



# **FCC Radio Test Report**

FCC ID: X4YLNX301

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

: 1801C251

Project No. Equipment Test Model Series Model Applicant Address

Lynx301 WIRELESS-N / MINI 2.0USB ADAPTER
AULUB305U4
N/A
NEXXT SOLUTIONS
3505 N.W 107TH AVE. MIAMI FLORIDA 33178 U.S.A

 Date of Receipt
 :
 Jan. 30, 2018

 Date of Test
 :
 Feb. 01, 2018 ~ Feb. 09, 2018

 Issued Date
 :
 Mar. 14, 2018

 Tested by
 :
 BTL Inc.

**Testing Engineer** 

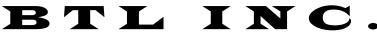
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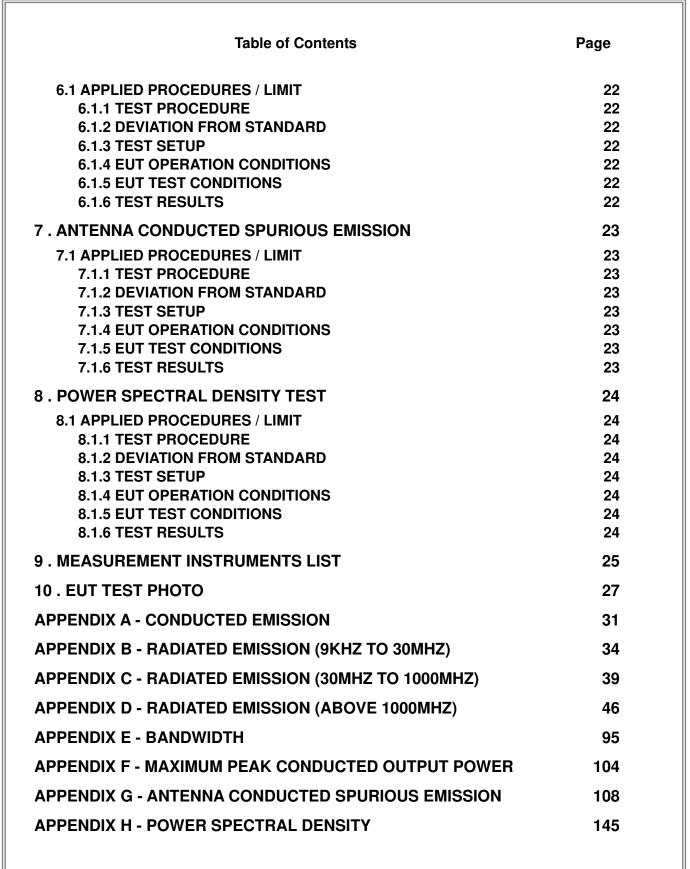
#### Limitation

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.	Version	Description	Issued Date
BTL-FCCP-1-1801C251	Rev.01	Original Issue.	Mar. 01, 2018
BTL-FCCP-1-1801C251		Delete the maximum peak conducted the output power of AVG data	Mar. 14, 2018





# **1. CERTIFICATION**

Equipment : Lynx301 WIRELESS-N / MINI 2.0USB ADAPTER Brand Name : NEXXT	ł
Test Model : AULUB305U4	
Series Model : N/A	
Applicant : NEXXT SOLUTIONS	
Manufacturer : NEXXT SOLUTIONS	
Address : 3505 N.W 107TH AVE. MIAMI FLORIDA 33178 U	.S.A
Date of Test : Feb. 01, 2018 ~ Feb. 09, 2018	
Test Sample : Engineering Sample	
Standard(s) : FCC Part15, Subpart C:(15.247) / ANSI C63.10-2	013

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-1-1801C251) 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	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.





#### 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:

a model en	101101		
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		
		30MHz ~ 200MHz	V	3.82		
	DG-CB03 CISPR			30MHz ~ 200MHz	Н	3.78
					200MHz ~ 1,000MHz	V
DG-CB03		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.





# **3. GENERAL INFORMATION**

#### 3.1 GENERAL DESCRIPTION OF EUT

Equipment	Lynx301 WIRELESS-N / MIN	NI 2.0USB ADAPTER		
Brand Name	NEXXT	NEXXT		
Test Model	AULUB305U4			
Series Model	N/A			
Model Difference	N/A			
	Operation Frequency	2412~2462 MHz		
Product Description	Modulation Technology	802.11b:DSSS 802.11g:OFDM 802.11n:OFDM		
	Bit Rate of Transmitter	802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n: up to 300 Mbps		
	802.11b:         11.77dBm           802.11g:         19.89dBm           802.11n(20MHz):         18.92dBm           802.11n(40MHz):         18.46dBm			
Power Source	DC voltage supplied from PC	CUSB port.		
Power Rating	DC 5V			

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

#### 2. Channel List:

CH01 - CH11 for 802.11b, 802.11g, 802.11n(20MHz) CH03 - CH09 for 802.11n(40MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

#### 3. Table for Filed Antenna:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	NA	N/A	Internal	N/A	1	N/A
2	NA	N/A	Internal	N/A	1	N/A

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R).

#### 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)

#### **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	





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%.



#### 3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

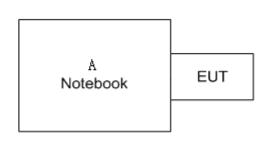
During testing, channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final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

Test software version	MP-Tool		
Frequency (MHz)	2412	2437	2462
802.11b	19	18	17
802.11g	27	27	27
802.11n (20MHz)	23/25	22/24	21/22
Frequency (MHz)	2422	2437	2452
802.11n (40MHz)	24/25	24/26	24/25





#### 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.
А	Notebook	Lenovo	DCSM	DOC	EB22953770

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



# 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 -5.00	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

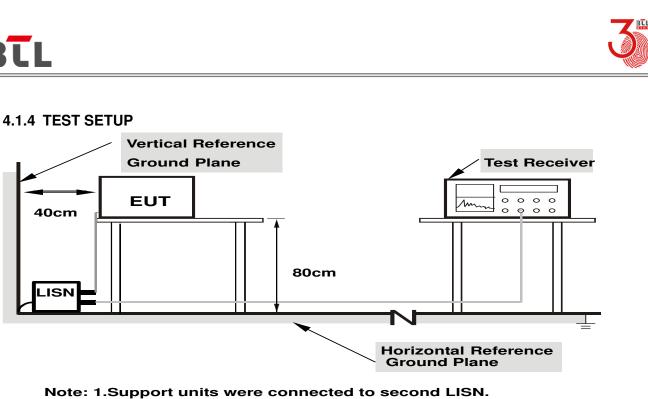
Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

#### 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



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

**BIL** 

Please refer to the Appendix A.



#### 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)

	(dBuV/m) (at 3 meters)	
Frequency (MHz)	PEAK	AVERAGE
Above 1000	74	54

Notes:

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





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

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

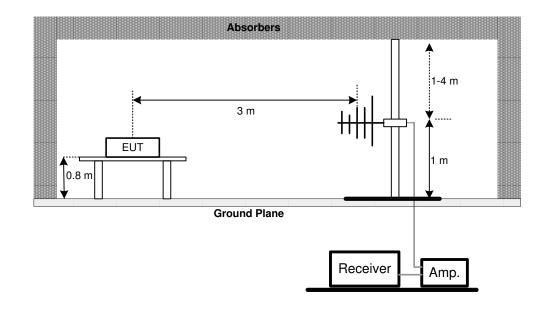
No deviation



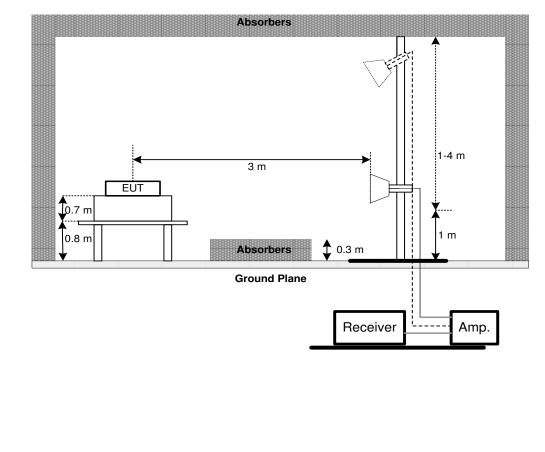


## 4.2.4 TEST SETUP

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

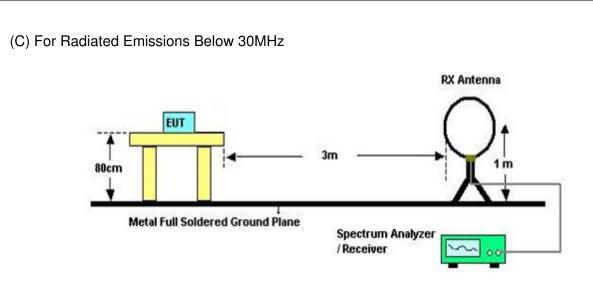


#### (B) Radiated Emission Test Set-Up Frequency Above 1 GHz









#### 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: DC 5V

#### 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.



# **5. BANDWIDTH TEST**

#### 5.1 APPLIED PROCEDURES

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

#### 5.1.1 TEST PROCEDURE

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

#### 5.1.2 DEVIATION FROM STANDARD

No deviation.

#### 5.1.3 TEST SETUP



#### 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 5V

#### 5.1.6 TEST RESULTS

Please refer to the Appendix E.



# 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 9.1.3 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



#### 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 5V

#### 6.1.6 TEST RESULTS

Please refer to the Appendix F.



# 7. ANTENNA CONDUCTED SPURIOUS EMISSION

#### 7.1 APPLIED PROCEDURES / LIMIT

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

# 7.1.1 TEST PROCEDURE

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

#### 7.1.2 DEVIATION FROM STANDARD

No deviation.

#### 7.1.3 TEST SETUP



#### 7.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 7.1.5 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: DC 5V

#### 7.1.6 TEST RESULTS

Please refer to the Appendix G.



# 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



#### 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 5V

#### 8.1.6 TEST RESULTS

Please refer to the Appendix H.



# 9. MEASUREMENT INSTRUMENTS LIST

	Conducted Emission						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until		
1	LISN	EMCO	3816/2	0052765	Mar. 26, 2018		
2	LISN	R&S	ENV216	101447	Mar. 26, 2018		
3	Test Cable	emci	RG223(9KHz-30 MHz)	C_17	Mar. 09, 2018		
4	EMI Test Receiver	R&S	ESCI	100382	Mar. 26, 2018		
5	50Ω Terminator	SHX	TF2-3G-A	08122901	Mar. 26, 2018		
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A		

	Radiated Emission 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	Aug. 20, 2018		
3	Receiver	Agilent	N9038A	MY52130039	Aug. 20, 2018		
4	Cable	emci	LMR-400(30MHz-1 GHz)(8m+5m)	N/A	Jun. 26, 2018		
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		
8	Antenna	EM	EM-6876-1	230	Mar. 06, 2018		





	Radiated Emission 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	Jul. 07, 2018		
7	Controller	СТ	SC100	N/A	N/A		
8	Controller	MF	MF-7802	MF780208416	N/A		
9	Cable	emci	EMC104-SM-SM-1 2000(12m)	N/A	Jun. 26, 2018		
10	Measurement Software	Farad	EZ-ÈMC 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	Aug. 20, 2018

	Peak Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	Power Meter	ANRITSU	ML2495A	1128009	Aug. 20, 2018	
2	Pulse Power Sensor	ANRITSU	MA 2411B	1027500	Aug. 20, 2018	

	Antenna Conducted Spurious Emission				
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 20, 2018

	Power Spectral Density				
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 20, 2018

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





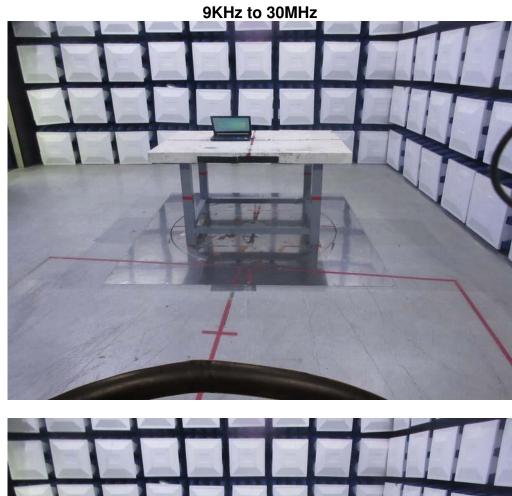
# **10. EUT TEST PHOTO**

#### **Conducted Measurement Photos**





## **Radiated Measurement Photos**







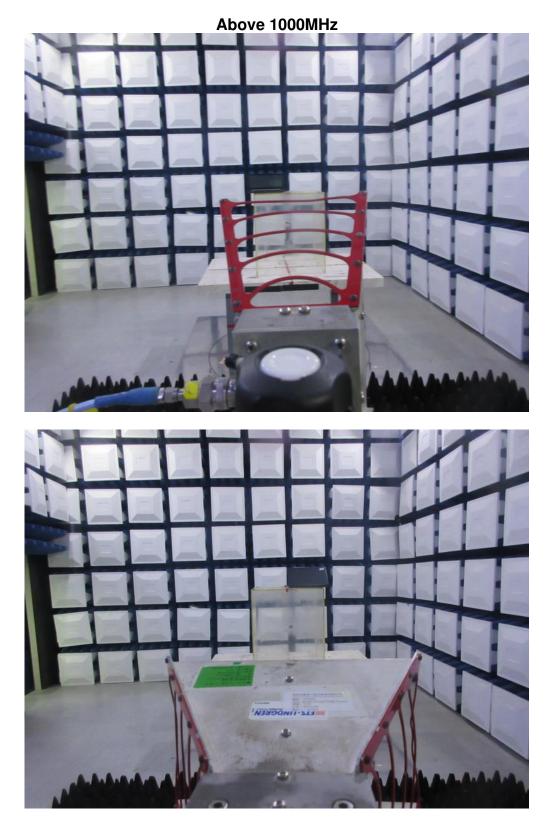
#### **Radiated Measurement Photos**







#### **Radiated Measurement Photos**



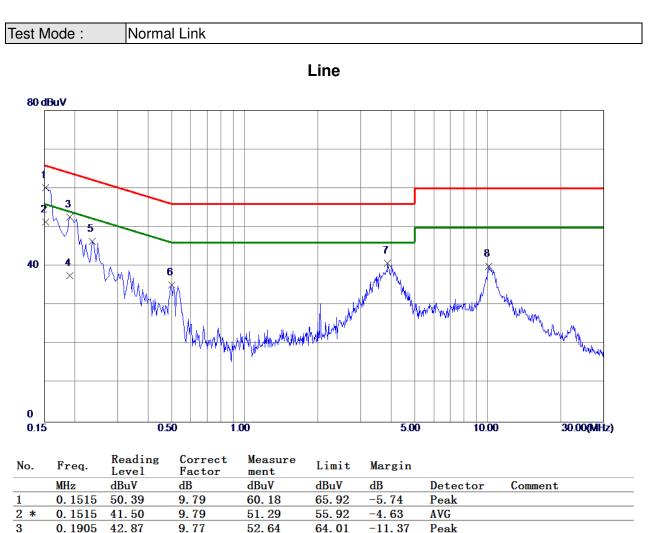




# **APPENDIX A - CONDUCTED EMISSION**



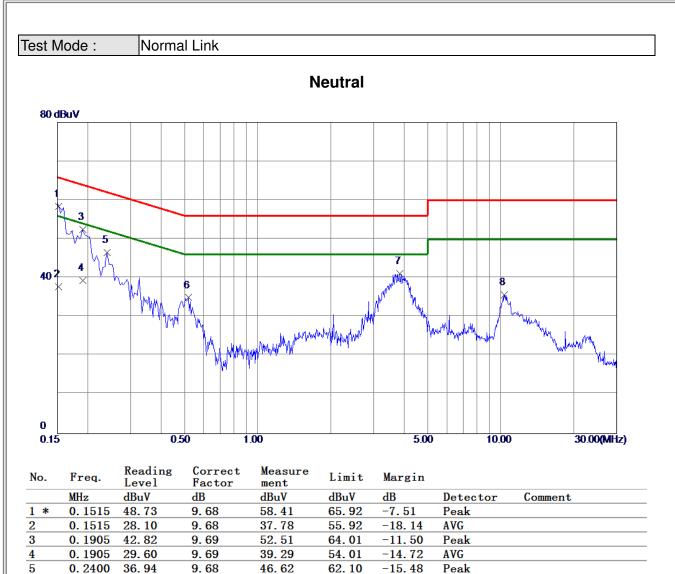




_							
2 *	<b>0</b> . 1515	<b>41.50</b>	9.79	51.29	55. 92	-4.63	AVG
3	0.1905	42.87	9.77	52.64	<b>64.0</b> 1	-11.37	Peak
4	0.1905	27.90	9.77	37.67	54.01	-16.34	AVG
5	0.2355	36.69	9.76	46.45	62.25	-15.80	Peak
6	0.5010	25.36	9.80	35.16	56. <b>00</b>	-20.84	Peak
7	3.8670	30.74	10.02	40.76	56. <b>00</b>	-15.24	Peak
8	10.0770	29.67	10.32	39.99	60.00	-20.01	Peak







62.10

5**6. 00** 

56.00

60.00

34.96

41.19

35.71

Peak

Peak

Peak

Peak

-21.04

-14.81

-24.29

9.68

9.70

9.94

10.29

25.26

31.25

0.5190

3.8490

10.3470 25.42

6

7

8





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





Test Mode: TX B MODE CHANNEL 01 Ant 0° 160.0 dBu¥/m 150 140 130 120 110 100 90 80 one get with the work of the second and the second 70 60 50 40 30 20 10 0.0 0.009 (MHz) 0.150 Reading Correct Measure-No. Mk. Freq. Limit Margin Level Factor ment MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 0.0167 36.83 20.05 56.88 123.15 -66.27 AVG 2 0.0336 33.27 19.21 117.08 -64.60 AVG 52.48

