

FCC PART 15 SUBPART C TEST REPORT

for

Digital Wireless Receiver

Model No.: DMR-101

FCC ID: U6OCA913

of

Applicant: INVENTEC BESTA CO., LTD.

**Address: 10FL., No. 36, Lane 513, Rui Guang Road, Nei Hu Dist.,
Taipei 114, 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, IC 5107A

A2LA Accredited No.: 2732.01



Report No.: W6M21411-14612-C-1

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: wtls@wtls-lab.com

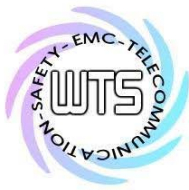
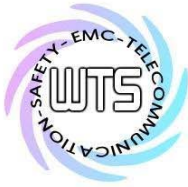


TABLE OF CONTENTS

| | | |
|----------|---|-----------|
| 1 | GENERAL INFORMATION | 2 |
| 1.1 | NOTES..... | 2 |
| 1.2 | TESTING LABORATORY | 3 |
| 1.2.1 | Location | 3 |
| 1.2.2 | Details of accreditation status | 3 |
| 1.3 | DETAILS OF APPROVAL HOLDER..... | 3 |
| 1.5 | GENERAL INFORMATION OF TEST ITEM | 4 |
| 1.6 | TEST STANDARDS..... | 5 |
| 2 | TECHNICAL TEST | 6 |
| 2.1 | SUMMARY OF TEST RESULTS | 6 |
| 2.2 | TEST ENVIRONMENT | 6 |
| 2.3 | TEST EQUIPMENT LIST | 7 |
| 2.4 | GENERAL TEST PROCEDURE | 9 |
| 3 | TEST RESULTS (ENCLOSURE) | 11 |
| 3.1 | PEAK OUTPUT POWER (TRANSMITTER) | 12 |
| 3.2 | EQUIVALENT ISOTROPIC RADIATED POWER..... | 15 |
| 3.3 | RF EXPOSURE COMPLIANCE REQUIREMENTS | 15 |
| 3.4 | TRANSMITTER RADIATED EMISSIONS IN RESTRICTED BANDS..... | 16 |
| 3.5 | SPURIOUS EMISSIONS (TX) | 17 |
| 3.6 | RADIATED EMISSION ON THE BAND EDGE | 21 |
| 3.7 | MINIMUM 6 dB BANDWIDTH | 23 |
| 3.8 | PEAK POWER SPECTRAL DENSITY | 26 |
| 3.9 | RADIATED EMISSION FROM DIGITAL PART | 29 |
| 3.10 | POWER LINE CONDUCTED EMISSION | 30 |
| | APPENDIX..... | 33 |



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

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.

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.

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:

November 18, 2014

Kent Lin

Date

WTS-Lab.

Name

Signature

Technical responsibility for area of testing:

November 18, 2014

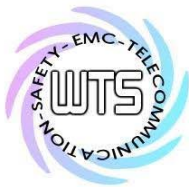
Kevin Wang

Date

WTS

Name

Signature



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

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, IC 5107A



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: INVENTEC BESTA CO., LTD.

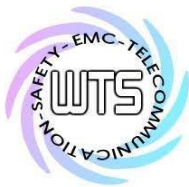
Street: 10FL., No. 36, Lane 513, Rui Guang Road, Nei Hu Dist.,

City: Taipei 114,

Country: Taiwan, R.O.C.

Telephone: 02-8797-2999

Fax: 02-8797-3521



Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

1.4 Application details

Date of receipt of test item:

November 07, 2014

Date of test:

from November 10, 2014 to November 18, 2014

1.5 General information of Test item

Type of test item:

Digital Wireless Receiver

Model Number:

DMR-101

Brand Name:

BESTA, SCEPTRE (for Multi-listing model number)

Multi-listing model number:

SE4200, SE4210, SE4220

Photos:

see Appendix

Technical data

Frequency band:

2.4 GHz – 2.4835 GHz

Frequency (ch 1):

2.403 GHz

Frequency (ch 13):

2.439 GHz

Frequency (ch 26):

2.478 GHz

Number of Channels:

26

Operation modes:

Half-duplex

Modulation Type:

GFSK

Fixed point-to-point operation:

☐ Yes / ☒ No

Type of Antenna:

Metal Stamping Antenna

Antenna gain:

2.5 dBi

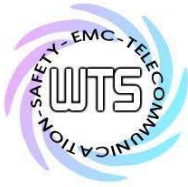
Power supply:

Adaptor (Input: 100~240V~50/60Hz, 0.2A

Output: 5.0V, 1.0A)

Emission designator:

4M15G1D



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21411-14612-C-1
FCC ID: U6OCA913

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"/> |

Transmitter

Unom

Power (ch 1): Conducted: 14.85 dBm
Power (ch 13): Conducted: 14.46 dBm
Power (ch 26): Conducted: 14.23 dBm

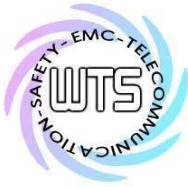
Manufacturer: (if applicable)

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

Additional information: ./.

1.6 Test standards

Technical standard : FCC RULES PART 15 SUBPART C § 15.247 (2013-10)



Registration number: W6M21411-14612-C-1
FCC ID: U6OCA913

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

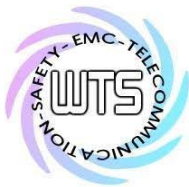
Temperature: 23 °C

Relative humidity content: 20 ... 75 %

Air pressure: 86 ... 103 kPa

Power supply: Adaptor (Input: 100~240V~50/60Hz, 0.2A
Output: 5.0V, 1.0A)

Extreme conditions parameters: ./.



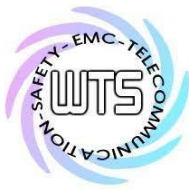
Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

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 | 2014/9/2 | 2015/9/1 |
| ETSTW-CE 003 | AC POWER SOURCE | APS-9102 | D161137 | GW | Function Test | |
| 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 | 2014/7/8 | 2015/7/7 |
| ETSTW-CE 016 | TWO-LINE V-NETWORK | ENV216 | 100050 | R&S | 2013/10/28 | 2014/10/27 |
| ETSTW-RE 004 | EMI TEST RECEIVER | ESI 40 | 832427/004 | R&S | 2014/9/2 | 2015/9/1 |
| ETSTW-RE 005 | EMI TEST RECEIVER | ESVS10 | 843207/020 | R&S | 2014/9/2 | 2015/9/1 |
| 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 | 2014/9/26 | 2015/9/25 |
| ETSTW-RE 027 | Passive Loop Antenna | 6512 | 00034563 | ETS-Lindgren | 2014/7/01 | 2015/6/30 |
| ETSTW-RE 030 | Double-Ridged Guide Horn Antenna | 3117 | 00035224 | EMCO | 2014/2/25 | 2015/2/24 |
| ETSTW-RE 045 | ESA-E SERIES SPECTRUM ANALYZER | E4404B | MY45111242 | Agilent | Pre-test Use | |
| ETSTW-RE 049 | TRILOG Super Broadband test Antenna | VULB 9160 | 9160-3185 | Schwarzbeck | 2014/2/18 | 2015/2/17 |
| ETSTW-RE 050 | Attenuator 10dB | 50HF-010-1 | None | JFW | 2014/3/3 | 2015/3/2 |
| ETSTW-RE 051 | Attenuator 6dB | 50HF-006-1 | None | JFW | 2014/3/3 | 2015/3/2 |
| ETSTW-RE 053 | Attenuator 3dB | 50HF-003-1 | None | JFW | 2014/3/3 | 2015/3/2 |
| ETSTW-RE 055 | SPECTRUM ANALYZER | FSU 26 | 200074 | R&S | 2014/6/05 | 2015/6/04 |
| ETSTW-RE 060 | Attenuator 30dB | 5015-30 | F651012z-01 | ATM | 2014/3/3 | 2015/3/2 |
| ETSTW-RE 062 | Amplifier Module | CHC 2 | None | KMIC | 2013/11/27 | 2014/11/26 |
| ETSTW-RE 064 | Bluetooth Test Set | MT8852B-042 | 6K00005709 | Anritsu | Function Test | |
| ETSTW-RE 069 | Double-Ridged Guide Horn Antenna | 3117 | 00069377 | EMCO | Function Test | |
| ETSTW-RE 072 | CELL SITE TEST SET | 8921A | 3339A00375 | HP | 2014/9/26 | 2015/9/25 |
| ETSTW-RE 088 | SOLID STATE AMPLIFIER | KMA180265A01 | 99057 | KMIC | 2014/9/26 | 2015/9/25 |
| ETSTW-RE 099 | DC Block | 50DB-007-1 | None | JFW | 2014/3/3 | 2015/3/2 |
| ETSTW-RE 106 | Humidity Temperature Meter | TES-1366 | 091011113 | TES | 2013/12/04 | 2014/12/03 |
| ETSTW-RE 111 | TRILOG Super Broadband test Antenna | VULB 9160 | 9160-3309 | Schwarz beck | 2013/12/27 | 2014/12/26 |
| ETSTW-RE 112 | AC POWER SOURCE | TFC-1005 | None | T-Power | Function test | |
| ETSTW-RE 115 | 2.4GHz Notch Filter | N0124411 | 473874 | MICROWAVE CIRCUITS | 2014/1/10 | 2015/1/09 |
| ETSTW-RE 120 | RF Player | MP9200 | MP9210-111022 | ADIVIC | Function test | |
| ETSTW-RE 122 | SIGNAL GENERATOR | SMF100A | 102149 | R&S | 2014/6/11 | 2015/6/10 |
| ETSTW-RE 125 | 5GHz Notch filter | 5NSL11-5200/E221.3-O/O | 1 | K&L Microwave | 2014/8/12 | 2015/8/11 |

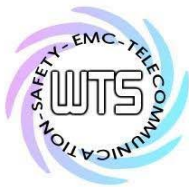


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

| | | | | | | |
|-----------------|--------------------------------------|--|--------------|-------------------|------------------|------------|
| ETSTW-RE 126 | 5GHz Notch filter | 5NSL11-5800/E221.3-O/O | 1 | K&L Microwave | 2014/8/12 | 2015/8/11 |
| ETSTW-RE 127 | RF Switch Box | RFS-01 | None | WTS | 2014/3/3 | 2015/3/2 |
| ETSTW-RE 128 | 5.3GHz Notch filter | N0153001 | SN487233 | Microwave Circits | 2014/8/12 | 2015/8/11 |
| ETSTW-RE 129 | 5.5GHz Notch filter | N0555984 | SN487234 | Microwave Circits | 2014/8/12 | 2015/8/11 |
| ETSTW-RE 130 | Handheld RF Spectrum Analyzer | N9340A | CN0147000204 | Agilent | Pre-test Use | |
| ETSTW-GSM 002 | Universal Radio Communication Tester | CMU 200 | 109439 | R&S | 2014/9/26 | 2015/9/25 |
| ETSTW-GSM 019 | Band Reject Filter | WRCTF824/849-822/851-40 /12+9SS | 3 | WI | 2014/1/10 | 2015/1/09 |
| ETSTW-GSM 020 | Band Reject Filter | WRCD1747/1748-1743/1752-32/5SS | 1 | WI | 2014/1/10 | 2015/1/09 |
| ETSTW-GSM 021 | Band Reject Filter | WRCD1879.5/1880.5-1875.5/1884.5-32/5SS | 3 | WI | 2014/1/10 | 2015/1/09 |
| ETSTW-GSM 022 | Band Reject Filter | WRCT901.9/903.1-904.25-50/8SS | 1 | WI | 2014/1/10 | 2015/1/09 |
| ETSTW-GSM 023 | Power Divider | 4901.19.A | None | SUHNER | 2014/9/17 | 2015/9/16 |
| ETSTW-Cable 010 | BNC Cable | 5 M BNC Cable | None | JYE BAO CO.,LTD. | 2014/2/27 | 2015/2/26 |
| 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. | 2014/2/27 | 2015/2/26 |
| ETSTW-Cable 016 | BNC Cable | Switch Box | B Cable 1 | Schwarz beck | 2014/2/27 | 2015/2/26 |
| ETSTW-Cable 017 | BNC Cable | X Cable | B Cable 2 | Schwarz beck | 2014/2/27 | 2015/2/26 |
| ETSTW-Cable 018 | BNC Cable | Y Cable | B Cable 3 | Schwarz beck | 2014/2/27 | 2015/2/26 |
| ETSTW-Cable 019 | BNC Cable | Z Cable | B Cable 4 | Schwarz beck | 2014/2/27 | 2015/2/26 |
| ETSTW-Cable 022 | N TYPE Cable | 5006 | 0002 | JYE BAO CO.,LTD. | 2014/2/19 | 2015/2/18 |
| ETSTW-Cable 026 | Microwave Cable | SUCOFLEX 104 | 279075 | HUBER+SUHNER | 2014/3/3 | 2015/3/2 |
| ETSTW-Cable 027 | Microwave Cable | SUCOFLEX 104 | 279083 | HUBER+SUHNER | 2014/3/3 | 2015/3/2 |
| ETSTW-Cable 028 | Microwave Cable | FA147A0015M2020 | 30064-2 | UTIFLEX | 2014/9/26 | 2015/9/25 |
| ETSTW-Cable 029 | Microwave Cable | FA147A0015M2020 | 30064-3 | UTIFLEX | 2014/9/26 | 2015/9/25 |
| ETSTW-Cable 030 | Microwave Cable | SUCOFLEX 104 (S_Cable 9) | 279067 | HUBER+SUHNER | 2014/3/3 | 2015/3/2 |
| ETSTW-Cable 031 | Microwave Cable | SUCOFLEX 104 (S_Cable 10) | 238092 | HUBER+SUHNER | 2013/11/27 | 2014/11/26 |
| ETSTW-Cable 043 | Microwave Cable | SUCOFLEX 104 | 317576 | HUBER+SUHNER | 2013/11/27 | 2014/11/26 |
| ETSTW-Cable 047 | Microwave Cable | SUCOFLEX 104 | 325518 | HUBER+SUHNER | 2013/11/27 | 2014/11/26 |
| ETSTW-Cable 053 | N TYPE To SMA Cable | RG142 | None | JYE BAO CO.,LTD. | 2014/2/19 | 2015/2/18 |
| ETSTW-Cable 058 | Microwave Cable | SUCOFLEX 104 | none | HUBER+SUHNER | 2014/2/19 | 2015/2/18 |
| WTSTW-SW 002 | EMI TEST SOFTWARE | EZ EMC | None | Farad | Version ETS-03A1 | |



2.4 General Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-2014 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 C63.4-2014 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 |

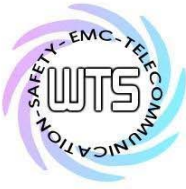
The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m (non metallic table) and arranged according to ANSI C63.4-2014 6.3.1. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to the frequency specified as follows:

- (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.



Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

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:

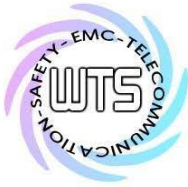
Average = Peak + Duty Factor

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 C63.4-2014 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.

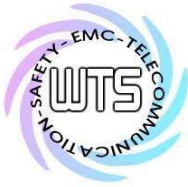


Registration number: W6M21411-14612-C-1
FCC ID: U6OCA913

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): 15.209 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Band Edge Measurement | 15.247(d) | <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"/> |
| 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 checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Power Line Conducted Emission | 15.207 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

The following is intentionally left blank.



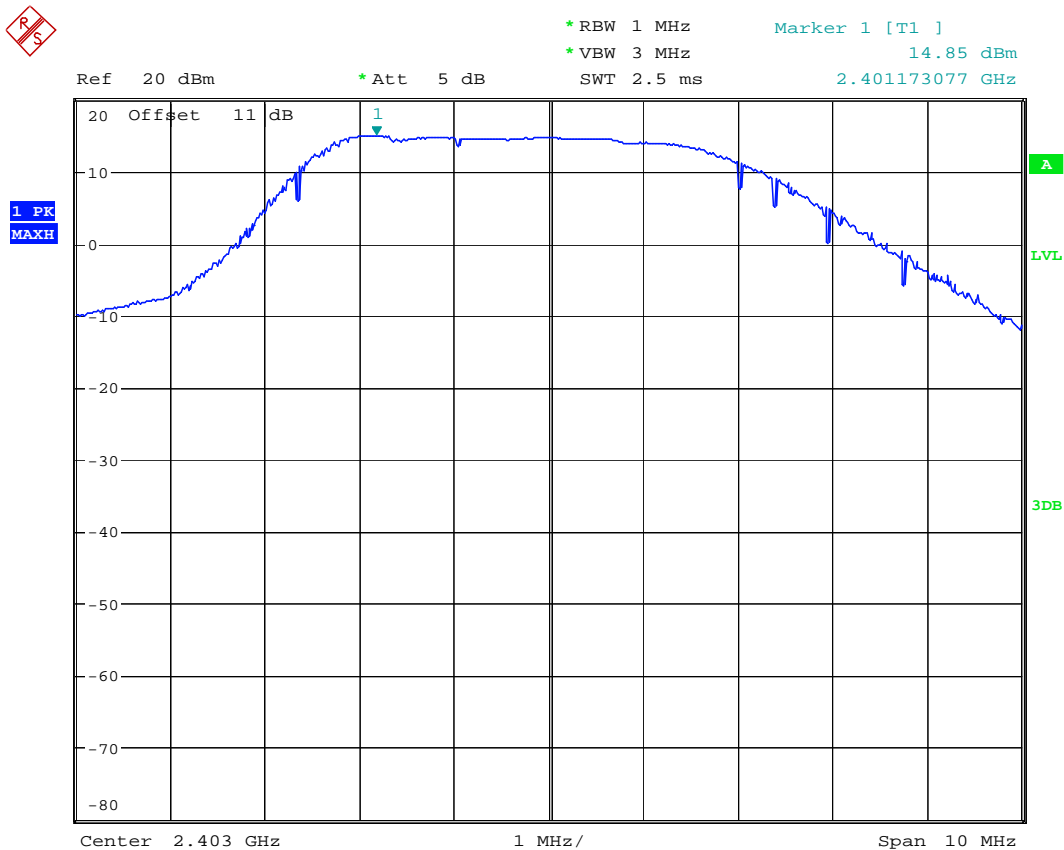
Registration number: W6M21411-14612-C-1
FCC ID: U6OCA913

3.1 Peak Output Power (transmitter)

FCC Rule: 15.247(b)(3)

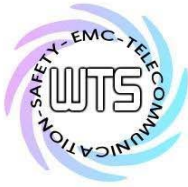
This measurement applies to equipment with an integral antenna and to equipment with an antenna connector and equipped with an antenna as declared by the applicant.

The power was measured with modulation (declared by the applicant).



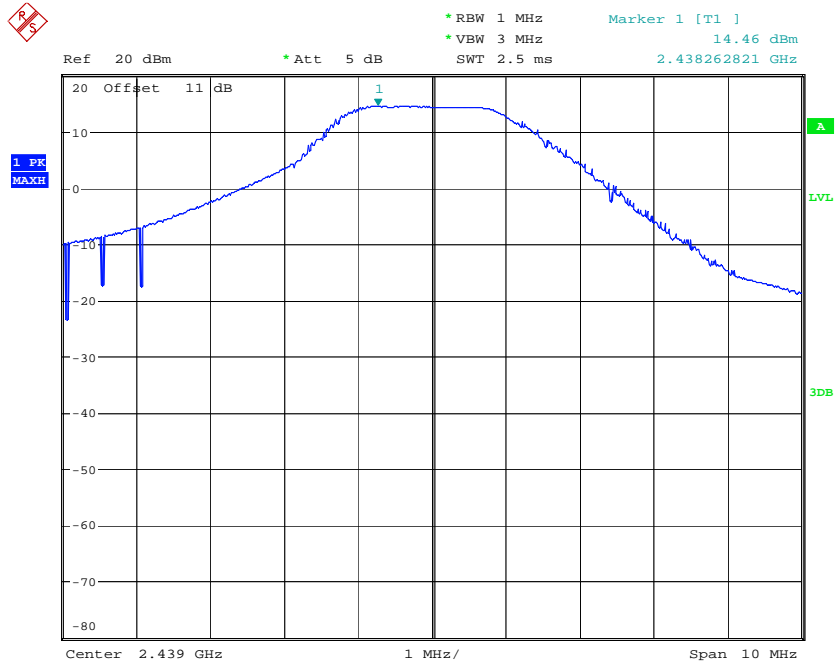
MAX OUTPUT POWER 2403MHZ

Date: 11.NOV.2014 16:33:31

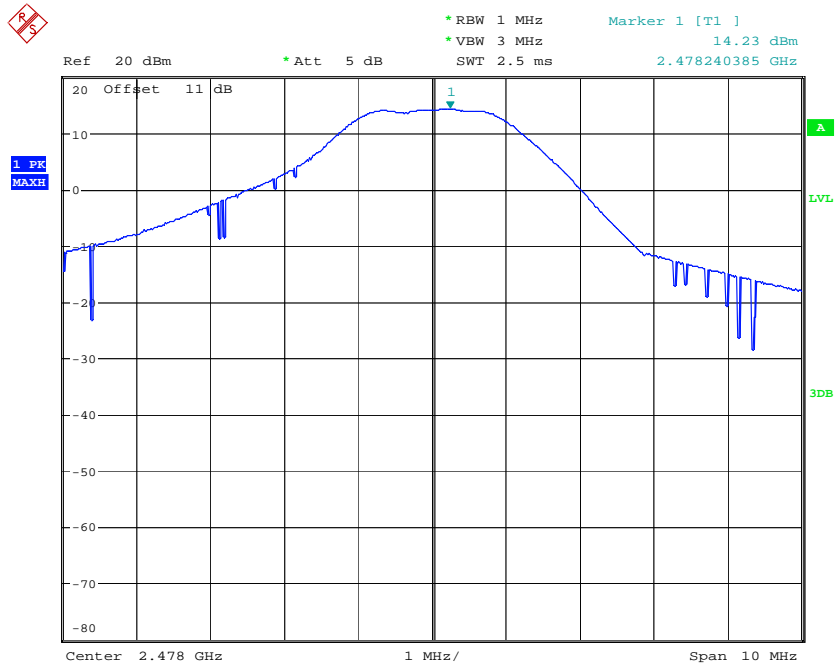


Worldwide Testing Services(Taiwan) Co., Ltd.

