



FCC Radio Test Report	
FCC ID: QISHRY-LX2	

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

: 1809C113

: HRY-LX2

: Smart Phone

Project No. Equipment Test Model Series Model Applicant Address

: N/A : Huawei Technologies Co., Ltd. : Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C Date of Receipt : Sep. 14, 2018 : Sep. 29, 2018 ~ Nov. 19, 2018

Date of Test Issued Date : Nov. 23, 2018 : BTL Inc. Tested by

Testing Engineer

VII (hen)

Technical Manager

(Shawn Xiao)

Authorized Signatory

(Steven Lu)

BTL INC

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TEL: +86-769-8318-3000



Certificate #5123.02





Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

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

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

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

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

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

Limitation

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



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專業檢測 延達30年





REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Nov. 22, 2018
R01	Changed the brand name to Honor.	Nov. 23, 2018





1. CERTIFICATION

Equipment : Brand Name :	
Test Model :	
Series Model :	
	•
	Huawei Technologies Co., Ltd.
	Huawei Technologies Co., Ltd.
Address :	Administration Building, Headquarters of Huawei Technologies Co., Ltd.,
	Bantian, Longgang District, Shenzhen, 518129, P.R.C
Factory :	Huawei Technologies Co., Ltd.
Address :	Administration Building, Headquarters of Huawei Technologies Co., Ltd.,
	Bantian, Longgang District, Shenzhen, 518129, P.R.C
Date of Test :	Sep. 29, 2018 ~ Nov. 19, 2018
Test Sample :	Engineering Sample No.: D181110240
	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-3-1809C113) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of A2LA according to the ISO-17025 quality assessment standard and technical standard(s).

Test result included in this report is only for the WLAN 2.4G Radiated Spurious Emissions part.



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	n	Test Item	Judgment	Remark	
15.247(d)/ 15.205/ 15.209		Transmitter Radiated Emissions	PASS		

Note:

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





2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China. BTL's test firm number for FCC: 854385 BTL's designation number for FCC: CN5020

2.2 MEASUREMENT UNCERTAINTY

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

The BTL measurement uncertainty as below table:

A. Radiated Measurement:

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



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Smart Phone					
Brand Name	Honor					
Test Model	HRY-LX2					
Series Model	N/A	N/A				
Model Difference(s)	N/A					
Software Version	9.0.1.111(C900E110R1P	9)				
Hardware Version	HL1HRYM					
	Operation Frequency	2412 MHz ~2462 MHz				
Product Description	Modulation Technology	802.11b:DSSS 802.11g:OFDM 802.11n:OFDM				
	Bit Rate of Transmitter	802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n: up to 150 Mbps				
Power Source	1# DC voltage supplied from AC/DC adapter. 2# Supplied from battery.					
Power Rating	1# I/P: 100-240V~,50/60Hz,0.5A O/P: 5V === 2A 2# DC 3.82V, 3320mAh					

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(20 MHz) CH03 - CH09 for 802.11n(40 MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

3. Table for Filed Antenna

Ar	nt.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1		N/A	N/A	Internal	N/A	-1.81





4. The EUT contains following accessory devices.

Item	Manufacturer	Factory	Model	Description
		Salcomp	HW-050200U02	
	Huawei	HUIZHOU BYD ELECTRONIC CO., LTD.		I/P:100-240V~
Adapter	Technologies Co., Ltd.	SHENZHEN HUNTKEY ELECTRIC CO., LTD.	HW-050200U02 HW-050200U01	50/60Hz, 0.5A O/P:5V === 2A
		Dongguan Phitek Electronics Co., Ltd.		
		SCUD (FUJIAN) Electronics Co., Ltd.		
Battery	Huawei Technologies	Huizhou Desay Battery Co., Ltd.	HB396286ECW	DC 3.82V, 3320mAh
	Co., Ltd.	Sunwoda Electronic Co., Ltd.		
		Dongguan Amperex Technology Limited		
		NingBo Broad Telecommunication Co., Ltd.	WA0001	
		HONGLIN TECHNOLOGY CO., LTD.	130-26669	
USB Cable	-	FOXCONN INTERCONNECT TECHNOLOGY LIMITED	CUBB01M-HC3 04-DH	-
		LuXshare	L99U2017-CS-H	
		Jiangxi Lianchuang Hongsheng Electronic Co., LTD.	MEND1532B528 A02	
Earphone	-	BOLUO COUNTY QUANCHENG ELECTRONIC CO.,LTD.	1293-3283-3.5m m-322	-



3.2 DESCRIPTION OF TEST MODES

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

Pretest Mode	Description
Mode 1	TX B Mode Channel 01/06/11
Mode 2	TX G Mode Channel 01/06/11
Mode 3 TX N-20 MHz Mode Channel 01/06/11	
Mode 4 TX N-40 MHz Mode Channel 03/06/09	
Mode 5 TX Mode	
Mode 6 TX G Mode Channel 01/02/06/10/11	
Mode 7 TX N-20 MHz Mode Channel 01/02/06/10/11	
Mode 8 TX N-40 MHz Mode Channel 03/04/06/08/09	

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

For Radiated Test			
Final Test Mode: Description			
Mode 1 TX B Mode Channel 01/06/11			
Mode 2 TX G Mode Channel 01/06/11			
Mode 3	TX N-20 MHz Mode Channel 01/06/11		
Mode 4	TX N-40 MHz Mode Channel 03/06/09		

For Band Edge Test			
Final Test Mode: Description			
Mode 1	TX B Mode Channel 01/06/11		
Mode 6 TX G Mode Channel 01/02/06/10/11			
Mode 7	TX N-20 MHz Mode Channel 01/02/06/10/11		
Mode 8	TX N-40 MHz Mode Channel 03/04/06/08/09		





Note:

- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1 Mbps)
 - 802.11g mode: OFDM (6 Mbps)
 - 802.11n HT20 mode : BPSK (6.5 Mbps)
 - 802.11n HT40 mode : BPSK (13.5 Mbps)
 - For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated 30 MHz to 1000 MHz test, the 802.11b is found to be the worst case and recorded.

3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

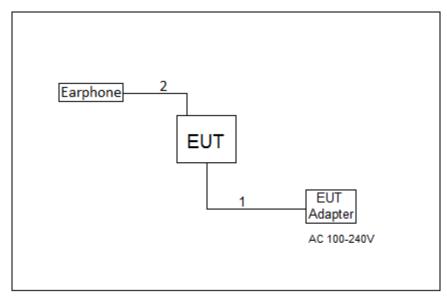
During testing, channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final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

Test software version	WiFiRFAuth.apk				
Frequency (MHz)	2412	2417	2437	2457	2462
802.11b	16	16	16	16	16
802.11g	13	17	17	17	13
802.11n (20 MHz)	11	15	15	15	11
Frequency (MHz)	2422	2427	2437	2447	2452
802.11n (40 MHz)	9	12	12	12	9





3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.5 DESCRIPTION OF SUPPORT UNITS

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

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

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	1.2m	DC Cable
2	NO	NO	1m	Audio Cable



4. EMC EMISSION TEST

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 RADIATED EMISSION LIMITS

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

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

Frequency	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 1000 MHz)

Frequency (MHz)	Band edge at 3m (dBµV/m) / Harmonic at 3m (dBµV/m)		Harmonic at 1.5m (dBµV/m)	
	Peak	Average	Peak	Average
Above 1000	74	54	80 (Note 5)	60(Note 5)

Note:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) The test result calculated as following: Measurement Value = Reading Level + Correct Factor Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use) Margin Level = Measurement Value - Limit Value
- (5)

$$FS_{\text{limit}} = FS_{\text{max}} - 20\log\left(\frac{d_{\text{limit}}}{d_{\text{measure}}}\right)$$

20log d limit/d measure=20log 3/1.5=6 dB.





Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW	1 MHz / 3 MHz for Peak,
(Emission in restricted band)	1 MHz / 1/T for Average

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

4.1.2 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 1 GHz)
- b. The measuring distance of 3 m or 1.5m 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 1 GHz.
- 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 1 GHz)
- 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 1 GHz)
- i. For the actual test configuration, please refer to the related Item -EUT Test Photos.

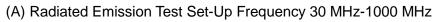
4.1.3 DEVIATION FROM TEST STANDARD

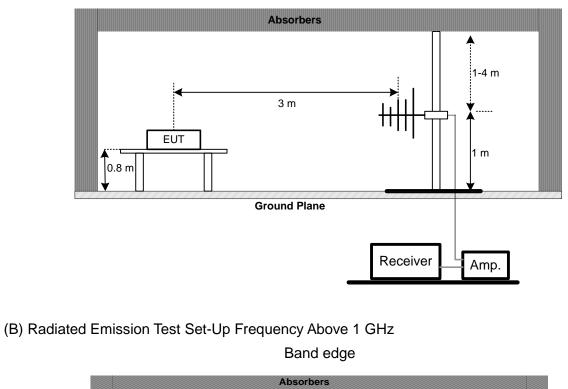
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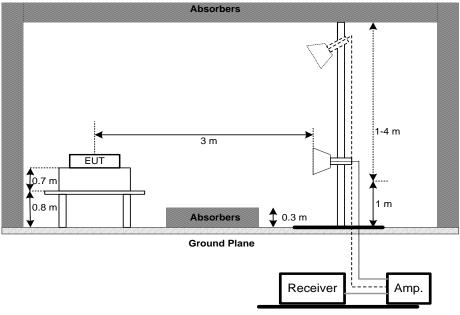




4.1.4 TEST SETUP





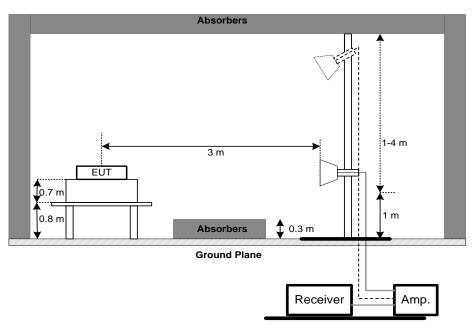




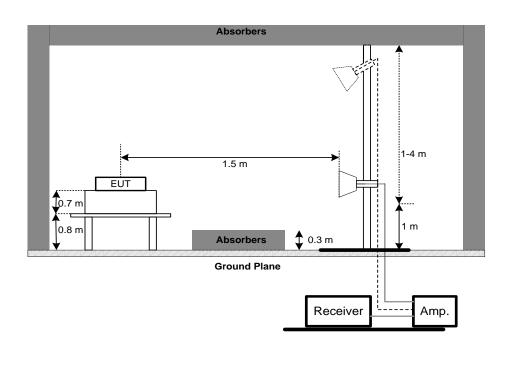


Harmonic





18GHz to 26.5GHz







(C) For Radiated Emissions 9 kHz-30 MHz

4.1.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.1.6 EUT TEST CONDITIONS

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

4.1.7 TEST RESULTS (9 kHz TO 30 MHz)

Please refer to the Appendix A.

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) All adapters had been pre-test and in this report only recorded the worst case.

4.1.8 TEST RESULTS (30 MHz TO 1000 MHz)

Please refer to the Appendix B.

Remark:

(1) All adapters had been pre-test and in this report only recorded the worst case.

4.1.9 TEST RESULTS (ABOVE 1000 MHz)

Please refer to the Appendix C.

Remark:

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



5. MEASUREMENT INSTRUMENTS LIST

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

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 11, 2019
2	Amplifier	HP	8447D	2944A09673	Aug. 11, 2019
3	Receiver	Agilent	N9038A	MY52130039	Aug. 11, 2019
4	Cable	emci	LMR-400(30MHz-1 GHz)(8m+5m)	N/A	May 25, 2019
5	Controller	СТ	SC100	N/A	N/A
6	Controller	MF	MF-7802	MF780208416	N/A
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emission Measurement - Above 1GHz										
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until					
1	Double Ridged Guide Antenna	ETS	3115	75789	Mar. 11, 2019					
2	Broad-Band Horn Antenna	Schwarzbeck BBHA 9170		9170319	Jun. 30, 2019					
3	Amplifier	Agilent	8449B	3008A02274	Mar. 11, 2019					
4	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 11, 2019					
5	Receiver	Agilent	N9038A	MY52130039	Aug. 11, 2019					
6	Controller	СТ	SC100	N/A	N/A					
7	Controller	MF	MF-7802	MF780208416	N/A					
8	Cable	mitron	B10-01-01-12M	18072744	Jul. 30, 2019					
9	Measurement Software Farad		EZ-EMC Ver.NB-03A1-01	N/A	N/A					

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

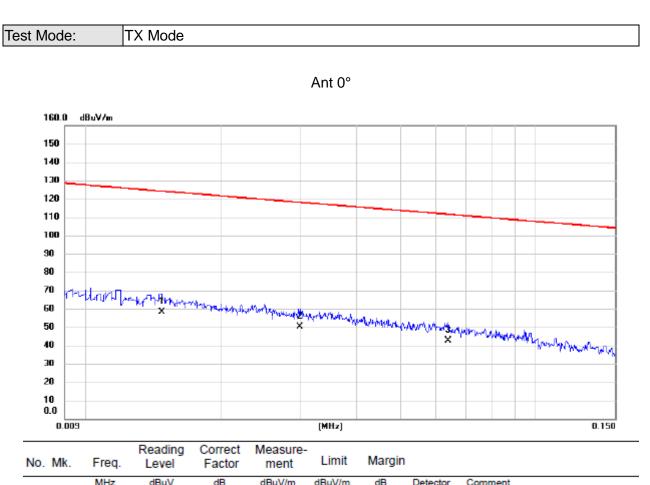




APPENDIX A - RADIATED EMISSION (9 KHZ TO 30 MHZ)







No. Mk.	Freq.	Level	Factor	ment	Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	0.0148	37.40	20.75	58.15	124.20	-66.05	AVG	
2	0.0300	30.50	19.85	50.35	118.06	-67.71	AVG	
3	0.0640	23.30	19.25	42.55	111.48	-68.93	AVG	



2

3 *

0.6140

2.2486

29.30

29.20

16.92

16.96

46.22

46.16

71.84

69.54

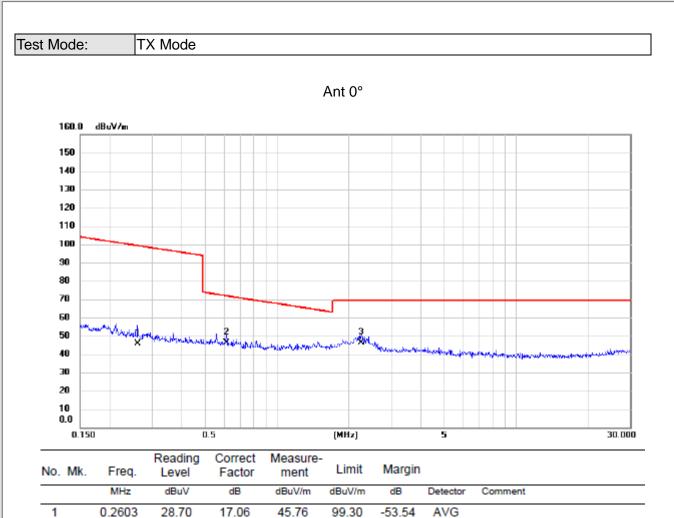
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-23.38

QP

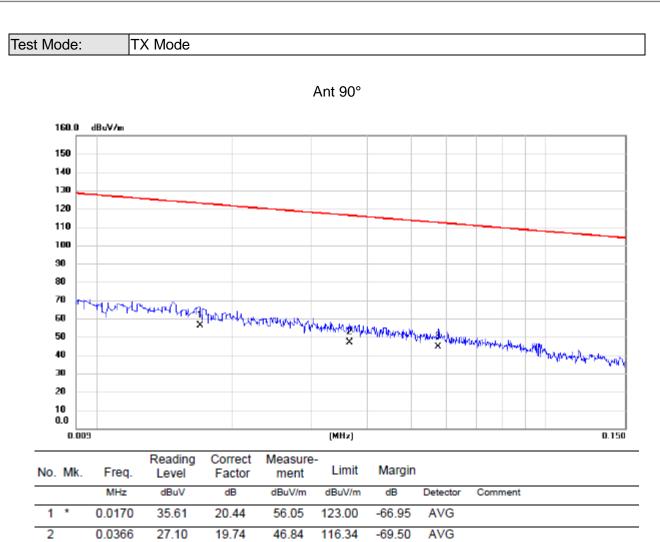
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0.0576

3

25.20

19.38

44.58

112.40

-67.82

AVG



2 *

3

2.2486

3.9430

24.50

24.10

16.96

15.80

41.46

39.90

69.54

69.54

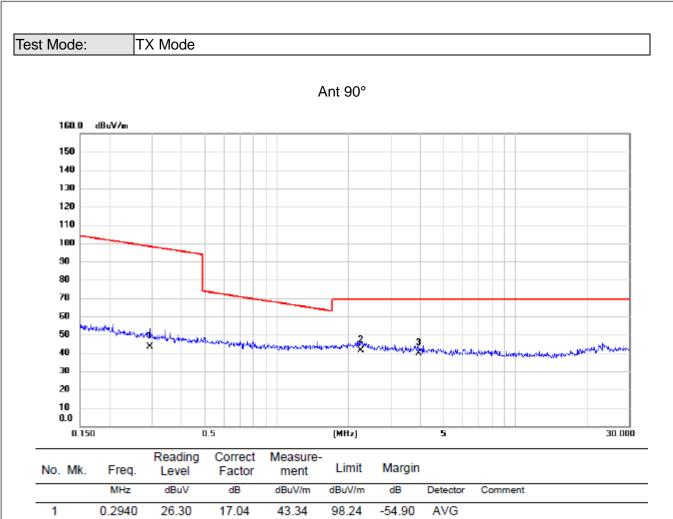
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QP





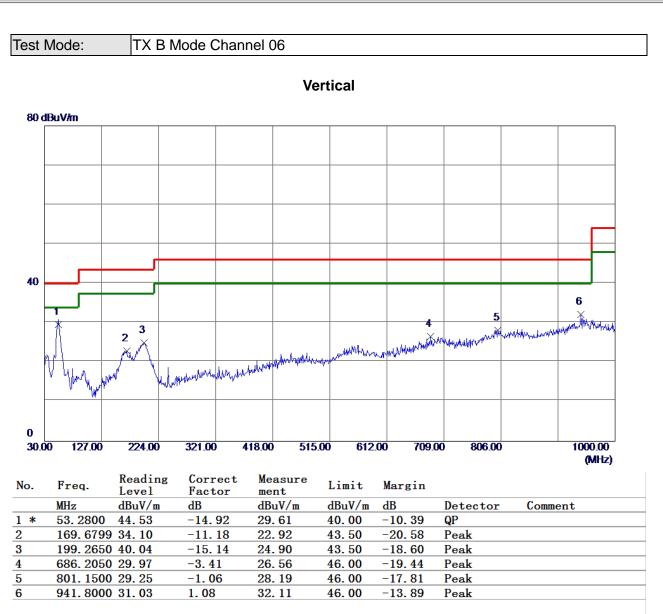




APPENDIX B - RADIATED EMISSION (30 MHZ TO 1000 MHZ)

