FCC Radio Test Report

FCC ID: X4Y23092

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

Project No.	:	1502C027
Equipment	:	Wireless AC dual-band router
Model Name	:	ARN04904U1
Applicant	:	NEXXT SOLUTIONS
Address	:	3505 N.W 107TH AVE,MIAMI ,FL,33178

Date of Receipt	:	Feb. 03, 2015
Date of Test	:	Feb. 03, 2015~Feb. 26, 2015
Issued Date	:	Feb. 27, 2015
Tested by	:	BTL Inc.

Testing Engineer : (David Mao)

Technical Manager : (Leo Hung)

Authorized Signatory : (Steven Lu)

B T L I N C .

No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

TEL: +86-769-8318-3000 FAX: +86-769-8319-6000

Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C**, or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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

BTL's reports must not be used by the client to claim product endorsement by the authorities or any agency of the Government.

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

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

Limitation

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

Table of Contents Page

1 . CERTIFICATION 6

2 . SUMMARY OF TEST RESULTS 7

2.1 TEST FACILITY 8

2.2 MEASUREMENT UNCERTAINTY 8

3 . GENERAL INFORMATION 9

3.1 GENERAL DESCRIPTION OF EUT 9

3.2 DESCRIPTION OF TEST MODES 11

3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING 12

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED 13

3.5 DESCRIPTION OF SUPPORT UNITS 13

4 . EMC EMISSION TEST 14

4.1 CONDUCTED EMISSION MEASUREMENT 14

4.1.1 POWER LINE CONDUCTED EMISSION LIMITS 14

4.1.2 TEST PROCEDURE 14

4.1.3 DEVIATION FROM TEST STANDARD 14

4.1.4 TEST SETUP 15

4.1.5 EUT OPERATING CONDITIONS 15

4.1.6 EUT TEST CONDITIONS 15

4.1.7 TEST RESULTS 15

4.2 RADIATED EMISSION MEASUREMENT 16

4.2.1 RADIATED EMISSION LIMITS 16

4.2.2 TEST PROCEDURE 17

4.2.3 DEVIATION FROM TEST STANDARD 17

4.2.4 TEST SETUP 17

4.2.5 EUT OPERATING CONDITIONS 18

4.2.6 EUT TEST CONDITIONS 18

4.2.7 TEST RESULTS (9KHZ TO 30MHZ) 19

4.2.8 TEST RESULTS (BETWEEN 30MHZ TO 1000 MHZ) 19

4.2.9 TEST RESULTS (ABOVE 1000 MHZ) 19

5 . BANDWIDTH TEST 20

5.1 APPLIED PROCEDURES 20

5.1.1 TEST PROCEDURE 20

5.1.2 DEVIATION FROM STANDARD 20

5.1.3 TEST SETUP 20

5.1.4 EUT OPERATION CONDITIONS 20

5.1.5 EUT TEST CONDITIONS 20

5.1.6 TEST RESULTS 20

Table of Contents Page

6 . MAXIMUM PEAK CONDUCTED OUTPUT POWER TEST 21
6.1 APPLIED PROCEDURES / LIMIT 21
6.1.1 TEST PROCEDURE 21
6.1.2 DEVIATION FROM STANDARD 21
6.1.3 TEST SETUP 21
6.1.4 EUT OPERATION CONDITIONS 21
6.1.5 EUT TEST CONDITIONS 21
6.1.6 TEST RESULTS 21
7 . ANTENNA CONDUCTED SPURIOUS EMISSION 22
7.1 APPLIED PROCEDURES / LIMIT 22
7.1.1 TEST PROCEDURE 22
7.1.2 DEVIATION FROM STANDARD 22
7.1.3 TEST SETUP 22
7.1.4 EUT OPERATION CONDITIONS 22
7.1.5 EUT TEST CONDITIONS 22
7.1.6 TEST RESULTS 22
8 . POWER SPECTRAL DENSITY TEST 23
8.1 APPLIED PROCEDURES / LIMIT 23
8.1.1 TEST PROCEDURE 23
8.1.2 DEVIATION FROM STANDARD 23
8.1.3 TEST SETUP 23
8.1.4 EUT OPERATION CONDITIONS 23
8.1.5 EUT TEST CONDITIONS 23
8.1.6 TEST RESULTS 23
9 . MEASUREMENT INSTRUMENTS LIST 24
10 . EUT TEST PHOTO 26
ATTACHMENT A - CONDUCTED EMISSION 30
ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ) 33
ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ) 35
ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ) 42
ATTACHMENT E - BANDWIDTH 91
ATTACHMENT F – MAXIMUM PEAK CONDUCTED OUTPUT POWER 100
ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION 104
ATTACHMENT H - POWER SPECTRAL DENSITY 129

REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1502C027	Original Issue.	Feb. 27, 2015

1. CERTIFICATION

Equipment	:	Wireless AC dual-band router
Brand Name	:	NEXXT
Model Name	:	ARN04904U1
Applicant	:	NEXXT SOLUTIONS
Date of Test	:	Feb. 03, 2015~Feb. 26, 2015
Test Sample	:	ENGINEERING SAMPLE
Standard(s)	:	FCC Part15, Subpart C: 2013 (15.247) / ANSI C63.4-2009

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-1-1502C027) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15 (15.247) , Subpart C: 2013			
Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.247(d)	Antenna conducted Spurious Emission	PASS	
15.247(a)(2)	6dB Bandwidth	PASS	
15.247(b)(3)	Peak Output Power	PASS	
15.247(e)	Power Spectral Density	PASS	
15.203	Antenna Requirement	PASS	
15.209/15.205	Transmitter Radiated Emissions	PASS	

NOTE:

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

(2) The test follows FCC KDB Publication No. 558074 D01 DTS Meas Guidance v03r02 (Measurement Guidelines of DTS)

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **DG-C02/DG-CB03** at the location of No.3,Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.523792
BTL's test firm number for FCC: 319330

2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %。

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
DG-C02	CISPR	150 KHz ~ 30MHz	1.94	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)	NOTE
DG-CB03	CISPR	9KHz~30MHz	V	3.79	
		9KHz~30MHz	H	3.57	
		30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	H	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	H	3.94	
		1GHz~18GHz	V	3.12	
		1GHz~18GHz	H	3.68	
		18GHz~40GHz	V	4.15	
		18GHz~40GHz	H	4.14	

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Wireless AC dual-band router	
Brand Name	NEXXT	
Model Name	ARN04904U1	
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 300 Mbps
	Output Power (Max.)	802.11b: 13.94dBm 802.11g: 22.28dBm 802.11n(20MHz): 23.58dBm 802.11n(40MHz): 22.43dBm
Power Source	DC voltage supplied from AC/DC adapter Brand/Model: NEXXT/TEA12-12100	
Power Rating	I/P: AC 100-240V 50/60Hz 0.3A O/P: 12V 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)	Note
1	N/A	50001241	Dipole	N/A	4.92	TX/RX
2	N/A	50001241	Dipole	N/A	4.92	TX/RX

Note:

(1) The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R), all transmit signals are completely uncorrelated, then, **Direction gain = G_{ANT}**, that is Directional gain=4.92.

(2) ANT 1 for 1TX was found to be the worst case and recorded

4.

Operating Mode / TX Mode	1TX	2TX
802.11b	V (ANT 1)	-
802.11g	V (ANT 1)	-
802.11n(20MHz)	-	V (ANT 1 + ANT 2)
802.11n(40MHz)	-	V (ANT 1 + ANT 2)

3.2 DESCRIPTION OF TEST MODES

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

Pretest Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09
Mode 5	TX MODE

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

For Conducted Test	
Final Test Mode	Description
Mode 5	TX MODE

For Radiated Test	
Final Test Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11
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 (13Mbps)
802.11n HT40 mode : BPSK (27Mbps)
For radiated emission tests, the highest output powers were set for final test.

(3) For radiated below 1G test, the 802.11b is found to be the worst case and recorded.

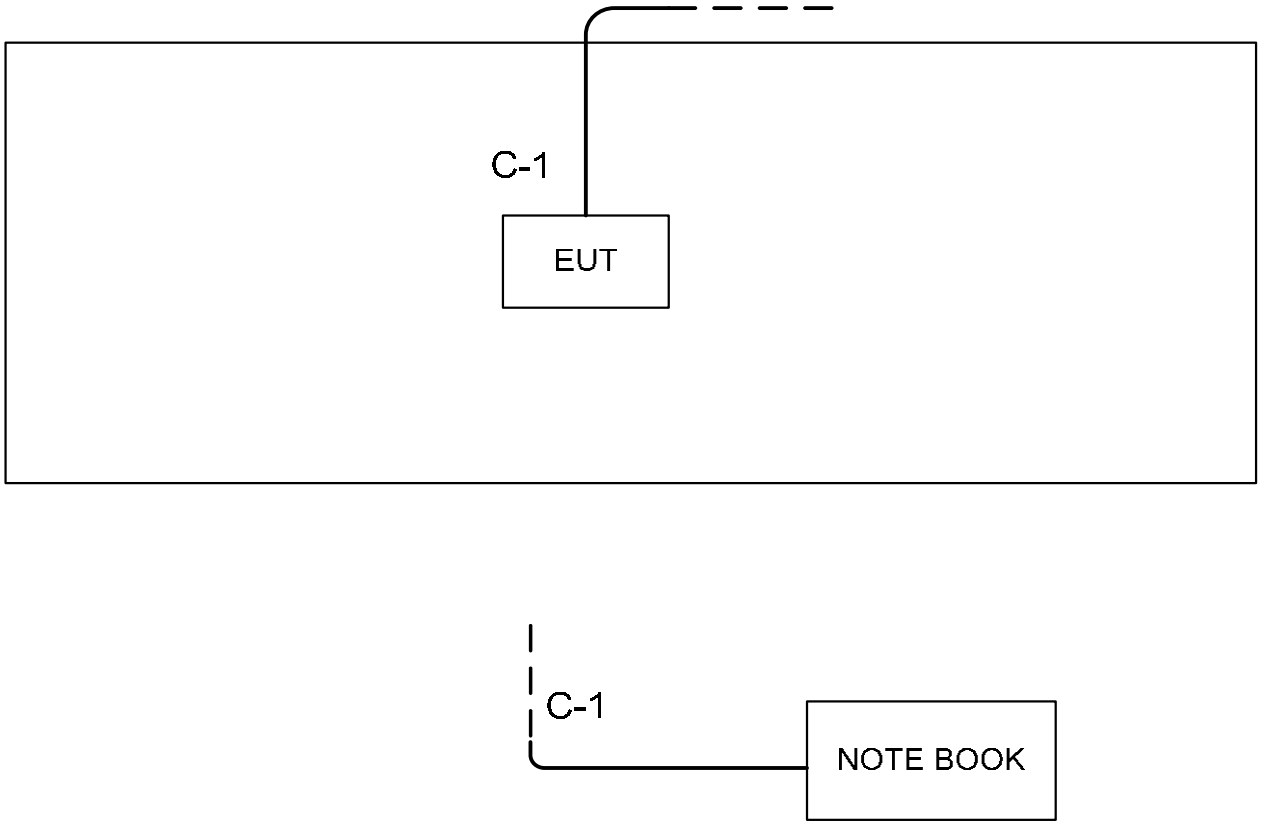
(4) The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

During testing, channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of WLAN

Test software version	MTool_2.0.1.1		
Frequency (MHz)	2412	2437	2462
802.11b	38	40	41
802.11g	47	58	55
802.11n (20MHz)	47	48	52
Frequency	2422	2437	2452
802.11n (40MHz)	38	45	45

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.	Note
E-1	NOTEBOOK	DELL	INSPIRON	DOC	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	YES	NO	10M	RJ45

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 -0.5	66 to 56*	56 to 46*
0.50 -5.0	56	46
5.0 -30.0	60	50

Note:

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

(2) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)
Margin Level = Measurement Value - Limit Value

The following table is the setting of the receiver

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

4.1.2 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

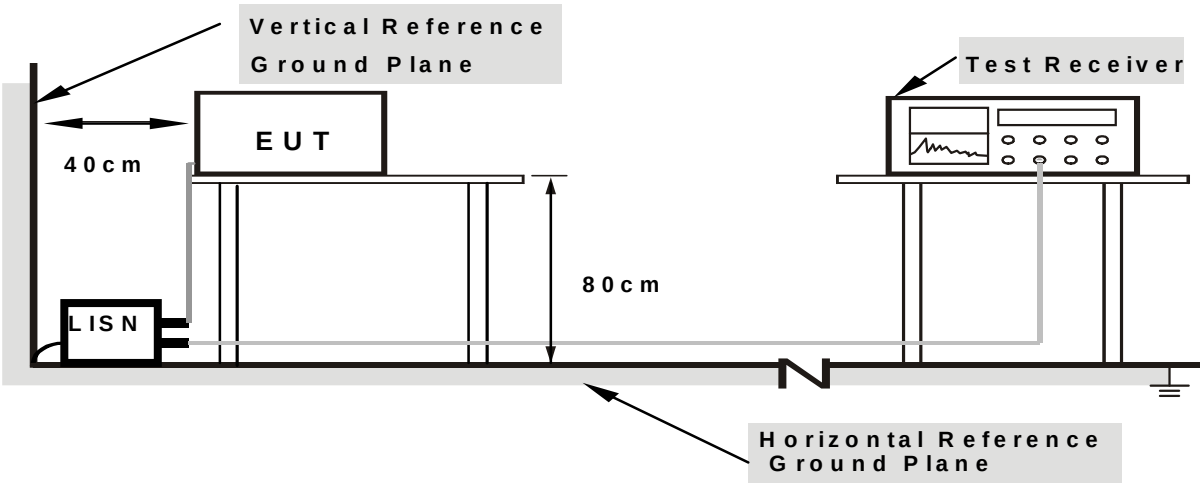
d. LISN at least 80 cm from nearest part of EUT chassis.

e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



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

4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

4.1.6 EUT TEST CONDITIONS

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

4.1.7 TEST RESULTS

Please refer to the Attachment A.

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS

20dB in any 100 KHz bandwidth outside the operating frequency band. 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)	RBW 1MHz VBW 3MHz peak detector for Pk value RMS detector for AV value

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

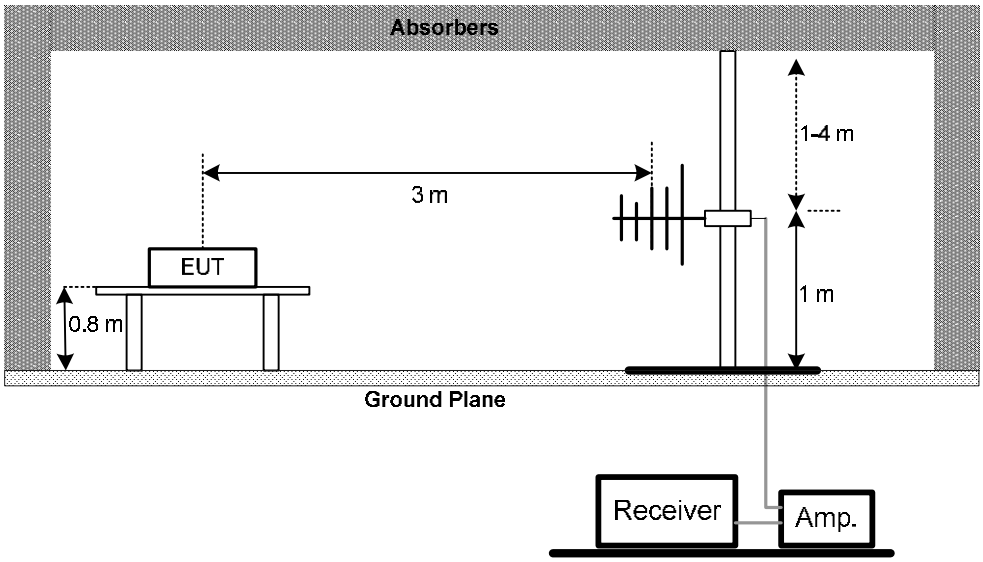
a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter fully-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 0.8 m; 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. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.3 DEVIATION FROM TEST STANDARD

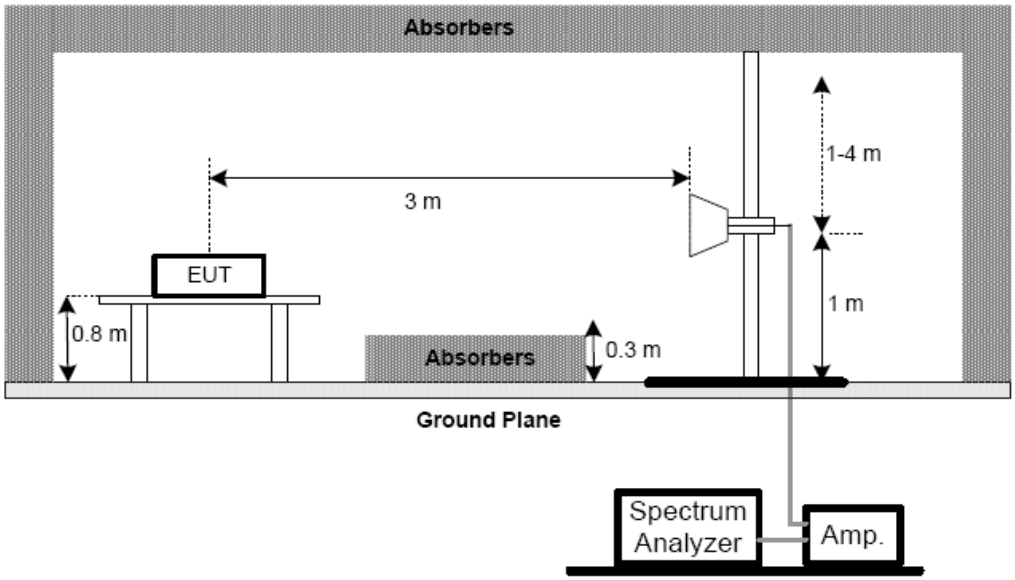
No deviation

4.2.4 TEST SETUP

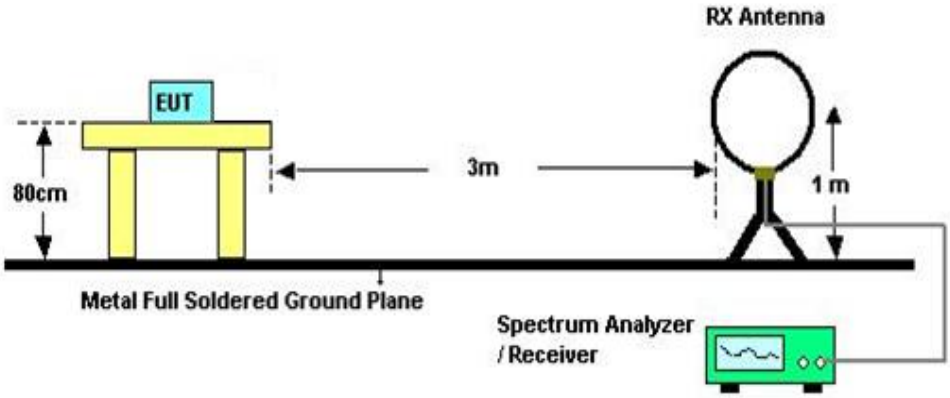
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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



(C) For radiated emissions below 30MHz



4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.5 Unless** otherwise a special operating condition is specified in the follows during the testing.

4.2.6 EUT TEST CONDITIONS

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

4.2.7 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Attachment B

Remark:

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

4.2.8 TEST RESULTS (BETWEEN 30MHZ TO 1000 MHZ)

Please refer to the Attachment C.

4.2.9 TEST RESULTS (ABOVE 1000 MHZ)

Please refer to the Attachment D.

Remark:

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

5. BANDWIDTH TEST

5.1 APPLIED PROCEDURES

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

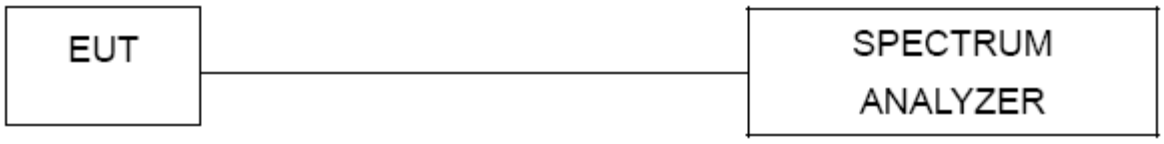
5.1.1 TEST PROCEDURE

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

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.5 EUT TEST CONDITIONS

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

5.1.6 TEST RESULTS

Please refer to the Attachment E.

6. MAXIMUM PEAK CONDUCTED OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

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

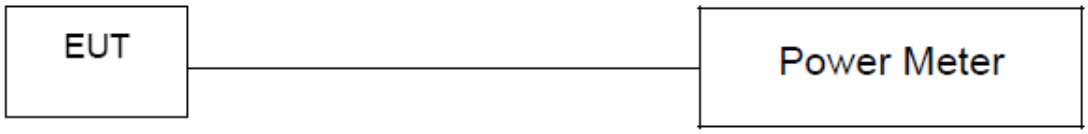
6.1.1 TEST PROCEDURE

a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
b. The maximum peak conducted output power was performed in accordance with method 9.1.2 of FCC KDB 558074 D01 DTS Meas Guidance v03r02.

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 Unless otherwise a special operating condition is specified in the follows during the testing.
Transmit output power was measured while the host equipment supply voltage was varied from 85 % to 115 % of the nominal rated supply voltage. No change in transmit output power was observed.

6.1.5 EUT TEST CONDITIONS

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

6.1.6 TEST RESULTS

Please refer to the Attachment F.

7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 APPLIED PROCEDURES / LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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 measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

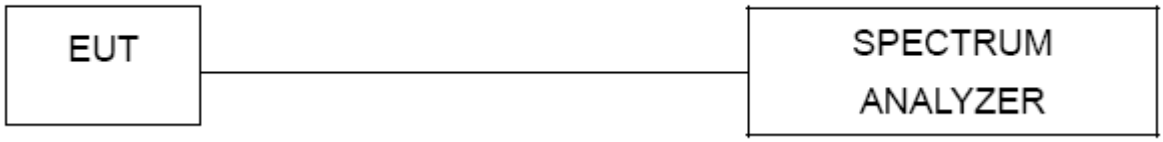
7.1.1 TEST PROCEDURE

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.

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.5 EUT TEST CONDITIONS

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

7.1.6 TEST RESULTS

Please refer to the Attachment G.

8. POWER SPECTRAL DENSITY TEST

8.1 APPLIED PROCEDURES / LIMIT

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

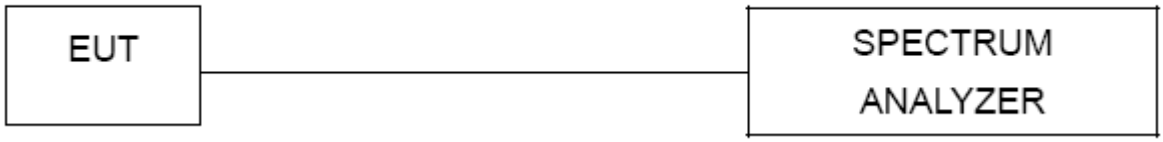
8.1.1 TEST PROCEDURE

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

8.1.2 DEVIATION FROM STANDARD

No deviation.

8.1.3 TEST SETUP



8.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 Unless otherwise a special operating condition is specified in the follows during the testing.

8.1.5 EUT TEST CONDITIONS

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

8.1.6 TEST RESULTS

Please refer to the Attachment H.

9. MEASUREMENT INSTRUMENTS LIST

Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	EMCO	3816/2	00052765	Mar. 29, 2015
2	LISN	R&S	ENV216	101447	Mar. 29, 2015
3	Test Cable	N/A	C_17	N/A	Mar. 14, 2015
4	EMI TEST RECEIVER	R&S	ESCS30	833364/017	Mar. 29, 2015
5	50Ω Terminator	SHX	TF2-3G-A	08122902	Mar. 29, 2015
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 29, 2015
2	Amplifier	HP	8447D	2944A09673	Mar. 29, 2015
3	Receiver	AGILENT	N9038A	MY52130039	Sep. 30, 2015
4	Test Cable	N/A	C-01_CB03	N/A	Jul. 01, 2015
5	Controller	CT	SC100	N/A	N/A
6	Antenna	ETS	3115	00075789	Mar. 29, 2015
7	Amplifier	Agilent	8449B	3008A02274	Mar. 29, 2015
8	Receiver	AGILENT	N9038A	MY52130039	Sep. 30, 2015
9	Test Cable	HUBER+SUHNER	C-48	N/A	Apr. 30, 2015
10	Controller	CT	SC100	N/A	N/A
11	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Feb. 21, 2016
12	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Feb. 21, 2016
13	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Mar. 29, 2015
14	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

6dB Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 02, 2015

Peak Output Power Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	P-series Power meter	Agilent	N1911A	MY45100473	Mar. 29, 2015
2	Wireband Power sensor	Agilent	N1921A	MY51100041	Mar. 29, 2015

Antenna Conducted Spurious Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 02, 2015

Power Spectral Density Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 02, 2015

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

10. EUT TEST PHOTO

Conducted Measurement Photos

Radiated Measurement Photos

9KHz to 30MHz

Radiated Measurement Photos

30MHz to 1000MHz

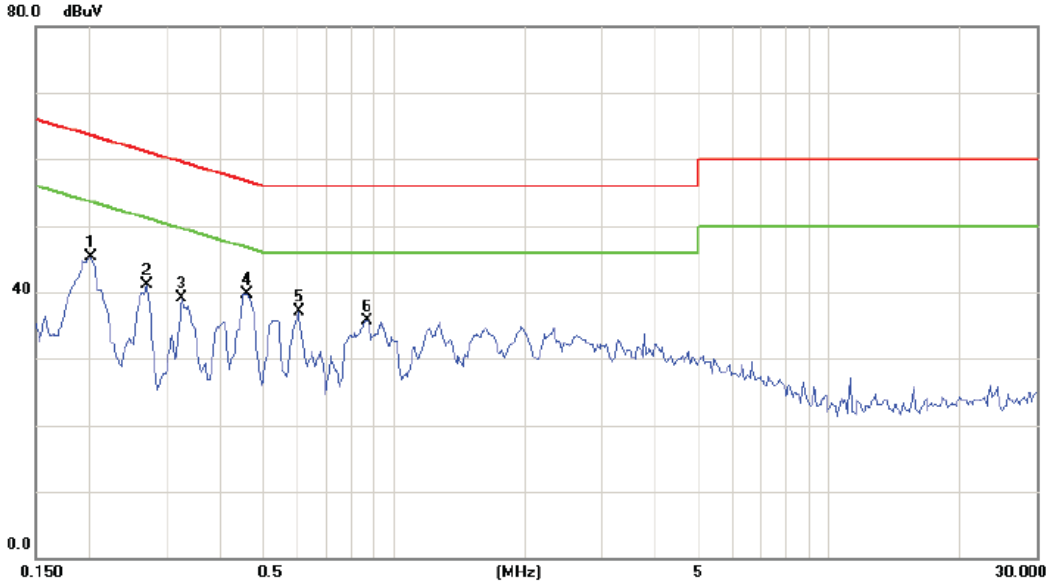
Radiated Measurement Photos

Above 1000MHz

ATTACHMENT A - CONDUCTED EMISSION

Test Mode :	TX MODE

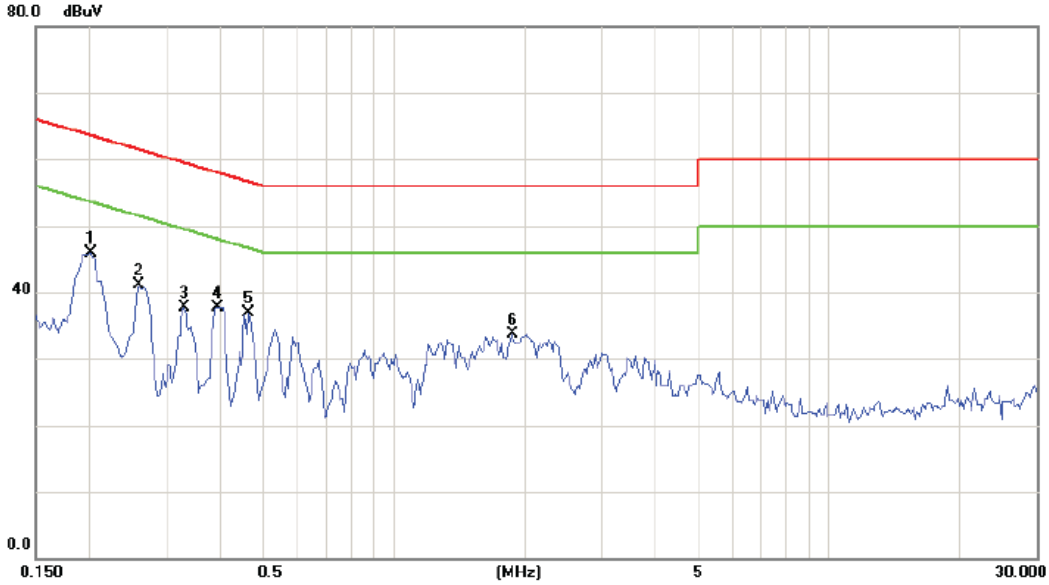
Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2008	35.72	9.50	45.22	63.58	-18.36	peak	
2		0.2711	31.57	9.53	41.10	61.08	-19.98	peak	
3		0.3258	29.50	9.55	39.05	59.56	-20.51	peak	
4	*	0.4586	30.08	9.62	39.70	56.72	-17.02	peak	
5		0.6070	27.49	9.59	37.08	56.00	-18.92	peak	
6		0.8688	26.20	9.59	35.79	56.00	-20.21	peak	

Test Mode :	TX MODE

Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.2008	36.37	9.57	45.94	63.58	-17.64	peak	
2		0.2594	31.46	9.57	41.03	61.45	-20.42	peak	
3		0.3297	28.08	9.57	37.65	59.46	-21.81	peak	
4		0.3922	28.14	9.58	37.72	58.02	-20.30	peak	
5		0.4625	27.35	9.58	36.93	56.65	-19.72	peak	
6		1.8687	24.14	9.63	33.77	56.00	-22.23	peak	

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

Test Mode:	TX Mode 2412MHz

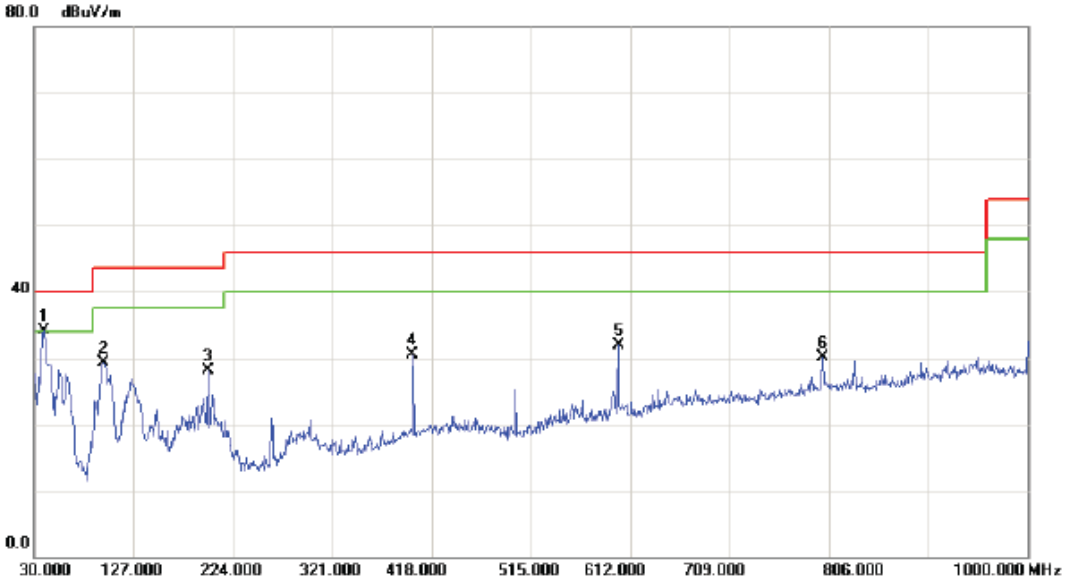
Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Note
0.0195	0°	8.16	24.30	32.46	121.80	-89.34	AVG
0.0195	0°	9.37	24.30	33.67	141.80	-108.13	PEAK
0.0246	0°	6.28	24.01	30.29	119.79	-89.50	AVG
0.0246	0°	7.15	24.01	31.16	139.79	-108.63	PEAK
0.0378	0°	2.13	23.17	25.30	116.05	-90.75	AVG
0.0378	0°	3.41	23.17	26.58	136.05	-109.47	PEAK
0.4190	0°	0.17	19.99	20.16	95.16	-75.00	AVG
0.4190	0°	1.56	19.99	21.55	115.16	-93.61	PEAK
1.0548	0°	20.38	19.59	39.97	67.14	-27.17	QP
2.1937	0°	24.72	19.38	44.10	69.54	-25.44	QP

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Note
0.0241	90°	6.12	24.04	30.16	119.96	-89.80	AVG
0.0241	90°	7.53	24.04	31.57	139.96	-108.39	PEAK
0.0307	90°	3.25	23.62	26.87	117.87	-90.99	AVG
0.0307	90°	4.18	23.62	27.80	137.87	-110.06	PEAK
0.0382	90°	1.32	23.15	24.47	115.96	-91.50	AVG
0.0382	90°	1.96	23.15	25.11	135.96	-110.86	PEAK
0.0436	90°	-1.37	22.81	21.44	114.81	-93.38	AVG
0.0436	90°	0.54	22.81	23.35	134.81	-111.47	PEAK
0.8163	90°	18.65	20.33	38.98	69.37	-30.38	QP
2.5318	90°	25.31	19.18	44.49	69.54	-25.05	QP