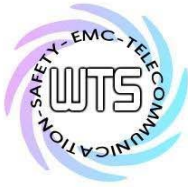
Registration number: W6M21411-14612-C-1
FCC ID: U6OCA913



MAX OUTPUT POWER 2439MHZ
Date: 11.NOV.2014 16:34:44



MAX OUTPUT POWER 2478MHZ
Date: 11.NOV.2014 16:35:41



Worldwide Testing Services(Taiwan) Co., Ltd.

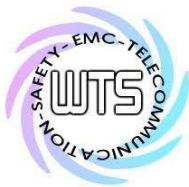
Registration number: W6M21411-14612-C-1
FCC ID: U6OCA913

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



Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

3.2 Equivalent isotropic radiated power

FCC Rule: 15.247(b)(3)

EIRP = max. conducted output power + antenna gain (Directional gain)

EIRP = 14.85 dBm + 2.5 dBi

= 17.35 dBm

Limit: EIRP = +36 dBm for Antenna gain <6dBi

Test equipment used: ETSTW-RE 055

3.3 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

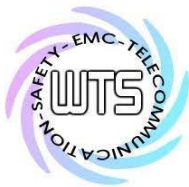
D – Cable Loss

AG – Antenna Gain

| Item | Unit | Value | Remarks |
|------|--------------------|-------------|------------------|
| P | mW | 30.5492 | Peak value |
| D | dB | | |
| AG | dBi | 2.5 | |
| G | | 1.77827941 | Calculated Value |
| R | cm | 20 | Assumed value |
| S | mW/cm ² | 0.010807597 | Calculated value |

Limits:

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



Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

3.4 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:

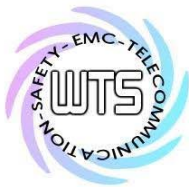
“If the emission is pulsed, modify the unit for continuous operation, use the setting shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.”

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.



Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

3.5 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

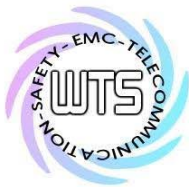
Guidance on Measurement of Digit Transmission Systems:

“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 = $20 \log (\text{dwell time}/100\text{ms})$

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



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

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: DMR-101

Date: 2014/11/14

Mode: 2403MHz

Temperature: 24 °C

Engineer: Roy

Polarization: Horizontal

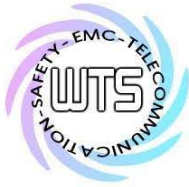
Humidity: 60 %

| Frequency (MHz) | Reading (dBuV) | Detector | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|-----------------|----------------|----------|-------------|-----------------|----------------|-------------|---------------------|----------------|
| 589.8396 | 5.97 | peak | 23.07 | 29.04 | 46.00 | -16.96 | 160 | 100 |
| 762.8456 | 5.88 | peak | 25.45 | 31.33 | 46.00 | -14.67 | 100 | 100 |

| Frequency (MHz) | Reading(dBuV) | | Factor (dB) Corr. | Result (dBuV/m) | | Limit (dBuV/m) | | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|-----------------|---------------|-------|-------------------|-----------------|-------|----------------|-------|-------------|---------------------|----------------|
| | Peak | Ave. | | Peak | Ave. | Peak | Ave. | | | |
| 2352.7050 | 71.63 | 43.04 | -4.94 | 66.69 | 38.10 | 74.00 | 54.00 | -15.90 | 100 | 100 |
| 2364.7290 | 69.16 | 41.88 | -4.87 | 64.29 | 37.01 | 74.00 | 54.00 | -16.99 | 165 | 100 |
| 2376.7530 | 74.13 | 43.32 | -4.80 | 69.33 | 38.52 | 74.00 | 54.00 | -15.48 | 75 | 100 |
| 4801.6030 | 49.12 | --- | 0.27 | 49.39 | --- | 74.00 | 54.00 | -24.61 | 190 | 100 |
| 7214.4290 | 47.01 | --- | 3.83 | 50.84 | --- | 74.00 | 54.00 | -23.16 | 255 | 100 |
| 9608.7170 | 45.17 | 33.78 | 7.93 | 53.10 | 41.71 | 74.00 | 54.00 | -12.29 | 245 | 100 |
| 12015.0000 | 33.63 | --- | 12.69 | 46.32 | --- | 74.00 | 54.00 | -27.68 | 55 | 100 |

Polarization: Vertical

| Frequency (MHz) | Reading (dBuV) | Detector | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|-----------------|----------------|----------|-------------|-----------------|----------------|-------------|---------------------|----------------|
| 31.9440 | 21.49 | peak | 13.26 | 34.75 | 40.00 | -5.25 | 240 | 100 |
| 92.2044 | 17.20 | peak | 9.29 | 26.49 | 43.50 | -17.01 | 50 | 100 |



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

| Frequency (MHz) | Reading (dBuV) | | Factor (dB) Corr. | Result (dBuV/m) | | Limit (dBuV/m) | | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|--------------------|-------------------|-------|----------------------|--------------------|-------|-------------------|-------|----------------|------------------------|-------------------|
| | Peak | Ave. | | Peak | Ave. | Peak | Ave. | | | |
| 2340.6810 | 57.56 | 42.37 | -5.01 | 52.55 | 37.36 | 74.00 | 54.00 | -16.64 | 100 | 100 |
| 2352.7050 | 73.91 | 42.67 | -4.94 | 68.97 | 37.73 | 74.00 | 54.00 | -16.27 | 150 | 100 |
| 2364.7290 | 72.28 | 42.33 | -4.87 | 67.41 | 37.46 | 74.00 | 54.00 | -16.54 | 45 | 100 |
| 2376.7530 | 74.71 | 42.89 | -4.80 | 69.91 | 38.09 | 74.00 | 54.00 | -15.91 | 225 | 100 |
| 2521.0420 | 56.38 | 42.03 | -4.30 | 52.08 | 37.73 | 74.00 | 54.00 | -16.27 | 60 | 100 |
| 4806.1580 | 59.57 | 42.54 | 0.29 | 59.86 | 42.83 | 74.00 | 54.00 | -11.17 | 330 | 100 |
| 7214.4290 | 44.90 | --- | 3.83 | 48.73 | --- | 74.00 | 54.00 | -25.27 | 140 | 100 |
| 9612.0000 | 36.55 | --- | 7.93 | 44.48 | --- | 74.00 | 54.00 | -29.52 | 205 | 100 |
| 12017.0340 | 42.22 | 33.20 | 12.71 | 54.93 | 45.91 | 74.00 | 54.00 | -8.09 | 90 | 100 |

Mode: 2439MHz

Polarization: Horizontal

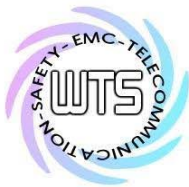
| Frequency (MHz) | Reading (dBuV) | Detector | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|--------------------|-------------------|----------|----------------|--------------------|-------------------|----------------|------------------------|-------------------|
| 37.7754 | 9.82 | peak | 13.62 | 23.44 | 40.00 | -16.56 | 30 | 100 |
| 593.7274 | 5.02 | peak | 23.12 | 28.14 | 46.00 | -17.86 | 110 | 100 |

| Frequency (MHz) | Reading(dBuV) | | Factor (dB) Corr. | Result (dBuV/m) | | Limit (dBuV/m) | | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|--------------------|---------------|-------|----------------------|--------------------|-------|-------------------|-------|----------------|------------------------|-------------------|
| | Peak | Ave. | | Peak | Ave. | Peak | Ave. | | | |
| 2388.7780 | 57.76 | 40.58 | -4.73 | 53.03 | 35.85 | 74.00 | 54.00 | -18.15 | 150 | 100 |
| 4873.7480 | 49.58 | --- | 0.45 | 50.03 | --- | 74.00 | 54.00 | -23.97 | 275 | 100 |
| 7318.6370 | 43.98 | --- | 3.65 | 47.63 | --- | 74.00 | 54.00 | -26.37 | 220 | 100 |
| 9756.0000 | 35.41 | --- | 8.26 | 43.67 | --- | 74.00 | 54.00 | -30.33 | 160 | 100 |
| 12195.0000 | 33.01 | --- | 13.71 | 46.72 | --- | 74.00 | 54.00 | -27.28 | 290 | 100 |

Polarization: Vertical

| Frequency (MHz) | Reading (dBuV) | Detector | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|--------------------|-------------------|----------|----------------|--------------------|-------------------|----------------|------------------------|-------------------|
| 31.9440 | 21.60 | peak | 13.26 | 34.86 | 40.00 | -5.14 | 170 | 100 |
| 92.2044 | 16.39 | peak | 9.29 | 25.68 | 43.50 | -17.82 | 245 | 100 |

| Frequency (MHz) | Reading (dBuV) | | Factor (dB) Corr. | Result (dBuV/m) | | Limit (dBuV/m) | | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|--------------------|-------------------|-------|----------------------|--------------------|-------|-------------------|-------|----------------|------------------------|-------------------|
| | Peak | Ave. | | Peak | Ave. | Peak | Ave. | | | |
| 4878.2950 | 57.66 | 40.34 | 0.47 | 58.13 | 40.81 | 74.00 | 54.00 | -13.19 | 175 | 100 |
| 7318.6370 | 52.32 | 40.11 | 3.65 | 55.97 | 43.76 | 74.00 | 54.00 | -10.24 | 135 | 100 |
| 9756.0000 | 39.27 | --- | 8.26 | 47.53 | --- | 74.00 | 54.00 | -26.47 | 140 | 100 |
| 12195.0000 | 34.07 | --- | 13.71 | 47.78 | --- | 74.00 | 54.00 | -26.22 | 35 | 100 |



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

Mode: 2478MHz

Polarization: Horizontal

| Frequency (MHz) | Reading (dBuV) | Detector | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|-----------------|----------------|----------|-------------|-----------------|----------------|-------------|---------------------|----------------|
| 440.1603 | 6.94 | peak | 19.98 | 26.92 | 46.00 | -19.08 | 160 | 100 |
| 943.6272 | 6.24 | peak | 27.89 | 34.13 | 46.00 | -11.87 | 205 | 100 |

| 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. | | | |
| 2503.0060 | 69.47 | 40.67 | -4.33 | 65.14 | 36.34 | 74.00 | 54.00 | -17.66 | 80 | 100 |
| 2515.0300 | 72.14 | 40.89 | -4.31 | 67.83 | 36.58 | 74.00 | 54.00 | -17.42 | 290 | 100 |
| 2527.0540 | 74.45 | 41.15 | -4.29 | 70.16 | 36.86 | 74.00 | 54.00 | -17.14 | 215 | 100 |
| 4953.9080 | 46.51 | --- | 0.84 | 47.35 | --- | 74.00 | 54.00 | -26.65 | 190 | 100 |
| 7434.0000 | 42.06 | --- | 3.93 | 45.99 | --- | 74.00 | 54.00 | -28.01 | 70 | 100 |
| 9912.0000 | 34.88 | --- | 8.51 | 43.39 | --- | 74.00 | 54.00 | -30.61 | 135 | 100 |
| 12390.0000 | 33.33 | --- | 14.46 | 47.79 | --- | 74.00 | 54.00 | -26.21 | 50 | 100 |

Polarization: Vertical

| Frequency (MHz) | Reading (dBuV) | Detector | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|-----------------|----------------|----------|-------------|-----------------|----------------|-------------|---------------------|----------------|
| 31.9440 | 21.52 | peak | 13.26 | 34.78 | 40.00 | -5.22 | 60 | 100 |
| 92.2044 | 17.08 | peak | 9.29 | 26.37 | 43.50 | -17.13 | 255 | 100 |

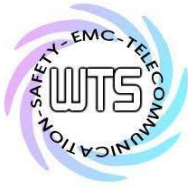
| Frequency (MHz) | Reading (dBuV) | | Factor (dB) | Result (dBuV/m) | | Limit (dBuV/m) | | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|-----------------|----------------|-------|-------------|-----------------|-------|----------------|-------|-------------|---------------------|----------------|
| | Peak | Ave. | Corr. | Peak | Ave. | Peak | Ave. | | | |
| 2503.0060 | 69.87 | 40.82 | -4.33 | 65.54 | 36.49 | 74.00 | 54.00 | -17.51 | 155 | 100 |
| 2515.0300 | 70.78 | 40.91 | -4.31 | 66.47 | 36.60 | 74.00 | 54.00 | -17.40 | 120 | 100 |
| 2527.0540 | 71.17 | 40.96 | -4.29 | 66.88 | 36.67 | 74.00 | 54.00 | -17.33 | 135 | 100 |
| 2551.1020 | 60.21 | 40.54 | -4.24 | 55.97 | 36.30 | 74.00 | 54.00 | -17.70 | 240 | 100 |
| 2575.1500 | 57.07 | 40.05 | -4.19 | 52.88 | 35.86 | 74.00 | 54.00 | -18.14 | 265 | 100 |
| 4956.1750 | 53.87 | 37.97 | 0.86 | 54.73 | 38.83 | 74.00 | 54.00 | -15.17 | 25 | 100 |
| 7434.0000 | 41.85 | --- | 3.93 | 45.78 | --- | 74.00 | 54.00 | -28.22 | 110 | 100 |
| 9912.0000 | 34.45 | --- | 8.51 | 42.96 | --- | 74.00 | 54.00 | -31.04 | 120 | 100 |
| 12390.0000 | 32.76 | --- | 14.46 | 47.22 | --- | 74.00 | 54.00 | -26.78 | 45 | 100 |

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 = ± 3.68 dB, 1-18 GHz = ± 5.37 dB, 18-40 GHz = ± 3.43 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 004, ETSTW-RE 030, ETSTW-RE 111,
ETSTW-RE 088, ETSTW-RE 018

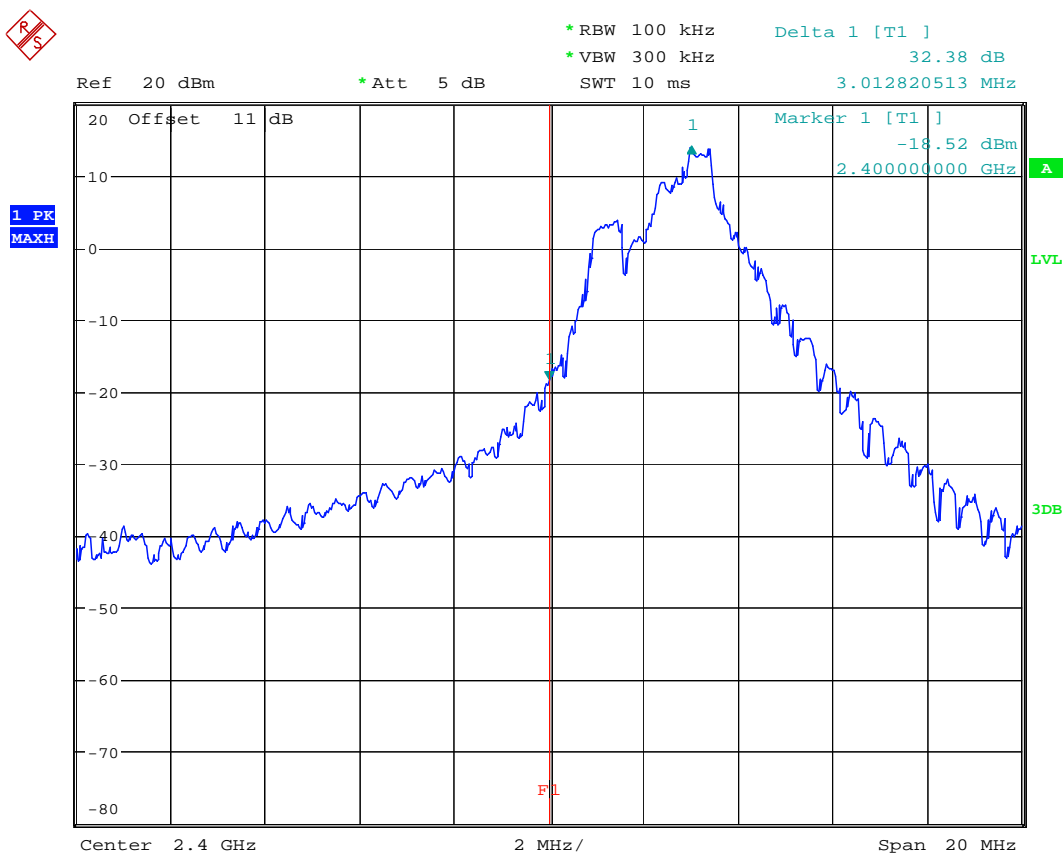


Registration number: W6M21411-14612-C-1
FCC ID: U6OCA913

3.6 Radiated Emission on the band edge

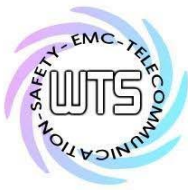
According to FCC rules part 15 subpart C §15.247(d) in any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100 kHz bandwidth within the band that 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.

