

**47 CFR PART 15 SUBPART C TEST REPORT**

**for**

**DUO Magnetless SPD/CAD Sensor**

**Model No.: MLSC1**

**FCC ID: M5LMLSC1**

of

Applicant: **ZEITBIKE LLC**

Address: **298 Dalton Street, Ventura, California, United States 93003 1539**

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.: W6M22012-20529-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](mailto:wts@wts-lab.com)



## **TABLE OF CONTENTS**

|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>GENERAL INFORMATION</b> .....   | <b>2</b>  |
| 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 .....  | 3         |
| 1.5      | GENERAL INFORMATION OF TEST ITEM.....  | 4         |
| 1.6      | TEST STANDARDS.....  | 5         |
| <b>2</b> | <b>TECHNICAL TEST</b> .....  | <b>6</b>  |
| 2.1      | SUMMARY OF TEST RESULTS .....  | 6         |
| 2.2      | TEST ENVIRONMENT .....   | 6         |
| 2.3      | TEST EQUIPMENT LIST .....  | 7         |
| 2.4      | GENERAL TEST PROCEDURE .....   | 10        |
| <b>3</b> | <b>TEST RESULTS (ENCLOSURE)</b> .....  | <b>12</b> |
| 3.1      | PEAK OUTPUT POWER (TRANSMITTER).....   | 13        |
| 3.2      | EQUIVALENT ISOTROPIC RADIATED POWER.....                                       | 16        |
| 3.3      | EXEMPTION LIMITS FOR ROUTINE EVALUATION ACCORDING TO FCC KDB PUBLICATION ..... | 16        |
| 3.4      | TRANSMITTER RADIATED EMISSIONS IN RESTRICTED BANDS.....                        | 18        |
| 3.5      | SPURIOUS EMISSIONS (TX) .....  | 19        |
| 3.6      | RADIATED EMISSION ON THE BAND EDGE .....                                       | 21        |
| 3.7      | MINIMUM 6 dB BANDWIDTH .....   | 24        |
| 3.8      | PEAK POWER SPECTRAL DENSITY .....  | 27        |
| 3.9      | RADIATED EMISSION FROM RECEIVER PART .....                                     | 30        |
| 3.10     | POWER LINE CONDUCTED EMISSION .....  | 31        |
|          | <b>APPENDIX</b> .....  | <b>32</b> |



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

Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

## 1 General Information

### **1.1 Notes**

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

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

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

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

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

The test report may only be reproduced or published in full.

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### **Tester:**

February 18, 2021

Robert Ren

Date

WTS-Lab.

Name

Signature

### **Technical responsibility for area of testing:**

February 18, 2021

Kevin Wang

Date

WTS

Name

Signature



Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

## **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: ZEITBIKE LLC

Street: 298 Dalton Street, Ventura,

City: California,

Country: United States, 93003 1539

Telephone: ./.

Fax: ./.

## **1.4 Application details**

Date of receipt of test item: January 14, 2021

Date of test: from January 15, 2021 to February 17, 2021



Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

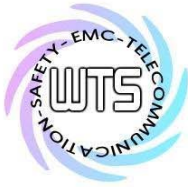
## 1.5 General information of Test item

Type of test item: DUO Magnetless SPD/CAD Sensor  
Model Number: MLSC1  
Brand Name: SIGMA  
Multi-listing model number: ./.  
Photos: see Appendix

### Technical data

Frequency band: 2402 MHz-2480 MHz (BLE), 2457 MHz (ANT+)  
BLE  
Frequency ( ch 0 or A): 2402 MHz  
Frequency ( ch 19 or B): 2440 MHz  
Frequency ( ch 39 or C): 2480 MHz  
Number of Channels: 40  
ANT+  
Frequency ( ch D): 2457 MHz  
Operation modes: Duplex (BLE), Simplex (ANT+)  
Modulation Type: GFSK  
Fixed point-to-point operation:  Yes /  No  
Type of Antenna: Chip Antenna  
Antenna gain: 3.48 dBi (Testing laboratory assumes no responsibility for affecting any validity of the result while the information which is provided by clients.)  
Power supply: Battery 3Vd.c.  
Emission designator: BLE: 1M90G1D, ANT+: 1M90G1D  
Host device: none  
Classification:

|   |                                     |
|---|-------------------------------------|
| Fixed Device  | <input type="checkbox"/>            |
| Mobile Device (Human Body distance > 20cm) (FCC rule part 2.1091)   | <input type="checkbox"/>            |
| Portable Device (Human Body distance < 20cm) (FCC rule part 2.1093) | <input checked="" type="checkbox"/> |



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Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

## Transmitter

## Unom

### **BLE**

|                      |                     |
|----------------------|---------------------|
| <b>Power (ch A):</b> | Conducted: 1.38 dBm |
| <b>Power (ch B):</b> | Conducted: 1.22 dBm |
| <b>Power (ch C):</b> | Conducted: 1.19 dBm |

### **ANT+**

|                      |                     |
|----------------------|---------------------|
| <b>Power (ch D):</b> | Conducted: 1.24 dBm |
|----------------------|---------------------|

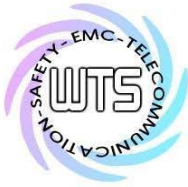
## **Manufacturer: (if applicable)**

|          |                           |
|----------|---------------------------|
| Name:    | SIGMA-ELEKTRO GmbH        |
| Street:  | Dr. Julius Leber Str. 15, |
| Town:    | Neustadt 67433            |
| Country: | Germany                   |

Additional information: ./.

## **1.6 Test standards**

Technical standard : 47 CFR PART 15 SUBPART C § 15.247 (2019-10)



Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

**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 %

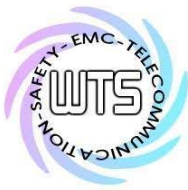
Air pressure: 86 ... 103 kPa

Power supply: Battery 3Vd.c.

Extreme conditions parameters: ./.

| 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,<br>Necessary Bandwidth | Expanded Uncertainty : 0.41 kHz  |
| Estimation Result of Uncertainty of Conducted Output Power<br>Measurement Output power  | Expanded Uncertainty : 1.61 dB   |
| Estimation Result of Uncertainty of Power Density Measurement<br>Power density  | Expanded Uncertainty : 1.68 dB   |
| Estimation Result of Uncertainty of Band Edge Measurement   | Expanded Uncertainty : 1.33 dBc  |

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



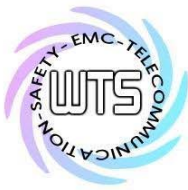
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Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

## 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          | 2020/6/11     | 2021/6/10      |
| ETSTW-CE 003 | AC POWER SOURCE                                    | APS-9102        | D161137     | GW           | Function Test |                |
| ETSTW-CE 004 | ZWEILEITER-V-NETZNACHBILDUNG<br>TWO-LINE V-NETWORK | ESH3-Z5         | 840731/011  | R&S          | 2020/11/6     | 2021/11/5      |
| ETSTW-CE 006 | IMPULSBEGRENZER<br>PULSE LIMITER                   | ESH3-Z2         | 100226      | R&S          | 2020/9/22     | 2021/9/21      |
| ETSTW-CE 008 | HF-EICHLITUNG RF<br>STEP ATTENUATOR<br>139dB DPSP  | 334.6010.02     | 844581/024  | R&S          | Function Test |                |
| ETSTW-CE 009 | TEMP.&HUMIDITY<br>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          | 2020/6/12     | 2021/6/11      |
| ETSTW-RE 004 | EMI TEST RECEIVER                                  | ESI 40          | 832427/004  | R&S          | 2020/9/14     | 2021/9/13      |
| ETSTW-RE 012 | TUNABLE BANDREJECT<br>FILTER                       | D.C 0309        | 146         | K&L          | Function Test |                |
| ETSTW-RE 013 | TUNABLE BANDREJECT<br>FILTER                       | D.C 0336        | 397         | K&L          | Function Test |                |
| ETSTW-RE 018 | MICROWAVE HORN<br>ANTENNA                          | AT4560          | 27212       | AR           | 2020/7/30     | 2021/7/29      |
| ETSTW-RE 019 | MICROWAVE HORN<br>ANTENNA                          | 22240-25        | 121074      | FM           | 2020/5/15     | 2021/5/14      |
| ETSTW-RE 027 | Passive Loop Antenna                               | 6512            | 00034563    | ETS-Lindgren | 2020/7/8      | 2021/7/7       |
| ETSTW-RE 030 | Double-Ridged Guide Horn<br>Antenna                | 3117            | 00035224    | ETS-Lindgren | 2020/4/22     | 2021/4/21      |
| ETSTW-RE 042 | Biconical Antenna                                  | HK116           | 100172      | R&S          | 2021/2/11     | 2022/2/10      |
| ETSTW-RE 043 | Log-Periodic Dipole<br>Antenna                     | HL223           | 100166      | R&S          | 2020/5/8      | 2021/5/7       |
| ETSTW-RE 044 | Log-Periodic Antenna                               | HL050           | 100094      | R&S          | 2020/8/3      | 2021/8/2       |
| ETSTW-RE 045 | ESA-E SERIES<br>SPECTRUM ANALYZER                  | E4404B          | MY45111242  | Agilent      | Pre-test Use  |                |
| ETSTW-RE 050 | Attenuator 10dB                                    | 50HF-010-1      | None        | JFW          | 2020/2/20     | 2021/2/19      |
| ETSTW-RE 051 | Attenuator 6dB                                     | 50HF-006-1      | None        | JFW          | 2020/2/20     | 2021/2/19      |
| ETSTW-RE 053 | Attenuator 3dB                                     | 50HF-003-1      | None        | JFW          | 2020/2/20     | 2021/2/19      |
| ETSTW-RE 055 | SPECTRUM ANALYZER                                  | FSU 26          | 200074      | R&S          | 2020/3/6      | 2021/3/5       |
| ETSTW-RE 060 | Attenuator 30dB                                    | 5015-30         | F651012z-01 | ATM          | 2020/2/20     | 2021/2/19      |
| ETSTW-RE 062 | Amplifier Module                                   | CHC 2           | None        | KMIC         | 2020/5/15     | 2021/5/14      |
| ETSTW-RE 064 | Bluetooth Test Set                                 | MT8852B-042     | 6K00005709  | Anritsu      | Function Test |                |
| ETSTW-RE 069 | Double-Ridged Guide Horn<br>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<br>AMPLIFIER                           | KMA180265A01    | 99057       | KMIC         | 2020/9/17     | 2021/9/16      |
| ETSTW-RE 091 | Match Pad  | MDCS1500        | None        | WOKEN        | 2020/5/22     | 2021/5/21      |
| ETSTW-RE 099 | DC Block   | 50DB-007-1      | None        | JFW          | 2020/2/20     | 2021/2/19      |
| ETSTW-RE 112 | AC POWER SOURCE                                    | TFC-1005        | T-0A023536  | T-Power      | Function test |                |
| ETSTW-RE 115 | 2.4GHz Notch Filter                                | N0124411        | 473874      | MICROWAVE    | 2021/1/6      | 2022/1/5       |





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Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

|                 |                                      |  |                 | CIRCUITS           |                  |            |
|-----------------|--------------------------------------|--|-----------------|--------------------|------------------|------------|
| ETSTW-RE 120    | RF Player                            | MP9200                                 | MP9210-111022   | ADIVIC             | 2020/12/25       | 2021/12/24 |
| ETSTW-RE 122    | SIGNAL GENERATOR                     | SMF100A                                | 102149          | R&S                | 2020/6/11        | 2021/6/10  |
| 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                | 2020/2/20        | 2021/2/19  |
| 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            | 2020/5/15        | 2021/5/14  |
| ETSTW-RE 146    | Preamplifier                         | JPA-10M1G                              | 15090004        | JPT                | 2020/6/5         | 2021/6/4   |
| ETSTW-RE 147    | Bi-log Hybrid Antenna                | MCTD 2786B                             | BLB16M04005     | ETC                | 2020/4/9         | 2021/4/8   |
| 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                | 2020/6/9         | 2021/6/8   |
| ETSTW-EMI 011   | USB Compact Modulator                | SFC-U                                  | 101689          | R&S                | 2020/5/21        | 2021/5/20  |
| ETSTW-GSM 002   | Universal Radio Communication Tester | CMU 200                                | 109439          | R&S                | 2020/3/9         | 2021/3/8   |
| ETSTW-GSM 003   | Radio Communication Analyzer         | MT8820C                                | 6201342073      | Anritsu            | 2020/4/20        | 2021/4/19  |
| 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            | 2020/3/27        | 2021/3/26  |
| 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       | 2020/2/20        | 2021/2/19  |
| ETSTW-Cable 017 | BNC Cable                            | X Cable                                | B Cable 2       | Schwarz beck       | 2020/2/20        | 2021/2/19  |
| ETSTW-Cable 018 | BNC Cable                            | Y Cable                                | B Cable 3       | Schwarz beck       | 2020/2/20        | 2021/2/19  |
| ETSTW-Cable 019 | BNC Cable                            | Z Cable                                | B Cable 4       | Schwarz beck       | 2020/2/20        | 2021/2/19  |
| 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       | 2020/5/8         | 2021/5/7   |
| 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       | 2020/2/20        | 2021/2/19  |



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Registration number: W6M22012-20529-C-1  
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|                 |                          |                       |          |              |                  |           |
|-----------------|--------------------------|-----------------------|----------|--------------|------------------|-----------|
| ETSTW-Cable 043 | Microwave Cable          | SUCOFLEX 104          | 317576   | HUBER+SUHNER | 2020/5/15        | 2021/5/14 |
| 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 | 2020/6/5         | 2021/6/4  |
| ETSTW-Cable 064 | Microwave Cable          | SUCOFLEX 104          | MY28891  | HUBER+SUHNER | 2020/5/15        | 2021/5/14 |
| ETSTW-Cable 071 | N TYPE CABLE             | EMCCFD400-NM-NM-25000 | 170239   | EMCI         | 2020/6/5         | 2021/6/4  |
| ETSTW-Cable 072 | SMA type cable (8m)      | SUCOFLEX 104          | 805800/4 | HUBER+SUHNER | 2020/5/15        | 2021/5/14 |
| ETSTW-Cable 074 | SMA type cable (2m)      | SUCOFLEX 104          | 802563/4 | HUBER+SUHNER | 2020/5/15        | 2021/5/14 |
| 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 |



Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

## **2.4 General Test Procedure**

**POWER LINE CONDUCTED INTERFERENCE:** The procedure used was ANSI STANDARD C63.10-2013 5.2 using a 50 $\mu$ H LISN (if necessary). Both lines were observed. The bandwidth of the spectrum analyzer was 10 kHz with an appropriate sweep speed.

**RADIATION INTERFERENCE:** The test procedure used was according to ANSI STANDARD C63.10-2013 6.4 employing a spectrum analyzer. For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 100kHz respectively with an appropriate sweep speed. For investigated frequency is above 1GHz, both of RBW and VBW of the spectrum analyzer were 1 MHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna.

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

Example:

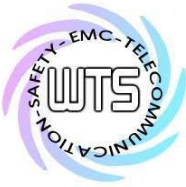
Freq (MHz)      METER READING + ACF + CABLE LOSS (to the receiver) = FS  
33                      20 dB $\mu$ V + 10.36 dB + 6 dB = 36.36 dB $\mu$ V/m @3m

The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m (non metallic table) and arranged according to ANSI C63.10-2013 6.3.1. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to the frequency specified as follows:

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

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

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



Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

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

The formula is as follows:

Average = Peak + Duty Factor

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

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

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

ANSI STANDARD C63.10-2013 10.2.7: Any measurements that utilize special test software shall be indicated and referenced in the test report. During testing, test software 'EZ EMC' was used for setting up different operation modes.



Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

**3 Test results (enclosure)**

| TEST CASE   | Para. Number         | Required                            | Test passed                         | Test failed              |
|---|----------------------|-------------------------------------|-------------------------------------|--------------------------|
| Peak Output Power                                   | 15.247(b)            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Equivalent isotropically radiated Power             | 15.247(b)            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Spurious Emissions radiated – Transmitter operating | 15.247(d):<br>15.209 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Band Edge Measurement                               | 15.247(d)            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Minimum 6 dB Bandwidth                              | 15.247(a)(2)         | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Peak Power Spectral Density                         | 15.247(e)            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Radiated Emission from Receiver part                | 15.109               | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> |
| Power Line Conducted Emission                       | 15.207               | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> |

The following is intentionally left blank.



Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

### 3.1 Peak Output Power (transmitter)

FCC Rule: 15.247(b)(3)

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

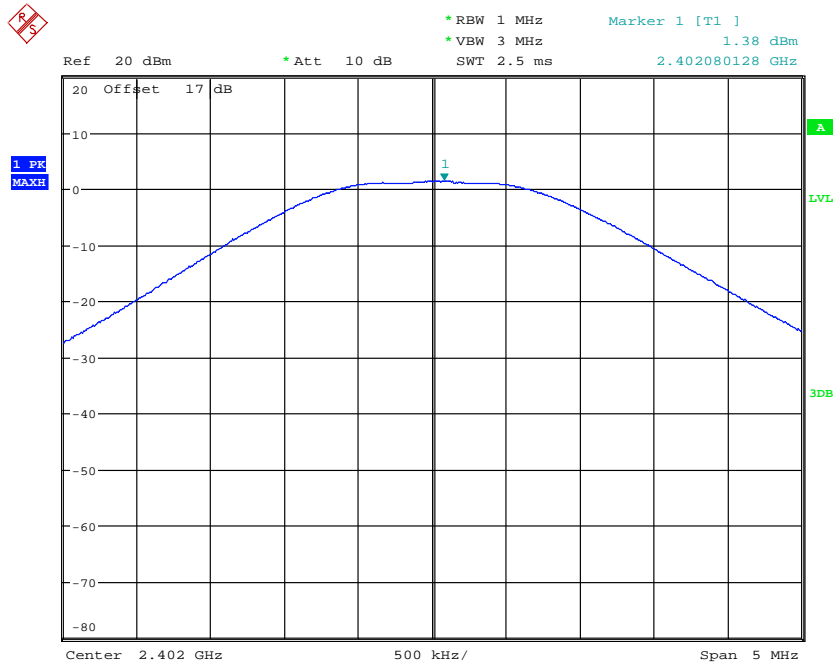
Test date: January 26, 2021

Temperature: 24.7 °C

Humidity: 54.2 %

Tester: Robert

BLE

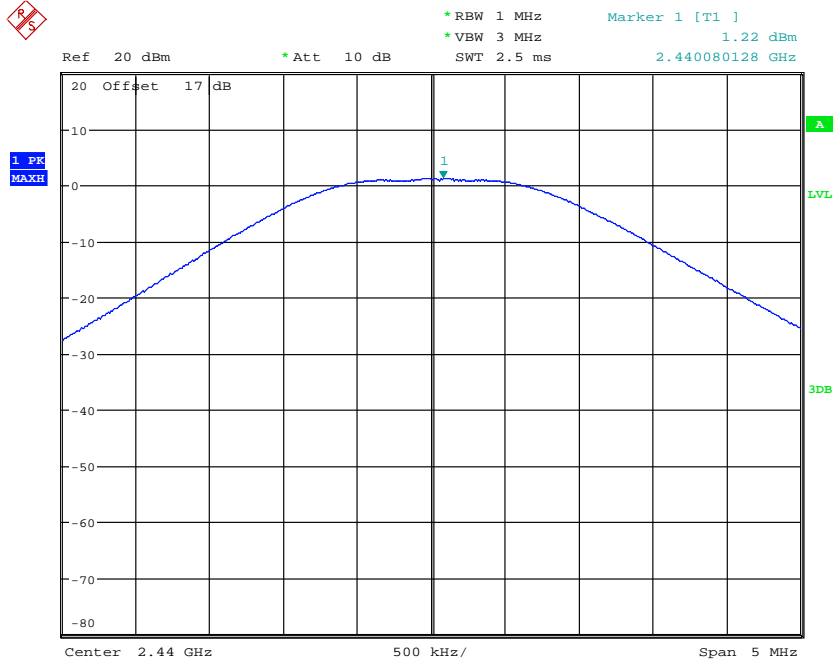


MAX OUTPUT POWER BT4.0 CH00  
Date: 26.JAN.2021 15:50:46

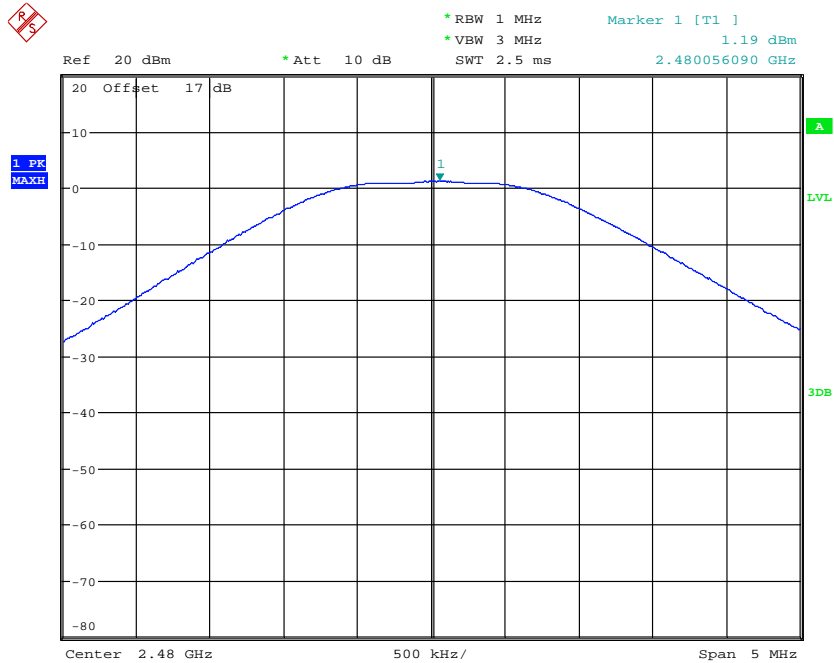


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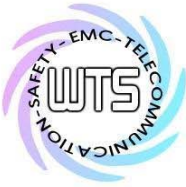
Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1



MAX OUTPUT POWER BT4.0 CH19  
Date: 26.JAN.2021 15:51:42



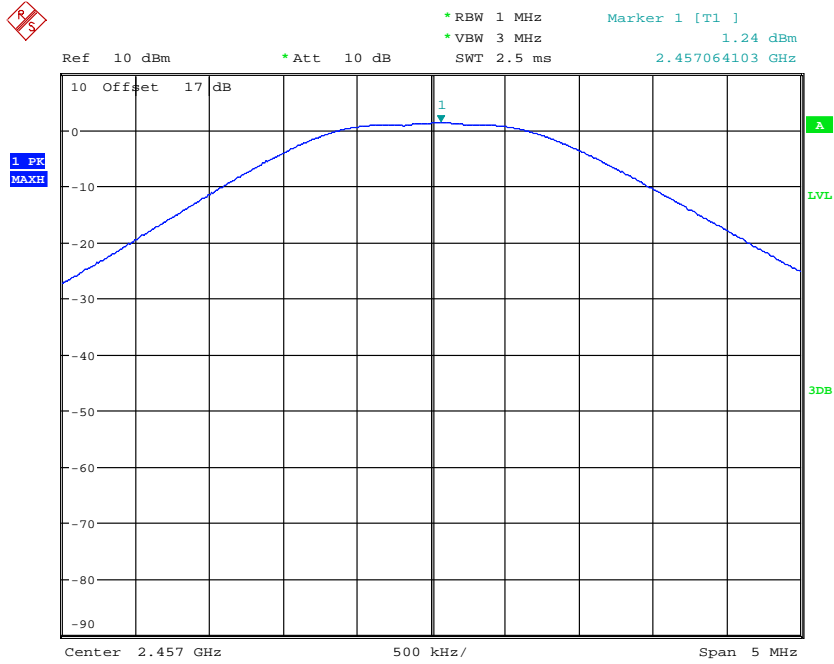
MAX OUTPUT POWER BT4.0 CH39  
Date: 26.JAN.2021 16:06:07



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Registration number: W6M22012-20529-C-1  
 FCC ID: M5LMLSC1

ANT+



MAX OUTPUT POWER  
 Date: 26.JAN.2021 15:58:01

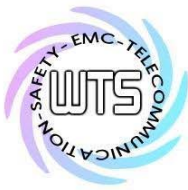
Limits:

| Frequency<br>MHz | Power<br>dBm |
|------------------|--------------|
| 902 - 928        | 30           |
| 2400 – 2483.5    | 30           |
| 5725 – 5850      | 30           |

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

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





Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

**3.2 Equivalent isotropic radiated power**

FCC Rule: 15.247(b)(3)

EIRP = max. conducted output power + antenna gain

**BLE**

EIRP=1.38 dBm + (3.48 dBi [antenna gain claimed by manufacturer]) = 4.86 dBm = 3.06 mW

**ANT+**

EIRP =1.24 dBm + (3.48 dBi [antenna gain claimed by manufacturer]) =4.72 dBm = 2.96 mW

**3.3 Exemption Limits for Routine Evaluation according to FCC KDB Publication**

**RESULT:**

Test standard : FCC KDB Publication  
447498 D01 General RF Exposure Guidance v06

According to 447498 D01 General RF Exposure Guidance v06:

SAR evaluation, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

**3.3.1 Exemption Limits for Routine Evaluation – SAR Evaluation**

SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table .

