# 47 CFR PART 15 SUBPART C TEST REPORT

# for

# REMOTE CONTROL

# Model No.: RC-WM-213

# FCC ID: VFK-RC-WM-213

of

Applicant: Ascion, LLC
Address: 2066 Franklin Rd, Bloomfield Hills, MI 48302, United States

Tested and Prepared

by

**Worldwide Testing Services (Taiwan) Co., Ltd.**

**FCC Registration No.: TW1477, TW1072**

**Industry Canada filed test laboratory Reg. No.: 20037, 5107A**

**Report No.: W6M22403-23342-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: wts@wts-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
1.4 Application details ..... 4
1.5 Test item ..... 4
1.6 Test standards ..... 4
2 Technical test ..... 5
2.1 Summary of test results ..... 5
2.2 Test environment ..... 5
2.3 Test Mode ..... 5
2.4 Test equipment utilized ..... 6
2.5 General Test Procedure ..... 7
3 Test results (enclosure) ..... 8
3.1 Transmission Requirements ..... 9
*3.1.1 Limit of Transmission Time ..... 9*
*3.1.2 Active Time ..... 9*
3.2 Output Power (Field Strength) ..... 10
3.3 Out of Band Radiated Emissions ..... 12
3.4 Transmitter Radiated Emissions in restricted Bands ..... 13
3.5 Spurious Emission radiated, Transmitter ..... 14
3.6 Channel Bandwidth ..... 15
3.7 Antenna requirement ..... 16
3.8 Duty Cycle ..... 17
3.9 Conducted Measurement at (AC) Power Line ..... 18

# 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.

Laboratory disclaimer-

1. The test results of this test report relate exclusively to the item tested as specified in 1.5.
2. The test report may only be reproduced or published in full.
3. Reproduction or publication of extracts from the report requires the prior written approval of the Worldwide Testing Services(Taiwan) Co., Ltd.

**Tester:**

| Date | WTS-Lab. | Name | Signature |
|---|---|---|---|
| April 26, 2024 | | Rick Chen | Rick Chen. |

**Technical responsibility for area of testing:**

| Date | WTS | Name | Signature |
|---|---|---|---|
| April 26, 2024 | | Kevin Wang | Kevin Wang |

## 1.2 Testing laboratory

### 1.2.1 Location

10m 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

Worldwide Testing Services (Taiwan) Co., Ltd.
6F., No. 58, Ln. 188, Ruiguang Rd., Neihu Dist.,
Taipei City 114 , Taiwan (R.O.C.)
Tel: 886-2-6606-8877

### 1.2.2 Details of accreditation status

Accredited testing laboratory
FCC filed test laboratory Reg. No.: TW1477, TW1072
Industry Canada filed test laboratory Reg. No.: 20037, 5107A

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

| | |
|---|---|
| Name: | ./. |
| Accredited number: | ./. |
| Street: | ./. |
| Town: | ./. |
| Country: | ./. |

## 1.3 Details of approval holder

| | |
|---|---|
| Name: | Ascion, LLC |
| Street: | 2066 Franklin Rd, Bloomfield Hills, |
| Town: | MI 48302, |
| Country: | United States |

## 1.4 Application details

| | |
|---|---|
| Date of receipt of test item: | March 08, 2024 |
| Date of test: | from March 11, 2024 to April 18, 2024 |

## 1.5 Test item

| | |
|---|---|
| Description of test item: | REMOTE CONTROL |
| Type identification: | RC-WM-213 |
| Brand name: | Reverie |
| Multi-listing model number: | RC-WM-213-XXX<br>(where"X" may be any alphanumeric character,black or " -" |
| Transmitting frequency: | 433.92 MHz |
| Operation mode: | Simplex |
| Voltage supply: | AAA battery 1.5Vd.c.*3 |
| Antenna type: | PCB antenna |
| Antenna gain: | 1 dBi |
| Sample no.: | #02 |

**Manufacturer** (if applicable)

| | |
|---|---|
| Name: | SUZHOU MOTECK ELECTRONICS-TECHNOLOGY CO LTD |
| Street: | No. 500, Hubei Road, Fenhu Economic Development Zone, |
| Town: | Wujiang City, Jiangsu Province, |
| Country: | China |

## 1.6 Test standards

Technical standard: 47 CFR PART 15 SUBPART C § 15.231 (a) (2023-10)

# 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 were ascertained in the course of the tests performed. ☐

## 2.2 Test environment

Relative humidity content: 20 ... 75 %

Air pressure: 86 ... 103 kPa

| Test item Name | Uncertainty |
|---|---|
| Estimation Result of Uncertainty of Conducted Emission (Conducted Measurement at (AC) Power Line) | Expanded Uncertainty：<br>AMN：0.94 dB<br>Voltage probe：0.96 dB<br>Include Pulse Limiter：1.5 dB |
| Estimation Result of Uncertainty of Radiated Emission(3M-966A) (Output Power (Field Strength), Out of Band Radiated Emissions, Transmitter Radiated Emissions in restricted Bands, Spurious Emission radiated) | Expanded Uncertainty：<br>0.009-30 MHz：1.88 dB<br>30-1000 MHz：3.20 dB<br>1-18 GHz：3.56 dB<br>18-40 GHz：2.94 dB |
| Estimation Result of Uncertainty of Bandwidth Measurement (Channel Bandwidth) | Expanded Uncertainty：0.45 kHz |
| Estimation Result of Uncertainty of Frequency Drift Measurement (Frequency Tolerance) | Expanded Uncertainty：6.11 Hz |
| Estimation Result of Uncertainty of Duty Cycle Measurement (Active Time) | Expanded Uncertainty：0.1 ms |

The decision rule is: Measurement uncertainty is not included in the calculation of test results.

## 2.3 Test Mode

This EUT is the portable device. So the EUT was tested on three different axes. Please see assessment test results as section 3 of this test report.

## 2.4 Test equipment utilized

Spurious Emission (966A) & Power

| Code No. | Test equipment | Mode No. | Serial No. | Brand | Cal. Date | Next Cal. Date |
|---|---|---|---|---|---|---|
| ETSTW-RE 153 | Signal Analyzer | FSV40 | 101929 | R&S | 2023/9/20 | 2024/9/19 |
| ETSTW-RE 154 | EMI Test Receiver | ESR3 | 102829 | R&S | 2024/4/10 | 2025/4/9 |
| ETSTW-RE 160 | Amplifier Module | CHC 3 | None | WTS | 2023/7/14 | 2024/7/13 |
| ETSTW-RE 177 | TRILOG Broadband Antenna | VULB 9168&EMCI-N-6-06 | 01380&AT-06007 | SCHWARZBECK& EMC | 2024/3/4 | 2025/3/3 |
| ETSTW-RE 178 | Double Ridged Guide Horn Antenna | DRH18-E | 210505A18ES | RFSPIN | 2024/2/29 | 2025/2/28 |
| ETSTW-Cable 077 | SMA type cable (10m) | EMC104-SM-SM-10000 | 230511 | EMCI | 2023/7/14 | 2024/7/13 |
| ETSTW-Cable 084 | SMA type cable (1m) | SF104-11SMA-1000 | 816477/4 | HONOVA | 2023/7/14 | 2024/7/13 |
| ETSTW-Cable 089 | SMA type cable (2m) | SF104-11SMA-2000 | SN 811889/4 | HUBER+SUHNER | 2023/7/14 | 2024/7/13 |
| WTSTW-SW 002 | EMI TEST SOFTWARE | EZ_EMC | None | Farad | Version ETS-03A1<br>Version EMEC-3A1+ | |

Duty Cycle & 20db bandwidth & Duration time

| Code No. | Test equipment | Mode No. | Serial No. | Brand | Cal. Date | Next Cal. Date |
|---|---|---|---|---|---|---|
| ETSTW-RE 050 | Attenuator 10dB | 50HF-010-1 | None | JFW | 2024/2/16 | 2025/2/15 |
| ETSTW-RE 055 | SPECTRUM ANALYZER | FSU 26 | 200074 | R&S | 2024/3/7 | 2025/3/6 |
| ETSTW-RE 099 | DC Block | 50DB-007-1 | None | JFW | 2024/2/16 | 2025/2/15 |
| ETSTW-Cable 030 | Microwave Cable | SUCOFLEX 104 （S_Cable 9） | 279067 | HUBER+SUHNER | 2024/2/16 | 2025/2/15 |

## 2.5 General Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.10-2013 6.2 using a 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 ANSI STANDARD C63.10-2013 6.3 using a spectrum analyzer. The bandwidth of the spectrum analyzer was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was the 100 kHz and the video bandwidth was 300 kHz.

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/m + 6 dB = 36.36 dBμV/m @3m |

ANSI STANDARD C63.10-2013 6.2.2 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m (non metallic table). The EUT was placed in the center of the table. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to $10^{th}$ harmonic of the fundamental.

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

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.

ANSI STANDARD C63.10-2013 B.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.

