

# **FCC Radio Test Report** FCC ID:XVGW420

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

: 1507C111 Project No.

Equipment : 802.11ac Wi-Fi USB STB Adapter

Model Name : W420

: Amino Communications Ltd Applicant

Address : Buckingway Business Park, Anderson Road,

Swavesey, Cambridge, CB24 4UQ, UK

Date of Receipt : Jul. 09, 2015

**Date of Test** : Jul. 09, 2015 ~ Jul. 28, 2015

Date or rocal Issued Date : Jui. 20, 1 BTL Inc. : Jul. 29, 2015

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## **REPORT ISSUED HISTORY**

Issued No.	Description	Issued Date
BTL-FCCP-1-1507C111	Original Issue.	Jul. 29, 2015

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## 1. CERTIFICATION

Equipment : 802.11ac Wi-Fi USB STB Adapter

Brand Name: OMINO

Model Name: W420

Applicant : Amino Communications Ltd Manufacturer : Amino Communications Ltd

Address : Buckingway Business Park, Anderson Road, Swavesey, Cambridge, CB24

4UQ, UK

Date of Test : Jul. 09, 2015 ~ Jul. 28, 2015

Test Sample: Engineering Sample

Standard(s) : FCC Part15, Subpart C: 2014 (15.247) /ANSI C63.10-2013

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-1-1507C111) 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).

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## 2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15 (15.247), Subpart C: 2014					
Standard(s) Section	Test Item	Judgment	Remark		
15.207	Conducted Emission	PASS			
15.247(d)	Antenna conducted Spurious Emission	PASS			
15.247(a)(2)	6dB Bandwidth	PASS			
15.247(b)(3)	Peak Output Power	PASS			
15.247(e)	Power Spectral Density	PASS			
15.203	Antenna Requirement	PASS			
15.209/15.205	Transmitter Radiated Emissions	PASS			

## NOTE:

- (1)" N/A" denotes test is not applicable in this test report.
- (2) The test follows FCC KDB Publication No. 558074 D01 DTS Meas Guidance v03r03 (Measurement Guidelines of DTS)

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#### 2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

BTL's test firm number for FCC: 319330

#### 2.2 MEASUREMENT UNCERTAINTY

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

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty U is based on astandard 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	2.32	

## B. Radiated Measurement:

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

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## 3. GENERAL INFORMATION

## 3.1 GENERAL DESCRIPTION OF EUT

Equipment	802.11ac Wi-Fi USB STB Adapter		
Brand Name	amino		
Model Name	W420		
Model Difference	NA		
	Operation Frequency	2412~2462 MHz	
Product Description	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: 9.77dBm 802.11g: 9.79dBm 802.11n(20MHz): 9.61dBm 802.11n(40MHz): 9.64dBm	
PowerSource	Supplied from PC USB port.		
Power Rating	DC 5V		

#### 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		

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## 3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	N/A	N/A	PCB	N/A	3	2.4G
2	N/A	N/A	PCB	N/A	3	2.4G

## 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**<sub>ANT</sub>, that is Directional gain=3.
- (2) ANT 1 for 1TX is the worst case.

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)

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#### 3.2 DESCRIPTION OF TEST MODES

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

Pretest Mode	Description	
Mode 1	TX B MODE CHANNEL 01/06/11	
Mode 2	TX G MODE CHANNEL 01/06/11	
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11	
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09	
Mode 5	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 HT40mode : BPSK (27Mbps)

For radiated emission tests, the highest output powers were set for final test.

- (3) For radiated below 1G test, the 802.11 bis 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%.

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## 3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

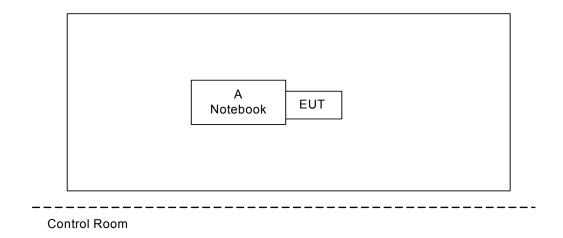
During testing, channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final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

Test software version		MTool_2.0.0.6	
Frequency (MHz)	2412	2437	2462
802.11b	37	37	37
802.11g	37	38	39
802.11n (20MHz)	31	32	33
Frequency	2422	2437	2452
802.11n (40MHz)	31	31	32

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## 3.4BLOCKDIAGRAMSHOWINGTHECONFIGURATIONOFSYSTEMTESTED



## 3.5DESCRIPTION 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
Α	Notebook	DELL	Inspiron 14-3437	DOC	N/A	

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

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#### **4.EMC EMISSION TEST**

#### 4.1CONDUCTED EMISSION MEASUREMENT

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

Fraguency of Emission (MHz)	Conducted Limit (dBµV)		
Frequency of Emission (MHz)	Quasi-peak	Average	
0.15 -0	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 equipmentspowered 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 groundplane 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.

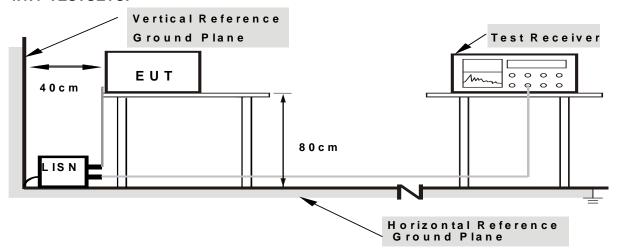
#### 4.1.3DEVIATIONFROMTESTSTANDARD

No deviation

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## 4.1.4 TESTSETUP



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

## **4.1.5EUT OPERATING CONDITIONS**

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

## **4.1.6EUT TEST CONDITIONS**

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

## 4.1.7TEST RESULTS

Please refer to the Attachment A.

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#### 4.2 RADIATED EMISSION MEASUREMENT

#### 4.2.1 RADIATED EMISSION LIMITS

20dBin 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	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(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)	
r requericy (Wiriz)	PEAK	AVERAGE
Above 1000	74	54

## Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C47.
- (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	1MHz / 3MHz for Peak,
(Emission in restricted band)	1MHz / 1/T for Average

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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 TESTPROCEDURE

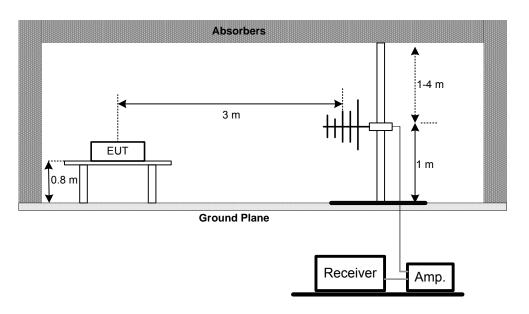
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The EUT was placed on the top of a rotating table 1.5 meters above the ground at 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 or 1.5 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 receiver 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.

## 4.2.3DEVIATIONFROMTESTSTANDARD

No deviation

#### 4.2.4 TESTSETUP

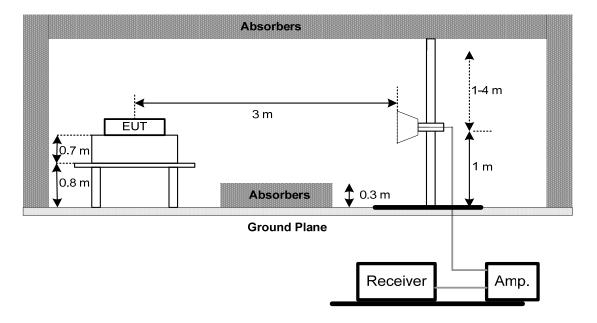
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



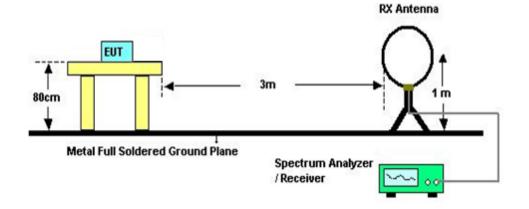
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## (B) Radiated Emission Test Set-Up Frequency Above 1 GHz



## (C) For Radiated Emissions Below 30MHz



## **4.2.5EUT OPERATING CONDITIONS**

The EUT was programmed to be in continuously transmitting mode.

## **4.2.6EUT TEST CONDITIONS**

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

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## 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(30MHZTO 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.

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## **5.BANDWIDTH TEST**

## **5.1APPLIED PROCEDURES**

FCC Part15 (15.247) , Subpart C47			
Section	Test Item	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	2400-2483.5	PASS

#### **5.1.1TEST 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.

## **5.1.2DEVIATION FROM STANDARD**

No deviation.

#### **5.1.3TEST SETUP**

EUT	SPECTRUM
	ANALYZER

## **5.1.4EUT OPERATION CONDITIONS**

The EUT was programmed to be in continuously transmitting mode.

## **5.1.5EUT TEST CONDITIONS**

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

## **5.1.6TEST RESULTS**

Please refer to the Attachment E.

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## **6.MAXIMUM CONDUCTED OUTPUT POWER TEST**

## **6.1APPLIED 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		

## **6.1.1TEST 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 558074D01 DTS Meas Guidance v03r03.

#### **6.1.2DEVIATION FROM STANDARD**

No deviation.

#### **6.1.3TEST SETUP**

EUT	Power Meter

## **6.1.4EUT OPERATION CONDITIONS**

The EUT was programmed to be in continuously transmitting mode.

## **6.1.5EUT TEST CONDITIONS**

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

#### **6.1.6TEST RESULTS**

Please refer to the Attachment F.

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#### 7.ANTENNA CONDUCTED SPURIOUS EMISSION

#### 7.1APPLIED PROCEDURES / LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum ordigitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits.

#### 7.1.1TEST 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.

#### 7.1.2DEVIATION FROM STANDARD

No deviation.

#### 7.1.3TEST SETUP

EUT	SPECTRUM
	ANALYZER

#### 7.1.4EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 7.1.5EUT TEST CONDITIONS

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

#### 7.1.6TEST RESULTS

Please refer to the Attachment G.

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## **8.POWER SPECTRAL DENSITY TEST**

## 8.1APPLIED 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	

## **8.1.1TEST 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.

#### **8.1.2DEVIATION FROM STANDARD**

No deviation.

## 8.1.3TEST SETUP

EUT	SPECTRUM
	ANALYZER

## **8.1.4EUT OPERATION CONDITIONS**

The EUT was programmed to be in continuously transmitting mode.

#### **8.1.5EUT TEST CONDITIONS**

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

#### **8.1.6TEST RESULTS**

Please refer to the Attachment H.

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## 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. 28, 2016	
2	LISN	R&S	ENV216	101447	Mar. 28, 2016	
3	Test Cable	emci	RG223(9KHz -30MHz)	C_17	Mar. 13, 2016	
4	EMI TEST RECEIVER	R&S	ESCS30	833364/017	Mar. 28, 2016	
5	50Ω Terminator	SHX	TF2-3G-A	08122902	Mar. 28, 2016	
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. 28, 2016	
2	Amplifier	HP	8447D	2944A09673	Nov. 17, 2015	
3	Receiver	AGILENT	N9038A	MY5213003 9	Sep. 30, 2015	
4	Test Cable	emci	LMR-400(30MH z-1GHz)	C-01	Jun. 28, 2016	
5	Controller	CT	SC100	N/A	N/A	
6	Antenna	ETS	3115	00075789	Mar. 28, 2016	
7	Amplifier	Agilent	8449B	3008A02274	Nov. 02, 2015	
8	Receiver	AGILENT	N9038A	MY5213003 9	Sep. 30, 2015	
9	Test Cable	emci	EMC104-SM-S M-10000(1GHz -26.5GHz)	C-68	Jun. 28, 2016	
10	Controller	СТ	SC100	N/A	N/A	
11	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Mar. 28, 2016	
12	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 28, 2016	
13	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Aug. 16, 2015	
14	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A	

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

	Peak Output PowerMeasurement				
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	P-series Power meter	Agilent	N1911A	MY45100473	Mar. 28, 2016
2	Wireband Power sensor	Agilent	N1921A	MY51100041	Mar. 28, 2016

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.

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## **10.EUT TEST PHOTO**







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## **Radiated Measurement Photos**

9KHz to 30MHz





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## **Radiated Measurement Photos**







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## **Radiated Measurement Photos**

## Above 1000MHz





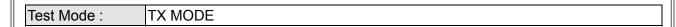
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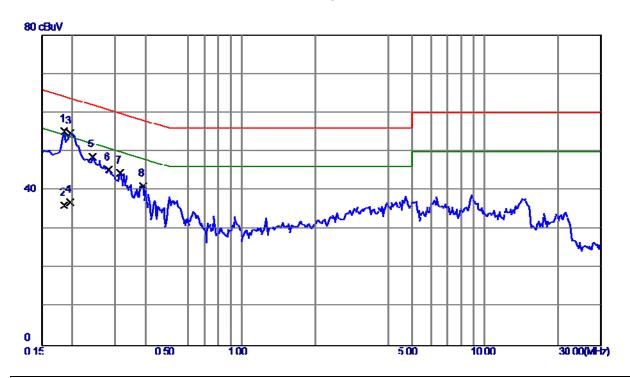
ATTACHMENTA -CONDUCTED EMISSION	

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## Line



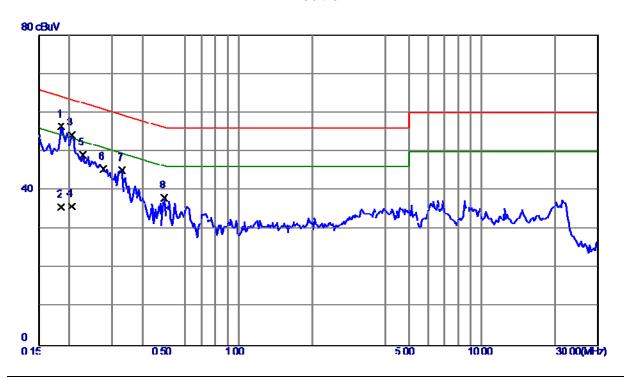
No.	Freq.	Reading	Correct	Measure	Limit	Over		
		Level	Factor	ment				
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1852	45.62	9.56	55.18	64.25	-9.07	Peak	
2	0.1852	26.61	9.56	36.17	54.25	-18.08	AVG	
3	0.1970	45.12	9.57	54.69	63.74	-9.05	Peak	
4	0.1970	27.40	9.57	36.97	53.74	-16.77	AVG	
5	0.2437	39.08	9.61	48.69	61.97	-13.28	Peak	
6	0.2828	35.72	9.63	45.35	60.73	-15.38	Peak	
7	0.3141	34.87	9.64	44.51	59.86	-15.35	Peak	
8	0.3922	31.48	9.67	41.15	58.02	-16.87	Peak	

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## **Neutral**



No.	Freq.	Reading	Correct	Measure	Limit	Over		
		Level	Factor	ment				
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1852	46.91	9.49	56.40	64.25	-7.85	Peak	
2	0.1852	26.20	9.49	35.69	54.25	-18.56	AVG	
3	0.2047	44.73	9.50	54.23	63.42	-9.19	Peak	
4	0.2047	26.30	9.50	35.80	53.42	-17.62	AVG	
5	0.2281	39.66	9.51	49.17	62.52	-13.35	Peak	
6	0.2760	35.93	9.52	45.45	60.94	-15.49	Peak	
7	0.3297	35.56	9.53	45.09	59.46	-14.37	Peak	
8	0.4938	28.51	9.56	38.07	56.10	-18.03	Peak	

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ATTACHMENTB -RADIATED EMISSION (9KHZ TO 30MHZ)

