



# **FCC Radio Test Report**

**FCC ID: V7TA301V3** 

This report concerns (chec	ck one): ⊠Original Grant ⊡Class I Change ⊡Class II Change
Project No. Equipment Test Model Applicant Address	<ul> <li>: 1801C253</li> <li>: N300 Mini WiFi Repeater</li> <li>: A301</li> <li>: SHENZHEN TENDA TECHNOLOGY CO.,LTD</li> <li>: 6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052</li> </ul>
Date of Receipt Date of Test Issued Date Tested by	<ul> <li>Jan. 31, 2018</li> <li>Jan. 31, 2018 ~ Feb. 27, 2018</li> <li>Mar. 19, 2018</li> <li>BTL Inc.</li> </ul>
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# **REPORT ISSUED HISTORY**

Issued No.	Description	Issued Date
BTL-FCCP-1-1801C253	Original Issue.	Mar. 19, 2018

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#### 1. CERTIFICATION

Equipment : N300 Mini WiFi Repeater

Brand Name : Tenda Test Model : A301

Applicant : SHENZHEN TENDA TECHNOLOGY CO.,LTD Manufacturer : SHENZHEN TENDA TECHNOLOGY CO.,LTD

Address : 6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District,

Shenzhen, China. 518052

Date of Test : Jan. 31, 2018 ~ Feb. 27, 2018

Test Sample: Engineering Sample

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

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

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-1-1801C253) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP according to the ISO-17025 quality assessment standard and technical standard(s).

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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		
15.247(d)/ 15.205/ 15.209	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: 854385 BTL's designation number for FCC: CN5020

#### 2.2 MEASUREMENT UNCERTAINTY

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

The BTL measurement uncertainty as below table:

#### A. Conducted Measurement:

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

#### B. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)			
		9KHz~30MHz	V	3.79			
		9KHz~30MHz	Н	3.57			
DG-CB03		30MHz ~ 200MHz	H / V 3.7  H 3.5  V 3.8  H 3.7  V 4.7  H 4.0  V 3.6  V 4.7				
		30MHz ~ 200MHz	30MHz ~ 200MHz H				
	CISPR	200MHz ~ 1,000MHz	Hz V				
	CIOPK	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	N300 Mini WiFi Repeater			
Brand Name	Tenda			
Test Model	A301			
Series Model	N/A			
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: 25 dBm 802.11g: 27.08dBm 802.11n(20MHz): 29.31dBm 802.11n(40MHz): 29.05dBm		
Power Source	AC Mains.			
Power Rating	AC 100-240V 0.3A 50/60Hz			

#### 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	Tenda	N/A	Dipole	N/A	3.5	N/A
2	Tenda	N/A	Dipole	N/A	3.5	N/A

Note: 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 = GANT, that is Directional gain=3.5.

## 4. The worst case for 1TX/ 2TX as follow:

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	Normal Link

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

For Conducted Test		
Final Test Mode	Description	
Mode 5	Normal Link	

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

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

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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 (13Mbps) 802.11n HT40 mode : BPSK (27Mbps)

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

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

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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

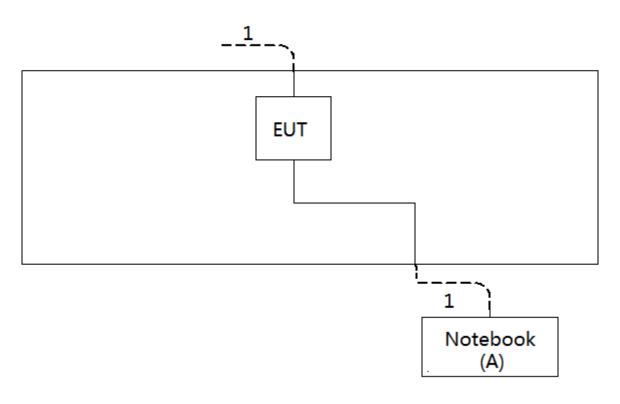
Test software version	MP_TEST		
Frequency (MHz)	2412	2437	2462
802.11b	58	61	60
802.11g	51	63	50
802.11n (20MHz)	58	63	54
Frequency (MHz)	2422	2437	2452
802.11n (40MHz)	53	63	53

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# 3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



## 3.5 DESCRIPTION OF SUPPORT UNITS

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

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.
Α	Notebook	Lenovo	DCSM	DOC	EB22953770

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	10m	RJ45 Cable

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

#### Note:

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

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

The following table is the setting of the receiver

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

#### 4.1.2 TEST PROCEDURE

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

#### 4.1.3 DEVIATION FROM TEST STANDARD

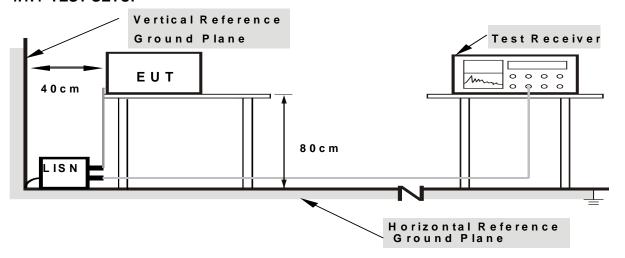
No deviation.

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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 Appendix 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) (a	(dBuV/m) (at 3 meters)		
	PEAK	AVERAGE		
Above 1000	74	54		

#### Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) The test result calculated as following: Measurement Value = Reading Level + Correct Factor Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use) Margin Level = Measurement Value - Limit Value

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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

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

#### **4.2.2 TEST PROCEDURE**

- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- c. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
- f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1GHz)
- h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1GHz)
- i. For the actual test configuration, please refer to the related Item -EUT Test Photos.

#### 4.2.3 DEVIATION FROM TEST STANDARD

No deviation.

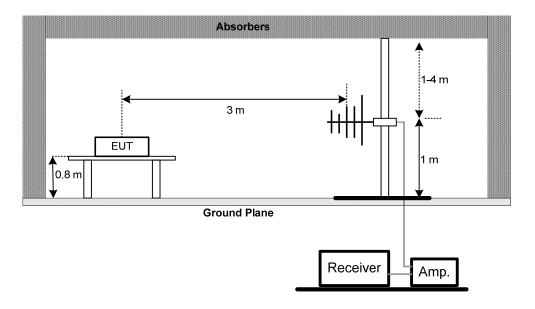
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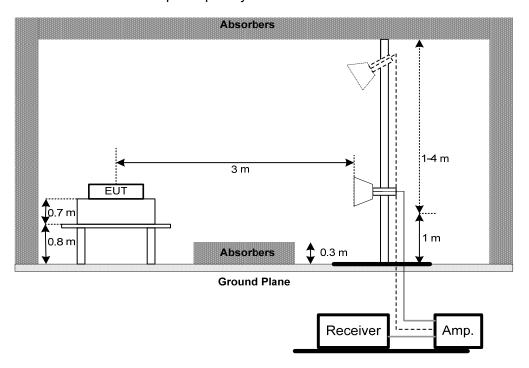


## 4.2.4 TEST SETUP

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



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

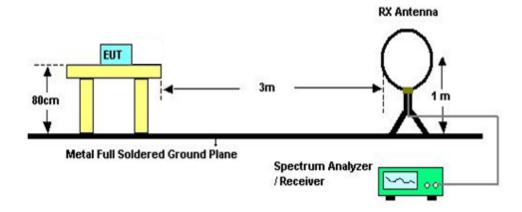


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## (C) For Radiated Emissions Below 30MHz



## 4.2.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 4.2.6 EUT TEST CONDITIONS

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

## 4.2.7 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Appendix B

#### Remark:

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

#### **4.2.8 TEST RESULTS (30MHZ TO 1000MHZ)**

Please refer to the Appendix C.

#### 4.2.9 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the Appendix D.

#### Remark:

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

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#### 5. BANDWIDTH TEST

#### **5.1 APPLIED PROCEDURES**

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

#### **5.1.1 TEST PROCEDURE**

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

#### **5.1.2 DEVIATION FROM STANDARD**

No deviation.

#### 5.1.3 TEST SETUP

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 Appendix 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 and FCC KDB 662911 D01 Multiple Transmitter Output.

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

No deviation.

#### 6.1.3 TEST SETUP

EUT	Power Meter
	1 5 WEI WEIE

#### **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 Appendix 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

EUT	SPECTRUM	
	ANALYZER	

#### 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 Appendix 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 Appendix H.

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# 9. MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EMI Test Receiver	R&S	ESCI	100382	Mar. 26, 2018
2	LISN	EMCO	3816/2	52765	Mar. 26, 2018
3	50Ω Terminator	SHX	TF2-3G-A	8122901	Mar. 26, 2018
4	TWO-LINE V-NETWORK	R&S	ENV216	101447	Mar. 26, 2018
5	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
6	Cable	N/A	RG223	12m	Oct. 19, 2018

	Radiated Emission Measurement - Below 1GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 26, 2018	
2	Amplifier	HP	8447D	2944A09673	Oct. 19, 2018	
3	Receiver	Agilent	N9038A	MY52130039	Aug. 20, 2018	
4	Cable	emci	LMR-400(30MHz-1G Hz)(8m+5m)	N/A	Jun. 26, 2018	
5	Controller	CT	SC100	N/A	N/A	
6	Controller	MF	MF-7802	MF780208416	N/A	
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A	
8	Antenna	EM	EM-6876-1	230	Mar. 06, 2018	

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	Radiated Emission Measurement - Above 1GHz											
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until							
1	Double Ridged Guide Antenna	ETS	3115	75789	Mar. 26, 2018							
2	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Jun. 08, 2018							
3	Amplifier	Agilent	8449B	3008A02274	May. 16, 2018							
4	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 26, 2018							
5	Receiver	Agilent	N9038A	MY52130039	Aug. 20, 2018							
6	Antenna	EM	EM-6876-1	230	Mar. 06, 2018							
7	Controller	СТ	SC100	N/A	N/A							
8	Controller	MF	MF-7802	MF780208416	N/A							
9	Cable	emci	EMC104-SM-SM-12 000(12m)	N/A	Jun. 26, 2018							
10	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A							

	6dB Bandwidth									
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until					
1	Spectrum Analyzer	R&S	FSP40	100185	Sep. 03, 2018					

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

	Antenna Conducted Spurious Emission									
Item	Kind of Equipment	Manufacturer	Serial No.	Calibrated until						
1	Spectrum Analyzer	R&S	FSP40	100185	Sep. 03, 2018					

	Power Spectral Density										
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until						
1	Spectrum Analyzer	R&S	FSP40	100185	Sep. 03, 2018						

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

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# **10. EUT TEST PHOTO**







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# **Radiated Measurement Photos**

9KHz to 30MHz





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# **Radiated Measurement Photos**

30MHz to 1000MHz





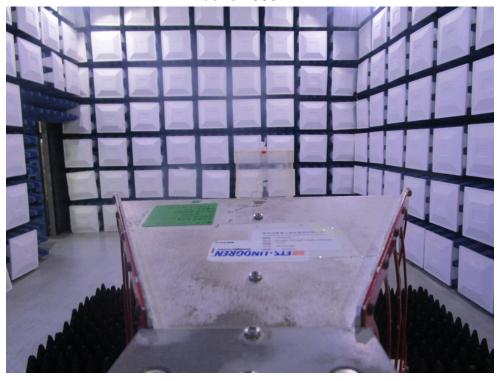
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# **Radiated Measurement Photos**

# Above 1000MHz





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<b>APPENDIX A - C</b>	ONDUCTED	<b>EMISSION</b>
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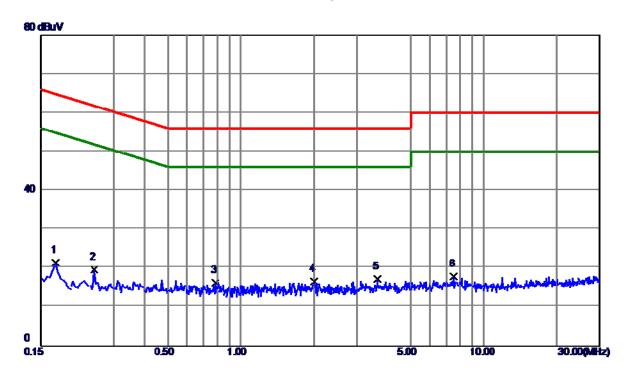
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Test Mode : Normal Link

# Line



No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1725	11.64	9. 78	21.42	64.84	-43. 42	Peak	
2.	0. 2490	9. 87	9. 76	19.63	61. 79	-42. 16	Peak	
3	0.7845	6. 47	9.82	16.29	56.00	-39. 71	Peak	
4	1. 9995	6. 76	9. 92	16.68	56. 00	-39. 32	Peak	
5 *	3.6375	7. 28	10.01	17.29	56. 00	-38. 71	Peak	
6	7.5210	7. 66	10.21	17.87	60.00	-42. 13	Peak	

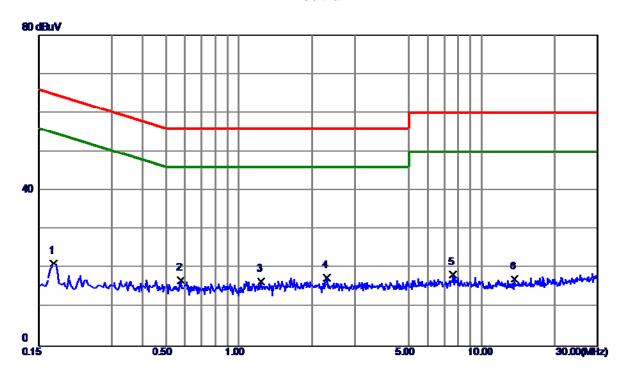
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Test Mode : Normal Link

# **Neutral**



No.	Freq.	Keadıng Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1725	11.62	9. 68	21.30	64.84	-43. 54	Peak	
2.	0. 5775	7. 30	9. 71	17.01	56. 00	-38. 99	Peak	
3	1.2345	6. 92	9. 76	16.68	56.00	-39. 32	Peak	
4 *	2.3100	7. 81	9. 86	17.67	56.00	-38. 33	Peak	
5	7.6020	8. 24	10. 14	18.38	60.00	-41.62	Peak	
6	13.6050	6. 76	10. 53	17.29	60.00	-42.71	Peak	

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

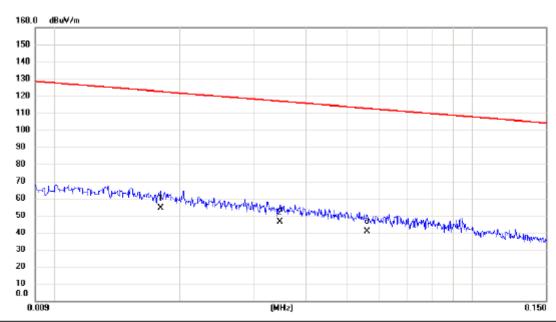
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Test Mode: TX MODE

Ant 0°



No.	Mk.	Freq.	_	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0180	34.49	19.88	54.37	122.50	-68.13	AVG	
2		0.0347	27.09	19.18	46.27	116.80	-70.53	AVG	
3		0.0560	22.14	18.61	40.75	112.64	-71.89	AVG	

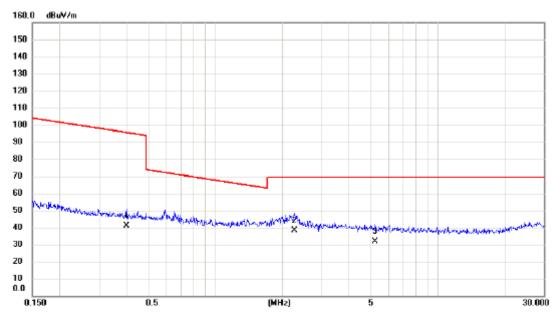
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Test Mode: TX MODE

Ant 0°



No. Mk.	Freq.	Reading Level		Measure- ment	Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	0.3997	24.45	16.54	40.99	95.57	-54.58	AVG	
2 *	2.2726	22.57	15.44	38.01	69.54	-31.53	QP	
3	5.2213	17.45	14.34	31.79	69.54	-37.75	QP	

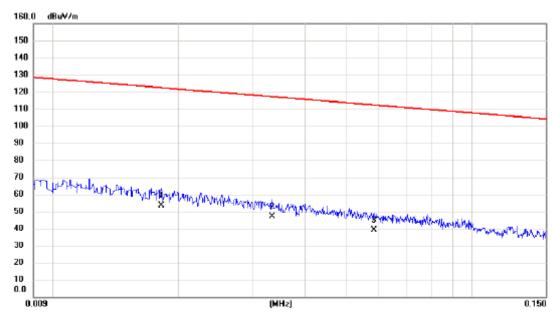
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Test Mode: TX MODE

# Ant 90°



No.	Mk.	Freq.			Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0182	33.54	19.85	53.39	122.40	-69.01	AVG	
2		0.0334	27.73	19.22	46.95	117.13	-70.18	AVG	
3		0.0584	20.46	18.56	39.02	112.28	-73.26	AVG	

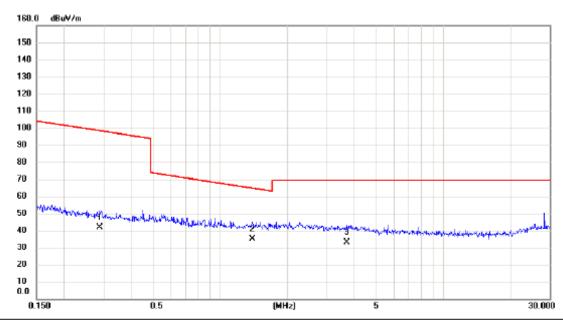
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Test Mode: TX MODE

# Ant 90°



No.	Mk.	Freq.		Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.2878	25.20	16.63	41.83	98.42	-56.59	AVG	
2	*	1.3958	19.33	15.74	35.07	64.71	-29.64	QP	
3		3.6806	18.02	15.04	33.06	69.54	-36.48	QP	