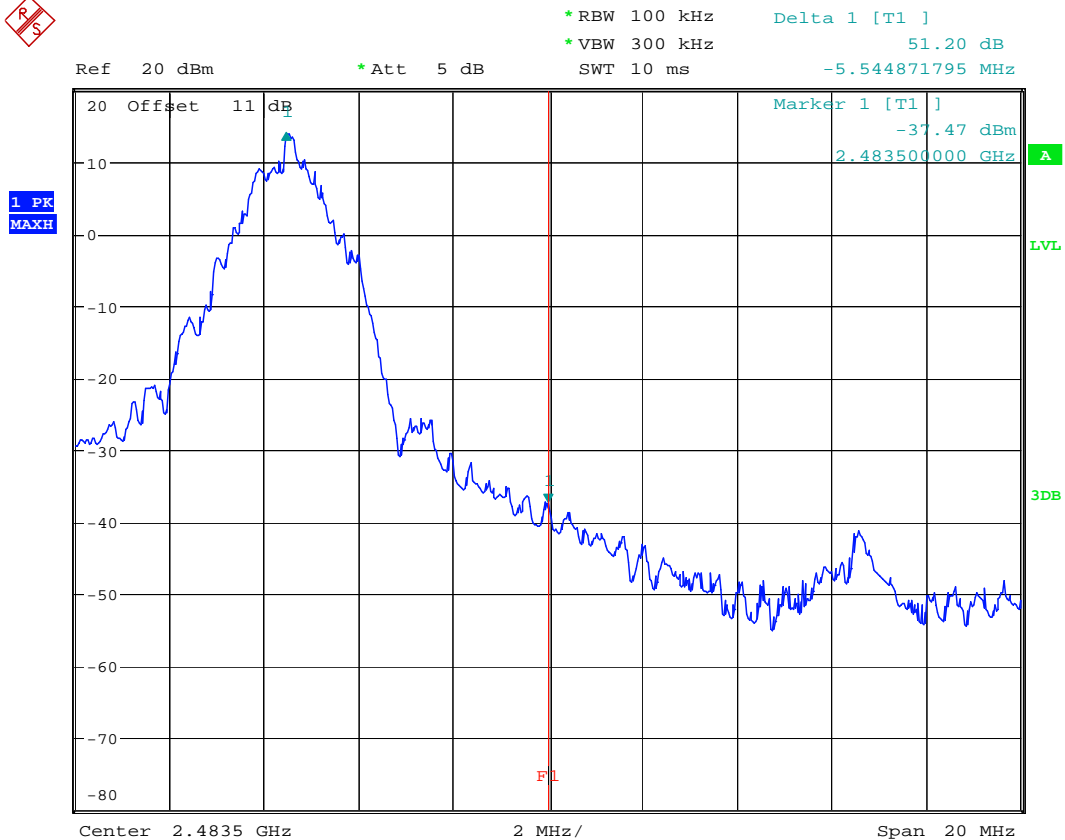


BANDEDGE 2403MHZ

Date: 11.NOV.2014 16:39:27



Registration number: W6M21411-14612-C-1
FCC ID: U6OCA913



BANDEDGE 2478MHZ

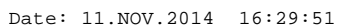
Date: 11.NOV.2014 16:37:59

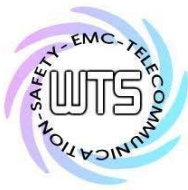
Limit:

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

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

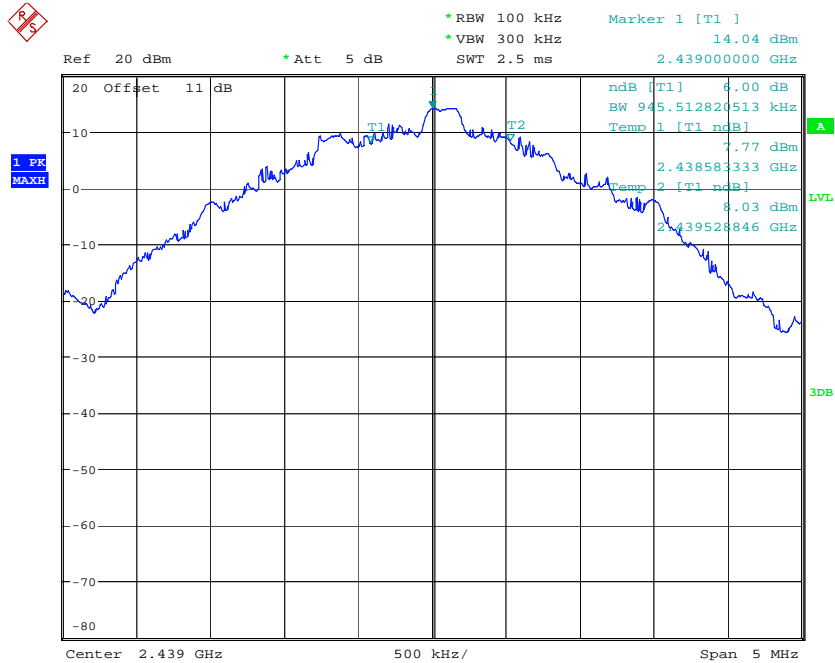
3.7 Minimum 6 dB Bandwidth





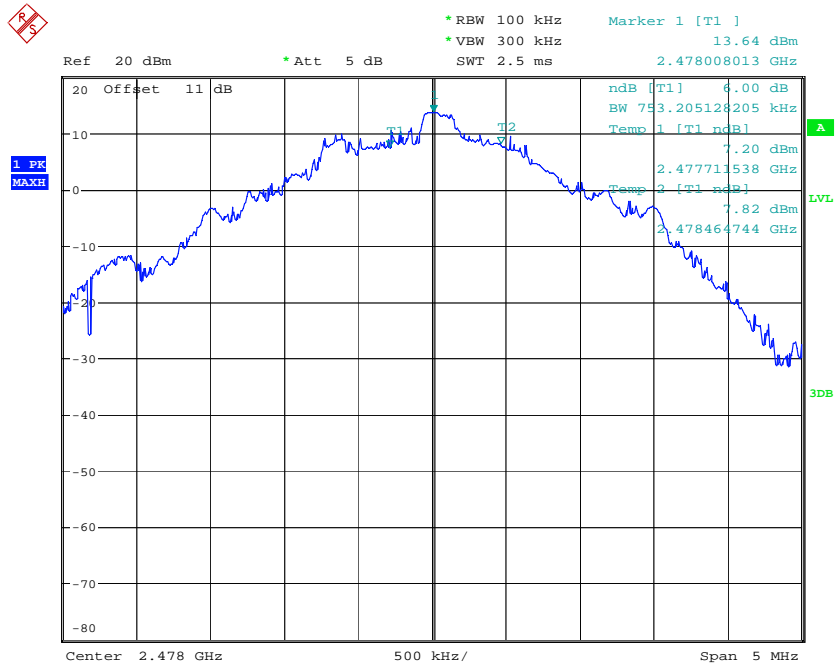
Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21411-14612-C-1
FCC ID: U6OCA913



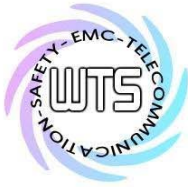
6DB BANDWIDTH 2439MHZ

Date: 11.NOV.2014 16:05:50



6DB BANDWIDTH 2478MHZ

Date: 11.NOV.2014 16:08:11

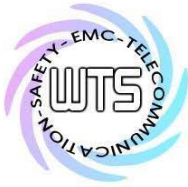


Registration number: W6M21411-14612-C-1
FCC ID: U6OCA913

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

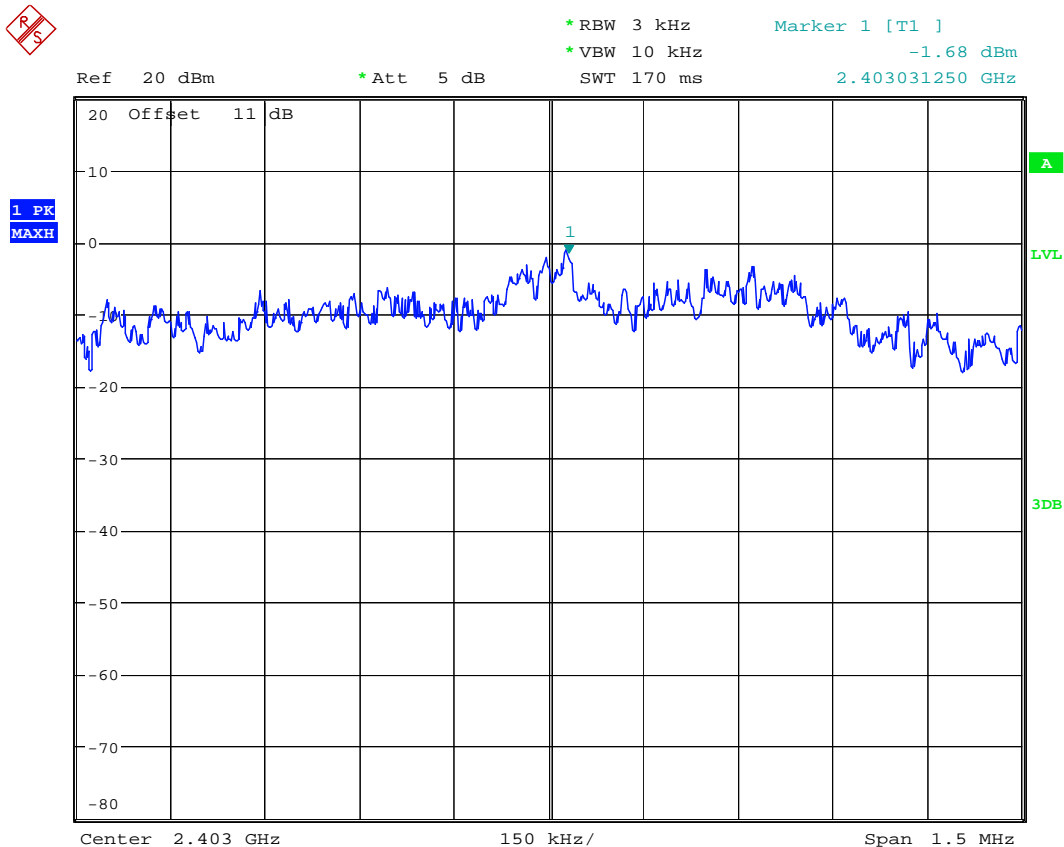


Registration number: W6M21411-14612-C-1
FCC ID: U6OCA913

3.8 Peak Power Spectral Density

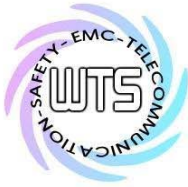
Peak Power Spectral density is a measured at low, middle and high channel.

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.



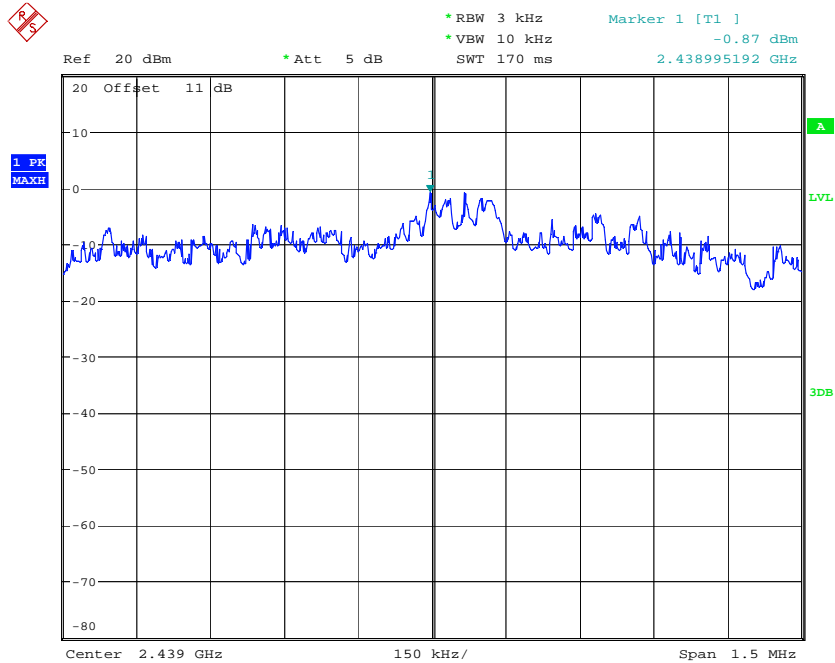
POWER DENSITY 2403MHZ

Date: 11.NOV.2014 16:41:35

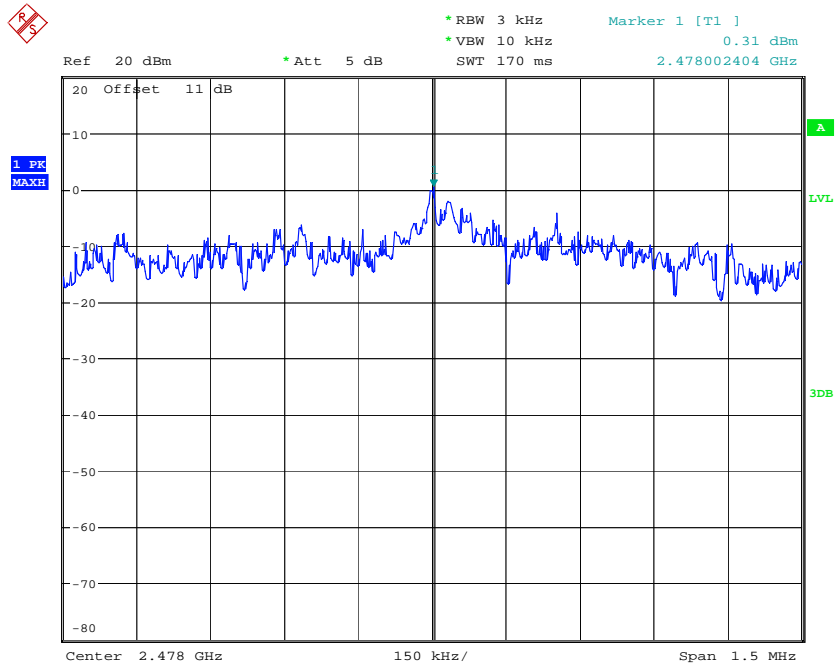


Worldwide Testing Services(Taiwan) Co., Ltd.

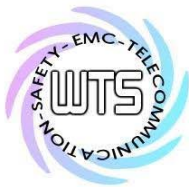
Registration number: W6M21411-14612-C-1
FCC ID: U6OCA913



POWER DENSITY 2439MHZ
Date: 11.NOV.2014 16:42:48



POWER DENSITY 2478MHZ
Date: 11.NOV.2014 16:43:30



Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

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: W6M21411-14612-C-1

FCC ID: U6OCA913

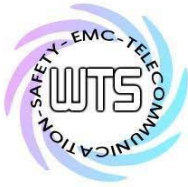
3.9 Radiated Emission from Digital Part

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 055, ETSTW-RE 064, ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 030
ETSTW-RE 111

Explanation: The test results are listed in the separated test report no.: W6M21411-14612-P-15B



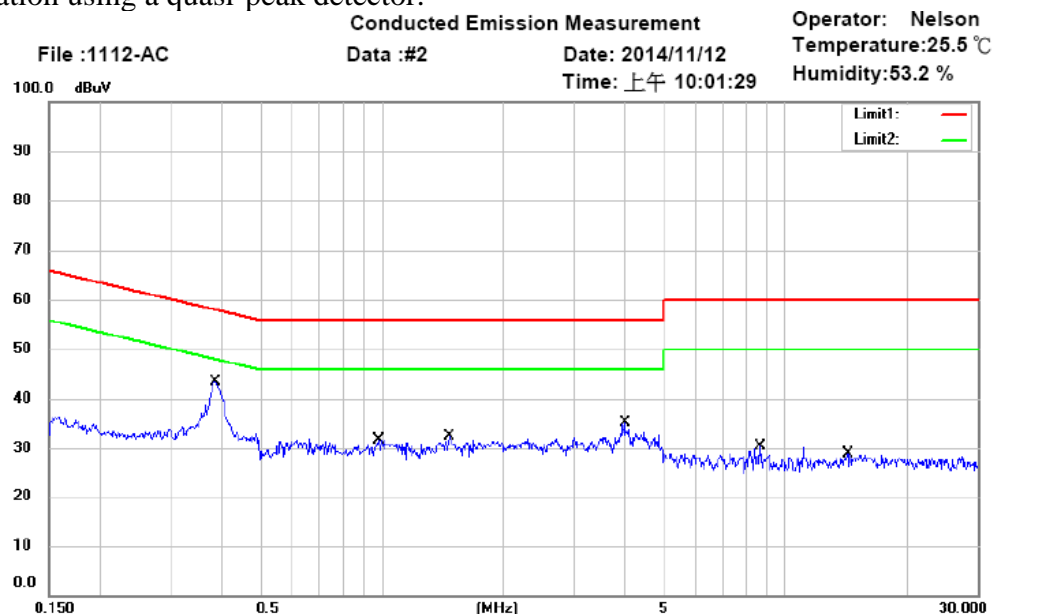
Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

3.10 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.



Site : Chamber_03

Condition : FCC Part 15 Class B Conduction (QP)

EUT : W6M21411-14612

M/N: DMR-101

Test Mode :

Note :

Phase: N

Power : 120 Va.c.

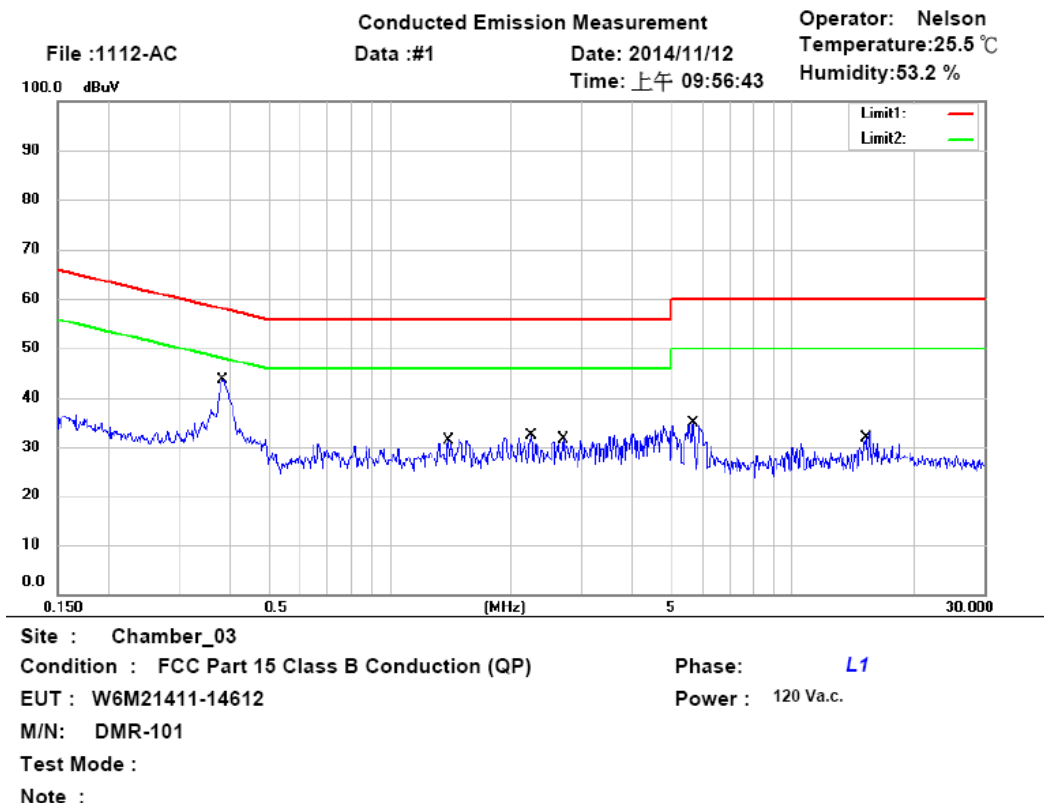
| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corrected factor(dB) | Result (dBuV) | Limit (dBuV) | Margin (dB) | Comment |
|-----|-----------------|----------------|----------|----------------------|---------------|--------------|-------------|---------|
| | 0.3855 | 30.62 | QP | 9.77 | 40.39 | 58.16 | -17.77 | |
| * | 0.3855 | 27.48 | AVG | 9.77 | 37.25 | 48.16 | -10.91 | |
| | 0.9815 | 15.24 | QP | 9.80 | 25.04 | 56.00 | -30.96 | |
| | 0.9815 | 11.54 | AVG | 9.80 | 21.34 | 46.00 | -24.66 | |
| | 1.4698 | 16.51 | QP | 9.81 | 26.32 | 56.00 | -29.68 | |
| | 1.4698 | 12.89 | AVG | 9.81 | 22.70 | 46.00 | -23.30 | |
| | 3.9875 | 19.21 | QP | 9.92 | 29.13 | 56.00 | -26.87 | |
| | 3.9875 | 12.80 | AVG | 9.92 | 22.72 | 46.00 | -23.28 | |
| | 8.6500 | 9.68 | QP | 10.10 | 19.78 | 60.00 | -40.22 | |
| | 8.6500 | 3.64 | AVG | 10.10 | 13.74 | 50.00 | -36.26 | |
| | 14.2250 | 8.16 | QP | 10.15 | 18.31 | 60.00 | -41.69 | |
| | 14.2250 | 3.54 | AVG | 10.15 | 13.69 | 50.00 | -36.31 | |



Worldwide Testing Services(Taiwan) Co., Ltd.

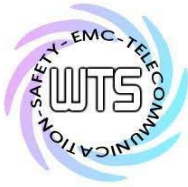
Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913



| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corrected factor(dB) | Result (dBuV) | Limit (dBuV) | Margin (dB) | Comment |
|-----|-----------------|----------------|----------|----------------------|---------------|--------------|-------------|---------|
| | 0.3843 | 30.36 | QP | 9.70 | 40.06 | 58.19 | -18.13 | |
| * | 0.3843 | 20.47 | AVG | 9.70 | 30.17 | 48.19 | -18.02 | |
| | 1.4023 | 12.57 | QP | 9.73 | 22.30 | 56.00 | -33.70 | |
| | 1.4023 | 3.59 | AVG | 9.73 | 13.32 | 46.00 | -32.68 | |
| | 2.2392 | 15.15 | QP | 9.76 | 24.91 | 56.00 | -31.09 | |
| | 2.2392 | 4.32 | AVG | 9.76 | 14.08 | 46.00 | -31.92 | |
| | 2.6960 | 16.16 | QP | 9.78 | 25.94 | 56.00 | -30.06 | |
| | 2.6960 | 5.54 | AVG | 9.78 | 15.32 | 46.00 | -30.68 | |
| | 5.6750 | 9.72 | QP | 9.92 | 19.64 | 60.00 | -40.36 | |
| | 5.6750 | 3.93 | AVG | 9.92 | 13.85 | 50.00 | -36.15 | |
| | 15.0750 | 11.38 | QP | 10.02 | 21.40 | 60.00 | -38.60 | |
| | 15.0750 | 2.57 | AVG | 10.02 | 12.59 | 50.00 | -37.41 | |

- Note: 1. The formula of measured value as: Test Result = Reading + Correction Factor
2. The Correction Factor = Cable Loss + LISN Insertion Loss + Pulse Limit Loss
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 = ± 1.41 dB; Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.
6. Up Line: QP Limit Line, Down Line: Ave Limit Line.

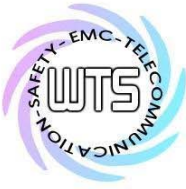


Registration number: W6M21411-14612-C-1
FCC ID: U6OCA913

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 016, ETSTW-CE 006, ETSTW-RE 045

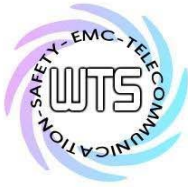


Registration number: W6M21411-14612-C-1
FCC ID: U6OCA913

Appendix

Measurement diagrams

Spurious Emissions radiated



Worldwide Testing Services(Taiwan) Co., Ltd.