# 3 Test results (enclosure)

☒ 1st test ☐ test after modification ☐ production test

| TEST CASE | Para. Number | Required | Test passed | Test failed |
|---|---|---|---|---|
| Transmission Requirements | 15.231(a) | ☒ | ☒ | ☐ |
| Radiated Emission | 15.231(b) | ☒ | ☒ | ☐ |
| Bandwidth of Emission | 15.231(c) | ☒ | ☒ | ☐ |
| Frequency Tolerance | 15.231(d) | ☐ | ☐ | ☐ |
| Period Alternate Field Strength Requirements | 15.231(b) | ☒ | ☒ | ☐ |
| Antenna Requirement | 15.203 | ☒ | ☒ | ☐ |
| Conducted Measurement at (AC) Power Line | 15.207 | ☐ | ☐ | ☐ |

The following is intentionally left blank.

## 3.1 Transmission Requirements

FCC 15.231(a)

### 3.1.1 Limit of Transmission Time

☒ According to 15.231(a)(1), a manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

☐ According to 15.231(a)(2), a transmitter activated automatically shall cease transmission within 5 seconds after activation.

### 3.1.2 Active Time

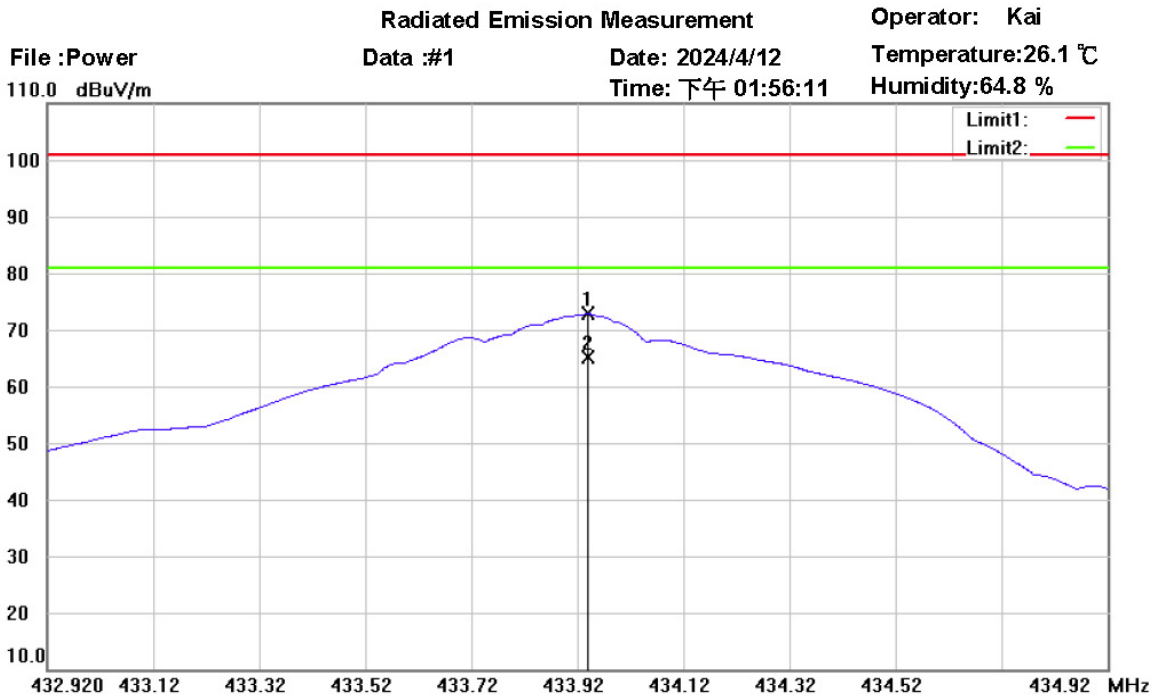
Test date: March 20, 2024
Temperature: 23.6 ˚C
Humidity: 51.7 %
Tester: Rick

☒ This manually operated transmitter employs a switch that automatically deactivate the transmitter within 463.846154 ms of being released.

☐ This transmitter is operated by automatic activation and active will cease transmission in __ ms after activation.

Explanation: See attached diagrams in appendix.

## 3.2 Output Power (Field Strength)

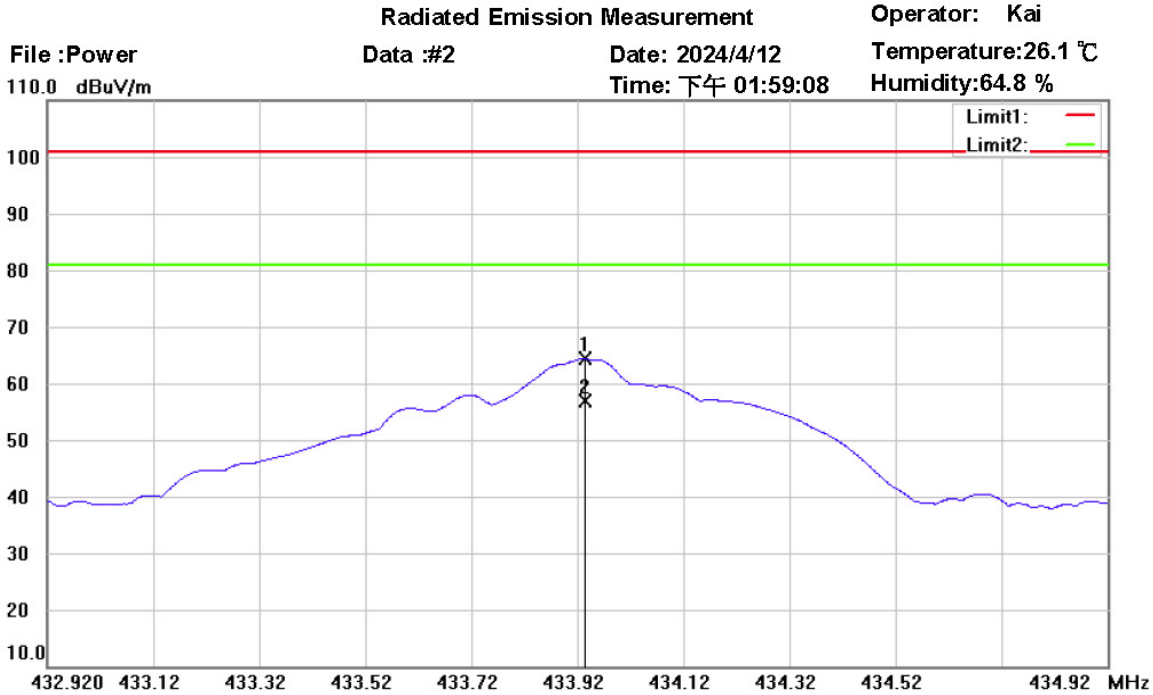



Site : 966A Chamber
Condition : FCC 15.231(433.92MHz)Power(PK)
EUT : W6M22403-23342
M/N:
Test Mode : TX 433.92MHz
Note :

Polarization: *Horizontal*
Power : 4.5 Vd.c.
Distance: 3m

| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corr. factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| | 433.9390 | 48.15 | peak | 24.65 | 72.80 | 100.80 | 229 | 262 | -28.00 | |
| * | 433.9390 | 40.58 | AVG | 24.65 | 65.23 | 80.80 | 229 | 262 | -15.57 | |

Registration number: W6M22403-23342-C-1
FCC ID: VFK-RC-WM-213




Site : 966A Chamber
Condition : FCC 15.231(433.92MHz)Power(PK)
EUT : W6M22403-23342
M/N:
Test Mode : TX 433.92MHz
Note :

Polarization: *Vertical*
Power : 4.5 Vd.c.
Distance: 3m

| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corr. factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| | 433.9330 | 39.73 | peak | 24.65 | 64.38 | 100.80 | 150 | 316 | -36.42 | |
| * | 433.9330 | 32.16 | AVG | 24.65 | 56.81 | 80.80 | 150 | 316 | -23.99 | |

Limit: 15.231(b)

| Fundamental Frequency (MHz) | Field strength of fundamental, limit µV/m |
|---|---|
| 40.66 – 40.70 | 2,250 |
| 70 – 130 | 1,250 |
| 130 – 174 | 1,250 to 3,750 |
| 174 – 260 | 3,750 |
| 260 – 470 | 3,750 to 12,500**<br>(433.92 MHz: 80.82523 dBµV/m = 10996.68 µV/m) |
| Above 470 | 12,500 |

** linear interpolation

Explanation: ./.

## 3.3 Out of Band Radiated Emissions

FCC Rule: 15.231(b) , 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.

Guidance on Measurement of pulsed emission: 15.35(c)
"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."

Duty Cycle correction = 20 log (dwell time/100ms or one period)

Limits:
For frequencies (Average measurements)
Correction factor conform 15.35 (c) (Average measurements)
Duty cycle correction :
Max. Peak reading – duty cycle correction

Max permitted average Limits = Max permitted Fundamental limit – 20 dB

For example for 433.92 fundamental carrier:
Max permitted average Limit: 80.8 dBµV/m - 20 dB= 60.8 dBµV/m

For frequencies above 1GHz (Peak measurements).
Modified Limits for peak conform 15.35 (b) = Max Permitted average Limits + 20dB (because Peak detector is used)

## 3.4 Transmitter Radiated Emissions in restricted Bands

FCC Rules: 15.231 (b), 15.205, 15.209, 15.35
Radiated emission measurements were performed from 30 MHz to 8000 MHz.
For radiated emission tests, the analyzer setting was as followings:
RES BW VID BW
Frequency <1 GHz 100 kHz 100 kHz (Peak measurements)
Frequency >1 GHz 1 MHz 1 MHz (Peak measurements)
1 MHz 1 MHz (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 960 | 500 | 54.0 |

For frequencies above 1GHz (Average measurements).
Guidance on Measurement of pulsed emission:
"If the emission is pulsed, modify the unit for continues operation , use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.