Table: SAR evaluation — Exemption limits for routine evaluation based on frequency and separation distance

**BLE**

| MHz  | 5     | 10    | 15    | 20    | 25    | mm                                |
|------|-------|-------|-------|-------|-------|-----------------------------------|
| 2402 | 10.09 | 19.26 | 29.35 | 38.52 | 48.52 | SAR Test Exclusion Threshold (mW) |

| MHz  | 30    | 35    | 40    | 45    | 50    | mm                                |
|------|-------|-------|-------|-------|-------|-----------------------------------|
| 2402 | 57.70 | 67.79 | 77.87 | 87.05 | 97.13 | SAR Test Exclusion Threshold (mW) |

Output power level shall be the higher of the maximum conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time-averaged output power.

Established separation distance is 5 mm.

**BLE**

Operating frequency band : 2402-2480 MHz

Max. output power level at 5 mm separation distance at 2402 MHz according to table is: 10.09 mW

The product is exempt from SAR Evaluation/Testing because the output power of 3.06 mW is below the exemption limit of 10.09 mW.



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

Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

## ANT+

| MHz  | 5    | 10    | 15    | 20    | 25    | mm                                      |
|------|------|-------|-------|-------|-------|---|
| 2457 | 9.99 | 18.98 | 28.97 | 37.96 | 47.95 | SAR Test<br>Exclusion<br>Threshold (mW) |

| MHz  | 30    | 35    | 40    | 45    | 50    | mm                                      |
|------|-------|-------|-------|-------|-------|---|
| 2457 | 56.94 | 66.93 | 76.91 | 85.91 | 95.90 | SAR Test<br>Exclusion<br>Threshold (mW) |

Output power level shall be the higher of the maximum conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time-averaged output power.

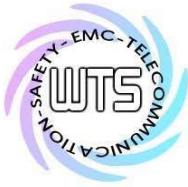
Established separation distance is 5 mm.

ANT+

Operating frequency band : 2457 MHz

Max. output power level at 5 mm separation distance at 2457 MHz according to table is: 9.99 mW

The product is exempt from SAR Evaluation/Testing because the output power of 2.96 mW is below the exemption limit of 9.99 mW.



Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

### **3.4 Transmitter Radiated Emissions in Restricted Bands**

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

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

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

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

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

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

Limits.

For frequencies below 1GHz:

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

For frequencies above 1GHz (Average measurements).

Guidance on Measurement of Digit Transmission Systems:

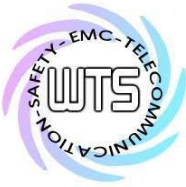
“If the emission is pulsed, modify the unit for continuous operation, use the setting shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.”

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

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

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

Explanation: See attached diagrams in Appendix.



Registration number: W6M22012-20529-C-1

FCC ID: M5LMLSC1

## **3.5 Spurious Emissions (tx)**

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

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

FCC Rule: 15.247(d), 15.35

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

Limits:

For frequencies above 1GHz (Peak measurements).

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

For frequencies above 1GHz (Average measurements).

Max. reading – 20dB

Max. reading – 20 dB

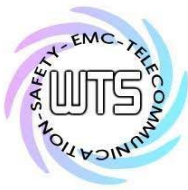
Guidance on Measurement of Digit Transmission Systems:

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

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

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

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



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

Registration number: W6M22012-20529-C-1  
 FCC ID: M5LMLSC1

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

Calculation of test results:

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

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

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

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

### Summary table with radiated data of the test plots

Model: MLSC1 Date: --  
 Mode: -- Temperature: -- °C Engineer: --  
 Polarization: -- Humidity: -- %

| Frequency (MHz) | Reading (dBuV) | Detector | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|-----------------|----------------|----------|-------------|-----------------|----------------|-------------|---------------------|----------------|
| --              | --             | --       | --          | --              | --             | --          | --                  | --             |
| --              | --             | --       | --          | --              | --             | --          | --                  | --             |

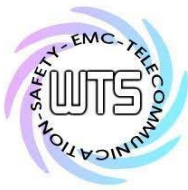
| Frequency (MHz) | Reading (dBuV) |      | Factor (dB) Corr. | Result (dBuV/m) |      | Limit (dBuV/m) |      | Margin (dB) | Table Degree (Deg.) | Ant. High (m) |
|-----------------|----------------|------|-------------------|-----------------|------|----------------|------|-------------|---------------------|---------------|
|                 | Peak           | Ave. |                   | Peak            | Ave. | Peak           | Ave. |             |                     |               |
| --              | --             | --   | --                | --              | --   | --             | --   | --          | --                  | --            |
| --              | --             | --   | --                | --              | --   | --             | --   | --          | --                  | --            |
| --              | --             | --   | --                | --              | --   | --             | --   | --          | --                  | --            |
| --              | --             | --   | --                | --              | --   | --             | --   | --          | --                  | --            |

### 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. After evaluated, the test result in this report adopt the worst case to measure, please see attached diagrams in appendix.

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

Test equipment used: ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 111, ETSTW-RE 088, ETSTW-RE 018



Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

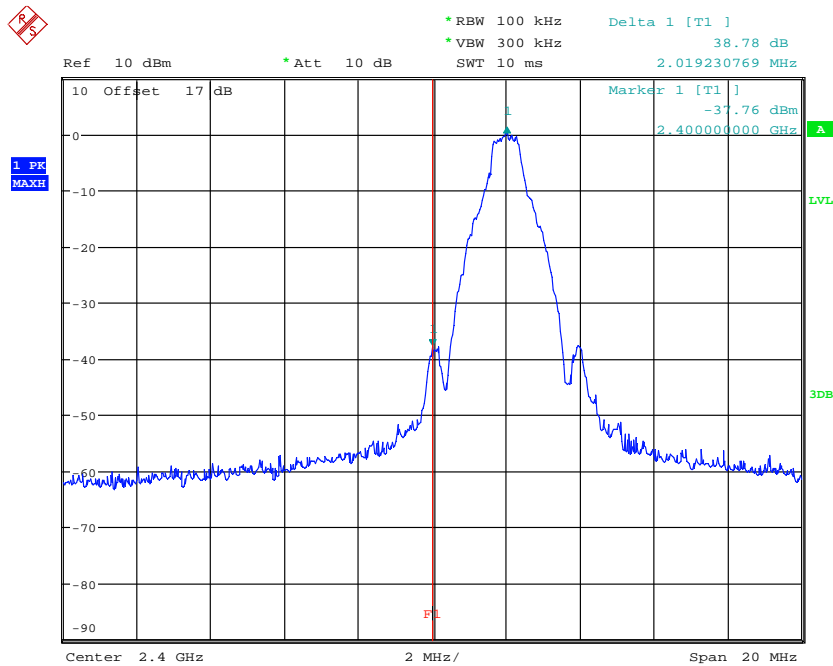
### 3.6 Radiated Emission on the band edge

According to FCC rules part 15 subpart C §15.247(d) in any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in § 15.209(a) is not required.

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

Test date: January 26, 2021  
Temperature: 24.7 °C  
Humidity: 54.2 %  
Tester: Robert

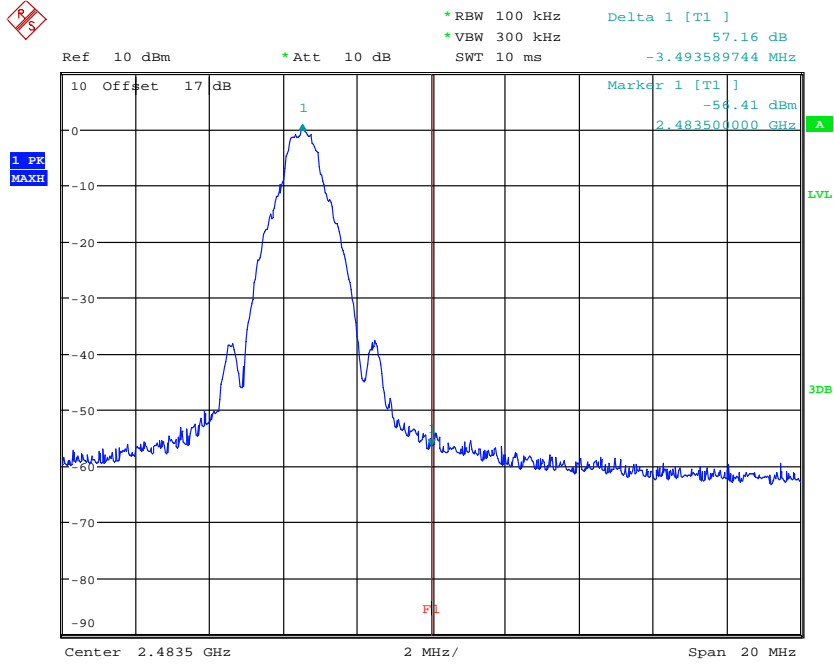
BLE



BANDEDGE BT4.0 CH00  
Date: 26.JAN.2021 15:51:16

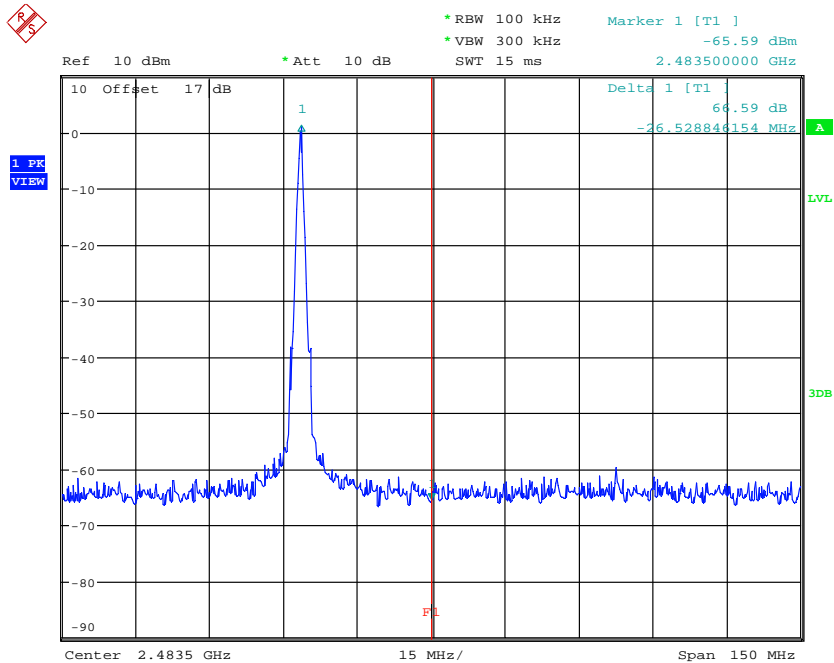


Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

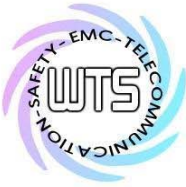


BANDEDGE BT4.0 CH39  
Date: 26.JAN.2021 16:06:38

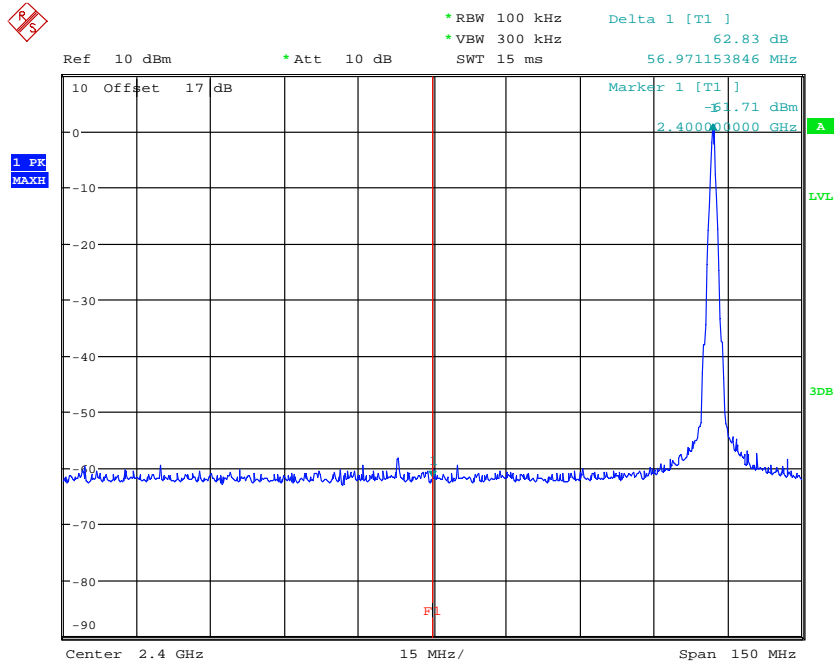
ANT+



BANDEDGE  
Date: 26.JAN.2021 16:00:54



Registration number: W6M22012-20529-C-1  
 FCC ID: M5LMLSC1



BANDEGE  
 Date: 26.JAN.2021 16:00:17

Limit:

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

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





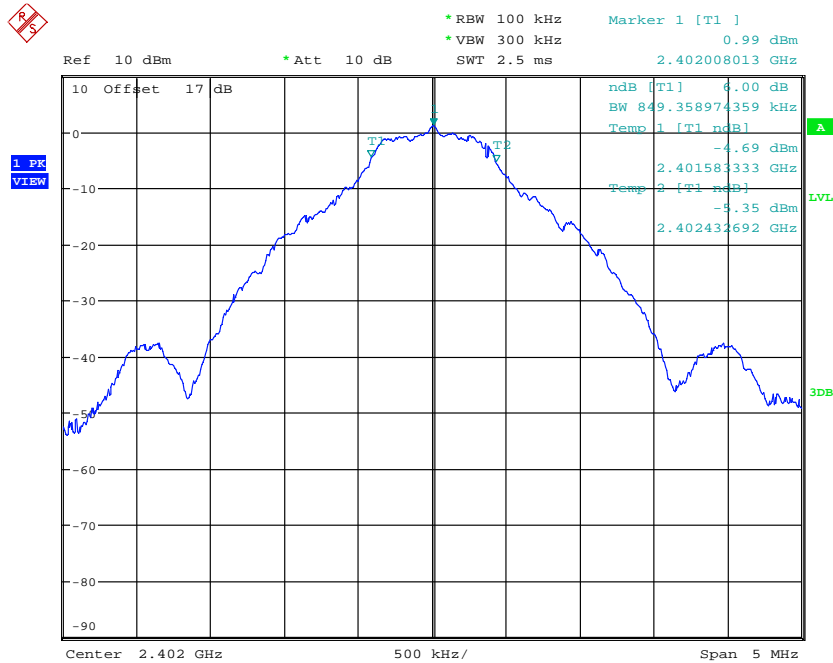
Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

### 3.7 Minimum 6 dB Bandwidth

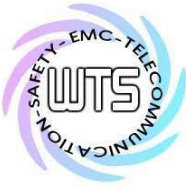
The analyzer ResBW was set to 100 kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK reading was taken, two markers were set 6 dB below the maximum level on the right and the left side of the emission. The 6 dB bandwidth is the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

Test date: January 26, 2021  
Temperature: 24.7 °C  
Humidity: 54.2 %  
Tester: Robert

BLE

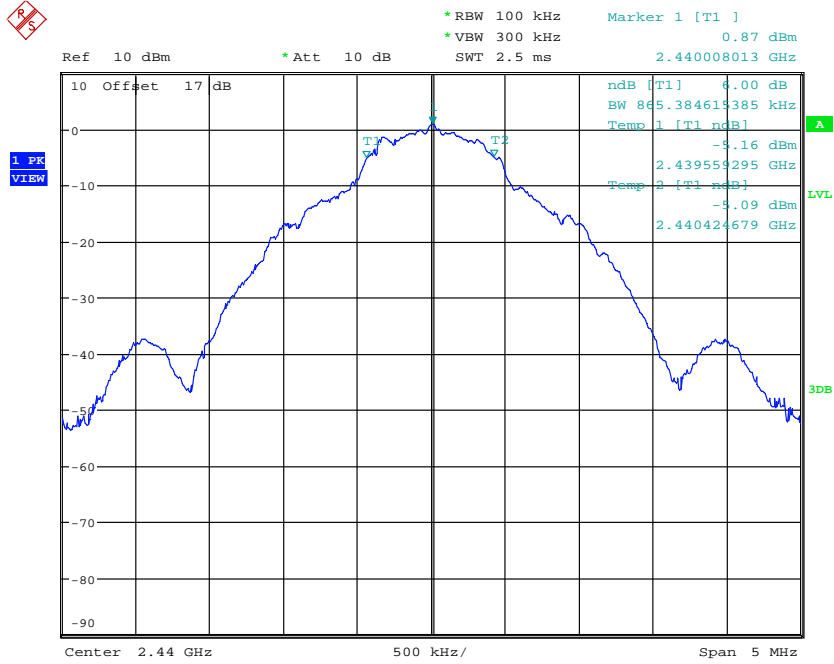


6DB BANDWIDTH BT4.0 CH00  
Date: 26.JAN.2021 15:50:56

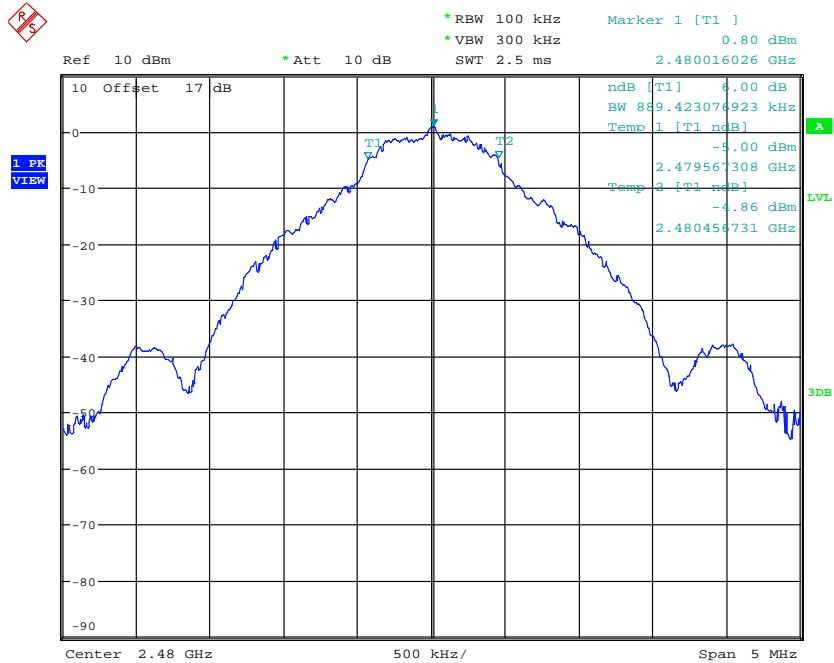


# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1



6DB BANDWIDTH BT4.0 CH19  
Date: 26.JAN.2021 15:51:52



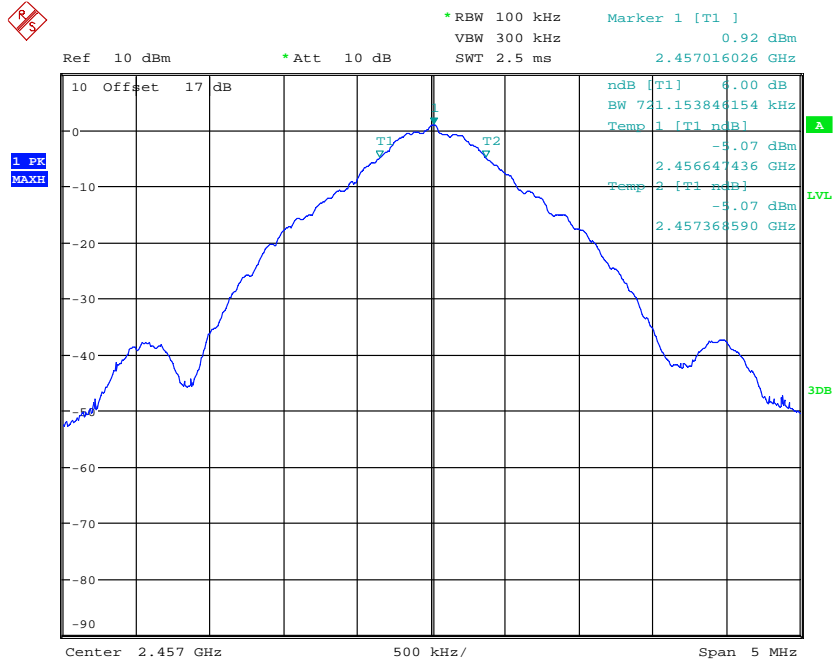
6DB BANDWIDTH BT4.0 CH39  
Date: 26.JAN.2021 16:06:20



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

Registration number: W6M22012-20529-C-1  
 FCC ID: M5LMLSC1

ANT+

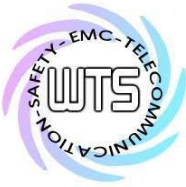


6DB BANDWIDTH  
 Date: 26.JAN.2021 15:57:01

**Limits:**

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

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



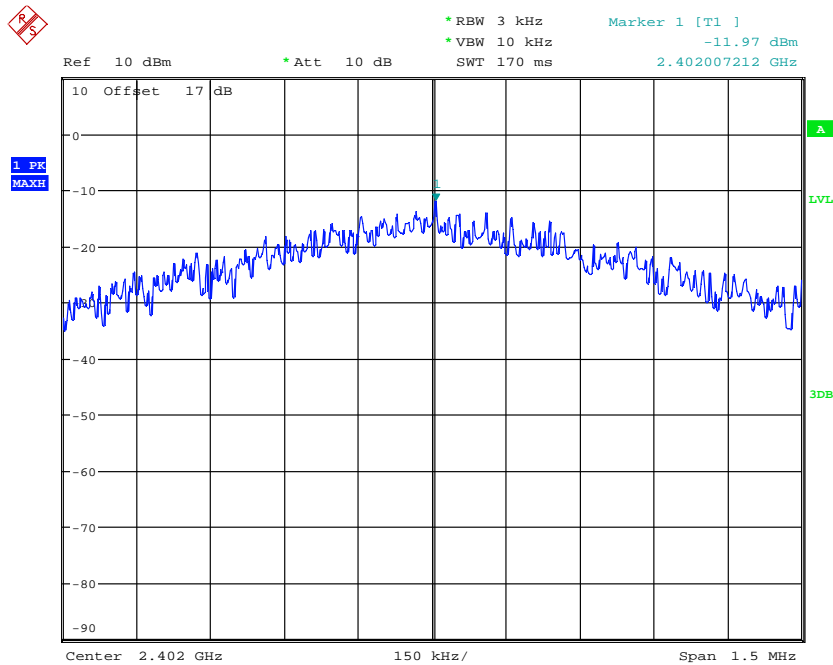
Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

### 3.8 Peak Power Spectral Density

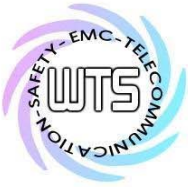
Peak Power Spectral density is a measured at low, middle and high channel.  
The peak output power is measured with a measurement bandwidth of 10 MHz and displayed on diagram together with Peak Power Spectral Density result which was measured with a bandwidth of 3 kHz, appreciate frequency span and sweep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

Test date: January 26, 2021  
Temperature: 24.7 °C  
Humidity: 54.2 %  
Tester: Robert