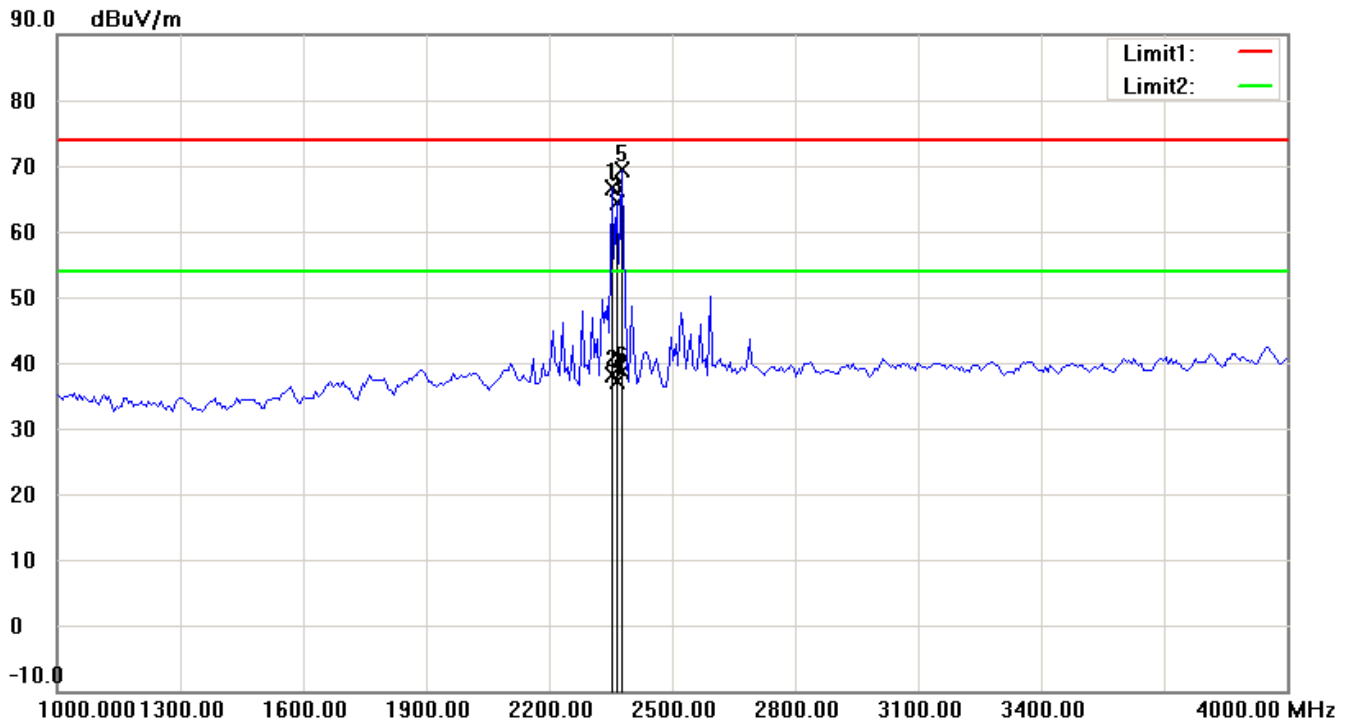
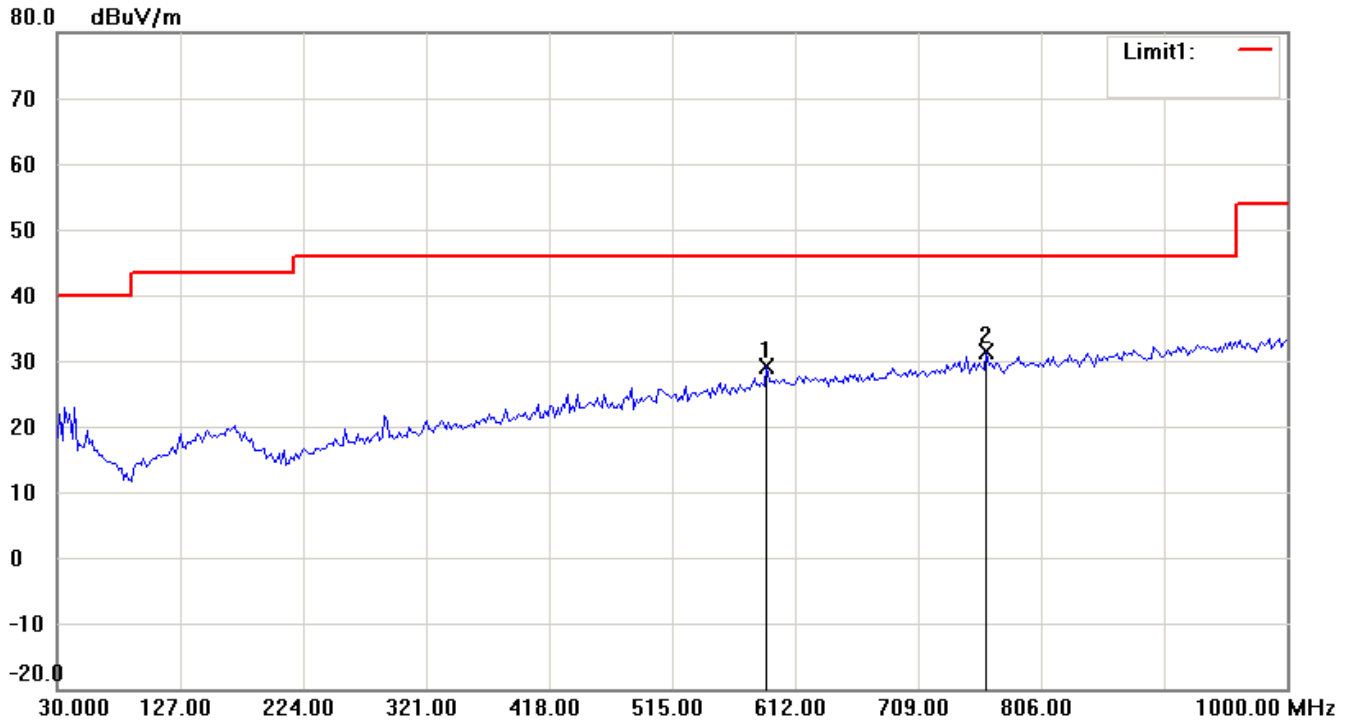
Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

Spurious Emissions _TX

2403 MHz

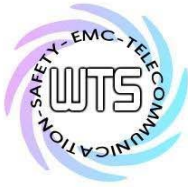
Antenna Polarization H



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

Note:

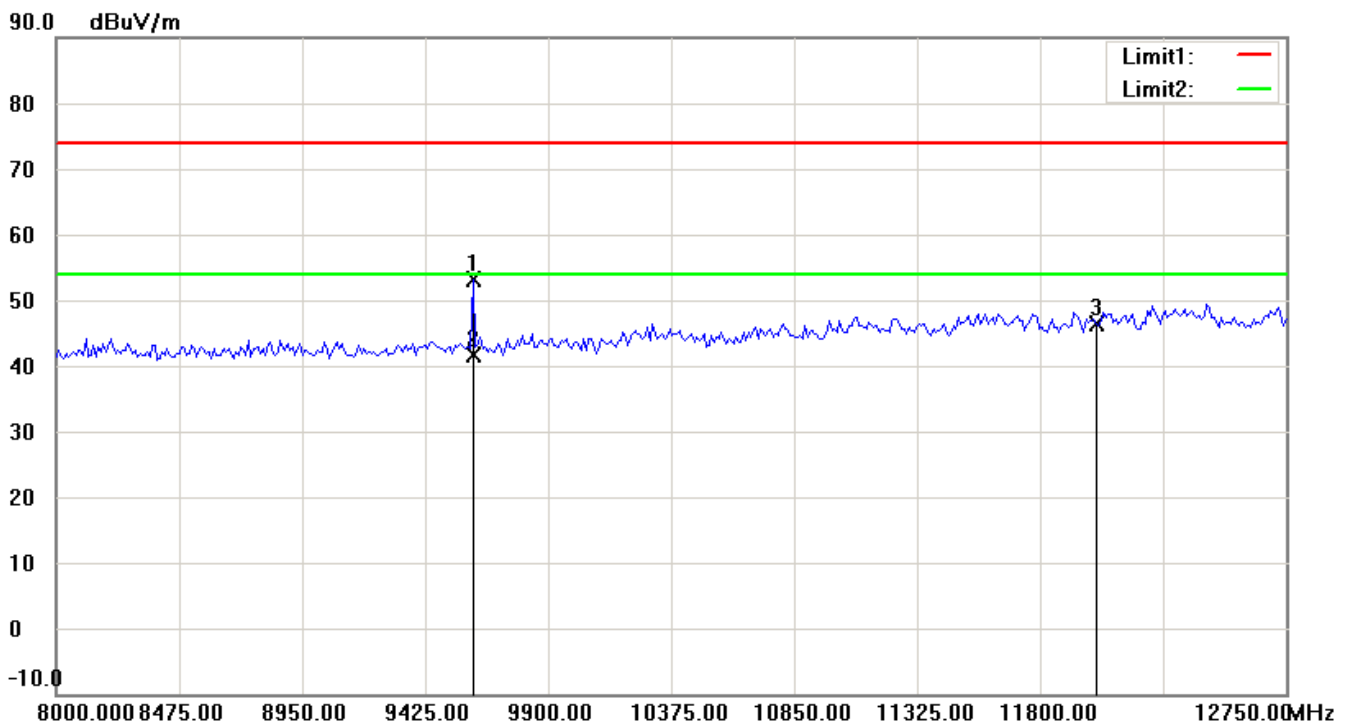
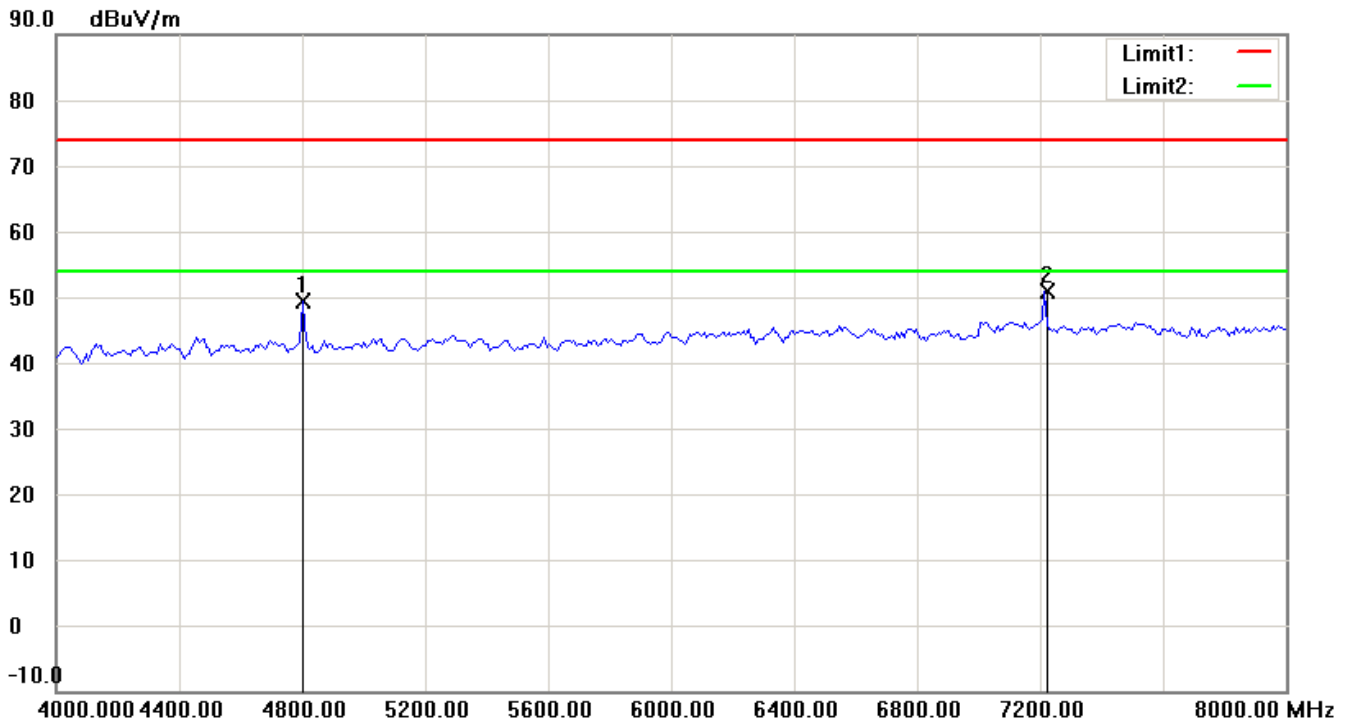
1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification 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: W6M21411-14612-C-1

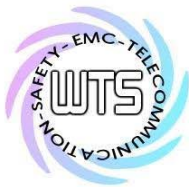
FCC ID: U6OCA913



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

Note:

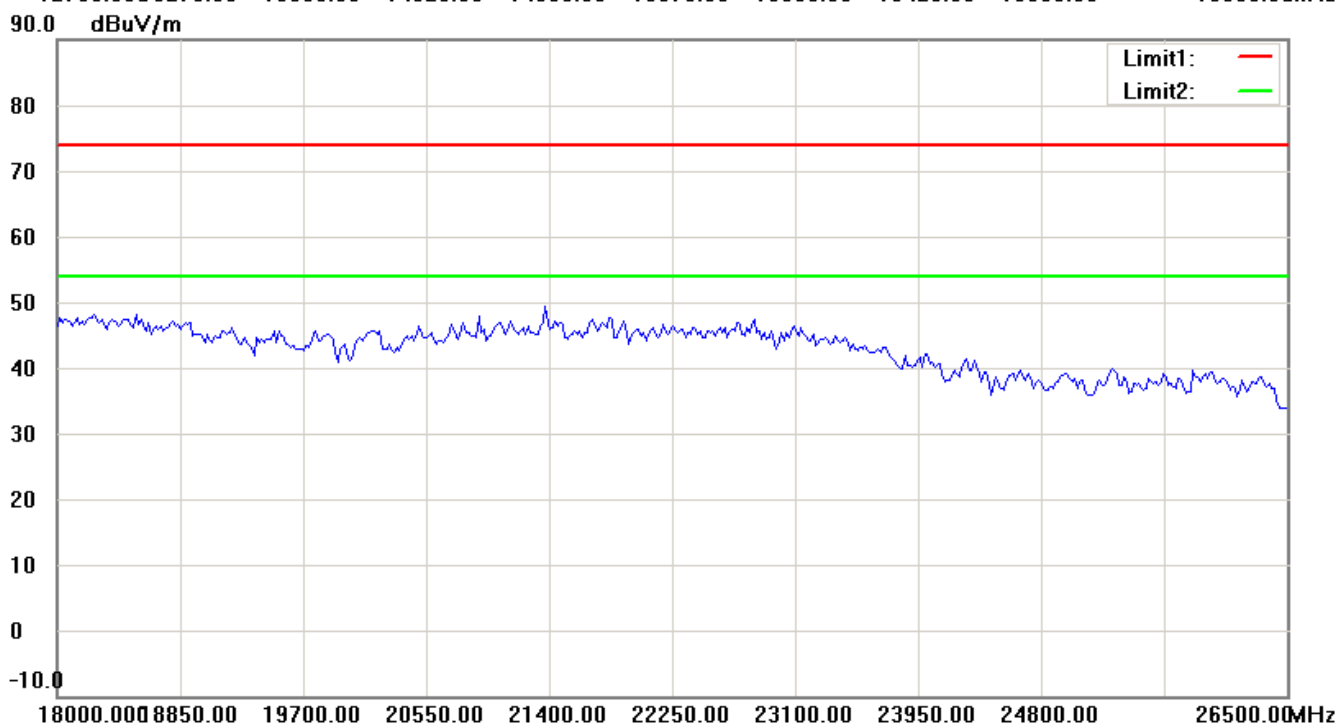
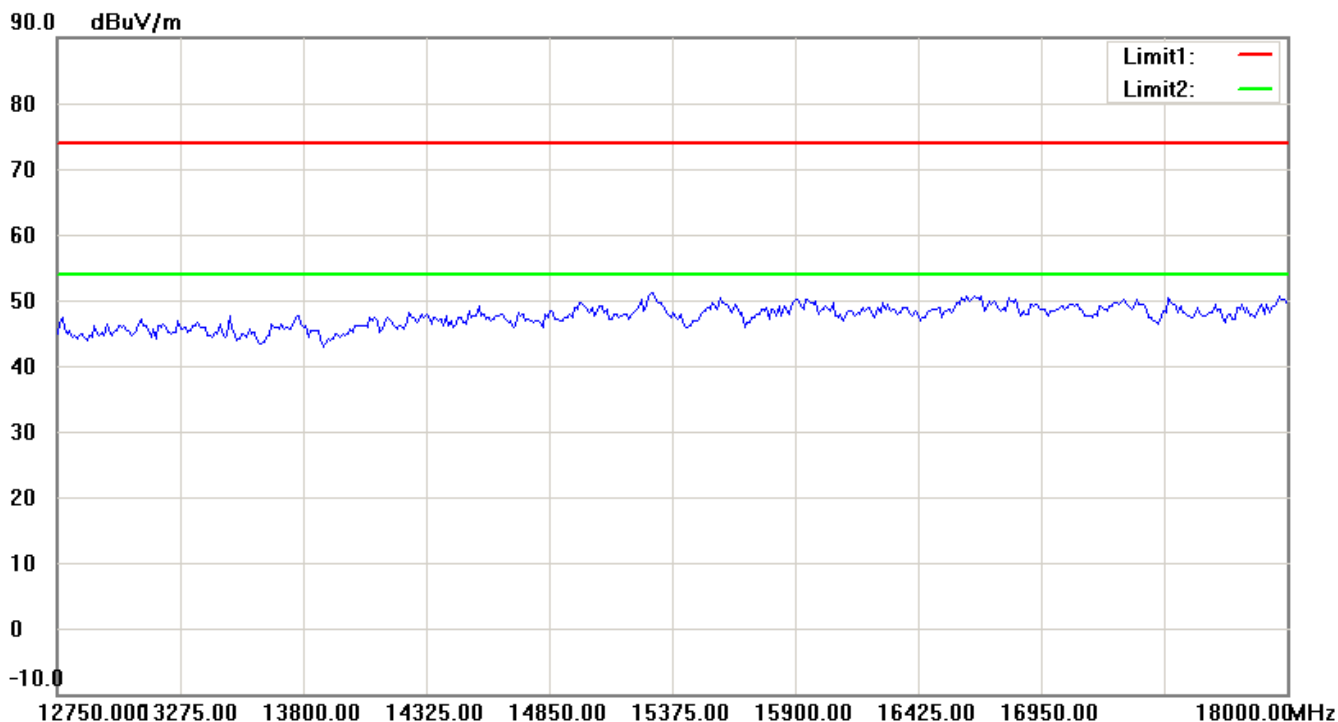
1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification 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: W6M21411-14612-C-1

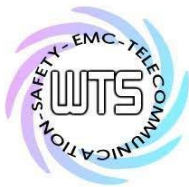
FCC ID: U6OCA913



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.



