

FCC PART 15 SUBPART C TEST REPORT

for

Wireless Scale

Model No.: WS-30

FCC ID: XNA-WS-30

of

Applicant: Withings

Address: 20, rue Rouget de Lisle, 92130 Issy les Moulineaux, FRANCE

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

FCC Registration No.: 930600

Industry Canada filed test laboratory Reg. No. IC 5679A-1

A2LA Accredited No.: 2732.01



Report No.: W6M21209-12715-C-1

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.
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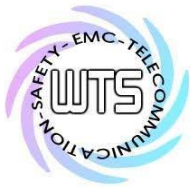


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1 General Information

1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.

The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.

Furthermore, there is no guarantee that a test sample which has passed all the relevant tests conforms to a specification.

Neither is there any guarantee that such a test sample will interwork with other genuinely open systems. The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that its performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5.

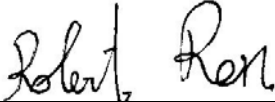
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Specific Conditions:

Usage of the hereunder tested device in combination with other integrated or external antennas requires at least additional output power measurements, spurious emission measurements, conducted emission measurements (AC supply lines) and radio frequency exposure evaluations for each individual configuration performed, for certification by FCC.

Tester:

September 20, 2012	Robert Ren	
_____	_____	_____
Date	WTS-Lab. Name	Signature

Technical responsibility for area of testing:

September 20, 2012	Danny Sung	
_____	_____	_____
Date	WTS Name	Signature



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1.2 Testing laboratory

1.2.1 Location

OATS

No.5-1, Lishui, Shuang Sing Village,
Wanli Dist., New Taipei City 207,
Taiwan (R.O.C.)

3 meter semi-anechoic chamber

No.35, Aly. 21, Ln. 228, Ankang Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

TEL:886-2-6613-0228

FAX:886-2-2791-5046

Company

Worldwide Testing Services(Taiwan) Co., Ltd.

6F, NO. 58, LANE 188, RUEY-KUANG RD.

NEIHU, TAIPEI 114, TAIWAN R.O.C.

Tel : 886-2-66068877

Fax : 886-2-66068879

1.2.2 Details of accreditation status

Accredited testing laboratory

A2LA accredited number: 2732.01

FCC filed test laboratory Reg. No. 930600

Industry Canada filed test laboratory Reg. No. IC 5679A-1



Test location, where different from Worldwide Testing Services (Taiwan) Co., Ltd. :

Name: ./.

Accredited number: ./.

Street: ./.

Town: ./.

Country: ./.

Telephone: ./.

Fax: ./.

1.3 Details of approval holder

Name: Withings
Street: 20, rue Rouget de Lisle, 92130
Town: Issy les Moulinaux,
Country: FRANCE
Telephone: +33 1 4146 0464
Fax: +33 1 4146 0456



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1.4 Application details

Date of receipt of test item: September 11, 2012

Date of test: from September 11, 2012 to September 20, 2012

1.5 General information of Test item

Type of test item: Wireless Scale

Model Number: WS-30

Brand Name: Withings

Multi-listing model number: ./.

Photos: see Appendix

Technical data

Frequency band: 2.412 GHz-2.462 GHz, 2.402 GHz-2.480 GHz

802.11b, g, n 20MHz

Frequency (ch 1): 2.412 GHz

Frequency (ch 6): 2.437 GHz

Frequency (ch 11): 2.462 GHz

Bluetooth Normal, EDR

Frequency (ch 0): 2.402 GHz

Frequency (ch 39): 2.441 GHz

Frequency (ch 78): 2.480 GHz

Number of Channels: 802.11b, g, n 20MHz: 11 channels
Bluetooth: 79 channels

Operation modes: duplex

Modulation Type: DSSS/OFDM、GFSK、 $\pi/4$ DQPSK、8DPSK

Fixed point-to-point operation: Yes / No

Type of Antenna: 2.4 GHz Inverted F Antenna

Antenna gain: 3.3 dBi

Power supply: Battery 1.5Vdc*4 / 500 mA



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Emission designator: 802.11b: DSSS: 15M2G1D
802.11g: OFDM: 17M6D1D
802.11n 20MHz: OFDM: 18M8D1D
Bluetooth (Normal): 782KF1D
Bluetooth (EDR): 1M15G1D

Host device: none

Classification :

Fixed Device	<input type="checkbox"/>
Mobile Device (Human Body distance > 20cm)	<input checked="" type="checkbox"/>
Portable Device (Human Body distance < 20cm)	<input type="checkbox"/>
Modular Radio Device	<input type="checkbox"/>

Transmitter

Unom

Mode A (802.11b)

Power (ch 1 or A): Conducted: 16.33 dBm
Power (ch 6 or B): Conducted: 16.46 dBm
Power (ch 11 or C): Conducted: 16.05 dBm

Mode B (802.11g)

Power (ch 1 or A): Conducted: 18.30 dBm
Power (ch 6 or B): Conducted: 18.52 dBm
Power (ch 11 or C): Conducted: 18.24 dBm

Mode C (802.11n 20 MHz)

Power (ch 1 or A): Conducted: 17.89 dBm
Power (ch 6 or B): Conducted: 18.26 dBm
Power (ch 11 or C): Conducted: 17.96 dBm

Mode D (Bluetooth Normal mode)

Power (ch 0 or A): Conducted: 6.72 dBm
Power (ch 39 or B): Conducted: 6.97 dBm
Power (ch 78 or C): Conducted: 6.16 dBm

Mode E (Bluetooth EDR mode)

Power (ch 0 or A): Conducted: 7.67 dBm
Power (ch 39 or B): Conducted: 7.59 dBm
Power (ch 78 or C): Conducted: 5.92 dBm

Manufacturer: (if applicable)

Name: ./.
Street: ./.
Town: ./.
Country: ./.

1.6 Test standards

Technical standard : FCC RULES PART 15 SUBPART C § 15.247 (2011-10)



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2 Technical test

2.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course of the tests performed.

or

The deviations as specified in 2.5 were ascertained in the course of the tests performed.

2.2 Test environment

Temperature: 23 °C
Relative humidity content: 20 ... 75 %
Air pressure: 86 ... 103 kPa
Power supply: Battery 1.5Vdc*4 / 500 mA
Extreme conditions parameters: ./.

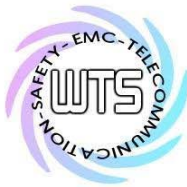


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2.3 Test Equipment List

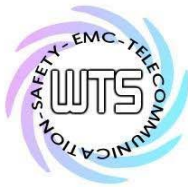
No.	Test equipment	Type	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2012/9/5	2013/9/4
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	Function Test	
ETSTW-CE 004	ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5	840731/011	R&S	2011/12/28	2012/12/27
ETSTW-CE 005	Line-Impedance Stabilisation Network	NNBM 8126D	137	Schwarzbeck	2012/9/5	2013/9/4
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2012/3/5	2013/3/4
ETSTW-CE 007	SPECTRUM ANALYZER 5GHz	FSB	849670/001	R&S	Pre-test Use	
ETSTW-CE 008	HF-EICHLITUNG RF STEP ATTENUATOR 139dB DPSP	334.6010.02	844581/024	R&S	Function Test	
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2012/7/3	2013/7/2
ETSTW-CE 013	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T4-02	20242	FCC	2012/9/6	2013/9/5
ETSTW-CE 024	IMPEDANCE STABILIZATION NETWORK	ISN T800	29454	TESEQ	2012/1/4	2013/1/3
ETSTW-CS 004	COUPLING AND DECOUPLING NETWORK	CDN M016	20053	SCHAFFNER	2012/8/10	2013/8/09
ETSTW-CS 005	RF Power Amplifier	100A250A	306547	AR	Function Test	
ETSTW-CS 010	6 dB Attenuator	SA3N1007-06	None	AISI	Function test	
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2012/8/10	2013/8/09
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2012/9/5	2013/9/4
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2012/9/5	2013/9/4
ETSTW-RE 010	ABSORBING CLAMP	MDS 21	3469	Schwarzbeck	2012/9/5	2013/9/4
ETSTW-RE 012	TUNABLE BANDREJECT FILTER	D.C 0309	146	K&L	Function Test	
ETSTW-RE 013	TUNABLE BANDREJECT FILTER	D.C 0336	397	K&L	Function Test	
ETSTW-RE 018	MICROWAVE HORN ANTENNA	AT4560	27212	AR	2010/10/4	2012/10/3
ETSTW-RE 019	MICROWAVE HORN ANTENNA	22240-25	121074	FM	2012/4/03	2013/4/02
ETSTW-RE 020	MICROWAVE HORN ANTENNA	AT4002A	306915	AR	Function Test	
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	ETS-Lindgren	2012/8/01	2013/7/31
ETSTW-RE 028	Log-Periodic Dipole Array Antenna	3148	34429	EMCO	Function Test	
ETSTW-RE 029	Biconical Antenna	3109	33524	EMCO	Function Test	
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	EMCO	2012/2/21	2013/2/20
ETSTW-RE 032	Millivoltmeter	URV 55	849086/013	R&S	2011/10/4	2012/10/3
ETSTW-RE 033	WaveRunner 6000A Serise Oscilloscope	WAVERUNNER 6100A	LCRY0604P1450 8	LeCroy	Function Test	
ETSTW-RE 034	Power Sensor	URV5-Z4	839313/006	R&S	2011/10/4	2012/10/3
ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2012/1/10	2013/1/9
ETSTW-RE 043	Log-Periodic Dipole Antenna	HL223	100166	R&S	2012/4/13	2013/4/12



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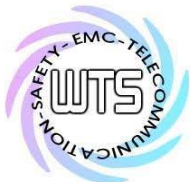
ETSTW-RE 044	Log-Periodic Antenna	HL050	100094	R&S	2012/4/06	2013/4/05
ETSTW-RE 045	ESA-E SERIES SPECTRUM ANALYZER	E4404B	MY45111242	Agilent	Pre-test Use	
ETSTW-RE 048	Triple Loop Antenna	HXYZ 9170	HXYZ 9170-134	Schwarzbeck	2012/8/28	2013/8/27
ETSTW-RE 049	TRILOG Super Broadband test Antenna	VULB 9160	9160-3185	Schwarzbeck	2012/3/23	2013/3/22
ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2012/3/3	2013/3/2
ETSTW-RE 051	Attenuator 6dB	50HF-006-1	None	JFW	2012/3/3	2013/3/2
ETSTW-RE 053	Attenuator 3dB	50HF-003-1	None	JFW	2012/3/3	2013/3/2
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2012/5/29	2013/5/28
ETSTW-RE 060	Attenuator 30dB	5015-30	F651012z-01	ATM	2012/3/3	2013/3/2
ETSTW-RE 061	Amplifier Module	CHC 1	None	ETS	2012/5/17	2013/5/16
ETSTW-RE 062	Amplifier Module	CHC 2	None	KMIC	2011/11/29	2012/11/28
ETSTW-RE 064	Bluetooth Test Set	MT8852B-042	6K00005709	Anritsu	Function Test	
ETSTW-RE 065	Amplifier	AMF-6F-18002650-25-10P	941608	MITEQ	2012/4/6	2013/4/5
ETSTW-RE 069	Double-Ridged Guide Horn Antenna	3117	00069377	EMCO	Function Test	
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2011/10/5	2012/10/4
ETSTW-RE 073	Power Meter	N1911A	MY45100769	Agilent	2012/1/4	2013/1/3
ETSTW-RE 074	Power Sensor	N1921A	MY45241198	Agilent	2012/1/4	2013/1/3
ETSTW-RE 088	SOLID STATE AMPLIFIER	KMA180265A01	99057	KMIC	2011/10/13	2012/10/12
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2012/3/5	2013/3/4
ETSTW-RE 105	2.4GHz Notch Filter	NO124411	39555	MICROWAVE CIRCUITS, INC.	2012/3/5	2013/3/4
ETSTW-RE 106	Humidity Temperature Meter	TES-1366	091011113	TES	2011/12/1	2012/11/30
ETSTW-RE 111	TRILOG Super Broadband test Antenna	VULB 9160	9160-3309	Schwarz beck	2011/12/27	2012/12/26
ETSTW-RE 112	AC POWER SOURCE	TFC-1005	None	T-Power	Function test	
ETSTW-RE 115	2.4GHz Notch Filter	N0124411	473874	MICROWAVE CIRCUITS	2012/1/12	2013/1/11
ETSTW-RE 120	RF Player	MP9200	MP9210-111022	ADIVIC	Function test	
ETSTW-RE 122	SIGNAL GENERATOR	SMF100A	102149	R&S	2012/7/3	2013/7/2
ETSTW-RE 125	5GHz Notch filter	5NSL11-5200/E221.3-O/O	1	K&L Microwave	2012/8/18	2013/8/17
ETSTW-RE 126	5GHz Notch filter	5NSL11-5800/E221.3-O/O	1	K&L Microwave	2012/8/18	2013/8/17
ETSTW-RE 127	RF Switch Box	RFS-01	None	WTS	2012/3/3	2013/3/2
ETSTW-EMI 001	HARMONICS 1000	HAR1000-1P	093	EMC-PARTNER	2012/8/10	2013/8/09
ETSTW-EMS 001	BASELSTRASSE 160 CH-4242 LAUFEN	CN-EFT1000	354	EMC-PARTNER	Function Test	
ETSTW-EMS 002	Frequency Converter	YF-6020	0308014	None	Function Test	
ETSTW-EMS 003	EMC Immunity Test System	TRA2000IN6	579	EMC-PARTNER	2011/11/2	2012/11/1
ETSTW-EMS 009	Magnetic Field Antenna	MF1000-1	104	EMC-PARTNER	Function Test	
ETSTW-EMS 010	Coupling De-coupling Network	CDN-UTP8	014	EMC-PARTNER	Function Test	
ETSTW-EMS 012	EM Injection Clamp	F-2031-23MM	476	FCC	2012/5/29	2013/5/28



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ETSTW-EMS 016	EMF Tester	1390	071208732	TES	2011/10/6	2012/10/5
ETSTW-EMS 017	Multimeter	DM-1220	518614	HOLA	2012/8/10	2013/8/09
ETSTW-EMS 019	Electrostatic Discharge Simulator	ESS-2002	ESS06Y6300	NoiseKen	2011/10/31	2012/10/30
ETSTW-EMS 020	Humidity Temperature Meter	TES-1366	091011116	TES	2011/12/20	2012/12/19
ETSTW-RS 003	RF Power Amplifier	30S1G3	306933	AR	Function Test	
ETSTW-RS 004	RF Power Amplifier	150W1000	307009	AR	Function Test	
ETSTW-RS 006	SIGNAL GENERATOR	SML03	101551	R&S	2012/2/29	2013/2/28
ETSTW-RS 007	14" COLOR VIDEO MONITOR	HS-CM145A	0512011548	None	Function Test	
ETSTW-RS 009	SIGNAL GENERATOR	8648C	3642U01656	HP	2012/2/20	2013/2/19
ETSTW-RS 010	Broadband Field Meter	NBM-520	C-0195	Narda	2012/9/7	2013/9/6
ETSTW-GSM 002	Universal Radio Communication Tester	CMU 200	109439	R&S	2011/10/4	2012/10/3
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849-822/851-40 /12+9SS	3	WI	2012/1/13	2013/1/12
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748-1743/1752-32/5SS	1	WI	2012/1/13	2013/1/12
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880.5-1875.5/1884.5-32/5SS	3	WI	2012/1/13	2013/1/12
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1-904.25-50/8SS	1	WI	2012/1/13	2013/1/12
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2012/9/18	2013/9/17
ETSTW-Cable 002	Microwave Cable	SUCOFLEX 104 (S Cable 7)	238093	HUBER+SUHNER	2012/5/17	2013/5/16
ETSTW-Cable 003	Microwave Cable	SUCOFLEX 104 (S Cable 11)	209953	HUBER+SUHNER	2012/5/17	2013/5/16
ETSTW-Cable 010	BNC Cable	5 M BNC Cable	None	JYE BAO CO.,LTD.	2012/3/5	2013/3/4
ETSTW-Cable 011	BNC Cable	BNC Cable 1	None	JYE BAO CO.,LTD.	Pre-test Use NCR	
ETSTW-Cable 012	N TYPE To SMA Cable	Cable 012	None	JYE BAO CO.,LTD.	2012/3/5	2013/3/4
ETSTW-Cable 013	Microwave Cable	SUCOFLEX 104 (S Cable 5)	232345	HUBER+SUHNER	Function Test	
ETSTW-Cable 016	BNC Cable	Switch Box	B Cable 1	Schwarz beck	2012/3/3	2013/3/2
ETSTW-Cable 017	BNC Cable	X Cable	B Cable 2	Schwarz beck	2012/3/3	2013/3/2
ETSTW-Cable 018	BNC Cable	Y Cable	B Cable 3	Schwarz beck	2012/3/3	2013/3/2
ETSTW-Cable 019	BNC Cable	Z Cable	B Cable 4	Schwarz beck	2012/3/3	2013/3/2
ETSTW-Cable 022	N TYPE Cable	5006	0002	JYE BAO CO.,LTD.	2012/4/6	2013/4/5
ETSTW-Cable 026	Microwave Cable	SUCOFLEX 104	279075	HUBER+SUHNER	2012/3/5	2013/3/4
ETSTW-Cable 027	Microwave Cable	SUCOFLEX 104	279083	HUBER+SUHNER	2012/3/5	2013/3/4
ETSTW-Cable 028	Microwave Cable	FA147A0015M2020	30064-2	UTIFLEX	2011/10/13	2012/10/12
ETSTW-Cable 029	Microwave Cable	FA147A0015M2020	30064-3	UTIFLEX	2011/10/13	2012/10/12
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 (S Cable 9)	279067	HUBER+SUHNER	2012/3/5	2013/3/4
ETSTW-Cable 031	Microwave Cable	SUCOFLEX 104 (S Cable 10)	238092	HUBER+SUHNER	2011/11/29	2012/11/28
ETSTW-Cable 032	Microwave Cable	SUCOFLEX 104 (S Cable 12)	237301	HUBER+SUHNER	Function Test	
ETSTW-Cable 039	Microwave Cable	SUCOFLEX 104 (S Cable 19)	316739	HUBER+SUHNER	2012/5/17	2013/5/16
ETSTW-Cable 040	Microwave Cable	SUCOFLEX 104 (S Cable 20)	316738	HUBER+SUHNER	Function Test	



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ETSTW-Cable 043	Microwave Cable	SUCOFLEX 104	317576	HUBER+SUHNER	2011/11/29	2012/11/28
ETSTW-Cable 047	Microwave Cable	SUCOFLEX 104	325518	HUBER+SUHNER	2011/11/29	2012/11/28
ETSTW-Cable 051	BNC Cable	BNC Cable 6	None	JYE BAO CO.,LTD.	2012/3/30	2013/3/29
ETSTW-Cable 052	BNC Cable	Clamp Cable	None	Schwarz beck	2012/3/30	2013/3/29
ETSTW-Cable 053	N TYPE To SMA Cable	RG142	None	JYE BAO CO.,LTD.	2012/4/6	2013/4/5
ETSTW-Cable 054	BNC To SMA Cable	RG142	None	JYE BAO CO.,LTD.	2012/4/6	2013/4/5
ETSTW-Cable 055	N TYPE Cable	N30N30-JBY240-80CM	20110621-1.1	JYE BAO CO.,LTD.	Function Test	
ETSTW-Cable 056	N TYPE Cable	N30N30-JBY240-80CM	20110621-1.0	JYE BAO CO.,LTD.	Function Test	
ETSTW-Cable 057	N TYPE Cable	N30N30-JBY240-80CM	20110621-1.1	JYE BAO CO.,LTD.	Function Test	
WTSTW-SW 001	EMI TEST SOFTWARE	Harmonics-1000	None	EMC PARTNER	HARCS Version 4.16 Firmware Version 2.18	
WTSTW-SW 002	EMI TEST SOFTWARE	EZ EMC	None	Farad	Version ETS-03A1	
WTSTW-SW 003	EMS TEST SOFTWARE	i2	None	AUDIX	Version 3.2007-8-17b	



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2.4 General Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-2009 5.2 using a 50 μ H LISN (if necessary). Both lines were observed. The bandwidth of the spectrum analyzer was 10 kHz with an appropriate sweep speed.

RADIATION INTERFERENCE: The test procedure used was according to ANSI STANDARD C63.4-2009 6.4 employing a spectrum analyzer. For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 100kHz respectively with an appropriate sweep speed. For investigated frequency is above 1GHz, both of RBW and VBW of the spectrum analyzer were 1 MHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dB μ V) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB.

Example:

Freq (MHz) METER READING + ACF + CABLE LOSS (to the receiver) = FS
33 20 dB μ V + 10.36 dB + 6 dB = 36.36 dB μ V/m @3m

The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m (non metallic table) and arranged according to ANSI C63.4-2009 6.3.1. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to the frequency specified as follows:

- (1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
- (2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
- (3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.
- (4) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a)(1)-(a)(3) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this Section, whichever is the higher frequency range of investigation.

For hand-held devices, a exploratory test was performed with three (3) orthogonal planes to determine the highest emissions.

Measurements were made by Worldwide Testing Services(Taiwan) Co., Ltd. at the registered open field test site located at No.5-1, Lishui, Shuang Sing Village, Wanli Dist., New Taipei City 207, Taiwan (R.O.C.). The Registration Number: 930600.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.



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When the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

The formula is as follows:

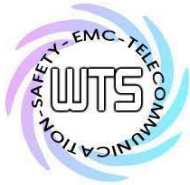
Average = Peak + Duty Factor

Duty Factor = $20 \log(\text{dwell time}/T)$

T = 100ms when the pulse train period is over 100 ms or the period of the pulse train.

Modified Limits for peak according to 15.35 (b) = Max Permitted average Limits + 20dB

ANSI STANDARD C63.4-2009 10.2.7: Any measurements that utilize special test software shall be indicated and referenced in the test report. During testing, test software 'EZ EMC' was used for setting up different operation modes.



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3 Test results (enclosure)

TEST CASE	Para. Number	Required	Test passed	Test failed
Peak Output Power	15.247(b)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Equivalent isotropically radiated Power	15.247(b)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Spurious Emissions radiated – Transmitter operating	15.247(c)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Spurious Emissions conducted – Transmitter operating	15.247	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Carrier Frequency Separation	15.247(a) (1)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Number of Hopping Frequencies	15.247(a) (1)(i)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Time of Occupancy (Dwell Time)	15.247(a) (1)(i)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
20 dB Bandwidth	15.247(a) (1)(i)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Minimum 6 dB Bandwidth	15.247(a)(2)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Band-edge Compliance of RF Emission	15.247(d)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Peak Power Spectral Density	15.247(e)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Radiated Emission from Digital Part	15.109	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Power Line Conducted Emission	15.207(a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



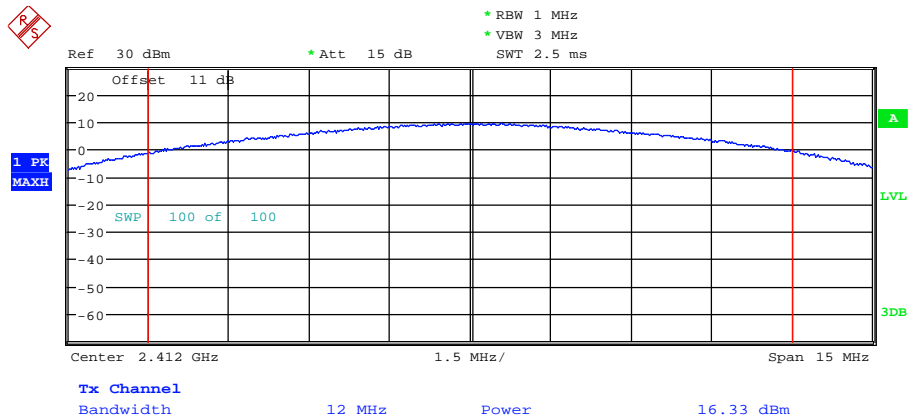
Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

3.1 Peak Output Power (transmitter)

FCC Rule: 15.247(b)(3)

This measurement applies to equipment with an integral antenna and to equipment with an antenna connector and equipped with an antenna as declared by the applicant.
The power was measured with modulation (declared by the applicant).

Mode A



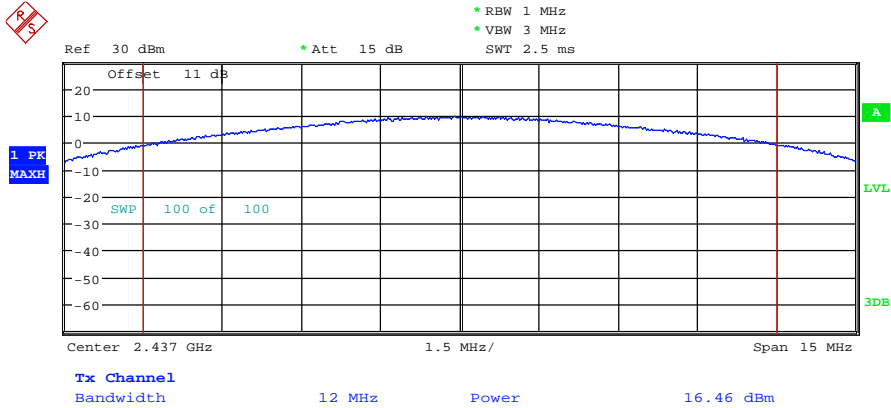
MAX OUTPUT POWER 802.11B CH01

Date: 19.SEP.2012 10:42:24

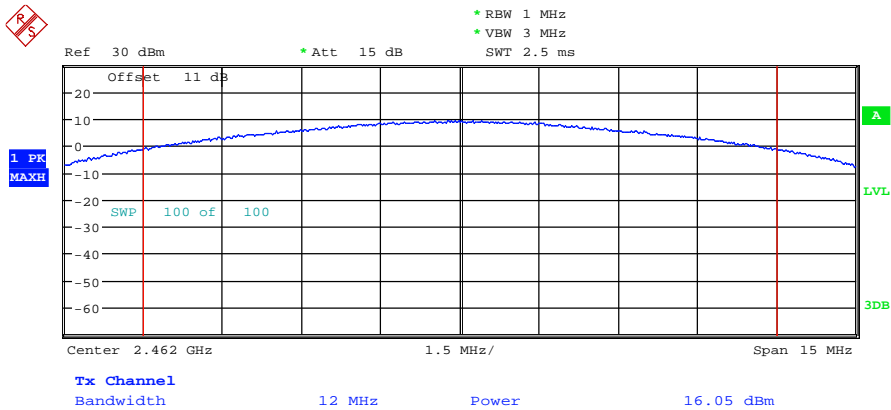


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MAX OUTPUT POWER 802.11B CH06
Date: 19.SEP.2012 11:16:44



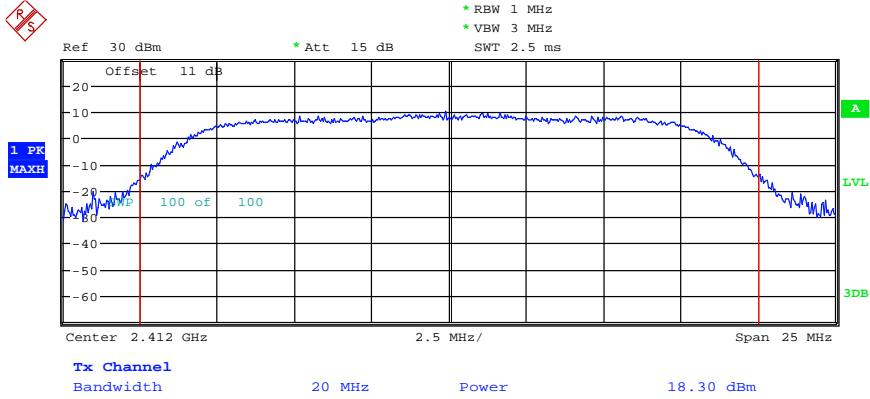
MAX OUTPUT POWER 802.11B CH11
Date: 19.SEP.2012 11:18:50



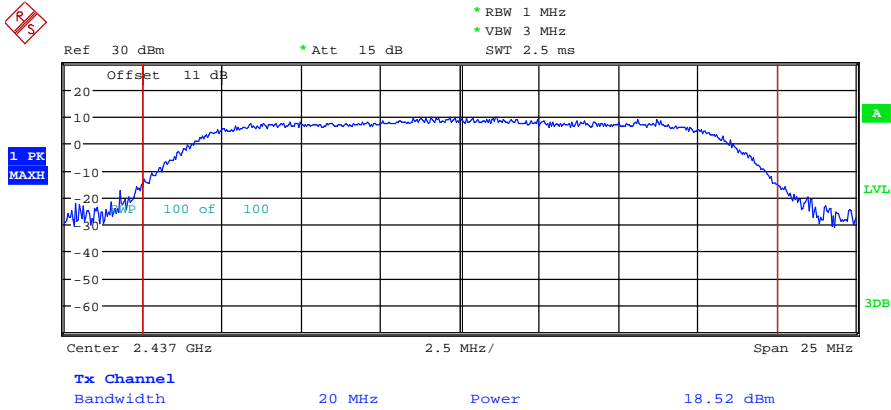
Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Mode B



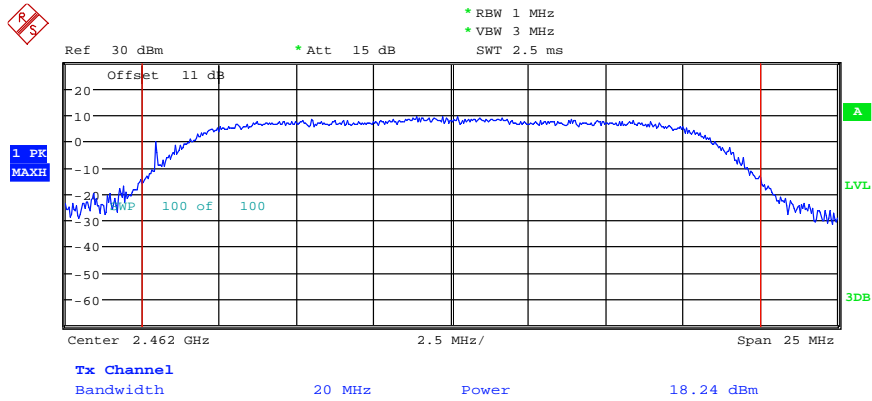
MAX OUTPUT POWER 802.11G CH01
Date: 19.SEP.2012 11:21:29



MAX OUTPUT POWER 802.11G CH06
Date: 19.SEP.2012 11:23:35

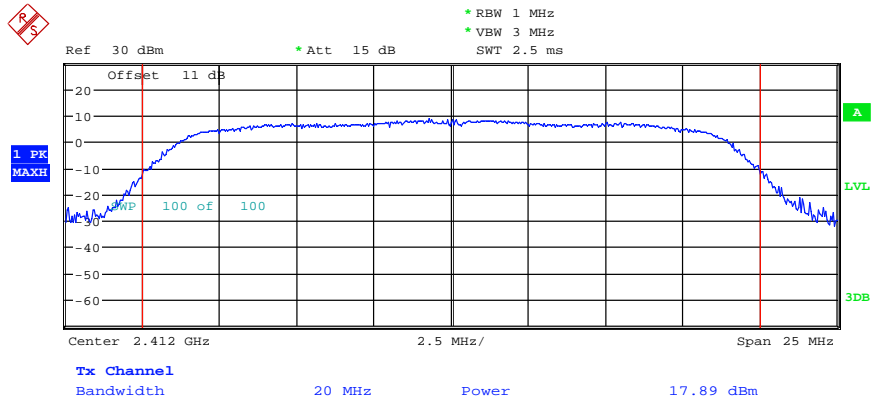


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



MAX OUTPUT POWER 802.11G CH11
Date: 19.SEP.2012 11:25:47

Mode C

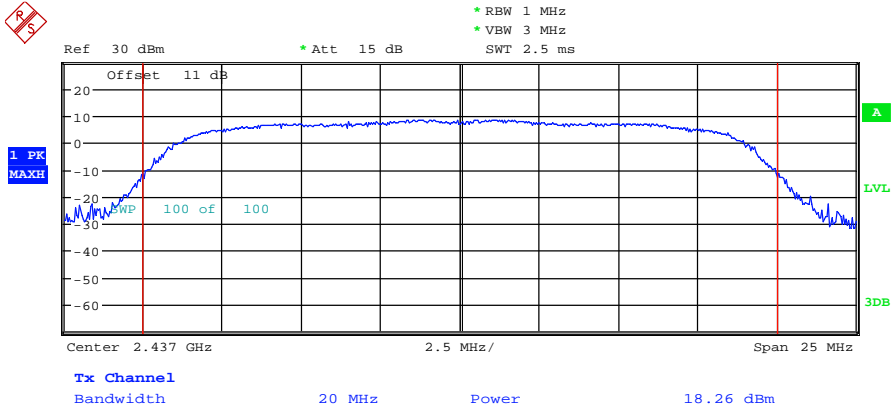


MAX OUTPUT POWER 802.11N 20MHZ CH01
Date: 19.SEP.2012 11:28:35

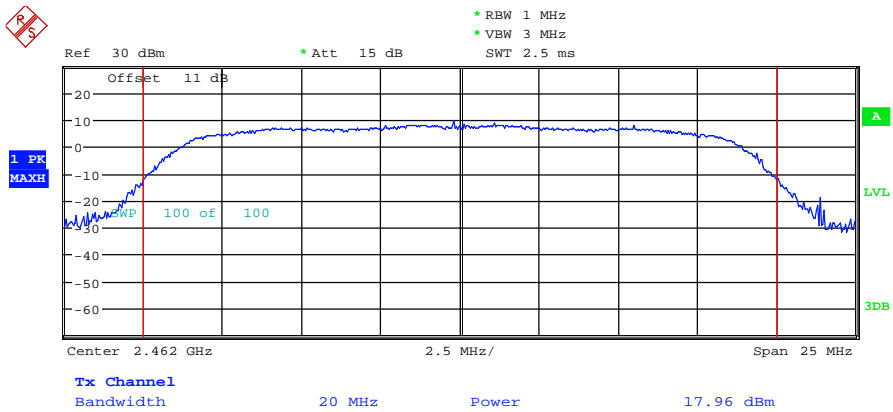


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



MAX OUTPUT POWER 802.11N 20MHZ CH06
Date: 19.SEP.2012 11:30:33

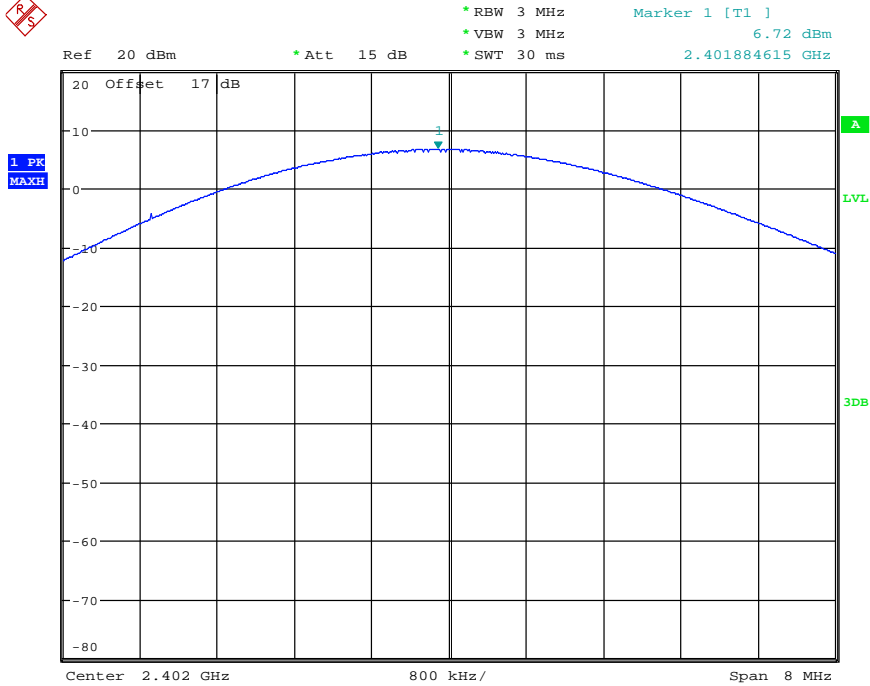


MAX OUTPUT POWER 802.11N 20MHZ CH11
Date: 19.SEP.2012 11:34:06

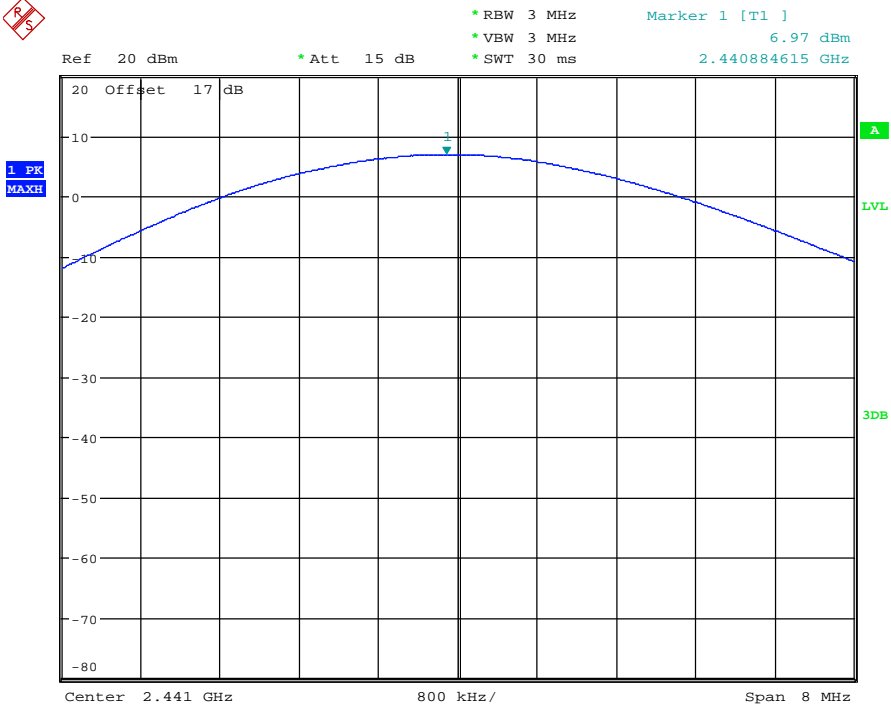


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Mode D



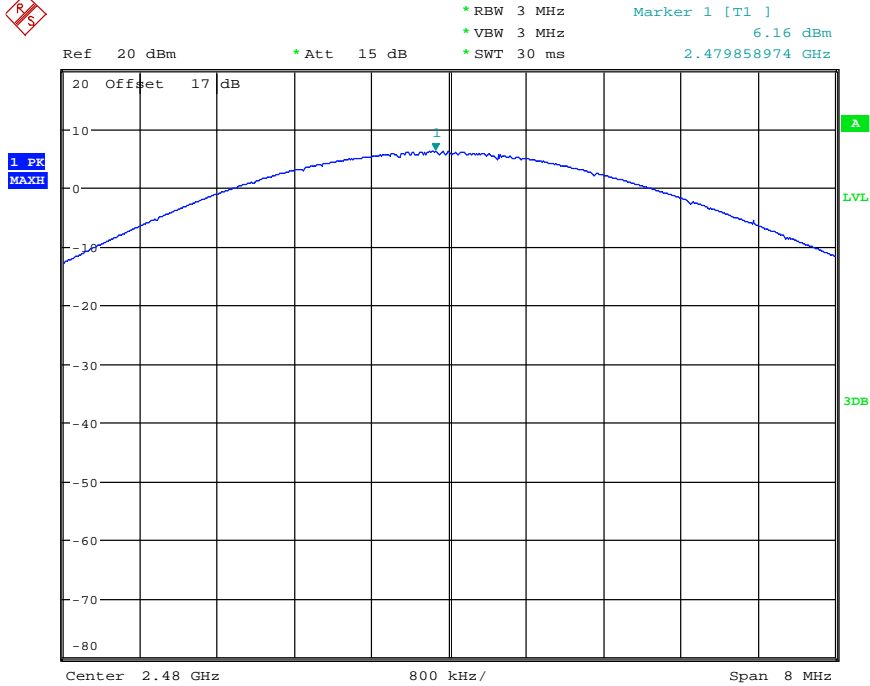
MAX OUTPUT POWER CH0
Date: 19.SEP.2012 17:35:26



MAX OUTPUT POWER CH39
Date: 19.SEP.2012 17:42:50

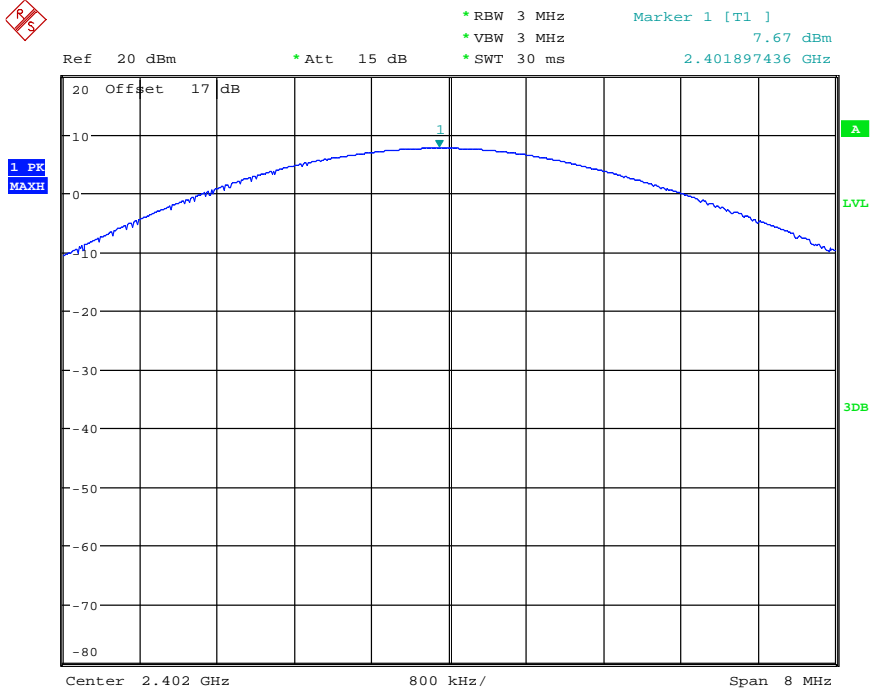


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



MAX OUTPUT POWER CH78
Date: 19.SEP.2012 18:06:22

Mode E

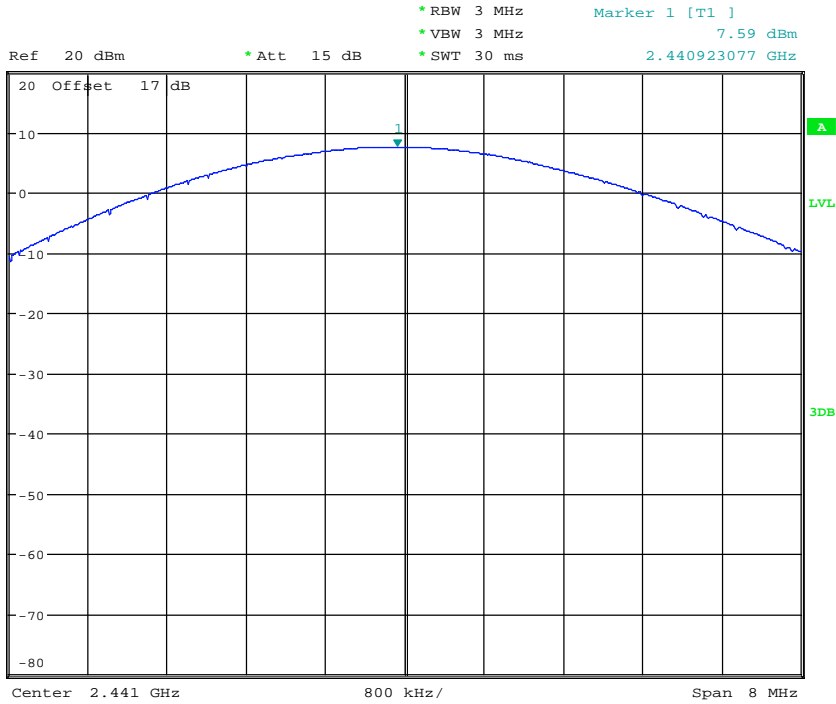


MAX OUTPUT POWER CH0 EDR MODE
Date: 19.SEP.2012 18:54:02

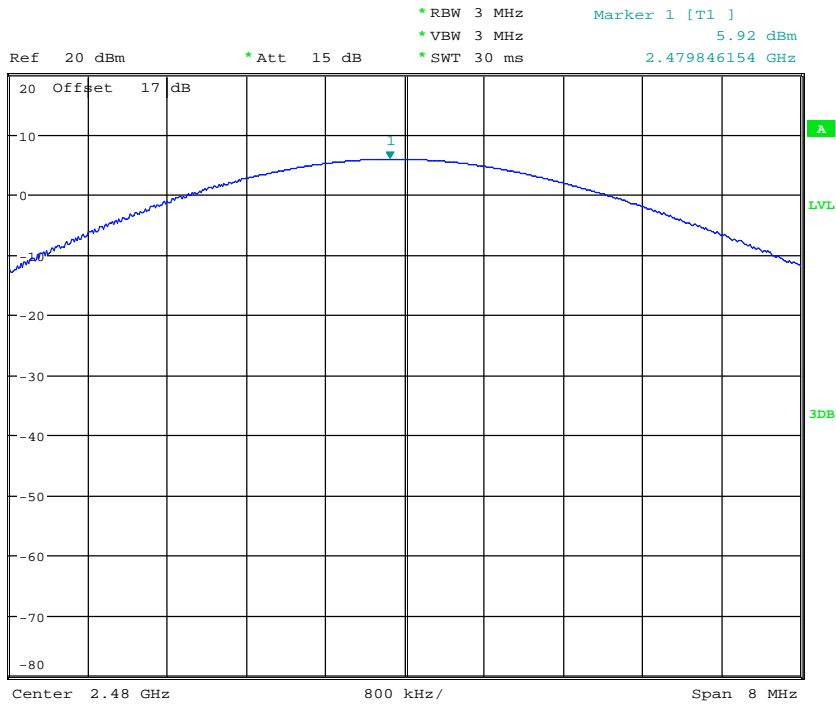


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



MAX OUTPUT POWER CH39 EDR MODE
Date: 19.SEP.2012 19:03:22



MAX OUTPUT POWER CH78 EDR MODE
Date: 19.SEP.2012 19:10:26



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Limits:

Frequency MHz	Power dBm
902 - 928	30
2400 – 2483.5	30
5725 – 5850	30

In case of employing transmitter antennas having antenna gain > 6 dBi and using fixed point-to point operation consider §15.247 (b)(4)

Test equipment used: ETSTW-RE 055, ETSTW-RE 050, ETSTW-RE 073, ETSTW-RE 074,
ETSTW-RE 064



Registration number: W6M21209-12715-C-1
 FCC ID: XNA-WS-30

3.2 RF Exposure Compliance Requirements

FCC OET Bulletin 65 Edition 97.01 determines the equations for predicting RF fields and applicable limits.

The prediction for power density in the far-field but will over-predict power density in the near field, where it could be used for walking a “worst case” or conservative prediction.

$$S = \frac{PG}{4 \pi R^2}$$

- S – Power Density
- P – Output power ERP
- R – Distance
- D – Cable Loss
- AG – Antenna Gain

WLAN 802.11b/g/n 20MHz

Item	Unit	Value	Remarks
P	mW	71.12	Peak value
D	dB		
AG	dBi	3.3	
G		2.1379	Calculated Value
R	cm	20	Assumed value
S	mW/cm ²	0.0302	Calculated value

Bluetooth Normal+EDR

Item	Unit	Value	Remarks
P	mW	5.84	Peak value
D	dB		
AG	dBi	3.3	
G		2.1379	Calculated Value
R	cm	20	Assumed value
S	mW/cm ²	0.0024	Calculated value

Limits:

Limit for General Population / Uncontrolled Exposure	
Frequency (MHz)	Power Density (mW/cm ²)
1500 – 100.000	1.0



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

3.3 Transmitter Radiated Emissions in Restricted Bands

FCC Rules: 15.247 (c), 15.205, 15.209, 15.35

Radiated emission measurements were performed from 30 MHz to 26500 MHz.

For radiated emission tests, the analyzer setting was as followings:

Frequency \leq 1 GHz, RBW:100 kHz, VBW: 100 kHz (Peak measurements)

Frequency $>$ 1 GHz, RBW: 1 MHz, VBW: 1 MHz (Peak measurements)

Frequency $>$ 1 GHz , RBW:1 MHz , VBW: 10 Hz (Average measurements)

Limits.

For frequencies below 1GHz:

Frequency of Emission (MHz)	Field strength (microvolts/meter)	Field Strength (dB microvolts/meter)
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above	500	54.0

For frequencies above 1GHz (Average measurements).

Guidance on Measurement of Digit Transmission Systems:

“If the emission is pulsed, modify the unit for continuous operation, use the setting shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.”

The correction factor, based on the total channel dwell time in a 100 ms period, may be mathematically applied to a measurement made with an average detector, to further reduce the value.

Duty cycle correction = $20 \log (\text{dwell time}/ 100\text{ms})$

Note: No duty cycle correction was added to the reading of this EUT.

Explanation: See attached diagrams in Appendix.



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FCC ID: XNA-WS-30

3.4 Spurious Emissions (tx)

Spurious emission was measured with modulation (declared by manufacturer).

In any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB 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. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c))

FCC Rule: 15.247(c), 15.35

For out of band emissions that are close to or that exceed the 20 dB attenuation requirement described in the specification, radiated measurements were performed at a 3 m separation distance to determine whether these emissions complied with the general radiated emission requirement.

Limits:

For frequencies above 1GHz (Peak measurements).

Modified Limit for peak according to 15.35 (b) = Max Permitted average Limits + 20dB

For frequencies above 1GHz (Average measurements).

Max. reading – 20dB

Max. reading – 20 dB

Guidance on Measurement of Digit Transmission Systems:

“If the emission is pulsed, modify the unit for continuous operation, use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.”

The correction factor, based on the total channel dwell time in a 100 ms period, may be mathematically applied to a measurement made with an average detector, to further reduce the value.

Duty Cycle correction = $20 \log (\text{dwell time}/100\text{ms})$

Test equipment used: ETSTW-RE 003, ETSTW-RE 030, ETSTW-RE 111,
ETSTW-RE 088, ETSTW-RE 018, ETSTW-RE 064

Note: No duty cycle correction was added to the reading of EUT.



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SAMPLE CALCULATION OF LIMIT. All results will be updated by an automatic measuring system in accordance with point 2.3.

Calculation of test results:

Such factors like antenna correction, cable loss, external attenuation etc. are already included in the provided measurement results. This is done by using validated test software and calibrated test system according the accreditation requirements.

The peak and average spurious emission plots was measured with the average limits.

In the Table being listed the critical peak and average value and exhibit the compliance with the above calculated Limits.

If in the column's correction factor states a value then the max. Field strength in the same row is corrected by a value gained from the "Correction Factor".

Summary table with radiated data of the test plots

Model: WS-30 Date: 2012/9/18
 Mode: TX 802.11b CH1 Temperature: 24 °C Engineer: Leon
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	7.84	peak	14.12	21.96	40.00	-18.04	260	100
150.5210	7.83	peak	15.07	22.90	43.50	-20.60	215	100
201.0620	21.83	peak	12.37	34.20	43.50	-9.30	110	100
267.1543	26.72	peak	14.56	41.28	46.00	-4.72	150	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4825.6510	47.38	---	-1.31	46.07	---	74.00	54.00	-27.93	40	100
7236.0000	41.63	---	4.20	45.83	---	74.00	54.00	-28.17	220	100
9648.0000	35.71	---	6.56	42.27	---	74.00	54.00	-31.73	300	100
12060.0000	33.15	---	11.56	44.71	---	74.00	54.00	-29.29	120	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4390	7.50	peak	14.12	21.62	40.00	-18.38	120	100
278.8176	17.58	peak	15.22	32.80	46.00	-13.20	310	100
407.1142	12.11	peak	18.43	30.54	46.00	-15.46	155	100
617.0541	5.53	peak	22.77	28.30	46.00	-17.70	100	100



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Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4824.0460	55.15	46.64	-1.31	53.84	45.33	74.00	54.00	-8.67	150	100
7238.4770	43.81	---	4.20	48.01	---	74.00	54.00	-25.99	230	100
9648.0000	34.45	---	6.56	41.01	---	74.00	54.00	-32.99	110	100
12060.0000	32.84	---	11.56	44.40	---	74.00	54.00	-29.60	40	100

Mode: TX 802.11b CH6

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	8.06	peak	14.12	22.18	40.00	-17.82	215	100
146.6333	8.02	peak	14.99	23.01	43.50	-20.49	240	100
201.0620	21.72	peak	12.37	34.09	43.50	-9.41	120	100
290.4810	25.45	peak	15.36	40.81	46.00	-5.19	55	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4873.7480	48.54	---	-1.15	47.39	---	74.00	54.00	-26.61	40	100
7323.0000	40.97	---	4.38	45.35	---	74.00	54.00	-28.65	110	100
9748.0000	33.97	---	6.81	40.78	---	74.00	54.00	-33.22	200	100
12185.0000	32.85	---	12.36	45.21	---	74.00	54.00	-28.79	160	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4390	8.07	peak	14.12	22.19	40.00	-17.81	110	100
197.1743	8.04	peak	12.52	20.56	43.50	-22.94	240	100
269.0982	25.63	peak	14.65	40.28	46.00	-5.72	305	100
440.1603	5.45	peak	19.31	24.76	46.00	-21.24	140	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4874.1310	56.98	46.99	-1.15	55.83	45.84	74.00	54.00	-8.16	145	100
7311.0000	42.58	---	4.33	46.91	---	74.00	54.00	-27.09	220	100
9748.0000	34.99	---	6.81	41.80	---	74.00	54.00	-32.20	250	100
12185.0000	32.64	---	12.36	45.00	---	74.00	54.00	-29.00	130	100



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
 FCC ID: XNA-WS-30

Mode: TX 802.11b CH11

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	7.75	peak	14.12	21.87	40.00	-18.13	155	100
146.6333	8.34	peak	14.99	23.33	43.50	-20.17	270	100
201.0620	22.03	peak	12.37	34.40	43.50	-9.10	110	100
278.8176	25.73	peak	15.22	40.95	46.00	-5.05	350	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4921.8440	50.18	---	-0.98	49.20	---	74.00	54.00	-24.80	120	100
7386.0000	40.82	---	4.63	45.45	---	74.00	54.00	-28.55	200	100
9848.0000	35.18	---	7.08	42.26	---	74.00	54.00	-31.74	130	100
12310.0000	32.59	---	12.38	44.97	---	74.00	54.00	-29.03	200	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
94.1483	14.73	peak	9.62	24.35	43.50	-19.15	230	100
261.3226	18.65	peak	14.27	32.92	46.00	-13.08	140	100
296.3126	16.47	peak	15.46	31.93	46.00	-14.07	215	100
428.4970	15.53	peak	19.04	34.57	46.00	-11.43	170	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4921.8440	50.65	---	-0.98	49.67	---	74.00	54.00	-24.33	260	100
7386.0000	41.84	---	4.63	46.47	---	74.00	54.00	-27.53	300	100
9848.0000	34.97	---	7.08	42.05	---	74.00	54.00	-31.95	60	100
12310.0000	33.32	---	12.38	45.70	---	74.00	54.00	-28.30	105	100

Mode: TX 802.11g CH1

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	8.11	peak	14.12	22.23	40.00	-17.77	230	100
146.6333	7.73	peak	14.99	22.72	43.50	-20.78	110	100
201.0620	22.27	peak	12.37	34.64	43.50	-8.86	145	100
284.6493	25.27	peak	15.32	40.59	46.00	-5.41	280	100



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Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4824.0000	43.44	---	-1.31	42.13	---	74.00	54.00	-31.87	230	100
7236.0000	42.94	---	4.20	47.14	---	74.00	54.00	-26.86	110	100
9648.0000	35.31	---	6.56	41.87	---	74.00	54.00	-32.13	230	100
12060.0000	32.87	---	11.56	44.43	---	74.00	54.00	-29.57	40	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4390	8.03	peak	14.12	22.15	40.00	-17.85	150	100
201.0621	8.62	peak	12.37	20.99	43.50	-22.51	270	100
296.3126	19.32	peak	15.46	34.78	46.00	-11.22	110	100
607.3347	4.92	peak	22.68	27.60	46.00	-18.40	160	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4817.6350	52.56	---	-1.33	51.23	---	74.00	54.00	-22.77	230	100
7238.4770	46.68	---	4.20	50.88	---	74.00	54.00	-23.12	140	100
9648.0000	33.42	---	6.56	39.98	---	74.00	54.00	-34.02	60	100
12060.0000	33.76	---	11.56	45.32	---	74.00	54.00	-28.68	140	100

Mode: TX 802.11g CH6

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	8.18	peak	14.12	22.30	40.00	-17.70	255	100
146.6333	7.90	peak	14.99	22.89	43.50	-20.61	130	100
201.0620	21.88	peak	12.37	34.25	43.50	-9.25	140	100
278.8176	25.98	peak	15.22	41.20	46.00	-4.80	275	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4873.7480	44.26	---	-1.15	43.11	---	74.00	54.00	-30.89	230	100
7323.0000	41.03	---	4.38	45.41	---	74.00	54.00	-28.59	140	100
9748.0000	34.56	---	6.81	41.37	---	74.00	54.00	-32.63	40	100
12185.0000	32.87	---	12.36	45.23	---	74.00	54.00	-28.77	310	100



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Polarization: Vertical

Frequency (MHz)	Reading (dBUV)	Detector	Factor (dB)	Result (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4390	8.27	peak	14.12	22.39	40.00	-17.61	120	100
109.6994	9.38	peak	12.63	22.01	43.50	-21.49	140	100
253.5471	19.48	peak	14.07	33.55	46.00	-12.45	275	100
420.7214	7.71	peak	18.87	26.58	46.00	-19.42	200	100

Frequency (MHz)	Reading (dBUV)		Factor (dB) Corr.	Result @3m (dBUV/m)		Limit @3m (dBUV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4873.7480	52.24	---	-1.15	51.09	---	74.00	54.00	-22.91	200	100
7310.6210	44.99	---	4.33	49.32	---	74.00	54.00	-24.68	105	100
9748.0000	34.01	---	6.81	40.82	---	74.00	54.00	-33.18	140	100
12185.0000	32.76	---	12.36	45.12	---	74.00	54.00	-28.88	305	100

Mode: TX 802.11g CH11

Polarization: Horizontal

Frequency (MHz)	Reading (dBUV)	Detector	Factor (dB)	Result (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	8.64	peak	14.12	22.76	40.00	-17.24	90	100
146.6333	8.90	peak	14.99	23.89	43.50	-19.61	150	100
201.0620	21.35	peak	12.37	33.72	43.50	-9.78	130	100
278.8176	25.62	peak	15.22	40.84	46.00	-5.16	245	100

Frequency (MHz)	Reading (dBUV)		Factor (dB) Corr.	Result @3m (dBUV/m)		Limit @3m (dBUV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4921.8440	47.44	---	-0.98	46.46	---	74.00	54.00	-27.54	220	100
7386.0000	40.19	---	4.63	44.82	---	74.00	54.00	-29.18	300	100
9848.0000	34.65	---	7.08	41.73	---	74.00	54.00	-32.27	205	100
12310.0000	32.94	---	12.38	45.32	---	74.00	54.00	-28.68	300	100

Polarization: Vertical

Frequency (MHz)	Reading (dBUV)	Detector	Factor (dB)	Result (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4390	7.06	peak	14.12	21.18	40.00	-18.82	155	100
251.6032	21.84	peak	14.03	35.87	46.00	-10.13	240	100
276.8737	22.06	peak	15.10	37.16	46.00	-8.84	35	100
424.6092	15.51	peak	18.96	34.47	46.00	-11.53	110	100



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Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4921.8440	49.63	---	-0.98	48.65	---	74.00	54.00	-25.35	260	100
7386.0000	40.99	---	4.63	45.62	---	74.00	54.00	-28.38	300	100
9848.0000	34.69	---	7.08	41.77	---	74.00	54.00	-32.23	155	100
12310.0000	32.38	---	12.38	44.76	---	74.00	54.00	-29.24	230	100

Mode: TX 802.11n 20 MHz CH1

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	8.54	peak	14.12	22.66	40.00	-17.34	250	100
148.5772	9.23	peak	15.04	24.27	43.50	-19.23	110	100
201.0620	21.92	peak	12.37	34.29	43.50	-9.21	75	100
296.3125	26.09	peak	15.46	41.55	46.00	-4.45	300	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4817.6350	45.04	---	-1.33	43.71	---	74.00	54.00	-30.29	230	100
7236.0000	41.17	---	4.20	45.37	---	74.00	54.00	-28.63	140	100
9648.0000	34.05	---	6.56	40.61	---	74.00	54.00	-33.39	230	100
12060.0000	33.74	---	11.56	45.30	---	74.00	54.00	-28.70	110	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4390	7.91	peak	14.12	22.03	40.00	-17.97	60	100
201.0621	8.76	peak	12.37	21.13	43.50	-22.37	240	100
267.1543	20.12	peak	14.56	34.68	46.00	-11.32	175	100
704.5291	4.84	peak	23.85	28.69	46.00	-17.31	310	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4825.6510	50.28	---	-1.31	48.97	---	74.00	54.00	-25.03	140	110
7238.4770	43.59	---	4.20	47.79	---	74.00	54.00	-26.21	155	100
9648.0000	35.70	---	6.56	42.26	---	74.00	54.00	-31.74	230	100
12060.0000	34.09	---	11.56	45.65	---	74.00	54.00	-28.35	110	100



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Mode: TX 802.11n 20 MHz CH6

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	7.72	peak	14.12	21.84	40.00	-18.16	230	100
148.5772	8.83	peak	15.04	23.87	43.50	-19.63	110	100
201.0620	22.22	peak	12.37	34.59	43.50	-8.91	140	100
272.9860	27.14	peak	14.87	42.01	46.00	-3.99	260	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4873.7480	45.27	---	-1.15	44.12	---	74.00	54.00	-29.88	130	100
7311.0000	41.04	---	4.33	45.37	---	74.00	54.00	-28.63	205	100
9748.0000	34.65	---	6.81	41.46	---	74.00	54.00	-32.54	240	100
12185.0000	32.95	---	12.36	45.31	---	74.00	54.00	-28.69	130	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4390	8.07	peak	14.12	22.19	40.00	-17.81	130	100
261.3226	24.36	peak	14.27	38.63	46.00	-7.37	270	100
311.8637	18.47	peak	15.87	34.34	46.00	-11.66	145	100
426.5531	9.99	peak	19.00	28.99	46.00	-17.01	110	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4873.7480	50.14	---	-1.15	48.99	---	74.00	54.00	-25.01	205	100
7311.0000	43.20	---	4.33	47.53	---	74.00	54.00	-26.47	110	100
9748.0000	35.02	---	6.81	41.83	---	74.00	54.00	-32.17	230	100
12185.0000	32.78	---	12.36	45.14	---	74.00	54.00	-28.86	140	100

Mode: TX 802.11n 20 MHz CH11

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	7.39	peak	14.12	21.51	40.00	-18.49	250	100
146.6333	8.73	peak	14.99	23.72	43.50	-19.78	130	100
206.8938	21.04	peak	12.20	33.24	43.50	-10.26	145	100
290.4810	26.15	peak	15.36	41.51	46.00	-4.49	270	100



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Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4960.0000	41.88	---	-0.84	41.04	---	74.00	54.00	-32.96	120	100
7440.0000	41.39	---	4.56	45.95	---	74.00	54.00	-28.05	300	100
9920.0000	34.66	---	7.22	41.88	---	74.00	54.00	-32.12	230	100
12400.0000	33.73	---	12.88	46.61	---	74.00	54.00	-27.39	140	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4390	7.69	peak	14.12	21.81	40.00	-18.19	140	100
261.3226	17.78	peak	14.27	32.05	46.00	-13.95	130	100
284.6493	17.85	peak	15.32	33.17	46.00	-12.83	265	100
422.6653	7.18	peak	18.91	26.09	46.00	-19.91	155	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4921.8440	51.12	---	-0.98	50.14	---	74.00	54.00	-23.86	260	100
7386.0000	42.67	---	4.63	47.30	---	74.00	54.00	-26.70	110	100
9848.0000	35.43	---	7.08	42.51	---	74.00	54.00	-31.49	250	100
12310.0000	33.77	---	12.38	46.15	---	74.00	54.00	-27.85	300	100

Mode: TX Bluetooth Normal CH0

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	8.03	peak	14.12	22.15	40.00	-17.85	265	100
148.5772	13.24	peak	15.04	28.28	43.50	-15.22	140	100
201.0620	26.87	peak	12.37	39.24	43.50	-4.26	235	100
272.9860	29.21	peak	14.87	44.08	46.00	-1.92	120	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4801.6030	50.10	---	-1.38	48.72	---	74.00	54.00	-25.28	210	100
7206.0000	41.80	---	4.16	45.96	---	74.00	54.00	-28.04	250	100
9608.0000	34.64	---	6.44	41.08	---	74.00	54.00	-32.92	210	100
12010.0000	32.89	---	11.23	44.12	---	74.00	54.00	-29.88	320	100



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Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	7.70	peak	14.12	21.82	40.00	-18.18	160	100
199.1182	13.70	peak	12.44	26.14	43.50	-17.36	30	100
278.8176	19.24	peak	15.22	34.46	46.00	-11.54	110	100
430.4408	13.26	peak	19.09	32.35	46.00	-13.65	155	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4804.0740	53.82	50.04	-1.38	52.44	48.66	74.00	54.00	-5.34	170	100
7206.0000	42.03	---	4.16	46.19	---	74.00	54.00	-27.81	230	100
9608.0000	34.82	---	6.44	41.26	---	74.00	54.00	-32.74	220	100
12010.0000	32.38	---	11.23	43.61	---	74.00	54.00	-30.39	300	100

Mode: TX Bluetooth Normal CH39

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	7.43	peak	14.12	21.55	40.00	-18.45	265	100
150.5210	13.66	peak	15.07	28.73	43.50	-14.77	230	100
201.0620	27.67	peak	12.37	40.04	43.50	-3.46	130	100
278.8176	28.72	peak	15.22	43.94	46.00	-2.06	175	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4881.7640	45.72	---	-1.13	44.59	---	74.00	54.00	-29.41	230	100
7323.0000	39.62	---	4.38	44.00	---	74.00	54.00	-30.00	40	100
9764.0000	34.95	---	6.83	41.78	---	74.00	54.00	-32.22	230	100
12205.0000	33.18	---	12.44	45.62	---	74.00	54.00	-28.38	140	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	7.50	peak	14.12	21.62	40.00	-18.38	110	100
201.0621	14.70	peak	12.37	27.07	43.50	-16.43	145	100
271.0421	20.41	peak	14.76	35.17	46.00	-10.83	260	100
300.2004	19.51	peak	15.53	35.04	46.00	-10.96	130	100



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Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4882.0590	53.73	49.88	-1.13	52.60	48.75	74.00	54.00	-5.25	153	100
7323.0000	41.22	---	4.38	45.60	---	74.00	54.00	-28.40	205	100
9764.0000	35.57	---	6.83	42.40	---	74.00	54.00	-31.60	30	100
12205.0000	33.27	---	12.44	45.71	---	74.00	54.00	-28.29	210	100

Mode: TX Bluetooth Normal CH78

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	7.63	peak	14.12	21.75	40.00	-18.25	160	100
148.5772	12.86	peak	15.04	27.90	43.50	-15.60	240	100
201.0620	28.10	peak	12.37	40.47	43.50	-3.03	270	100
274.9297	29.20	peak	14.99	44.19	46.00	-1.81	130	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4953.9080	46.11	---	-0.86	45.25	---	74.00	54.00	-28.75	310	100
7440.0000	41.99	---	4.56	46.55	---	74.00	54.00	-27.45	220	100
9920.0000	34.29	---	7.22	41.51	---	74.00	54.00	-32.49	250	100
12400.0000	32.15	---	12.88	45.03	---	74.00	54.00	-28.97	175	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	7.59	peak	14.12	21.71	40.00	-18.29	155	100
201.0621	14.29	peak	12.37	26.66	43.50	-16.84	130	100
261.3226	23.65	peak	14.27	37.92	46.00	-8.08	145	100
418.7776	9.64	peak	18.81	28.45	46.00	-17.55	120	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4961.9240	52.26	---	-0.83	51.43	---	74.00	54.00	-22.57	230	100
7440.0000	41.35	---	4.56	45.91	---	74.00	54.00	-28.09	110	100
9920.0000	35.19	---	7.22	42.41	---	74.00	54.00	-31.59	310	100
12400.0000	33.23	---	12.88	46.11	---	74.00	54.00	-27.89	260	100



Registration number: W6M21209-12715-C-1
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Note

- 1. Correction Factor = Antenna factor + Cable loss - Preamplifier**
- 2. The formula of measured value as: Test Result = Reading + Correction Factor**
- 3. Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average**
- 4. All not in the table noted test results are more than 20 dB below the relevant limits.**
- 5. Measurement uncertainty for 3m measurement: 30-1000 MHz = ± 3.72 dB, 1-18 GHz = ± 5.56 dB, 18-40 GHz = ± 3.46 dB ; Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.**
- 6. See attached diagrams in appendix.**

TEST RESULT (Transmitter): The unit DOES meet the FCC requirements.

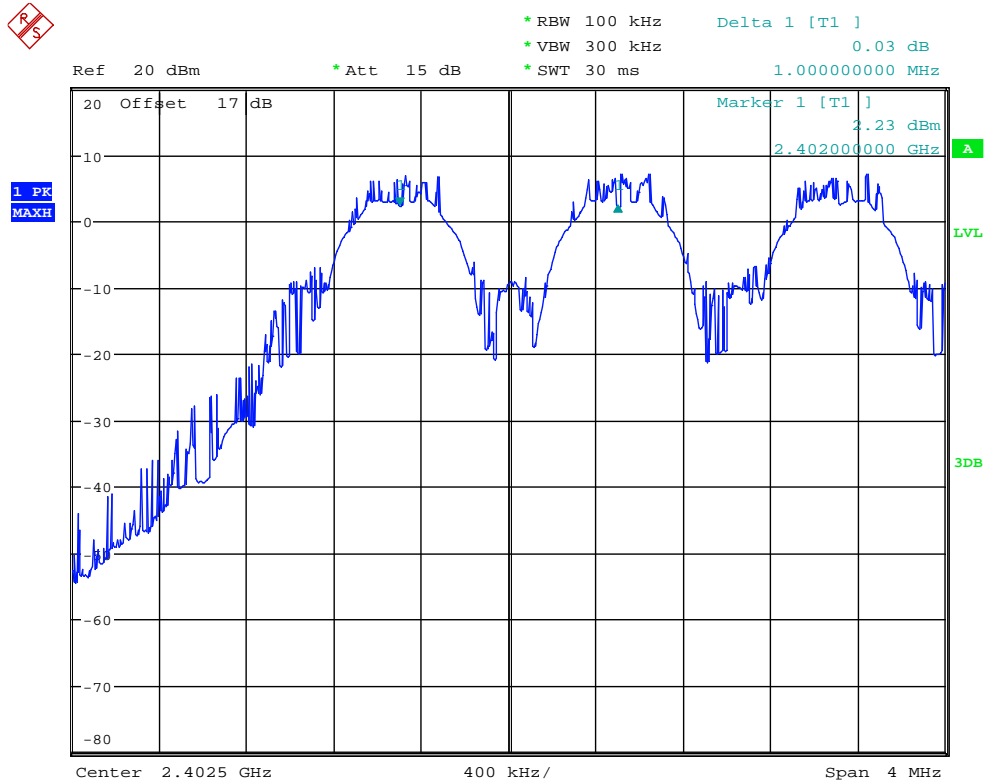
Test equipment used: ETSTW-RE 003, ETSTW-RE 030, ETSTW-RE 111,
ETSTW-RE 088, ETSTW-RE 018, ETSTW-RE 064



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

3.5 Carrier Frequency Separation

Carrier Frequency Separation was measured with modulation (declared by manufacturer). According to FCC rules part 15 subpart C §15.247 frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or 20 dB bandwidth of the hopping channel, whichever is greater.

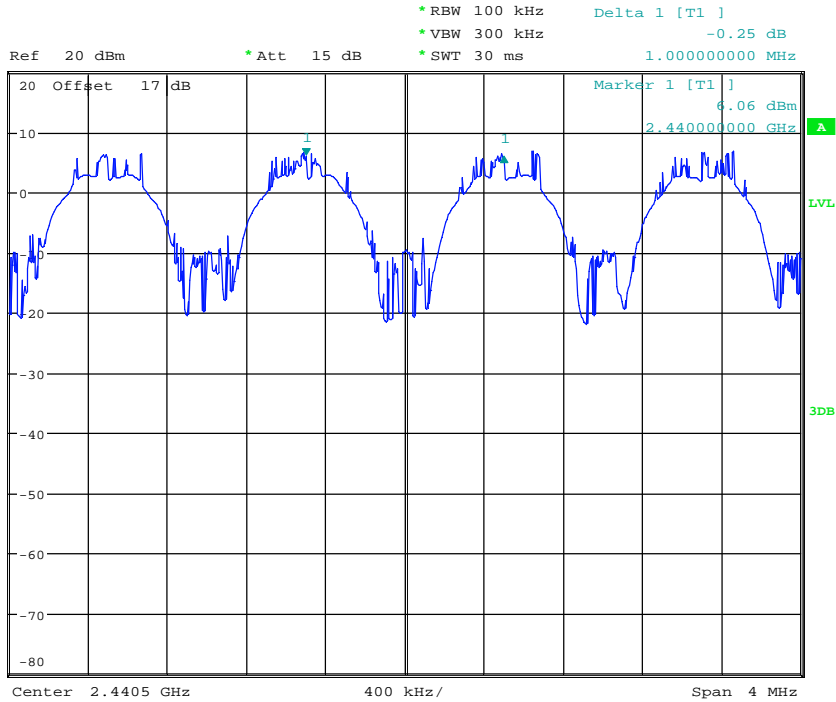


FREQUENCY SEPARATION CH0
Date: 19.SEP.2012 18:26:42

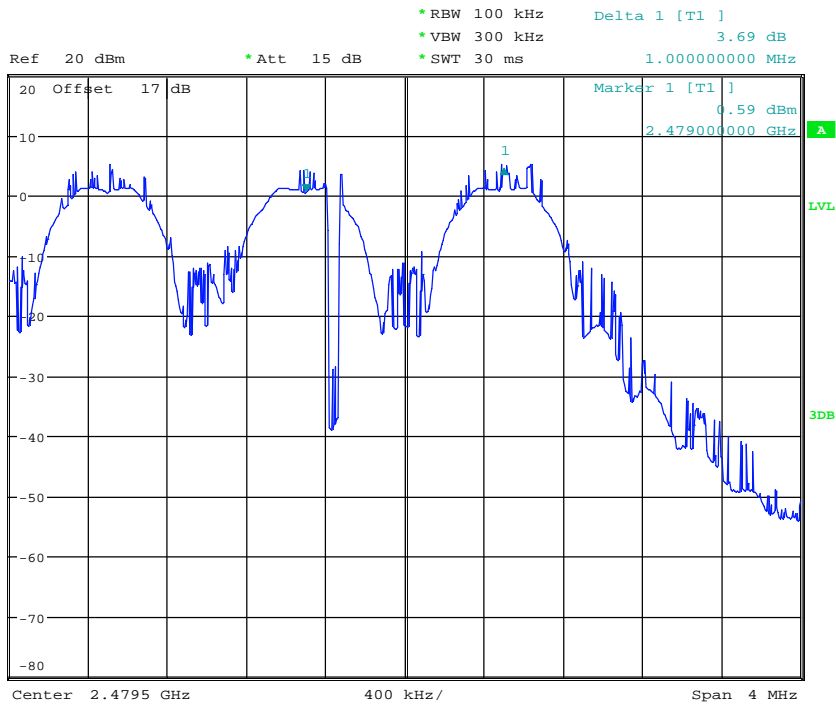


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



FREQUENCY SEPARATION CH39
Date: 19.SEP.2012 18:27:26



FREQUENCY SEPARATION CH78
Date: 19.SEP.2012 18:28:14



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Limits:

Frequency Range MHz	Limits	
	20 dB bandwidth < 25 kHz	20 dB bandwidth > 25 kHz
902-928	25 kHz	20 dB bandwidth
2400-2483.5 5725-5850.0	25 kHz	20 dB bandwidth

Test equipment used: ETSTW-RE 055, ETSTW-RE 064

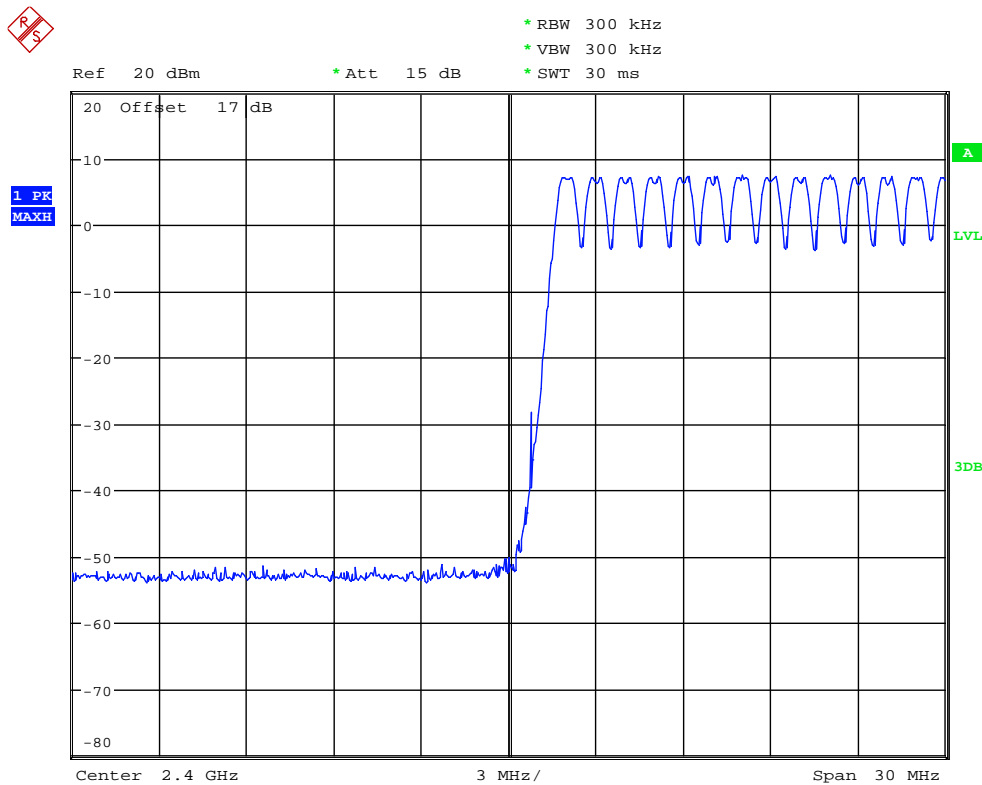


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

3.6 Number of Hopping Frequencies

According to FCC rules part 15 subpart C §15.247 frequency hopping systems operating in the 2400-2483.5 MHz band shall use at least 15 hopping frequencies. Frequency hopping systems in 5725-5850 MHz bands shall use at least 75 hopping frequencies.

