FCC PART 15 SUBPART C TEST REPORT

for

2.4G Keyboard

Model No.: RF-6496

FCC ID: UJ96496

of

Applicant: I-ROCKS TECHNOLOGY CO., LTD.
Address: 12F, No. 190, Chung-hsin Rd., Sec. 2, Hsin-tien City, Taipei, 23146 Taiwan,R.O.C.

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

Testing Laboratory
1477

Report No.: W6M21103-11336-P-15

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.
TEL: 886-2-66068877 FAX: 886-2-66068879 E-mail: wts@wts-lab.com

TABLE OF CONTENTS

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 is 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.
The test report may only be reproduced or published in full.
Reproduction or publication of extracts from the report requires the prior written approval of the Worldwide Testing Services(Taiwan) Co., Ltd.

Tester:

April 01, 2011		Rick Chen	Rick Chen.
Date	WTS-Lab.	Name	Signature

Technical responsibility for area of testing:

April 01, 2011		Chang Tse-Ming	Chang Tse-Ming
Date	WTS	Name	Signature

Registration number: W6M21103-11336-P-15
FCC ID: UJ96496

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.)

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: 2730.01

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:	./.

Registration number: W6M21103-11336-P-15
FCC ID: UJ96496

1.3 Details of approval holder

Name:	I-ROCKS TECHNOLOGY CO., LTD.
Street:	12F, No. 190, Chung-hsin Rd., Sec. 2,
Town:	Hsin-tien City, Taipei,
Country:	23146 Taiwan,R.O.C.
Telephone:	+886-2-2911-3080
Fax:	+886-2-2914-1712
Teletex:	./.

1.4 Application details

Date of receipt of test item:	March 17, 2011
Date of test:	From March 18, 2011 to March 31, 2011

1.5 General information of Test item

Type of test item:	2.4G Keyboard
Model Number:	RF-6496
Multi-listing model number:	without
Brand name:	i-rocks
Photos:	see Annex

Technical data

Frequency band:	2.400-2.4835GHz
Operation Frequency:	2.410-2.472 GHz
Frequency 1:	2.410 GHz
Frequency 2:	2.442 GHz
Frequency 3:	2.472 GHz
Operation modes:	duplex

Registration number: W6M21103-11336-P-15
FCC ID: UJ96496

Modulation Type:	GFSK
Antenna type:	PCB Antenna
Power supply:	Battery 1.5VDC*2

Manufacturer: (if different from applicant)

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

Additional information: ./.

1.6 Test standards

Technical standard : FCC RULES PART 15 SUBPART C § 15.249 (2009-10)

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
Details Power supply:	Battery 1.5VDC*2
Extreme conditions parameters:	Not required

Registration number: W6M21103-11336-P-15
FCC ID: UJ96496

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	2010/9/2	2011/9/1
ETSTW-CE 004	ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5	840731/011	R&S	2011/3/10	2012/3/9
ETSTW-CE 005	Line-Impedance Stabilisation Network	NNBM 8126D	137	Schwarzbeck	2010/9/8	2011/9/7
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2010/5/8	2011/5/7
ETSTW-CE 007	SPECTRUM ANALYZER 5GHz	FSB	849670/001	R&S	Pre-test Use NCR	
ETSTW-CE 008	HF-EICHLEITUNG 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	2010/7/21	2011/7/20
ETSTW-CE 013	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T4-02	20242	FCC	2010/10/21	2011/10/20
ETSTW-CE 015	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T8-02	20307	FCC	2010/9/6	2011/9/5
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2011/2/21	2012/2/20
ETSTW-RE 002	Function Generator	33220A	MY43004982	Agilent	Function Test	
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2010/8/10	2011/8/9
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2010/9/14	2011/9/13
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2010/9/2	2011/9/1
ETSTW-RE 006	Attenuator 10dB	50HF-010-5N-1	None	STEP	2011/3/1	2012/2/28
ETSTW-RE 010	ABSORBING CLAMP	MDS 21	3469	Schwarzbeck	2010/9/6	2011/9/5
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	2011/10/3
ETSTW-RE 020	MICROWAVE HORN ANTENNA	AT4002A	306915	AR	Function Test	
ETSTW-RE 021	SWEEP GENERATOR	SWM05	835130/010	R&S	2010/8/20	2011/8/19
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	EMCO	2010/7/22	2011/7/21
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	EMCO	2011/2/25	2012/2/24
ETSTW-RE 032	Millivoltmeter	URV 55	849086/013	R&S	2010/10/4	2011/10/3
ETSTW-RE 033	WaveRunner 6000A Serise Oscilloscope	WAVERUNNER 6100A	LCRY0604P14508	LeCroy	Function Test	
ETSTW-RE 034	Power Sensor	URV5-Z4	839313/006	R&S	2010/10/4	2011/10/3
ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2011/1/14	2012/1/13
ETSTW-RE 043	Log-Periodic Dipole Antenna	HL223	100166	R&S	2010/4/29	2011/4/28
ETSTW-RE 044	Log-Periodic Antenna	HL050	100094	R&S	2010/5/11	2011/5/10
ETSTW-RE 045	ESA-E SERIES SPECTRUM ANALYZER	E4404B	MY45111242	Agilent	Pre-test Use NCR	
ETSTW-RE 047	PSA SERIES SPECTRUM ANALYZER	E4445A	MY46181369	Agilent	Pre-test Use NCR	
ETSTW-RE 048	Triple Loop Antenna	HXYZ 9170	HXYZ 9170-134	Schwarzbeck	2010/8/30	2011/8/29
ETSTW-RE 049	TRILOG Super Broadband test Antenna	VULB 9160	9160-3185	Schwarzbeck	2010/4/13	2011/4/12

ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2011/3/4	2012/3/3
ETSTW-RE 051	Attenuator 6dB	50HF-006-1	None	JFW	2011/3/4	2012/3/3
ETSTW-RE 053	Attenuator 3dB	50HF-003-1	None	JFW	2011/3/4	2012/3/3
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2010/6/3	2011/6/2
ETSTW-RE 060	Attenuator 30dB	5015-30	F651012z-01	ATM	2011/3/1	2012/2/28
ETSTW-RE 061	Amplifier Module	CHC 1	None	ETS	2010/9/27	2011/9/26
ETSTW-RE 062	Amplifier Module	CHC 2	None	KMIC	2010/11/30	2011/11/29
ETSTW-RE 064	Bluetooth Test Set	MT8852B-042	6K00005709	Anritsu	Function Test	
ETSTW-RE 065	Amplifier	AMF-6F-18002650-25-10P	941608	MITEQ	2010/4/13	2011/4/12
ETSTW-RE 066	Highpass Filter	H1G013G1	206015	MICROWAVE CIRCUITS, INC.	2011/3/4	2012/3/3
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2010/10/7	2011/10/6
ETSTW-RE 073	Power Meter	N1911A	MY45100769	Agilent	2011/1/10	2012/1/9
ETSTW-RE 074	Power Sensor	N1921A	MY45241198	Agilent	2011/1/10	2012/1/9
ETSTW-RE 081	Highpass Filter	H03G13G1	4260-02 DC0428	MICROWAVE CIRCUITS, INC.	2011/3/4	2012/3/3
ETSTW-RE 096	SIGNAL GENERATOR	SMIQ 03B	102274	R&S	2010/5/31	2011/5/30
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2011/3/10	2012/3/9
ETSTW-RE 105	2.4GHz Notch Filter	NO124411	39555	MICROWAVE CIRCUITS, INC.	2011/3/11	2012/3/10
ETSTW-RE 106	Humidity Temperature Meter	TES-1366	091011113	TES	2011/3/24	2012/3/23
ETSTW-RE 111	Log-Periodic Dipole Array Antenna	VULB 9160	9160-3309	Schwarz beck	2010/12/17	2011/12/16
ETSTW-RE 114	2.4GHz Notch Filter	N0124411	473873	MICROWAVE CIRCUITS	2011/1/13	2012/1/12
ETSTW-GSM 002	Universal Radio Communication Tester	CMU 200	109439	R&S	2010/10/7	2011/10/6
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849-822/851-40/12+9SS	3	WI	2011/1/14	2012/1/13
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748-1743/1752-32/5SS	1	WI	2011/1/14	2012/1/13
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880.5-1875.5/1884.5-32/5SS	3	WI	2011/1/14	2012/1/13
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1-904.25-50/8SS	1	WI	2011/1/14	2012/1/13
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2010/9/20	2011/9/19
ETSTW-Cable 002	Microwave Cable	SUCOFLEX 104（S_Cable 7）	238093	HUBER+SUHNER	2010/9/27	2011/9/26
ETSTW-Cable 003	Microwave Cable	SUCOFLEX 104（S_Cable 11）	209953	HUBER+SUHNER	2011/3/4	2012/3/3
ETSTW-Cable 010	BNC Cable	5 M BNC Cable	None	JYE BAO CO.,LTD.	2011/3/8	2012/3/7
ETSTW-Cable 011	BNC Cable	BNC Cable 1	None	JYE BAO CO.,LTD.	Pre-test Use NCR	
ETSTW-Cable 012	BNC Cable	BNC Cable 2	None	JYE BAO CO.,LTD.	2011/3/8	2012/3/7
ETSTW-Cable 013	Microwave Cable	SUCOFLEX 104（S_Cable 5）	232345	HUBER+SUHNER	2011/3/1	2012/2/28
ETSTW-Cable 022	N TYPE Cable	OATS Cable 3	0002	JYE BAO CO.,LTD.	2011/3/1	2012/2/28
ETSTW-Cable 026	Microwave Cable	SUCOFLEX 104	279075	HUBER+SUHNER	2011/3/10	2012/3/9
ETSTW-Cable 027	Microwave Cable	SUCOFLEX 104	279083	HUBER+SUHNER	2011/3/10	2012/3/9
ETSTW-Cable 028	Microwave Cable	FA147A0015M2020	30064-2	UTIFLEX	2010/9/13	2011/9/12

ETSTW-Cable 029	Microwave Cable	FA147A0015M2020	30064-3	UTIFLEX	2010/9/13	2011/9/12
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 （S_Cable 9）	279067	SPECTRUM	2011/3/10	2012/3/9
ETSTW-Cable 031	Microwave Cable	SUCOFLEX 104 （S_Cable 10）	238092	HUBER+SUHNER	2010/11/30	2011/11/29
ETSTW-Cable 039	Microwave Cable	SUCOFLEX 104 （S_Cable 19）	316739	HUBER+SUHNER	2011/3/4	2012/3/3
ETSTW-Cable 043	Microwave Cable	SUCOFLEX 104	317576	HUBER+SUHNER	2010/11/30	2011/11/29
ETSTW-Cable 047	Microwave Cable	SUCOFLEX 104	325518	HUBER+SUHNER	2010/11/30	2011/11/29
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	
WTSTW-SW 005	GSM Fading Level Correction	GSMFadLevCor	None	R&S	Version 1.66	

2.4 General Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-2003 using a 50µH 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 C63.4-2003 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 dBµV) 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 dBµV + 10.36 dB + 6 dB = 36.36 dBµV/m @3m

ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm height and with dimensions of 1m by 1.5m (non metallic table). The EUT was placed in the centre of the table. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to 10th harmonic of the fundamental.

Peak readings were taken in three (3) orthogonal planes and the highest readings.
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.

3 Test results (enclosure)

Test case	Para. Number	Required	Test passed	Test failed
Peak Output Power	15.249 (a)	☒	☒	☐
Spurious Emissions radiated – Transmitter operating	15.249 (e)	☒	☒	☐
Spurious Emissions conducted – Transmitter operating	15.249 (e)	☐	☐	☐
Radiated Emission from Digital Part	15.109	☐	☐	☐
Out of Band Spurious Emission, Band edge-Transmitter operating	15.249 (e)	☒	☒	☐
Power Line Conducted Emission	15.207	☐	☐	☐

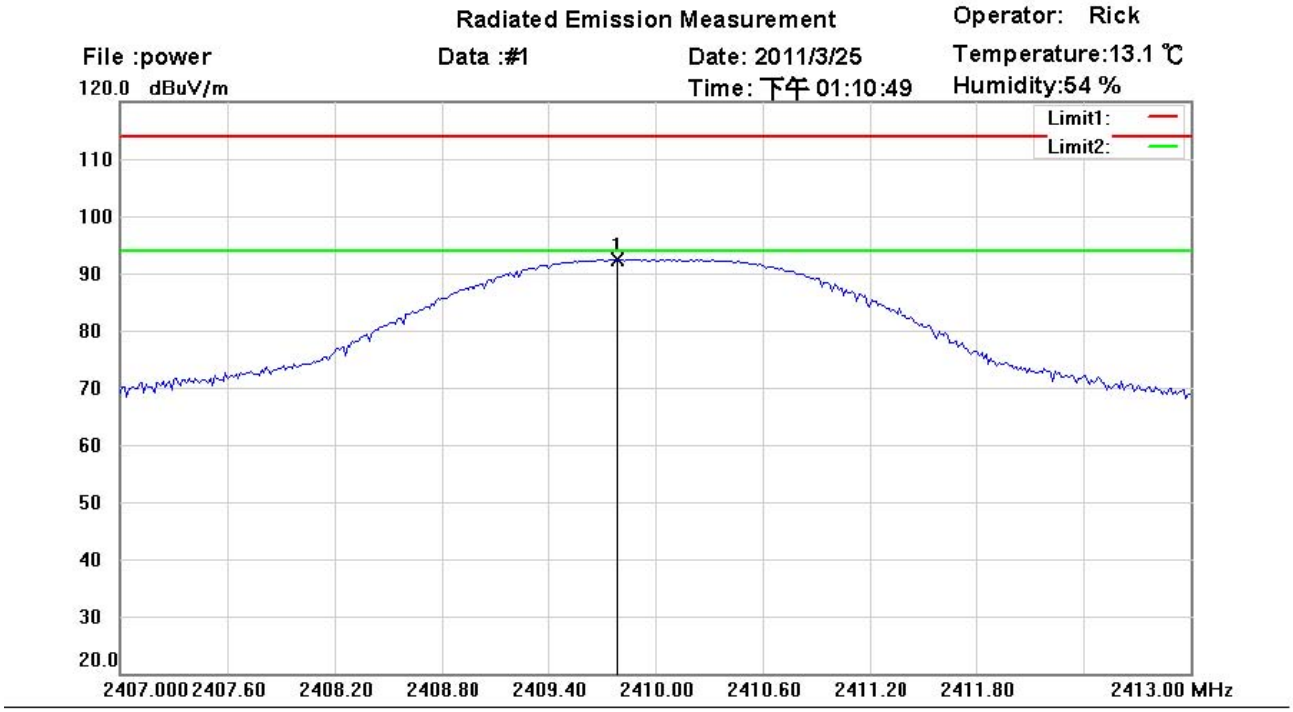
The follows is intended to leave blank.

3.1 Peak Output Power (transmitter)

FCC Rule: 15.249 (b)

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).

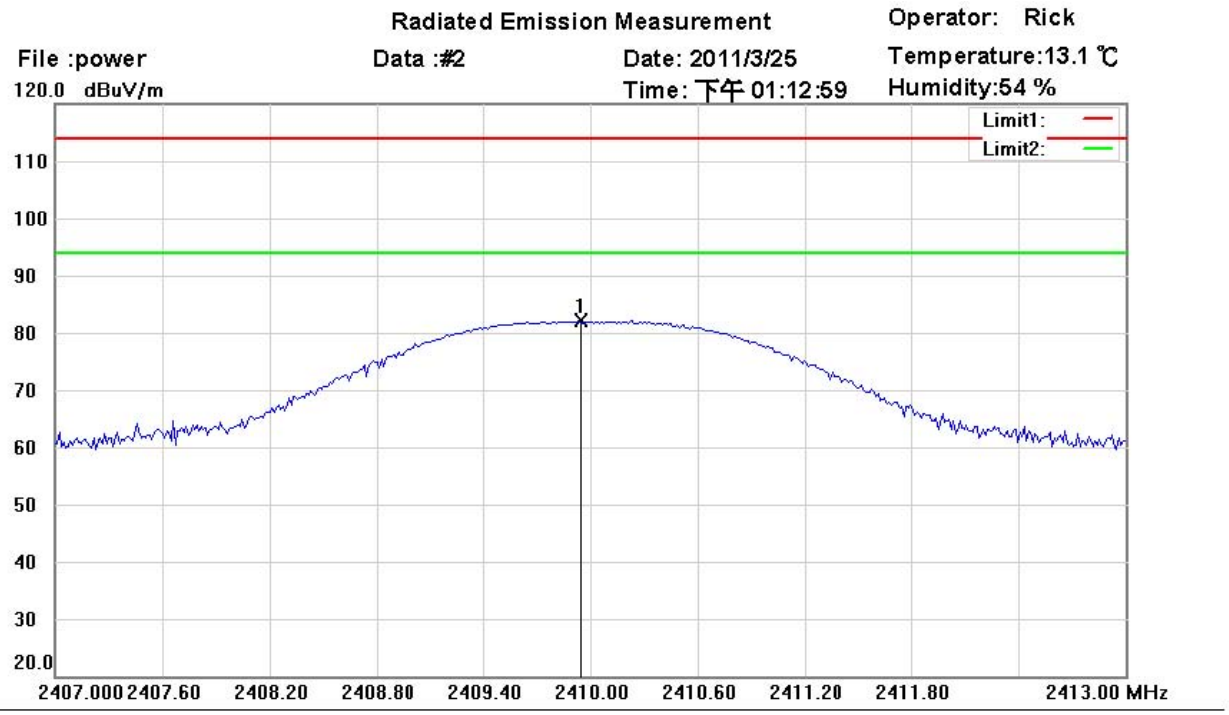


Site : Chamber_01
Condition : FCC 15.249 power_PK
EUT : W6M21103-11336
M/N: RF-6496
Test Mode : 2410MHz
Note :

Polarization: Horizontal
Power : 0
Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	2409.778	59.62	peak	32.75	92.37	114.00	150	270	-21.63	

Registration number: W6M21103-11336-P-15
FCC ID: UJ96496

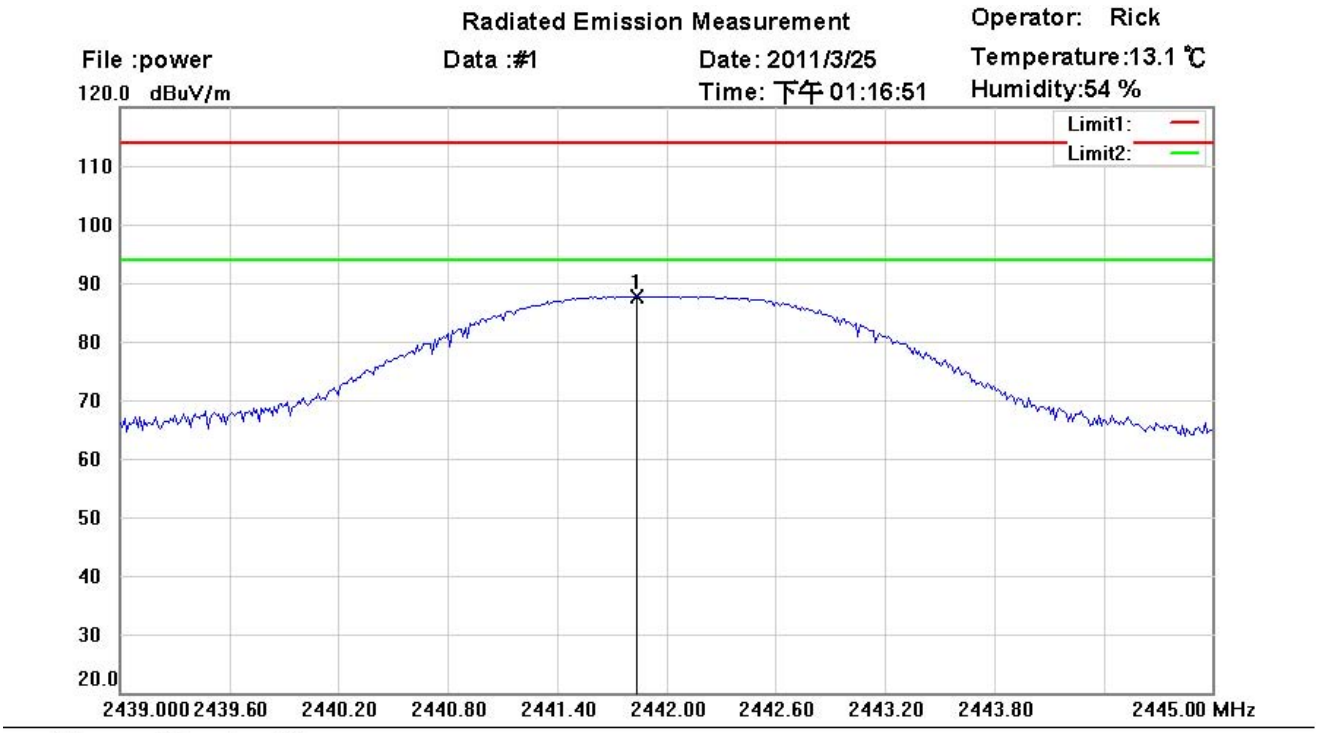


Site : Chamber_01
Condition : FCC 15.249 power_PK
EUT : W6M21103-11336
M/N: RF-6496
Test Mode : 2410MHz
Note :

Polarization: *Vertical*
Power : 0
Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	2409.934	49.34	peak	32.75	82.09	114.00	150	130	-31.91	

