# 47 CFR PART 15 SUBPART C Test Report

# for

# Transmitter

# Model No.: ACT-800T

# FCC ID: M5X-ACT800T

of

Applicant: MIPRO Electronics Co., Ltd.

Address: 814, Beigang Rd., Chiayi City 600079,

Taiwan, R.O.C.

Tested and Prepared

by

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

**FCC Registration No.: TW1477, TW0020, TW1072**

**Industry Canada filed test laboratory Reg. No. 20037**



**Report No.: W6M22103-20772-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

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# 1 General Information

## 1.1 Notes

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

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

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

Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.

The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that is performance generally conforms to representative cases of communications equipment.

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

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**Tester:**

| June 15, 2021 | | Sora Kuo | Sora. |
|---|---|---|---|
| Date | WTS-Lab. | Name | Signature |

**Technical responsibility for area of testing:**

| June 15, 2021 | | Kevin Wang | Kevin Wang |
|---|---|---|---|
| Date | WTS | Name | Signature |

Registration number: W6M22103-20772-C-1
FCC ID: M5X-ACT800T

## 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
FCC filed test laboratory Reg. No. TW1477, TW0020, TW1072
Industry Canada filed test laboratory Reg. No. 20037

**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: | MIPRO Electronics Co., Ltd. |
| Street: | 814, Beigang Rd., |
| Town: | Chiayi City 600079, |
| Country: | Taiwan, R.O.C. |
| Telephone: | +886-5-238-0809 |
| Fax: | +886-5-238-0803 |

## 1.4 Application details

| | |
|---|---|
| Date of receipt of test sample: | April 19, 2021 |
| Date of test: | from April 20, 2021 to June 04, 2021 |

Registration number: W6M22103-20772-C-1
FCC ID: M5X-ACT800T

## 1.5 General information of Test item

| | |
|---|---|
| Type of test item: | Transmitter |
| Model Number: | ACT-800T |
| Brand Name: | MIPRO |
| Multi-listing model number: | ACT-8XXXXX (X=0~9,a~z,A~Z or Blank) |
| Photos: | see Annex |

**Technical data**

| | |
|---|---|
| Frequency band : | 470-608 MHz |
| Frequency 1: | 470.1 MHz |
| Frequency 2: | 539.0 MHz |
| Frequency 3: | 607.9 MHz |
| Antenna Type: | 1/4 λ Antenna |
| Antenna Gain: | 0.66 dBi (Testing laboratory assumes no responsibility for affecting any validity of the resultwhile the information which is provided by clients.) |
| Power supply: | USB 5Vd.c., Battery 3.7Vd.c. |
| Operation modes: | Simplex |

**Manufacturer:** (if applicable)

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

## 1.6 Test standards

Technical standard: 47 CFR PART 15 SUBPART C § 15.236 (2019-10)

## 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

Power supply: USB 5Vd.c., Battery 3.7Vd.c.

| Test item Name | Uncertainty |
|---|---|
| Estimation Result of Uncertainty of Conducted Emission | Expanded Uncertainty：<br>AMN：1.05 dB<br>Voltage probe：1.05 dB |
| Estimation Result of Uncertainty of Radiated Emission(3M) | Expanded Uncertainty：<br>0.009-30 MHz：2.13 dB<br>30-1000 MHz：3.53 dB<br>1-18 GHz：4.19 dB<br>18-40 GHz：4.09 dB |
| Estimation Result of Uncertainty of Bandwidth Measurement<br>20 dB Bandwidth, Occupied bandwidth, Channel bandwidth, Necessary Bandwidth | Expanded Uncertainty：0.41 kHz |
| Estimation Result of Uncertainty of Frequency Drift Measurement<br>Frequency stability | Expanded Uncertainty：6.11 Hz |
| Estimation Result of Uncertainty of EIRP Measurement | Expanded Uncertainty：<br>30-200MHz：2.14 dB<br>200-1000MHz：2.4 dB<br>1-18GHz：4.84 dB<br>18-40GHz：4.31 dB |

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

Registration number: W6M22103-20772-C-1
FCC ID: M5X-ACT800T

## 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 | 2021/6/4 | 2022/6/3 |
| ETSTW-CE 003 | AC POWER SOURCE | APS-9102 | D161137 | GW | Function Test | |
| ETSTW-CE 004 | ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK | ESH3-Z5 | 840731/011 | R&S | 2020/11/6 | 2021/11/5 |
| ETSTW-CE 006 | IMPULSBEGRENZER PULSE LIMITER | ESH3-Z2 | 100226 | R&S | 2020/9/22 | 2021/9/21 |
| ETSTW-CE 008 | HF-EICHLEITUNG RF STEP ATTENUATOR 139dB DPSP | 334.6010.02 | 844581/024 | R&S | Function Test | |
| ETSTW-CE 009 | TEMP.&HUMIDITY CHAMBER | GTH-225-40-1P-U | MAA0305-009 | GIANT FORCE | 2020/7/22 | 2021/7/21 |
| ETSTW-CE 016 | TWO-LINE V-NETWORK | ENV216 | 100050 | R&S | 2020/10/26 | 2021/10/25 |
| ETSTW-CE 028 | MXE EMI Receiver | N9038A | MY53220110 | Agilent | 2020/7/29 | 2021/7/28 |
| ETSTW-RE 003 | EMI TEST RECEIVER | ESI 26 | 831438/001 | R&S | 2021/6/4 | 2022/6/3 |
| ETSTW-RE 004 | EMI TEST RECEIVER | ESI 40 | 832427/004 | R&S | 2020/9/14 | 2021/9/13 |
| 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 | 2020/7/30 | 2021/7/29 |
| ETSTW-RE 019 | MICROWAVE HORN ANTENNA | 22240-25 | 121074 | FM | 2021/5/5 | 2022/5/4 |
| ETSTW-RE 027 | Passive Loop Antenna | 6512 | 00034563 | ETS-Lindgren | 2020/7/8 | 2021/7/7 |
| ETSTW-RE 030 | Double-Ridged Guide Horn Antenna | 3117 | 00035224 | ETS-Lindgren | 2021/5/5 | 2022/5/4 |
| ETSTW-RE 042 | Biconical Antenna | HK116 | 100172 | R&S | 2021/3/18 | 2022/3/17 |
| ETSTW-RE 043 | Log-Periodic Dipole Antenna | HL223 | 100166 | R&S | 2021/5/21 | 2022/5/20 |
| ETSTW-RE 044 | Log-Periodic Antenna | HL050 | 100094 | R&S | 2020/8/3 | 2021/8/2 |
| ETSTW-RE 045 | ESA-E SERIES SPECTRUM ANALYZER | E4404B | MY45111242 | Agilent | Pre-test Use | |
| ETSTW-RE 050 | Attenuator 10dB | 50HF-010-1 | None | JFW | 2021/2/19 | 2022/2/18 |
| ETSTW-RE 051 | Attenuator 6dB | 50HF-006-1 | None | JFW | 2021/2/19 | 2022/2/18 |
| ETSTW-RE 053 | Attenuator 3dB | 50HF-003-1 | None | JFW | 2021/2/19 | 2022/2/18 |
| ETSTW-RE 055 | SPECTRUM ANALYZER | FSU 26 | 200074 | R&S | 2021/3/16 | 2022/3/15 |
| ETSTW-RE 060 | Attenuator 30dB | 5015-30 | F651012z-01 | ATM | 2021/2/19 | 2022/2/18 |
| ETSTW-RE 062 | Amplifier Module | CHC 2 | None | KMIC | 2021/5/5 | 2022/5/4 |
| ETSTW-RE 064 | Bluetooth Test Set | MT8852B-042 | 6K00005709 | Anritsu | Function Test | |
| ETSTW-RE 069 | Double-Ridged Guide Horn Antenna | 3117 | 00069377 | ETS-Lindgren | Function Test | |
| ETSTW-RE 072 | CELL SITE TEST SET | 8921A | 3339A00375 | HP | 2020/10/15 | 2021/10/14 |
| ETSTW-RE 088 | SOLID STATE AMPLIFIER | KMA180265A01 | 99057 | KMIC | 2020/9/17 | 2021/9/16 |
| ETSTW-RE 091 | Match Pad | MDCS1500 | None | WOKEN | 2021/5/27 | 2022/5/26 |
| ETSTW-RE 099 | DC Block | 50DB-007-1 | None | JFW | 2021/2/19 | 2022/2/18 |
| ETSTW-RE 112 | AC POWER SOURCE | TFC-1005 | T-0A023536 | T-Power | Function test | |
| ETSTW-RE 115 | 2.4GHz Notch Filter | N0124411 | 473874 | MICROWAVE CIRCUITS | 2021/1/6 | 2022/1/5 |

| | | | | | | |
|---|---|---|---|---|---|---|
| ETSTW-RE 120 | RF Player | MP9200 | MP9210-111022 | ADIVIC | 2020/12/25 | 2021/12/24 |
| ETSTW-RE 122 | SIGNAL GENERATOR | SMF100A | 102149 | R&S | 2021/6/4 | 2022/6/3 |
| ETSTW-RE 125 | 5GHz Notch filter | 5NSL11-5200/E221.3-O/O | 1 | K&L Microwave | 2020/8/7 | 2021/8/6 |
| ETSTW-RE 126 | 5GHz Notch filter | 5NSL12-5800/E221.3-O/O | 1 | K&L Microwave | 2020/8/7 | 2021/8/6 |
| ETSTW-RE 127 | RF Switch Box | RFS-01 | None | WTS | 2021/2/19 | 2022/2/18 |
| ETSTW-RE 128 | 5.3GHz Notch filter | N0153001 | SN487233 | Microwave Circuits | 2020/8/7 | 2021/8/6 |
| ETSTW-RE 129 | 5.5GHz Notch filter | N0555984 | SN487234 | Microwave Circuits | 2020/8/7 | 2021/8/6 |
| ETSTW-RE 130 | Handheld RF Spectrum Analyzer | N9340A | CN0147000204 | Agilent | Pre-test Use | |
| ETSTW-RE 142 | Amplifier | 8447D | 2805A03378 | Agilent | 2021/5/5 | 2022/5/4 |
| ETSTW-RE 146 | Preamplifier | JPA-10M1G | 15090004 | JPT | 2021/6/4 | 2022/6/3 |
| ETSTW-RE 147 | Bi-log Hybrid Antenna | MCTD 2786B | BLB16M04005 | ETC | 2021/4/7 | 2022/4/6 |
| ETSTW-RE 148 | Bi-log Hybrid Antenna | MCTD 2786B | BLB16M04006 | ETC | 2020/7/9 | 2021/7/8 |
| ETSTW-RE 153 | Signal Analyzer | FSV40 | 101929 | R&S | 2020/10/1 | 2021/9/30 |
| ETSTW-RF 002 | Electromagnetic field probe | LF-30 | K-0007 | STT | 2021/6/4 | 2022/6/3 |
| ETSTW-EMI 011 | USB Compact Modulator | SFC-U | 101689 | R&S | 2021/6/2 | 2022/6/1 |
| ETSTW-GSM 002 | Universal Radio Communication Tester | CMU 200 | 109439 | R&S | 2021/3/16 | 2022/3/15 |
| ETSTW-GSM 003 | Radio Communication Analyzer | MT8820C | 6201342073 | Anritsu | 2021/4/27 | 2022/4/26 |
| ETSTW-GSM 004 | Wideband Radio Communication Tester | CMW500 | 128092 | R&S | 2020/11/10 | 2021/11/9 |
| ETSTW-GSM 019 | Band Reject Filter | WRCTF824/849-822/851-40 /12+9SS | 3 | WI | 2021/1/6 | 2022/1/5 |
| ETSTW-GSM 020 | Band Reject Filter | WRCD1747/1748-1743/1752-32/5SS | 1 | WI | 2021/1/6 | 2022/1/5 |
| ETSTW-GSM 021 | Band Reject Filter | WRCD1879.5/1880.5-1875.5/1884.5-32/5SS | 3 | WI | 2021/1/6 | 2022/1/5 |
| ETSTW-GSM 022 | Band Reject Filter | WRCT901.9/903.1-904.25-50/8SS | 1 | WI | 2021/1/6 | 2022/1/5 |
| ETSTW-GSM 023 | Power Divider | 4901.19.A | None | SUHNER | 2020/9/8 | 2021/9/7 |
| ETSTW-GSM 024 | Radio Communication Analyzer | MT8821C | None | Anritsu | 2021/4/1 | 2022/3/31 |
| ETSTW-GSM 025 | Band Reject Filter | BRM19835 | 001 | Micro-Tronics | 2020/8/7 | 2021/8/6 |
| ETSTW-Cable 011 | SMA to N type Cable | RGU-400 | None | THERMAX | Pre-test Use NCR | |
| ETSTW-Cable 016 | BNC Cable | Switch Box | B Cable 1 | Schwarz beck | 2021/2/19 | 2022/2/18 |
| ETSTW-Cable 017 | BNC Cable | X Cable | B Cable 2 | Schwarz beck | 2021/2/19 | 2022/2/18 |
| ETSTW-Cable 018 | BNC Cable | Y Cable | B Cable 3 | Schwarz beck | 2021/2/19 | 2022/2/18 |
| ETSTW-Cable 019 | BNC Cable | Z Cable | B Cable 4 | Schwarz beck | 2021/2/19 | 2022/2/18 |
| ETSTW-Cable 020 | N TYPE Cable | OATS Cable 1 | N30N30-L335-15M | JYE BAO CO.,LTD. | 2020/7/1 | 2021/6/30 |
| ETSTW-Cable 027 | Microwave Cable | SUCOFLEX 104 | 279083 | HUBER+SUHNER | 2021/5/5 | 2022/5/4 |
| ETSTW-Cable 028 | Microwave Cable | FA147A0015M2020 | 30064-2 | UTIFLEX | 2020/9/17 | 2021/9/16 |
| ETSTW-Cable 029 | Microwave Cable | FA147A0015M2020 | 30064-3 | UTIFLEX | 2020/9/17 | 2021/9/16 |
| ETSTW-Cable 030 | Microwave Cable | SUCOFLEX 104（S_Cable 9） | 279067 | HUBER+SUHNER | 2021/2/19 | 2022/2/18 |
| ETSTW-Cable 043 | Microwave Cable | SUCOFLEX 104 | 317576 | HUBER+SUHNER | 2021/5/5 | 2022/5/4 |
| ETSTW-Cable 047 | Microwave Cable | SUCOFLEX 104 | 325518 | HUBER+SUHNER | 2020/7/3 | 2021/7/2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| ETSTW-Cable 058 | Microwave Cable | SUCOFLEX 104 | none | HUBER+SUHNER | 2021/6/4 | 2022/6/3 |
| ETSTW-Cable 064 | Microwave Cable | SUCOFLEX 104 | MY28891 | HUBER+SUHNER | 2021/5/5 | 2022/5/4 |
| ETSTW-Cable 071 | N TYPE CABLE | EMCCFD400-NM-NM-25000 | 170239 | EMCI | 2021/6/4 | 2022/6/3 |
| ETSTW-Cable 072 | SMA type cable (8m) | SUCOFLEX 104 | 805800/4 | HUBER+SUHNER | 2021/5/5 | 2022/5/4 |
| ETSTW-Cable 074 | SMA type cable (2m) | SUCOFLEX 104 | 802563/4 | HUBER+SUHNER | 2021/5/5 | 2022/5/4 |
| WTSTW-SW 002 | EMI TEST SOFTWARE | EZ_EMC | None | Farad | Version ETS-03A1 | |
| WTSTW-SW 006 | EMI TEST SOFTWARE | e3 | None | AUDIX | Version 9.161014 | |
| WTSTW-SW 008 | Signal studio | Agilent | None | AUDIX | Version 2.0.0.1 | |
| ETSTW-TH 002 | Thermohygrometer | 608-H1 | 45204317 | Testo | 2020/9/23 | 2021/9/22 |
| ETSTW-TH 003 | Wireless weather station | GAIA | N/A | TFA | 2020/12/3 | 2021/12/2 |

## 2.4 General Test Procedure

**POWER LINE CONDUCTED INTERFERENCE:** The procedure used was ANSI STANDARD C63.10-2013 6.2 using a 50μH LISN (if necessary). Both lines were observed. The bandwidth of the spectrum analyzer was 10 kHz with an appropriate sweep speed.

**RADIATION INTERFERENCE:** The test procedure used was according to ANSI STANDARD C63.10-2013 6.3 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 100 kHz 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. The ambient temperature of the UUT was 23°C with a humidity of 40 %.

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 at the registered open field test site located at The Registration Number:
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)

| Test case | Para. Number | Required | Test passed | Test failed |
|---|---|---|---|---|
| RF Power Output | §15.236(d) | ☒ | ☒ | ☐ |
| Occupied Bandwidth | §15.236(f) | ☒ | ☒ | ☐ |
| Emission Mask | §15.236(g)<br>ETSI EN 300 422-1 v2.1.2 | ☒ | ☒ | ☐ |
| Radiated Spurious Emission | §15.236(g) | ☒ | ☒ | ☐ |
| Line Conducted Emissions | 15.207 | ☒ | ☒ | ☐ |
| Frequency Stability vs. Temperature<br>Frequency Stability vs. Voltage | §15.236(f)(3) | ☒ | ☒ | ☐ |
| Modulation | §15.236(f)(3) | ☐ | ☐ | ☐ |

The following is intentionally left blank.

# 4 RF Power Output, FCC15.236 (d)

## 4.1 Test procedure

§ 2.1046 Measurements required: RF power output.

(a) For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in § 2.1033(c)(8). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.

(b) For single sideband, independent sideband, and single channel, controlled carrier radiotelephone transmitters the procedure specified in paragraph (a) of this section shall be employed and, in addition, the transmitter shall be modulated during the test as follows. In all tests, the input level of the modulating signal shall be such as to develop rated peak envelope power or carrier power, as appropriate, for the transmitter.

(1) Single sideband transmitters in the A3A or A3J emission modes - by two tones at frequencies of 400 Hz and 1800 Hz (for 3.0 kHz authorized bandwidth), or 500 Hz and 2100 Hz (3.5 kHz authorized bandwidth), or 500 Hz and 2400 Hz (for 4.0 kHz authorized bandwidth), applied simultaneously, the input levels of the tones so adjusted that the two principal frequency components of the radio frequency signal produced are equal in magnitude.

(2) Single sideband transmitters in the A3H emission mode - by one tone at a frequency of 1500 Hz (for 3.0 kHz authorized bandwidth), or 1700 Hz (for 3.5 kHz authorized bandwidth), or 1900 Hz (for 4.0 kHz authorized bandwidth), the level of which is adjusted to produce a radio frequency signal component equal in magnitude to the magnitude of the carrier in this mode.

(3) As an alternative to paragraphs (b) (1) and (2) of this section other tones besides those specified may be used as modulating frequencies, upon a sufficient showing of need. However, any tones so chosen must not be harmonically related, the third and fifth order intermodulation products which occur must fall within the −25 dB step of the emission bandwidth limitation curve, the seventh and ninth order intermodulation product must fall within the 35 dB step of the referenced curve and the eleventh and all higher order products must fall beyond the −35 dB step of the referenced curve.

(4) Independent sideband transmitters having two channels by 1700 Hz tones applied simultaneously in both channels, the input levels of the tones so adjusted that the two principal frequency components of the radio frequency signal produced are equal in magnitude.

