

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

**for**

**TPMS**

**Model No.: RSI-24**

**FCC ID: HQXRSI24**

**of**

Applicant: Sysgration Ltd.

Address: 5F-1, No.1, Sec.1, Tiding Blvd., Neihu Dist. Taipei City  
Taiwan 114

Tested and Prepared

by

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

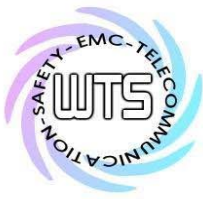
**FCC Registration No.: TW1477, TW1072**

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



**Report No.: W6M22203-21716-C-1**

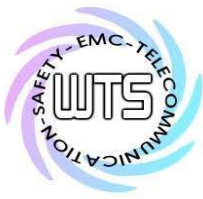
6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.  
TEL: 886-2-66068877 FAX: 886-2-66068879 E-mail: [wts@wts-lab.com](mailto:wts@wts-lab.com)



Registration number: W6M22203-21716-C-1  
FCC ID: HQXRS124

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## 1 General Information

### 1.1 Notes

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

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

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

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

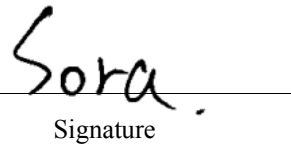
Laboratory disclaimer-

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

### Tester:

April 15, 2022

Sora Kuo



Date

WTS-Lab.

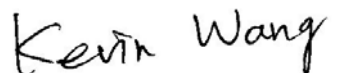
Name

Signature

### Technical responsibility for area of testing:

April 15, 2022

Kevin Wang

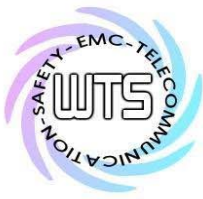


Date

WTS

Name

Signature



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## **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

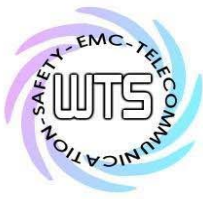
Accredited testing laboratory

FCC filed test laboratory Reg. No.: TW1477, TW1072

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

## **1.3 Details of approval holder**

Name:	Sysgration Ltd.
Street:	5F-1, No.1, Sec.1, Tiding Blvd., Neihu Dist.
Town:	Taipei City
Country:	Taiwan 114



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## **1.4 Application details**

Date of receipt of test item: March 31, 2022  
Date of test: from March 31, 2022 to April 15, 2022

## **1.5 Test item**

Description of test item: TPMS  
Type identification: RSI-24  
Brand name: SYSGRATION  
Multi-listing model number: RSI-20B, RSI-21B, RSI-23  
Transmitting frequency: 315 MHz  
433.95 MHz  
Operation mode: Simplex  
Voltage supply: Battery 3Vd.c. (CR2050W)  
Antenna type: Loop antenna  
Photos: ./.  
Sample No.: #03

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

1.

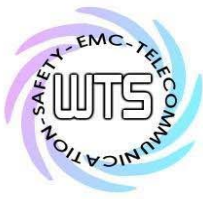
Name: Sysgration Nankang Factory (Taiwan)  
Street: No.28-2, Industrial N.Road Nan-Kang Industrial Park  
Town: Nan-Tou City,  
Country: Taiwan R.O.C

2.

Name: Sysgration Electronics Technology (HuiZhou) Company,Limited  
Street: YuXin Science Park 3rd Floor,Long Shan 7 Rd., XiangShuiHe  
Industrial Zone, DaYaWan,  
Town: HuiZhou City, GuangDong Province,  
Country: China

## **1.6 Test standards**

Technical standard: 47 CFR PART 15 SUBPART C § 15.231 (e) (2020-10)



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**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

Details of power supply: Battery 3Vd.c. (CR2050W)

Test item Name	Uncertainty
Estimation Result of Uncertainty of Conducted Emission (Conducted Measurement at (AC) Power Line)	Expanded Uncertainty : AMN : 1.03 dB Voltage probe : 1.05 dB
Estimation Result of Uncertainty of Radiated Emission(3M) (Output Power (Field Strength), Out of Band Radiated Emissions, Transmitter Radiated Emissions in restricted Bands, Spurious Emission radiated)	Expanded Uncertainty : 0.009-30 MHz : 3.48 dB 30-1000 MHz : 4.48 dB 1-18 GHz : 4.15 dB 18-40 GHz : 3.78 dB
Estimation Result of Uncertainty of Bandwidth Measurement (Channel Bandwidth)	Expanded Uncertainty : 0.45 kHz
Estimation Result of Uncertainty of Frequency Drift Measurement (Frequency Tolerance)	Expanded Uncertainty : 6.11 Hz
Estimation Result of Uncertainty of Duty Cycle Measurement (Active Time)	Expanded Uncertainty : 0.1 ms

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



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## 2.4 Test equipment utilized

No.	Test equipment	Type	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2021/6/17	2022/6/16
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	Function Test	
ETSTW-CE 004	ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5	840731/011	R&S	2021/11/9	2022/11/8
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2021/9/22	2022/9/21
ETSTW-CE 008	HF-EICHLITUNG RF STEP ATTENUATOR 139dB DPSP	334.6010.02	844581/024	R&S	Function Test	
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2021/7/29	2022/7/28
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2021/11/8	2022/11/7
ETSTW-CE 028	MXE EMI Receiver	N9038A	MY53220110	Agilent	2021/7/28	2022/7/27
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2021/6/17	2022/6/16
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2021/9/28	2022/9/27
ETSTW-RE 012	TUNABLE BANDREJECT FILTER	D.C 0309	146	K&L	Function Test	
ETSTW-RE 013	TUNABLE BANDREJECT FILTER	D.C 0336	397	K&L	Function Test	
ETSTW-RE 018	MICROWAVE HORN ANTENNA	AT4560	27212	AR	2021/8/4	2022/8/3
ETSTW-RE 019	MICROWAVE HORN ANTENNA	22240-25	121074	FM	2021/5/31	2022/5/30
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	ETS-Lindgren	2021/6/16	2022/6/15
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	ETS-Lindgren	2021/5/5	2022/5/4
ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2022/3/4	2023/3/3
ETSTW-RE 043	Log-Periodic Dipole Antenna	HL223	100166	R&S	2021/5/21	2022/5/20
ETSTW-RE 044	Log-Periodic Antenna	HL050	100094	R&S	2021/7/14	2022/7/13
ETSTW-RE 045	ESA-E SERIES SPECTRUM ANALYZER	E4404B	MY45111242	Agilent	Pre-test Use	
ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2022/2/18	2023/2/17
ETSTW-RE 051	Attenuator 6dB	50HF-006-1	None	JFW	2022/2/18	2023/2/17
ETSTW-RE 053	Attenuator 3dB	50HF-003-1	None	JFW	2022/2/18	2023/2/17
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2022/3/28	2023/3/27
ETSTW-RE 060	Attenuator 30dB	5015-30	F651012z-01	ATM	2022/2/18	2023/2/17
ETSTW-RE 062	Amplifier Module	CHC 2	None	KMIC	2021/5/14	2022/5/13
ETSTW-RE 064	Bluetooth Test Set	MT8852B-042	6K00005709	Anritsu	Function Test	
ETSTW-RE 069	Double-Ridged Guide Horn Antenna	3117	00069377	ETS-Lindgren	Function Test	
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2021/10/27	2022/10/26
ETSTW-RE 088	SOLID STATE AMPLIFIER	KMA180265A01	99057	KMIC	2021/9/17	2022/9/16
ETSTW-RE 091	Match Pad	MDCS1500	None	WOKEN	2021/5/27	2022/5/26
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2022/2/18	2023/2/17
ETSTW-RE 112	AC POWER SOURCE	TFC-1005	T-0A023536	T-Power	Function test	
ETSTW-RE 115	2.4GHz Notch Filter	N0124411	473874	MICROWAVE CIRCUITS	2022/1/5	2023/1/4



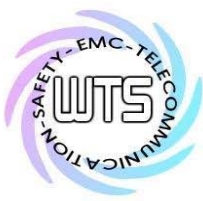
# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22203-21716-C-1

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ETSTW-RE 120	RF Player	MP9200	MP9210-111022	ADIVIC	2021/10/29	2022/10/28
ETSTW-RE 122	SIGNAL GENERATOR	SMF100A	102149	R&S	2021/6/8	2022/6/7
ETSTW-RE 125	5GHz Notch filter	5NSL11-5200/E221.3-O/O	1	K&L Microwave	2021/8/6	2022/8/5
ETSTW-RE 126	5GHz Notch filter	5NSL12-5800/E221.3-O/O	1	K&L Microwave	2021/8/6	2022/8/5
ETSTW-RE 127	RF Switch Box	RFS-01	None	WTS	2022/2/18	2023/2/17
ETSTW-RE 128	5.3GHz Notch filter	N0153001	SN487233	Microwave Circuits	2021/8/6	2022/8/5
ETSTW-RE 129	5.5GHz Notch filter	N0555984	SN487234	Microwave Circuits	2021/8/6	2022/8/5
ETSTW-RE 130	Handheld RF Spectrum Analyzer	N9340A	CN0147000204	Agilent	Pre-test Use	
ETSTW-RE 142	Amplifier	8447D	2805A03378	Agilent	2021/5/14	2022/5/13
ETSTW-RE 146	Preamplifier	JPA-10MIG	15090004	JPT	2021/6/4	2022/6/3
ETSTW-RE 152	Bi-log Hybrid Antenna	MCTD 2786B	BLB20J04029	ETC	2021/10/5	2022/10/4
ETSTW-RE 153	Signal Analyzer	FSV40	101929	R&S	2021/10/6	2022/10/5
ETSTW-RE 159	Bi-log Hybrid Antenna (30M~1000 MHz)	MCTD 2786B	BLB21N04035	ETC	2021/12/06	2022/12/05
ETSTW-RF 002	Electromagnetic field probe	LF-30	K-0007	STT	2021/7/19	2022/7/18
ETSTW-EMI 011	USB Compact Modulator	SFC-U	101689	R&S	2021/6/2	2022/6/1
ETSTW-GSM 002	Universal Radio Communication Tester	CMU 200	109439	R&S	2022/3/28	2023/3/27
ETSTW-GSM 003	Radio Communication Analyzer	MT8820C	6201342073	Anritsu	2021/4/27	2022/4/26
ETSTW-GSM 004	Wideband Radio Communication Tester	CMW500	128092	R&S	2021/10/29	2022/10/28
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849-822/851-40 /12+9SS	3	WI	2022/1/5	2023/1/4
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748-1743/1752-32/5SS	1	WI	2022/1/5	2023/1/4
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880.5-1875.5/1884.5-32/5SS	3	WI	2022/1/5	2023/1/4
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1-904.25-50/8SS	1	WI	2022/1/5	2023/1/4
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2021/9/7	2022/9/6
ETSTW-GSM 024	Radio Communication Analyzer	MT8821C	None	Anritsu	2022/3/23	2023/3/22
ETSTW-GSM 025	Band Reject Filter	BRM19835	001	Micro-Tronics	2021/8/6	2022/8/5
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	2022/2/18	2023/2/17
ETSTW-Cable 017	BNC Cable	X Cable	B Cable 2	Schwarz beck	2022/2/18	2023/2/17
ETSTW-Cable 018	BNC Cable	Y Cable	B Cable 3	Schwarz beck	2022/2/18	2023/2/17
ETSTW-Cable 019	BNC Cable	Z Cable	B Cable 4	Schwarz beck	2022/2/18	2023/2/17
ETSTW-Cable 020	N TYPE Cable	OATS Cable 1	N30N30-L335-15M	JYE BAO CO.,LTD.	2021/7/1	2022/6/30
ETSTW-Cable 027	Microwave Cable	SUCOFLEX 104	279083	HUBER+SUHNER	2021/5/7	2022/5/6
ETSTW-Cable 028	Microwave Cable	FA147A0015M2020	30064-2	UTIFLEX	2021/9/17	2022/9/16
ETSTW-Cable 029	Microwave Cable	FA147A0015M2020	30064-3	UTIFLEX	2021/9/17	2022/9/16
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 (S_Cable 9)	279067	HUBER+SUHNER	2022/2/18	2023/2/17
ETSTW-Cable 043	Microwave Cable	SUCOFLEX 104	317576	HUBER+SUHNER	2021/5/14	2022/5/13
ETSTW-Cable 047	Microwave Cable	SUCOFLEX 104	325518	HUBER+SUHNER	2021/7/2	2022/7/1



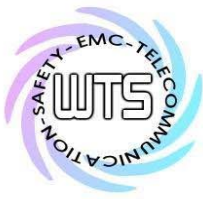


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ETSTW-Cable 058	Microwave Cable	SUCOFLEX 104	none	HUBER+SUHNER	2021/6/4	2022/6/3
ETSTW-Cable 064	Microwave Cable	SUCOFLEX 104	MY28891	HUBER+SUHNER	2021/5/14	2022/5/13
ETSTW-Cable 071	N TYPE CABLE	EMCCFD400-NM-NM-25000	170239	EMCI	2021/6/4	2022/6/3
ETSTW-Cable 072	SMA type cable (8m)	SUCOFLEX 104	805800/4	HUBER+SUHNER	2021/5/14	2022/5/13
ETSTW-Cable 074	SMA type cable (2m)	SUCOFLEX 104	802563/4	HUBER+SUHNER	2021/5/14	2022/5/13
WTSTW-SW 002	EMI TEST SOFTWARE	EZ_EMG	None	Farad	Version ETS-03A1 Version EMEC-3A1+	
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	2021/10/18	2022/10/17
ETSTW-TH 003	Wireless weather station	GAIA	N/A	TFA	2021/10/18	2022/10/17



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## **2.5 General Test Procedure**

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

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

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

Example:

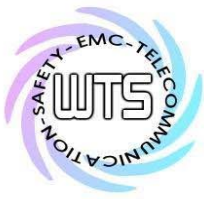
Freq (MHz)      METER READING + ACF + CABLE LOSS (to the receiver) = FS  
33                      20 dB $\mu$ V + 10.36 dB/m + 6 dB = 36.36 dB $\mu$ V/m @3m

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

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

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

**ANSI STANDARD C63.10-2009 B.2.7:** Any measurements that utilize special test software shall be indicated and referenced in the test report. During testing, test software 'EZ EMC' was used for setting up different operation modes.