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Test Mode: TX MODE

Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Note
0.0157	0°	13.48	24.5723	38.0523	123.6862	-85.6339	AVG
0.0157	0°	14.62	24.5723	39.1923	143.6862	-104.4939	PEAK
0.0366	0°	6.88	23.2487	30.1287	116.3346	-86.2059	AVG
0.0366	0°	7.63	23.2487	30.8787	136.3346	-105.4559	PEAK
0.0392	0°	3.84	23.0840	26.9240	115.7385	-88.8145	AVG
0.0392	0°	5.53	23.0840	28.6140	135.7385	-107.1245	PEAK
0.0473	0°	0.96	22.5710	23.5310	114.1070	-90.5760	AVG
0.0473	0°	3.13	22.5710	25.7010	134.1070	-108.4060	PEAK
2.0664	0°	30.67	19.4602	50.1302	69.5400	-19.4098	QP
3.3667	0°	21.75	18.9367	40.6867	69.5400	-28.8533	QP

Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Note
0.0151	90°	13.46	24.3000	37.7600	124.0247	-86.2647	AVG
0.0151	90°	14.63	24.3000	38.9300	144.0247	-105.0947	PEAK
0.0362	90°	6.42	23.2740	29.6940	116.4301	-86.7361	AVG
0.0362	90°	8.81	23.2740	32.0840	136.4301	-104.3461	PEAK
0.0383	90°	3.59	23.1410	26.7310	115.9402	-89.2092	AVG
0.0383	90°	5.54	23.1410	28.6810	135.9402	-107.2592	PEAK
0.0689	90°	0.72	22.0220	22.7420	110.8398	-88.0978	AVG
0.0689	90°	2.89	22.0220	24.9120	130.8398	-105.9278	PEAK
2.0574	90°	30.74	19.4656	50.2056	69.5400	-19.3344	QP
3.2486	90°	21.58	18.9249	40.5049	69.5400	-29.0351	QP

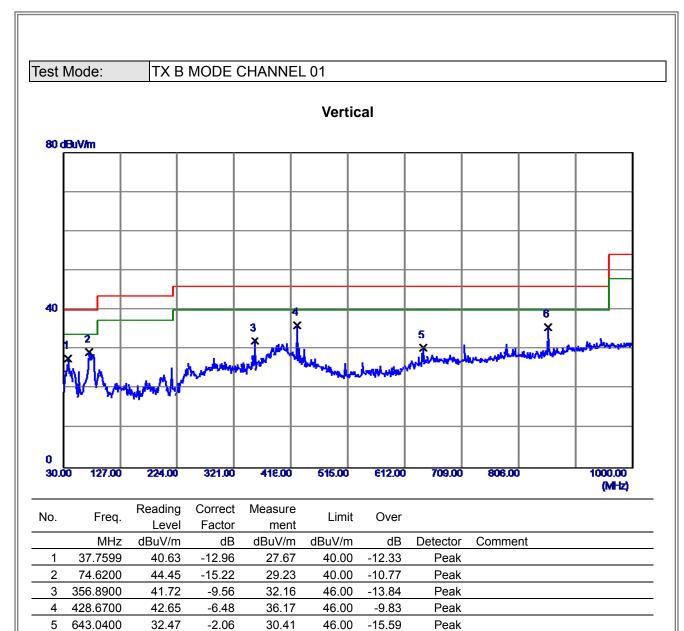
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ATTACHMENTC -RADIATED EMISSION (30MHZ TO 1000MHZ)

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856.4400

35.36

0.32

35.68

46.00

-10.32

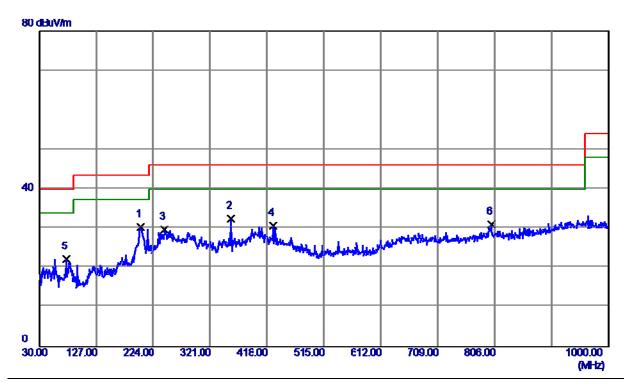
Peak

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Test Mode: TX B MODE CHANNEL 01

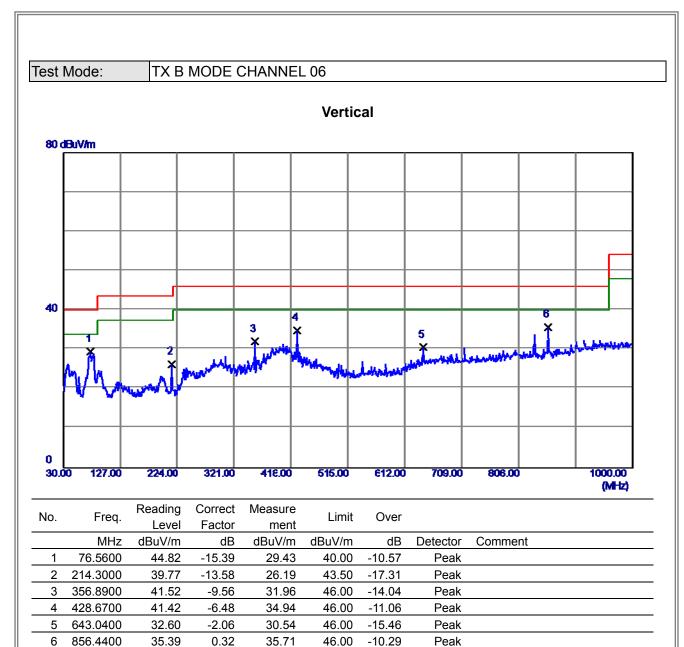
# Horizontal



No.	Erog	Reading	Correct	Measure	Limit	Over			
110.	Freq.	Level	Factor	ment	LIIIII	Ovei			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	202.6600	43.95	-13.61	30.34	43.50	-13.16	Peak		
2	356.8900	42.05	-9.56	32.49	46.00	-13.51	Peak		
3	243.4000	42.28	-12.49	29.79	46.00	-16.21	Peak		
4	428.6700	37.18	-6.48	30.70	46.00	-15.30	Peak		
5	76.5600	37.57	-15.39	22.18	40.00	-17.82	Peak		
6	800.1800	30.83	0.16	30.99	46.00	-15.01	Peak		

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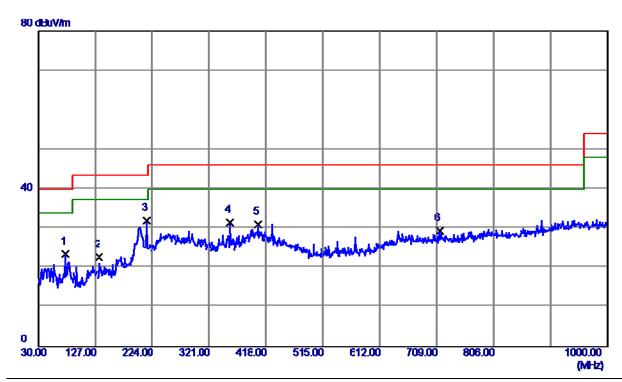


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Test Mode: TX B MODE CHANNEL 06

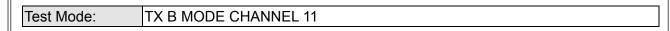
# Horizontal



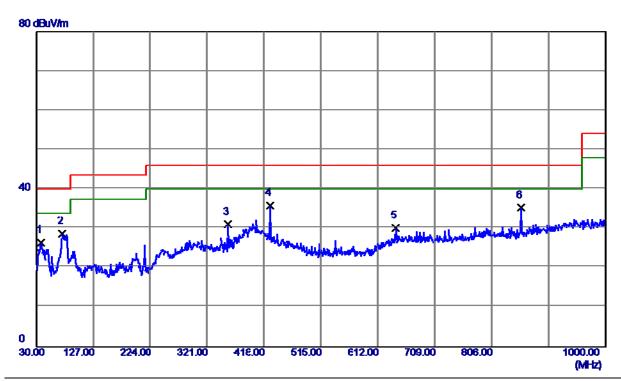
	No.	Erog	Reading	Correct	Measure	Limit	Over			
	INO.	Freq.	Level	Factor	ment	LIIIII	Ovei			
_		MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
_	1	76.5600	38.86	-15.39	23.47	40.00	-16.53	Peak		
	2	133.7899	34.18	-11.53	22.65	43.50	-20.85	Peak		
	3	214.3000	45.56	-13.58	31.98	43.50	-11.52	Peak		
	4	356.8900	41.13	-9.56	31.57	46.00	-14.43	Peak		
	5	405.3900	38.19	-7.12	31.07	46.00	-14.93	Peak		
	6	713.8500	30.90	-1.46	29.44	46.00	-16.56	Peak		

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## Vertical



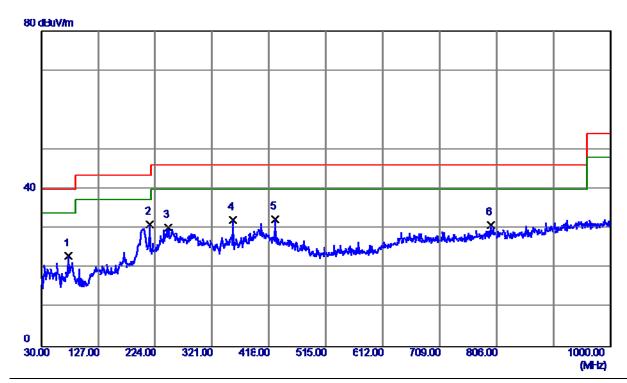
No.	Erog	Reading	Correct	Measure	Limit	Over			
NO.	Freq.	Level	Factor	ment	LIIIII	Ovei			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	37.7599	39.30	-12.96	26.34	40.00	-13.66	Peak		
2	74.6200	43.91	-15.22	28.69	40.00	-11.31	Peak		
3	356.8900	40.64	-9.56	31.08	46.00	-14.92	Peak		
4	428.6700	42.25	-6.48	35.77	46.00	-10.23	Peak		
5	642.0700	32.27	-2.12	30.15	46.00	-15.85	Peak		
6	856.4400	34.96	0.32	35.28	46.00	-10.72	Peak		 

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Test Mode: TX B MODE CHANNEL 11

# Horizontal



No.	Frog	Reading	Correct	Measure	Limit	Over			
INO.	Freq.	Level	Factor	ment	LIIIII	Ovei			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	76.5600	38.38	-15.39	22.99	40.00	-17.01	Peak		
2	214.3000	44.59	-13.58	31.01	43.50	-12.49	Peak		
3	246.3100	42.77	-12.57	30.20	46.00	-15.80	Peak		
4	356.8900	41.74	-9.56	32.18	46.00	-13.82	Peak		
5	428.6700	38.81	-6.48	32.33	46.00	-13.67	Peak		
6	796.3000	30.88	0.04	30.92	46.00	-15.08	Peak		

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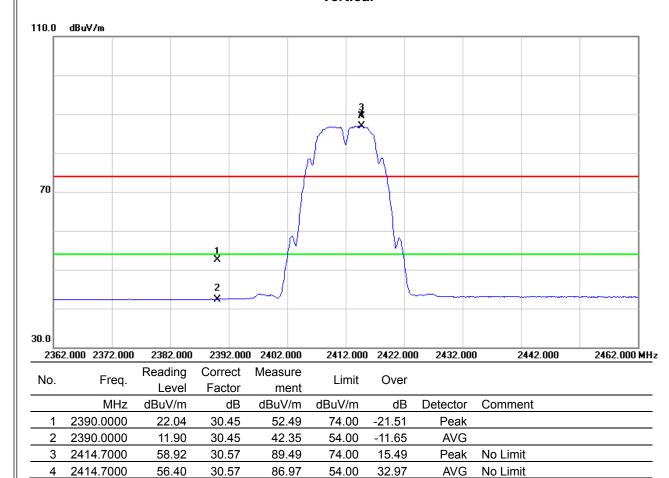
ATTACI	HMENTD -RADIATED	EMISSION (ABOVE	1000MHZ)

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

#### Vertical

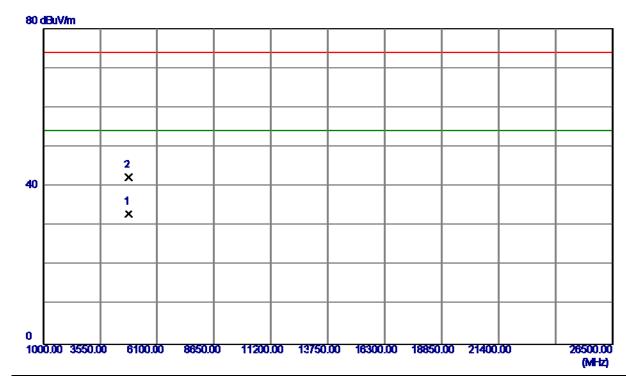


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Test Mode: TX B MODE 2412MHz

## **Vertical**



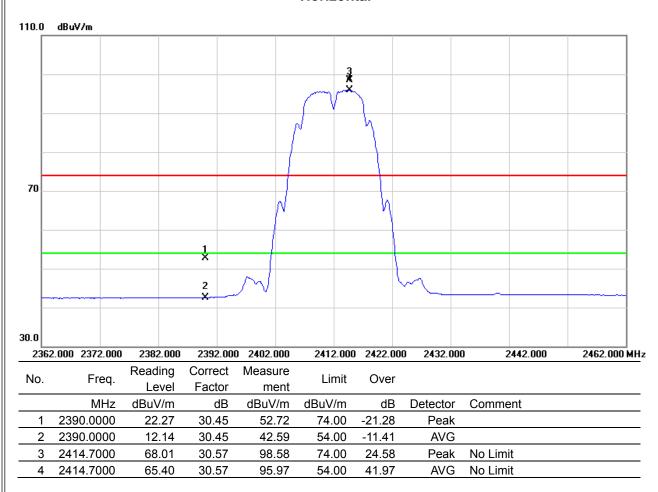
No.	Freq.	Reading	Correct	Measure	Limit	Over			
110.	r req.	Level	Factor	ment	LIIIII	Ovei			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4824.0099	27.03	5.87	32.90	54.00	-21.10	AVG		
2	4824.0200	36.38	5.87	42.25	74.00	-31.75	Peak		

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

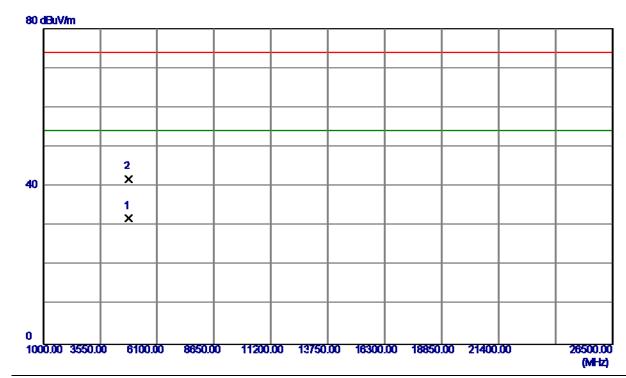
#### Horizontal





Test Mode: TX B MODE 2412MHz

## Horizontal



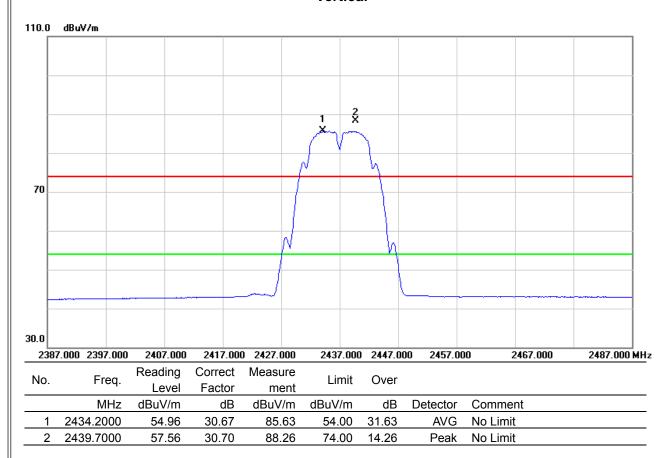
No.	Freq.	Reading	Correct	Measure	Limit	Over			
	1104.	Level	Factor	ment	LIIIII	OVCI			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4823.9900	25.90	5.87	31.77	54.00	-22.23	AVG		
2	4824.0299	35.97	5.87	41.84	74.00	-32.16	Peak		