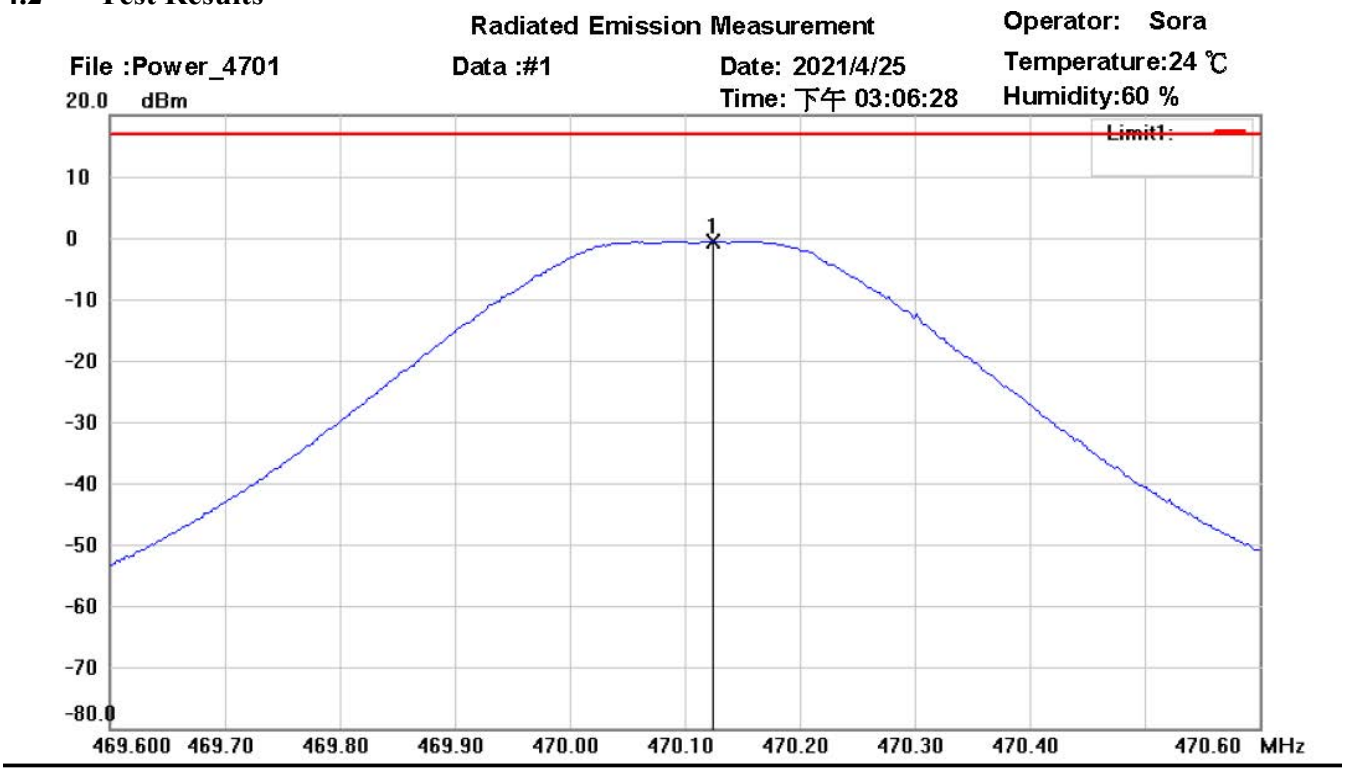
(5) Independent sideband transmitters having more than two channels by an appropriate signal or signals applied to all channels simultaneously. The input signal or signals shall simulate the input signals specified by the manufacturer for normal operation.

(6) Single-channel controlled-carrier transmitters in the A3 emission mode - by a 2500 Hz tone.

(c) For measurements conducted pursuant to paragraphs (a) and (b) of this section, all calculations and methods used by the applicant for determining carrier power or peak envelope power, as appropriate, on the basis of measured power in the radio frequency load attached to the transmitter output terminals shall be shown. Under the test conditions specified, no components of the emission spectrum shall exceed the limits specified in the applicable rule parts as necessary for meeting occupied bandwidth oremission limitations.

Registration number: W6M22103-20772-C-1
FCC ID: M5X-ACT800T

## 4.2 Test Results




Site : Chamber
Condition : FCC 15.236 POWER
EUT : W6M22103-20772
M/N:
Test Mode : Tx 470.1MHz
Note :

Polarization: *Horizontal*
Power : 3.7 Vd.c.
Distance: 3m

| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 470.1251 | -31.53 | peak | 30.88 | -0.65 | 17.00 | 150 | 280 | -17.65 | |

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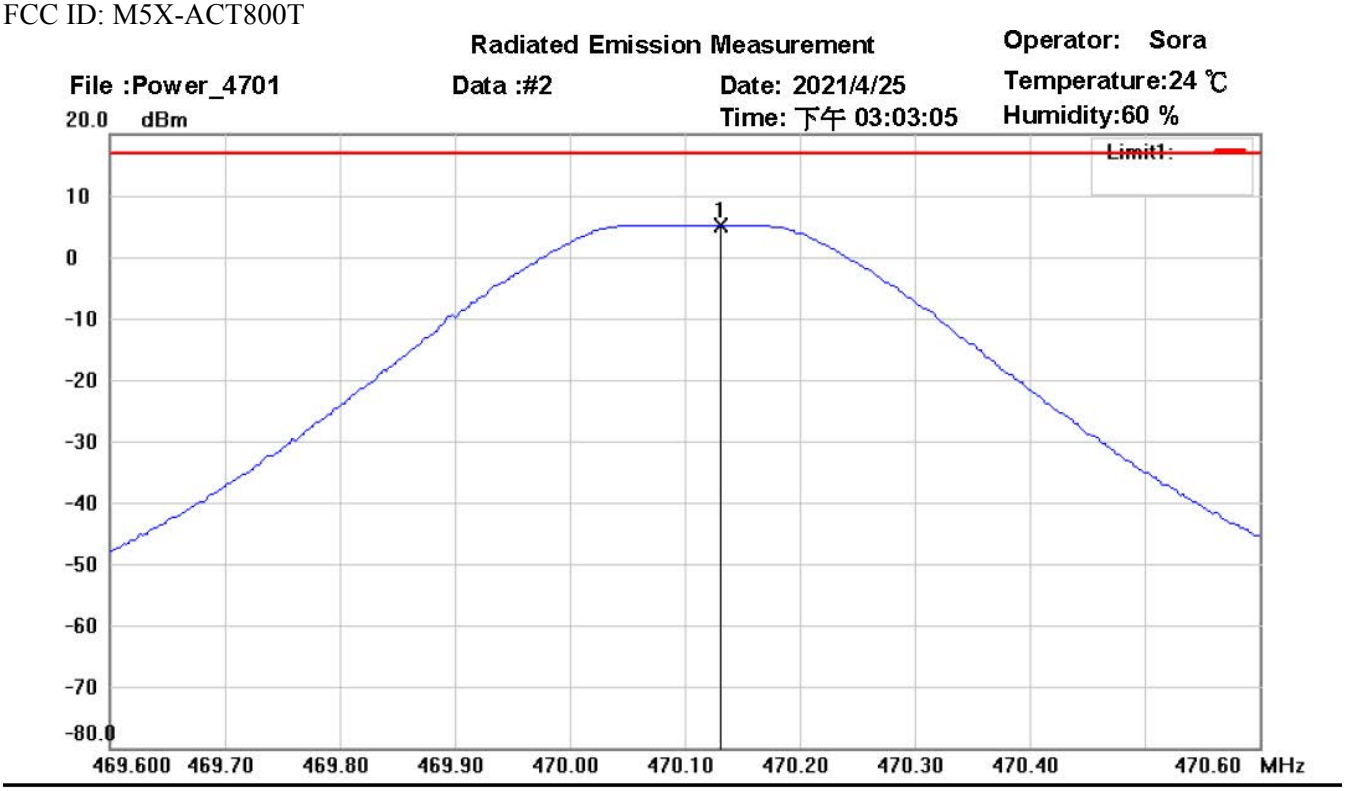


Site : Chamber
Condition : FCC 15.236 POWER
EUT : W6M22103-20772
M/N:
Test Mode : Tx 470.1MHz
Note :

Polarization: *Vertical*
Power : 3.7 Vd.c.
Distance: 3m

| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 470.1311 | -24.14 | peak | 29.28 | 5.14 | 17.00 | 150 | 225 | -11.86 | |

Registration number: W6M22103-20772-C-1
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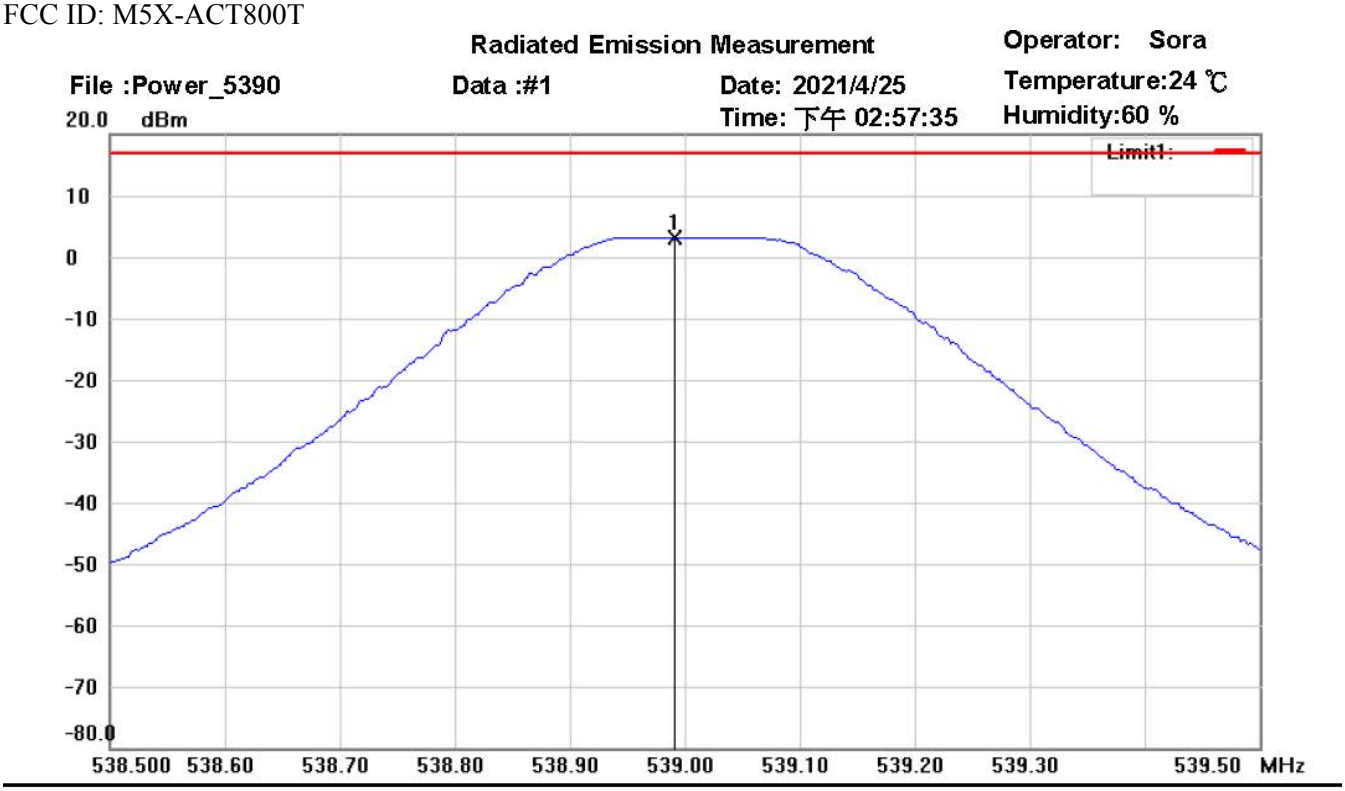
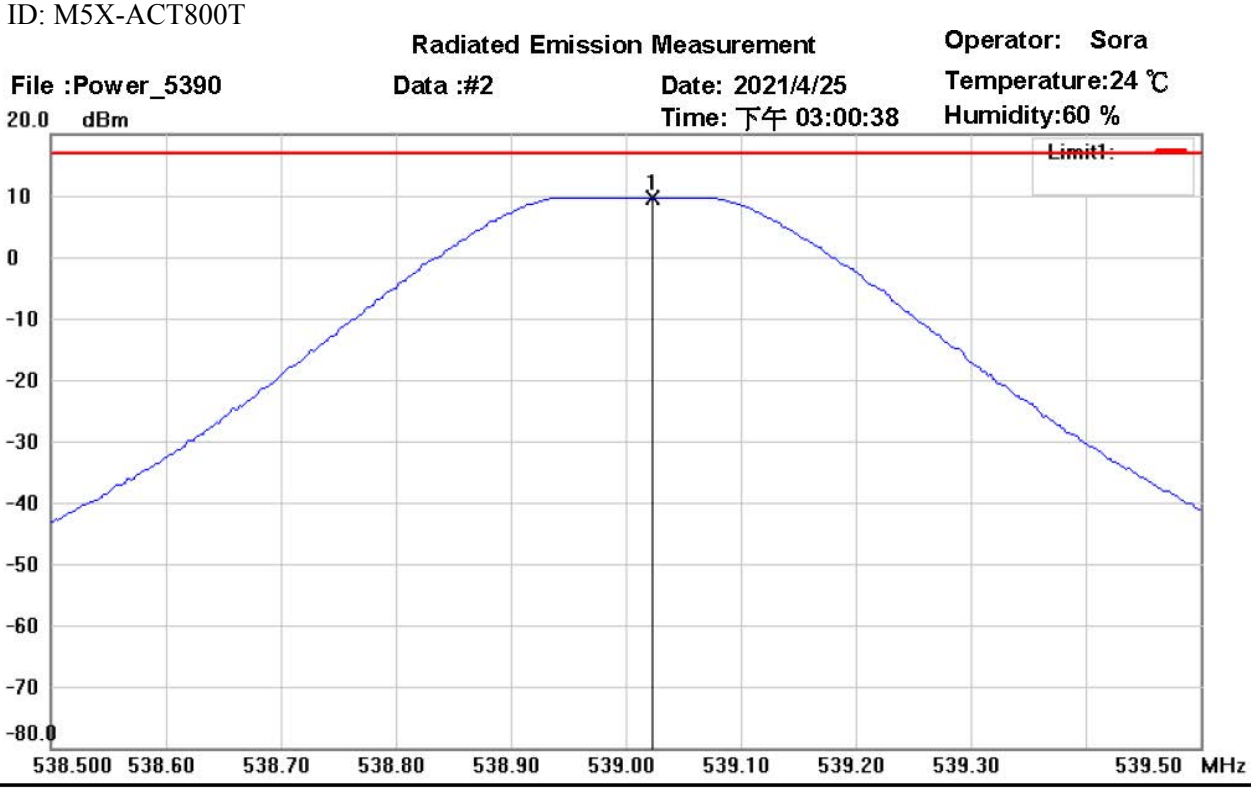



Site : Chamber
Condition : FCC 15.236 POWER
EUT : W6M22103-20772
M/N:
Test Mode : Tx 539MHz
Note :

Polarization: *Horizontal*
Power : 3.7 Vd.c.
Distance: 3m

| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 538.9910 | -28.50 | peak | 31.70 | 3.20 | 17.00 | 150 | 35 | -13.80 | |

Registration number: W6M22103-20772-C-1
FCC ID: M5X-ACT800T

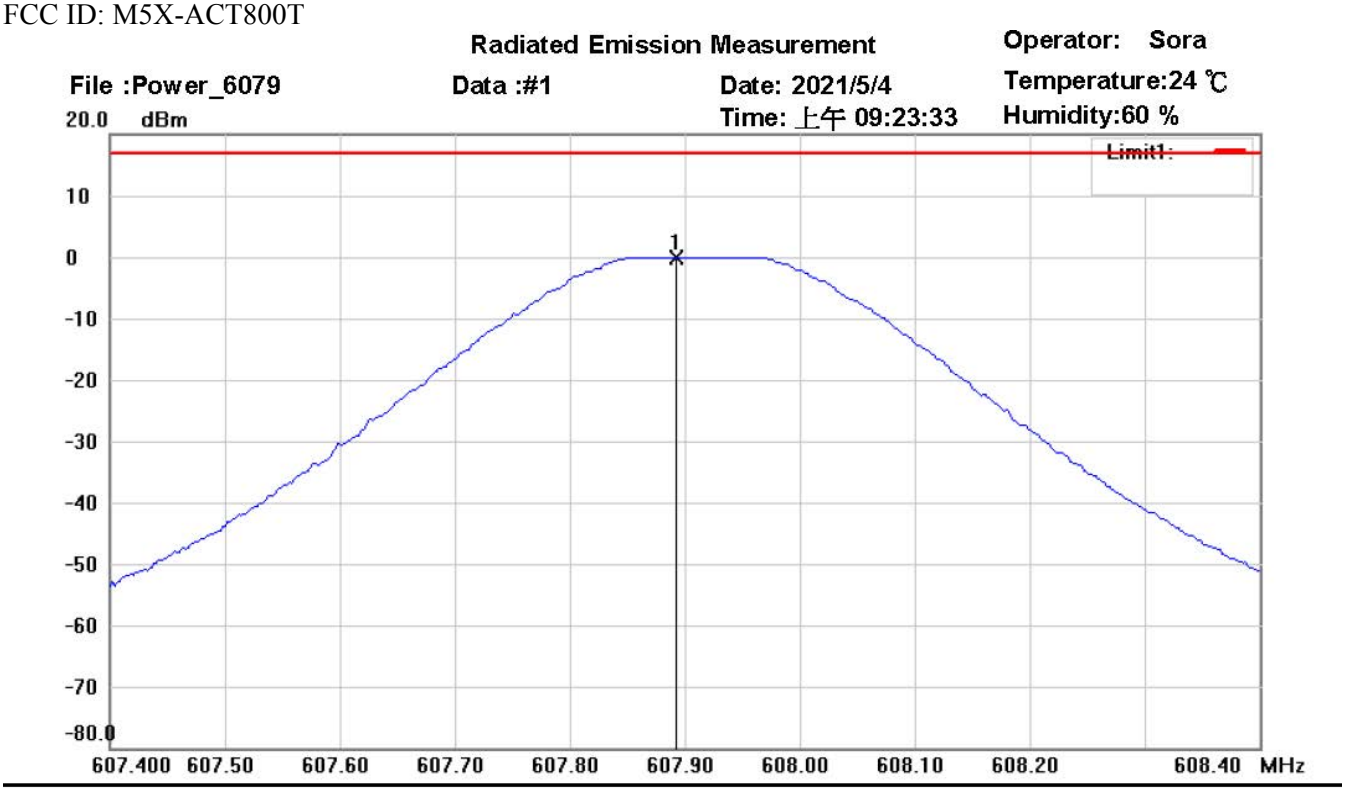



Site : Chamber
Condition : FCC 15.236 POWER
EUT : W6M22103-20772
M/N:
Test Mode : Tx 539MHz
Note :

Polarization: *Vertical*
Power : 3.7 Vd.c.
Distance: 3m

| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 539.0230 | -20.82 | peak | 30.50 | 9.68 | 17.00 | 150 | 180 | -7.32 | |