3 \*

0.0728

30.01

18.27

48.28

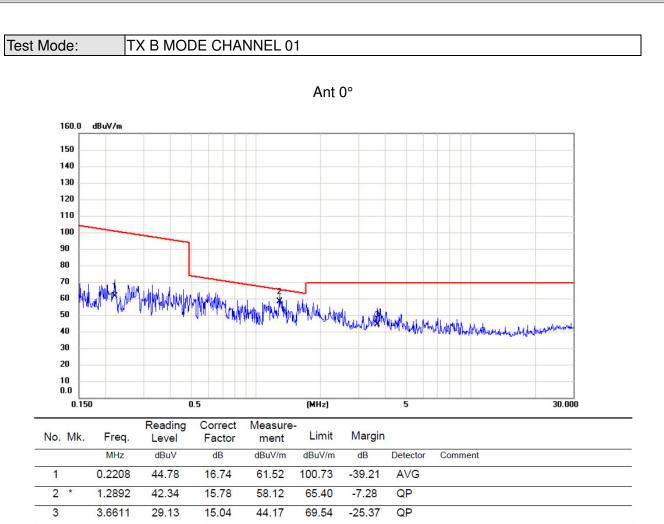
110.36

-62.08

AVG

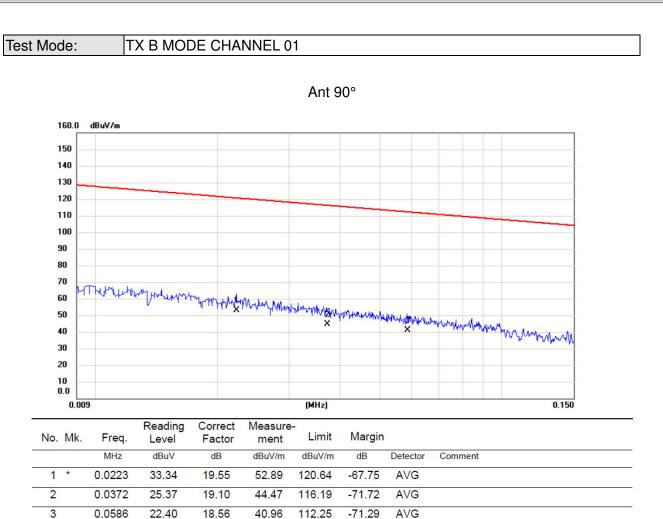






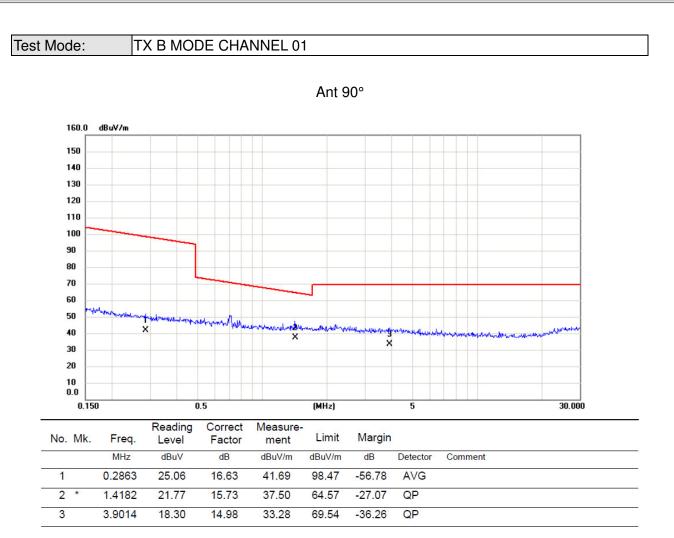












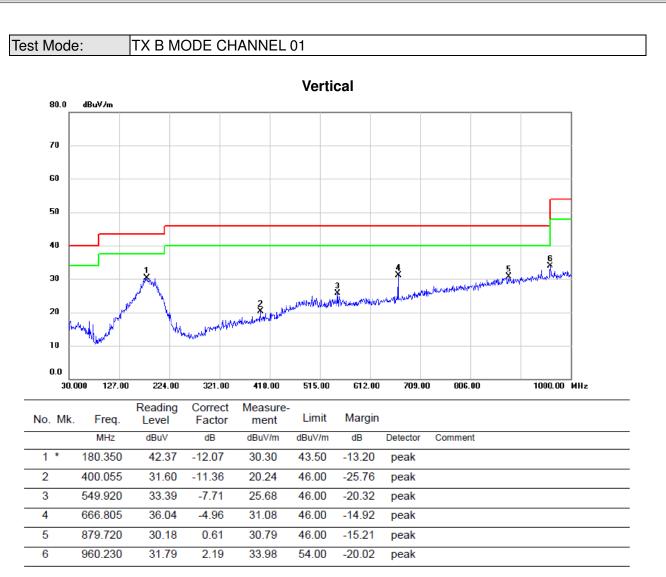




## APPENDIX C - RADIATED EMISSION (30MHZ TO 1000MHZ)

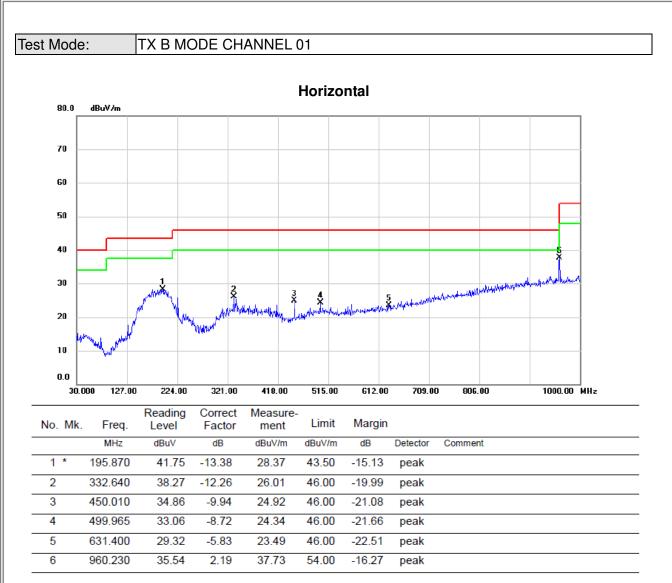






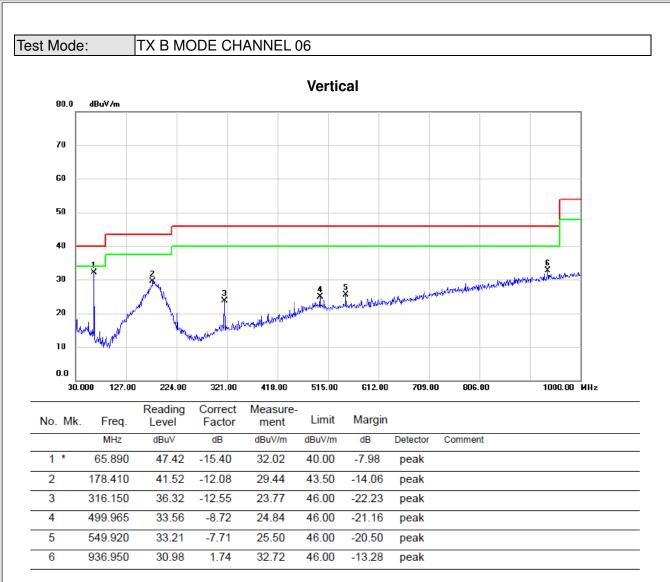






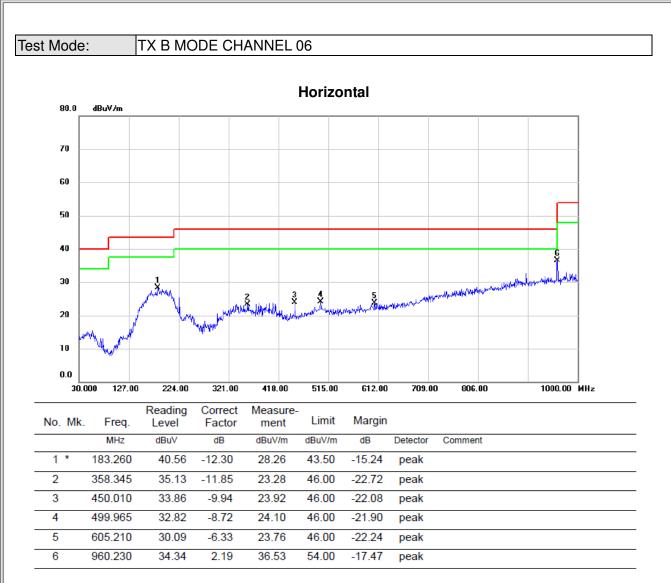






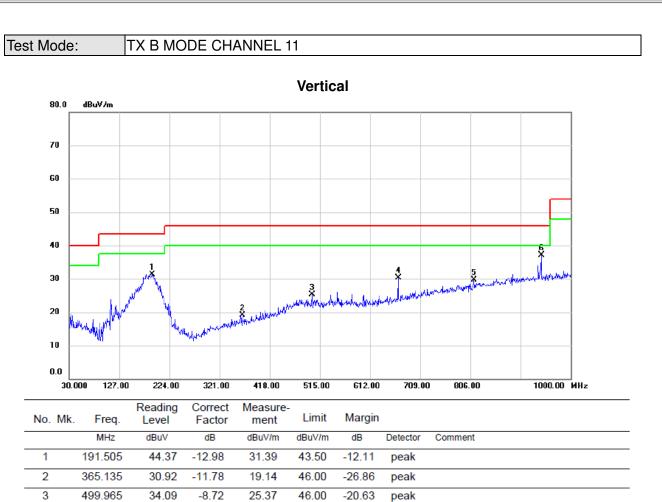












666.805

813.275

943.255

4

5

6 \*

35.32

30.71

35.32

-4.96

-1.00

1.87

30.36

29.71

37.19

46.00

46.00

46.00

-15.64

-16.29

-8.81

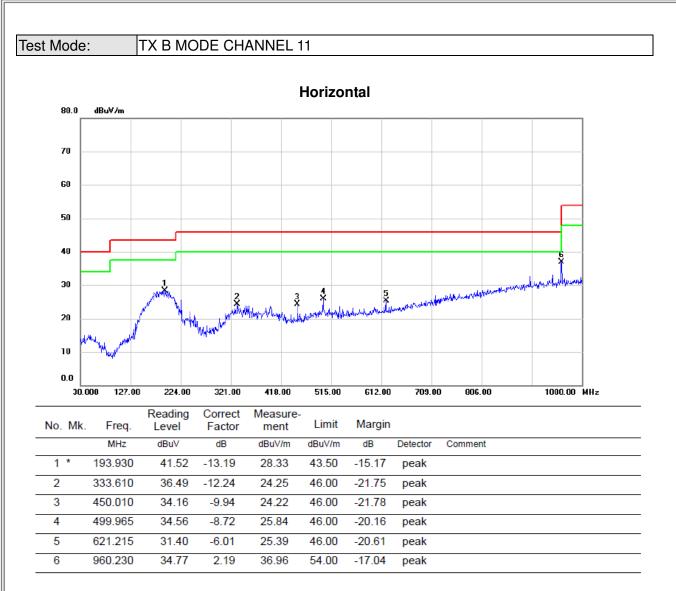
peak

peak

peak







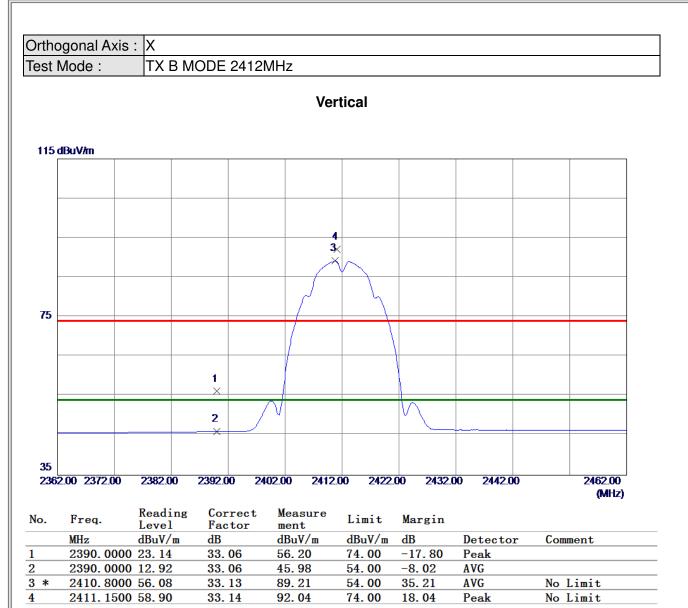




## APPENDIX D - RADIATED EMISSION (ABOVE 1000MHZ)







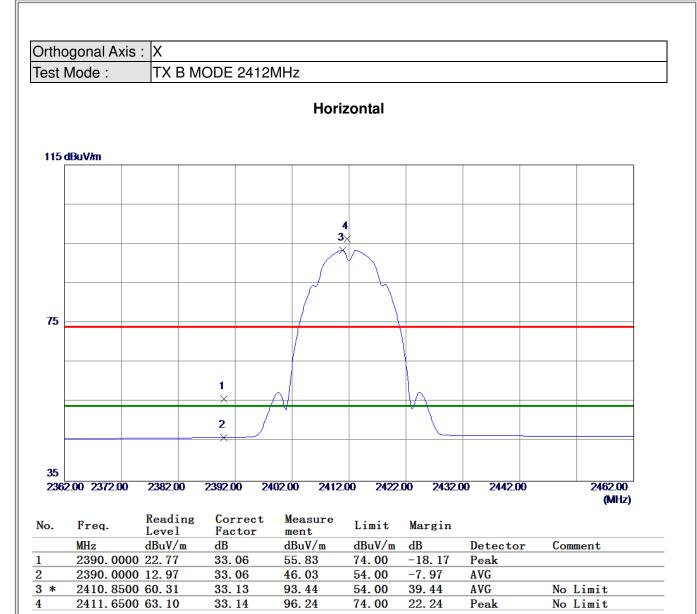






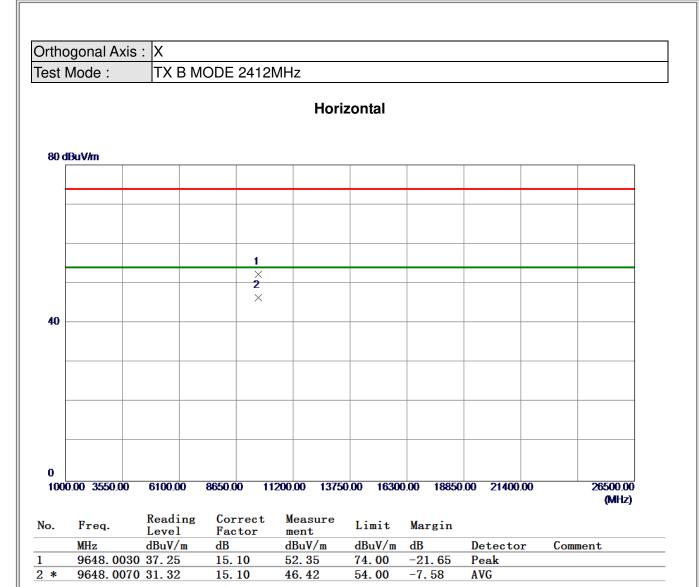






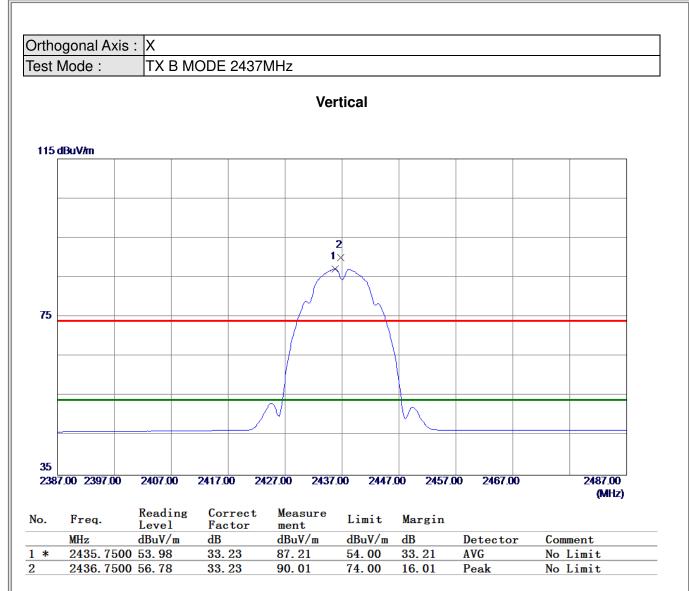






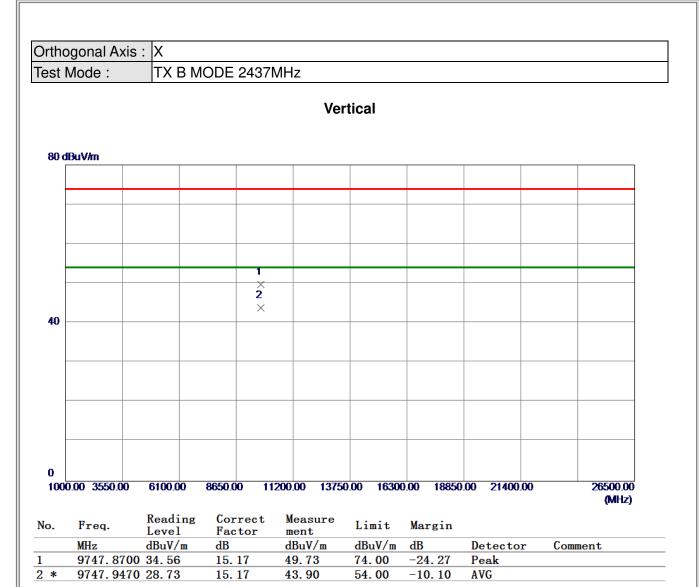






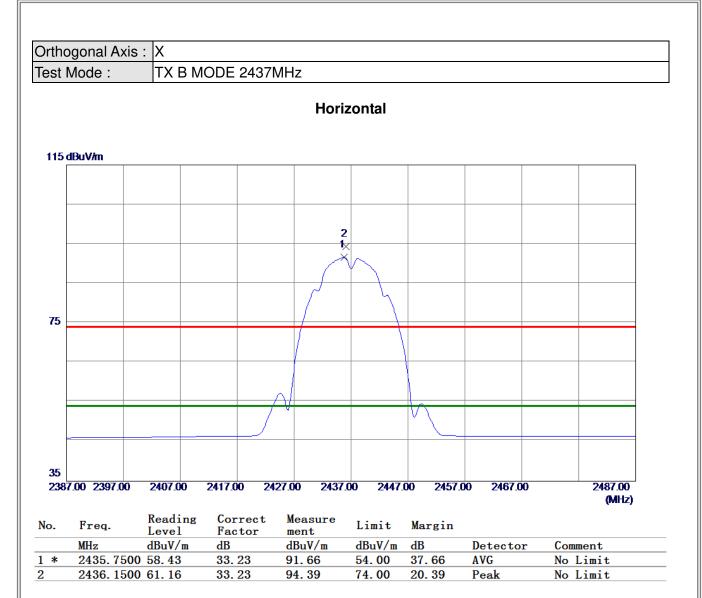






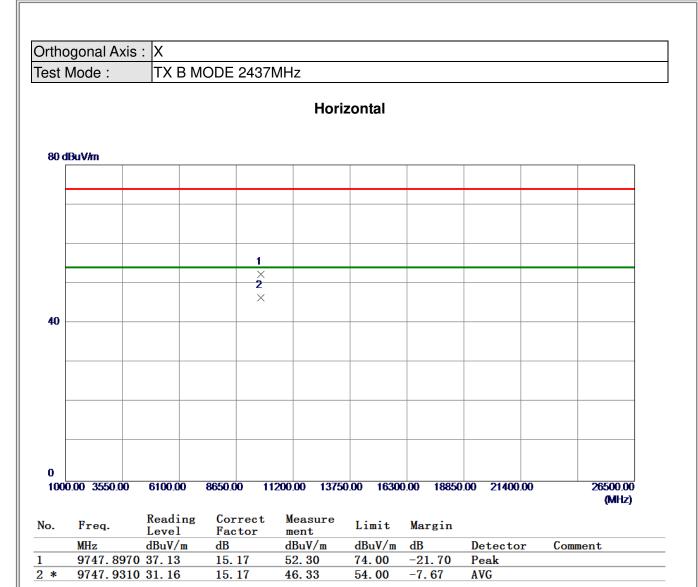






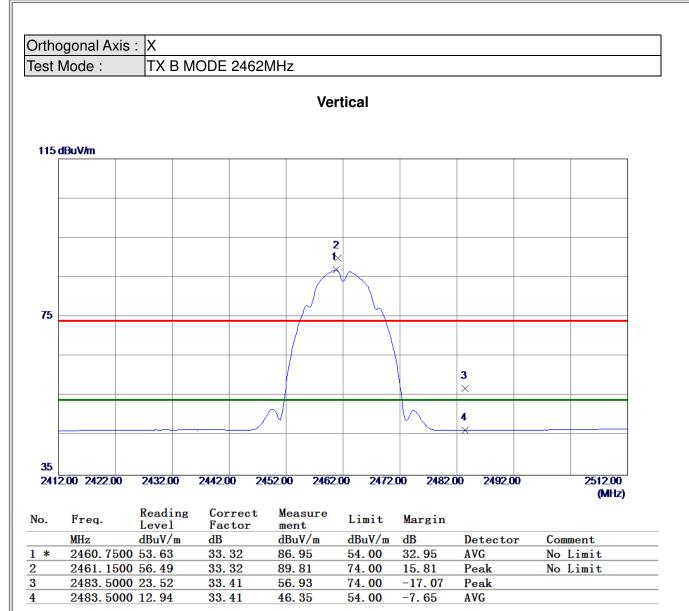












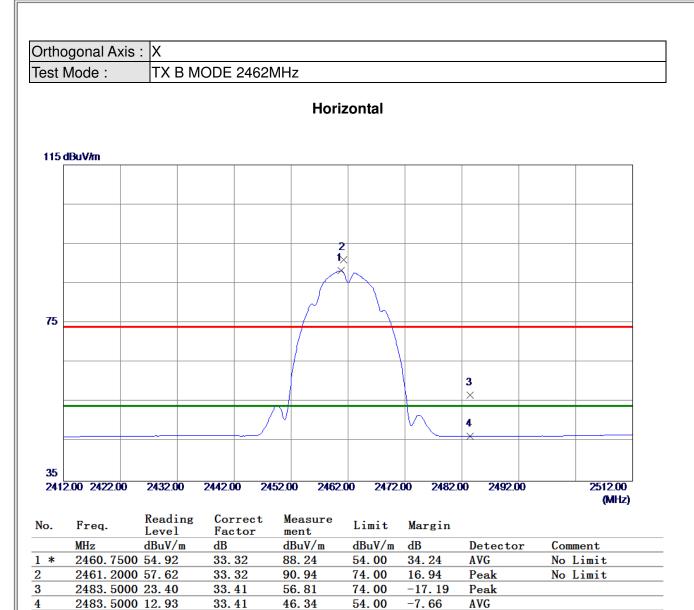






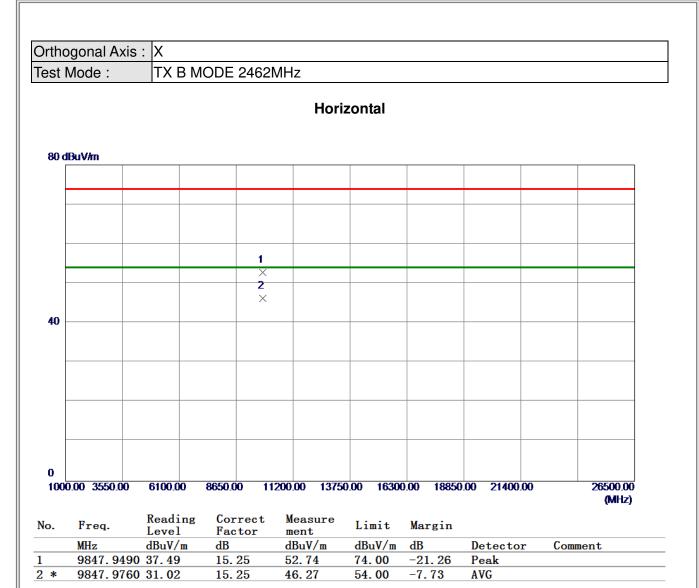






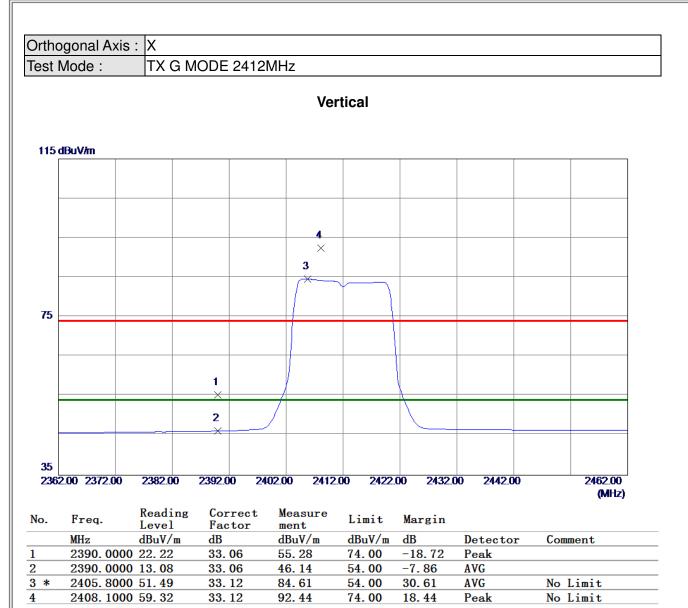