For frequencies above 1GHz (Average measurements).

The correction factor, based on the channel dwell tine 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 (dwell time/100ms)
No duty cycle correction was added to the reading

Modified Limits for peak conform 15.35 (b) = Max Permitted average Limits + 20dB (because Peak detector is used)

Above 960 MHz
For mode DSSS CW: 54 dBμV/m + 20 dB = 74 dBμV/m

Explanation: See attached diagrams in appendix.

## 3.5 Spurious Emission radiated, Transmitter

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

The limits on the field strength of the spurious emission in the table § 15.231(b) are based on the fundamental frequency of the intentional radiator. Spurious emission shall be attenuated to the average (or alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in § 15.209, whichever limit permits a higher field strength.
In addition, radiated emission 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)).
SAMPLE CALCULATION OF LIMIT. All results will be updated by an automatic measuring system in accordance to 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 an exhibit the compliance with the above calculated Limits.

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.**

All other not noted test plots do not contain significant test results in relation to the limits
Test results: The unit meet the FCC requirements.

Explanation: See attached diagrams in appendix.

## 3.6 Channel Bandwidth

Measurement of Necessary Bandwidth (BN)

Test date: March 20, 2024
Temperature: 23.6 ˚C
Humidity: 51.7 %
Tester: Rick

| Used frequency | Bandwidth | Limit |
|---|---|---|
| 433.92 MHz | 6.891025641 kHz | 0.0172275641 MHz |

Limits:

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

Explanation: See attached diagrams in appendix.

## 3.7 Antenna requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

Explanation: This PCB antenna is integral antenna which passes antenna requirement.

| The equipment meets the requirements | yes | no |
|---|---|---|
| | ☒ | ☐ |

## 3.8 Duty Cycle

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

Average Reading = Peak Reading (dBuV/m) + Duty Cycle Correction

Test date: March 20, 2024
Temperature: 23.6 ˚C
Humidity: 51.7 %
Tester: Rick

Duty Cycle Correction = 20 log (Cycle)
In order to determine the Duty Cycle, the EUT is measured as:

| Testing Mode | T period (ms) | T on (ms) | Duty Cycle | Duty Cycle Correction 20*log(Duty Cycle) |
|---|---|---|---|---|
| Transmitting mode | 100 | 41.829 | 0.41829 | -7.57 |

Explanation: See attached diagrams in appendix.

## 3.9 Conducted Measurement at (AC) Power Line

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 + 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. **Up Line: QP Limit Line, Down Line: Ave Limit Line.**
6. **This test is not required because the EUT is battery-used.**

**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 |

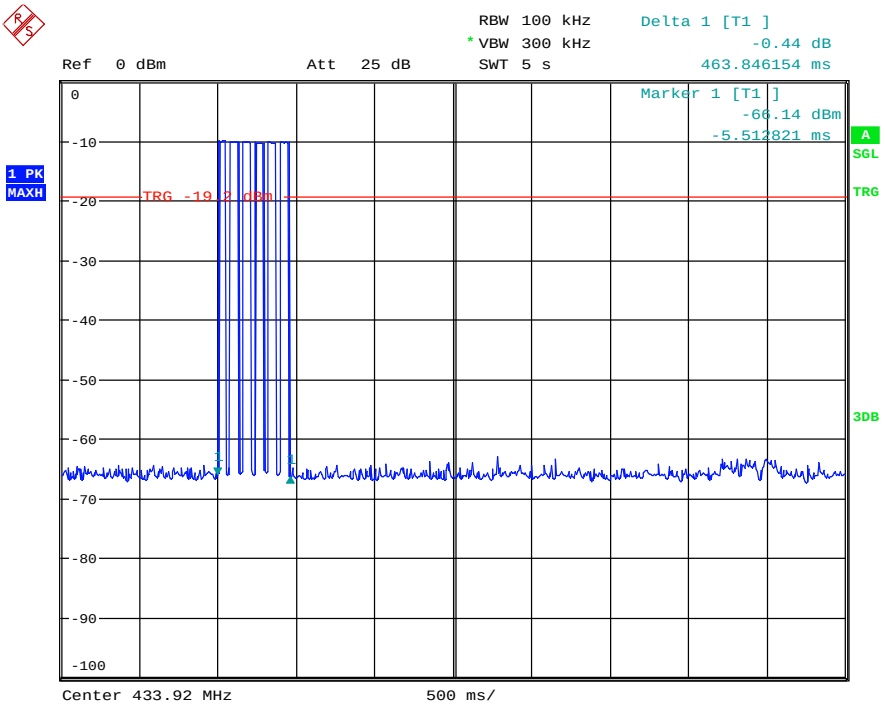
# Appendix

**Measurement diagrams**

1. Active Time
2. Duty Cycle
3. Bandwidth
4. Spurious Emissions radiated

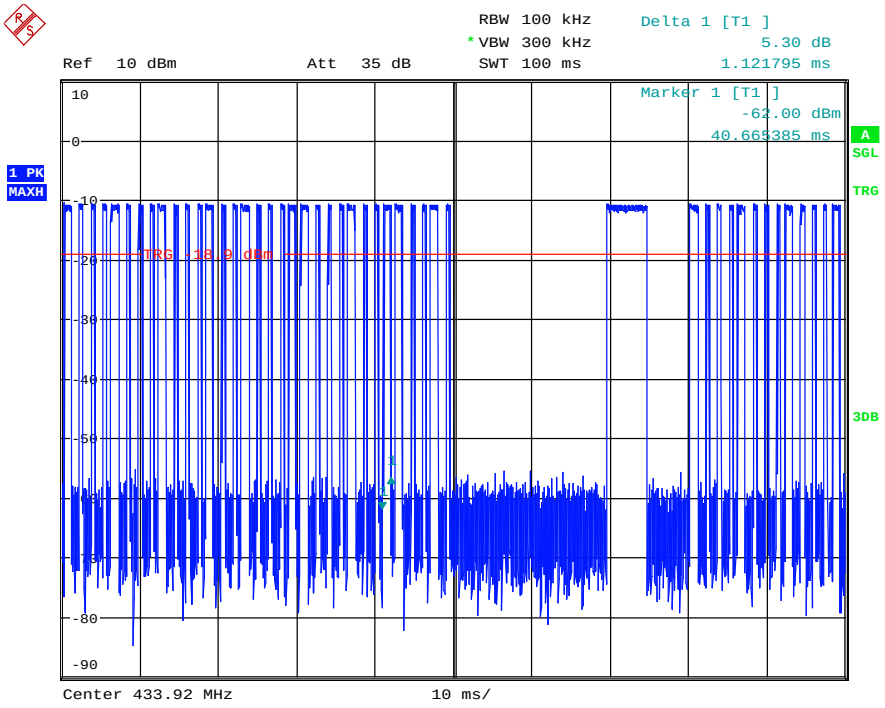
Registration number: W6M22403-23342-C-1
FCC ID: VFK-RC-WM-213

