

Report No.: BTL-FCCP-1-1905C047



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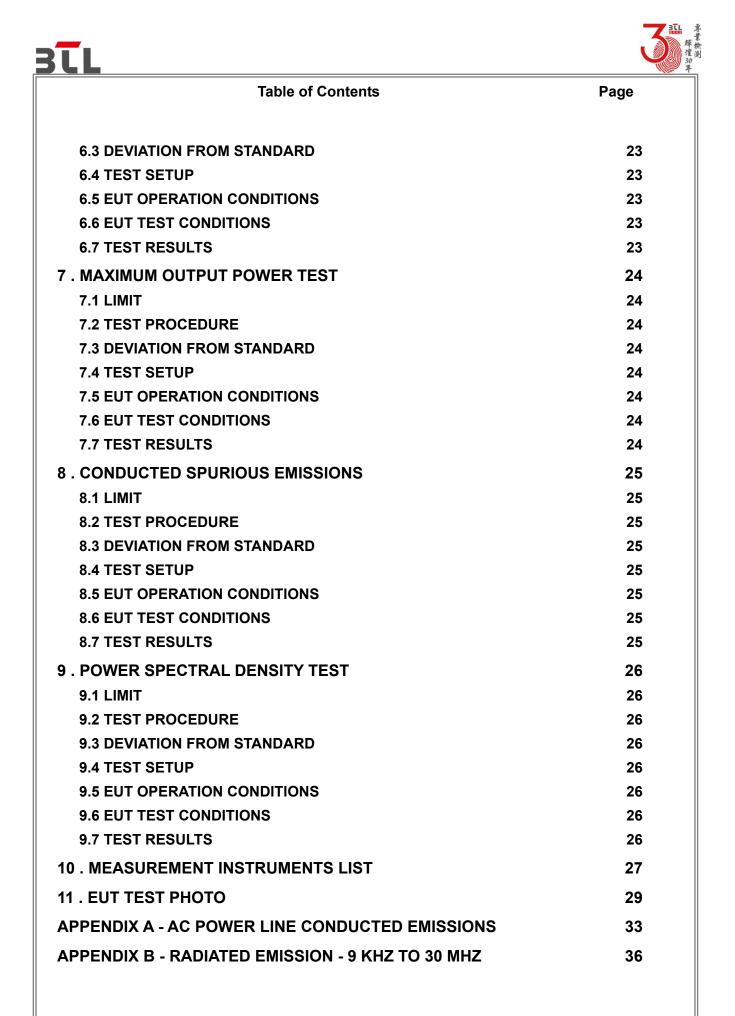
The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended 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. Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.



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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Jun. 20, 2019





1. GENERAL SUMMARY

Equipment : Brand Name :	300Mbps Wireless N Access Point
Test Model :	
Series Model :	
	SHENZHEN TENDA TECHNOLOGY CO., LTD
	SHENZHEN TENDA TECHNOLOGY CO., LTD
Address :	6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District,
	Shenzhen, China. 518052
Date of Test :	May 17, 2019~Jun. 12, 2019
Test Sample :	Engineering Sample No.: DG19051712
Standard(s) :	FCC Part15, Subpart C (15.247)
	ANSI C63.10-2013
	FCC KDB 558074 D01 DTS Meas Guidance v05r02
	FCC KDB 662911 D01 Multiple Transmitter Output v02r01

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-1-1905C047) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of A2LA according to the ISO/IEC 17025 quality assessment standard and technical standard(s).

Test results included in this report are only for the WLAN 2.4 GHz part.



2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

	Applied Standard(s): FCC Part15, Subpart C (15.247)				
Standard(s) Section	Test Item	Test Result	Judgment	Remark	
15.207	AC Power Line Conducted Emissions	APPENDIX A	PASS		
15.247(d) 15.205(a) 15.209(a)	Radiated Emissions	APPENDIX B APPENDIX C APPENDIX D	PASS		
15.247(a)(2)	Bandwidth	APPENDIX E	PASS		
15.247(b)(3)	Maximum Output Power	APPENDIX F	PASS		
15.247(d)	Conducted Spurious Emissions	APPENDIX G	PASS		
15.247(e)	Power Spectral Density	APPENDIX H	PASS		
15.203	Antenna Requirement		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 Registration Number for FCC: 357015 BTL's Designation Number for FCC: CN1240

2.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)) The BTL measurement uncertainty as below table:

A. AC power line conducted emissions test:

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

B. Radiated emissions test:

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
		30 MHz~200 MHz	V	3.82
	CISPR	30 MHz~200 MHz	Н	3.78
DG-CB03		200 MHz~1,000 MHz	V	4.10
DG-CB03		200 MHz~1,000 MHz	H	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	300Mbps Wireless N Access Point
Brand Name	Tenda
Test Model	AP5
Series Model	N/A
Model Difference(s)	N/A
	1# DC voltage supplied from AC/DC adapter.
Power Source	Model:BN036-A12012U
	2# DC voltage supplied from PoE adapter.
Power Rating	I/P: 100-240V~ 50/60Hz 0.4A O/P: 12V1.0A
Operation Frequency	2412 MHz ~ 2462 MHz
	IEEE 802.11b: DSSS
Modulation Type	IEEE 802.11g: OFDM
	IEEE 802.11n: OFDM
	IEEE 802.11b: 11/5.5/2/1 Mbps
Bit Rate of Transmitter	IEEE 802.11g: 54/48/36/24/18/12/9/6 Mbps
	IEEE 802.11n: up to 300 Mbps
	IEEE 802.11b: 11.33 dBm (0.0136 W)
Maximum Output Power	IEEE 802.11g: 22.67 dBm (0.1849 W)
Non-Beamforming	IEEE 802.11n (HT20): 24.91 dBm (0.3097 W)
	IEEE 802.11n (HT40): 22.57 dBm (0.1807 W)
Maximum Output Power	IEEE 802.11n (HT20): 24.84 dBm (0.3048 W)
Beamforming	IEEE 802.11n (HT40): 22.52 dBm (0.1786 W)

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. Antenna Specification:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	N/A	N/A	Dipole	N/A	5	TX/RX
2	N/A	N/A	Dipole	N/A	5	TX/RX
3	N/A	N/A	Dipole	N/A	5	RX

Note:

(1) For Non-Beamforming Function:

Antenna Gain=5 dBi. This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain = G_{ANT} +10log(N)dBi, that is Directional gain =5+10log(2)dBi=8.01. So, the output power limit is 30-8.01+6=27.99, the power spectral density limit is 8-8.01+6=5.99.

 (2) For Beamforming Function: Beamforming Gain=3 dBi, Directional gain=3+5=8 dBi. So, the output power limit is 30-8+6=28, the power spectral density limit is 8-8+6=6.

4. Table for Antenna Configuration:

Operating Mode		
TX Mode	1TX	2TX
802.11b	V (Ant. 2)	-
802.11g	V (Ant. 2)	-
802.11n(20 MHz)	-	V (Ant. 1 + Ant. 2)
802.11n(40 MHz)	-	V (Ant. 1 + Ant. 2)



3.2 DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description	
Mode 1	TX B Mode Channel 01/06/11	
Mode 2	TX G Mode Channel 01/06/11	
Mode 3	TX N-20 MHz Mode Channel 01/06/11	
Mode 4	TX N-40 MHz Mode Channel 03/06/09	
Mode 5	TX N-20 Mode Channel 06	
Following mode(s) as (were) found to be the worst case(s) and selected for the final test.		

AC power line conducted emissions test		
Final Test Mode:	Description	
Mode 5	TX N-20 Mode Channel 06	

Radiated emissions test – Below 1GHz		
Final Test Mode:	Description	
Mode 5	TX N-20 Mode Channel 06	

Radiated emissions test – Above 1GHz		
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	

Conducted 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	





NOTE:

- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: CCK (1 Mbps) 802.11g mode: OFDM (6 Mbps) 802.11n HT20 mode : BPSK (6.5*2 Mbps) 802.11n HT40 mode : BPSK (13.5*2 Mbps) For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated emission below 1 GHz test, the IEEE 802.11n20 is found to be the worst case and recorded.
- (4) For radiated emission above 1 GHz test, 1GHz~26.5GHz have been pre-tested and in this report only recorded the worst case. The remaining spurious points are all below the limit value of 20dB.

3.3 PARAMETERS OF TEST SOFTWARE

Non-Beamforming			
Test Software		cart	
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	5.5	6.5	7.5
IEEE 802.11g	11	13.5	13
IEEE 802.11n (HT20)	11	12.5	13
Frequency (MHz)	2422	2437	2452
IEEE 802.11n (HT40)	9.5	12.5	11

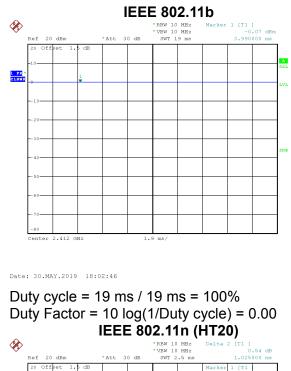
With Beamforming

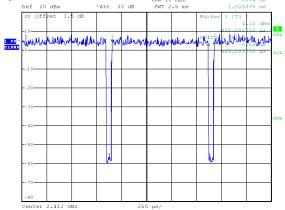
Test Software	cart		
Frequency (MHz)	2412	2437	2462
IEEE 802.11n (HT20)	11	12.5	13
Frequency (MHz)	2422	2437	2452
IEEE 802.11n (HT40)	9.5	12.5	11

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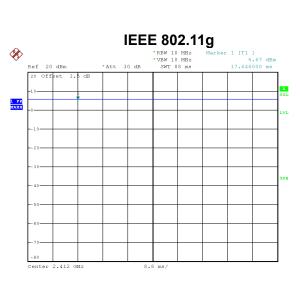
3.4 DUTY CYCLE



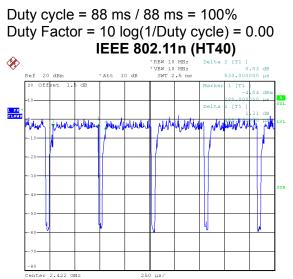


Date: 30.MAY.2019 18:03:38

Duty cycle = 0.965 ms / 1.025 ms = 94.1% Duty Factor = 10 log(1/Duty cycle) = 0.26

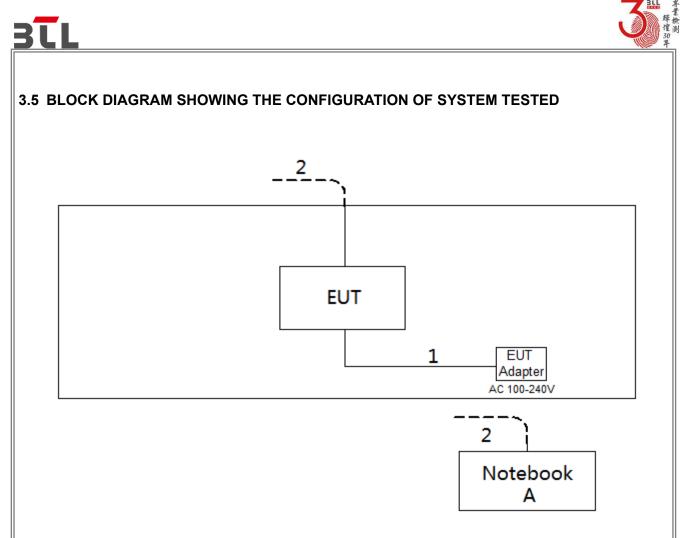


Date: 30.MAY.2019 18:01:40



Date: 30.MAY.2019 18:04:01

Duty cycle = 0.455 ms / 0.530 ms = 85.8% Duty Factor = 10 log(1/Duty cycle) = 0.67



3.6 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.
А	Notebook	Dell	Inspiron 15-7559	N/A
Item	Cable Type	Shielded Type	Ferrite Core	Length
1	DC Cable	NO	NO	1.5m
2	RJ45 Cable	NO	NO	10m

4. AC POWER LINE CONDUCTED EMISSIONS TEST

4.1 LIMIT

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

NOTE:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

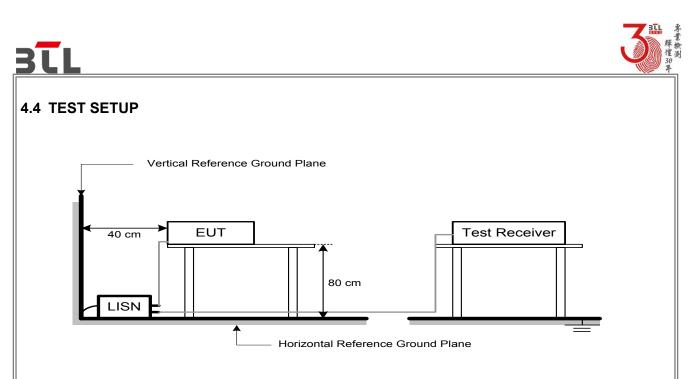
Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

4.2 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.

4.3 DEVIATION FROM TEST STANDARD

No deviation



4.5 EUT OPERATION CONDITIONS

EUT was programmed to be in continuously transmitting mode.

4.6 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 53% Test Voltage: AC 120V/60Hz

4.7 TEST RESULTS

Please refer to the APPENDIX A.



5. RADIATED EMISSIONS TEST

5.1 LIMIT

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)

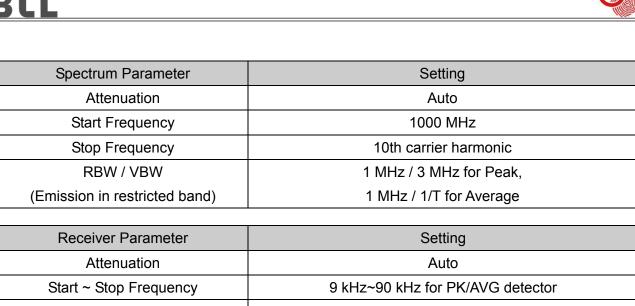
Frequency	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000 MHz)

	(dBuV/m at 3 m)	
Frequency (MHz)	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).



Start ~ Stop Frequency90 kHz~110 kHz for QP detectorStart ~ Stop Frequency110 kHz~490 kHz for PK/AVG detectorStart ~ Stop Frequency490 kHz~30 MHz for QP detectorStart ~ Stop Frequency30 MHz~1000 MHz for QP detector

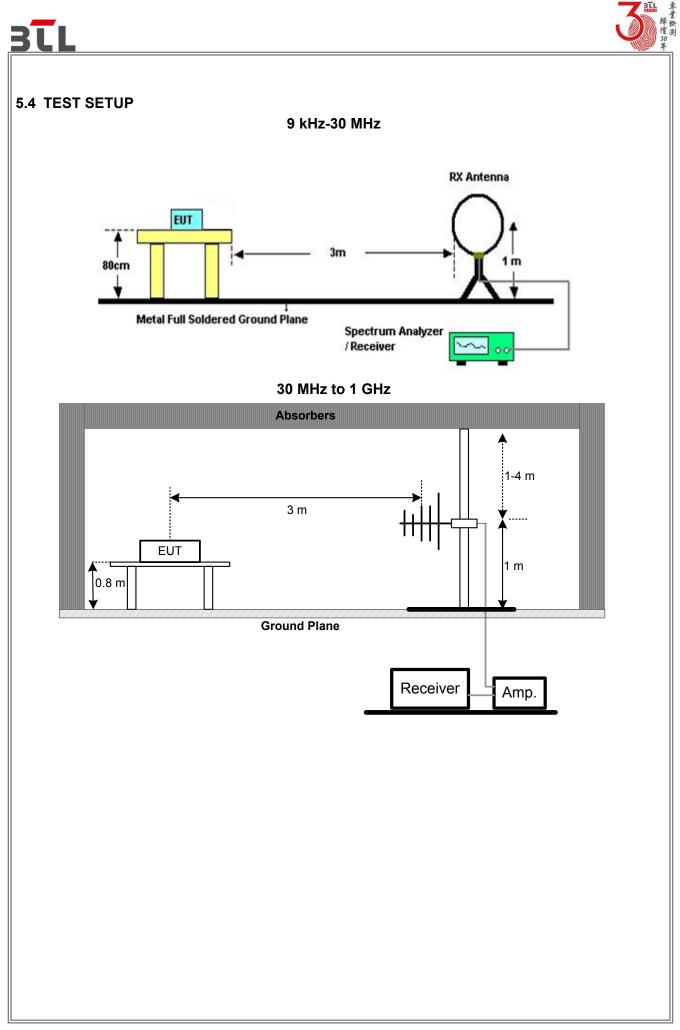
5.2 TEST PROCEDURE

- 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.

5.3 DEVIATION FROM TEST STANDARD

No deviation





Site

5.6 EUT TEST CONDITIONS

Temperature: 24°C Relative Humidity: 68% Test Voltage: AC 120V/60Hz

5.7 TEST RESULTS - 9 KHZ TO 30 MHZ

Please refer to the APPENDIX B

Remark:

(1) Distance extrapolation factor = 40 log (specific distance / test distance) (dB).
(2) Limit line = specific limits (dBuV) + distance extrapolation factor.

5.8 TEST RESULTS - 30 MHZ TO 1000 MHZ

Please refer to the APPENDIX C.

5.9 TEST RESULTS - ABOVE 1000 MHZ

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.



6. BANDWIDTH TEST

6.1 LIMIT

FCC Part15, Subpart C (15.247)			
Section	Test Item	Limit	
15 047(o)(0)	6 dB Bandwidth	Minimum 500 kHz	
15.247(a)(2)	99% Emission Bandwidth	-	

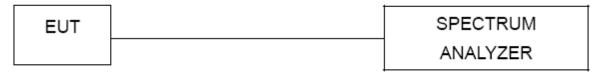
6.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. For 6dB Bandwidth Spectrum setting: RBW= 100KHz, VBW=300KHz, Sweep time = 2.5 ms.
 For 99% OBW Spectrum Setting: For B,G,N20,vht20 mode: RBW= 300KHz, VBW=1MHz,For N40,vht40 mode: RBW= 1MHz, VBW=3MHz, Sweep time = 2.5 ms.
- c. The bandwidth was performed in accordance with method 11.8.1 of ANSI C63.10-2013.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 EUT TEST CONDITIONS

Temperature: 24°C Relative Humidity: 70.8% Test Voltage: AC 120V/60Hz

6.7 TEST RESULTS

Please refer to the APPENDIX E.





7. MAXIMUM OUTPUT POWER TEST

7.1 LIMIT

FCC Part15, Subpart C (15.247)				
Section Test Item Limit				
15.247(b)(3)	Maximum Output Power	1 Watt or 30dBm		

7.2 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 conducted output power was performed in accordance with method 11.9.1.3 (for peak power) or 11.9.2.3 (for AVG power) of ANSI C63.10-2013.

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP

EUT	Power Meter

7.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 EUT TEST CONDITIONS

Temperature: 24°C Relative Humidity: 70.8% Test Voltage: AC 120V/60Hz

7.7 TEST RESULTS

Please refer to the APPENDIX F.



8. CONDUCTED SPURIOUS EMISSIONS

8.1 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)).

8.2 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.

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP

EUT	SPECTRUM
	ANALYZER

8.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 EUT TEST CONDITIONS

Temperature: 24°C Relative Humidity: 70.8% Test Voltage: AC 120V/60Hz

8.7 TEST RESULTS

Please refer to the APPENDIX G.





9. POWER SPECTRAL DENSITY TEST

9.1 LIMIT

FCC Part15, Subpart C (15.247)					
Section	Limit				
15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)			

9.2 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.
- c. The Power Spectral Density was performed in accordance with method 11.10.2 of ANSI C63.10-2013.

9.3 DEVIATION FROM STANDARD

No deviation.

9.4 TEST SETUP



SPECTRUM

ANALYZER

9.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

9.6 EUT TEST CONDITIONS

Temperature: 24°C Relative Humidity: 70.8% Test Voltage: AC 120V/60Hz

9.7 TEST RESULTS

Please refer to the APPENDIX H.



