FCC Radio Test Report

FCC ID: KA2WA171C1

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

Project No.	:	1712C072
Equipment	:	AC600 MU-MIMO Wi-Fi USB Adapter
Test Model	:	DWA-171
Series Model	:	N/A
Applicant	:	D-Link Corporation
Address	:	17595 Mt. Herrmann, Fountain Valley, California, United States 92708

Date of Receipt	:	Dec. 14, 2017
Date of Test	:	Dec. 14, 2017 ~ Jan. 15, 2018
Issued Date	:	Jan. 17, 2018
Tested by	:	BTL Inc.

Testing Engineer : Jivey Jiang
(Jivey Jiang)

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(David Mao)

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BTL INC.

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NVLAP® TESTING NVLAP LAB CODE 200788-0

Declaration

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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.

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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1712C072	Original Issue.	Jan. 17, 2018

1. CERTIFICATION

Equipment	:	AC600 MU-MIMO Wi-Fi USB Adapter
Brand Name	:	D-Link
Test Model	:	DWA-171
Series Model		N/A
Applicant	:	D-Link Corporation
Manufacturer	:	Alpha Networks Inc
Address	:	No.8 Li-shing 7th Rd., Science-based Industrial Park, Hsinchu, Taiwan, R.O.C.
Factory	:	AlphaNetworks(Dongguan) Co.,Ltd.
Address	:	Part A2, Floor 6, No. 55 Feila Road, Waigaoqiao Free Trade Zone, Shanghai
Date of Test	:	Dec. 14, 2017 ~ Jan. 15, 2018
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-1-1712C072) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP according to the ISO-17025 quality assessment standard and technical standard(s).

Test results included in this report is only for WLAN 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: 854385
BTL's designation number for FCC: CN5020

2.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty figures shall be calculated according the methods described in the ETSI TR 100 028 and shall correspond to an expansion factor (coverage factor) k=1.96 or k=2(which provide confidence levels of respectively 90% and 95.45% in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)). Measurement Uncertainty for a Level of Confidence of 95 %, U=2xUc(y).

The BTL measurement uncertainty as below table:

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	AC600 MU-MIMO Wi-Fi USB Adapter	
Brand Name	D-Link	
Test Model	DWA-171	
Series Model	N/A	
Model Difference	N/A	
Product Description	Operation Frequency	2412~2462 MHz
	Modulation Technology	802.11b:DSSS 802.11g:OFDM 802.11n:OFDM
	Bit Rate of Transmitter	802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n up to 150 Mbps
	Output Power (Max.)	802.11b: 22.28dBm 802.11g: 25.02dBm 802.11n(20MHz): 24.07dBm 802.11n(40MHz): 23.64dBm
Power Source	Supplied from USB port.	
Power Rating	DC 5V 1A	

Note:

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

2. Channel List:

CH01 - CH11 for 802.11b, 802.11g, 802.11n(20MHz) CH03 - CH09 for 802.11n(40MHz)							
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	PCB	N/A	1.38

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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 N-40MHZ MODE CHANNEL 03/06/09
Mode 5	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
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09

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
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09

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
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09

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
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09

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
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09

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)
802.11n HT40 mode : BPSK (13.5Mbps)
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.

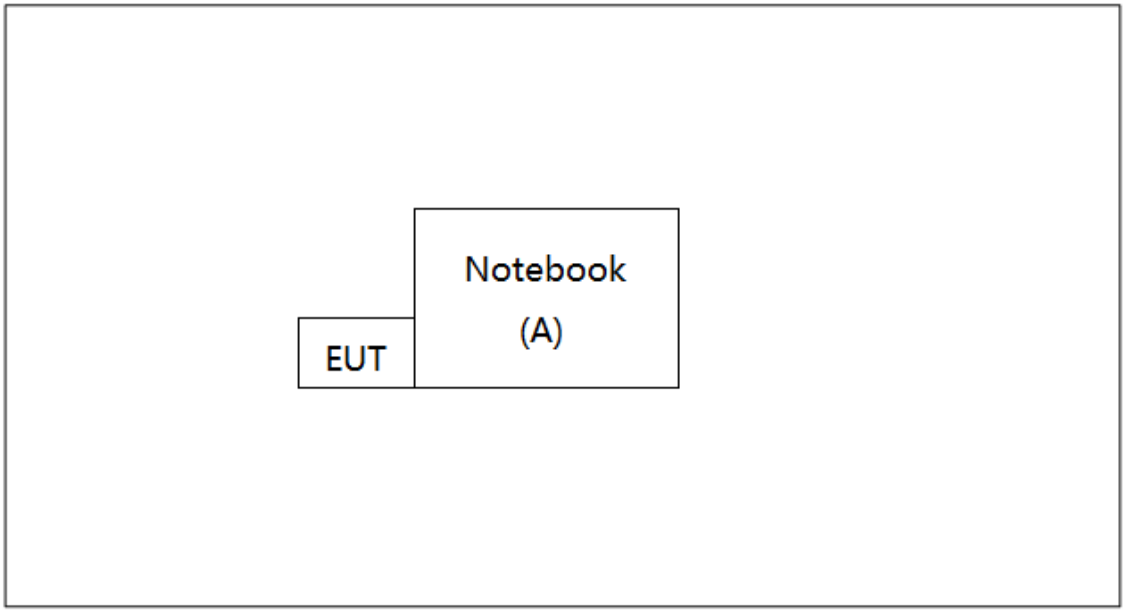
(4) The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

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	MP TOOL		
Frequency (MHz)	2412	2437	2462
802.11b	59	59	59
802.11g	54	63	54
802.11n (20MHz)	54	63	53
Frequency (MHz)	2422	2437	2452
802.11n (40MHz)	52	56	51

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	Lenovo	E46L	DOC	EB22953770

Item	Shielded Type	Ferrite Core	Length	Note
-	-	-	-	-

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

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

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 -0.50	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

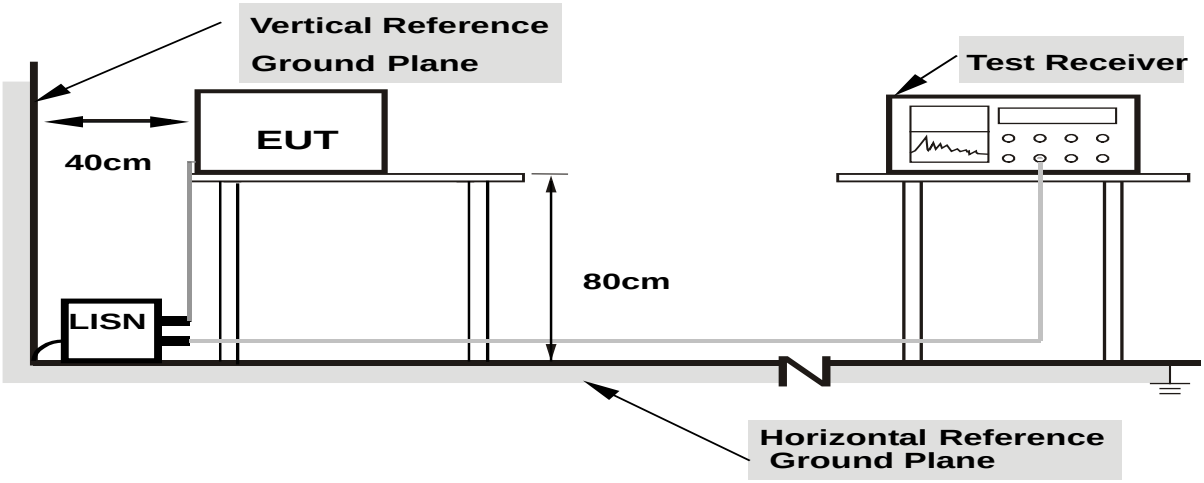
4.1.2 TEST PROCEDURE

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

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



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 Appendix 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

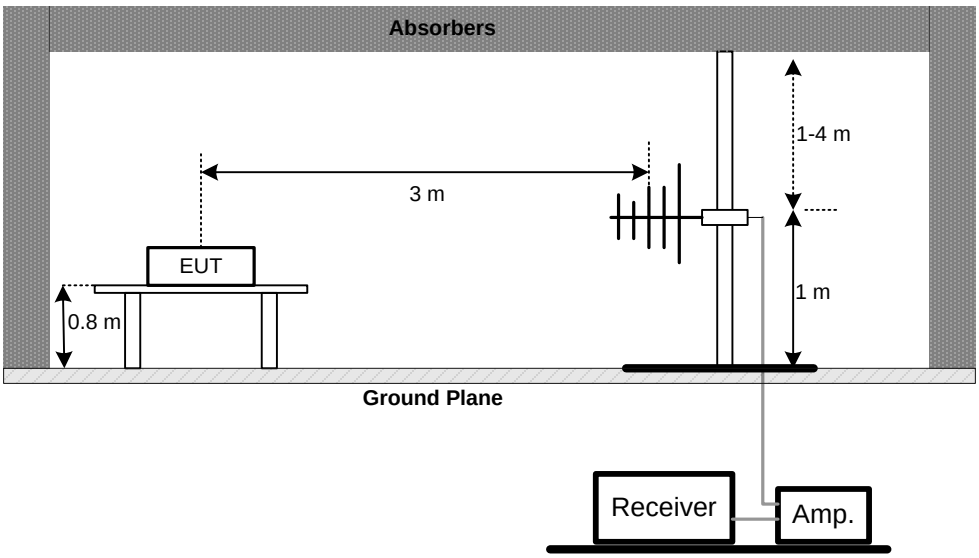
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The measuring distance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

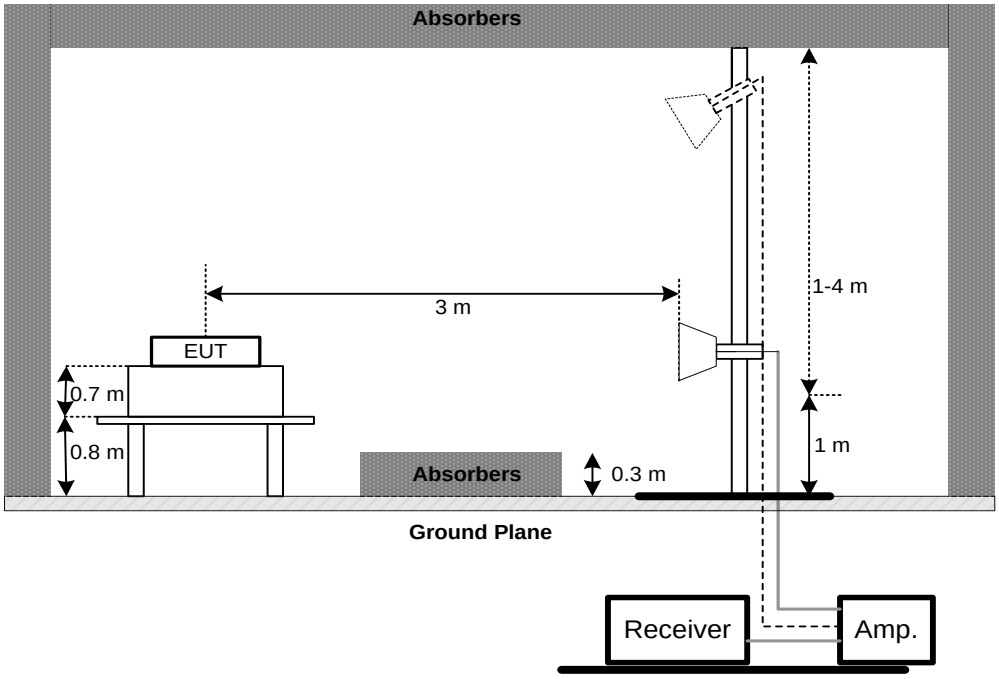
No deviation

4.2.4 TEST SETUP

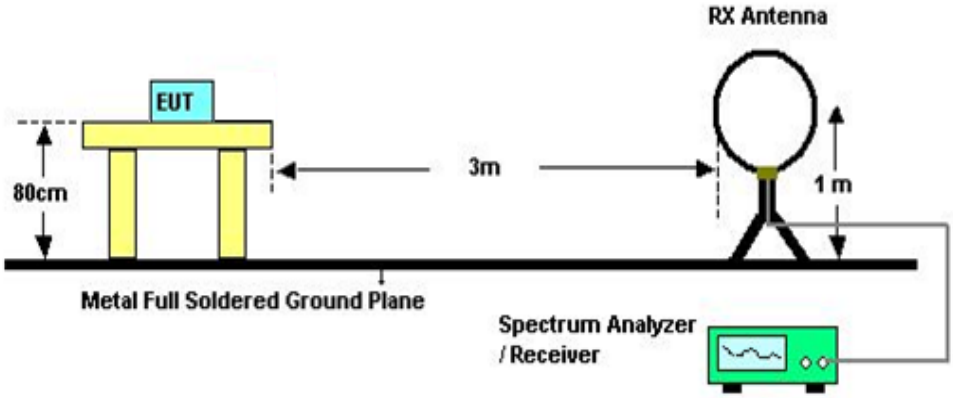
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(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: DC 5V

4.2.7 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Appendix 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 (specific distance / test distance) (dB).
(3) Limit line = specific limits (dBuV) + distance extrapolation factor.

4.2.8 TEST RESULTS (30MHZ TO 1000MHZ)

Please refer to the Appendix C.

4.2.9 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the Appendix 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

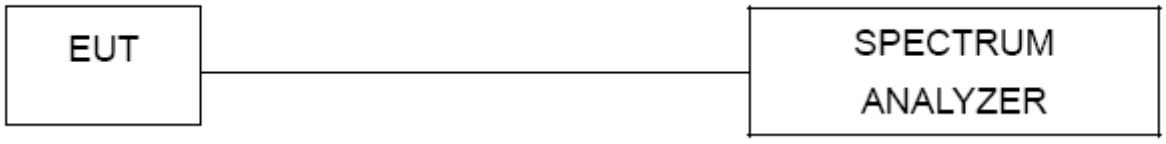
5.1.1 TEST PROCEDURE

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: DC 5V

5.1.6 TEST RESULTS

Please refer to the Appendix 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.

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: DC 5V

6.1.6 TEST RESULTS

Please refer to the Appendix 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.

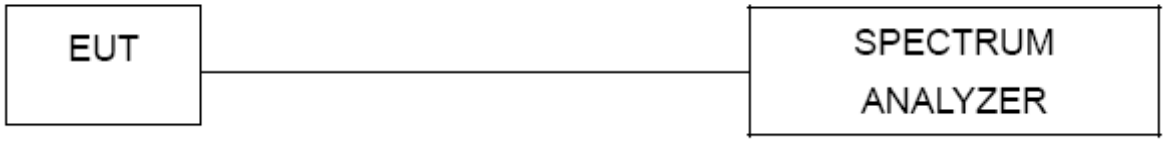
7.1.1 TEST PROCEDURE

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: DC 5V

7.1.6 TEST RESULTS

Please refer to the Appendix 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: DC 5V

8.1.6 TEST RESULTS

Please refer to the Appendix 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. 26, 2018
2	LISN	R&S	ENV216	101447	Mar. 26, 2018
3	Test Cable	emci	RG223(9KHz-30 MHz)	C_17	Mar. 09, 2018
4	EMI Test Receiver	R&S	ESCI	100382	Mar. 26, 2018
5	50Ω Terminator	SHX	TF2-3G-A	08122901	Mar. 26, 2018
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emission Measurement - Below 1GHz					
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	Aug. 20, 2018
3	Receiver	Agilent	N9038A	MY52130039	Aug. 20, 2018
4	Cable	emci	LMR-400(30MHz-1 GHz)(8m+5m)	N/A	Jun. 26, 2018
5	Controller	CT	SC100	N/A	N/A
6	Controller	MF	MF-7802	MF780208416	N/A
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
8	Antenna	EM	EM-6876-1	230	Mar. 06, 2018

Radiated Emission Measurement - Above 1GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Double Ridged Guide Antenna	ETS	3115	75789	Mar. 26, 2018
2	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Jun. 08, 2018
3	Amplifier	Agilent	8449B	3008A02274	May. 16, 2018
4	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 26, 2018
5	Receiver	Agilent	N9038A	MY52130039	Aug. 20, 2018
6	Controller	CT	SC100	N/A	N/A
7	Controller	MF	MF-7802	MF780208416	N/A
8	Cable	emci	EMC104-SM-SM-1 2000(12m)	N/A	Jun. 26, 2018
9	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

6dB Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 20, 2018

Peak Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	ANRITSU	ML2495A	1128009	Mar. 26, 2018
2	Pulse Power Sensor	ANRITSU	MA 2411B	1027500	Mar. 26, 2018

Antenna Conducted Spurious Emission					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 20, 2018

Power Spectral Density					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 20, 2018

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

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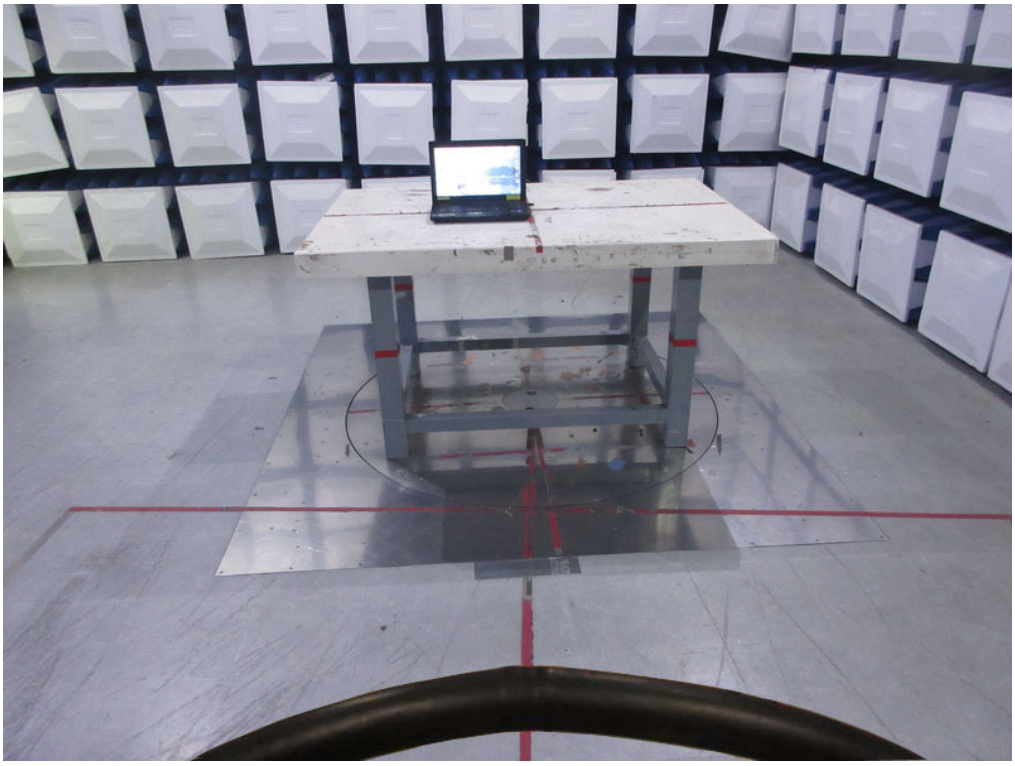
All calibration period of equipment list is one year.

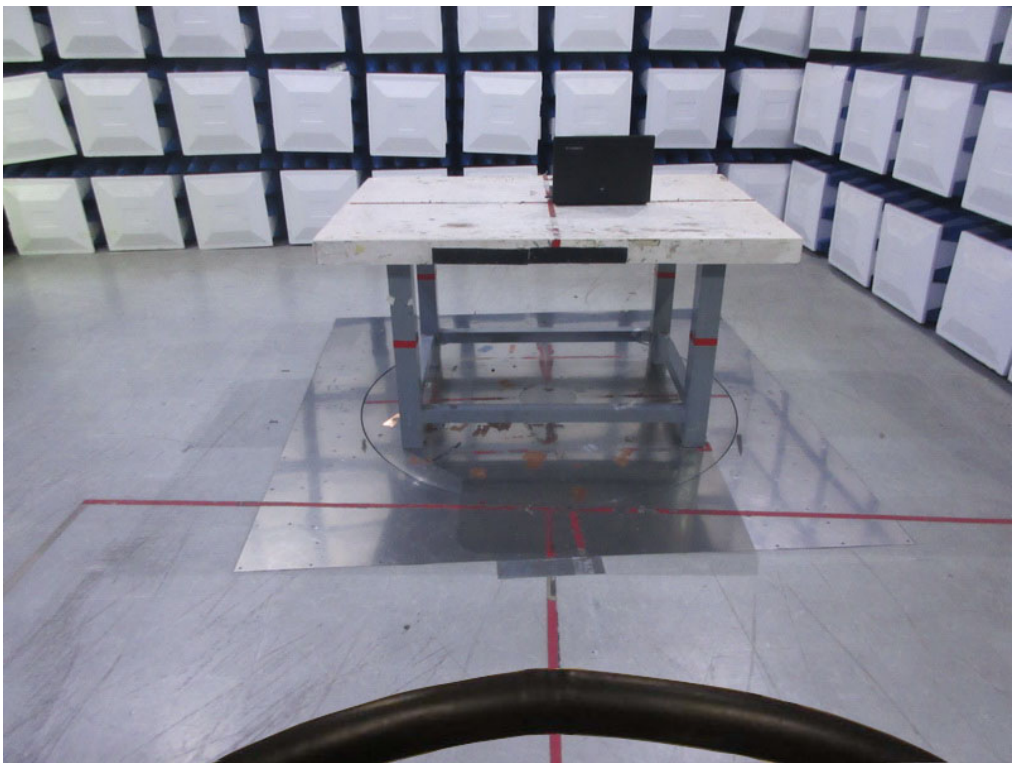
10. EUT TEST PHOTO

Conducted Measurement Photos

Radiated Measurement Photos

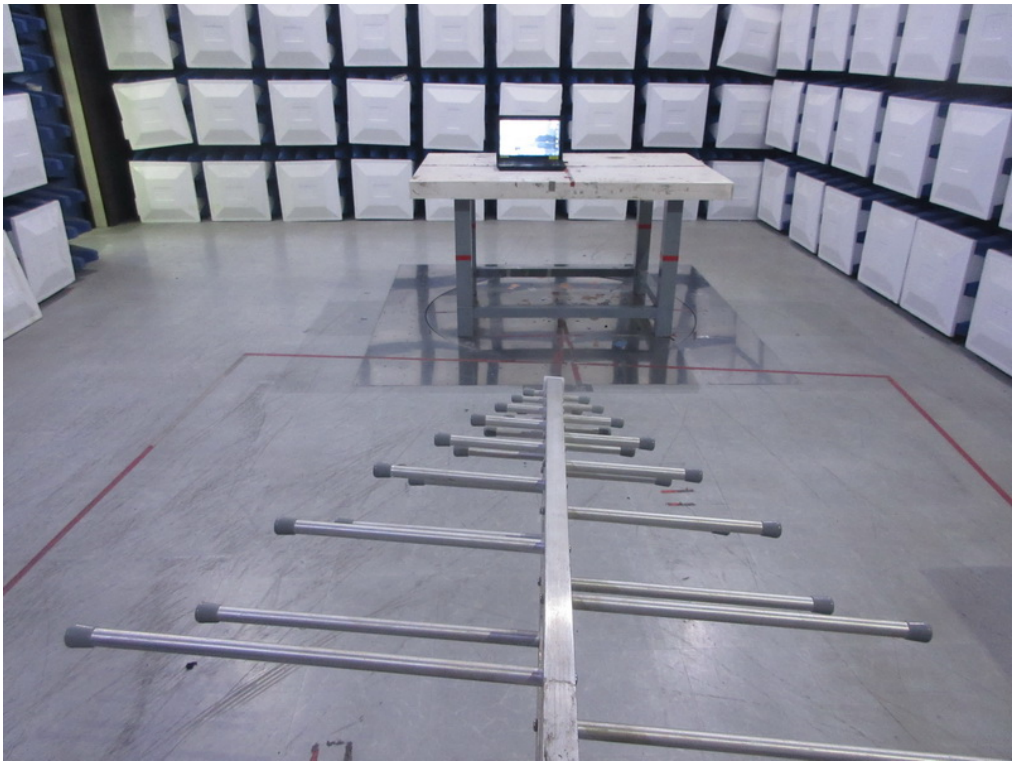
9KHz to 30MHz

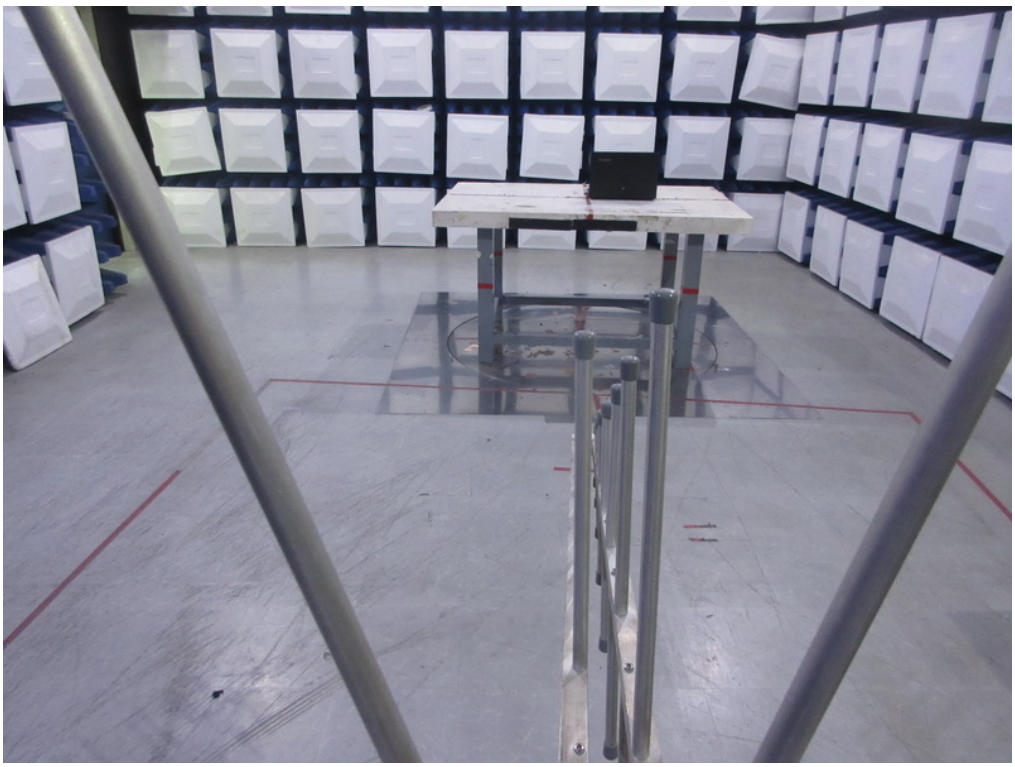




Radiated Measurement Photos

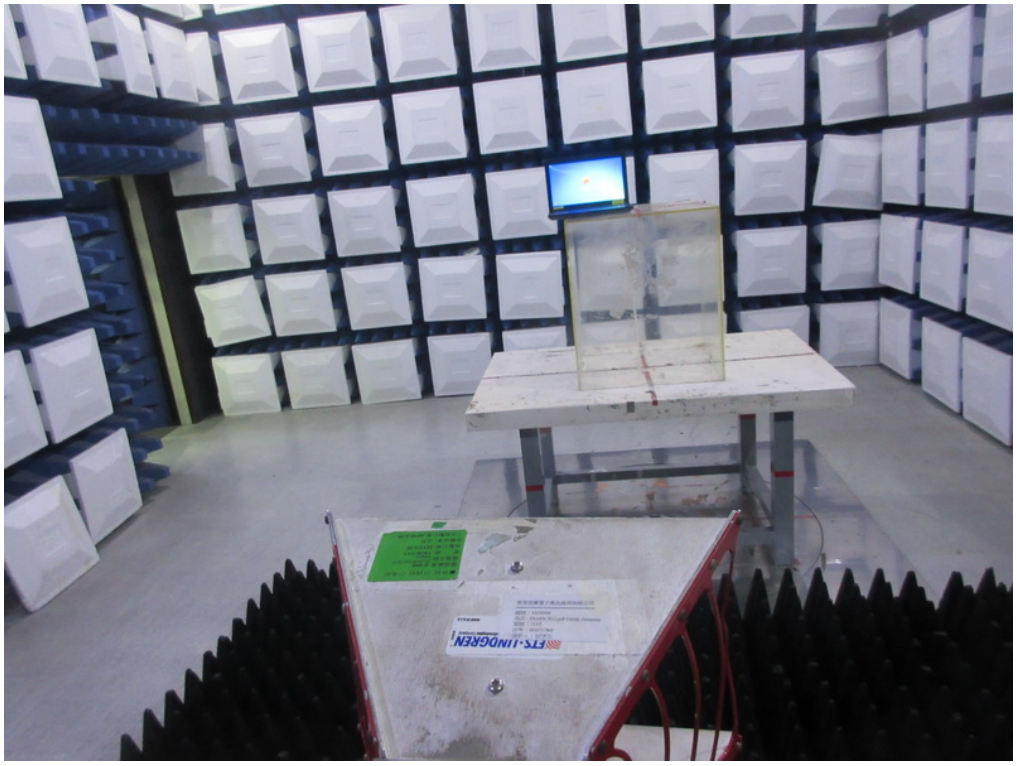
30MHz to 1000MHz

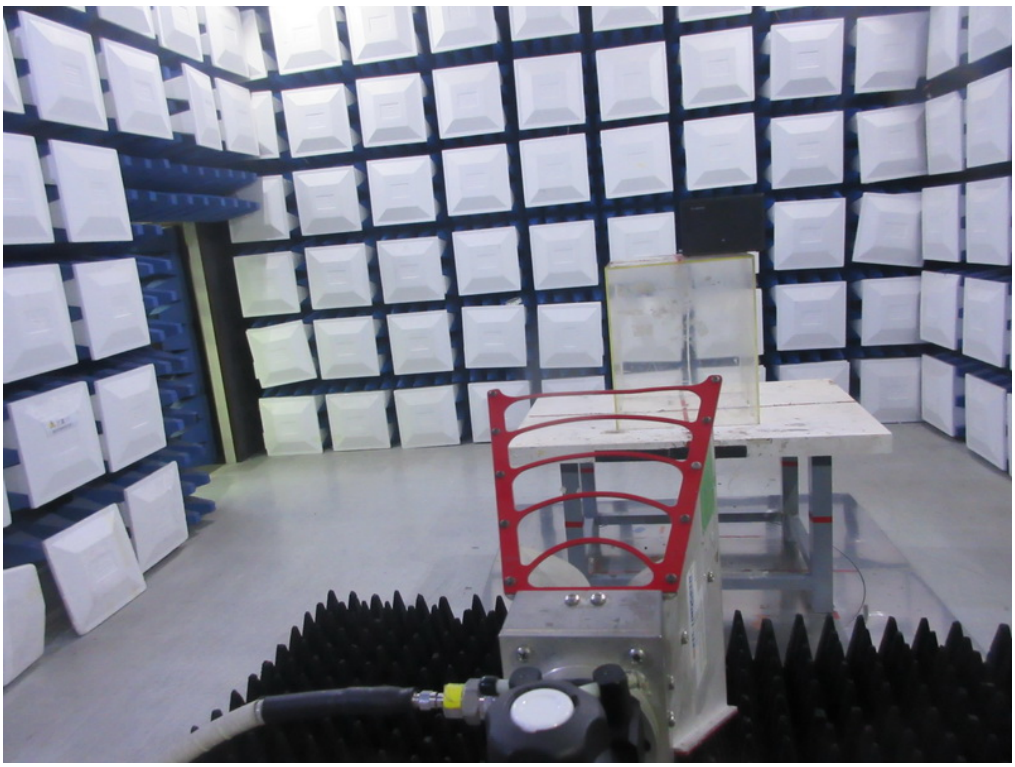




Radiated Measurement Photos

Above 1000MHz

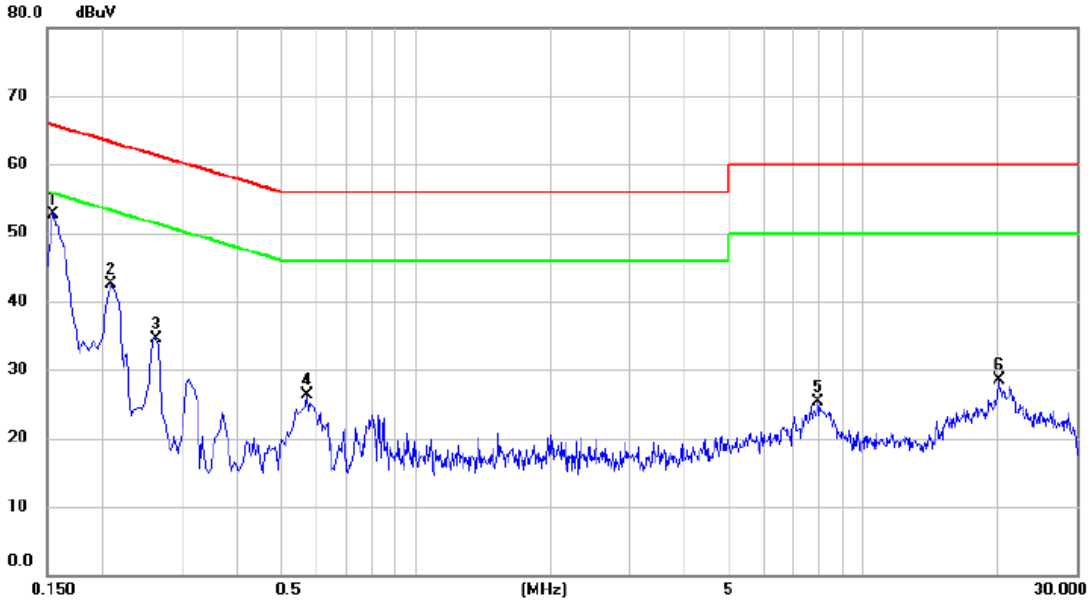




APPENDIX A - CONDUCTED EMISSION

Test Mode :	TX MODE

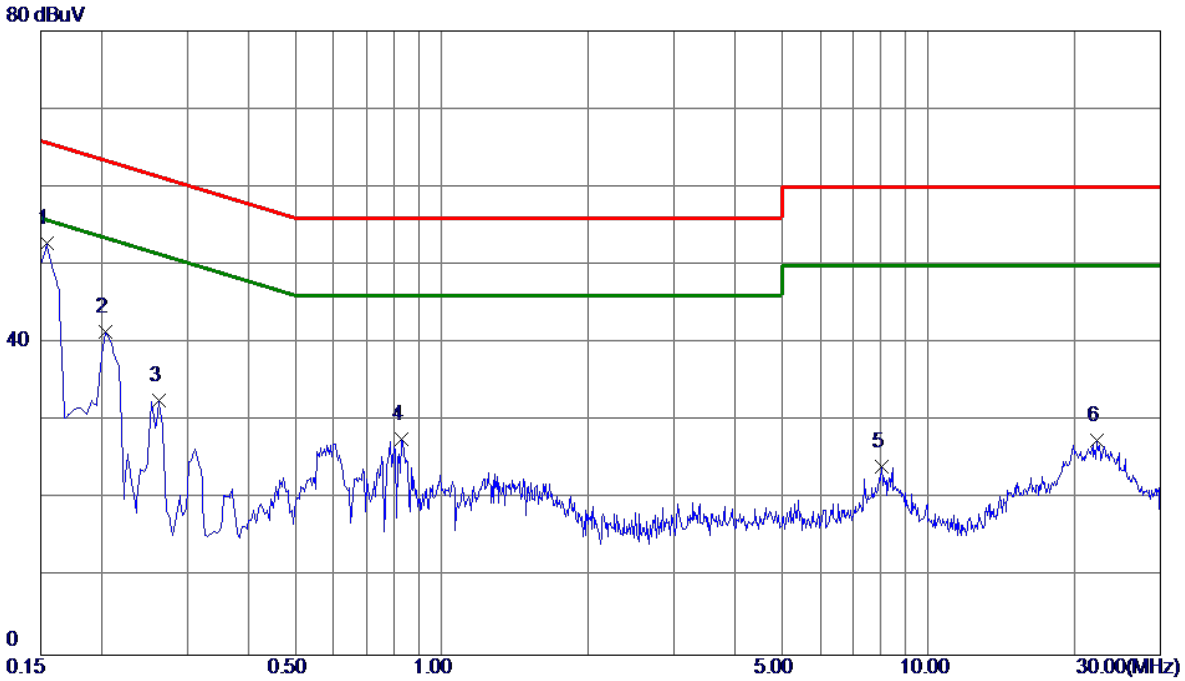
Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1544	42.92	9.79	52.71	65.76	-13.05	peak	
2		0.2085	32.69	9.76	42.45	63.26	-20.81	peak	
3		0.2625	24.71	9.76	34.47	61.35	-26.88	peak	
4		0.5730	16.40	9.81	26.21	56.00	-29.79	peak	
5		7.9080	15.08	10.23	25.31	60.00	-34.69	peak	
6		20.0985	17.94	10.65	28.59	60.00	-31.41	peak	

