

FCC Radio Test Report

FCC ID: 2ADBM-LS9-AC11DBT

This report concerns (check or	ne): ⊠Original Grant ⊡Class I Change ⊡Class II Change
Equipment : I Model Name : I Applicant : I Address : 8	1602C104 media/audio streaming module LS9-AC11DBT Libre Wireless Technologies Inc 5405 Alton Parkway, Suite A-563, Irvine, CA 92604, JSA
Date of Test : Issued Date :	Mar. 01, 2016 Mar. 01, 2016 ~ Mar. 15, 2016 Mar. 16, 2016 BTL Inc.
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For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-3-1602C104	Original Issue.	Mar. 16, 2016

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1. CERTIFICATION

Equipment : media/audio streaming module

Brand Name: Libre Sync Model Name: LS9-AC11DBT

Applicant : Libre Wireless Technologies Inc

Manufacturer: #1 Shenzhen Zowee Technology Co., Ltd

#2 Hansong (Nanjing) Technology Ltd.

Address : #1 NO.5 Zowee technology building, Science & Technology industrial park of

privately owned enterprises, Pingshan, Xili, Nanshan district, Shenzhen,

China.

#2 8th Kangping Road, Jiangning Economyand Technology Development Zone,

Nanjing,211106,China.

Date of Test : Mar. 01, 2016 ~ Mar. 15, 2016

Test Sample: Engineering Sample

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

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

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-3-1602C104) 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				
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.

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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 a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

A. Conducted Measurement:

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

B. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
		9KHz~30MHz	V	3.79
		9KHz~30MHz	Η	3.57
		30MHz ~ 200MHz	V	3.82
		30MHz ~ 200MHz	Ι	3.78
DG-CB03	CISPR	200MHz ~ 1,000MHz	V	4.10
DG-CB03	DG-CB03 CISPR	200MHz ~ 1,000MHz	Η	4.06
		1GHz~18GHz	V	3.12
		1GHz~18GHz	Η	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	media/audio streaming module			
Brand Name	Libre Sync	Libre Sync		
Model Name	LS9-AC11DBT			
OEM Model	Ltd)	WMBG2CDWX-LW(for factory: Shenzhen Zowee Technology Co., Ltd) 00-06040-01(for factory: Hansong (Nanjing) Technology Ltd.)		
Model Difference	N/A			
	Operation Frequency	2412~2462 MHz		
	Modulation Technology	802.11b:DSSS 802.11g:OFDM 802.11n:OFDM		
Product Description	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: 16.79dBm 802.11g: 15.43dBm 802.11n(20MHz): 14.69dBm 802.11n(40MHz): 13.82dBm		
Power Source	Supplied from system.			
Power Rating	EUT I/P:DC 3.3V			

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 – CH11 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	80	2447	11	2462
03	2422	06	2437	09	2452		

3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Libre Sync	N/A	Dipole	N/A	4

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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	

For Band Edge Test		
Final Test Mode Description		
Mode 1	TX B MODE CHANNEL 01/06/11	
Mode 2	TX G MODE CHANNEL 01/06/11	
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11	
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09	

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6dB Spectrum Bandwidth			
Final Test Mode Description			
Mode 1	TX B MODE CHANNEL 01/06/11		
Mode 2	TX G MODE CHANNEL 01/06/11		
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11		
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09		

Maximum Conducted Output Power		
Final Test Mode Description		
Mode 1	TX B MODE CHANNEL 01/06/11	
Mode 2	TX G MODE CHANNEL 01/06/11	
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11	
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09	

Power Spectral Density		
Final Test Mode Description		
Mode 1	TX B MODE CHANNEL 01/06/11	
Mode 2	TX G MODE CHANNEL 01/06/11	
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11	
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09	

Note:

- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1Mbps)

802.11g mode: OFDM (6Mbps)

802.11n HT20 mode : BPSK (6.5Mbps) 802.11n HT40 mode : BPSK (13.5Mbps)

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

- (3) For radiated below 1G test, the 802.11b is found to be the worst case and recorded.
- (4) The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

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3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

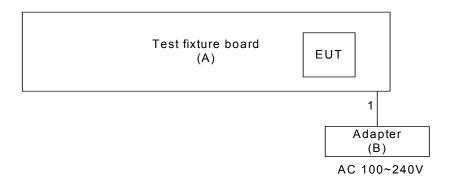
During testing, channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final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

Test software version	DutApi_w8887_BrdigeEth		
Frequency (MHz)	2412 2437 2462		
802.11b	16	16	16
802.11g	14	15	13
802.11n (20MHz)	14	14	13
Frequency	2422	2437	2452
802.11n (40MHz)	12	14	11

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3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



Ground plane

(Remote System)

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.
Α	Test fixture board	N/A	N/A	N/A	N/A
В	Adapter	Vonhk	KSAFE0900270W1US	VER	N/A

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	1.45	Power Cable

Note:

(1) For detachable type I/O cable should be specified the length in m in <code>"Length"</code> column.

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4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

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

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

Note:

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

The following table is the setting of the receiver

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

4.1.2 TEST PROCEDURE

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

4.1.3 DEVIATION FROM TEST STANDARD

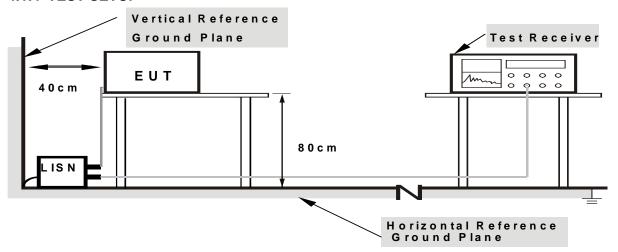
No deviation

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4.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

4.1.5 EUT OPERATING CONDITIONS

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

4.1.6 EUT TEST CONDITIONS

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

4.1.7 TEST RESULTS

Please refer to the Attachment A.

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4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (9KHz-1000MHz)

Frequency	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 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	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 TEST PROCEDURE

- a. The measuring distance of at 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The measuring distance of at 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- 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.

4.2.3 DEVIATION FROM TEST STANDARD

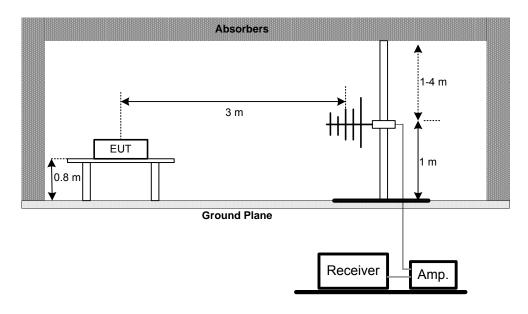
No deviation

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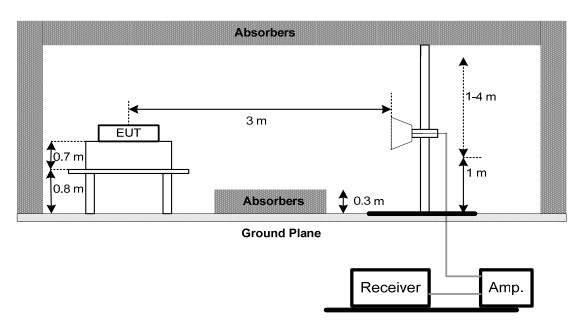


4.2.4 TEST SETUP

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



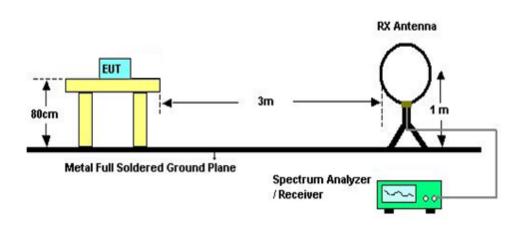
(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



(C) For Radiated Emissions Below 30MHz

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4.2.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.2.6 EUT TEST CONDITIONS

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

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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 (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.

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5. BANDWIDTH TEST

5.1 APPLIED PROCEDURES

FCC Part15 (15.247) , Subpart C				
Section	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

EUT	SPECTRUM
	ANALYZER

5.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.1.5 EUT TEST CONDITIONS

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

5.1.6 TEST RESULTS

Please refer to the Attachment E.

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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 v03r04.

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP

EUT	Power Meter
	1 OWEL MELET

6.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.1.5 EUT TEST CONDITIONS

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

6.1.6 TEST RESULTS

Please refer to the Attachment F.

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7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 APPLIED PROCEDURES / LIMIT

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

7.1.1 TEST PROCEDURE

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

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.1.5 EUT TEST CONDITIONS

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

7.1.6 TEST RESULTS

Please refer to the Attachment G.

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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

EUT	SPECTRUM
	ANALYZER

8.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.1.5 EUT TEST CONDITIONS

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

8.1.6 TEST RESULTS

Please refer to the Attachment H.

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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-30 MHz)	C_17	Mar. 12, 2017		
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. 09, 2016	
3	Receiver	AGILENT	N9038A	MY52130039	Oct. 11, 2016	
4	Test Cable	emci	LMR-400(30MH z-1GHz)	C-01	Jun. 28, 2016	
5	Controller	СТ	SC100	N/A	N/A	
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A	
7	Antenna	ETS	3115	00075789	Mar. 28, 2016	
8	Amplifier	Agilent	8449B	3008A02274	Nov. 01, 2016	
9	Receiver	AGILENT	N9038A	MY52130039	Oct. 11, 2016	
10	Test Cable	emci	EMC104-SM-S M-10000(1GHz -26.5GHz)	C-68	Jun. 28, 2016	
11	Controller	CT	SC100	N/A	N/A	
12	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Mar. 28, 2016	
13	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 28, 2016	
14	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Sep. 07, 2016	

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	6dB Bandwidth Measurement				
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Oct. 11, 2016

	Peak Output Power Measurement						
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	Oct. 11, 2016	

	Power Spectral Density Measurement							
Item	m Kind of Equipment Manufacturer Type No. Serial No. Calibrated ur							
1	Spectrum Analyzer	R&S	FSP 40	100185	Oct. 11, 2016			

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

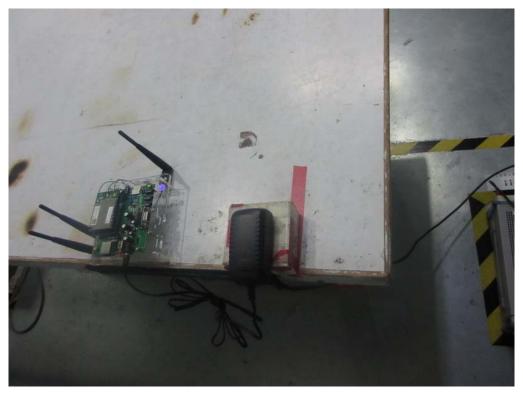
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10. EUT TEST PHOTO







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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





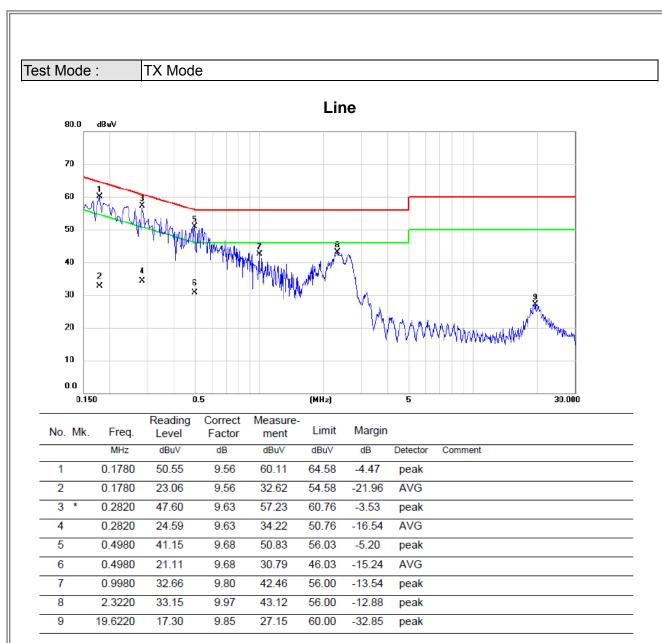
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ATTACHMENT A - CONDUCTED EMISSION

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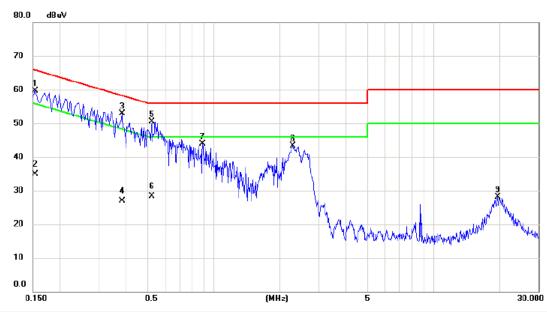






Test Mode : TX Mode

Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1540	50.14	9.49	59.63	65.78	-6.15	peak	
2		0.1540	25.33	9.49	34.82	55.78	-20.96	AVG	
3	*	0.3820	43.32	9.53	52.85	58.24	-5.39	peak	
4		0.3820	17.37	9.53	26.90	48.24	-21.34	AVG	
5		0.5220	40.85	9.56	50.41	56.00	-5.59	peak	
6		0.5220	18.79	9.56	28.35	46.00	-17.65	AVG	
7		0.8860	34.32	9.58	43.90	56.00	-12.10	peak	
8		2.2820	33.58	9.74	43.32	56.00	-12.68	peak	
9		19.5060	18.16	9.97	28.13	60.00	-31.87	peak	

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

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Test Mode: TX B MODE CHANNEL 01

Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Note	
0.00943	0°	13.11	24.9694	38.0794	128.1140	-90.0346	AVG	
0.00943	0°	15.13	24.9694	40.0994	148.1140	-108.0146	PEAK	
0.026	0°	7.34	23.9200	31.2600	119.3048	-88.0448	AVG	
0.026	0°	8.89	23.9200	32.8100	139.3048	-106.4948	PEAK	
0.0341	0°	5.41	23.4070	28.8170	116.9491	-88.1321	AVG	
0.0341	0°	6.27	23.4070	29.6770	136.9491	-107.2721	PEAK	
0.0433	0°	1.6	22.8243	24.4243	114.8745	-90.4501	AVG	
0.0433	0°	2.97	22.8243	25.7943	134.8745	-109.0801	PEAK	
0.495	0°	22.32	19.8120	42.1320	73.7121	-31.5801	QP	
1.7131	0°	24.43	19.5287	43.9587	69.5400	-25.5813	QP	