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

Test Mode:	TX B MODE CHANNEL 01

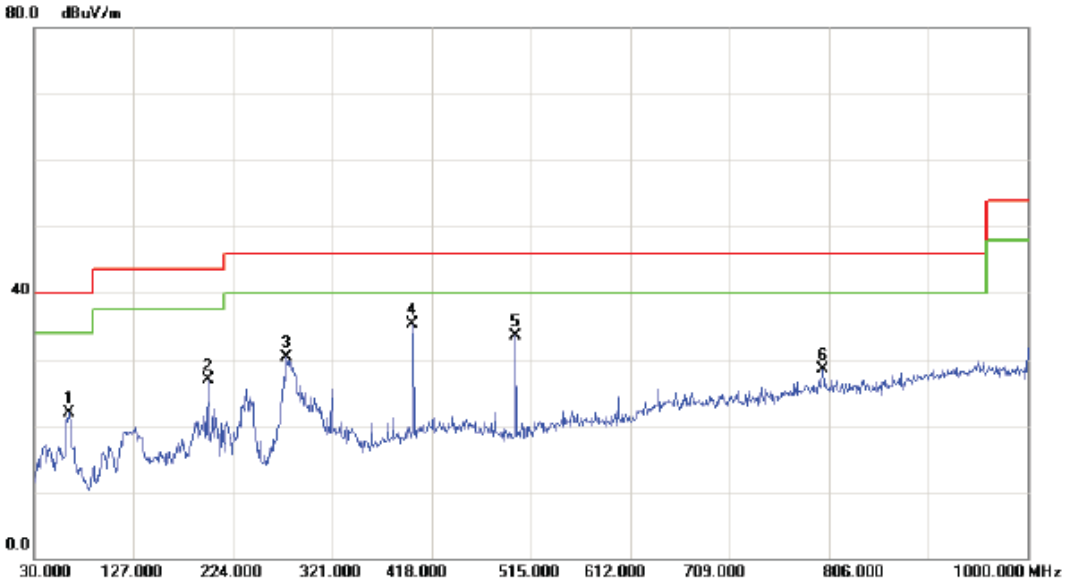
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	39.7000	48.41	-14.27	34.14	40.00	-5.86	peak	
2		97.9000	45.91	-16.68	29.23	43.50	-14.27	peak	
3		199.7500	43.11	-14.97	28.14	43.50	-15.36	peak	
4		399.5700	40.09	-9.55	30.54	46.00	-15.46	peak	
5		600.3600	39.74	-7.89	31.85	46.00	-14.15	peak	
6		800.1800	33.04	-2.89	30.15	46.00	-15.85	peak	

Test Mode:	TX B MODE CHANNEL 01

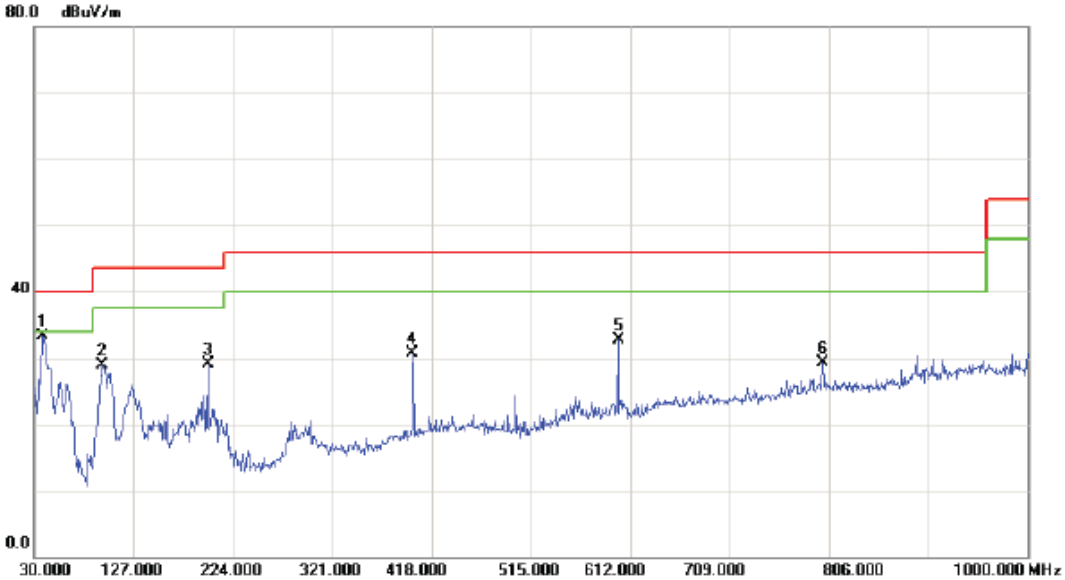
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		63.9500	37.32	-15.47	21.85	40.00	-18.15	peak	
2		199.7500	41.78	-14.97	26.81	43.50	-16.69	peak	
3		276.3800	42.92	-12.63	30.29	46.00	-15.71	peak	
4	*	399.5700	44.84	-9.55	35.29	46.00	-10.71	peak	
5		500.4500	43.99	-10.50	33.49	46.00	-12.51	peak	
6		800.1800	31.38	-2.89	28.49	46.00	-17.51	peak	

Test Mode:	TX B MODE CHANNEL 06

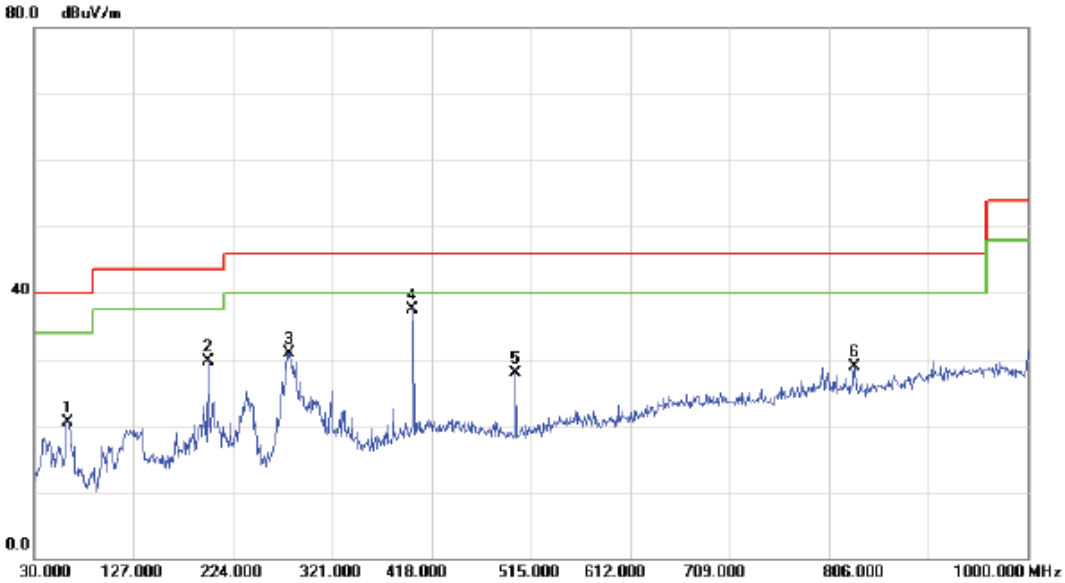
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	38.7300	47.70	-14.32	33.38	40.00	-6.62	peak	
2		96.9300	45.69	-16.84	28.85	43.50	-14.65	peak	
3		199.7500	44.02	-14.97	29.05	43.50	-14.45	peak	
4		399.5700	40.32	-9.55	30.77	46.00	-15.23	peak	
5		600.3600	40.64	-7.89	32.75	46.00	-13.25	peak	
6		800.1800	32.27	-2.89	29.38	46.00	-16.62	peak	

Test Mode:	TX B MODE CHANNEL 06

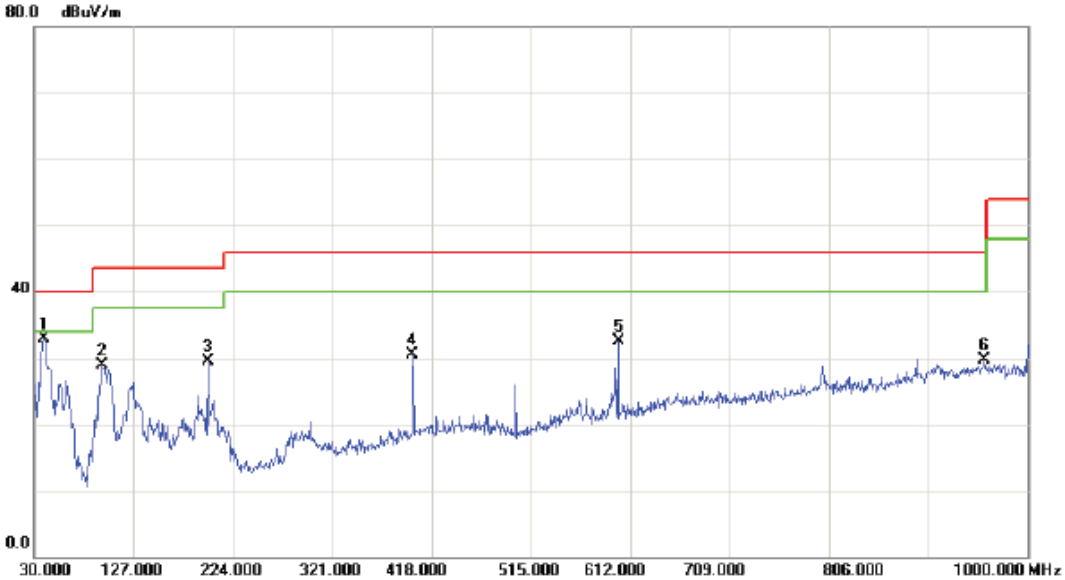
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		62.9800	35.97	-15.39	20.58	40.00	-19.42	peak	
2		199.7500	44.68	-14.97	29.71	43.50	-13.79	peak	
3		278.3200	43.30	-12.45	30.85	46.00	-15.15	peak	
4	*	399.5700	47.14	-9.55	37.59	46.00	-8.41	peak	
5		500.4500	38.47	-10.50	27.97	46.00	-18.03	peak	
6		831.2200	31.93	-3.05	28.88	46.00	-17.12	peak	

Test Mode:	TX B MODE CHANNEL 11

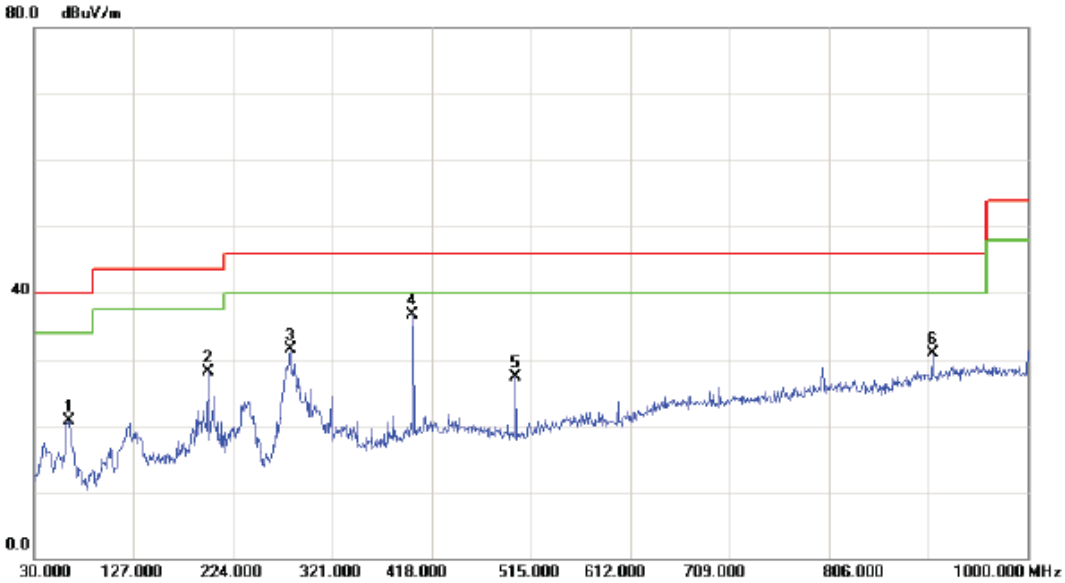
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	39.7000	47.13	-14.27	32.86	40.00	-7.14	peak	
2		96.9300	45.75	-16.84	28.91	43.50	-14.59	peak	
3		199.7500	44.45	-14.97	29.48	43.50	-14.02	peak	
4		399.5700	40.01	-9.55	30.46	46.00	-15.54	peak	
5		600.3600	40.48	-7.89	32.59	46.00	-13.41	peak	
6		958.2900	29.97	-0.25	29.72	46.00	-16.28	peak	

Test Mode:	TX B MODE CHANNEL 11

Horizontal

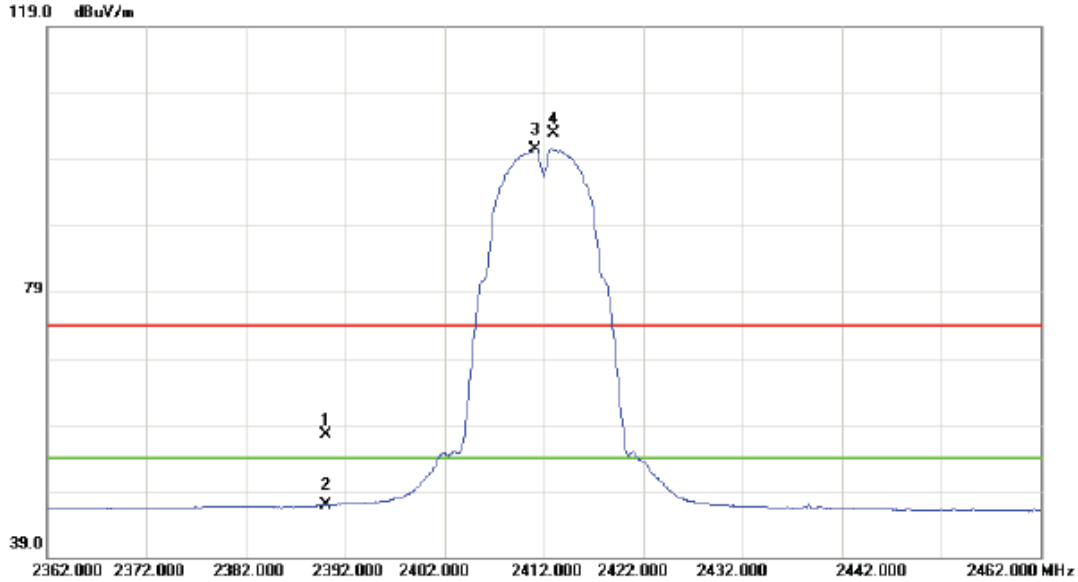


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		63.9500	36.12	-15.47	20.65	40.00	-19.35	peak	
2		199.7500	42.99	-14.97	28.02	43.50	-15.48	peak	
3		280.2600	43.73	-12.27	31.46	46.00	-14.54	peak	
4	*	399.5700	46.35	-9.55	36.80	46.00	-9.20	peak	
5		500.4500	37.85	-10.50	27.35	46.00	-18.65	peak	
6		906.8800	32.31	-1.34	30.97	46.00	-15.03	peak	

ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

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

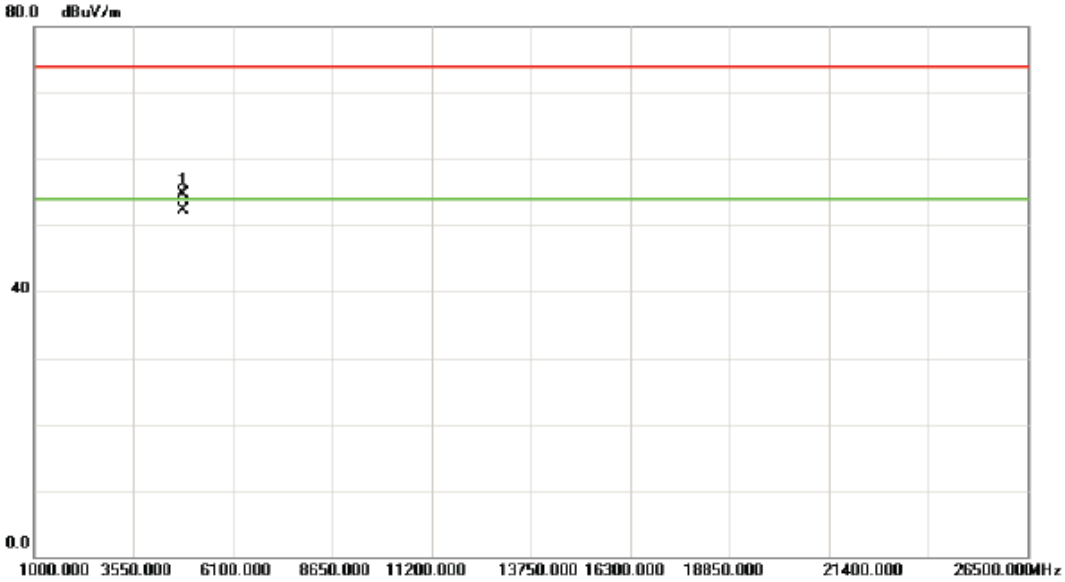
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	25.55	31.88	57.43	74.00	-16.57	peak	
2		2390.000	15.00	31.88	46.88	54.00	-7.12	AVG	
3	*	2411.200	68.65	31.91	100.56	54.00	46.56	AVG	NO limit
4	X	2413.000	71.04	31.91	102.95	74.00	28.95	peak	NO limit

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

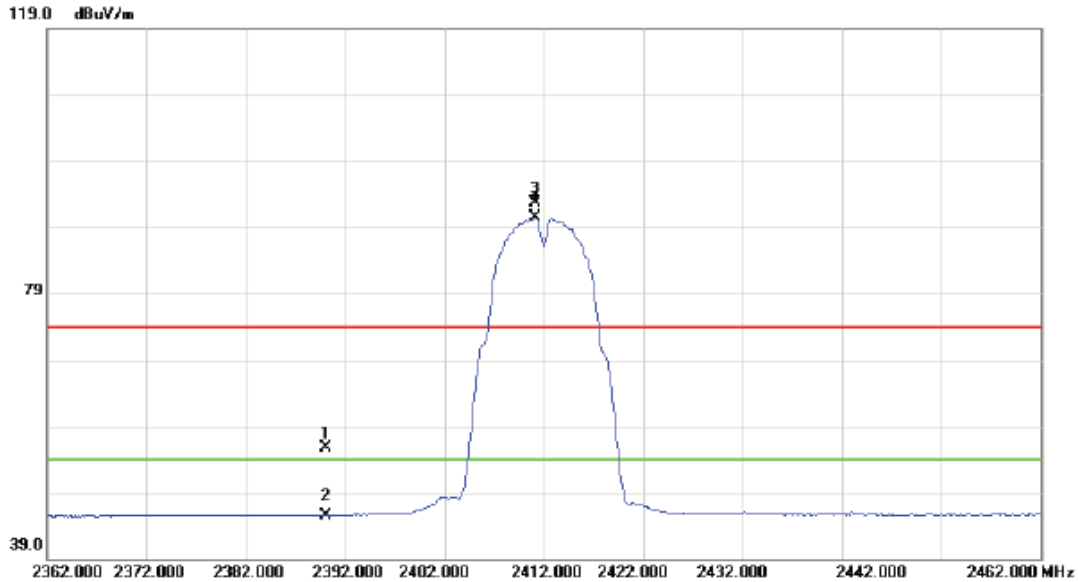
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4823.925	51.01	3.62	54.63	74.00	-19.37	peak	
2	*	4823.970	48.65	3.62	52.27	54.00	-1.73	AVG	

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

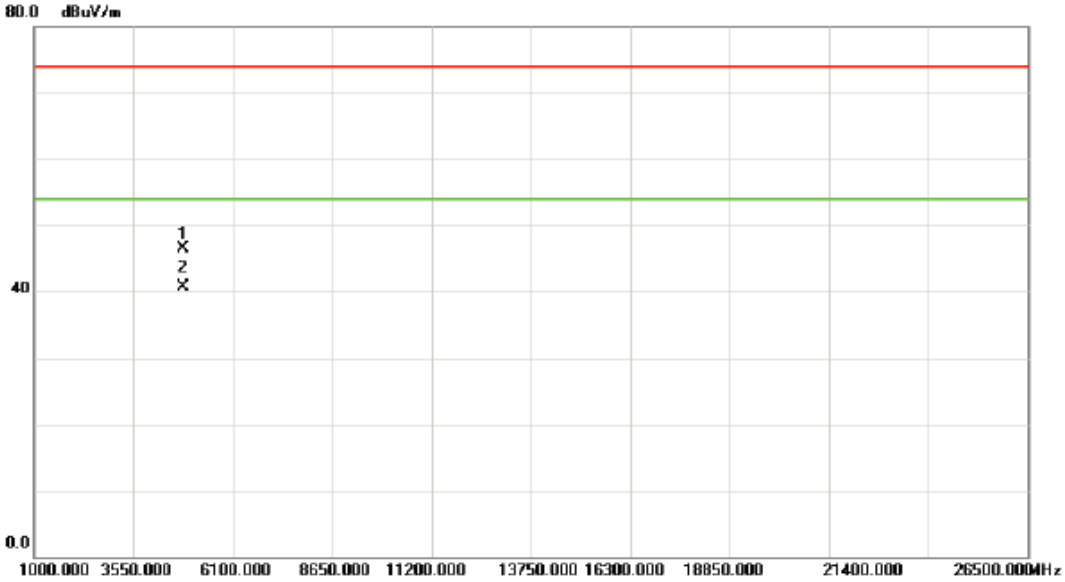
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	23.74	31.88	55.62	74.00	-18.38	peak	
2		2390.000	13.71	31.88	45.59	54.00	-8.41	AVG	
3	X	2411.100	60.88	31.91	92.79	74.00	18.79	peak	NO limit
4	*	2411.200	58.62	31.91	90.53	54.00	36.53	AVG	NO limit

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

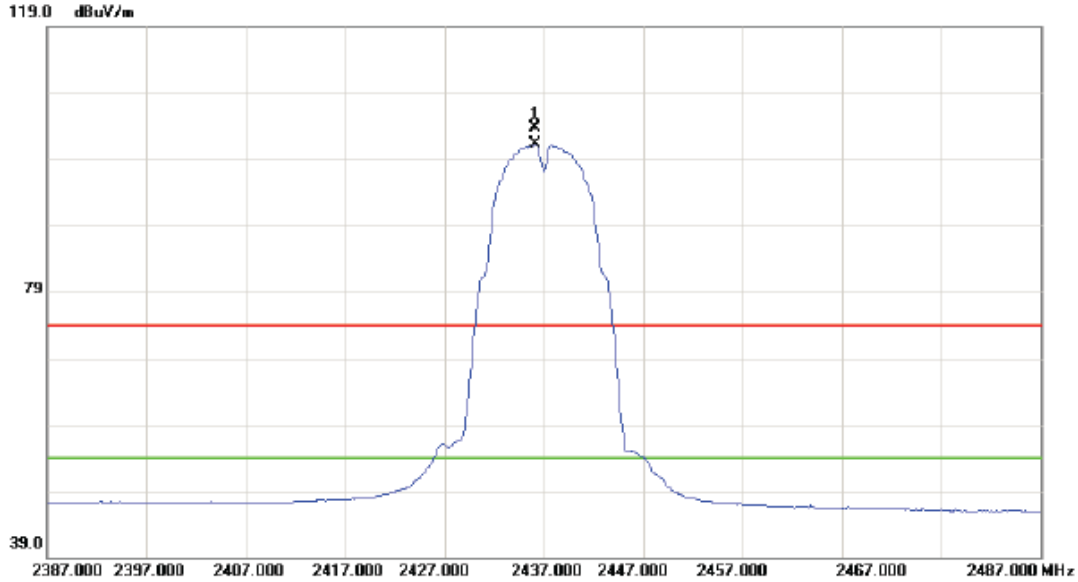
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4823.750	42.81	3.62	46.43	74.00	-27.57	peak	
2	*	4824.010	37.15	3.62	40.77	54.00	-13.23	AVG	

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

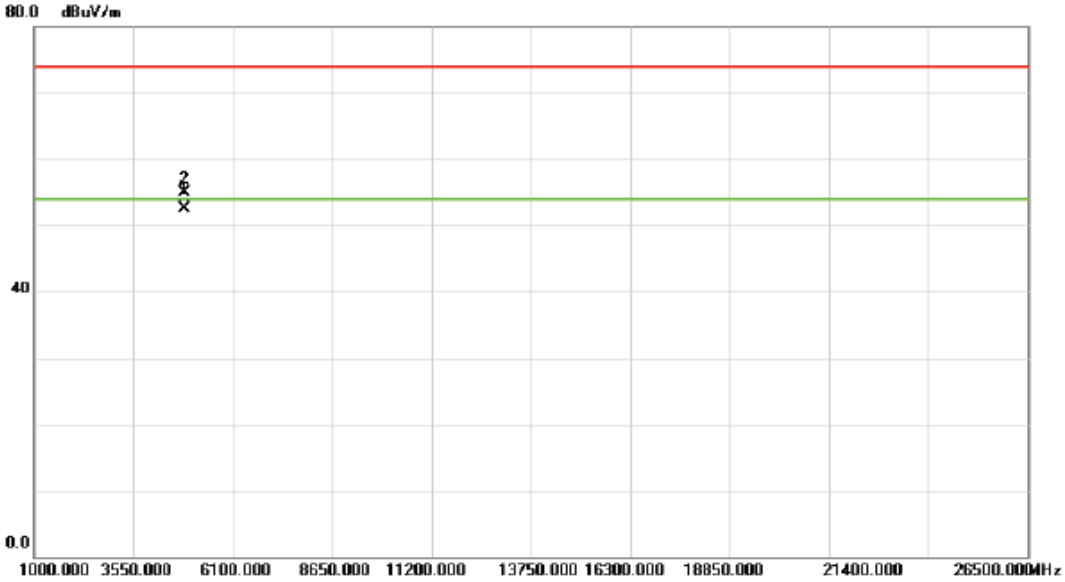
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2436.100	71.70	31.94	103.64	74.00	29.64	peak	NO limit
2	*	2436.200	69.41	31.94	101.35	54.00	47.35	AVG	NO limit

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

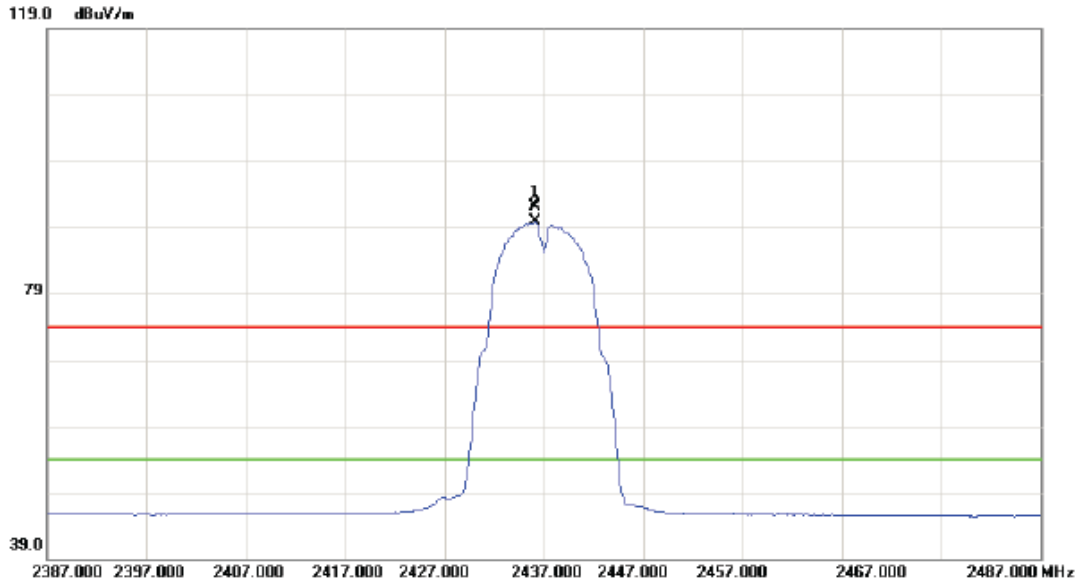
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4873.970	48.83	3.72	52.55	54.00	-1.45	AVG	
2		4873.985	51.24	3.72	54.96	74.00	-19.04	peak	

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

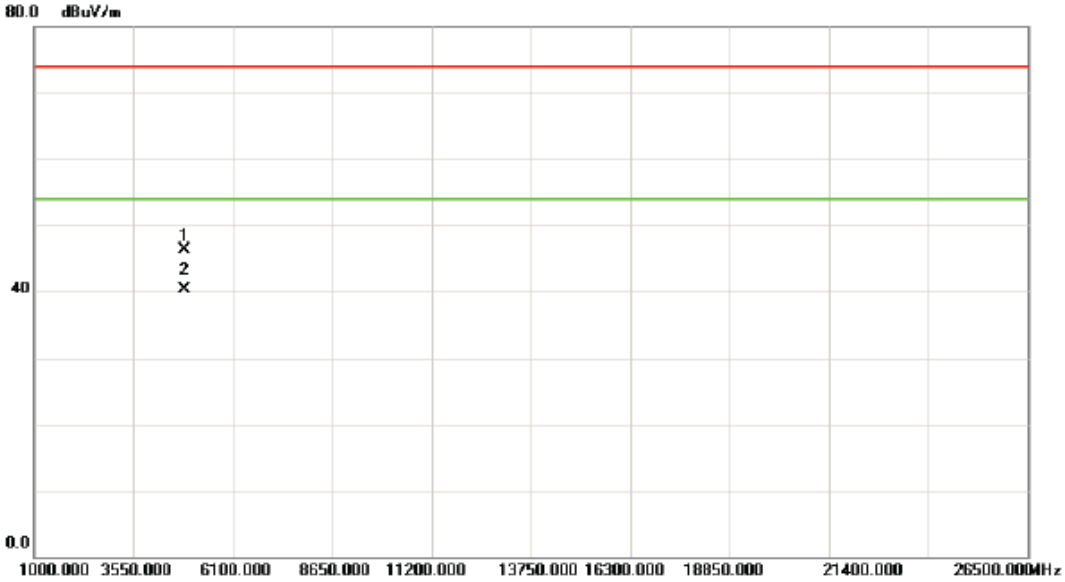
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2436.200	60.16	31.94	92.10	74.00	18.10	peak	NO limit
2	*	2436.200	57.87	31.94	89.81	54.00	35.81	AVG	NO limit

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

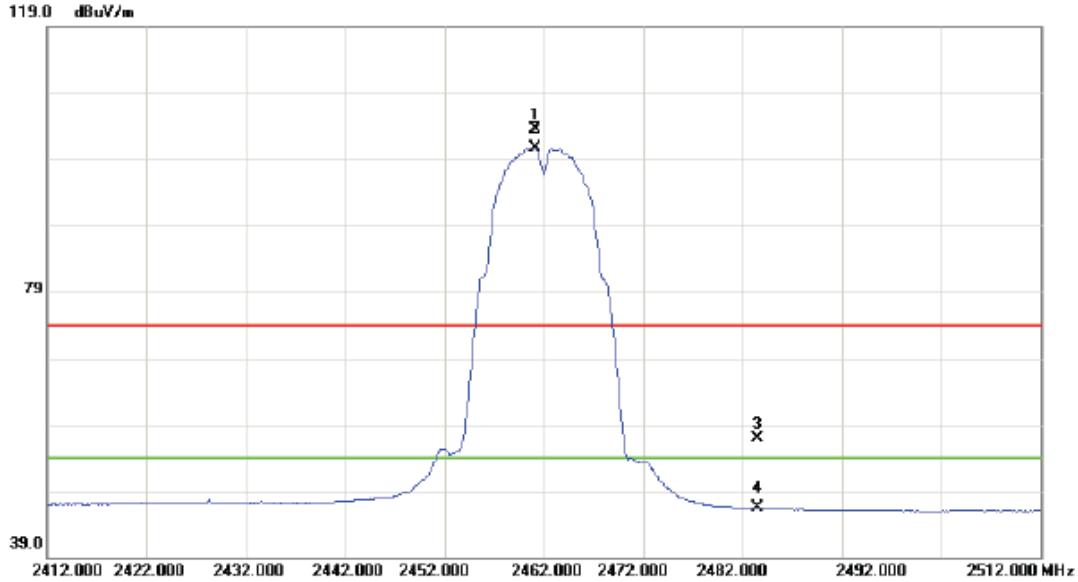
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	42.54	3.72	46.26	74.00	-27.74	peak	
2	*	4874.000	36.51	3.72	40.23	54.00	-13.77	AVG	

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

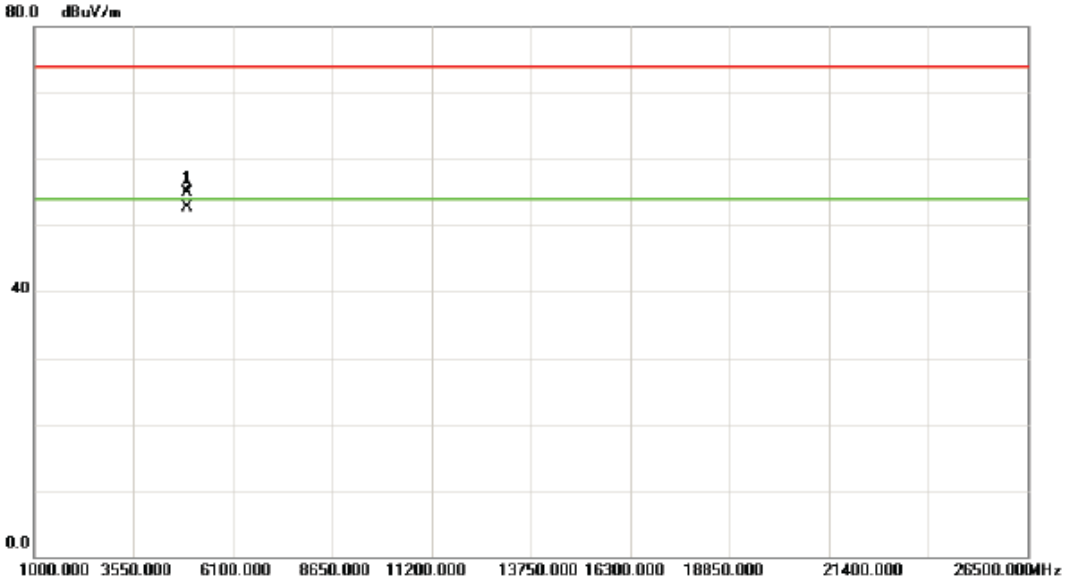
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2461.100	71.60	31.98	103.58	74.00	29.58	peak	NO limit
2	*	2461.200	68.79	31.98	100.77	54.00	46.77	AVG	NO limit
3		2483.500	24.82	32.01	56.83	74.00	-17.17	peak	
4		2483.500	14.48	32.01	46.49	54.00	-7.51	AVG	