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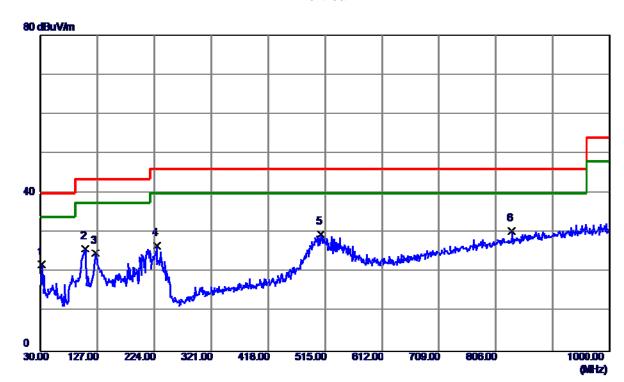
APPENDIX C - RADIATED EMISSION (30MHZ TO 1000MHZ)

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# **Vertical**



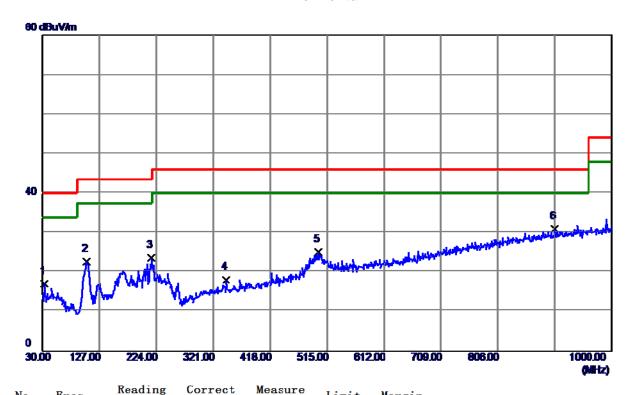
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	$d\mathbf{B}$	Detector	Comment
1	32. 4250	36. 94	-14.96	21. 98	40.00	-18.02	Peak	
2	106. 1450	42.62	-16. 69	25. 93	43.50	-17.57	Peak	
3	124.0900	39.85	-15. 12	24.73	<b>43.50</b>	-18.77	Peak	
4	228. 3650	40.74	-14.09	26.65	46.00	-19. 35	Peak	
5	507.7250	38. 17	-8. 56	29. 61	46.00	-16. 39	Peak	
6 *	833. 1599	30. 87	-0.46	30. 41	46.00	-15. 59	Peak	

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# Horizontal



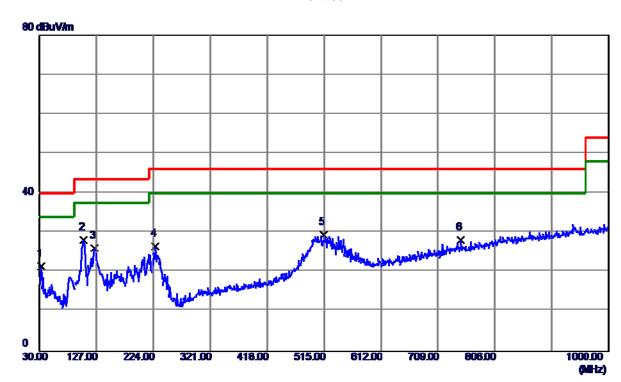
No.	Freq.	Level	Factor	measure	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	33. 3950	31. 86	-14.81	17.05	40.00	-22. 95	Peak	
2	105. 6600	39. 53	-16. 75	22. 78	43. 50	-20.72	Peak	
3	215. 7550	37. 62	-13.94	23.68	43.50	-19.82	Peak	
4	342.8250	30. 24	<b>−12. 08</b>	18. 16	46.00	-27.84	Peak	
5	499. 9650	33. 77	-8.72	<b>25.0</b> 5	46.00	-20. 95	Peak	
6 *	903. 0000	29. 89	1. 09	30. 98	46.00	-15. 02	Peak	

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# **Vertical**



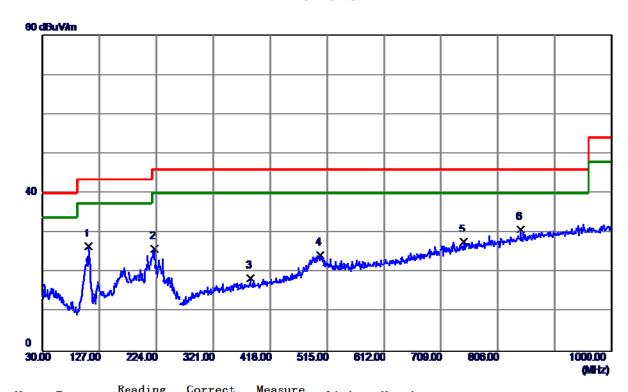
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	$d\mathbf{B}$	Detector	Comment
1	33. 3950	36. 29	-14.81	21.48	40.00	-18. 52	Peak	
2 *	105. 6600	44. 93	-16. 75	28. 18	43.50	-15. 32	Peak	
3	124.0900	41. 17	-15. 12	26.05	43.50	-17.45	Peak	
4	227. 3950	40.65	-14.07	26. 58	46.00	-19.42	Peak	
5	513. 5450	37. 91	-8.45	29.46	46.00	-16. 54	Peak	
6	748. 2849	30. 68	-2. 50	28. 18	46.00	-17.82	Peak	

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# Horizontal



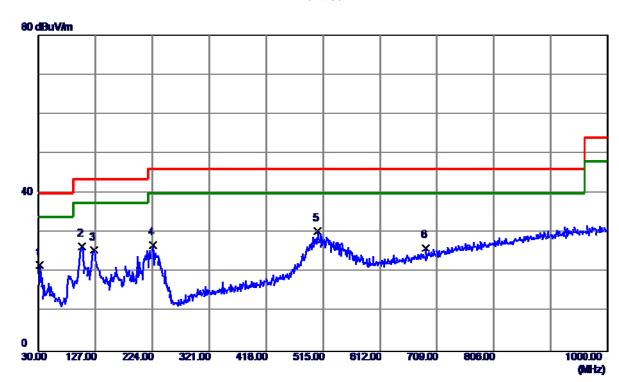
No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	108. 5700	42.94	-16. 37	26. 57	43.50	-16. 93	Peak	
2	220.6050	39. 88	-13. 92	25. 96	46.00	-20.04	Peak	
3	384. 5350	30. 11	-11.54	18. 57	46.00	-27.43	Peak	
4	502.8750	32. 93	-8. 66	24. 27	46.00	-21.73	Peak	
5	747. 3150	30. 25	<b>-2.53</b>	27.72	46.00	-18. 28	Peak	
6 *	844. 3150	30. 96	<b>-0.</b> 15	30. 81	46.00	-15. 19	Peak	

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# Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	$d\mathbf{B}$	Detector	Comment
1	32. 4250	36. 68	-14.96	21.72	40.00	-18. 28	Peak	
2	104. 2050	43. 56	-16. 94	26. 62	43.50	-16.88	Peak	
3	125.0600	40.62	<b>−15. 05</b>	25. 57	43.50	-17.93	Peak	
4	224.9700	40.95	-14.02	26. 93	46.00	-19.07	Peak	
5 *	505. 7850	39. 00	-8. 60	30. 40	46.00	-15. 60	Peak	
6	689. 6000	30. 42	-4. 26	26. 16	46.00	-19.84	Peak	

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# Horizontal



No.	Freq.	Keading Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	107.6000	44. 49	-16. 50	27.99	43.50	-15. 51	Peak	
2	168. 2250	33. 10	-12.44	20.66	43.50	-22.84	Peak	
3	222.0600	38. 39	<b>−13. 95</b>	24.44	46.00	-21. 56	Peak	
4	502. 3900	33. 74	-8. 67	<b>25. 07</b>	46.00	-20.93	Peak	
5	747.8000	29.65	-2. 51	27. 14	46.00	-18.86	Peak	
6 *	894. 2700	30. 01	0.91	30. 92	46.00	-15. <b>0</b> 8	Peak	

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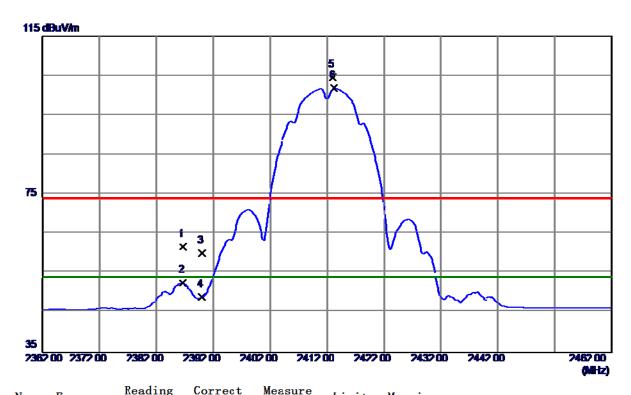
APPENDIX D - RADIATED EMISSION (ABOVE 1000MHZ)

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# Vertical



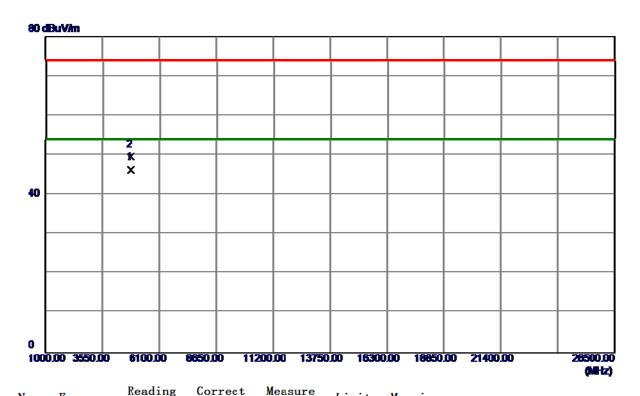
No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2386.6500	28. 73	33. 04	61.77	74.00	-12. 23	Peak	
2	2386.6500	19. 52	33. 04	52.56	<b>54.00</b>	-1.44	AVG	
3	2390, 0000	27. 10	33. 06	60. 16	74.00	-13.84	Peak	
4	2390.0000	15. 96	33. 06	49.02	<b>54.00</b>	-4.98	AVG	
5	2412. 9500	71. 51	33. 14	104.65	74.00	30.65	Peak	No Limit
6 *	2413. 2000	68. 81	33. 14	101. 95	54.00	47.95	AVG	No Limit

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### Vertical



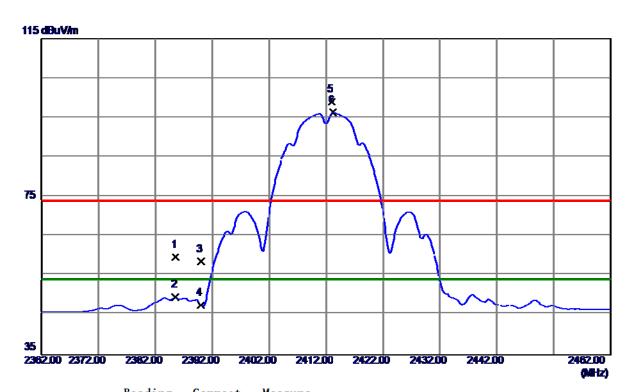
No.	Freq.	Level	Factor	measure	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4823. 9320	39. 64	6. 66	46.30	54.00	-7.70	AVG	
2	4824.0410	42. 98	6. 66	49.64	74.00	-24. 36	Peak	

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### Horizontal



No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2385. 5000	26. 60	33.04	59.64	74.00	-14.36	Peak	
2	2385. 5000	16. 54	33.04	49.58	54.00	-4.42	AVG	
3	2390. 0000	25. 39	33.06	58.45	74.00	-15. 55	Peak	
4	2390. 0000	14. 40	33.06	47.46	<b>54.00</b>	<b>-6.54</b>	AVG	
5	2412. 9500	65.84	33. 14	98.98	74.00	24.98	Peak	No Limit
6 *	2413. 2000	63. 11	33. 14	96.25	54.00	42. 25	AVG	No Limit

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#### Horizontal



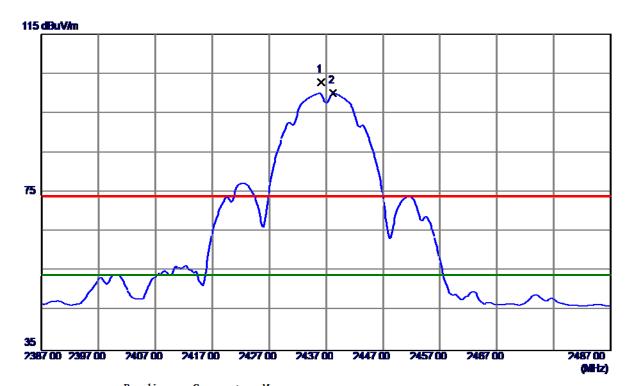
ľ	No.	Freq.	Level	Factor	measure	Limit	Margin		
		MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4823.9590	43. 51	6. 66	50.17	74.00	-23.83	Peak	
2	<u></u> *	4823. 9880	40. 21	6. 66	46.87	54.00	-7.13	AVG	
2	· ? *								

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# Vertical



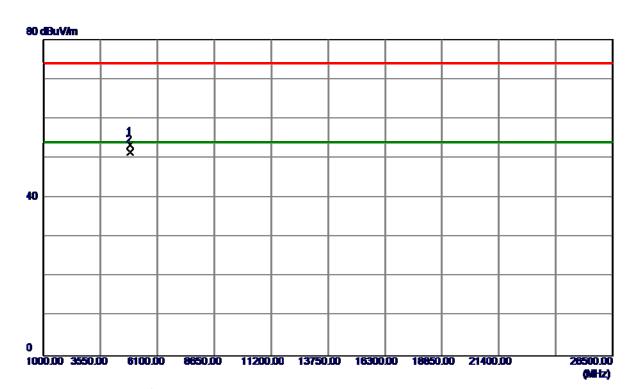
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2436. 1500	69. 61	33. 23	102. 84	74.00	28.84	Peak	No Limit
2 *	2438. 2000	66. 91	33. 24	100. 15	<b>54.00</b>	46. 15	AVG	No Limit

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### Vertical



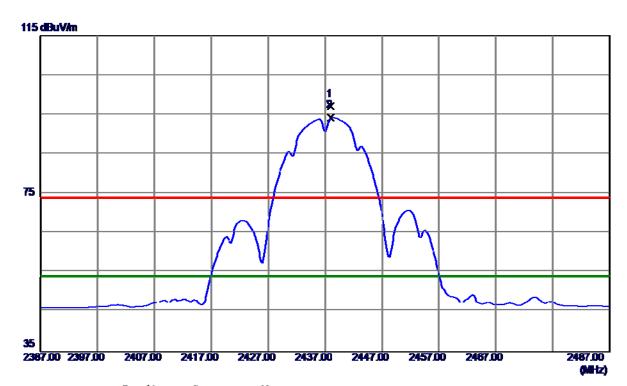
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873. 9340	46. 65	6.84	53.49	74.00	-20. 51	Peak	
2 *	4873. 9480	44.67	6.84	51.51	<b>54.00</b>	-2.49	AVG	

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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	2437.9500	63. 80	33. 24	97.04	74.00	23.04	Peak	No Limit
2 *	2438.0500	61.01	33. 24	94.25	54.00	40. 25	AVG	No Limit

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#### Horizontal



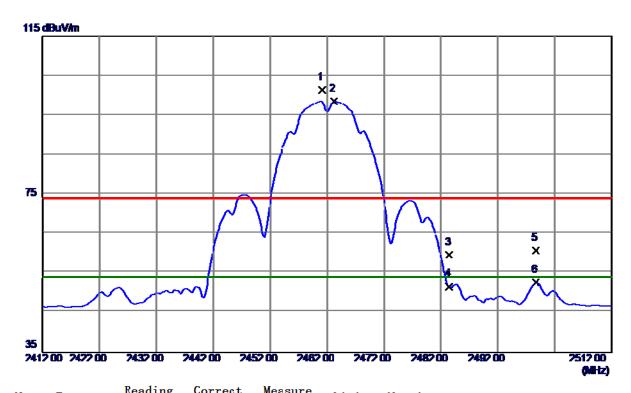
Freq.	Level	Factor	measure	Limit	Margin		
MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
4873.9000	47.63	6.84	54.47	74.00	-19. 53	Peak	
4873. 9660	46. 01	6.84	52.85	54.00	-1. 15	AVG	
	MHz 4873. 9000	Level	MHz dBuV/m dB 4873.9000 47.63 6.84	MHz dBuV/m dB dBuV/m 4873.9000 47.63 6.84 54.47	MHz dBuV/m dB dBuV/m dBuV/m 4873.9000 47.63 6.84 54.47 74.00	MHz dBuV/m dB dBuV/m dBuV/m dB 4873.9000 47.63 6.84 54.47 74.00 -19.53	MHz dBuV/m dB dBuV/m dB Detector 4873.9000 47.63 6.84 54.47 74.00 -19.53 Peak

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# Vertical



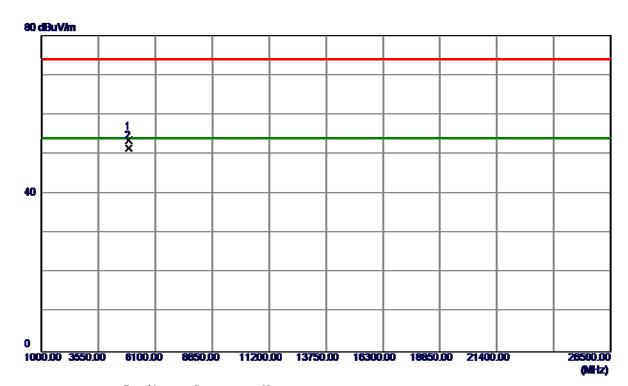
No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2461. 1500	68. <b>0</b> 2	33. 32	101. 34	74.00	27. 34	Peak	No Limit
2 *	2463. 2500	65. 23	33. 33	98. 56	54.00	44.56	AVG	No Limit
3	2483, 5000	26. 19	33. 41	59. 60	74.00	-14.40	Peak	
4	2483. 5000	18. 20	33.41	51.61	54.00	-2.39	AVG	
5	2498.7000	27. 33	33. 47	60.80	74.00	-13. 20	Peak	
6	2498. 7000	19. 21	33. 47	52.68	54.00	-1.32	AVG	