Registration number: W6M22103-20772-C-1
FCC ID: M5X-ACT800T

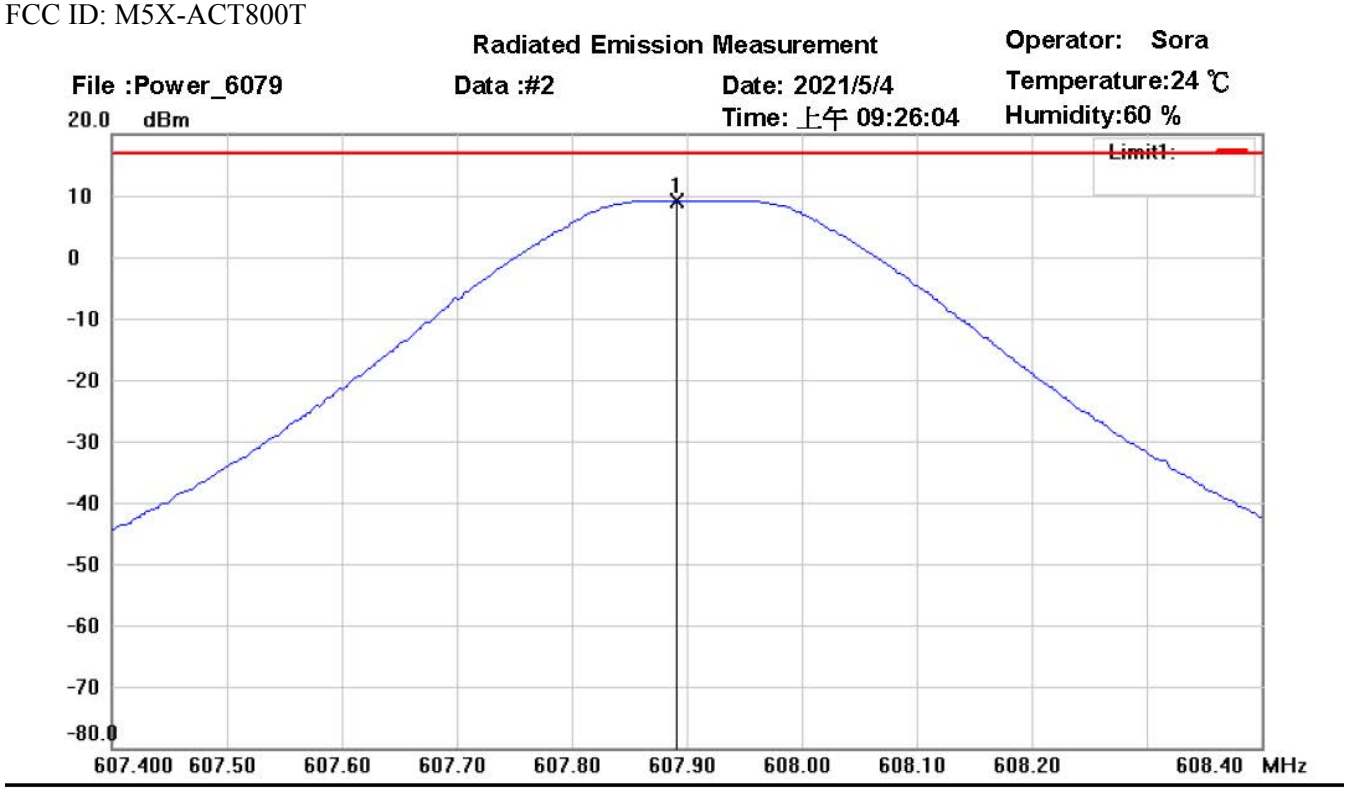



Site : Chamber
Condition : FCC 15.236 POWER
EUT : W6M22103-20772
M/N:
Test Mode : Tx 607.9MHz
Note :

Polarization: *Horizontal*
Power : 3.7 Vd.c.
Distance: 3m

| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 607.8930 | -33.37 | peak | 33.34 | -0.03 | 17.00 | 150 | 150 | -17.03 | |

Registration number: W6M22103-20772-C-1
FCC ID: M5X-ACT800T




Site : Chamber
Condition : FCC 15.236 POWER
EUT : W6M22103-20772
M/N:
Test Mode : Tx 607.9MHz
Note :

Polarization: *Vertical*
Power : 3.7 Vd.c.
Distance: 3m

| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 607.8910 | -21.25 | peak | 30.39 | 9.14 | 17.00 | 150 | 90 | -7.86 | |

Test equipment used: ETSTW-RE 004, ETSTW-RE 122, ETSTW-RE 042, ETSTW-RE 043

Limit According to FCC PART 15.236(d): The output power limit: 50 mW (17 dBm)

Registration number: W6M22103-20772-C-1
FCC ID: M5X-ACT800T

# 5 Occupied Bandwidth, FCC15.236 (f) / /Emission Mask, FCC15.236 (g)

## 5.1 Test Procedure

**Occupied Bandwidth**

(f) The operating frequency within a permissible band of operation as defined in paragraph (c) must comply with the following requirements.

(1) The frequency selection shall be offset from the upper or lower band limits by 25 kHz or an integral multiple thereof.

(2) One or more adjacent 25 kHz segments within the assignable frequencies may be combined to form a channel whose maximum bandwidth shall not exceed 200 kHz. The operating bandwidth shall not exceed 200 kHz.

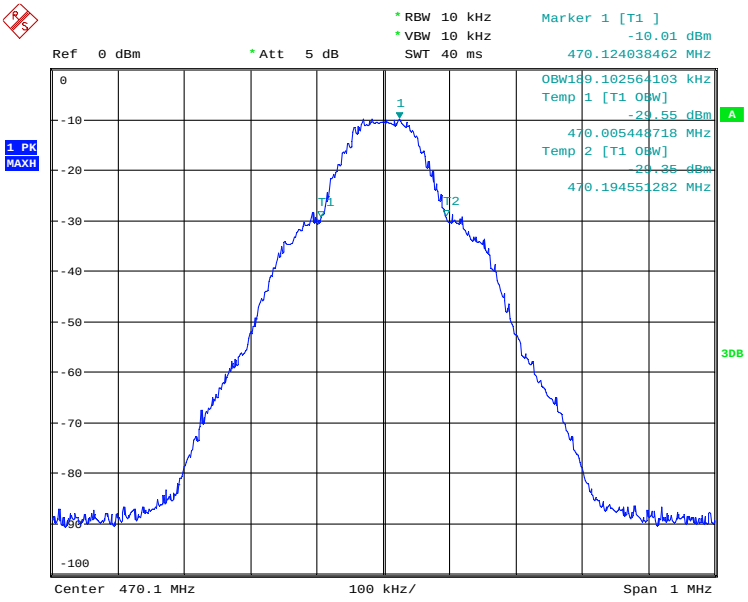
(3) The frequency tolerance of the carrier signal shall be maintained within ±0.005% of the operating frequency over a temperature variation of - 20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. Battery (1) In the bands allocated and assigned for broadcast television and in the 600 MHz service band: 50 mW EIRP

(2) In the 600 MHz guard bands including the duplex gap: 20 mW EIRP (e) Operation is limited to locations separated from licensed services by the following distances. (1) Four kilometers outside the following protected service contours of co-channel TV stations. operated equipment shall be tested using a new battery.

## 5.2 Test results

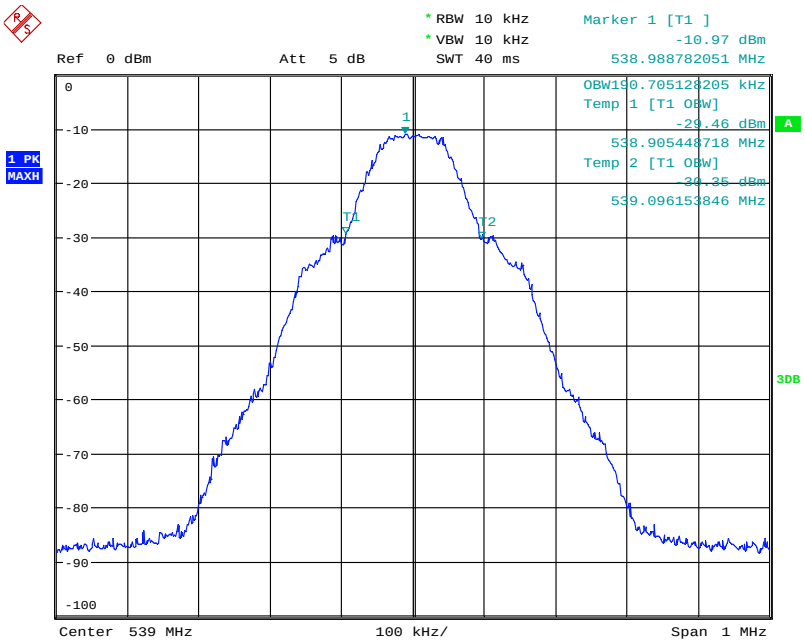
Test date: May 05, 2021
Temperature: 24.8 ˚C
Humidity: 52.6 %
Tester: Sora

Occupied Bandwidth

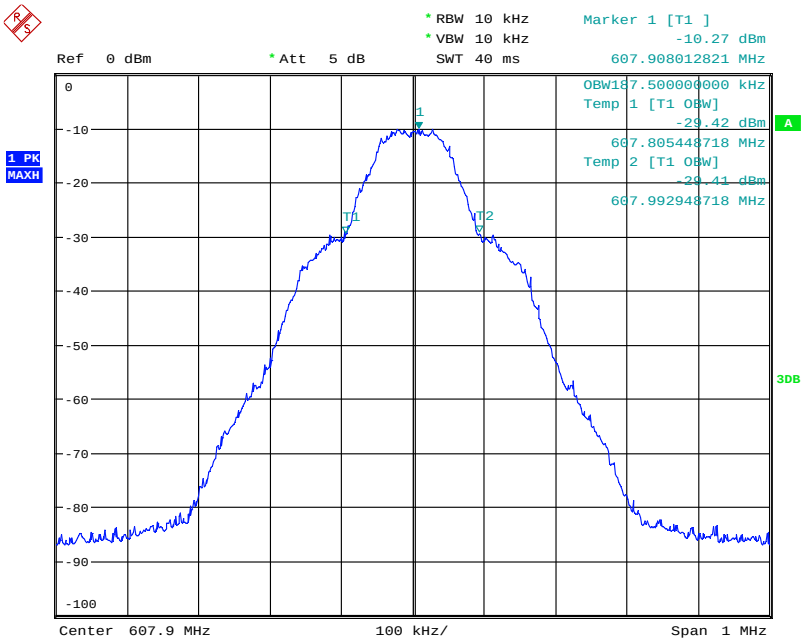



OCCUPIED BANDWIDTH 470.1MHz
Date: 5.MAY.2021 10:23:04

Registration number: W6M22103-20772-C-1
FCC ID: M5X-ACT800T




OCCUPIED BANDWIDTH 539MHz
Date: 5.MAY.2021 10:14:34




OCCUPIED BANDWIDTH 607.9MHz
Date: 5.MAY.2021 10:34:11

**Limit**
The operating bandwidth shall not exceed 200 kHz.

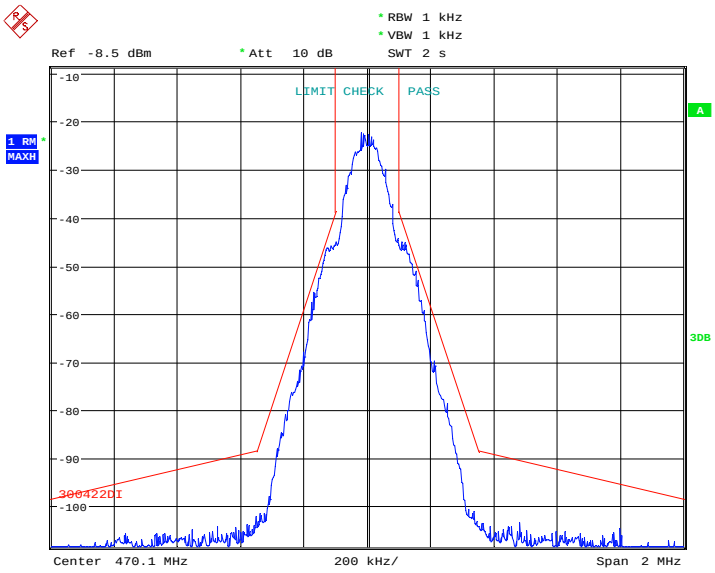
Test equipment used: ETSTW-RE 055 , ETSTW-RE 072, ETSTW-RE 050

Registration number: W6M22103-20772-C-1
FCC ID: M5X-ACT800T

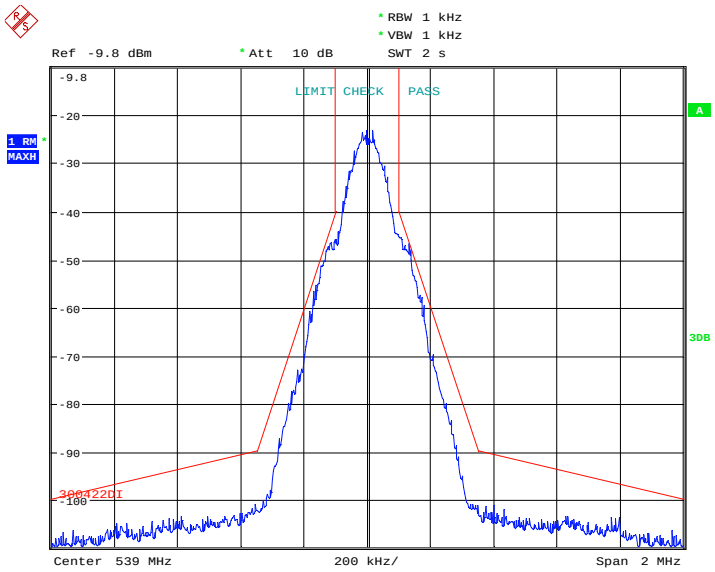
**Emission Mask**

(g) Emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in Section 8.3 of ETSI EN 300 422–1 V2.1.2 (2017-01) (incorporated by reference, see § 15.38). Emissions outside this band shall comply with the limit specified at the edges of the ETSI mask.

Test date: May 05, 2021
Temperature: 24.8 ˚C
Humidity: 52.6 %
Tester: Sora

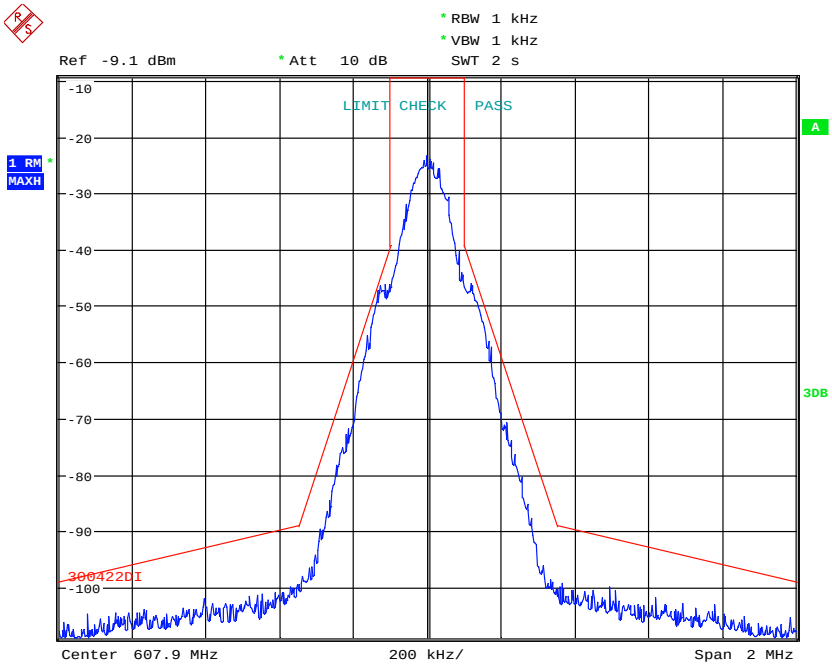



NECESSARY BANDWIDTH 470.1MHz
Date: 5.MAY.2021 10:22:01




NECESSARY BANDWIDTH 539MHz
Date: 5.MAY.2021 10:17:20

Registration number: W6M22103-20772-C-1
FCC ID: M5X-ACT800T




NECESSARY BANDWIDTH 607.9MHz
Date: 5.MAY.2021 10:29:51

Test equipment used: ETSTW-RE 055 , ETSTW-RE 072

LIMIT acc. Subclause 8.3.1.2

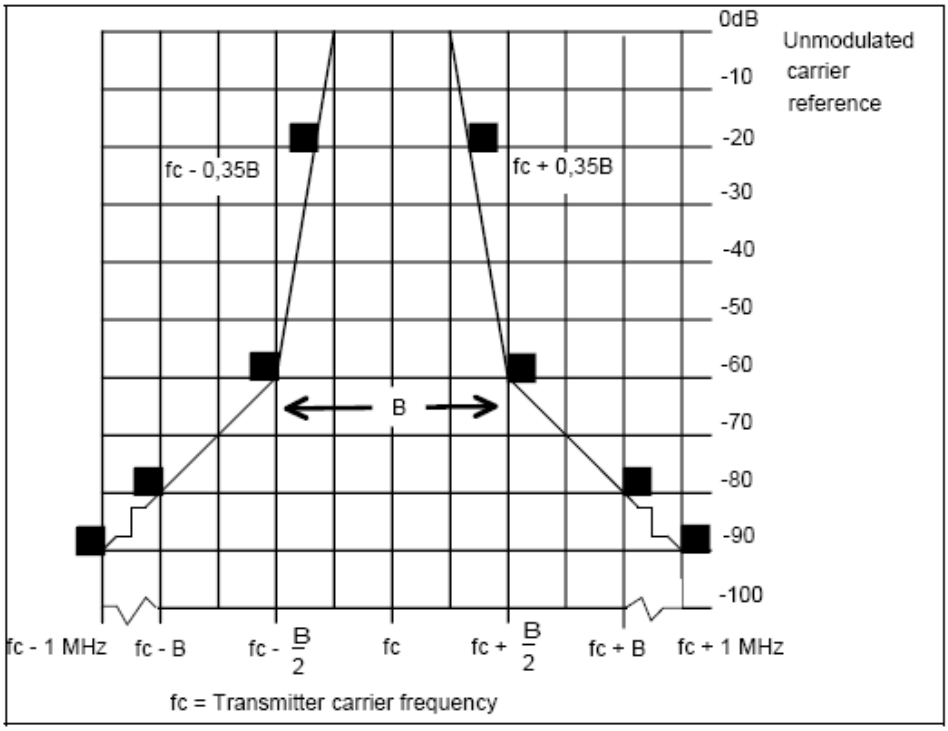



**Figure 1: Spectrum mask for analogue systems in all bands**

Registration number: W6M22103-20772-C-1
FCC ID: M5X-ACT800T
LIMIT acc. Subclause 8.3.2.2
The transmitter output spectrum shall be within the mask defined in figure 2. This mask may also be used for both analogue and digital Assistive Listening Devices.