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

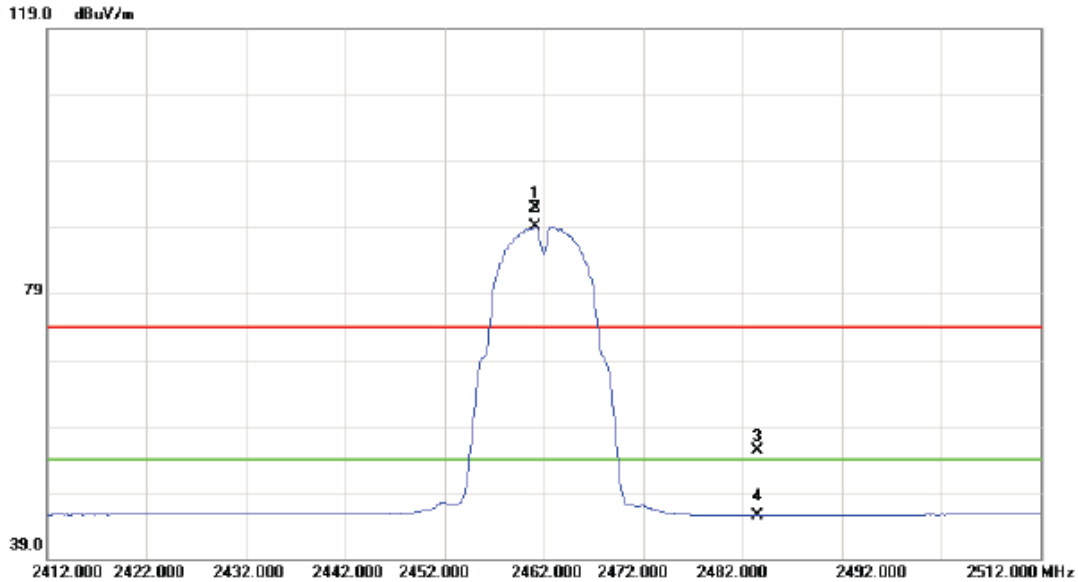
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4924.005	51.19	3.80	54.99	74.00	-19.01	peak	
2	*	4924.035	48.89	3.80	52.69	54.00	-1.31	AVG	

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

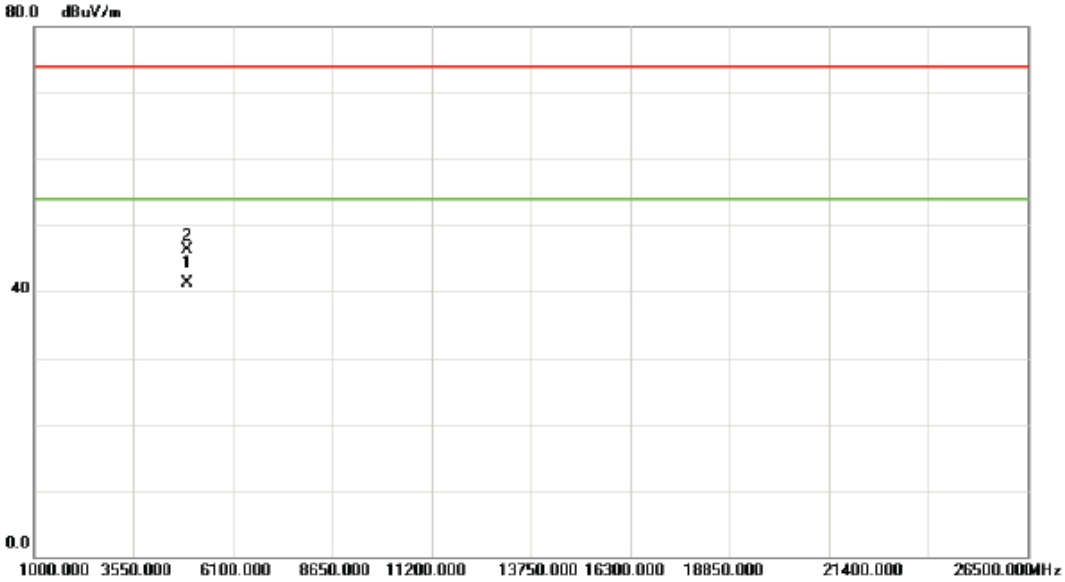
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2461.100	59.85	31.98	91.83	74.00	17.83	peak	NO limit
2	*	2461.200	57.15	31.98	89.13	54.00	35.13	AVG	NO limit
3		2483.500	23.37	32.01	55.38	74.00	-18.62	peak	
4		2483.500	13.50	32.01	45.51	54.00	-8.49	AVG	

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

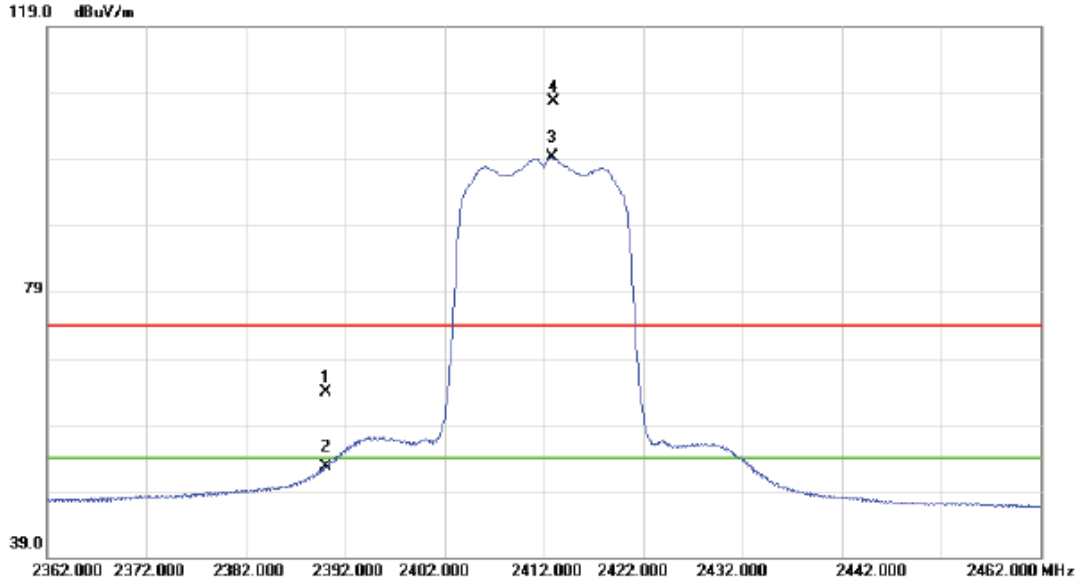
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4923.980	37.55	3.80	41.35	54.00	-12.65	AVG	
2		4924.035	42.60	3.80	46.40	74.00	-27.60	peak	

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

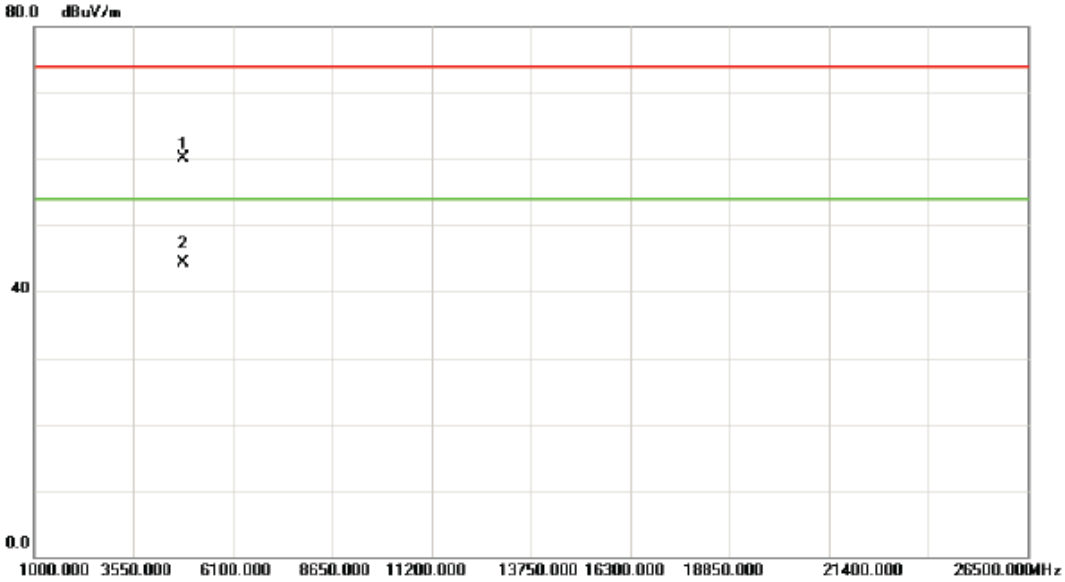
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	32.10	31.88	63.98	74.00	-10.02	peak	
2		2390.000	20.84	31.88	52.72	54.00	-1.28	AVG	
3	*	2412.800	67.35	31.91	99.26	54.00	45.26	AVG	NO limit
4	X	2413.000	75.71	31.91	107.62	74.00	33.62	peak	NO limit

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

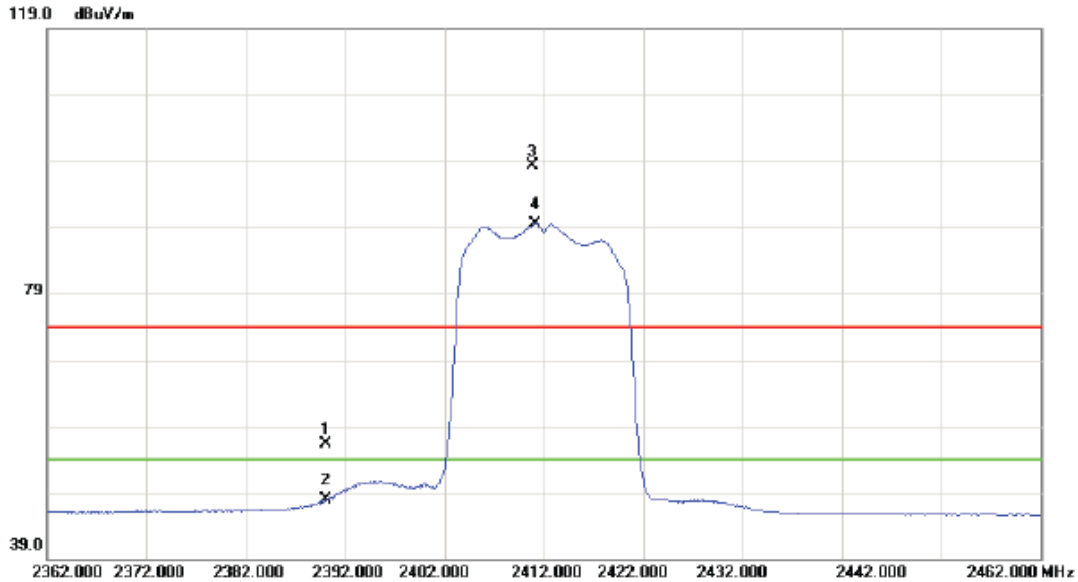
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4823.945	56.43	3.62	60.05	74.00	-13.95	peak	
2	*	4823.965	40.65	3.62	44.27	54.00	-9.73	AVG	

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

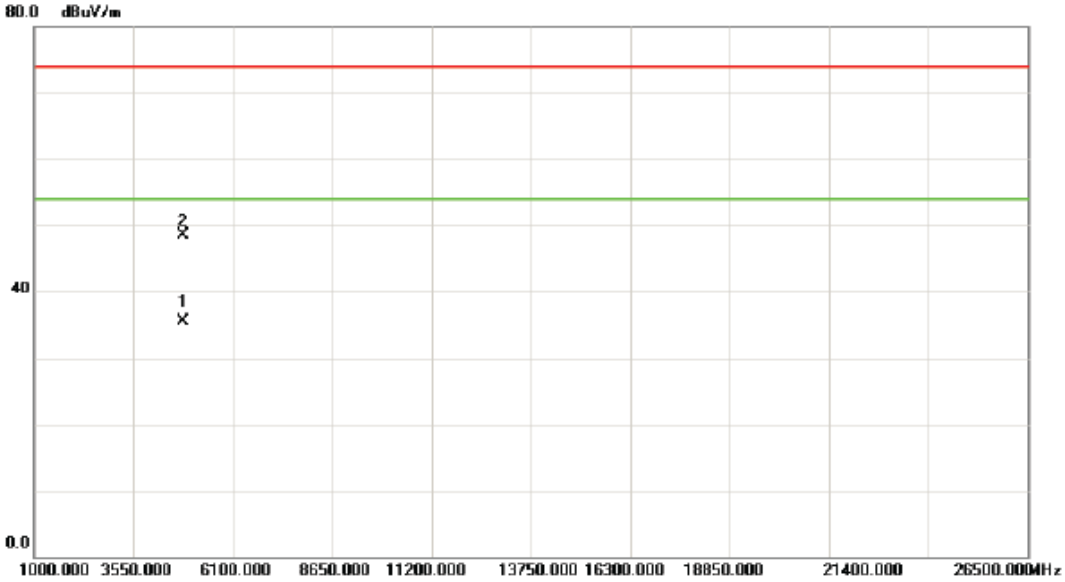
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	24.32	31.88	56.20	74.00	-17.80	peak	
2		2390.000	16.02	31.88	47.90	54.00	-6.10	AVG	
3	X	2410.800	66.43	31.91	98.34	74.00	24.34	peak	NO limit
4	*	2411.200	57.62	31.91	89.53	54.00	35.53	AVG	NO limit

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

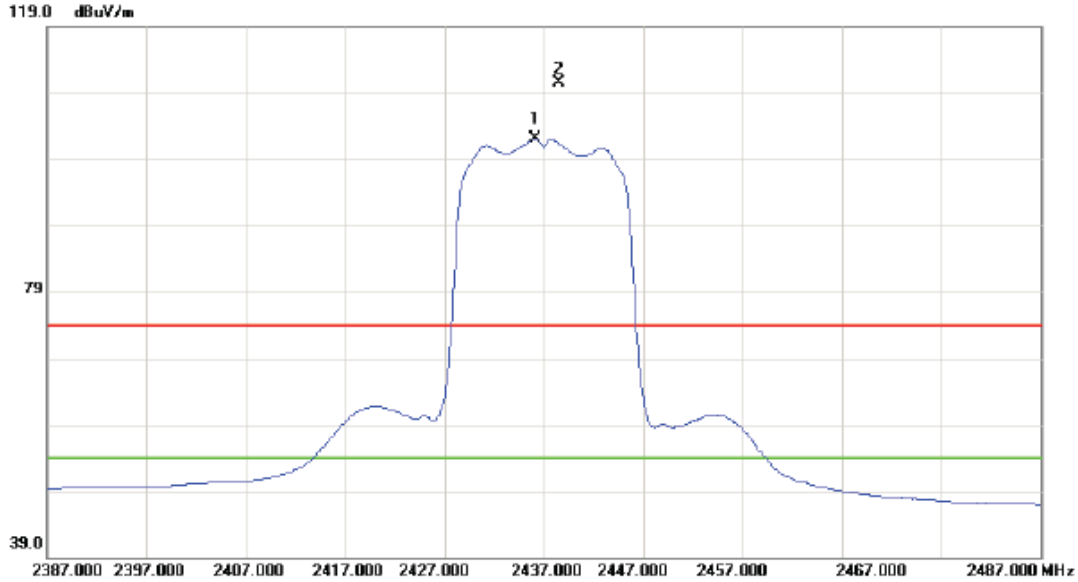
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4823.985	31.81	3.62	35.43	54.00	-18.57	AVG	
2		4824.080	44.80	3.62	48.42	74.00	-25.58	peak	

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

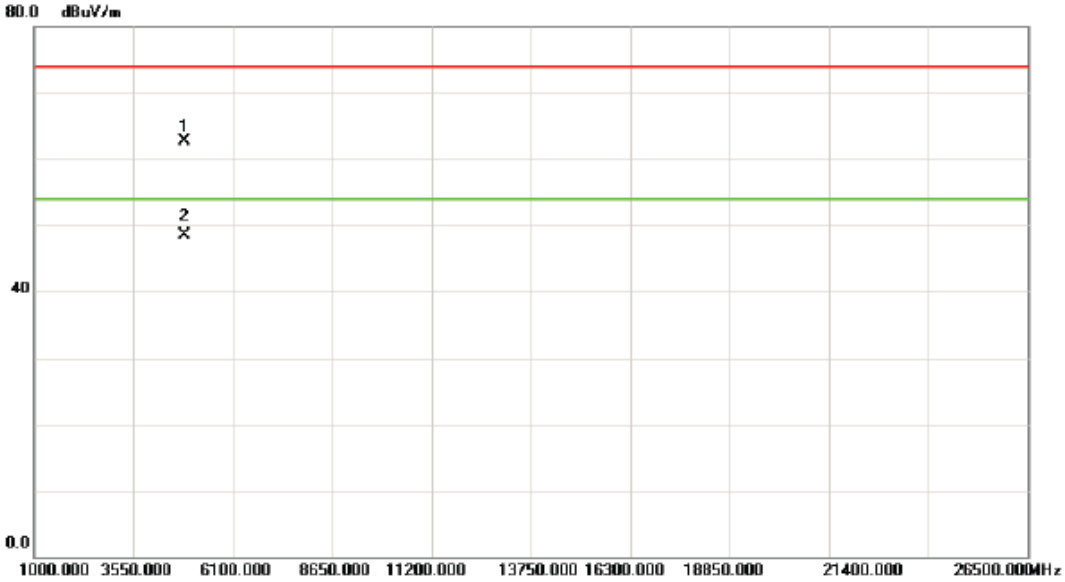
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2436.200	70.25	31.94	102.19	54.00	48.19	AVG	NO limit
2	X	2438.500	78.59	31.94	110.53	74.00	36.53	peak	NO limit

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

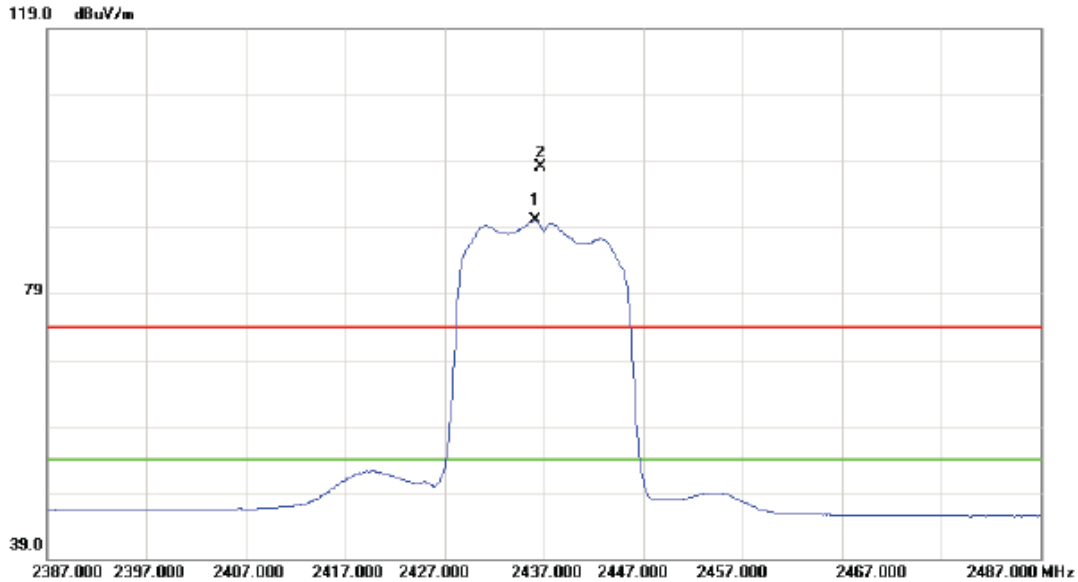
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4873.675	59.01	3.72	62.73	74.00	-11.27	peak	
2	*	4873.935	44.82	3.72	48.54	54.00	-5.46	AVG	

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

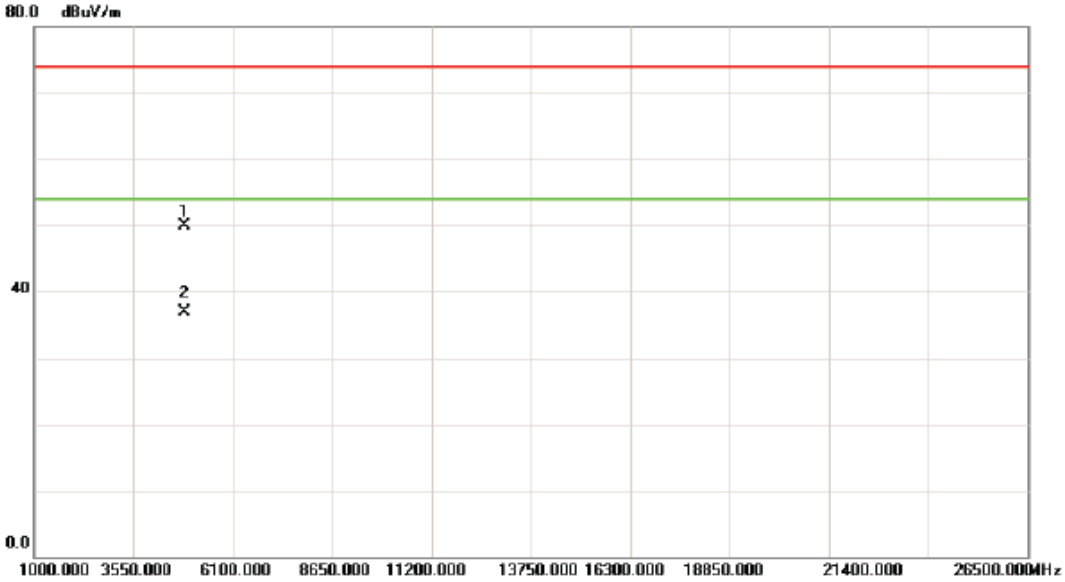
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2436.200	58.11	31.94	90.05	54.00	36.05	AVG	NO limit
2	X	2436.700	66.13	31.94	98.07	74.00	24.07	peak	NO limit

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

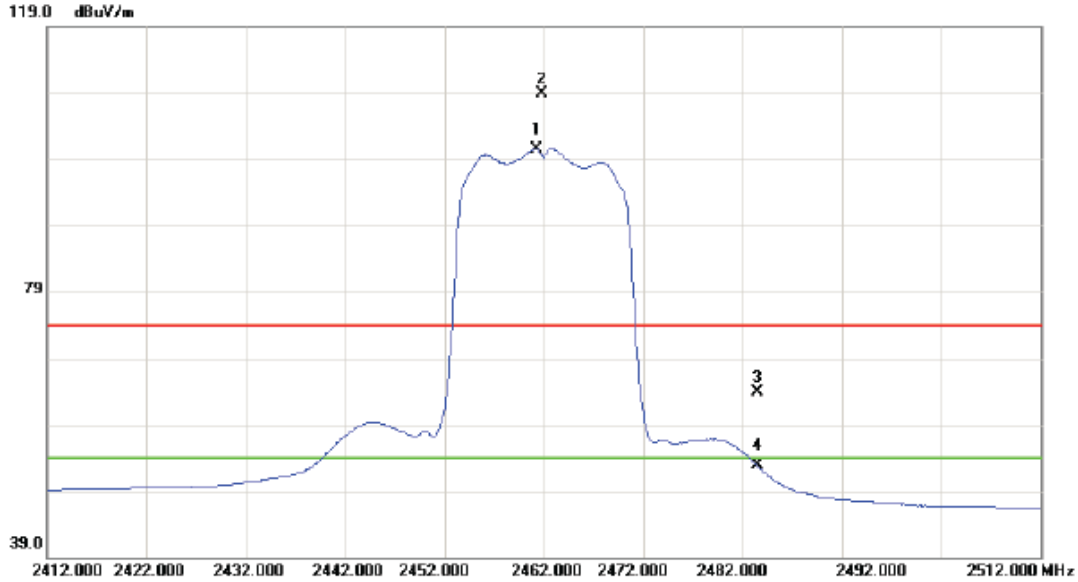
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4873.950	46.22	3.72	49.94	74.00	-24.06	peak	
2	*	4874.145	33.20	3.72	36.92	54.00	-17.08	AVG	

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

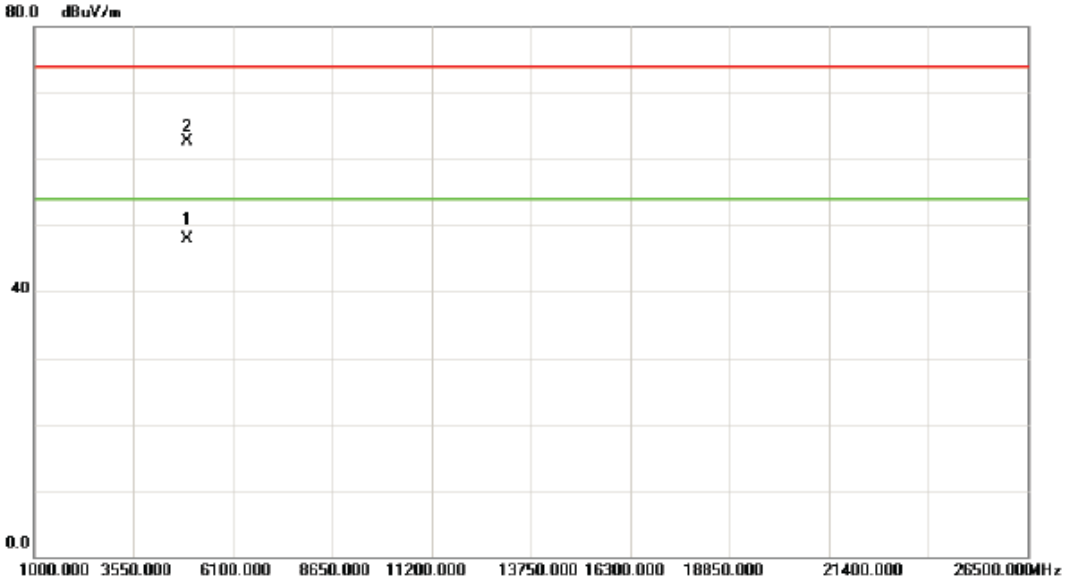
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2461.300	68.59	31.98	100.57	54.00	46.57	AVG	NO limit
2	X	2461.800	76.86	31.98	108.84	74.00	34.84	peak	NO limit
3		2483.500	31.93	32.01	63.94	74.00	-10.06	peak	
4		2483.500	20.83	32.01	52.84	54.00	-1.16	AVG	

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

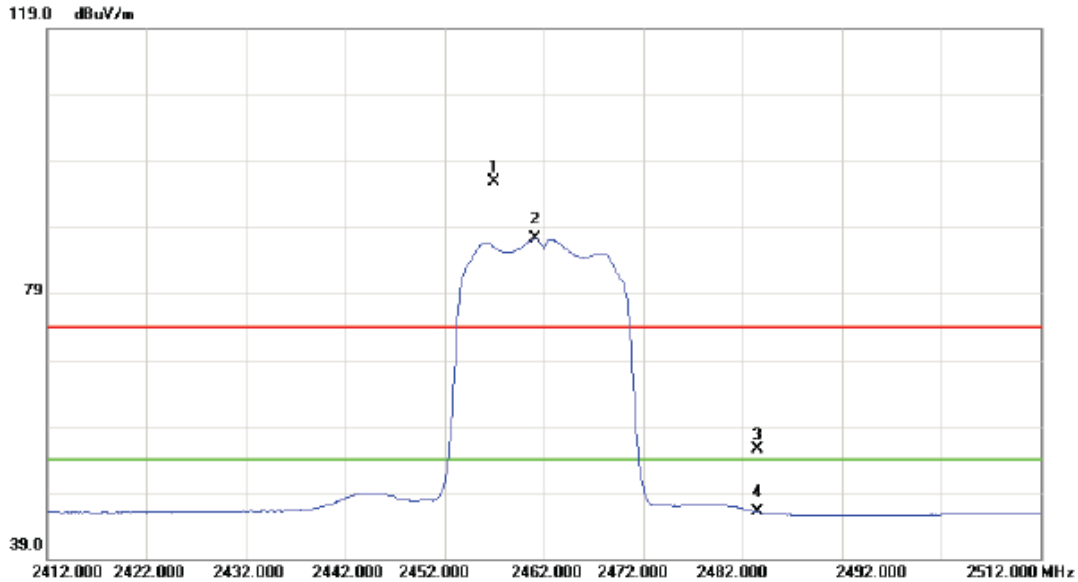
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4923.940	44.10	3.80	47.90	54.00	-6.10	AVG	
2		4924.105	58.87	3.80	62.67	74.00	-11.33	peak	

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

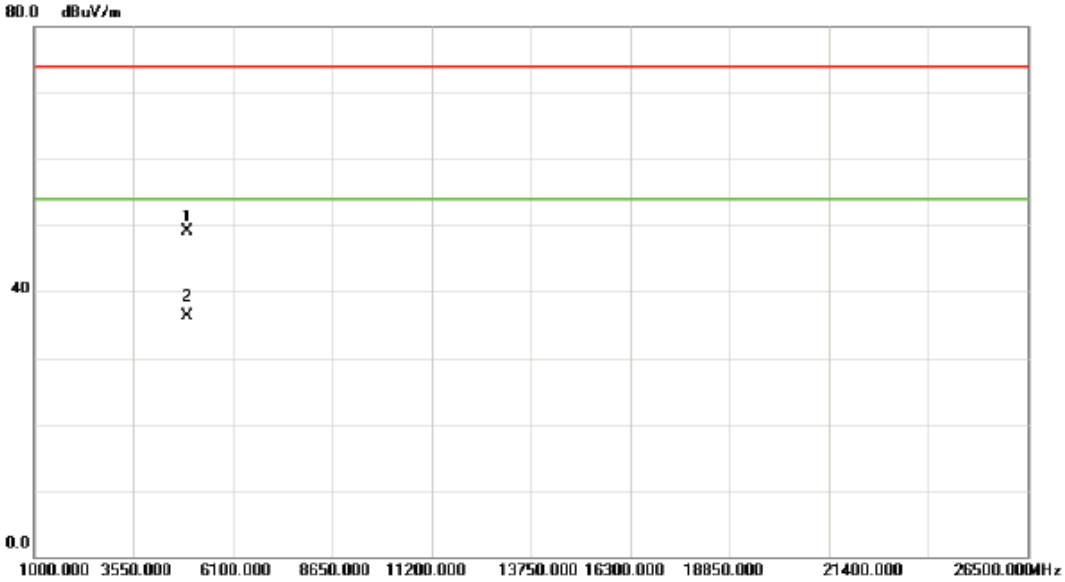
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2457.000	63.87	31.98	95.85	74.00	21.85	peak	NO limit
2	*	2461.200	55.32	31.98	87.30	54.00	33.30	AVG	NO limit
3		2483.500	23.47	32.01	55.48	74.00	-18.52	peak	
4		2483.500	14.06	32.01	46.07	54.00	-7.93	AVG	

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

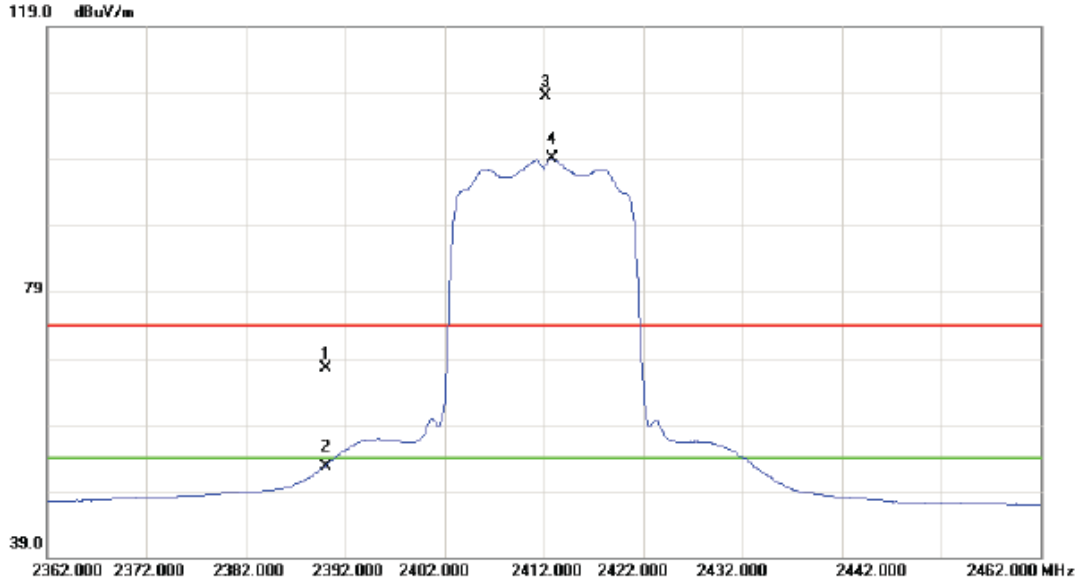
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4923.995	45.37	3.80	49.17	74.00	-24.83	peak	
2	*	4924.015	32.44	3.80	36.24	54.00	-17.76	AVG	