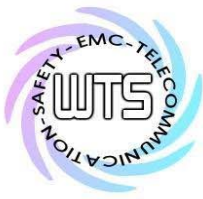
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**3 Test results (enclosure)**

1st test                       test after modification                       production test

TEST CASE	Para. Number	Required	Test passed	Test failed
Transmission Requirements	15.231(e)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Radiated Emission	15.231(e)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Bandwidth of Emission	15.231(c)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Frequency Tolerance	15.231(d)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Period Alternate Field Strength Requirements	15.231(e)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Antenna Requirement	15.203	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Conducted Measurement at (AC) Power Line	15.207	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The following is intentionally left blank.



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## **3.1 Transmission Requirements**

FCC 15.231(e)

### 3.1.1 Limit of Transmission Time

Devices operated under the provisions of this paragraph shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.

### 3.1.2 Results for the duration and silent period measurement

Test date: March 31, 2022  
Temperature: 25.1 °C  
Humidity: 55.0 %  
Tester: Sora

This manually operated transmitter employs software to control the duration of each transmission and silent period between transmissions. The real measured result for the duration of each transmission is \_\_\_\_\_ ms, and the result for silent period between transmissions is \_\_\_\_\_ second.

315 MHz

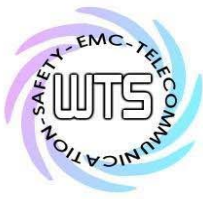
This transmitter is operated by automatic activation, and the duration of each transmission and silent period between transmissions will be controlled by software. The real measured result for the duration of each transmission is 13.782051 ms, and the result for silent period between transmissions is 29.479167 second.

433.95 MHz

This transmitter is operated by automatic activation, and the duration of each transmission and silent period between transmissions will be controlled by software. The real measured result for the duration of each transmission is 13.782051 ms, and the result for silent period between transmissions is 29.198718 second.

Test equipment used : ETSTW-RE 004 ETSTW-RE 062, ETSTW-RE 142, ETSTW-RE 152

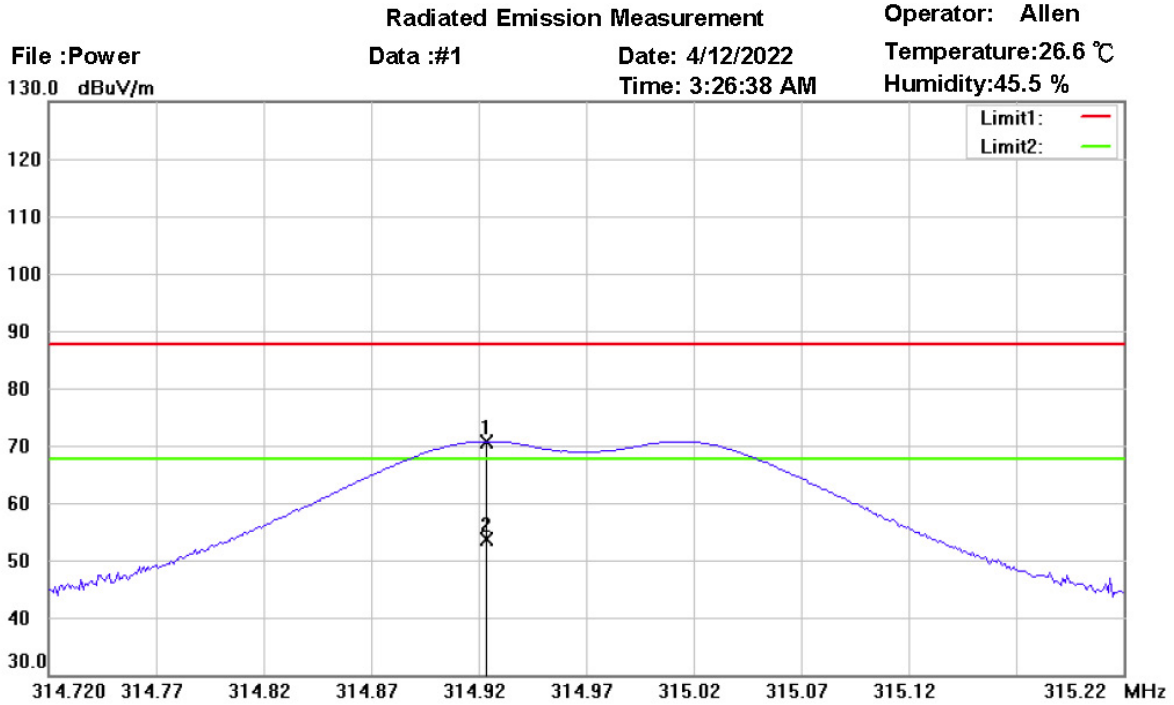
Explanation: See attached diagrams in appendix.



Registration number: W6M22203-21716-C-1  
 FCC ID: HQXRSI24

## 3.2 Output Power (Field Strength)

315 MHz



Site : Chamber

Condition : FCC 15.231(315MHz)Power(PK)<e>

EUT : W6M22203-21716

M/N:

Test Mode : TX 315MHz

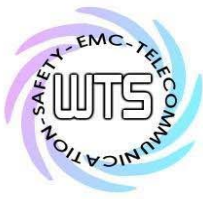
Note :

Polarization: *Horizontal*

Power : 3 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	314.9234	48.73	peak	21.99	70.72	87.66	105	360	-16.94	
*	314.9234	31.52	AVG	21.99	53.51	67.66	105	360	-14.15	



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

Registration number: W6M22203-21716-C-1  
 FCC ID: HQXRS124

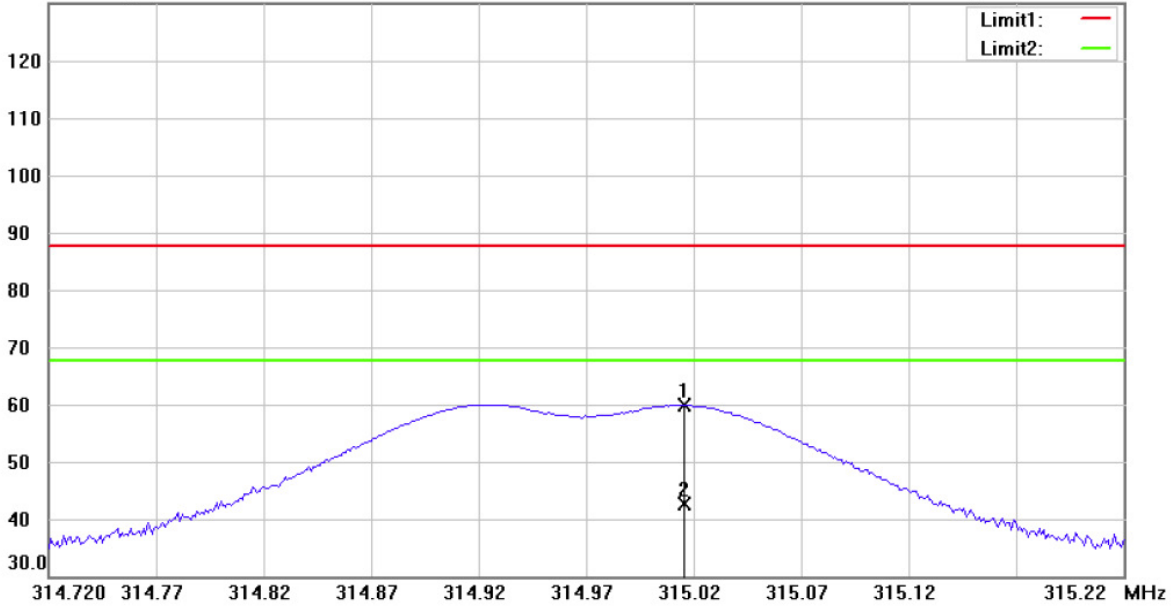
### Radiated Emission Measurement

Operator: Allen  
 Temperature: 26.6 °C  
 Humidity: 45.5 %

File : Power  
 130.0 dBuV/m

Data : #2

Date: 4/12/2022  
 Time: 3:32:39 AM



Site : Chamber

Condition : FCC 15.231(315MHz)Power(PK)<e>

EUT : W6M22203-21716

M/N:

Test Mode : TX 315MHz

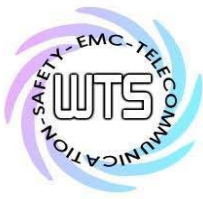
Note :

Polarization: *Vertical*

Power : 3 Vd.c.

Distance: 3m

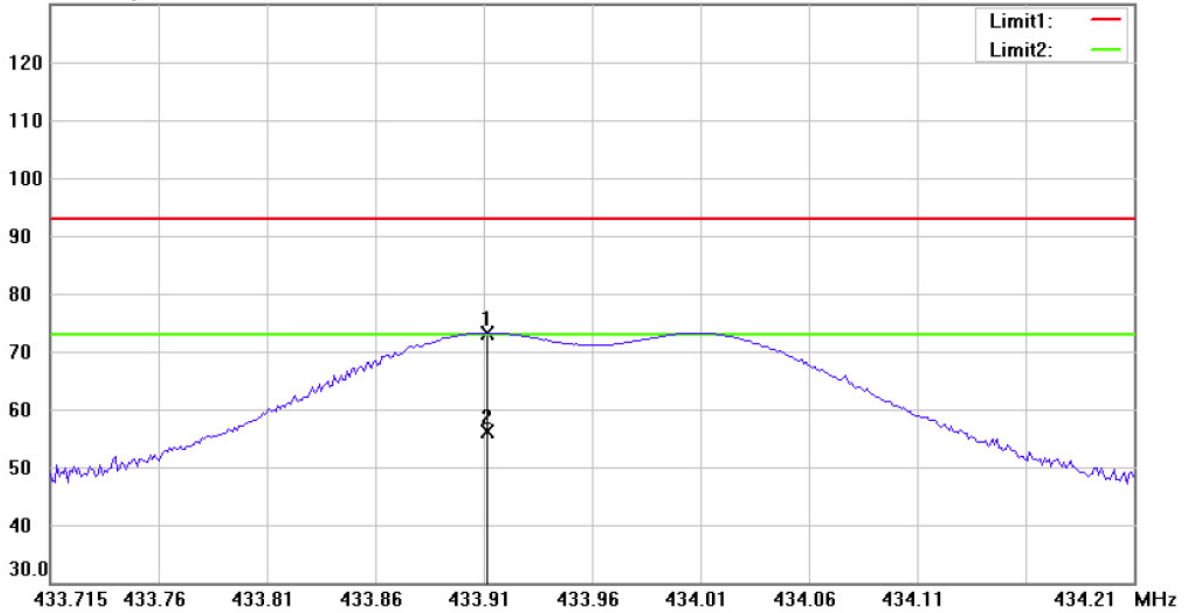
Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	315.0156	37.96	peak	21.99	59.95	87.66	150	110	-27.71	
*	315.0156	20.75	AVG	21.99	42.74	67.66	150	110	-24.92	



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

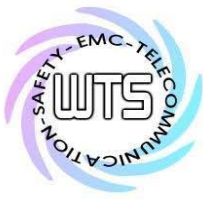
Registration number: W6M22203-21716-C-1  
 FCC ID: HQXRSI24  
 433.95 MHz

**Radiated Emission Measurement**  
 File :Power      Data :#1      Date: 4/12/2022      Operator: Allen  
 130.0 dBuV/m      Time: 1:11:11 AM      Temperature:26.6 °C  
 Humidity:45.5 %



Site : Chamber  
 Condition : FCC 15.231(433MHz)Power(PK)<e>      Polarization: *Horizontal*  
 EUT : W6M22203-21716      Power : 3 Vd.c.  
 M/N:      Distance: 3m  
 Test Mode : TX 433.95MHz  
 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
	433.9164	48.32	peak	24.92	73.24	92.80	100	360	-19.56	
*	433.9164	31.11	AVG	24.92	56.03	72.80	100	360	-16.77	



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

Registration number: W6M22203-21716-C-1  
 FCC ID: HQXRSI24

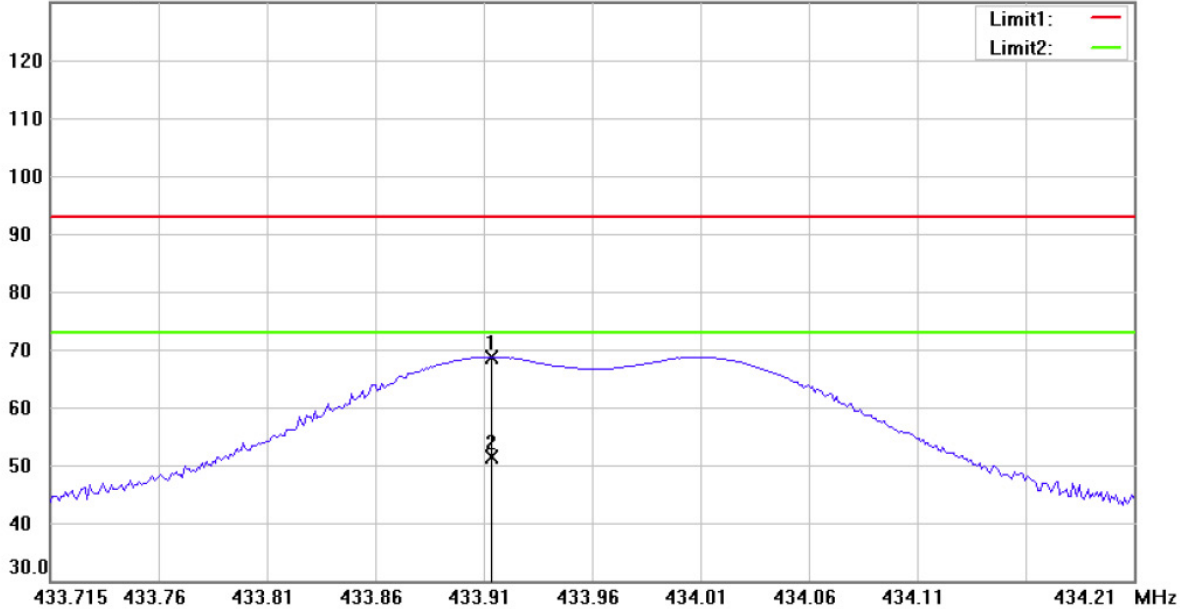
### Radiated Emission Measurement

Operator: Allen  
 Temperature: 26.6 °C  
 Humidity: 45.5 %

File : Power  
 130.0 dBuV/m

Data : #2

Date: 4/12/2022  
 Time: 1:15:17 AM



Site : Chamber

Condition : FCC 15.231(433MHz)Power(PK)<e>

EUT : W6M22203-21716

M/N:

Test Mode : TX 433.95MHz

Note :

Polarization: *Vertical*

Power : 3 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	433.9184	43.79	peak	24.92	68.71	92.80	120	330	-24.09	
*	433.9184	26.58	AVG	24.92	51.50	72.80	120	330	-21.30	

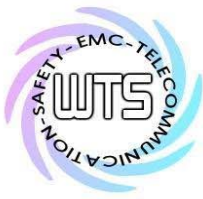
Limit 15.231(e)

Fundamental Frequency (MHz)	Field strength of fundamental, limit (µV/m)
40.66 – 40.70	1,000
70 – 130	500
130 – 174	500 to 1,500
174 – 260	1,500
260 – 470	1,500 to 5,000** (315 MHz: 67.66 dBµV/m = 2416.677 µV/m) (433.95 MHz: 72.87 dBµV/m = 4399.181 µV/m)
Above 470	5,000

\*\* linear interpolation

Test equipment used: ETSTW-RE 004, ETSTW-RE 062, ETSTW-RE 142, ETSTW-RE 152





Registration number: W6M22203-21716-C-1  
FCC ID: HQXRSI24

### **3.3 Out of Band Radiated Emissions**

FCC Rule: 15.231(e) , 15.35

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

Guidance on Measurement of pulsed emission: 15.35(c)

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

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

Limits:

For frequencies (Average measurements)

Correction factor conform 15.35 (c) (Average measurements)

Duty cycle correction :

Max. Peak reading – duty cycle correction

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

For example for 315 fundamental carrier:

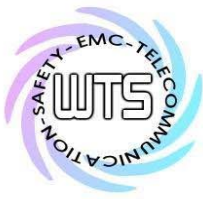
Max permitted average Limit:  $67.66 \text{ dB}\mu\text{V/m} - 20 \text{ dB} = 47.66 \text{ dB}\mu\text{V/m}$

For example for 433.95 fundamental carrier:

Max permitted average Limit:  $72.87 \text{ dB}\mu\text{V/m} - 20 \text{ dB} = 52.87 \text{ dB}\mu\text{V/m}$

For frequencies above 1GHz (Peak measurements).

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



Registration number: W6M22203-21716-C-1  
FCC ID: HQXRSI24

**3.4 Transmitter Radiated Emissions in restricted Bands**

FCC Rules: 15.231 (e), 15.205, 15.209, 15.35

Radiated emission measurements were performed from 30 MHz to 8000 MHz.

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

RES BW VID BW

Frequency <1 GHz 100 kHz 100 kHz (Peak measurements)

Frequency >1 GHz 1 MHz 1 MHz (Peak measurements)

1 MHz 1 MHz (Average measurements)

Limits:

For frequencies below 1GHz :

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

For frequencies above 1GHz (Average measurements).

Guidance on Measurement of pulsed emission:

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

For frequencies above 1GHz (Average measurements).

The correction factor, based on the channel dwell 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 (dwell time/100ms)

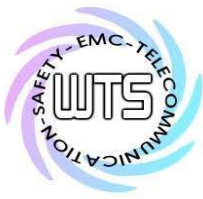
No duty cycle correction was added to the reading

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

Above 960 MHz

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

Explanation: See attached diagrams in appendix.



Registration number: W6M22203-21716-C-1  
 FCC ID: HQXRSI24

### 3.5 Spurious Emission radiated, Transmitter

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

The limits on the field strength of the spurious emission in the table § 15.231(e) are based on the fundamental frequency of the intentional radiator. Spurious emission shall be attenuated to the average (or alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in § 15.209, whichever limit permits a higher field strength.

In addition, radiated emission which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

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

Calculation of test results:

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

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

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

Summary table with radiated data of the test plots

Model: RSI-24 Date: --  
 Mode: -- Temperature: -- °C Engineer: --  
 Polarization: Horizontal Humidity: -- %

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

Polarization: Vertical

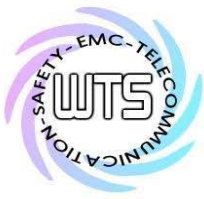
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--

**Note**

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

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

Test equipment used: ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 062, ETSTW-RE 142, ETSTW-RE 152



Registration number: W6M22203-21716-C-1  
FCC ID: HQXRSI24

**3.6 Channel Bandwidth**

Measurement of Necessary Bandwidth (BN)

Test date: March 31, 2022  
Temperature: 25.1 °C  
Humidity: 55.0 %  
Tester: Allen

Used frequency	Bandwidth	Limit
315 MHz	142.628205128 kHz	0.7875 MHz

Used frequency	Bandwidth	Limit
433.95 MHz	144.230769231 kHz	1.0849 MHz

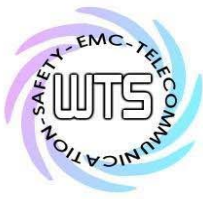
Explanation: The bandwidth fulfills the requirements of FCC § 15.231, see attached diagrams.

Limits:

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

Test equipment used: ETSTW-RE 004

Explanation: ./..



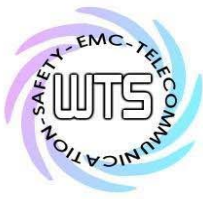
Registration number: W6M22203-21716-C-1  
FCC ID: HQXRSI24

**3.7 Antenna requirement**

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

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

The equipment meets the requirements	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>
--------------------------------------	--	--------------------------------



Registration number: W6M22203-21716-C-1  
FCC ID: HQXRSI24

### 3.8 Duty Cycle

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

$$\text{Average Reading} = \text{Peak Reading (dBuV/m)} + \text{Duty Cycle Correction}$$

Test date: March 31, 2022

Temperature: 25.1 °C

Humidity: 55.0 %

Tester: Sora

$$\text{Duty Cycle Correction} = 20 \log (\text{Cycle})$$

In order to determine the Duty Cycle, the EUT is measured as:

315 Mhz

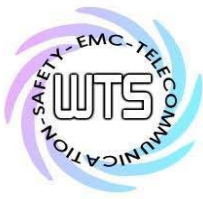
Testing Mode	T period (ms)	T on (ms)	Duty Cycle	Duty Cycle Correction 20*log(Duty Cycle)
Transmitting mode	100	13.78205	0.13782051	-17.21

433.95 MHz

Testing Mode	T period (ms)	T on (ms)	Duty Cycle	Duty Cycle Correction 20*log(Duty Cycle)
Transmitting mode	100	13.78205	0.13782051	-17.21

Test equipment used: ETSTW-RE 004

Explanation: See attached diagrams in appendix.



Registration number: W6M22203-21716-C-1  
 FCC ID: HQXRSI24

### 3.9 Conducted Measurement at (AC) Power Line

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

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

Model: RSI-24 Date: --  
 Mode: -- Temperature: -- °C Engineer: --  
 Polarization: -- Humidity: -- %

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

Polarization: --

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

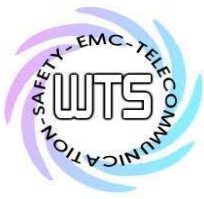
**Note**

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. **This test is not required because the EUT is powered by 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.



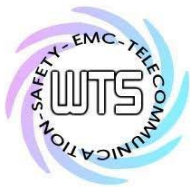
Registration number: W6M22203-21716-C-1  
FCC ID: HQXRS124

## **Appendix**

### **Measurement diagrams**

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





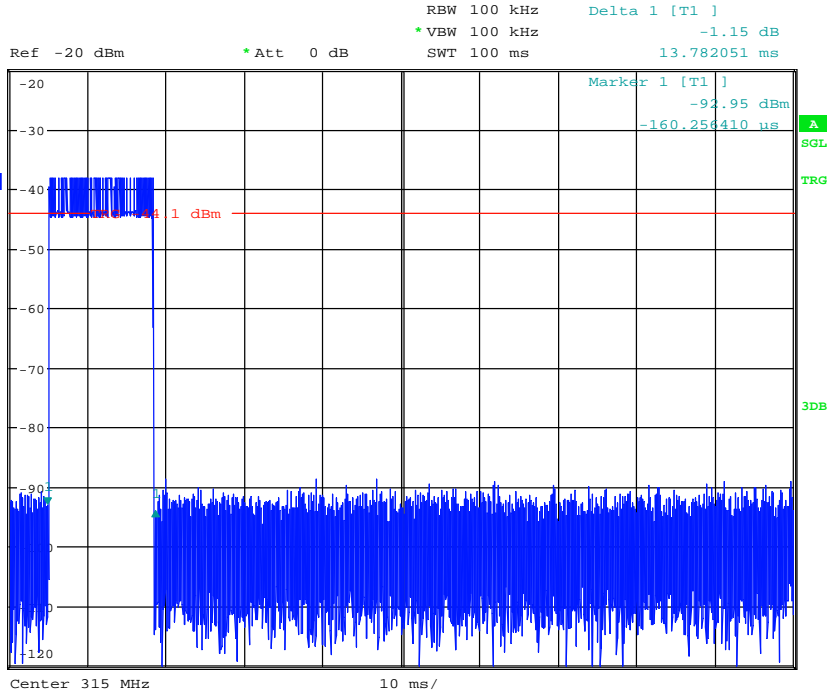
# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22203-21716-C-1

