

47 CFR PART 15 SUBPART C TEST REPORT
for
Tire-Pressure Monitoring System
Model No.: MDMAXTPMS 2.0
FCC ID: 2ANR7-T56011

of

Applicant: ATEQ INSTRUMENTS (ASIA)PTE LTD.
TAIWAN BRANCH (SINGAPORE)
Address: 3, LANE223, SAN JIA DONG STREET, 40642, TAICHUNG,
TAIWAN

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.: W6M22203-21701-C-1

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



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Worldwide Testing Services(Taiwan) Co., Ltd.

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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 25, 2022

Kent Lin

Date

WTS-Lab.

Name

Signature

Technical responsibility for area of testing:

April 25, 2022

Kevin Wang

Date

WTS

Name

Signature



Worldwide Testing Services(Taiwan) Co., Ltd.

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1.2 Testing laboratory

1.2.1 Location

10m OATS

No.5-1, Lishui, Shuang Sing Village, Wanli Dist.,
New Taipei City 207, Taiwan (R.O.C.)

3 meter semi-anechoic chamber

No.35, Aly. 21, Ln. 228, Ankang Rd., Neihu Dist.,
Taipei City 114, Taiwan (R.O.C.)
Tel: 886-2-6613-0228

Worldwide Testing Services (Taiwan) Co., Ltd.

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

1.2.2 Details of accreditation status

Accredited testing laboratory

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

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

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

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

1.3 Details of approval holder

Name:	ATEQ INSTRUMENTS (ASIA)PTE LTD. TAIWAN BRANCH (SINGAPORE)
Street:	3, LANE223, SAN JIA DONG STREET,
Town:	40642, TAICHUNG,
Country:	TAIWAN

1.4 Application details

Date of receipt of test item: March 29, 2022

Date of test: From March 30, 2022 to April 21, 2022



Registration number: W6M22203-21701-C-1
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1.5 General information of Test item

Type of test item: Tire-Pressure Monitoring System

Model number: MDMAXTPMS 2.0

Multi-listing model number: MDMAX2.0 / MAXTPMS2.0 / VT51

Brand name: ATEQ , MATCO

Technical data:

Transmitting frequency: 125kHz

Operation modes: Simplex

Modulation type: ASK

Antenna type: Wire Antenna

Power supply: Adaptor (I/P: 100-240V~50/60Hz, 0.3A;
O/P: 5V, 2.0A, 10.0W)
Battery: 3.7V, 3000mAh, 11.1Wh

Sample no.: #02

Manufacturer: (if different from Approval Holder)

Name: ./.

Street: ./.

Town: ./.

Country: ./.

Additional information: ./.

1.6 Test standards

Technical standard :
47 CFR PART 15 SUBPART C § 15.209 (2020-10)

Special statement

The report is prepared for Co-location Evaluation.



2 Technical test

2.1 Summary of test results

☒

1

2.2 Test environment

Extreme conditions parameters: test voltage : -- extreme
 min : -- V
 max : -- V

Test item Name	Measurement Uncertainty
Estimation Result of Uncertainty of Radiated Emission(3M) (Peak Output Power, Spurious Emissions radiated – Transmitter operating, Radiated Emissions from Receiver Section of Receiver Part)	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

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



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2.3 Test Equipment List

No.	Test equipment	Type	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2021/6/17	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-EICHLEITUNG RF STEP ATTENUATOR 139dB DPSP	334.6010.02	844581/024	R&S	Function Test	
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	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



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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
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-10M1G	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	2022/4/19	2023/4/18
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



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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
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 EMC	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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2.4 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 according to ANSI STANDARD C63.10-2013 6.3 employing a spectrum analyzer. For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 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 dBμV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB.

Example:

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

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

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

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

ANSI STANDARD C63.10-2013 B.2.7: Any measurements that utilize special test software shall be indicated and referenced in the test report. During testing, test software 'EZ EMC' was used for setting up different operation modes.



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3 Test results (enclosure)

Test case	Para. Number	Required	Test passed	Test failed
Spurious Emissions radiated – Transmitter operating (Co-location Evaluation)	15.109	☒	☒	☐