Frequency (MHz)	Ant 0°/90°	Read level dBuV/m	Factor (dB)	Measured(FS) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Note	
0.00947	90°	13.38	24.3000	37.6800	128.0772	-90.3972	AVG	
0.00947	90°	14.3	24.3000	38.6000	148.0772	-109.4772	PEAK	
0.0227	90°	6.8	24.1290	30.9290	120.4837	-89.5547	AVG	
0.0227	90°	8.11	24.1290	32.2390	140.4837	-108.2447	PEAK	
0.0318	90°	3.24	23.5527	26.7927	117.5557	-90.7630	AVG	
0.0318	90°	5.61	23.5527	29.1627	137.5557	-108.3930	PEAK	
0.043	90°	1.24	22.8433	24.0833	114.9349	-90.8515	AVG	
0.043	90°	2.61	22.8433	25.4533	134.9349	-109.4815	PEAK	
0.4922	90°	19.55	19.8187	39.3687	73.7614	-34.3927	QP	
1.7164	90°	23.86	19.5284	43.3884	69.5400	-26.1516	QP	

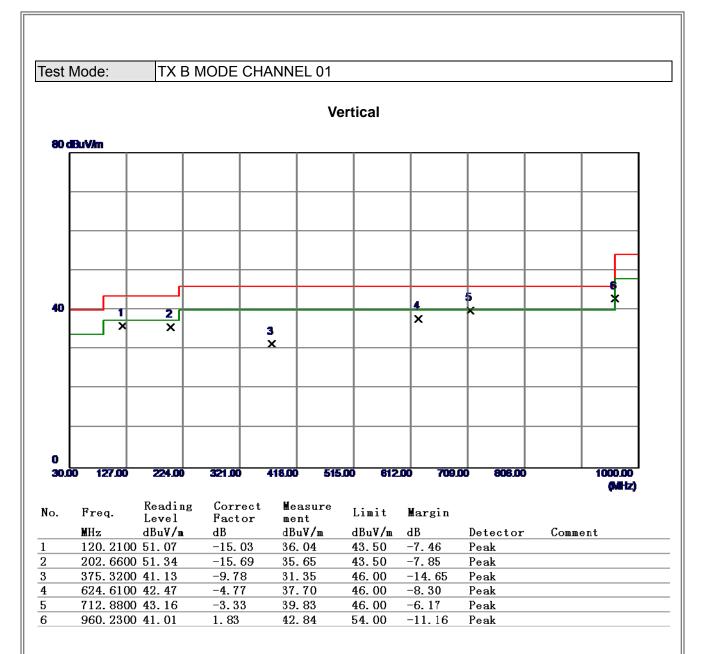
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ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)

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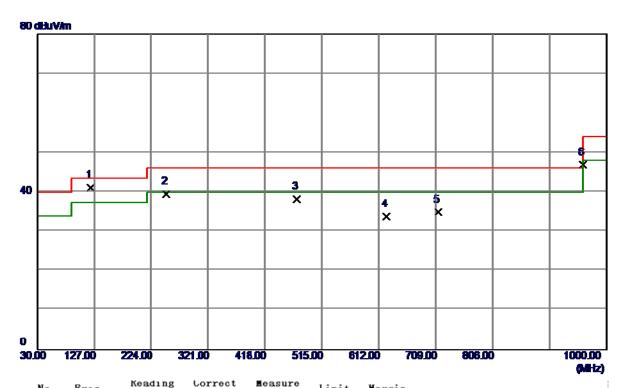








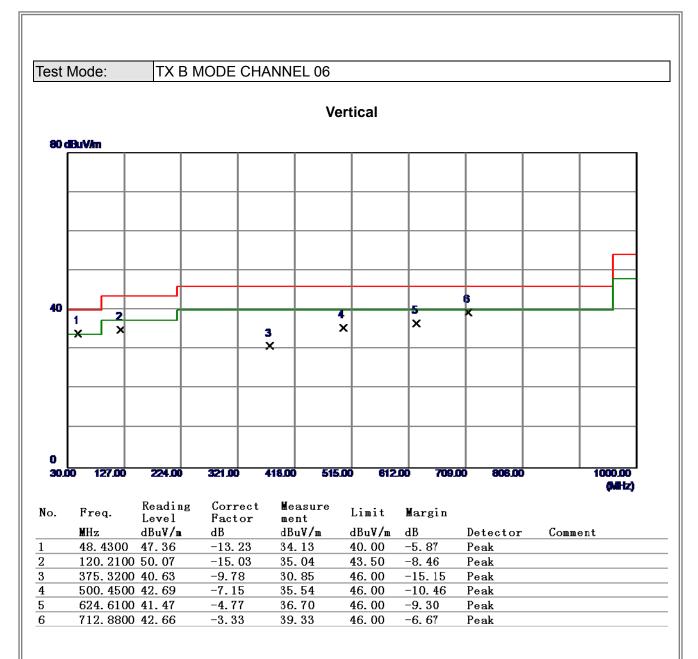
Horizontal



No.	Freq.	Level	Factor	measure	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	120. 2100	56. 18	-15.03	41.15	43.50	-2.35	Peak	
2	250. 1900	52.87	-13.37	39. 50	46.00	-6.50	Peak	
3	472. 3200	45.76	-7.48	38. 28	46.00	-7.72	Peak	
4	624. 6100	38. 48	-4.77	33.71	46.00	-12. 29	Peak	
5	712.8800	38.14	-3.33	34. 81	46.00	-11. 19	Peak	
6	960. 2300	45.00	1.83	46. 83	54.00	-7. 17	Peak	

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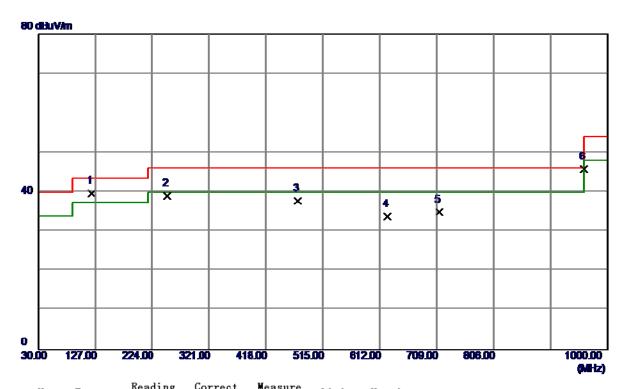








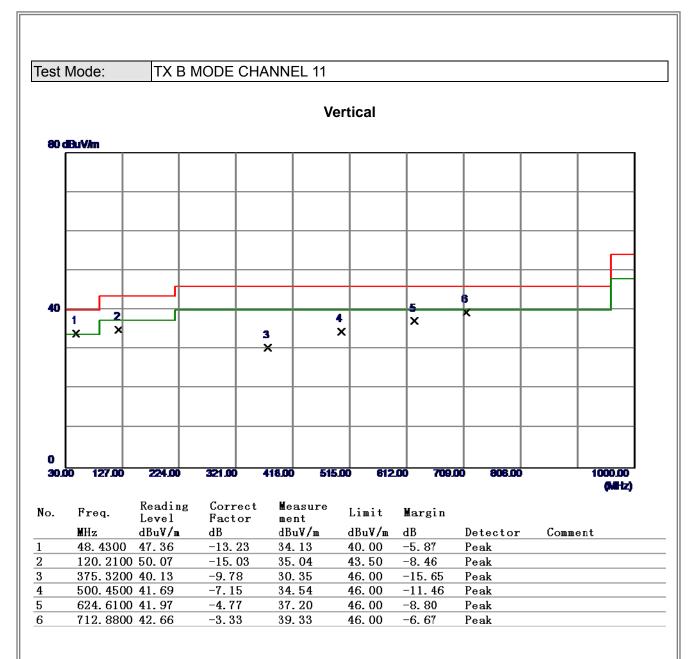
Horizontal



Freq.	Keading Level	Factor	Measure ment	Limit	Margin		
MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
120. 2100	54. 68	-15.03	39. 65	43.50	-3.85	Peak	
250. 1900	52.37	-13.37	39.00	46.00	-7.00	Peak	
472. 3200	45. 26	-7.4 8	37.78	46.00	-8. 22	Peak	
624. 6100	38. 48	-4.77	33.71	46.00	-12.29	Peak	
712.8800	38. 14	-3.33	34. 81	46.00	-11. 19	Peak	
960. 2300	44. 00	1.83	45. 83	54.00	-8. 17	Peak	
	MHz 120. 2100 250. 1900 472. 3200 624. 6100 712. 8800	Freq. Level	Hz dBuV/m dB 120.2100 54.68 -15.03 250.1900 52.37 -13.37 472.3200 45.26 -7.48 624.6100 38.48 -4.77 712.8800 38.14 -3.33	Hreq. Level Factor ment MHz dBuV/m dB dBuV/m 120.2100 54.68 -15.03 39.65 250.1900 52.37 -13.37 39.00 472.3200 45.26 -7.48 37.78 624.6100 38.48 -4.77 33.71 712.8800 38.14 -3.33 34.81	Hreq. Level Factor ment Limit MHz dBuV/m dB dBuV/m dBuV/m 120. 2100 54. 68 -15. 03 39. 65 43. 50 250. 1900 52. 37 -13. 37 39. 00 46. 00 472. 3200 45. 26 -7. 48 37. 78 46. 00 624. 6100 38. 48 -4. 77 33. 71 46. 00 712. 8800 38. 14 -3. 33 34. 81 46. 00	MHz dBuV/m dB dBuV/m dBuV/m dB 120. 2100 54. 68 -15. 03 39. 65 43. 50 -3. 85 250. 1900 52. 37 -13. 37 39. 00 46. 00 -7. 00 472. 3200 45. 26 -7. 48 37. 78 46. 00 -8. 22 624. 6100 38. 48 -4. 77 33. 71 46. 00 -12. 29 712. 8800 38. 14 -3. 33 34. 81 46. 00 -11. 19	MHz dBuV/m dB dBuV/m dBuV/m dB Detector 120. 2100 54. 68 -15. 03 39. 65 43. 50 -3. 85 Peak 250. 1900 52. 37 -13. 37 39. 00 46. 00 -7. 00 Peak 472. 3200 45. 26 -7. 48 37. 78 46. 00 -8. 22 Peak 624. 6100 38. 48 -4. 77 33. 71 46. 00 -12. 29 Peak 712. 8800 38. 14 -3. 33 34. 81 46. 00 -11. 19 Peak

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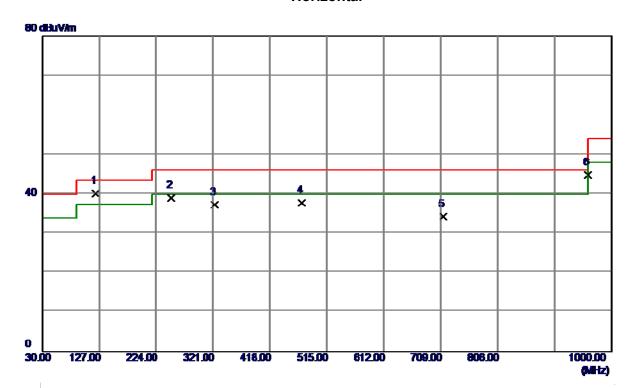








Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	120. 2100	55. 18	-15.03	40. 15	43.50	-3.35	Peak	
2	250. 1900	52.37	-13.37	39.00	46.00	-7.00	Peak	
3	323.9100	48. 21	-10.89	37.32	46.00	-8. 68	Peak	
4	472. 3200	45. 26	-7 . 4 8	37. 78	46.00	-8. 22	Peak	
5	712. 8800	37. 64	-3.33	34. 31	46.00	-11. 69	Peak	
6	960. 2300	43.00	1.83	44. 83	54.00	-9. 17	Peak	

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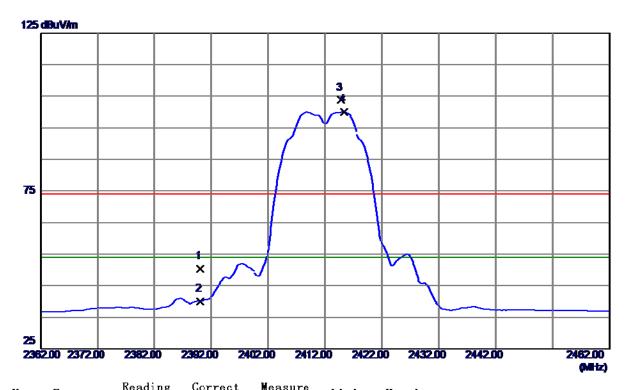
ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

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

Vertical



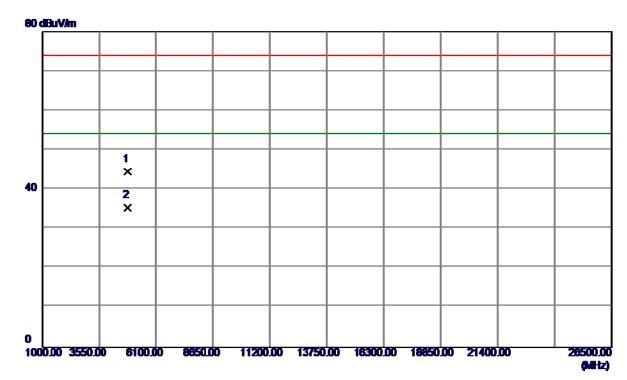
No.	Freq.	Level	Factor	measure	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	16. 11	34. 23	50. 34	74.00	-23.66	Peak	
2	2390. 0000	5.82	34. 23	40. 05	54.00	-13.95	AVG	
3	2414. 8000	69. 33	34. 38	103.71	74.00	29. 71	Peak	No Limit
4	2415.3000	65. 58	34. 38	99. 96	54.00	45. 96	AVG	No Limit

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Test Mode: TX B MODE 2412MHz

Vertical



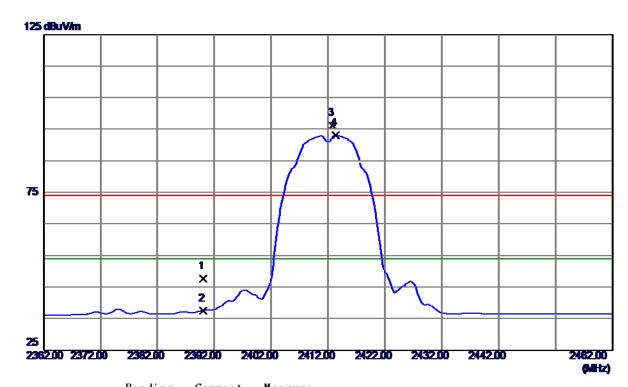
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823.9100	41.52	3.00	44. 52	74.00	-29. 48	Peak	
2	4823. 9800	32. 36	3.00	35. 36	54.00	-18.64	AVG	