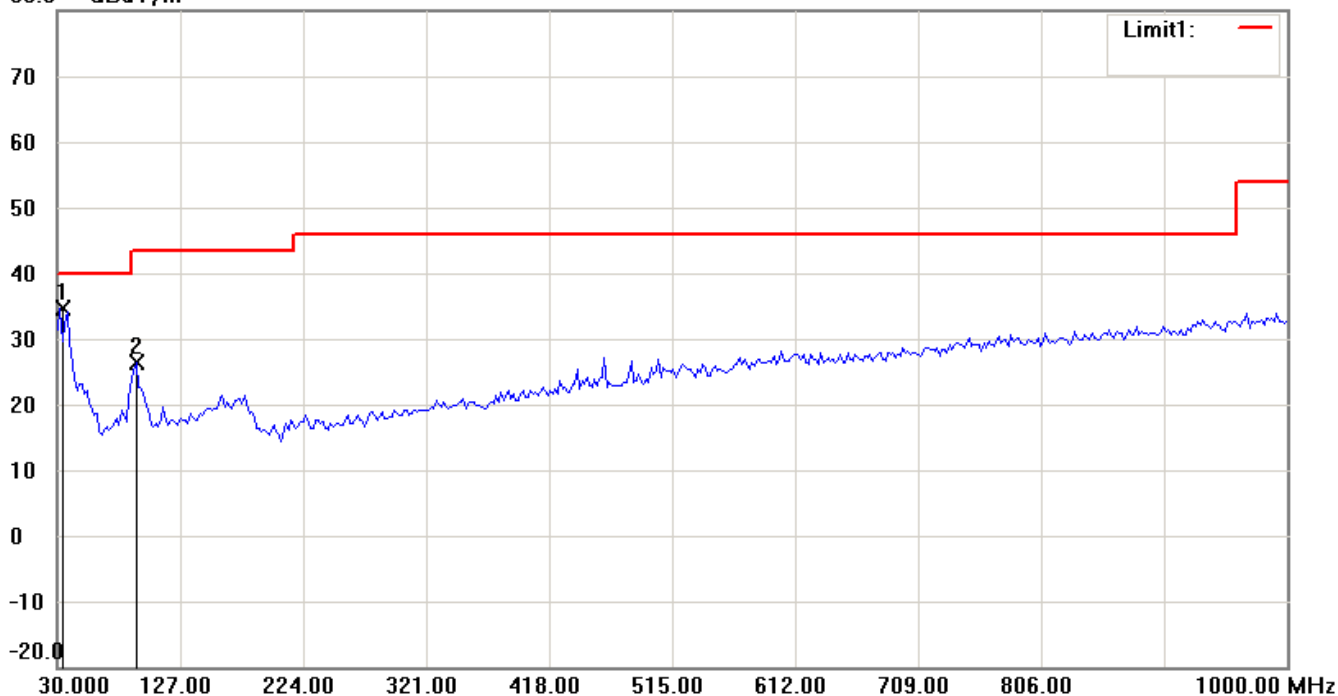
Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21411-14612-C-1

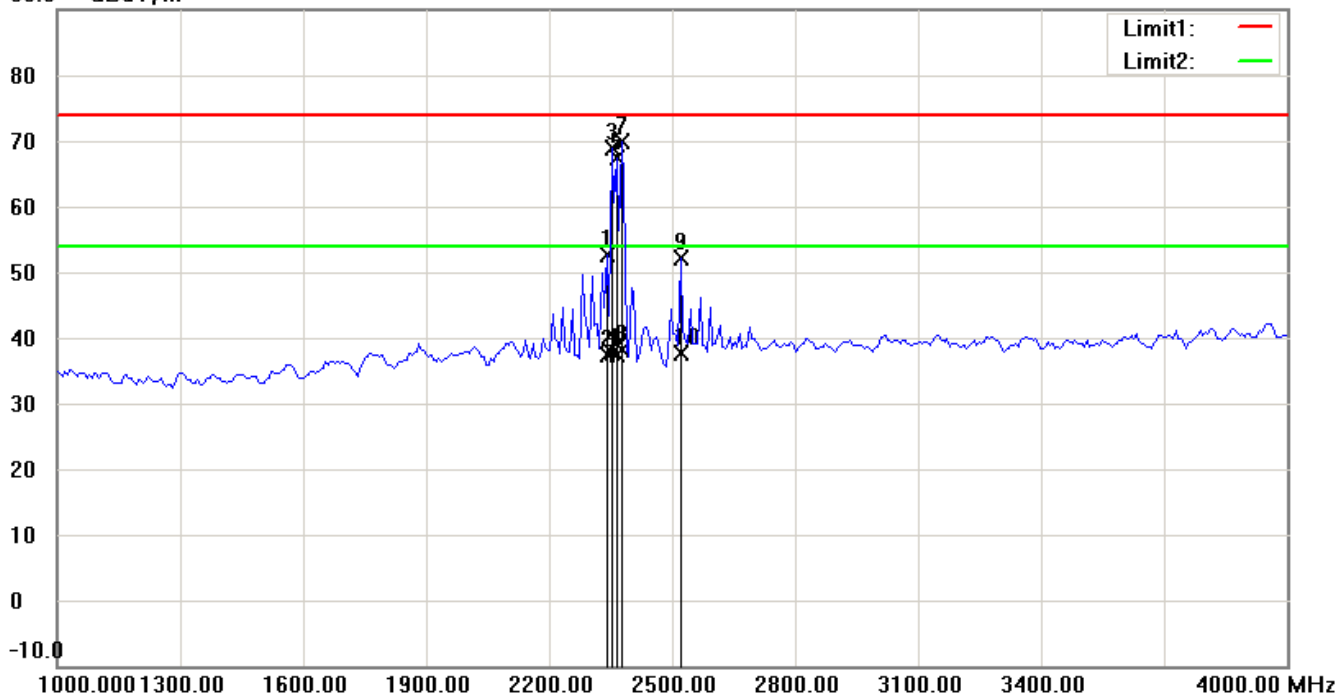
FCC ID: U6OCA913

Antenna Polarization V

80.0 dBuV/m



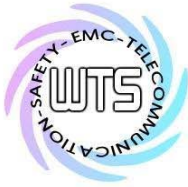
90.0 dBuV/m



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

Note:

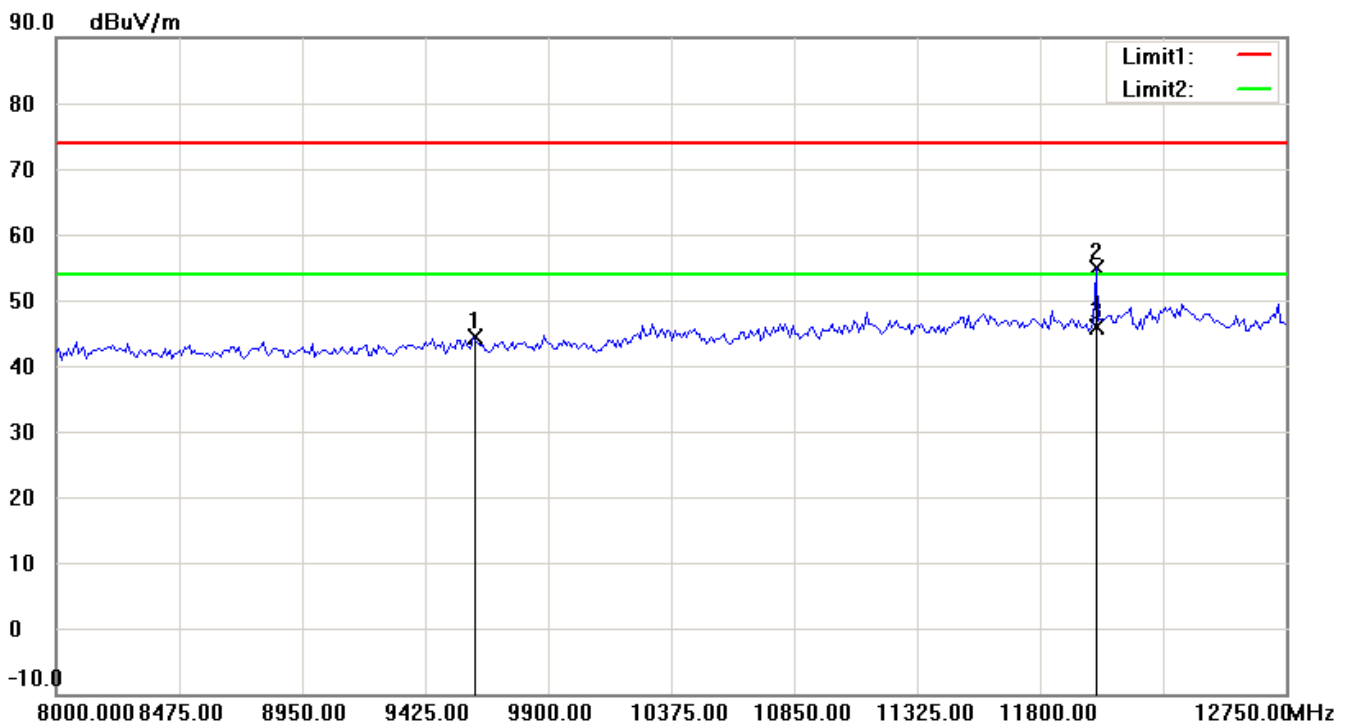
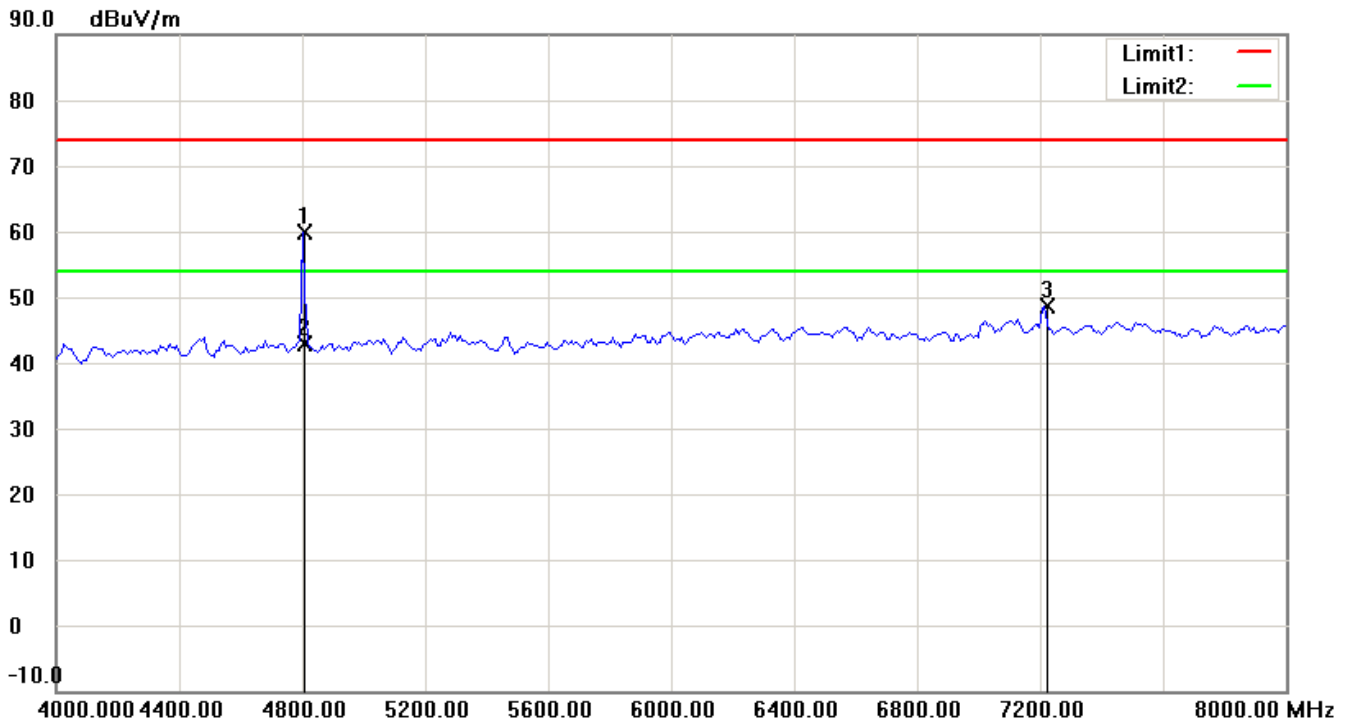
1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification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



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21411-14612-C-1

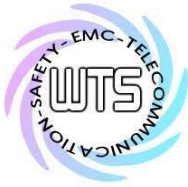
FCC ID: U6OCA913



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

Note:

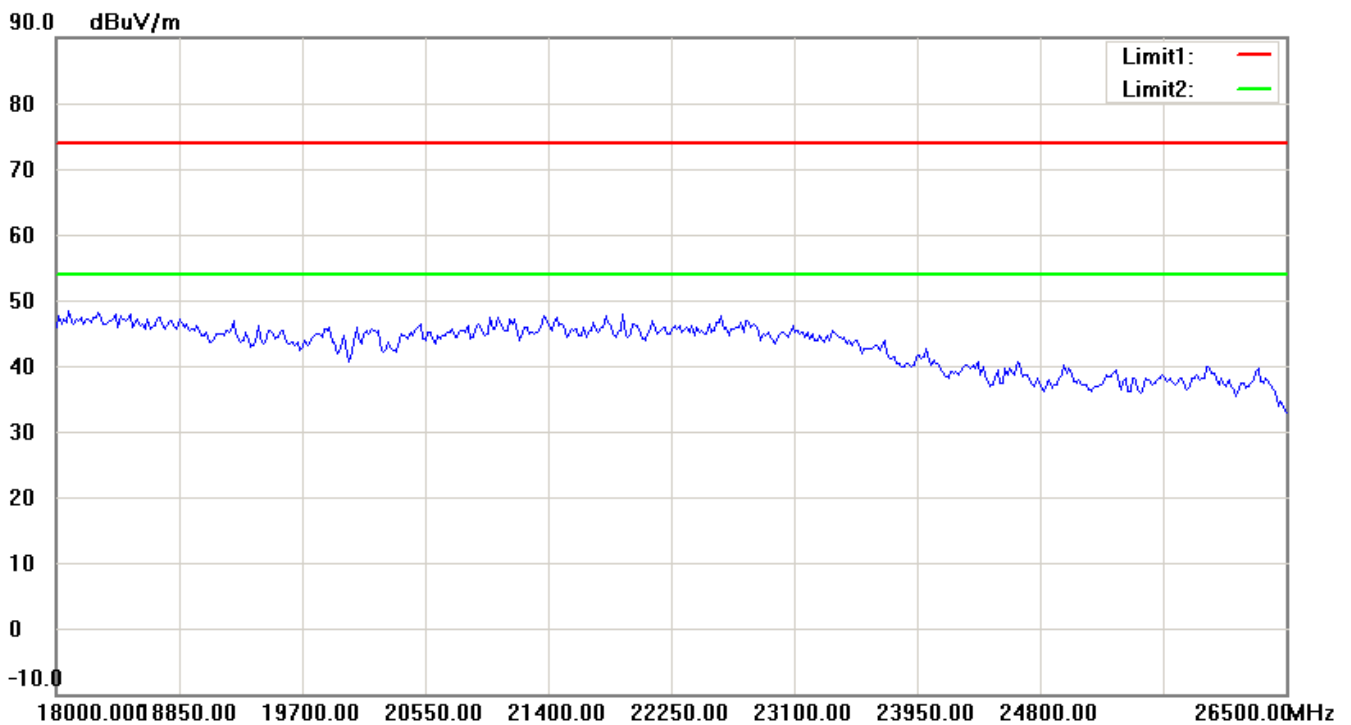
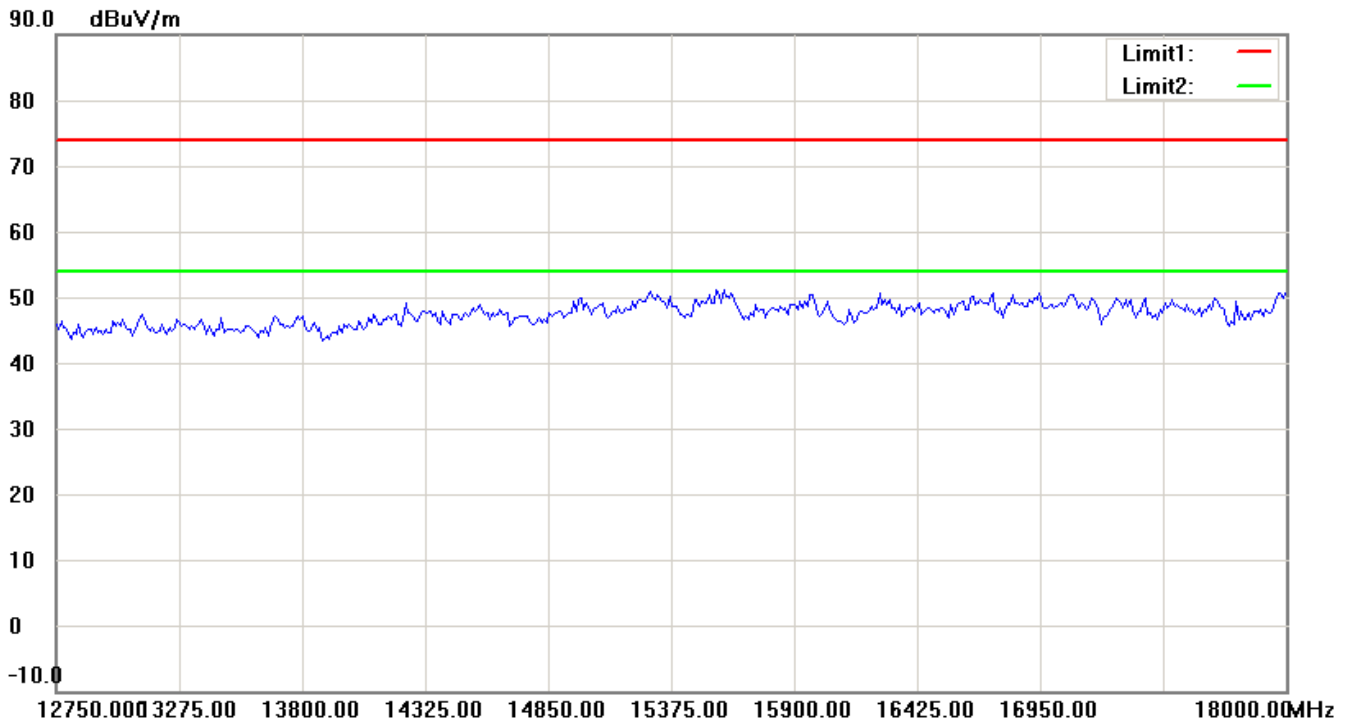
1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification 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: W6M21411-14612-C-1

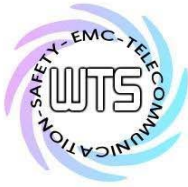
FCC ID: U6OCA913



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.



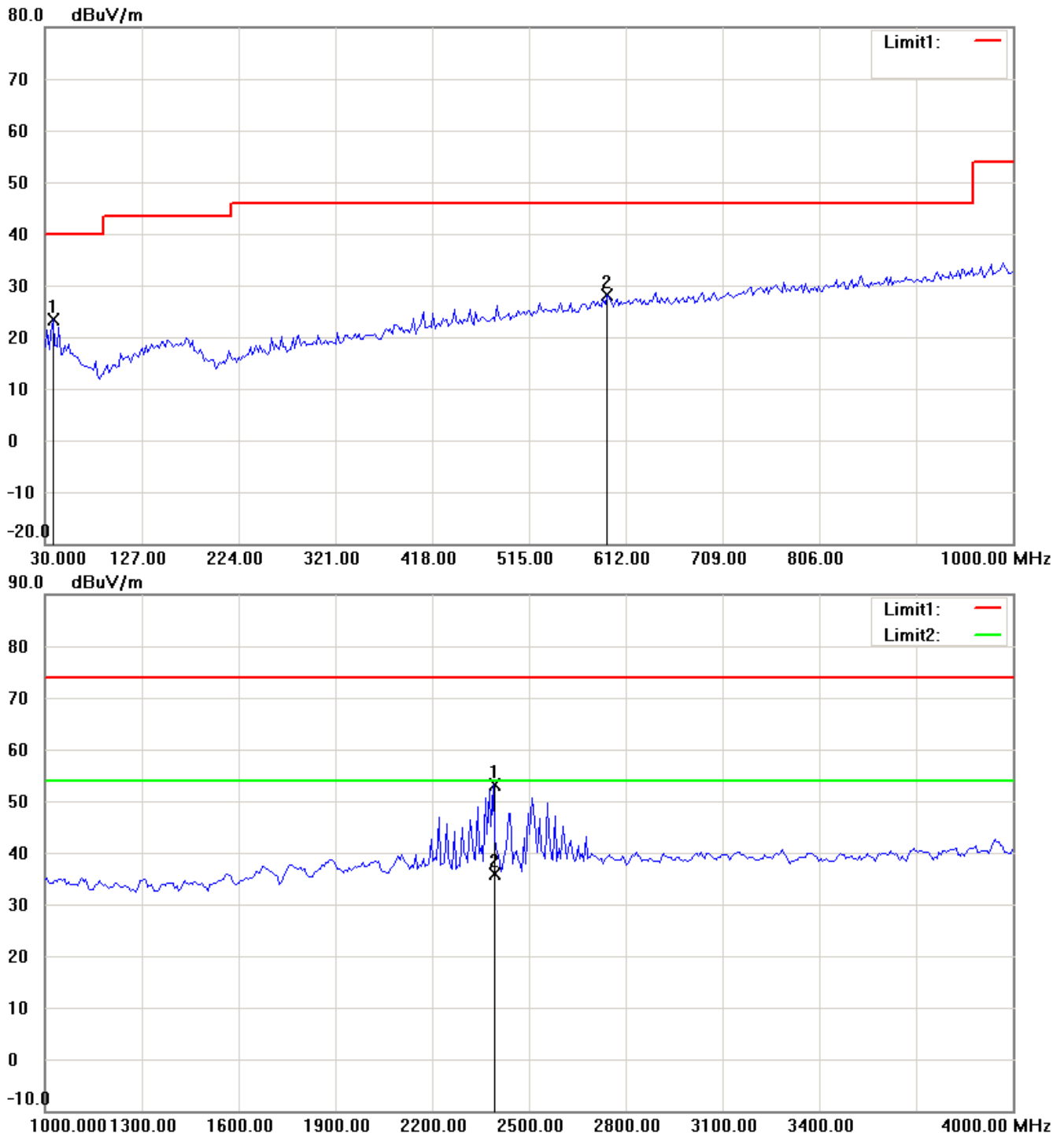
Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