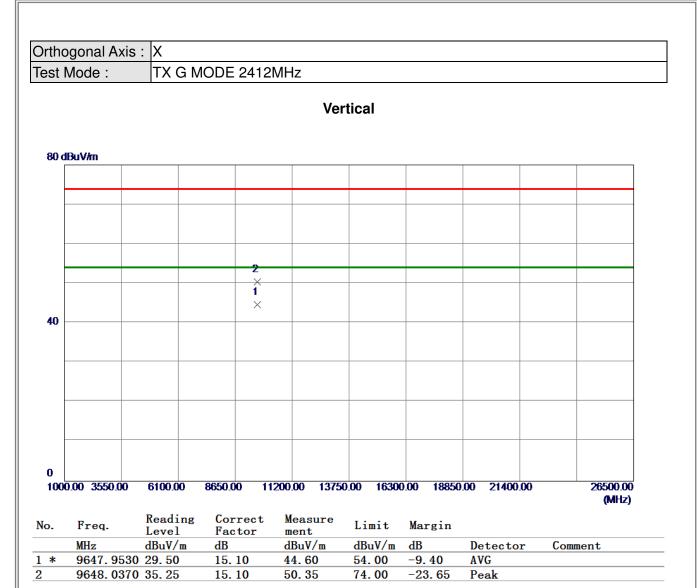






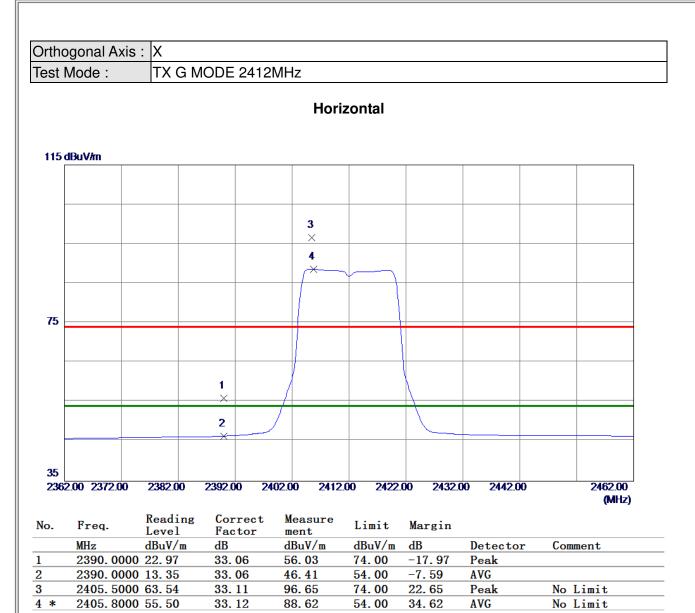






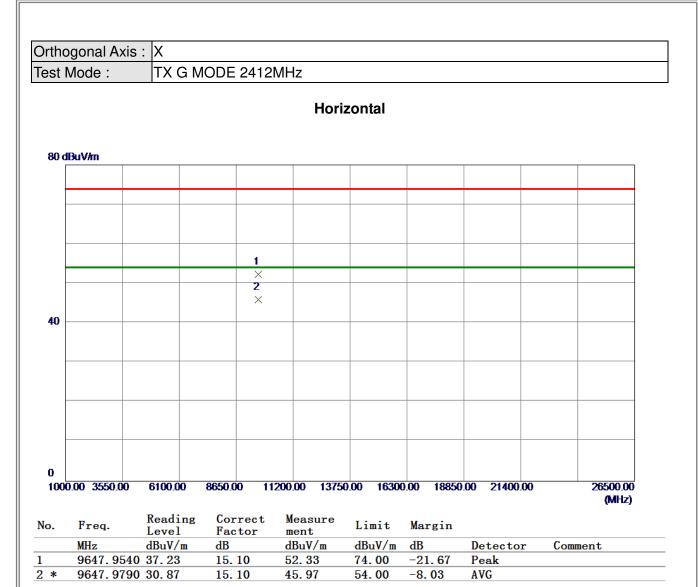






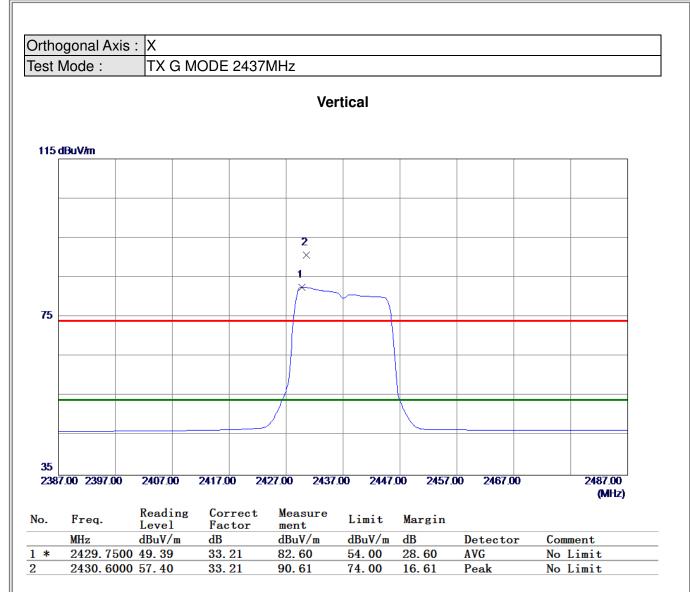






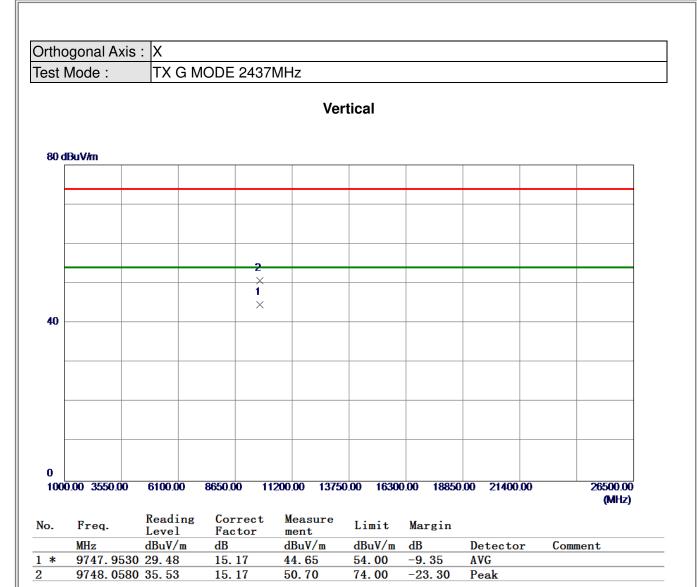






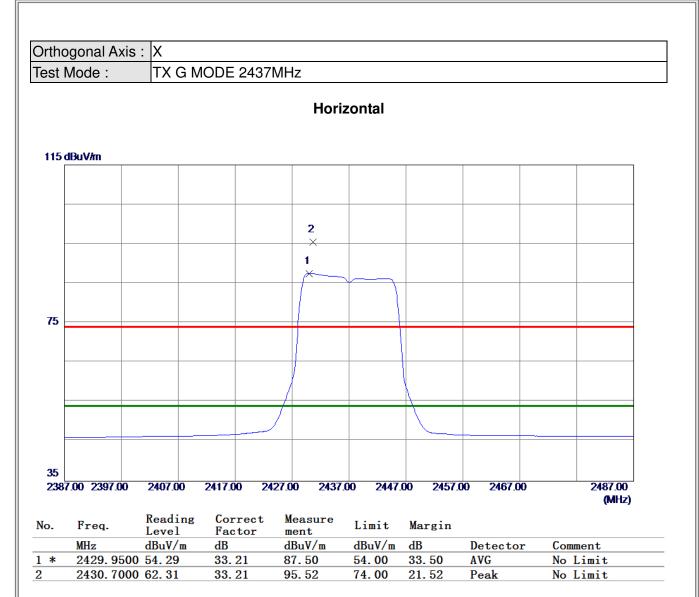






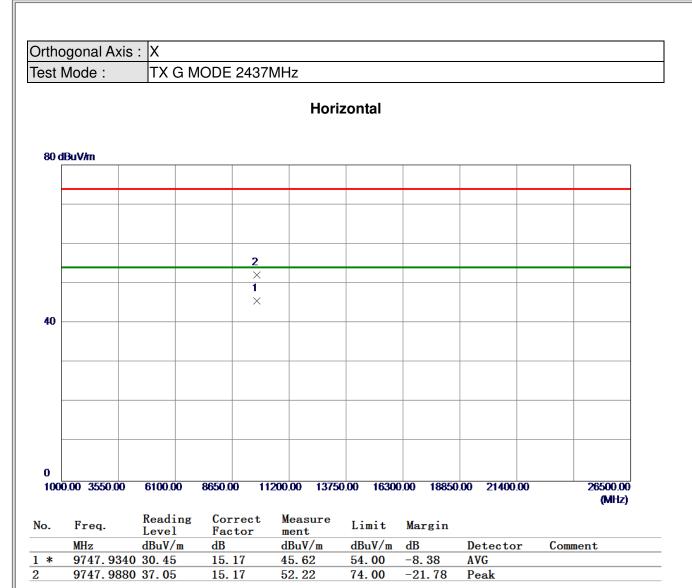






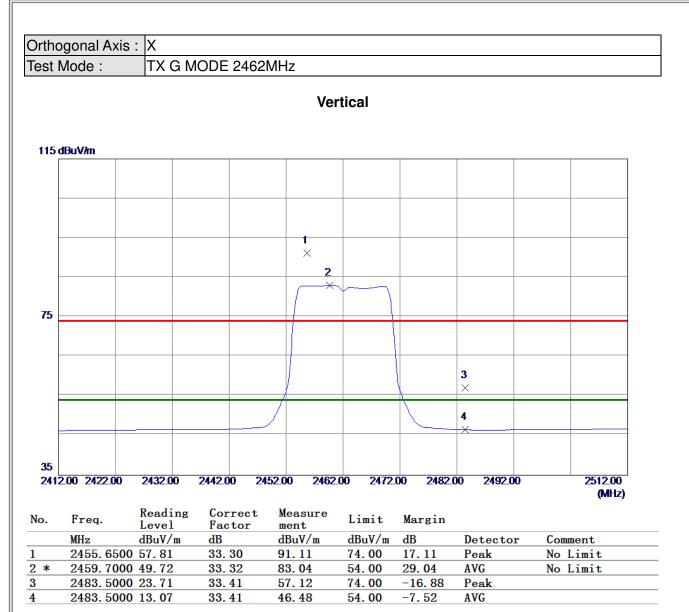






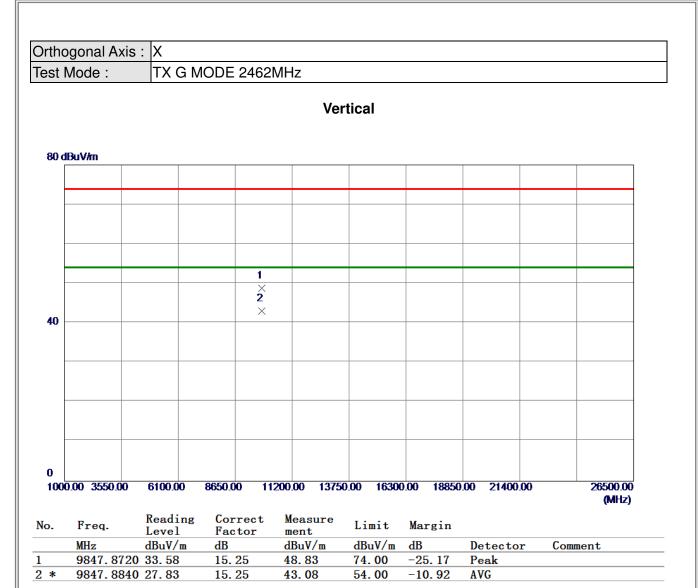






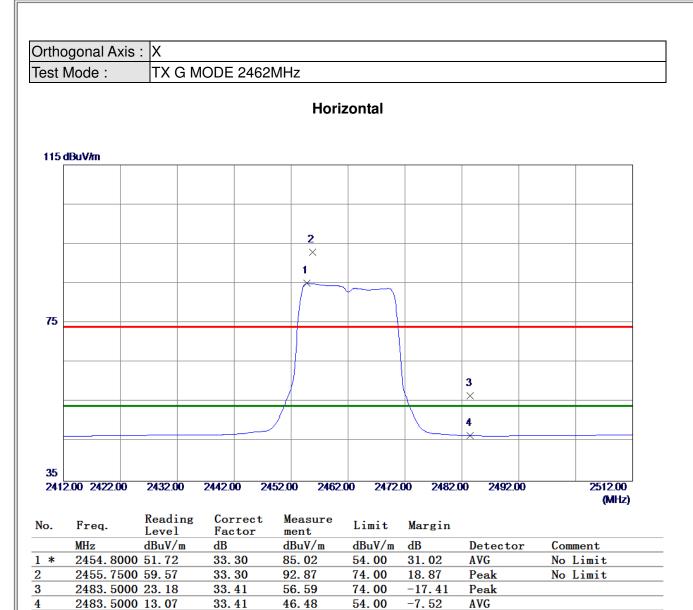












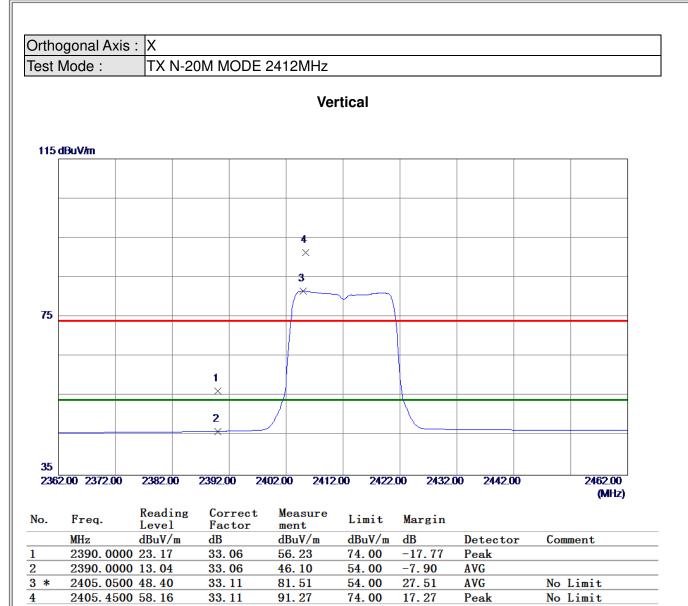






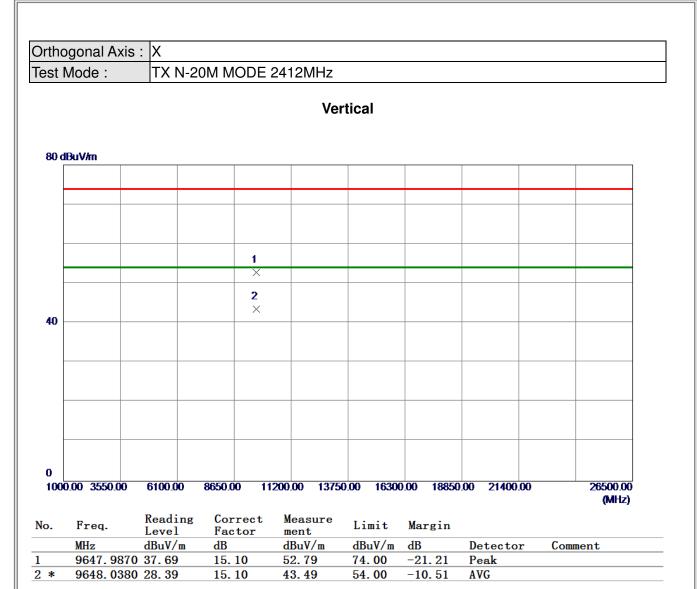






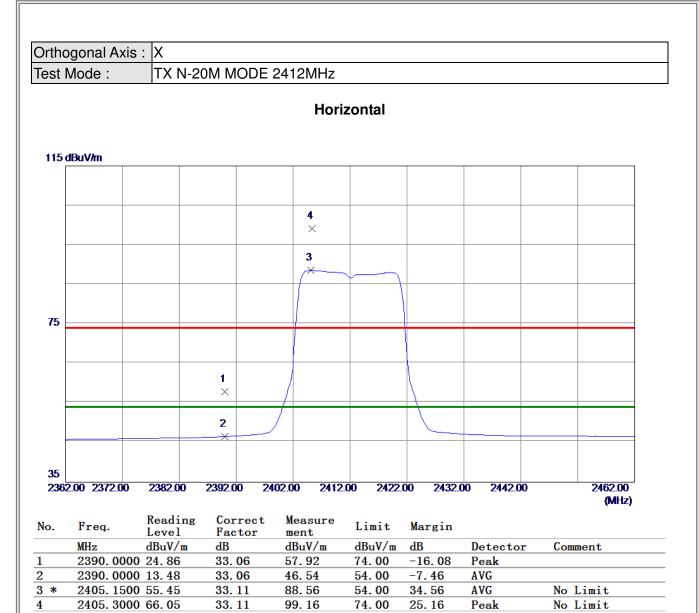






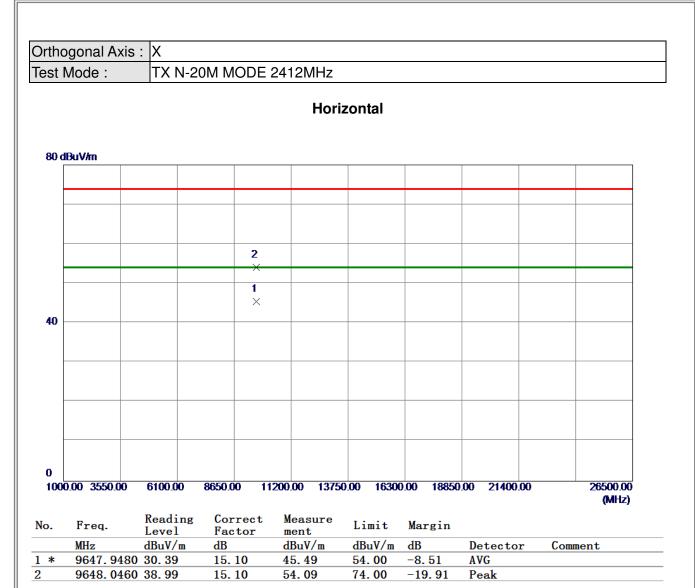






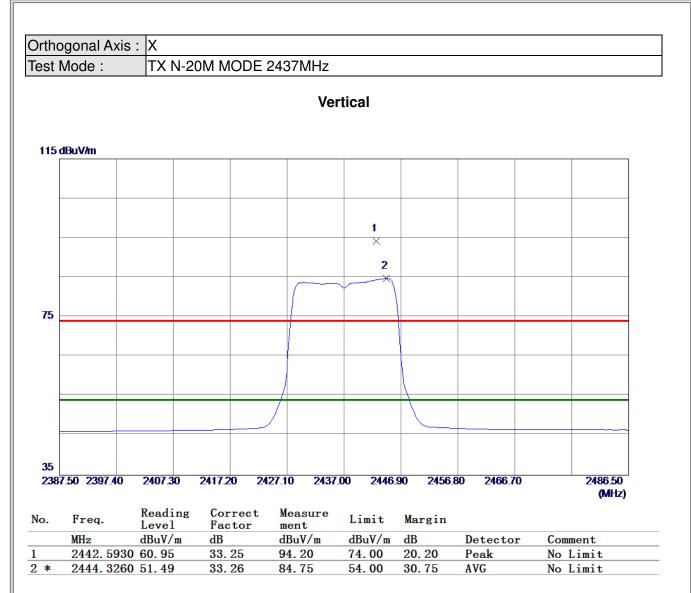






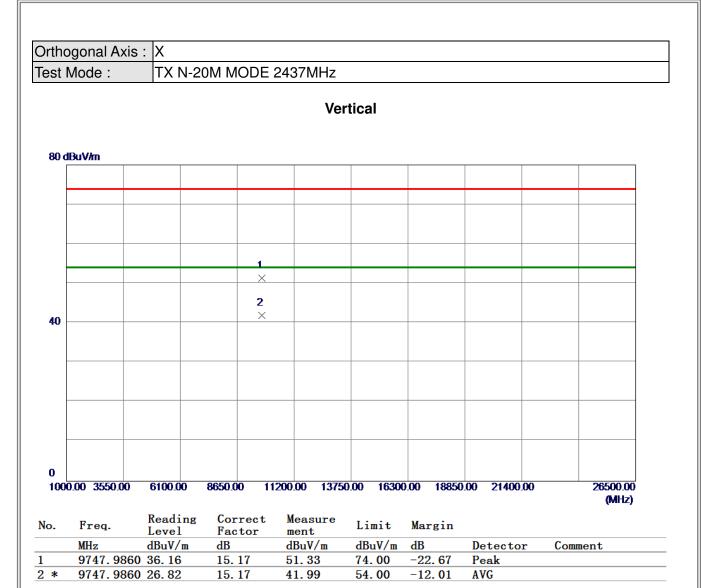






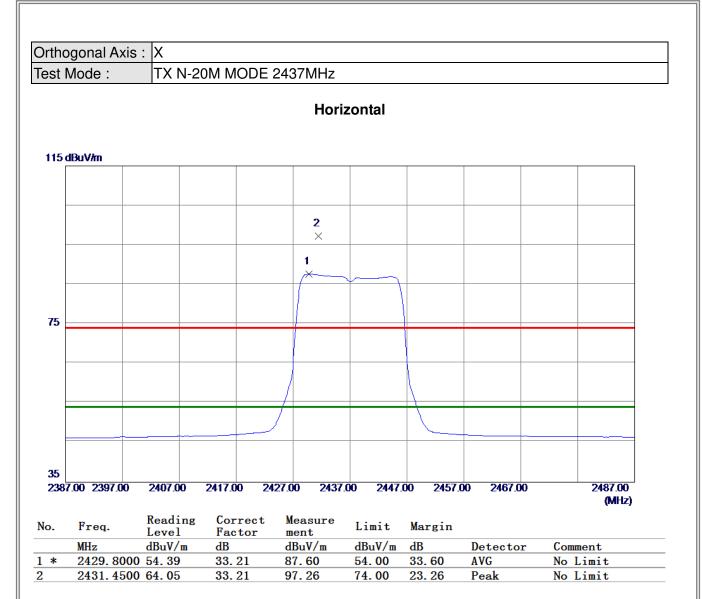






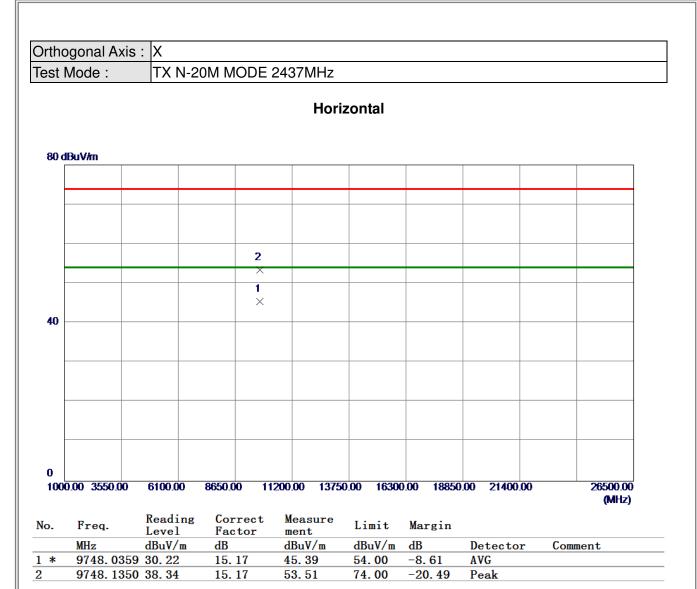






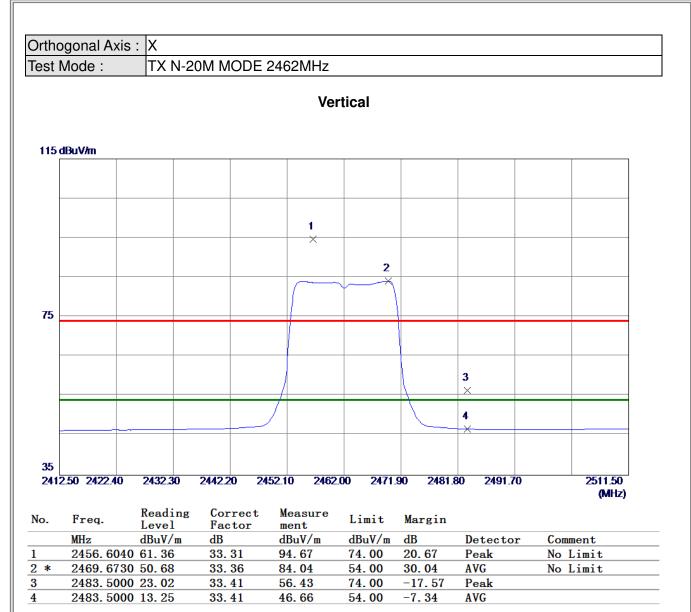






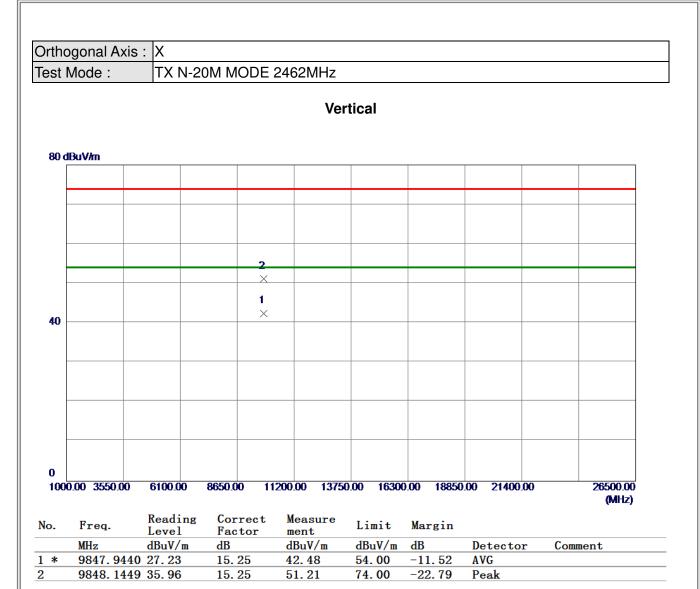






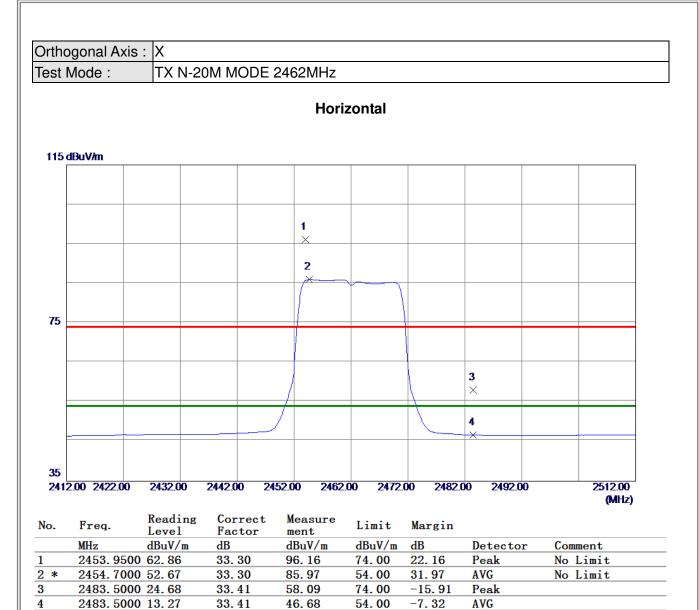






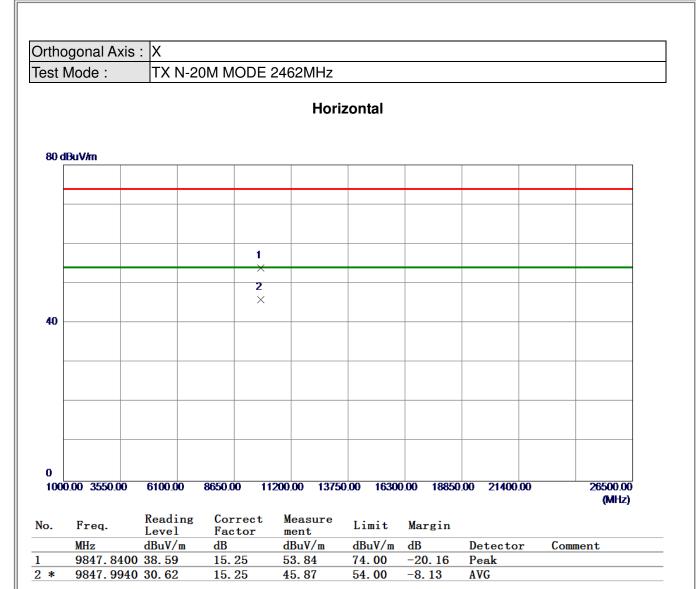






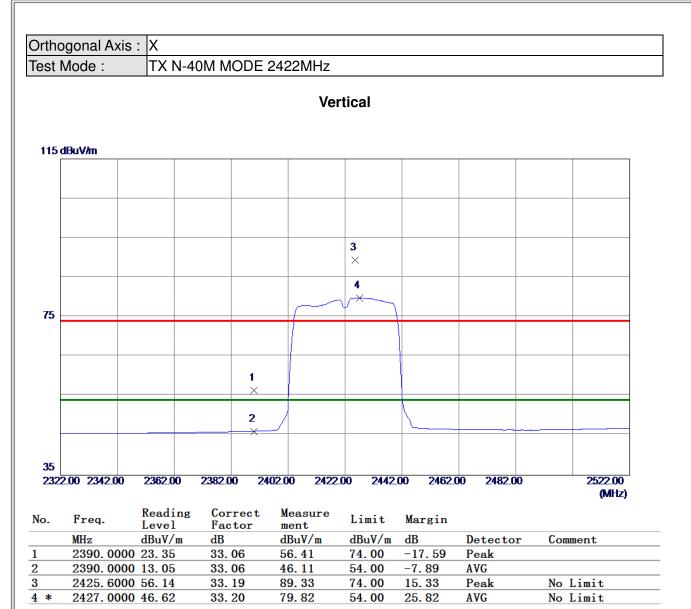






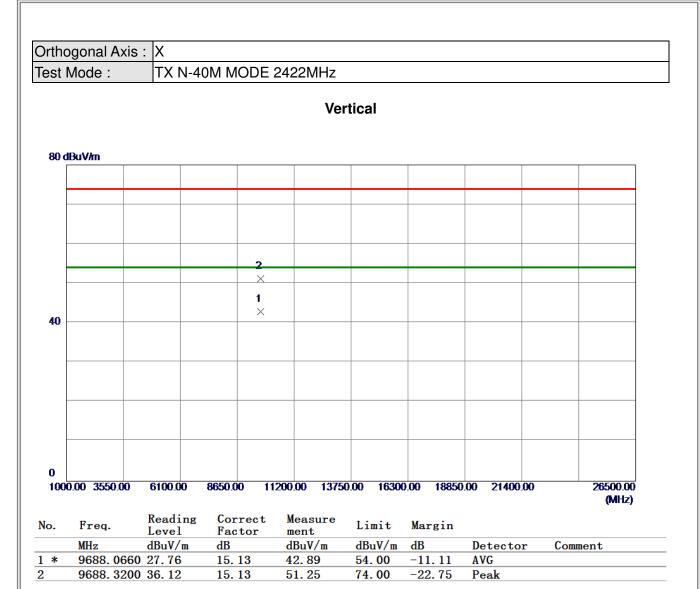






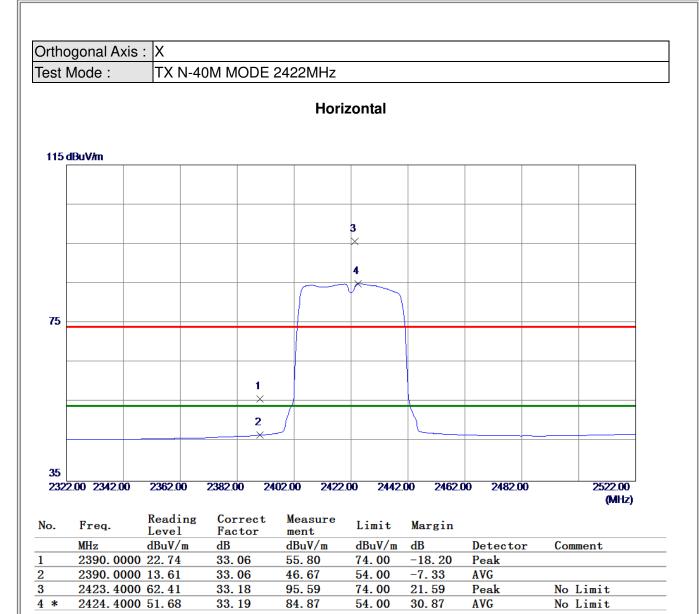






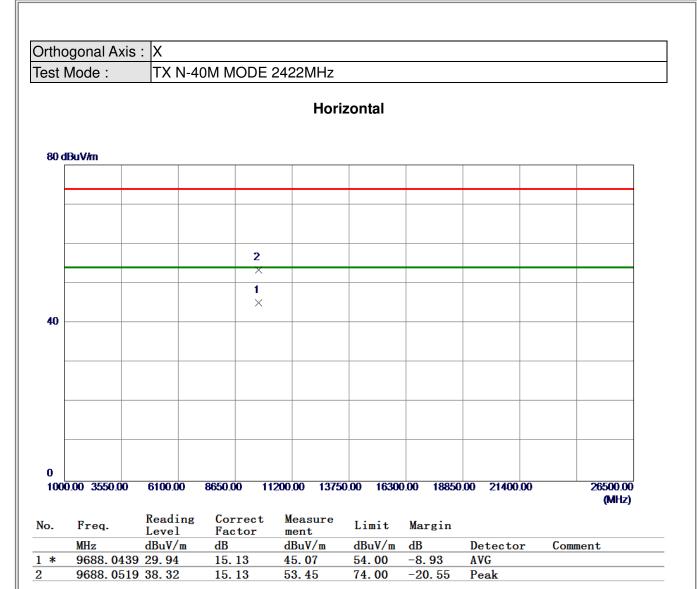






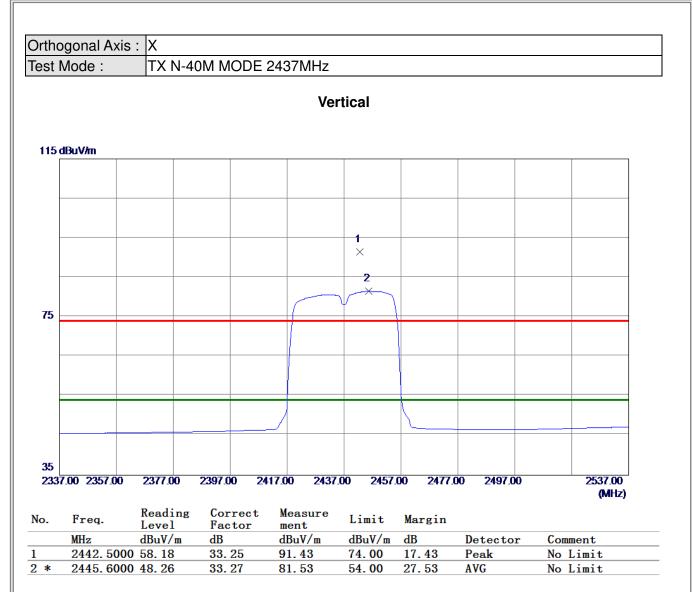