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

### Vertical

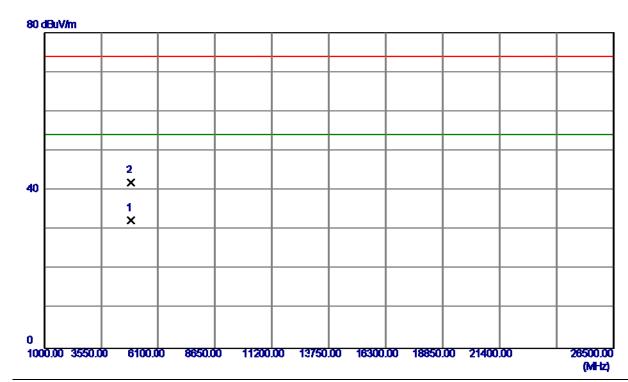


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Orthogonal Axis: X
Test Mode: TX B MODE 2437MHz

## **Vertical**



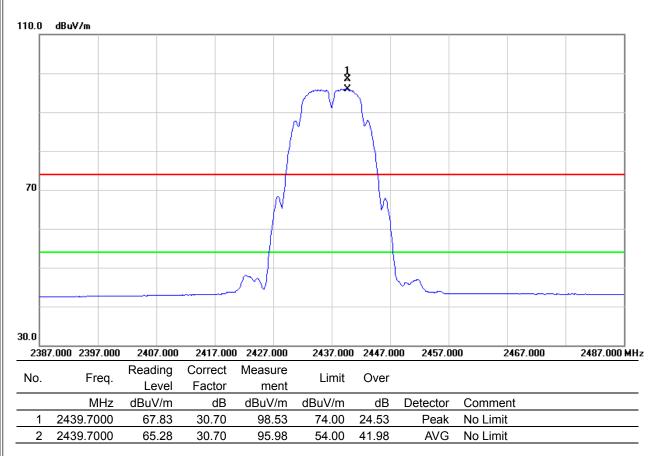
Freq	Reading	Correct	Measure	Limit	Over			
r req.	Level	Factor	ment	LIIIII	Ovei			
MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
4874.0000	26.26	6.00	32.26	54.00	-21.74	AVG		
4874.1050	35.93	6.00	41.93	74.00	-32.07	Peak		
	4874.0000	Hreq. Level  MHz dBuV/m  4874.0000 26.26	Hereq.         Level         Factor           MHz         dBuV/m         dB           4874.0000         26.26         6.00	Freq.         Level         Factor         ment           MHz         dBuV/m         dB dBuV/m           4874.0000         26.26         6.00         32.26	Freq.         Level         Factor         ment         Limit           MHz         dBuV/m         dB dBuV/m         dBuV/m           4874.0000         26.26         6.00         32.26         54.00	Freq.         Level         Factor         ment         Limit         Over           MHz         dBuV/m         dB         dBuV/m         dBuV/m         dB           4874.0000         26.26         6.00         32.26         54.00         -21.74	Freq.         Level         Factor         ment         Limit         Over           MHz         dBuV/m         dB uV/m         <	Freq.         Level         Factor         ment         Limit         Over           MHz         dBuV/m         dB dBuV/m         dBuV/m         dB Detector         Comment           4874.0000         26.26         6.00         32.26         54.00         -21.74         AVG

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

### Horizontal

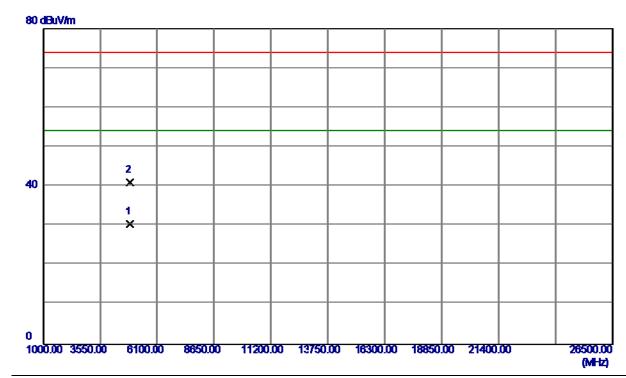


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Test Mode: TX B MODE 2437MHz

## Horizontal



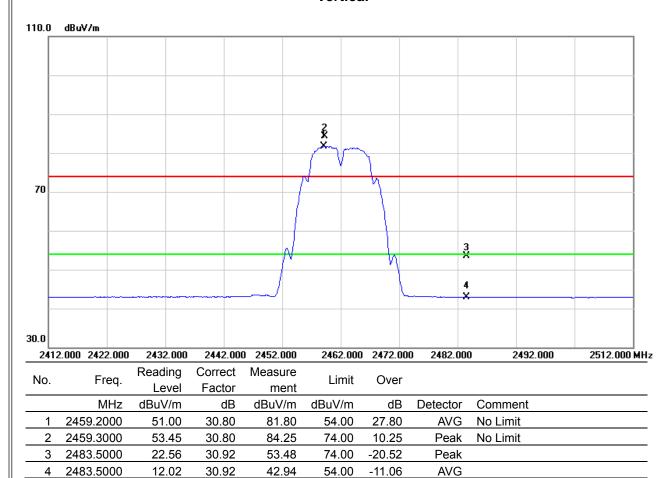
No.	Freq.	Reading	Correct	Measure	Limit	Over			
110.	1104.	Level	Factor	ment	LIIIII	OVCI			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4873.9800	24.35	6.00	30.35	54.00	-23.65	AVG		
2	4874.1200	35.02	6.00	41.02	74.00	-32.98	Peak		

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

### Vertical

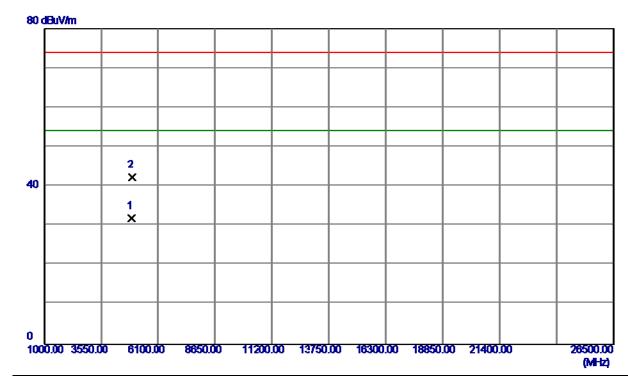


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Test Mode: TX B MODE 2462MHz

## **Vertical**



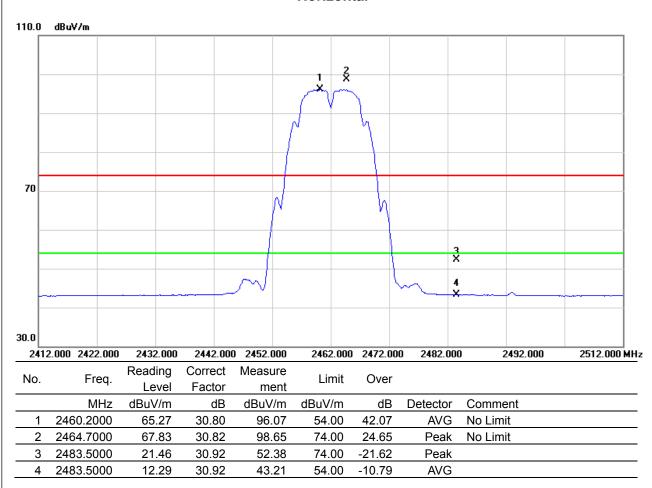
No.	Freq.	Reading	Correct	Measure	Limit	Over			
140.	r req.	Level	Factor	ment	LIIIII	OVCI			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4924.0150	25.76	6.14	31.90	54.00	-22.10	AVG		
2	4924.5050	36.08	6.14	42.22	74.00	-31.78	Peak		

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

#### Horizontal

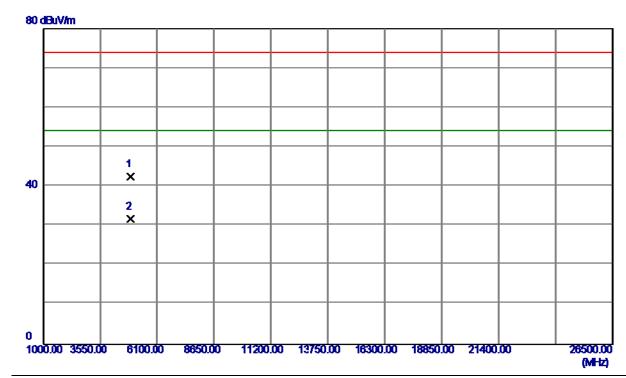


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Test Mode: TX B MODE 2462MHz

## Horizontal



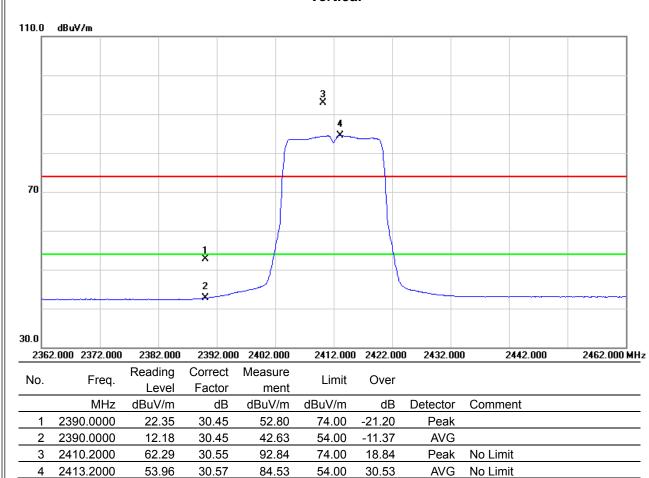
No.	Freq.	Reading	Correct	Measure	Limit	Over			
140.	r req.	Level	Factor	ment	Liiiii	OVCI			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4923.9600	36.27	6.14	42.41	74.00	-31.59	Peak		
2	4923.9750	25.61	6.14	31.75	54.00	-22.25	AVG		

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

### Vertical

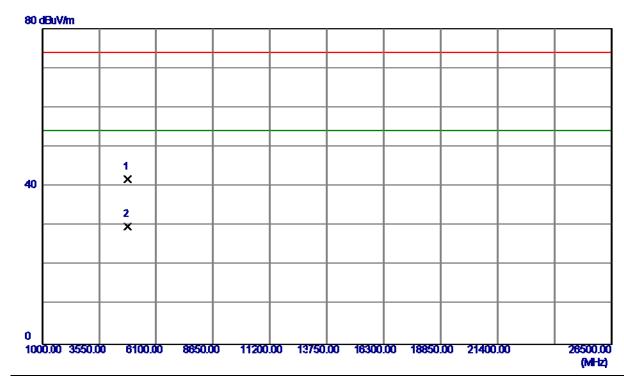


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Test Mode: TX G MODE 2412MHz

## **Vertical**



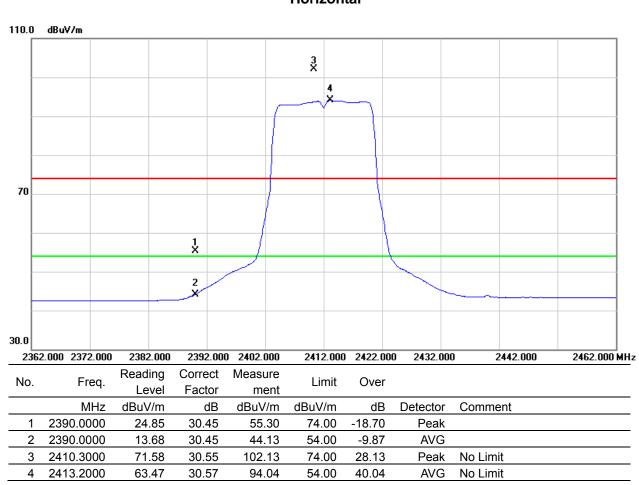
No.	Freq.	Reading	Correct	Measure	Limit	Over			
INO.	rieq.	Level	Factor	ment	LIIIII	Ovei			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4824.0950	35.92	5.87	41.79	74.00	-32.21	Peak		
2	4824.0950	23.82	5.87	29.69	54.00	-24.31	AVG		

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

#### Horizontal

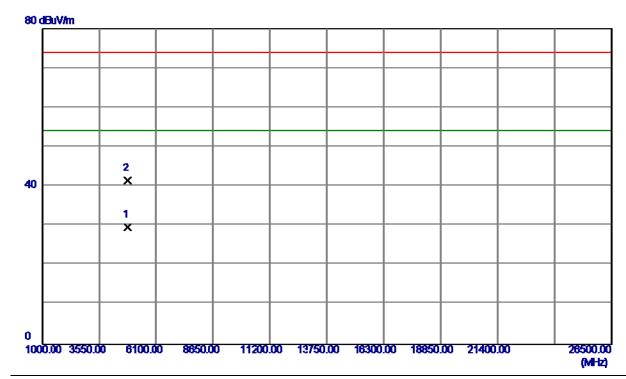


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Test Mode: TX G MODE 2412MHz

## Horizontal



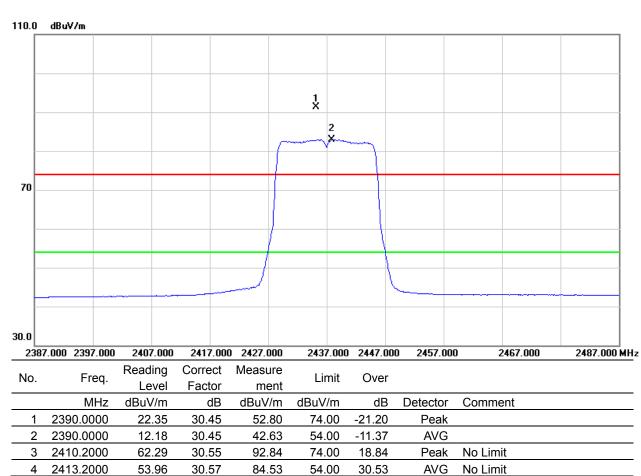
No.	Freq.	Reading	Correct	Measure	Limit	Over			
NO.	rieq.	Level	Factor	ment	LIIIII	Ovei			
<u> </u>	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4824.1850	23.67	5.87	29.54	54.00	-24.46	AVG		
2	4824.5200	35.57	5.87	41.44	74.00	-32.56	Peak		

Report No.: BTL-FCCP-1-1507C111 Page 58 of 143



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

# Vertical



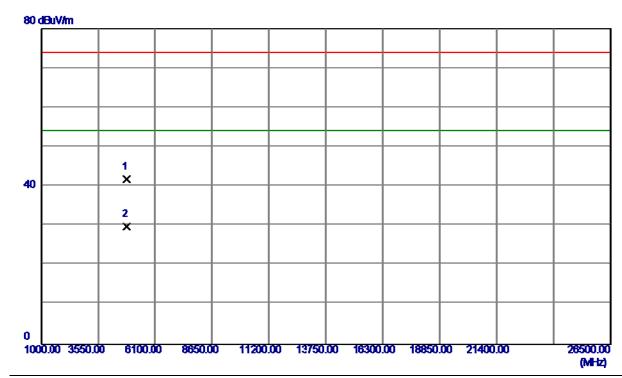
	No. Fre	Erog	Reading Correct Measure		Over					
		rieq.	Level	Factor	ment	LIIIII	Ovei			
		MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
	1	2390.0000	22.35	30.45	52.80	74.00	-21.20	Peak		
	2	2390.0000	12.18	30.45	42.63	54.00	-11.37	AVG		
	3	2410.2000	62.29	30.55	92.84	74.00	18.84	Peak	No Limit	
	4	2413.2000	53.96	30.57	84.53	54.00	30.53	AVG	No Limit	