2439MHz

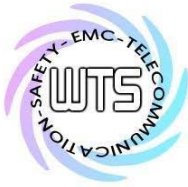
Antenna Polarization H



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

Note:

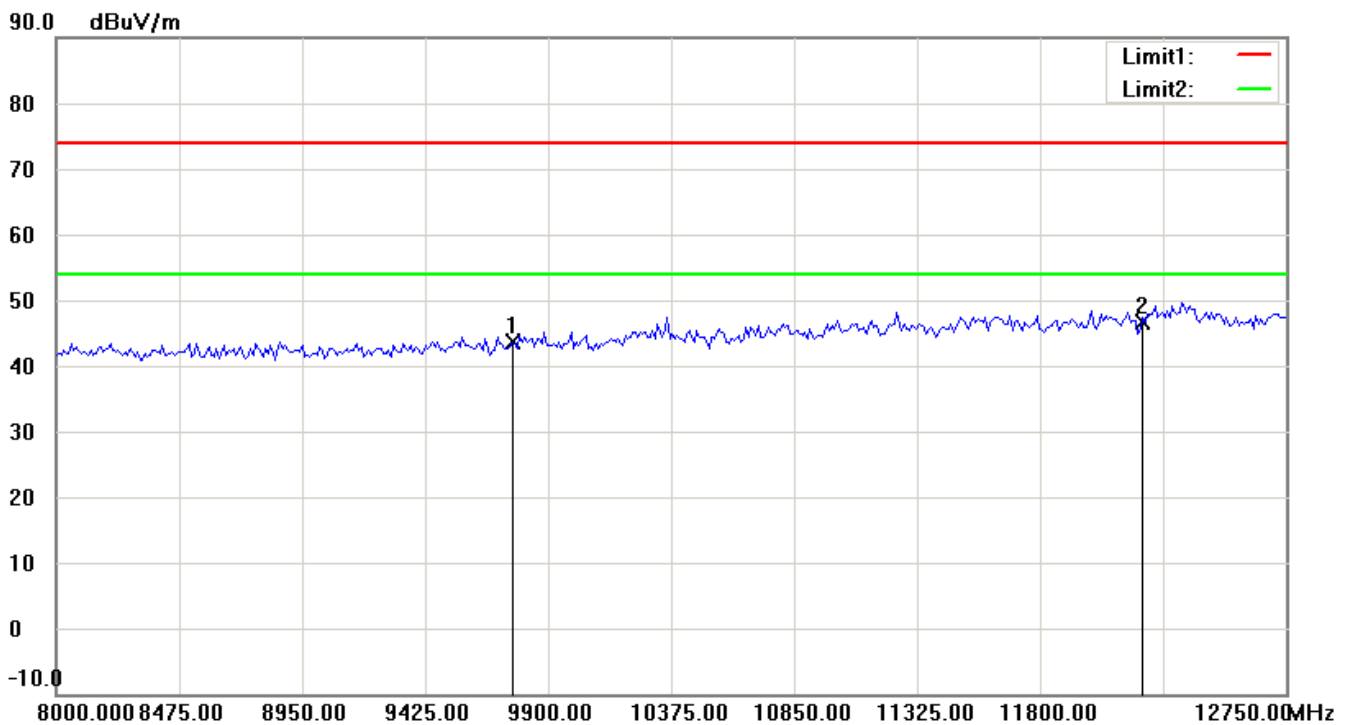
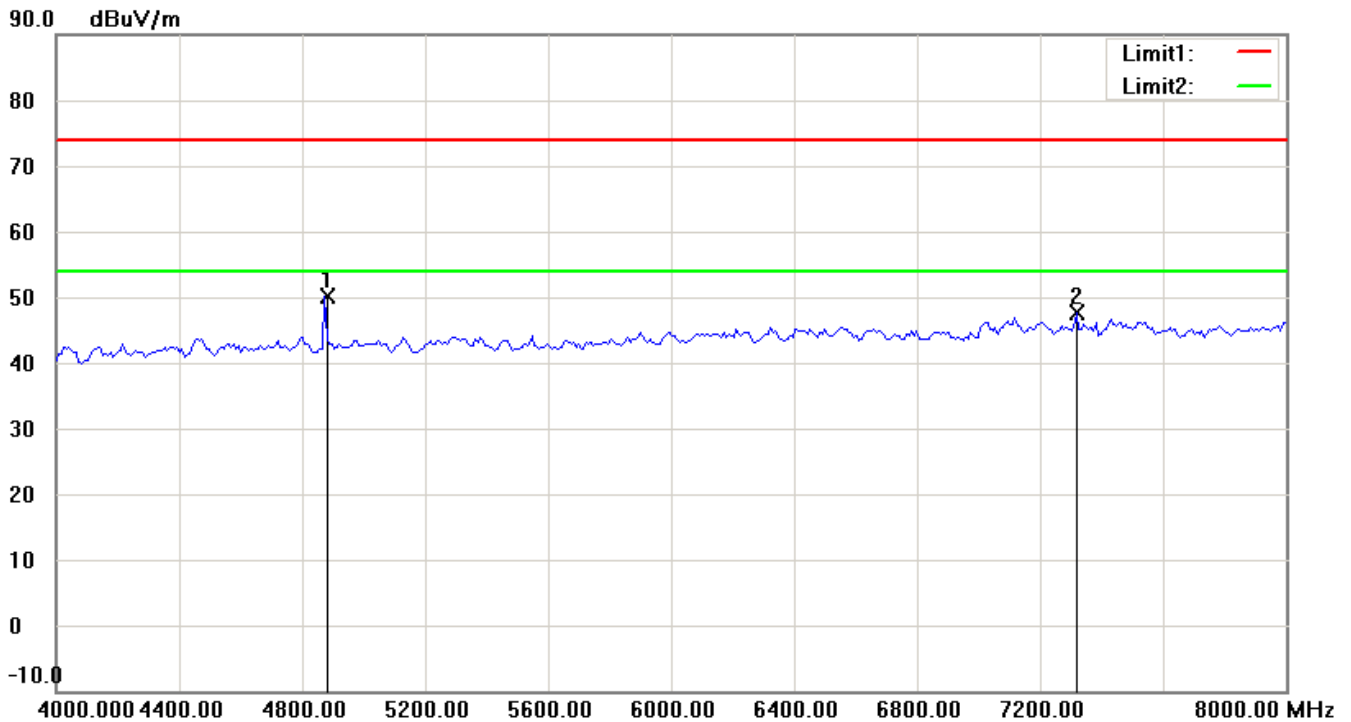
1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification 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: W6M21411-14612-C-1

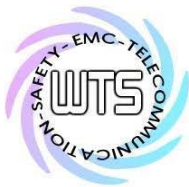
FCC ID: U6OCA913



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

Note:

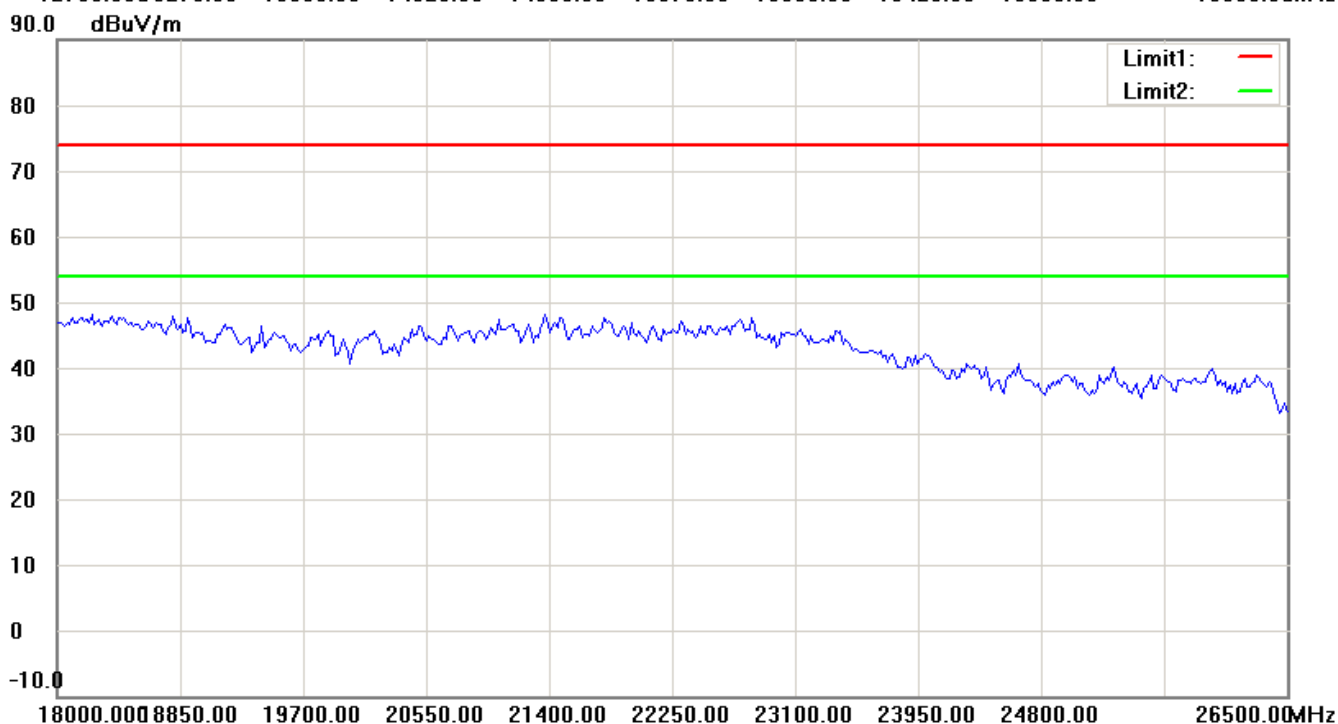
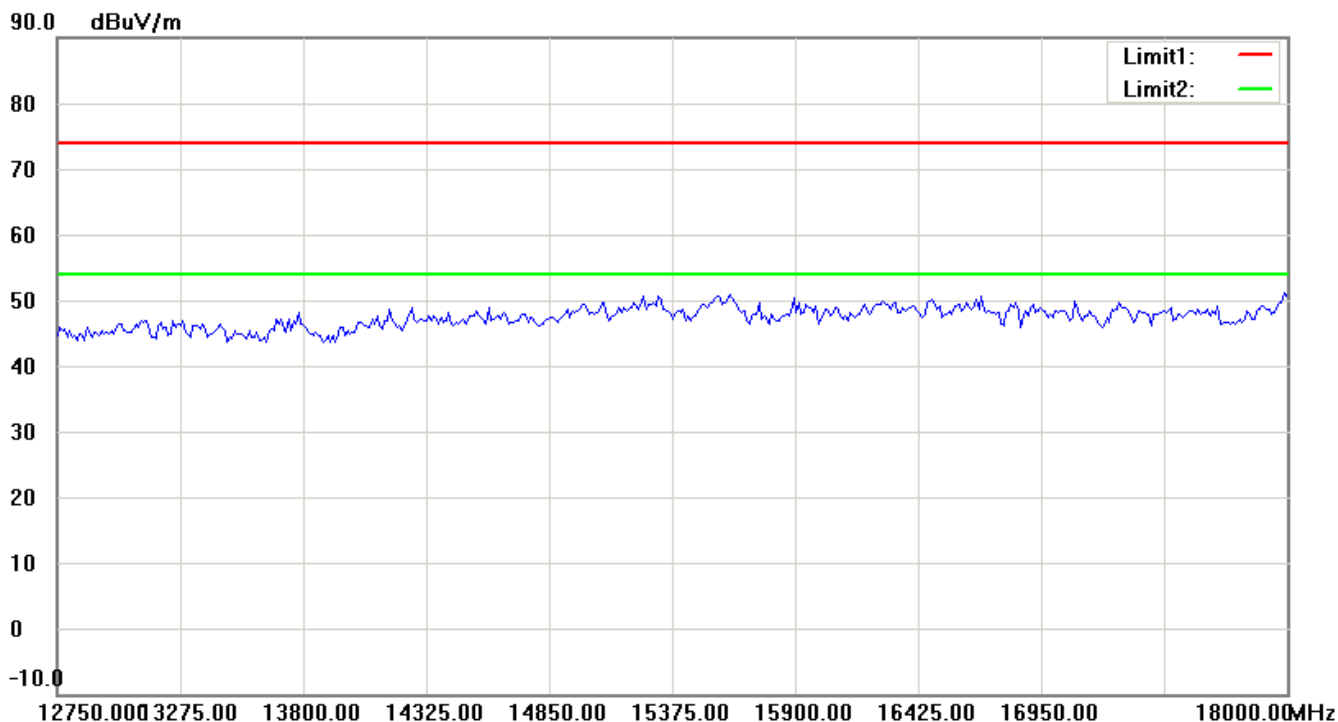
1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification 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: W6M21411-14612-C-1

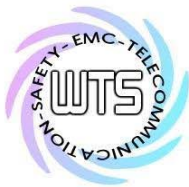
FCC ID: U6OCA913



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.

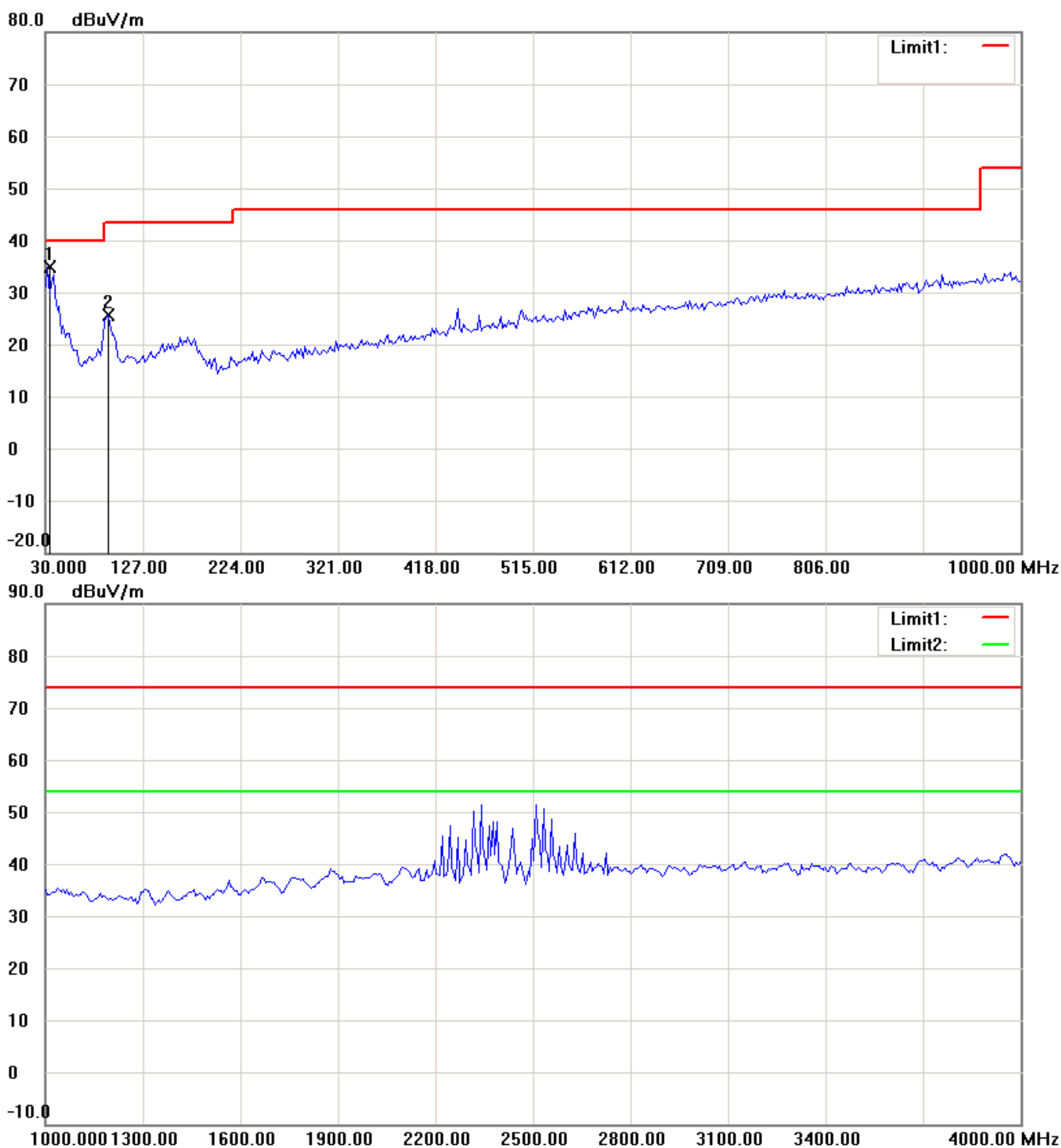


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

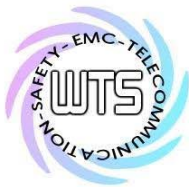
Antenna Polarization V



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

Note:

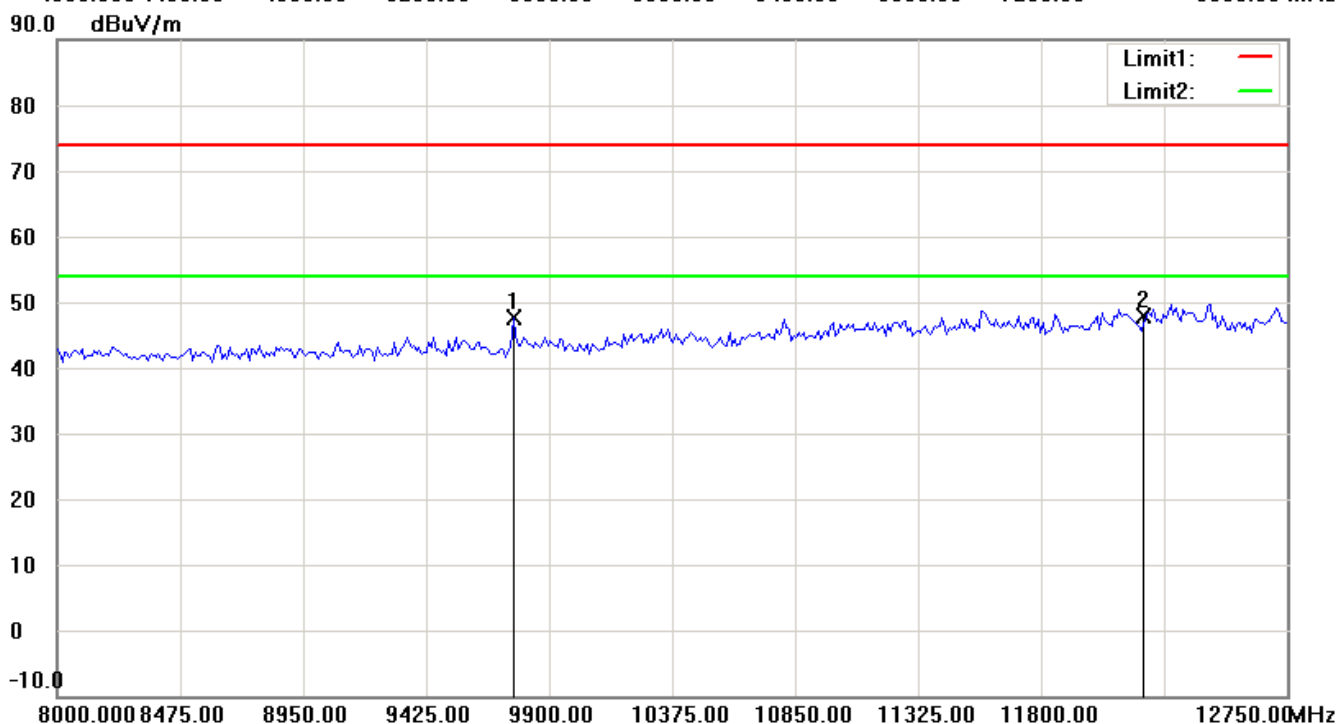
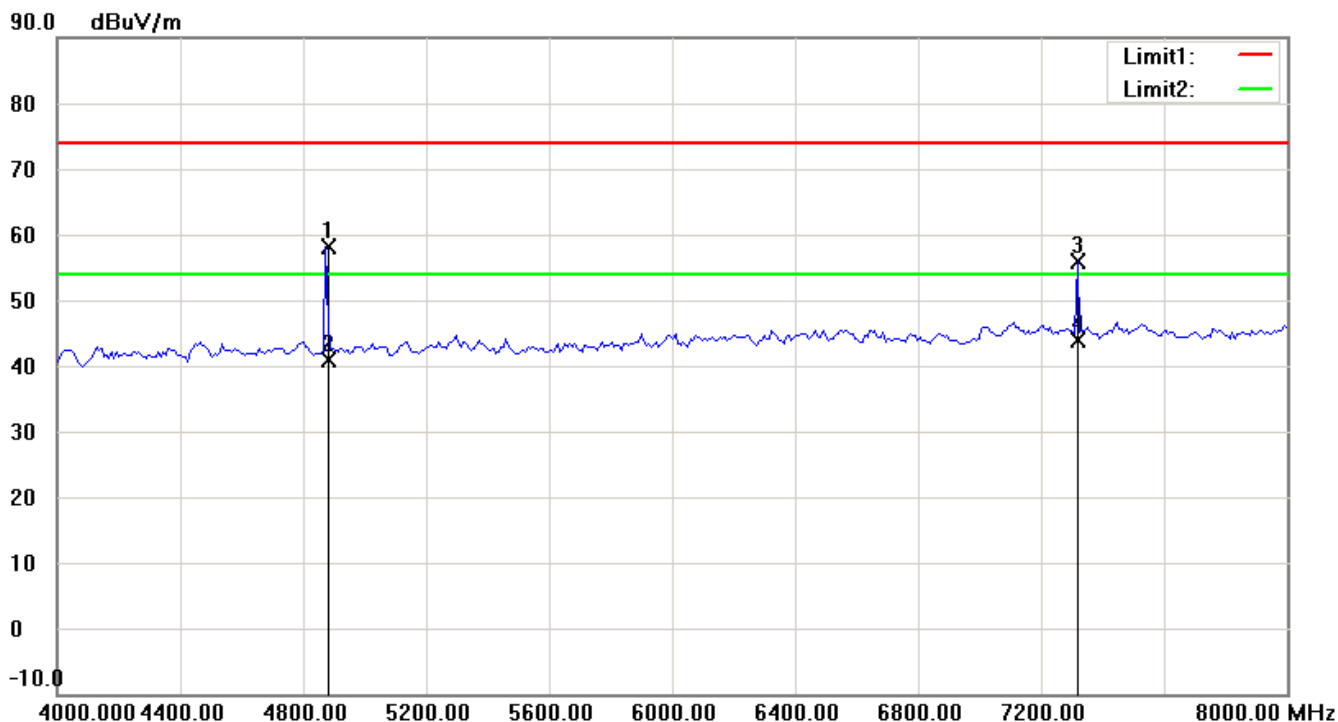
1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification 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: W6M21411-14612-C-1