Registration number: W6M21103-11336-P-15
FCC ID: UJ96496

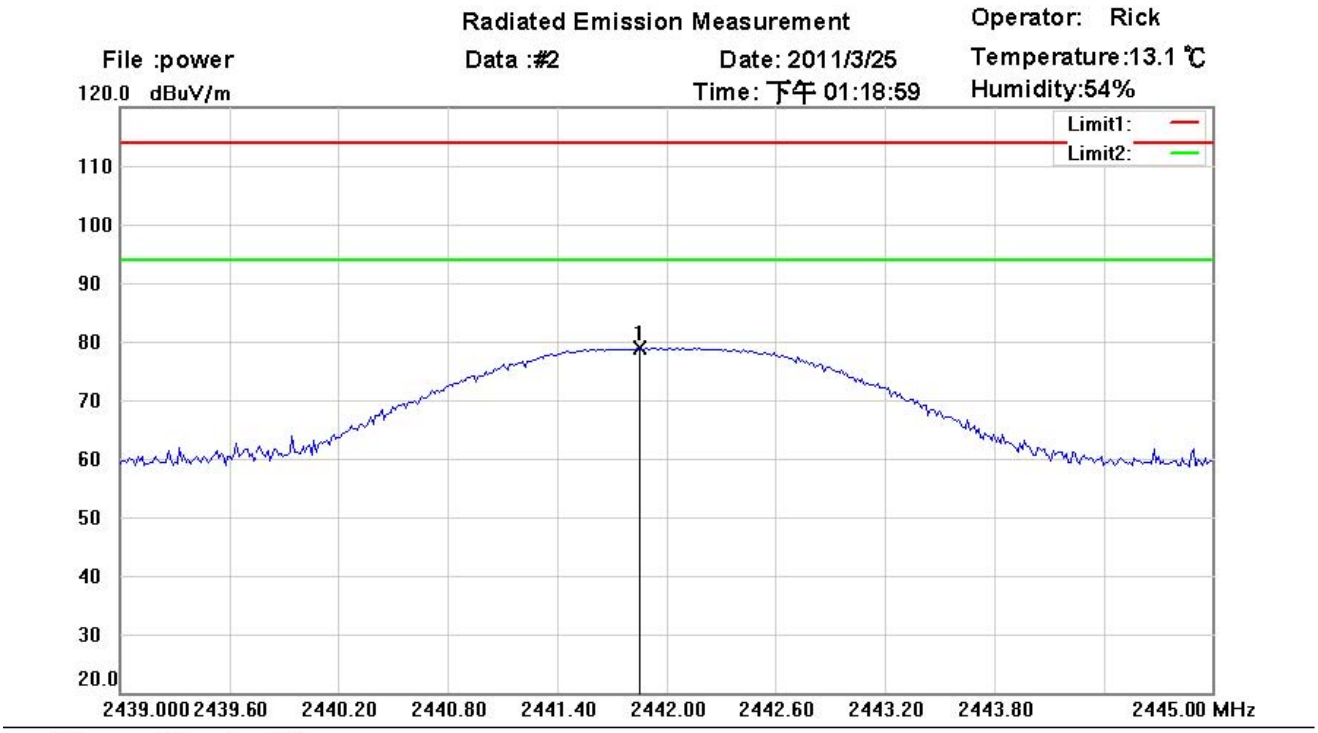


Site : Chamber_01
Condition : FCC 15.249 power_PK
EUT : W6M21103-11336
M/N: RF-6496
Test Mode : 2442MHz
Note :

Polarization: *Horizontal*
Power : 0
Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	2441.826	54.85	peak	32.86	87.71	114.00	150	270	-26.29	

Registration number: W6M21103-11336-P-15
FCC ID: UJ96496

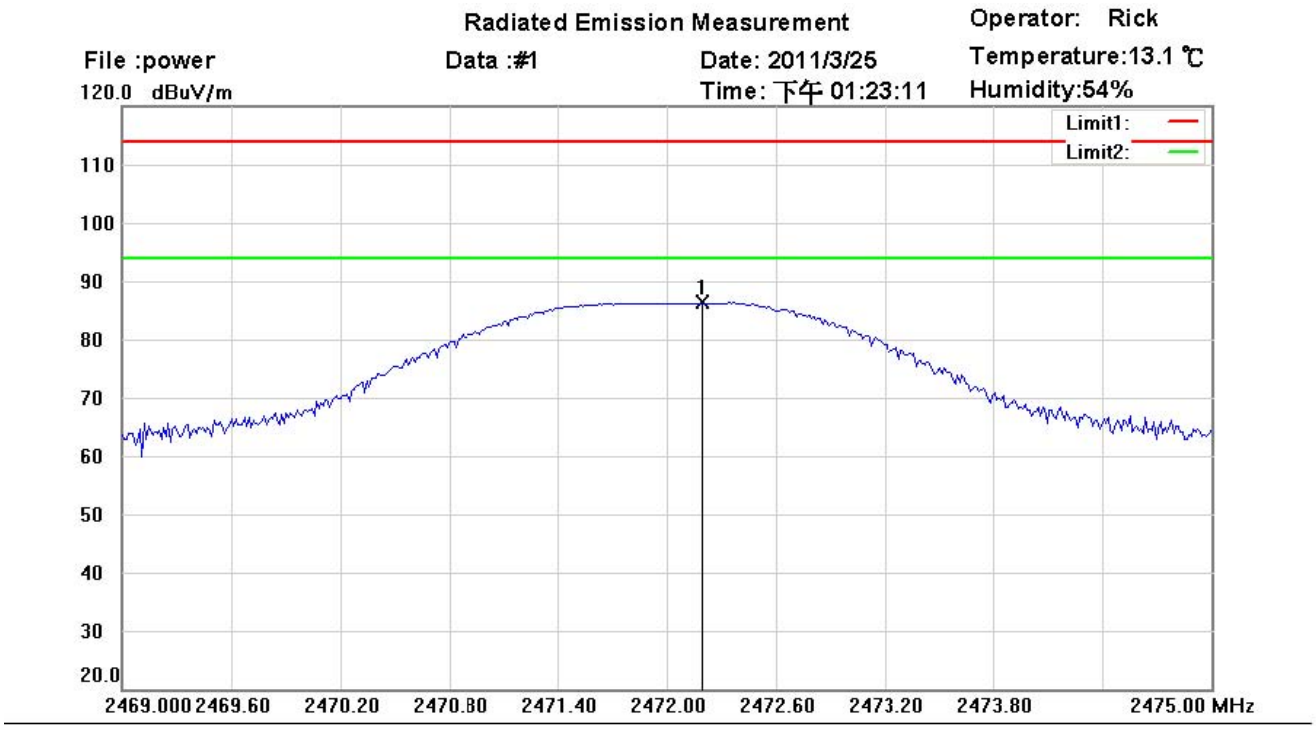


Site : Chamber_01
Condition : FCC 15.249 power_PK
EUT : W6M21103-11336
M/N: RF-6496
Test Mode : 2442MHz
Note :

Polarization: *Vertical*
Power : 0
Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	2441.838	46.02	peak	32.86	78.88	114.00	150	80	-35.12	

Registration number: W6M21103-11336-P-15
FCC ID: UJ96496

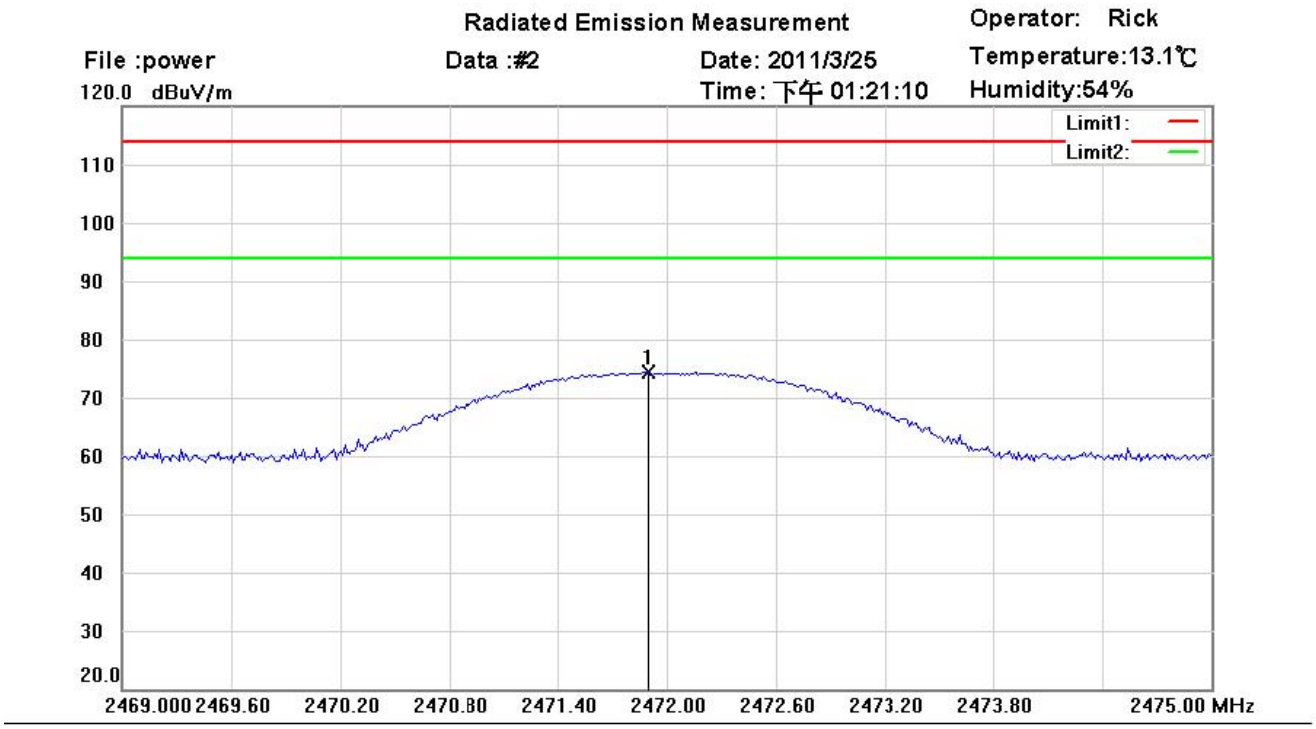


Site : Chamber_01
Condition : FCC 15.249 power_PK
EUT : W6M21103-11336
M/N: RF-6496
Test Mode : 2472MHz
Note :

Polarization: *Horizontal*
Power : 0
Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	2472.198	53.31	peak	32.98	86.29	114.00	150	280	-27.71	

Registration number: W6M21103-11336-P-15
FCC ID: UJ96496



Site : Chamber_01
Condition : FCC 15.249 power_PK
EUT : W6M21103-11336
M/N: RF-6496
Test Mode : 2472MHz
Note :

Polarization: *Vertical*
Power : 0
Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	2471.886	41.35	peak	32.98	74.33	114.00	150	150	-39.67	

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 018, ETSTW-RE 028, ETSTW-RE 029, ETSTW-RE 030, ETSTW-RE 044

3.2 Equivalent isotropic radiated power

Because using an permanent antenna there are no deviations from the radiated test results according 3.1.

3.3 RF Exposure Compliance Requirements

Not applicable for this 2.4G Keyboard for the low power level.

3.4 Out of Band Radiated Emissions

FCC Rule: 15.249 (d)(e), 15.35(b)

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

For frequency above 1000 MHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.

Limits:

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	46.5
Above 960	500	54.0

For frequencies above 1 GHz (Peak measurements).

Limit + 20 dB 54.0 dBµV/m + 20 dB= 74dBµV/m
Or
Must be attenuated at least 50dB below the level of fundament

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 018, ETSTW-RE 028, ETSTW-RE 029, ETSTW-RE 030, ETSTW-RE 044

Explanation: Please see attached diagram as appendix.

3.5 Spurious emission (tx)

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

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

For frequencies above 1000 MHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.

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

The peak and average spurious emission plots was measured with the average limits.
The critical peak value listed in the table agree with the above calculated limits.

Summary table with radiated data of the test plots

Model: RF-6496 Date: 2011/3/25
Mode: 2410MHz Temperature: 13.1 °C Engineer: Rick
Polarization: Horizontal Humidity: 54 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
208.0160	24.13	peak	12.91	37.04	43.50	-6.46	210	150
715.2305	12.07	peak	24.31	36.38	46.00	-9.62	240	150

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
4820.0000	46.68	---	-4.16	42.52	---	74.00	54.00	-31.48	120	150
5234.4690	48.90	---	-2.42	46.48	---	74.00	54.00	-27.52	240	150
7230.0000	48.75	---	-1.37	47.38	---	74.00	54.00	-26.62	200	150
9640.0000	25.06	---	19.43	44.49	---	74.00	54.00	-29.51	130	150
12050.0000	25.62	---	21.96	47.58	---	74.00	54.00	-26.42	220	150

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
188.5370	10.86	peak	13.58	24.44	43.50	-19.06	110	150
882.1643	7.76	peak	26.54	34.30	46.00	-11.70	200	150

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)		Factor (dB)	Result (dBuV/m)		Limit (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.			
4820.0000	46.57	---	-4.16	42.41	---	74.00	54.00	-31.59	240	150
5218.4370	46.49	---	-2.52	43.97	---	74.00	54.00	-30.03	150	150
7230.0000	49.30	---	-1.37	47.93	---	74.00	54.00	-26.07	120	150
9640.0000	25.10	---	19.43	44.53	---	74.00	54.00	-29.47	170	150
12050.0000	24.23	---	21.96	46.19	---	74.00	54.00	-27.81	220	150

Mode: 2442MHz

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
208.0160	24.11	peak	12.91	37.02	43.50	-6.48	240	150
727.8558	10.26	peak	24.65	34.91	46.00	-11.09	130	150

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)		Factor (dB)	Result (dBuV/m)		Limit (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.			
4884.0000	46.80	---	-3.97	42.83	---	74.00	54.00	-31.17	140	150
5234.4690	48.09	---	-2.42	45.67	---	74.00	54.00	-28.33	200	150
7326.0000	48.42	---	-1.92	46.50	---	74.00	54.00	-27.50	230	150
9768.0000	24.53	---	19.47	44.00	---	74.00	54.00	-30.00	200	150
12210.0000	24.49	---	22.31	46.80	---	74.00	54.00	-27.20	170	150

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
47.3144	7.97	peak	14.19	22.16	40.00	-17.84	230	150
898.9980	9.46	peak	26.75	36.21	46.00	-9.79	220	150

Polarization: Vertical

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
4884.0000	47.73	---	-3.97	43.76	---	74.00	54.00	-30.24	190	150
5234.4690	48.81	---	-2.42	46.39	---	74.00	54.00	-27.61	240	150
7326.0000	48.72	---	-1.92	46.80	---	74.00	54.00	-27.20	130	150
9768.0000	25.38	---	19.47	44.85	---	74.00	54.00	-29.15	130	150
12210.0000	24.67	---	22.31	46.98	---	74.00	54.00	-27.02	200	150

Mode: 2472MHz

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
208.0160	25.72	peak	12.91	38.63	43.50	-4.87	200	150
727.8558	12.23	peak	24.65	36.88	46.00	-9.12	230	150

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
4944.0000	47.34	---	-3.91	43.43	---	74.00	54.00	-30.57	260	150
5234.4690	50.45	---	-2.42	48.03	---	74.00	54.00	-25.97	110	150
7416.0000	48.74	---	-2.14	46.60	---	74.00	54.00	-27.40	210	150
9888.0000	24.79	---	19.64	44.43	---	74.00	54.00	-29.57	130	150
12360.0000	24.89	---	22.32	47.21	---	74.00	54.00	-26.79	210	150

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
194.4890	12.31	peak	13.09	25.40	43.50	-18.10	170	150
877.9560	9.44	peak	26.49	35.93	46.00	-10.07	210	150

Polarization: Vertical

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
4944.0000	46.13	---	-3.91	42.22	---	74.00	54.00	-31.78	160	150
5234.4690	47.38	---	-2.42	44.96	---	74.00	54.00	-29.04	220	150
7416.0000	48.39	---	-2.14	46.25	---	74.00	54.00	-27.75	210	150
9888.0000	24.94	---	19.64	44.58	---	74.00	54.00	-29.42	260	150
12360.0000	25.00	---	22.32	47.32	---	74.00	54.00	-26.68	210	150

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. **See the diagrams in the appendix.**

TEST RESULT (Transmitter): The unit DOES meet the FCC requirements.
Test equipment used: ETSTW-RE 055

3.6 Radiated Emissions from Digital Part

Summary table with radiated data of the test plots

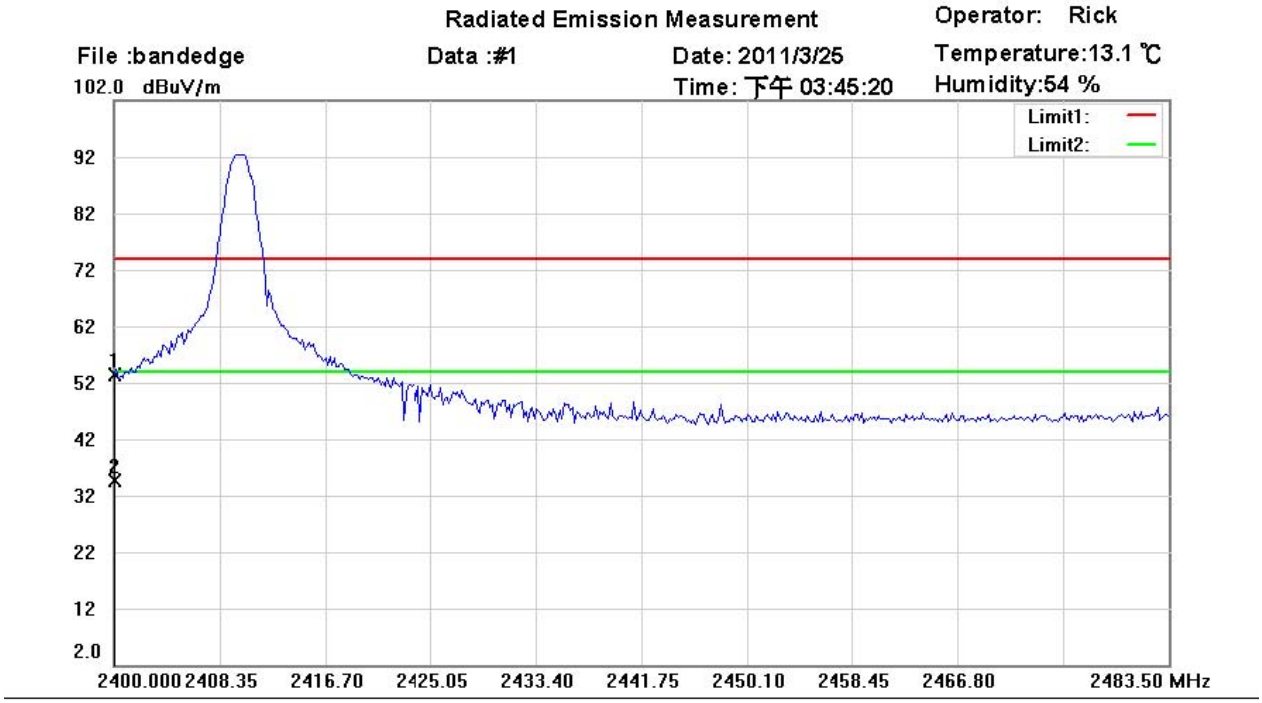
Note
1. **Correction Factor = Antenna factor + Cable loss - Preamplifier**
2. **The formula of measured value as: Test Result = Reading + Correction Factor**
3. **Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average**
4. **All not in the table noted test results are more than 20 dB below the relevant limits.**
5. **Up Line: PK Limit Line, Down Line: Ave Limit Line.**

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 018, ETSTW-RE 028, ETSTW-RE 029, ETSTW-RE 030, ETSTW-RE 044

Explanation : The test results are listed in the separated test report no. W6M21103-11336-P-15B

3.7 Radiated Emission on the band edge

From the following plots, they show that the fundamental emissions are confined in the specified band and hey at least 50 dB below the carrier level at band edge (2400 and 2483.5 MHz). It meets the requirement of section 15.249(d).