For frequency hopping systems operating in the 902-928 MHz band: if the 20dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies; if the 20dB bandwidth of the hopping channel 250 kHz or greater, the system shall use at least 25 hopping frequencies.



NUMBER OF HOPPING CH0-13
Date: 19.SEP.2012 18:23:58



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Limits:

Frequency Range MHz	Limit	
	20dB Bandwidth	Number of Channels
902-928 MHz	Bandwidth < 250 kHz	≥ 50
	Bandwidth ≥ 250 kHz	≥ 25
2400-2483.5	not defined	15
5725-5850.0 MHz	1 MHz	75

Test equipment used: ETSTW-RE 055, ETSTW-RE 064

3.6.1 Pseudorandom Frequency Hopping Sequence

The generation of the hopping sequence is determined by the Bluetooth cord specification and complies with the FCC requirements.

3.6.2 Coordination of hopping sequences to other transmitters

According to the Bluetooth core specification such a coordination is not possible. During scatternet function only one of the two hopping sequences will be used at a definite moment.

3.6.3 System Receiver Hopping Capability

According to the Bluetooth core specification. The system receivers shift frequencies in synchronization with the transmitted signals.



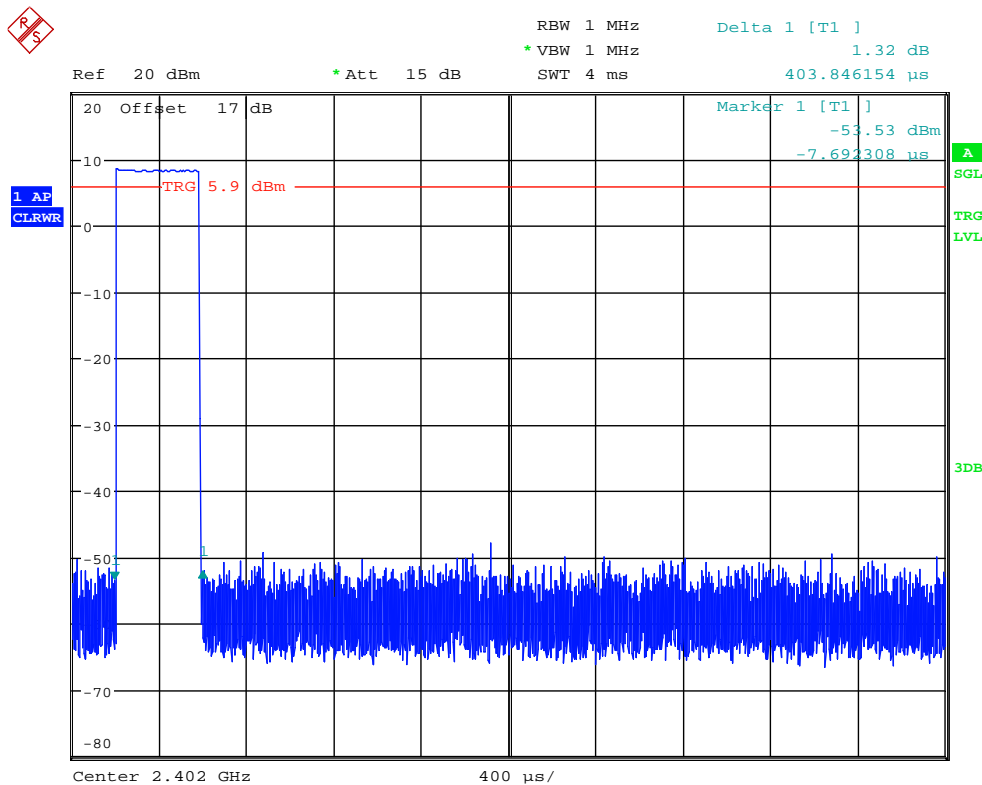
Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

3.7 Time of Occupancy (Dwell Time)

Frequency hopping systems operating in the 5725-5850 MHz band shall use an average time of occupancy on any frequency not greater than 0.4 seconds within a 30 second period.

In 2400-2483.5 MHz band the average time of occupancy on any channel shall not be greater than 0.4 seconds multiplied by the number of hopping channels employed.

For frequency hopping systems operating in the 902-928 MHz band: if the 20dB bandwidth of the hopping channel is less than 250 kHz, the average time of occupancy on any frequency shall not greater than 0.4 seconds within a 20 second period; if the 20dB bandwidth of the hopping channel is 250 kHz or greater, the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.

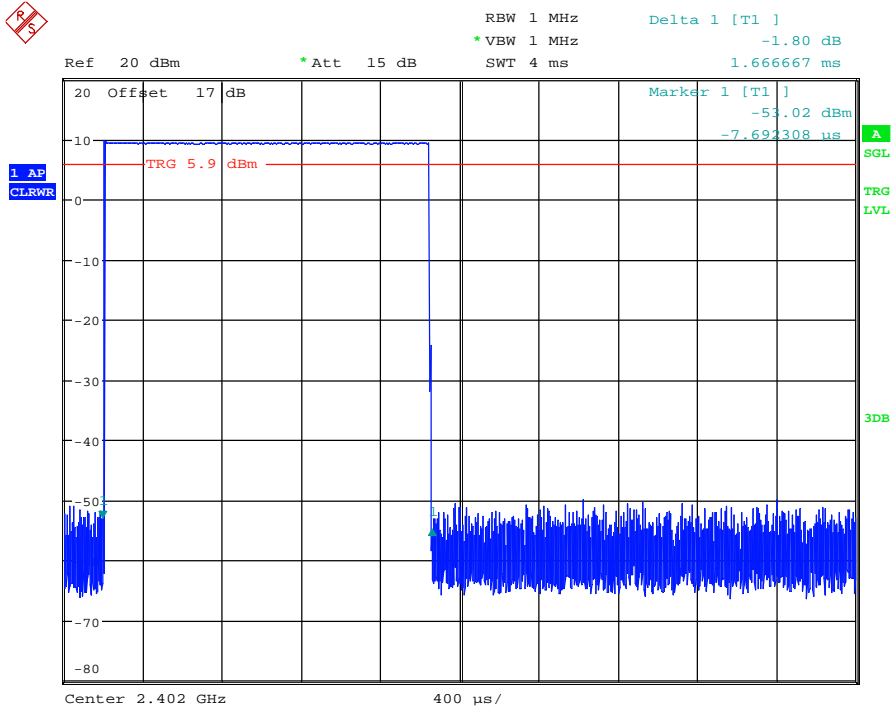


DWELL TIME CH0 DH1 (0.403ms * 320event = 128.96ms)

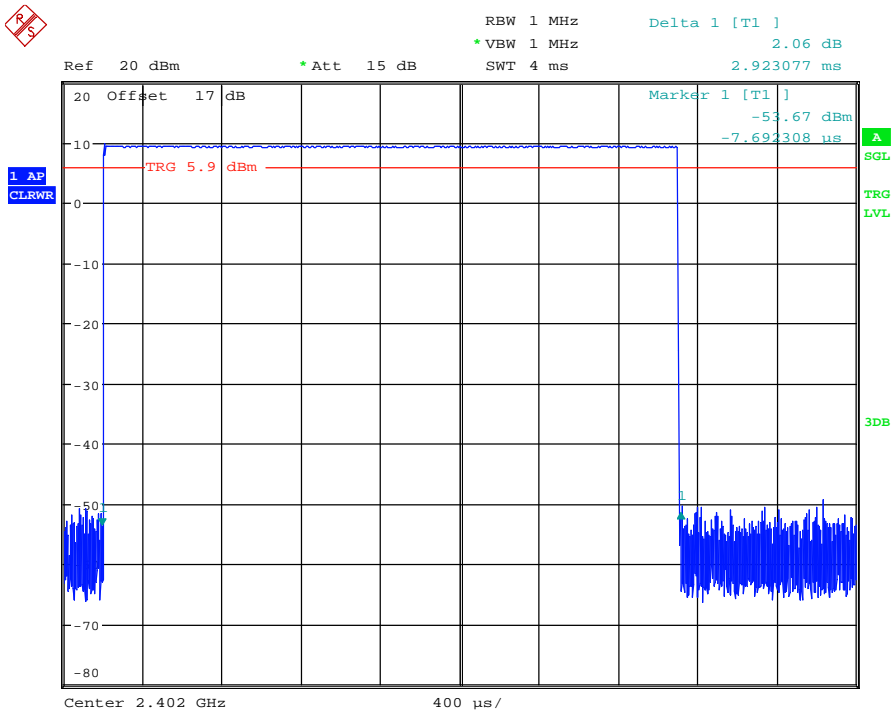
Date: 19.SEP.2012 13:58:31



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



DWELL TIME CH0 DH3 (1.666ms * 160event = 266.56ms)
Date: 19.SEP.2012 14:01:39

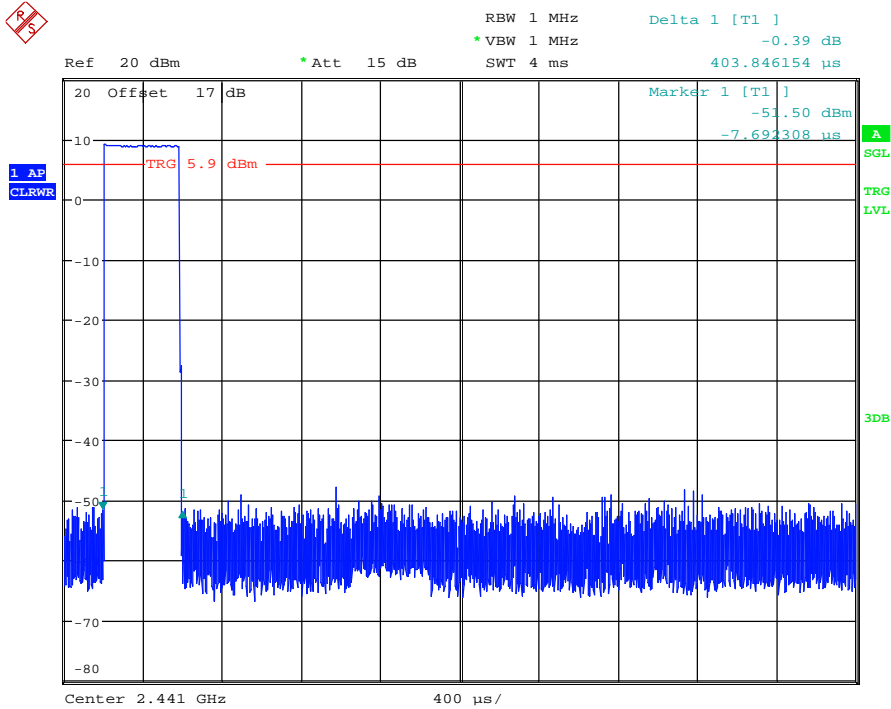


DWELL TIME CH0 DH5 (2.923ms * 110event = 321.53ms)
Date: 19.SEP.2012 14:03:09

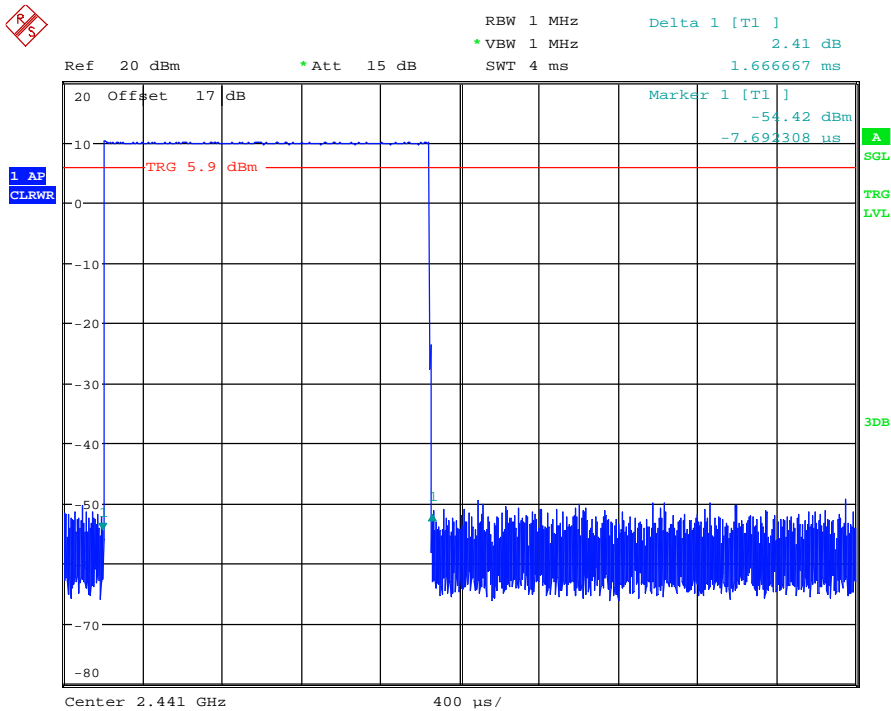


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



DWELL TIME CH39 DH1 (0.403ms * 320event = 128.96ms)
Date: 19.SEP.2012 13:58:59

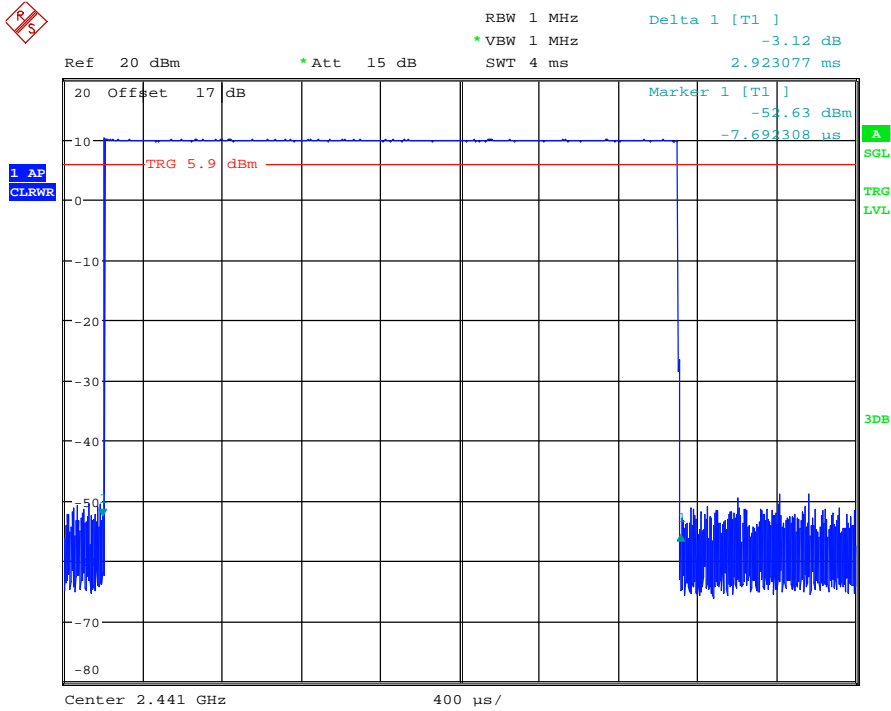


DWELL TIME CH39 DH3 (1.666ms * 160event = 266.56ms)
Date: 19.SEP.2012 14:01:11

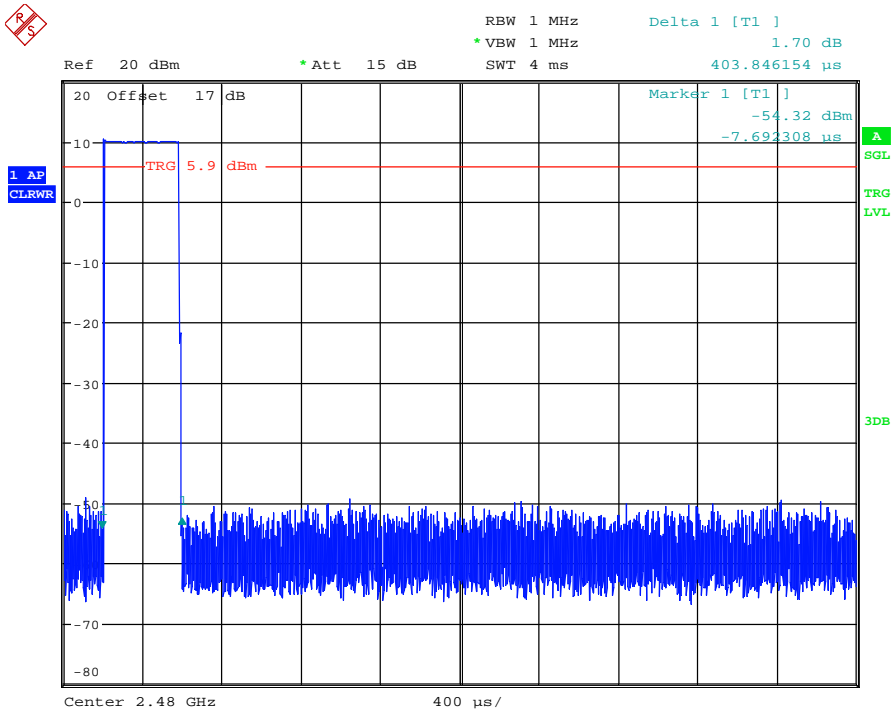


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



DWELL TIME CH39 DH5 (2.923ms * 110event = 321.53ms)
Date: 19.SEP.2012 14:03:32

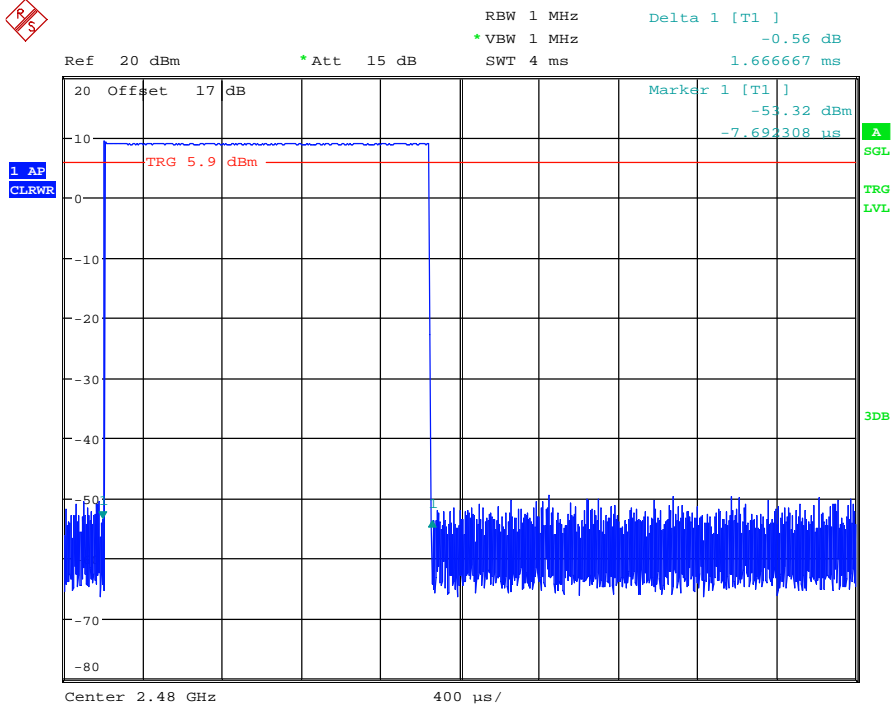


DWELL TIME CH78 DH1 (0.403ms * 320event = 128.96ms)
Date: 19.SEP.2012 13:59:21

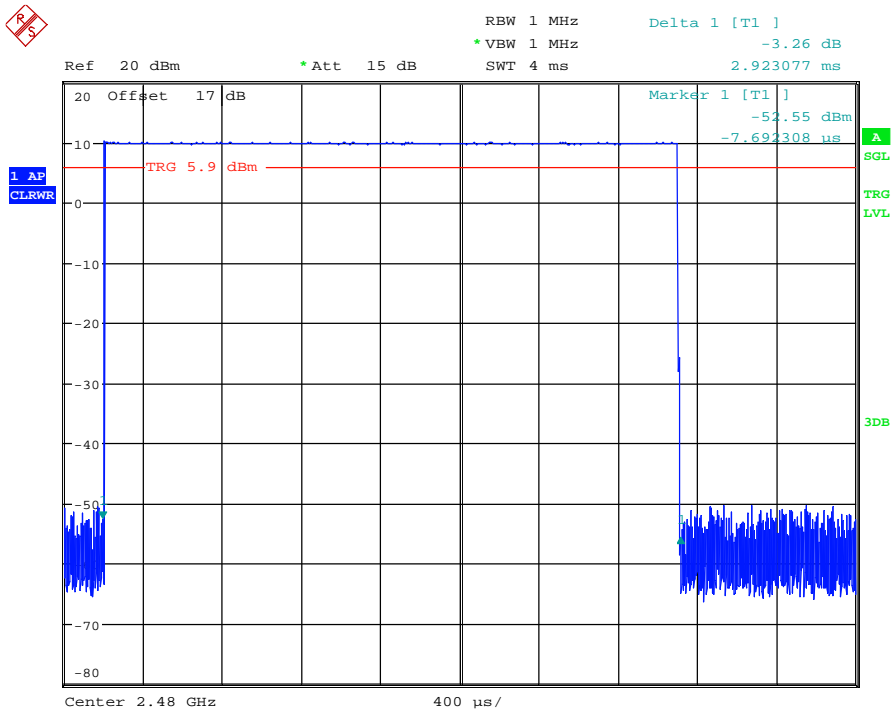


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



DWELL TIME CH78 DH3 (1.666ms * 160event = 266.56ms)
Date: 19.SEP.2012 14:00:39



DWELL TIME CH78 DH5 (2.923ms * 110event = 321.53ms)
Date: 19.SEP.2012 14:03:56



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Limits and measurement periods:

Frequency MHz	Number of channels	Measurement Periode	Limit
902 – 928	≥ 50	20 s	0.4 s
	$49 \geq 25$	10 s	0.4 s
2400 – 2483.5	≥ 15	0.4 s * number of used channels	0.4 s
5725- 5850	≥ 75	30 s	0.4s

Test equipment used: ETSTW-RE 055, ETSTW-RE 064



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

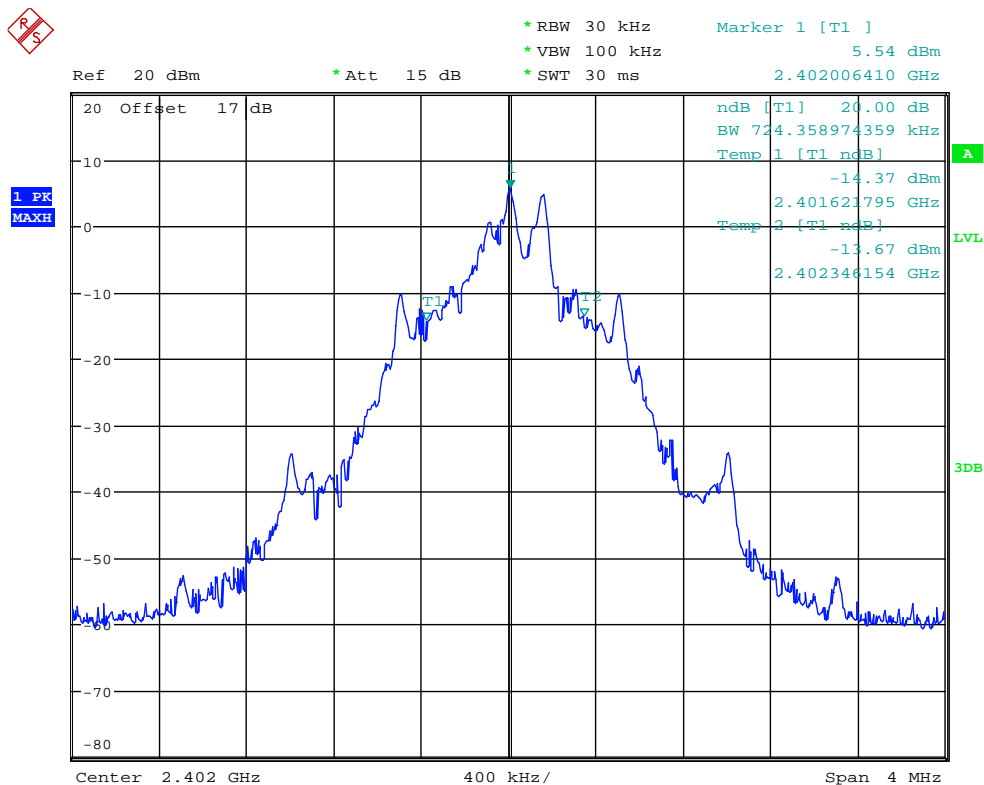
3.8 20dB Bandwidth

Frequency hopping systems operating in the 5725-5850 MHz bands shall use a maximum 20dB bandwidth of 1 MHz.

The 20dB bandwidth is measured on the lowest, middle and highest hopping channel.

For frequency hopping systems operating in the 902-928 MHz band the maximum 20dB bandwidth of the hopping channel is 500 kHz.

Mode D (Bluetooth Normal mode)

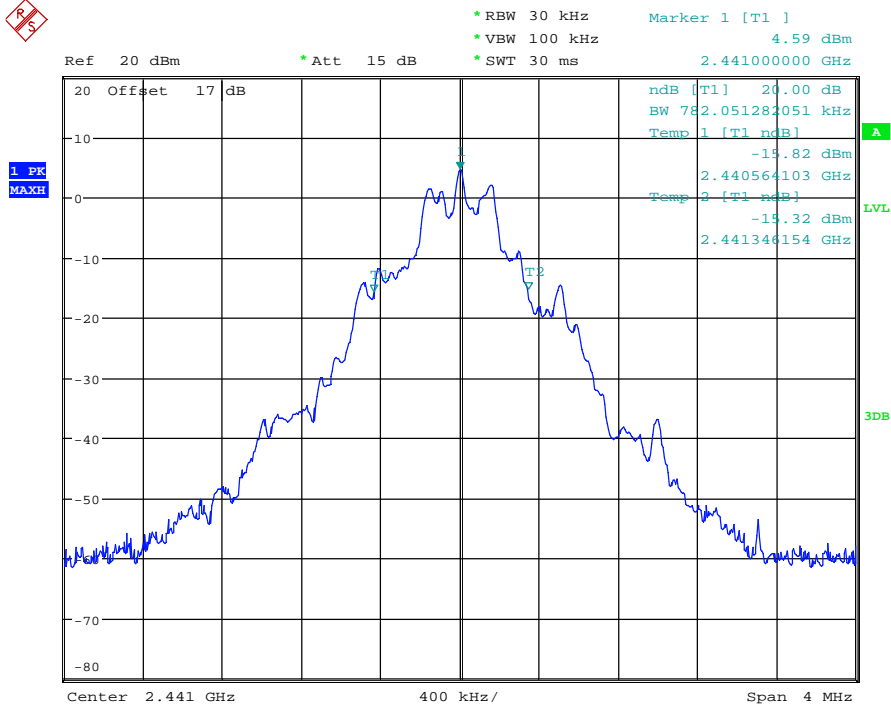


20DB BANDWIDTH CH0

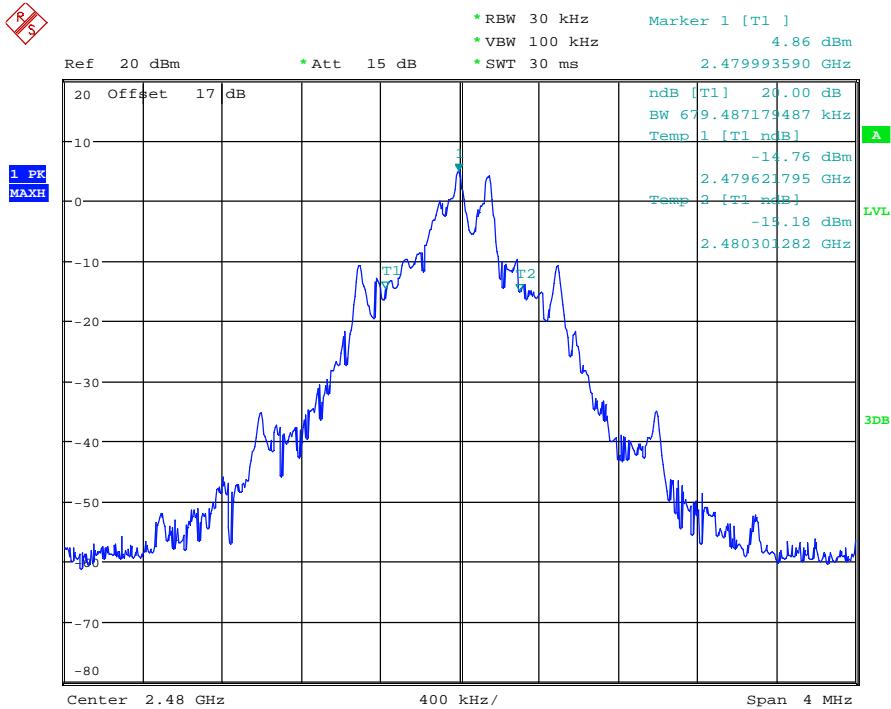
Date: 19.SEP.2012 17:35:34



Registration number: W6M21209-12715-C-1
 FCC ID: XNA-WS-30



20DB BANDWIDTH CH39
 Date: 19.SEP.2012 17:42:58

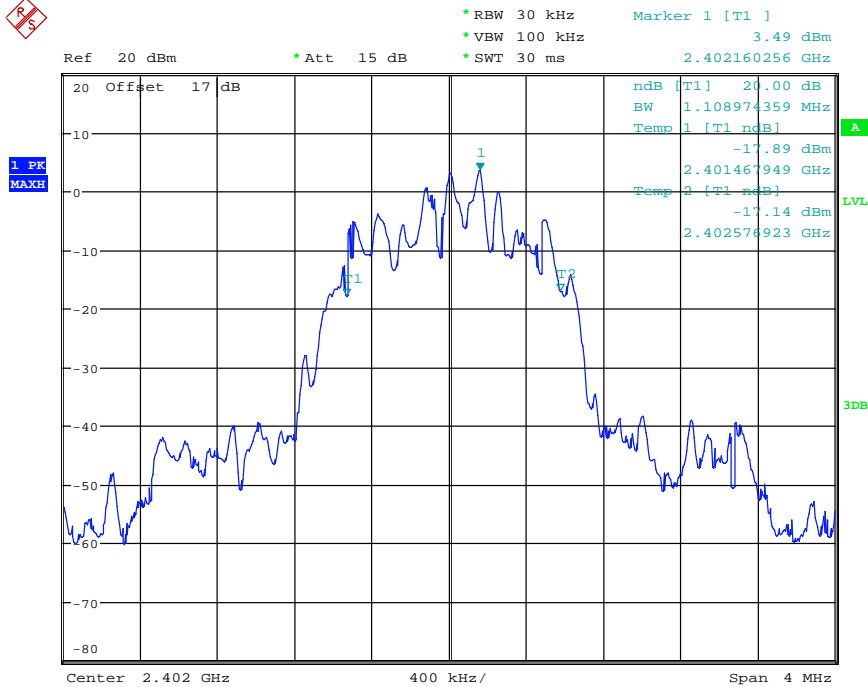


20DB BANDWIDTH CH78
 Date: 19.SEP.2012 18:06:30

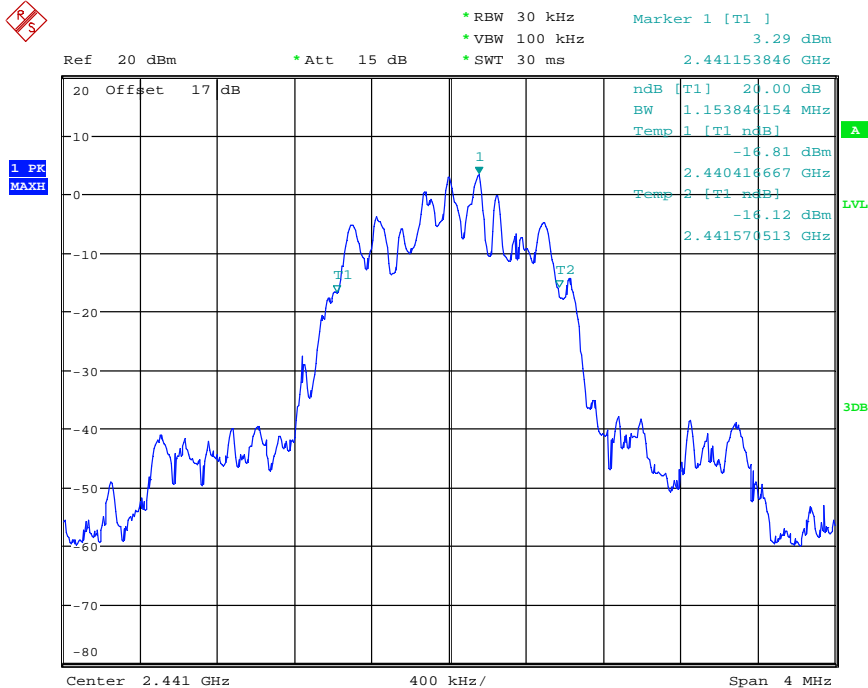


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Mode E (Bluetooth EDR mode)



20DB BANDWIDTH CH0 EDR MODE
Date: 19.SEP.2012 18:54:10



20DB BANDWIDTH CH39 EDR MODE
Date: 19.SEP.2012 19:03:30



Registration number: W6M21209-12715-C-1
 FCC ID: XNA-WS-30



20DB BANDWIDTH CH78 EDR MODE
 Date: 19.SEP.2012 19:10:34

Limits:

Frequency Range / MHz	Limit
902-928	≤ 500 kHz
2400-2483.5	not defined
5725-5850	≤ 1 MHz

Test equipment used: ETSTW-RE 055, ETSTW-RE 064

3.8.1 System Receiver Input Bandwidth

It is determined in the Bluetooth core specification. The value matches to the bandwidth of transmitter signal.

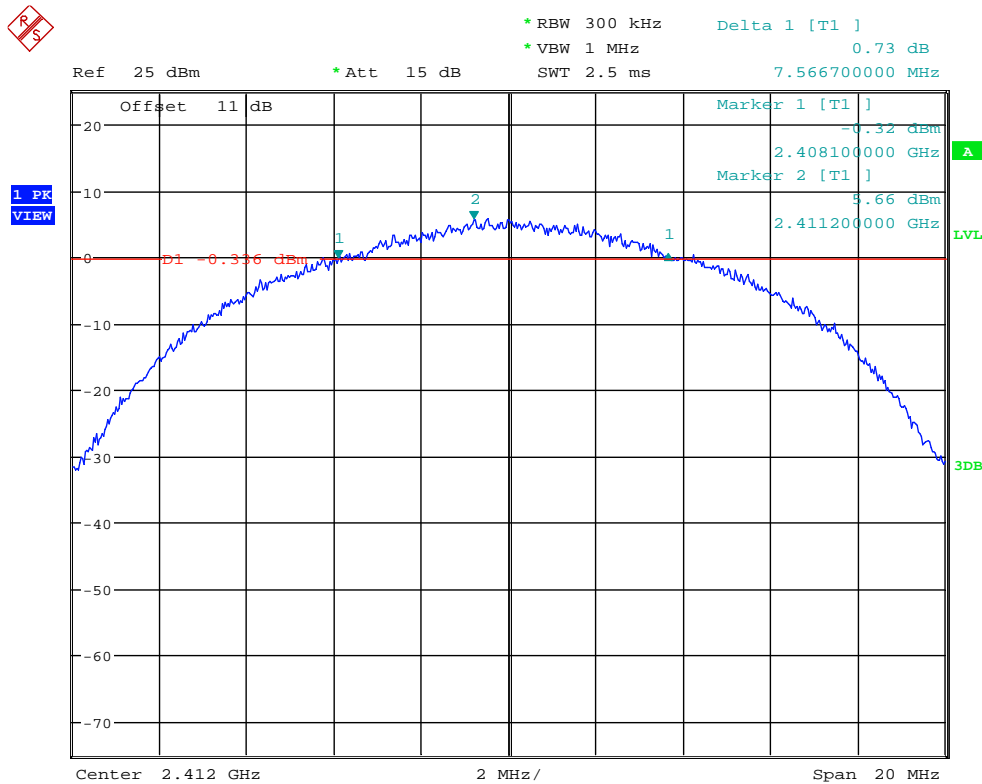


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

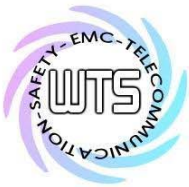
3.9 Minimum 6 dB Bandwidth

The analyzer ResBW was set to 100 kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK reading was taken, two markers were set 6 dB below the maximum level on the right and the left side of the emission. The 6 dB bandwidth is the frequency difference between the two markers.

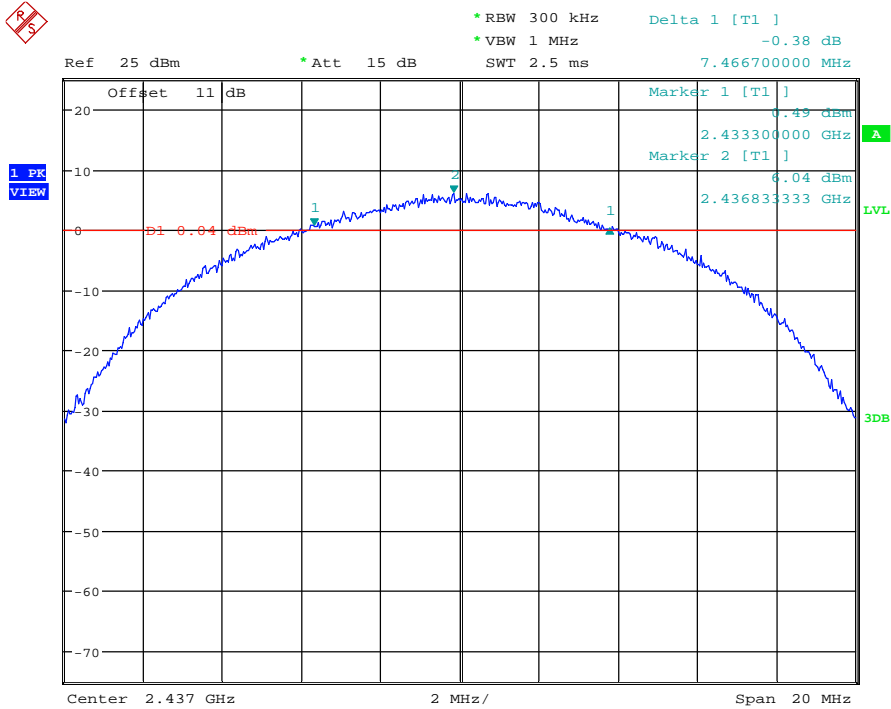
Mode A



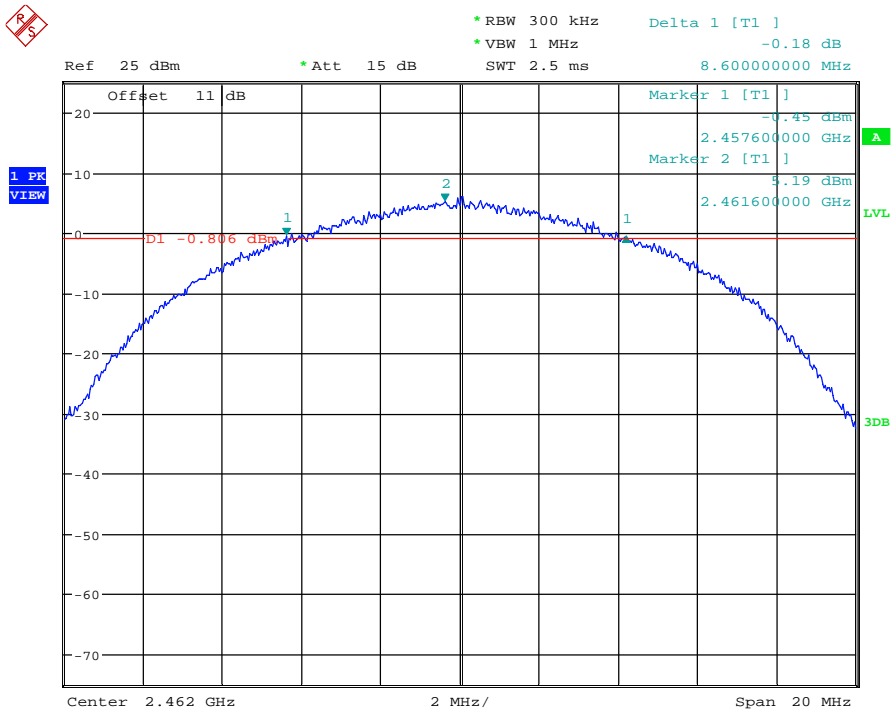
6DB BANDWIDTH 802.11B CH01
Date: 19.SEP.2012 10:42:33



Registration number: W6M21209-12715-C-1
 FCC ID: XNA-WS-30



6DB BANDWIDTH 802.11B CH06
 Date: 19.SEP.2012 11:16:52

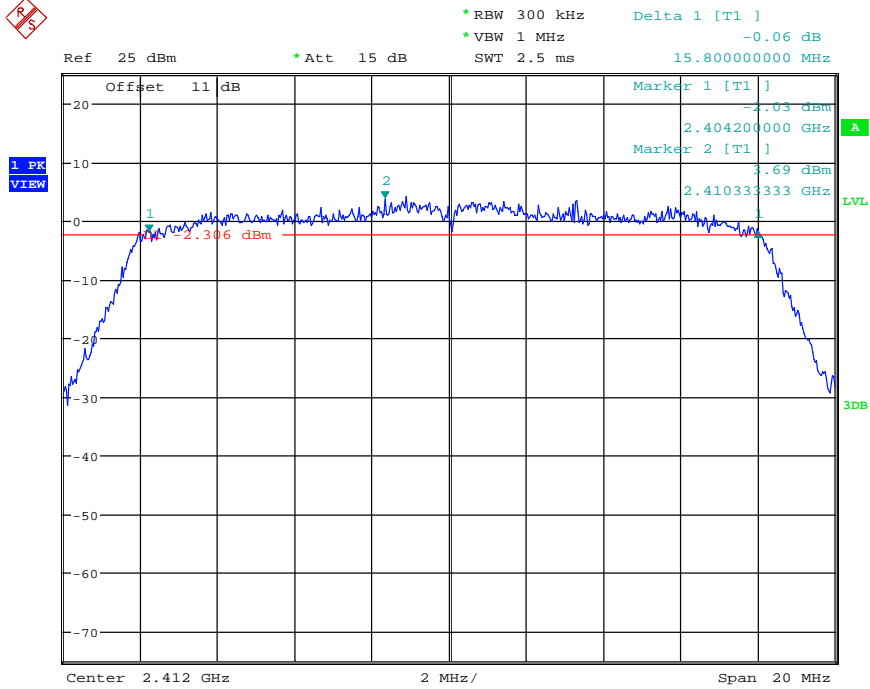


6DB BANDWIDTH 802.11B CH11
 Date: 19.SEP.2012 11:18:58

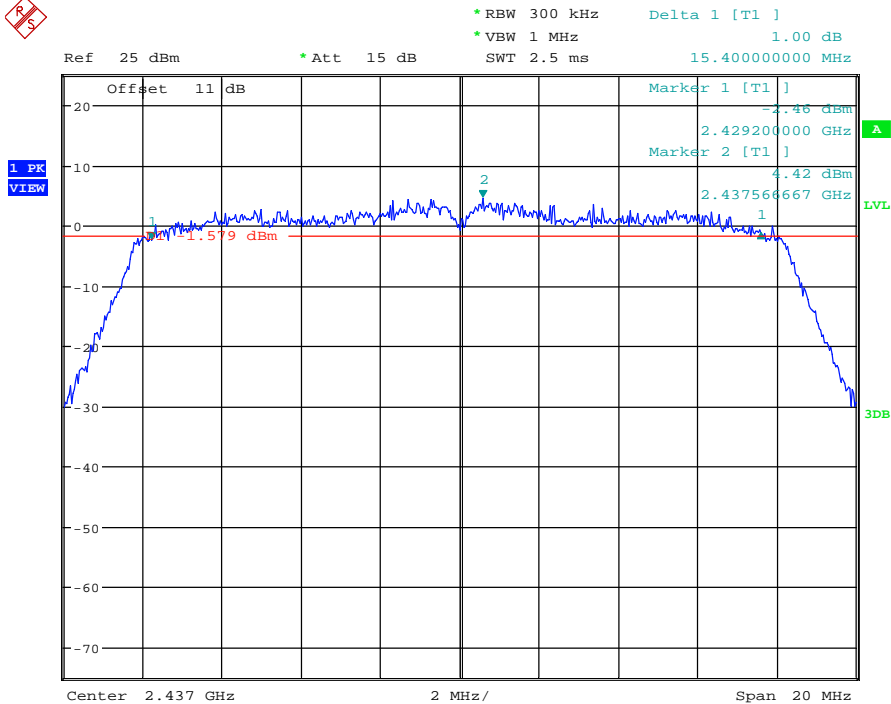


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Mode B



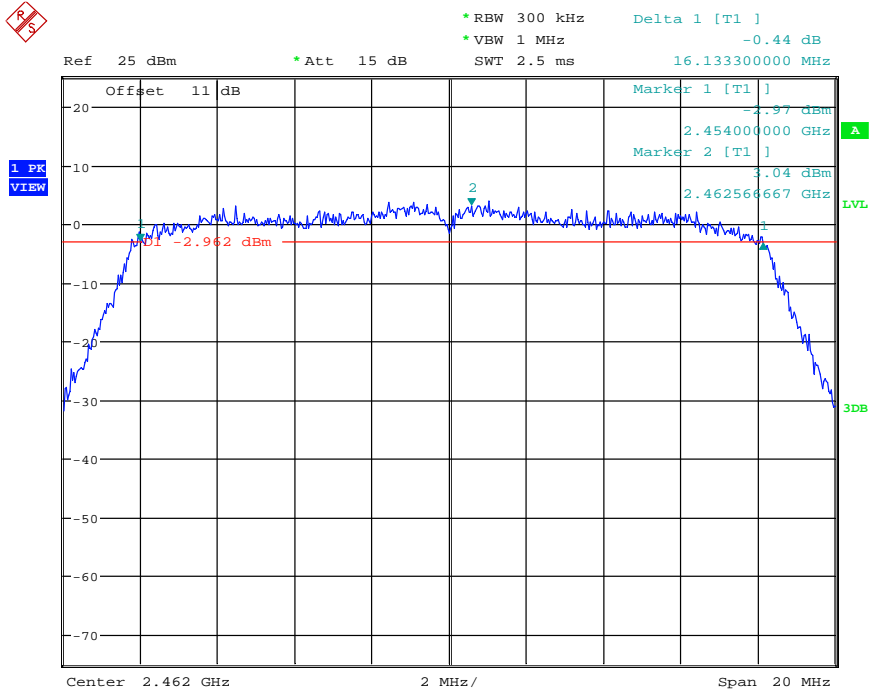
6DB BANDWIDTH 802.11G CH01
Date: 19.SEP.2012 11:21:38



6DB BANDWIDTH 802.11G CH06
Date: 19.SEP.2012 11:23:43

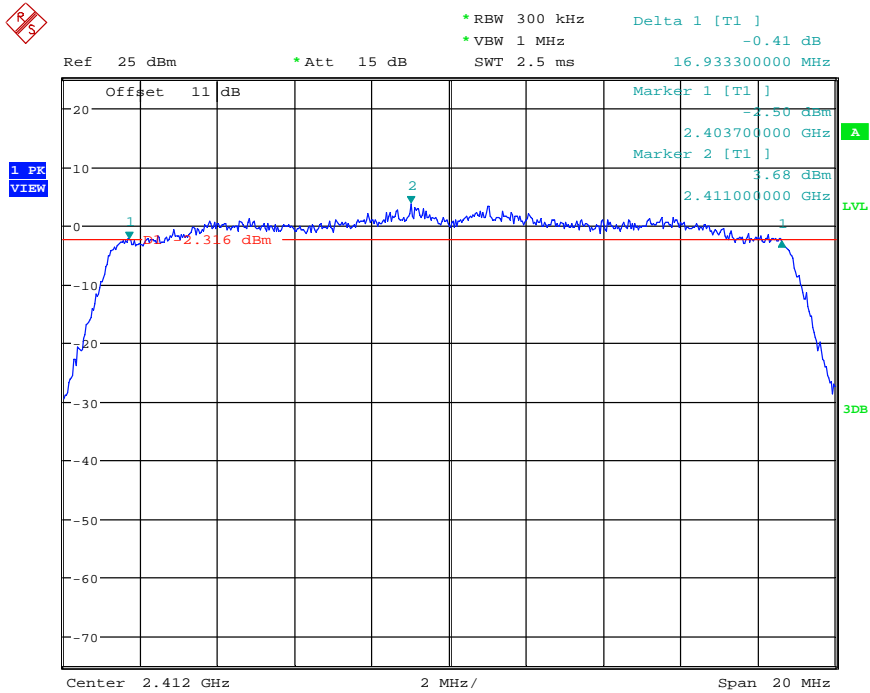


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



6DB BANDWIDTH 802.11G CH11
Date: 19.SEP.2012 11:25:55

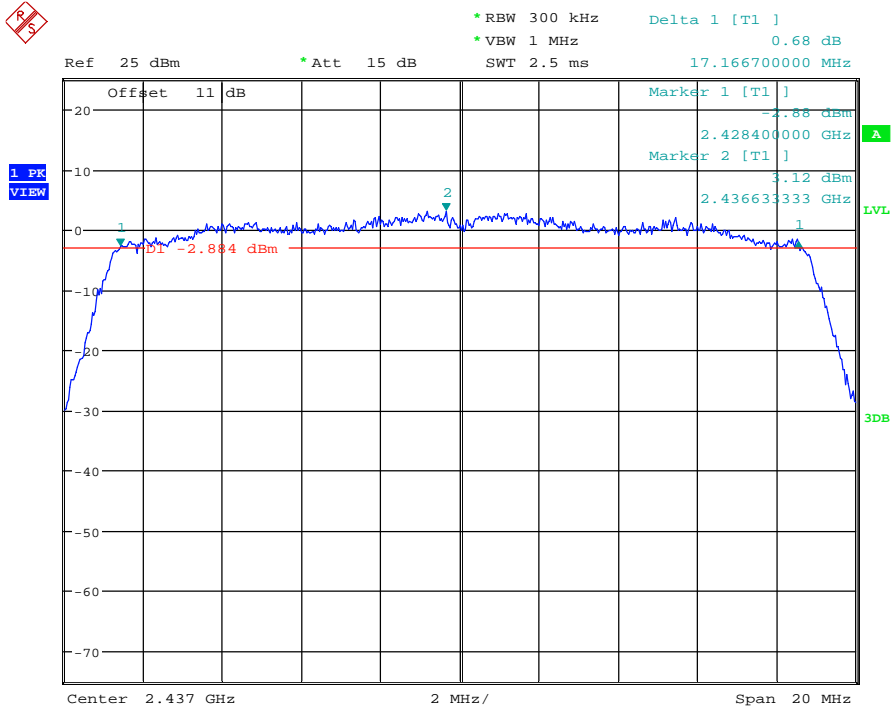
Mode C



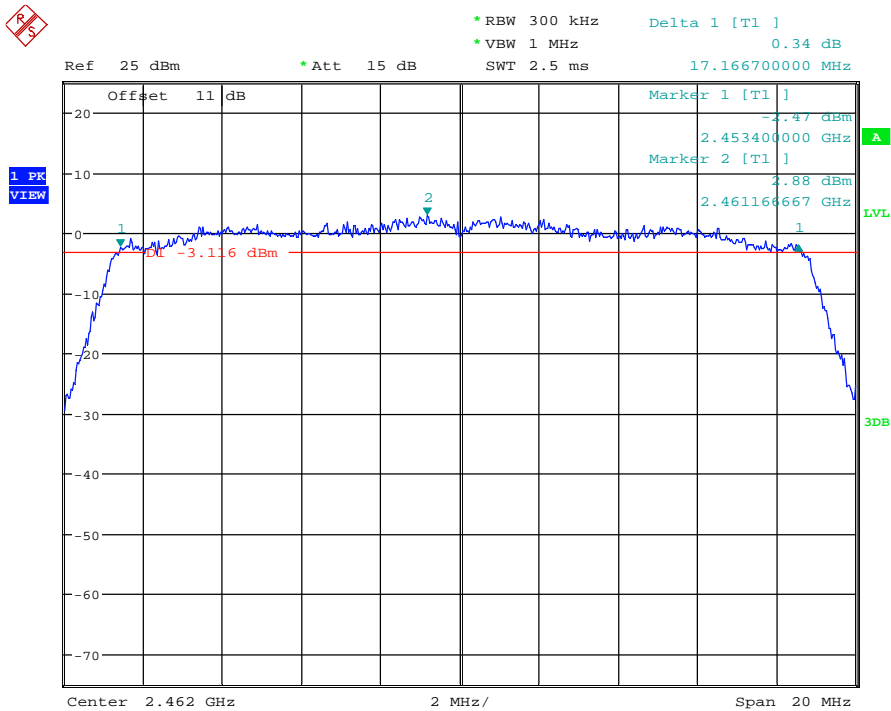
6DB BANDWIDTH 802.11N 20MHZ CH01
Date: 19.SEP.2012 11:28:44



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



6DB BANDWIDTH 802.11N 20MHZ CH06
Date: 19.SEP.2012 11:30:42



6DB BANDWIDTH 802.11N 20MHZ CH11
Date: 19.SEP.2012 11:34:15



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Limits:

Frequency Range MHz	Limits
902-928	min 500 kHz
2400-2483.5	min 500 kHz
5725-5850	min 500 kHz

Test equipment used: ETSTW-RE 055, ETSTW-RE 050



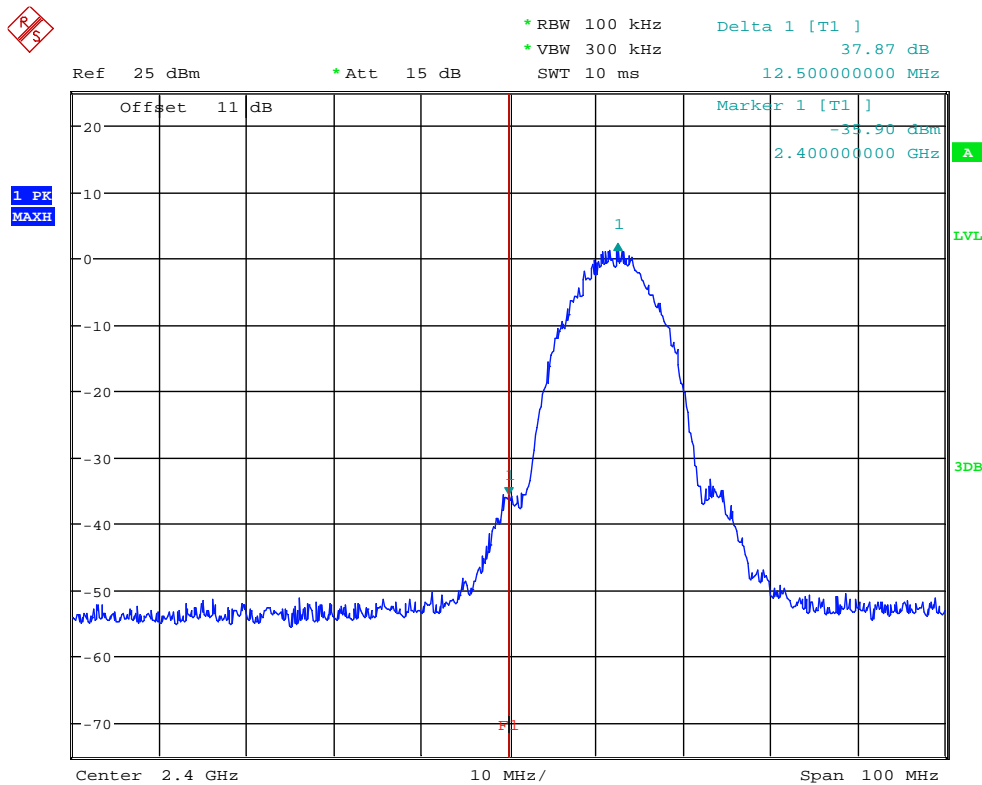
Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

3.10 Radiated Emission on the band edge

According to FCC rules part 15 subpart C §15.247(c) in any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB 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. Attenuation below the general limits specified in § 15.209(a) is not required.

In addition radiated emission which fall in the restricted bands, as defined in section 15.205(a), must also with the radiated emission limits.

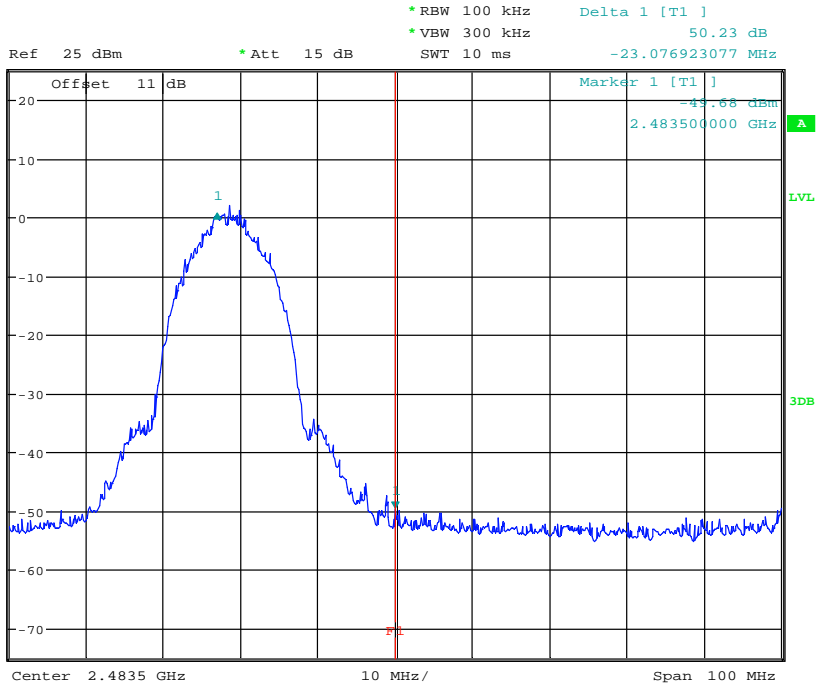
Mode A



BANDEDGE 802.11B CH01
Date: 19.SEP.2012 10:42:45

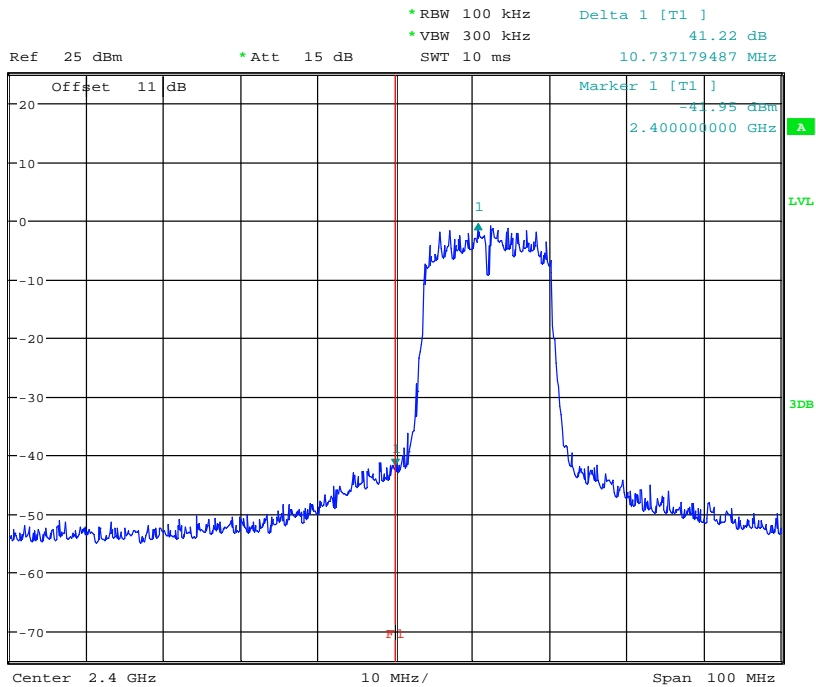


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



BANDEDGE 802.11B CH11
Date: 19.SEP.2012 11:19:10

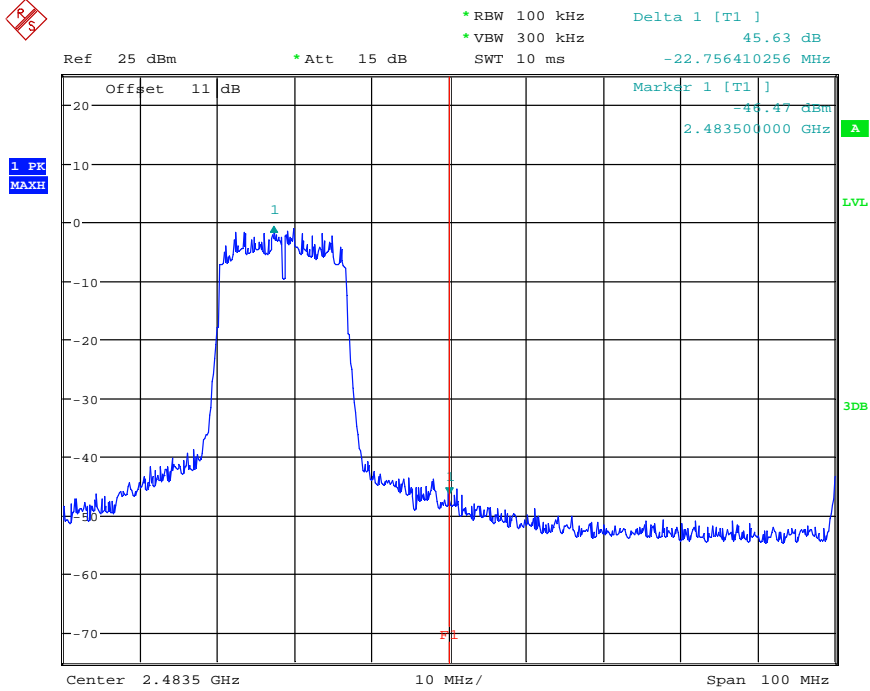
Mode B



BANDEDGE 802.11G CH01
Date: 19.SEP.2012 11:21:50

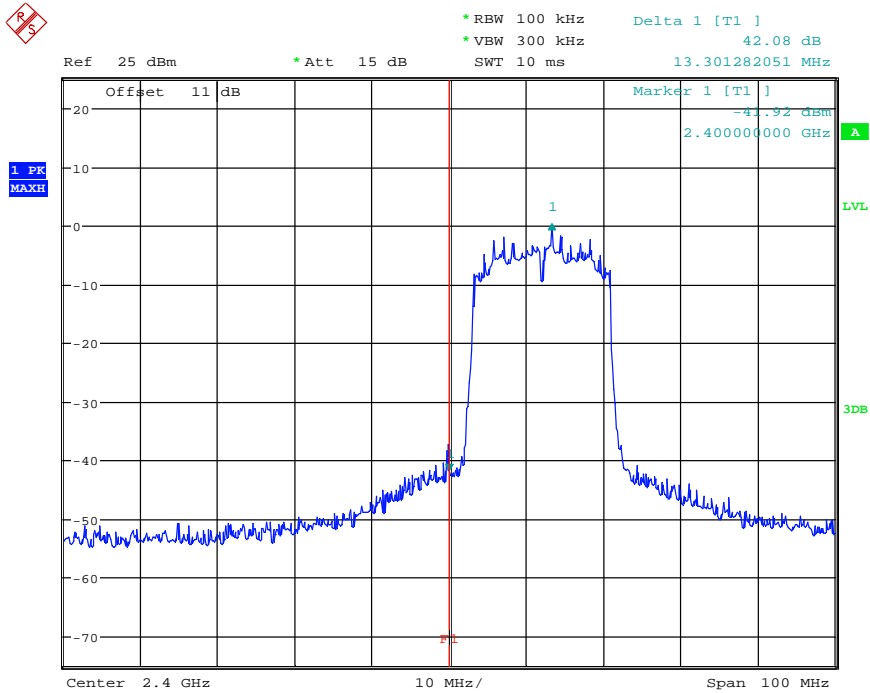


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



BANDEDGE 802.11G CH11
Date: 19.SEP.2012 11:26:07

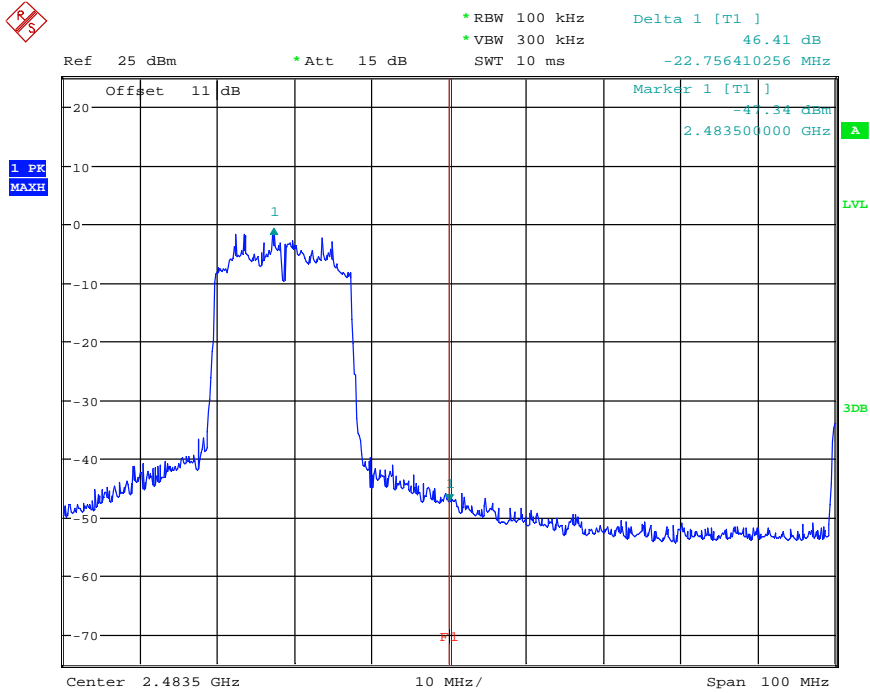
Mode C



BANDEDGE 802.11N 20MHZ CH01
Date: 19.SEP.2012 11:28:56

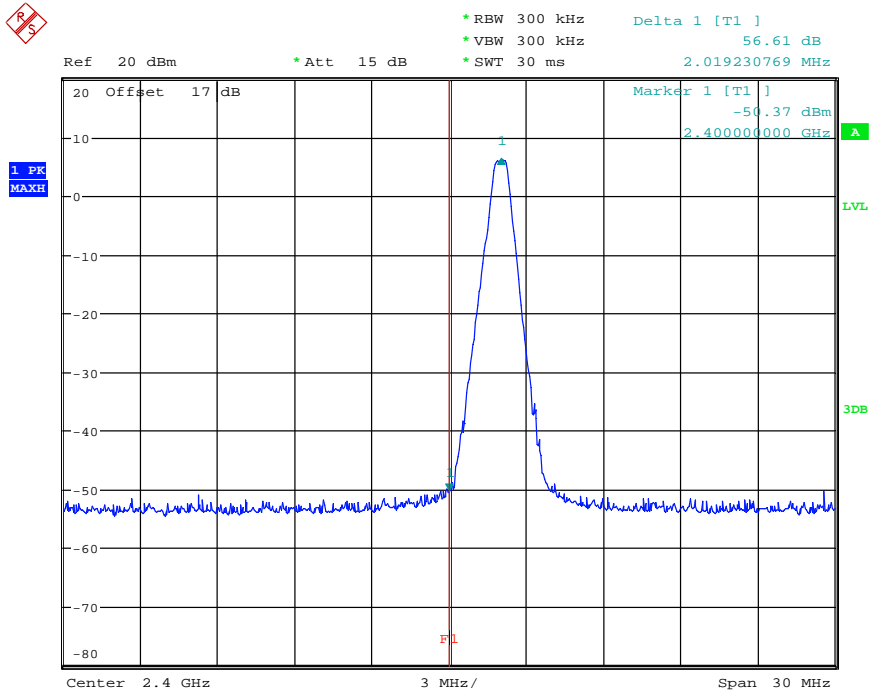


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



BANDEDGE 802.11N 20MHZ CH11
Date: 19.SEP.2012 11:34:27

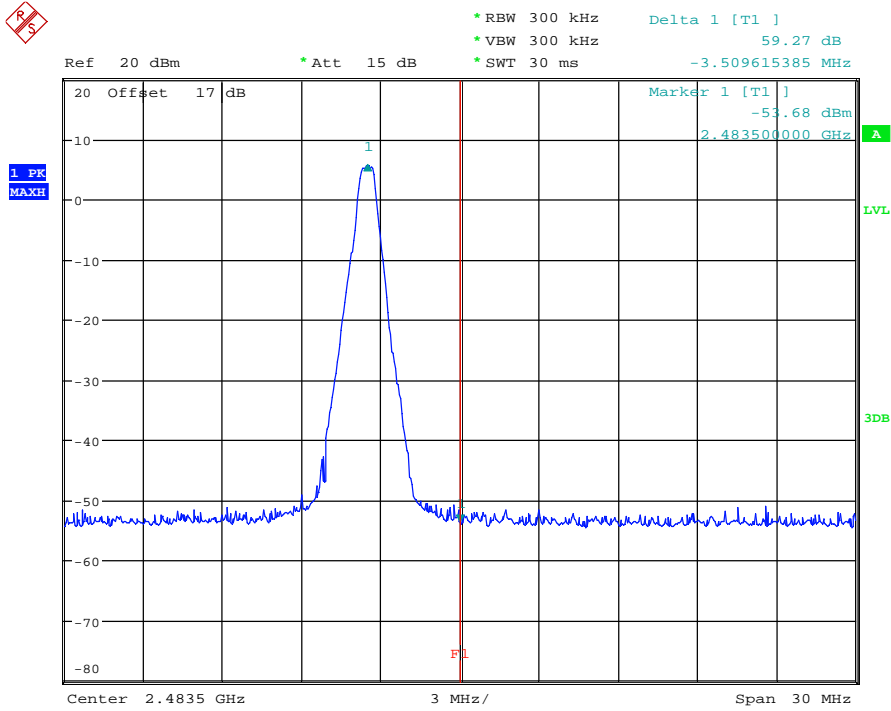
Mode D



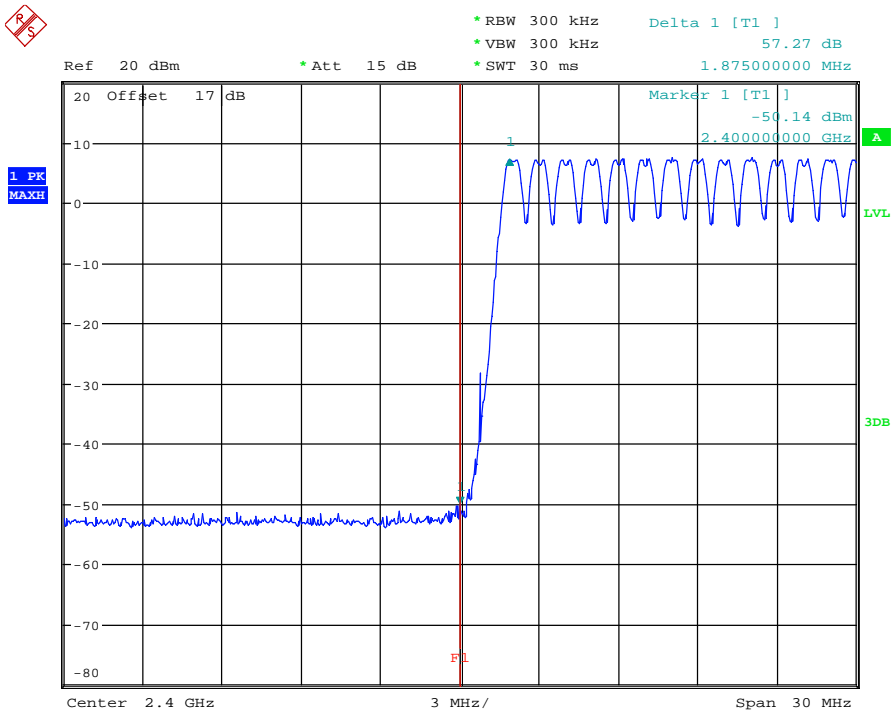
BANDEDGE CH0
Date: 19.SEP.2012 17:35:46



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



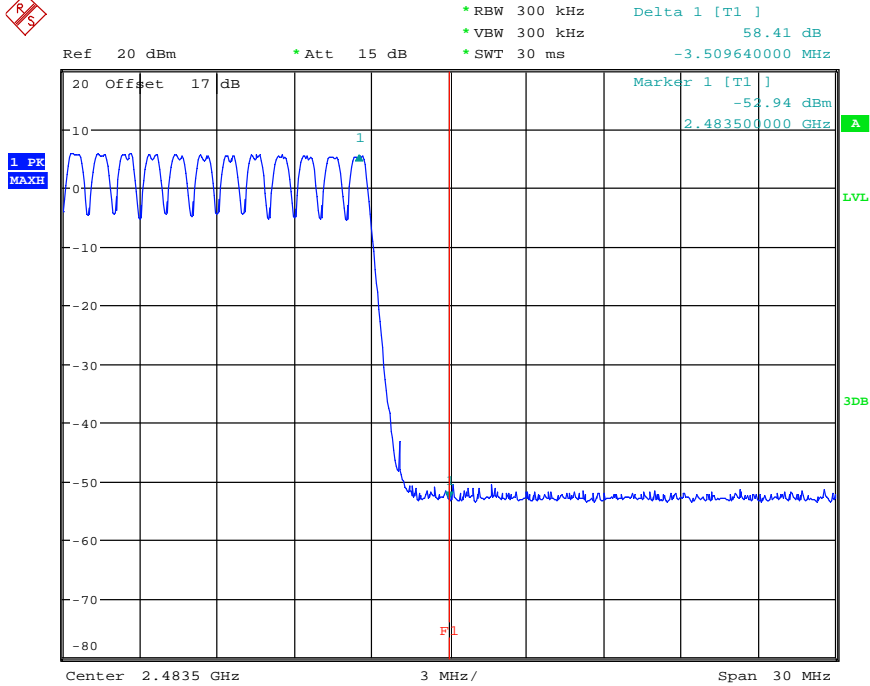
BANDEDGE CH78
Date: 19.SEP.2012 18:06:38