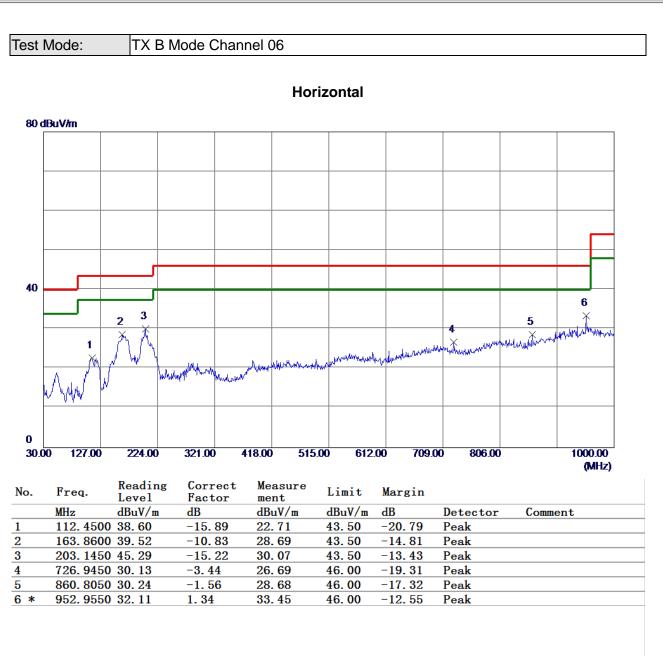












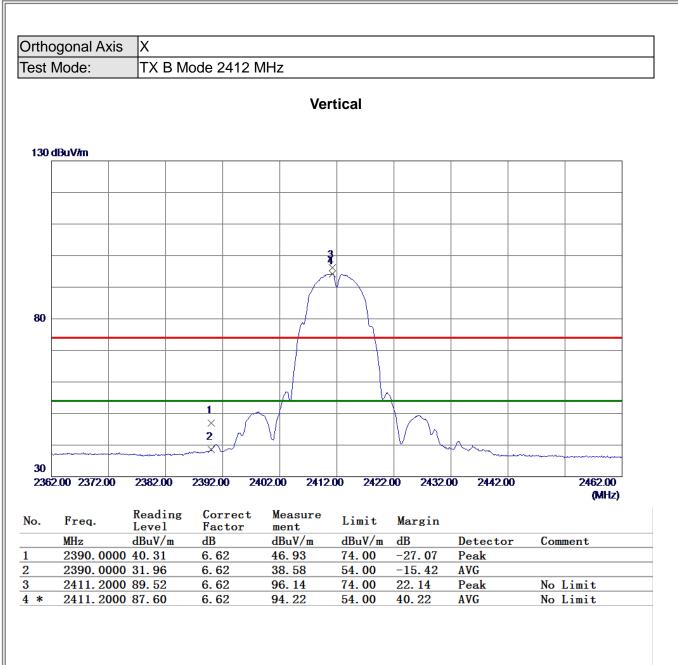




APPENDIX C - RADIATED EMISSION (ABOVE 1000 MHZ)

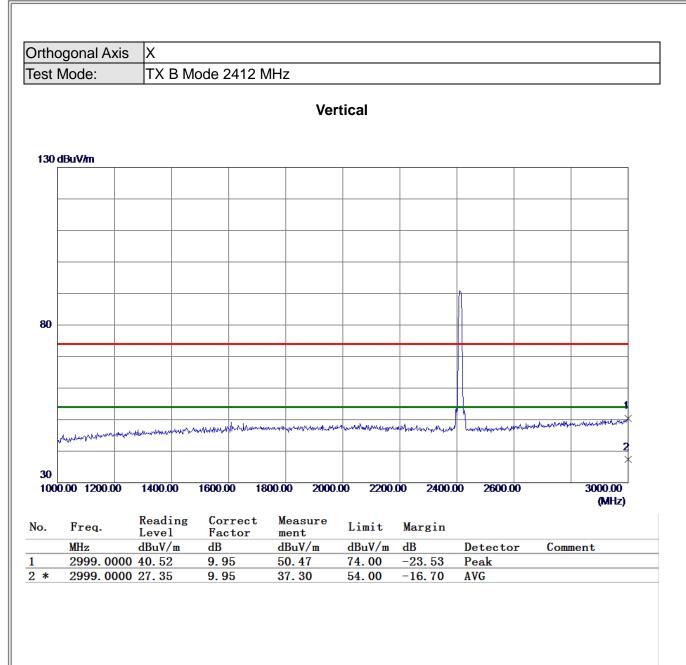






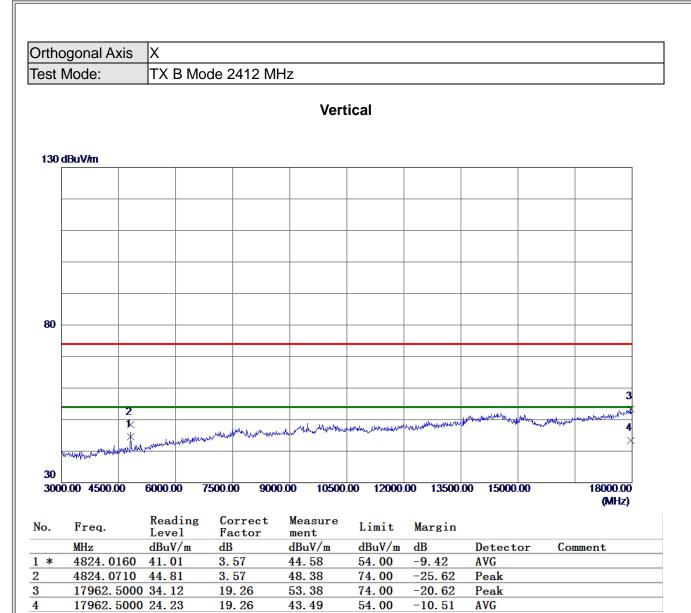






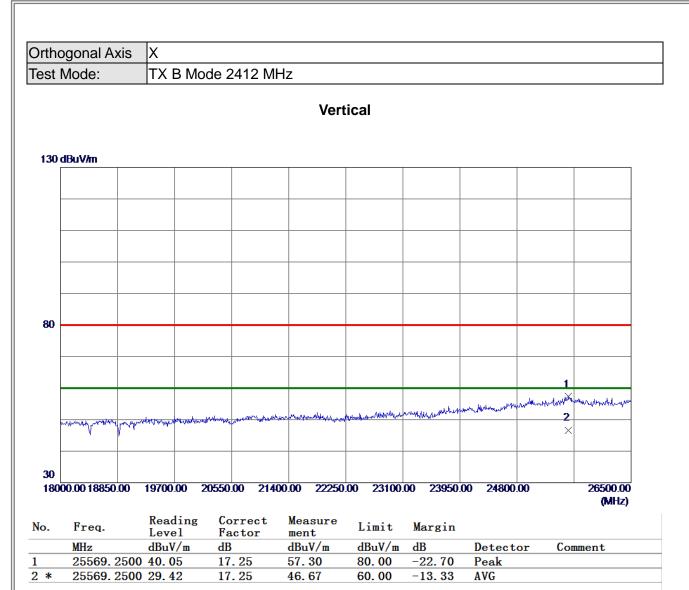






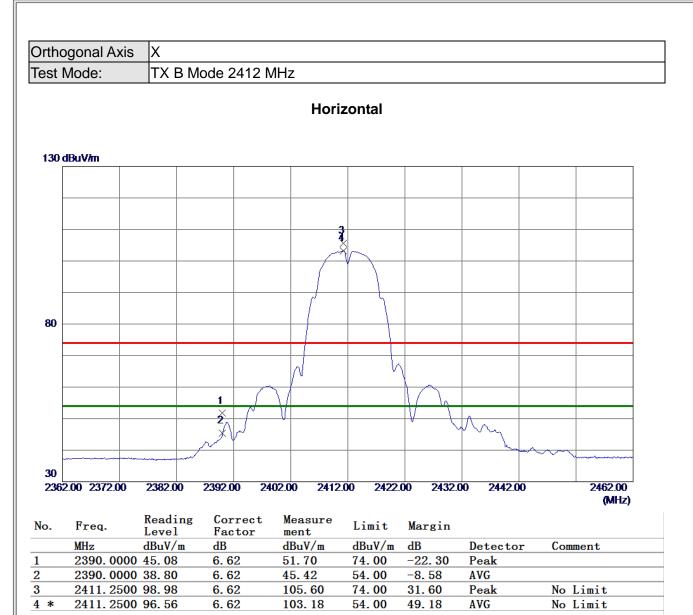






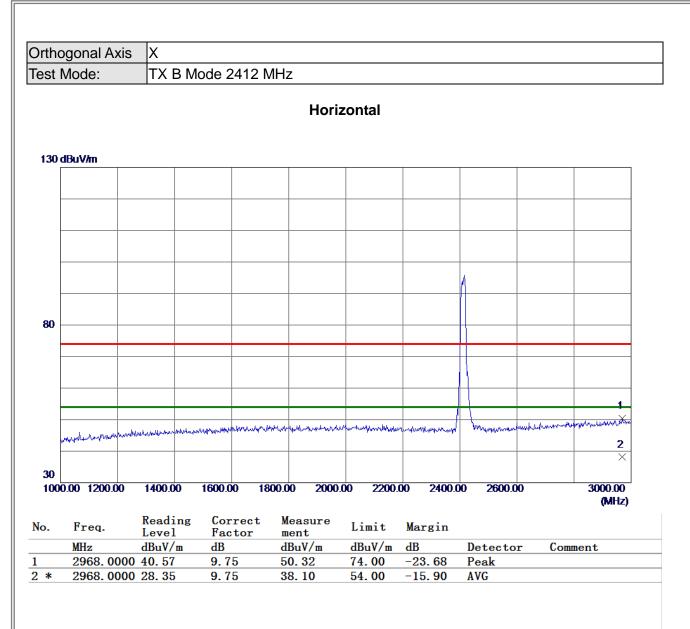






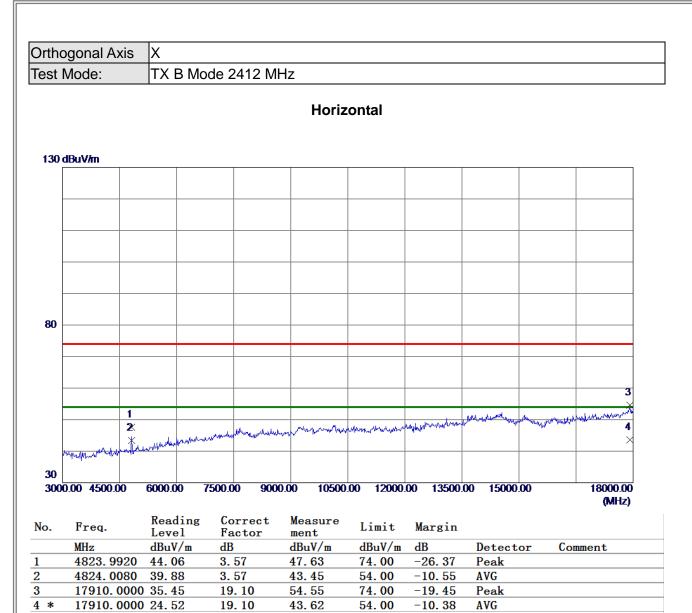






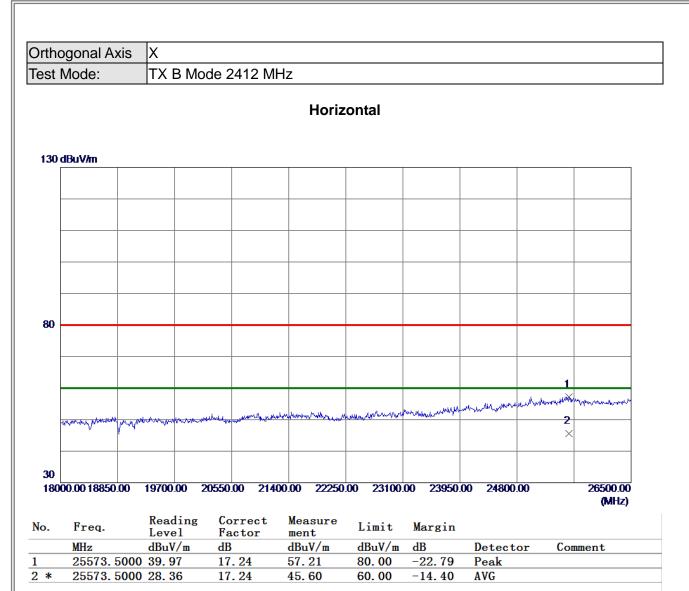






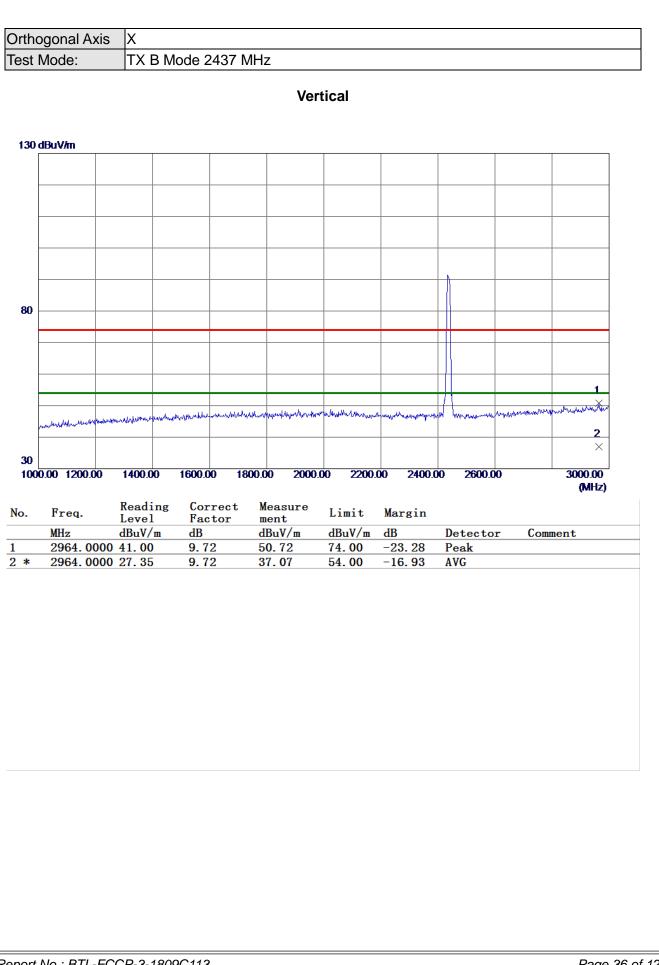








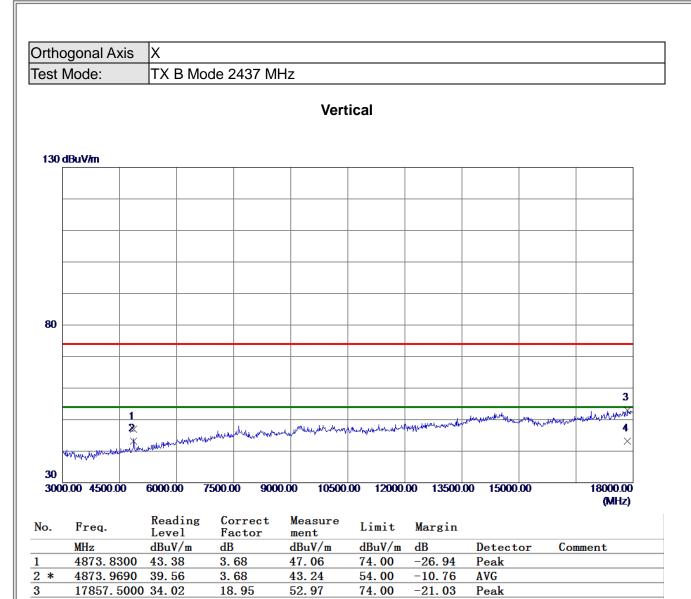






4





17857.5000 24.25

18**. 9**5

43.20

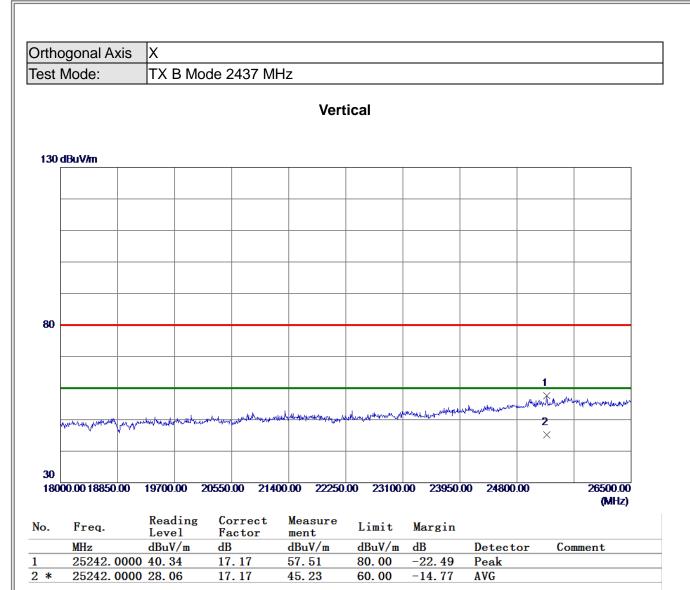
54**. 00**

-10.80

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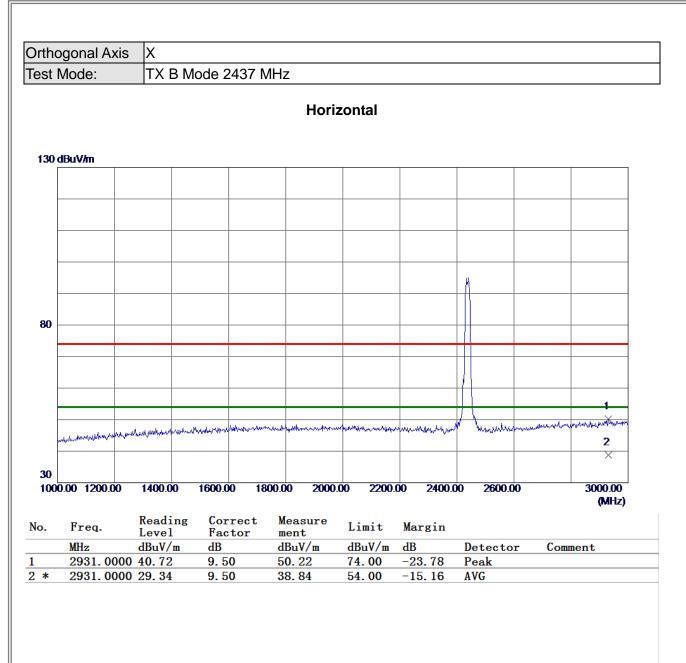