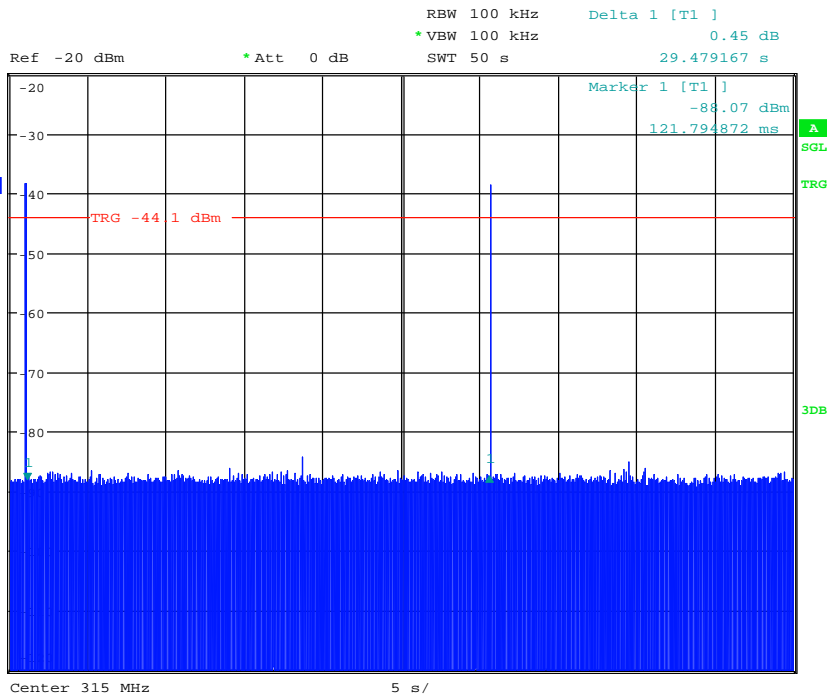
FCC ID: HQXRSI24

Active Time

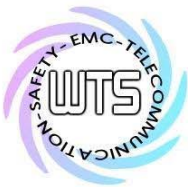
315MHz



Date: 31.MAR.2022 20:49:08

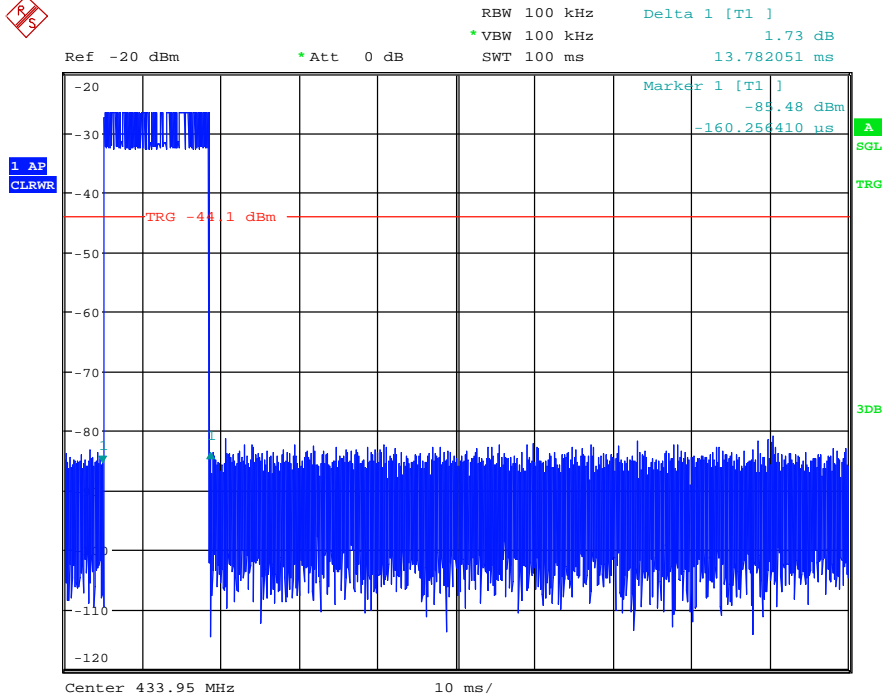


Date: 31.MAR.2022 20:48:23

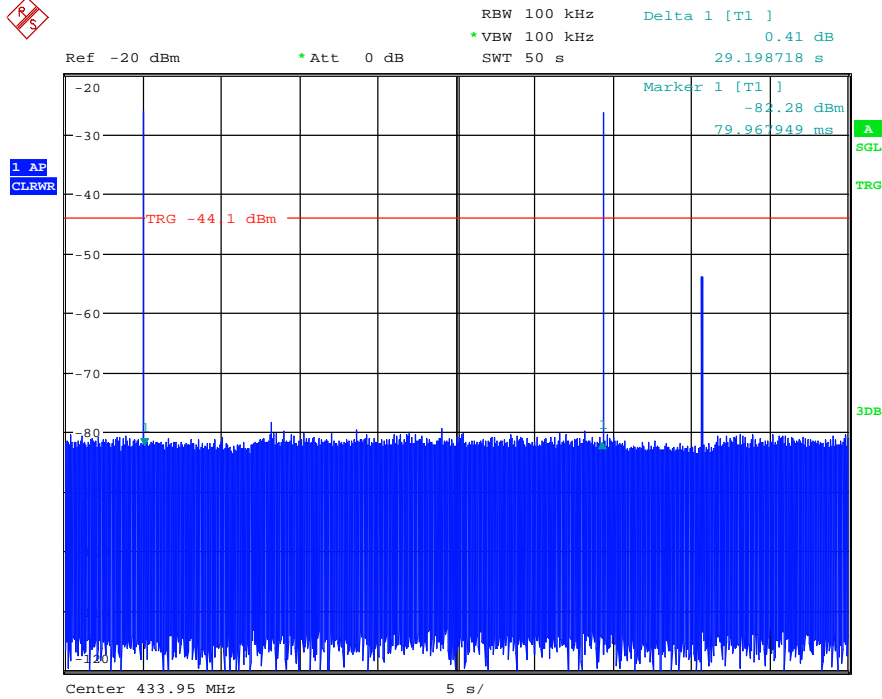


# Worldwide Testing Services(Taiwan) Co., Ltd.

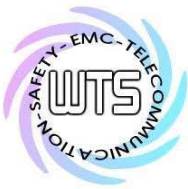
Registration number: W6M22203-21716-C-1  
FCC ID: HQXRSI24  
433.95MHz



Date: 31.MAR.2022 21:10:19



Date: 31.MAR.2022 21:09:30



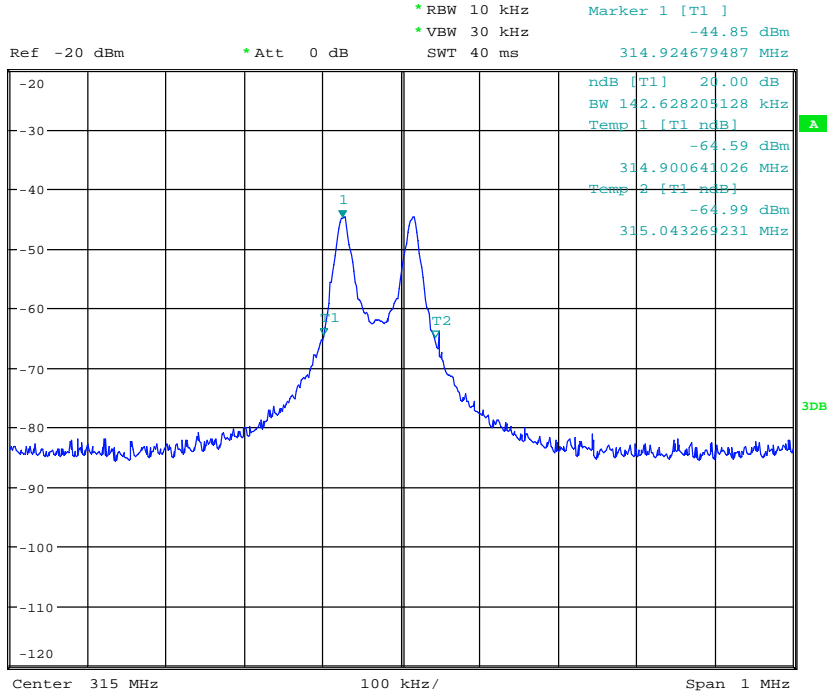
# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22203-21716-C-1

FCC ID: HQXRSI24

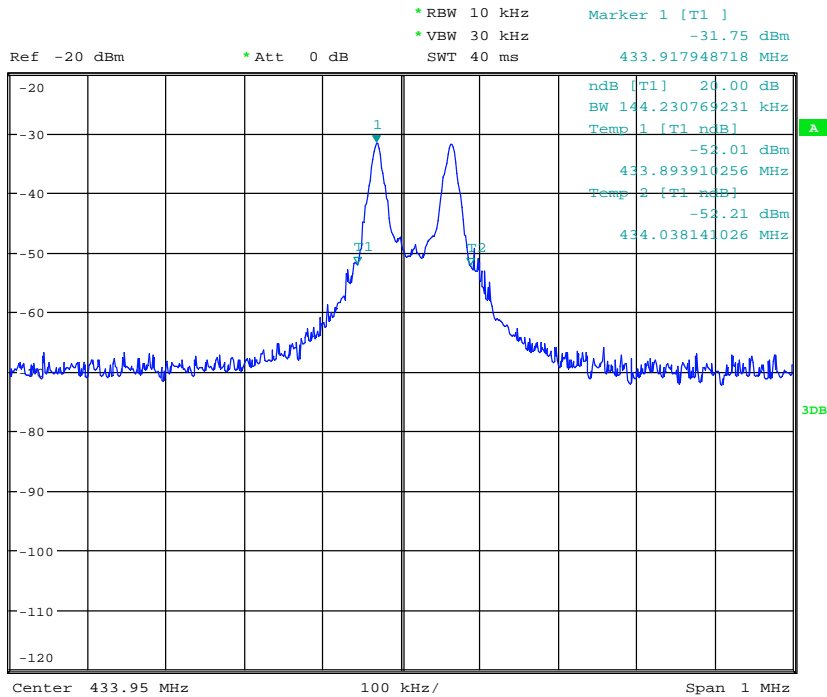
Bandwidth

315MHz

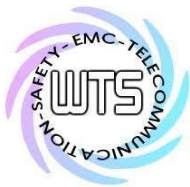


Date: 31.MAR.2022 20:38:34

433.95MHz

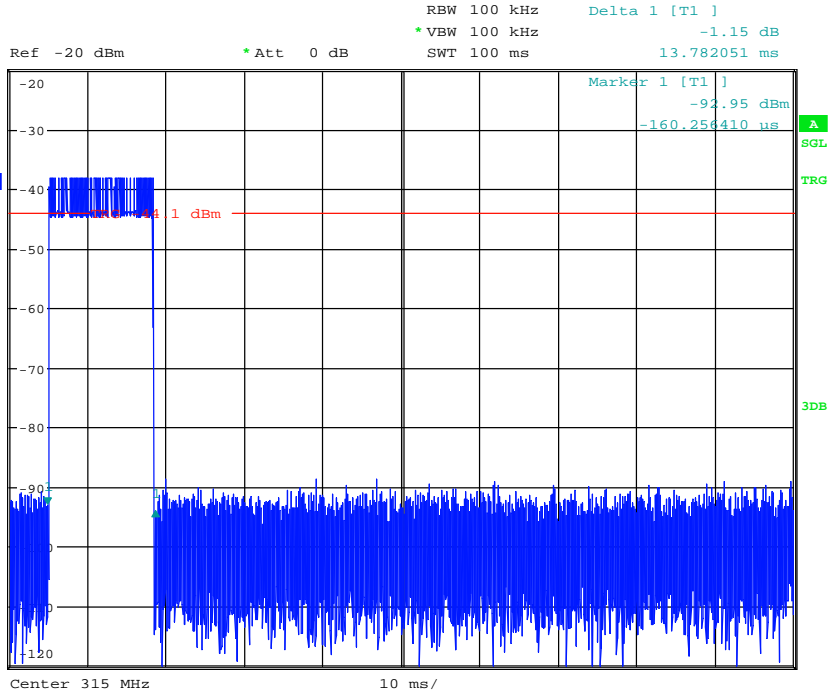


Date: 31.MAR.2022 21:11:33



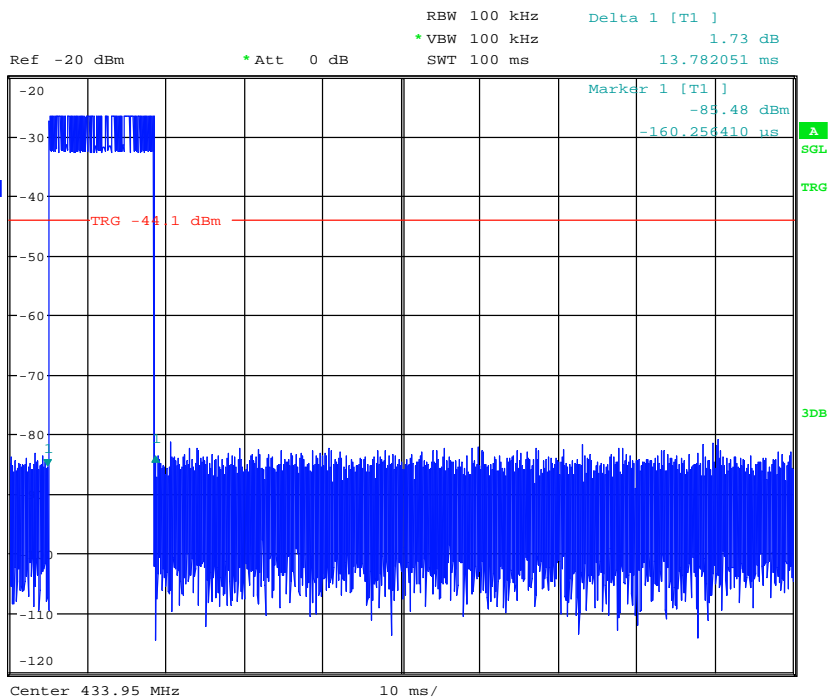
# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22203-21716-C-1  
FCC ID: HQXRSI24  
Duty Cycle  
315MHz



Date: 31.MAR.2022 20:49:08

433.95MHz



Date: 31.MAR.2022 21:10:19



Radiated Emission Measurement

Operator: Allen

File :1

Data :#1

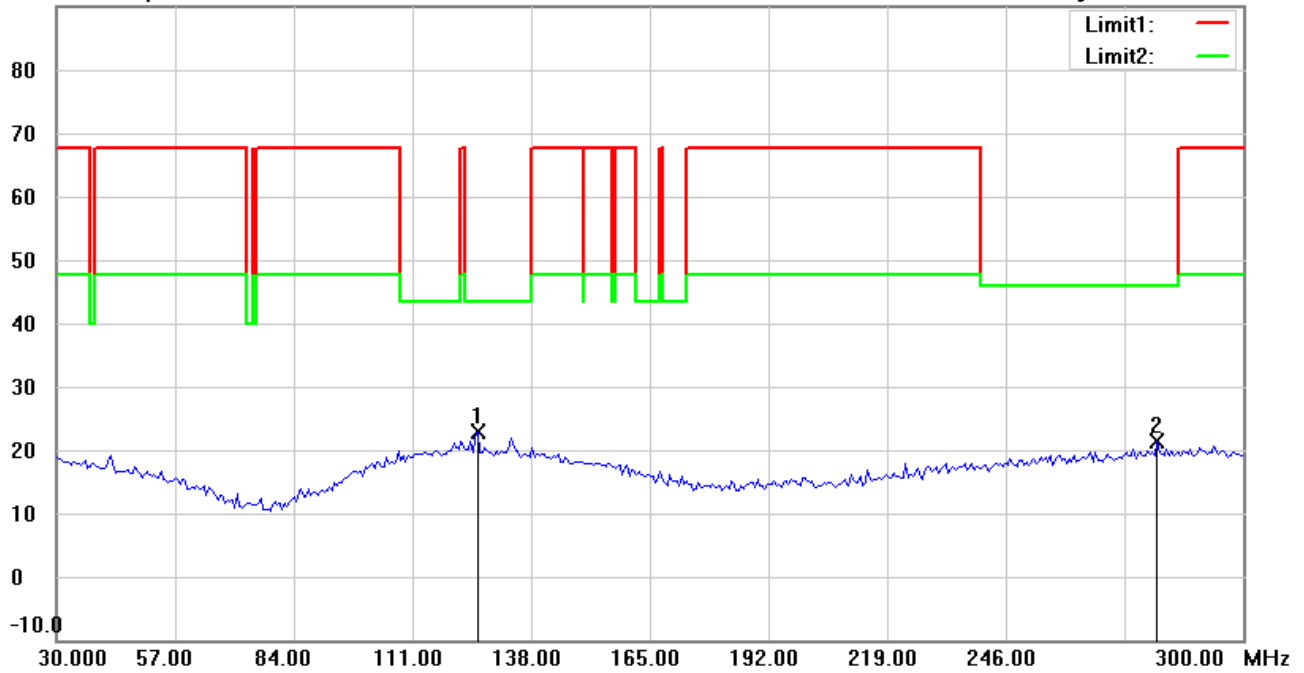
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 3:50:26 AM

Humidity:45.5 %



Site : Chamber

Condition : FCC 15.231(315MHz) 30-300(PK)<e>

Polarization: *Horizontal*

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 315MHz

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
*	125.7715	28.91	peak	-6.09	22.82	43.50	136	200	-20.68	
	280.5210	27.41	peak	-5.96	21.45	46.00	112	175	-24.55	



