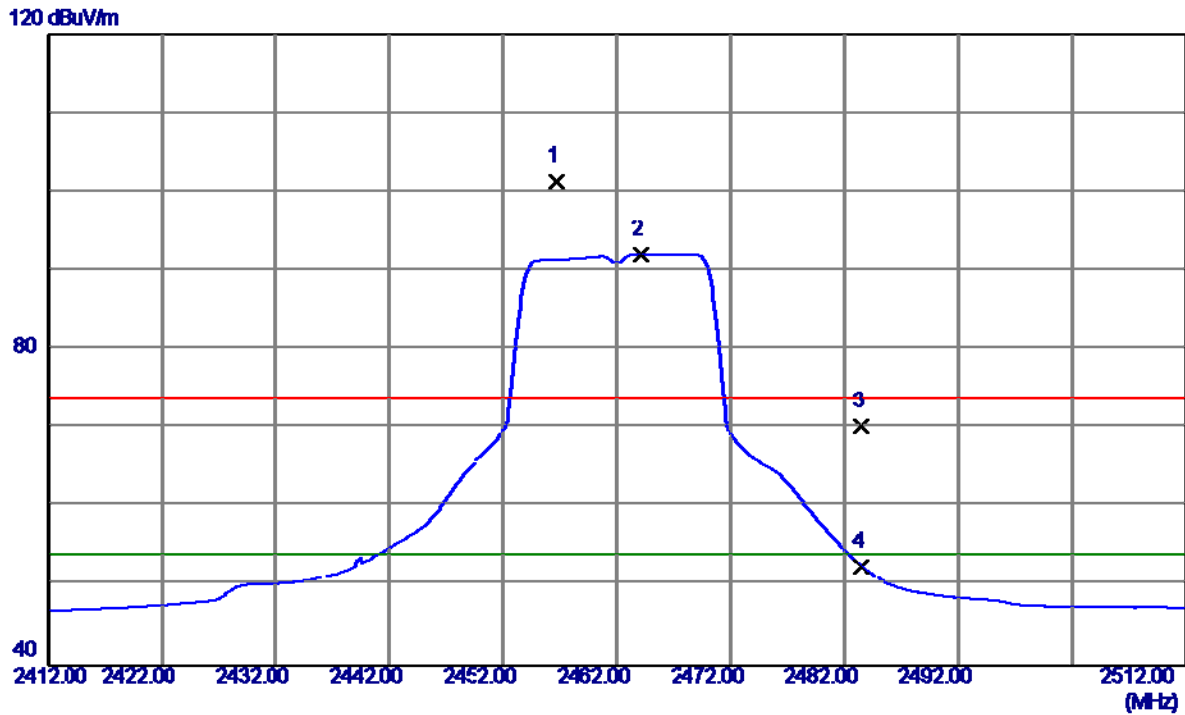
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.9000	53.57	5.28	58.85	74.00	-15.15	Peak	
2 *	4925.3000	40.98	5.28	46.26	54.00	-7.74	AVG	

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

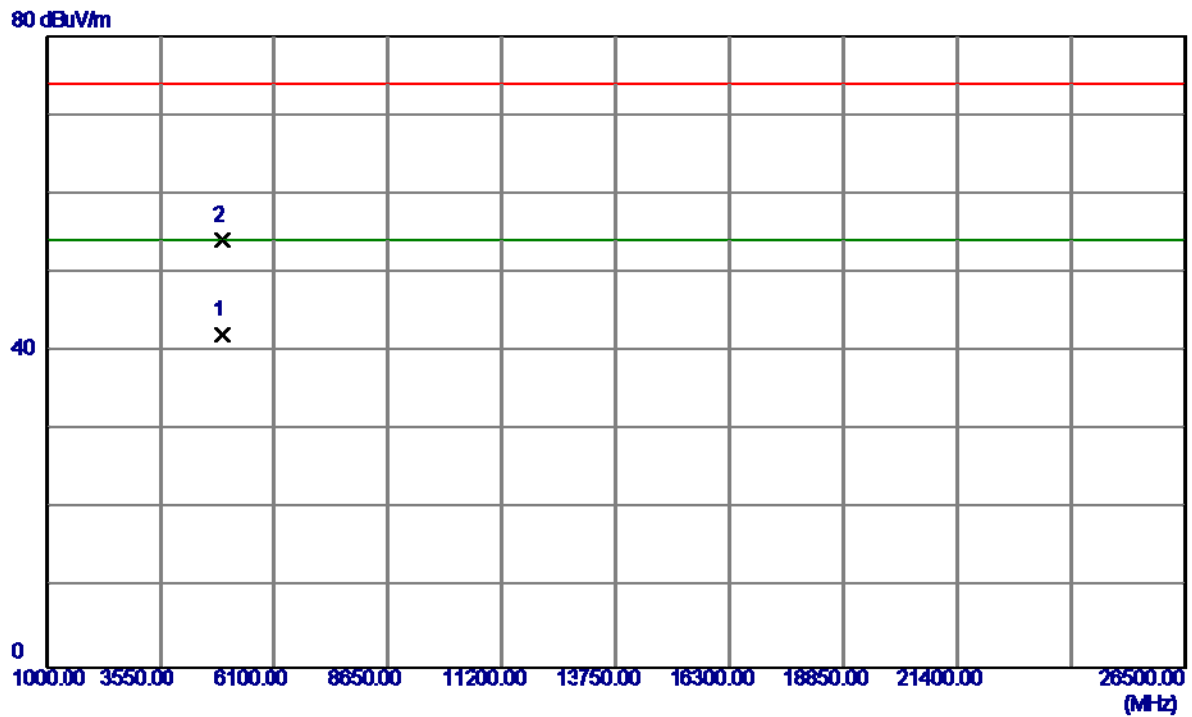
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2456.7000	68.01	33.29	101.30	74.00	27.30	Peak	No Limit
2 *	2464.1000	58.71	33.32	92.03	54.00	38.03	AVG	No Limit
3	2483.5000	36.88	33.40	70.28	74.00	-3.72	Peak	
4	2483.5000	19.12	33.40	52.52	54.00	-1.48	AVG	

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

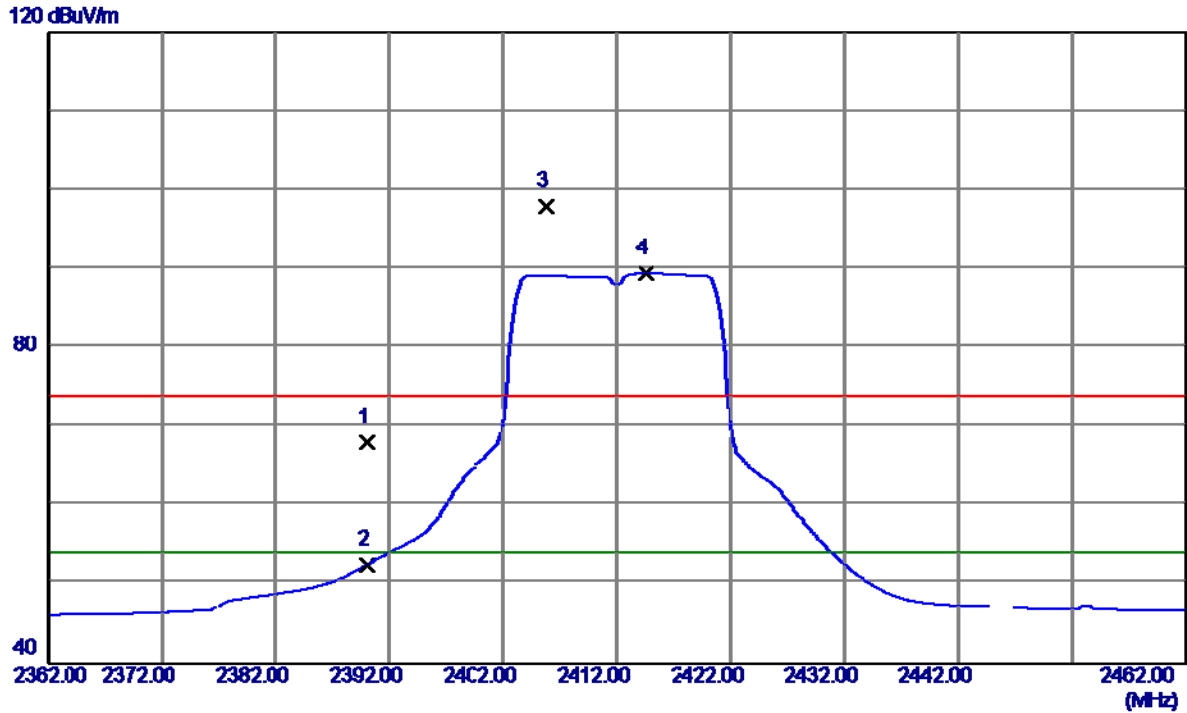
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4925.0000	36.77	5.28	42.05	54.00	-11.95	AVG	
2	4925.6000	48.79	5.28	54.07	74.00	-19.93	Peak	

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

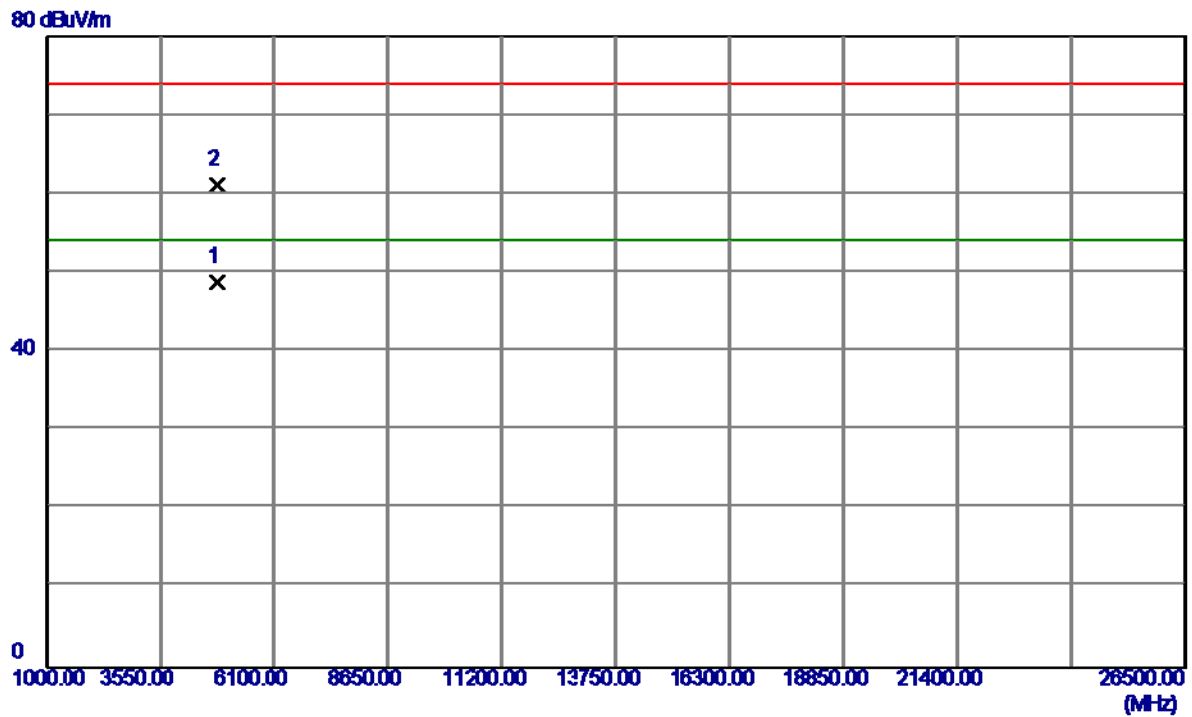
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	35.05	33.01	68.06	74.00	-5.94	Peak	
2	2390.0000	19.54	33.01	52.55	54.00	-1.45	AVG	
3	2405.8000	64.83	33.08	97.91	74.00	23.91	Peak	No Limit
4 *	2414.6000	56.29	33.11	89.40	54.00	35.40	AVG	No Limit

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

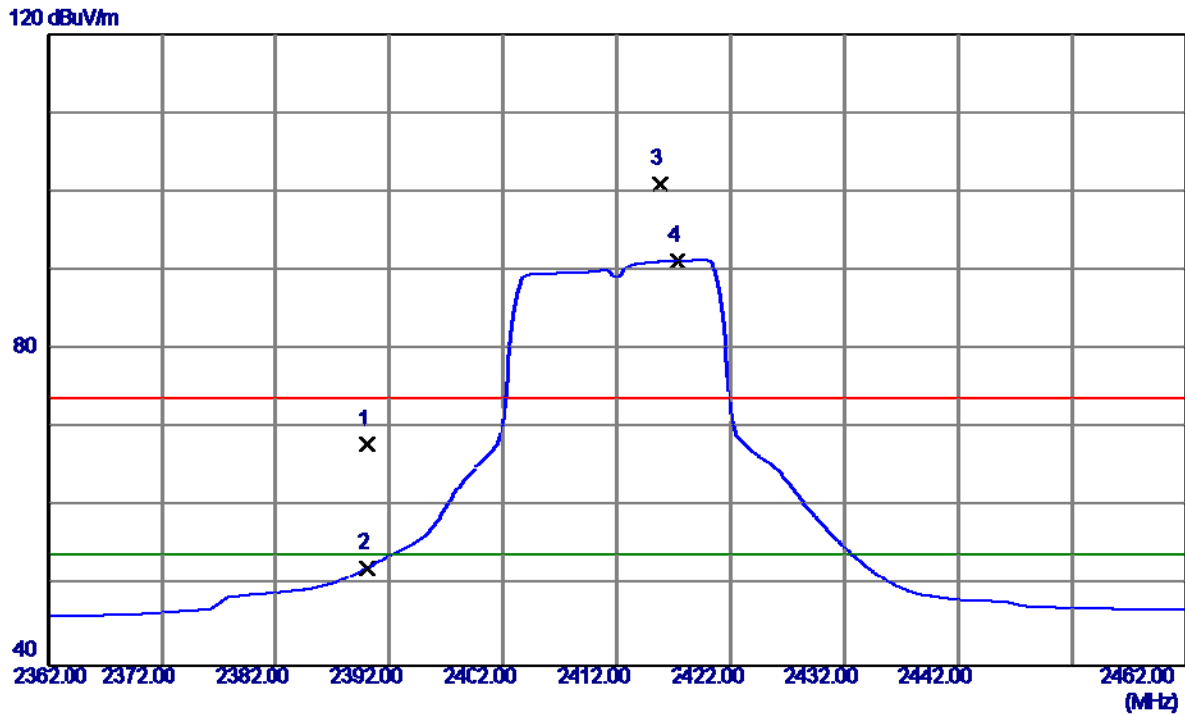
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4824.7000	43.99	4.86	48.85	54.00	-5.15	AVG	
2	4827.5000	56.23	4.87	61.10	74.00	-12.90	Peak	

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

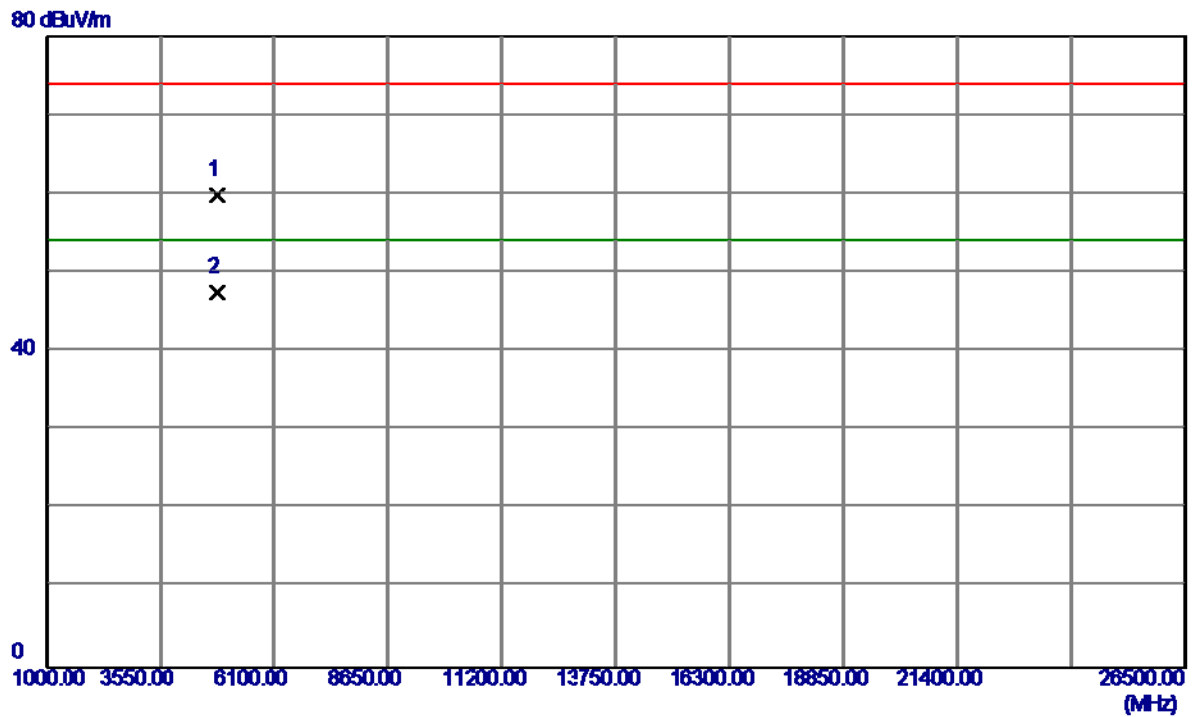
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	34.91	33.01	67.92	74.00	-6.08	Peak	
2	2390.0000	19.37	33.01	52.38	54.00	-1.62	AVG	
3	2415.8000	67.83	33.12	100.95	74.00	26.95	Peak	No Limit
4 *	2417.3000	58.11	33.12	91.23	54.00	37.23	AVG	No Limit