BANDEDGE CH0 HOPPING MODE
Date: 19.SEP.2012 18:23:59

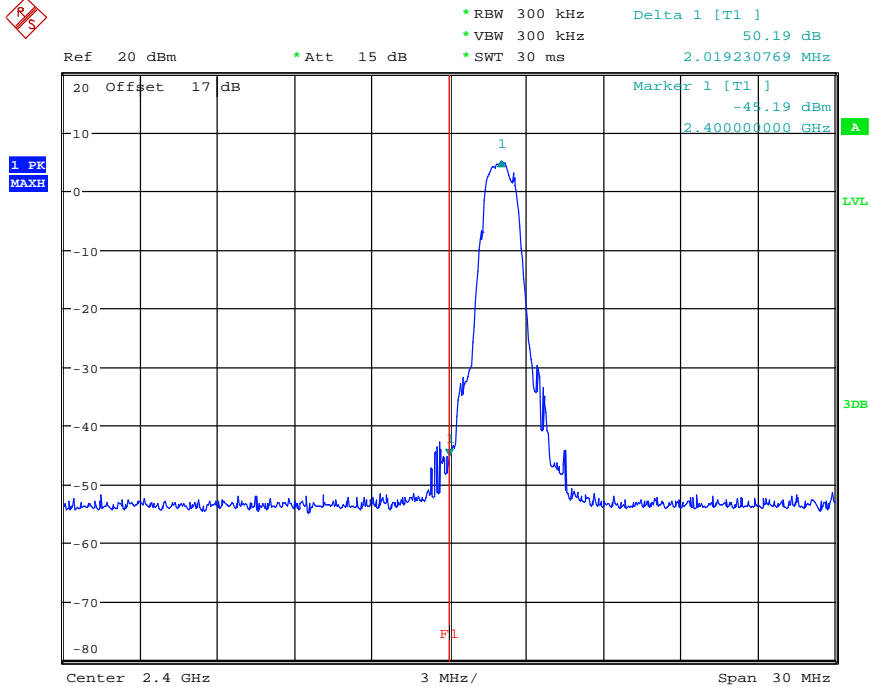


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



BANDEDGE CH78 HOPPING MODE
Date: 19.SEP.2012 18:24:39

Mode E

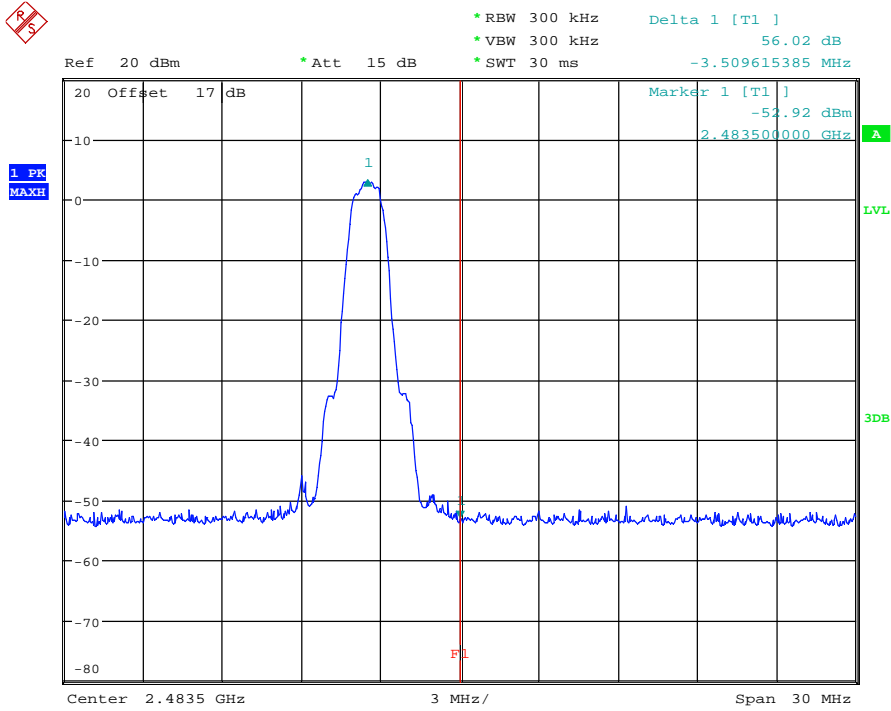


BANDEDGE CH0 EDR MODE
Date: 19.SEP.2012 18:54:18

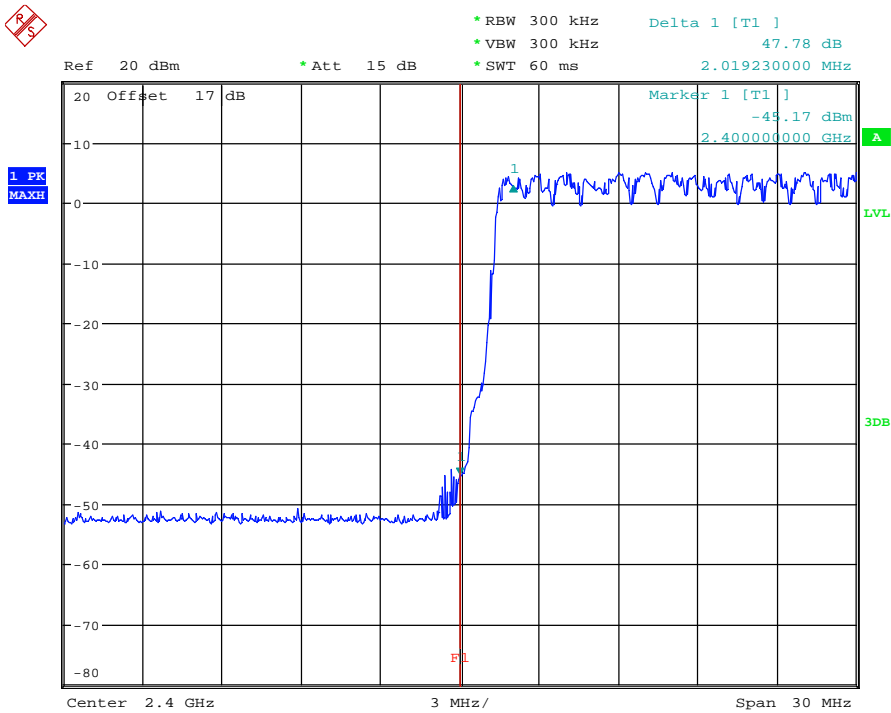


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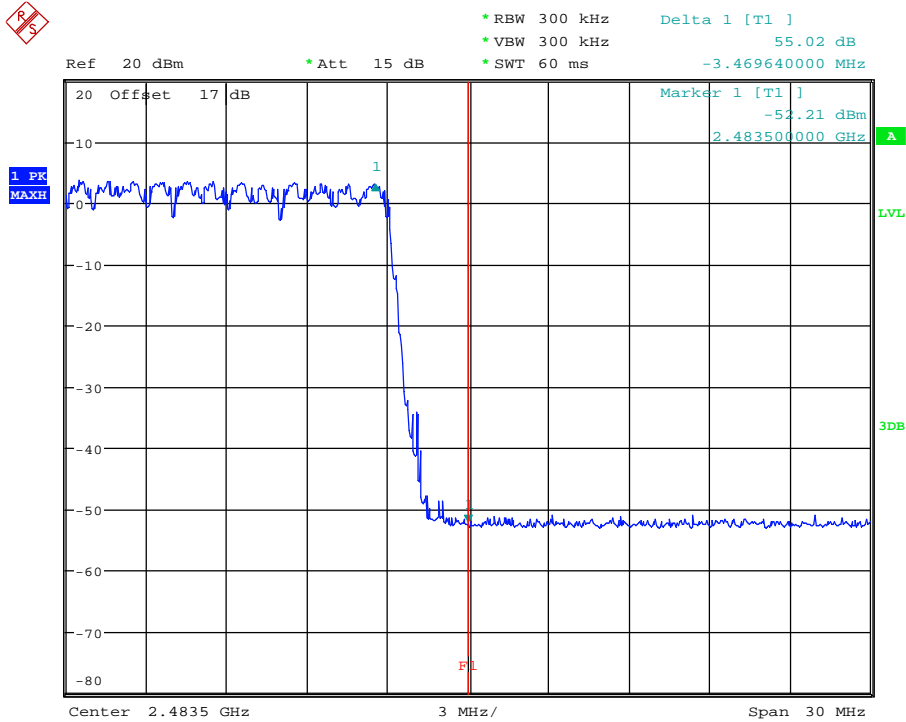
BANDEDGE CH78 EDR MODE
Date: 19.SEP.2012 19:10:46



BANDEDGE CH0 EDR HOPPING MODE
Date: 19.SEP.2012 18:41:50



Registration number: W6M21209-12715-C-1
 FCC ID: XNA-WS-30



BANDEDGE CH78 EDR HOPPING MODE
 Date: 19.SEP.2012 18:43:34

Limit:

Frequency Range / MHz	Limit
902 - 928	- 20 dB
2400 - 2483.5	
5725 - 5850	

Test equipment used: ETSTW-RE 055, ETSTW-RE 050, ETSTW-RE 064

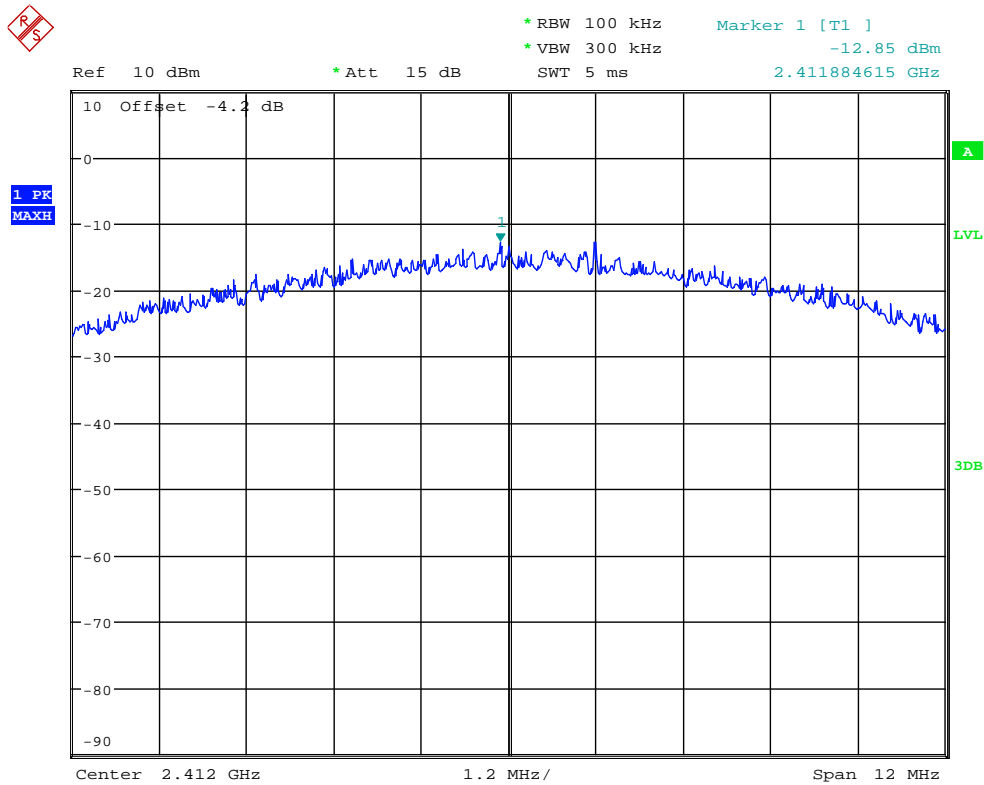


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

3.11 Peak Power Spectral Density

Peak Power Spectral density is a measured at low, middle and high channel.
The peak output power is measured with a measurement bandwidth of 10 MHz and displayed on diagram together with Peak Power Spectral Density result which was measured with a bandwidth of 3 kHz, appreciate frequency span and sweep time.

Mode A

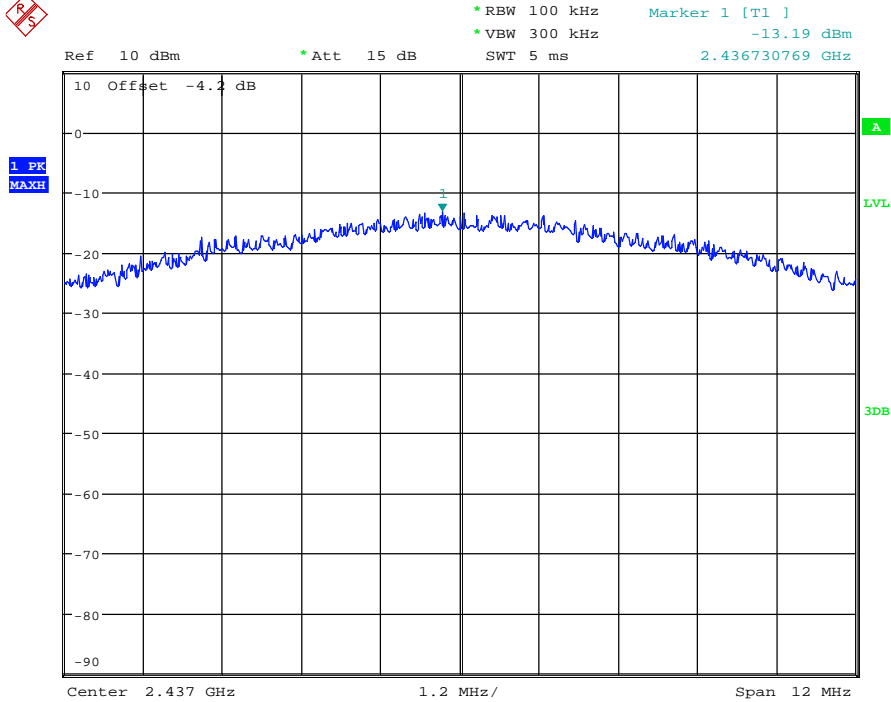


POWER DENSITY 802.11B CH01
Date: 19.SEP.2012 10:42:39

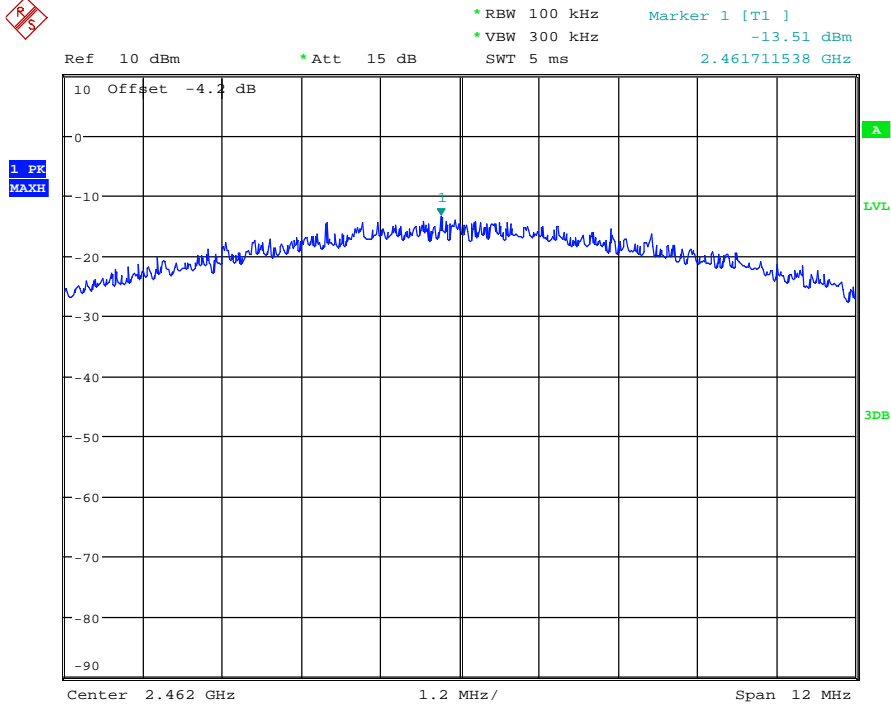


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



POWER DENSITY 802.11B CH06
Date: 19.SEP.2012 11:16:58

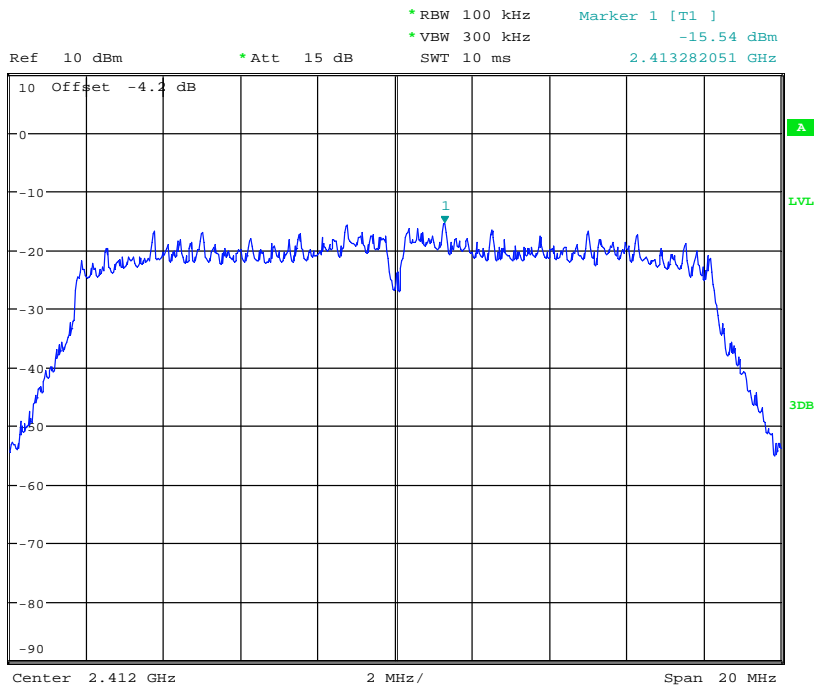


POWER DENSITY 802.11B CH11
Date: 19.SEP.2012 11:19:04

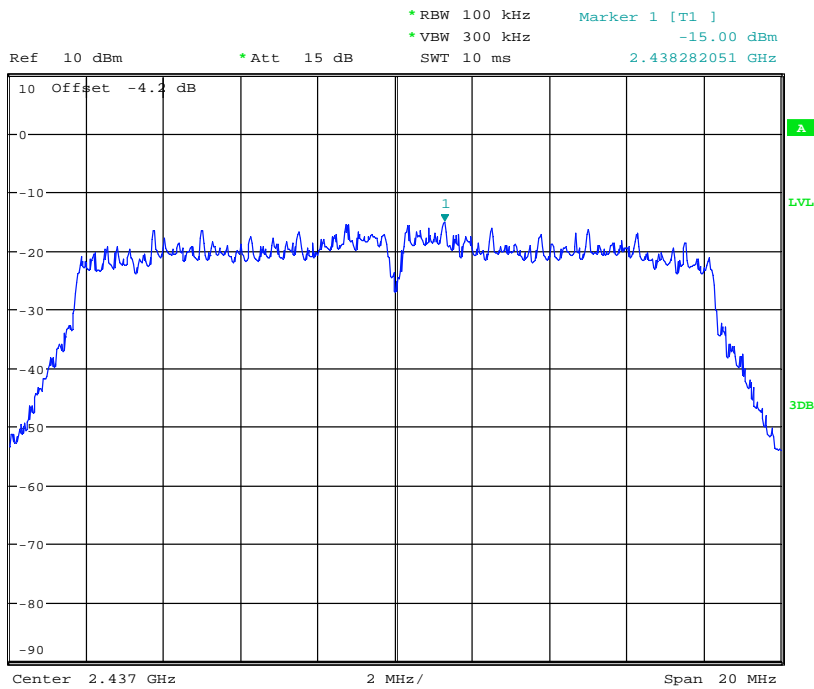


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Mode B



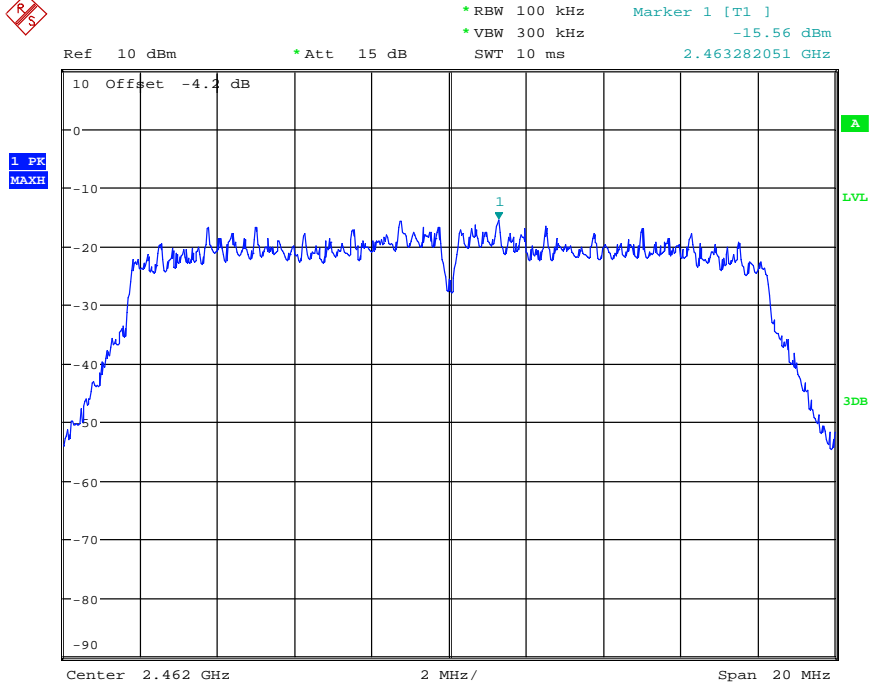
POWER DENSITY 802.11G CH01
Date: 19.SEP.2012 11:21:44



POWER DENSITY 802.11G CH06
Date: 19.SEP.2012 11:23:49

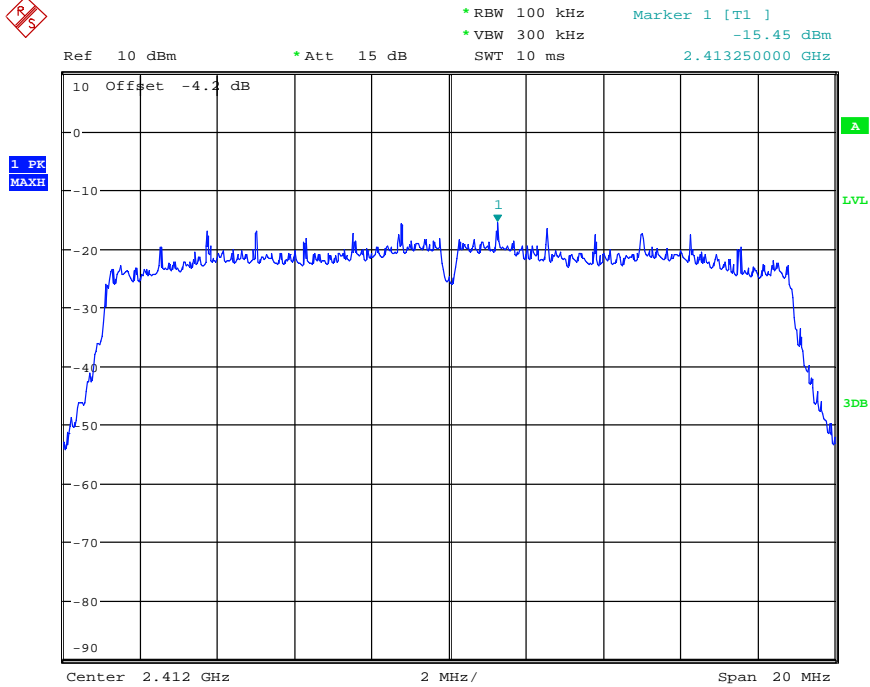


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



POWER DENSITY 802.11G CH11
Date: 19.SEP.2012 11:26:01

Mode C

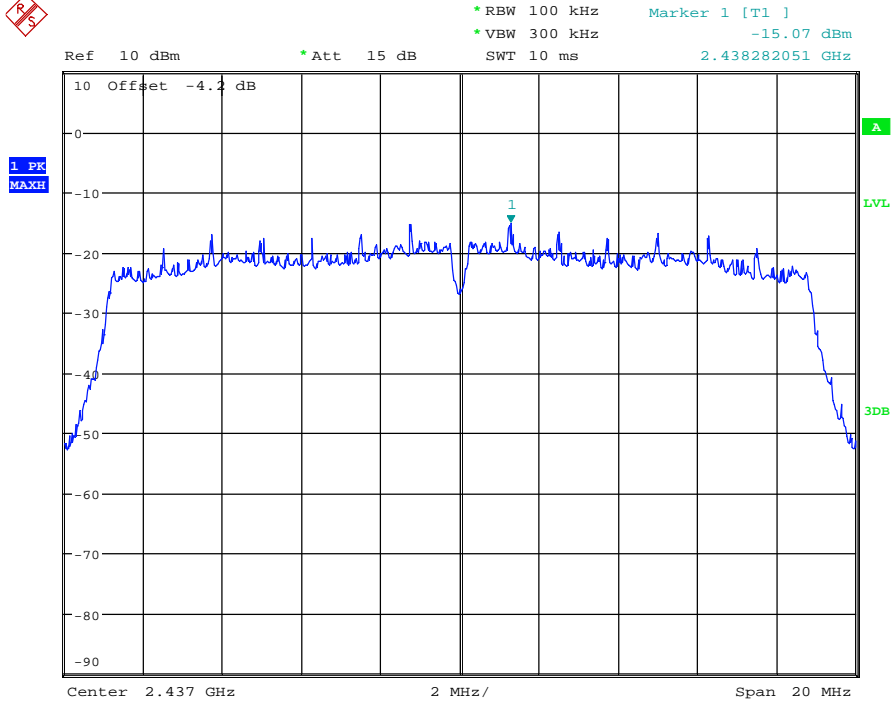


POWER DENSITY 802.11N 20MHZ CH01
Date: 19.SEP.2012 11:28:50

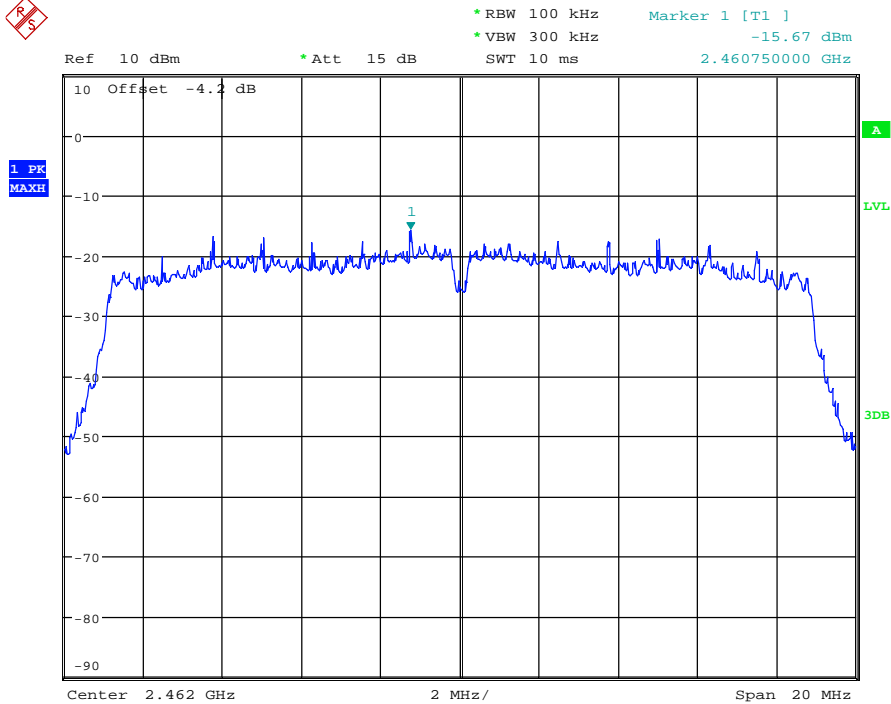


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



POWER DENSITY 802.11N 20MHZ CH06
Date: 19.SEP.2012 11:30:48



POWER DENSITY 802.11N 20MHZ CH11
Date: 19.SEP.2012 11:34:20



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Limits:

Frequency Range MHz	dBm
902-928	8
2400-2483.5	8
5725-5850	8

Test equipment used: ETSTW-RE 055, ETSTW-RE 050



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

3.12 Radiated Emission from Digital Part

FCC Rule: 15.109

Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of Emission (MHz)	Field Strength (microvolts/meter)	Field Strength (dBmicrovolts/meter)
30 – 88	100	40.0
88 – 216	150	43.5
216 – 960	200	46.0
Above 960	500	54.0

Test equipment used: ETSTW-RE 003, ETSTW-RE 030, ETSTW-RE 055,
ETSTW-RE 064, ETSTW-RE 111

Explanation: Please refer to separated test report no.: W6M21209-12715-P-15B.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

3.13 Power Line Conducted Emission

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the table bellows with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

This measurement was transact first with instrumentation using an average and peak detector and a 10 kHz bandwidth. If the peak detector achieves a calculated level, the measurement is repeated by an instrumentation using a quasi-peak detector.

Limits:

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi Peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

Test equipment used: ETSTW-CE 001, ETSTW-CE 004, ETSTW-CE 006, ETSTW-RE 064

Explanation: This test is not required because the EUT is battery back-up powered.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Appendix

Measurement diagrams

Spurious Emissions radiated



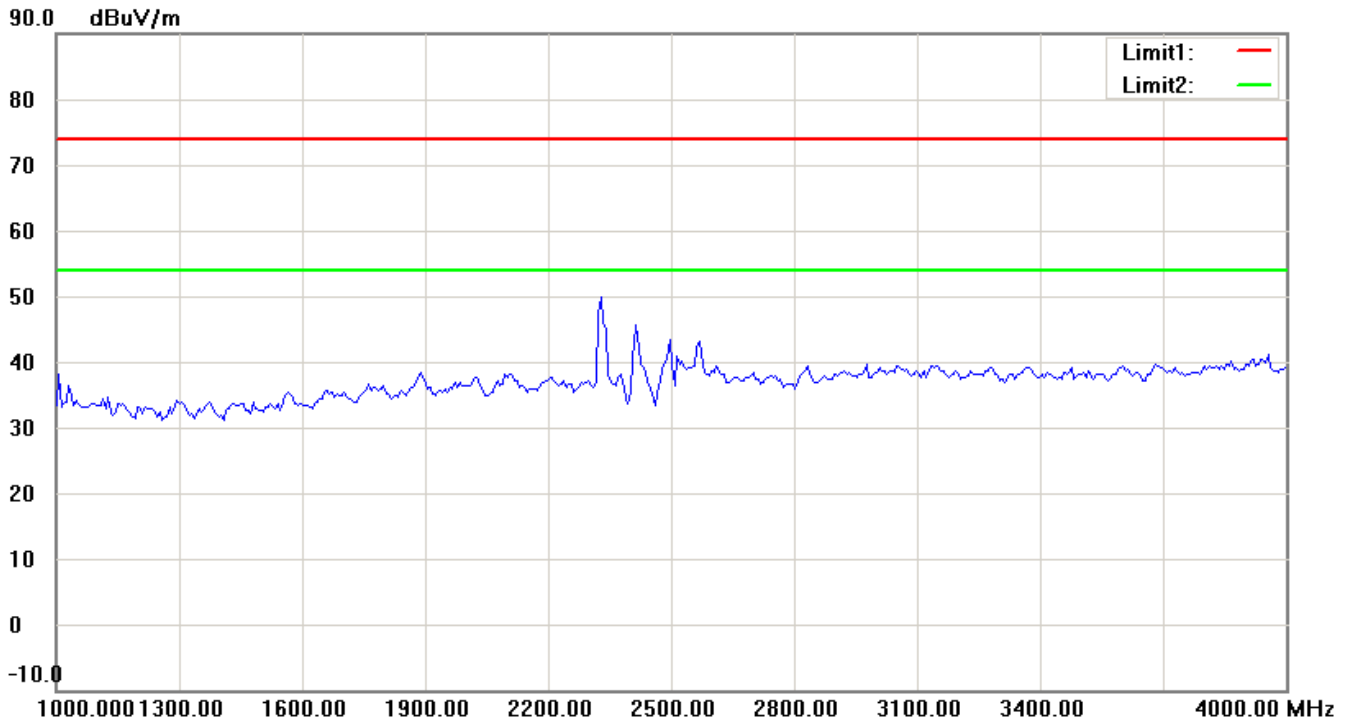
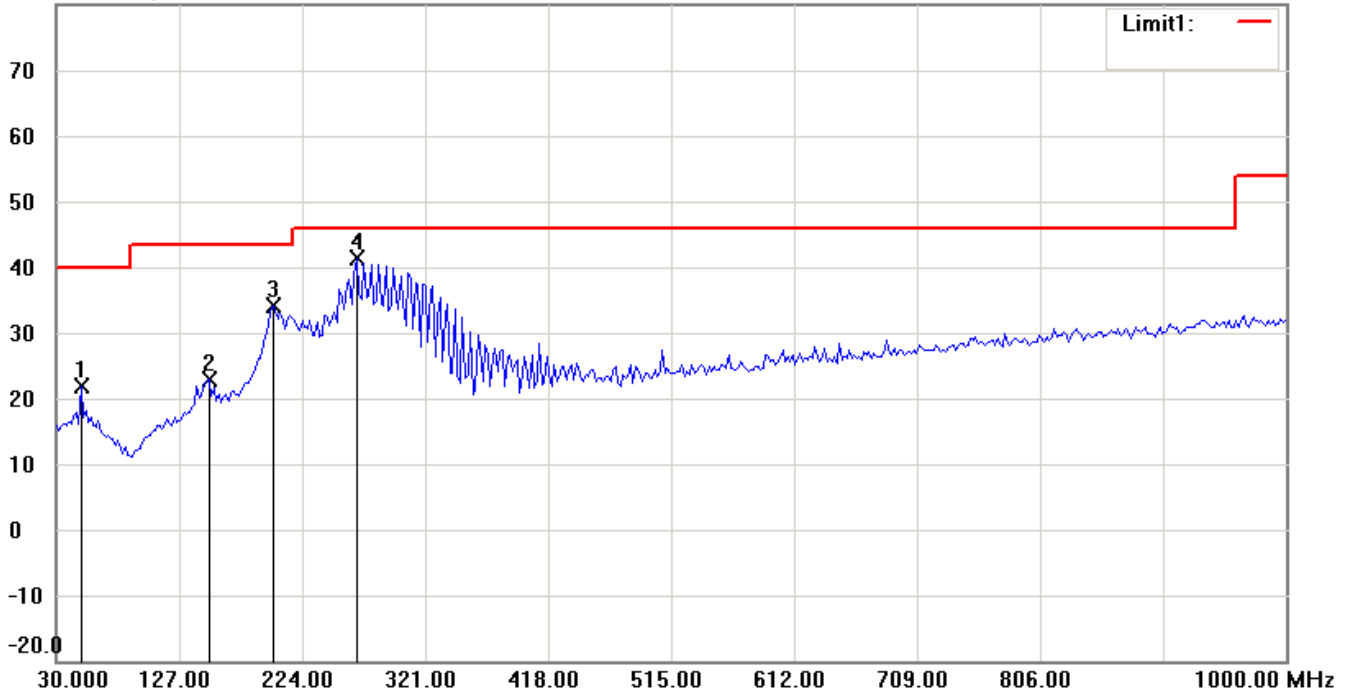
Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Spurious Emissions radiated

TX 802.11b CH1

Antenna Polarization H

80.0 dBuV/m



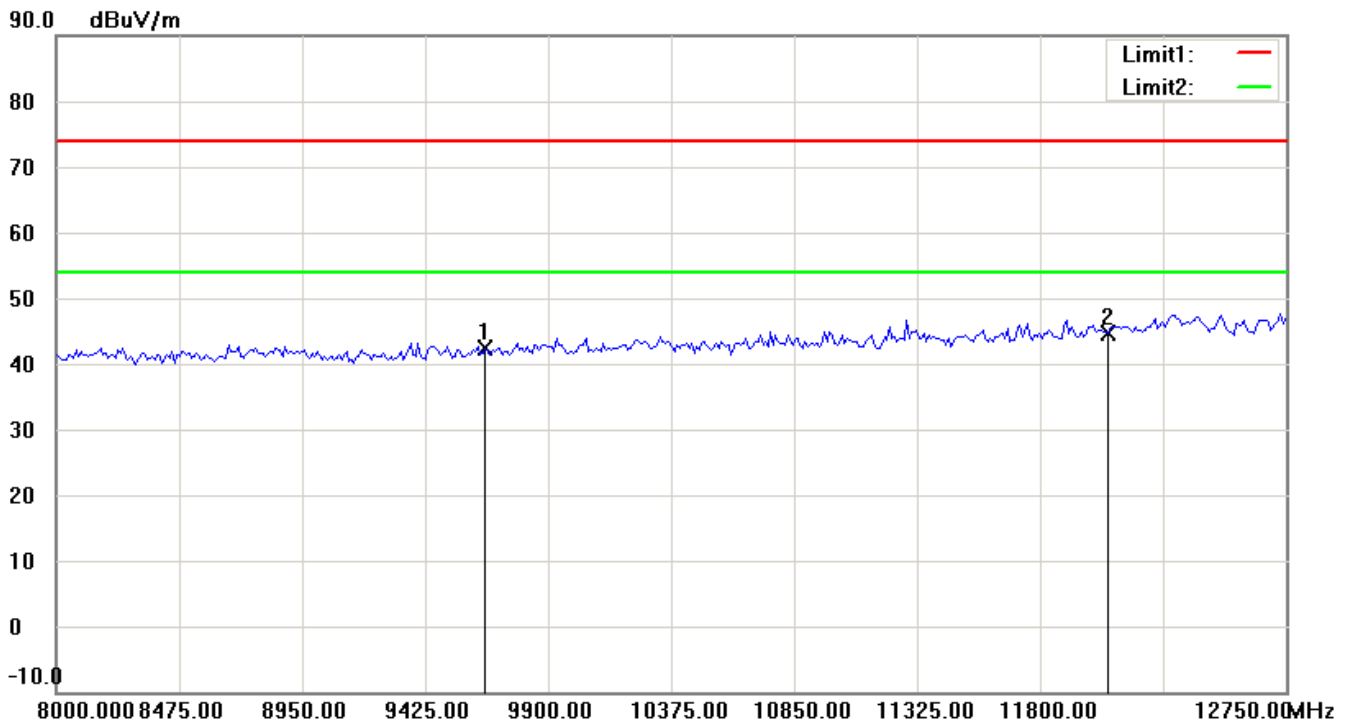
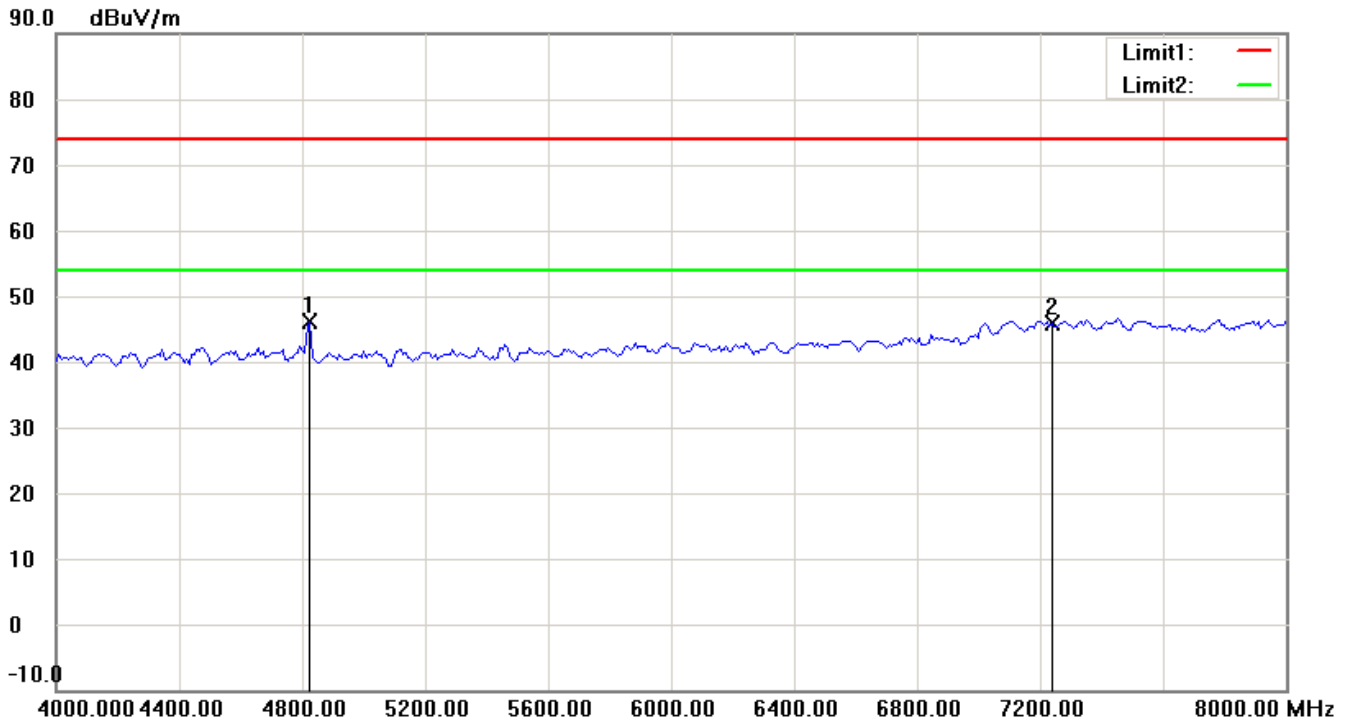
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

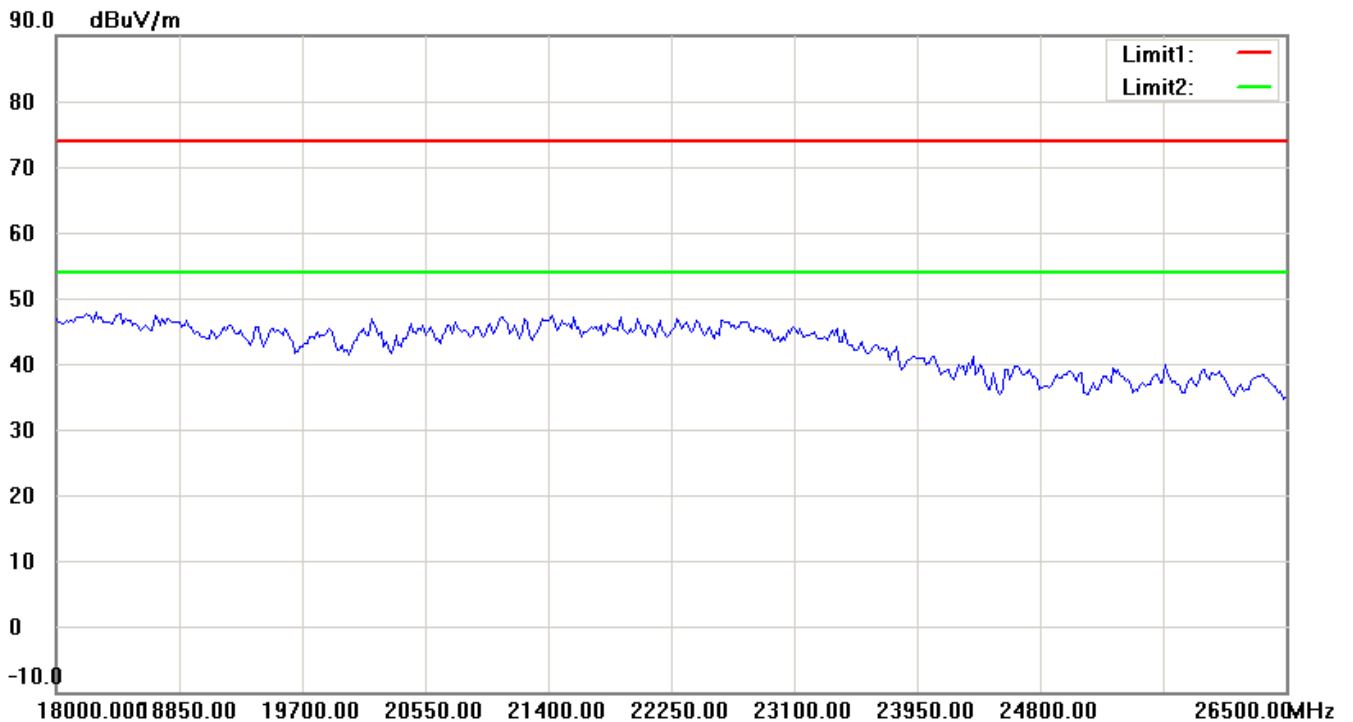
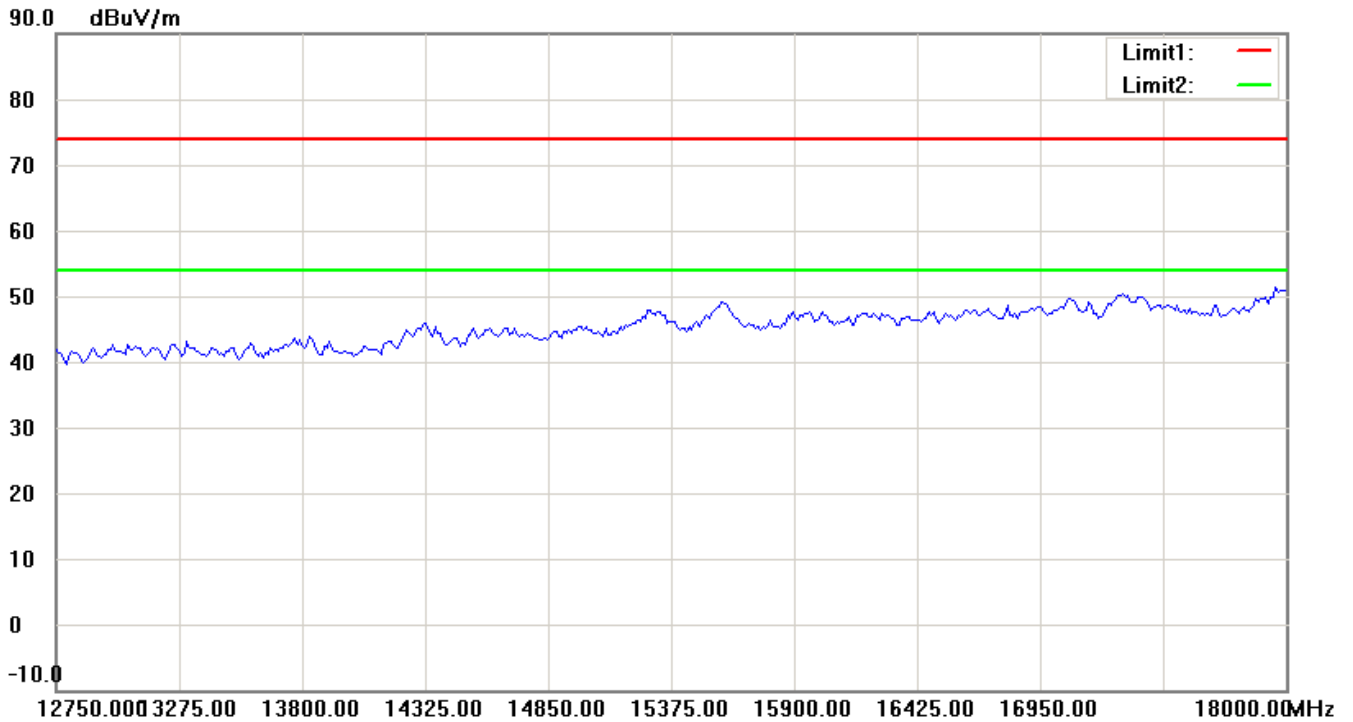
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

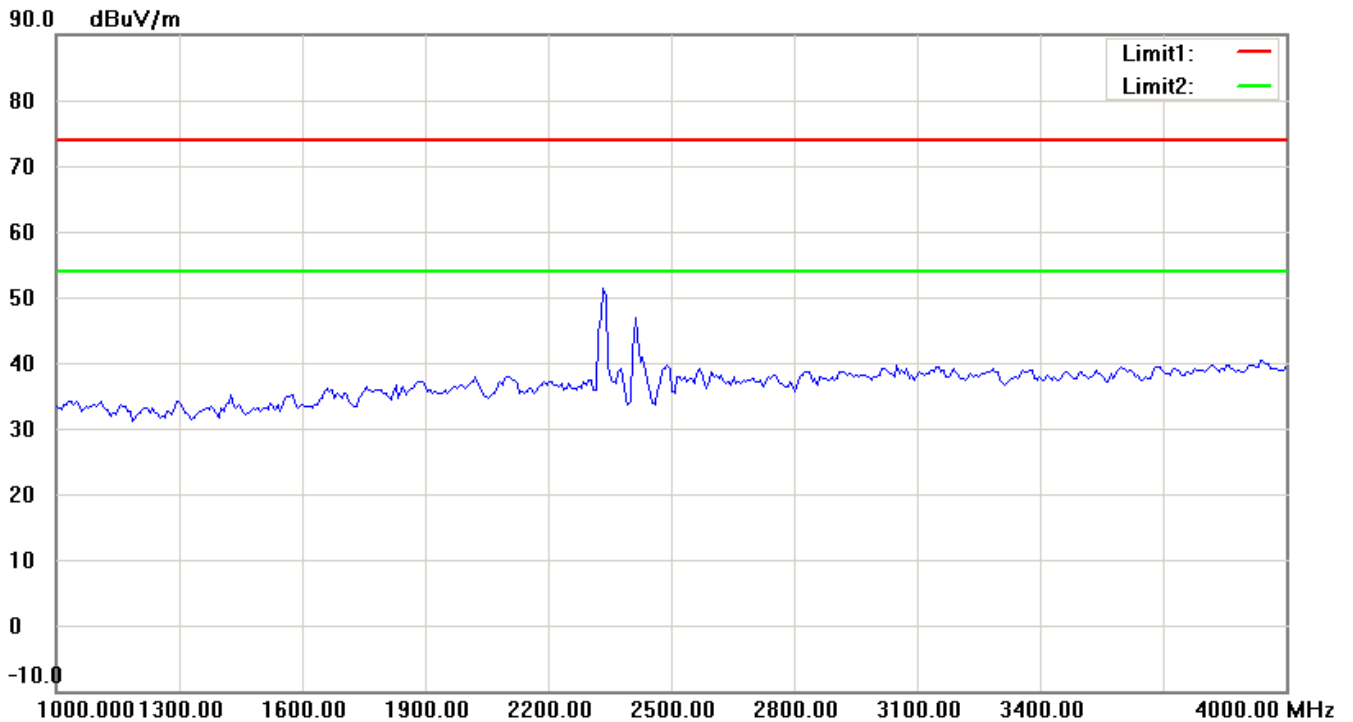
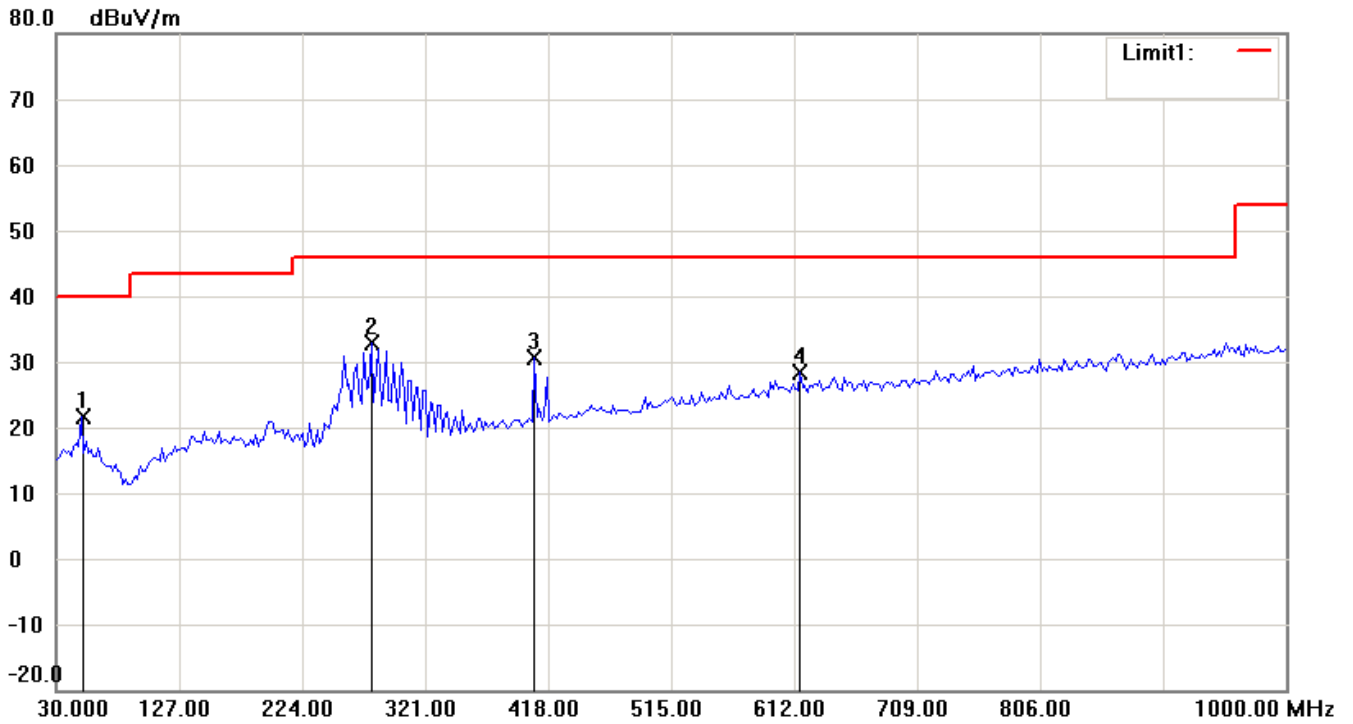
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Antenna Polarization V



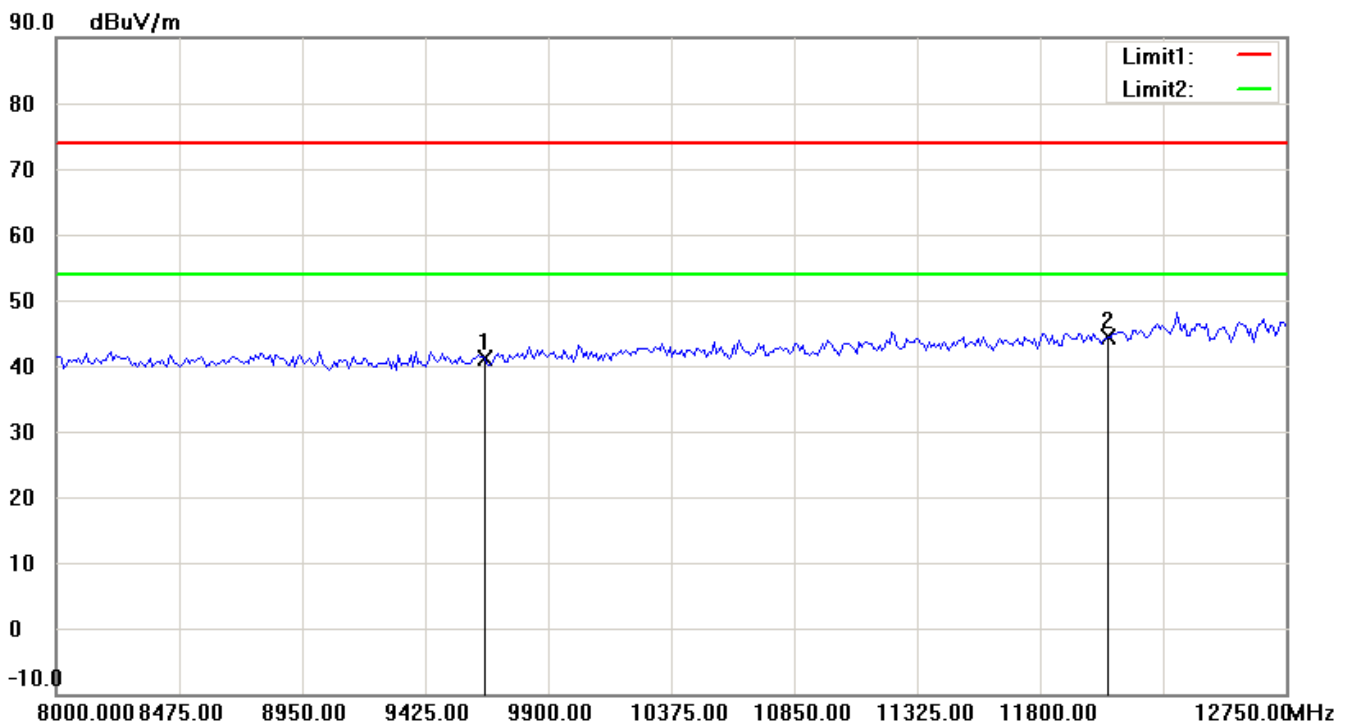
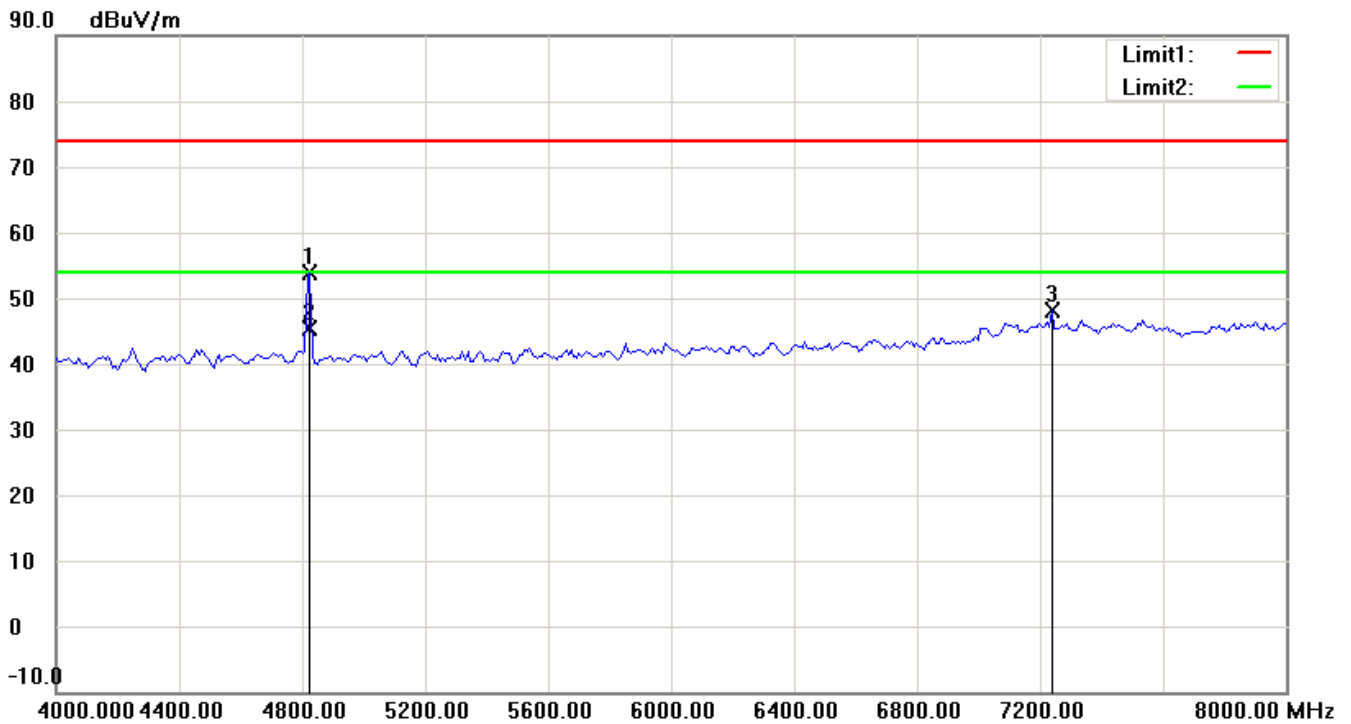
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

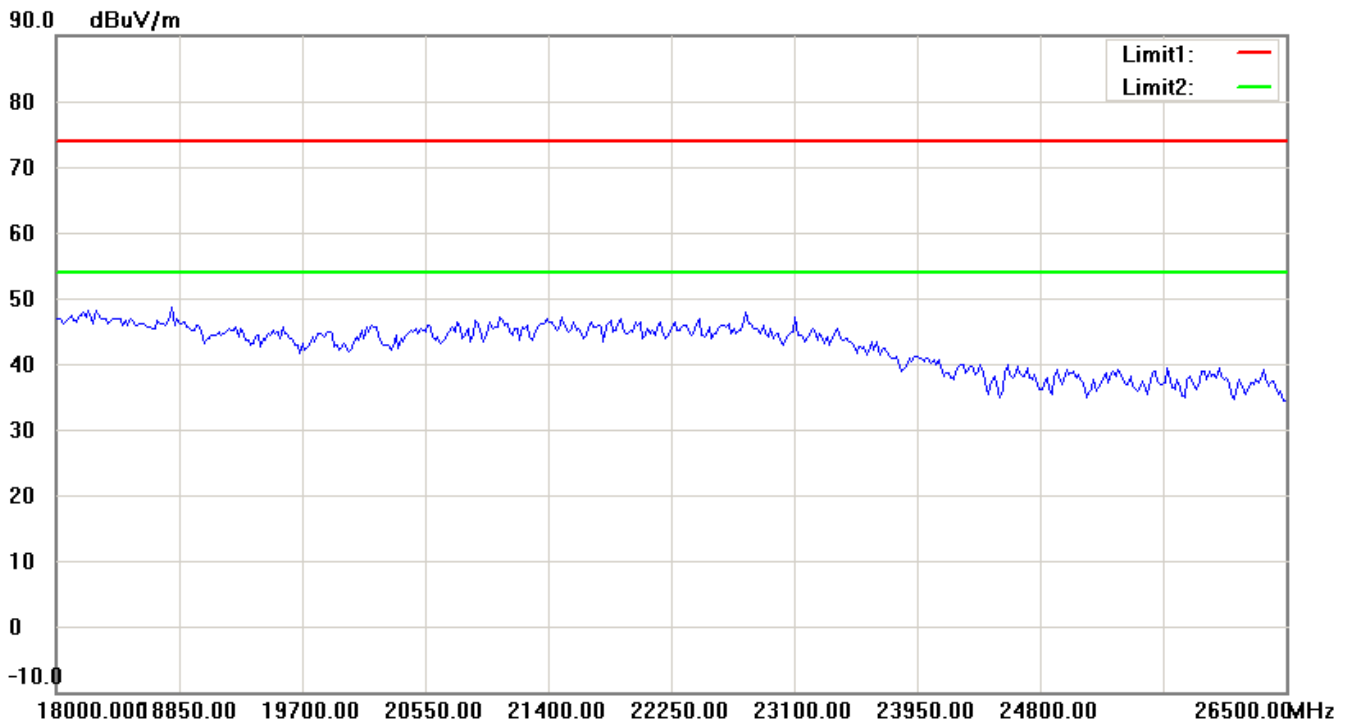
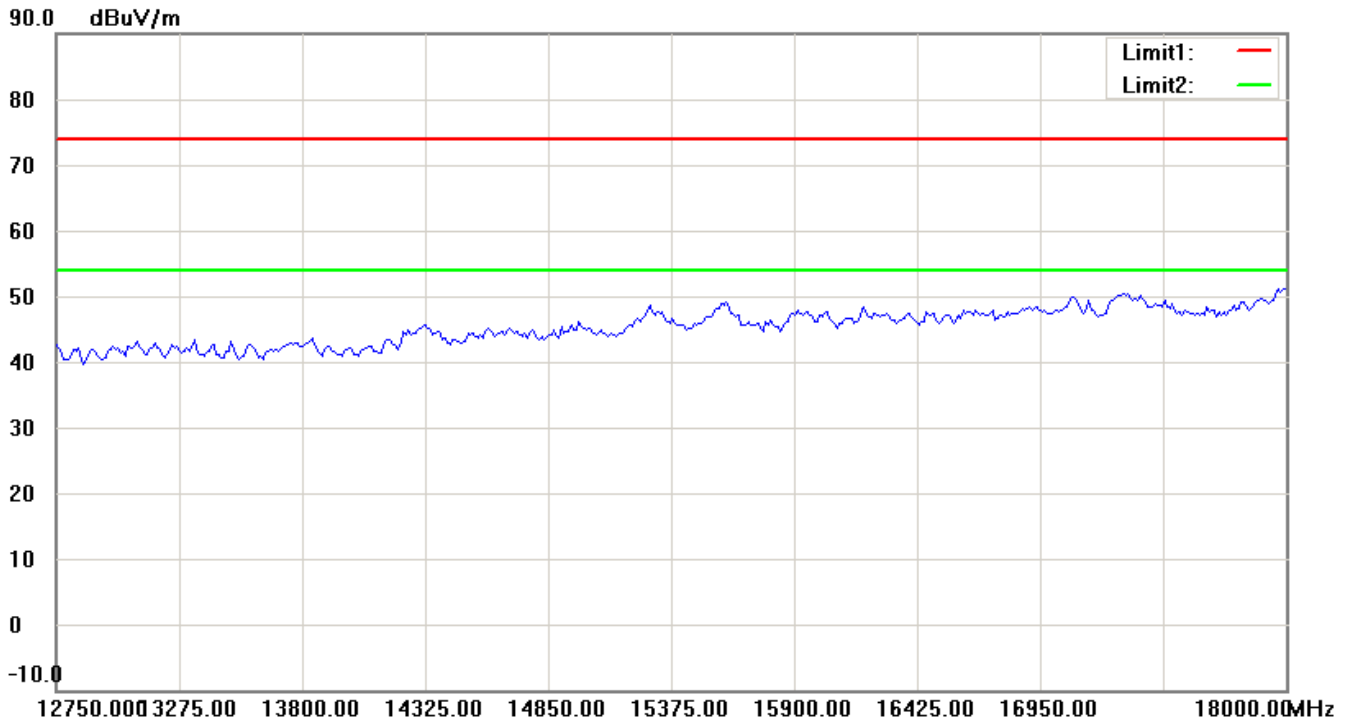
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.