Radiated Emission Measurement

Operator: Allen

File :1

Data :#2

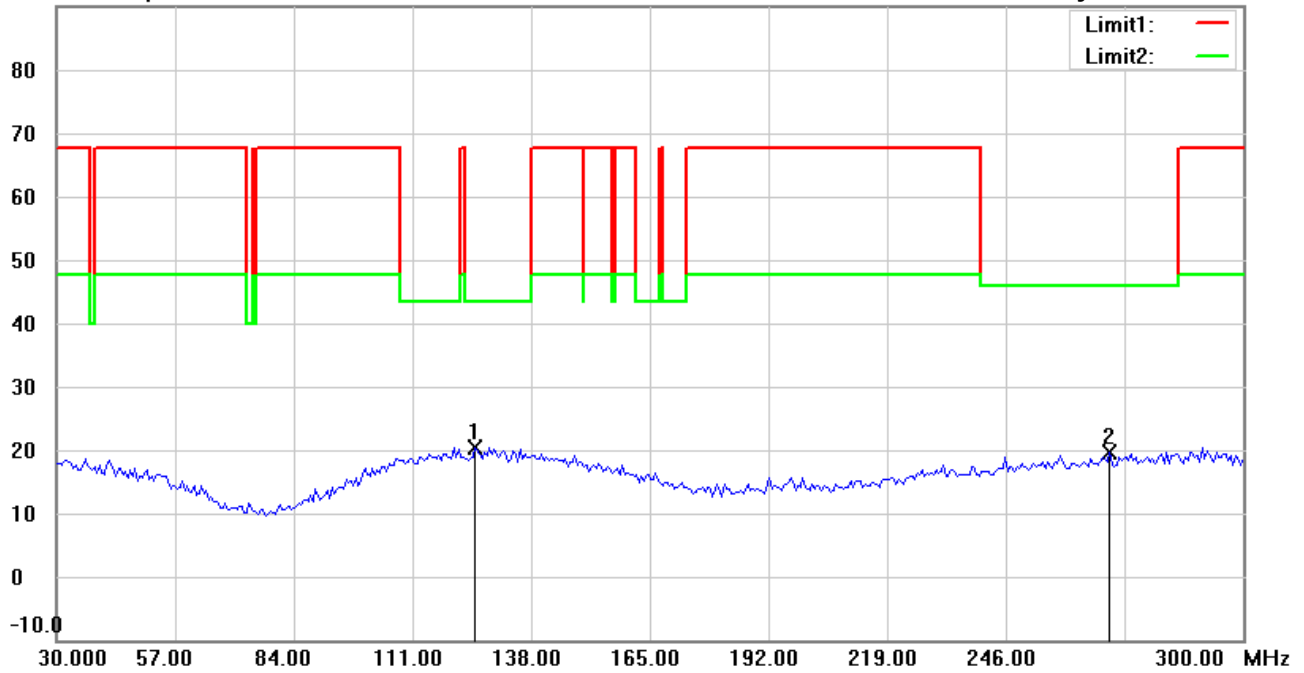
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 3:52:23 AM

Humidity:45.5 %



Site : Chamber

Condition : FCC 15.231(315MHz) 30-300(PK)<e>

Polarization: *Vertical*

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 315MHz

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
*	125.2305	26.60	peak	-6.10	20.50	43.50	100	59	-23.00	
	269.6994	26.05	peak	-6.33	19.72	46.00	141	230	-26.28	



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Radiated Emission Measurement

Operator: Allen

File :2

Data :#1

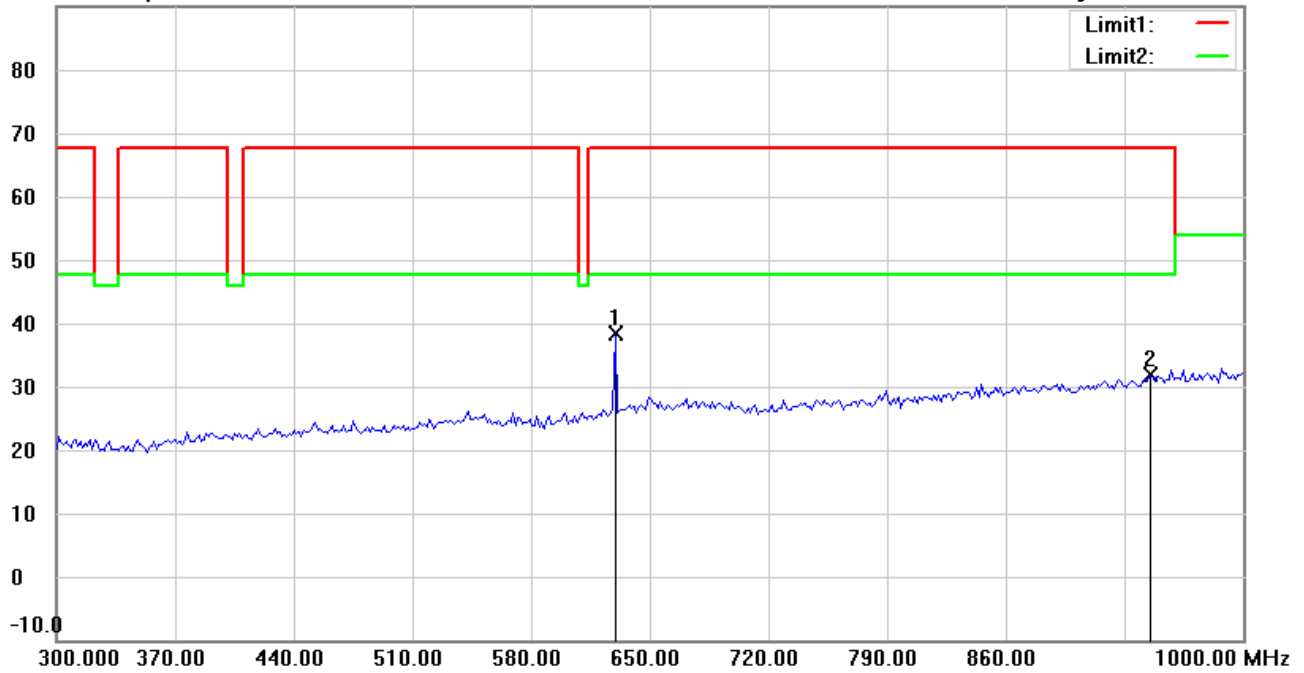
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 3:56:37 AM

Humidity:45.5 %



Site : Chamber

Condition : FCC 15.231(315MHz) 300-1000(PK)<e>

Polarization: *Horizontal*

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 315MHz

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
*	629.6593	38.09	peak	0.17	38.26	67.66	120	64	-29.40	
	945.2906	26.27	peak	5.71	31.98	67.66	100	245	-35.68	

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



Radiated Emission Measurement

Operator: Allen

File :2

Data :#2

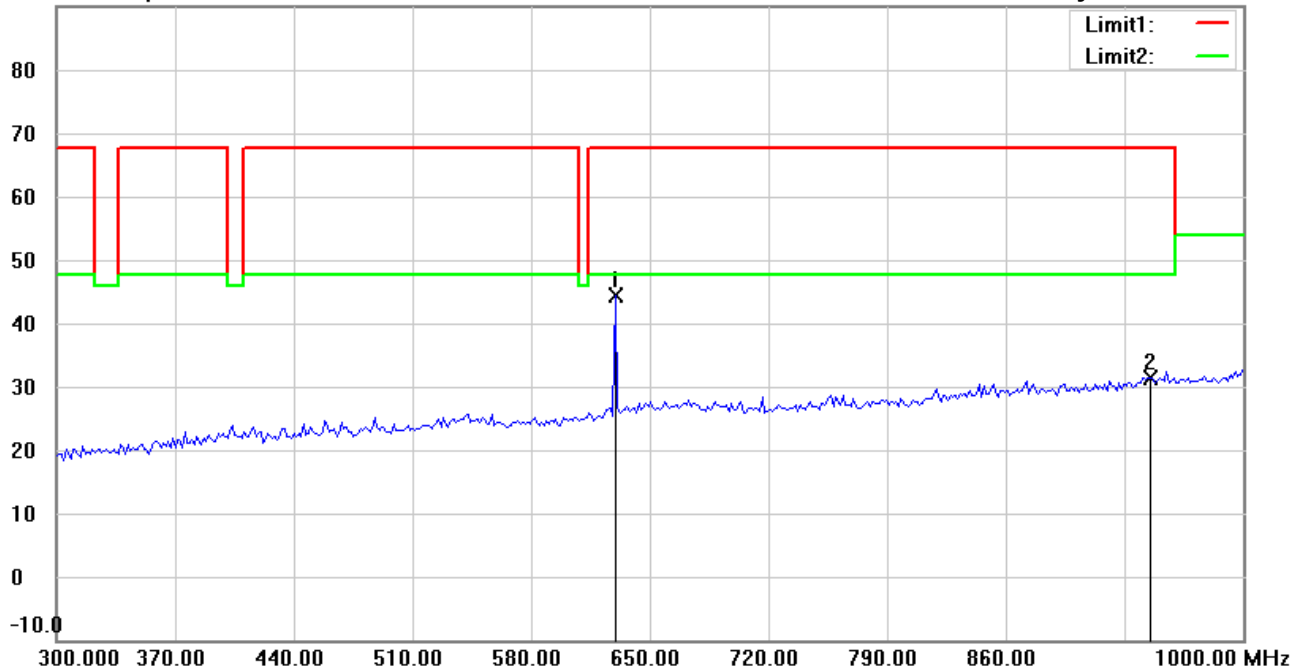
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 3:59:26 AM

Humidity:45.5 %



Site : Chamber

Condition : FCC 15.231(315MHz) 300-1000(PK)<e>

Polarization: **Vertical**

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 315MHz

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
*	629.6593	44.20	peak	0.17	44.37	67.66	134	300	-23.29	
	945.2906	25.56	peak	5.71	31.27	67.66	115	175	-36.39	





Radiated Emission Measurement

Operator: Allen

File :3

Data :#1

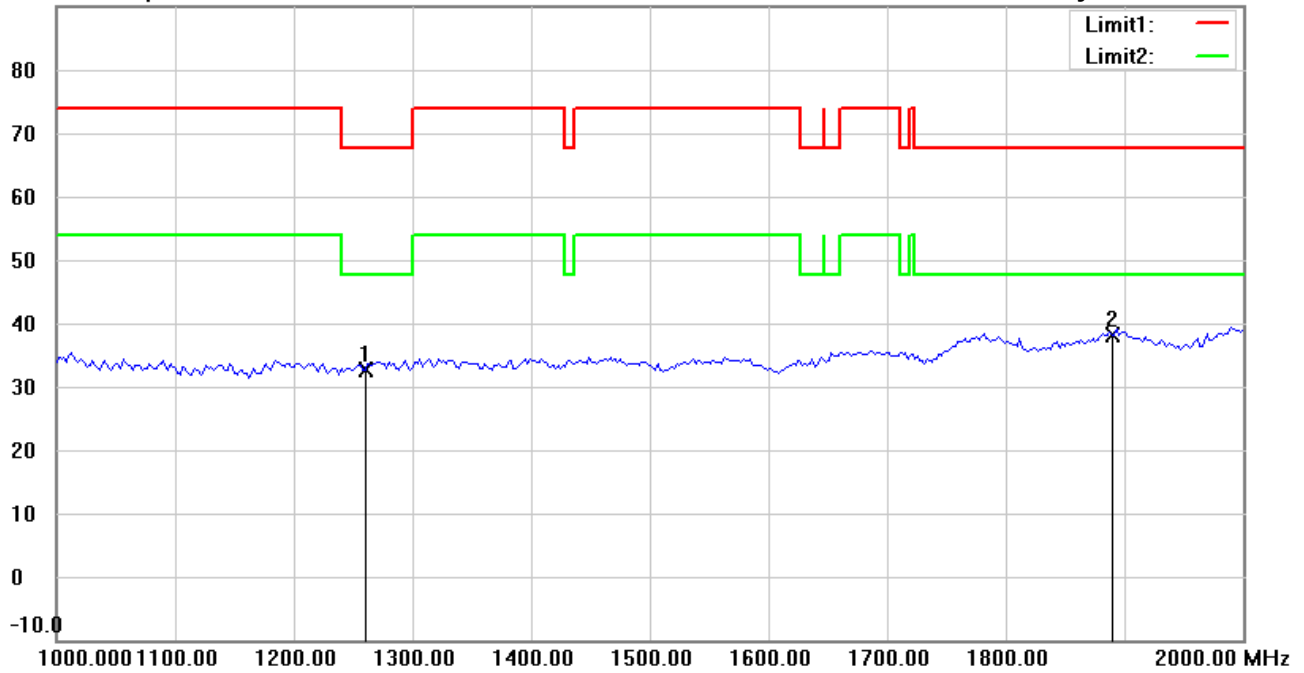
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 4:09:45 AM

Humidity:45.5 %



Site : Chamber

Condition : FCC 15.231(315MHz) 1000-2000(PK)<e>

Polarization: *Horizontal*

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 315MHz

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
	1259.840	39.16	peak	-6.43	32.73	67.66	150	312	-34.93	
*	1889.760	40.93	peak	-2.75	38.18	67.66	150	175	-29.48	