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### Vertical



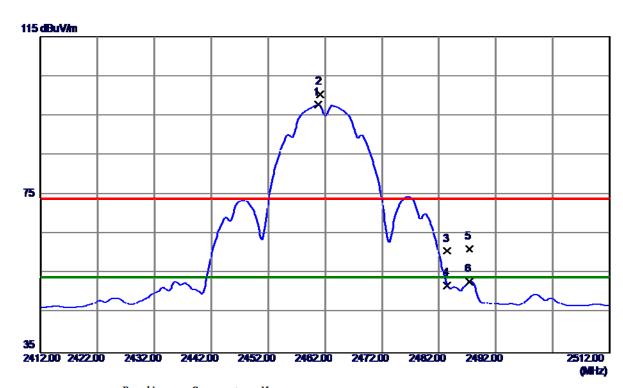
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4923. 8390	46. 66	7.02	53.68	74.00	-20. 32	Peak	
2 *	4923. 9700	44. 50	7.02	51.52	<b>54.00</b>	-2.48	AVG	

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#### Horizontal



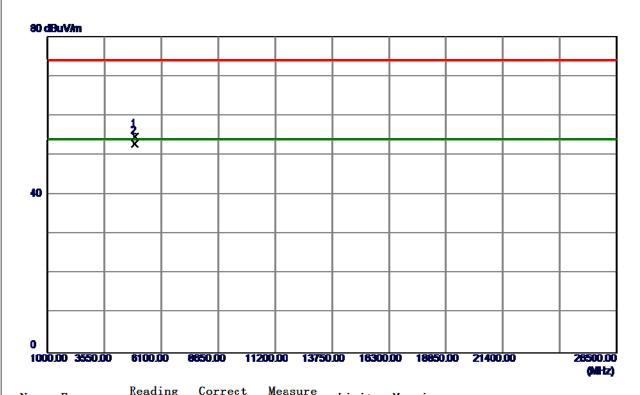
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2460.7500	64. 39	33. 32	97.71	54.00	43.71	AVG	No Limit
2	2461. 1500	67. 17	33. 32	100. 49	74.00	26. 49	Peak	No Limit
3	2483. 5000	27. 27	33. 41	60.68	74.00	-13. 32	Peak	
4	2483. 5000	18. 48	33. 41	51.89	54.00	-2.11	AVG	
5	2487.3000	27. 76	33. 42	61.18	74.00	-12.82	Peak	
6	2487. 3000	19. 50	33. 42	52.92	54.00	-1.08	AVG	

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#### Horizontal



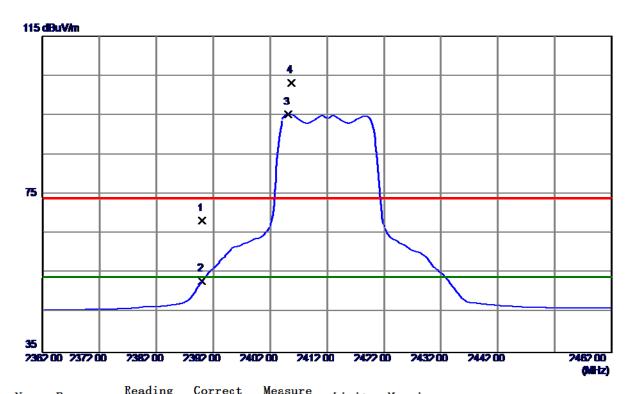
No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4923.8760	47.74	7.02	54.76	74.00	-19.24	Peak	
2 *	4923. 9460	45. 96	7.02	52.98	54.00	-1. 02	AVG	

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# Vertical



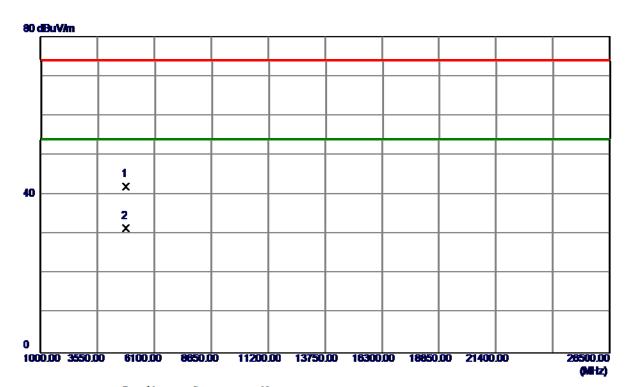
No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	35. 24	33.06	68. 30	74.00	-5. 70	Peak	
2	2390. 0000	19. 94	33.06	53.00	54.00	-1.00	AVG	
3 *	2405, 2500	62. 13	33. 11	95. 24	54. 00	41. 24	AVG	No Limit
4	2405. 8000	70. 10	33. 12	103. 22	74.00	29. 22	Peak	No Limit

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### **Vertical**



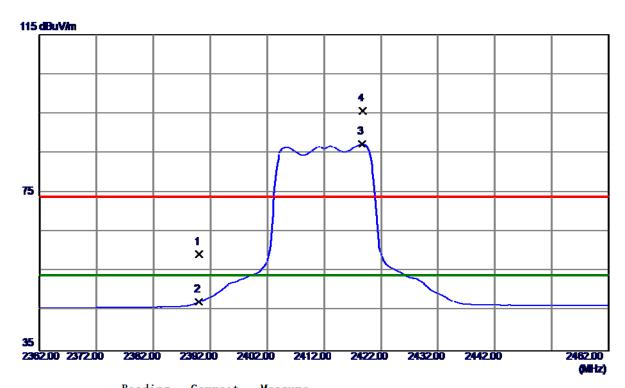
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823. 6880	35. 48	6. 66	42.14	74.00	-31.86	Peak	
2 *	4824. 1170	24.78	6. 66	31.44	54.00	-22.56	AVG	

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#### Horizontal



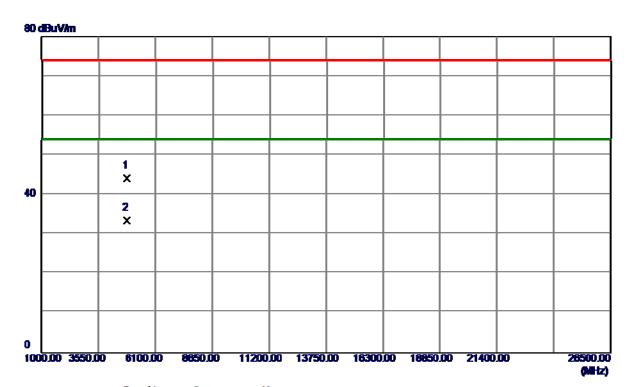
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	26. 19	33.06	59.25	74.00	-14.75	Peak	
2	2390. 0000	14.21	33.06	47.27	54.00	-6. 73	AVG	
3 *	2418.6500	54. 12	33. 16	87.28	<b>54.00</b>	33. 28	AVG	No Limit
4	2418.7500	62. 47	33. 16	95.63	74.00	21.63	Peak	No Limit

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#### Horizontal



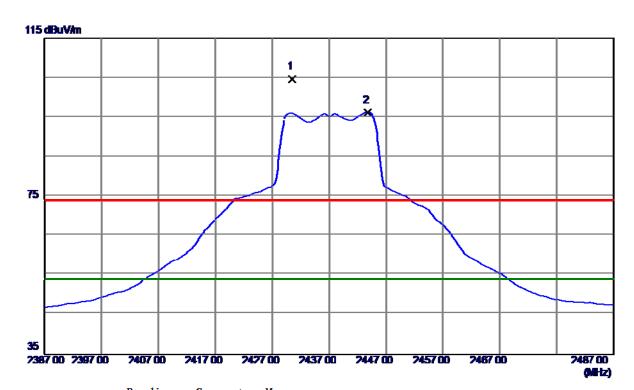
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4823. 6850	37.49	6. 66	44.15	74.00	-29.85	Peak	
2 *	4823. 9900	26. 82	6. 66	33.48	54.00	<b>-20.</b> 52	AVG	

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# Vertical



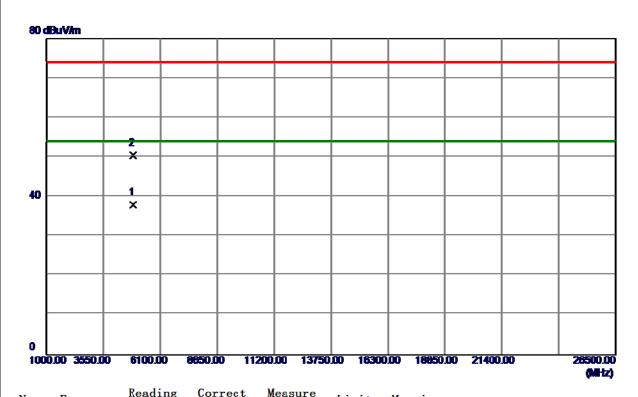
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2430.6000	71. 37	33. 21	104. 58	74.00	30. 58	Peak	No Limit
2 *	2443.7500	62. 93	33. 26	96. 19	54.00	42. 19	AVG	No Limit

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### Vertical



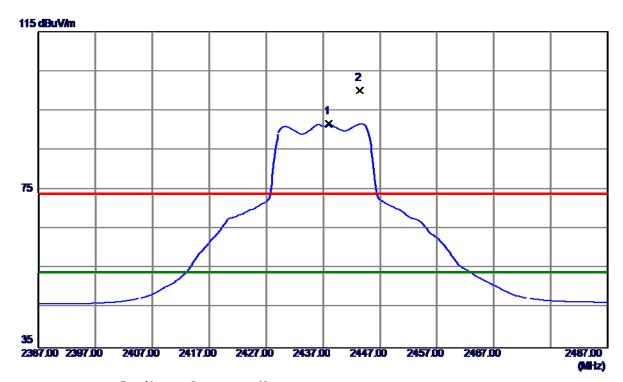
No.	Freq.	Level	Factor	measure	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.0970	31.06	6.84	37.90	<b>54.00</b>	-16. 10	AVG	
2	4874. 7830	43. 55	6.84	50.39	74.00	-23. 61	Peak	

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#### Horizontal



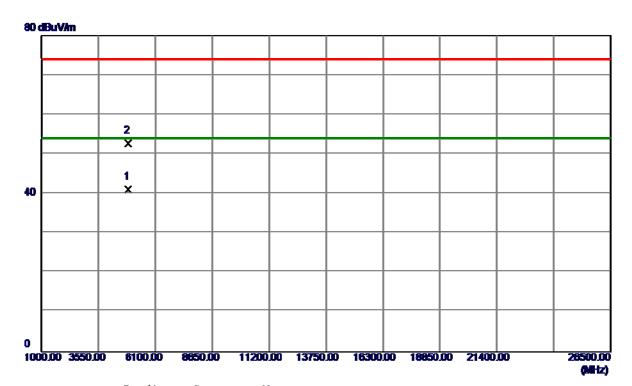
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2437.9500	58. 39	33. 24	91.63	54.00	37.63	AVG	No Limit
2	2443. 4500	66.86	33. 26	100. 12	74.00	26. 12	Peak	No Limit

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#### Horizontal



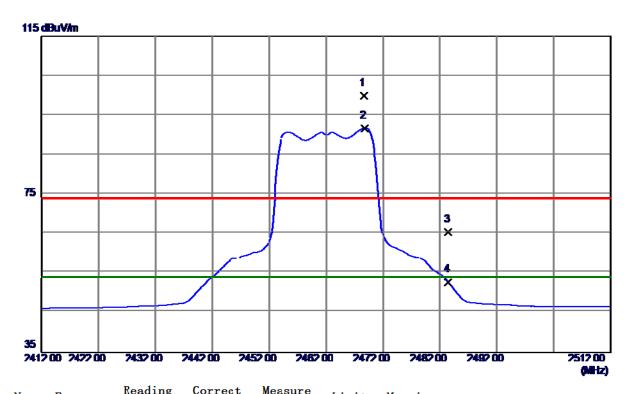
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.0330	34. 25	6.84	41.09	54.00	-12. 91	AVG	
2	4874.6130	45. 92	6.84	52.76	74.00	-21. 24	Peak	

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# Vertical



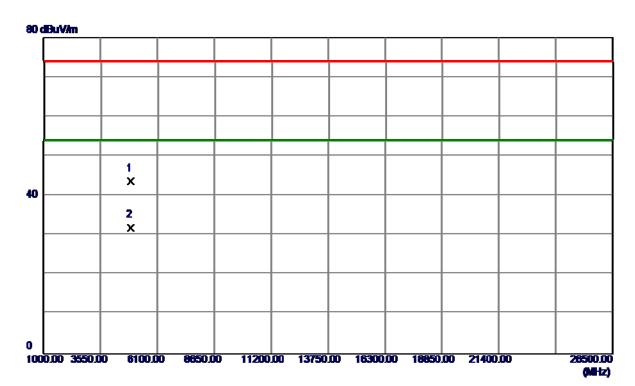
No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2468.7000	66. 61	33. 35	99.96	74.00	25. 96	Peak	No Limit
2 *	2468. 8000	58. 36	33. 35	91.71	54.00	37.71	AVG	No Limit
3	2483, 5000	31. 99	33. 41	65. 40	74.00	-8. 60	Peak	
4	2483. 5000	19. 37	33.41	52.78	54.00	-1. 22	AVG	

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### Vertical



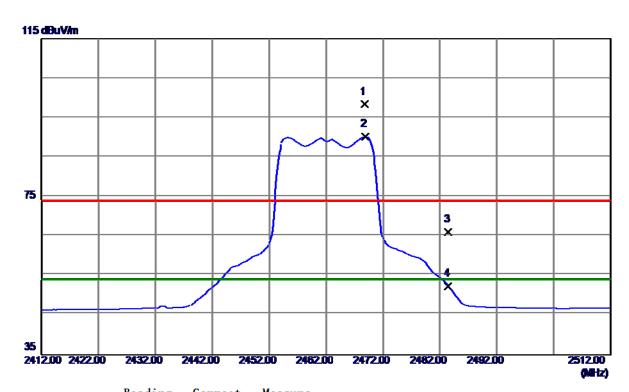
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4923. 9100	36.65	7.02	43.67	74.00	-30.33	Peak	
2 *	4924. 0490	24.90	7. 02	31.92	54.00	-22 <b>. 0</b> 8	AVG	

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#### Horizontal



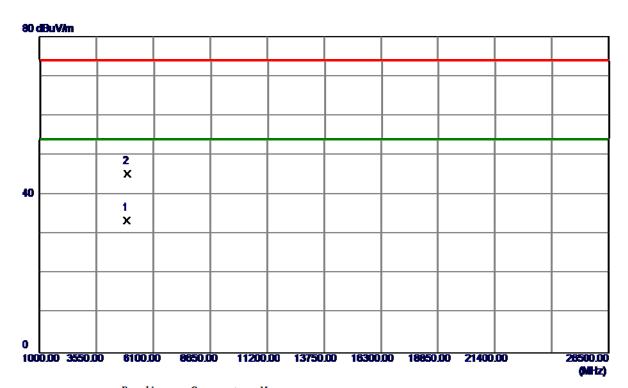
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2468. 8000	65.00	33. 35	98. 35	74.00	24. 35	Peak	No Limit
2 *	2468.8500	56. 80	33. 35	90. 15	54.00	36. 15	AVG	No Limit
3	2483. 5000	32. 57	33.41	65.98	74.00	<b>-8.02</b>	Peak	
4	2483. 5000	18. 94	33. 41	52.35	54.00	-1.65	AVG	

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### Horizontal



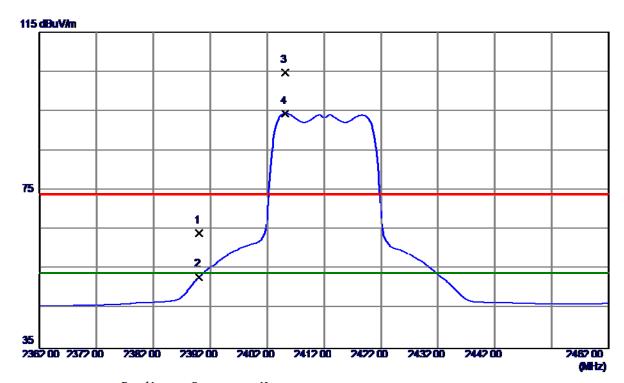
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4923.8450	26. 39	7.02	33.41	54.00	-20.59	AVG	
2	4924. 8929	38. 29	7. 02	45.31	74.00	-28. 69	Peak	

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# Vertical



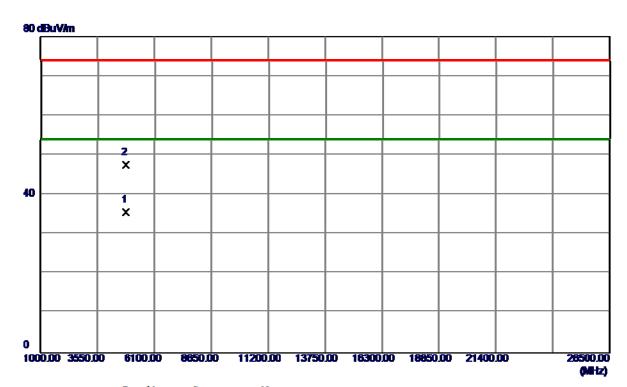
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	31. 04	33. 06	64.10	74.00	-9. 90	Peak	
2	2390.0000	20.05	33.06	53.11	54.00	-0.89	AVG	
3	2405, 2000	71. 63	33. 11	104. 74	74.00	30. 74	Peak	No Limit
4 *	2405. 2500	61.30	33. 11	94.41	<b>54.00</b>	40.41	AVG	No Limit