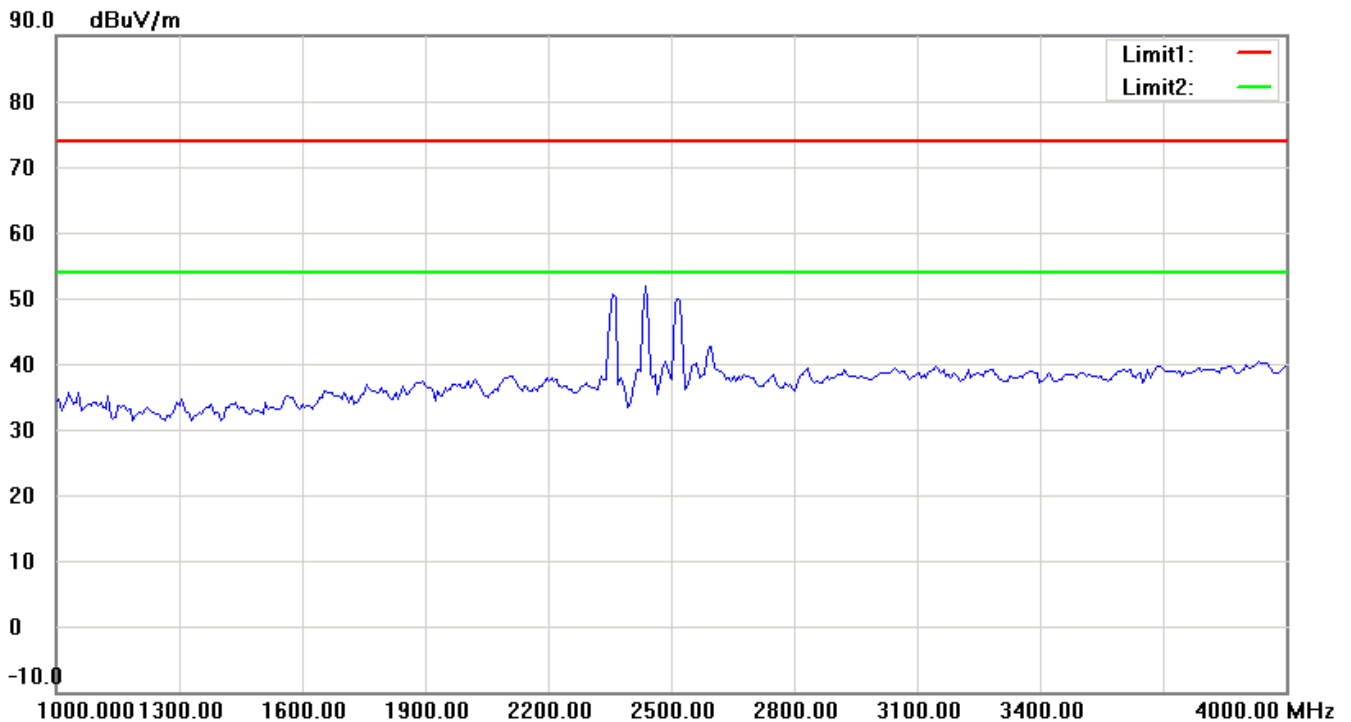
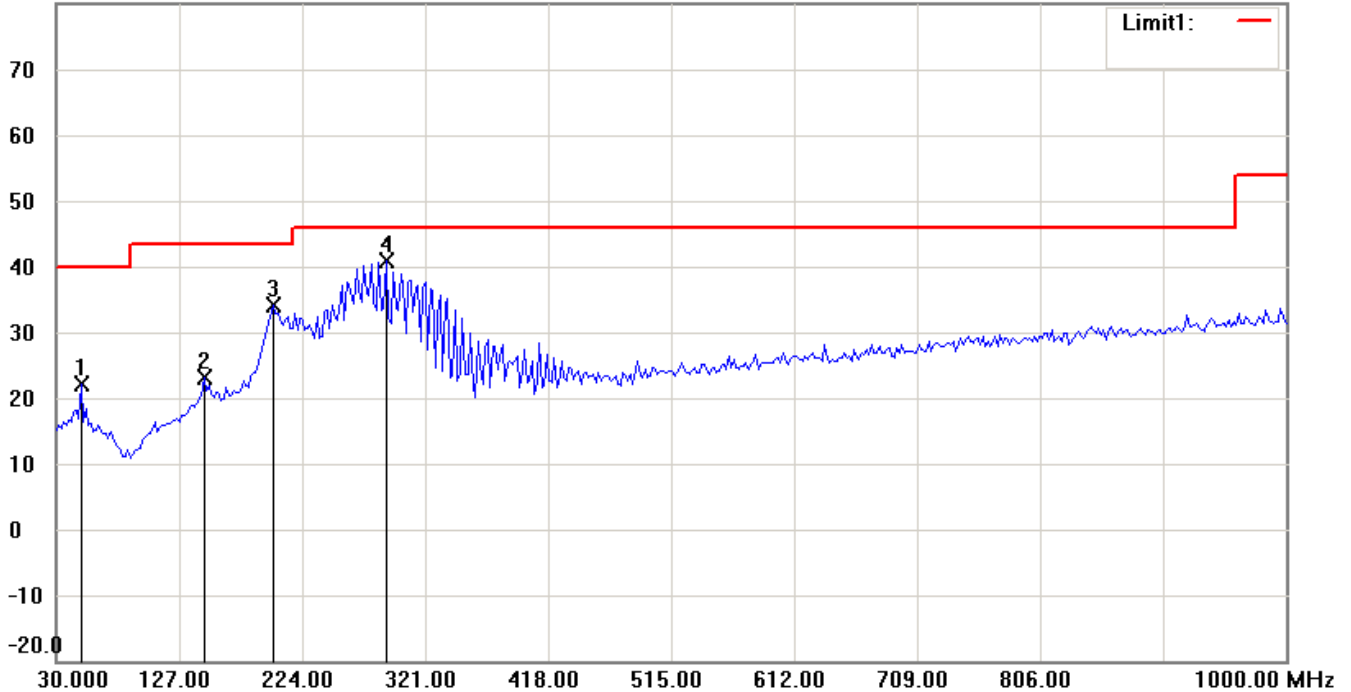


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

TX 802.11b CH6

Antenna Polarization H

80.0 dBuV/m



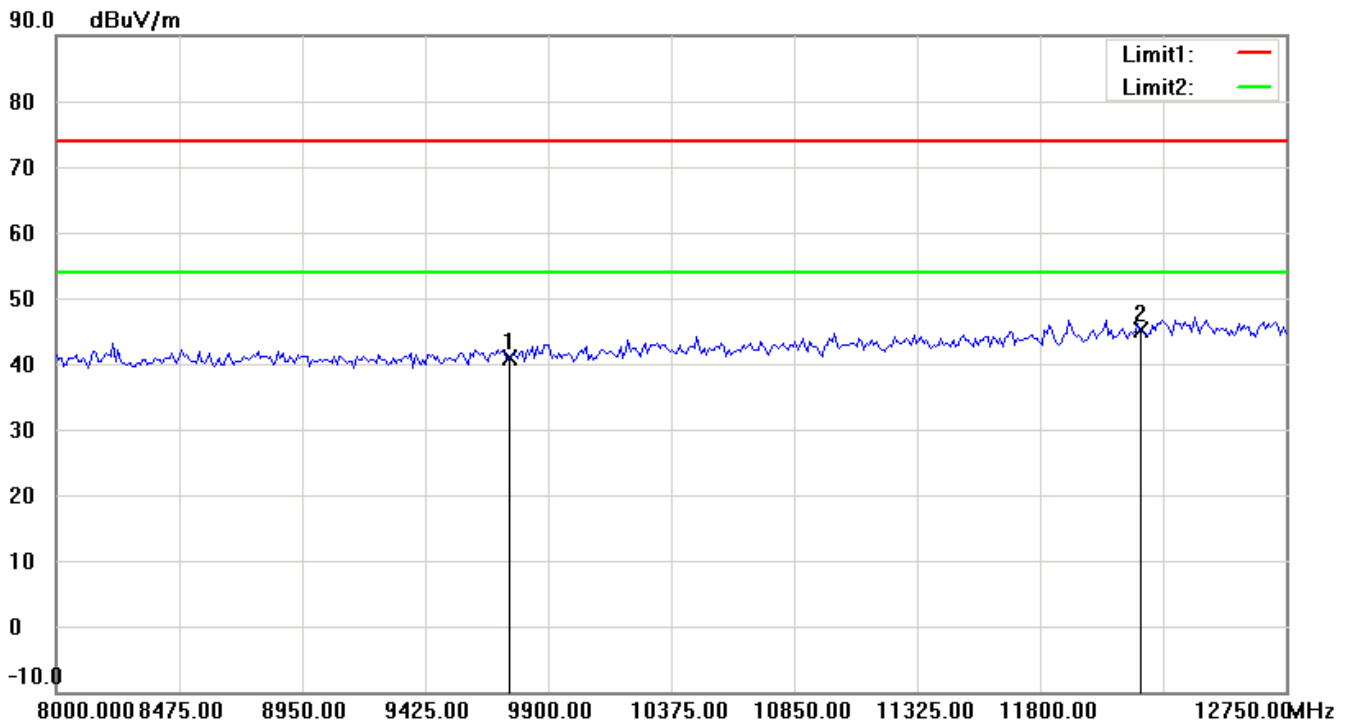
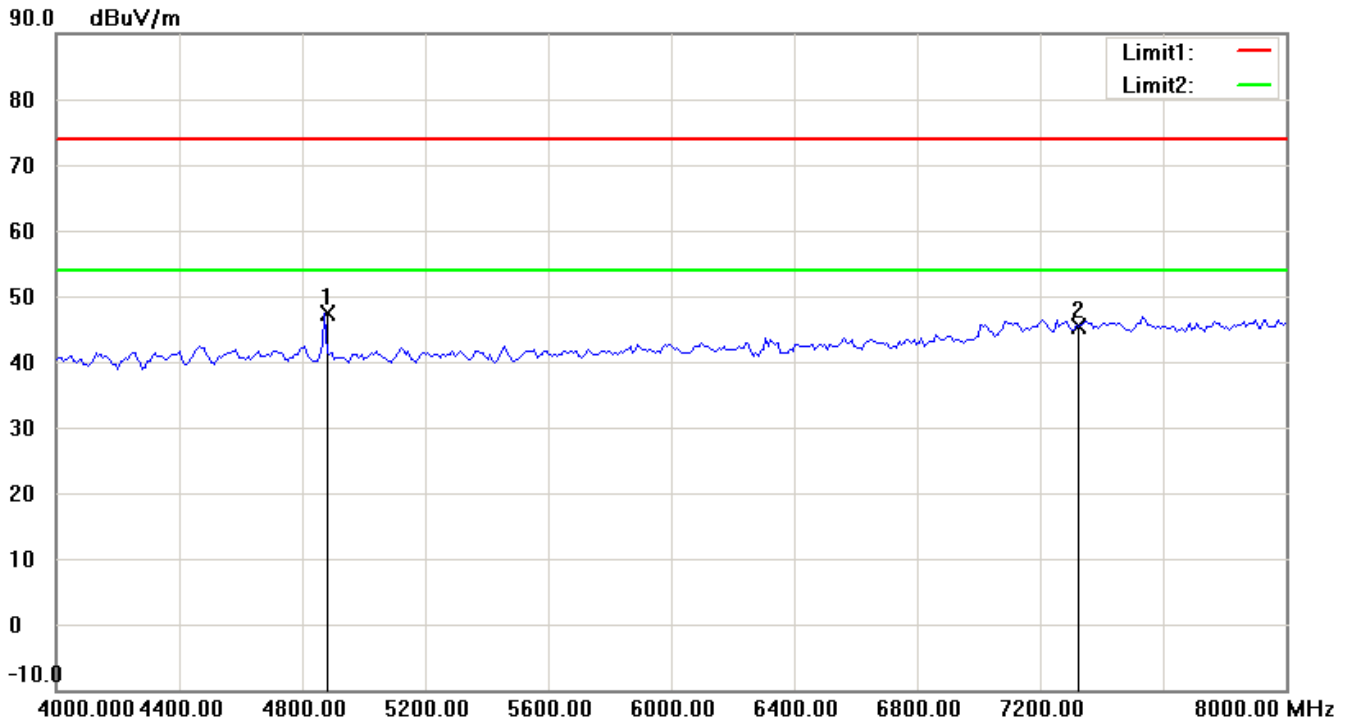
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

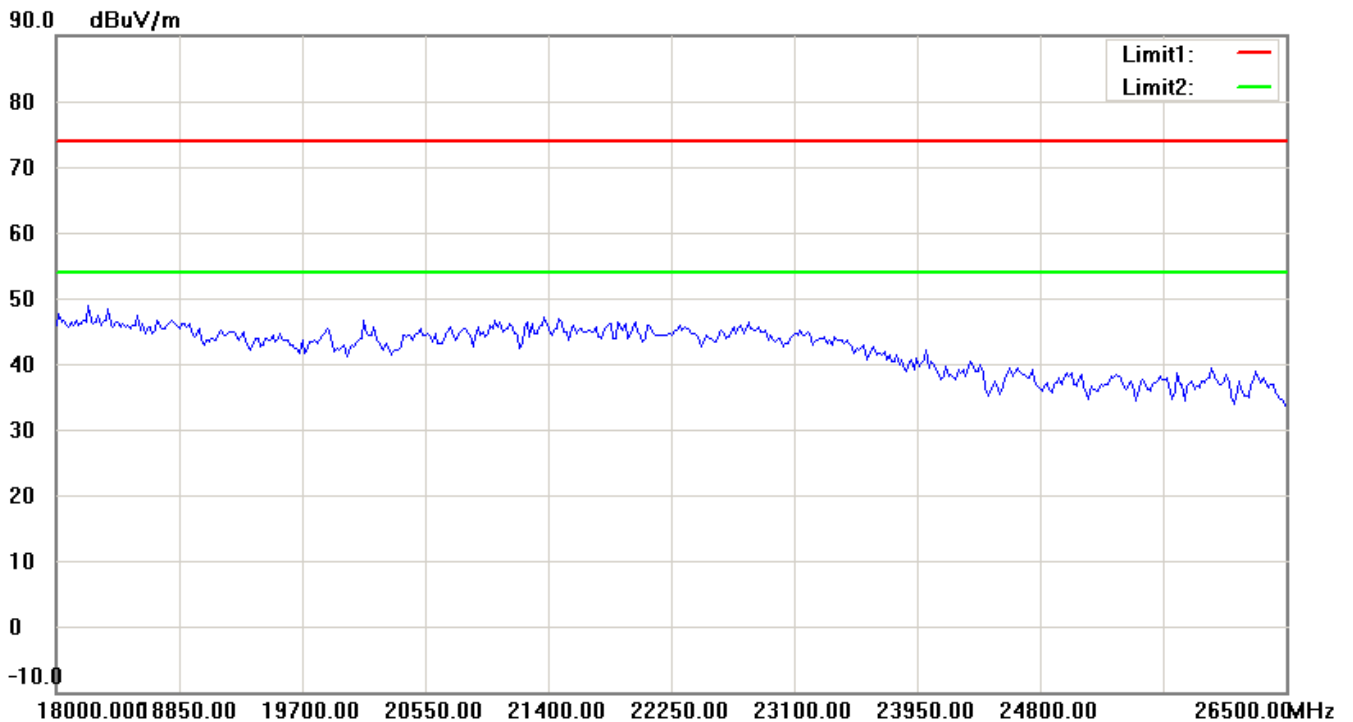
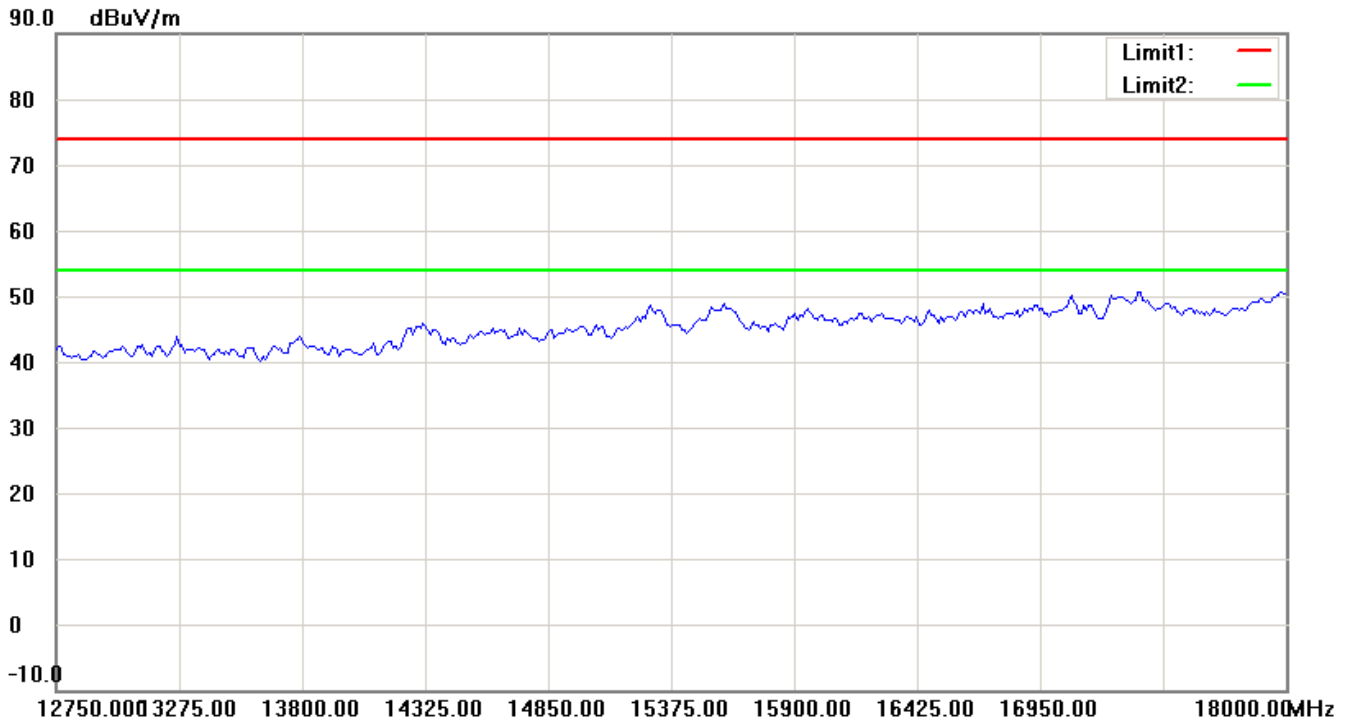
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

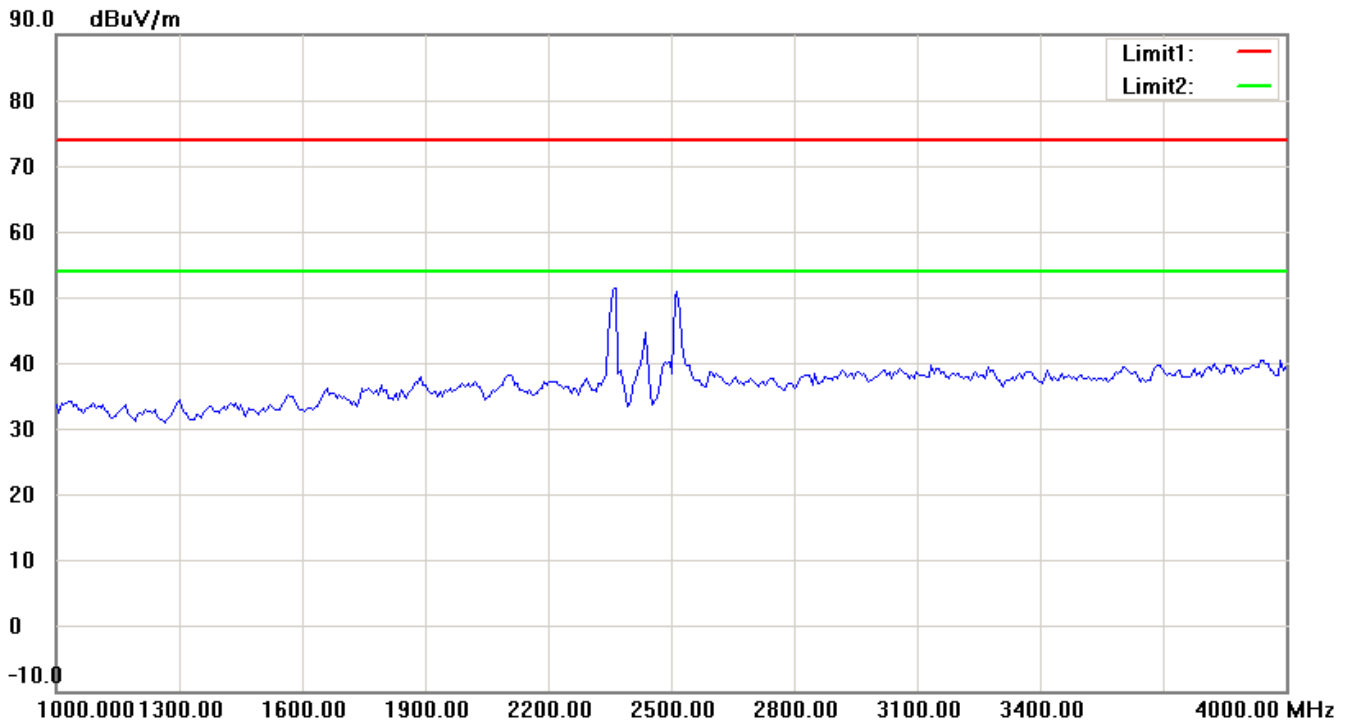
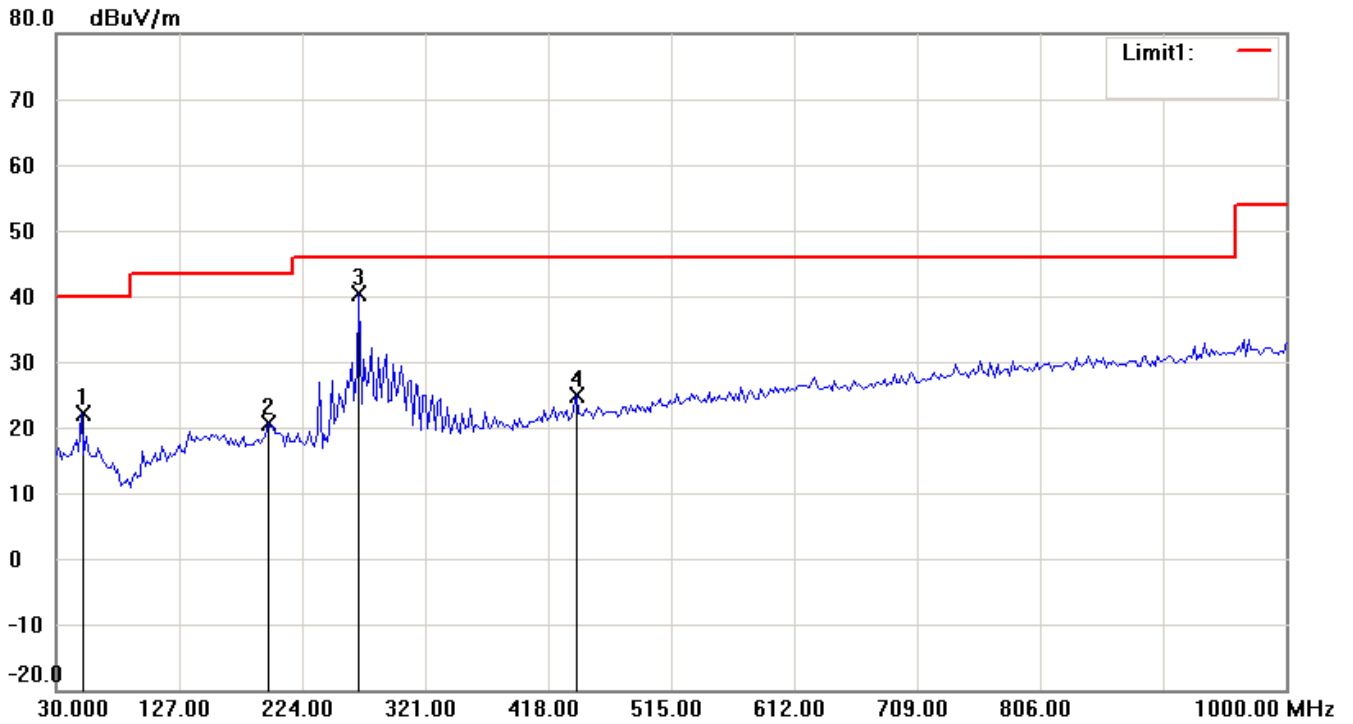
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Antenna Polarization V



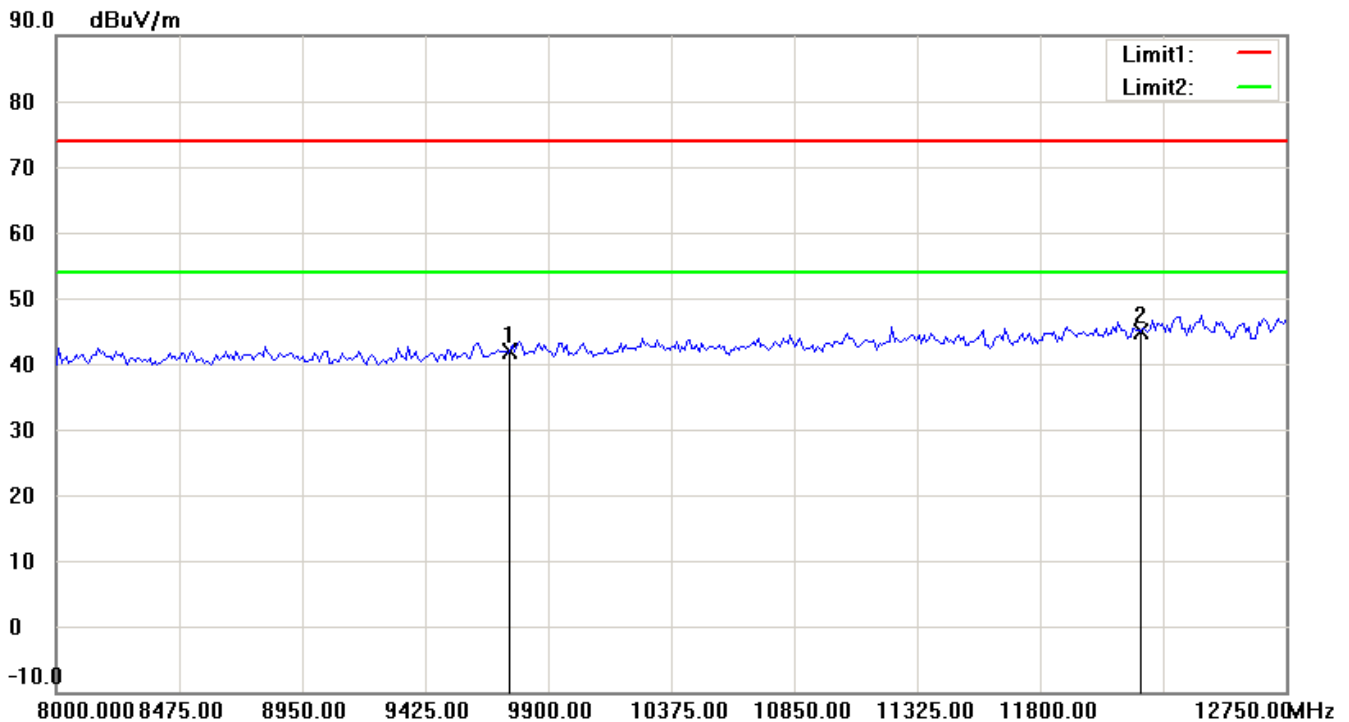
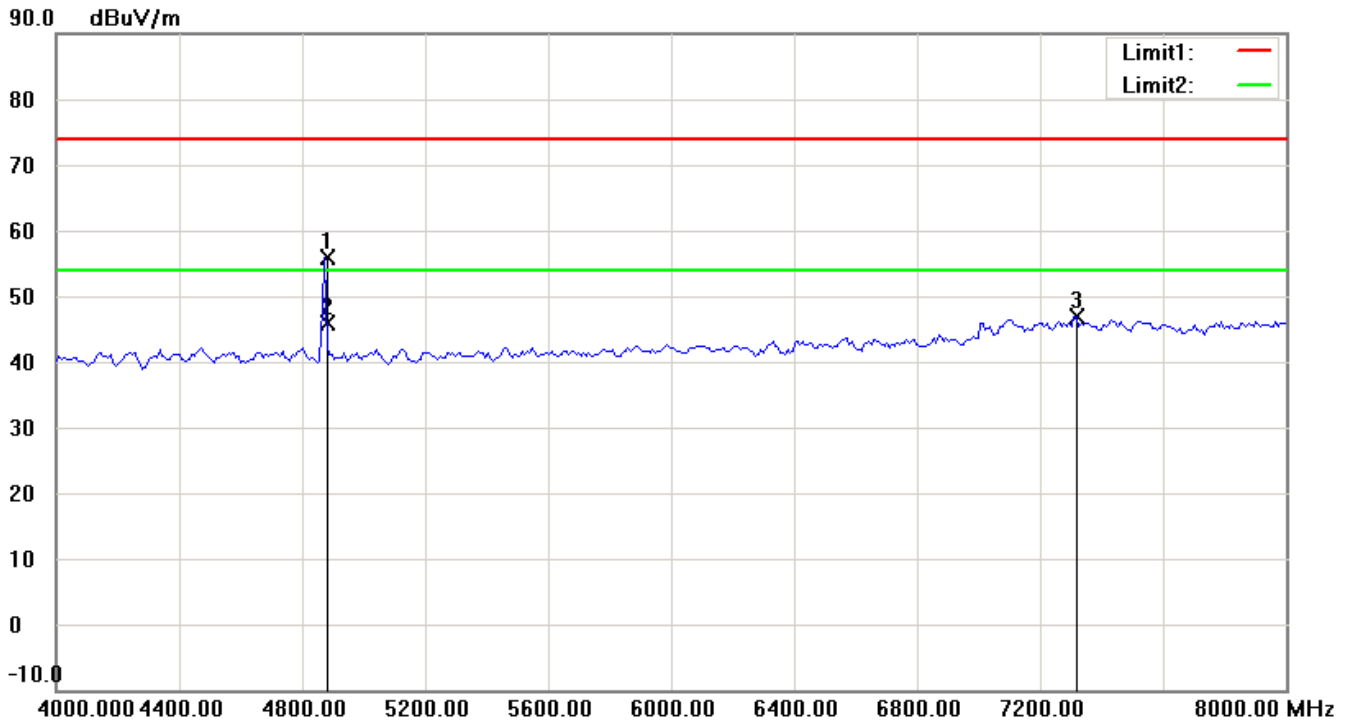
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

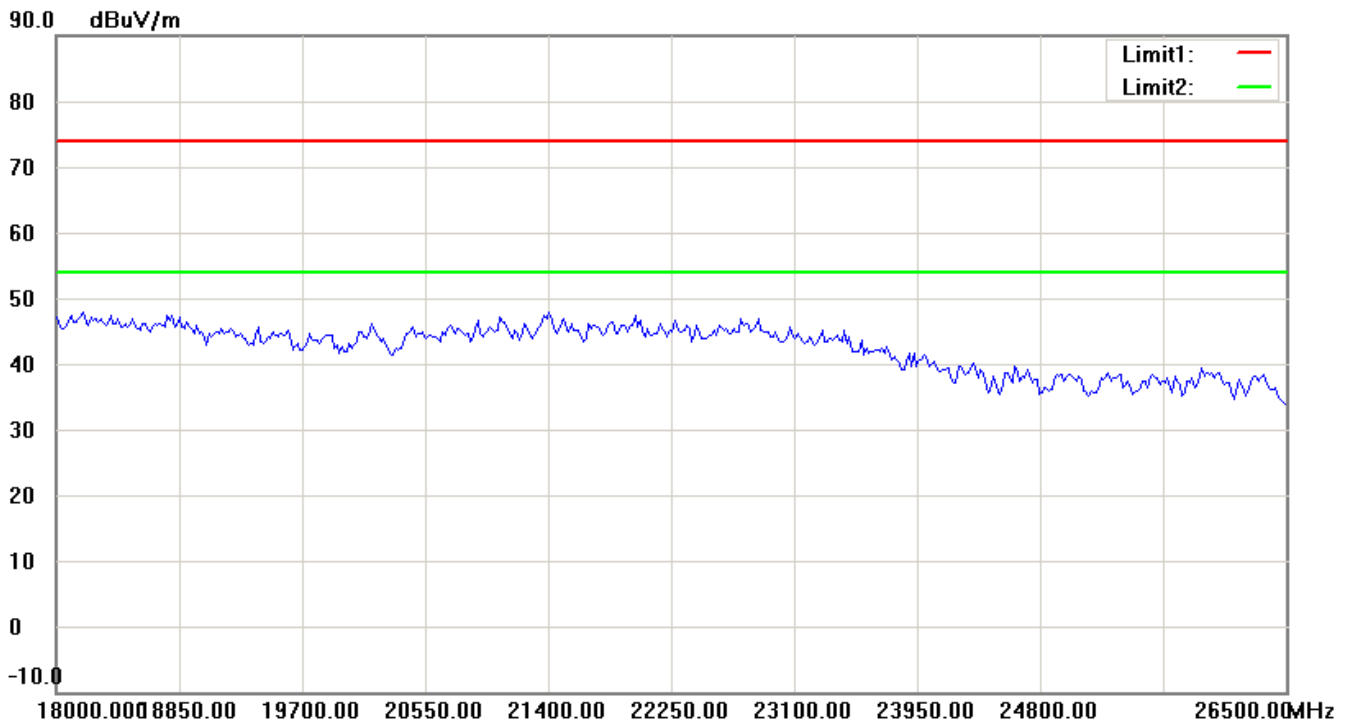
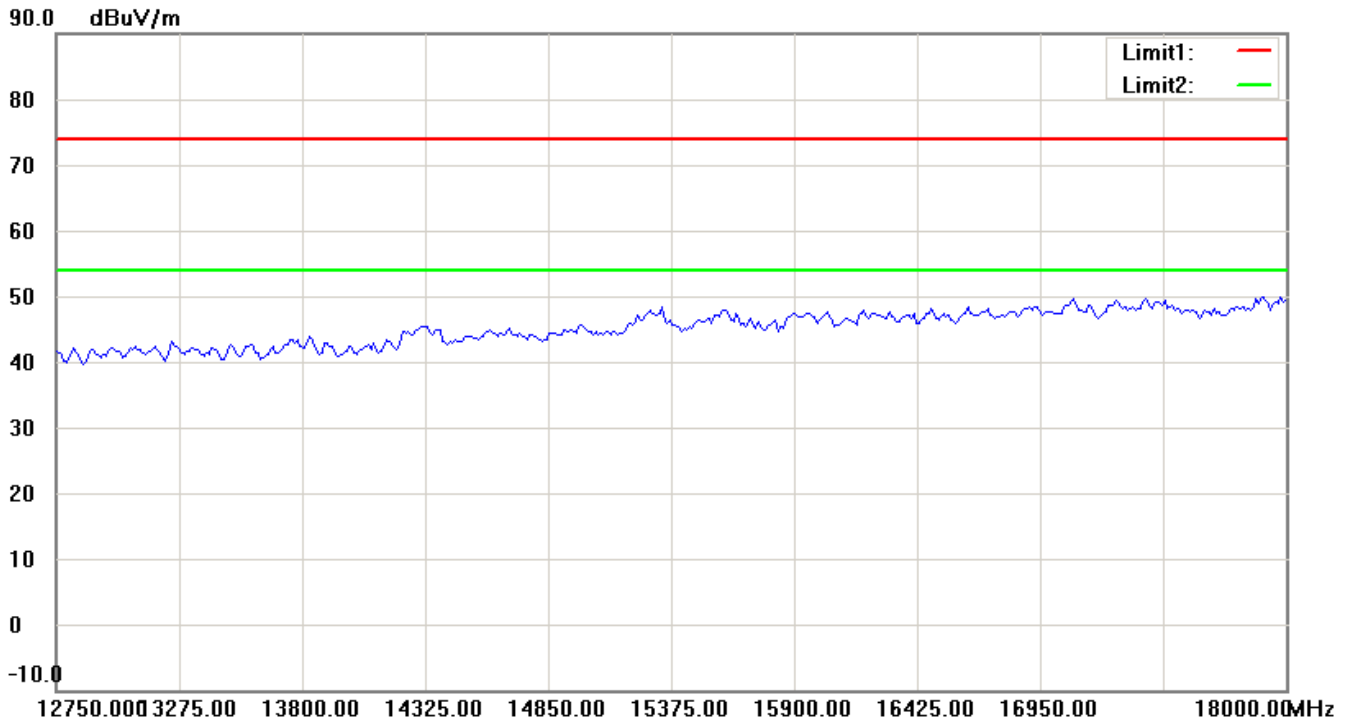
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

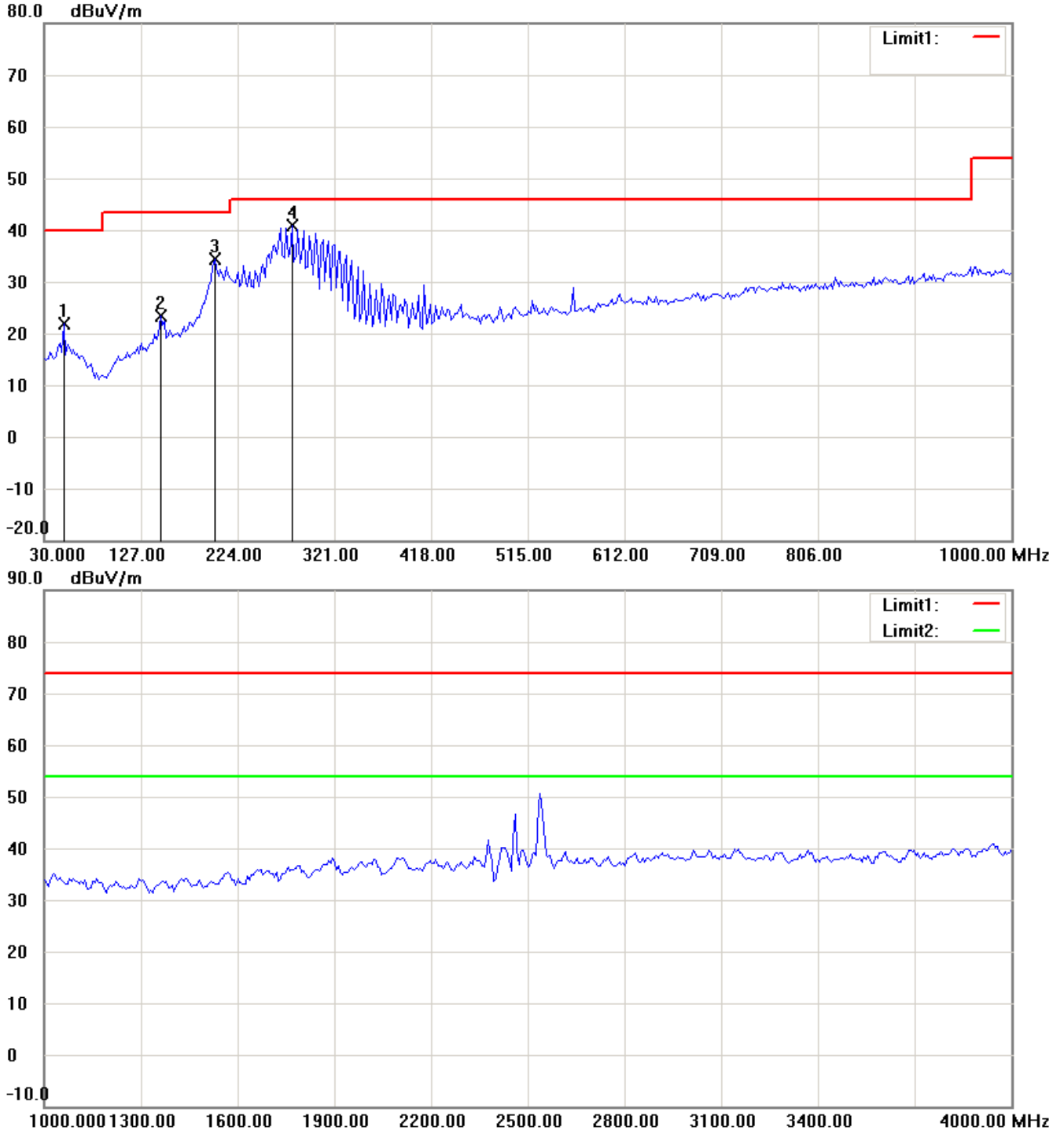
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

TX 802.11b CH11
Antenna Polarization H



Up Line: Peak Limit Line Down Line: Ave Limit Line

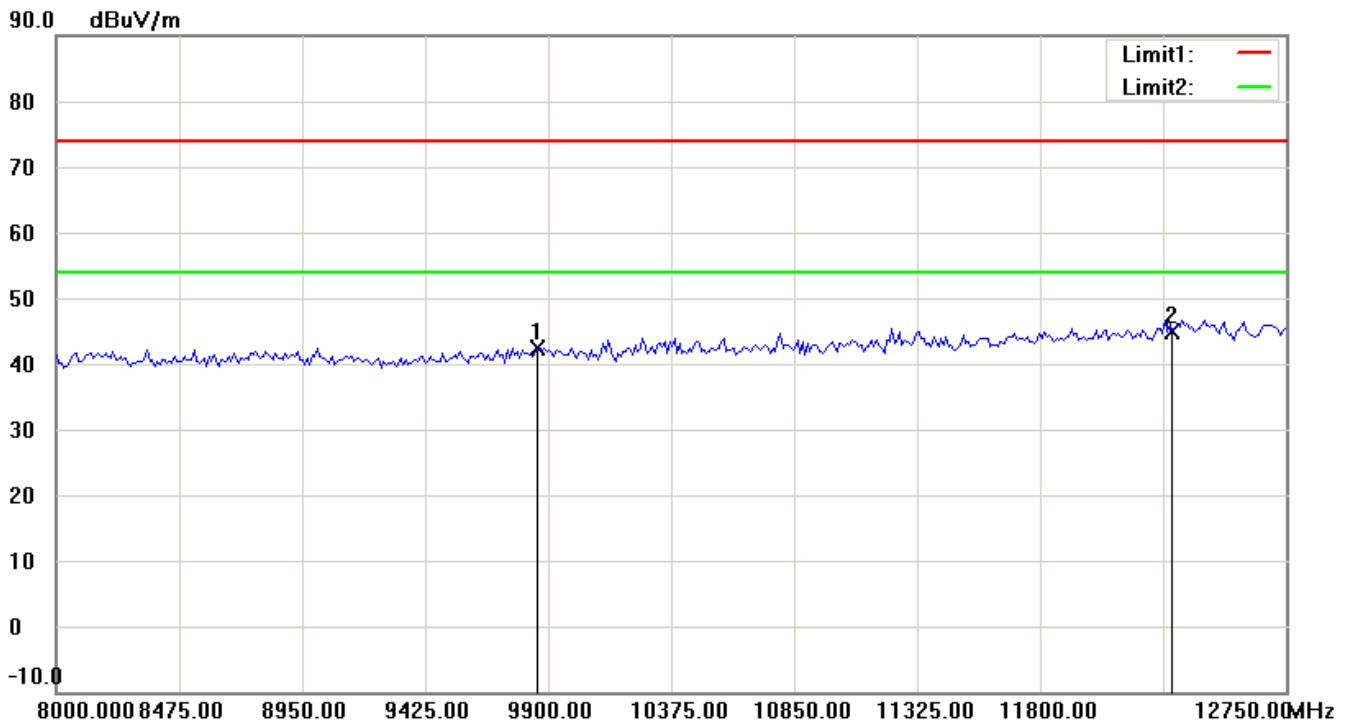
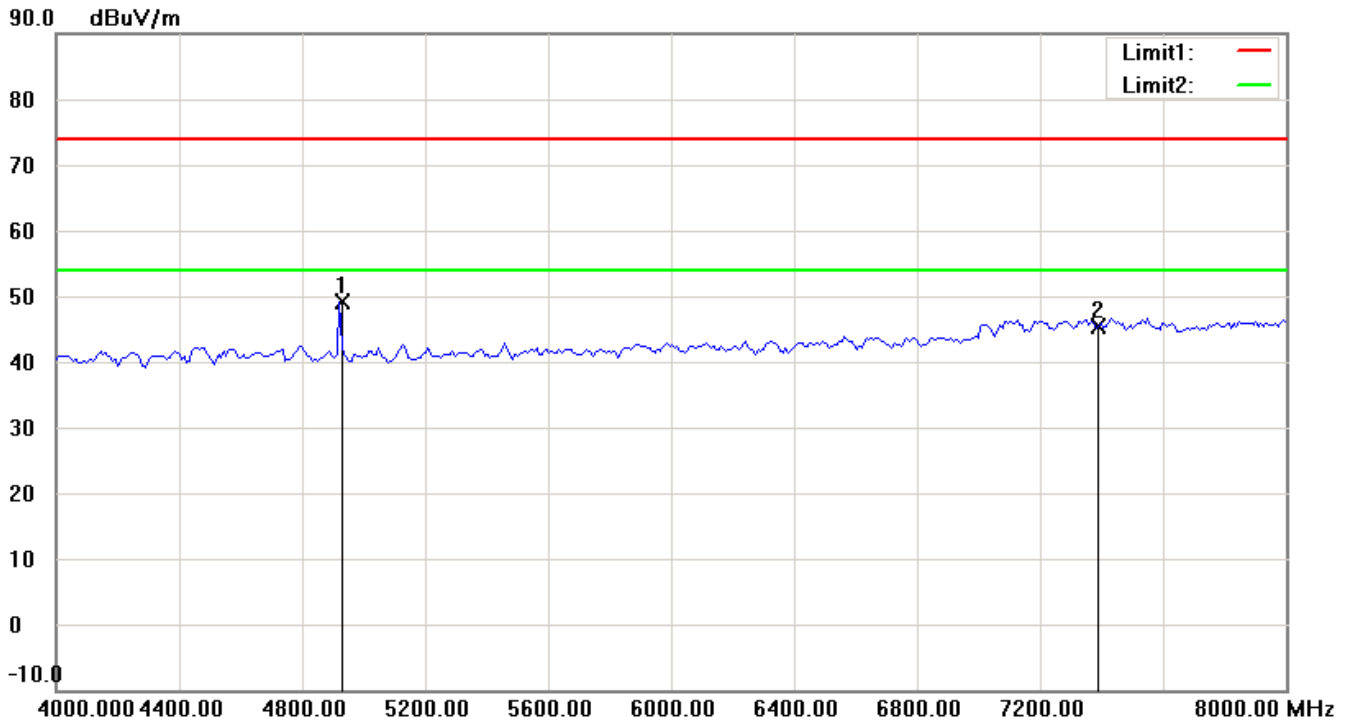
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Worldwide Testing Services(Taiwan) Co., Ltd.

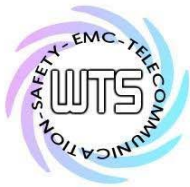
Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



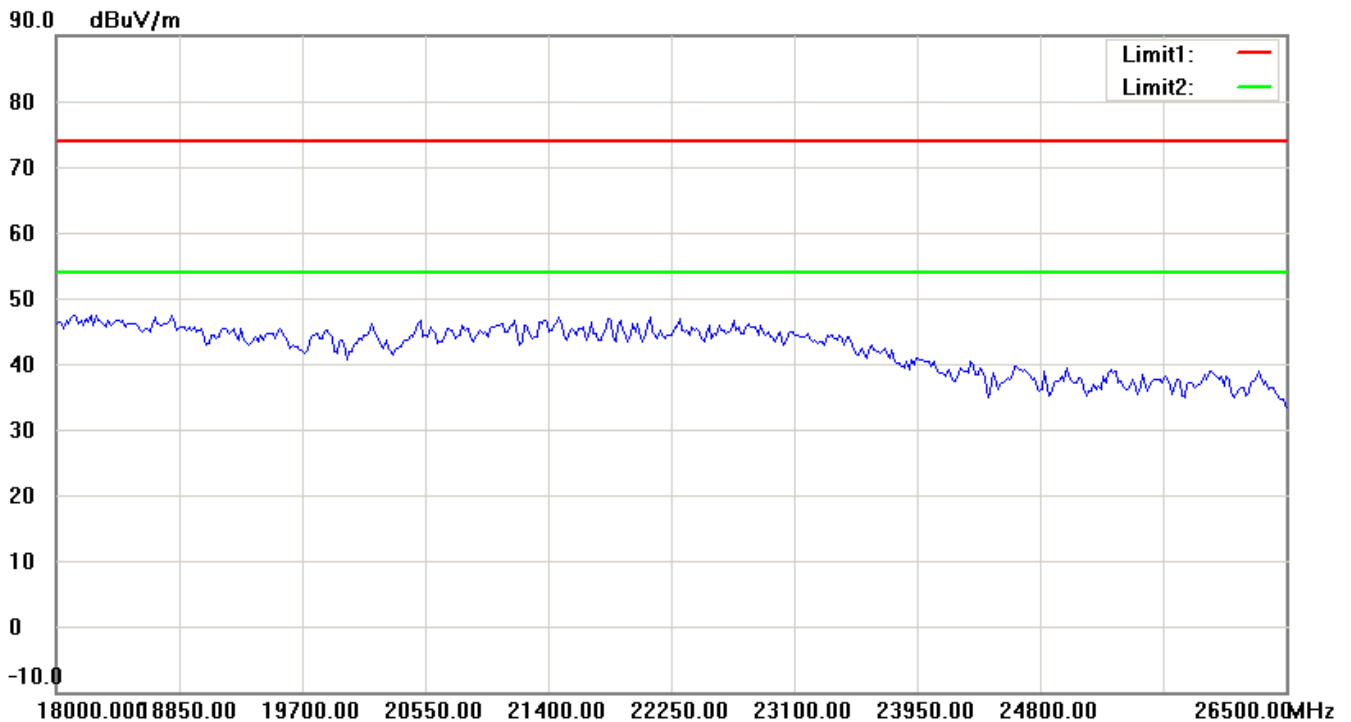
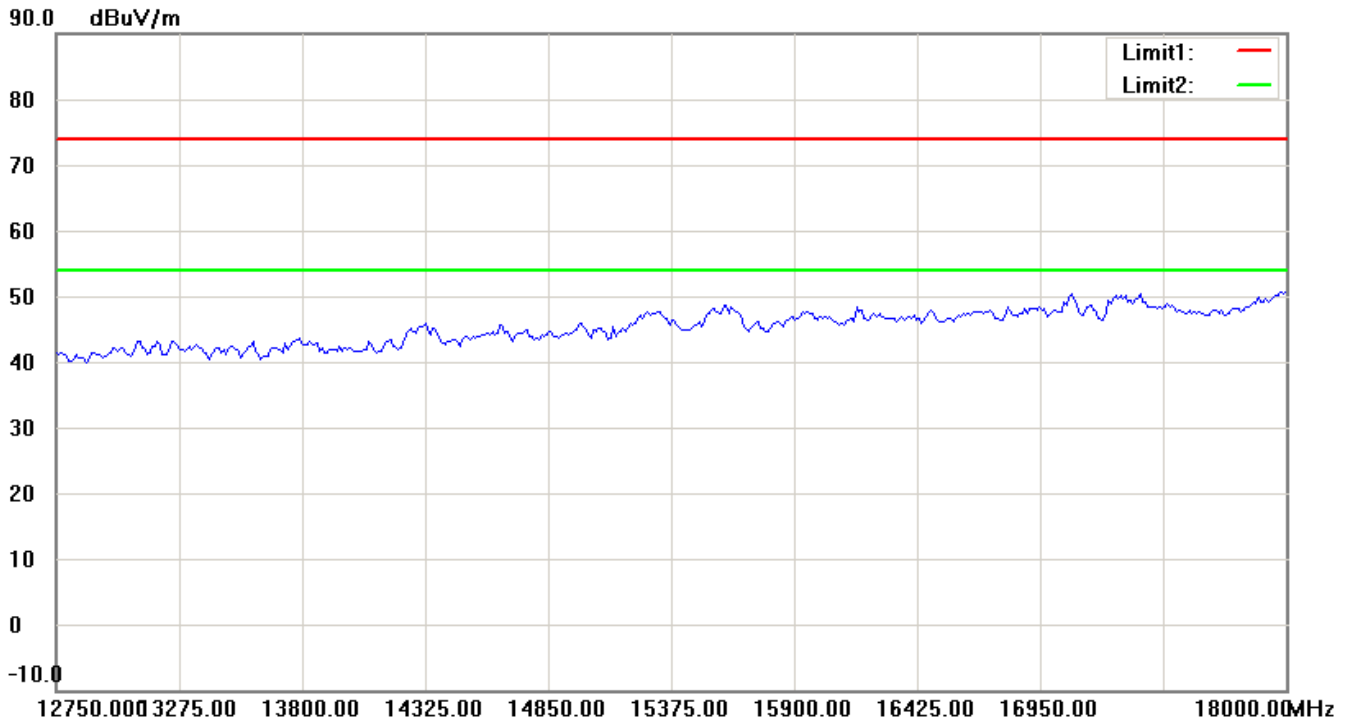
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

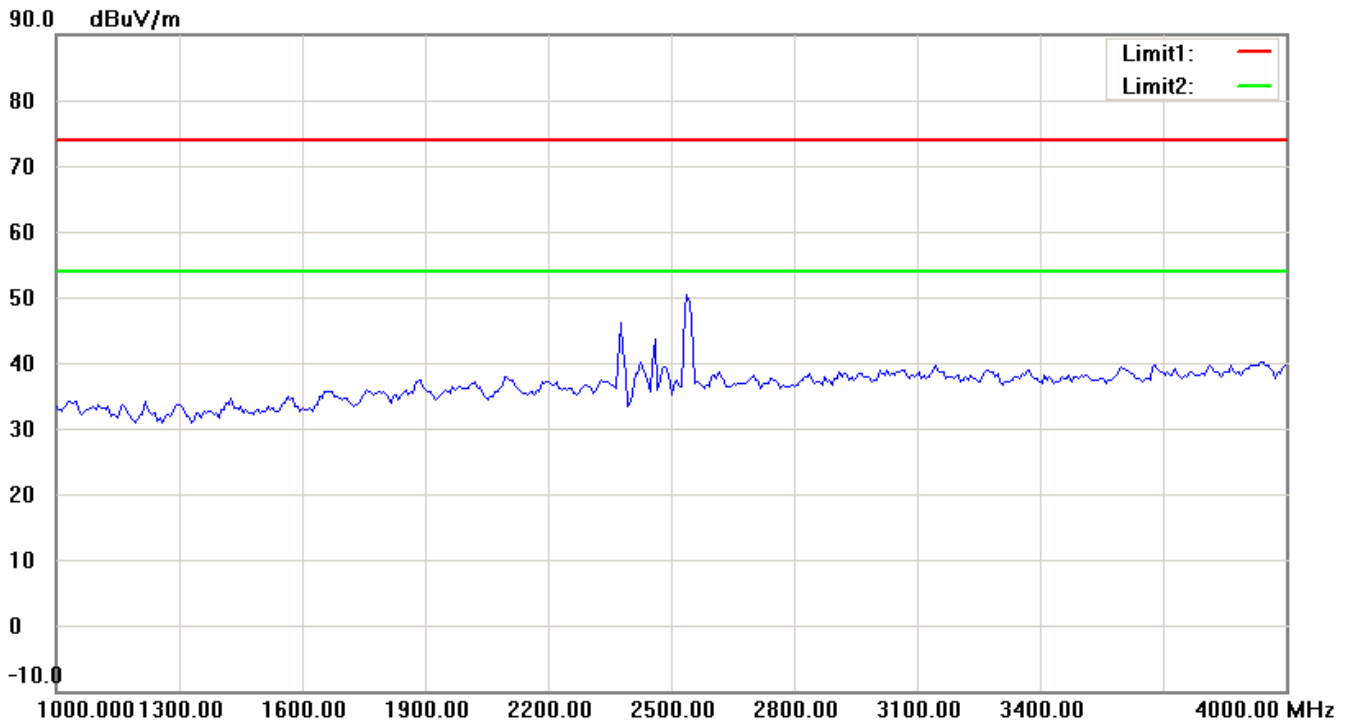
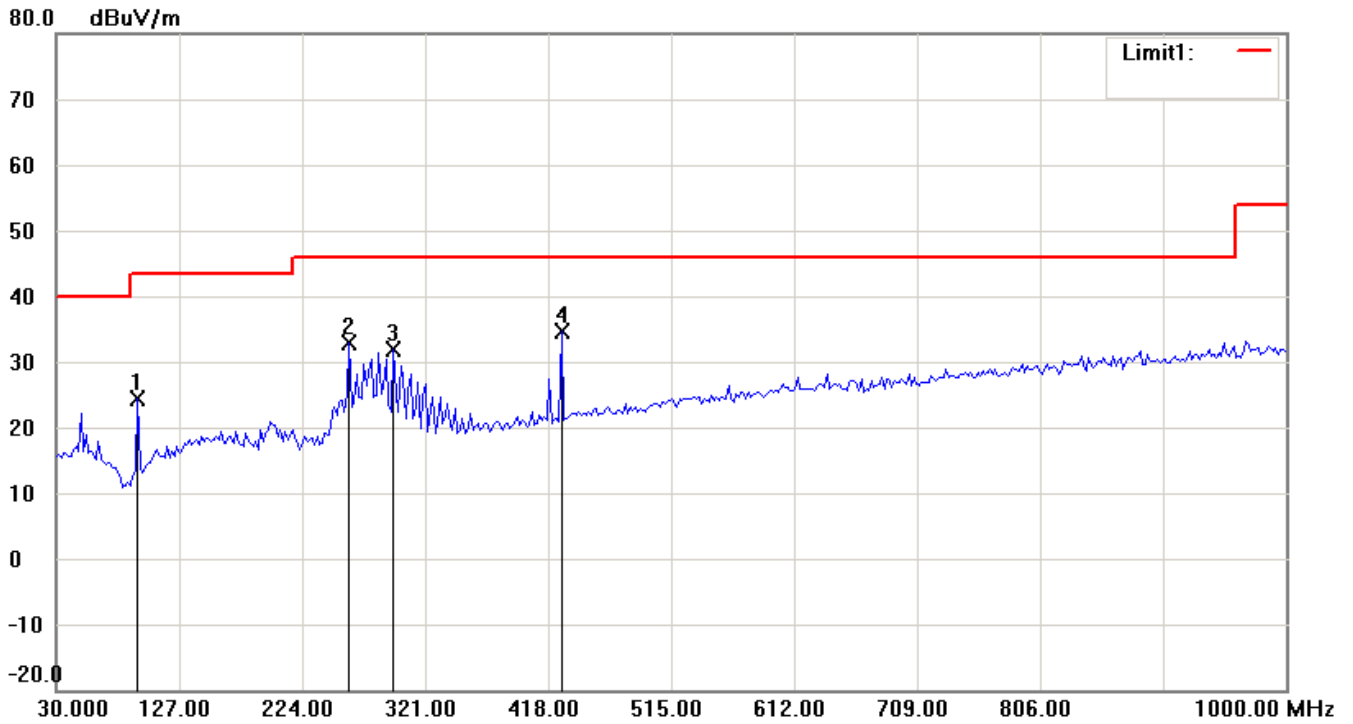
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Antenna Polarization V



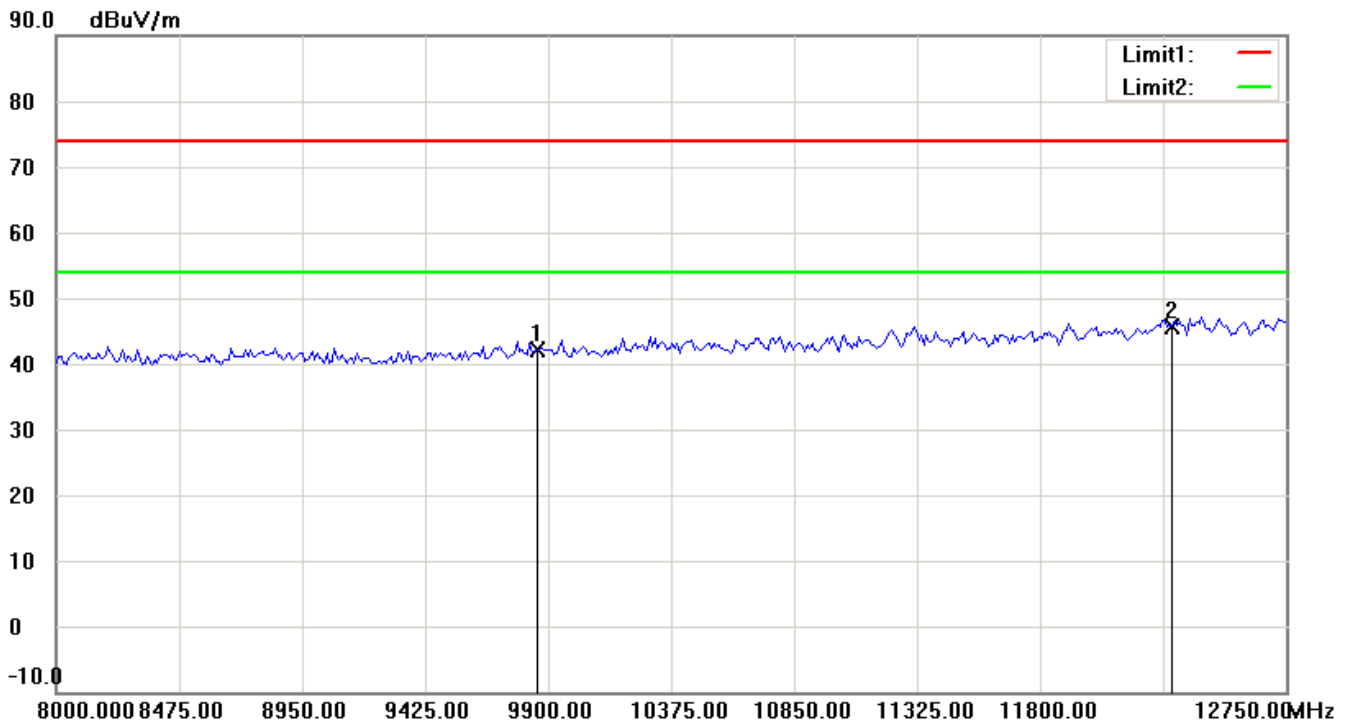
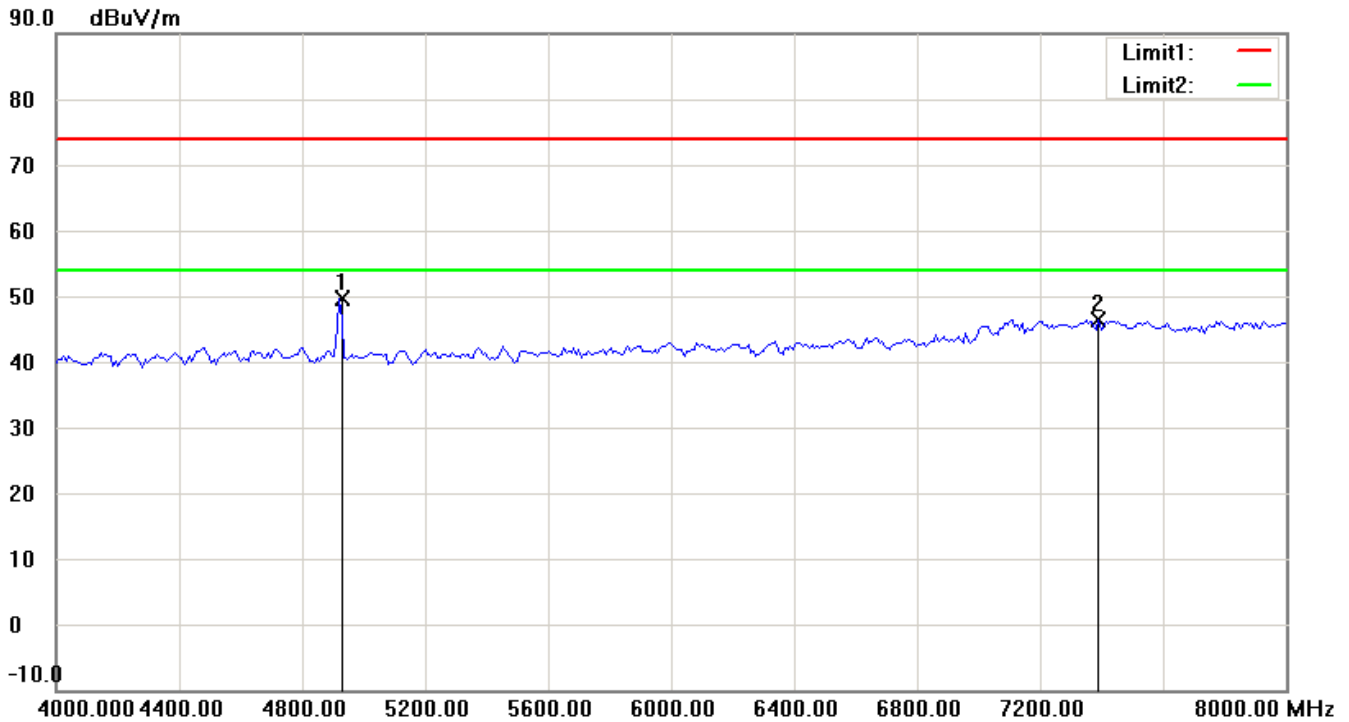
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

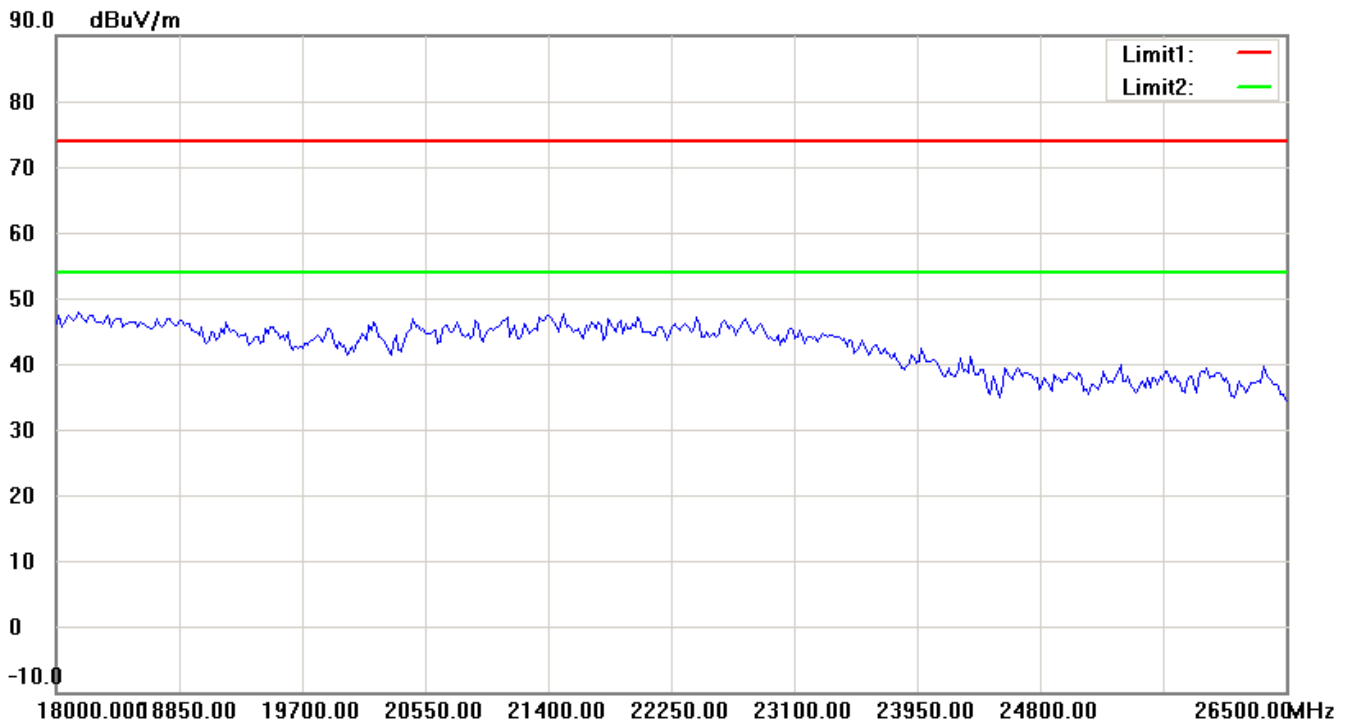
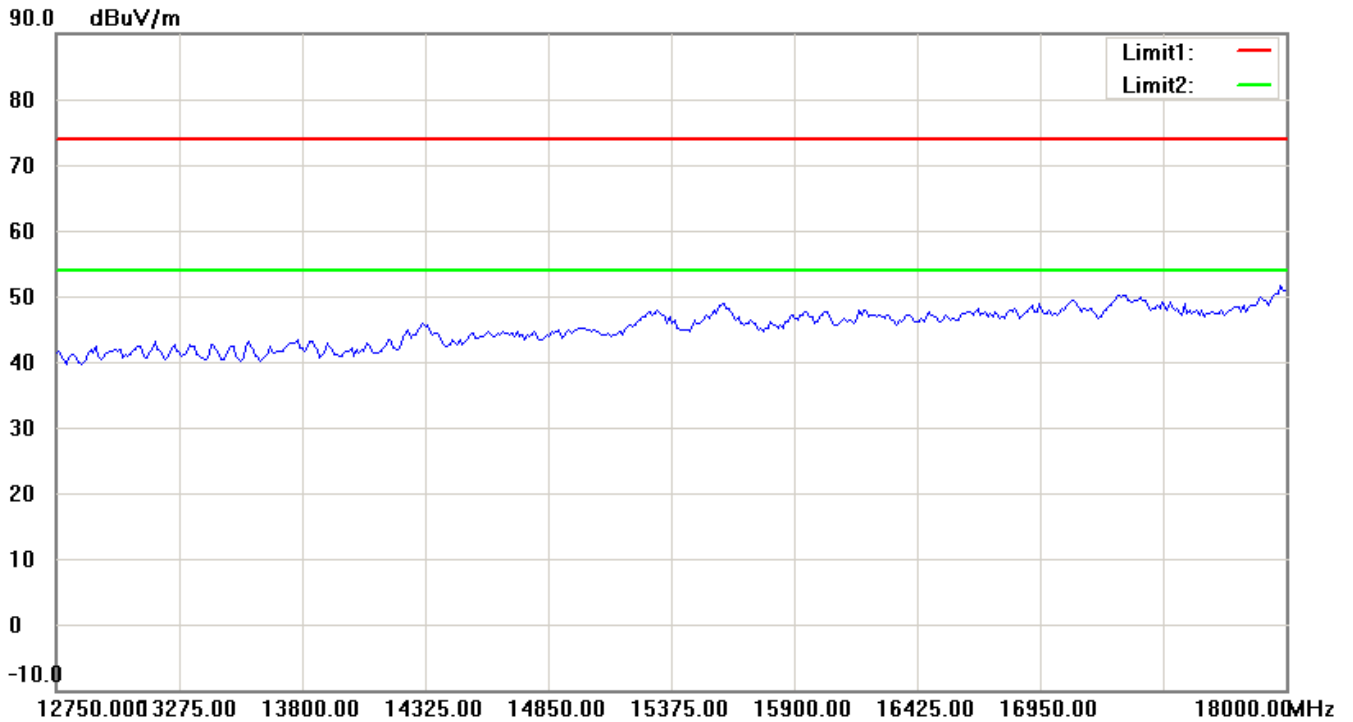
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

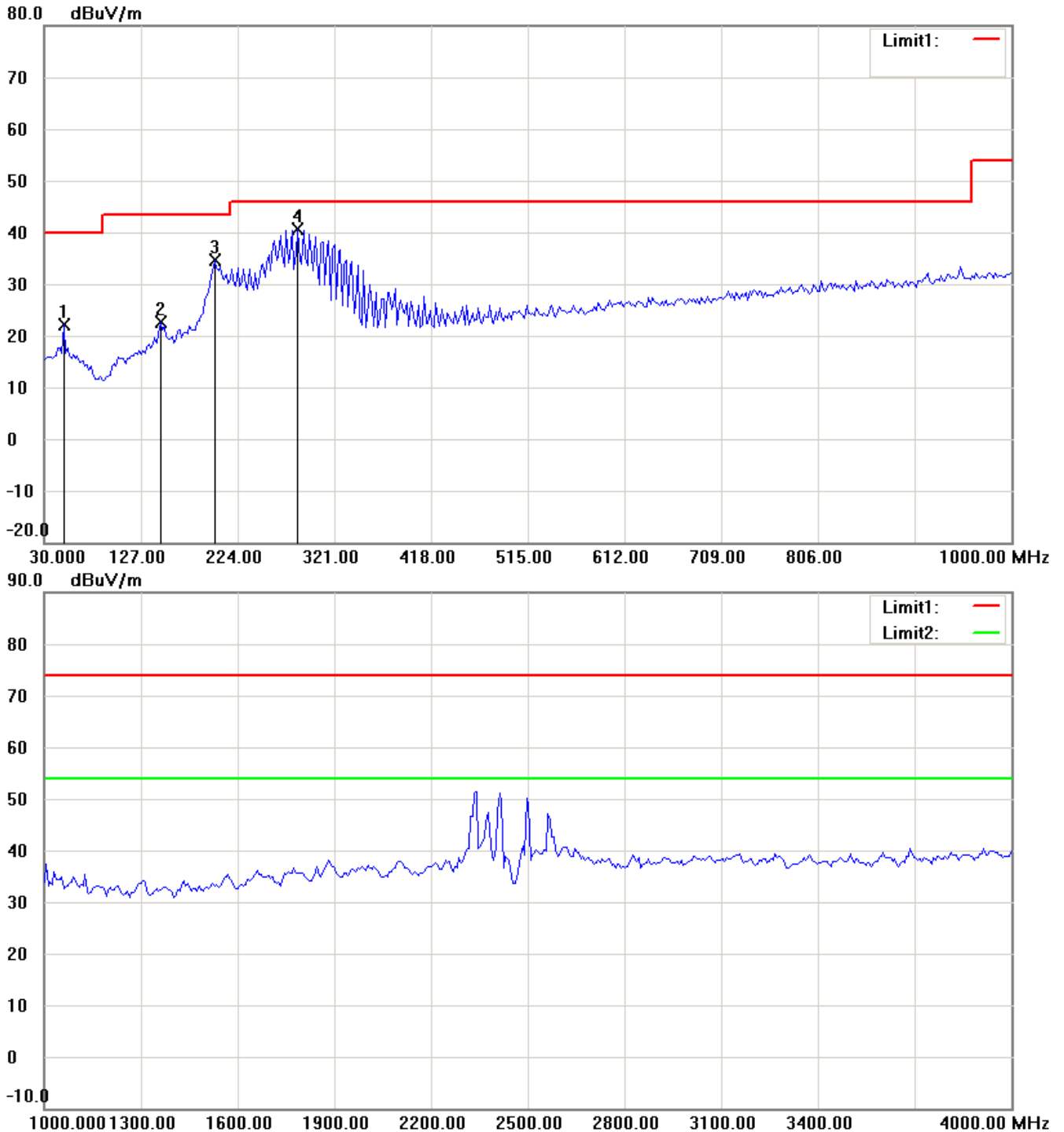
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

TX 802.11g CH1
Antenna Polarization H



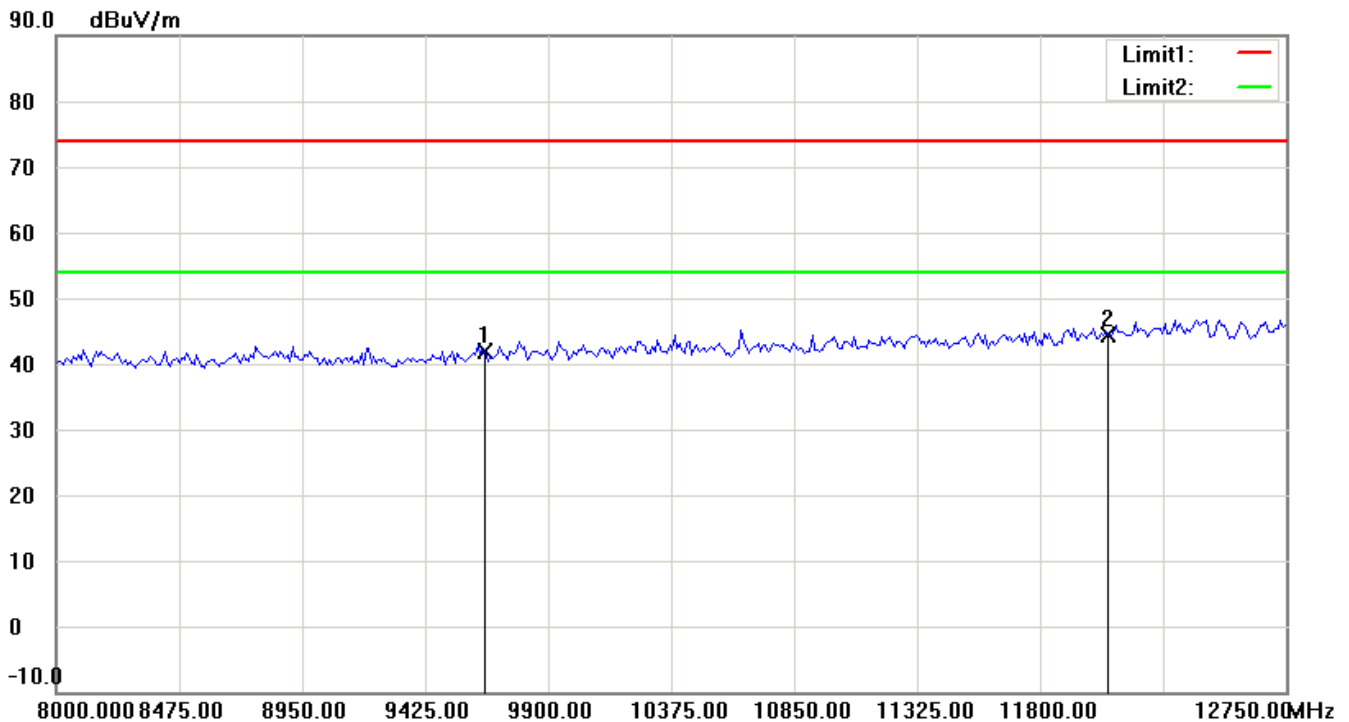
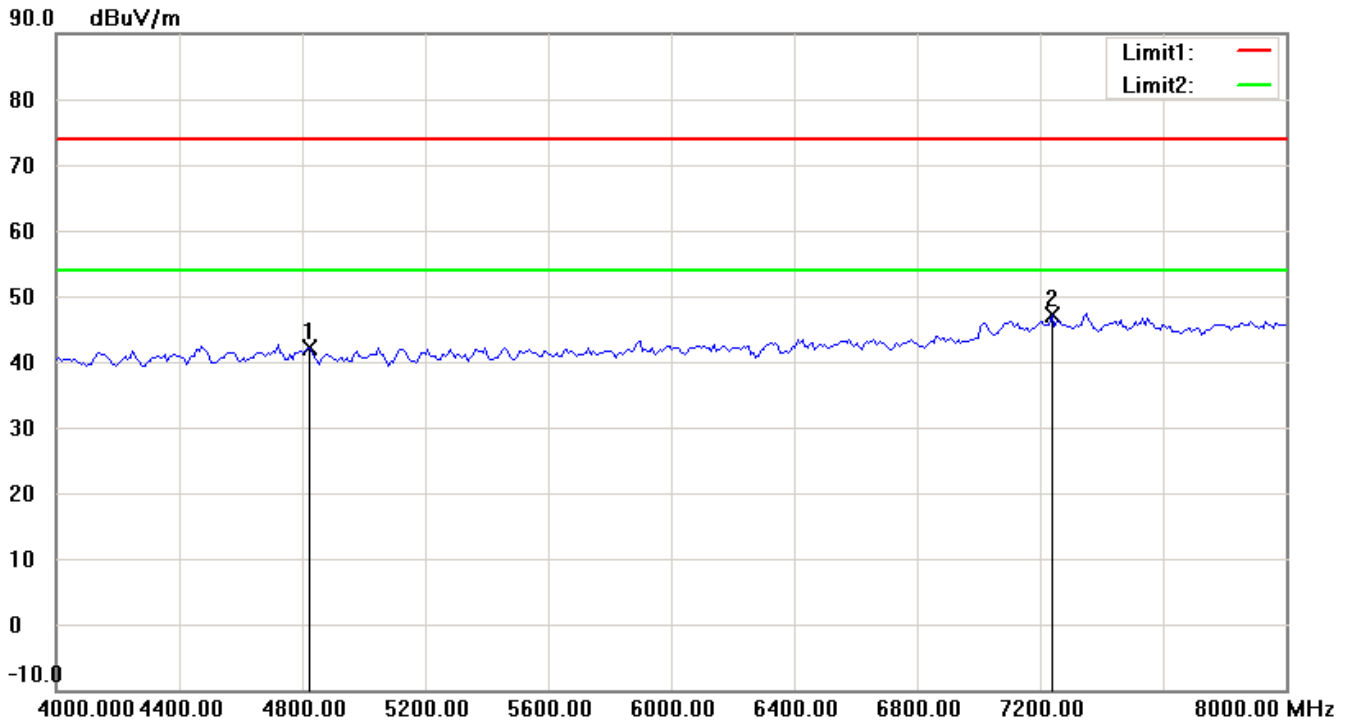
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



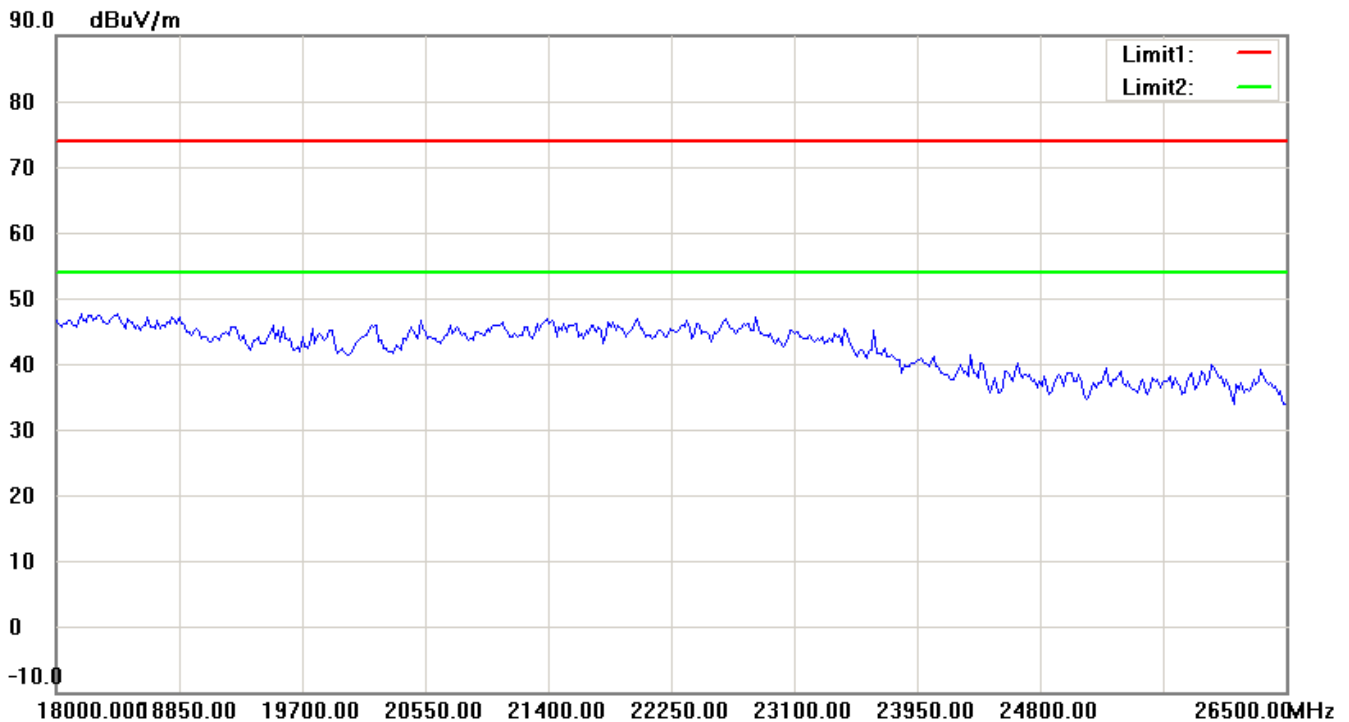
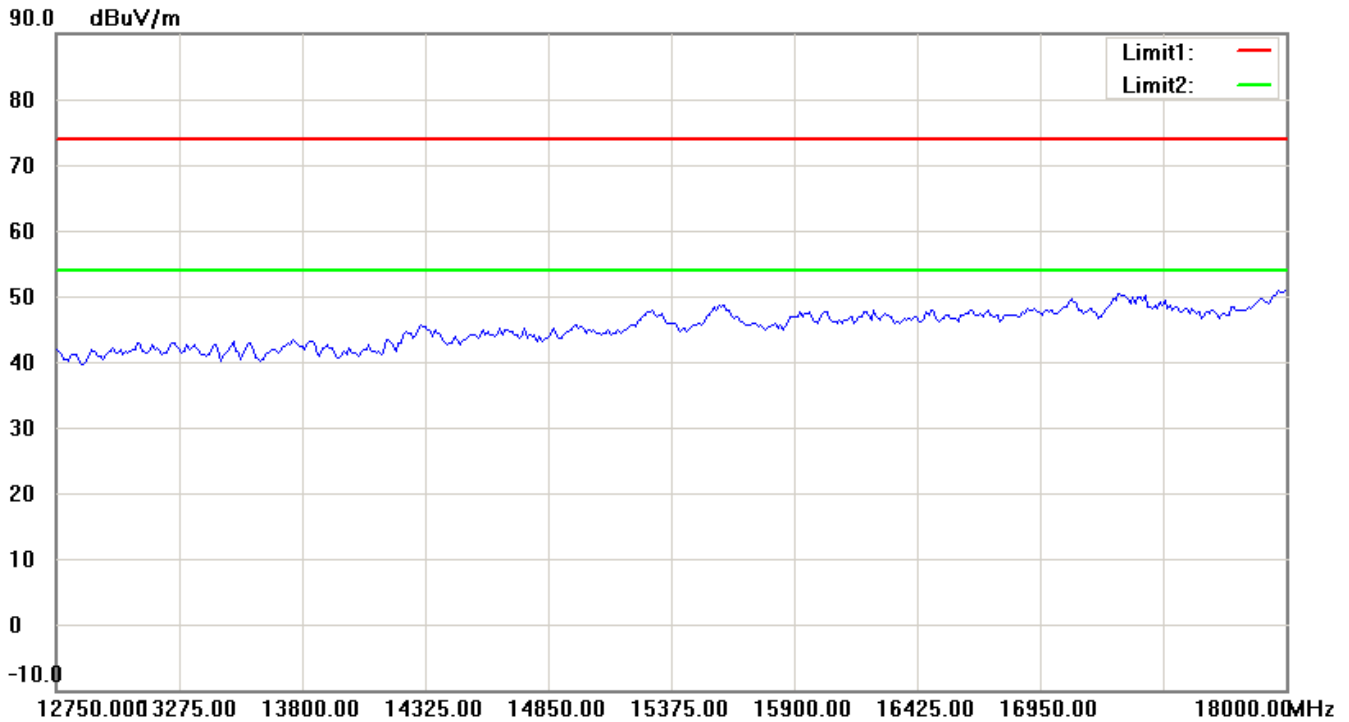
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