10. MEASUREMENT INSTRUMENTS LIST

	AC Power Line Conducted Emissions				
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EMI Test Receiver	R&S	ESCI	100382	Mar. 10, 2020
2	LISN	EMCO	3816/2	52765	Mar. 10, 2020
3	50ohm Terminator	SHX	TF5-3	15041305	Mar. 10, 2020
4	Artificial-Mains Network	SCHWARZBEC K	NSLK 8127	8127685	Mar. 10, 2020
5	TRANSIENT LIMITER	EM	EM-7600	772	Mar. 10, 2020
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
7	Cable	N/A	RG223	12m	Mar. 12, 2020

	Radiated Emissions - 9 kHz to 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	Loop Antenna	EM	EM-6876-1	230	Jan. 15, 2020	
2	Cable	N/A	RG 213/U	C-102	May 31, 2020	
3	EMI Test Receiver	R&S	ESCI	100895	Mar. 10, 2020	
4	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A	

	Radiated Emissions - 30 MHz to 1 GHz						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until		
1	Antenna	Schwarzbeck	VULB9160	9160-3232	Mar. 09, 2020		
2	Amplifier	HP	8447D	2944A09673	Aug. 11, 2019		
3	Receiver	Agilent	N9038A	MY52130039	Aug. 11, 2019		
4	Cable	emci	LMR-400(30MHz- 1GHz)(8m+5m)	N/A	May 24, 2020		
5	Controller	СТ	SC100	N/A	N/A		
6	Controller	MF	MF-7802	MF780208416	N/A		
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A		

	Radiated Emissions - Above 1 GHz				
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Double Ridged Guide Antenna	ETS	3115	75789	Mar. 09, 2020
2	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Jun. 30, 2019
3	Amplifier	Agilent	8449B	3008A02333	Mar. 10, 2020
4	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 10, 2020
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	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	P-series power meter	Agilent	N1911A	MY45100473	Aug. 11, 2019
2	wideband power sensor	Agilent	N1921A	MY51100041	Aug. 11, 2019

Antenna Conducted Spurious Emissions					
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.





11. EUT TEST PHOTO

AC Power Line Conducted Emissions Test Photos





Report No.: BTL-FCCP-1-1905C047

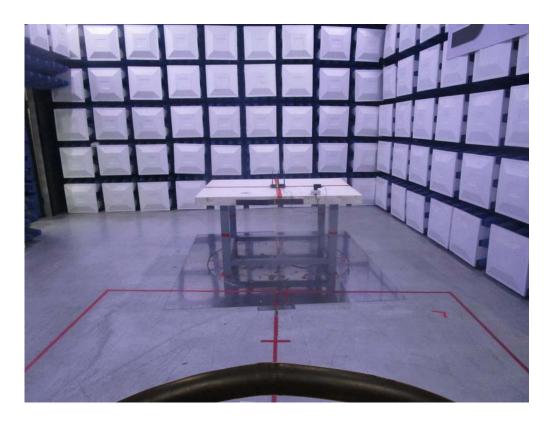
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Radiated Emissions Test Photos

9 kHz to 30 MHz





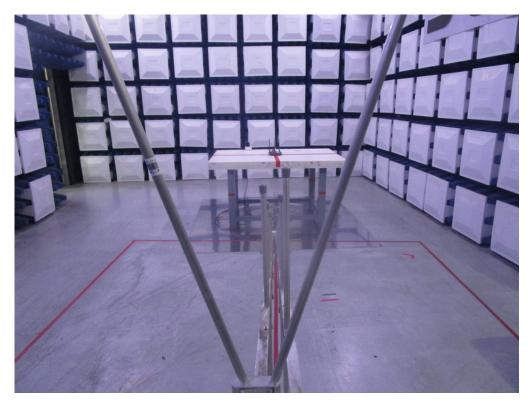
Report No.: BTL-FCCP-1-1905C047

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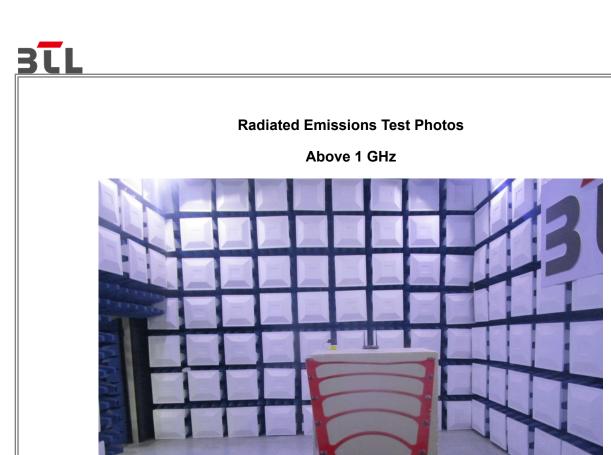


Radiated Emissions Test Photos

30 MHz to 1 GHz









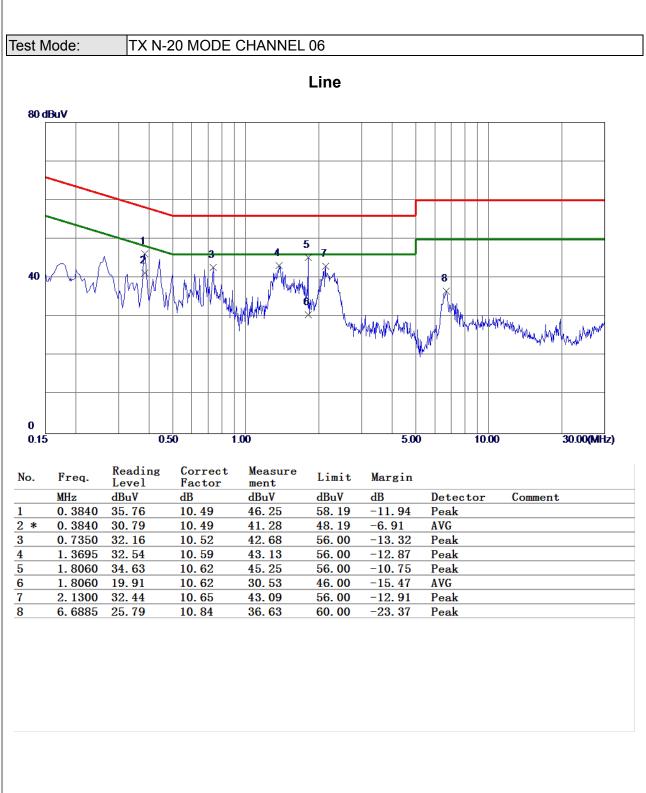
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APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS







REMARKS: (1) Measurement Value = Reading Level + Correct Factor. (2) Margin Level = Measurement Value - Limit Value.

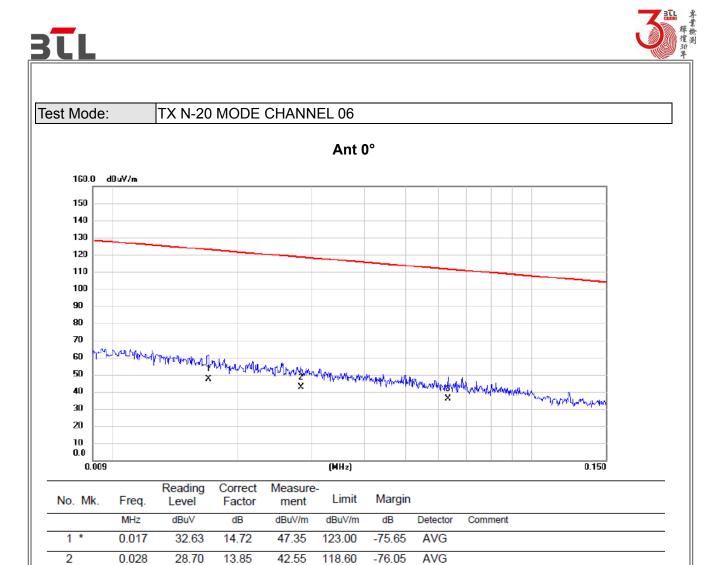








APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ



3

0.063

(1) Measurement Value = Reading Level + Correct Factor.

13.72

35.82

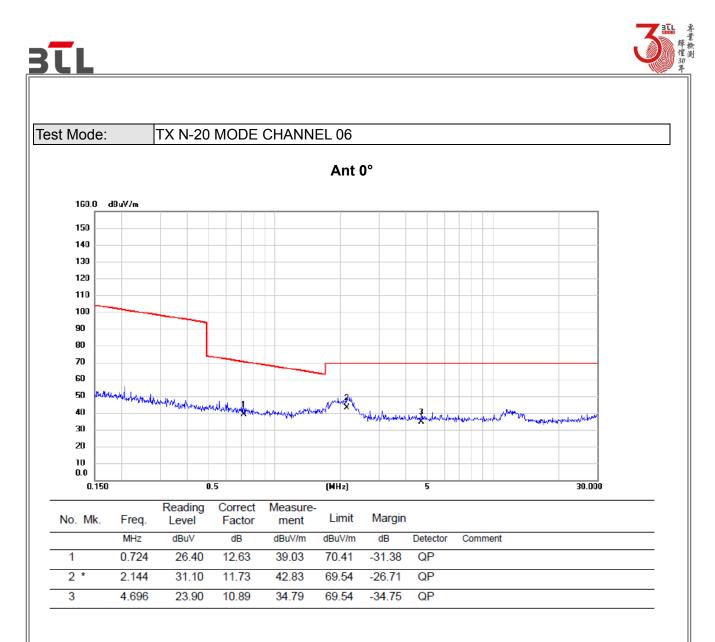
111.59

-75.77

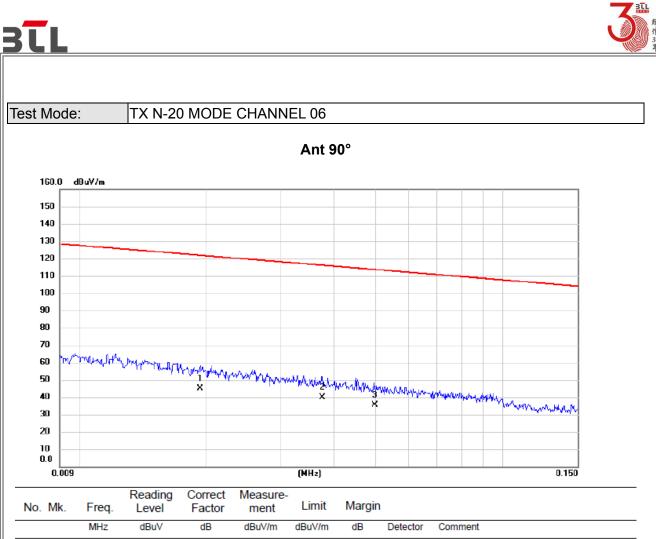
AVG

(2) Margin Level = Measurement Value - Limit Value.

22.10

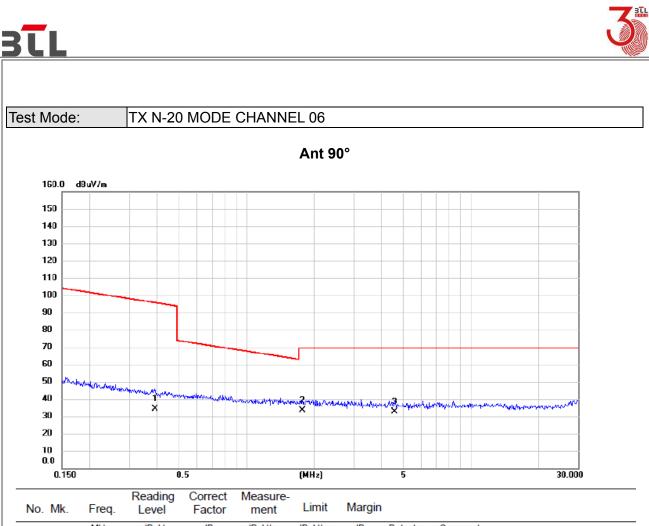


- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



NO. MK.	Freq.	Level	Factor	ment	Limit	wargin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	0.019	30.80	14.03	44.83	121.89	-77.06	AVG	
2 *	0.037	26.10	13.89	39.99	116.12	-76.13	AVG	
3	0.050	21.30	13.93	35.23	113.66	-78.43	AVG	

- (1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value Limit Value.



No. Mk.	Freq.	Level	Factor	ment	Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	0.389	20.90	13.33	34.23	95.80	-61.57	AVG	
2 *	1.772	21.30	11.97	33.27	69.54	-36.27	QP	
3	4.574	21.70	10.89	32.59	69.54	-36.95	QP	

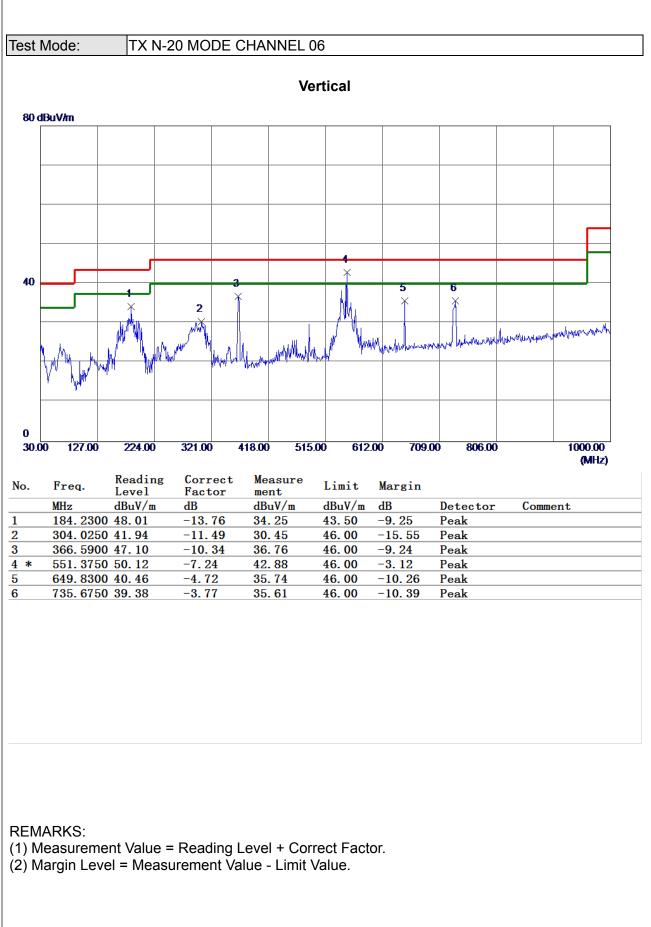
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ

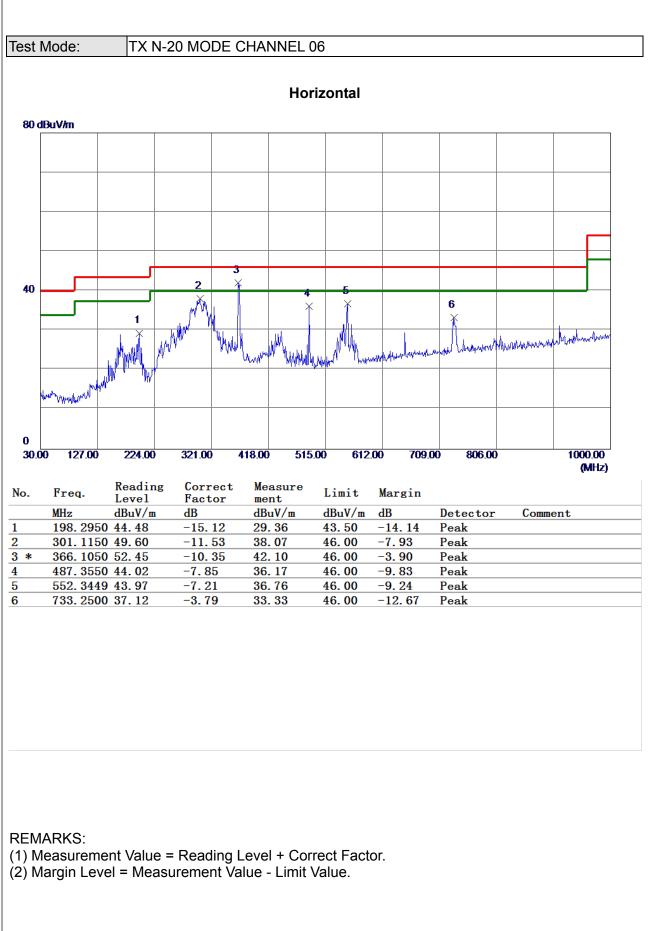






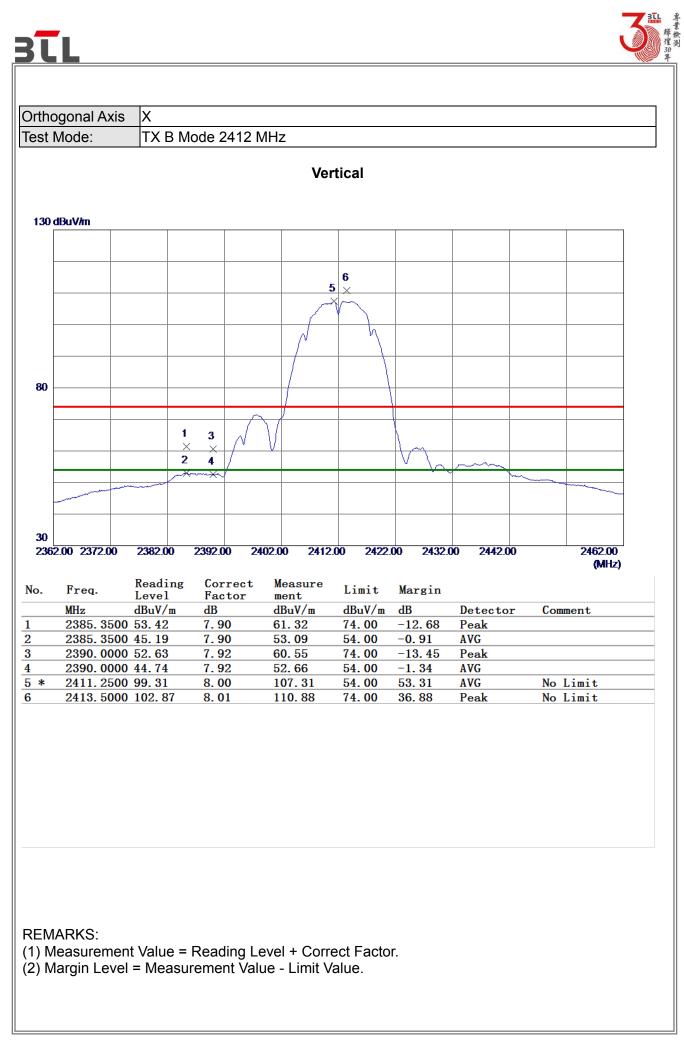


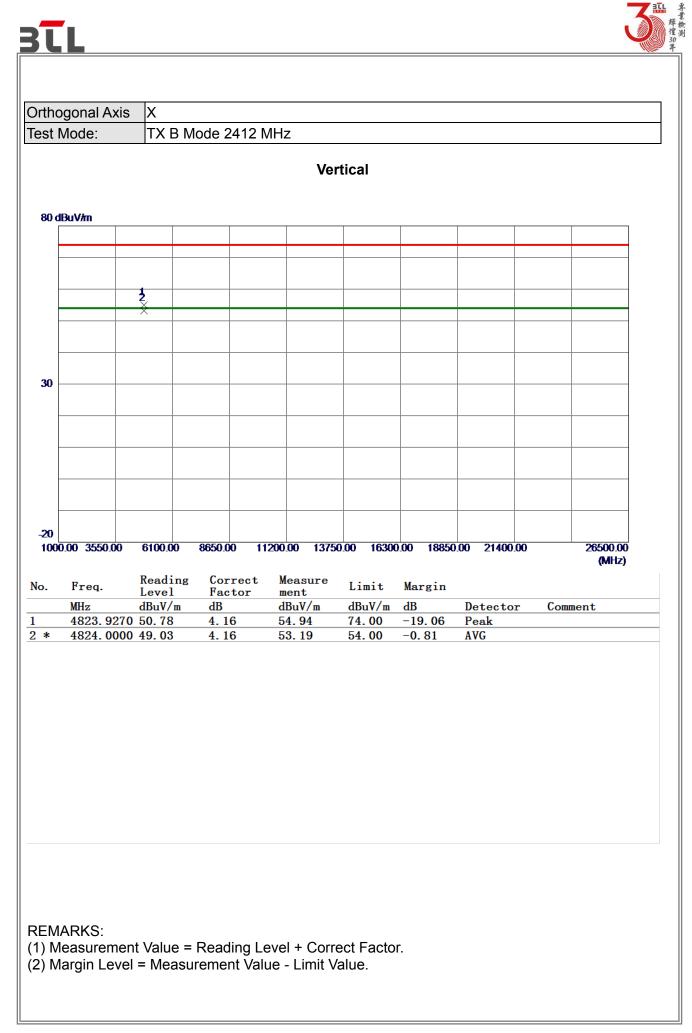


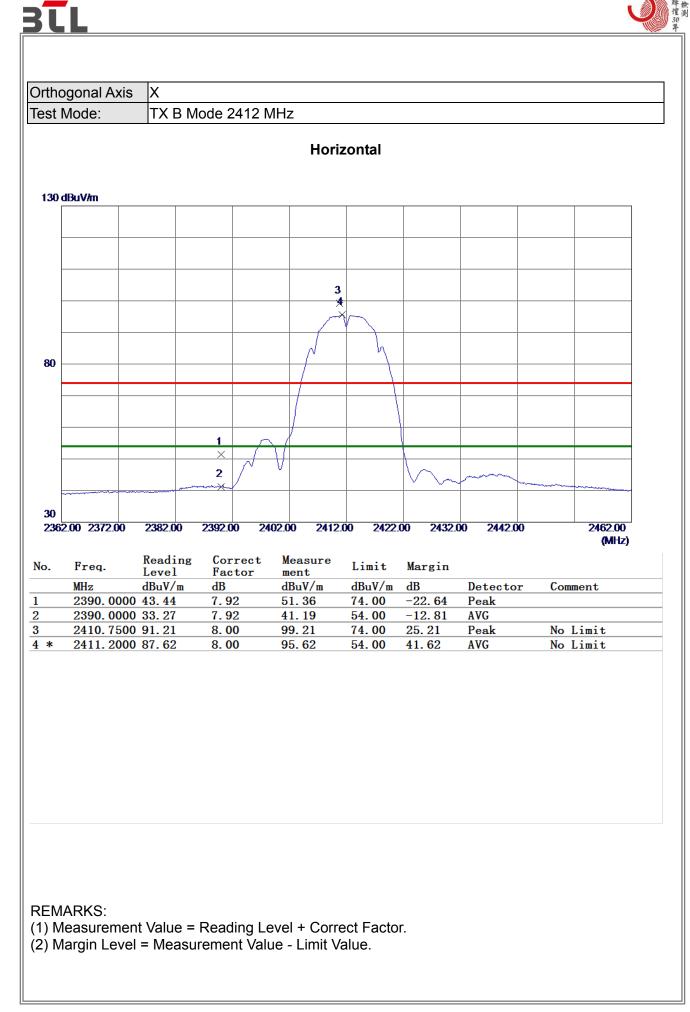


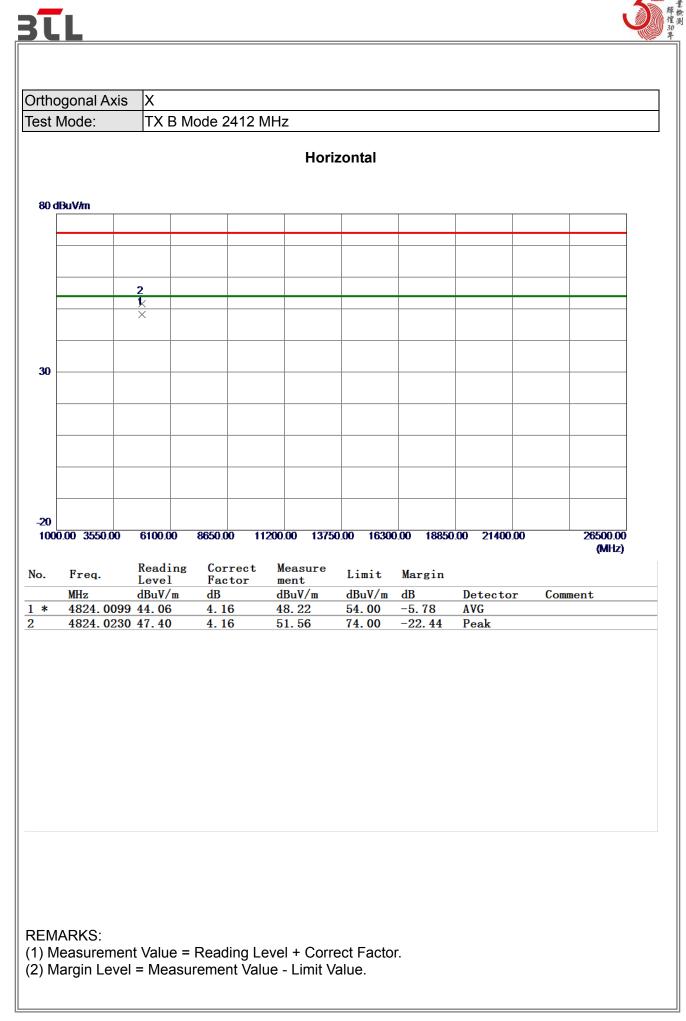


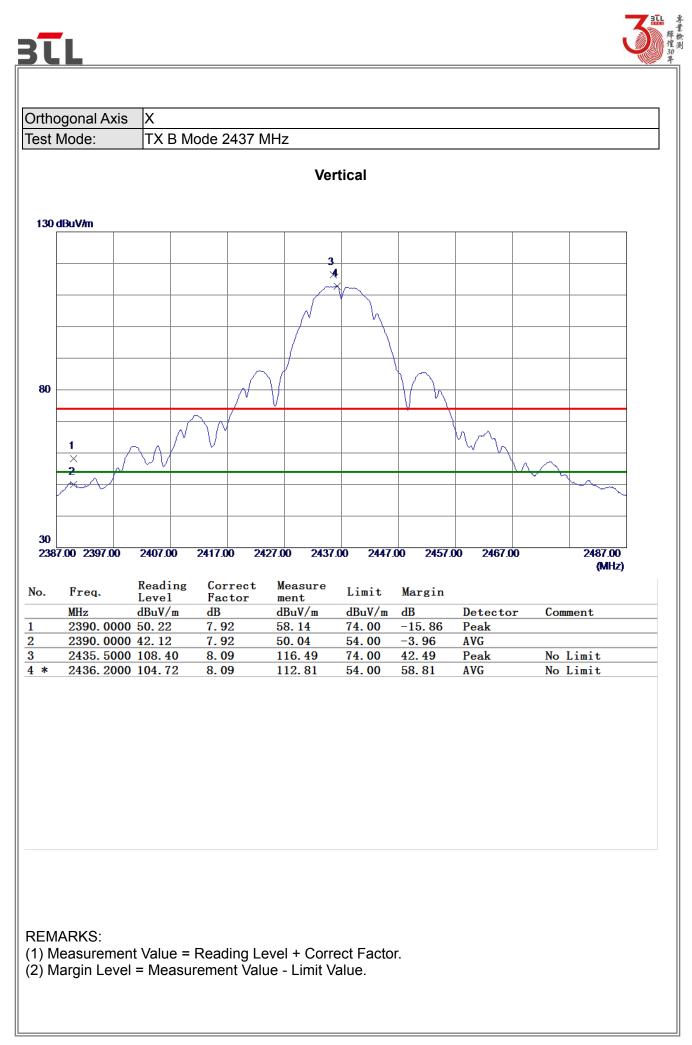
APPENDIX D - RADIATED EMISSION- ABOVE 1000 MHZ