Report No.: BTL-FCCP-1-1507C111 Page 59 of 143



Test Mode: TX G MODE 2437MHz

## **Vertical**



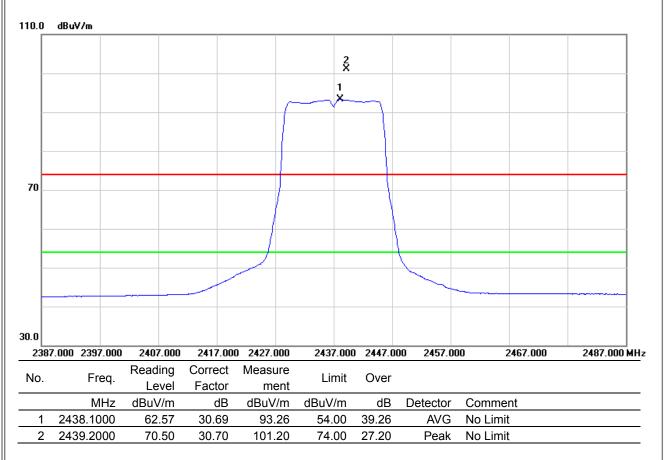
No.	Freq.	Reading	Correct	Measure	Limit	Over			
110.	r req.	Level	Factor	ment	LIIIII	Ovei			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4824.0950	35.92	5.87	41.79	74.00	-32.21	Peak		
2	4824.0950	23.82	5.87	29.69	54.00	-24.31	AVG		

Report No.: BTL-FCCP-1-1507C111 Page 60 of 143



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

### Horizontal

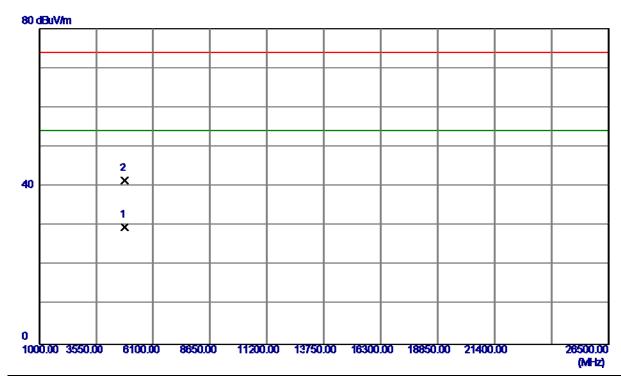


Report No.: BTL-FCCP-1-1507C111 Page 61 of 143



Test Mode: TX G MODE 2437MHz

## Horizontal



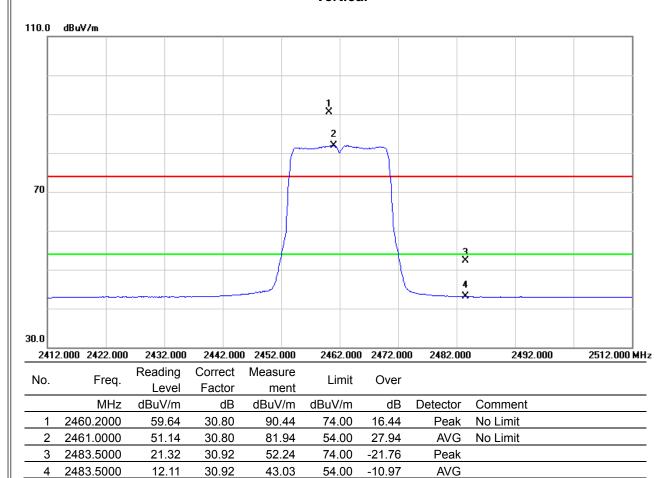
No.	Freq.	Reading	Correct	Measure	Limit	Over			
NO.	rieq.	Level	Factor	ment	LIIIII	Ovei			
<u> </u>	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4824.1850	23.67	5.87	29.54	54.00	-24.46	AVG		
2	4824.5200	35.57	5.87	41.44	74.00	-32.56	Peak		

Report No.: BTL-FCCP-1-1507C111 Page 62 of 143



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

### Vertical



Report No.: BTL-FCCP-1-1507C111 Page 63 of 143



Test Mode: TX G MODE 2462MHz

## **Vertical**



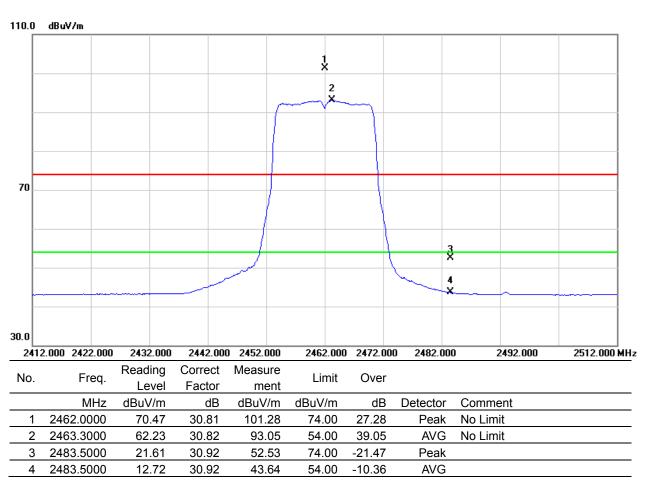
No.	Freq.	Reading	Correct	Measure	Limit	Over			
110.	r req.	Level	Factor	ment	LIIIII	Ovei			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4824.0950	35.92	5.87	41.79	74.00	-32.21	Peak		
2	4824.0950	23.82	5.87	29.69	54.00	-24.31	AVG		

Report No.: BTL-FCCP-1-1507C111 Page 64 of 143



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

### Horizontal

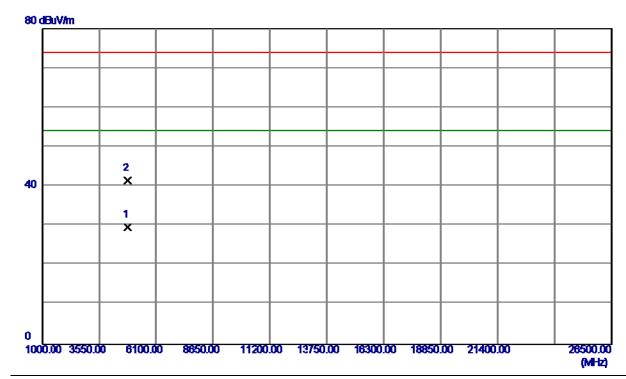


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Test Mode: TX G MODE 2462MHz

## Horizontal



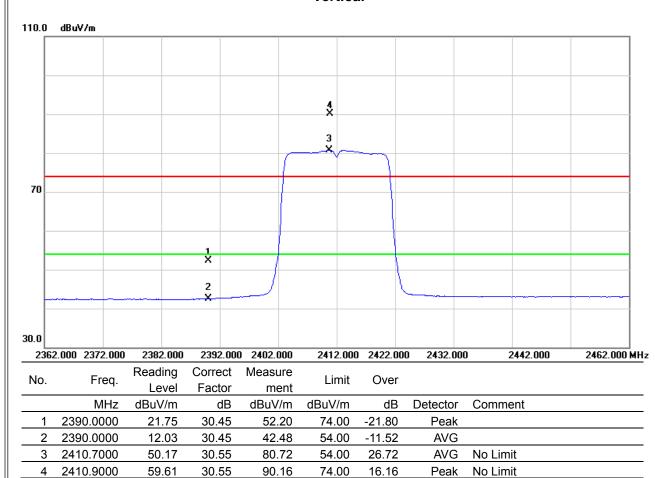
No.	Freq.	Reading	Correct	Measure	Limit	Over			
NO.	rieq.	Level	Factor	ment	LIIIII	Ovei			
<u> </u>	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4824.1850	23.67	5.87	29.54	54.00	-24.46	AVG		
2	4824.5200	35.57	5.87	41.44	74.00	-32.56	Peak		

Report No.: BTL-FCCP-1-1507C111 Page 66 of 143



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

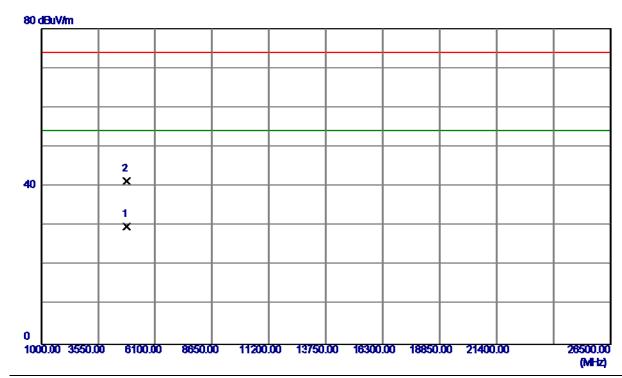
### Vertical





Test Mode: TX N-20M MODE 2412MHz

# Vertical



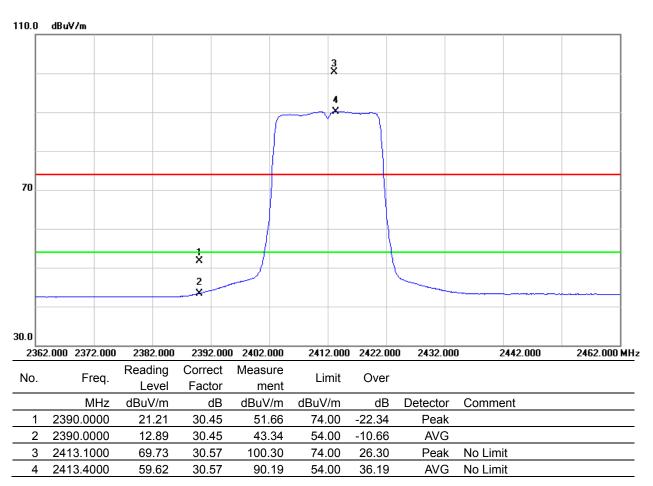
Freq	Reading	Correct	Measure	Limit	Over			
r req.	Level	Factor	ment	LIIIII	Ovei			
MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
4824.2050	23.83	5.87	29.70	54.00	-24.30	AVG		
4824.6349	35.39	5.87	41.26	74.00	-32.74	Peak		
	4824.2050	Hreq. Level  MHz dBuV/m  4824.2050 23.83	Freq.         Level         Factor           MHz         dBuV/m         dB           4824.2050         23.83         5.87	Freq.         Level         Factor         ment           MHz         dBuV/m         dB dBuV/m           4824.2050         23.83         5.87         29.70	Freq.         Level         Factor         ment         Limit           MHz         dBuV/m         dB dBuV/m         dBuV/m           4824.2050         23.83         5.87         29.70         54.00	Freq.         Level         Factor         ment         Limit         Over           MHz         dBuV/m         dB         dBuV/m         dBuV/m         dB           4824.2050         23.83         5.87         29.70         54.00         -24.30	Freq.         Level         Factor         ment         Limit         Over           MHz         dBuV/m         dB uV/m         <	Freq. Level Factor ment Limit Over  MHz dBuV/m dB dBuV/m dBuV/m dB Detector Comment

Report No.: BTL-FCCP-1-1507C111 Page 68 of 143



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

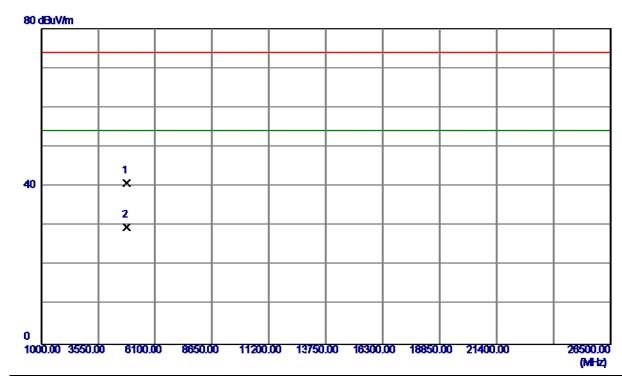
### Horizontal





Test Mode: TX N-20M MODE 2412MHz

## Horizontal



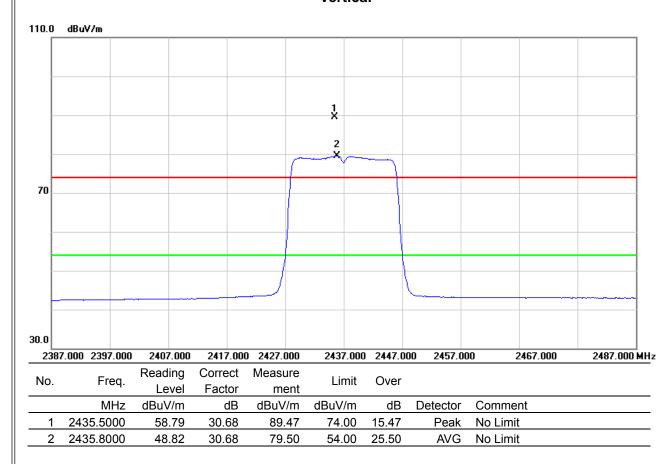
Freq	Reading	Correct	Measure	Limit	Over			
r req.	Level	Factor	ment	LIIIII	Ovei			
MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
4824.2350	34.99	5.87	40.86	74.00	-33.14	Peak		
4825.1850	23.80	5.87	29.67	54.00	-24.33	AVG		
	4824.2350	Hreq. Level  MHz dBuV/m  4824.2350 34.99	Hreq.         Level         Factor           MHz         dBuV/m         dB           4824.2350         34.99         5.87	Freq.         Level         Factor         ment           MHz         dBuV/m         dB dBuV/m           4824.2350         34.99         5.87         40.86	Freq.         Level         Factor         ment         Limit           MHz         dBuV/m         dB dBuV/m         dBuV/m           4824.2350         34.99         5.87         40.86         74.00	Freq.         Level         Factor         ment         Limit         Over           MHz         dBuV/m         dB         dBuV/m         dBuV/m         dB           4824.2350         34.99         5.87         40.86         74.00         -33.14	Freq.         Level         Factor         ment         Limit         Over           MHz         dBuV/m         dB         dBuV/m         dBuV/m         dB         Detector           4824.2350         34.99         5.87         40.86         74.00         -33.14         Peak	Freq.         Level         Factor         ment         Limit         Over           MHz         dBuV/m         dB         dBuV/m         dBuV/m         dB         Detector         Comment           4824.2350         34.99         5.87         40.86         74.00         -33.14         Peak

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

## Vertical

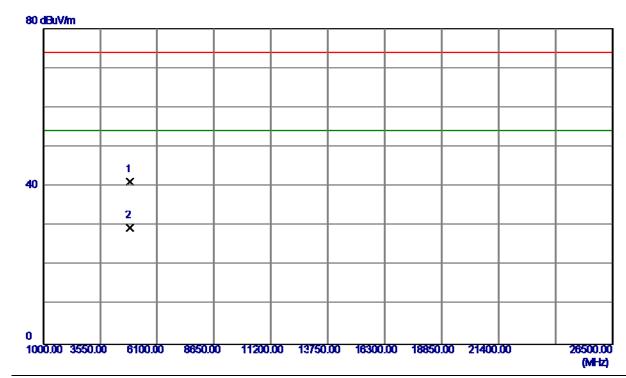


Report No.: BTL-FCCP-1-1507C111 Page 71 of 143



Test Mode: TX N-20M MODE 2437MHz

## **Vertical**



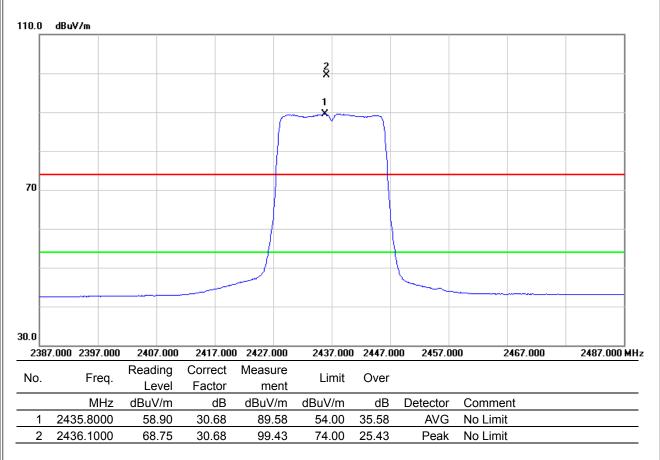
No.	Freq.	Reading	Correct	Measure	Limit	Over			
140.	r req.	Level	Factor	ment	LIIIII	OVCI			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4873.7950	35.12	6.00	41.12	74.00	-32.88	Peak		
2	4873.8300	23.46	6.00	29.46	54.00	-24.54	AVG		