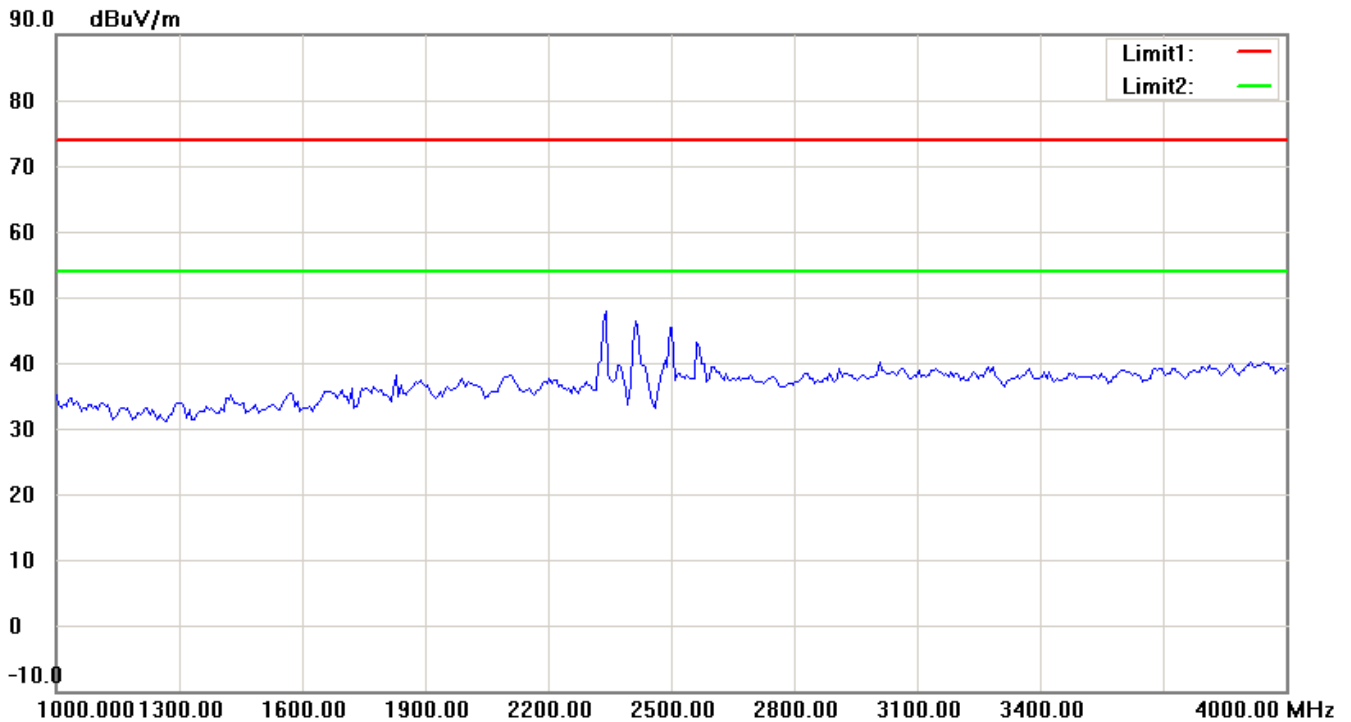
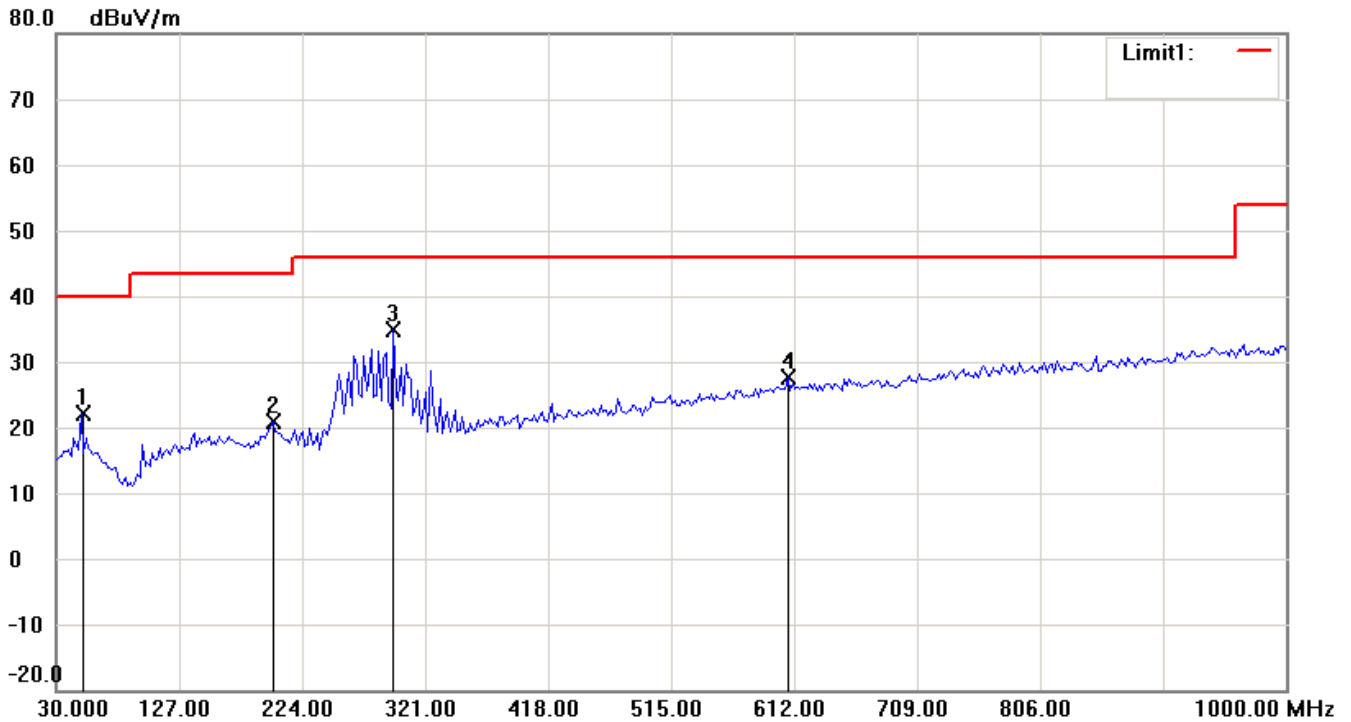
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Antenna Polarization V



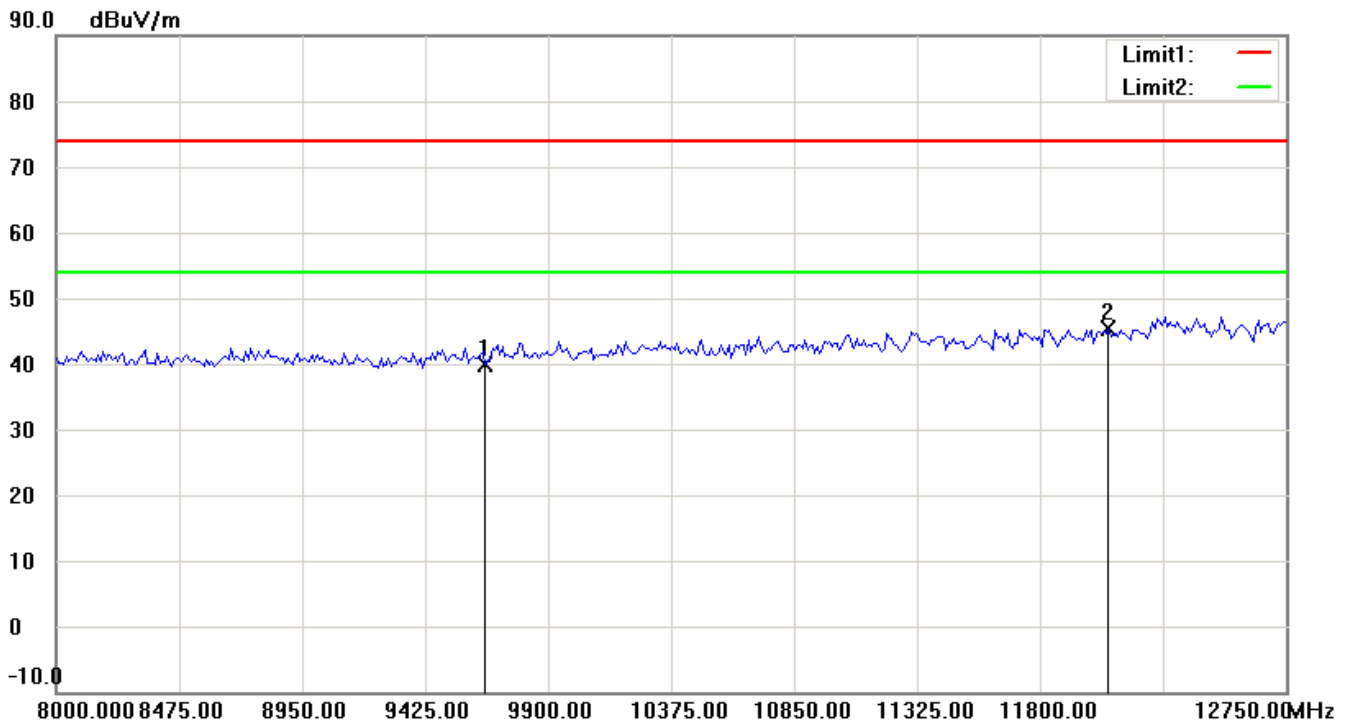
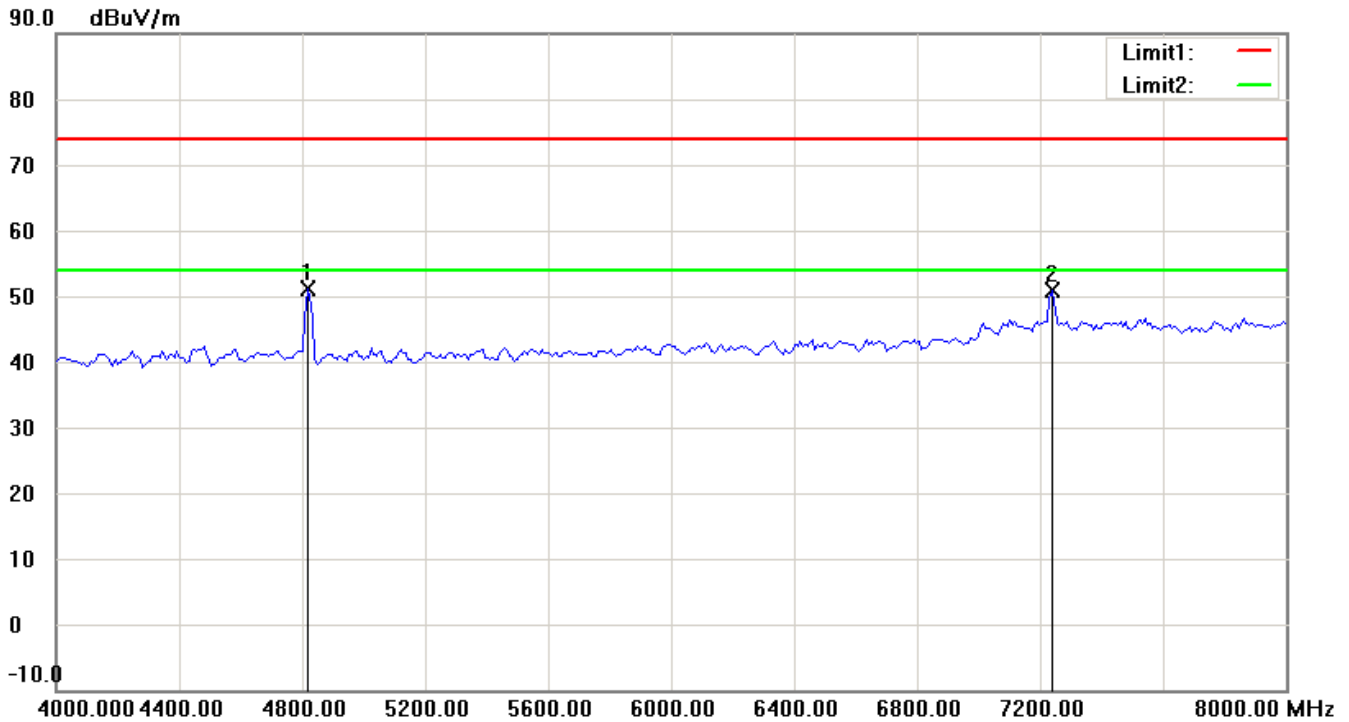
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

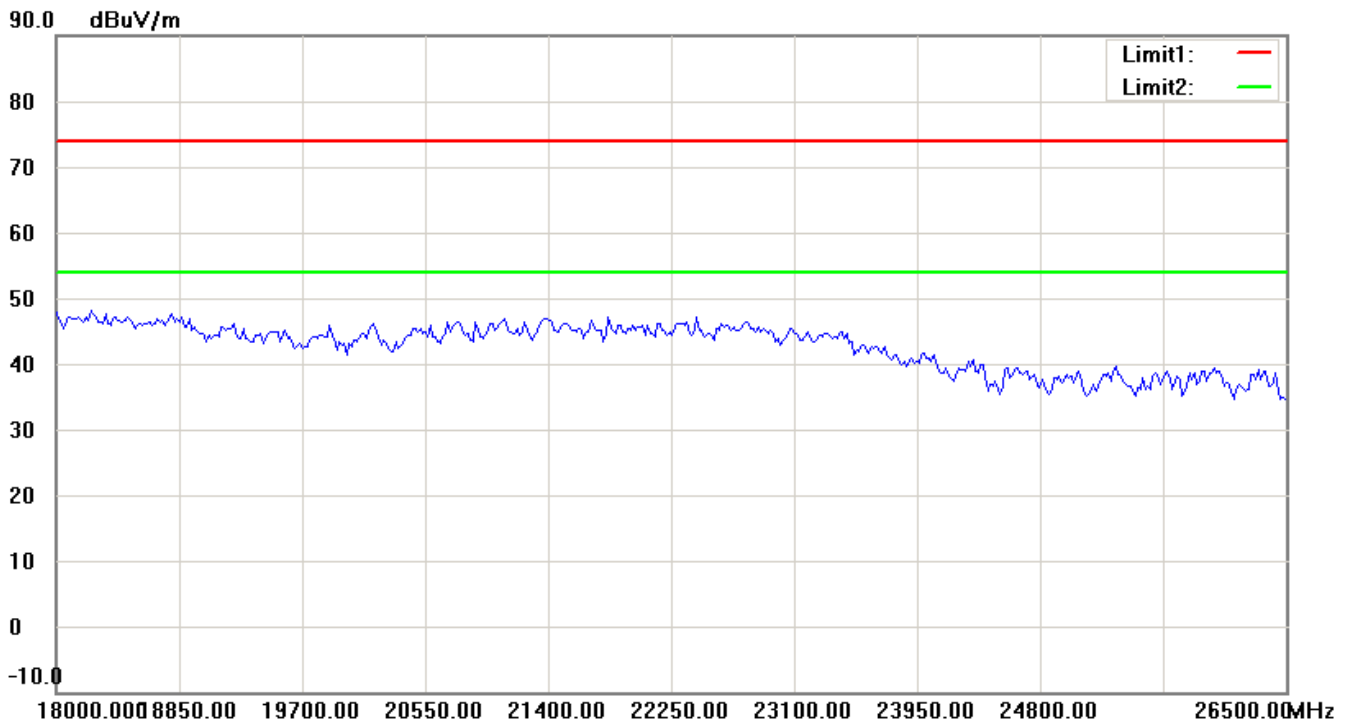
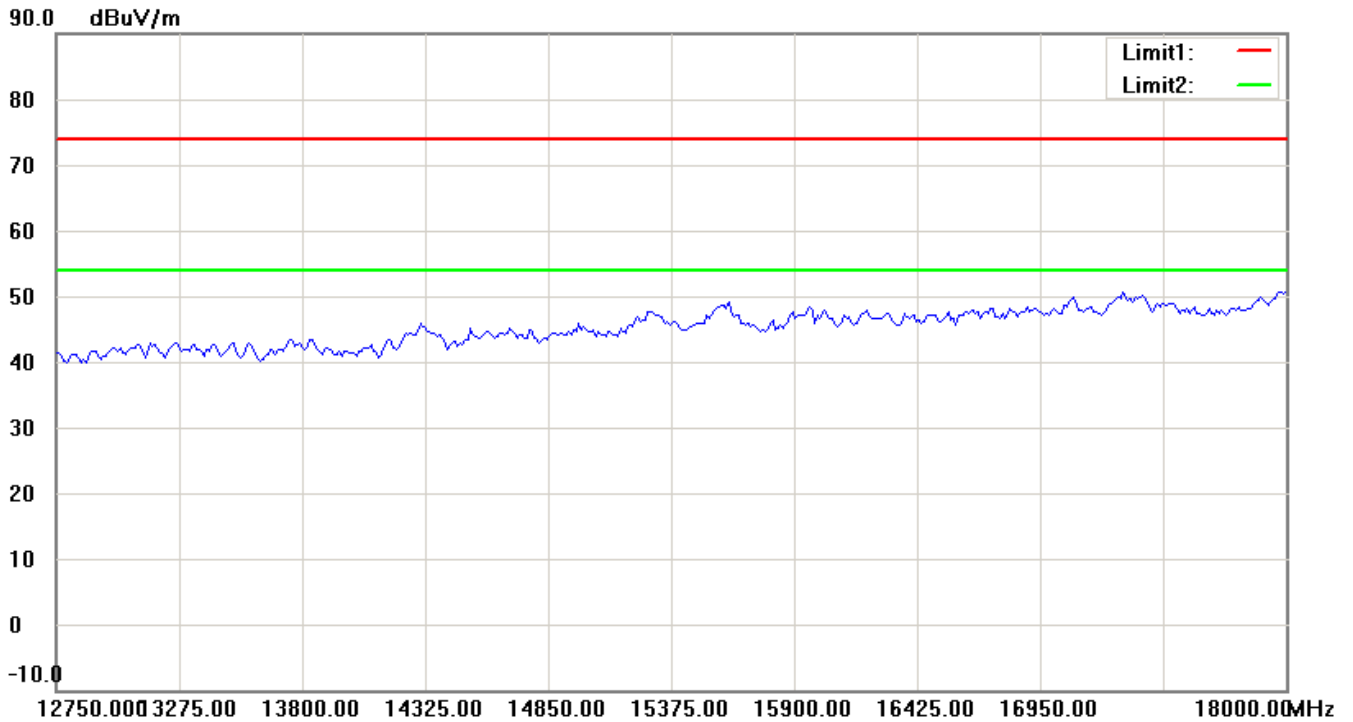
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

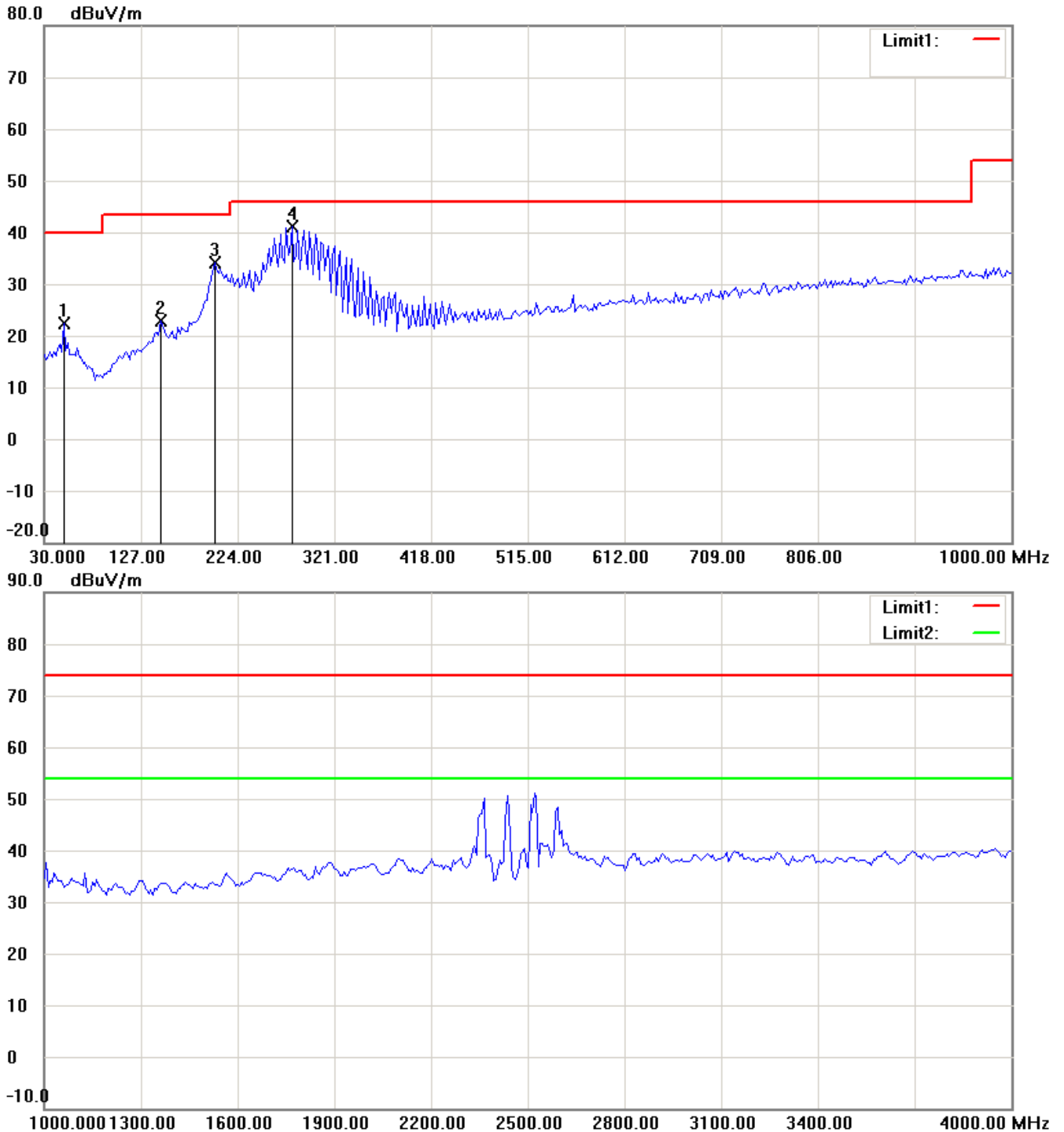
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

TX 802.11g CH6
Antenna Polarization H



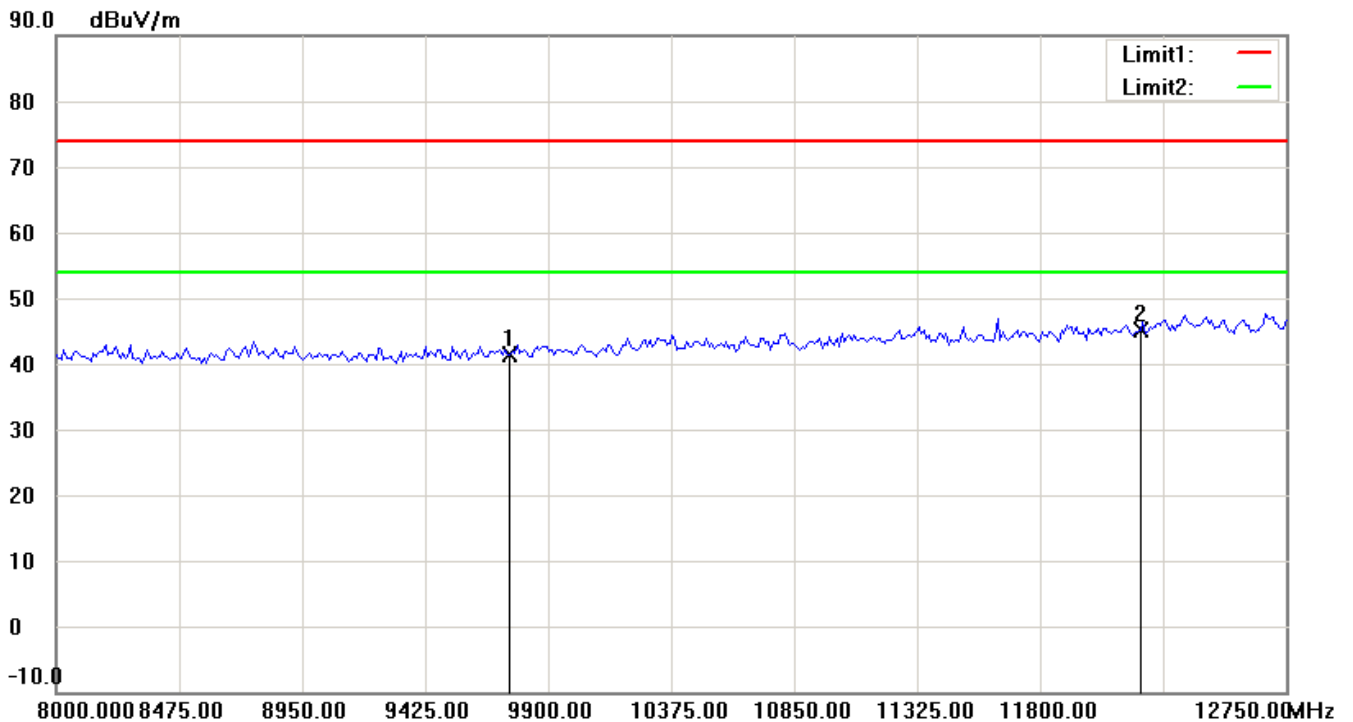
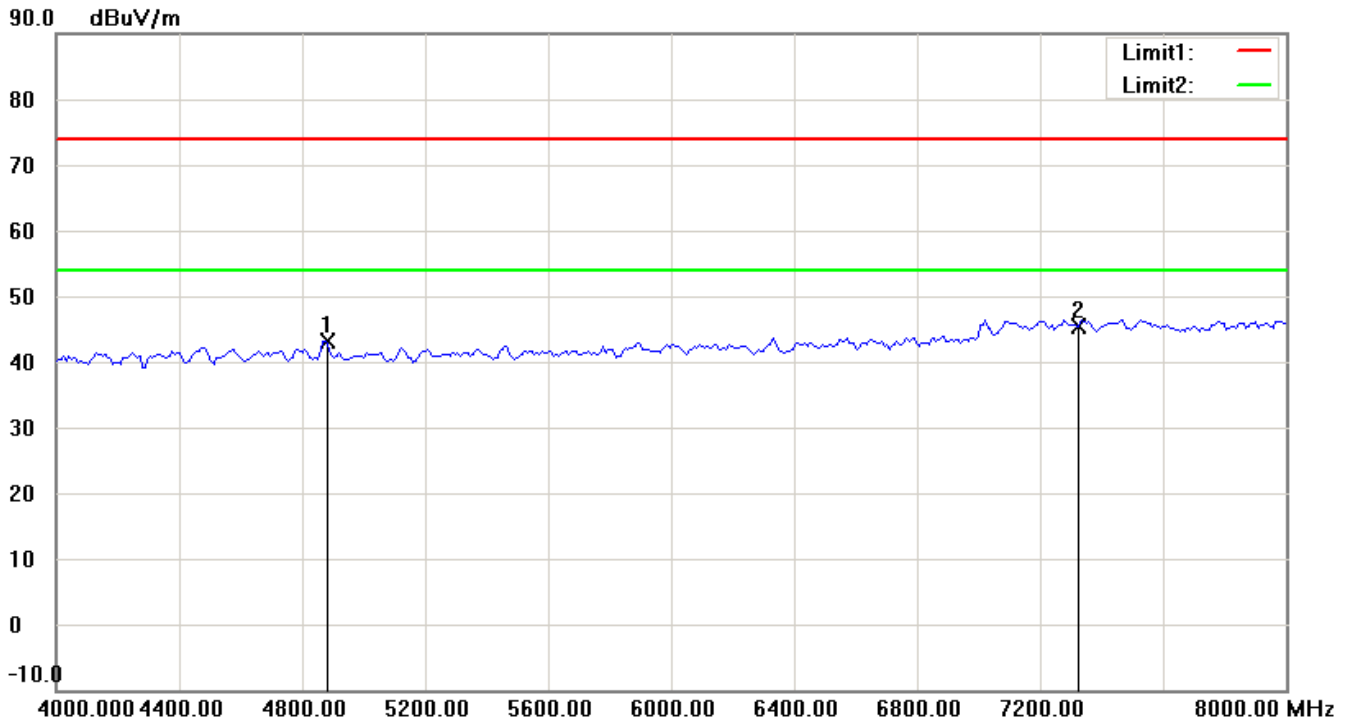
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



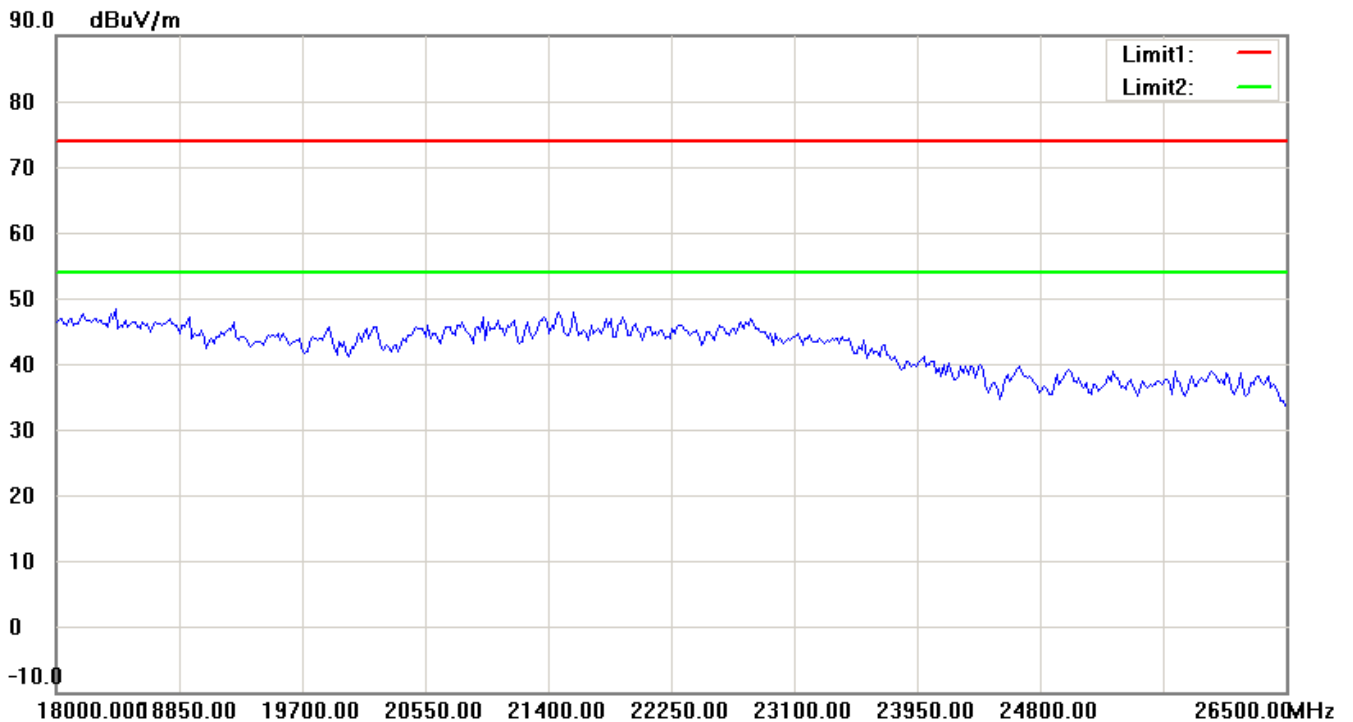
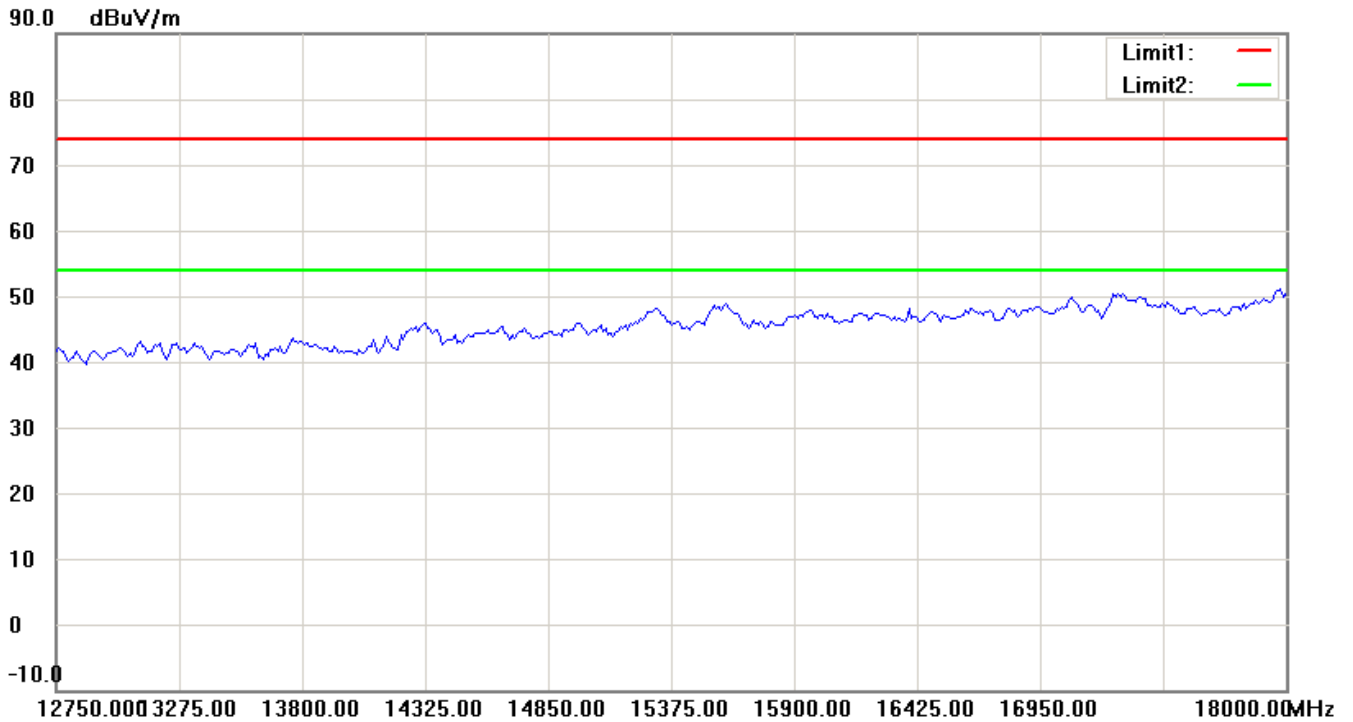
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

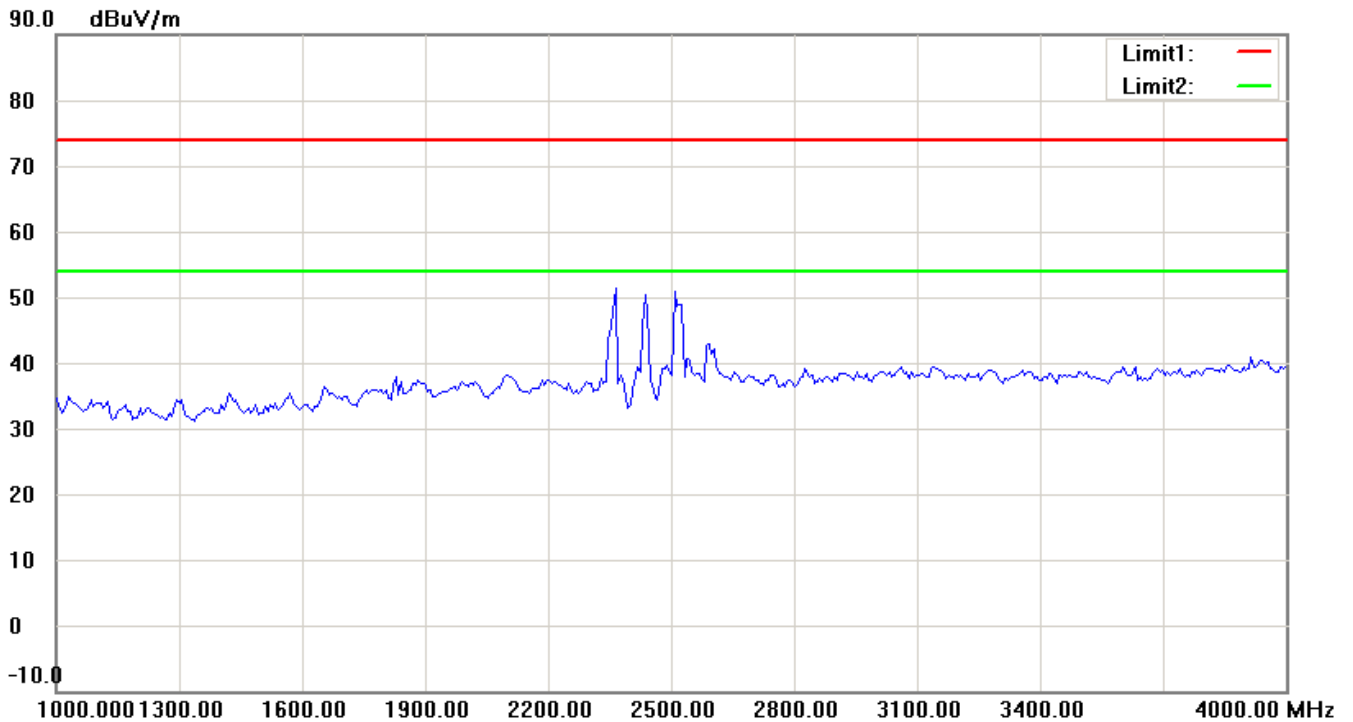
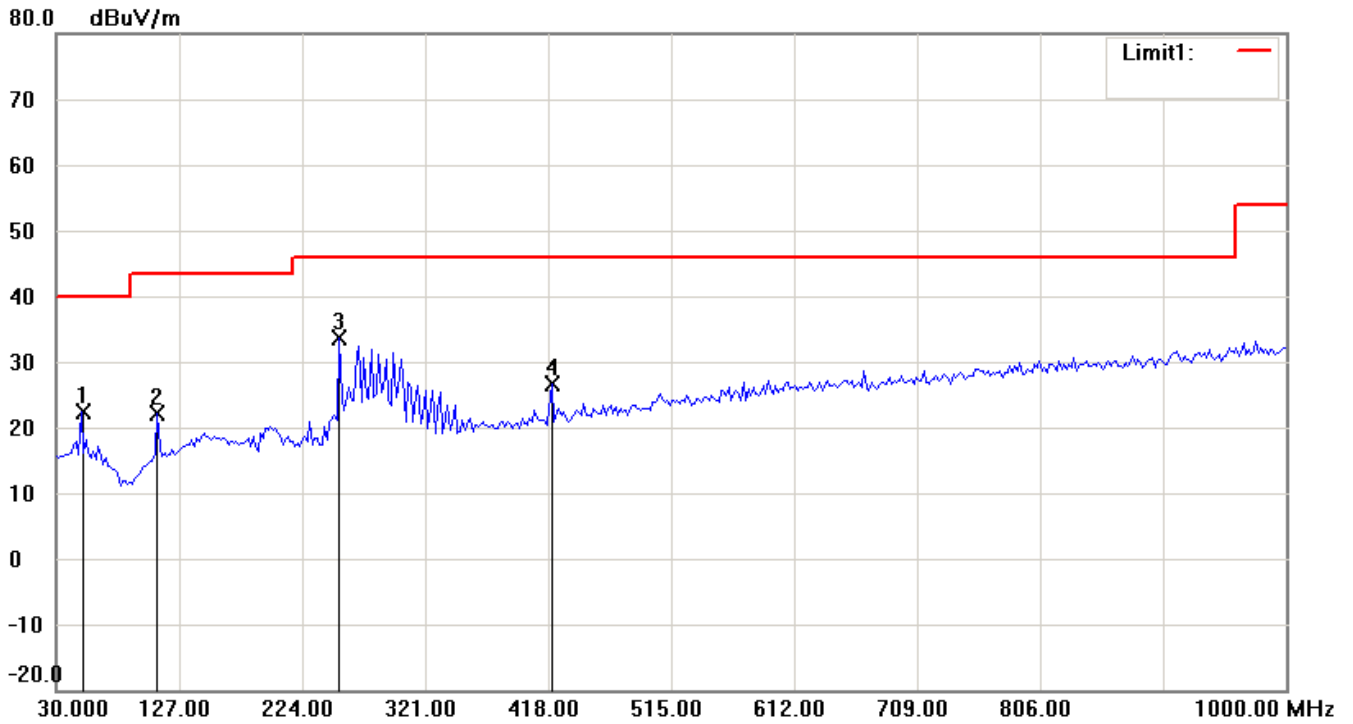
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Antenna Polarization V



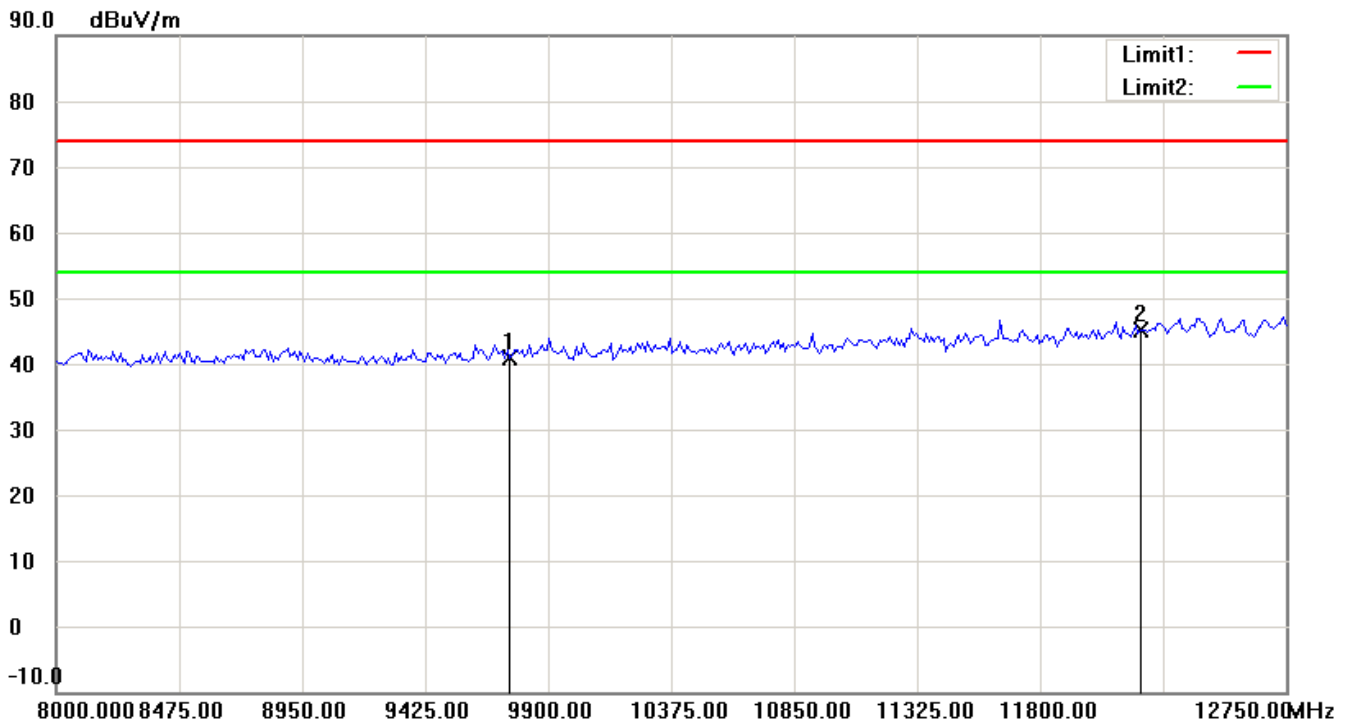
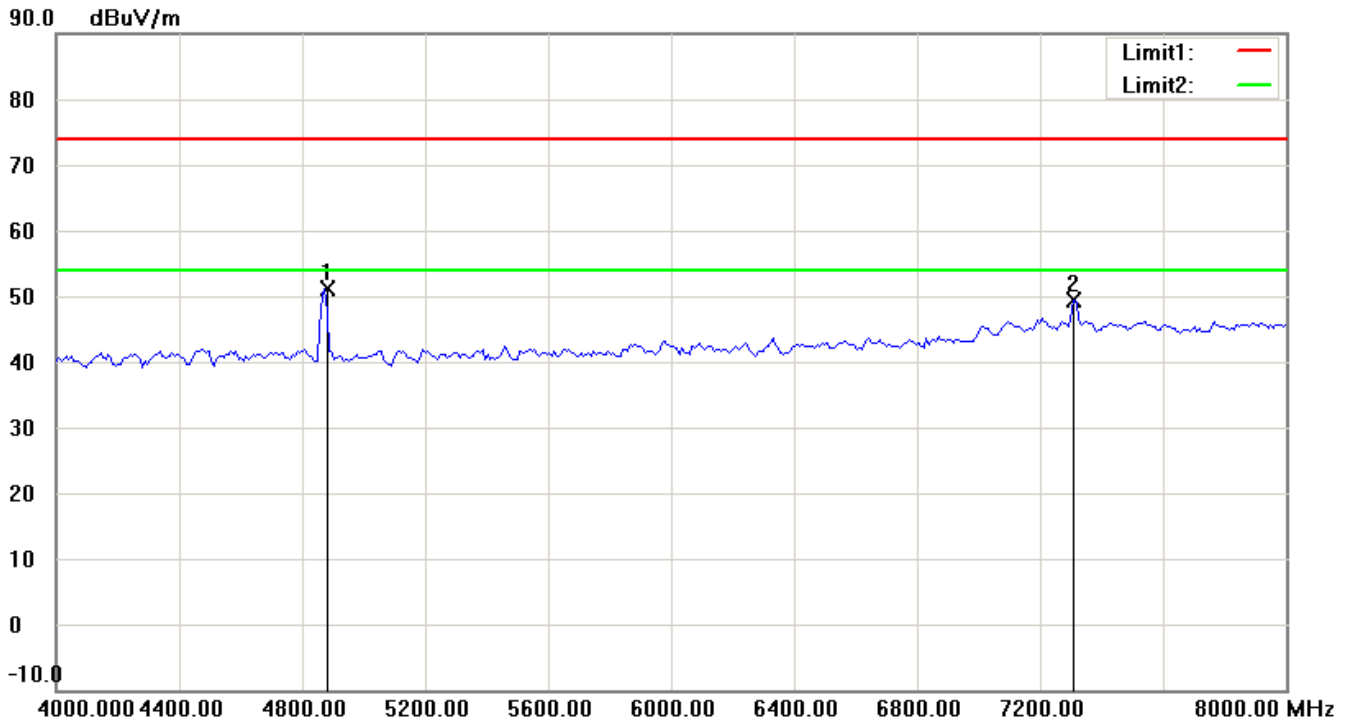
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



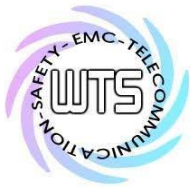
Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



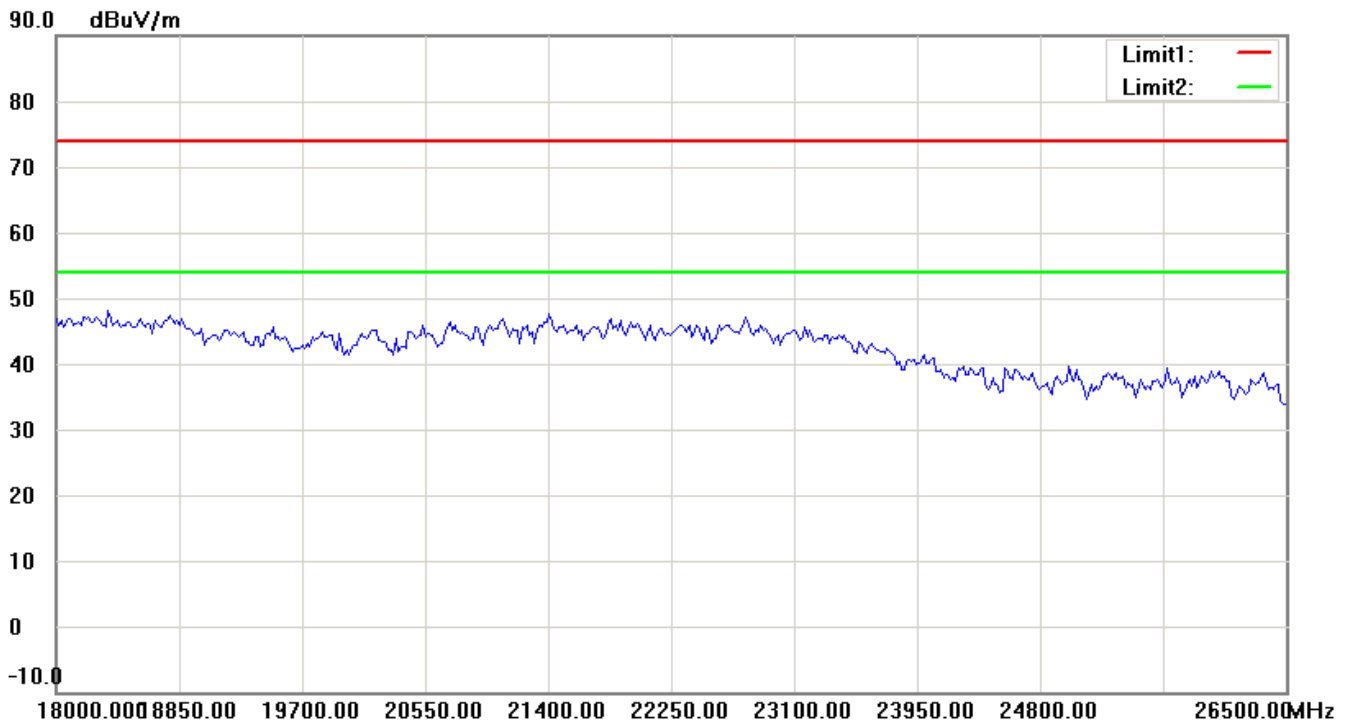
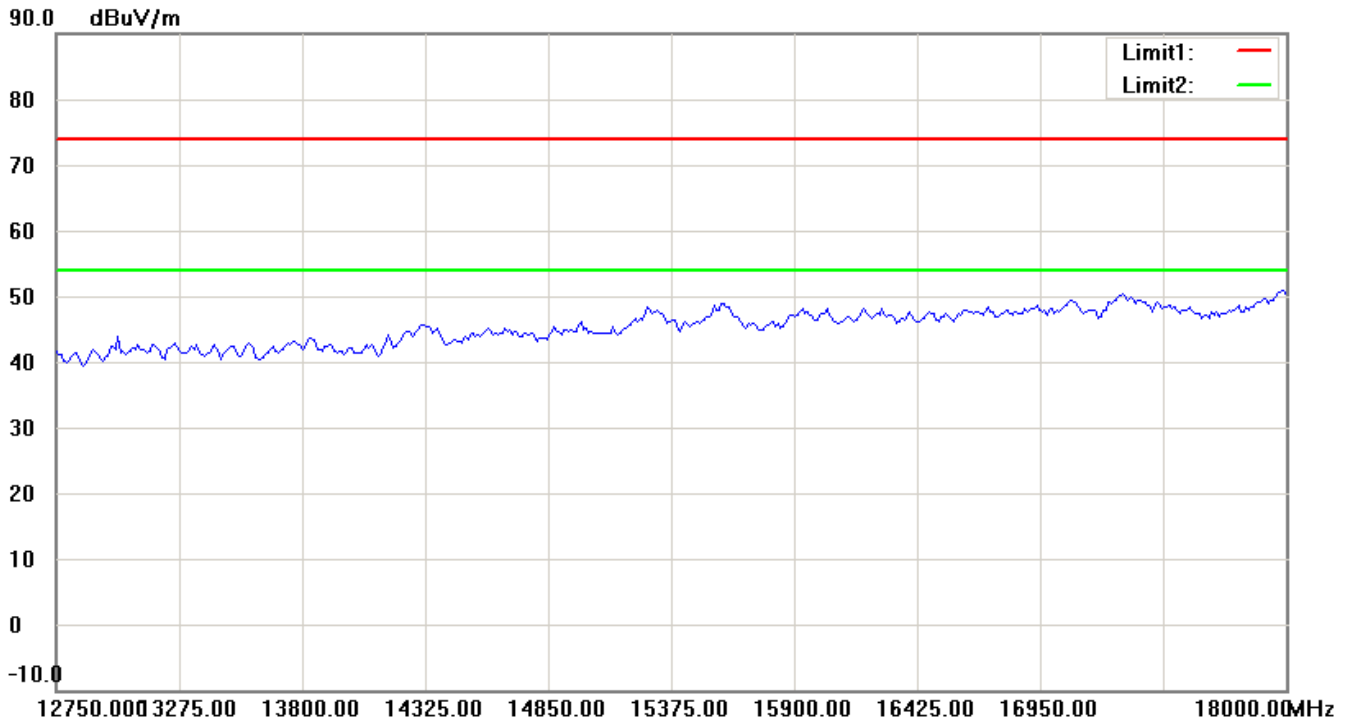
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

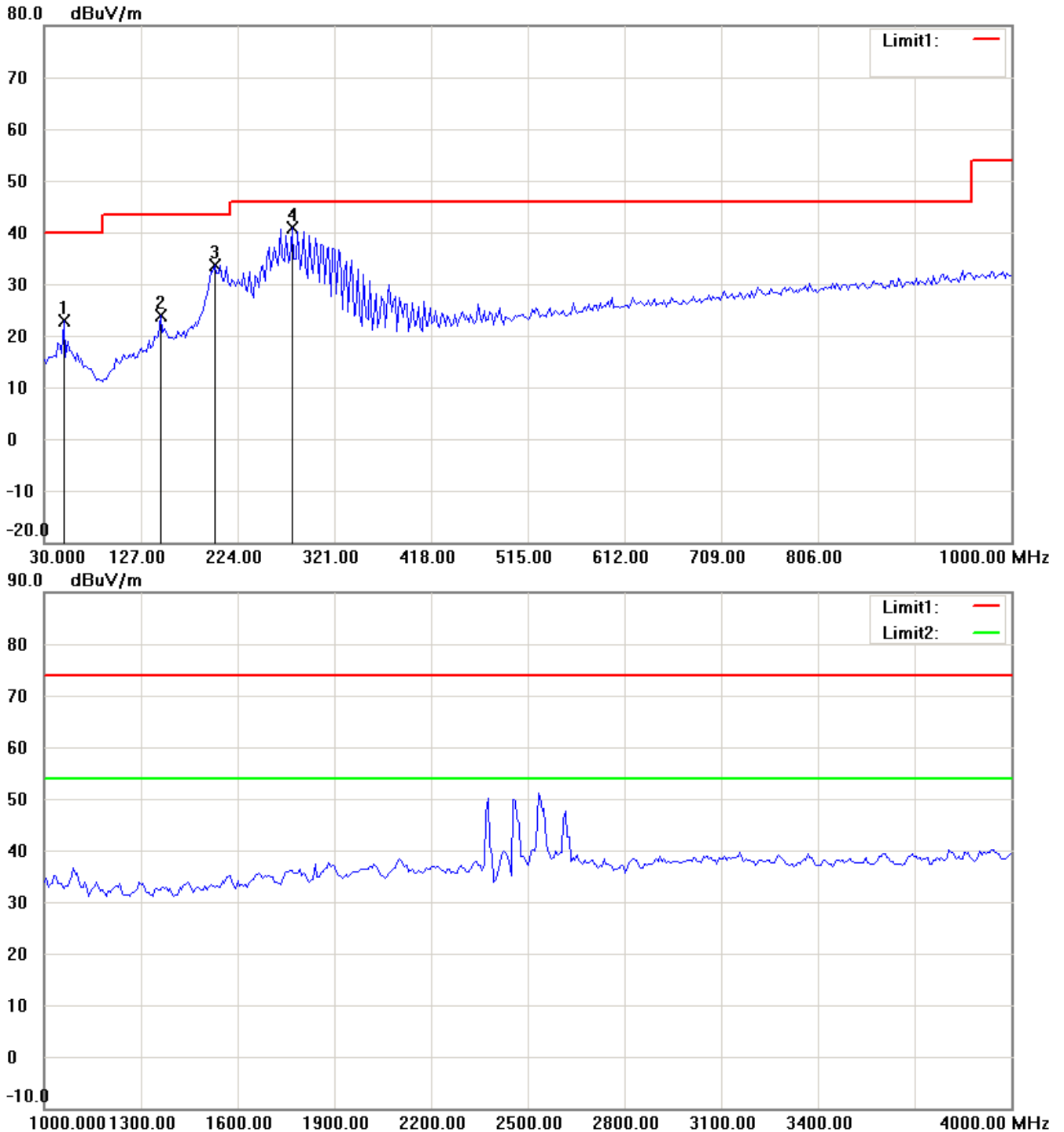
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

TX 802.11g CH11
Antenna Polarization H



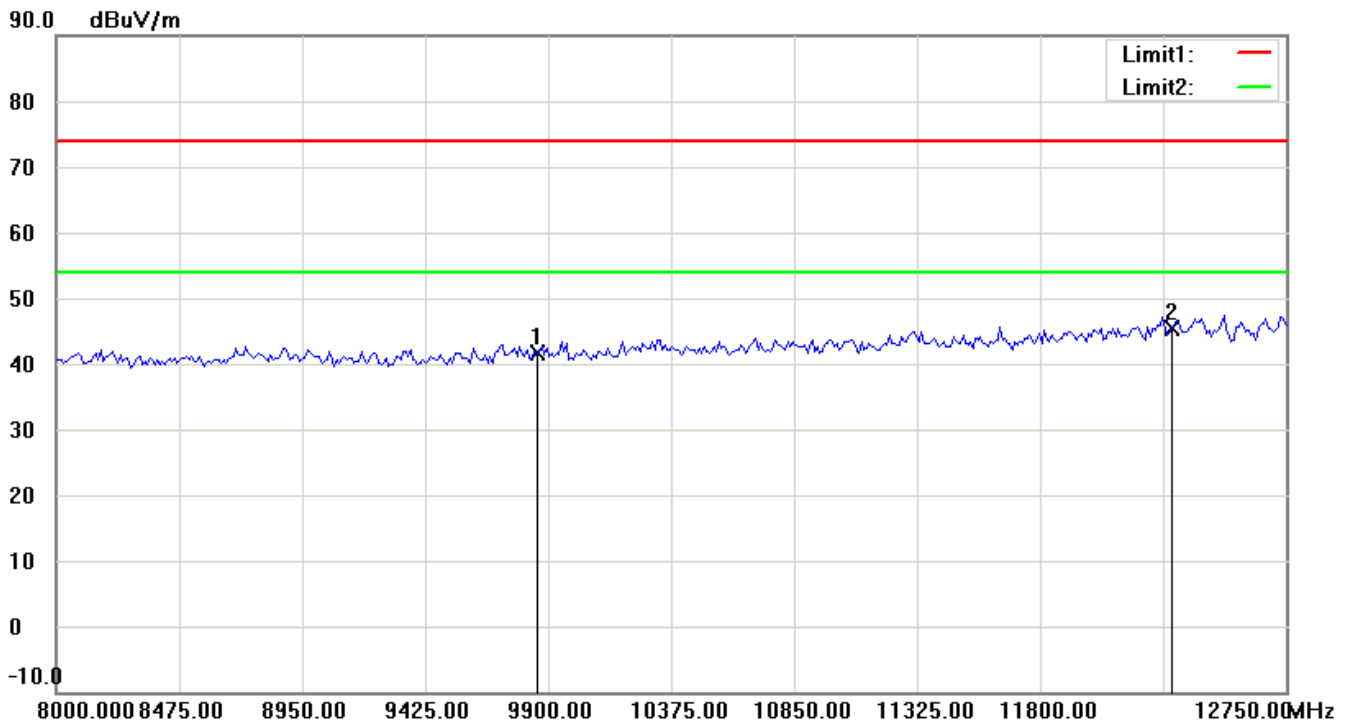
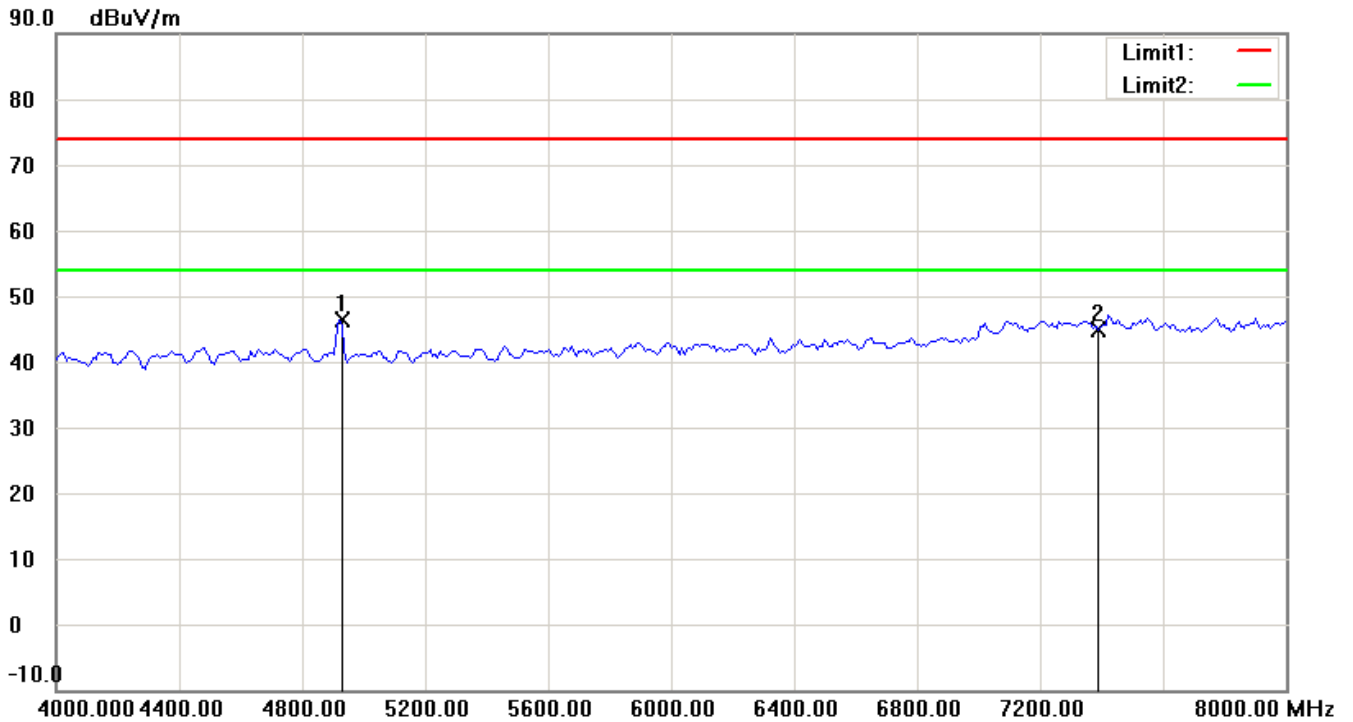
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



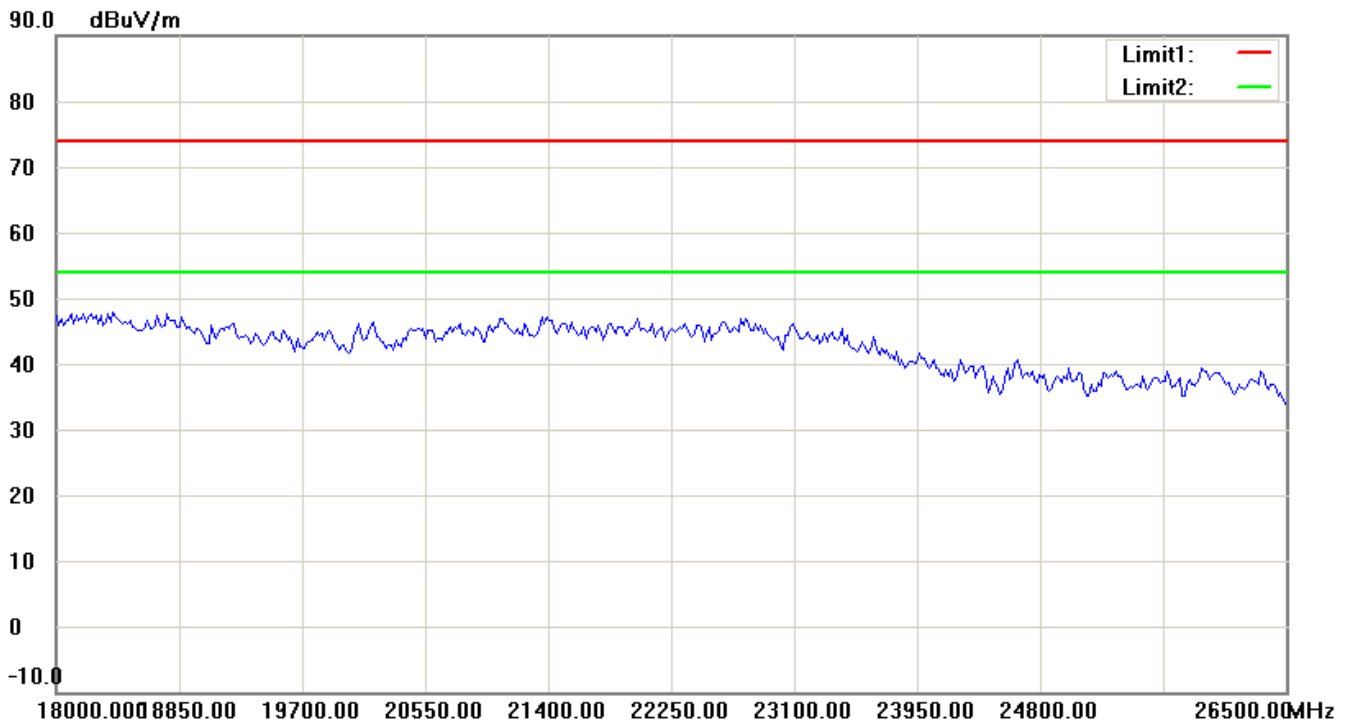
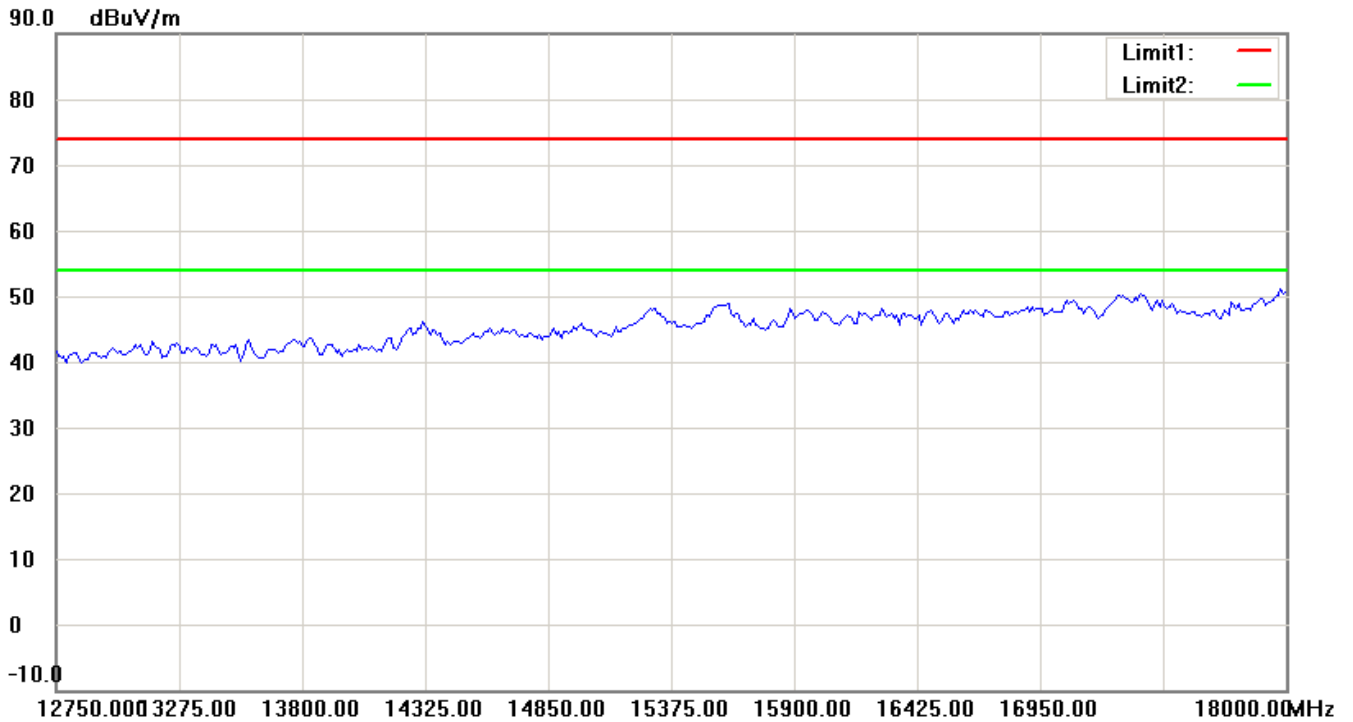
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

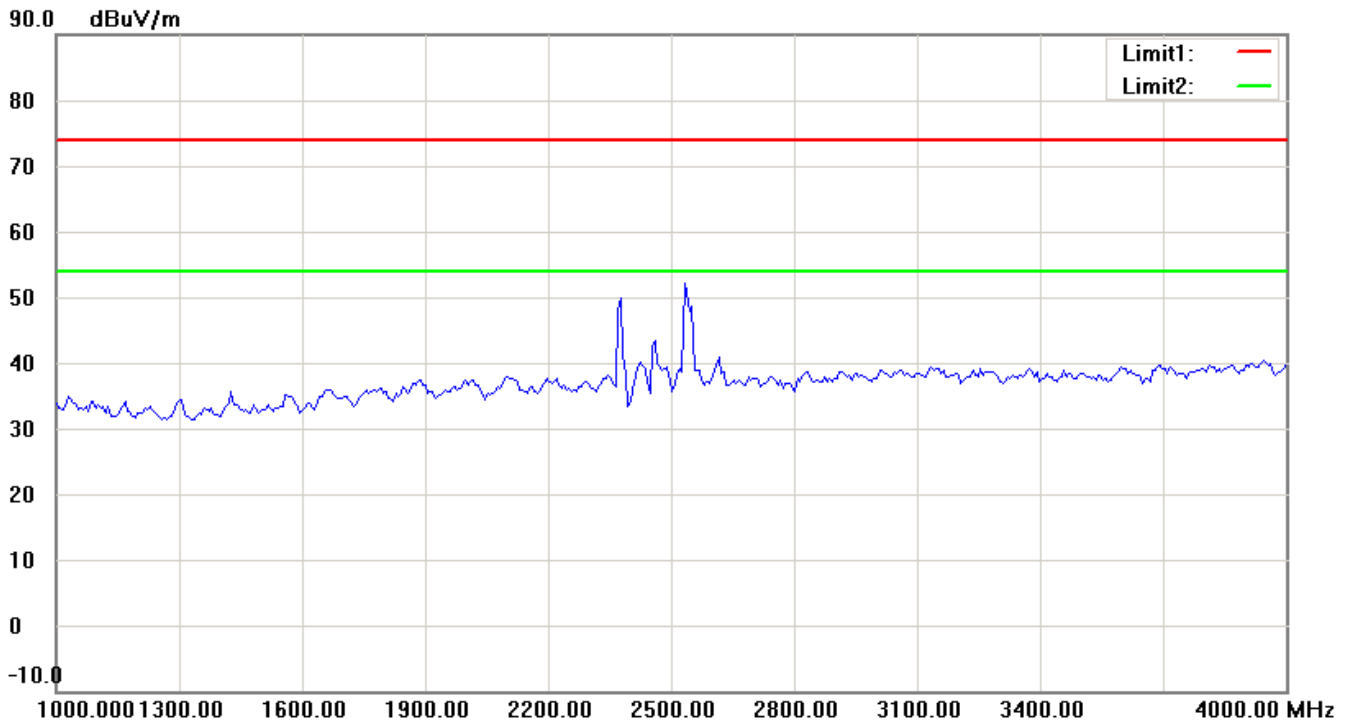
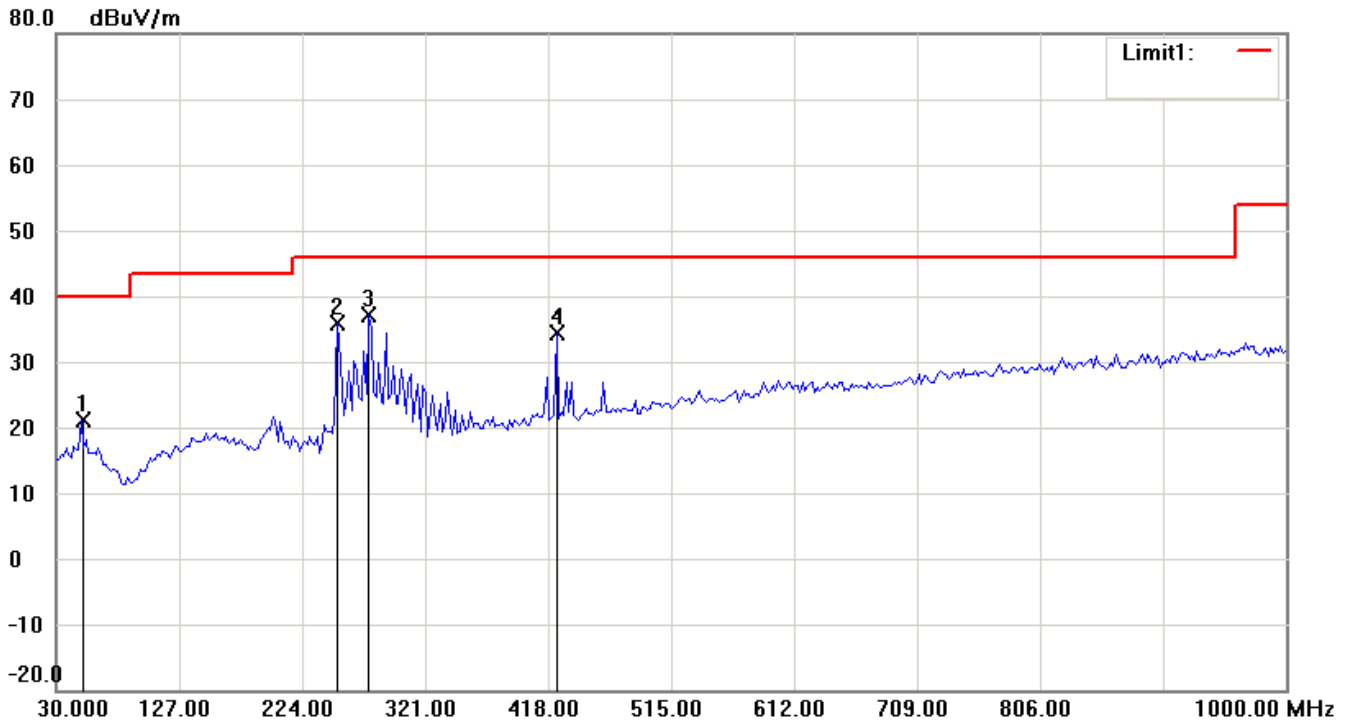
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Antenna Polarization V