# Active Time



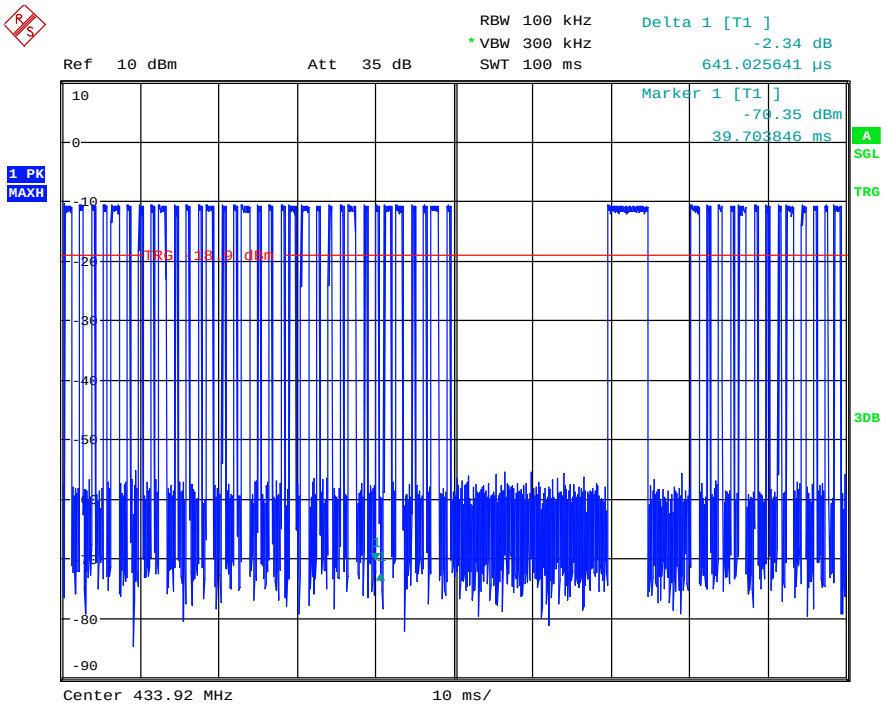

Date: 20.MAR.2024 20:53:39

# Duty Cycle

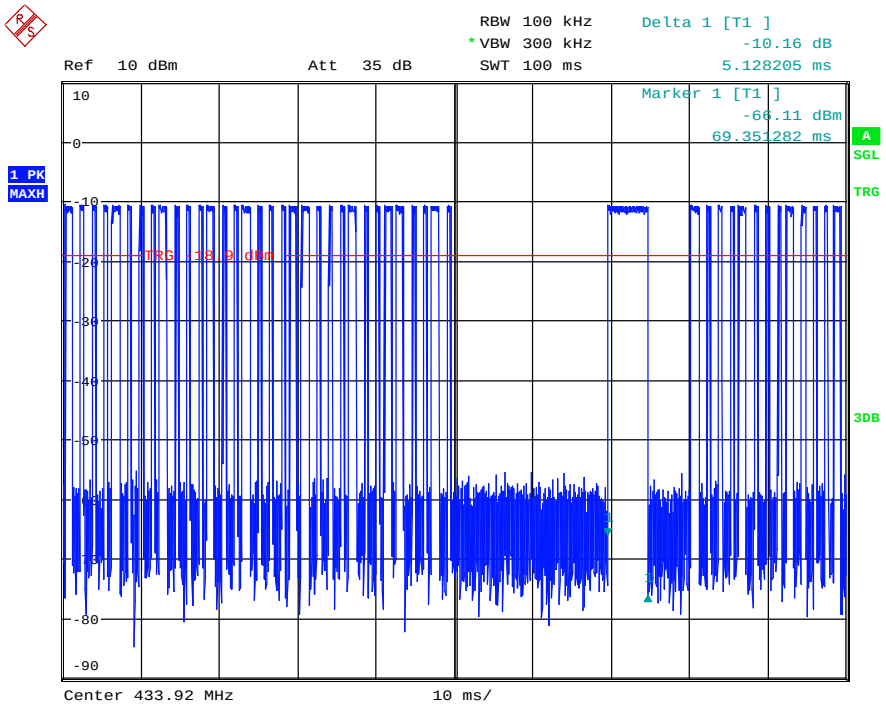



Date: 20.MAR.2024 21:18:17

Registration number: W6M22403-23342-C-1
FCC ID: VFK-RC-WM-213



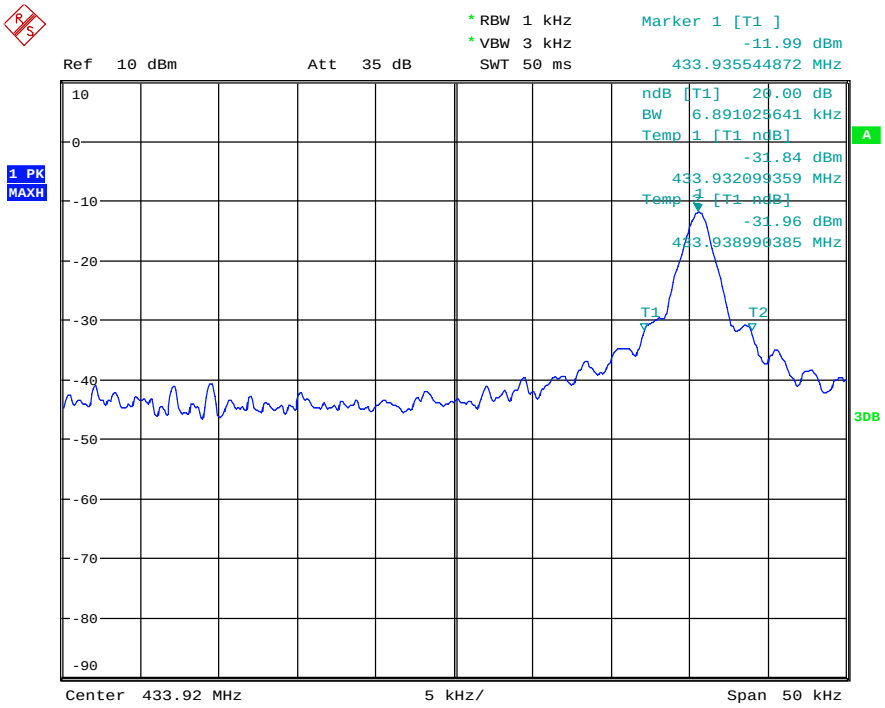

Date: 20.MAR.2024 21:19:26




Date: 20.MAR.2024 21:19:59

Registration number: W6M22403-23342-C-1
FCC ID: VFK-RC-WM-213

# Channel Bandwidth




Date: 20.MAR.2024 21:00:45

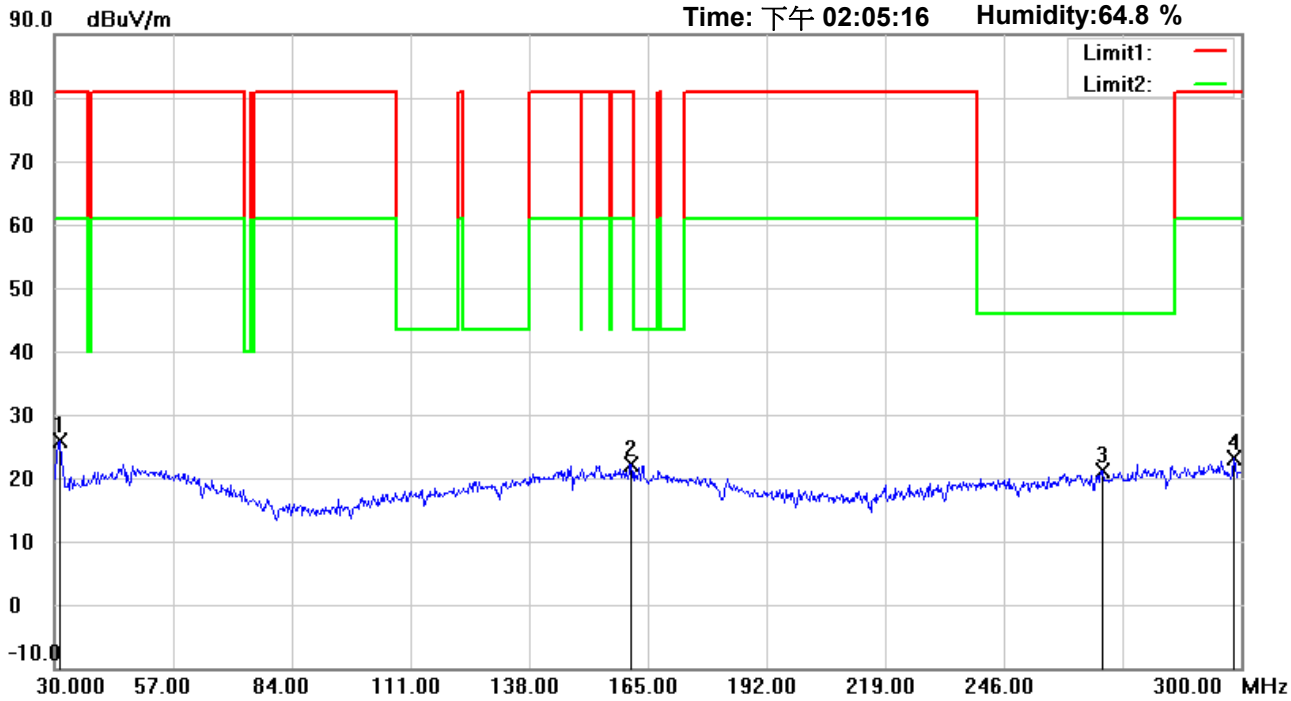
Address:No.99,Sec.1,Balian Rd.,Xizhi Dist.,New Taipei City
Tel:+886-2-2646-1508
Fax:+886-2-2646-1533

## Radiated Emission Measurement

Operator: Kai

File :1 Data :#1 Date: 2024/4/12 Time: 下午 02:05:16

Temperature:26.1 ℃
Humidity:64.8 %




Site : 966A Chamber

Condition : FCC 15.231(433MHz) 30-300(PK)

Polarization: *Horizontal*

EUT : W6M22403-23342

Power : 4.5 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.92MHz

Note :

| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corr. factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| | 31.0800 | 40.70 | peak | -14.74 | 25.96 | 80.80 | 100 | 250 | -54.84 | |
| | 161.0850 | 34.46 | peak | -12.24 | 22.22 | 80.80 | 100 | 33 | -58.58 | |
| * | 268.4100 | 34.19 | peak | -13.09 | 21.10 | 46.00 | 100 | 25 | -24.90 | |
| | 298.3800 | 35.29 | peak | -12.23 | 23.06 | 80.80 | 100 | 175 | -57.74 | |

