

FCC Radio Test Report

FCC ID: ZW9TPC-B001-R

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

Project No. : 1810H004
Equipment : Point of Sale Terminal
Test Model : TPC-B001-R
Series Model : N/A
Applicant : BYD Precision Manufacture Co.,Ltd.
Address : No.3001, Bao He Road, Baolong industrial,
Longgang Street ,Longgang Zone,Shenzhen
State / Country: China

Date of Receipt : Oct. 25, 2018
Date of Test : Oct. 25, 2018~Nov. 26, 2018
Issued Date : Nov. 28, 2018
Tested by : BTL Inc.

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Certificate #5123.02

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BTL's reports apply only to the specific samples tested under conditions. It is manufacturer'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.

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The information, data and test plan are provided by manufacturer, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements in all the possible configurations as representative of its intended use.

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

Report Version	Description	Issued Date
R00	Original Issue.	Nov. 28, 2018

1. CERTIFICATION

Equipment : Point of Sale Terminal
Brand Name : hp
Test Model : TPC-B001-R
Series Model : N/A
Applicant : BYD Precision Manufacture Co.,Ltd.
Address : No.3001, Bao He Road, Baolong industrial, Longgang Street ,Longgang Zone,Shenzhen State / Country: China
Manufacturer : HP Inc.
Address : 1501 Page Mill Road, Palo Alto, CA 94304, USA
Factory : BYD Precision Manufacture Co.,Ltd.
Address : No.3001, Bao He Road, Baolong industrial, Longgang Street ,Longgang Zone,Shenzhen
Date of Test : Oct. 25, 2018 ~ Nov. 26, 2018
Test Sample : Engineering Sample No.: B181000147
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-3-1810H004) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of A2LA 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)	6 dB Bandwidth	PASS	
15.247(b)(3)	Maximum 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 %, $U=2\times U_c(y)$.

The BTL measurement uncertainty as below table:

A. Conducted Measurement:

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

B. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
DG-CB03	CISPR	9 KHz~30 MHz	V	3.79
		9 KHz~30 MHz	H	3.57
		30 MHz~200 MHz	V	3.82
		30 MH~200 MHz	H	3.78
		200 MHz~1,000 MHz	V	4.10
		200 MHz~1,000 MHz	H	4.06
		1 GHz~18 GHz	V	3.12
		1 GHz~18 GHz	H	3.68
		18 GHz~40 GHz	V	4.15
		18 GHz~40 GHz	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	Point of Sale Terminal		
Brand Name	hp		
Test Model	TPC-B001-R		
Series Model	N/A		
Model Difference(s)	N/A		
Software Version	V1.00.00		
Hardware Version	1.0.0		
Product Description	Operation Frequency		2412 MHz ~2462 MHz
	Modulation Technology		802.11b:DSSS 802.11g:OFDM 802.11n:OFDM
	Bit Rate of Transmitter		802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n up to 300 Mbps
	Output Power (Max.) Non-Beamforming		802.11b: 18.54 dBm 802.11g: 24.55 dBm 802.11n(20 MHz): 23.84 dBm
Power Source	DC Voltage supplied from AC/DC adapter. #1 Model/Brand: TPN-CA08/hp #2 Model/Brand: TPN-LA11/hp		
Power Rating	I/P: 100-240V ~ 50/60Hz, 1.4A O/P: 5V---3A \ 9V---3A\ 12V---3A \ 15V---3A 45W MAX		

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(20 MHz)							
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	PULSE	SZ1090W	FPC	N/A	2.88

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-20 MHz Mode Channel 01/06/11
Mode 4	TX Mode

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

For Conducted Test	
Final Test Mode:	Description
Mode 4	TX Mode

For Radiated Test	
Final Test Mode:	Description
Mode 1	TX B Mode Channel 01/06/11
Mode 2	TX G Mode Channel 01/06/11
Mode 3	TX N-20 MHz 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-20 MHz Mode Channel 01/06/11

6 dB 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-20 MHz Mode Channel 01/06/11

Maximum 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-20 MHz 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-20 MHz Mode Channel 01/06/11

Note:

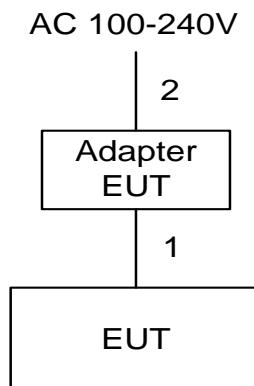
- (1) The measurements are performed at the high, middle, low available channels.
- (3) For radiated 30 MHz to 1000 MHz test, the 802.11b is found to be the worst case and recorded.
- (4) The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.
- (5) All adapters had been pre-test and in this report only recorded the worst case.

3.3 TABLE OF PARAMETERS OF TEST 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	QRCT3_V3.0-303		
Frequency (MHz)	2412	2437	2462
802.11b	16	16	16
802.11g	13.5	13.5	13.5
802.11n (20 MHz)	12.5	12.5	12.5

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.5 DESCRIPTION OF SUPPORT UNITS

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

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

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	1.8m	DC Cable
2	NO	NO	1m	AC Cable

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

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

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

Note:

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

The following table is the setting of the receiver

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

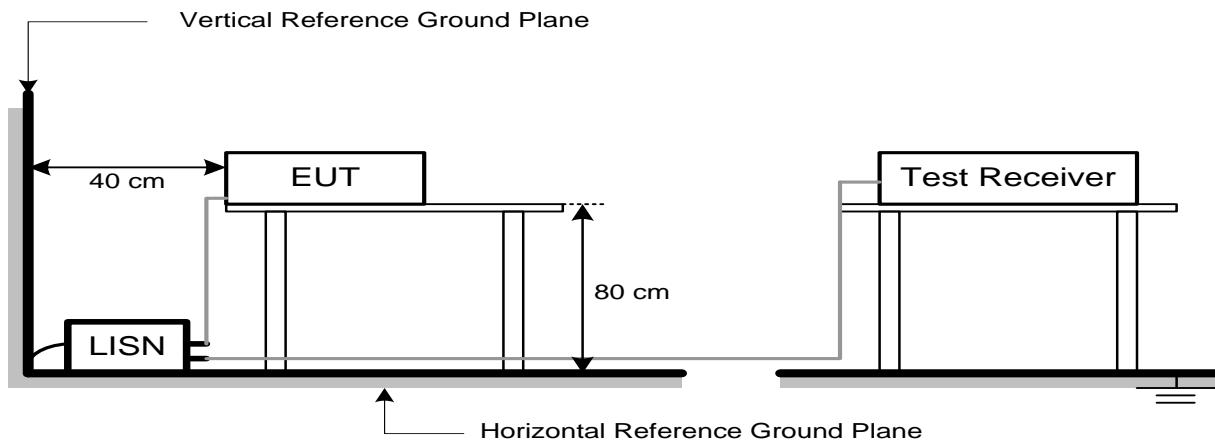
4.1.2 TEST PROCEDURE

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

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



4.1.5 EUT OPERATING CONDITIONS

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

4.1.6 EUT TEST CONDITIONS

Temperature: 23.8°C Relative Humidity: 61.2% Test Voltage: AC 120V/60Hz

4.1.7 TEST RESULTS

Please refer to the Appendix A.

Remark:

- (1) All readings are QP Mode value unless otherwise stated AVG in column of [®]Note . If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a “ * ” marked in AVG Mode column of Interference Voltage Measured.

(2) Measuring frequency range from 150KHz to 30 MHz.

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 (9 kHz-1000 MHz)

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 1000 MHz)

Frequency (MHz)	(dBuV/m) (at 3 meters)	
	Peak	Average
Above 1000	74	54

Note:

- (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)	1 MHz / 3 MHz for Peak, 1 MHz / 1/T for Average

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

4.2.2 TEST PROCEDURE

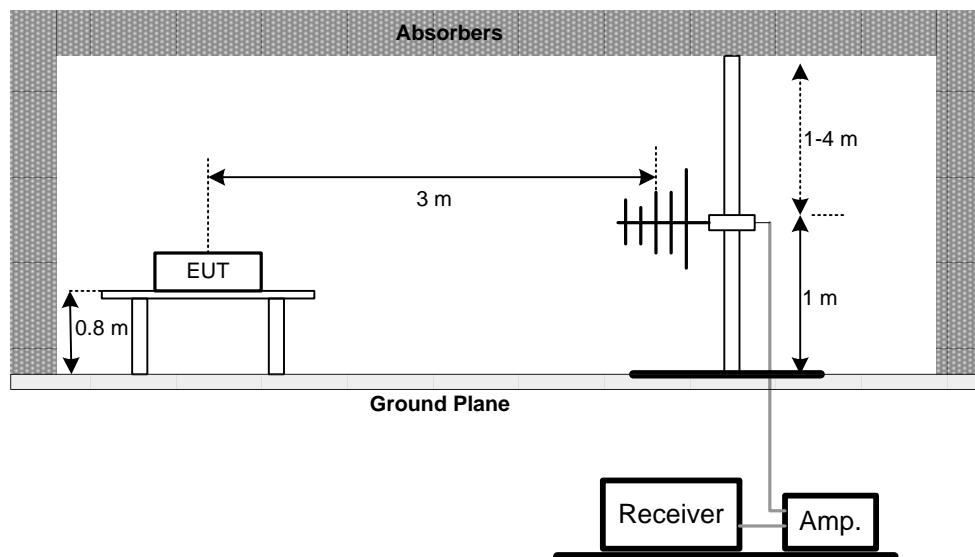
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
- The measuring distance 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 1 GHz)
- 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 1 GHz.
- The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1 GHz)
- 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 1 GHz)
- For the actual test configuration, please refer to the related Item -EUT Test Photos.

4.2.3 DEVIATION FROM TEST STANDARD

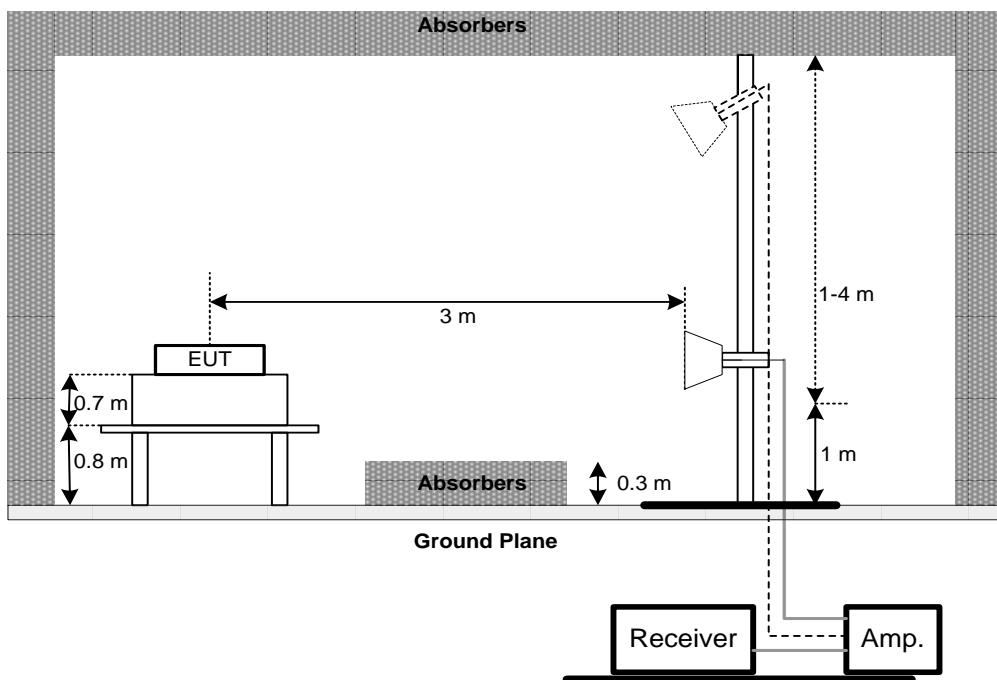
No deviation

4.2.4 TEST SETUP

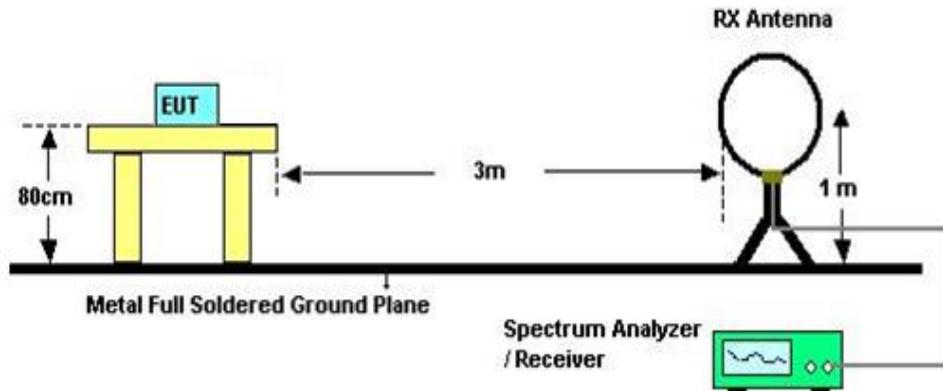
(A) Radiated Emission Test Set-Up Frequency 30 MHz-1000 MHz



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



(C) For Radiated Emissions 9 kHz-30 MHz



4.2.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.2.6 EUT TEST CONDITIONS

Temperature: 22°C Relative Humidity: 56% Test Voltage: AC 120V/60Hz

4.2.7 TEST RESULTS (9 kHz TO 30 MHz)

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 = $40 \log (\text{specific distance} / \text{test distance})$ (dB).
- (3) Limit line = specific limits (dB_{UV}) + distance extrapolation factor.

4.2.8 TEST RESULTS (30 MHz TO 1000 MHz)

Please refer to the Appendix C.

4.2.9 TEST RESULTS (ABOVE 1000 MHz)

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

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- Spectrum Setting: RBW= 100 kHz, VBW=300 kHz, 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: 24°C Relative Humidity: 58.9% Test Voltage: AC 120V/60Hz

5.1.6 TEST RESULTS

Please refer to the Appendix E.

6. MAXIMUM 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 30 dBm	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 v04 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: 25.2°C Relative Humidity: 57.5% Test Voltage: AC 120V/60Hz

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 intentional radiator is operating, the radio frequency power that is produced by the intentional radiator 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 the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

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= 100 kHz, VBW=300 kHz, Sweep time = Auto.

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: 26°C Relative Humidity: 55.8% Test Voltage: AC 120V/60Hz

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 3 kHz)	2400-2483.5	PASS

8.1.1 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as shown in the block diagram below.
 - b. Spectrum Setting: RBW=3 kHz, VBW=10 kHz, 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: 22.9°C Relative Humidity: 55.9% Test Voltage: AC 120V/60Hz

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	EMI Test Receiver	R&S	ESCI	100382	Mar. 11, 2019
2	LISN	EMCO	3816/2	52765	Mar. 11, 2019
3	50Ω Terminator	SHX	TF2-3G-A	8122901	Mar. 11, 2019
4	TWO-LINE V-NETWORK	R&S	ENV216	101447	Mar. 11, 2019
5	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
6	Cable	N/A	RG223	12m	Mar. 23, 2019

Radiated Emission Measurement - 9kHz TO 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Loop Antenna	EM	EM-6876-1	230	Feb. 07, 2019
2	Cable	N/A	RG 213/U	C-102	Jun. 01, 2019
3	EMI Test Receiver	R&S	ESCI	100382	Mar. 11, 2019
4	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emission Measurement – 30 MHz TO 1000 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 11, 2019
2	Amplifier	HP	8447D	2944A09673	Aug. 11, 2019
3	Receiver	Agilent	N9038A	MY52130039	Aug. 11, 2019
4	Cable	emci	LMR-400(30MHz-1 GHz)(8m+5m)	N/A	May 25, 2019
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

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. 11, 2019
2	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Jun. 30, 2019
3	Amplifier	Agilent	8449B	3008A02274	Mar. 11, 2019
4	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 11, 2019
5	Receiver	Agilent	N9038A	MY52130039	Aug. 11, 2019
6	Controller	CT	SC100	N/A	N/A
7	Controller	MF	MF-7802	MF780208416	N/A
8	Cable	mitron	B10-01-01-12M	18072744	Jul. 30, 2019
9	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

6 dB Bandwidth

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 11, 2019

Maximum output power

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	ANRITSU	ML2495A	1128009	Mar. 11, 2019
2	Pulse Power Sensor	ANRITSU	MA 2411B	1027500	Mar. 11, 2019

Antenna Conducted Spurious Emission

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 11, 2019

Power Spectral Density

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 11, 2019

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

9 kHz to 30 MHz



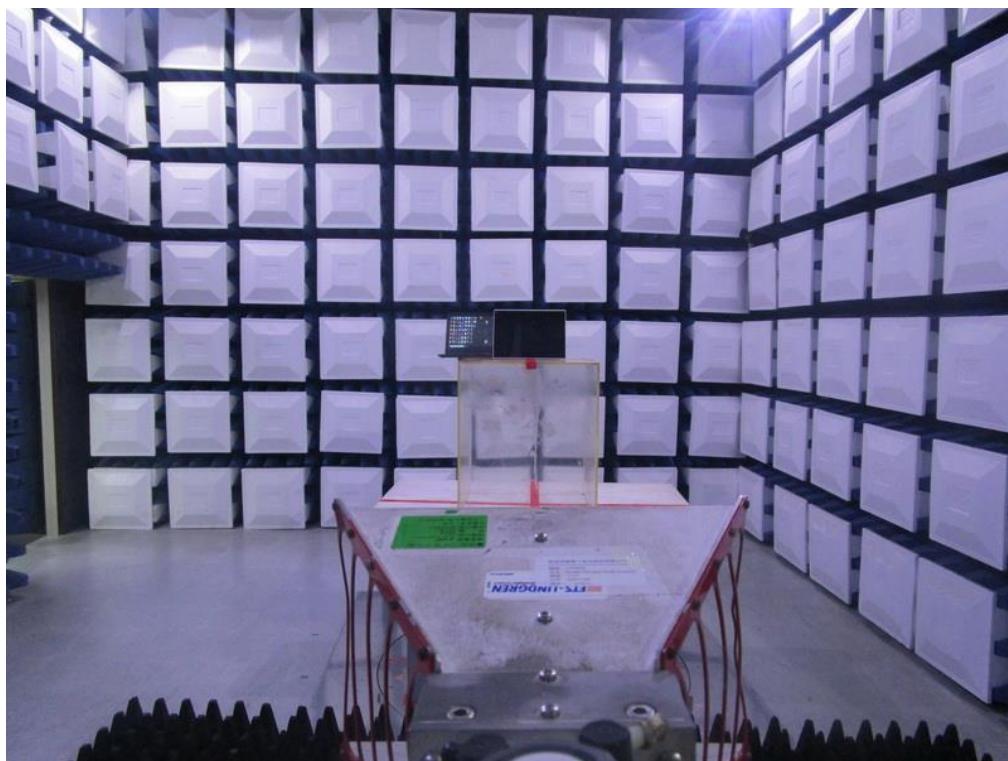
Radiated Measurement Photos

30 MHz to 1000 MHz



Radiated Measurement Photos

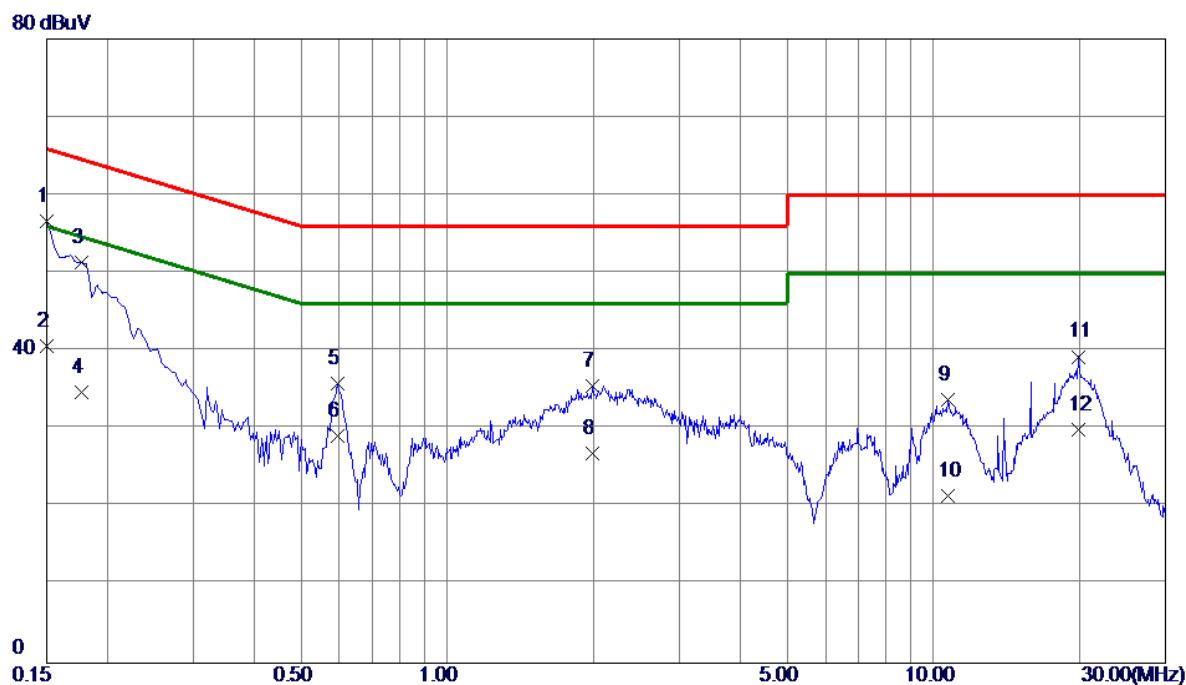
Above 1000 MHz



APPENDIX A - CONDUCTED EMISSION

Test Mode:	TX Mode
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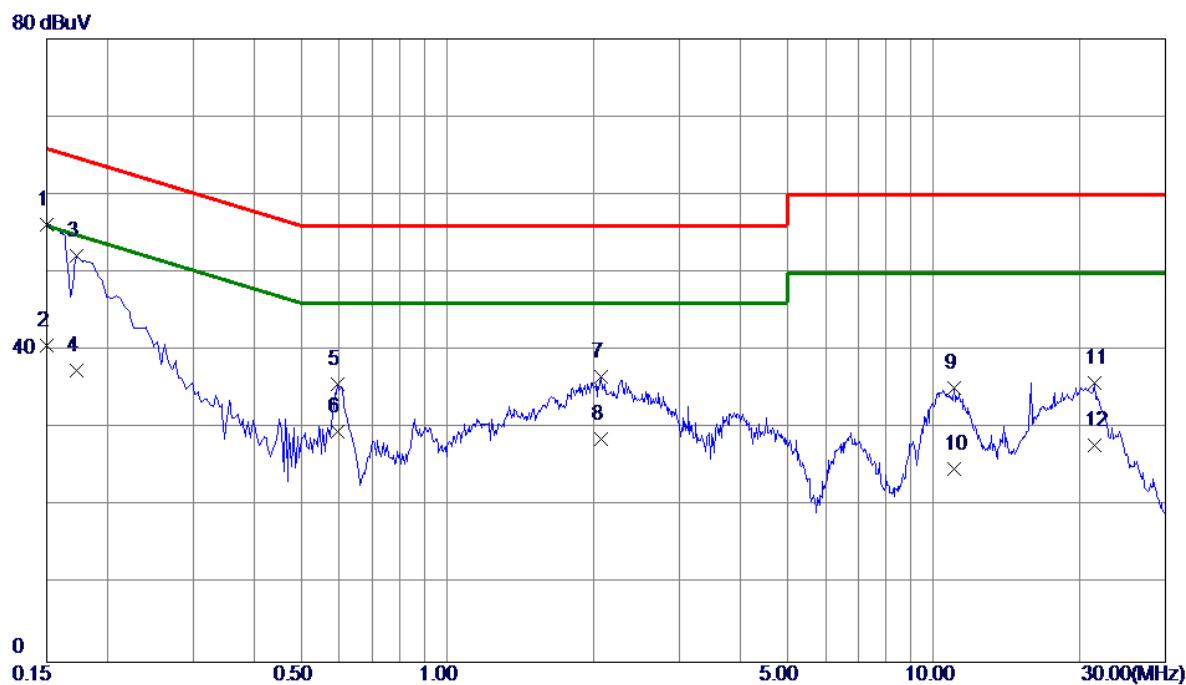
Line



No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1 *	0.1500	46.81	9.77	56.58	66.00	-9.42	QP	
2	0.1500	30.80	9.77	40.57	56.00	-15.43	AVG	
3	0.1770	41.49	9.82	51.31	64.63	-13.32	QP	
4	0.1770	24.90	9.82	34.72	54.63	-19.91	AVG	
5	0.5955	25.73	10.08	35.81	56.00	-20.19	QP	
6	0.5955	19.10	10.08	29.18	46.00	-16.82	AVG	
7	1.9860	25.46	10.04	35.50	56.00	-20.50	QP	
8	1.9860	16.90	10.04	26.94	46.00	-19.06	AVG	
9	10.6935	23.41	10.36	33.77	60.00	-26.23	QP	
10	10.6935	11.10	10.36	21.46	50.00	-28.54	AVG	
11	19.8194	28.56	10.72	39.28	60.00	-20.72	QP	
12	19.8194	19.21	10.72	29.93	50.00	-20.07	AVG	

Test Mode: TX Mode

Neutral

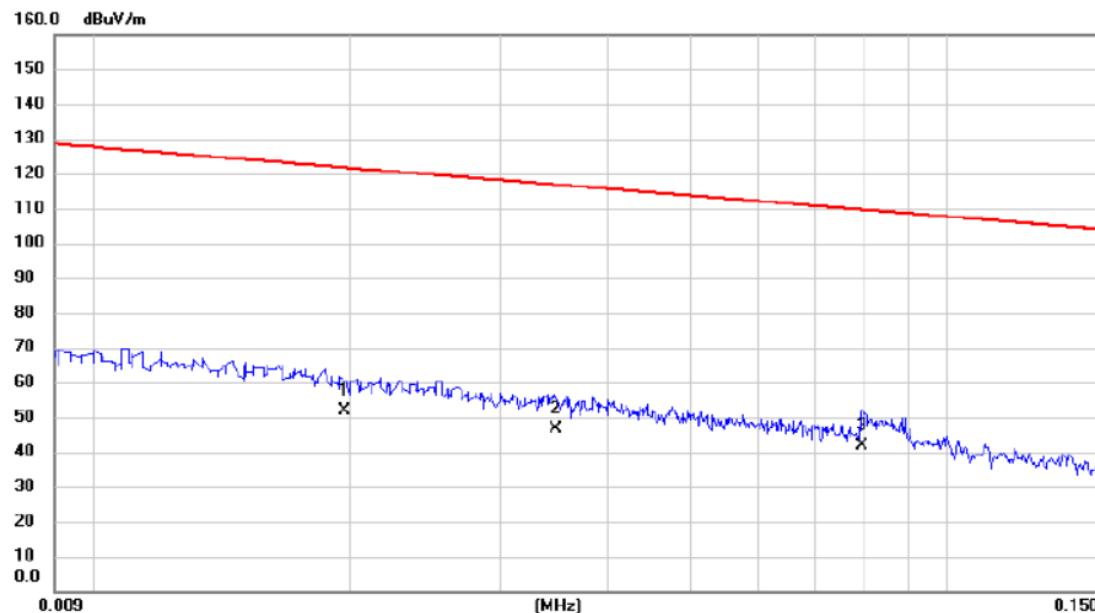


No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1 *	0.1500	46.38	9.78	56.16	66.00	-9.84	QP	
2	0.1500	30.90	9.78	40.68	56.00	-15.32	AVG	
3	0.1725	42.30	9.81	52.11	64.84	-12.73	QP	
4	0.1725	27.60	9.81	37.41	54.84	-17.43	AVG	
5	0.5955	25.62	10.01	35.63	56.00	-20.37	QP	
6	0.5955	19.60	10.01	29.61	46.00	-16.39	AVG	
7	2.0715	26.52	10.16	36.68	56.00	-19.32	QP	
8	2.0715	18.41	10.16	28.57	46.00	-17.43	AVG	
9	11.0535	25.00	10.20	35.20	60.00	-24.80	QP	
10	11.0535	14.61	10.20	24.81	50.00	-25.19	AVG	
11	21.4395	25.12	10.69	35.81	60.00	-24.19	QP	
12	21.4395	17.19	10.69	27.88	50.00	-22.12	AVG	

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

Test Mode: TX Mode

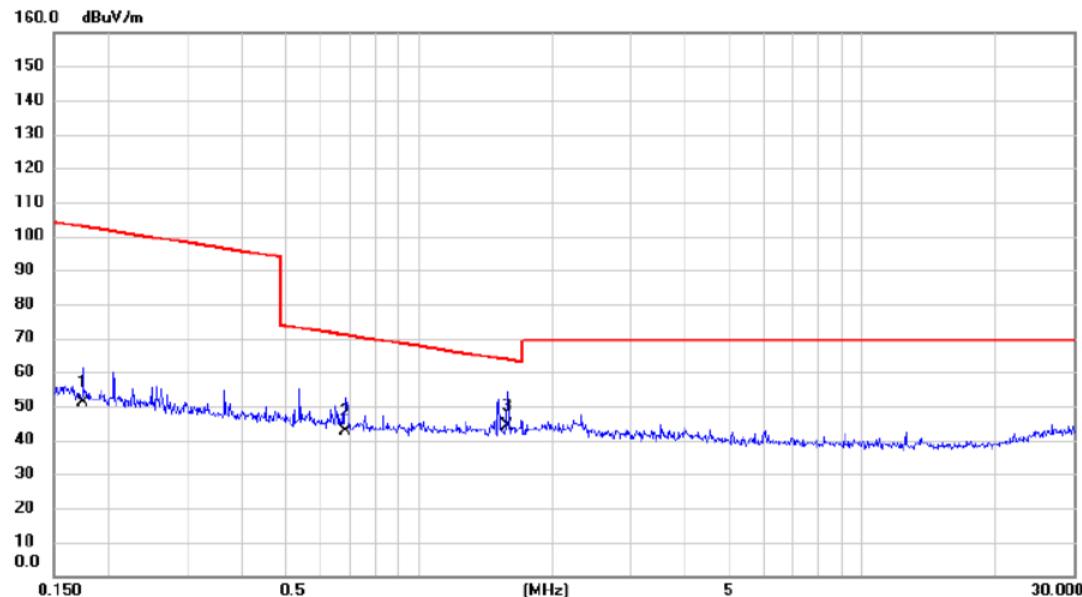
Ant 0°



No.	Mk.	Freq. MHz	Reading Level	Correct Factor	Measure- ment	Limit	Over	Detector	Comment
			dBuV	dB	dBuV/m	dBuV/m	dB		
1		0.0197	32.21	19.66	51.87	121.72	-69.85	AVG	
2		0.0348	27.44	19.18	46.62	116.77	-70.15	AVG	
3 *		0.0793	23.56	18.13	41.69	109.62	-67.93	AVG	

Test Mode: TX Mode

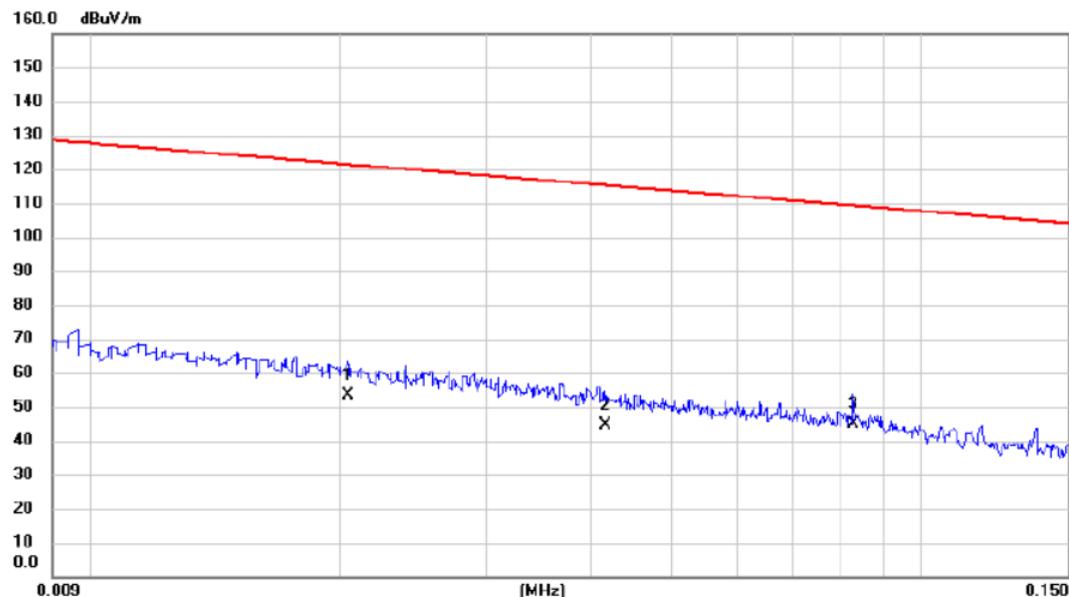
Ant 0°



No.	Mk.	Freq. MHz	Reading Level	Correct Factor	Measure- ment	Limit	Over	Comment
			dBuV	dB	dBuV/m	dBuV/m	dB	
1		0.1740	34.26	16.88	51.14	102.80	-51.66	AVG
2		0.6826	26.18	16.26	42.44	70.92	-28.48	QP
3 *		1.5851	28.73	15.67	44.40	63.60	-19.20	QP