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

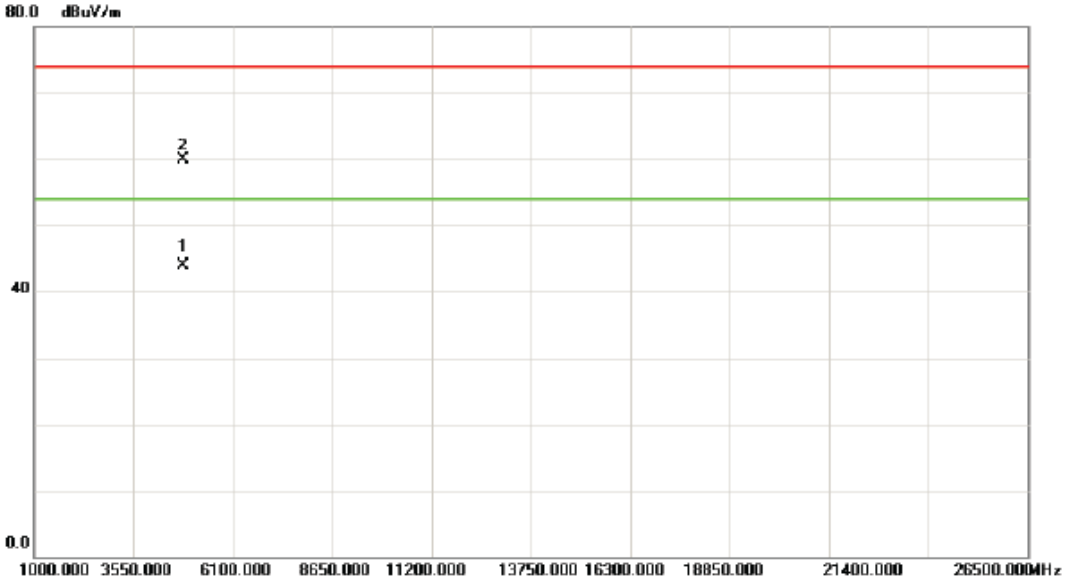
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	35.54	31.88	67.42	74.00	-6.58	peak	
2		2390.000	20.91	31.88	52.79	54.00	-1.21	AVG	
3	X	2412.200	76.58	31.91	108.49	74.00	34.49	peak	NO limit
4	*	2412.800	67.11	31.91	99.02	54.00	45.02	AVG	NO limit

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

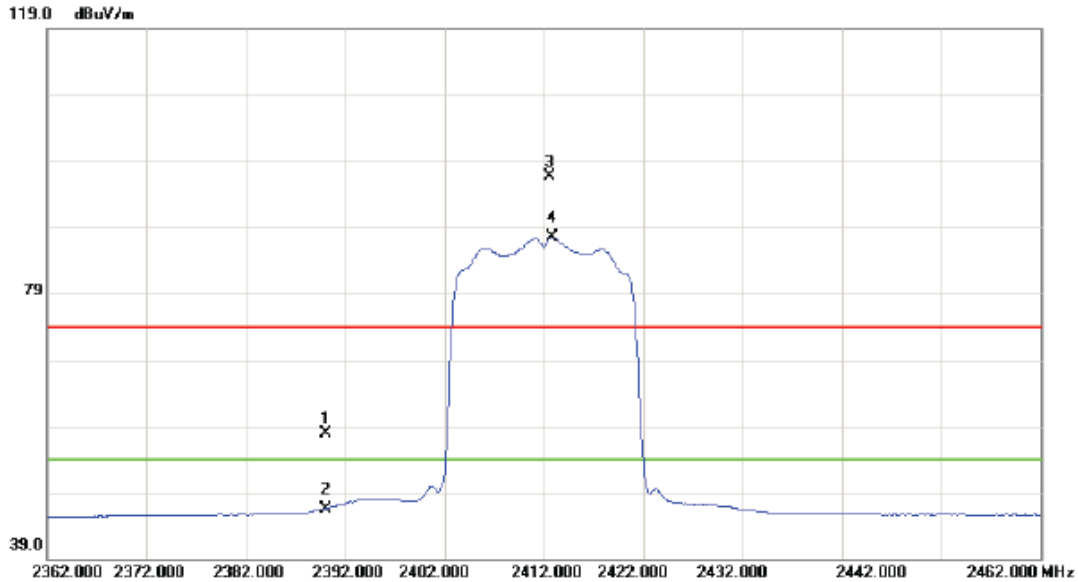
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4823.920	40.33	3.62	43.95	54.00	-10.05	AVG	
2		4824.055	56.31	3.62	59.93	74.00	-14.07	peak	

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

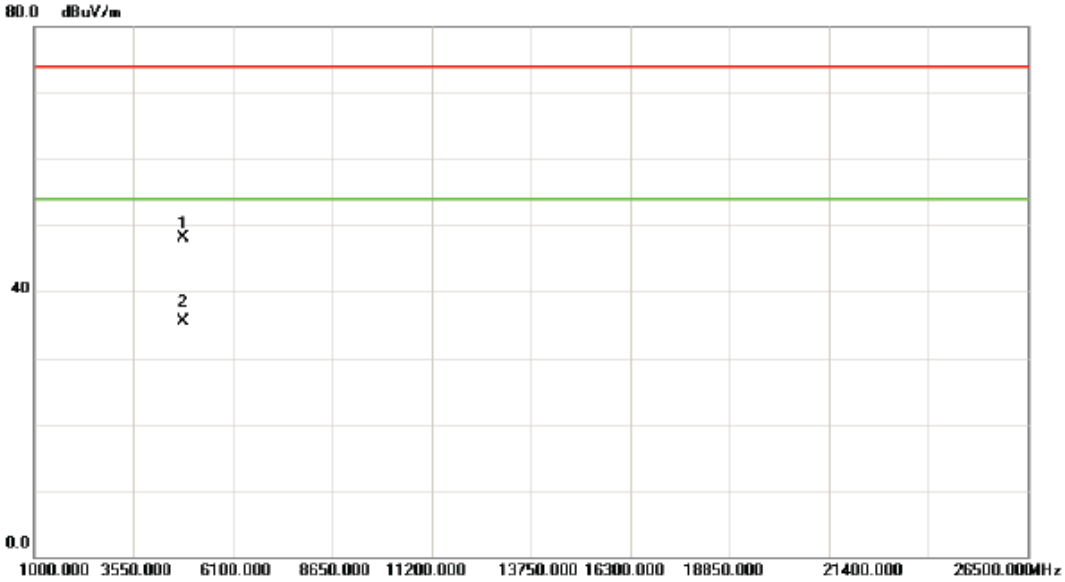
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	25.97	31.88	57.85	74.00	-16.15	peak	
2		2390.000	14.64	31.88	46.52	54.00	-7.48	AVG	
3	X	2412.600	64.72	31.91	96.63	74.00	22.63	peak	NO limit
4	*	2412.800	55.56	31.91	87.47	54.00	33.47	AVG	NO limit

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

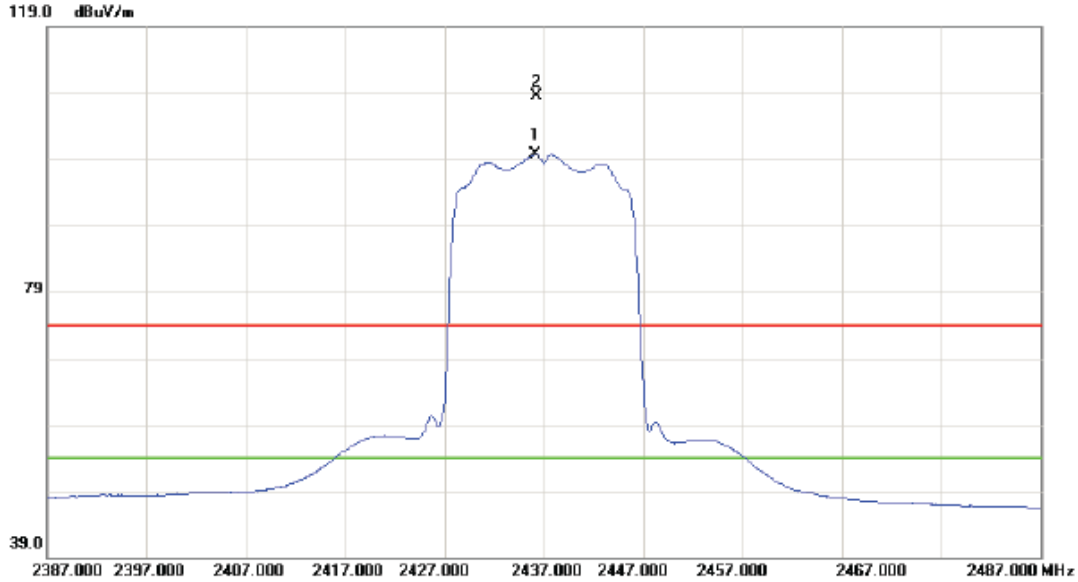
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4823.995	44.58	3.62	48.20	74.00	-25.80	peak	
2	*	4823.995	31.80	3.62	35.42	54.00	-18.58	AVG	

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

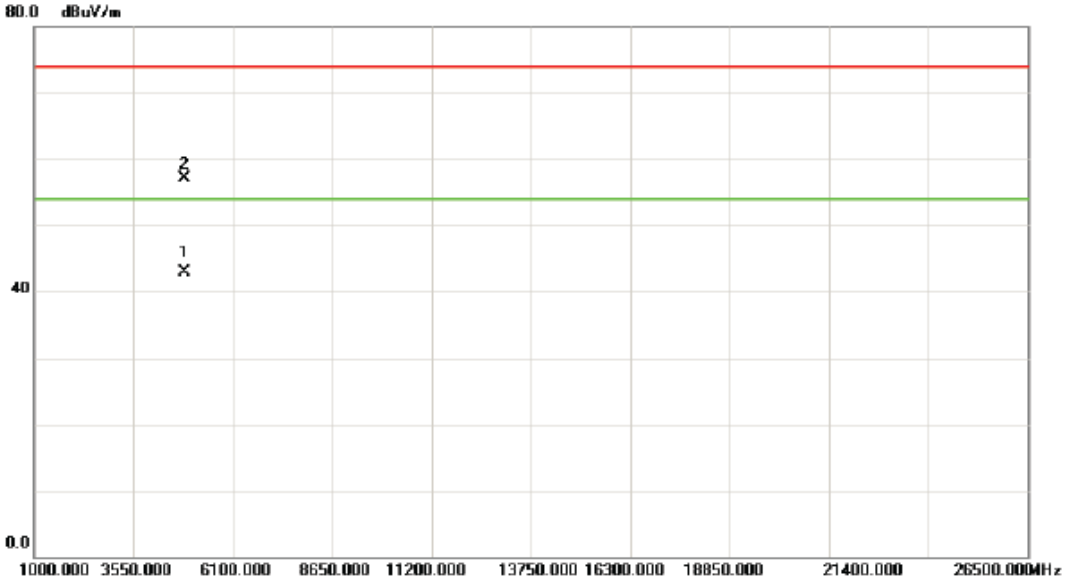
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2436.200	67.73	31.94	99.67	54.00	45.67	AVG	NO limit
2	X	2436.300	76.62	31.94	108.56	74.00	34.56	peak	NO limit

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

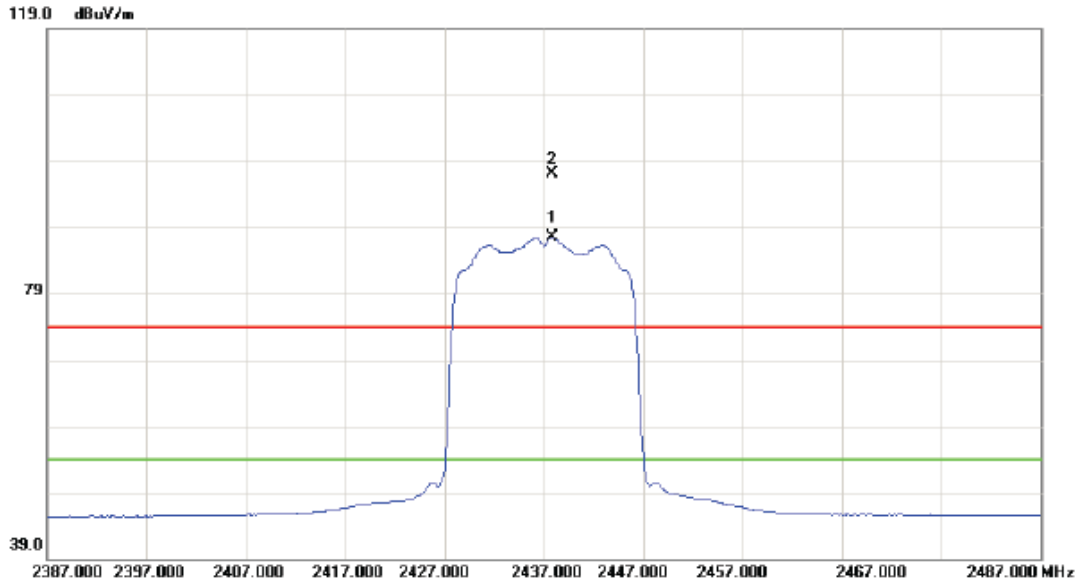
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4873.905	39.16	3.72	42.88	54.00	-11.12	AVG	
2		4873.985	53.45	3.72	57.17	74.00	-16.83	peak	

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

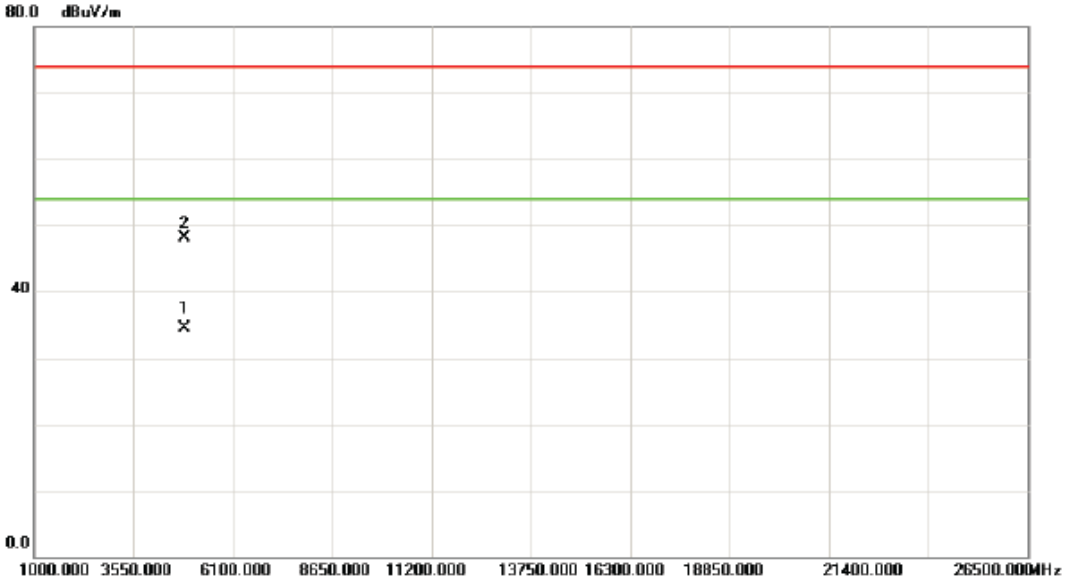
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2437.800	55.49	31.94	87.43	54.00	33.43	AVG	NO limit
2	X	2437.900	65.25	31.94	97.19	74.00	23.19	peak	NO limit

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

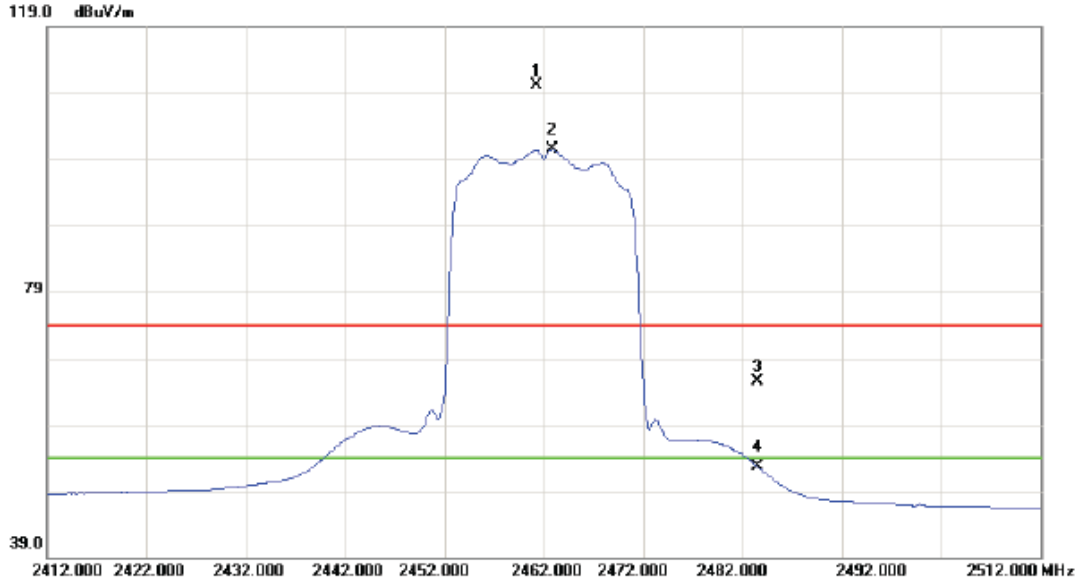
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4873.970	30.73	3.72	34.45	54.00	-19.55	AVG	
2		4874.015	44.33	3.72	48.05	74.00	-25.95	peak	

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

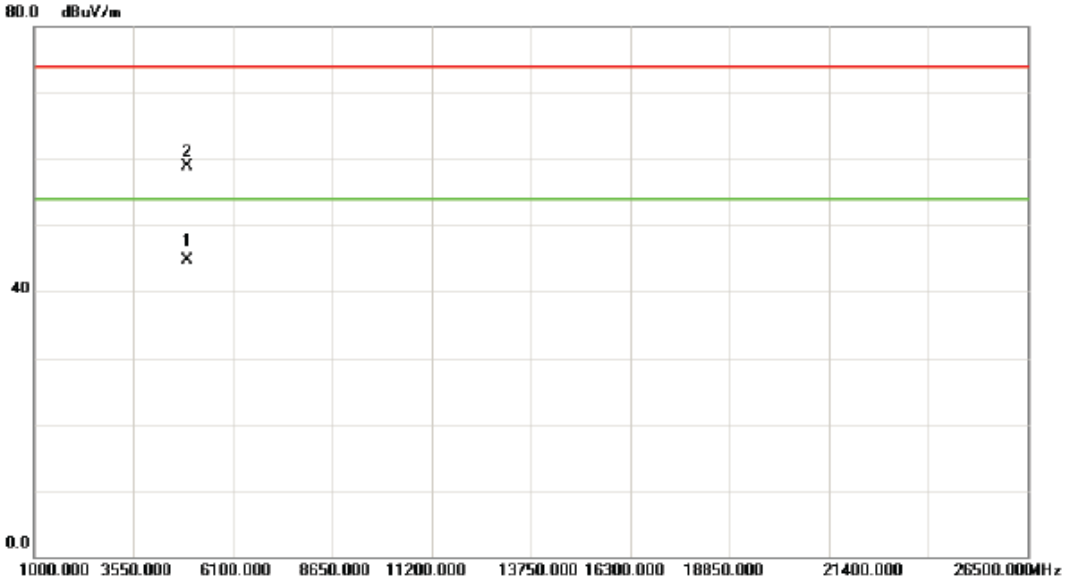
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2461.300	78.21	31.98	110.19	74.00	36.19	peak	NO limit
2	*	2462.800	68.50	31.98	100.48	54.00	46.48	AVG	NO limit
3		2483.500	33.42	32.01	65.43	74.00	-8.57	peak	
4		2483.500	20.74	32.01	52.75	54.00	-1.25	AVG	

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

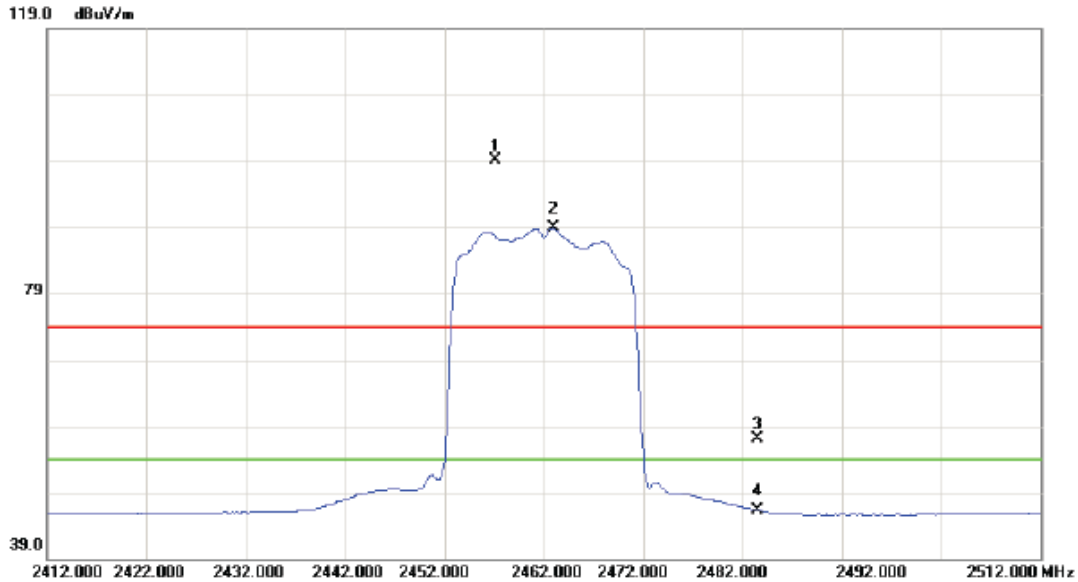
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4923.985	40.89	3.80	44.69	54.00	-9.31	AVG	
2		4924.010	55.07	3.80	58.87	74.00	-15.13	peak	

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

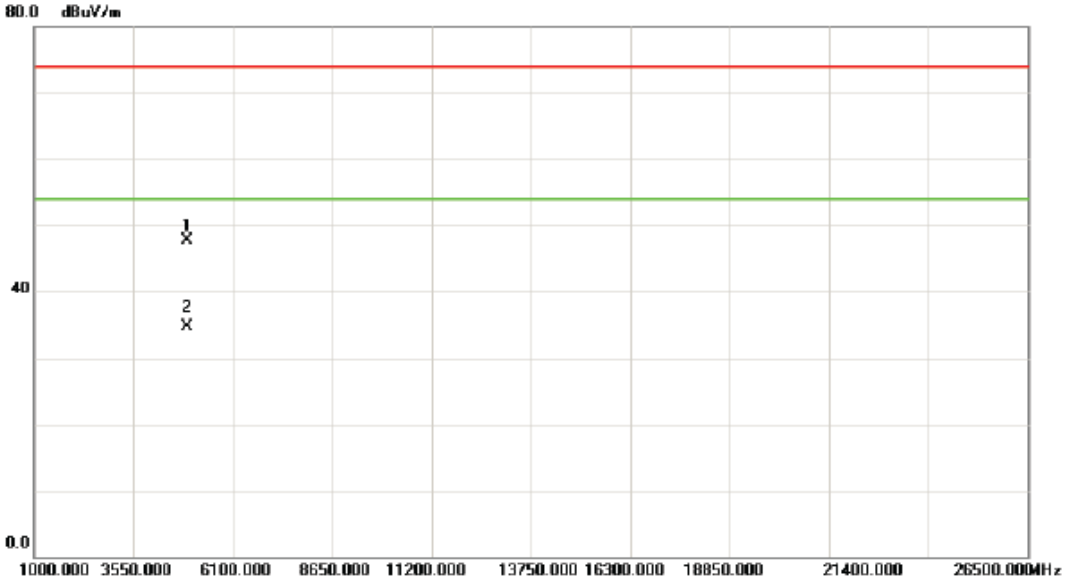
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2457.100	67.04	31.98	99.02	74.00	25.02	peak	NO limit
2	*	2463.000	56.85	31.98	88.83	54.00	34.83	AVG	NO limit
3		2483.500	25.17	32.01	57.18	74.00	-16.82	peak	
4		2483.500	14.34	32.01	46.35	54.00	-7.65	AVG	

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

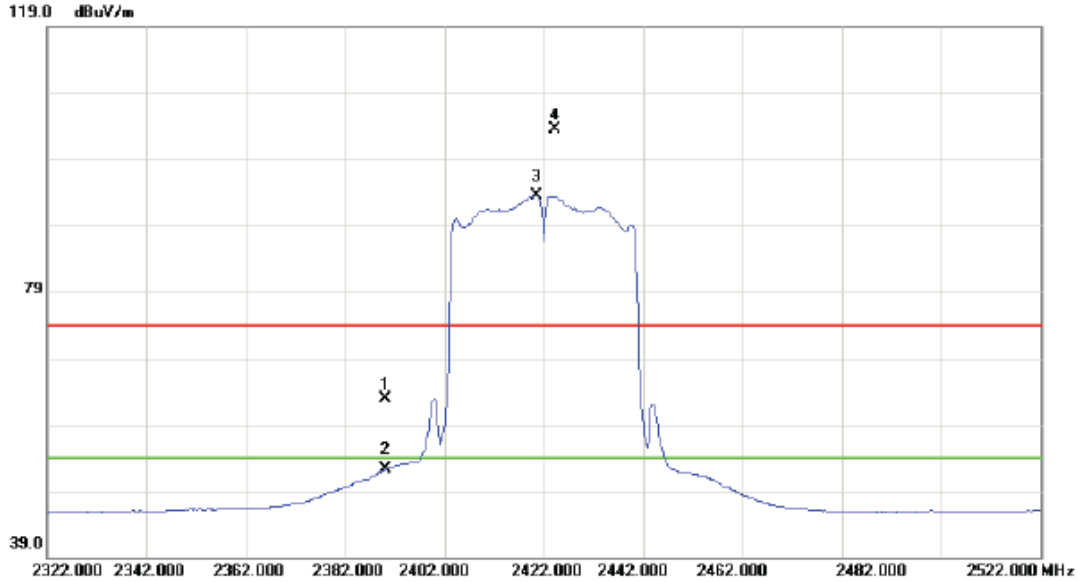
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4923.950	43.89	3.80	47.69	74.00	-26.31	peak	
2	*	4924.065	30.82	3.80	34.62	54.00	-19.38	AVG	

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

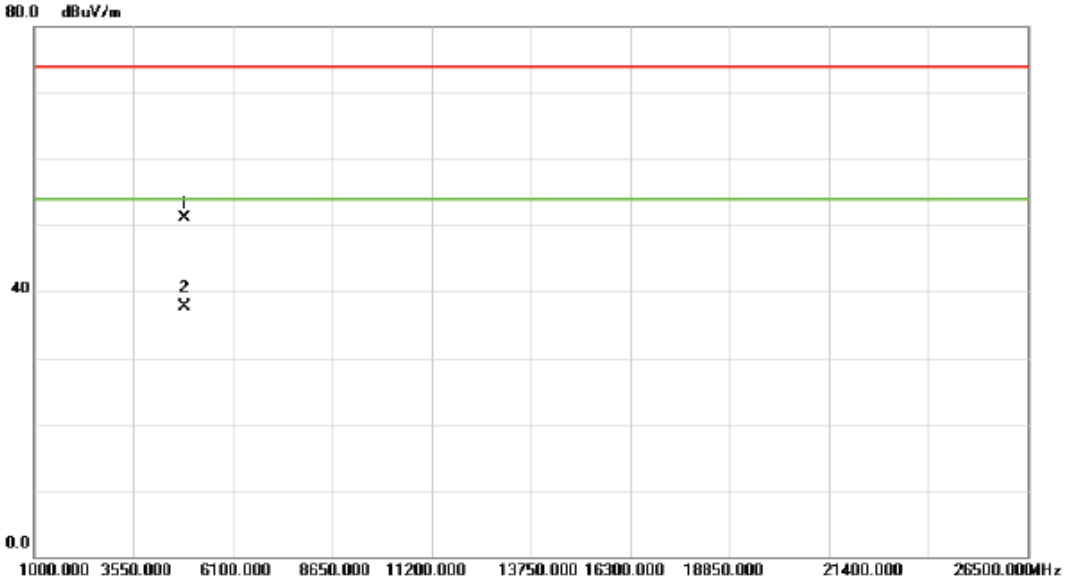
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	30.98	31.88	62.86	74.00	-11.14	peak	
2		2390.000	20.33	31.88	52.21	54.00	-1.79	AVG	
3	*	2420.400	61.49	31.92	93.41	54.00	39.41	AVG	NO limit
4	X	2424.200	71.66	31.93	103.59	74.00	29.59	peak	NO limit

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

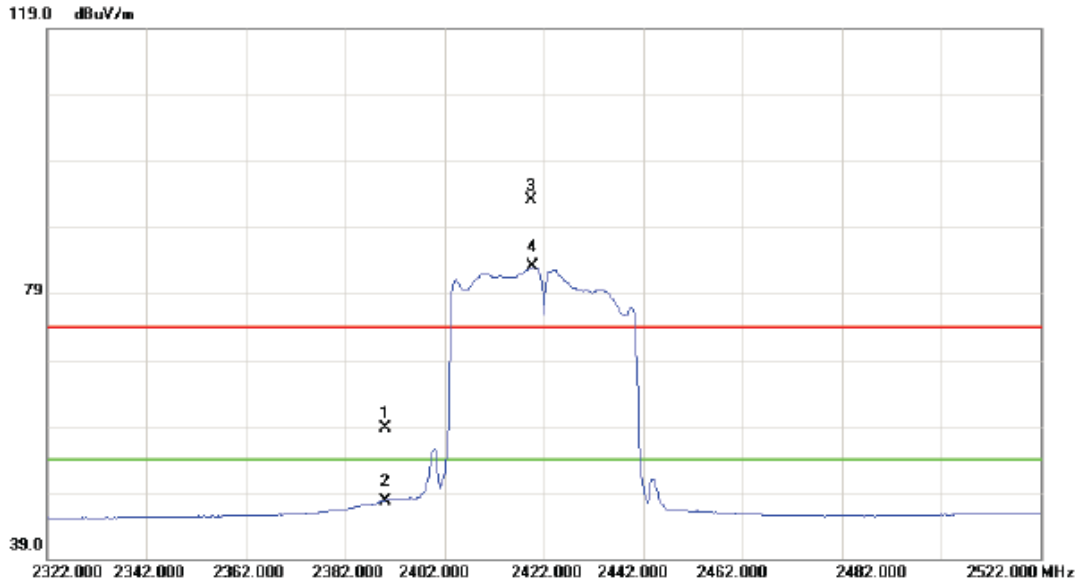
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4843.940	47.36	3.66	51.02	74.00	-22.98	peak	
2	*	4843.960	34.09	3.66	37.75	54.00	-16.25	AVG	

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

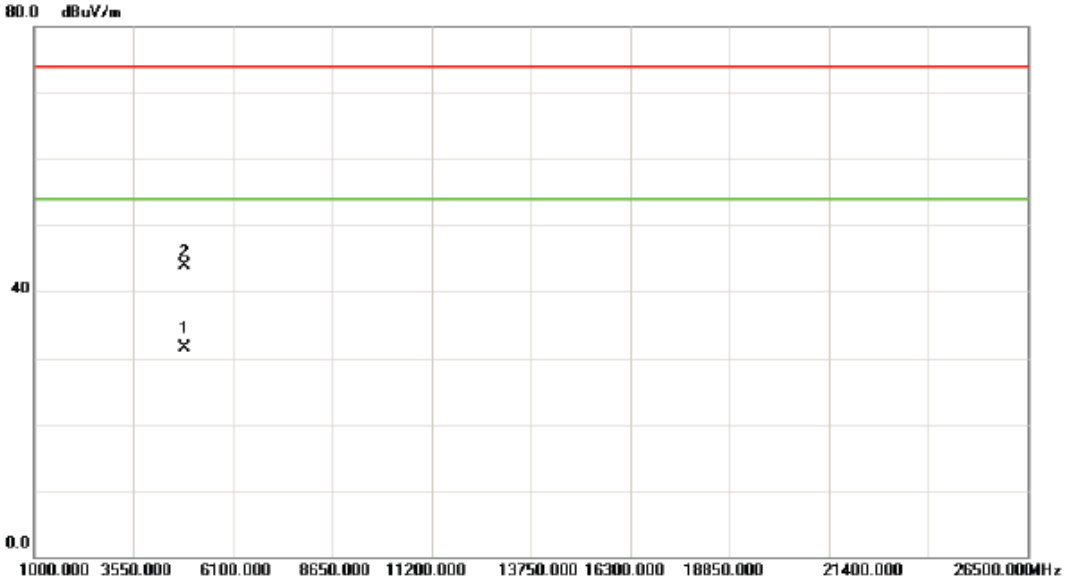
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	26.89	31.88	58.77	74.00	-15.23	peak	
2		2390.000	15.87	31.88	47.75	54.00	-6.25	AVG	
3	X	2419.400	61.24	31.92	93.16	74.00	19.16	peak	NO limit
4	*	2419.800	51.09	31.92	83.01	54.00	29.01	AVG	NO limit

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

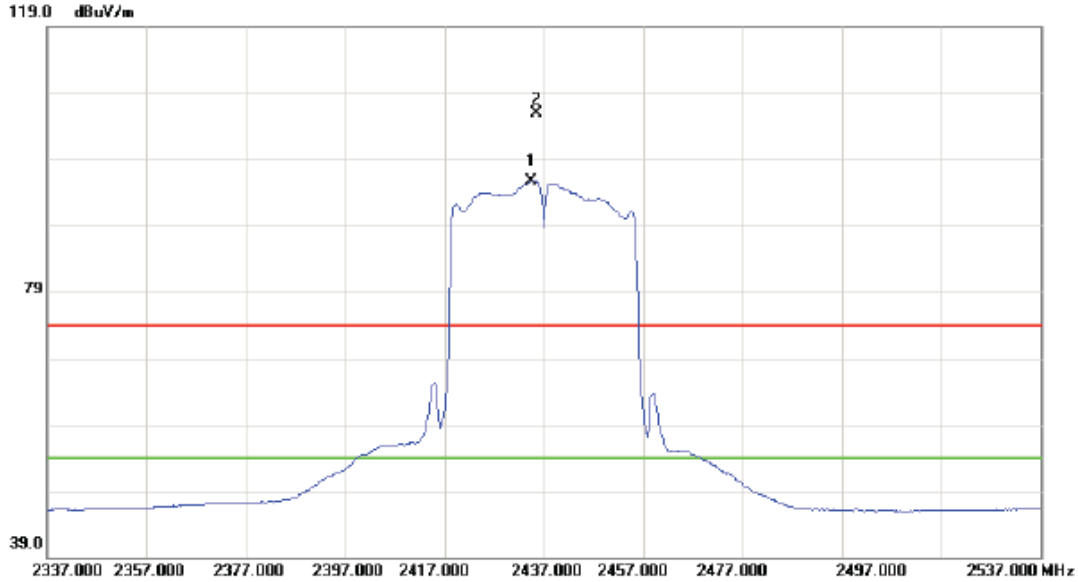
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	4843.930	27.82	3.66	31.48	54.00	-22.52	AVG	
2		4844.100	40.27	3.66	43.93	74.00	-30.07	peak	