BLE

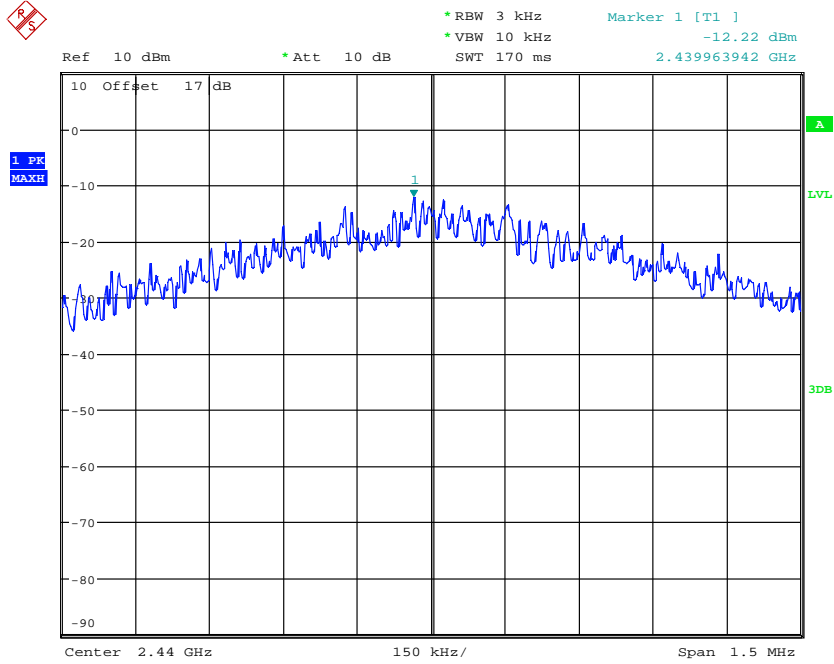


POWER DENSITY BT4.0 CH00  
Date: 26.JAN.2021 15:51:08

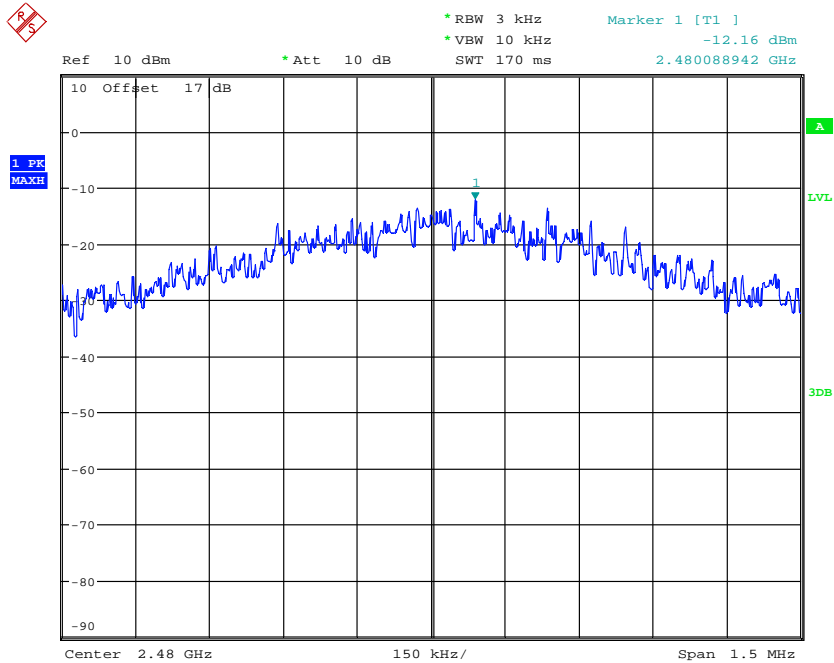


# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1



POWER DENSITY BT4.0 CH19  
Date: 26.JAN.2021 15:52:04



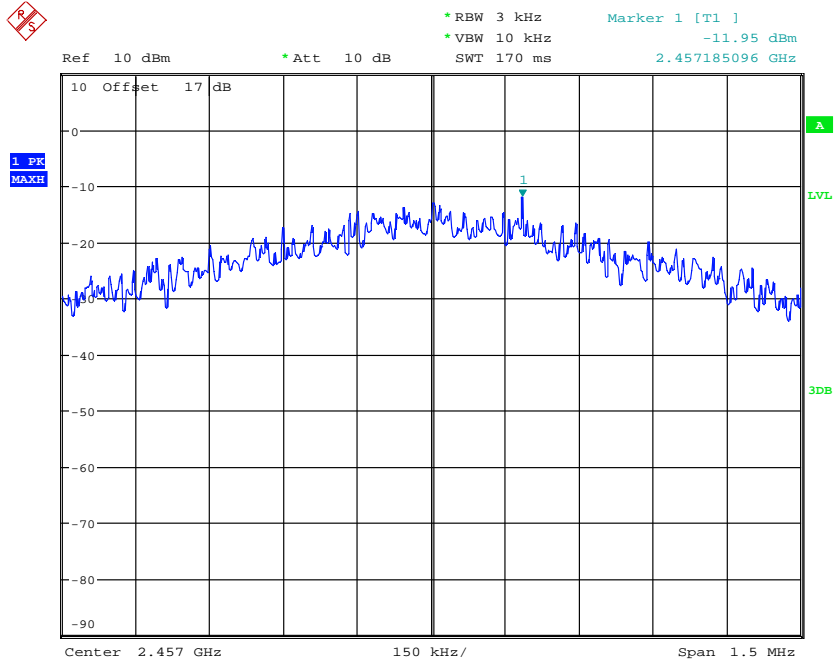
POWER DENSITY BT4.0 CH39  
Date: 26.JAN.2021 16:06:30



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

Registration number: W6M22012-20529-C-1  
 FCC ID: M5LMLSC1

ANT+



POWER DENSITY  
 Date: 26.JAN.2021 15:59:01

**Limits:**

| Frequency Range<br>MHz | dBm |
|------------------------|-----|
| 902-928                | 8   |
| 2400-2483.5            | 8   |
| 5725-5850              | 8   |

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



Registration number: W6M22012-20529-C-1  
 FCC ID: M5LMLSC1

**3.9 Radiated Emission from Receiver Part**

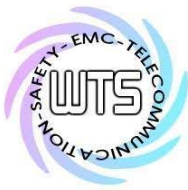
Model: MLSC1 Date: --  
 Mode: -- Temperature: -- °C Engineer: --  
 Polarization: -- Humidity: -- %

| Frequency (MHz) | Reading (dBuV) | Detector | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|-----------------|----------------|----------|-------------|-----------------|----------------|-------------|---------------------|----------------|
| --              | --             | --       | --          | --              | --             | --          | --                  | --             |
| --              | --             | --       | --          | --              | --             | --          | --                  | --             |

| Frequency (MHz) | Reading (dBuV) |      | Factor (dB) Corr. | Result (dBuV/m) |      | Limit (dBuV/m) |      | Margin (dB) | Table Degree (Deg.) | Ant. High (m) |
|-----------------|----------------|------|-------------------|-----------------|------|----------------|------|-------------|---------------------|---------------|
|                 | Peak           | Ave. |                   | Peak            | Ave. | Peak           | Ave. |             |                     |               |
| --              | --             | --   | --                | --              | --   | --             | --   | --          | --                  | --            |
| --              | --             | --   | --                | --              | --   | --             | --   | --          | --                  | --            |
| --              | --             | --   | --                | --              | --   | --             | --   | --          | --                  | --            |
| --              | --             | --   | --                | --              | --   | --             | --   | --          | --                  | --            |

**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. Please refer to the test report number W6M22012-20529-P-15B.



Registration number: W6M22012-20529-C-1  
 FCC ID: M5LMLSC1

**3.10 Power Line Conducted Emission**

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

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

Model: MLSC1 Date: --  
 Mode: -- Temperature: -- °C Engineer: --  
 Polarization: N Humidity: -- %

| Frequency<br>(MHz) | Reading<br>(dBuV) |      | Factor<br>(dB)<br>Corr. | Result<br>(dBuV) |      | Limit<br>(dBuV) |      | Margin<br>(dB) |
|--------------------|-------------------|------|-------------------------|------------------|------|-----------------|------|----------------|
|                    | QP                | Ave. |                         | QP               | Ave. | QP              | Ave. |                |
| --                 | --                | --   | --                      | --               | --   | --              | --   | --             |
| --                 | --                | --   | --                      | --               | --   | --              | --   | --             |
| --                 | --                | --   | --                      | --               | --   | --              | --   | --             |
| --                 | --                | --   | --                      | --               | --   | --              | --   | --             |

Polarization: L1

| Frequency<br>(MHz) | Reading<br>(dBuV) |      | Factor<br>(dB)<br>Corr. | Result<br>(dBuV) |      | Limit<br>(dBuV) |      | Margin<br>(dB) |
|--------------------|-------------------|------|-------------------------|------------------|------|-----------------|------|----------------|
|                    | QP                | Ave. |                         | QP               | Ave. | QP              | Ave. |                |
| --                 | --                | --   | --                      | --               | --   | --              | --   | --             |
| --                 | --                | --   | --                      | --               | --   | --              | --   | --             |
| --                 | --                | --   | --                      | --               | --   | --              | --   | --             |
| --                 | --                | --   | --                      | --               | --   | --              | --   | --             |

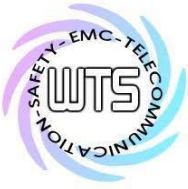
- Note:**
1. The formula of measured value as: **Test Result = Reading + Correction Factor**
  2. The Correction Factor = Cable Loss + LISN Insertion Loss + Pulse Limit Loss
  3. Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average
  4. All not in the table noted test results are more than 20 dB below the relevant limits.
  5. Up Line: QP Limit Line, Down Line: Ave Limit Line.
  6. This test in not required because the EUT uses battery.

**Limits:**

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

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





Registration number: W6M22012-20529-C-1  
FCC ID: M5LMLSC1

## **Appendix**

### **Measurement diagrams**

Radiated 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: Allen

File :1\_BLE\_TX

Data :#1

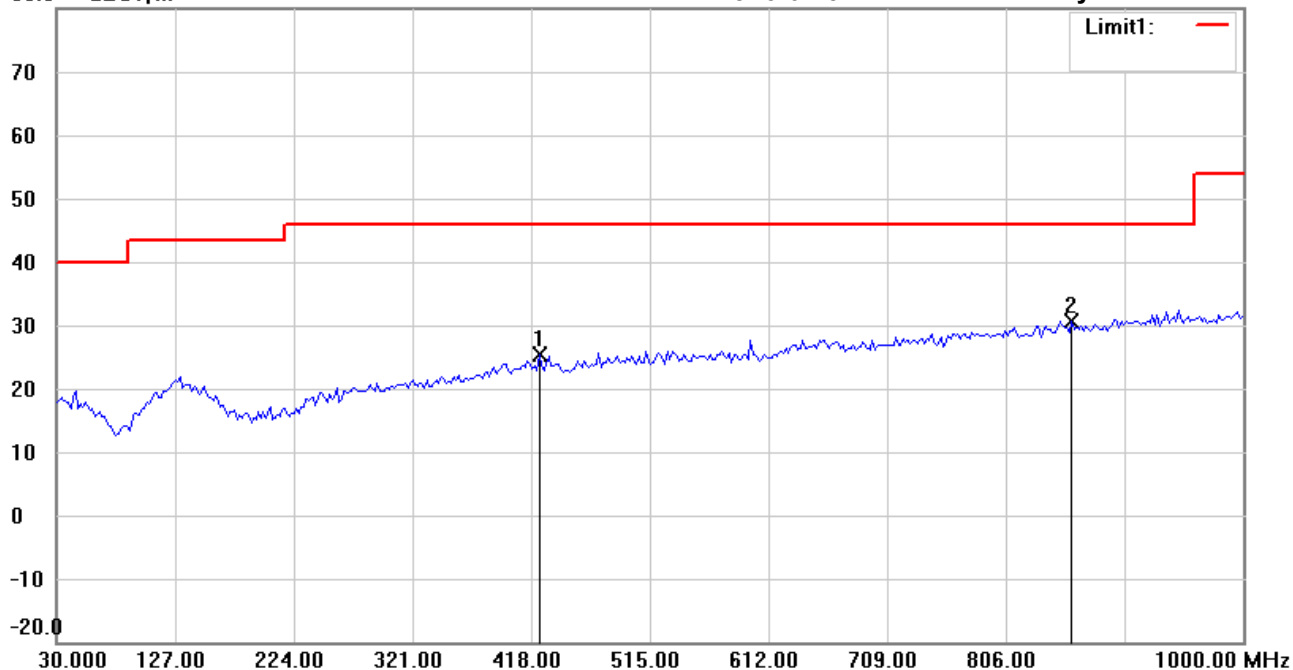
Date: 1/27/2021

Temperature:22.9 °C

80.0 dBuV/m

Time: 3:01:57 AM

Humidity:64.6 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_30-1000MHz

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2402MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 424.6091        | 28.73          | peak     | -3.47               | 25.26           | 46.00          | 100          | 185            | -20.74      |         |
| *   | 860.0401        | 27.63          | peak     | 2.99                | 30.62           | 46.00          | 100          | 30             | -15.38      |         |

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



Radiated Emission Measurement

Operator: Allen

File :1\_BLE\_TX

Data :#2

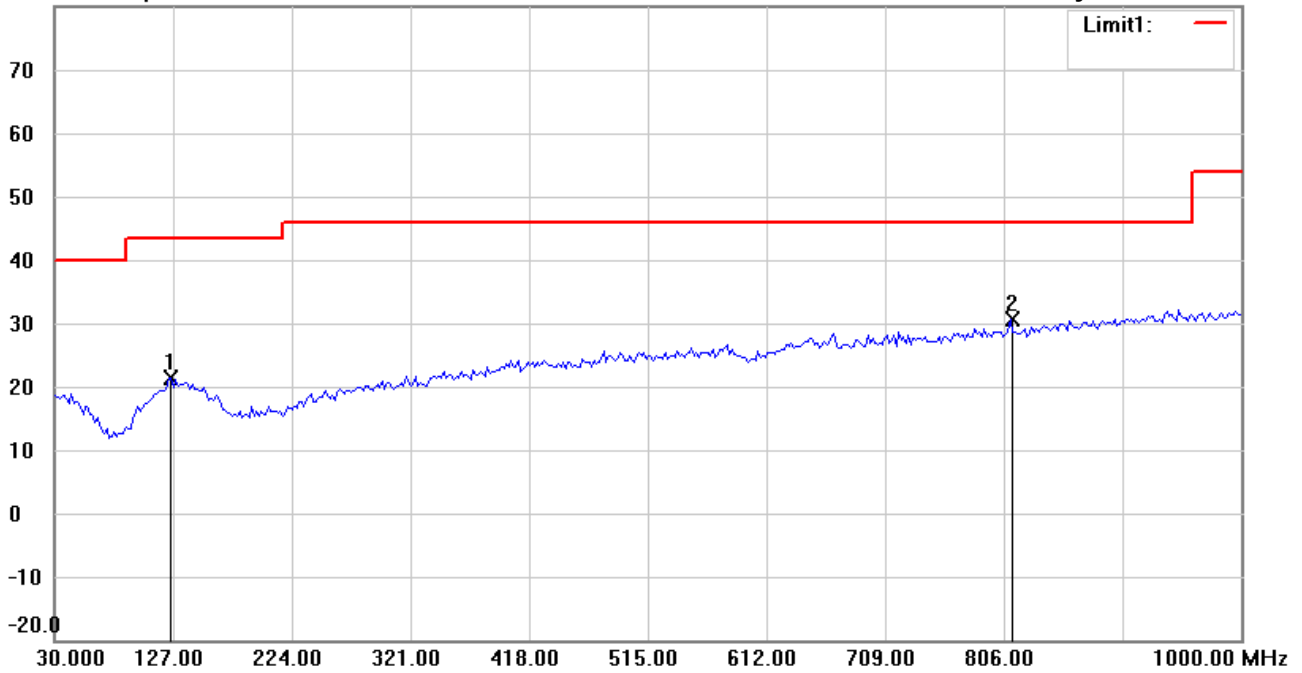
Date: 1/27/2021

Temperature:22.9 °C

80.0 dBuV/m

Time: 3:02:57 AM

Humidity:64.6 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_30-1000MHz

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2402MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 125.2505        | 28.45          | peak     | -7.05               | 21.40           | 43.50          | 100          | 350            | -22.10      |         |
| *   | 811.4430        | 28.67          | peak     | 1.92                | 30.59           | 46.00          | 100          | 138            | -15.41      |         |



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 Tel:+886-2-6606-8877  
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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#1

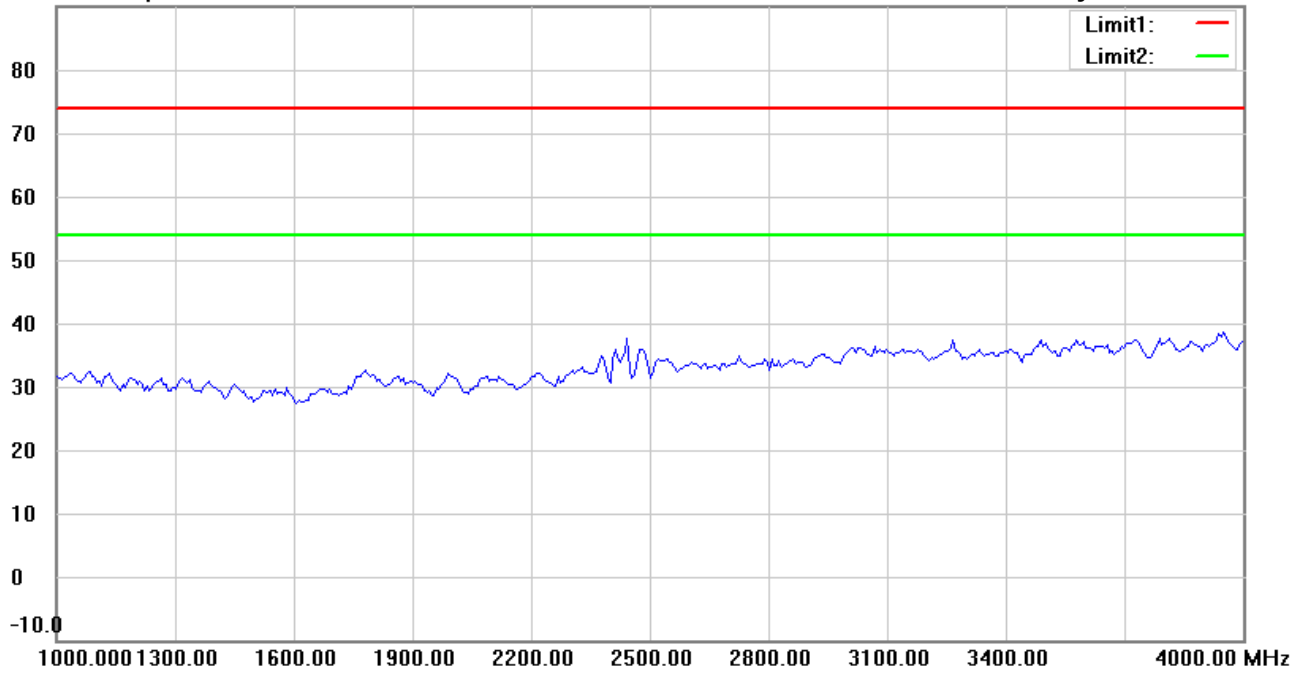
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:20:17 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2402MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



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**Radiated Emission Measurement**

Operator: Vincent

File :3

Data :#6

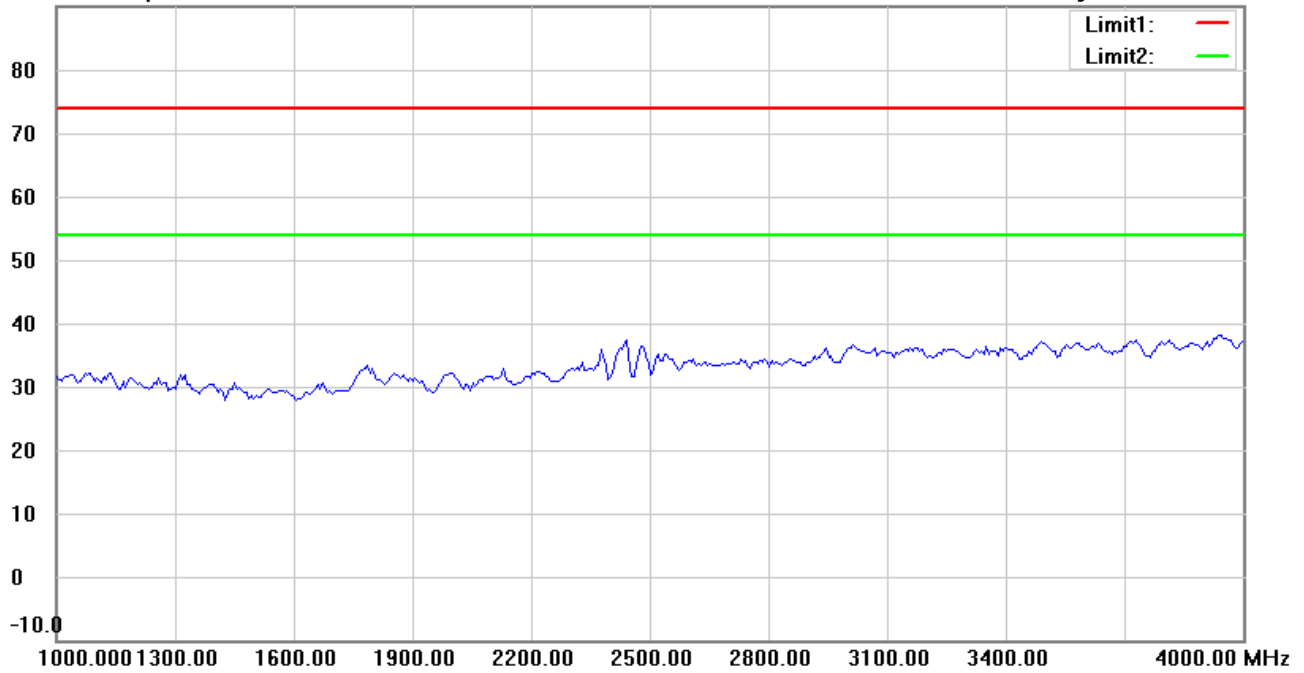
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:23:48 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2402MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



Radiated Emission Measurement

Operator: Vincent

File :3

Data :#2

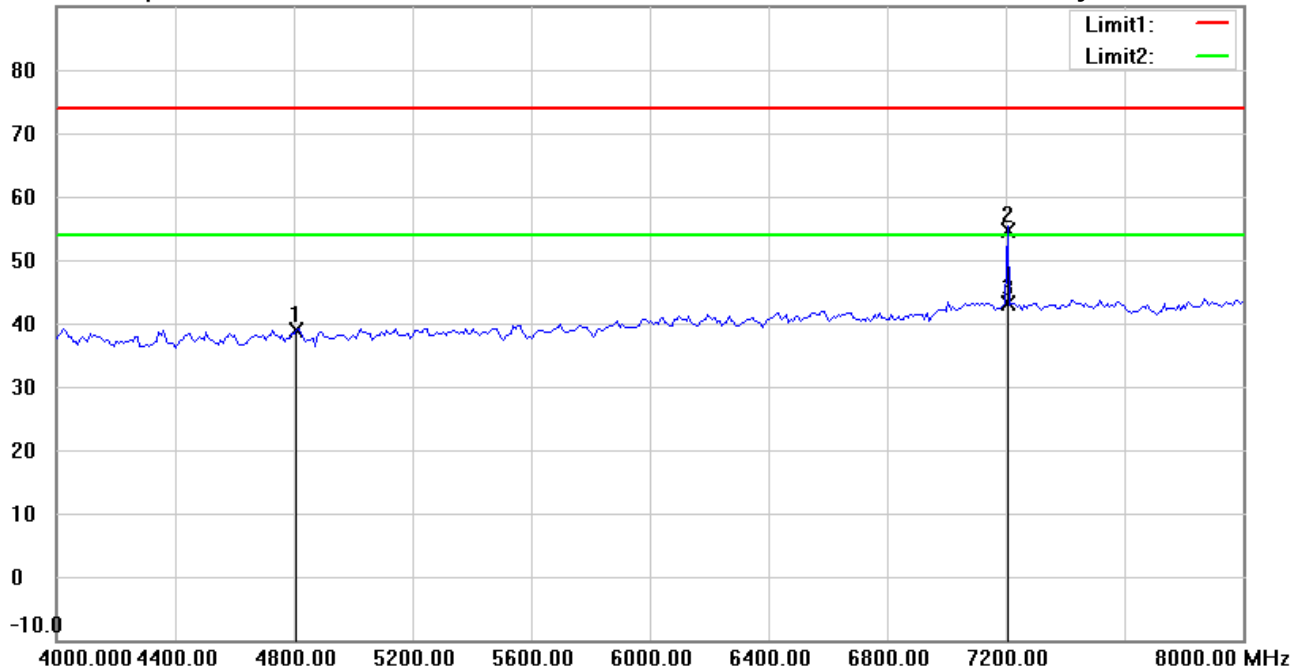
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:21:17 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2402MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 4804.000        | 40.58          | peak     | -1.75               | 38.83           | 74.00          | 150          | 143            | -35.17      |         |
|     | 7205.800        | 51.29          | peak     | 3.32                | 54.61           | 74.00          | 182          | 198            | -19.39      |         |
| *   | 7205.800        | 39.90          | AVG      | 3.32                | 43.22           | 54.00          | 182          | 198            | -10.78      |         |