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

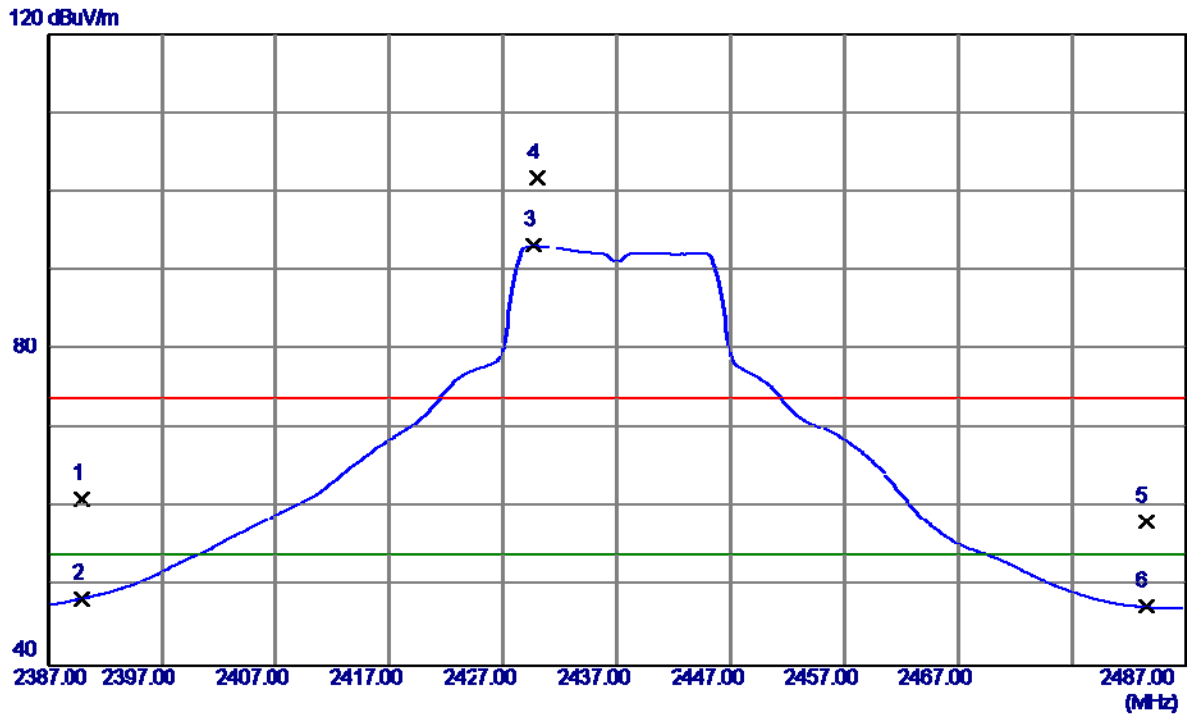
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4822.1000	54.92	4.85	59.77	74.00	-14.23	Peak	
2 *	4823.8000	42.72	4.85	47.57	54.00	-6.43	AVG	

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

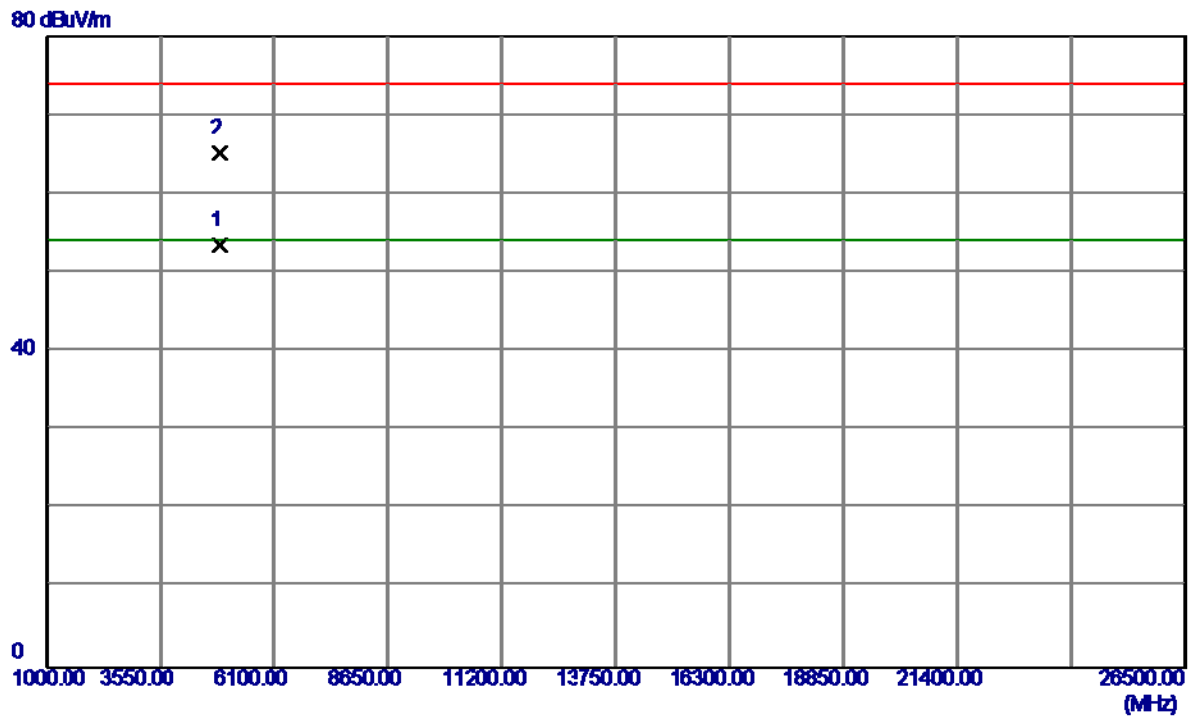
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	28.05	33.01	61.06	74.00	-12.94	Peak	
2	2390.0000	15.54	33.01	48.55	54.00	-5.45	AVG	
3 *	2429.7000	60.04	33.18	93.22	54.00	39.22	AVG	No Limit
4	2430.0000	68.65	33.18	101.83	74.00	27.83	Peak	No Limit
5	2483.5000	24.85	33.40	58.25	74.00	-15.75	Peak	
6	2483.5000	14.08	33.40	47.48	54.00	-6.52	AVG	

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

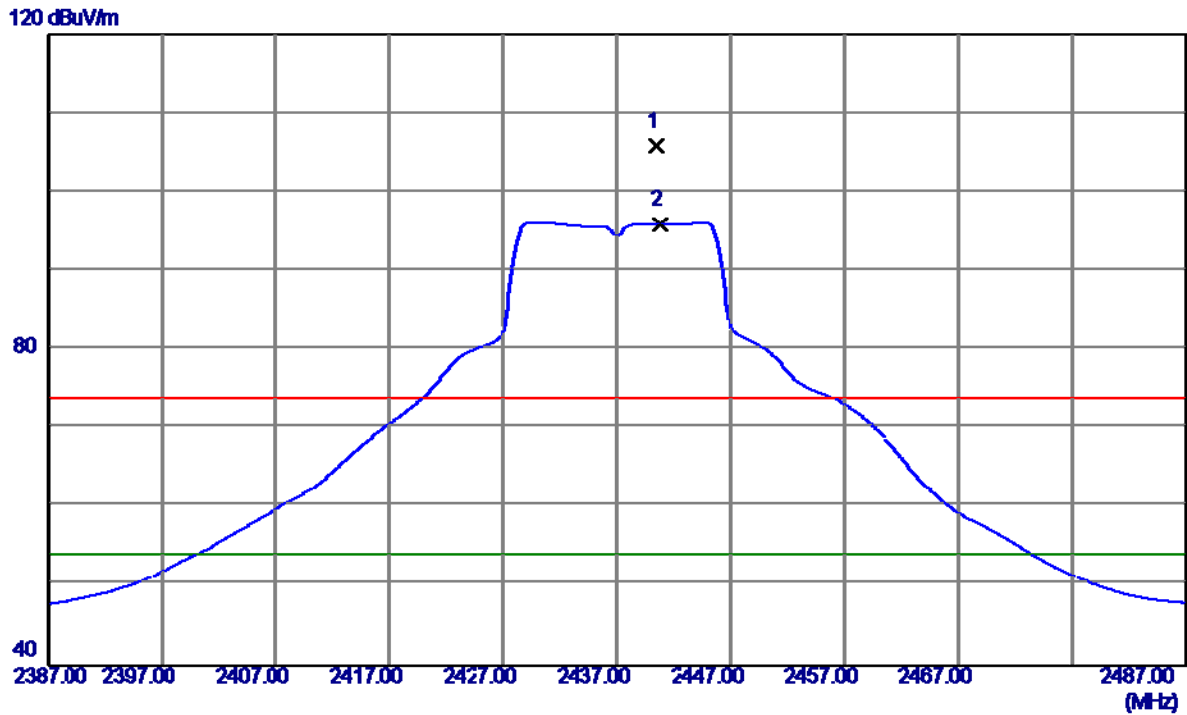
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4872.9000	48.41	5.06	53.47	54.00	-0.53	AVG	
2	4874.5000	60.02	5.07	65.09	74.00	-8.91	Peak	

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

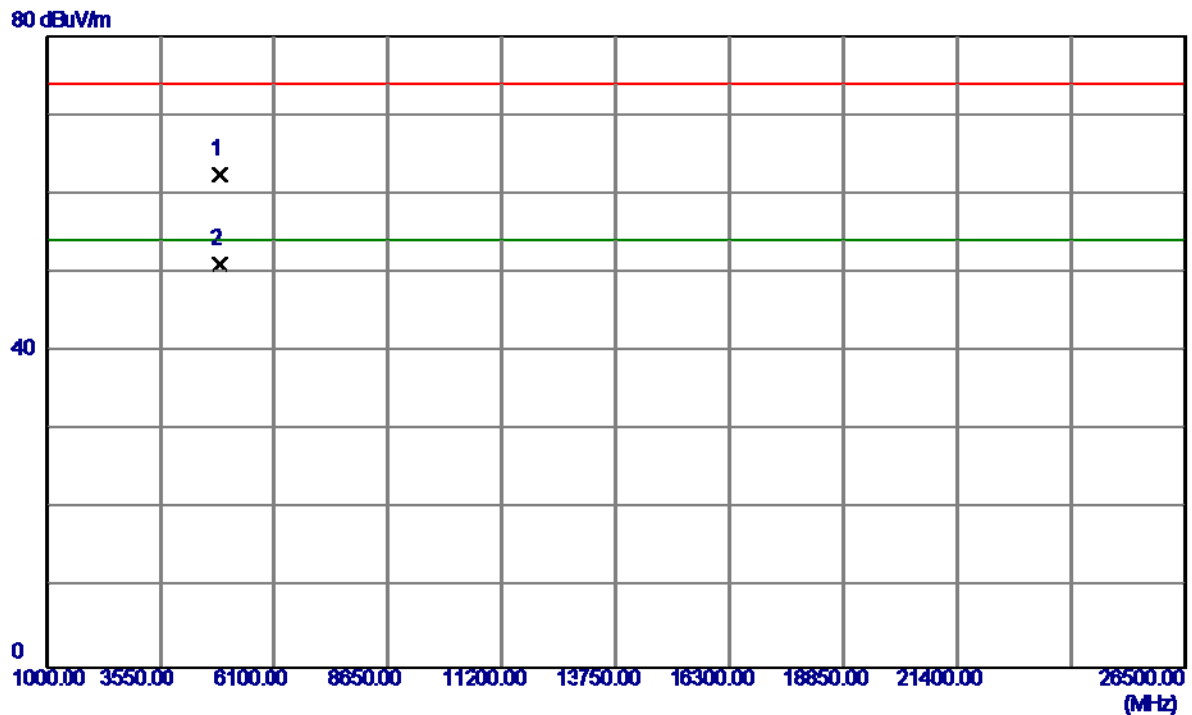
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2440.4000	72.52	33.22	105.74	74.00	31.74	Peak	No Limit
2 *	2440.8000	62.62	33.22	95.84	54.00	41.84	AVG	No Limit

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

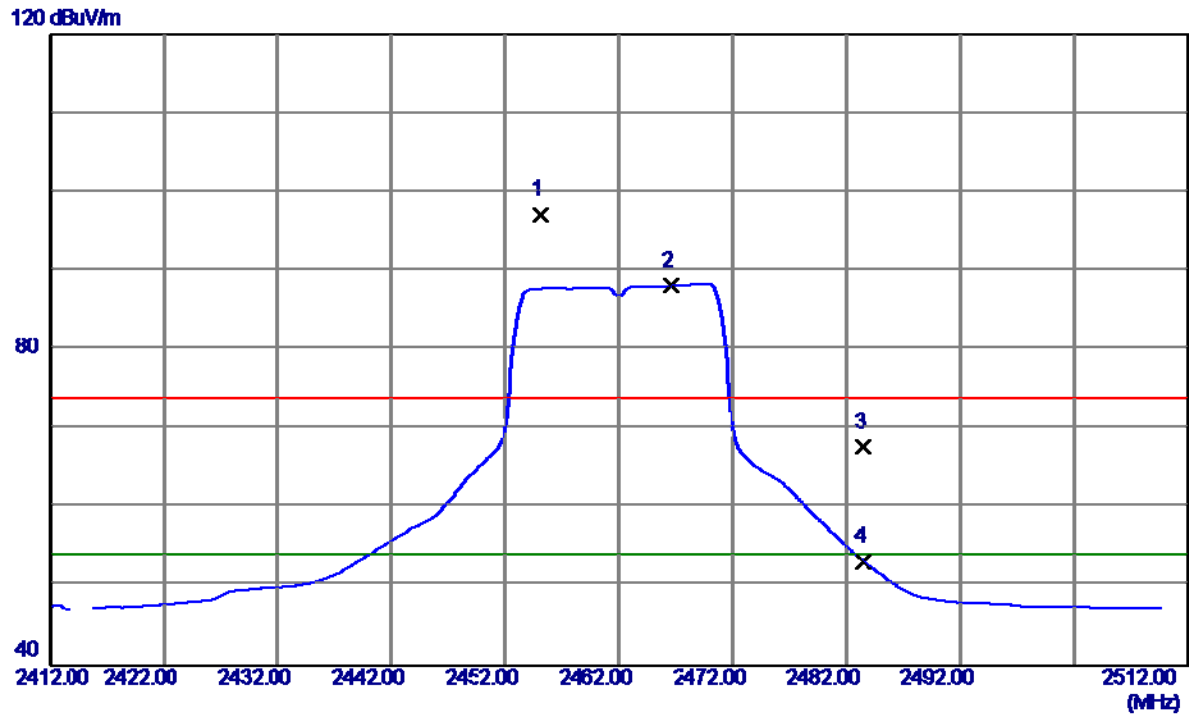
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4870.7000	57.41	5.05	62.46	74.00	-11.54	Peak	
2 *	4872.8000	45.97	5.06	51.03	54.00	-2.97	AVG	

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

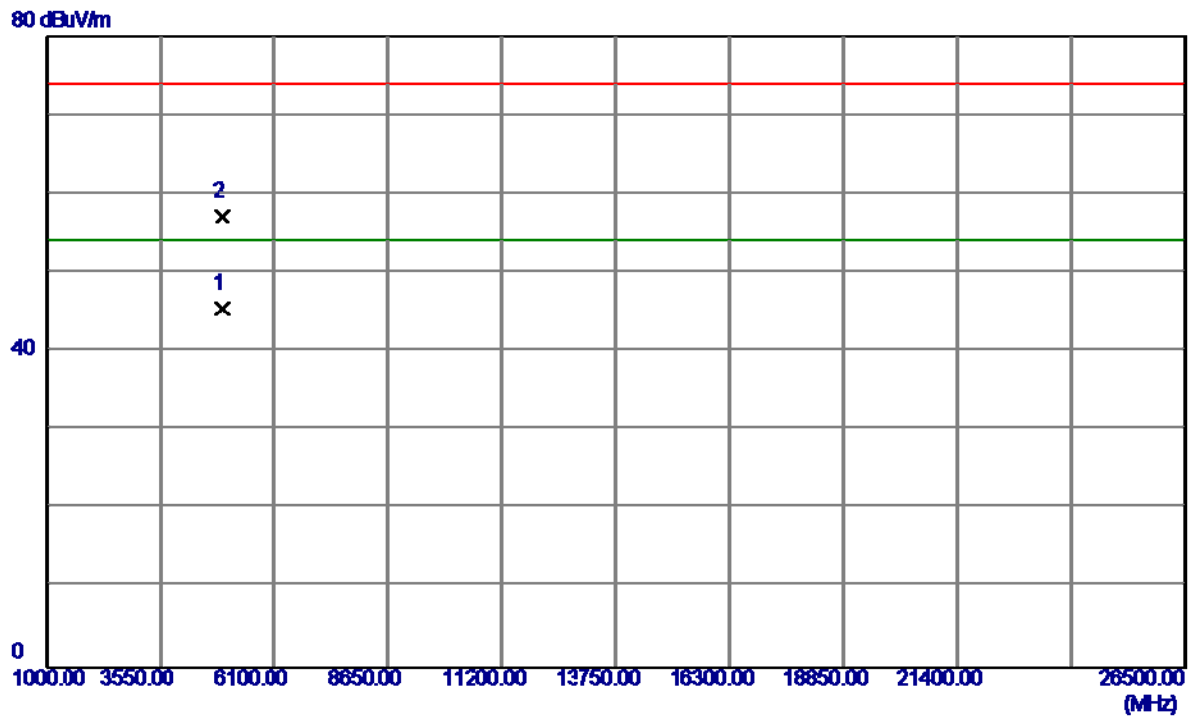
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2455.1000	63.79	33.28	97.07	74.00	23.07	Peak	No Limit
2 *	2466.6000	54.75	33.33	88.08	54.00	34.08	AVG	No Limit
3	2483.5000	34.30	33.40	67.70	74.00	-6.30	Peak	
4	2483.5000	19.75	33.40	53.15	54.00	-0.85	AVG	