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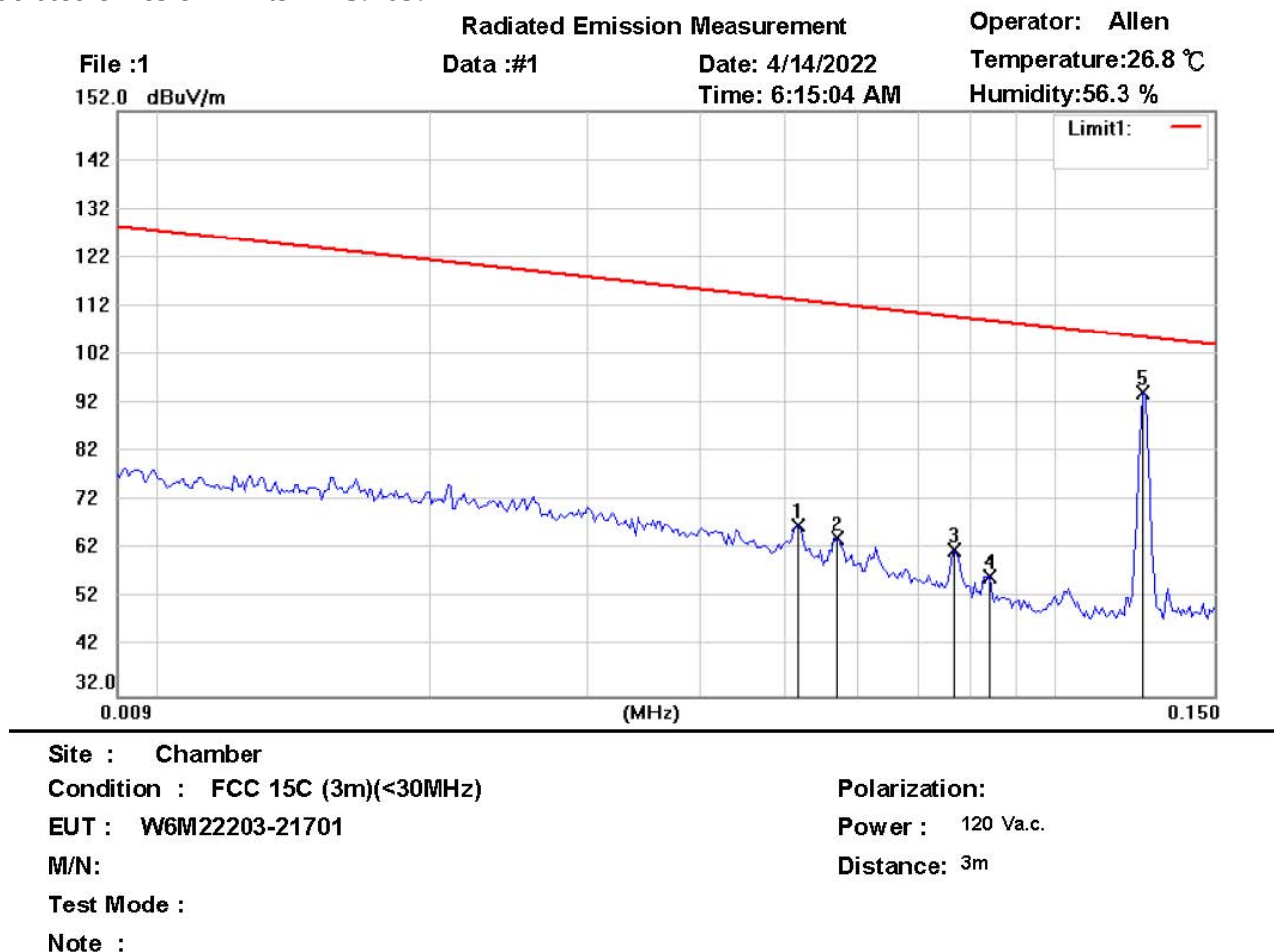


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3.1 Spurious Emissions radiated – Transmitter operating

FCC Rules: 15.209

The field strength of any emission appearing outside of the specific band shall not exceed the general radiated emission limits in 15.209.



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
	0.0517	-4.61	peak	71.50	66.89	113.33	100	75	-46.44	
	0.0570	-6.43	peak	70.78	64.35	112.48	100	210	-48.13	
	0.0771	-6.08	peak	68.04	61.96	109.86	100	335	-47.90	
	0.0844	-10.50	peak	67.04	56.54	109.07	100	142	-52.53	
*	0.1252	30.43	peak	63.80	94.23	105.65			-11.42	RF Power



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Radiated Emission Measurement