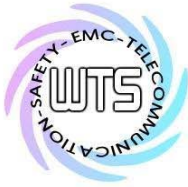
FCC ID: U6OCA913



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

Note:

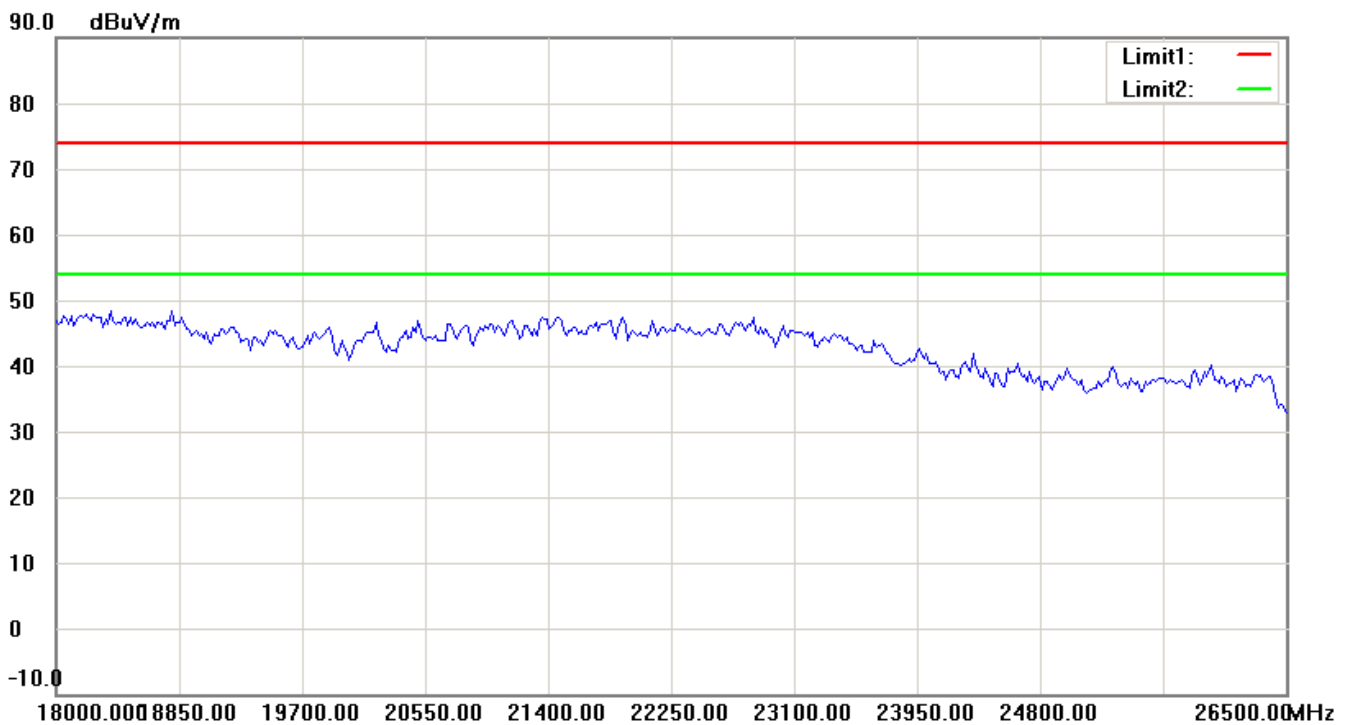
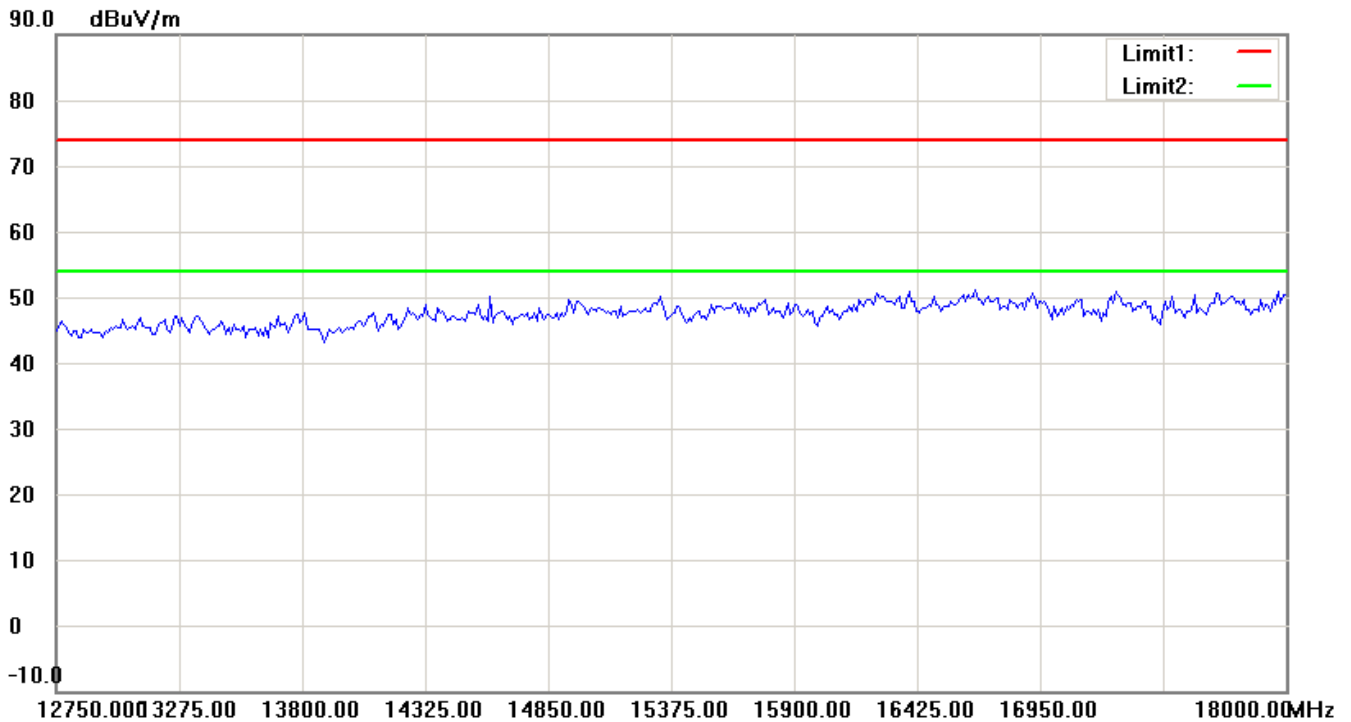
1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification 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: W6M21411-14612-C-1

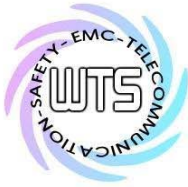
FCC ID: U6OCA913



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.



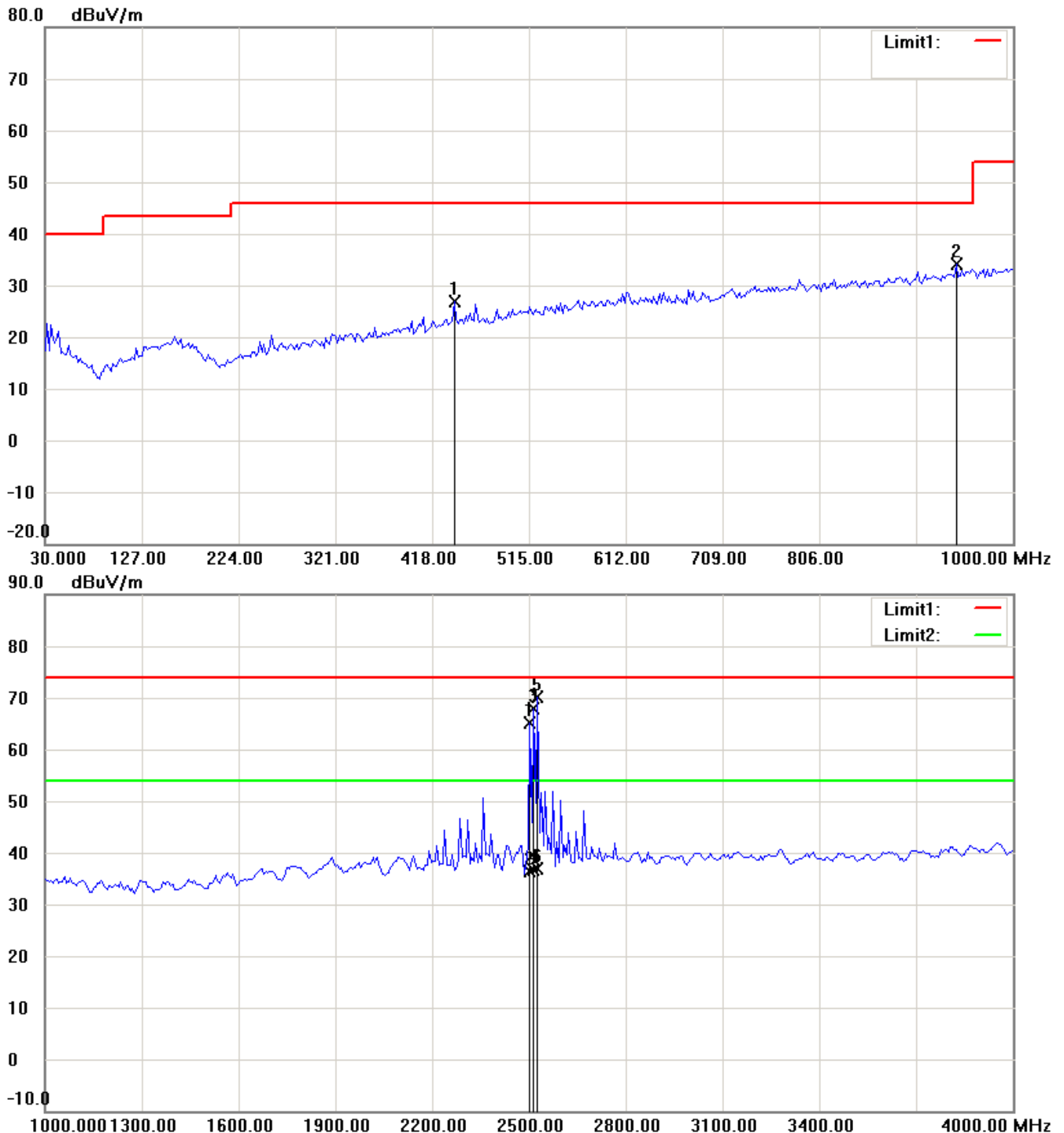
Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

2478 MHz

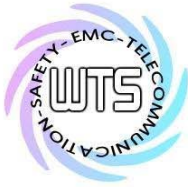
Antenna Polarization H



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

Note:

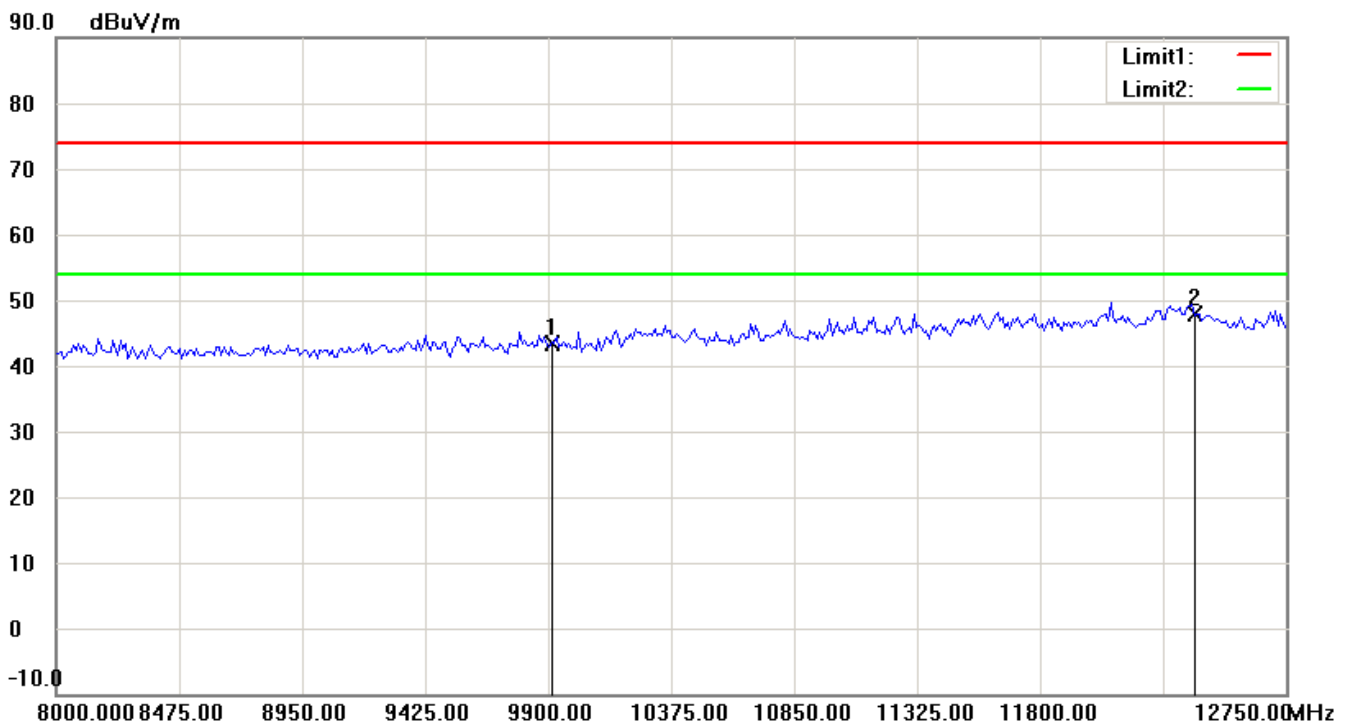
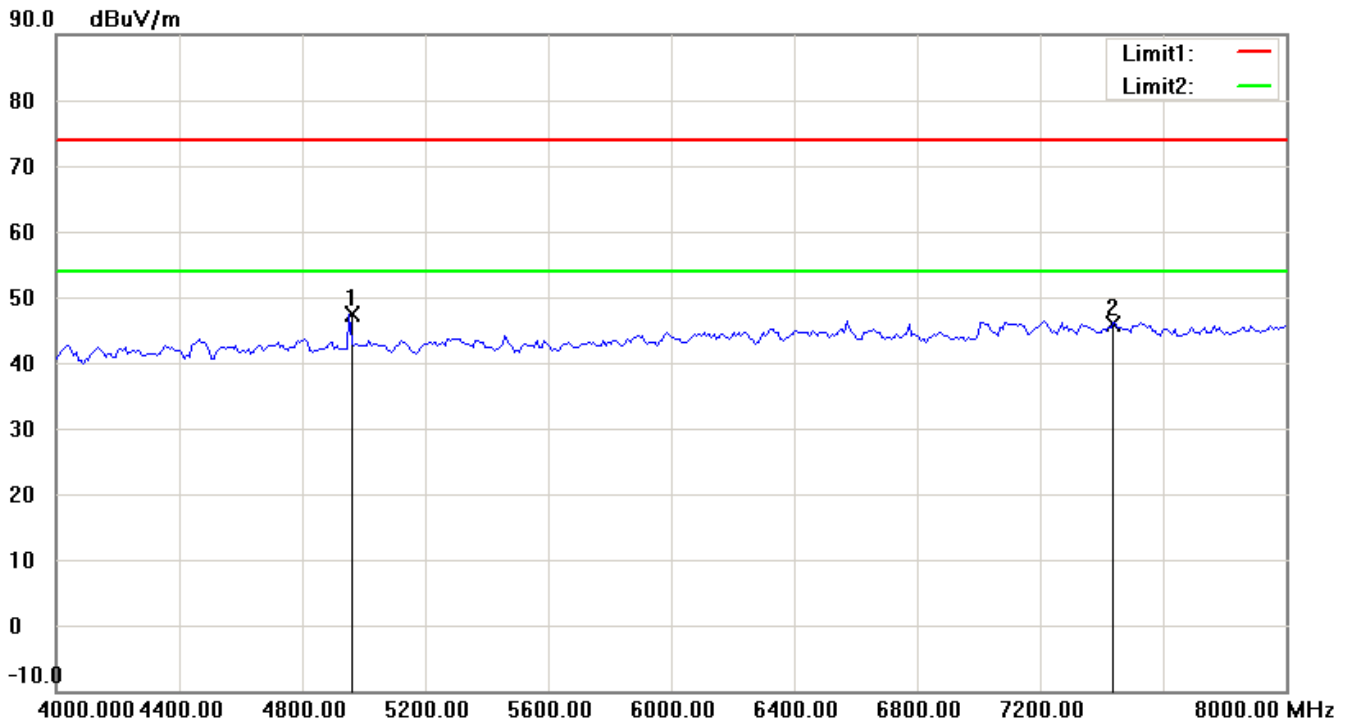
1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification 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: W6M21411-14612-C-1