Test Mode :	TX MODE

Neutral

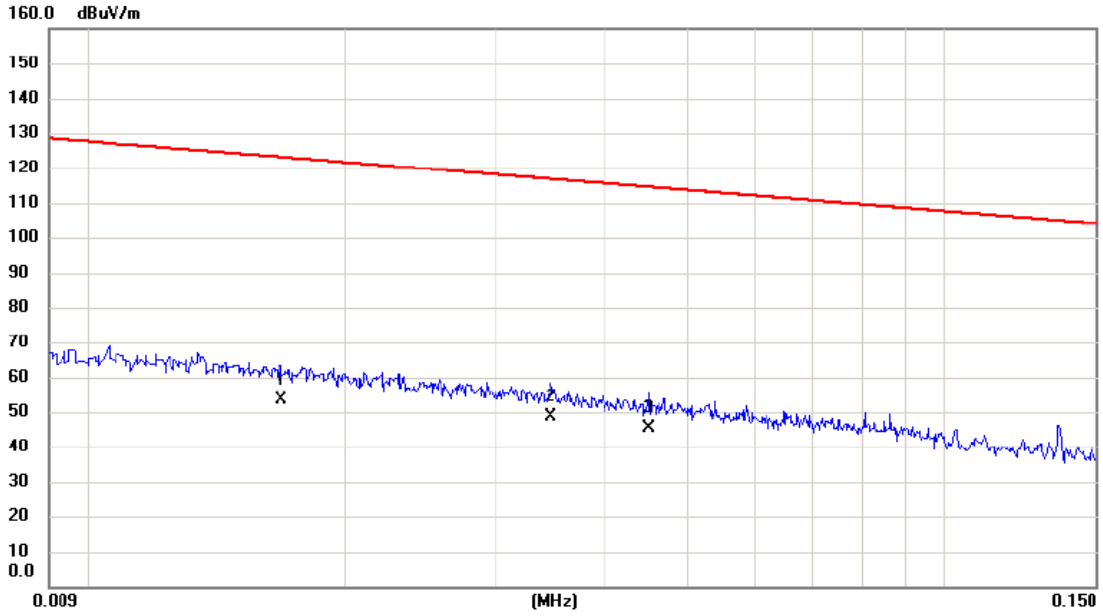


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.1545	43.05	9.68	52.73	65.75	-13.02	Peak	
2	0.2040	31.71	9.69	41.40	63.45	-22.05	Peak	
3	0.2625	23.03	9.67	32.70	61.35	-28.65	Peak	
4	0.8250	17.89	9.72	27.61	56.00	-28.39	Peak	
5	8.0024	13.98	10.16	24.14	60.00	-35.86	Peak	
6	22.1910	16.73	10.84	27.57	60.00	-32.43	Peak	

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

Test Mode:	TX MODE

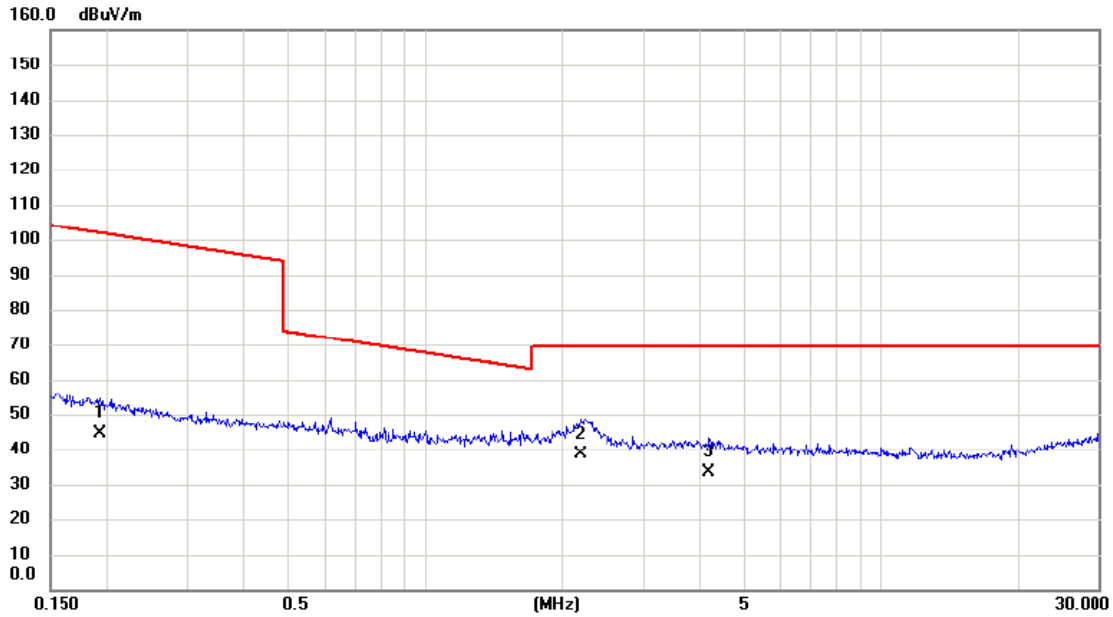
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0168	33.45	20.04	53.49	123.10	-69.61	AVG	
2	*	0.0347	29.38	19.18	48.56	116.80	-68.24	AVG	
3		0.0450	26.41	18.87	45.28	114.54	-69.26	AVG	

Test Mode:	TX MODE

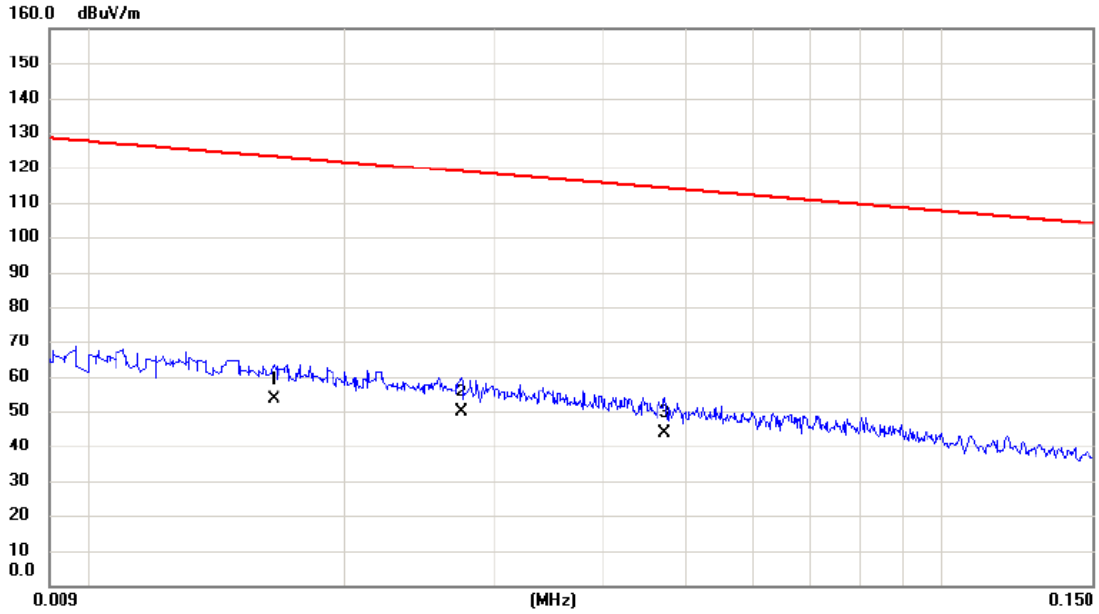
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.1924	27.64	16.82	44.46	101.92	-57.46	AVG	
2	*	2.1898	23.23	15.45	38.68	69.54	-30.86	QP	
3		4.1796	18.47	14.84	33.31	69.54	-36.23	QP	

Test Mode:	TX MODE

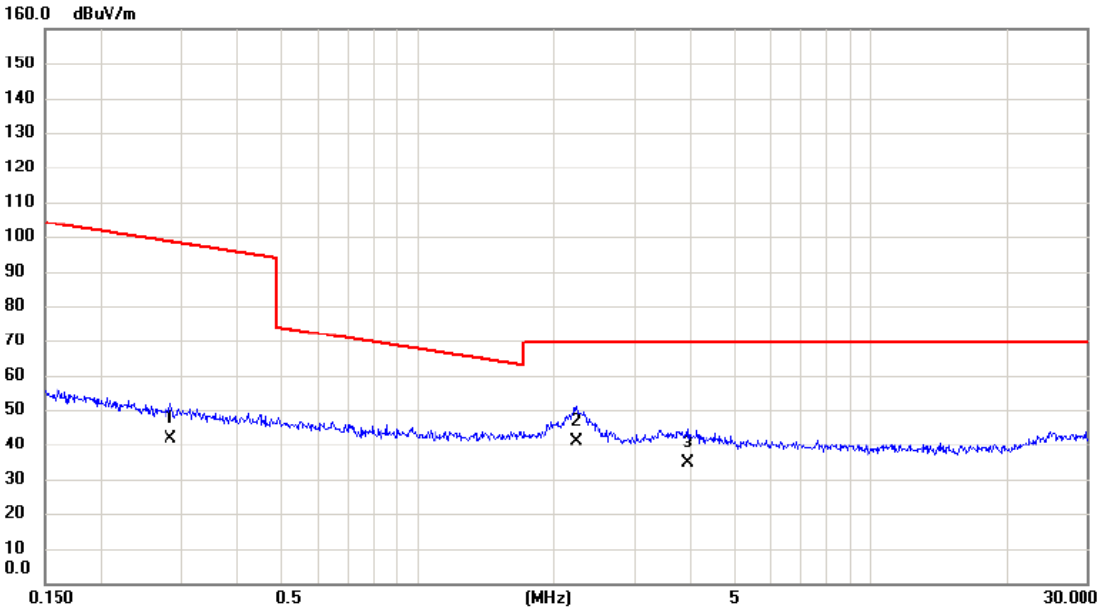
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0165	33.46	20.07	53.53	123.26	-69.73	AVG	
2	*	0.0274	30.47	19.40	49.87	118.85	-68.98	AVG	
3		0.0473	24.88	18.80	43.68	114.11	-70.43	AVG	

Test Mode:	TX MODE

Ant 90°

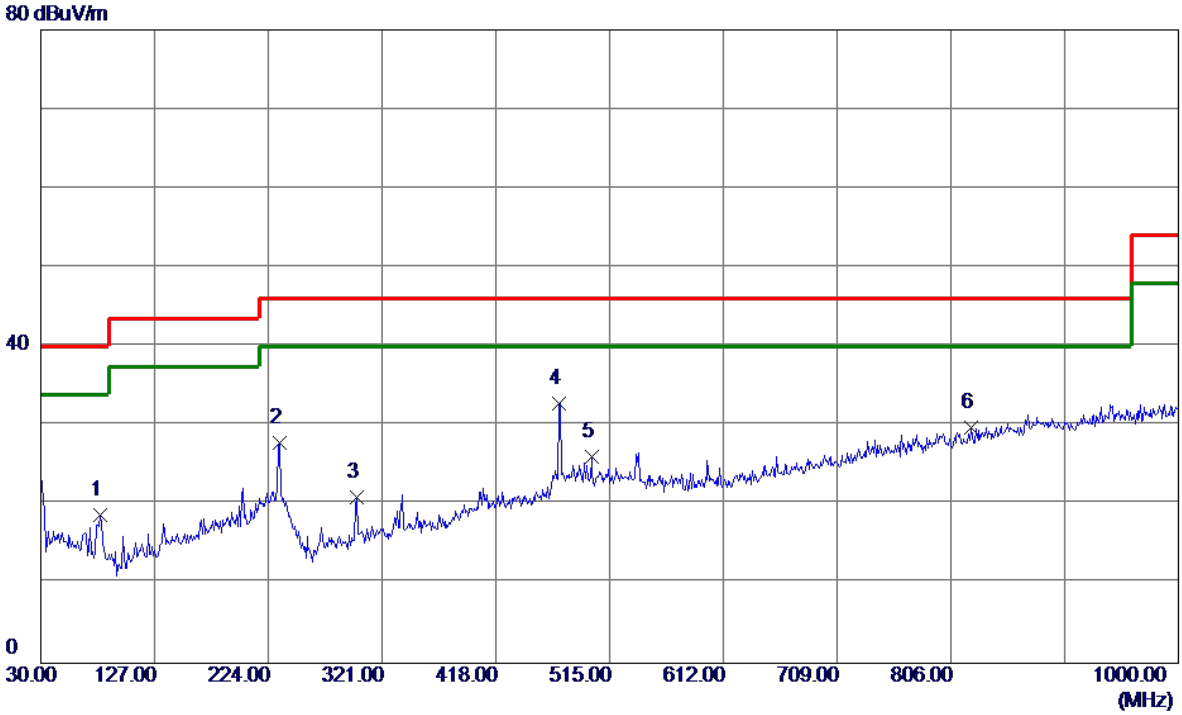


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.2847	24.98	16.63	41.61	98.52	-56.91	AVG	
2	*	2.2367	25.45	15.44	40.89	69.54	-28.65	QP	
3		3.9430	19.78	14.97	34.75	69.54	-34.79	QP	

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

Test Mode:	TX B MODE CHANNEL 01

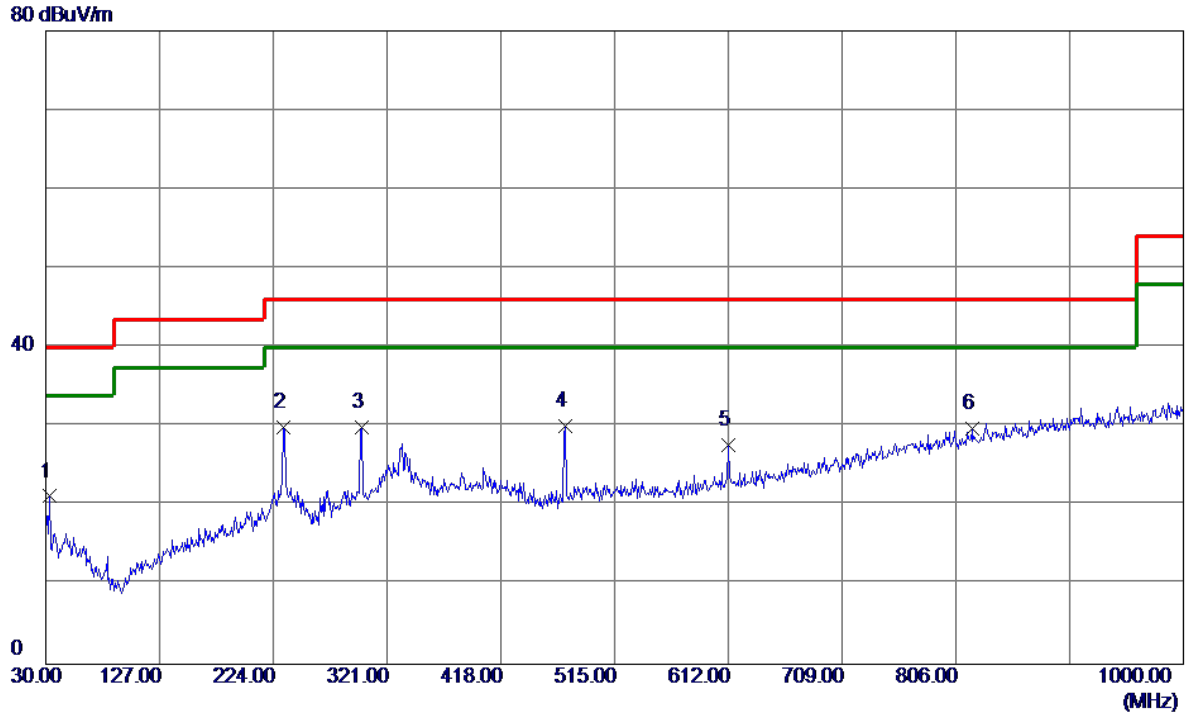
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	80.4400	36.99	-18.25	18.74	40.00	-21.26	Peak	
2	233.7000	42.04	-14.22	27.82	46.00	-18.18	Peak	
3	299.6600	33.77	-12.88	20.89	46.00	-25.11	Peak	
4 *	471.3500	42.20	-9.42	32.78	46.00	-13.22	Peak	
5	499.4800	34.74	-8.73	26.01	46.00	-19.99	Peak	
6	823.4600	30.52	-0.72	29.80	46.00	-16.20	Peak	

Test Mode:	TX B MODE CHANNEL 01

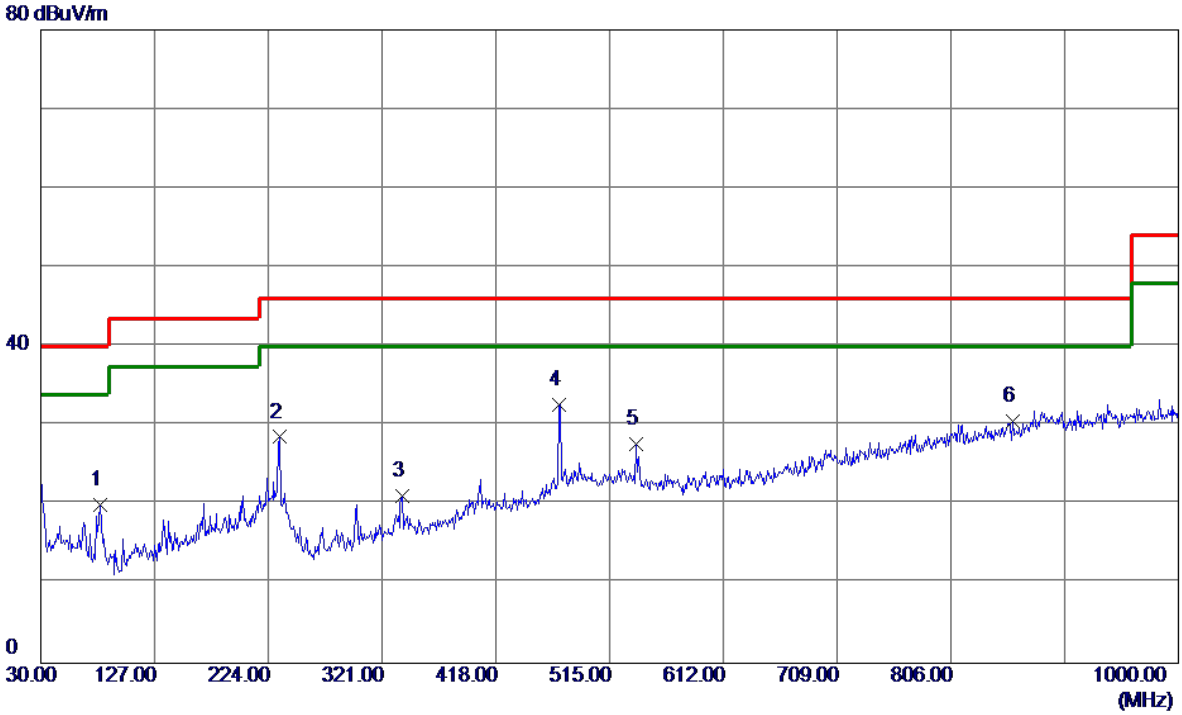
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	32.9100	36.09	-14.89	21.20	40.00	-18.80	Peak	
2	232.7300	44.04	-14.19	29.85	46.00	-16.15	Peak	
3	299.6600	42.78	-12.88	29.90	46.00	-16.10	Peak	
4 *	473.2900	39.50	-9.37	30.13	46.00	-15.87	Peak	
5	612.0000	33.85	-6.19	27.66	46.00	-18.34	Peak	
6	819.5800	30.54	-0.83	29.71	46.00	-16.29	Peak	

Test Mode:	TX B MODE CHANNEL 06

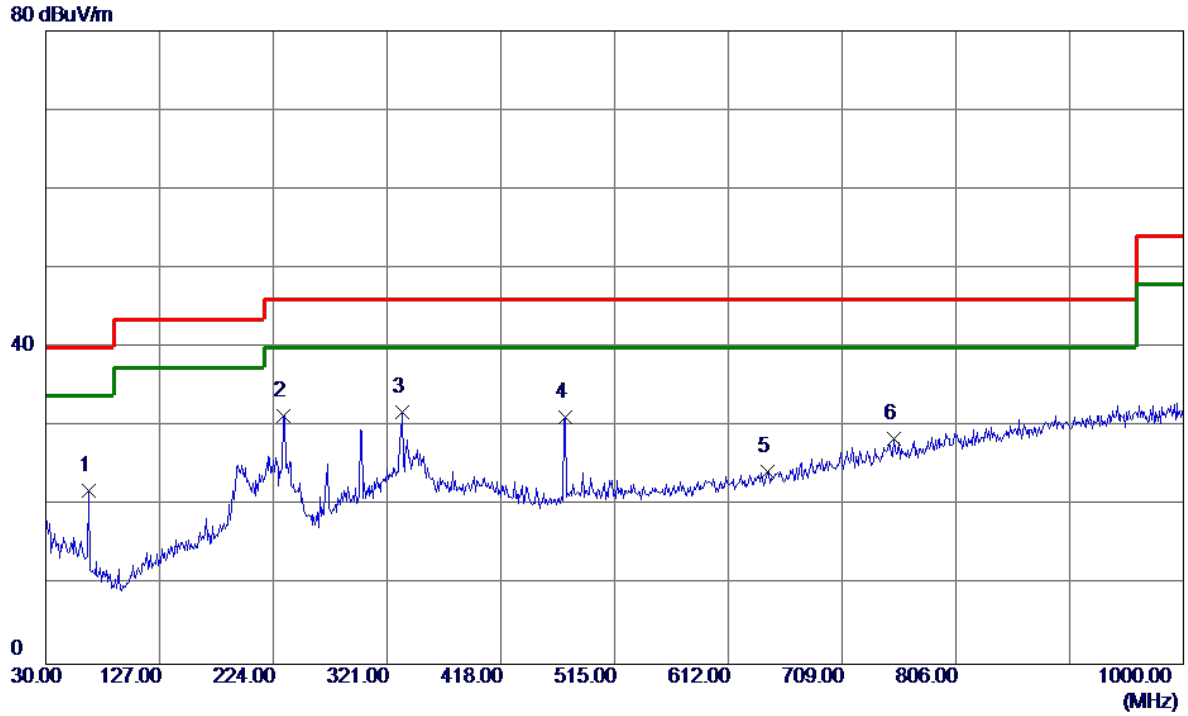
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	80.4400	38.19	-18.25	19.94	40.00	-20.06	Peak	
2	233.7000	42.78	-14.22	28.56	46.00	-17.44	Peak	
3	338.4600	33.30	-12.16	21.14	46.00	-24.86	Peak	
4 *	471.3500	42.10	-9.42	32.68	46.00	-13.32	Peak	
5	537.3100	35.61	-7.97	27.64	46.00	-18.36	Peak	
6	858.3800	30.42	0.17	30.59	46.00	-15.41	Peak	

Test Mode:	TX B MODE CHANNEL 06

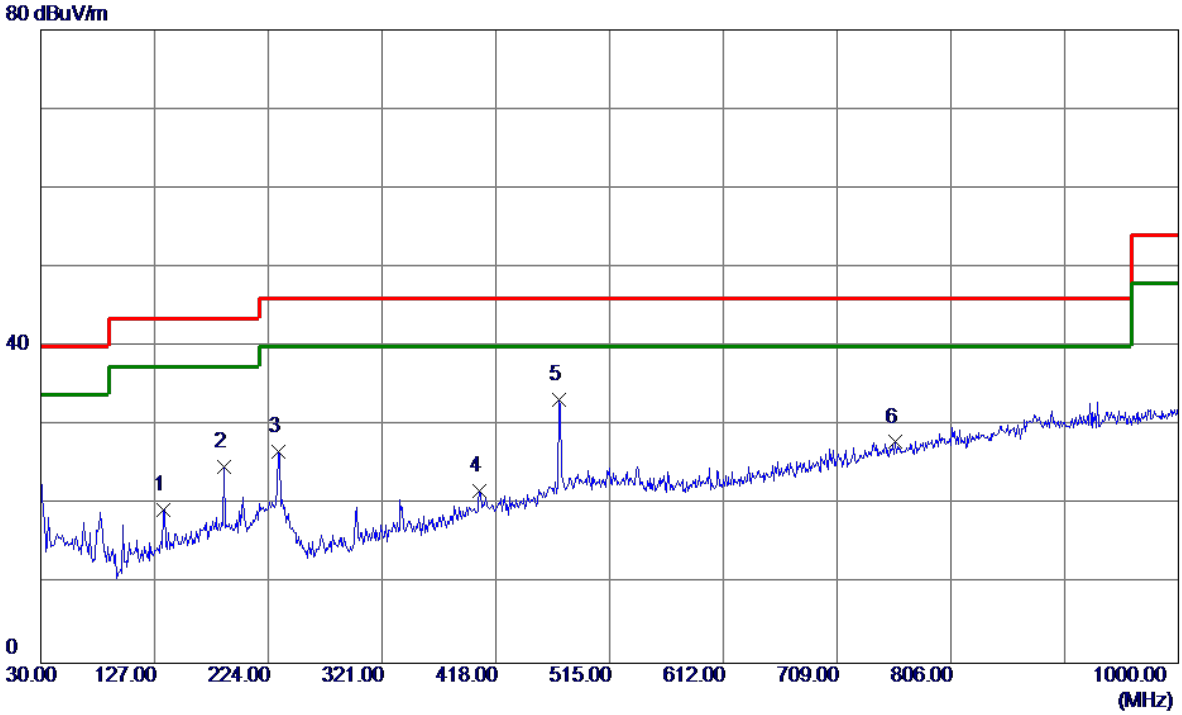
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	66.8600	37.53	-15.67	21.86	40.00	-18.14	Peak	
2	232.7300	45.53	-14.19	31.34	46.00	-14.66	Peak	
3 *	333.6099	44.13	-12.24	31.89	46.00	-14.11	Peak	
4	473.2900	40.58	-9.37	31.21	46.00	-14.79	Peak	
5	644.9800	29.87	-5.57	24.30	46.00	-21.70	Peak	
6	753.6200	30.84	-2.37	28.47	46.00	-17.53	Peak	

Test Mode:	TX B MODE CHANNEL 11

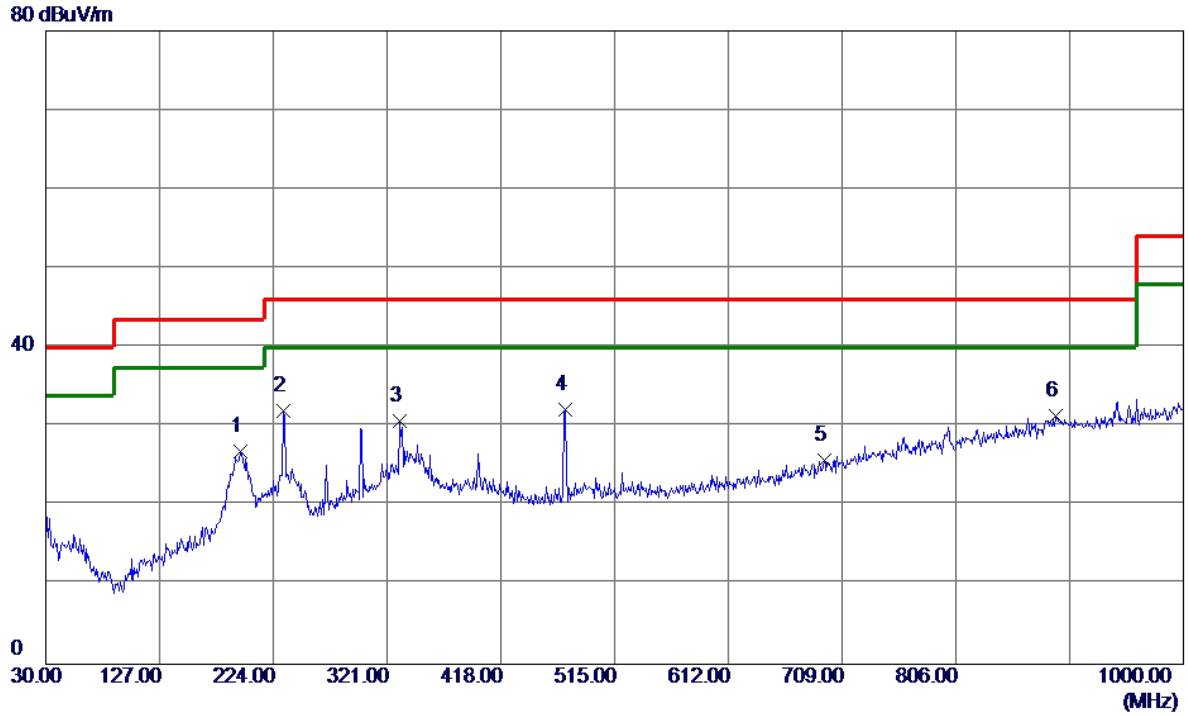
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	134.7600	33.89	-14.47	19.42	43.50	-24.08	Peak	
2	186.1700	37.38	-12.54	24.84	43.50	-18.66	Peak	
3	232.7300	40.90	-14.19	26.71	46.00	-19.29	Peak	
4	404.4200	33.01	-11.23	21.78	46.00	-24.22	Peak	
5 *	471.3500	42.74	-9.42	33.32	46.00	-12.68	Peak	
6	758.4699	30.18	-2.26	27.92	46.00	-18.08	Peak	