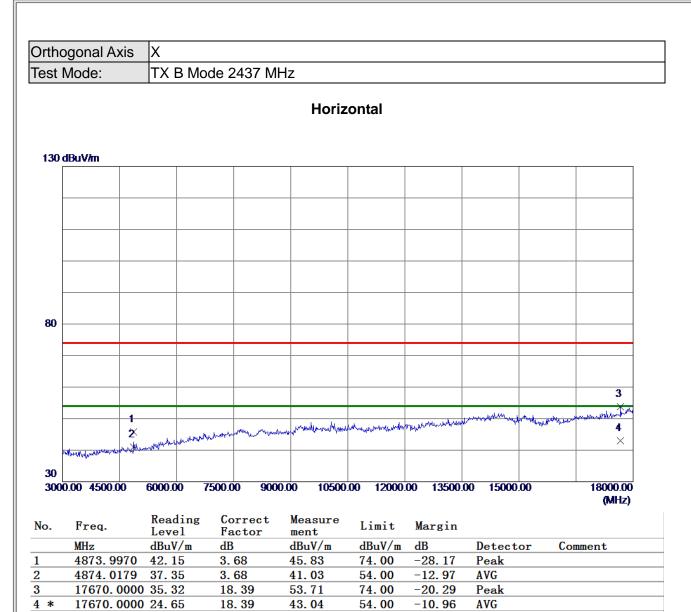






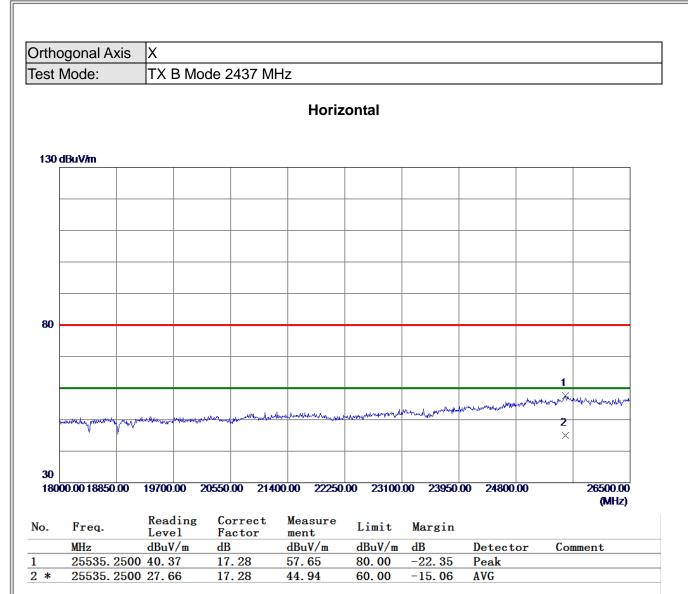






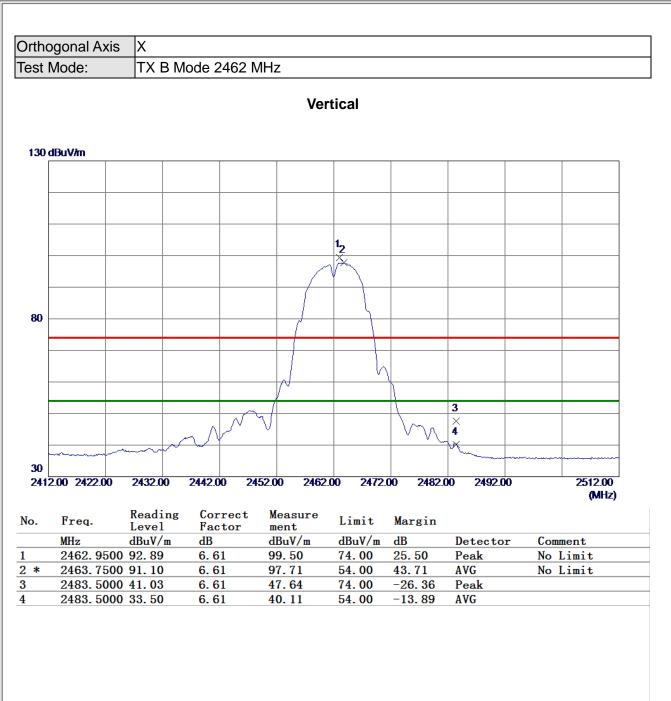






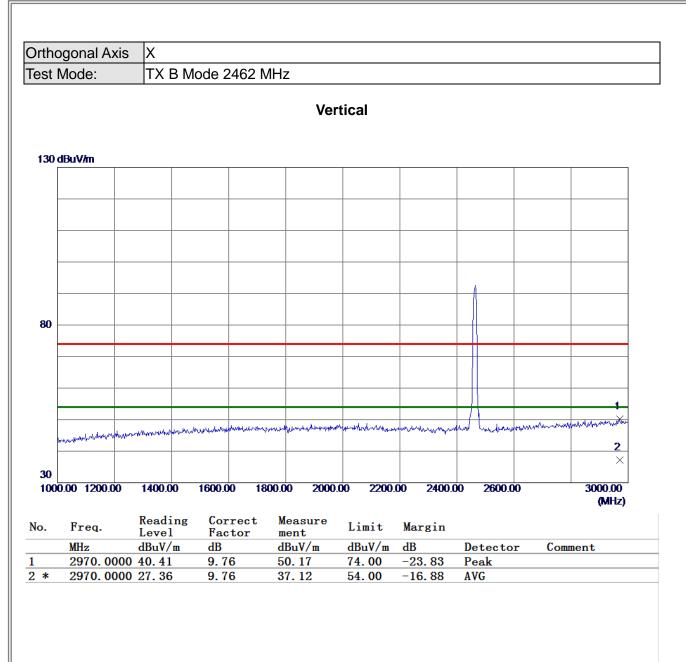








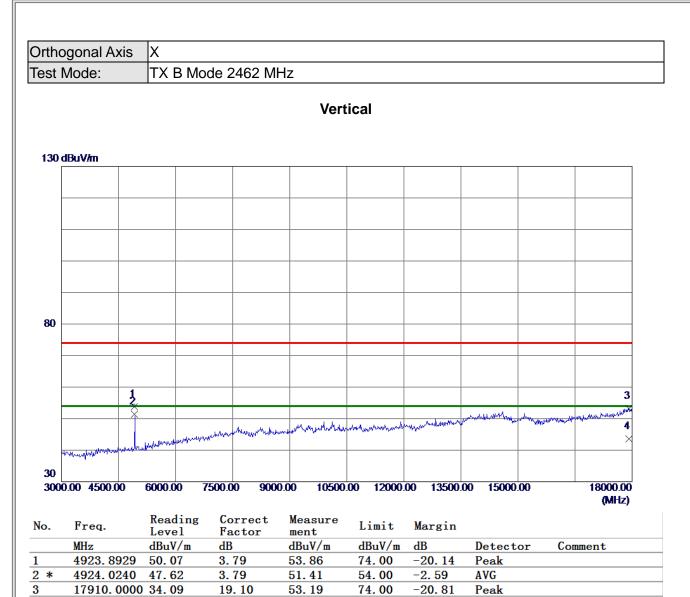






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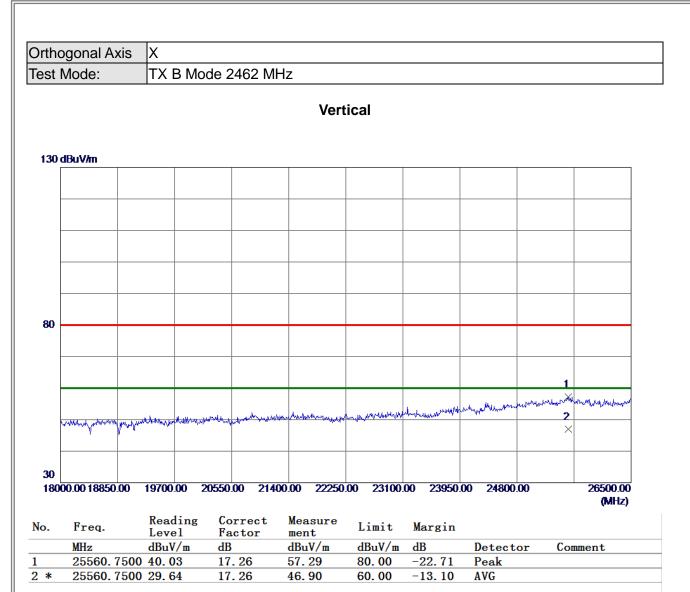
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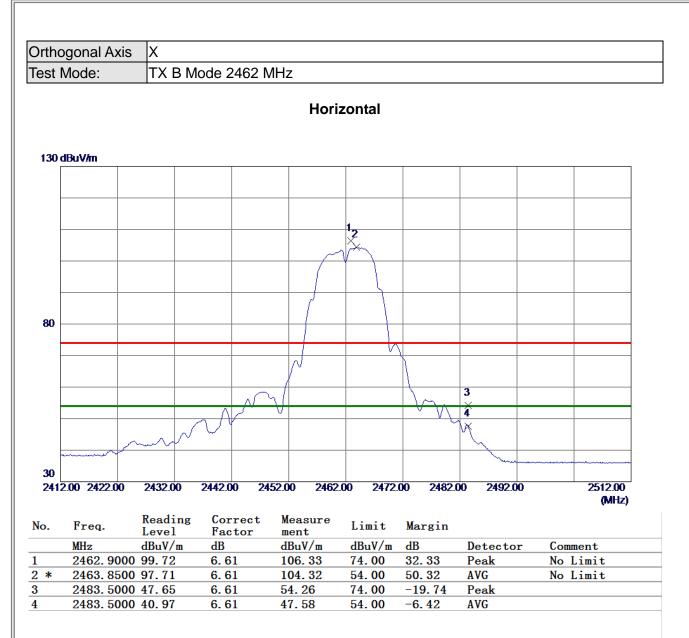






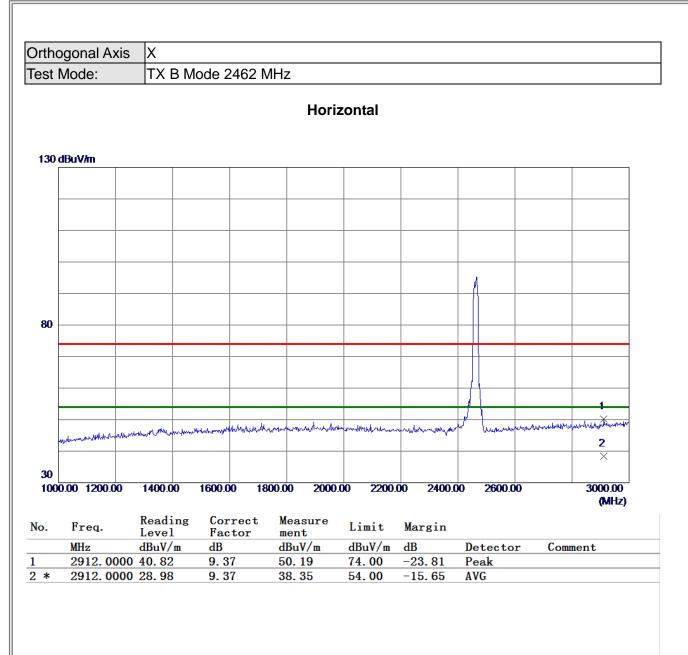






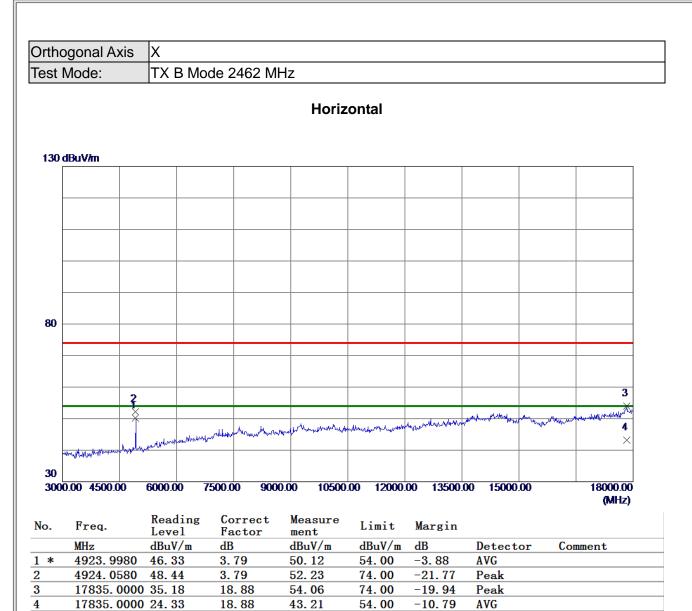








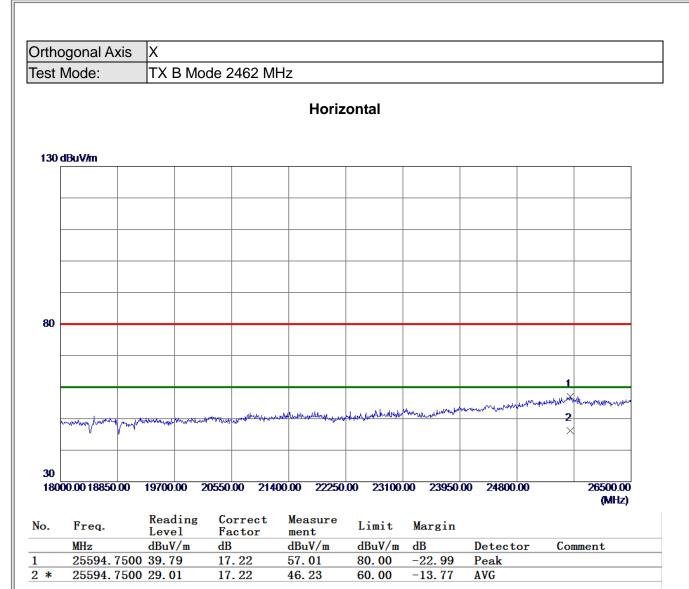




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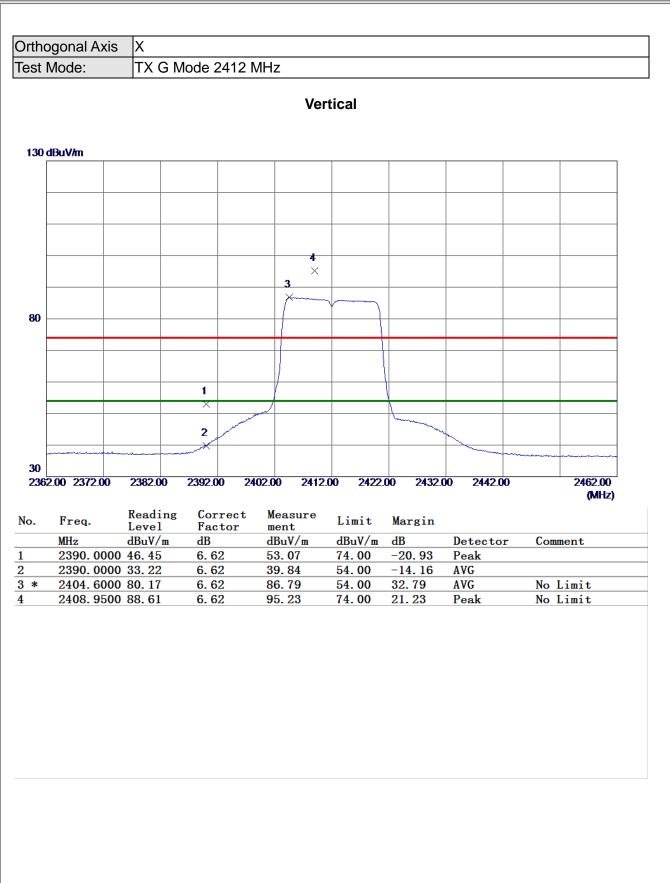