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Test Mode: TX B MODE 2412MHz

Horizontal



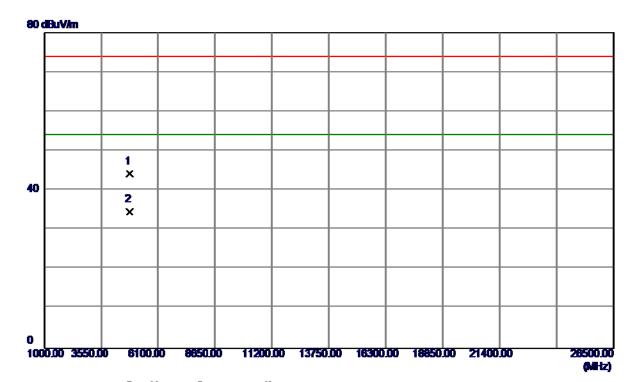
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	13.46	34. 23	47.69	74.00	-26.31	Peak	
2	2390. 0000	3. 22	34. 23	37. 45	54.00	-16.55	AVG	
3	2412. 8000	61.85	34. 36	96. 21	74.00	22. 21	Peak	No Limit
4	2413.3000	58. 68	34. 37	93. 05	54.00	39. 05	AVG	No Limit

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Test Mode: TX B MODE 2412MHz

Horizontal



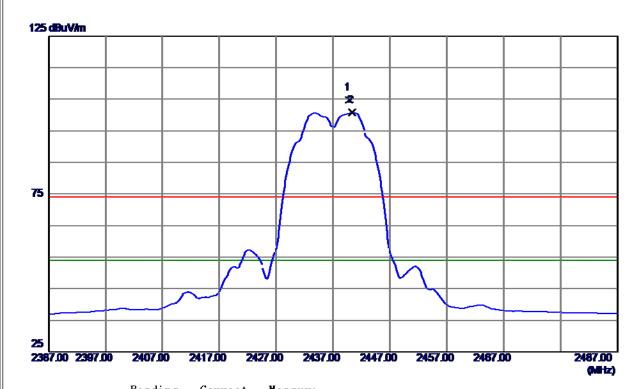
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBu V/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823. 9100	41.20	3.00	44. 20	74.00	-29. 80	Peak	
2	4824. 0600	31.59	3.00	34. 59	54.00	-19. 41	AVG	

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

Vertical



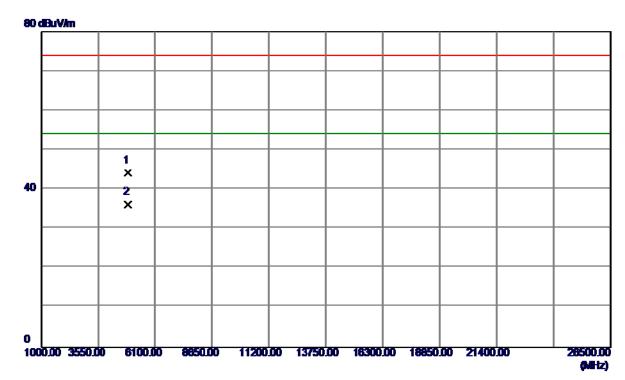
No.	Freq.	Keading Level	Correct Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2439. 8000	70. 27	34. 52	104. 79	74.00	30. 79	Peak	No Limit
2	2440. 3000	66. 21	34. 52	100.73	54.00	46.73	AVG	No Limit

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Test Mode: TX B MODE 2437MHz

Vertical



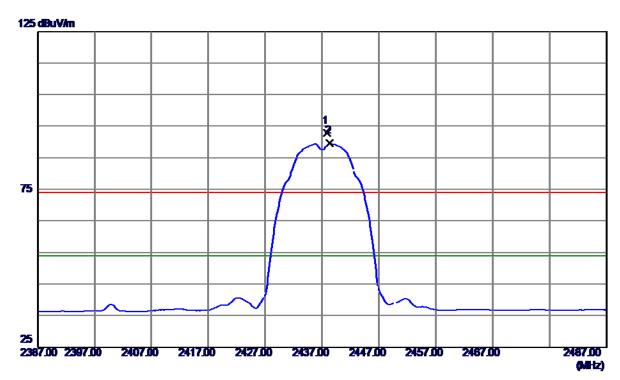
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dВ	Detector	Comment
1	4873. 9200	41.16	3.03	44. 19	74.00	-29.81	Peak	
2	4873. 9800	33. 18	3.03	36. 21	54.00	-17.79	AVG	

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Test Mode: TX B MODE 2437MHz

Horizontal



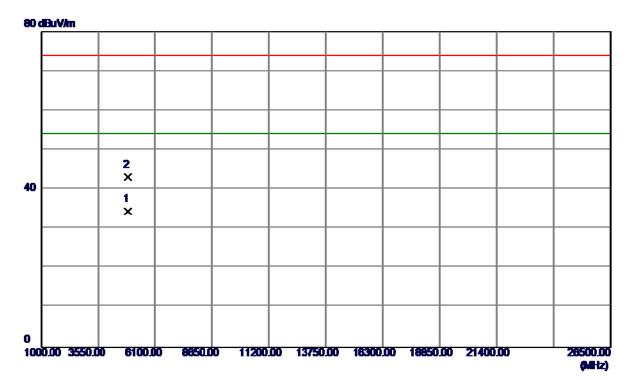
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dВ	Detector	Comment
1	2437. 9000	58. 30	34. 51	92. 81	74.00	18.81	Peak	No Limit
2	2438. 3000	55. 01	34. 51	89. 52	54.00	35. 52	AVG	No Limit

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Test Mode: TX B MODE 2437MHz

Horizontal



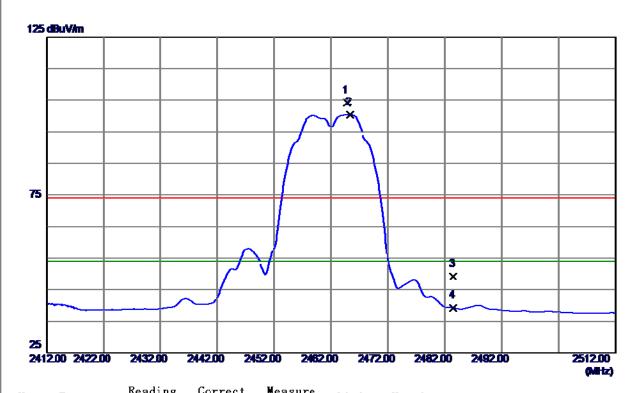
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873. 9200	31.36	3.03	34. 39	54.00	-19.61	AVG	
2	4874. 0800	40. 08	3.03	43. 11	74.00	-30.89	Peak	

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

Vertical



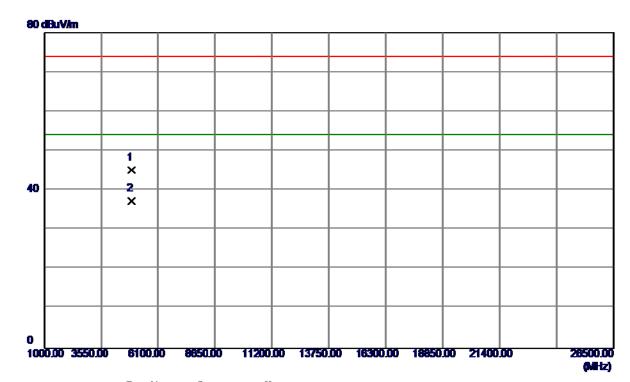
No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2464. 8000	69. 48	34. 67	104. 15	74.00	30. 15	Peak	No Limit
2	2465.3000	65. 80	34. 67	100. 47	54.00	46. 47	AVG	No Limit
3	2483.5000	14. 37	34. 77	49. 14	74.00	-24.86	Peak	
4	2483.5000	4. 47	34. 77	39. 24	54.00	-14.76	AVG	

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Test Mode: TX B MODE 2462MHz

Vertical



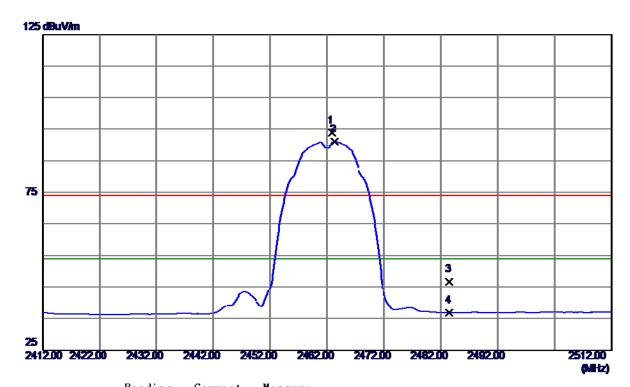
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dВ	Detector	Comment
1	4923. 9300	42.12	3.05	45. 17	74.00	-28.83	Peak	
2	4923. 9600	34. 25	3.05	37. 30	54.00	-16.70	AVG	

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Test Mode: TX B MODE 2462MHz

Horizontal



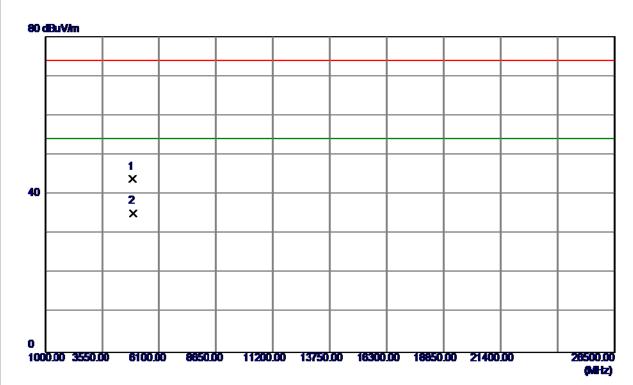
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dВ	dBuV/m	dBuV/m	dВ	Detector	Comment
1	2462. 9000	59. 21	34. 65	93. 86	74.00	19.86	Peak	No Limit
2	2463.3000	56. 37	34. 66	91.03	54.00	37.03	AVG	No Limit
3	2483.5000	11.75	34. 77	46. 52	74.00	-27.48	Peak	
4	2483.5000	2. 07	34. 77	36. 84	54.00	-17.16	AVG	

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Test Mode: TX B MODE 2462MHz

Horizontal



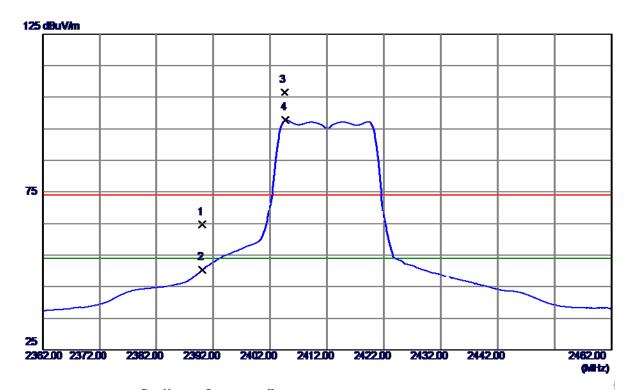
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dВ	dBuV/m	dBuV/m	dВ	Detector	Comment
1	4923. 4000	40. 87	3.05	43.92	74.00	-30.08	Peak	
2	4924. 5000	32. 19	3. 05	35. 24	54.00	-18.76	AVG	

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

Vertical



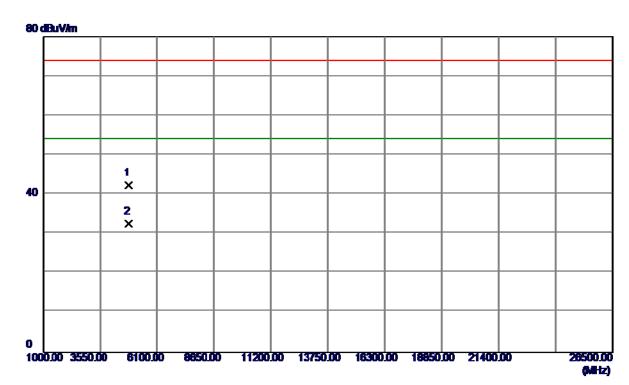
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	30. 47	34. 23	64.70	74.00	-9.30	Peak	
2	2390. 0000	16. 10	34. 23	50.33	54.00	-3.67	AVG	
3	2404. 5000	72.36	34. 32	106.68	74.00	32. 68	Peak	No Limit
4	2404. 7000	63. 45	34. 32	97.77	54.00	43.77	AVG	No Limit

Report No.: BTL-FCCP-3-1602C104 Page 56 of 124



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

Vertical



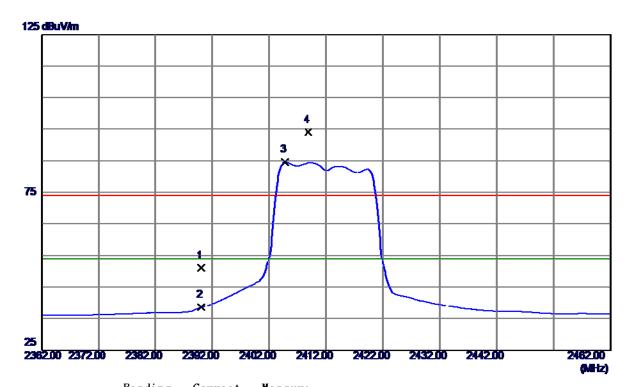
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dВ	dBuV/m	dBuV/m	dВ	Detector	Comment
1	4823.9100	39. 24	3.00	42. 24	74.00	-31.76	Peak	
2	4823. 9800	29. 50	3.00	32. 50	54.00	-21.50	AVG	

Report No.: BTL-FCCP-3-1602C104 Page 57 of 124



Test Mode: TX G MODE 2412MHz

Horizontal



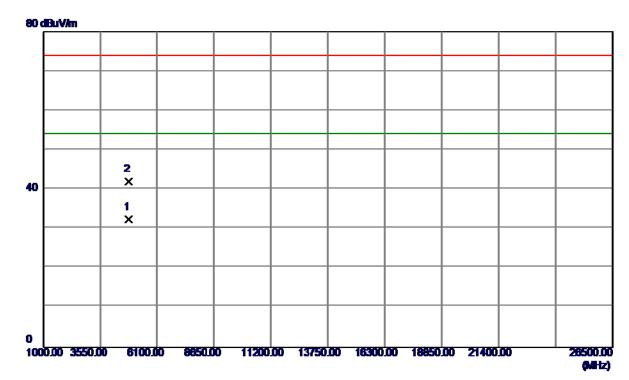
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	16.78	34. 23	51.01	74.00	-22.99	Peak	
2	2390. 0000	4. 29	34. 23	38. 52	54.00	-15.48	AVG	
3	2404. 8000	50. 24	34. 32	84. 56	54.00	30. 56	AVG	No Limit
4	2408. 9000	59. 62	34. 34	93. 96	74.00	19. 96	Peak	No Limit