Test Mode:	TX B MODE CHANNEL 11

Horizontal

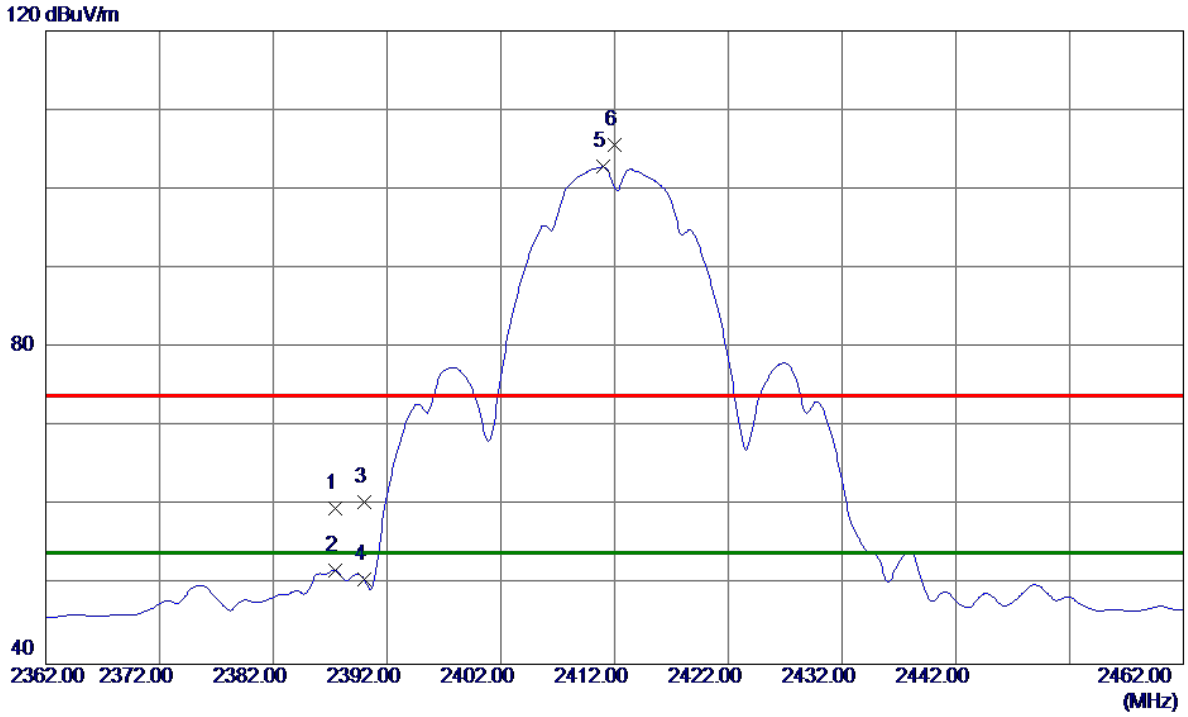


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	195.8700	40.20	-13.38	26.82	43.50	-16.68	Peak	
2	232.7300	46.20	-14.19	32.01	46.00	-13.99	Peak	
3	331.6700	42.96	-12.28	30.68	46.00	-15.32	Peak	
4 *	473.2900	41.48	-9.37	32.11	46.00	-13.89	Peak	
5	693.4800	29.93	-4.14	25.79	46.00	-20.21	Peak	
6	891.3600	30.52	0.85	31.37	46.00	-14.63	Peak	

APPENDIX D - RADIATED EMISSION (ABOVE 1000MHZ)

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

Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2387.4000	26.70	33.05	59.75	74.00	-14.25	Peak	
2	2387.4000	18.82	33.05	51.87	54.00	-2.13	AVG	
3	2390.0000	27.45	33.06	60.51	74.00	-13.49	Peak	
4	2390.0000	17.62	33.06	50.68	54.00	-3.32	AVG	
5 *	2411.0000	69.67	33.14	102.81	54.00	48.81	AVG	No Limit
6	2412.0000	72.43	33.14	105.57	74.00	31.57	Peak	No Limit

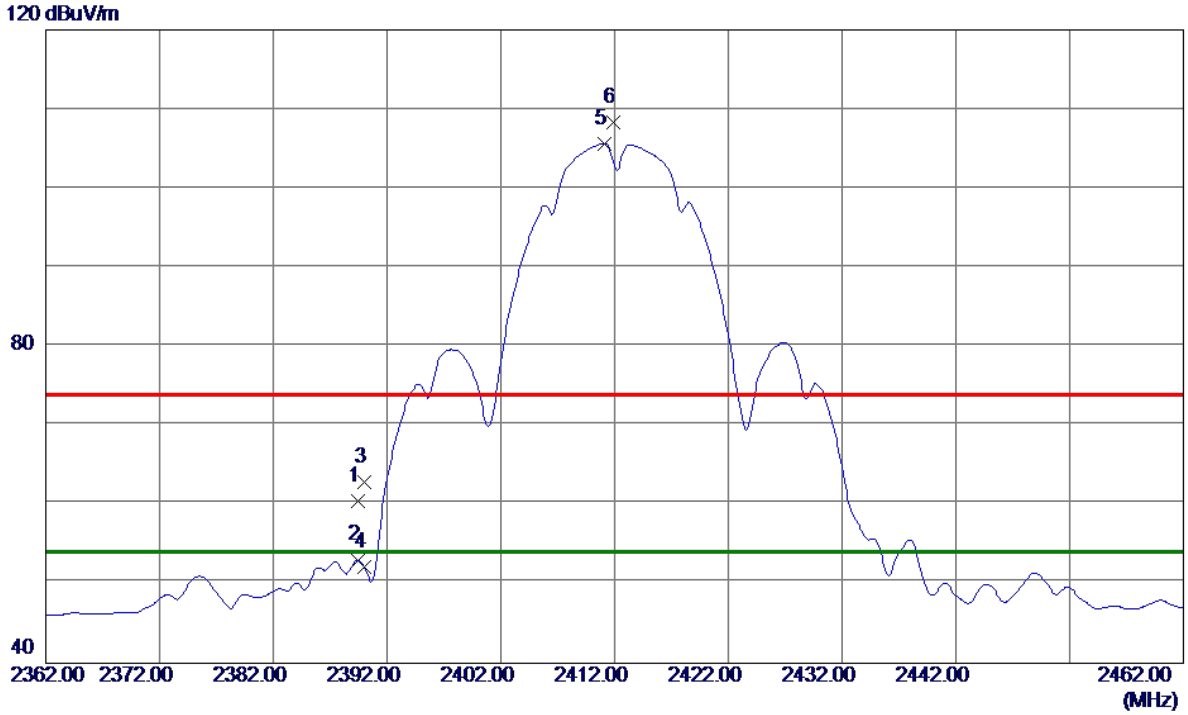
Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz

Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4824.1050	47.49	6.66	54.15	74.00	-19.85	Peak	
2 *	4824.1800	45.99	6.66	52.65	54.00	-1.35	AVG	

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

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2389.4000	27.41	33.05	60.46	74.00	-13.54	Peak	
2	2389.4000	19.99	33.05	53.04	54.00	-0.96	AVG	
3	2390.0000	29.79	33.06	62.85	74.00	-11.15	Peak	
4	2390.0000	19.14	33.06	52.20	54.00	-1.80	AVG	
5 *	2411.1000	72.45	33.14	105.59	54.00	51.59	AVG	No Limit
6	2411.9000	75.25	33.14	108.39	74.00	34.39	Peak	No Limit

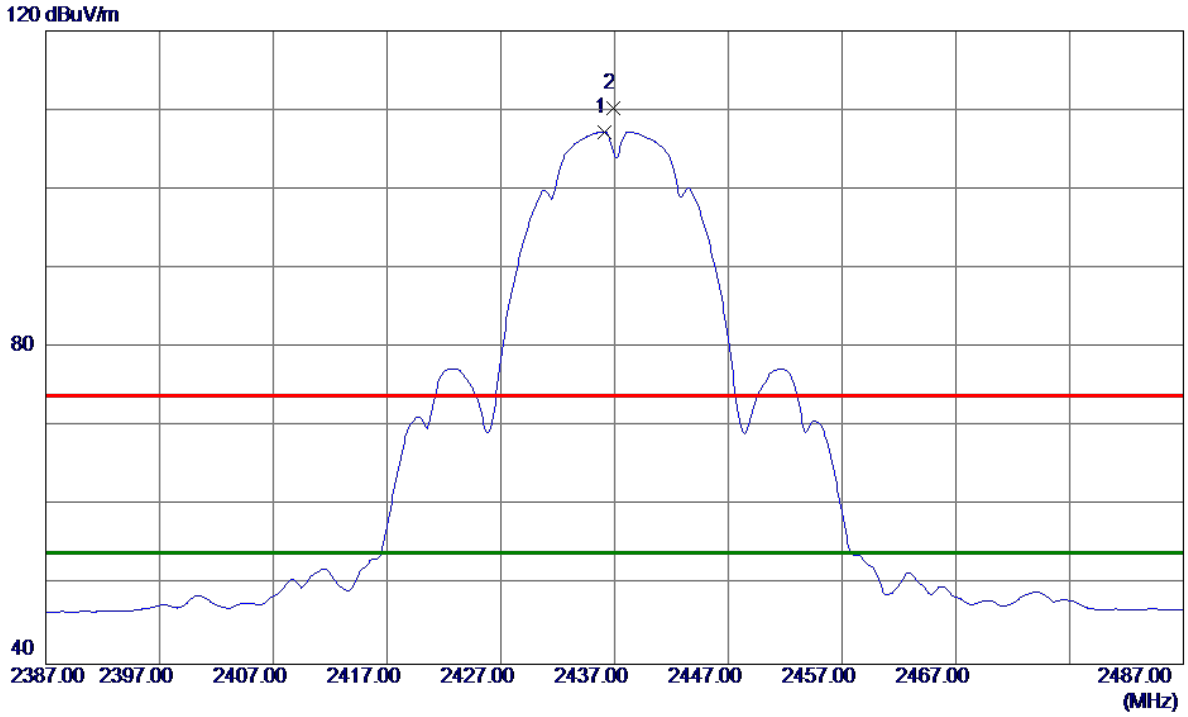
Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz

Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4824.2500	46.30	6.66	52.96	54.00	-1.04	AVG	
2	4824.3300	48.08	6.66	54.74	74.00	-19.26	Peak	

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

Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2436.1000	74.03	33.23	107.26	54.00	53.26	AVG	No Limit
2	2436.9000	77.04	33.23	110.27	74.00	36.27	Peak	No Limit

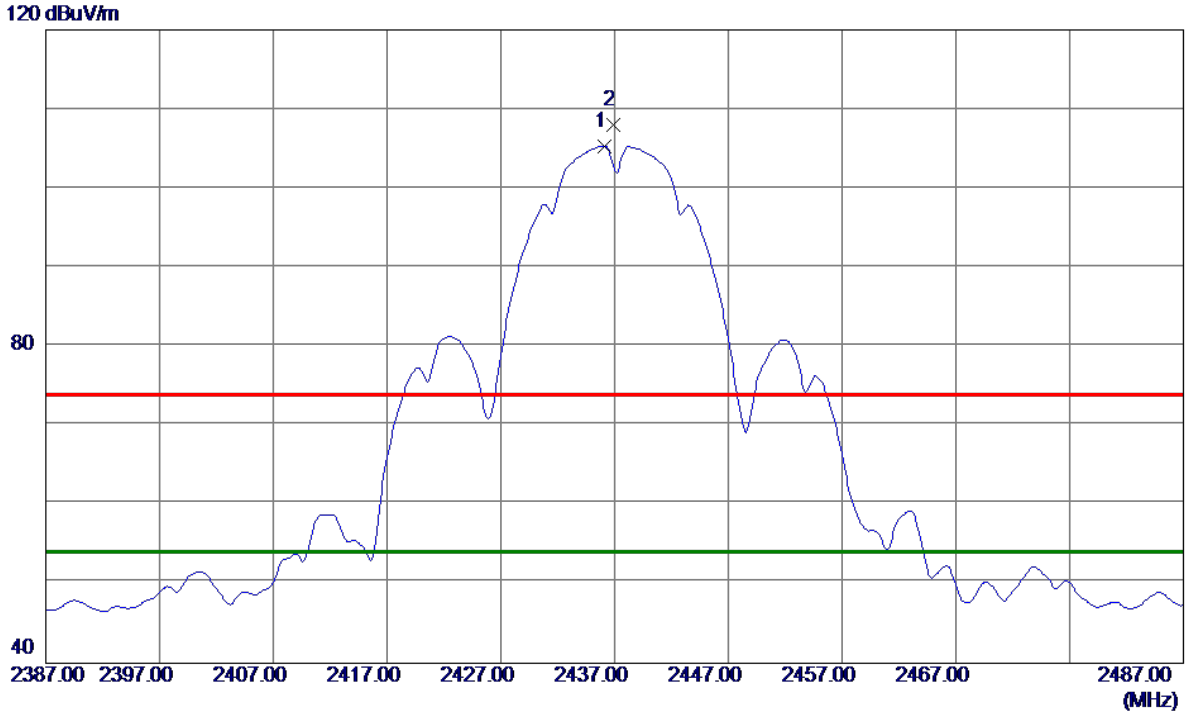
Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz

Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.1850	44.16	6.84	51.00	54.00	-3.00	AVG	
2	4874.2000	45.97	6.84	52.81	74.00	-21.19	Peak	

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

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2436.1000	72.08	33.23	105.31	54.00	51.31	AVG	No Limit
2	2436.9000	74.71	33.23	107.94	74.00	33.94	Peak	No Limit

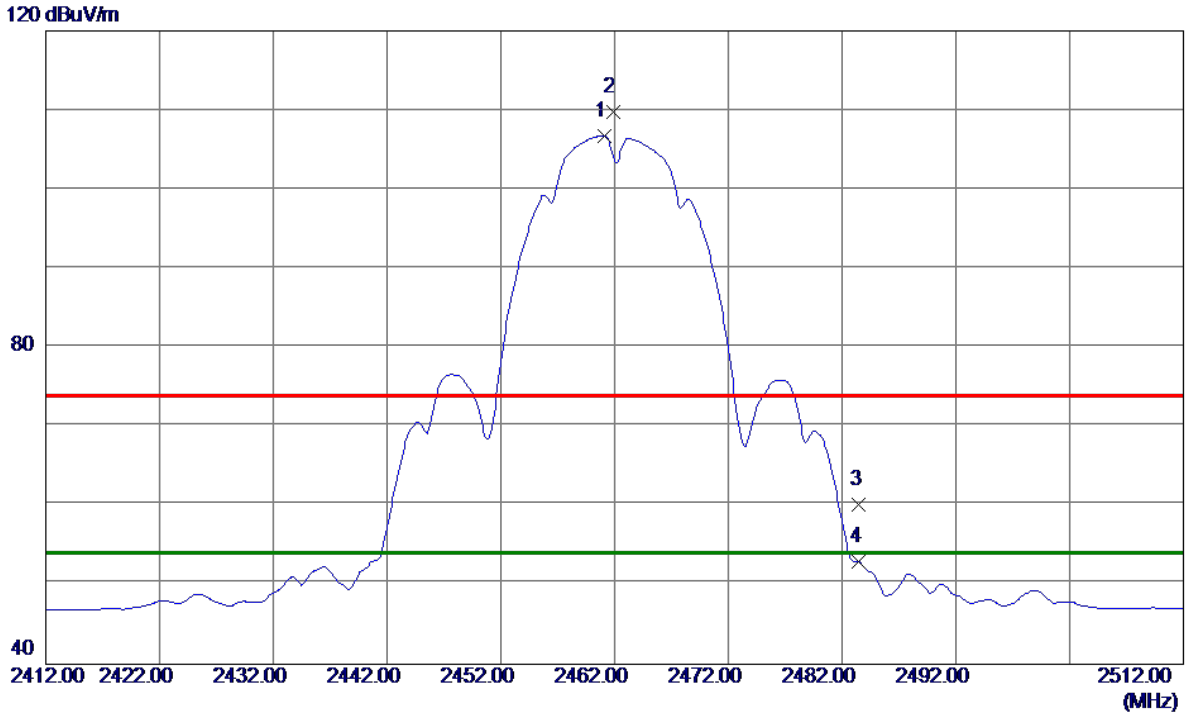
Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz

Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.1800	45.38	6.84	52.22	54.00	-1.78	AVG	
2	4874.2200	47.07	6.84	53.91	74.00	-20.09	Peak	

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

Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2461.1000	73.41	33.32	106.73	54.00	52.73	AVG	No Limit
2	2461.9000	76.39	33.33	109.72	74.00	35.72	Peak	No Limit
3	2483.5000	26.80	33.41	60.21	74.00	-13.79	Peak	
4	2483.5000	19.54	33.41	52.95	54.00	-1.05	AVG	

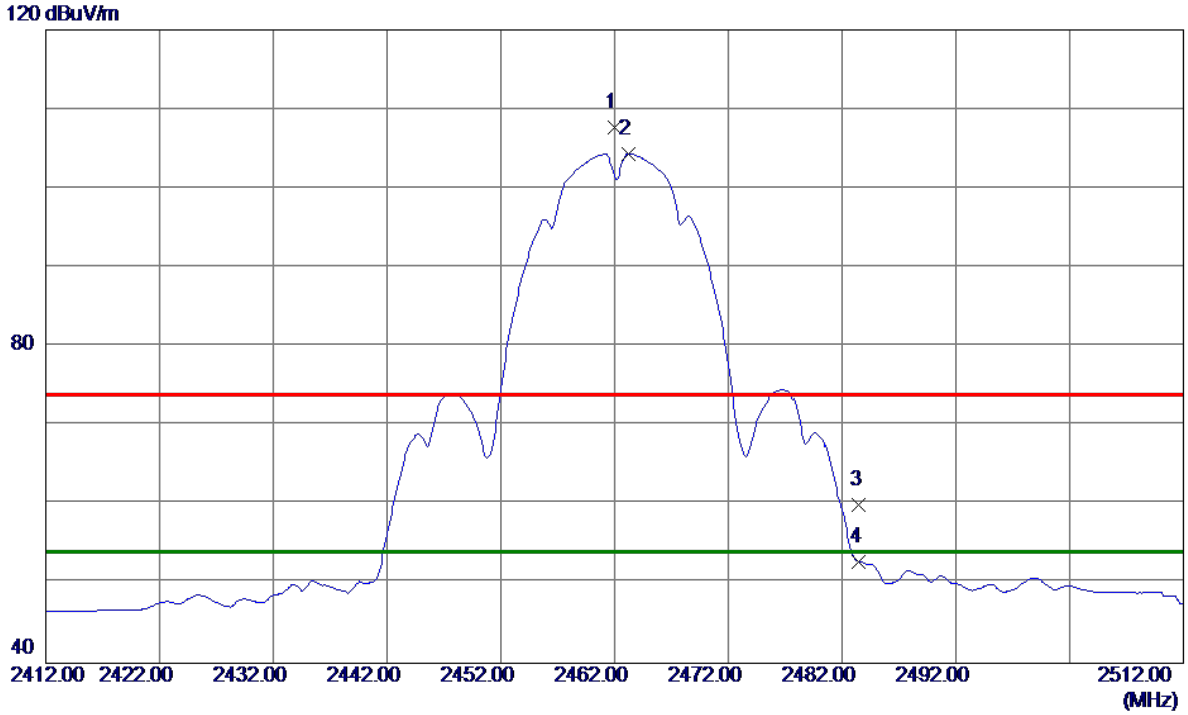
Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4924.1700	43.76	7.02	50.78	54.00	-3.22	AVG	
2	4924.2799	45.42	7.02	52.44	74.00	-21.56	Peak	

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

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2462.0000	74.31	33.33	107.64	74.00	33.64	Peak	No Limit
2 *	2463.2000	71.06	33.33	104.39	54.00	50.39	AVG	No Limit
3	2483.5000	26.56	33.41	59.97	74.00	-14.03	Peak	
4	2483.5000	19.41	33.41	52.82	54.00	-1.18	AVG	

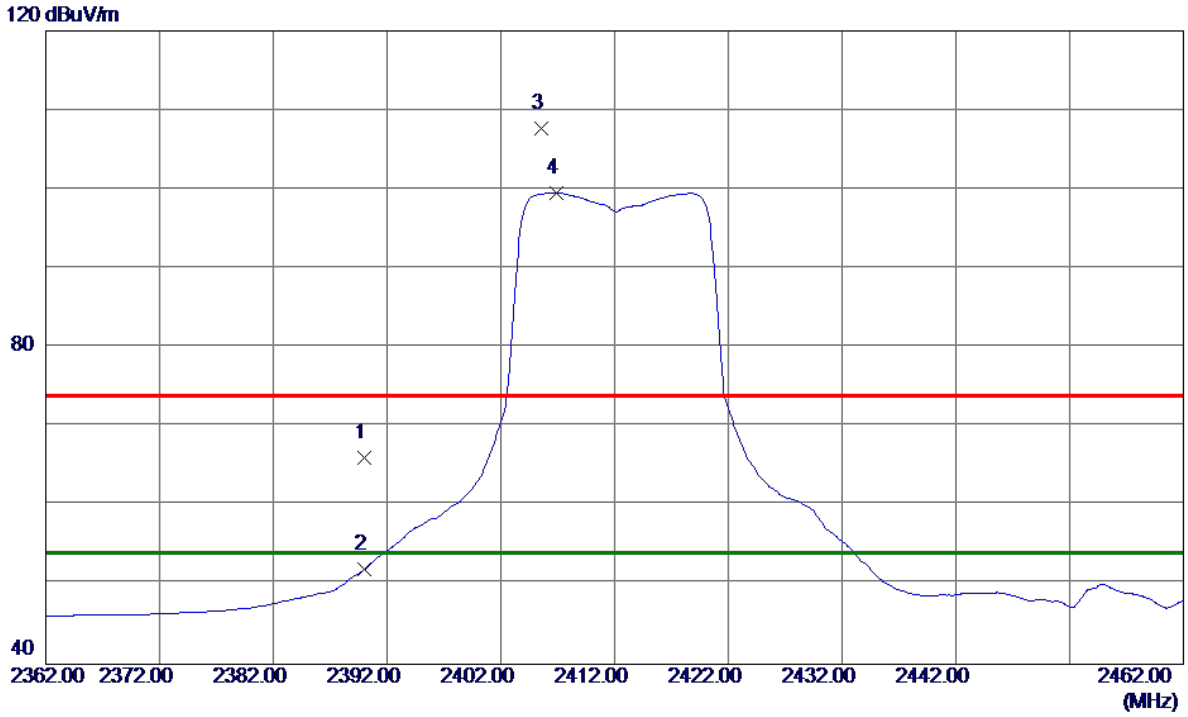
Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4924.1750	45.30	7.02	52.32	54.00	-1.68	AVG	
2	4924.1950	46.97	7.02	53.99	74.00	-20.01	Peak	

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

Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	33.04	33.06	66.10	74.00	-7.90	Peak	
2	2390.0000	18.90	33.06	51.96	54.00	-2.04	AVG	
3	2405.6000	74.62	33.11	107.73	74.00	33.73	Peak	No Limit
4 *	2406.9000	66.38	33.12	99.50	54.00	45.50	AVG	No Limit

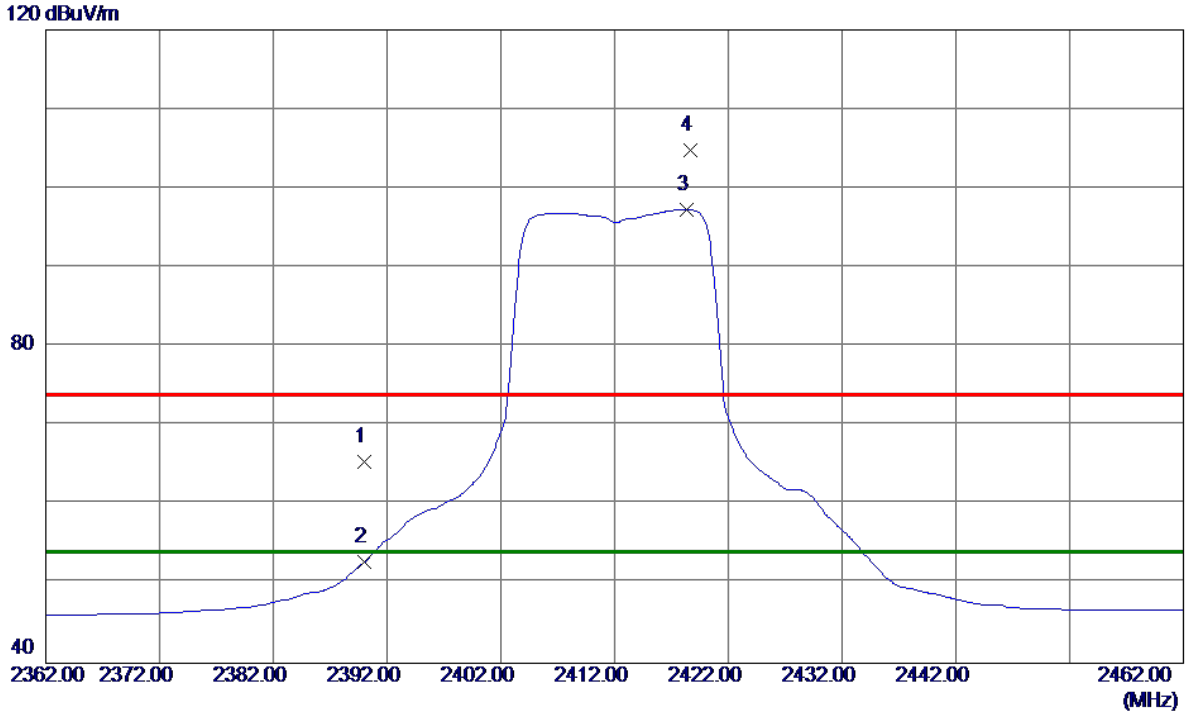
Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz

Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4818.2000	37.07	6.64	43.71	74.00	-30.29	Peak	
2 *	4823.9000	27.44	6.66	34.10	54.00	-19.90	AVG	

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

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	32.33	33.06	65.39	74.00	-8.61	Peak	
2	2390.0000	19.72	33.06	52.78	54.00	-1.22	AVG	
3 *	2418.3000	64.15	33.16	97.31	54.00	43.31	AVG	No Limit
4	2418.7000	71.71	33.16	104.87	74.00	30.87	Peak	No Limit

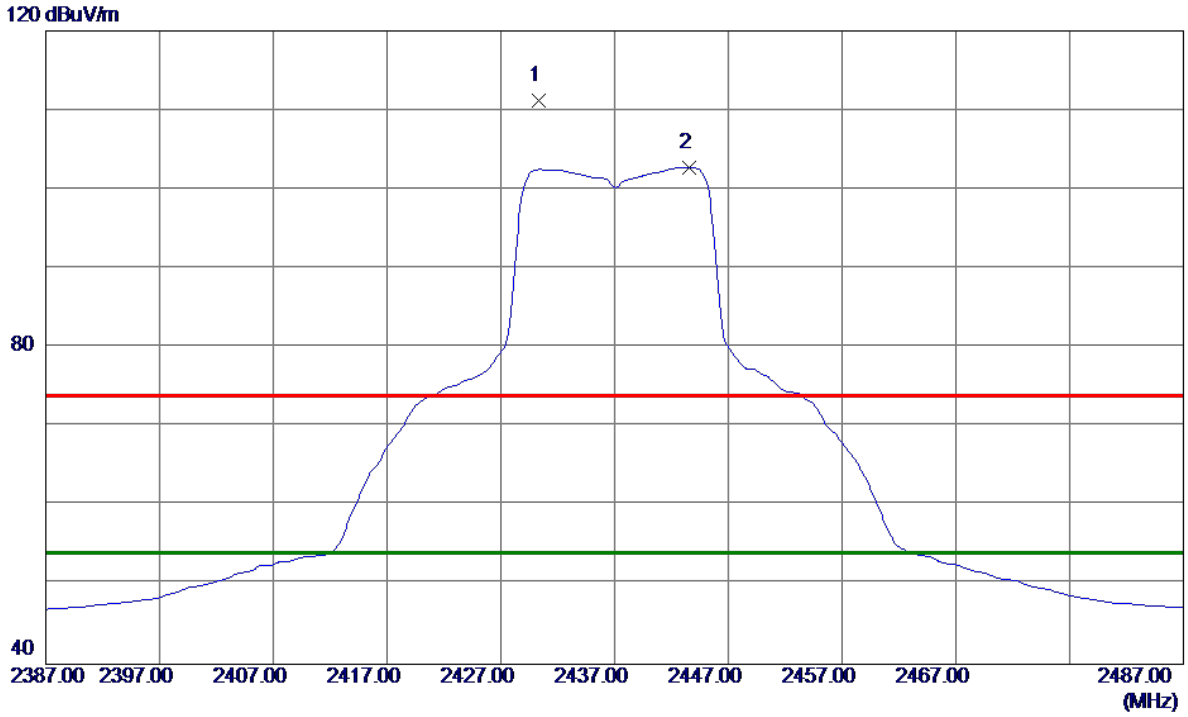
Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz

Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4819.4500	37.82	6.64	44.46	74.00	-29.54	Peak	
2 *	4823.8500	28.88	6.66	35.54	54.00	-18.46	AVG	

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

Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2430.3000	77.97	33.21	111.18	74.00	37.18	Peak	No Limit
2 *	2443.6000	69.47	33.26	102.73	54.00	48.73	AVG	No Limit

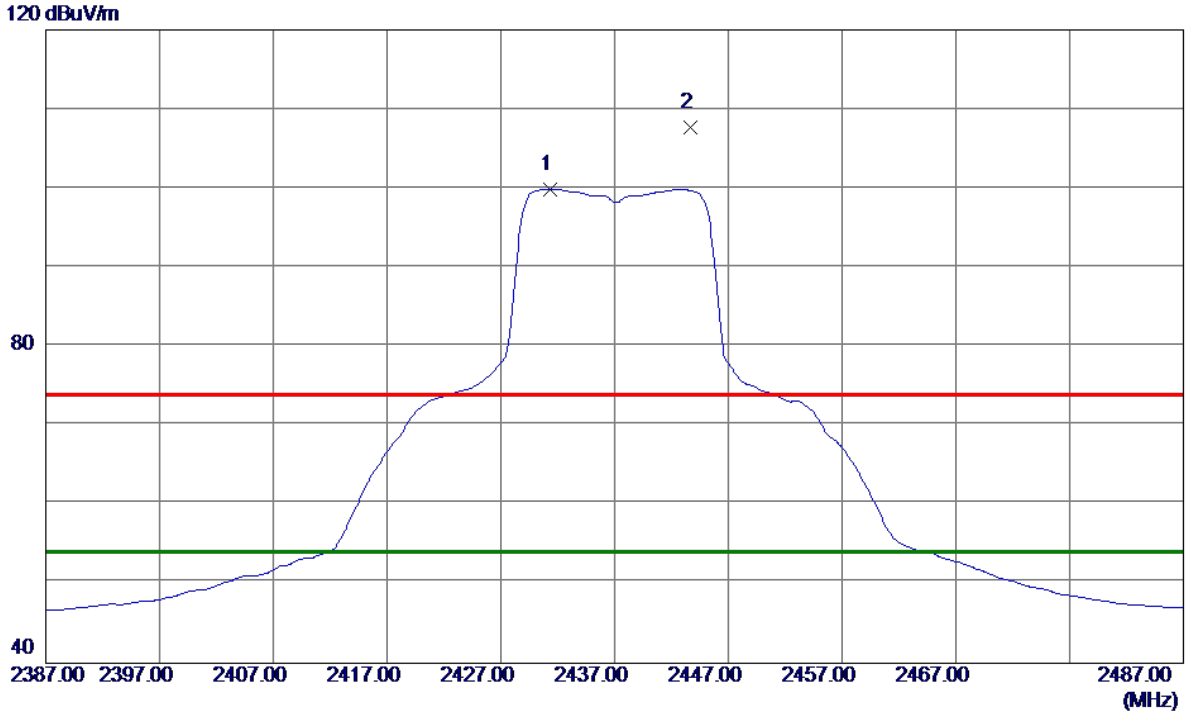
Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873.5000	32.44	6.84	39.28	74.00	-34.72	Peak	
2 *	4873.9500	23.03	6.84	29.87	54.00	-24.13	AVG	

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

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2431.3000	66.60	33.21	99.81	54.00	45.81	AVG	No Limit
2	2443.7000	74.48	33.26	107.74	74.00	33.74	Peak	No Limit