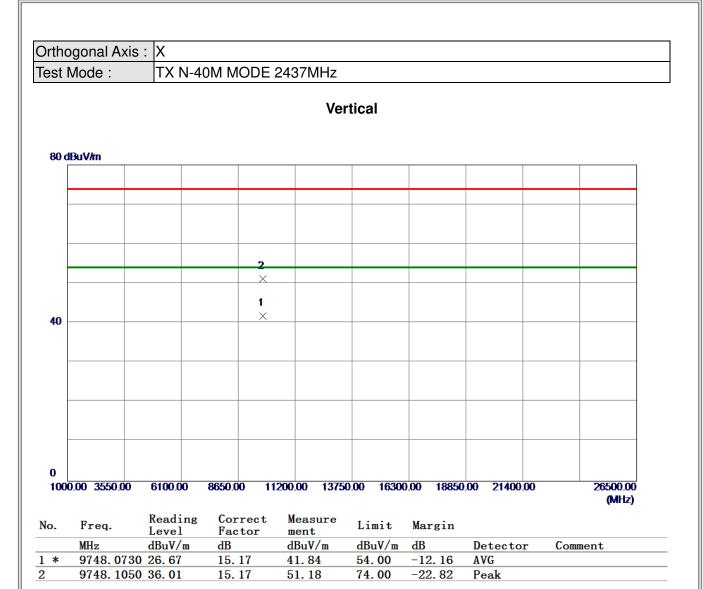






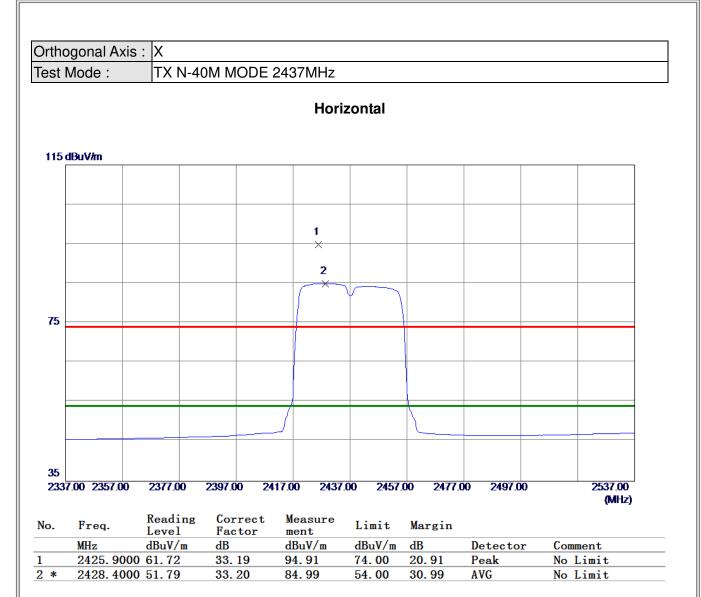






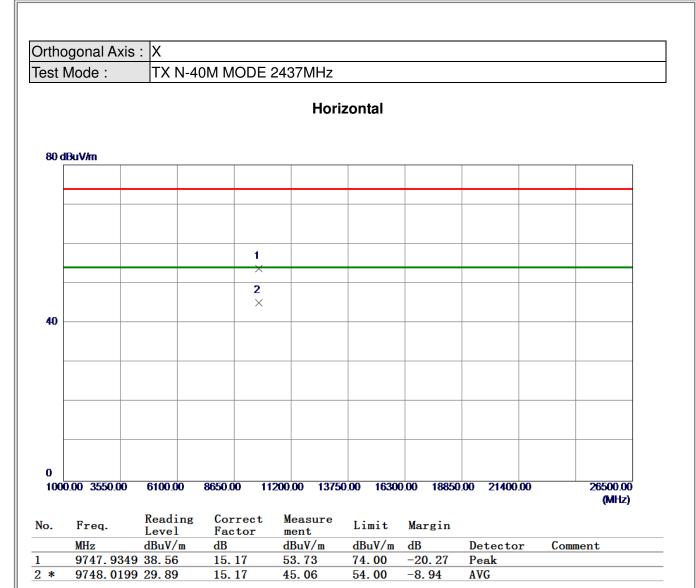






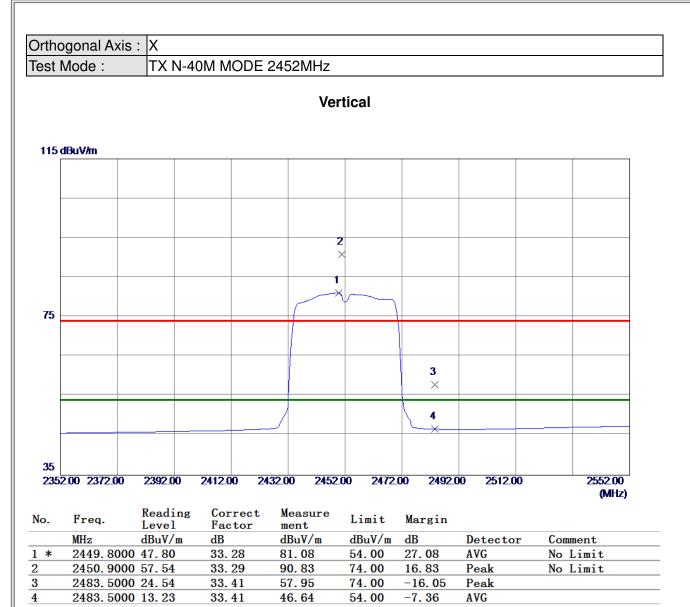






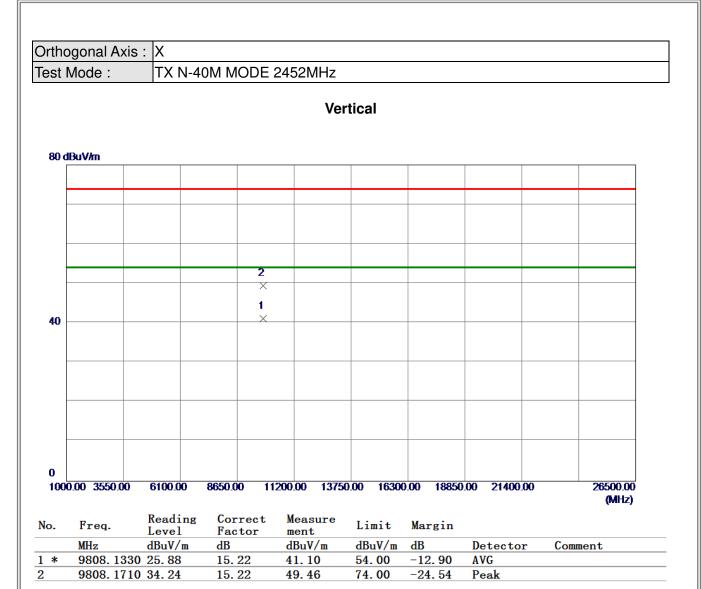






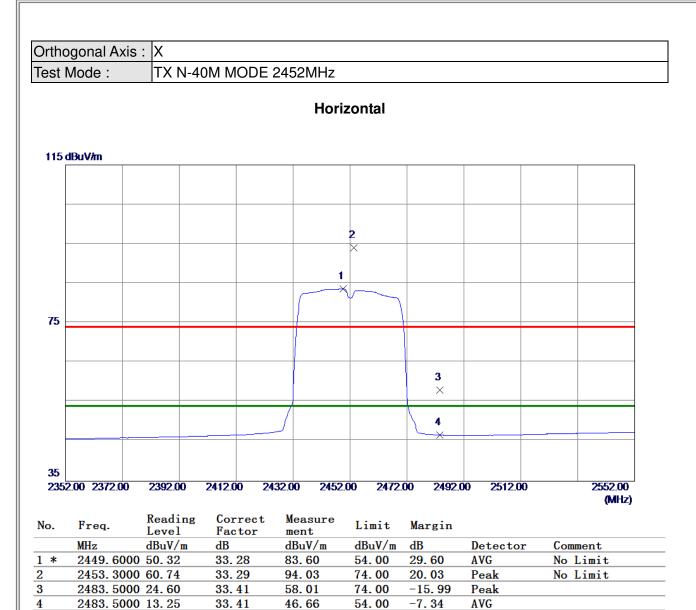






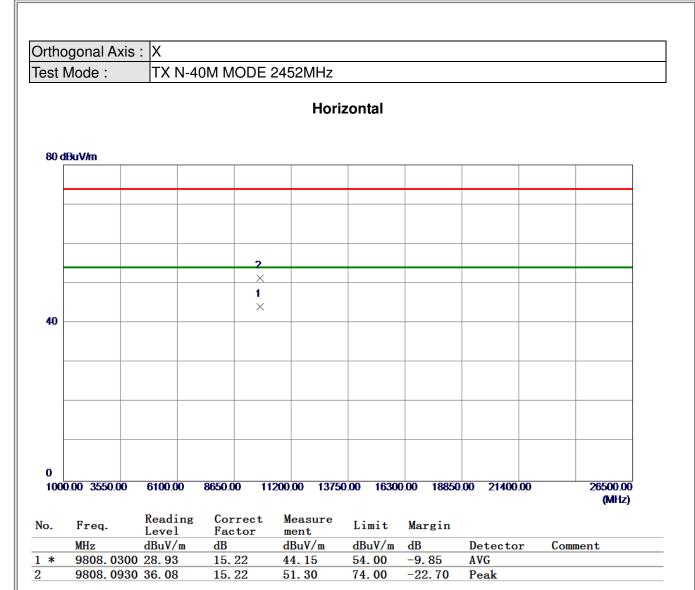
















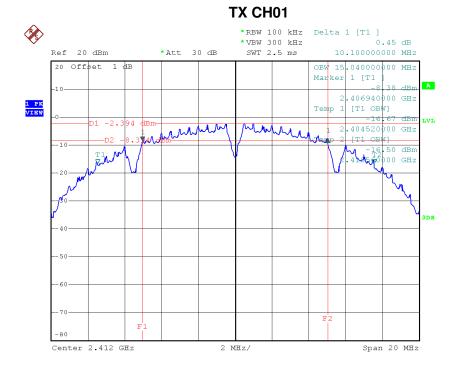
#### **APPENDIX E - BANDWIDTH**





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

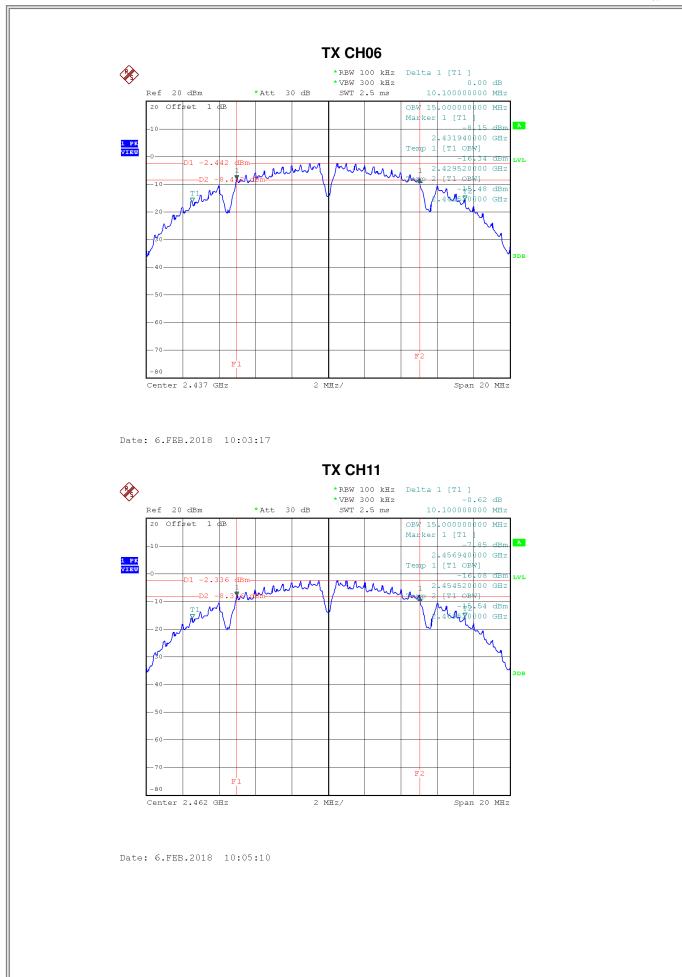
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	10.10	15.04	500	Complies
2437	10.10	15.00	500	Complies
2462	10.10	15.00	500	Complies



Date: 6.FEB.2018 09:59:14

# **3**TL



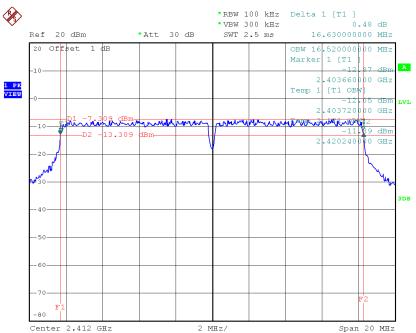






Test Mode: TX G Mode_CH01/06/11					
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result	
2412	16.63	16.52	500	Complies	
2437	16.64	16.52	500	Complies	
2462	16.64	16.52	500	Complies	

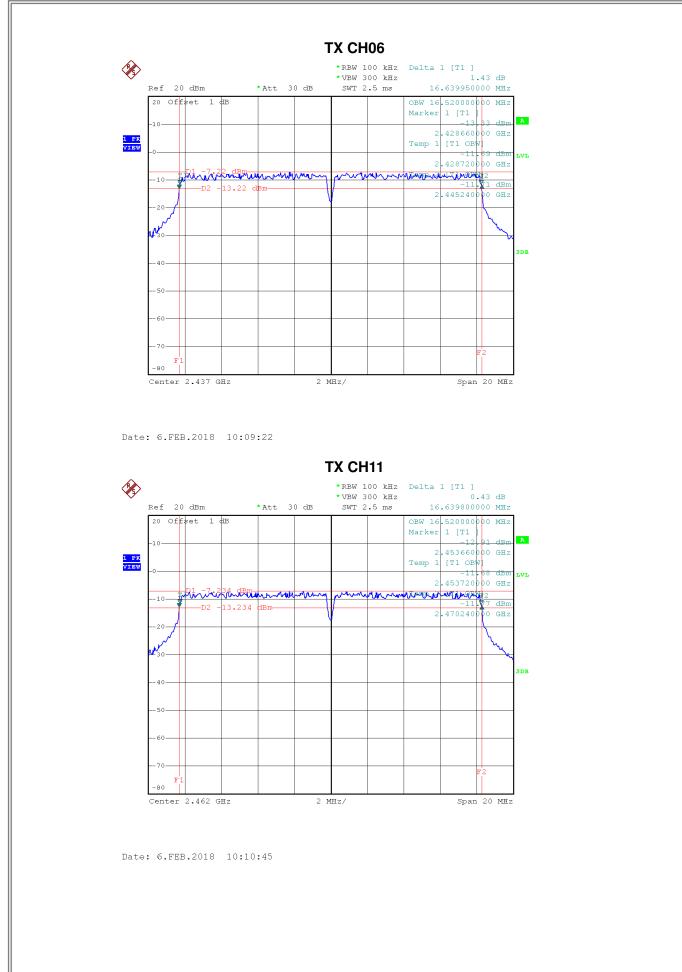




Date: 6.FEB.2018 10:07:51

# **S**TL





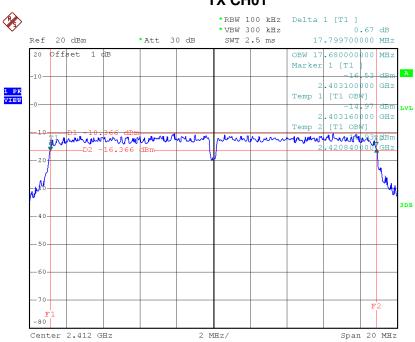




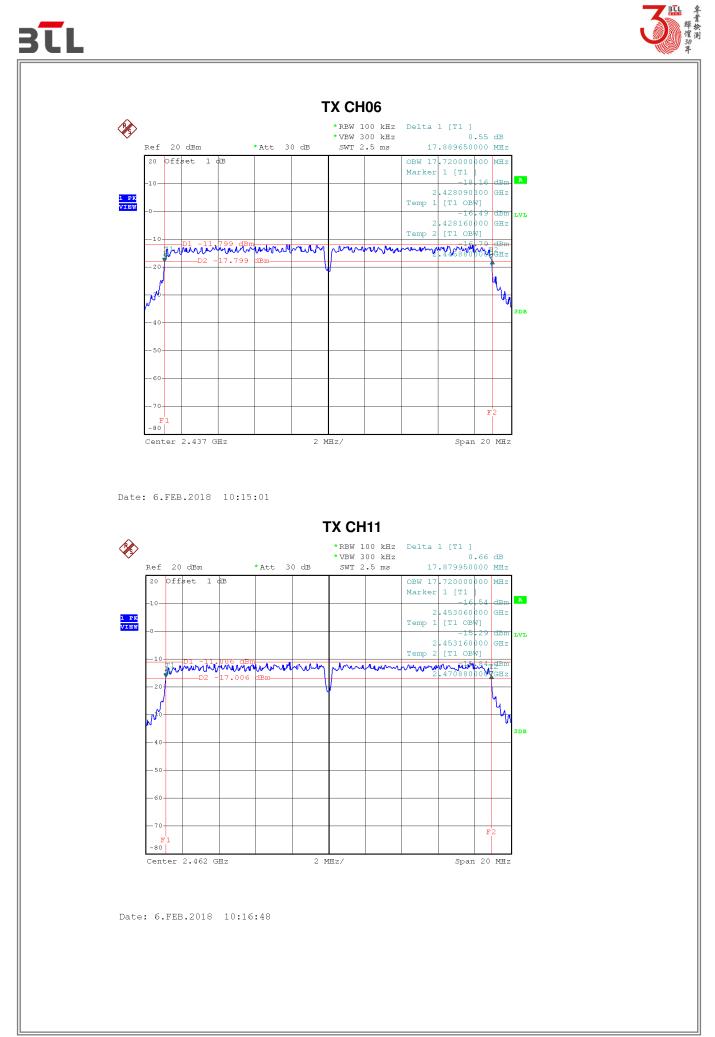
Test Mode : TX N-20MHz Mode_CH01/06/11					
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result	
2412	17.80	17.68	500	Complies	
2437	17.89	17.72	500	Complies	
2462	17.88	17.72	500	Complies	