*:Maximum data x:Over limit !:over margin

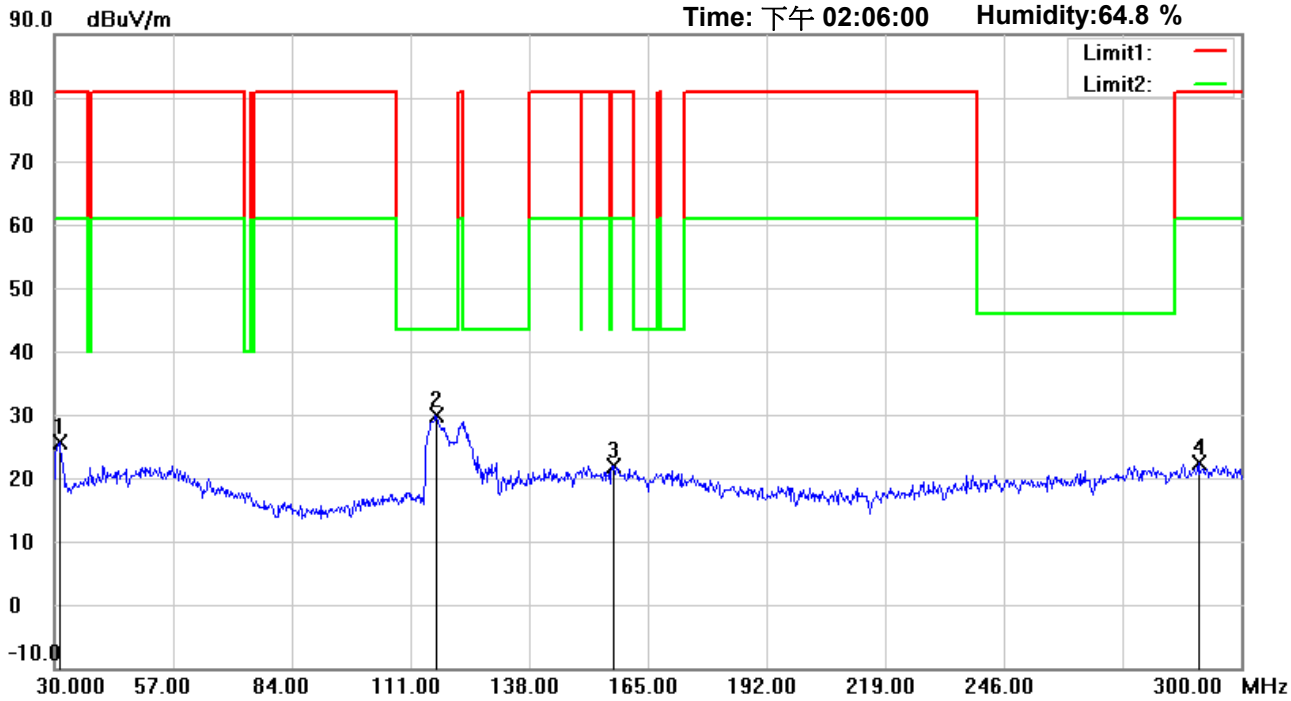
Address:No.99,Sec.1,Balian Rd.,Xizhi Dist.,New Taipei City
Tel:+886-2-2646-1508
Fax:+886-2-2646-1533

## Radiated Emission Measurement

Operator: Kai

File :1 Data :#2 Date: 2024/4/12 Time: 下午 02:06:00

Temperature:26.1 ℃
Humidity:64.8 %




Site : 966A Chamber

Condition : FCC 15.231(433MHz) 30-300(PK)

Polarization: *Vertical*

EUT : W6M22403-23342

Power : 4.5 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.92MHz

Note :

| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corr. factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| | 31.0800 | 40.35 | peak | -14.74 | 25.61 | 80.80 | 100 | 120 | -55.19 | |
| * | 116.8050 | 44.82 | peak | -15.05 | 29.77 | 43.50 | 100 | 55 | -13.73 | |
| | 157.0350 | 34.12 | peak | -12.16 | 21.96 | 80.80 | 100 | 33 | -58.84 | |
| | 290.4150 | 34.76 | peak | -12.31 | 22.45 | 80.80 | 100 | 289 | -58.35 | |

*:Maximum data x:Over limit !:over margin

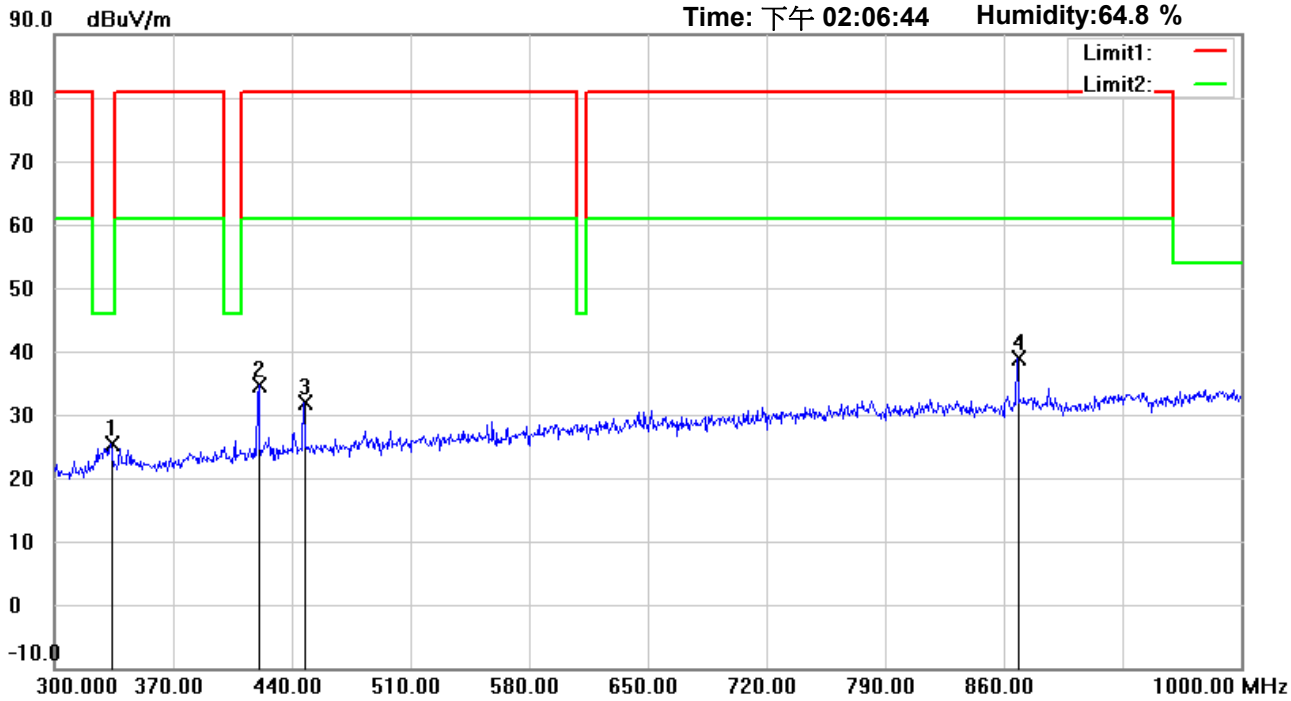
Address:No.99,Sec.1,Balian Rd.,Xizhi Dist.,New Taipei City
Tel:+886-2-2646-1508
Fax:+886-2-2646-1533

## Radiated Emission Measurement

Operator: Kai

File :2 Data :#1 Date: 2024/4/12 Time: 下午 02:06:44

Temperature:26.1 ℃
Humidity:64.8 %




Site : 966A Chamber

Condition : FCC 15.231(433MHz) 300-1000(PK)

Polarization: *Horizontal*

EUT : W6M22403-23342

Power : 4.5 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.92MHz

Note :

| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corr. factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 333.2500 | 36.65 | peak | -11.34 | 25.31 | 46.00 | 100 | 246 | -20.69 | |
| | 420.4000 | 44.02 | peak | -9.34 | 34.68 | 80.80 | 100 | 73 | -46.12 | |
| | 447.3500 | 40.39 | peak | -8.39 | 32.00 | 80.80 | 100 | 95 | -48.80 | |
| | 868.0500 | 40.31 | peak | -1.50 | 38.81 | 80.80 | 100 | 318 | -41.99 | |

