



FCC Radio Test Report

FCC ID: KA2CHS161A1

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

: 1808H001

Project No. Equipment Test Model Series Model Applicant Address

: Wi-Fi Water Sensor : DCH-S161 : N/A : D-Link Corporation : 17595 Mt. Herrmann, Fountain Valley, California, United States 92708

Issued Date Tested by

Date of Receipt : Aug. 06, 2018 Date of Test : Aug. 07, 2018 ~ Aug. 24, 2018 : Sep. 18, 2018 : BTL Inc.

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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.

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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

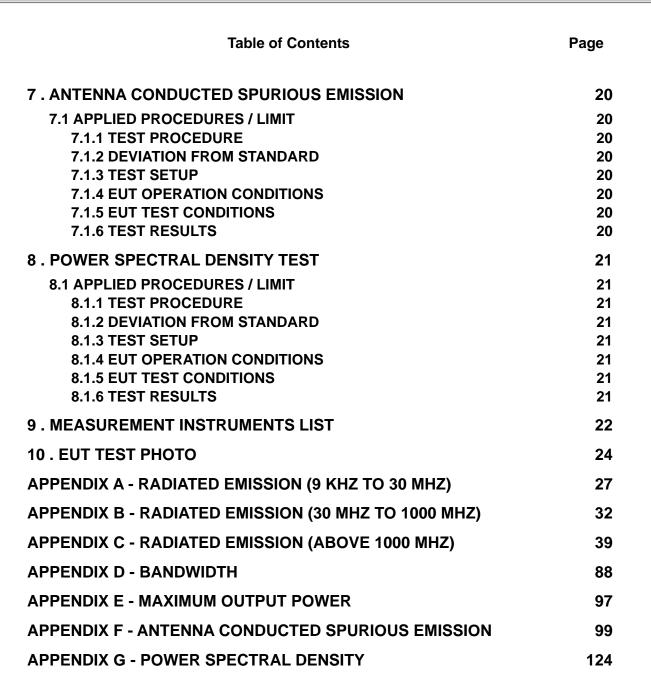
For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.



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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1808H001	Original Issue.	Sep. 18, 2018





1. CERTIFICATION

Equipment : Wi-Fi Water Sensor
Brand Name : D-Link
Test Model : DCH-S161
Series Model : N/A
Applicant : D-Link Corporation
Manufacturer : D-Link Corporation
Address : 17595 Mt. Herrmann, Fountain Valley, California, United States 92708
Date of Test : Aug. 07, 2018 ~ Aug. 23, 2018
Test Sample : Engineering Sample No.: D180806608 for radiated, D180806606 for
conducted.
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-1-1808H001) 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).



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	N/A		
15.247(d)	Antenna conducted Spurious Emission	PASS		
15.247(a)(2)	6 dB Bandwidth	PASS		
15.247(b)(3)	Maximum 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.





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	Measurement Frequency Range	Ant. H / V	U, (dB)			
		9 KHz~30 MHz	V	3.79			
		9 KHz~30 MHz	Н	3.57			
	CISPR -	30 MHz~200 MHz	V	3.82			
		CISPR	-CB03 CISPR CISPR 200 MHz~1,000 MHz 200 MHz~1,000 MHz 1 GHz~18 GHz 1 GHz~18 GHz 18 GHz~40 GHz		30 MH~200 MHz	Н	3.78
						200 MHz~1,000 MHz	V
DG-CB03				200 MHz~1,000 MHz	Н	4.06	
				1 GHz~18 GHz	V	3.12	
					1 GHz~18 GHz	H	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	Wi-Fi Water Sensor	
Brand Name	D-Link	
Test Model	DCH-S161	
Series Model	N/A	
Model Difference(s)	N/A	
Software Version	100	
Hardware Version	A1	
	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 150 Mbps
	Output Power (Max.)	802.11b: 18.48 dBm 802.11g: 22.57 dBm 802.11n(20 MHz): 22.08 dBm 802.11n(40 MHz): 21.49 dBm
Power Source	Supplied from battery.	
Power Rating	DC 3V, 0.5A	

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

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	WL6DR1500	PCB	N/A	0



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

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 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	





6 dB 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-20 MHz Mode Channel 01/06/11	
Mode 4	TX N-40 MHz Mode Channel 03/06/09	

Maximum 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-20 MHz Mode Channel 01/06/11	
Mode 4 TX N-40 MHz 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-20 MHz Mode Channel 01/06/11	
Mode 4	TX N-40 MHz Mode Channel 03/06/09	

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	UI_mptool		
Frequency (MHz)	2412	2462	
802.11b	35 35		35
802.11g	40 39		39
802.11n (20 MHz)	40	39	39
Frequency (MHz)	2422 2437		2452
802.11n (40 MHz)	38	38	38





3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

EUT

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
-	-	-	-	-



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)	(dBuV/m) (at 3 meters)		
	Peak	Average	
Above 1000	74	54	

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





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 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 1 GHz)
- 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.

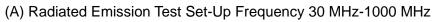
4.1.3 DEVIATION FROM TEST STANDARD

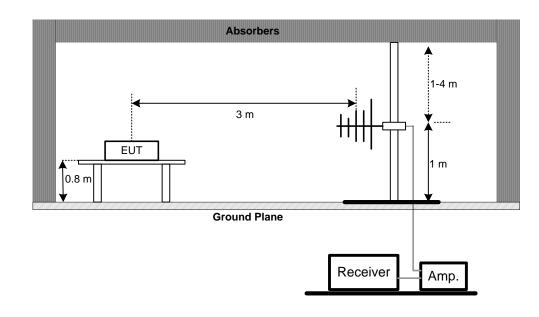
No deviation



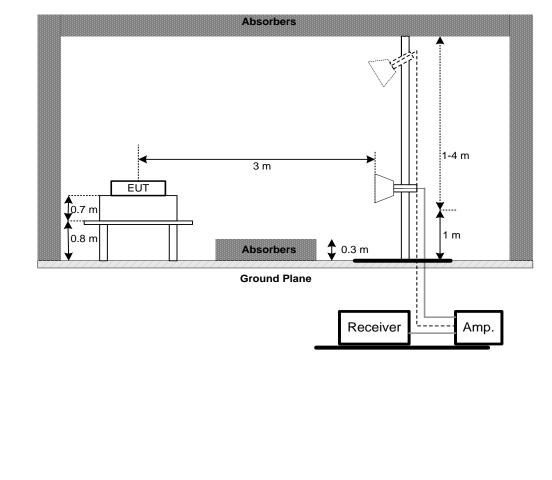


4.1.4 TEST SETUP





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







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: 55% Test Voltage: DC 3V

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.

4.1.8 TEST RESULTS (30 MHz TO 1000 MHz)

Please refer to the Appendix B.

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. BANDWIDTH TEST

5.1 APPLIED PROCEDURES

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

5.1.1 TEST PROCEDURE

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

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.1.5 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: DC 3V

5.1.6 TEST RESULTS

Please refer to the Appendix D.



6. MAXIMUM 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 30 dBm	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 v04 DTS Meas Guidance.

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



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: DC 3V

6.1.6 TEST RESULTS

Please refer to the Appendix E.



7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 APPLIED PROCEDURES / LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

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= 100 kHz, VBW=300 kHz, Sweep time = Auto.
- c. Offset=antenna gain+cable loss

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.1.5 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: DC 3V

7.1.6 TEST RESULTS

Please refer to the Appendix F.



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 3 kHz)	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=3 kHz, VBW=10 kHz, 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: DC 3V

8.1.6 TEST RESULTS

Please refer to the Appendix G.



9. MEASUREMENT INSTRUMENTS LIST

	Radiated Emission Measurement-9kHz TO 30 MHz						
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		

Radiated Emission Measurement-30 MHz TO 1000 MHz

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

	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		





	Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 11, 2019	

	Maximum output power						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until		
1	Power Meter	ANRITSU	ML2495A	1128009	Mar. 11, 2019		
2	Pulse Power Sensor	ANRITSU	MA 2411B	1027500	Mar. 11, 2019		

	Antenna Conducted Spurious Emission					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 11, 2019	

	Power Spectral Density						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until		
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 11, 2019		

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





10. EUT TEST PHOTO

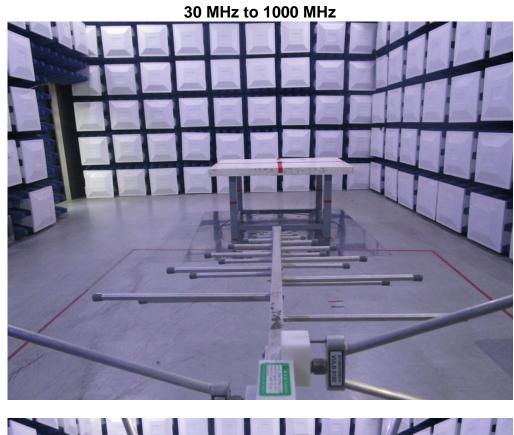
Radiated Measurement Photos







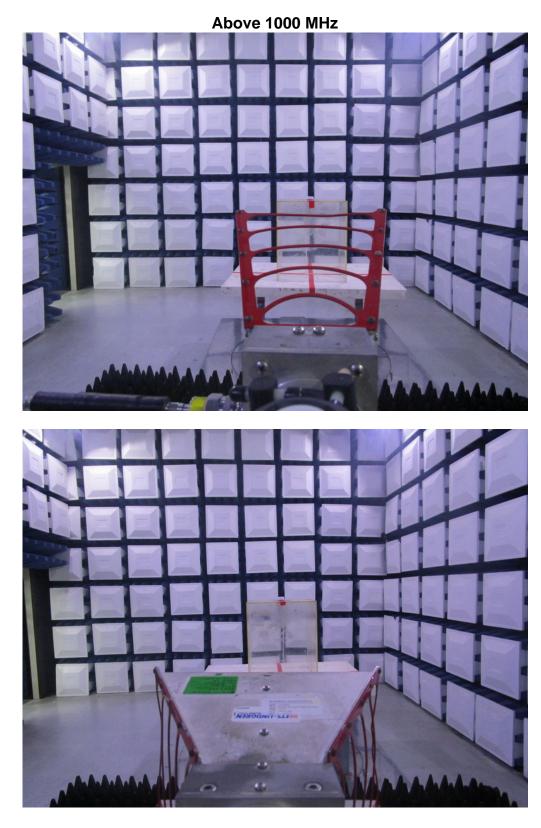
Radiated Measurement Photos







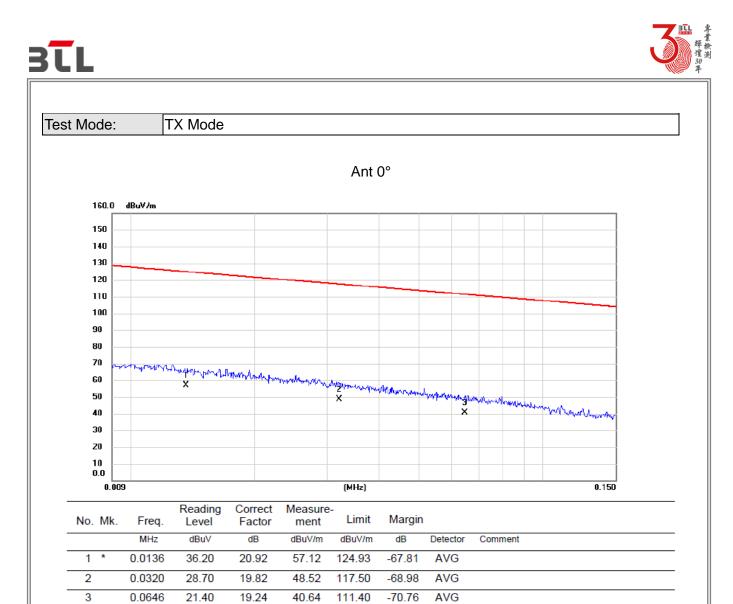
Radiated Measurement Photos

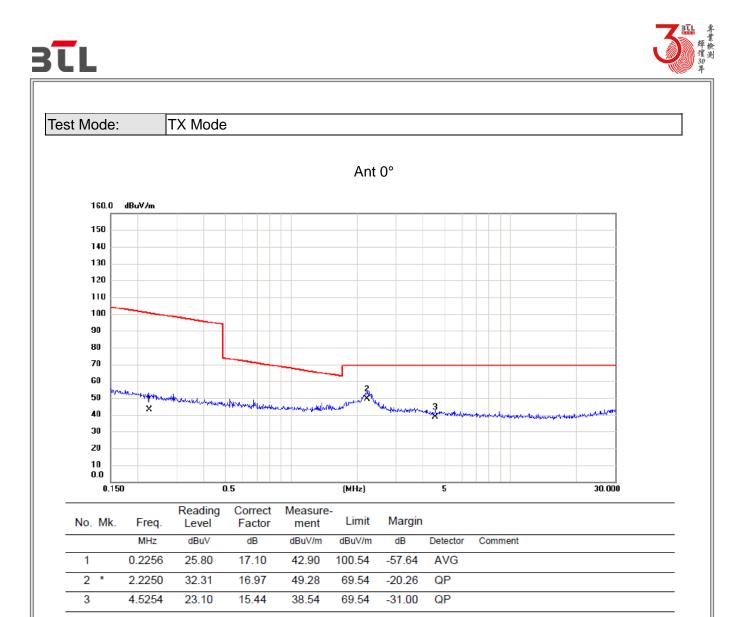






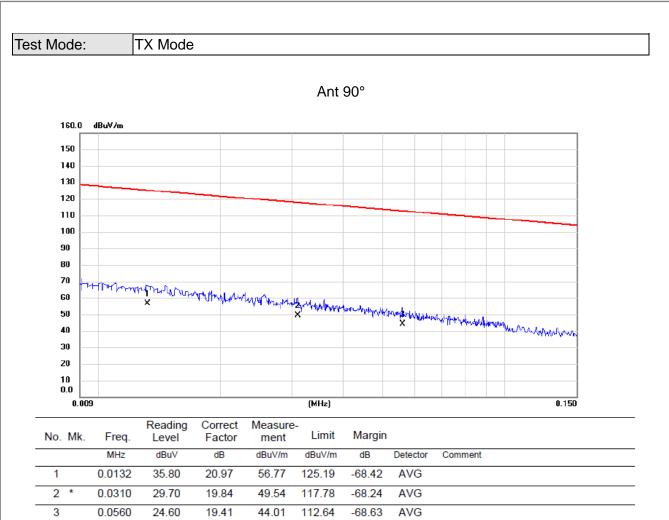
APPENDIX A - RADIATED EMISSION (9 KHZ TO 30 MHZ)





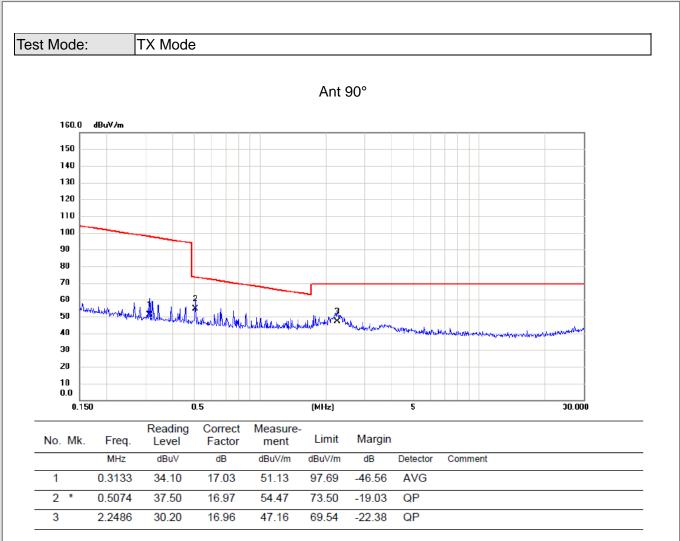












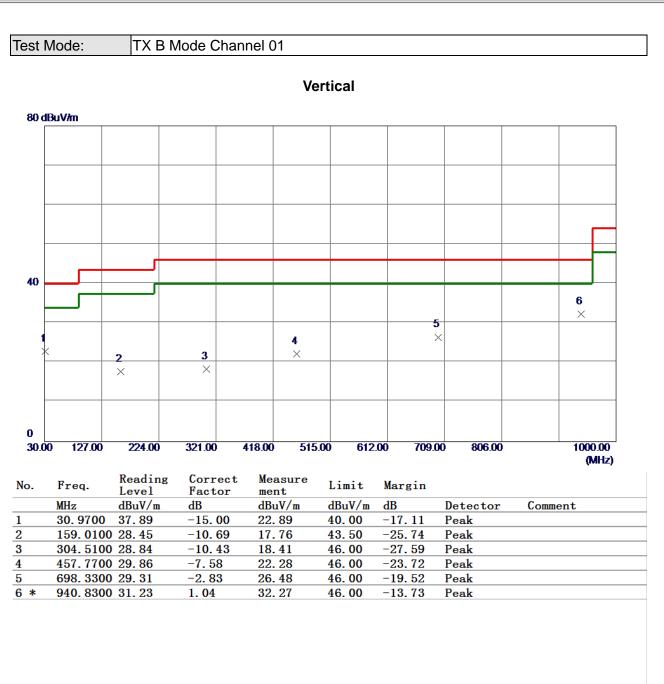




APPENDIX B - RADIATED EMISSION (30 MHZ TO 1000 MHZ)