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### **Vertical**



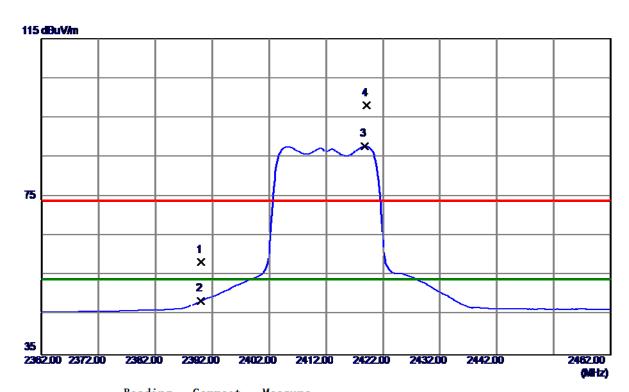
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4824. 5680	28. 87	6. 66	35. 53	<b>54.00</b>	-18.47	AVG	
2	4824. 8480	40. 79	6. 66	47.45	74.00	<b>-26.</b> 55	Peak	

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## Horizontal



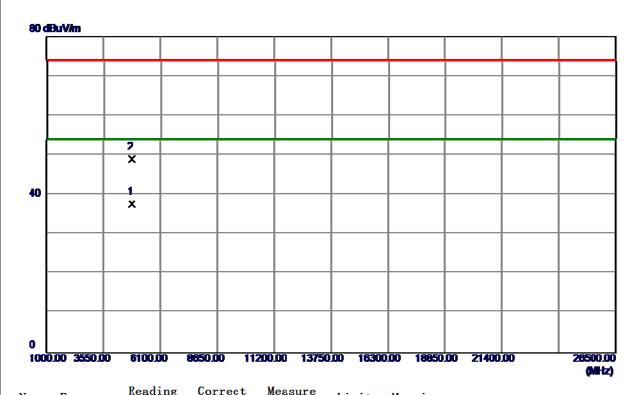
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	25. 27	33.06	58.33	74.00	-15. 67	Peak	
2	2390.0000	15. 57	33.06	48.63	54.00	-5. 37	AVG	
3 *	2418.7500	54.64	33. 16	87.80	54.00	33.80	AVG	No Limit
4	2419. 1000	64.92	33. 17	98.09	74.00	24.09	Peak	No Limit

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## Horizontal



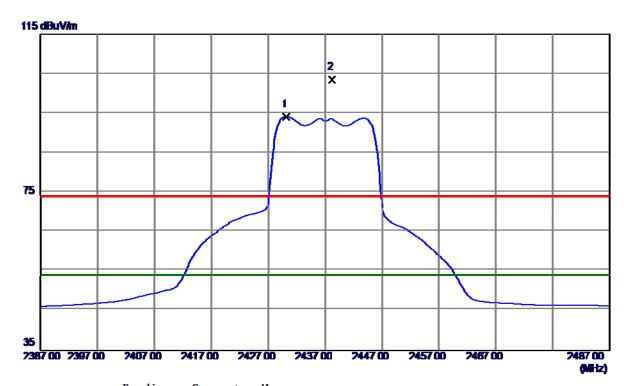
No.	Freq.	Level	Factor	measure	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4824.5500	30. 93	6. 66	37.59	<b>54.00</b>	-16.41	AVG	
2	4824.6730	42. 30	6. 66	48.96	74.00	<b>-25.04</b>	Peak	

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# Vertical



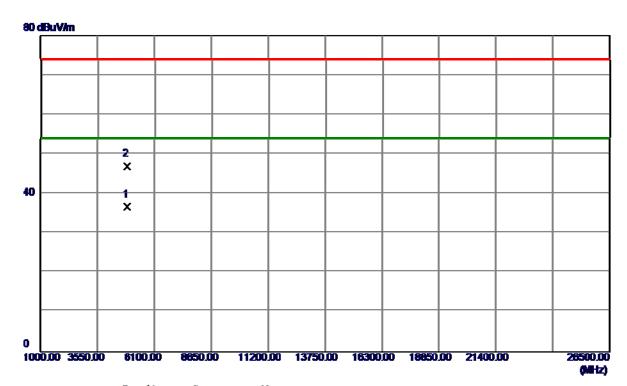
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2430. 2500	60.89	33. 21	94.10	54.00	40.10	AVG	No Limit
2	2438. 2500	70. 31	33. 24	103. 55	74.00	29. 55	Peak	No Limit

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# Vertical



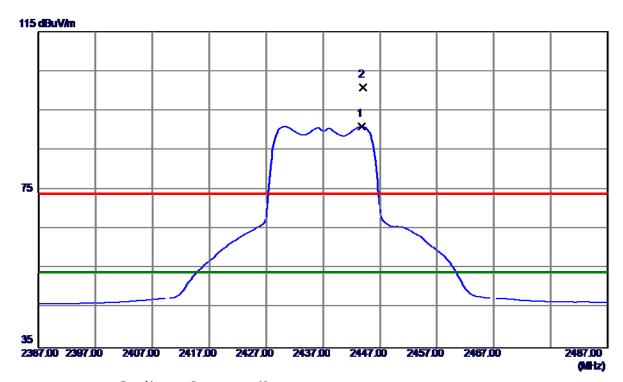
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4874.6570	29.73	6.84	36. 57	<b>54.00</b>	-17.43	AVG	
2	4874.7420	40.11	6.84	46.95	74.00	-27.05	Peak	

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## Horizontal



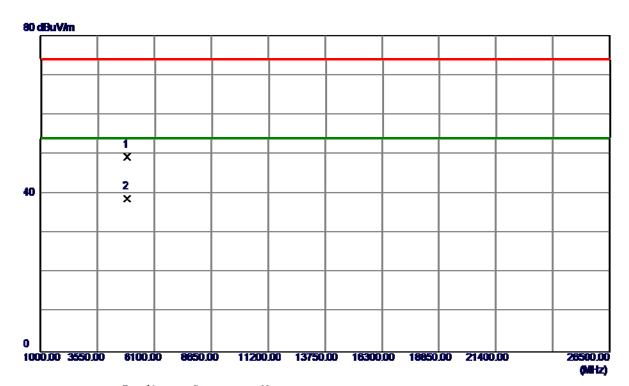
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2443.7500	57.72	33. 26	90. 98	54.00	36. 98	AVG	No Limit
2	2443. 9500	67. 69	33. 26	100. 95	74.00	26. 95	Peak	No Limit

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## Horizontal



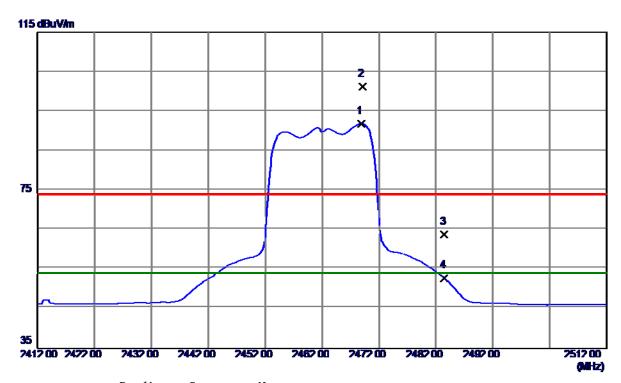
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873. 5840	42.47	6.84	49.31	74.00	-24.69	Peak	
2 *	4873. 9990	31.84	6.84	38.68	<b>54.00</b>	-15.32	AVG	

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# Vertical



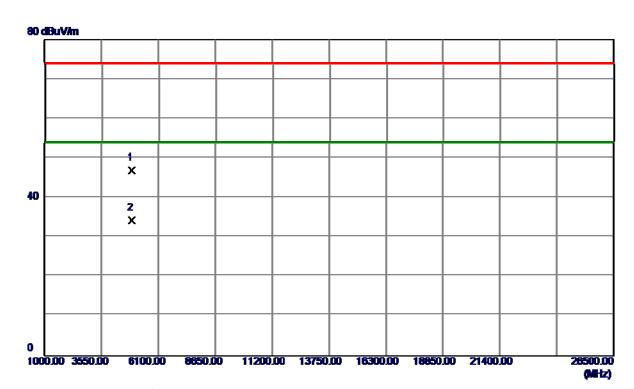
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2468.8500	58. 51	33. 35	91.86	<b>54.00</b>	37.86	AVG	No Limit
2	2469. 1500	67. 96	33. 35	101. 31	74.00	27.31	Peak	No Limit
3	2483, 5000	30. 40	33. 41	63.81	74.00	-10. 19	Peak	
4	2483. 5000	19. 40	33.41	52.81	54.00	-1. 19	AVG	

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# Vertical



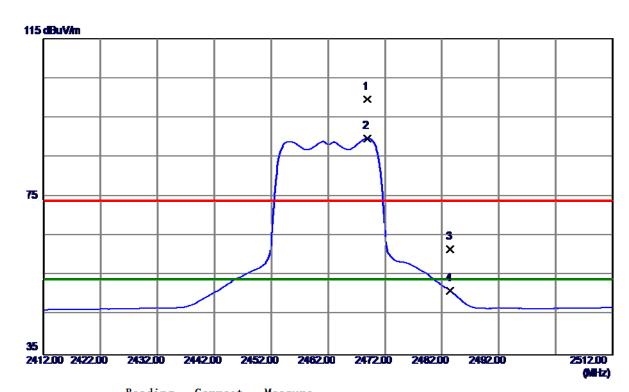
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4923. 4490	39.89	7.01	46.90	74.00	-27.10	Peak	
2 *	4924. 0019	27. 22	7.02	34.24	54.00	-19.76	AVG	

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## Horizontal



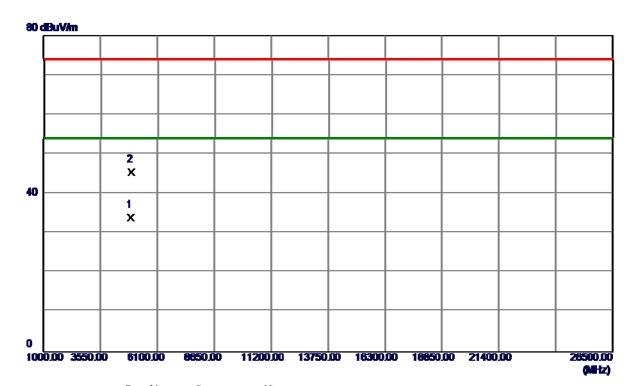
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2468. 9000	66. 27	33. 35	99.62	74.00	25. 62	Peak	No Limit
2 *	2468.9000	56. 45	33. 35	89.80	54.00	35. 80	AVG	No Limit
3	2483. 5000	28. 29	33.41	61.70	74.00	<b>-12.30</b>	Peak	
4	2483. 5000	17. 69	33. 41	51.10	54.00	-2.90	AVG	

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## Horizontal



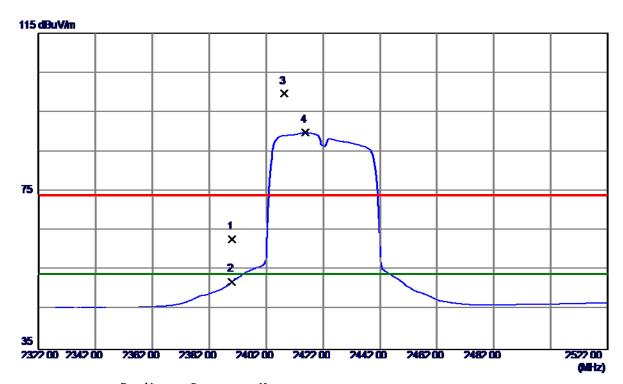
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4923. 5070	26. 93	7.02	33.95	<b>54.00</b>	-20.05	AVG	
2	4924. 5930	38. 47	7. 02	45.49	74.00	-28. 51	Peak	

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# Vertical



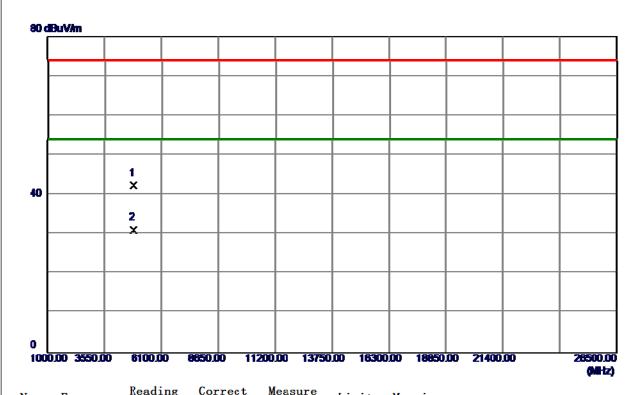
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390. 0000	29.83	33.06	62.89	74.00	-11. 11	Peak	
2	2390.0000	19. 11	33.06	52.17	54.00	-1.83	AVG	
3	2408. 4000	66. 59	33. 13	99.72	74.00	25. 72	Peak	No Limit
4 *	2415. 7000	56. 68	33. 15	89.83	54.00	35. 83	AVG	No Limit

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# Vertical



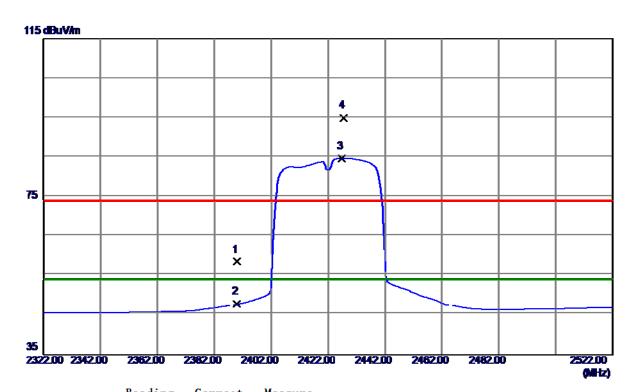
No.	Freq.	Level	Factor	measure	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4843. 7530	35. 59	6. 73	42.32	74.00	-31.68	Peak	
2 *	4844. 6469	24. 25	6. 73	30.98	54.00	<b>-23.02</b>	AVG	

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## Horizontal



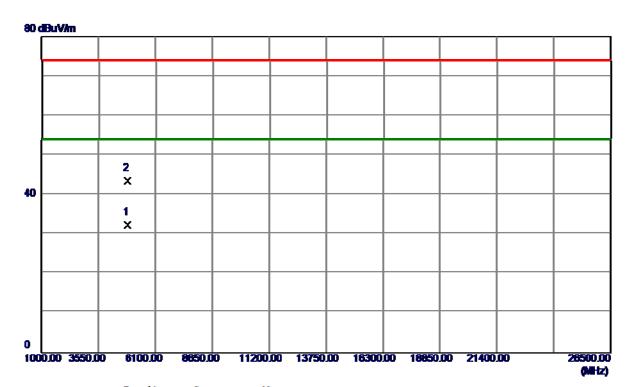
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	25. 38	33.06	58.44	74.00	-15. 56	Peak	
2	2390.0000	14.67	33.06	47.73	54.00	-6. 27	AVG	
3 *	2426.8000	51.48	33. 19	84.67	54.00	30.67	AVG	No Limit
4	2427.5000	61. 69	33. 20	94.89	74.00	20.89	Peak	No Limit

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## Horizontal



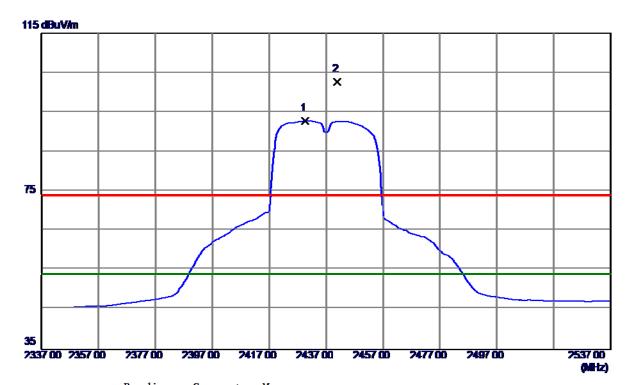
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4843. 9230	25. 63	6. 73	32.36	<b>54.00</b>	-21.64	AVG	
2	4844. 6469	36. 76	6. 73	43.49	74.00	-30. 51	Peak	

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# Vertical



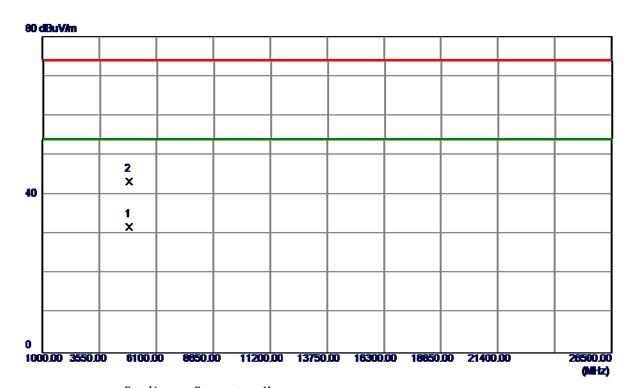
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2429.7000	<b>59. 56</b>	33. 21	92.77	54.00	38.77	AVG	No Limit
2	2441. 0000	69. 44	33. 25	102. 69	74.00	28.69	Peak	No Limit

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# Vertical



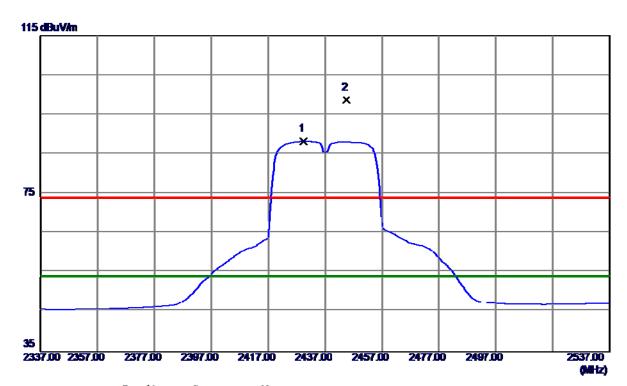
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4873. 2700	25. <b>0</b> 5	6.83	31.88	<b>54.00</b>	-22. 12	AVG	
2	4873. 9560	36. 58	6. 84	43.42	74. 00	-30. 58	Peak	