*:Maximum data x:Over limit !:over margin

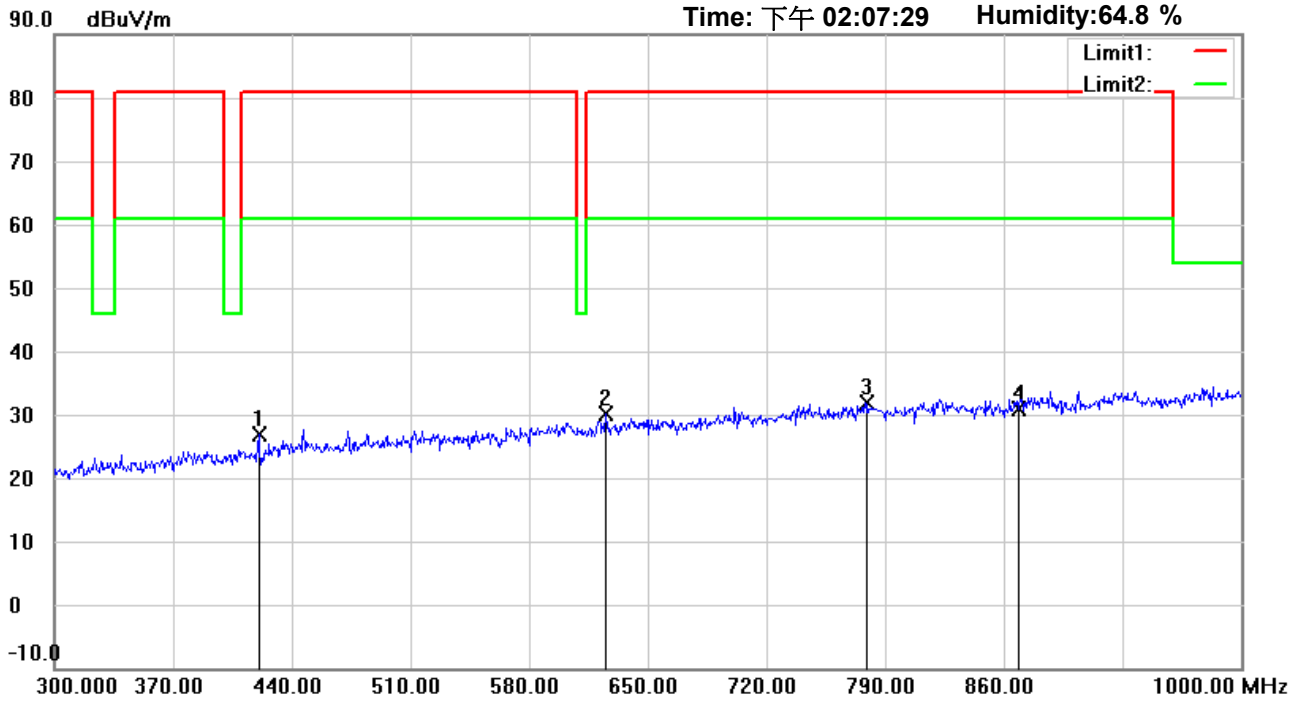
Address:No.99,Sec.1,Balian Rd.,Xizhi Dist.,New Taipei City
Tel:+886-2-2646-1508
Fax:+886-2-2646-1533

## Radiated Emission Measurement

Operator: Kai

File :2 Data :#2 Date: 2024/4/12 Time: 下午 02:07:29

Temperature:26.1 ℃
Humidity:64.8 %




Site : 966A Chamber

Condition : FCC 15.231(433MHz) 300-1000(PK)

Polarization: *Vertical*

EUT : W6M22403-23342

Power : 4.5 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.92MHz

Note :

| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corr. factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| | 420.4000 | 36.33 | peak | -9.34 | 26.99 | 80.80 | 100 | 247 | -53.81 | |
| | 625.5000 | 34.77 | peak | -4.70 | 30.07 | 80.80 | 100 | 282 | -50.73 | |
| * | 778.4500 | 34.09 | peak | -2.12 | 31.97 | 80.80 | 100 | 178 | -48.83 | |
| | 867.8400 | 32.48 | peak | -1.50 | 30.98 | 80.80 | 100 | 302 | -49.82 | |

*:Maximum data x:Over limit !:over margin

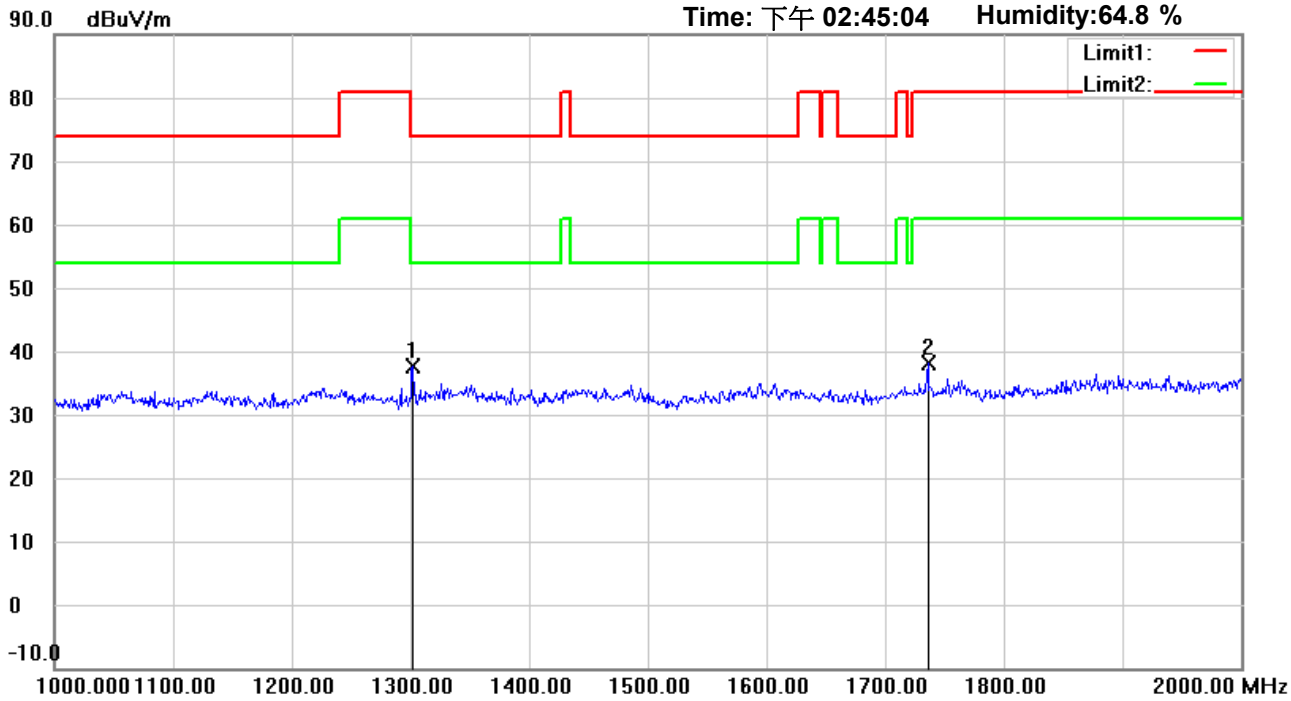
Address:No.99,Sec.1,Balian Rd.,Xizhi Dist.,New Taipei City
Tel:+886-2-2646-1508
Fax:+886-2-2646-1533

## Radiated Emission Measurement

Operator: Kai

File :3 Data :#1 Date: 2024/4/12 Time: 下午 02:45:04

Temperature:26.1 ℃
Humidity:64.8 %




Site : 966A Chamber

Condition : FCC 15.231(433MHz) 1000-2000(PK)

Polarization: *Horizontal*

EUT : W6M22403-23342

Power : 4.5 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.92MHz

Note :

| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corr. factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 1302.000 | 46.51 | peak | -8.77 | 37.74 | 74.00 | 150 | 225 | -36.26 | |
| | 1736.500 | 46.27 | peak | -8.11 | 38.16 | 80.80 | 150 | 131 | -42.64 | |

*:Maximum data x:Over limit !:over margin

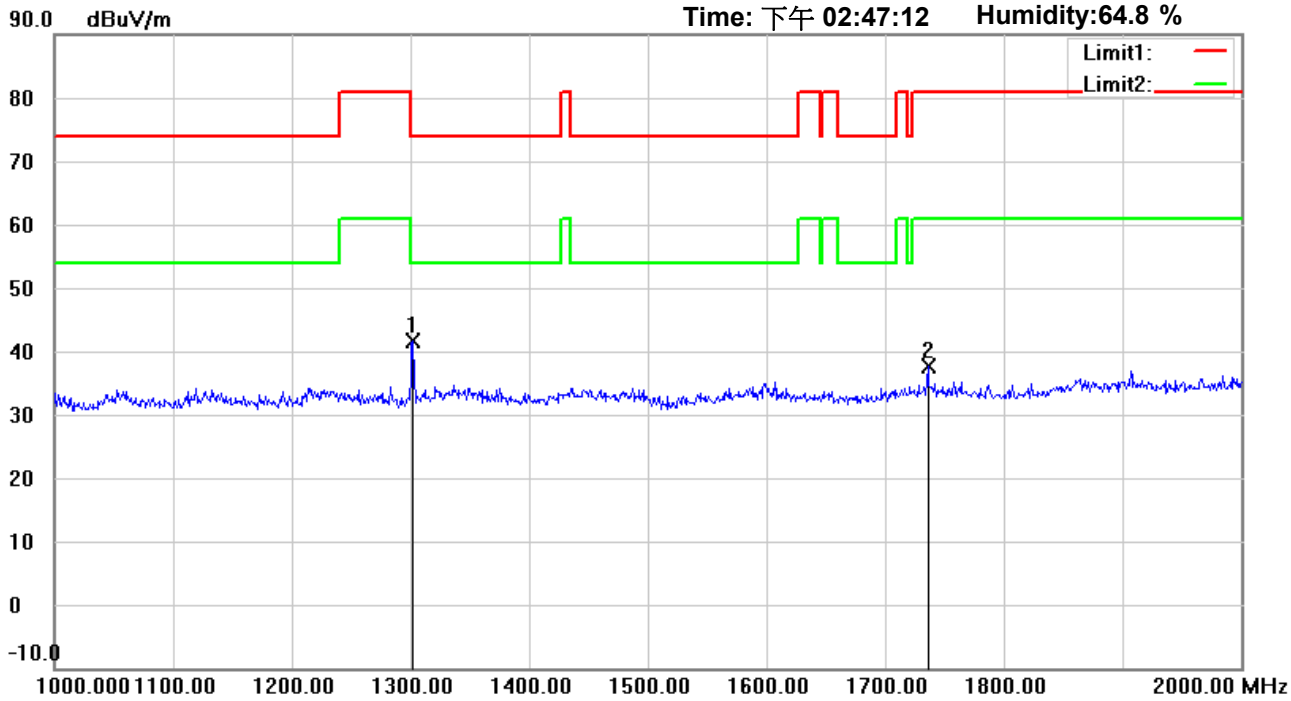
Address:No.99,Sec.1,Balian Rd.,Xizhi Dist.,New Taipei City
Tel:+886-2-2646-1508
Fax:+886-2-2646-1533