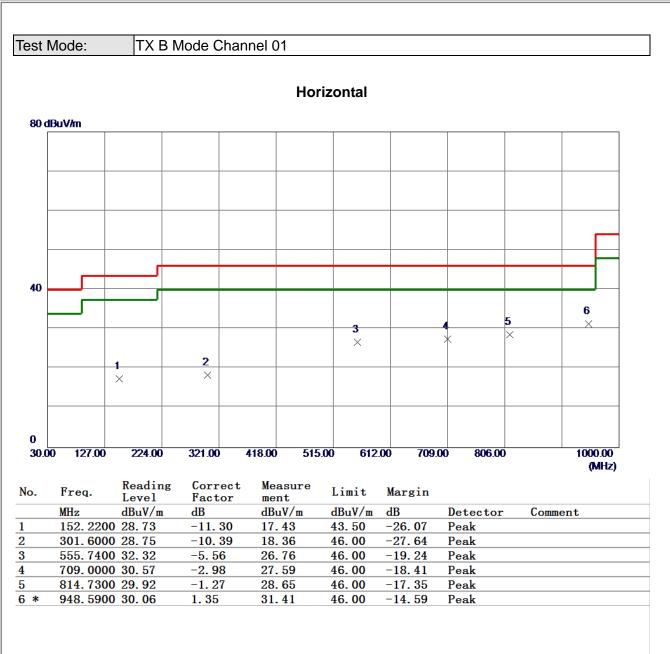






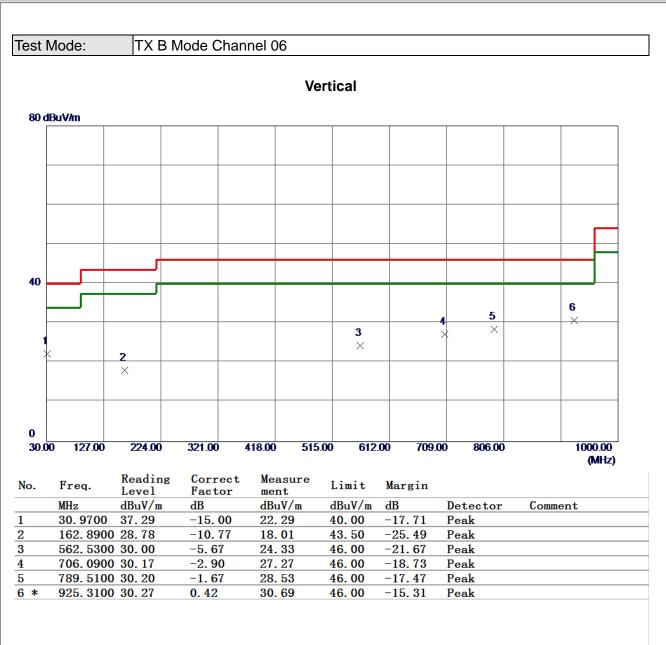






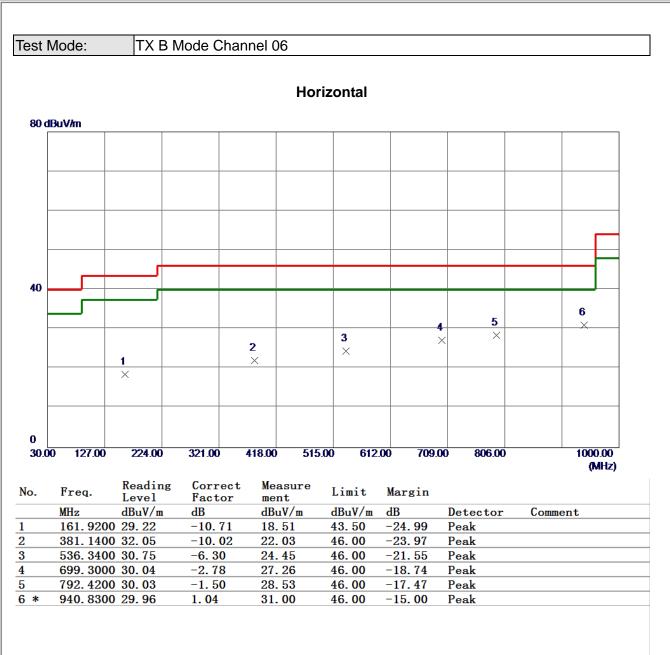






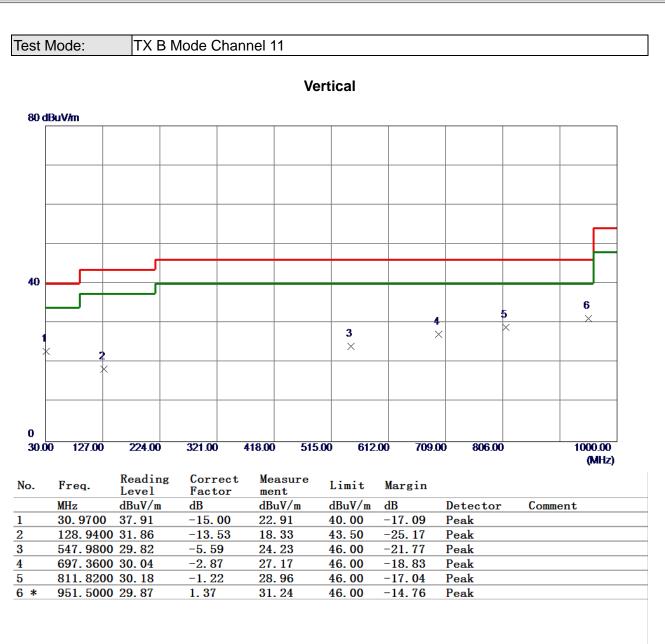






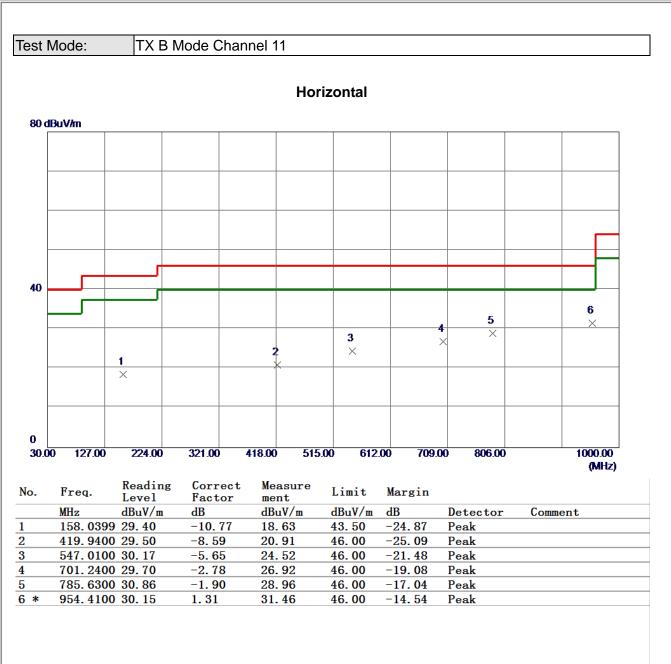












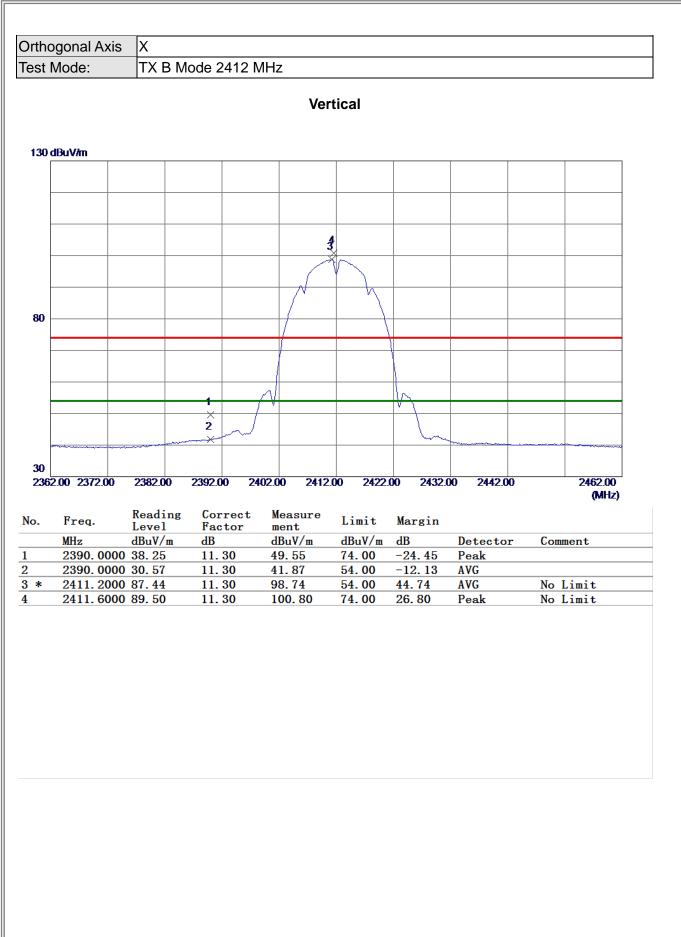




APPENDIX C - RADIATED EMISSION (ABOVE 1000 MHZ)