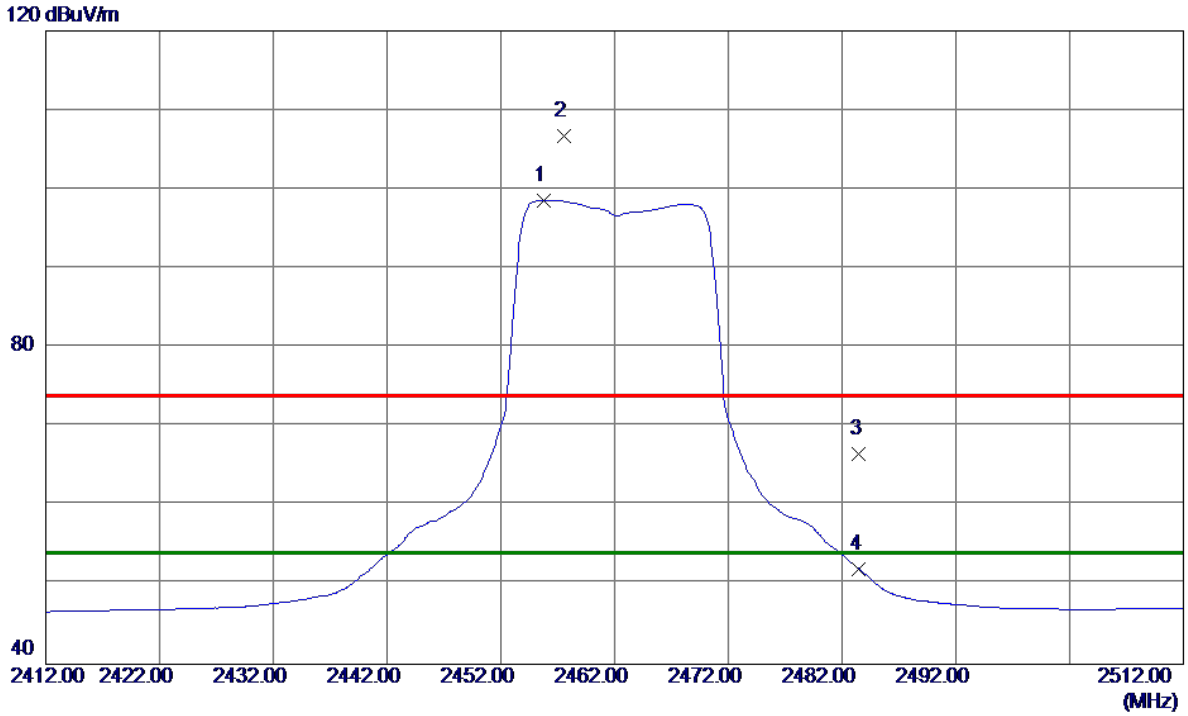
Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873.6500	36.58	6.84	43.42	74.00	-30.58	Peak	
2 *	4874.4000	25.01	6.84	31.85	54.00	-22.15	AVG	

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

Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2455.8000	65.27	33.30	98.57	54.00	44.57	AVG	No Limit
2	2457.6000	73.40	33.31	106.71	74.00	32.71	Peak	No Limit
3	2483.5000	33.18	33.41	66.59	74.00	-7.41	Peak	
4	2483.5000	18.59	33.41	52.00	54.00	-2.00	AVG	

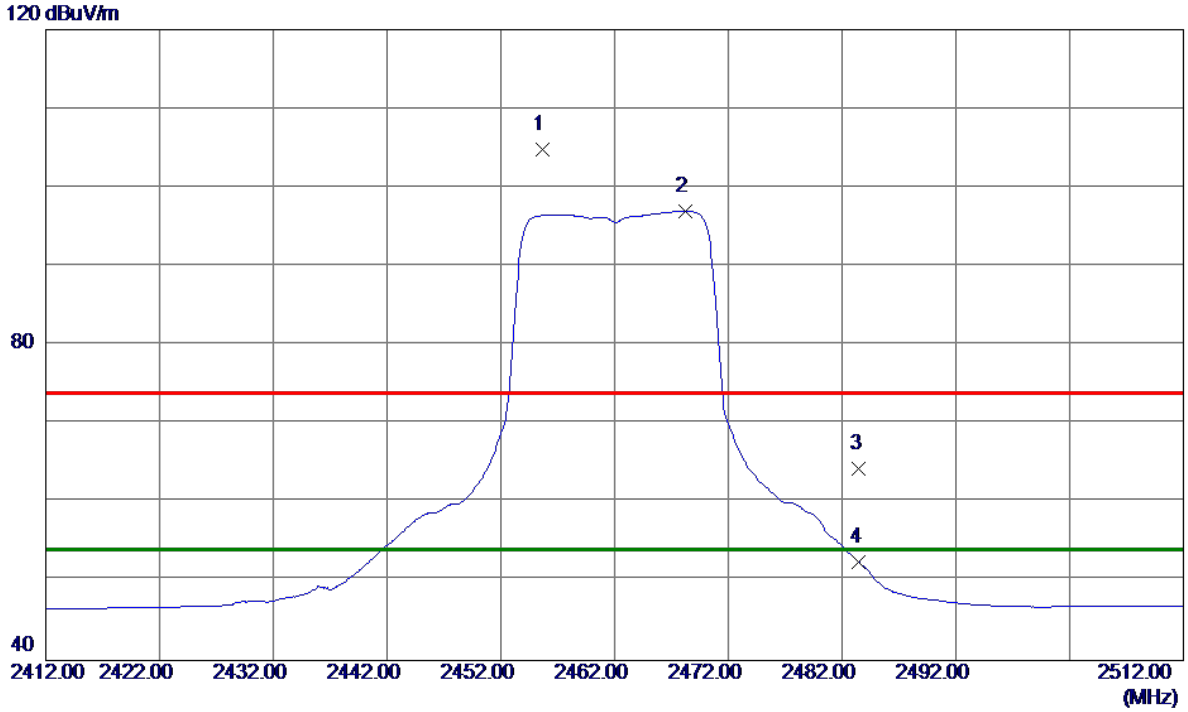
Orthogonal Axis :	X
Test Mode :	TX G MODE 2462MHz

Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4923.0500	23.17	7.01	30.18	54.00	-23.82	AVG	
2	4923.7000	32.73	7.02	39.75	74.00	-34.25	Peak	

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

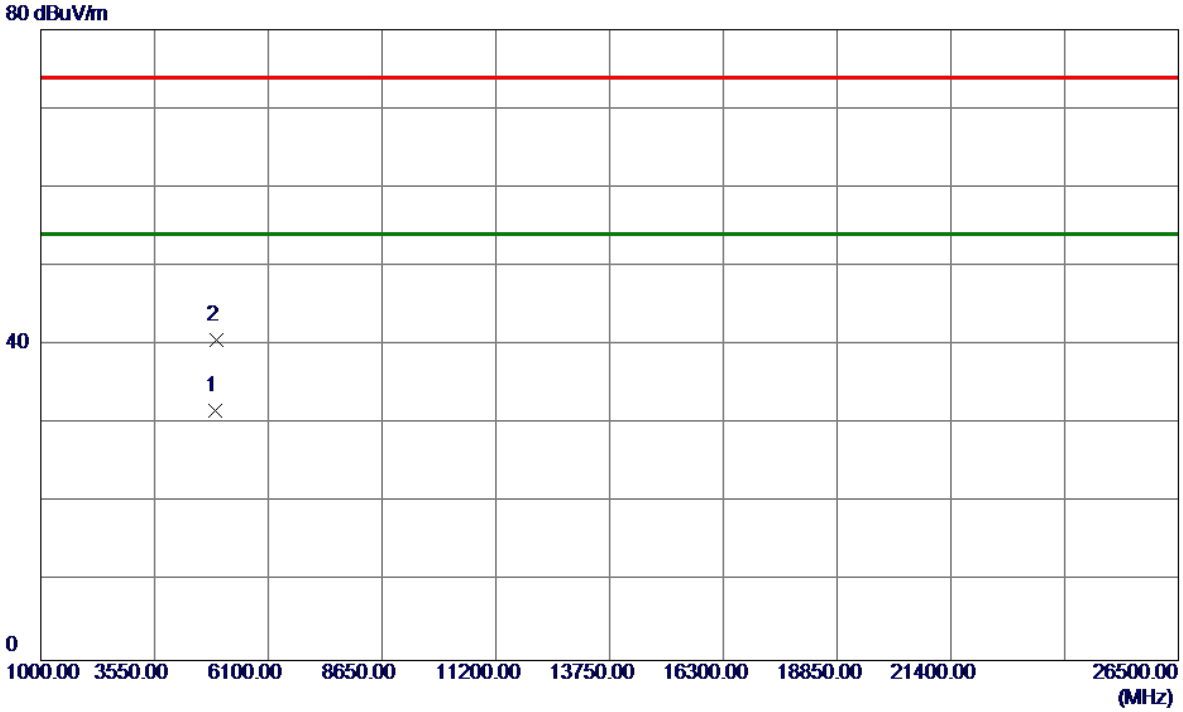
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2455.7000	71.53	33.30	104.83	74.00	30.83	Peak	No Limit
2 *	2468.2000	63.67	33.35	97.02	54.00	43.02	AVG	No Limit
3	2483.5000	30.85	33.41	64.26	74.00	-9.74	Peak	
4	2483.5000	19.00	33.41	52.41	54.00	-1.59	AVG	

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

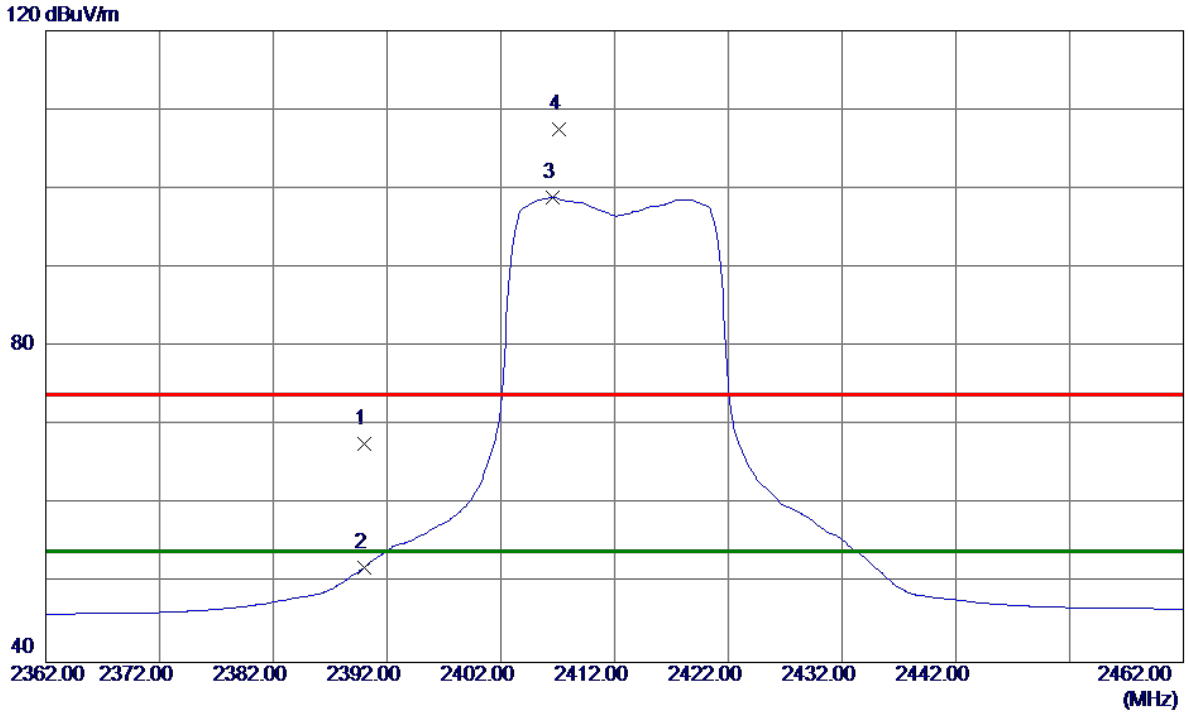
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4923.3500	24.64	7.01	31.65	54.00	-22.35	AVG	
2	4924.8500	33.59	7.02	40.61	74.00	-33.39	Peak	

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

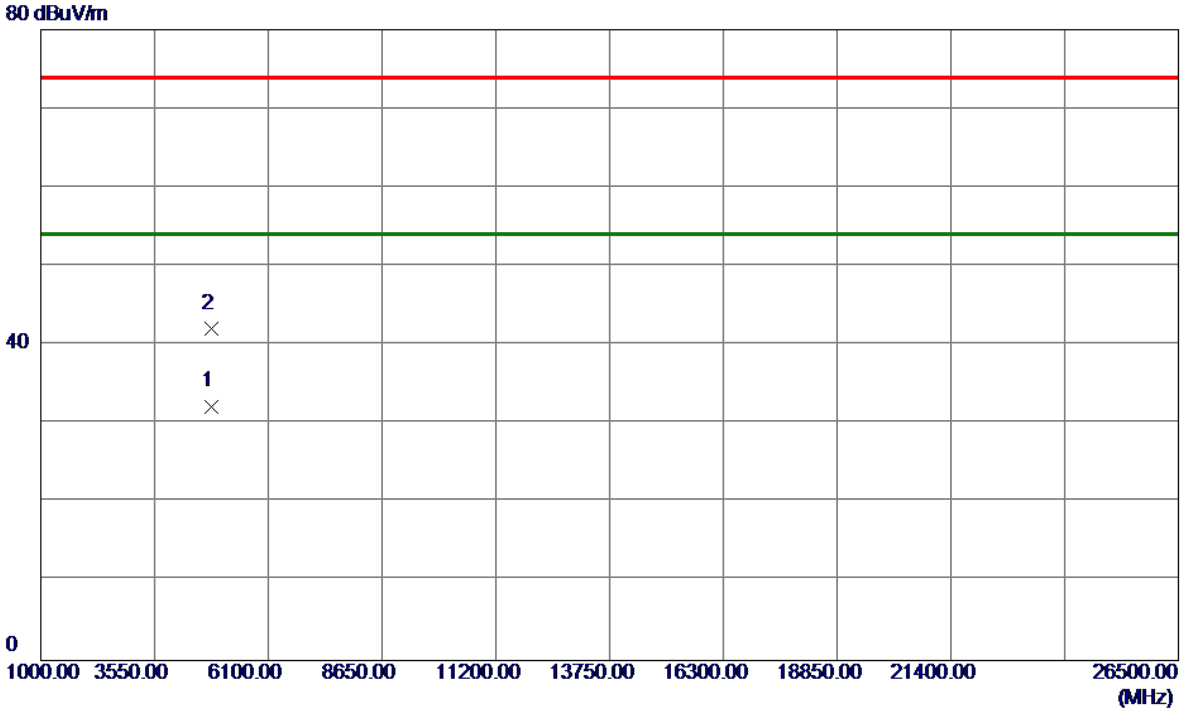
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	34.55	33.06	67.61	74.00	-6.39	Peak	
2	2390.0000	18.97	33.06	52.03	54.00	-1.97	AVG	
3 *	2406.6000	65.78	33.12	98.90	54.00	44.90	AVG	No Limit
4	2407.1000	74.43	33.12	107.55	74.00	33.55	Peak	No Limit

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

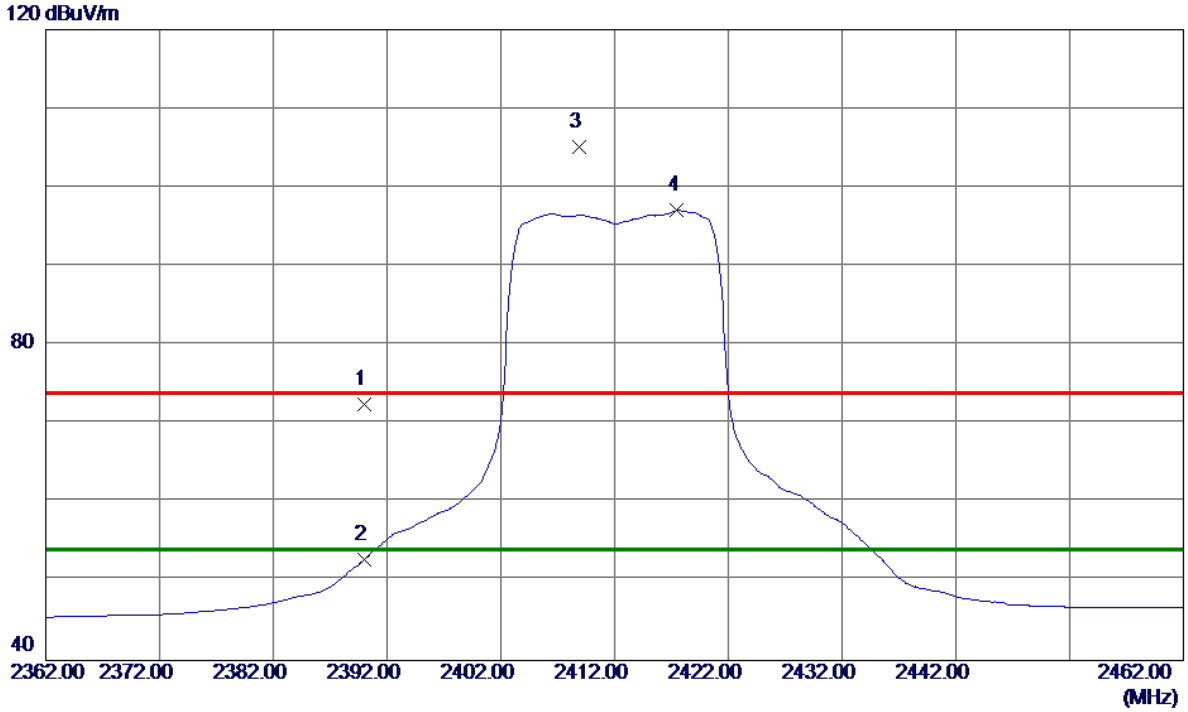
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4822.7000	25.59	6.65	32.24	54.00	-21.76	AVG	
2	4824.1000	35.35	6.66	42.01	74.00	-31.99	Peak	

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

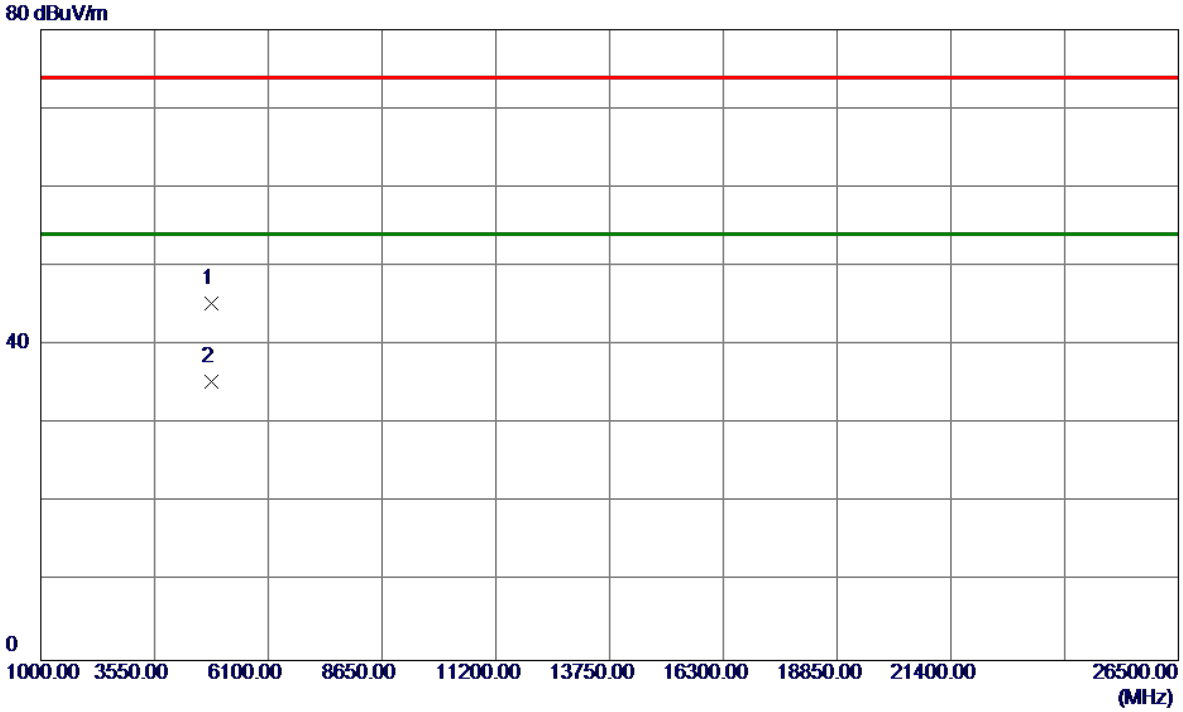
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	39.49	33.06	72.55	74.00	-1.45	Peak	
2	2390.0000	19.73	33.06	52.79	54.00	-1.21	AVG	
3	2408.9000	72.00	33.13	105.13	74.00	31.13	Peak	No Limit
4 *	2417.5000	63.94	33.16	97.10	54.00	43.10	AVG	No Limit

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

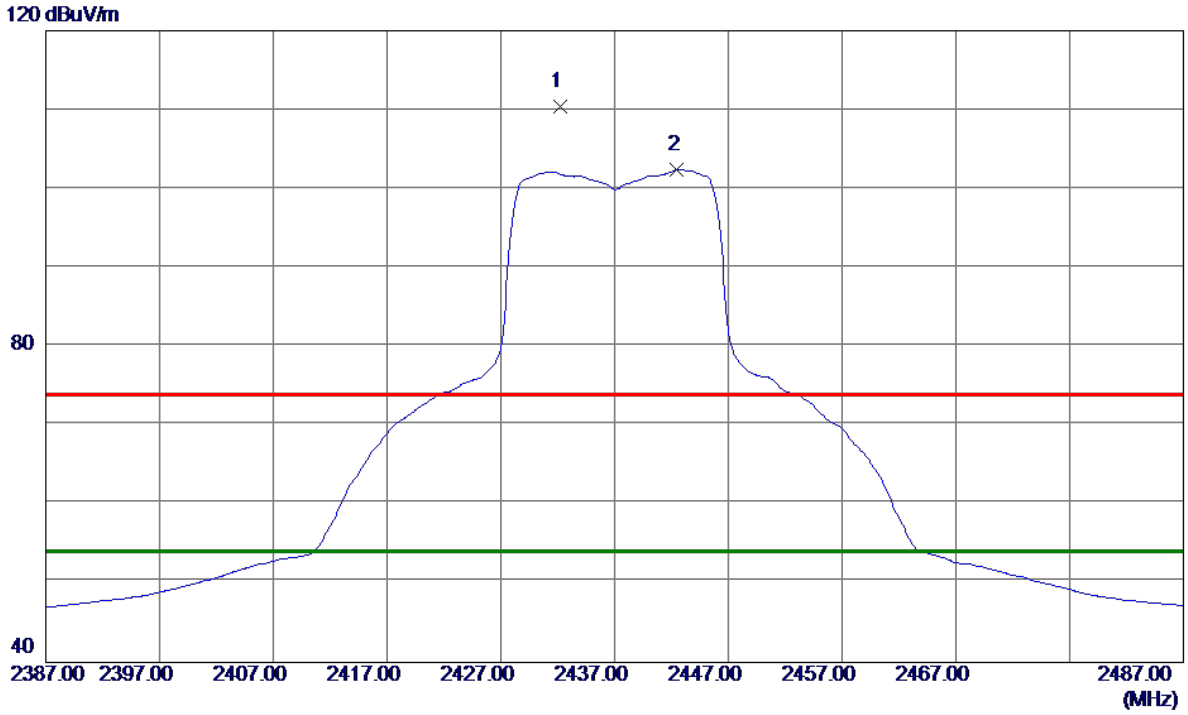
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823.5000	38.66	6.66	45.32	74.00	-28.68	Peak	
2 *	4823.7000	28.74	6.66	35.40	54.00	-18.60	AVG	

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

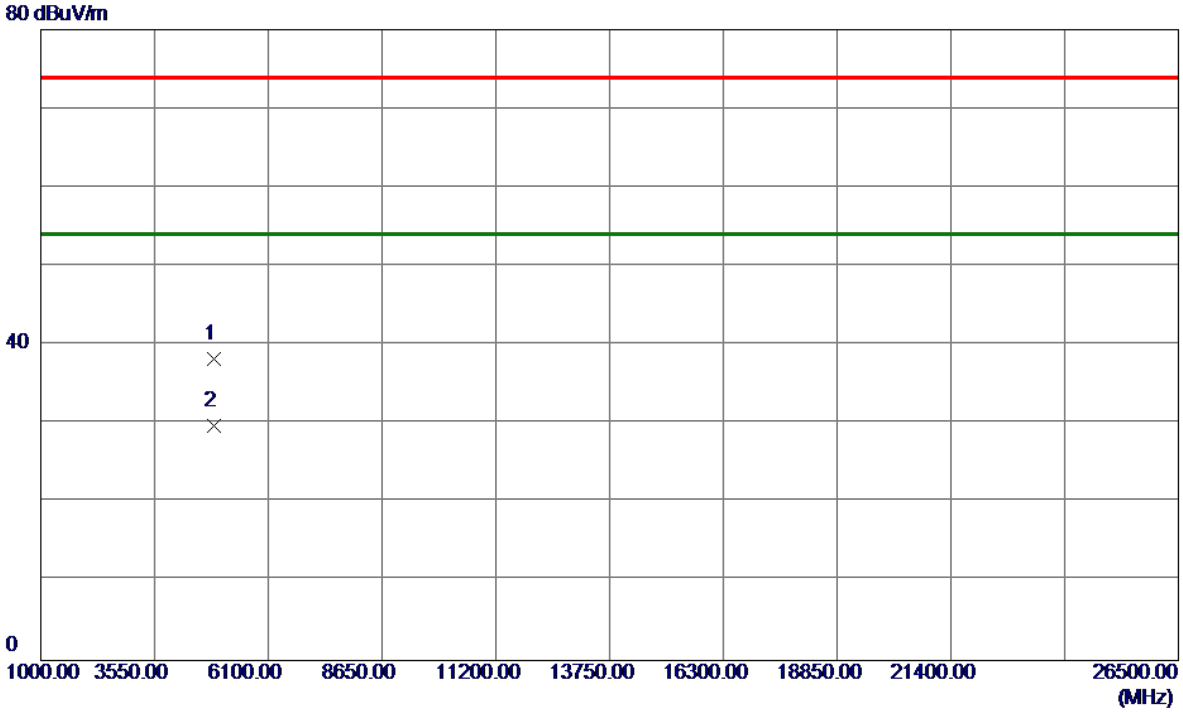
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2432.2000	77.19	33.21	110.40	74.00	36.40	Peak	No Limit
2 *	2442.5000	69.20	33.25	102.45	54.00	48.45	AVG	No Limit

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

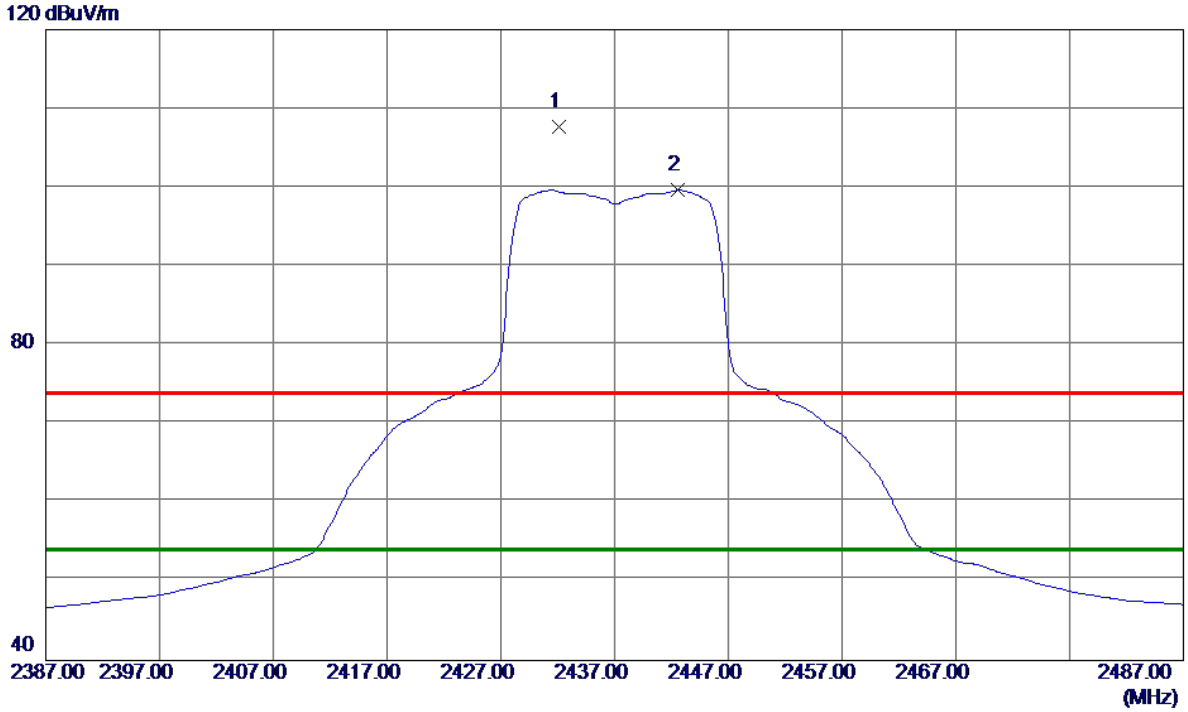
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873.4500	31.40	6.84	38.24	74.00	-35.76	Peak	
2 *	4874.1500	22.88	6.84	29.72	54.00	-24.28	AVG	

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

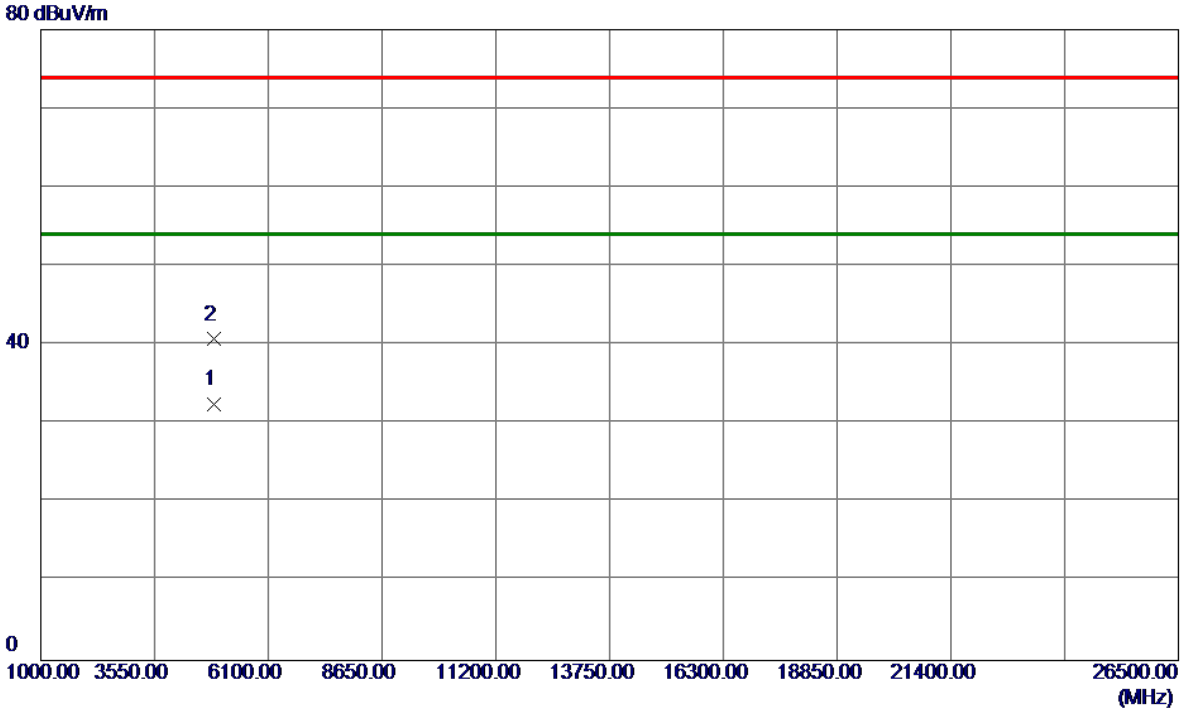
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2432.1000	74.51	33.21	107.72	74.00	33.72	Peak	No Limit
2 *	2442.6000	66.41	33.25	99.66	54.00	45.66	AVG	No Limit