Radiated Emission Measurement

Operator: Allen

File :3

Data :#3

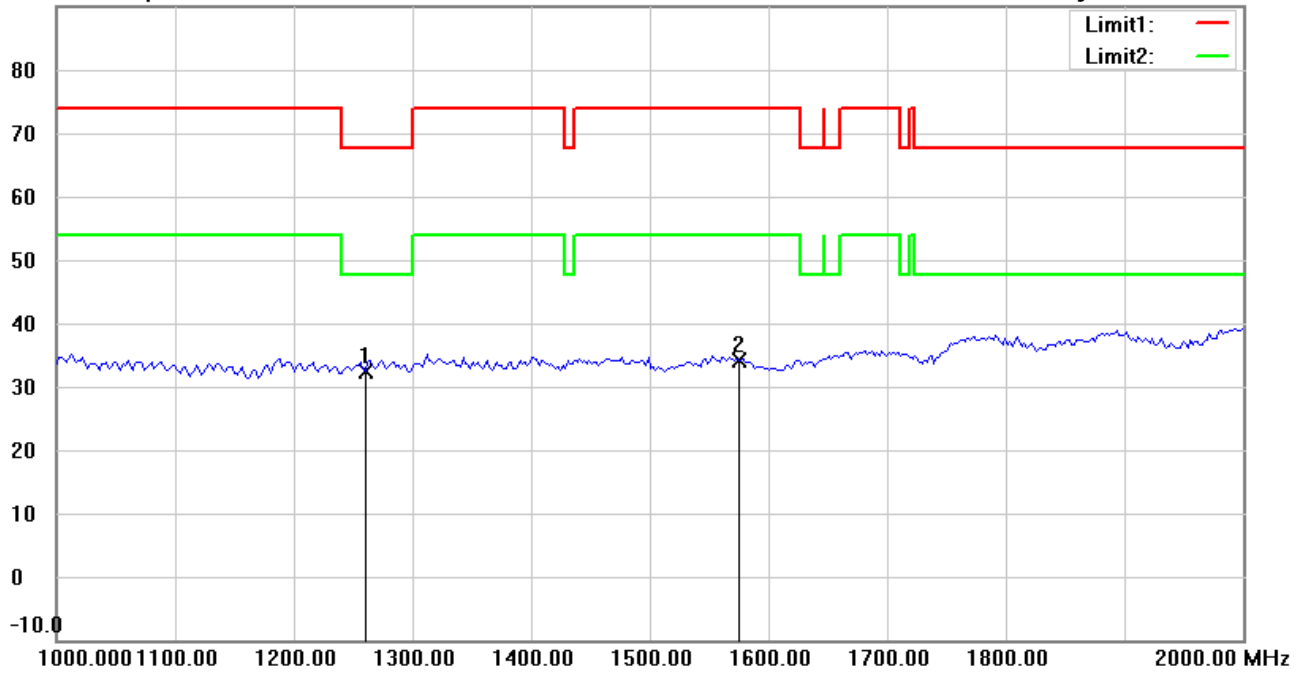
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 4:13:15 AM

Humidity:45.5 %



Site : Chamber

Condition : FCC 15.231(315MHz) 1000-2000(PK)<e>

Polarization: **Vertical**

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 315MHz

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
*	1259.840	38.85	peak	-6.43	32.42	67.66	150	190	-35.24	
	1574.826	40.60	peak	-6.55	34.05	74.00	150	245	-39.95	



Radiated Emission Measurement

Operator: Allen

File :3

Data :#2

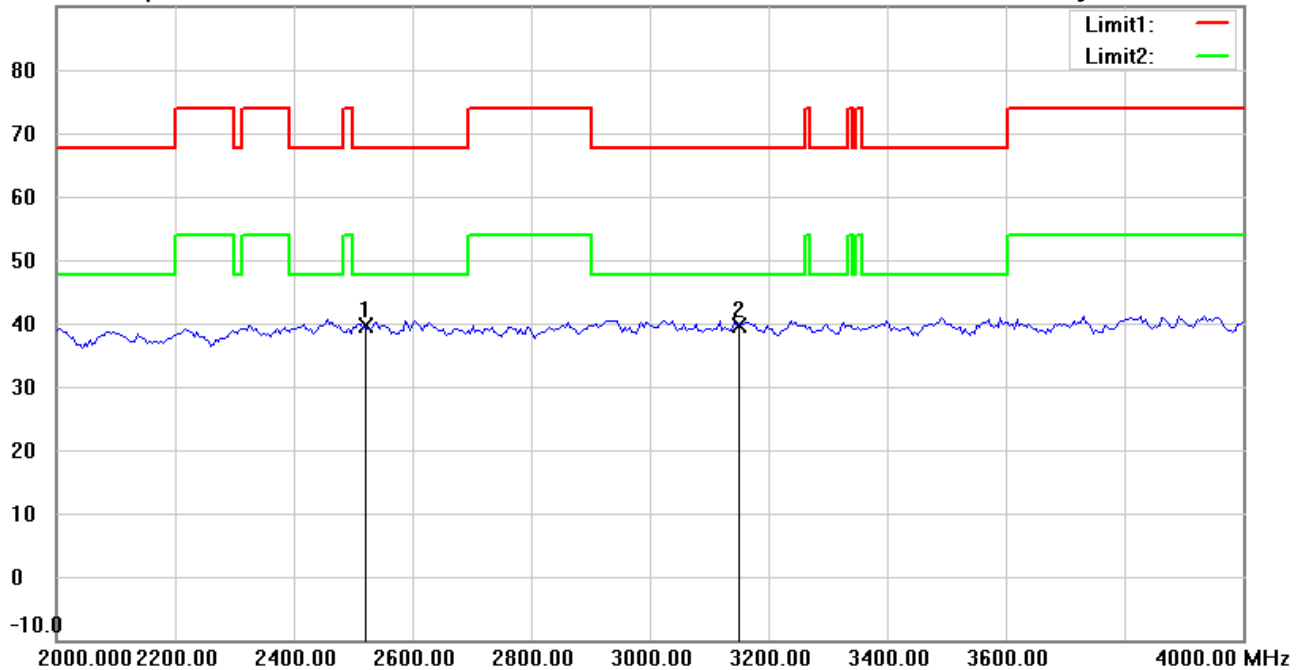
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 4:11:11 AM

Humidity:45.5 %



Site : Chamber

Condition : FCC 15.231(315MHz) 2000-4000(PK)<e>

Polarization: *Horizontal*

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 315MHz

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
*	2519.680	40.08	peak	-0.35	39.73	67.66	150	73	-27.93	
	3149.600	39.59	peak	0.10	39.69	67.66	150	160	-27.97	



Radiated Emission Measurement

Operator: Allen

File :3

Data :#4

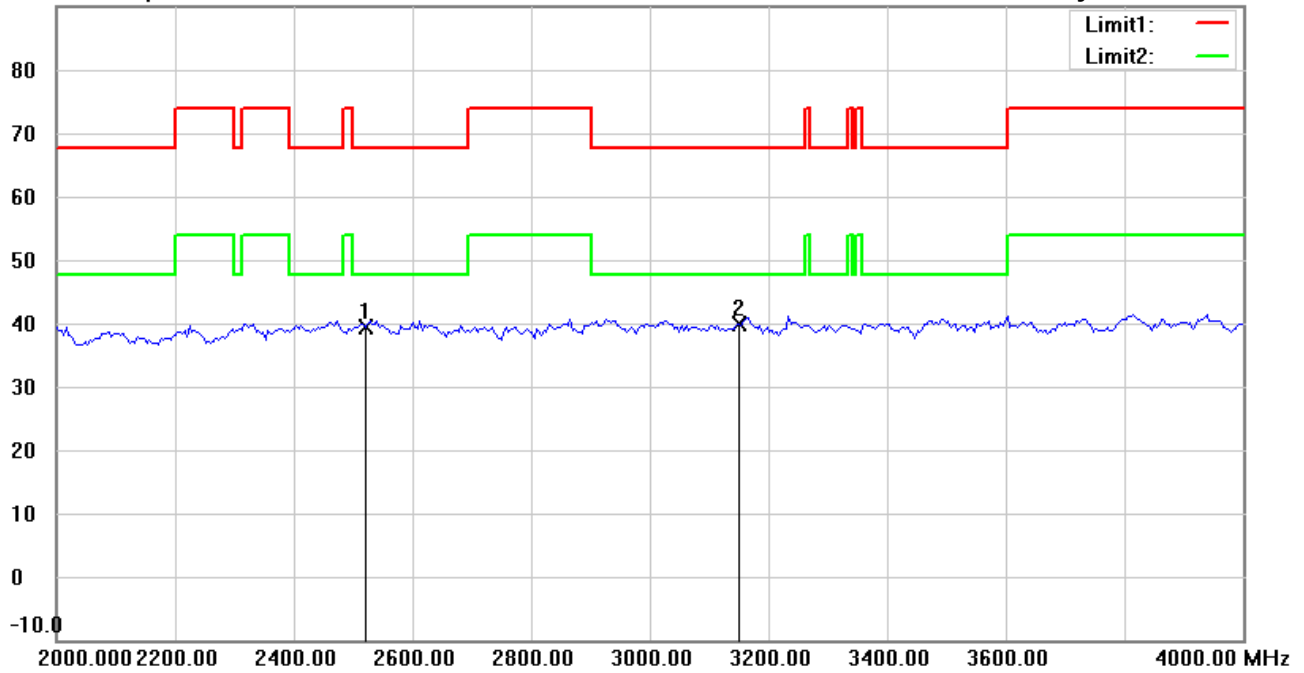
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 4:16:40 AM

Humidity:45.5 %



Site : Chamber

Condition : FCC 15.231(315MHz) 2000-4000(PK)<e>

Polarization: *Vertical*

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 315MHz

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
	2519.680	39.78	peak	-0.35	39.43	67.66	150	0	-28.23	
*	3149.614	39.90	peak	0.10	40.00	67.66	150	304	-27.66	



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Radiated Emission Measurement

Operator: Allen

File :1

Data :#1

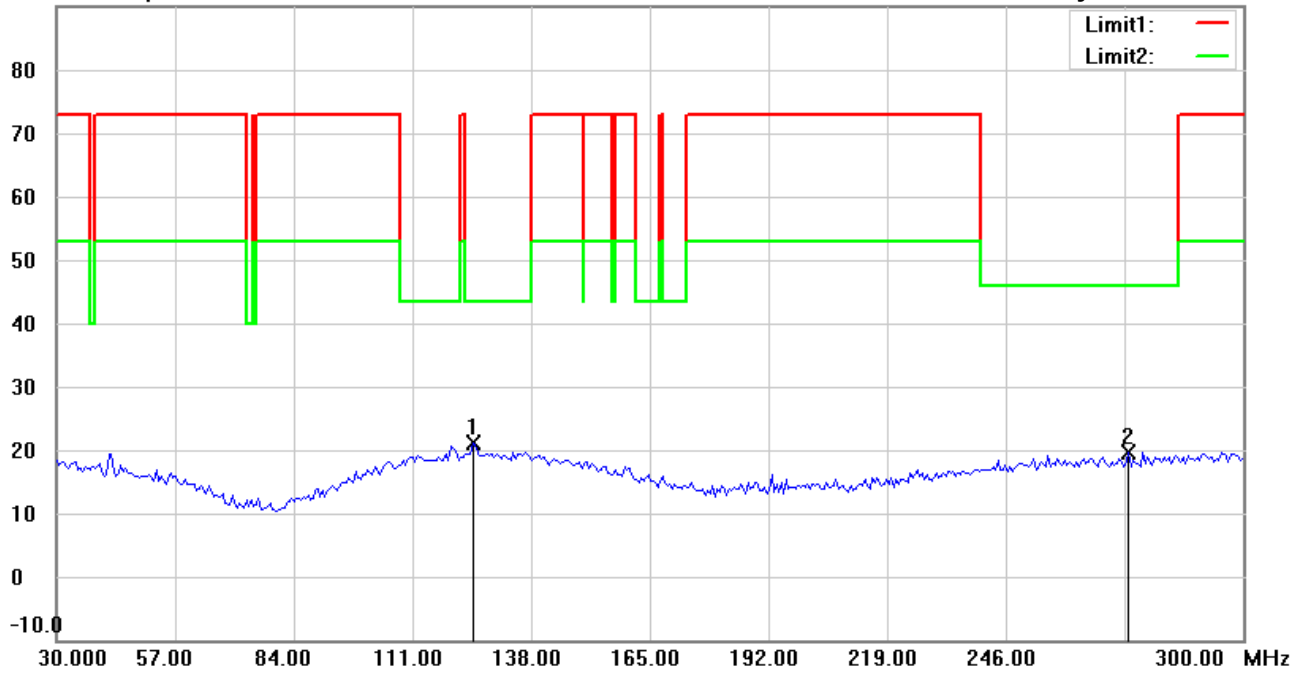
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 1:59:53 AM

Humidity:45.5 %



Site : Chamber

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

Polarization: *Horizontal*

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.95MHz

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
*	124.6894	27.26	peak	-6.12	21.14	43.50	135	100	-22.36	
	274.0281	25.89	peak	-6.18	19.71	46.00	100	275	-26.29	