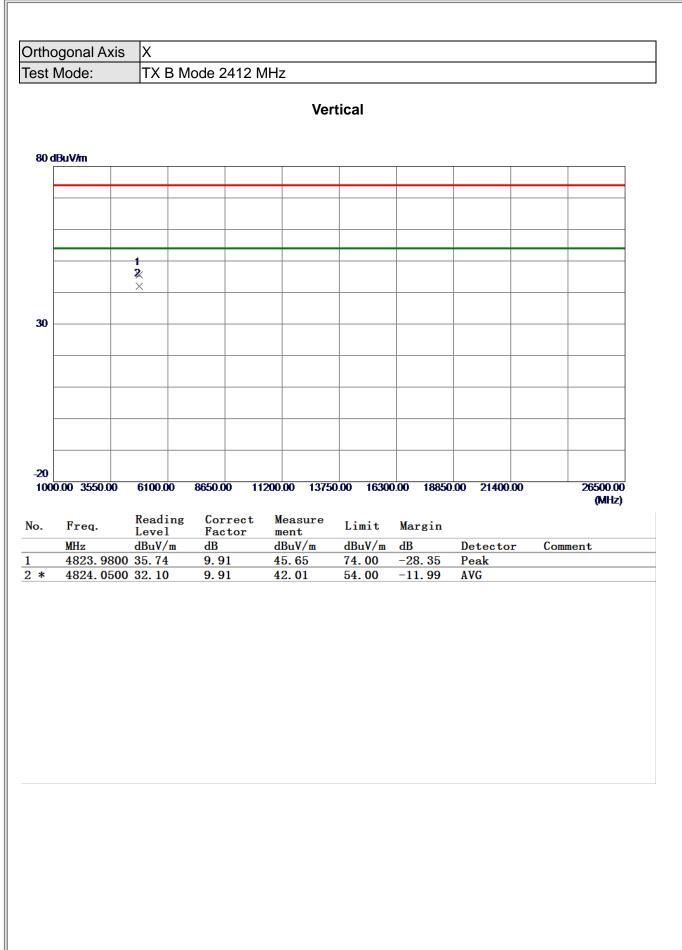






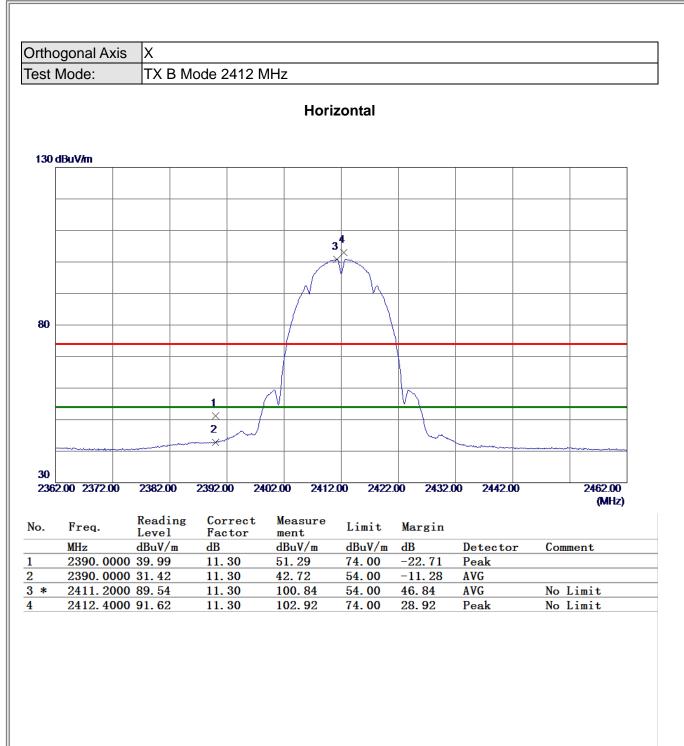






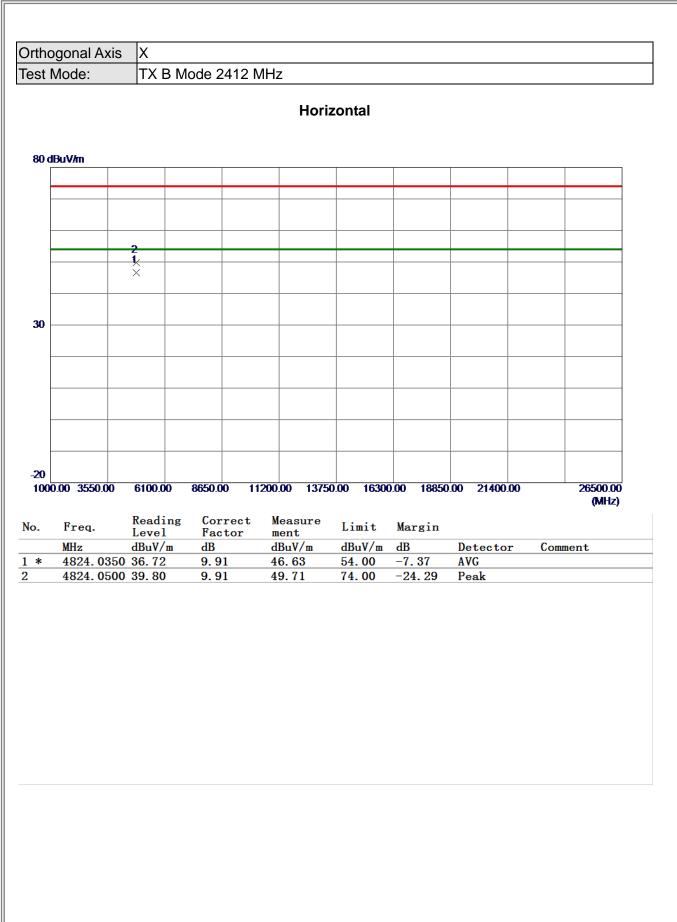






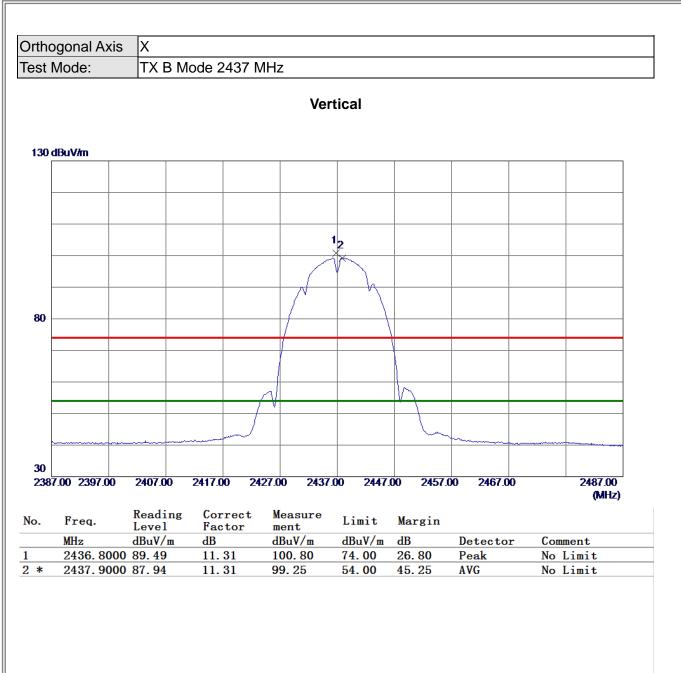






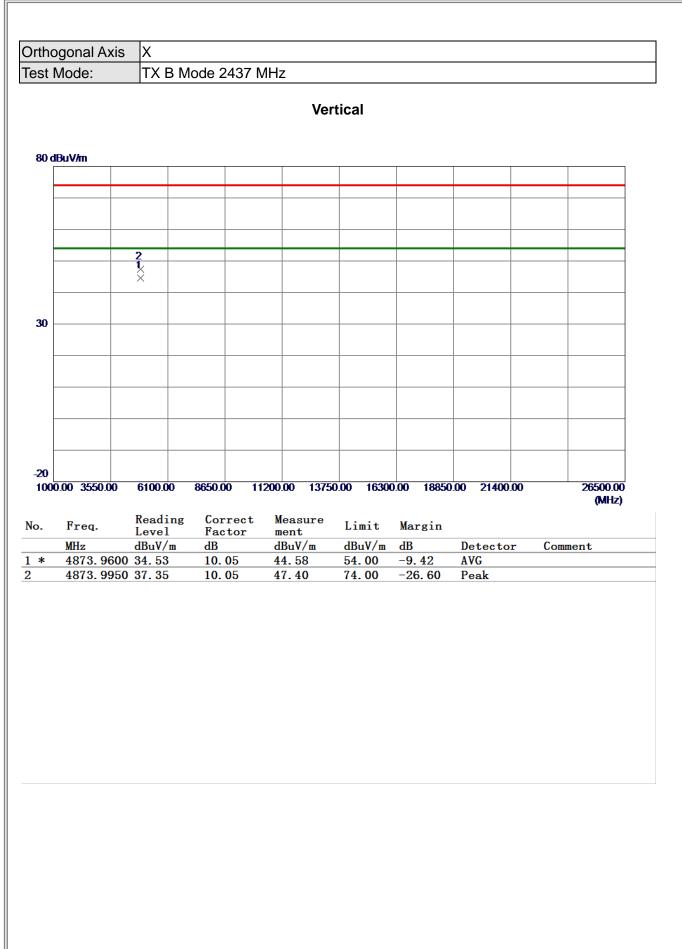






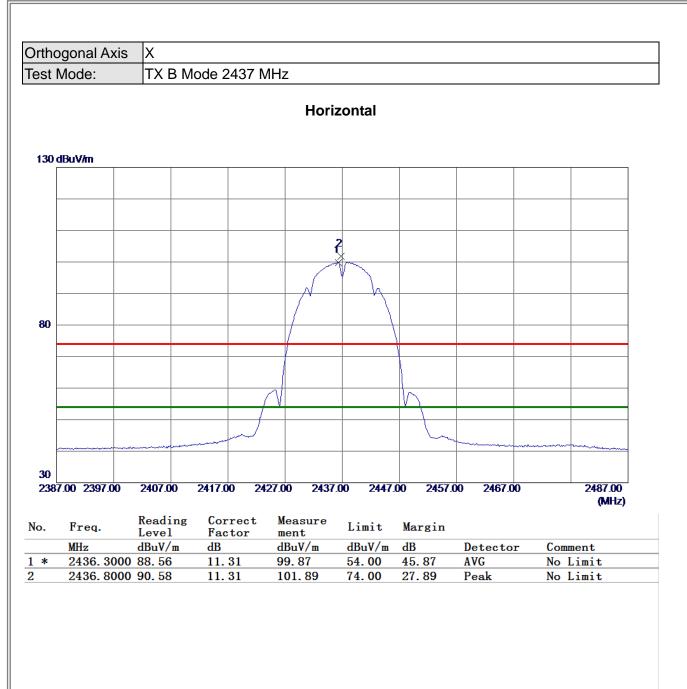






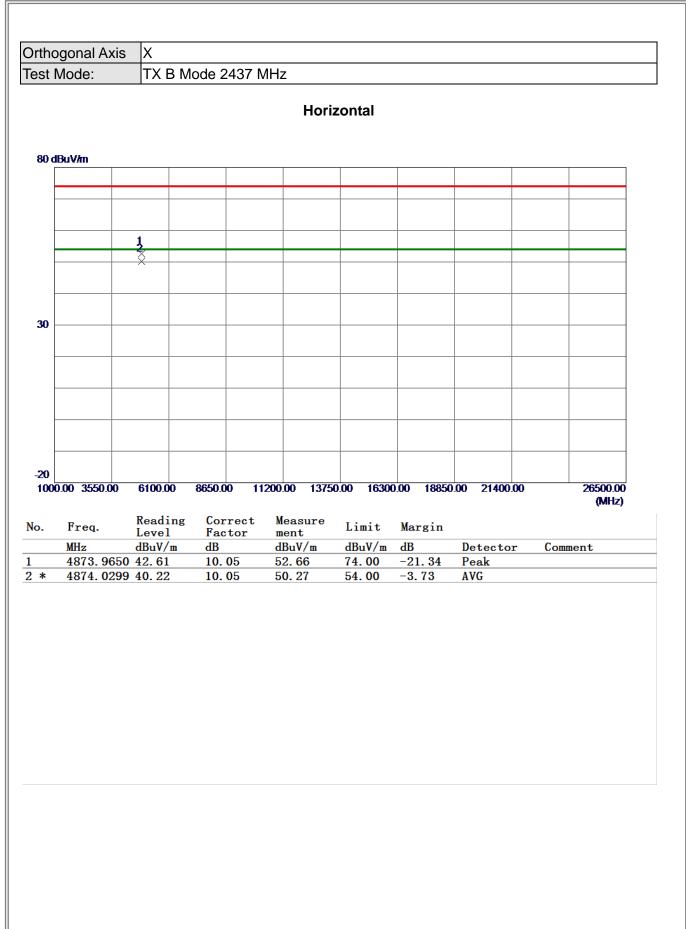






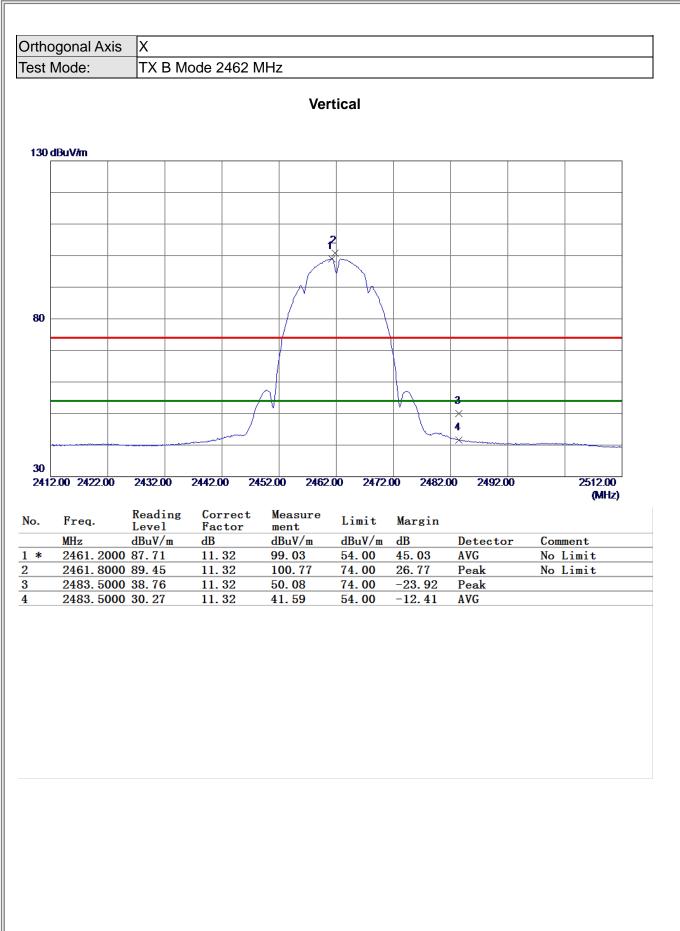






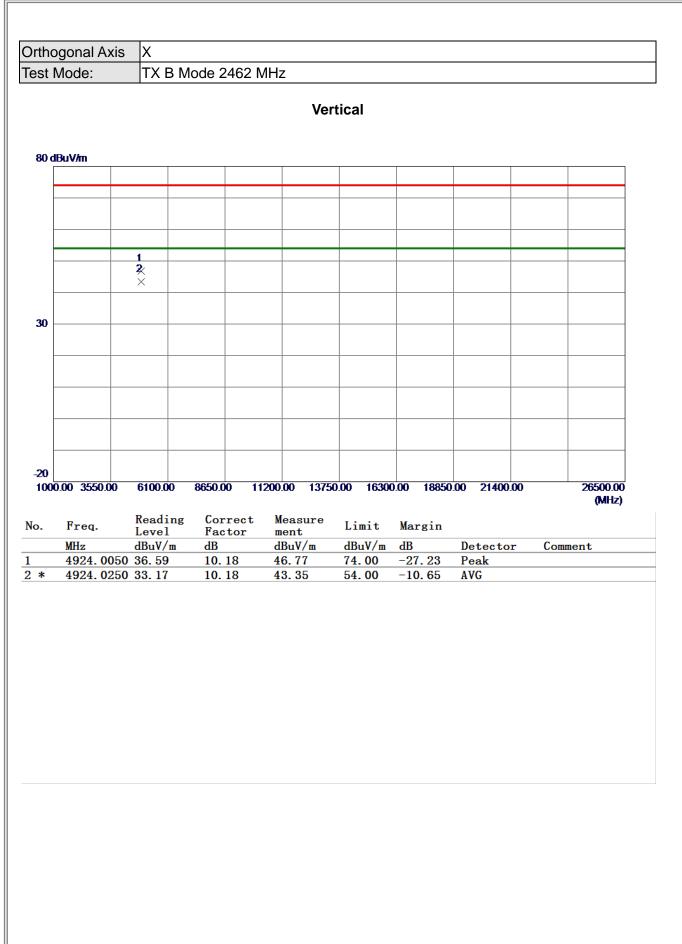






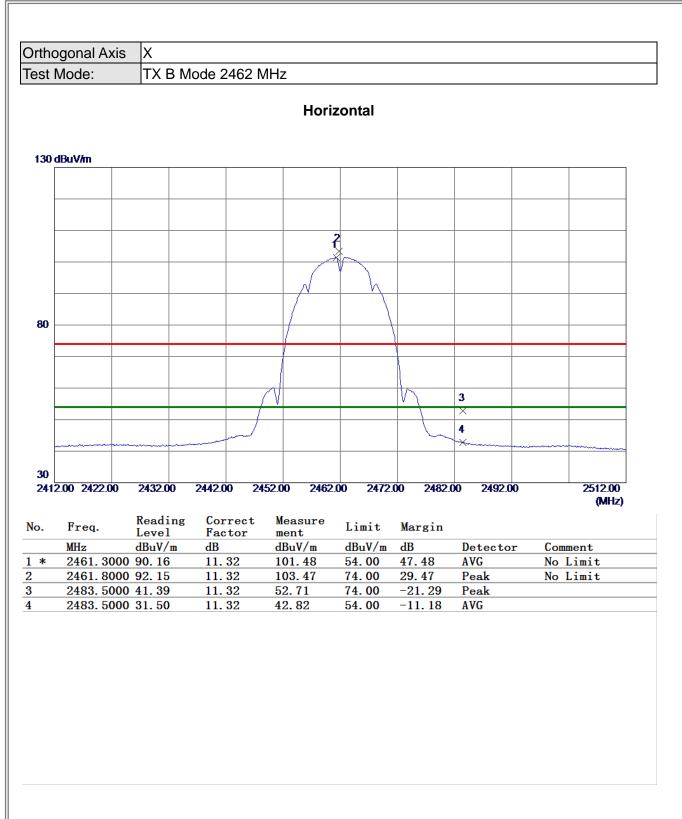






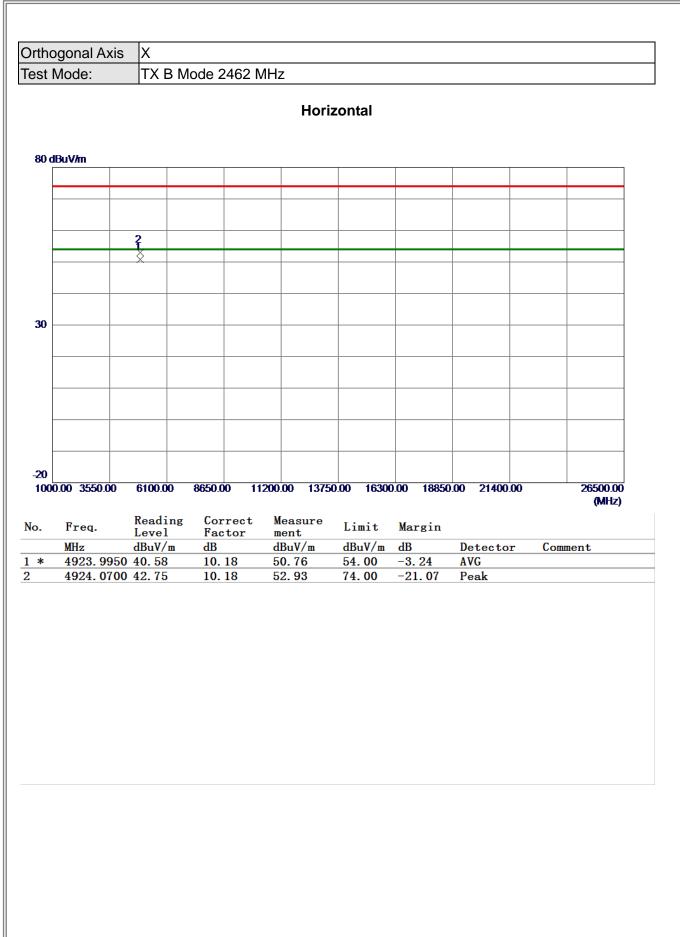






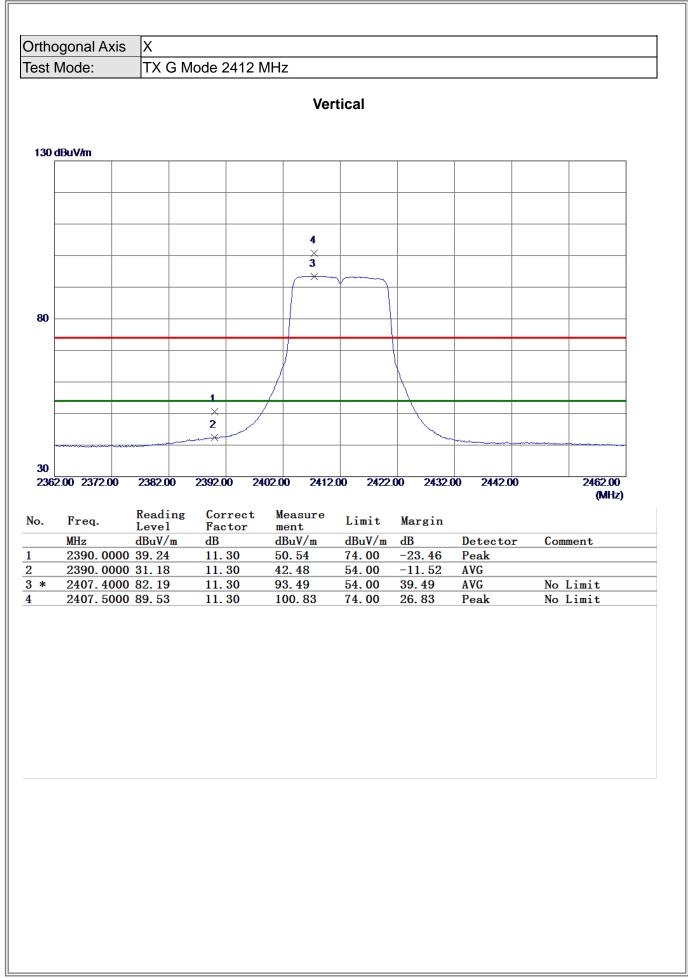






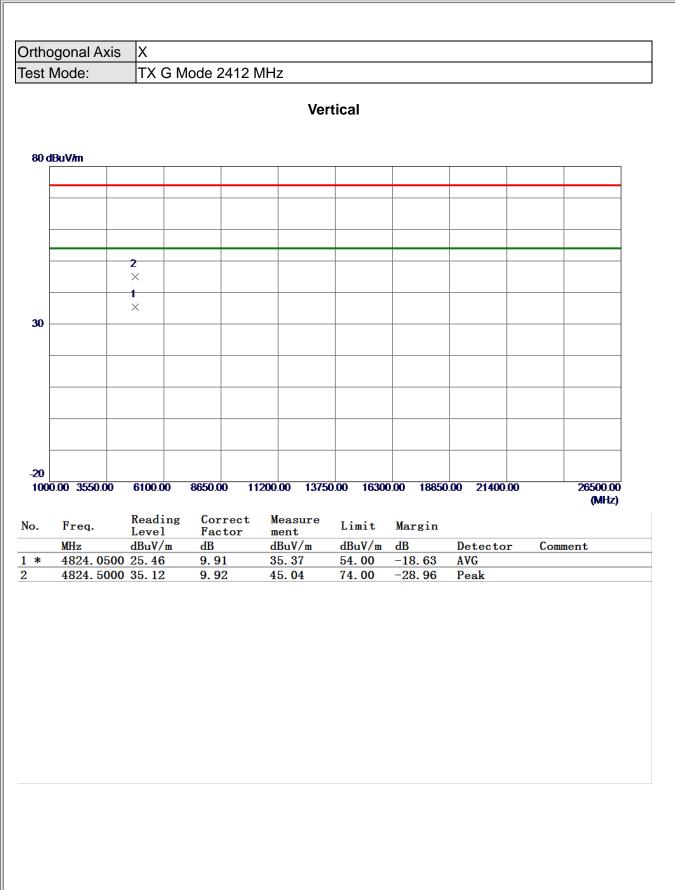






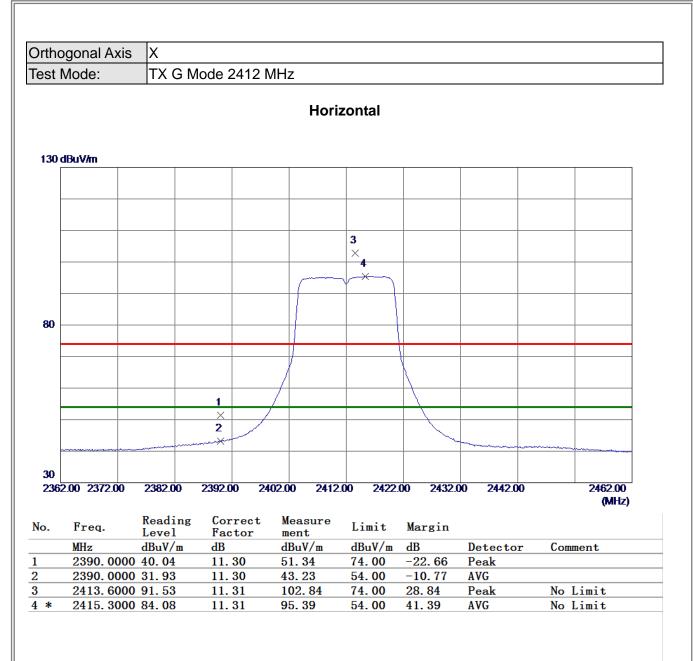












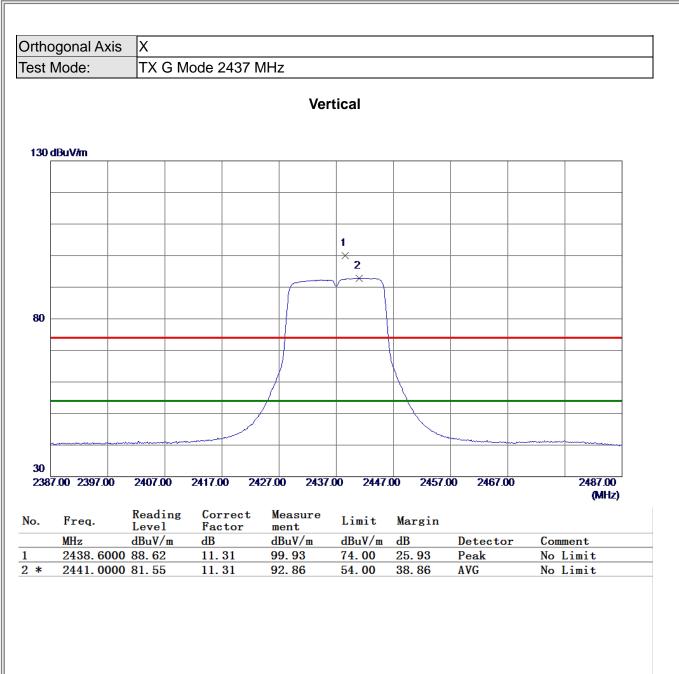






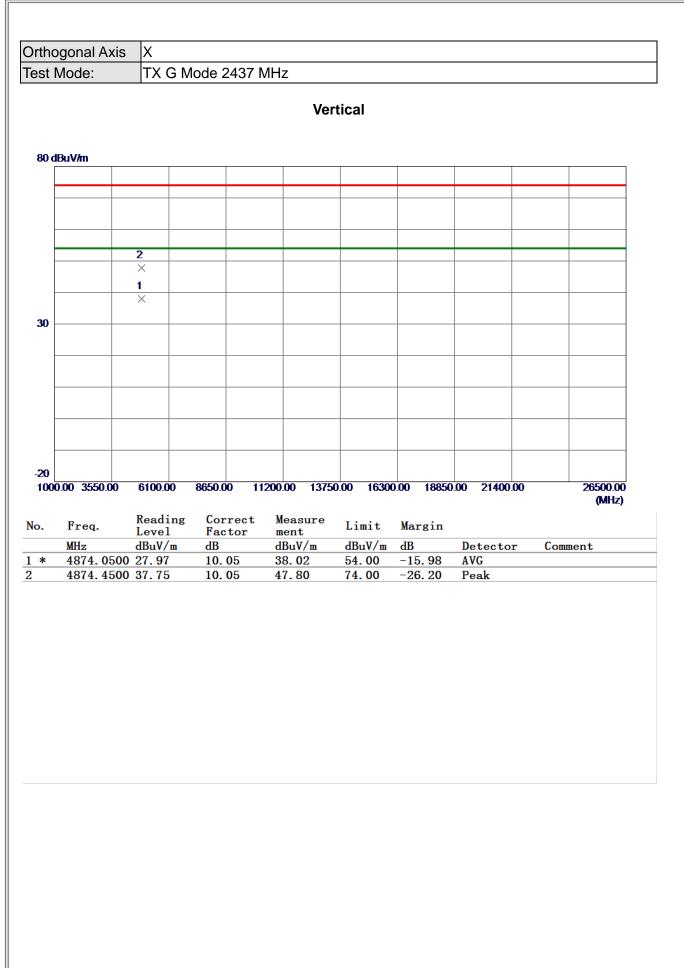






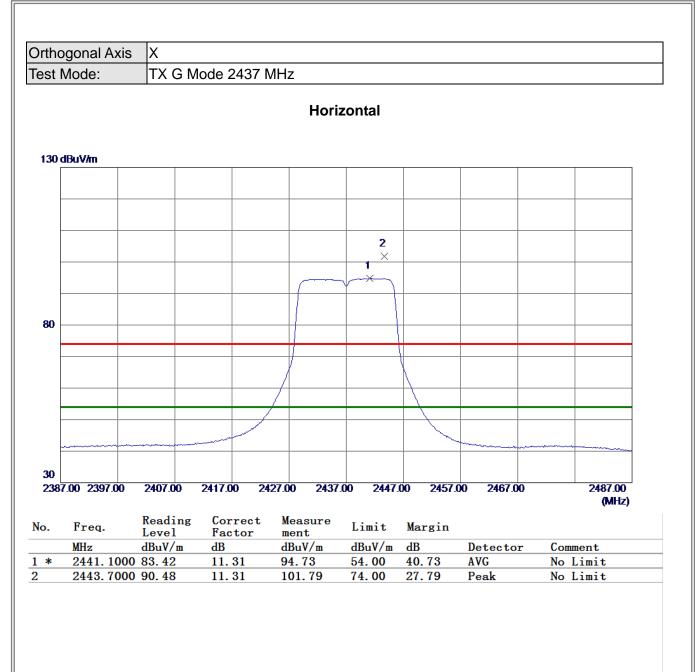






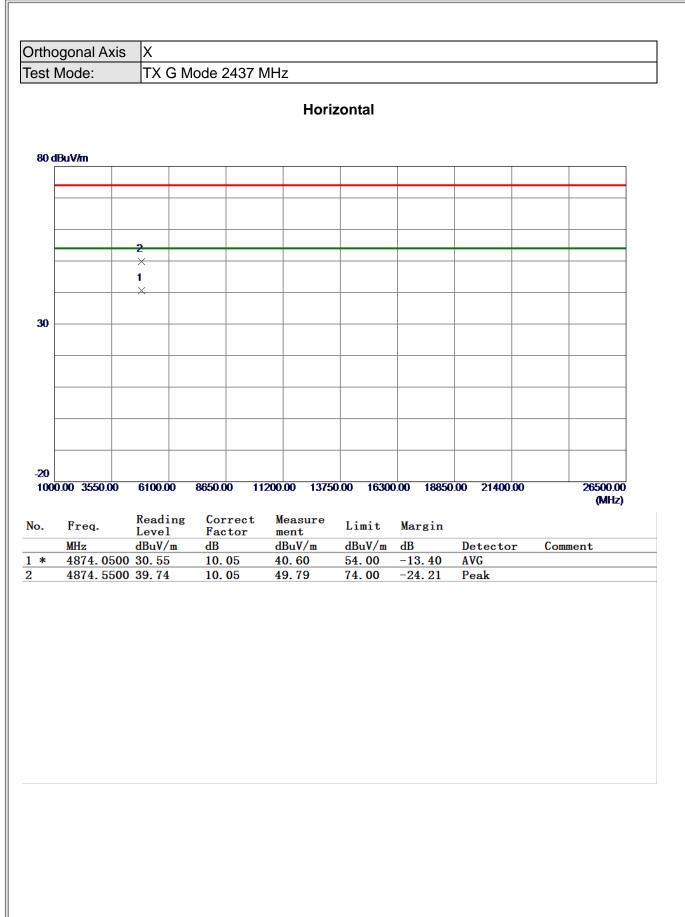