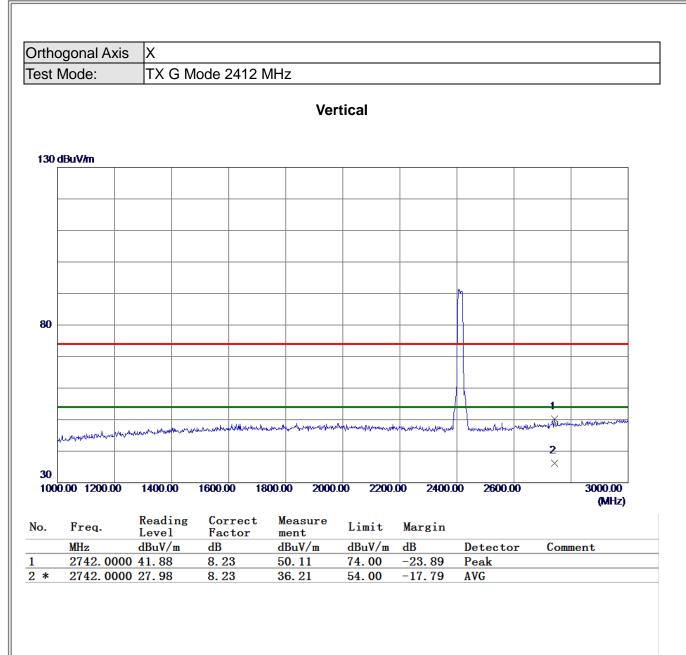






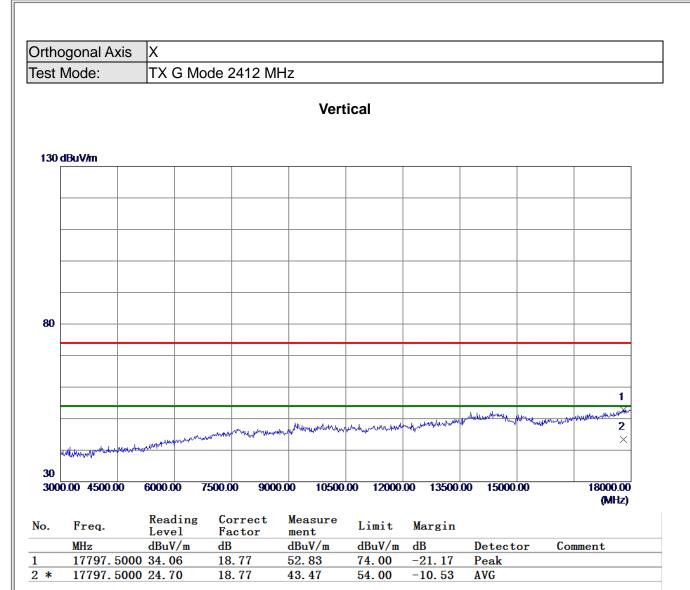






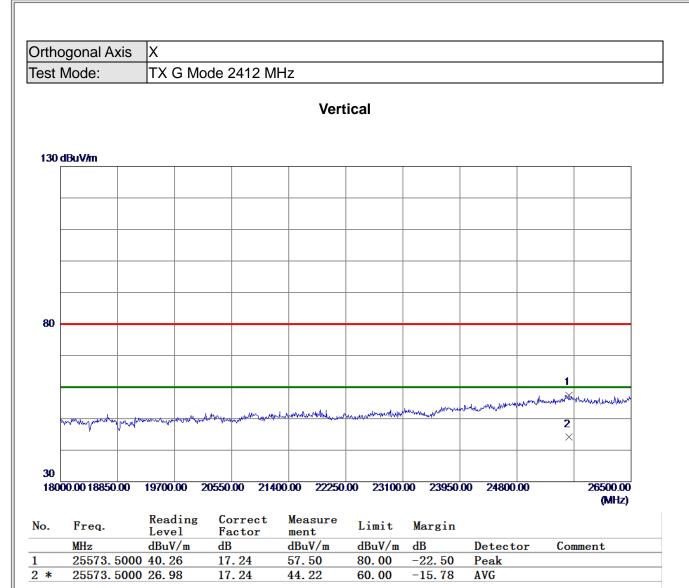












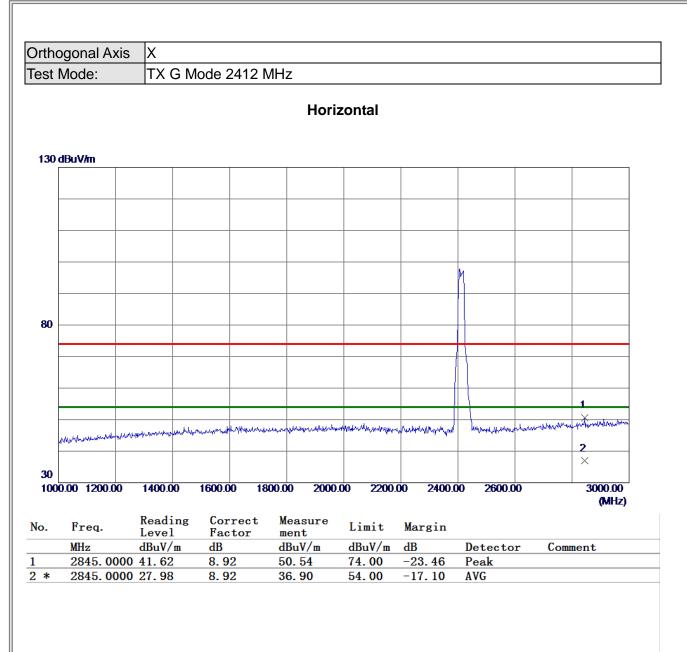






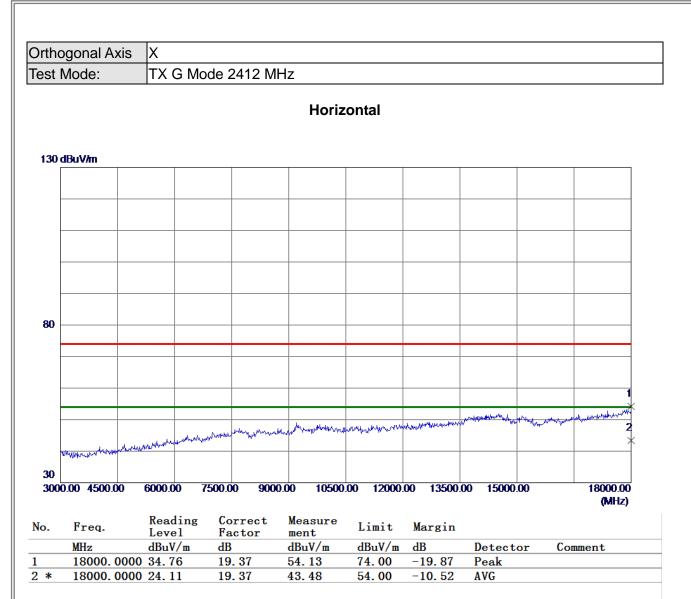






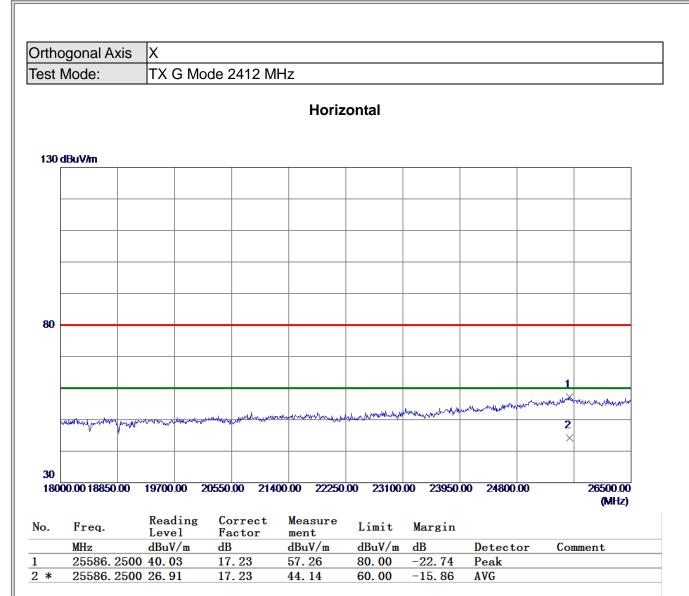






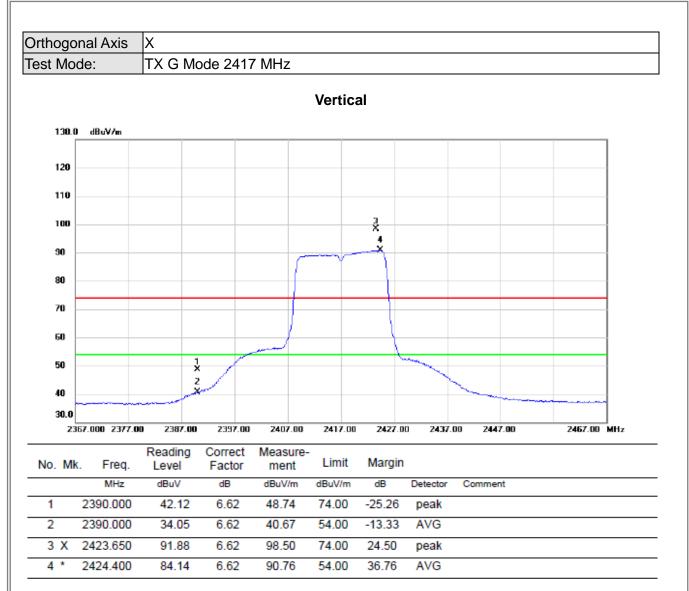






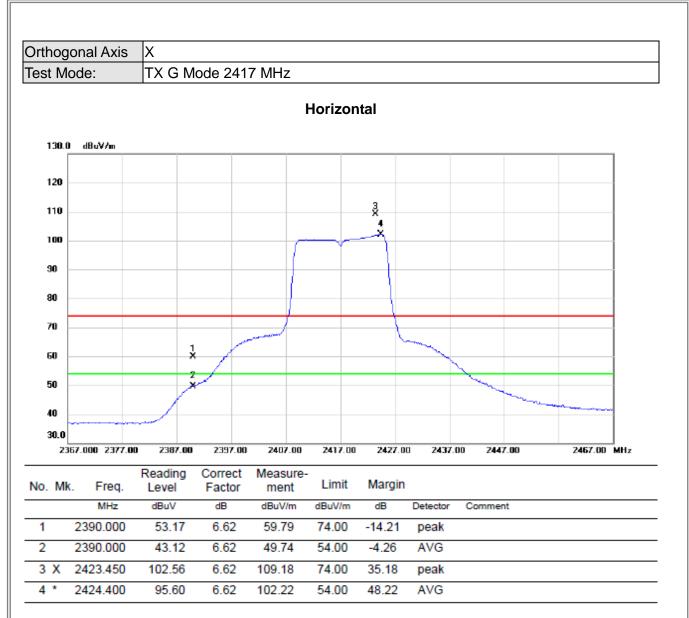






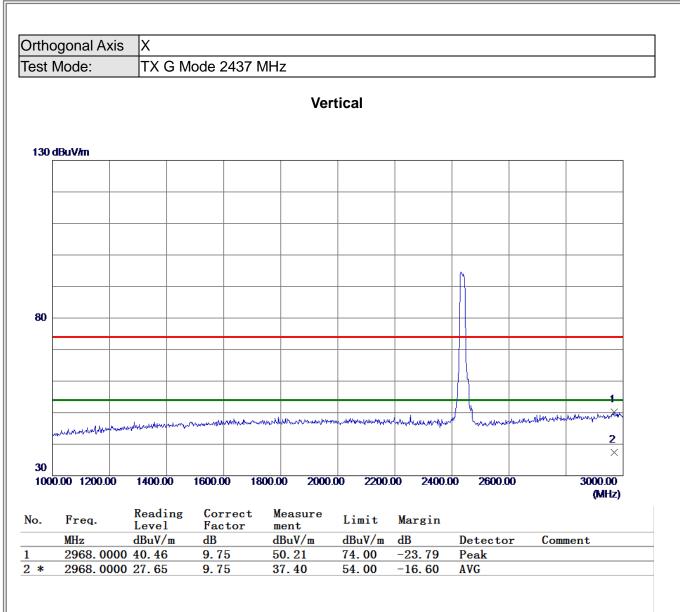






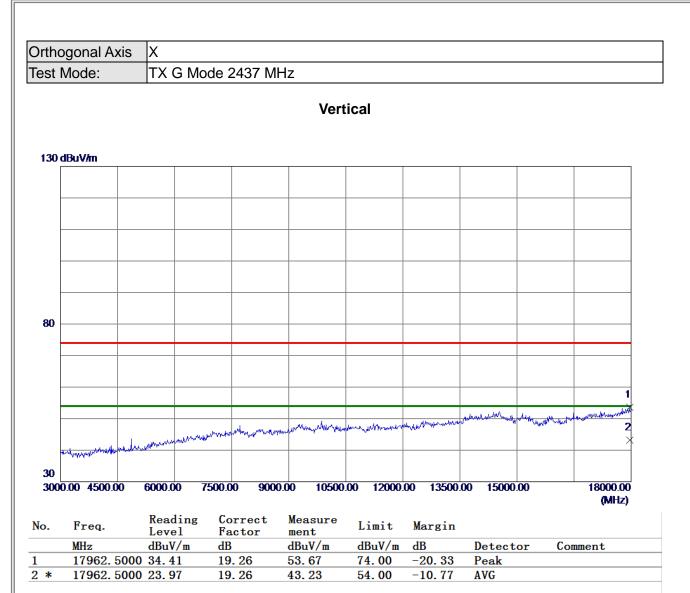






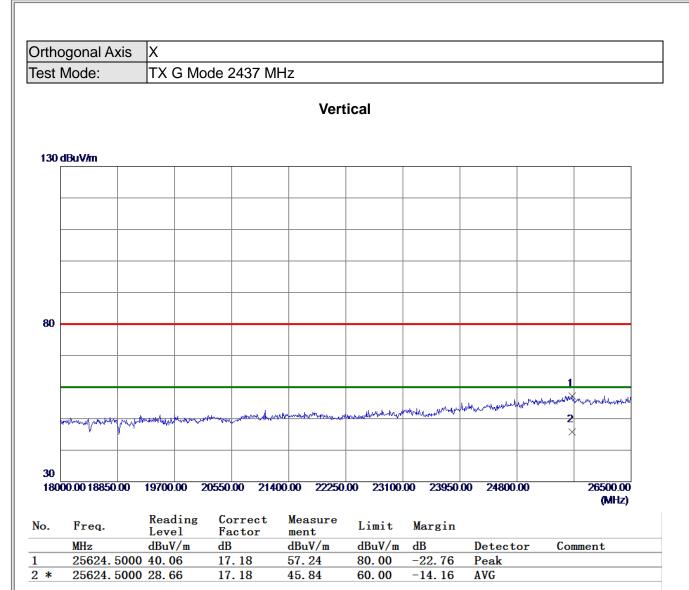






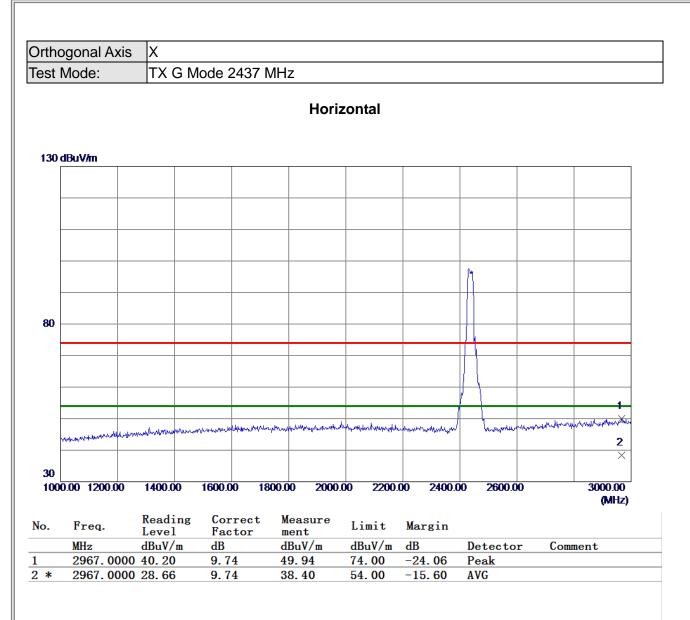






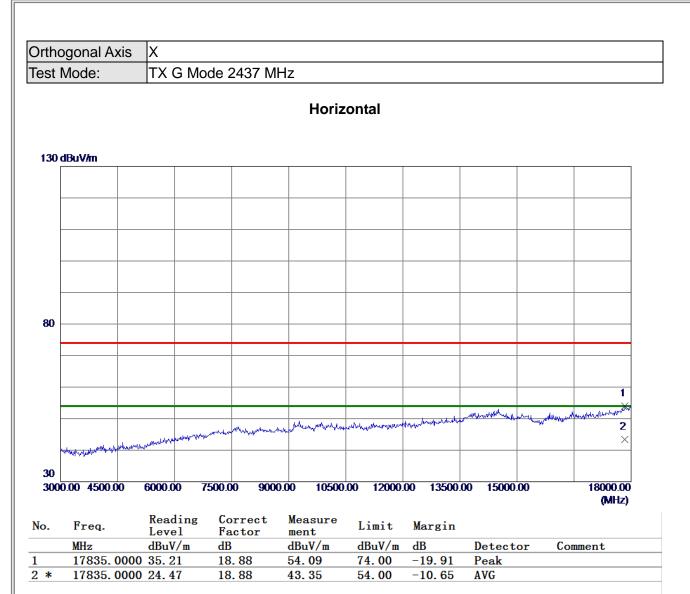






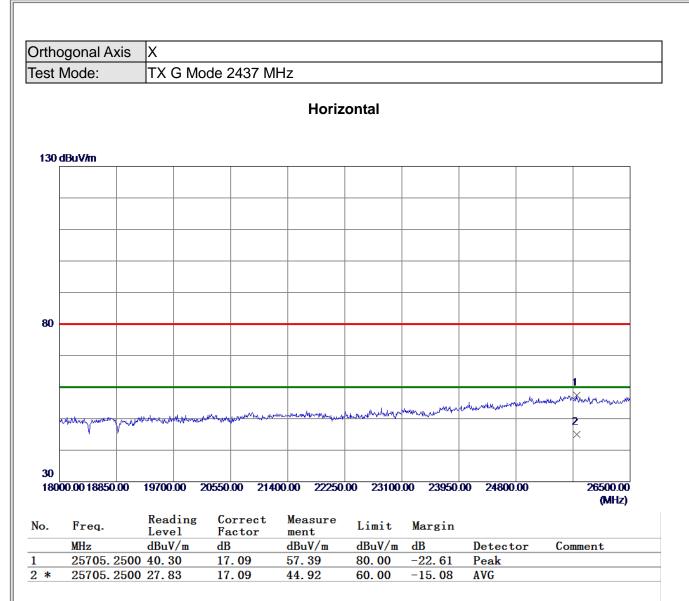






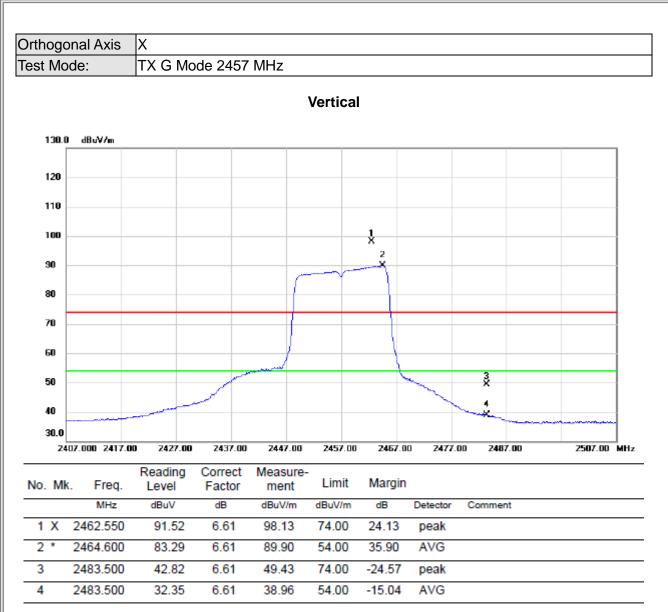