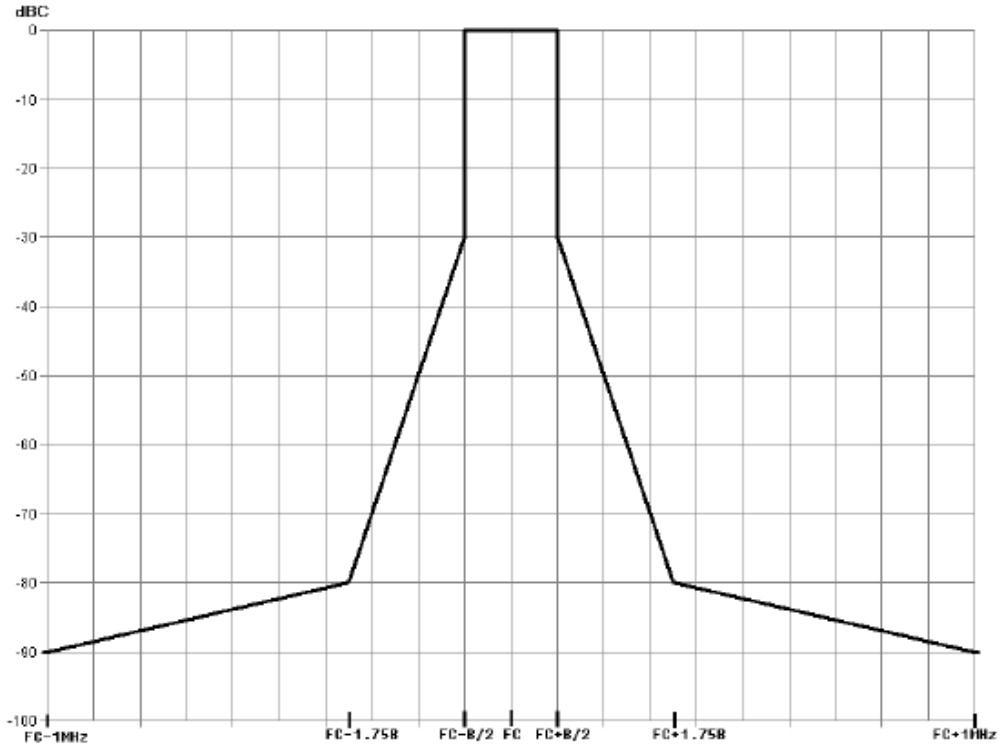



**Figure 2: Spectrum mask for digital systems below 1 GHz**

# 6 Radiated Spurious Emission , FCC 15.236(g)

## 6.1 Test procedure

(g) Emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in Section 8.3 of ETSI EN 300 422–1 V2.1.2 (2017-01) (incorporated by reference, see § 15.38). Emissions outside this band shall comply with the limit specified at the edges of the ETSI mask.

## 6.2 Test results

The measurements of the spurious emission at the upper , center and lower channel.
The measurement diagrams show that all significant spurs are well below the limit line.

**Summary table with radiated data of the test plots for Carrier Test Frequency**

Model: ACT-800T Date: --
Mode: -- Temperature: -- °C Engineer: --
Polarization: Horizontal Humidity: -- %

| Frequency (MHz) | Reading (dBm) Peak | Factor (dB) Corr. | Result (dBm) | Limit (dBm) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|---|---|---|---|---|---|---|---|
| -- | -- | -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- | -- | -- |

Polarization: Vertical

| Frequency (MHz) | Reading (dBm) Peak | Factor (dB) Corr. | Result (dBm) | Limit (dBm) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|---|---|---|---|---|---|---|---|
| -- | -- | -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- | -- | -- |

**Note:**

1. **Correction Factor = Antenna Gain + Cable Loss + Amplifier Gain**
2. **The formula of measured value as: Test Result = Reading + Correction Factor**
3. **All not in the table noted test results are more than 20 dB below the relevant limits.**
4. **See the attached diagram as appendix.**

Test equipment used: ETSTW-RE 004, ETSTW-RE 122, ETSTW-RE 030, ETSTW-RE 042, ETSTW-RE 043, ETSTW-RE 044

## 7 Frequency Stability, FCC 15.236(f)(3)

### 7.1 Test procedure

The frequency tolerance of the carrier signal shall be maintained within ±0.005% of the operating frequency over a temperature variation of −20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. Battery operated equipment shall be tested using a new battery.

### 7.2 Test results

Test date: April 28, 2021
Temperature: 22.6 ˚C
Humidity: 51.8 %
Tester: Sora

| 470.1MHz | | | |
|---|---|---|---|
| **Test Temp** | **Carrier Freq.(MHz)** | **Result(ppm)** | **limit(ppm)** |
| -20 | 470.104006 | 8.522463 | 50 |
| -10 | 470.104006 | 8.522463 | 50 |
| 0 | 470.103205 | 6.817971 | 50 |
| 10 | 470.103205 | 6.817971 | 50 |
| 20 | 470.100801 | 1.704493 | 50 |
| 30 | 470.098397 | -3.408985 | 50 |
| 40 | 470.099199 | -1.704493 | 50 |
| 50 | 470.097596 | -5.113478 | 50 |

| 539MHz | | | |
|---|---|---|---|
| **Test Temp** | **Carrier Freq.(MHz)** | **Result(ppm)** | **limit(ppm)** |
| -20 | 539.004006 | 7.433044 | 50 |
| -10 | 539.004006 | 7.433044 | 50 |
| 0 | 539.004006 | 7.433044 | 50 |
| 10 | 539.002404 | 4.459826 | 50 |
| 20 | 539.002404 | 4.459826 | 50 |
| 30 | 539.000000 | 0.000000 | 50 |
| 40 | 538.999199 | -1.486609 | 50 |
| 50 | 538.996795 | -5.946434 | 50 |

| 607.9MHz | | | |
|---|---|---|---|
| **Test Temp** | **Carrier Freq.(MHz)** | **Result(ppm)** | **limit(ppm)** |
| -20 | 607.901603 | 2.636230 | 50 |
| -10 | 607.902404 | 3.954344 | 50 |
| 0 | 607.902404 | 3.954344 | 50 |
| 10 | 607.902404 | 3.954344 | 50 |
| 20 | 607.901600 | 2.632432 | 50 |
| 30 | 607.900801 | 1.318115 | 50 |
| 40 | 607.899199 | -1.318115 | 50 |
| 50 | 607.897596 | -3.954344 | 50 |

**Limit According to FCC 15.236(f)(3)**

The frequency tolerance of the transmitter shall be 0.005 percent.

Test equipment used: ETSTW-RE 055, ETSTW-CE 009

Registration number: W6M22103-20772-C-1
FCC ID: M5X-ACT800T

**Voltage**

| 470.1MHz | | | |
|---|---|---|---|
| **Test Volt** | **Carrier Freq.(MHz)** | **Result(ppm)** | **limit(ppm)** |
| 3.35Vd.c. | 470.100801 | 1.704493 | 50 |
| 3.7Vd.c. | 470.100801 | 1.704493 | 50 |
| 4.26Vd.c. | 470.100801 | 1.704493 | 50 |

| 539MHz | | | |
|---|---|---|---|
| **Test Volt** | **Carrier Freq.(MHz)** | **Result(ppm)** | **limit(ppm)** |
| 3.35Vd.c. | 539.000801 | 1.486609 | 50 |
| 3.7Vd.c. | 539.000801 | 1.486609 | 50 |
| 4.26Vd.c. | 539.000801 | 1.486609 | 50 |

| 607.9MHz | | | |
|---|---|---|---|
| **Test Volt** | **Carrier Freq.(MHz)** | **Result(ppm)** | **limit(ppm)** |
| 3.35Vd.c. | 607.900801 | 1.318115 | 50 |
| 3.7Vd.c. | 607.900801 | 1.318115 | 50 |
| 4.26Vd.c. | 607.900801 | 1.318115 | 50 |

Limit : ±0.005%

**Limit According to FCC 15.236(f)(3)**
**The frequency tolerance of the transmitter shall be 0.005 percent.**

Test equipment used: ETSTW-RE 055

# 8 Modulation

## 8.1 Test procedure

The devices may employ any type of modulation. The type of modulation used shall be reported. Equipment employing amplitude modulation (AM) or frequency modulation (FM) shall have a modulation index that does not exceed 100% or a frequency deviation that does not exceed ±75 kHz, respectively.

## 8.2 Test results

Test date: --
Temperature: -- ˚C
Humidity: -- %
Tester: --

Limits : Modulation index that does not exceed 100% or a frequency deviation that does not exceed ±75 kHz.

Test equipment used: ETSTW-RE 072, ETSTW-RE 055, ETSTW-RE 050

Explanation: This test is not required because the EUT belongs to digital device.

## 9 Line Conducted Emission , FCC 15.207

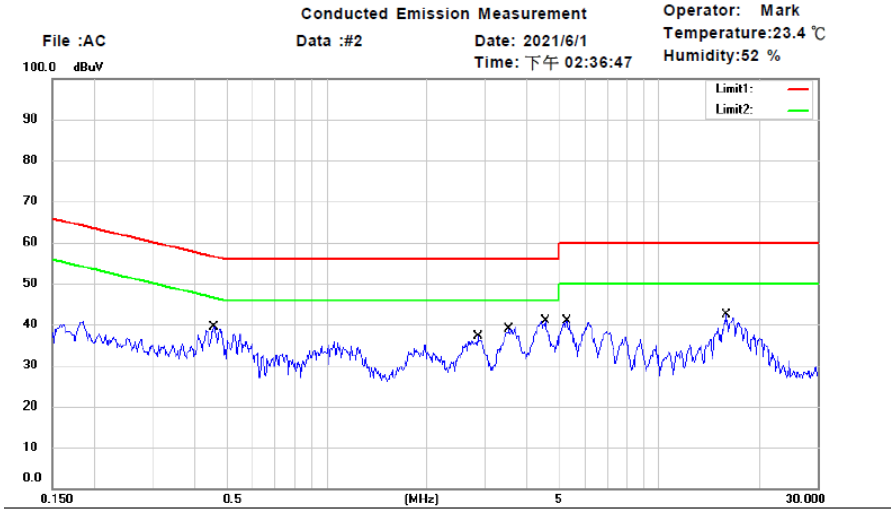
The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power.
Near the carrier an Emission Mask is defined by the standard.

### 9.1 Test procedure

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.

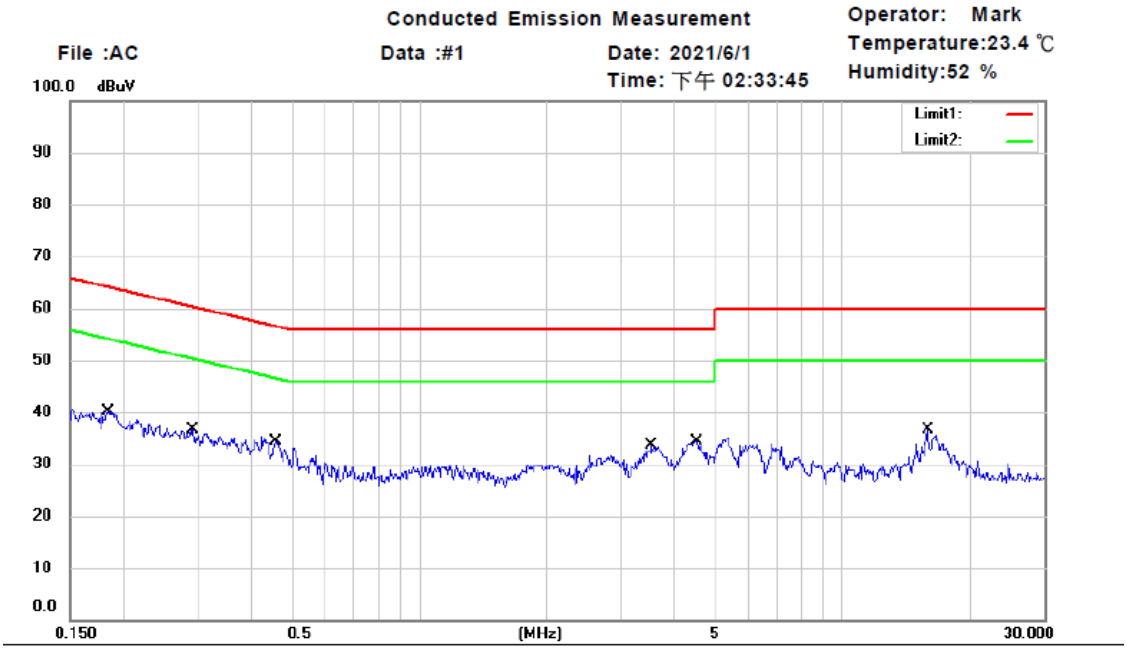
### 9.2 Test Results




Site : Chamber_03
Condition : FCC Part 15 Class B Conduction(QP)
Phase: N
EUT : W6M22103-20772
Power : 120 Va.c.
M/N:
Test Mode : Charge
Note :

| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corrected factor(dB) | Result (dBuV) | Limit (dBuV) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|
| | 0.4582 | 24.57 | QP | 9.61 | 34.18 | 56.73 | -22.55 | |
| * | 0.4582 | 15.93 | AVG | 9.61 | 25.54 | 46.73 | -21.19 | |
| | 2.8445 | 20.03 | QP | 9.52 | 29.55 | 56.00 | -26.45 | |
| | 2.8445 | 10.70 | AVG | 9.52 | 20.22 | 46.00 | -25.78 | |
| | 3.5330 | 21.62 | QP | 9.61 | 31.23 | 56.00 | -24.77 | |
| | 3.5330 | 12.24 | AVG | 9.61 | 21.85 | 46.00 | -24.15 | |
| | 4.5478 | 21.38 | QP | 9.99 | 31.37 | 56.00 | -24.63 | |
| | 4.5478 | 11.86 | AVG | 9.99 | 21.85 | 46.00 | -24.15 | |
| | 5.2500 | 23.93 | QP | 10.21 | 34.14 | 60.00 | -25.86 | |
| | 5.2500 | 14.39 | AVG | 10.21 | 24.60 | 50.00 | -25.40 | |
| | 15.8750 | 23.62 | QP | 10.15 | 33.77 | 60.00 | -26.23 | |
| | 15.8750 | 12.23 | AVG | 10.15 | 22.38 | 50.00 | -27.62 | |

Registration number: W6M22103-20772-C-1
FCC ID: M5X-ACT800T




Site : Chamber_03
Condition : FCC Part 15 Class B Conduction(QP)
Phase: L1
EUT : W6M22103-20772
Power : 120 Va.c.
M/N:
Test Mode : Charge
Note :

| Mk. | Frequency (MHz) | Reading (dBuV) | Detector | Corrected factor(dB) | Result (dBuV) | Limit (dBuV) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|
| | 0.1841 | 25.88 | QP | 9.66 | 35.54 | 64.30 | -28.76 | |
| | 0.1841 | 18.18 | AVG | 9.66 | 27.84 | 54.30 | -26.46 | |
| | 0.2923 | 16.97 | QP | 9.64 | 26.61 | 60.46 | -33.85 | |
| | 0.2923 | 3.09 | AVG | 9.64 | 12.73 | 50.46 | -37.73 | |
| | 0.4566 | 17.12 | QP | 9.62 | 26.74 | 56.75 | -30.01 | |
| | 0.4566 | 10.18 | AVG | 9.62 | 19.80 | 46.75 | -26.95 | |
| | 3.5443 | 17.74 | QP | 9.61 | 27.35 | 56.00 | -28.65 | |
| | 3.5443 | 13.30 | AVG | 9.61 | 22.91 | 46.00 | -23.09 | |
| | 4.5028 | 18.77 | QP | 9.97 | 28.74 | 56.00 | -27.26 | |
| * | 4.5028 | 13.90 | AVG | 9.97 | 23.87 | 46.00 | -22.13 | |
| | 15.8625 | 17.00 | QP | 10.06 | 27.06 | 60.00 | -32.94 | |
| | 15.8625 | 10.82 | AVG | 10.06 | 20.88 | 50.00 | -29.12 | |

**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.**

Test equipment used: ETSTW-CE 001, ETSTW-CE 016, ETSTW-RE 045

# Appendix

## A. Photos

1. External Photos
2. Internal Photos
3. Set Up Photo of Radiated Emission
4. Set Up Photo of Conducted Emission

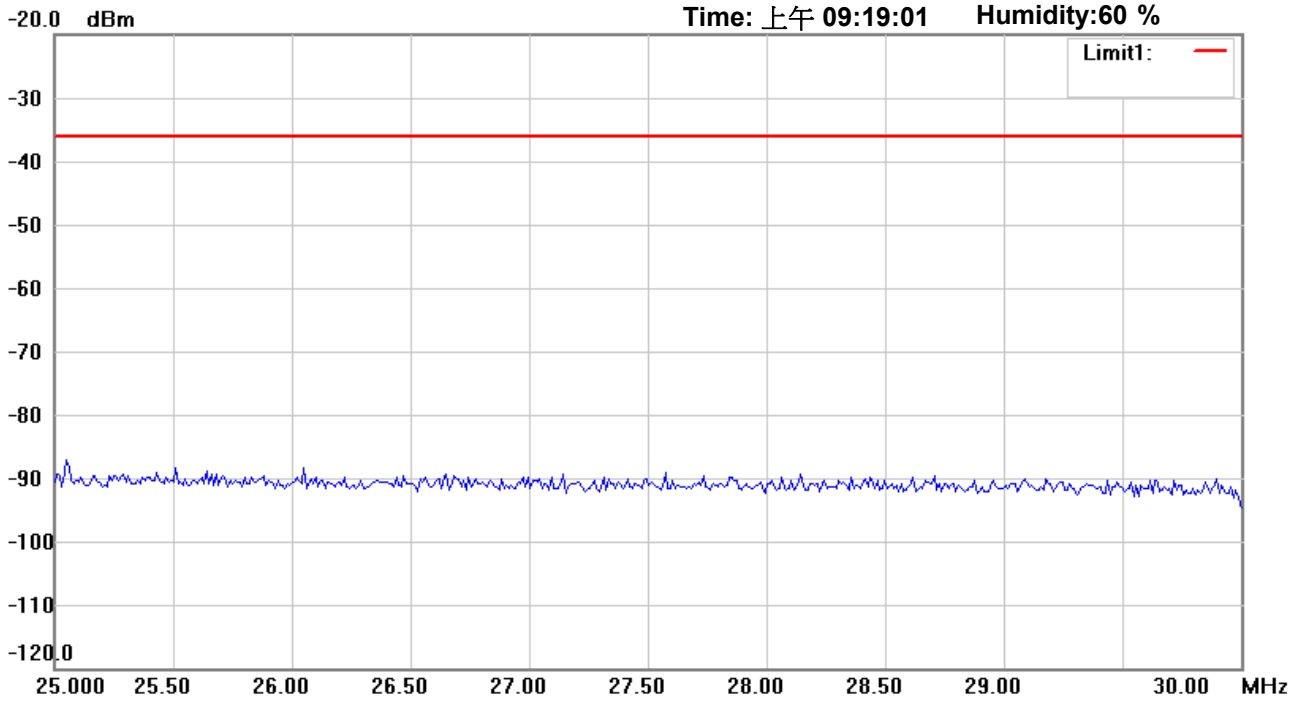
## B. Measurement diagrams

Radiation Spurious Emission

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :1 Data :#1 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 09:19:01 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 470.1MHz
Note :