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

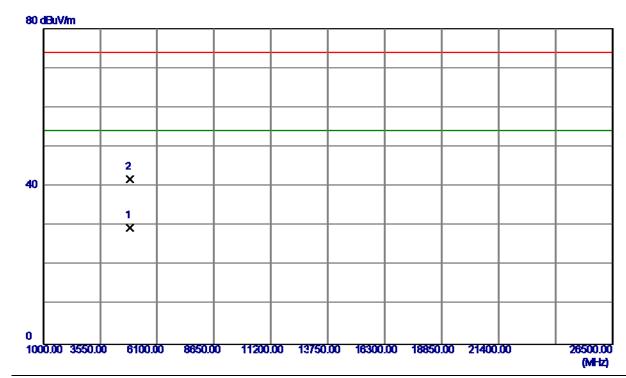
#### Horizontal





Test Mode: TX N-20M MODE 2437MHz

# Horizontal



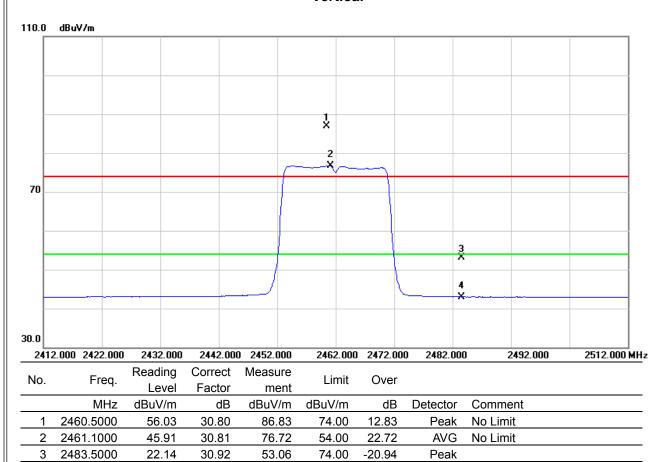
No.	Freq.	Reading	ding Correct Measure Limit Over		Over				
110.	r req.	Level	Factor	ment	LIIIII	Ovei			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4873.9200	23.37	6.00	29.37	54.00	-24.63	AVG		
2	4874.4800	35.72	6.00	41.72	74.00	-32.28	Peak		

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

#### Vertical



54.00

-11.00

AVG

2483.5000

12.08

30.92

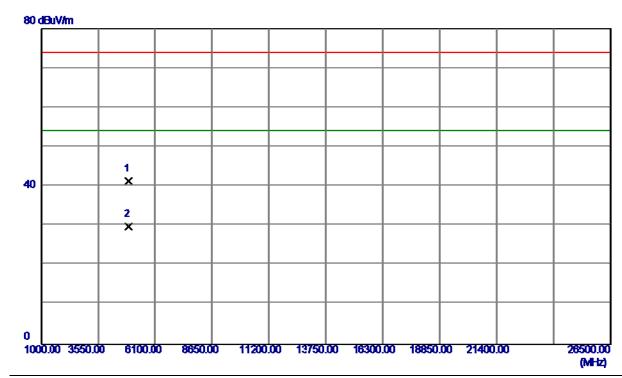
43.00

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Test Mode: TX N-20M MODE 2462MHz

# **Vertical**



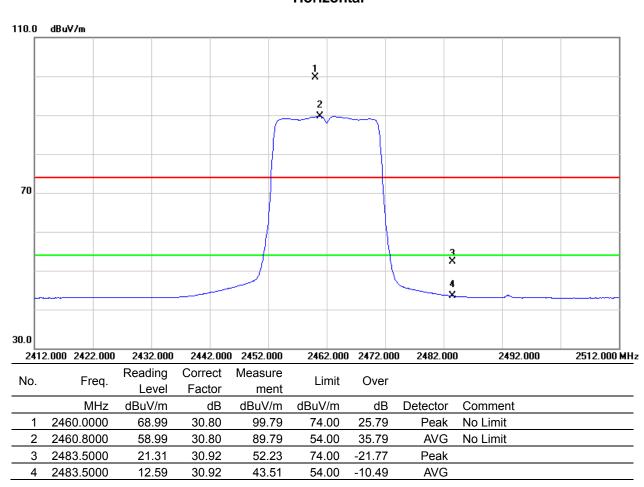
No.	Freq.	Reading Correct Measure Limit Over		Over					
140.	r req.	Level	Factor	ment	Liiiii	OVCI			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4923.1850	35.09	6.13	41.22	74.00	-32.78	Peak		
2	4923.9800	23.66	6.14	29.80	54.00	-24.20	AVG		

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

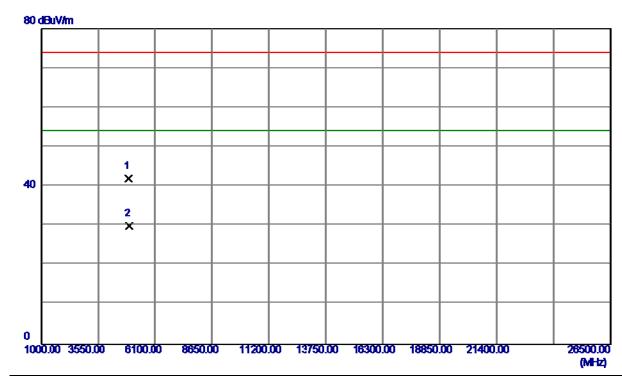
# Horizontal





Test Mode: TX N-20M MODE 2462MHz

# Horizontal



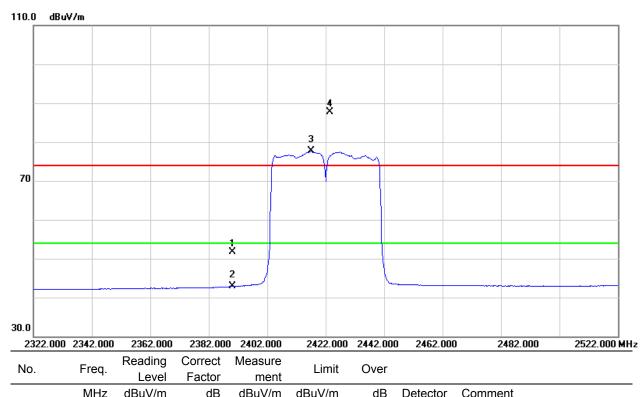
No.	Fred	Freq. Reading Correct Measure Limit Over		Over					
	i ieq.	Level	Factor	ment	LIIIII	Ovei			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4923.2850	35.77	6.14	41.91	74.00	-32.09	Peak		
2	4924.3750	23.71	6.14	29.85	54.00	-24.15	AVG		

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

# Vertical



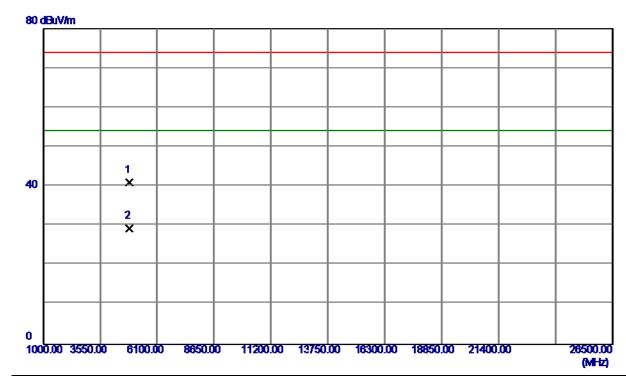
No.	Frog	Freq. Reading Correct Measure Limit Ove		Over					
INO.	rieq.	Level	Factor	ment	LIIIII	Ovei			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	2390.0000	21.23	30.45	51.68	74.00	-22.32	Peak		
2	2390.0000	12.36	30.45	42.81	54.00	-11.19	AVG		
3	2417.0000	47.06	30.58	77.64	54.00	23.64	AVG	No Limit	
4	2423.6000	57.06	30.62	87.68	74.00	13.68	Peak	No Limit	

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Test Mode: TX N-40M MODE 2422MHz

# **Vertical**



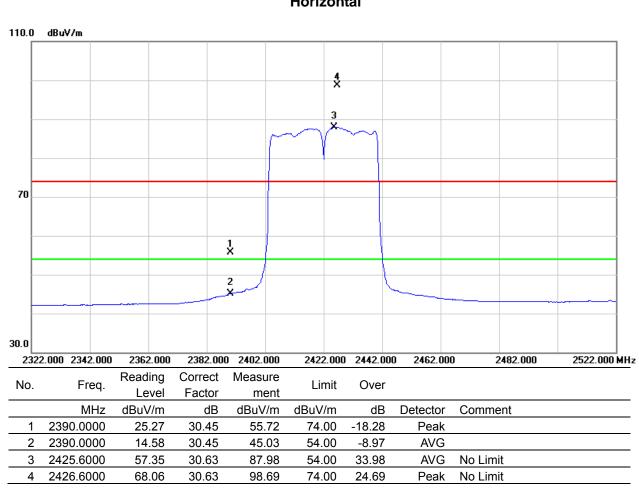
No.	Freq.	reg. Reading Correct Measure Limit Ove		Over					
	1104.	Level	Factor	ment	LIIIII	OVCI			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4843.8700	35.01	5.92	40.93	74.00	-33.07	Peak		
2	4844.0600	23.39	5.92	29.31	54.00	-24.69	AVG		

Report No.: BTL-FCCP-1-1507C111 Page 80 of 143



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

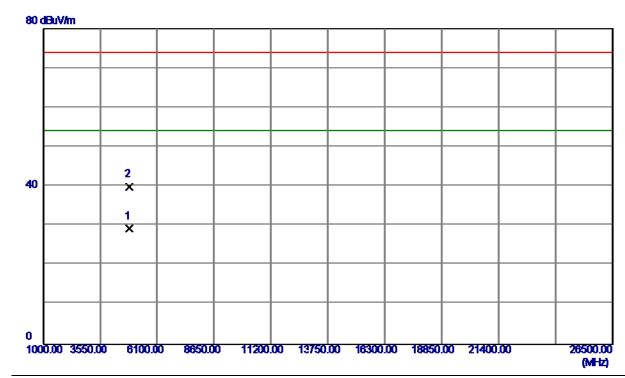
#### Horizontal





Test Mode: TX N-40M MODE 2422MHz

# Horizontal



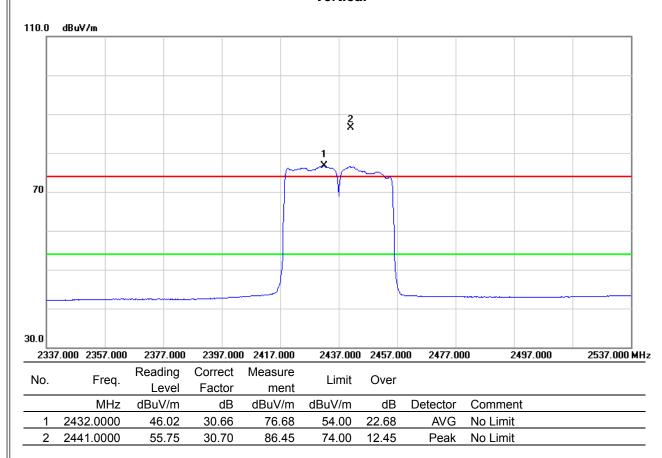
No.	Freq.	reg. Reading Correct Measure Limit Ove		Over					
	1104.	Level	Factor	ment	LIIIII	OVCI			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4844.1800	23.28	5.92	29.20	54.00	-24.80	AVG		
2	4844.3600	33.90	5.92	39.82	74.00	-34.18	Peak		

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

# Vertical

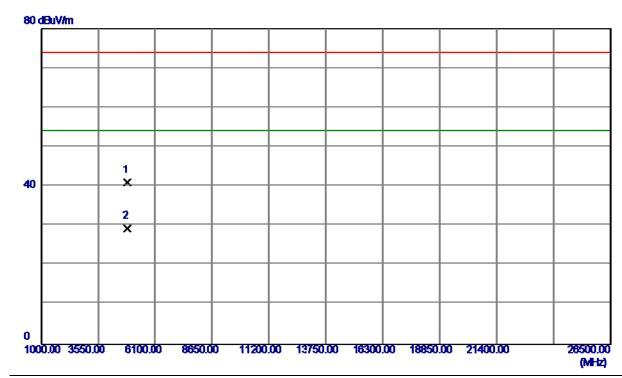


Report No.: BTL-FCCP-1-1507C111 Page 83 of 143



Test Mode: TX N-40M MODE 2437MHz

# **Vertical**



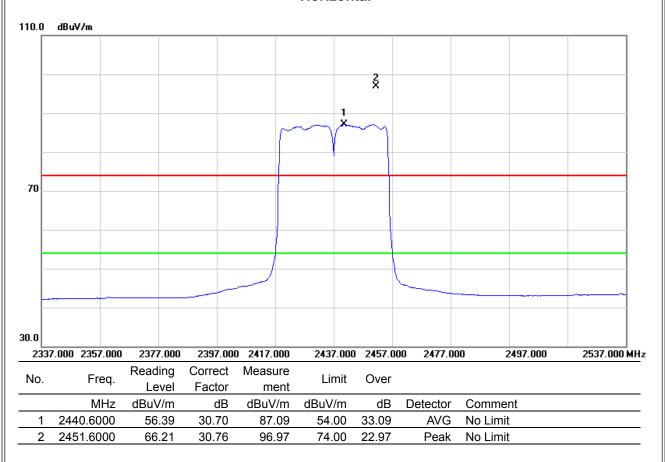
No. Freg.	Reading	Correct	Measure	Limit	Over				
	1104.	Level	Factor	ment	LIIIII	OVCI			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4843.8700	35.01	5.92	40.93	74.00	-33.07	Peak		
2	4844.0600	23.39	5.92	29.31	54.00	-24.69	AVG		

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

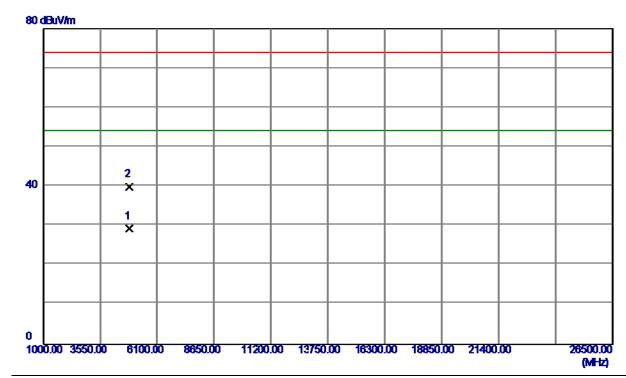
#### Horizontal





Test Mode: TX N-40M MODE 2437MHz

# Horizontal



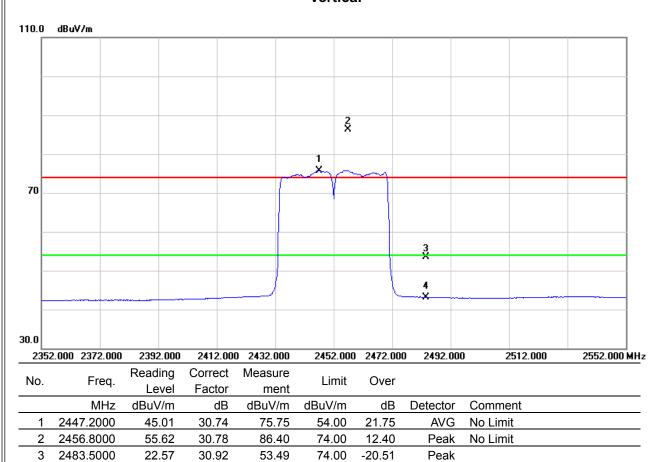
No. Fred	Freq.	Reading	Correct	Measure	Limit	Over			
	1104.	Level	Factor	ment		OVCI			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4844.1800	23.28	5.92	29.20	54.00	-24.80	AVG		
2	4844.3600	33.90	5.92	39.82	74.00	-34.18	Peak		