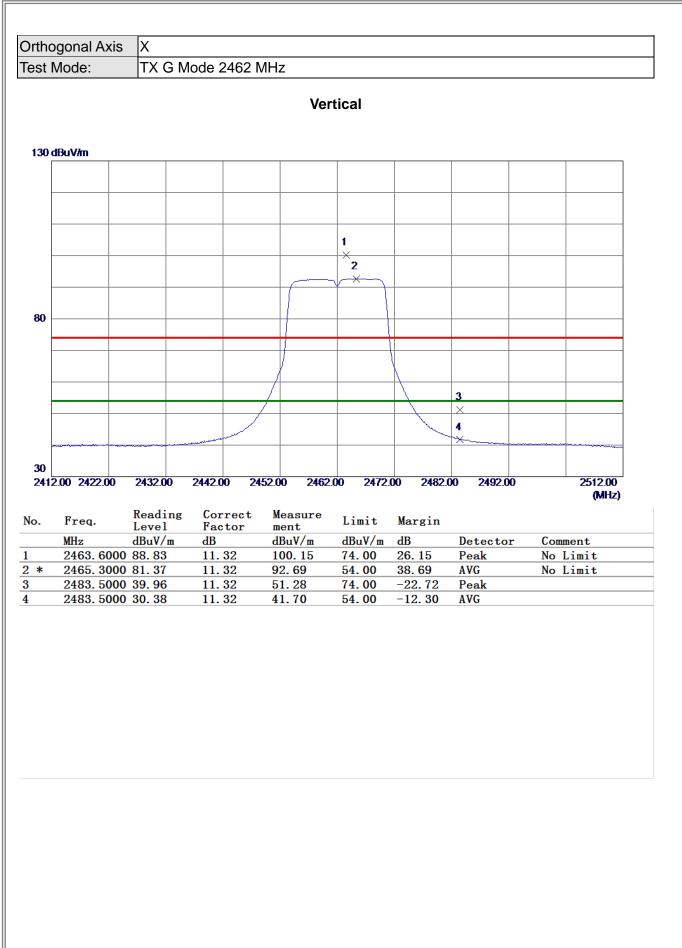






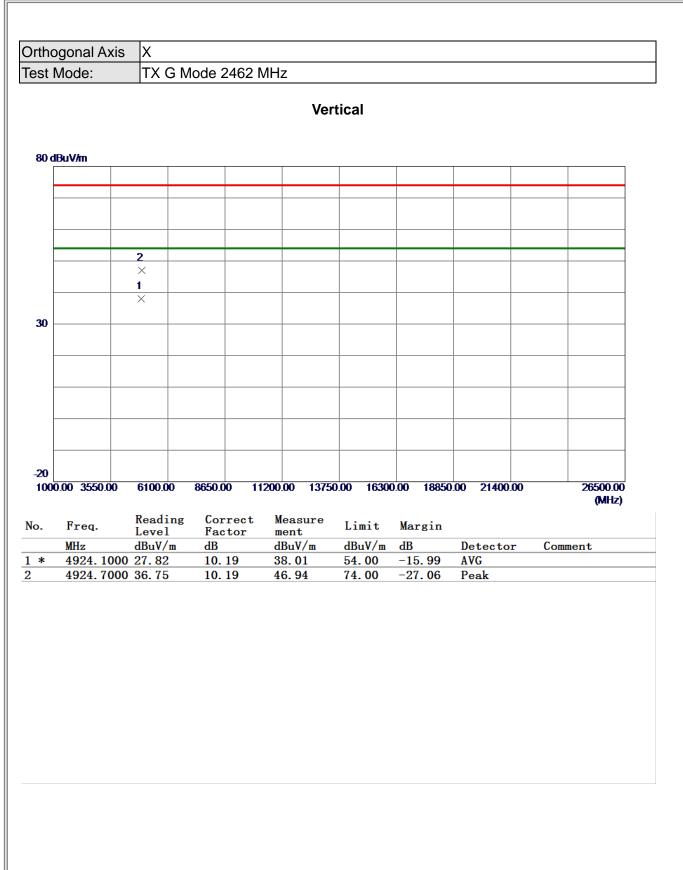






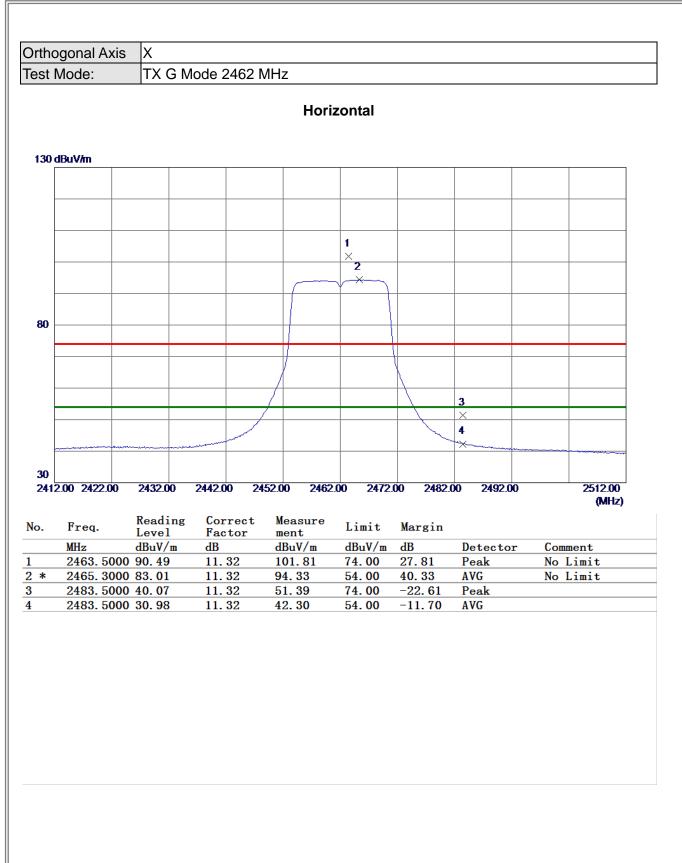






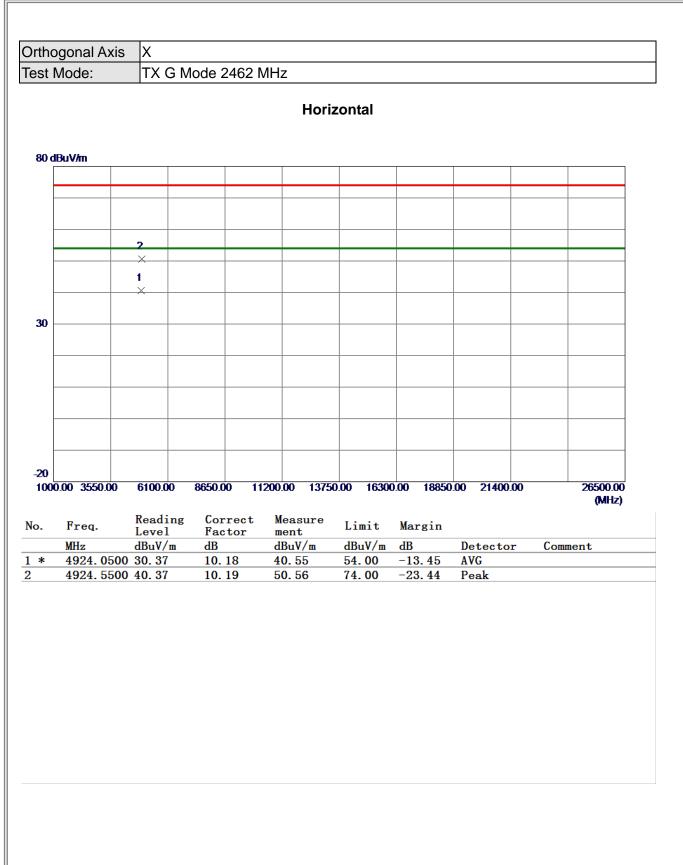






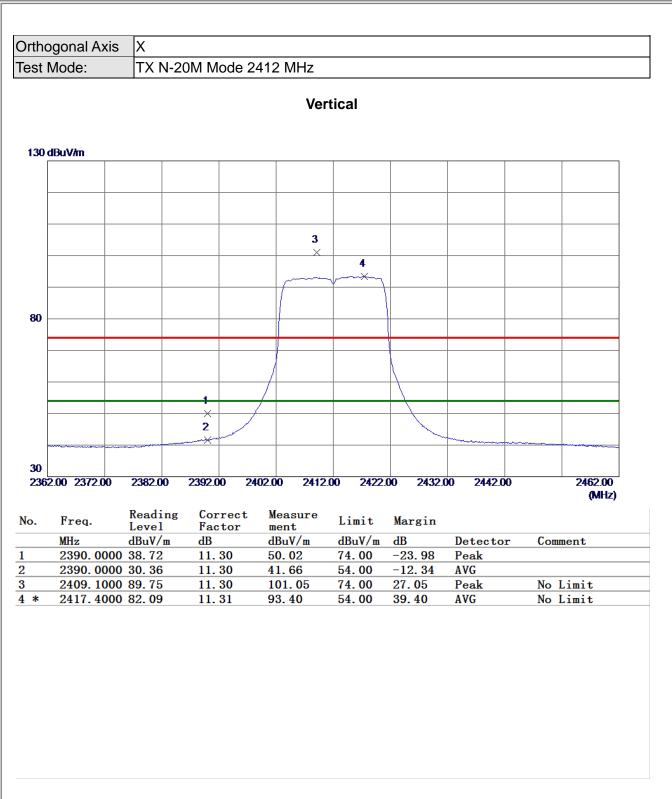












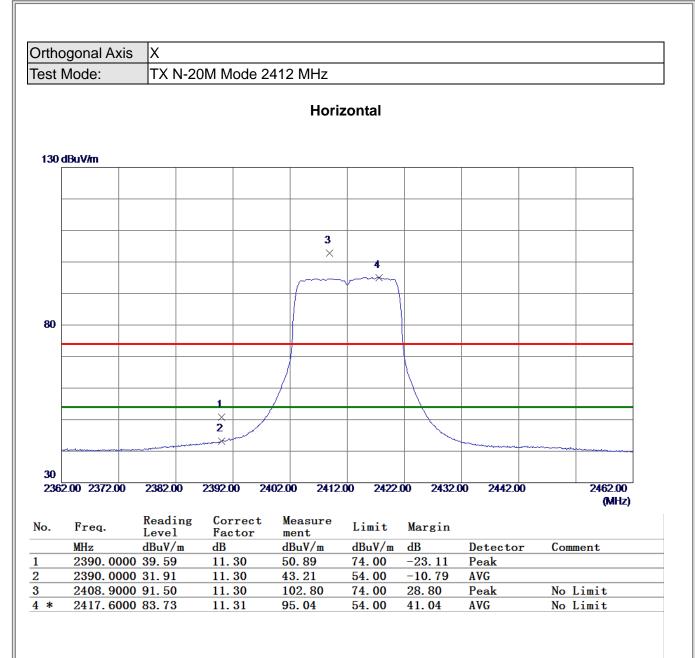






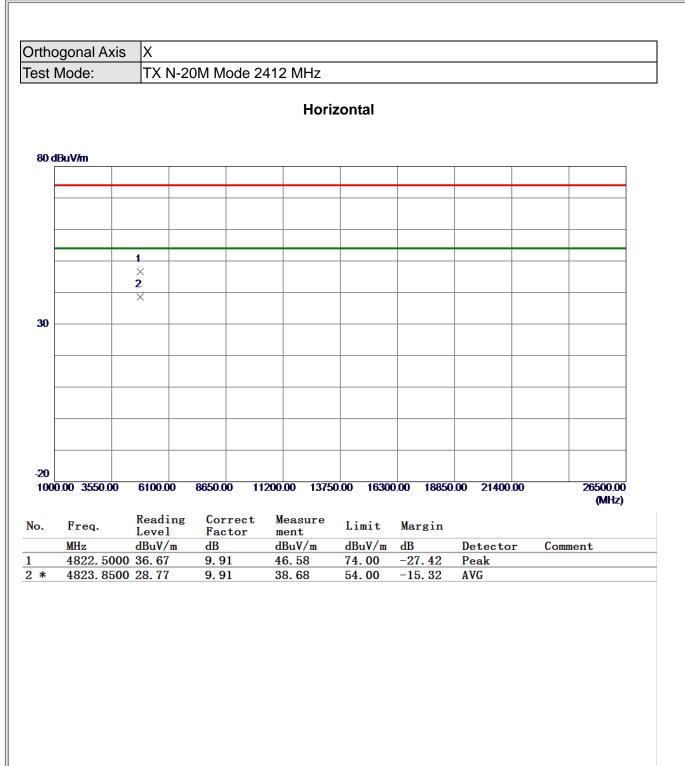






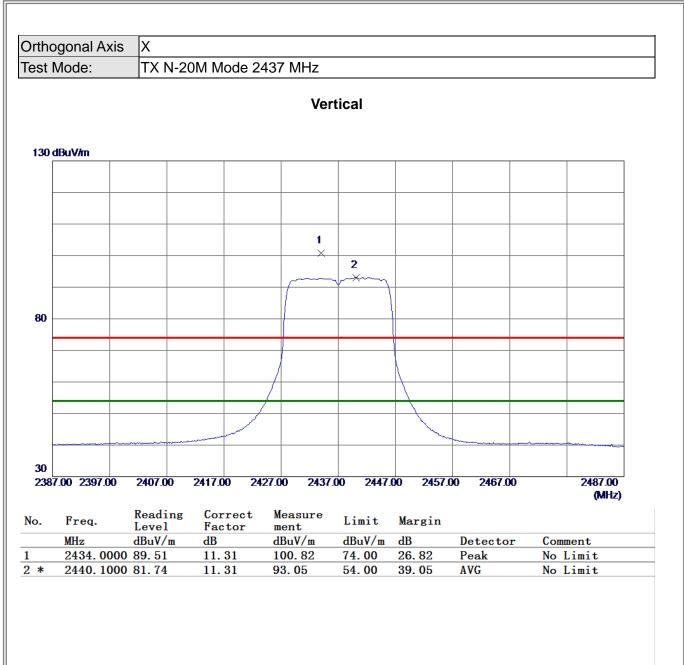






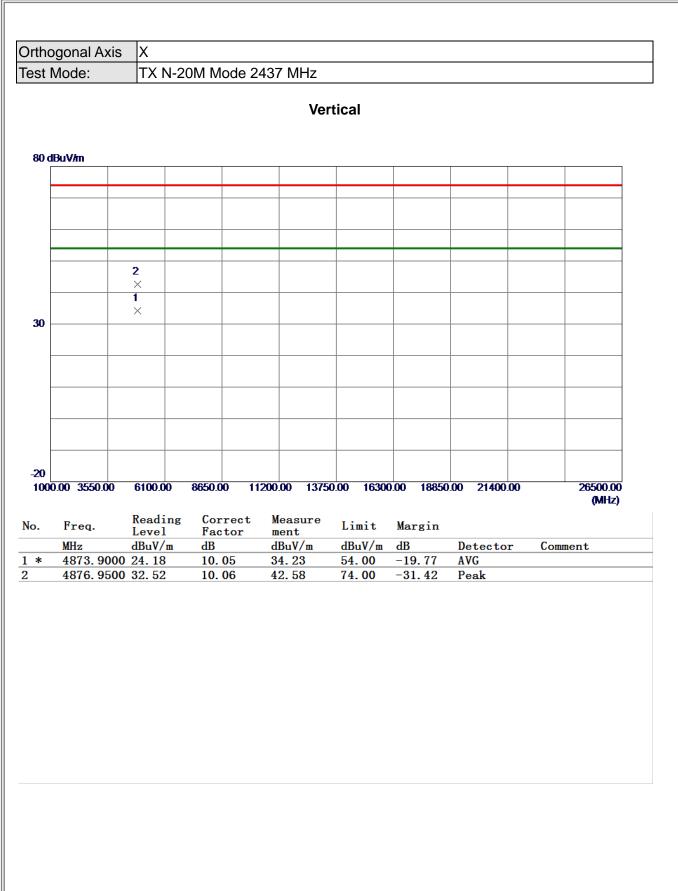






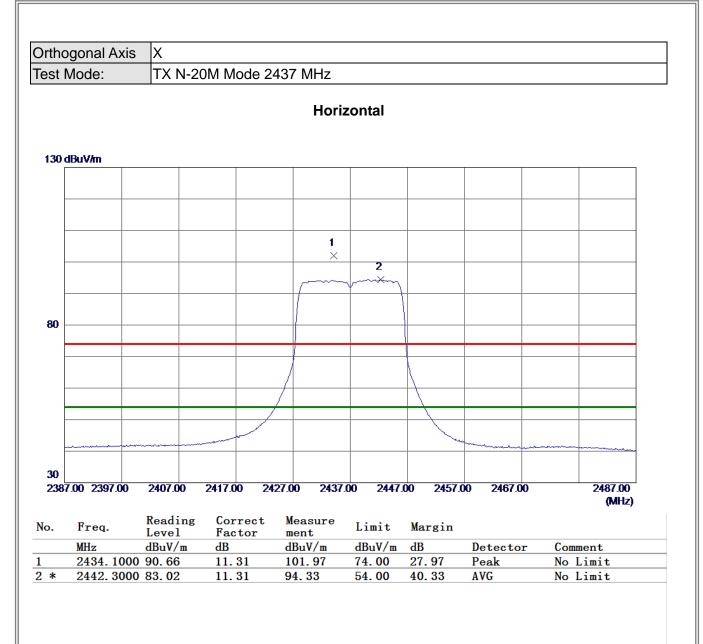






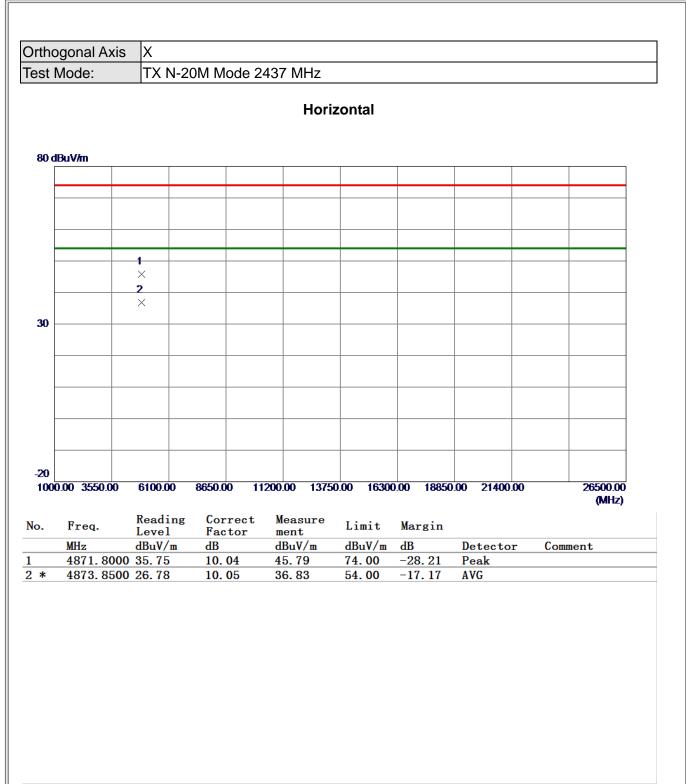






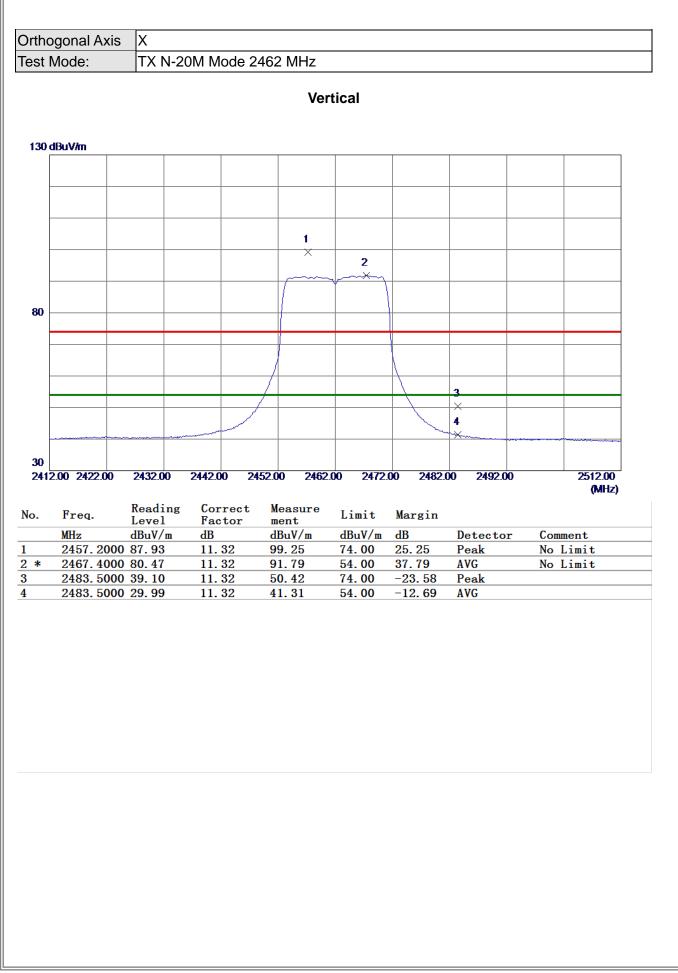






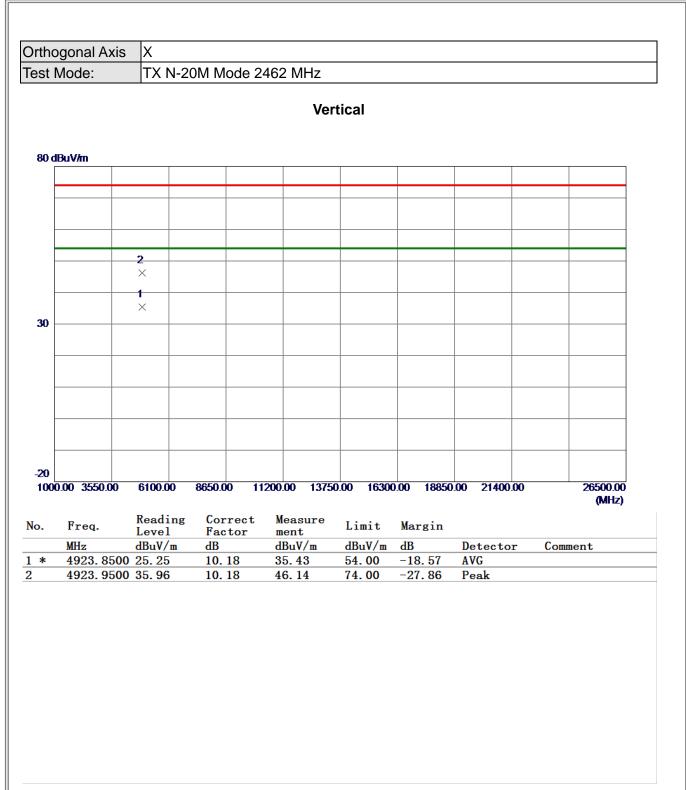






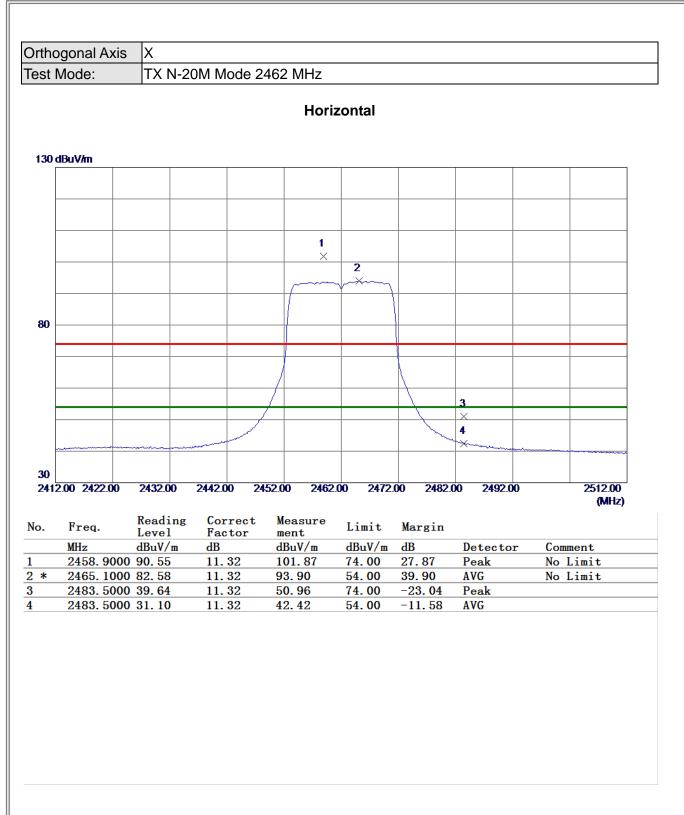






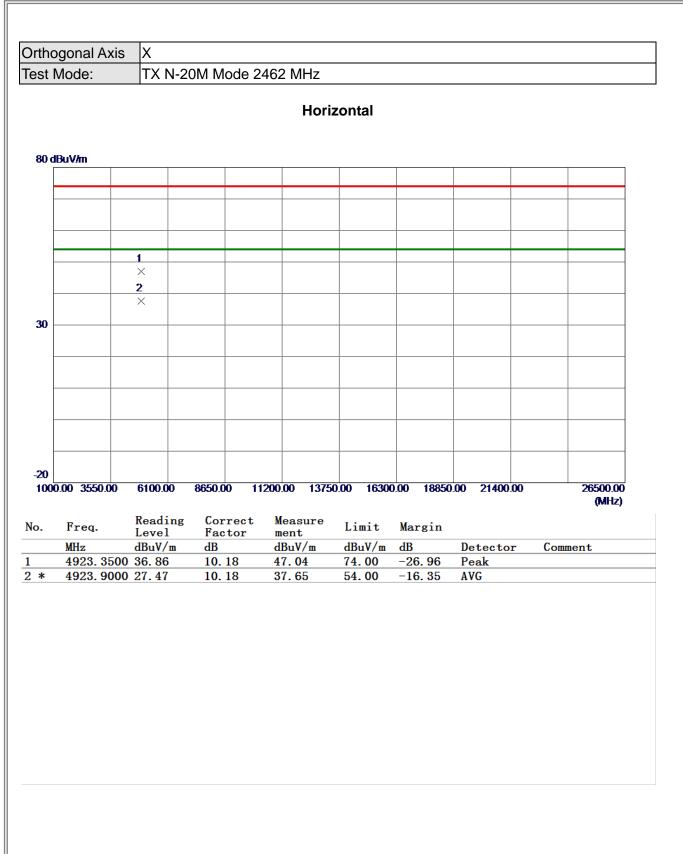






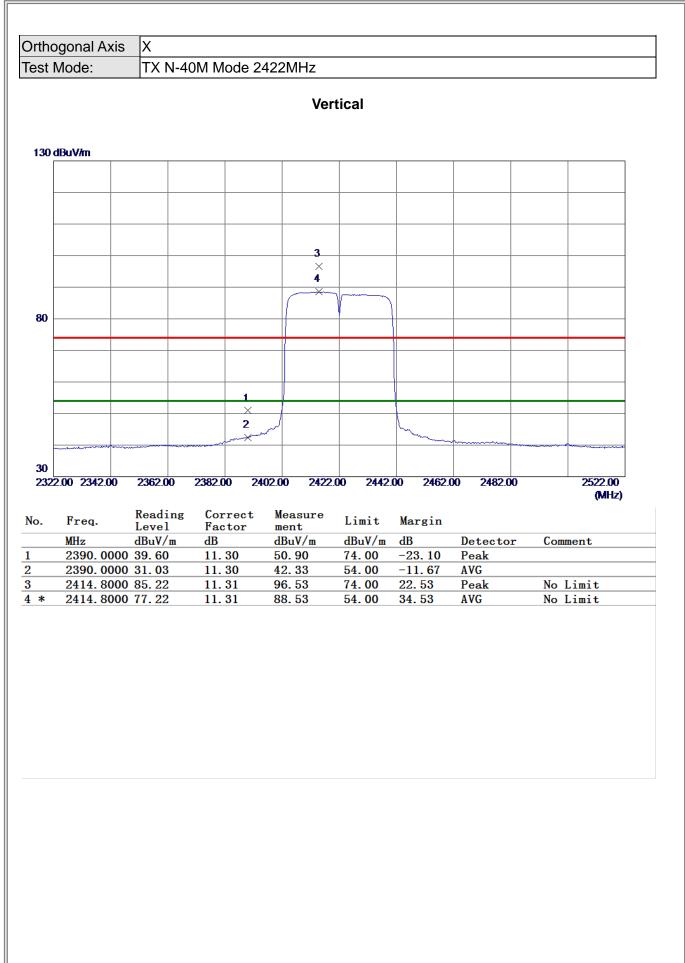






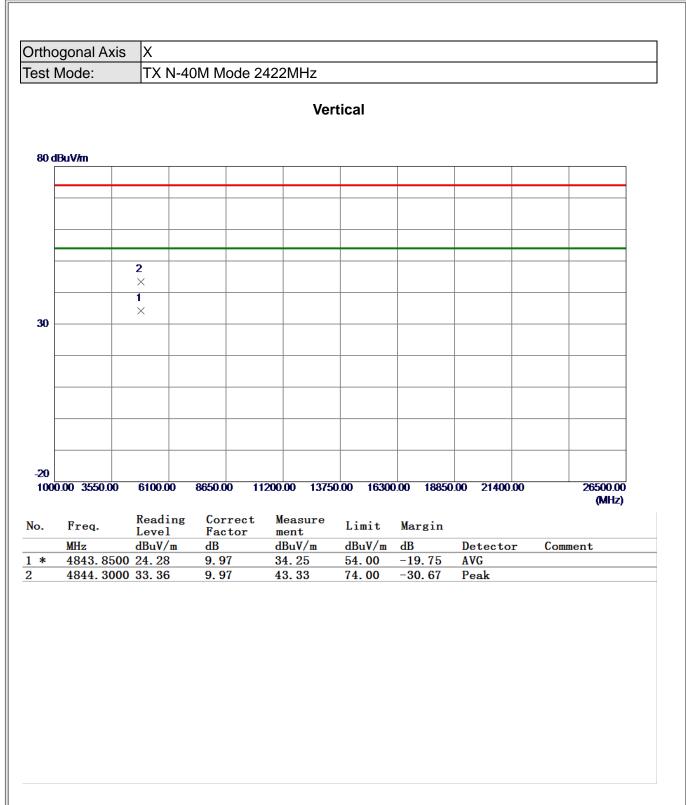






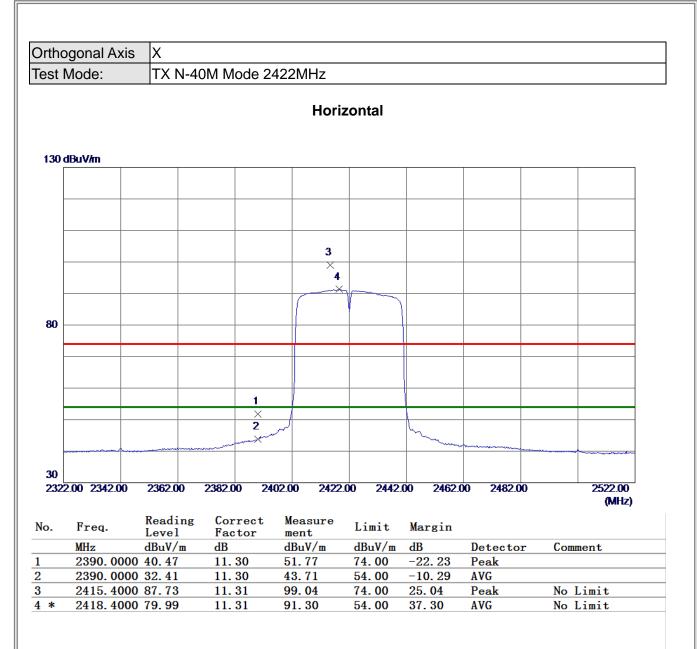






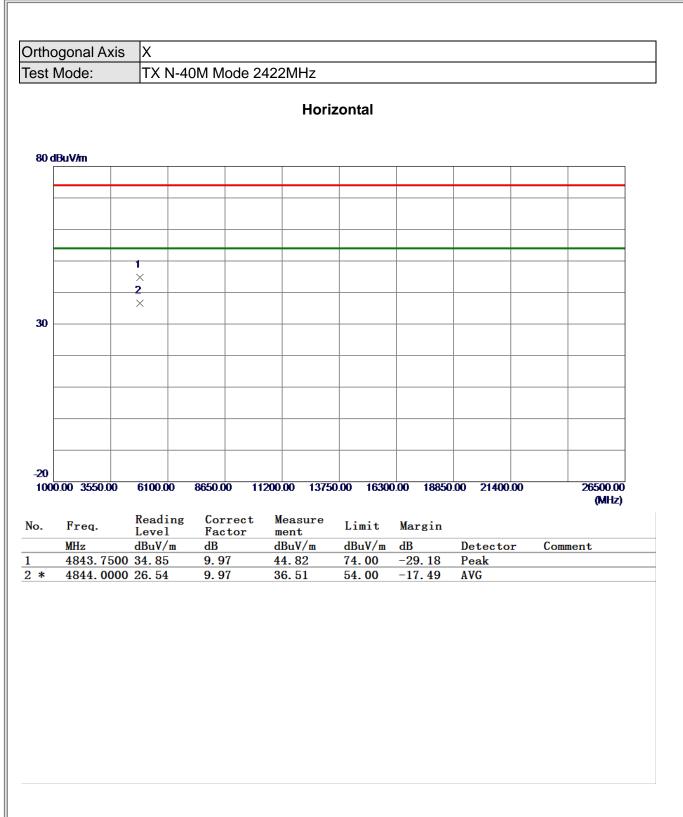