Polarization: *Horizontal*
Power : 3.7 Vd.c.
Distance: 3m

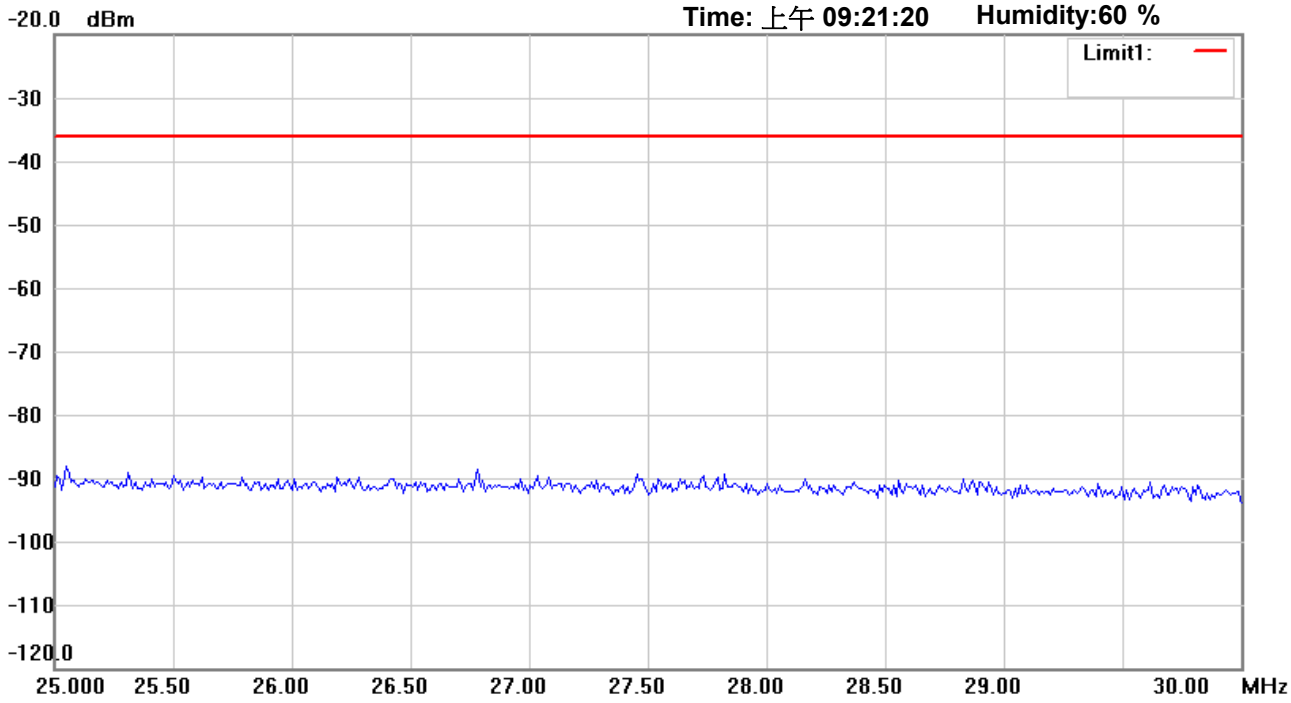
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :1 Data :#3 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 09:21:20 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 470.1MHz
Note :

Polarization: *Vertical*
Power : 3.7 Vd.c.
Distance: 3m

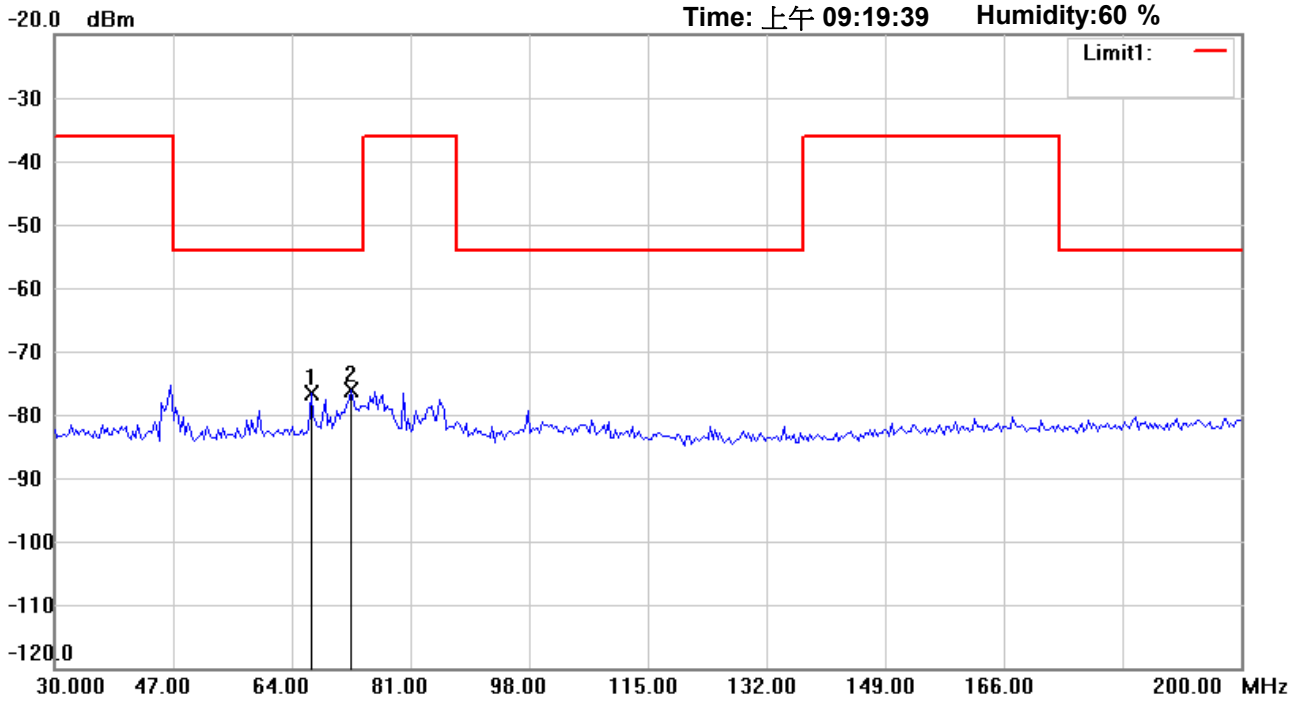
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :1 Data :#2 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 09:19:39 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 470.1MHz
Note :

Polarization: *Horizontal*
Power : 3.7 Vd.c.
Distance: 3m

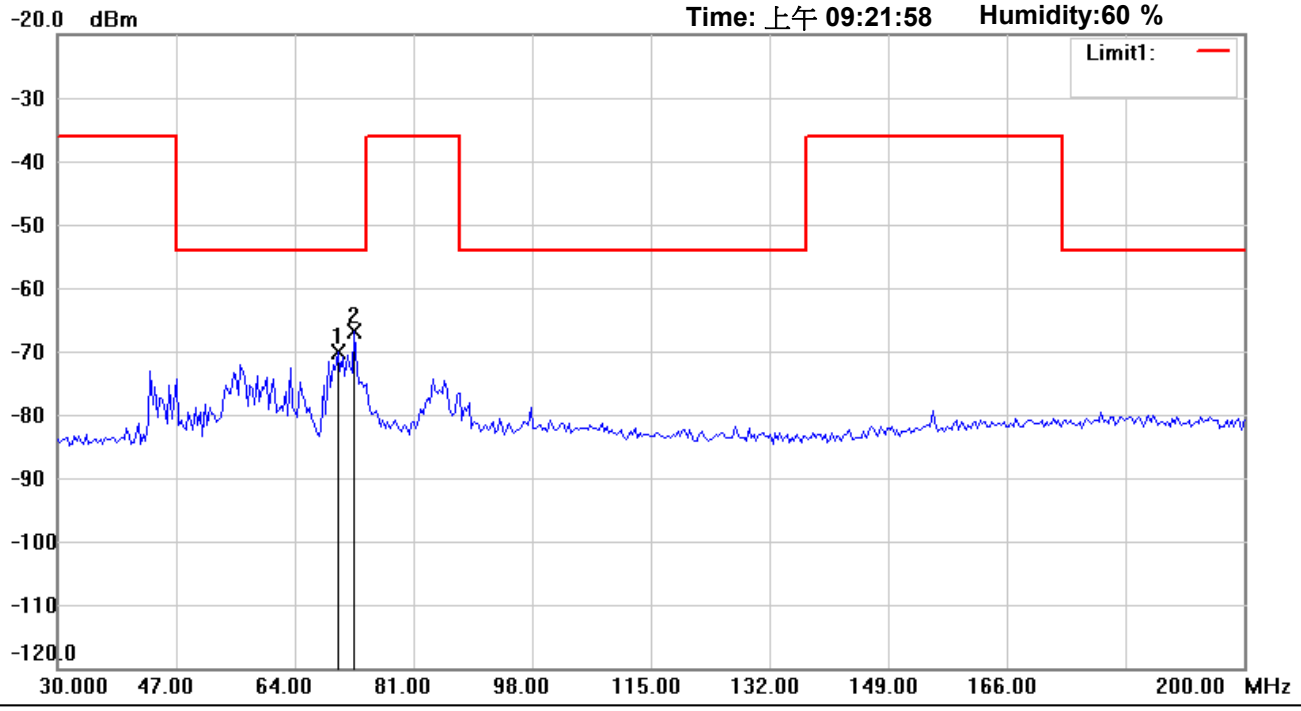
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| | 66.7936 | -98.24 | peak | 21.59 | -76.65 | -54.00 | 150 | 150 | -22.65 | |
| * | 72.5852 | -97.73 | peak | 21.54 | -76.19 | -54.00 | 150 | 195 | -22.19 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :1 Data :#4 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 09:21:58 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 470.1MHz
Note :

Polarization: *Vertical*
Power : 3.7 Vd.c.
Distance: 3m

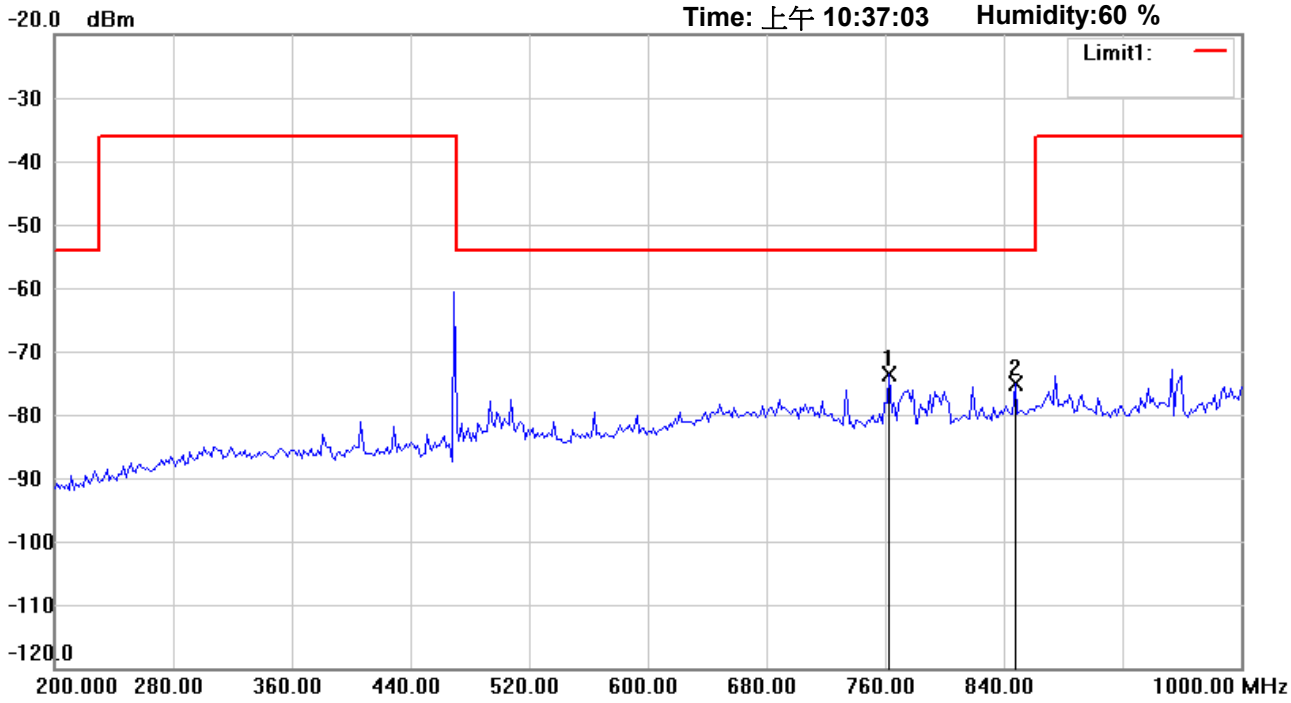
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| | 70.2004 | -91.09 | peak | 20.99 | -70.10 | -54.00 | 150 | 340 | -16.10 | |
| * | 72.5852 | -88.01 | peak | 21.05 | -66.96 | -54.00 | 150 | 285 | -12.96 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :2 Data :#1 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 10:37:03 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 470.1MHz
Note :

Polarization: *Horizontal*
Power : 3.7 Vd.c.
Distance: 3m

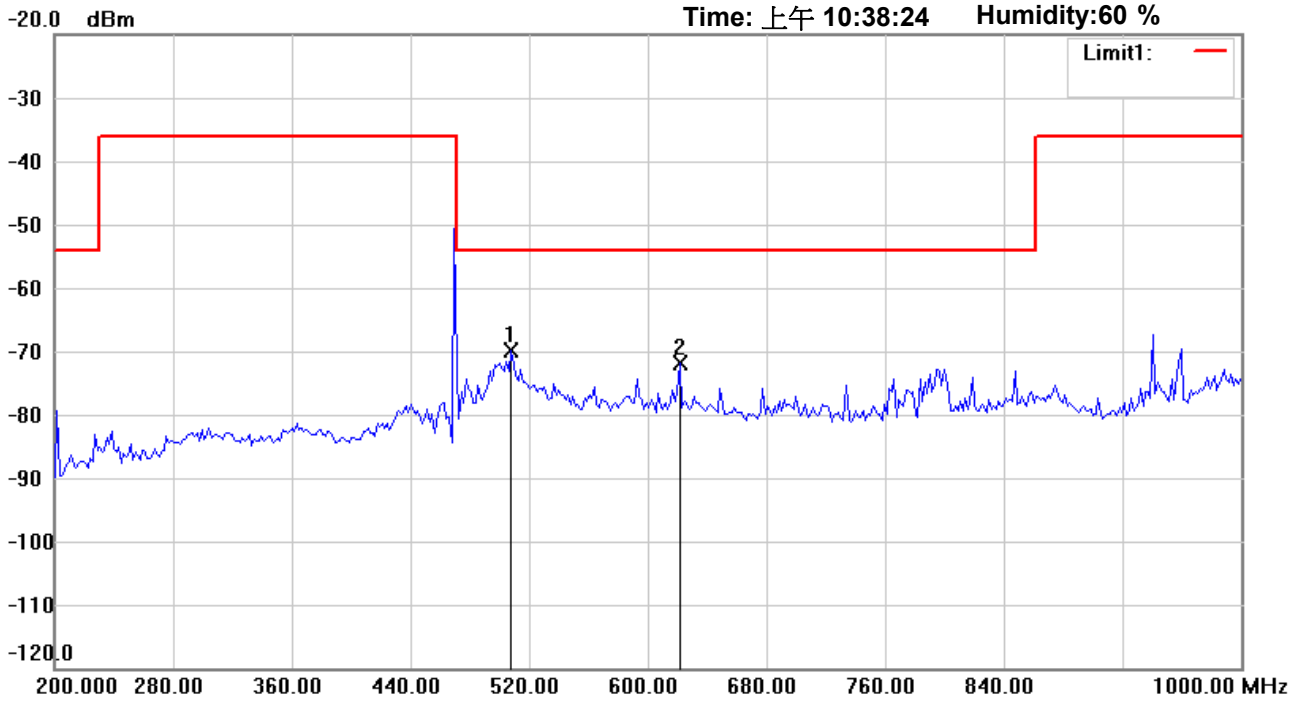
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 762.7255 | -69.10 | peak | -4.54 | -73.64 | -54.00 | 150 | 125 | -19.64 | |
| | 847.6954 | -72.35 | peak | -2.70 | -75.05 | -54.00 | 150 | 180 | -21.05 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :2 Data :#2 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 10:38:24 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 470.1MHz
Note :

Polarization: *Vertical*
Power : 3.7 Vd.c.
Distance: 3m

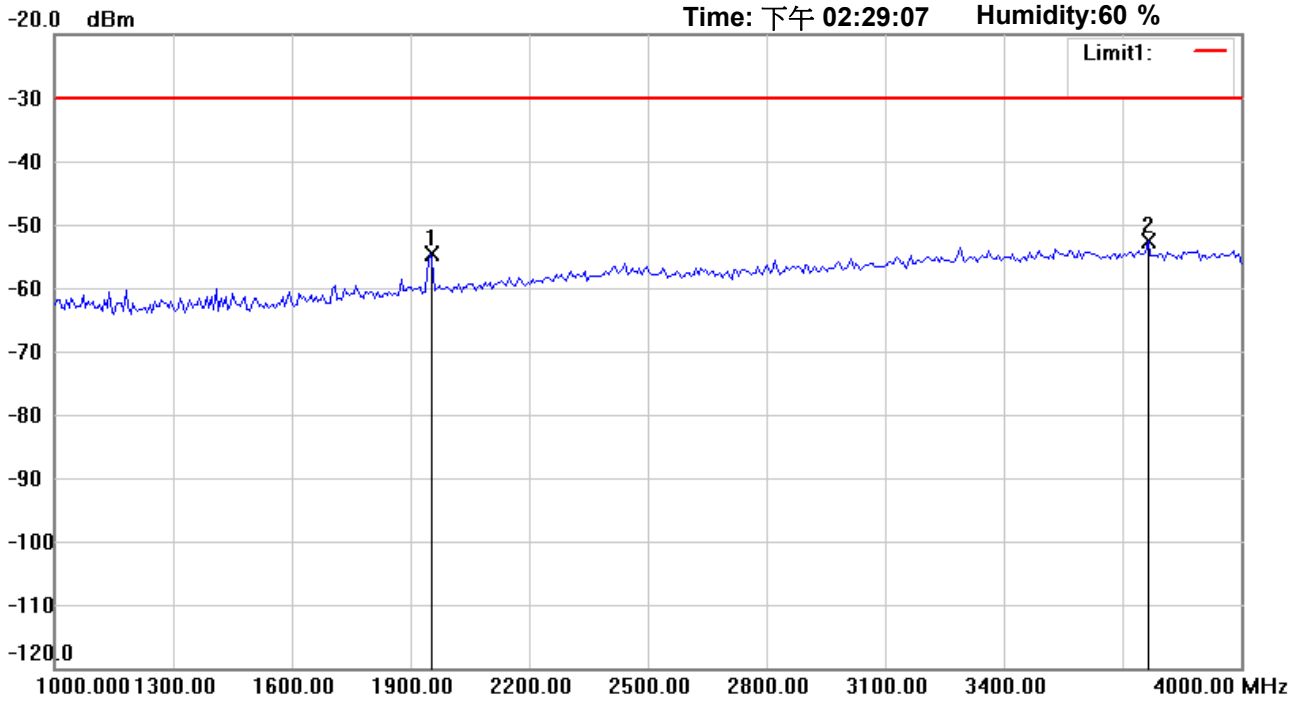
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 507.8156 | -63.34 | peak | -6.62 | -69.96 | -54.00 | 150 | 225 | -15.96 | |
| | 621.6433 | -66.66 | peak | -5.09 | -71.75 | -54.00 | 150 | 305 | -17.75 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :3 Data :#1 Date: 2021/4/25 Temperature:24 ℃
Time: 下午 02:29:07 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 470.1MHz
Note :