Radiated Emission Measurement

Operator: Vincent

File :3

Data :#7

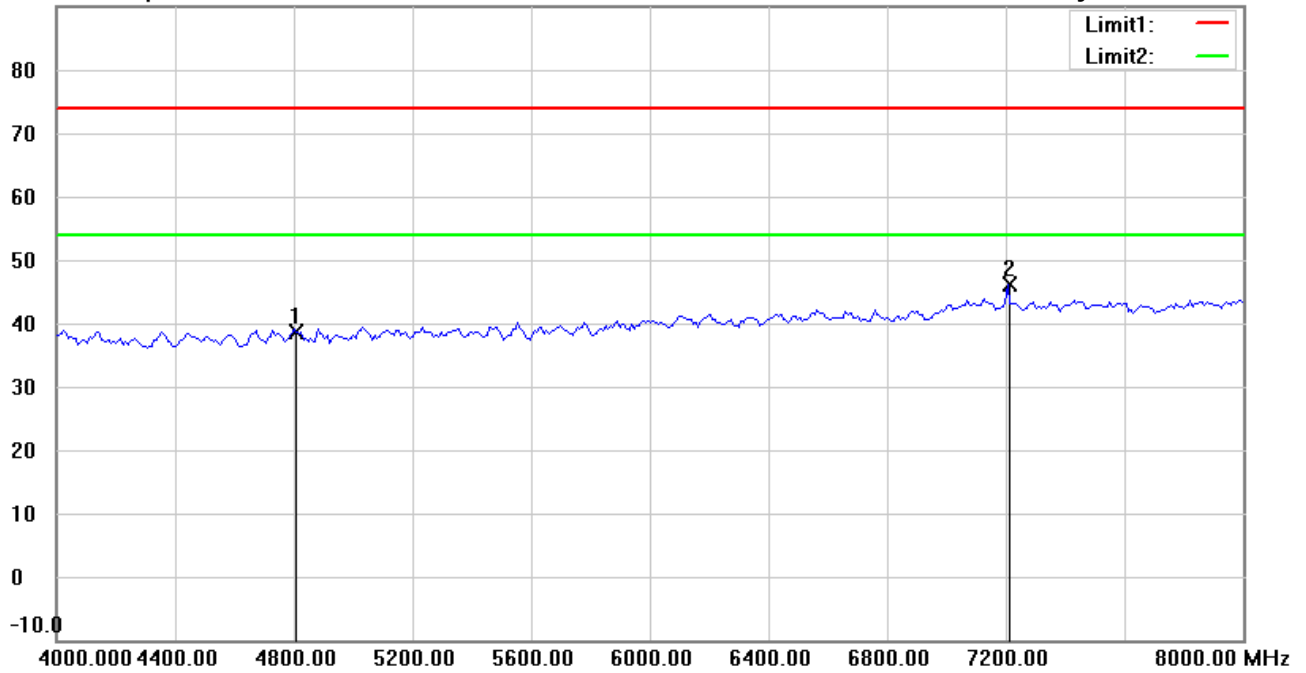
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:24:49 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2402MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 4804.000        | 40.30          | peak     | -1.75               | 38.55           | 74.00          | 150          | 144            | -35.45      |         |
| *   | 7206.413        | 42.71          | peak     | 3.32                | 46.03           | 74.00          | 150          | 217            | -27.97      |         |



Radiated Emission Measurement

Operator: Vincent

File :3

Data :#3

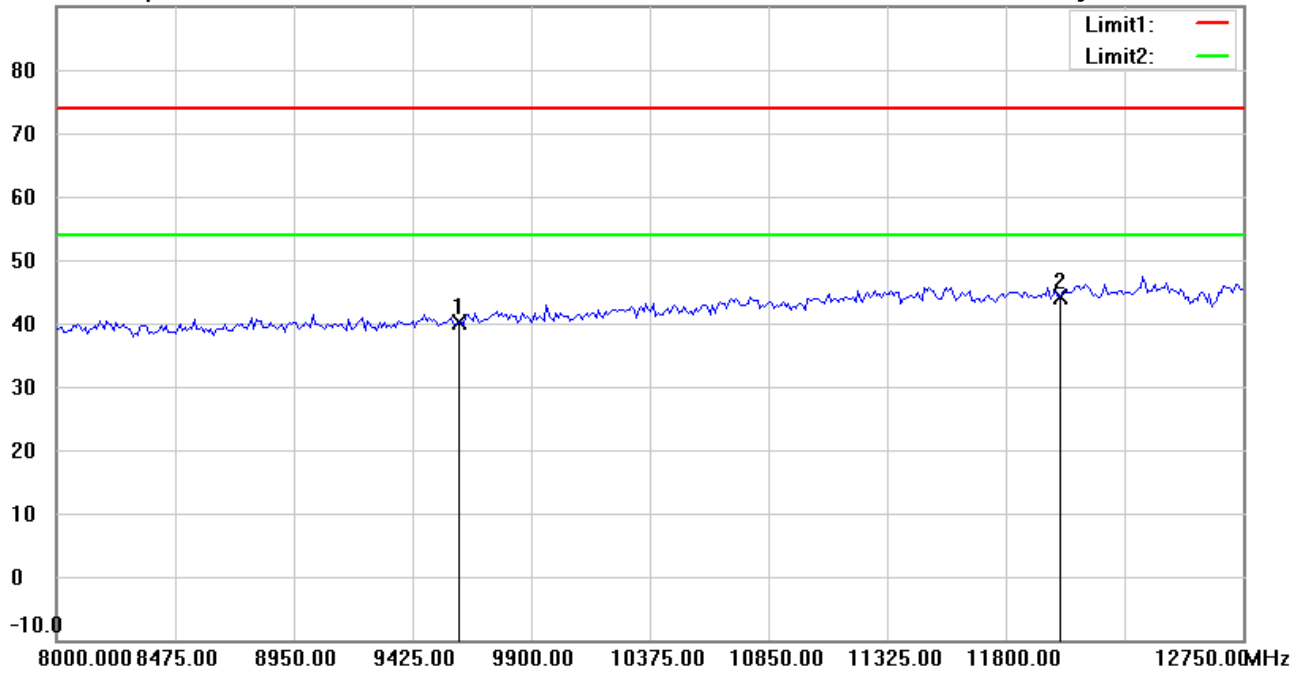
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:22:24 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2402MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 9608.000        | 33.49          | peak     | 6.70                | 40.19           | 74.00          | 150          | 146            | -33.81      |         |
| *   | 12010.000       | 32.47          | peak     | 11.68               | 44.15           | 74.00          | 150          | 229            | -29.85      |         |





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

Operator: Vincent

File :3

Data :#8

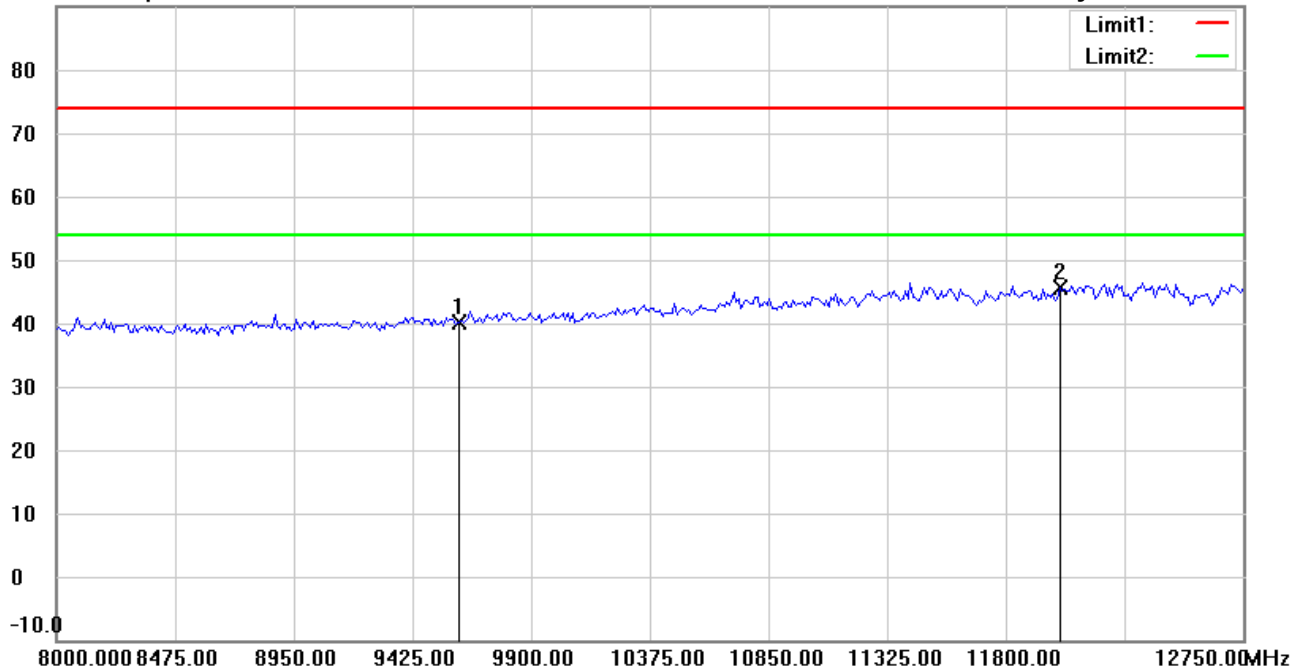
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:25:49 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: **Vertical**

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2402MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 9608.000        | 33.40          | peak     | 6.70                | 40.10           | 74.00          | 150          | 166            | -33.90      |         |
| *   | 12010.000       | 34.07          | peak     | 11.68               | 45.75           | 74.00          | 150          | 235            | -28.25      |         |

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



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#4

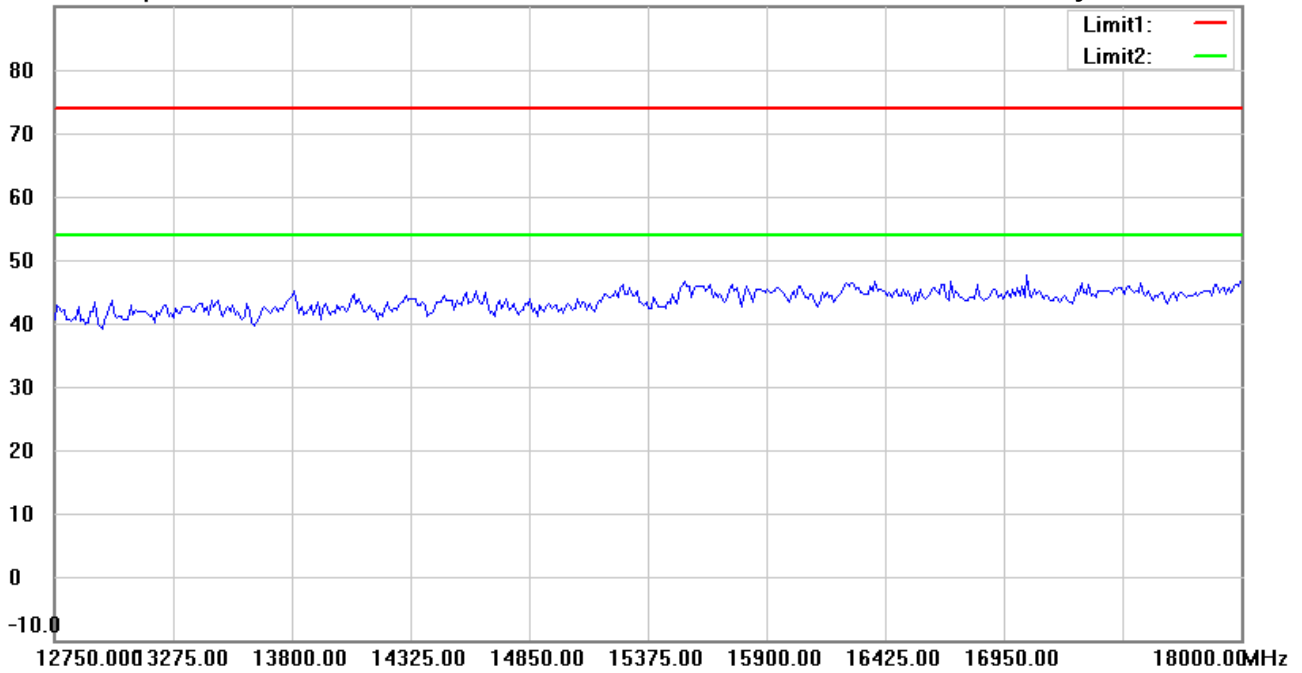
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:22:38 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2402MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

\*: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: Vincent

File :3

Data :#9

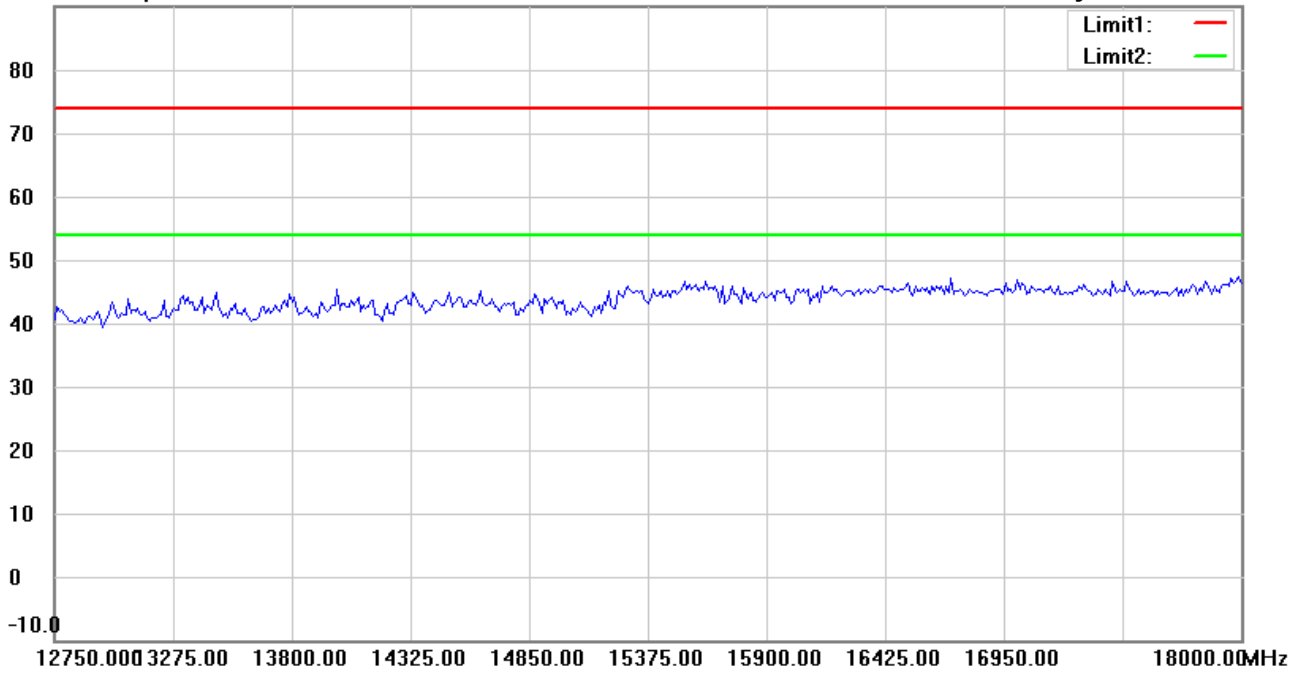
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:26:03 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2402MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

\*: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: Vincent

File :3

Data :#5

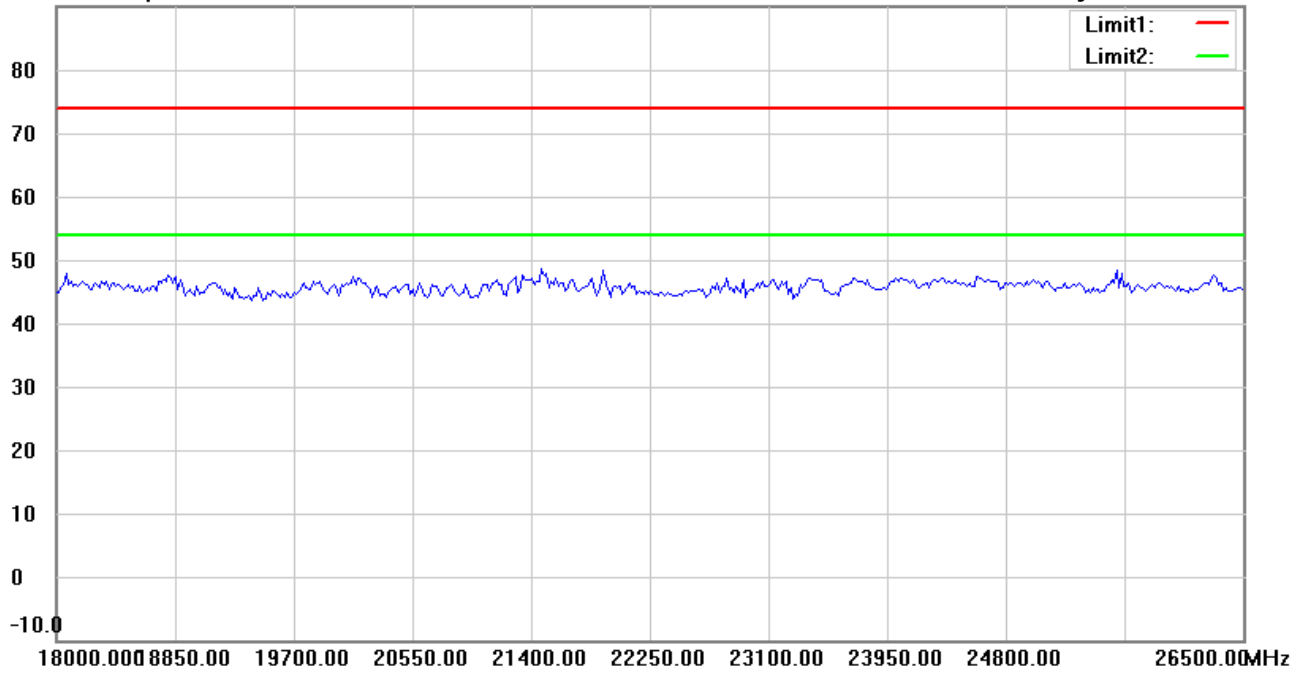
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:22:48 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2402MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



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**Radiated Emission Measurement**

Operator: Vincent

File :3

Data :#10

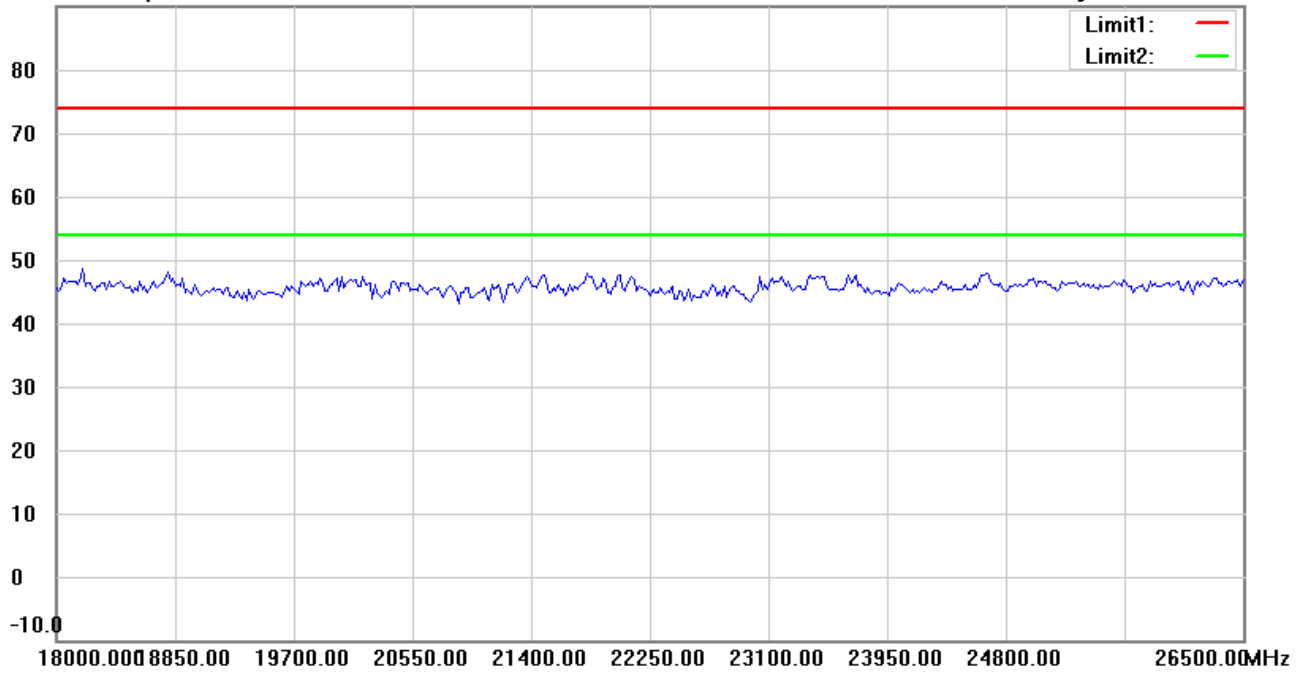
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:26:13 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2402MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



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**Radiated Emission Measurement**

Operator: Vincent

File :3

Data :#1

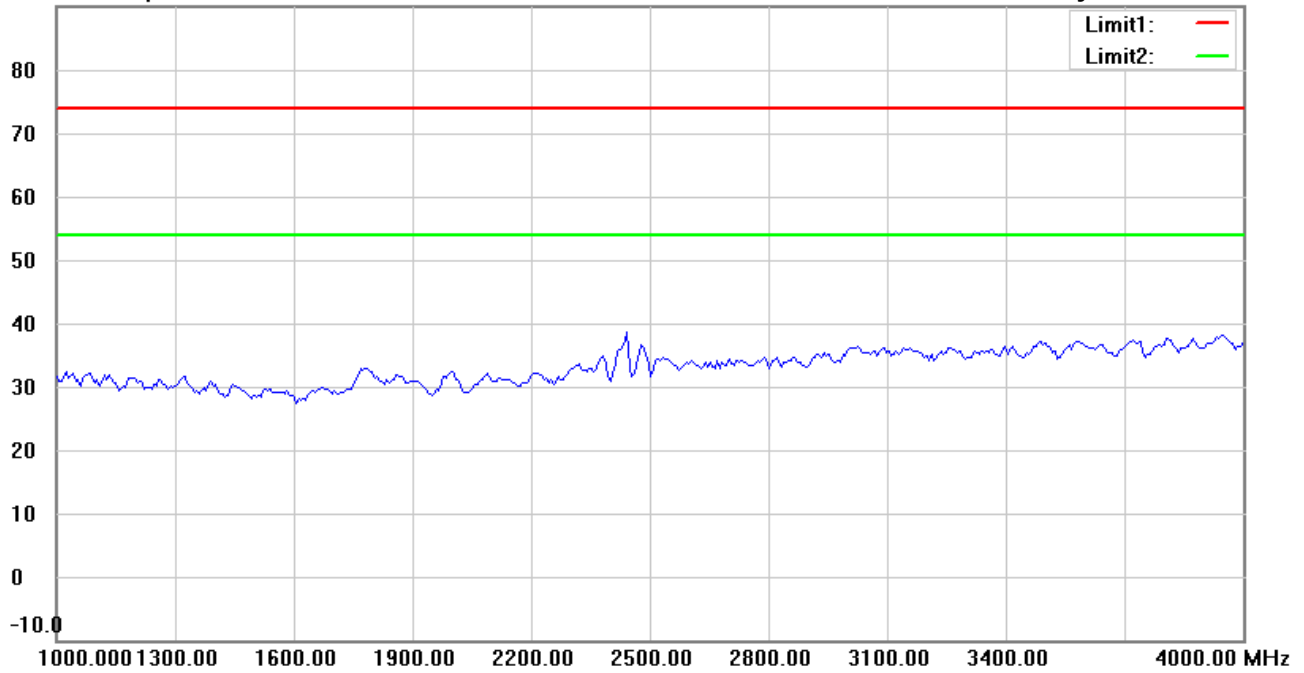
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:41:37 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2440MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