Test Mode: TX Mode

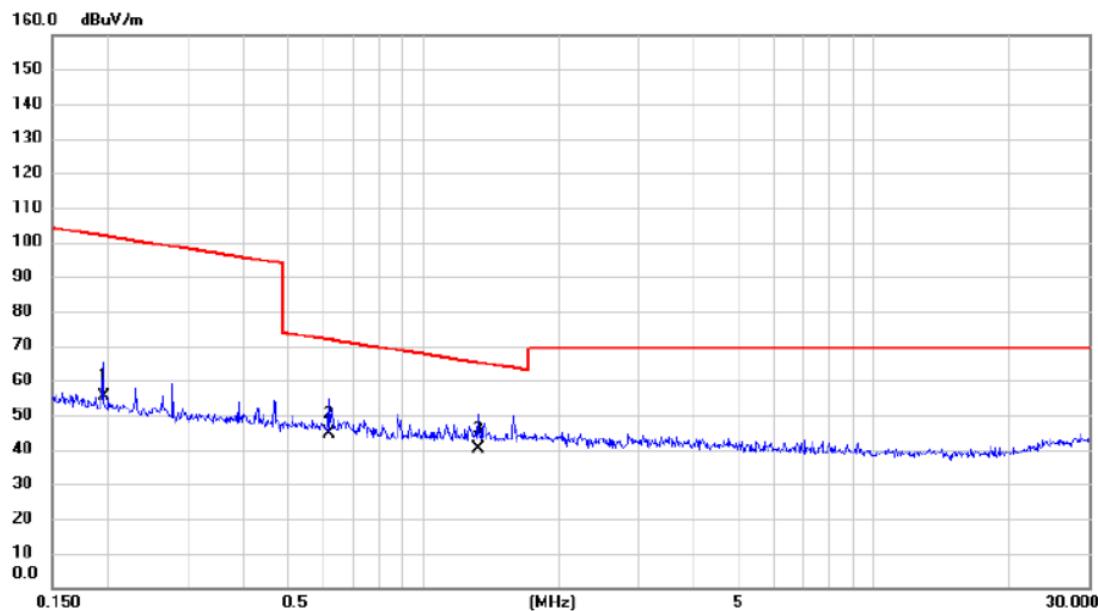
Ant 90°



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		0.0204	33.87	19.61	53.48	121.41	-67.93	AVG	
2		0.0416	25.63	18.97	44.60	115.22	-70.62	AVG	
3 *		0.0827	26.80	18.05	44.85	109.25	-64.40	AVG	

Test Mode: TX Mode

Ant 90°

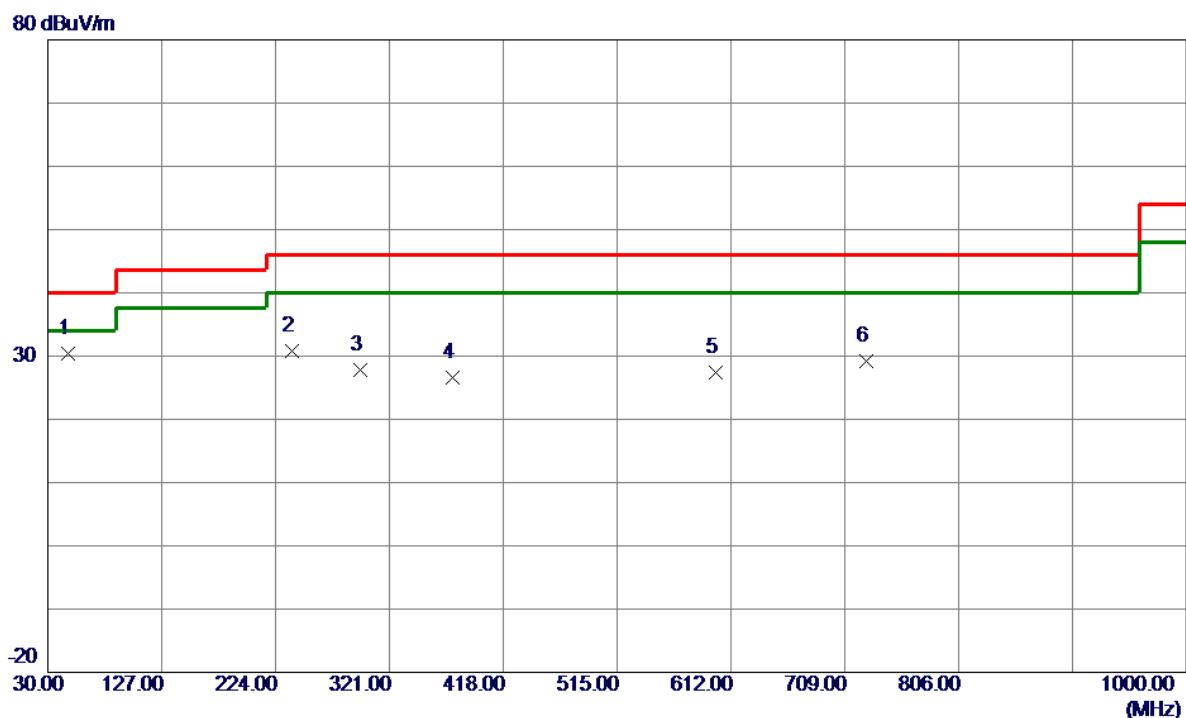


No.	Mk.	Freq. MHz	Reading Level dB _{uV}	Correct Factor dB	Measure- ment dB _{uV/m}	Limit dB _{uV/m}	Over Detector	Comment
1		0.1955	38.44	16.81	55.25	101.78	-46.53	AVG
2		0.6173	28.26	16.33	44.59	71.79	-27.20	QP
3	*	1.3238	24.35	15.77	40.12	65.17	-25.05	QP

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

Test Mode: TX B Mode Channel 01

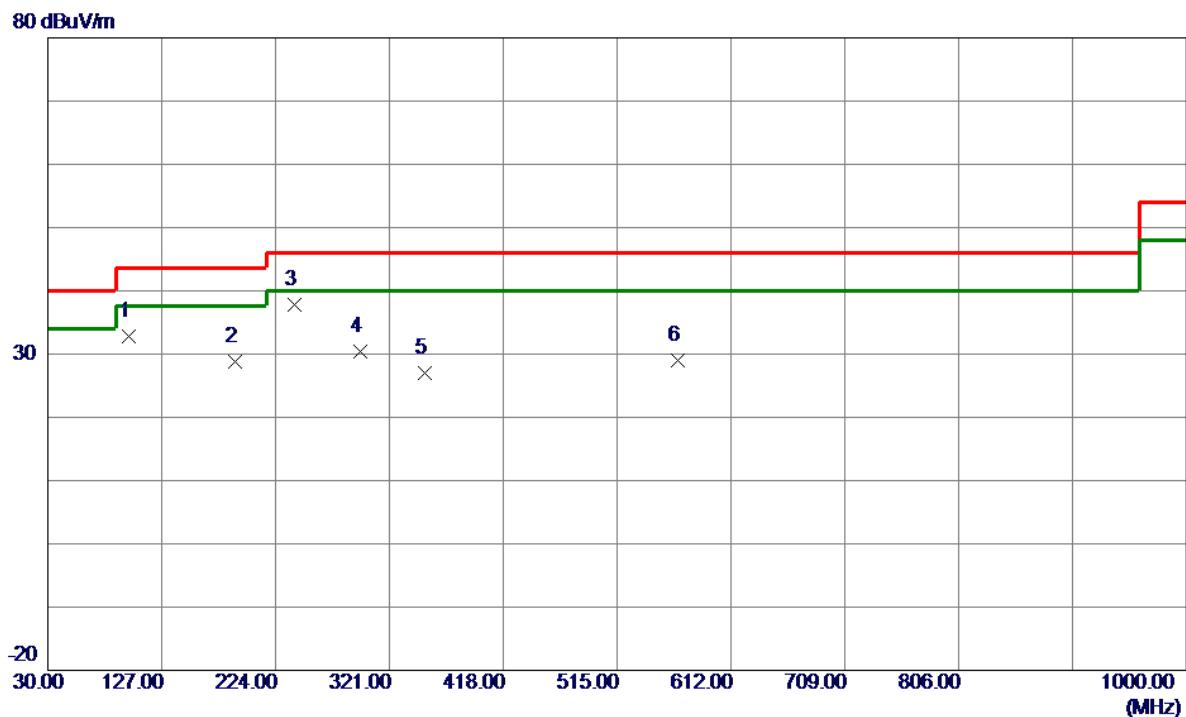
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment	
								Detector	Comment
1 *	46.9750	47.57	-17.25	30.32	40.00	-9.68	Peak		
2	238.0650	48.67	-17.80	30.87	46.00	-15.13	Peak		
3	296.2650	44.03	-16.21	27.82	46.00	-18.18	Peak		
4	374.3500	41.06	-14.44	26.62	46.00	-19.38	Peak		
5	598.9050	37.22	-9.80	27.42	46.00	-18.58	Peak		
6	727.4300	37.77	-8.55	29.22	46.00	-16.78	Peak		

Test Mode: TX B Mode Channel 01

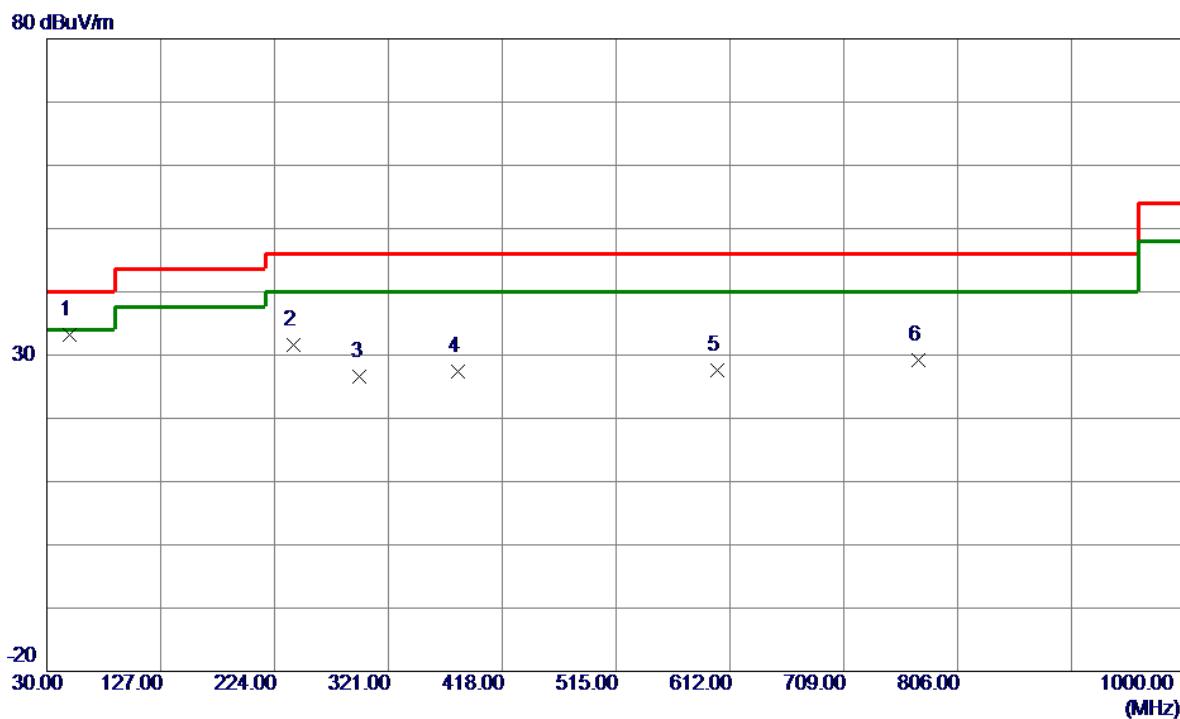
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	98.8700	52.71	-19.95	32.76	43.50	-10.74	Peak	
2	189.0800	47.99	-19.22	28.77	43.50	-14.73	Peak	
3 *	240.0050	55.56	-17.67	37.89	46.00	-8.11	Peak	
4	295.7800	46.70	-16.24	30.46	46.00	-15.54	Peak	
5	351.5550	40.84	-13.86	26.98	46.00	-19.02	Peak	
6	566.8950	39.29	-10.23	29.06	46.00	-16.94	Peak	

Test Mode: TX B Mode Channel 06

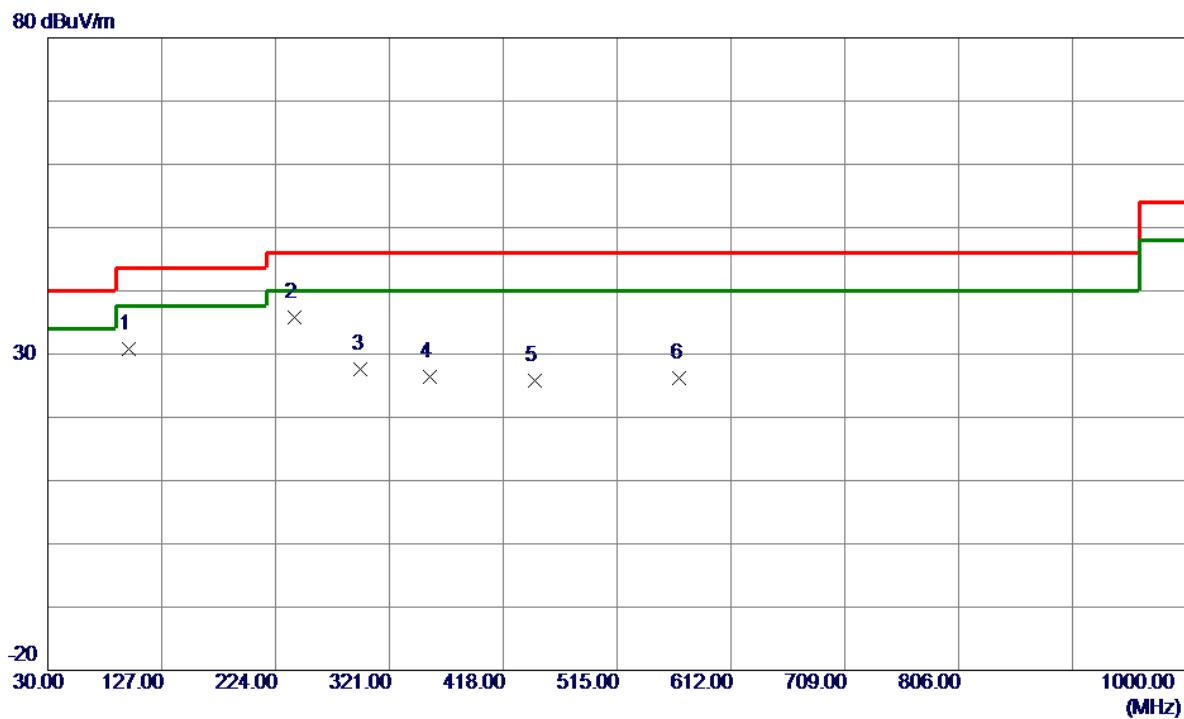
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	49.4000	50.57	-17.43	33.14	40.00	-6.86	Peak	
2	240.0050	49.29	-17.67	31.62	46.00	-14.38	Peak	
3	296.7500	42.70	-16.19	26.51	46.00	-19.49	Peak	
4	380.6550	41.73	-14.39	27.34	46.00	-18.66	Peak	
5	600.8449	37.35	-9.78	27.57	46.00	-18.43	Peak	
6	772.5349	37.00	-7.81	29.19	46.00	-16.81	Peak	

Test Mode: TX B Mode Channel 06

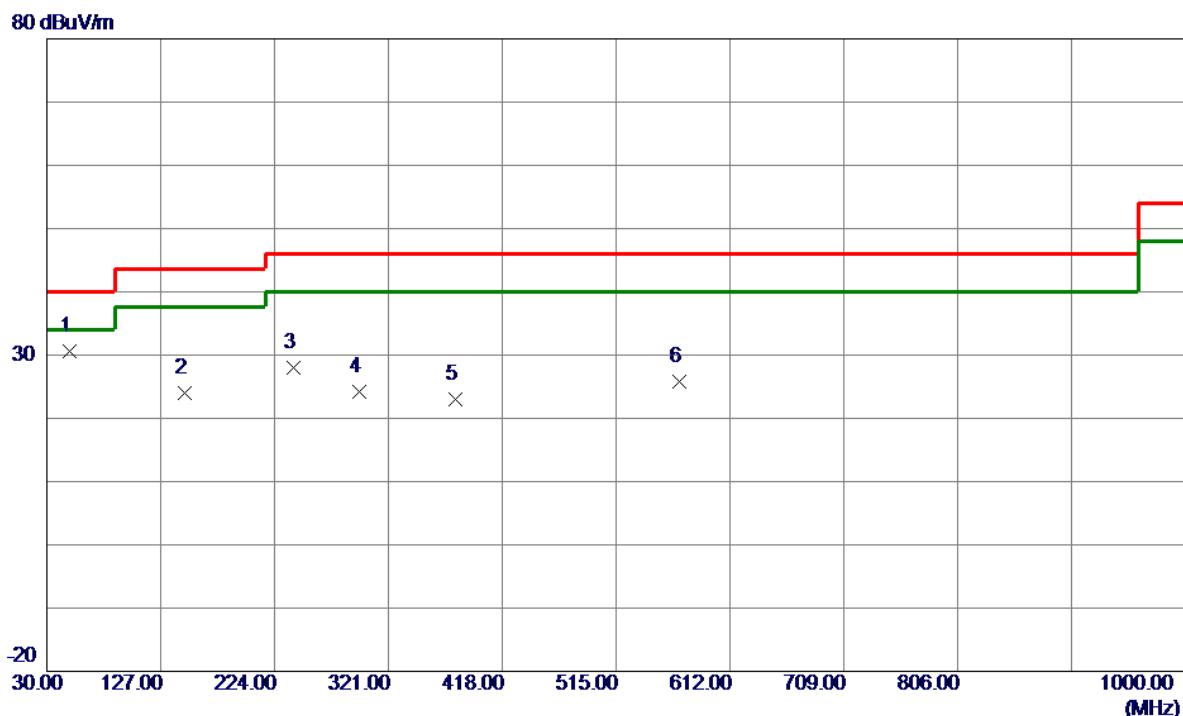
Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	98.8700	50.79	-19.95	30.84	43.50	-12.66	Peak	
2 *	240.0050	53.53	-17.67	35.86	46.00	-10.14	Peak	
3	296.7500	43.88	-16.19	27.69	46.00	-18.31	Peak	
4	355.4350	40.43	-13.96	26.47	46.00	-19.53	Peak	
5	445.1600	38.33	-12.55	25.78	46.00	-20.22	Peak	
6	568.3500	36.38	-10.21	26.17	46.00	-19.83	Peak	

Test Mode: TX B Mode Channel 11

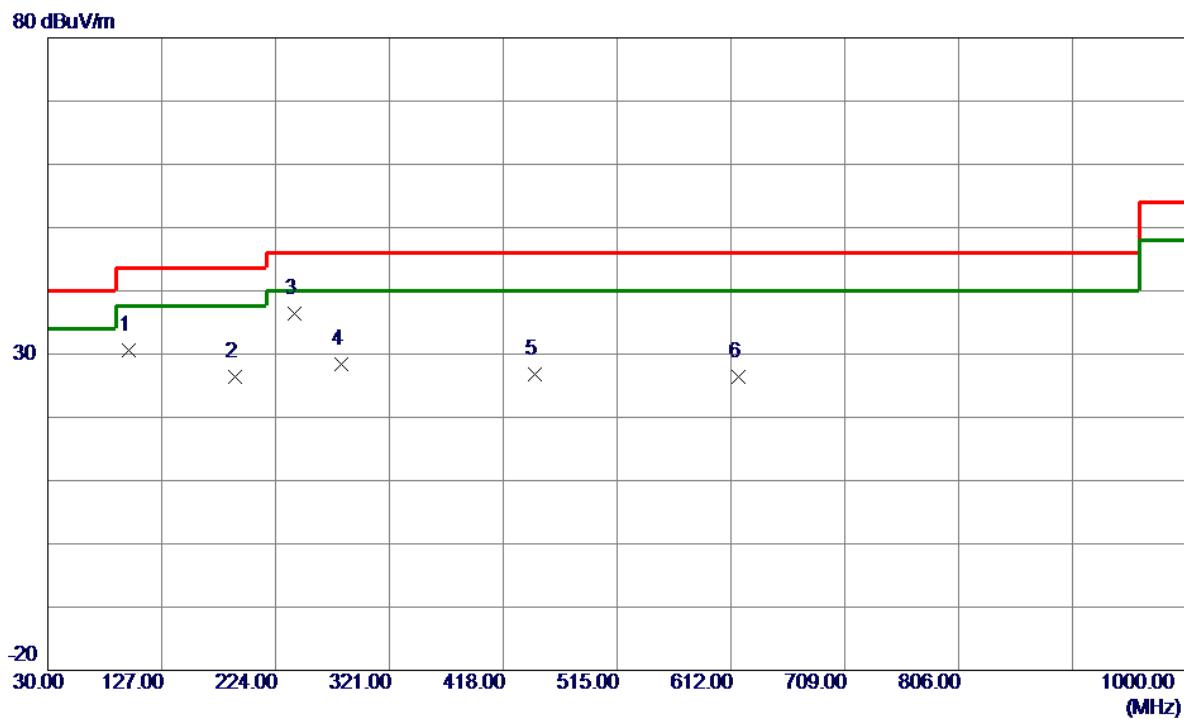
Vertical



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	49.4000	48.08	-17.43	30.65	40.00	-9.35	Peak	
2	147.8550	39.69	-15.71	23.98	43.50	-19.52	Peak	
3	240.0050	45.68	-17.67	28.01	46.00	-17.99	Peak	
4	296.2650	40.46	-16.21	24.25	46.00	-21.75	Peak	
5	378.2300	37.35	-14.41	22.94	46.00	-23.06	Peak	
6	568.8350	35.92	-10.20	25.72	46.00	-20.28	Peak	

Test Mode: TX B Mode Channel 11

Horizontal



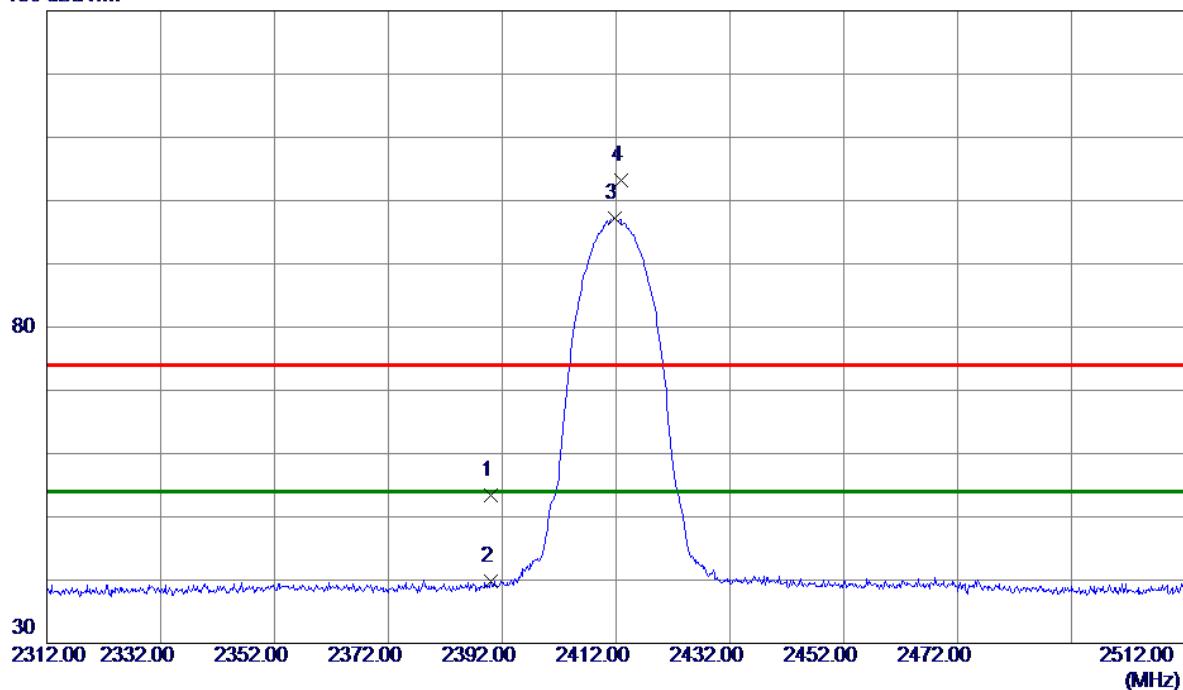
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	98.8700	50.64	-19.95	30.69	43.50	-12.81	Peak	
2	189.5650	45.65	-19.26	26.39	43.50	-17.11	Peak	
3 *	240.0050	54.11	-17.67	36.44	46.00	-9.56	Peak	
4	280.2600	45.52	-17.03	28.49	46.00	-17.51	Peak	
5	445.1600	39.29	-12.55	26.74	46.00	-19.26	Peak	
6	618.3050	35.96	-9.60	26.36	46.00	-19.64	Peak	

APPENDIX D - RADIATED EMISSION (ABOVE 1000 MHZ)

Orthogonal Axis	X
Test Mode:	TX B Mode 2412 MHz

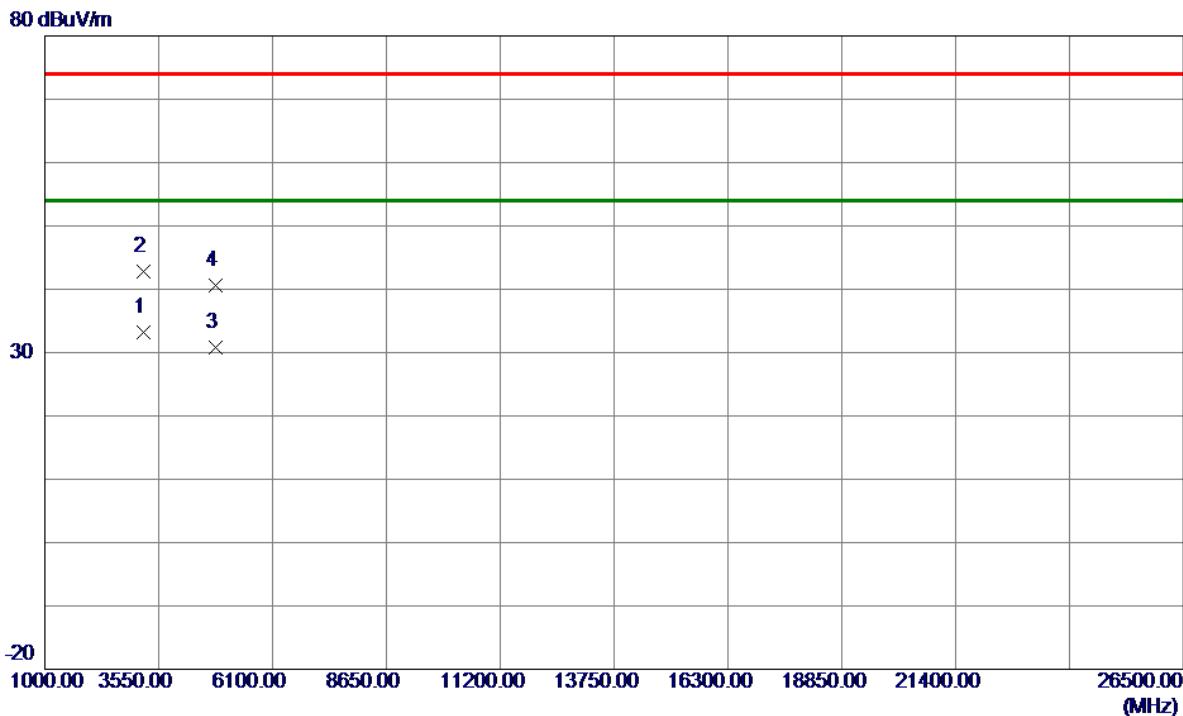
Vertical

130 dBuV/m



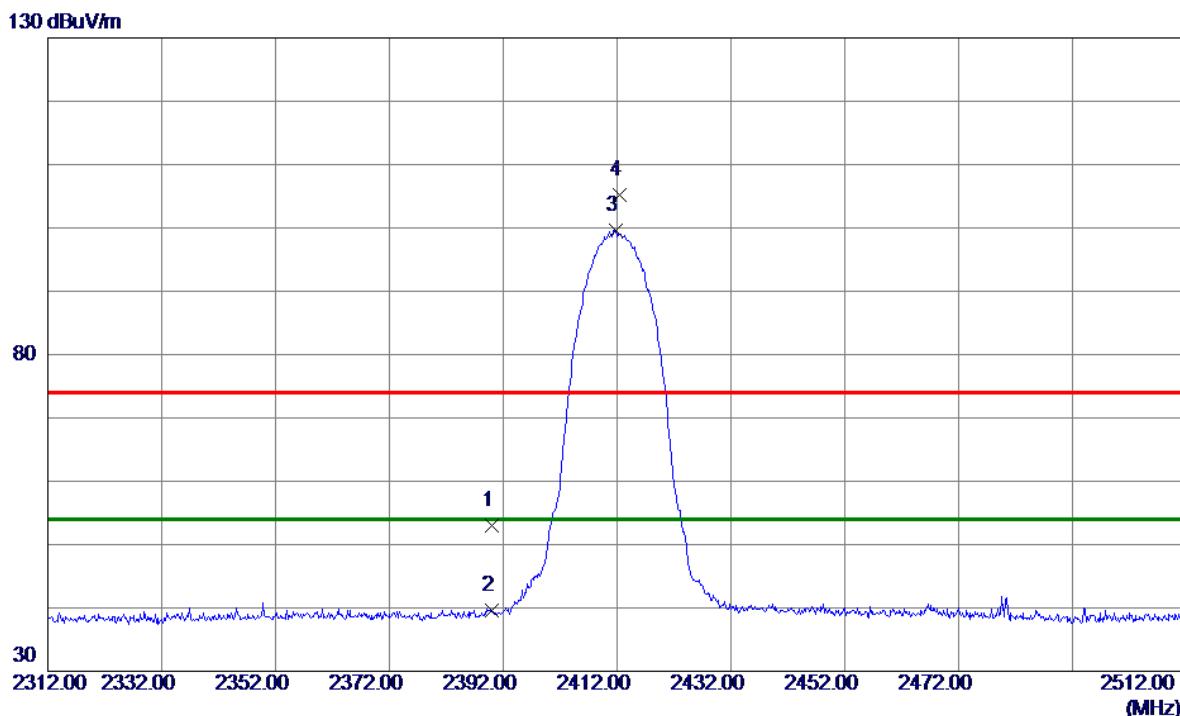
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	21.53	31.79	53.32	74.00	-20.68	Peak	
2	2390.0000	7.95	31.79	39.74	54.00	-14.26	Avg	
3 *	2411.8000	65.44	31.85	97.29	54.00	43.29	Avg	No Limit
4	2412.9000	71.38	31.85	103.23	74.00	29.23	Peak	No Limit