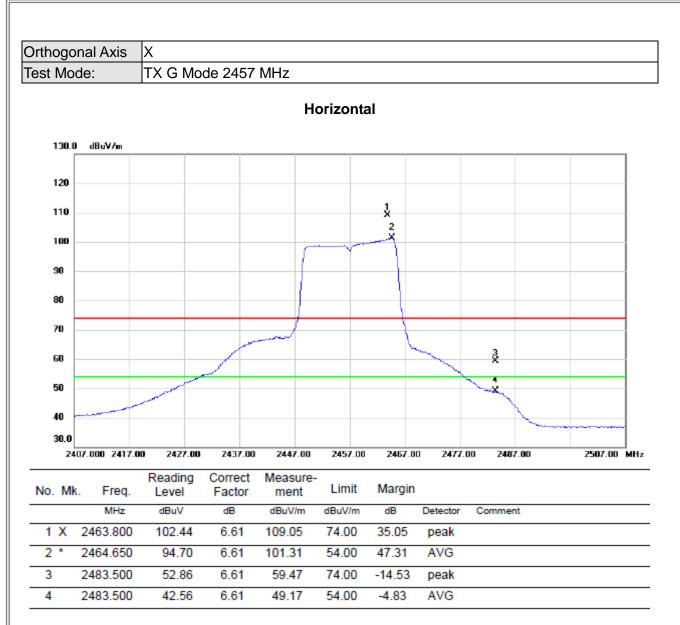






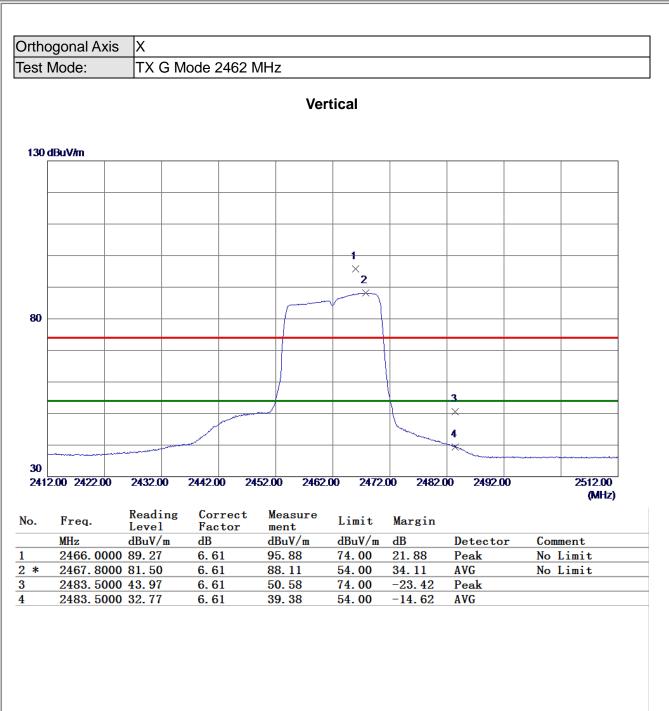






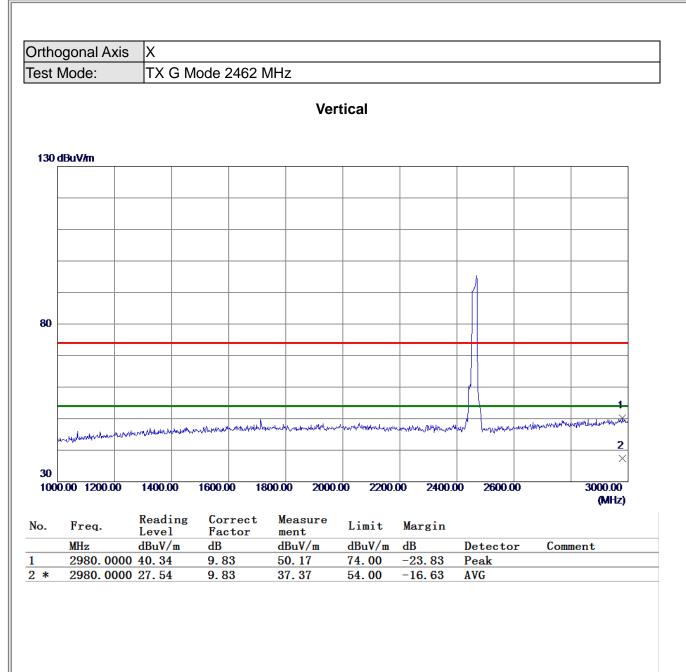






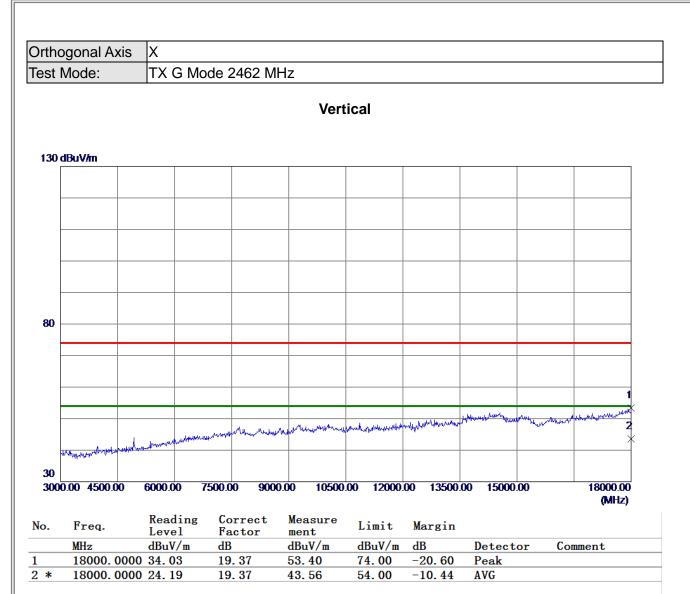






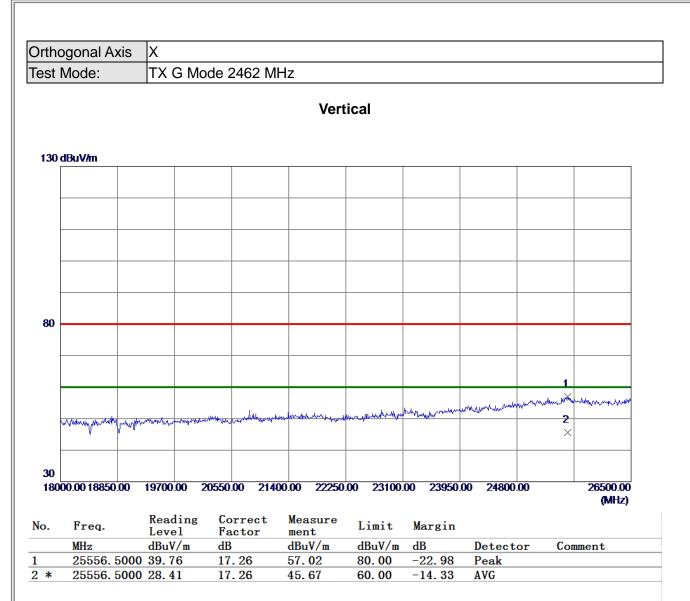






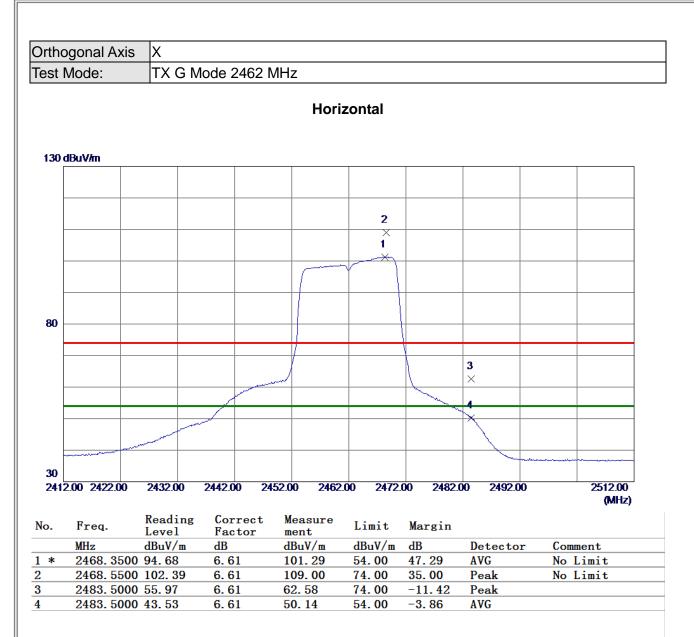






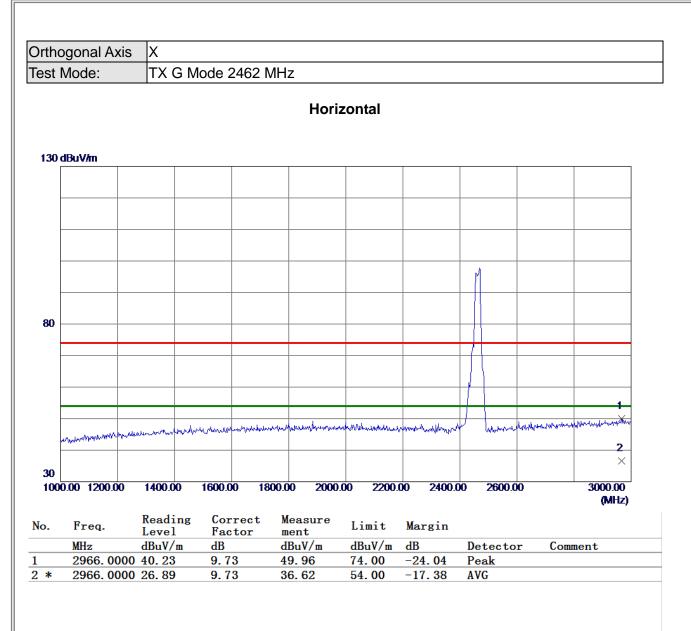






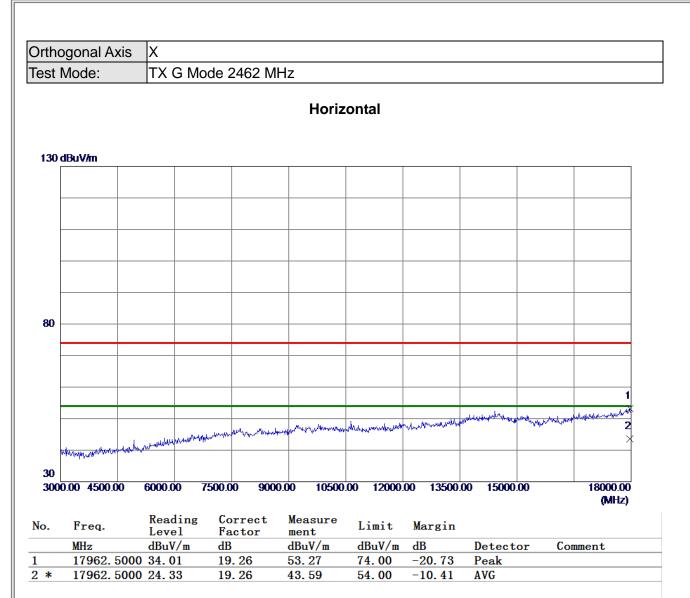






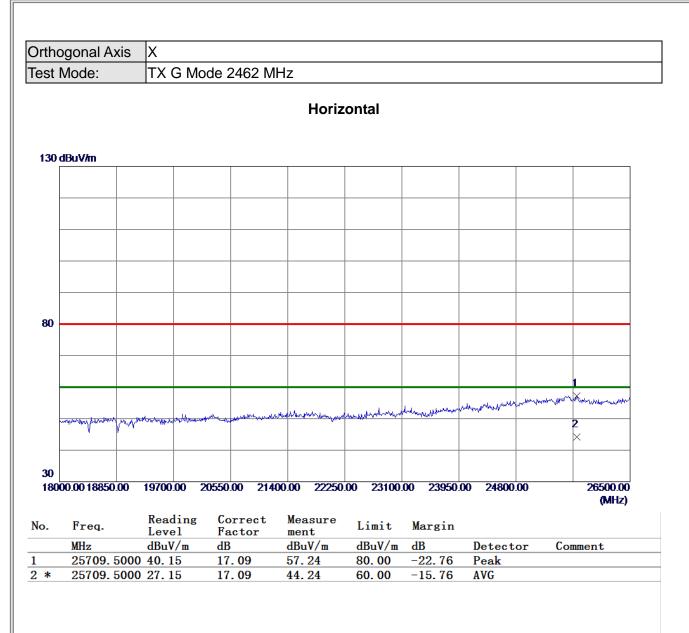






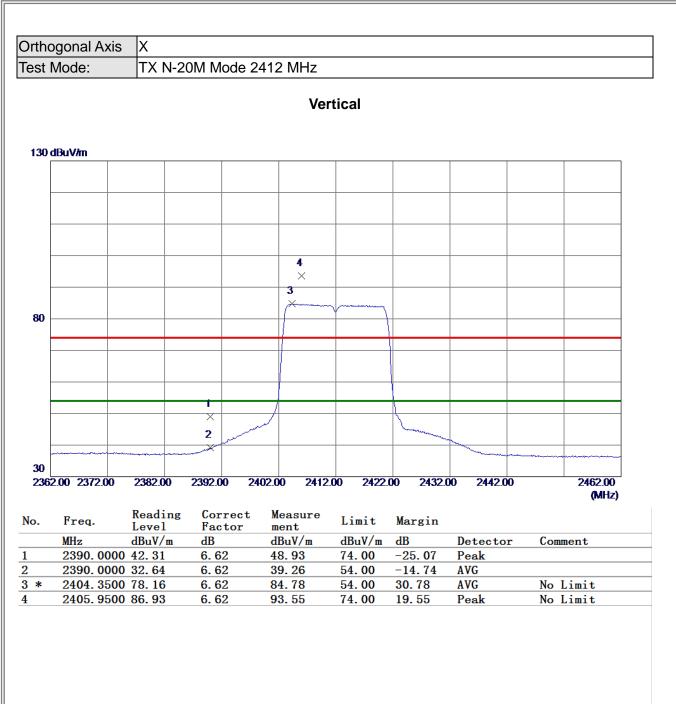






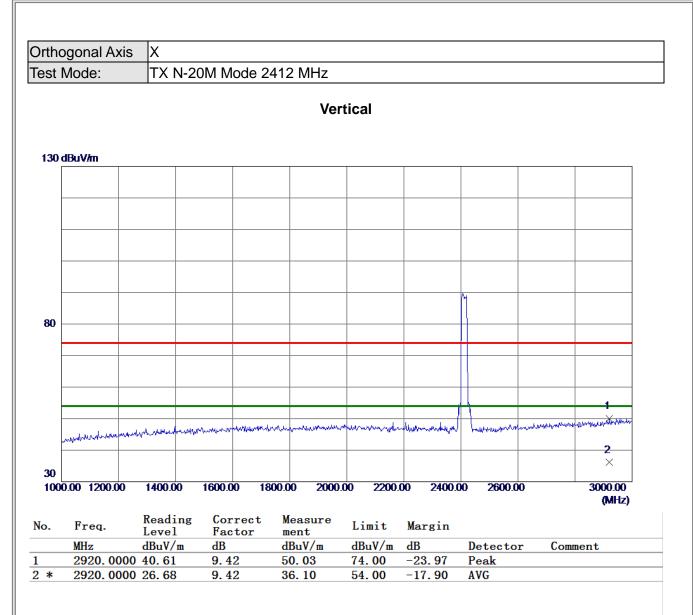






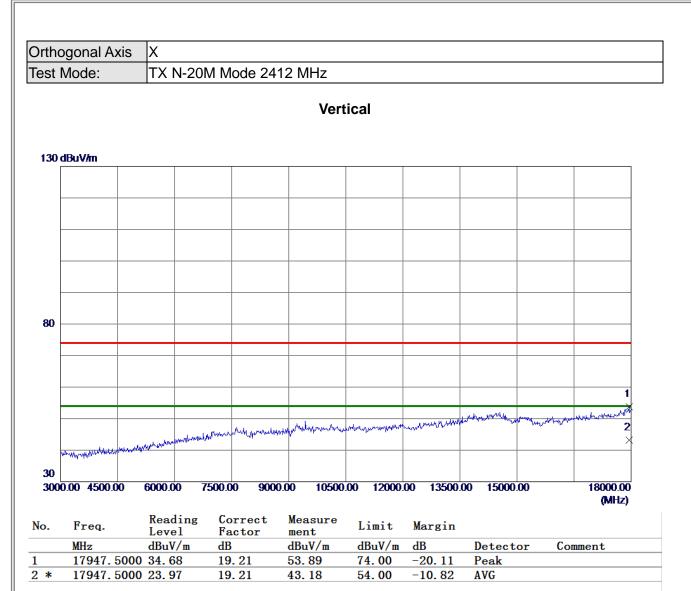






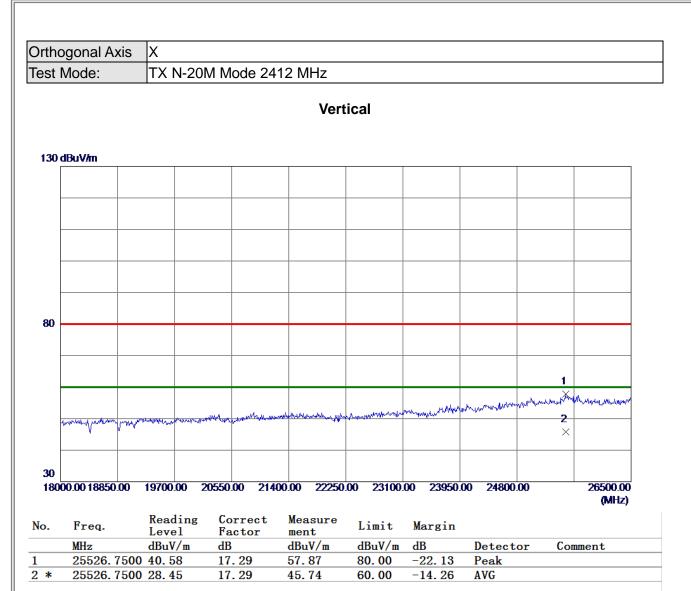






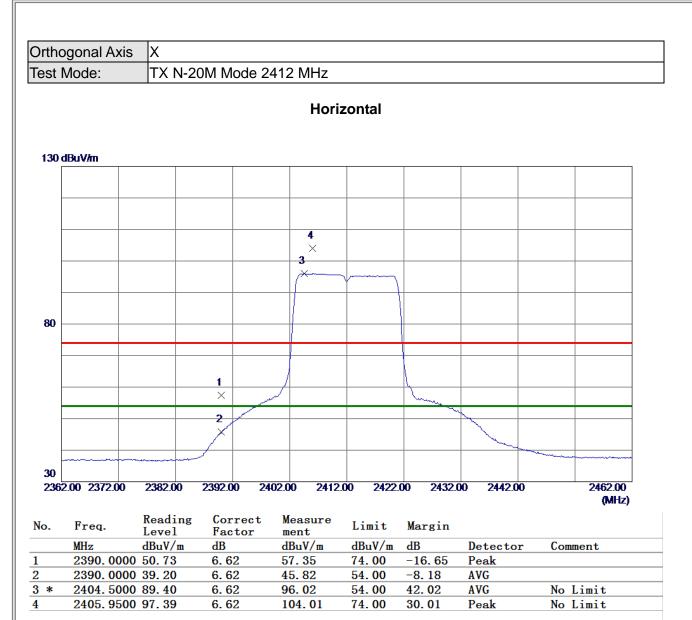






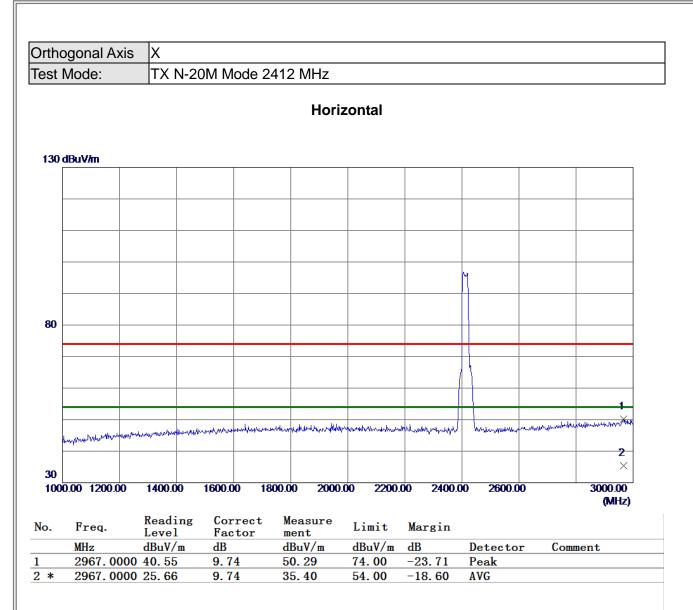






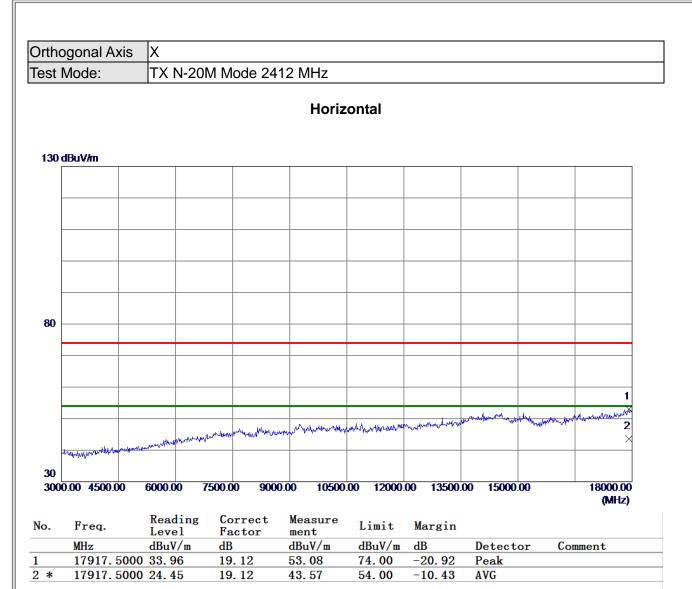