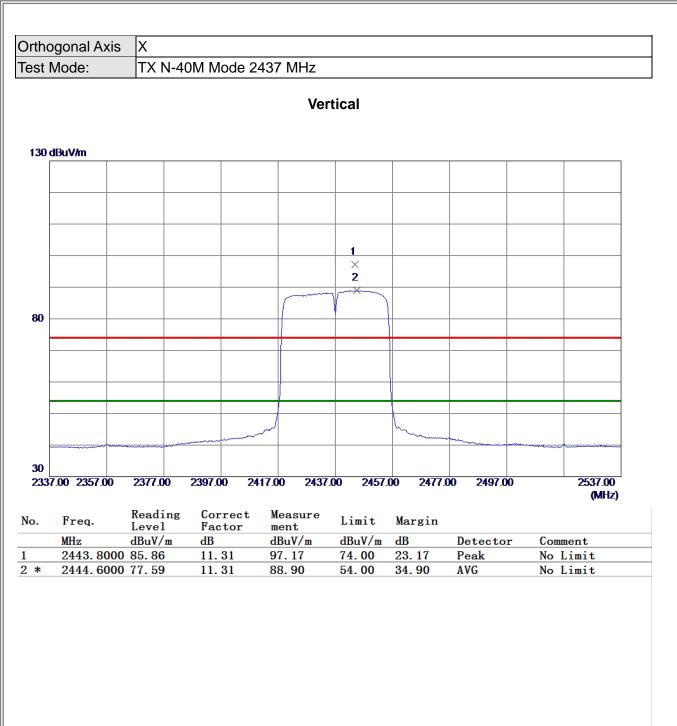






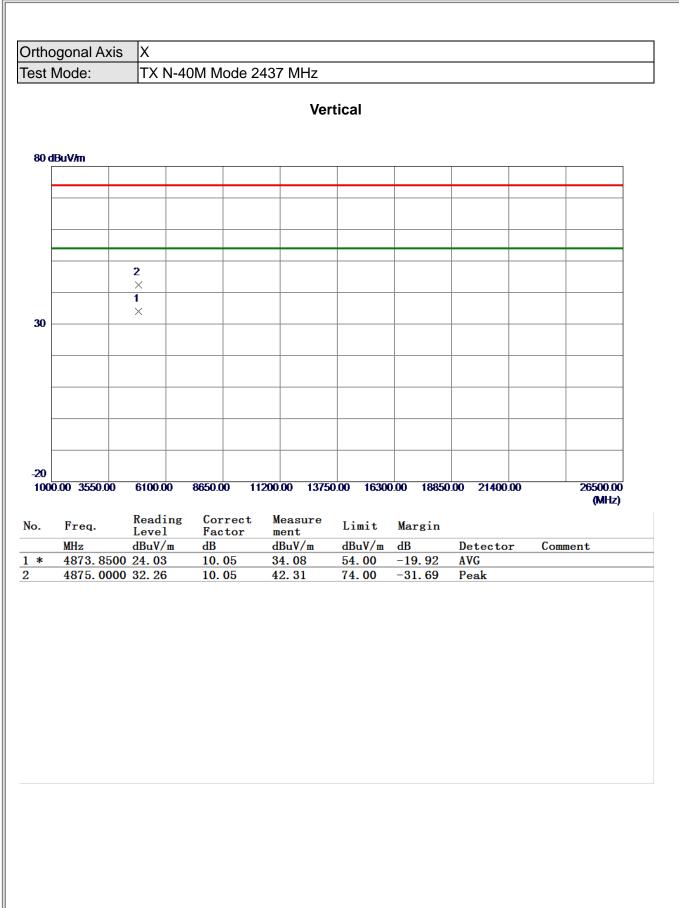






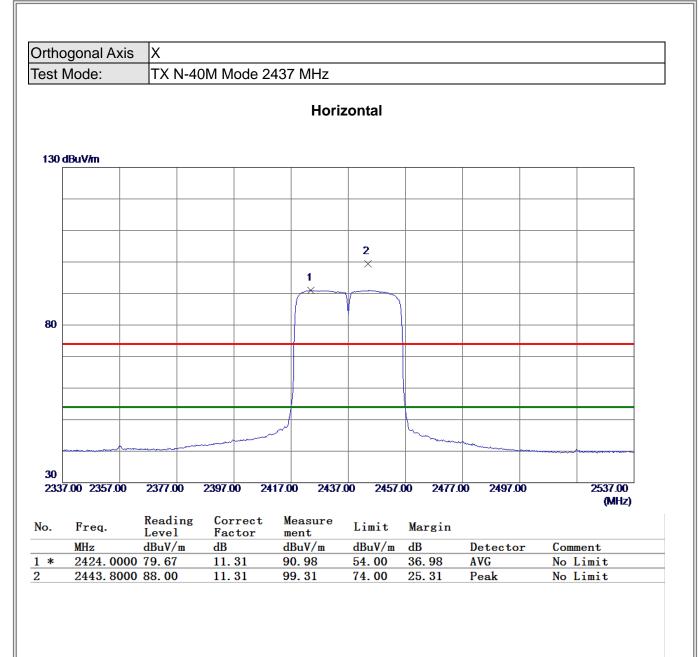






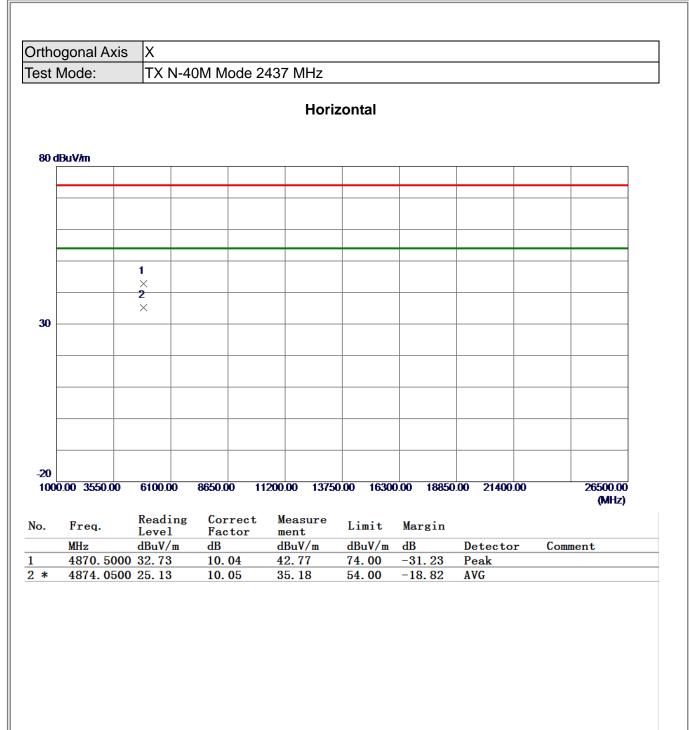






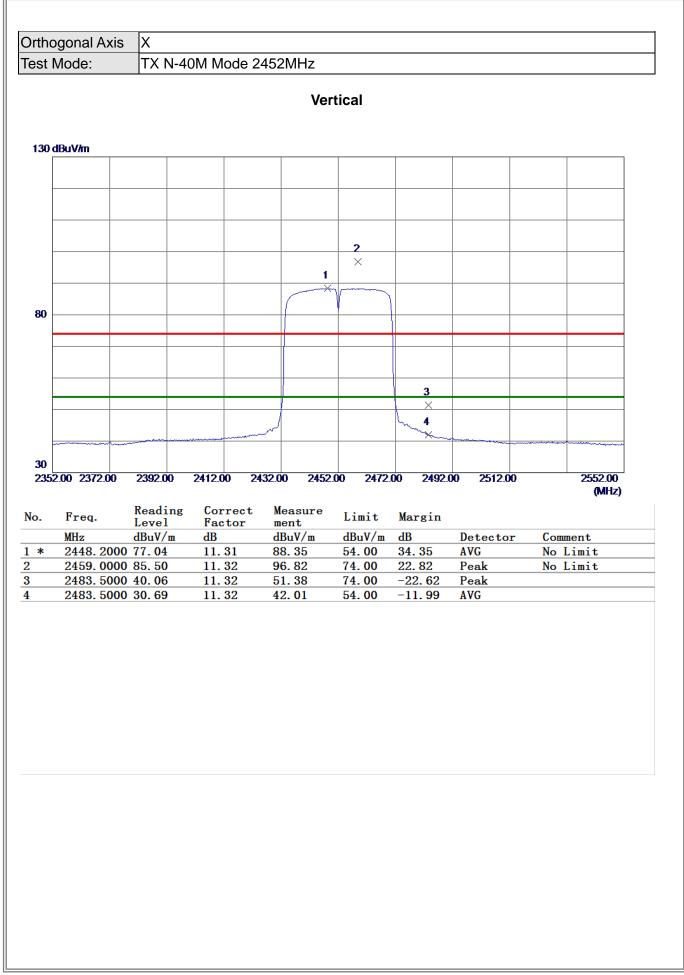






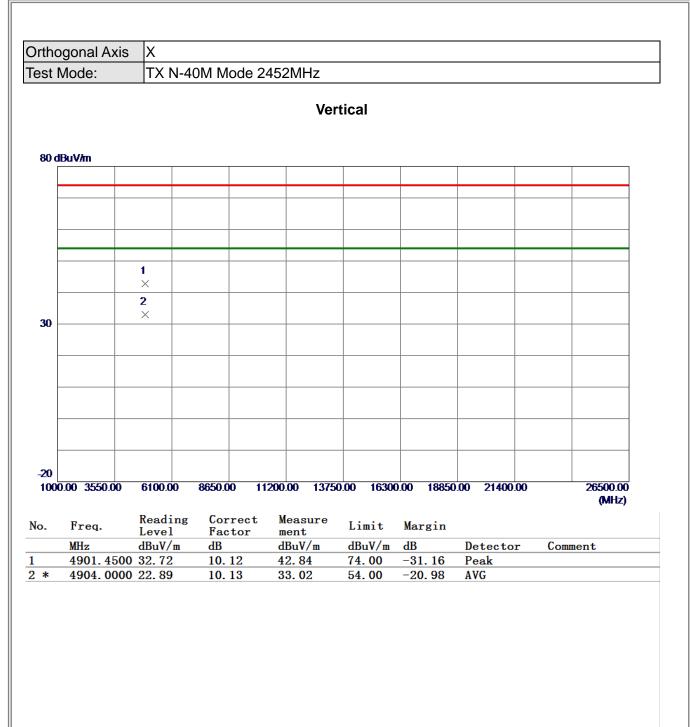






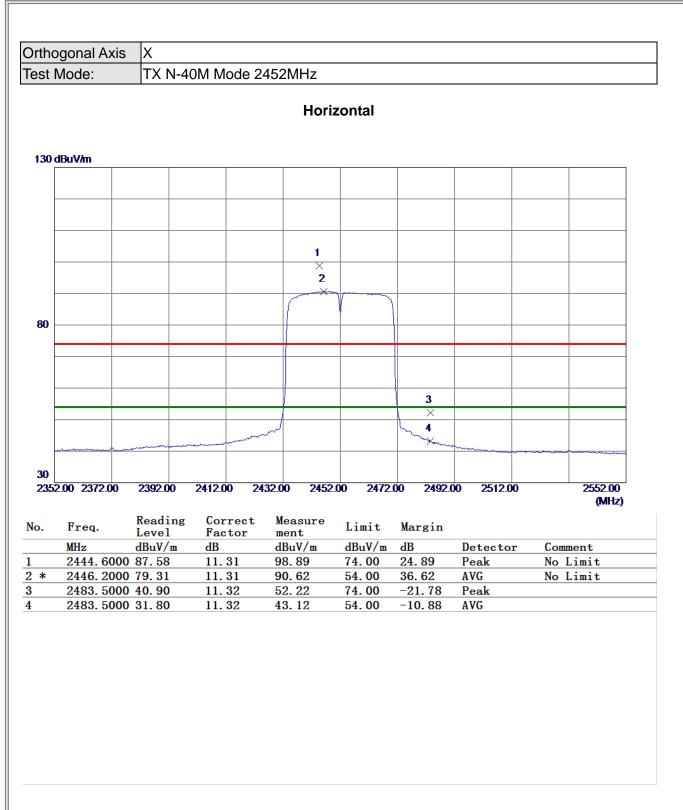






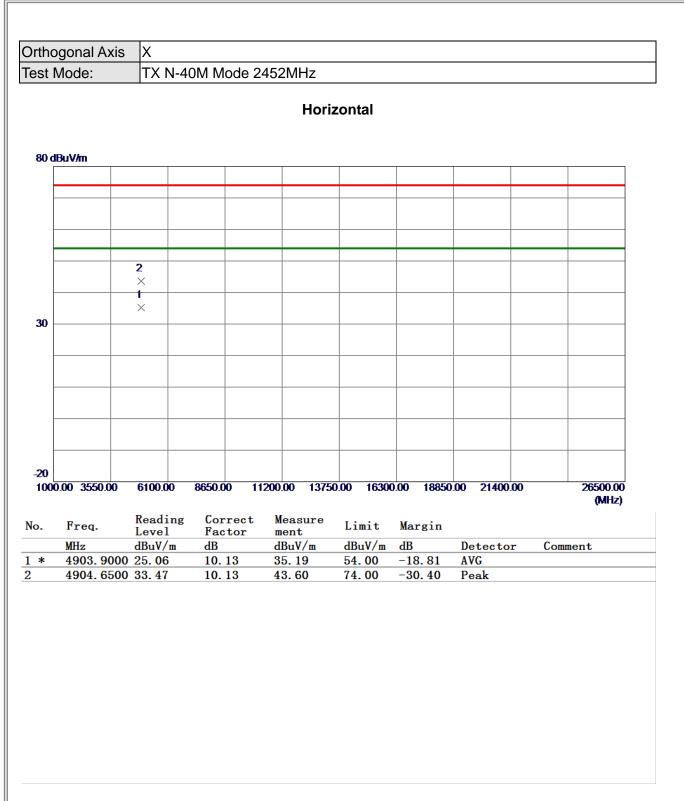
















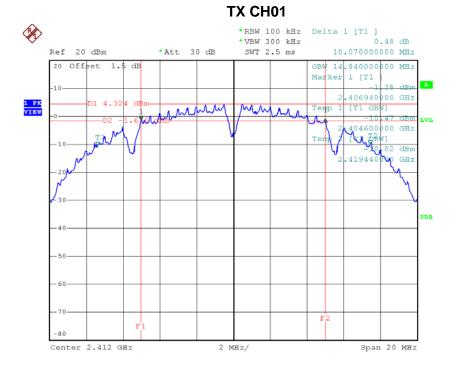
APPENDIX D - BANDWIDTH





Test Mode: TX B Mode_CH01/06/11

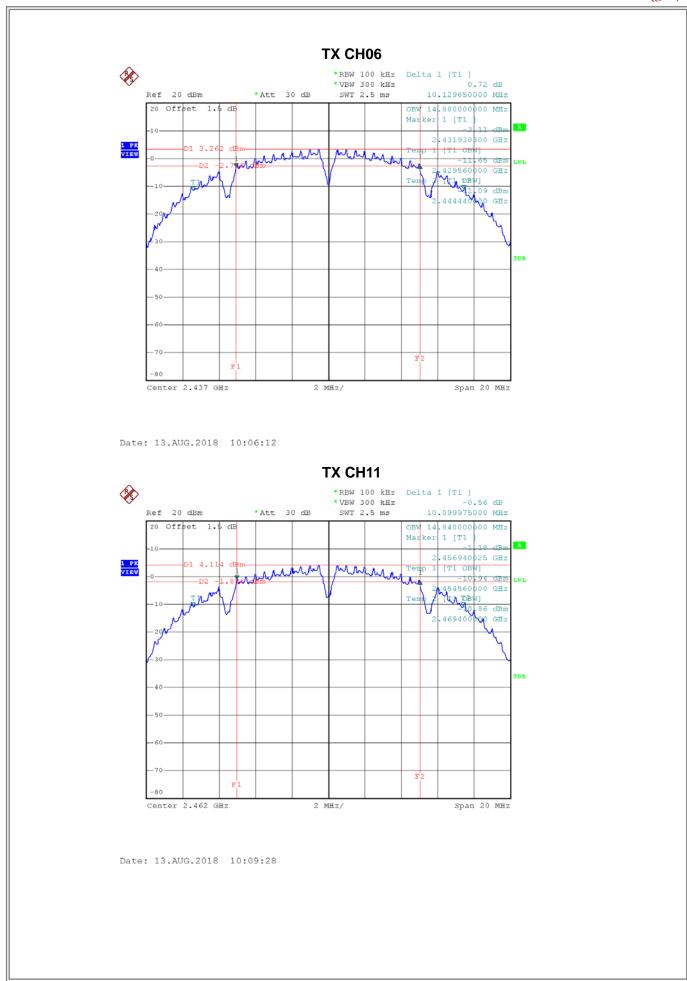
Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	10.07	14.84	500	Complies
2437	10.13	14.88	500	Complies
2462	10.10	14.84	500	Complies



Date: 13.AUG.2018 10:03:46





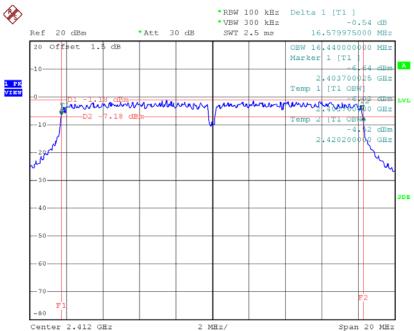






Test Mode: TX G Mode_CH01/06/11					
Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result	