Operator: Allen

Data :#1

Date: 4/14/2022

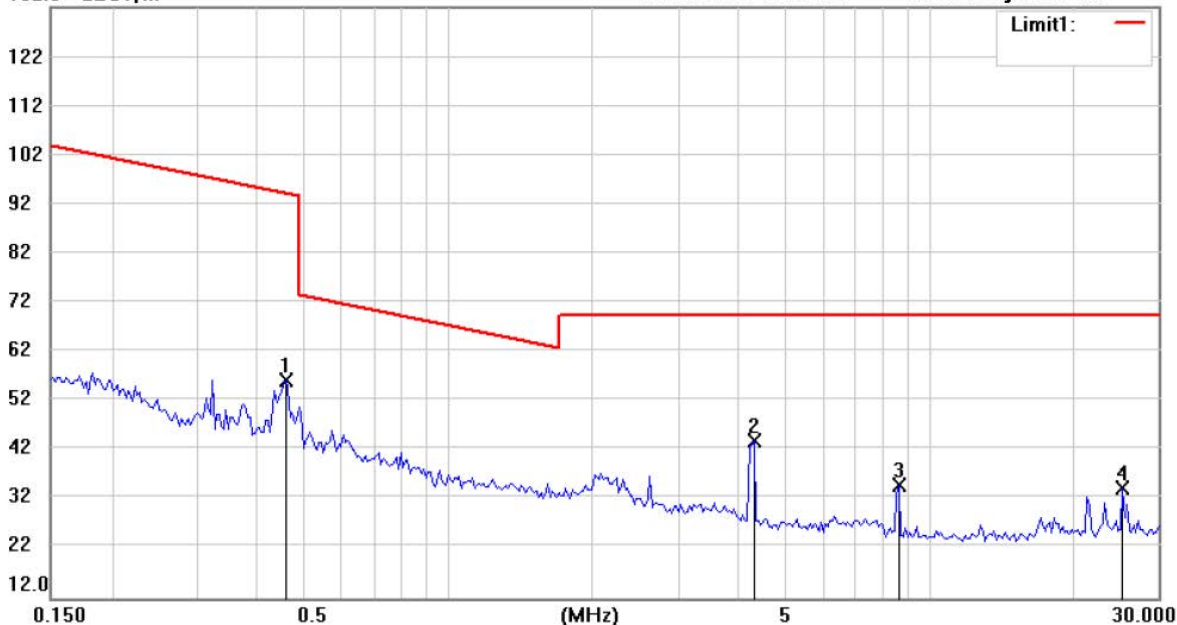
Temperature: 26.8 °C

Time: 6:17:56 AM

Humidity: 56.3 %

File :2

132.0 dBuV/m



Site : Chamber

Condition : FCC 15C (3m)(<30MHz)

EUT : W6M22203-21701

M/N:

Test Mode :

Note :

Polarization:

Power : 120 Va.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
	0.4623	3.48	peak	52.68	56.16	94.31	100	245	-38.15	
*	4.3438	7.87	peak	35.98	43.85	69.54	100	110	-25.69	
	8.6617	0.70	peak	34.32	35.02	69.54	100	92	-34.52	
	25.3128	1.52	peak	32.77	34.29	69.54	100	330	-35.25	



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Radiated Emission Measurement

Operator: Allen

File :3

Data :#1

Date: 4/14/2022

Temperature:26.8 °C

Time: 5:44:08 AM

Humidity:56.3 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

EUT : W6M22203-21701

M/N:

Test Mode :

Note :

Polarization: *Horizontal*

Power : 120 Va.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
	72.7655	34.27	peak	-14.65	19.62	40.00	110	137	-20.38	
	173.8477	35.43	peak	-10.80	24.63	43.50	120	79	-18.87	
	224.3888	34.94	peak	-8.90	26.04	46.00	143	197	-19.96	
	317.6954	32.29	peak	-5.14	27.15	46.00	100	340	-18.85	
	350.7412	33.75	peak	-4.62	29.13	46.00	115	65	-16.87	
*	653.9880	28.65	peak	1.36	30.01	46.00	108	210	-15.99	



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Radiated Emission Measurement