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

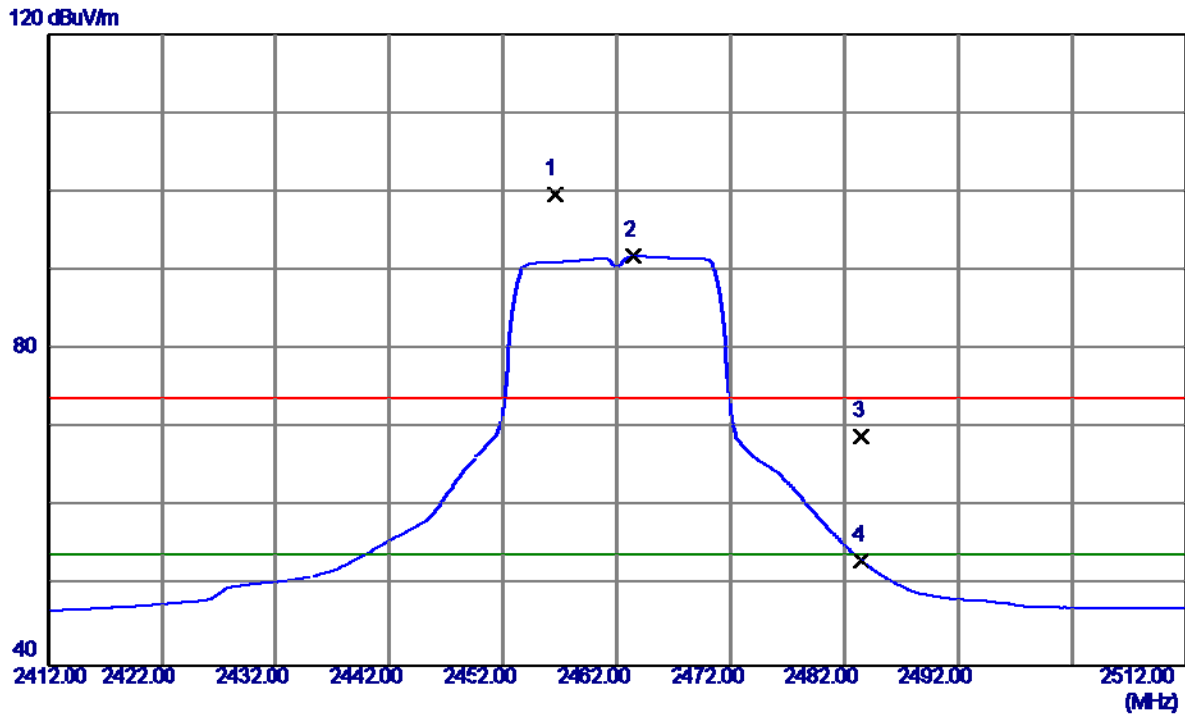
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4925.3000	40.18	5.28	45.46	54.00	-8.54	AVG	
2	4930.1000	51.85	5.30	57.15	74.00	-16.85	Peak	

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

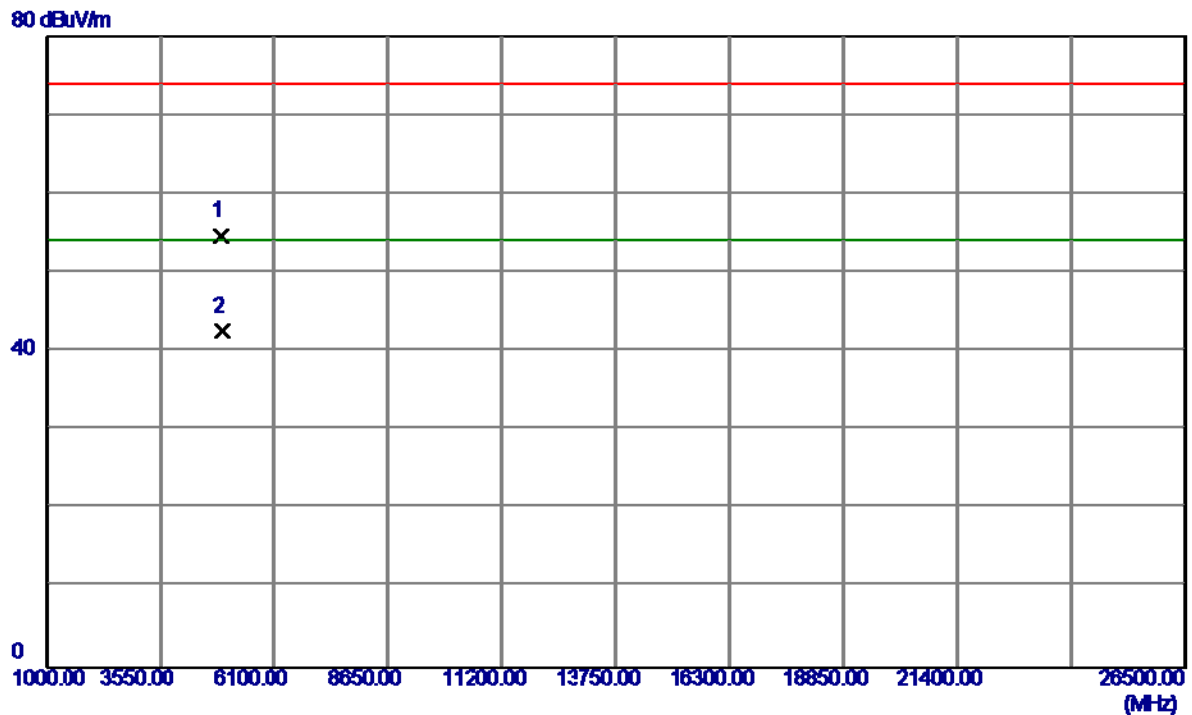
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2456.5000	66.34	33.29	99.63	74.00	25.63	Peak	No Limit
2 *	2463.4000	58.49	33.32	91.81	54.00	37.81	AVG	No Limit
3	2483.5000	35.62	33.40	69.02	74.00	-4.98	Peak	
4	2483.5000	19.87	33.40	53.27	54.00	-0.73	AVG	

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

Horizontal



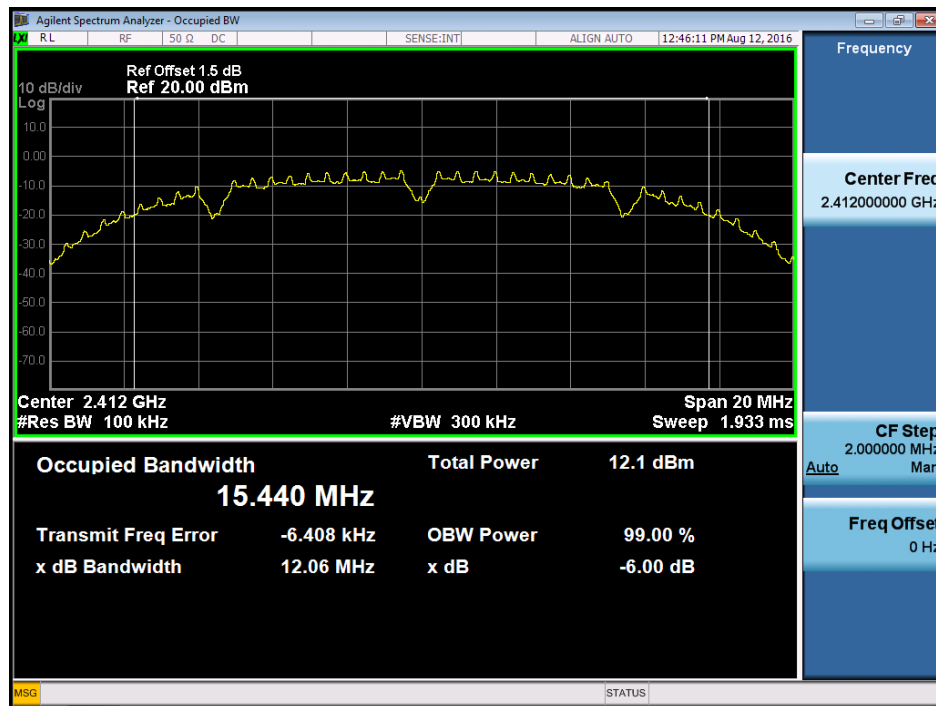
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.0000	49.36	5.28	54.64	74.00	-19.36	Peak	
2 *	4925.1000	37.23	5.28	42.51	54.00	-11.49	AVG	

ATTACHMENT E - BANDWIDTH

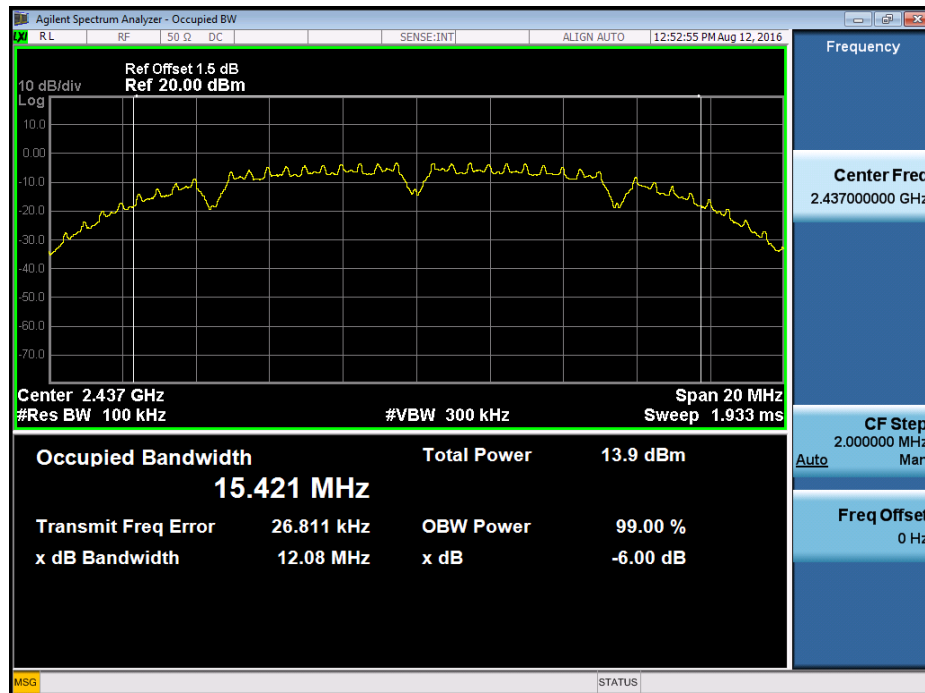
Test Mode : TX B Mode_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	12.06	15.44	500	Complies
2437	12.08	15.42	500	Complies
2462	12.06	15.44	500	Complies

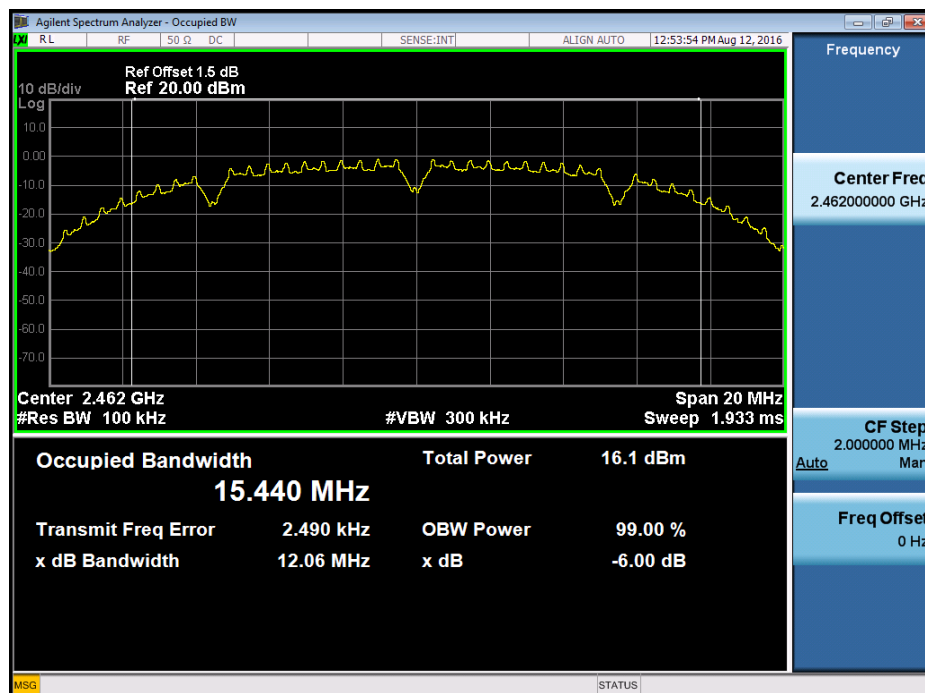
TX CH01



TX CH06



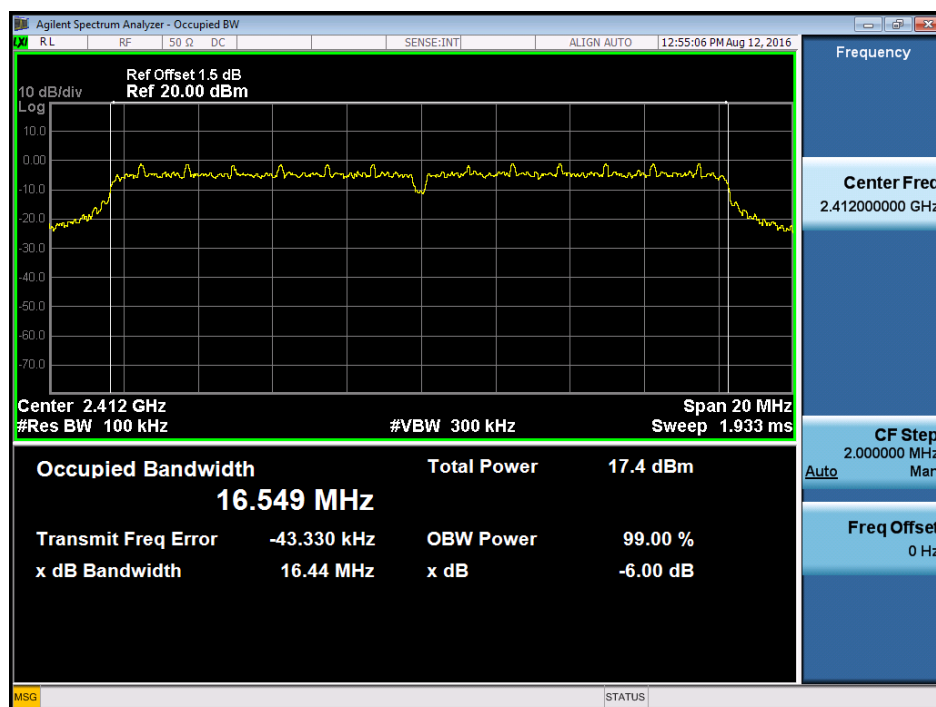
TX CH11



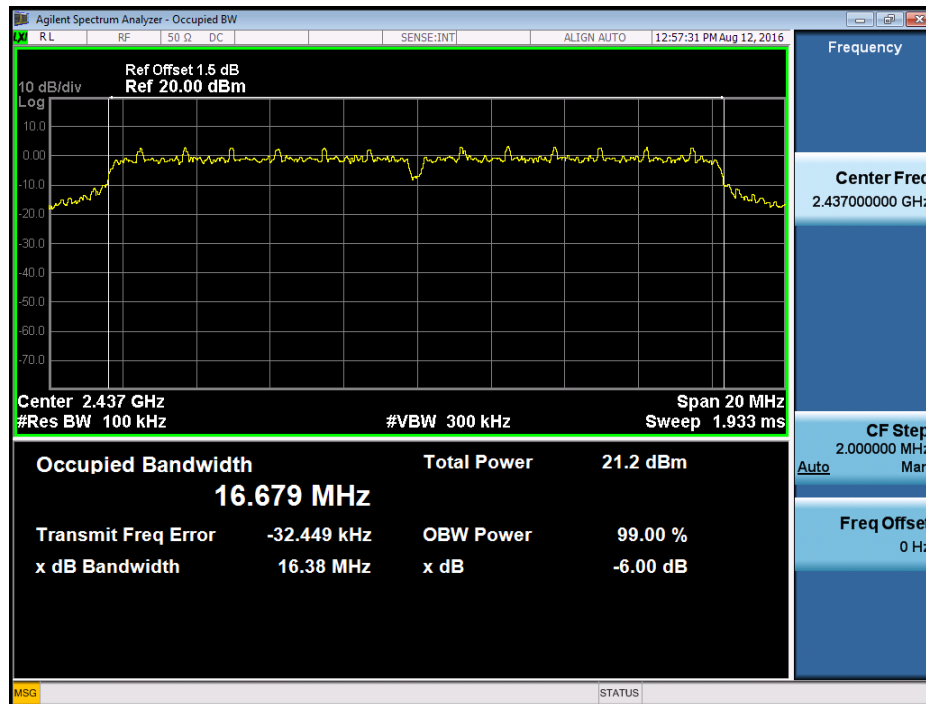
Test Mode: TX G Mode_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	16.44	16.55	500	Complies
2437	16.38	16.68	500	Complies
2462	16.38	16.54	500	Complies