Polarization: *Horizontal*
Power : 3.7 Vd.c.
Distance: 3m

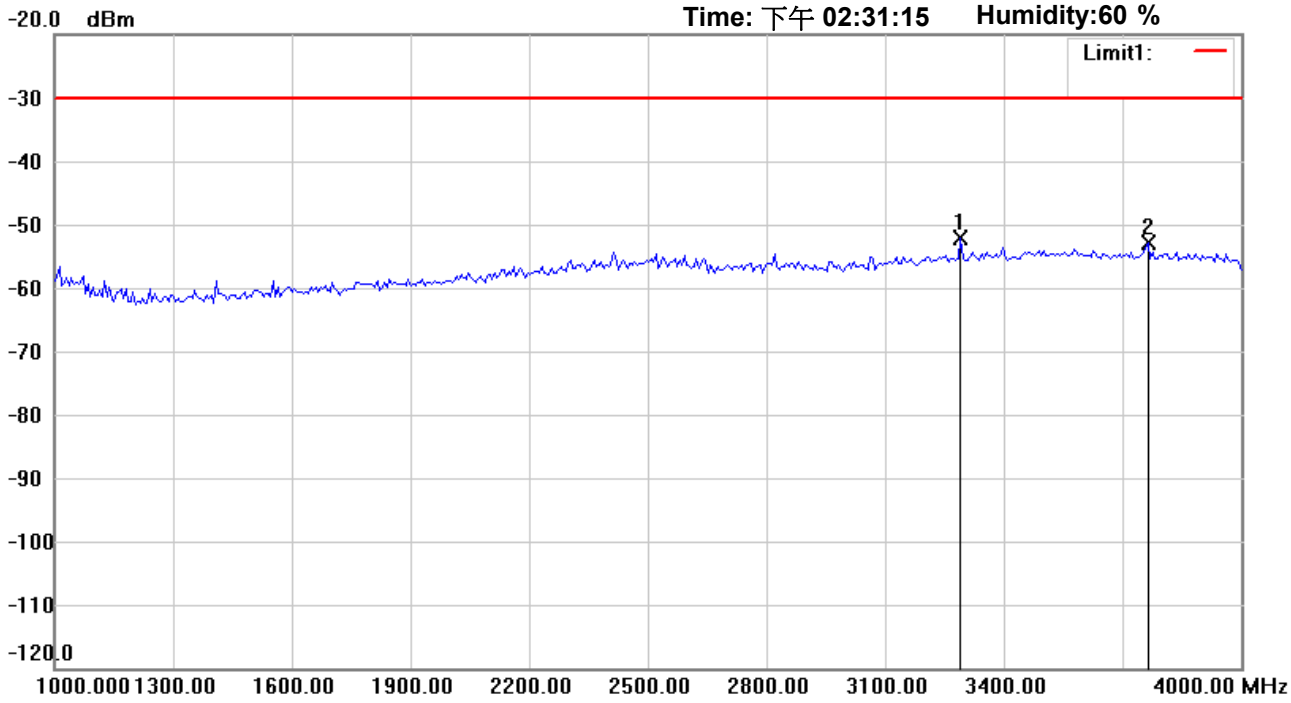
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1949.900 | -55.52 | peak | 0.78 | -54.74 | -30.00 | 150 | 75 | -24.74 | |
| * | 3765.531 | -60.29 | peak | 7.67 | -52.62 | -30.00 | 150 | 125 | -22.62 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :3 Data :#2 Date: 2021/4/25 Temperature:24 ℃
Time: 下午 02:31:15 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 470.1MHz
Note :

Polarization: *Vertical*
Power : 3.7 Vd.c.
Distance: 3m

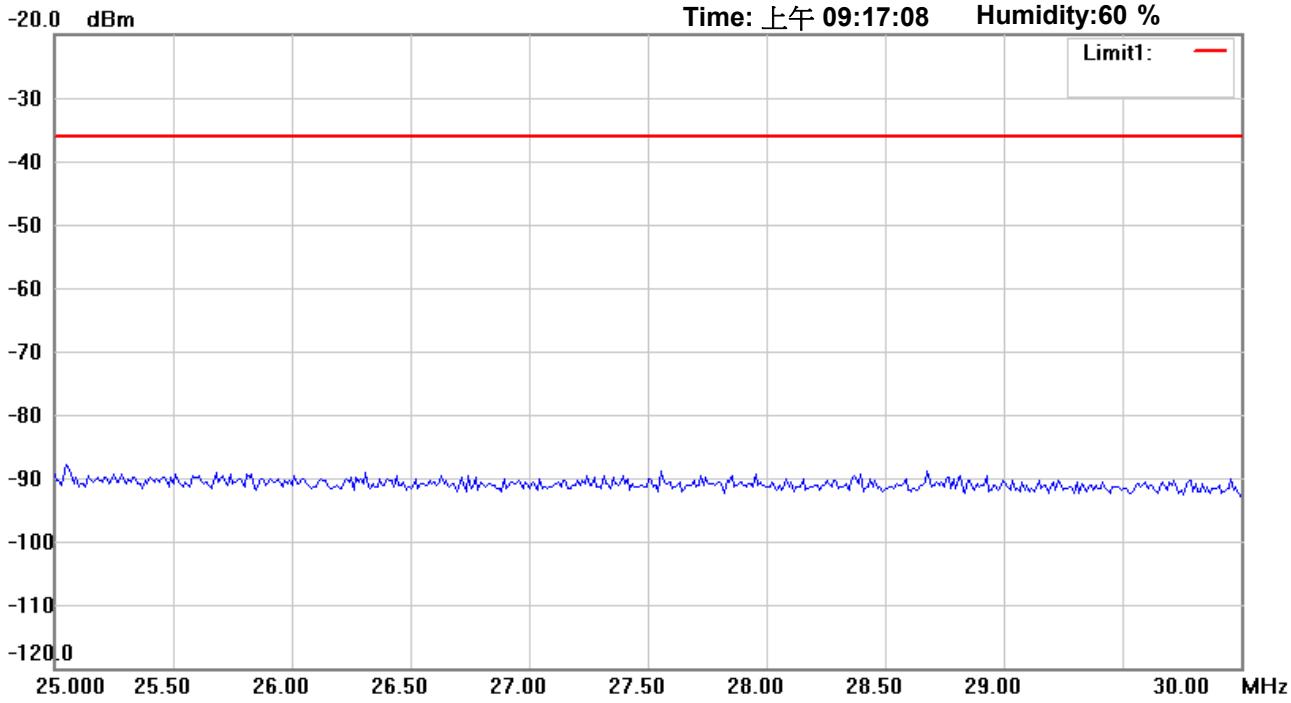
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 3290.581 | -58.63 | peak | 6.62 | -52.01 | -30.00 | 150 | 115 | -22.01 | |
| | 3765.531 | -60.30 | peak | 7.45 | -52.85 | -30.00 | 150 | 65 | -22.85 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :1 Data :#1 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 09:17:08 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 539MHz
Note :

Polarization: *Horizontal*
Power : 3.7 Vd.c.
Distance: 3m

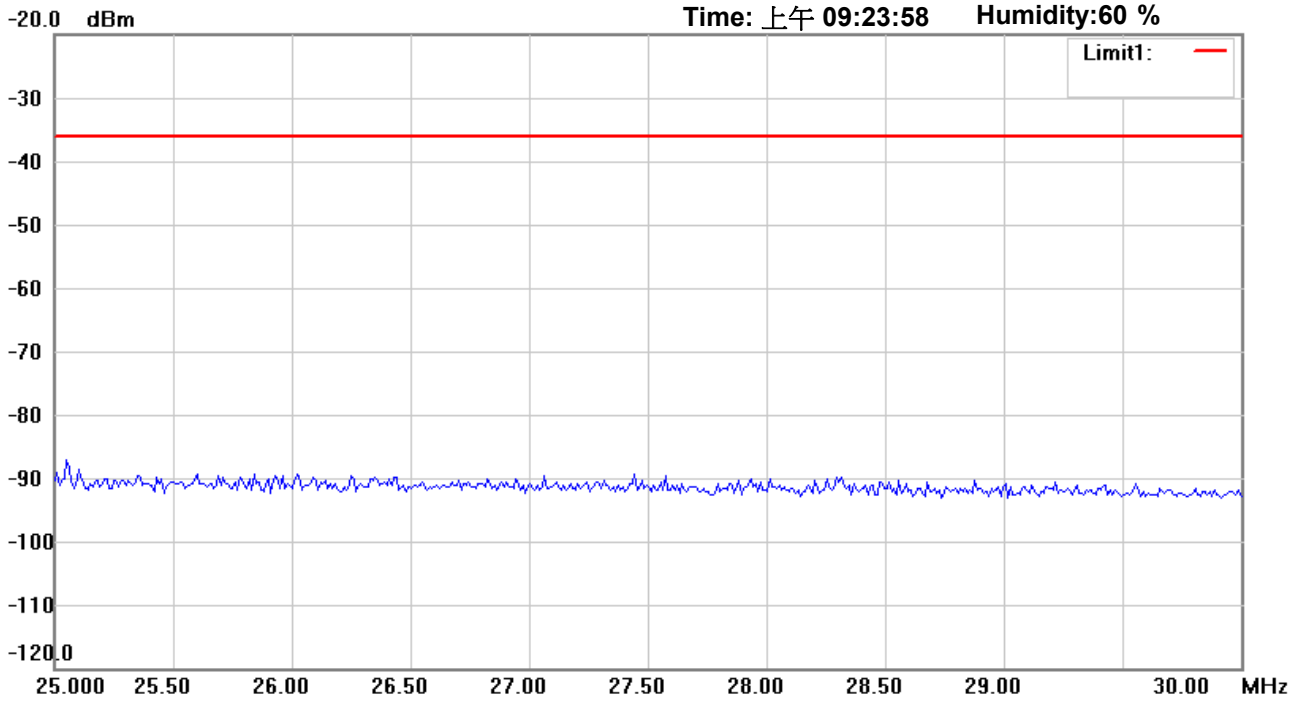
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :1 Data :#3 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 09:23:58 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 539MHz
Note :

Polarization: *Vertical*
Power : 3.7 Vd.c.
Distance: 3m

| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
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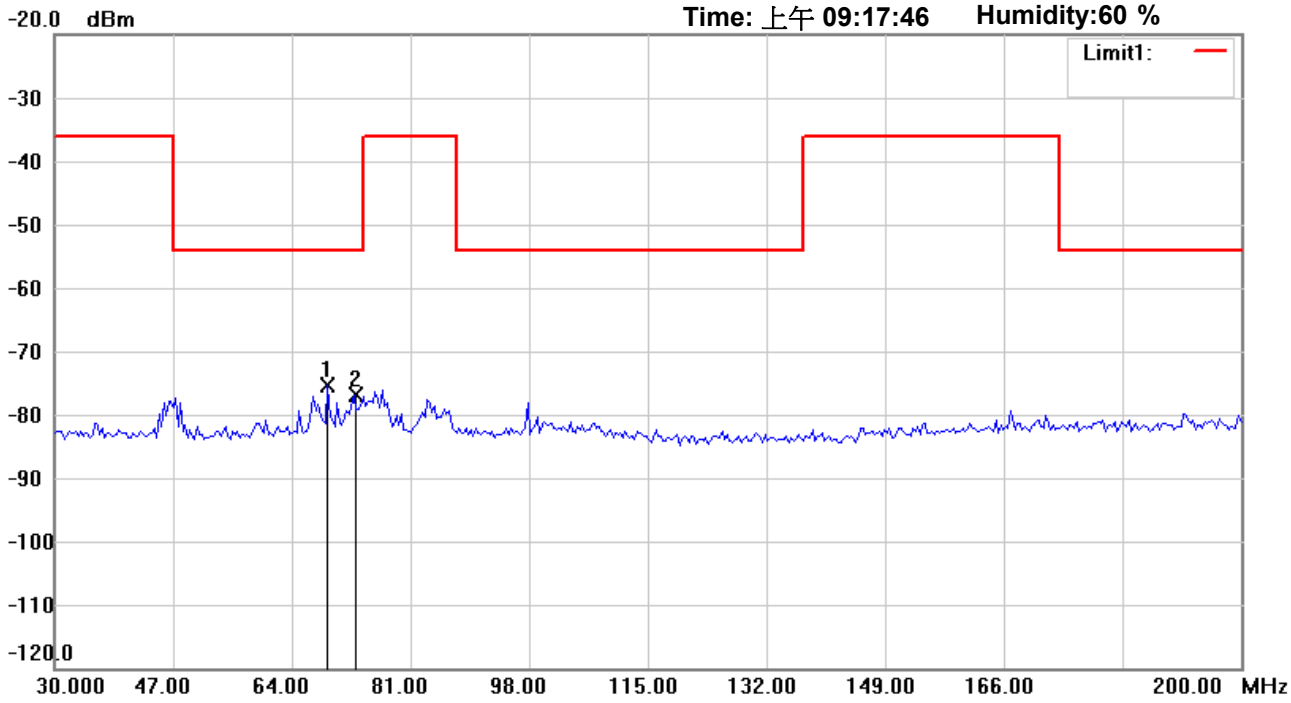
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora

File :1 Data :#2 Date: 2021/4/27 Time: 上午 09:17:46 Temperature:24 ℃ Humidity:60 %




Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22103-20772

M/N:

Test Mode : Tx 539MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

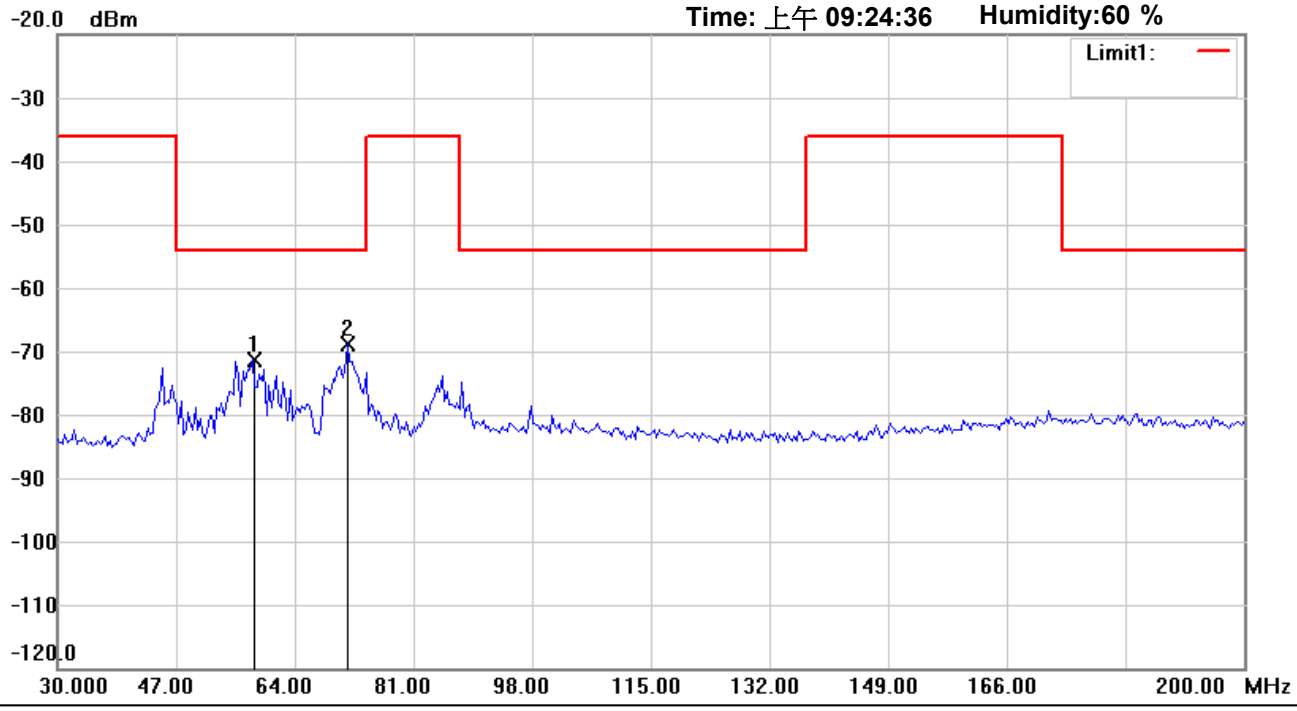
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 69.1784 | -96.98 | peak | 21.52 | -75.46 | -54.00 | 150 | 45 | -21.46 | |
| | 72.9260 | -98.40 | peak | 21.54 | -76.86 | -54.00 | 150 | 80 | -22.86 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :1 Data :#4 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 09:24:36 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 539MHz
Note :

Polarization: *Vertical*
Power : 3.7 Vd.c.
Distance: 3m

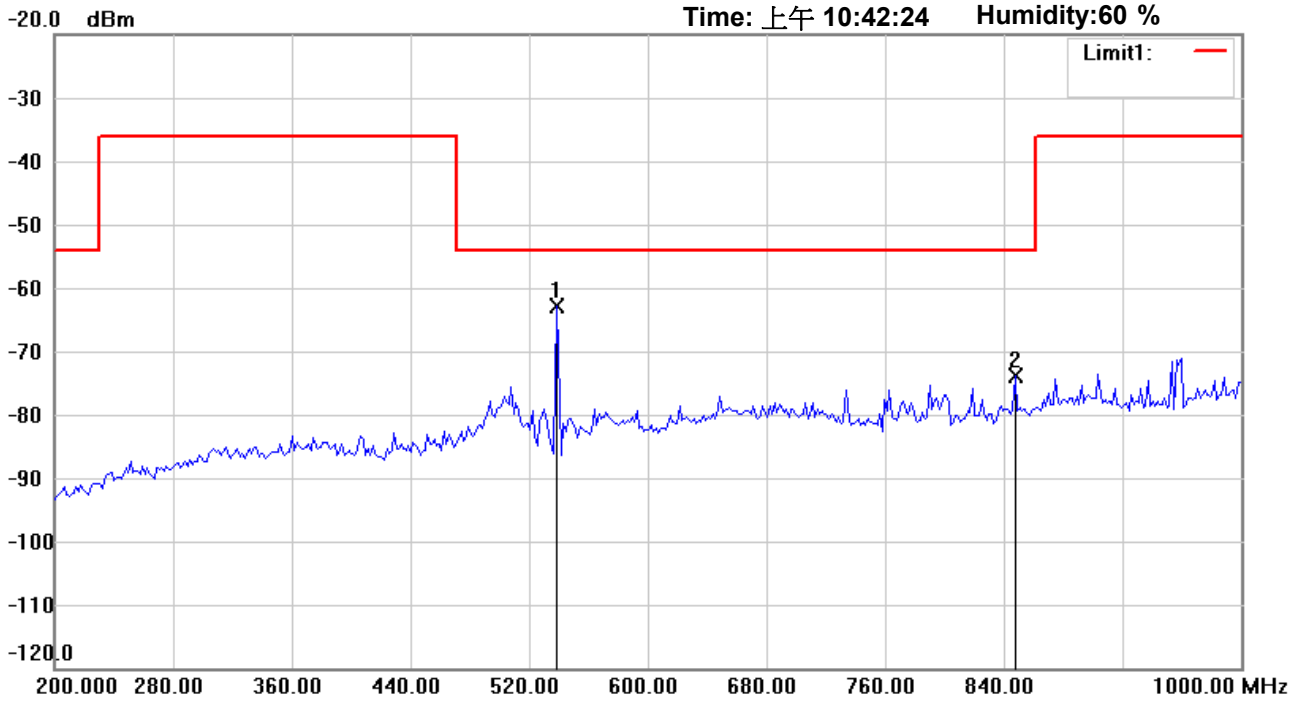
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| | 57.9360 | -92.94 | peak | 21.54 | -71.40 | -54.00 | 150 | 220 | -17.40 | |
| * | 71.5631 | -89.94 | peak | 21.02 | -68.92 | -54.00 | 150 | 305 | -14.92 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :2 Data :#1 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 10:42:24 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 539MHz
Note :