Report No.: BTL-FCCP-3-1602C104 Page 58 of 124



Test Mode: TX G MODE 2412MHz

Horizontal



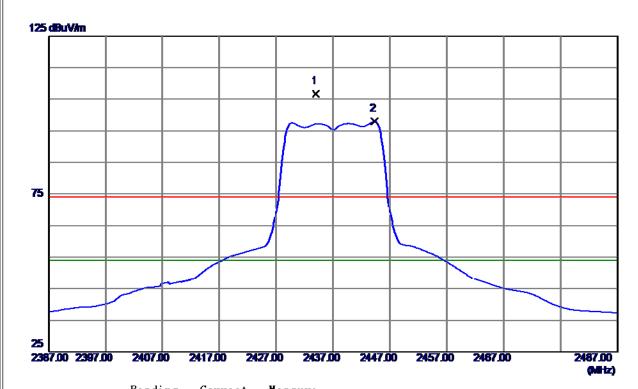
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dВ	Detector	Comment
1	4823.9600	29. 37	3.00	32. 37	54.00	-21.63	AVG	
2	4824. 0000	38. 87	3.00	41.87	74.00	-32.13	Peak	

Report No.: BTL-FCCP-3-1602C104 Page 59 of 124



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

Vertical



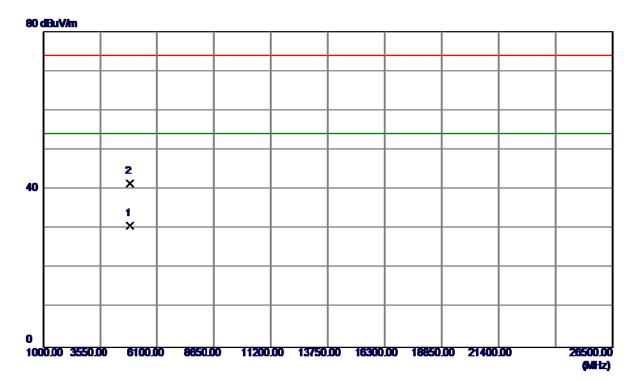
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2434. 0000	72. 25	34. 49	106.74	74.00	32.74	Peak	No Limit
2	2444. 3000	63.40	34. 55	97. 95	54.00	43.95	AVG	No Limit

Report No.: BTL-FCCP-3-1602C104 Page 60 of 124



Test Mode: TX G MODE 2437MHz

Vertical



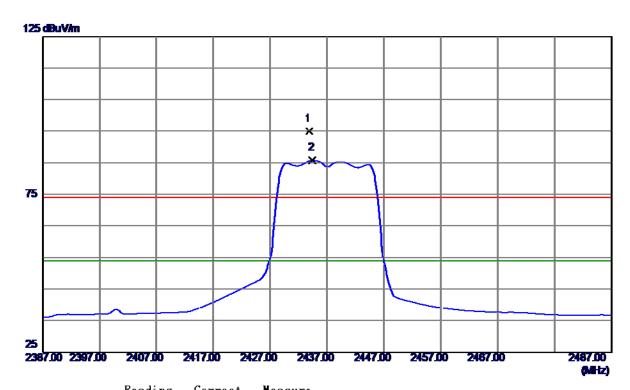
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dВ	Detector	Comment
1	4874. 1000	27.64	3.03	30. 67	54.00	-23.33	AVG	
2	4875. 2200	38. 40	3.03	41. 43	74.00	-32.57	Peak	

Report No.: BTL-FCCP-3-1602C104 Page 61 of 124



Test Mode: TX G MODE 2437MHz

Horizontal



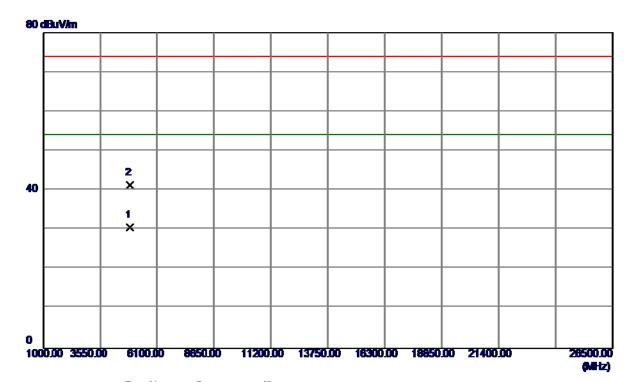
No.	Freq.	Keading Level	Correct Factor	measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dВ	Detector	Comment
1	2433. 9000	60. 48	34. 49	94. 97	74.00	20. 97	Peak	No Limit
2	2434. 5000	51. 23	34. 49	85.72	54.00	31.72	AVG	No Limit

Report No.: BTL-FCCP-3-1602C104 Page 62 of 124



Test Mode: TX G MODE 2437MHz

Horizontal



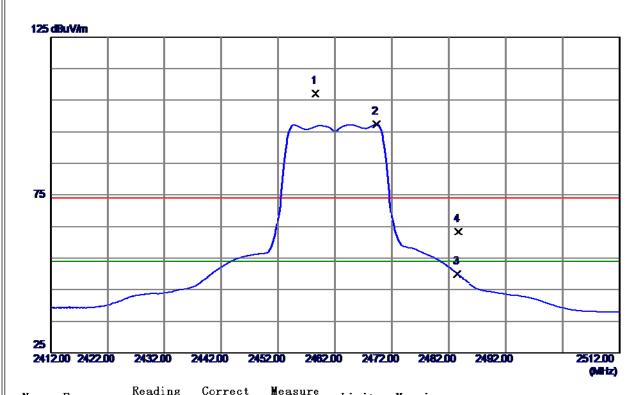
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873.9600	27. 51	3.03	30.54	54.00	-23.46	AVG	
2	4874. 0800	38. 32	3.03	41.35	74.00	-32.65	Peak	

Report No.: BTL-FCCP-3-1602C104 Page 63 of 124



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

Vertical



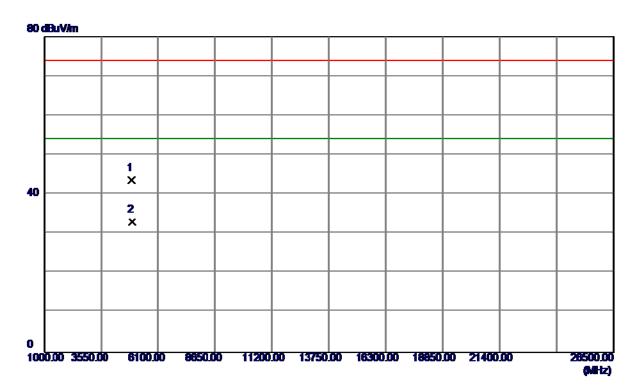
No.	Freq.	Level	Factor	measure	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2458. 6000	72.60	34. 63	107. 23	74.00	33. 23	Peak	No Limit
2	2469. 3000	62.77	34. 69	97. 46	54.00	43.46	AVG	No Limit
3	2483.5000	15. 30	34. 77	50. 07	54.00	-3.93	AVG	
4	2483.7000	28. 69	34. 78	63. 47	74.00	-10.53	Peak	

Report No.: BTL-FCCP-3-1602C104 Page 64 of 124



Test Mode: TX G MODE 2462MHz

Vertical



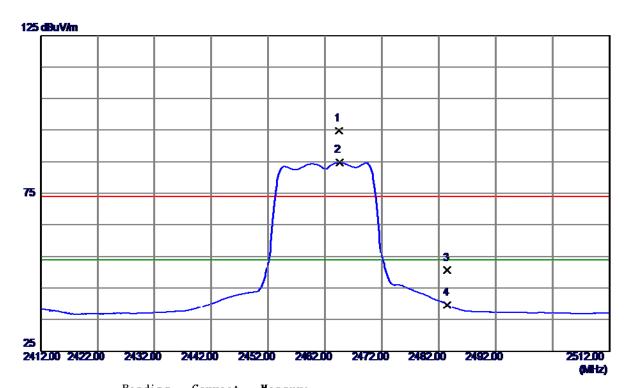
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dВ	dBuV/m	dBuV/m	dВ	Detector	Comment
1	4923.5000	40. 44	3.05	43. 49	74.00	-30.51	Peak	
2	4924. 5000	29. 98	3. 05	33. 03	54.00	-20. 97	AVG	

Report No.: BTL-FCCP-3-1602C104 Page 65 of 124



Test Mode: TX G MODE 2462MHz

Horizontal



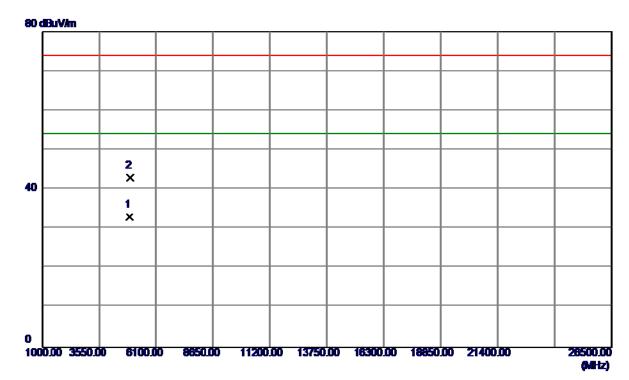
No.	Freq.	Keading Level	Correct Factor	measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dВ	Detector	Comment
1	2464. 4000	60. 23	34. 66	94. 89	74.00	20. 89	Peak	No Limit
2	2464. 5000	50. 05	34. 66	84. 71	54.00	30.71	AVG	No Limit
3	2483.5000	15.85	34. 77	50. 62	74.00	-23.38	Peak	
4	2483.5000	4. 81	34. 77	39. 58	54.00	-14.42	AVG	

Report No.: BTL-FCCP-3-1602C104 Page 66 of 124



Test Mode: TX G MODE 2462MHz

Horizontal



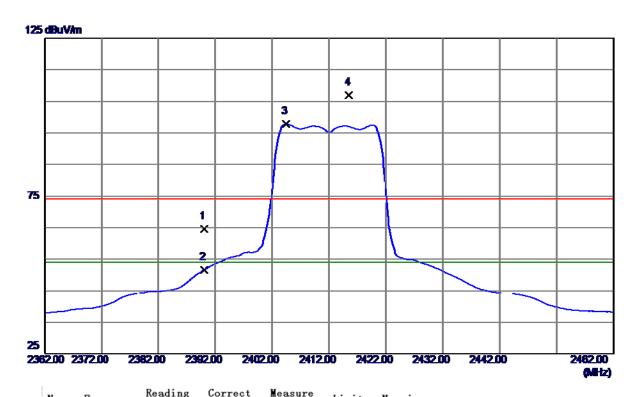
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dВ	Detector	Comment
1	4923.5000	29. 89	3.05	32. 94	54.00	-21.06	AVG	
2	4924. 5000	39. 77	3.05	42. 82	74.00	-31.18	Peak	

Report No.: BTL-FCCP-3-1602C104 Page 67 of 124



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

Vertical



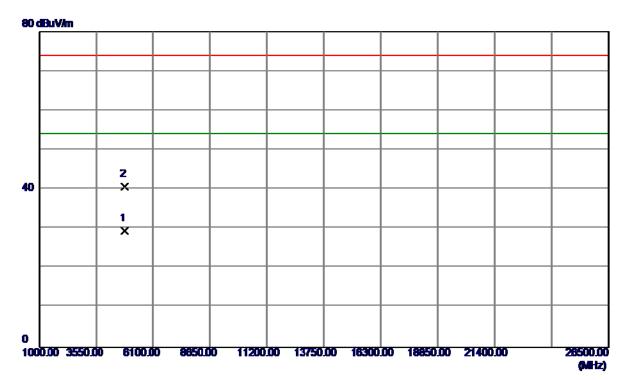
No.	Freq.	Level	Factor	measure	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	30. 37	34. 23	64. 60	74.00	-9. 40	Peak	
2	2390. 0000	17.38	34. 23	51.61	54.00	-2.39	AVG	
3	2404. 4000	63.46	34. 32	97. 78	54.00	43.78	AVG	No Limit
4	2415. 5000	72. 58	34. 38	106. 96	74.00	32. 96	Peak	No Limit

Report No.: BTL-FCCP-3-1602C104 Page 68 of 124



Test Mode: TX N-20M MODE 2412MHz

Vertical



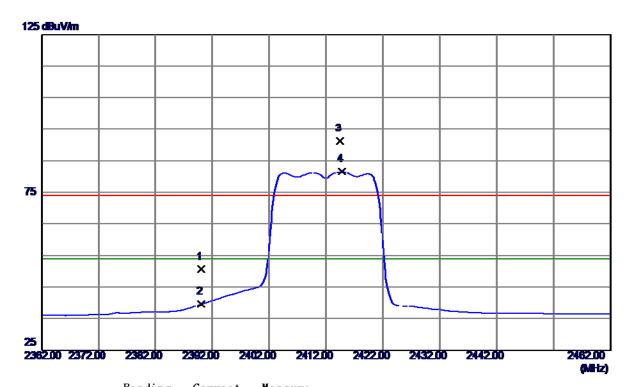
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dВ	dBuV/m	dBuV/m	dВ	Detector	Comment
1	4823.8600	26. 40	3.00	29. 40	54.00	-24.60	AVG	
2	4824. 1000	37. 67	3.00	40. 67	74.00	-33.33	Peak	

Report No.: BTL-FCCP-3-1602C104 Page 69 of 124



Test Mode: TX N-20M MODE 2412MHz

Horizontal



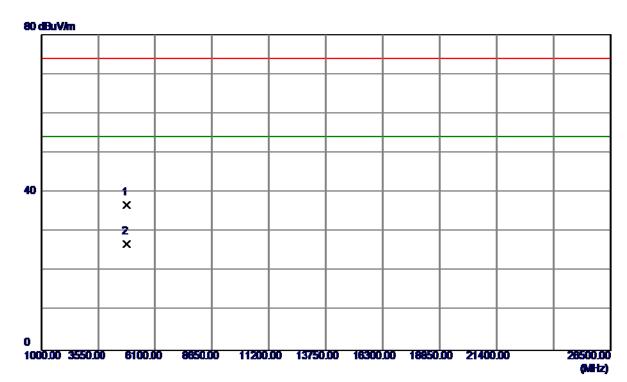
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	16. 40	34. 23	50. 63	74.00	-23.37	Peak	
2	2390. 0000	5. 35	34. 23	39. 58	54.00	-14.42	AVG	
3	2414. 4000	56. 88	34. 37	91. 25	74.00	17. 25	Peak	No Limit
4	2414. 8000	47. 20	34. 38	81.58	54.00	27.58	AVG	No Limit