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## Horizontal



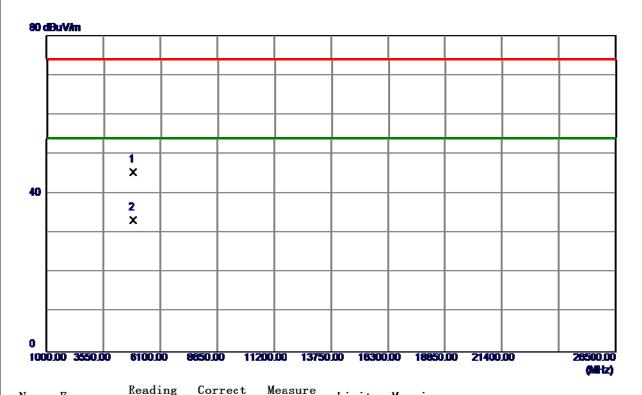
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	2429. 5000	<b>55. 07</b>	33. 20	88. 27	54.00	34. 27	AVG	No Limit
2	2444. 6000	65. 37	33. 26	98.63	74.00	24.63	Peak	No Limit

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# Horizontal



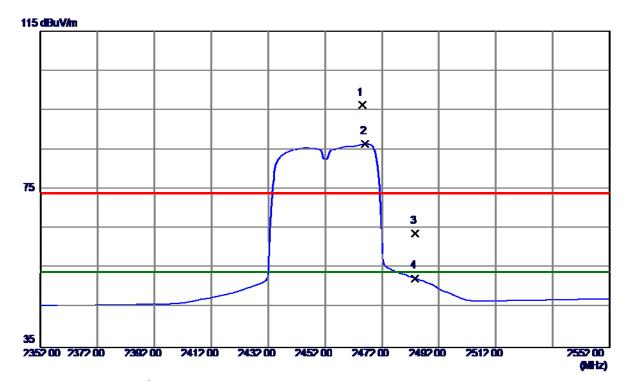
No.	Freq.	Level	Factor	measure	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4873.7070	38. 55	6.84	45.39	74.00	-28.61	Peak	
2 *	4873. 9890	26. 50	6.84	33.34	54.00	-20. 66	AVG	

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# Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2465.0000	62. 91	33. 34	96.25	74.00	22. 25	Peak	No Limit
2 *	2466.0000	53. 16	33. 34	86.50	54.00	32. 50	AVG	No Limit
3	2483, 5000	30. 42	33. 41	63.83	74.00	-10.17	Peak	
4	2483. 5000	19. 08	33. 41	52.49	54.00	-1.51	AVG	

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# Vertical



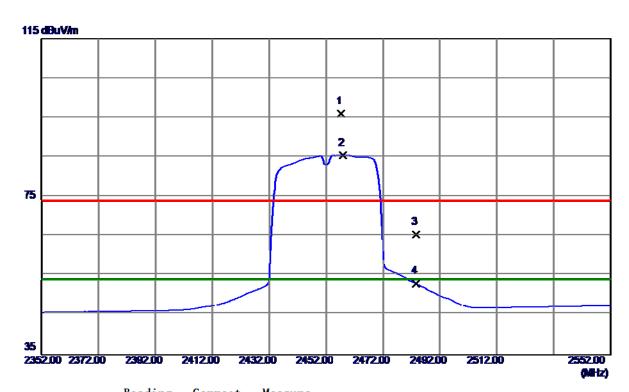
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4896. 3500	2 <b>6.0</b> 8	6. 92	33.00	54.00	-21.00	AVG	
2	4920. 1000	36. 61	7.00	43.61	74.00	-30.39	Peak	

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## Horizontal



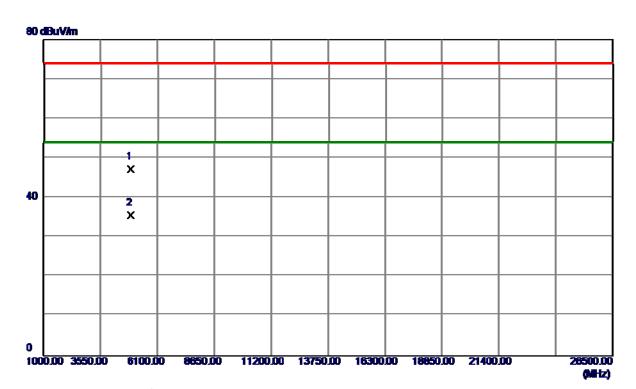
No.	Freq.	Keading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2457.4000	62. 62	33. 31	95. 93	74.00	21.93	Peak	No Limit
2 *	2457.9000	52. <b>0</b> 8	33. 31	85. 39	54.00	31. 39	AVG	No Limit
3	2483. 5000	32.06	33.41	65.47	74.00	-8.53	Peak	
4	2483. 5000	19. 49	33. 41	52.90	54.00	-1.10	AVG	

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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	4904.7000	40. 21	6. 95	47.16	74.00	-26.84	Peak	
2 *	4907.3500	28. 63	6. 96	35. 59	<b>54.00</b>	-18.41	AVG	

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APPENDIX E - BANDWIDTH

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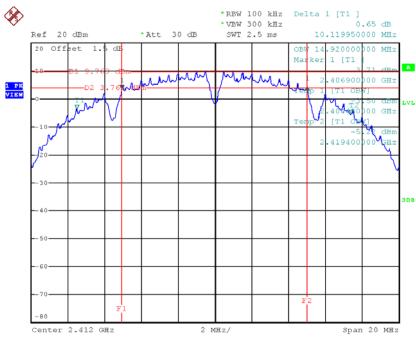




# Test Mode: TX B Mode\_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	10.12	14.92	500	Complies
2437	10.11	15.00	500	Complies
2462	10.12	14.92	500	Complies

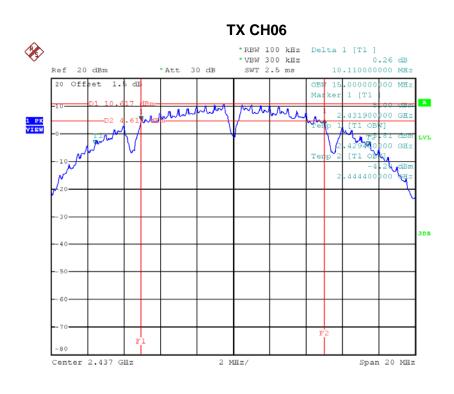
## TX CH01



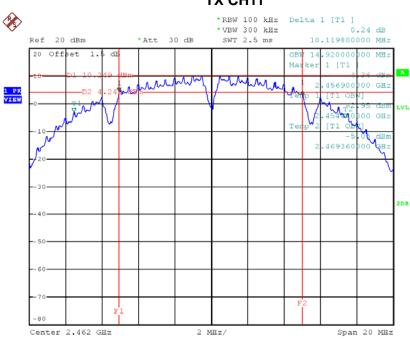
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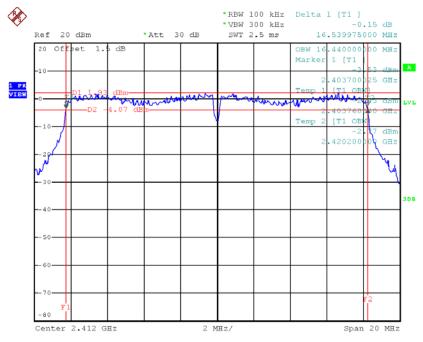




# Test Mode: TX G Mode\_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	16.54	16.44	500	Complies
2437	16.53	16.52	500	Complies
2462	16.54	16.44	500	Complies

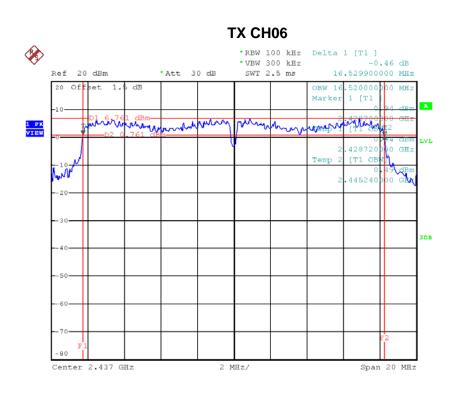


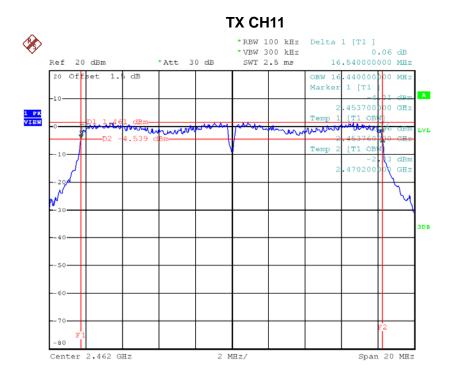


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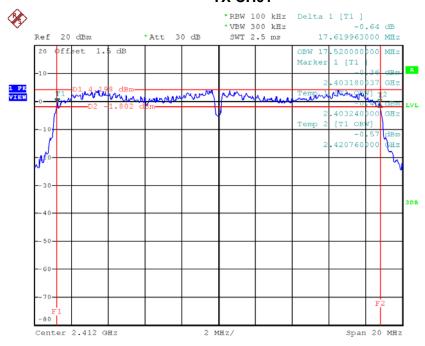




# Test Mode: TX N-20MHz Mode\_CH01/06/11

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	17.62	17.52	500	Complies
2437	17.68	17.56	500	Complies
2462	17.66	17.56	500	Complies

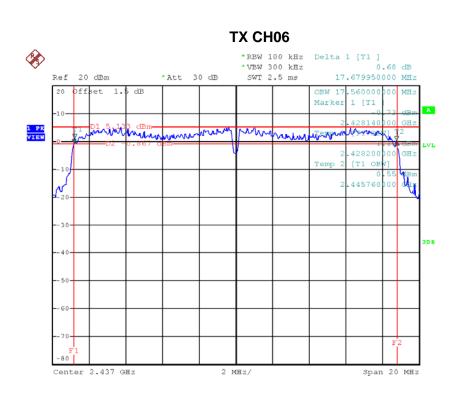


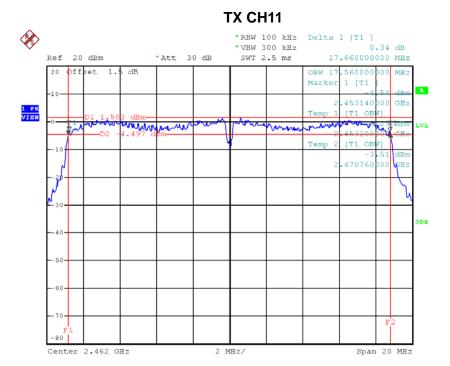


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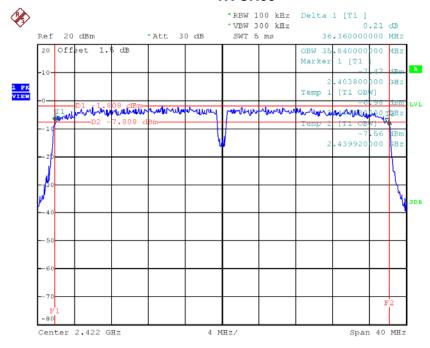




# Test Mode: TX N-40MHz Mode\_CH03/06/09

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2422	36.36	35.84	500	Complies
2437	36.48	35.84	500	Complies
2452	36.48	35.84	500	Complies

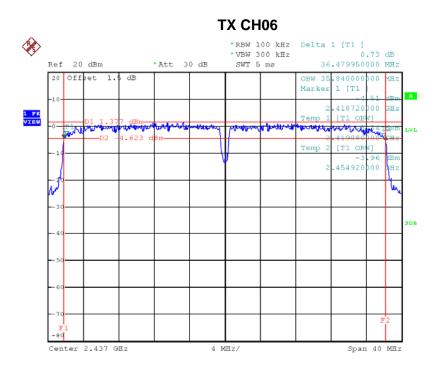
# **TX CH03**

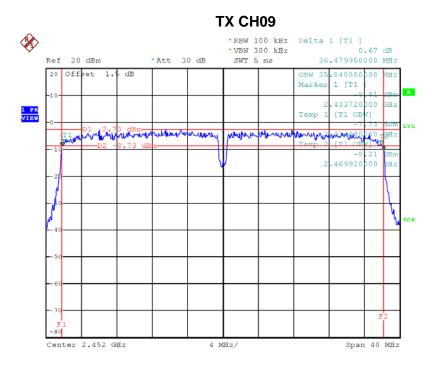


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APPENDIX F - MAXIMUM PEAK CONDUCTED OUTPUT POWER

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Test Mode :TX B Mode_CH01/06/11						
Frequency	Conducted	Conducted	Max. Limit	Max. Limit	Result	
(MHz)	Power (dBm)	Power (W)	(dBm)	(W)	Result	
2412	24.65	0.29	30.00	1.00	Complies	
2437	25.00	0.32	30.00	1.00	Complies	
2462	24.28	0.27	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)	Result	
2412	25.88	0.39	30.00	1.00	Complies	
2437	27.08	0.51	30.00	1.00	Complies	
2462	25.04	0.32	30.00	1.00	Complies	

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Test Mode :TX N20 Mode_CH01/06/11_ANT 1						
Frequency	Conducted	Conducted	Max. Limit	Max. Limit	Result	
(MHz)	Power (dBm)	Power (W)	(dBm)	(W)	Result	
2412	25.61	0.36	30.00	1.00	Complies	
2437	26.30	0.43	30.00	1.00	Complies	
2462	24.13	0.26	30.00	1.00	Complies	

Test Mode :TX N20 Mode_CH01/06/11_ANT 2						
Frequency	Conducted	Conducted	Max. Limit	Max. Limit	Result	
(MHz)	Power (dBm)	Power (W)	(dBm)	(W)	Result	
2412	24.67	0.29	30.00	1.00	Complies	
2437	26.29	0.43	30.00	1.00	Complies	
2462	24.10	0.26	30.00	1.00	Complies	

Test Mode :TX N20 Mode_CH01/06/11_Total						
Frequency	Conducted	Conducted	Max. Limit	Max. Limit	Result	
(MHz)	Power (dBm)	Power (W)	(dBm)	(W)	Result	
2412	28.18	0.66	30.00	1.00	Complies	
2437	29.31	0.85	30.00	1.00	Complies	
2462	27.13	0.52	30.00	1.00	Complies	

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Test Mode :TX N40 Mode_CH03/06/09_ANT 1						
Frequency	Conducted	Conducted	Max. Limit	Max. Limit	Result	
(MHz)	Power (dBm)	Power (W)	(dBm)	(W)	Result	
2422	23.51	0.22	30.00	1.00	Complies	
2437	25.71	0.37	30.00	1.00	Complies	
2452	22.94	0.20	30.00	1.00	Complies	

Test Mode :TX N40 Mode_CH03/06/09_ANT 2						
Frequency	Conducted	Conducted	Max. Limit	Max. Limit	Result	
(MHz)	Power (dBm)	Power (W)	(dBm)	(W)	Result	
2422	24.27	0.27	30.00	1.00	Complies	
2437	26.34	0.43	30.00	1.00	Complies	
2452	24.15	0.26	30.00	1.00	Complies	

Test Mode :TX N40 Mode_CH03/06/09_Total						
Frequency	Conducted	Conducted	Max. Limit	Max. Limit	Result	
(MHz)	Power (dBm)	Power (W)	(dBm)	(W)	Result	
2422	26.92	0.49	30.00	1.00	Complies	
2437	29.05	0.80	30.00	1.00	Complies	
2452	26.60	0.46	30.00	1.00	Complies	

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APPENDIX G - ANTENNA CONDUCTED SPURIOUS EMISSION

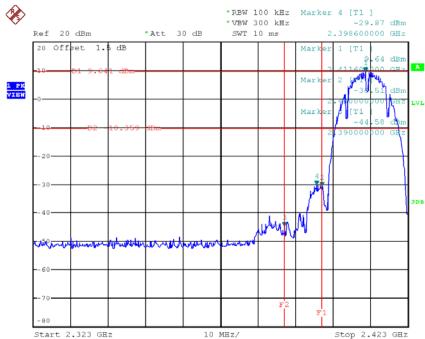
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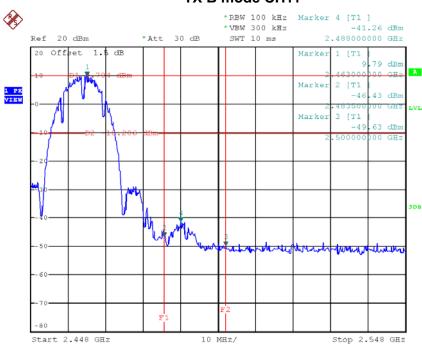








### TX B mode CH11

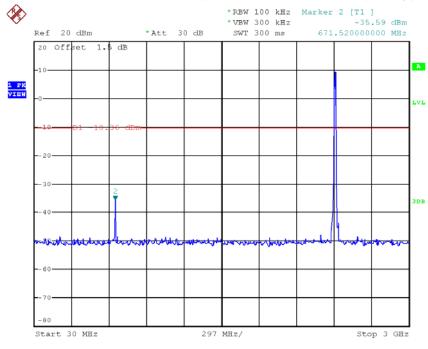


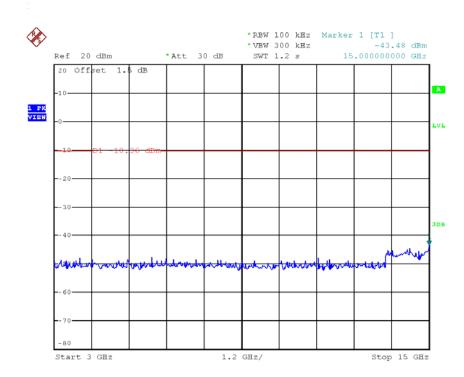
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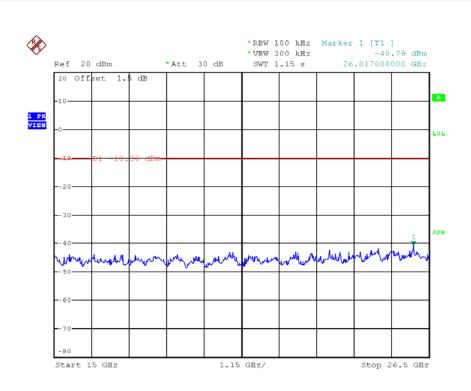