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

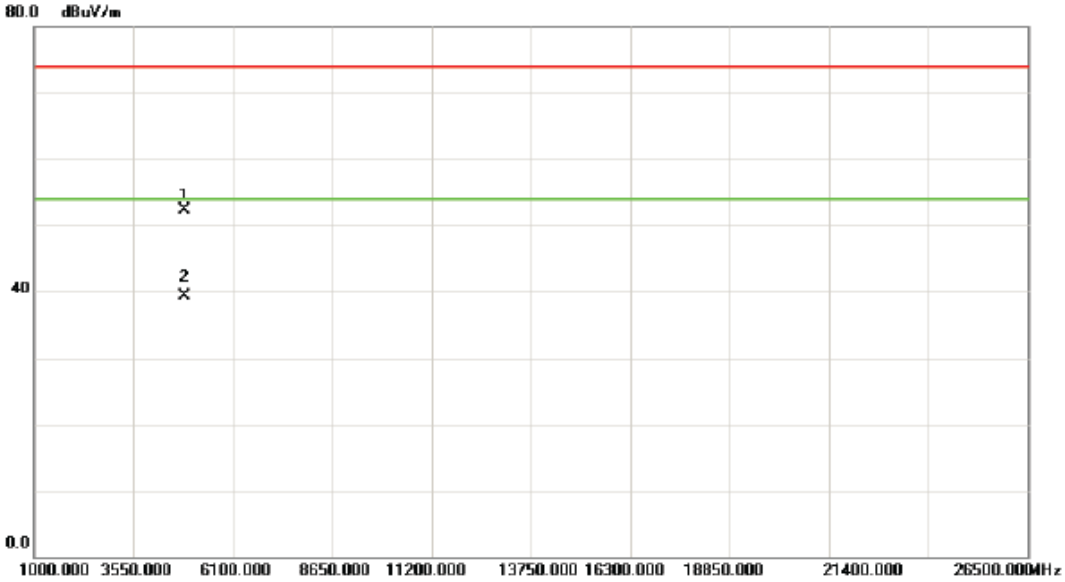
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2434.600	63.75	31.94	95.69	54.00	41.69	AVG	NO limit
2	X	2435.600	73.89	31.94	105.83	74.00	31.83	peak	NO limit

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

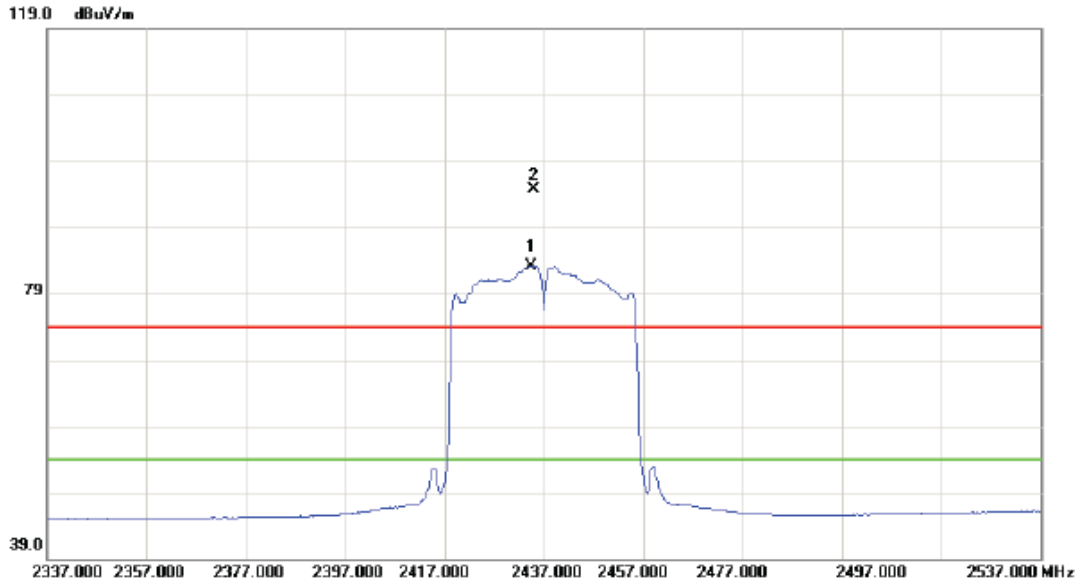
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.060	48.50	3.72	52.22	74.00	-21.78	peak	
2	*	4874.060	35.56	3.72	39.28	54.00	-14.72	AVG	

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

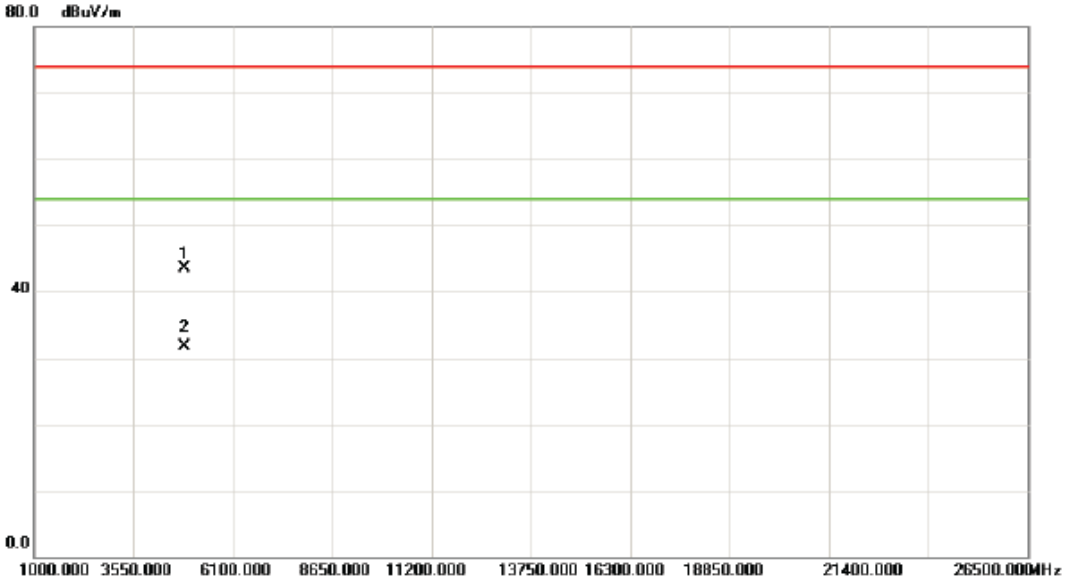
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2434.400	51.17	31.94	83.11	54.00	29.11	AVG	NO limit
2	X	2435.000	62.80	31.94	94.74	74.00	20.74	peak	NO limit

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

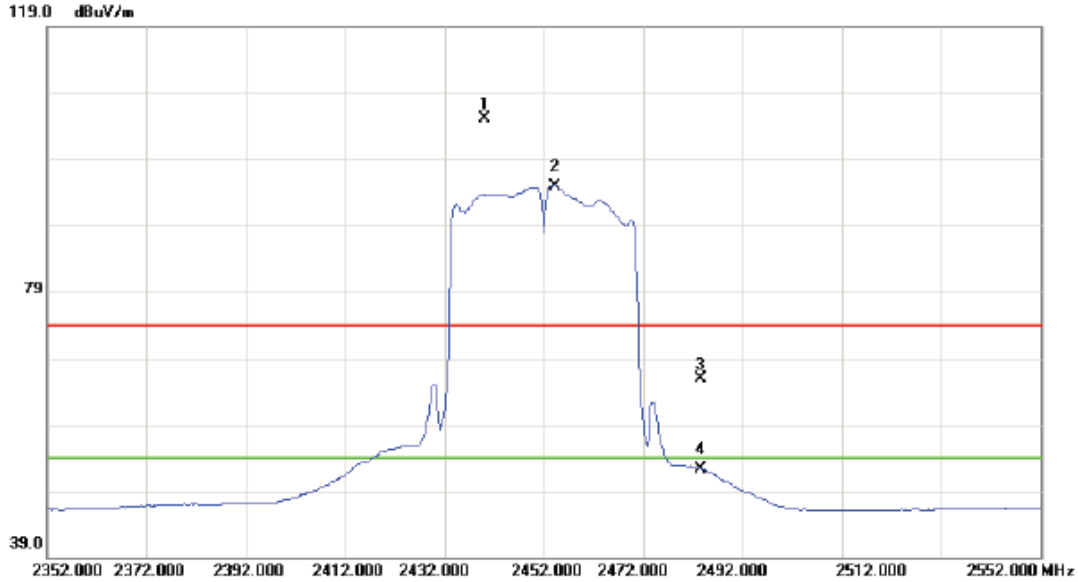
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.025	39.76	3.72	43.48	74.00	-30.52	peak	
2	*	4874.025	27.95	3.72	31.67	54.00	-22.33	AVG	

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

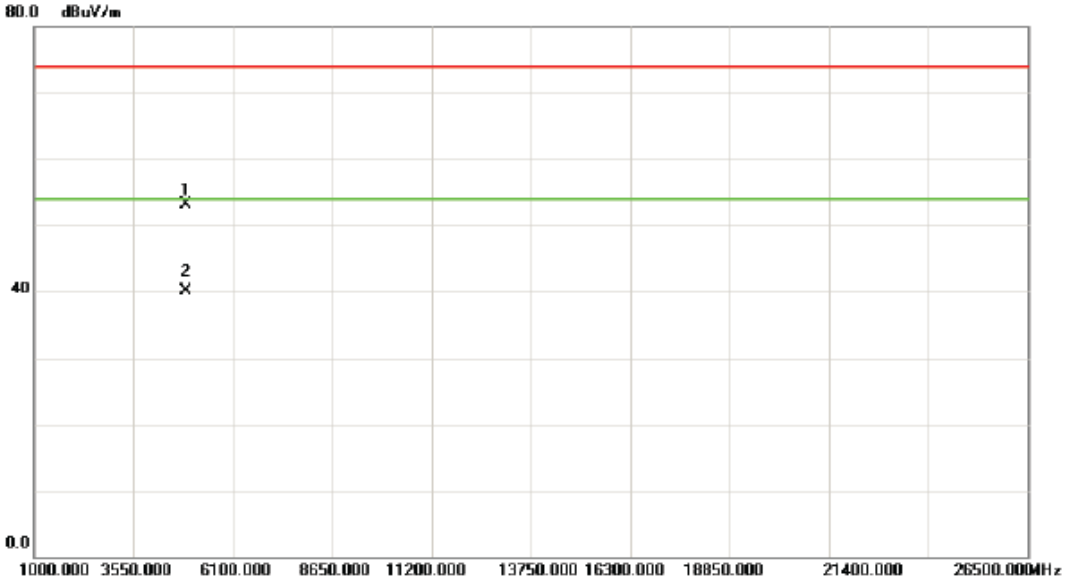
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2440.000	73.09	31.95	105.04	74.00	31.04	peak	NO limit
2	*	2454.200	63.04	31.96	95.00	54.00	41.00	AVG	NO limit
3		2483.500	33.86	32.01	65.87	74.00	-8.13	peak	
4		2483.500	20.38	32.01	52.39	54.00	-1.61	AVG	

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

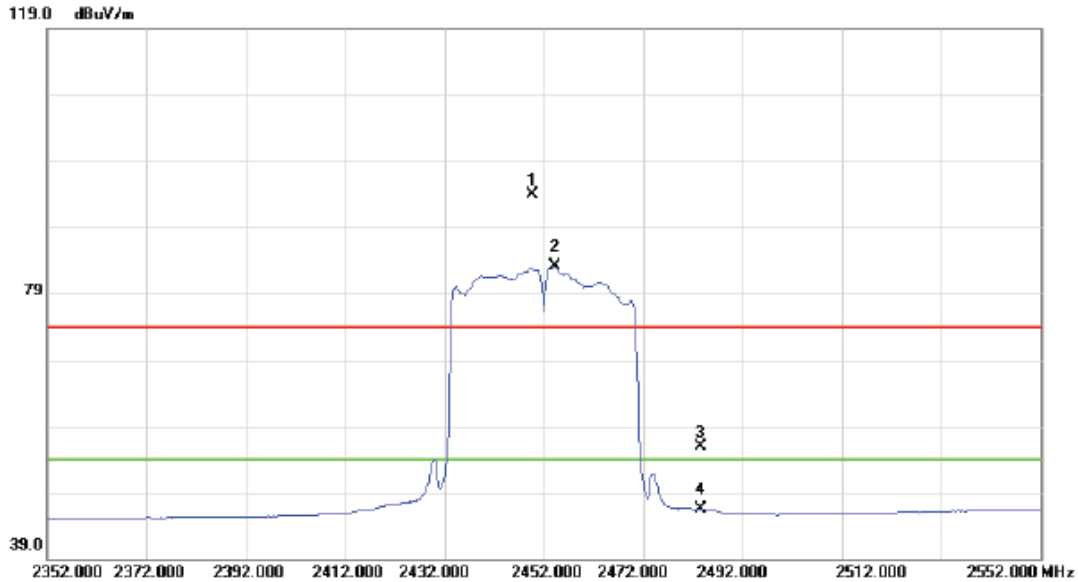
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4903.990	49.39	3.77	53.16	74.00	-20.84	peak	
2	*	4903.990	36.43	3.77	40.20	54.00	-13.80	AVG	

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

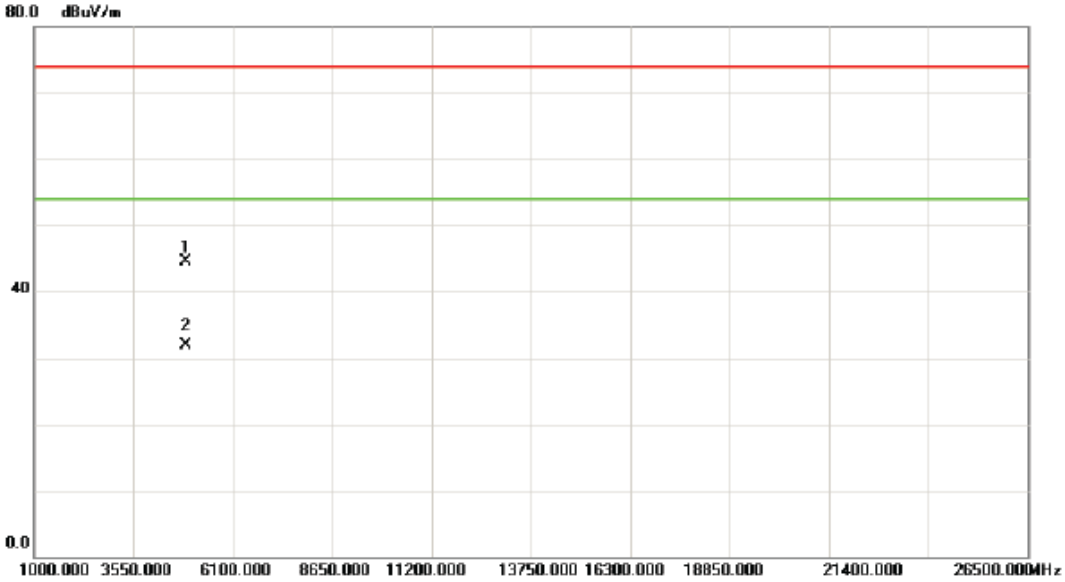
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2449.800	62.04	31.96	94.00	74.00	20.00	peak	NO limit
2	*	2454.200	51.05	31.96	83.01	54.00	29.01	AVG	NO limit
3		2483.500	23.93	32.01	55.94	74.00	-18.06	peak	
4		2483.500	14.45	32.01	46.46	54.00	-7.54	AVG	

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

Horizontal



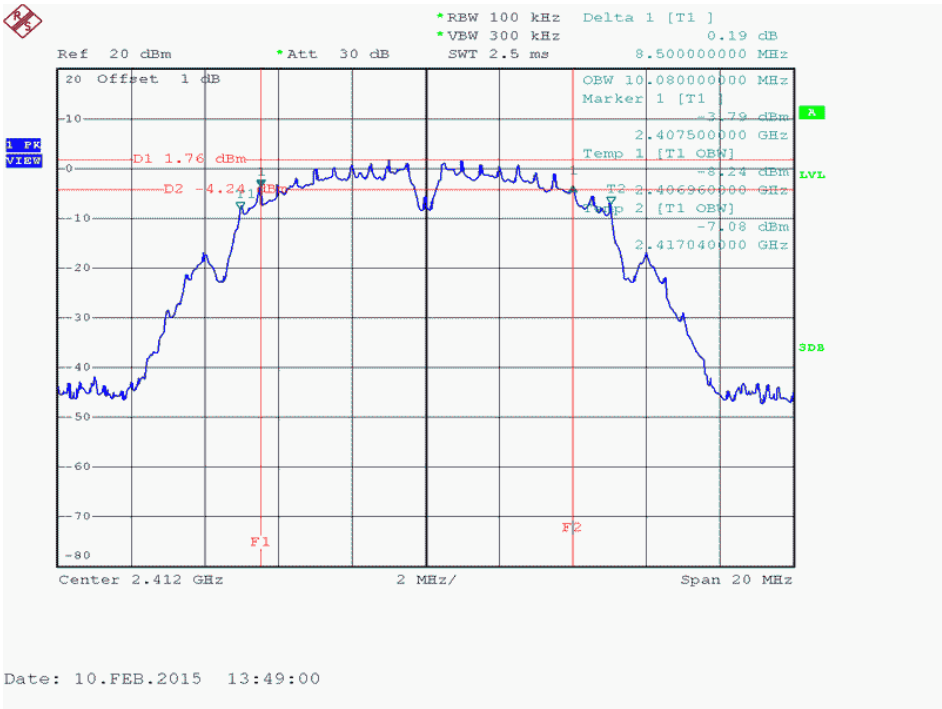
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4904.065	40.68	3.77	44.45	74.00	-29.55	peak	
2	*	4904.145	28.08	3.77	31.85	54.00	-22.15	AVG	

ATTACHMENT E - BANDWIDTH

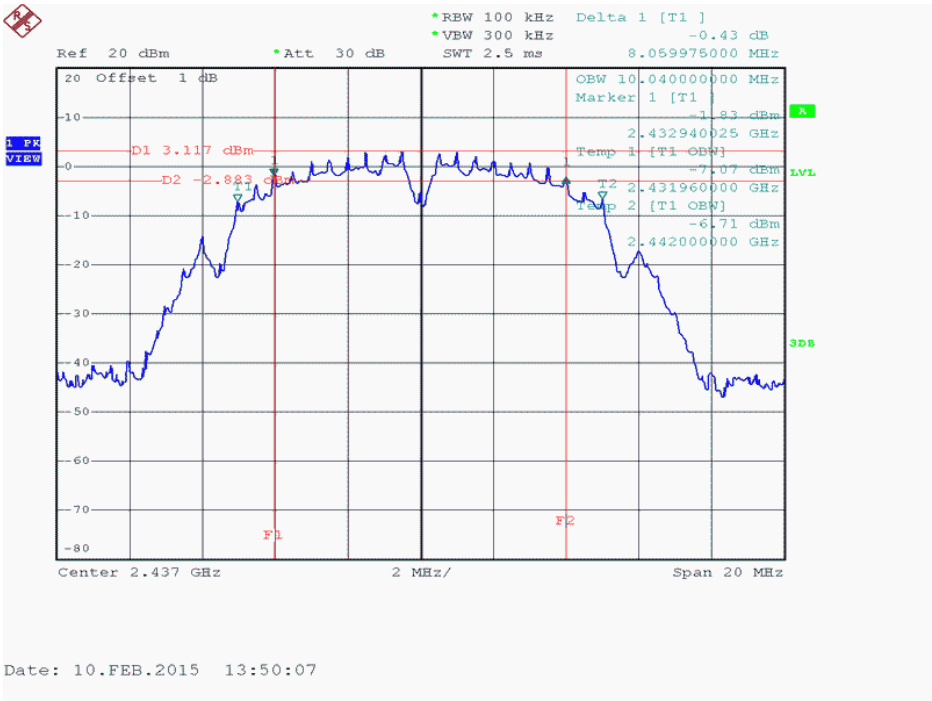
Test Mode : TX B Mode_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	8.50	10.08	500	Complies
2437	8.06	10.04	500	Complies
2462	8.11	10.08	500	Complies

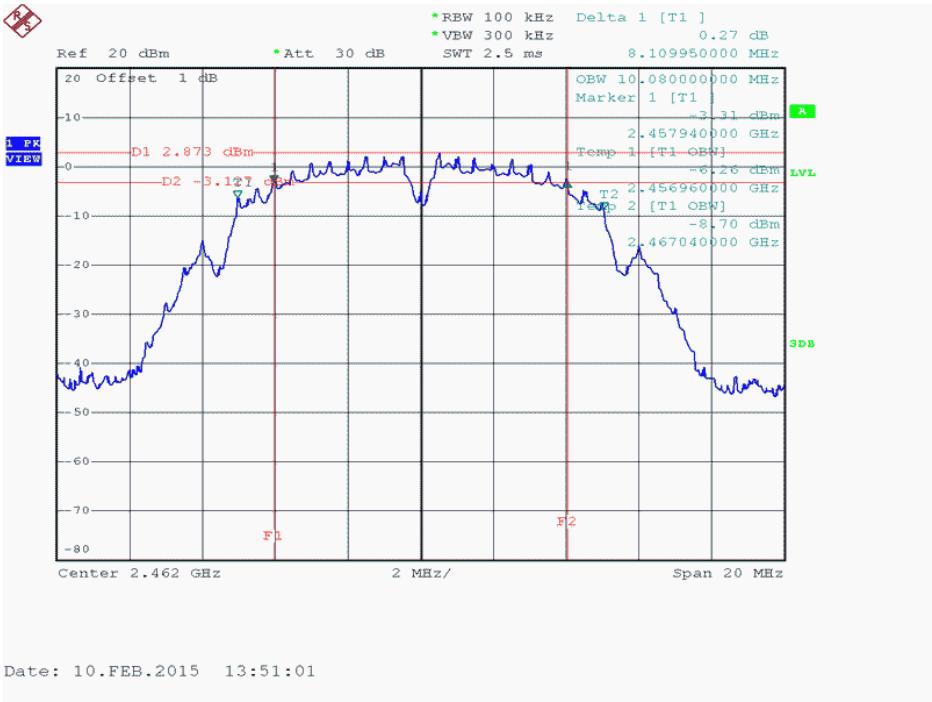
TX CH01



TX CH06



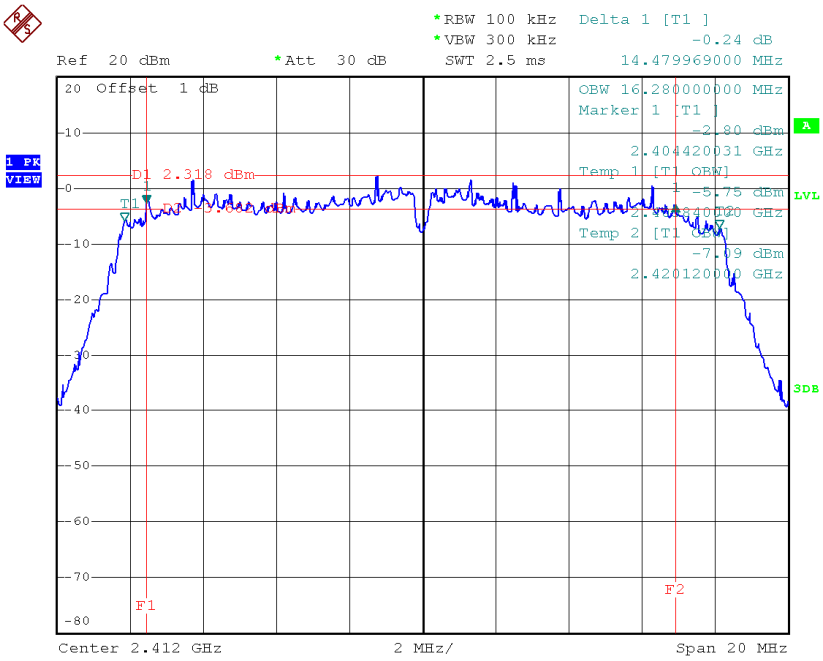
TX CH11



Test Mode: TX G Mode_CH01/06/11

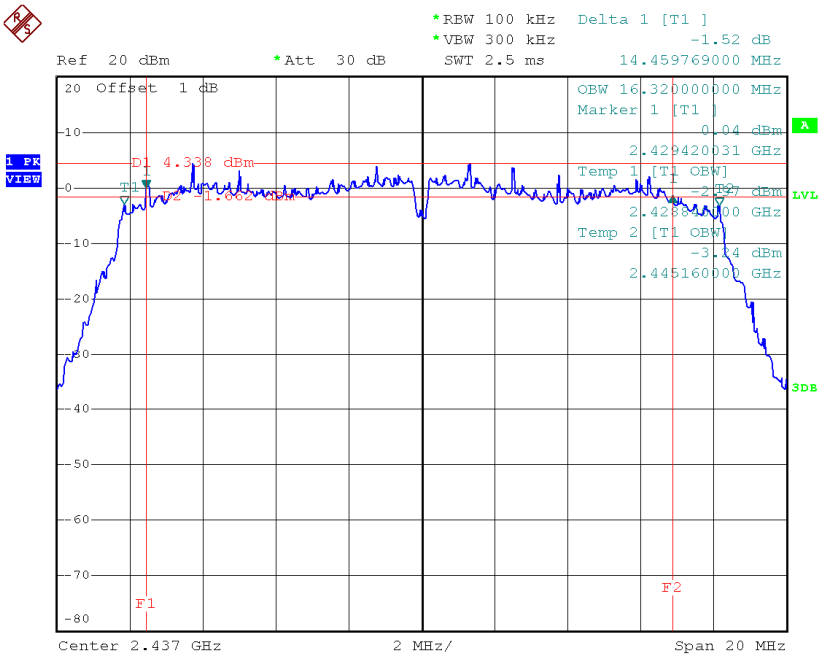
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	14.48	16.28	500	Complies
2437	14.46	16.32	500	Complies
2462	15.04	16.28	500	Complies

TX CH01



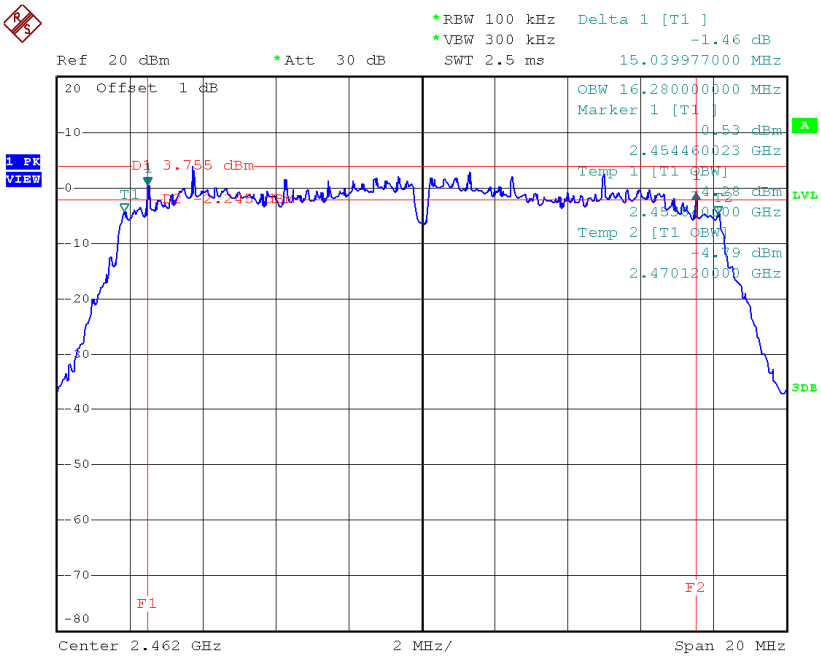
Date: 10.FEB.2015 13:52:51

TX CH06



Date: 10.FEB.2015 13:54:28

TX CH11

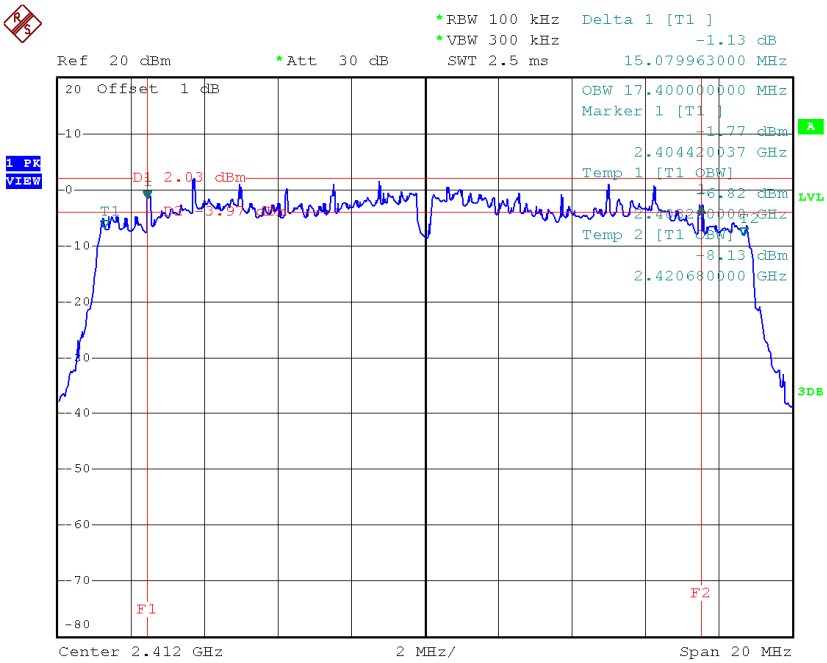


Date: 10.FEB.2015 13:55:20

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

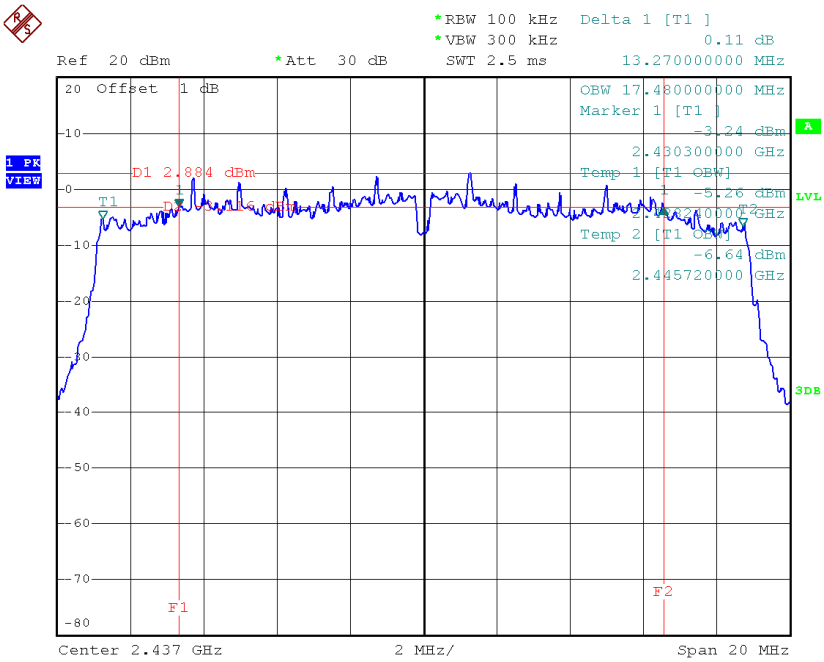
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	15.08	17.40	500	Complies
2437	13.27	17.48	500	Complies
2462	14.16	17.40	500	Complies