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

#### Vertical



54.00

-10.86

AVG

2483.5000

12.22

30.92

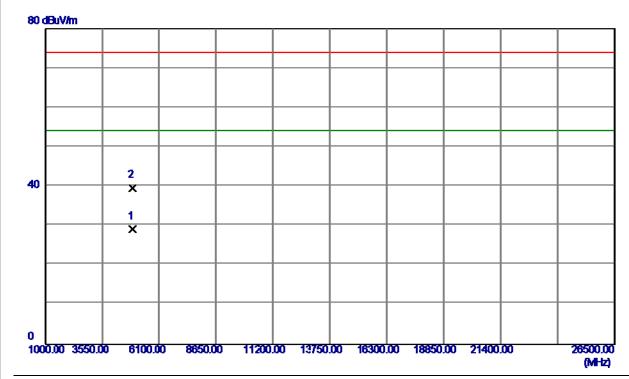
43.14

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Test Mode: TX N-40M MODE 2452MHz

# **Vertical**



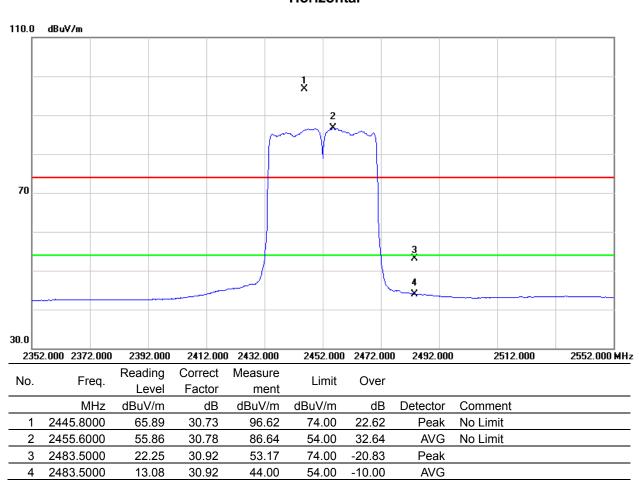
No. F	Freq.	Reading	Correct	Measure	Limit	Over			
	rieq.	Level	Factor	ment		Ovei			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	4904.4500	23.05	6.08	29.13	54.00	-24.87	AVG		
2	4904.6400	33.51	6.09	39.60	74.00	-34.40	Peak		

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Test Mode: TX N-40M MODE 2452MHz

#### Horizontal

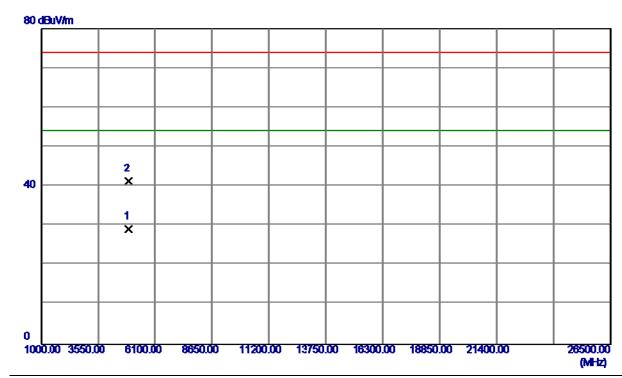


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Test Mode: TX N-40M MODE 2452MHz

# Horizontal



Freq	Reading	Correct	Measure	Limit	Over			
r req.	Level	Factor	ment		Ovei			
MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
4904.1700	23.09	6.08	29.17	54.00	-24.83	AVG		
4904.6600	35.24	6.09	41.33	74.00	-32.67	Peak		
	4904.1700	Hreq. Level  MHz dBuV/m  4904.1700 23.09	Hreq.         Level         Factor           MHz         dBuV/m         dB           4904.1700         23.09         6.08	Hereq.         Level         Factor         ment           MHz         dBuV/m         dB dBuV/m           4904.1700         23.09         6.08         29.17	Freq.         Level         Factor         ment         Limit           MHz         dBuV/m         dB dBuV/m         dBuV/m           4904.1700         23.09         6.08         29.17         54.00	Freq.         Level         Factor         ment         Limit         Over           MHz         dBuV/m         dB         dBuV/m         dBuV/m         dB           4904.1700         23.09         6.08         29.17         54.00         -24.83	Freq.         Level         Factor         ment         Limit         Over           MHz         dBuV/m         dB dBuV/m         dBuV/m         dB Detector           4904.1700         23.09         6.08         29.17         54.00         -24.83         AVG	Freq.         Level         Factor         ment         Limit         Over           MHz         dBuV/m         dB dBuV/m         dBuV/m         dB Detector         Comment           4904.1700         23.09         6.08         29.17         54.00         -24.83         AVG

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ATTACHMENTE - BANDWIDTH	

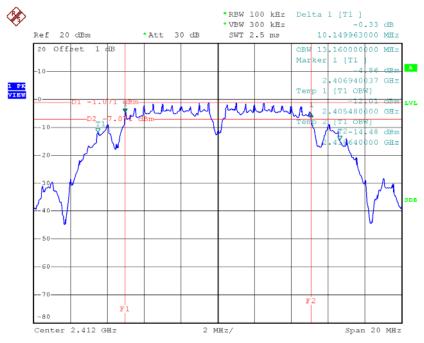
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# Test Mode: TX B Mode\_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	10.15	13.16	500	Complies
2437	10.17	13.16	500	Complies
2462	10.09	13.16	500	Complies

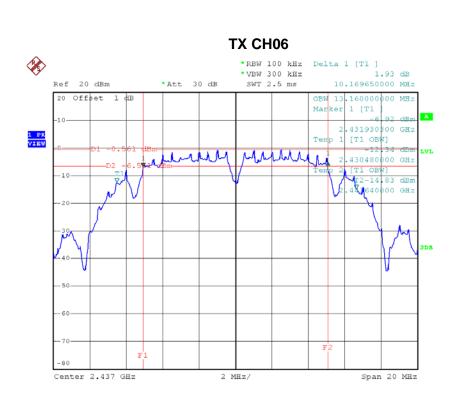
#### **TX CH01**



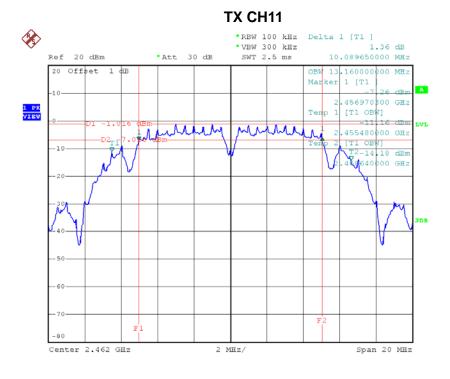
Date: 19.JUL.2015 11:54:00

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#### Date: 19.JUL.2015 11:55:43



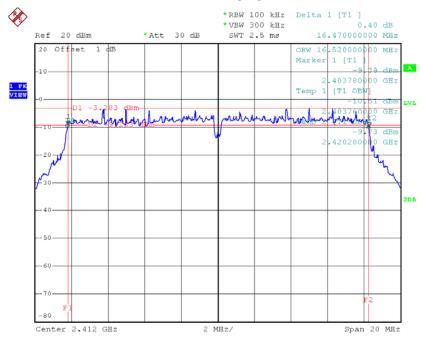
Date: 19.JUL.2015 11:56:59



# Test Mode: TX G Mode\_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	16.47	16.52	500	Complies
2437	16.43	16.52	500	Complies
2462	16.40	16.52	500	Complies

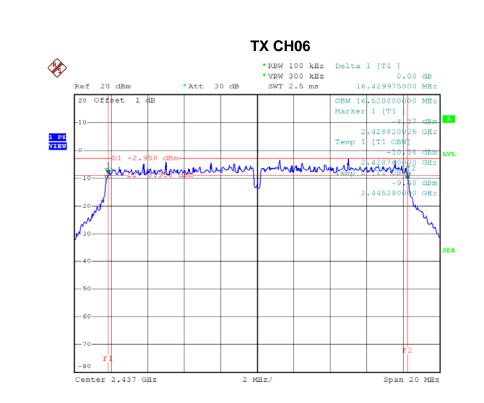
#### **TX CH01**



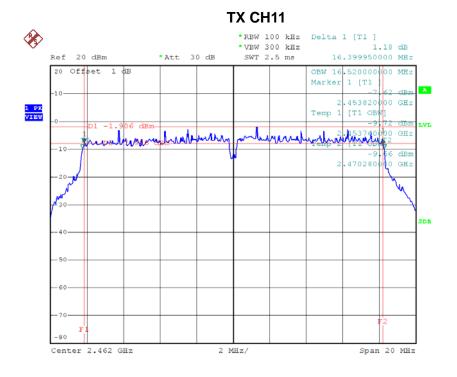
Date: 19.JUL.2015 11:58:07

Report No.: BTL-FCCP-1-1507C111 Page 94 of 143





Date: 19.JUL.2015 11:59:08



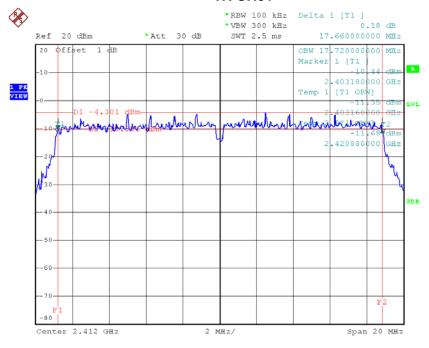
Date: 19.JUL.2015 12:00:23



Test Mode: TX N-20MHz Mode\_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	17.66	17.72	500	Complies
2437	17.64	17.68	500	Complies
2462	17.61	17.64	500	Complies

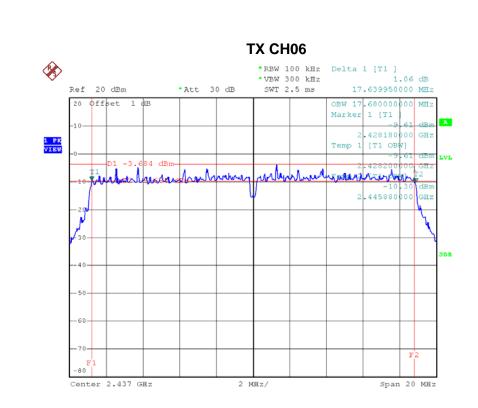
#### TX CH01



Date: 19.JUL.2015 12:01:44

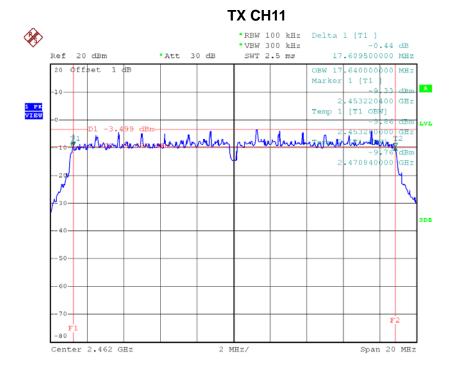
Report No.: BTL-FCCP-1-1507C111 Page 96 of 143





Date: 19.JUL.2015 12:02:50

Date: 19.JUL.2015 12:03:49



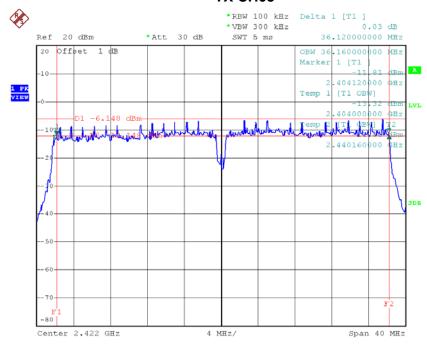
Report No.: BTL-FCCP-1-1507C111



Test Mode: TX N-40MHz Mode\_CH03/06/09

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2422	36.12	36.16	500	Complies
2437	35.88	36.16	500	Complies
2452	35.88	36.16	500	Complies

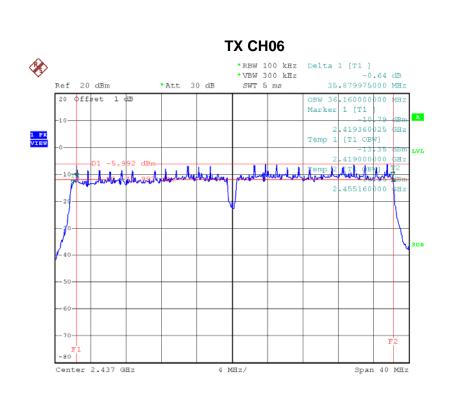
# **TX CH03**



Date: 19.JUL.2015 12:04:50

Report No.: BTL-FCCP-1-1507C111 Page 98 of 143





Date: 19.JUL.2015 12:06:12

# 

4 MHz/

Span 40 MHz

**TX CH09** 

Date: 19.JUL.2015 12:07:06

Center 2.452 GHz



ATTACHMENTF- MAXIMUM CONDUCTED OUTPUT POWER	

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Test Mode :TX B Mode_CH01/06/11						
Frequency	AVG Power (dBm)	Conducted Power	Max. Limit	Max. Limit	Result	
(MHz)	AVG Power (dbill)	(W)	(dBm)	(W)	Resuit	
2412	9.68	0.009	30.00	1.00	Complies	
2437	9.77	0.009	30.00	1.00	Complies	
2462	9.64	0.009	30.00	1.00	Complies	

Test Mode :TX G Mode_CH01/06/11						
Frequency	AVG Power (dBm)	Conducted Power	Max. Limit	Max. Limit	Result	
(MHz)	AVG Power (dbill)	(W)	(dBm)	(W)	Kesuit	
2412	9.75	0.009	30.00	1.00	Complies	
2437	9.61	0.009	30.00	1.00	Complies	
2462	9.79	0.009528	30.00	1.00	Complies	

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Test Mode :TX N20 Mode_CH01/06/11_ANT 1						
Frequency	AVC Dower (dDm)	Conducted Power	Max. Limit	Max. Limit	Dogult	
(MHz)	AVG Power (dBm)	(W)	(dBm)	(W)	Result	
2412	7.85	0.006	30.00	1.00	Complies	
2437	7.95	0.006	30.00	1.00	Complies	
2462	8.02	0.006	30.00	1.00	Complies	

Test Mode :TX N20 Mode_CH01/06/11_ANT 2						
Frequency	AVC Dower (dPm)	Conducted Power	Max. Limit	Max. Limit	Result	
(MHz)	AVG Power (dBm)	(W)	(dBm)	(W)	Result	
2412	4.65	0.003	30.00	1.00	Complies	
2437	4.63	0.003	30.00	1.00	Complies	
2462	4.45	0.003	30.00	1.00	Complies	

Test Mode :TX N20 Mode_CH01/06/11_Total						
Frequency	AVG Power (dBm)	Conducted Power	Max. Limit	Max. Limit	Result	
(MHz)	AVG FOWEI (UBIII)	(W)	(dBm)	(W)	Result	
2412	9.54	0.009	30.00	1.00	Complies	
2437	9.61	0.009	30.00	1.00	Complies	
2462	9.60	0.009	30.00	1.00	Complies	

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Test Mode :TX N40 Mode_CH03/06/09_ANT 1						
Frequency	AVG Power	Conducted Power	Max. Limit	Max. Limit	Dogult	
(MHz)	(dBm)	(W)	(dBm)	(W)	Result	
2422	7.96	0.006	30.00	1.00	Complies	
2437	7.92	0.006	30.00	1.00	Complies	
2452	8.01	0.006	30.00	1.00	Complies	