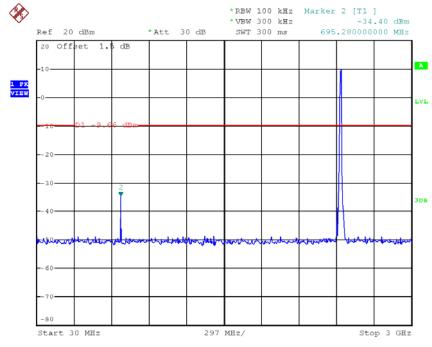
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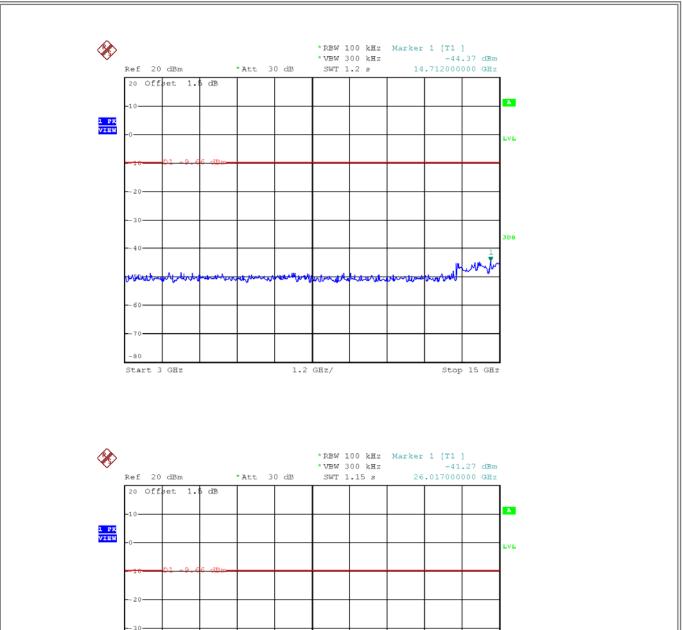
## TX B mode CH06 (10 Harmonic of the frequency)



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1.15 GHz/

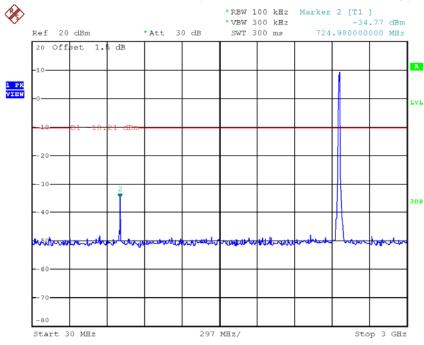
Stop 26.5 GHz

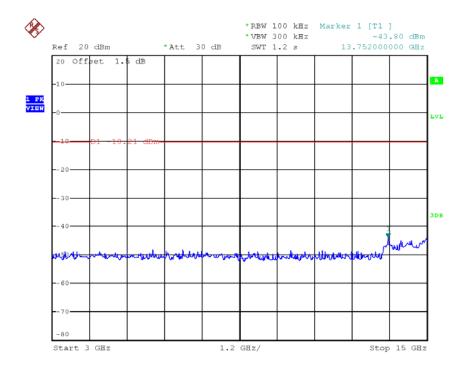
Start 15 GHz





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

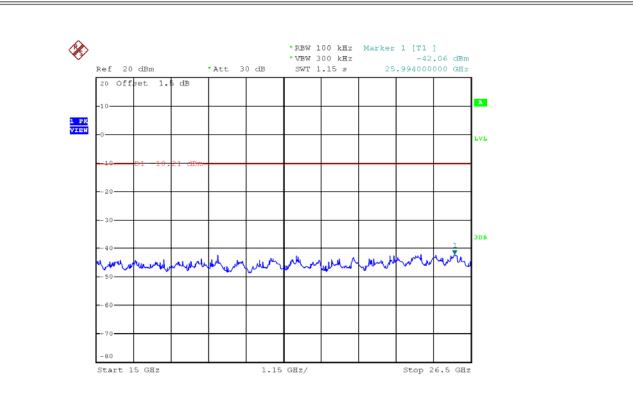




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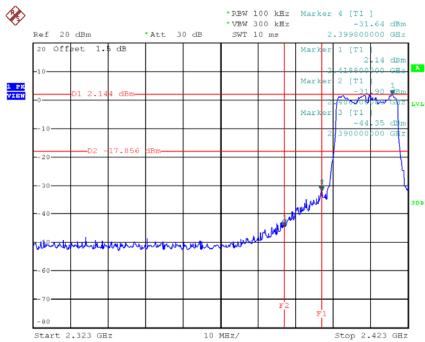
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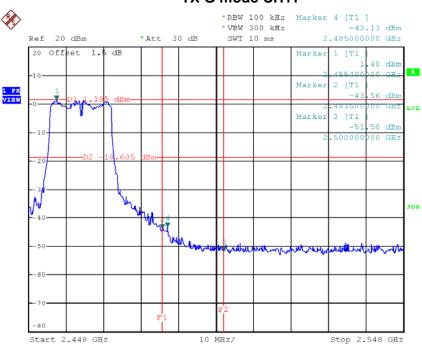


# Test Mode: TX G Mode





### TX G mode CH11

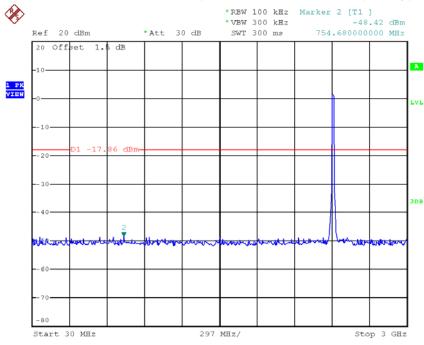


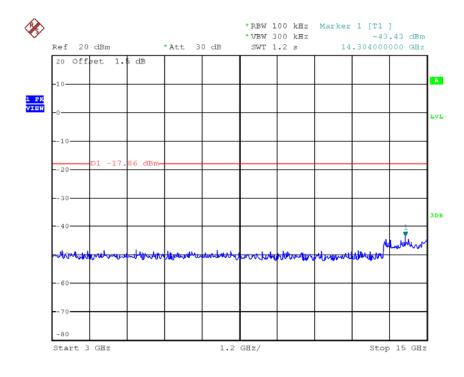
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# TX G mode CH01 (10 Harmonic of the frequency)

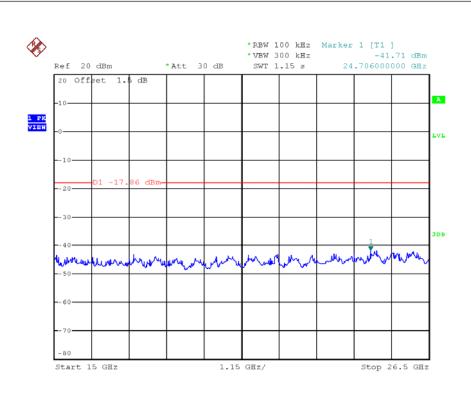




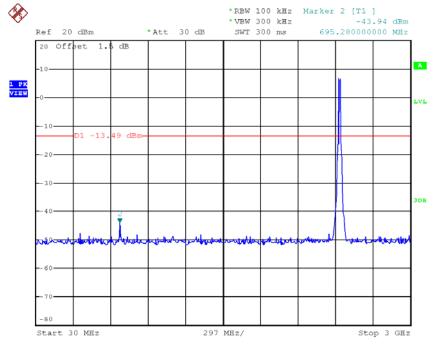
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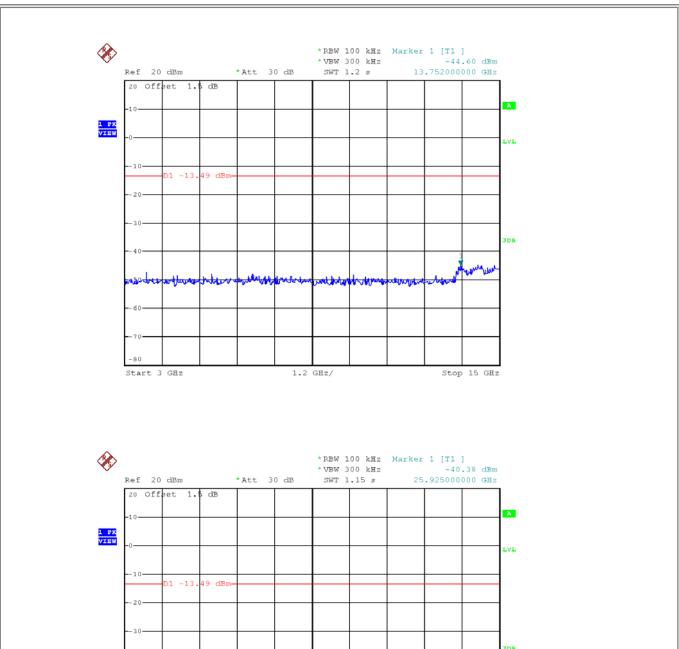
## TX G mode CH06 (10 Harmonic of the frequency)



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1.15 GHz/

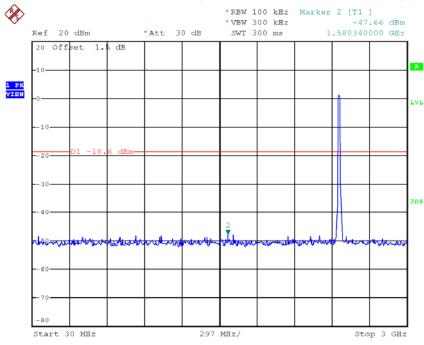
Stop 26.5 GHz

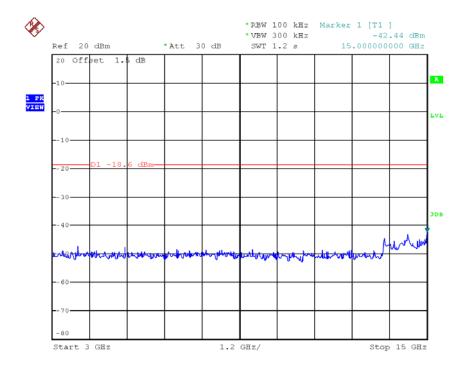
Start 15 GHz





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

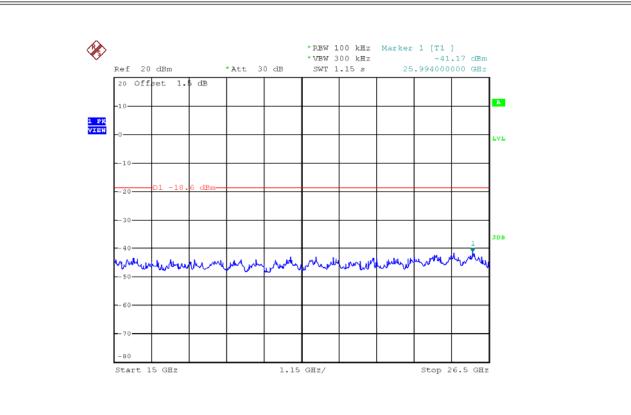




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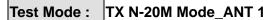


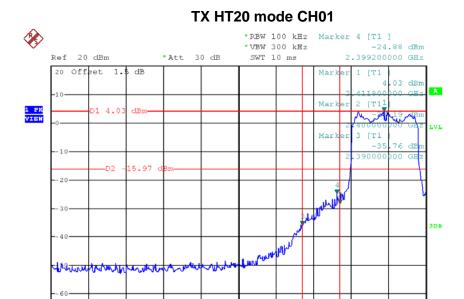


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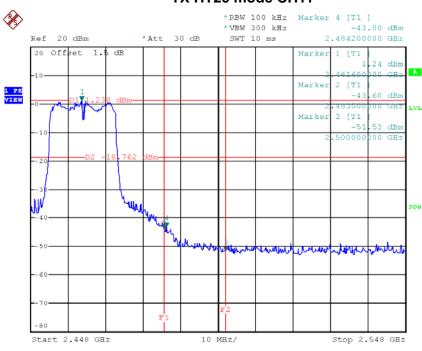






### TX HT20 mode CH11

Stop 2.423 GHz

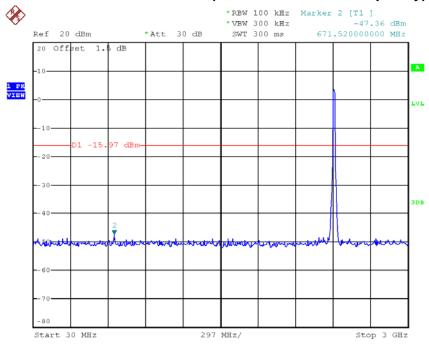


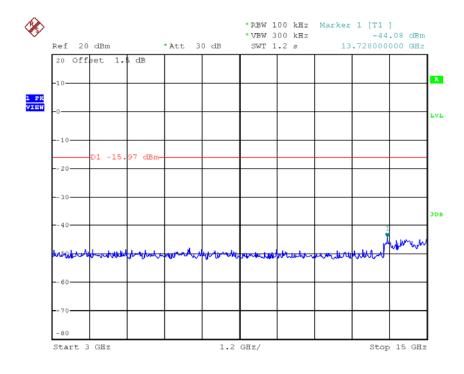
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### TX HT20 mode CH01 (10 Harmonic of the frequency)

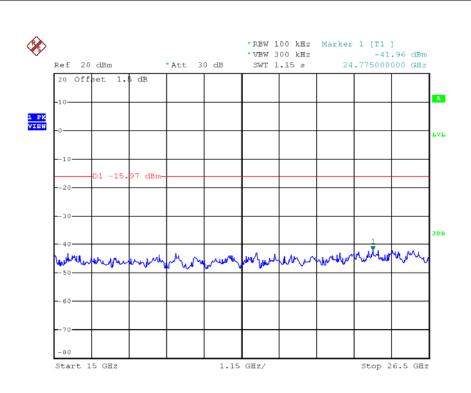




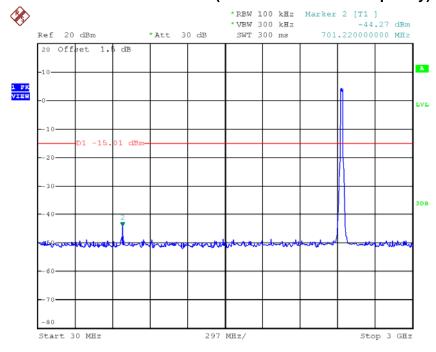
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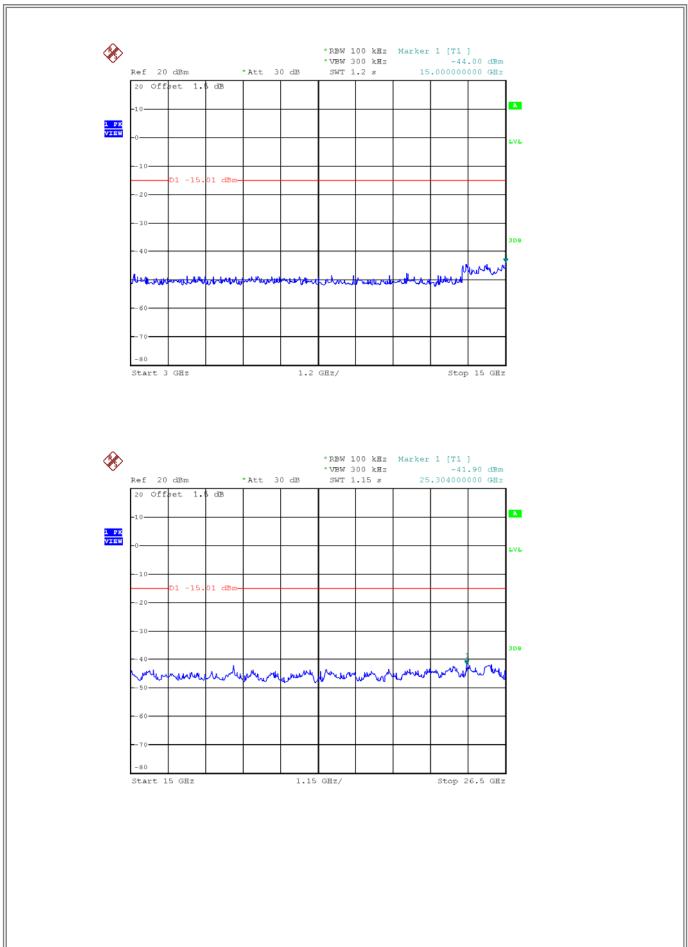
# TX HT20 mode CH06 (10 Harmonic of the frequency)



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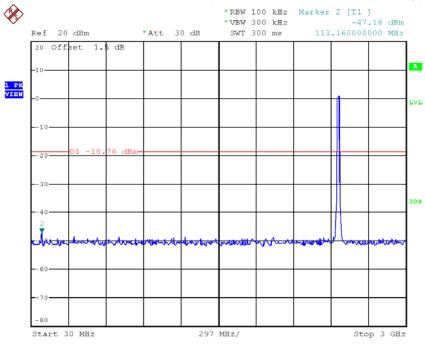