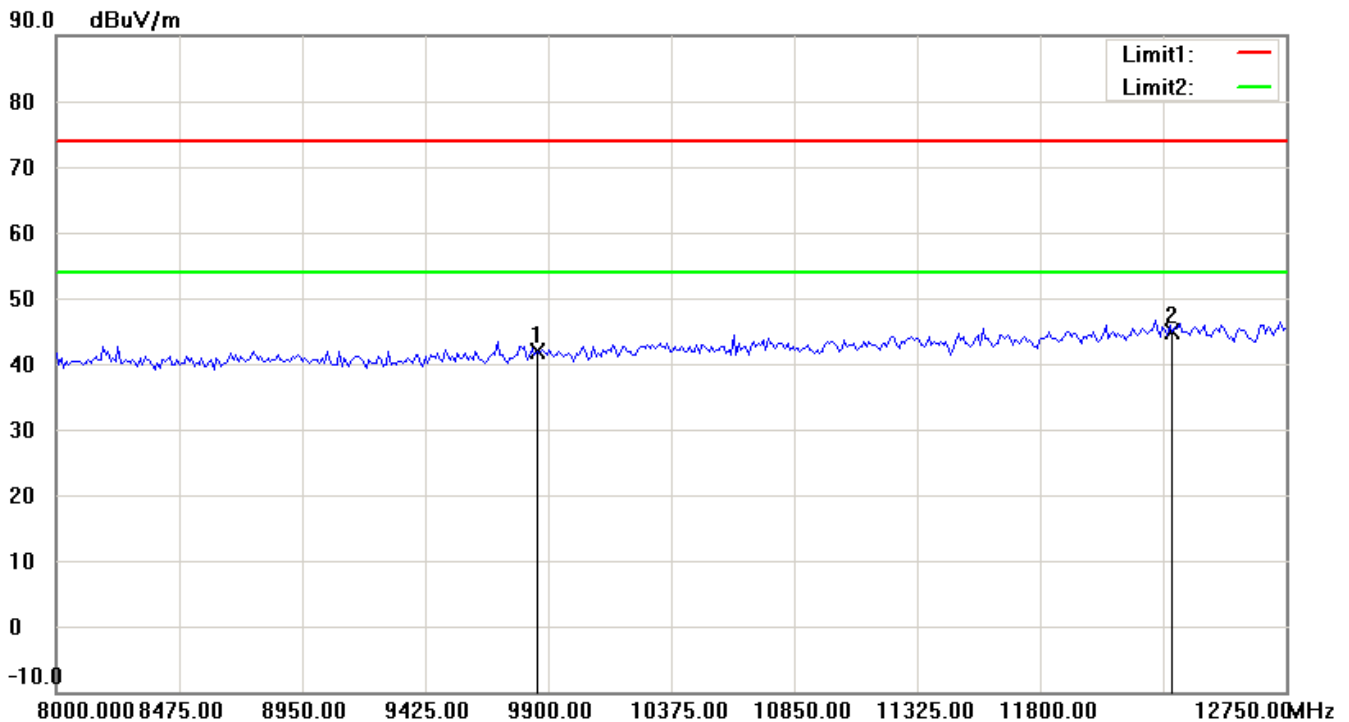
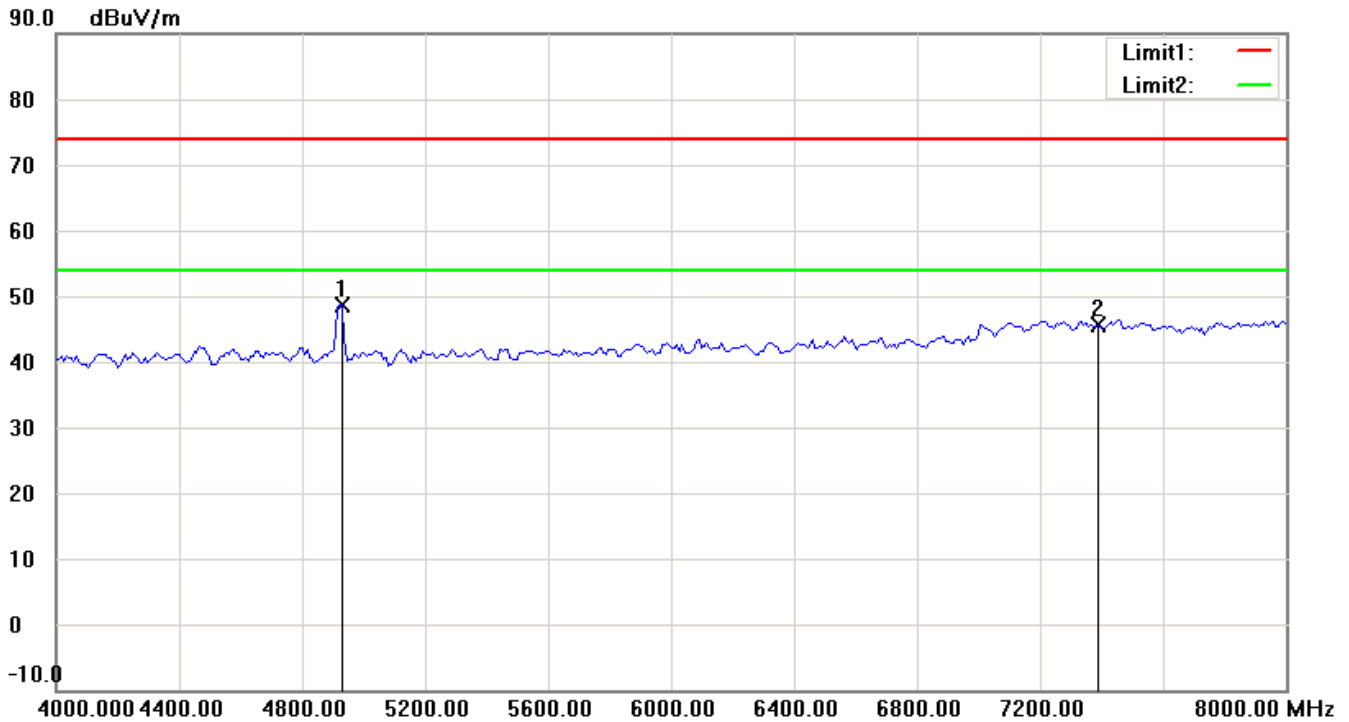
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



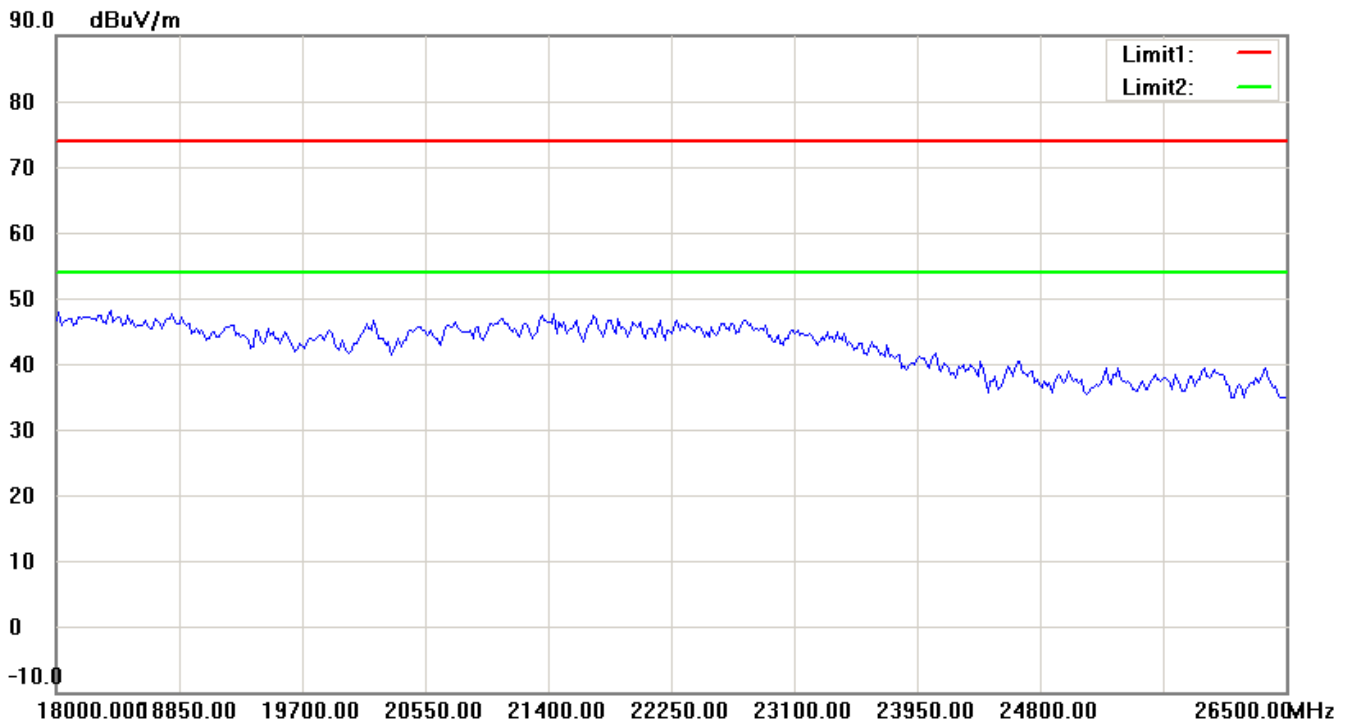
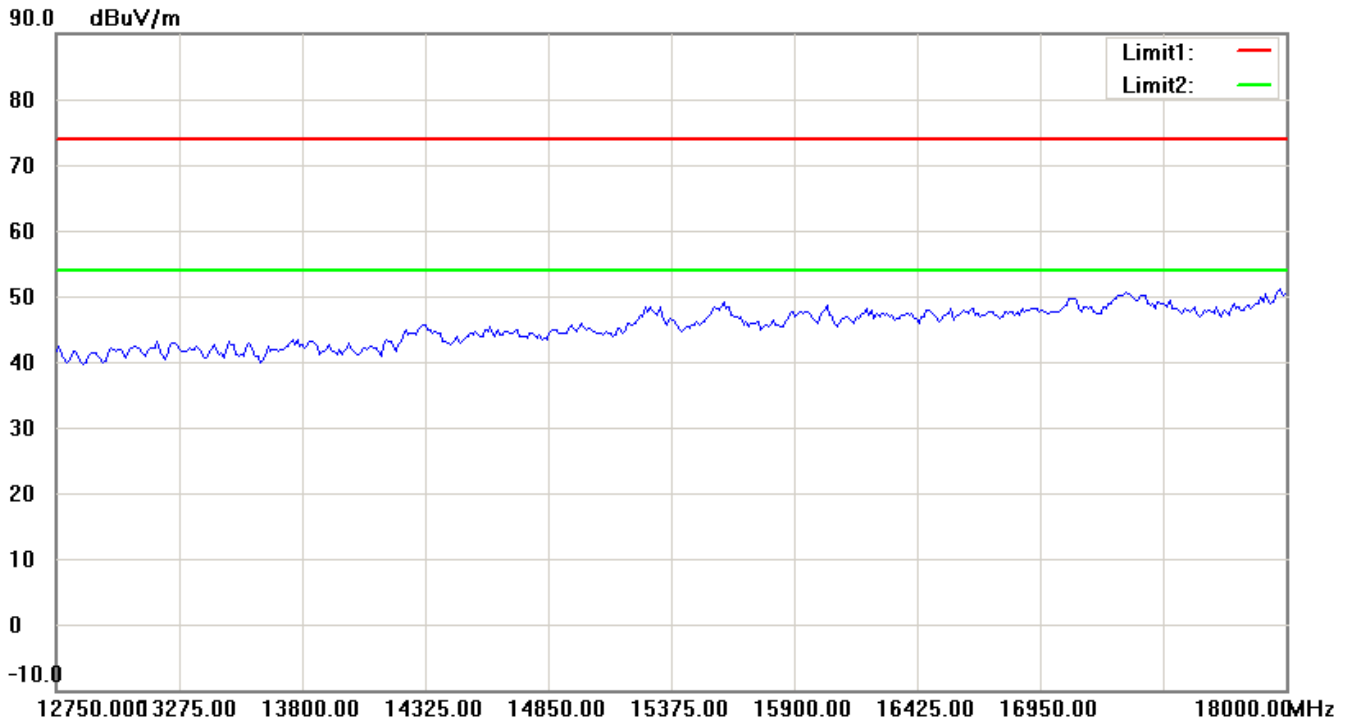
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.

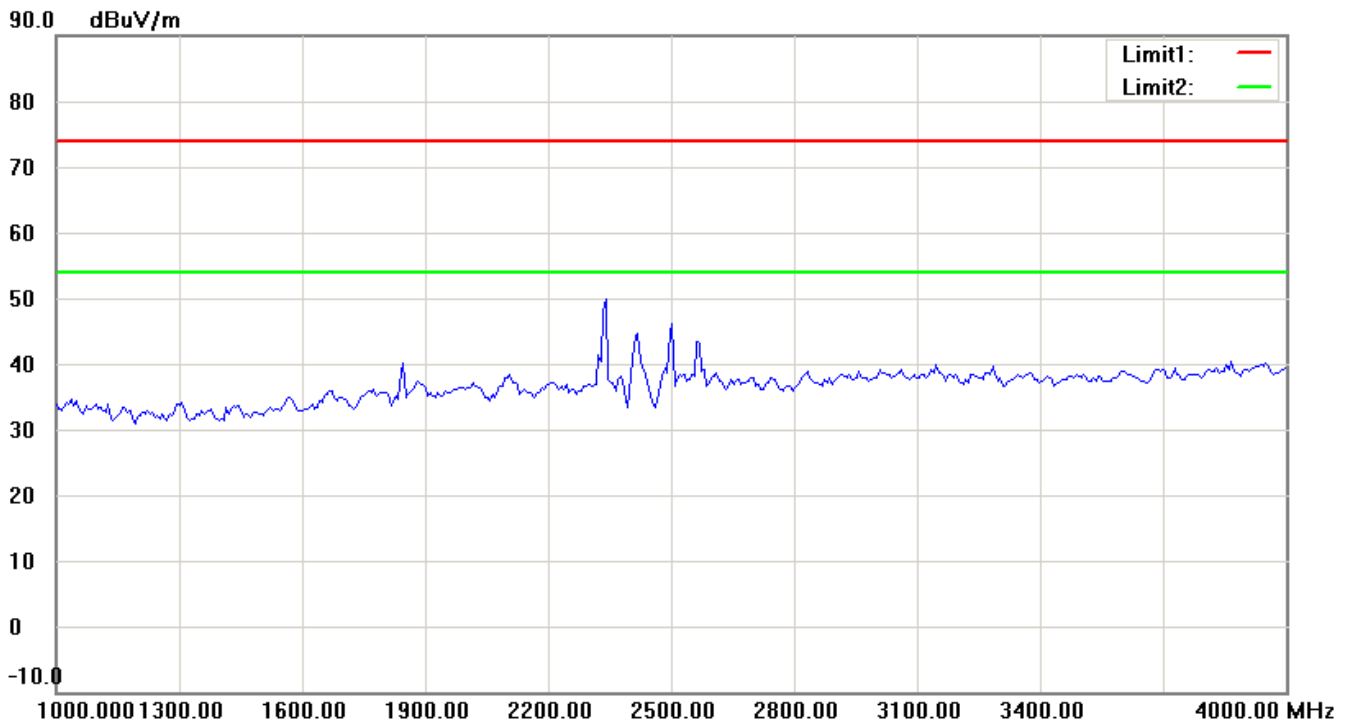
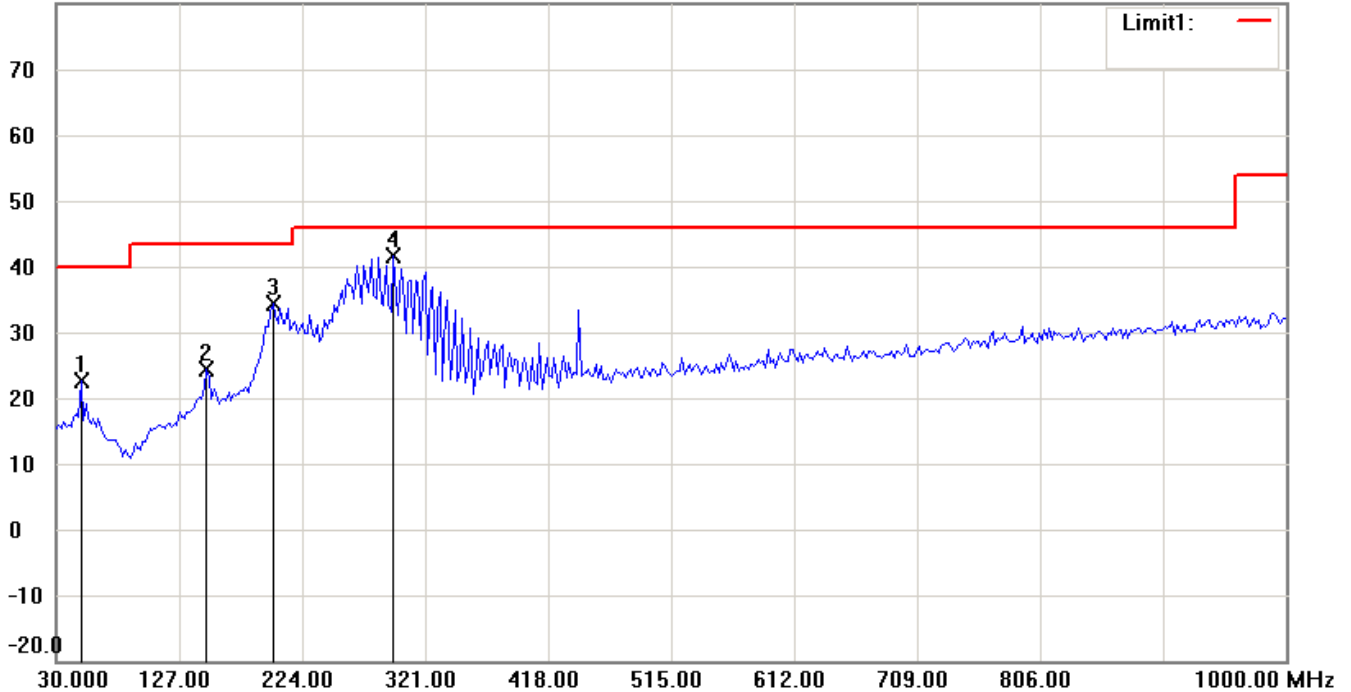


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

TX 802.11n 20MHz CH1

Antenna Polarization H

80.0 dBuV/m



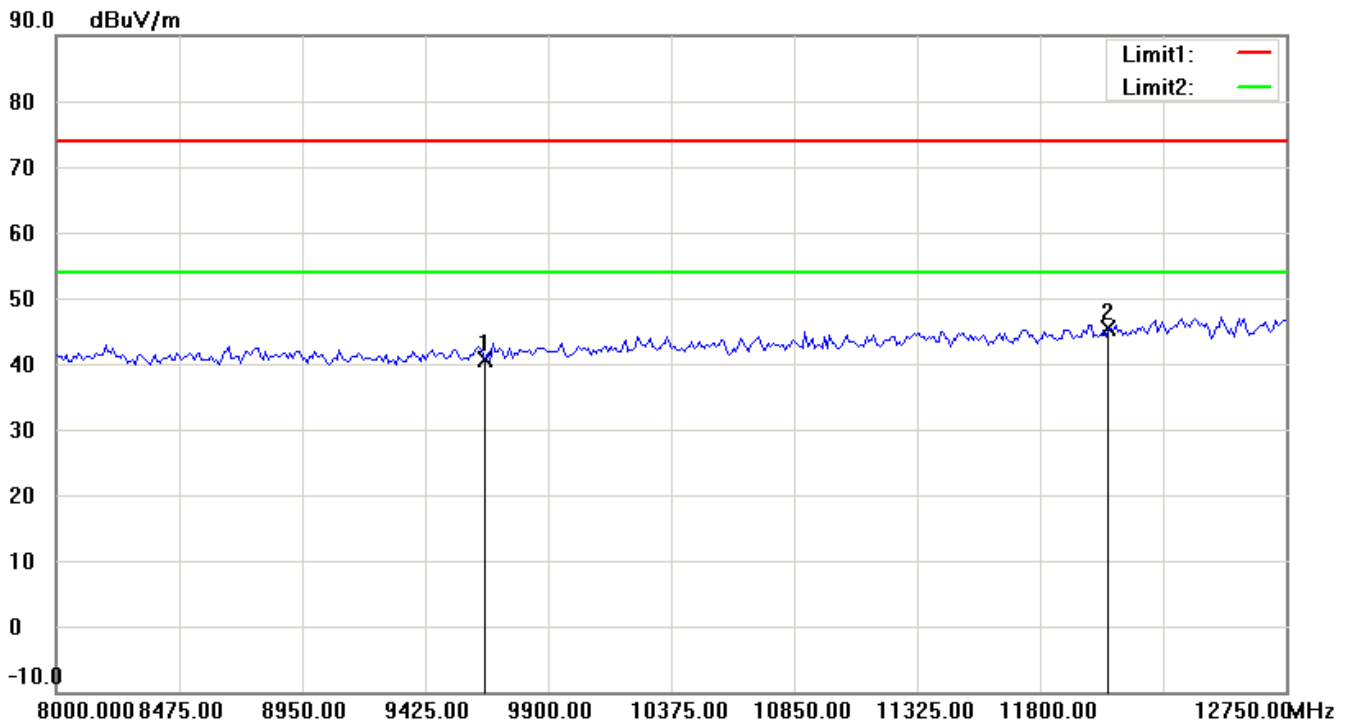
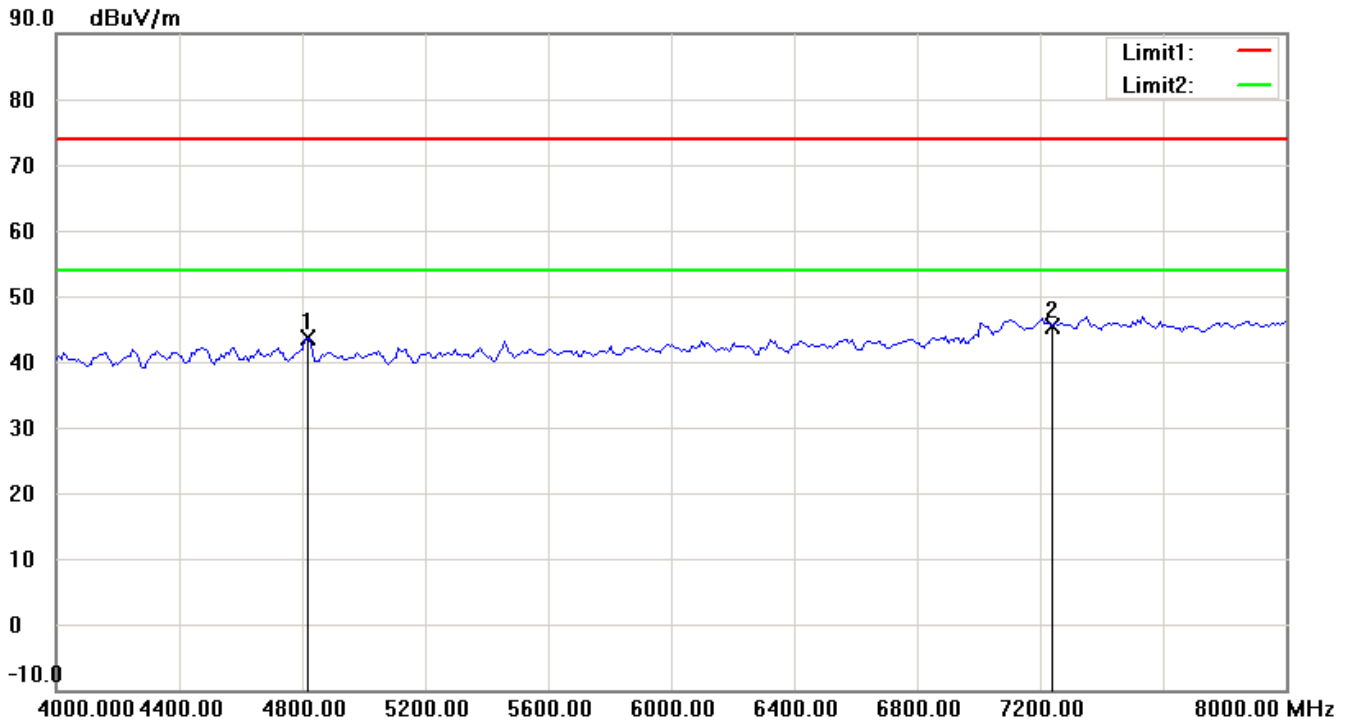
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

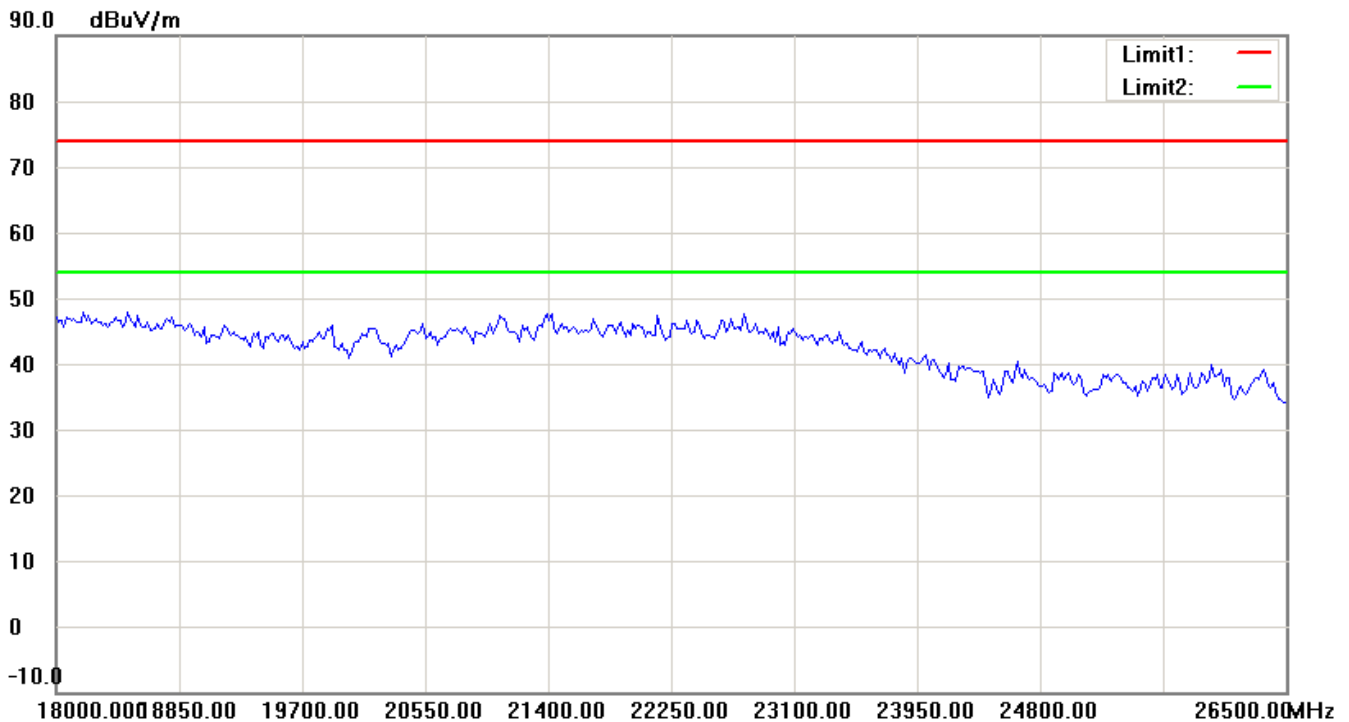
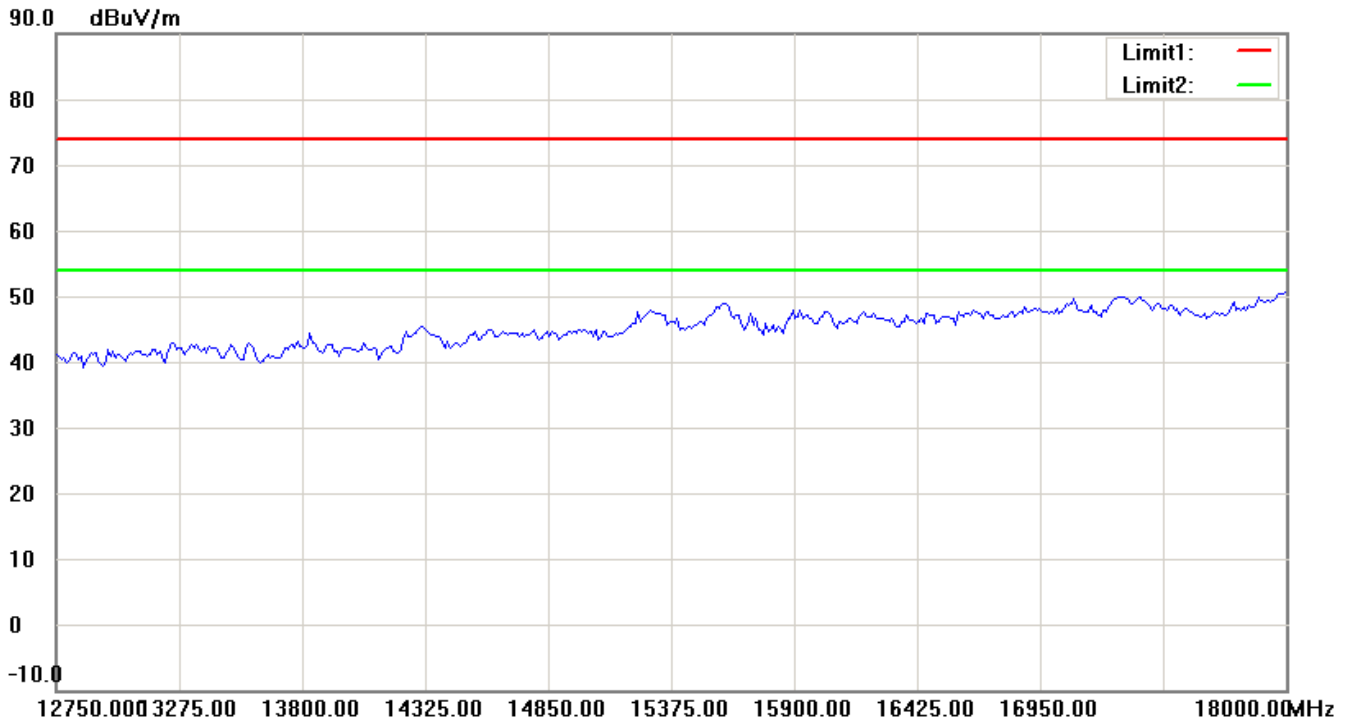
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

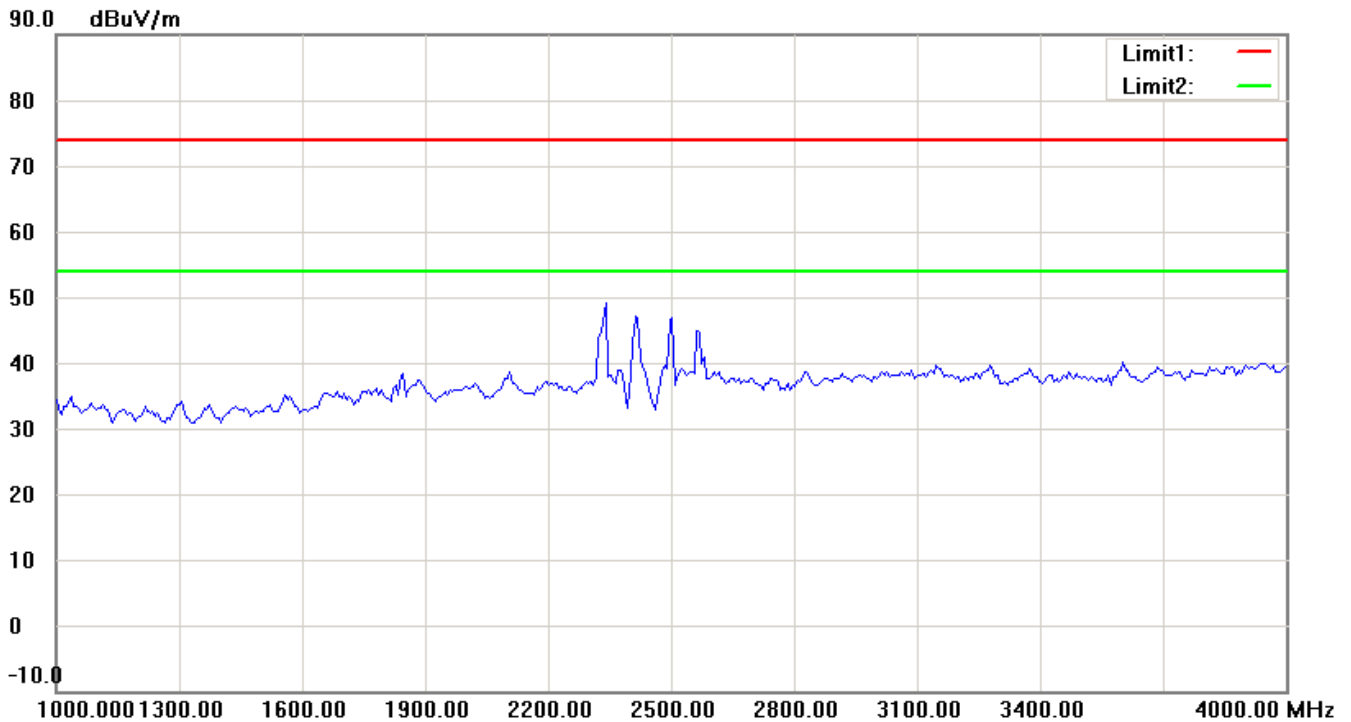
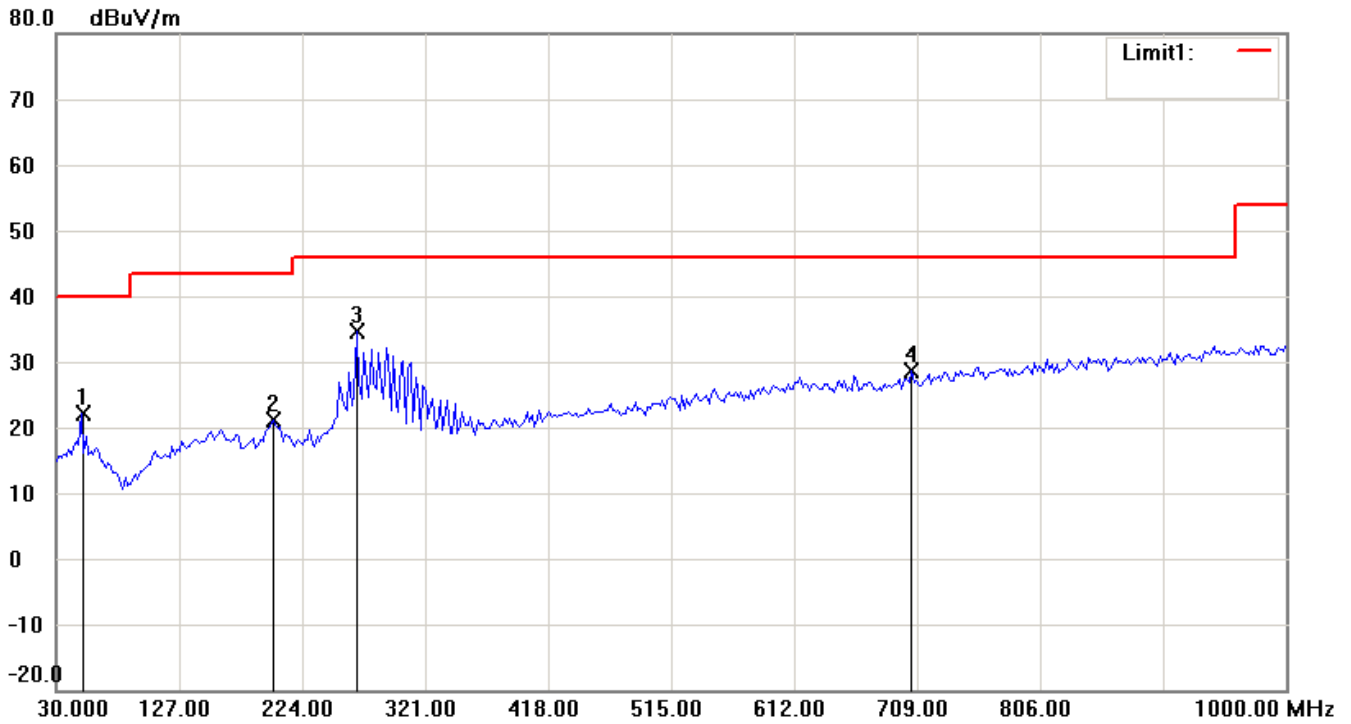
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Antenna Polarization V



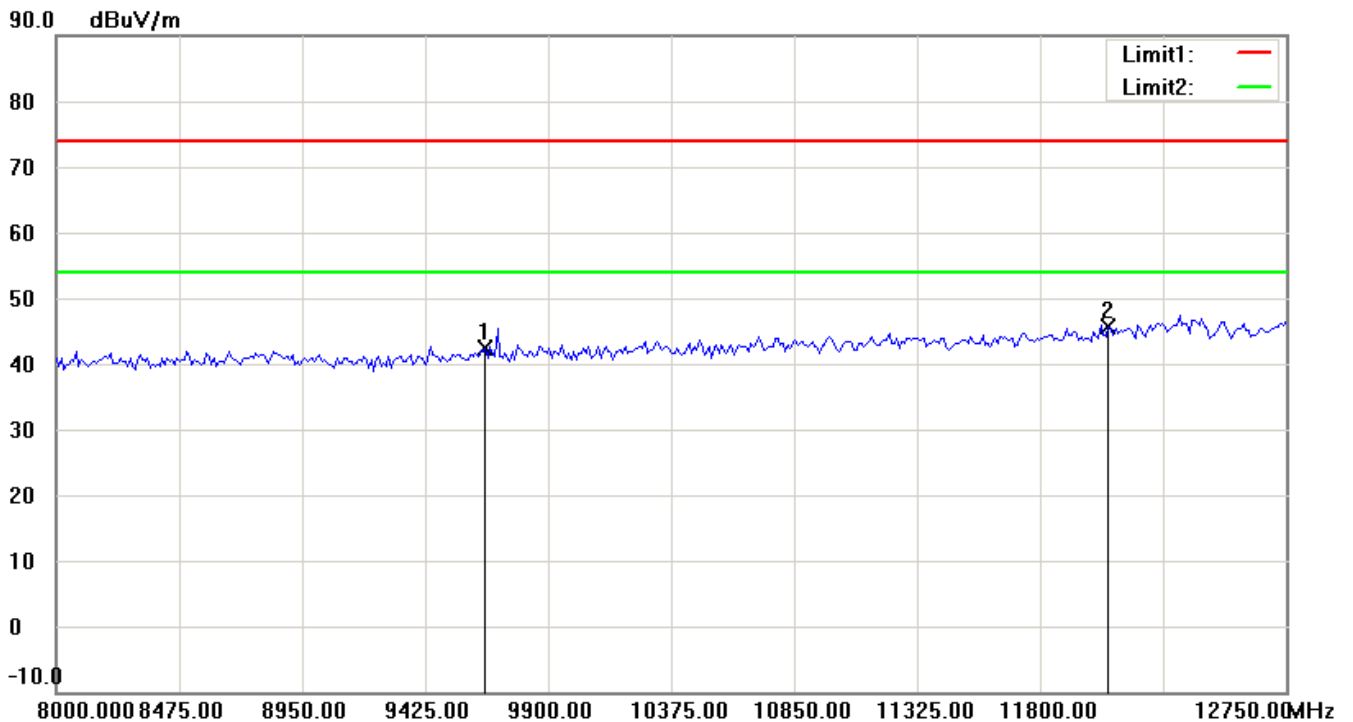
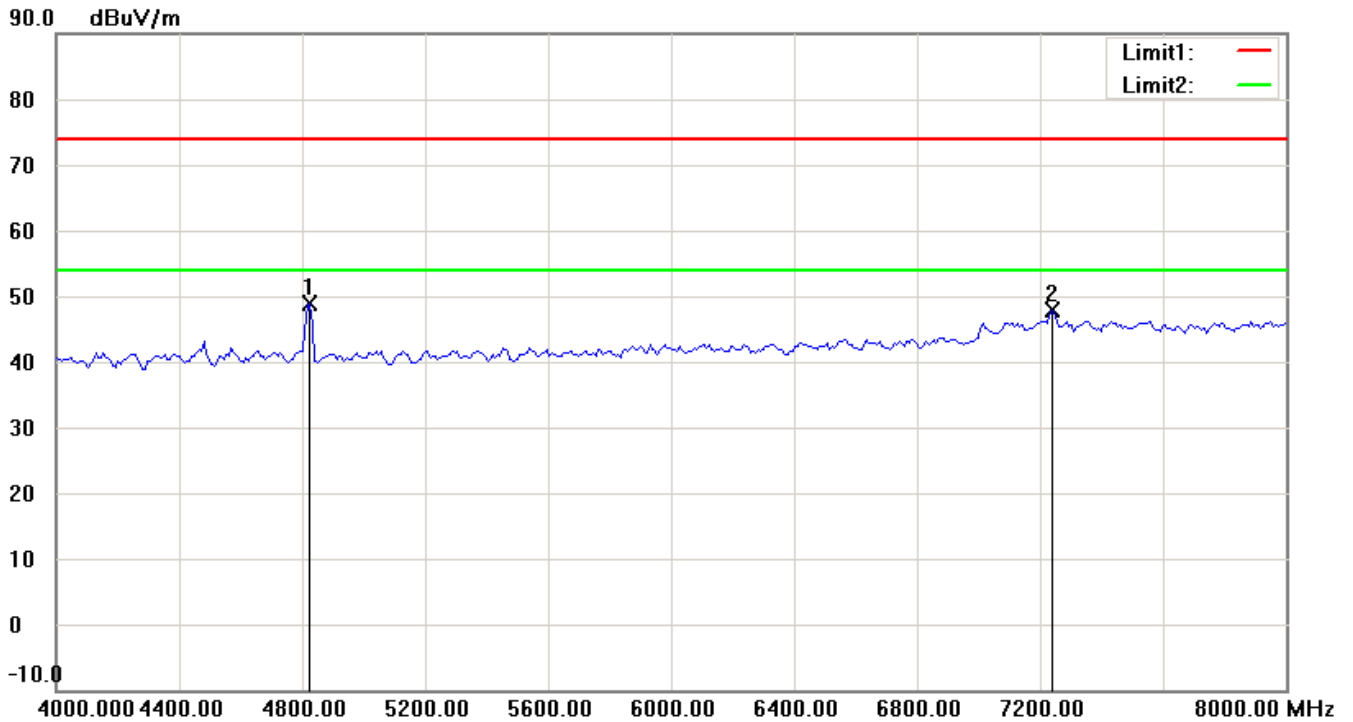
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



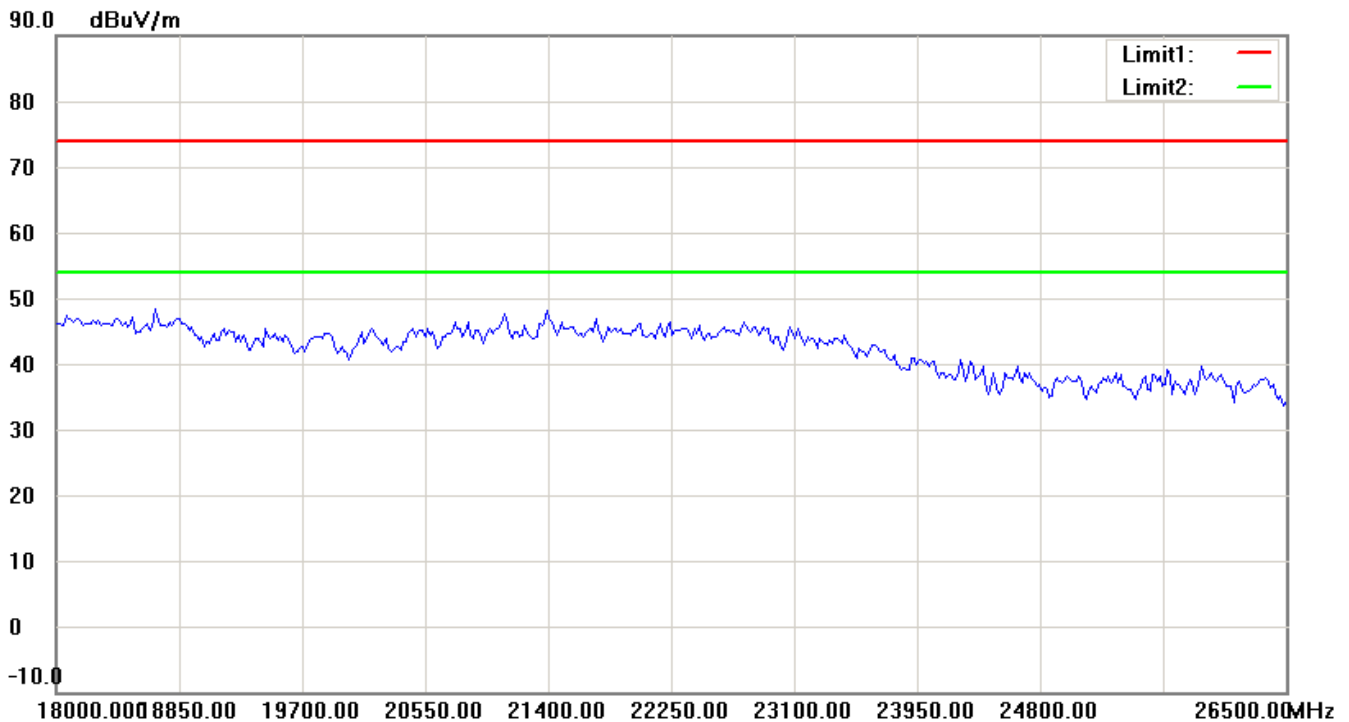
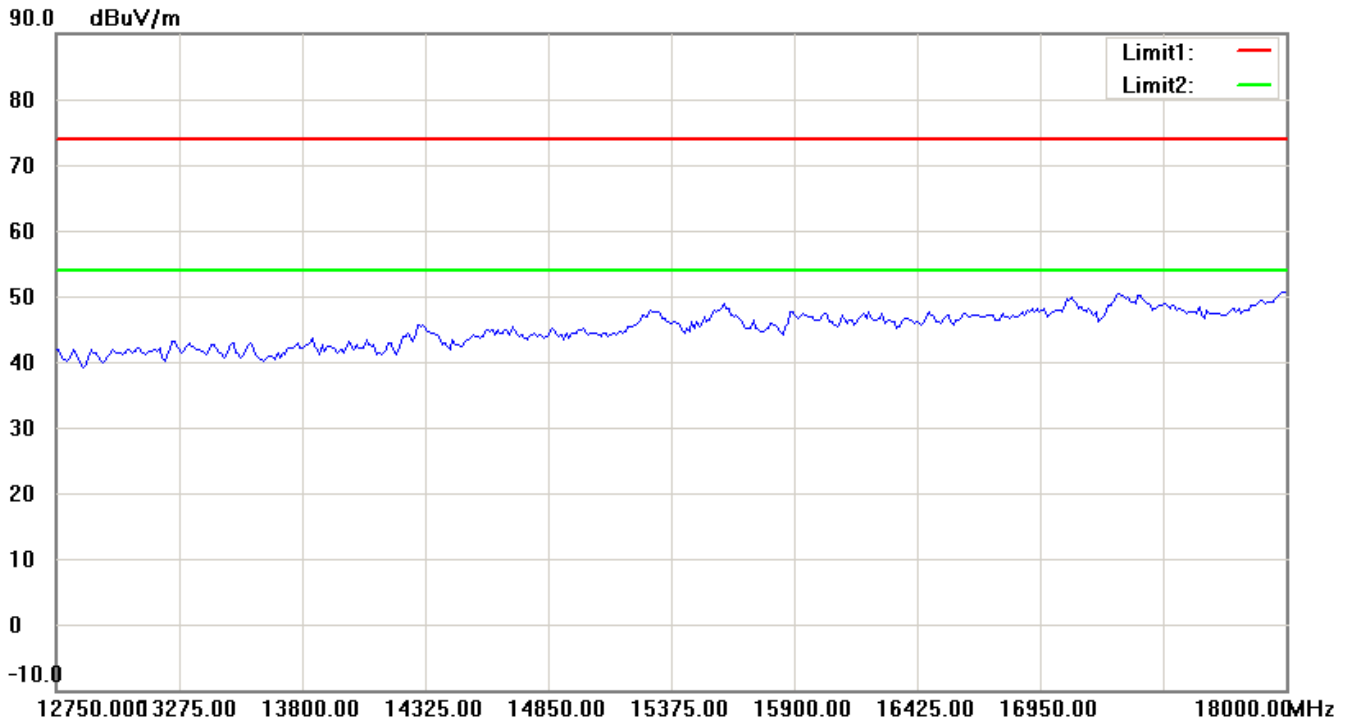
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.

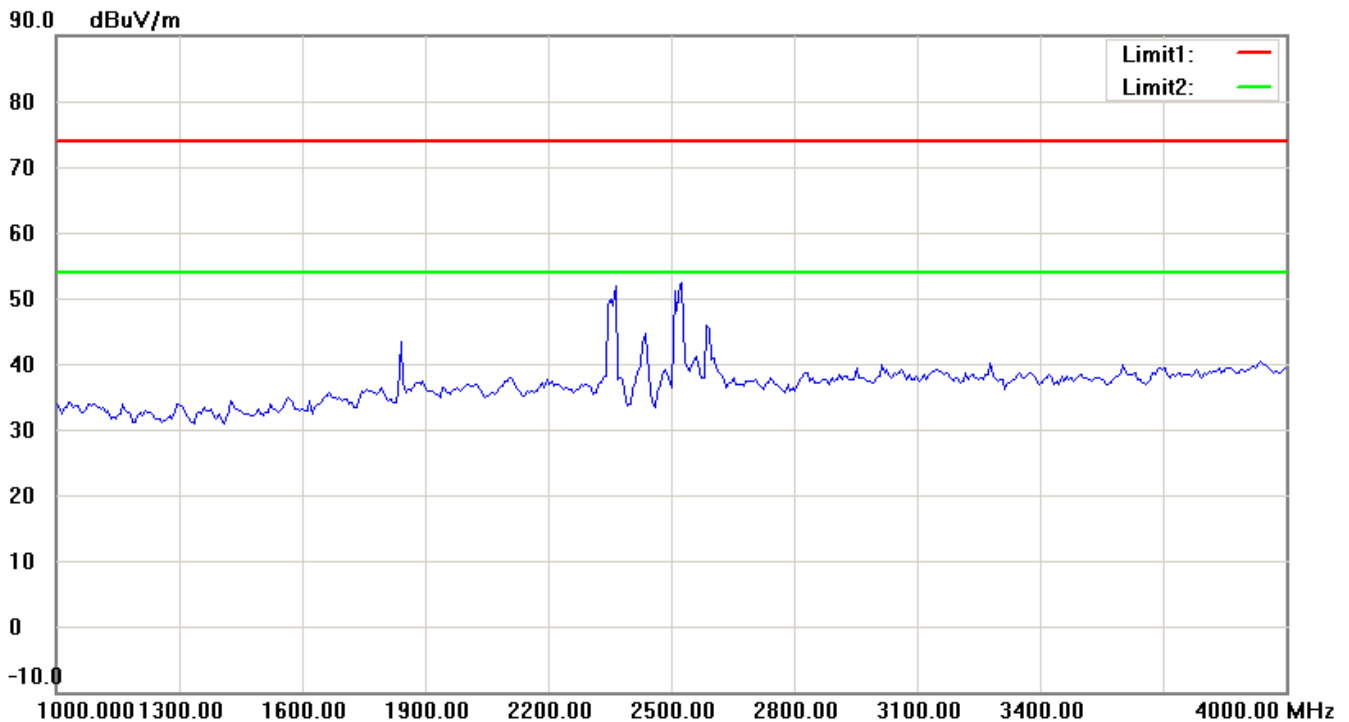
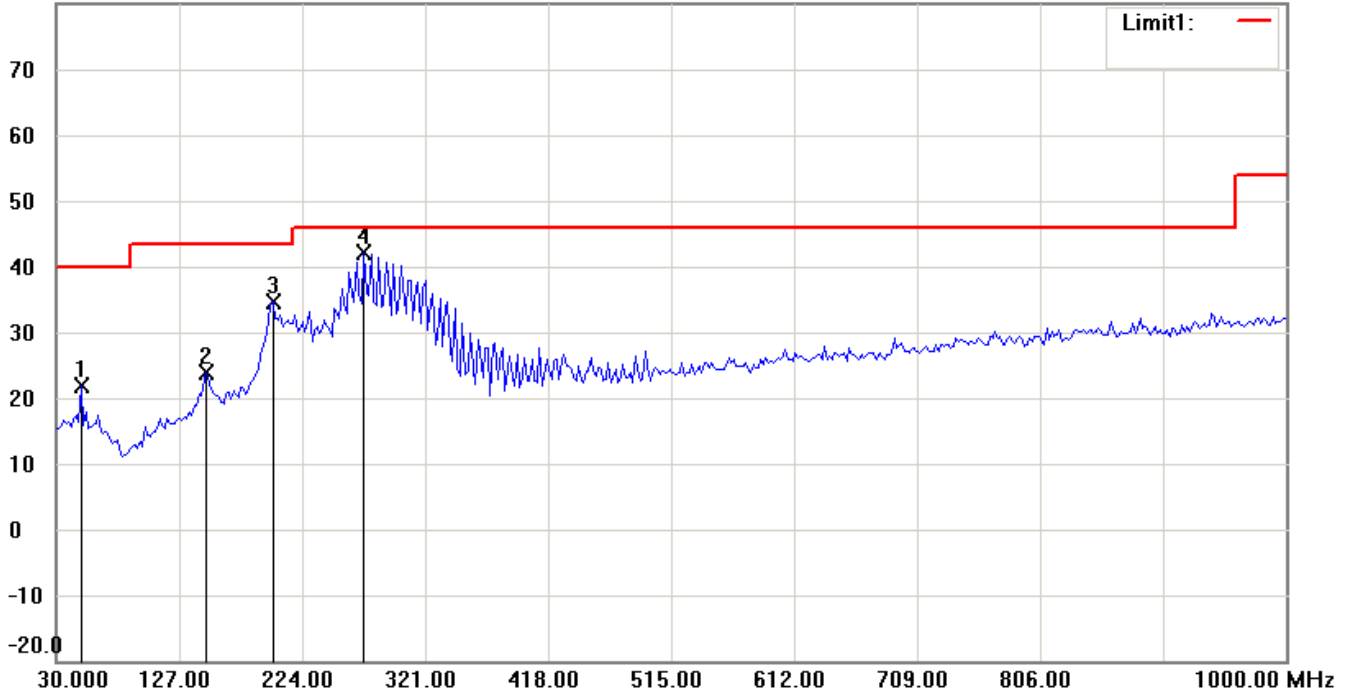


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

TX 802.11n 20MHz CH6

Antenna Polarization H

80.0 dBuV/m



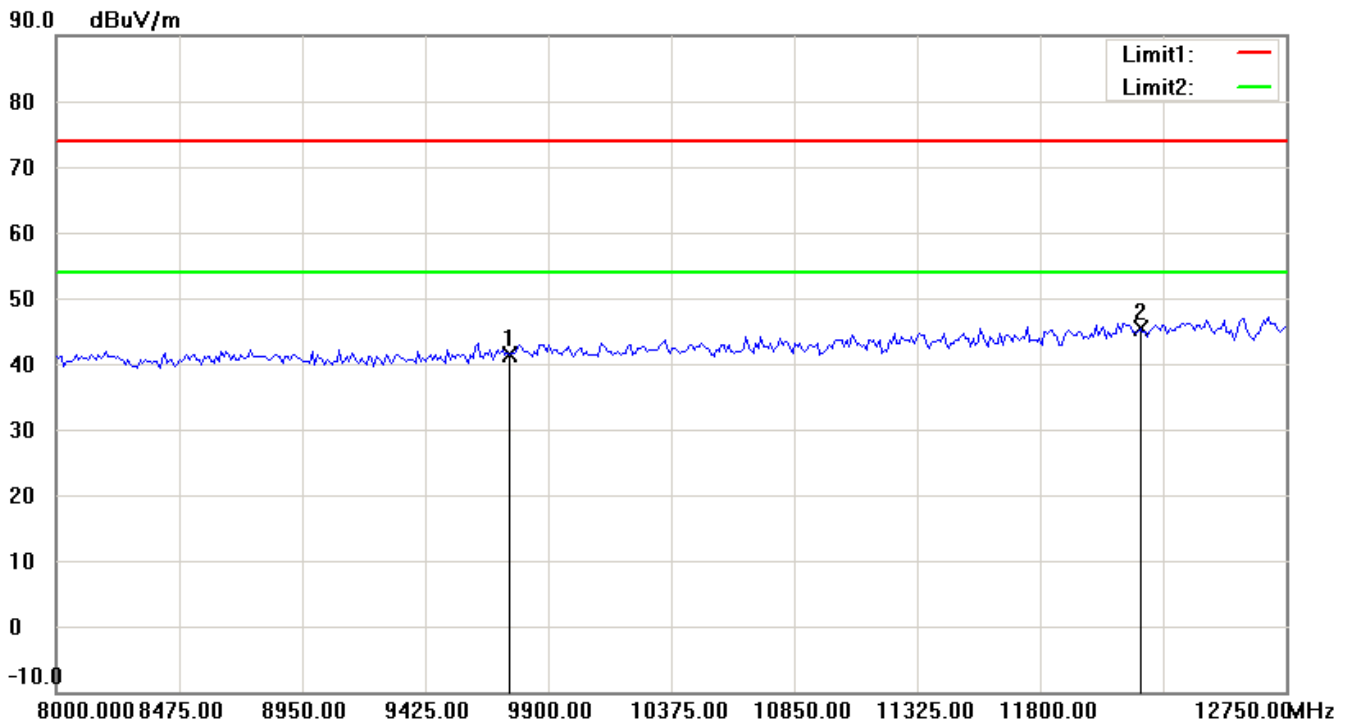
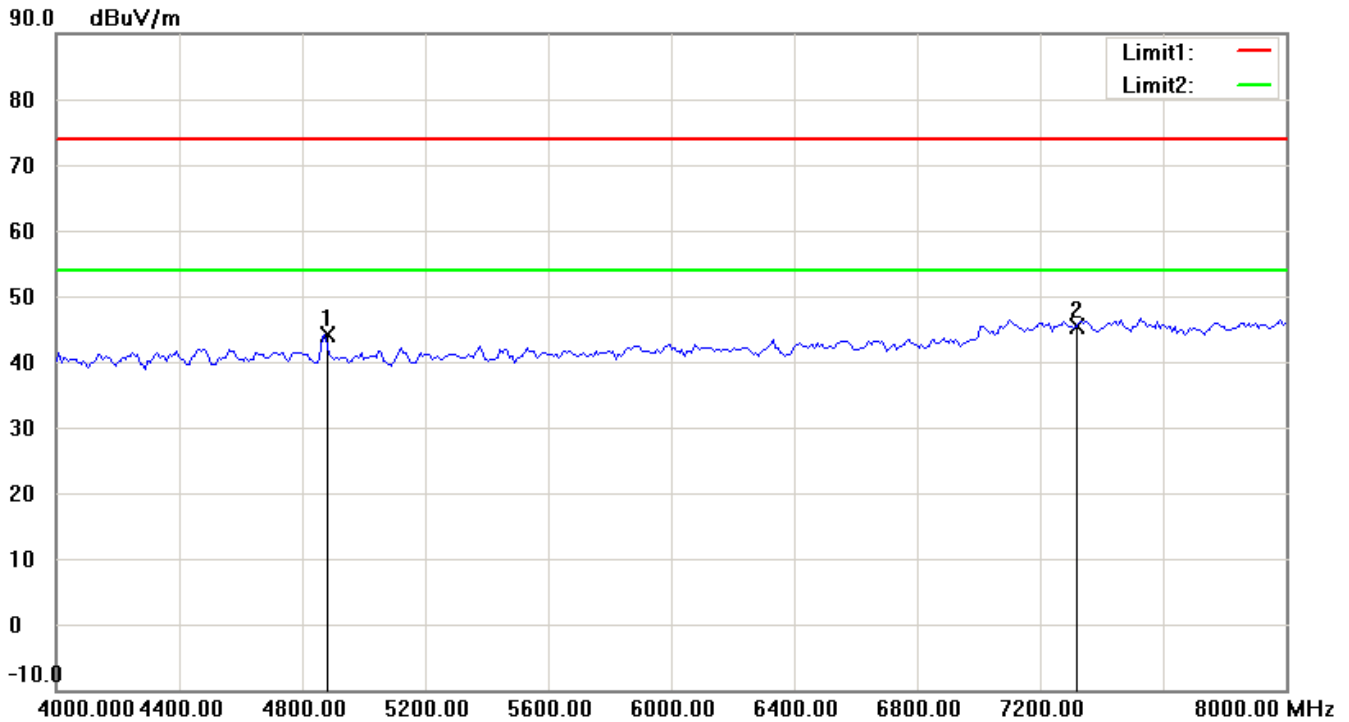
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

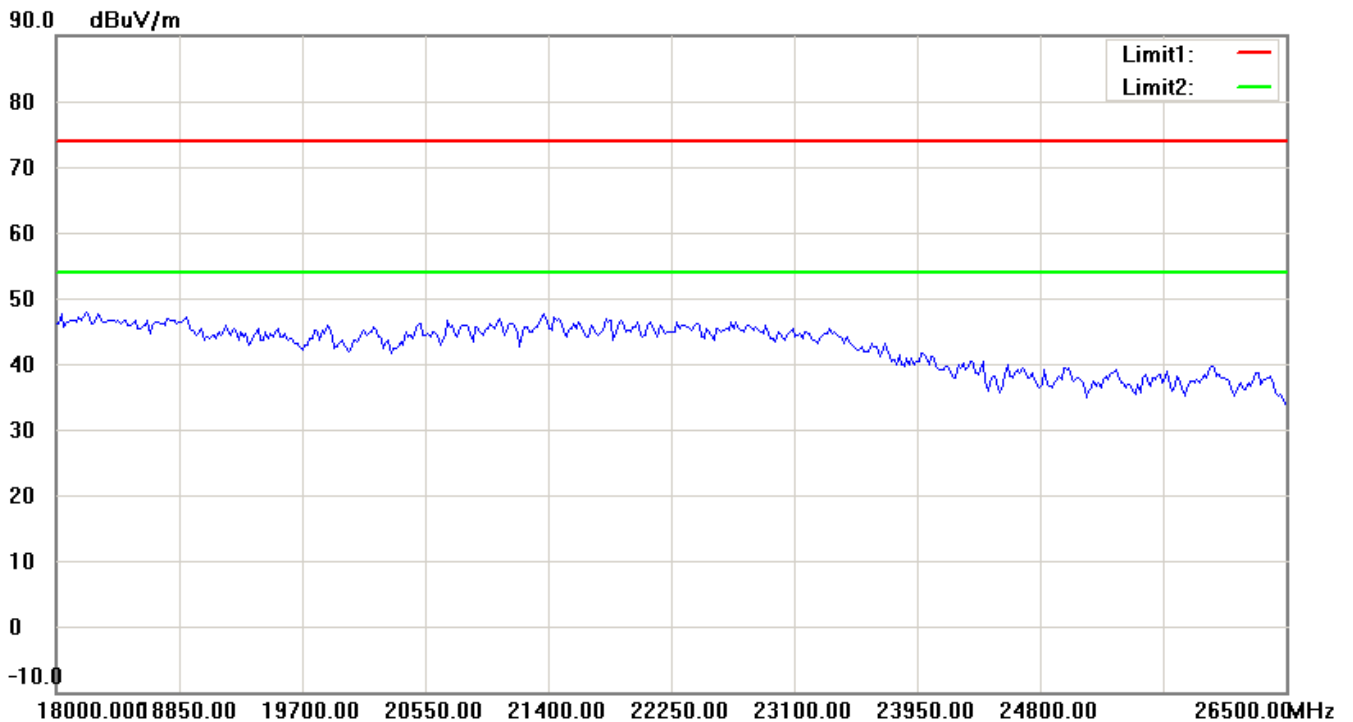
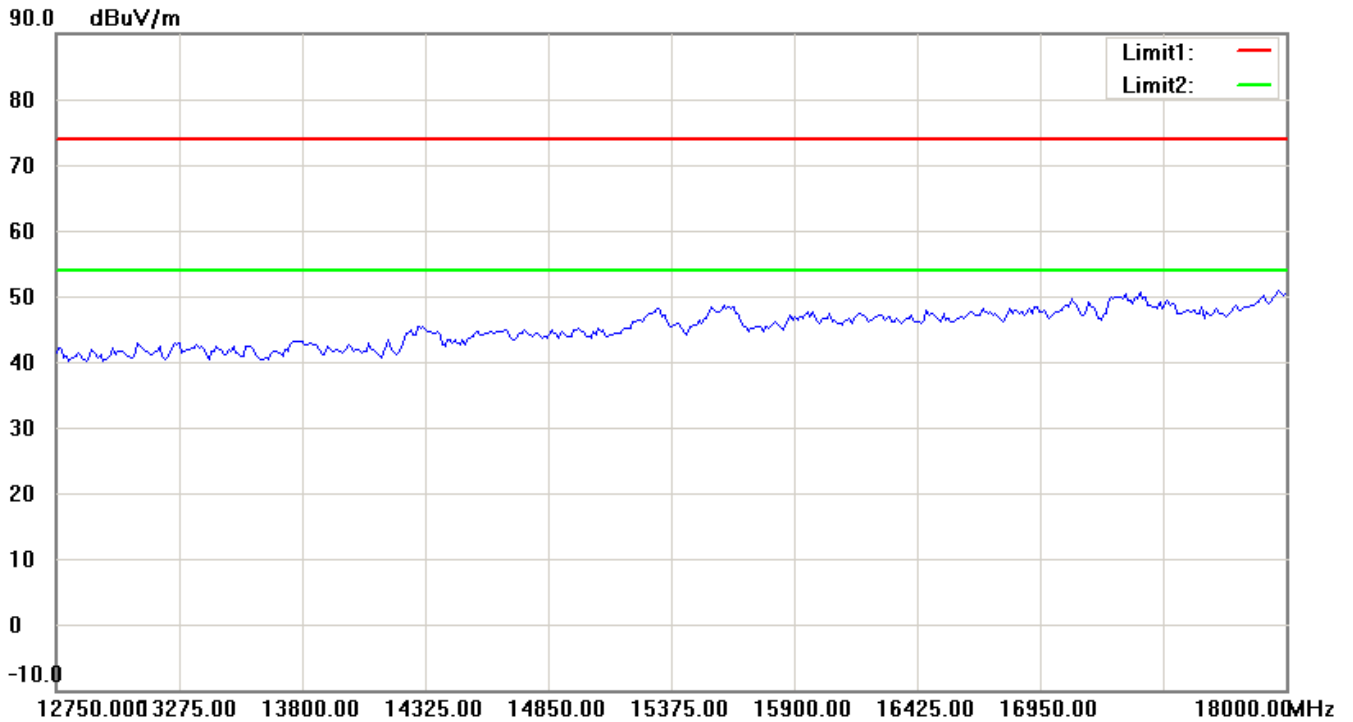
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

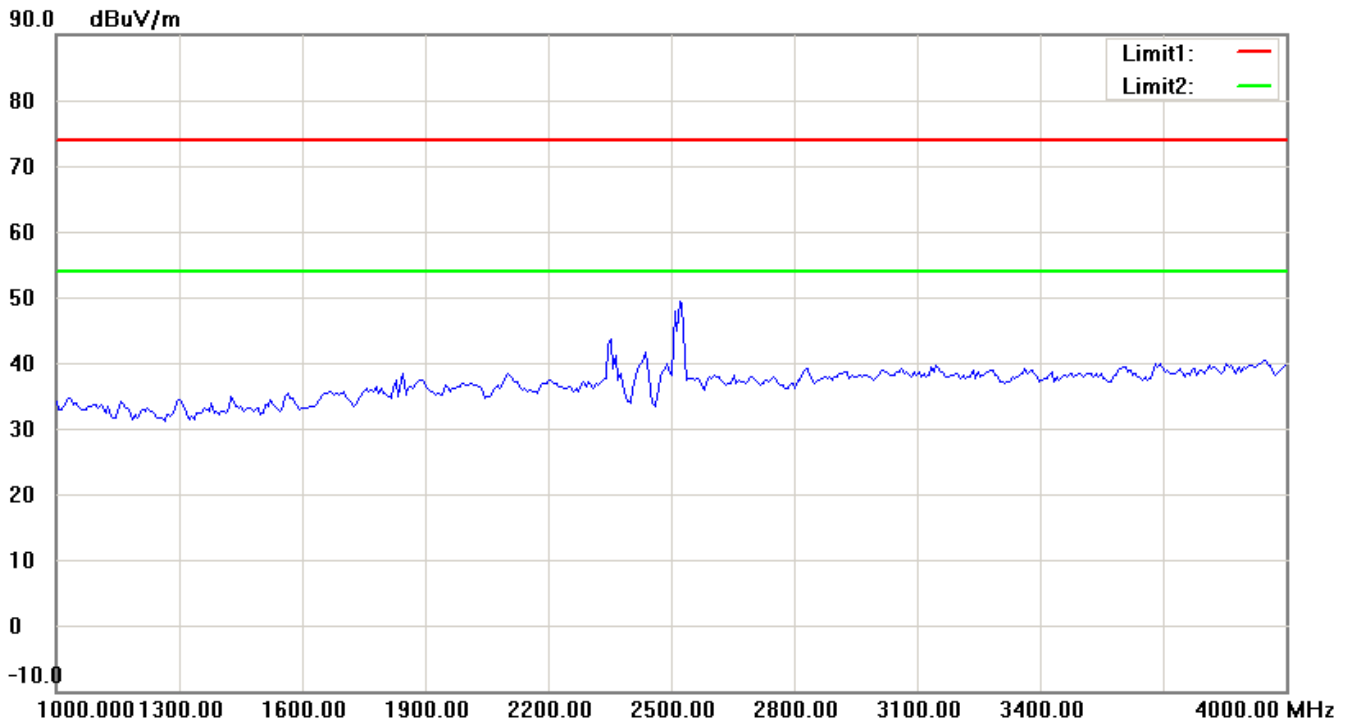
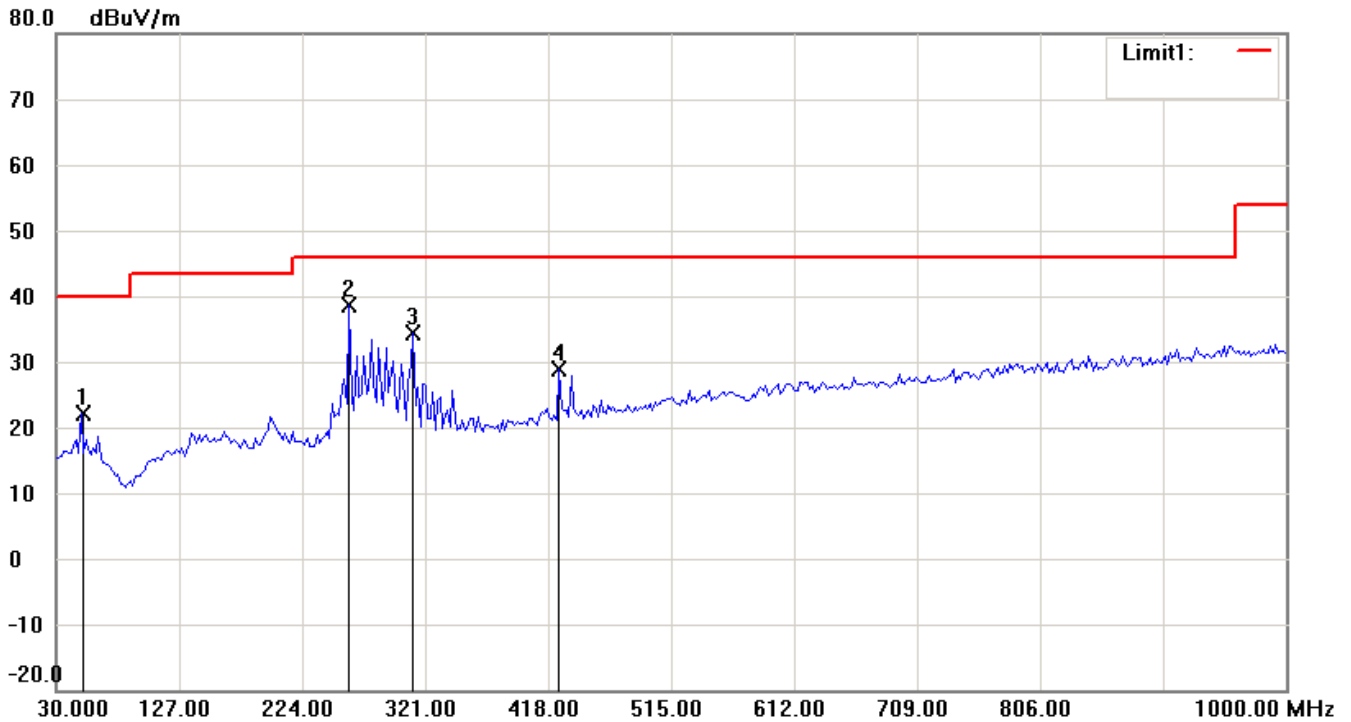
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Antenna Polarization V