Operator: Allen

File :3

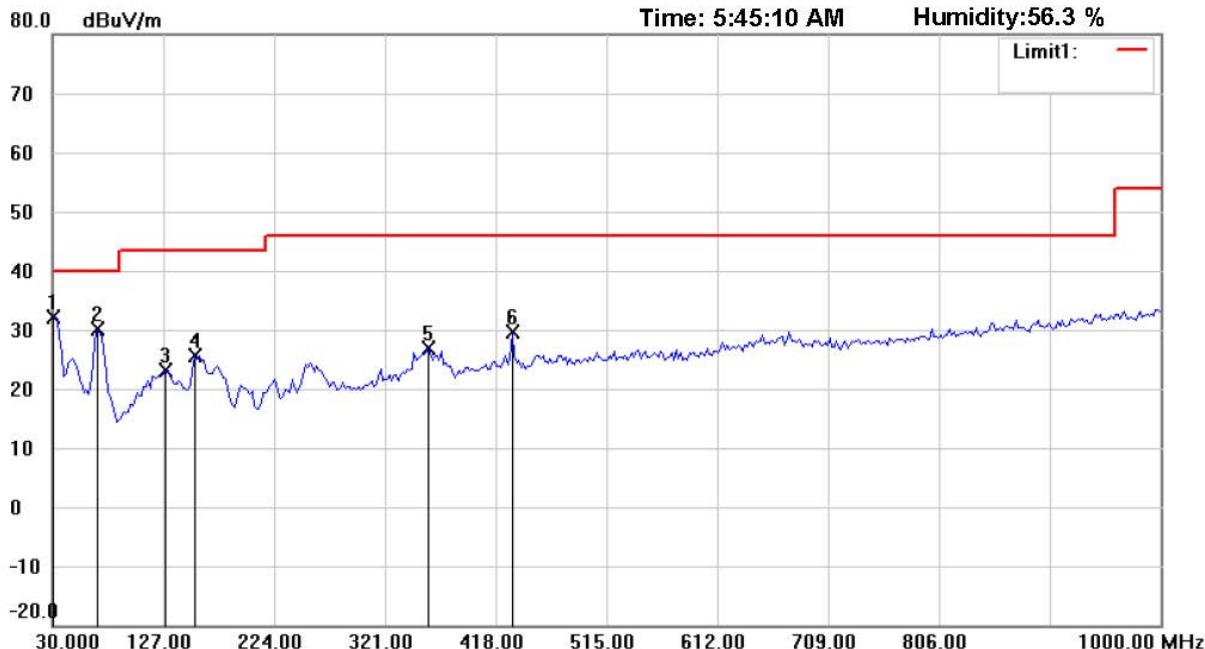
Data :#2

Date: 4/14/2022

Temperature:26.8 °C

Time: 5:45:10 AM

Humidity:56.3 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

EUT : W6M22203-21701

M/N:

Test Mode :

Note :

Polarization: **Vertical**

Power : 120 Va.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
*	30.0000	40.01	peak	-7.79	32.22	40.00	100	30	-7.78	
	68.8777	44.32	peak	-14.11	30.21	40.00	136	225	-9.79	
	129.1382	29.19	peak	-5.99	23.20	43.50	100	67	-20.30	
	154.4088	33.95	peak	-8.22	25.73	43.50	108	160	-17.77	
	358.5170	31.36	peak	-4.43	26.93	46.00	100	113	-19.07	
	432.3847	32.56	peak	-3.03	29.53	46.00	120	148	-16.47	



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Radiated Emission Measurement

Operator: Allen

File :4

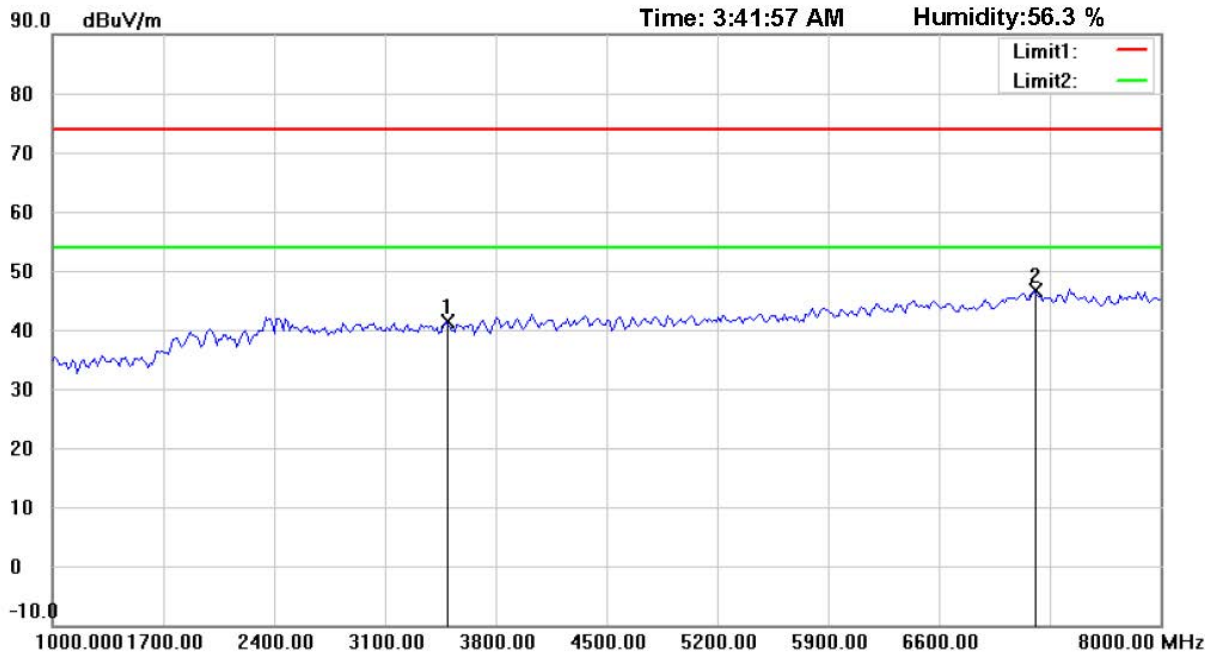
Data :#1

Date: 4/14/2022

Temperature:26.8 °C

Time: 3:41:57 AM

Humidity:56.3 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: *Horizontal*

EUT : W6M22203-21701

Power : 120 Va.c.