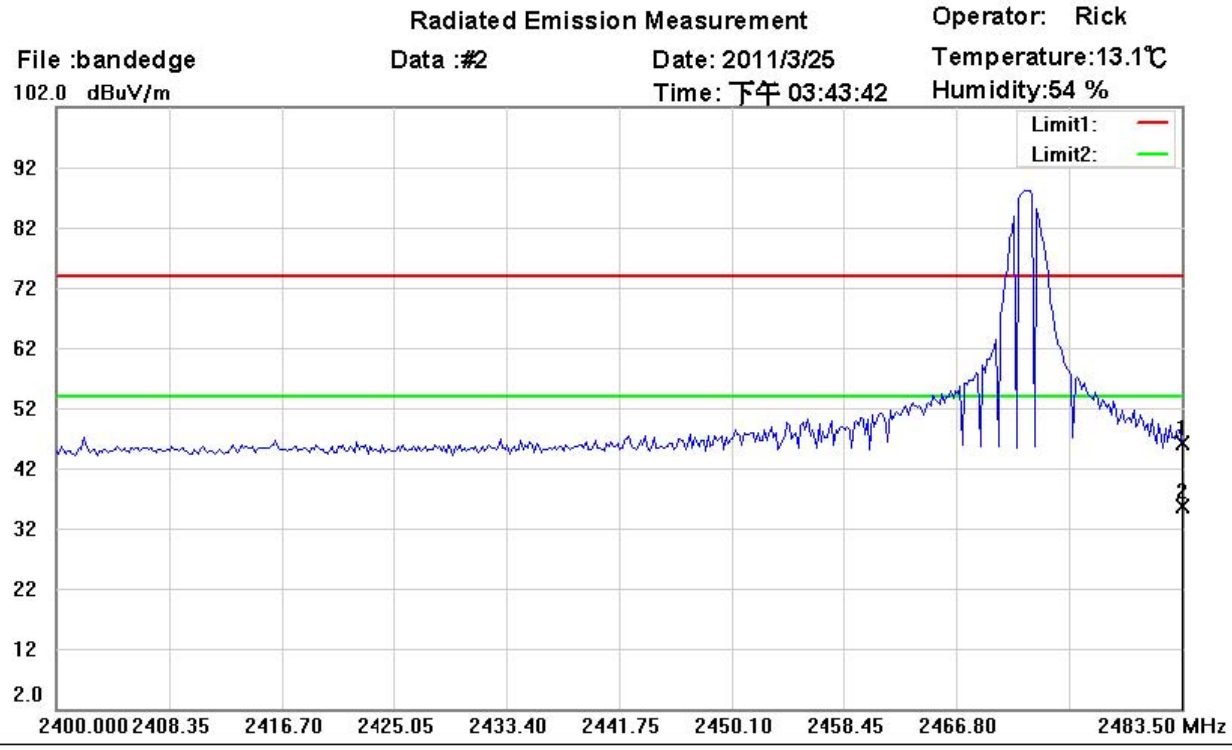


Site : Chamber
Condition : FCC_part 15 RE-Class B_Above 1GHz_PK
EUT : W6M21103-11336
M/N: RF-6496
Test Mode : 2410MHz
Note :

Polarization:
Power : 0
Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	2400.000	20.76	peak	32.71	53.47	74.00	150	280	-20.53	
*	2400.000	1.91	AVG	32.71	34.62	54.00	150	280	-19.38	

Registration number: W6M21103-11336-P-15
FCC ID: UJ96496



Site : Chamber
Condition : FCC_part 15 RE-Class B_Above 1GHz_PK
EUT : W6M21103-11336
M/N: RF-6496
Test Mode : 2472MHz
Note :

Polarization:
Power : 0
Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	2483.500	13.20	peak	33.02	46.22	74.00	150	280	-27.78	
*	2483.500	2.70	AVG	33.02	35.72	54.00	150	280	-18.28	

Limit:

Frequency Range (MHz)	Limit (dBμV/m)	
	Peak	Average
902 – 928 2400 – 2483.5 5725 – 5875 24000 - 24250	74	54

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 018, ETSTW-RE 028, ETSTW-RE 029, ETSTW-RE 030, ETSTW-RE 044

3.8 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.

Note: 1. The formula of measured value as: Test Result = Reading + Correction Factor
2. The Correction Factor = Cable Loss + LISN Insertion Loss
3. Detector function in the form : PK = Peak, QP = Qusai Peak, AV = Average
4. All not in the table noted test results are more than 20 dB below the relevant limits.
5. This test is not required due to the EUT uses battery.