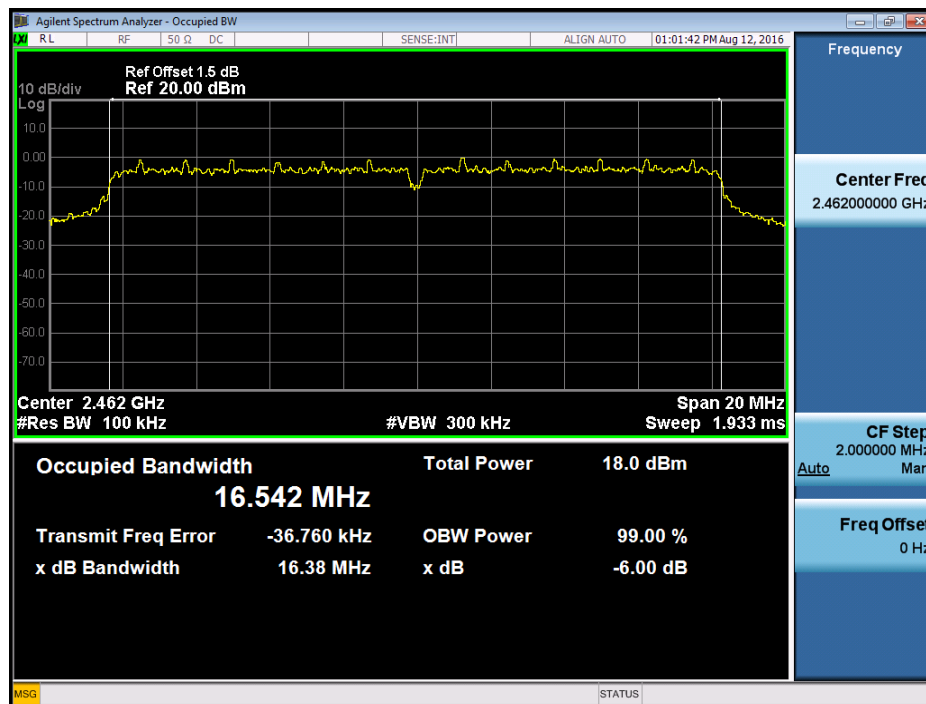
TX CH01



TX CH06



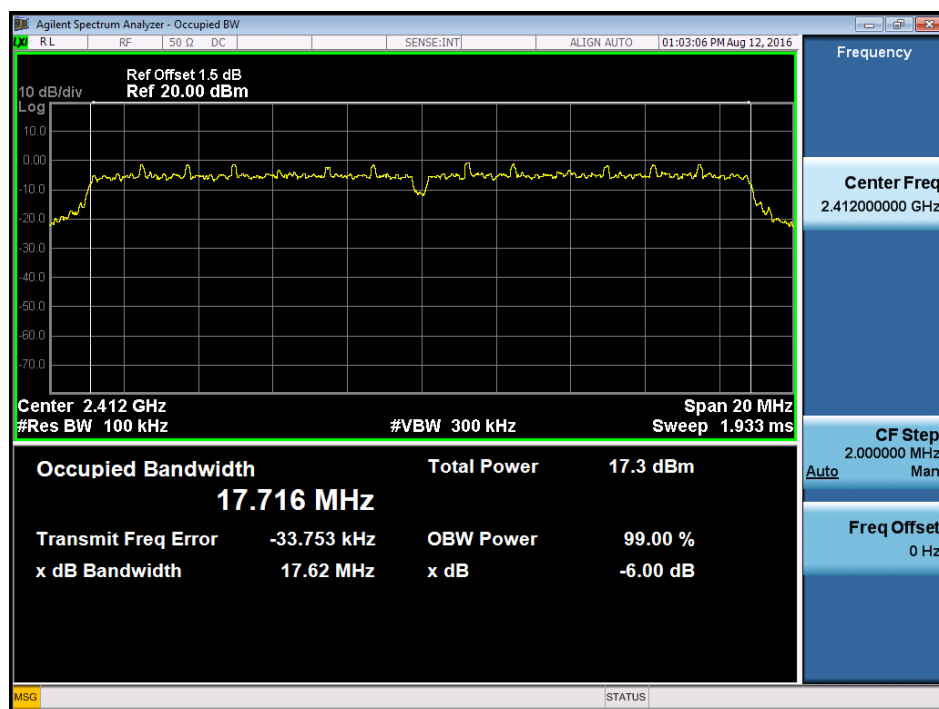
TX CH11



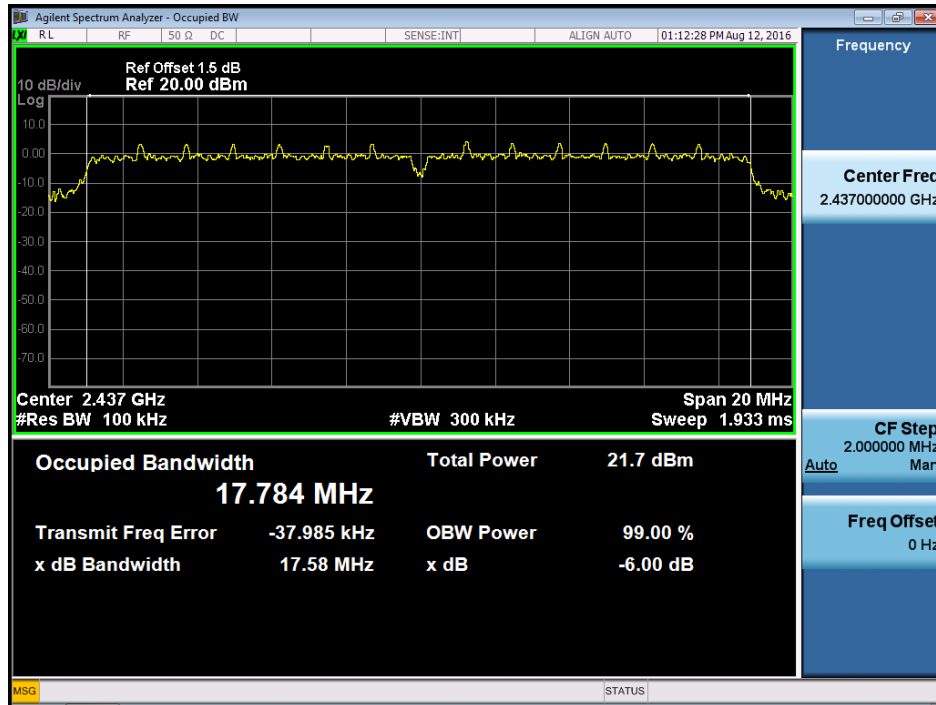
Test Mode : TX N-20MHz Mode_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	17.62	17.72	500	Complies
2437	17.58	17.78	500	Complies
2462	17.63	17.72	500	Complies

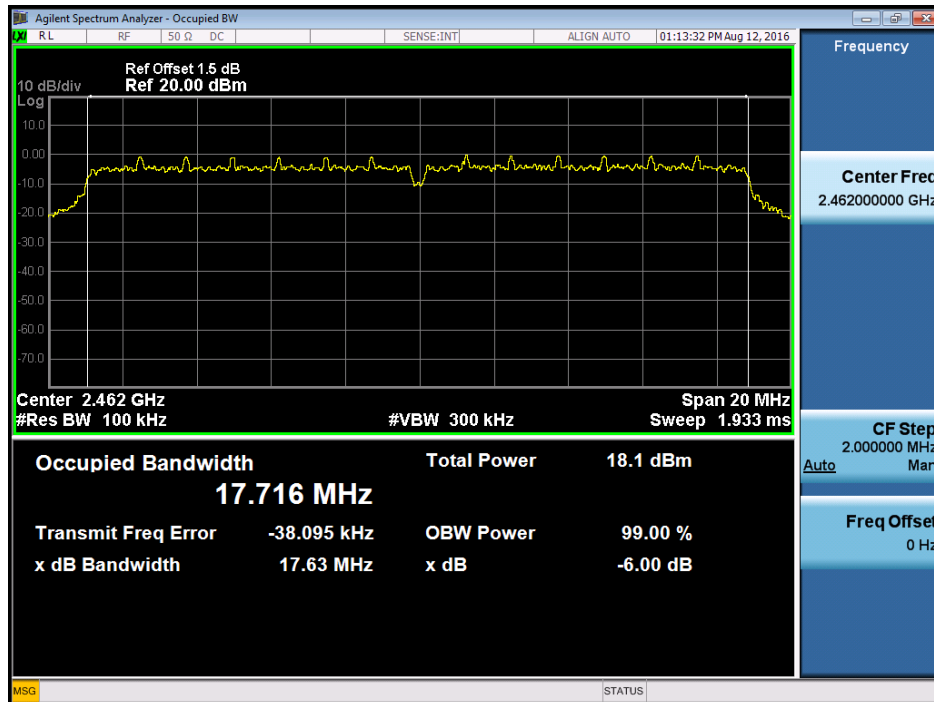
TX CH01



TX CH06



TX CH11



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	9.59	0.00910	30.00	1.00	Complies
2437	10.63	0.01156	30.00	1.00	Complies
2462	13.38	0.02178	30.00	1.00	Complies

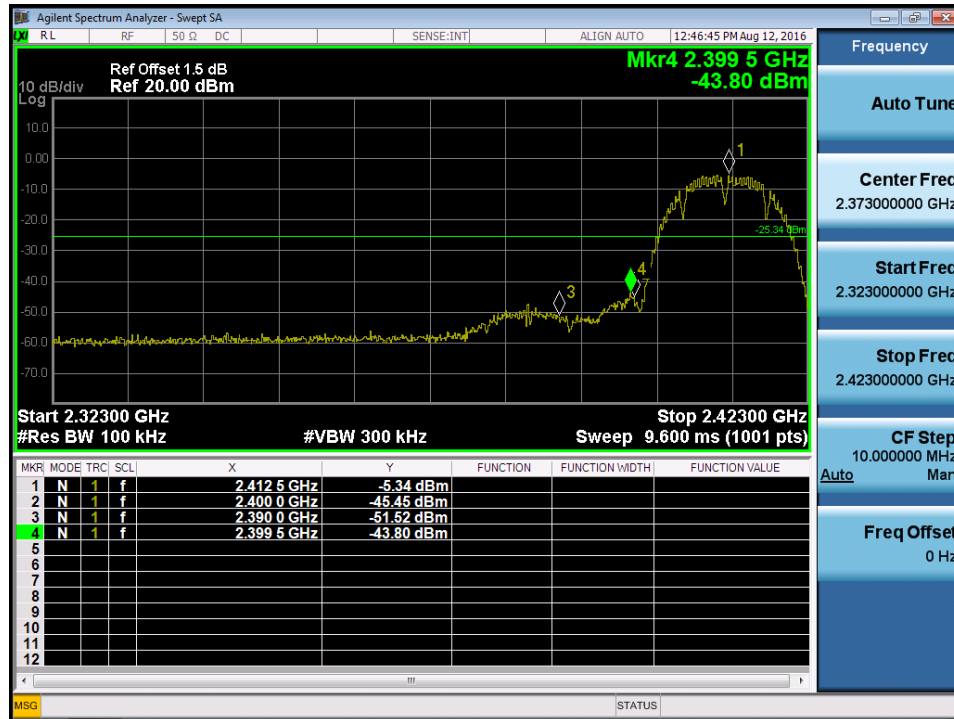
Test Mode :TX G Mode_CH01/06/11					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	19.29	0.08492	30.00	1.00	Complies
2437	19.18	0.08279	30.00	1.00	Complies
2462	19.25	0.08414	30.00	1.00	Complies

Test Mode :TX N20 Mode_CH01/06/11					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	19.57	0.09057	30.00	1.00	Complies
2437	19.39	0.08690	30.00	1.00	Complies
2462	19.86	0.09683	30.00	1.00	Complies

ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION

Test Mode : TX B Mode

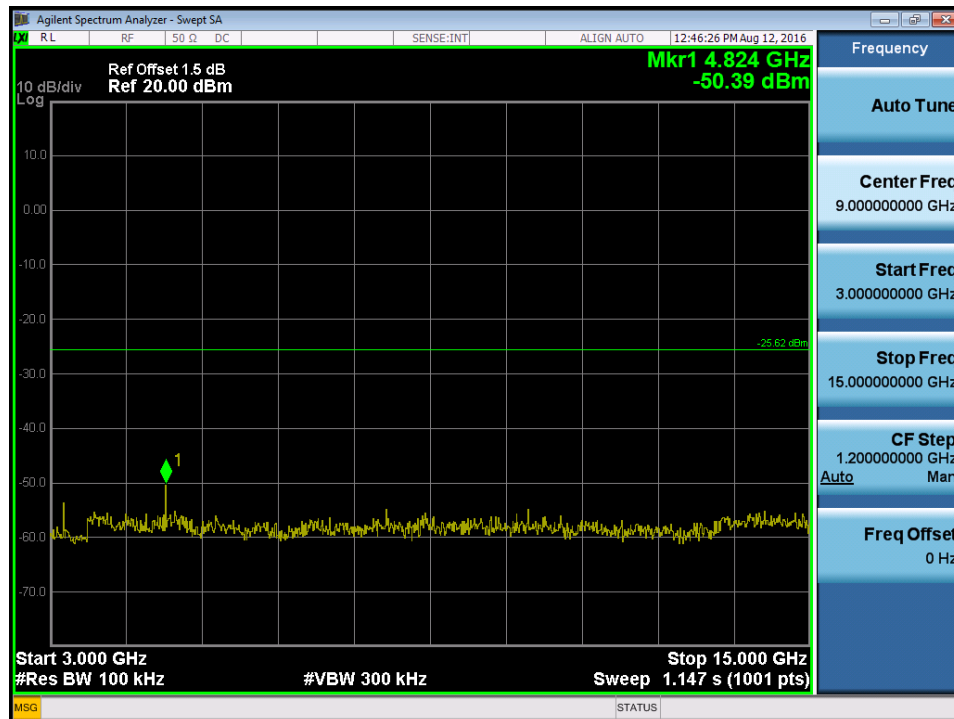
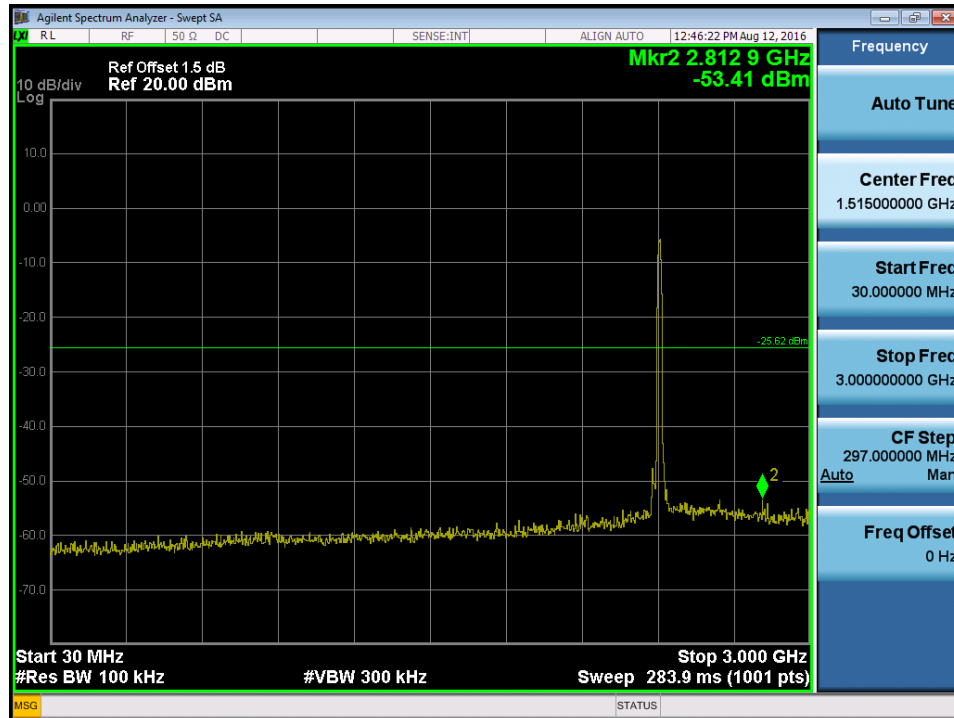
TX B mode CH01