\*: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: Vincent

File :3

Data :#6

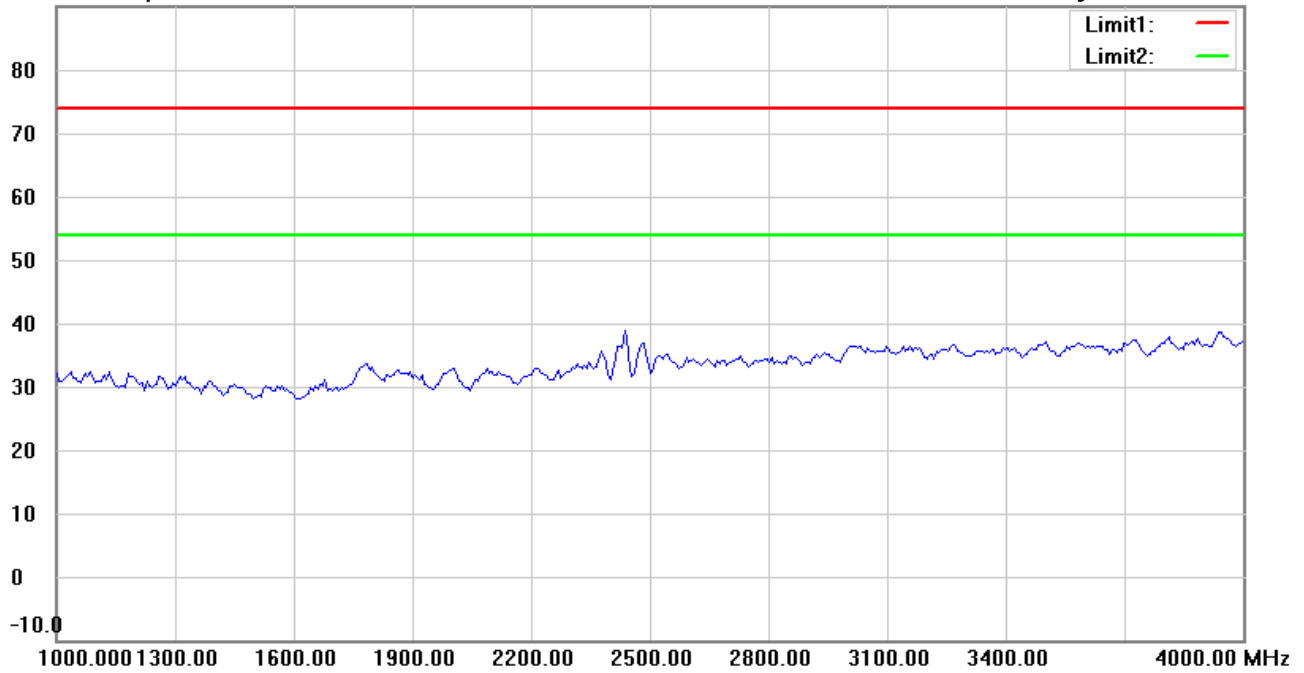
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:45:08 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2440MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



Radiated Emission Measurement

Operator: Vincent

File :3

Data :#2

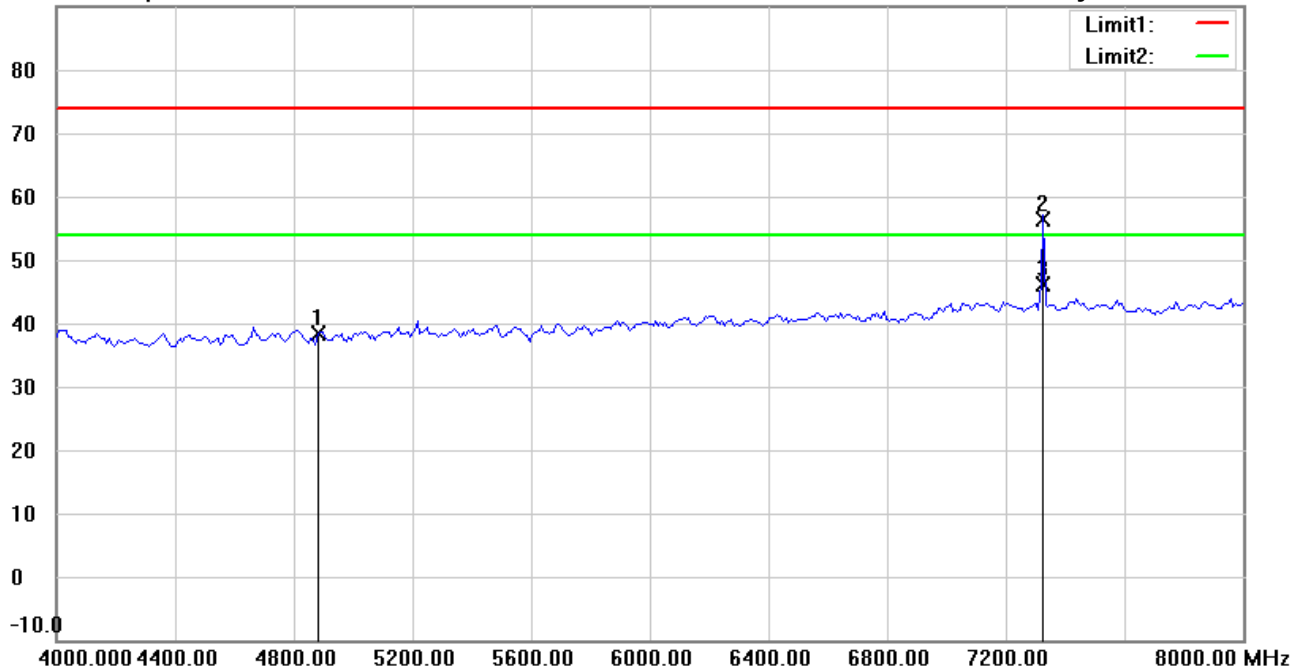
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:42:37 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2440MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 4880.000        | 40.03          | peak     | -1.60               | 38.43           | 74.00          | 150          | 311            | -35.57      |         |
|     | 7320.085        | 52.95          | peak     | 3.51                | 56.46           | 74.00          | 168          | 200            | -17.54      |         |
| *   | 7320.085        | 42.62          | AVG      | 3.51                | 46.13           | 54.00          | 168          | 200            | -7.87       |         |





Radiated Emission Measurement

Operator: Vincent

File :3

Data :#7

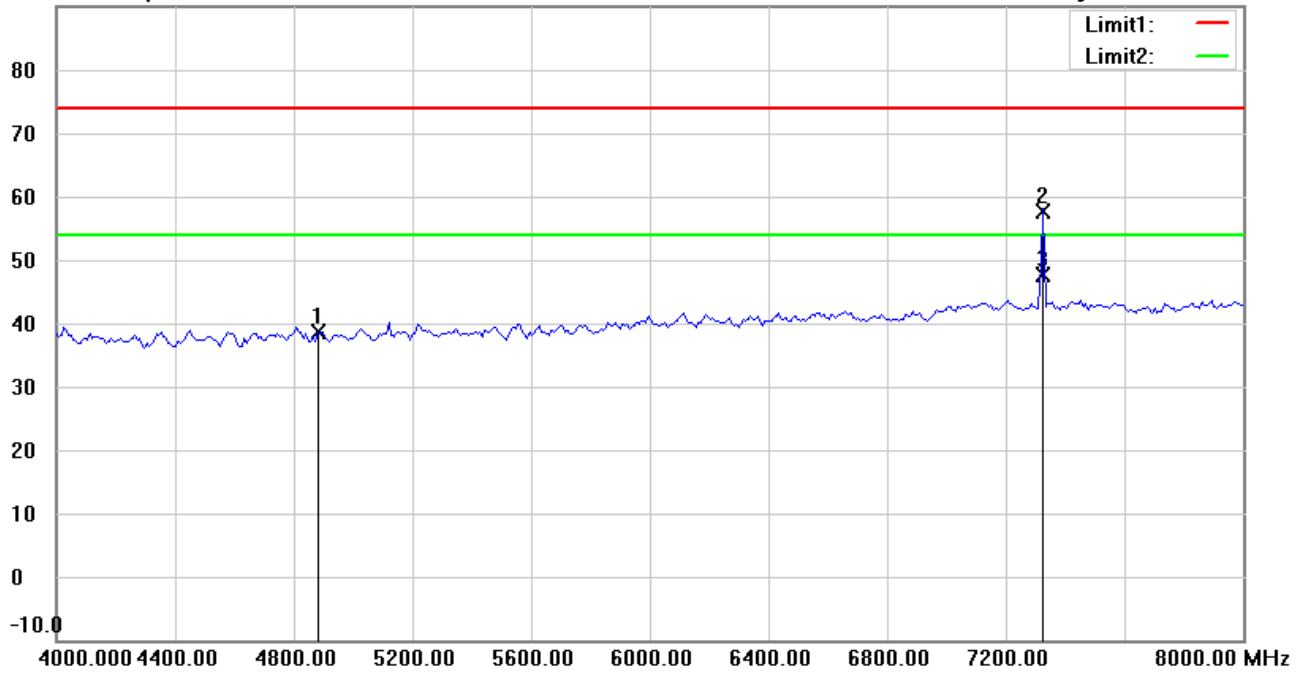
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:46:09 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2440MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 4880.000        | 40.16          | peak     | -1.60               | 38.56           | 74.00          | 150          | 44             | -35.44      |         |
|     | 7320.125        | 54.12          | peak     | 3.51                | 57.63           | 74.00          | 162          | 215            | -16.37      |         |
| *   | 7320.125        | 44.03          | AVG      | 3.51                | 47.54           | 54.00          | 162          | 215            | -6.46       |         |



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#3

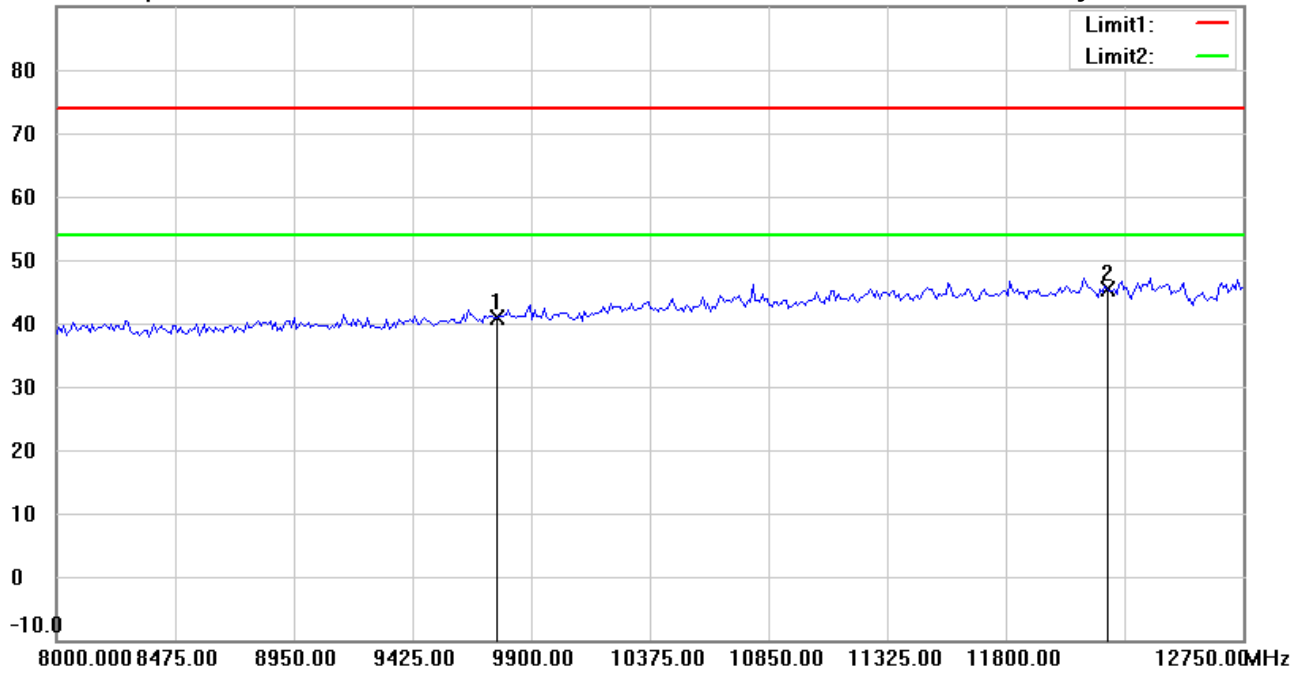
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:43:44 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2440MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 9760.000        | 34.15          | peak     | 6.84                | 40.99           | 74.00          | 150          | 212            | -33.01      |         |
| *   | 12200.000       | 32.32          | peak     | 13.02               | 45.34           | 74.00          | 150          | 229            | -28.66      |         |

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



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**Radiated Emission Measurement**

Operator: Vincent

File :3

Data :#8

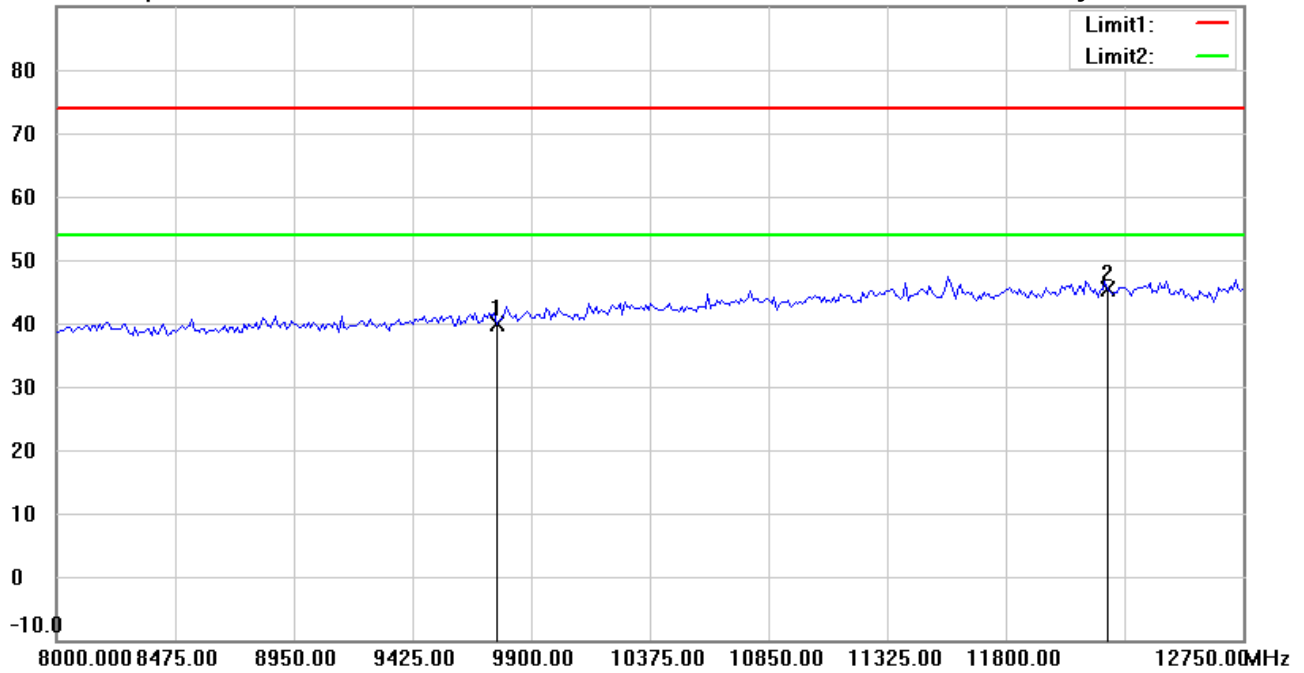
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:47:08 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: **Vertical**

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2440MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 9760.000        | 33.15          | peak     | 6.84                | 39.99           | 74.00          | 150          | 142            | -34.01      |         |
| *   | 12200.000       | 32.24          | peak     | 13.02               | 45.26           | 74.00          | 150          | 199            | -28.74      |         |

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



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#4

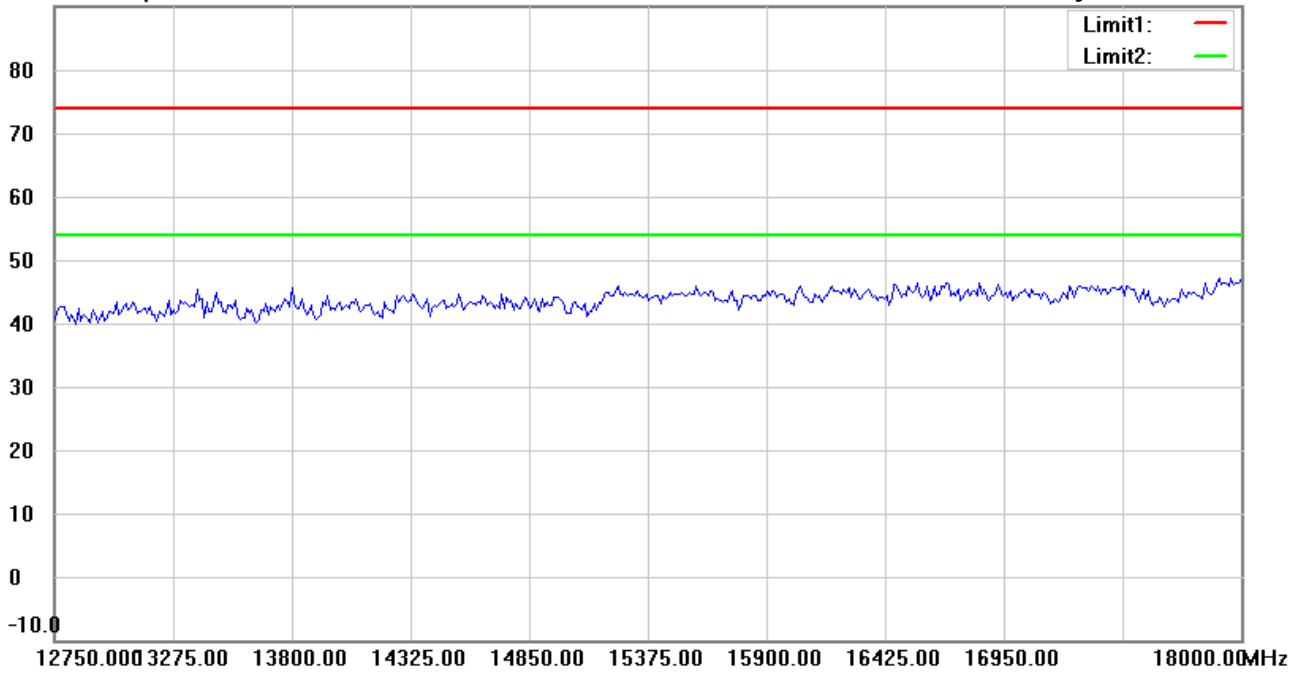
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:43:58 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2440MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#9

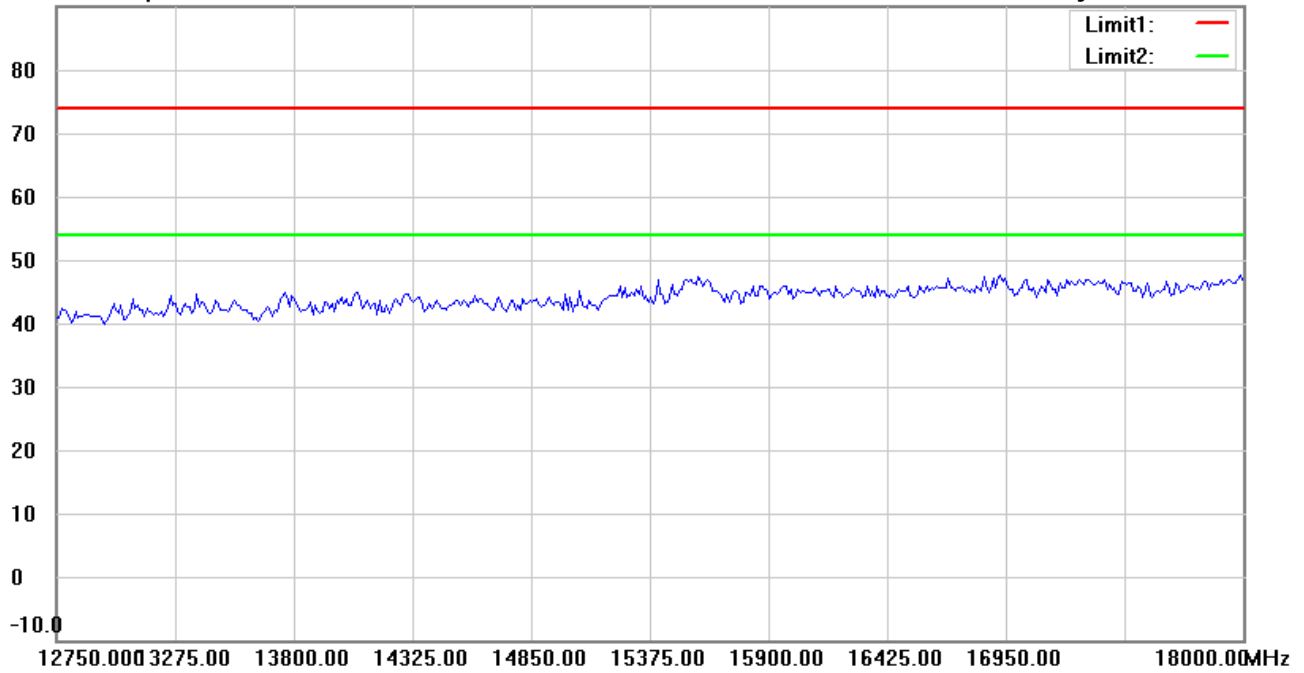
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:47:22 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2440MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#5

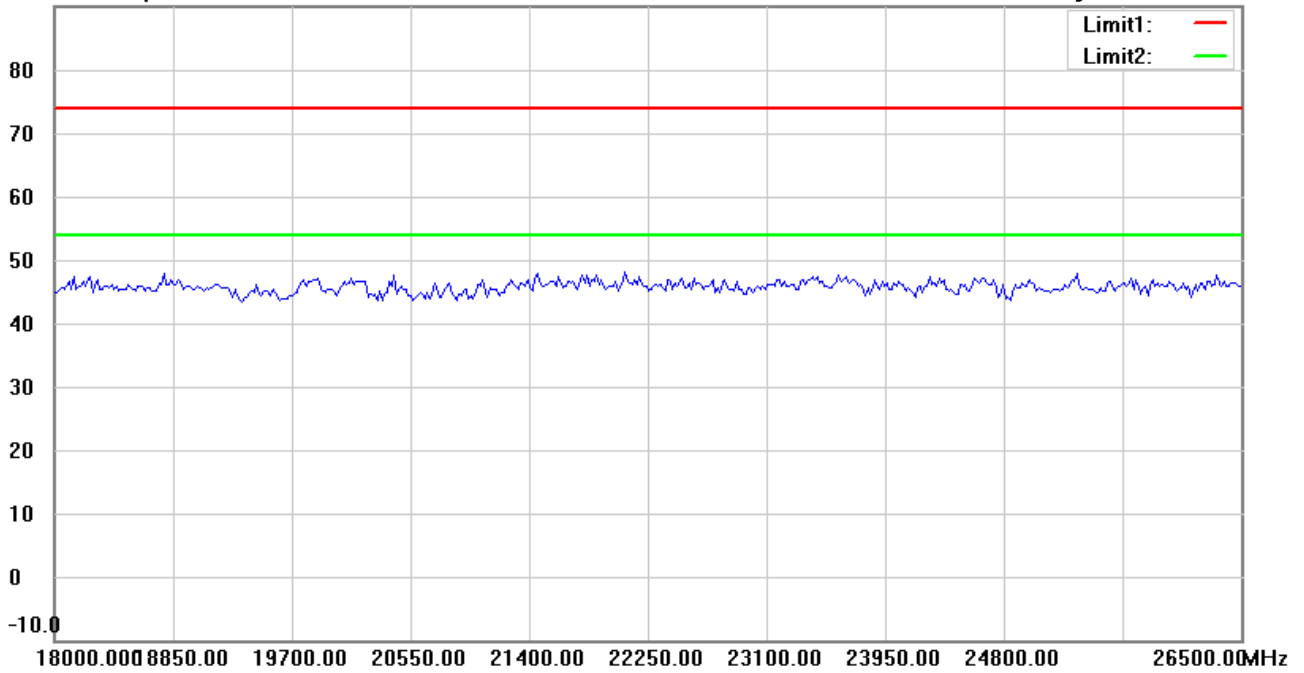
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:44:08 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2440MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#10