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

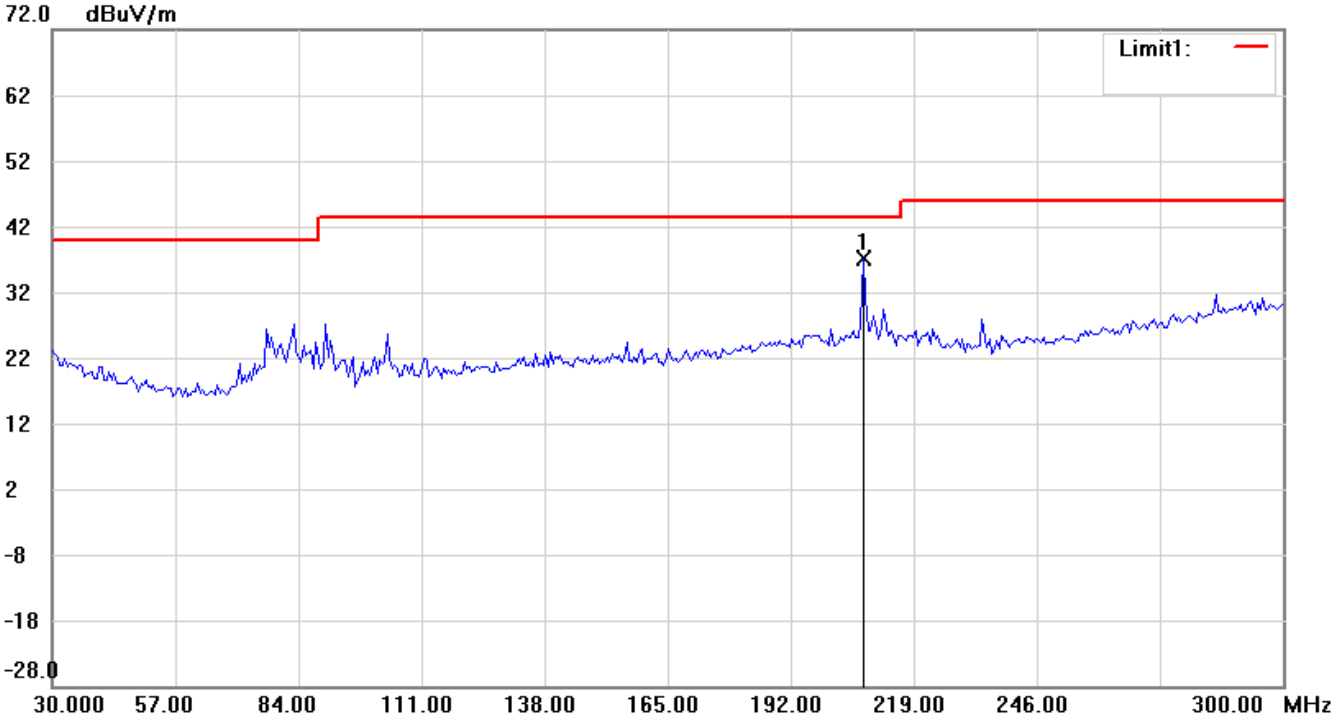
Appendix

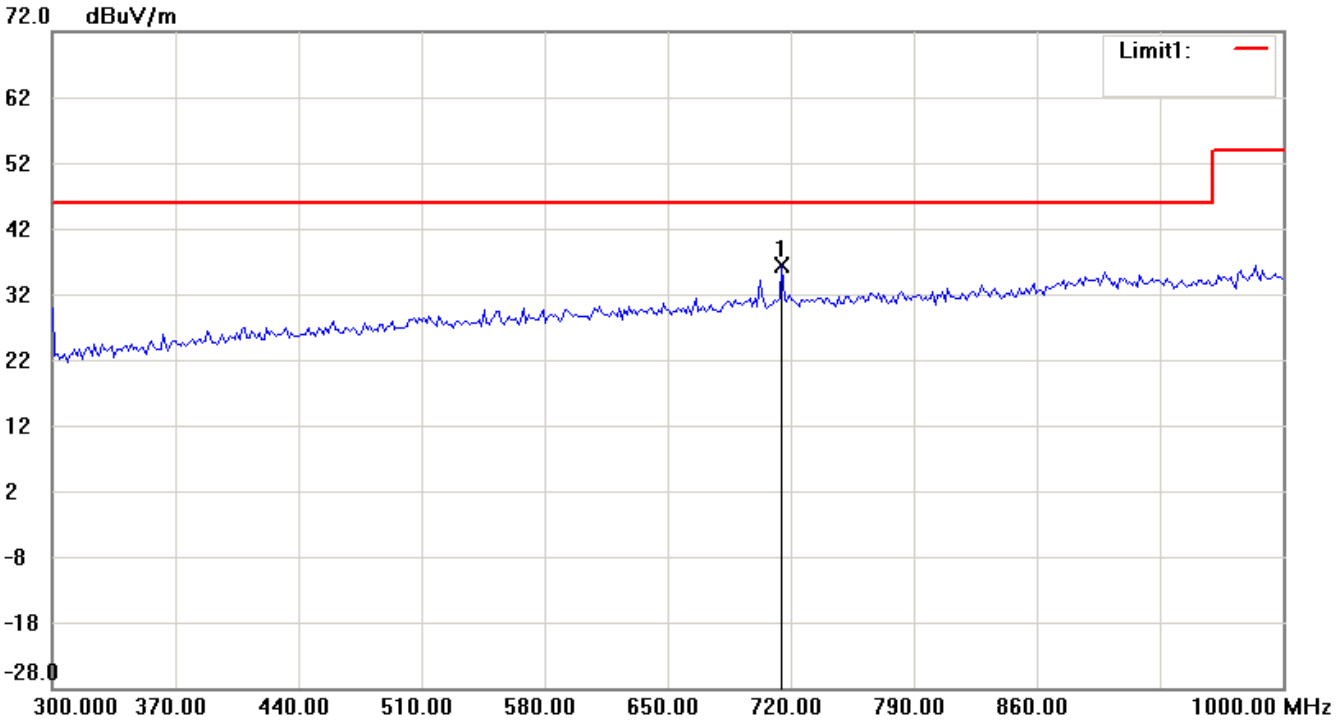
Measurement diagrams

Spurious Emissions Radiated

Registration number: W6M21103-11336-P-15
FCC ID: UJ96496

Spurious Emissions radiated-Transmitter
2410MHz
Antenna Polarization H

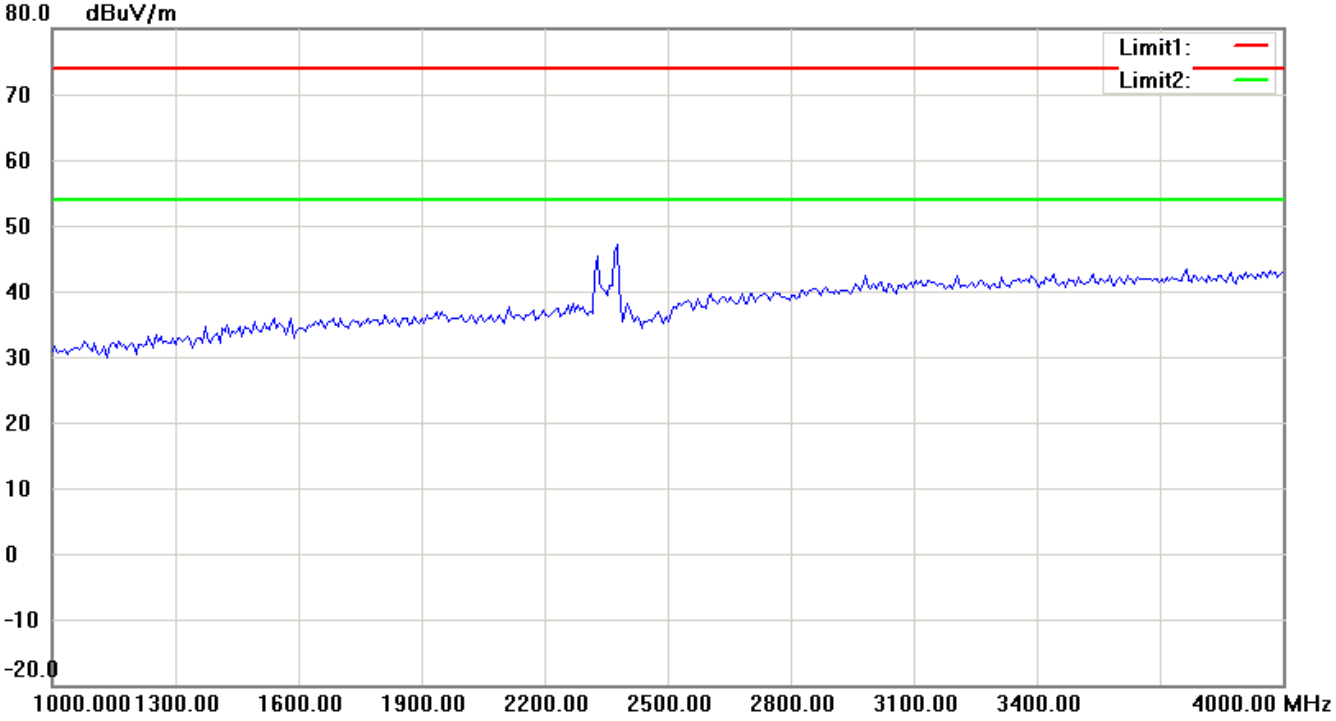


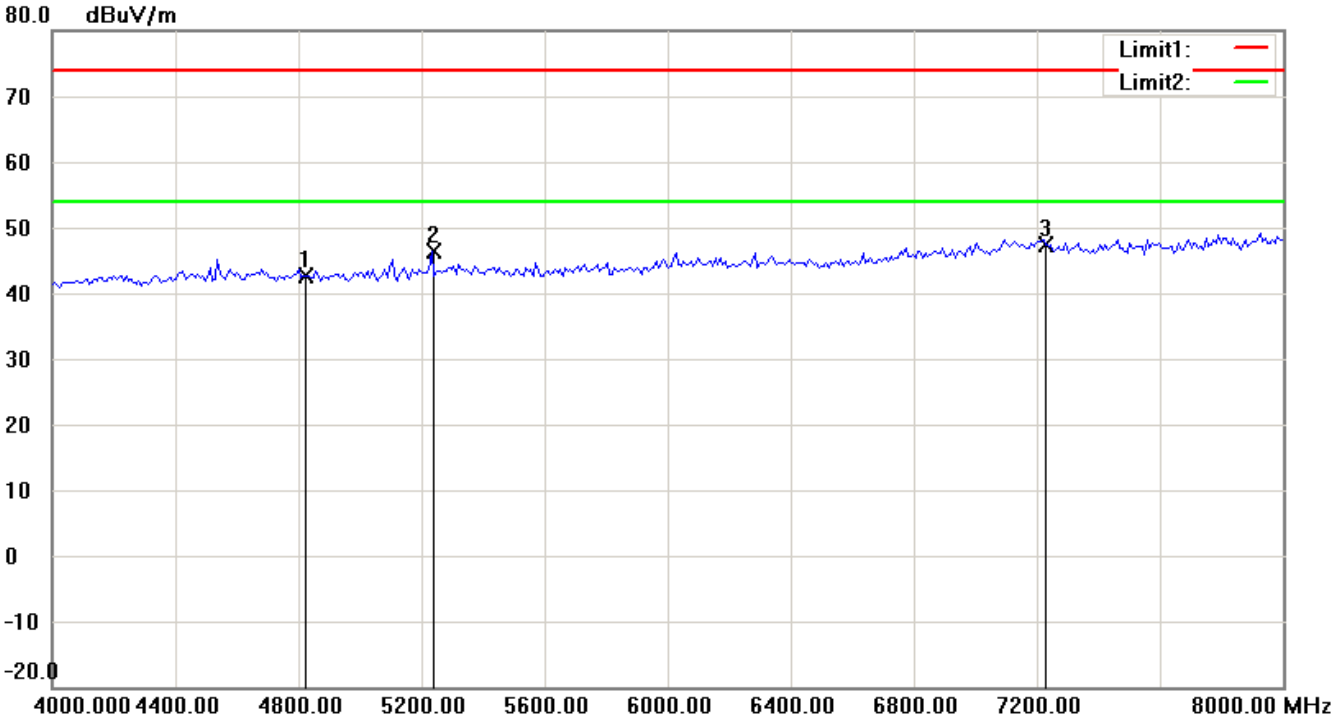


Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496

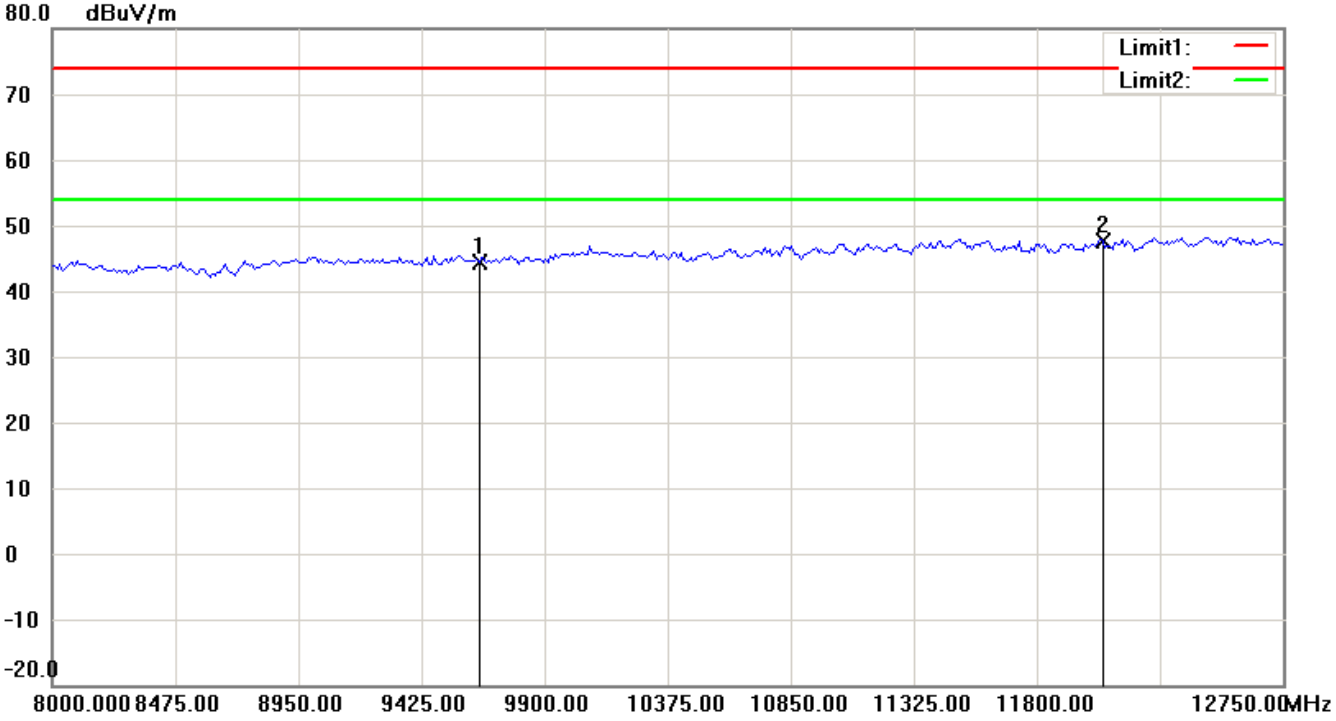


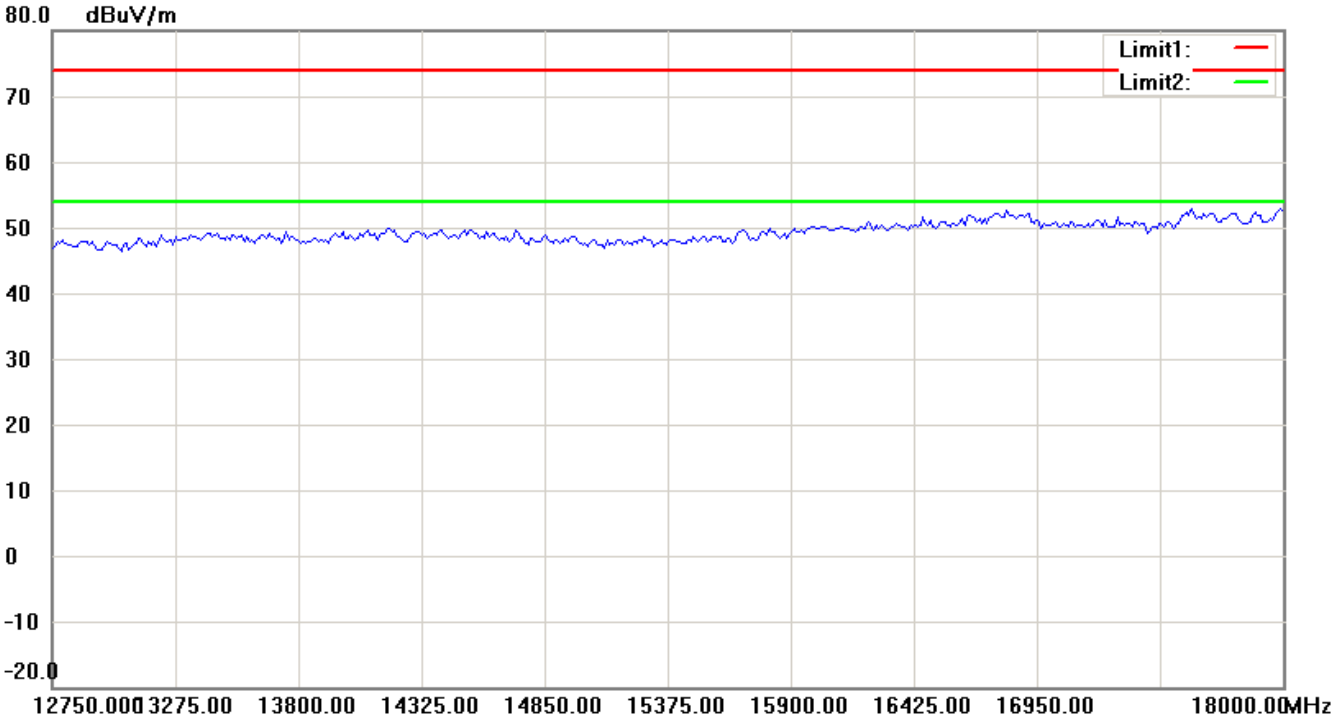


Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496

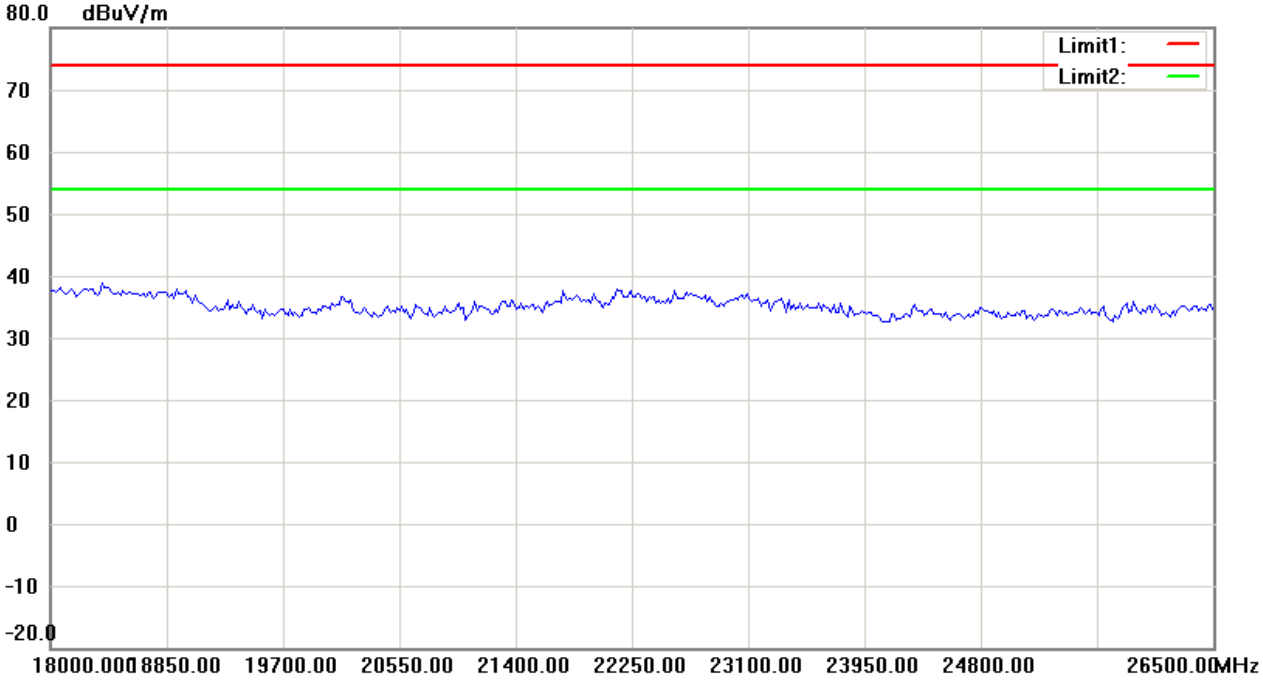




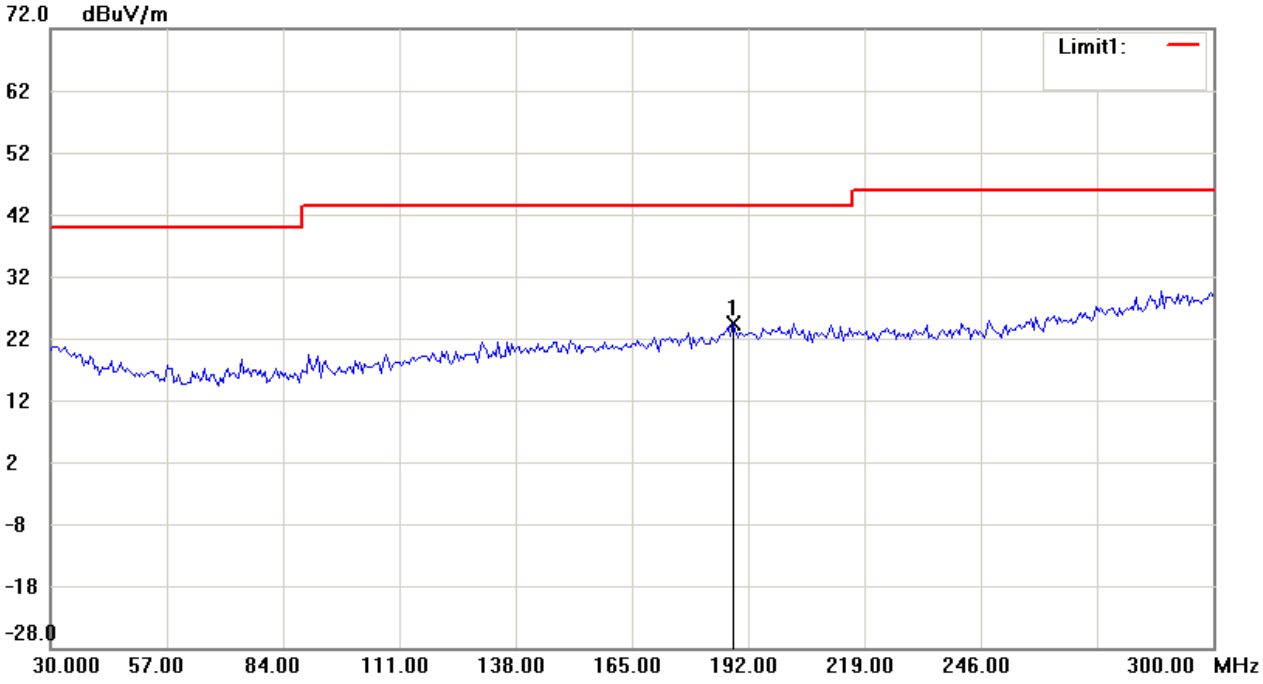
Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496