TX CH01



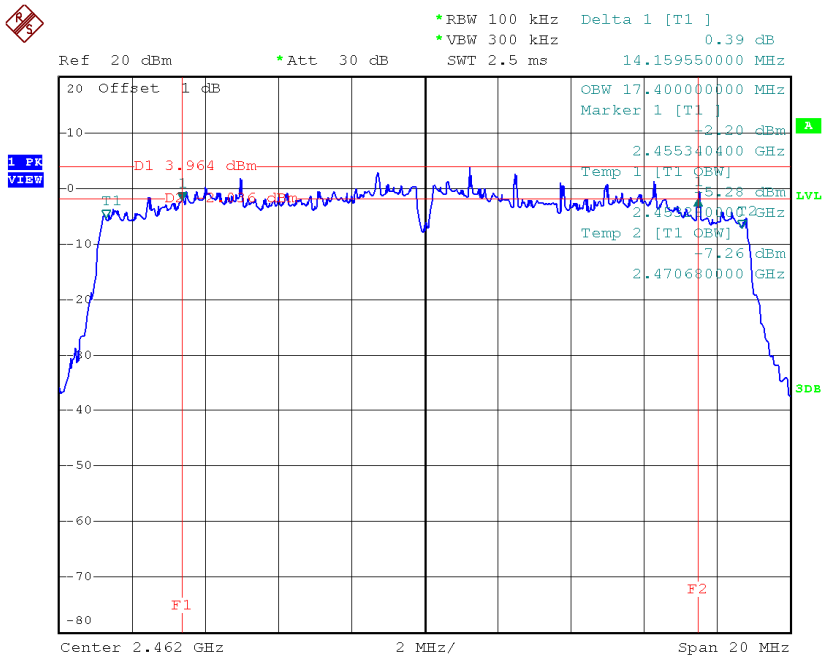
Date: 10.FEB.2015 13:57:09

TX CH06



Date: 10.FEB.2015 13:58:25

TX CH11

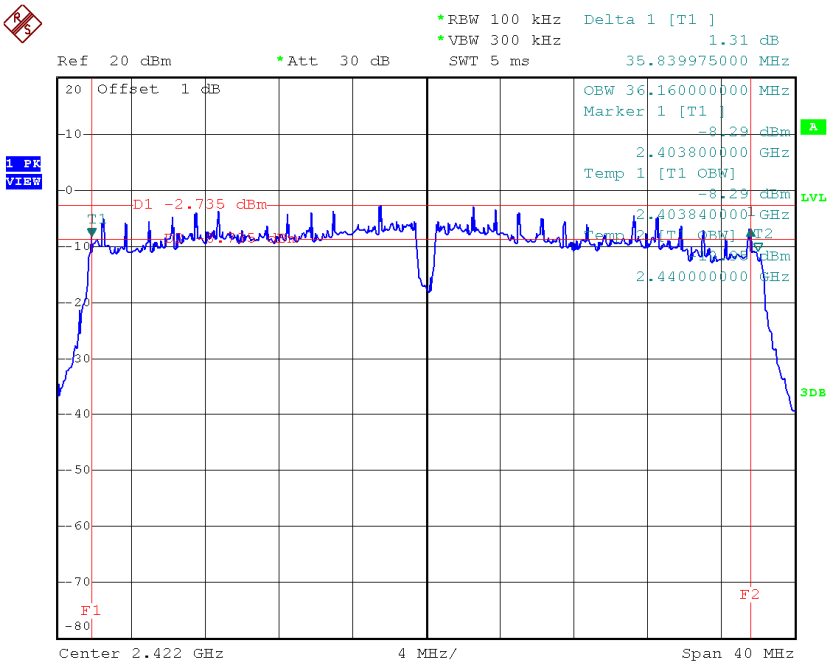


Date: 10.FEB.2015 13:59:32

Test Mode : TX N-40MHz Mode_CH03/06/09

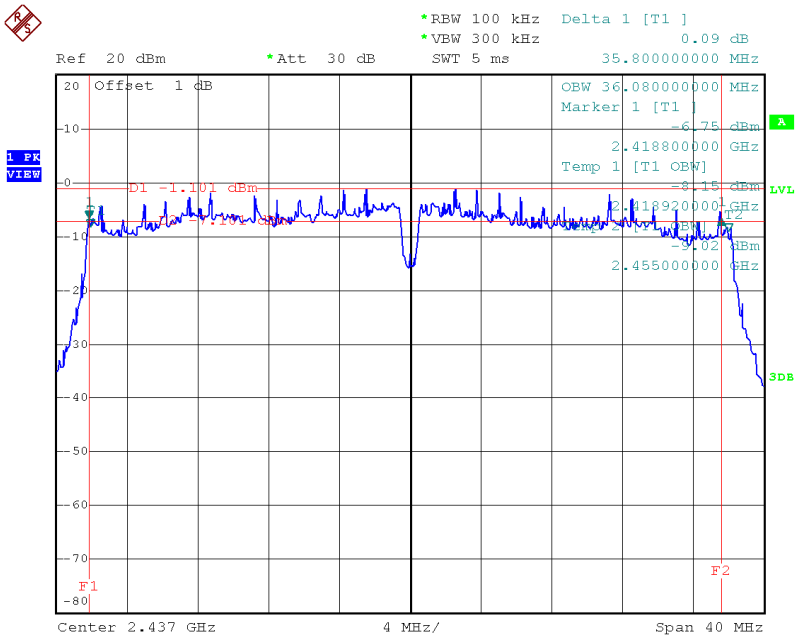
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2422	35.84	36.16	500	Complies
2437	35.80	36.08	500	Complies
2452	34.40	36.08	500	Complies

TX CH03



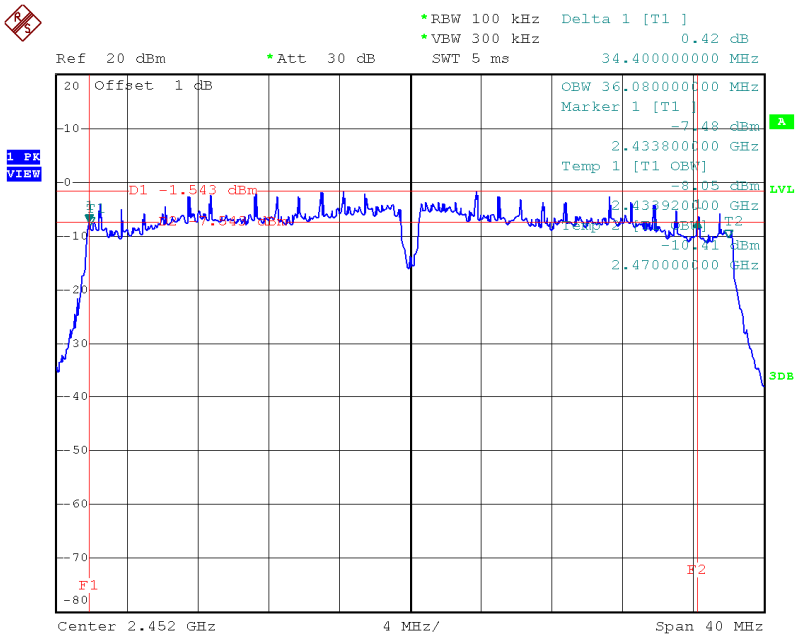
Date: 10.FEB.2015 14:09:20

TX CH06



Date: 10.FEB.2015 14:10:19

TX CH09



Date: 10.FEB.2015 14:12:04

ATTACHMENT F – MAXIMUM PEAK CONDUCTED OUTPUT POWER

Test Mode :TX B Mode_CH01/06/11_ANT 1					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	13.58	0.02	30.00	1.00	Complies
2437	13.91	0.02	30.00	1.00	Complies
2462	13.94	0.02	30.00	1.00	Complies

Test Mode :TX G Mode_CH01/06/11_ANT 1					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	19.97	0.10	30.00	1.00	Complies
2437	22.28	0.17	30.00	1.00	Complies
2462	21.68	0.15	30.00	1.00	Complies

Test Mode :TX N20 Mode_CH01/06/11_ANT 1					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	19.92	0.10	30.00	1.00	Complies
2437	19.90	0.10	30.00	1.00	Complies
2462	20.90	0.12	30.00	1.00	Complies

Test Mode :TX N20 Mode_CH01/06/11_ANT 2					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	20.90	0.12	30.00	1.00	Complies
2437	20.11	0.10	30.00	1.00	Complies
2462	20.22	0.11	30.00	1.00	Complies

Test Mode :TX N20 Mode_CH01/06/11_Total					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	23.45	0.22	30.00	1.00	Complies
2437	23.02	0.20	30.00	1.00	Complies
2462	23.58	0.23	30.00	1.00	Complies

Test Mode :TX N40 Mode_CH03/06/09_ANT 1					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2422	17.90	0.06	30.00	1.00	Complies
2437	19.55	0.09	30.00	1.00	Complies
2452	19.33	0.09	30.00	1.00	Complies

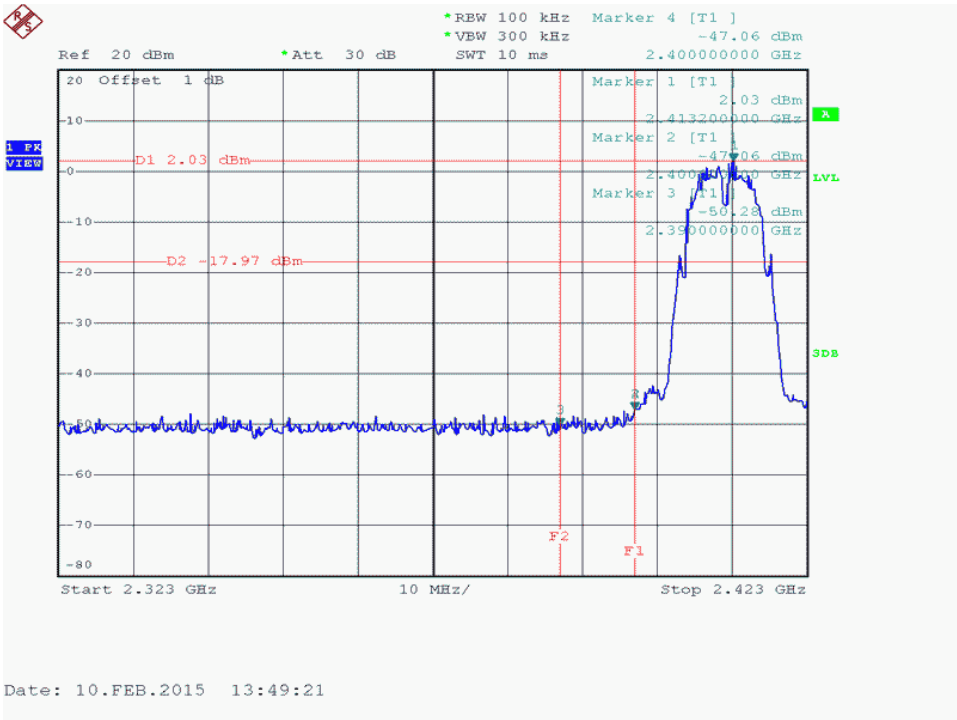
Test Mode :TX N40 Mode_CH03/06/09_ANT 2					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2422	17.40	0.05	30.00	1.00	Complies
2437	19.28	0.08	30.00	1.00	Complies
2452	19.20	0.08	30.00	1.00	Complies

Test Mode :TX N40 Mode_CH03/06/09_Total					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2422	20.67	0.12	30.00	1.00	Complies
2437	22.43	0.17	30.00	1.00	Complies
2452	22.28	0.17	30.00	1.00	Complies

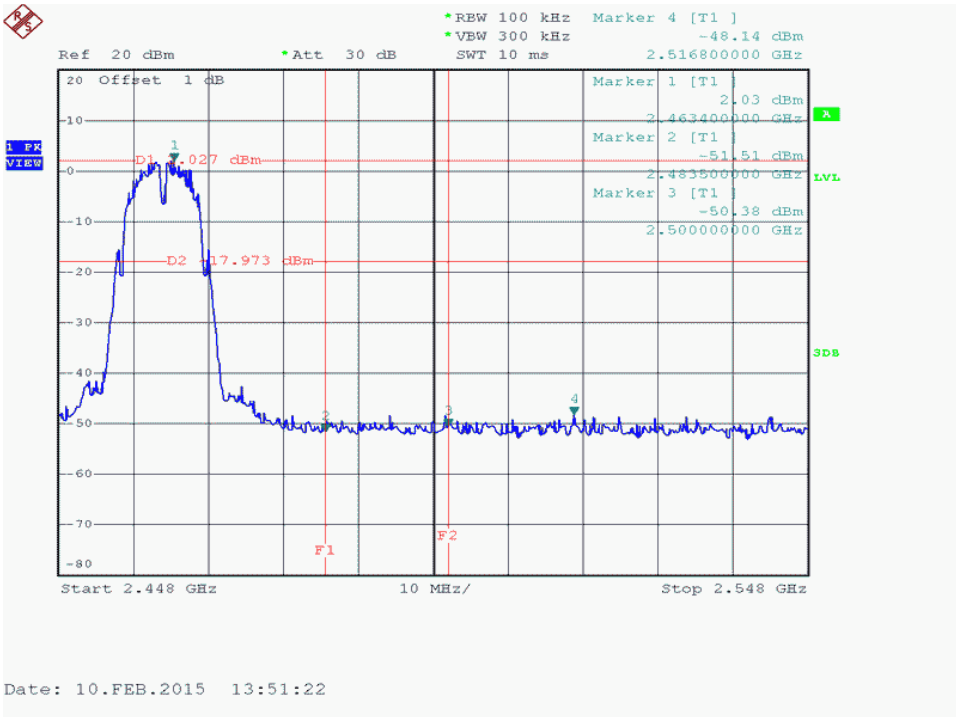
ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION

Test Mode :	**TX B Mode_ANT 1**

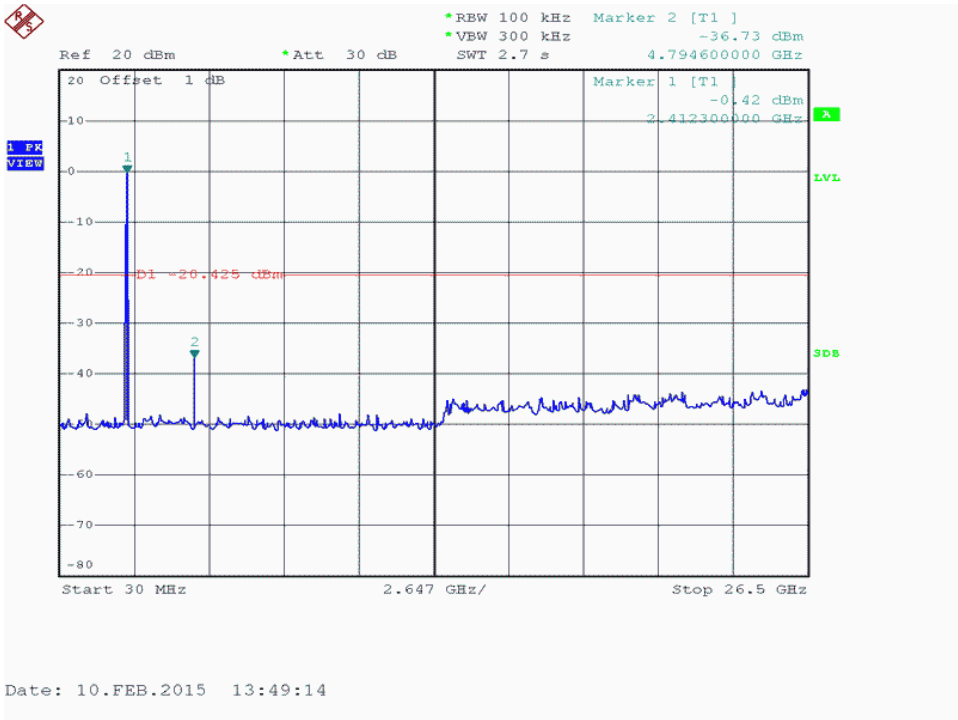
TX B mode CH01



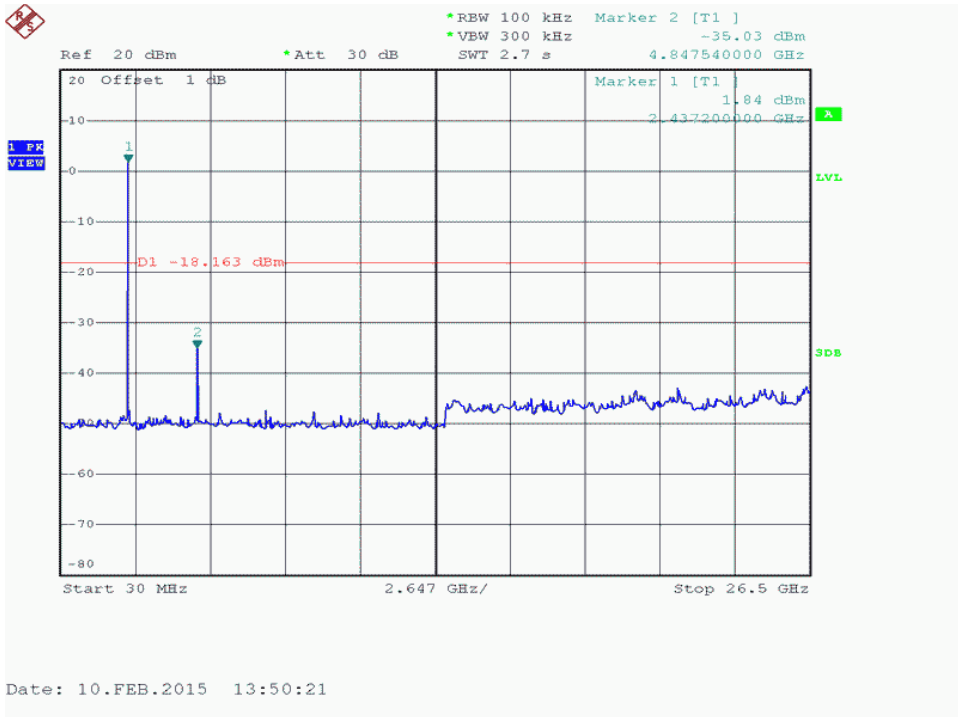
TX B mode CH11



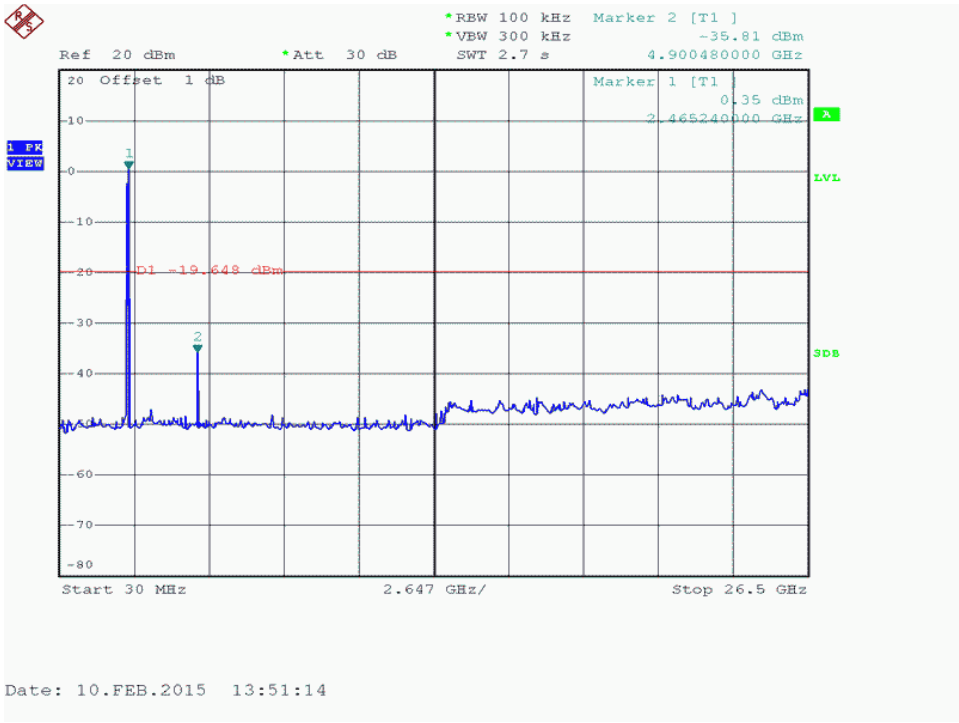
TX B mode CH01 (10 Harmonic of the frequency)



TX B mode CH06 (10 Harmonic of the frequency)

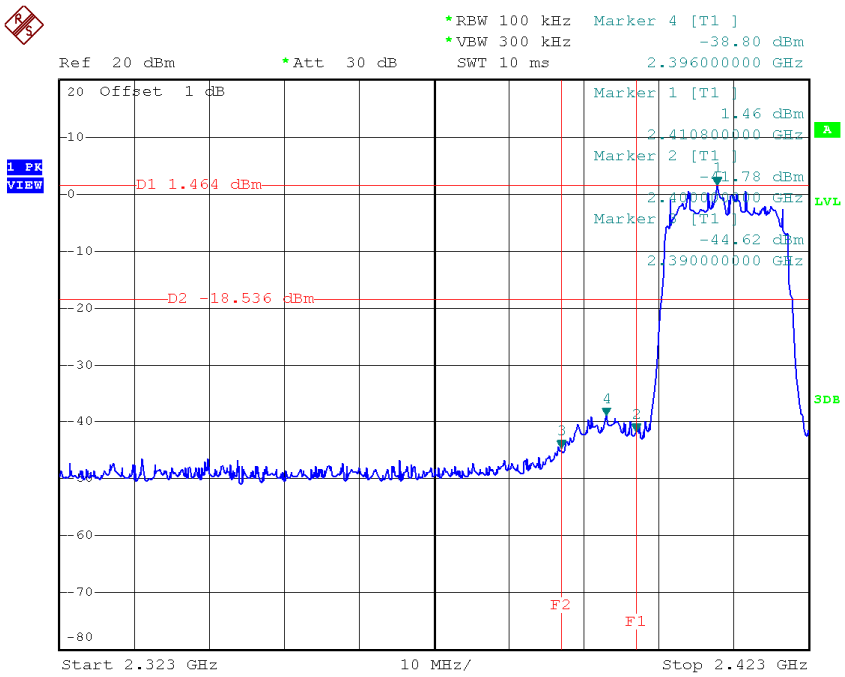


TX B mode CH11 (10 Harmonic of the frequency)



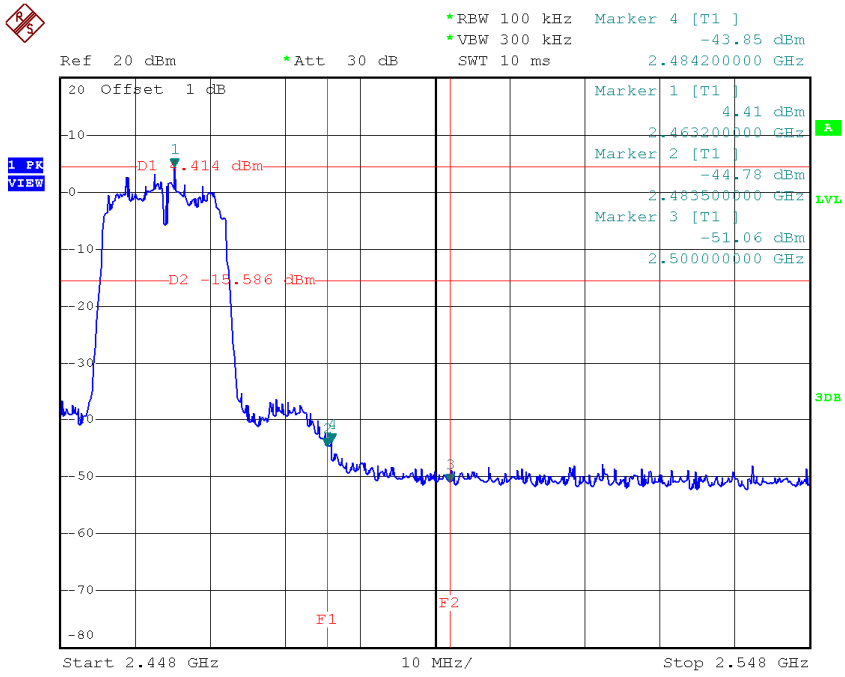
Test Mode :	**TX G Mode_ANT 1**

TX G mode CH01



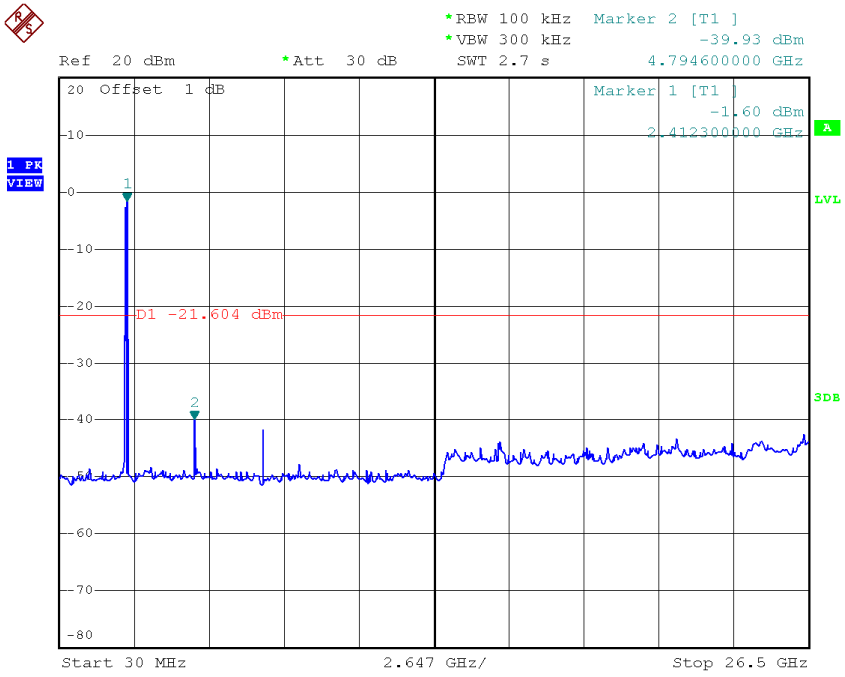
Date: 10.FEB.2015 13:53:12

TX G mode CH11



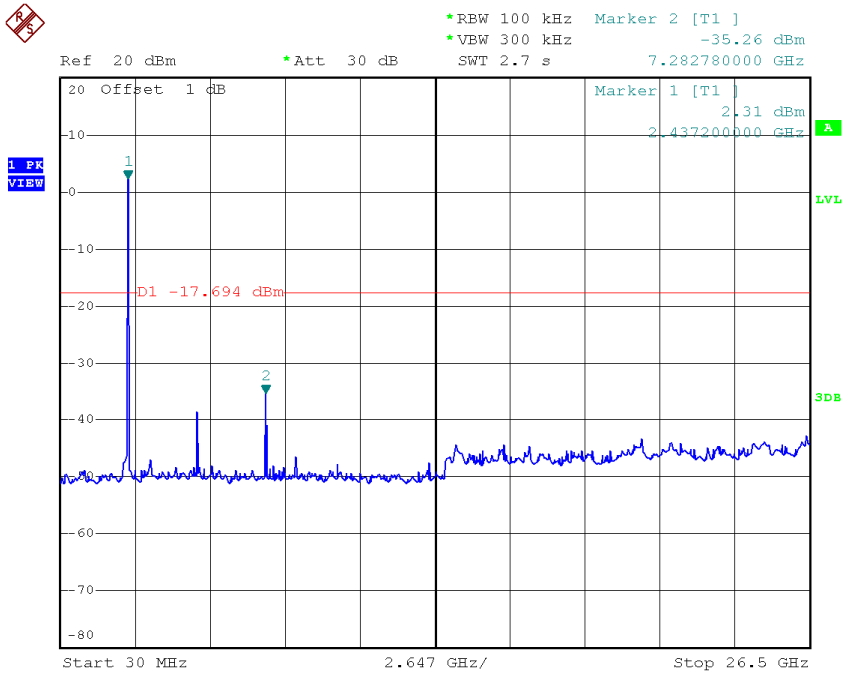
Date: 10.FEB.2015 13:55:41

TX G mode CH01 (10 Harmonic of the frequency)



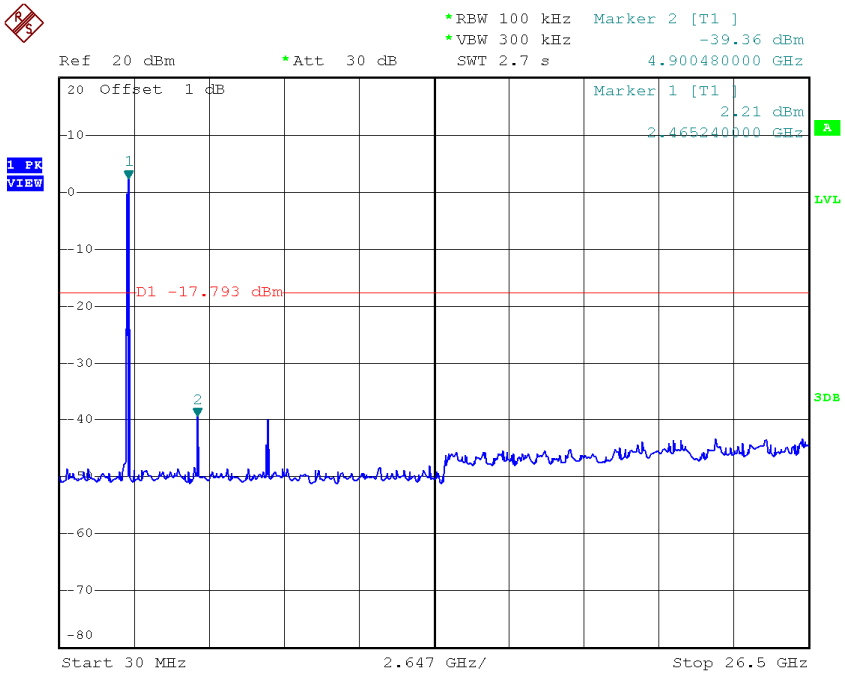
Date: 10.FEB.2015 13:53:04

TX G mode CH06 (10 Harmonic of the frequency)



Date: 10.FEB.2015 13:54:42

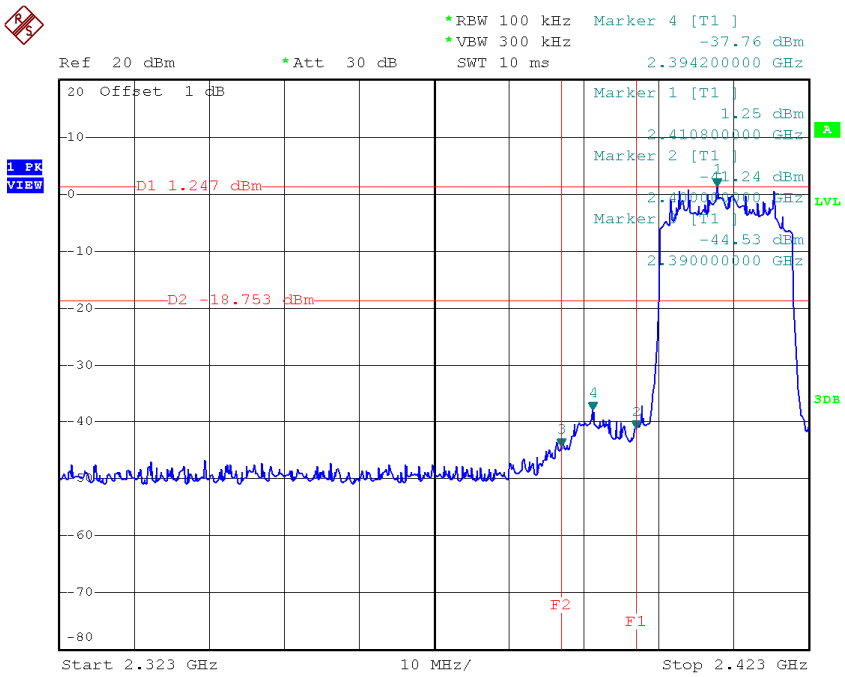
TX G mode CH11 (10 Harmonic of the frequency)



Date: 10.FEB.2015 13:55:34

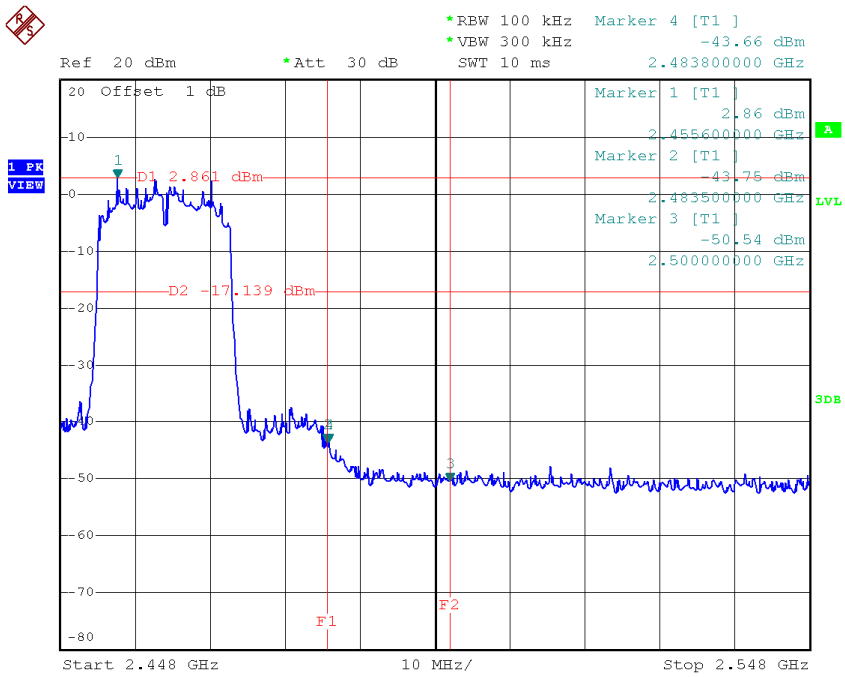
Test Mode :	**TX N-20M Mode_ANT 1**

TX HT20 mode CH01



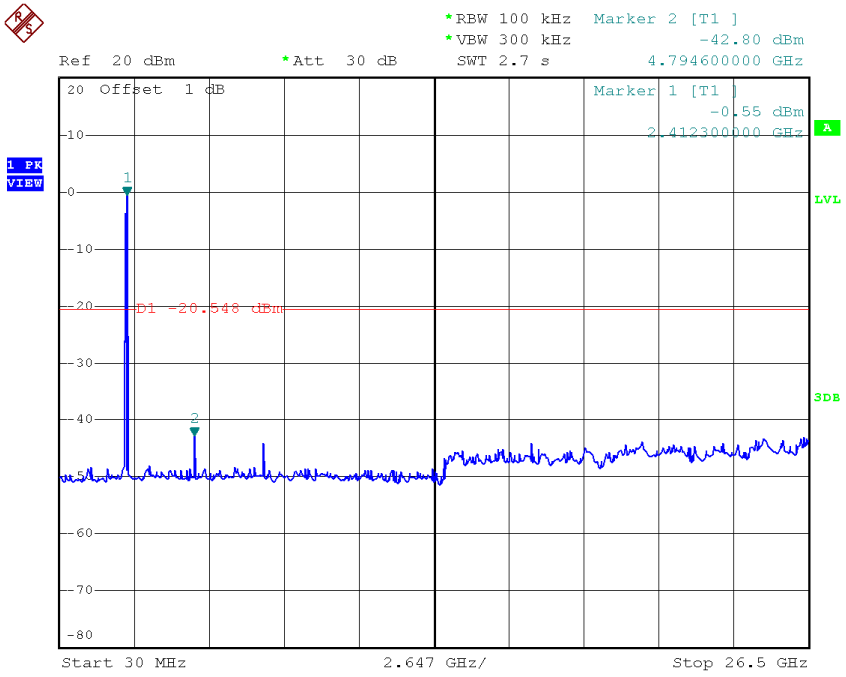
Date: 10.FEB.2015 13:57:30

TX HT20 mode CH11



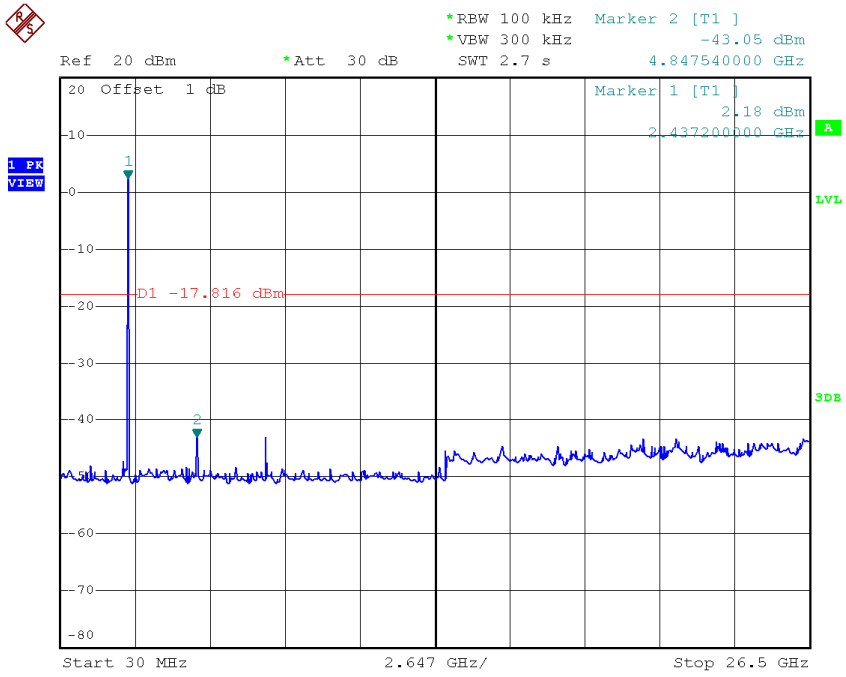
Date: 10.FEB.2015 13:59:53

TX HT20 mode CH01 (10 Harmonic of the frequency)