Report No.: BTL-FCCP-3-1602C104 Page 70 of 124



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

Horizontal



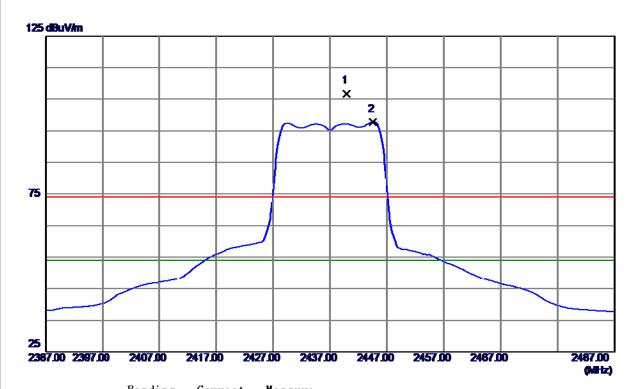
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823. 9200	33. 82	3.00	36. 82	74.00	-37.18	Peak	
2	4823.9600	23. 92	3.00	26. 92	54.00	-27.08	AVG	

Report No.: BTL-FCCP-3-1602C104 Page 71 of 124



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

Vertical



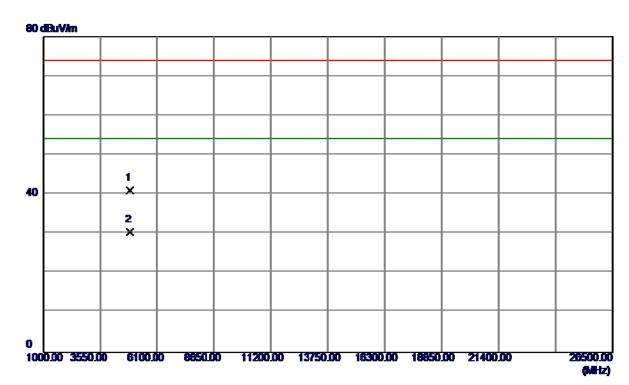
No.	Freq.	Keading Level	Correct Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2439. 9000	72.38	34. 52	106. 90	74.00	32. 90	Peak	No Limit
2	2444. 6000	63. 33	34. 55	97.88	54.00	43.88	AVG	No Limit

Report No.: BTL-FCCP-3-1602C104 Page 72 of 124



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

Vertical



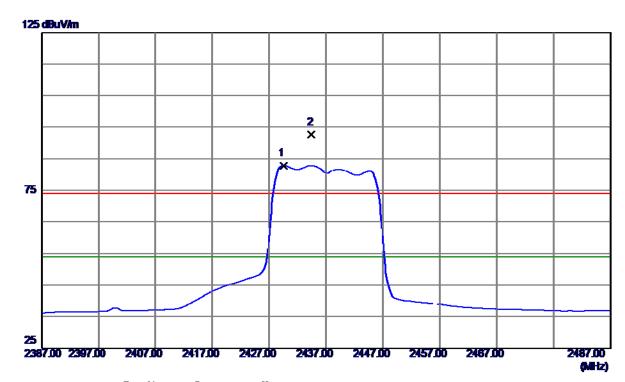
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873.5800	37.86	3.03	40.89	74.00	-33.11	Peak	
2	4873. 9200	27. 32	3.03	30. 35	54.00	-23.65	AVG	

Report No.: BTL-FCCP-3-1602C104 Page 73 of 124



Test Mode: TX N-20M MODE 2437MHz

Horizontal



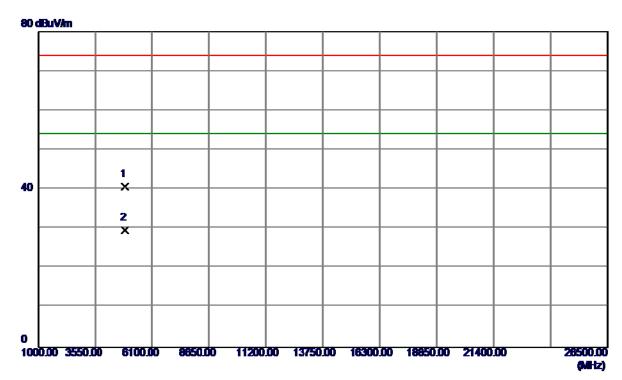
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dВ	Detector	Comment
1	2429. 5000	48. 41	34. 46	82. 87	54.00	28. 87	AVG	No Limit
2	2434. 5000	58. 19	34. 49	92. 68	74.00	18.68	Peak	No Limit

Report No.: BTL-FCCP-3-1602C104 Page 74 of 124



Test Mode: TX N-20M MODE 2437MHz

Horizontal



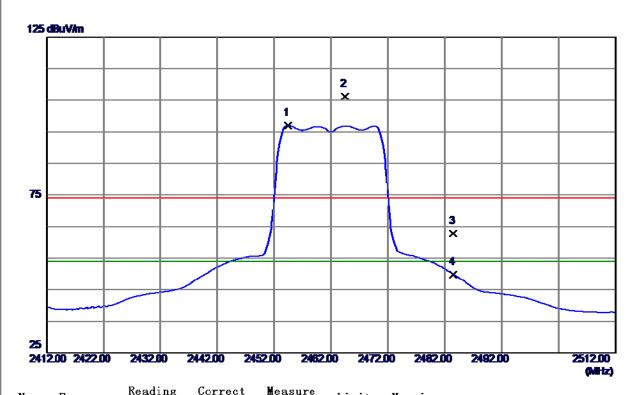
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4872.9000	37. 68	3.03	40.71	74.00	-33.29	Peak	
2	4873.3000	26. 53	3.03	29. 56	54.00	-24.44	AVG	

Report No.: BTL-FCCP-3-1602C104 Page 75 of 124



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

Vertical



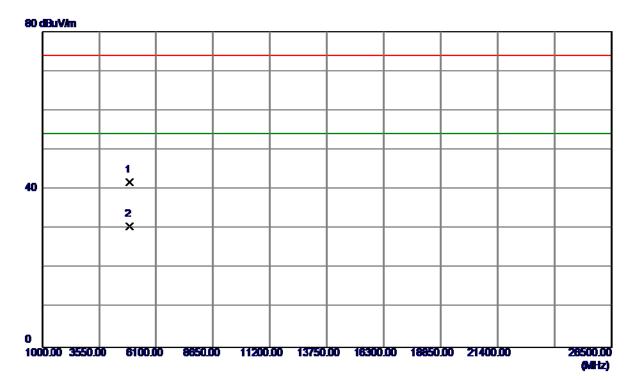
No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2454. 4000	62. 41	34. 61	97. 02	54.00	43.02	AVG	No Limit
2	2464. 4000	71.52	34. 66	106. 18	74.00	32.18	Peak	No Limit
3	2483.5000	28. 06	34. 77	62. 83	74.00	-11.17	Peak	
4	2483.5000	15. 08	34. 77	49. 85	54.00	- 4. 15	AVG	

Report No.: BTL-FCCP-3-1602C104 Page 76 of 124



Test Mode: TX N-20M MODE 2462MHz

Vertical



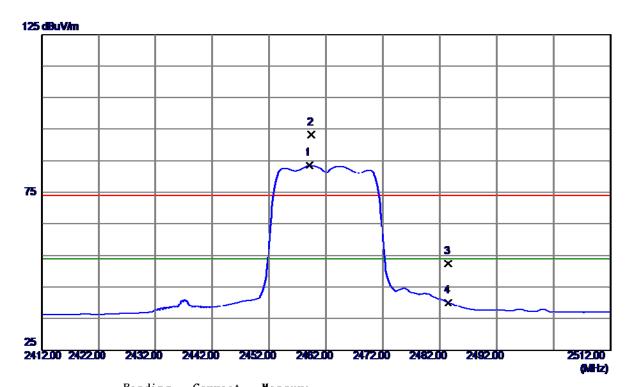
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dВ	dBuV/m	dBuV/m	dB	Detector	Comment
1	4923. 2000	38. 72	3.05	41.77	74.00	-32.23	Peak	
2	4923. 5000	27. 55	3. 05	30. 60	54.00	-23.40	AVG	

Report No.: BTL-FCCP-3-1602C104 Page 77 of 124



Test Mode: TX N-20M MODE 2462MHz

Horizontal



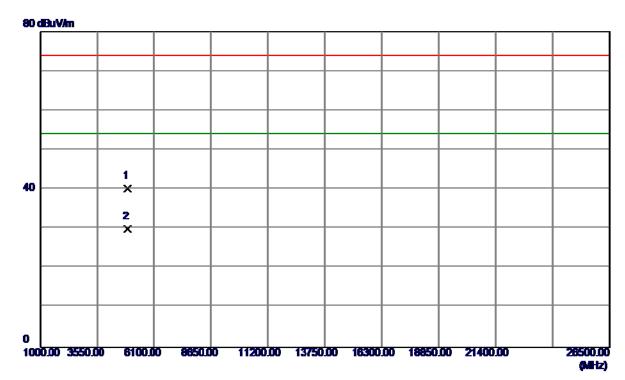
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dВ	dBuV/m	dBuV/m	dВ	Detector	Comment
1	2459. 1000	48. 90	34. 63	83. 53	54.00	29. 53	AVG	No Limit
2	2459. 5000	58. 58	34. 64	93. 22	74.00	19. 22	Peak	No Limit
3	2483.5000	17.54	34. 77	52. 31	74.00	-21.69	Peak	
4	2483.5000	5. 16	34. 77	39. 93	54.00	-14.07	AVG	

Report No.: BTL-FCCP-3-1602C104 Page 78 of 124



Test Mode: TX N-20M MODE 2462MHz

Horizontal



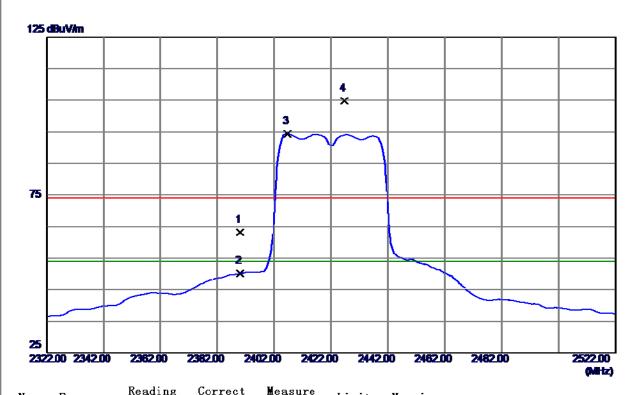
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4923. 1000	37. 08	3.05	40. 13	74.00	-33.87	Peak	
2	4923. 4900	26. 93	3.05	29. 98	54.00	-24. 02	AVG	

Report No.: BTL-FCCP-3-1602C104 Page 79 of 124



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

Vertical



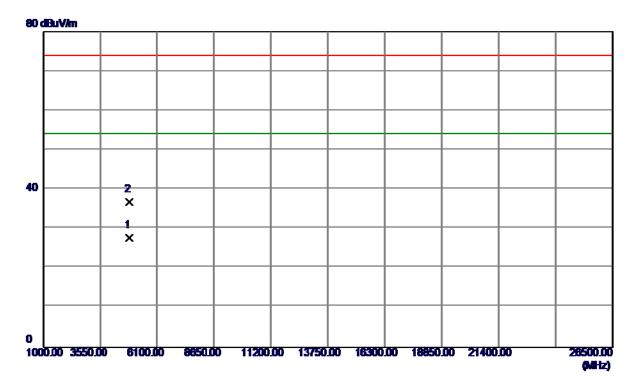
No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	28. 98	34. 23	63. 21	74.00	-10.79	Peak	
2	2390. 0000	15. 93	34. 23	50.16	54.00	-3.84	AVG	
3	2406. 6000	60. 04	34. 33	94. 37	54.00	40.37	AVG	No Limit
4	2426. 6000	70. 27	34. 44	104.71	74.00	30.71	Peak	No Limit

Report No.: BTL-FCCP-3-1602C104 Page 80 of 124



Test Mode: TX N-40M MODE 2422MHz

Vertical



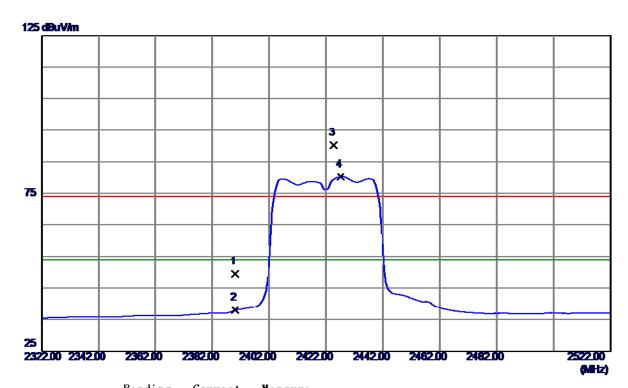
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4843.5400	24. 69	3.01	27.70	54.00	-26.30	AVG	
2	4843. 9200	33. 85	3.01	36. 86	74.00	-37.14	Peak	

Report No.: BTL-FCCP-3-1602C104 Page 81 of 124



Test Mode: TX N-40M MODE 2422MHz

Horizontal



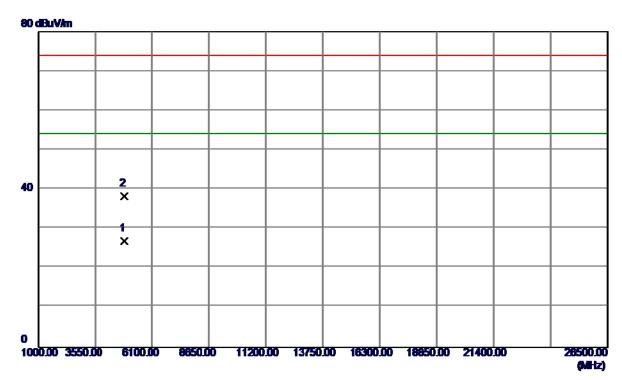
No.	Freq.	keading Level	Correct Factor	measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	15. 23	34. 23	49. 46	74.00	-24.54	Peak	
2	2390. 0000	3.70	34. 23	37. 93	54.00	-16.07	AVG	
3	2424. 6000	55. 78	34. 43	90. 21	74.00	16. 21	Peak	No Limit
4	2427. 2000	45.75	34. 45	80. 20	54.00	26. 20	AVG	No Limit