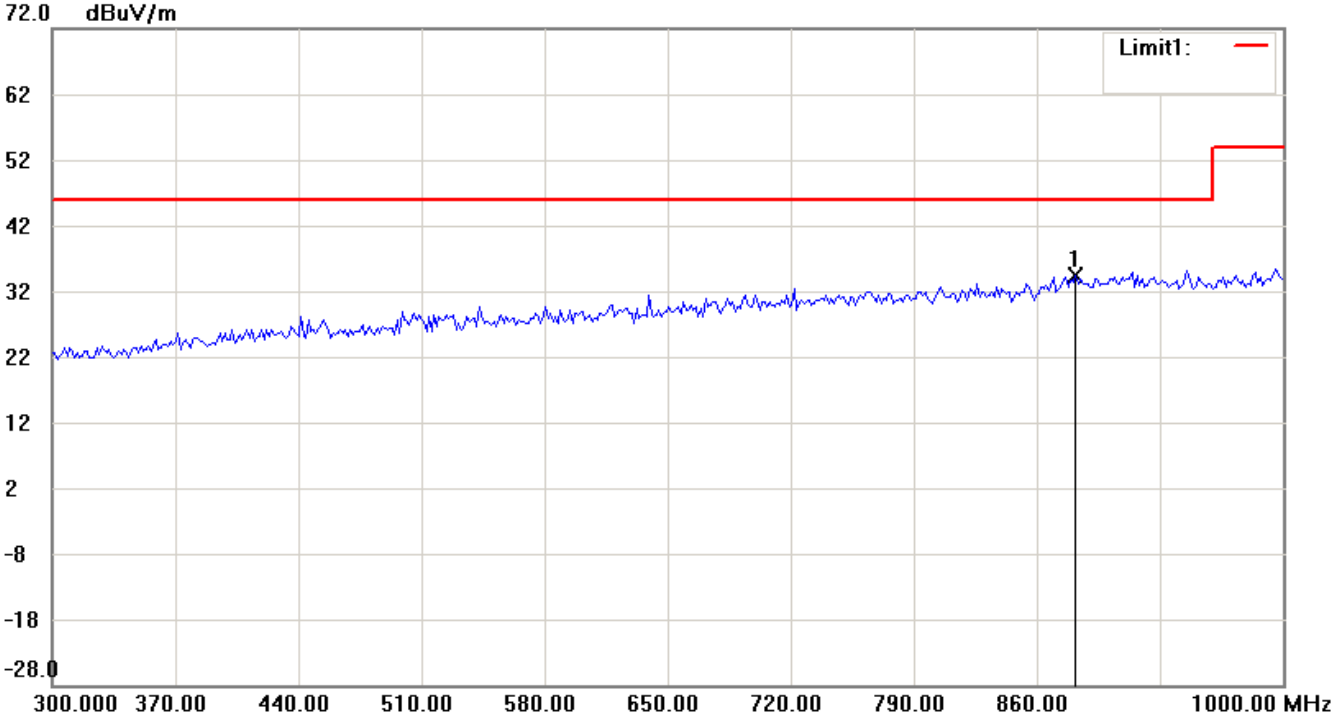
Antenna Polarization V

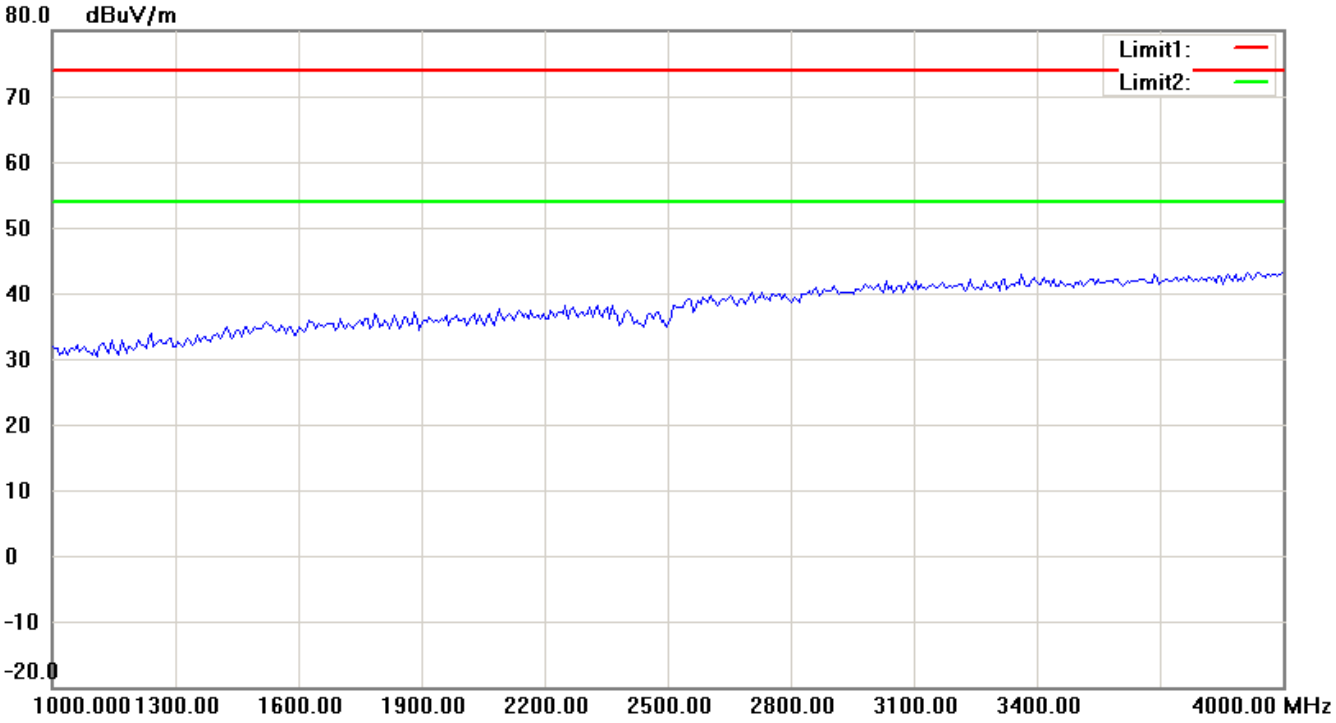


Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496

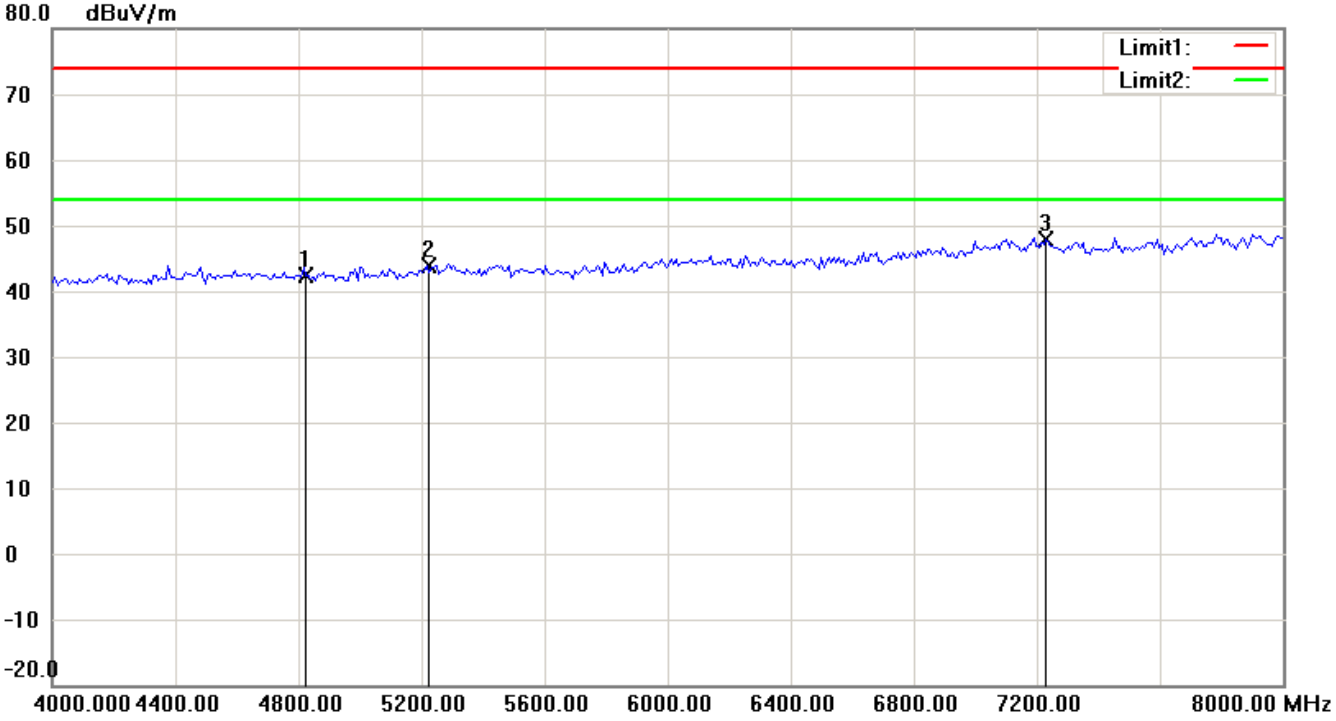


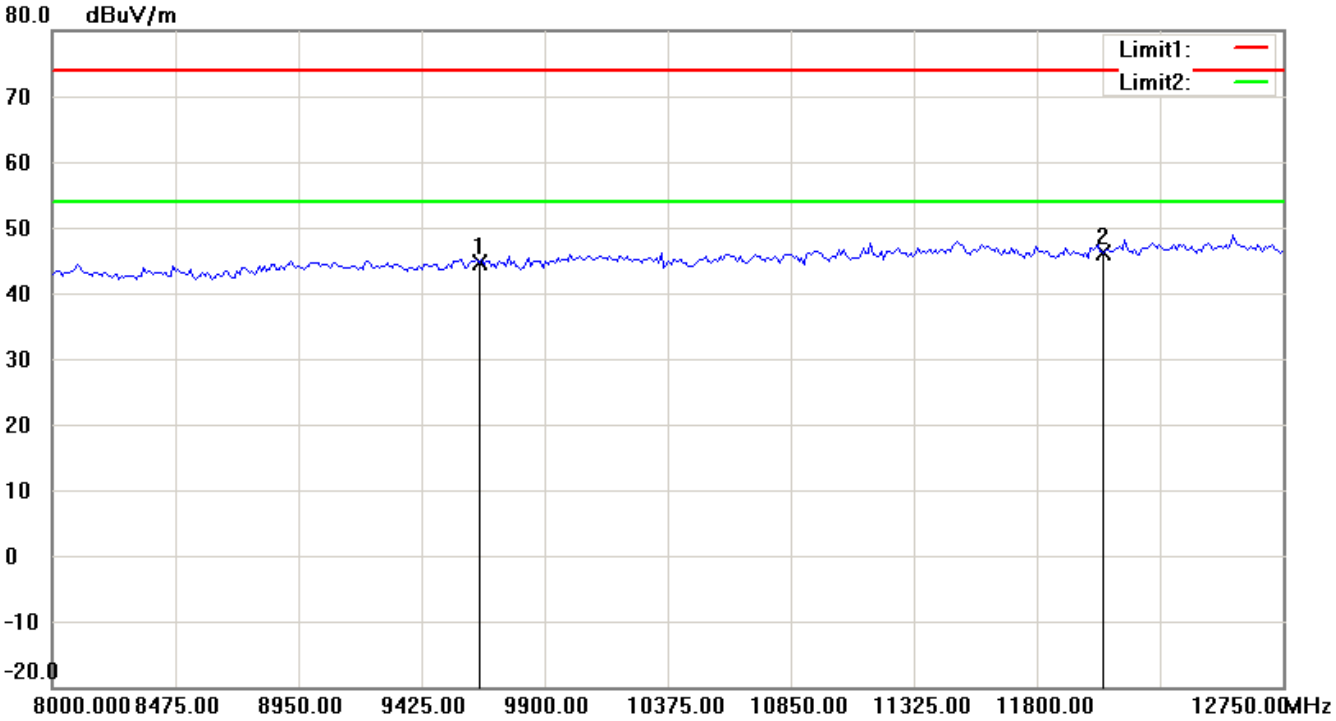


Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496

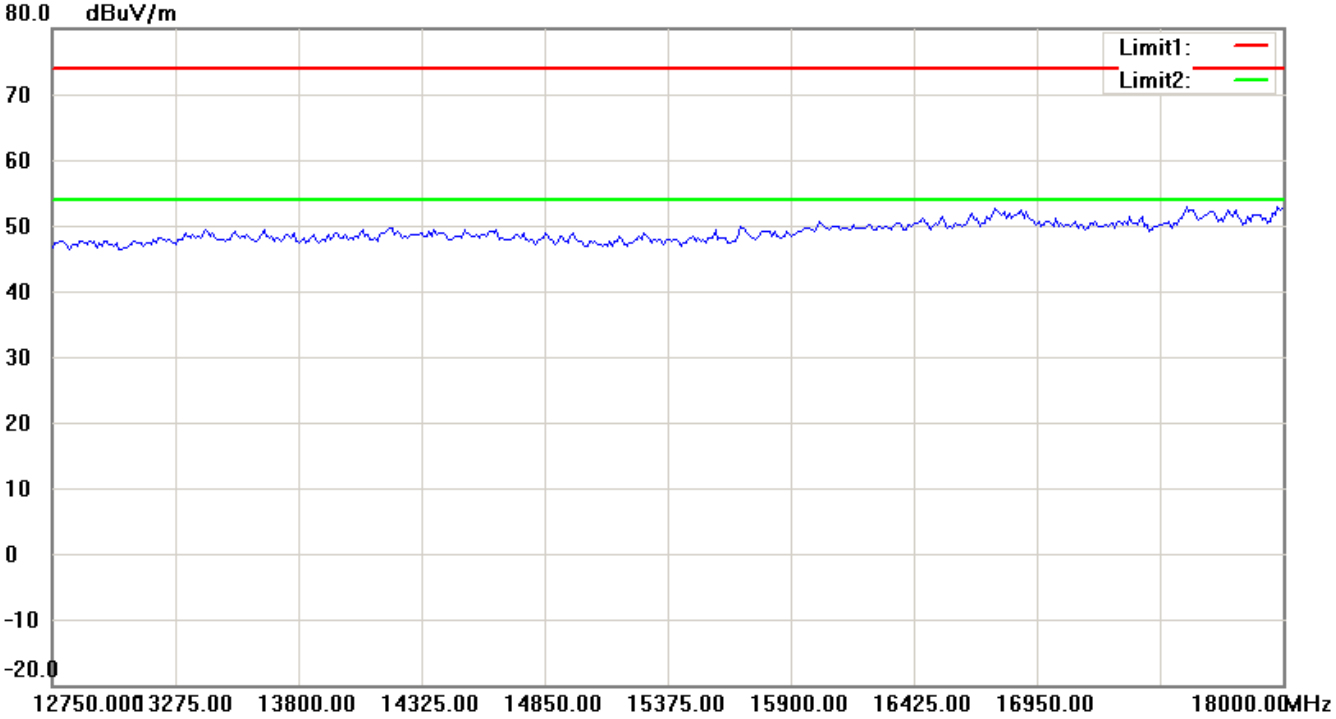


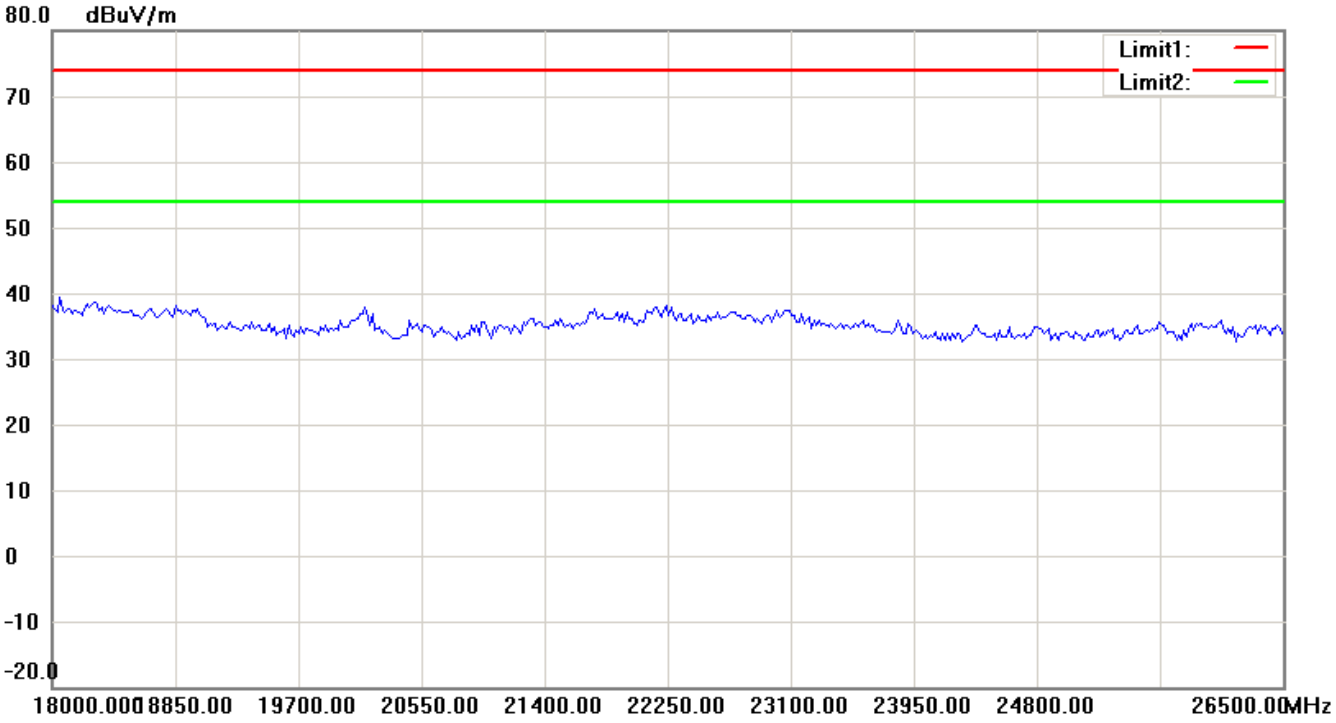


Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496





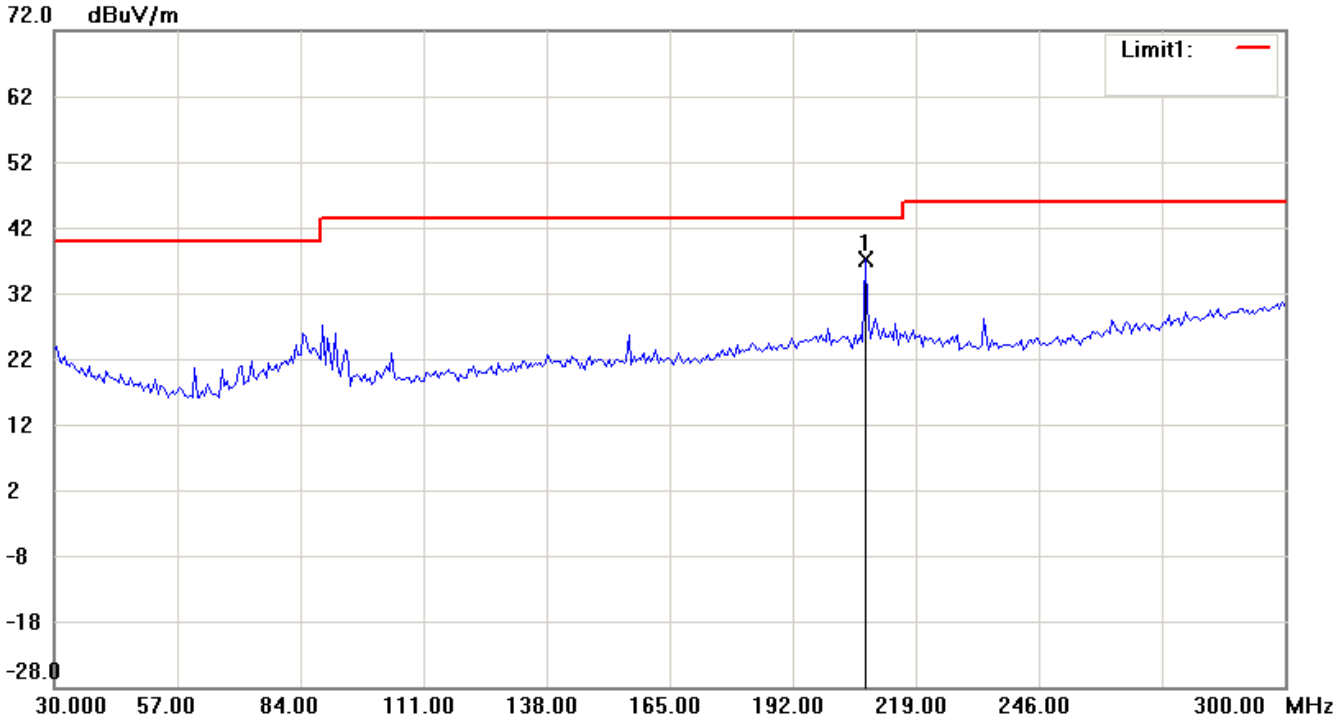
Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

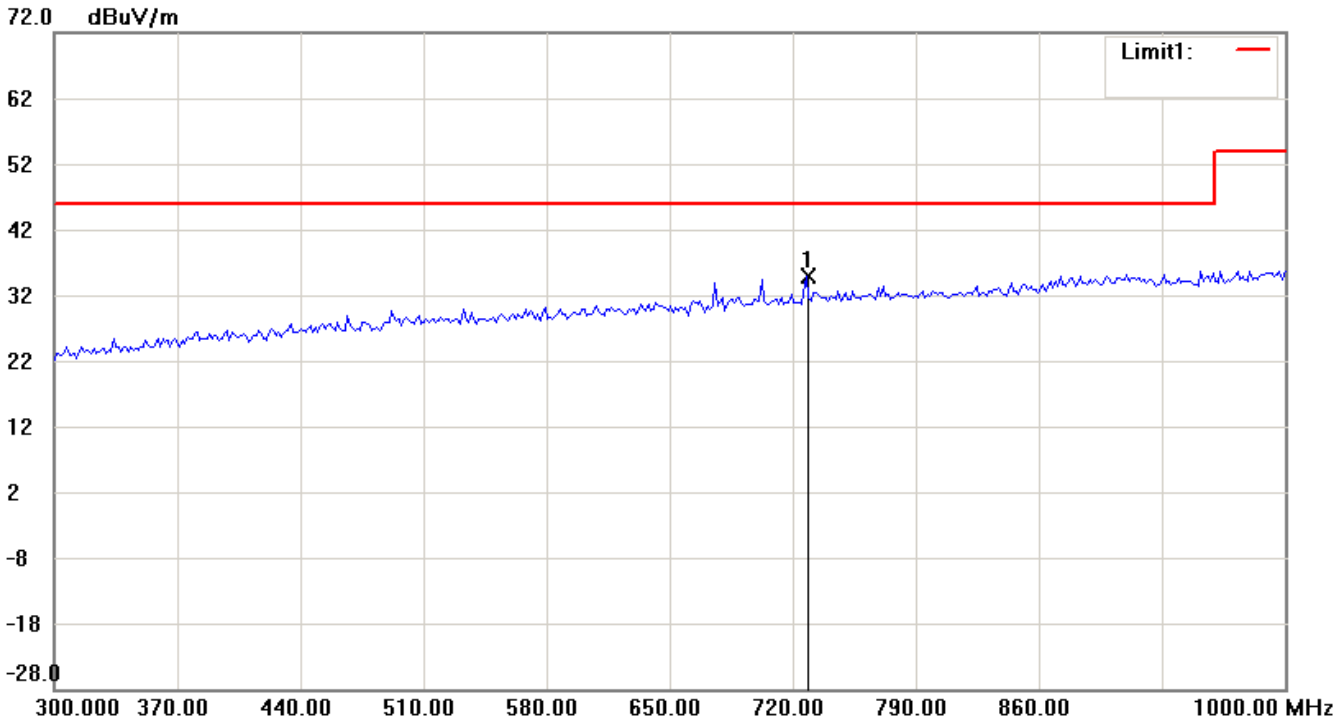
1. **The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.**
2. **The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the 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: W6M21103-11336-P-15
FCC ID: UJ96496