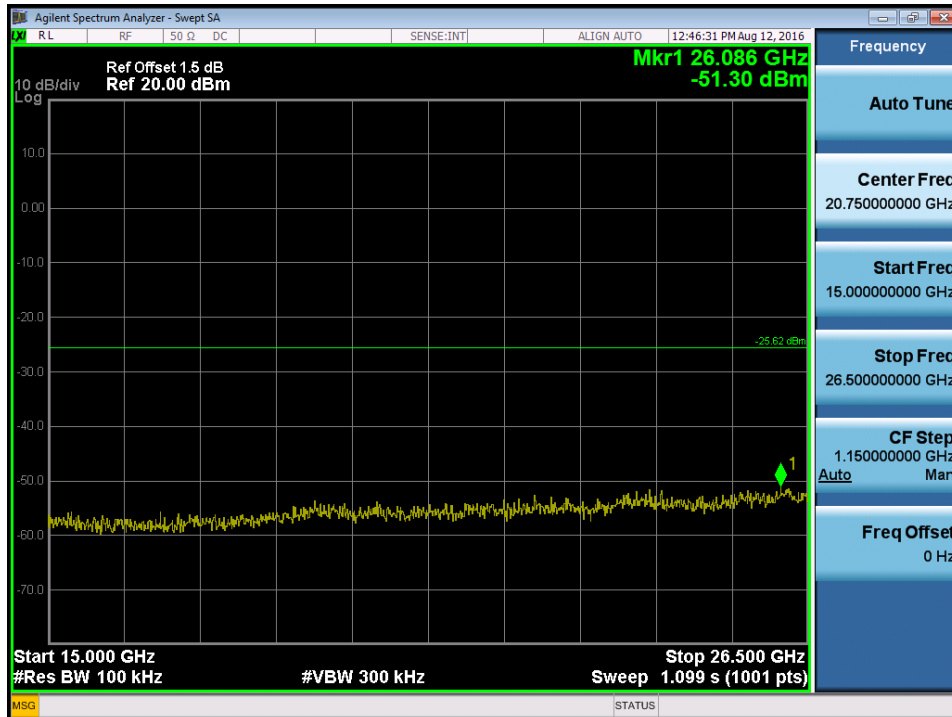


TX B mode CH11

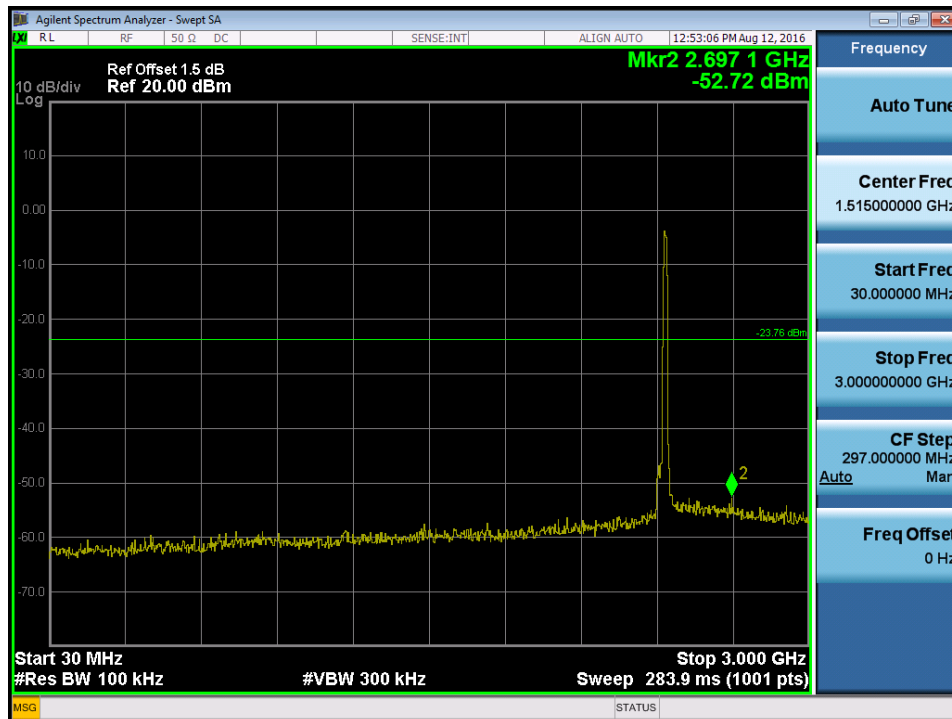


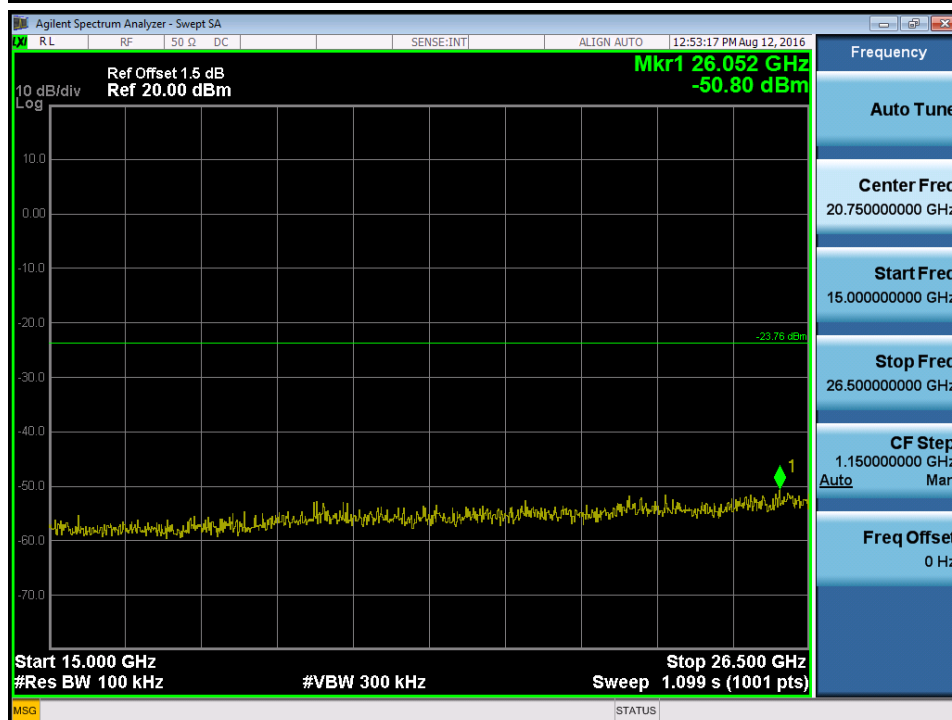
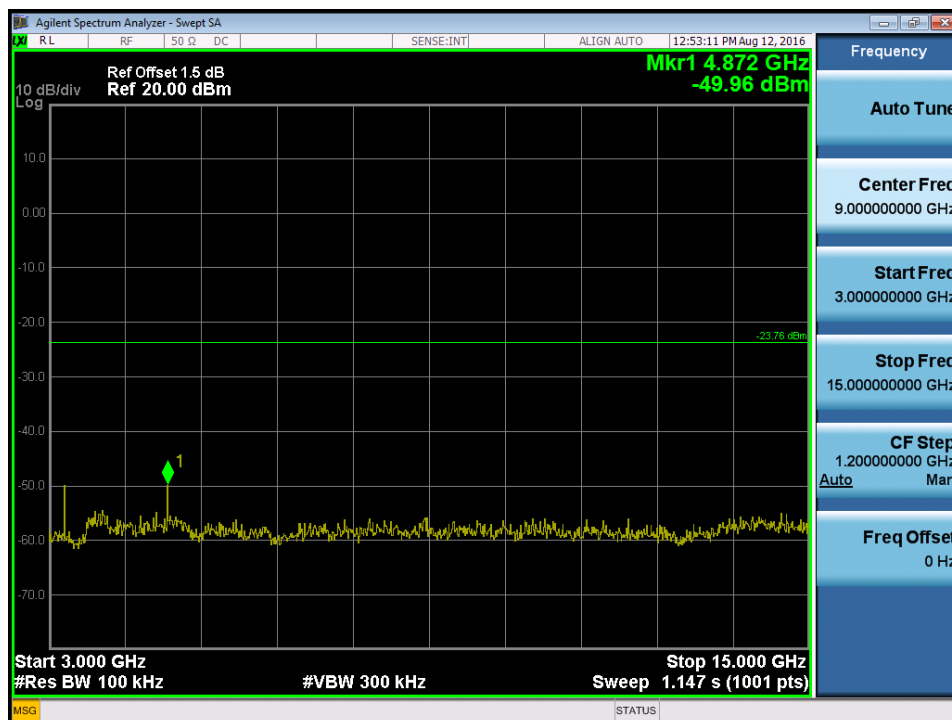
TX B mode CH01 (10 Harmonic of the frequency)



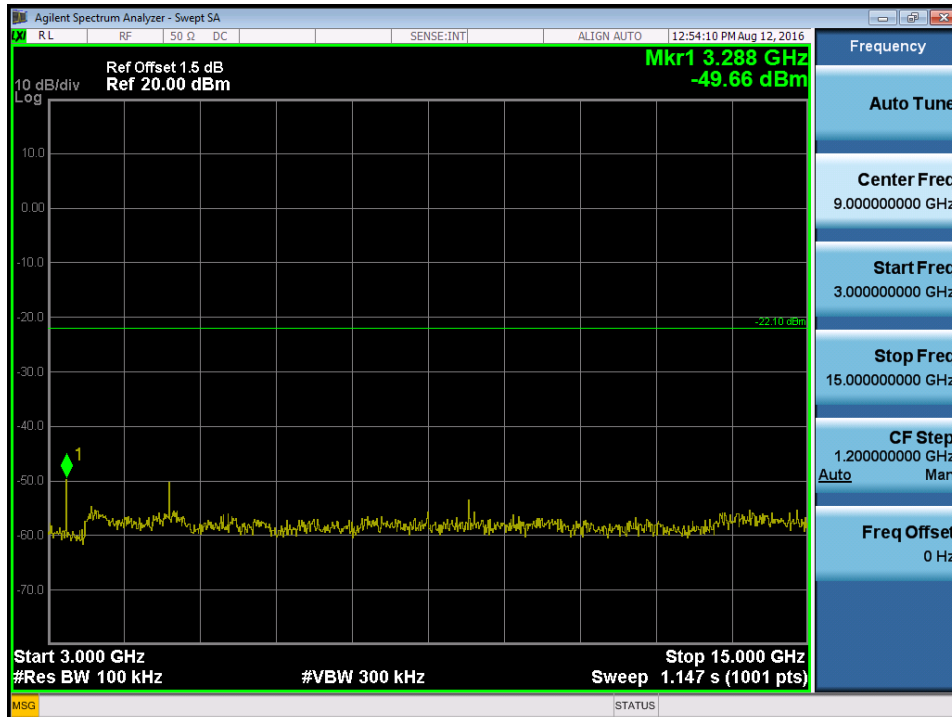
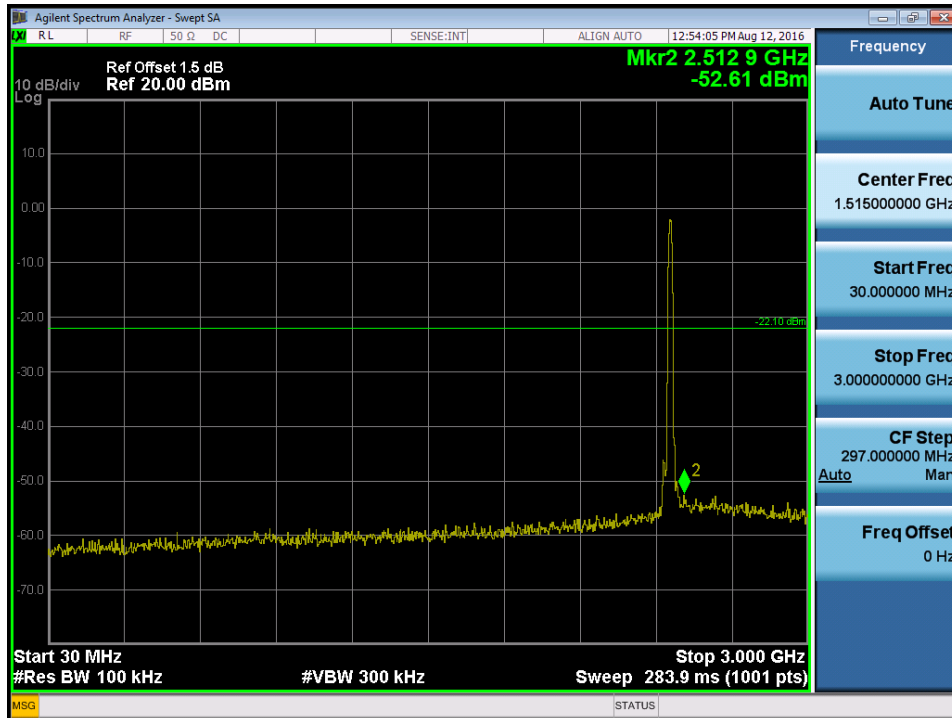


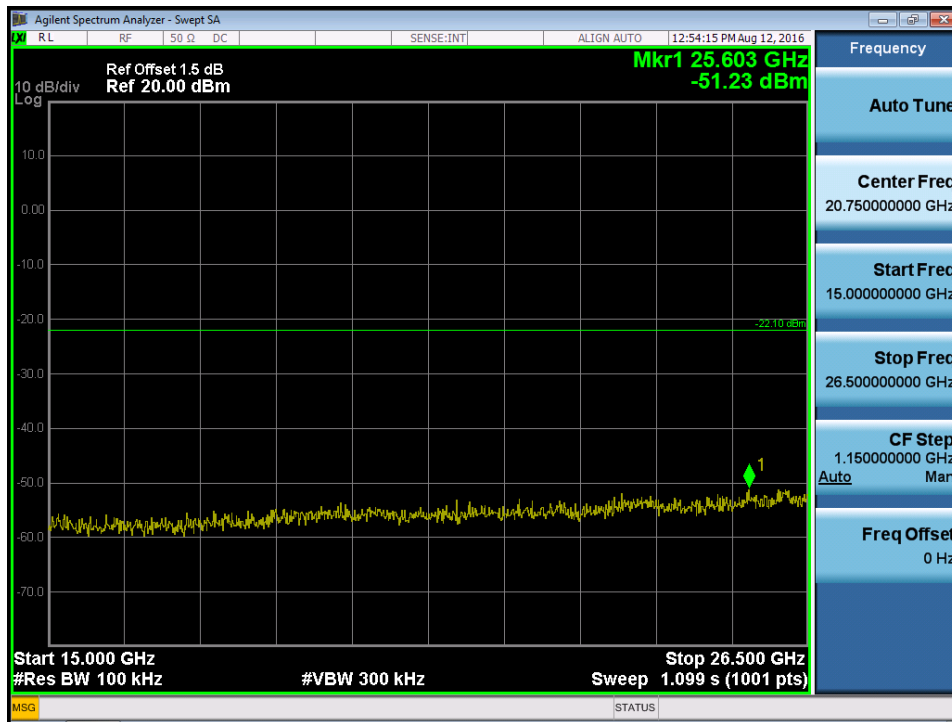
TX B mode CH06 (10 Harmonic of the frequency)





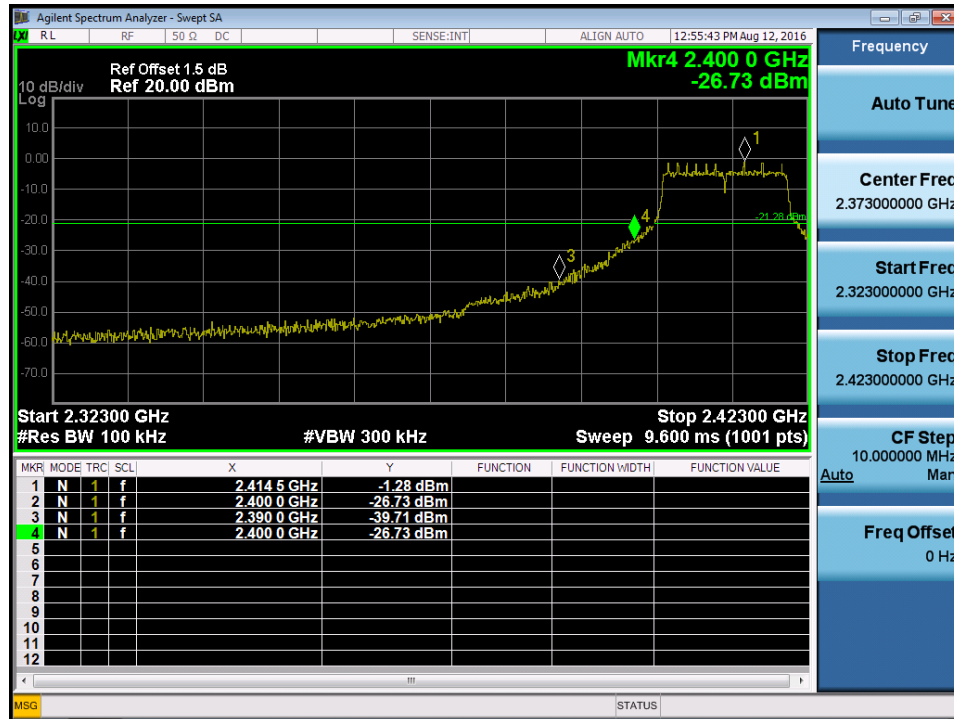
TX B mode CH11 (10 Harmonic of the frequency)