Orthogonal Axis	X
Test Mode:	TX B Mode 2412 MHz

Vertical

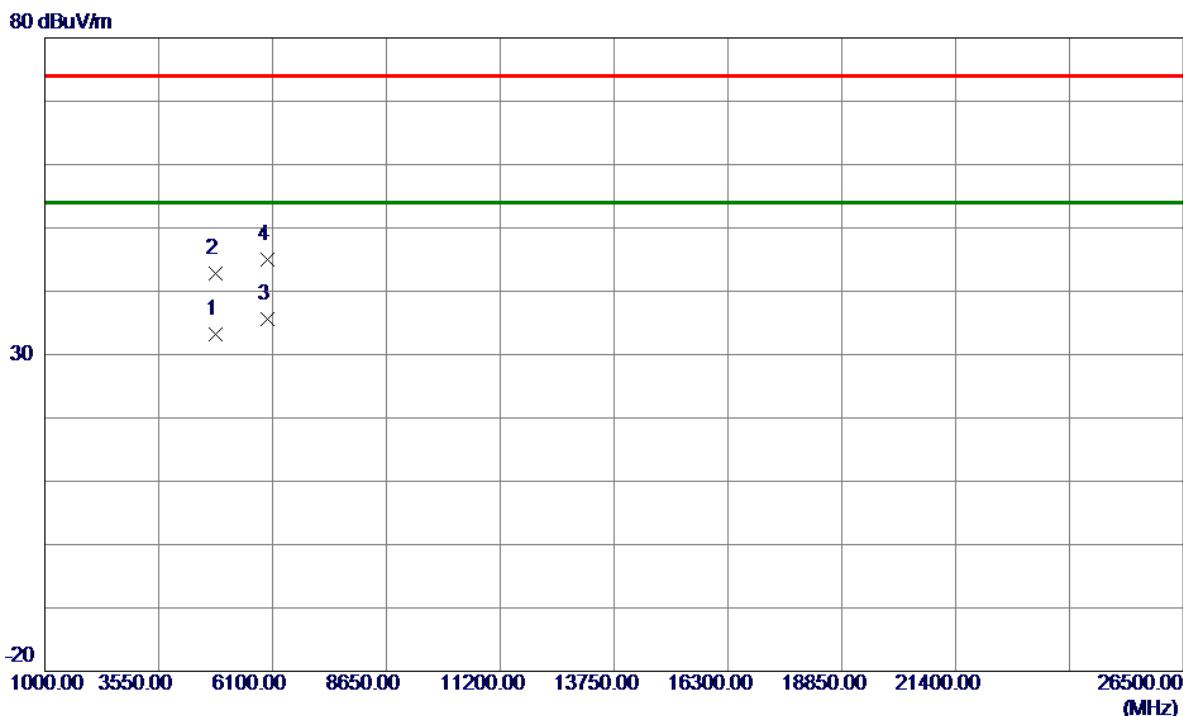
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	3218.5000	48.27	-15.14	33.13	54.00	-20.87	AVG	
2	3221.8500	57.85	-15.14	42.71	74.00	-31.29	Peak	
3	4824.1400	41.48	-10.72	30.76	54.00	-23.24	AVG	
4	4823.4500	51.31	-10.73	40.58	74.00	-33.42	Peak	

Orthogonal Axis	X
Test Mode:	TX B Mode 2412 MHz

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	21.15	31.79	52.94	74.00	-21.06	Peak	
2	2390.0000	7.76	31.79	39.55	54.00	-14.45	AVG	
3 *	2411.7000	67.73	31.85	99.58	54.00	45.58	AVG	No Limit
4	2412.5000	73.26	31.85	105.11	74.00	31.11	Peak	No Limit

Orthogonal Axis	X
Test Mode:	TX B Mode 2412 MHz

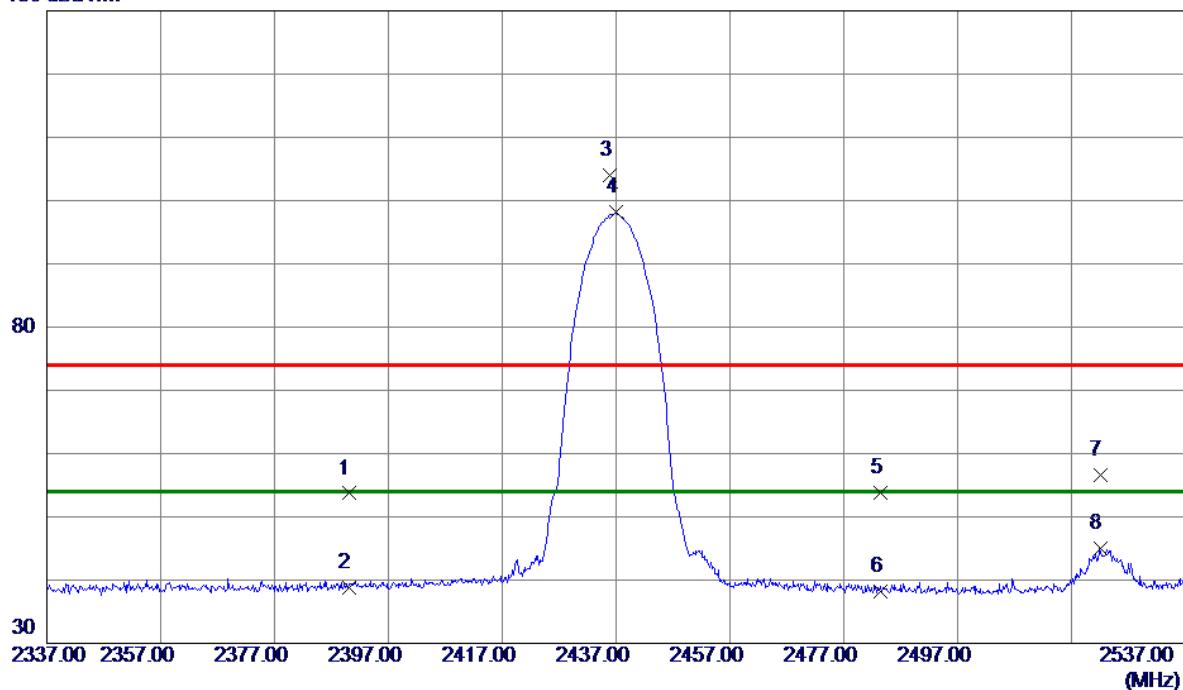
Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.0900	43.88	-10.72	33.16	54.00	-20.84	AVG	
2	4825.1700	53.61	-10.72	42.89	74.00	-31.11	Peak	
3 *	5997.3700	42.97	-7.43	35.54	54.00	-18.46	AVG	
4	5998.2400	52.46	-7.43	45.03	74.00	-28.97	Peak	

Orthogonal Axis	X
Test Mode:	TX B Mode 2437 MHz

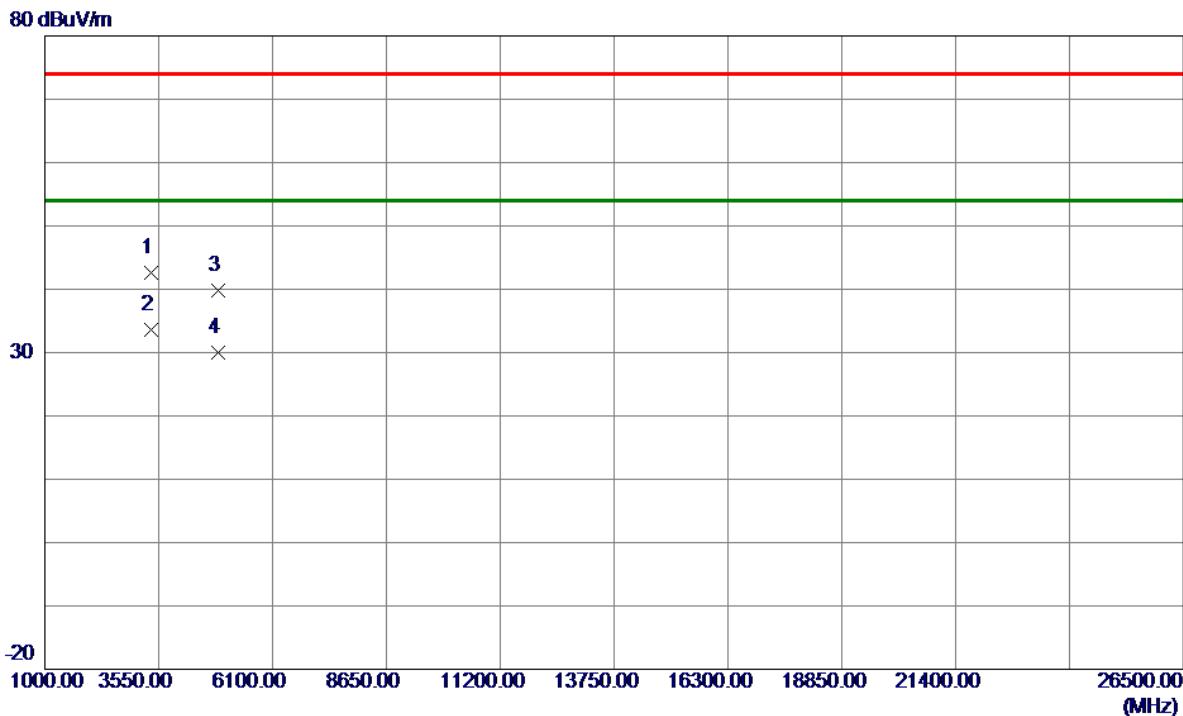
Vertical

130 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	21.91	31.79	53.70	74.00	-20.30	Peak	
2	2390.0000	7.06	31.79	38.85	54.00	-15.15	AVG	
3	2435.9000	72.12	31.92	104.04	74.00	30.04	Peak	No Limit
4 *	2437.0000	66.25	31.92	98.17	54.00	44.17	AVG	No Limit
5	2483.5000	21.70	32.05	53.75	74.00	-20.25	Peak	
6	2483.5000	6.21	32.05	38.26	54.00	-15.74	AVG	
7	2522.0000	24.41	32.16	56.57	74.00	-17.43	Peak	
8	2522.0000	12.77	32.16	44.93	54.00	-9.07	AVG	

Orthogonal Axis	X
Test Mode:	TX B Mode 2437 MHz

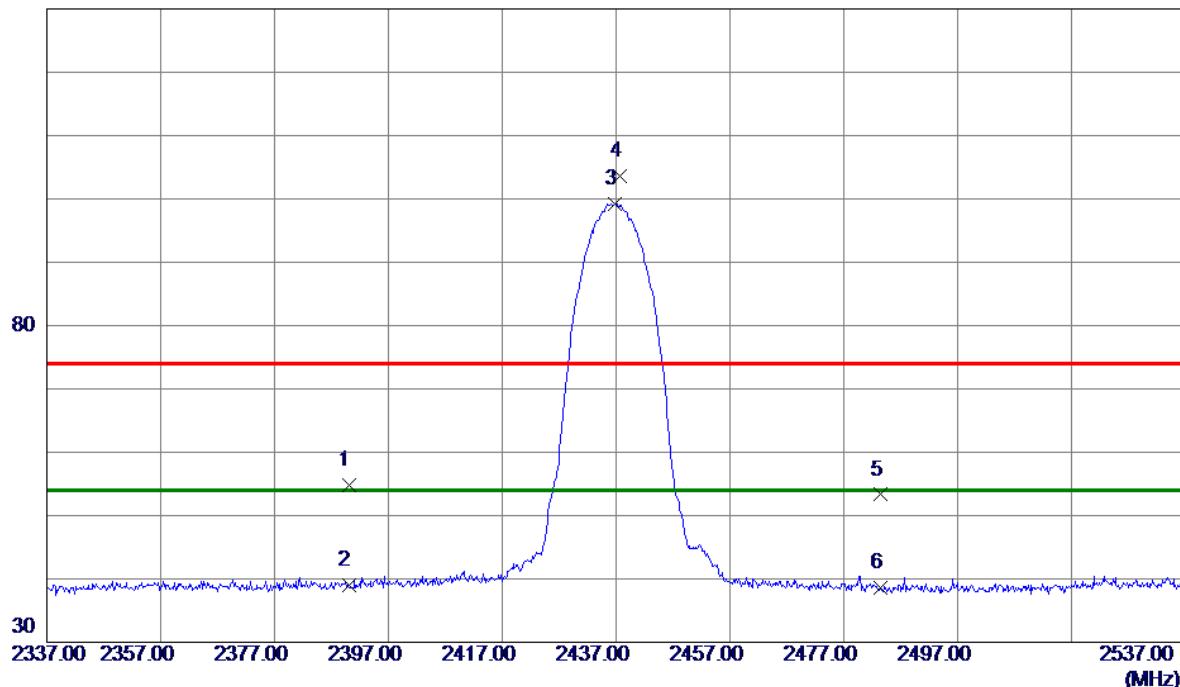
Vertical

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	3371.5000	57.55	-14.90	42.65	74.00	-31.35	Peak	
2 *	3371.5000	48.47	-14.90	33.57	54.00	-20.43	AVG	
3	4873.7000	50.27	-10.52	39.75	74.00	-34.25	Peak	
4	4874.2100	40.53	-10.51	30.02	54.00	-23.98	AVG	

Orthogonal Axis	X
Test Mode:	TX B Mode 2437 MHz

Horizontal

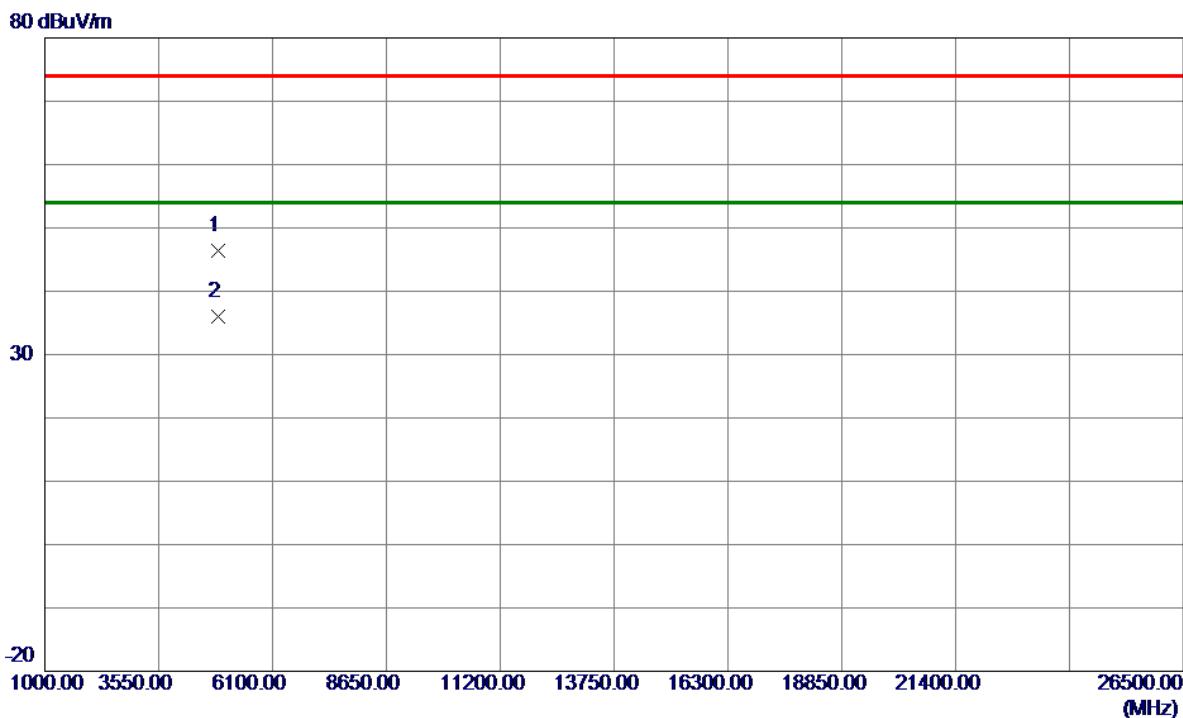
130 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	22.92	31.79	54.71	74.00	-19.29	Peak	
2	2390.0000	7.18	31.79	38.97	54.00	-15.03	AVG	
3 *	2436.8000	67.36	31.92	99.28	54.00	45.28	AVG	No Limit
4	2437.6000	71.63	31.92	103.55	74.00	29.55	Peak	No Limit
5	2483.5000	21.25	32.05	53.30	74.00	-20.70	Peak	
6	2483.5000	6.48	32.05	38.53	54.00	-15.47	AVG	

Orthogonal Axis	X
Test Mode:	TX B Mode 2437 MHz

Horizontal

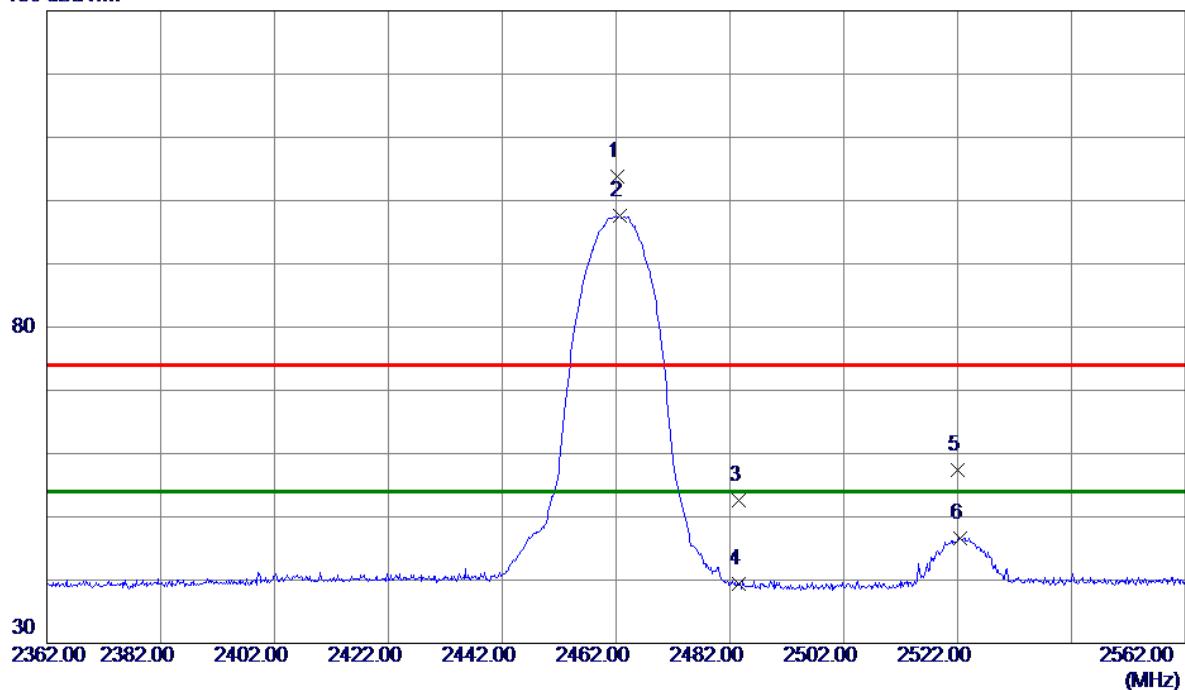


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873.3400	56.84	-10.52	46.32	74.00	-27.68	Peak	
2 *	4874.4000	46.57	-10.51	36.06	54.00	-17.94	AVG	

Orthogonal Axis	X
Test Mode:	TX B Mode 2462 MHz

Vertical

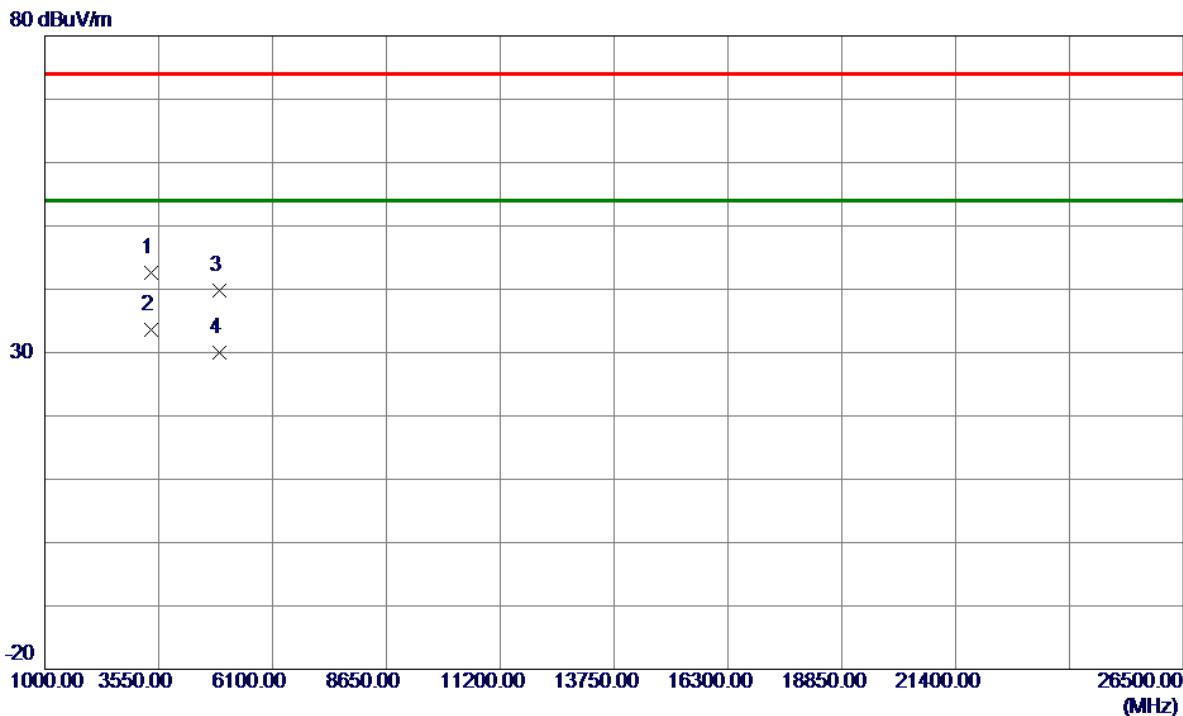
130 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2462.3000	71.75	31.99	103.74	74.00	29.74	Peak	No Limit
2 *	2462.7000	65.59	31.99	97.58	54.00	43.58	AVG	No Limit
3	2483.5000	20.48	32.05	52.53	74.00	-21.47	Peak	
4	2483.5000	7.35	32.05	39.40	54.00	-14.60	AVG	
5	2522.0000	25.32	32.16	57.48	74.00	-16.52	Peak	
6	2522.4000	14.47	32.16	46.63	54.00	-7.37	AVG	

Orthogonal Axis	X
Test Mode:	TX B Mode 2462 MHz

Vertical

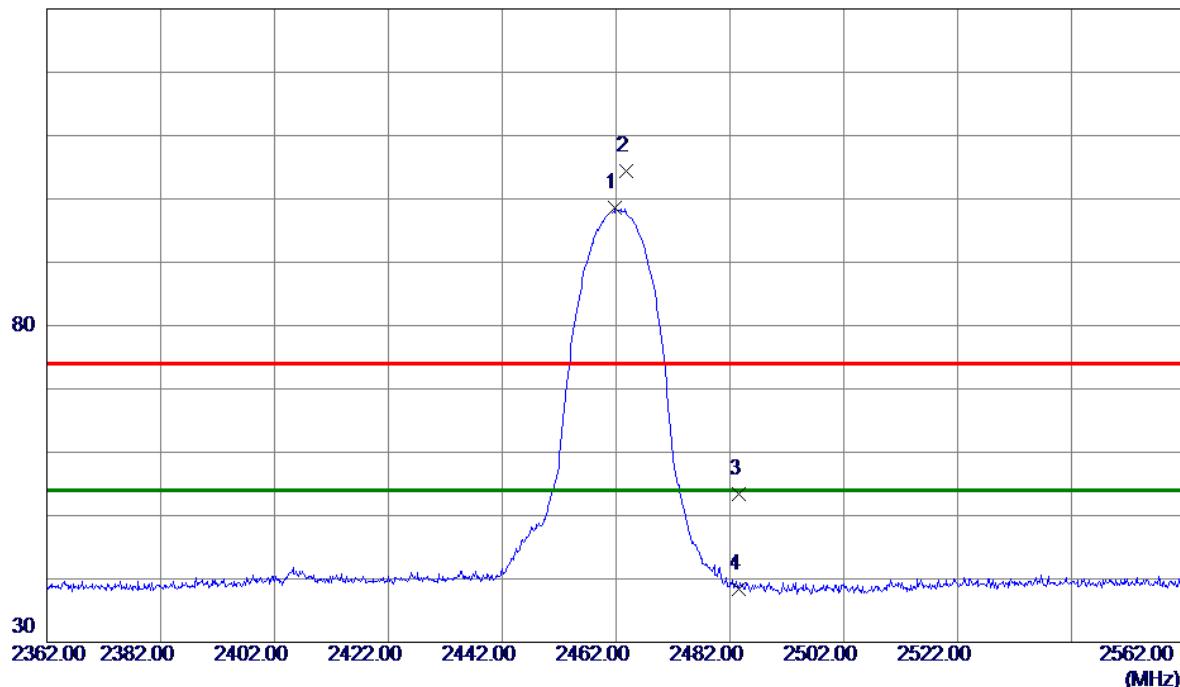


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	3371.5000	57.55	-14.90	42.65	74.00	-31.35	Peak	
2 *	3371.5000	48.47	-14.90	33.57	54.00	-20.43	AVG	
3	4922.4200	50.06	-10.31	39.75	74.00	-34.25	Peak	
4	4923.3400	40.33	-10.31	30.02	54.00	-23.98	AVG	

Orthogonal Axis	X
Test Mode:	TX B Mode 2462 MHz

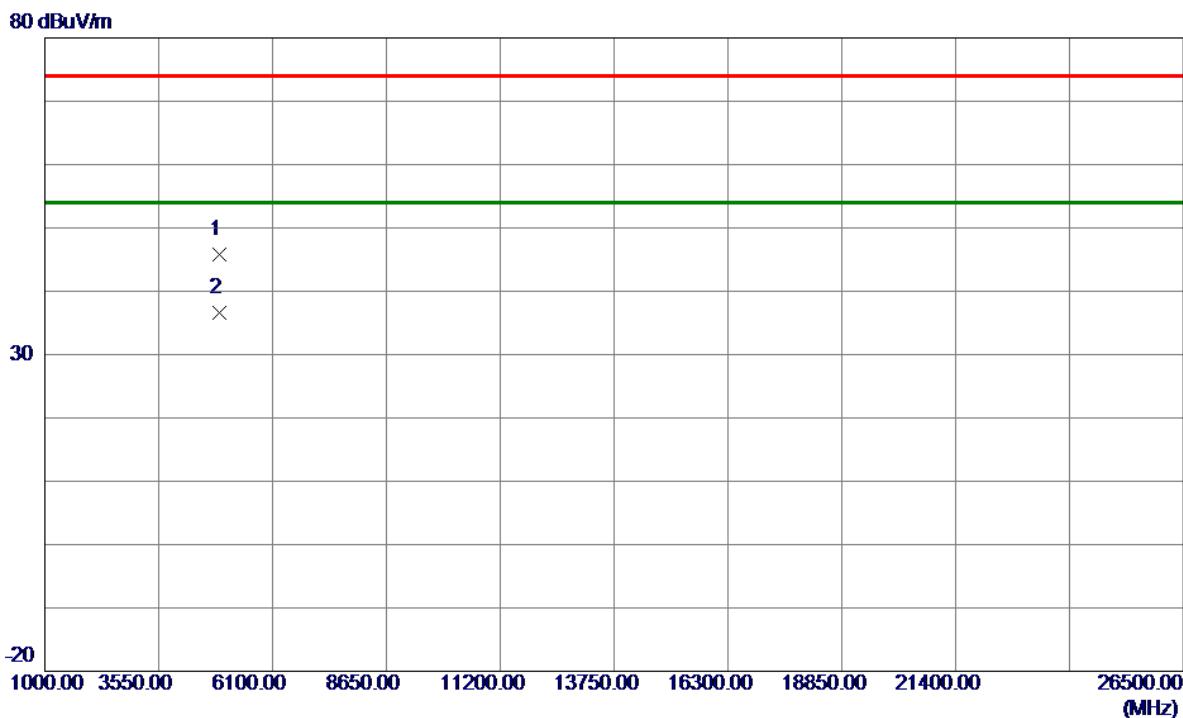
Horizontal

130 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2461.8000	66.57	31.99	98.56	54.00	44.56	AVG	No Limit
2	2463.8000	72.47	32.00	104.47	74.00	30.47	Peak	No Limit
3	2483.5000	21.41	32.05	53.46	74.00	-20.54	Peak	
4	2483.5000	6.44	32.05	38.49	54.00	-15.51	AVG	

Orthogonal Axis	X
Test Mode:	TX B Mode 2462 MHz

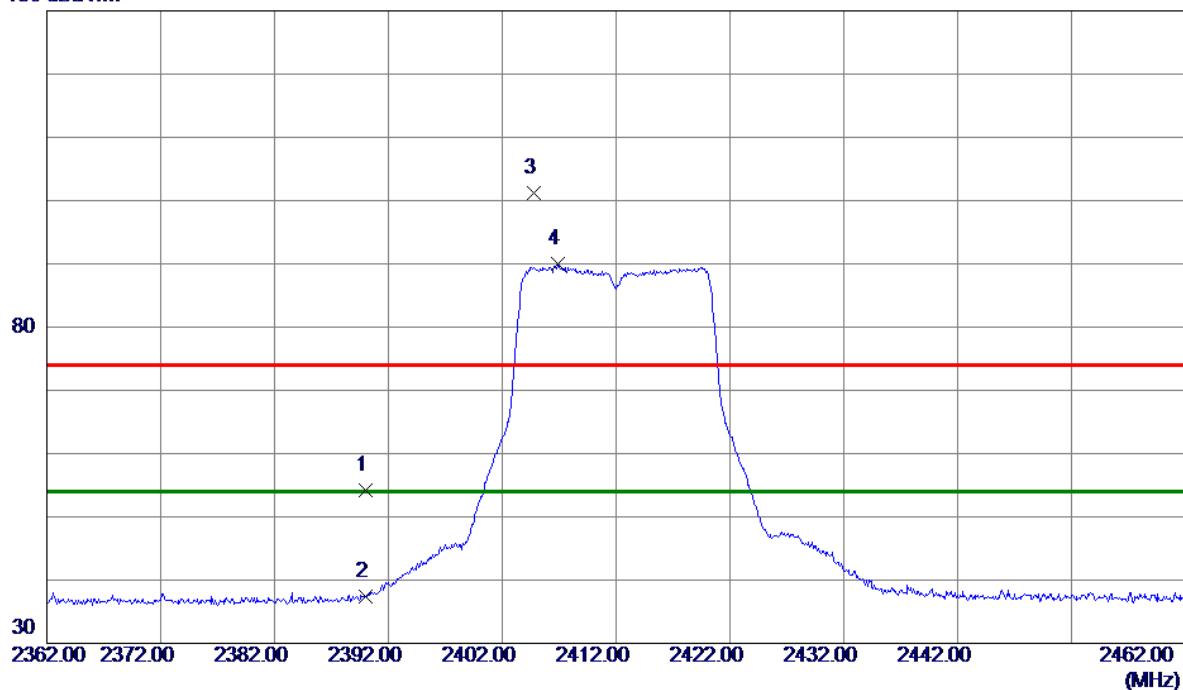
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	4923.5000	56.17	-10.31	45.86	74.00	-28.14	Peak	
2 *	4924.1000	46.94	-10.31	36.63	54.00	-17.37	AVG	

Orthogonal Axis	X
Test Mode:	TX G Mode 2412 MHz

Vertical

130 dBuV/m

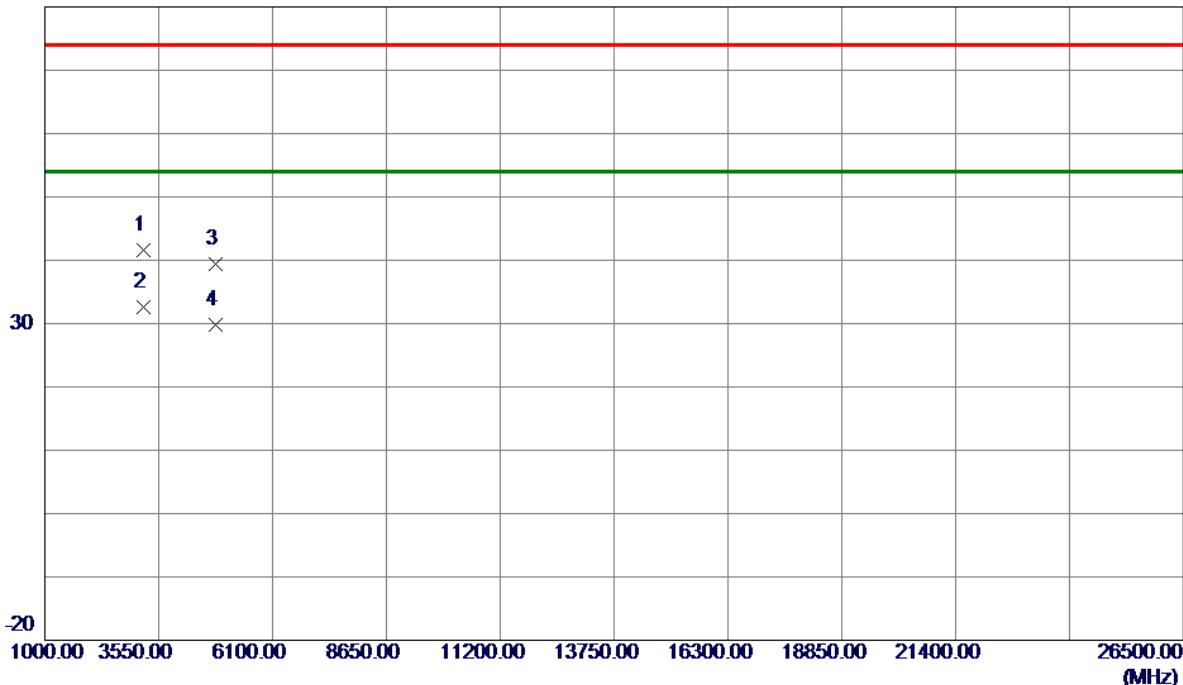


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.000	22.45	31.79	54.24	74.00	-19.76	Peak	
2	2390.000	5.52	31.79	37.31	54.00	-16.69	AVG	
3	2404.800	69.28	31.83	101.11	74.00	27.11	Peak	No Limit
4 *	2406.900	58.06	31.84	89.90	54.00	35.90	AVG	No Limit