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

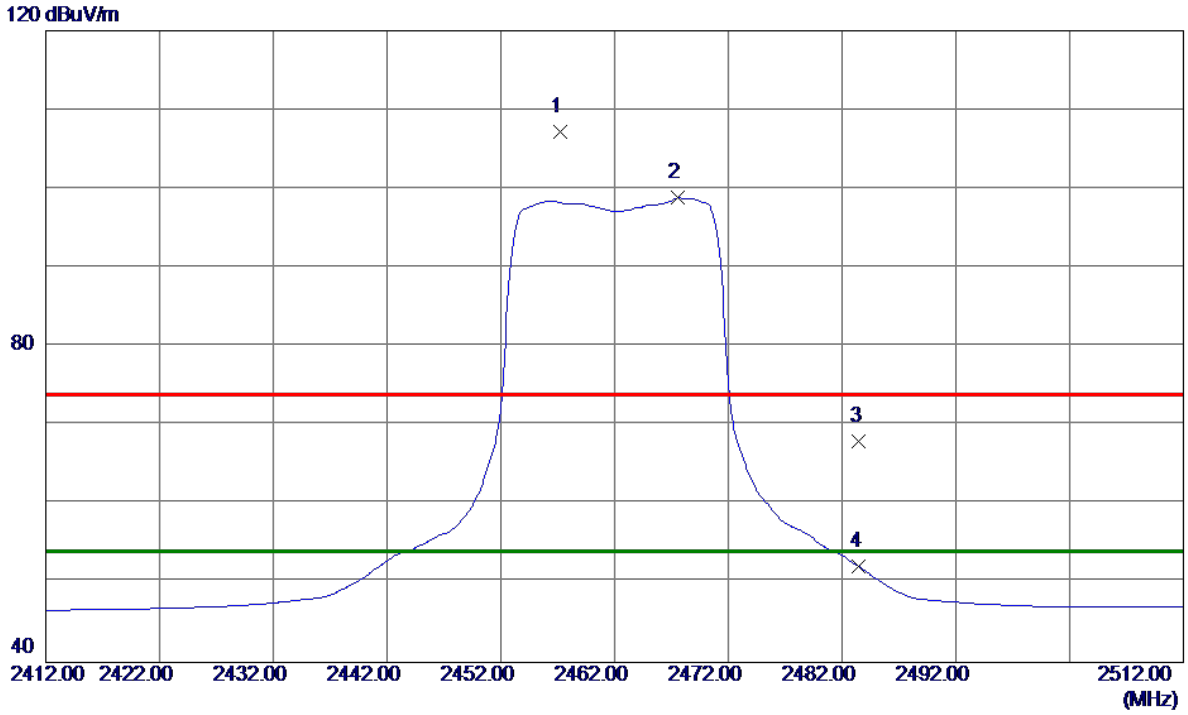
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4873.1000	25.66	6.83	32.49	54.00	-21.51	AVG	
2	4874.3500	33.88	6.84	40.72	74.00	-33.28	Peak	

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

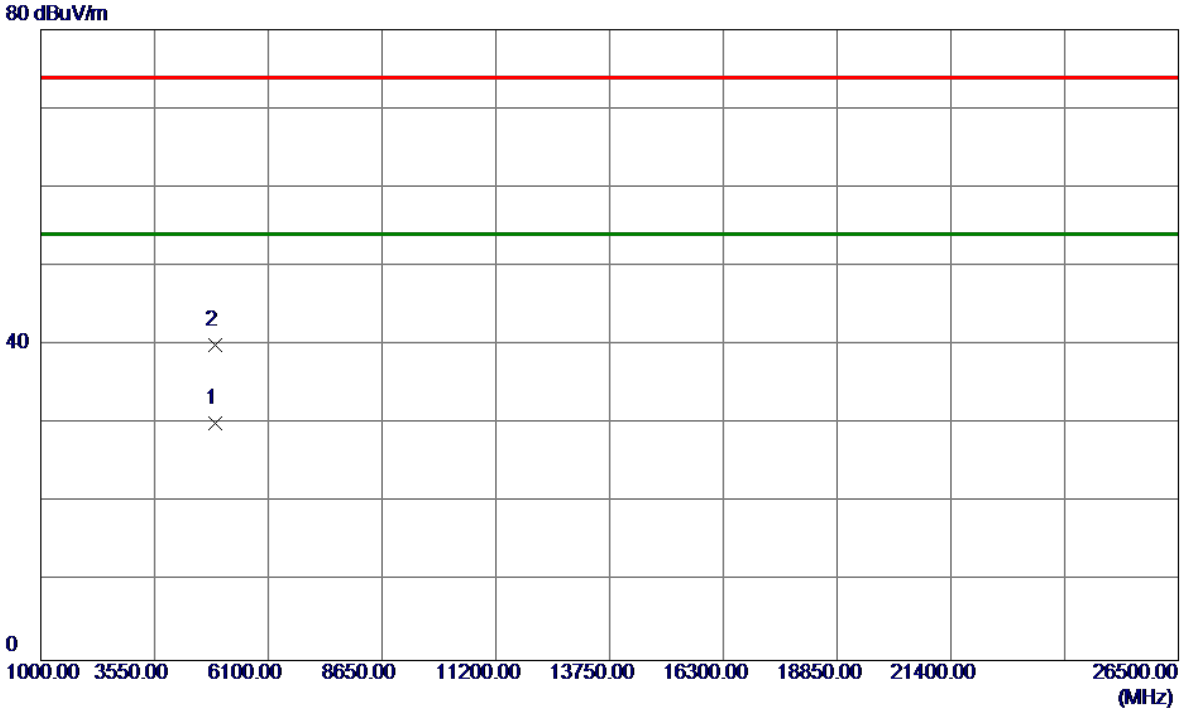
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2457.2000	73.81	33.31	107.12	74.00	33.12	Peak	No Limit
2 *	2467.6000	65.48	33.35	98.83	54.00	44.83	AVG	No Limit
3	2483.5000	34.62	33.41	68.03	74.00	-5.97	Peak	
4	2483.5000	18.71	33.41	52.12	54.00	-1.88	AVG	

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

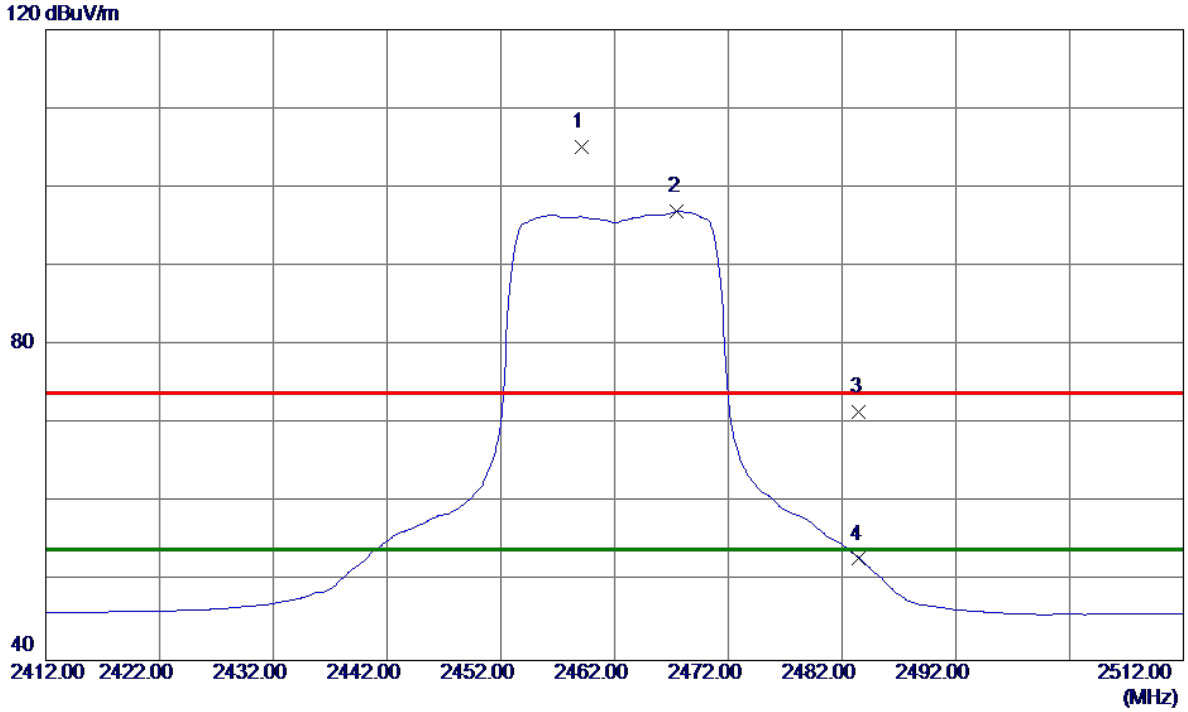
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4924.0000	23.11	7.02	30.13	54.00	-23.87	AVG	
2	4924.0500	33.00	7.02	40.02	74.00	-33.98	Peak	

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

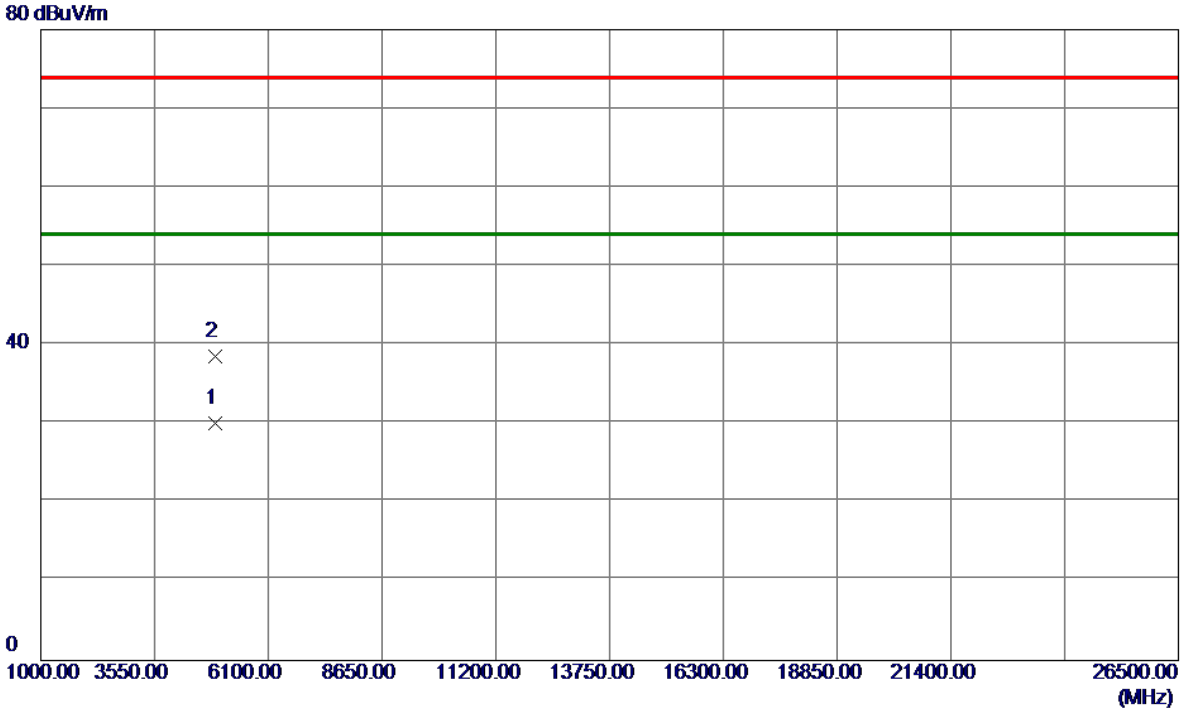
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2459.1000	71.75	33.32	105.07	74.00	31.07	Peak	No Limit
2 *	2467.5000	63.64	33.35	96.99	54.00	42.99	AVG	No Limit
3	2483.5000	38.19	33.41	71.60	74.00	-2.40	Peak	
4	2483.5000	19.47	33.41	52.88	54.00	-1.12	AVG	

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

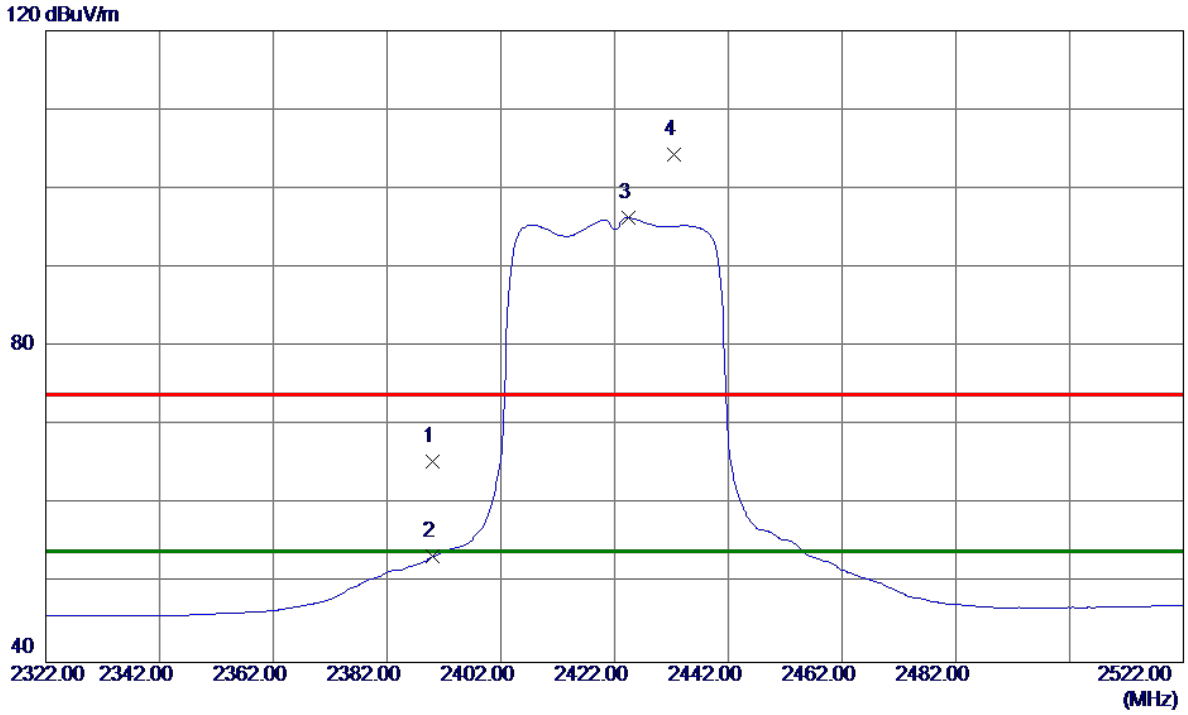
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4923.7500	23.13	7.02	30.15	54.00	-23.85	AVG	
2	4924.0000	31.50	7.02	38.52	74.00	-35.48	Peak	

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2422MHz

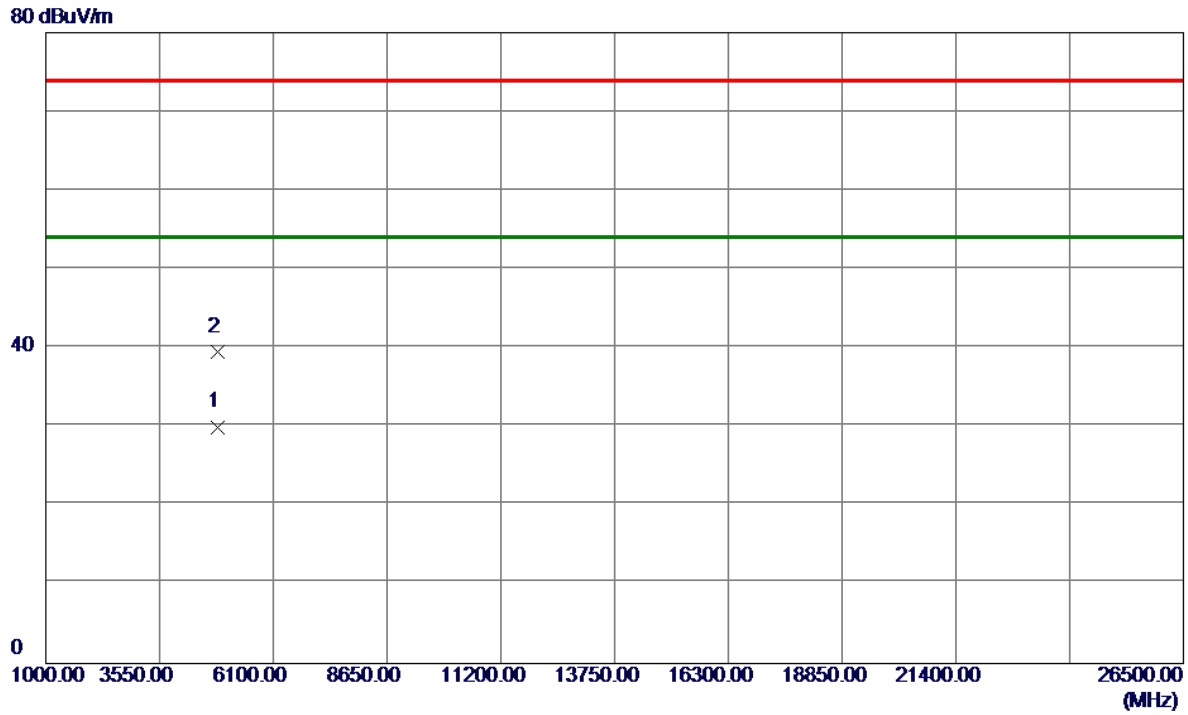
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	32.44	33.06	65.50	74.00	-8.50	Peak	
2	2390.0000	20.34	33.06	53.40	54.00	-0.60	AVG	
3 *	2424.4000	63.10	33.19	96.29	54.00	42.29	AVG	No Limit
4	2432.4000	71.15	33.22	104.37	74.00	30.37	Peak	No Limit

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2422MHz

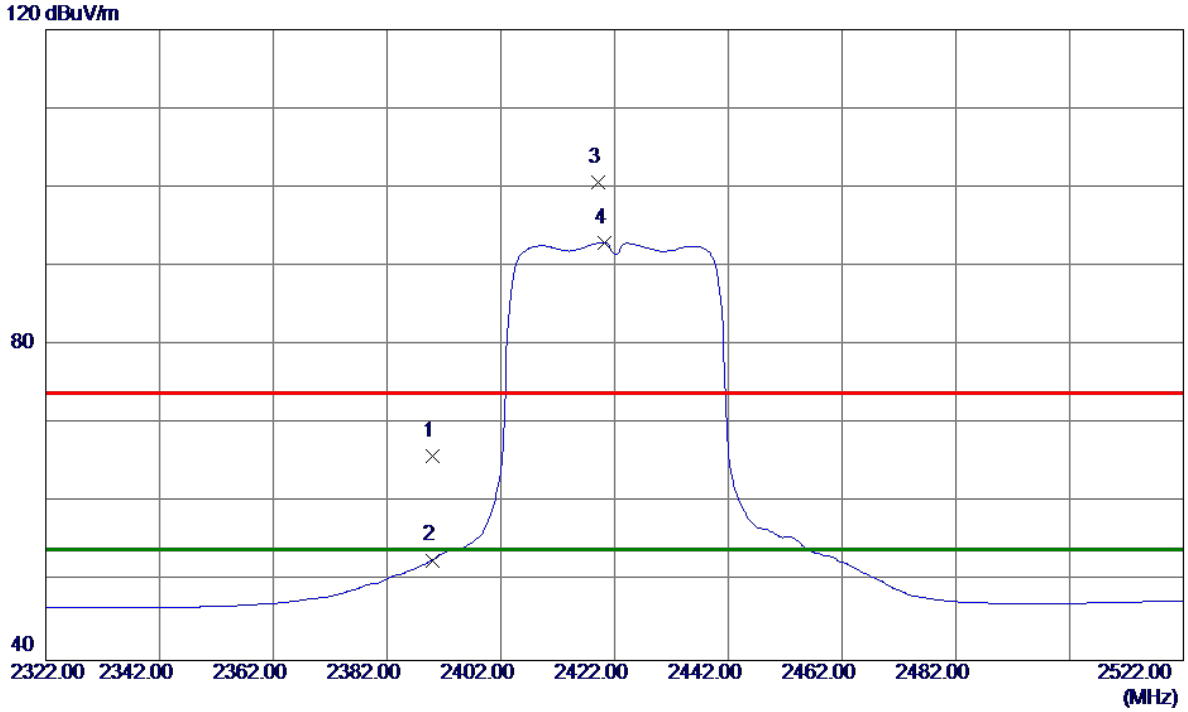
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4844.1000	23.27	6.73	30.00	54.00	-24.00	AVG	
2	4844.2500	32.75	6.73	39.48	74.00	-34.52	Peak	

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2422MHz

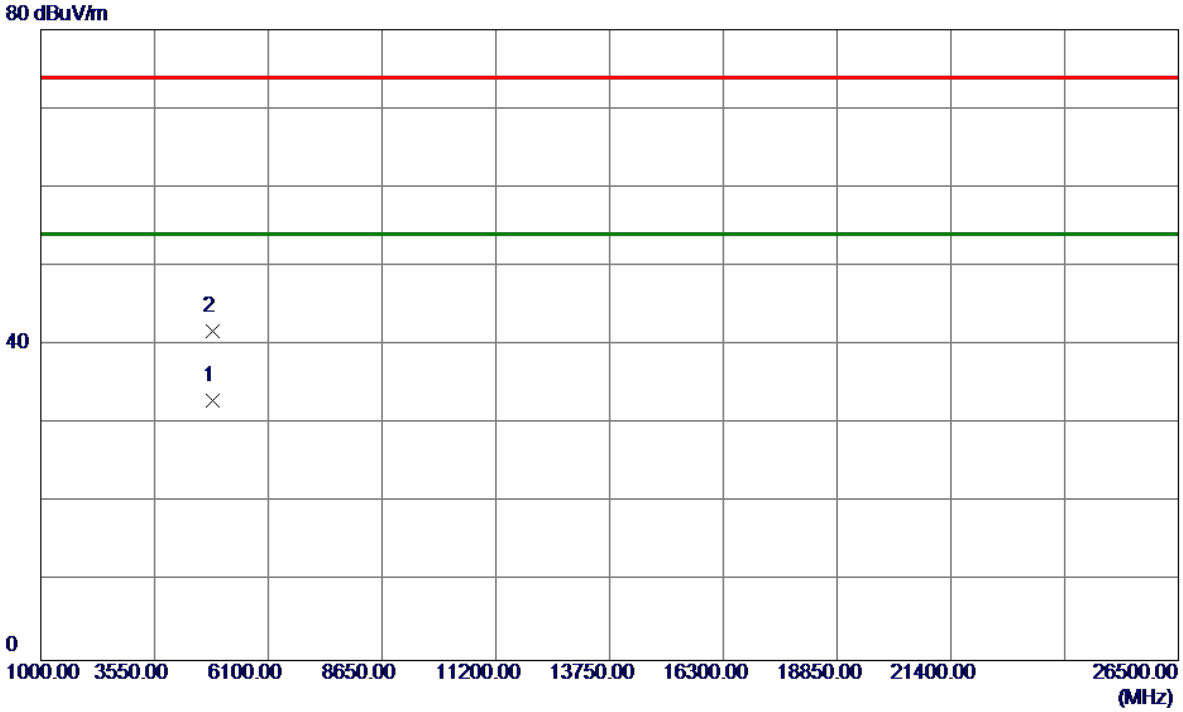
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	32.91	33.06	65.97	74.00	-8.03	Peak	
2	2390.0000	19.66	33.06	52.72	54.00	-1.28	AVG	
3	2419.2000	67.45	33.17	100.62	74.00	26.62	Peak	No Limit
4 *	2420.2000	59.86	33.17	93.03	54.00	39.03	AVG	No Limit

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2422MHz

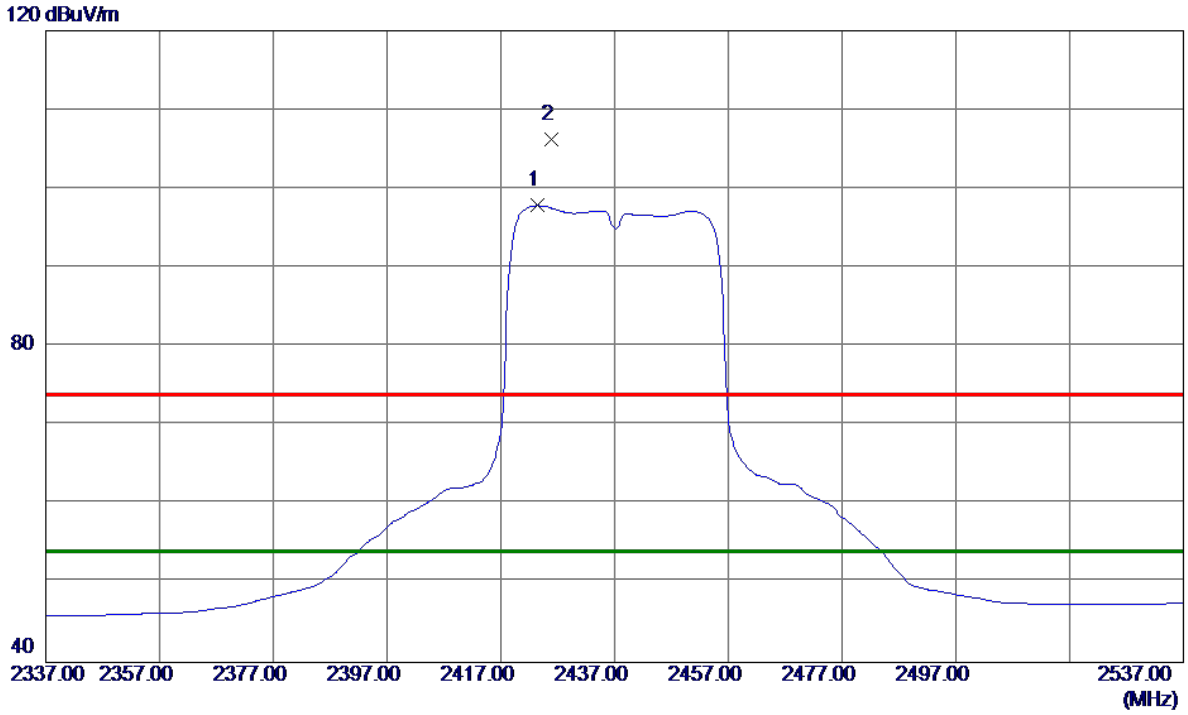
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4844.3000	26.24	6.73	32.97	54.00	-21.03	AVG	
2	4844.4000	35.03	6.73	41.76	74.00	-32.24	Peak	

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2437MHz

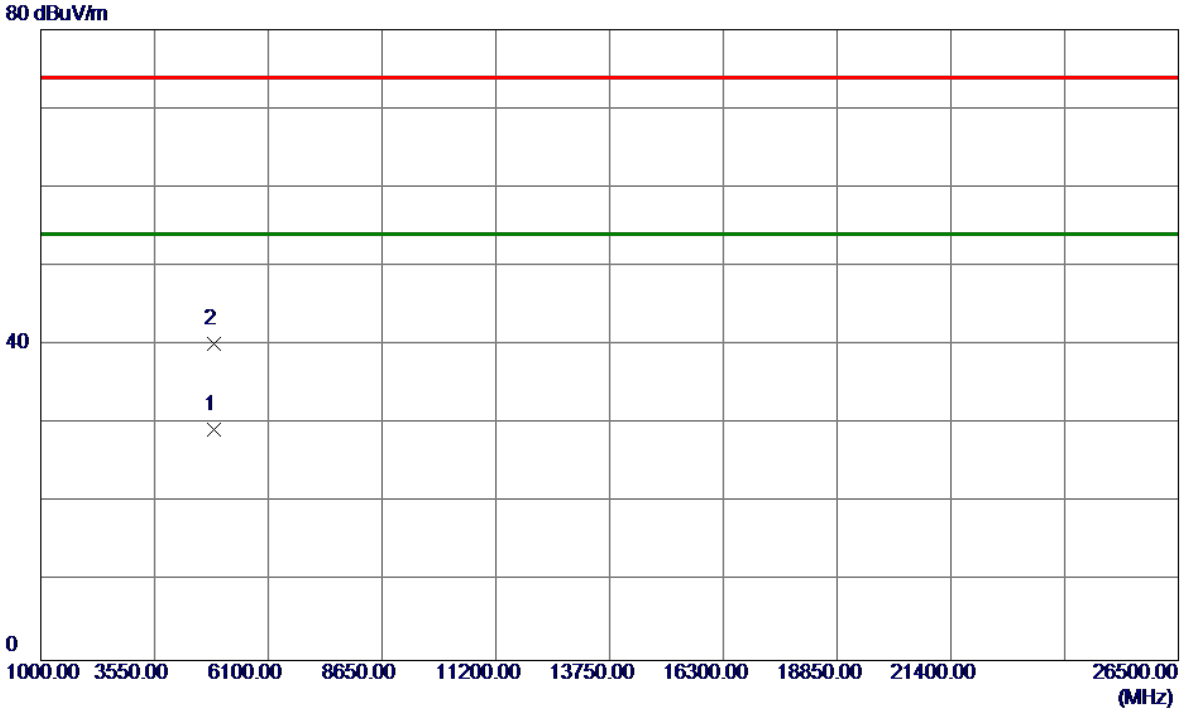
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2423.4000	64.67	33.18	97.85	54.00	43.85	AVG	No Limit
2	2425.8000	73.12	33.19	106.31	74.00	32.31	Peak	No Limit

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2437MHz

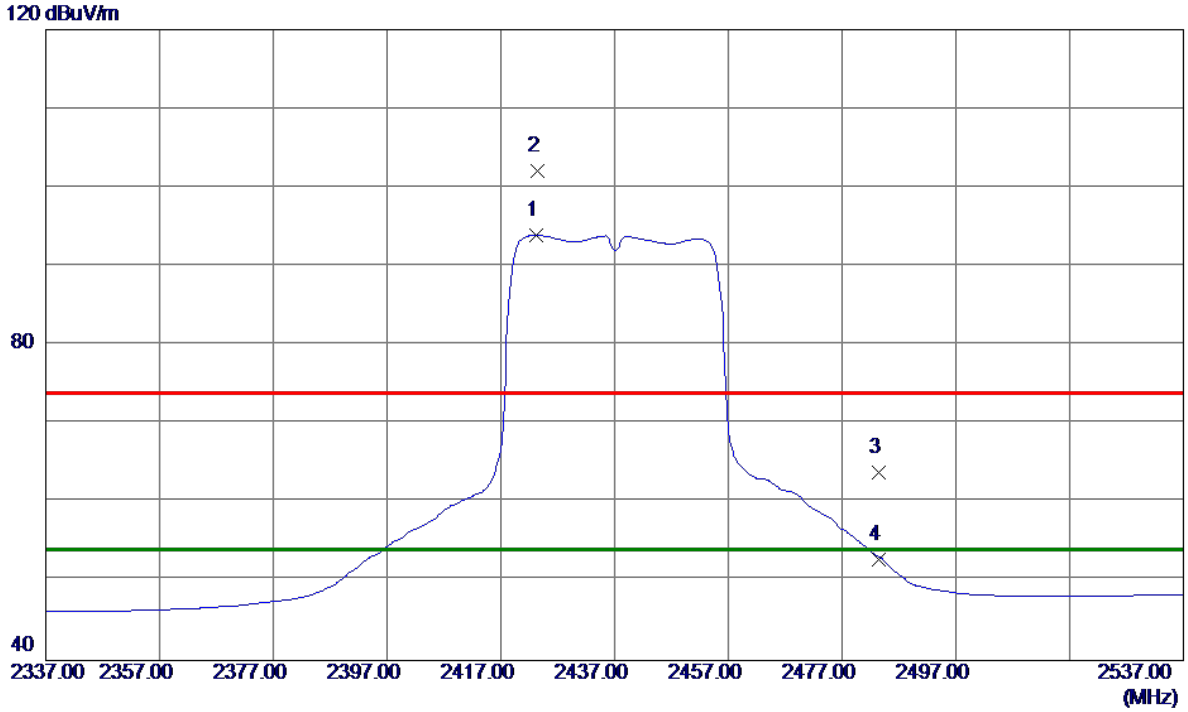
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4873.5000	22.51	6.84	29.35	54.00	-24.65	AVG	
2	4873.9500	33.30	6.84	40.14	74.00	-33.86	Peak	

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2437MHz

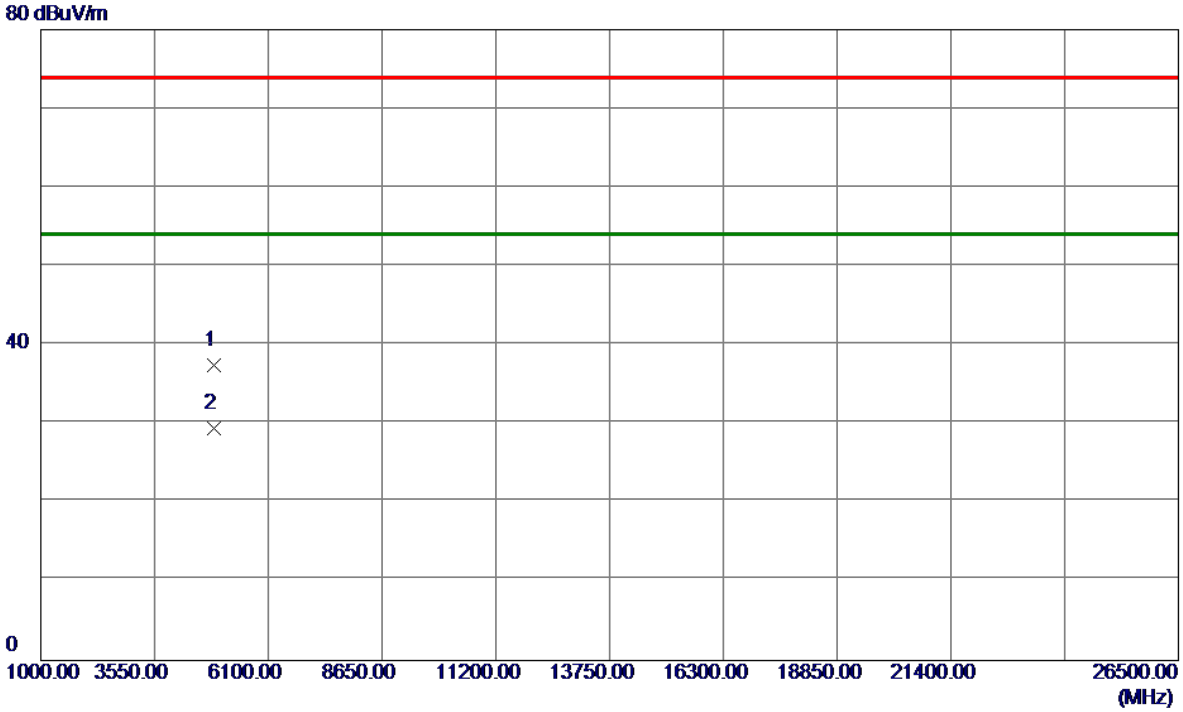
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2423.2000	60.74	33.18	93.92	54.00	39.92	AVG	No Limit
2	2423.4000	68.95	33.18	102.13	74.00	28.13	Peak	No Limit
3	2483.5000	30.39	33.41	63.80	74.00	-10.20	Peak	
4	2483.5000	19.45	33.41	52.86	54.00	-1.14	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2437MHz