2442MHz

Antenna Polarization H

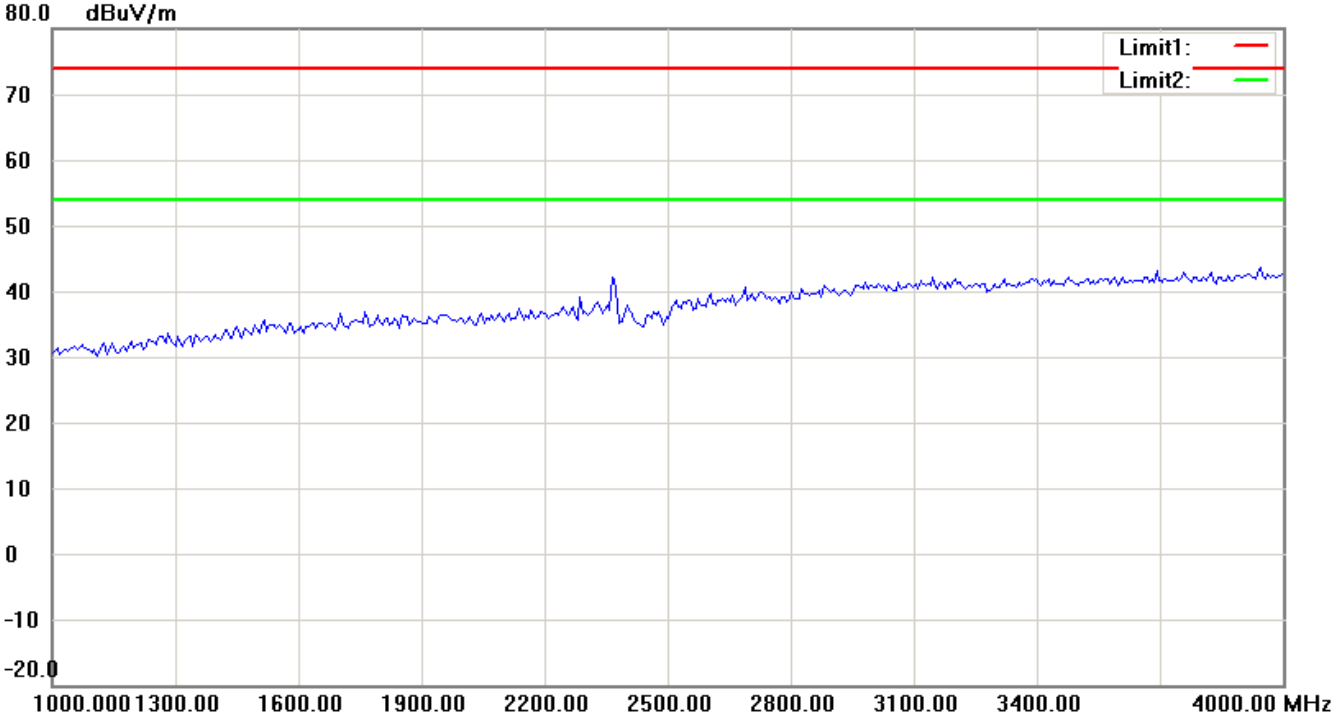


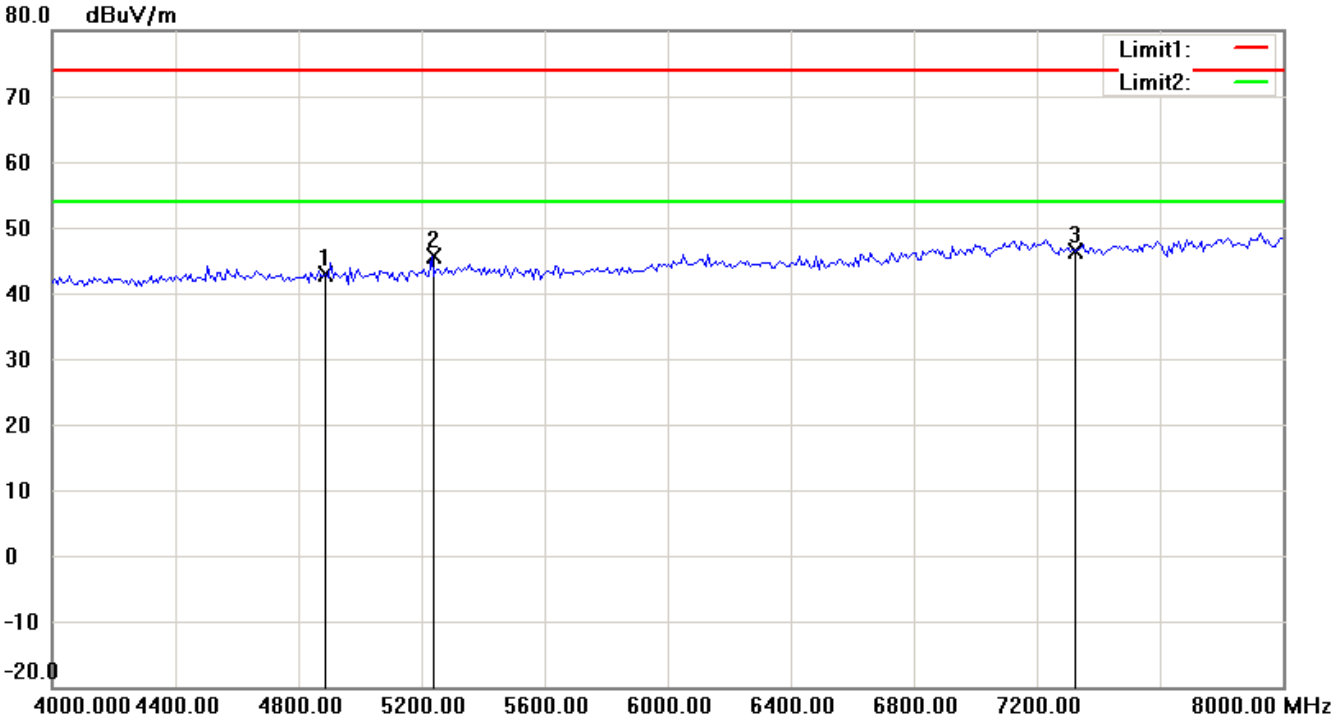


Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496

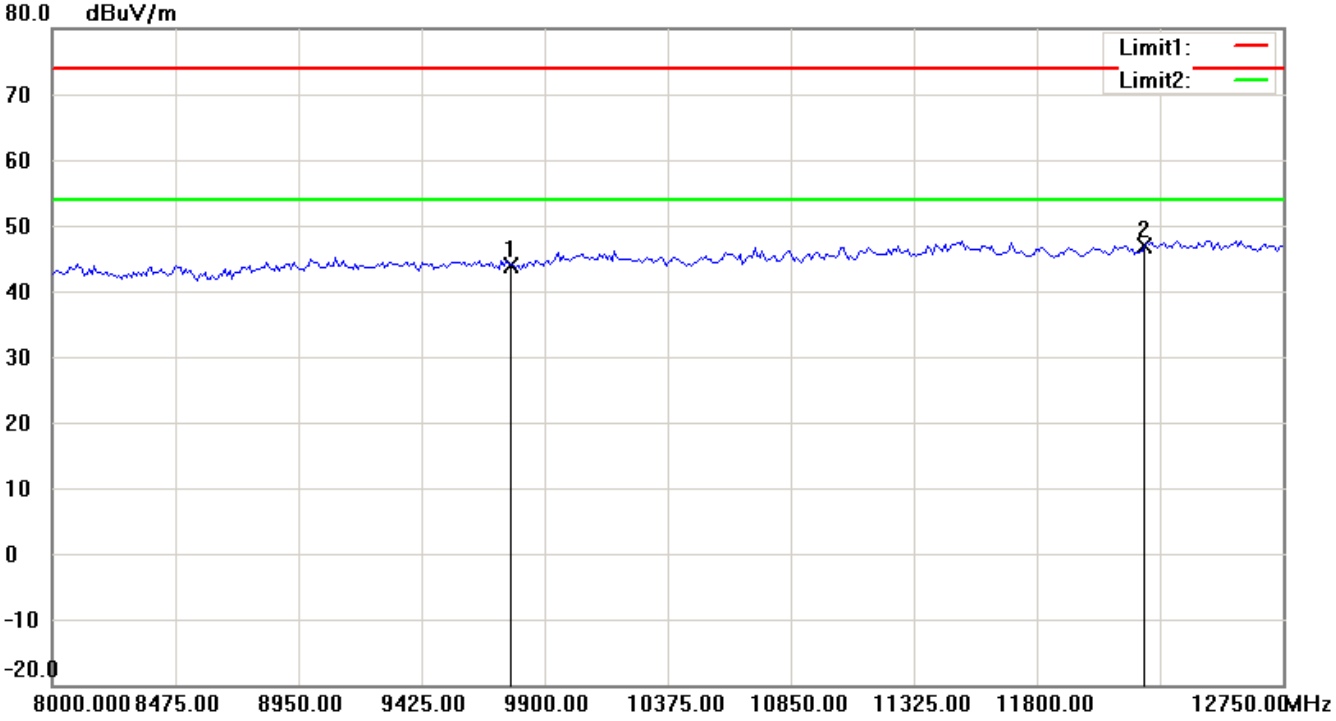


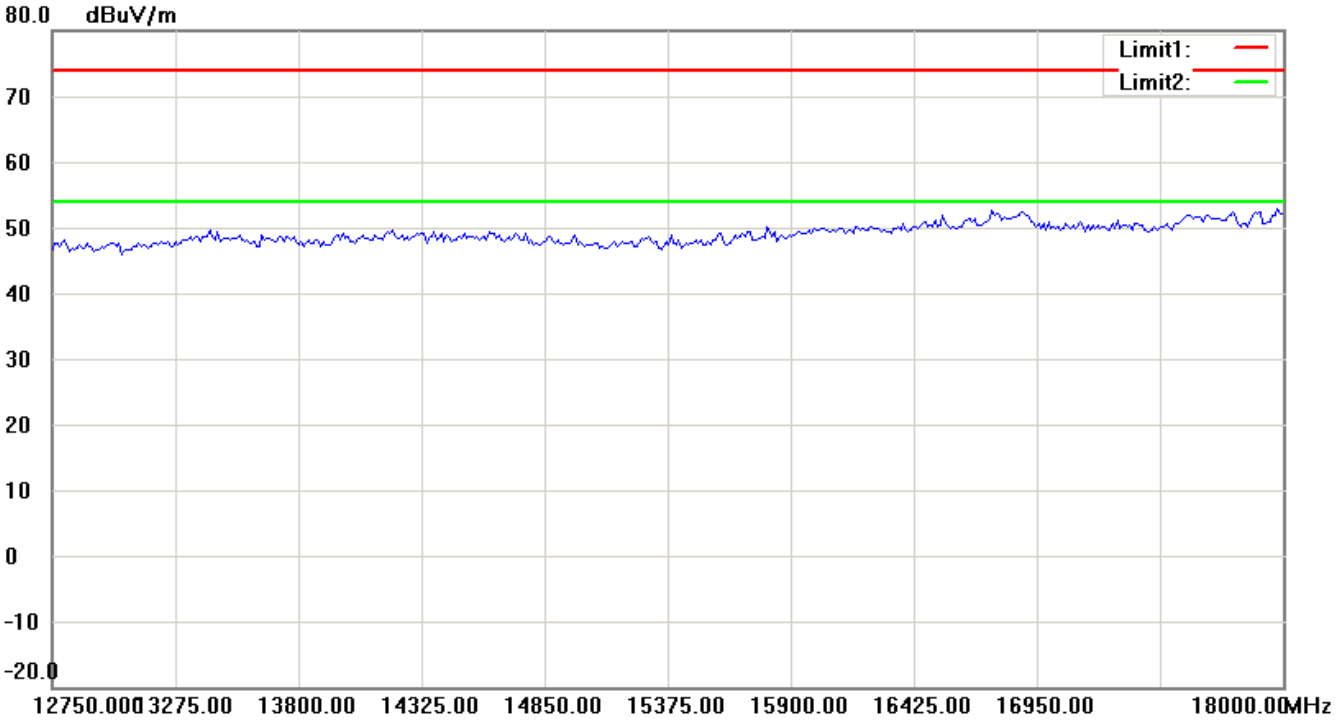


Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496

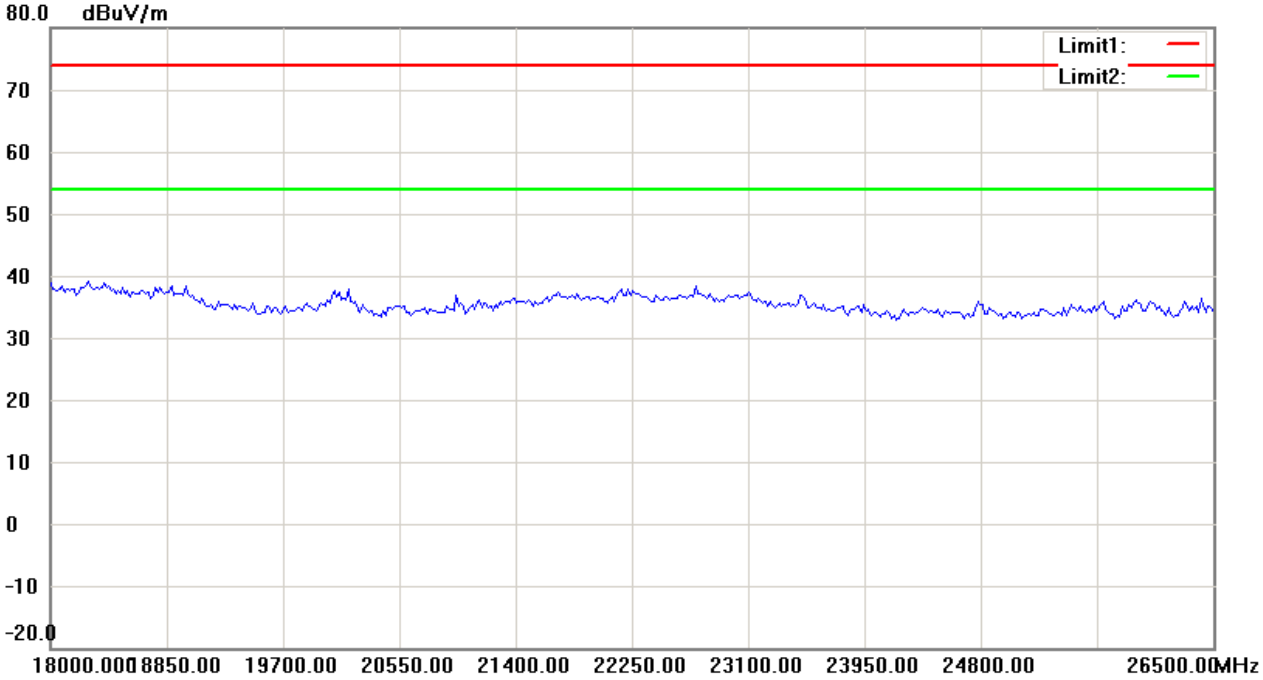




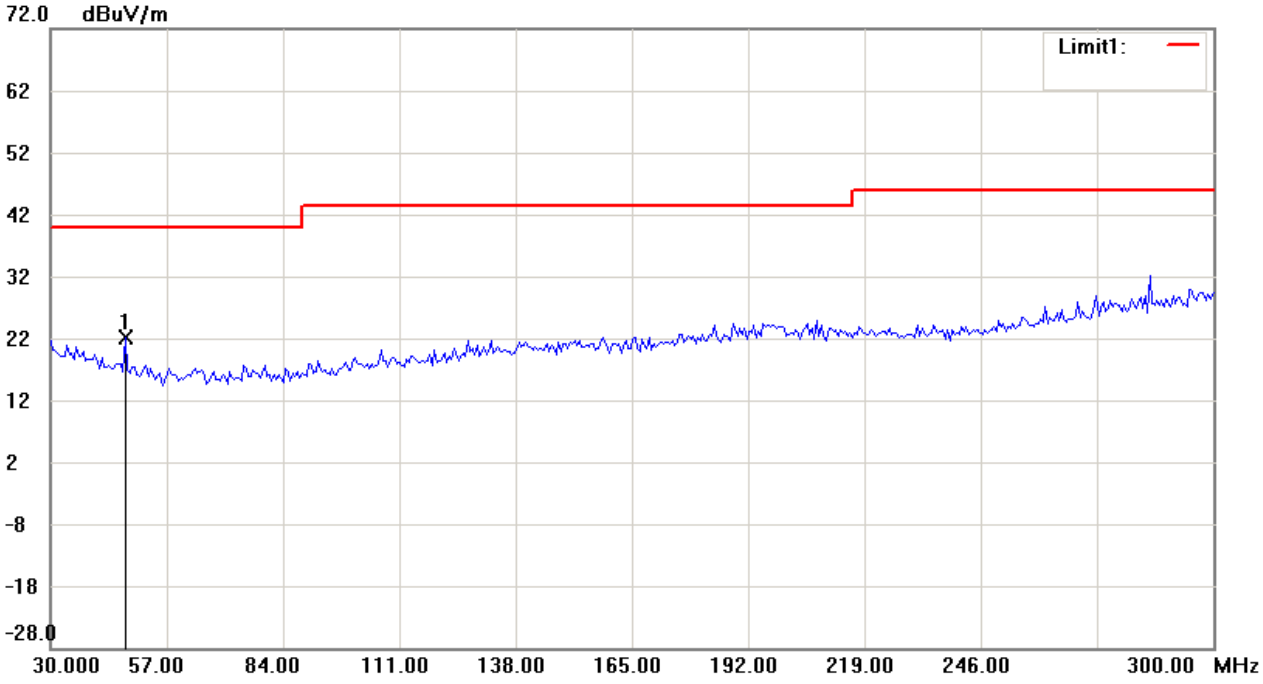
Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496