Orthogonal Axis	X
Test Mode:	TX G Mode 2412 MHz

Vertical

80 dBuV/m

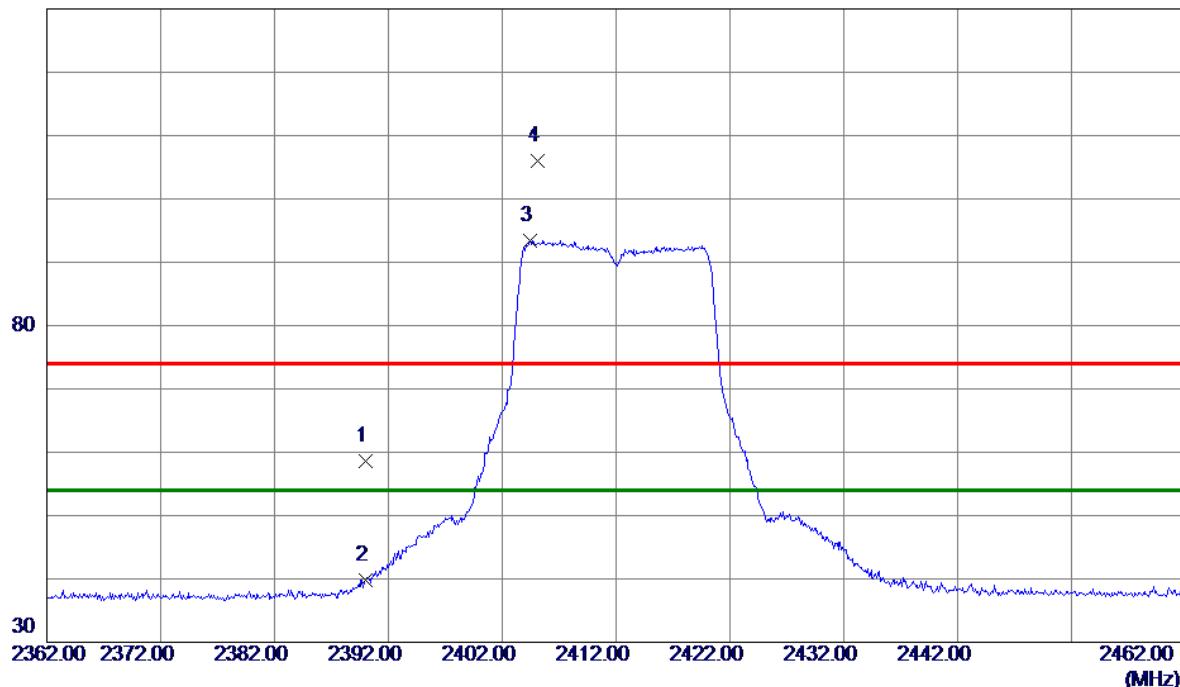


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	3218.5000	56.71	-15.14	41.57	74.00	-32.43	Peak	
2 *	3218.5000	47.75	-15.14	32.61	54.00	-21.39	AVG	
3	4822.3200	50.20	-10.73	39.47	74.00	-34.53	Peak	
4	4823.1000	40.44	-10.73	29.71	54.00	-24.29	AVG	

Orthogonal Axis	X
Test Mode:	TX G Mode 2412 MHz

Horizontal

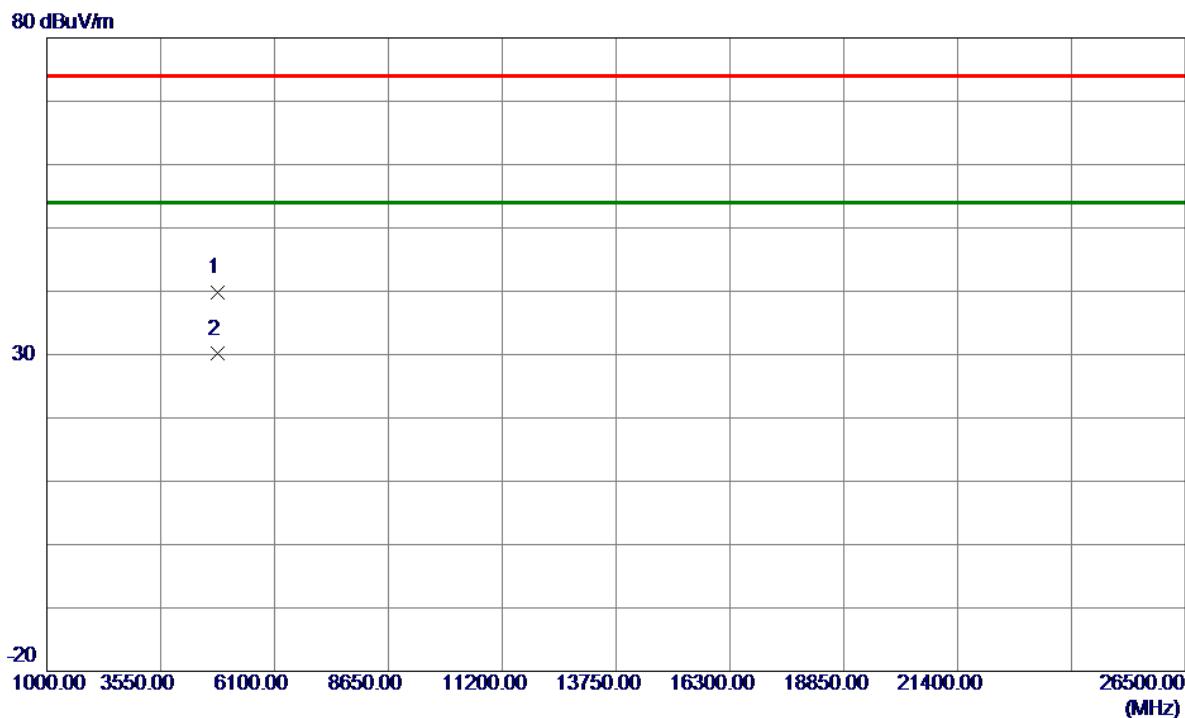
130 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	26.90	31.79	58.69	74.00	-15.31	Peak	
2	2390.0000	8.00	31.79	39.79	54.00	-14.21	AVG	
3 *	2404.4000	61.54	31.83	93.37	54.00	39.37	AVG	No Limit
4	2405.1000	74.20	31.83	106.03	74.00	32.03	Peak	No Limit

Orthogonal Axis	X
Test Mode:	TX G Mode 2412 MHz

Horizontal

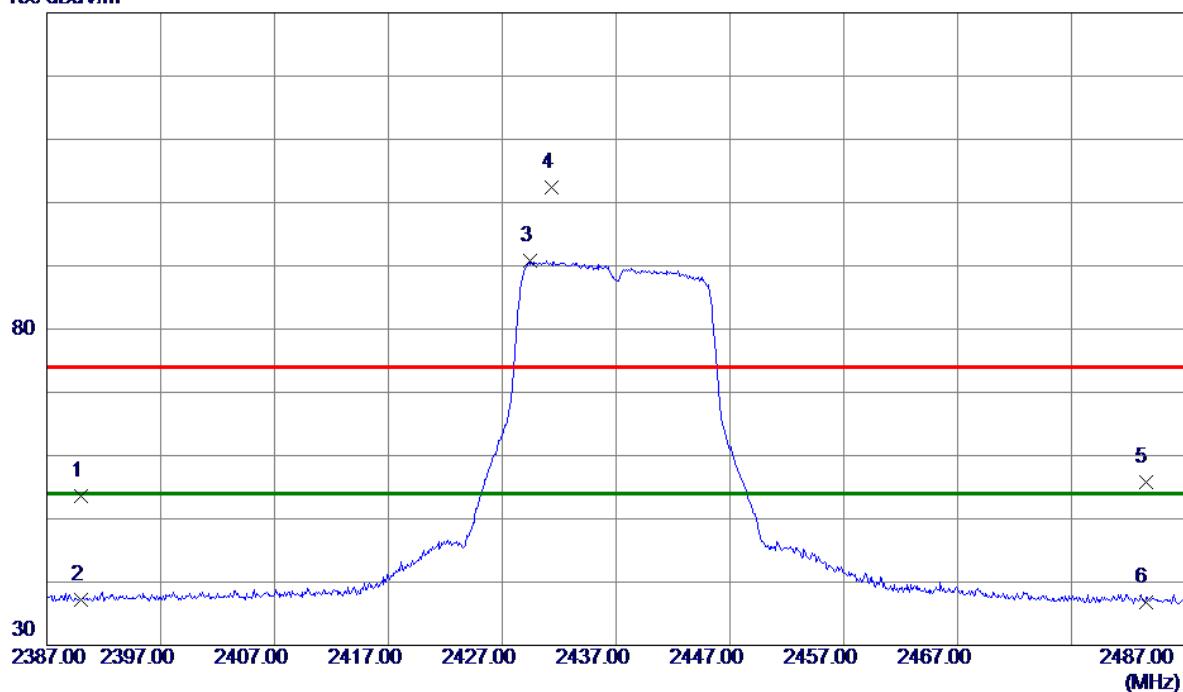


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823.4100	50.47	-10.73	39.74	74.00	-34.26	Peak	
2 *	4823.9500	40.82	-10.72	30.10	54.00	-23.90	AVG	

Orthogonal Axis	X
Test Mode:	TX G Mode 2437 MHz

Vertical

130 dBuV/m

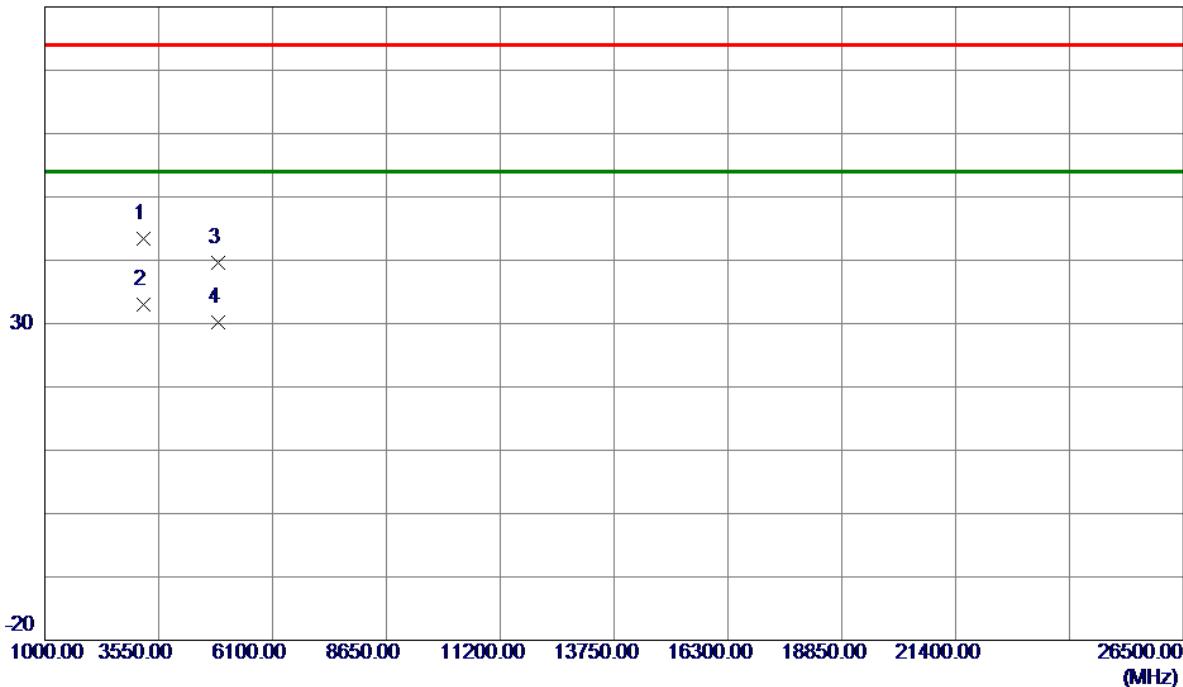


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.000	21.73	31.79	53.52	74.00	-20.48	Peak	
2	2390.000	5.45	31.79	37.24	54.00	-16.76	Avg	
3 *	2429.400	58.82	31.90	90.72	54.00	36.72	Avg	No Limit
4	2431.300	70.41	31.90	102.31	74.00	28.31	Peak	No Limit
5	2483.500	23.75	32.05	55.80	74.00	-18.20	Peak	
6	2483.500	4.83	32.05	36.88	54.00	-17.12	Avg	

Orthogonal Axis	X
Test Mode:	TX G Mode 2437 MHz

Vertical

80 dBuV/m

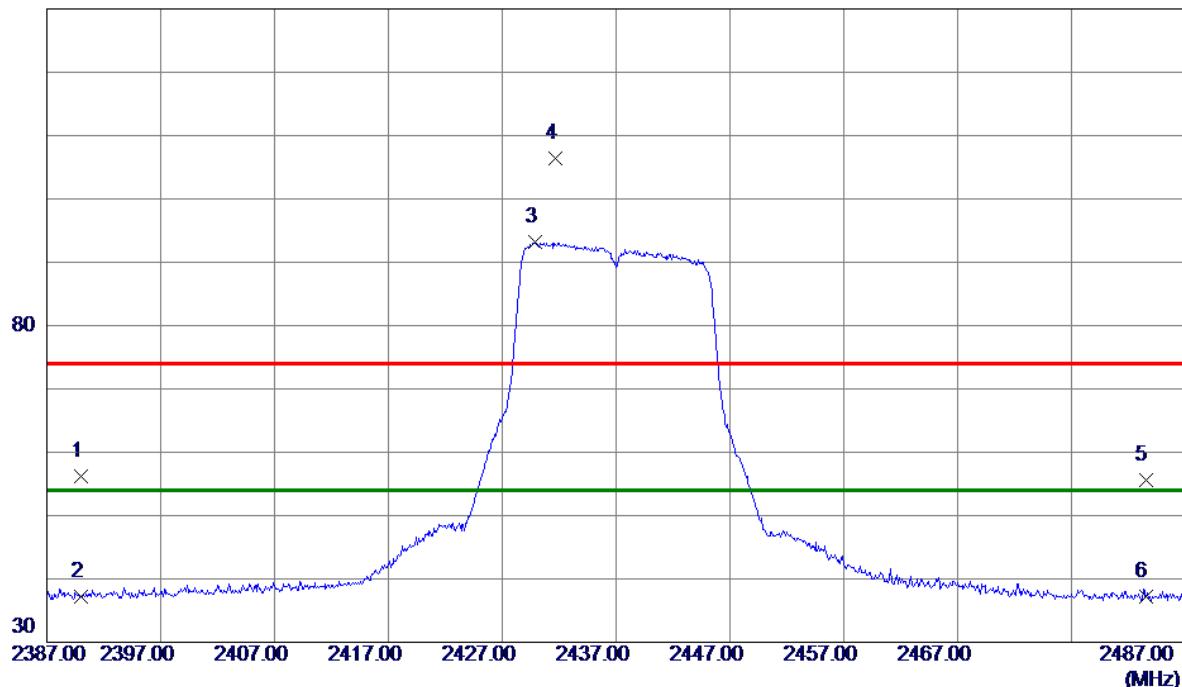


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	3218.5000	58.63	-15.14	43.49	74.00	-30.51	Peak	
2 *	3218.5000	48.14	-15.14	33.00	54.00	-21.00	AVG	
3	4872.4200	50.19	-10.52	39.67	74.00	-34.33	Peak	
4	4874.3200	40.79	-10.51	30.28	54.00	-23.72	AVG	

Orthogonal Axis	X
Test Mode:	TX G Mode 2437 MHz

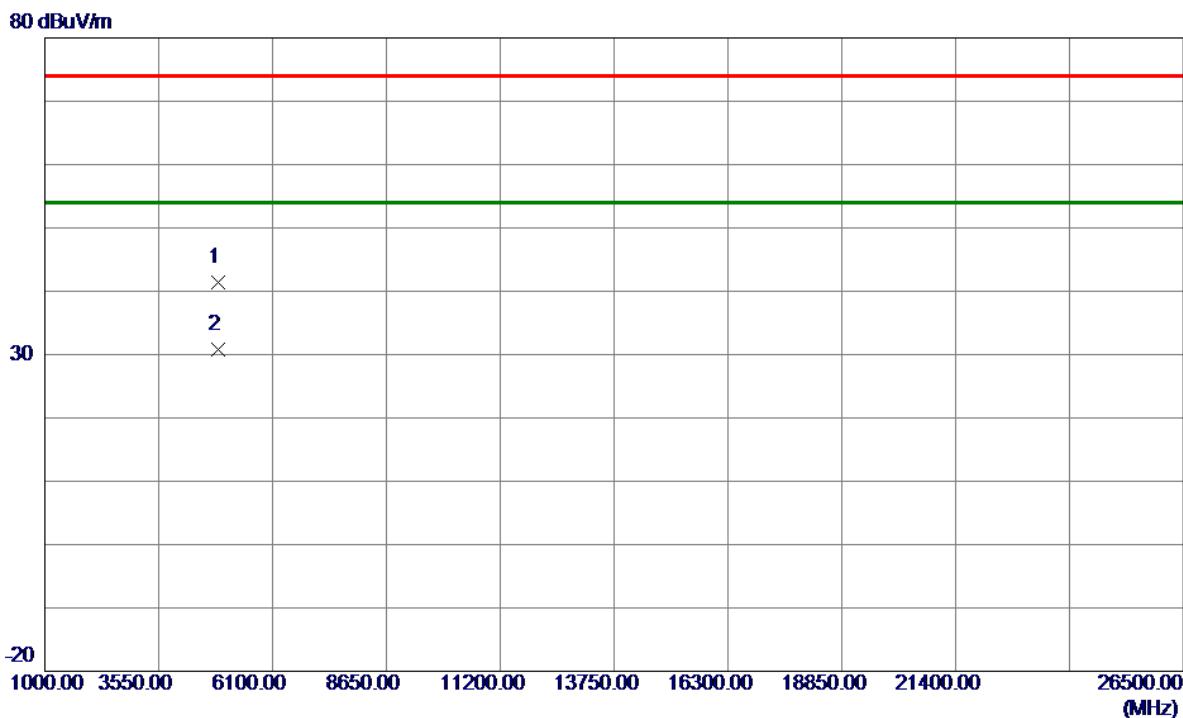
Horizontal

130 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	24.41	31.79	56.20	74.00	-17.80	Peak	
2	2390.0000	5.35	31.79	37.14	54.00	-16.86	AVG	
3 *	2429.9000	61.22	31.90	93.12	54.00	39.12	AVG	No Limit
4	2431.7100	74.52	31.91	106.43	74.00	32.43	Peak	No Limit
5	2483.5000	23.47	32.05	55.52	74.00	-18.48	Peak	
6	2483.5000	5.09	32.05	37.14	54.00	-16.86	AVG	

Orthogonal Axis	X
Test Mode:	TX G Mode 2437 MHz

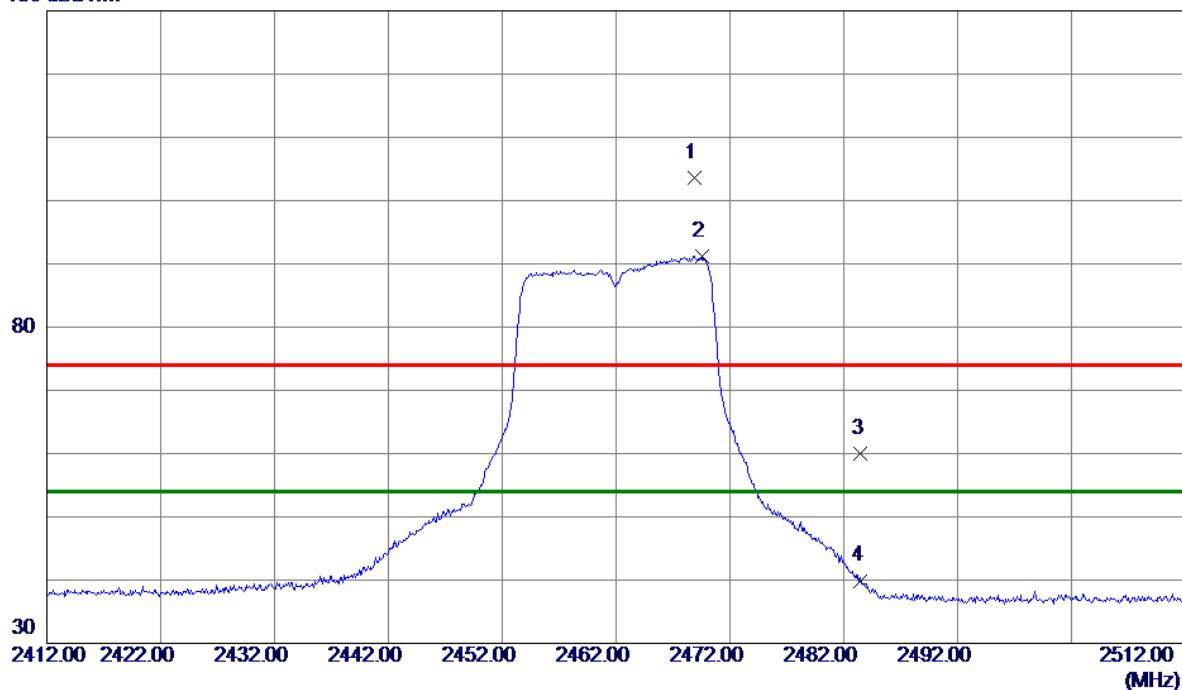
Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4872.6000	51.86	-10.52	41.34	74.00	-32.66	Peak	
2 *	4874.2799	41.39	-10.51	30.88	54.00	-23.12	AVG	

Orthogonal Axis	X
Test Mode:	TX G Mode 2462 MHz

Vertical

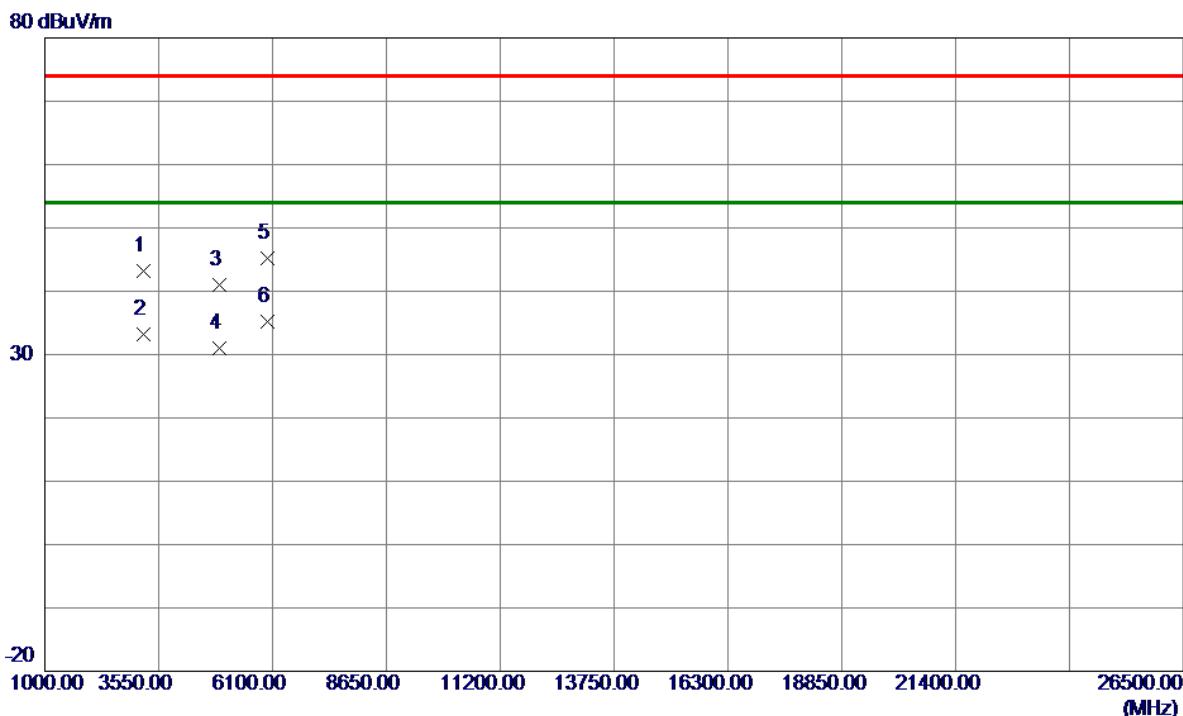
130 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2468.9000	71.60	32.01	103.61	74.00	29.61	Peak	No Limit
2 *	2469.6000	59.23	32.01	91.24	54.00	37.24	AVG	No Limit
3	2483.5000	27.94	32.05	59.99	74.00	-14.01	Peak	
4	2483.5000	7.85	32.05	39.90	54.00	-14.10	AVG	

Orthogonal Axis	X
Test Mode:	TX G Mode 2462 MHz

Vertical

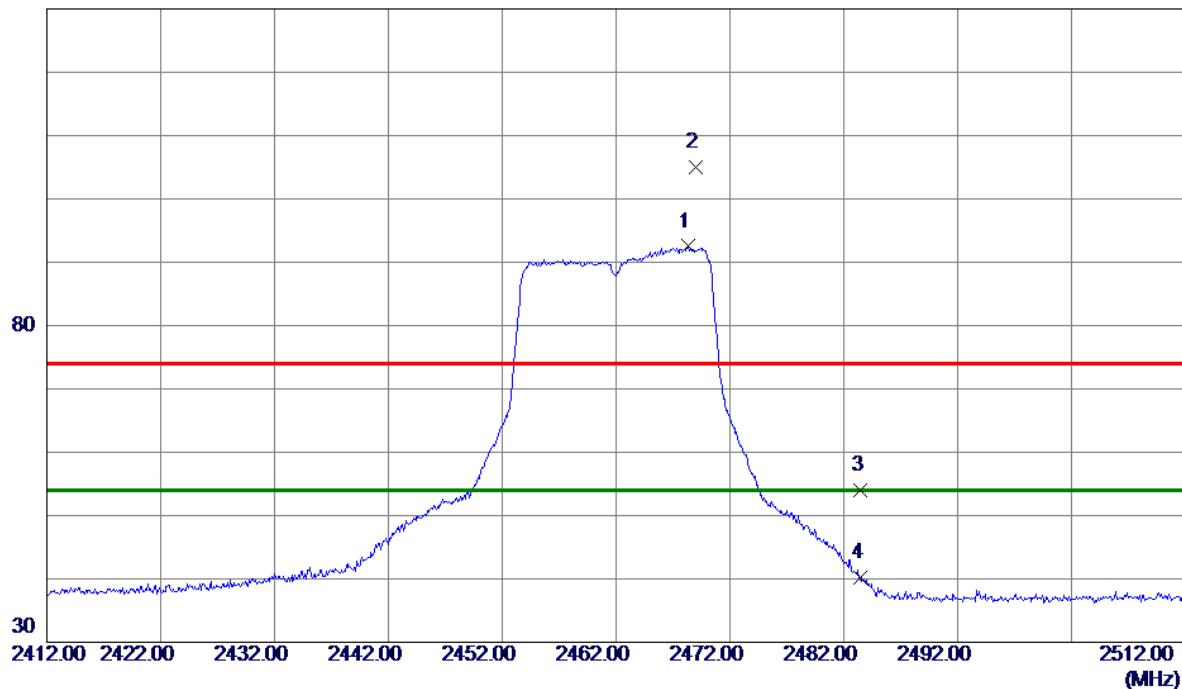


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	3218.5000	58.42	-15.14	43.28	74.00	-30.72	Peak	
2	3218.5000	48.33	-15.14	33.19	54.00	-20.81	AVG	
3	4922.3600	51.29	-10.31	40.98	74.00	-33.02	Peak	
4	4923.7500	41.37	-10.31	31.06	54.00	-22.94	AVG	
5	5996.4300	52.68	-7.44	45.24	74.00	-28.76	Peak	
6 *	5997.9100	42.61	-7.43	35.18	54.00	-18.82	AVG	

Orthogonal Axis	X
Test Mode:	TX G Mode 2462 MHz

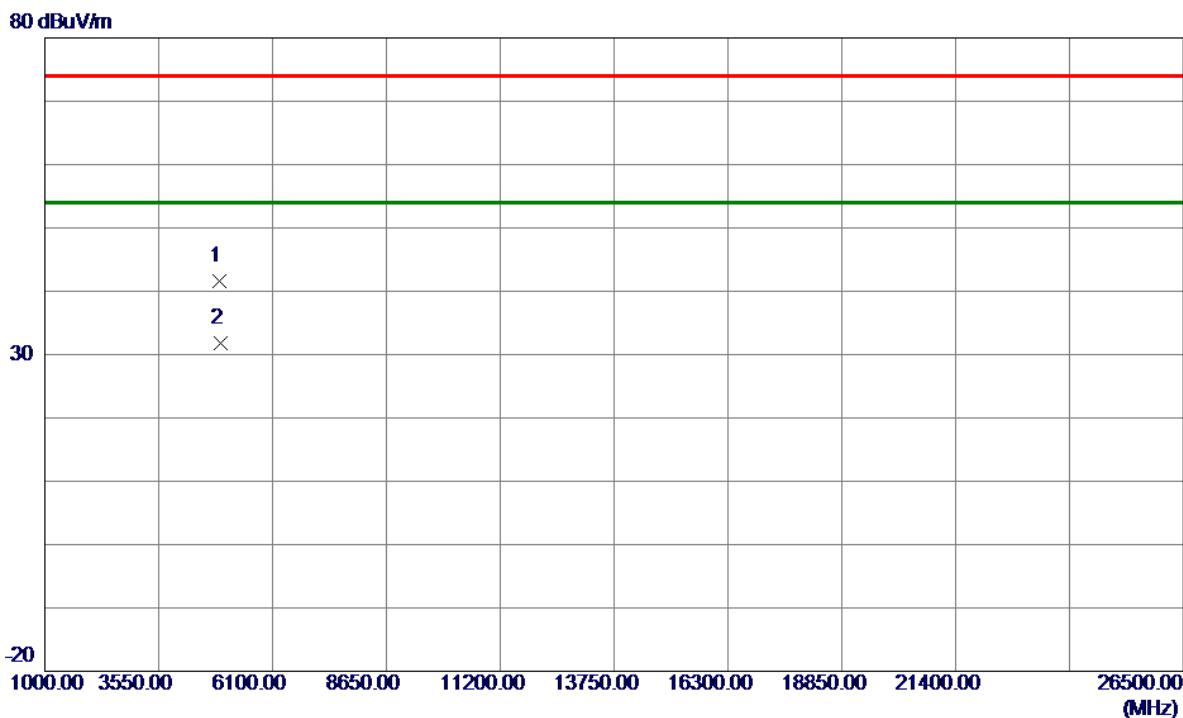
Horizontal

130 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2468.3000	60.49	32.01	92.50	54.00	38.50	AVG	No Limit
2	2469.0000	72.94	32.01	104.95	74.00	30.95	Peak	No Limit
3	2483.5000	22.00	32.05	54.05	74.00	-19.95	Peak	
4	2483.5000	8.23	32.05	40.28	54.00	-13.72	AVG	

Orthogonal Axis	X
Test Mode:	TX G Mode 2462 MHz

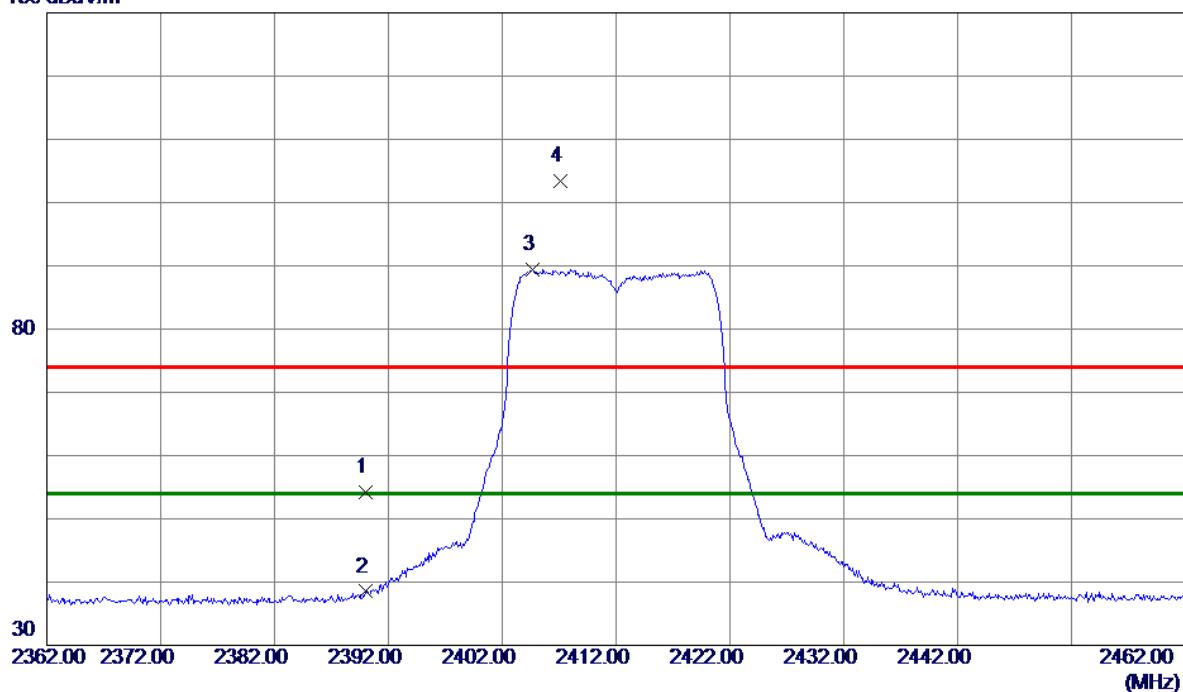
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	4922.8400	51.96	-10.31	41.65	74.00	-32.35	Peak	
2 *	4924.1700	42.10	-10.31	31.79	54.00	-22.21	AVG	