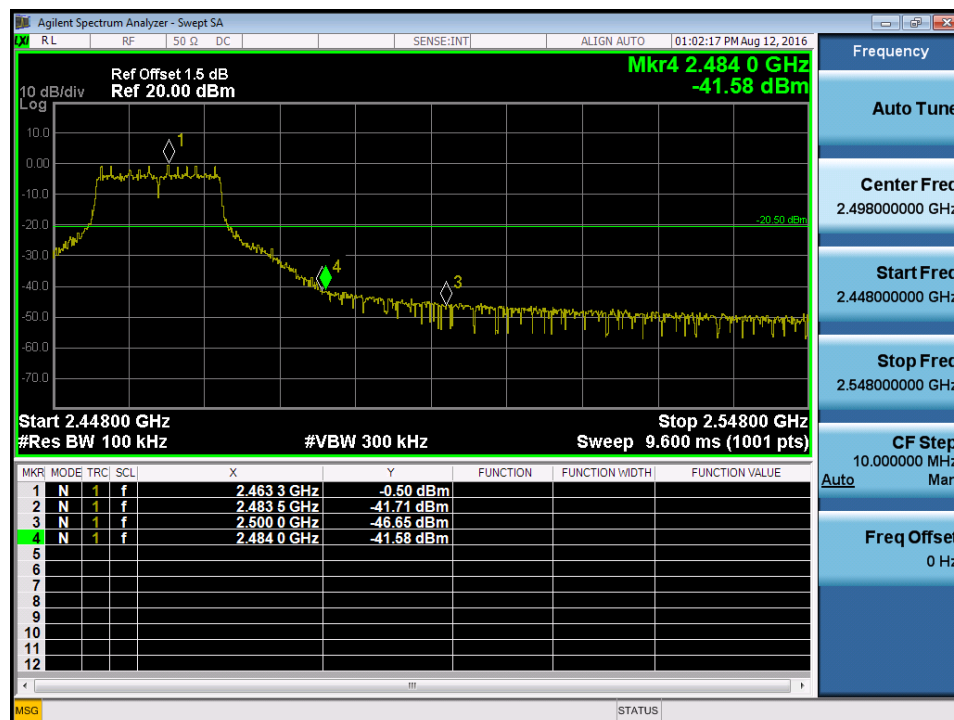


Test Mode : TX G Mode

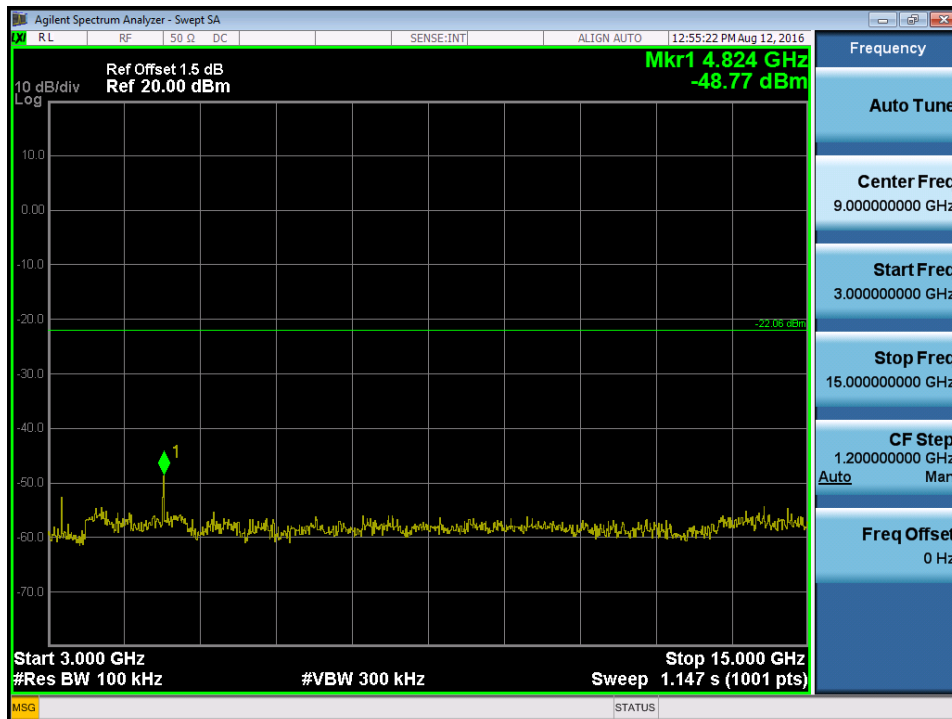
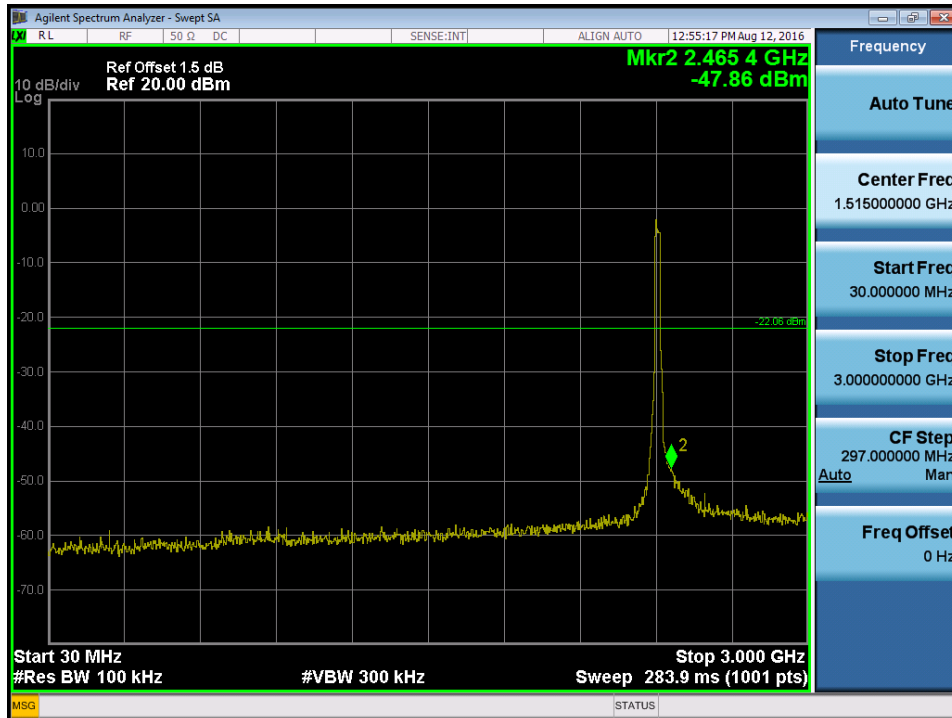
TX G mode CH01

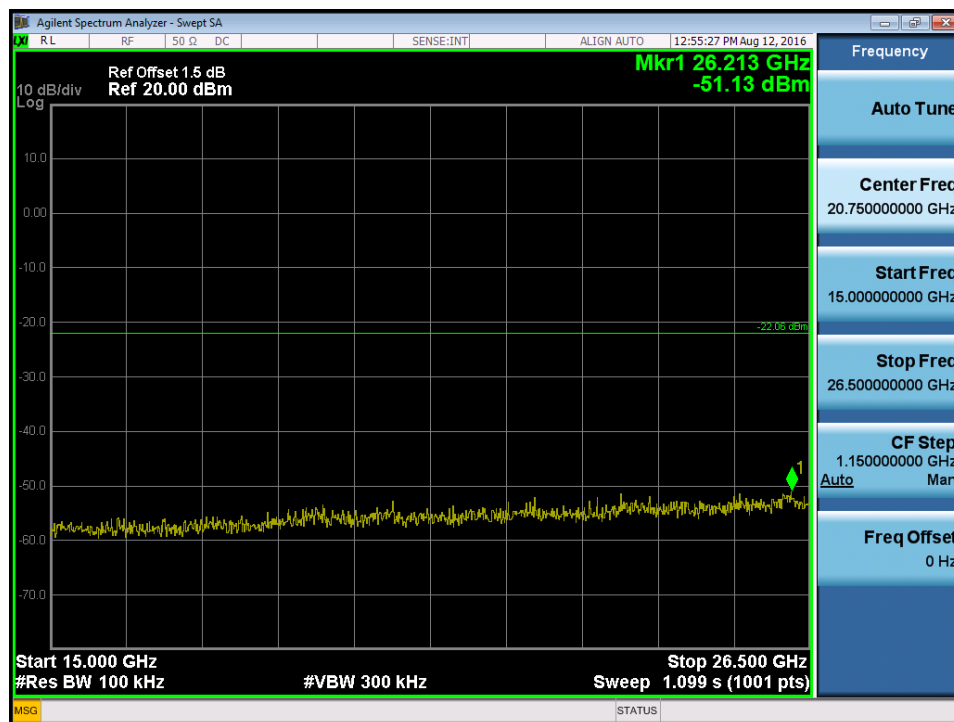


TX G mode CH11

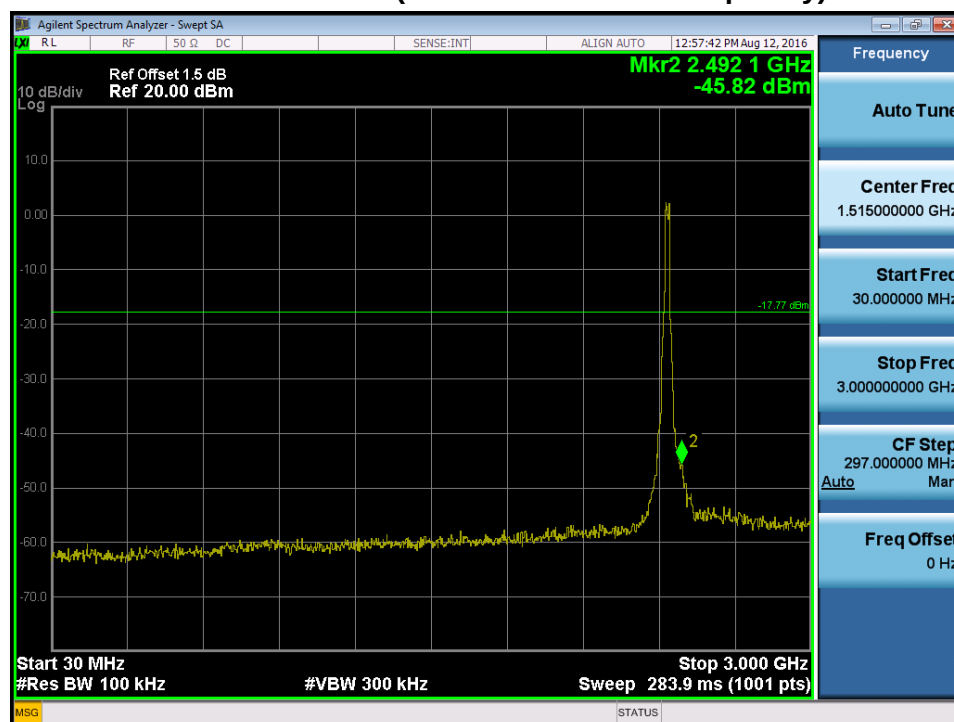


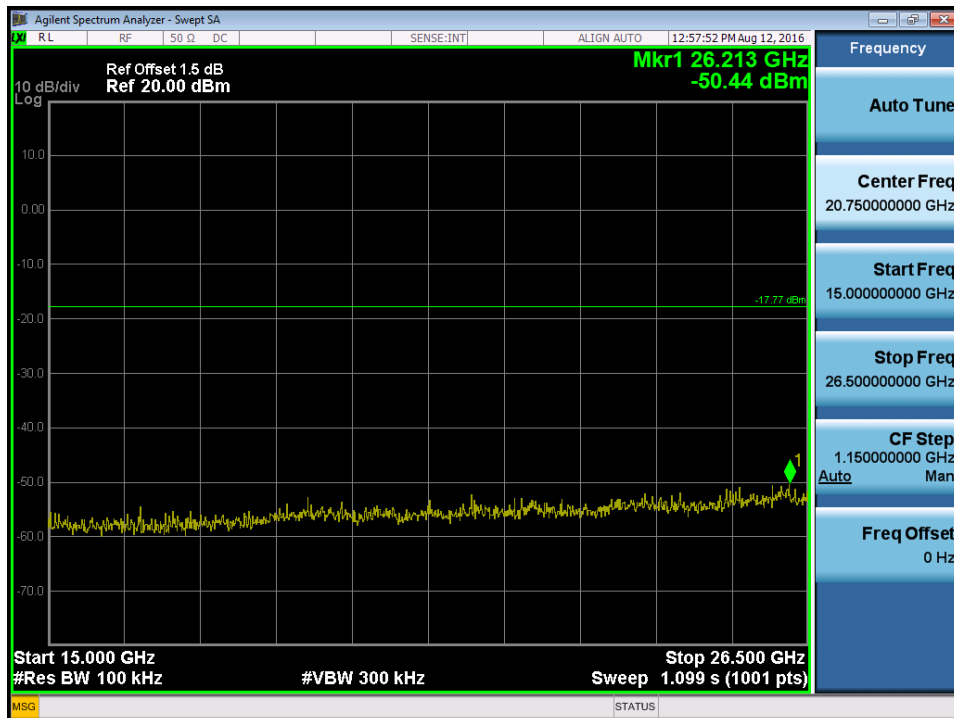
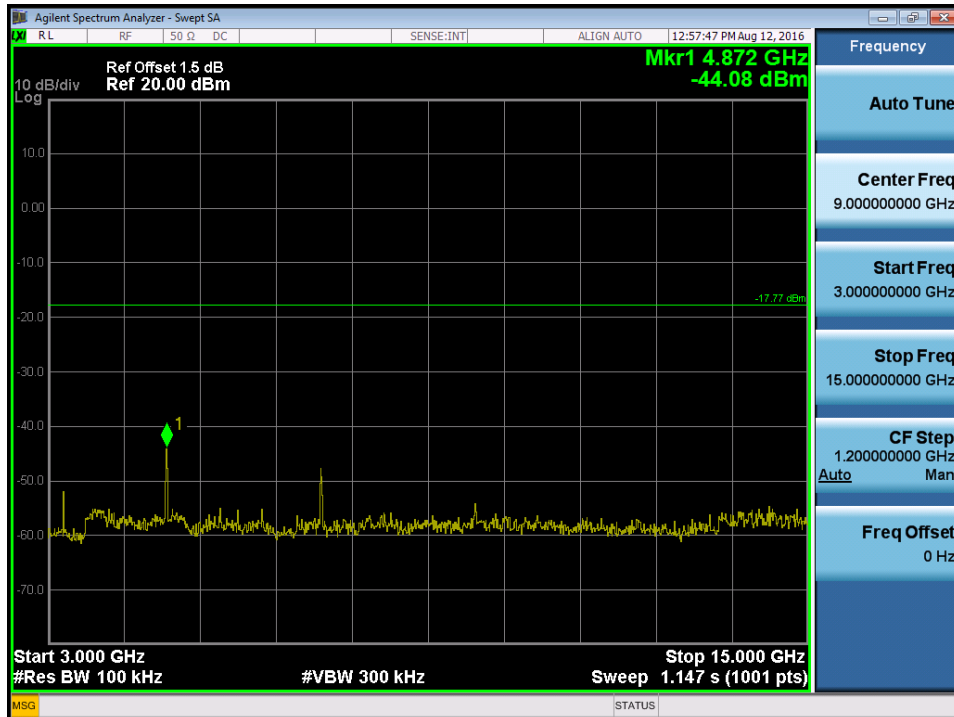
TX G mode CH01 (10 Harmonic of the frequency)



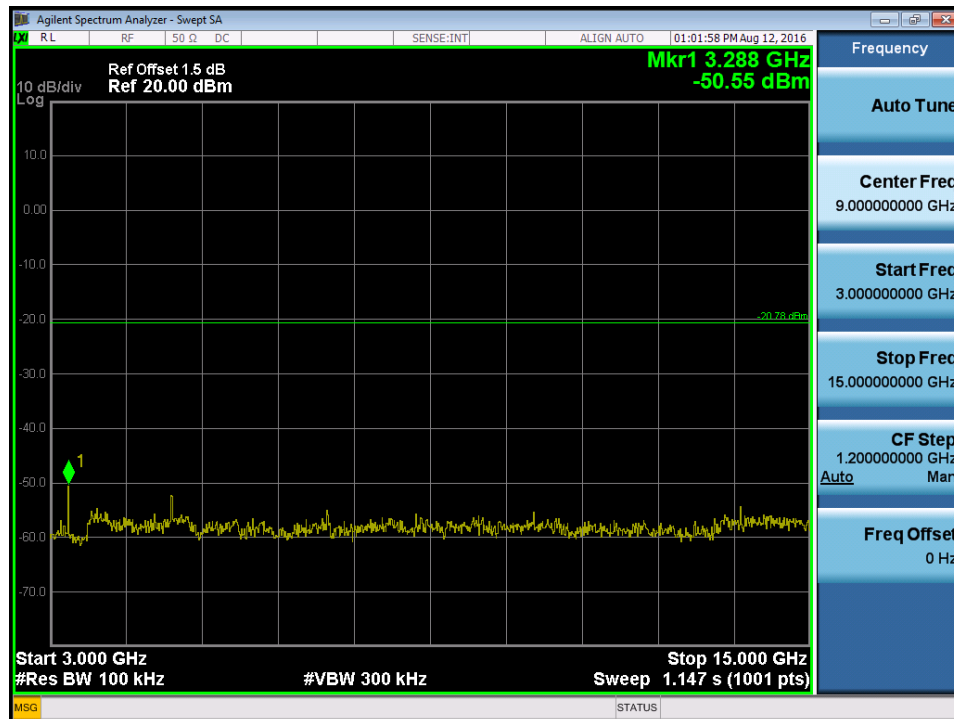
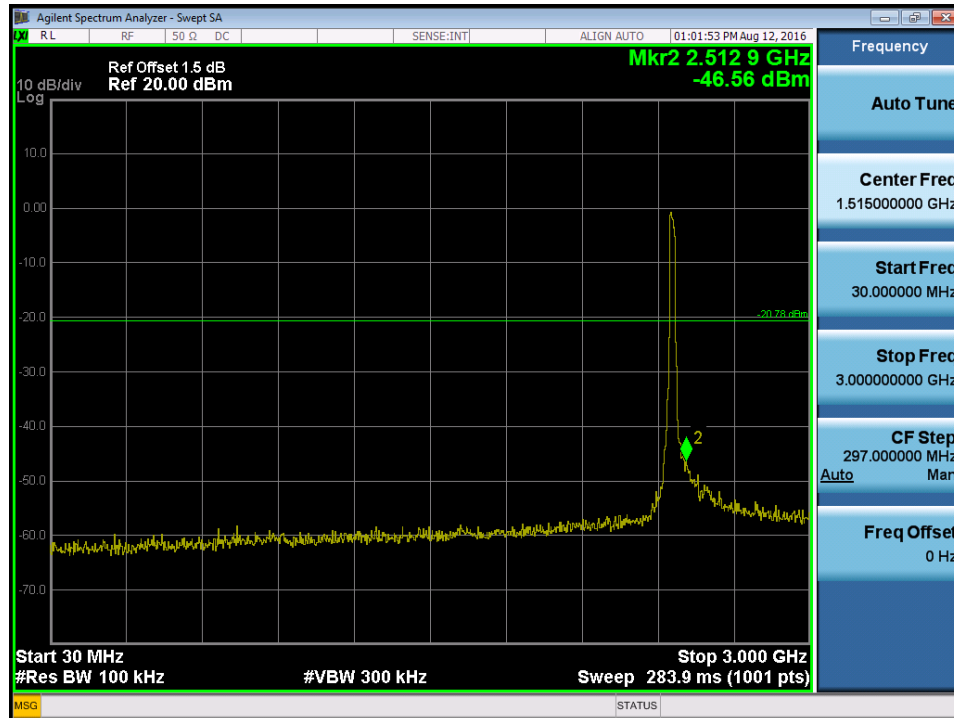


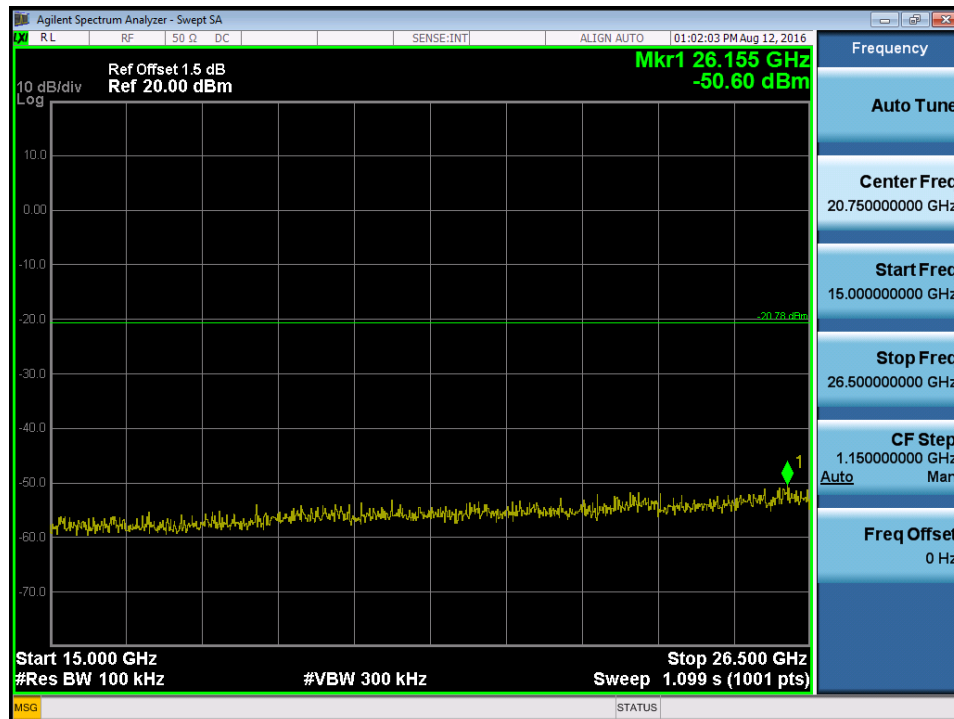
TX G mode CH06 (10 Harmonic of the frequency)