Polarization: *Horizontal*
Power : 3.7 Vd.c.
Distance: 3m

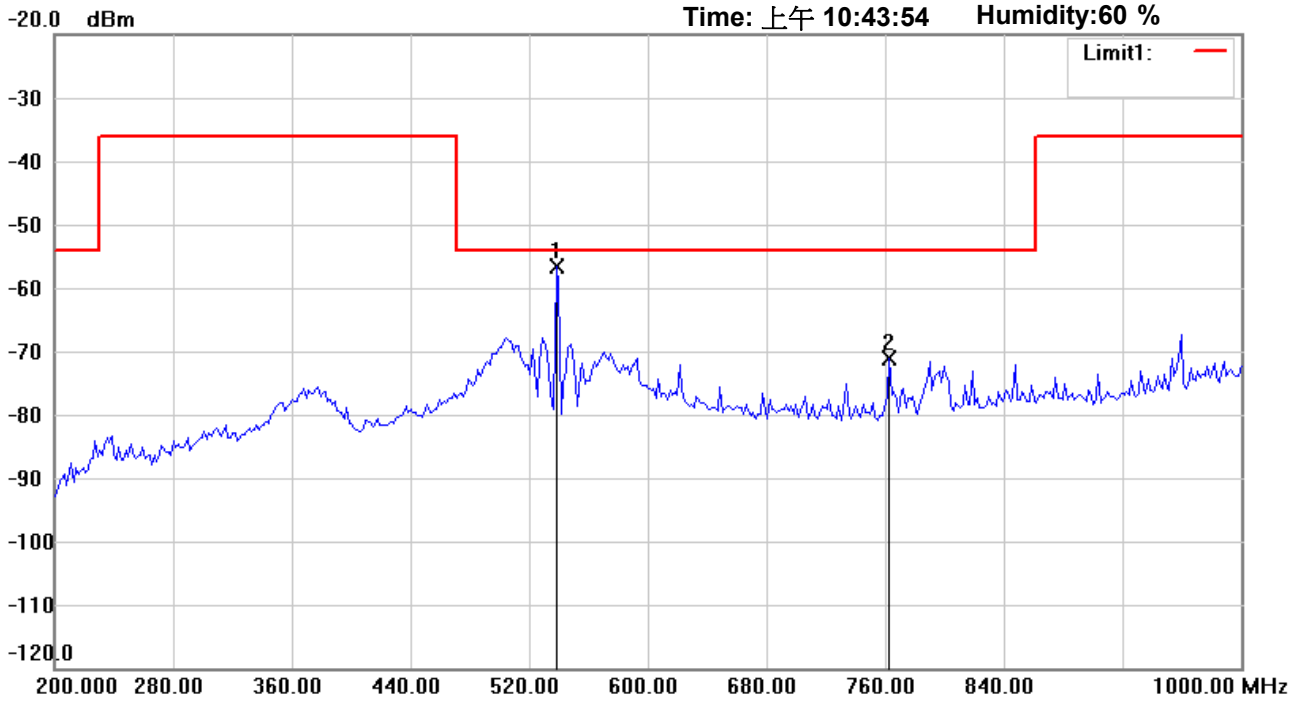
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 538.2766 | -54.91 | peak | -7.97 | -62.88 | -54.00 | 150 | 180 | -8.88 | |
| | 847.6954 | -71.09 | peak | -2.70 | -73.79 | -54.00 | 150 | 115 | -19.79 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :2 Data :#2 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 10:43:54 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 539MHz
Note :

Polarization: *Vertical*
Power : 3.7 Vd.c.
Distance: 3m

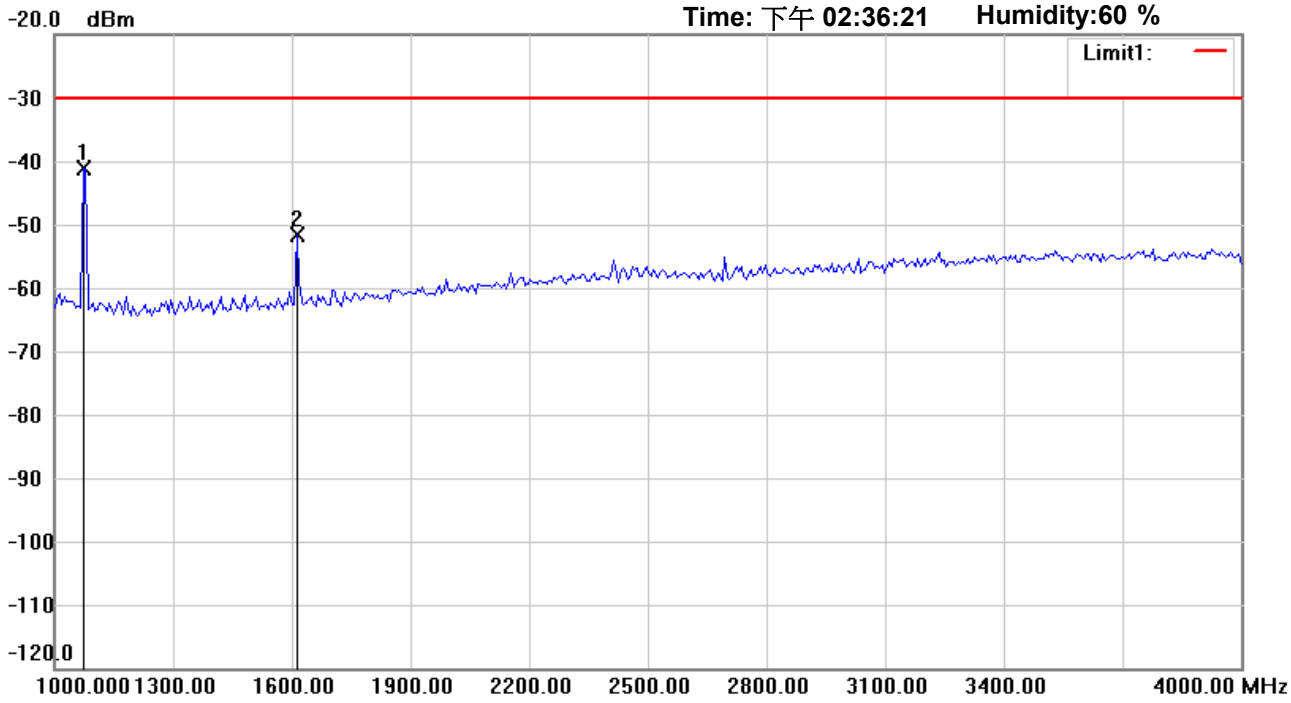
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 538.2766 | -50.37 | peak | -6.28 | -56.65 | -54.00 | 150 | 175 | -2.65 | |
| | 762.7255 | -67.62 | peak | -3.41 | -71.03 | -54.00 | 150 | 285 | -17.03 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :3 Data :#1 Date: 2021/4/25 Temperature:24 ℃
Time: 下午 02:36:21 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 539MHz
Note :

Polarization: *Horizontal*
Power : 3.7 Vd.c.
Distance: 3m

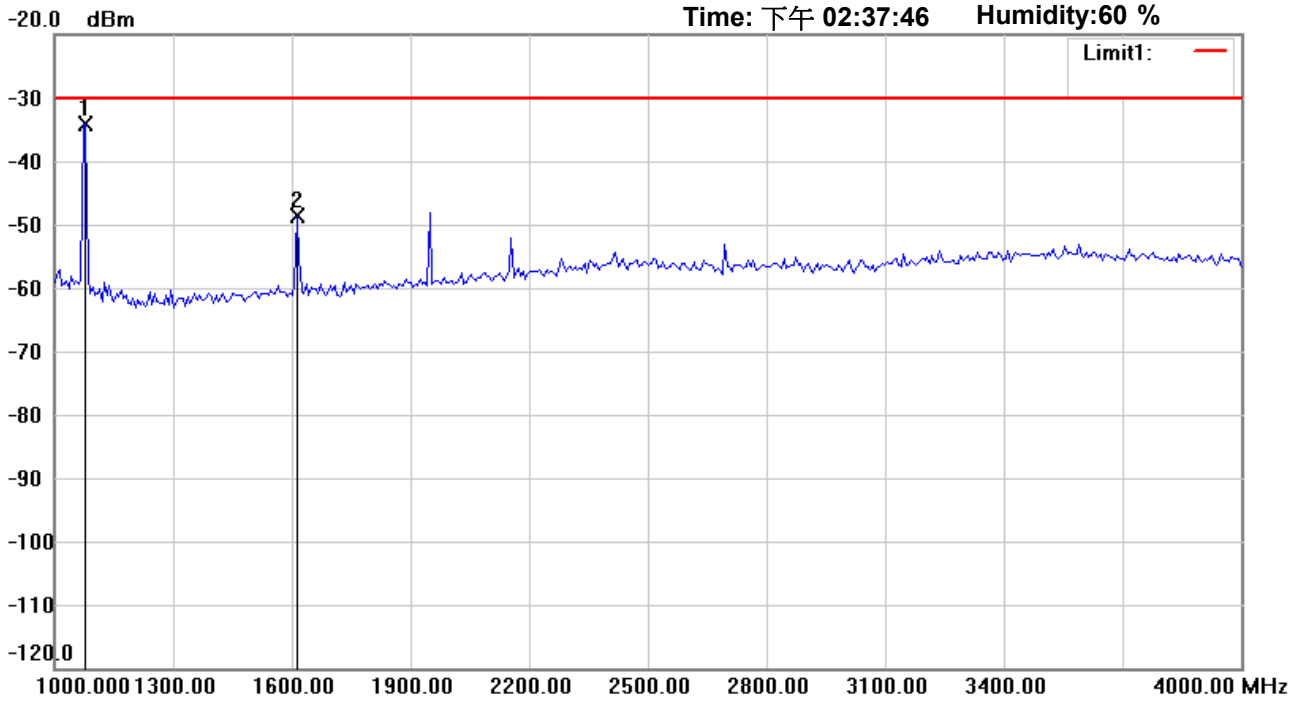
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 1072.144 | -38.89 | peak | -2.16 | -41.05 | -30.00 | 150 | 335 | -11.05 | |
| | 1613.226 | -50.24 | peak | -1.45 | -51.69 | -30.00 | 150 | 250 | -21.69 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :3 Data :#2 Date: 2021/4/25 Temperature:24 ℃
Time: 下午 02:37:46 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 539MHz
Note :

Polarization: *Vertical*
Power : 3.7 Vd.c.
Distance: 3m

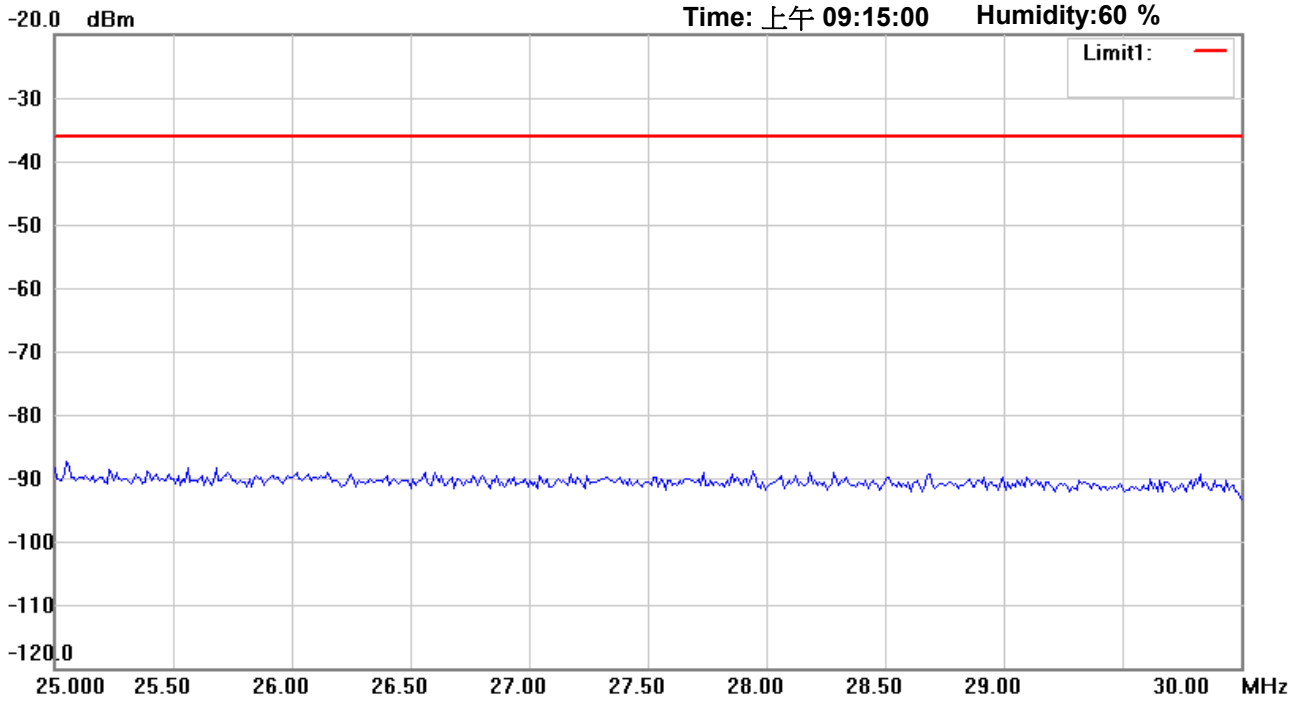
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 1078.156 | -32.67 | peak | -1.53 | -34.20 | -30.00 | 150 | 205 | -4.20 | |
| | 1613.226 | -48.84 | peak | 0.34 | -48.50 | -30.00 | 150 | 160 | -18.50 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :1 Data :#1 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 09:15:00 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 607.9MHz
Note :

Polarization: *Horizontal*
Power : 3.7 Vd.c.
Distance: 3m

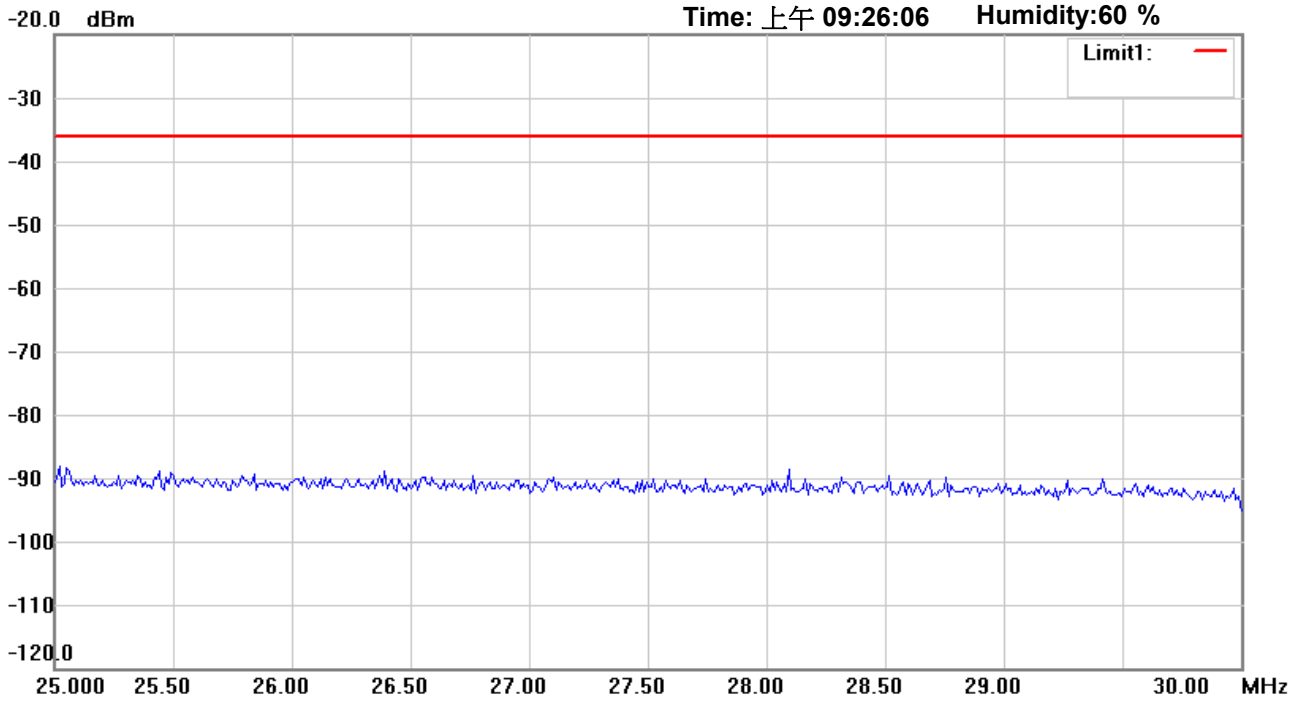
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :1 Data :#3 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 09:26:06 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 607.9MHz
Note :

Polarization: *Vertical*
Power : 3.7 Vd.c.
Distance: 3m

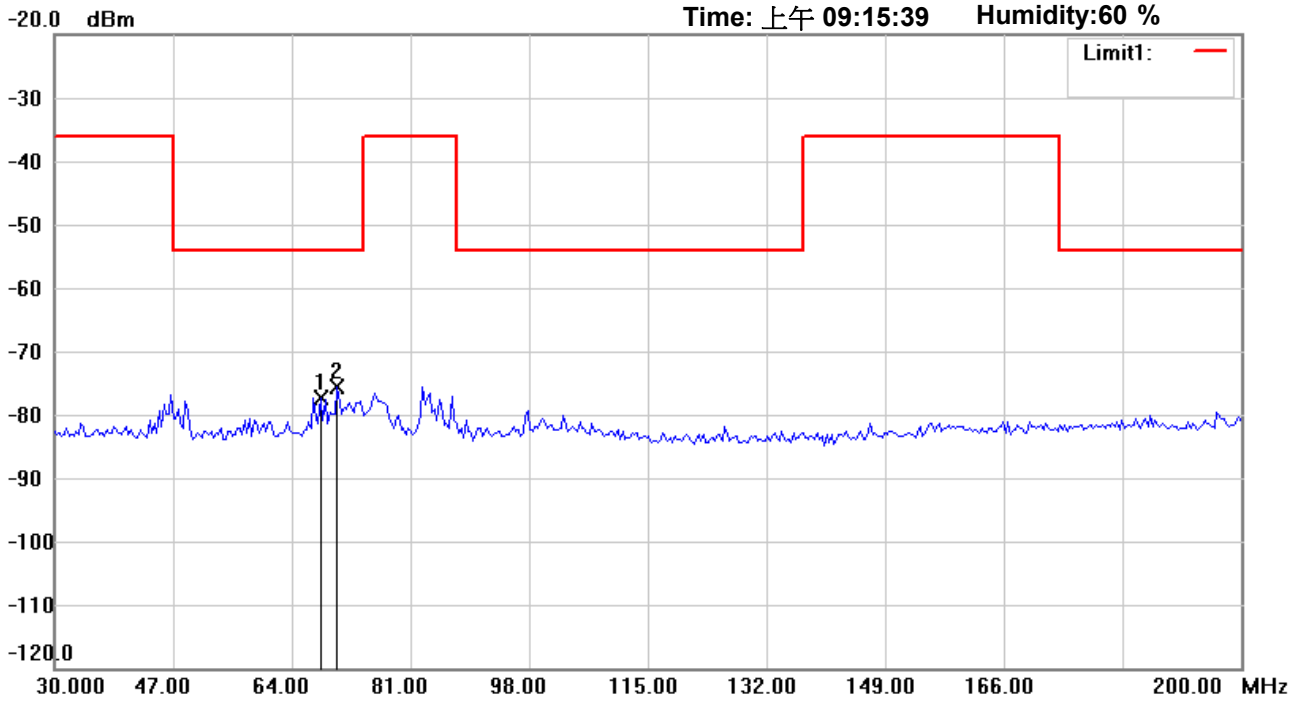
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :1 Data :#2 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 09:15:39 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 607.9MHz
Note :