**TX CH01** 



Date: 6.FEB.2018 10:12:41

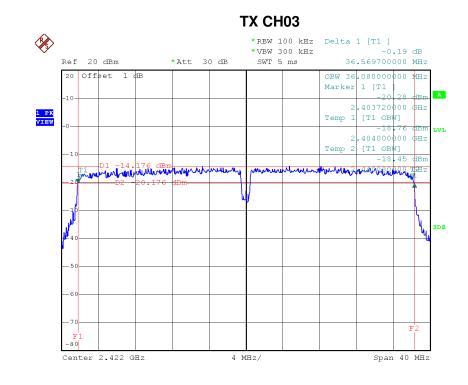


Report No.: BTL-FCCP-1-1801C251



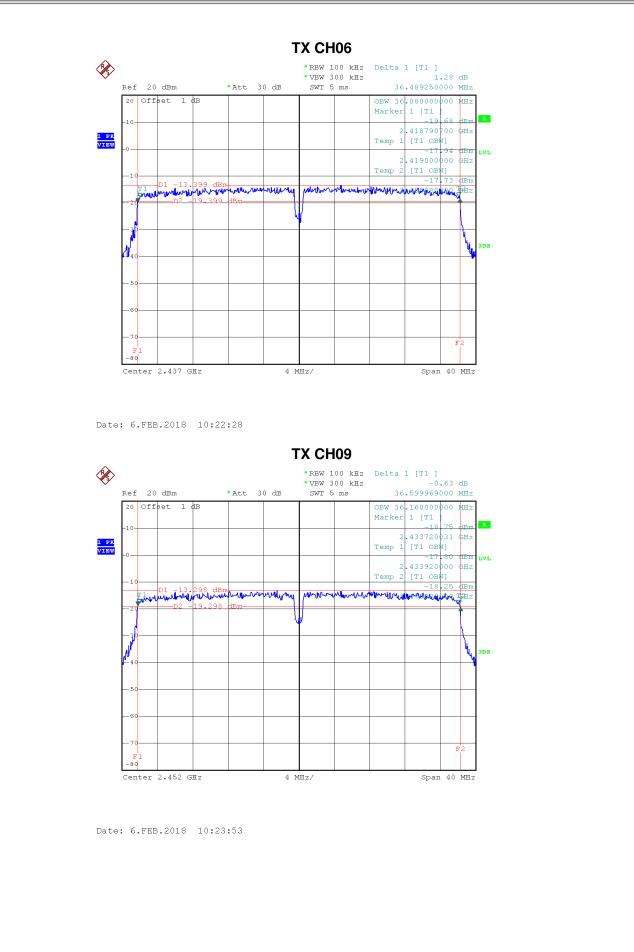


Test Mode : TX N-40MHz Mode_CH03/06/09					
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result	
2422	36.57	36.08	500	Complies	
2437	36.49	36.08	500	Complies	
2452	36.60	36.16	500	Complies	



Date: 6.FEB.2018 10:19:11





Report No.: BTL-FCCP-1-1801C251





### **APPENDIX F - MAXIMUM PEAK CONDUCTED OUTPUT POWER**





Test Mode :TX B Mode_CH01/06/11_ANT 1					
Frequency (MHz)	Peak Conducted Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result	
2412	11.51	30.00	1.00	Complies	
2437	11.72	30.00	1.00	Complies	
2462	11.77	30.00	1.00	Complies	

Test Mode :TX G Mode_CH01/06/11_ANT 1					
Frequency (MHz)	Peak Conducted Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result	
2412	19.89	30.00	1.00	Complies	
2437	19.64	30.00	1.00	Complies	
2462	19.69	30.00	1.00	Complies	





Test Mode :TX N20 Mode_CH01/06/11_ANT 1					
Frequency (MHz)	Peak Conducted Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result	
2412	16.08	30.00	1.00	Complies	
2437	16.47	30.00	1.00	Complies	
2462	15.92	30.00	1.00	Complies	

Test Mode :TX N20 Mode_CH01/06/11_ANT 2					
Frequency (MHz)	Peak Conducted Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result	
2412	15.18	30.00	1.00	Complies	
2437	15.27	30.00	1.00	Complies	
2462	15.01	30.00	1.00	Complies	

Test Mode :TX N20 Mode_CH01/06/11_Total					
Frequency (MHz)	Peak Conducted Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result	
2412	18.66	30.00	1.00	Complies	
2437	18.92	30.00	1.00	Complies	
2462	18.50	30.00	1.00	Complies	





Test Mode :TX N40 Mode_CH03/06/09_ANT 1				
Frequency (MHz)	Peak Conducted Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
2422	15.49	30.00	1.00	Complies
2437	15.32	30.00	1.00	Complies
2452	15.65	30.00	1.00	Complies

Test Mode :TX N40 Mode_CH03/06/09_ANT 2					
Frequency (MHz)	Peak Conducted Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result	
2422	15.39	30.00	1.00	Complies	
2437	15.58	30.00	1.00	Complies	
2452	15.15	30.00	1.00	Complies	

Test Mode :TX N40 Mode_CH03/06/09_Total					
Frequency (MHz)	Peak Conducted Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result	
2422	18.45	30.00	1.00	Complies	
2437	18.46	30.00	1.00	Complies	
2452	18.42	30.00	1.00	Complies	

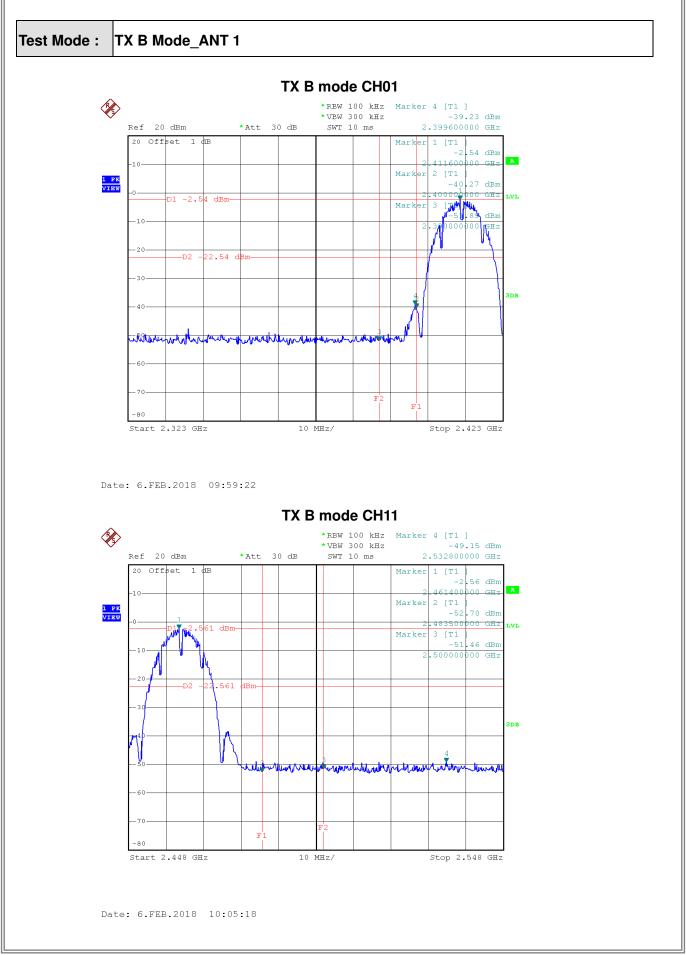




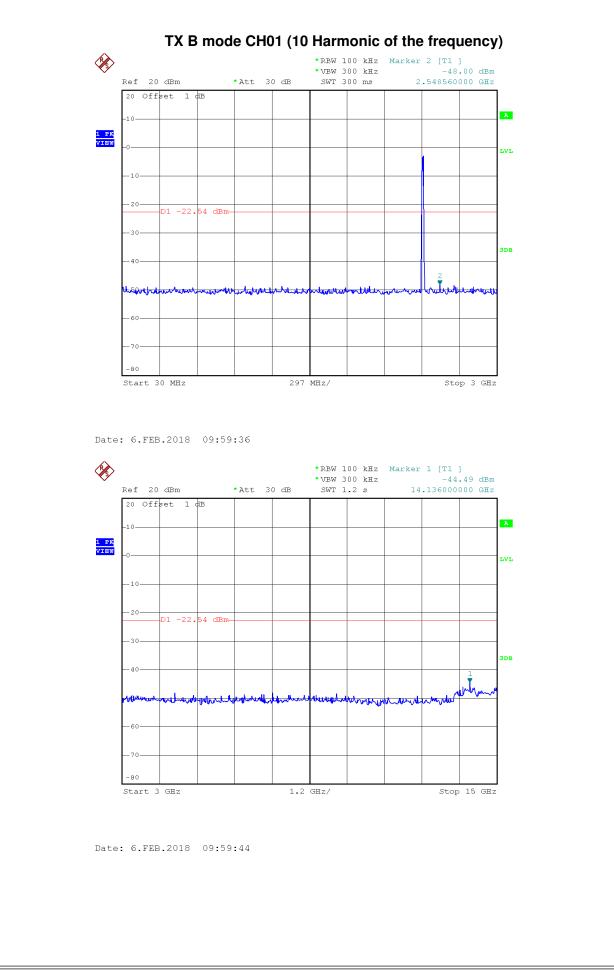
### **APPENDIX G - ANTENNA CONDUCTED SPURIOUS EMISSION**

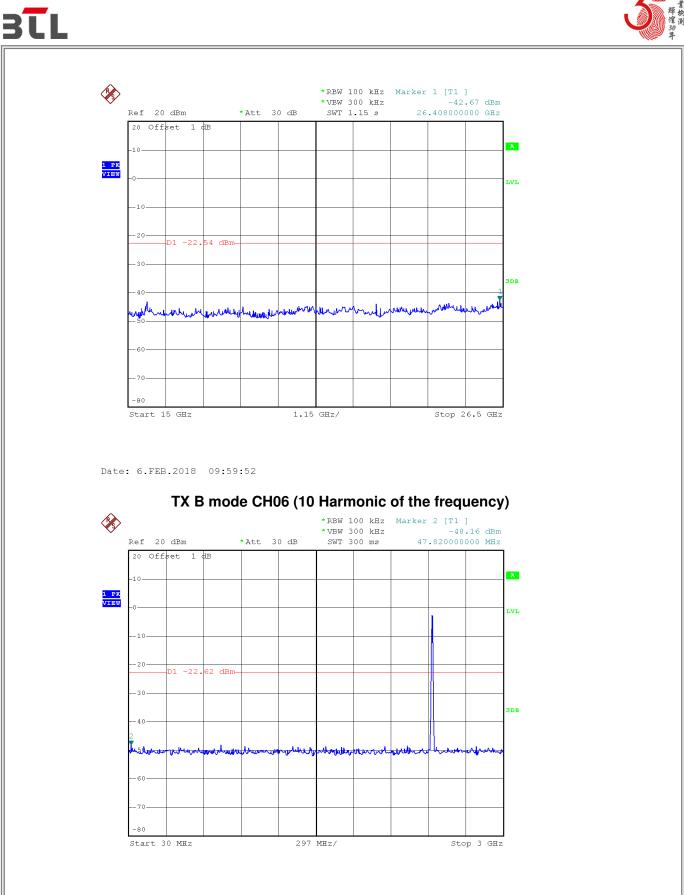


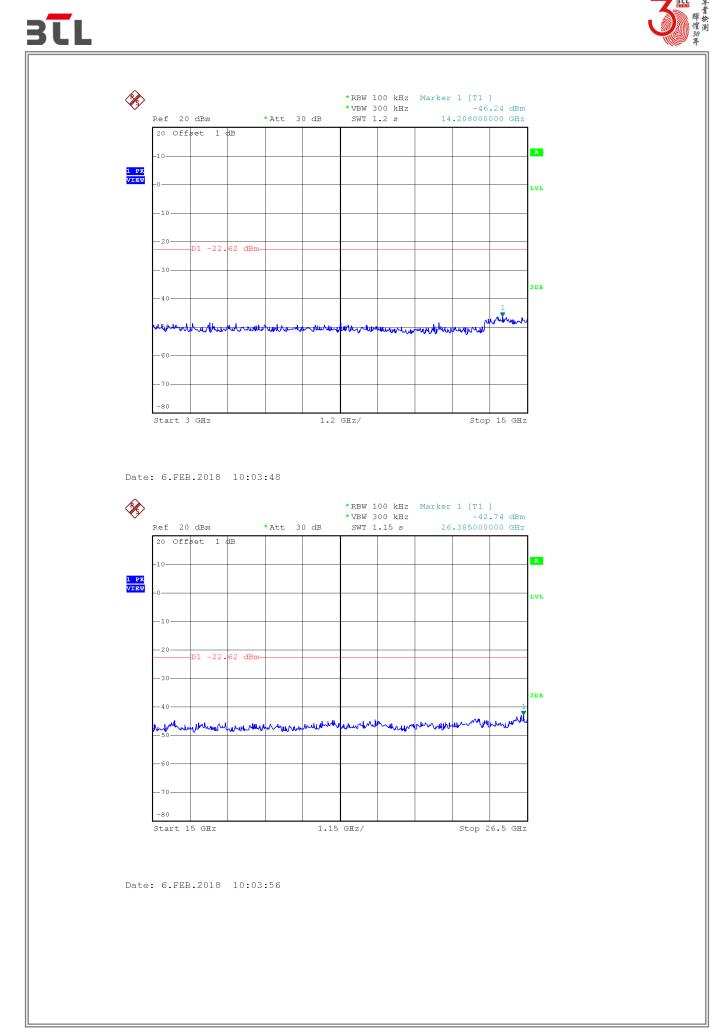




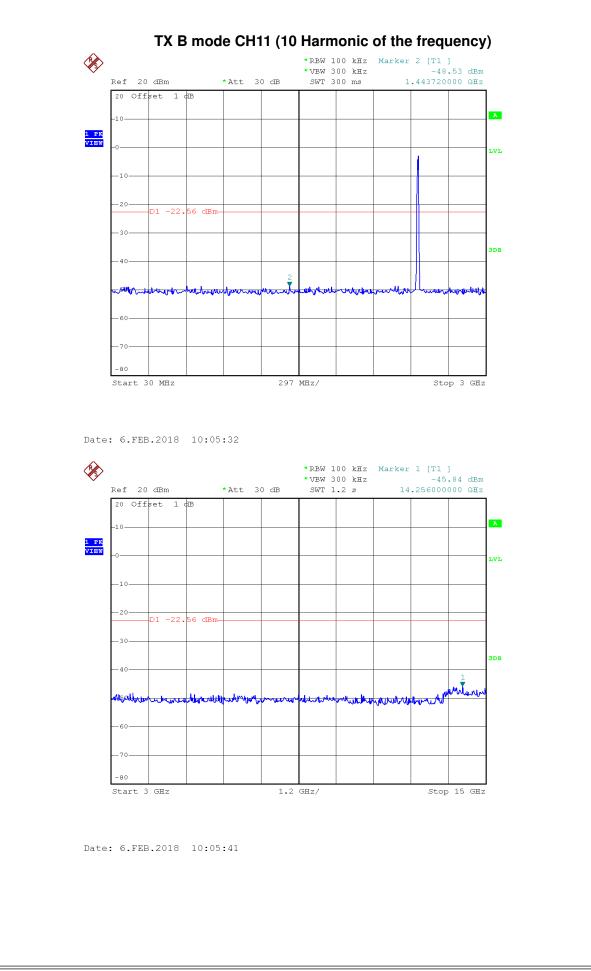


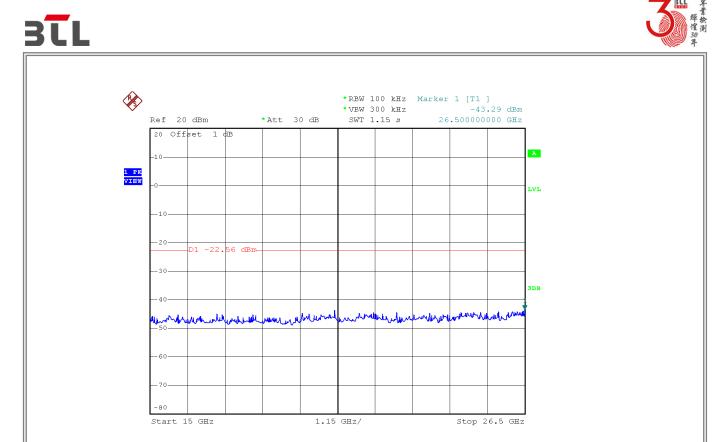








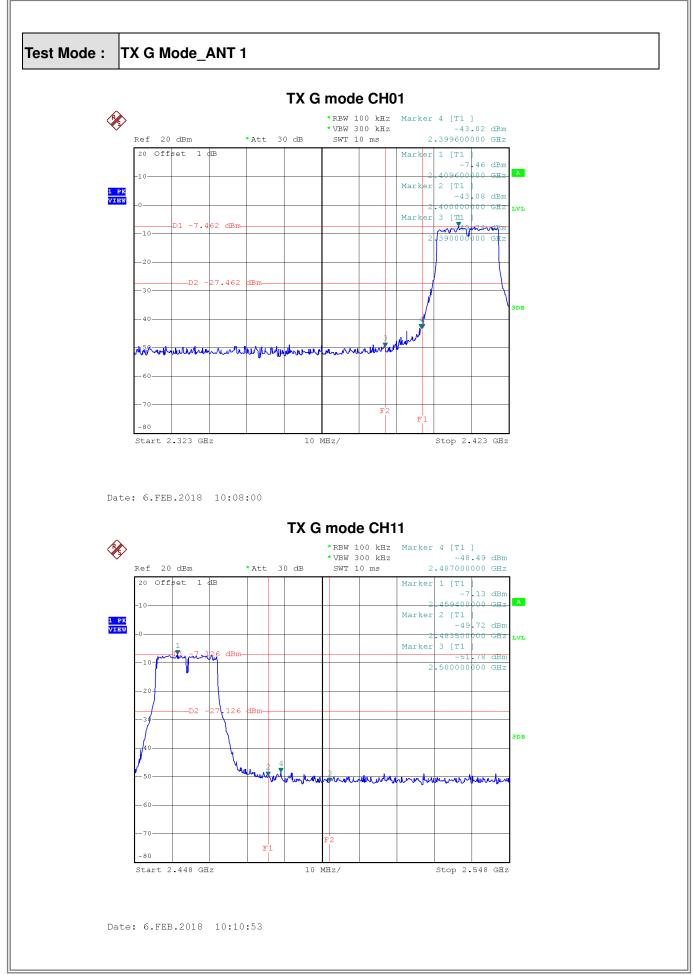




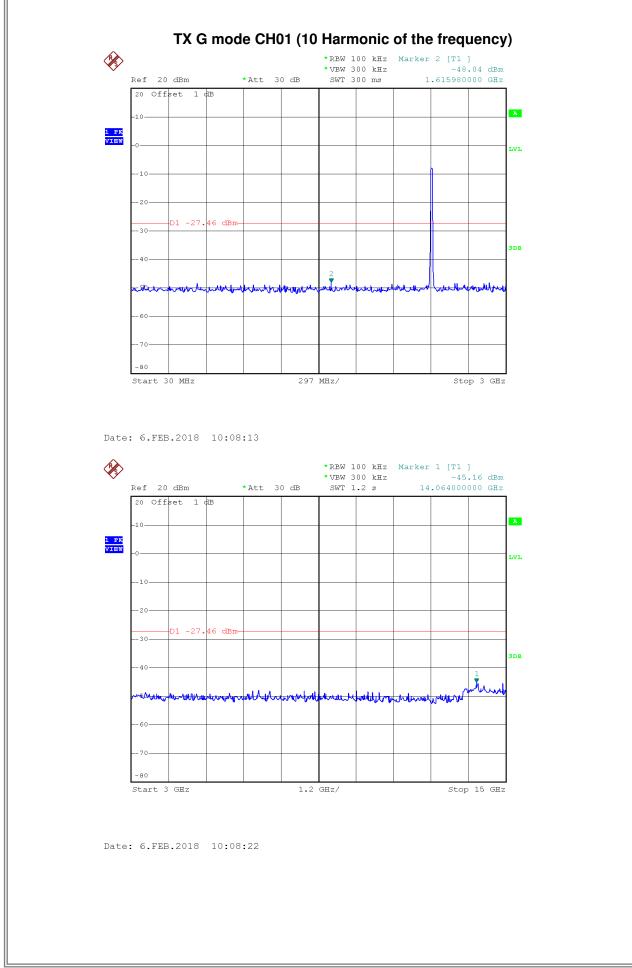
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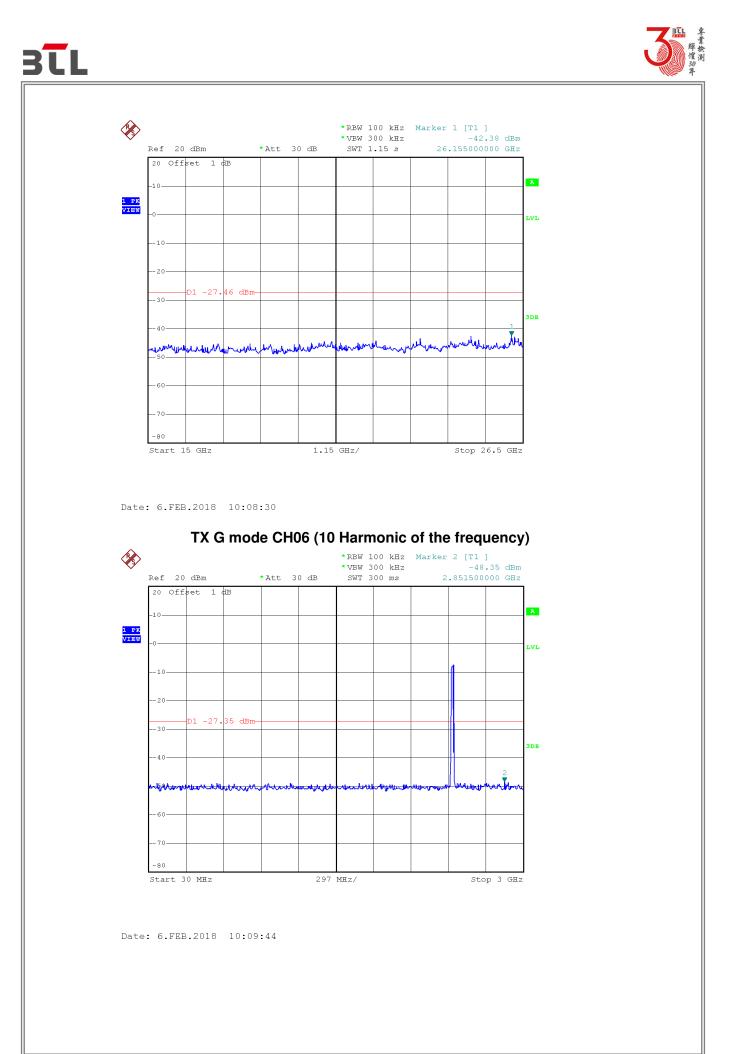