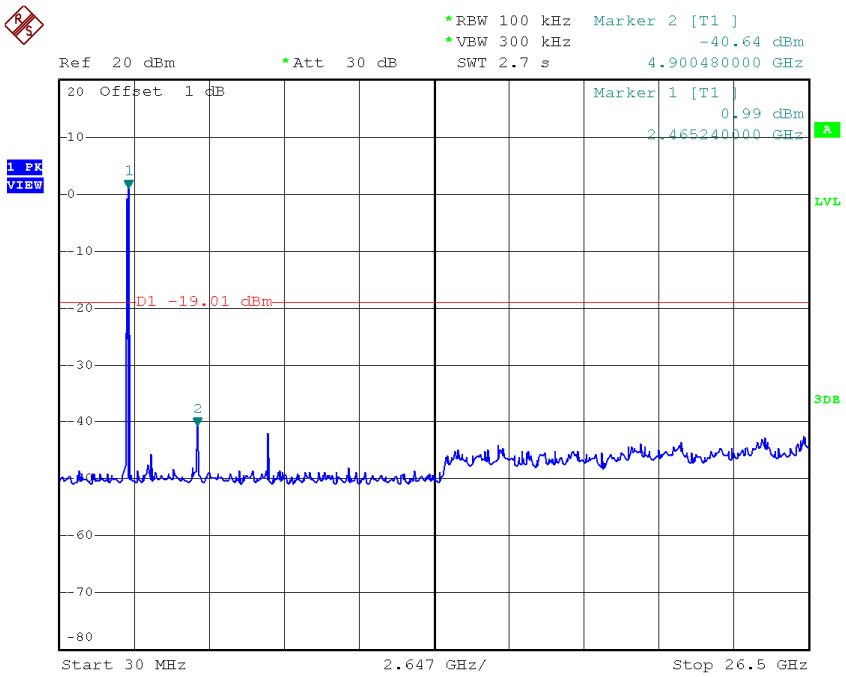
Date: 10.FEB.2015 13:57:22

TX HT20 mode CH06 (10 Harmonic of the frequency)



Date: 10.FEB.2015 13:58:39

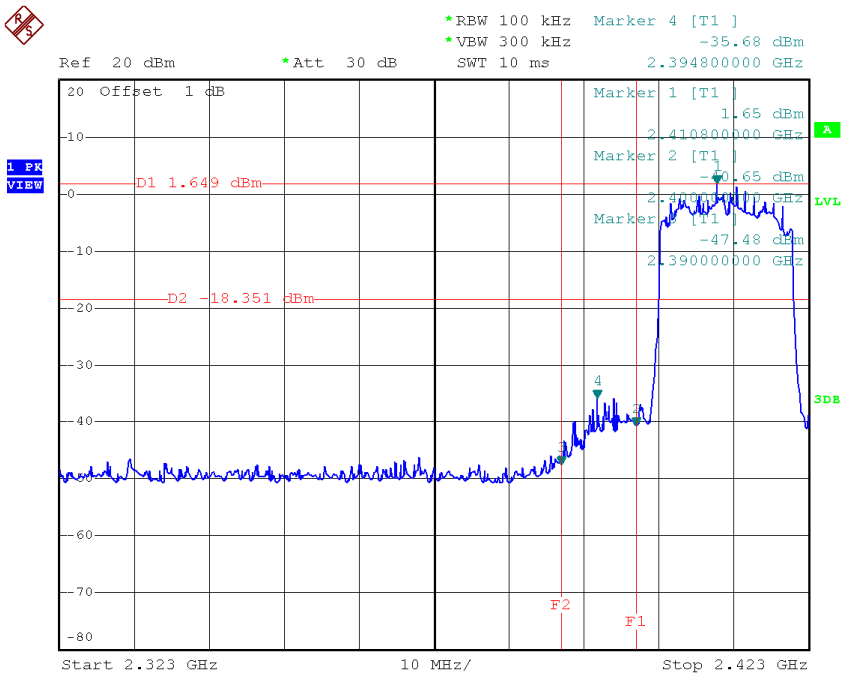
TX HT20 mode CH11 (10 Harmonic of the frequency)



Date: 10.FEB.2015 13:59:46

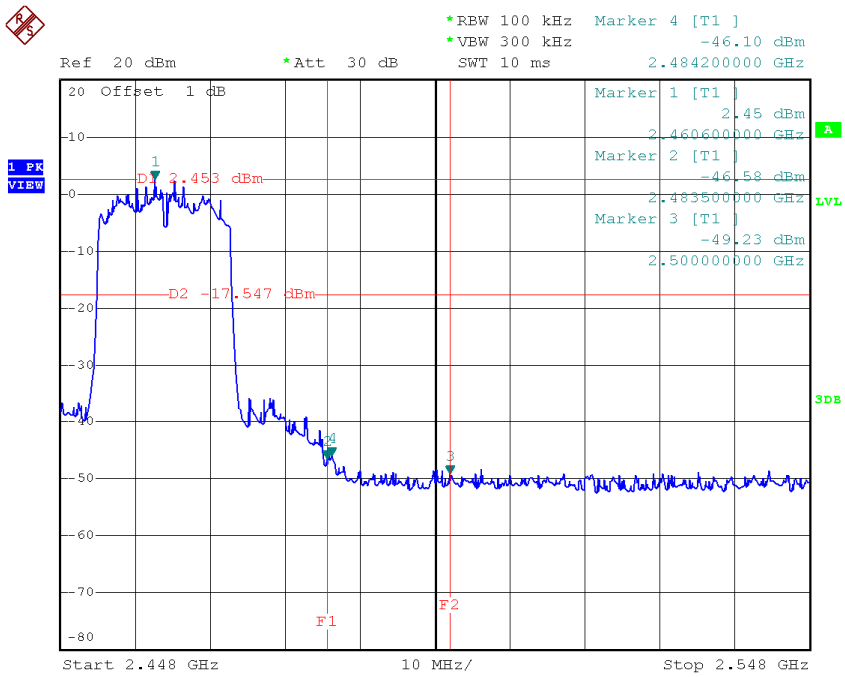
Test Mode :	**TX N-20M Mode_ANT 2**

TX HT20 mode CH01



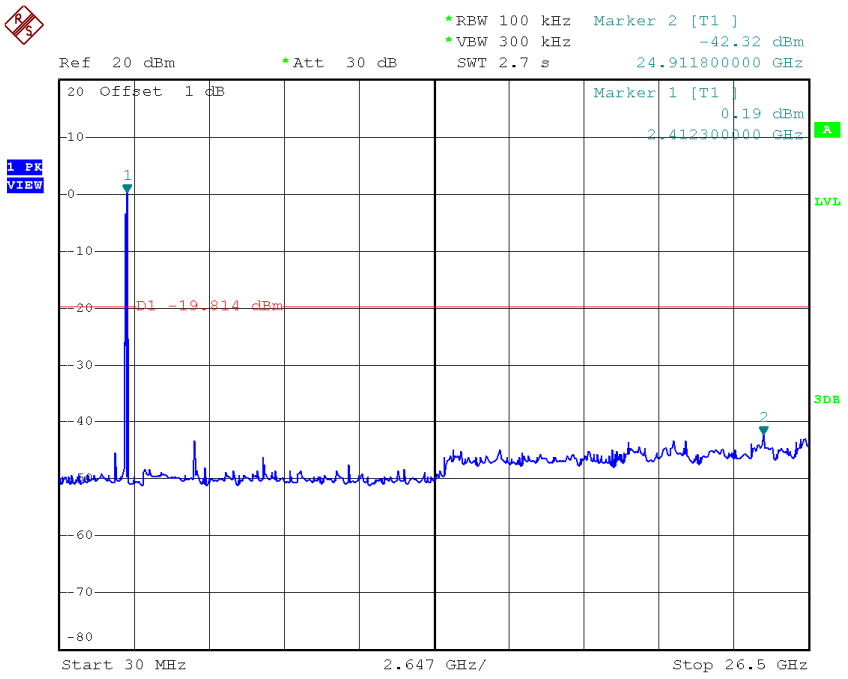
Date: 10.FEB.2015 14:01:49

TX HT20 mode CH11



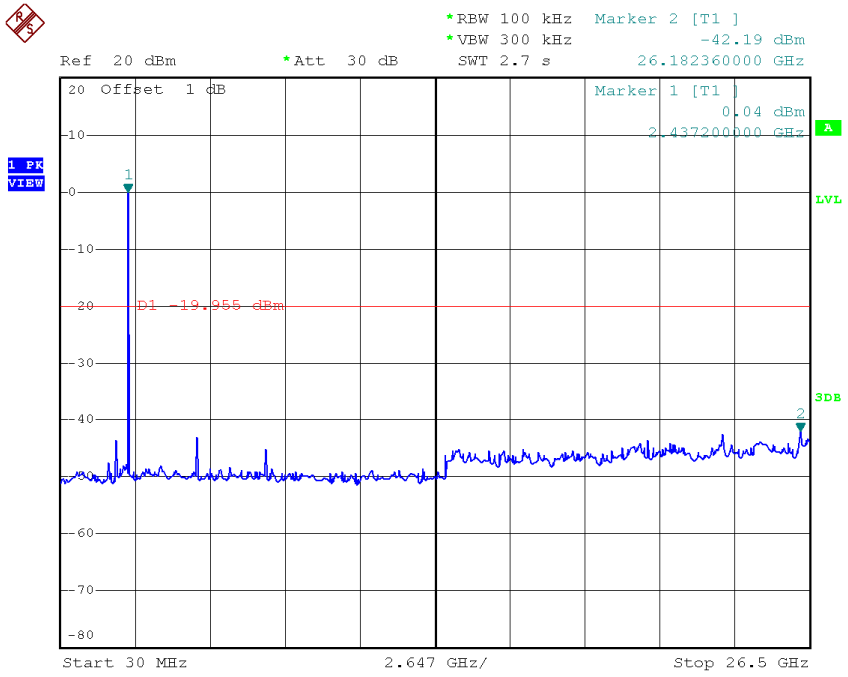
Date: 10.FEB.2015 14:03:40

TX HT20 mode CH01 (10 Harmonic of the frequency)



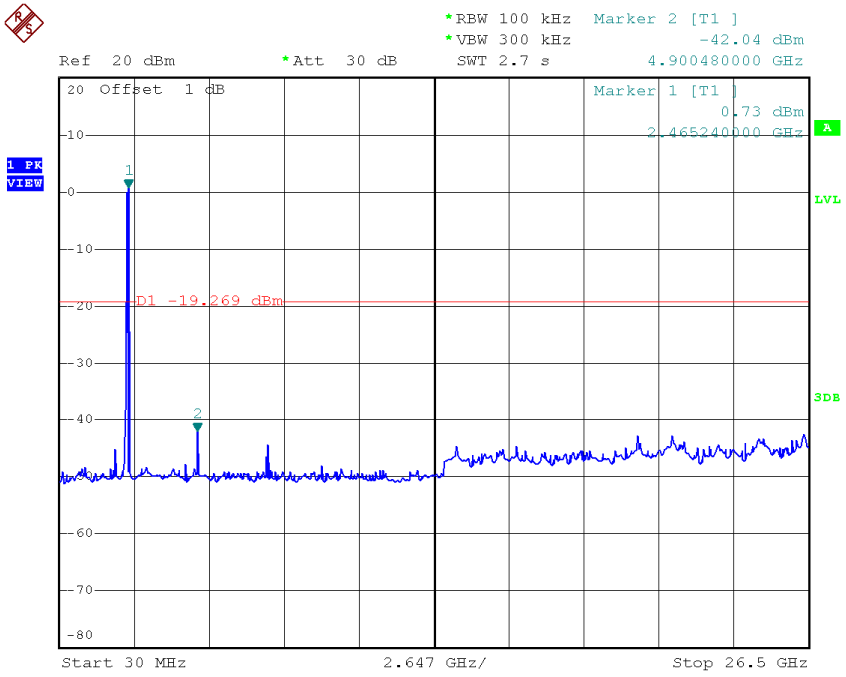
Date: 10.FEB.2015 14:01:42

TX HT20 mode CH06 (10 Harmonic of the frequency)



Date: 10.FEB.2015 14:02:40

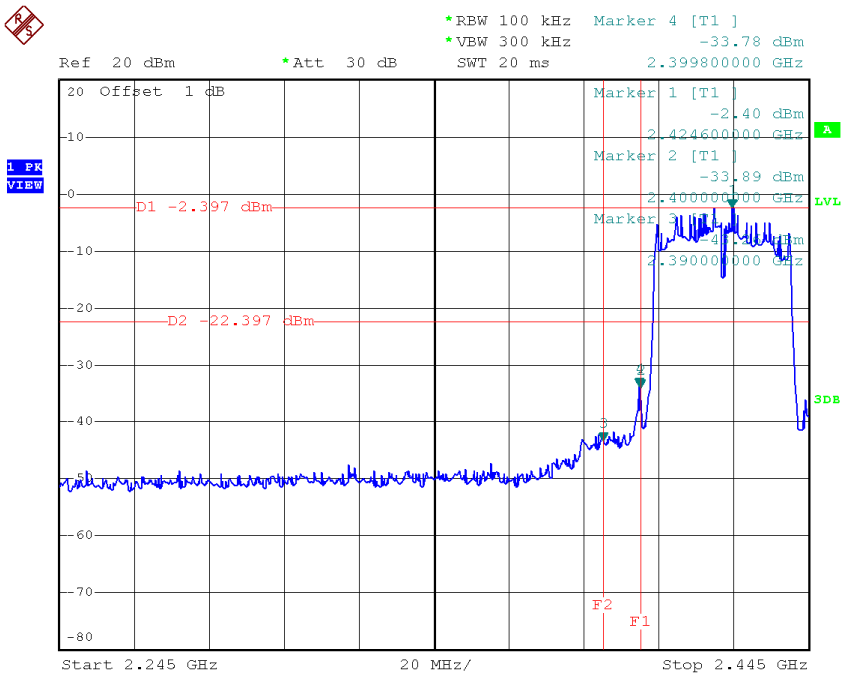
TX HT20 mode CH11 (10 Harmonic of the frequency)



Date: 10.FEB.2015 14:03:32

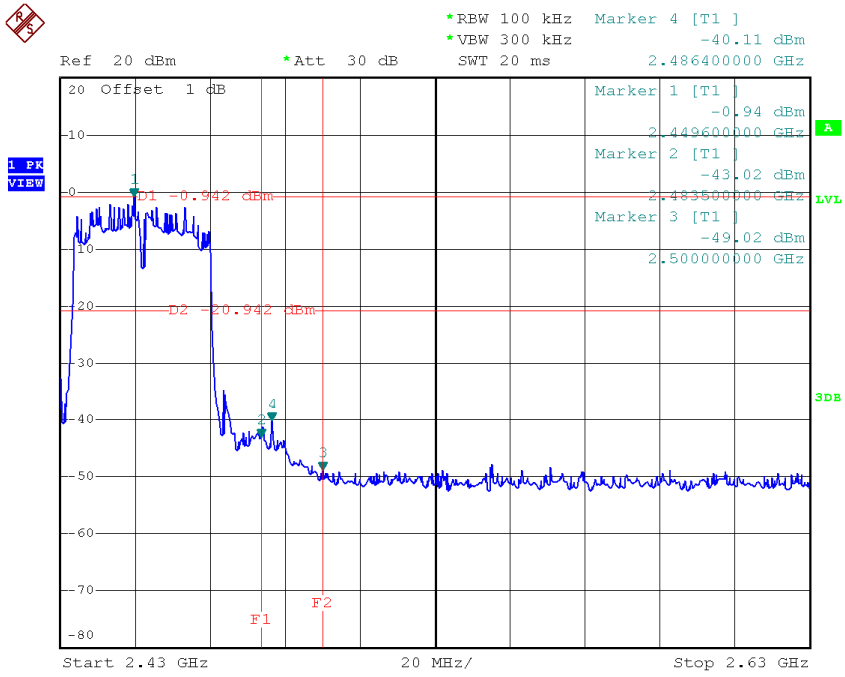
Test Mode :	**TX N-40M Mode_ANT 1**

TX HT40 mode CH03



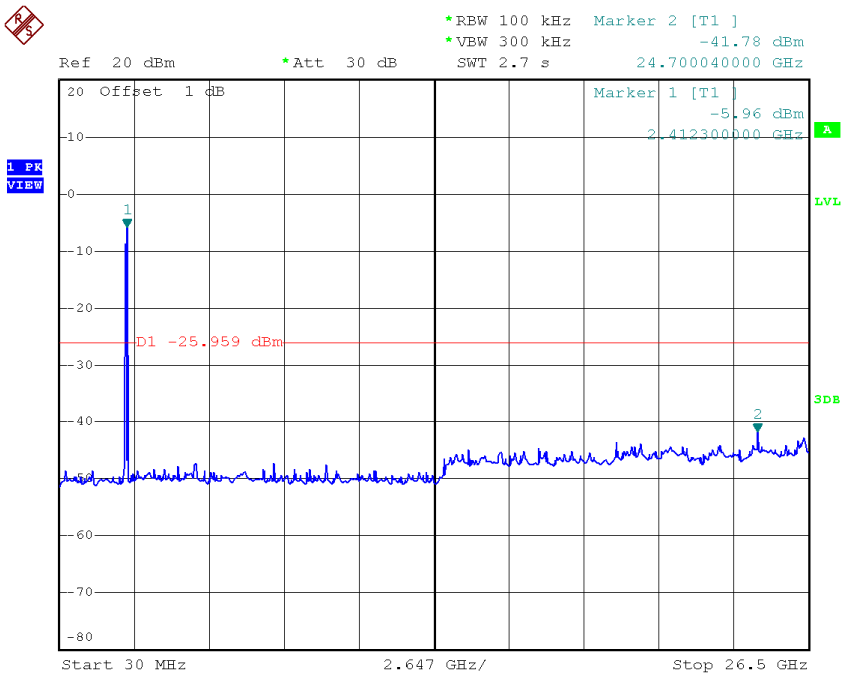
Date: 10.FEB.2015 14:09:41

TX HT40 mode CH09



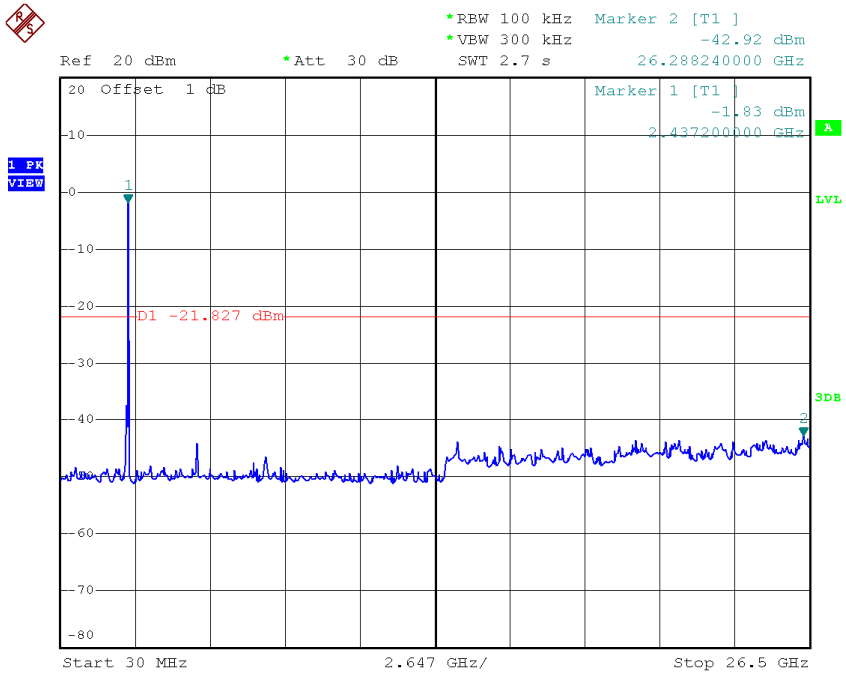
Date: 10.FEB.2015 14:12:25

TX HT40 mode CH03 (10 Harmonic of the frequency)



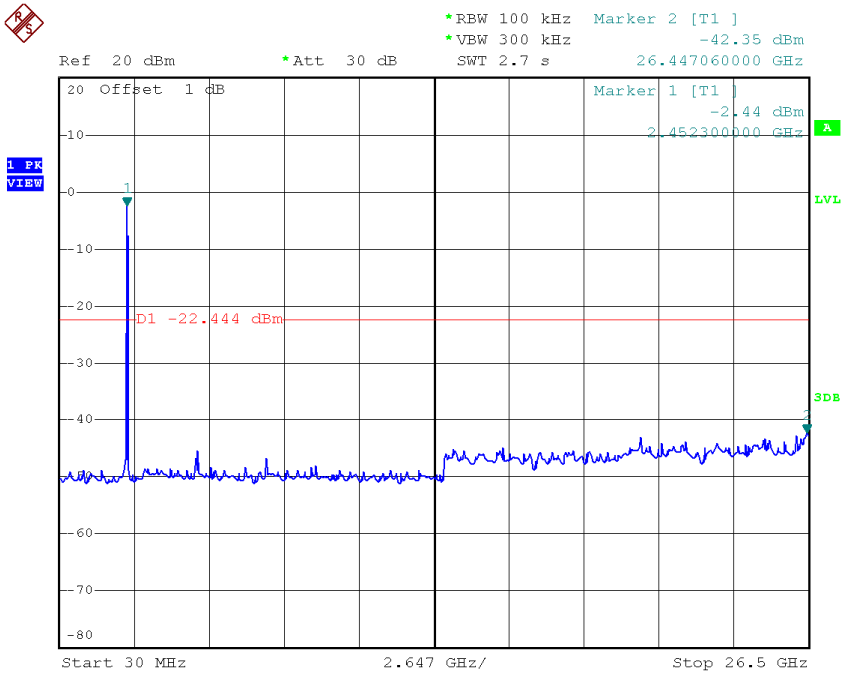
Date: 10.FEB.2015 14:09:34

TX HT40 mode CH06 (10 Harmonic of the frequency)



Date: 10.FEB.2015 14:10:33

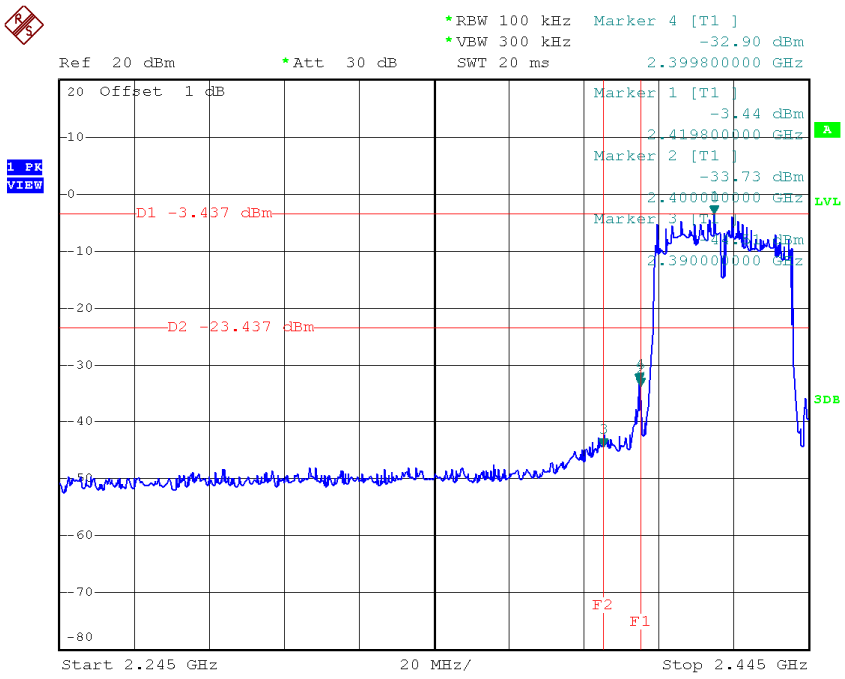
TX HT40 mode CH09 (10 Harmonic of the frequency)



Date: 10.FEB.2015 14:12:18

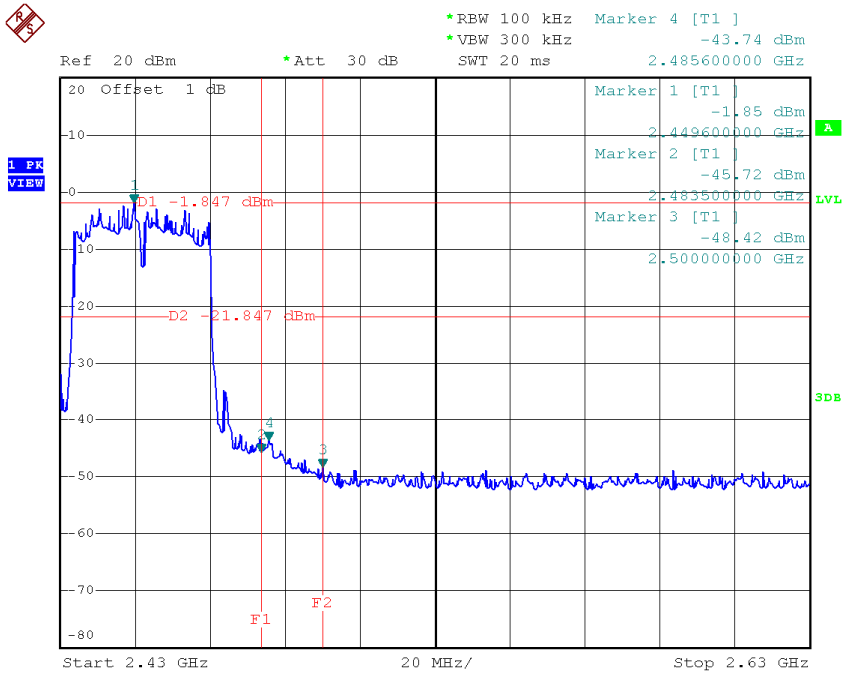
Test Mode :	**TX N-40M Mode_ANT 2**

TX HT40 mode CH03



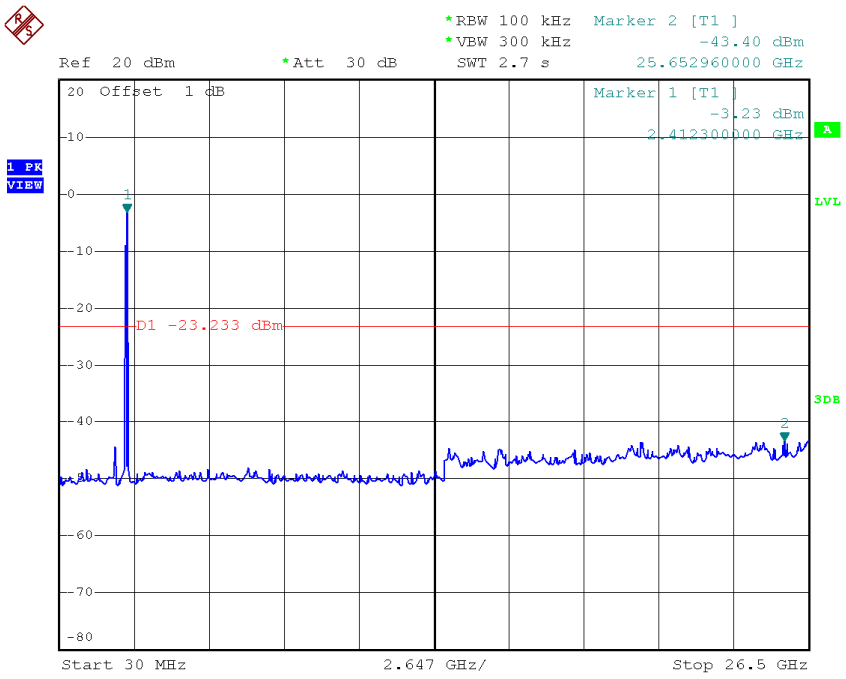
Date: 10.FEB.2015 14:05:24

TX HT40 mode CH09



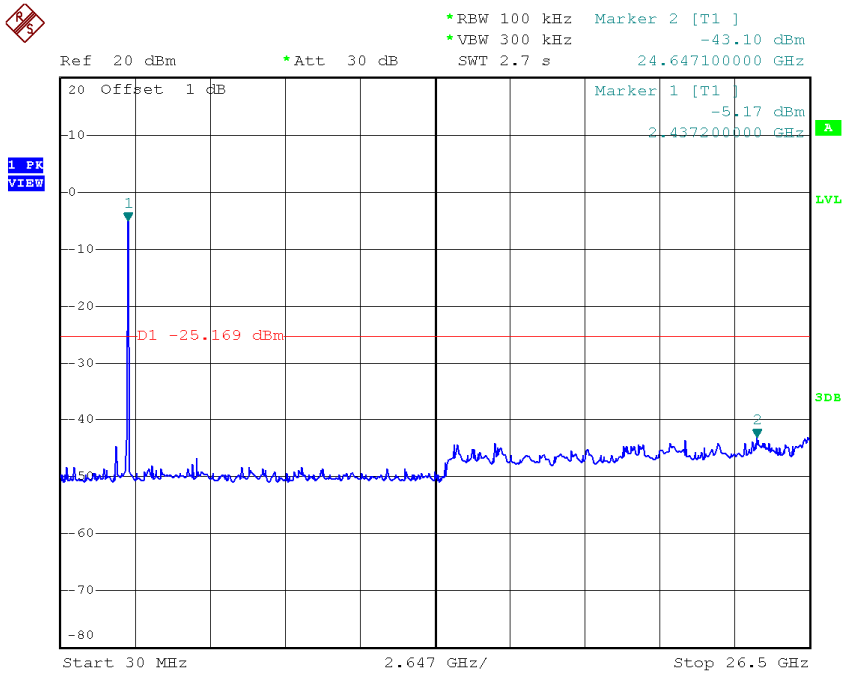
Date: 10.FEB.2015 14:07:19

TX HT40 mode CH03 (10 Harmonic of the frequency)



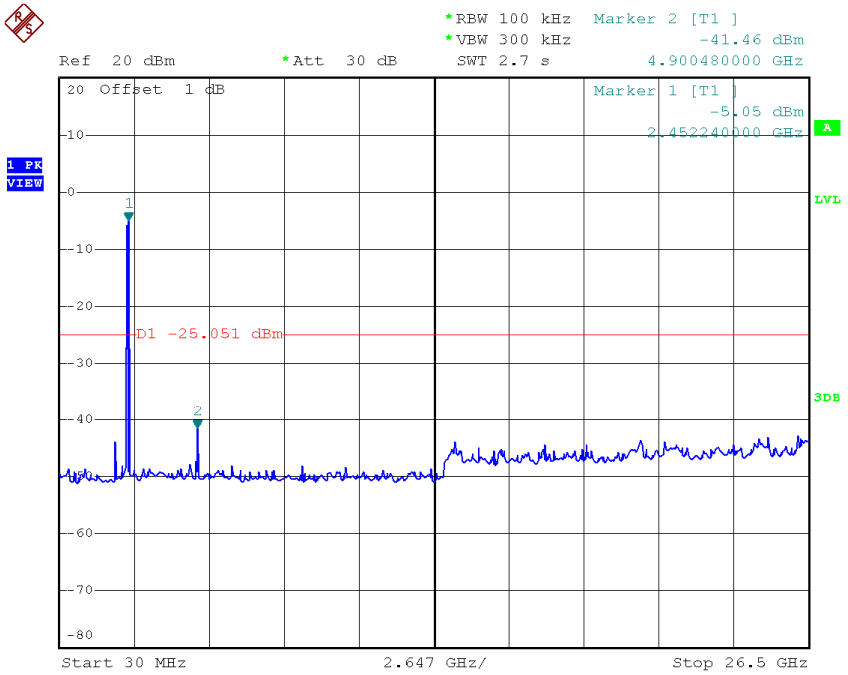
Date: 10.FEB.2015 14:05:16

TX HT40 mode CH06 (10 Harmonic of the frequency)



Date: 10.FEB.2015 14:06:18

TX HT40 mode CH09 (10 Harmonic of the frequency)