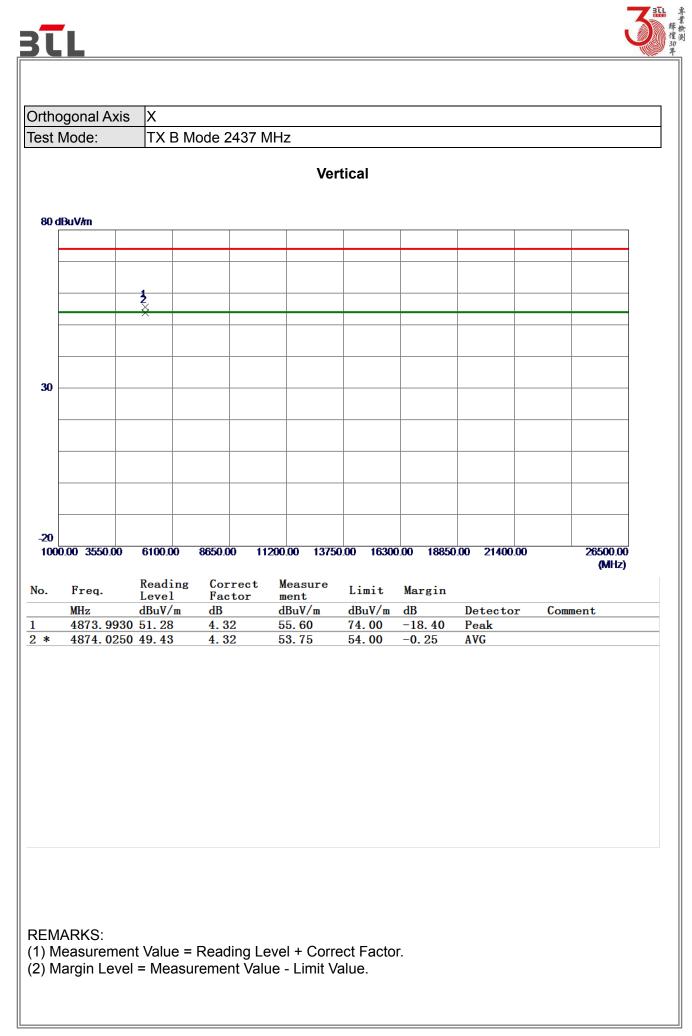


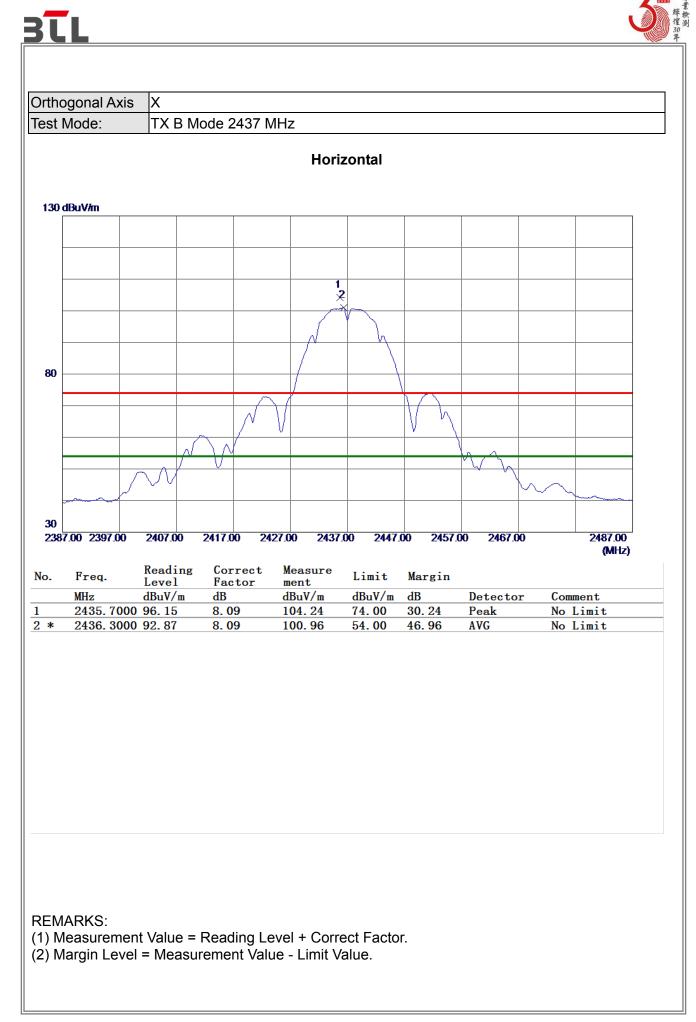


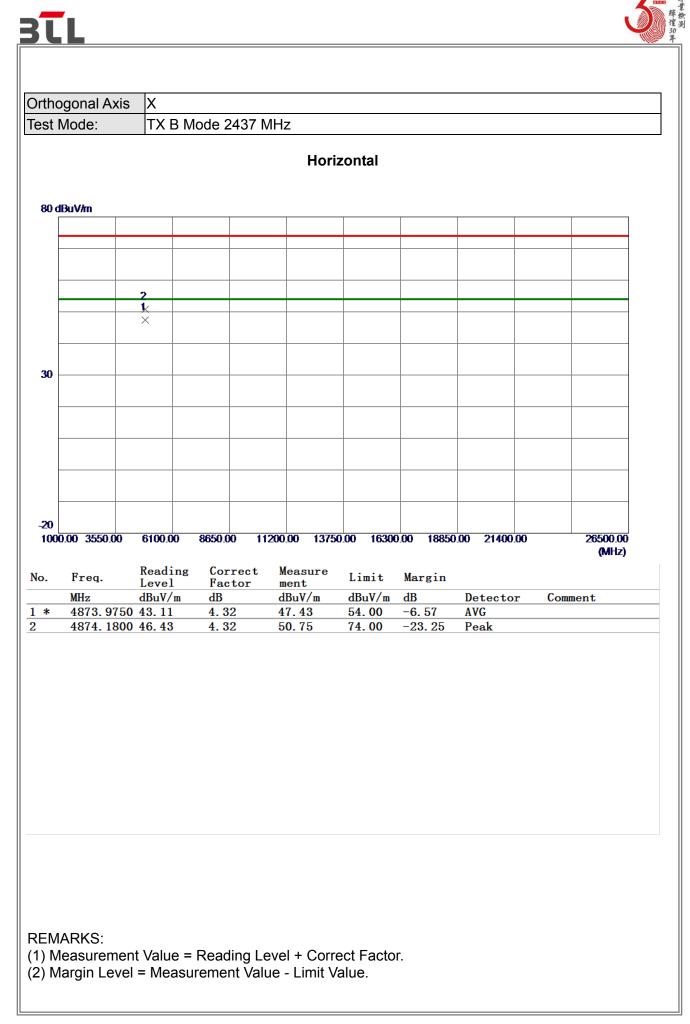


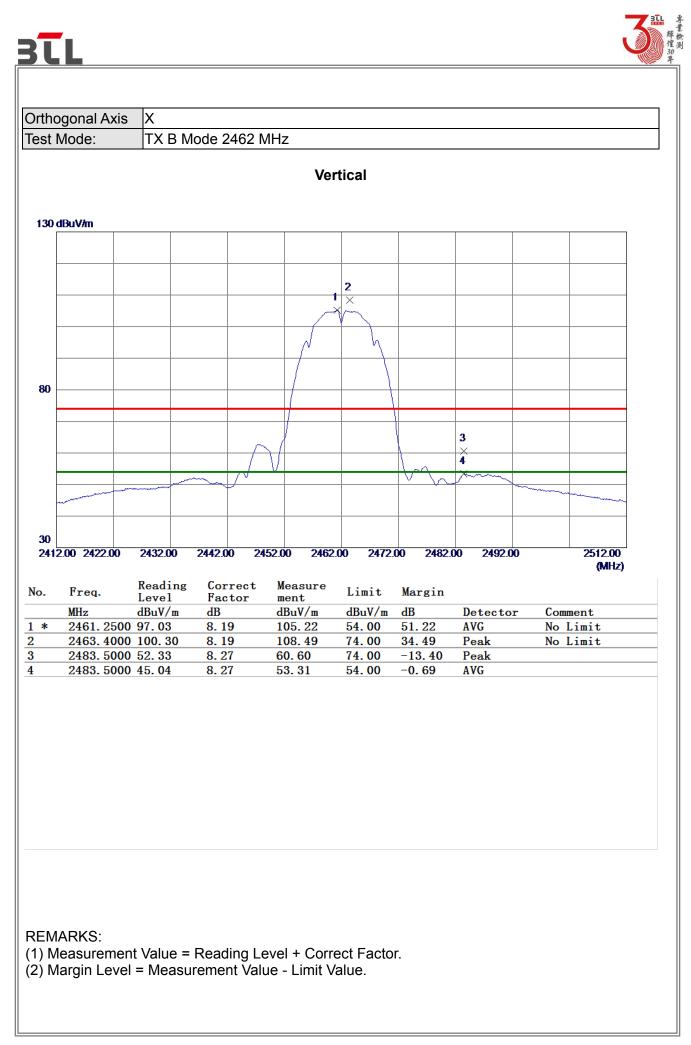


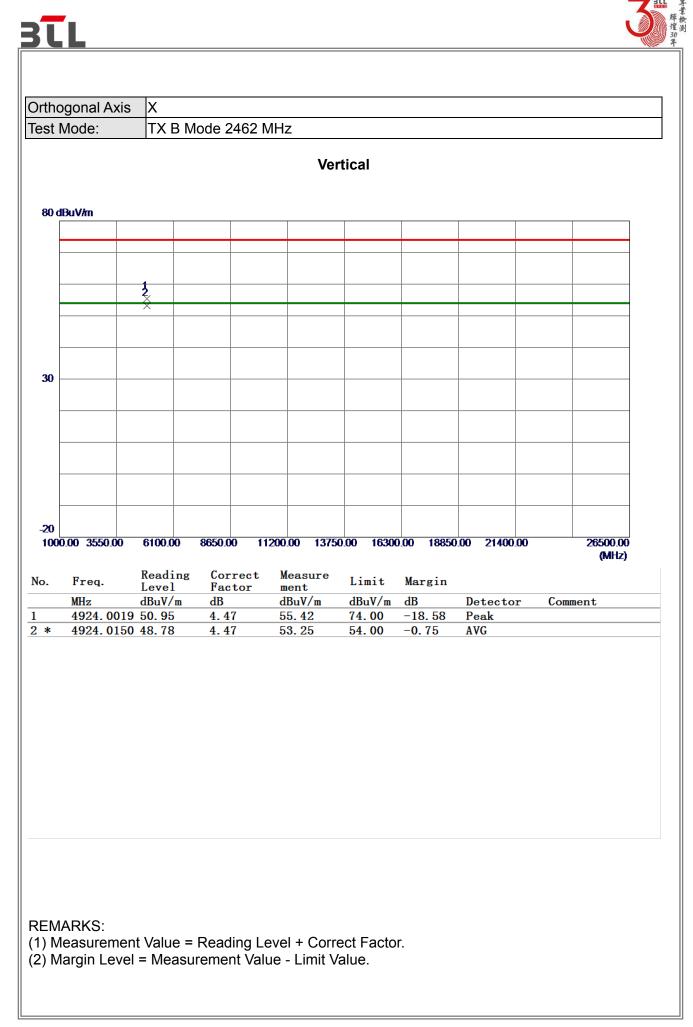


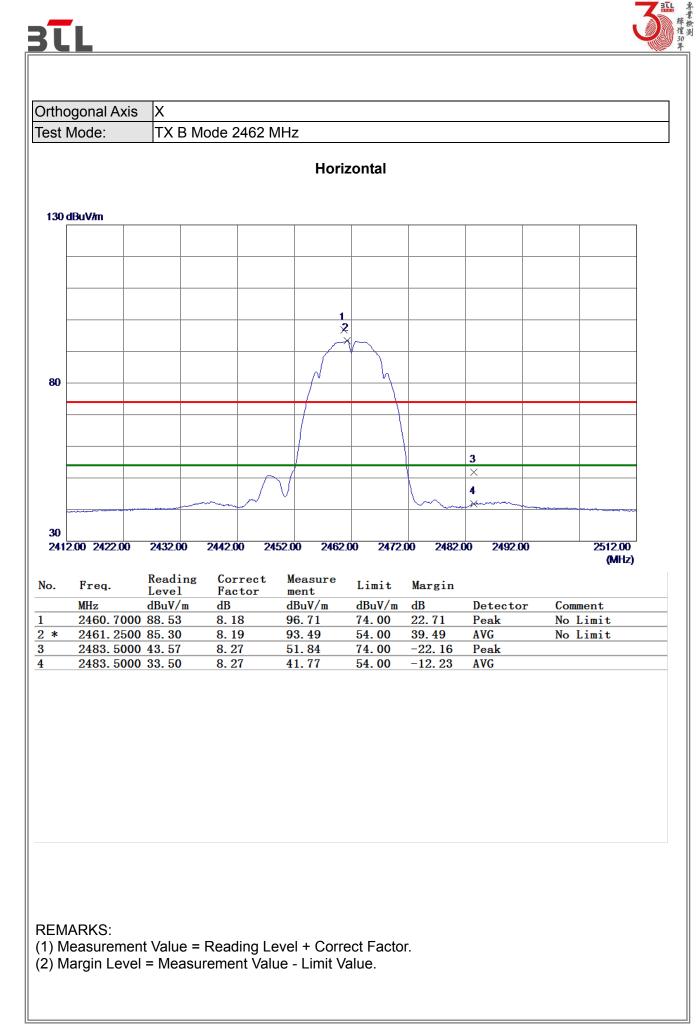


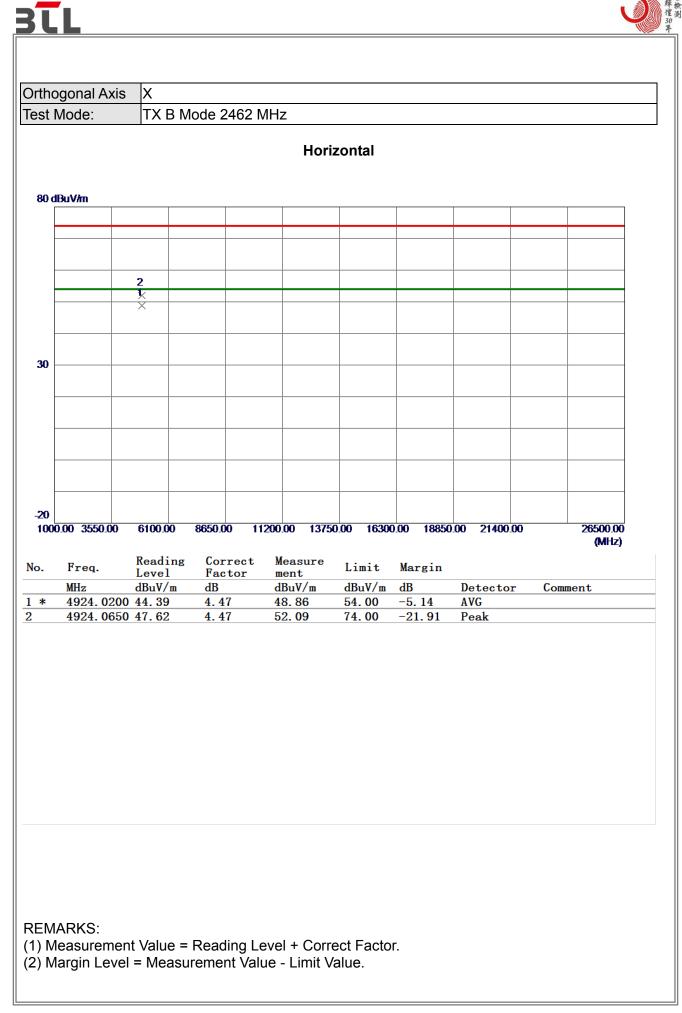


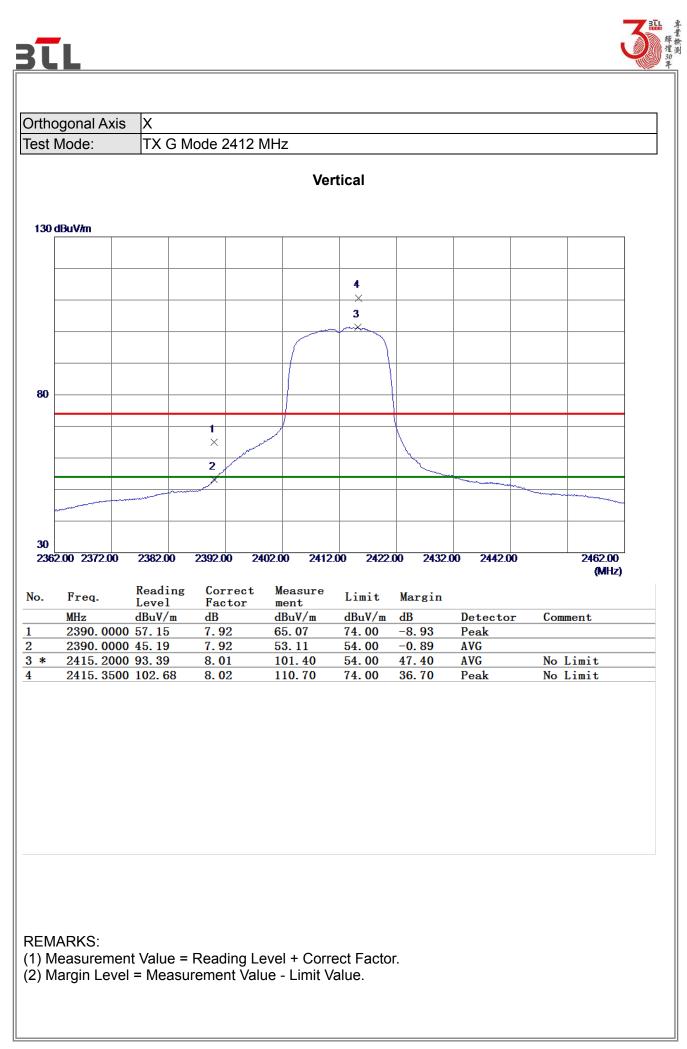


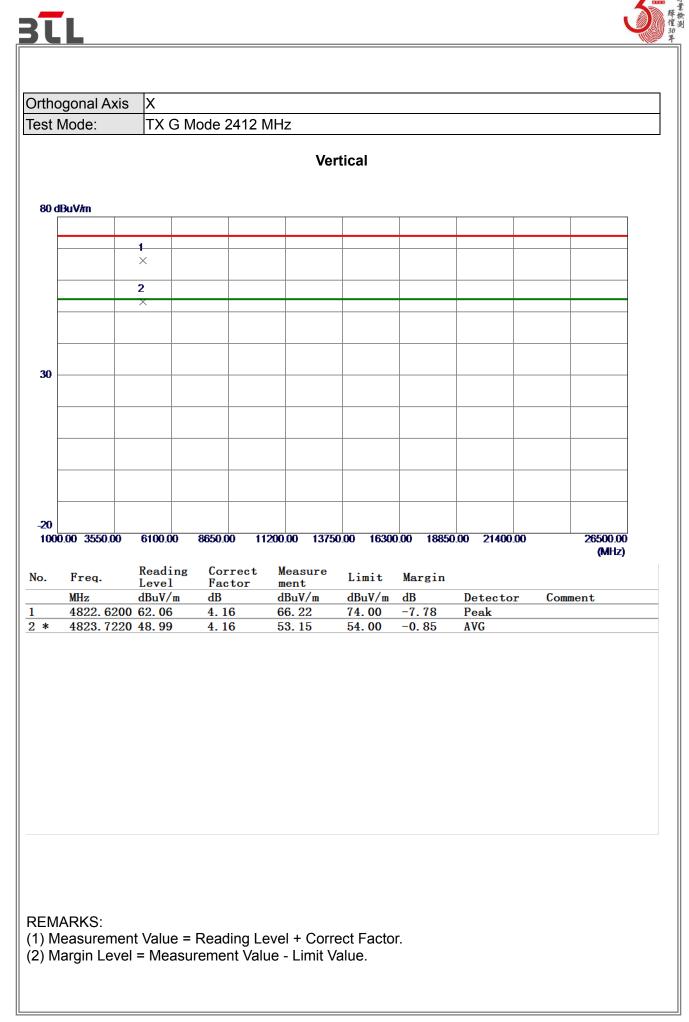


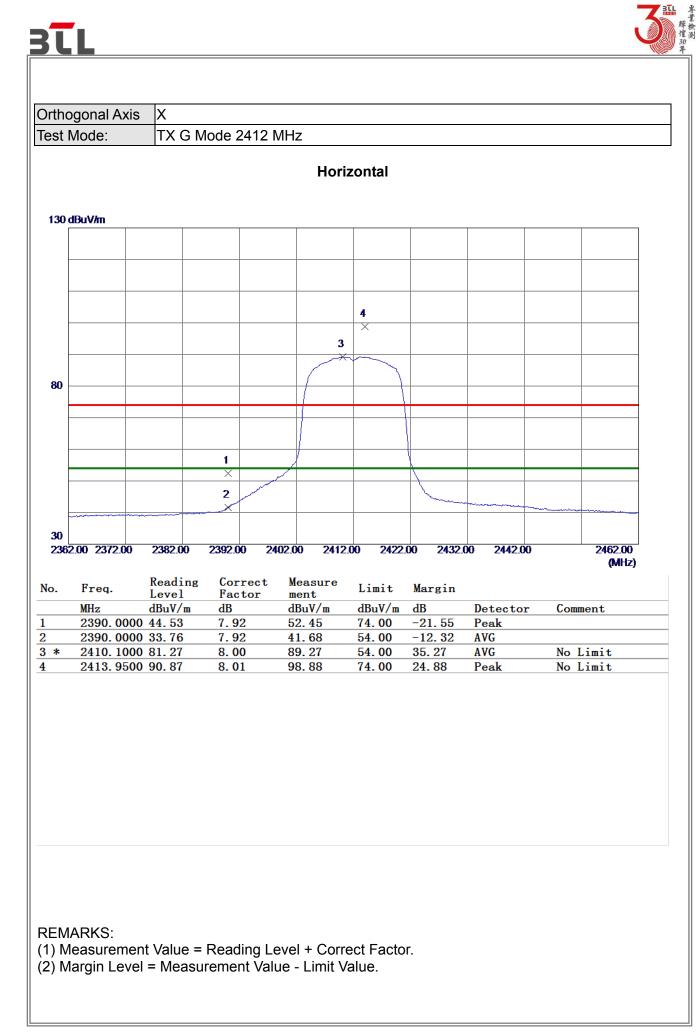


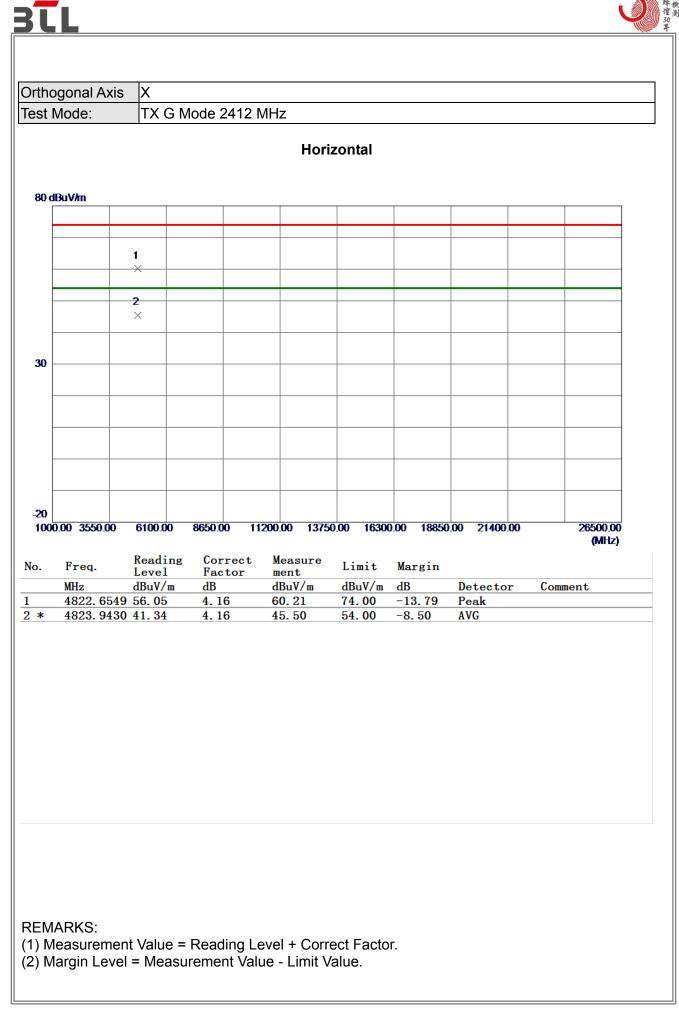


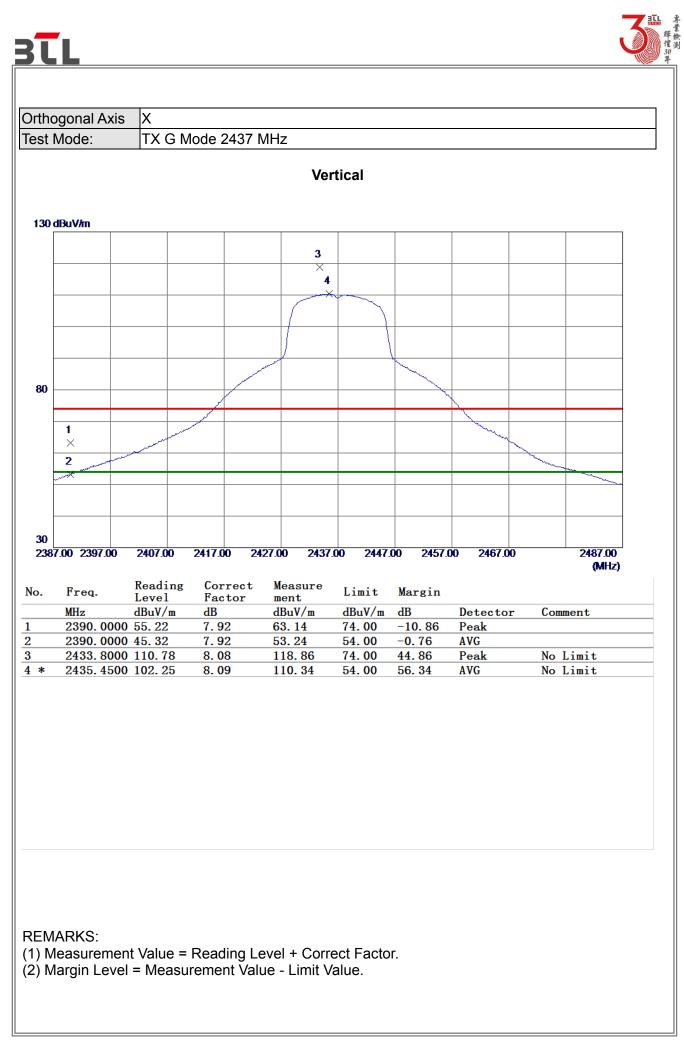


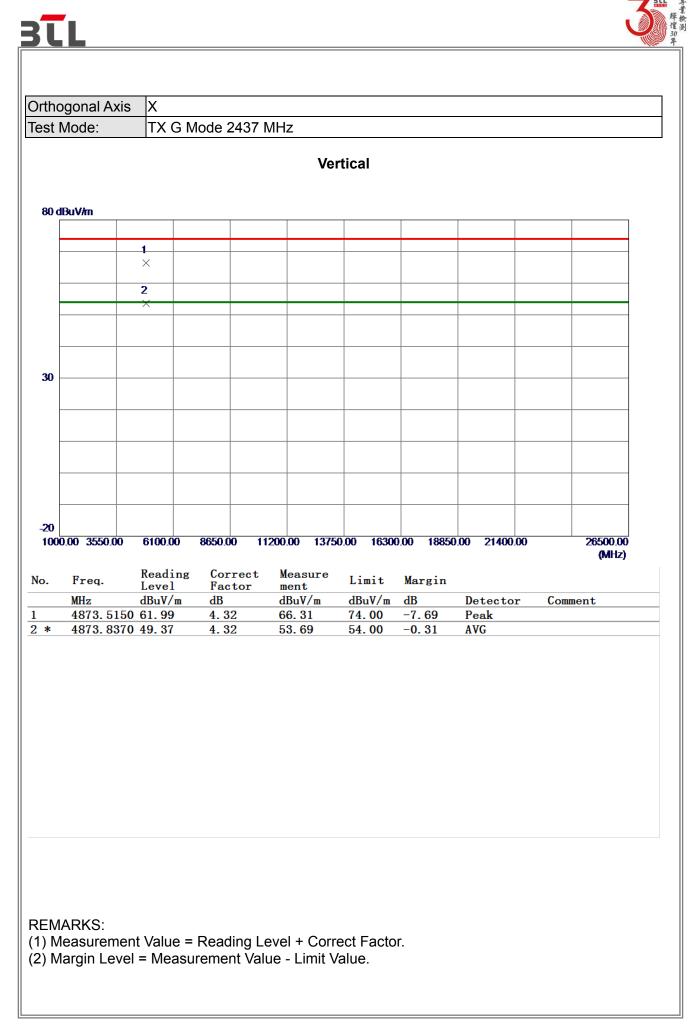


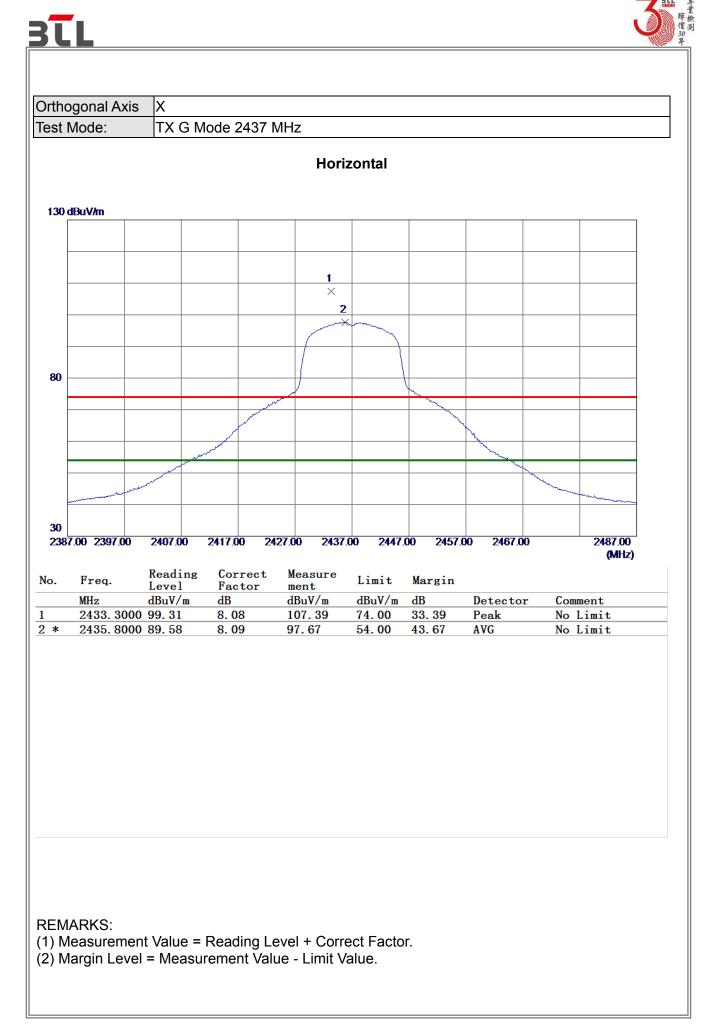


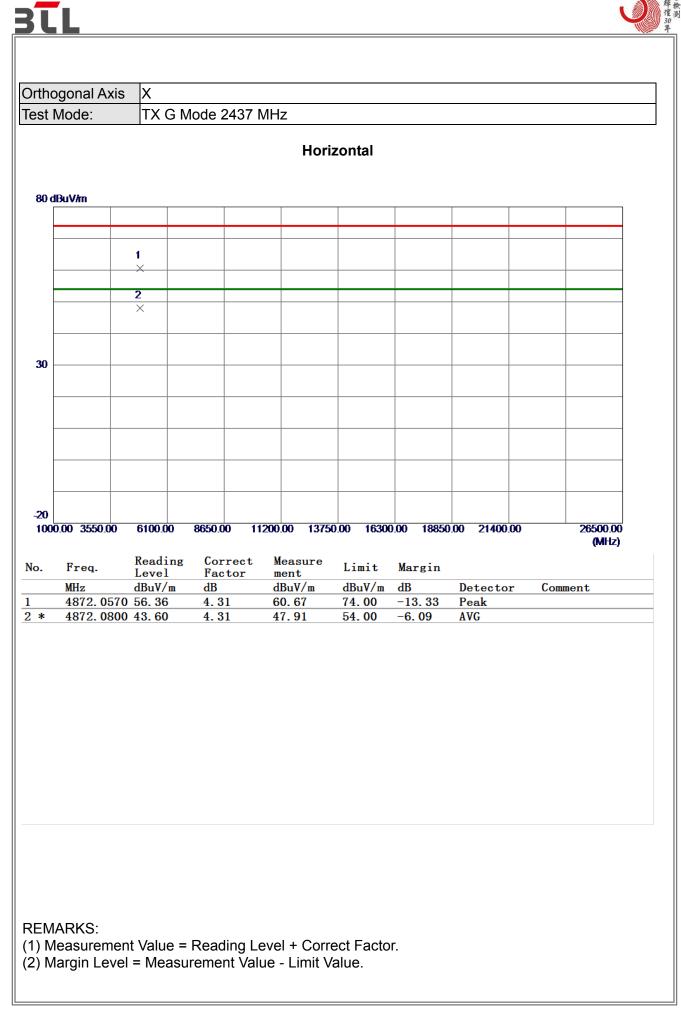


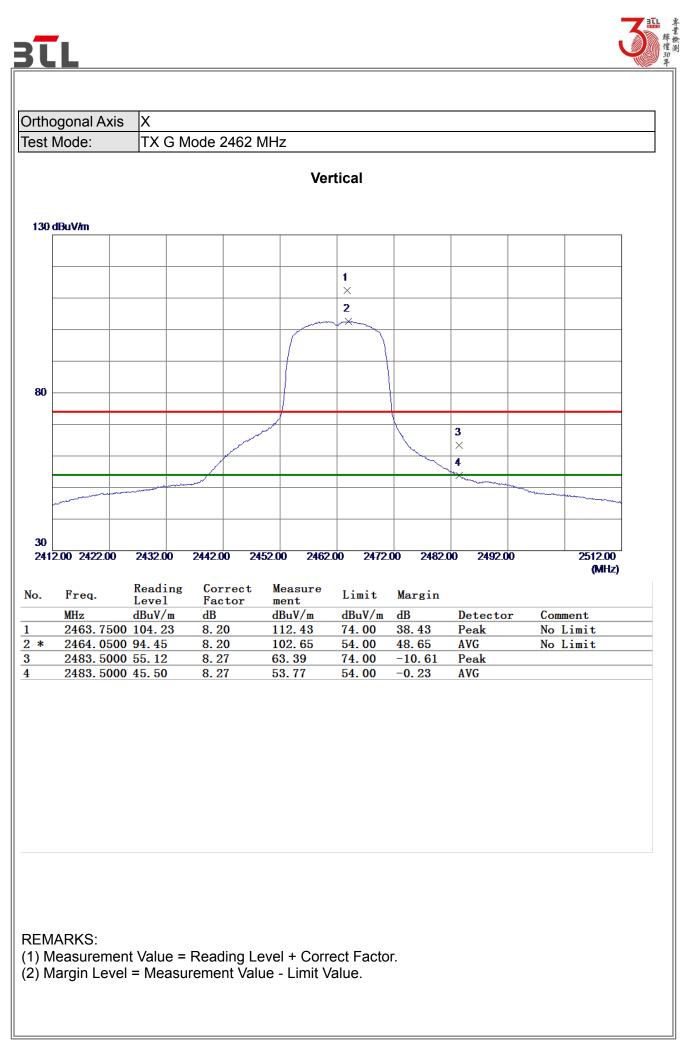


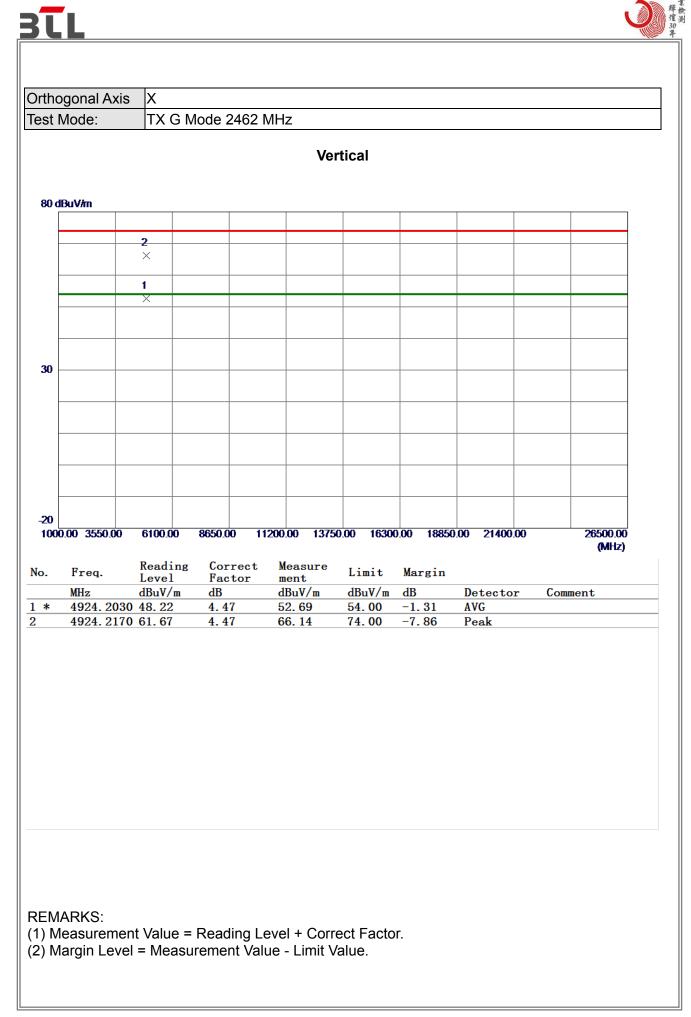






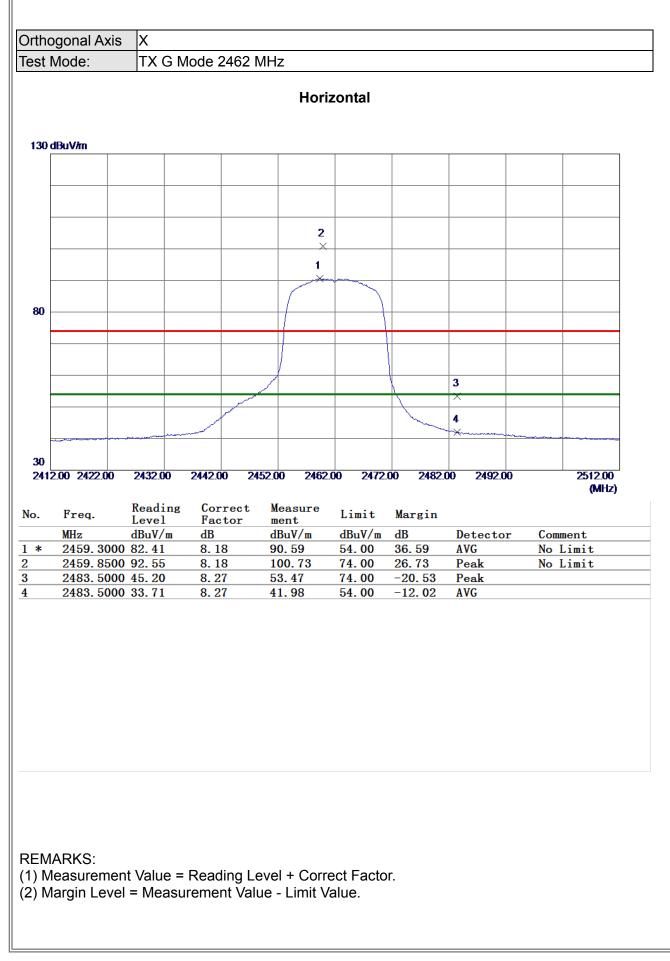


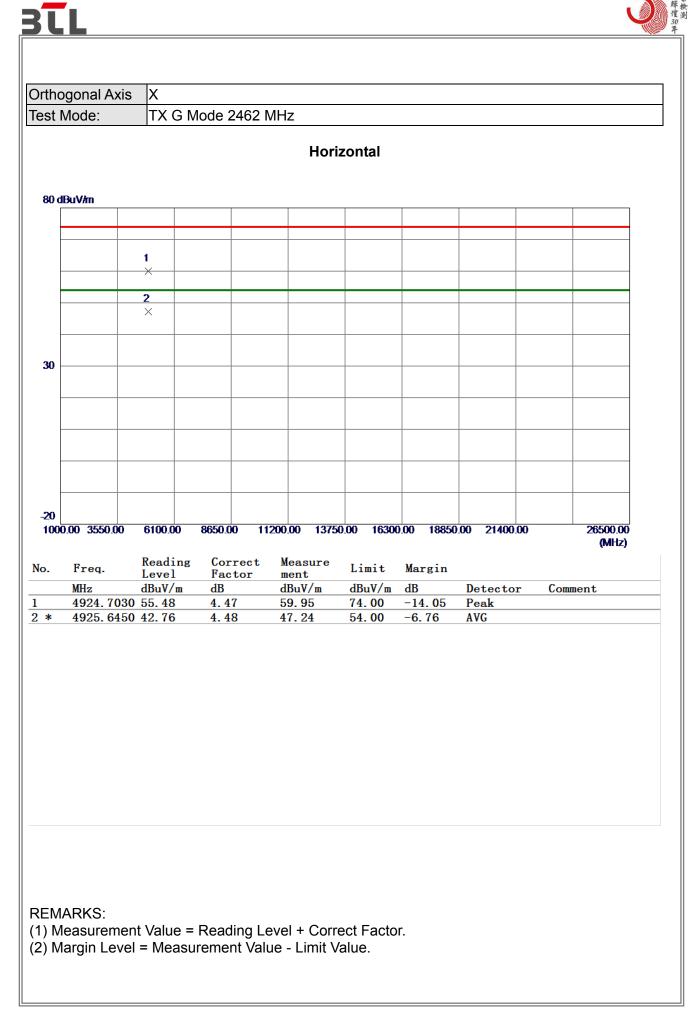


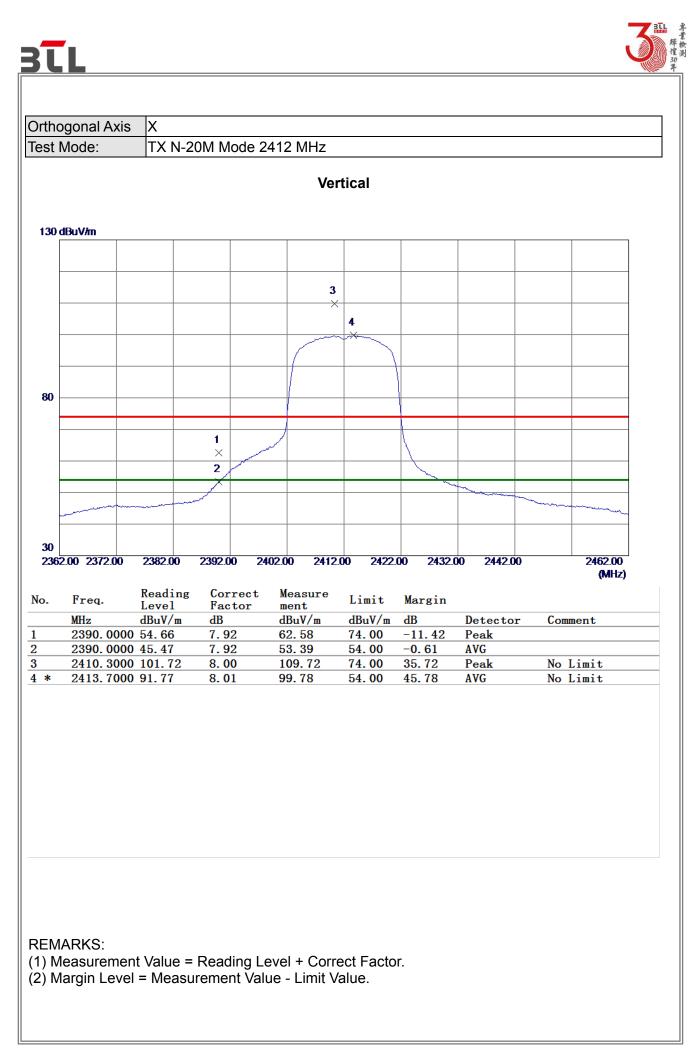


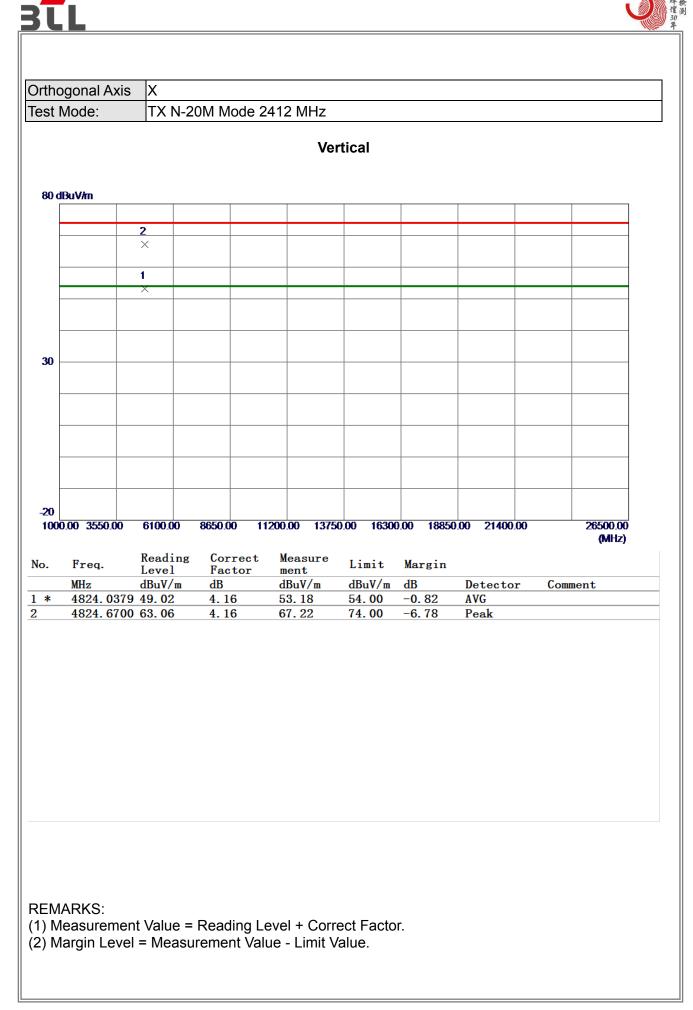






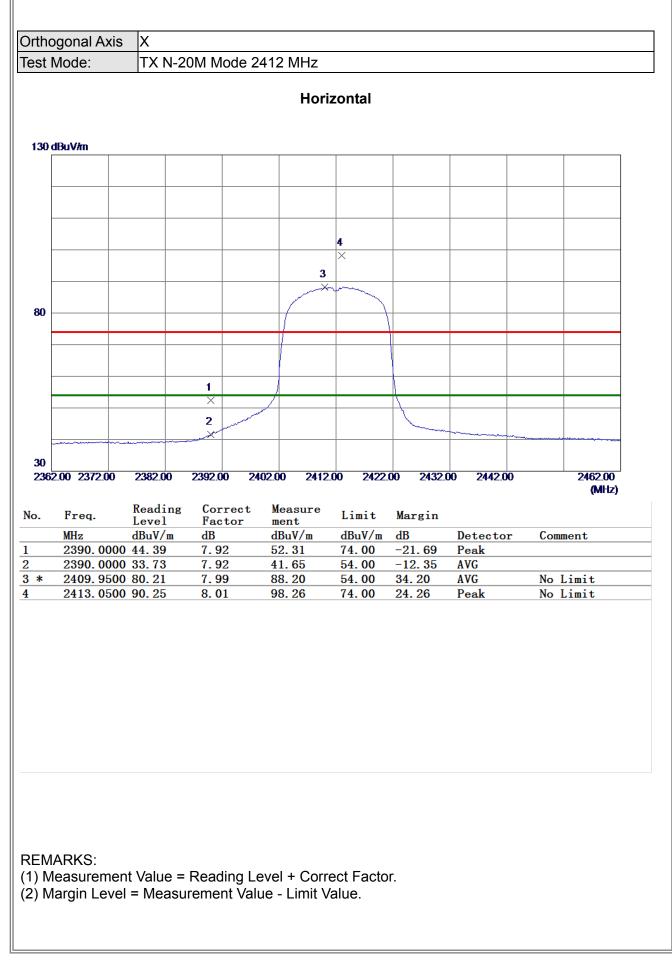


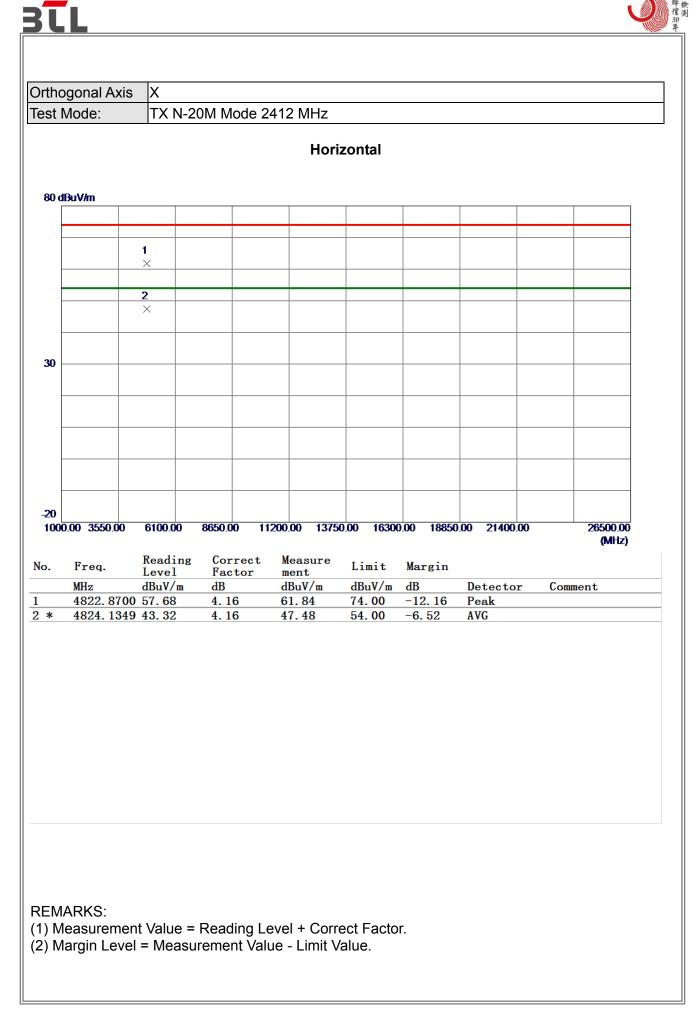


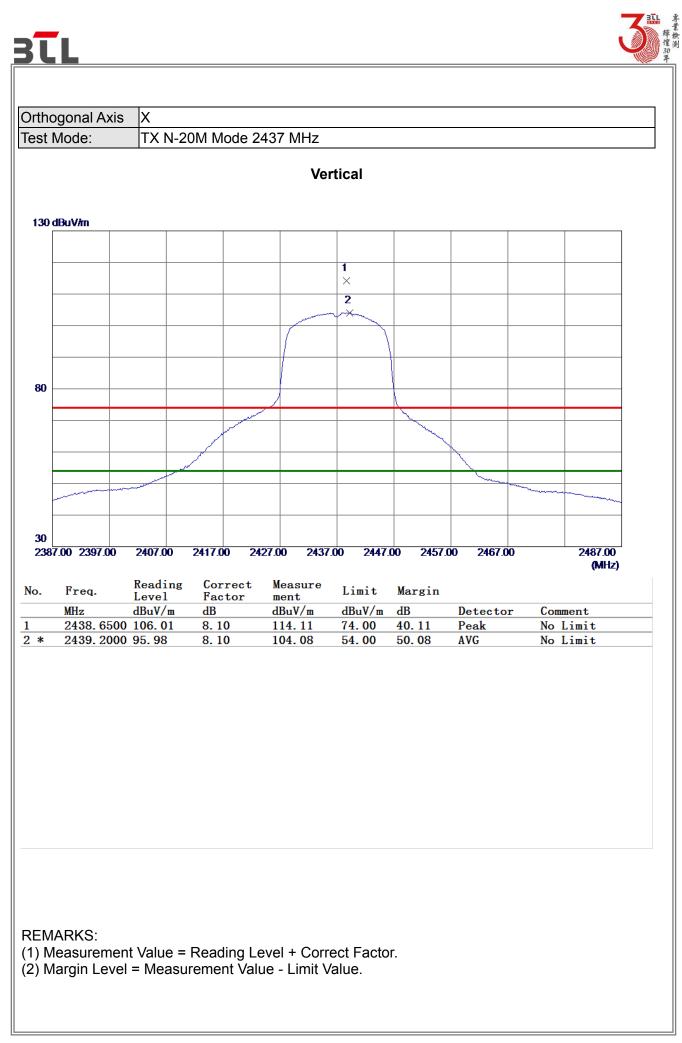


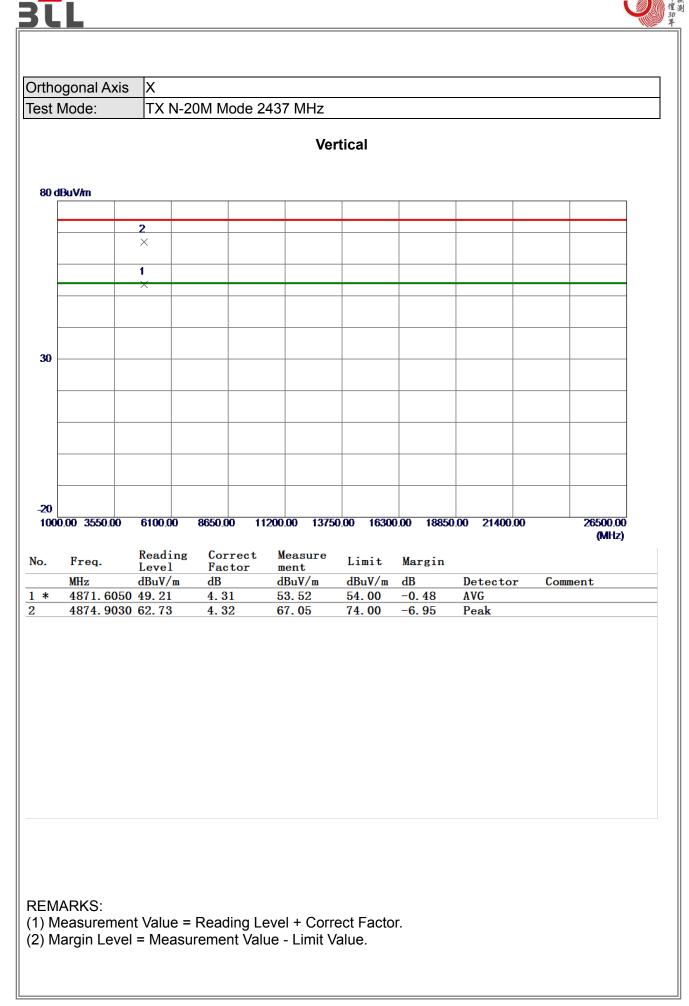


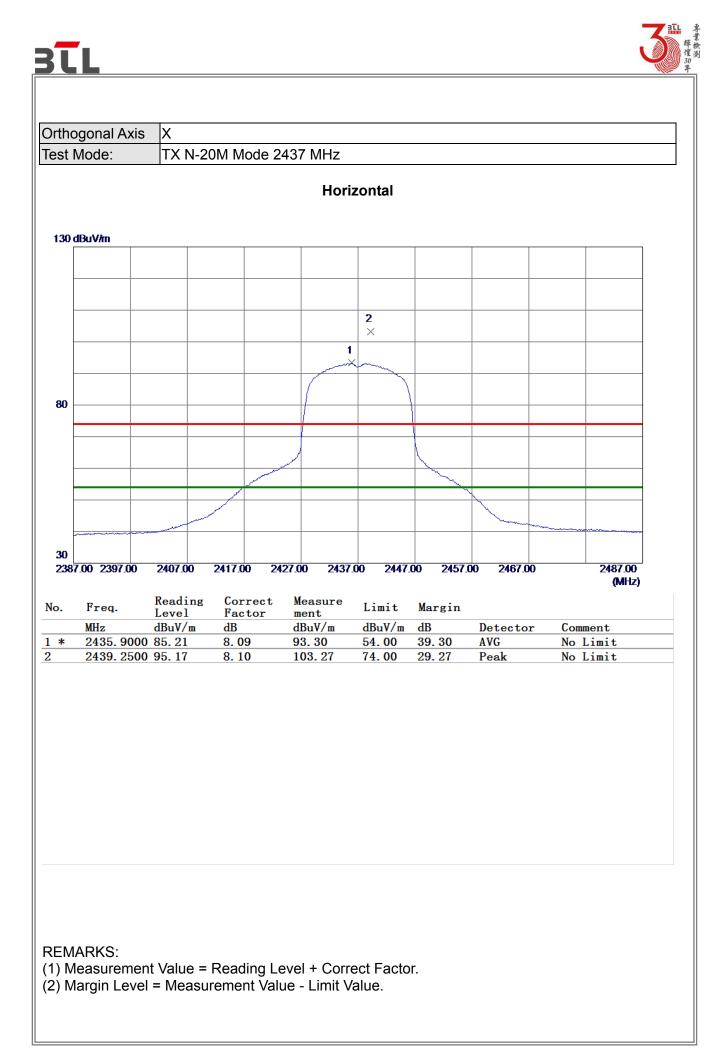


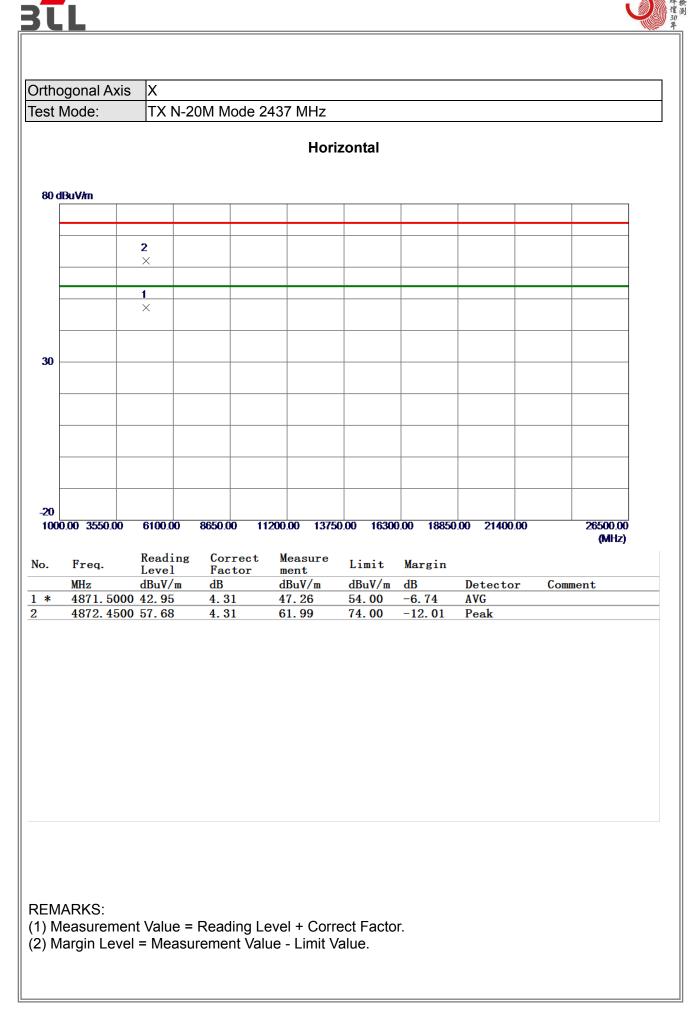


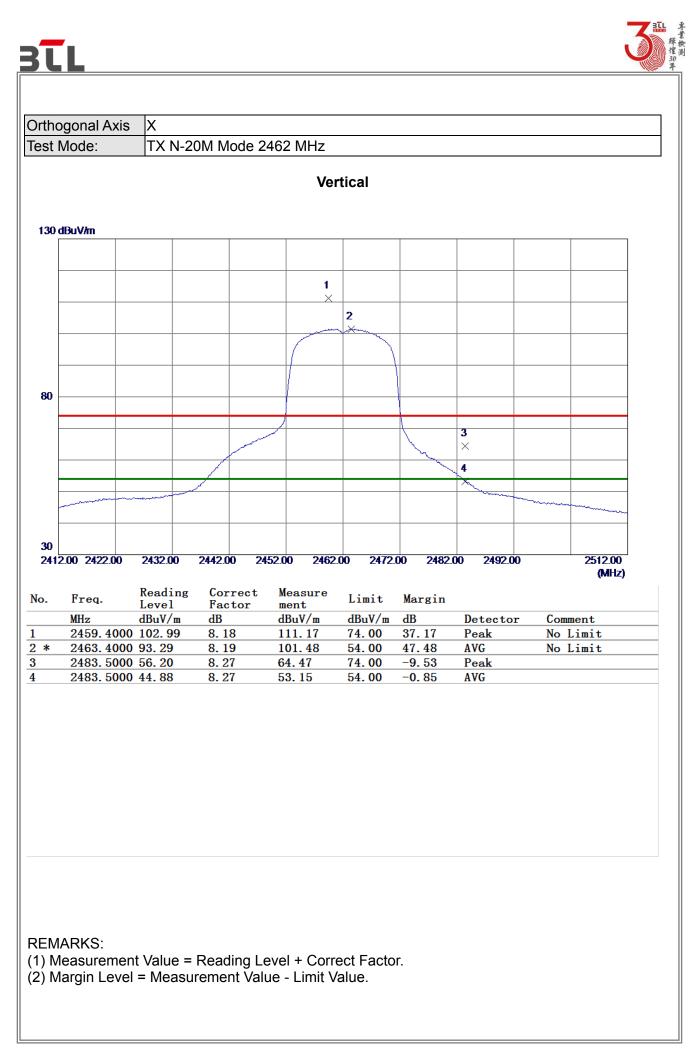


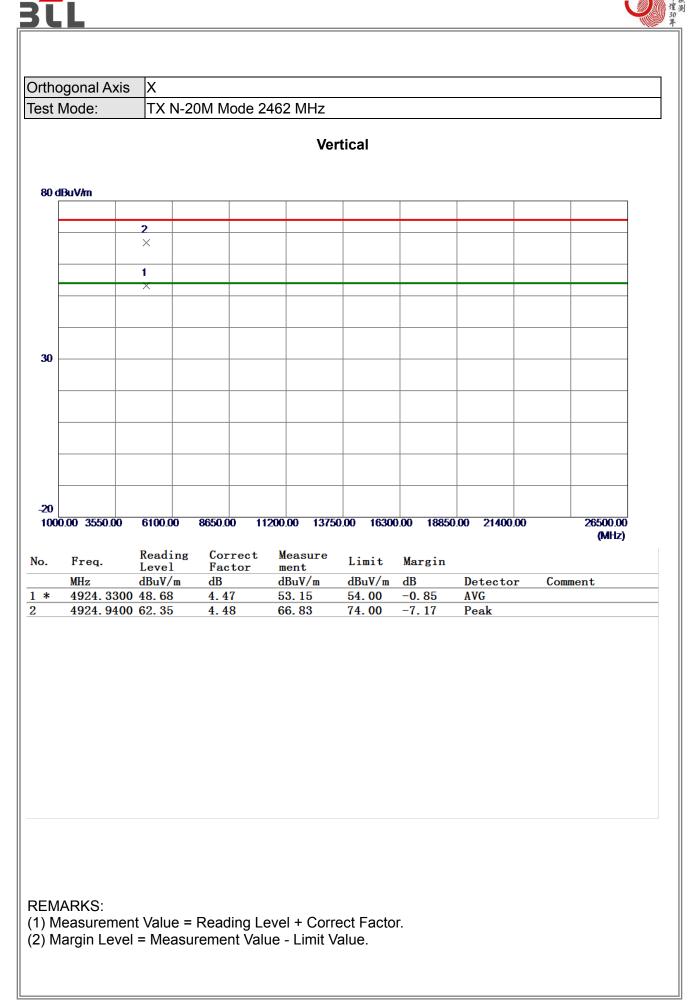






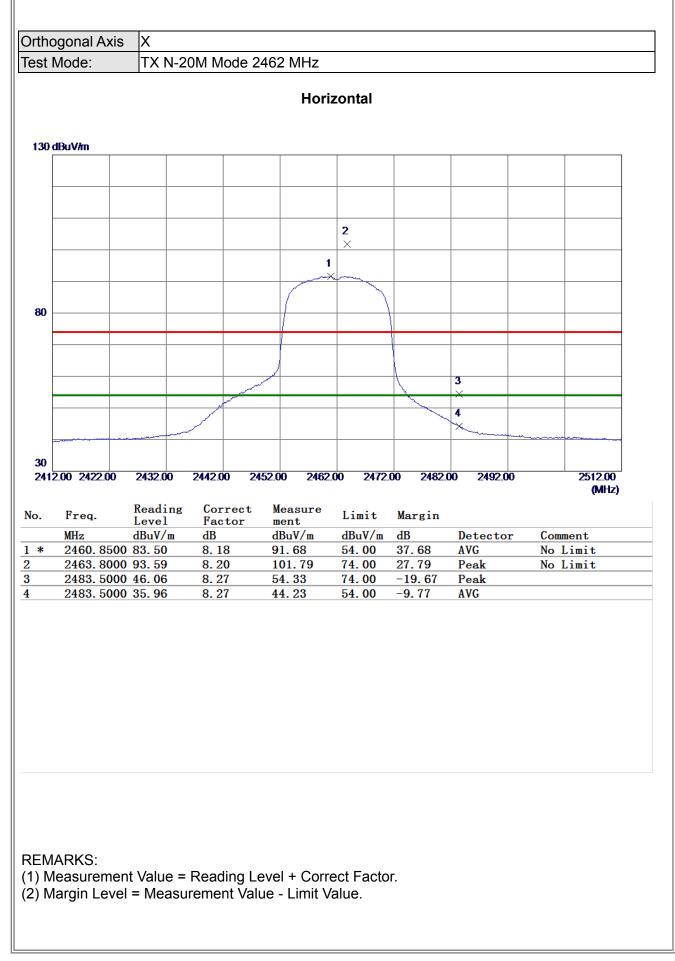


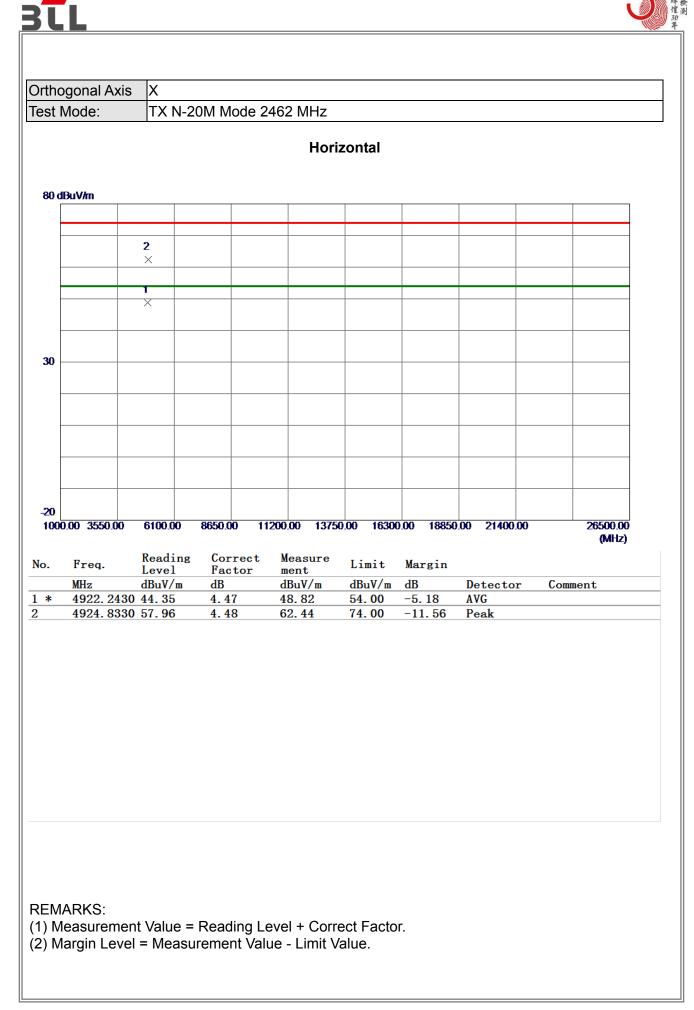


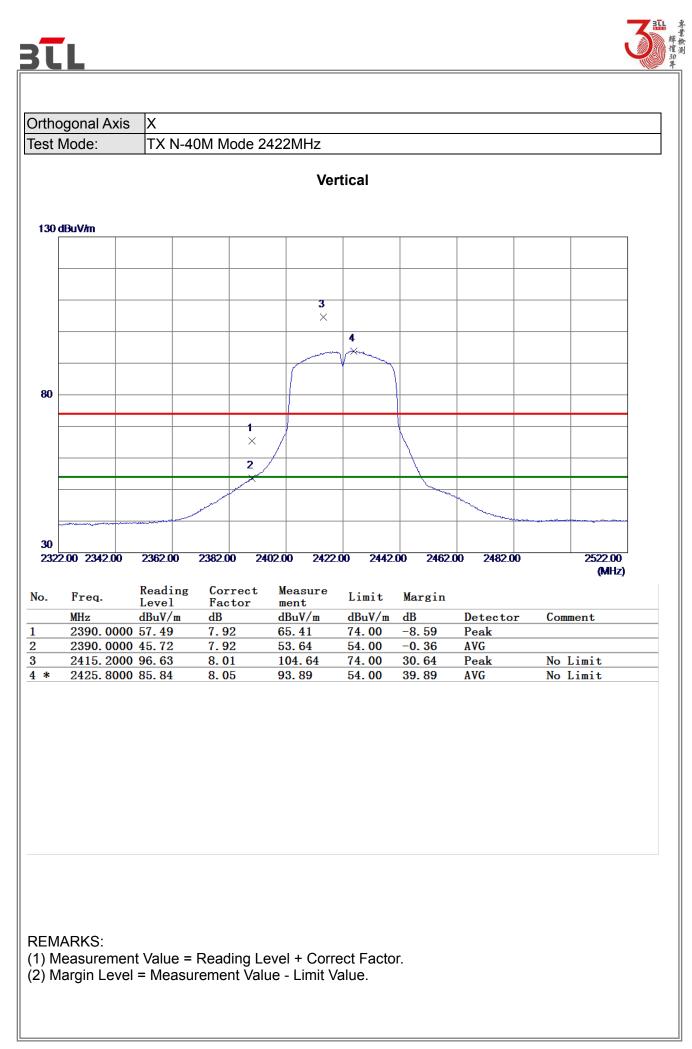


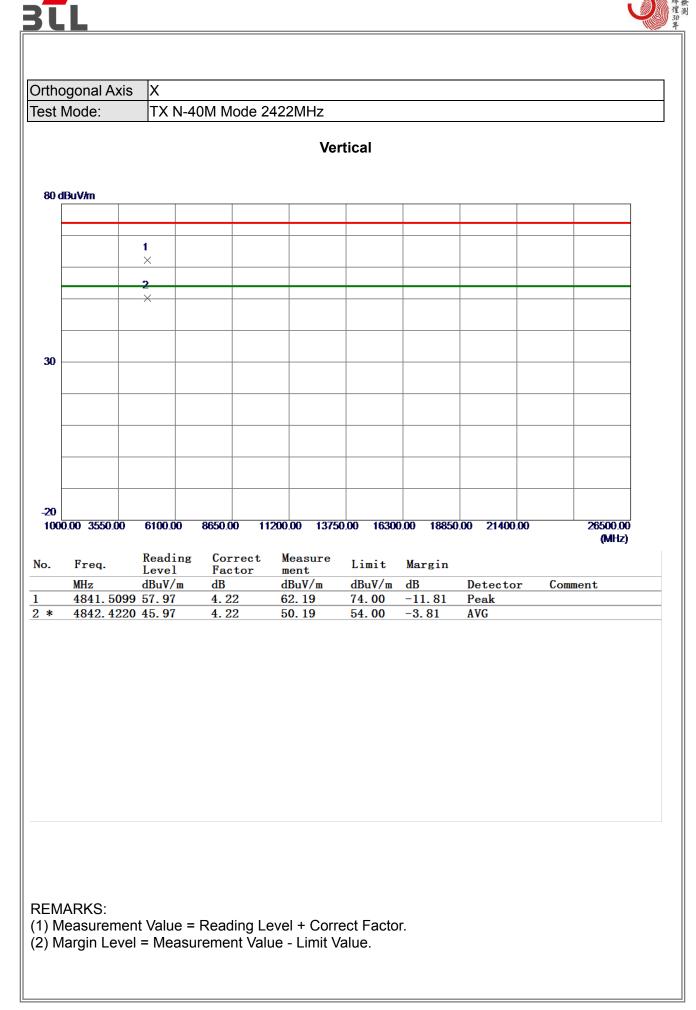






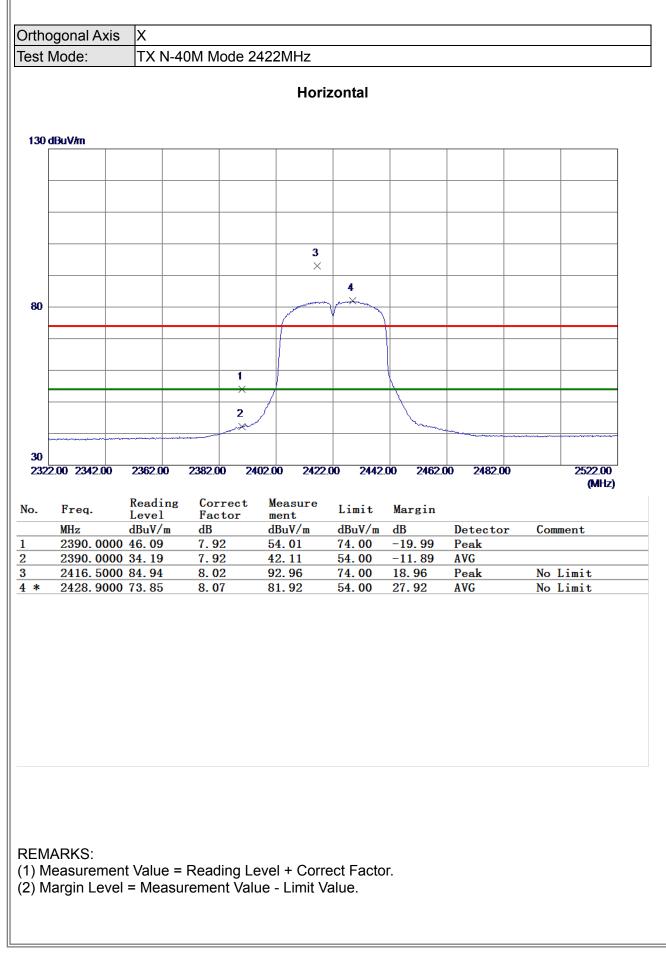