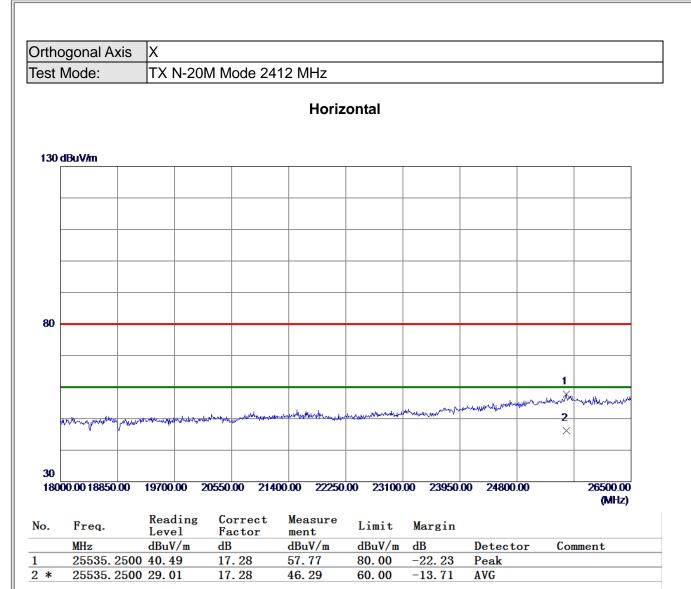






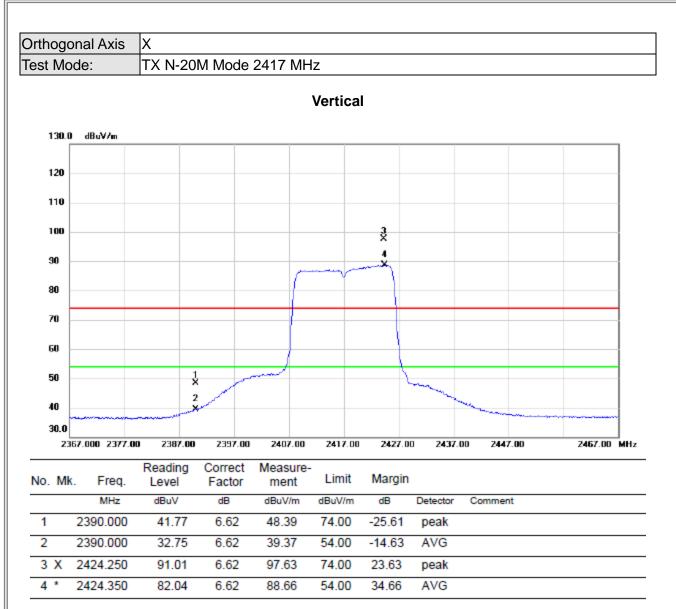






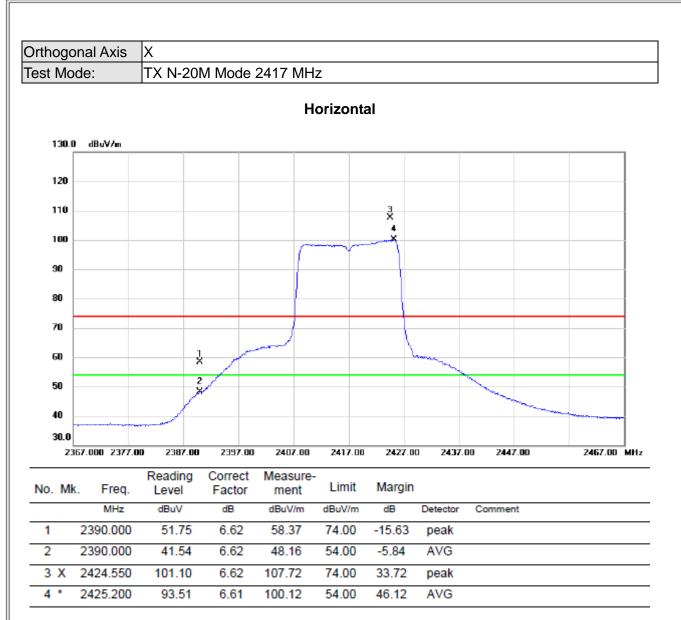






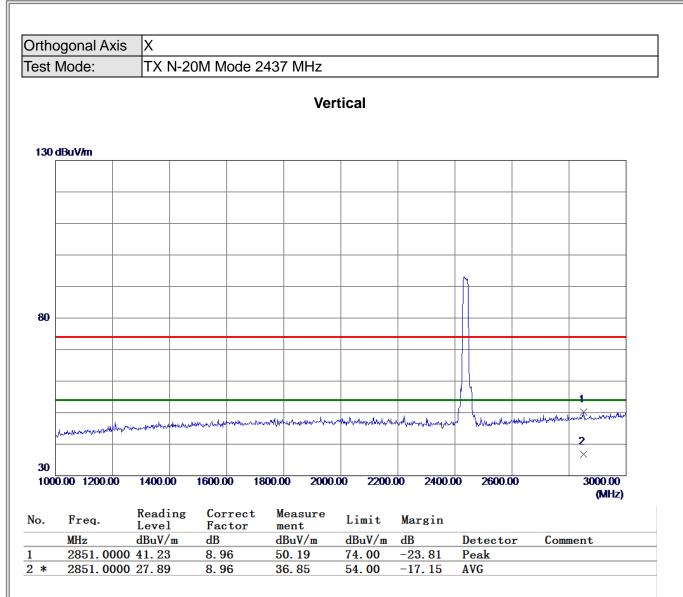






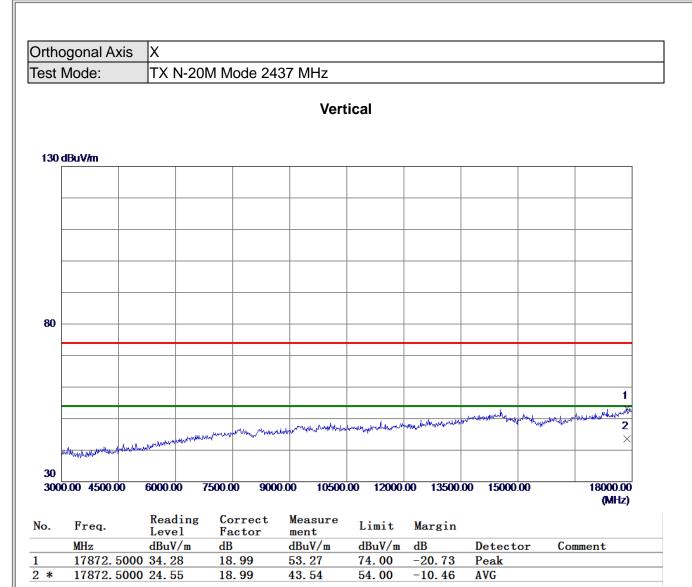






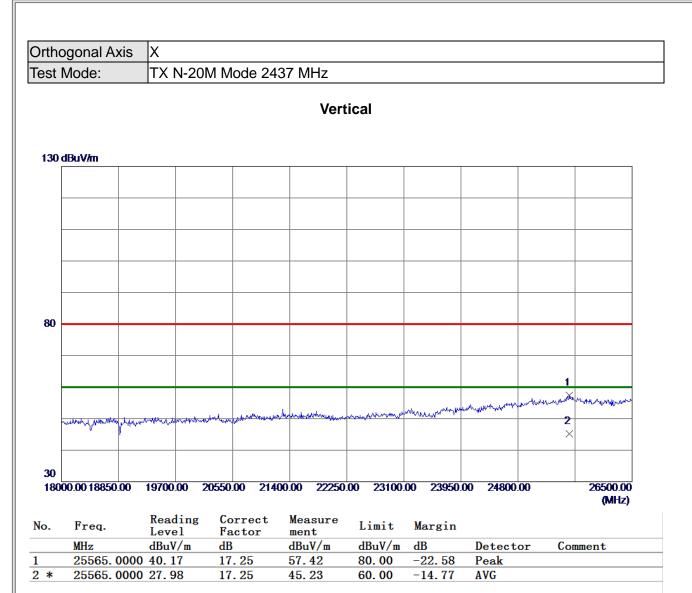






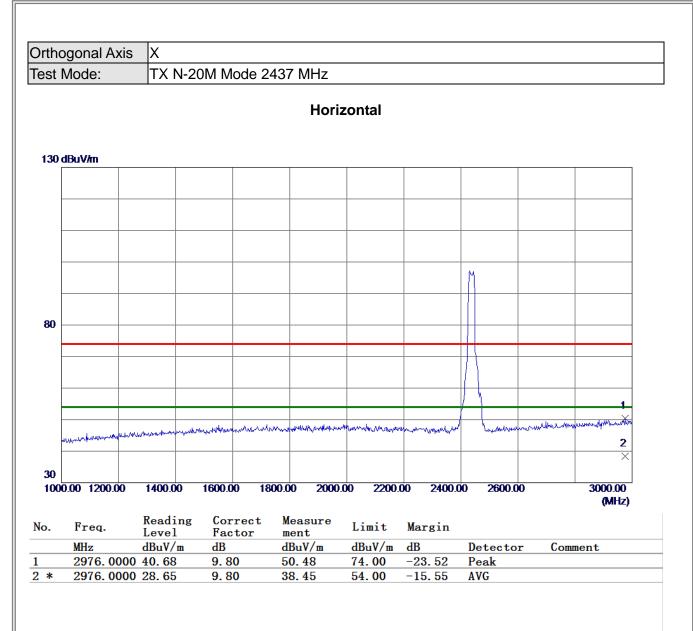






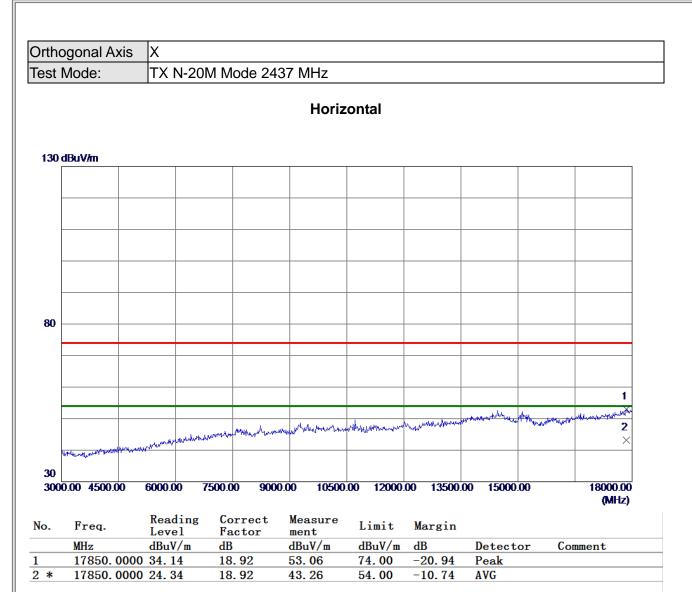






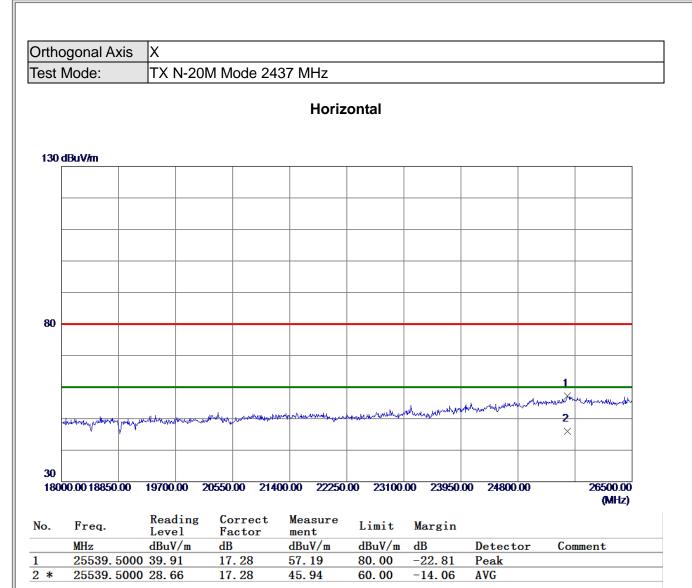






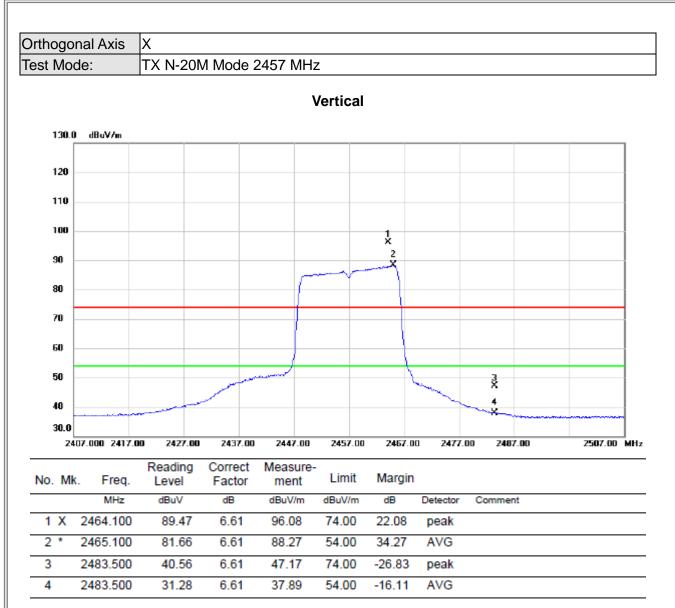






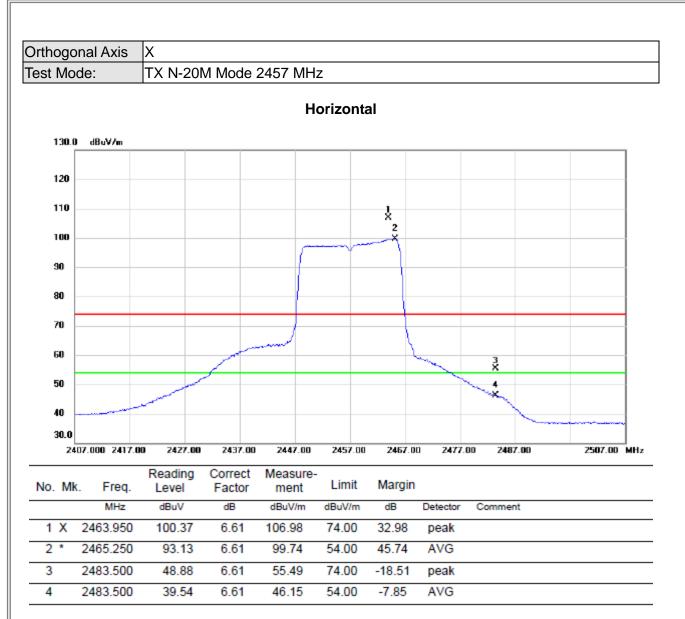






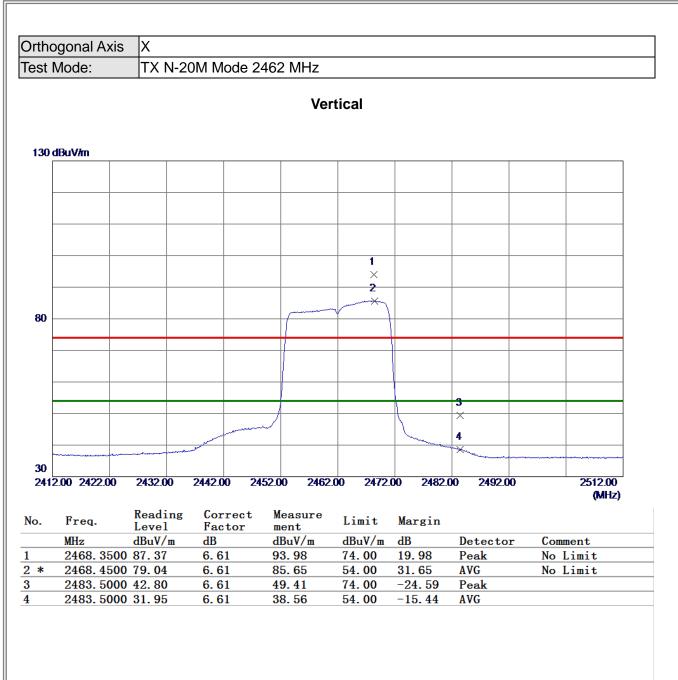






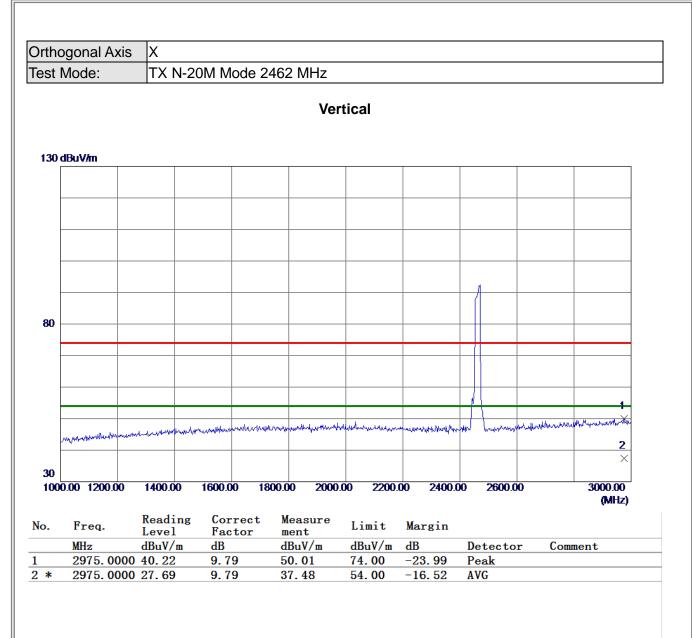






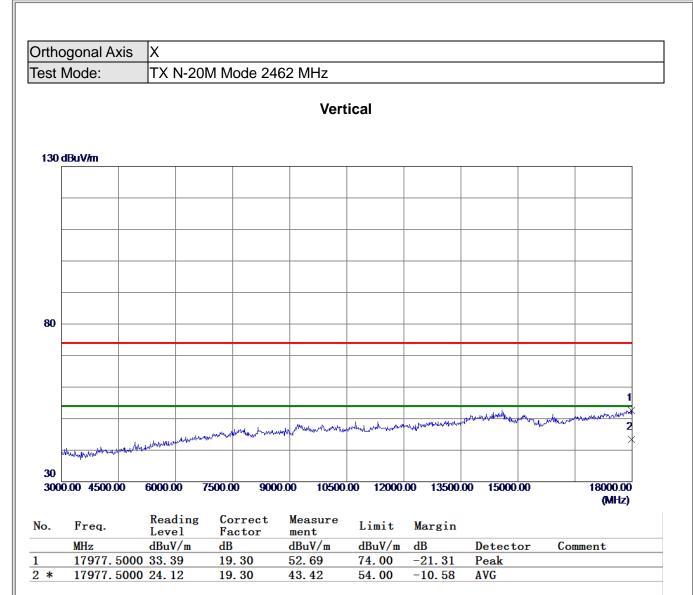






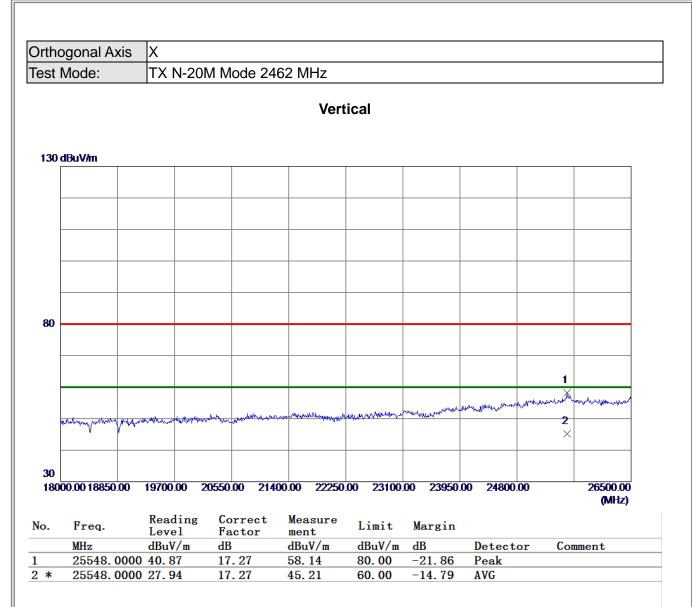