M/N:

Distance: 3m

Test Mode :

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
	3482.966	40.78	peak	0.64	41.42	74.00	150	72	-32.58	
*	7200.401	40.60	peak	6.05	46.65	74.00	150	280	-27.35	



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22203-21701-C-1
FCC ID: 2ANR7-T56011

Radiated Emission Measurement

Operator: Allen

File :4

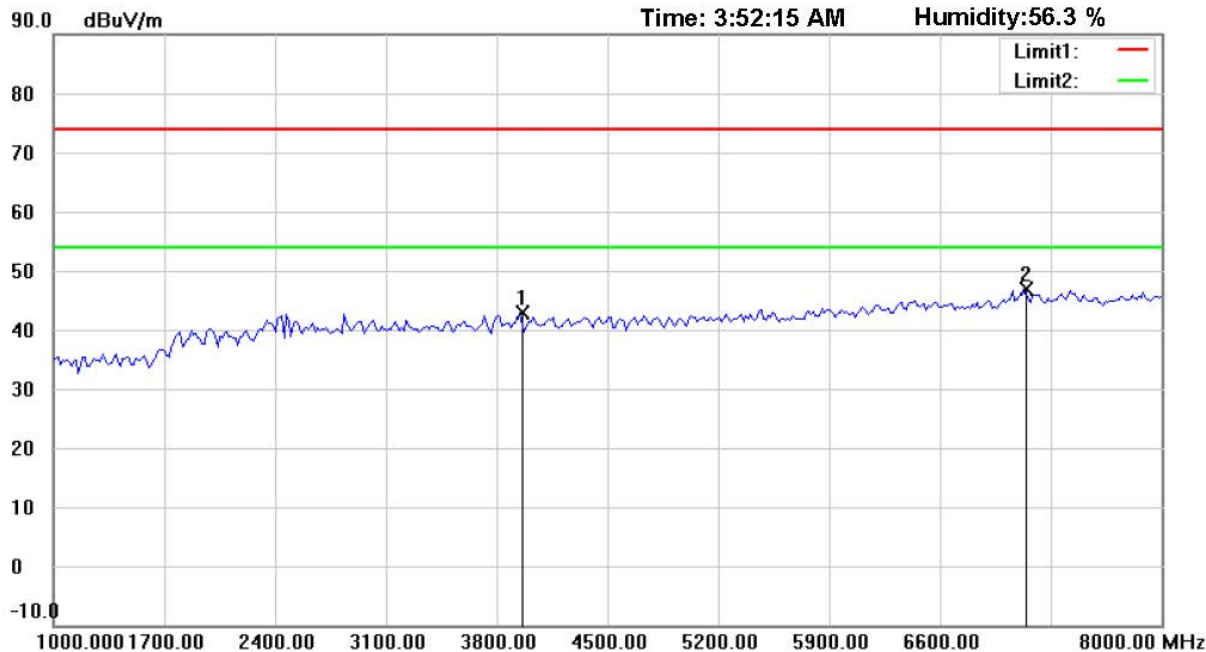
Data :#5

Date: 4/14/2022

Temperature:26.8 °C

Time: 3:52:15 AM

Humidity:56.3 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: **Vertical**

EUT : W6M22203-21701

Power : 120 Va.c.

M/N:

Distance: 3m

Test Mode :

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
	3945.892	41.30	peak	1.52	42.82	74.00	150	278	-31.18	
*	7130.261	40.67	peak	6.20	46.87	74.00	150	35	-27.13	



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22203-21701-C-1
FCC ID: 2ANR7-T56011