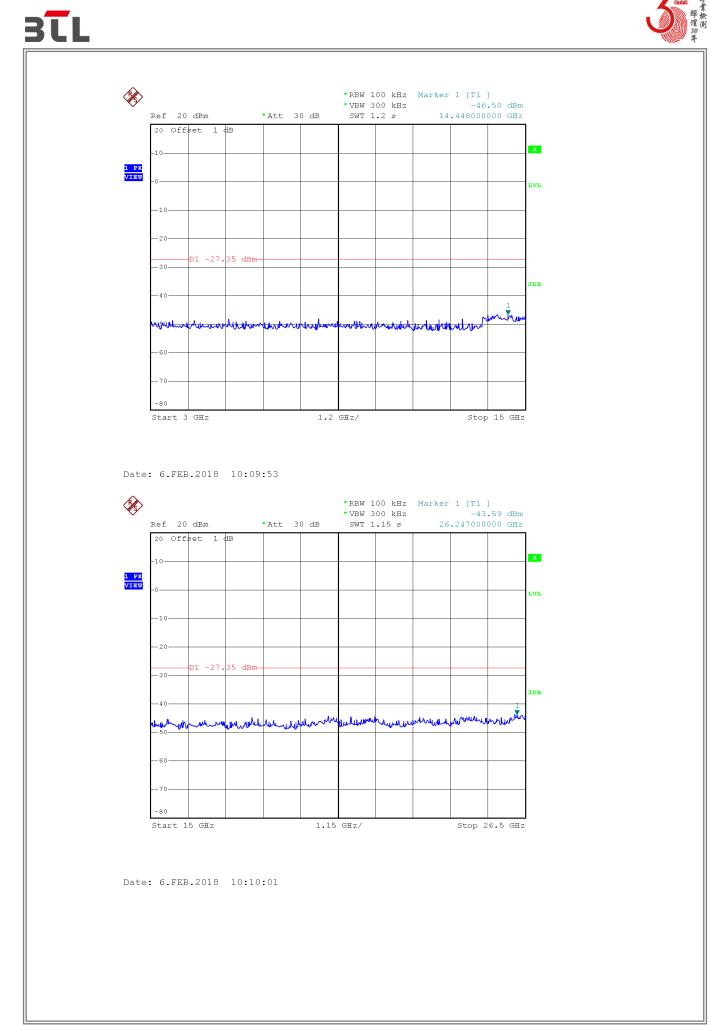




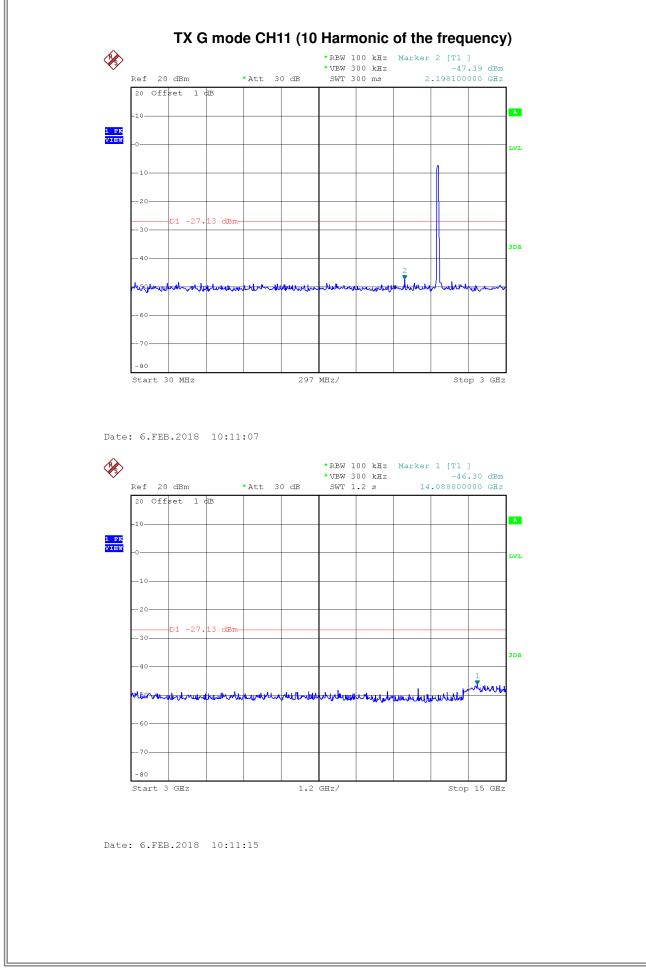


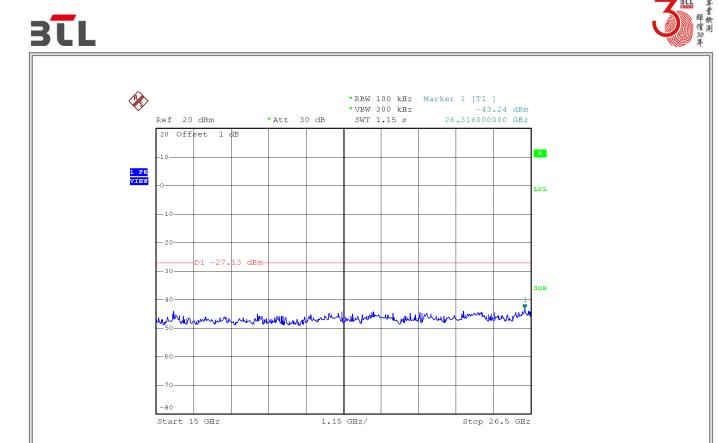








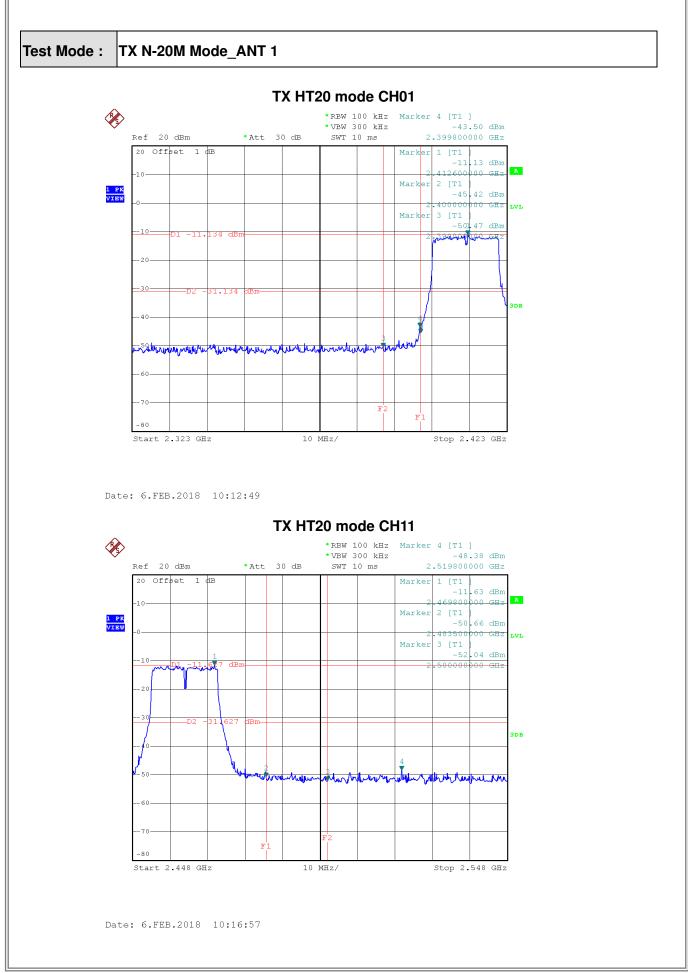




Date: 6.FEB.2018 10:11:23

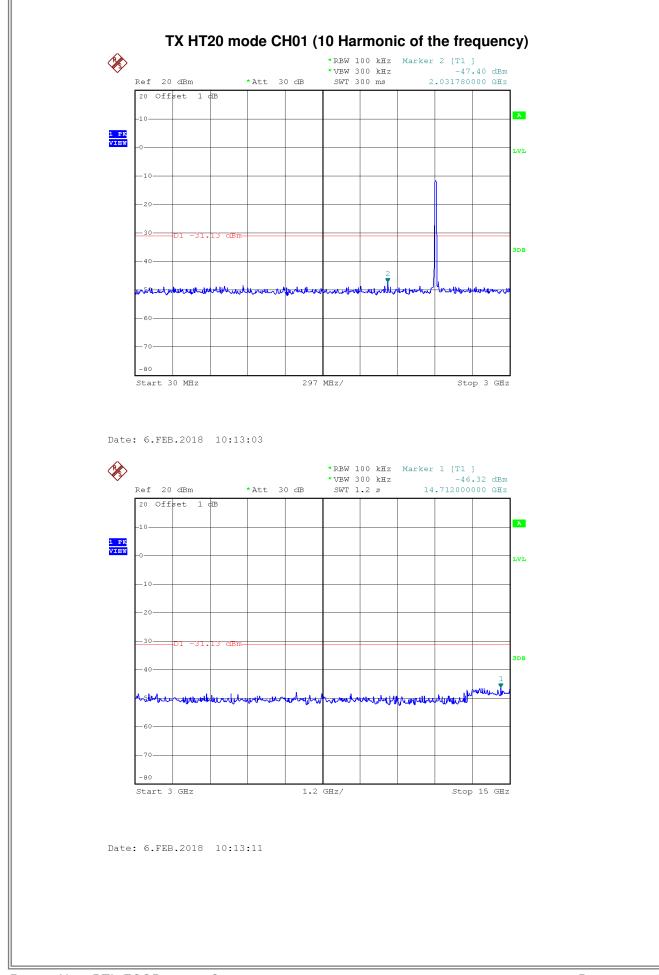


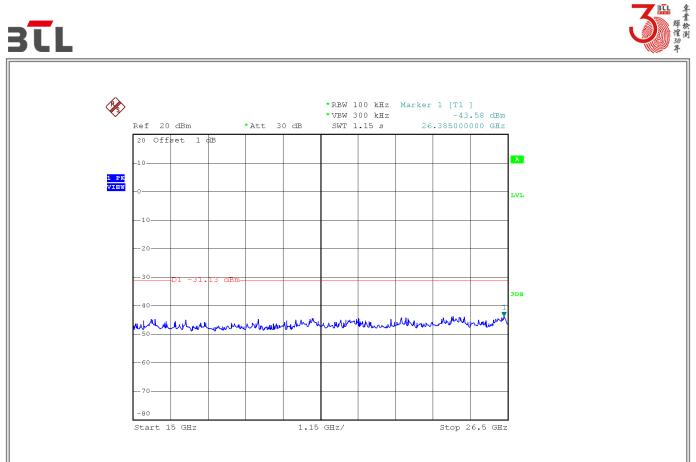




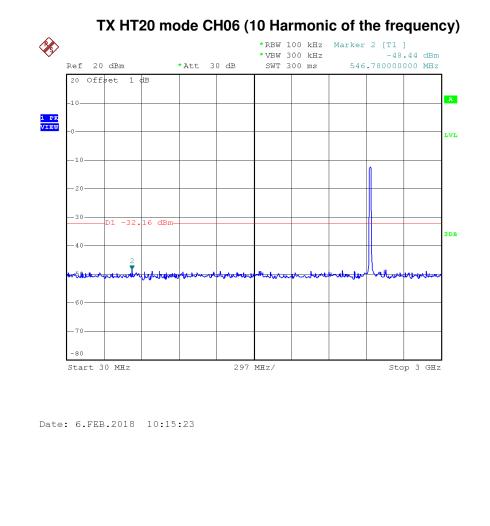
Report No.: BTL-FCCP-1-1801C251

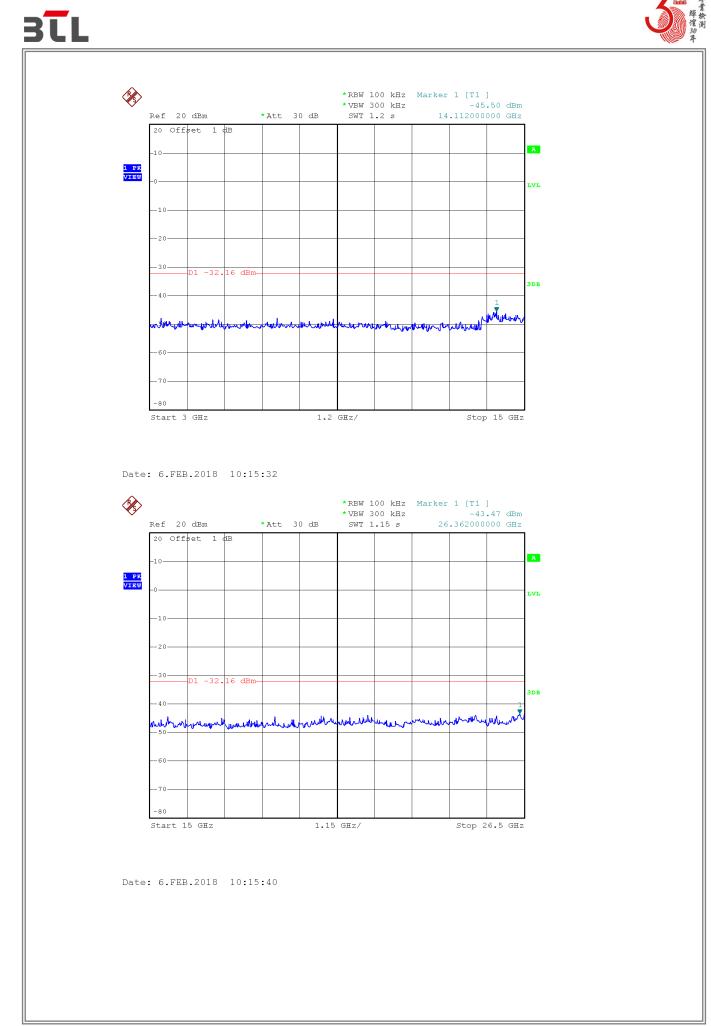




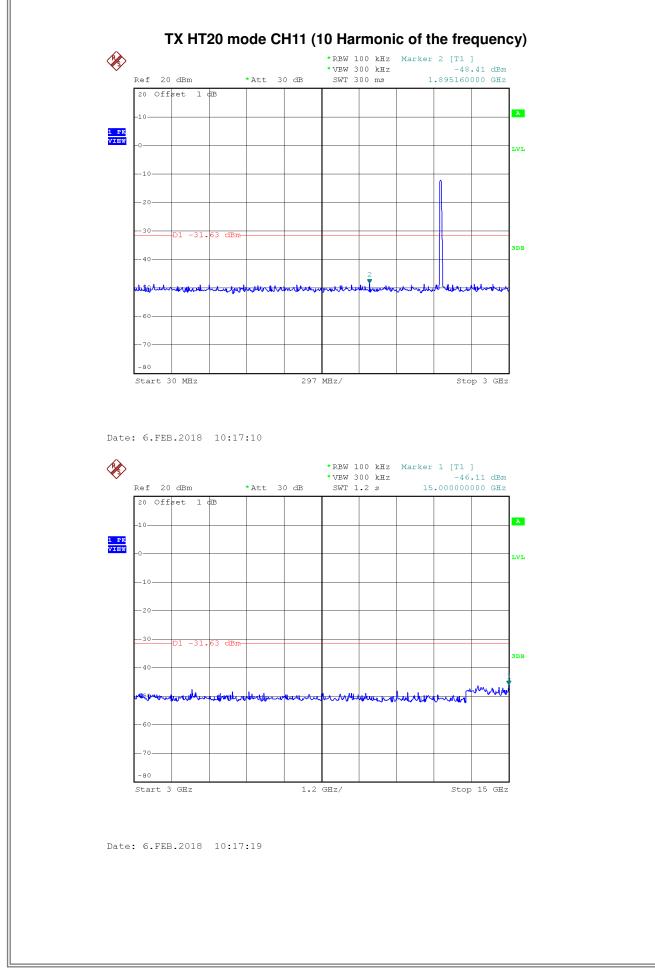


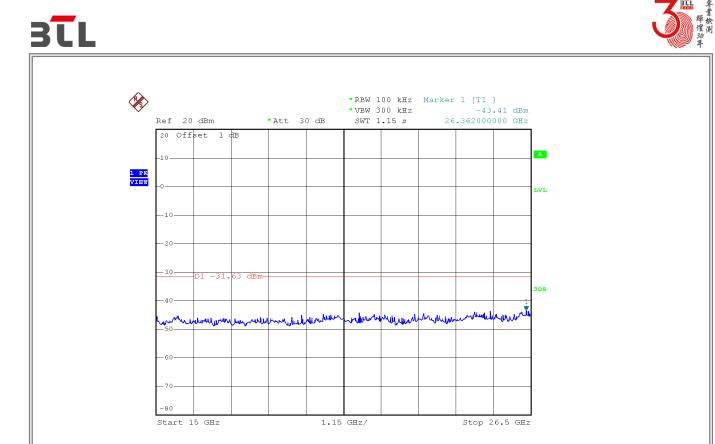
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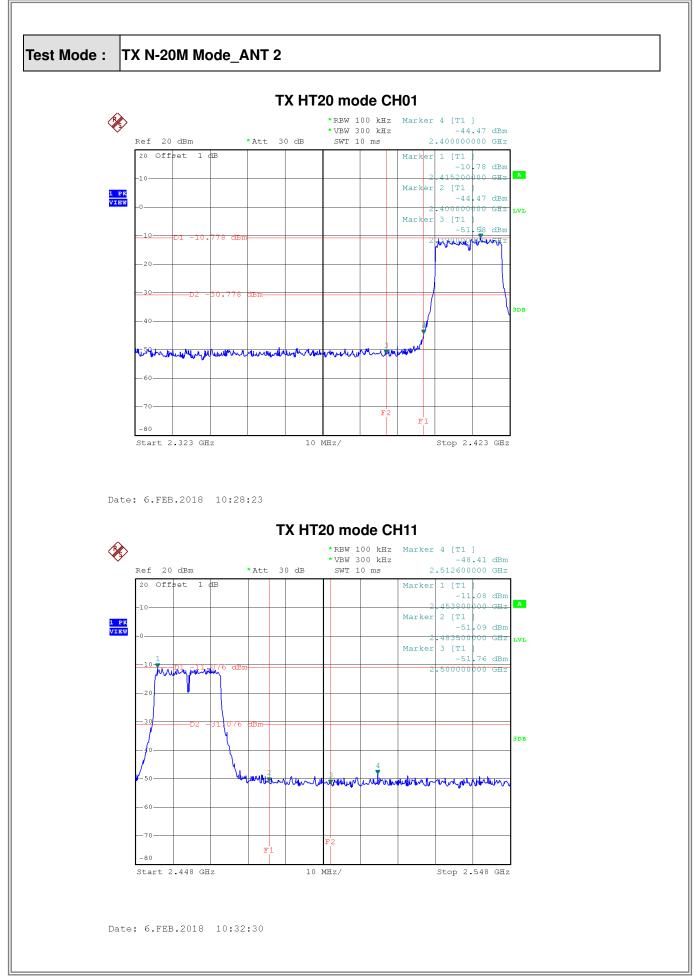




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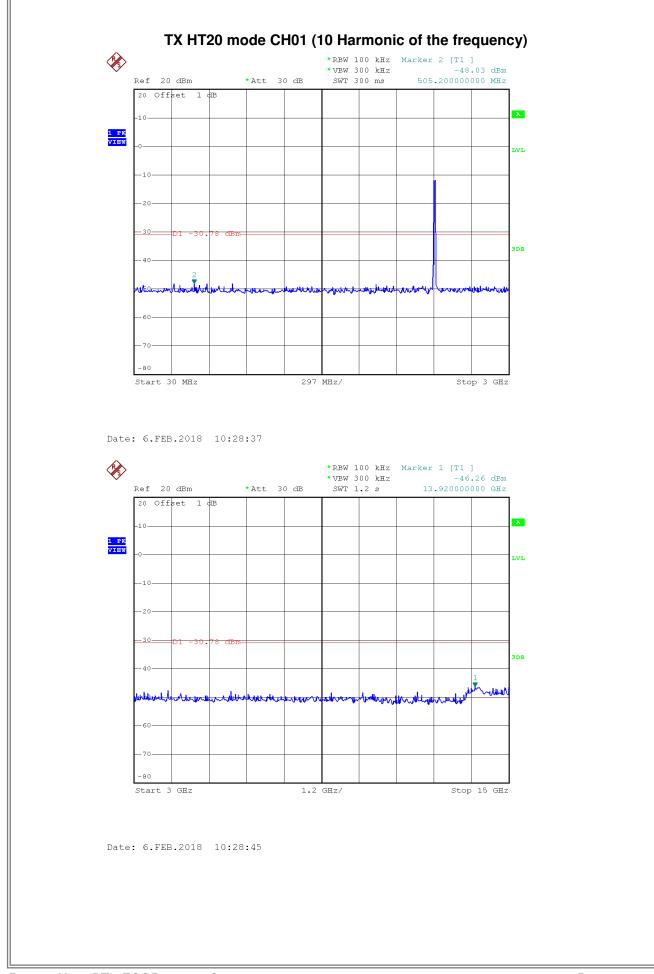