Report No.: BTL-FCCP-3-1602C104 Page 82 of 124



Test Mode: TX N-40M MODE 2422MHz

Horizontal



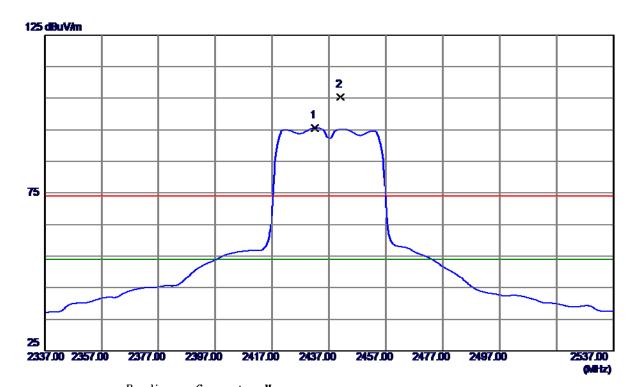
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4843.1000	23.89	3.01	26. 90	54.00	-27.10	AVG	
2	4844. 0000	35. 16	3.01	38. 17	74.00	-35.83	Peak	

Report No.: BTL-FCCP-3-1602C104 Page 83 of 124



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

Vertical



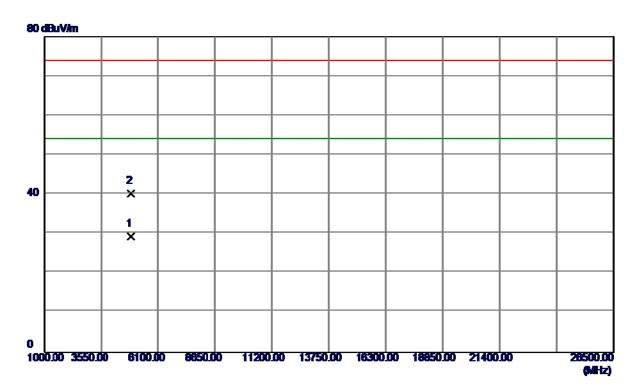
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2432. 2000	61. 15	34. 48	95. 63	54.00	41.63	AVG	No Limit
2	2441.0000	70.85	34. 53	105.38	74.00	31.38	Peak	No Limit

Report No.: BTL-FCCP-3-1602C104 Page 84 of 124



Test Mode: TX N-40M MODE 2437MHz

Vertical



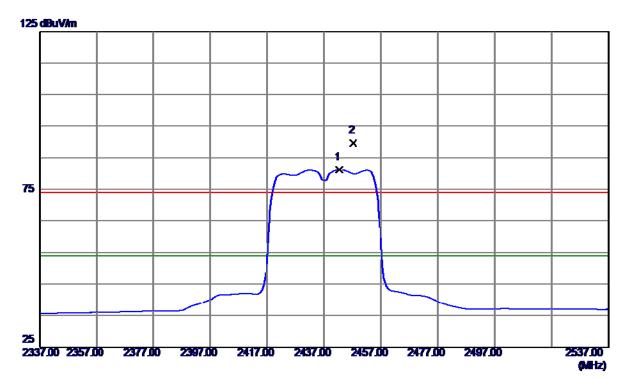
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dВ	Detector	Comment
1	4873.7599	26. 21	3.03	29. 24	54.00	-24.76	AVG	
2	4873.8300	37. 15	3.03	40. 18	74.00	-33.82	Peak	

Report No.: BTL-FCCP-3-1602C104 Page 85 of 124



Test Mode: TX N-40M MODE 2437MHz

Horizontal



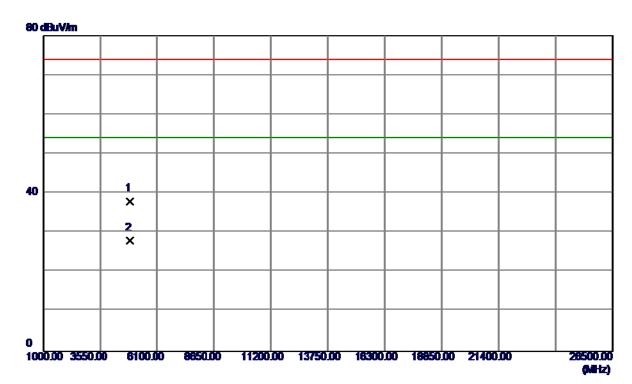
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dВ	Detector	Comment
1	2442. 4000	46. 58	34. 54	81.12	54.00	27.12	AVG	No Limit
2	2447. 2000	55. 13	34. 56	89. 69	74.00	15. 69	Peak	No Limit

Report No.: BTL-FCCP-3-1602C104 Page 86 of 124



Test Mode: TX N-40M MODE 2437MHz

Horizontal



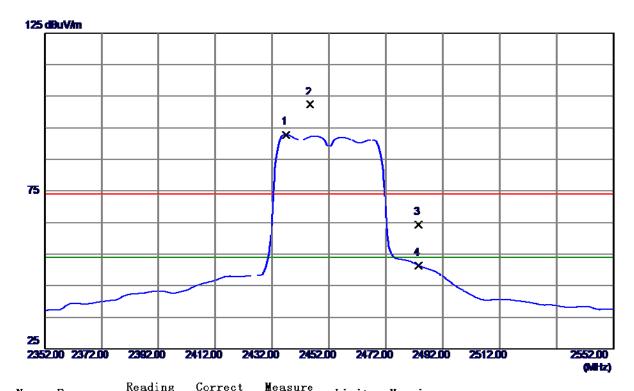
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dВ	Detector	Comment
1	4873.8300	34. 97	3.03	38. 00	74.00	-36.00	Peak	
2	4873.9000	25. 01	3.03	28. 04	54.00	-25.96	AVG	

Report No.: BTL-FCCP-3-1602C104 Page 87 of 124



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

Vertical



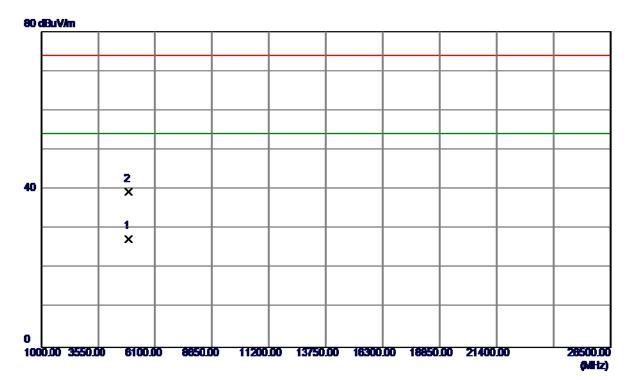
No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2436. 8000	58. 40	34. 50	92. 90	54.00	38. 90	AVG	No Limit
2	2445. 4000	67. 93	34. 55	102.48	74.00	28. 48	Peak	No Limit
3	2483.5000	29. 66	34. 77	64. 43	74.00	-9. 57	Peak	
4	2483.5000	16. 69	34. 77	51.46	54.00	-2.54	AVG	

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Test Mode: TX N-40M MODE 2452MHz

Vertical



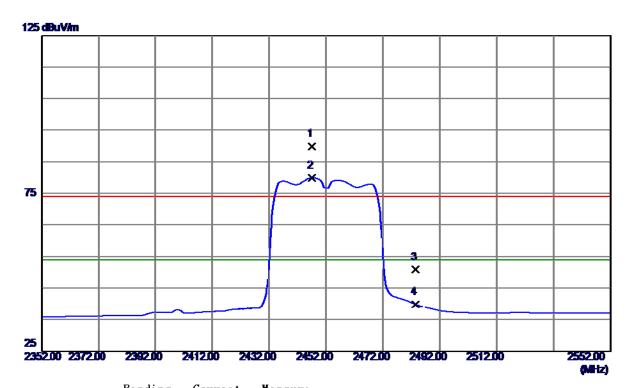
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4903.5000	24. 40	3.04	27. 44	54.00	-26.56	AVG	
2	4904. 0000	36. 34	3.04	39. 38	74.00	-34.62	Peak	

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Test Mode: TX N-40M MODE 2452MHz

Horizontal



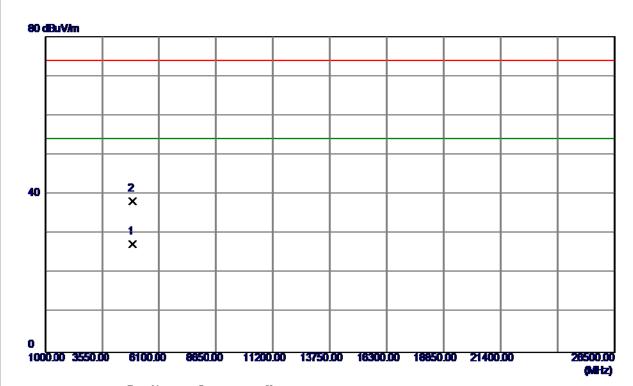
No.	Freq.	keading Level	Correct Factor	measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2447. 2000	55. 28	34. 56	89. 84	74.00	15.84	Peak	No Limit
2	2447. 2000	45. 22	34. 56	79. 78	54.00	25. 78	AVG	No Limit
3	2483.5000	15. 99	34. 77	50. 76	74.00	-23.24	Peak	
4	2483.5000	4. 99	34. 77	39. 76	54.00	-14.24	AVG	

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

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MIIz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4903.8100	24. 34	3.04	27. 38	54.00	-26. 62	AVG	
2	4903. 9400	35. 19	3.04	38. 23	74.00	-35.77	Peak	

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ATTACHMENT E - BANDWIDTH

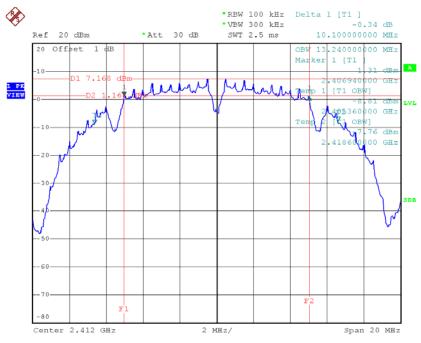
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Test Mode: TX B Mode_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	10.10	13.24	500	Complies
2437	9.64	13.20	500	Complies
2462	9.60	13.20	500	Complies

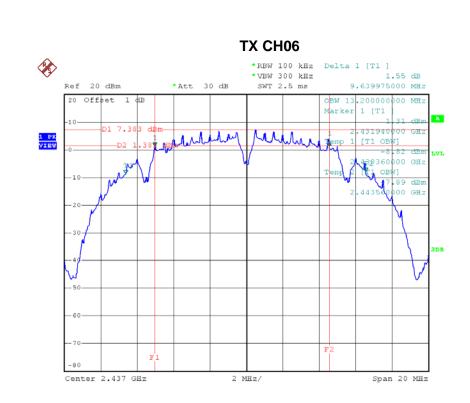
TX CH01



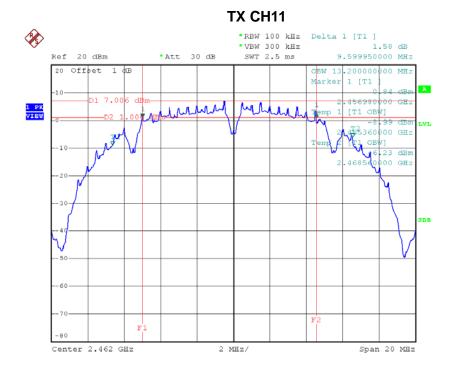
Date: 4.MAR.2016 14:02:31

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Date: 4.MAR.2016 14:04:01



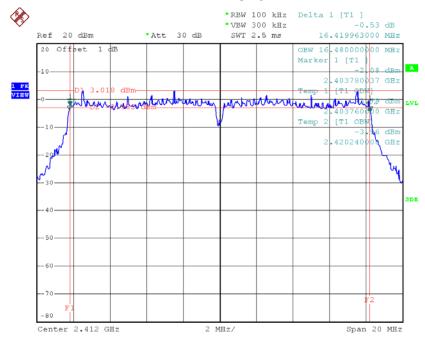
Date: 4.MAR.2016 14:05:28



Test Mode: TX G Mode_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	16.42	16.48	500	Complies
2437	16.44	16.48	500	Complies
2462	16.43	16.48	500	Complies

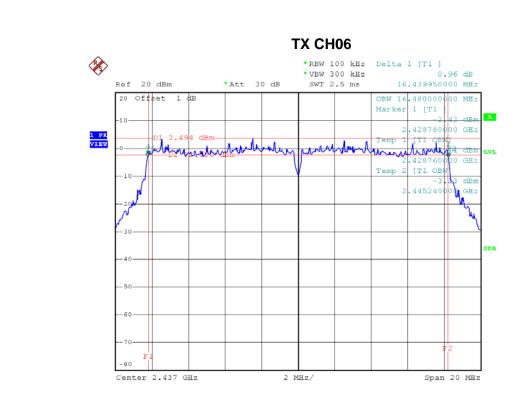
TX CH01



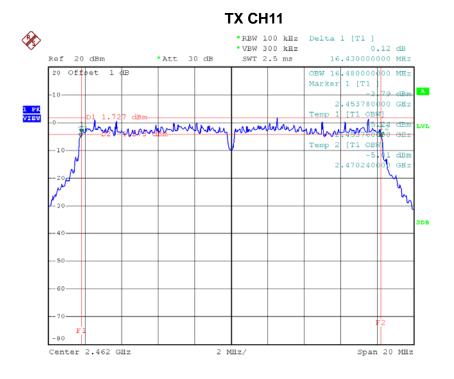
Date: 4.MAR.2016 14:07:22

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Date: 4.MAR.2016 14:09:36



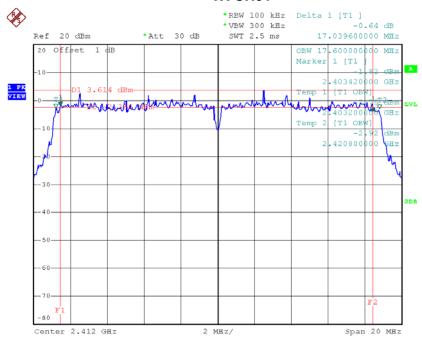
Date: 4.MAR.2016 14:11:22



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

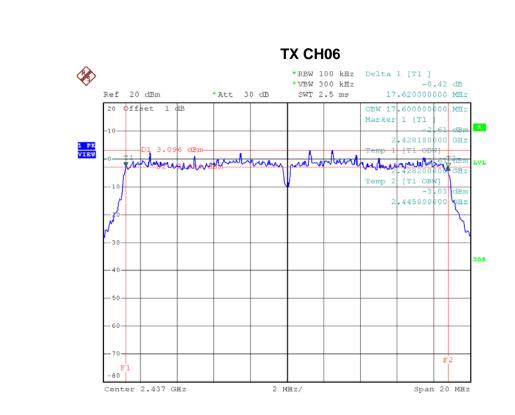
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	17.04	17.60	500	Complies
2437	17.62	17.60	500	Complies
2462	17.07	17.60	500	Complies