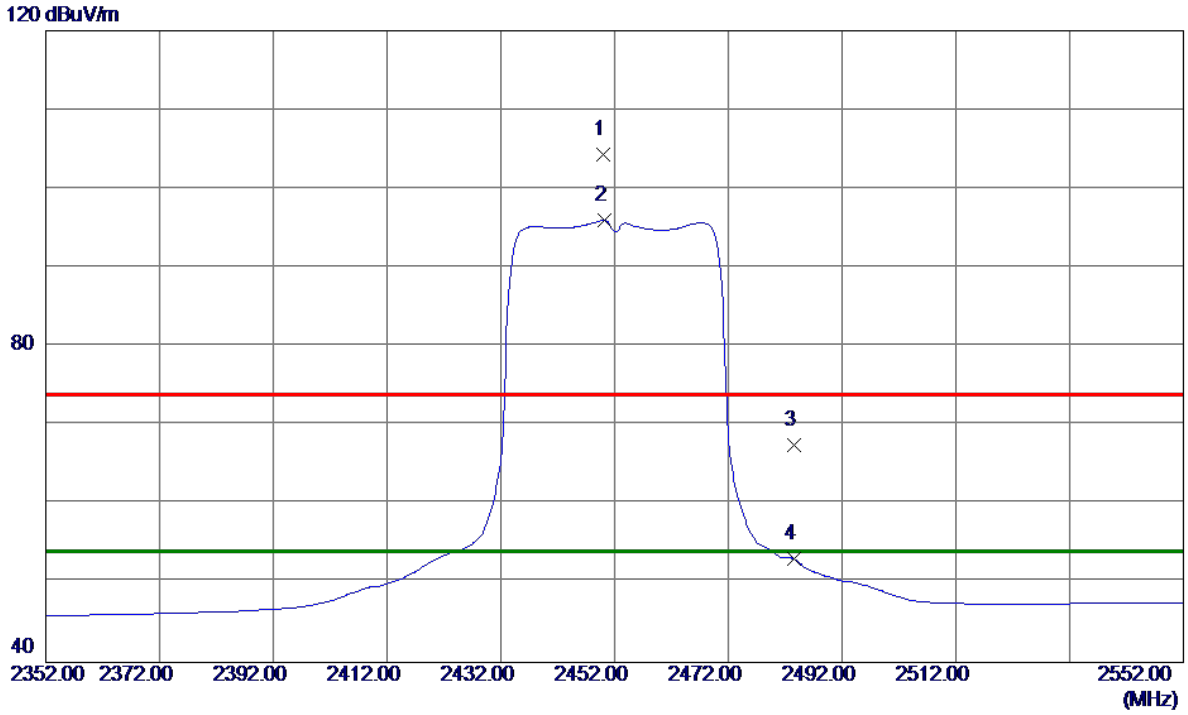
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873.5500	30.60	6.84	37.44	74.00	-36.56	Peak	
2 *	4874.2500	22.55	6.84	29.39	54.00	-24.61	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2452MHz

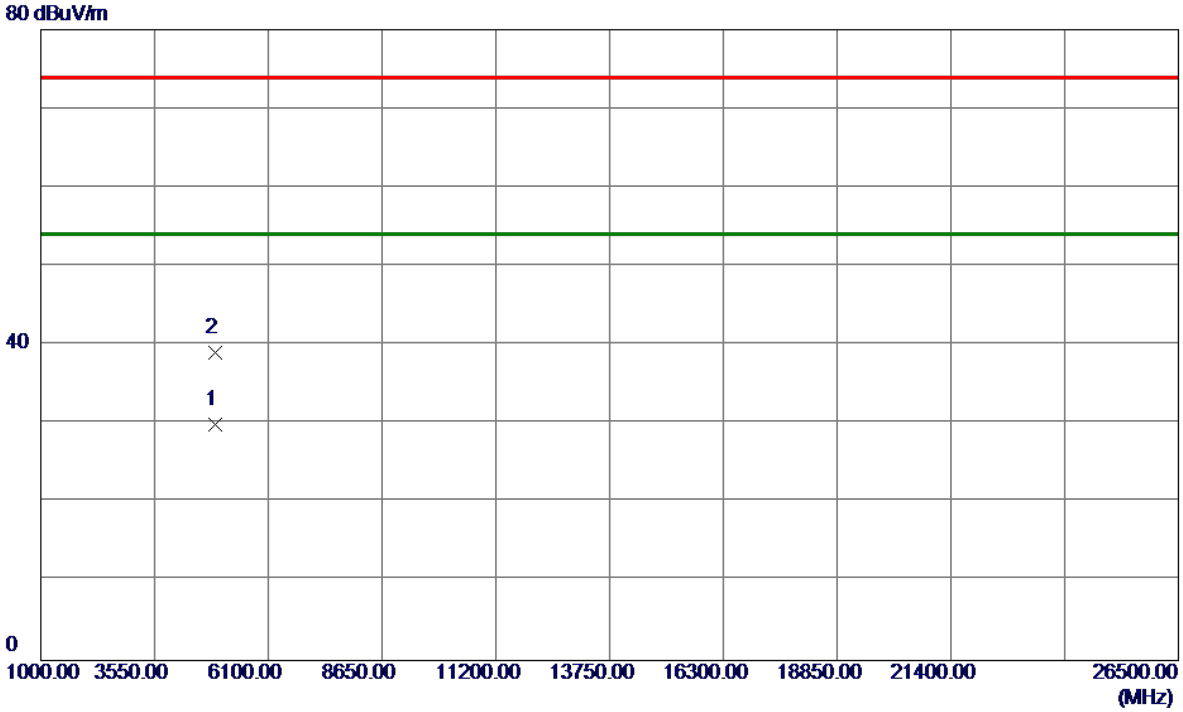
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2450.0000	71.10	33.28	104.38	74.00	30.38	Peak	No Limit
2 *	2450.2000	62.69	33.28	95.97	54.00	41.97	AVG	No Limit
3	2483.5000	34.06	33.41	67.47	74.00	-6.53	Peak	
4	2483.5000	19.64	33.41	53.05	54.00	-0.95	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2452MHz

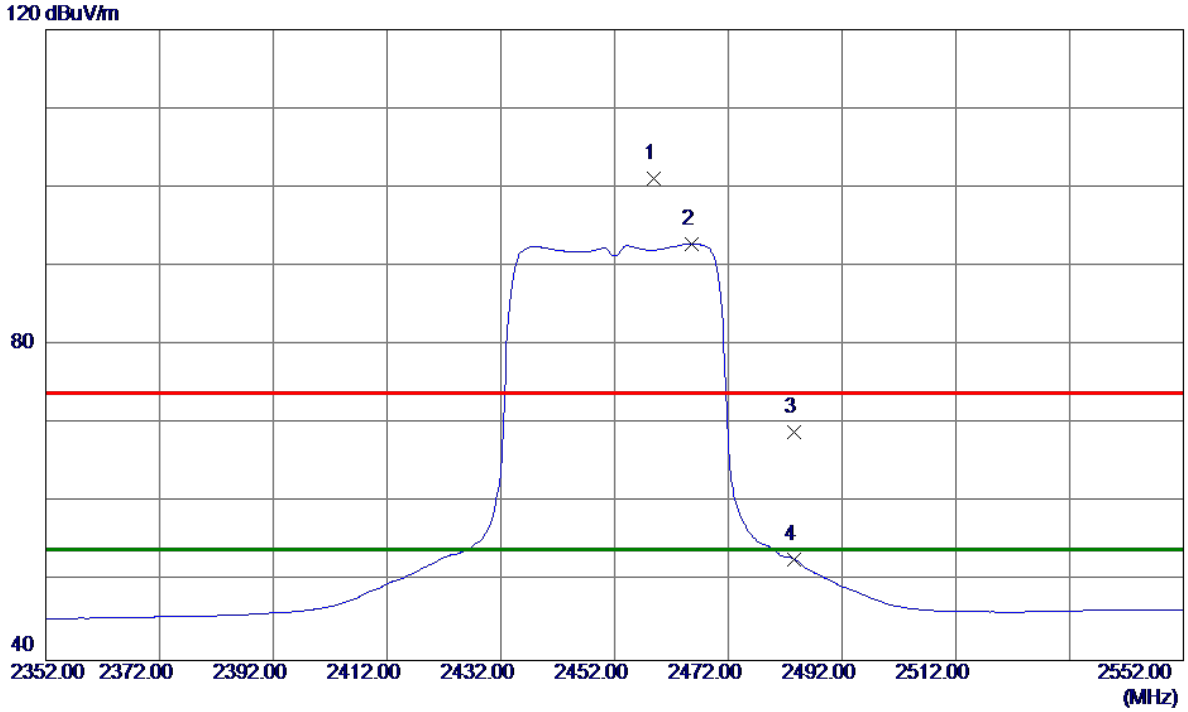
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4903.9000	22.99	6.94	29.93	54.00	-24.07	AVG	
2	4904.1500	32.06	6.95	39.01	74.00	-34.99	Peak	

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2452MHz

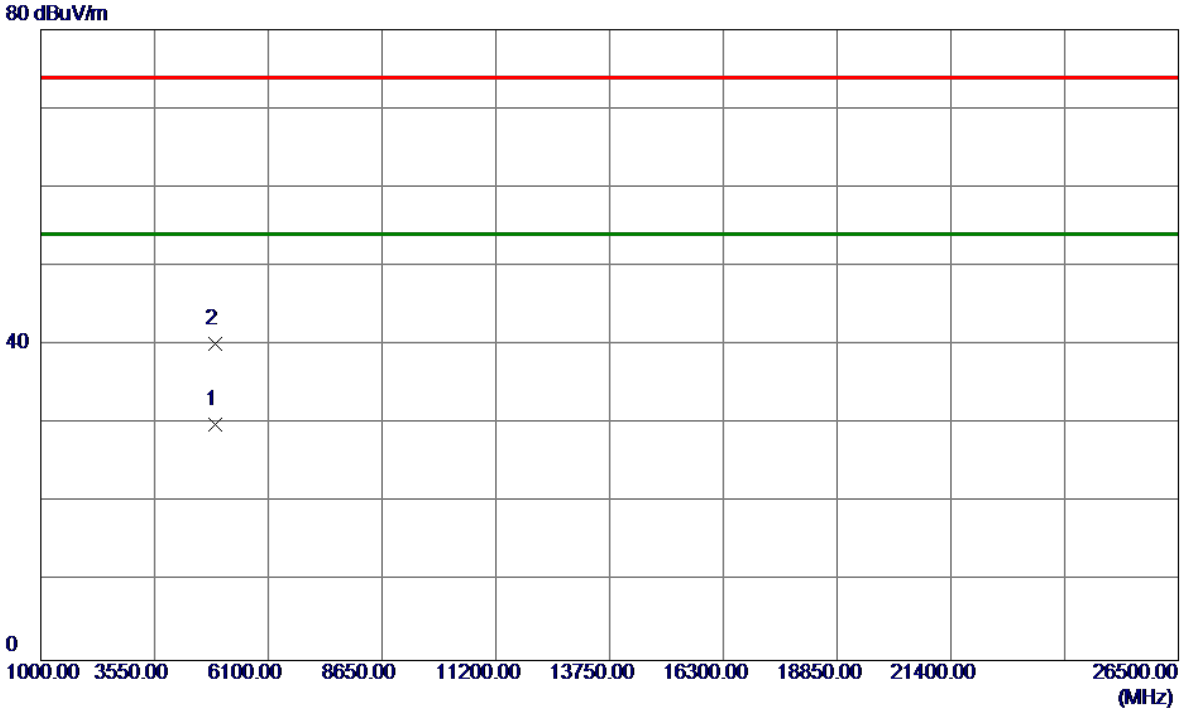
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2458.8000	67.84	33.31	101.15	74.00	27.15	Peak	No Limit
2 *	2465.6000	59.47	33.34	92.81	54.00	38.81	AVG	No Limit
3	2483.5000	35.51	33.41	68.92	74.00	-5.08	Peak	
4	2483.5000	19.42	33.41	52.83	54.00	-1.17	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-40M MODE 2452MHz

Horizontal



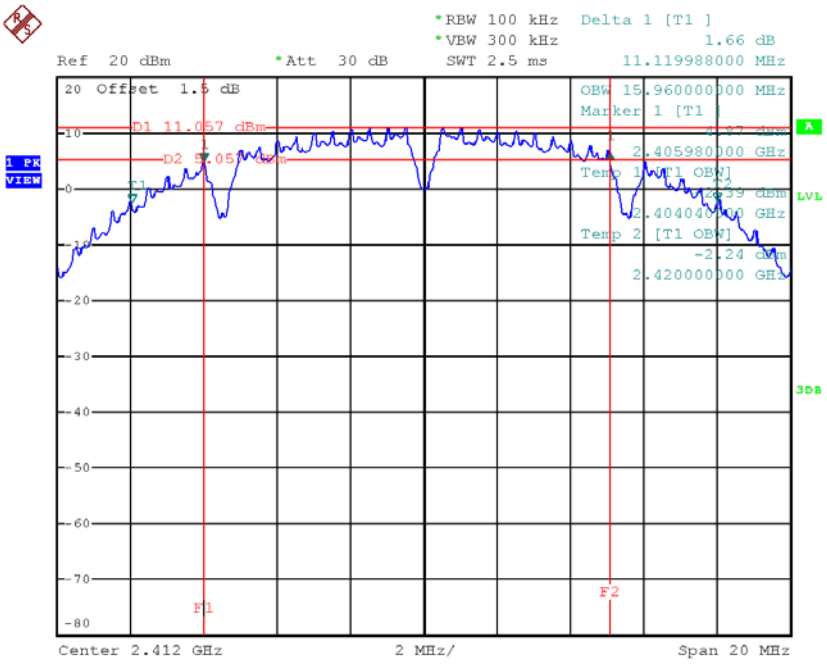
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4903.8000	22.99	6.94	29.93	54.00	-24.07	AVG	
2	4904.8000	33.22	6.95	40.17	74.00	-33.83	Peak	

APPENDIX E - BANDWIDTH

Test Mode : TX B Mode_CH01/06/11

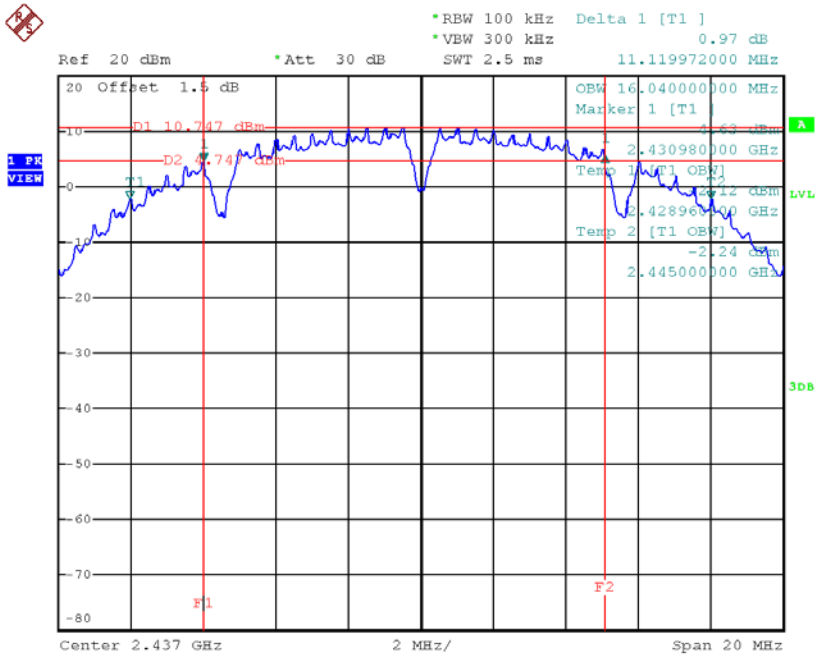
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	11.12	15.96	500	Complies
2437	11.12	16.04	500	Complies
2462	11.16	16.04	500	Complies

TX CH01



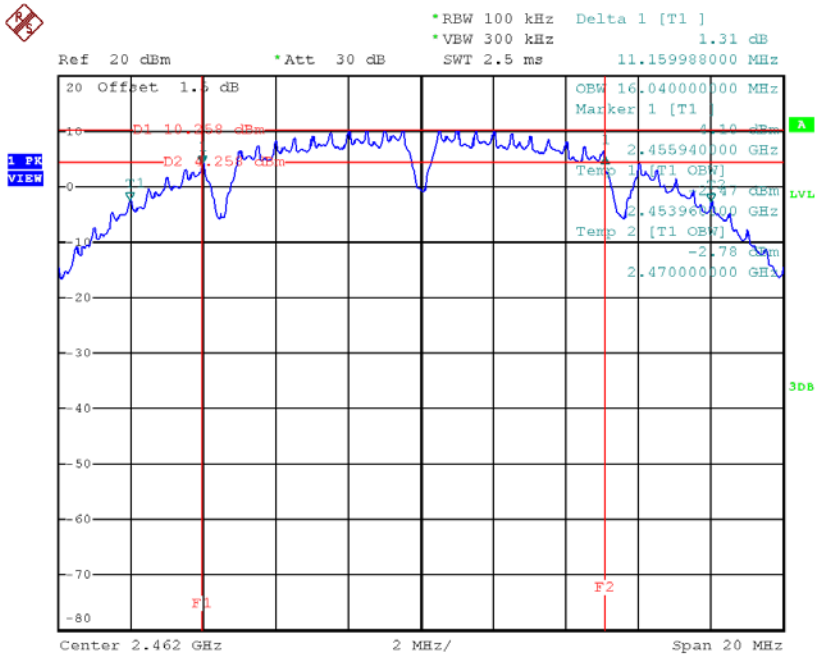
Date: 28.DEC.2017 19:55:06

TX CH06



Date: 28.DEC.2017 19:55:57

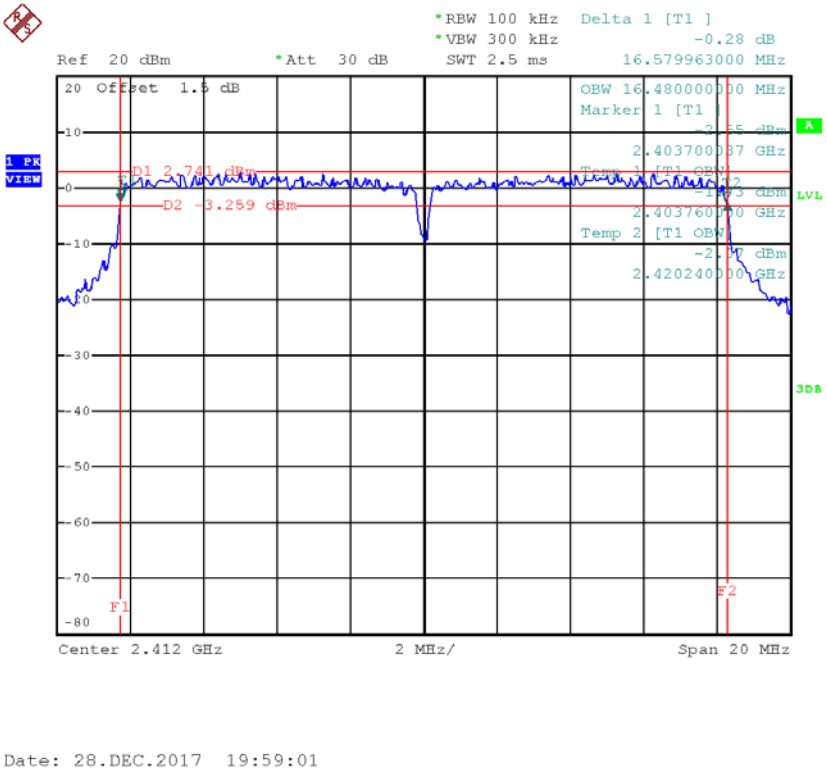
TX CH11



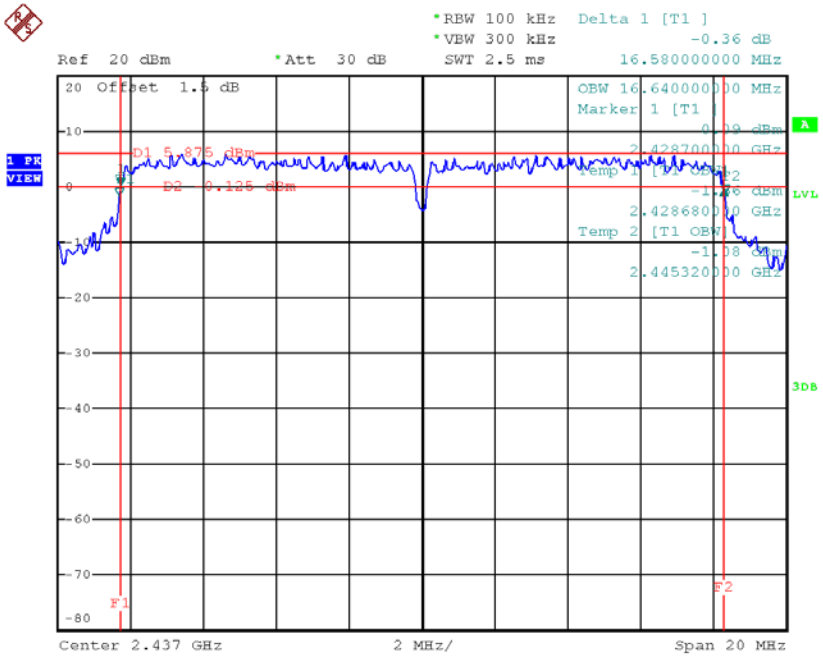
Date: 28.DEC.2017 19:57:35

Test Mode: TX G Mode_CH01/06/11				
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	16.58	16.48	500	Complies
2437	16.58	16.64	500	Complies
2462	16.57	16.48	500	Complies

TX CH01

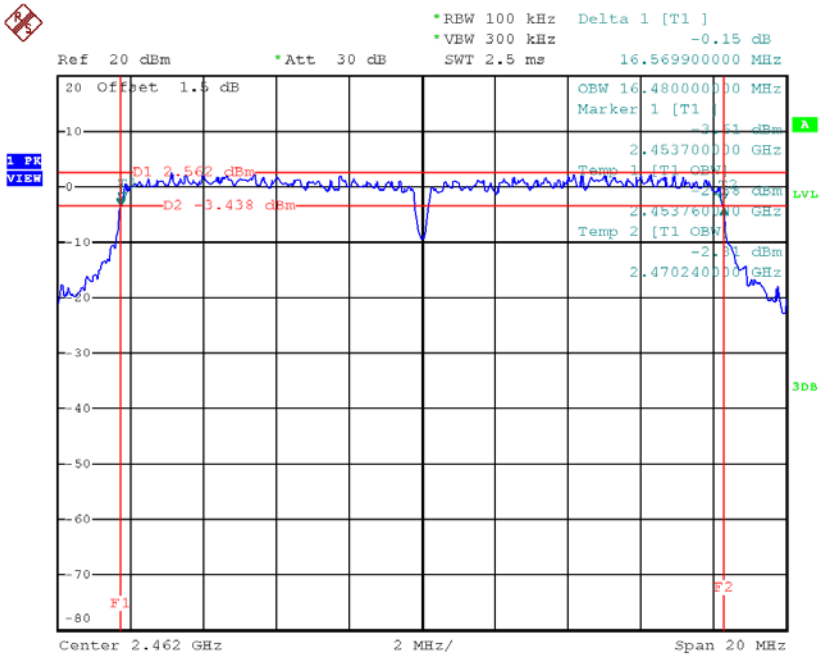


TX CH06



Date: 28.DEC.2017 20:00:35

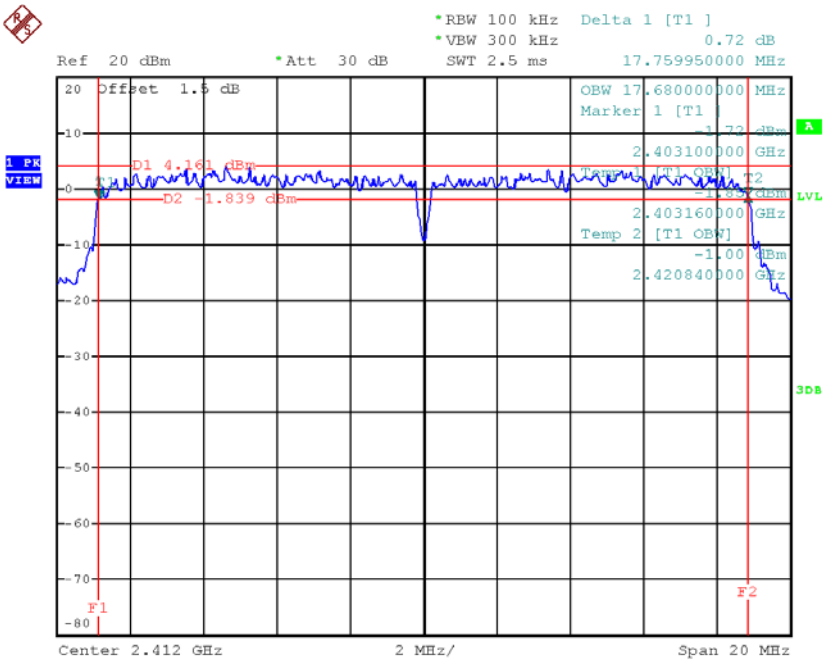
TX CH11



Date: 28.DEC.2017 20:02:05

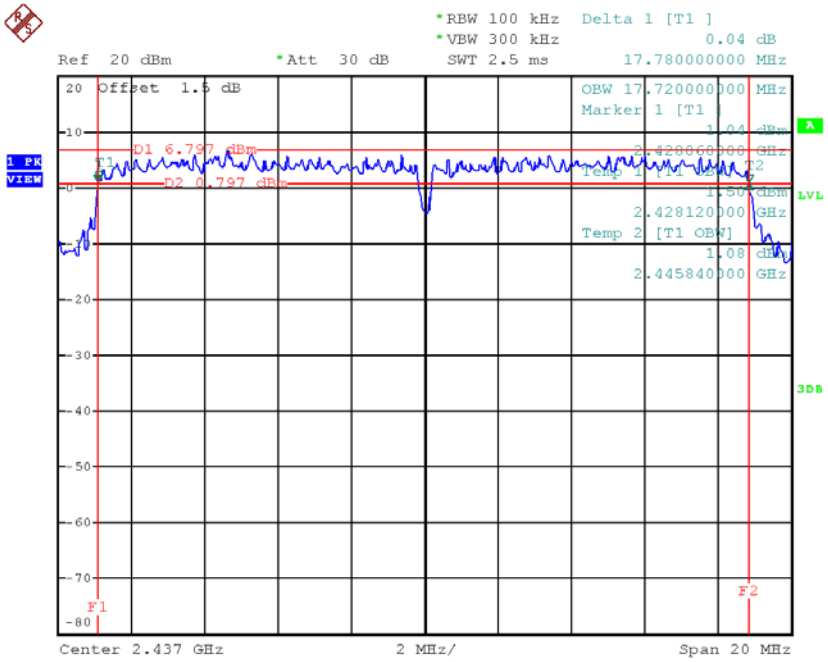
Test Mode : TX N-20MHz Mode_CH01/06/11				
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	17.76	17.68	500	Complies
2437	17.78	17.72	500	Complies
2462	17.76	17.64	500	Complies

TX CH01



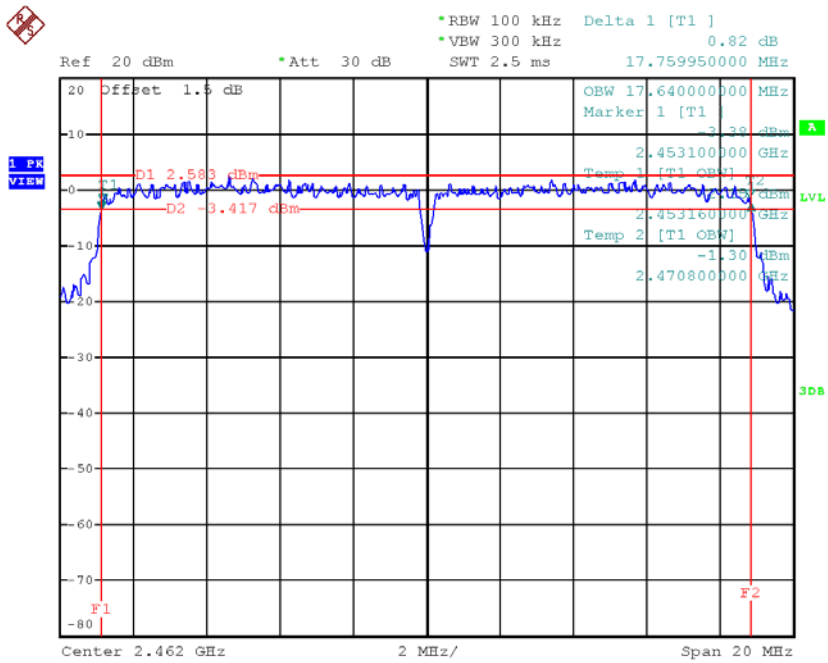
Date: 28.DEC.2017 20:05:26

TX CH06



Date: 28.DEC.2017 20:06:38

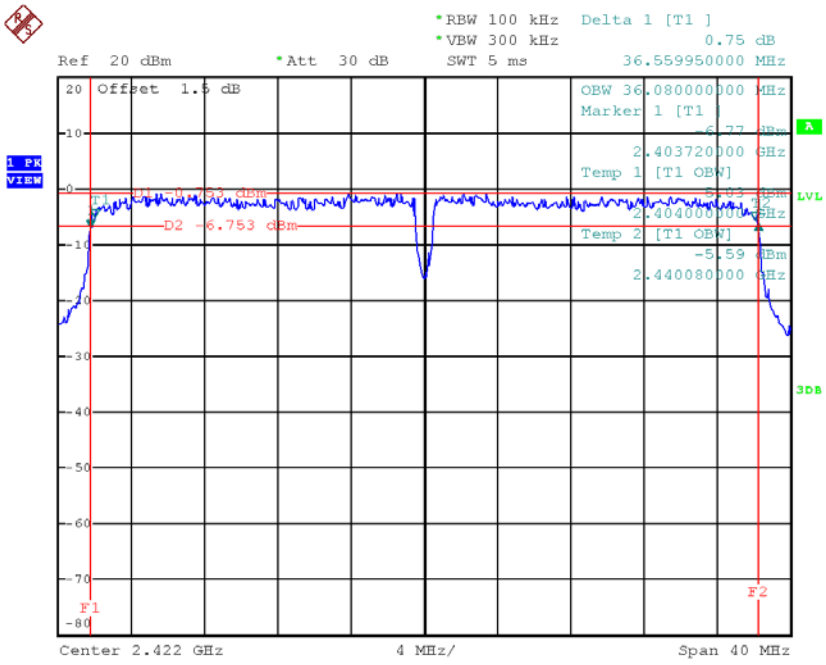
TX CH11



Date: 28.DEC.2017 20:08:00

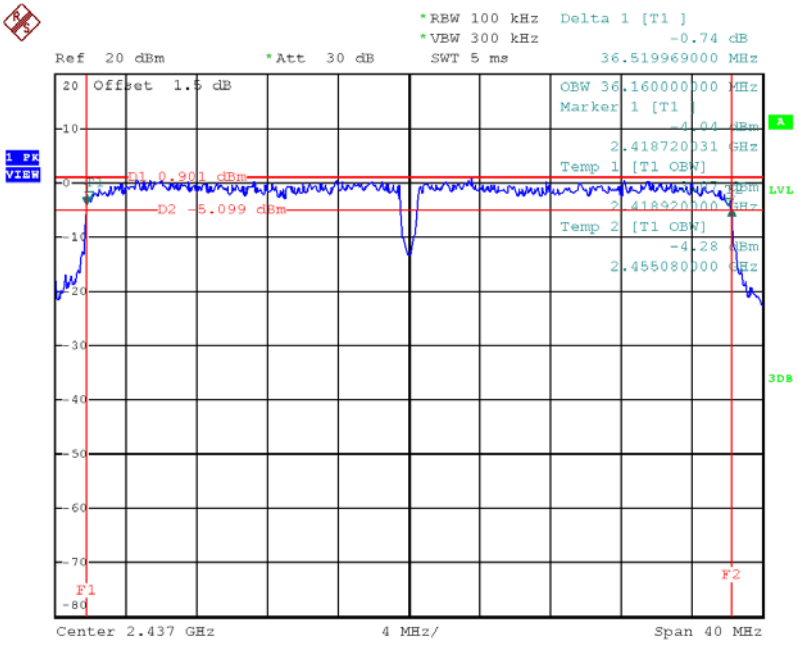
Test Mode : TX N-40MHz Mode_CH03/06/09				
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2422	36.56	36.08	500	Complies
2437	36.52	36.16	500	Complies
2452	36.56	36.16	500	Complies