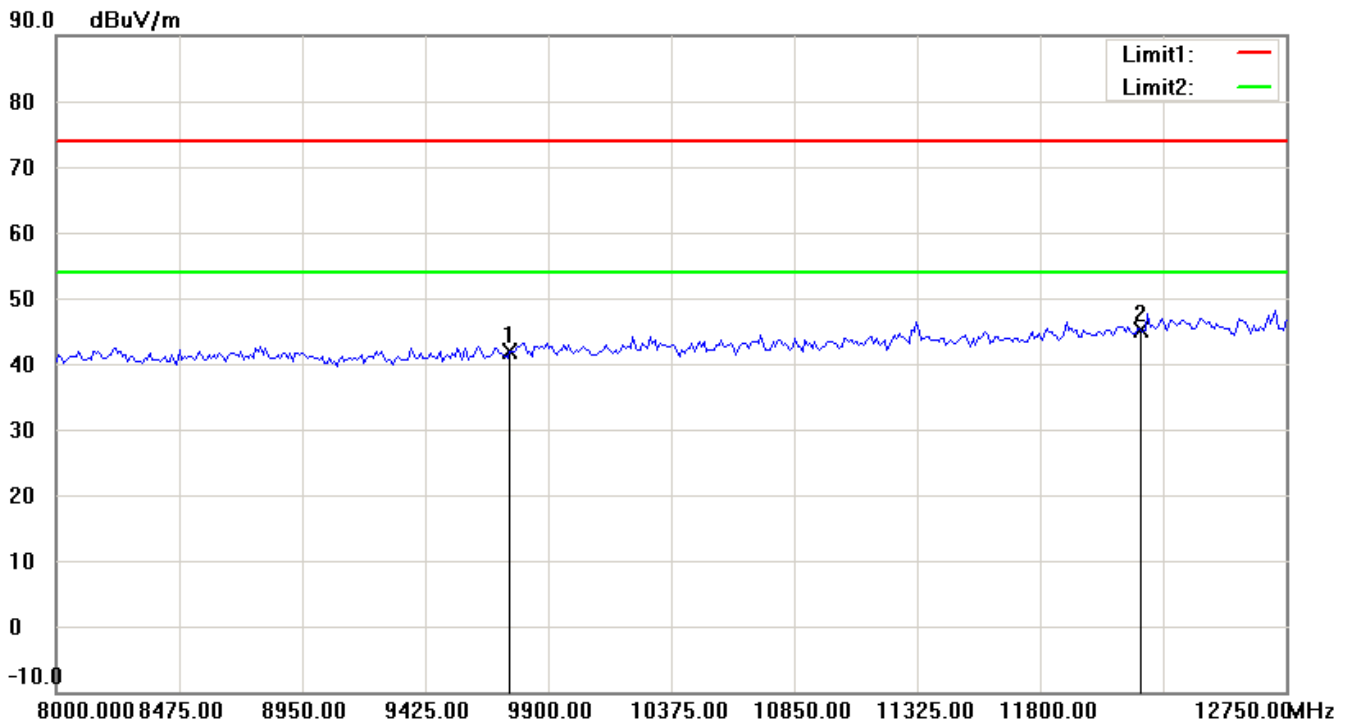
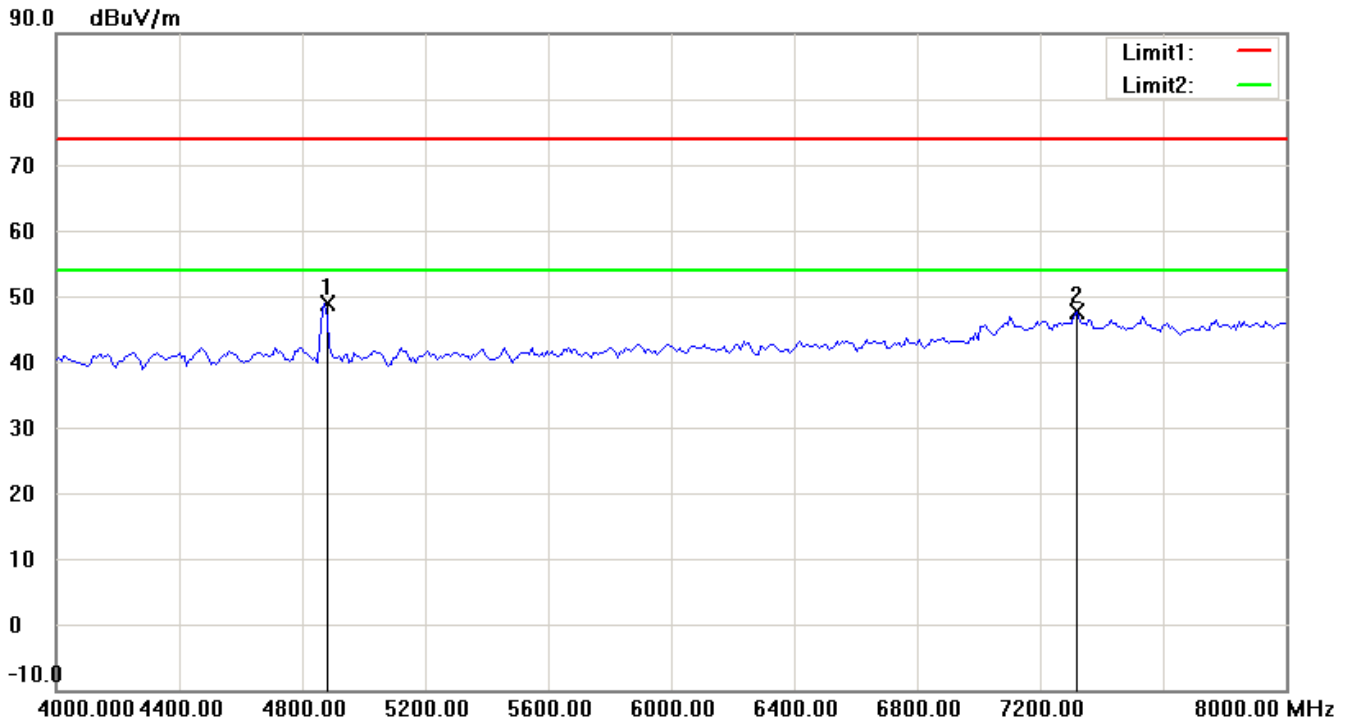
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



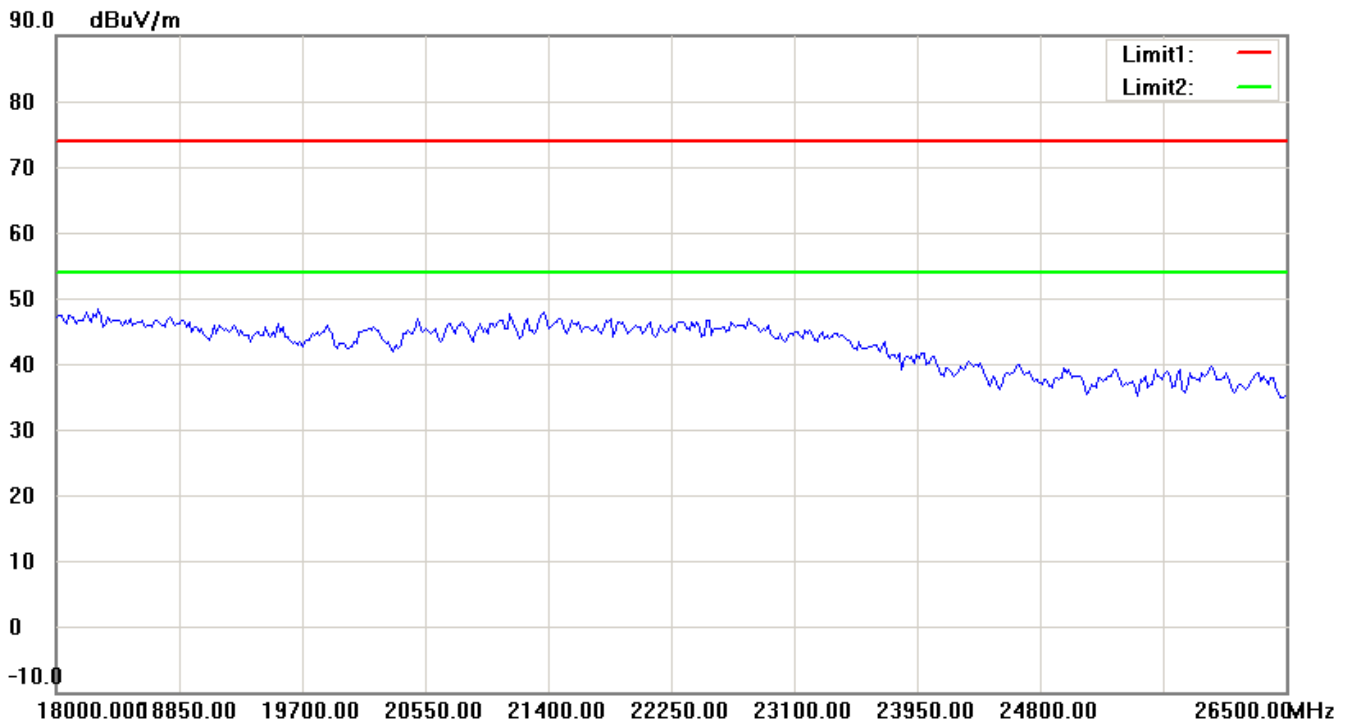
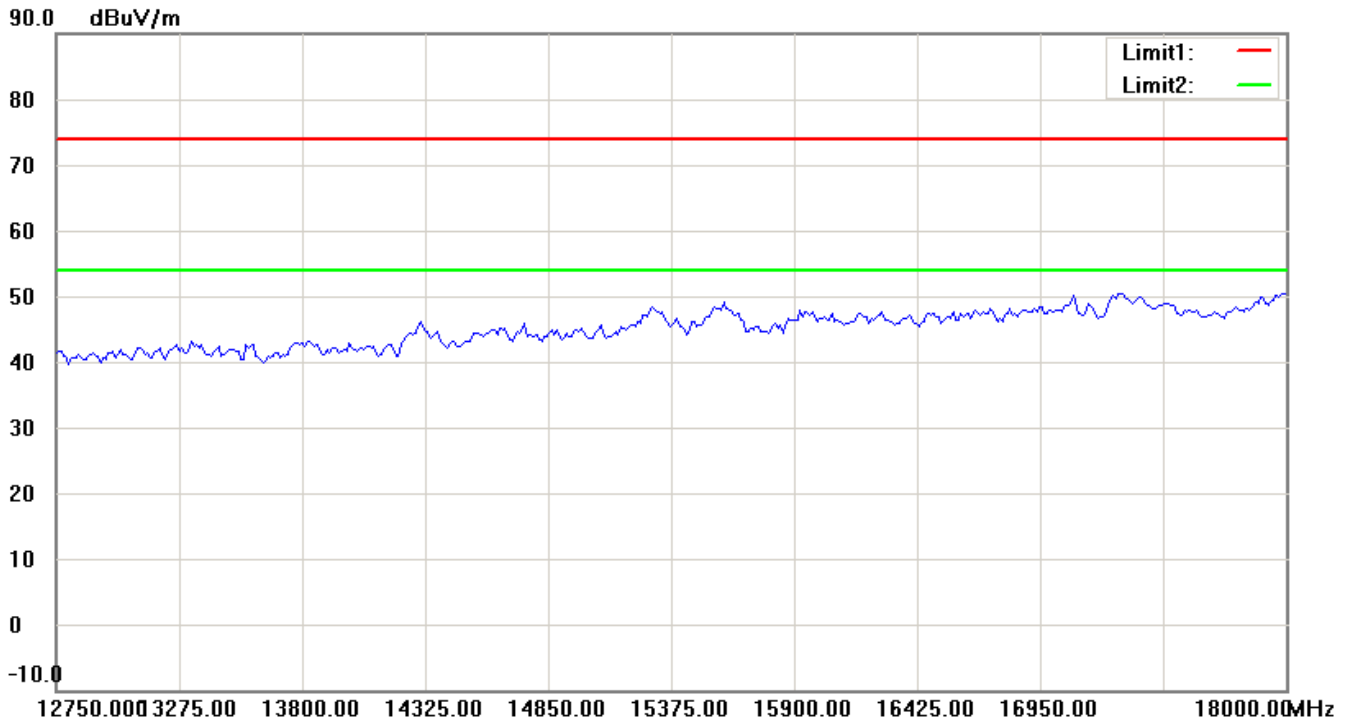
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.

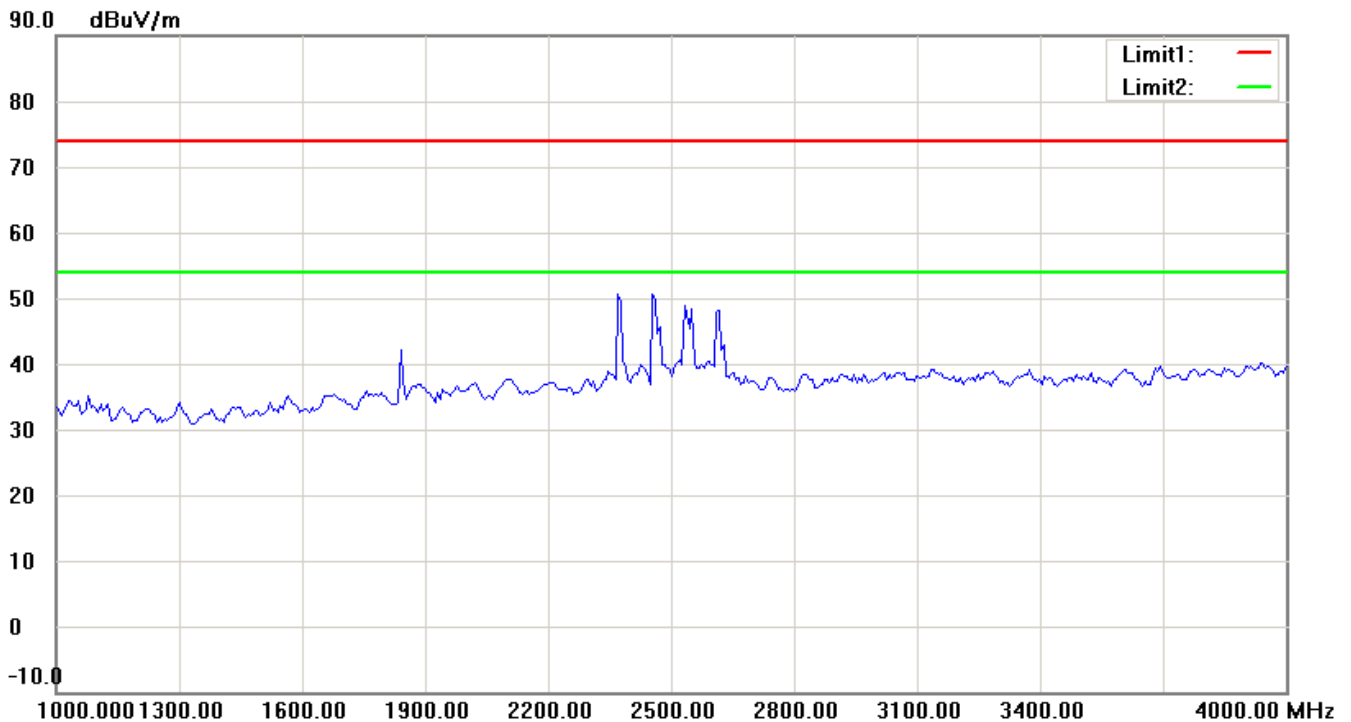
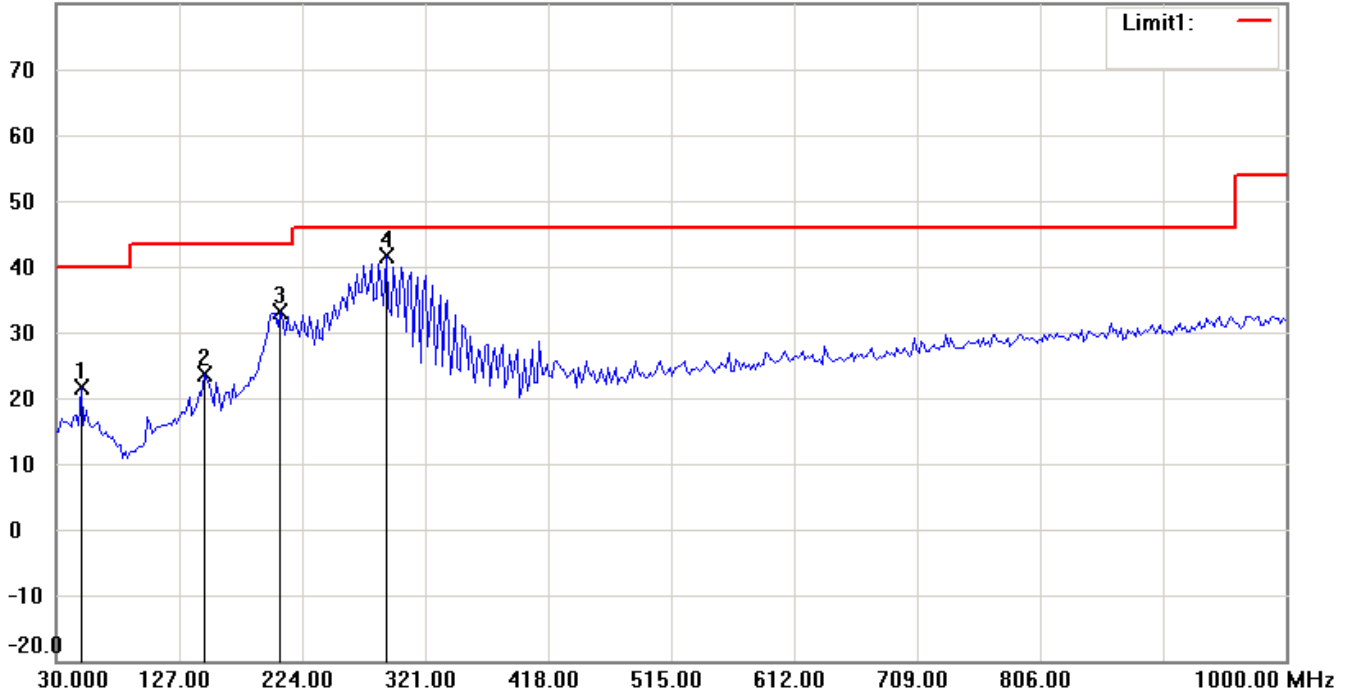


Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

TX 802.11n 20MHz CH11

Antenna Polarization H

80.0 dBuV/m



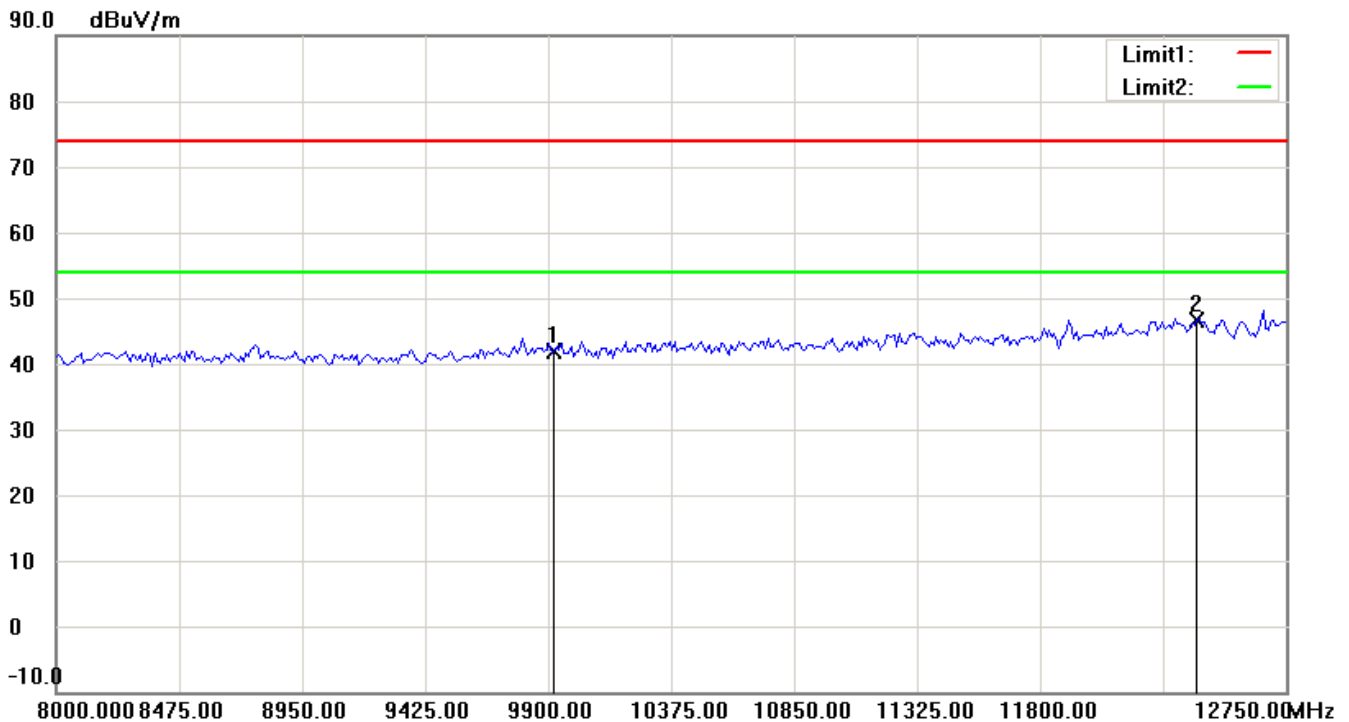
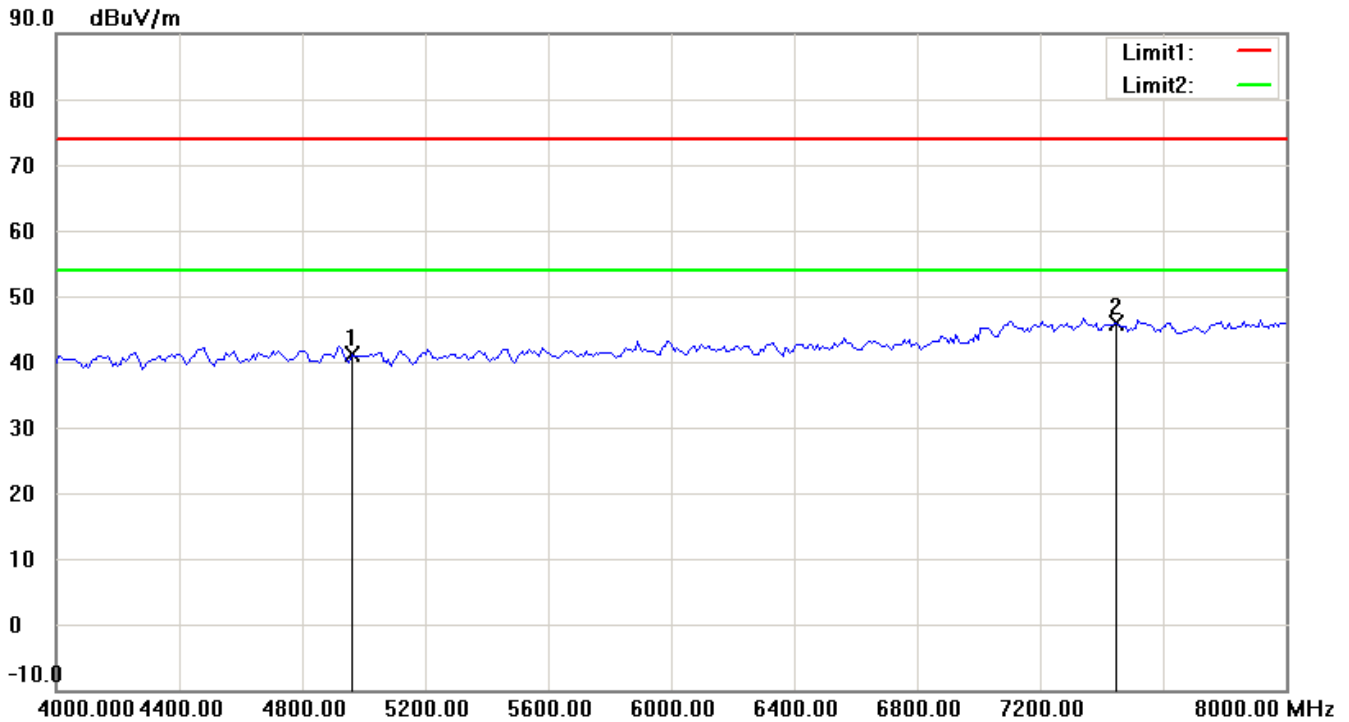
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

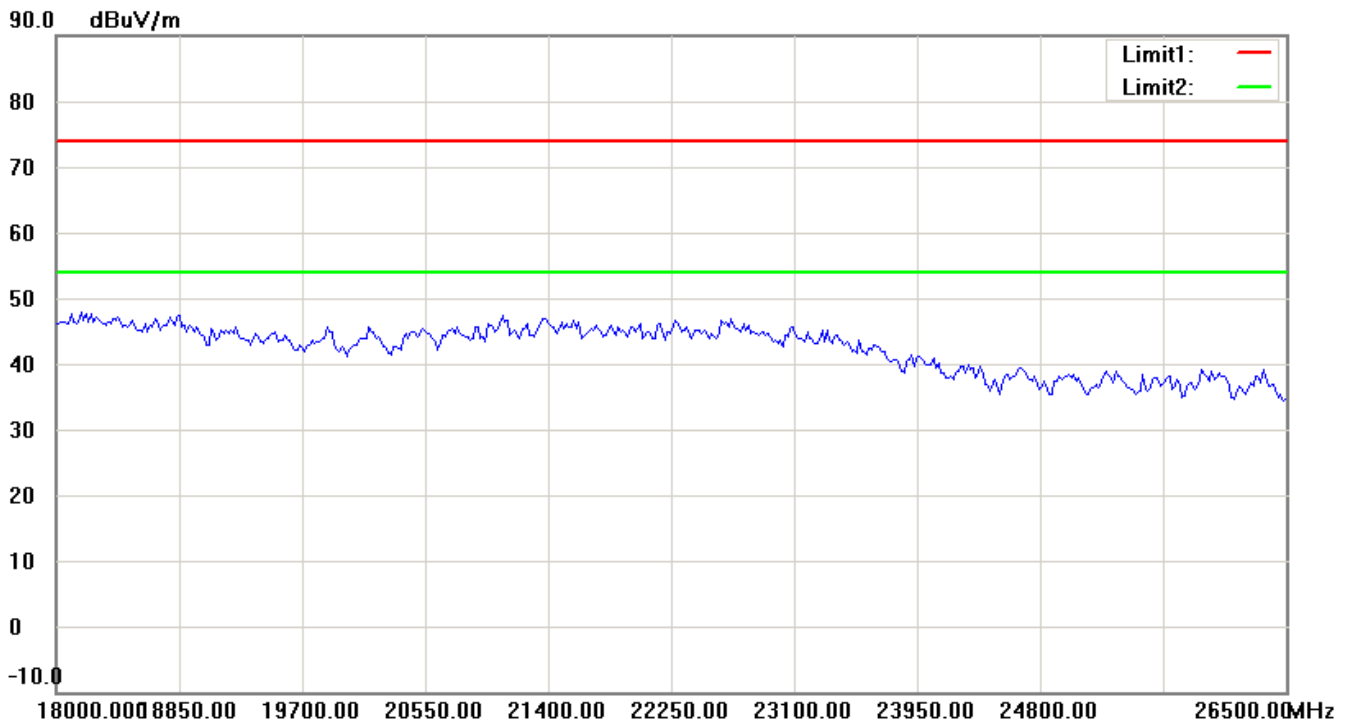
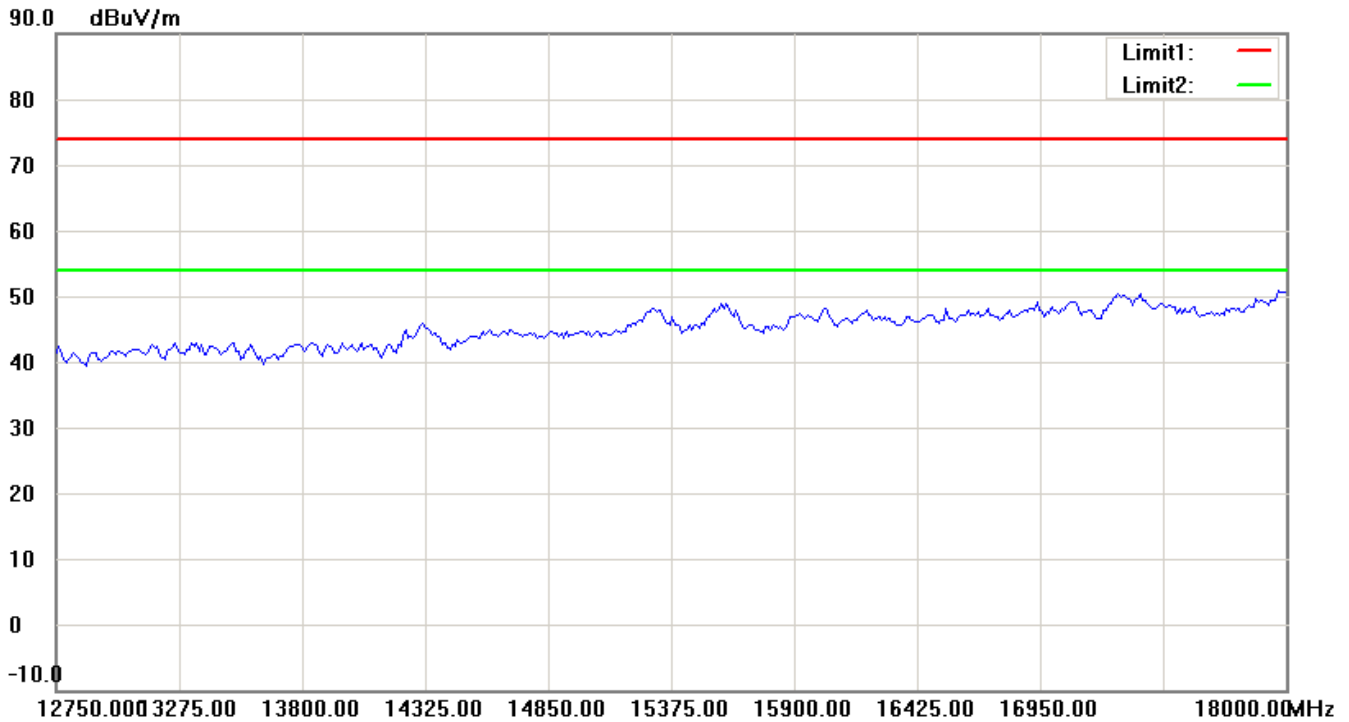
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

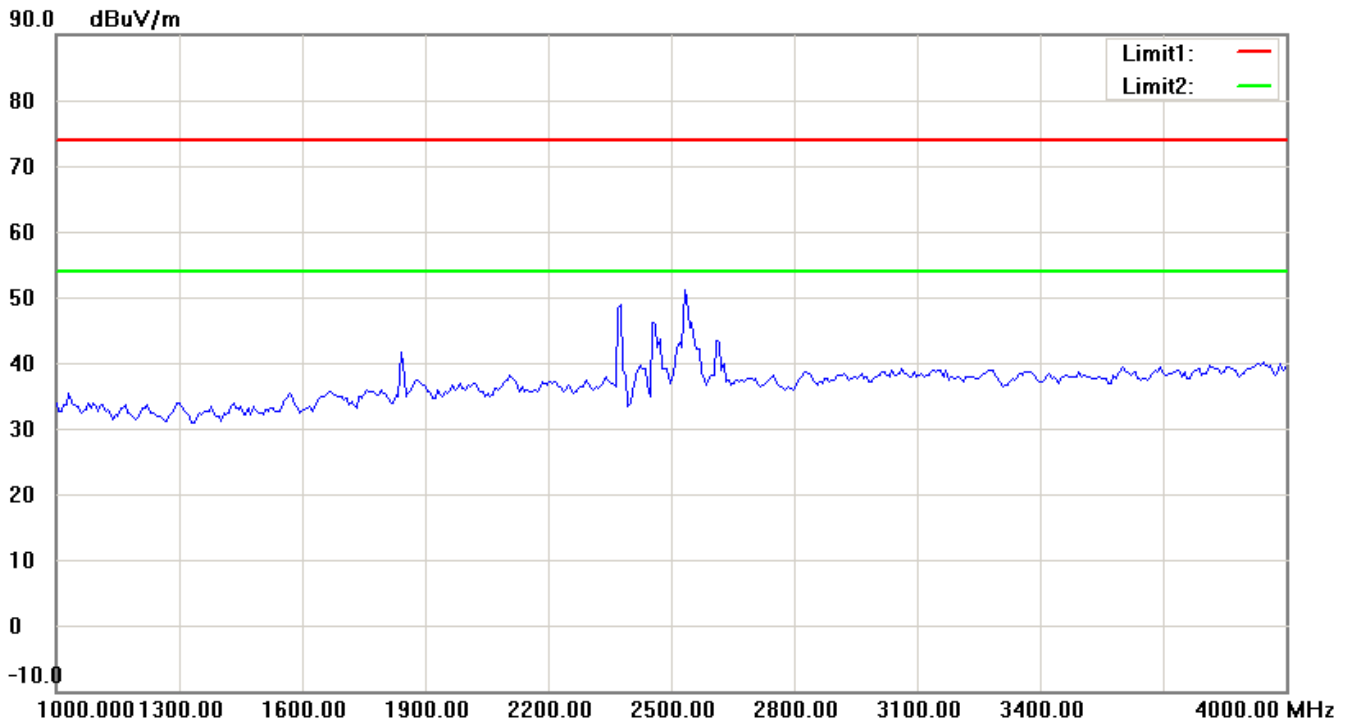
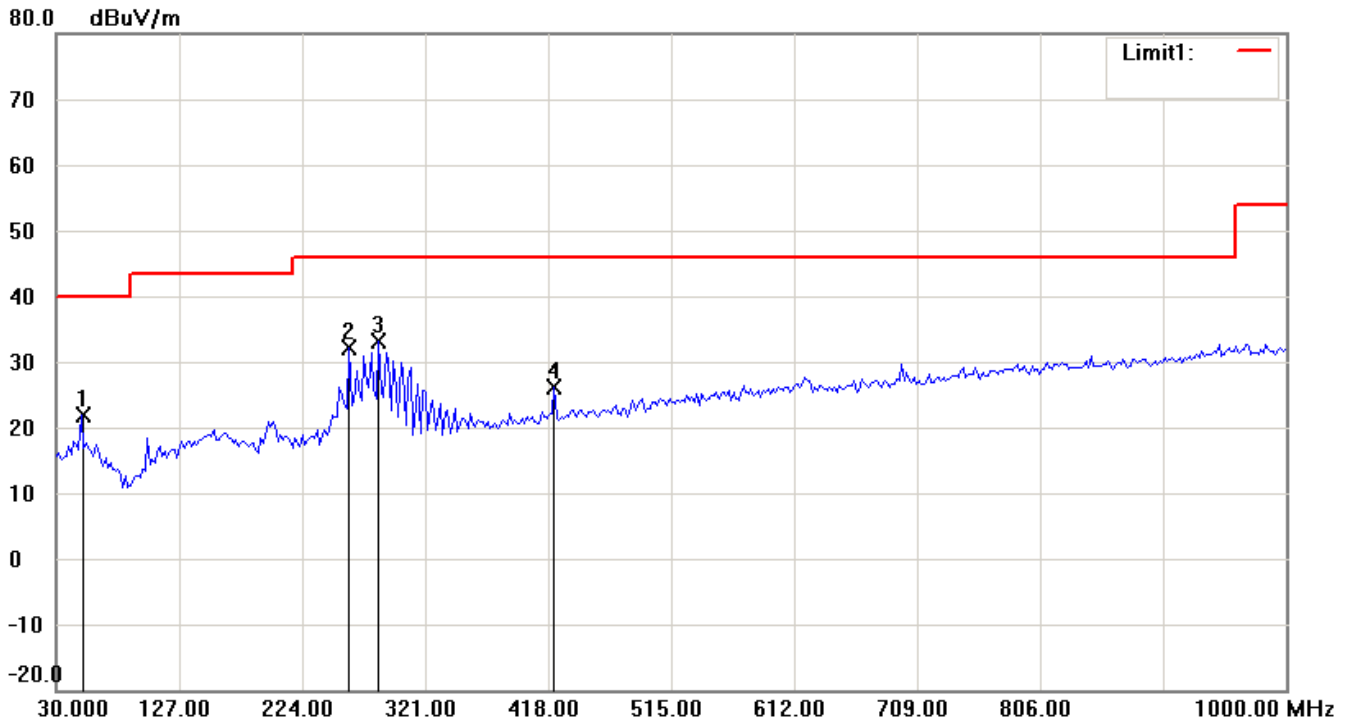
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Antenna Polarization V



Up Line: Peak Limit Line Down Line: Ave Limit Line

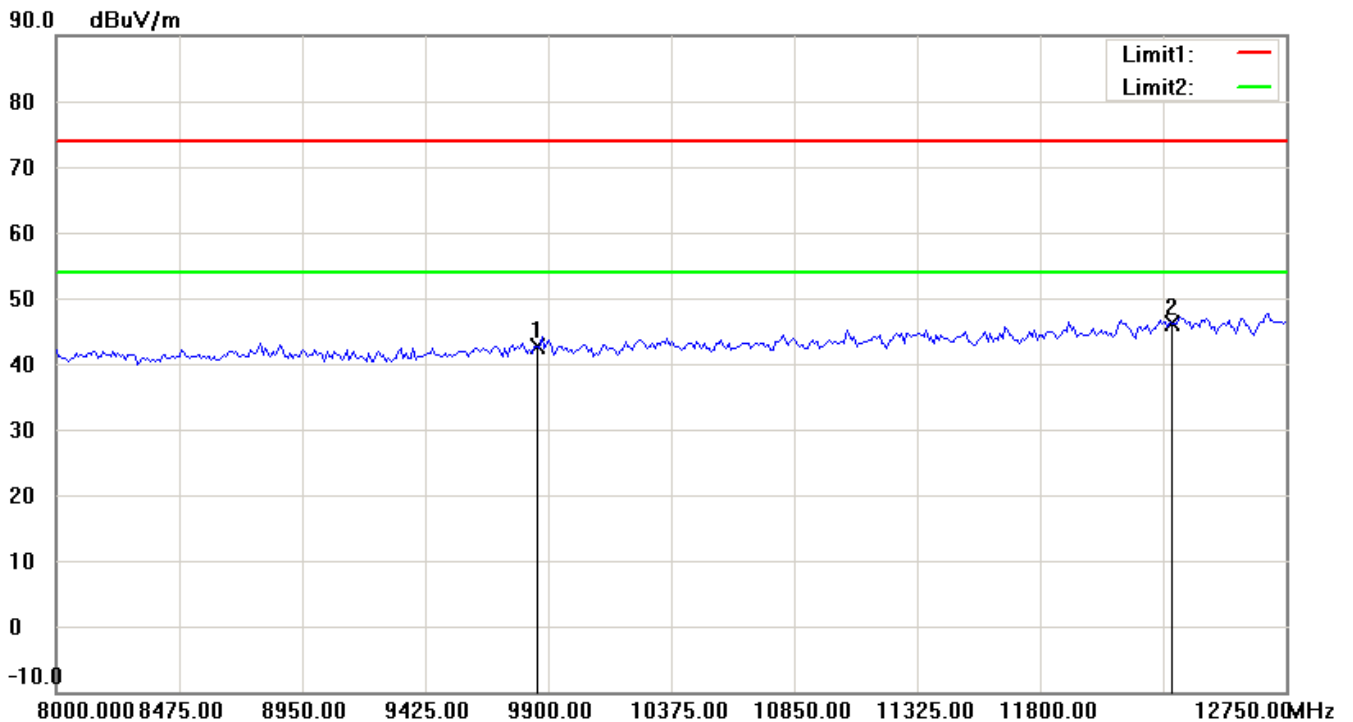
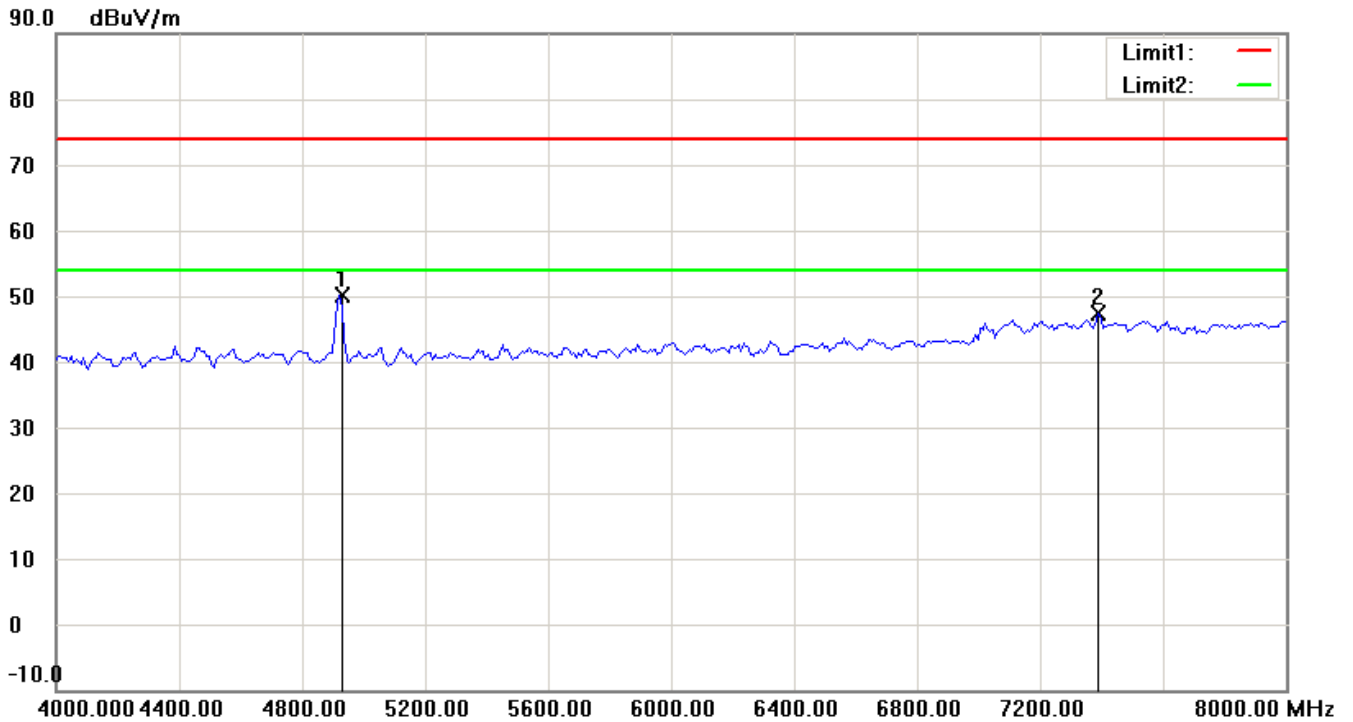
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



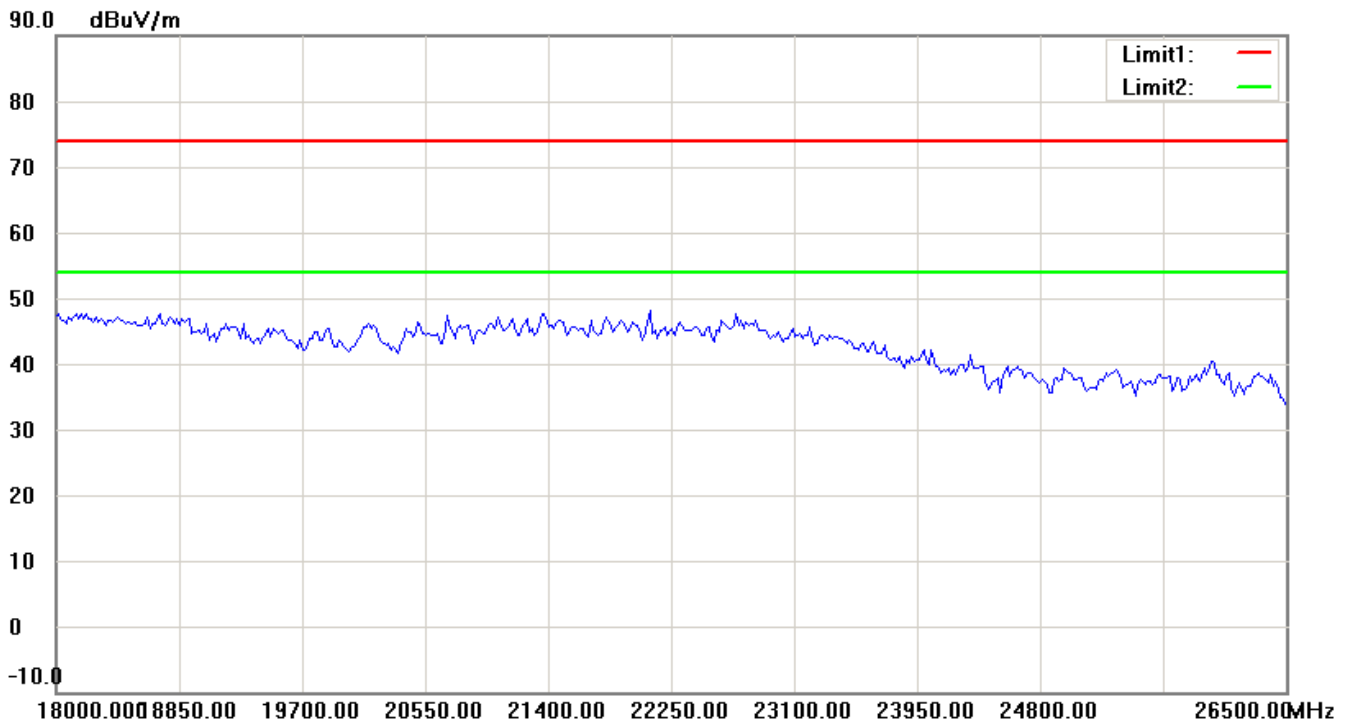
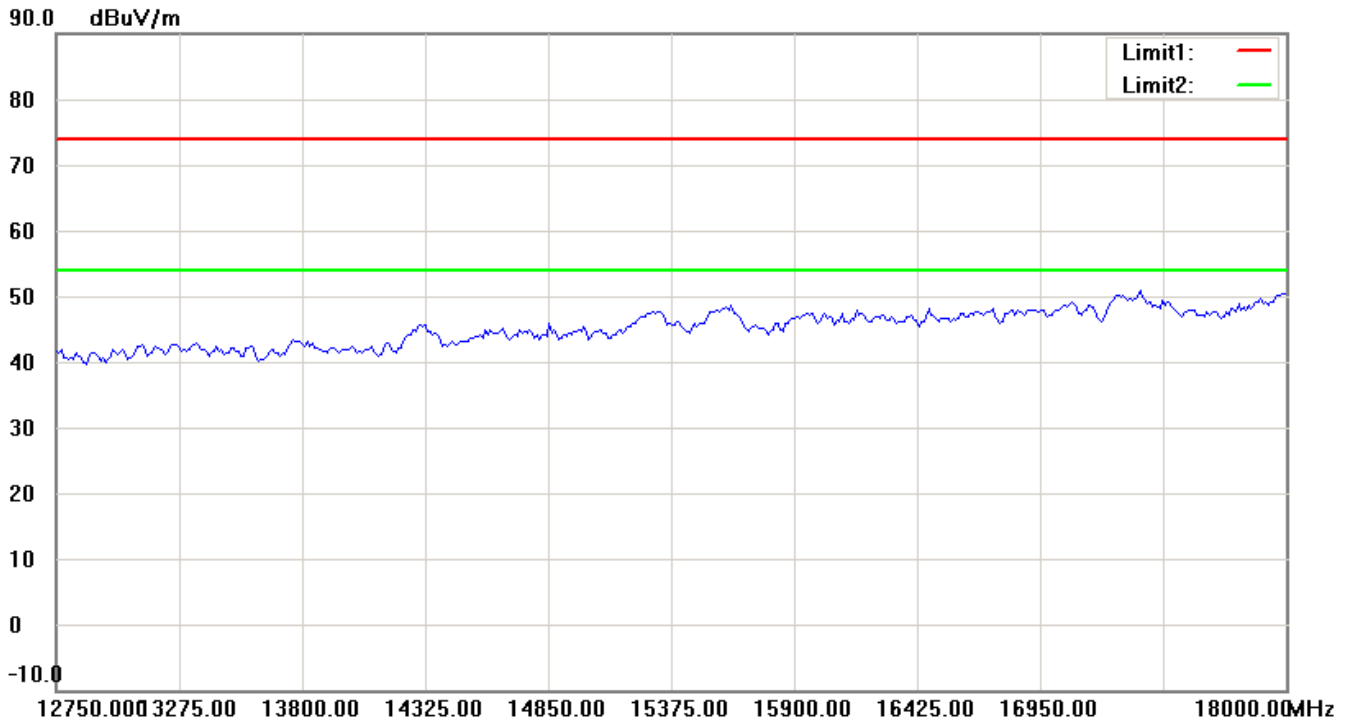
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

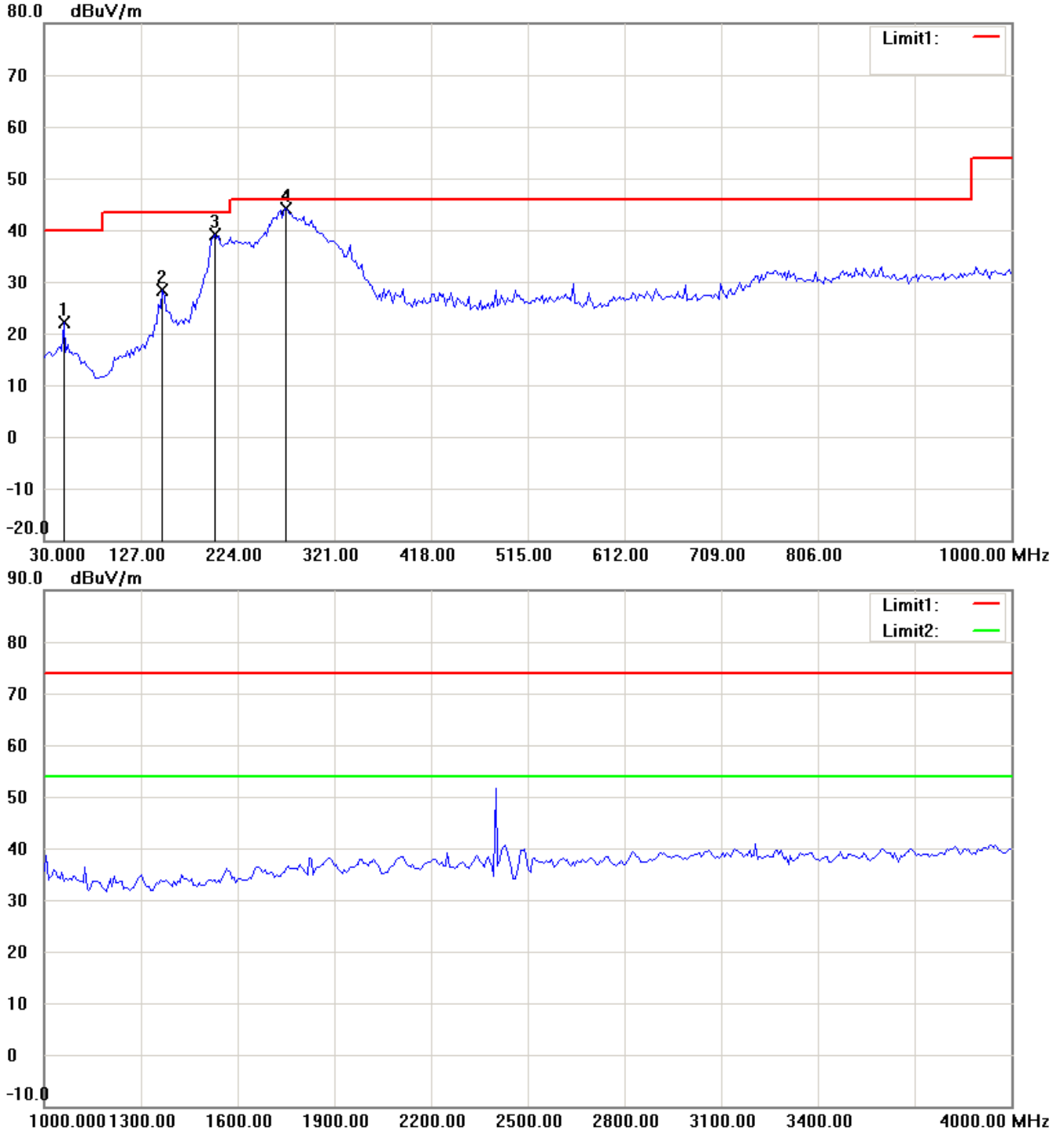
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

TX Bluetooth Normal CH0
Antenna Polarization H



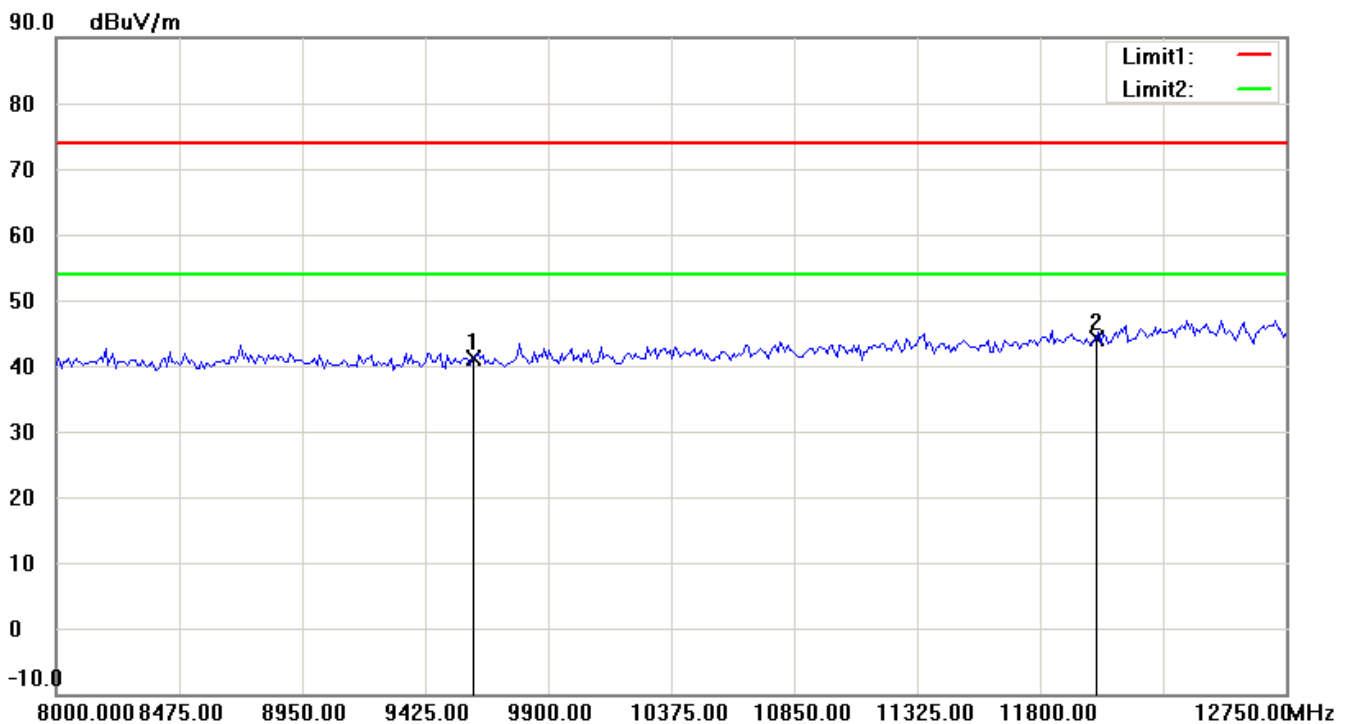
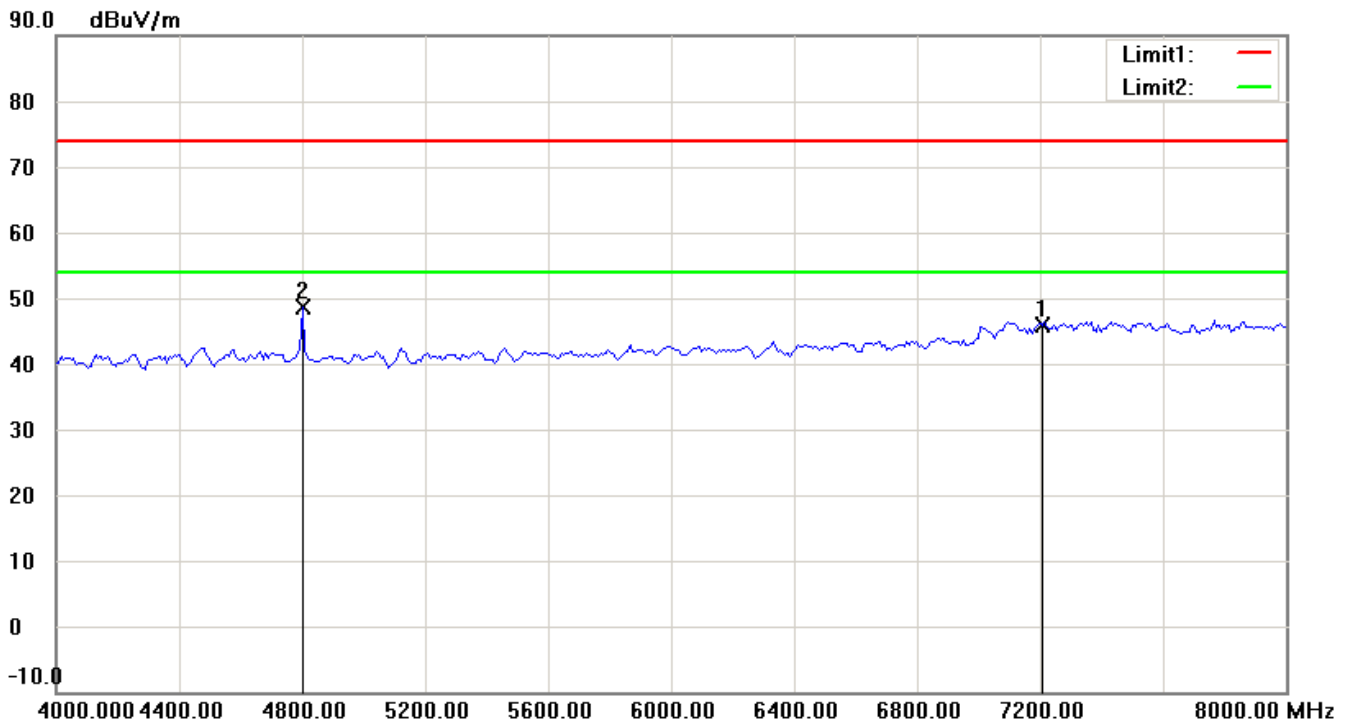
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

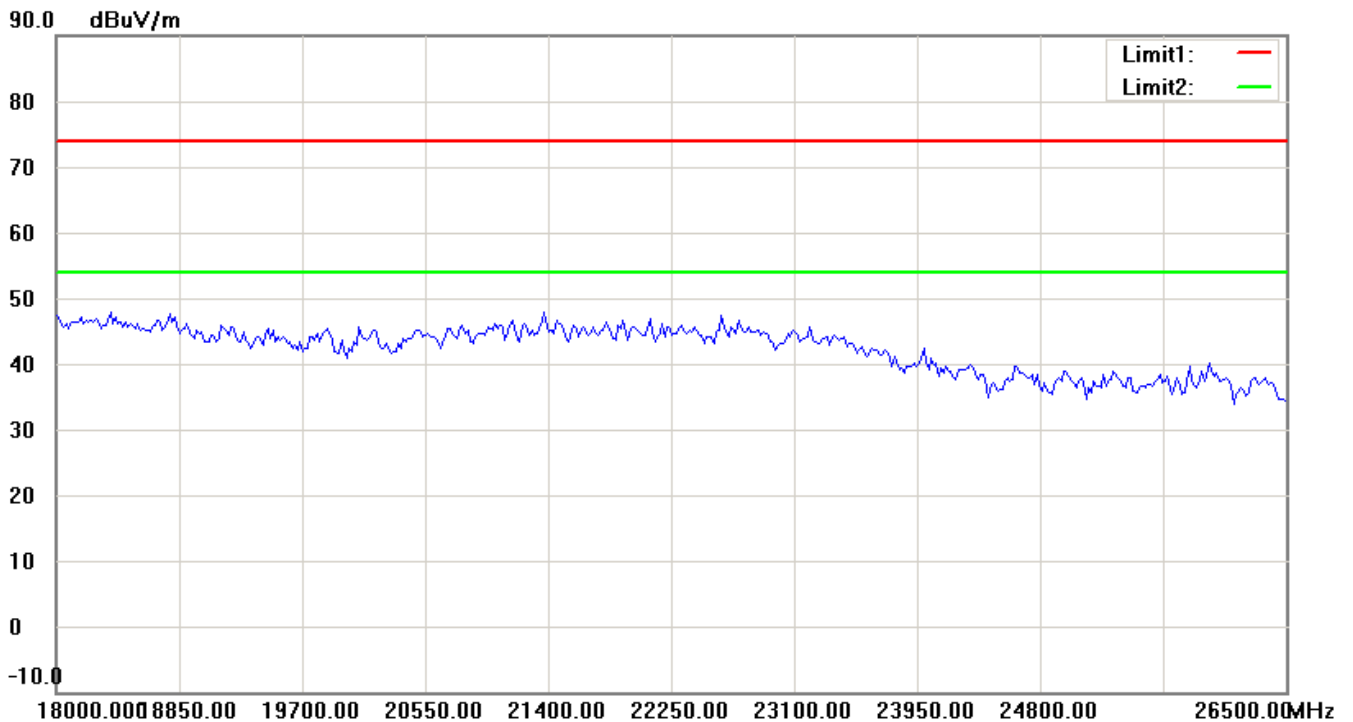
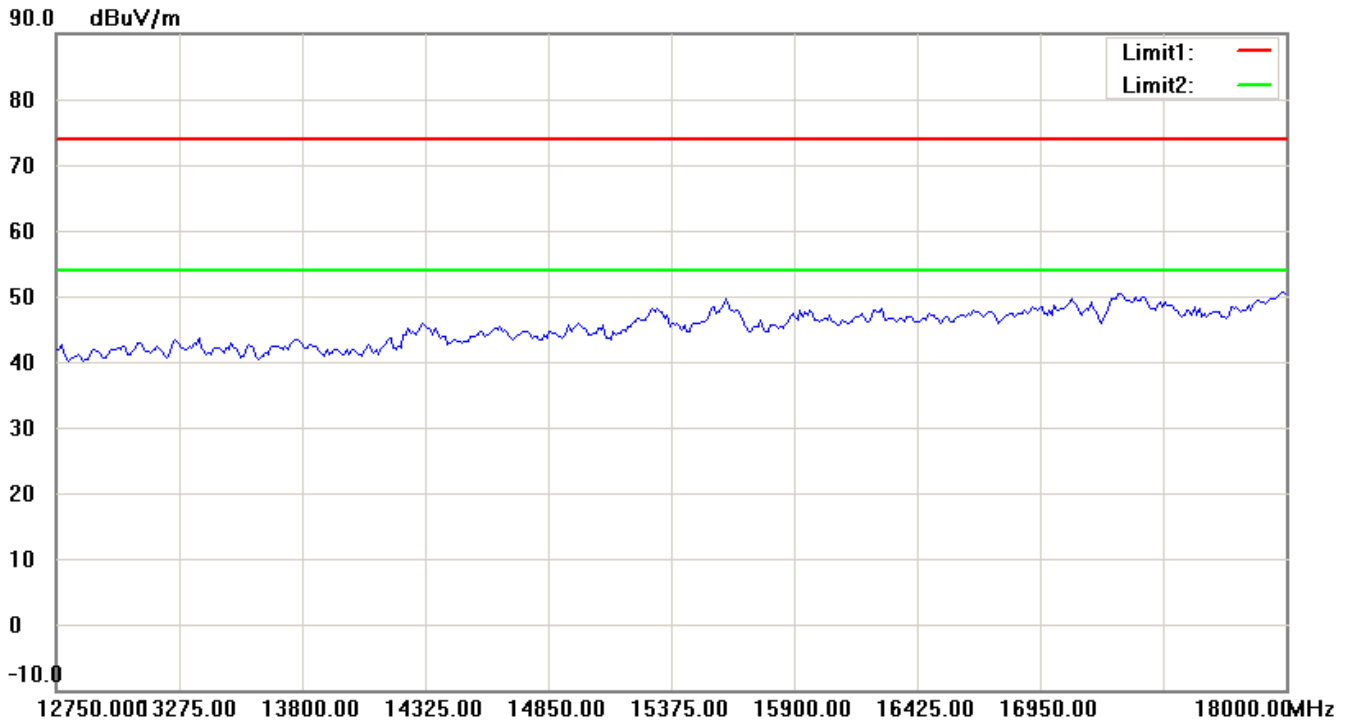
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

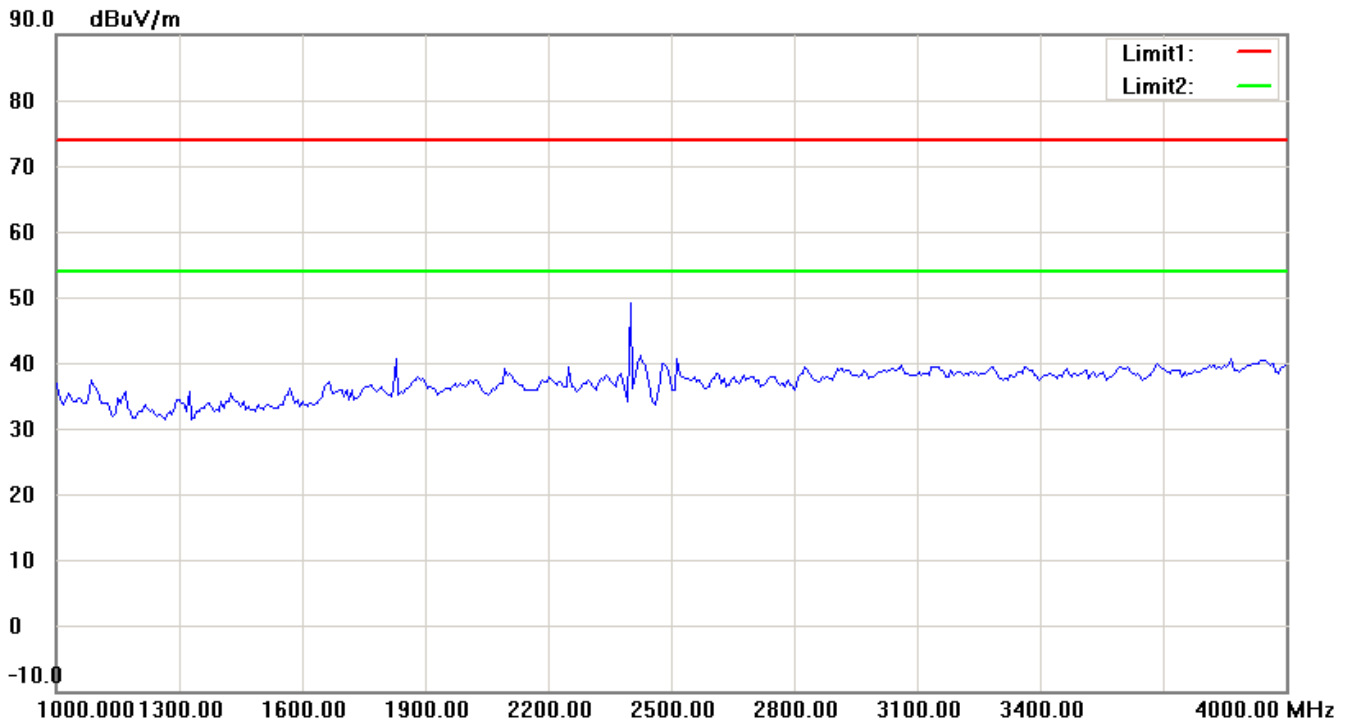
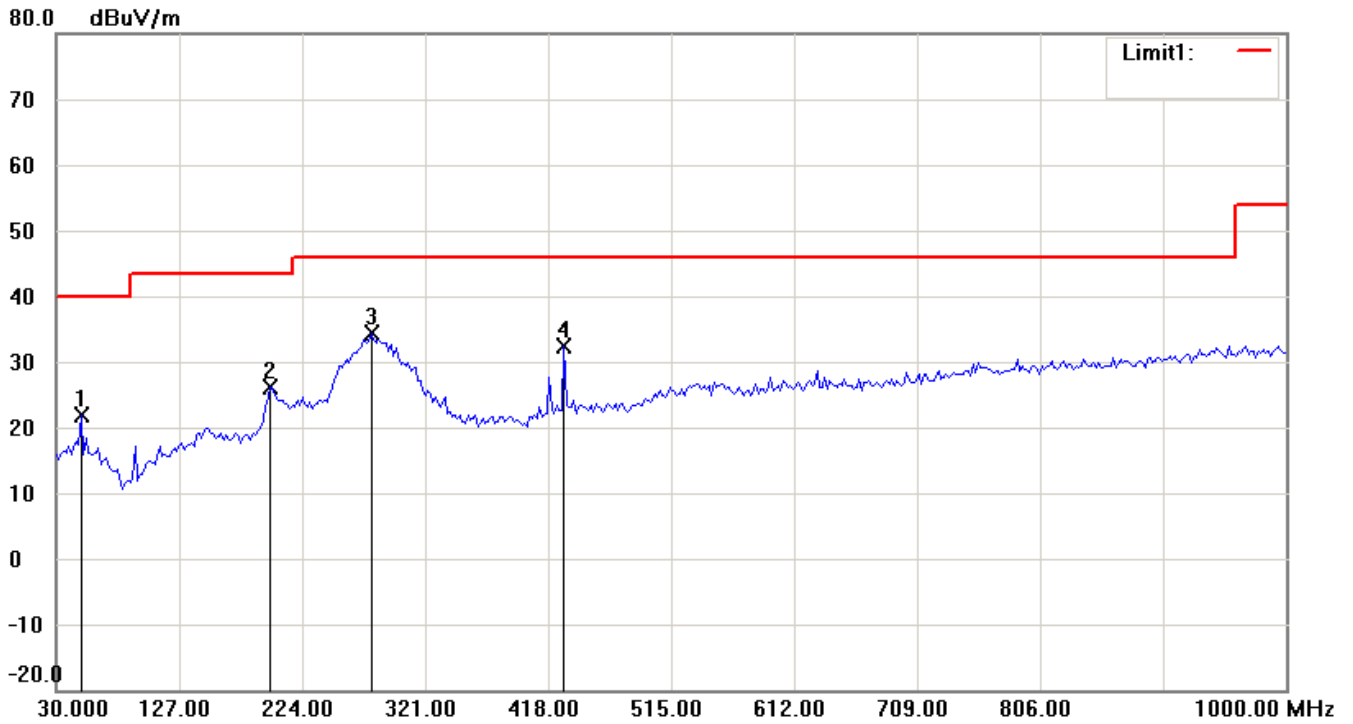
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Antenna Polarization V



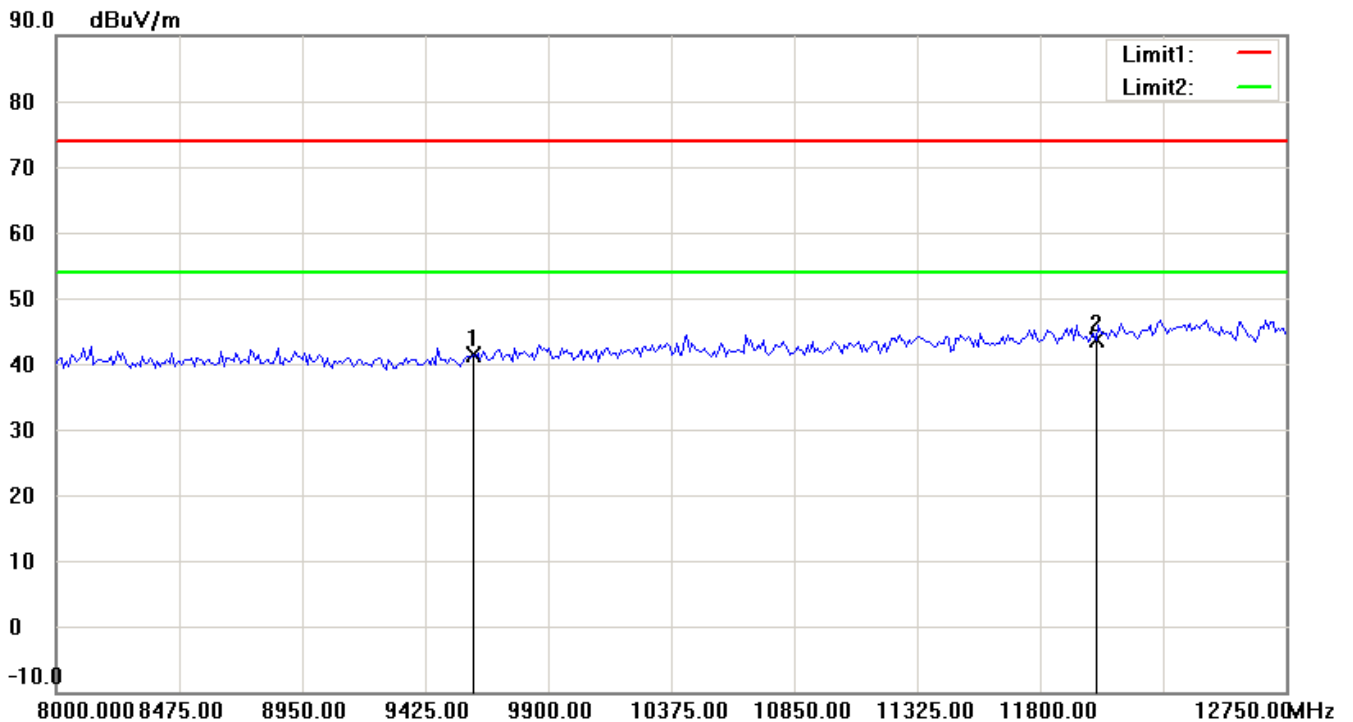
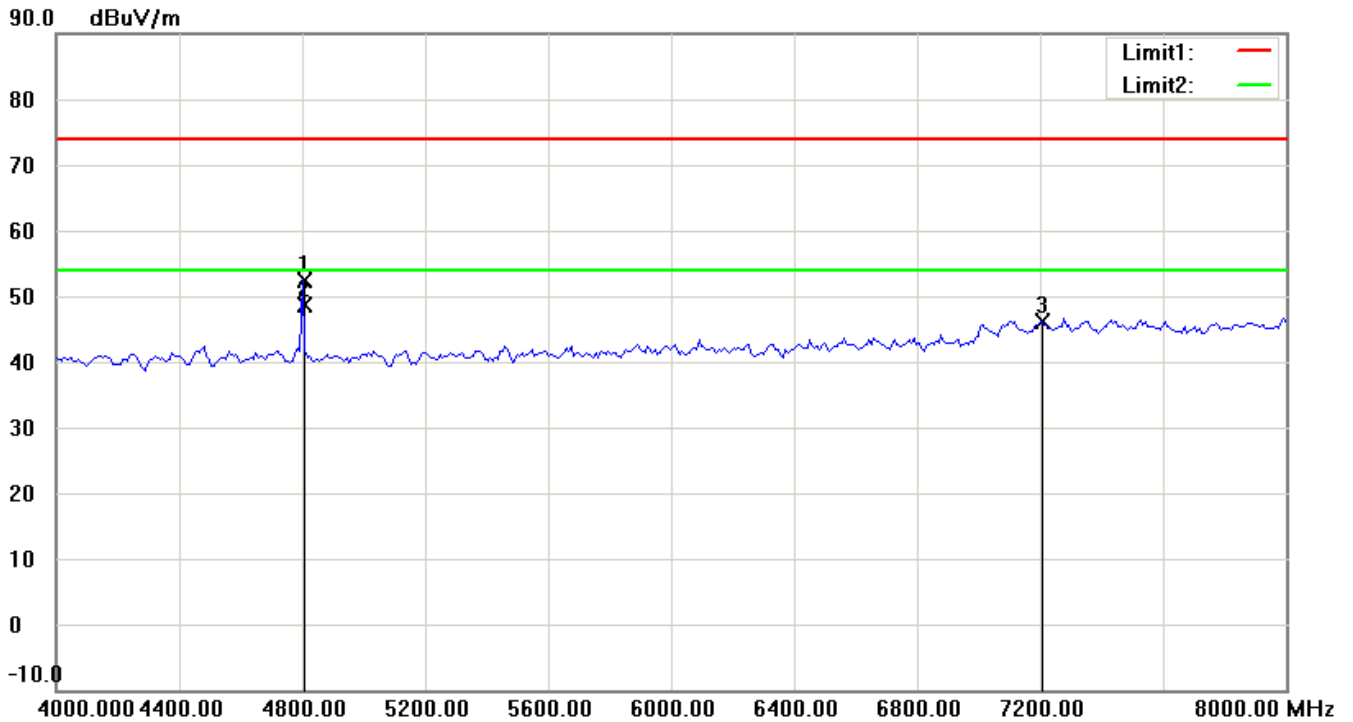
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