## Radiated Emission Measurement

Operator: Kai

File :3 Data :#4 Date: 2024/4/12 Time: 下午 02:47:12

Temperature:26.1 ℃
Humidity:64.8 %




Site : 966A Chamber

Condition : FCC 15.231(433MHz) 1000-2000(PK)

Polarization: *Vertical*

EUT : W6M22403-23342

Power : 4.5 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.92MHz

Note :

| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corr. factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 1302.000 | 50.36 | peak | -8.77 | 41.59 | 74.00 | 150 | 166 | -32.41 | |
| | 1736.000 | 45.62 | peak | -8.11 | 37.51 | 80.80 | 150 | 5 | -43.29 | |

*:Maximum data x:Over limit !:over margin

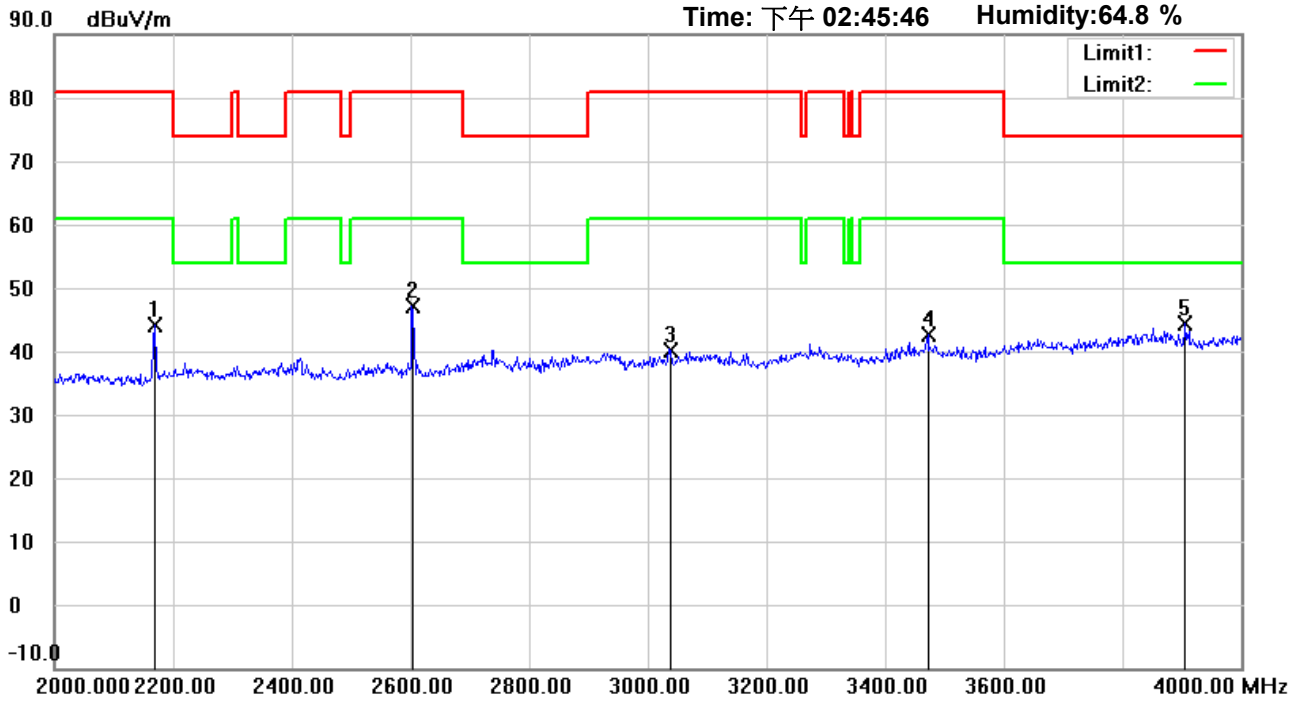
Address:No.99,Sec.1,Balian Rd.,Xizhi Dist.,New Taipei City
Tel:+886-2-2646-1508
Fax:+886-2-2646-1533

## Radiated Emission Measurement

Operator: Kai

File :3 Data :#2 Date: 2024/4/12 Time: 下午 02:45:46

Temperature:26.1 ℃
Humidity:64.8 %




Site : 966A Chamber

Condition : FCC 15.231(433MHz) 2000-4000(PK)

Polarization: *Horizontal*

EUT : W6M22403-23342

Power : 4.5 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.92MHz

Note :

| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corr. factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2169.000 | 49.62 | peak | -5.50 | 44.12 | 80.80 | 150 | 55 | -36.68 | |
| | 2603.000 | 51.60 | peak | -4.56 | 47.04 | 80.80 | 150 | 288 | -33.76 | |
| | 3037.440 | 43.13 | peak | -2.90 | 40.23 | 80.80 | 150 | 263 | -40.57 | |
| | 3472.000 | 44.56 | peak | -1.97 | 42.59 | 80.80 | 150 | 139 | -38.21 | |
| * | 3906.000 | 43.66 | peak | 0.73 | 44.39 | 74.00 | 150 | 315 | -29.61 | |

*:Maximum data x:Over limit !:over margin

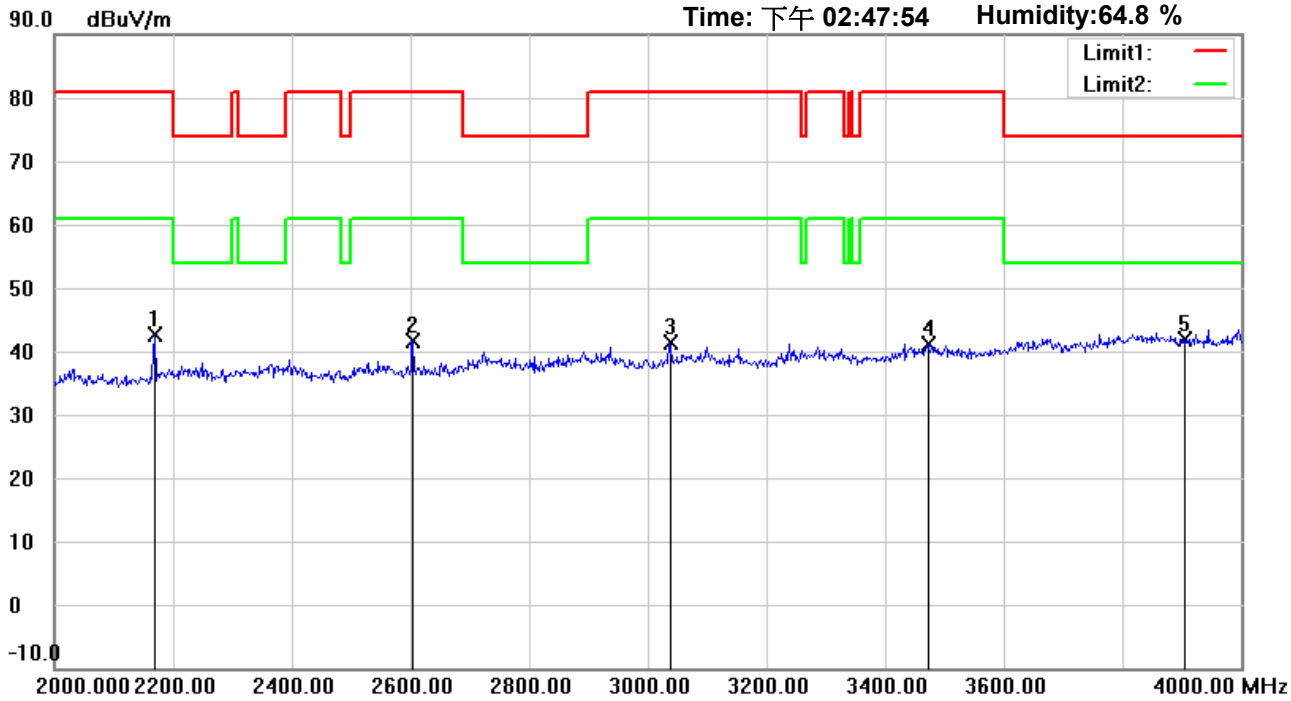
Address:No.99,Sec.1,Balian Rd.,Xizhi Dist.,New Taipei City
Tel:+886-2-2646-1508
Fax:+886-2-2646-1533