TX CH01

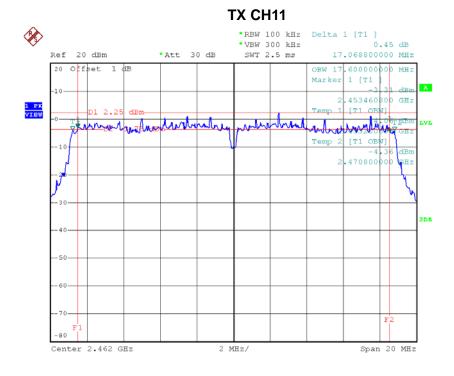


Date: 4.MAR.2016 14:13:42









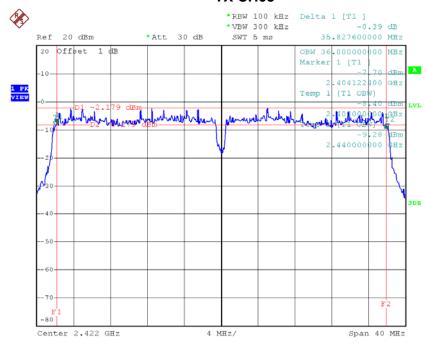
Date: 4.MAR.2016 14:16:04



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

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2422	35.83	36.00	500	Complies
2437	36.36	36.00	500	Complies
2452	36.07	36.08	500	Complies

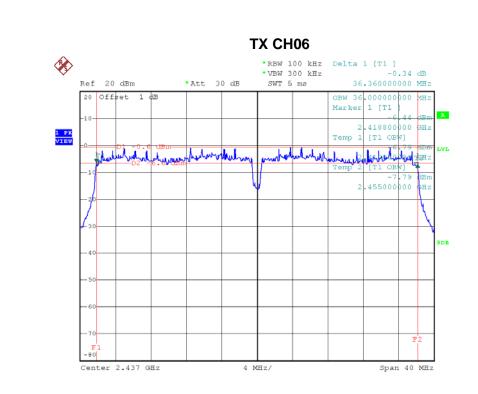
TX CH03



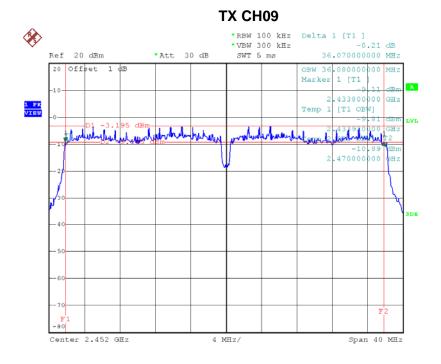
Date: 4.MAR.2016 14:22:14

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Date: 4.MAR.2016 14:25:35



Date: 4.MAR.2016 14:26:51



ATTACHMENT F – MAXIMUM PEAK CONDUCTED OUTPUT POWER

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Test Mode :TX B Mode_CH01/06/11					
Frequency	Conducted	Conducted	Max. Limit	Max. Limit	Dogult
(MHz)	Power (dBm)	Power (W)	(dBm)	(W)	Result
2412	16.79	0.05	30.00	1.00	Complies
2437	16.47	0.04	30.00	1.00	Complies
2462	16.33	0.04	30.00	1.00	Complies

Test Mode :TX G Mode_CH01/06/11					
Frequency	Conducted	Conducted	Max. Limit	Max. Limit	Result
(MHz)	Power (dBm)	Power (W)	(dBm)	(W)	Resuit
2412	14.67	0.03	30.00	1.00	Complies
2437	15.43	0.03	30.00	1.00	Complies
2462	13.54	0.02	30.00	1.00	Complies

Test Mode :TX N20 Mode_CH01/06/11					
Frequency	Conducted	Conducted	Max. Limit	Max. Limit	Result
(MHz)	Power (dBm)	Power (W)	(dBm)	(W)	Result
2412	14.69	0.03	30.00	1.00	Complies
2437	14.41	0.03	30.00	1.00	Complies
2462	13.48	0.02	30.00	1.00	Complies

Test Mode :TX N40 Mode_CH03/06/09					
Frequency	Conducted	Conducted	Max. Limit	Max. Limit	Result
(MHz)	Power (dBm)	Power (W)	(dBm)	(W)	Result
2422	12.43	0.02	30.00	1.00	Complies
2437	13.82	0.02	30.00	1.00	Complies
2452	10.96	0.01	30.00	1.00	Complies

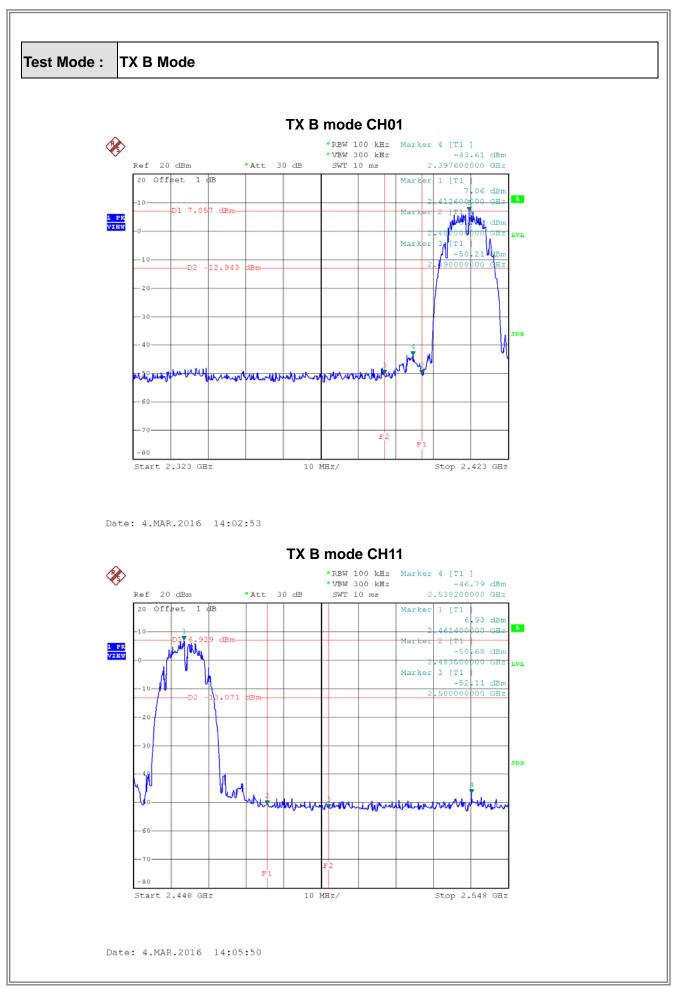
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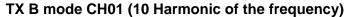
ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION

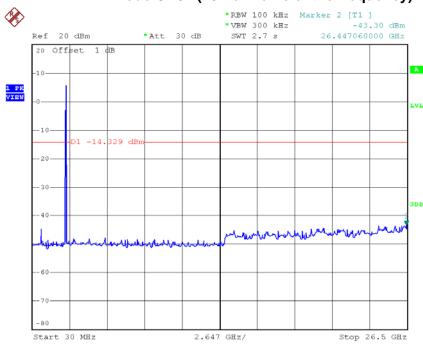
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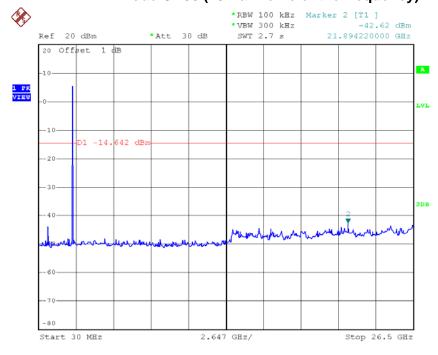






Date: 4.MAR.2016 14:02:45

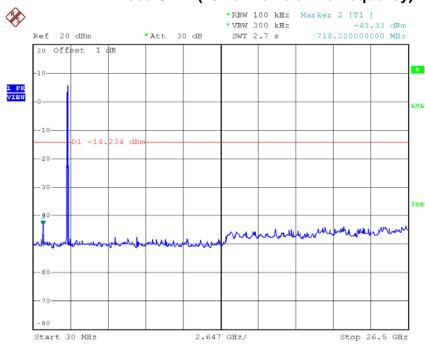
TX B mode CH06 (10 Harmonic of the frequency)



Date: 4.MAR.2016 14:04:14



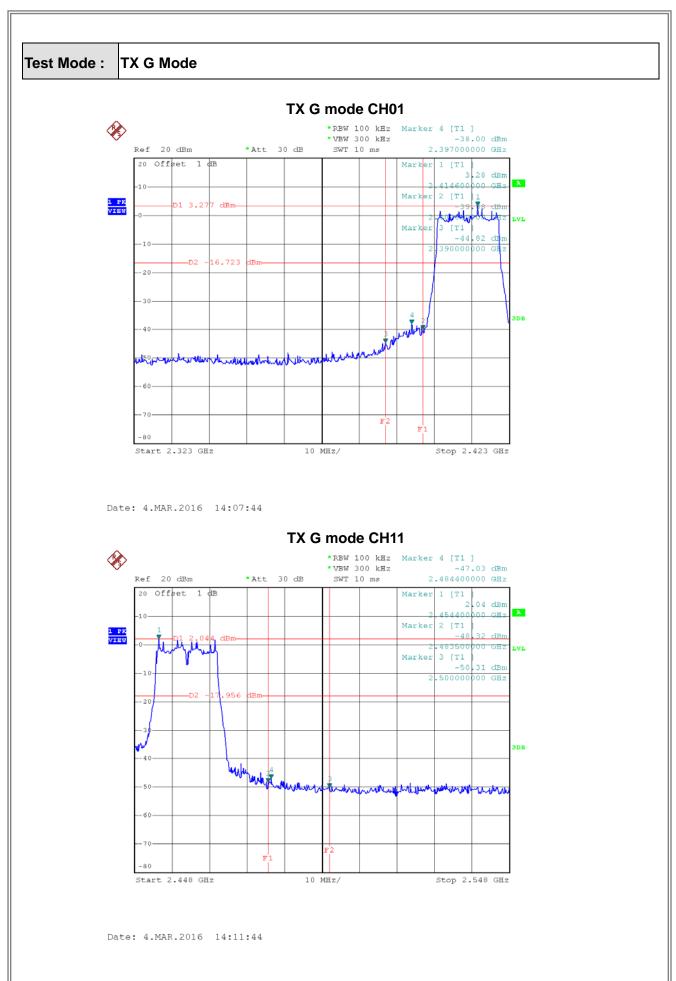




Date: 4.MAR.2016 14:05:42

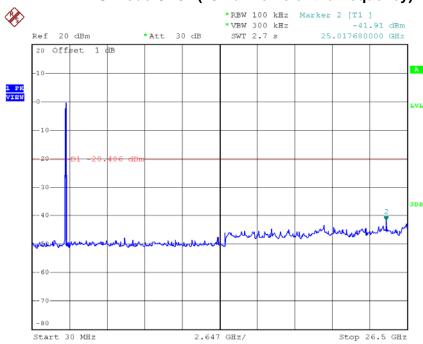
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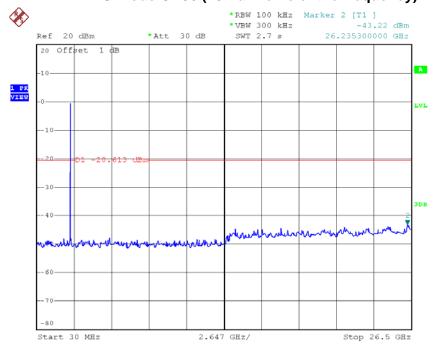






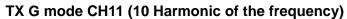
Date: 4.MAR.2016 14:07:36

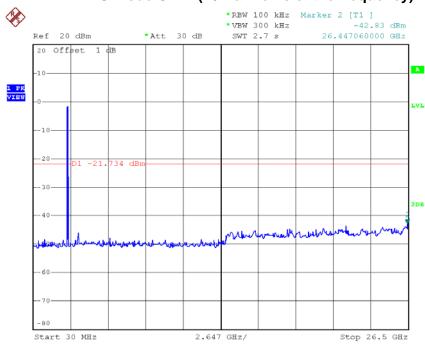
TX G mode CH06 (10 Harmonic of the frequency)



Date: 4.MAR.2016 14:09:50



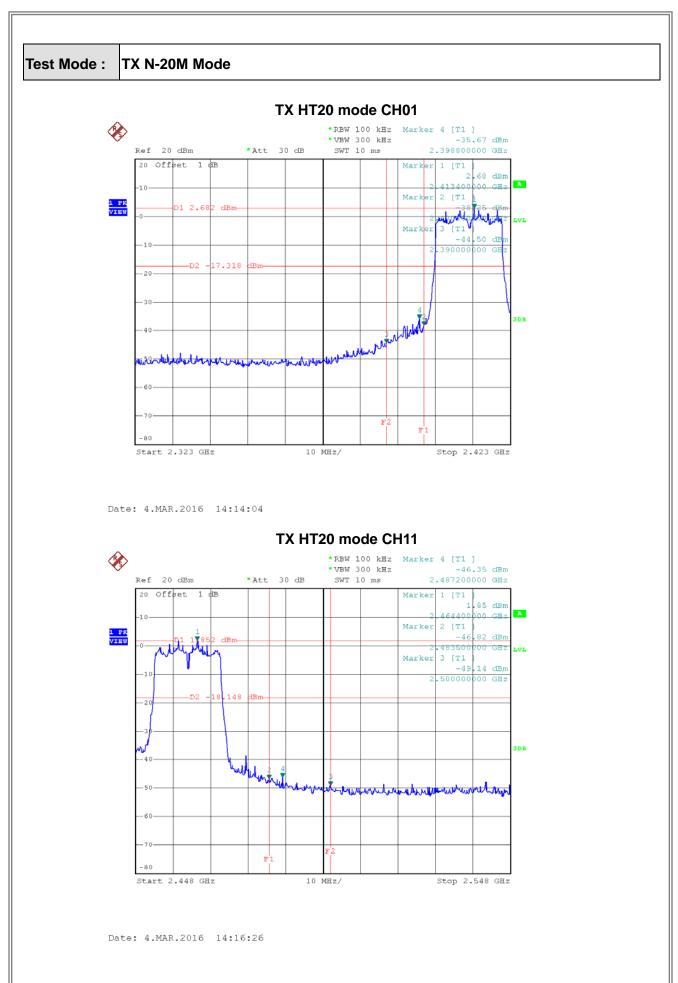




Date: 4.MAR.2016 14:11:36

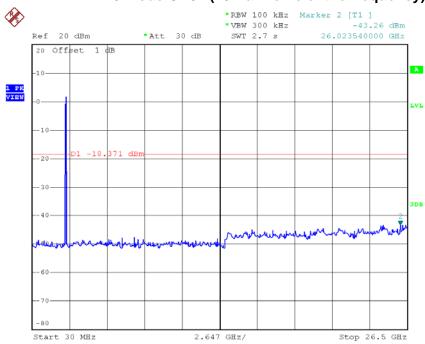
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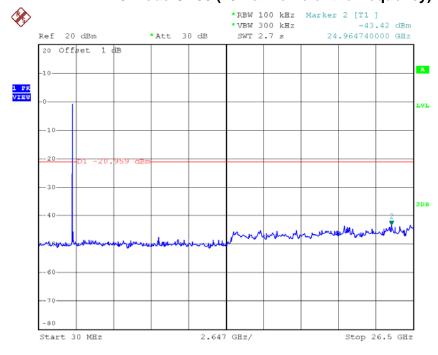