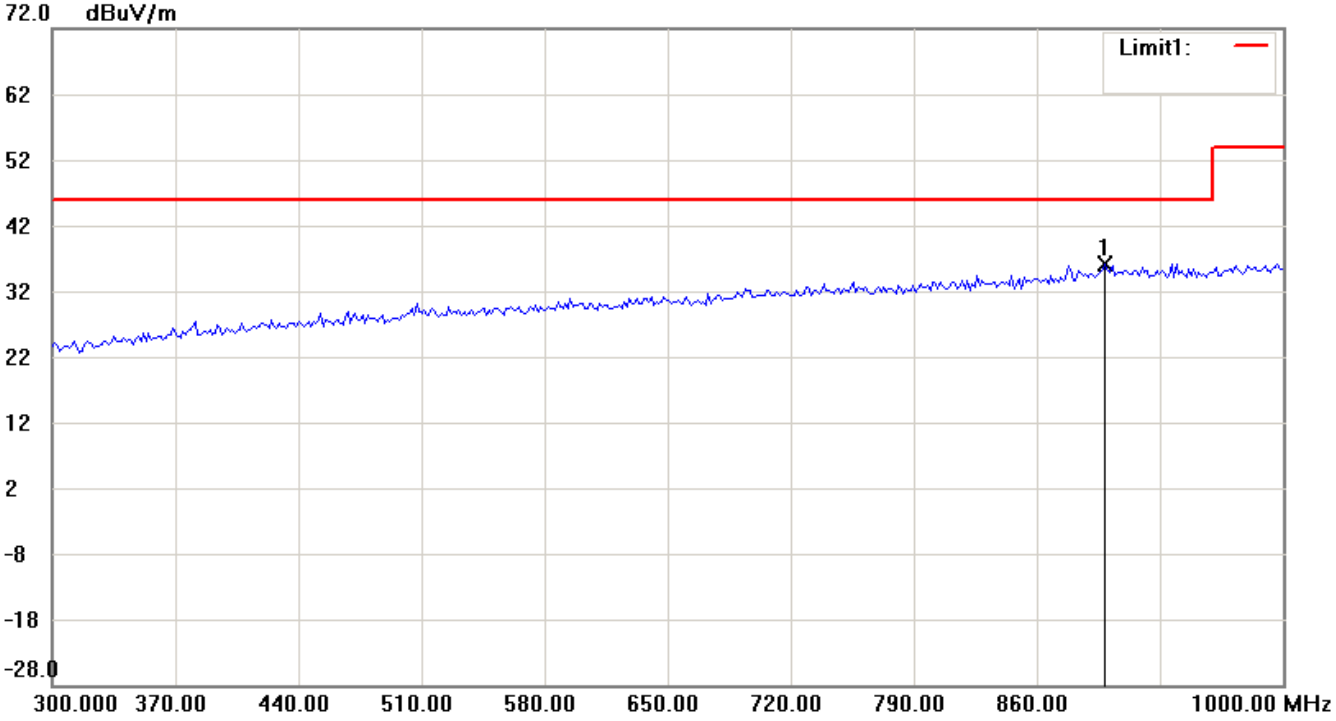
Antenna Polarization V

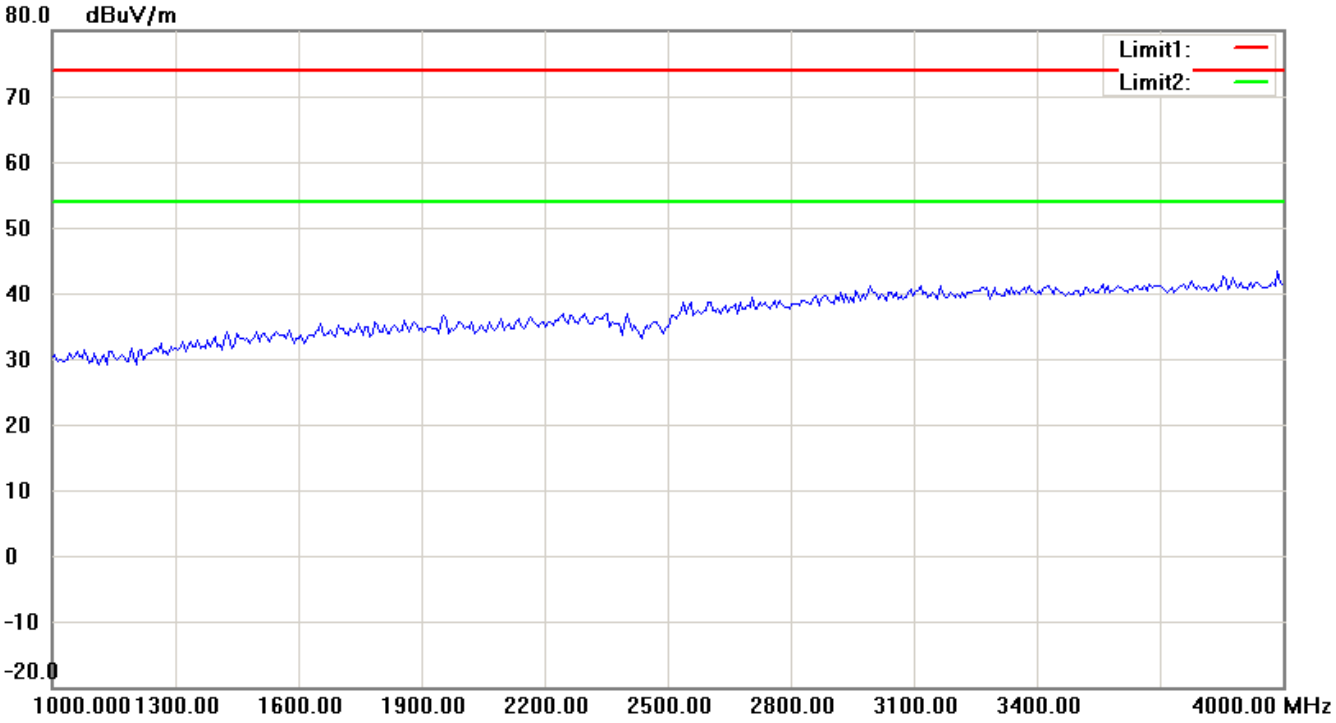


Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496

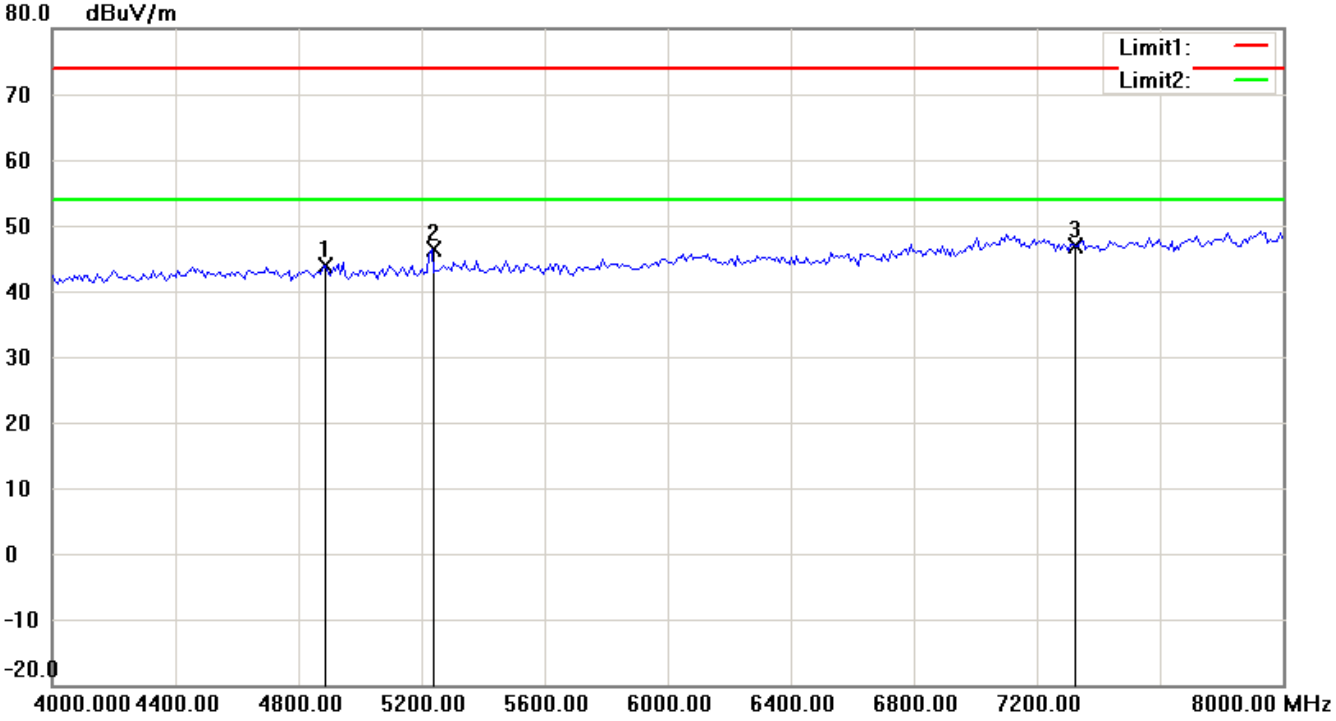


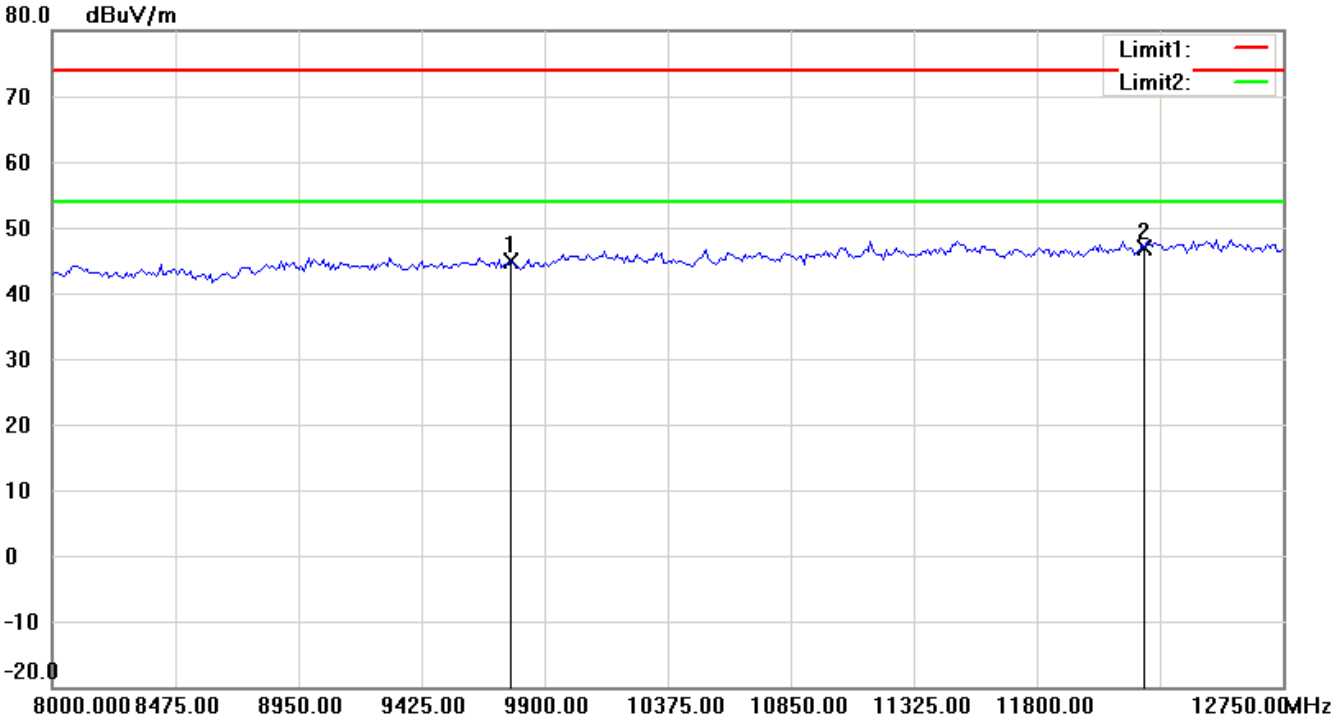


Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496

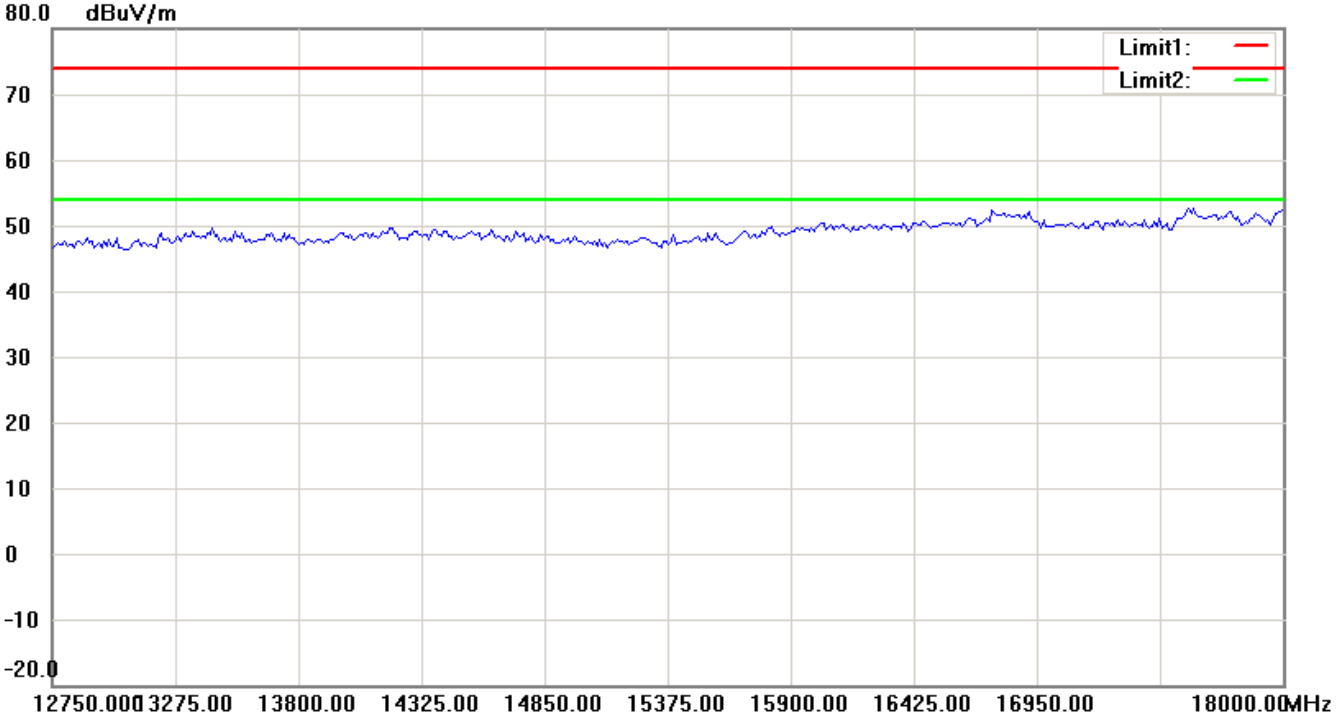


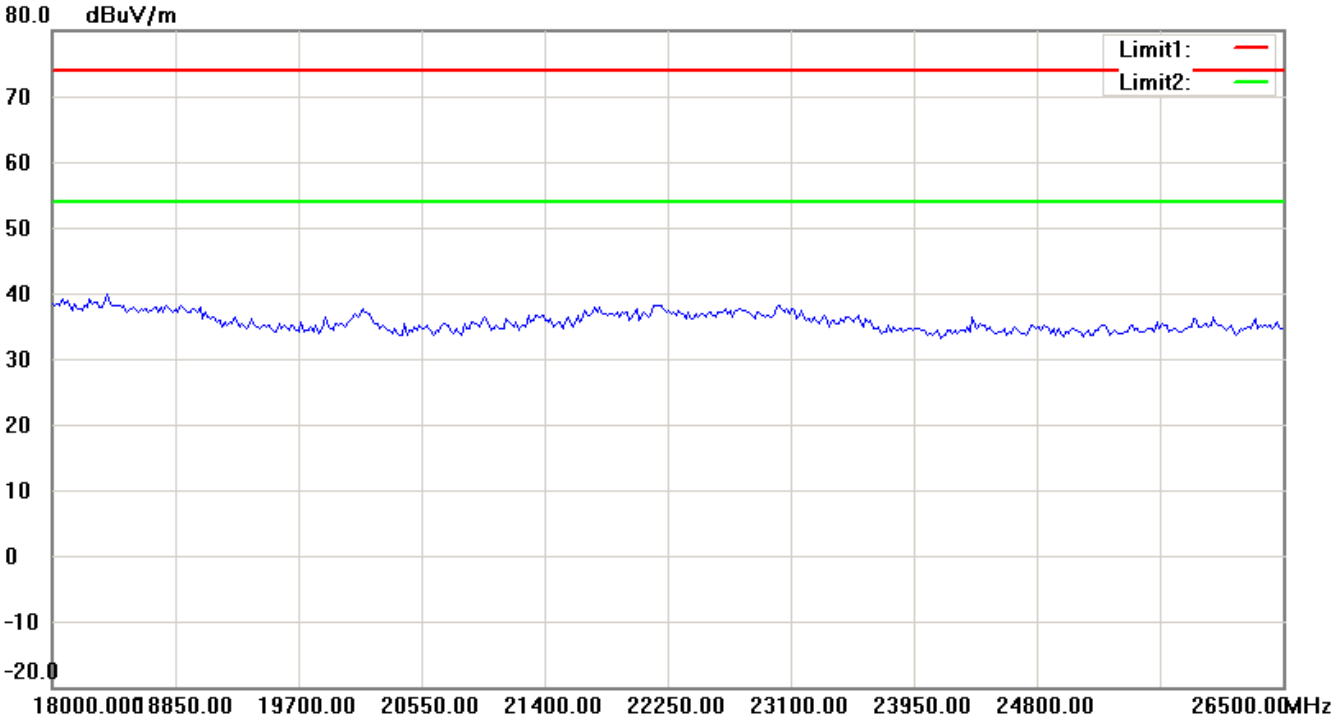


Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496





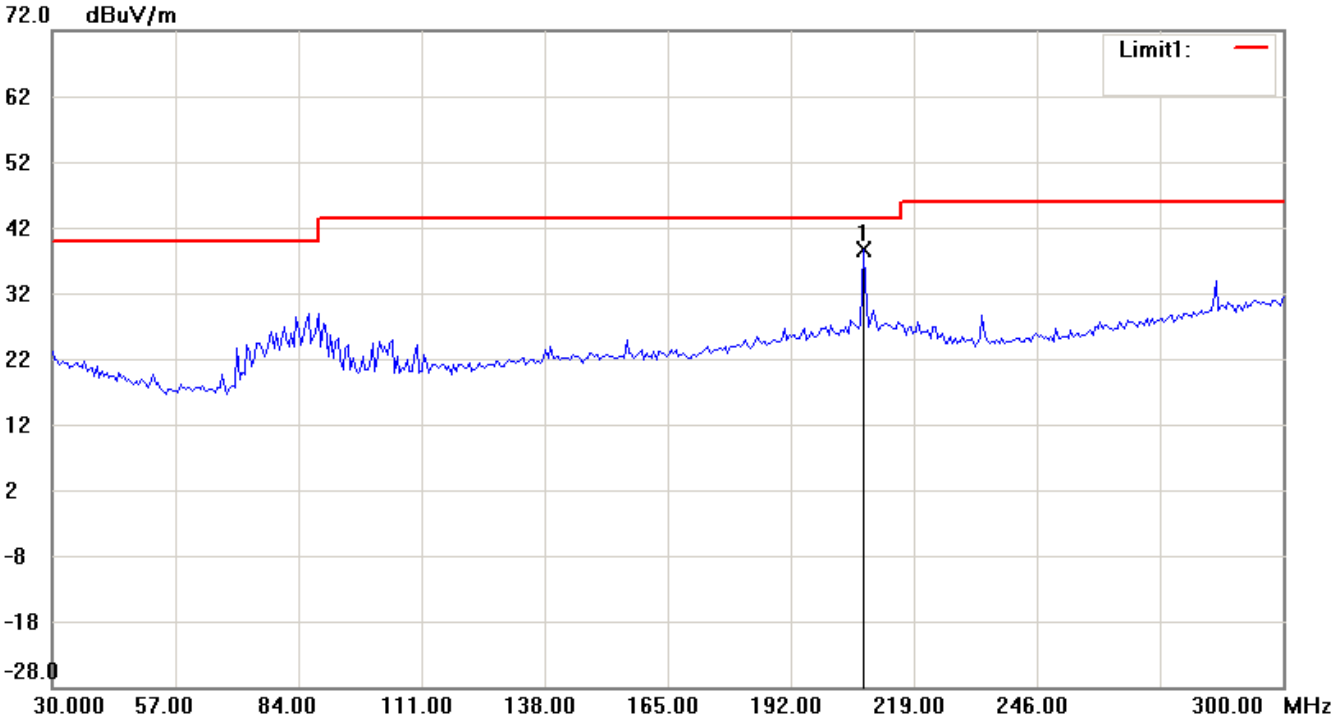
Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

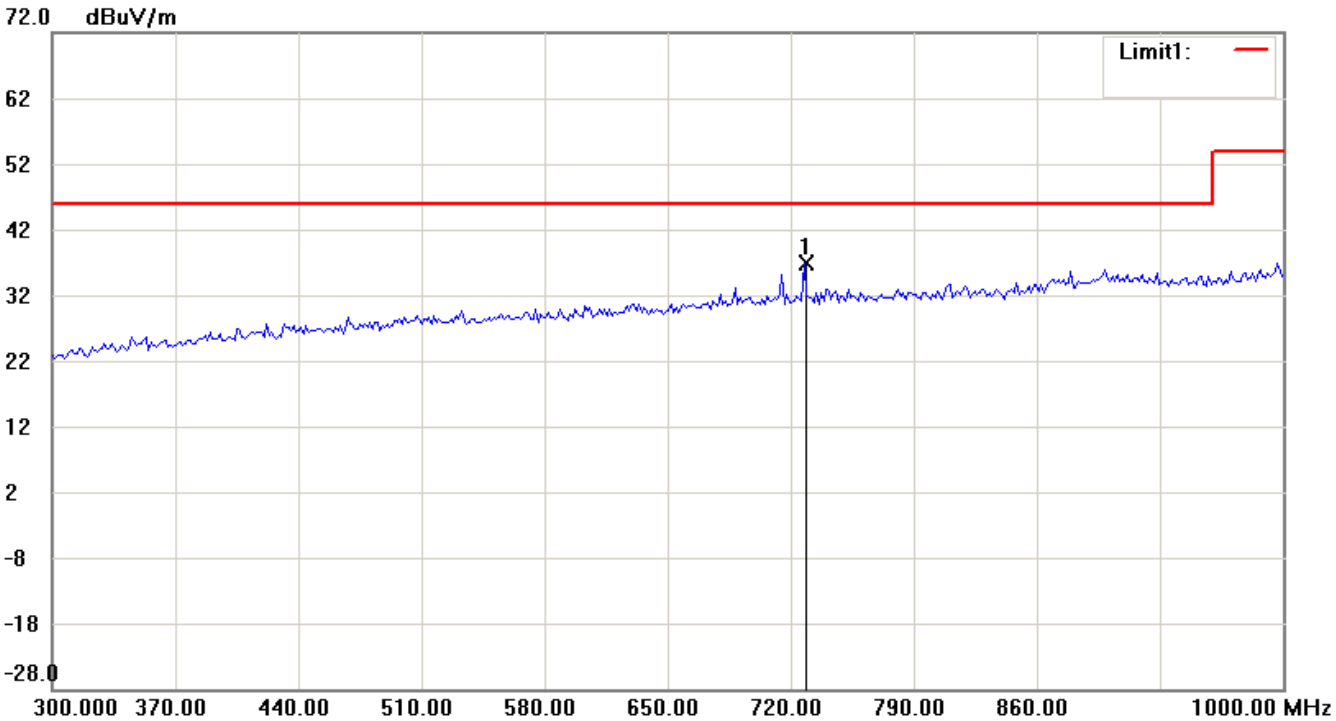
1. **The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.**
2. **The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the 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: W6M21103-11336-P-15
FCC ID: UJ96496

2472MHz

Antenna Polarization H

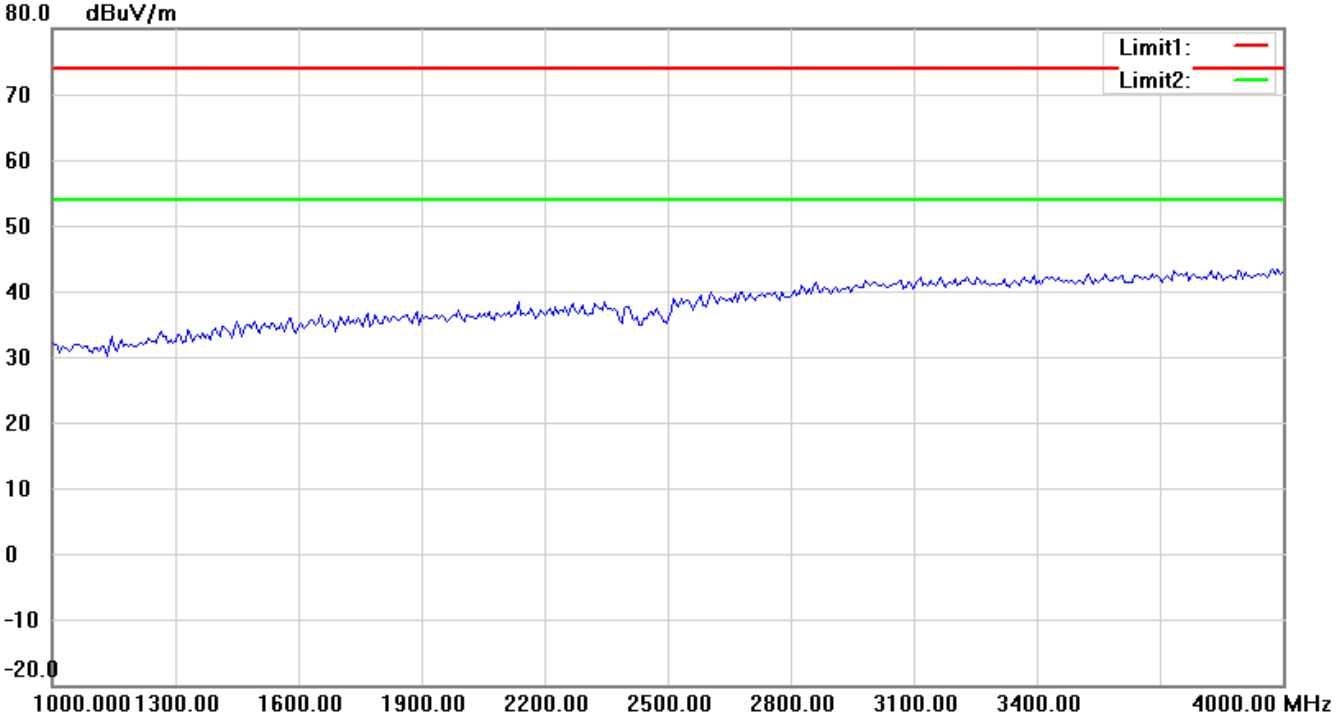


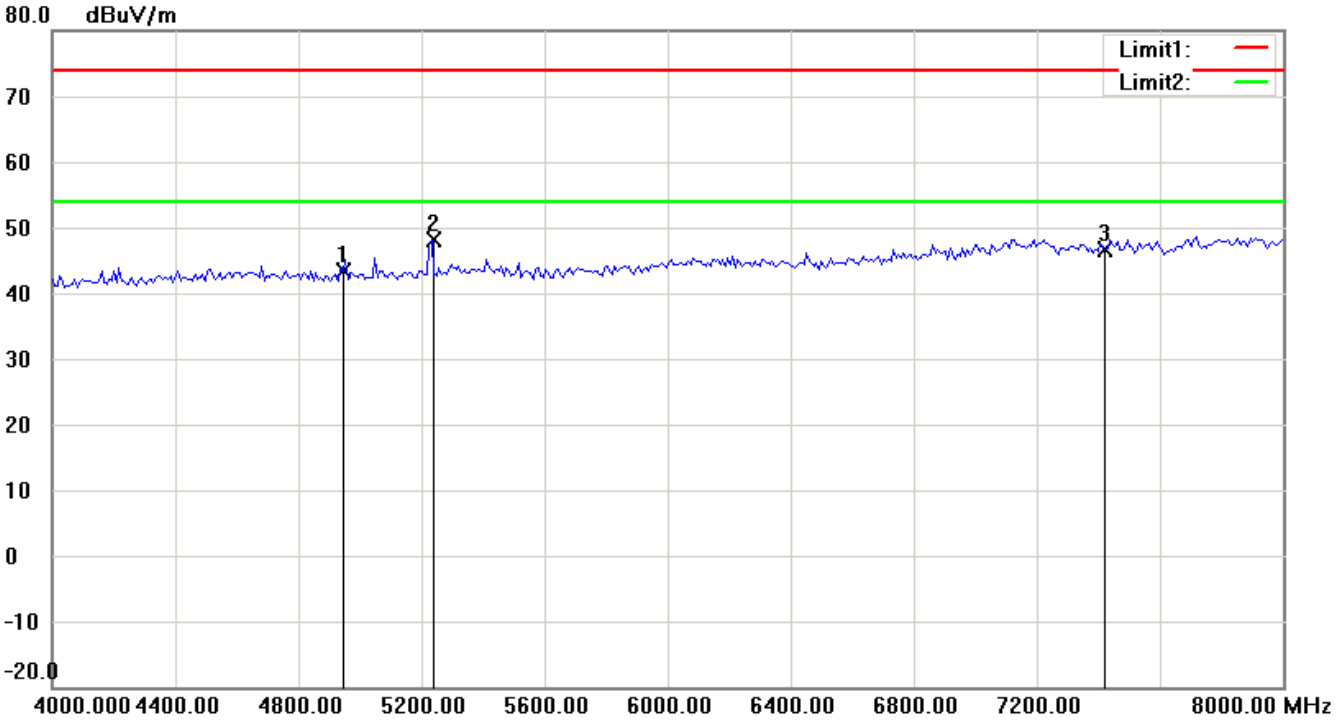


Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496

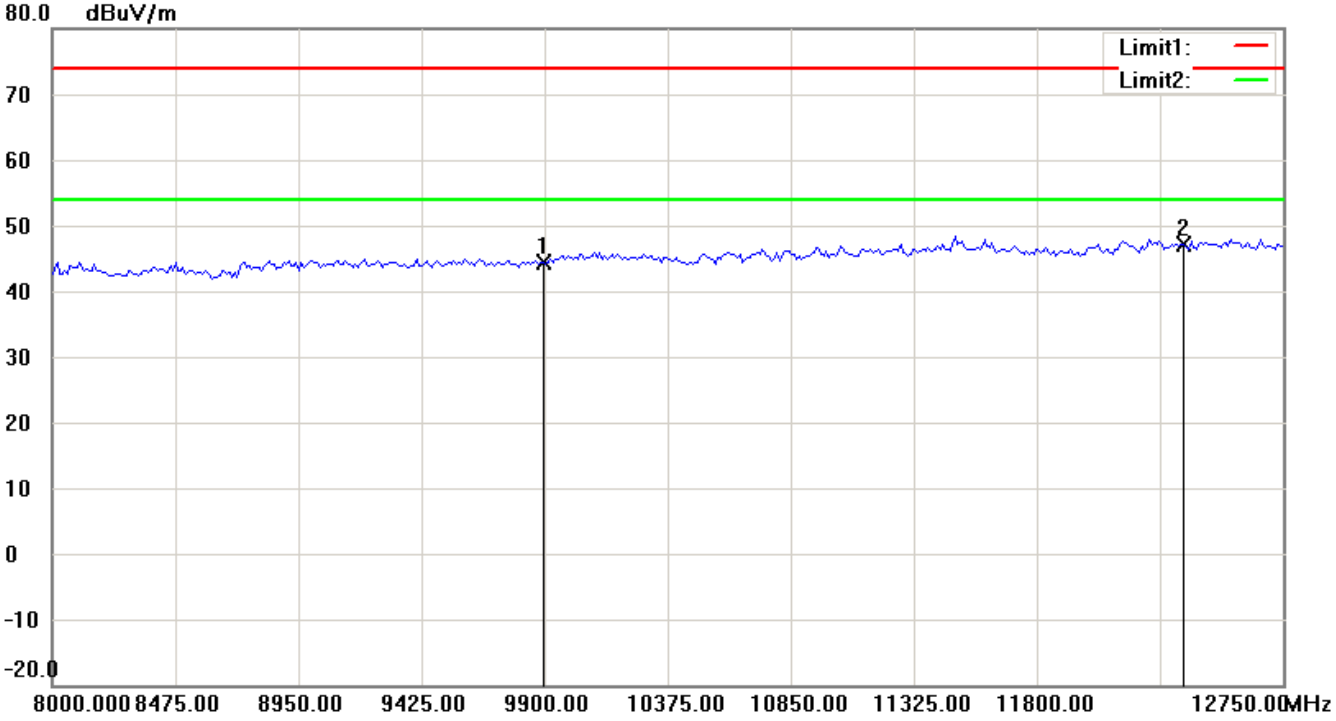


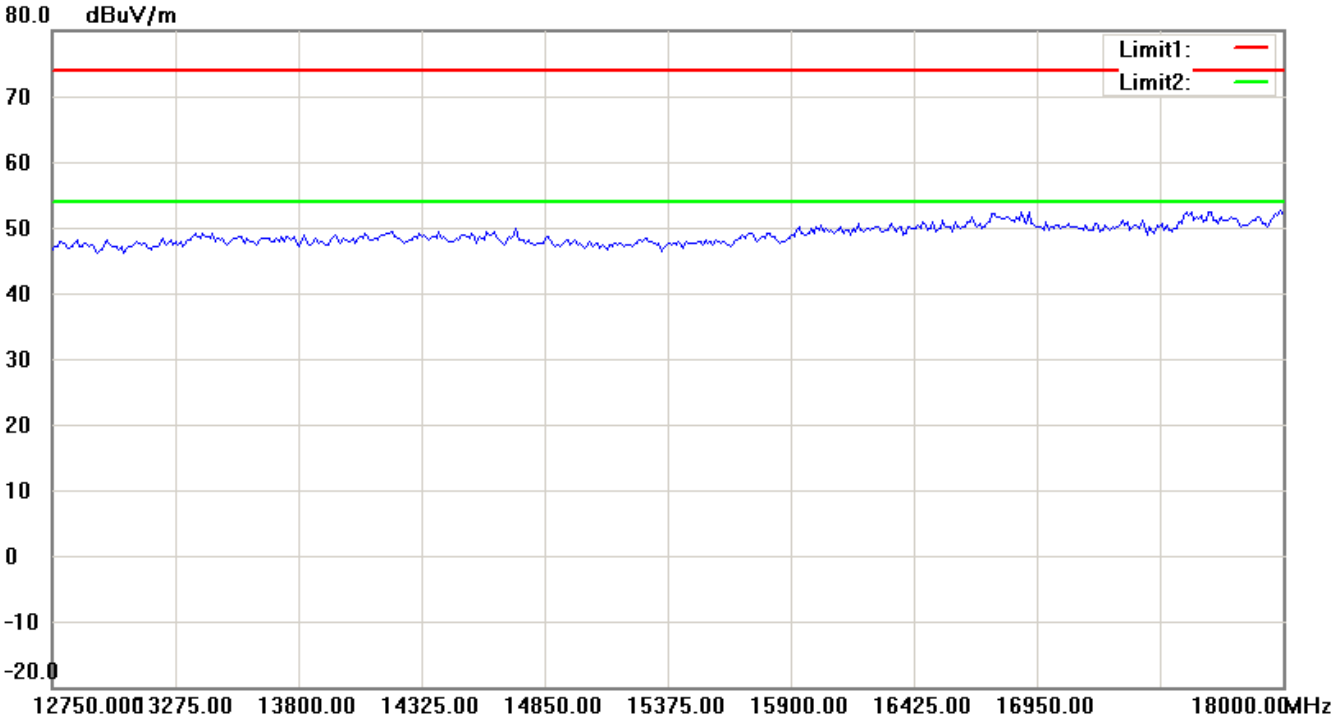


Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496

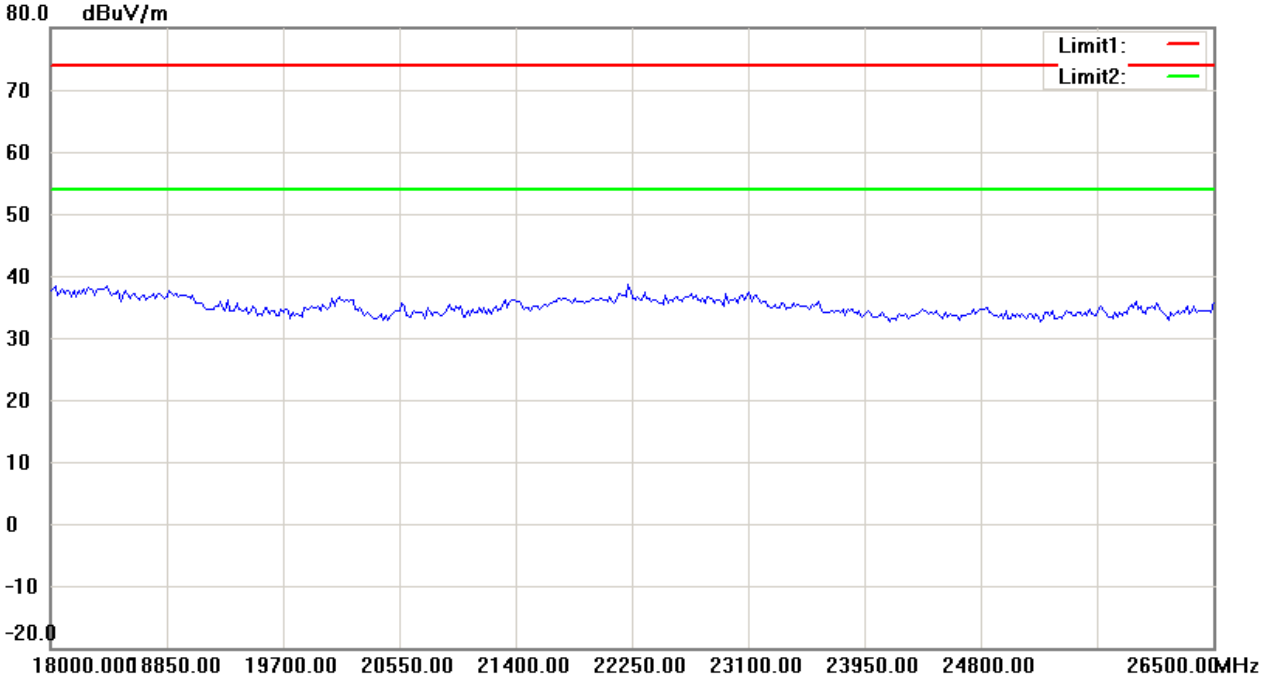




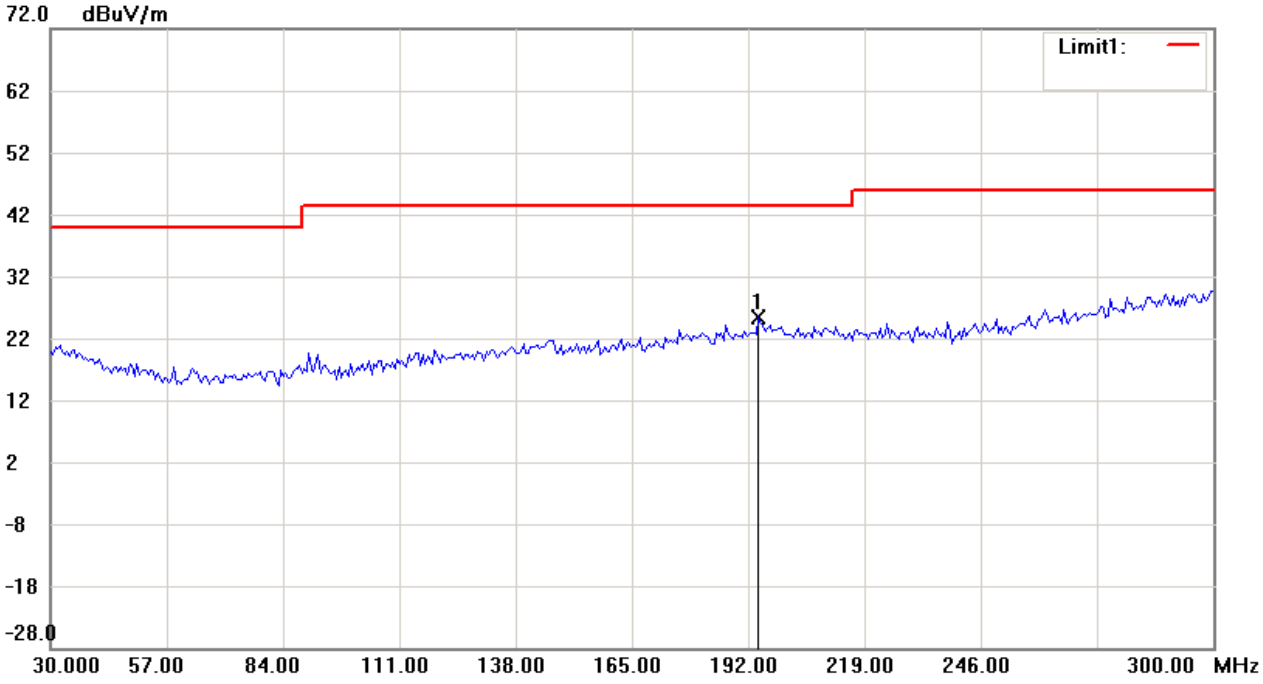
Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496