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

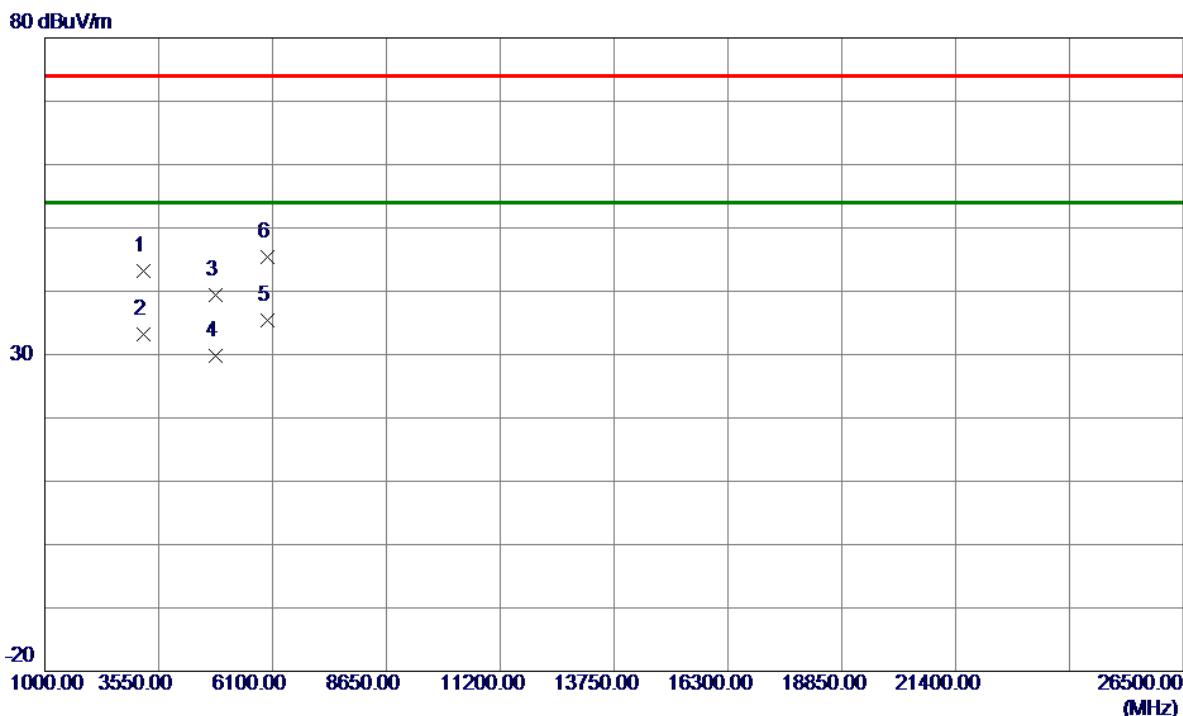
Vertical

130 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	22.32	31.79	54.11	74.00	-19.89	Peak	
2	2390.0000	6.71	31.79	38.50	54.00	-15.50	AVG	
3 *	2404.7000	57.63	31.83	89.46	54.00	35.46	AVG	No Limit
4	2407.1000	71.50	31.84	103.34	74.00	29.34	Peak	No Limit

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

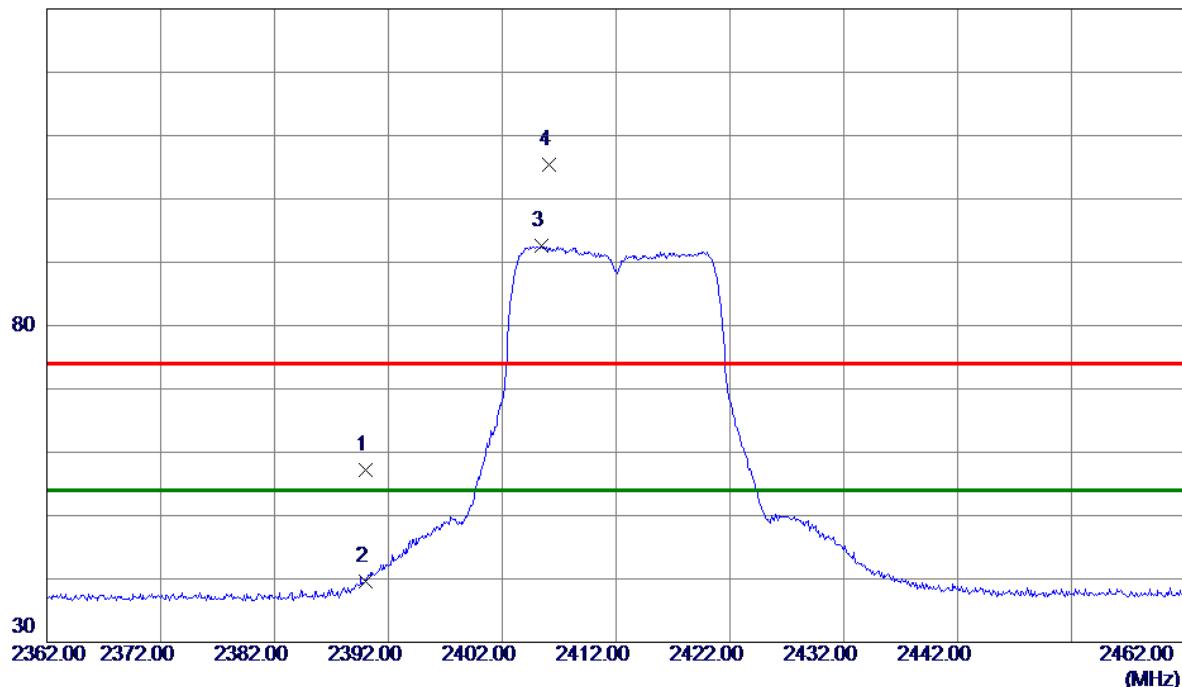
Vertical

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	3218.5000	58.41	-15.14	43.27	74.00	-30.73	Peak	
2	3218.5000	48.43	-15.14	33.29	54.00	-20.71	AVG	
3	4823.5200	50.19	-10.73	39.46	74.00	-34.54	Peak	
4	4824.1400	40.45	-10.72	29.73	54.00	-24.27	AVG	
5 *	5997.3700	42.77	-7.43	35.34	54.00	-18.66	AVG	
6	5998.2400	52.87	-7.43	45.44	74.00	-28.56	Peak	

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

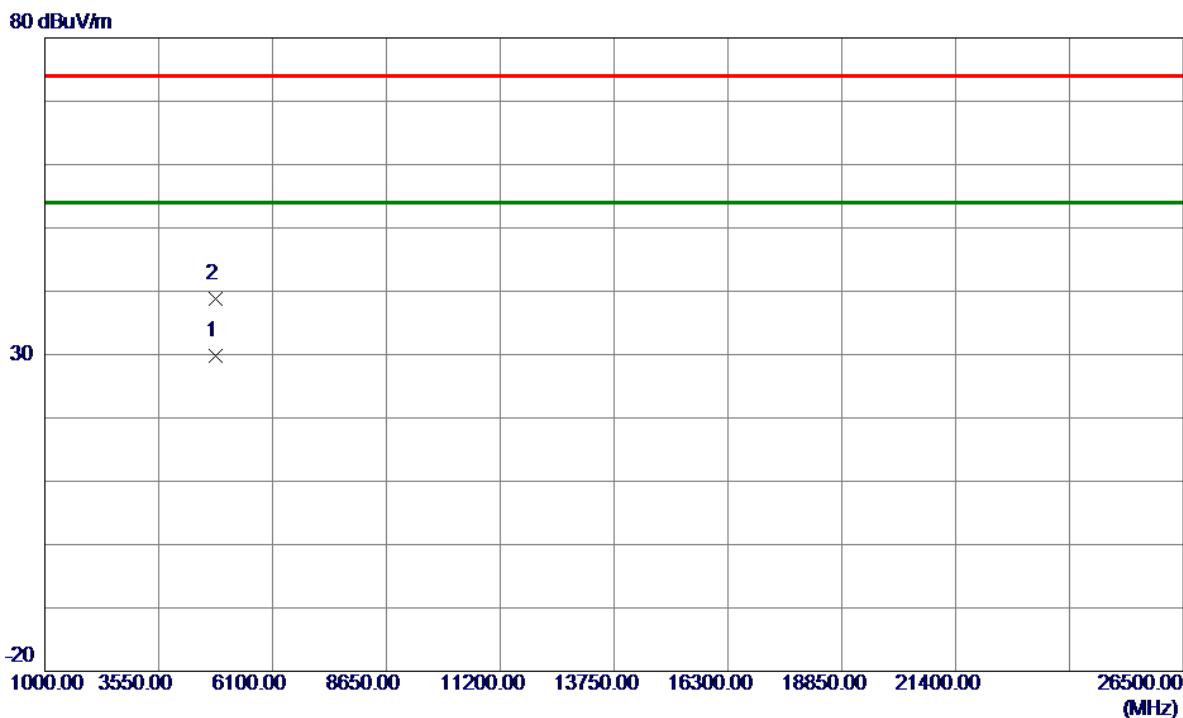
Horizontal

130 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.000	25.41	31.79	57.20	74.00	-16.80	Peak	
2	2390.000	7.78	31.79	39.57	54.00	-14.43	AVG	
3 *	2405.400	60.68	31.83	92.51	54.00	38.51	AVG	No Limit
4	2406.100	73.62	31.83	105.45	74.00	31.45	Peak	No Limit

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

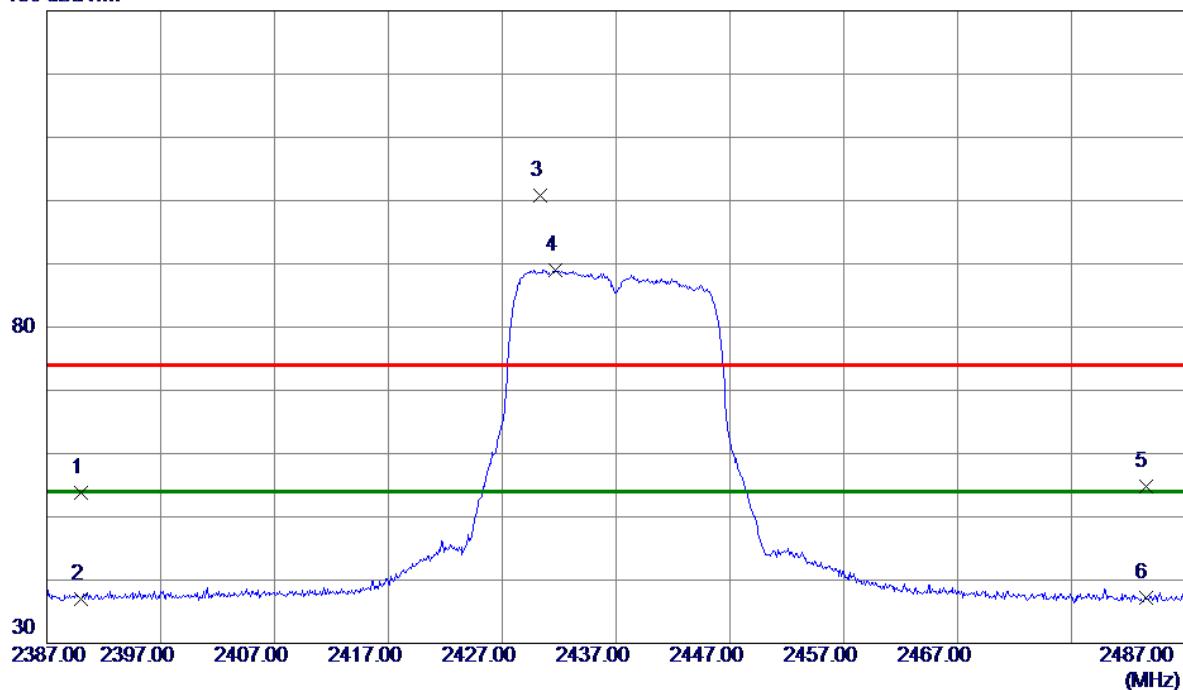
Horizontal

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4824.1400	40.61	-10.72	29.89	54.00	-24.11	AVG	
2	4824.2799	49.57	-10.72	38.85	74.00	-35.15	Peak	

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

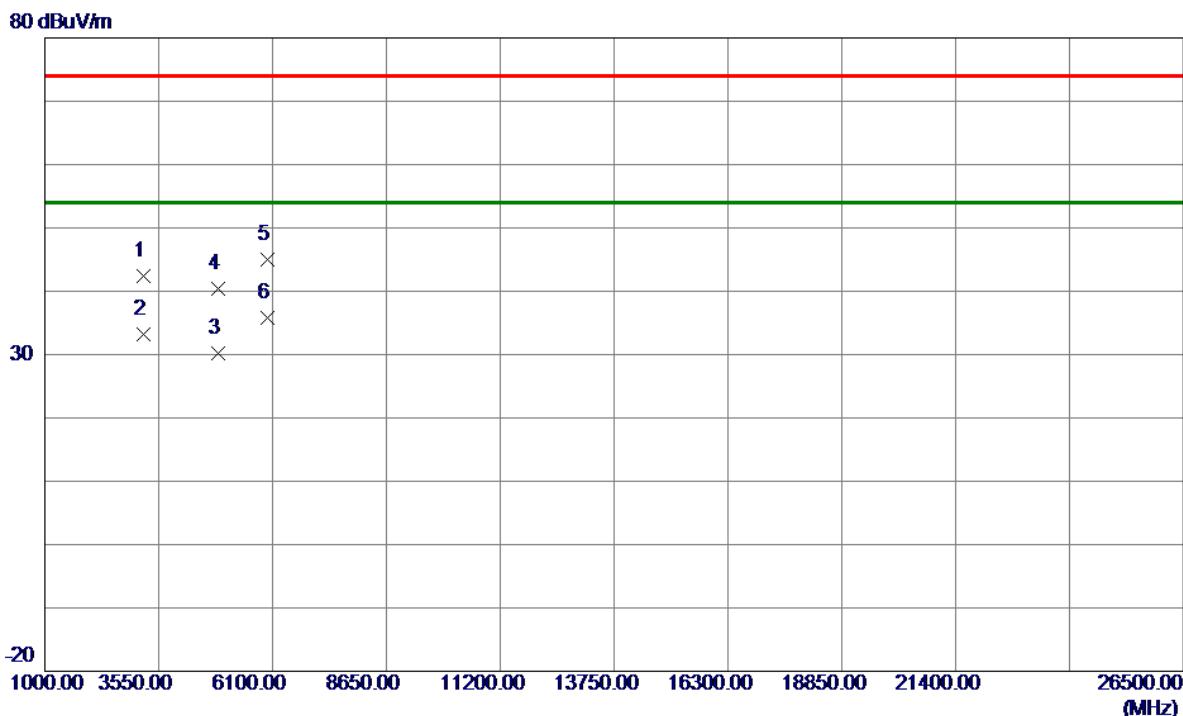
Vertical

130 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.000	22.03	31.79	53.82	74.00	-20.18	Peak	
2	2390.000	5.18	31.79	36.97	54.00	-17.03	AVG	
3	2430.300	68.91	31.90	100.81	74.00	26.81	Peak	No Limit
4 *	2431.700	57.13	31.91	89.04	54.00	35.04	AVG	No Limit
5	2483.500	22.73	32.05	54.78	74.00	-19.22	Peak	
6	2483.500	5.23	32.05	37.28	54.00	-16.72	AVG	

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

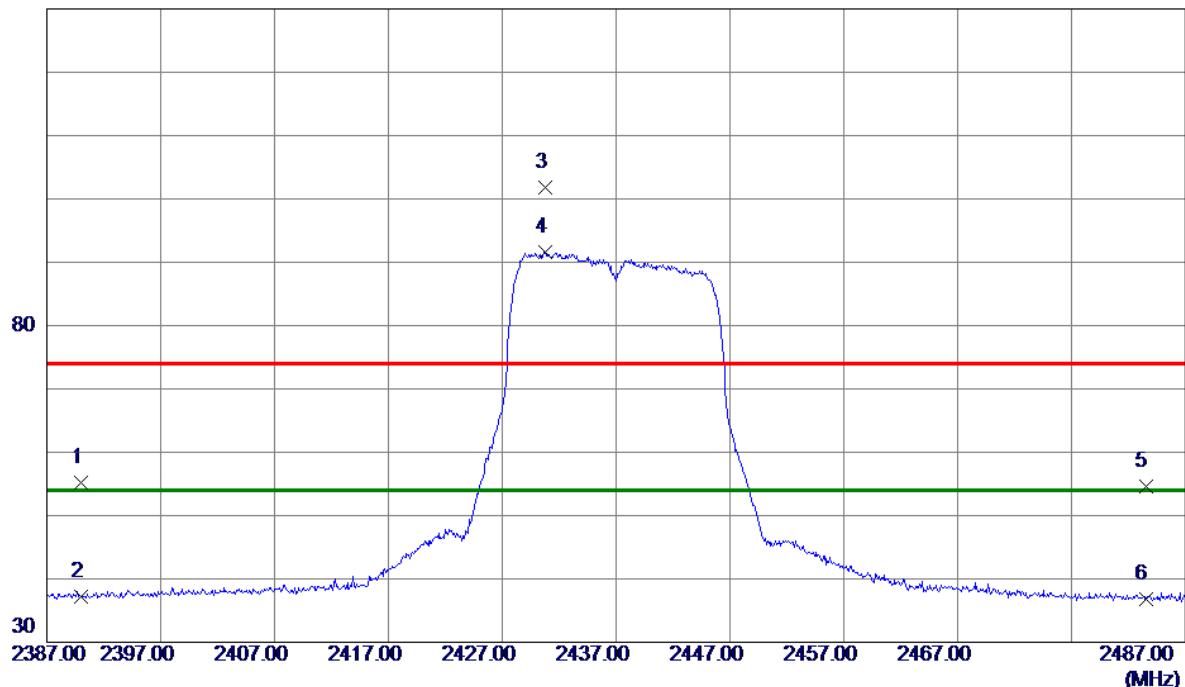
Vertical

No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	3218.5000	57.48	-15.14	42.34	74.00	-31.66	Peak	
2	3218.5000	48.41	-15.14	33.27	54.00	-20.73	AVG	
3	4873.9200	40.68	-10.52	30.16	54.00	-23.84	AVG	
4	4874.2100	50.88	-10.51	40.37	74.00	-33.63	Peak	
5	5998.0000	52.42	-7.43	44.99	74.00	-29.01	Peak	
6 *	5998.0000	43.17	-7.43	35.74	54.00	-18.26	AVG	

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

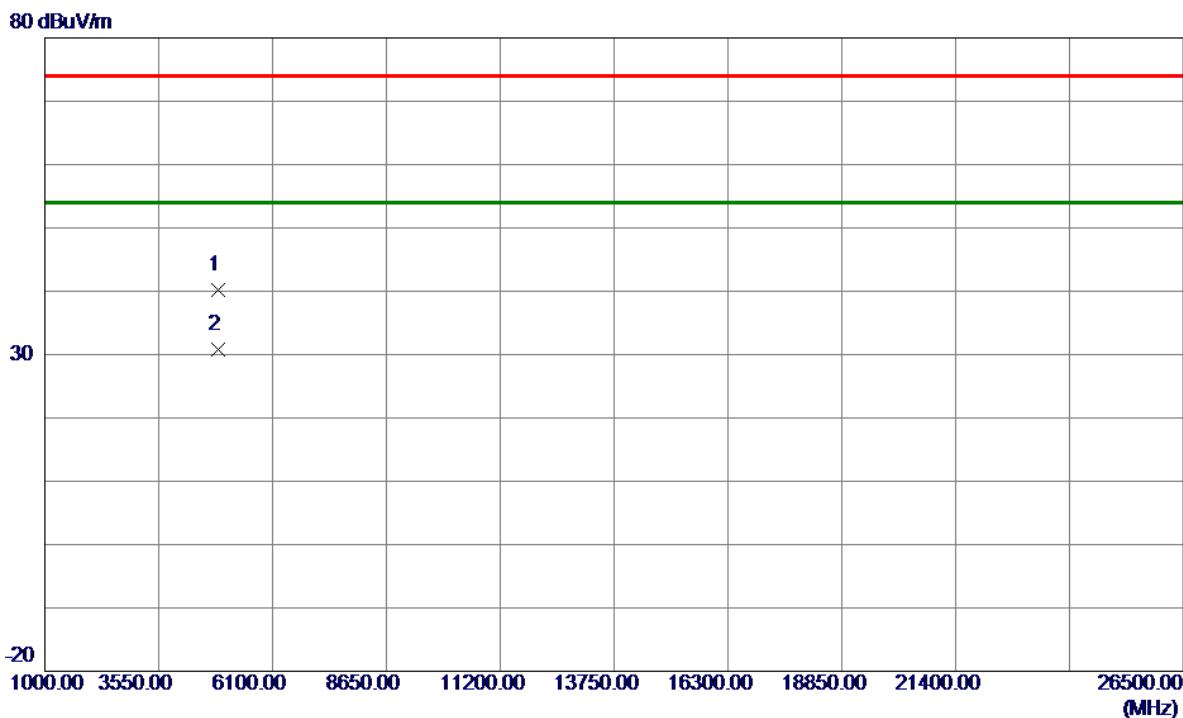
Horizontal

130 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	23.48	31.79	55.27	74.00	-18.73	Peak	
2	2390.0000	5.43	31.79	37.22	54.00	-16.78	AVG	
3	2430.8000	69.86	31.90	101.76	74.00	27.76	Peak	No Limit
4 *	2430.8000	59.71	31.90	91.61	54.00	37.61	AVG	No Limit
5	2483.5000	22.51	32.05	54.56	74.00	-19.44	Peak	
6	2483.5000	4.80	32.05	36.85	54.00	-17.15	AVG	

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

Horizontal

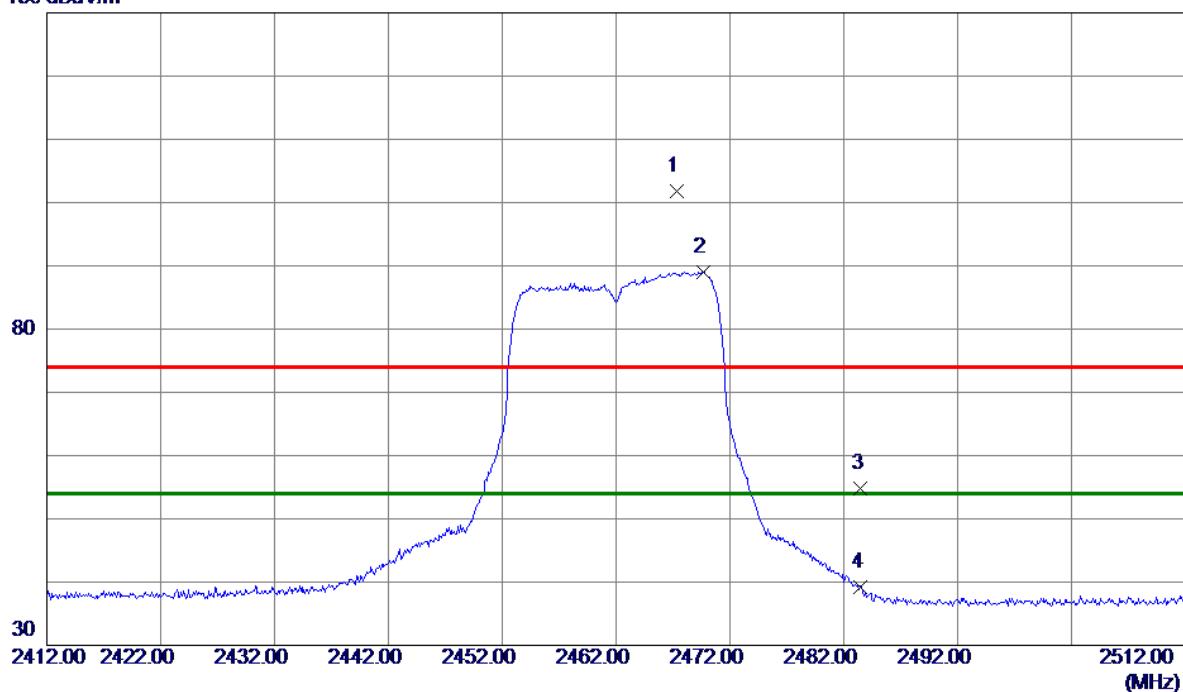
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4872.1000	50.77	-10.52	40.25	74.00	-33.75	Peak	
2 *	4873.8400	41.32	-10.52	30.80	54.00	-23.20	AVG	

Orthogonal Axis X

Test Mode: TX N-20M Mode 2462 MHz

Vertical

130 dBuV/m

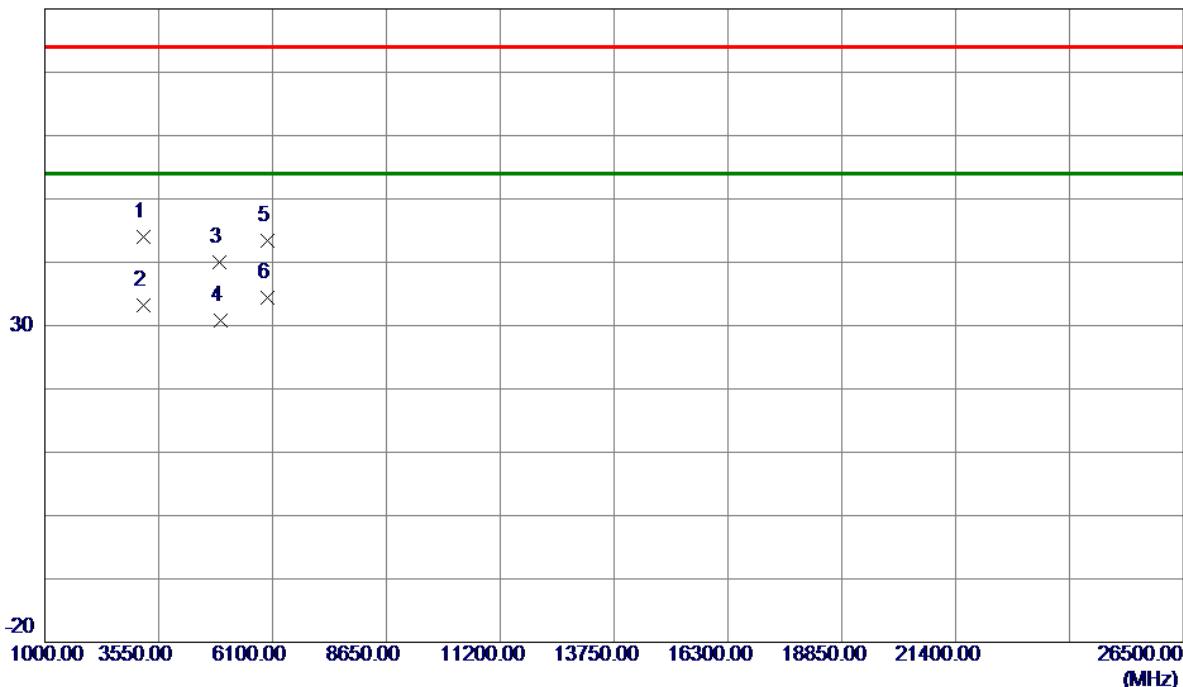


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2467.3000	69.83	32.01	101.84	74.00	27.84	Peak	No Limit
2 *	2469.7000	57.07	32.01	89.08	54.00	35.08	AVG	No Limit
3	2483.5000	22.80	32.05	54.85	74.00	-19.15	Peak	
4	2483.5000	7.14	32.05	39.19	54.00	-14.81	AVG	

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

Vertical

80 dBuV/m

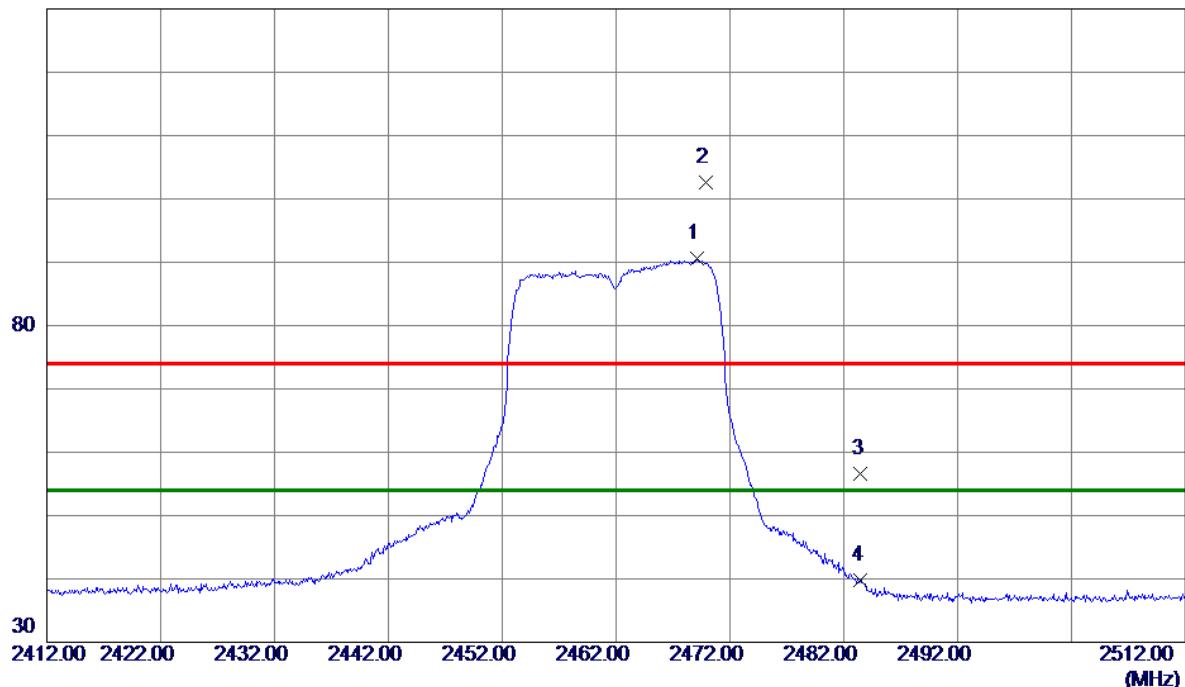


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	3218.5000	59.15	-15.14	44.01	74.00	-29.99	Peak	
2	3218.5000	48.34	-15.14	33.20	54.00	-20.80	AVG	
3	4923.1100	50.29	-10.31	39.98	74.00	-34.02	Peak	
4	4924.3400	41.03	-10.31	30.72	54.00	-23.28	AVG	
5	5998.0400	50.91	-7.43	43.48	74.00	-30.52	Peak	
6 *	5997.1100	41.87	-7.43	34.44	54.00	-19.56	AVG	