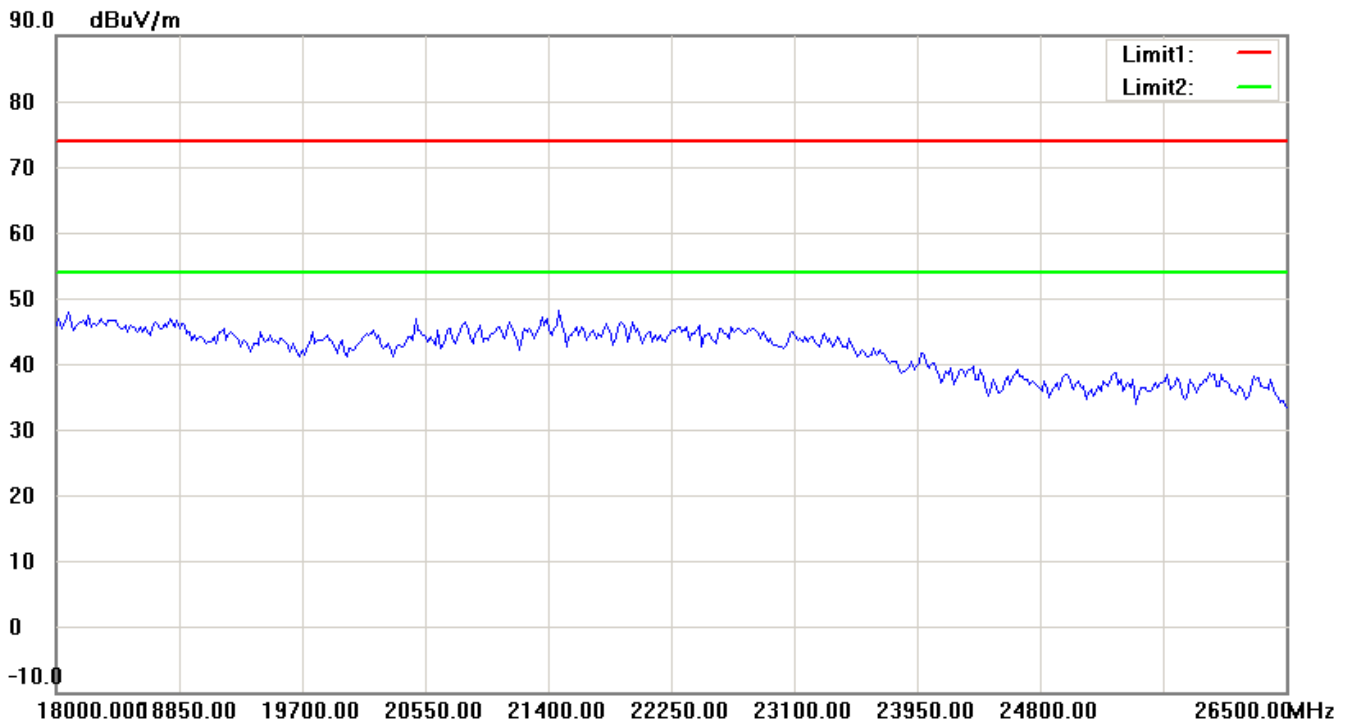
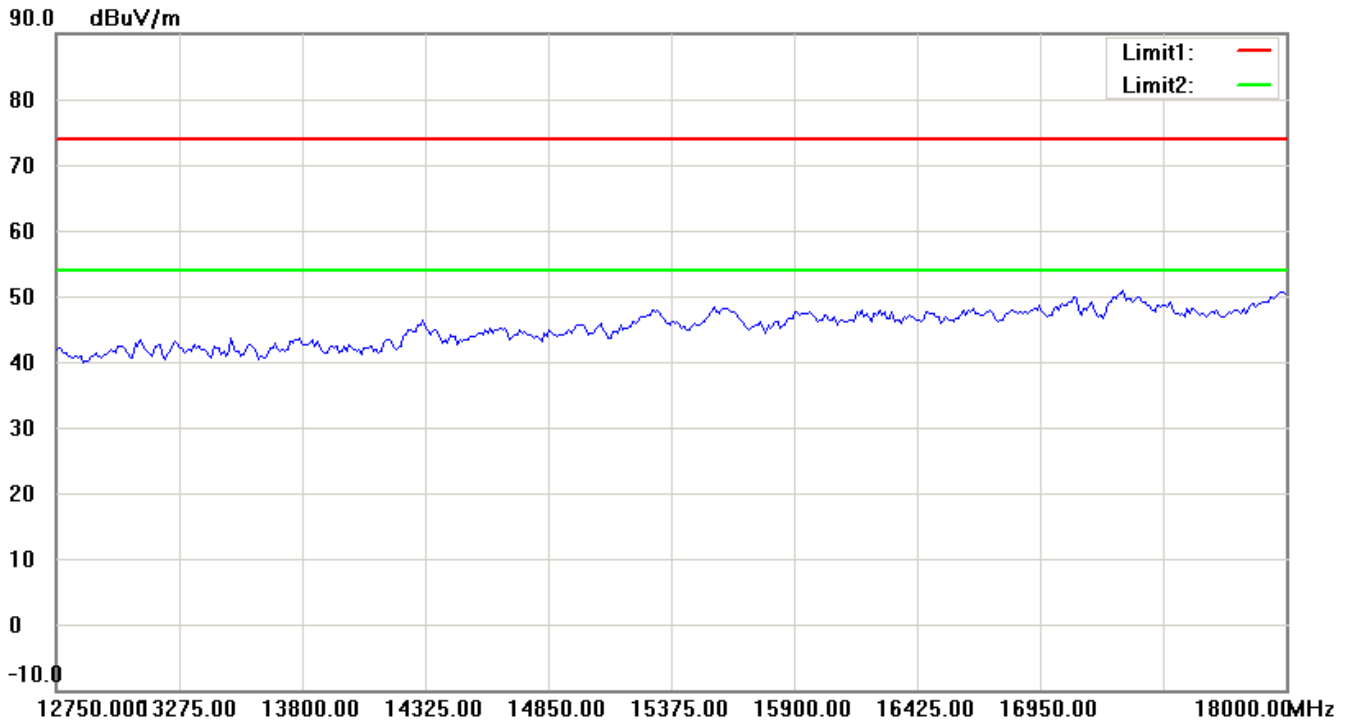
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

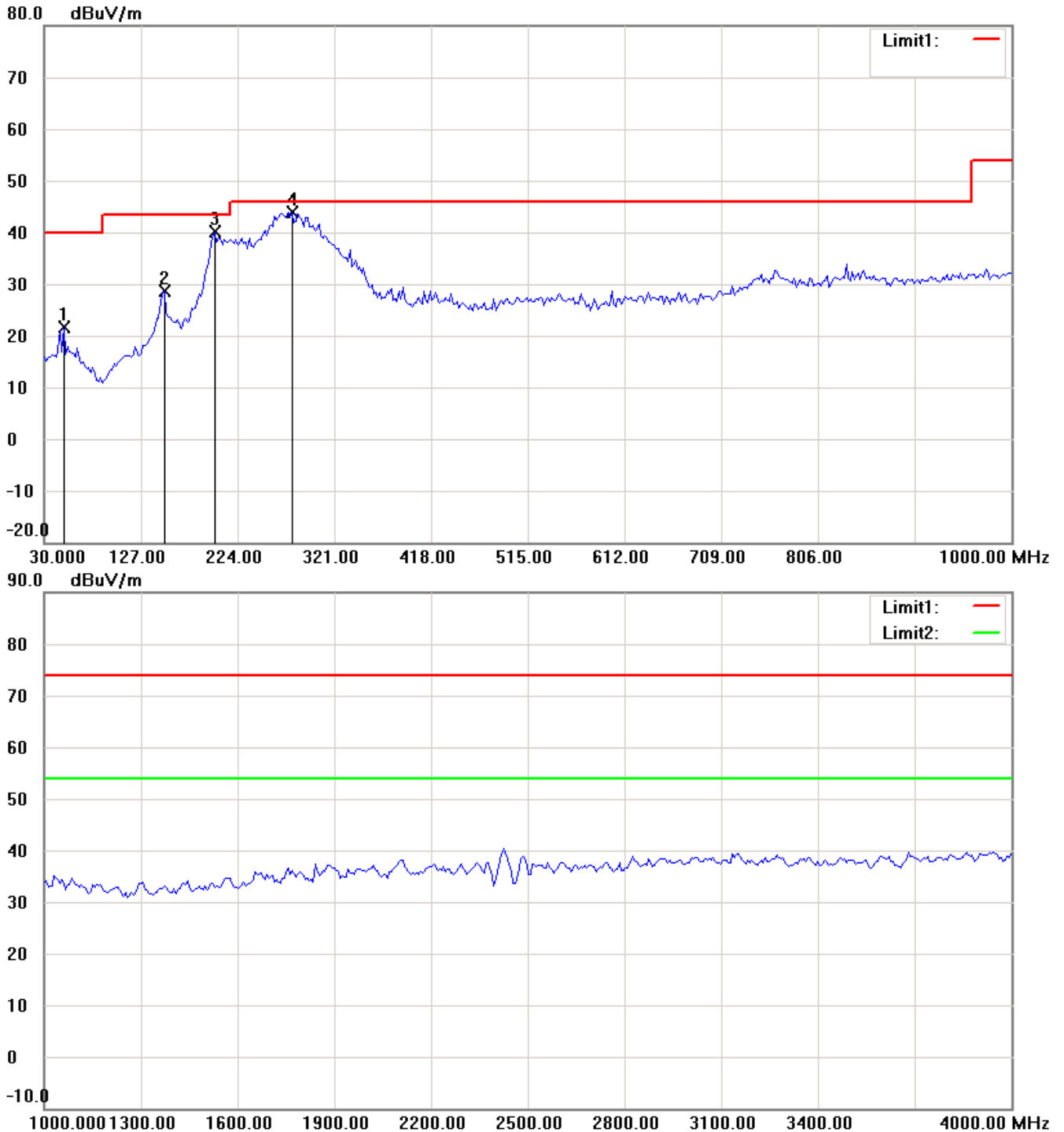
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

TX Bluetooth Normal CH39
Antenna Polarization H



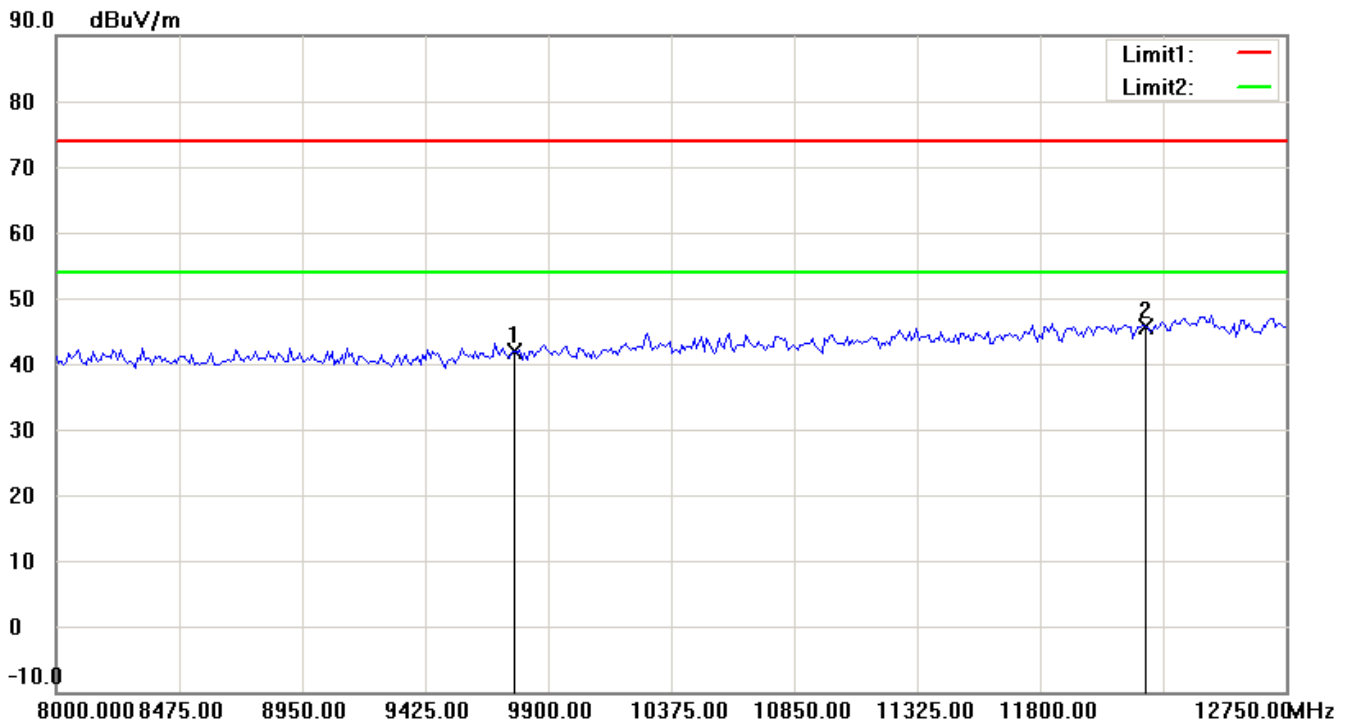
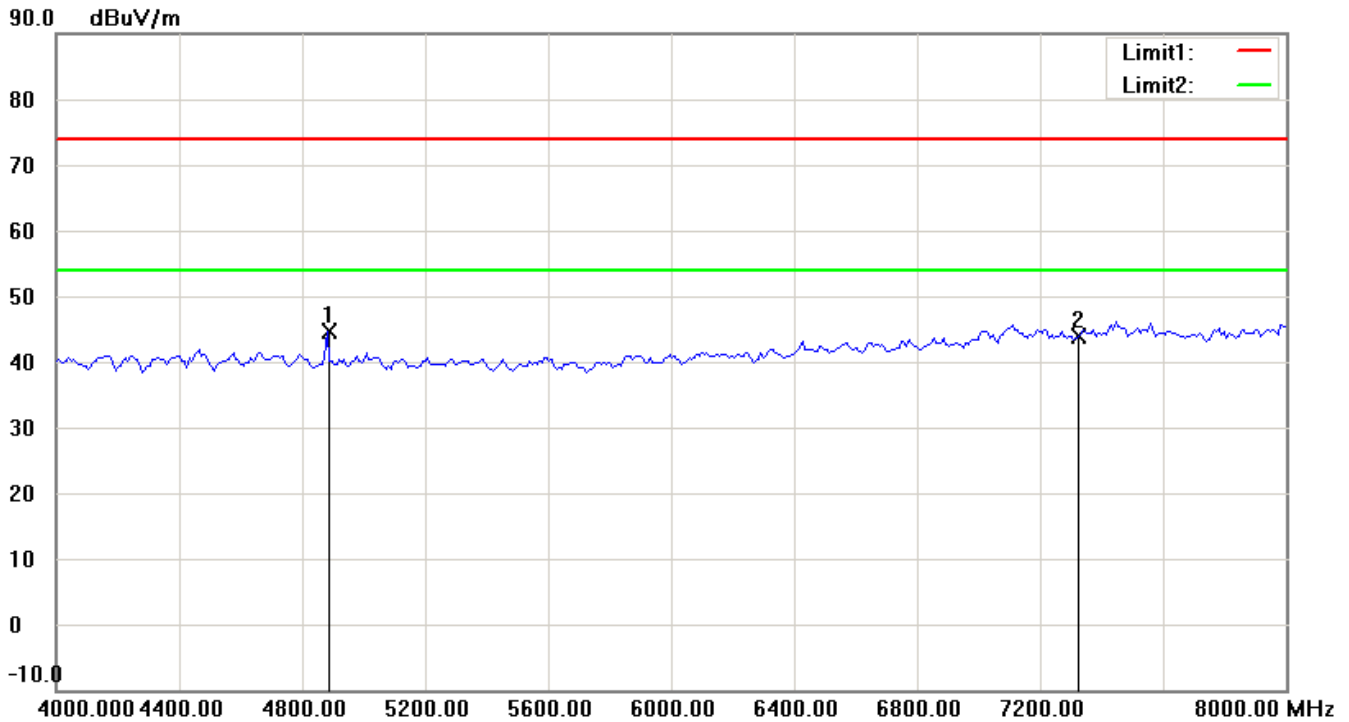
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



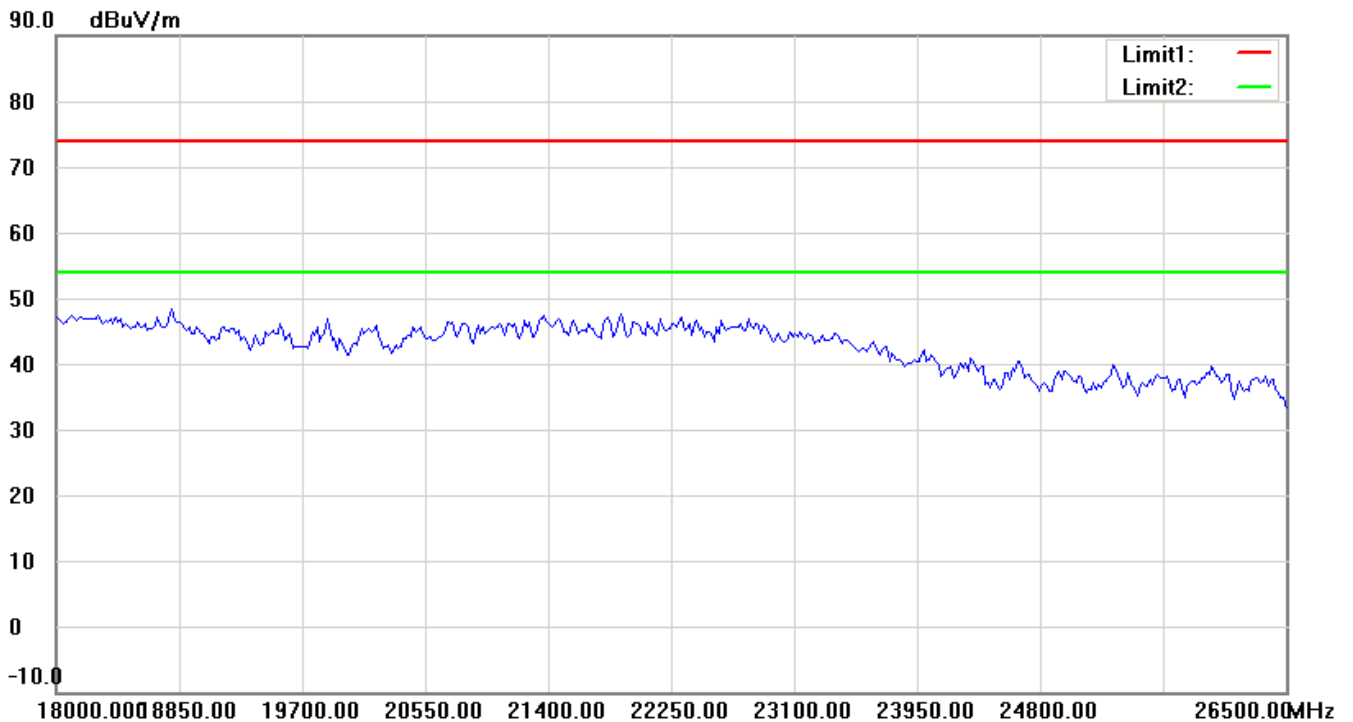
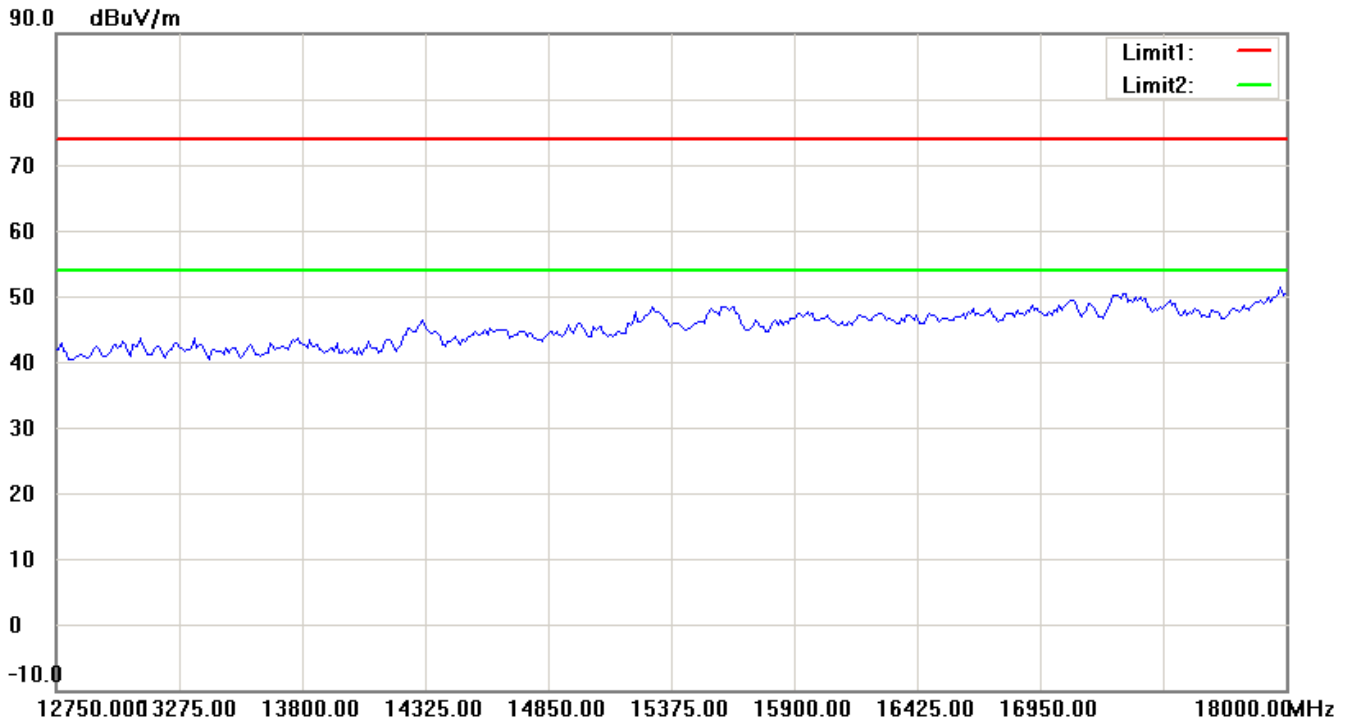
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

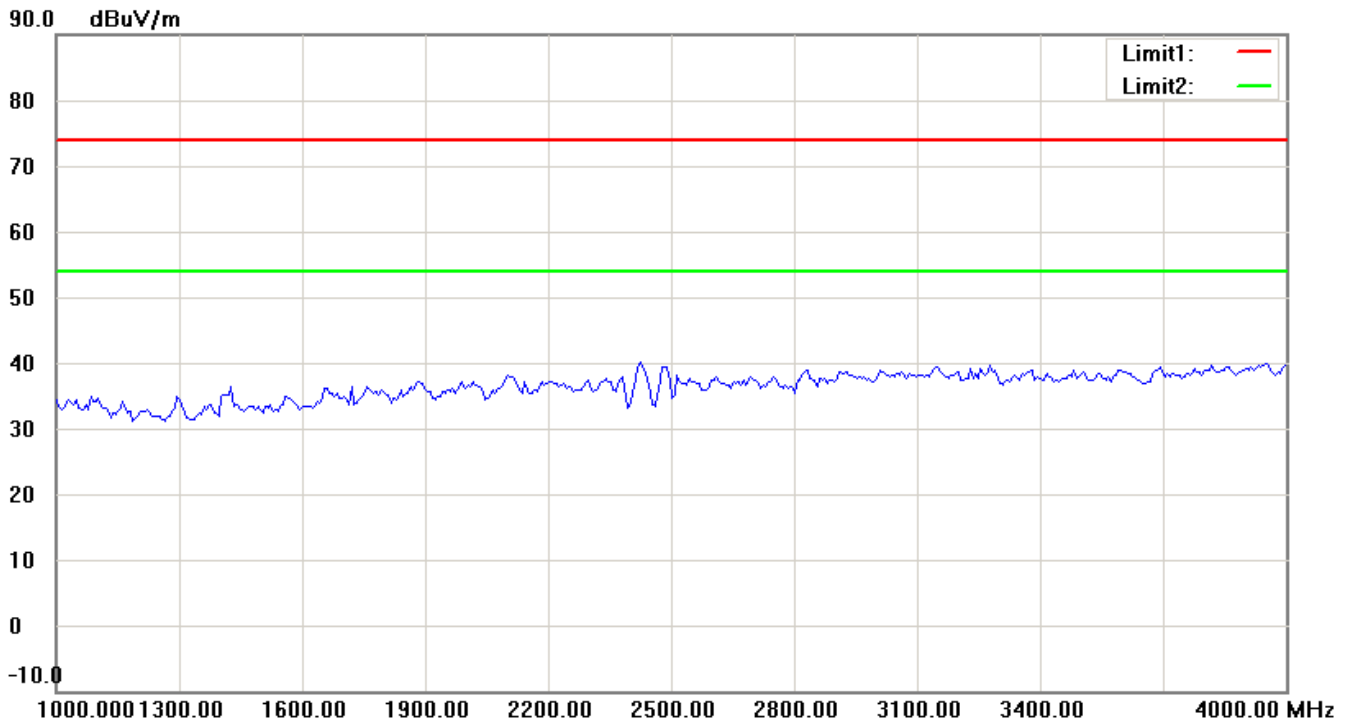
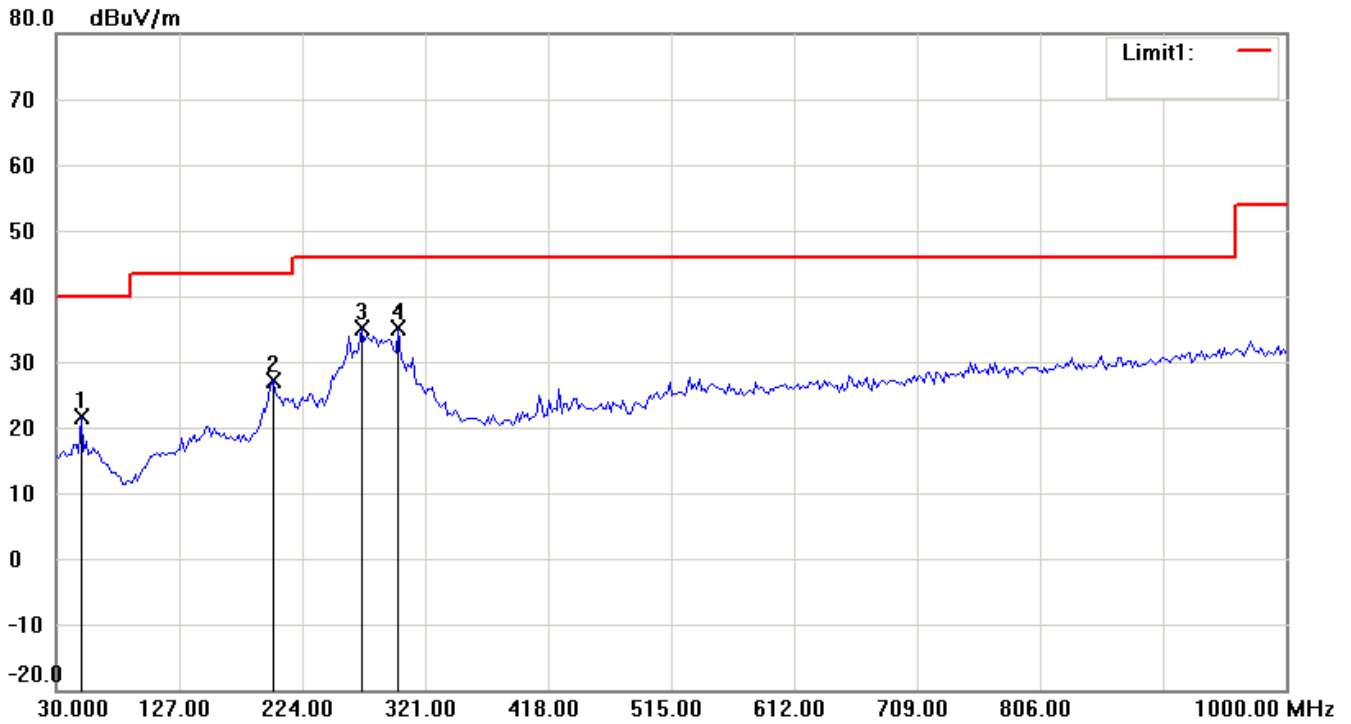
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Antenna Polarization V



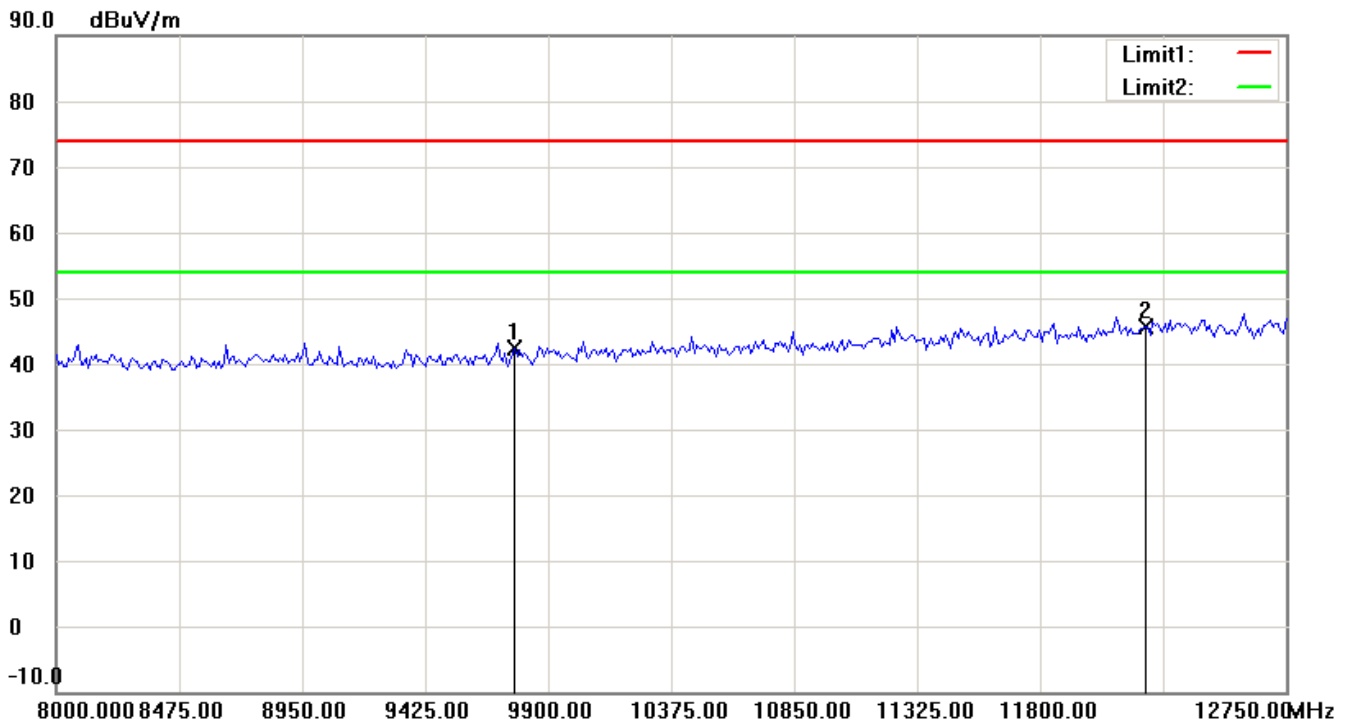
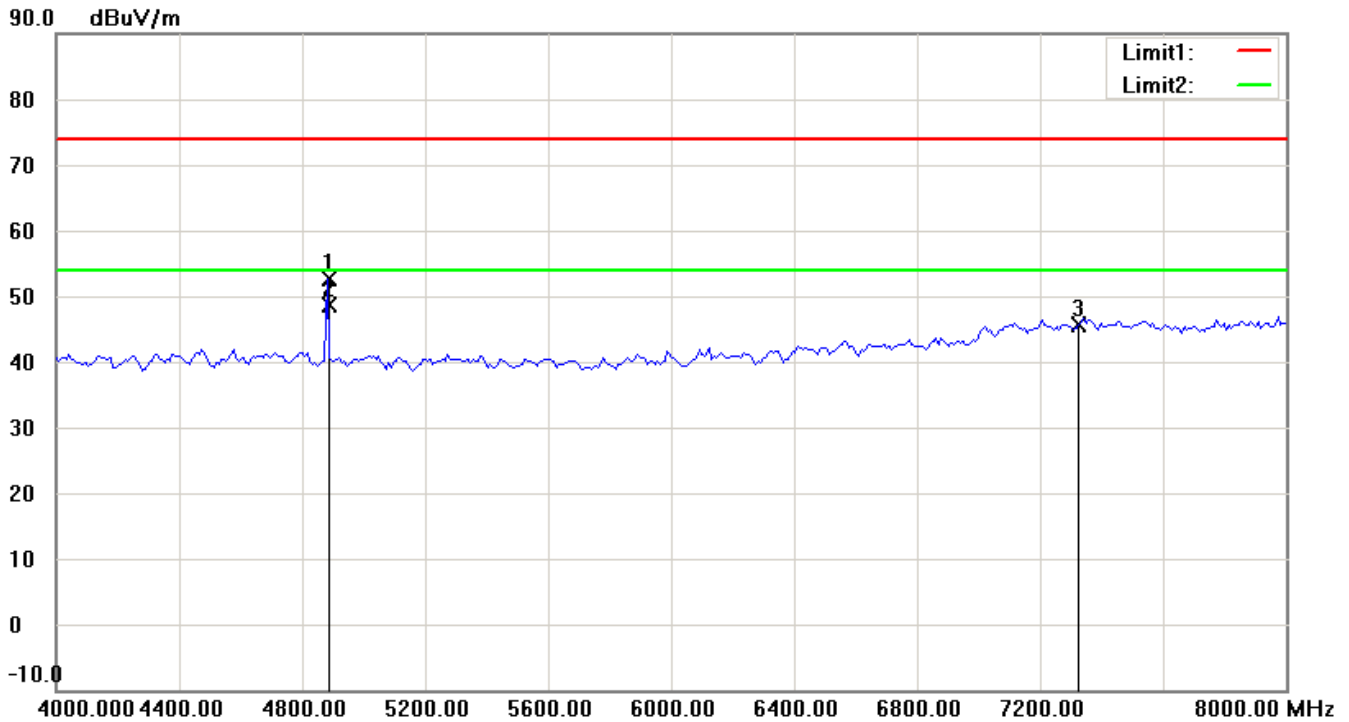
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

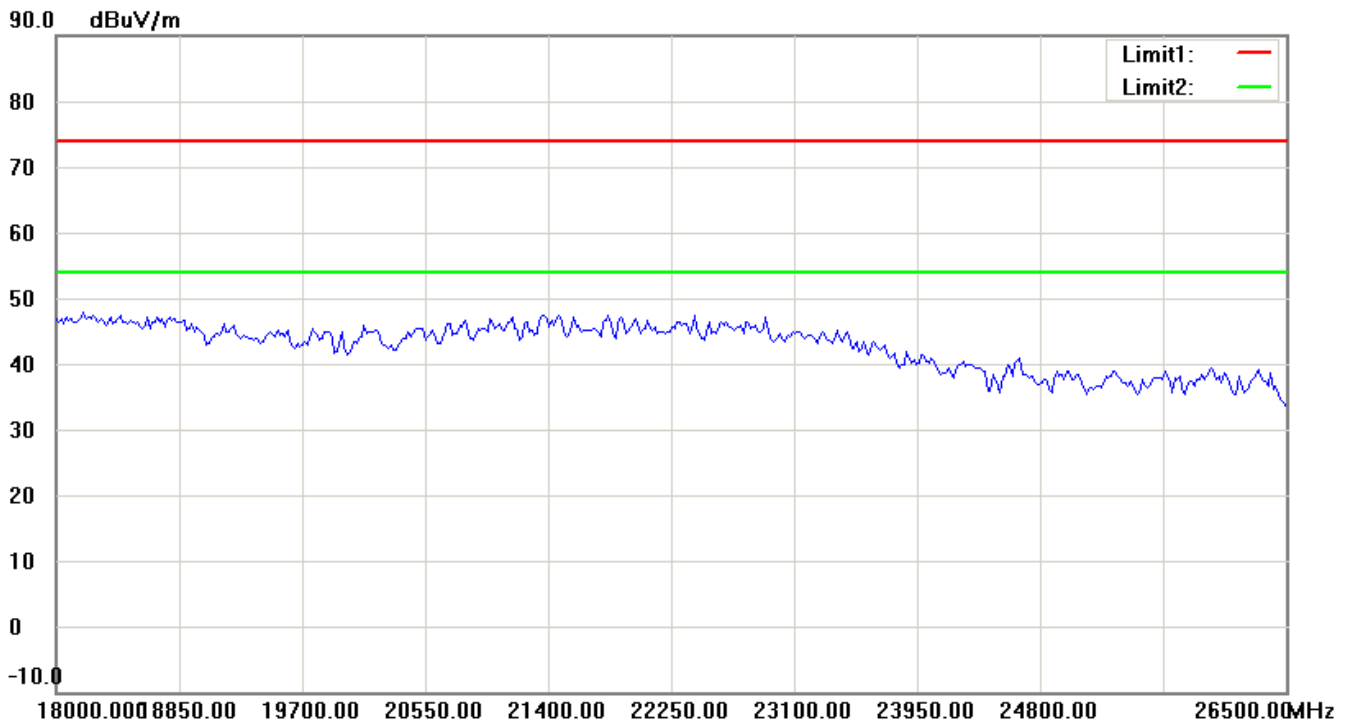
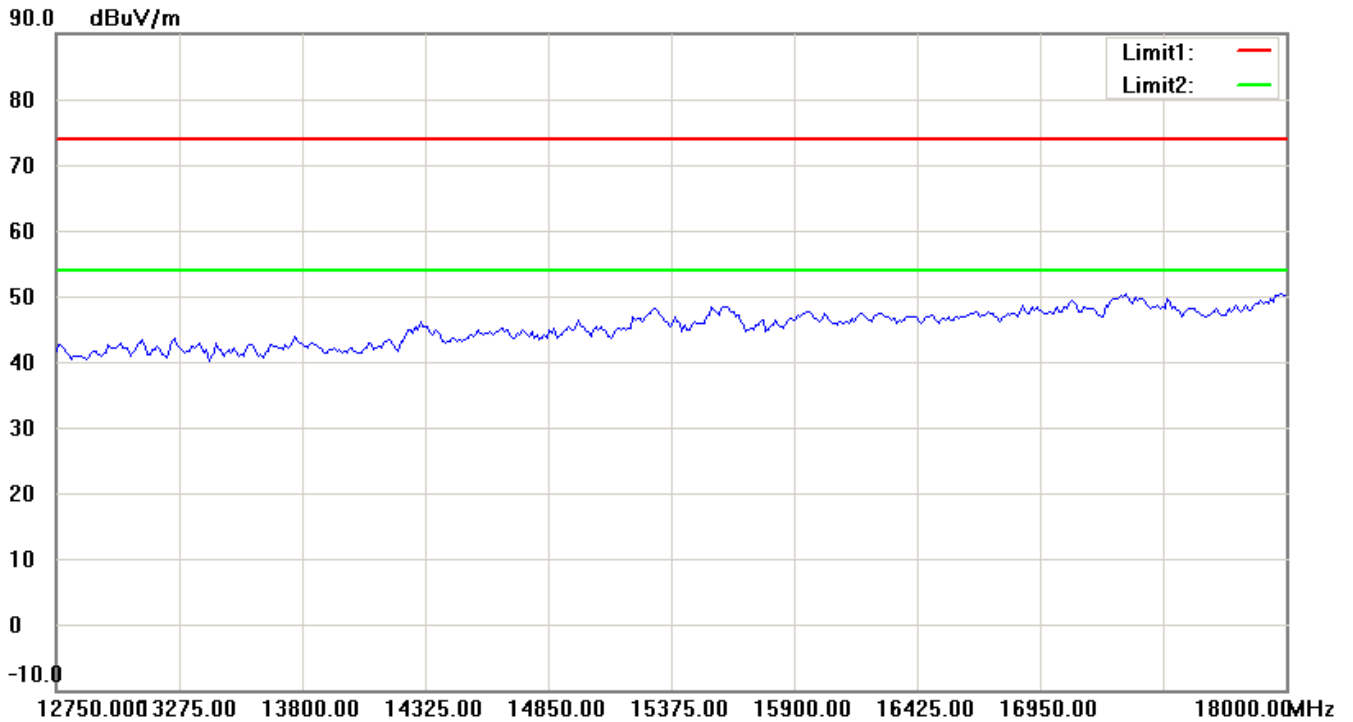
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
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Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

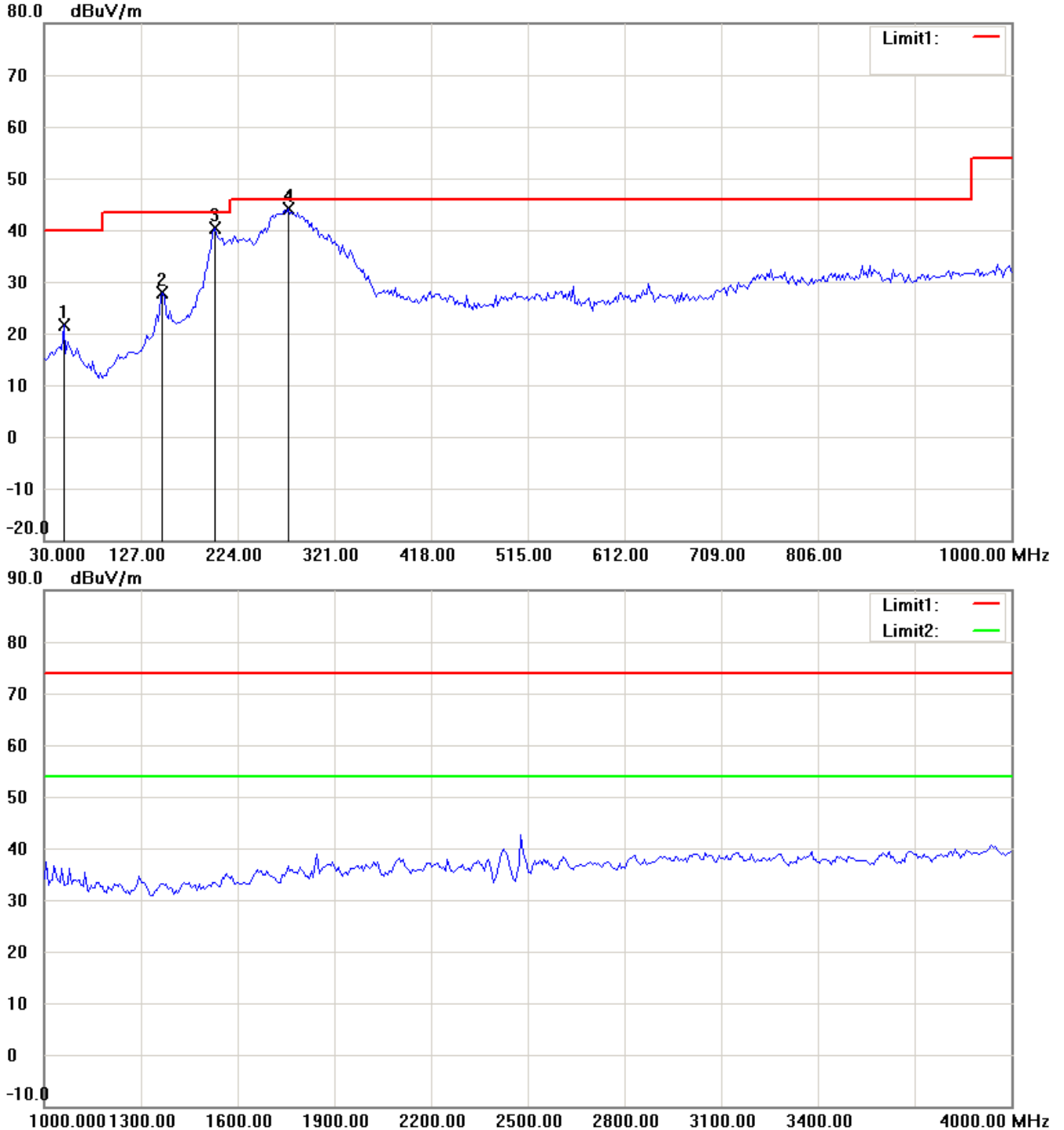
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

TX Bluetooth Normal CH78
Antenna Polarization H



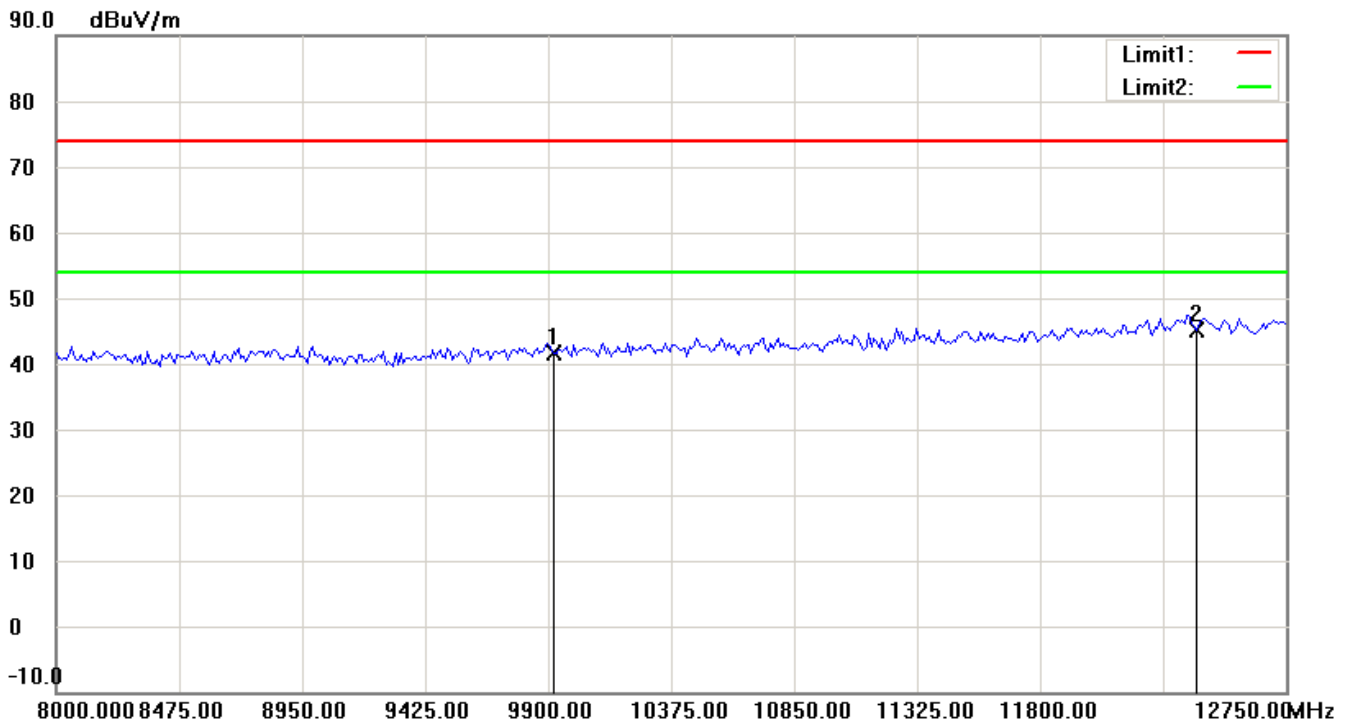
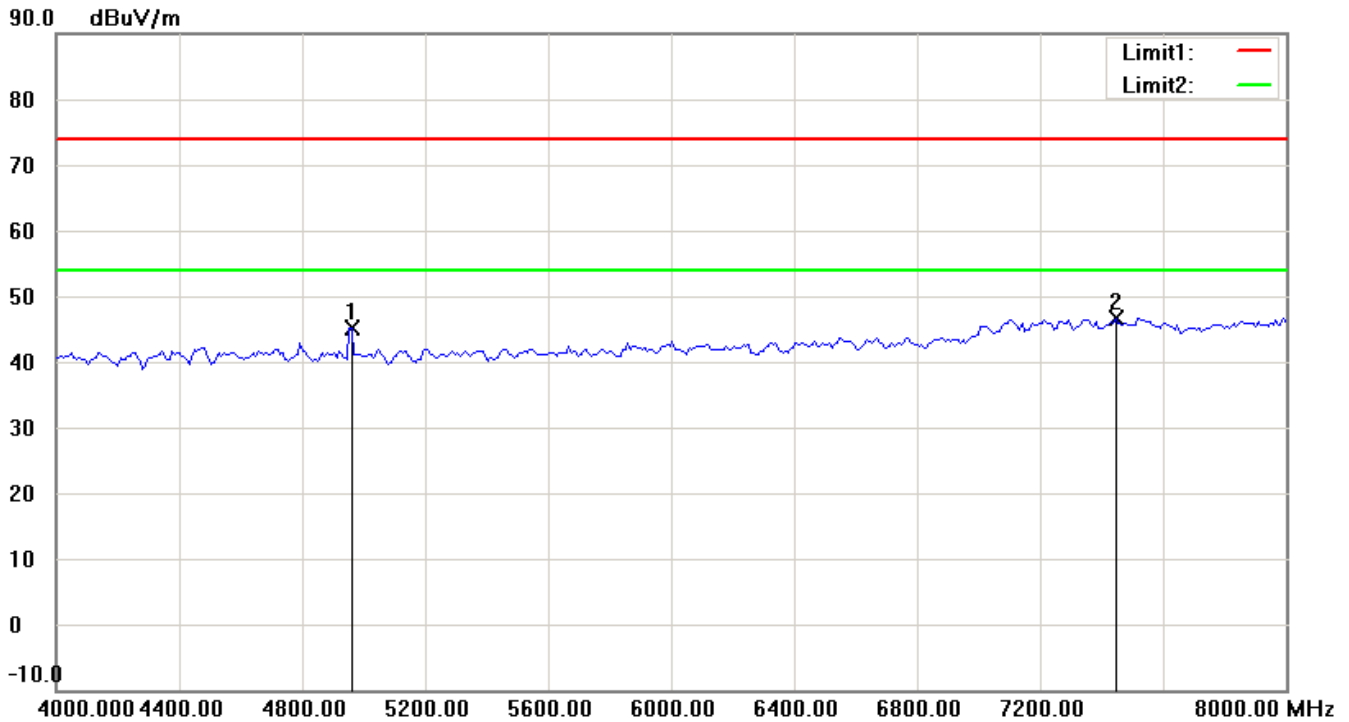
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

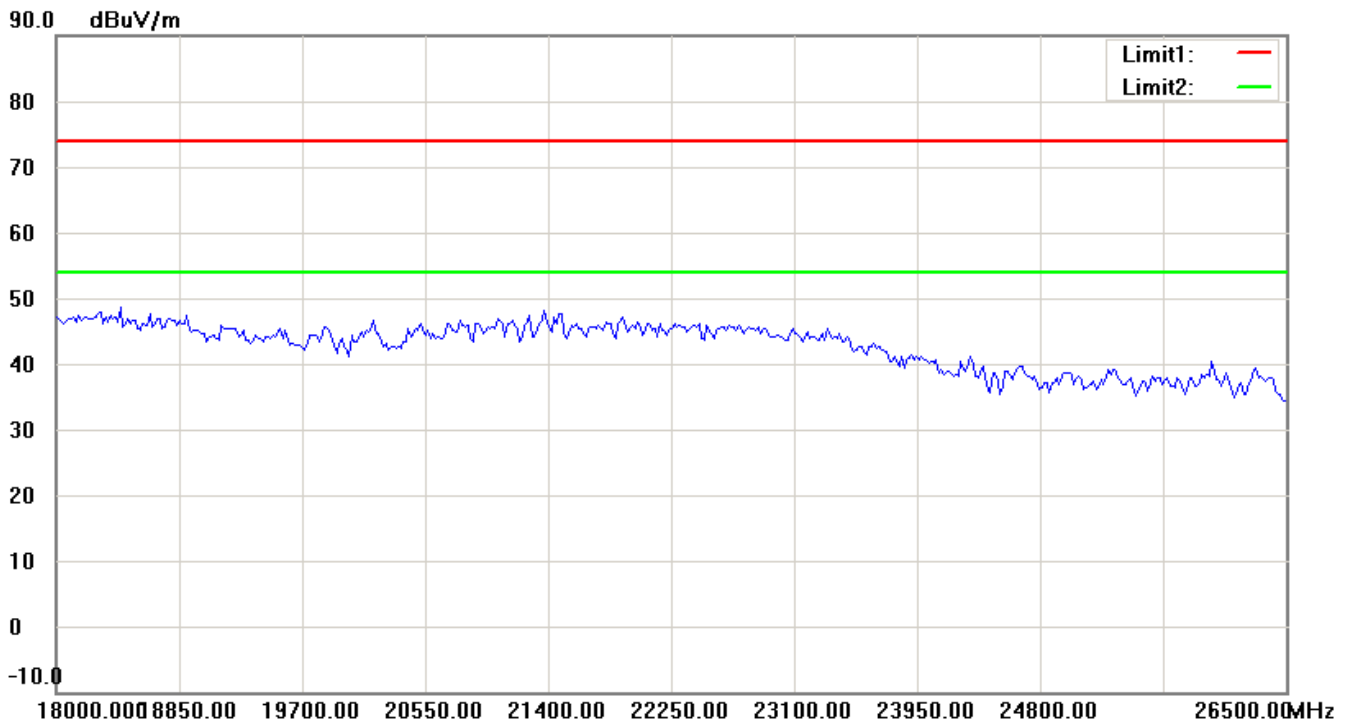
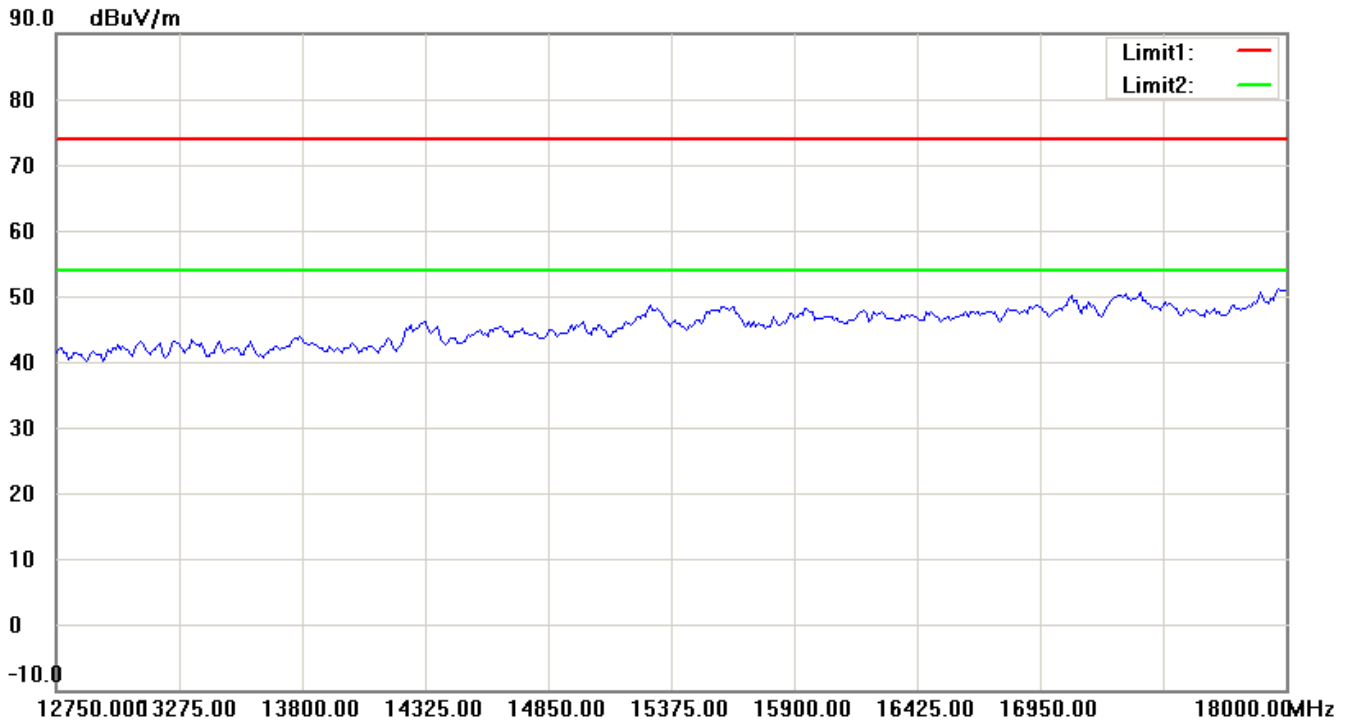
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

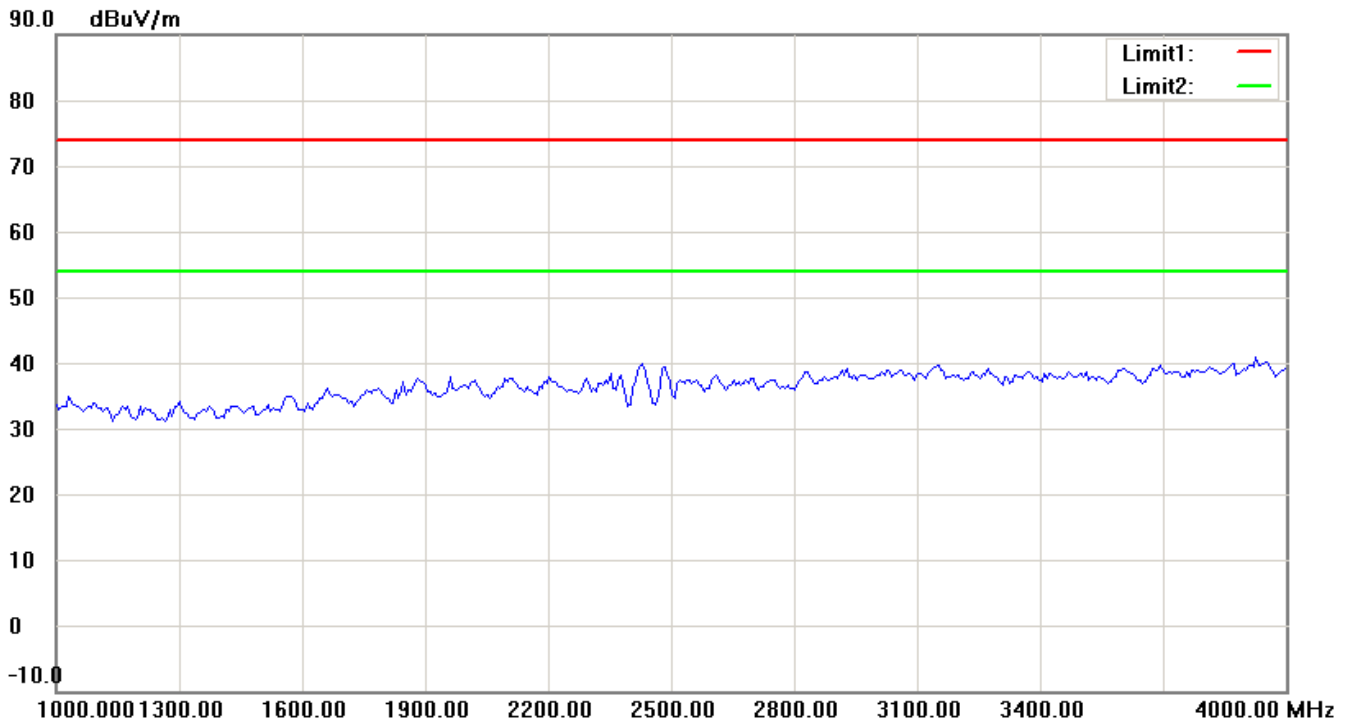
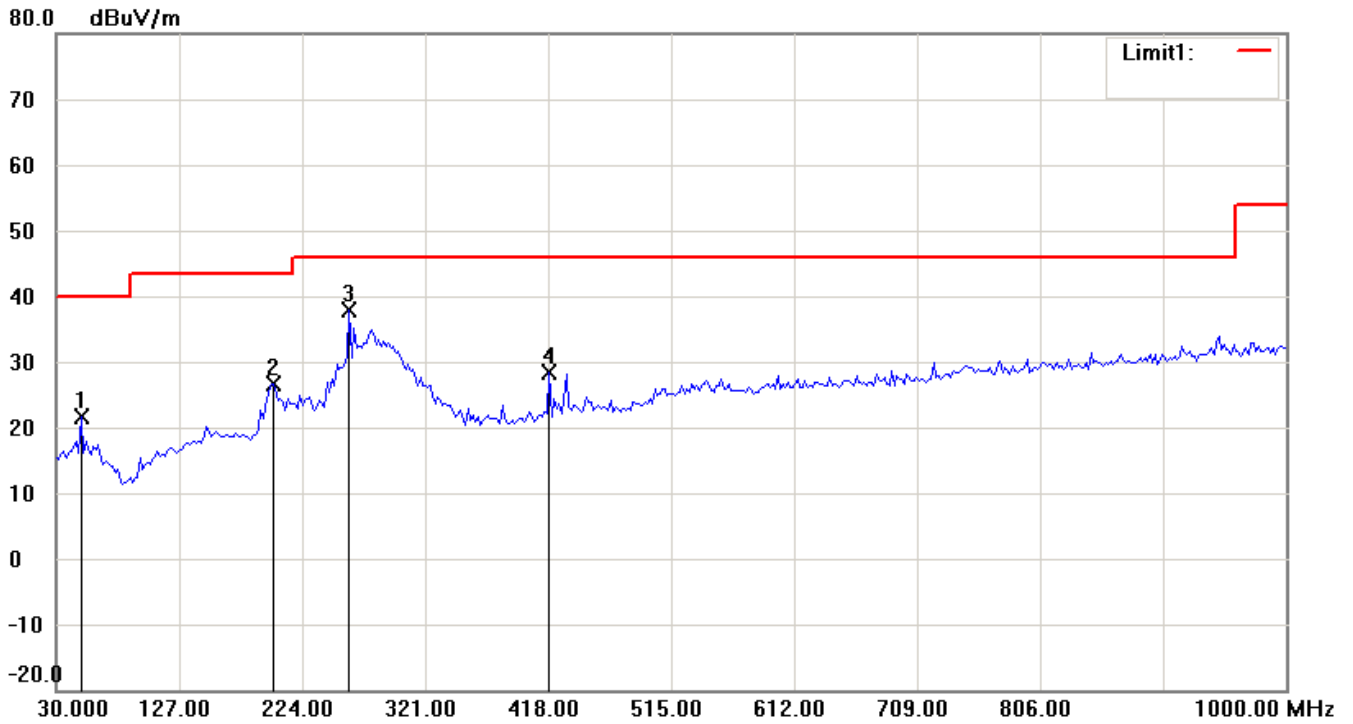
Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30

Antenna Polarization V



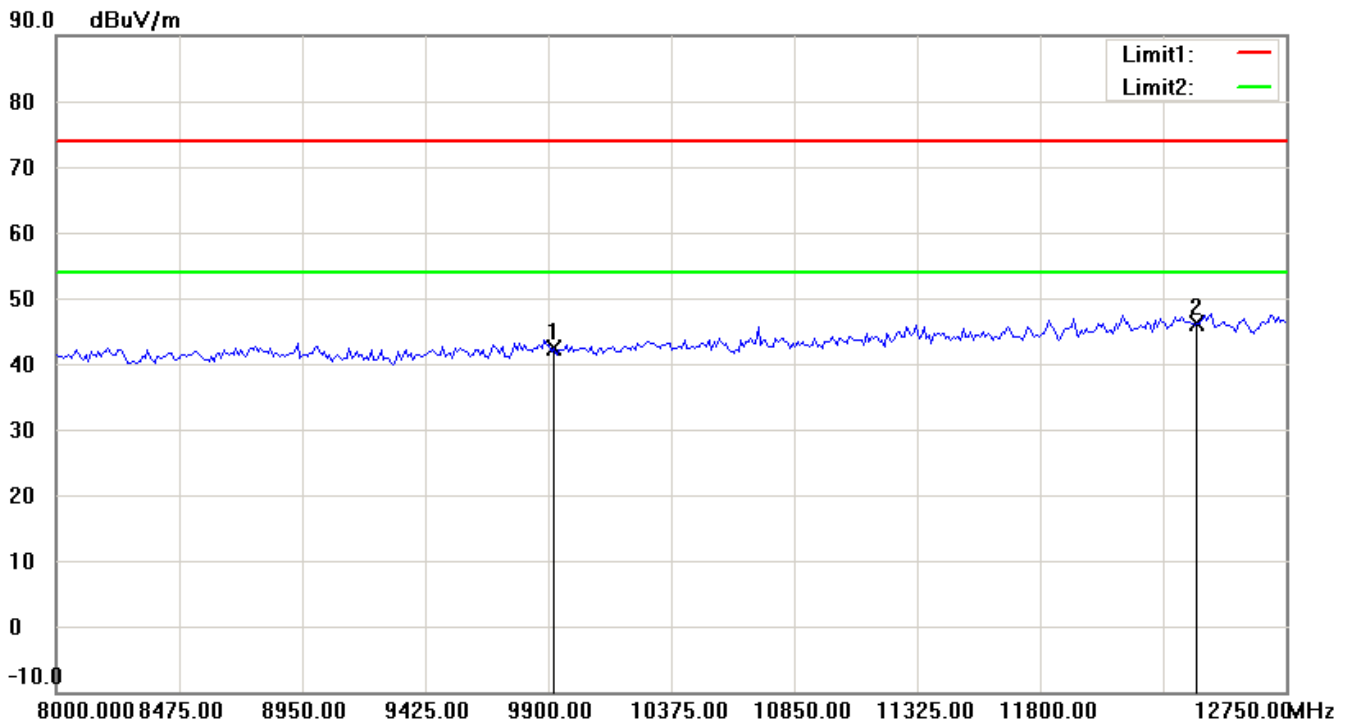
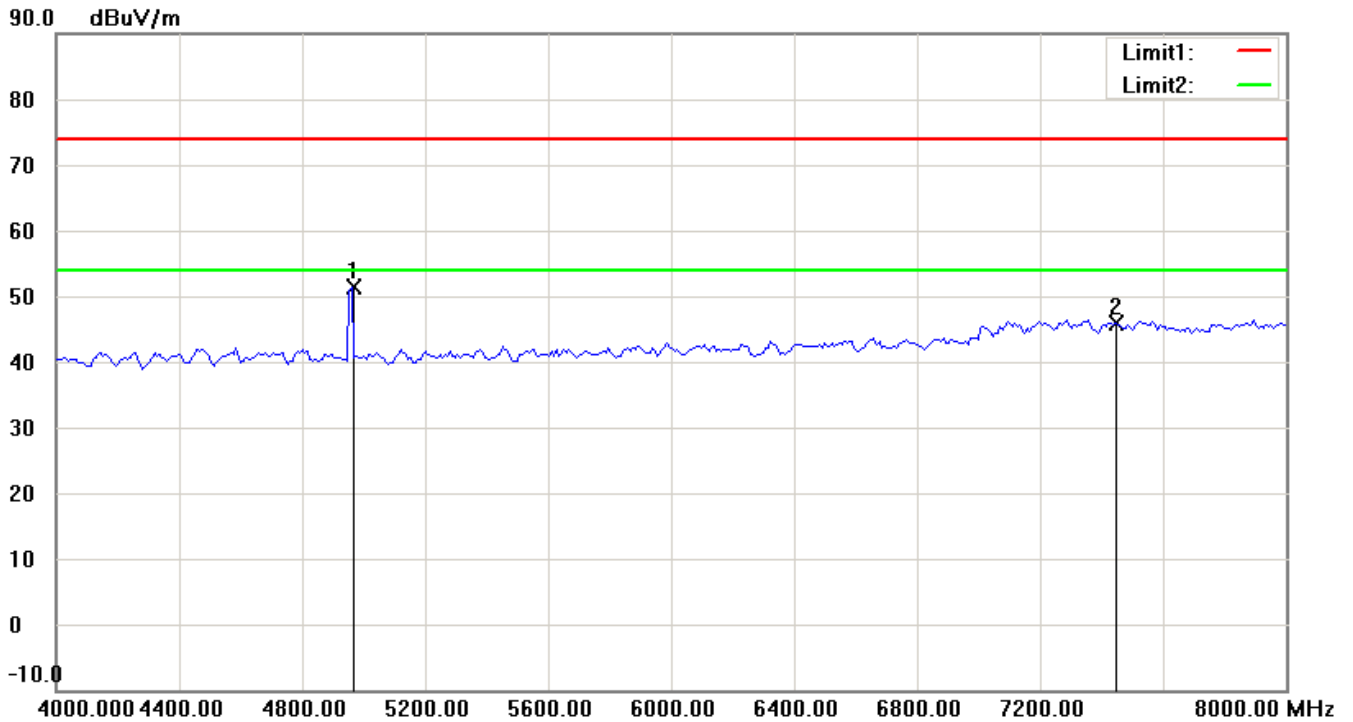
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



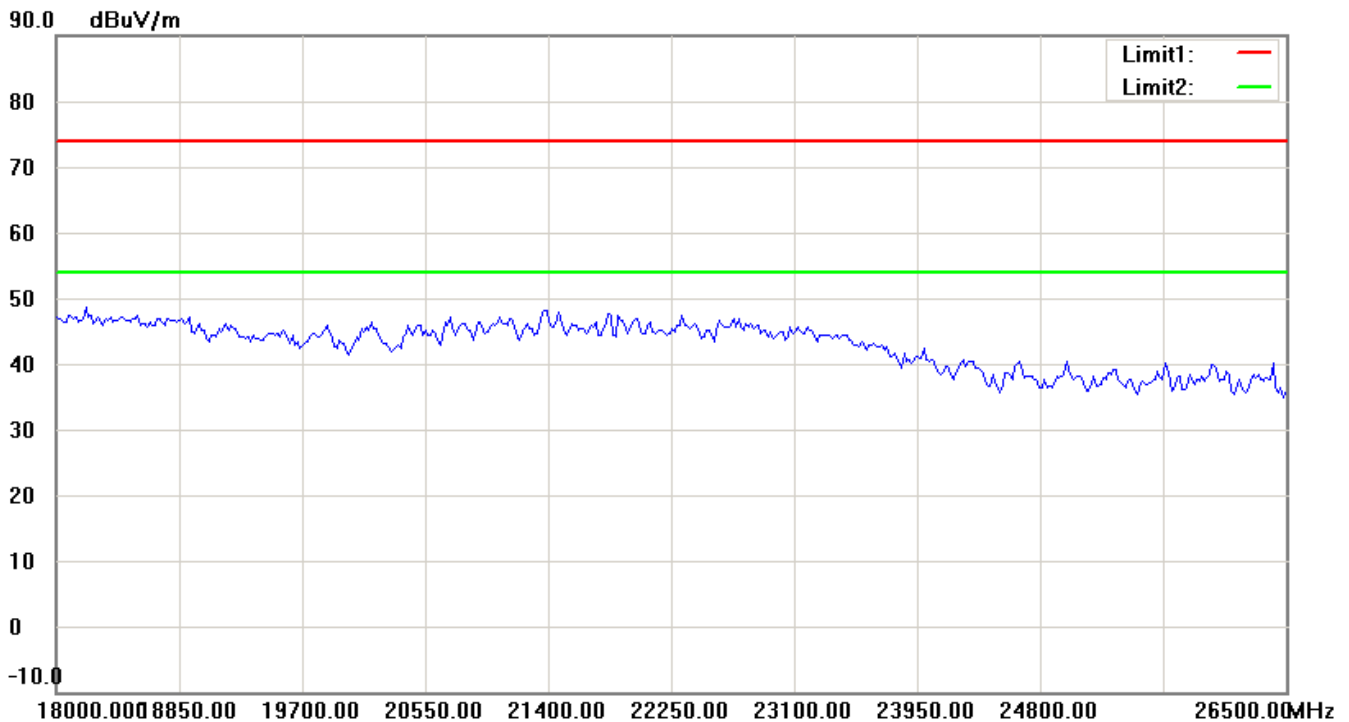
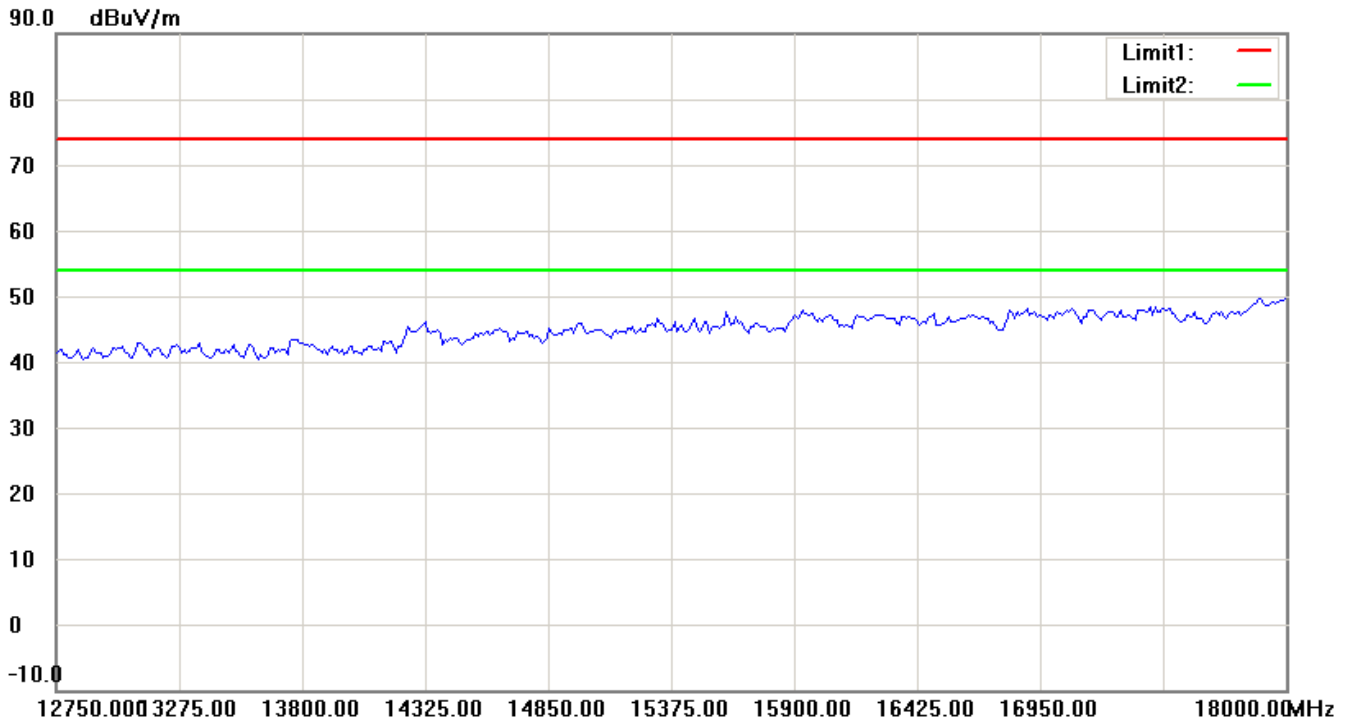
Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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Registration number: W6M21209-12715-C-1
FCC ID: XNA-WS-30



Up Line: Peak Limit Line Down Line: Ave Limit Line

Note:

1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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