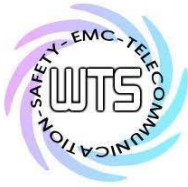
FCC ID: U6OCA913



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

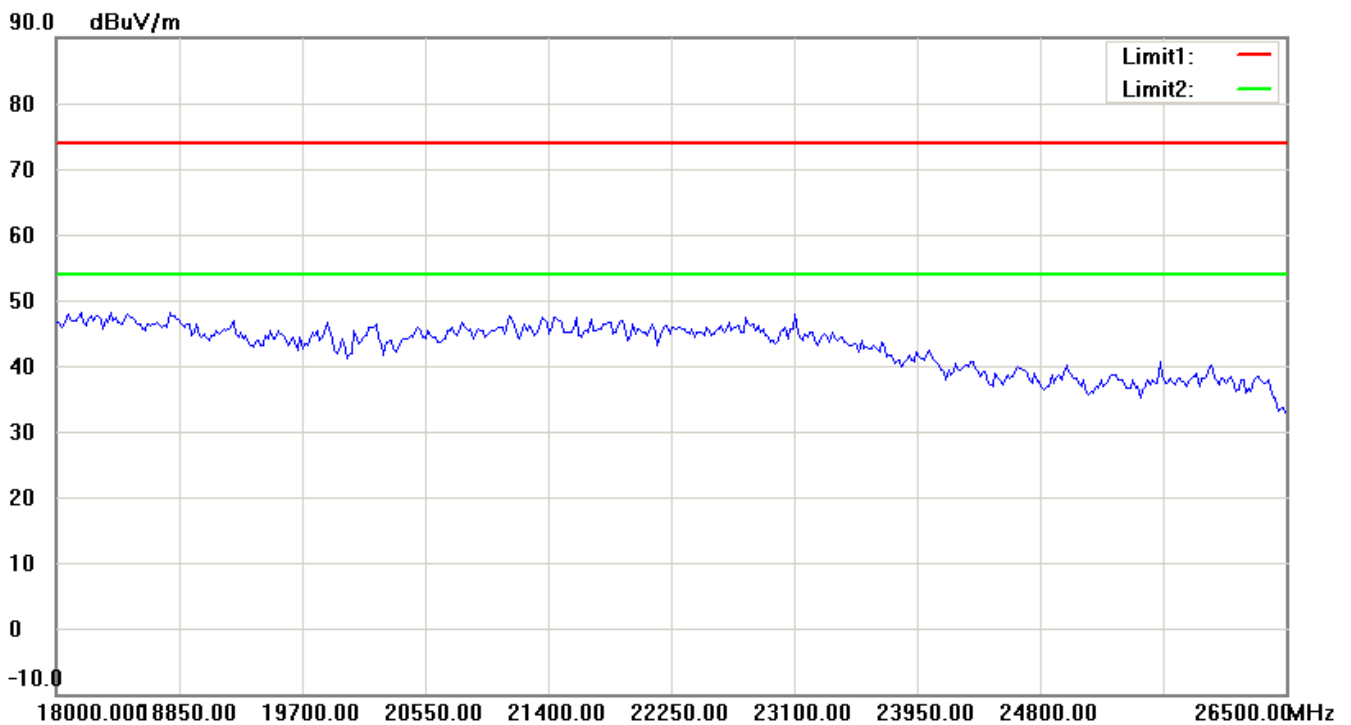
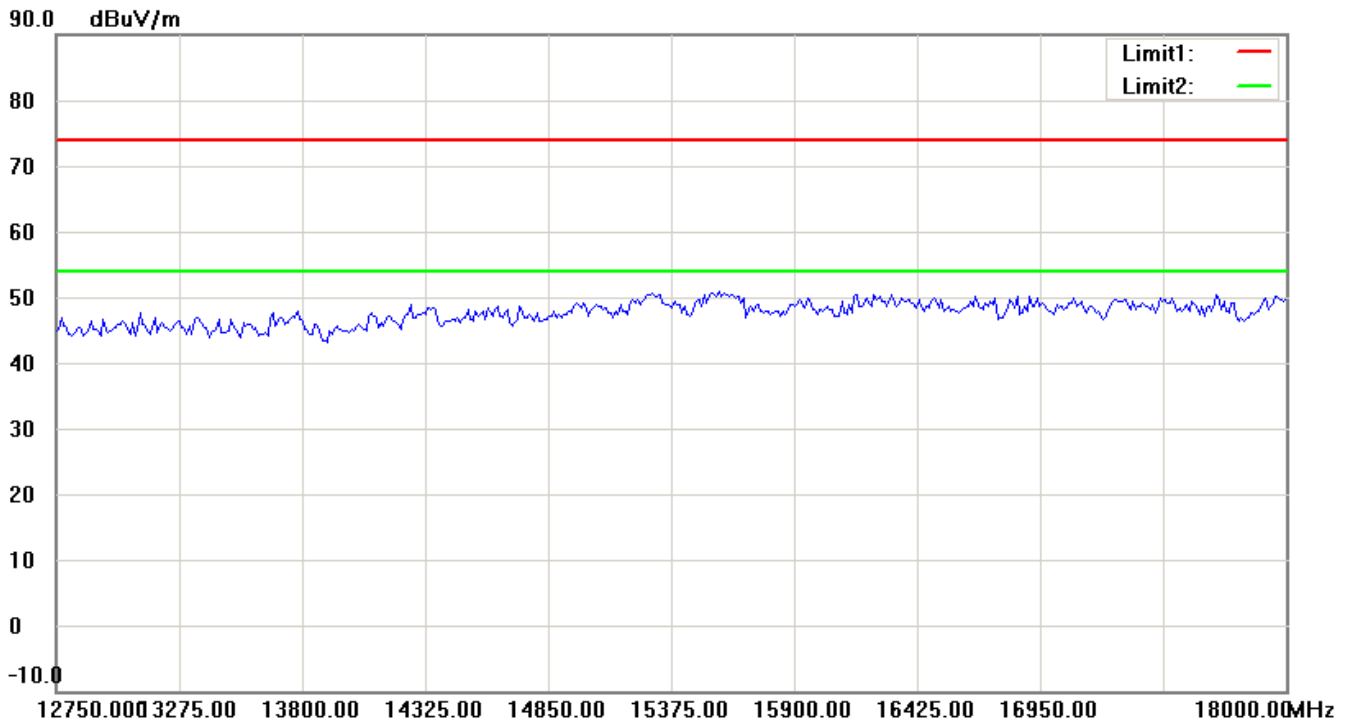
Note:

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: W6M21411-14612-C-1
FCC ID: U6OCA913



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.

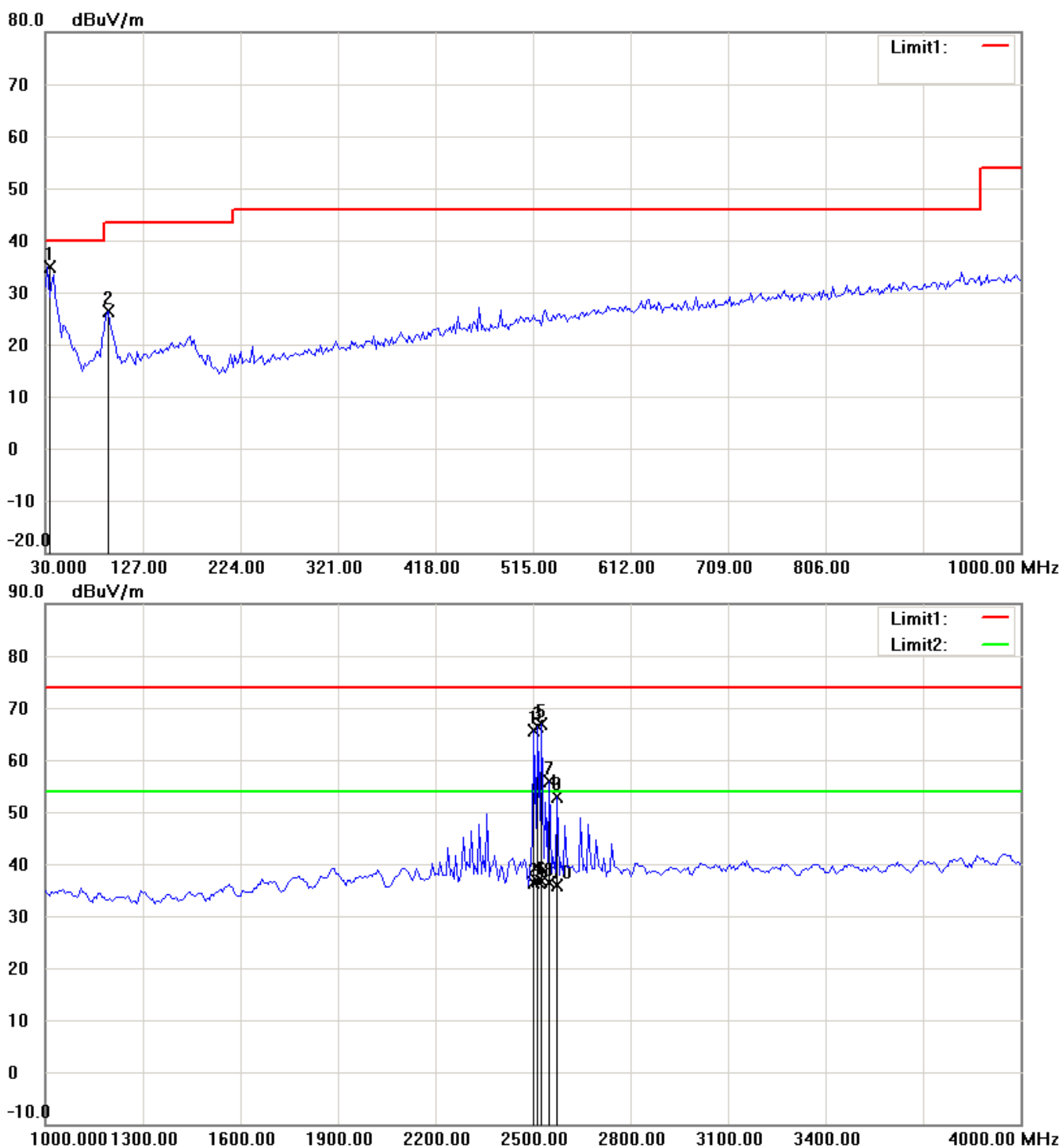


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21411-14612-C-1

FCC ID: U6OCA913

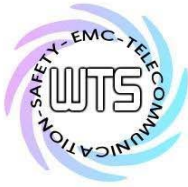
Antenna Polarization V



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

Note:

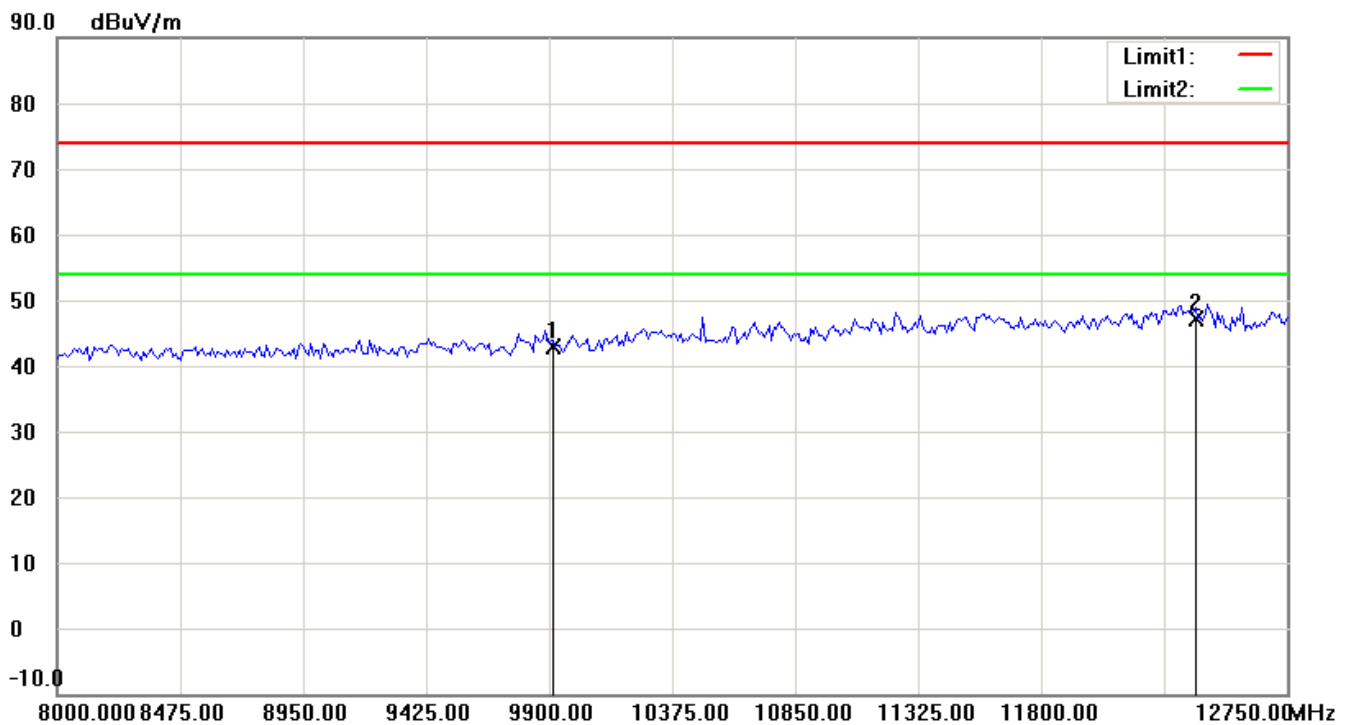
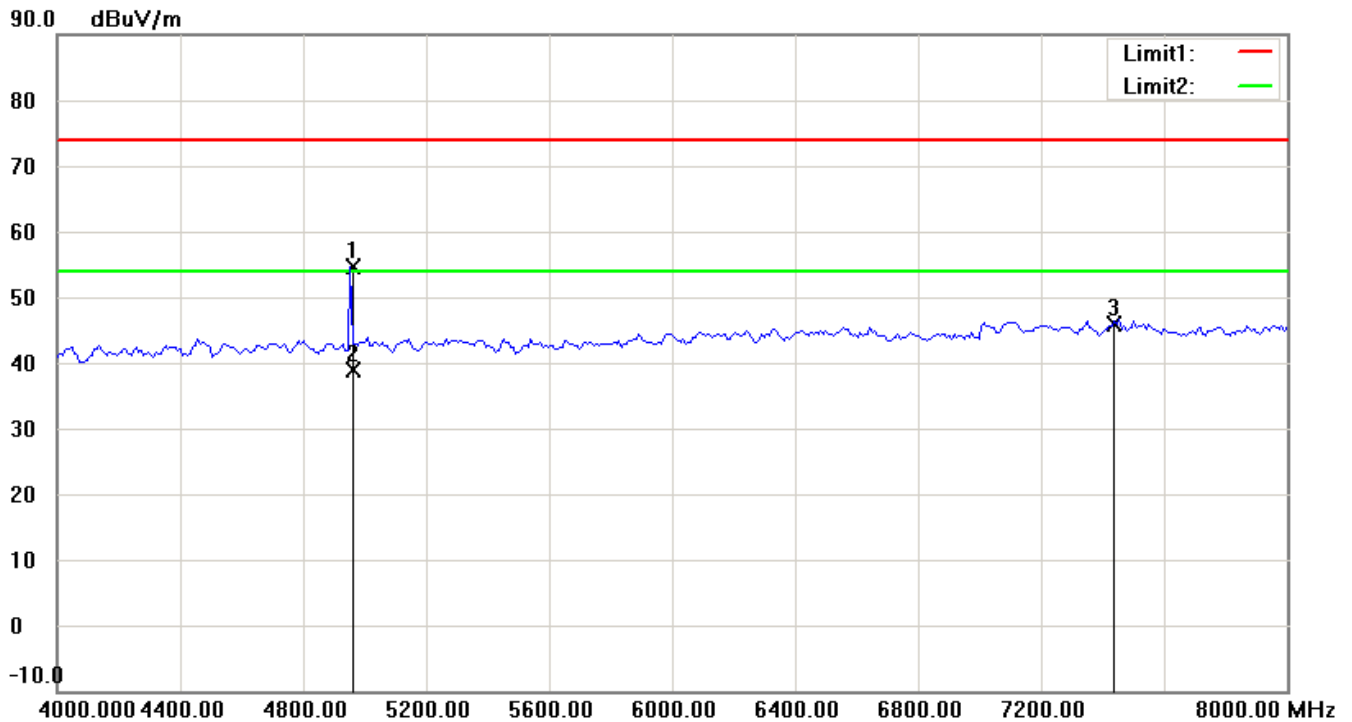
1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification 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: W6M21411-14612-C-1

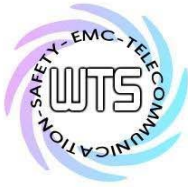
FCC ID: U6OCA913



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

Note:

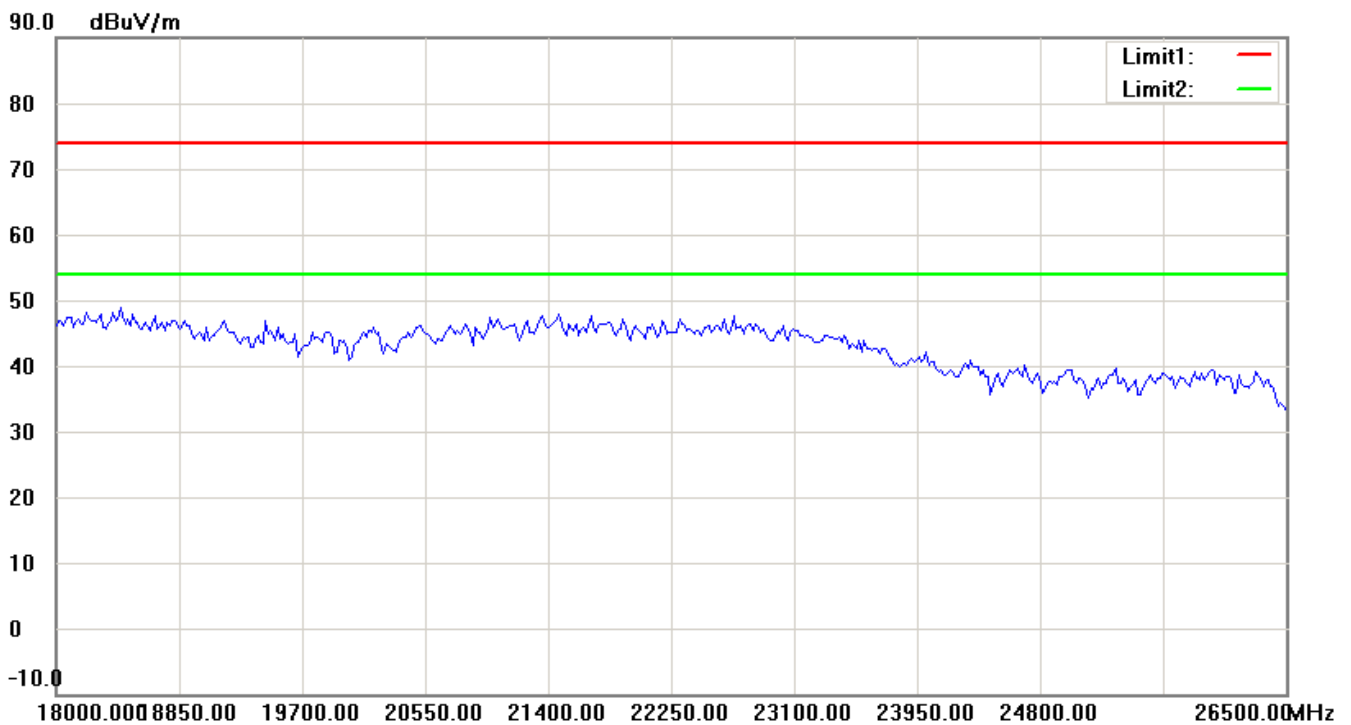
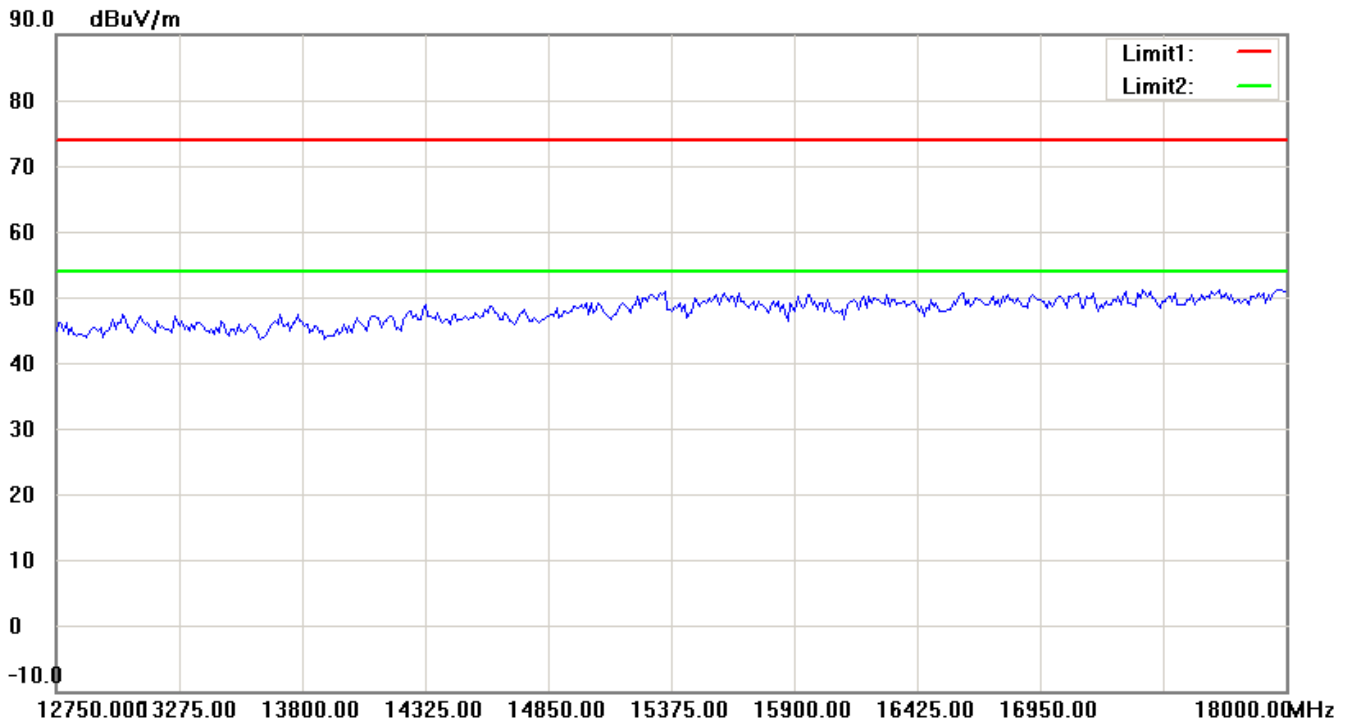
1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification 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: W6M21411-14612-C-1

FCC ID: U6OCA913



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.