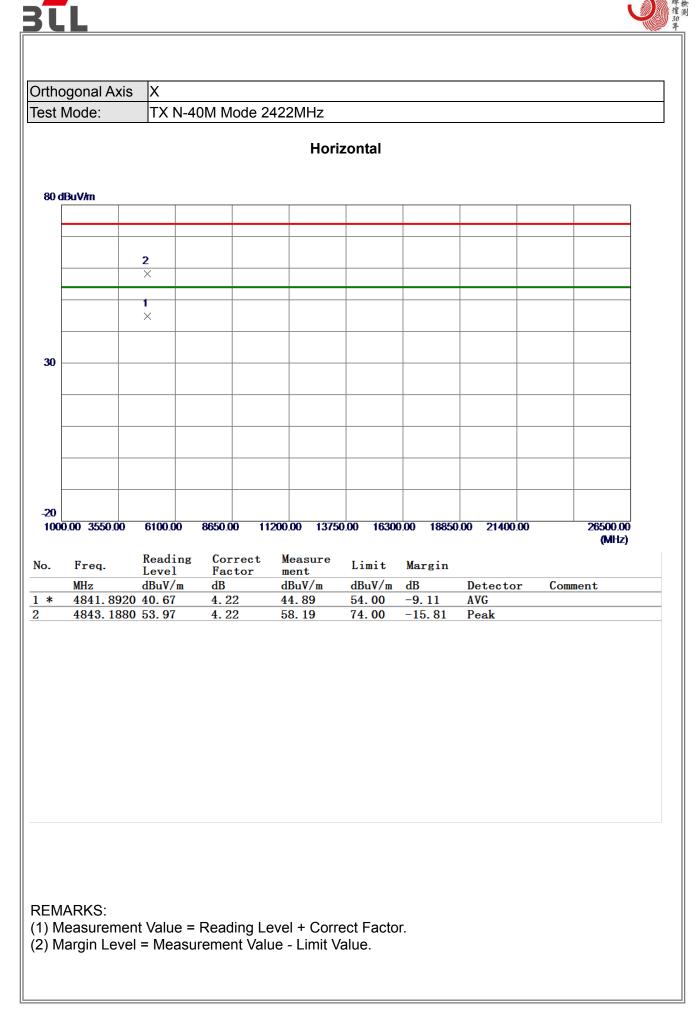


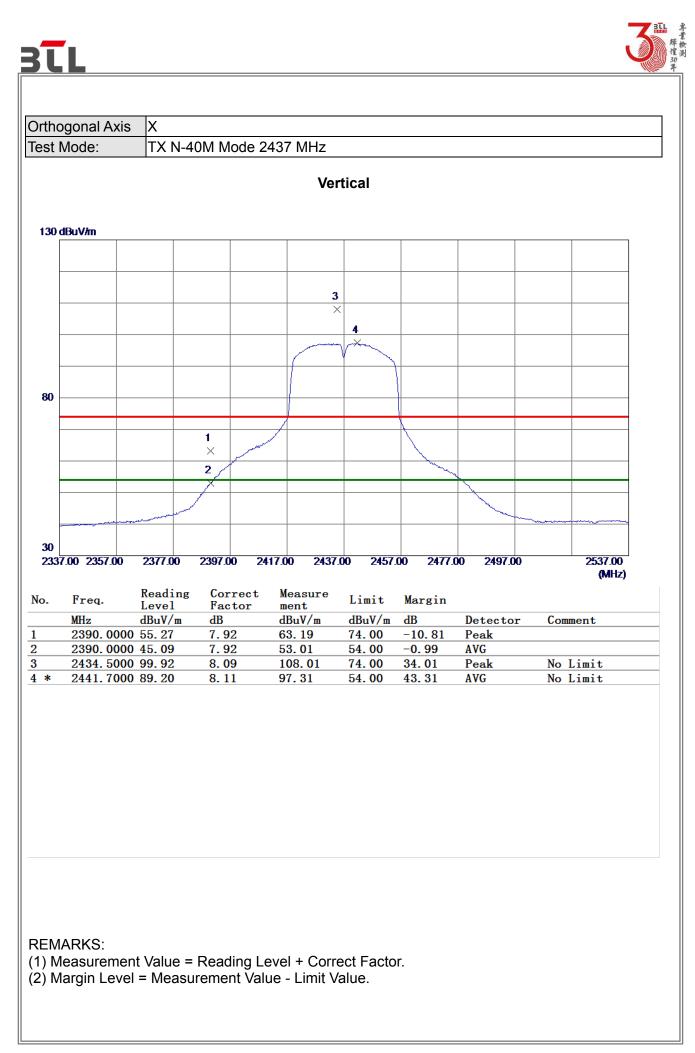


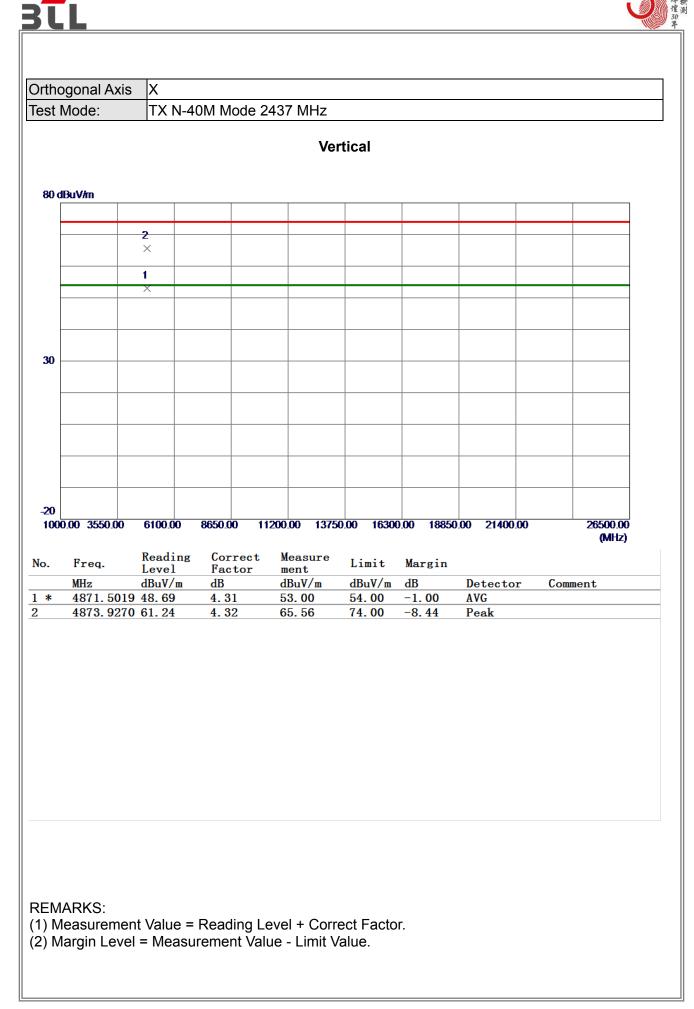






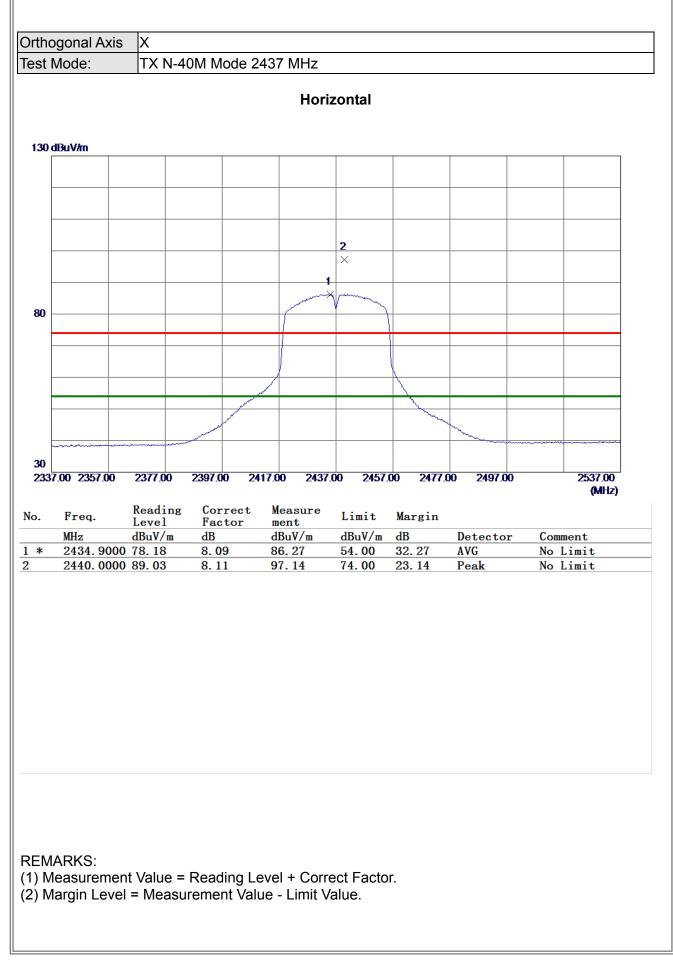


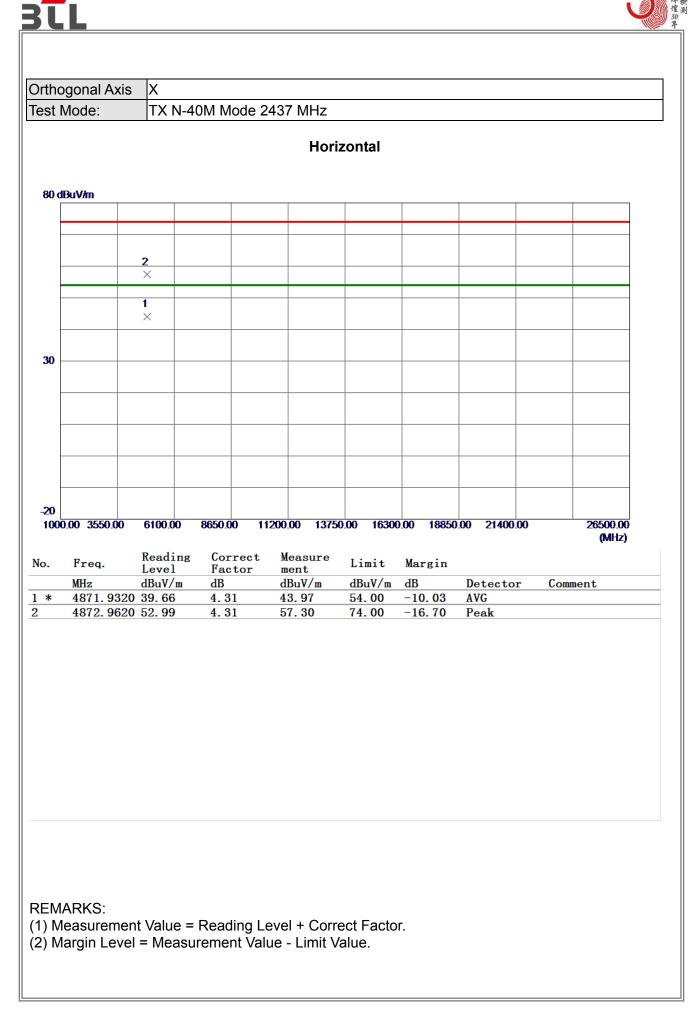


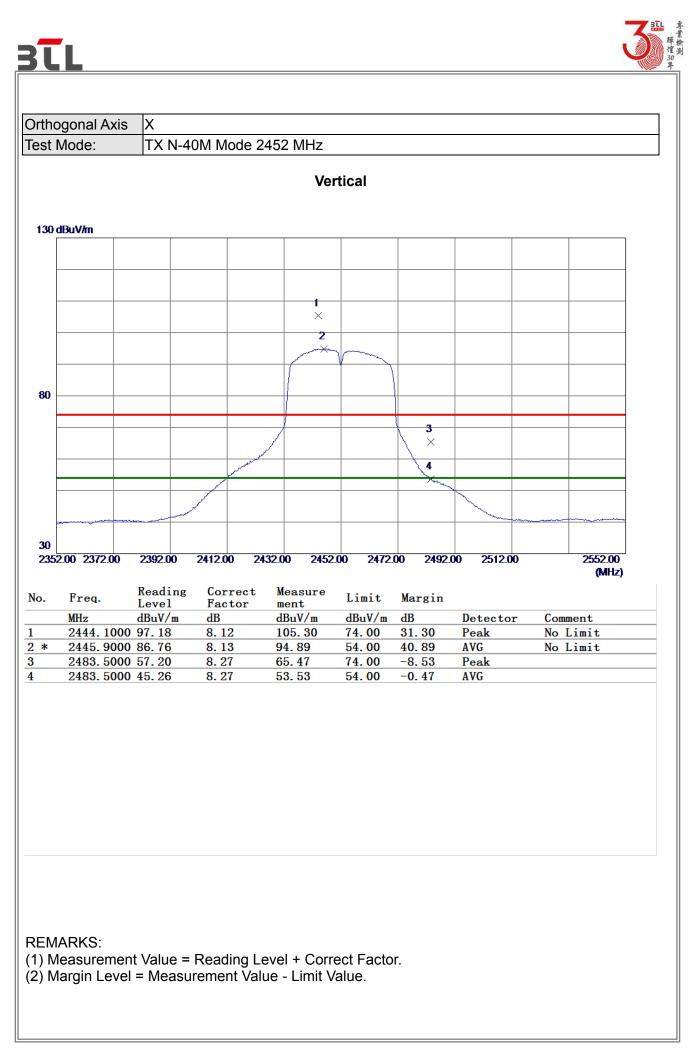


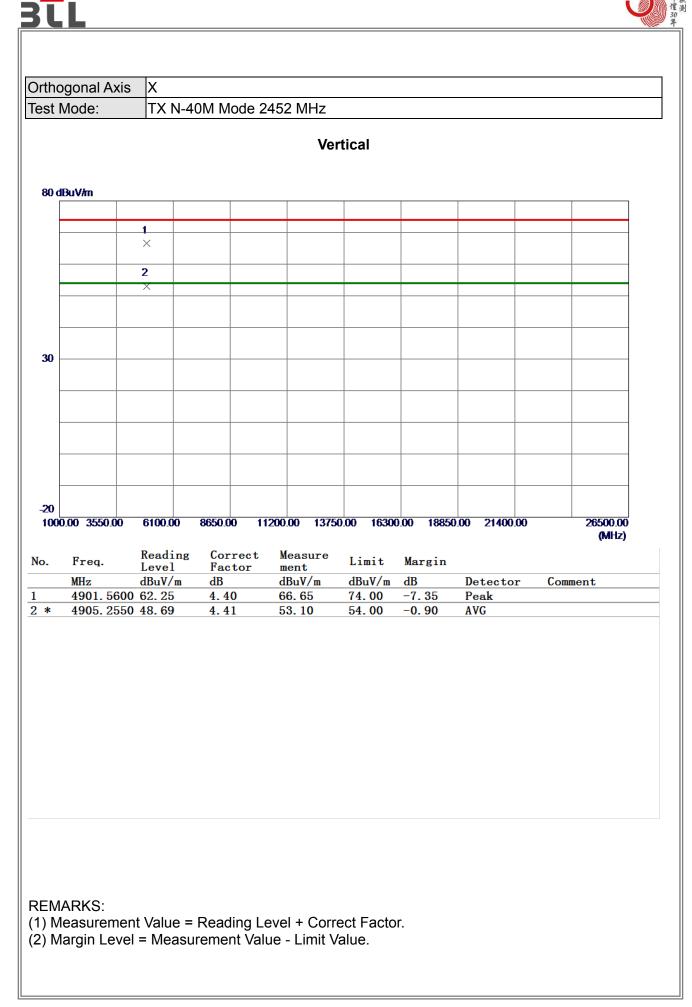






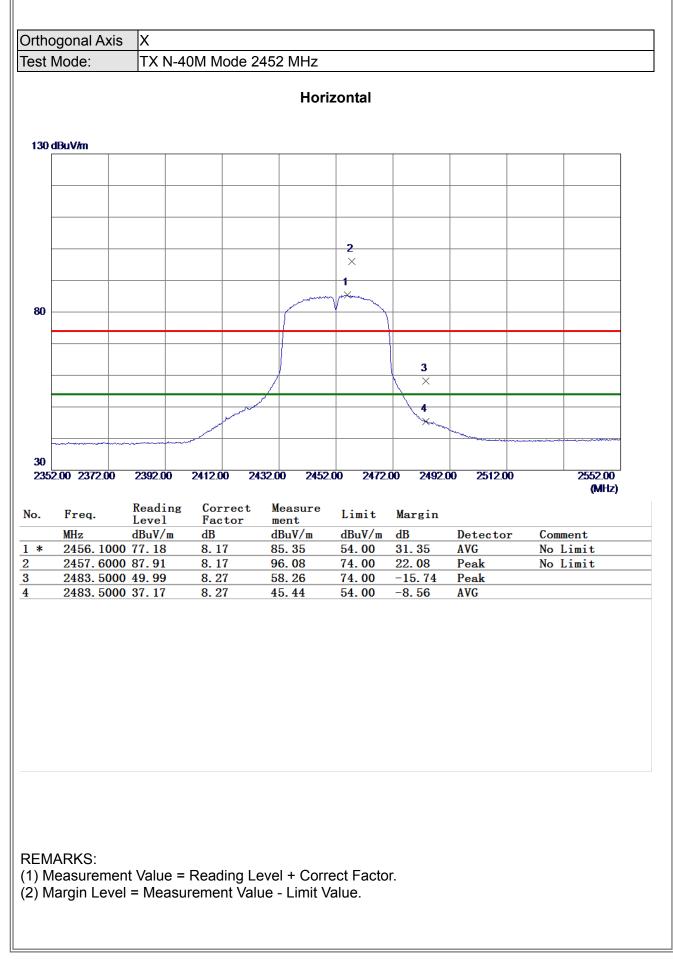


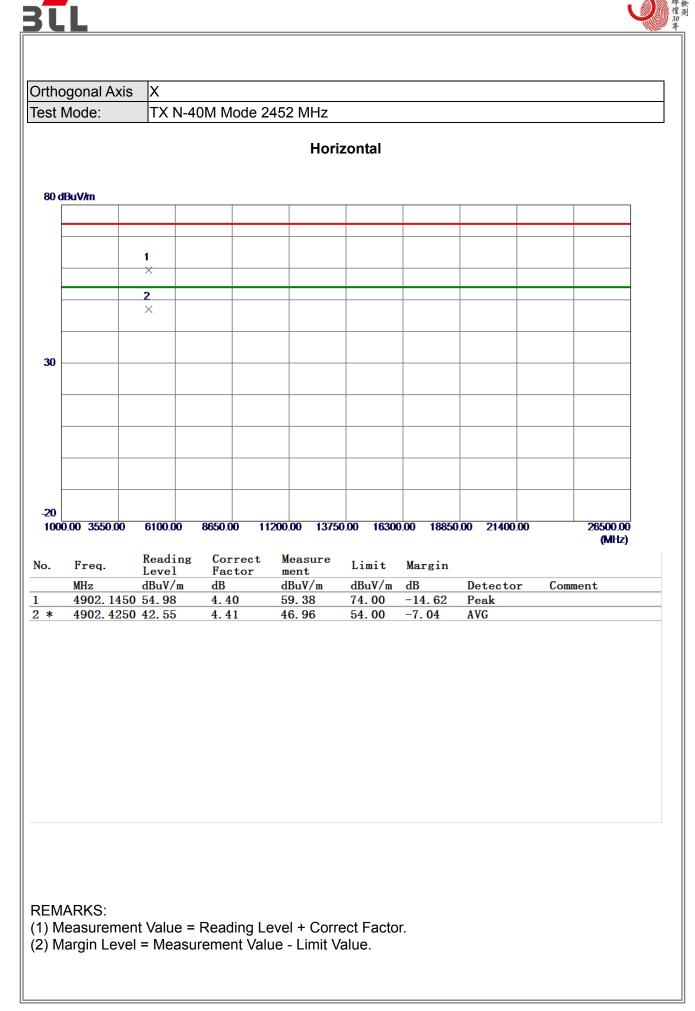










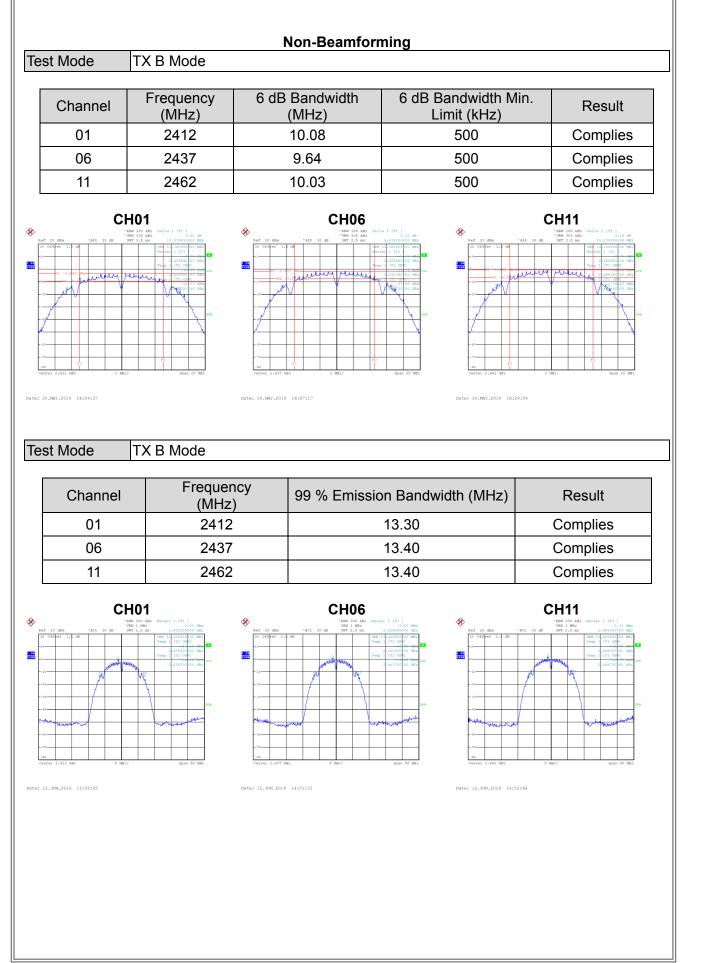




APPENDIX E - BANDWIDTH



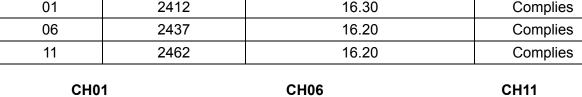


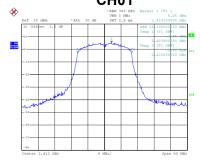




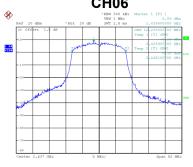


Te	st Mode	TX G Mode						
	Channel	Frequency (MHz)		Bandwidth MHz)		andwidth Min mit (kHz)	^{I.} Result	
	01	2412		14.47		500	Complies	
	06	2437		15.10		500	Complies	
	11	2462		14.24		500	Complies	
	f 20 dBm *Att 30 dB	HOOL MERINE MELLELI ALLENATION AND ALLENATION AND	Ref 20 dm 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		111 1 	Entr 2.462 MET	President President President	
Te	st Mode	TX G Mode						
	Channel	Freque (MHz		99 % Emissi	on Bandw	vidth (MHz)	Result	
	01	2412	2		16.30		Complies	
F								

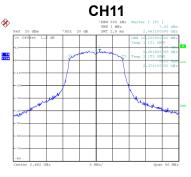




Date: 12.JUN.2019 14:55:35



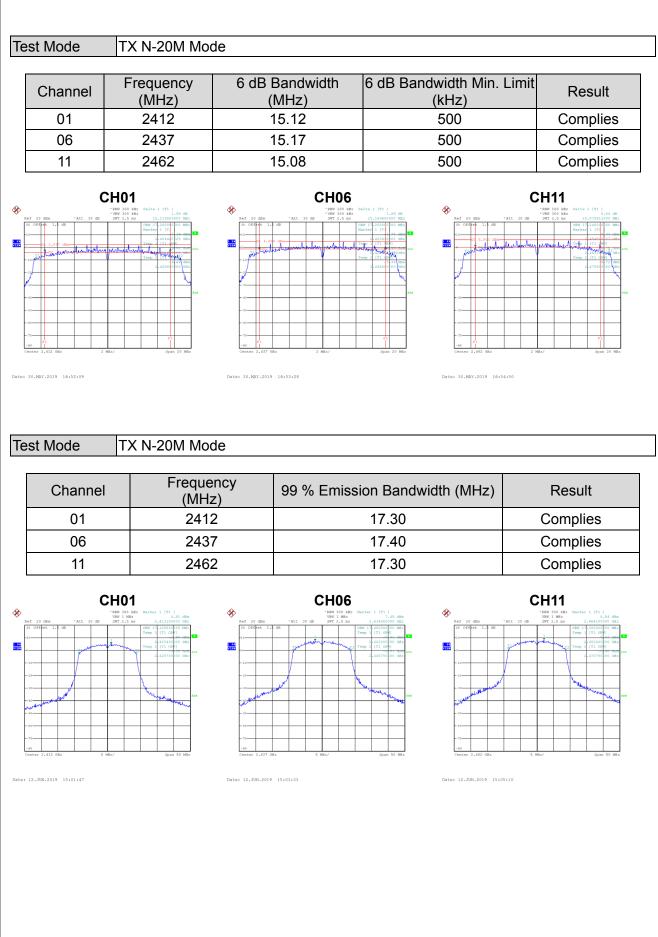
Date: 12.JUN.2019 14:56:18



Date: 12.JUN.2019 14:56:56











	TX N-40M Mod	de				
Channel	Frequency (MHz)		Bandwidth MHz)		lwidth Min. Limit (kHz)	Result
03	2422	3	35.12 500		500	Complies