2412	16.58	16.44	500	Complies	
2437	16.61	16.44	500	Complies	
2462	16.58	16.44	500	Complies	

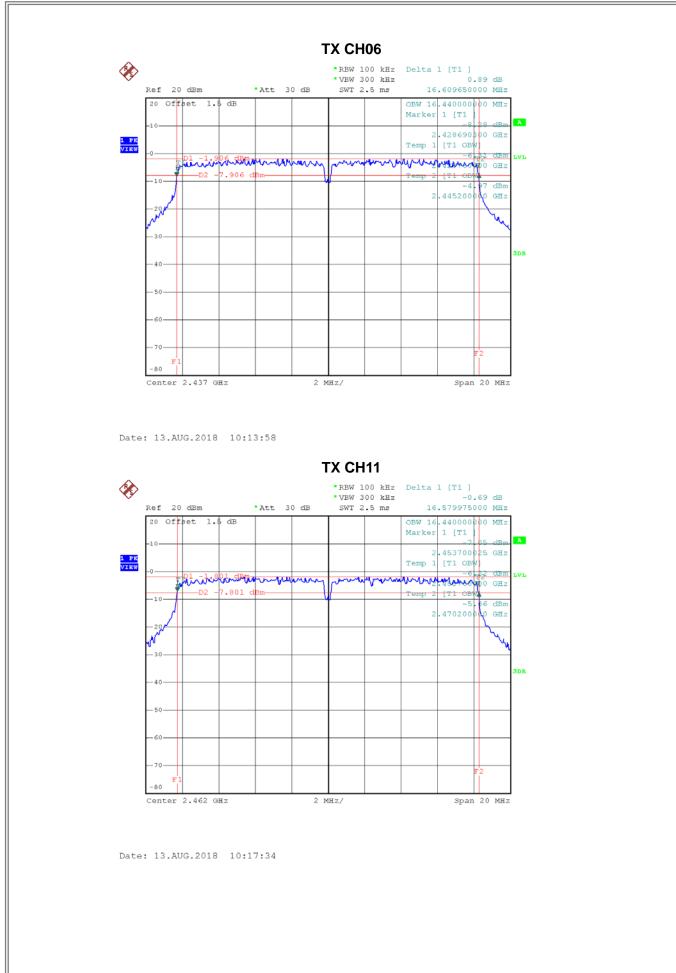




Date: 13.AUG.2018 10:12:06

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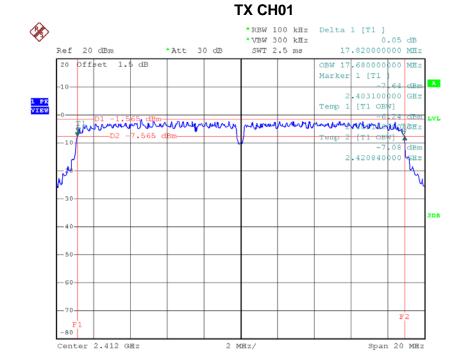




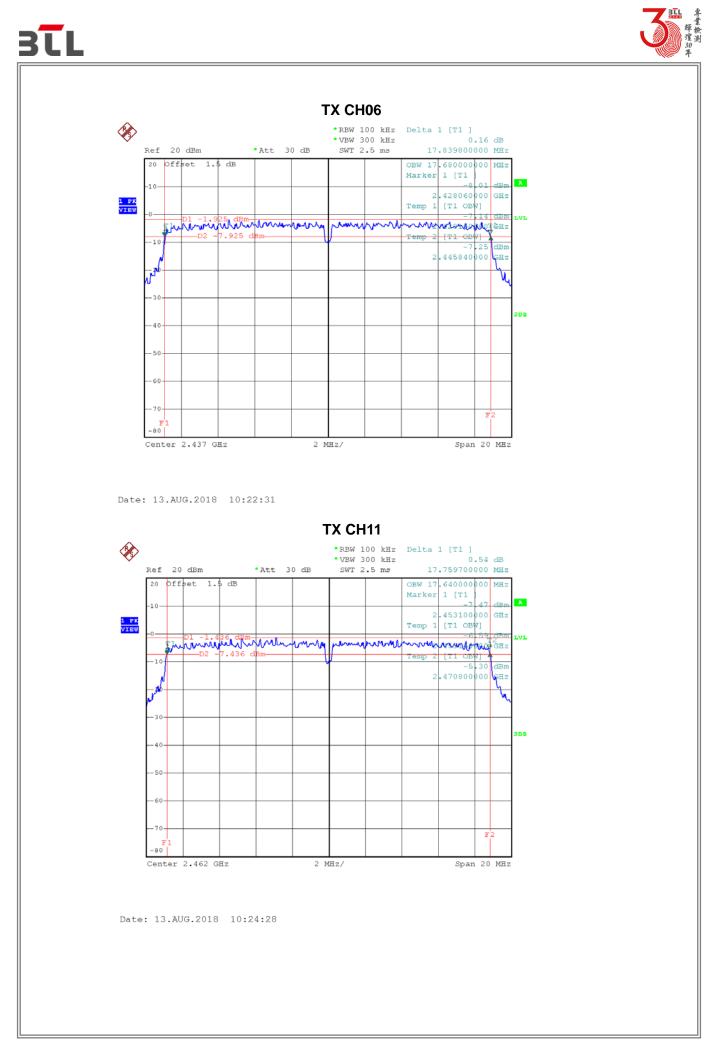




Test Mode: TX N-20MHz Mode_CH01/06/11						
Frequency (MHz)6 dB Bandwidth99% Occupied BWMin. Limit (kHz)Test Result						
2412	17.82	17.68	500	Complies		
2437	17.84	17.68	500	Complies		
2462	17.76	17.64	500	Complies		



Date: 13.AUG.2018 10:19:50

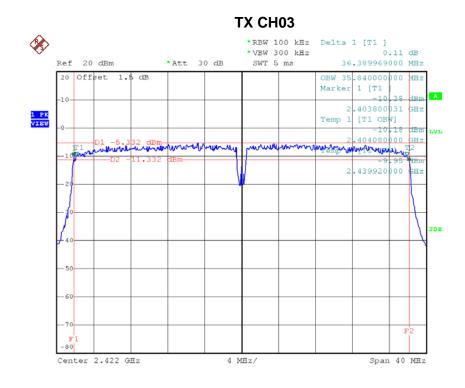


Report No.: BTL-FCCP-1-1808H001



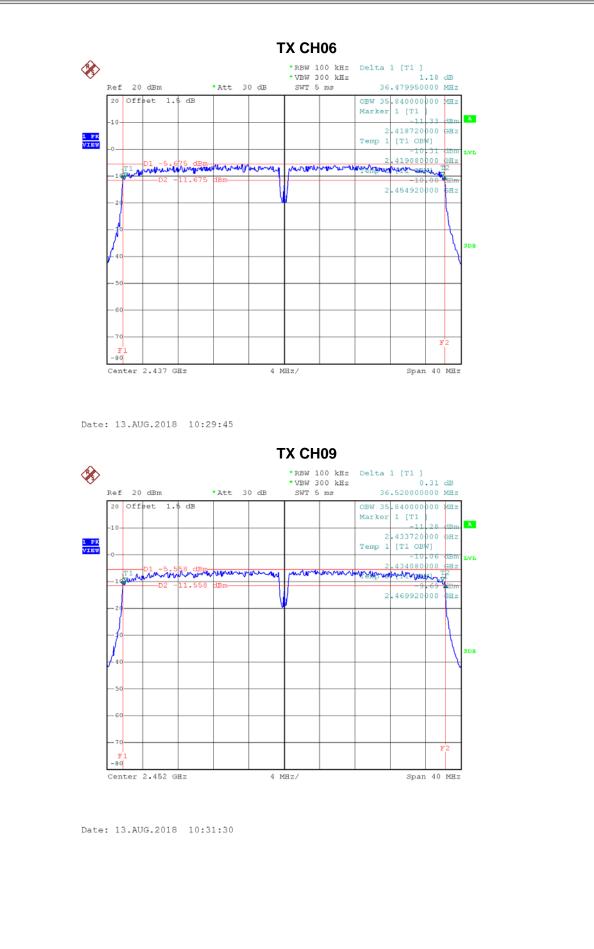


Test Mode: TX N-40MHz Mode_CH03/06/09					
Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result	
2422	36.39	35.84	500	Complies	
2437	36.48	35.84	500	Complies	
2452	36.52	35.84	500	Complies	