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

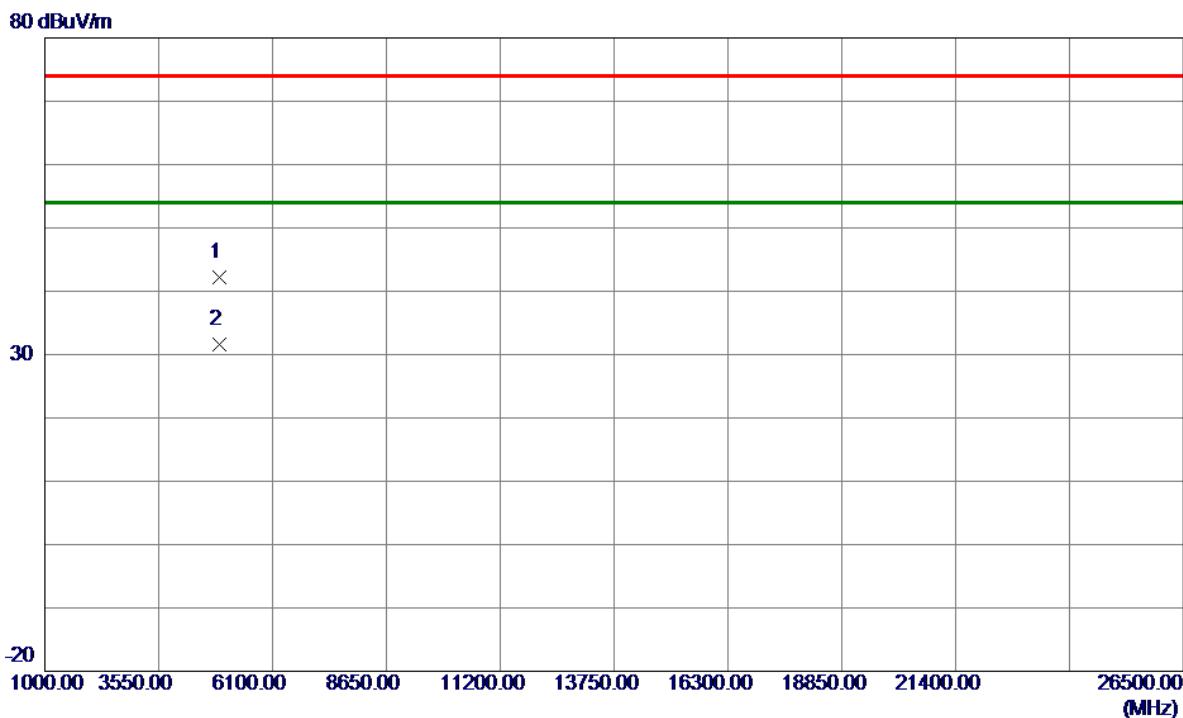
Horizontal

130 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2469.1000	58.56	32.01	90.57	54.00	36.57	AVG	No Limit
2	2469.9000	70.67	32.01	102.68	74.00	28.68	Peak	No Limit
3	2483.5000	24.64	32.05	56.69	74.00	-17.31	Peak	
4	2483.5000	7.79	32.05	39.84	54.00	-14.16	AVG	

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

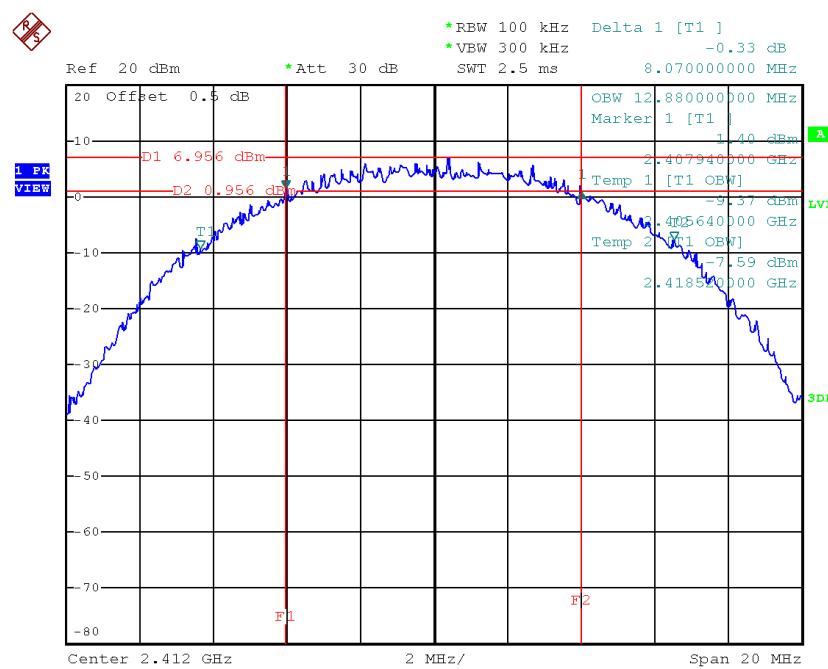
Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	4923.3200	52.58	-10.31	42.27	74.00	-31.73	Peak	
2 *	4924.0099	41.85	-10.31	31.54	54.00	-22.46	AVG	

APPENDIX E - BANDWIDTH

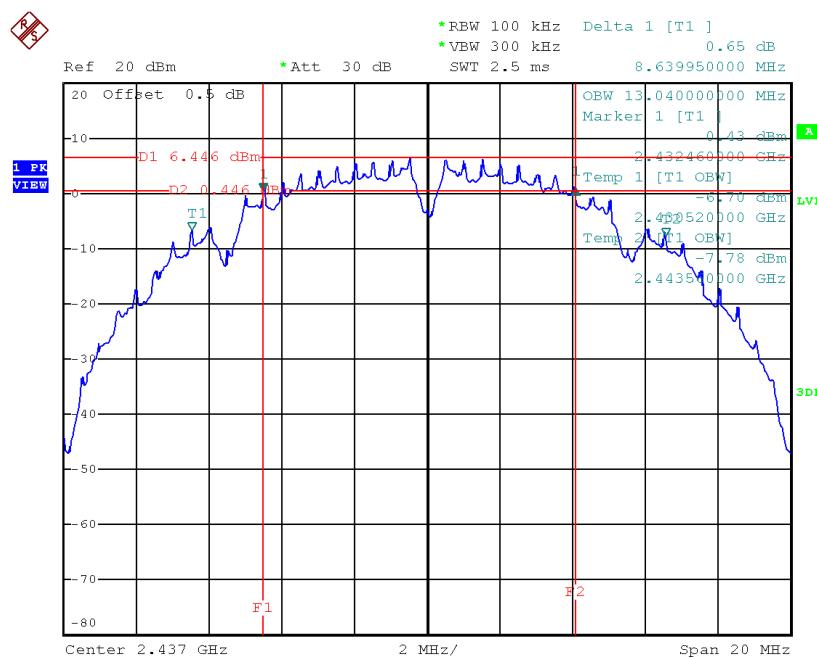
Test Mode: TX B Mode_CH01/06/11

Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	8.07	12.88	500	Complies
2437	8.64	13.04	500	Complies
2462	8.66	12.96	500	Complies

TX CH01


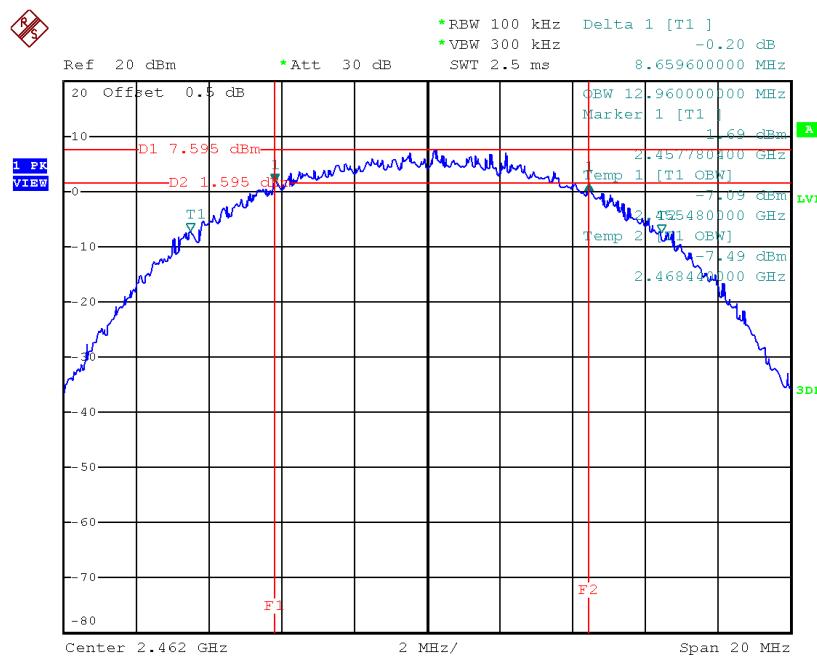
Date: 16.NOV.2018 12:09:40

TX CH06



Date: 16.NOV.2018 12:15:02

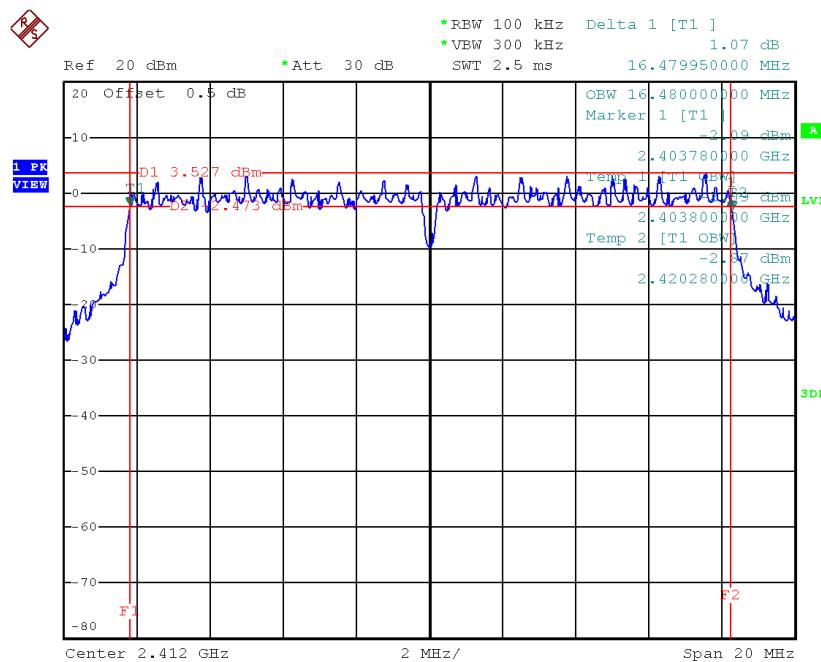
TX CH11



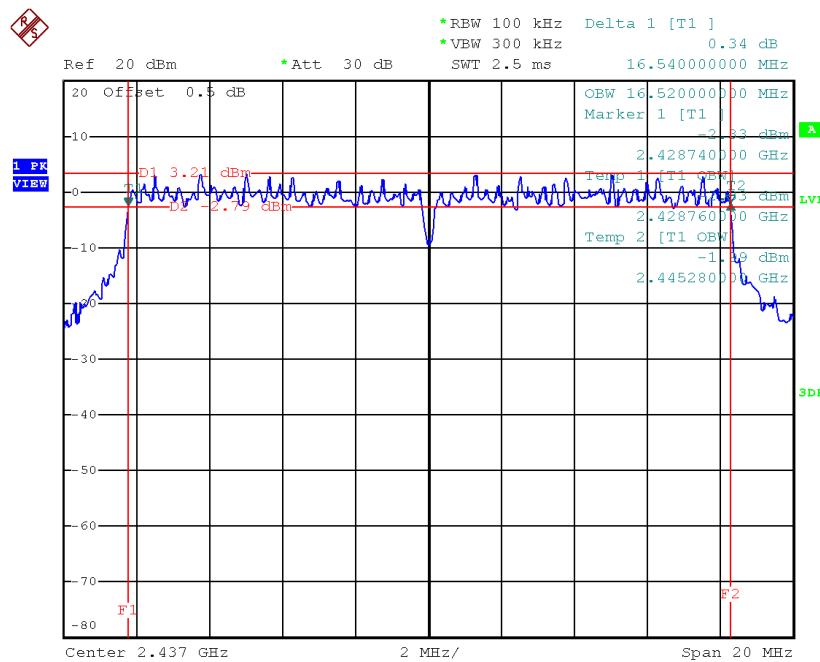
Date: 16.NOV.2018 12:17:20

Test Mode: TX G Mode_CH01/06/11

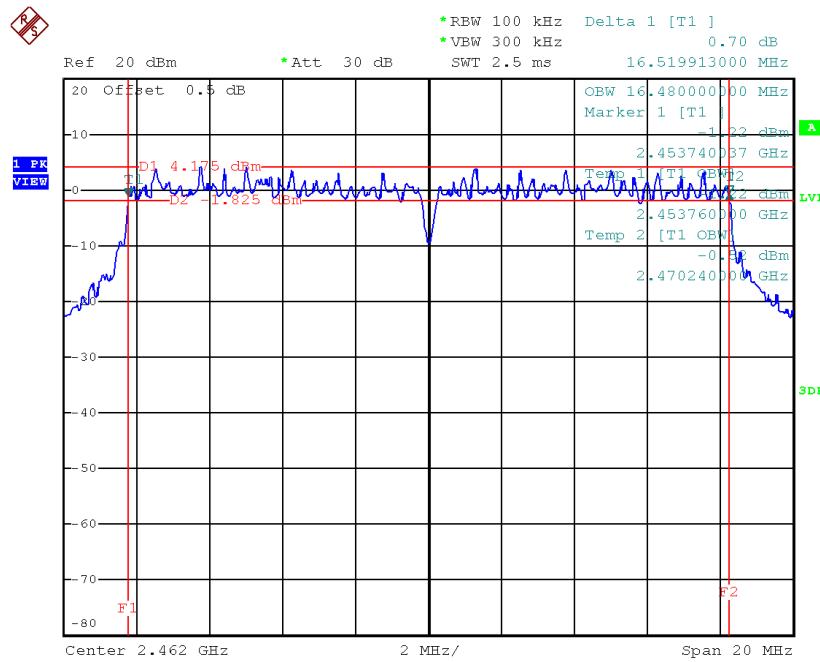
Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	16.48	16.48	500	Complies
2437	16.54	16.52	500	Complies
2462	16.52	16.48	500	Complies

TX CH01


Date: 16.NOV.2018 12:19:31

TX CH06

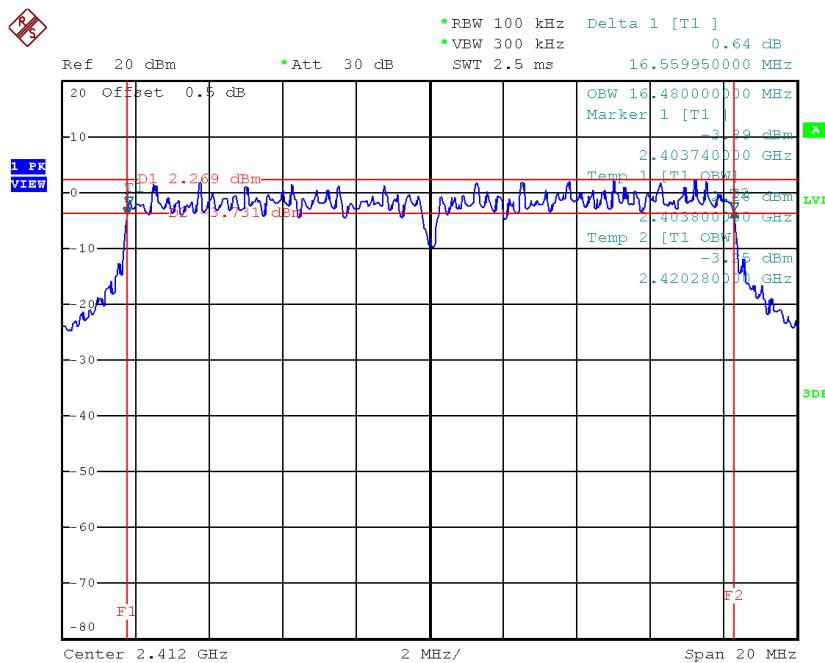
Date: 16.NOV.2018 12:21:37

TX CH11

Date: 16.NOV.2018 12:23:57

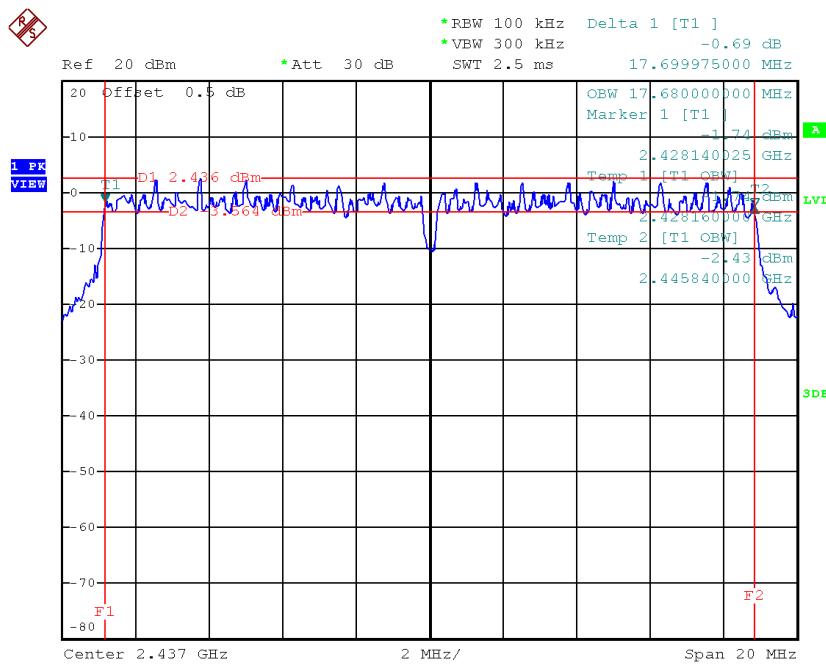
Test Mode: TX N-20MHz Mode_CH01/06/11

Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	16.56	16.48	500	Complies
2437	17.70	17.68	500	Complies
2462	17.75	17.72	500	Complies

TX CH01


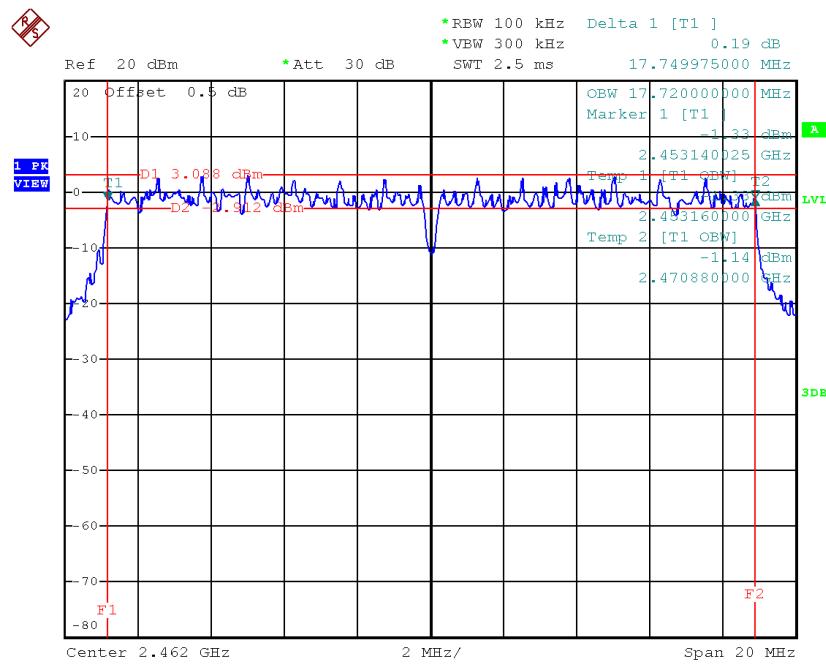
Date: 16.NOV.2018 12:26:18

TX CH06



Date: 16.NOV.2018 13:04:27

TX CH11



Date: 16.NOV.2018 13:07:10

APPENDIX F - MAXIMUM OUTPUT POWER

Test Mode: TX B Mode_CH01/06/11					
Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	18.13	0.07	30.00	1.00	Complies
2437	18.12	0.06	30.00	1.00	Complies
2462	18.54	0.07	30.00	1.00	Complies

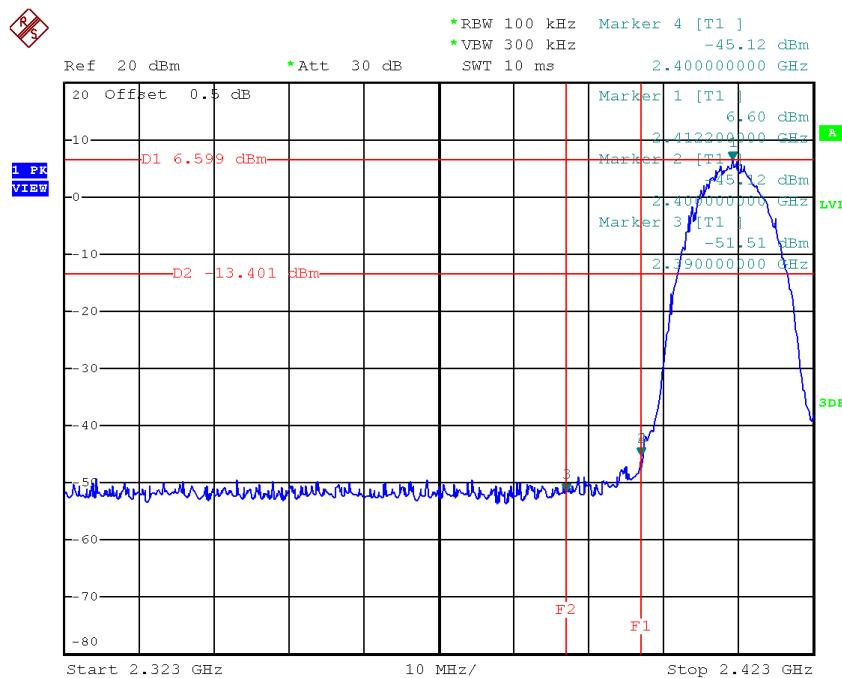
Test Mode: TX G Mode_CH01/06/11					
Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	24.55	0.29	30.00	1.00	Complies
2437	24.40	0.28	30.00	1.00	Complies
2462	23.72	0.24	30.00	1.00	Complies

Test Mode: TX N20 Mode_CH01/06/11					
Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	23.83	0.24	30.00	1.00	Complies
2437	23.84	0.24	30.00	1.00	Complies
2462	23.31	0.21	30.00	1.00	Complies

APPENDIX G - ANTENNA CONDUCTED SPURIOUS EMISSION

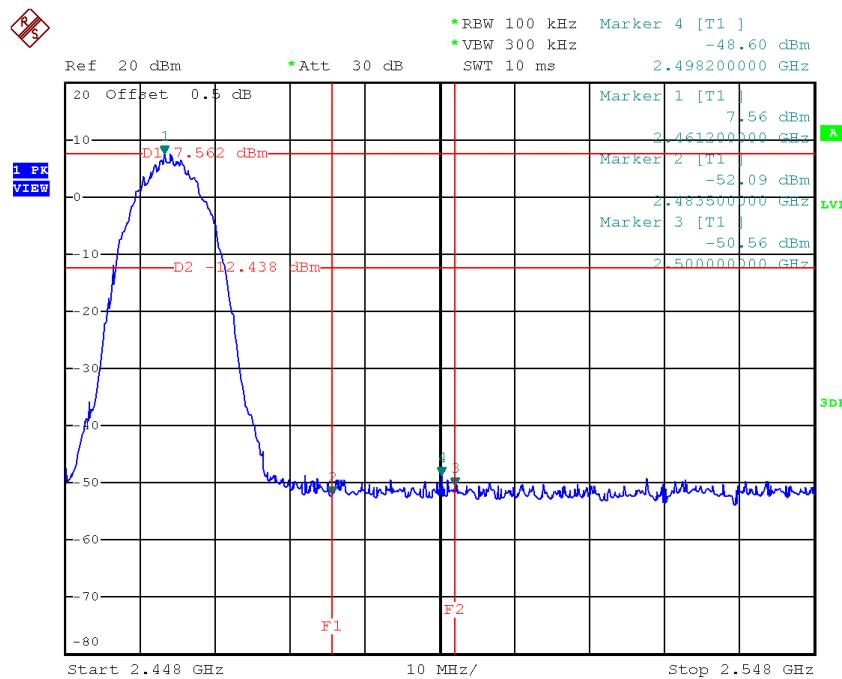
Test Mode:	TX B Mode
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TX B mode CH01



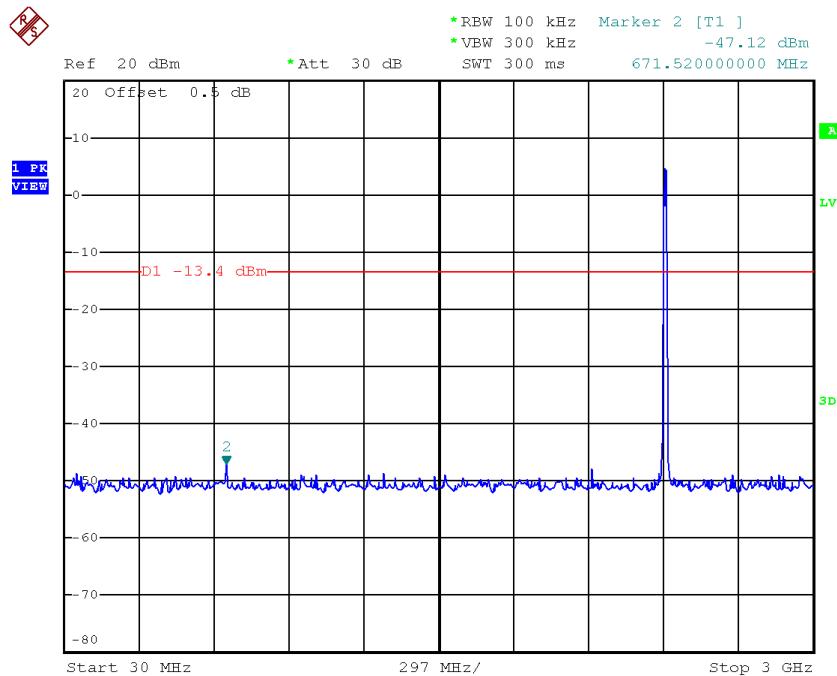
Date: 16.NOV.2018 12:10:04

TX B mode CH11

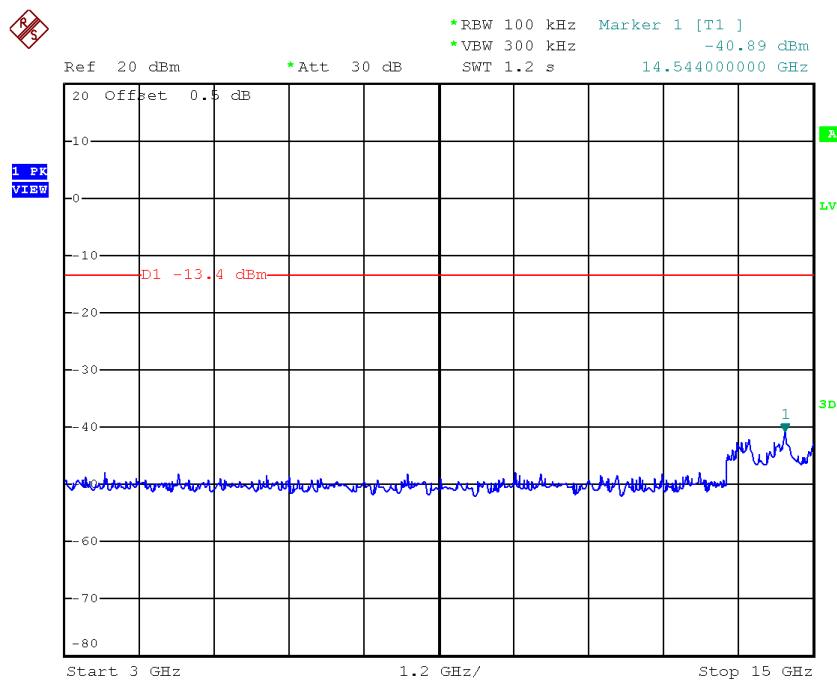


Date: 16.NOV.2018 12:17:44

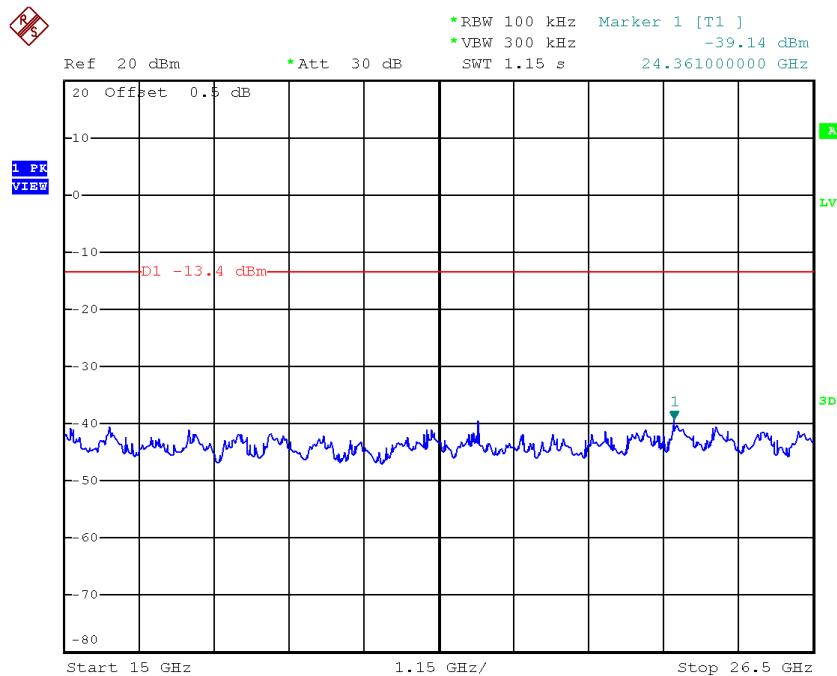
TX B mode CH01 (10 Harmonic of the frequency)



Date: 16.NOV.2018 12:10:17

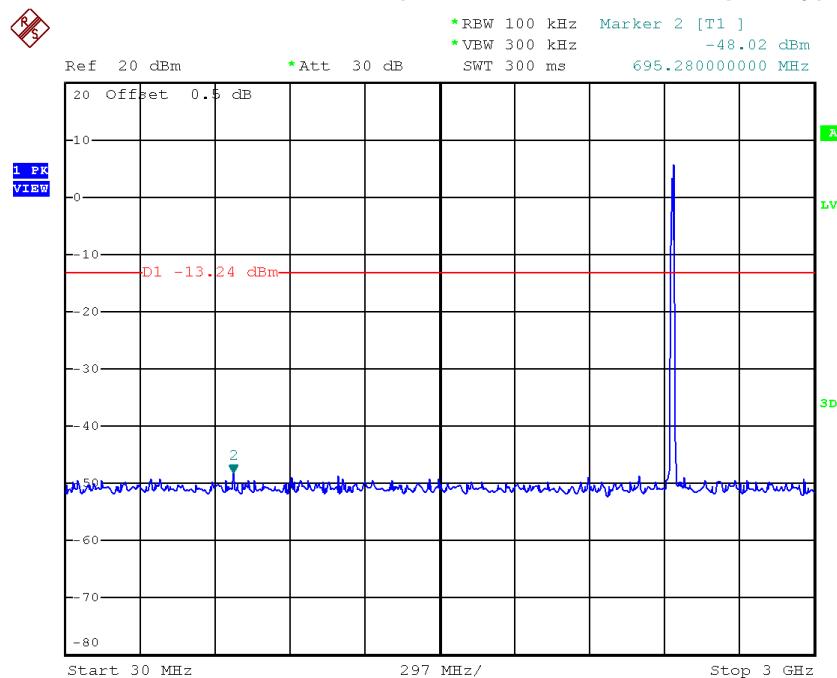


Date: 16.NOV.2018 12:10:23

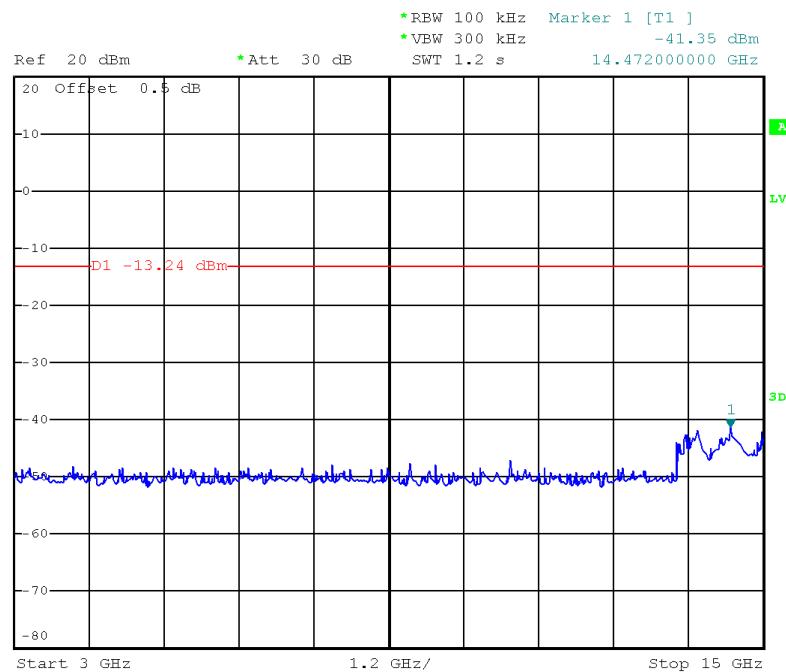


Date: 16.NOV.2018 12:10:30

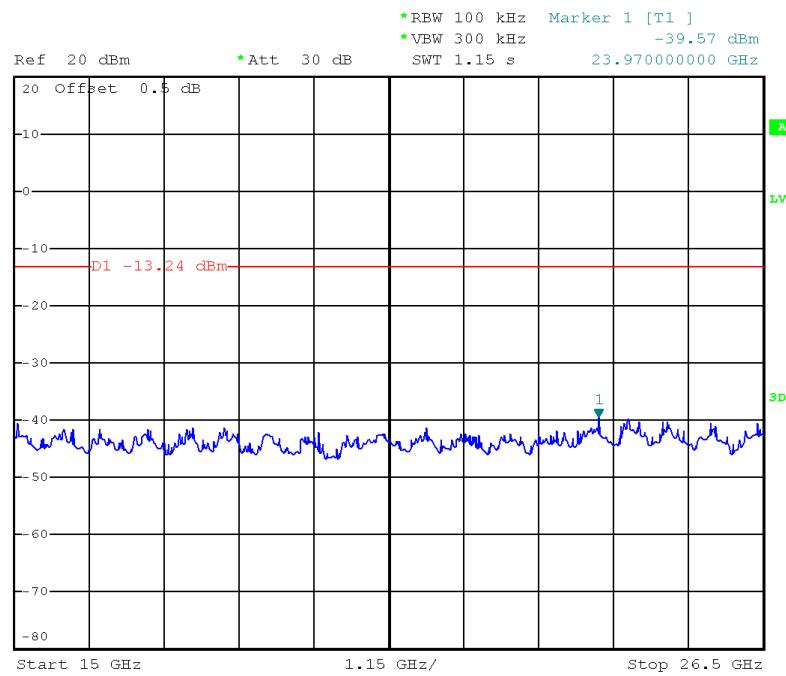
TX B mode CH06 (10 Harmonic of the frequency)