06	2437	3	32.72		500	Complies
09	2452	3	35.08		500	Complies
(CH03 *RW 100 kHz Delta 1 (T1)	*	CH06	Delta 1 (T1)	د	CH09 'RBW 100 kHz Delta 1 (71)
Channel Frequency						
Channe	el Freque (MH		99 % Emiss	ion Bandwi	dth (MHz)	Result
03	en (MH 242	z) 2	99 % Emiss	36.20		Complies
03	⁵¹ (MH 242 243	z) 2 7	99 % Emiss	36.20 36.20		Complies Complies
03	en (MH 242	z) 2 7	99 % Emiss	36.20		Complies

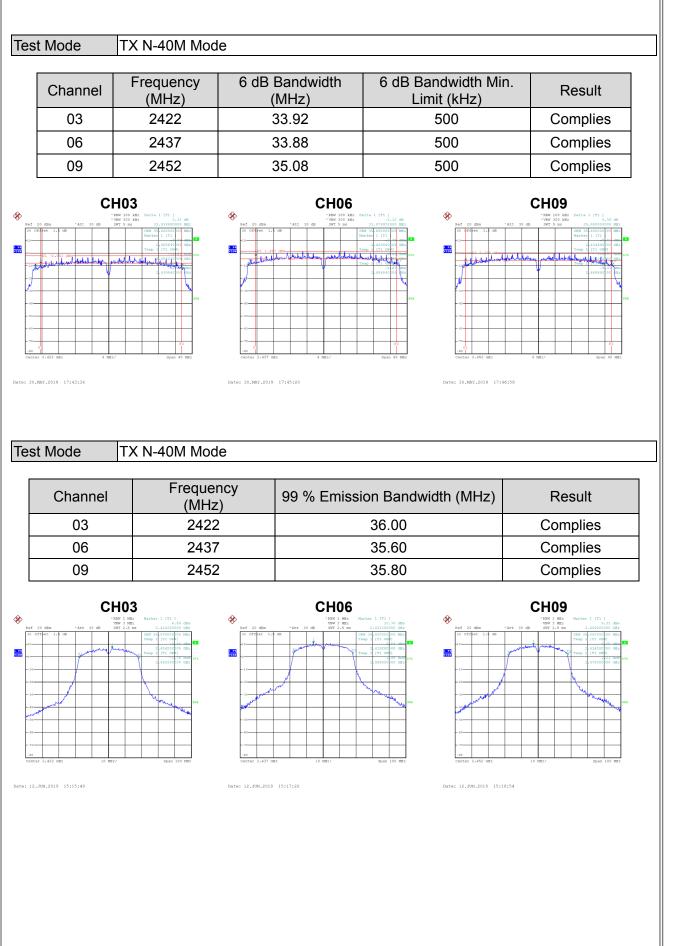




With Beamforming								
Test Mode	TX N-20M Mod			······3				
Channel	Frequency (MHz)		Bandwidth MHz)		ridth Min. Lim (Hz)	^{it} Result		
01	2412		15.12	Ę	500	Complies		
06	2437		15.14		500	Complies		
11	2462		13.85	Ę	500	Complies		
Channel	Freque (MH:		99 % Emiss	ion Bandwidt	h (MHz)	Result		
01	241	2	17.30			Complies		
06	243	7		17.30		Complies		
11	246	2		17.30		Complies		
					Image: 100 dbm - Act: 30 Image: 100 dbm Image: 100 dbm	CHLIL:		











APPENDIX F - MAXIMUM OUTPUT POWER





	Non-Beamforming								
Test Mode	Test Mode TX B Mode								
Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result			
01	2412	8.83	0.0076	30.00	1.0000	Complies			
06	2437	10.49	0.0112	30.00	1.0000	Complies			
11	2462	11.33	0.0136	30.00	1.0000	Complies			
T (1 (1	TYON								
Test Mode	e TX G Mo	ode							
	Fraguaday	Output Dowor		Max Limit	Max Limit				
Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	(dBm)	Max. Limit (W)	Result			
01	2412	19.73	0.0940	30.00	1.0000	Complies			
06	2437	22.67	0.1849	30.00	1.0000	Complies			