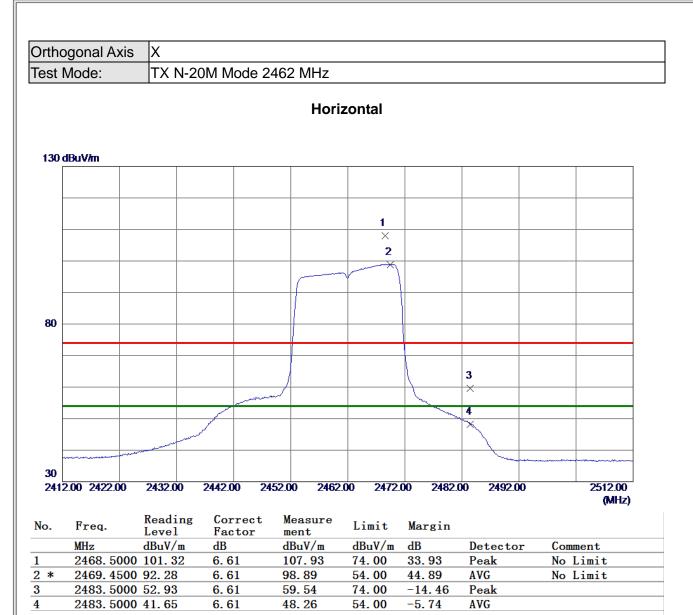






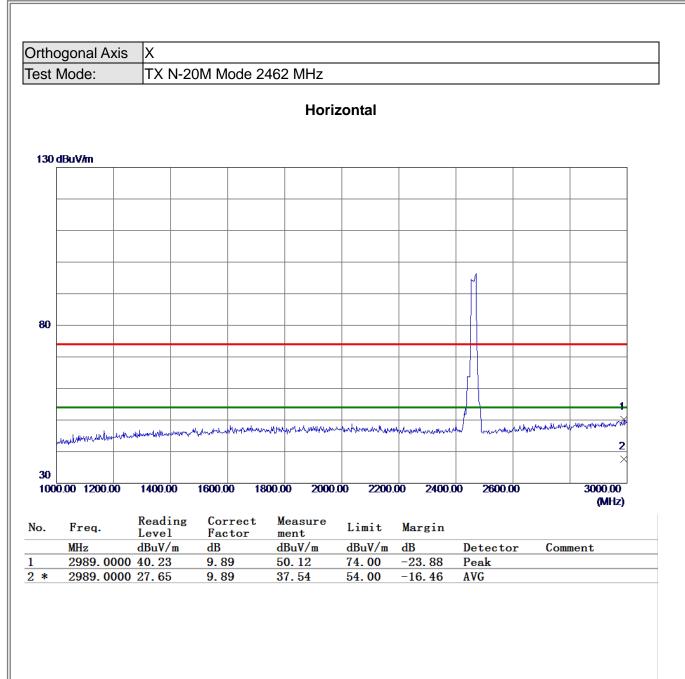






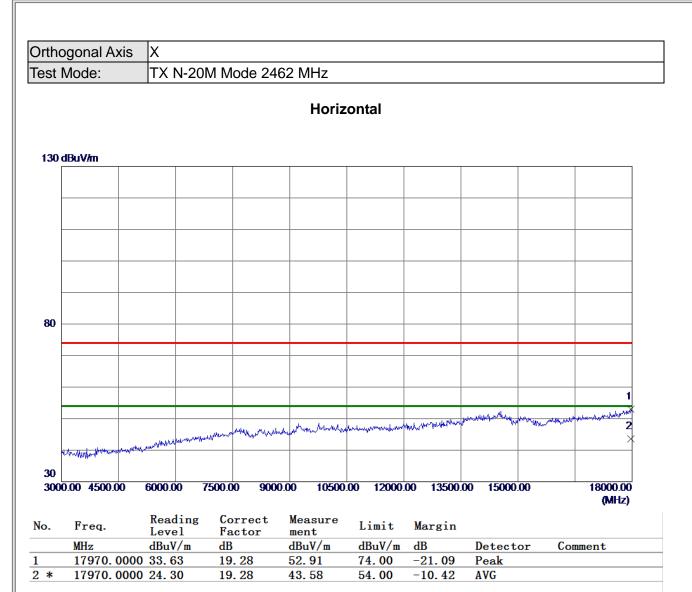






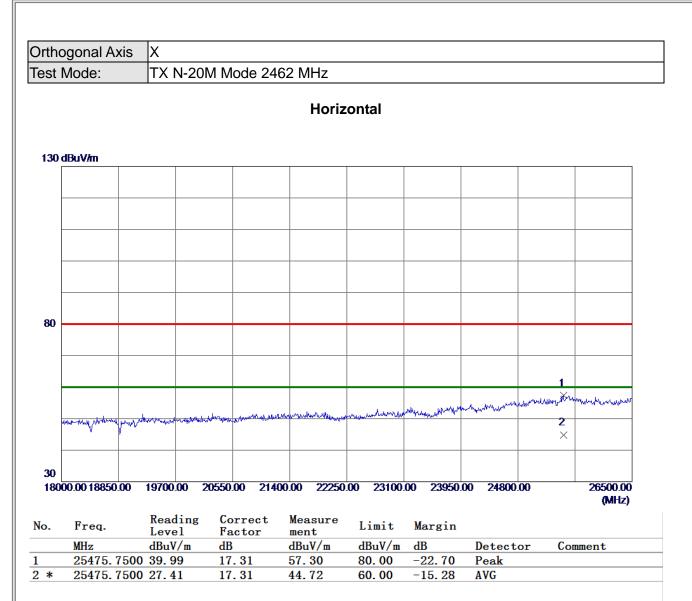






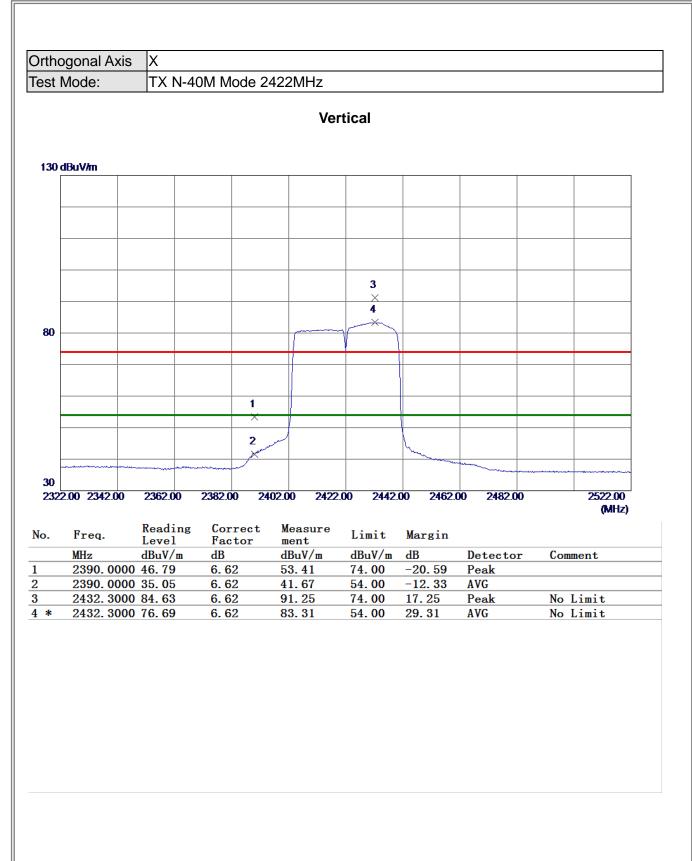






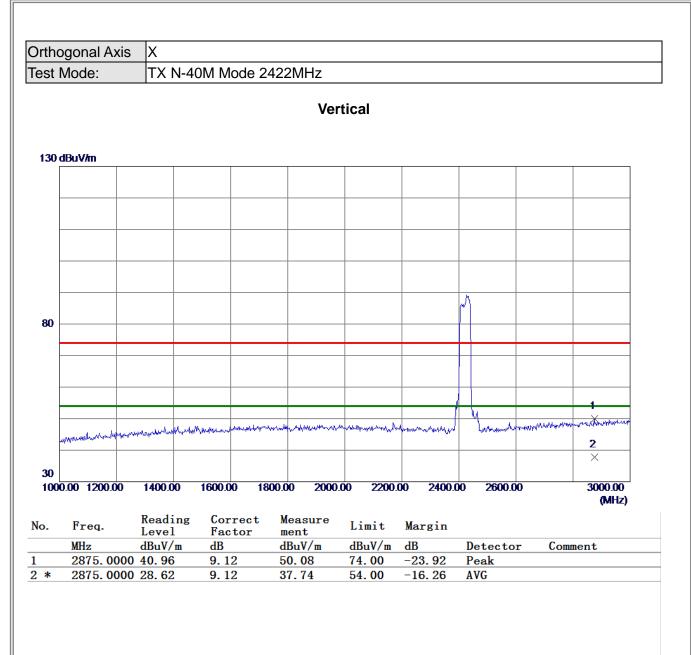






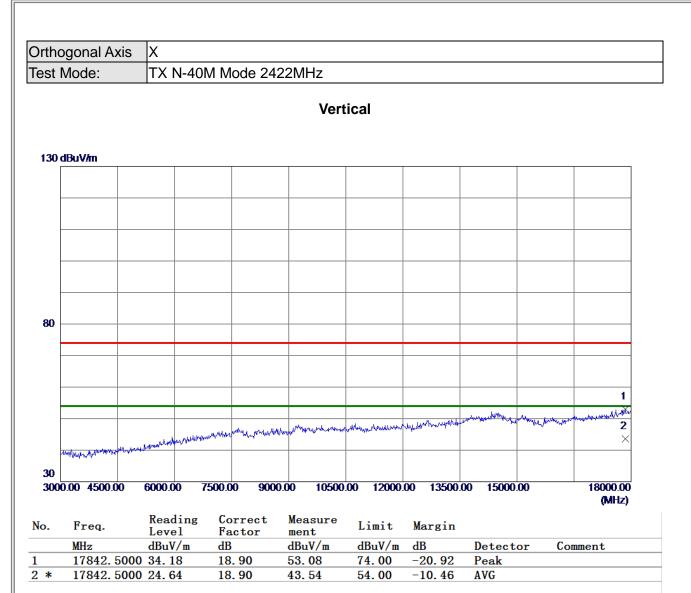






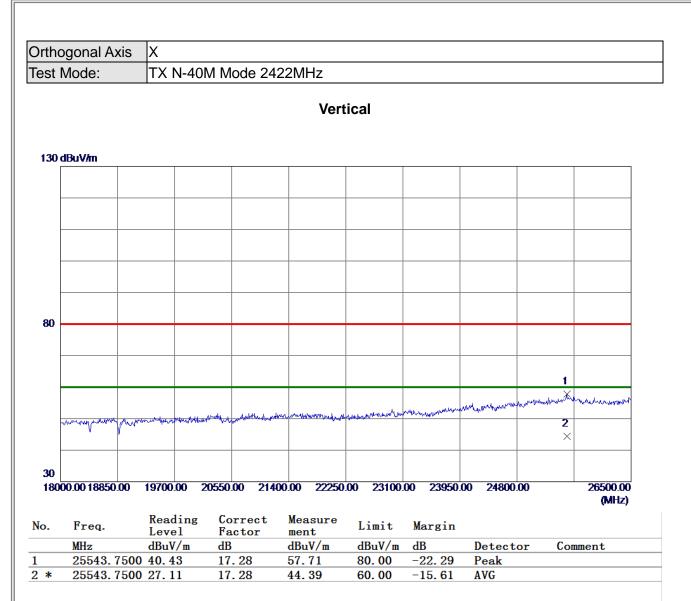






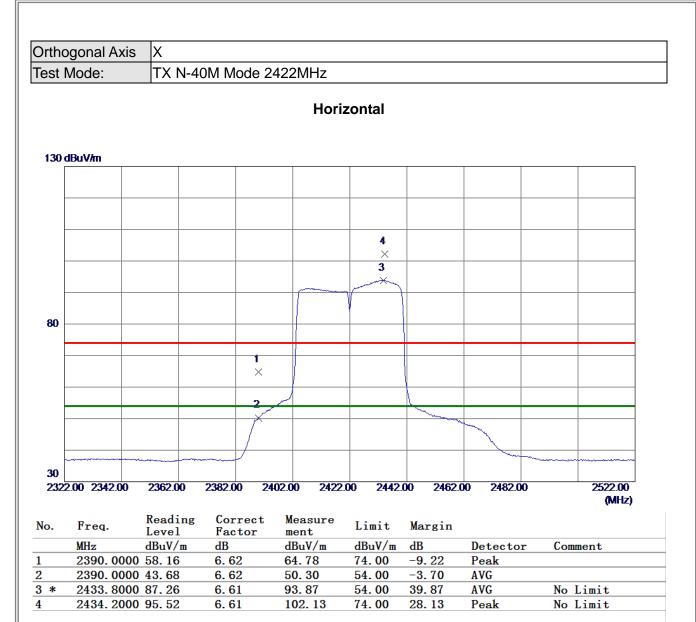






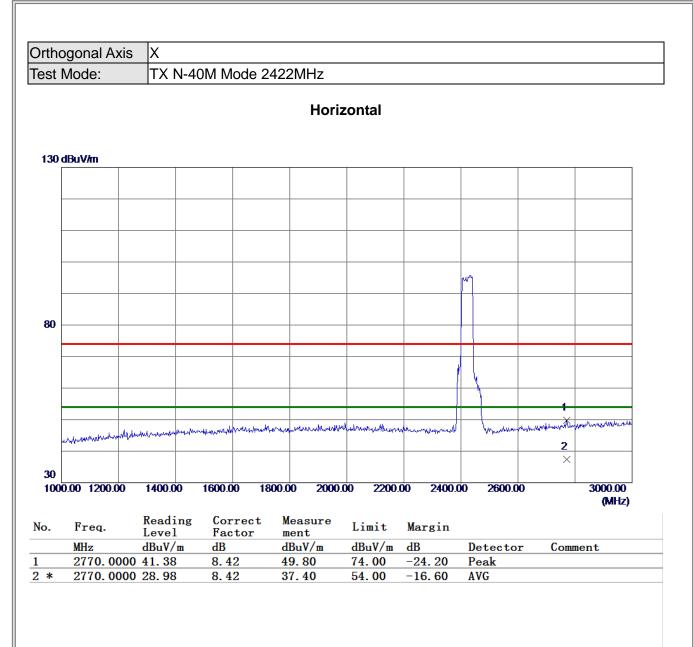






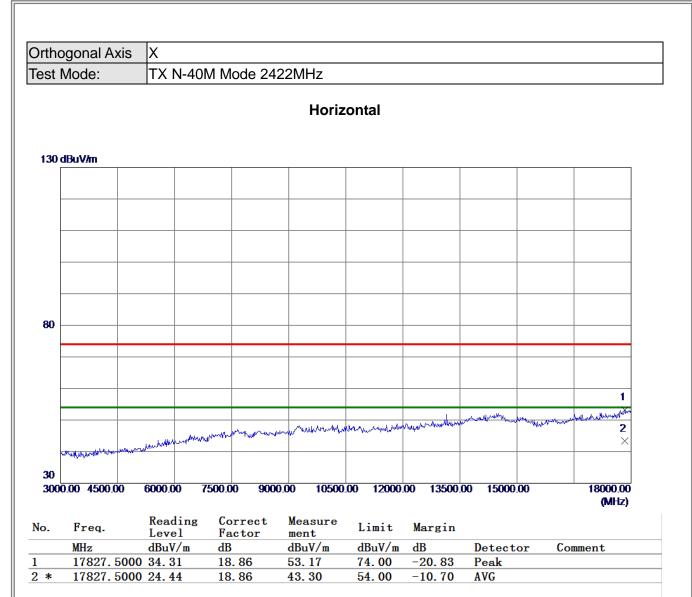






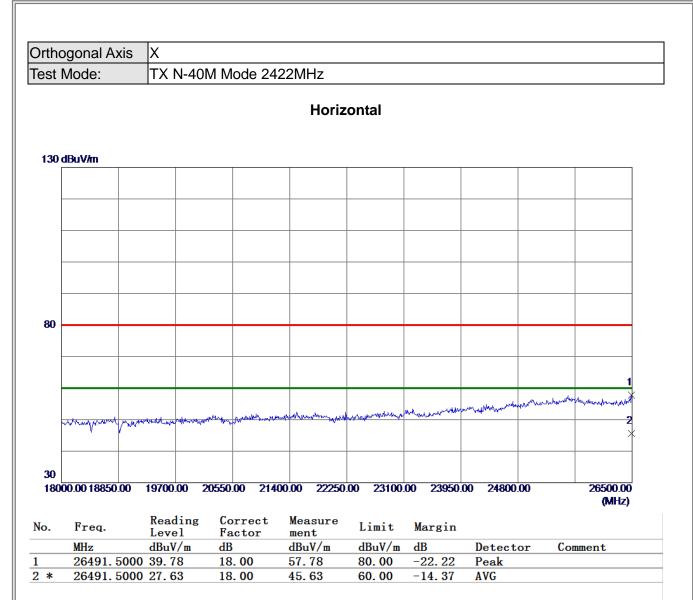






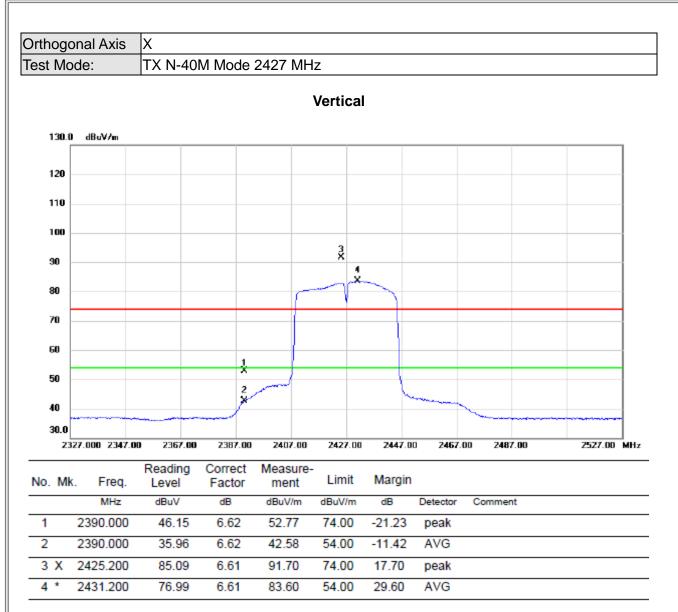






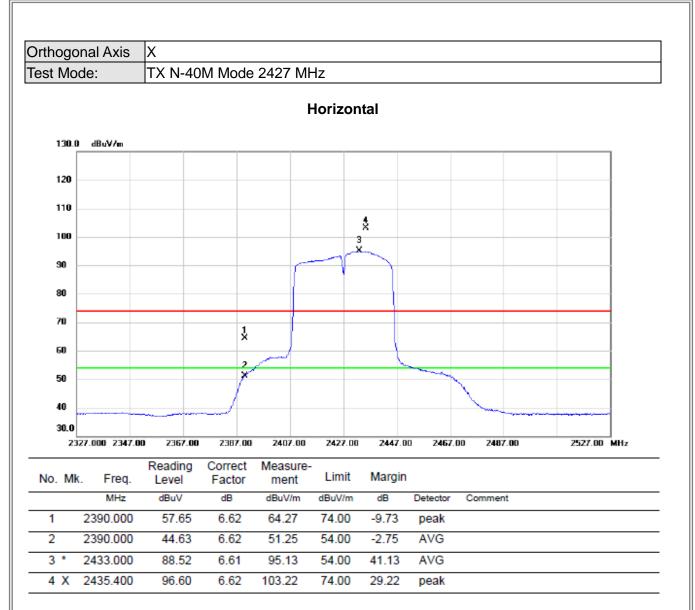






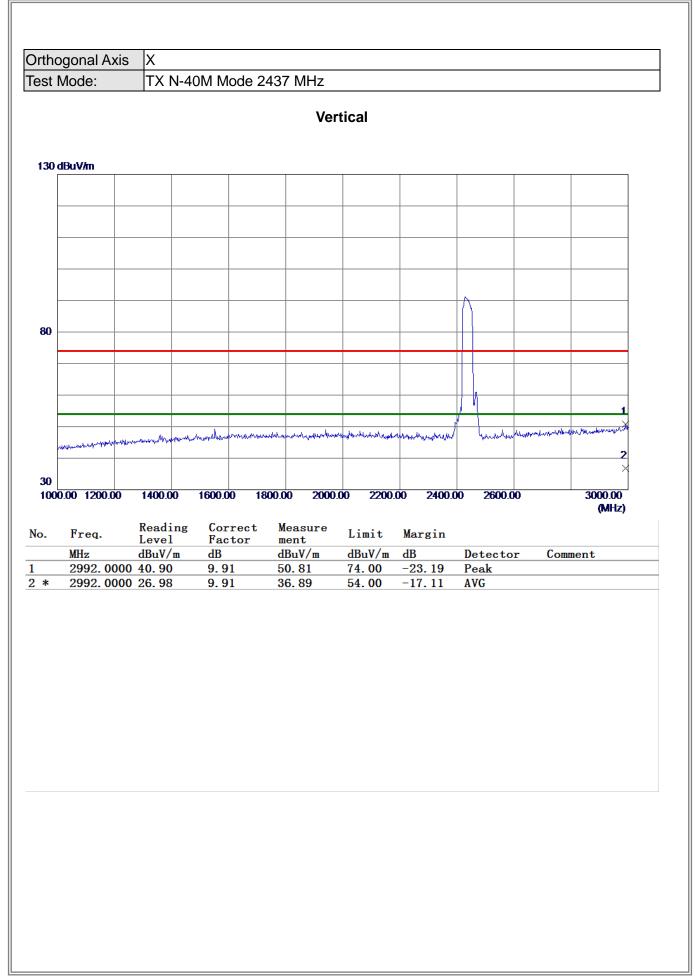