Radiated Emission Measurement

Operator: Allen

File :4

Data :#2

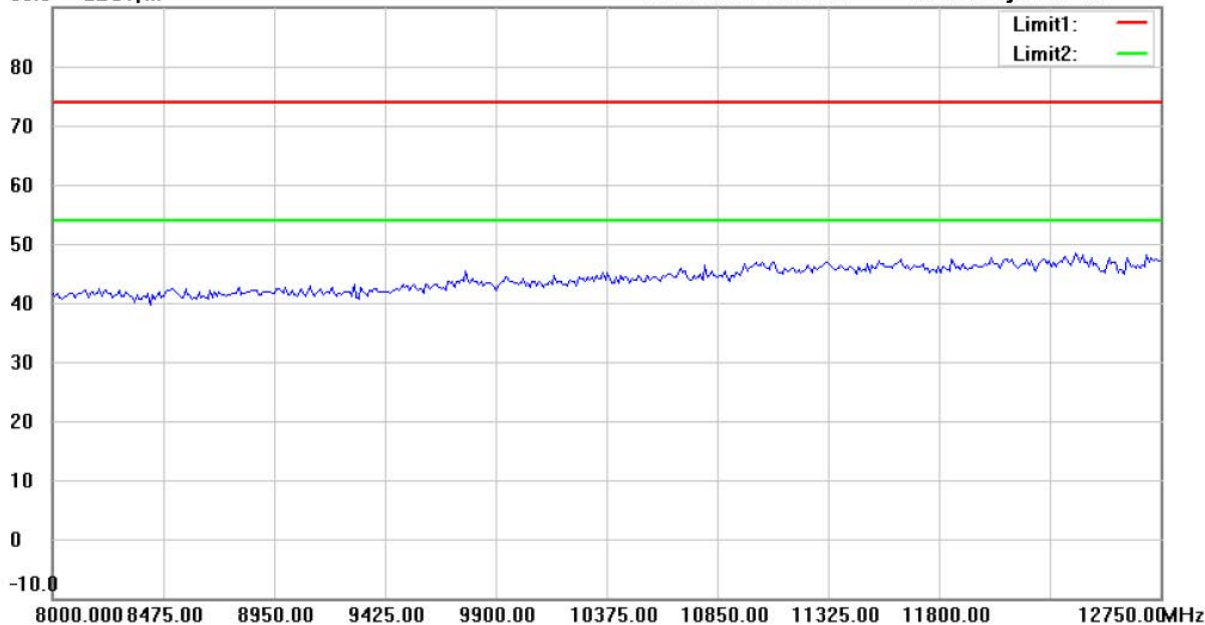
Date: 4/14/2022

Temperature:26.8 °C

Time: 3:47:12 AM

Humidity:56.3 %

90.0 dBuV/m



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: *Horizontal*

EUT : W6M22203-21701

Power : 120 Va.c.

M/N:

Distance: 3m

Test Mode :

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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Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22203-21701-C-1
FCC ID: 2ANR7-T56011

Radiated Emission Measurement

Operator: Allen

File :4

Data :#6

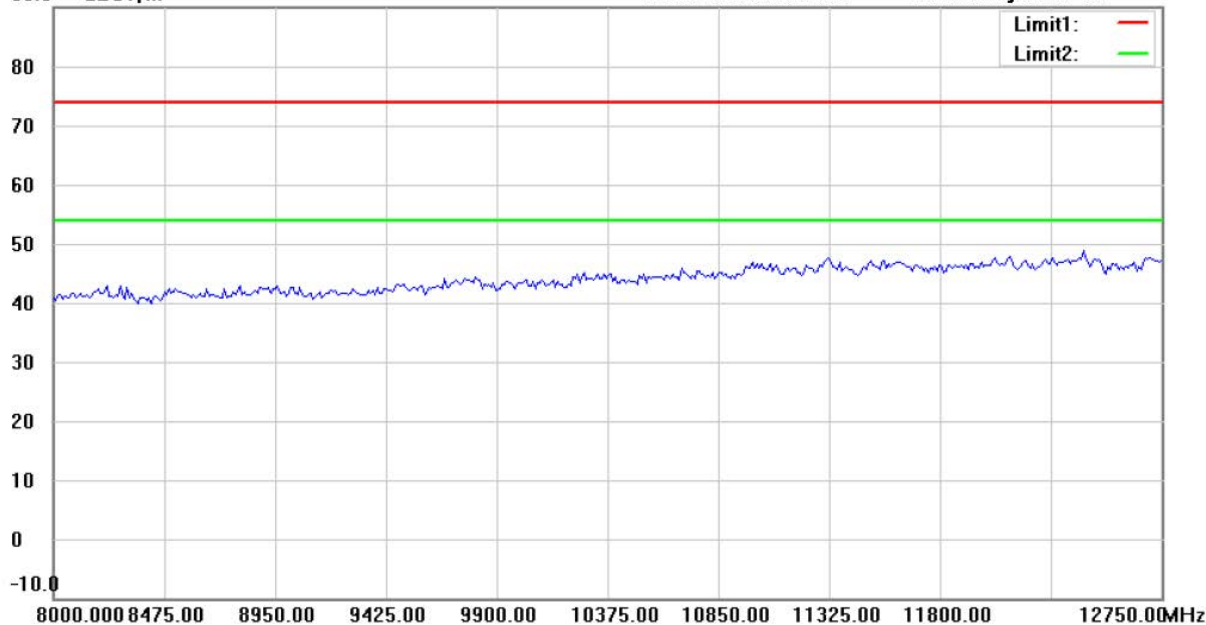
Date: 4/14/2022

Temperature:26.8 °C

Time: 3:53:39 AM

Humidity:56.3 %

90.0 dBuV/m



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: **Vertical**

EUT : W6M22203-21701

Power : 120 Va.c.