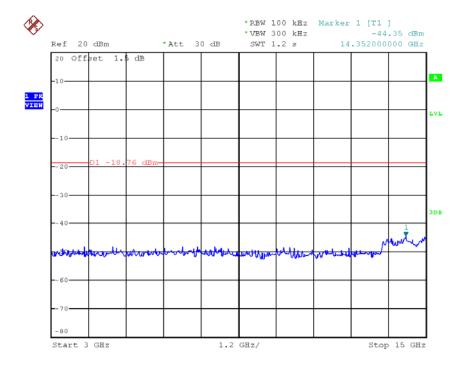
Report No.: BTL-FCCP-1-1801C253





### TX HT20 mode CH11 (10 Harmonic of the frequency)

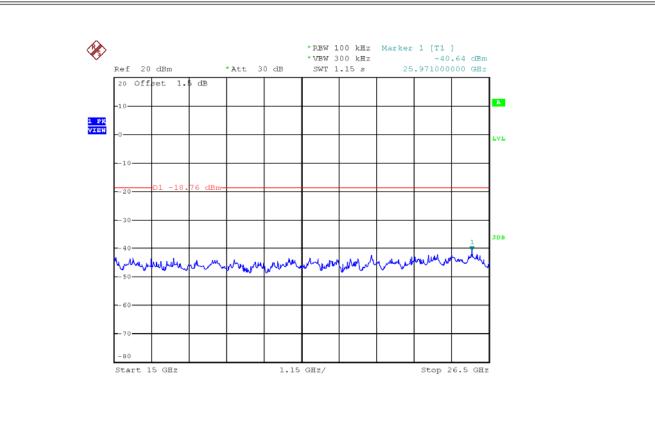




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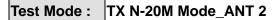




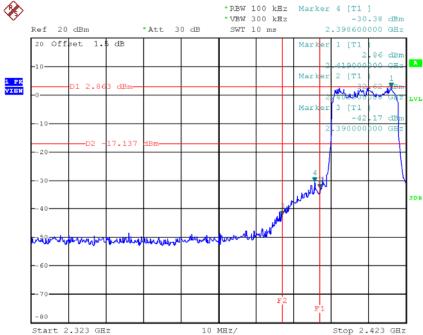
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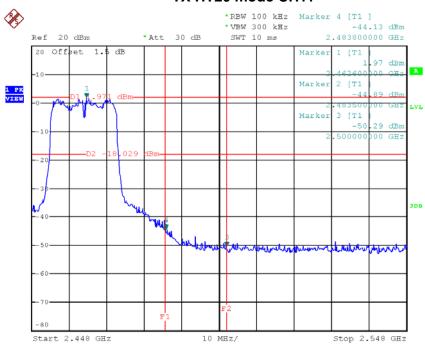








### TX HT20 mode CH11

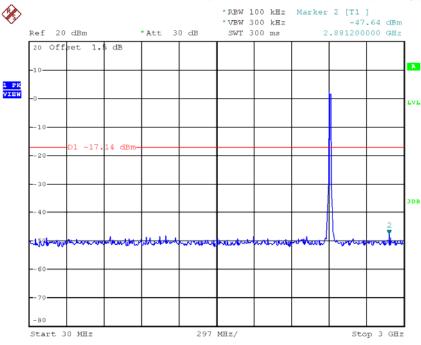


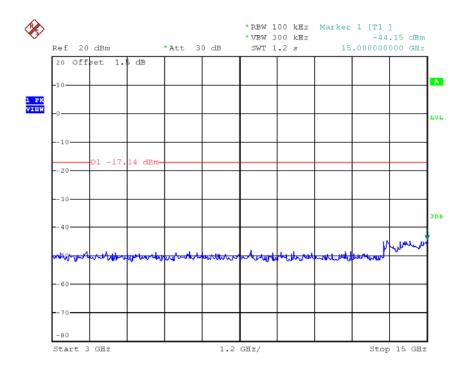
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### TX HT20 mode CH01 (10 Harmonic of the frequency)

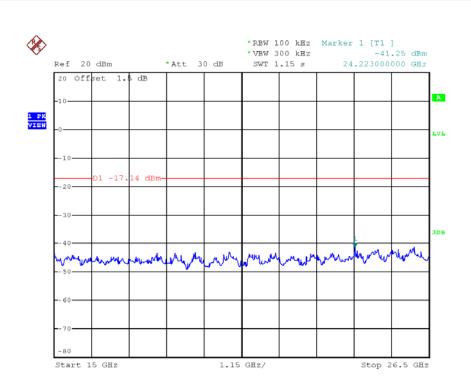




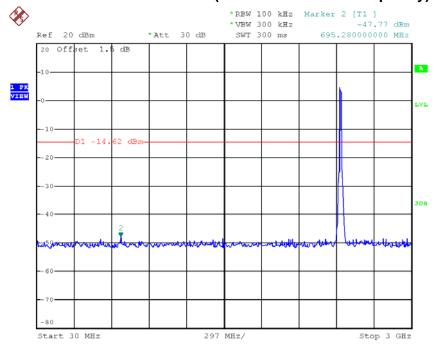
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## TX HT20 mode CH06 (10 Harmonic of the frequency)

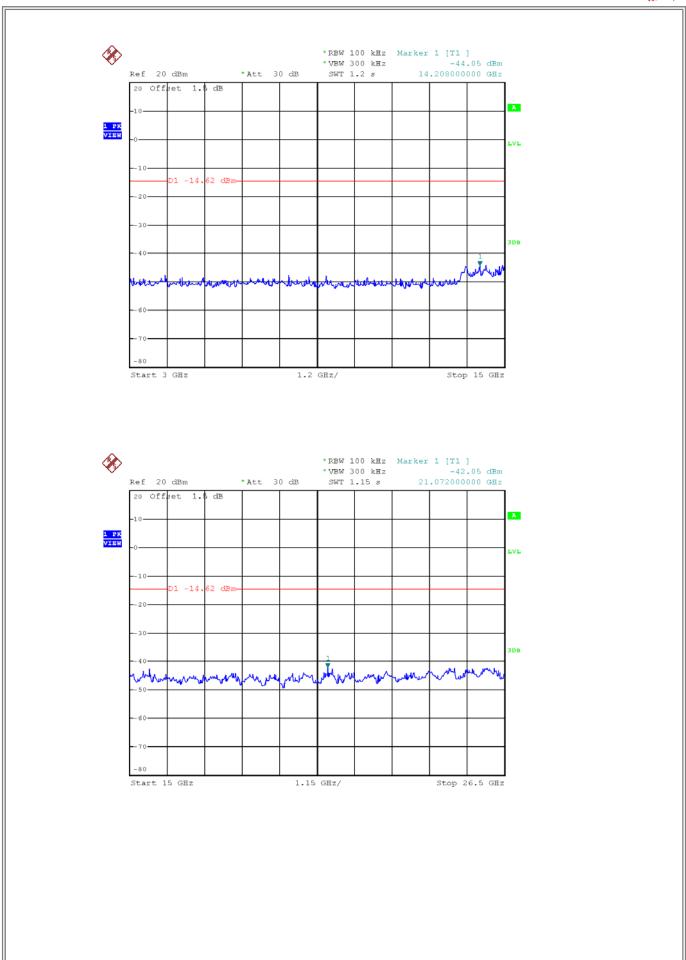


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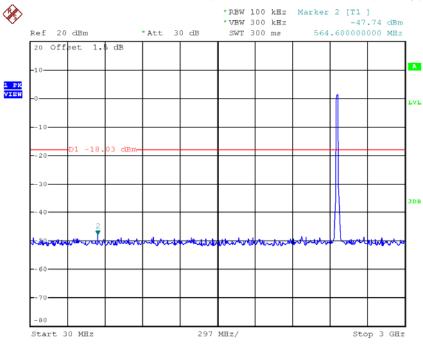


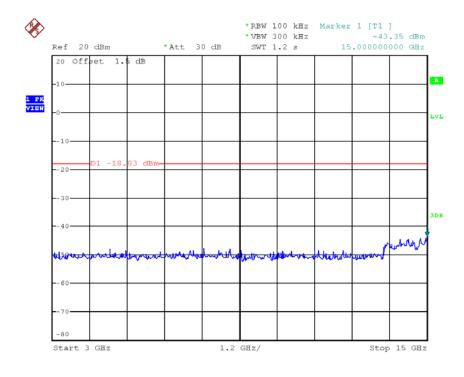
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### TX HT20 mode CH11 (10 Harmonic of the frequency)

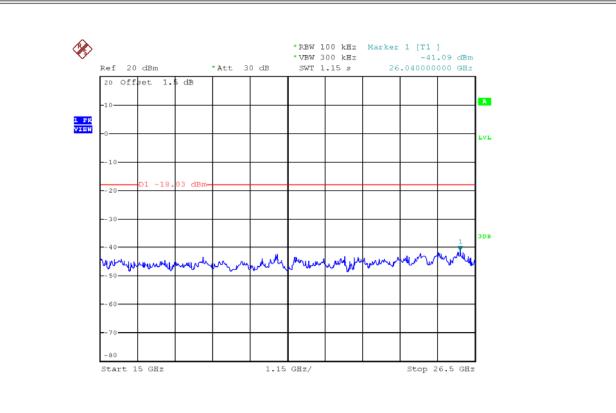




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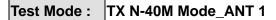


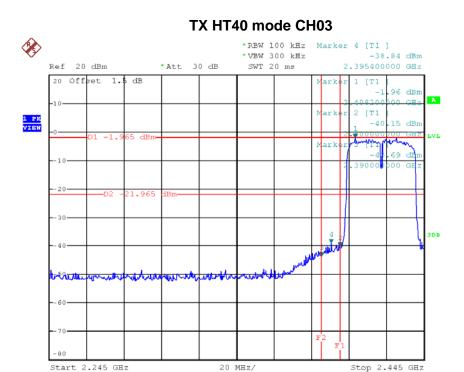


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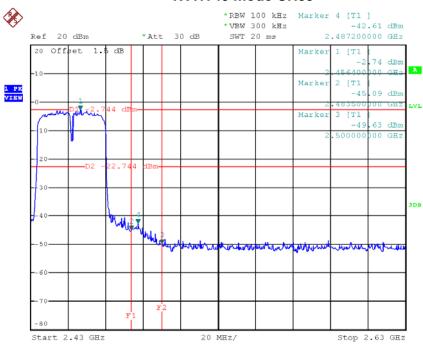








### TX HT40 mode CH09

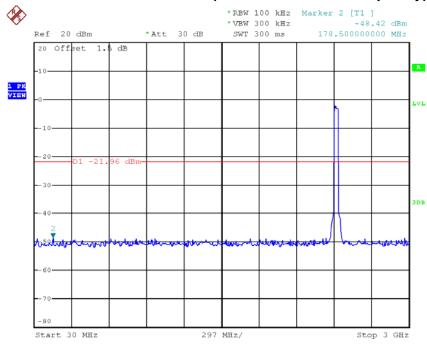


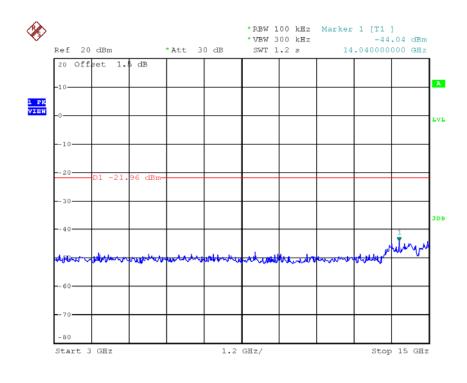
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# TX HT40 mode CH03 (10 Harmonic of the frequency)

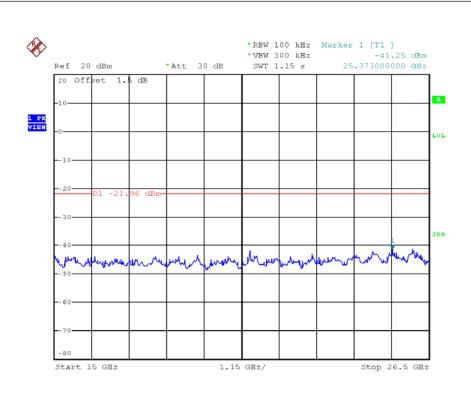




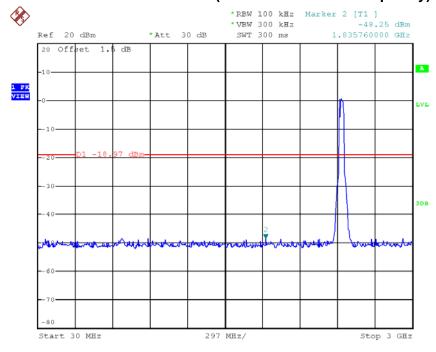
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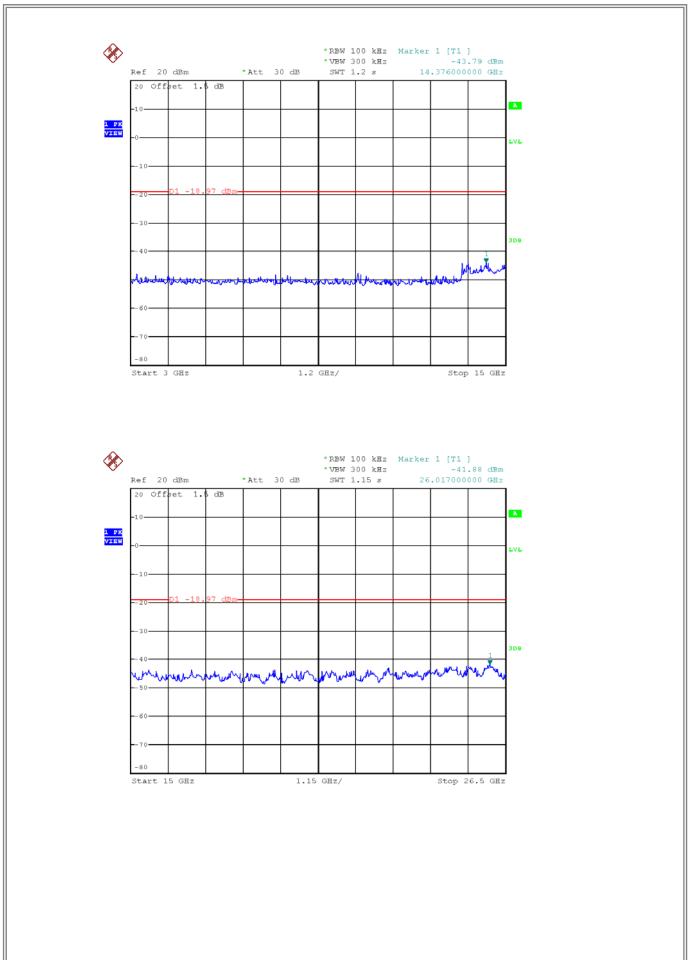
# TX HT40 mode CH06 (10 Harmonic of the frequency)



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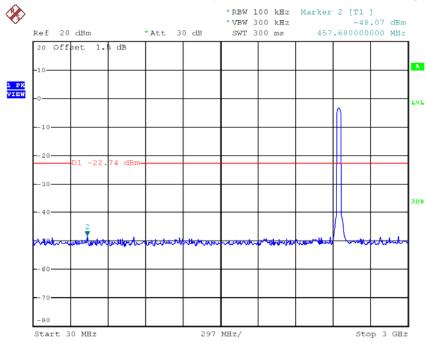
Report No.: BTL-FCCP-1-1801C253

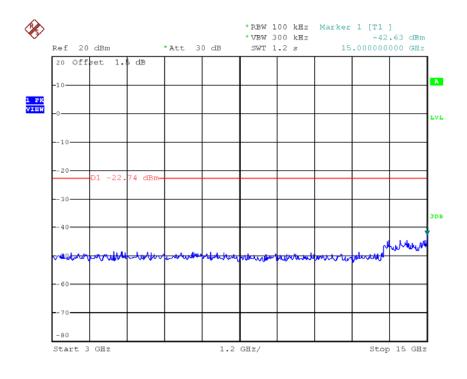
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### TX HT40 mode CH09 (10 Harmonic of the frequency)

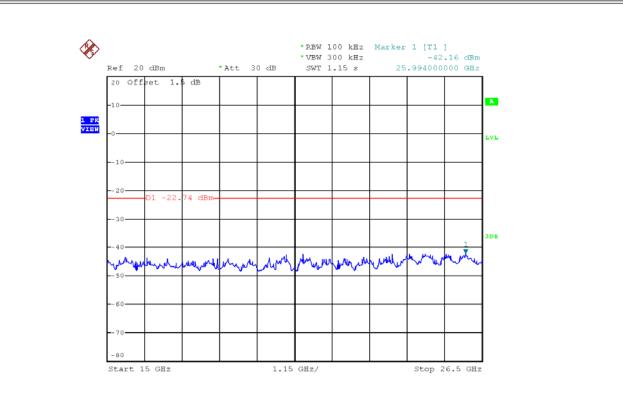




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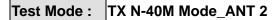


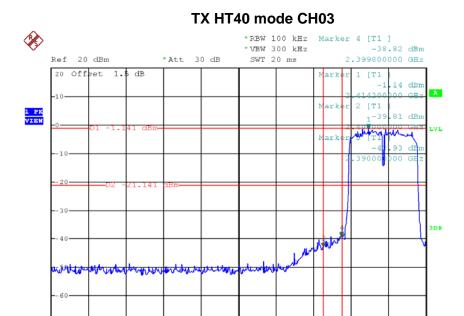


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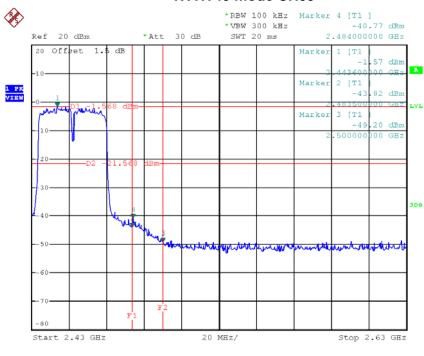