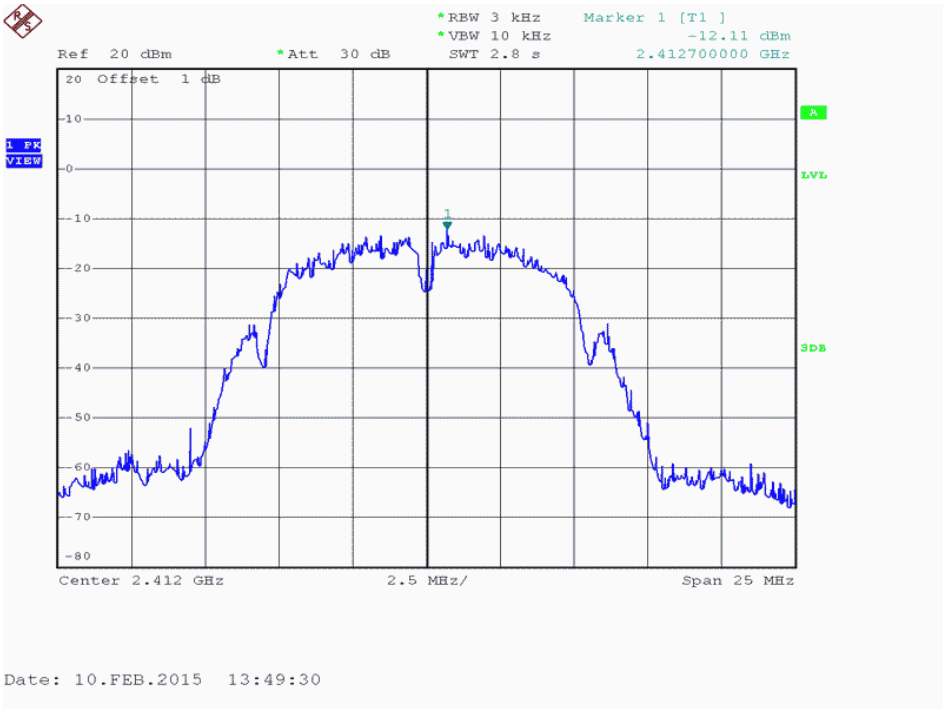
Date: 10.FEB.2015 14:07:11

ATTACHMENT H - POWER SPECTRAL DENSITY

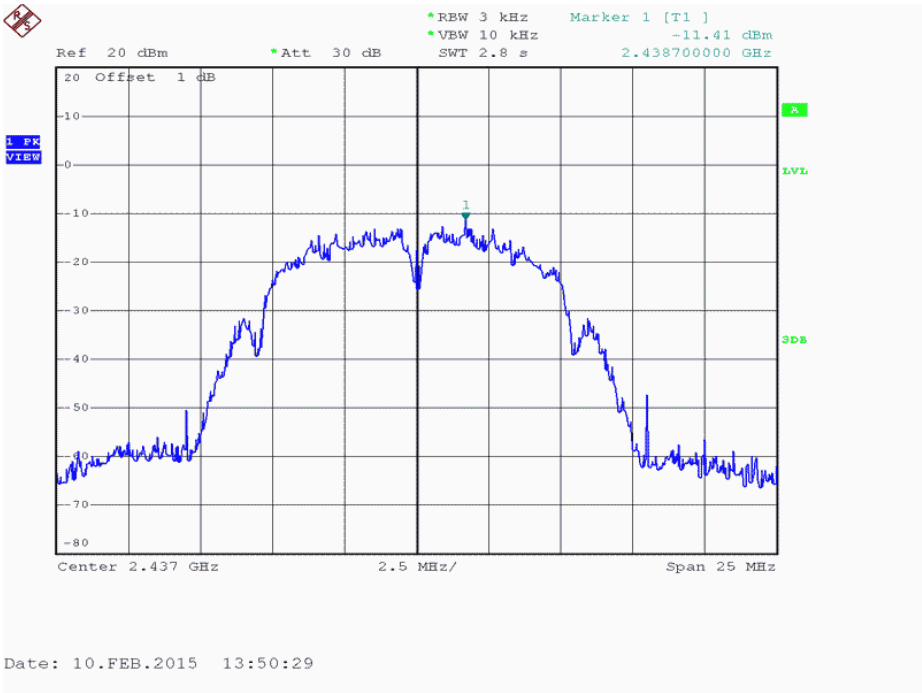
Test Mode :TX B Mode_CH01/06/11_ANT 1

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-12.11	0.06	8.00	Complies
2437	-11.41	0.07	8.00	Complies
2462	-11.52	0.07	8.00	Complies

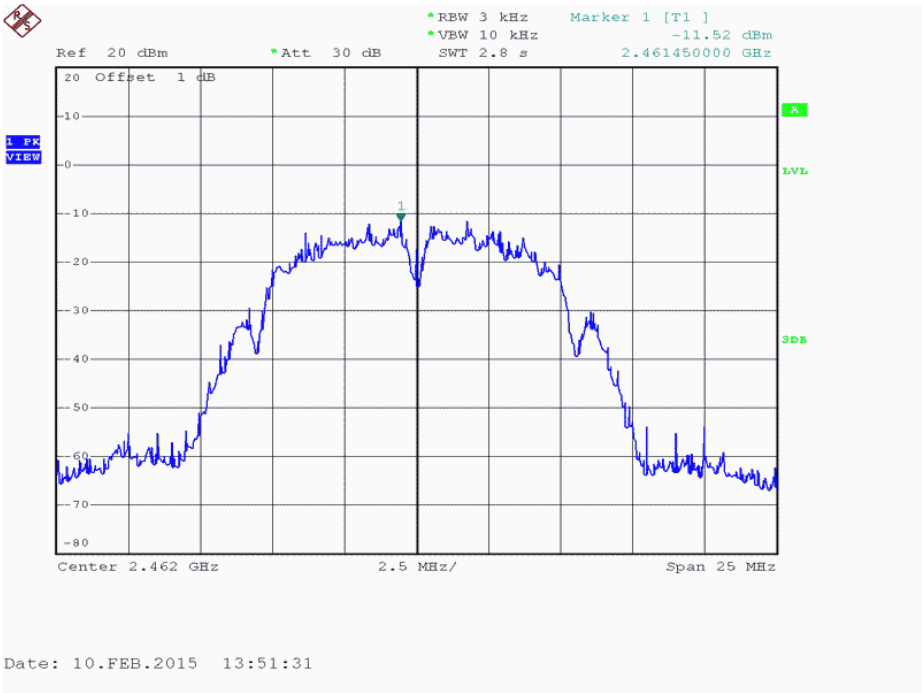
TX CH01



TX CH06



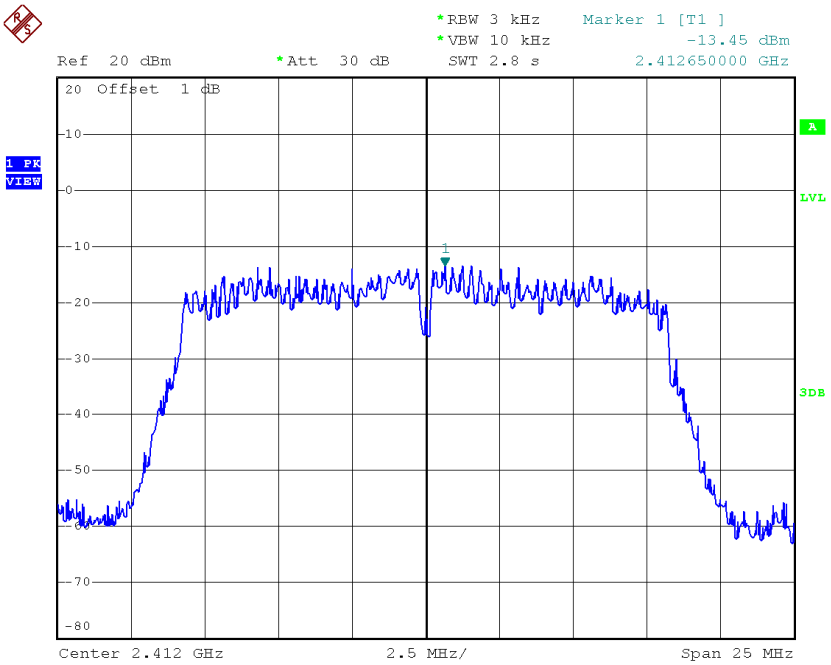
TX CH11



Test Mode :TX G Mode_CH01/06/11_ANT 1

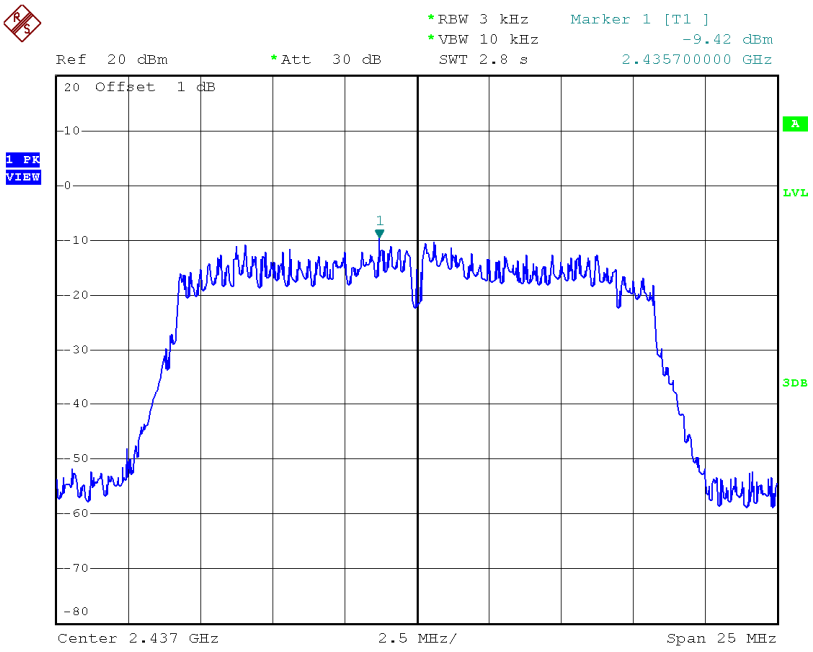
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-13.45	0.05	8.00	Complies
2437	-9.42	0.11	8.00	Complies
2462	-10.39	0.09	8.00	Complies

TX CH01



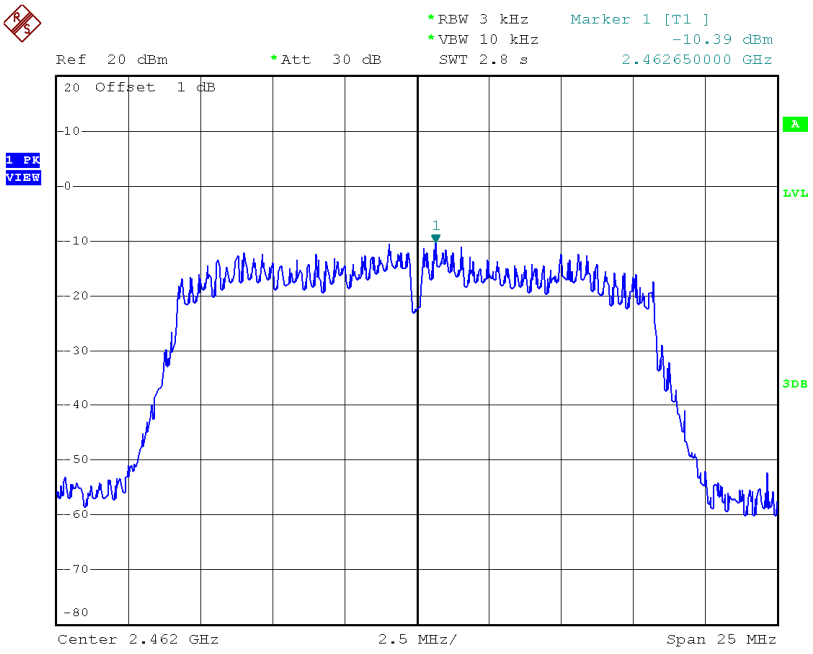
Date: 10.FEB.2015 13:53:21

TX CH06



Date: 10.FEB.2015 13:54:51

TX CH11

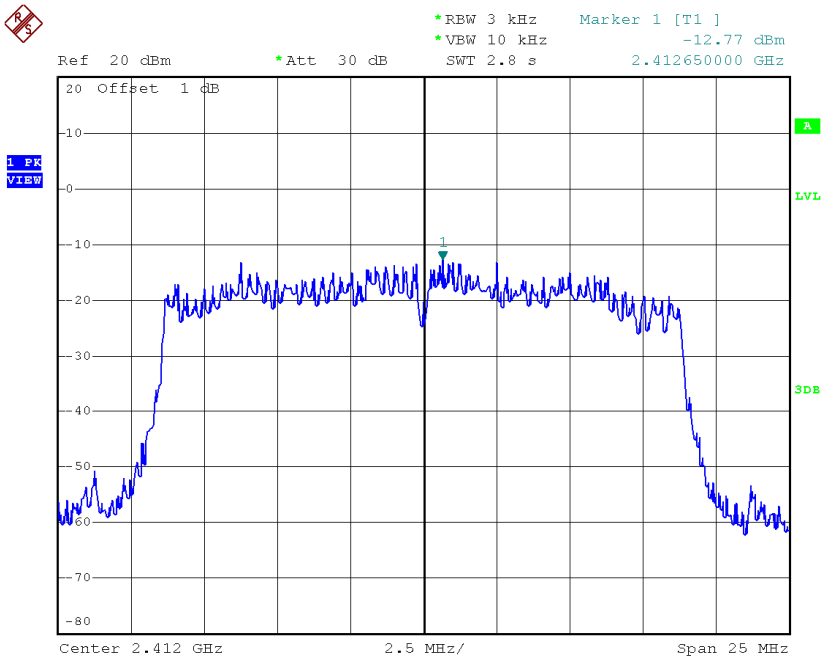


Date: 10.FEB.2015 13:55:50

Test Mode : TX N-20M Mode_CH01/06/11_ANT 1

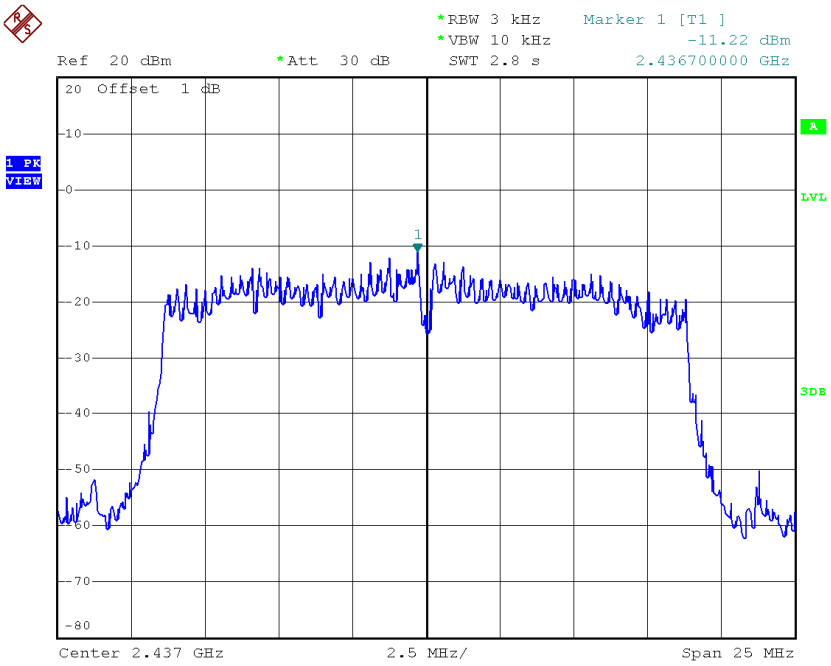
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-12.77	0.05	8.00	Complies
2437	-11.22	0.08	8.00	Complies
2462	-11.86	0.07	8.00	Complies

TX CH01



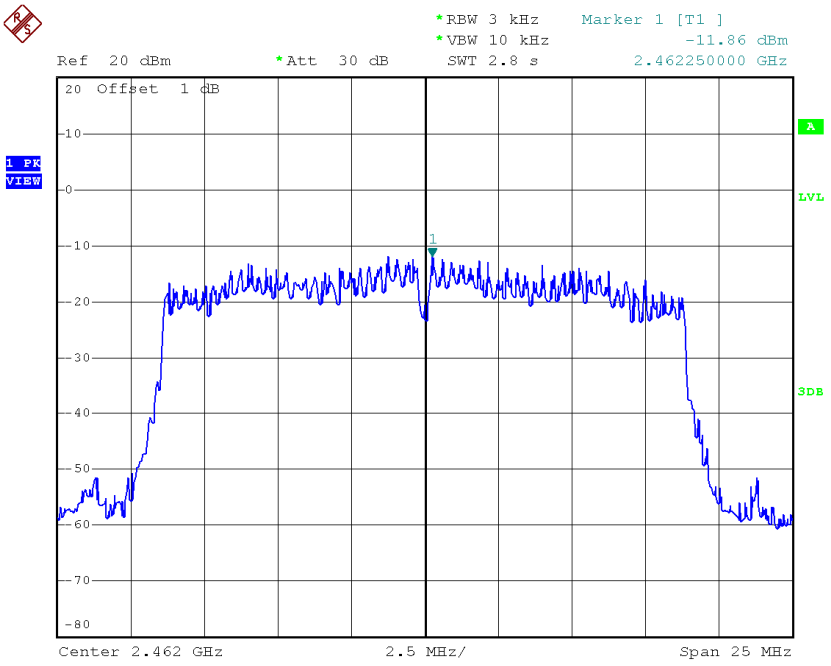
Date: 10.FEB.2015 13:57:39

TX CH06



Date: 10.FEB.2015 13:58:48

TX CH11

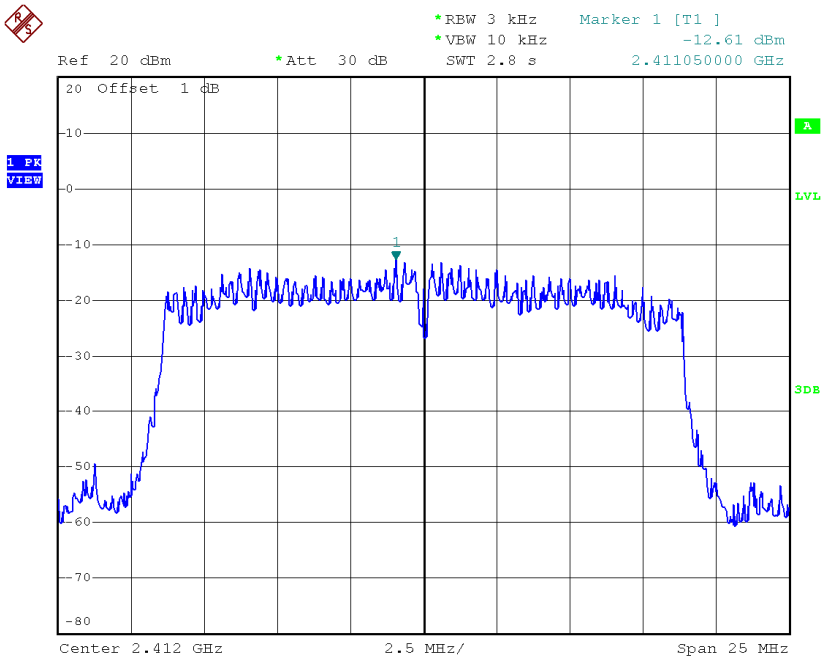


Date: 10.FEB.2015 14:00:02

Test Mode : TX N-20M Mode_CH01/06/11_ANT 2

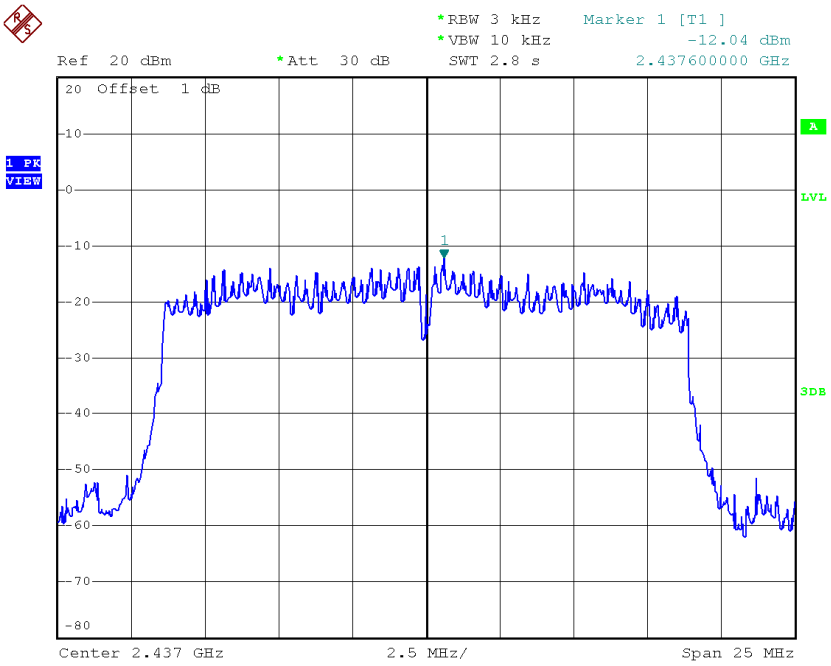
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-12.61	0.05	8.00	Complies
2437	-12.04	0.06	8.00	Complies
2462	-10.93	0.08	8.00	Complies

TX CH01



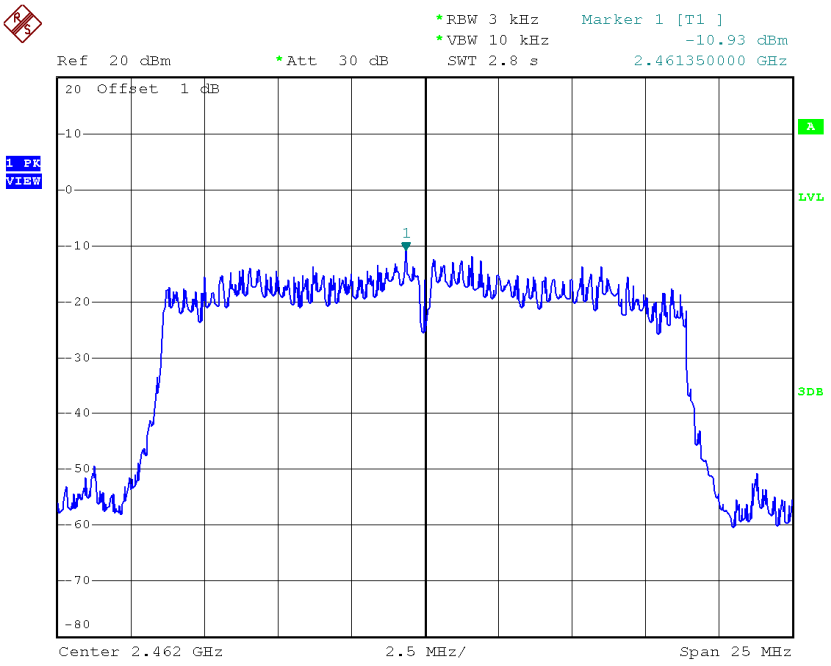
Date: 10.FEB.2015 14:01:58

TX CH06



Date: 10.FEB.2015 14:02:49

TX CH11



Date: 10.FEB.2015 14:03:48

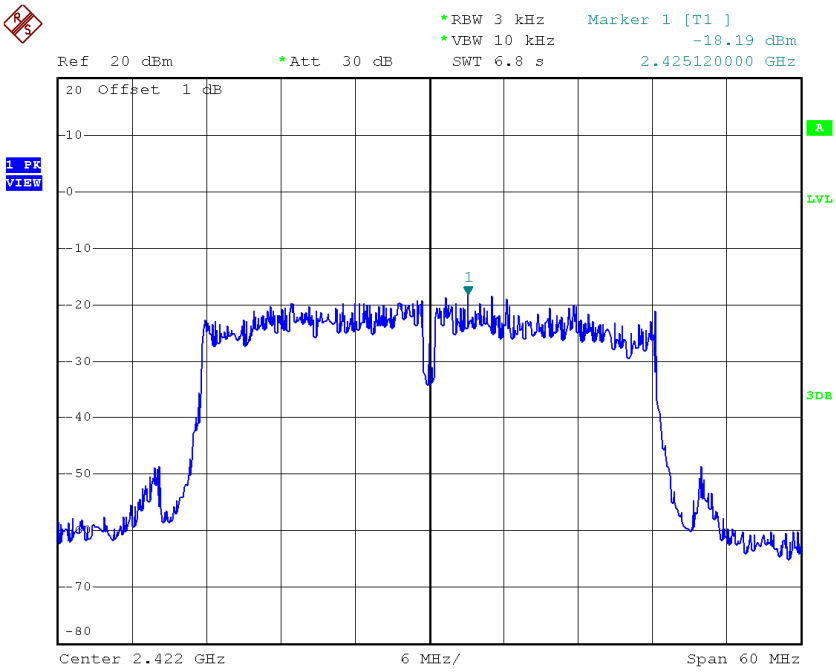
Test Mode : TX N-20M Mode_CH01/06/11_Total

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-9.68	0.11	8.00	Complies
2437	-8.60	0.14	8.00	Complies
2462	-8.36	0.15	8.00	Complies

Test Mode : TX N-40M Mode_CH03/06/09_ANT 1

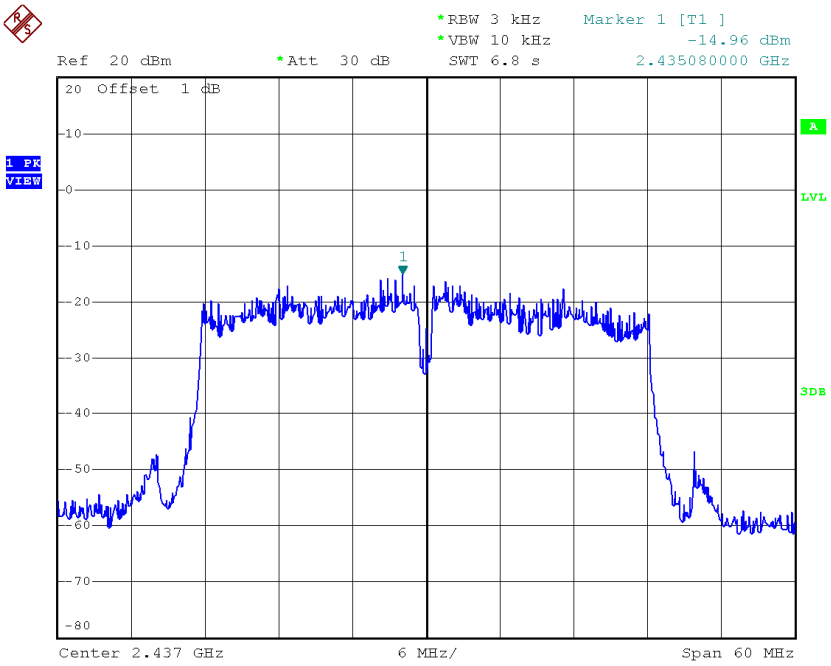
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2422	-18.19	0.02	8.00	Complies
2437	-14.96	0.03	8.00	Complies
2452	-16.85	0.02	8.00	Complies

TX CH03



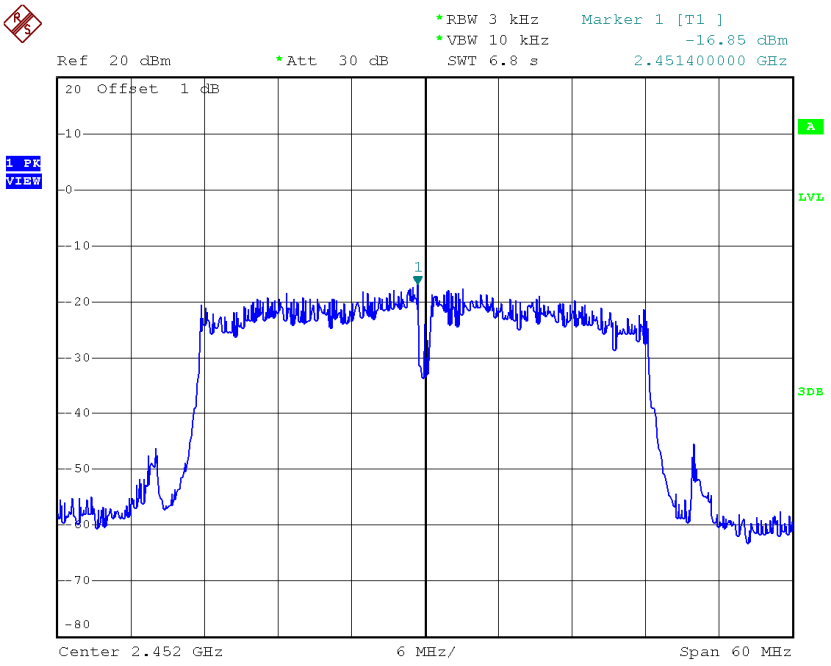
Date: 10.FEB.2015 14:09:53

TX CH06



Date: 10.FEB.2015 14:10:44

TX CH09

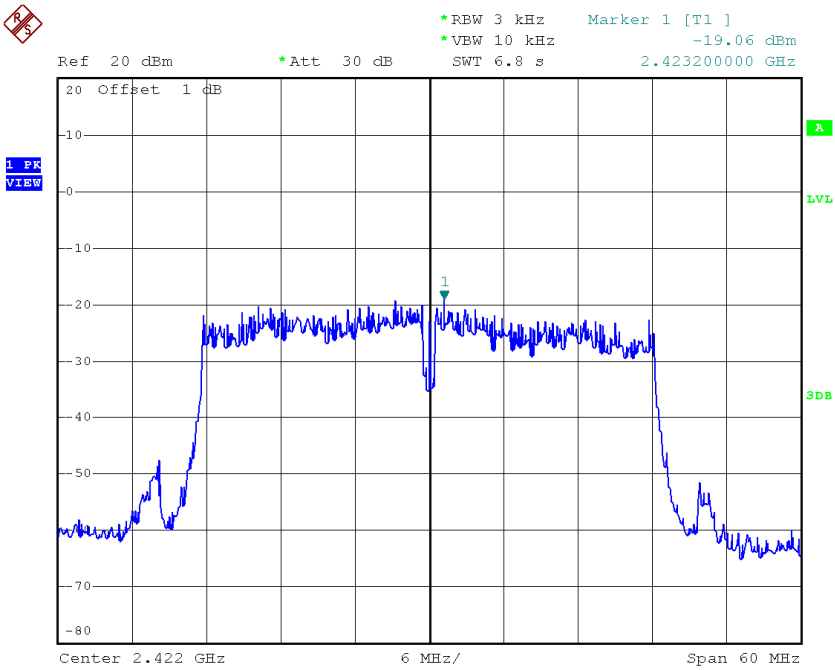


Date: 10.FEB.2015 14:12:37

Test Mode : TX N-40M Mode_CH03/06/09_ANT 2

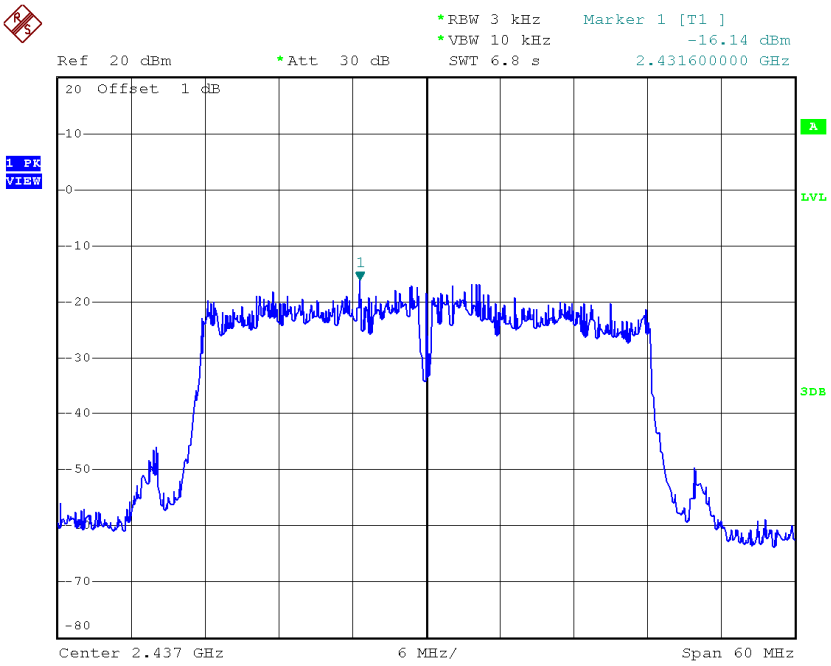
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2422	-19.06	0.01	8.00	Complies
2437	-16.14	0.02	8.00	Complies
2452	-16.83	0.02	8.00	Complies

TX CH03



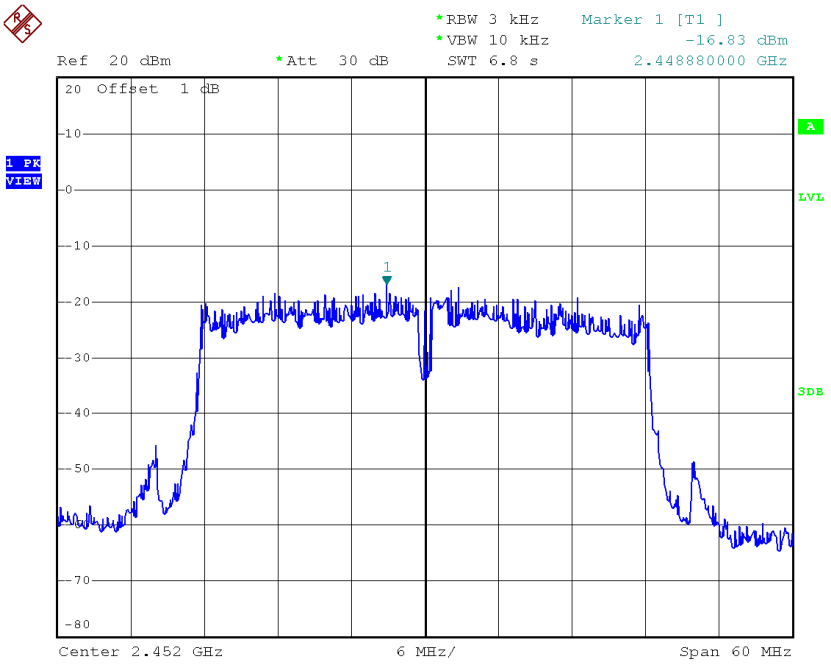
Date: 10.FEB.2015 14:05:36

TX CH06



Date: 10.FEB.2015 14:06:30

TX CH09



Date: 10.FEB.2015 14:07:31

Test Mode : TX N-40M Mode_CH03/06/09_Total

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2422	-15.59	0.03	8.00	Complies
2437	-12.50	0.06	8.00	Complies
2452	-13.83	0.04	8.00	Complies