M/N:

Distance: 3m

Test Mode :

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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Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22203-21701-C-1
FCC ID: 2ANR7-T56011

Radiated Emission Measurement

Operator: Allen

File :4

Data :#3

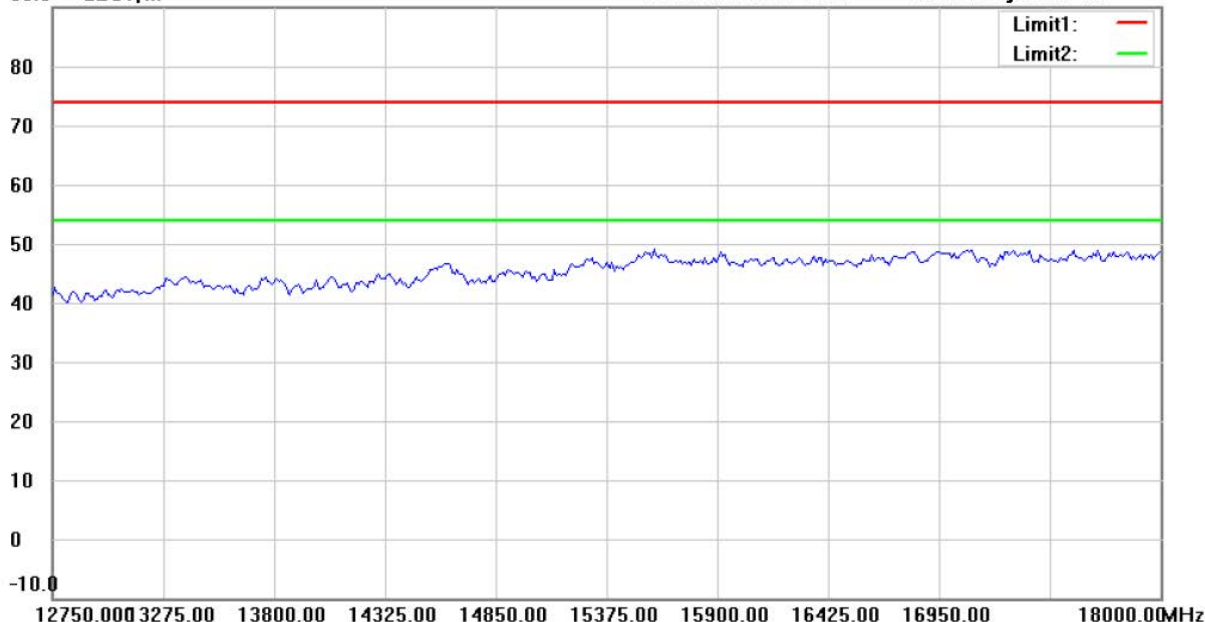
Date: 4/14/2022

Temperature:26.8 °C

Time: 3:48:27 AM

Humidity:56.3 %

90.0 dBuV/m



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: *Horizontal*

EUT : W6M22203-21701

Power : 120 Va.c.

M/N:

Distance: 3m

Test Mode :

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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Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22203-21701-C-1
FCC ID: 2ANR7-T56011