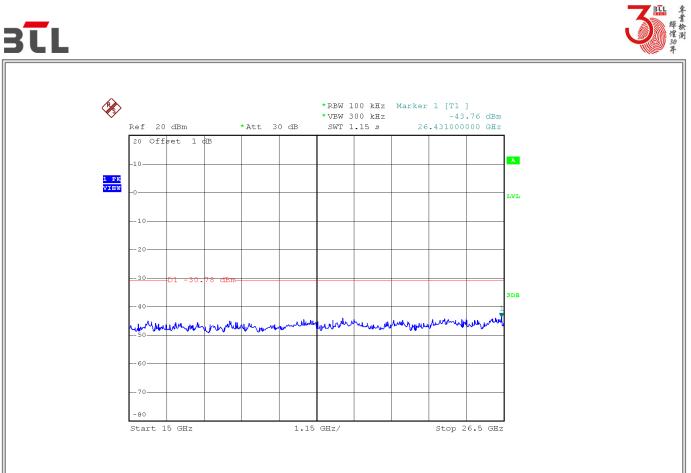




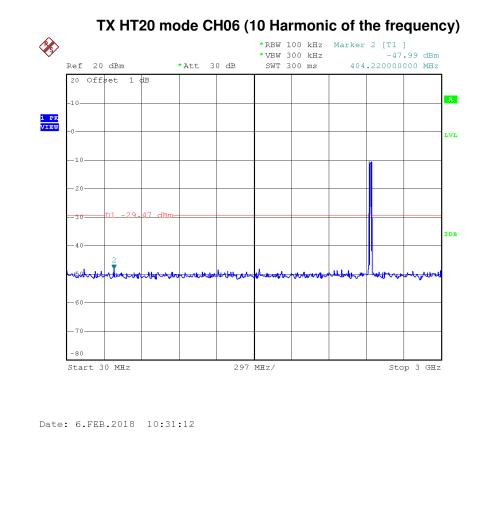
Report No.: BTL-FCCP-1-1801C251



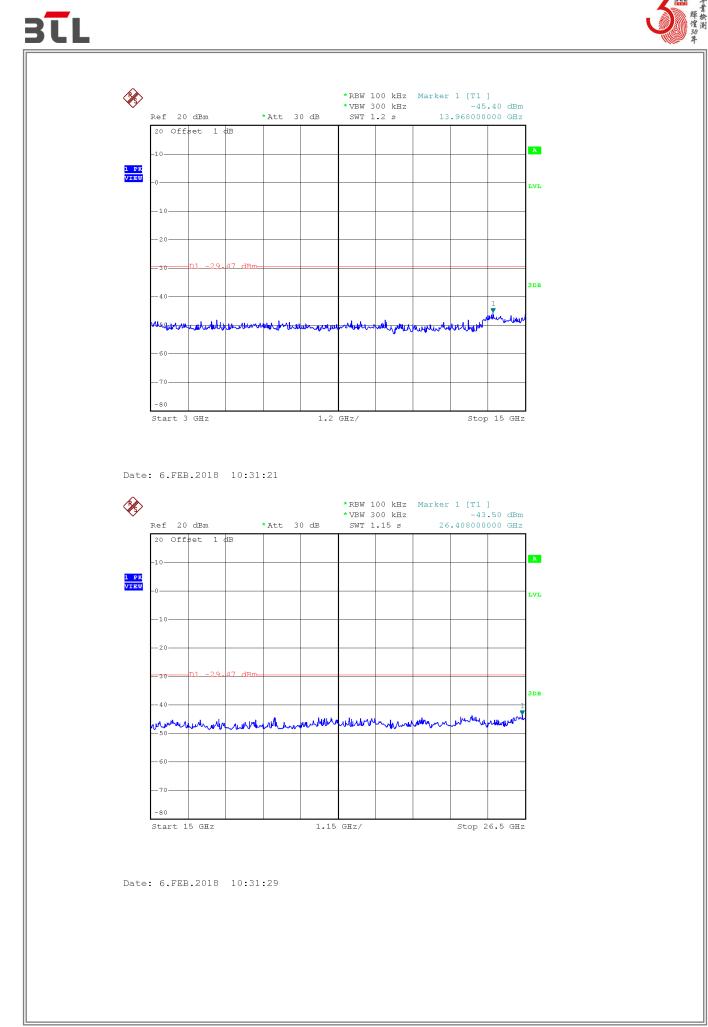




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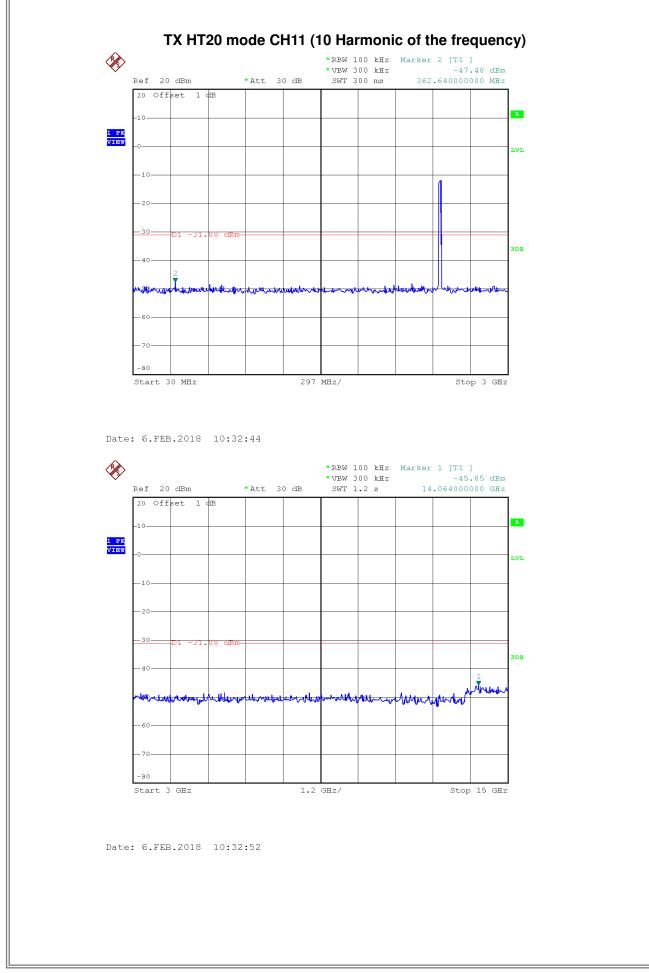


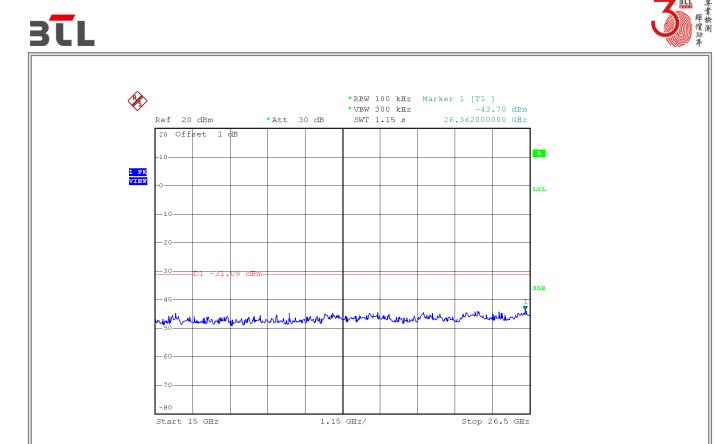
Report No.: BTL-FCCP-1-1801C251



Report No.: BTL-FCCP-1-1801C251



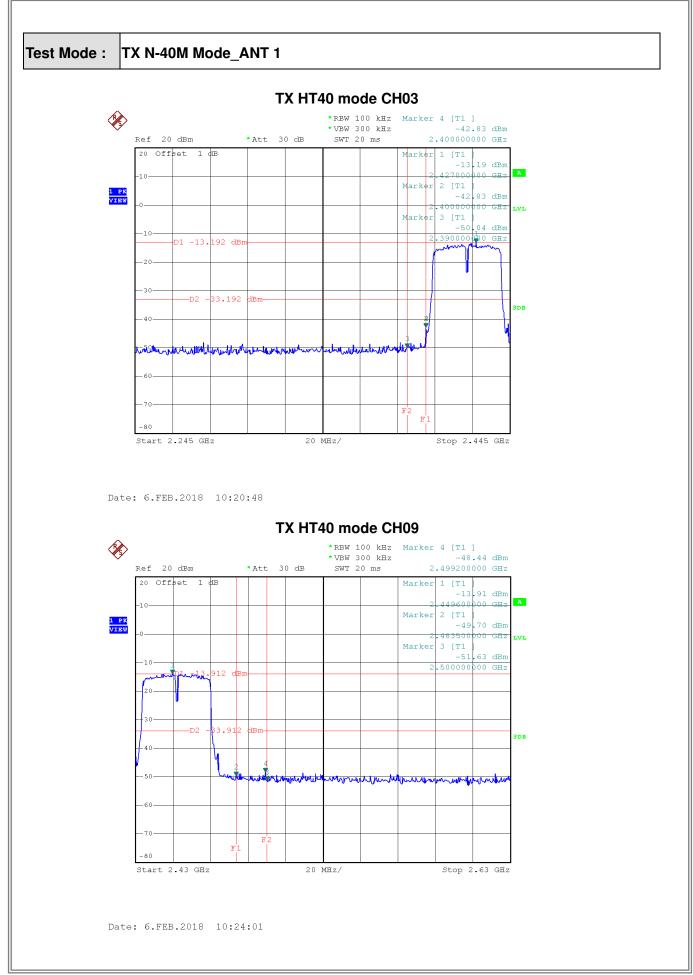




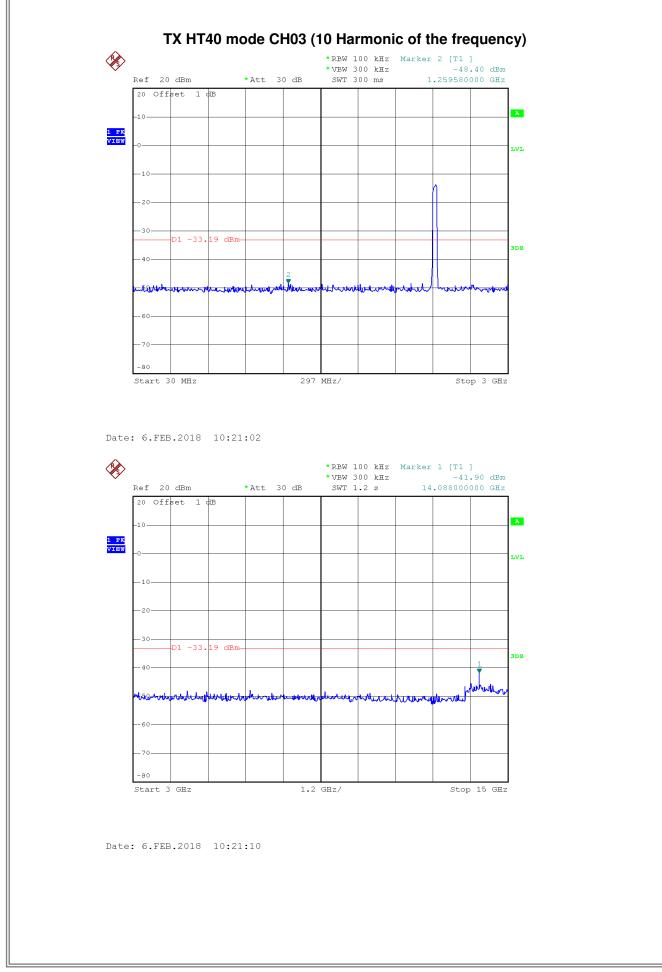
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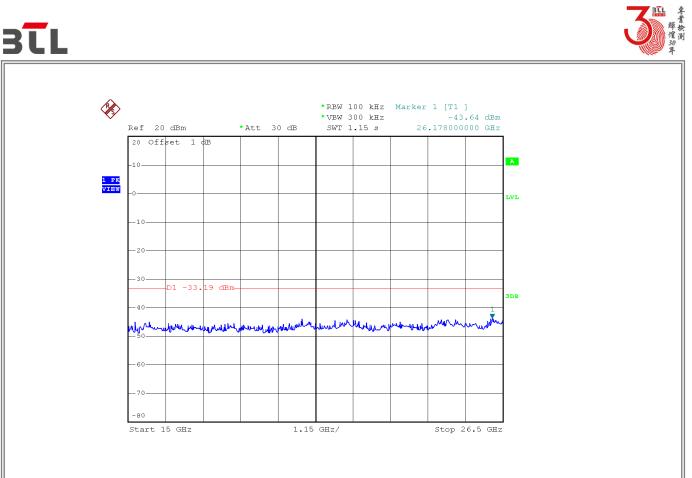