Polarization: *Horizontal*
Power : 3.7 Vd.c.
Distance: 3m

| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| | 68.1563 | -98.80 | peak | 21.55 | -77.25 | -54.00 | 150 | 75 | -23.25 | |
| * | 70.5411 | -97.06 | peak | 21.51 | -75.55 | -54.00 | 150 | 115 | -21.55 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
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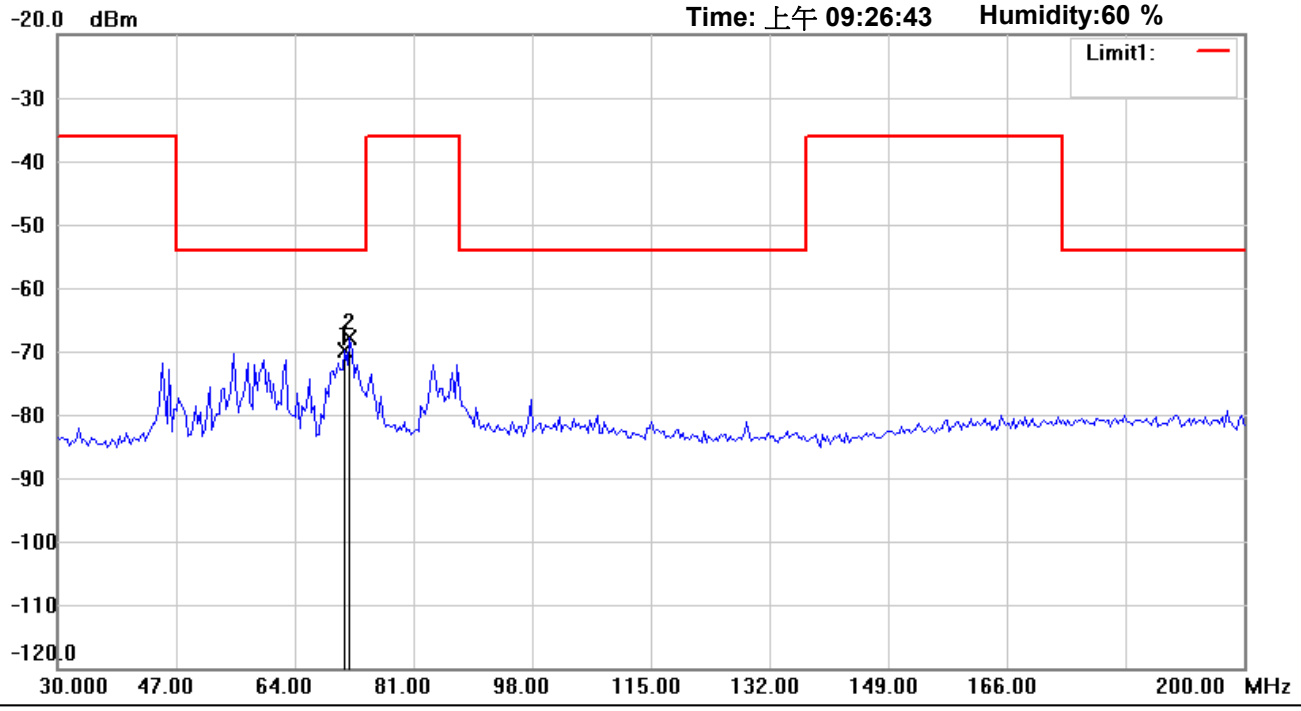
## Radiated Emission Measurement

Operator: Sora
File :1 Data :#4 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 09:26:43 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 607.9MHz
Note :

Polarization: *Vertical*
Power : 3.7 Vd.c.
Distance: 3m

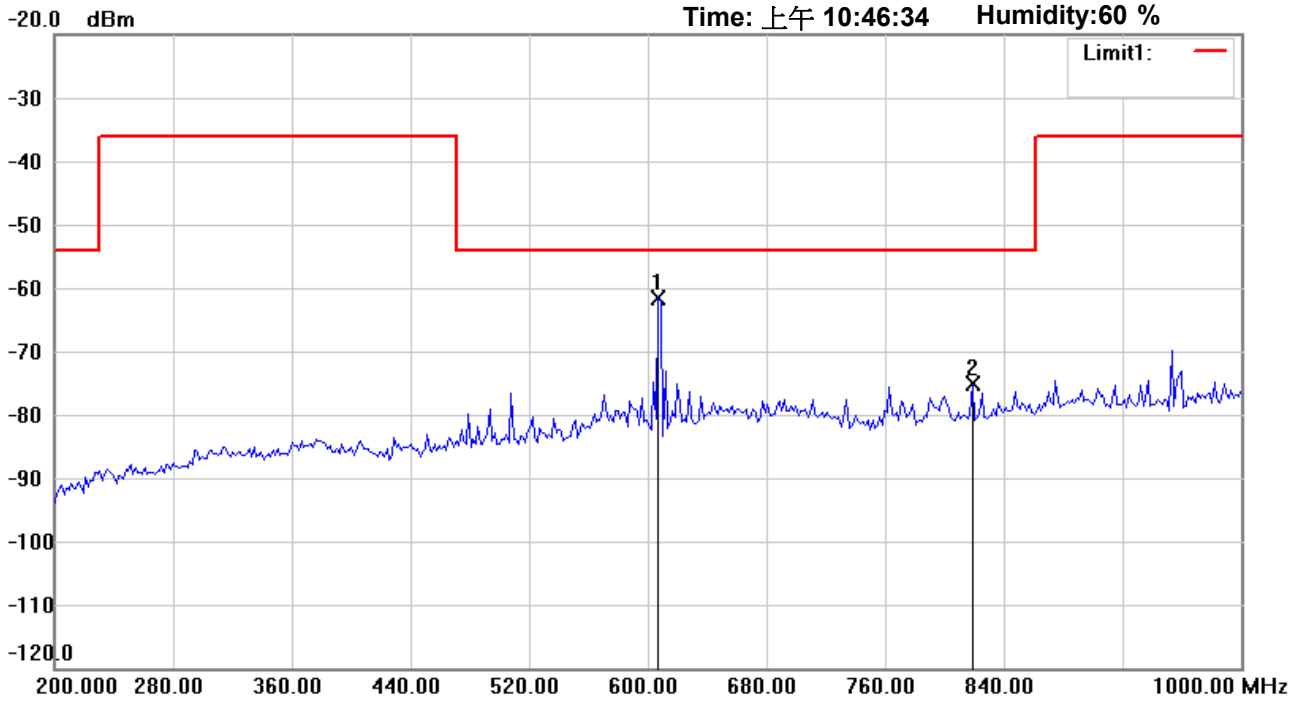
| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| | 71.2224 | -90.78 | peak | 21.01 | -69.77 | -54.00 | 150 | 315 | -15.77 | |
| * | 71.9038 | -88.91 | peak | 21.03 | -67.88 | -54.00 | 150 | 285 | -13.88 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8879

## Radiated Emission Measurement

Operator: Sora
File :2 Data :#1 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 10:46:34 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 607.9MHz
Note :

Polarization: *Horizontal*
Power : 3.7 Vd.c.
Distance: 3m

| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 607.2144 | -56.13 | peak | -5.51 | -61.64 | -54.00 | 150 | 160 | -7.64 | |
| | 818.8377 | -71.42 | peak | -3.58 | -75.00 | -54.00 | 150 | 105 | -21.00 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
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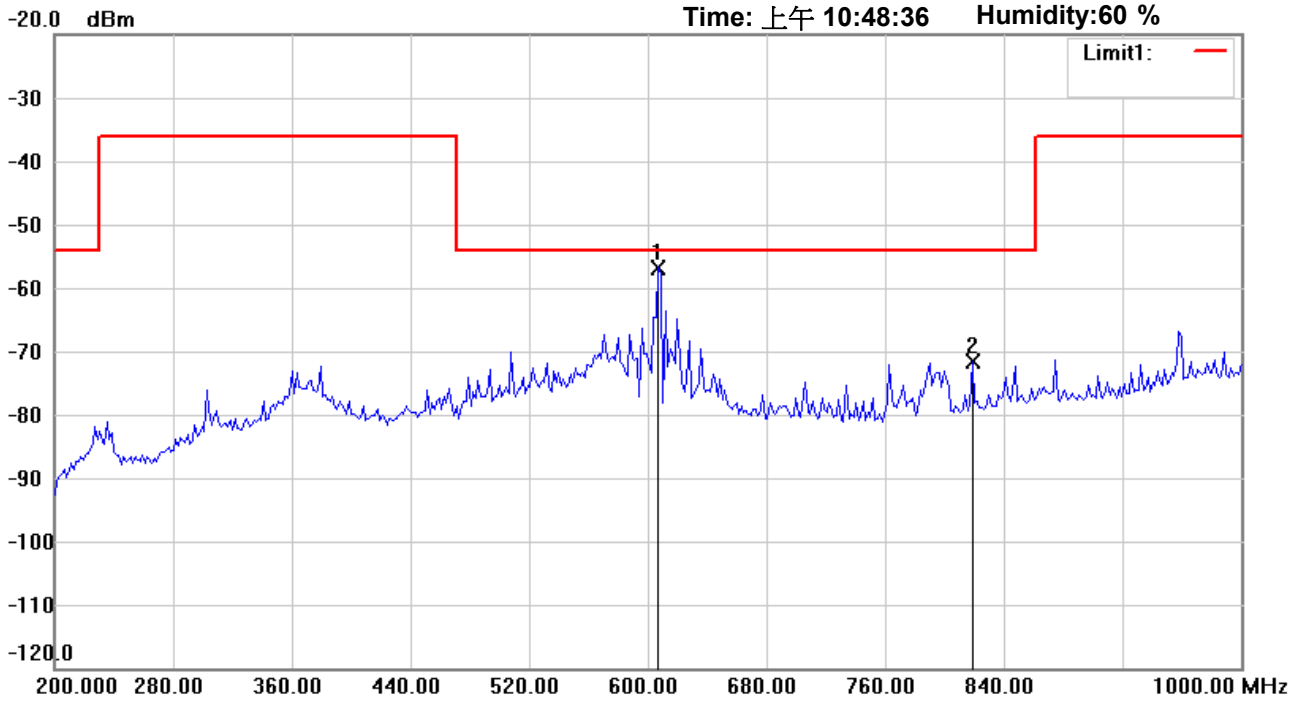
## Radiated Emission Measurement

Operator: Sora
File :2 Data :#2 Date: 2021/4/27 Temperature:24 ℃
Time: 上午 10:48:36 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 607.9MHz
Note :

Polarization: *Vertical*
Power : 3.7 Vd.c.
Distance: 3m

| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 607.2144 | -51.33 | peak | -5.42 | -56.75 | -54.00 | 150 | 205 | -2.75 | |
| | 818.8377 | -69.17 | peak | -2.33 | -71.50 | -54.00 | 150 | 75 | -17.50 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
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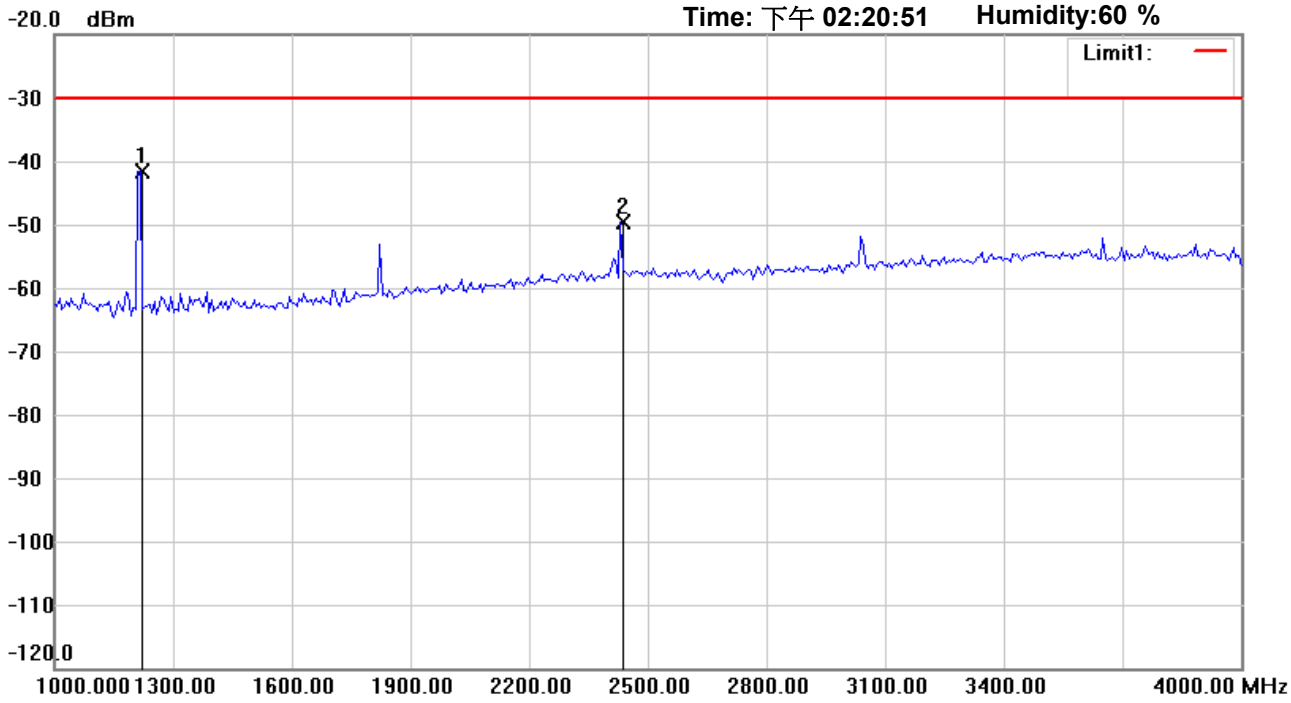
## Radiated Emission Measurement

Operator: Sora
File :3 Data :#1 Date: 2021/4/25 Temperature:24 ℃
Time: 下午 02:20:51 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 607.9MHz
Note :

Polarization: *Horizontal*
Power : 3.7 Vd.c.
Distance: 3m

| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 1216.433 | -39.43 | peak | -2.17 | -41.60 | -30.00 | 150 | 225 | -11.60 | |
| | 2430.862 | -52.95 | peak | 3.43 | -49.52 | -30.00 | 150 | 105 | -19.52 | |

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

Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
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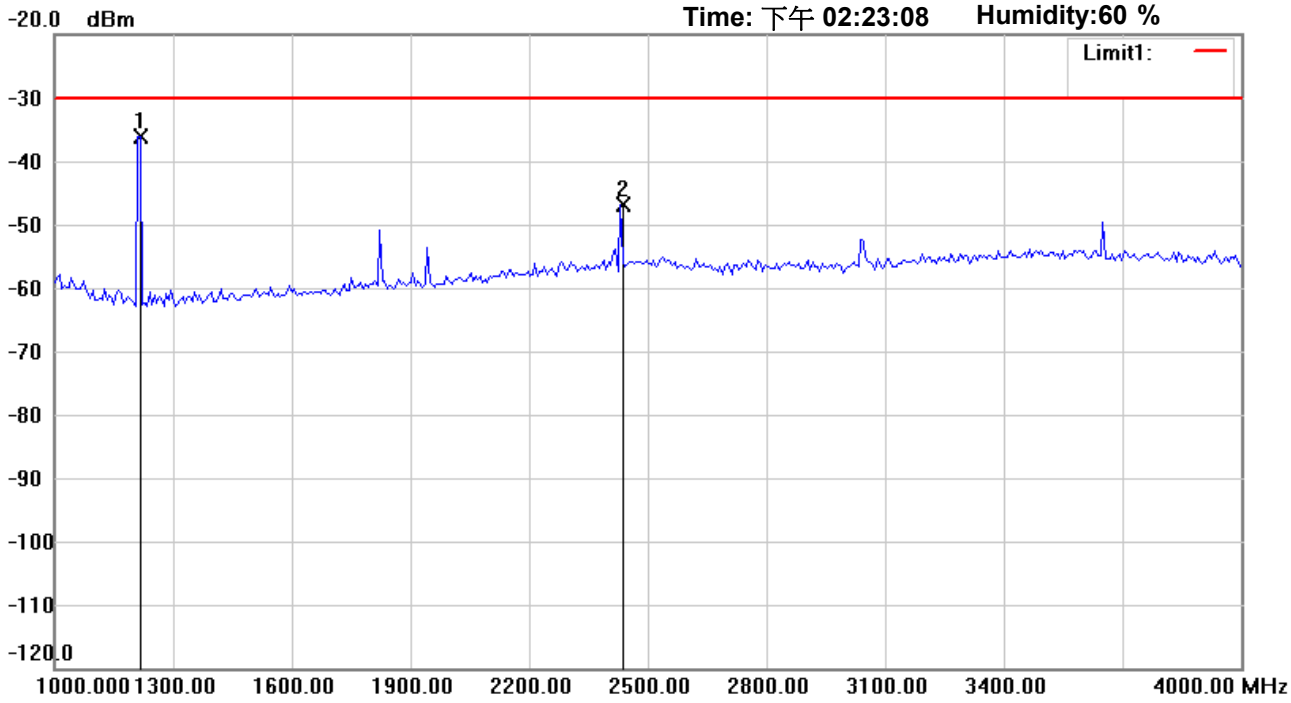
## Radiated Emission Measurement

Operator: Sora
File :3 Data :#2 Date: 2021/4/25 Temperature:24 ℃
Time: 下午 02:23:08 Humidity:60 %




Site : Chamber
Condition : ETSI EN300_422-TX_Spurious_OP
EUT : W6M22103-20772
M/N:
Test Mode : Tx 607.9MHz
Note :

Polarization: *Vertical*
Power : 3.7 Vd.c.
Distance: 3m

| Mk. | Frequency (MHz) | Reading (dBm) | Detector | Corr. factor (dB) | Result (dBm) | Limit (dBm) | Ant.Pos (cm) | Tab.Pos (deg.) | Margin (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| * | 1210.421 | -34.97 | peak | -1.13 | -36.10 | -30.00 | 150 | 295 | -6.10 | |
| | 2430.862 | -51.99 | peak | 5.00 | -46.99 | -30.00 | 150 | 75 | -16.99 | |

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