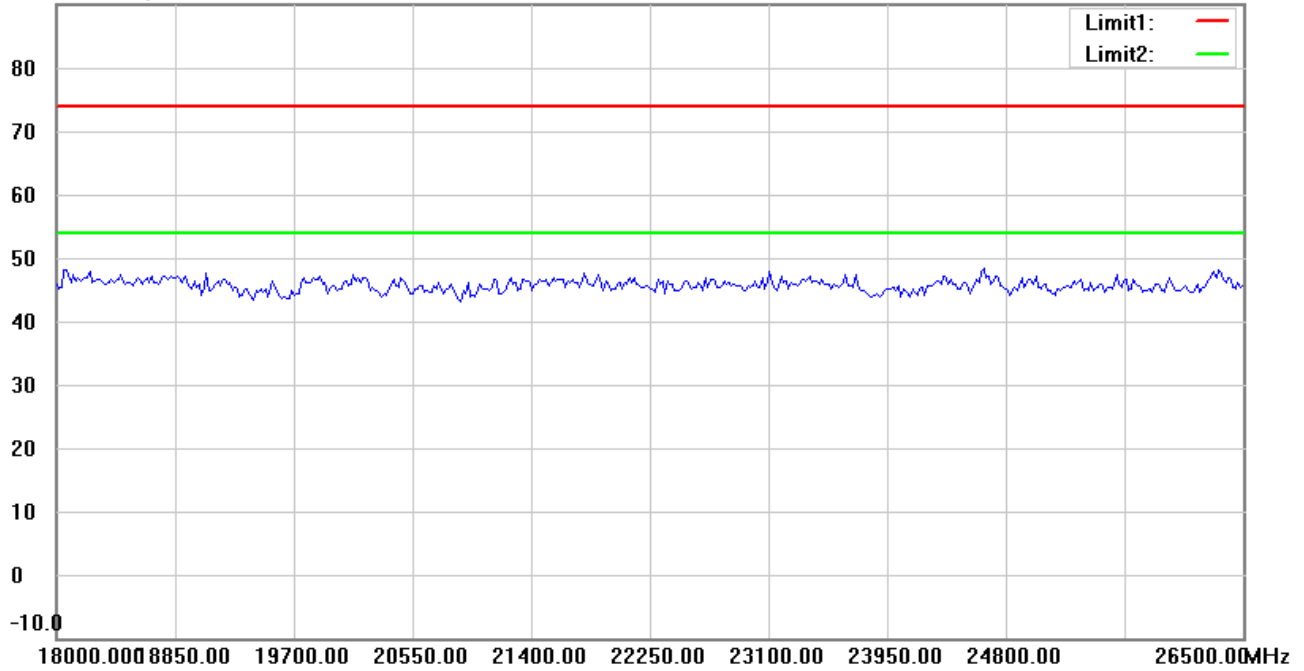
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:47:32 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2440MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



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Radiated Emission Measurement

Operator: Allen

File :3

Data :#1

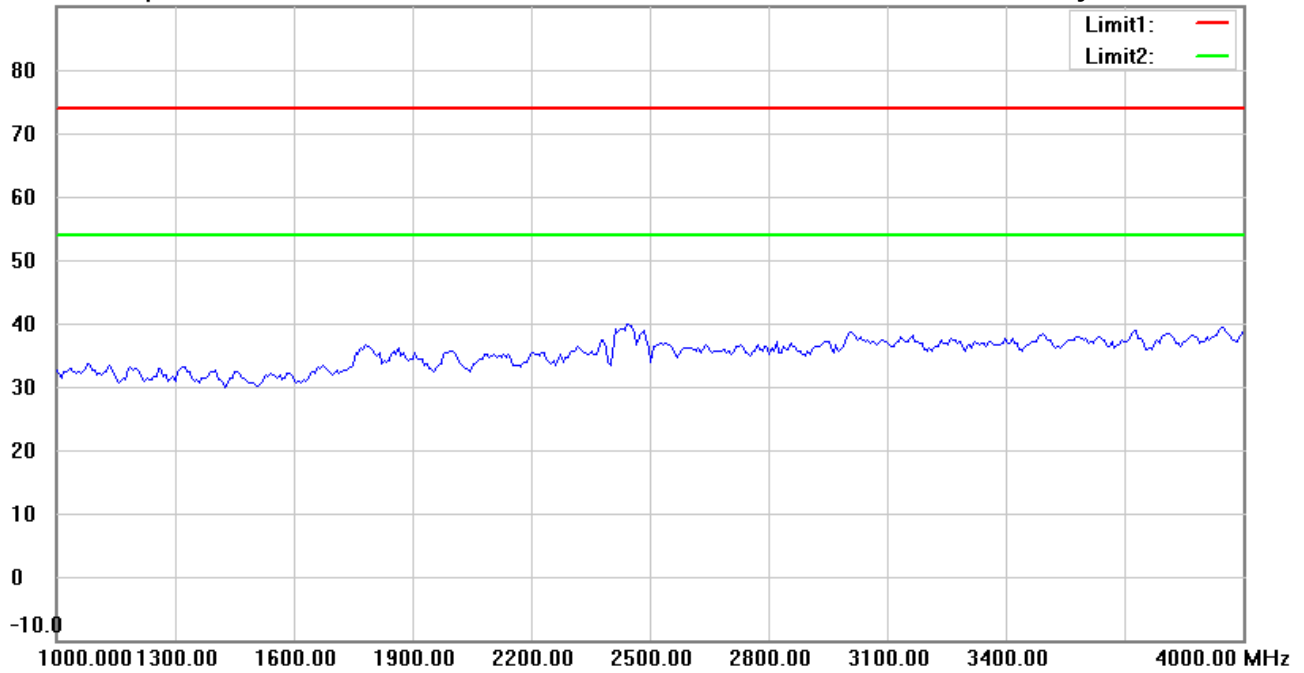
Date: 1/27/2021

Temperature:22.9 °C

90.0 dBuV/m

Time: 1:36:03 AM

Humidity:64.6 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2480MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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





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**Radiated Emission Measurement**

Operator: Allen

File :3

Data :#6

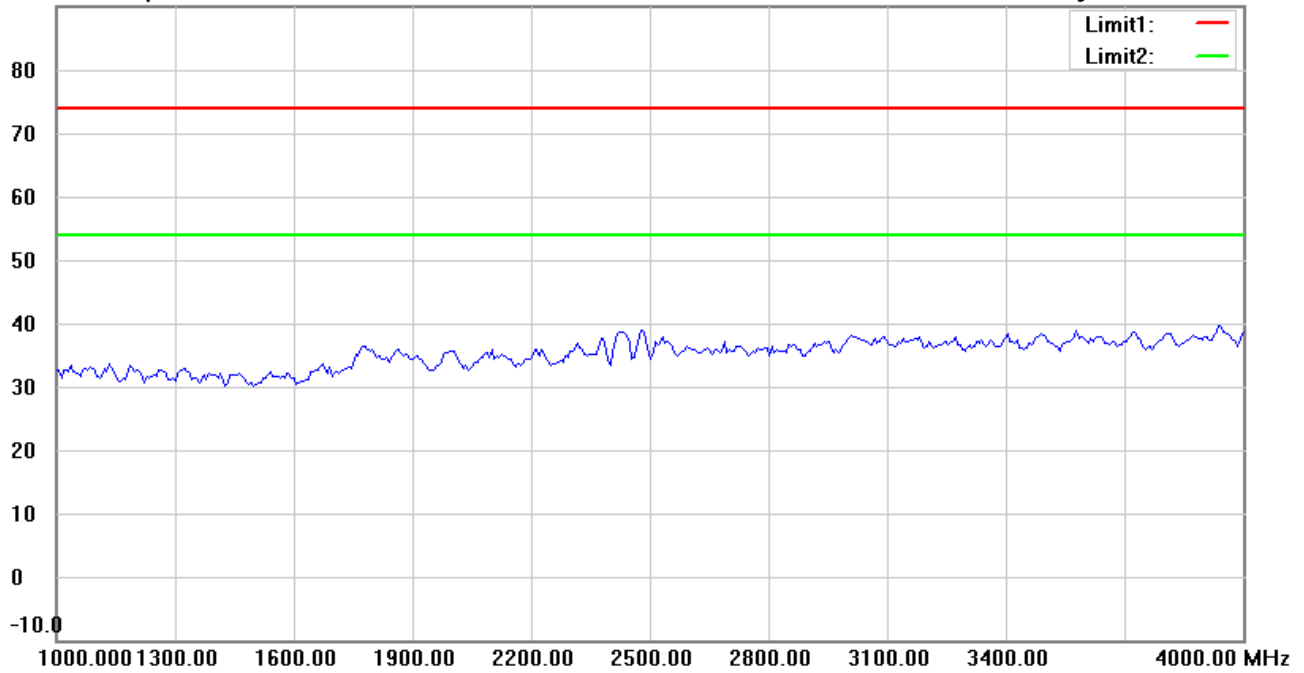
Date: 1/27/2021

Temperature:22.9 °C

90.0 dBuV/m

Time: 1:39:34 AM

Humidity:64.6 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2480MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



Radiated Emission Measurement

Operator: Allen

File :3

Data :#2

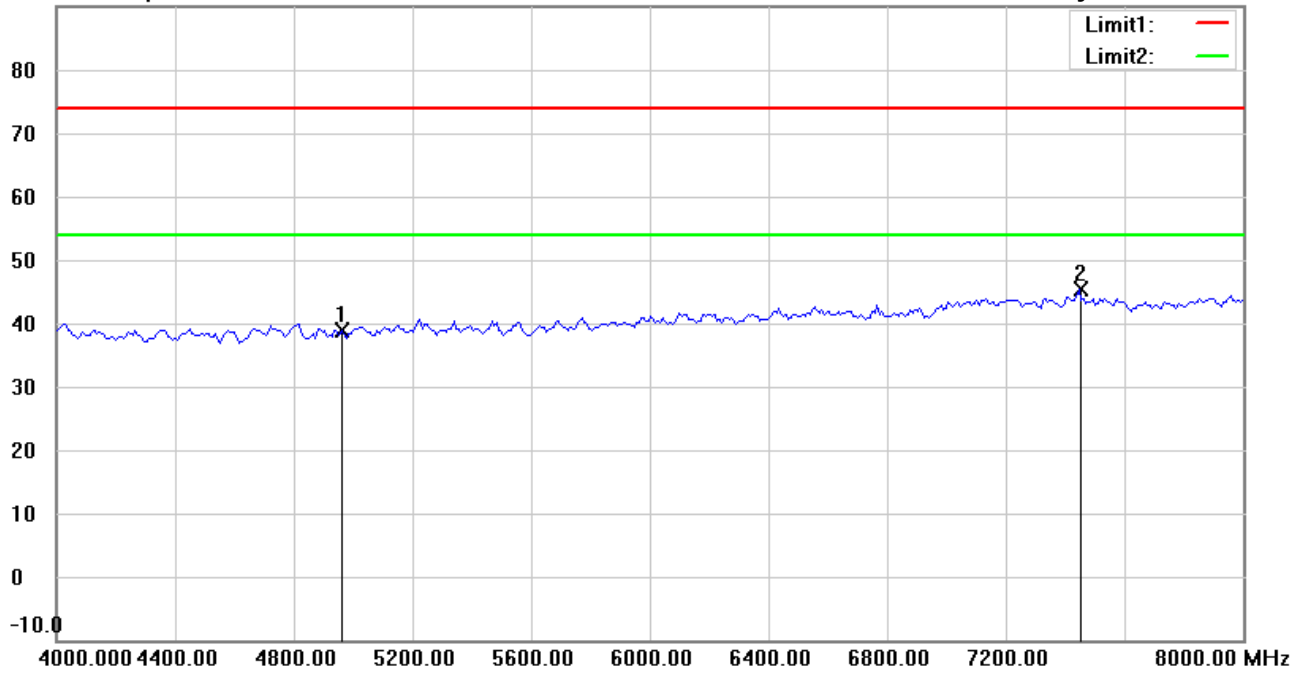
Date: 1/27/2021

Temperature:22.9 °C

90.0 dBuV/m

Time: 1:37:04 AM

Humidity:64.6 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: **Horizontal**

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2480MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 4960.000        | 40.20          | peak     | -1.36               | 38.84           | 74.00          | 150          | 215            | -35.16      |         |
| *   | 7446.894        | 41.60          | peak     | 3.74                | 45.34           | 74.00          | 150          | 100            | -28.66      |         |



Radiated Emission Measurement

Operator: Allen

File :3

Data :#7

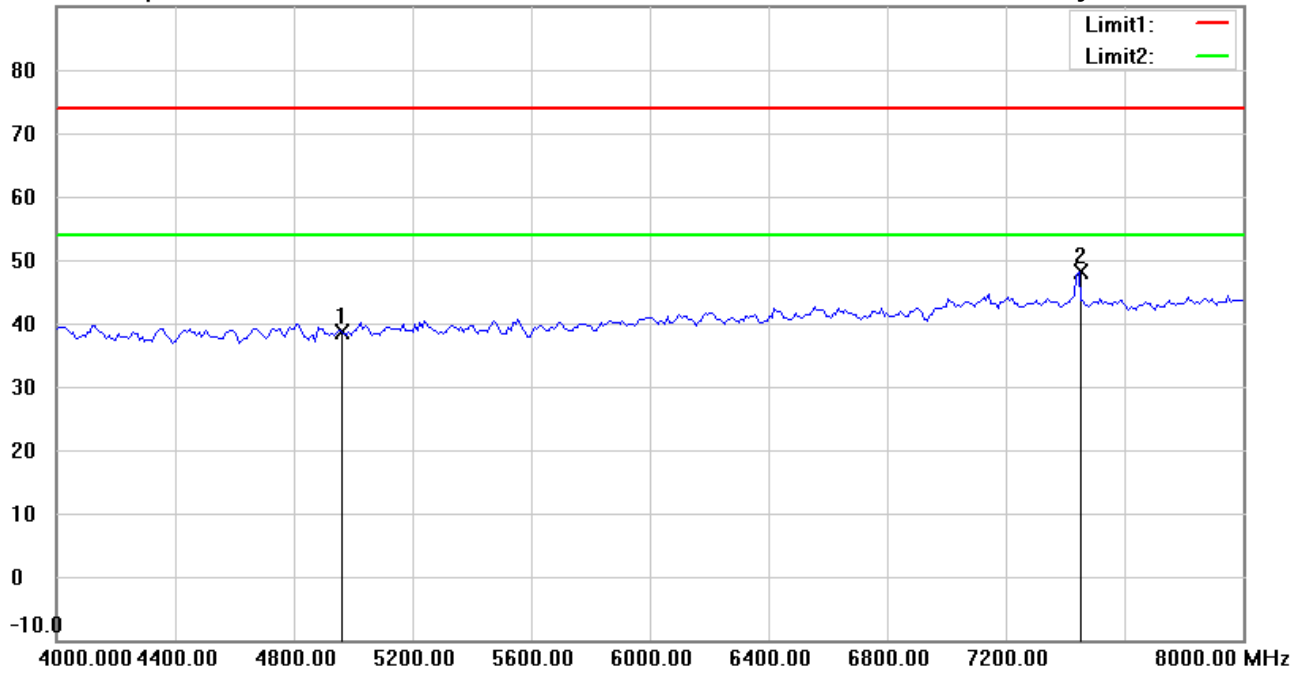
Date: 1/27/2021

Temperature:22.9 °C

90.0 dBuV/m

Time: 1:40:35 AM

Humidity:64.6 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: **Vertical**

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2480MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 4960.000        | 40.01          | peak     | -1.36               | 38.65           | 74.00          | 150          | 310            | -35.35      |         |
| *   | 7446.894        | 44.32          | peak     | 3.74                | 48.06           | 74.00          | 150          | 224            | -25.94      |         |



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Radiated Emission Measurement

Operator: Allen

File :3

Data :#3

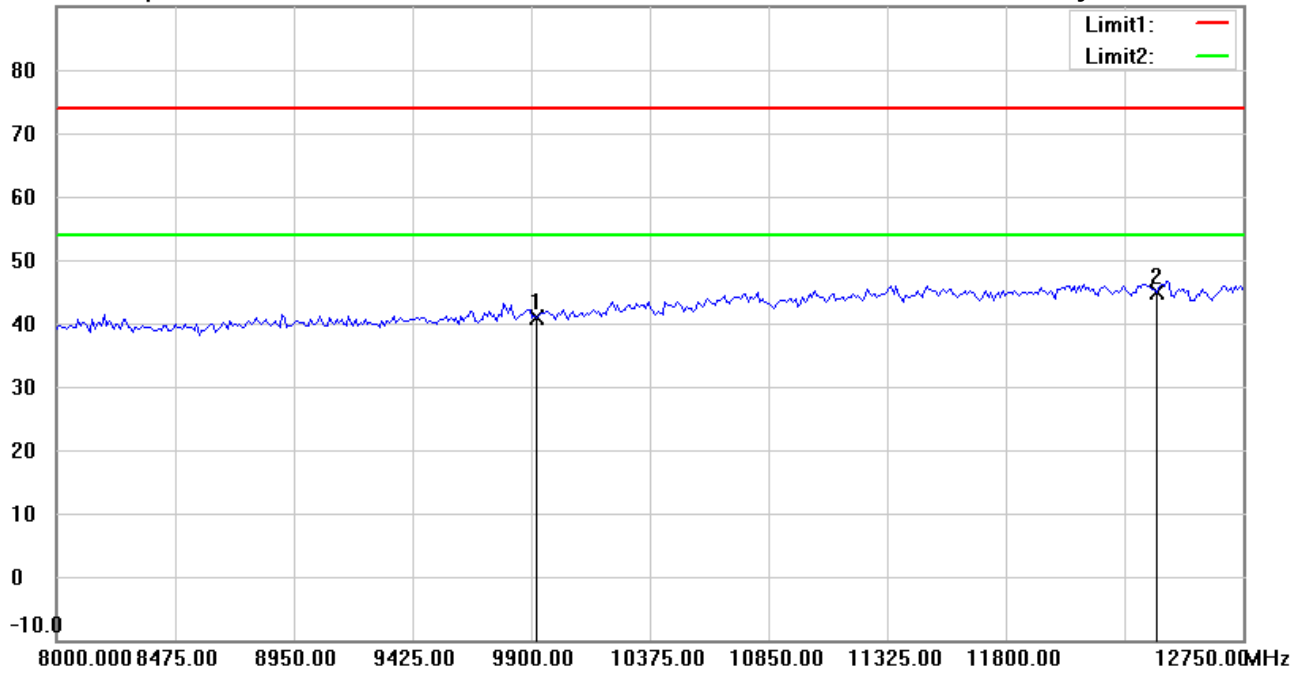
Date: 1/27/2021

Temperature:22.9 °C

90.0 dBuV/m

Time: 1:38:10 AM

Humidity:64.6 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2480MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 9920.000        | 33.53          | peak     | 7.23                | 40.76           | 74.00          | 150          | 73             | -33.24      |         |
| *   | 12400.000       | 32.15          | peak     | 12.81               | 44.96           | 74.00          | 150          | 250            | -29.04      |         |

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



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Radiated Emission Measurement

Operator: Allen

File :3

Data :#8

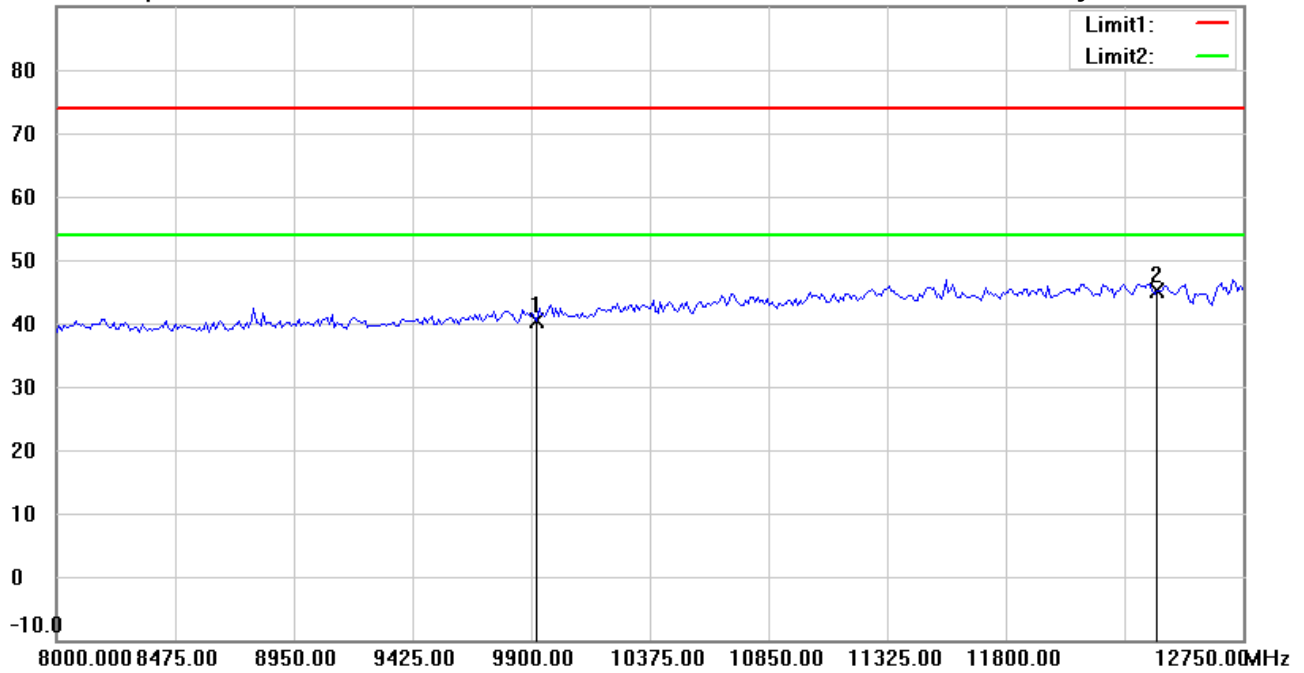
Date: 1/27/2021

Temperature:22.9 °C

90.0 dBuV/m

Time: 1:41:35 AM

Humidity:64.6 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2480MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 9920.000        | 33.25          | peak     | 7.23                | 40.48           | 74.00          | 150          | 42             | -33.52      |         |
| *   | 12400.000       | 32.24          | peak     | 12.81               | 45.05           | 74.00          | 150          | 235            | -28.95      |         |

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



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**Radiated Emission Measurement**