	Test Mode :TX N40 Mode_CH03/06/09_ANT 2						
Frequency	AVG Power	Conducted Power	Max. Limit	Max. Limit	Dogult		
(MHz)	(dBm)	(W)	(dBm)	(W)	Result		
2422	4.53	0.003	30.00	1.00	Complies		
2437	4.38	0.003	30.00	1.00	Complies		
2452	4.60	0.003	30.00	1.00	Complies		

Test Mode :TX N40 Mode_CH03/06/09_Total						
Frequency	AVG Power	Conducted Power	Max. Limit	Max. Limit	Result	
(MHz)	(dBm)	(W)	(dBm)	(W)	Result	
2422	9.59	0.009	30.00	1.00	Complies	
2437	9.51	0.009	30.00	1.00	Complies	
2452	9.64	0.009	30.00	1.00	Complies	

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ATTACHMENTG - ANTENNA CONDUCTED SPURIOUS EMISSION

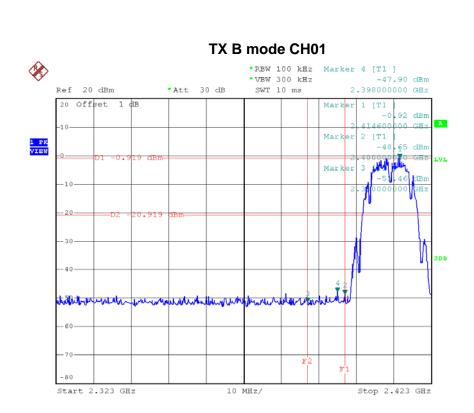
Report No.: BTL-FCCP-1-1507C111 Page 104 of 143



est Mode : TX B Mode	

Report No.: BTL-FCCP-1-1507C111





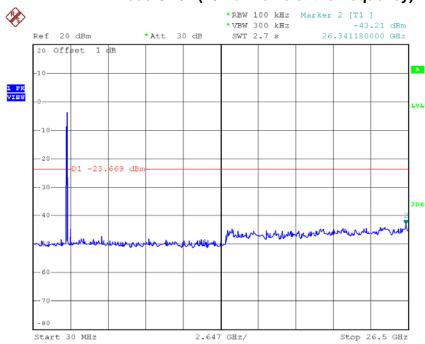
Date: 19.JUL.2015 11:54:22

# TX B modeCH11 \*RBW 100 kHz Marker 4 [T1 ] \*VBW 300 kHz -47.98 dBm Ref 20 dBm 2.543800000 GHz \*Att 30 dB SWT 10 ms 20 Offset 1 dB Marker 1 [T1 44 dBm 2 [T1 1 PK VIEW 183500 3 [T1 | -49.74 dBm market forther war the same war to the same war to the same with the same war to the same ware to the same war to the same war to the same war to the same war -80 Start 2.448 GHz Stop 2.548 GHz 10 MHz/

Date: 19.JUL.2015 11:57:21

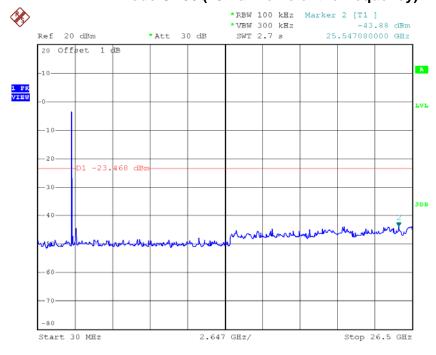






Date: 19.JUL.2015 11:54:14

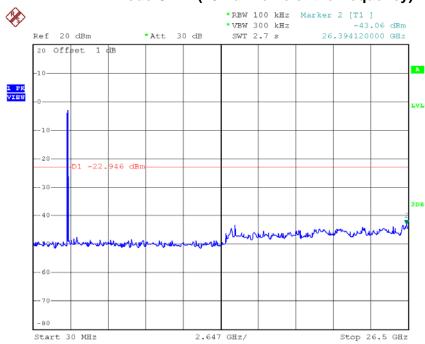
# TX B mode CH06 (10 Harmonic of the frequency)



Date: 19.JUL.2015 11:55:57







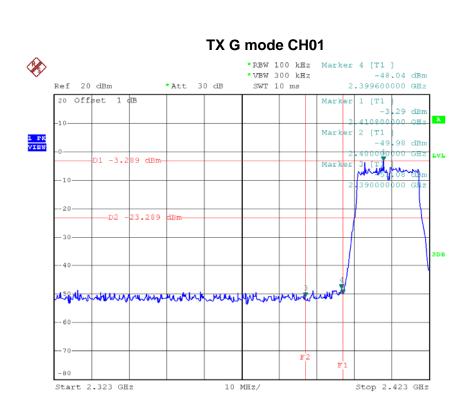
Date: 19.JUL.2015 11:57:13



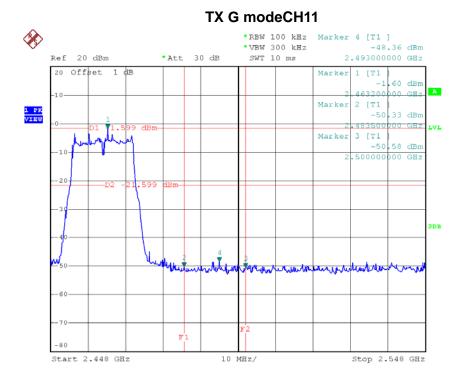
est Mode :	TX G Mode		
	<u></u>		

Report No.: BTL-FCCP-1-1507C111





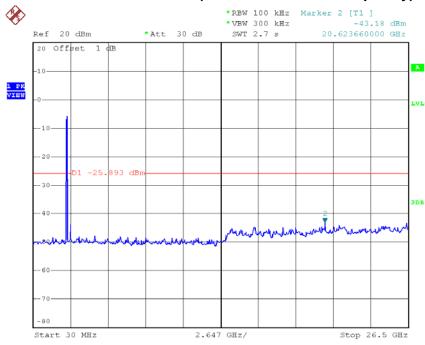
Date: 19.JUL.2015 11:58:29



Date: 19.JUL.2015 12:00:45

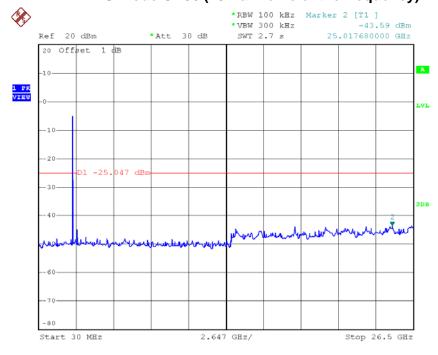






Date: 19.JUL.2015 11:58:21

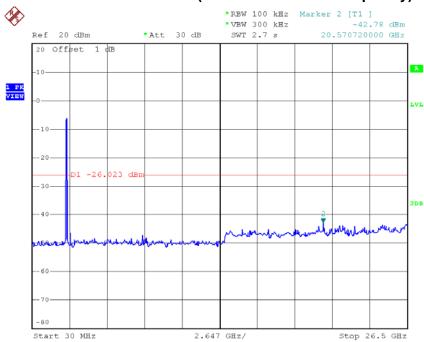
# TX G mode CH06 (10 Harmonic of the frequency)



Date: 19.JUL.2015 11:59:22



# TX G mode CH11 (10 Harmonic of the frequency)



Date: 19.JUL.2015 12:00:37

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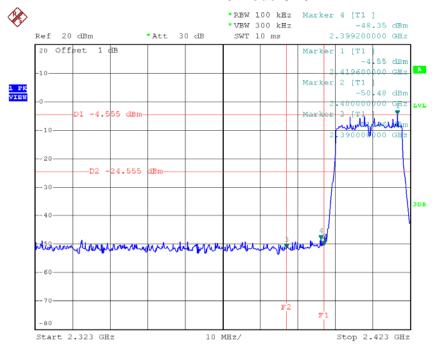


Test Mode :	TX N-20M Mode_ANT 1

Report No.: BTL-FCCP-1-1507C111

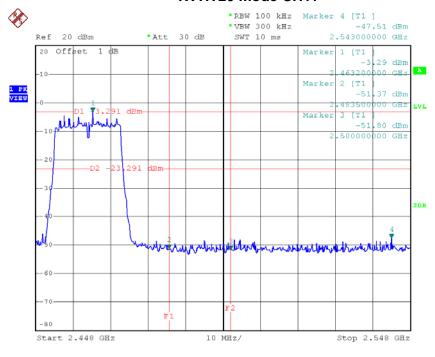






Date: 19.JUL.2015 12:02:05

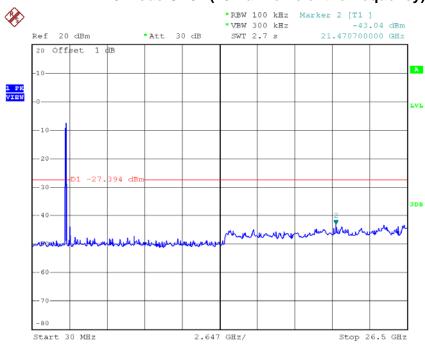
#### TX HT20 mode CH11



Date: 19.JUL.2015 12:04:10

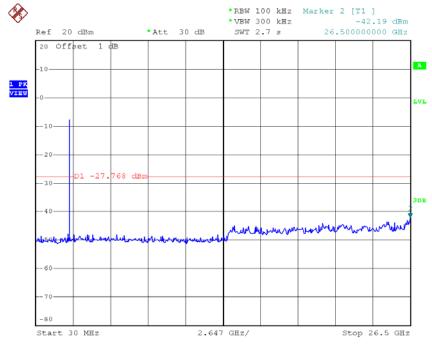






Date: 19.JUL.2015 12:01:57

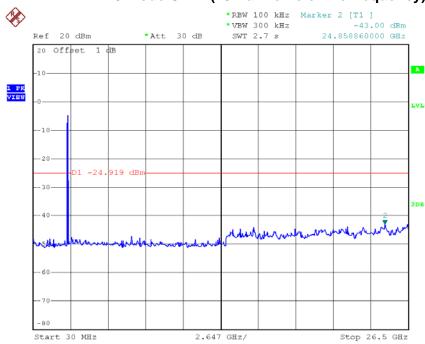
# TX HT20 mode CH06 (10 Harmonic of the frequency)



Date: 19.JUL.2015 12:03:04







Date: 19.JUL.2015 12:04:02

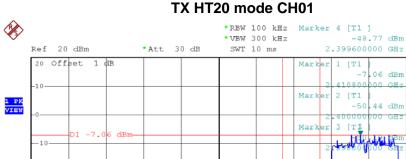
Report No.: BTL-FCCP-1-1507C111 Page 116 of 143

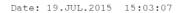


est Mode :	TX N-20M Mode_ANT 2	

Report No.: BTL-FCCP-1-1507C111

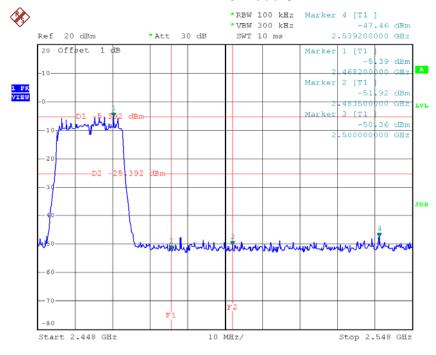






# 410800000 GHz 2 [T1 -50 .44 dBm 27.06 d the burner with much more than the second of Stop 2.423 GHz Start 2.323 GHz 10 MHz/

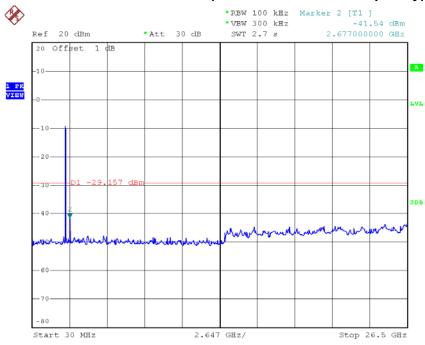
#### TX HT20 mode CH11



Date: 19.JUL.2015 15:04:54

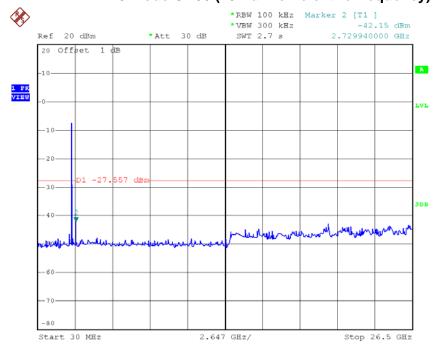






Date: 19.JUL.2015 15:03:00

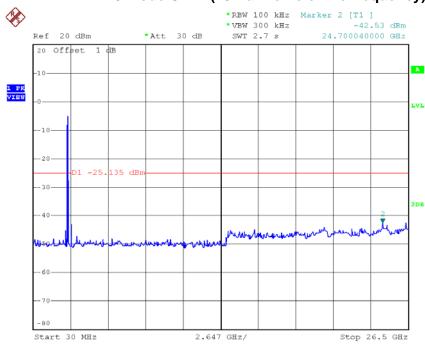
# TX HT20 mode CH06 (10 Harmonic of the frequency)



Date: 19.JUL.2015 15:03:58







Date: 19.JUL.2015 15:04:46

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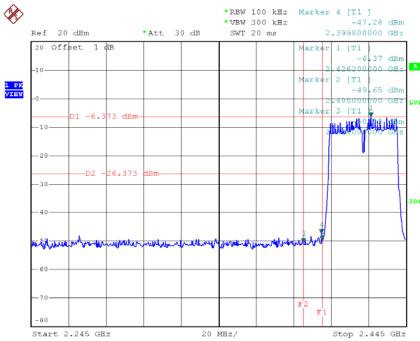


est Mode :	TX N-40M Mode_ANT 1	

Report No.: BTL-FCCP-1-1507C111

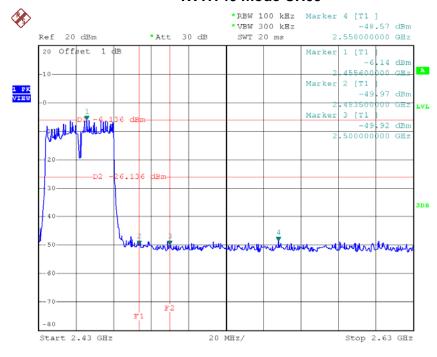






Date: 19.JUL.2015 12:05:12

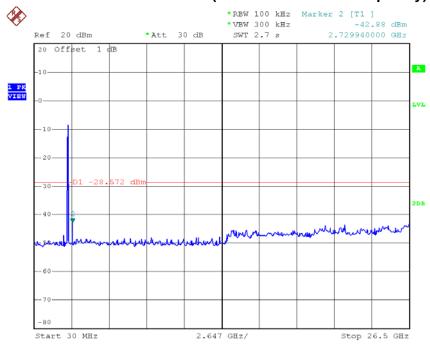
#### TX HT40 mode CH09



Date: 19.JUL.2015 12:07:28

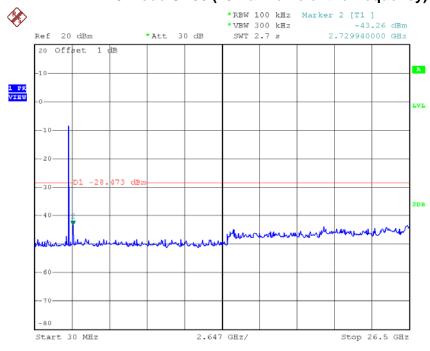






Date: 19.JUL.2015 12:05:04

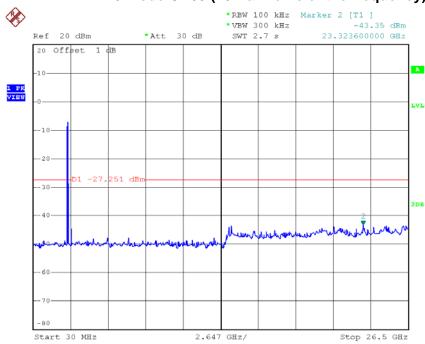
# TX HT40 mode CH06 (10 Harmonic of the frequency)