Date: 16.NOV.2018 12:15:22

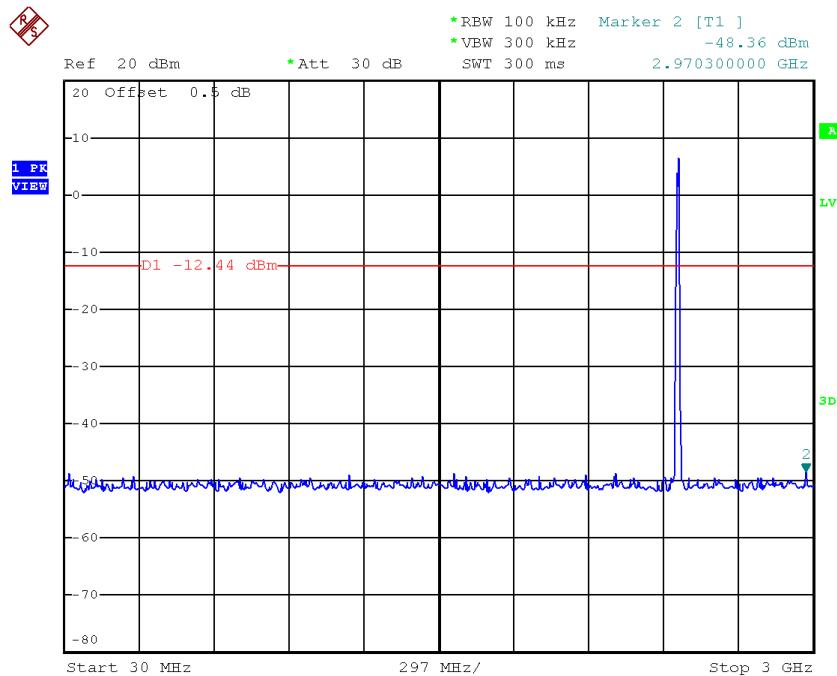


Date: 16.NOV.2018 12:15:29

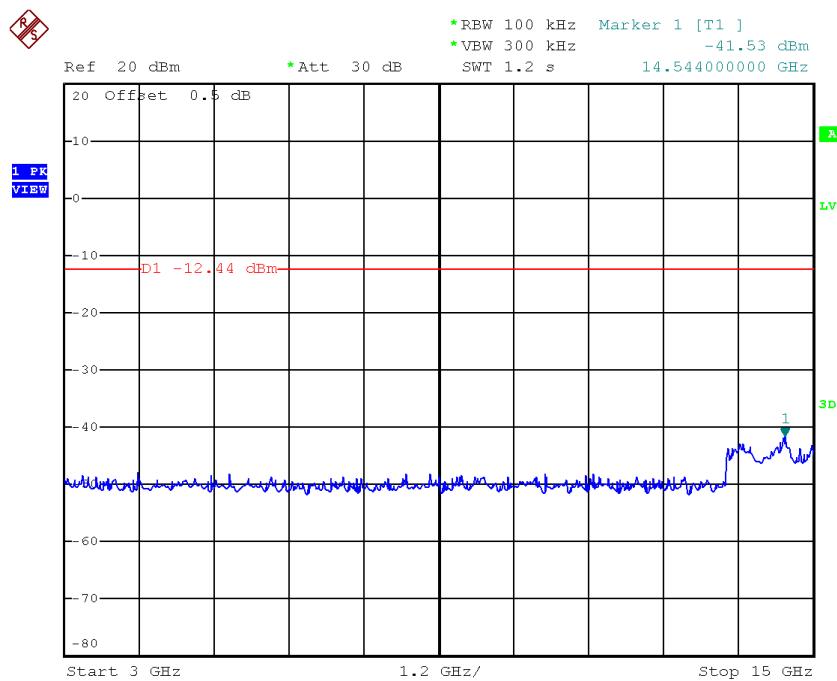


Date: 16.NOV.2018 12:15:35

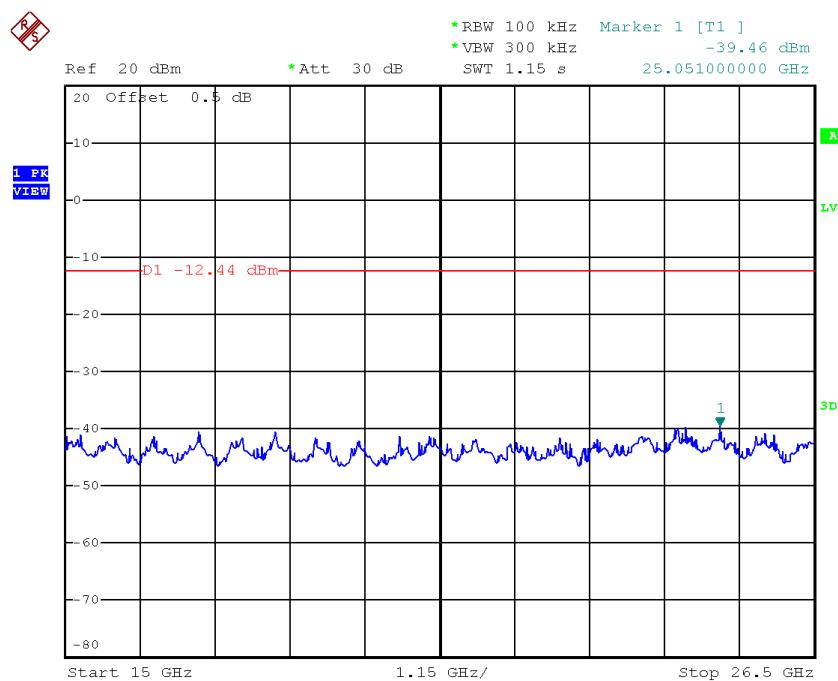
TX B mode CH11 (10 Harmonic of the frequency)



Date: 16.NOV.2018 12:17:56



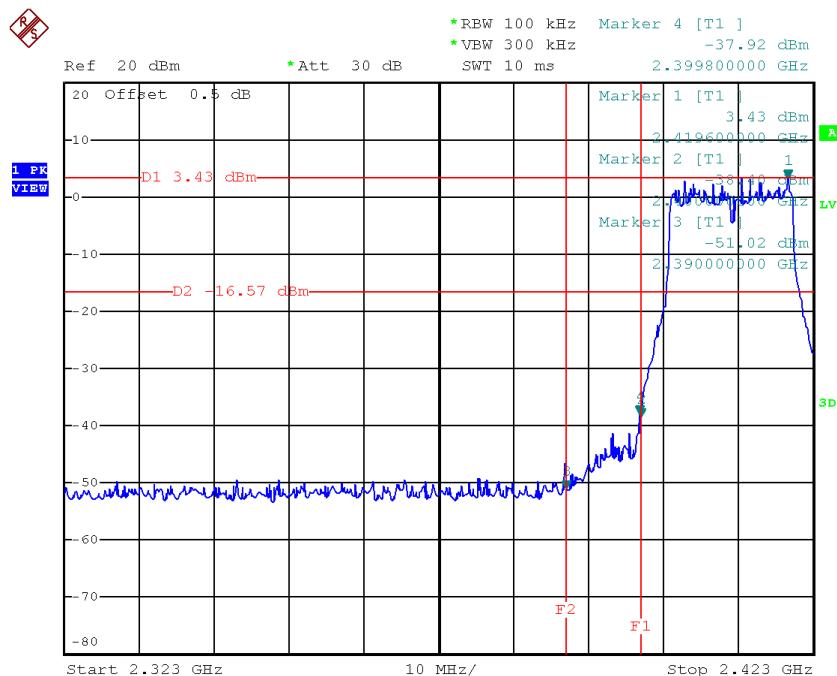
Date: 16.NOV.2018 12:18:03



Date: 16.NOV.2018 12:18:10

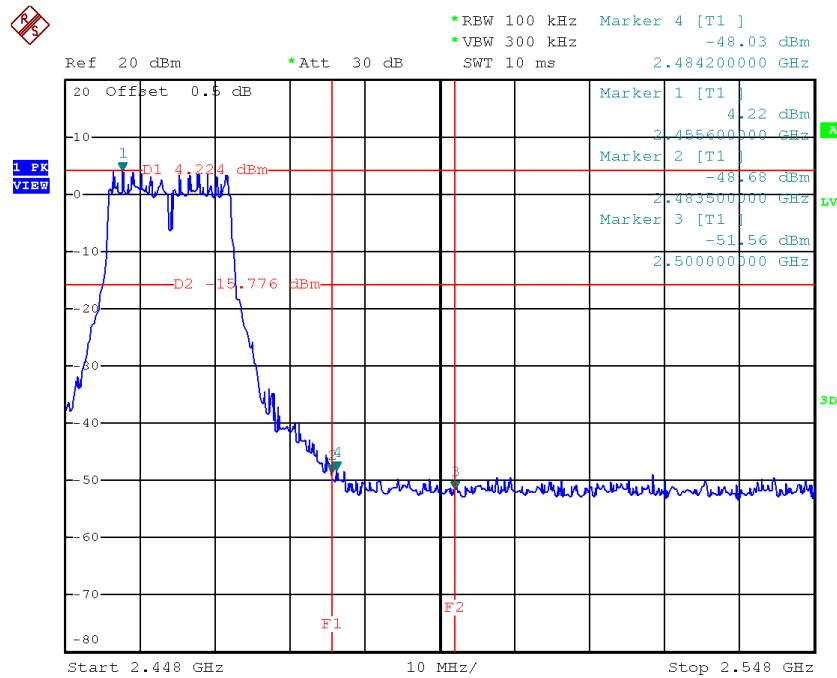
Test Mode:	TX G Mode
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TX G mode CH01



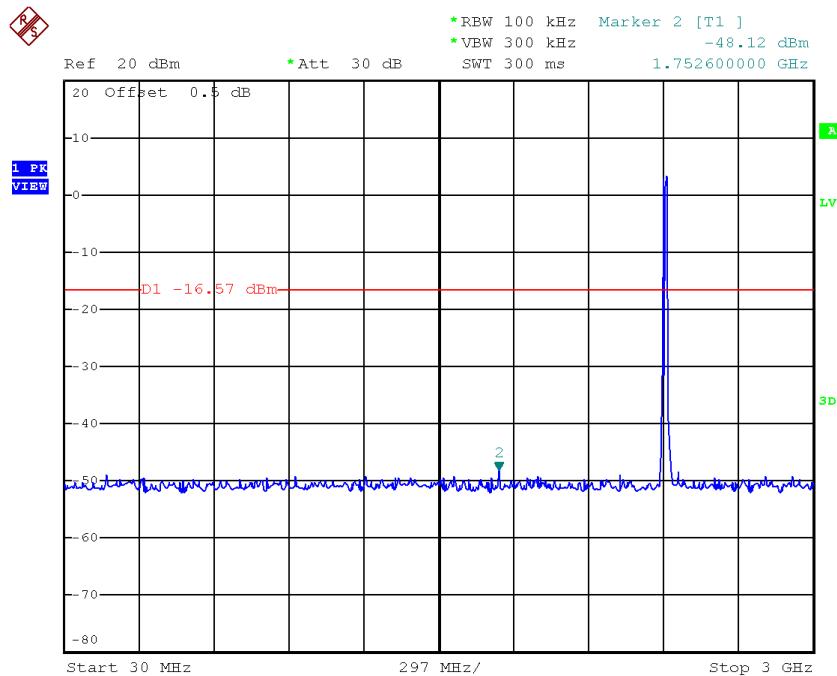
Date: 16.NOV.2018 12:19:55

TX G mode CH11

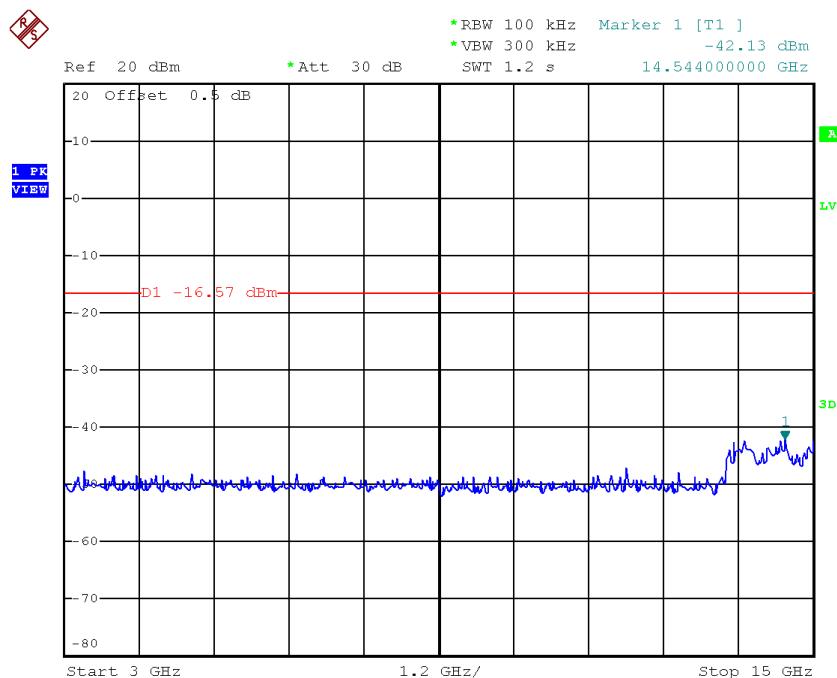


Date: 16.NOV.2018 12:24:21

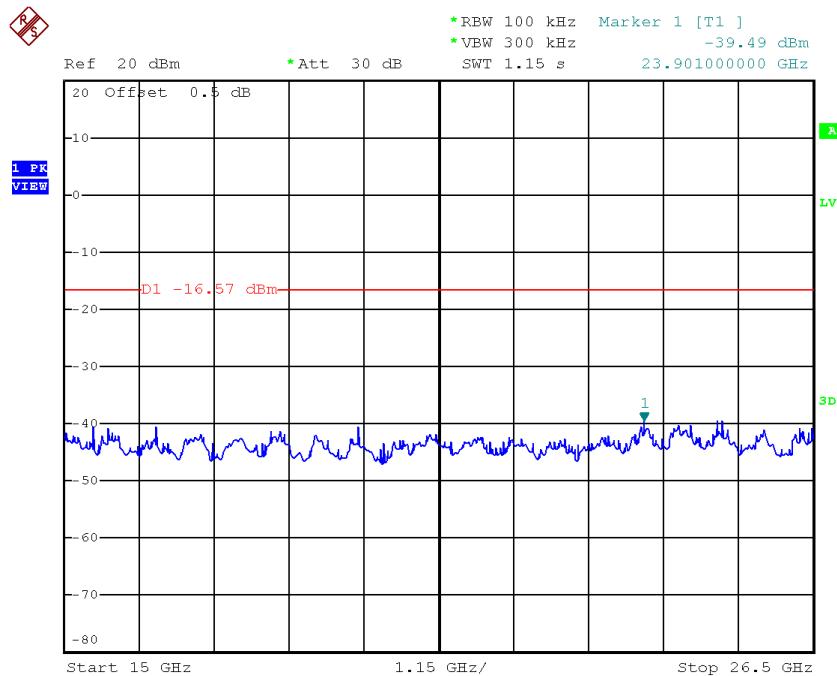
TX G mode CH01 (10 Harmonic of the frequency)



Date: 16.NOV.2018 12:20:07

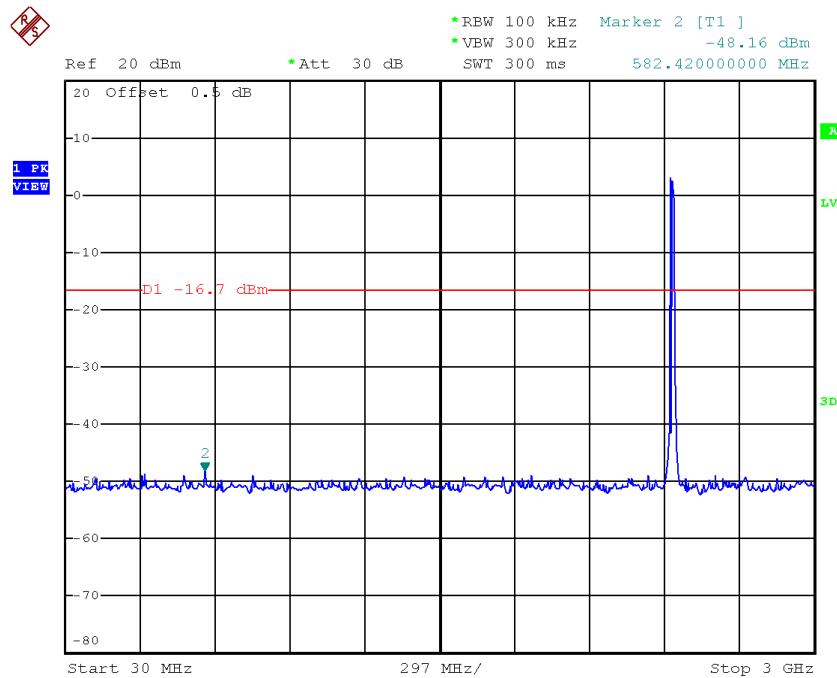


Date: 16.NOV.2018 12:20:14

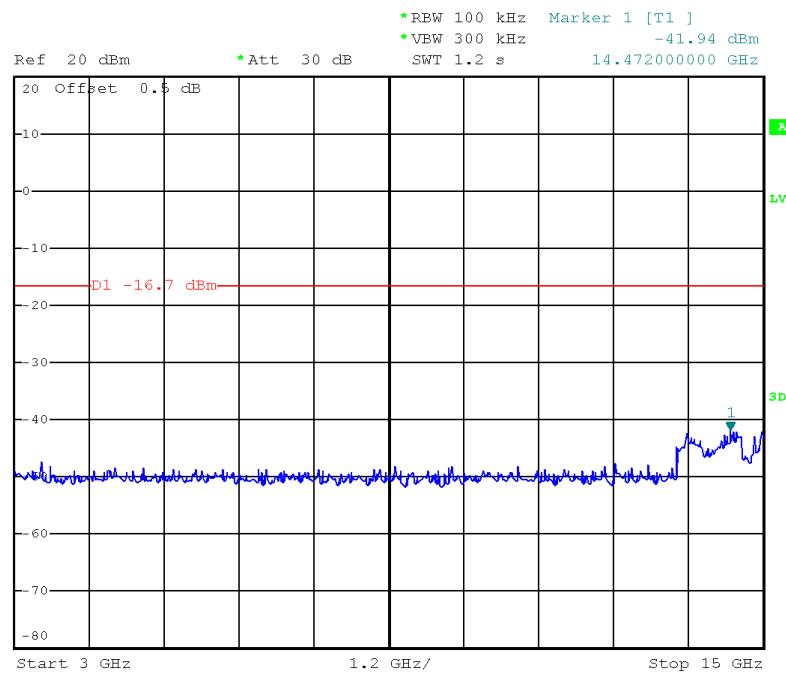


Date: 16.NOV.2018 12:20:21

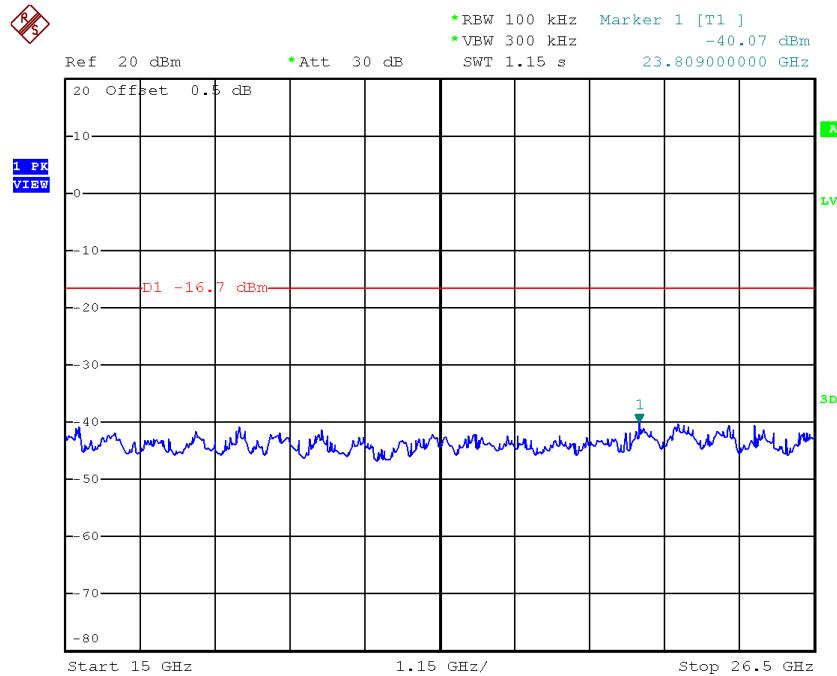
TX G mode CH06 (10 Harmonic of the frequency)



Date: 16.NOV.2018 12:22:13

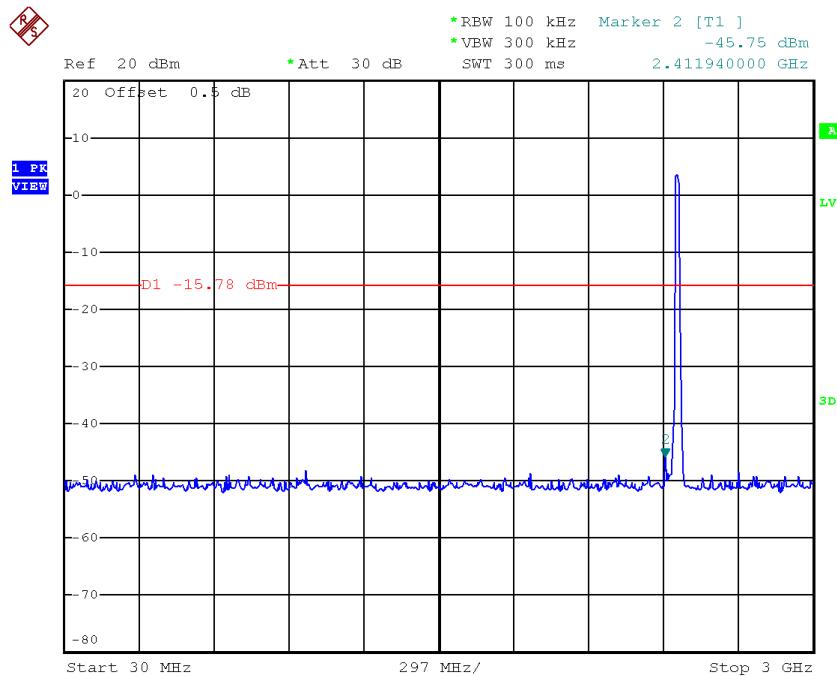


Date: 16.NOV.2018 12:22:20

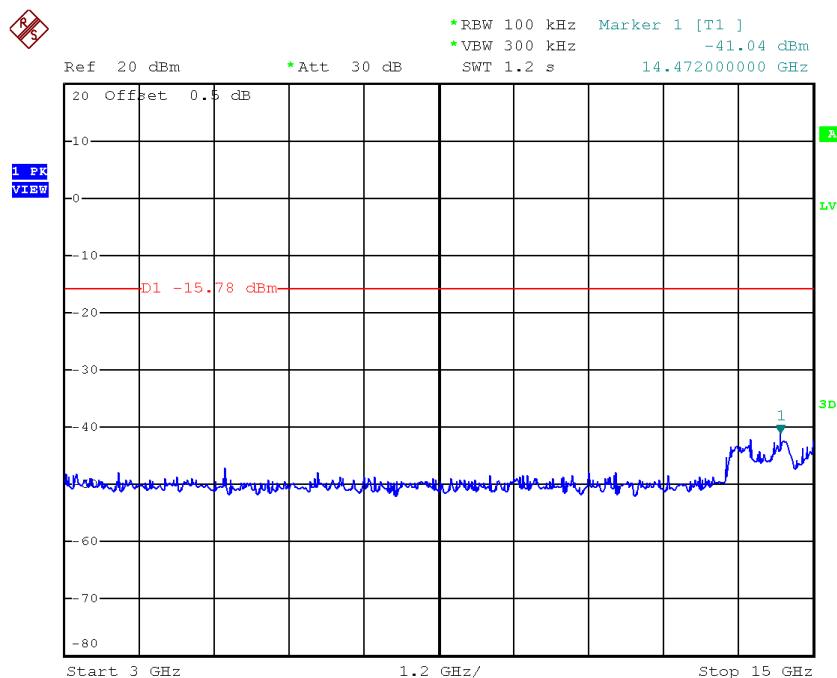


Date: 16.NOV.2018 12:22:26

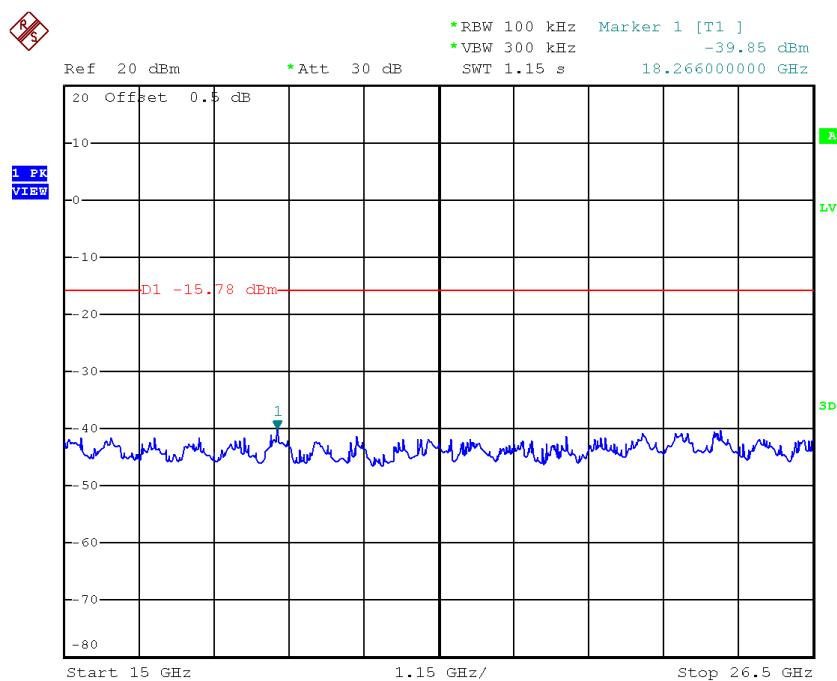
TX G mode CH11 (10 Harmonic of the frequency)



Date: 16.NOV.2018 12:24:33



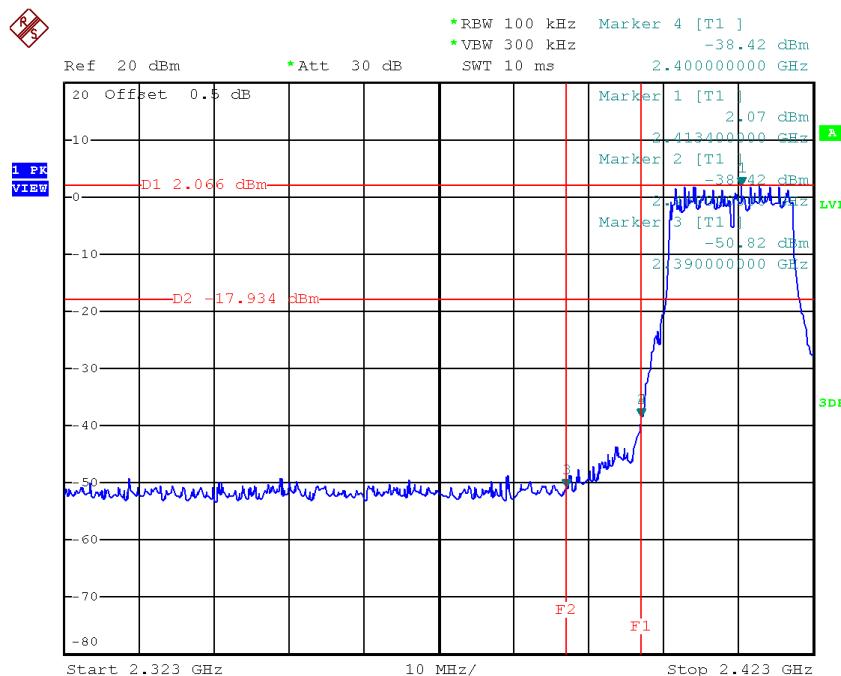
Date: 16.NOV.2018 12:24:40



Date: 16.NOV.2018 12:24:47

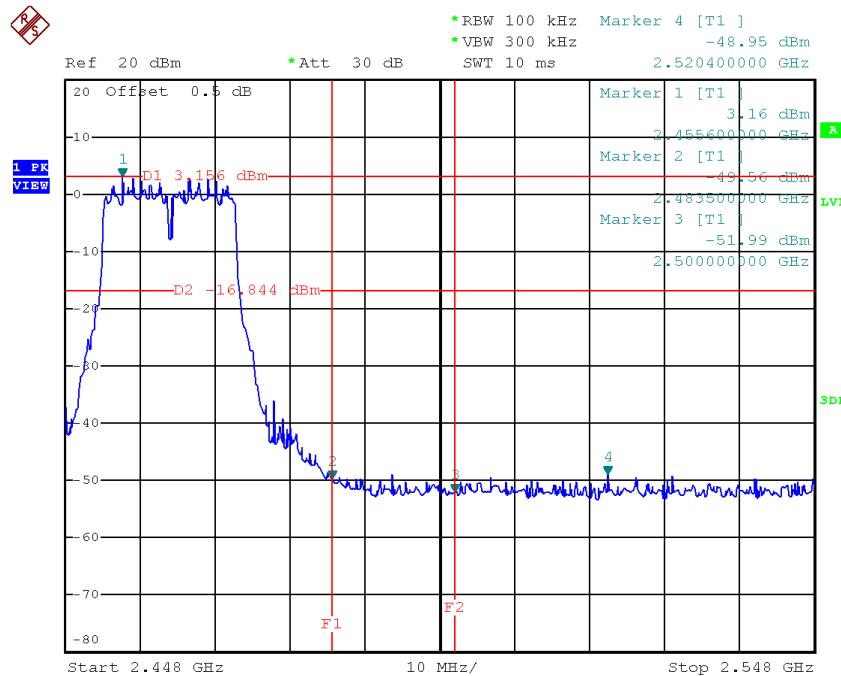
Test Mode: TX N-20M Mode

TX HT20 mode CH01



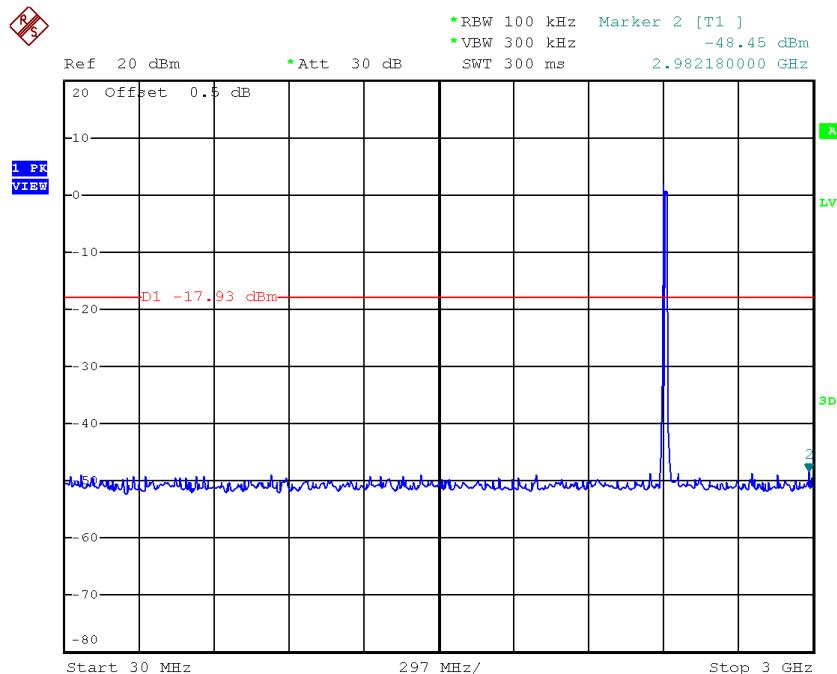
Date: 16.NOV.2018 12:26:42

TX HT20 mode CH11

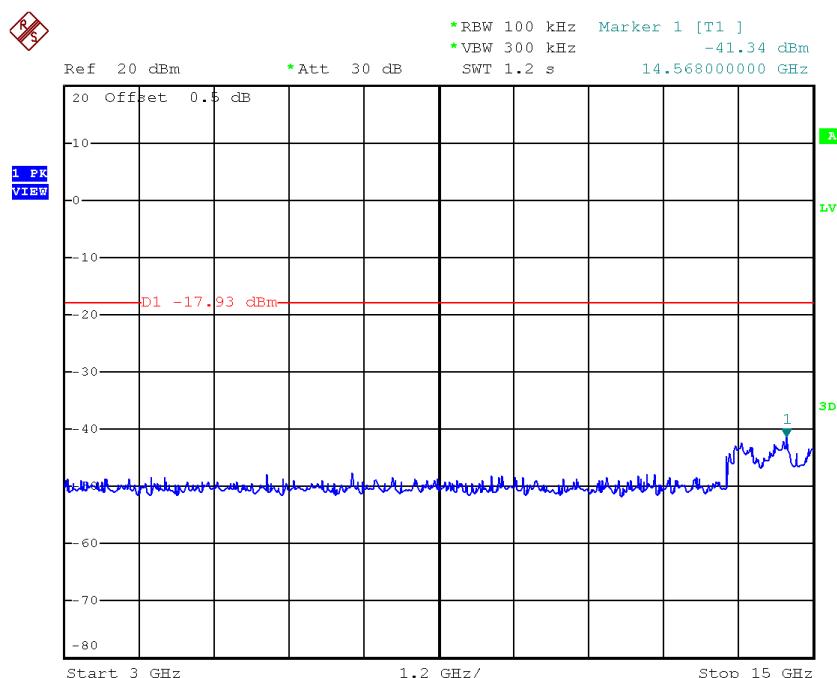


Date: 16.NOV.2018 13:07:34

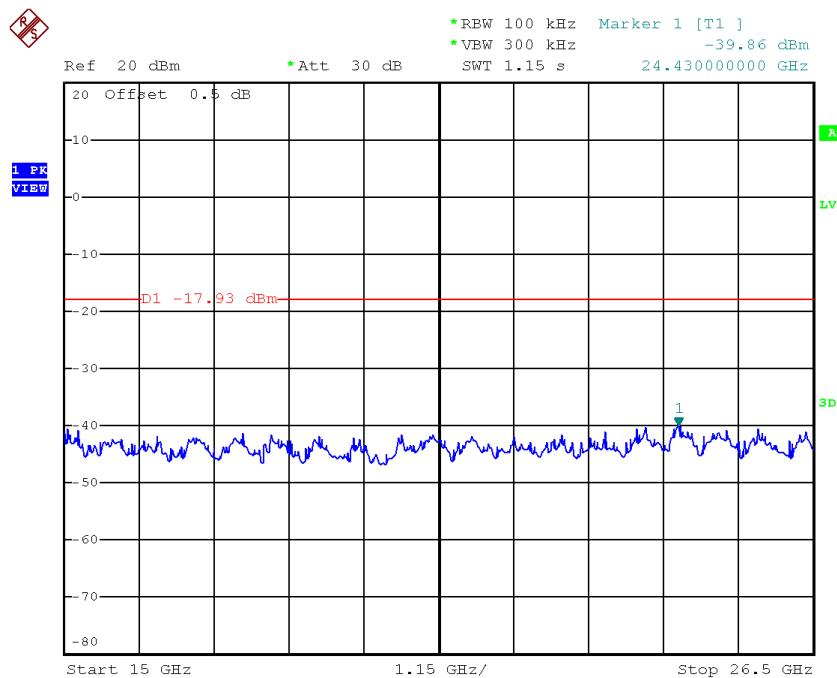
TX HT20 mode CH01 (10 Harmonic of the frequency)