Date: 13.AUG.2018 10:27:52









APPENDIX E - MAXIMUM OUTPUT POWER Report No.: BTL-FCCP-1-1808H001 Page 97 of 132





Test Mode: TX B Mode_CH01/06/11						
Frequency	Output Power	Output Power	Max. Limit	Max. Limit	Result	
(MHz)	(dBm)	(VV)	(dBm)	(W)	Result	
2412	18.45	0.07	30.00	1.00	Complies	
2437	18.44	0.07	30.00	1.00	Complies	
2462	18.48	0.07	30.00	1.00	Complies	

Test Mode: TX G Mode_CH01/06/11						
Frequency	Output Power	Output Power	Max. Limit	Max. Limit	Deput	
(MHz)	(dBm)	(VV)	(dBm)	(W)	Result	
2412	22.57	0.18	30.00	1.00	Complies	
2437	22.31	0.17	30.00	1.00	Complies	
2462	22.54	0.18	30.00	1.00	Complies	

Test Mode: TX N20 Mode_CH01/06/11						
Frequency	Output Power	Output Power	Max. Limit	Max. Limit	Popult	
(MHz)	(dBm)	(VV)	(dBm)	(W)	Result	
2412	22.02	0.16	30.00	1.00	Complies	
2437	21.83	0.15	30.00	1.00	Complies	
2462	22.08	0.16	30.00	1.00	Complies	

Test Mode: TX N40 Mode_CH03/06/09						
Frequency	Output Power	Output Power	Max. Limit	Max. Limit	Popult	
(MHz)	(dBm)	(VV)	(dBm)	(W)	Result	
2422	21.17	0.13	30.00	1.00	Complies	
2437	21.24	0.13	30.00	1.00	Complies	
2452	21.49	0.14	30.00	1.00	Complies	