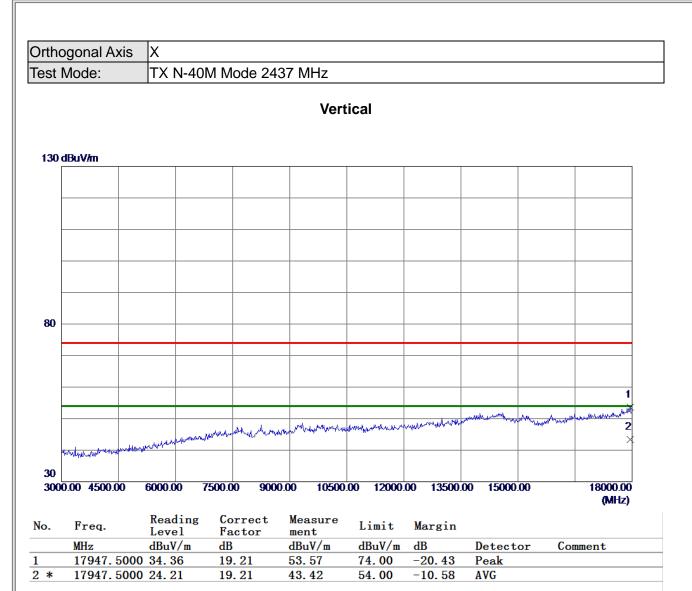






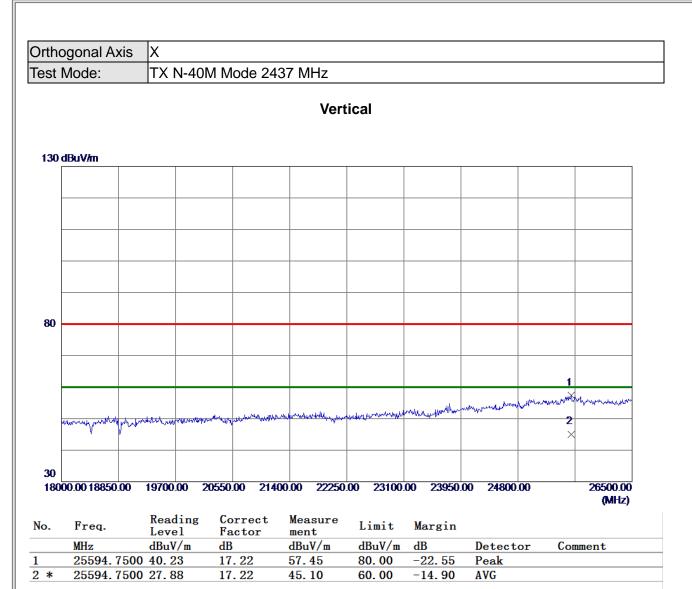






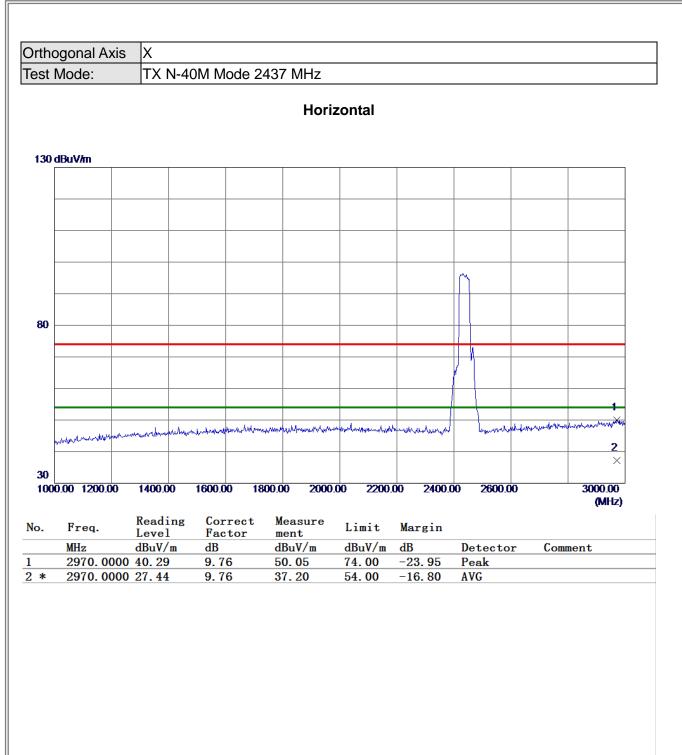






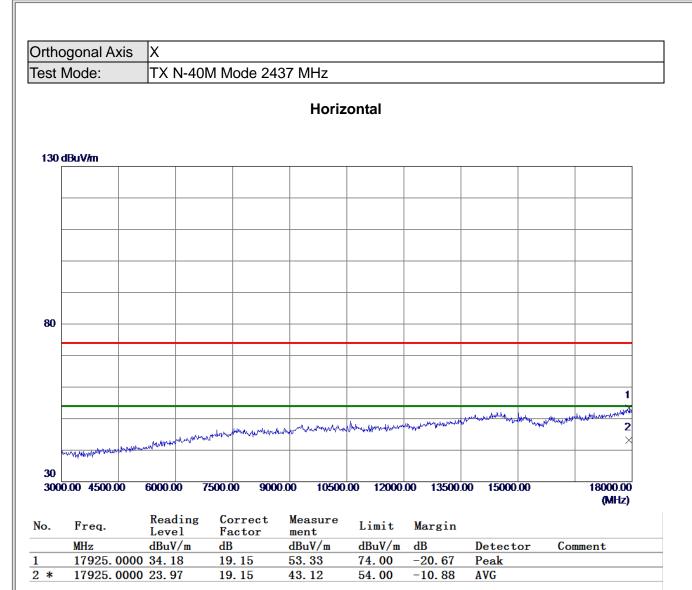






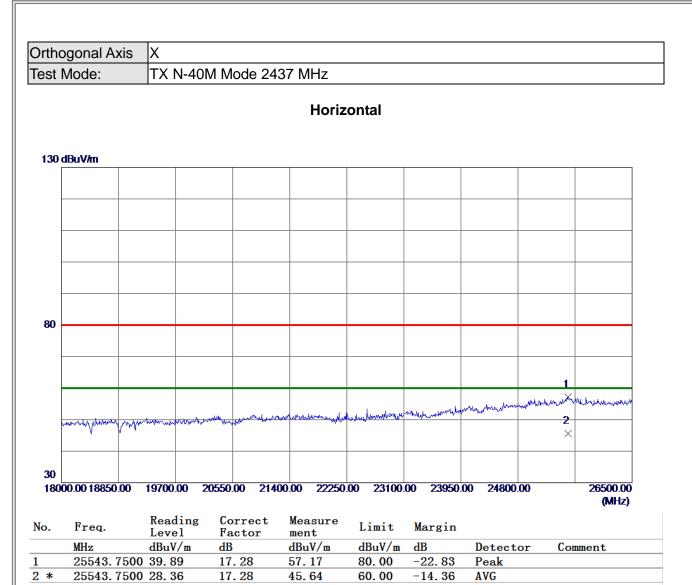






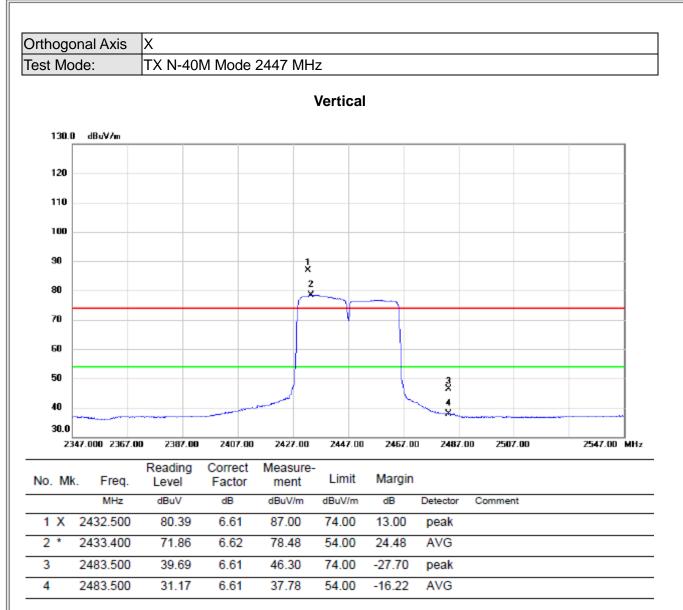






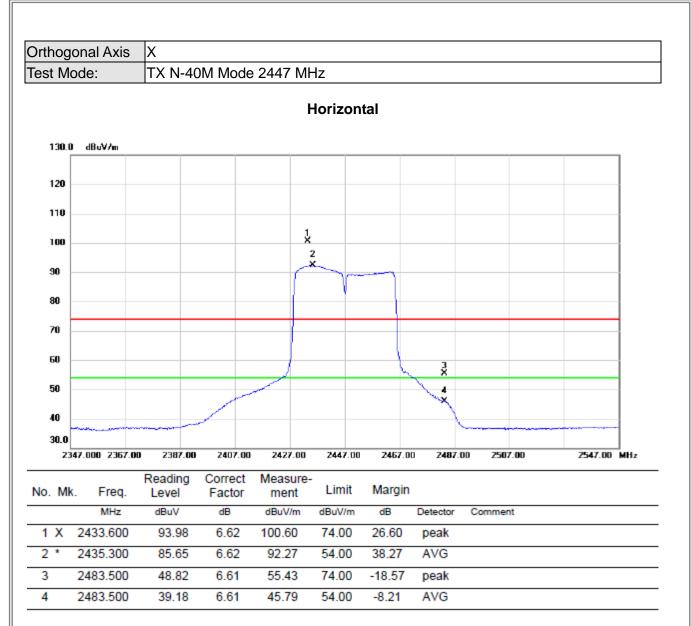






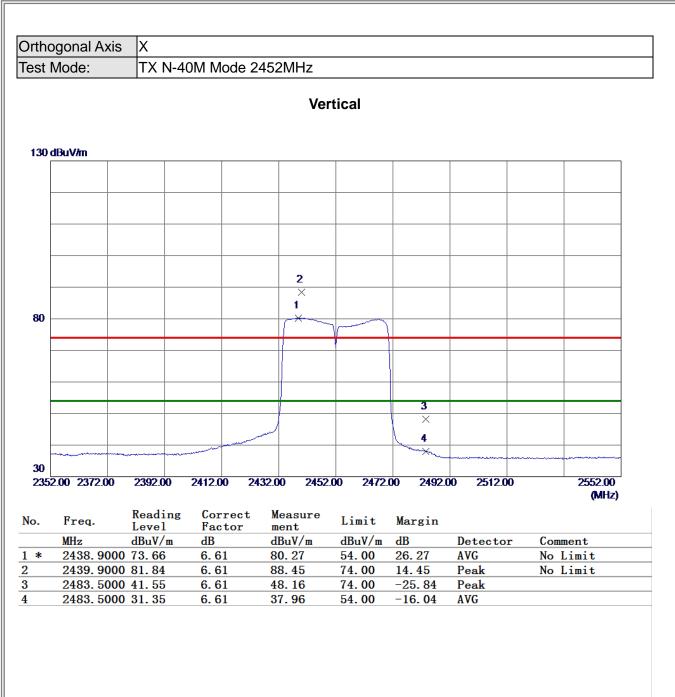






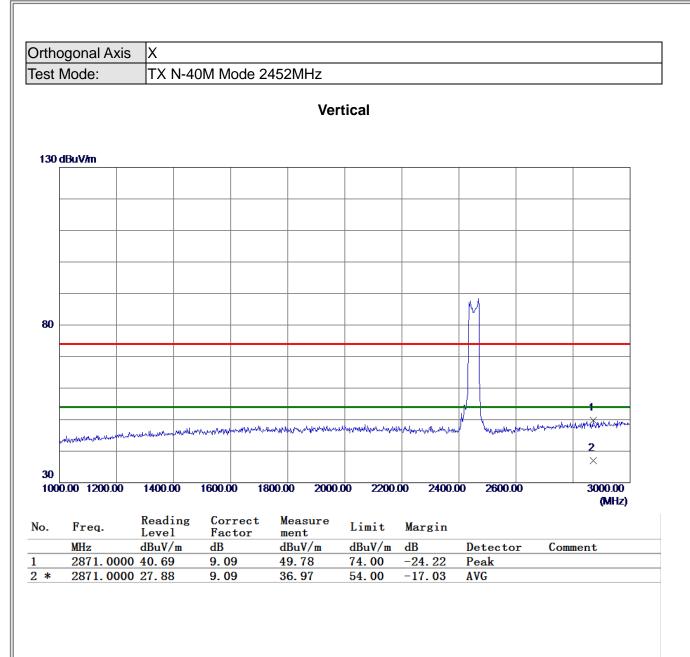






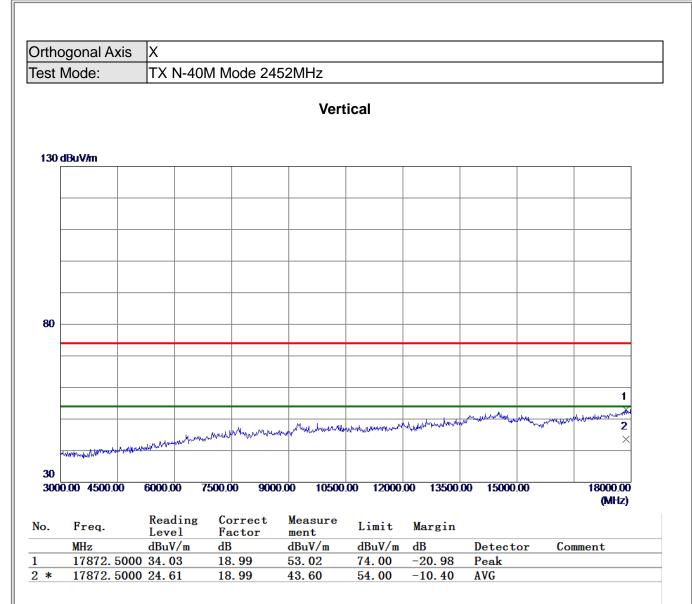






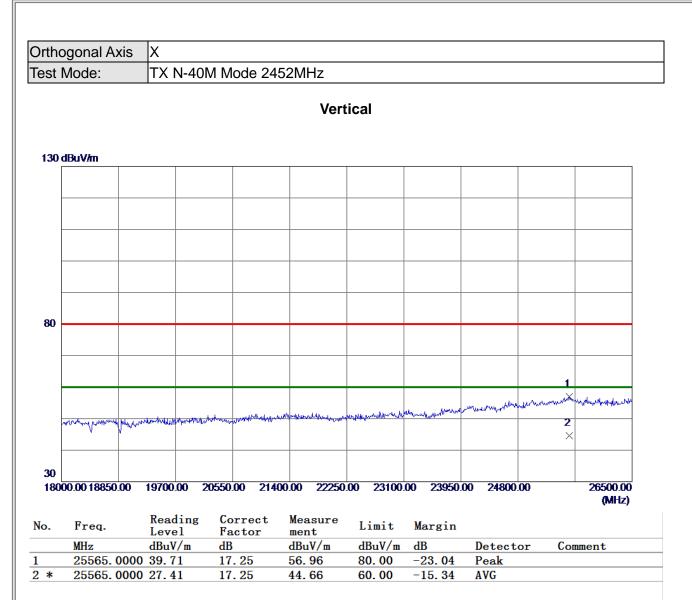






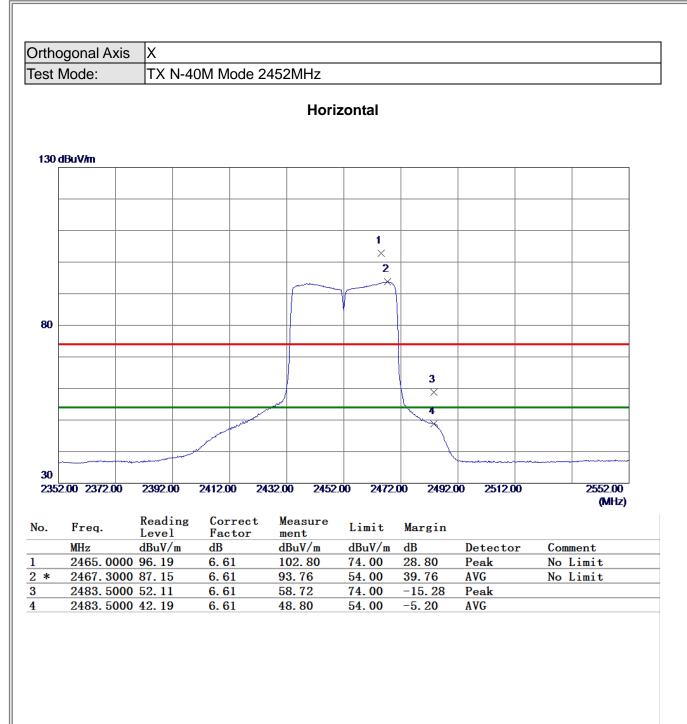






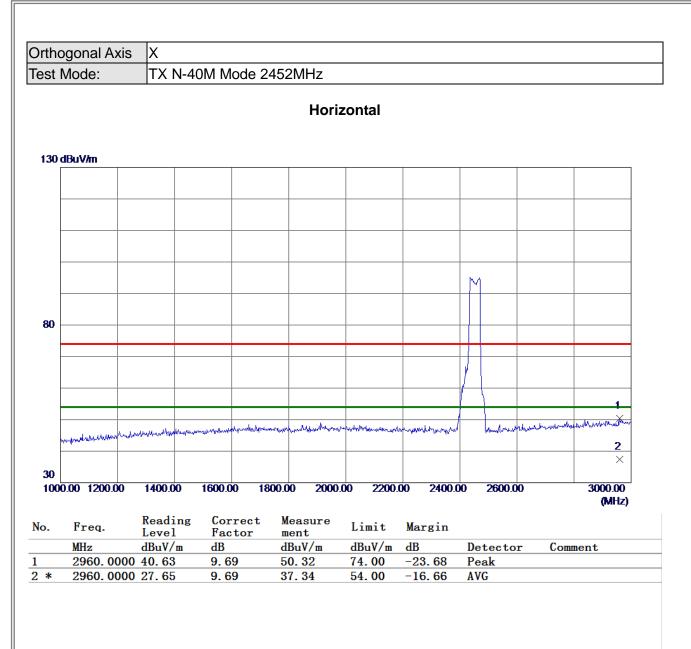






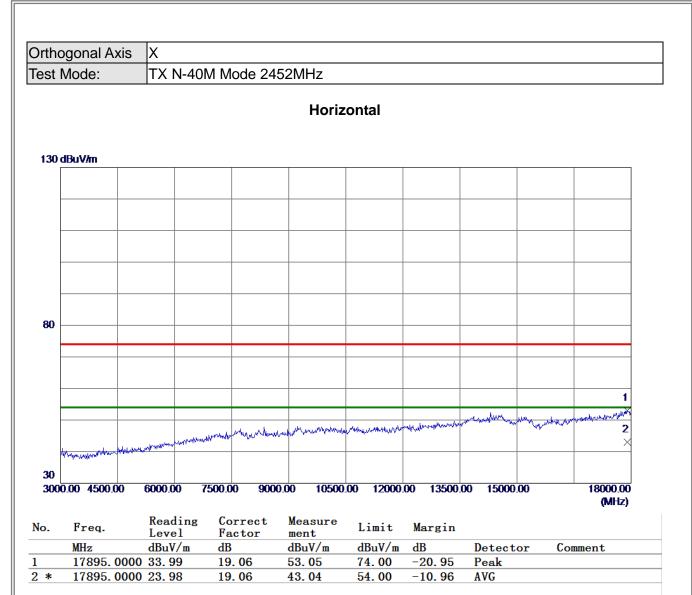






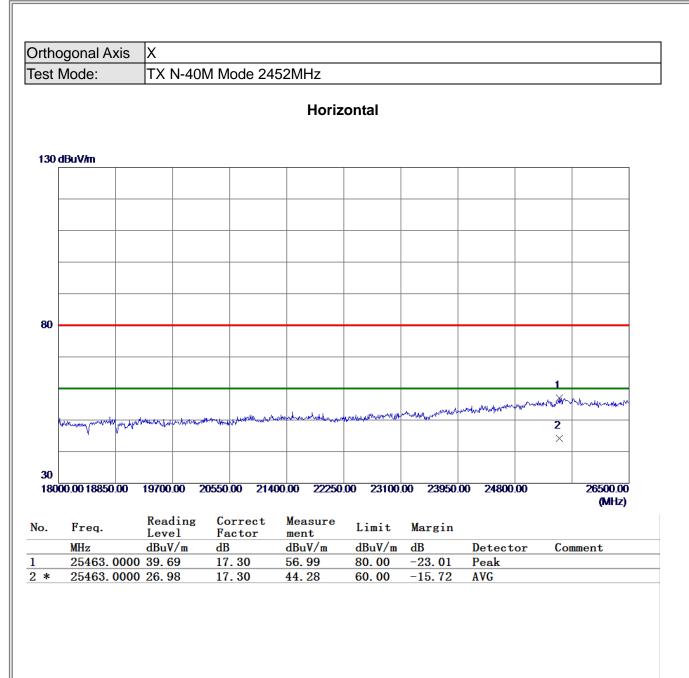












End of Test Report