## Radiated Emission Measurement

Operator: Kai

File :3 Data :#5 Date: 2024/4/12 Time: 下午 02:47:54

Temperature:26.1 ℃
Humidity:64.8 %




Site : 966A Chamber

Condition : FCC 15.231(433MHz) 2000-4000(PK)

Polarization: *Vertical*

EUT : W6M22403-23342

Power : 4.5 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.92MHz

Note :

| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corr. factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2170.000 | 48.22 | peak | -5.50 | 42.72 | 80.80 | 150 | 53 | -38.08 | |
| | 2603.000 | 46.19 | peak | -4.56 | 41.63 | 80.80 | 150 | 310 | -39.17 | |
| | 3037.000 | 44.19 | peak | -2.90 | 41.29 | 80.80 | 150 | 199 | -39.51 | |
| | 3471.360 | 43.10 | peak | -1.97 | 41.13 | 80.80 | 150 | 126 | -39.67 | |
| * | 3905.280 | 41.07 | peak | 0.73 | 41.80 | 74.00 | 150 | 274 | -32.20 | |

*:Maximum data x:Over limit !:over margin

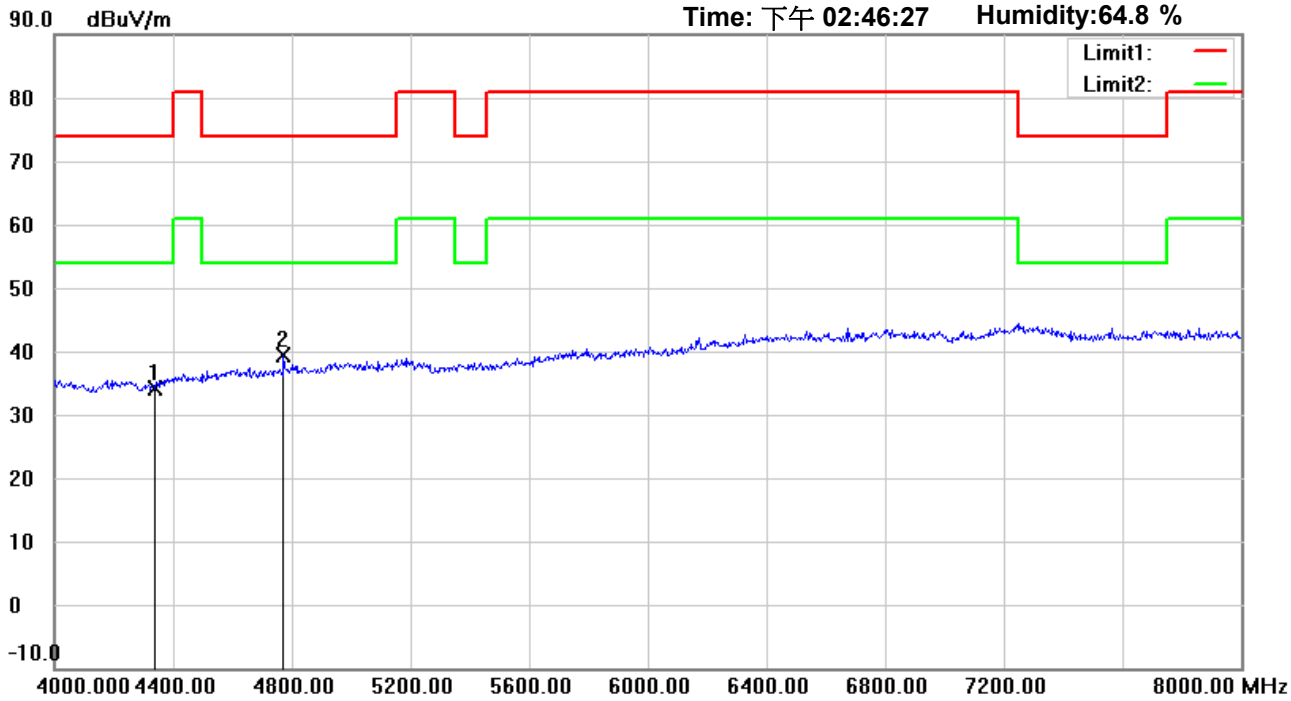
Address:No.99,Sec.1,Balian Rd.,Xizhi Dist.,New Taipei City
Tel:+886-2-2646-1508
Fax:+886-2-2646-1533

## Radiated Emission Measurement

Operator: Kai

File :3 Data :#3 Date: 2024/4/12 Time: 下午 02:46:27

Temperature:26.1 ℃
Humidity:64.8 %




Site : 966A Chamber

Condition : FCC 15.231(433MHz) 4000-8000(PK)

Polarization: *Horizontal*

EUT : W6M22403-23342

Power : 4.5 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.92MHz

Note :

| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corr. factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| | 4339.200 | 32.78 | peak | 1.45 | 34.23 | 74.00 | 150 | 196 | -39.77 | |
| * | 4772.000 | 35.74 | peak | 3.63 | 39.37 | 74.00 | 150 | 228 | -34.63 | |

*:Maximum data x:Over limit !:over margin

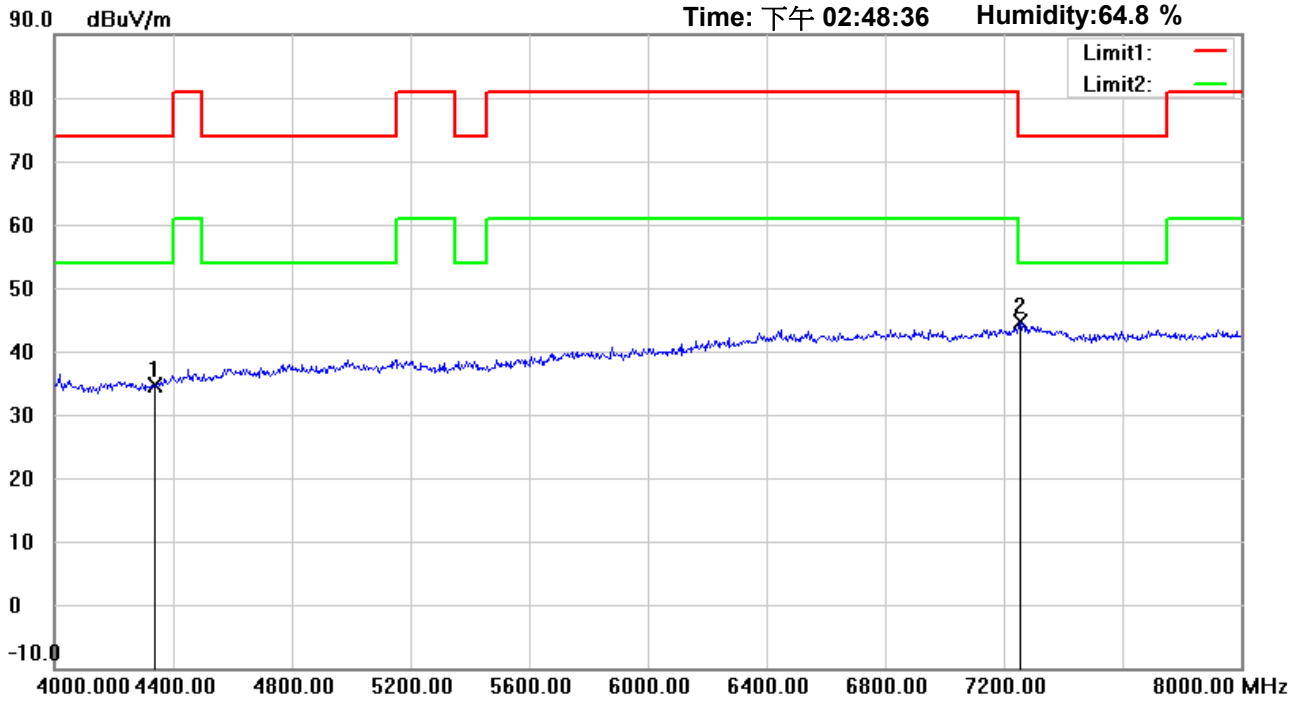
Address:No.99,Sec.1,Balian Rd.,Xizhi Dist.,New Taipei City
Tel:+886-2-2646-1508
Fax:+886-2-2646-1533

## Radiated Emission Measurement

Operator: Kai

File :3 Data :#6 Date: 2024/4/12 Time: 下午 02:48:36

Temperature:26.1 ℃
Humidity:64.8 %




Site : 966A Chamber

Condition : FCC 15.231(433MHz) 4000-8000(PK)

Polarization: *Vertical*

EUT : W6M22403-23342

Power : 4.5 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.92MHz

Note :

| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corr. factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| | 4339.200 | 33.24 | peak | 1.45 | 34.69 | 74.00 | 150 | 163 | -39.31 | |
| * | 7256.000 | 34.70 | peak | 10.03 | 44.73 | 74.00 | 150 | 355 | -29.27 | |

*:Maximum data x:Over limit !:over margin