Operator: Allen

File :3

Data :#4

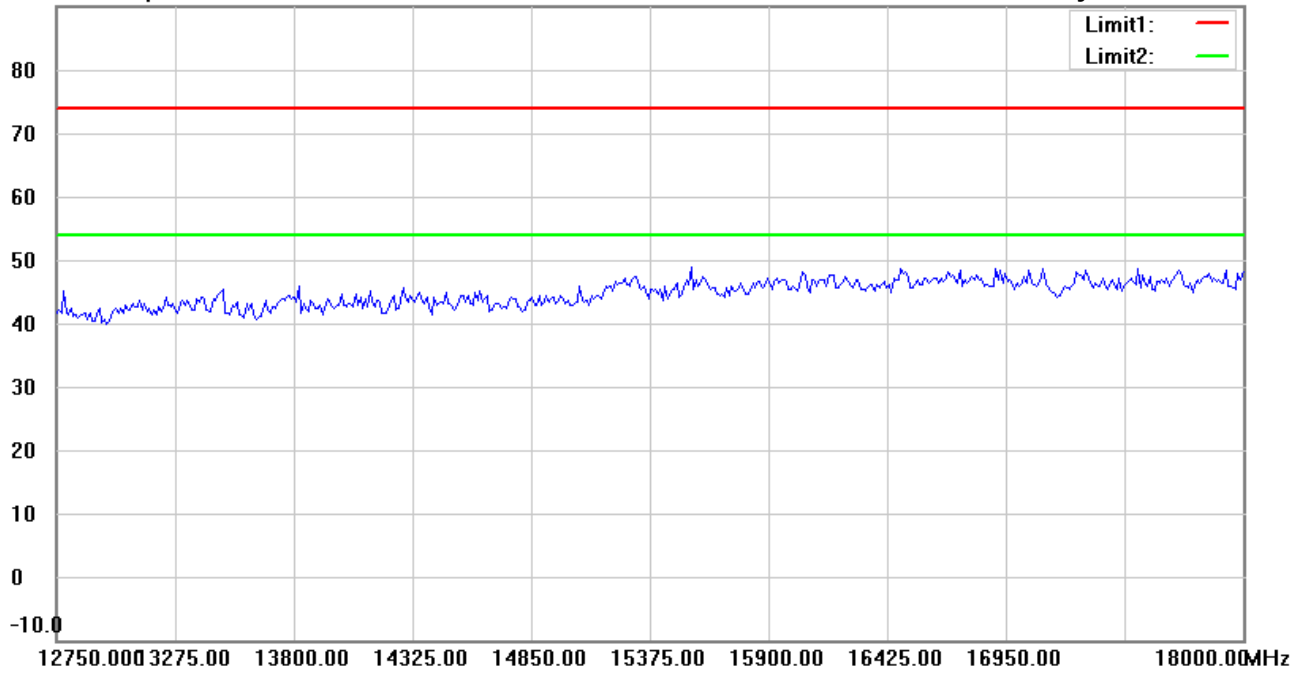
Date: 1/27/2021

Temperature:22.9 °C

90.0 dBuV/m

Time: 1:38:24 AM

Humidity:64.6 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2480MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



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Radiated Emission Measurement

Operator: Allen

File :3

Data :#9

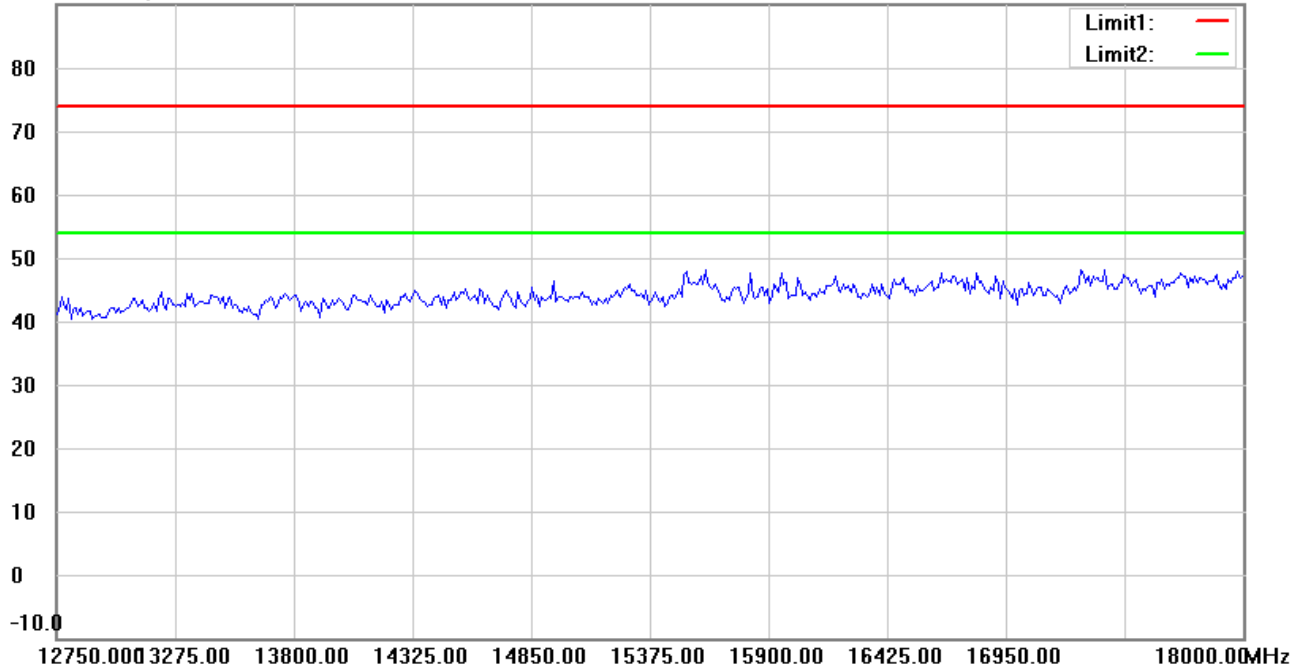
Date: 1/27/2021

Temperature:22.9 °C

90.0 dBuV/m

Time: 1:41:49 AM

Humidity:64.6 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2480MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



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Radiated Emission Measurement

Operator: Allen

File :3

Data :#5

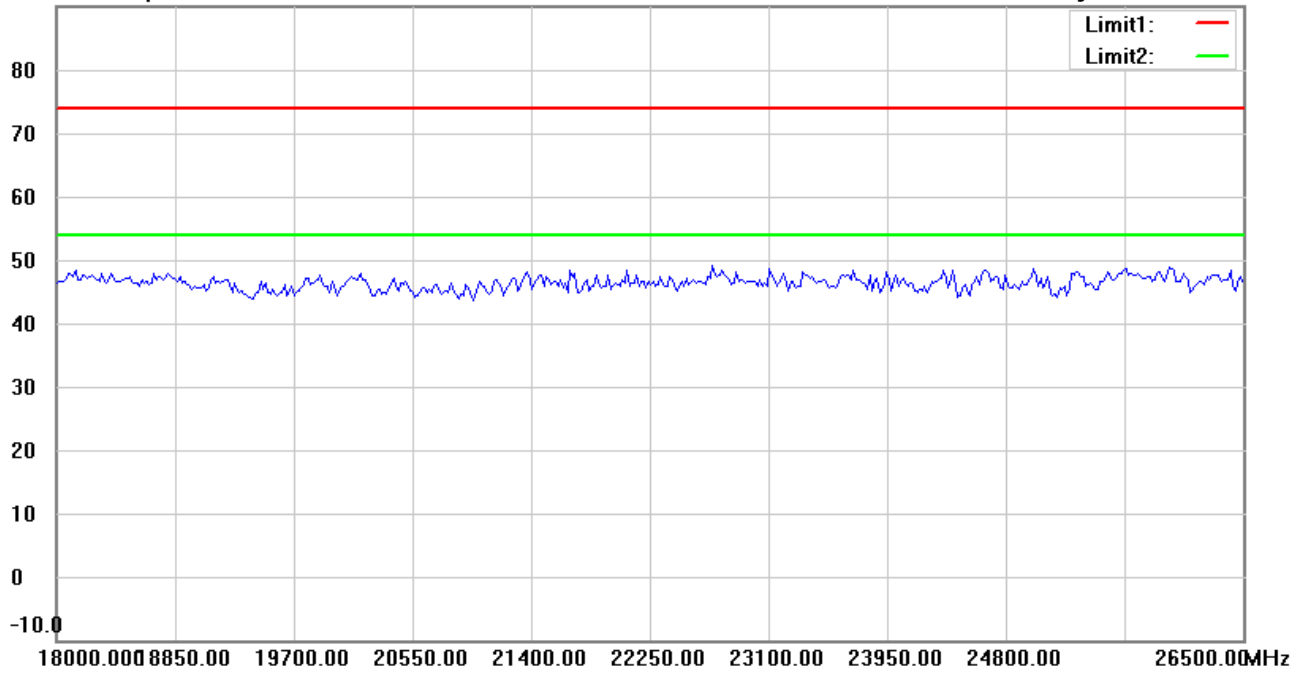
Date: 1/27/2021

Temperature:22.9 °C

90.0 dBuV/m

Time: 1:38:34 AM

Humidity:64.6 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2480MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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





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**Radiated Emission Measurement**

Operator: Allen

File :3

Data :#10

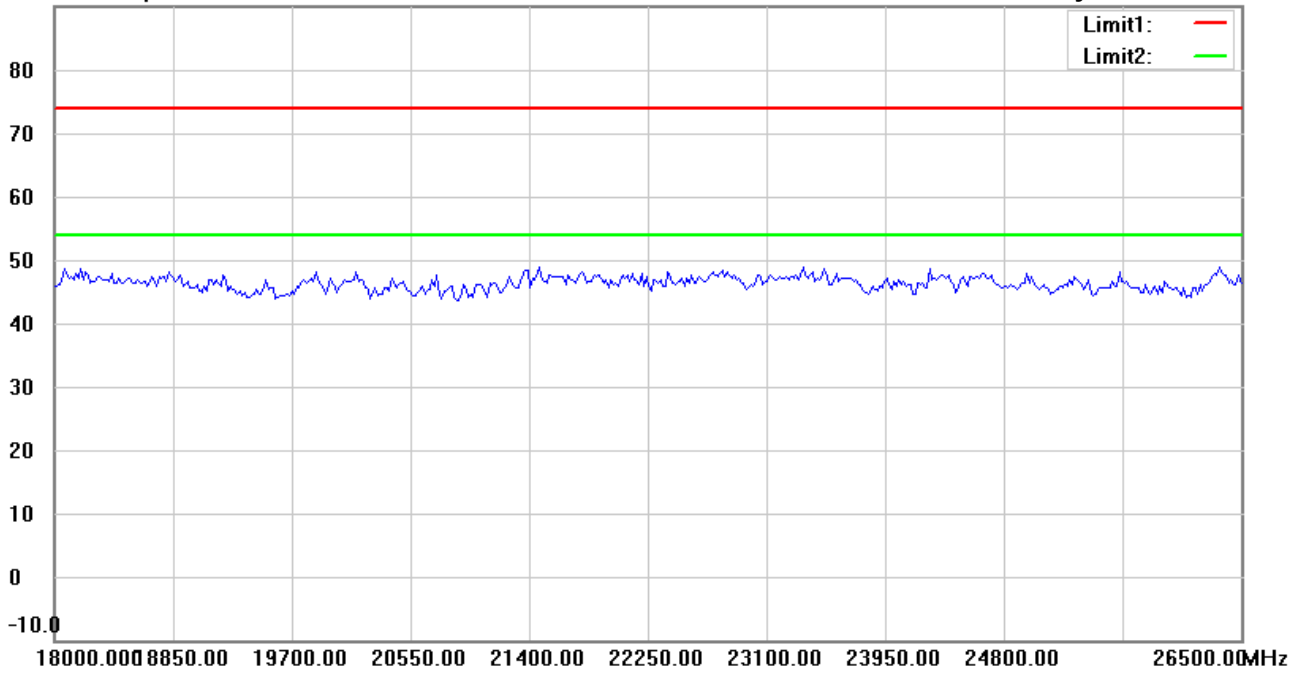
Date: 1/27/2021

Temperature:22.9 °C

90.0 dBuV/m

Time: 1:41:59 AM

Humidity:64.6 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2480MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



## Radiated Emission Measurement

Operator: Allen

File :1\_ANT+\_TX

Data :#1

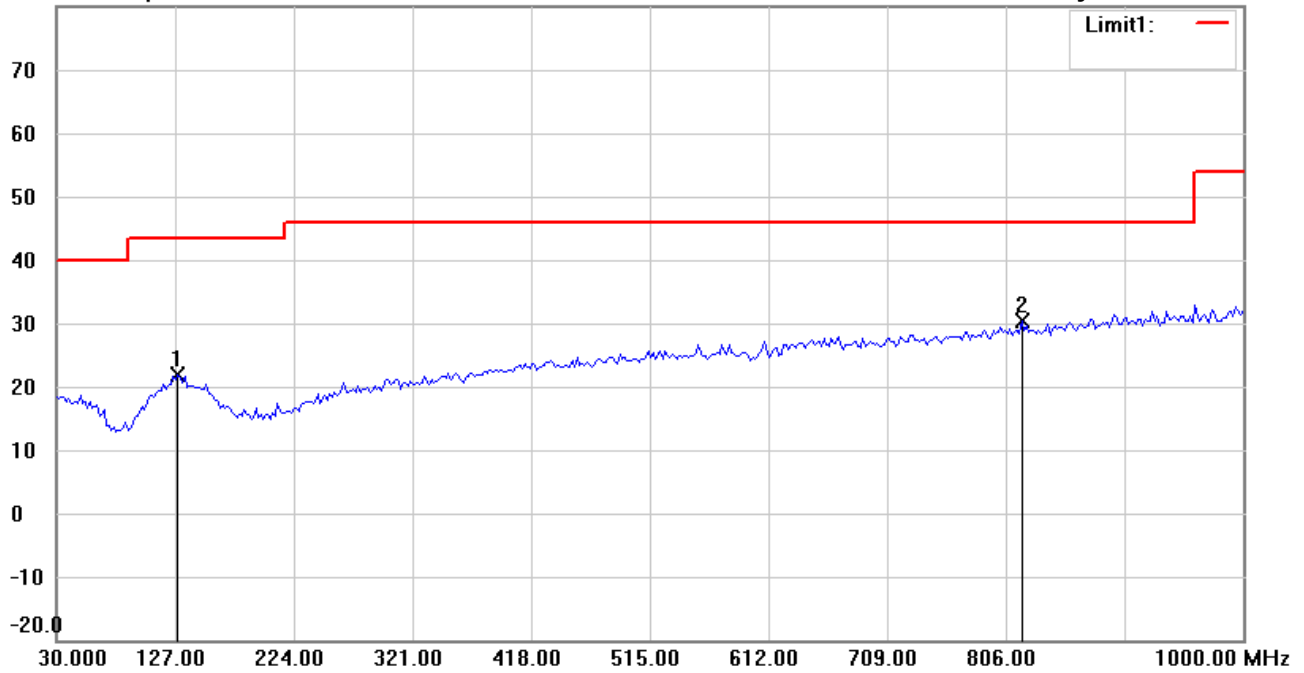
Date: 1/27/2021

Temperature:22.9 °C

80.0 dBuV/m

Time: 2:58:54 AM

Humidity:64.6 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_30-1000MHz

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2457MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 129.1382        | 28.70          | peak     | -6.86               | 21.84           | 43.50          | 100          | 138            | -21.66      |         |
| *   | 819.2183        | 28.23          | peak     | 2.11                | 30.34           | 46.00          | 100          | 240            | -15.66      |         |



Radiated Emission Measurement

Operator: Allen

File :1\_ANT+\_TX

Data :#2

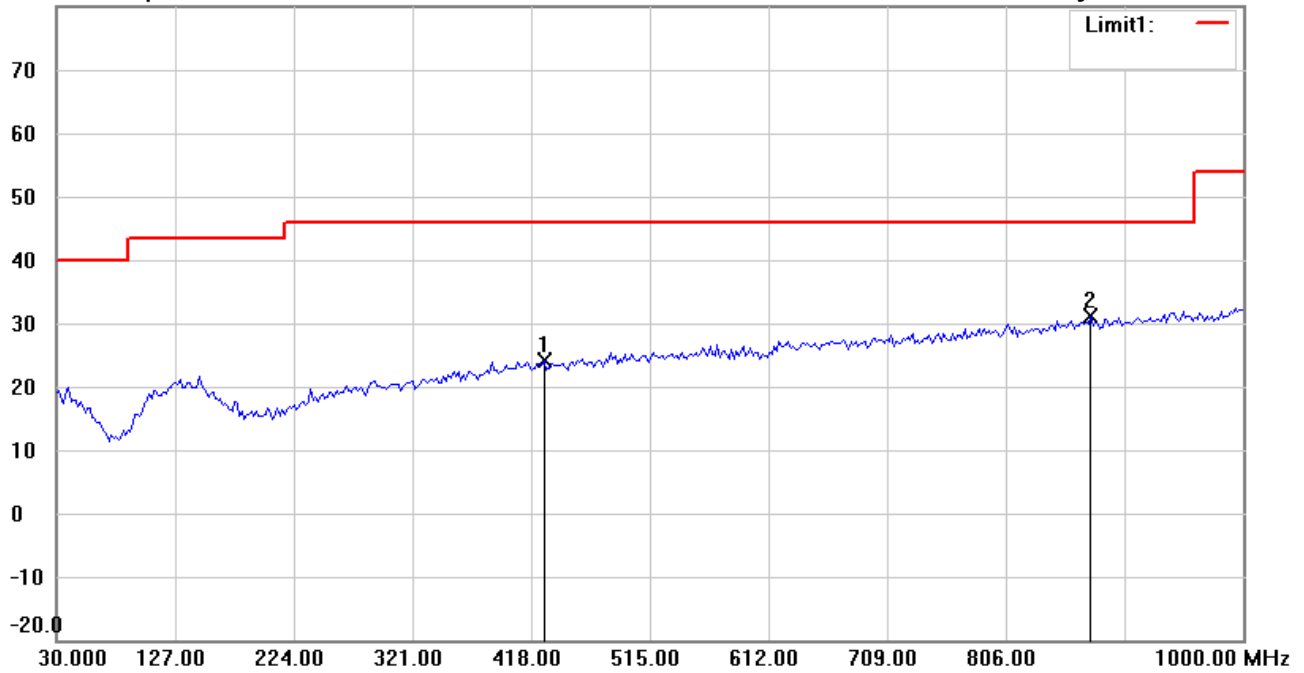
Date: 1/27/2021

Temperature:22.9 °C

80.0 dBuV/m

Time: 2:59:54 AM

Humidity:64.6 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_30-1000MHz

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2457MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 428.4970        | 27.56          | peak     | -3.42               | 24.14           | 46.00          | 100          | 75             | -21.86      |         |
| *   | 875.5912        | 27.87          | peak     | 3.22                | 31.09           | 46.00          | 100          | 120            | -14.91      |         |



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#1

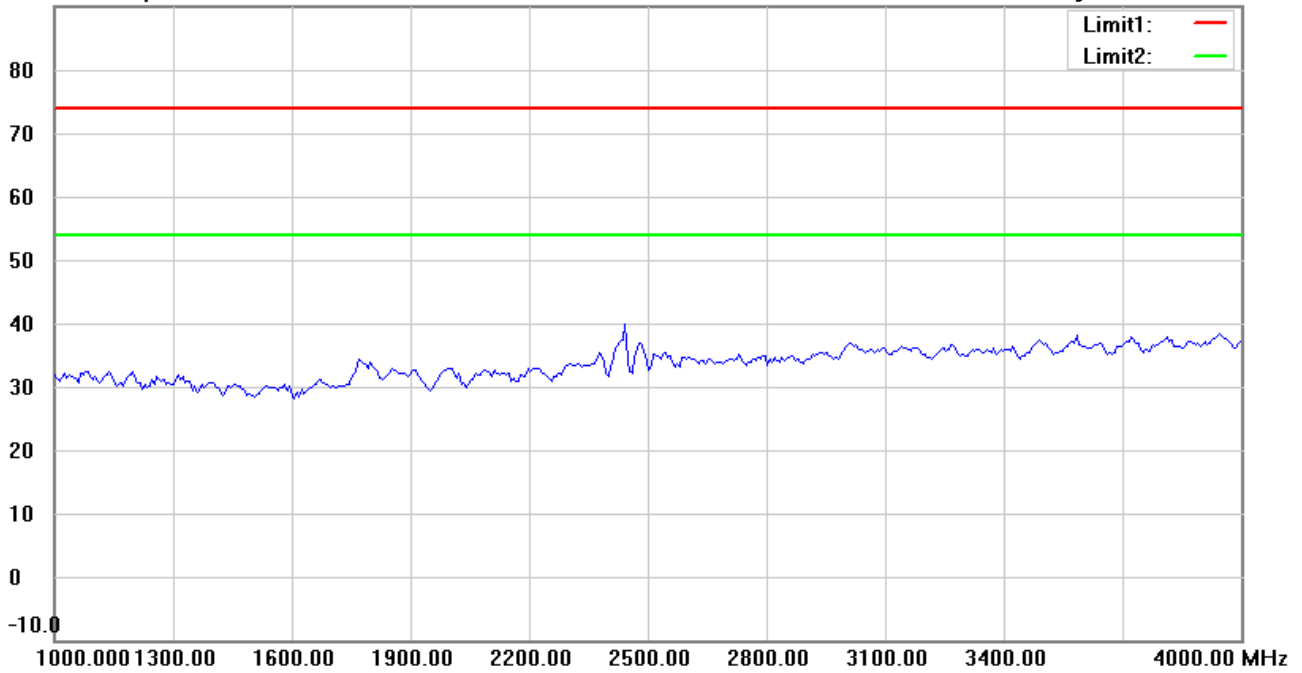
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:57:58 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2457MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#6

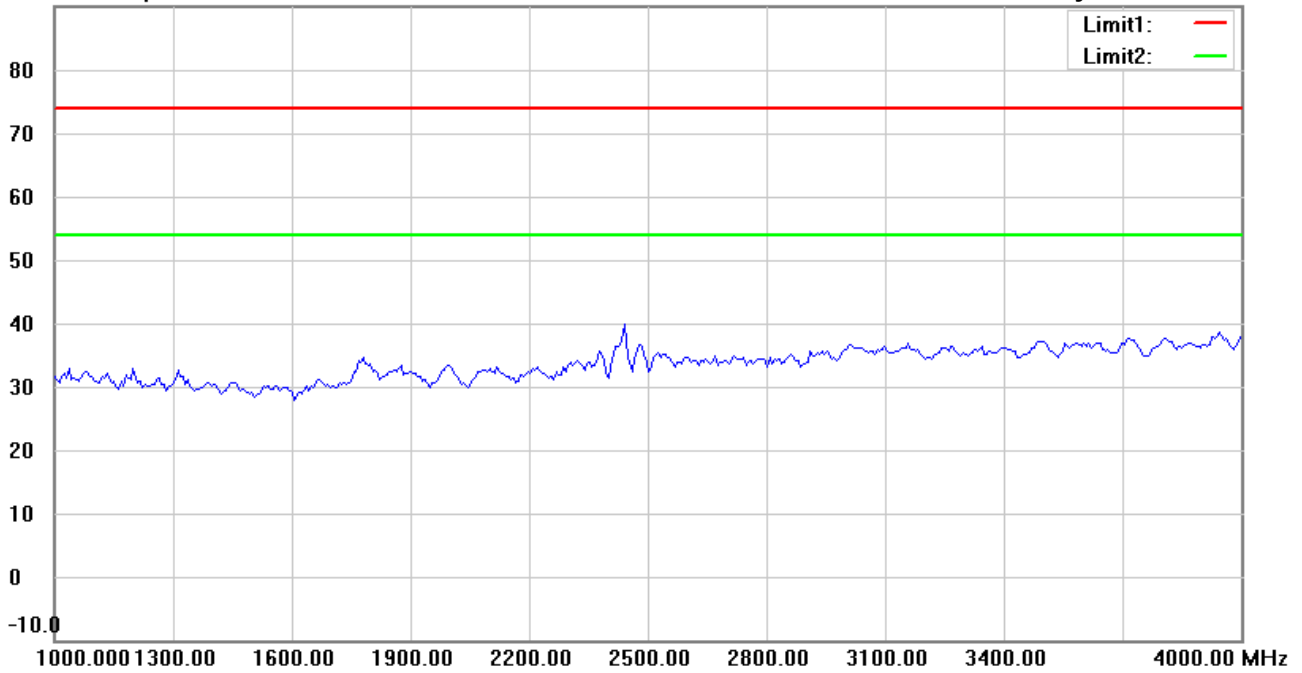
Date: 1/27/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 12:01:29 AM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2457MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