TX CH03



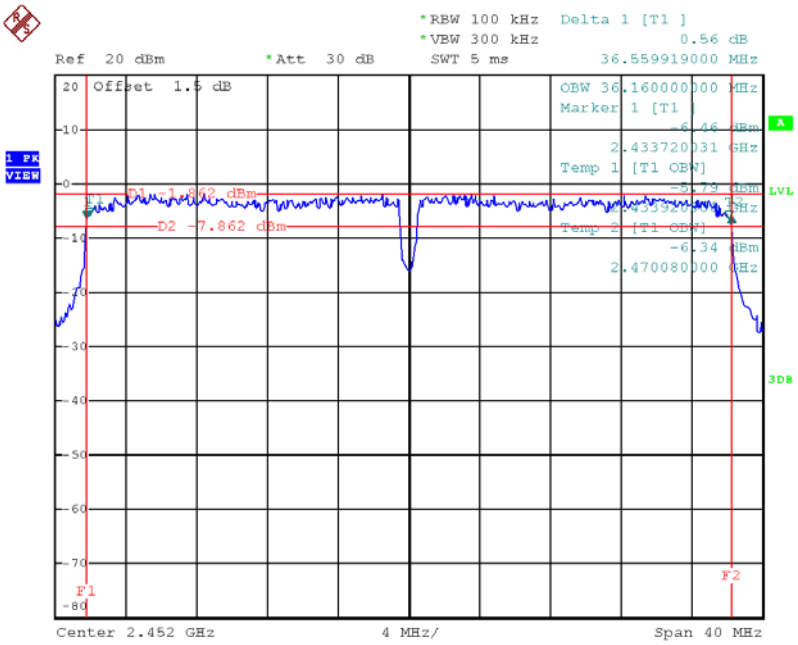
Date: 28.DEC.2017 20:09:24

TX CH06



Date: 28.DEC.2017 20:10:40

TX CH09



Date: 28.DEC.2017 20:12:21

APPENDIX 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	21.87	0.15	30.00	1.00	Complies
2437	21.75	0.15	30.00	1.00	Complies
2462	22.28	0.17	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	25.02	0.32	30.00	1.00	Complies
2437	24.08	0.26	30.00	1.00	Complies
2462	22.87	0.19	30.00	1.00	Complies

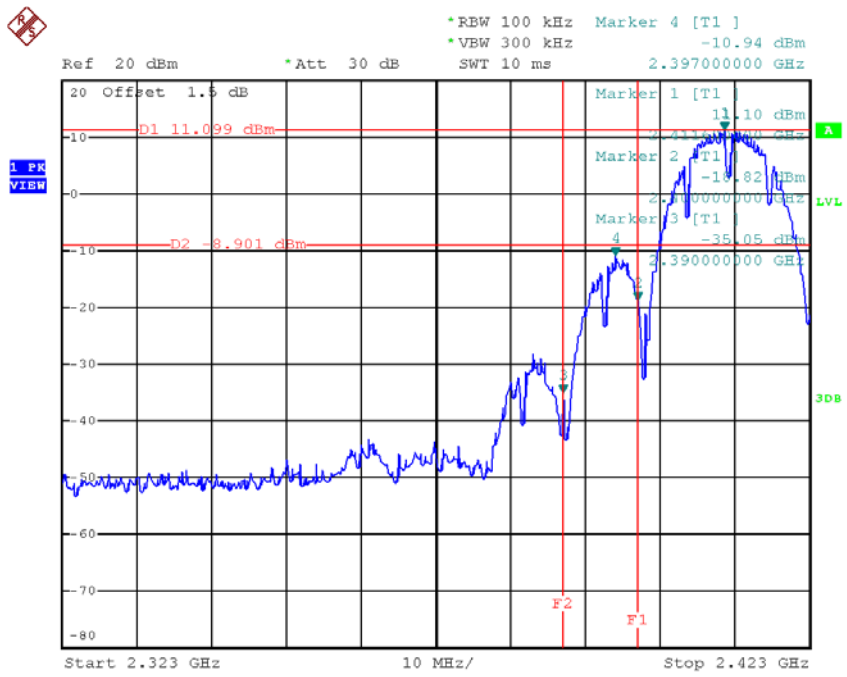
Test Mode :TX N20 Mode_CH01/06/11					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	24.02	0.25	30.00	1.00	Complies
2437	24.07	0.26	30.00	1.00	Complies
2462	22.65	0.18	30.00	1.00	Complies

Test Mode :TX N40 Mode_CH03/06/09					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2422	23.64	0.23	30.00	1.00	Complies
2437	22.55	0.18	30.00	1.00	Complies
2452	22.84	0.19	30.00	1.00	Complies

APPENDIX G - ANTENNA CONDUCTED SPURIOUS EMISSION

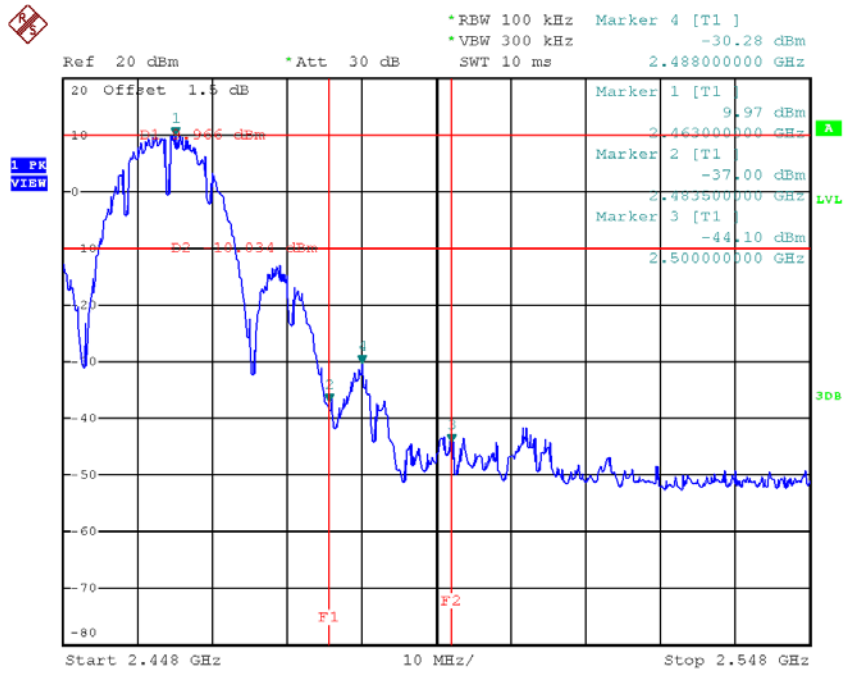
Test Mode :	TX B Mode

TX B mode CH01



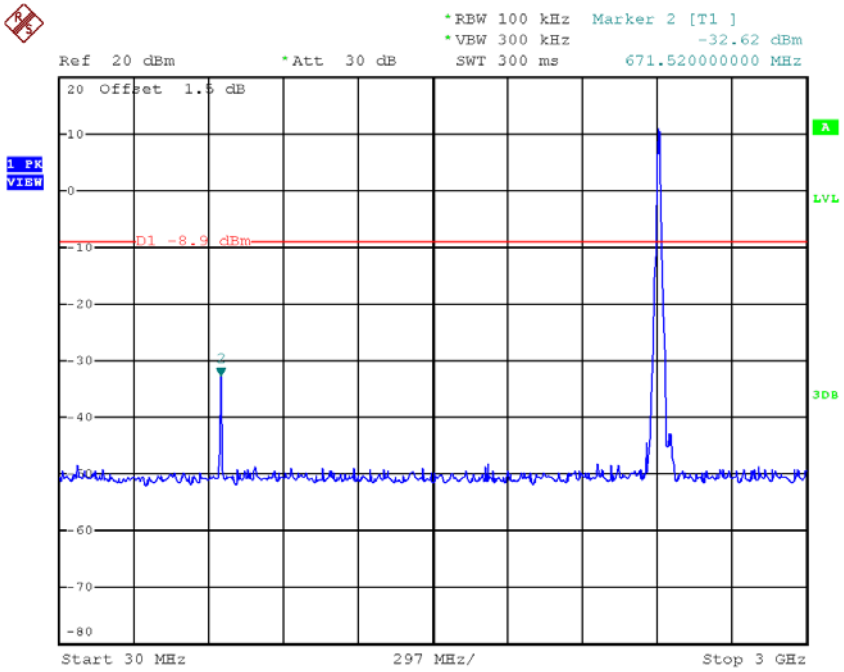
Date: 28.DEC.2017 19:53:33

TX B mode CH11

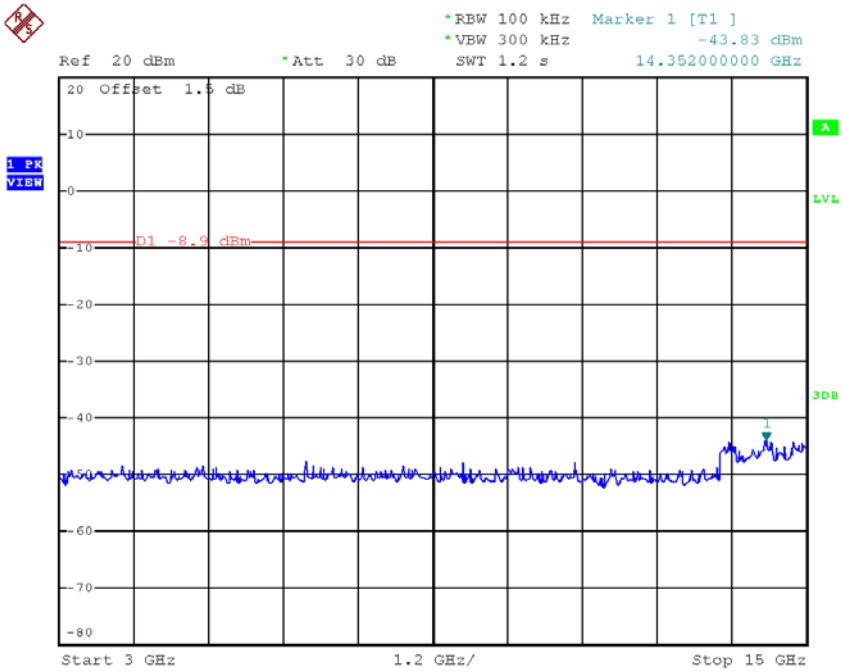


Date: 28.DEC.2017 19:57:43

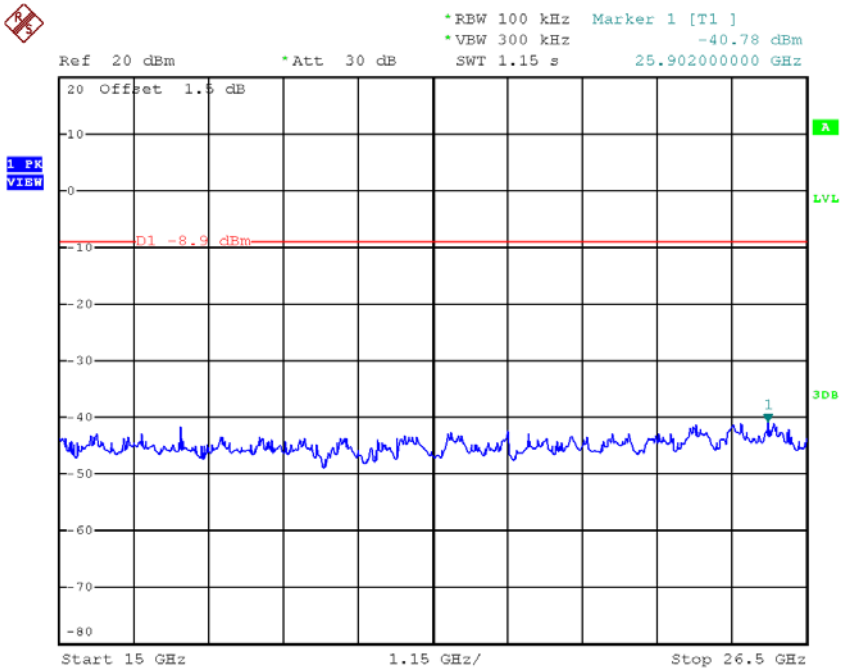
TX B mode CH01 (10 Harmonic of the frequency)



Date: 28.DEC.2017 19:53:47

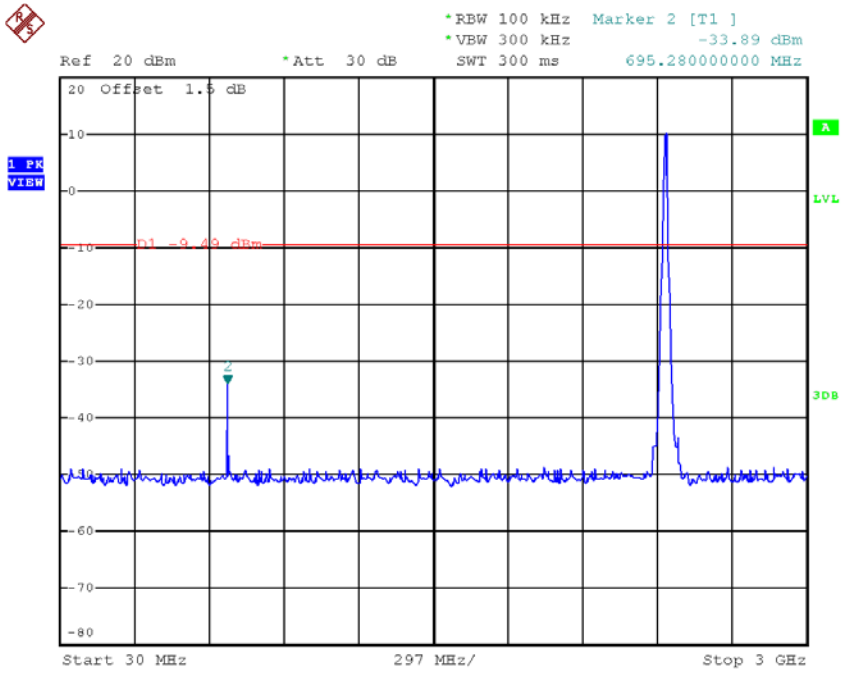


Date: 28.DEC.2017 19:53:55

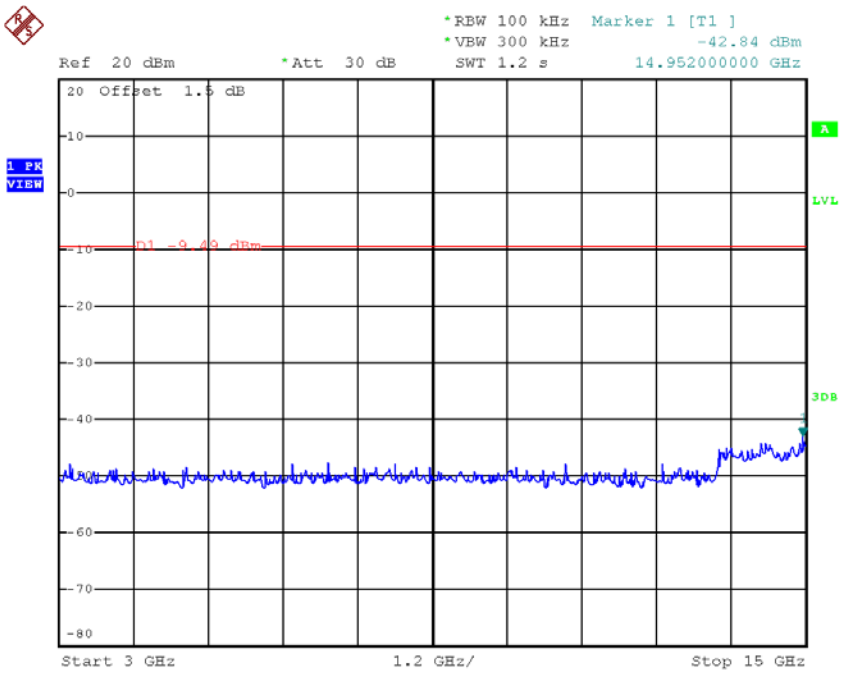


Date: 28.DEC.2017 19:54:03

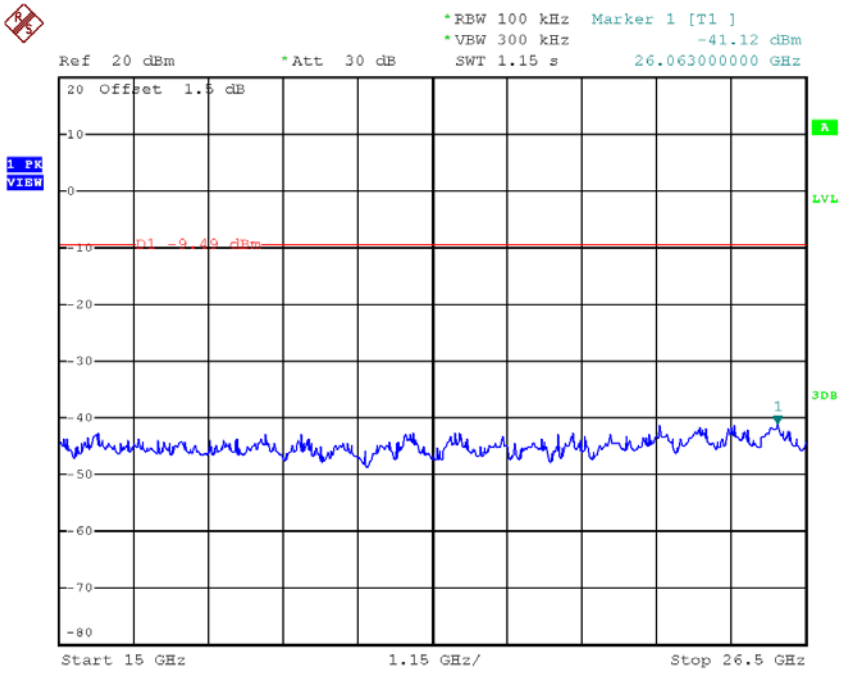
TX B mode CH06 (10 Harmonic of the frequency)



Date: 28.DEC.2017 19:56:19

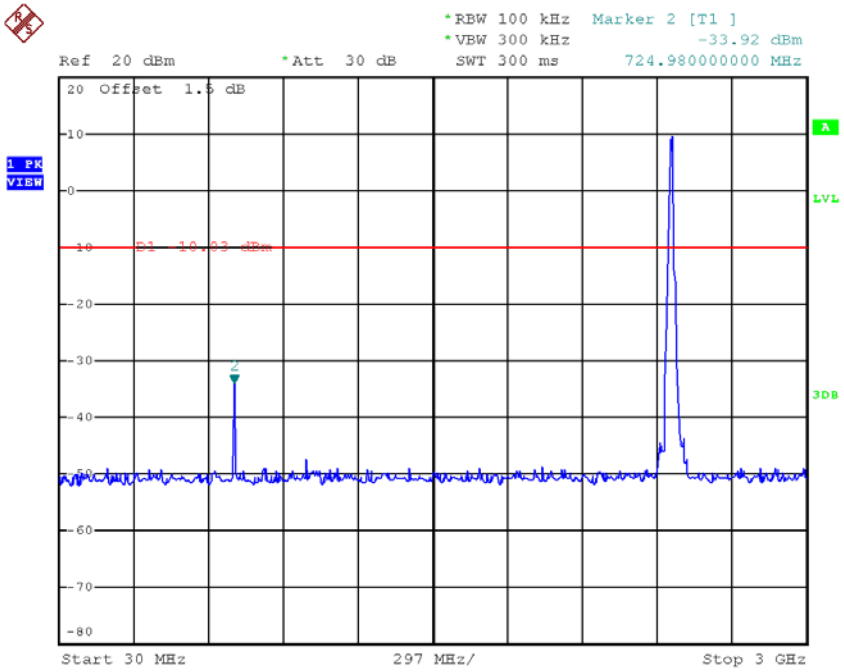


Date: 28.DEC.2017 19:56:27

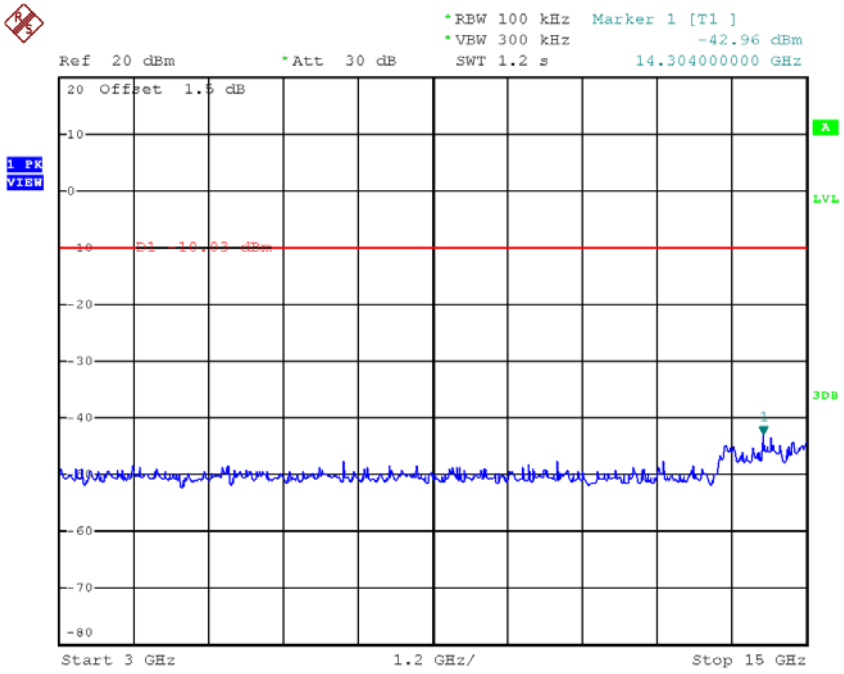


Date: 28.DEC.2017 19:56:35

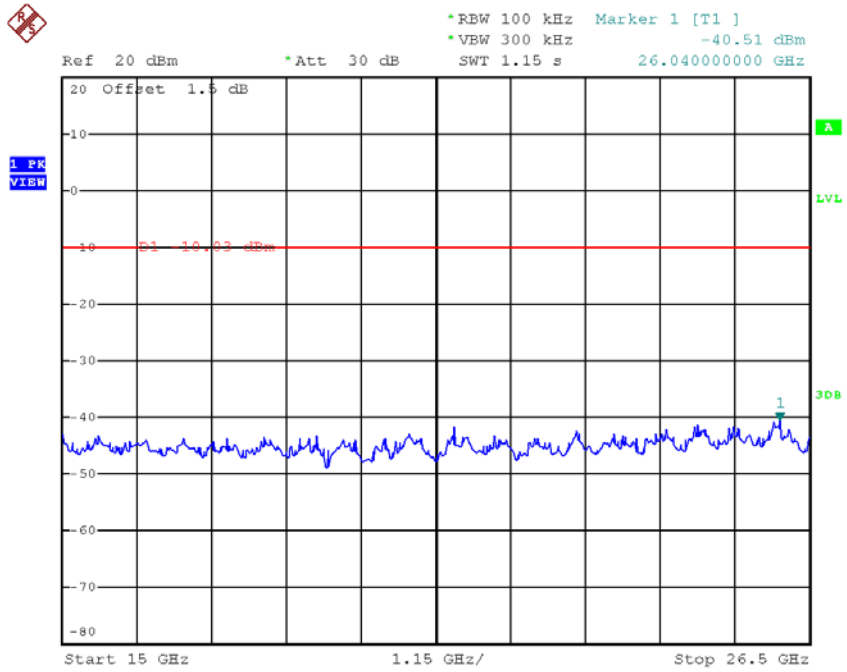
TX B mode CH11 (10 Harmonic of the frequency)



Date: 28.DEC.2017 19:57:57



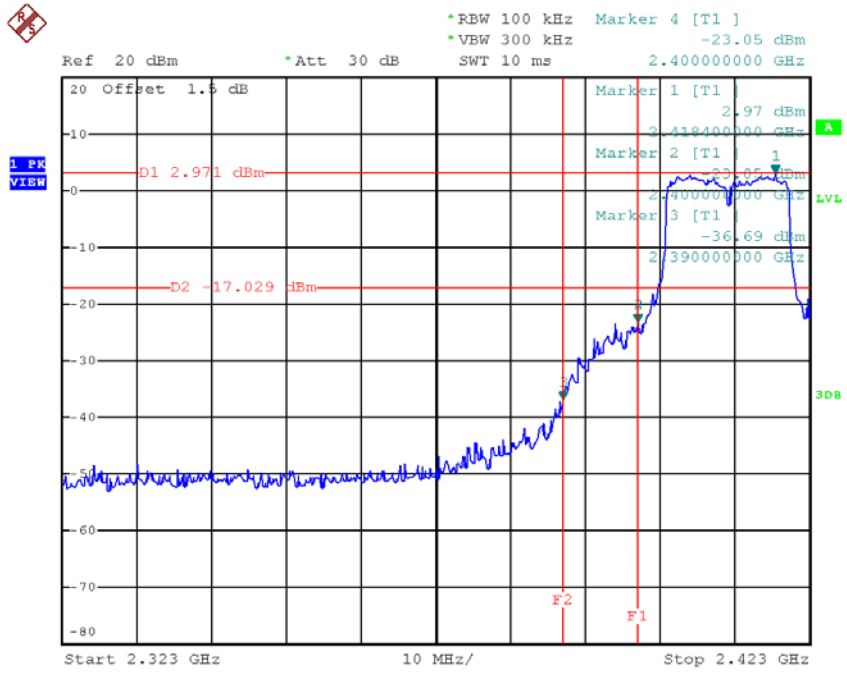
Date: 28.DEC.2017 19:58:05



Date: 28.DEC.2017 19:58:13

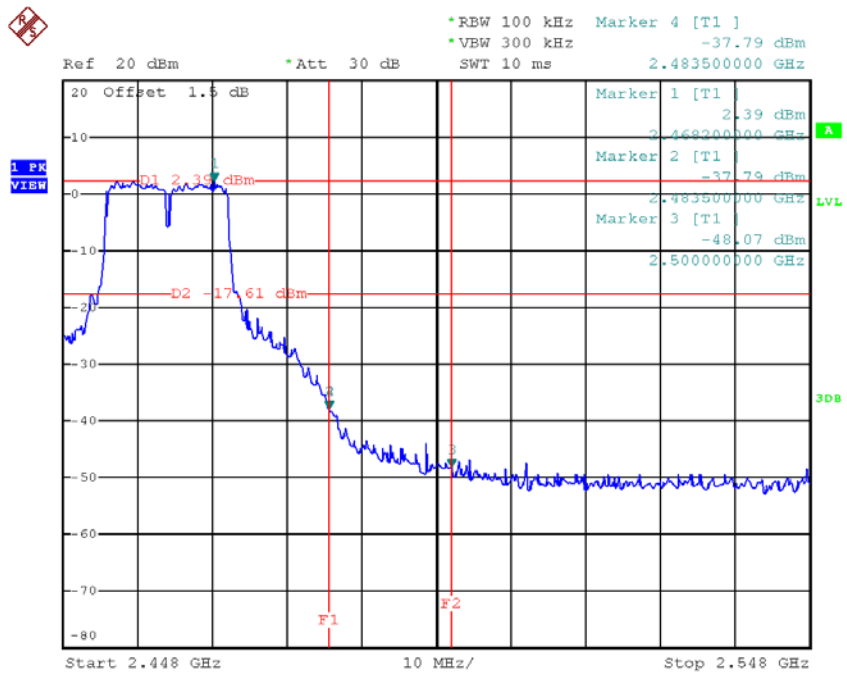
Test Mode :	TX G Mode

TX G mode CH01



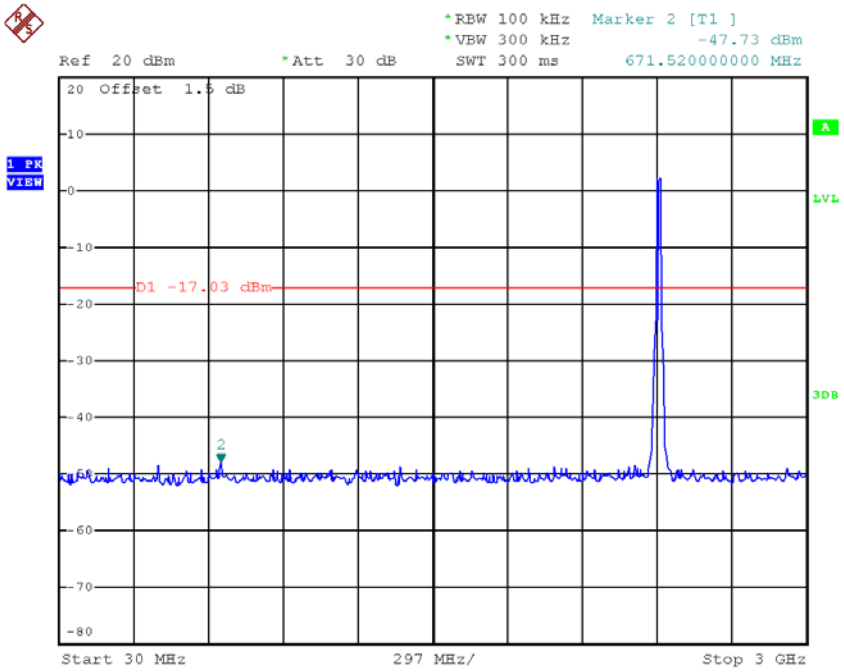
Date: 28.DEC.2017 19:59:09

TX G mode CH11

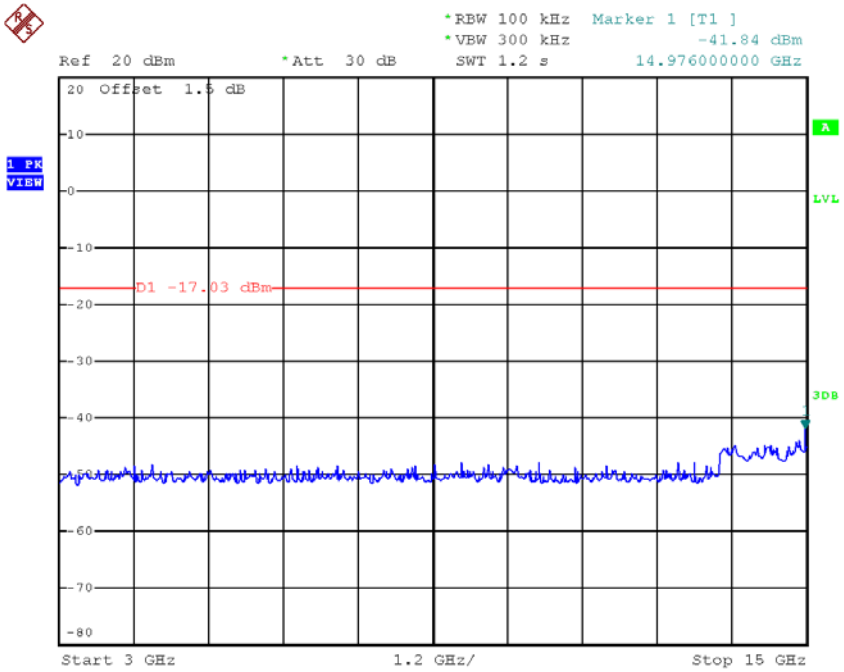


Date: 28.DEC.2017 20:02:13

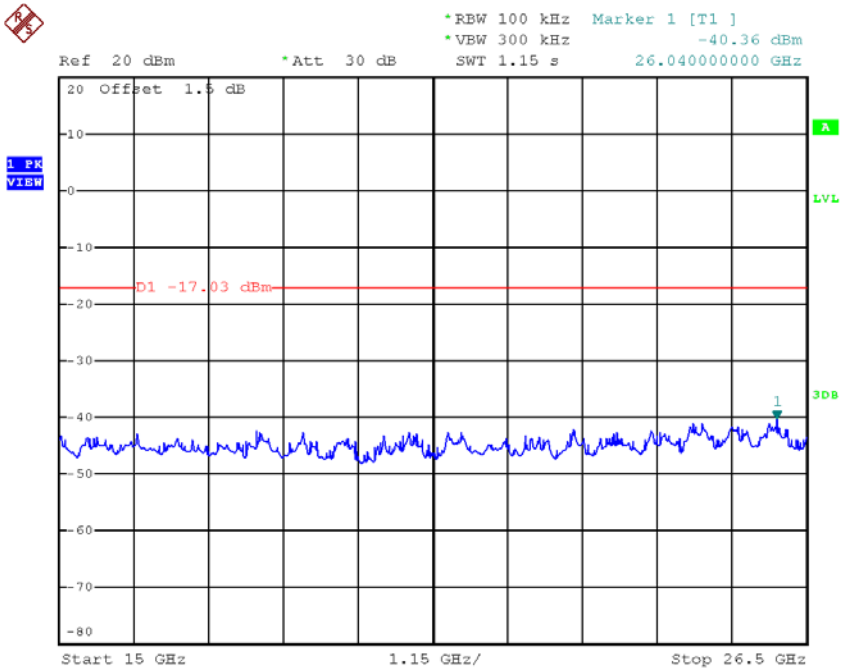
TX G mode CH01 (10 Harmonic of the frequency)