11	2462	22.39	0.1734	30.00	1.0000	Complies			





 Test Mode
 TX N-20M Mode_Ant. 1

 Channel
 Frequency (MHz)
 Output Power (dBm)
 Output Power (W)
 Max. Limit (dBm)
 Max. Limit (W)
 Result

01	2412	19.58	0.0908	27.99	0.6295	Complies
06	2437	21.82	0.1521	27.99	0.6295	Complies
11	2462	20.08	0.1019	27.99	0.6295	Complies

Test Mode TX N-20M Mode_Ant. 2

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	20.08	0.1019	27.99	0.6295	Complies
06	2437	21.97	0.1574	27.99	0.6295	Complies
11	2462	21.75	0.1496	27.99	0.6295	Complies

Test Mode TX N-20M Mode_Total

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	22.85	0.1926	27.99	0.6295	Complies
06	2437	24.91	0.3097	27.99	0.6295	Complies
11	2462	24.01	0.2515	27.99	0.6295	Complies



09



Complies

Test Mode TX N-40M Mode Ant. 1 Frequency Output Power Max. Limit Max. Limit Channel Output Power (W) Result (MHz) (dBm) (dBm) (W) 03 2422 15.99 0.0397 27.99 0.6295 Complies 27.99 Complies 06 2437 19.48 0.0887 0.6295

18.12

Test Mode TX N-40M Mode_Ant. 2

2452

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	16.69	0.0467	27.99	0.6295	Complies
06	2437	19.63	0.0918	27.99	0.6295	Complies
09	2452	17.71	0.0590	27.99	0.6295	Complies

0.0649

27.99

0.6295

Test Mode TX N-40M Mode_Total

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	19.36	0.0864	27.99	0.6295	Complies
06	2437	22.57	0.1807	27.99	0.6295	Complies
09	2452	20.93	0.1239	27.99	0.6295	Complies





	With Beamforming							