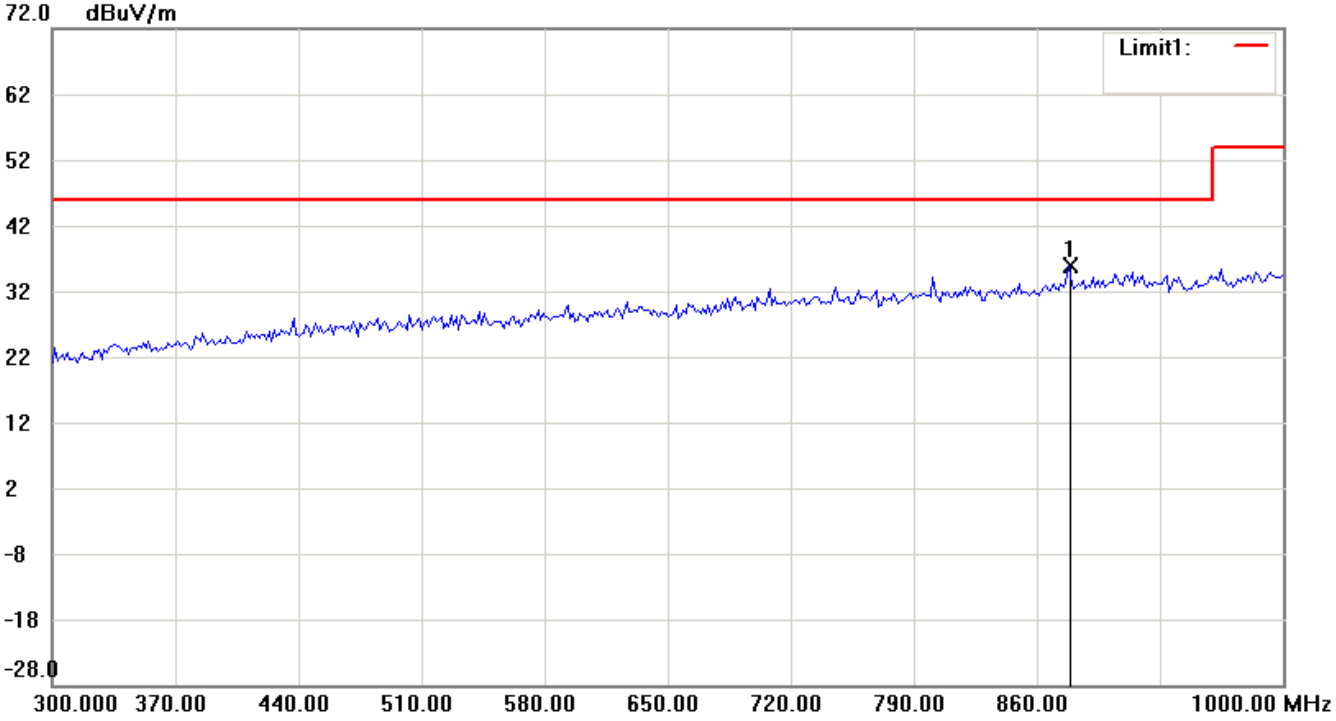
Antenna Polarization V

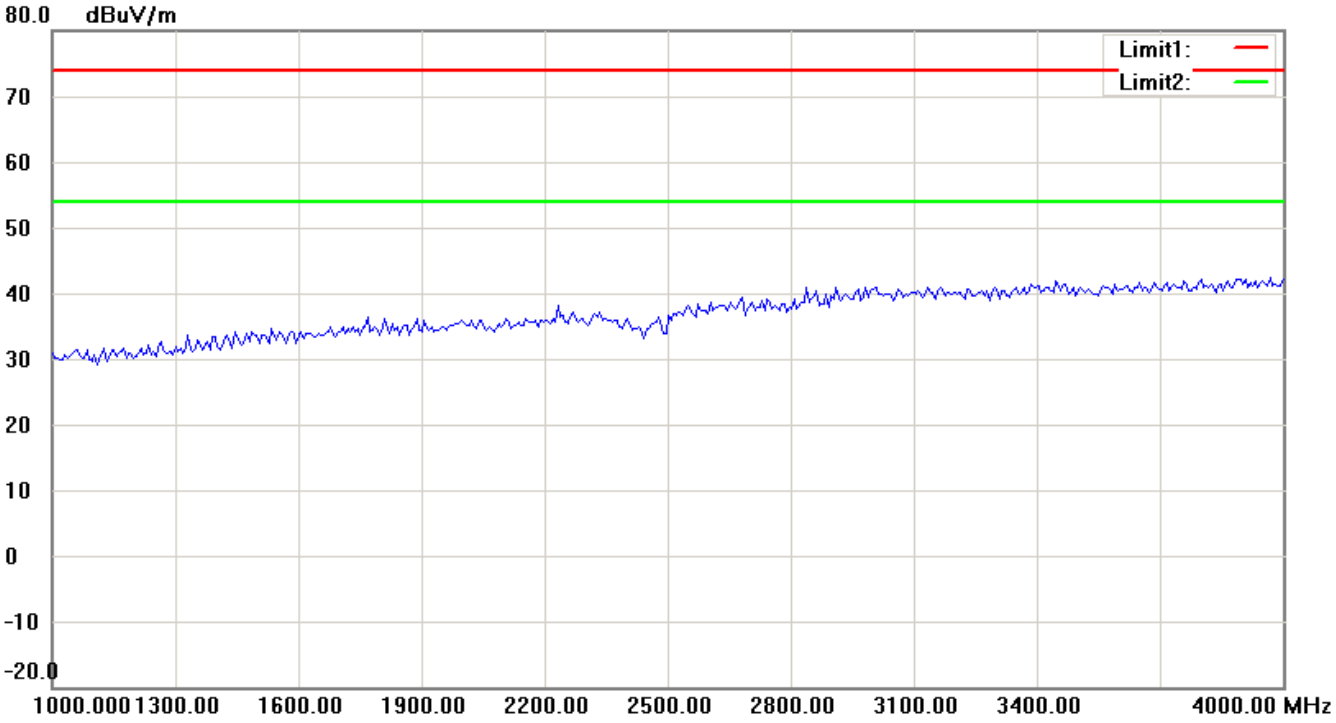


Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496

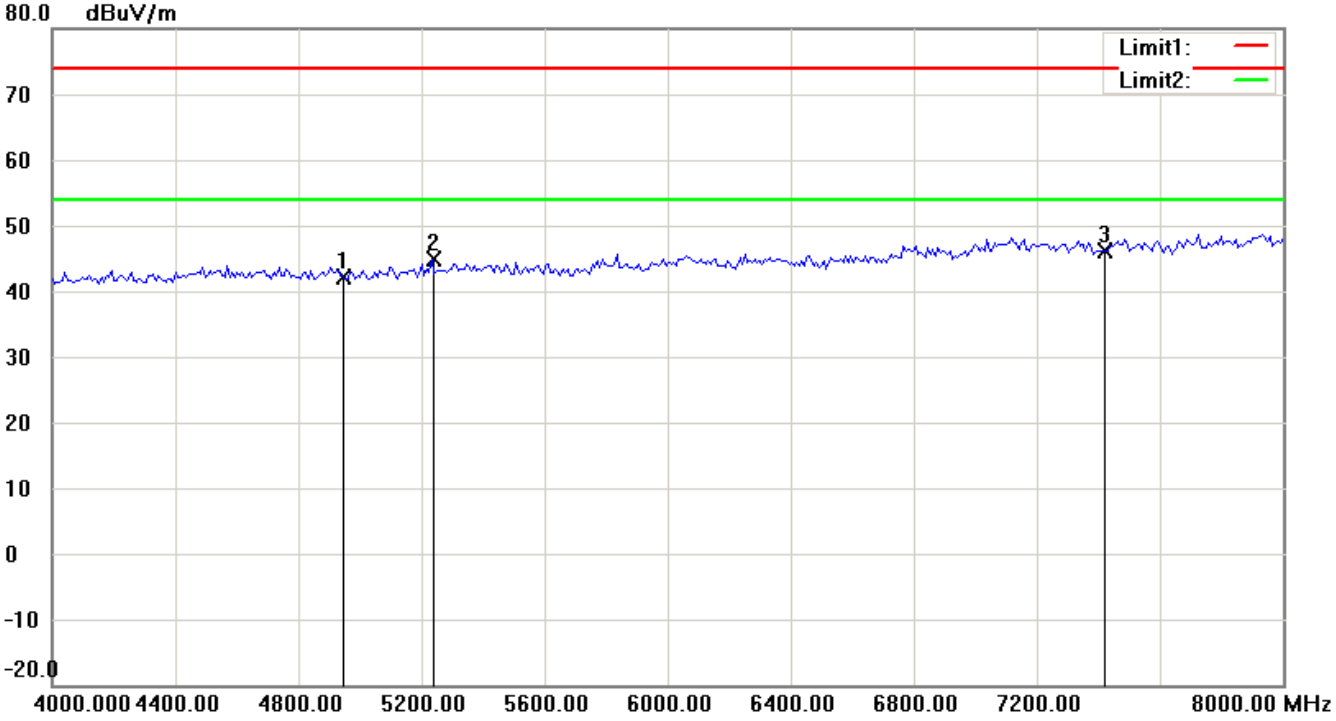


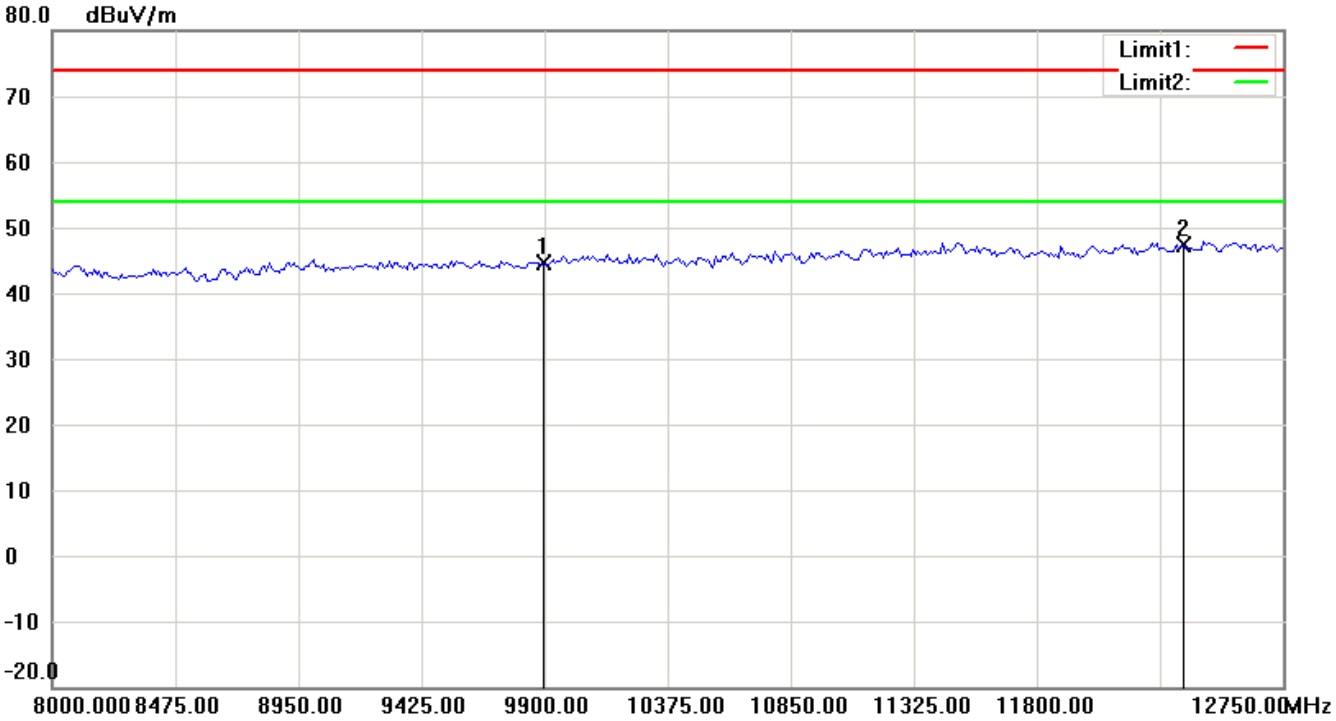


Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496

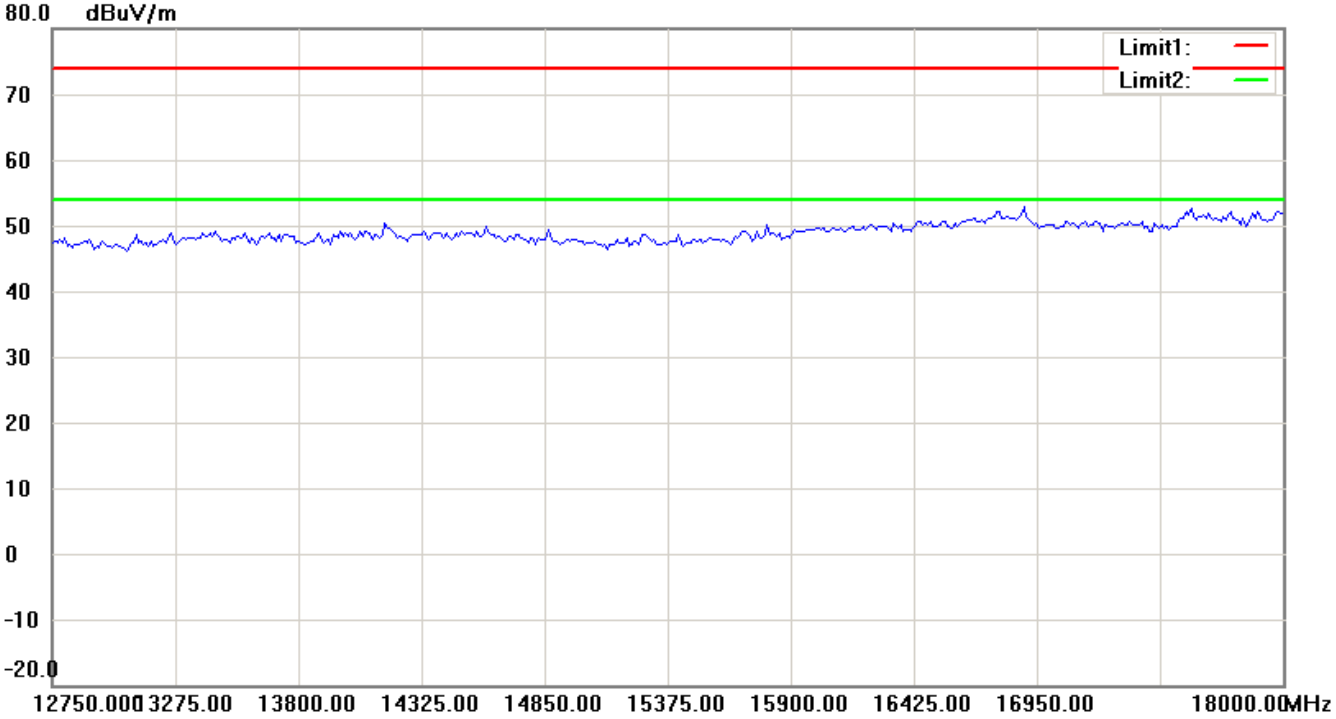


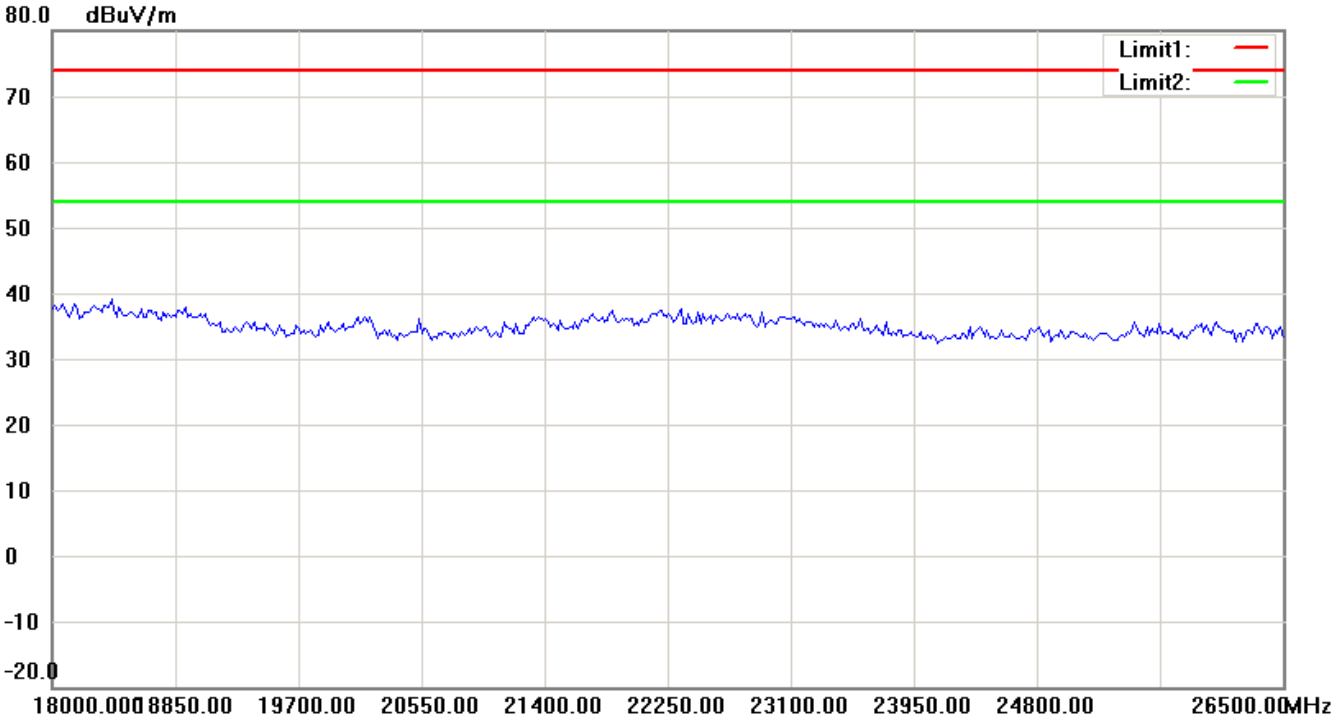


Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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: W6M21103-11336-P-15
FCC ID: UJ96496





Note: Up Line: PK Limit Line, Down Line: Ave Limit Line

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.**