Date: 16.NOV.2018 12:26:54

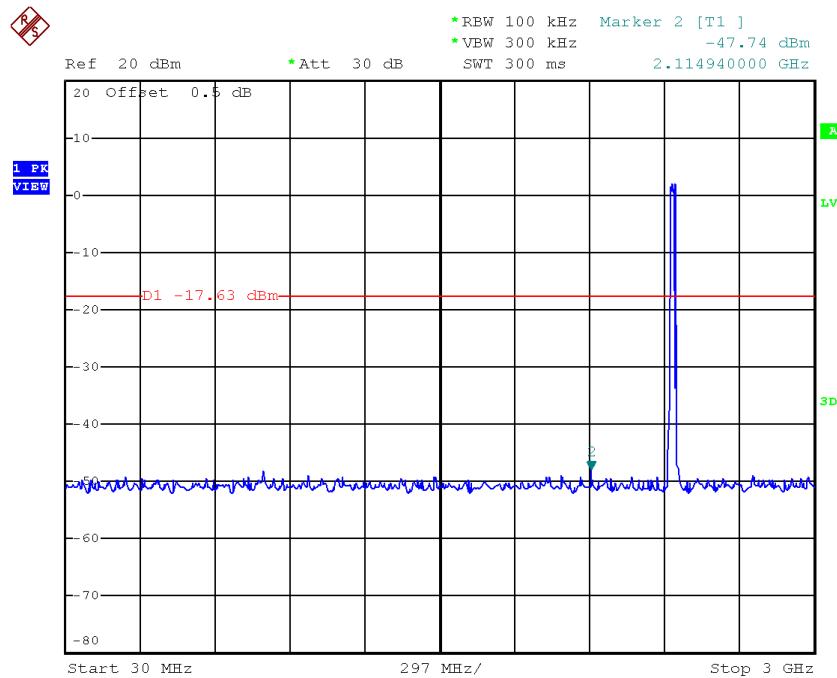


Date: 16.NOV.2018 12:27:01

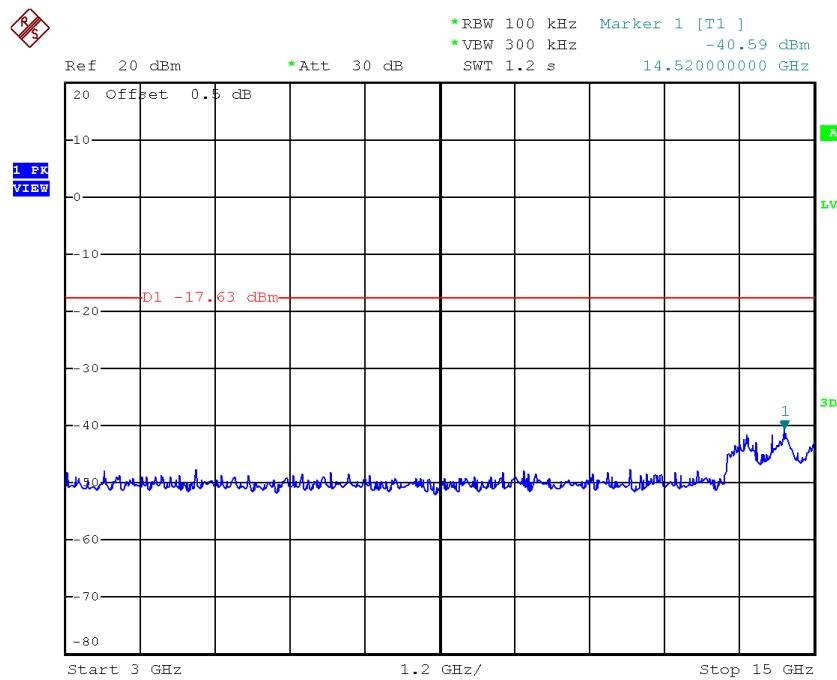


Date: 16.NOV.2018 12:27:08

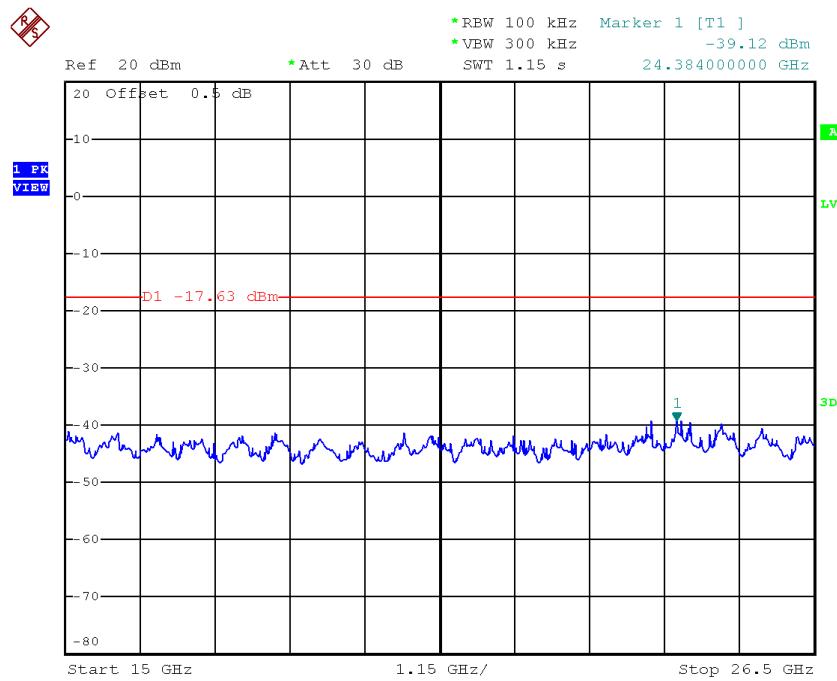
TX HT20 mode CH06 (10 Harmonic of the frequency)



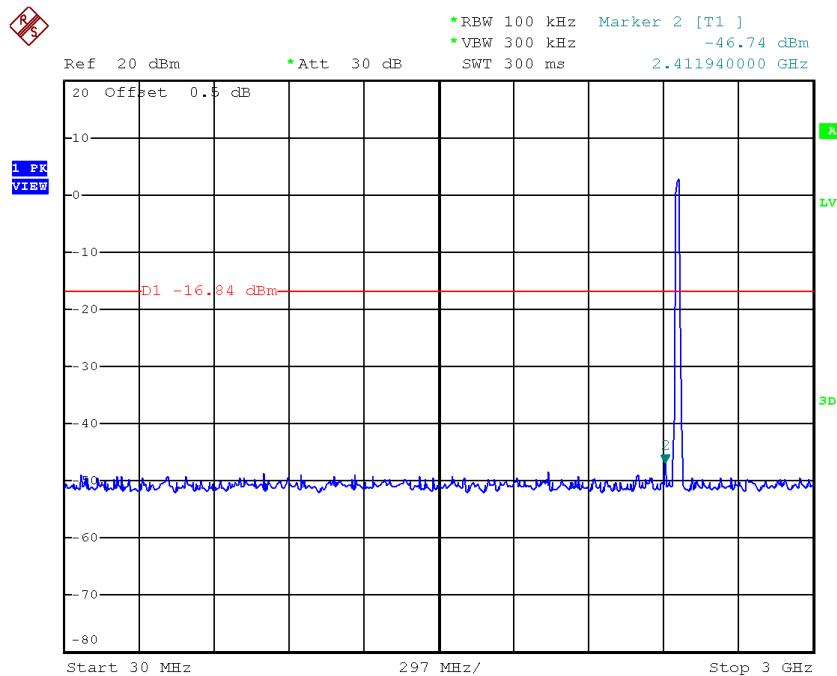
Date: 16.NOV.2018 13:05:03



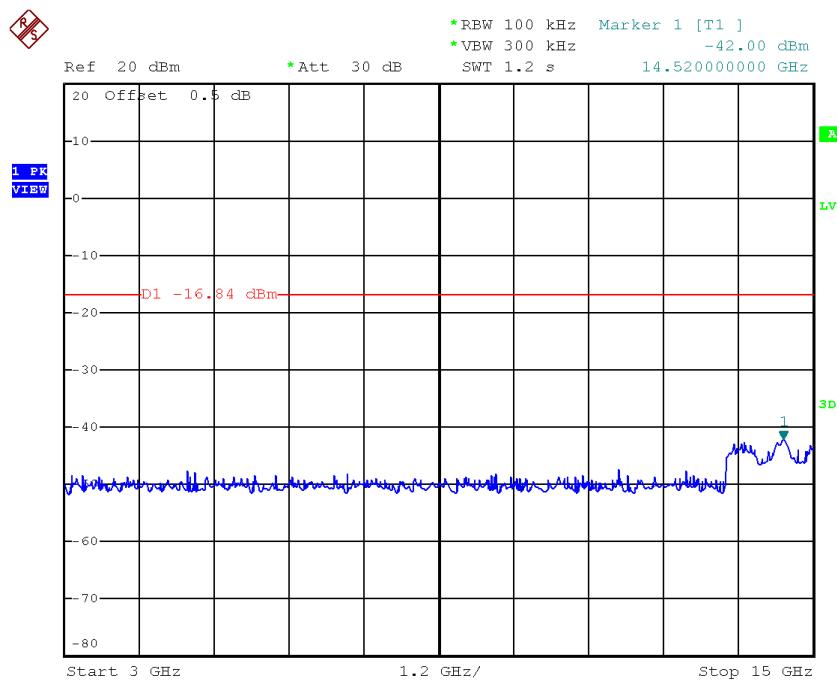
Date: 16.NOV.2018 13:05:10



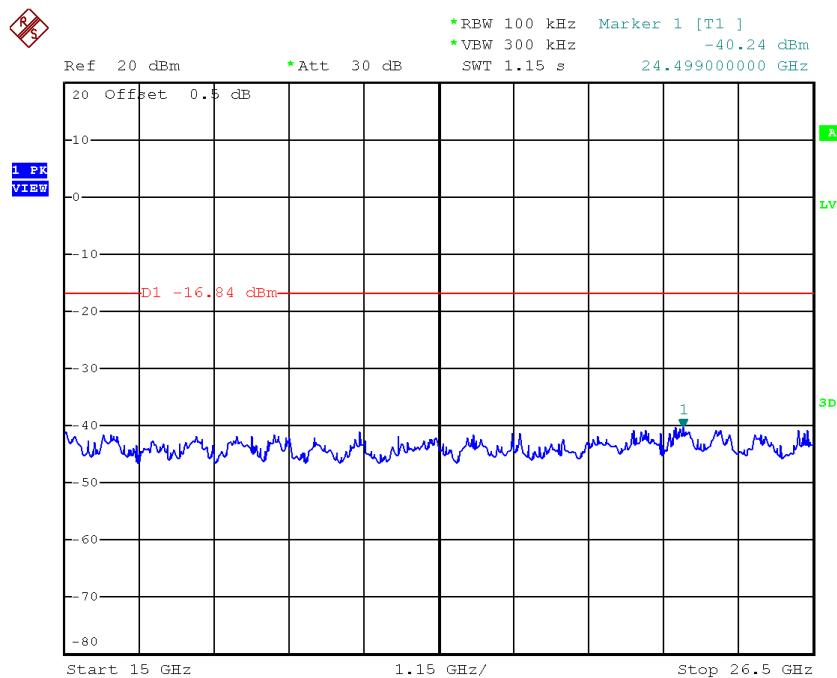
Date: 16.NOV.2018 13:05:17

TX HT20 mode CH11 (10 Harmonic of the frequency)


Date: 16.NOV.2018 13:07:47



Date: 16.NOV.2018 13:07:53



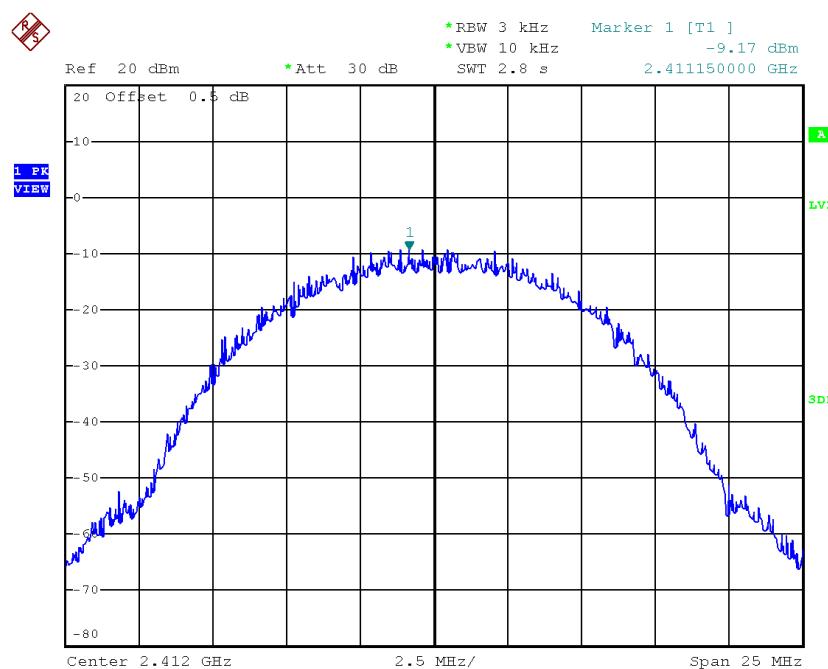
Date: 16.NOV.2018 13:08:00

APPENDIX H - POWER SPECTRAL DENSITY

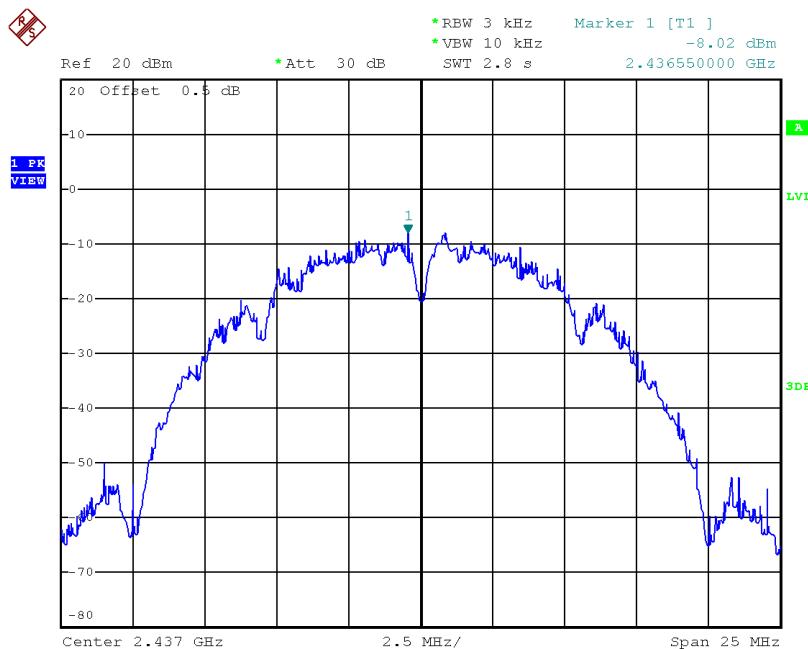
Test Mode: TX B Mode_CH01/06/11

Frequency (MHz)	Power Density (dBm/3 kHz)	Power Density (mW/3 kHz)	Max. Limit (dBm/3 kHz)	Result
2412	-9.17	0.1211	8.00	Complies
2437	-8.02	0.1578	8.00	Complies
2462	-6.71	0.2133	8.00	Complies

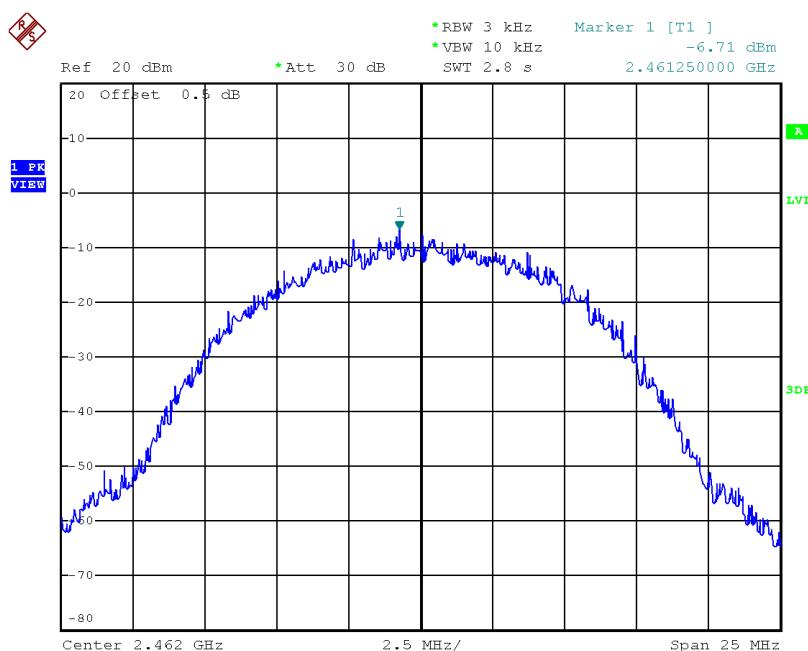
TX CH01



Date: 16.NOV.2018 12:10:38

TX CH06

Date: 16.NOV.2018 12:15:44

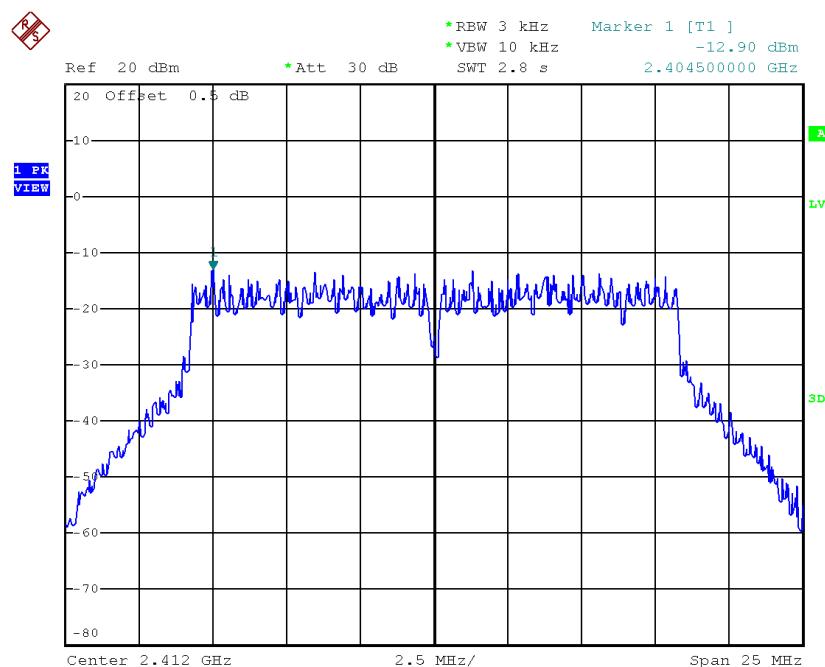
TX CH11

Date: 16.NOV.2018 12:18:18

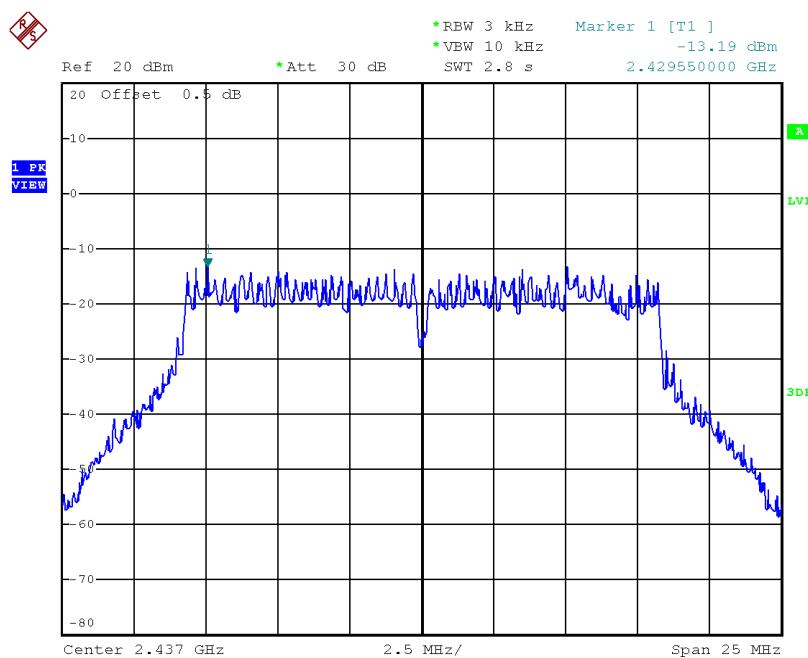
Test Mode: TX G Mode_CH01/06/11

Frequency (MHz)	Power Density (dBm/3 kHz)	Power Density (mW/3 kHz)	Max. Limit (dBm/3 kHz)	Result
2412	-12.90	0.0513	8.00	Complies
2437	-13.19	0.0480	8.00	Complies
2462	-10.64	0.0863	8.00	Complies

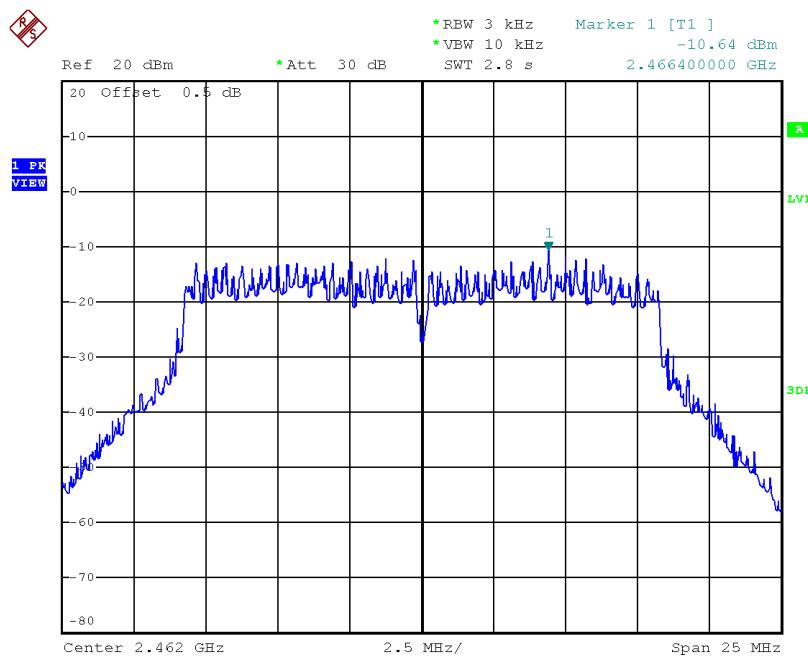
TX CH01



Date: 16.NOV.2018 12:20:29

TX CH06

Date: 16.NOV.2018 12:22:35

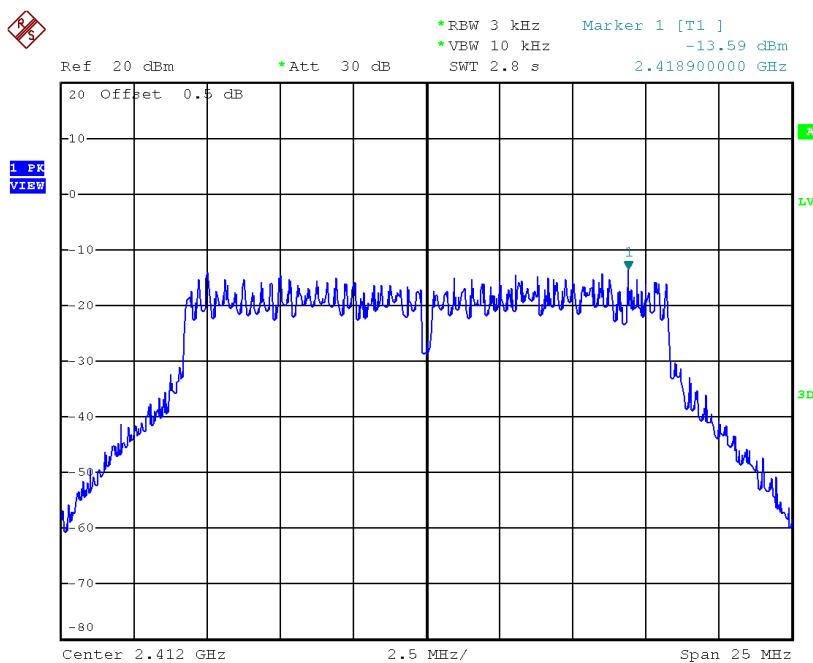
TX CH11

Date: 16.NOV.2018 12:24:55

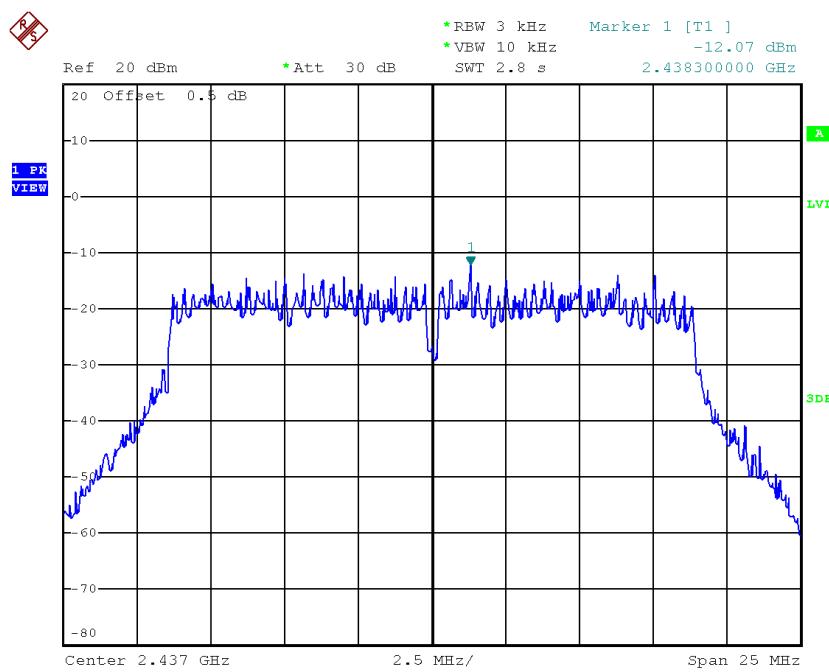
Test Mode: TX N-20M Mode_CH01/06/11

Frequency (MHz)	Power Density (dBm/3 kHz)	Power Density (mW/3 kHz)	Max. Limit (dBm/3 kHz)	Result
2412	-13.59	0.0438	8.00	Complies
2437	-12.07	0.0621	8.00	Complies
2462	-13.42	0.0455	8.00	Complies

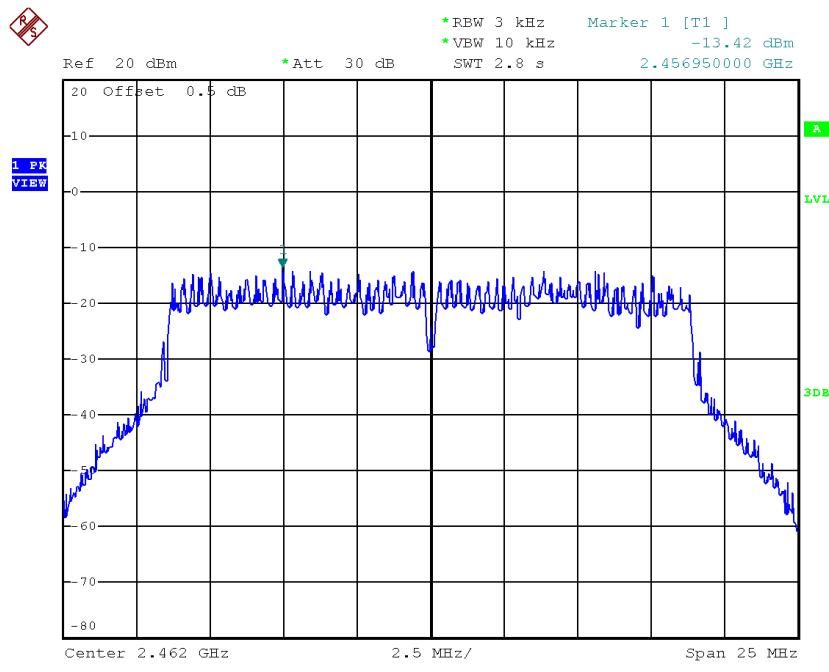
TX CH01



Date: 16.NOV.2018 12:27:16

TX CH06

Date: 16.NOV.2018 13:05:25

TX CH11

Date: 16.NOV.2018 13:08:08

End of Test Report