Date: 19.JUL.2015 12:06:26







Date: 19.JUL.2015 12:07:20

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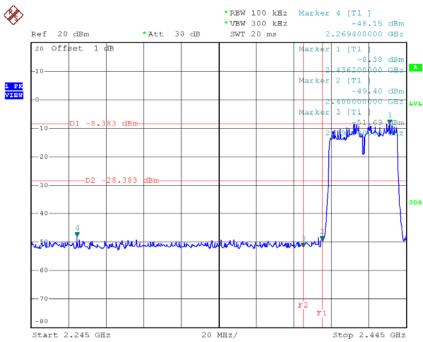


Test Mode:	TX N-40M Mode_ANT 2

Report No.: BTL-FCCP-1-1507C111

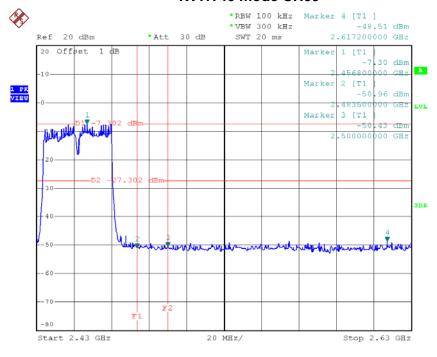






Date: 19.JUL.2015 15:05:57

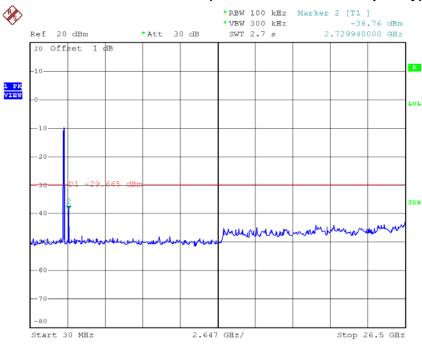
#### TX HT40 mode CH09



Date: 19.JUL.2015 15:07:59

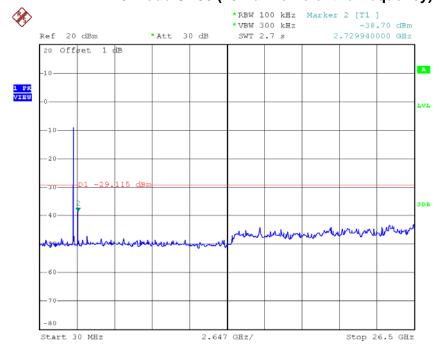






Date: 19.JUL.2015 15:05:50

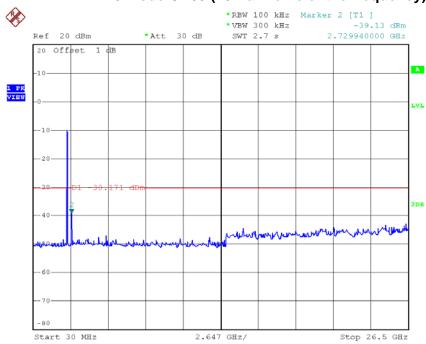
# TX HT40 mode CH06 (10 Harmonic of the frequency)



Date: 19.JUL.2015 15:07:01







Date: 19.JUL.2015 15:07:52

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ATTACHMENTH - POWER SPECTRAL DENSITY

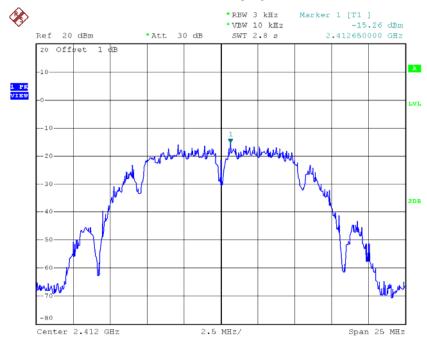
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#### Test Mode: TX B Mode\_CH01/06/11

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-15.26	0.03	8.00	Complies
2437	-15.69	0.03	8.00	Complies
2462	-15.42	0.03	8.00	Complies

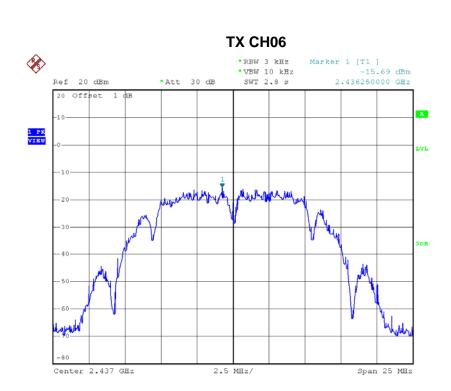
#### TX CH01



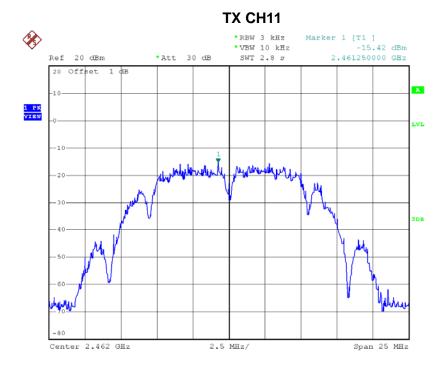
Date: 19.JUL.2015 11:54:31

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Date: 19.JUL.2015 11:56:06



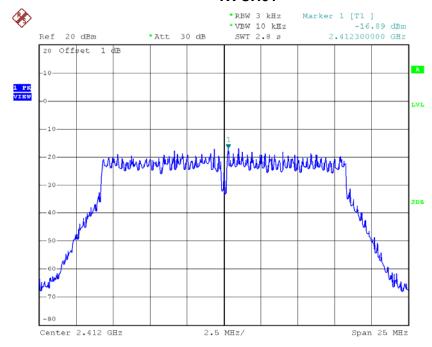
Date: 19.JUL.2015 11:57:30



#### Test Mode :TX G Mode\_CH01/06/11

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-16.89	0.02	8.00	Complies
2437	-15.63	0.03	8.00	Complies
2462	-16.02	0.03	8.00	Complies

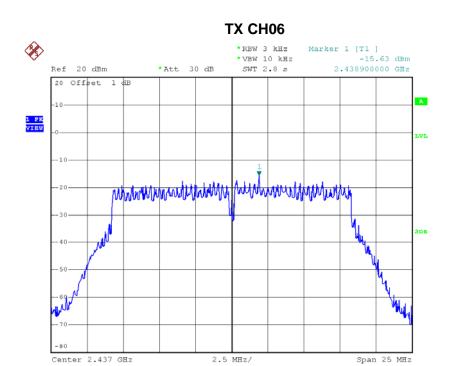
#### TX CH01



Date: 19.JUL.2015 11:58:38

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Date: 19.JUL.2015 11:59:31

# TX CH11 \*RBW 3 kHz Marker 1 [T1] \*VBW 10 kHz -16.02 dBm \*Att 30 dB SWT 2.8 s 2.463900000 GHz 20 Offset 1 dB -0 -10 -20 -30 -40 -50 -60 -60 Center 2.462 GHz 2.5 MHz/ Span 25 MHz

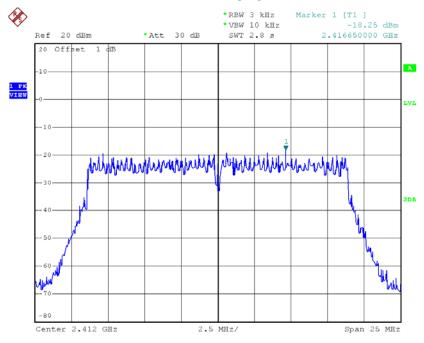
Date: 19.JUL.2015 12:00:54



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	-18.25	0.01	8.00	Complies
2437	-19.58	0.01	8.00	Complies
2462	-18.71	0.01	8.00	Complies

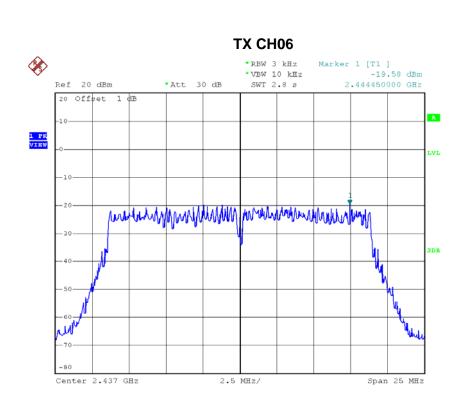
#### TX CH01



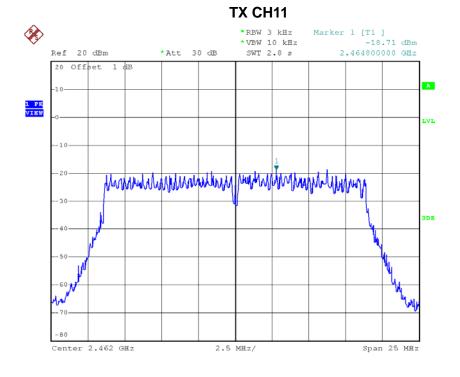
Date: 19.JUL.2015 12:02:14

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Date: 19.JUL.2015 12:03:13



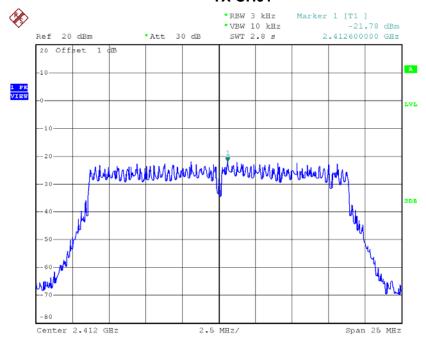
Date: 19.JUL.2015 12:04:19



# 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	-21.78	0.01	8.00	Complies
2437	-19.46	0.01	8.00	Complies
2462	-19.09	0.01	8.00	Complies

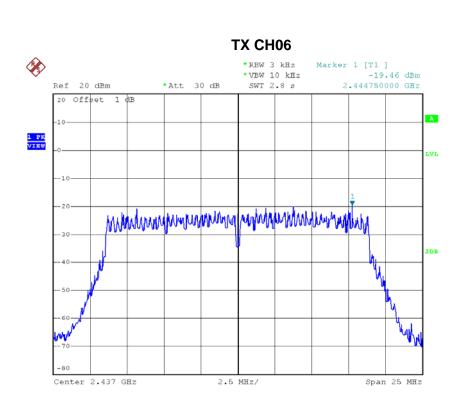
#### TX CH01



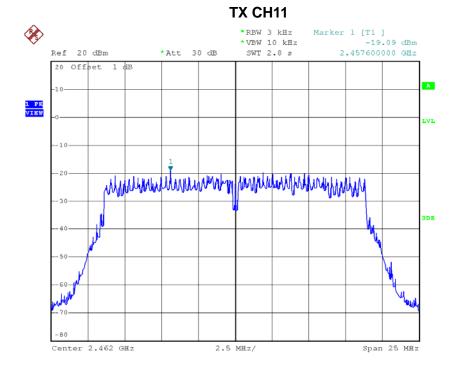
Date: 19.JUL.2015 15:03:17

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Date: 19.JUL.2015 15:04:07



Date: 19.JUL.2015 15:05:03



# 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	-16.99	0.02	8.00	Complies
2437	-16.99	0.02	8.00	Complies
2462	-16.99	0.02	8.00	Complies

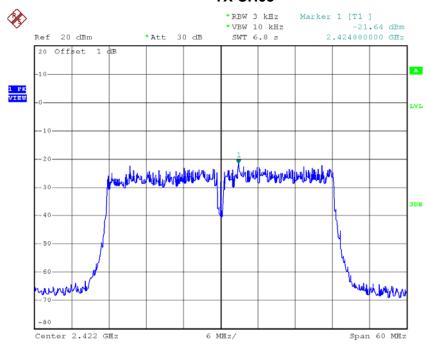
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Test Mode: TX N-40M Mode\_CH03/06/09\_ANT 1

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2422	-21.64	0.01	8.00	Complies
2437	-20.75	0.01	8.00	Complies
2452	-21.21	0.01	8.00	Complies

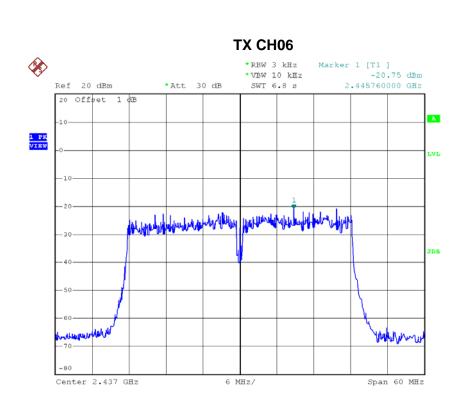
#### TX CH03



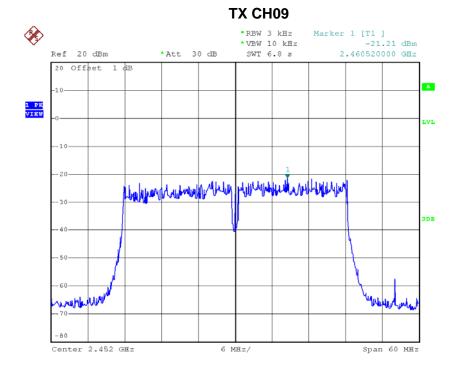
Date: 19.JUL.2015 12:05:24

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Date: 19.JUL.2015 12:06:38



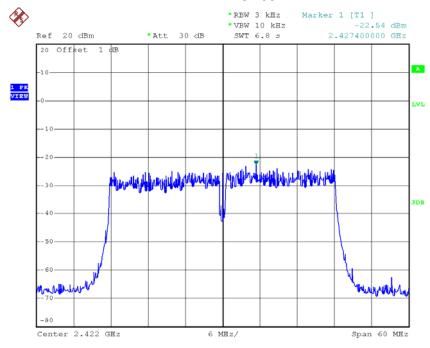
Date: 19.JUL.2015 12:07:40



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	-22.54	0.01	8.00	Complies
2437	-22.43	0.01	8.00	Complies
2452	-22.03	0.01	8.00	Complies

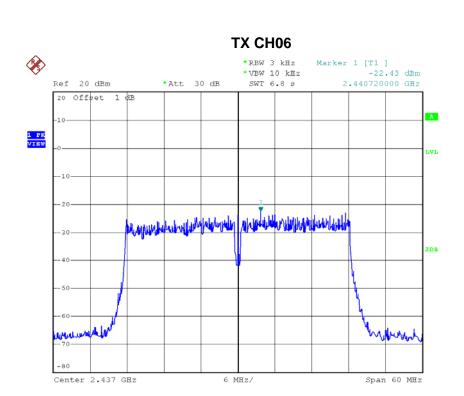
#### **TX CH03**



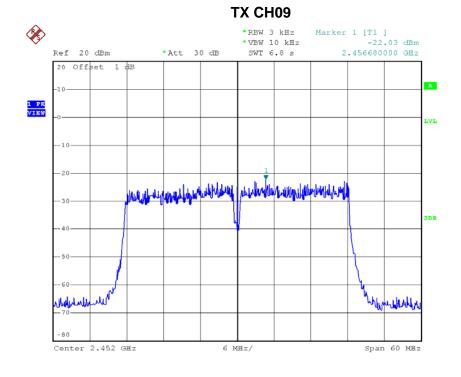
Date: 19.JUL.2015 15:06:10

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Date: 19.JUL.2015 15:07:14



Date: 19.JUL.2015 15:08:12



# 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	-16.99	0.02	8.00	Complies
2437	-16.99	0.02	8.00	Complies
2452	-16.99	0.02	8.00	Complies

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