Date: 28.DEC.2017 19:59:23

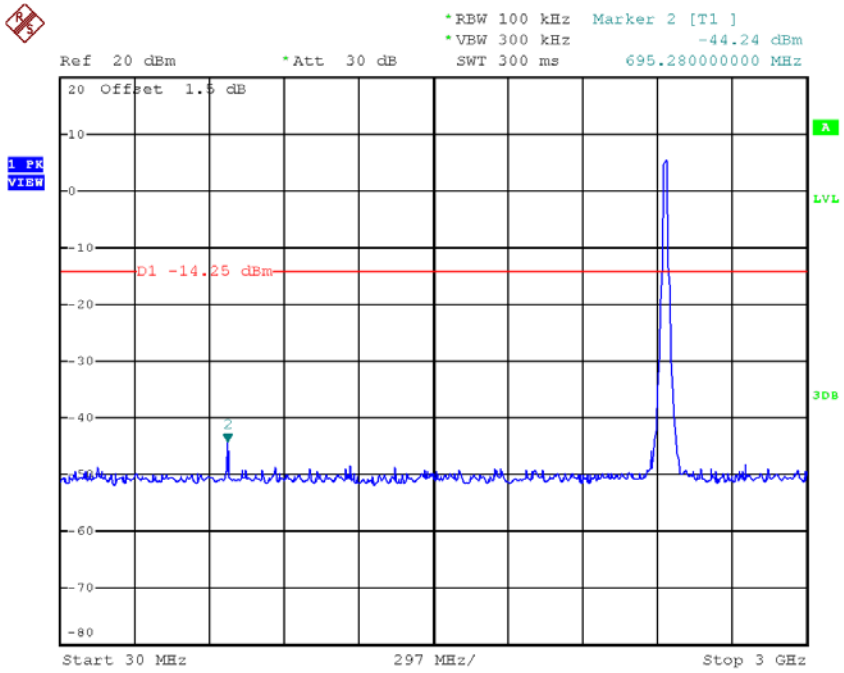


Date: 28.DEC.2017 19:59:31

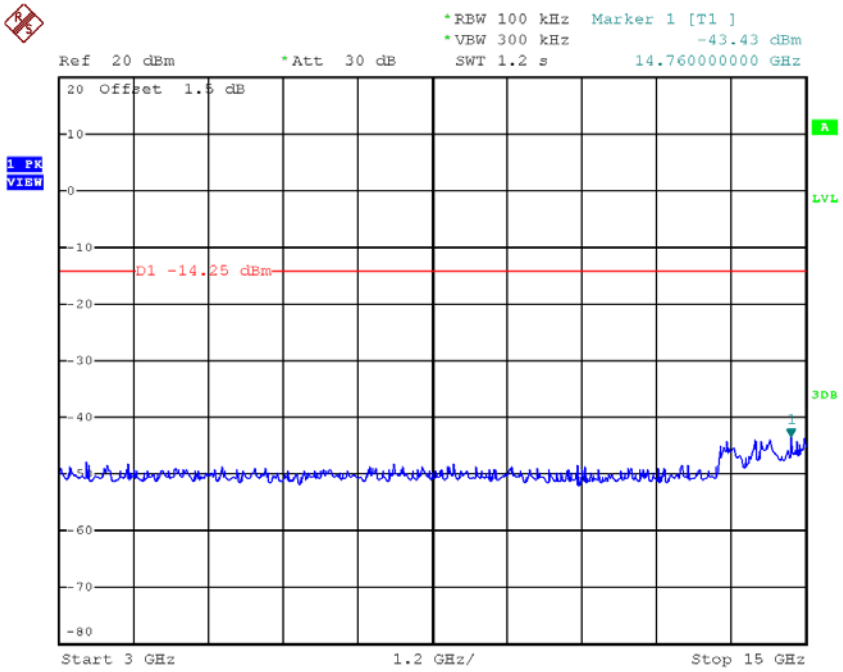


Date: 28.DEC.2017 19:59:39

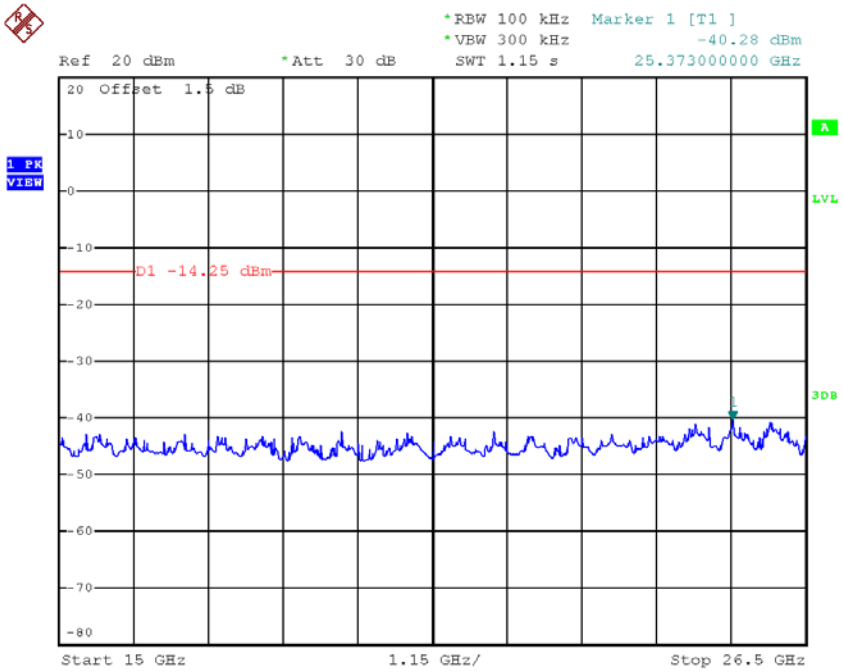
TX G mode CH06 (10 Harmonic of the frequency)



Date: 28.DEC.2017 20:00:57

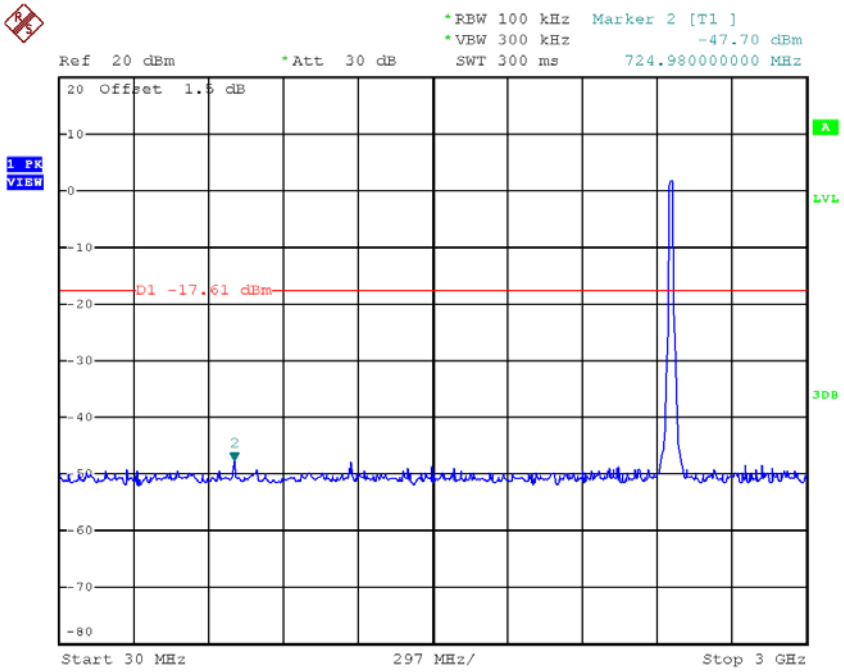


Date: 28.DEC.2017 20:01:05

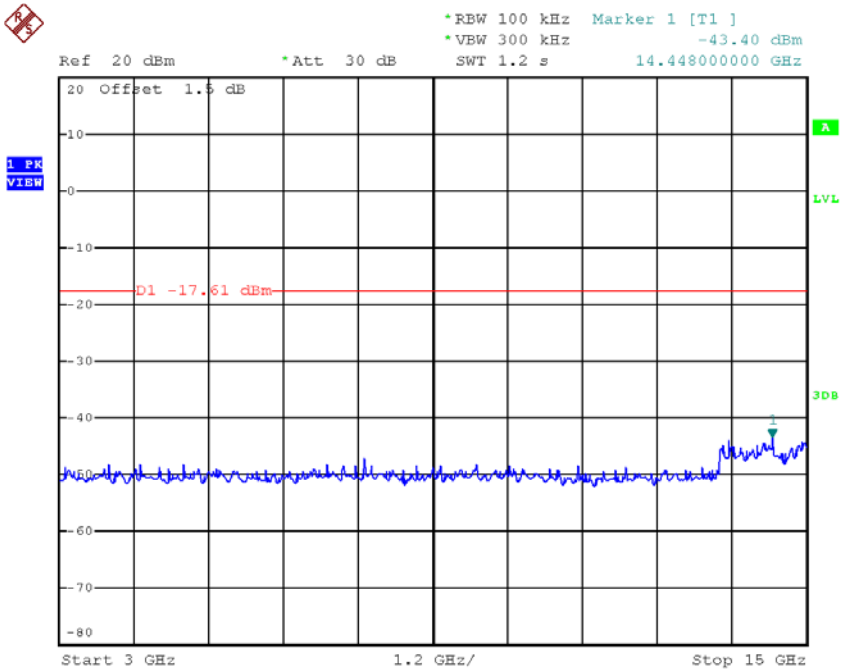


Date: 28.DEC.2017 20:01:13

TX G mode CH11 (10 Harmonic of the frequency)



Date: 28.DEC.2017 20:02:27



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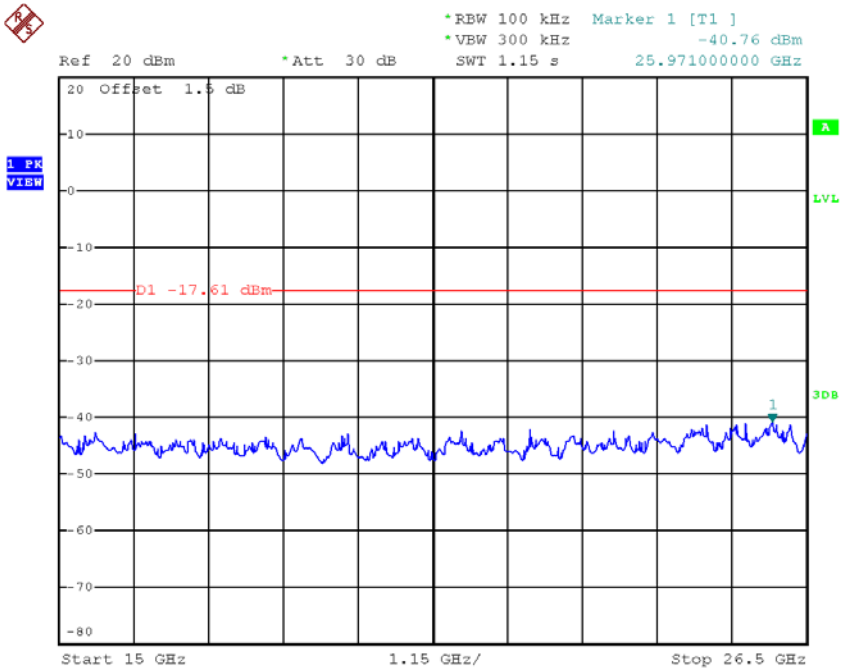

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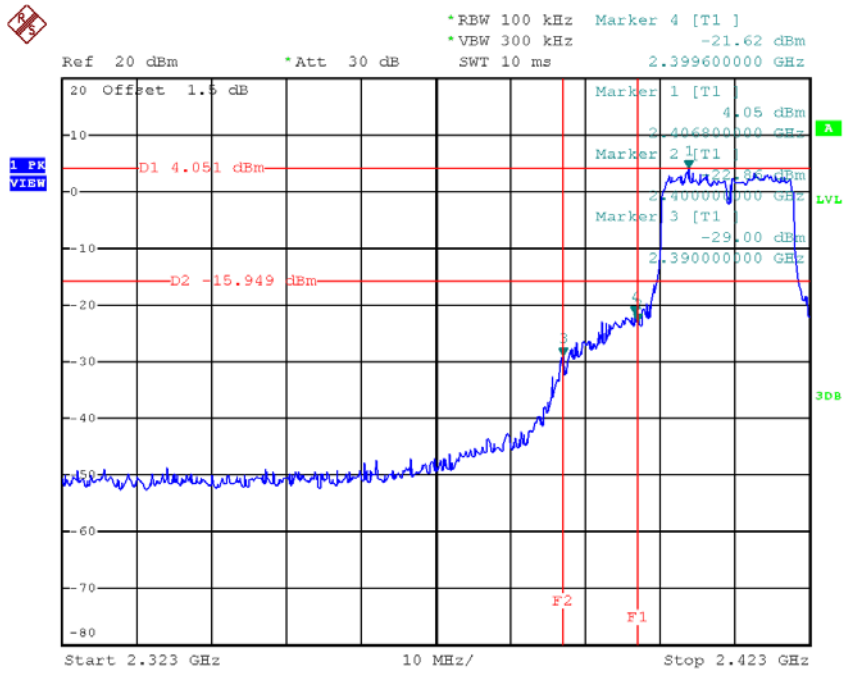
Test Mode :	TX N-20M Mode

TX HT20 mode CH01



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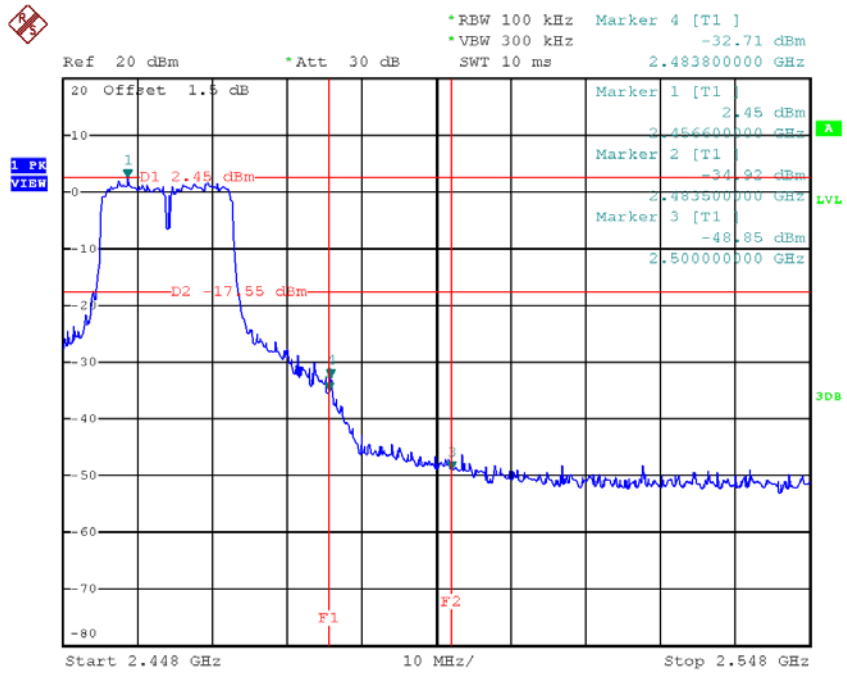
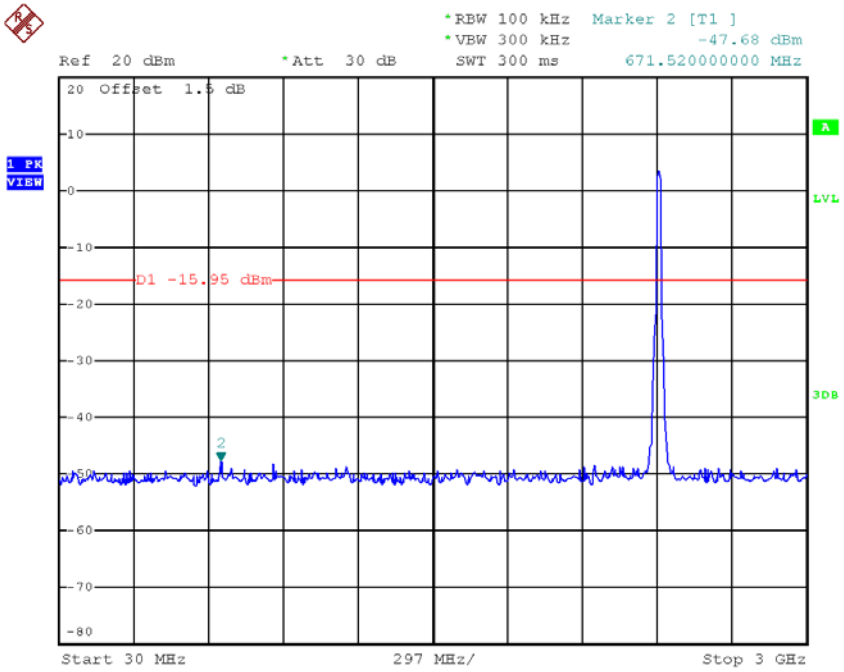
TX HT20 mode CH11



Date: 28.DEC.2017 20:08:08

TX HT20 mode CH01 (10 Harmonic of the frequency)



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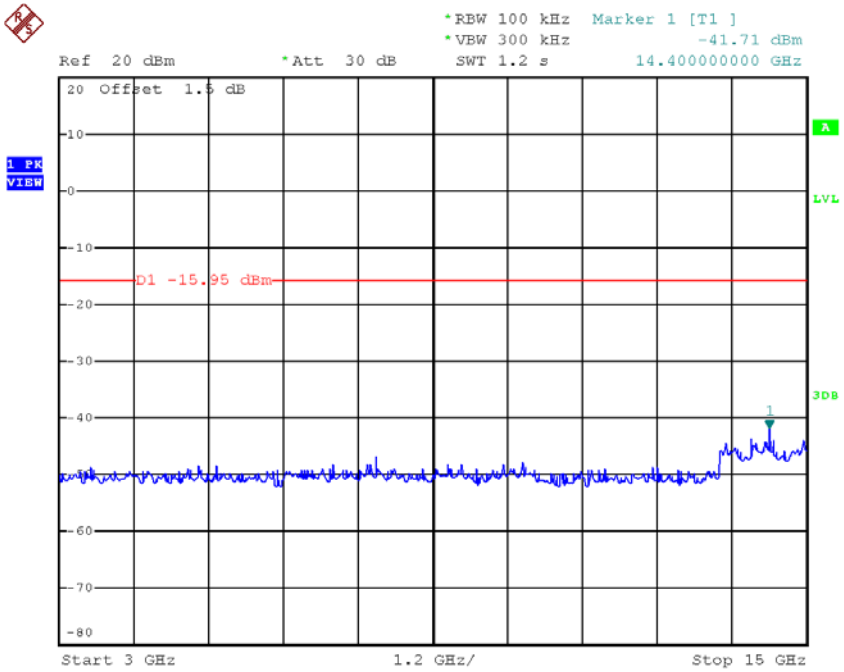

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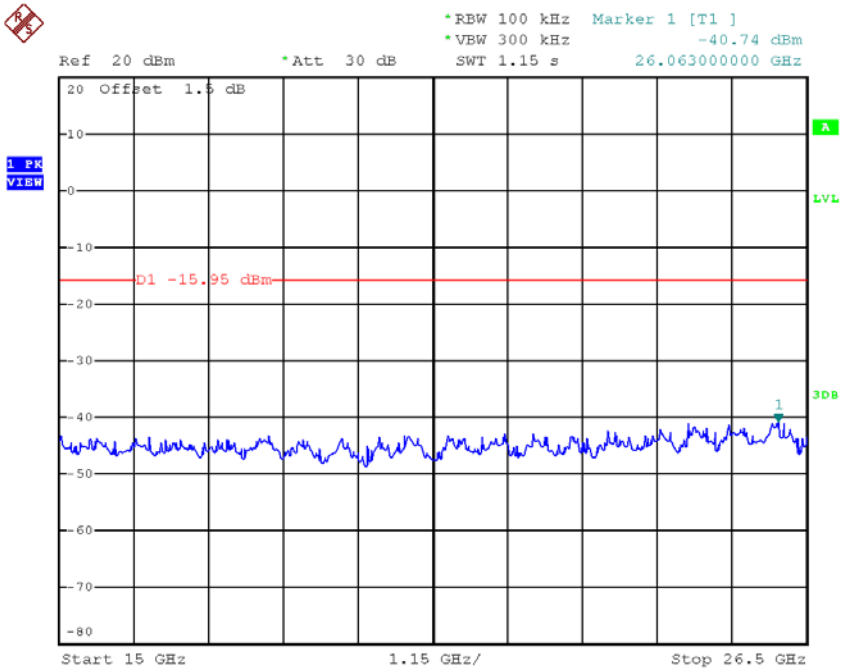
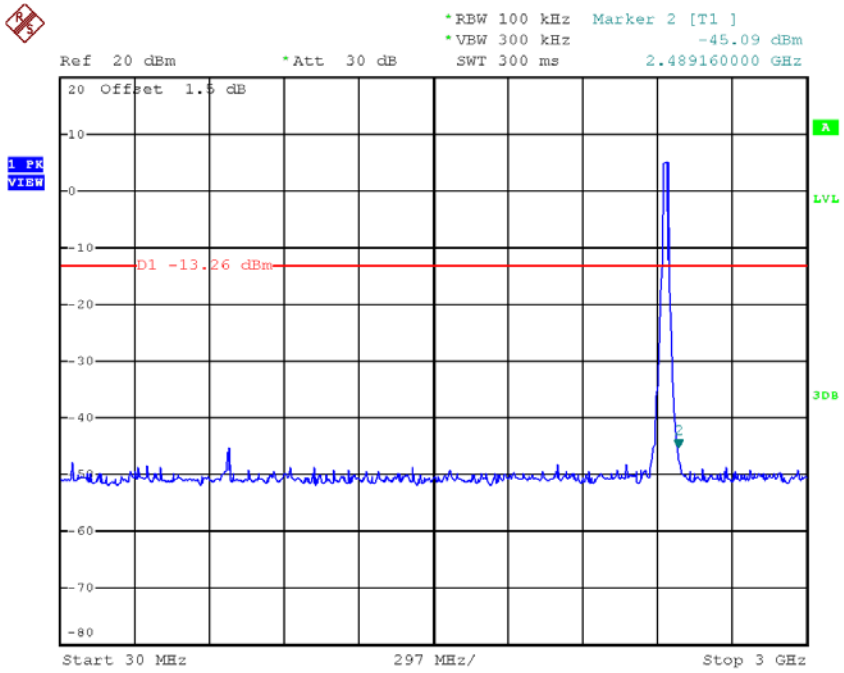
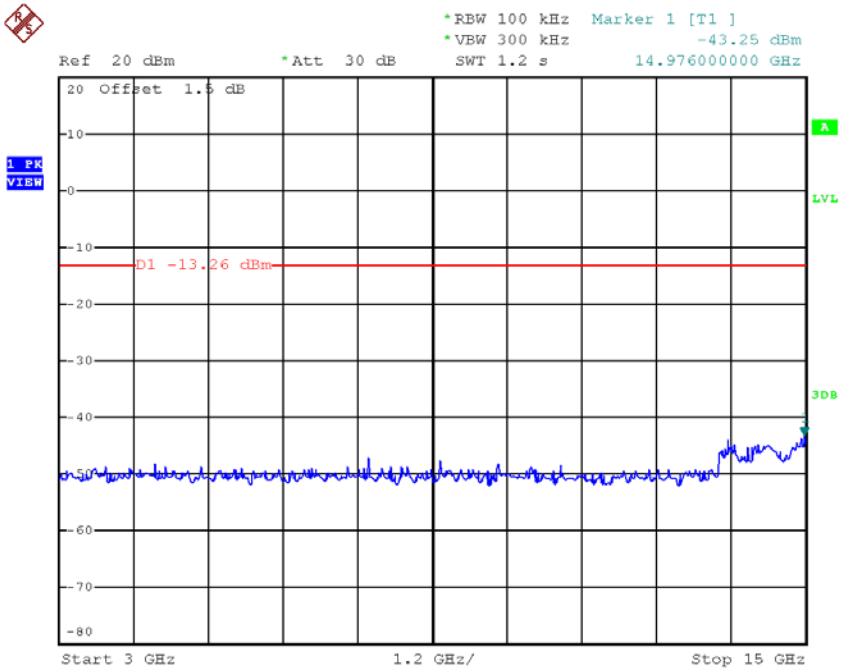


Date: 28.DEC.2017 20:06:04

TX HT20 mode CH06 (10 Harmonic of the frequency)



Date: 28.DEC.2017 20:07:00



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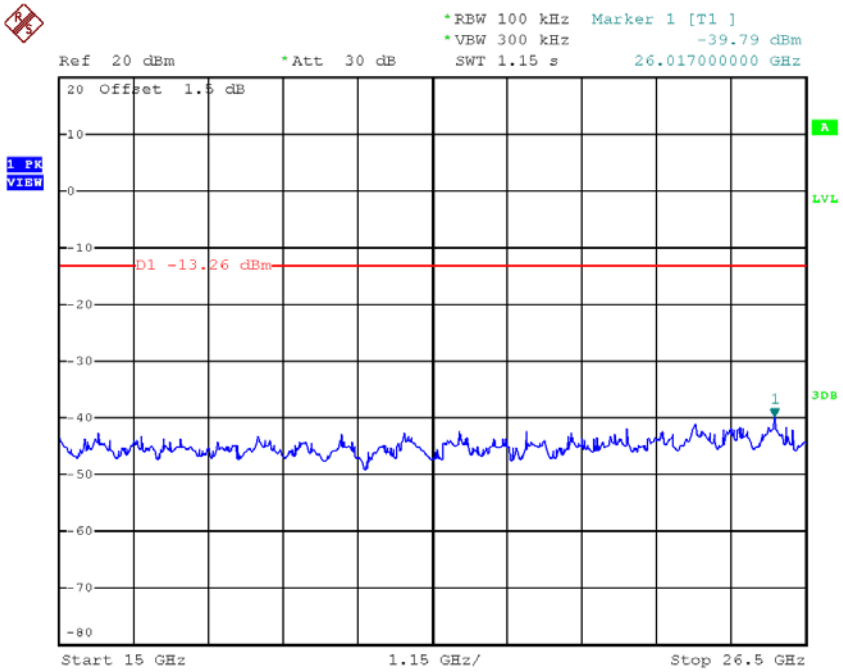
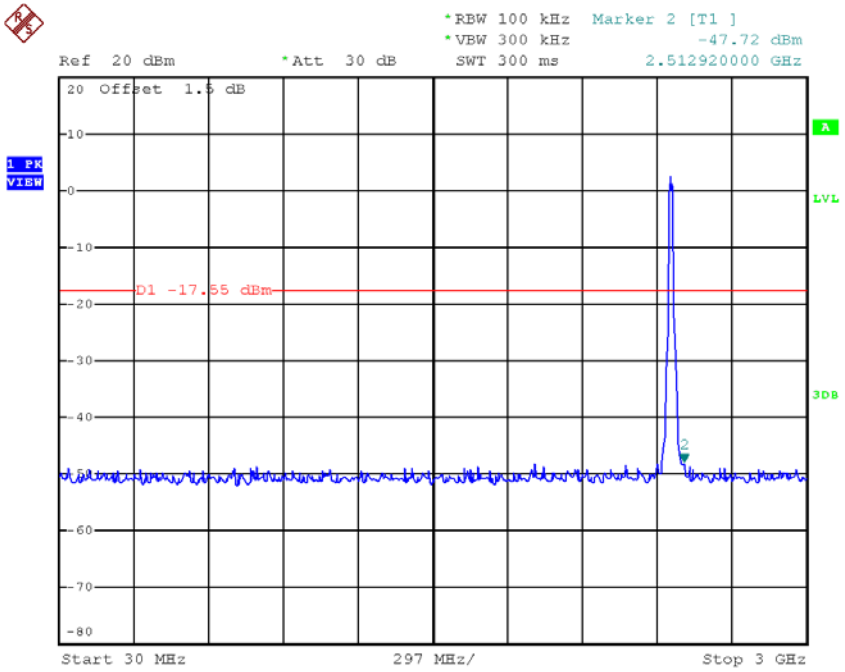


Date: 28.DEC.2017 20:07:16

TX HT20 mode CH11 (10 Harmonic of the frequency)



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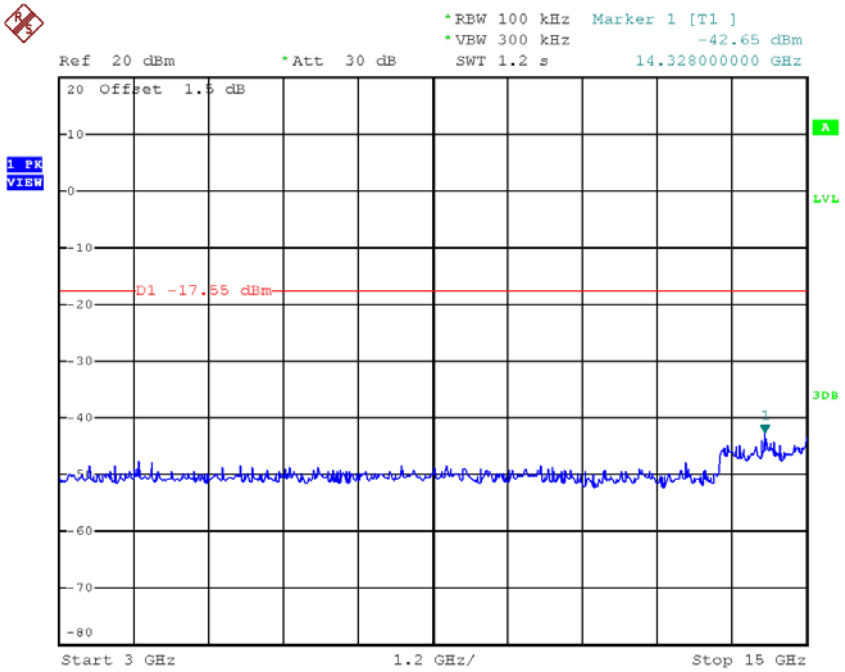

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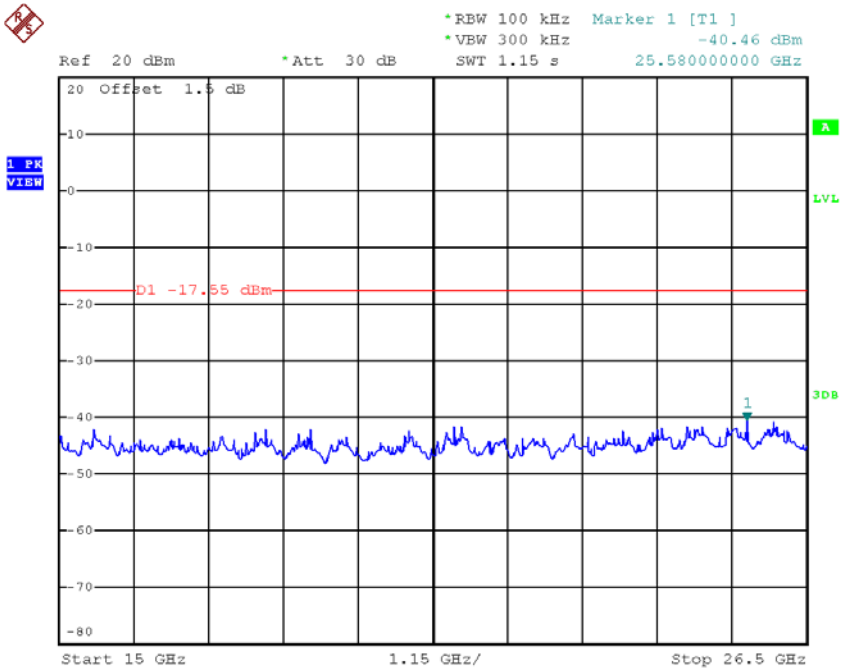

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