Radiated Emission Measurement

Operator: Vincent

File :3

Data :#2

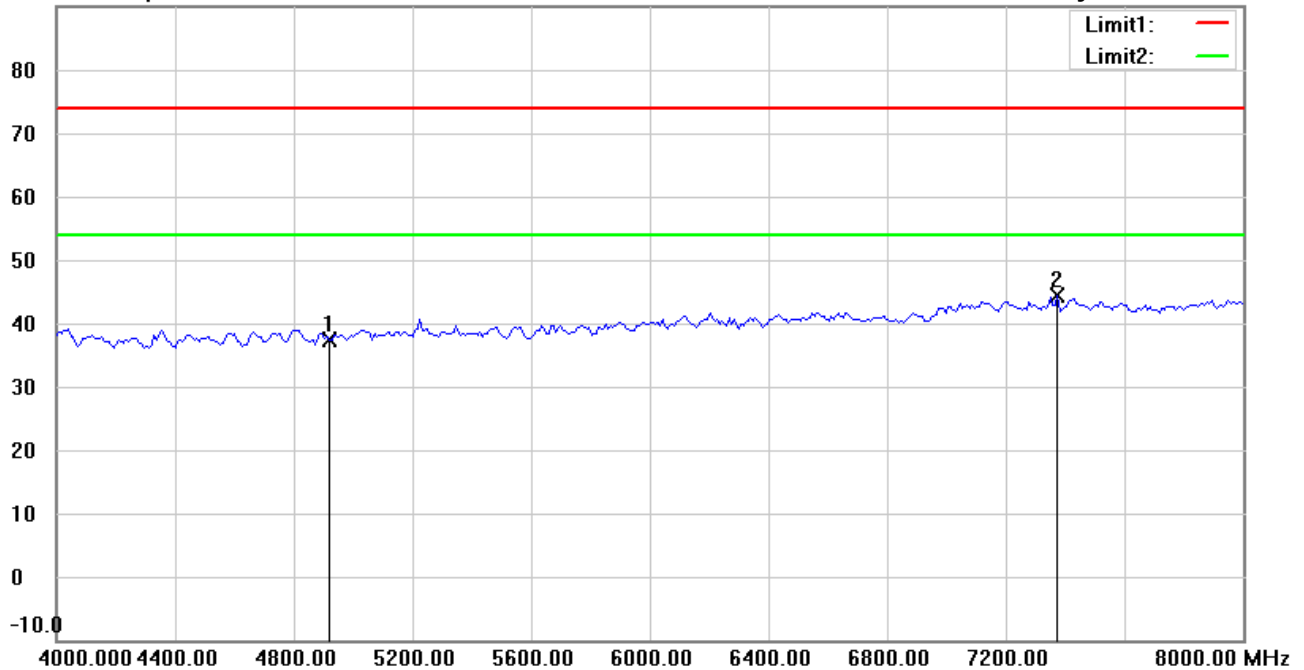
Date: 1/26/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 11:58:58 PM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2457MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 4914.000        | 38.93          | peak     | -1.51               | 37.42           | 74.00          | 150          | 187            | -36.58      |         |
| *   | 7371.000        | 40.71          | peak     | 3.73                | 44.44           | 74.00          | 150          | 211            | -29.56      |         |



Radiated Emission Measurement

Operator: Vincent

File :3

Data :#7

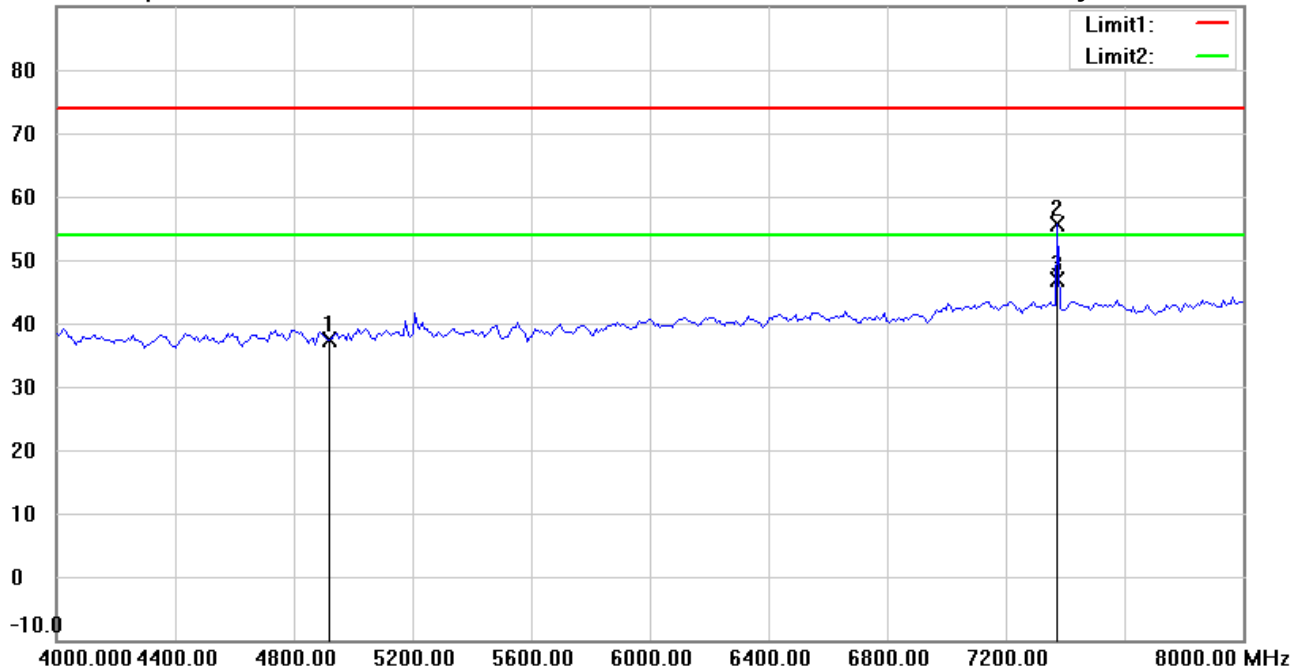
Date: 1/27/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 12:02:30 AM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2457MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 4914.000        | 38.77          | peak     | -1.51               | 37.26           | 74.00          | 150          | 166            | -36.74      |         |
|     | 7374.749        | 51.84          | peak     | 3.74                | 55.58           | 74.00          | 150          | 230            | -18.42      |         |
| *   | 7374.749        | 43.26          | AVG      | 3.74                | 47.00           | 54.00          | 150          | 230            | -7.00       |         |



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#3

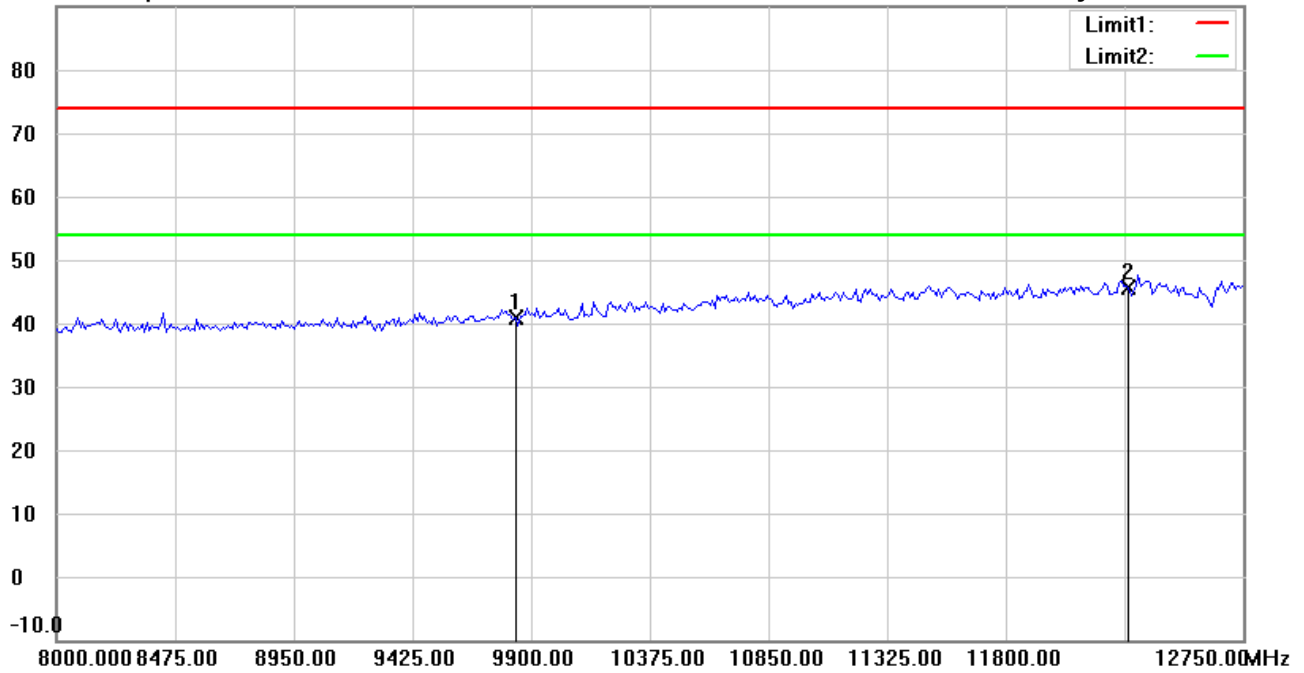
Date: 1/27/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 12:00:05 AM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2457MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 9828.000        | 33.93          | peak     | 6.98                | 40.91           | 74.00          | 150          | 280            | -33.09      |         |
| *   | 12285.000       | 33.22          | peak     | 12.34               | 45.56           | 74.00          | 150          | 143            | -28.44      |         |

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





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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#8

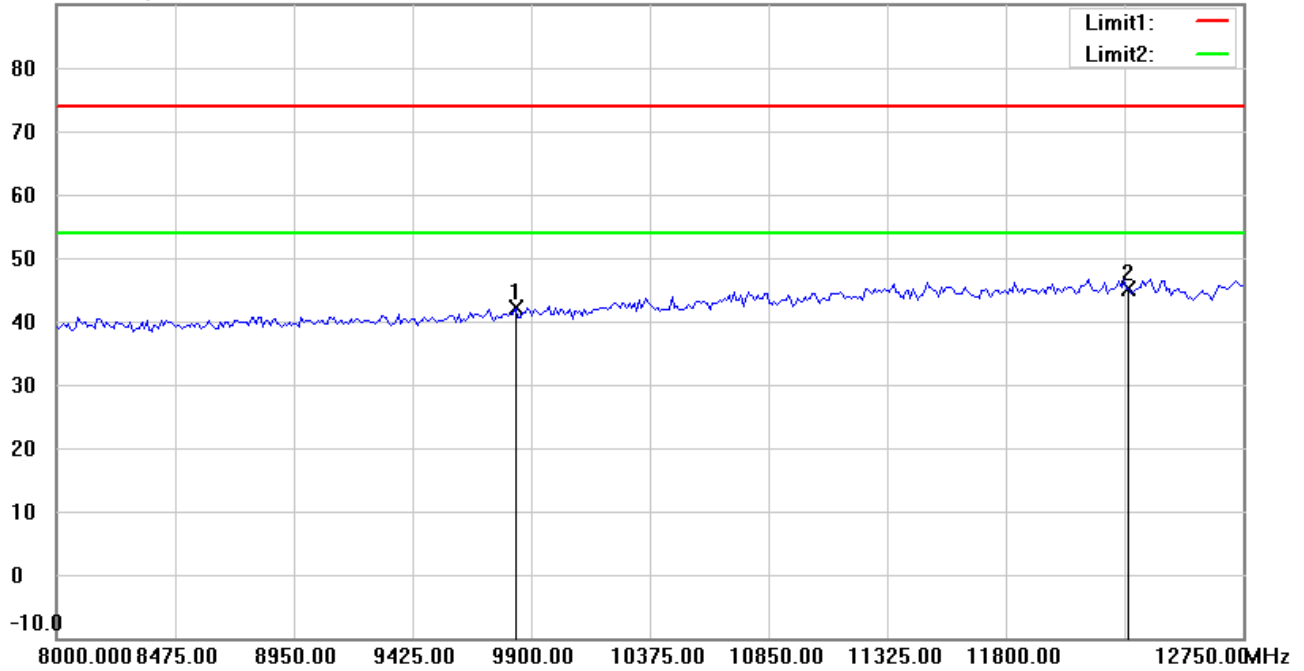
Date: 1/27/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 12:03:30 AM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2457MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|     | 9828.000        | 35.24          | peak     | 6.98                | 42.22           | 74.00          | 150          | 248            | -31.78      |         |
| *   | 12285.000       | 32.80          | peak     | 12.34               | 45.14           | 74.00          | 150          | 190            | -28.86      |         |

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



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#4

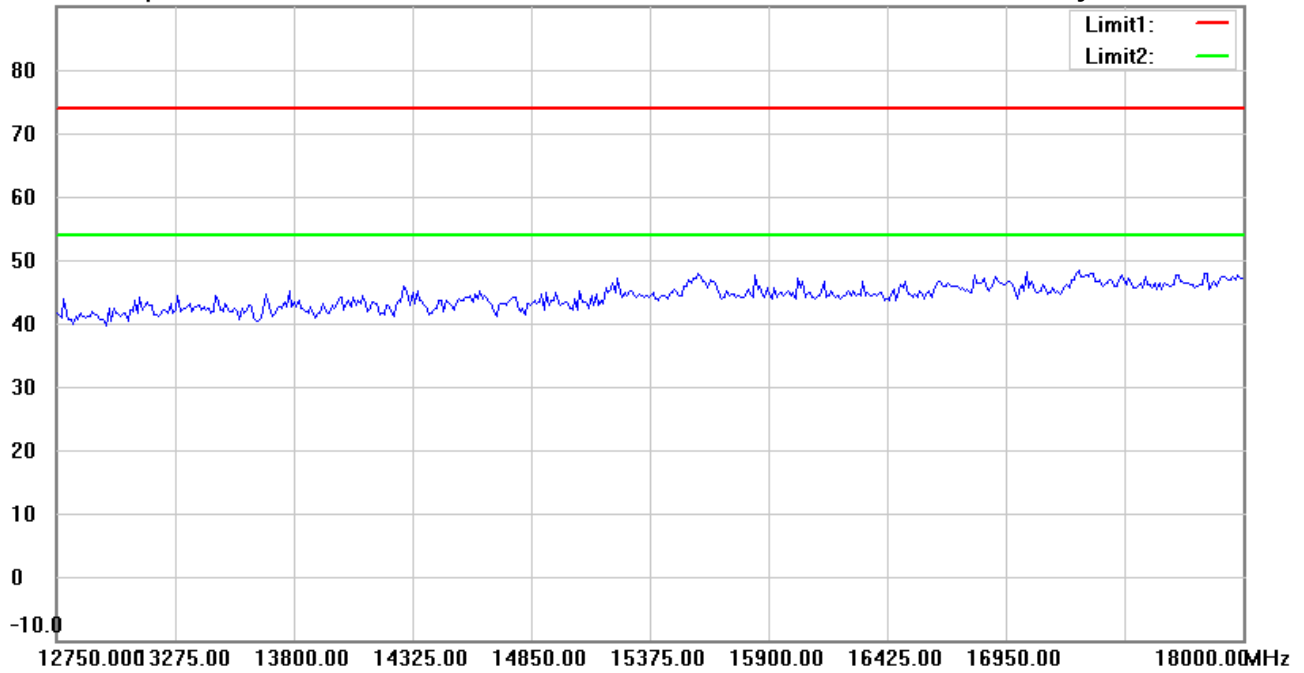
Date: 1/27/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 12:00:19 AM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2457MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#9

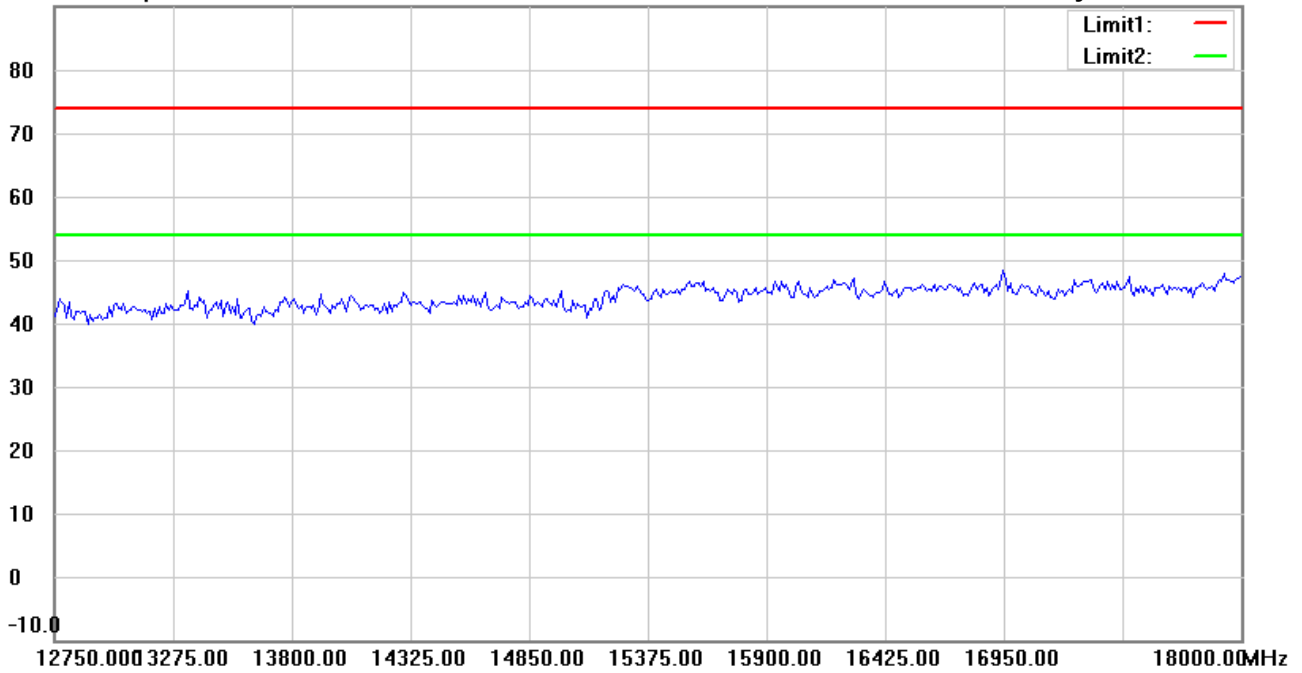
Date: 1/27/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 12:03:44 AM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2457MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



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**Radiated Emission Measurement**

Operator: Vincent

File :3

Data :#5

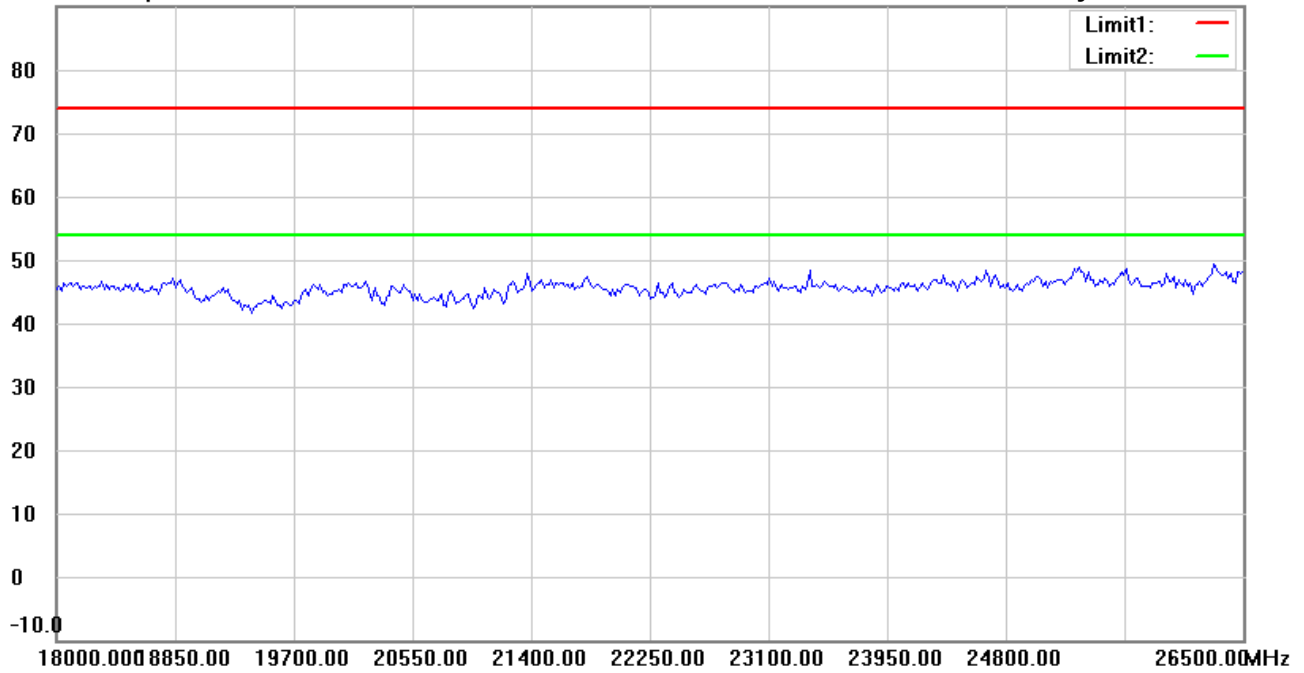
Date: 1/27/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 12:00:29 AM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Horizontal*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2457MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#10

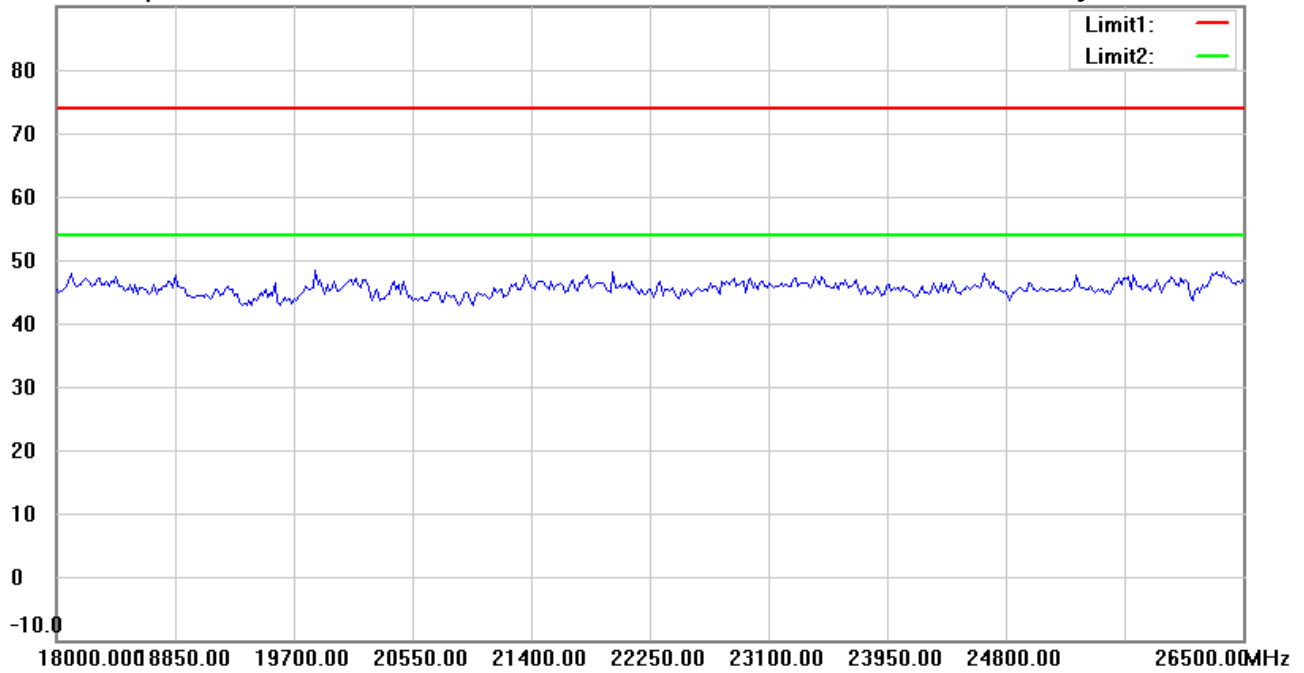
Date: 1/27/2021

Temperature:22.4 °C

90.0 dBuV/m

Time: 12:03:54 AM

Humidity:61.8 %



Site : Chamber

Condition : FCC\_part 15 RE-Class C\_Above 1GHz\_PK

Polarization: *Vertical*

EUT : W6M22012-20529

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 2457MHz

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 |
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|
|-----|-----------------|----------------|----------|---------------------|-----------------|----------------|--------------|----------------|-------------|---------|

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