Date: 4.MAR.2016 14:13:57

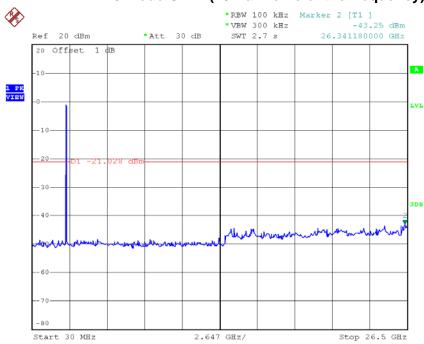
TX HT20 mode CH06 (10 Harmonic of the frequency)



Date: 4.MAR.2016 14:15:04



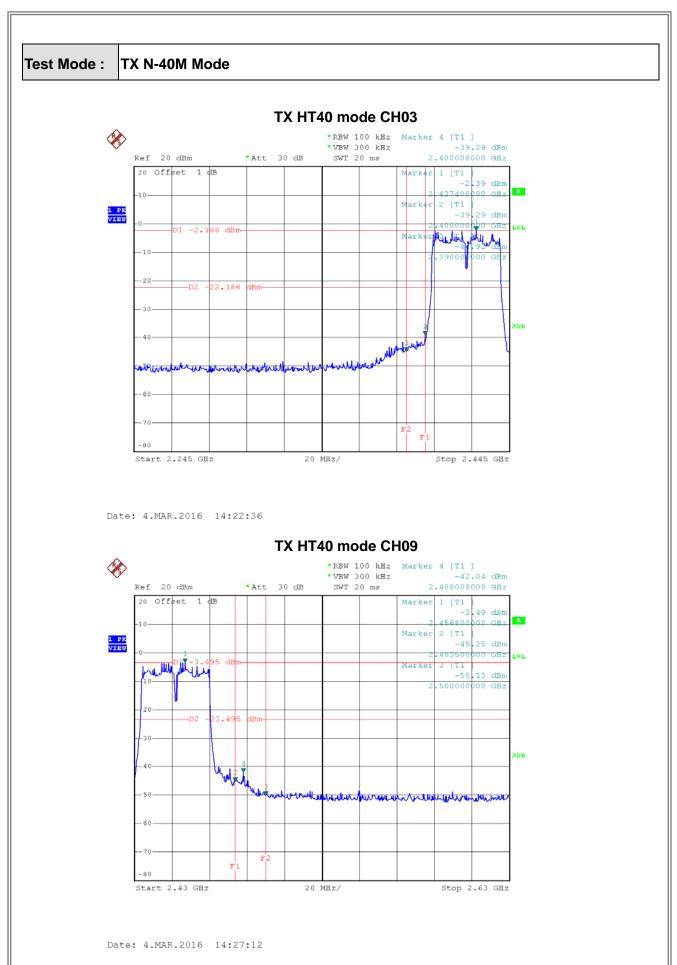




Date: 4.MAR.2016 14:16:19

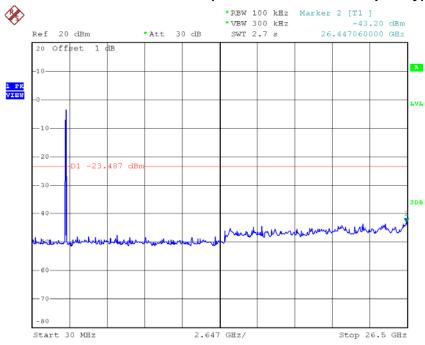
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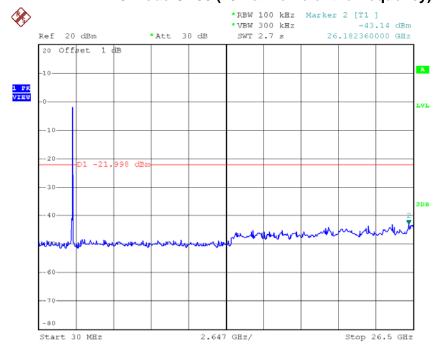






Date: 4.MAR.2016 14:22:28

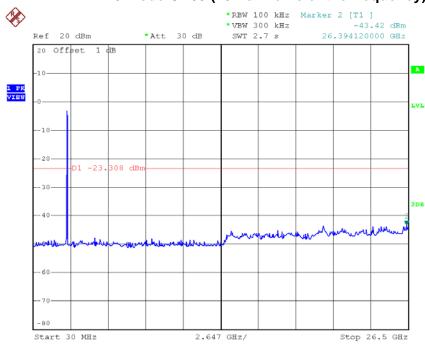
TX HT40 mode CH06 (10 Harmonic of the frequency)



Date: 4.MAR.2016 14:25:50



TX HT40 mode CH09 (10 Harmonic of the frequency)



Date: 4.MAR.2016 14:27:05

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ATTACHMENT H - POWER SPECTRAL DENSITY

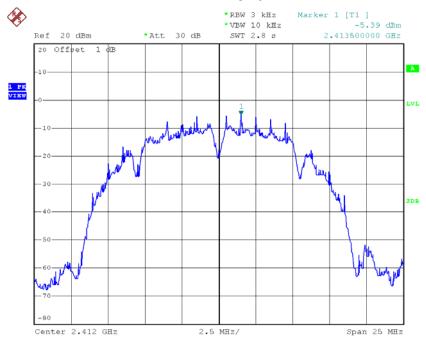
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Test Mode :TX B Mode_CH01/06/11

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-5.39	0.29	8.00	Complies
2437	-6.15	0.24	8.00	Complies
2462	-5.50	0.28	8.00	Complies

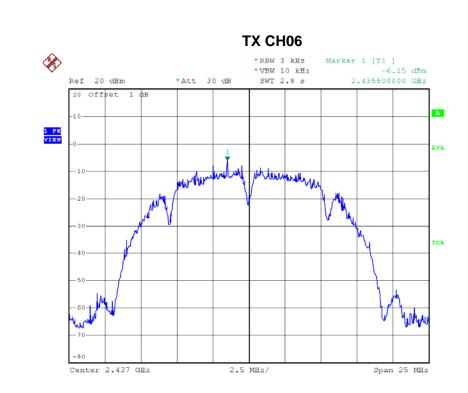
TX CH01



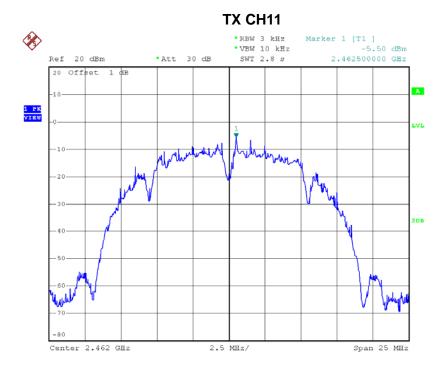
Date: 4.MAR.2016 14:03:02

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Date: 4.MAR.2016 14:04:23



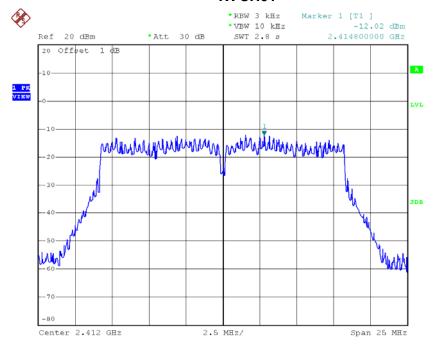
Date: 4.MAR.2016 14:05:59



Test Mode :TX G Mode_CH01/06/11

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-12.02	0.06	8.00	Complies
2437	-11.21	0.08	8.00	Complies
2462	-13.18	0.05	8.00	Complies

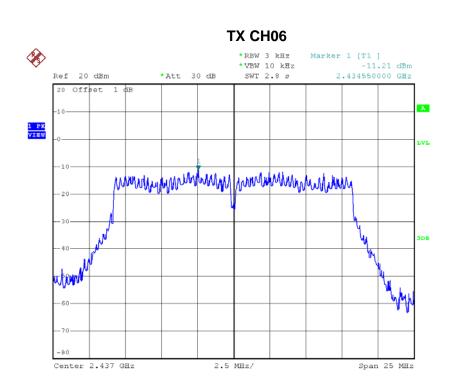
TX CH01



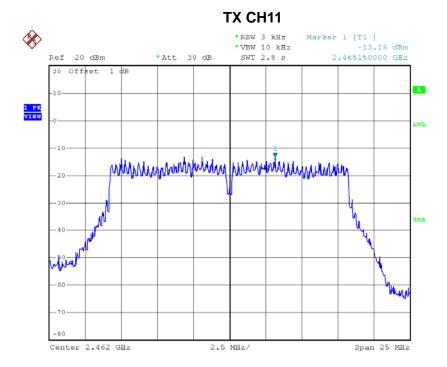
Date: 4.MAR.2016 14:07:53

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Date: 4.MAR.2016 14:09:59



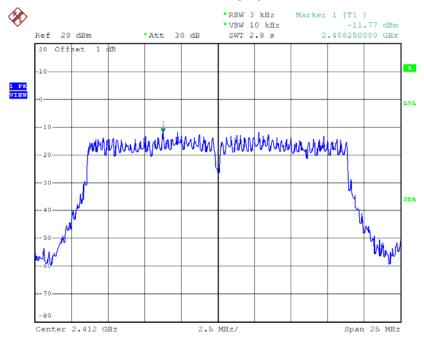
Date: 4.MAR.2016 14:11:53



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

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-11.77	0.07	8.00	Complies
2437	-11.49	0.07	8.00	Complies
2462	-13.05	0.05	8.00	Complies

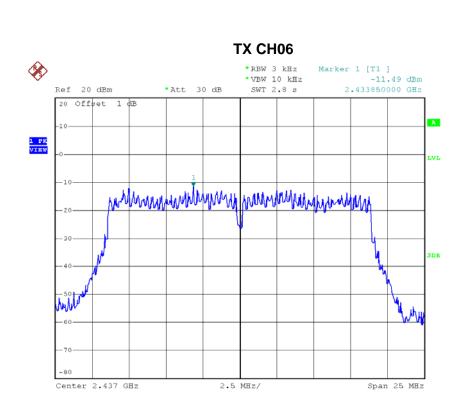
TX CH01



Date: 4.MAR.2016 14:14:14

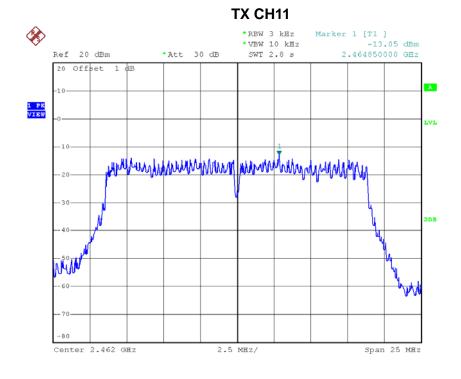
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Date: 4.MAR.2016 14:16:35



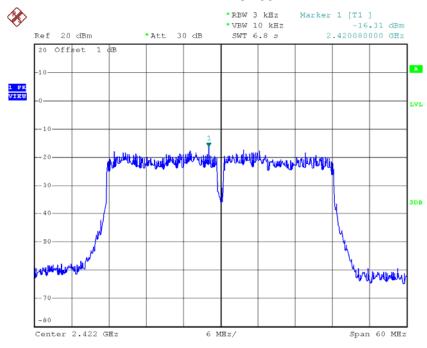
Report No.: BTL-FCCP-3-1602C104



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

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2422	-16.31	0.02	8.00	Complies
2437	-15.10	0.03	8.00	Complies
2452	-17.97	0.02	8.00	Complies

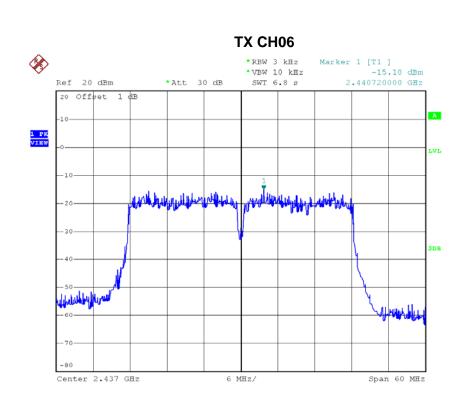
TX CH03



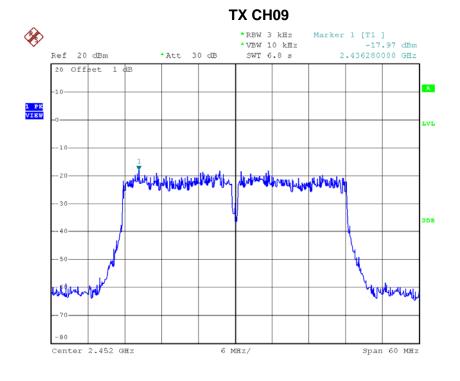
Date: 4.MAR.2016 14:22:48

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Date: 4.MAR.2016 14:26:02



Date: 4.MAR.2016 14:27:24