Radiated Emission Measurement

Operator: Allen

File :1

Data :#2

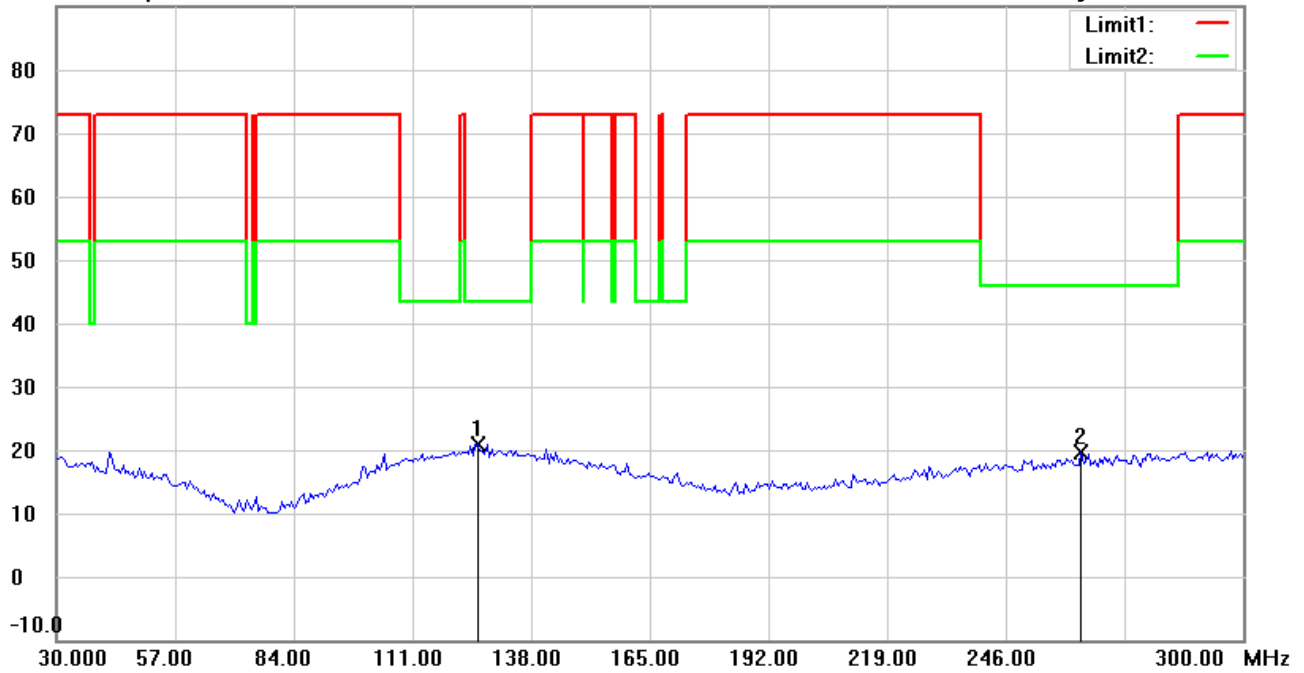
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 2:02:17 AM

Humidity:45.5 %



Site : Chamber

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

Polarization: **Vertical**

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.95MHz

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
*	125.7715	27.01	peak	-6.09	20.92	43.50	110	300	-22.58	
	263.2064	26.26	peak	-6.55	19.71	46.00	145	165	-26.29	



Radiated Emission Measurement

Operator: Allen

File :2

Data :#1

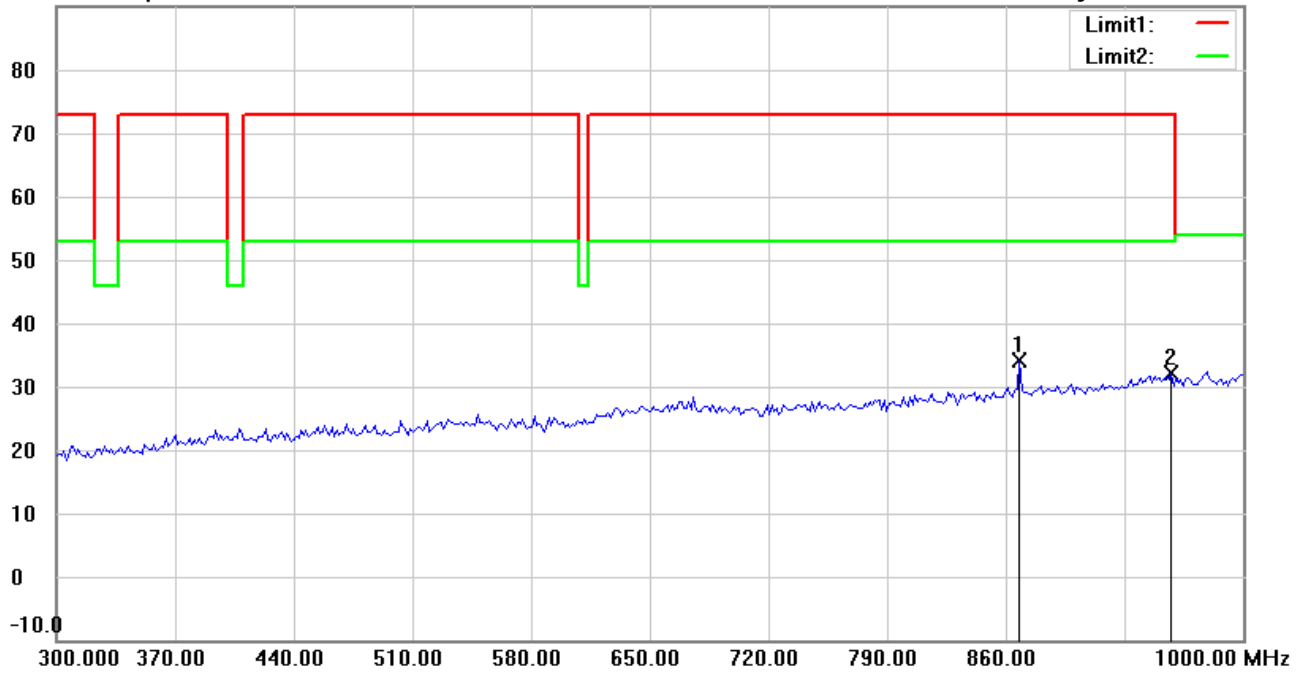
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 2:04:47 AM

Humidity:45.5 %



Site : Chamber

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

Polarization: *Horizontal*

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.95MHz

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
*	868.1363	30.25	peak	3.99	34.24	72.80	120	80	-38.56	
	957.9158	26.12	peak	6.00	32.12	72.80	100	216	-40.68	



Radiated Emission Measurement

Operator: Allen

File :2

Data :#2

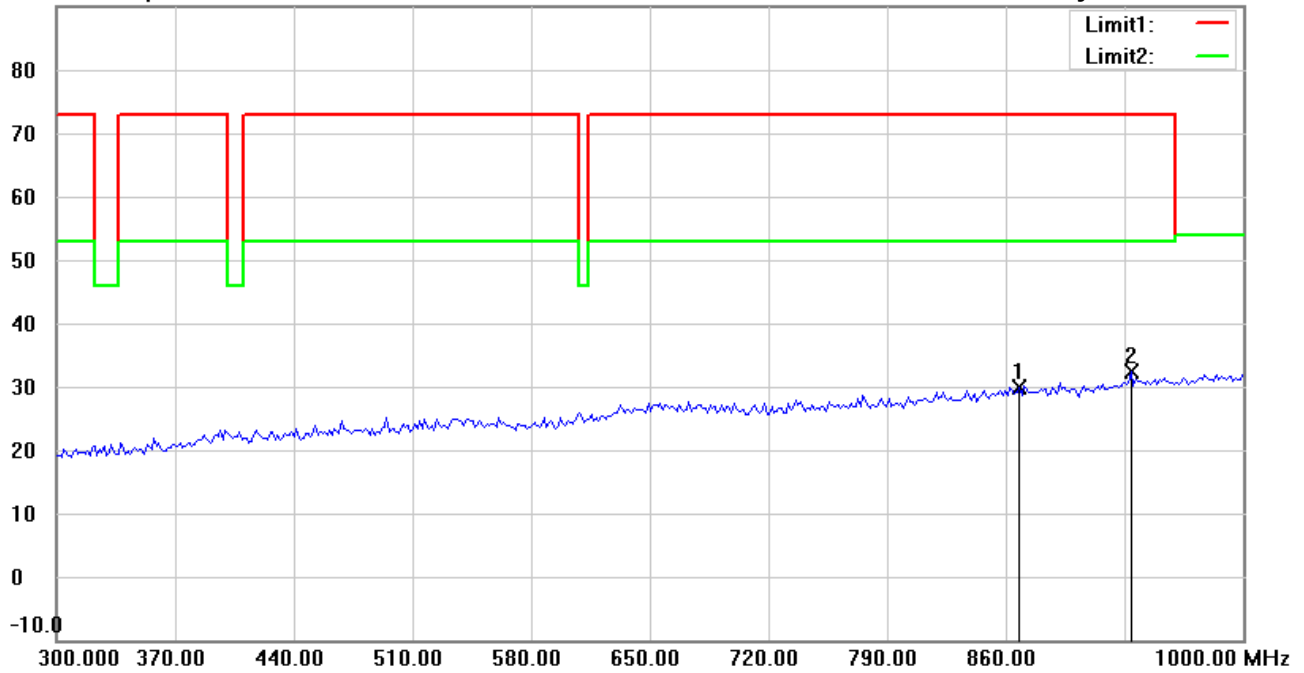
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 2:07:11 AM

Humidity:45.5 %



Site : Chamber

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

Polarization: **Vertical**

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.95MHz

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
	867.9300	25.77	peak	3.99	29.76	72.80	124	170	-43.04	
*	934.0681	26.89	peak	5.42	32.31	72.80	100	305	-40.49	





Radiated Emission Measurement

Operator: Allen

File :3

Data :#1

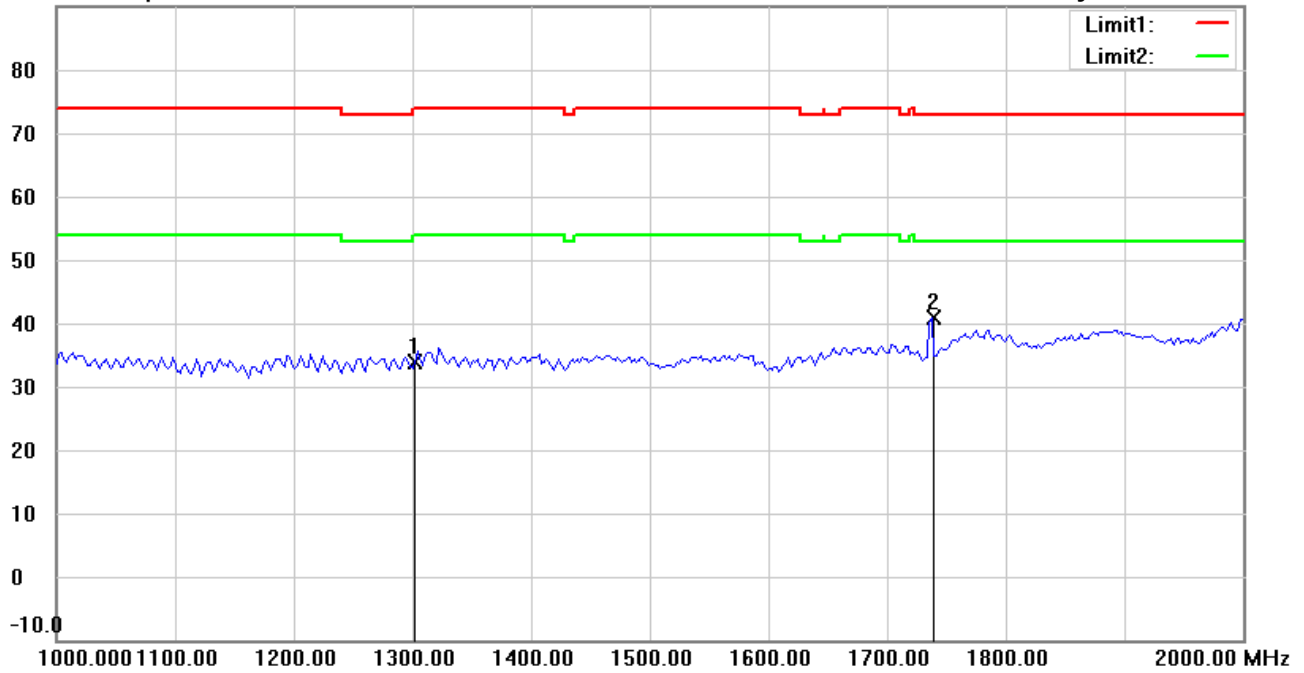
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 2:16:37 AM

Humidity:45.5 %



Site : Chamber

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

Polarization: *Horizontal*

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.95MHz

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
	1301.895	40.02	peak	-6.04	33.98	74.00	150	310	-40.02	
*	1737.475	45.25	peak	-4.41	40.84	72.80	150	76	-31.96	



Radiated Emission Measurement

Operator: Allen

File :3

Data :#4

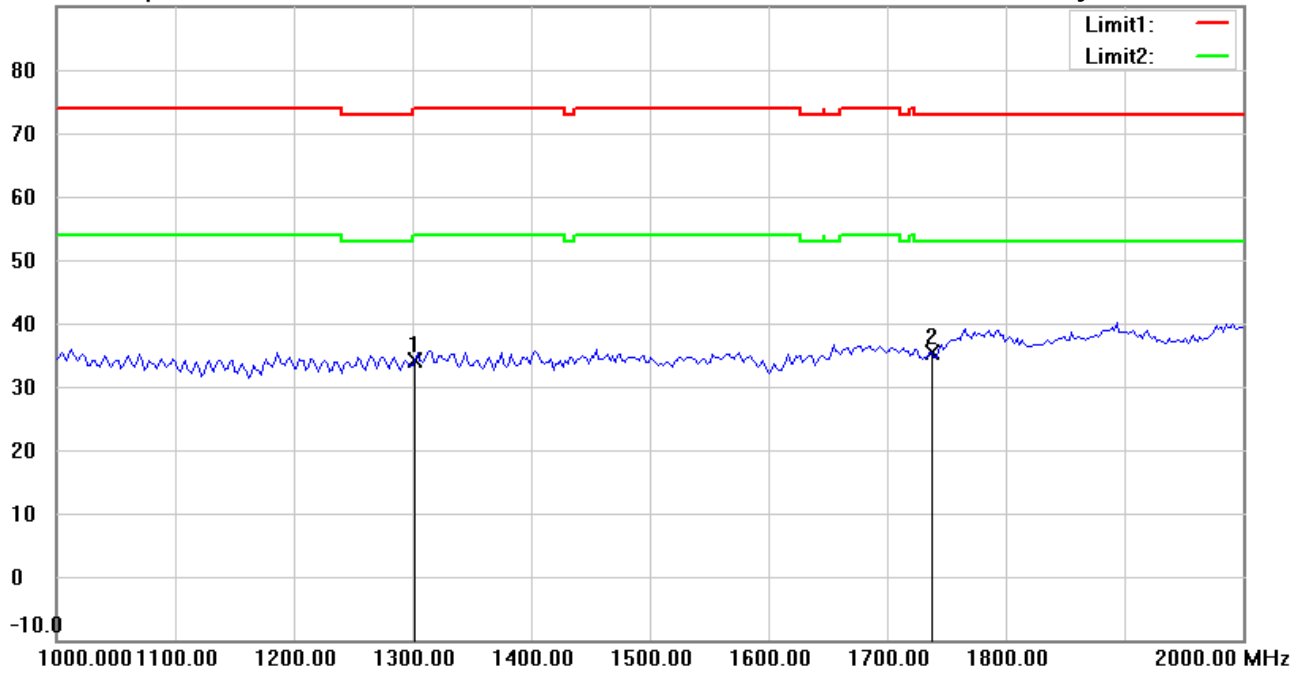
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 2:23:22 AM