Test Mode	e TX N-20	M Mode_Ant. 1						
Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result		
01	2412	19.46	0.0883	28.00	0.6310	Complies		
06	2437	21.74	0.1493	28.00	0.6310	Complies		
11	2462	20.03	0.1007	28.00	0.6310	Complies		
Test Mode	e TX N-20	M Mode_Ant. 2						
Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result		
01	2412	20.05	0.1012	28.00	0.6310	Complies		
06	2437	21.91	0.1552	28.00	0.6310	Complies		
11	2462	21.68	0.1472	28.00	0.6310	Complies		
Test Mode	e TX N-20	M Mode_Total]		
Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result		
01	2412	22.78	0.1895	28.00	0.6310	Complies		
06	2437	24.84	0.3048	28.00	0.6310	Complies		
11	2462	23.94	0.2479	28.00	0.6310	Complies		





Test Mode TX N-40M Mode Ant. 1 Frequency Output Power Max. Limit Max. Limit Output Power (W) Channel Result (MHz) (dBm) (dBm) (W) 03 2422 15.92 0.0391 28.00 0.6310 Complies

 06
 2437
 19.43
 0.0877
 28.00
 0.6310
 Complies

 09
 2452
 18.08
 0.0643
 28.00
 0.6310
 Complies

Test Mode TX N-40M Mode_Ant. 2

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	16.64	0.0461	28.00	0.6310	Complies
06	2437	19.58	0.0908	28.00	0.6310	Complies
09	2452	17.62	0.0578	28.00	0.6310	Complies

Test Mode TX N-40M Mode_Total

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	19.31	0.0852	28.00	0.6310	Complies
06	2437	22.52	0.1786	28.00	0.6310	Complies
09	2452	20.87	0.1221	28.00	0.6310	Complies



APPENDIX G - CONDUCTED SPURIOUS EMISSIONS