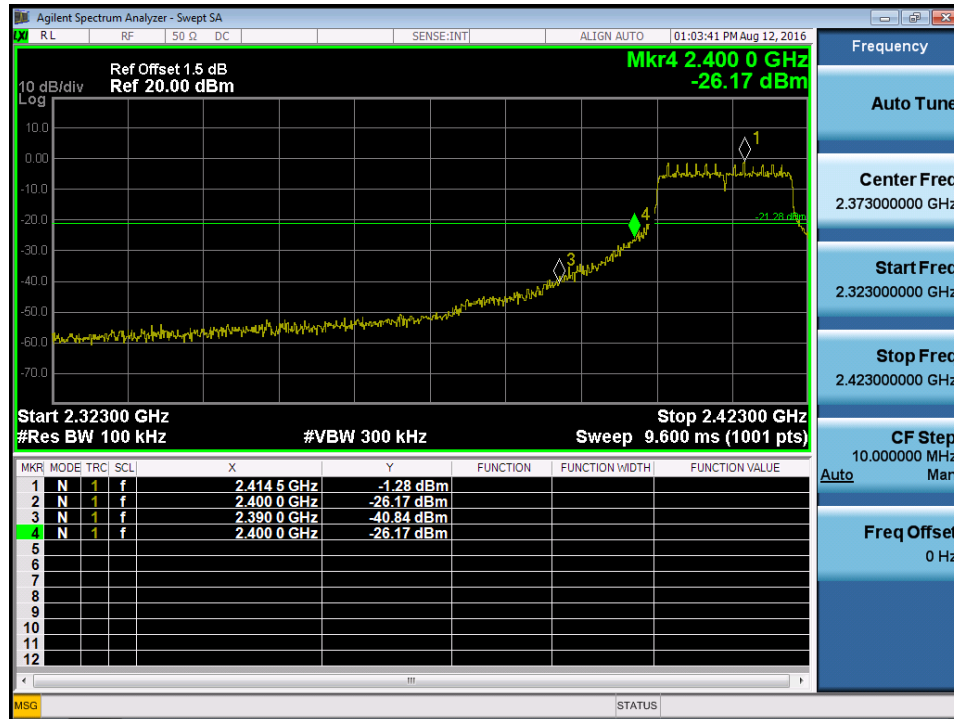
TX G mode CH11 (10 Harmonic of the frequency)



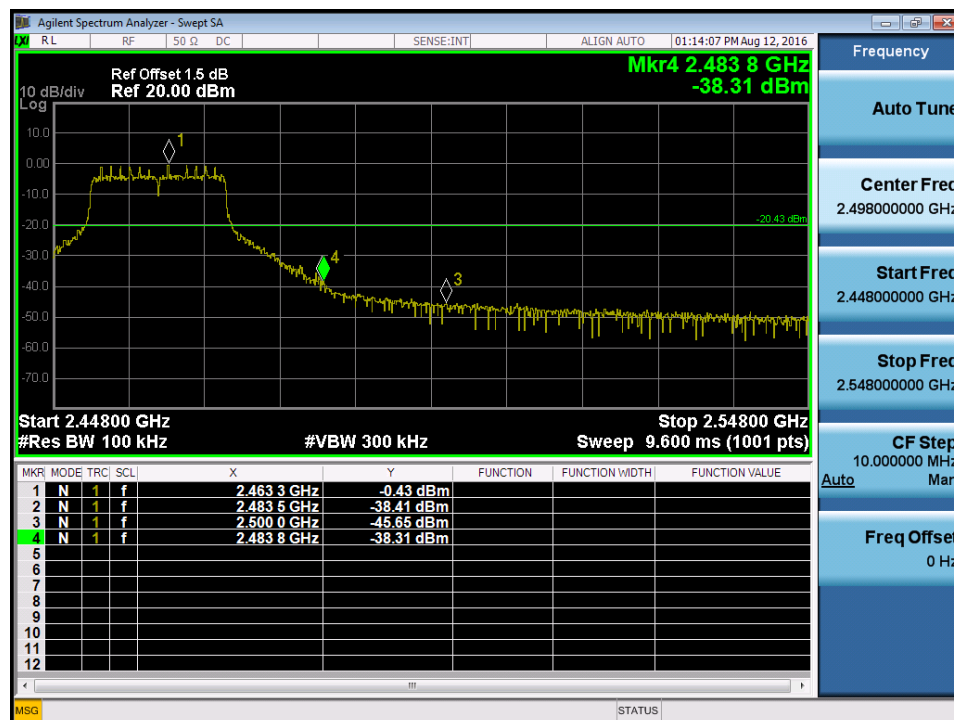


Test Mode : TX N-20M Mode

TX HT20 mode CH01

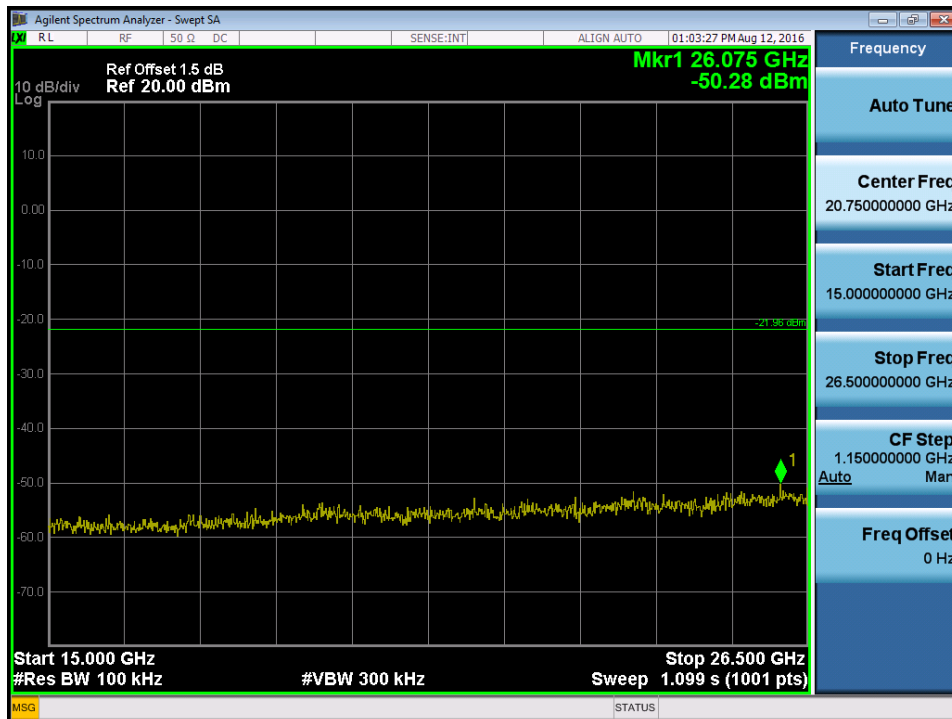


TX HT20 mode CH11

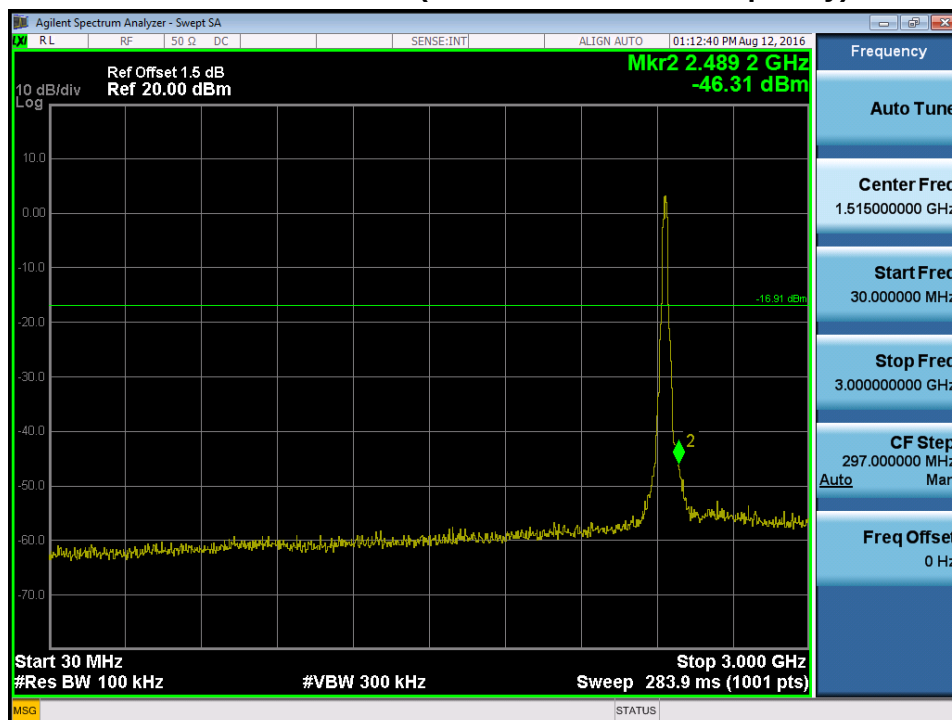


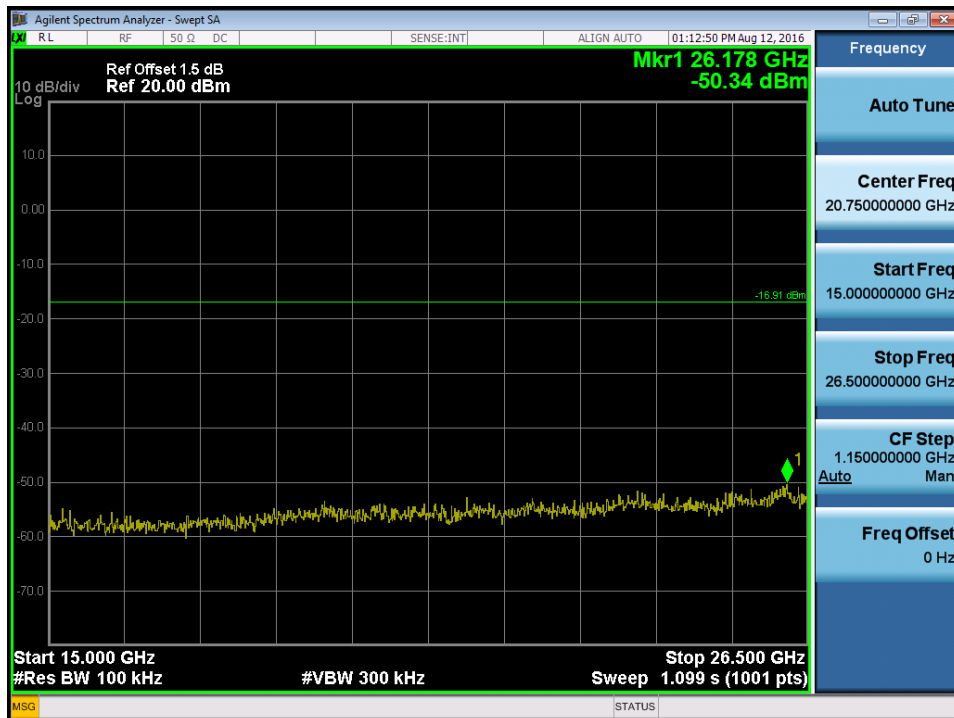
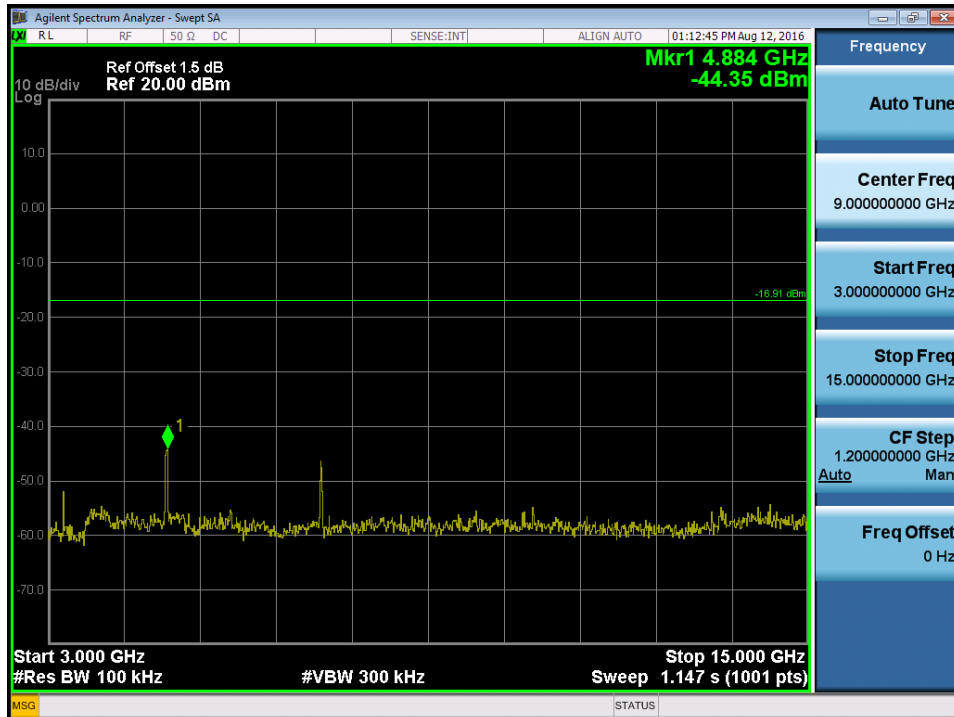
TX HT20 mode CH01 (10 Harmonic of the frequency)



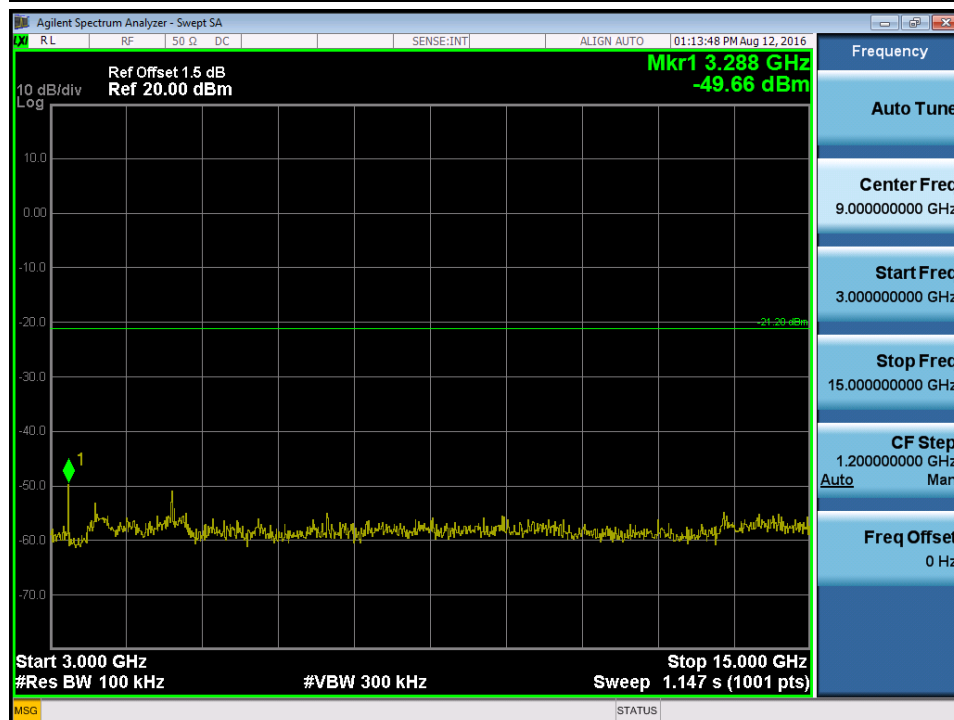
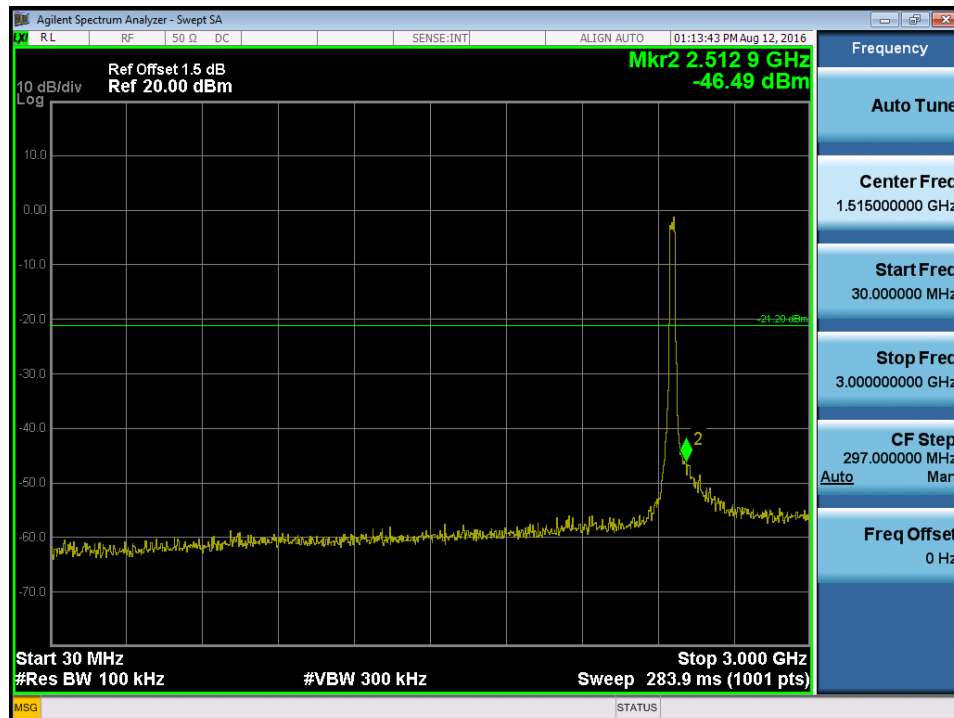