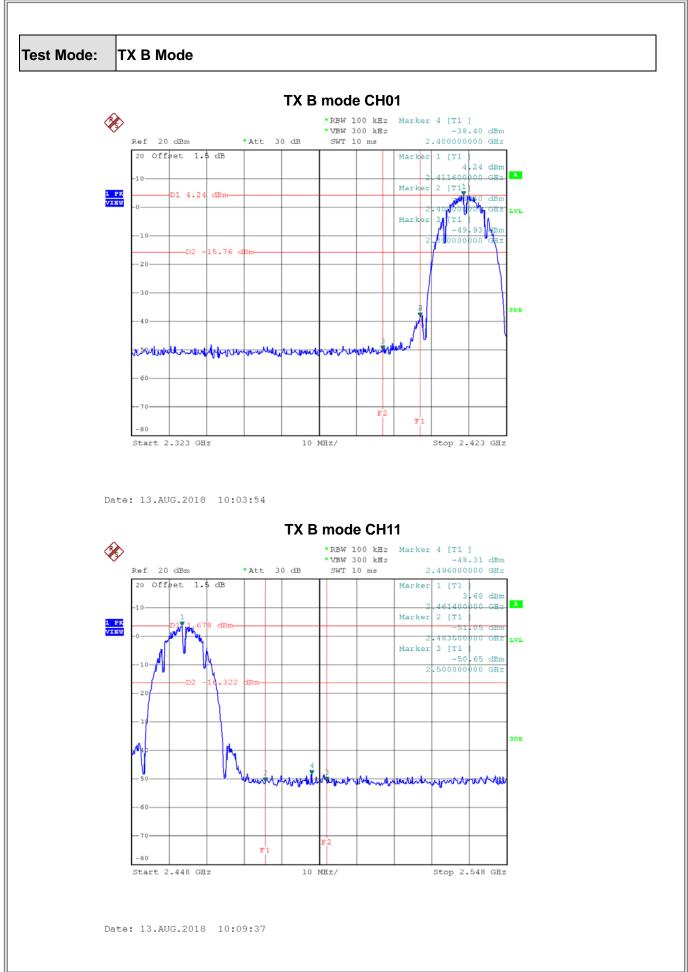




APPENDIX F - ANTENNA CONDUCTED SPURIOUS EMISSION

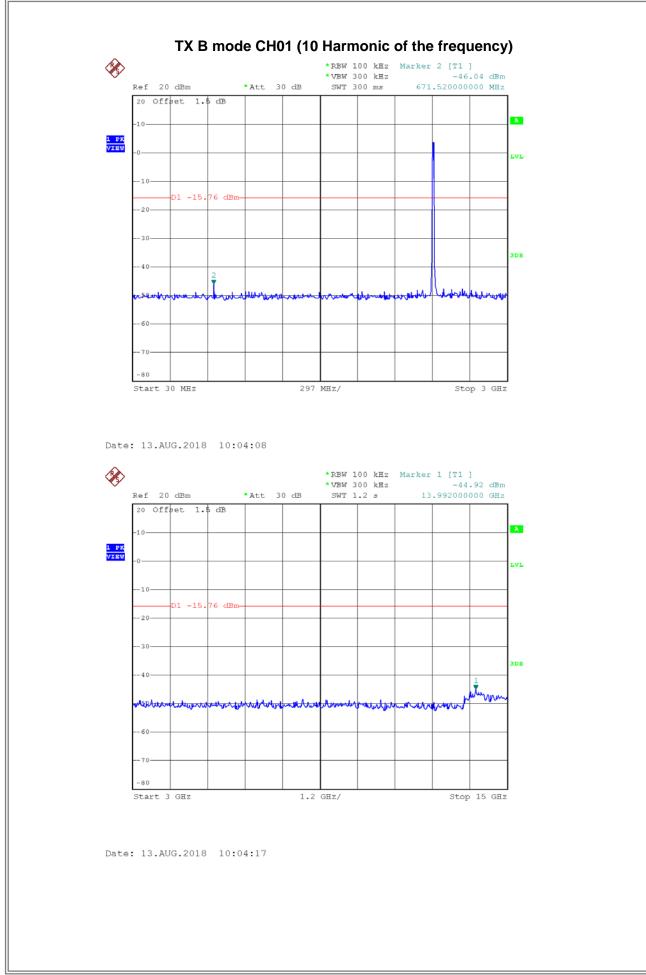


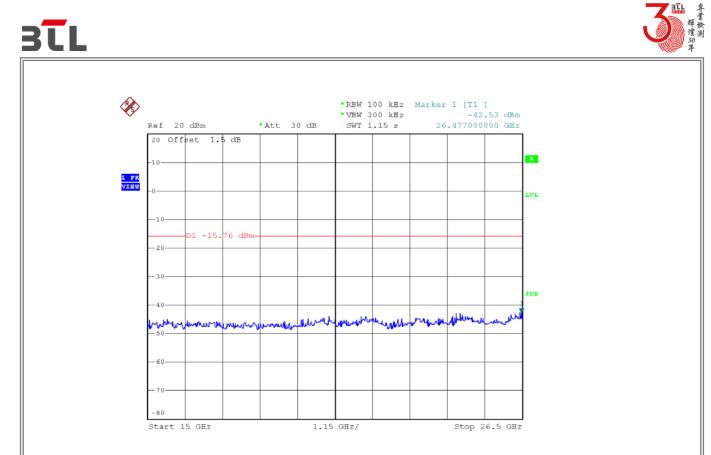




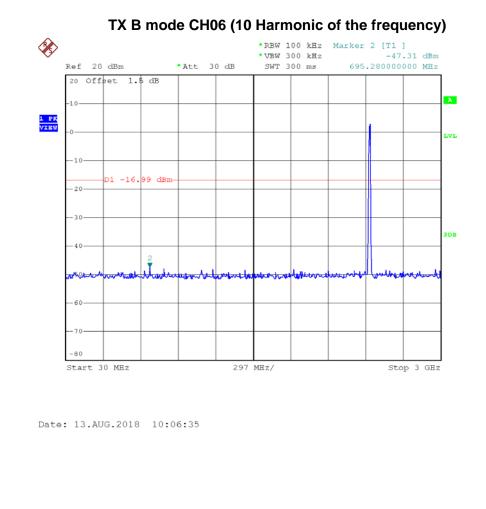
Report No.: BTL-FCCP-1-1808H001

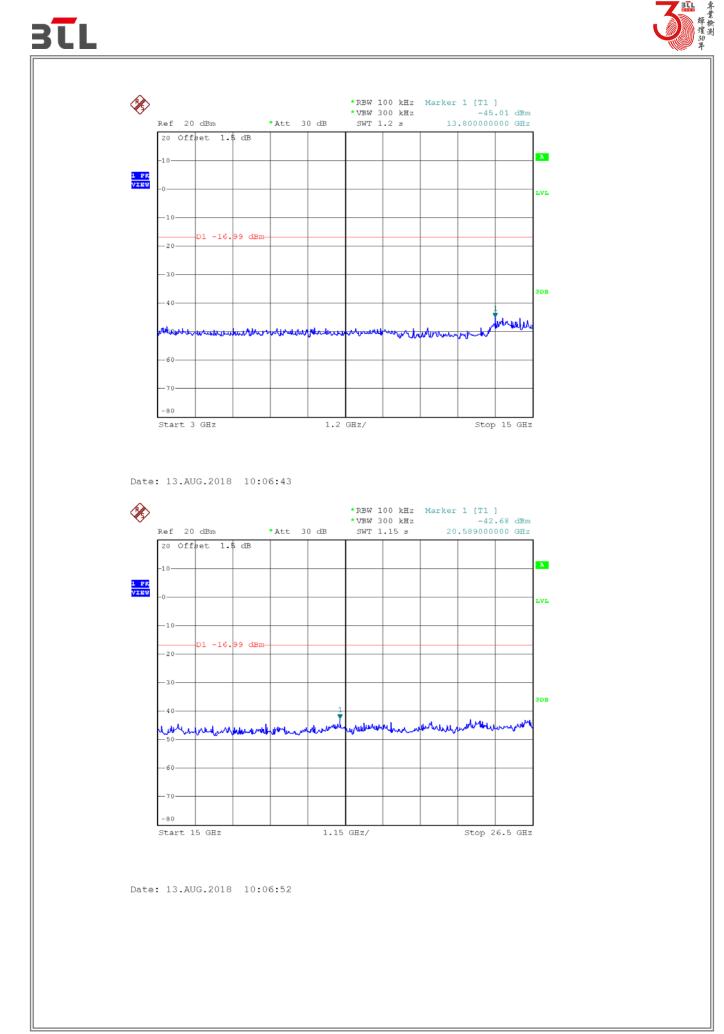




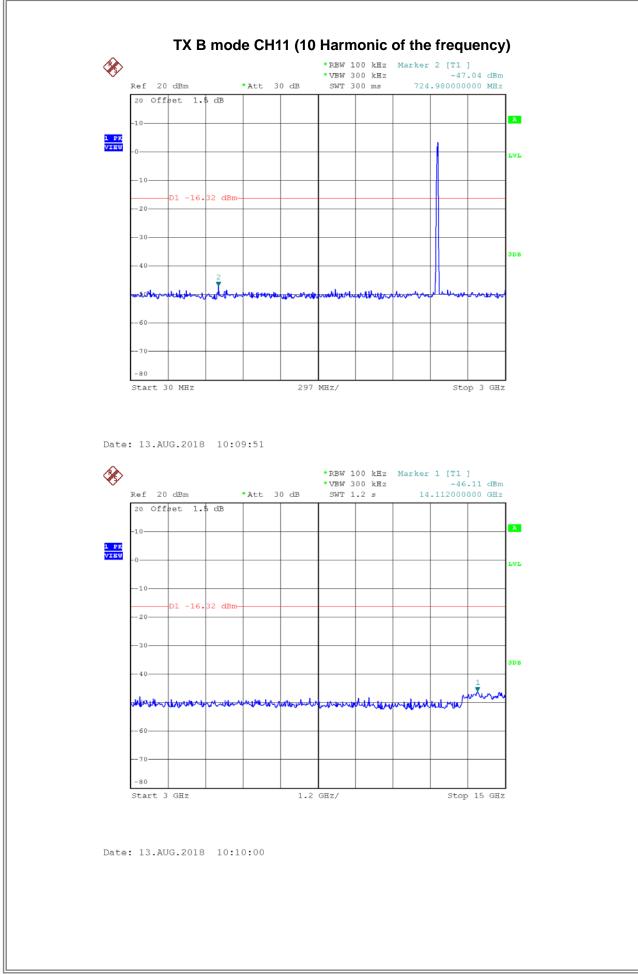


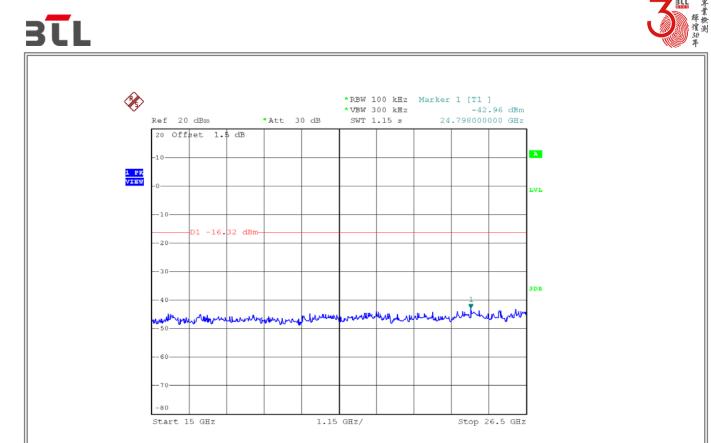
Date: 13.AUG.2018 10:04:25







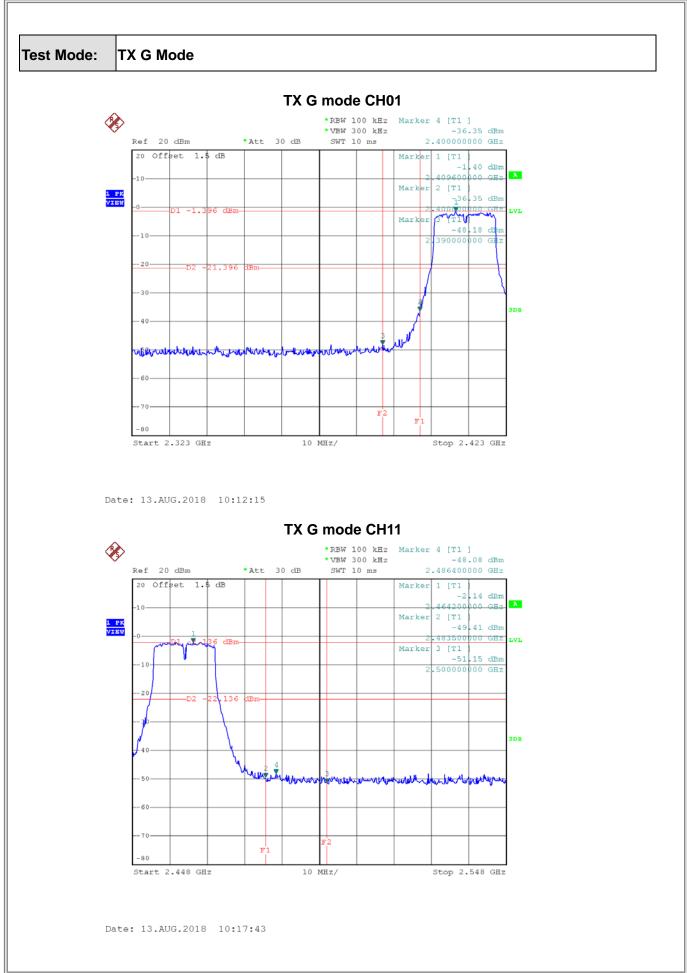




Date: 13.AUG.2018 10:10:08

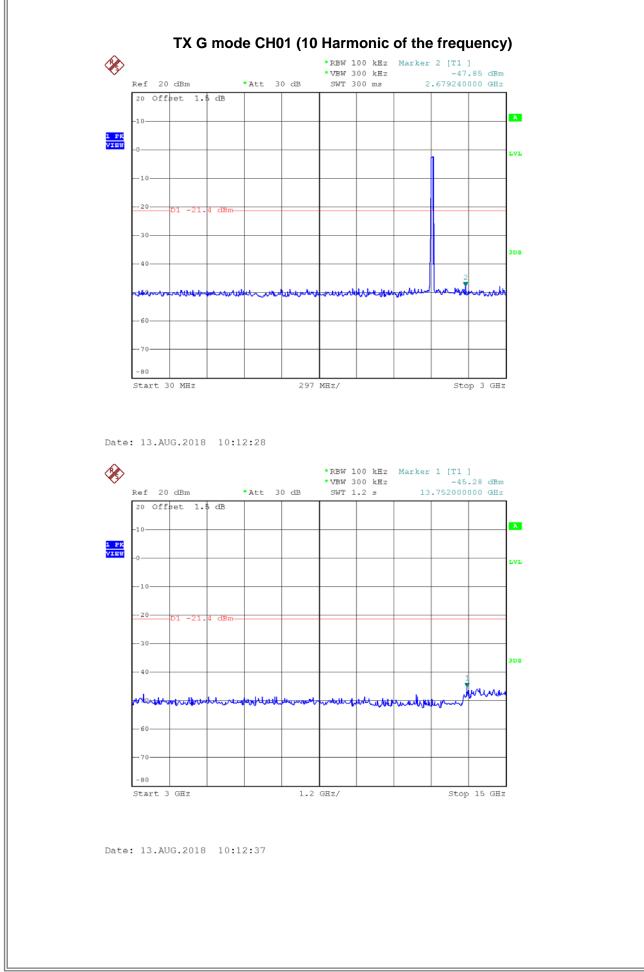


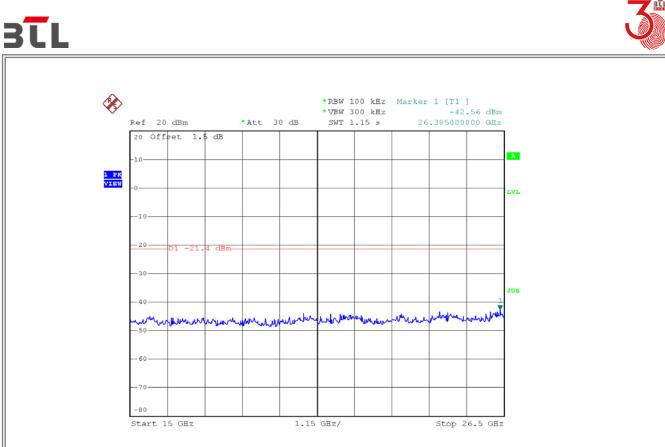




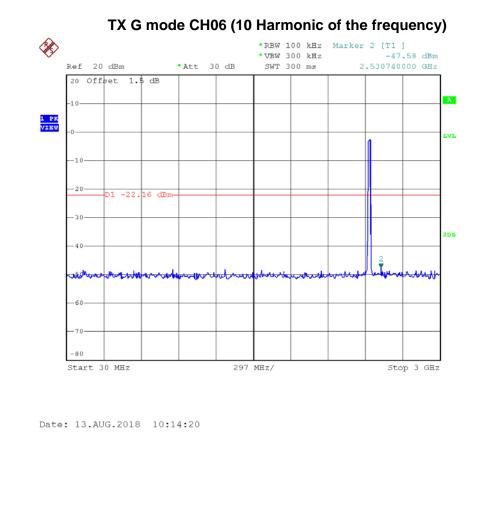
Report No.: BTL-FCCP-1-1808H001



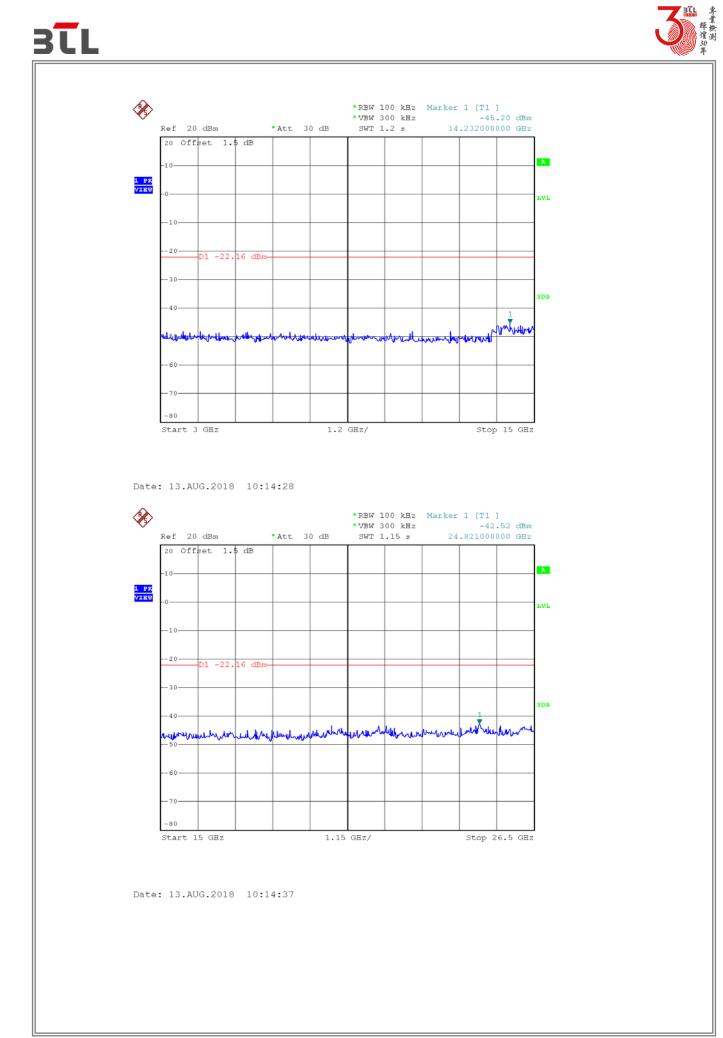




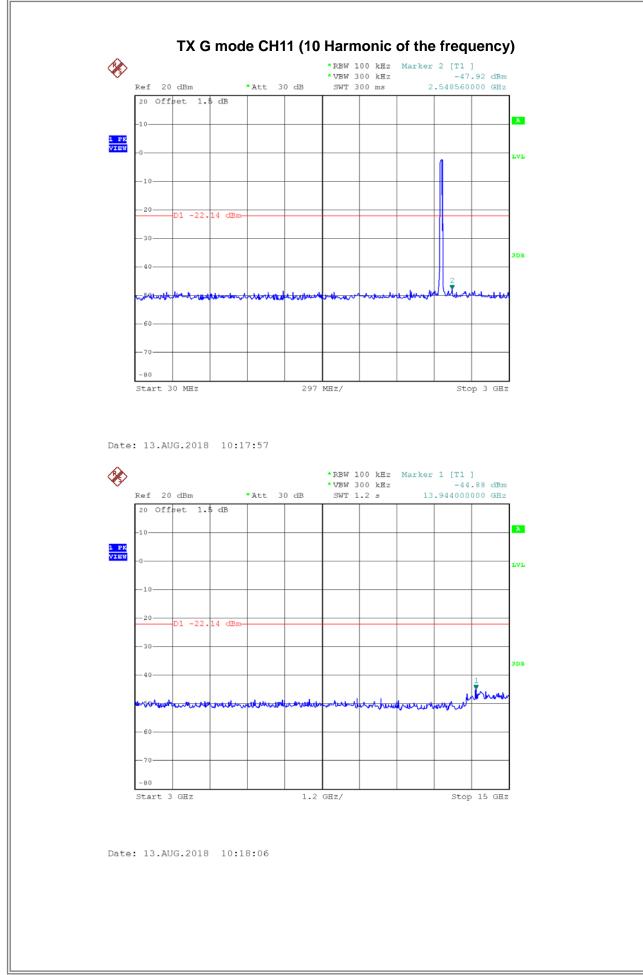
Date: 13.AUG.2018 10:12:45

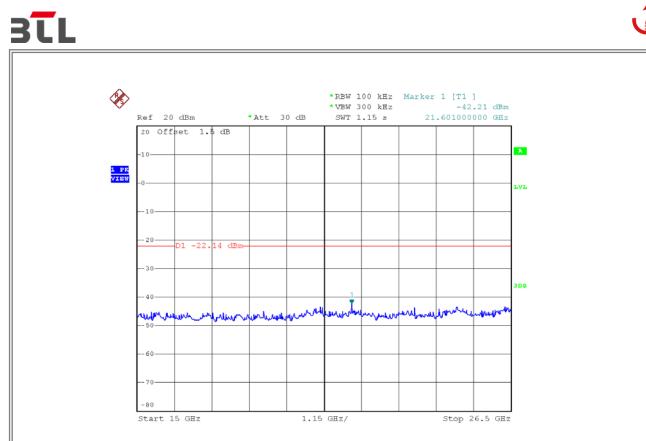


Report No.: BTL-FCCP-1-1808H001







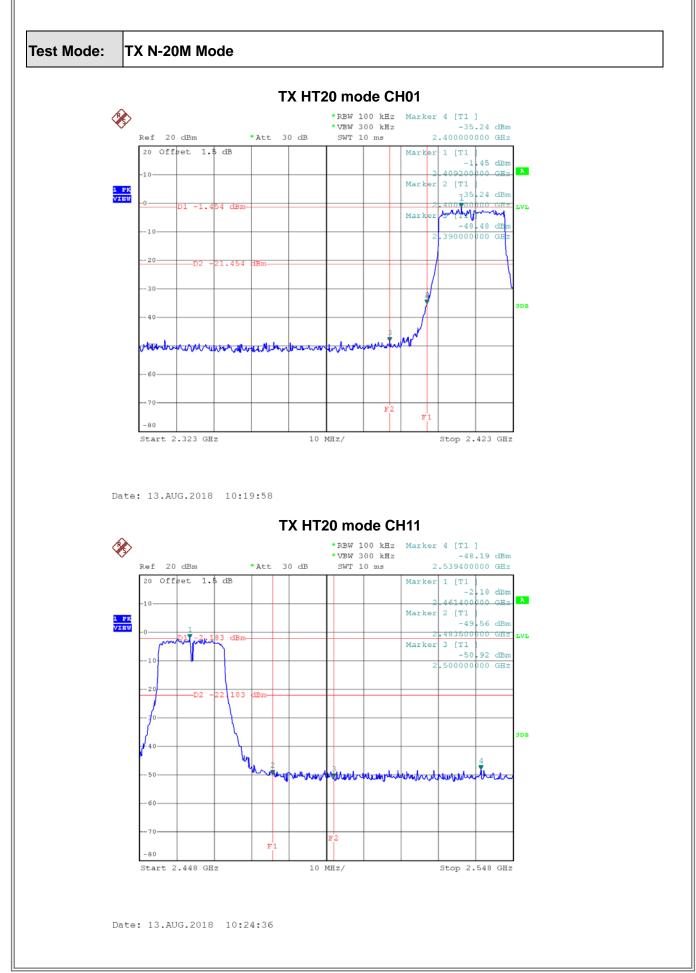


Date: 13.AUG.2018 10:18:14

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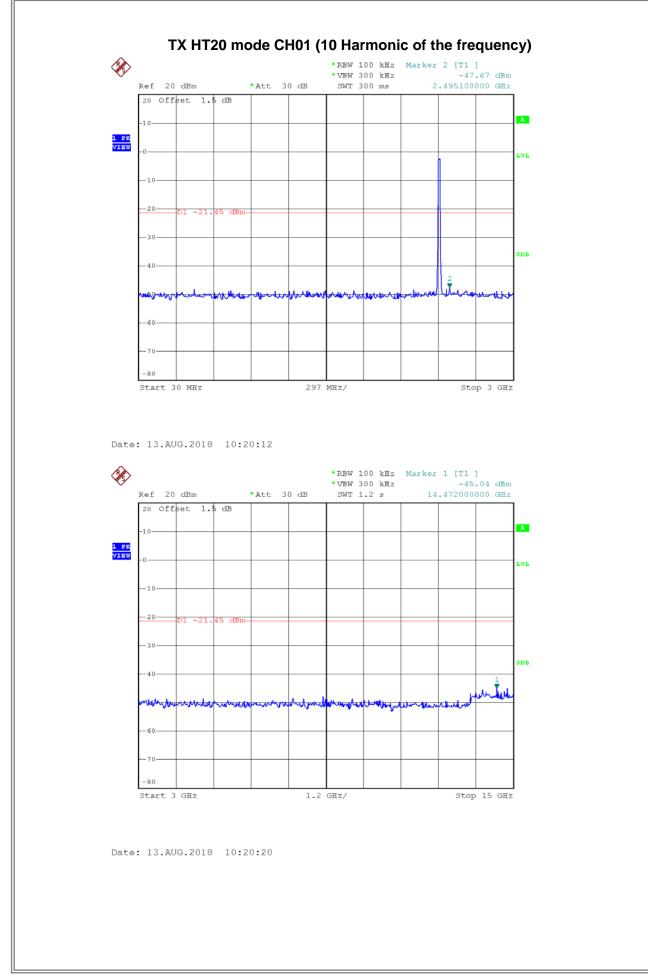


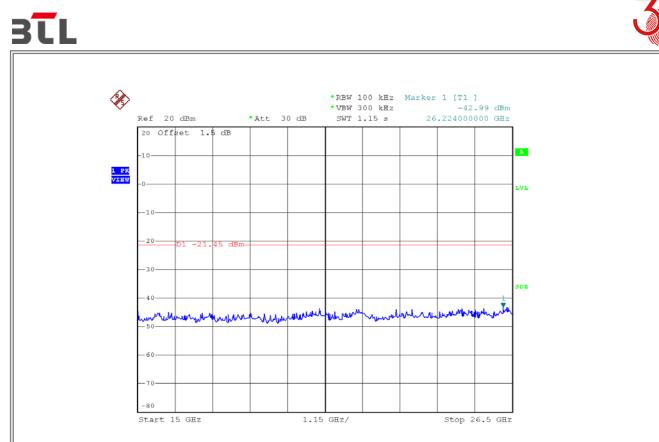




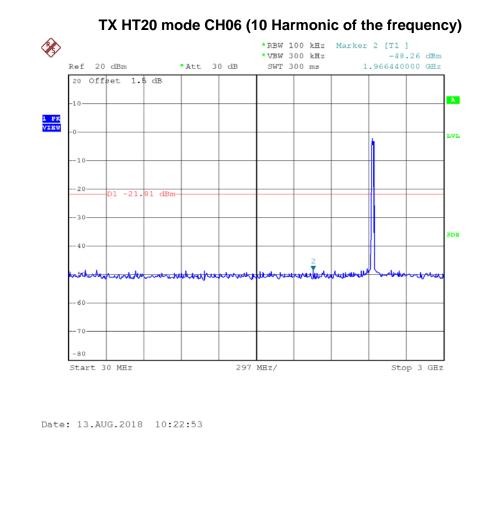
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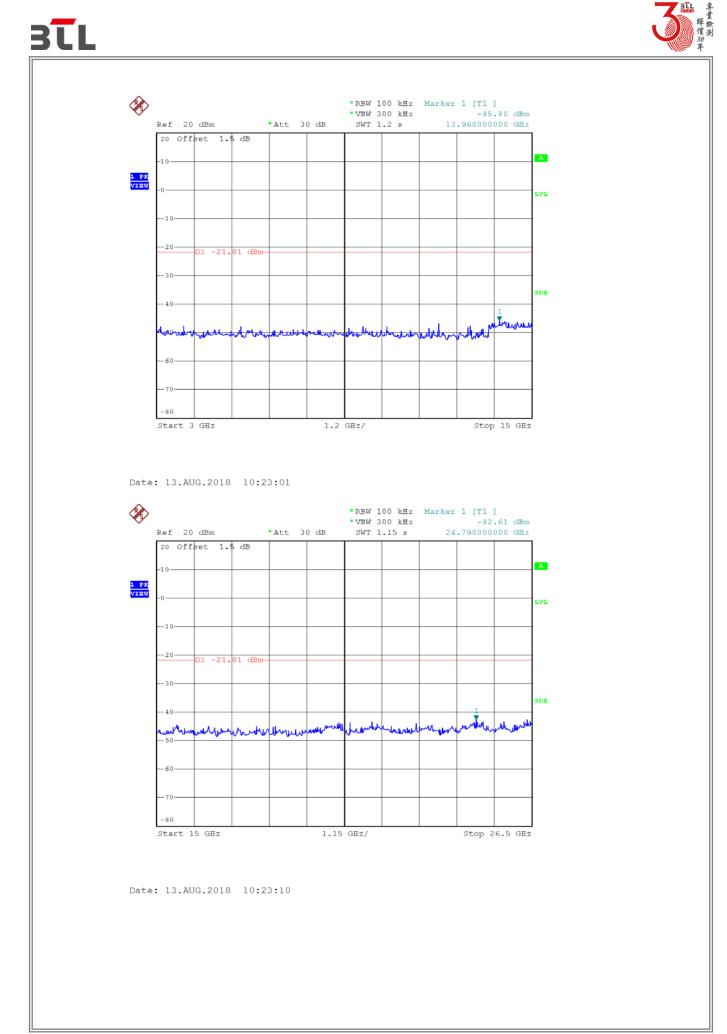




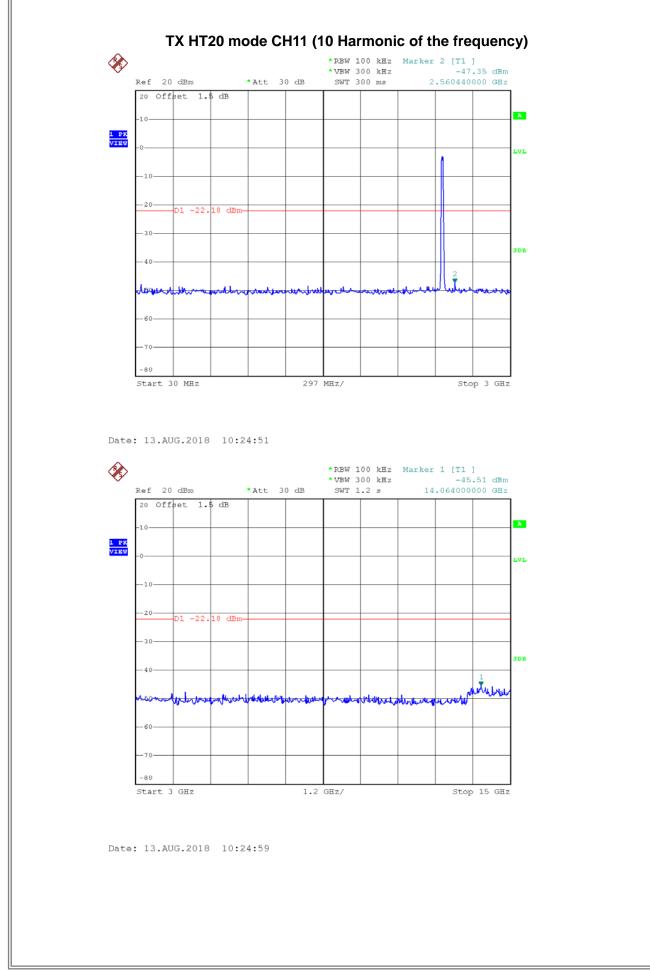
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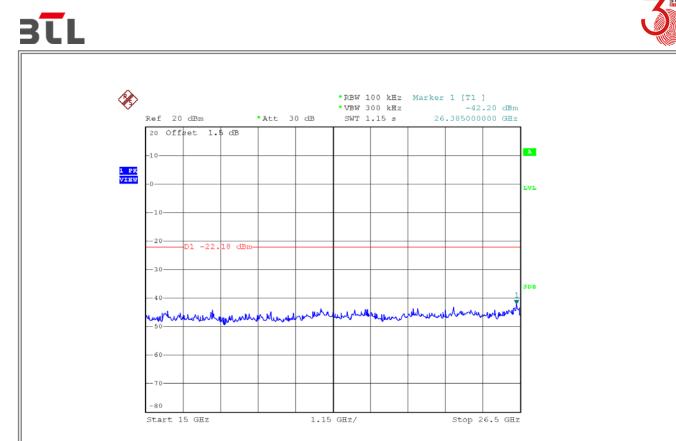


Report No.: BTL-FCCP-1-1808H001







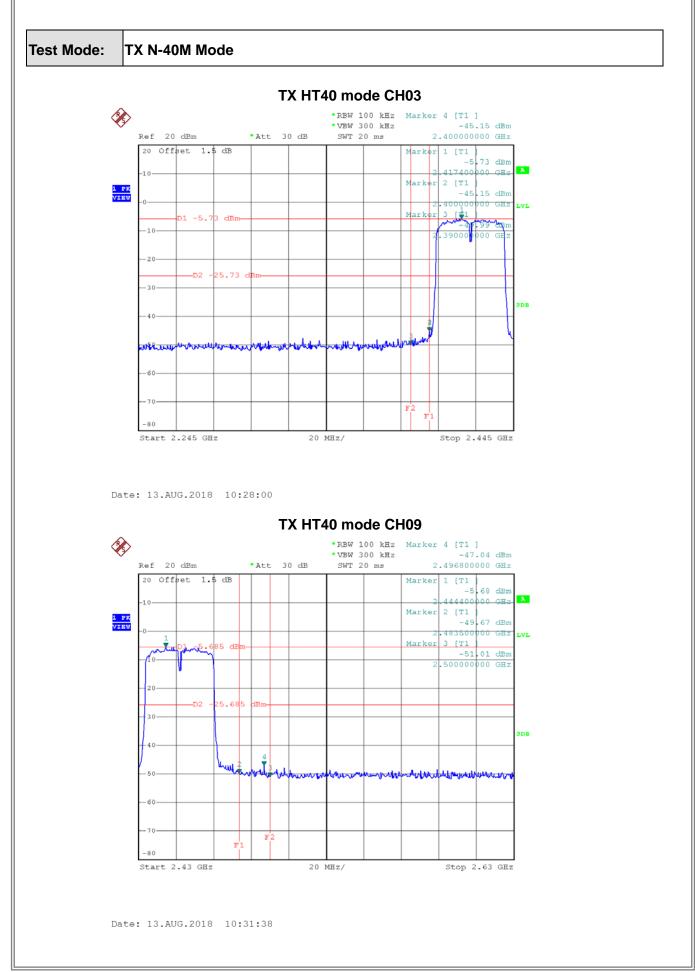


Date: 13.AUG.2018 10:25:07

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Report No.: BTL-FCCP-1-1808H001