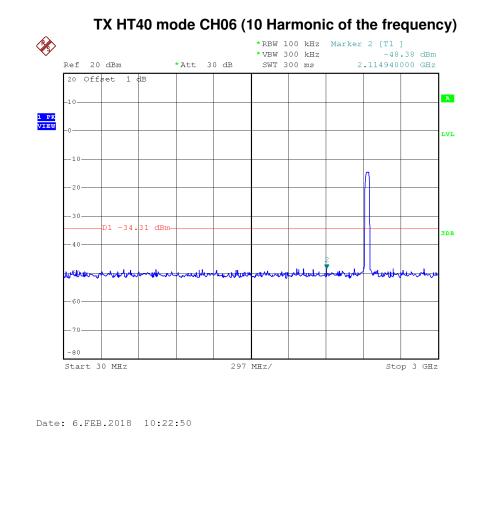


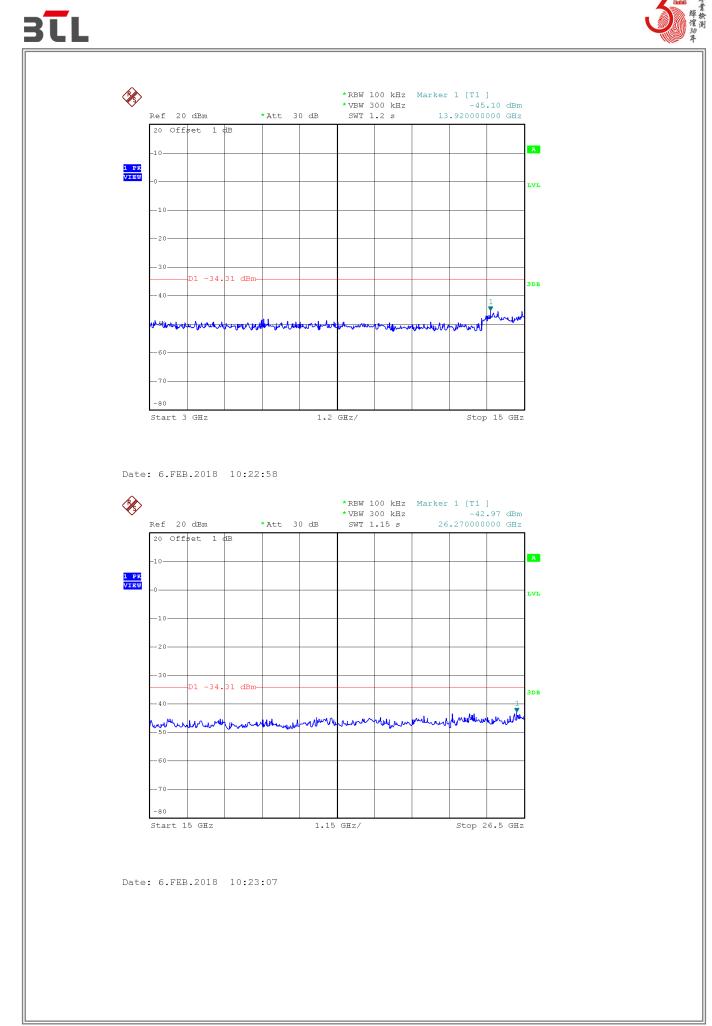




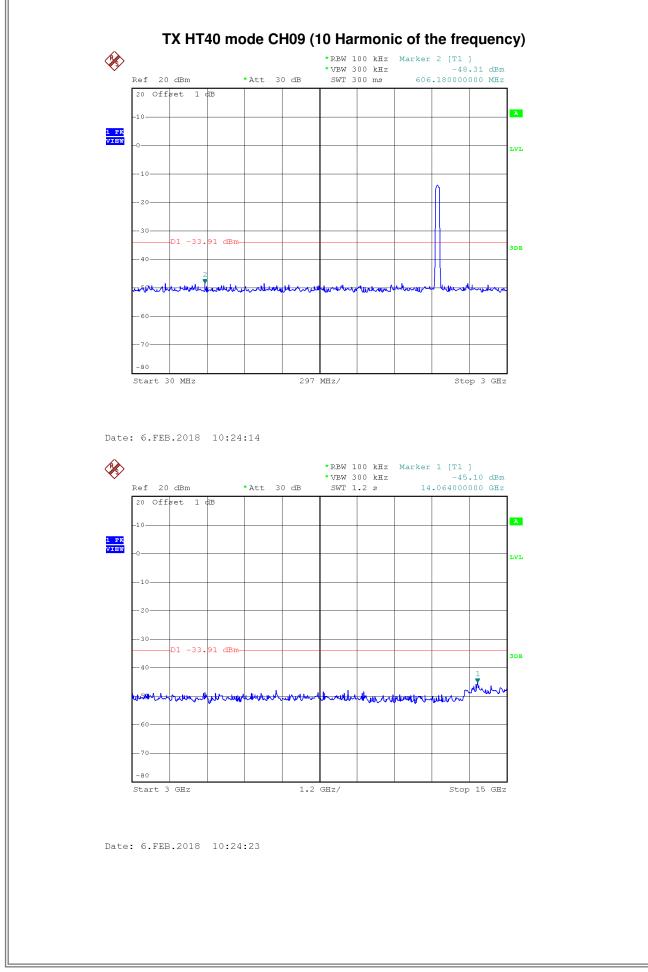


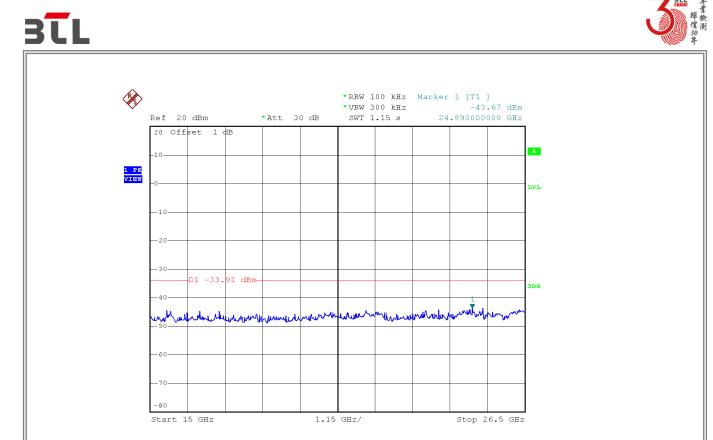
Date: 6.FEB.2018 10:21:19







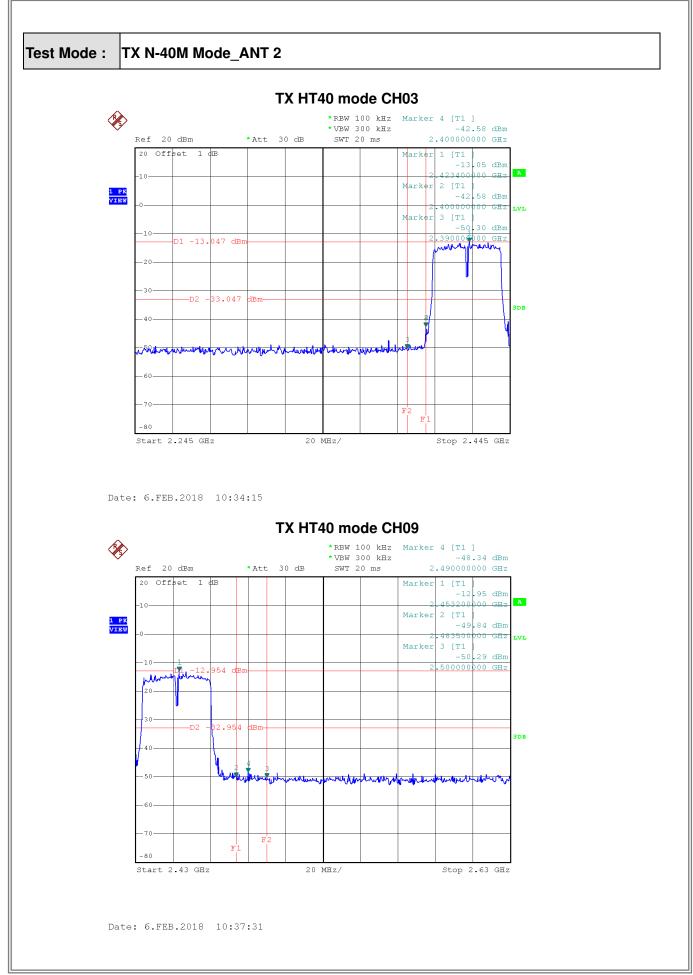




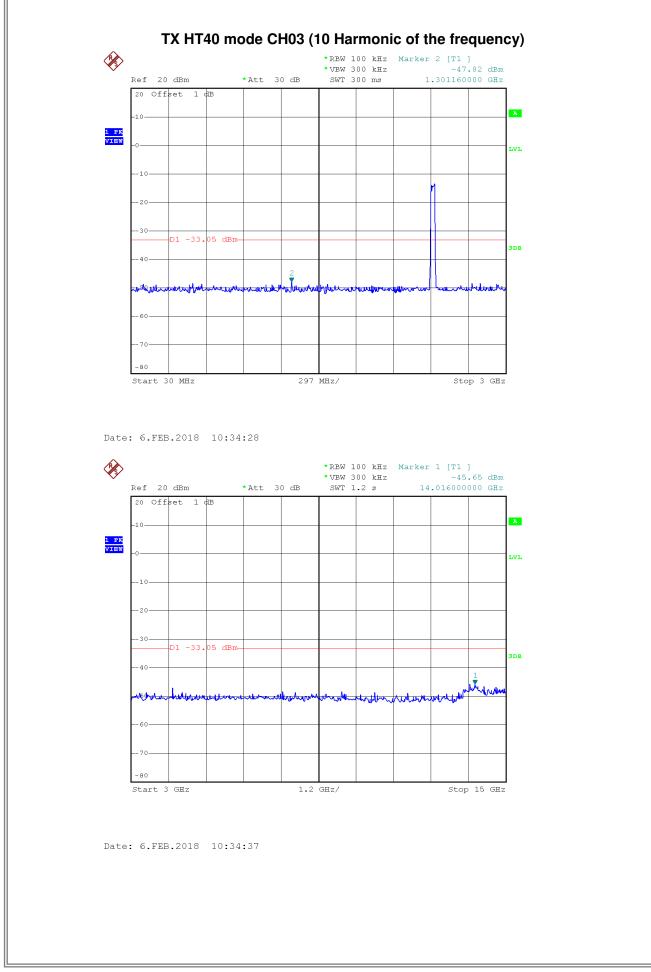
Date: 6.FEB.2018 10:24:31

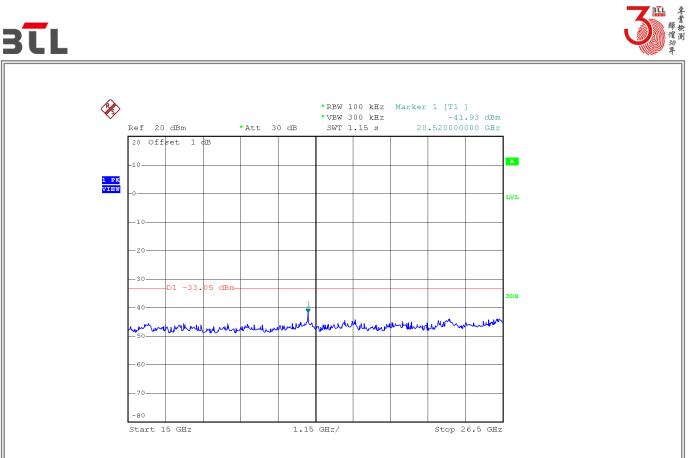




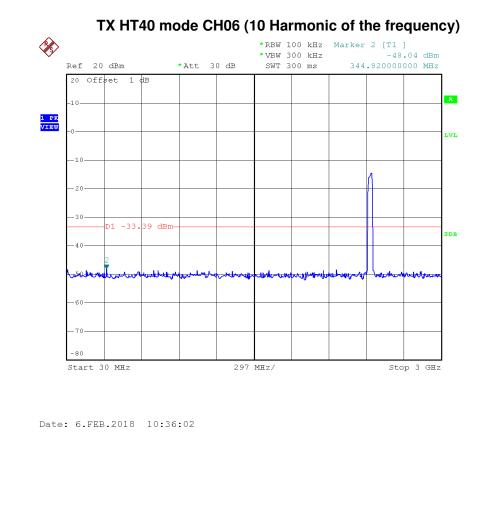


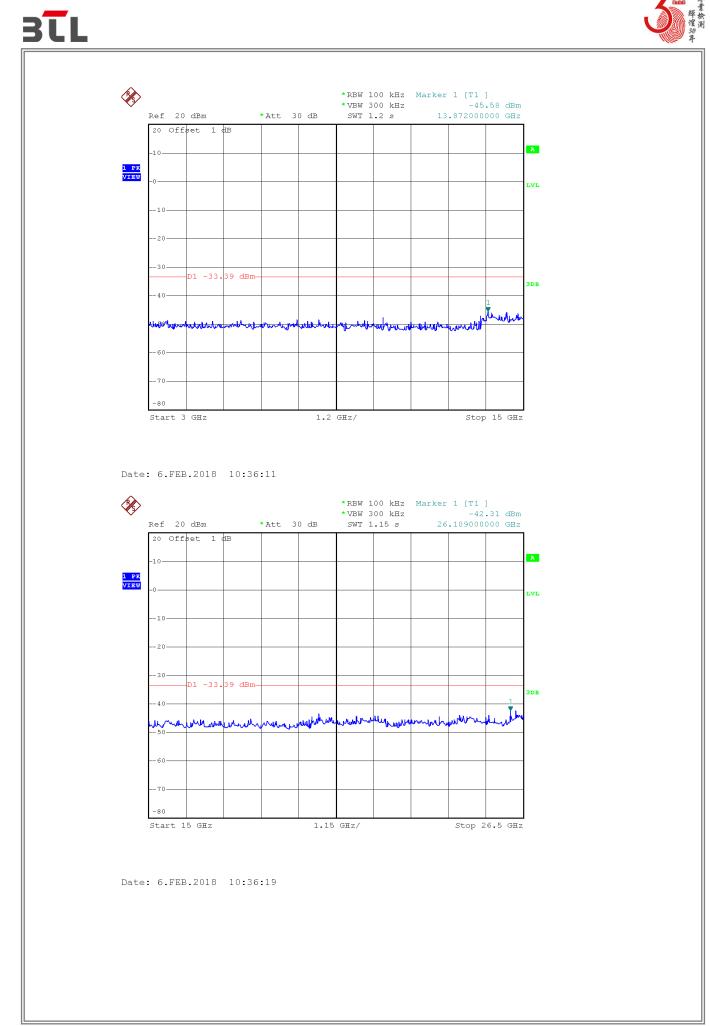




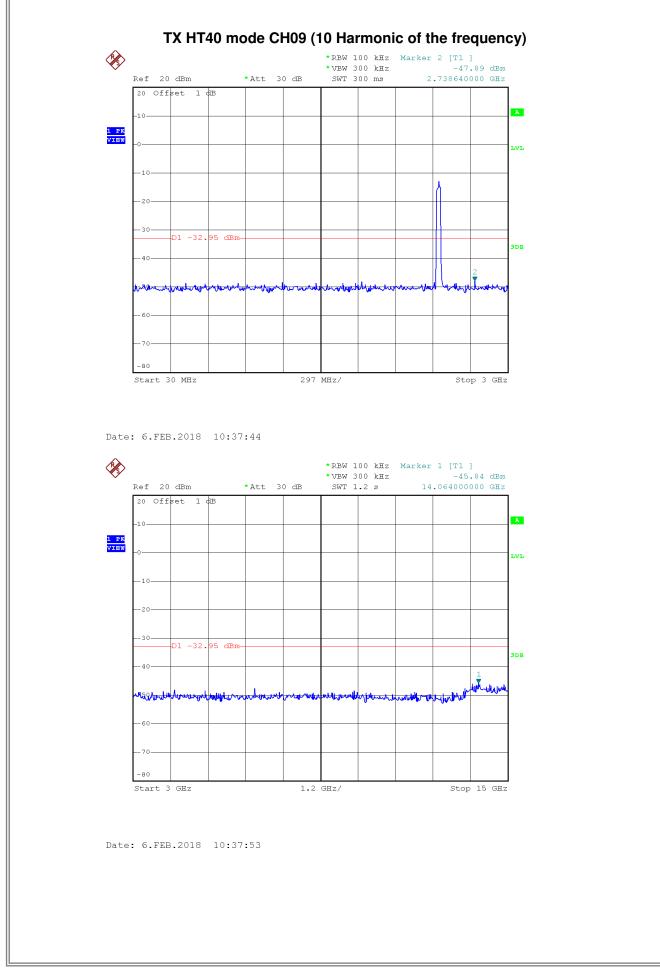


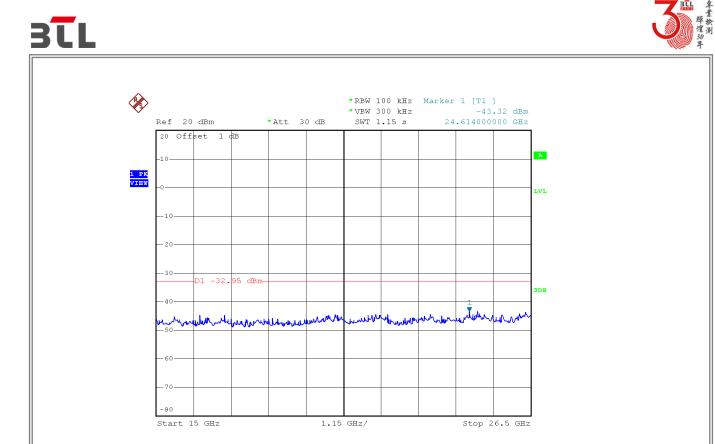
Date: 6.FEB.2018 10:34:45











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Date: 6.FEB.2018 10:38:01
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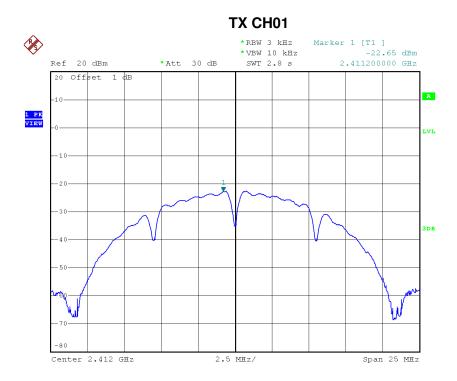
## **APPENDIX H - POWER SPECTRAL DENSITY**





#### Test Mode :TX B Mode\_CH01/06/11\_ANT 1

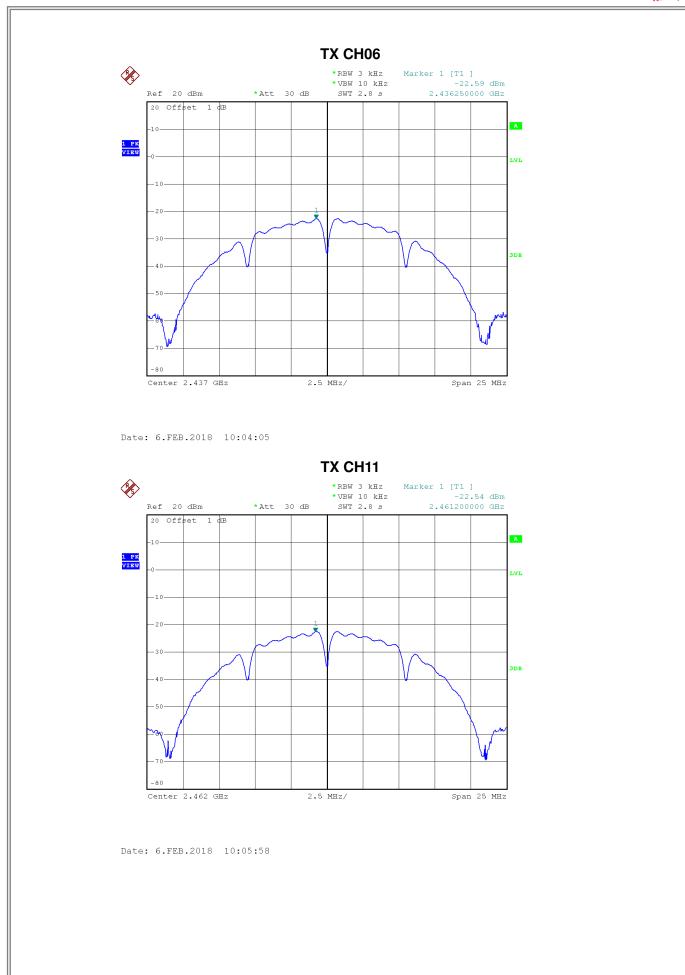
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-22.65	0.0054	8.00	Complies
2437	-22.59	0.0055	8.00	Complies
2462	-22.54	0.0056	8.00	Complies



Date: 6.FEB.2018 10:00:02

# **J**TL





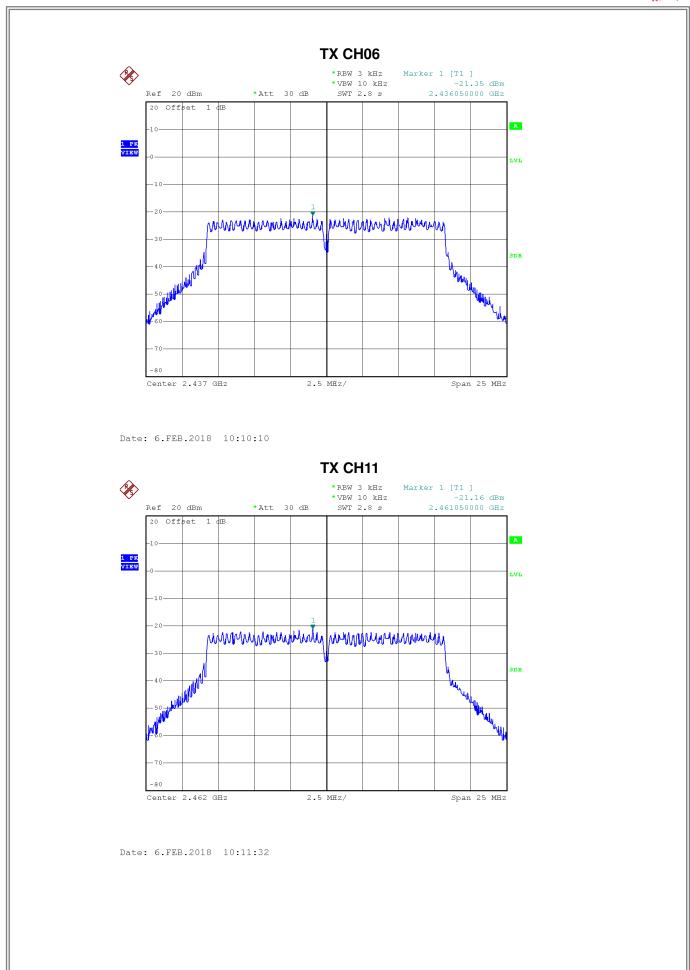




### Test Mode :TX G Mode\_CH01/06/11\_ANT 1 Frequency **Power Density** Power Density Max. Limit Result (dBm/3kHz) (MHz) (dBm/3kHz) (mW/3kHz) 2412 -22.04 0.0063 8.00 Complies Complies 2437 -21.35 0.0073 8.00 2462 -21.16 8.00 Complies 0.0077 **TX CH01** 8 \*RBW 3 kHz Marker 1 [T1 ] -22.04 dBm 2.411050000 GHz \*VBW 10 kHz SWT 2.8 s Ref 20 dBm \*Att 30 dB 20 Offset 1 dB А 1 PK VIEW LVL 3DB Wind Hallow Mary -80 Center 2.412 GHz Span 25 MHz 2.5 MHz/ Date: 6.FEB.2018 10:08:39





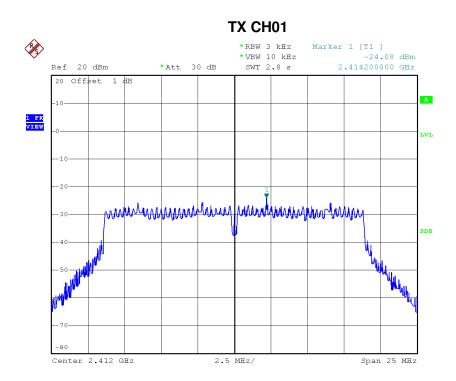




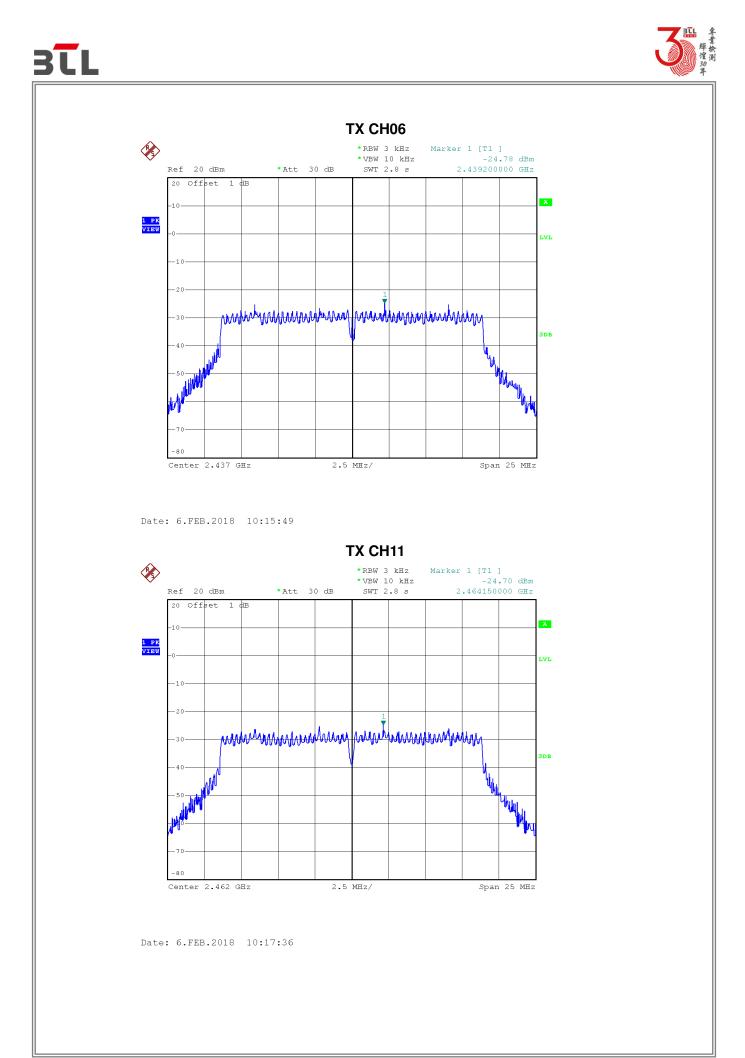


#### Test Mode : TX N-20M Mode\_CH01/06/11\_ANT 1

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-24.08	0.0039	8.00	Complies
2437	-24.78	0.0033	8.00	Complies
2462	-24.70	0.0034	8.00	Complies



Date: 6.FEB.2018 10:13:28

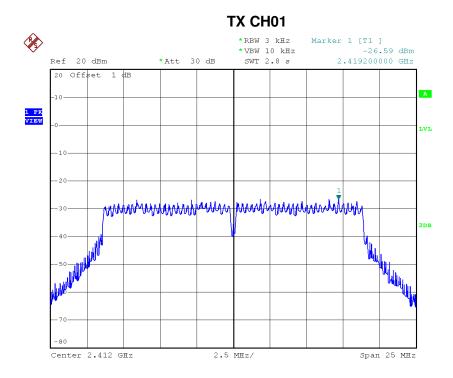


Report No.: BTL-FCCP-1-1801C251

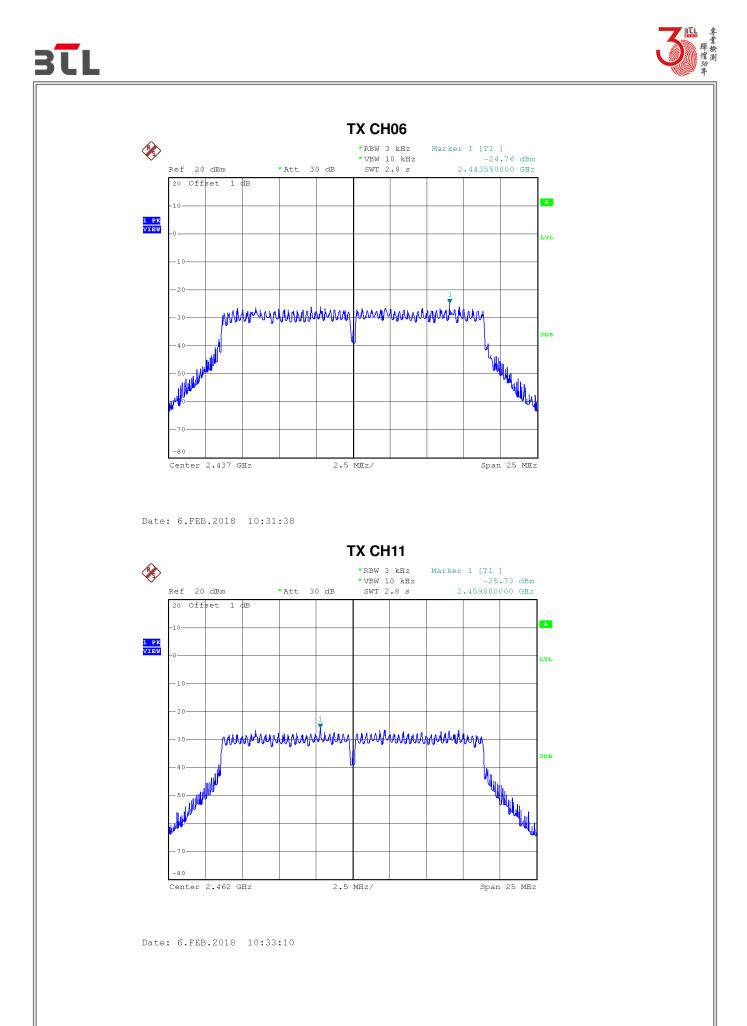


Test Mode : TX N-20M Mode_C	H01/06/11_ANT 2
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Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-26.59	0.0022	8.00	Complies
2437	-24.76	0.0033	8.00	Complies
2462	-25.73	0.0027	8.00	Complies



Date: 6.FEB.2018 10:29:03



Report No.: BTL-FCCP-1-1801C251



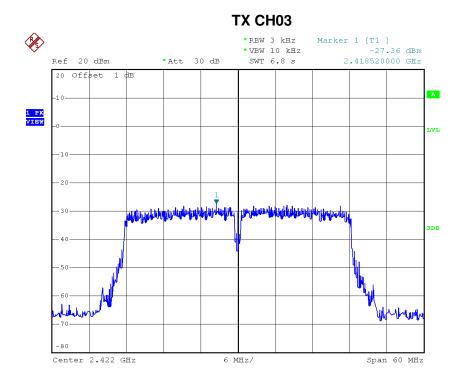
#### Test Mode : TX N-20M Mode\_CH01/06/11\_Total

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-22.15	0.0061	8.00	Complies
2437	-21.80	0.0066	8.00	Complies
2462	-22.15	0.0061	8.00	Complies

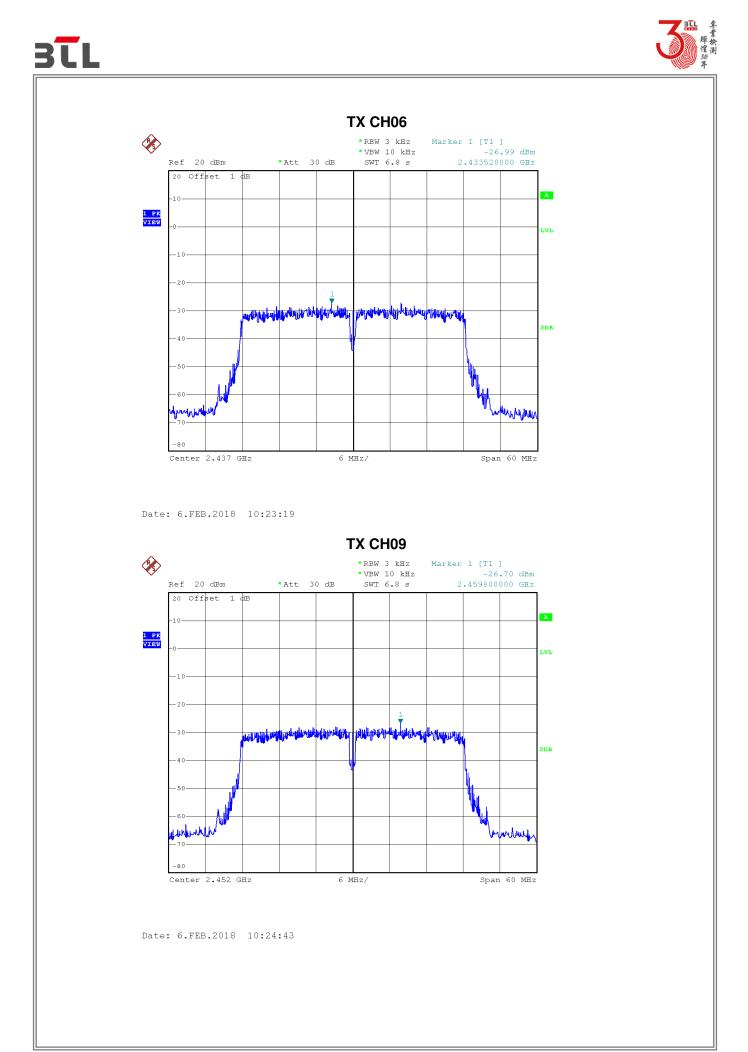




#### Test Mode : TX N-40M Mode\_CH03/06/09\_ANT 1 Frequency Power Density Power Density Max. Limit Result (dBm/3kHz) (mW/3kHz) (dBm/3kHz) (MHz) 2422 -27.36 0.0018 8.00 Complies Complies 2437 -26.99 0.0020 8.00 2452 -26.70 8.00 Complies 0.0021



Date: 6.FEB.2018 10:21:31

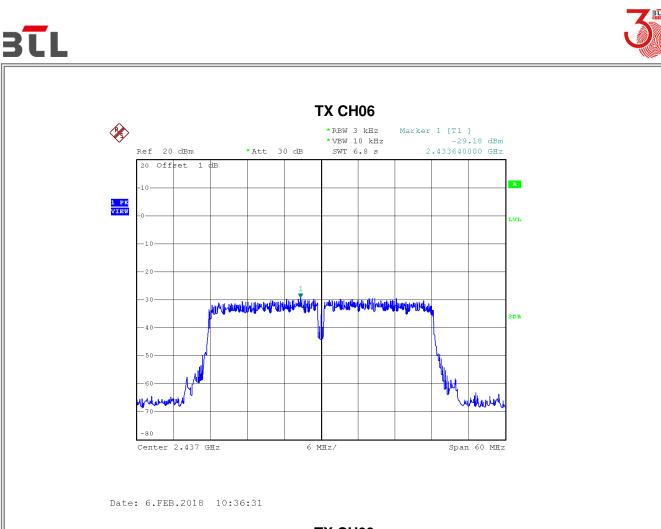


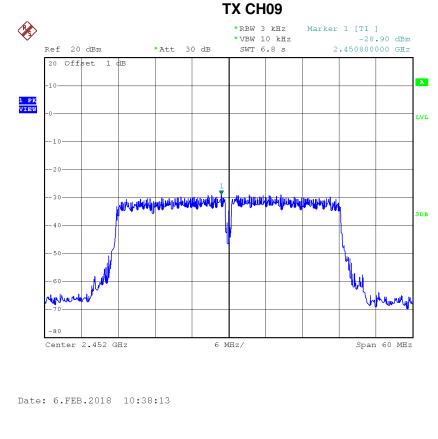
Report No.: BTL-FCCP-1-1801C251





Frequency	Power Density	Power Density	Max. Limit	Deaut
(MHz)	(dBm/3kHz)	(mW/3kHz)	(dBm/3kHz)	Resul
2422	-28.19	0.0015	8.00	Compli
2437	-29.18	0.0012	8.00	Compli
2452	-28.90	0.0013	8.00	Compli
Re:	Offset 1 dB	*VBW 10 kHz	Cker 1 [T1 ] -28.19 dBm 2.429800000 GHz	
1 PR VIBW -0-				
3	20	Hallmanney berland marked and the first of the state of t		
4	10		3DB	
5	50			
	50			
Hw 7	<b>Min Muht</b> h 20		Usel Mishing	
- 8				
Cei	nter 2.422 GHz	6 MHz/	Span 60 MHz	
5				
Date: 6	6.FEB.2018 10:34:57			







#### 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	-24.81	0.0033	8.00	Complies
2437	-24.95	0.0032	8.00	Complies
2452	-24.69	0.0034	8.00	Complies