Humidity:45.5 %



Site : Chamber

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

Polarization: *Vertical*

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.95MHz

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
	1301.895	40.12	peak	-6.04	34.08	74.00	150	186	-39.92	
*	1735.860	39.81	peak	-4.43	35.38	72.80	150	220	-37.42	



Radiated Emission Measurement

Operator: Allen

File :3

Data :#2

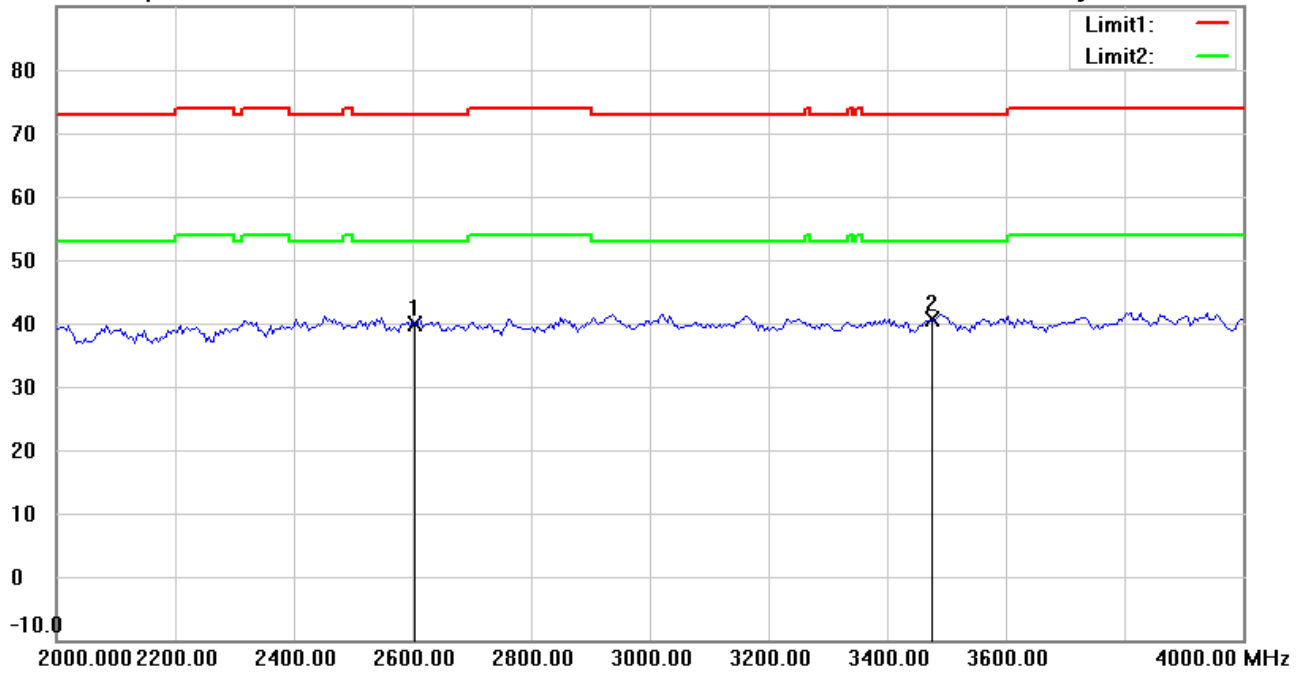
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 2:18:12 AM

Humidity:45.5 %



Site : Chamber

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

Polarization: *Horizontal*

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.95MHz

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
	2603.790	40.28	peak	-0.30	39.98	72.80	150	0	-32.82	
*	3471.720	40.09	peak	0.61	40.70	72.80	150	142	-32.10	



Radiated Emission Measurement

Operator: Allen

File :3

Data :#5

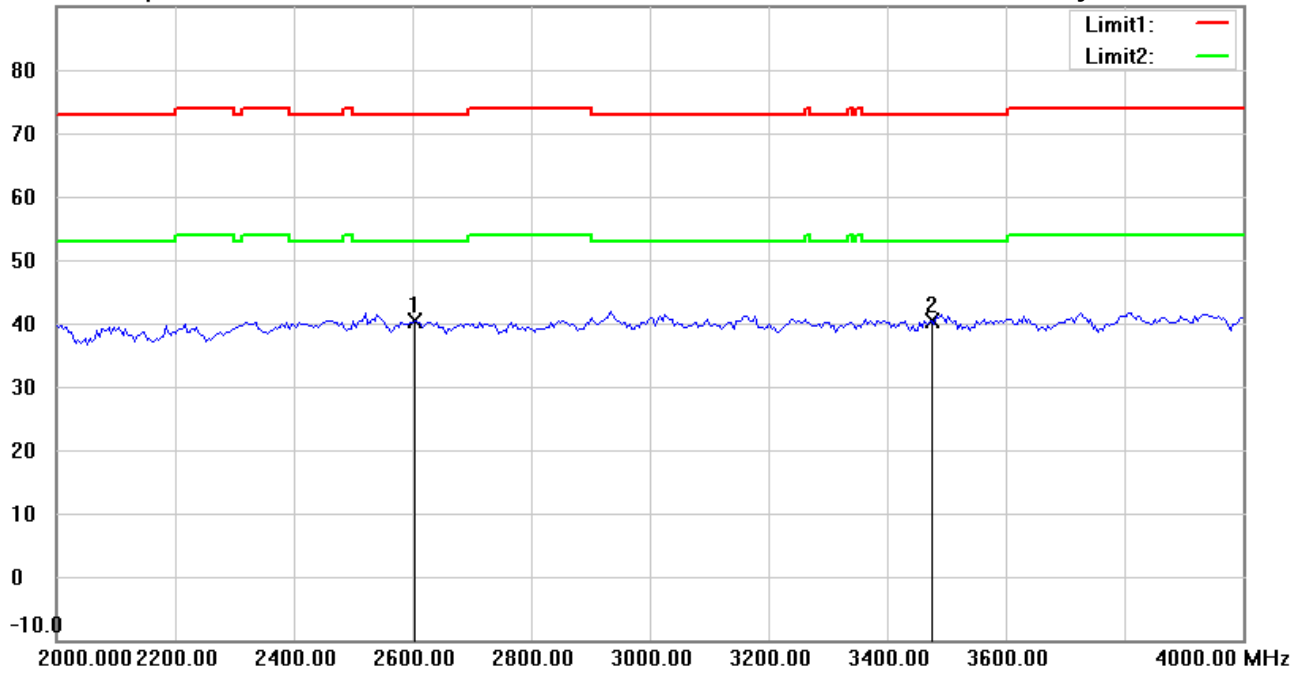
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 2:25:20 AM

Humidity:45.5 %



Site : Chamber

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

Polarization: **Vertical**

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.95MHz

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
	2603.790	40.60	peak	-0.30	40.30	72.80	150	237	-32.50	
*	3471.720	39.82	peak	0.61	40.43	72.80	150	60	-32.37	



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Radiated Emission Measurement

Operator: Allen

File :3

Data :#3

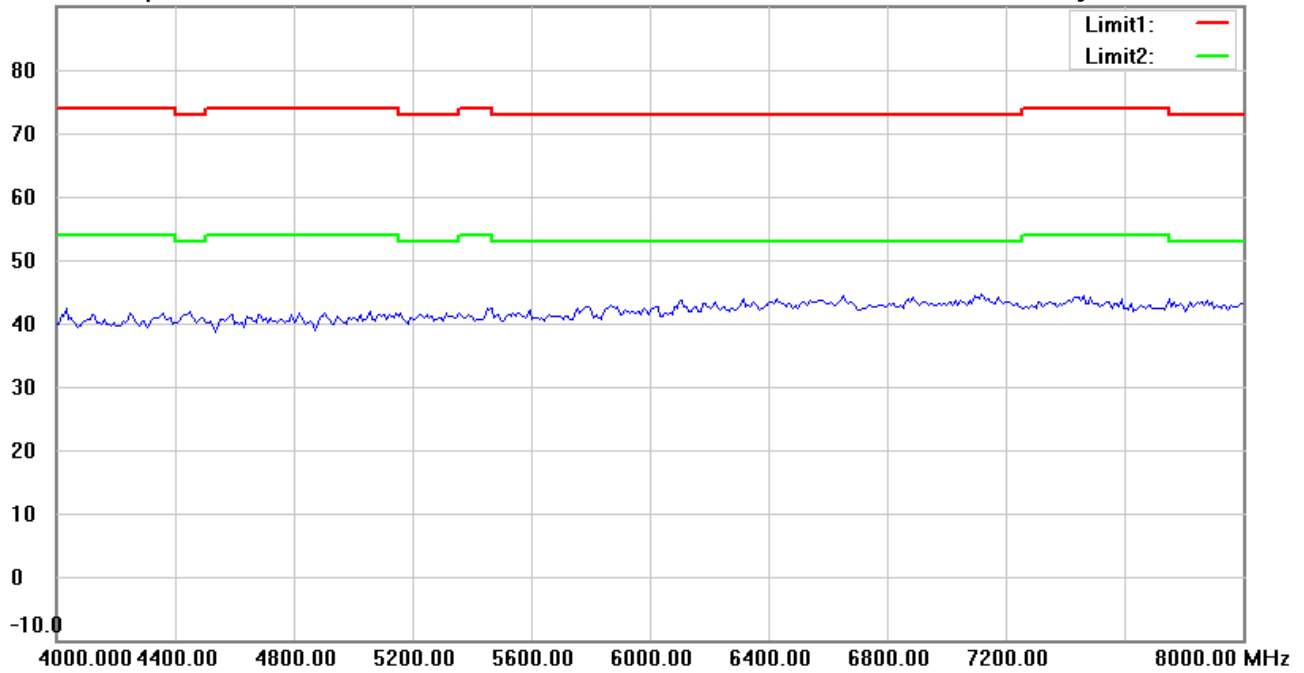
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 2:21:48 AM

Humidity:45.5 %



Site : Chamber

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

Polarization: *Horizontal*

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.95MHz

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



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 Fax:+886-2-6606-8879

Radiated Emission Measurement

Operator: Allen

File :3

Data :#6

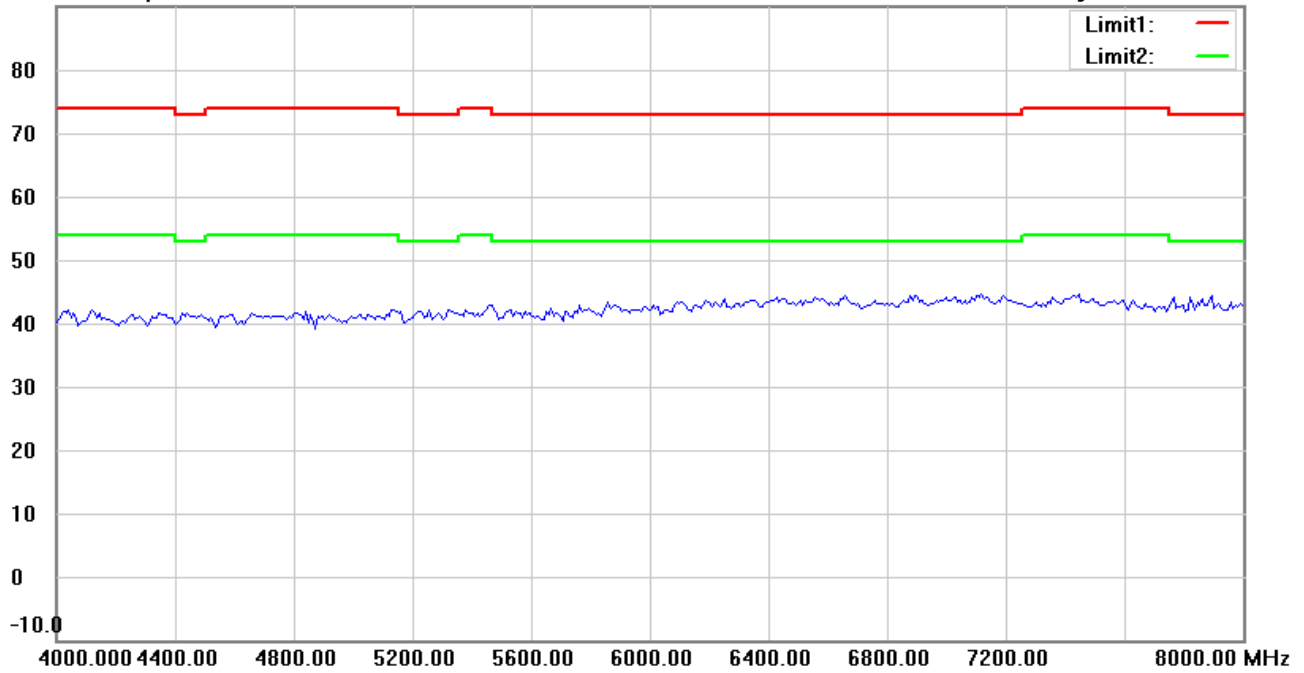
Date: 4/12/2022

Temperature:26.6 °C

90.0 dBuV/m

Time: 2:27:26 AM

Humidity:45.5 %



Site : Chamber

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

Polarization: *Vertical*

EUT : W6M22203-21716

Power : 3 Vd.c.

M/N:

Distance: 3m

Test Mode : TX 433.95MHz

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