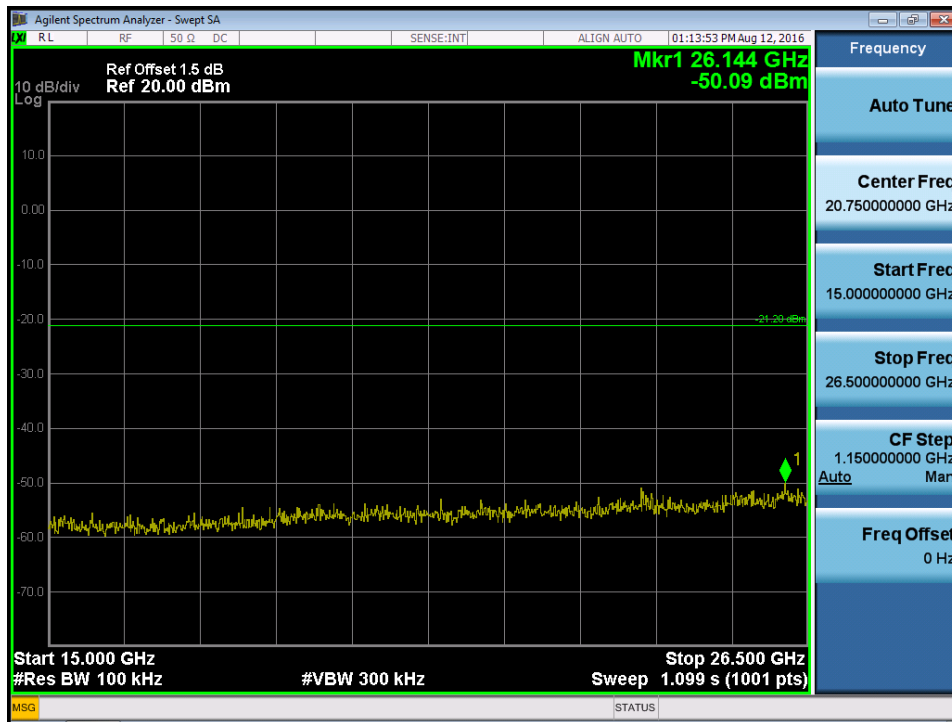
TX HT20 mode CH06 (10 Harmonic of the frequency)





TX HT20 mode CH11 (10 Harmonic of the frequency)



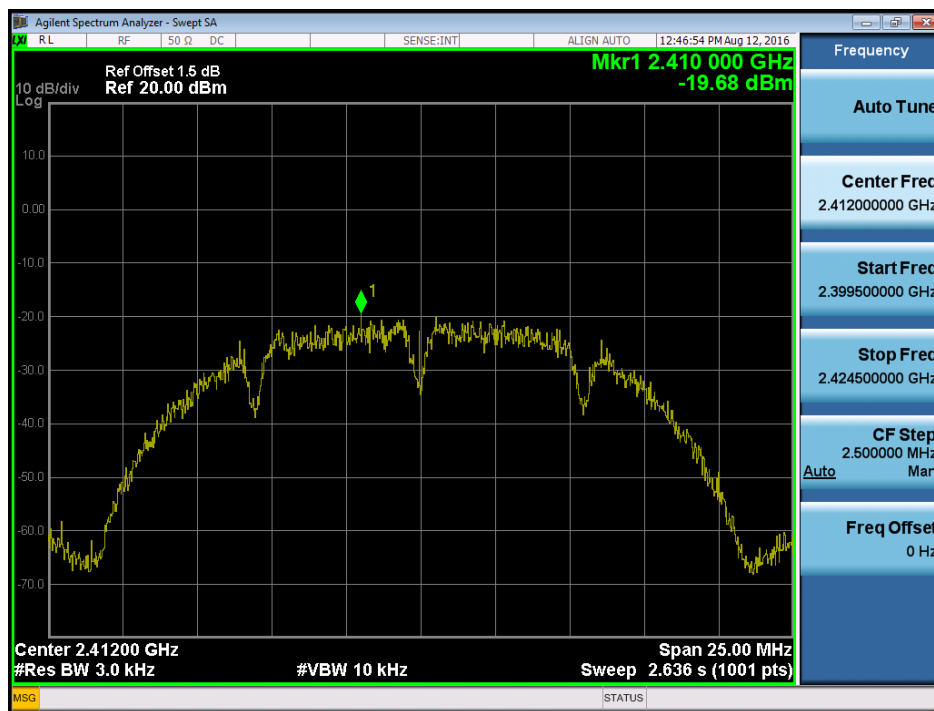


ATTACHMENT H - POWER SPECTRAL DENSITY

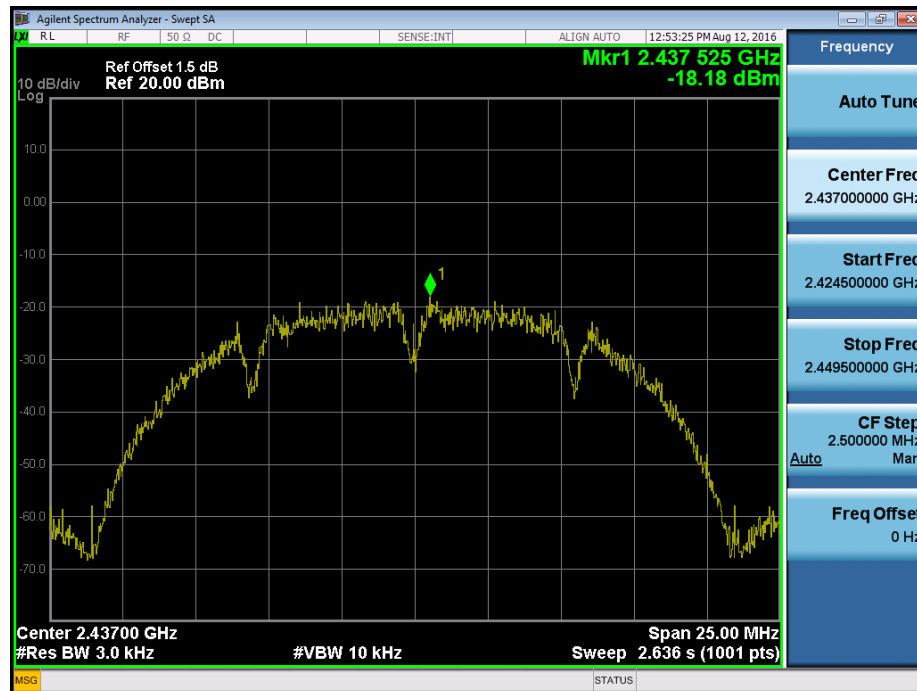
Test Mode :TX B Mode_CH01/06/11

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-19.68	0.0108	8.00	Complies
2437	-18.18	0.0152	8.00	Complies
2462	-15.99	0.0252	8.00	Complies

TX CH01



TX CH06



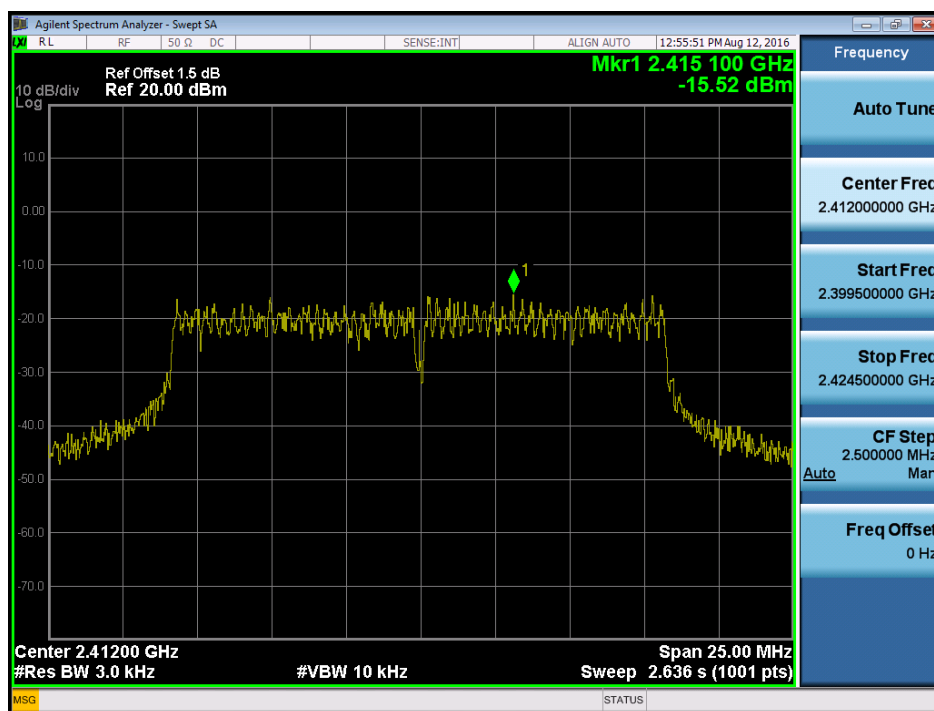
TX CH11



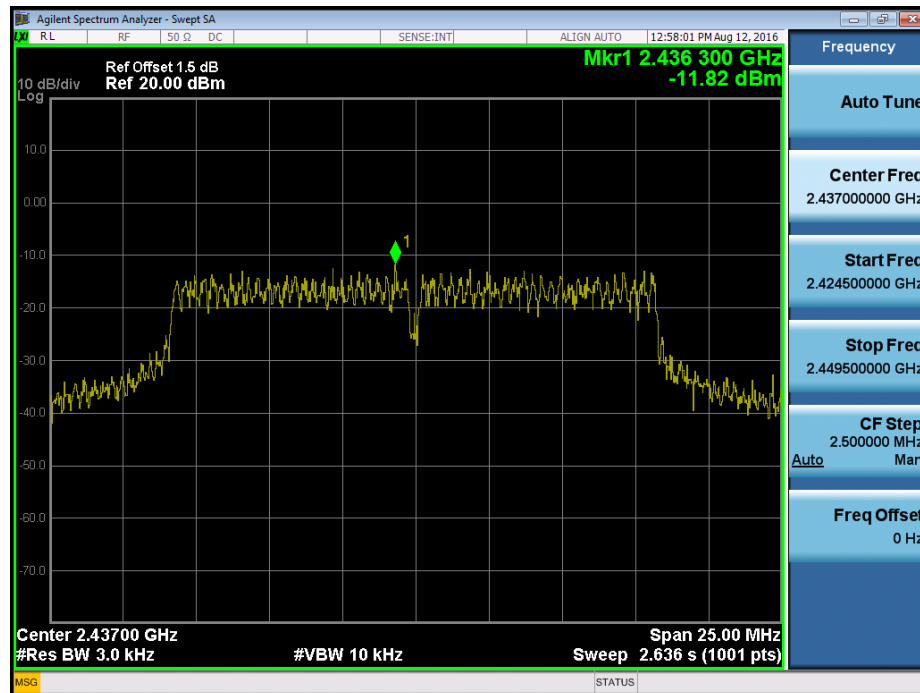
Test Mode :TX G Mode_CH01/06/11

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-15.52	0.0281	8.00	Complies
2437	-11.82	0.0658	8.00	Complies
2462	-14.94	0.0321	8.00	Complies

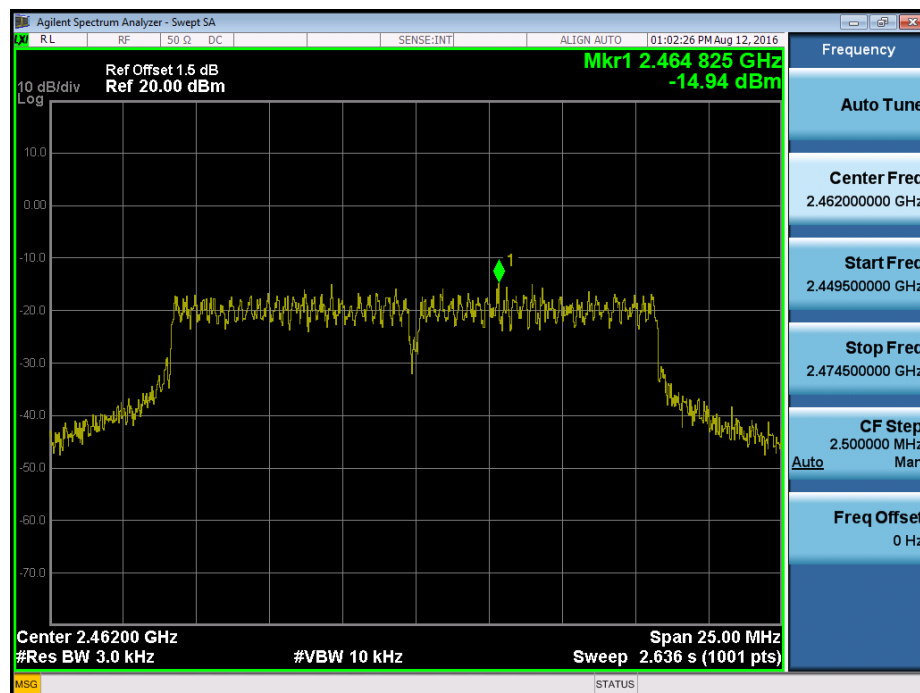
TX CH01



TX CH06



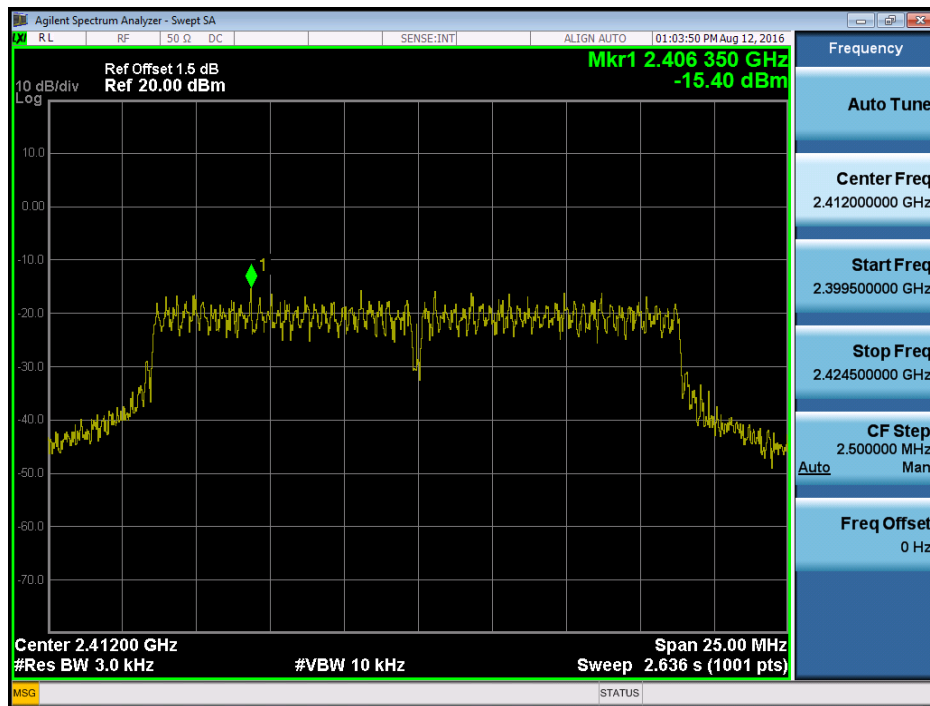
TX CH11



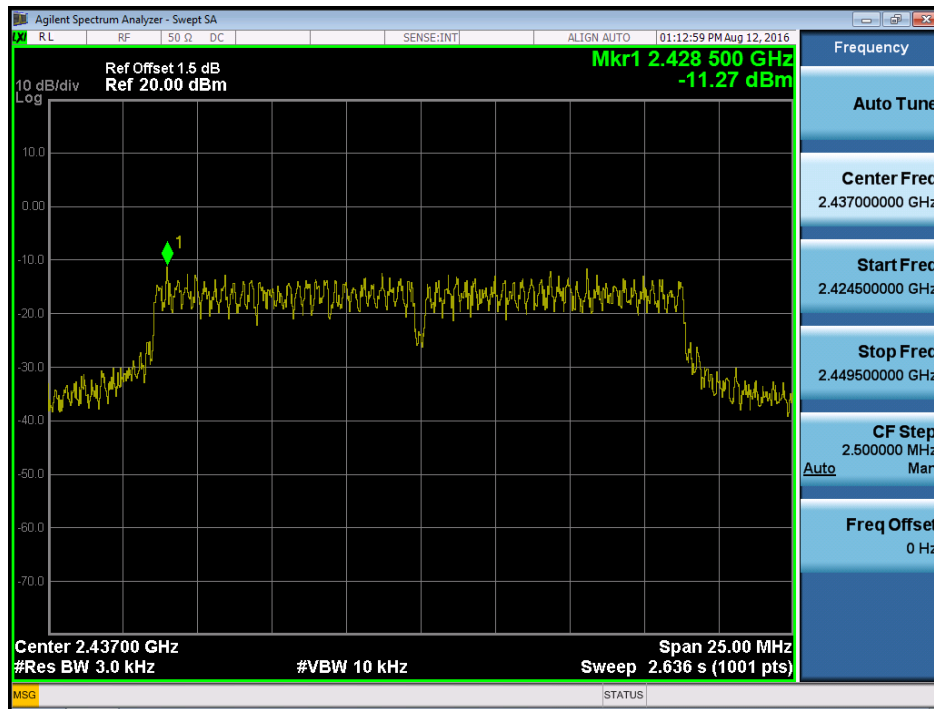
Test Mode : TX N-20M Mode_CH01/06/11

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-15.40	0.0288	8.00	Complies
2437	-11.27	0.0746	8.00	Complies
2462	-14.66	0.0342	8.00	Complies

TX CH01



TX CH06



TX CH11