### TX HT40 mode CH09

Stop 2.445 GHz

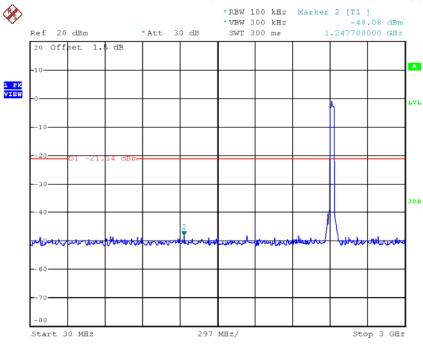


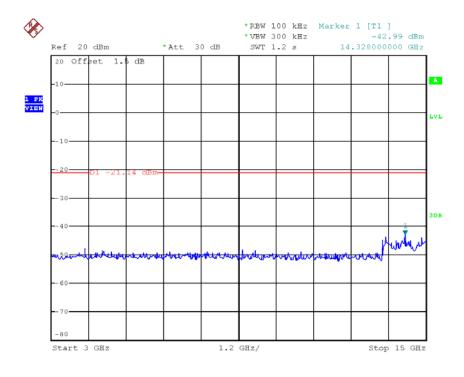
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# TX HT40 mode CH03 (10 Harmonic of the frequency)

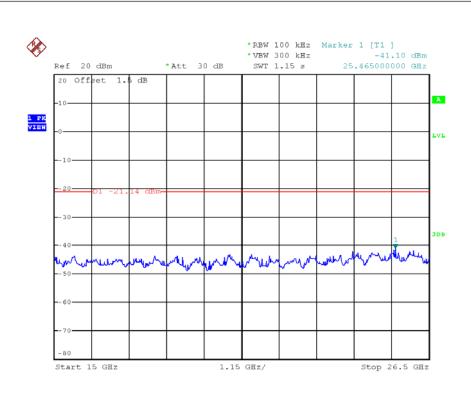




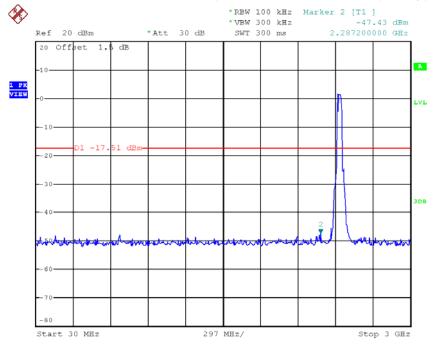
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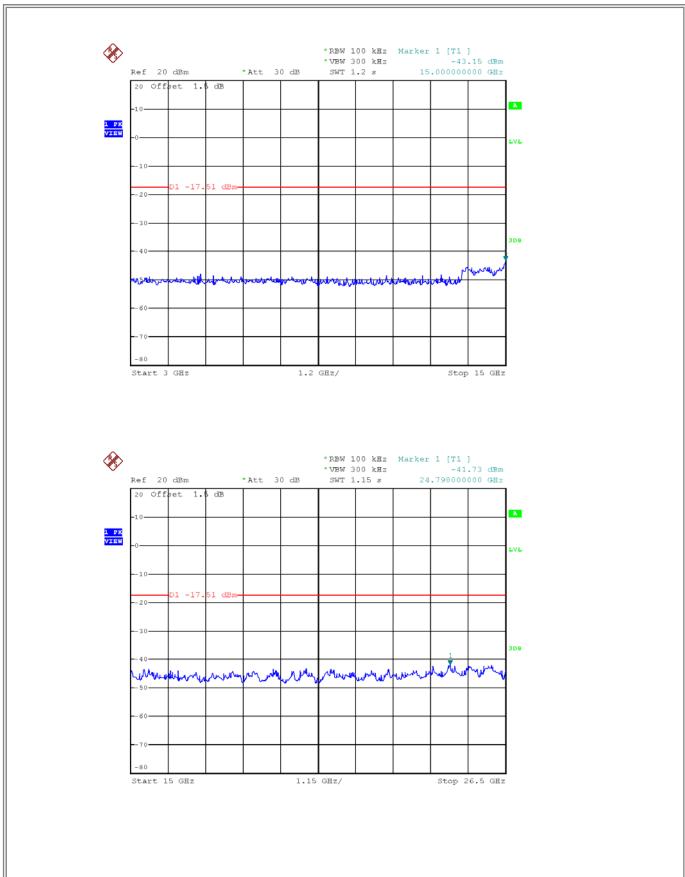
## TX HT40 mode CH06 (10 Harmonic of the frequency)



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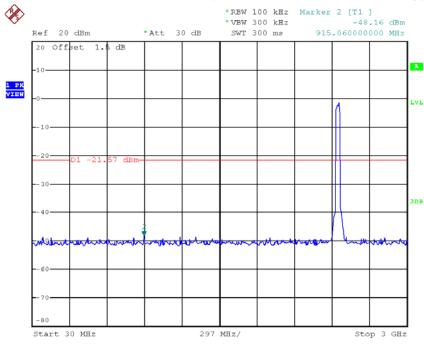


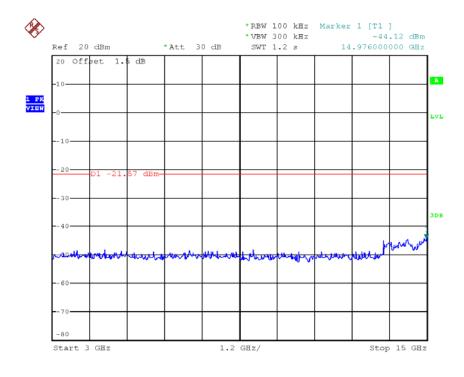






# TX HT40 mode CH09 (10 Harmonic of the frequency)

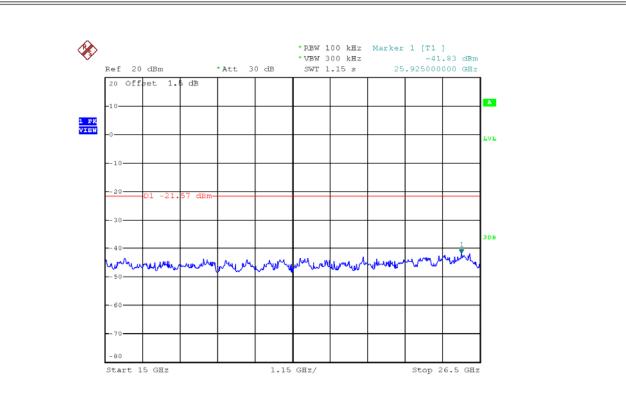




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<b>APPENDIX H-</b>	<b>POWER</b>	<b>SPECTR</b>	AL C	DENSITY
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## Test Mode :TX B Mode\_CH01/06/11

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-10.38	0.0916	8.00	Complies
2437	-9.53	0.1114	8.00	Complies
2462	-10.04	0.0991	8.00	Complies

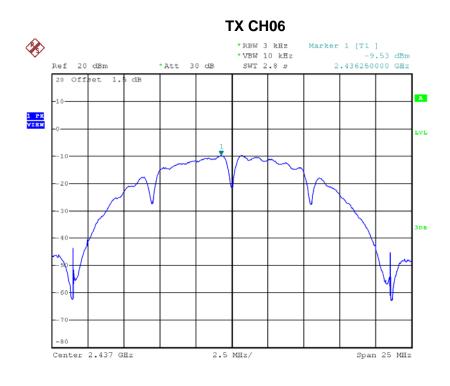


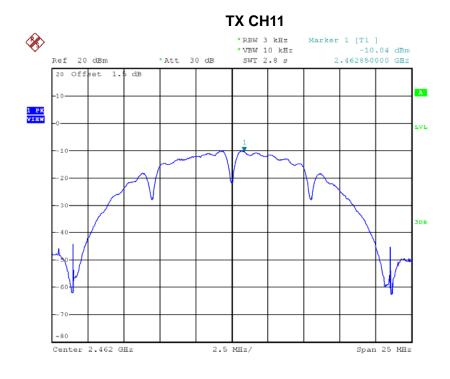


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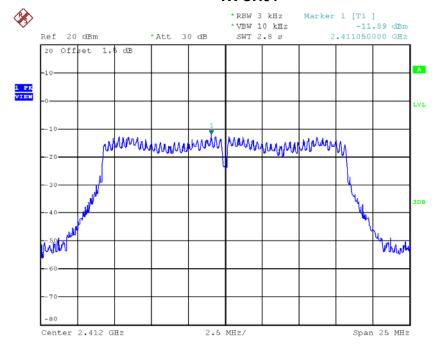




# Test Mode :TX G Mode\_CH01/06/11

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-11.89	0.0647	8.00	Complies
2437	-8.05	0.1567	8.00	Complies
2462	-12.55	0.0556	8.00	Complies

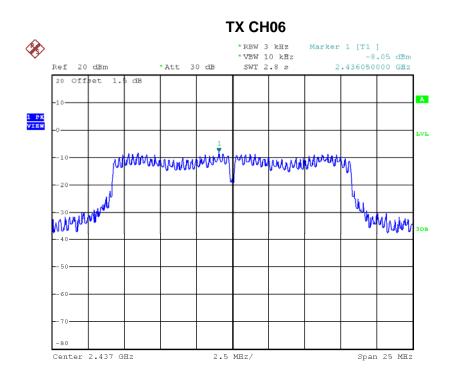
## TX CH01

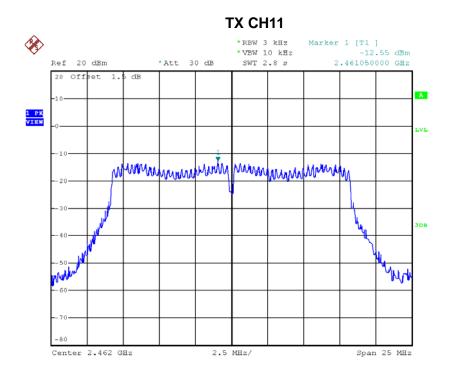


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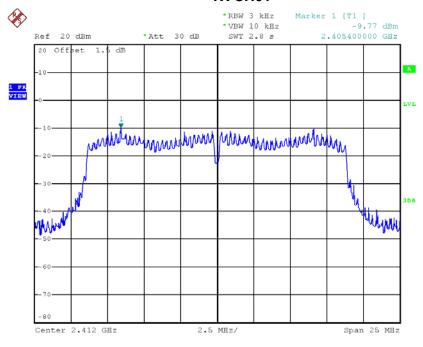




## Test Mode: TX N-20M Mode\_CH01/06/11\_ANT 1

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-9.77	0.1054	8.00	Complies
2437	-8.91	0.1285	8.00	Complies
2462	-12.38	0.0578	8.00	Complies

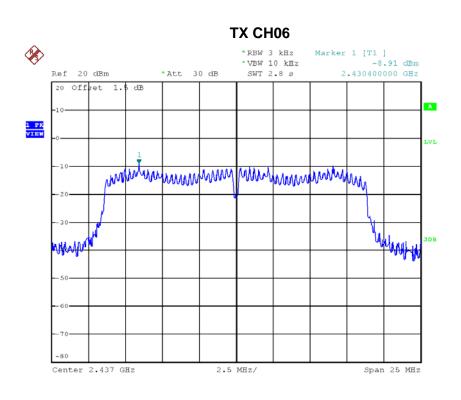
#### TX CH01

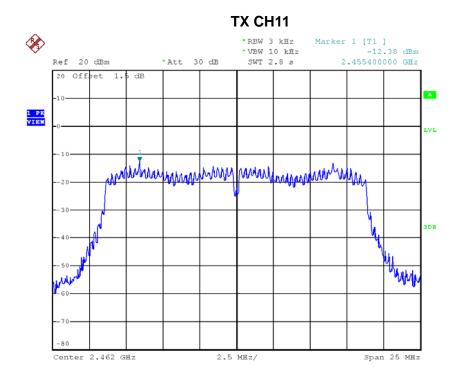


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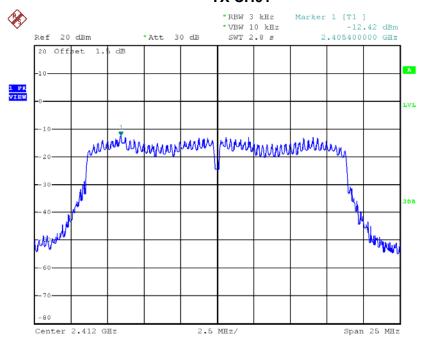




## Test Mode: TX N-20M Mode\_CH01/06/11\_ANT 2

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-12.42	0.0573	8.00	Complies
2437	-9.46	0.1132	8.00	Complies
2462	-11.43	0.0719	8.00	Complies

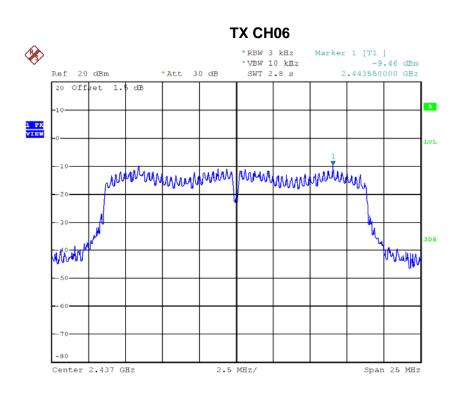
#### **TX CH01**

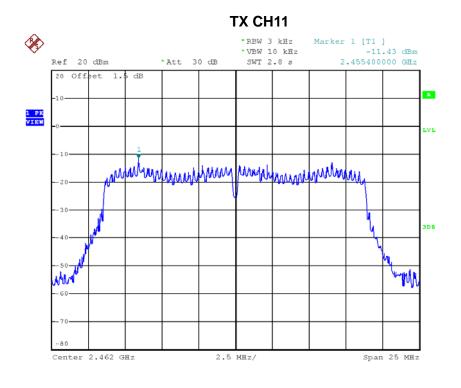


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# Test Mode : TX N-20M Mode\_CH01/06/11\_Total

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-7.89	0.1627	8.00	Complies
2437	-6.17	0.2417	8.00	Complies
2462	-8.87	0.1297	8.00	Complies

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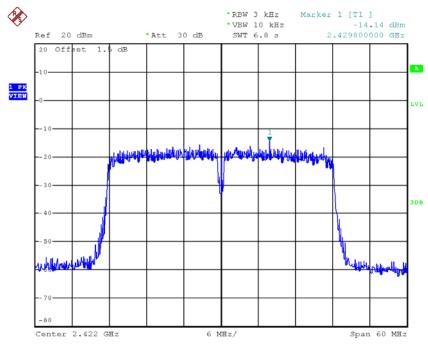




### Test Mode: TX N-40M Mode\_CH03/06/09\_ANT 1

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2422	-14.14	0.0385	8.00	Complies
2437	-12.86	0.0518	8.00	Complies
2452	-16.24	0.0238	8.00	Complies

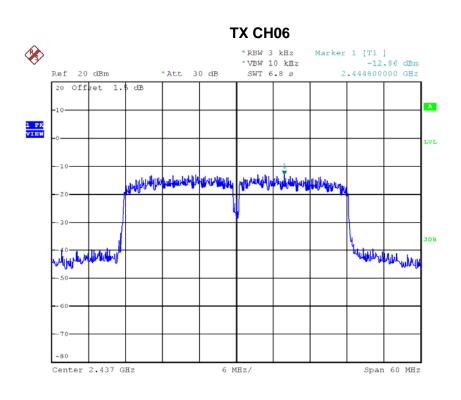


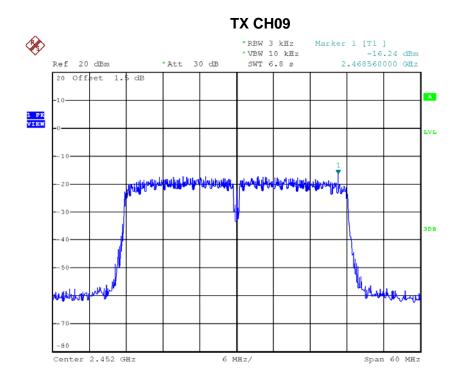


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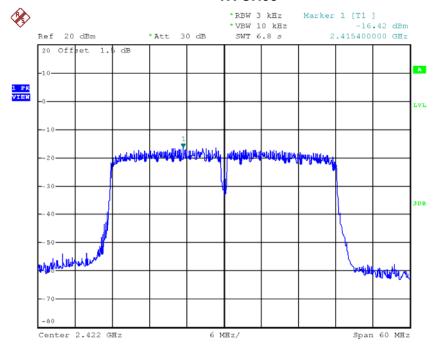




## Test Mode: TX N-40M Mode\_CH03/06/09\_ANT 2

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2422	-16.42	0.0228	8.00	Complies
2437	-12.64	0.0545	8.00	Complies
2452	-16.60	0.0219	8.00	Complies

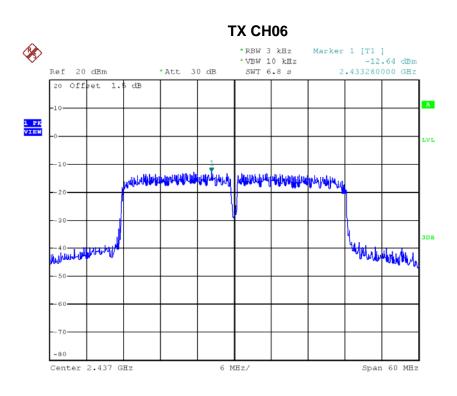
#### **TX CH03**

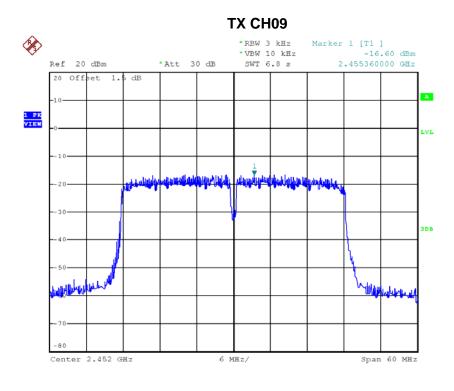


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# Test Mode: TX N-40M Mode\_CH03/06/09\_Total

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2422	-12.13	0.0613	8.00	Complies
2437	-9.73	0.1063	8.00	Complies
2452	-13.40	0.0457	8.00	Complies

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