Radiated Emission Measurement

Operator: Allen

File :4

Data :#7

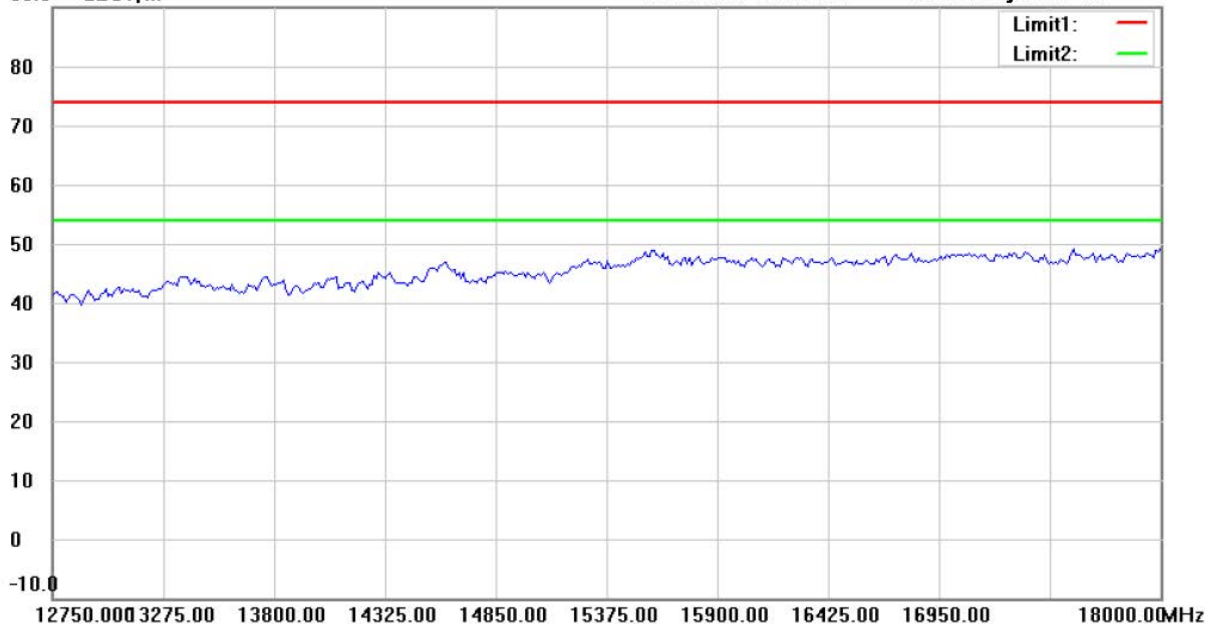
Date: 4/14/2022

Temperature:26.8 °C

Time: 3:54:54 AM

Humidity:56.3 %

90.0 dBuV/m



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: **Vertical**

EUT : W6M22203-21701

Power : 120 Va.c.

M/N:

Distance: 3m

Test Mode :

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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Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22203-21701-C-1
FCC ID: 2ANR7-T56011

Radiated Emission Measurement

Operator: Allen

File :4

Data :#4

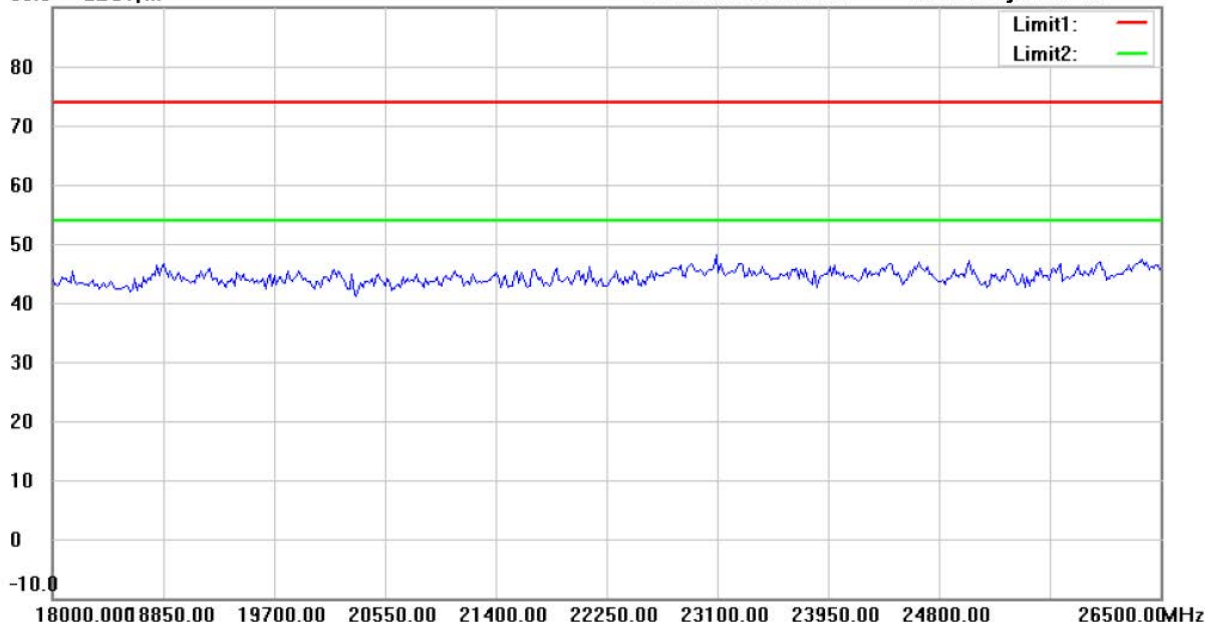
Date: 4/14/2022

Temperature:26.8 °C

Time: 3:48:34 AM

Humidity:56.3 %

90.0 dBuV/m



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: *Horizontal*

EUT : W6M22203-21701

Power : 120 Va.c.

M/N:

Distance: 3m

Test Mode :

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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Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22203-21701-C-1
FCC ID: 2ANR7-T56011

Radiated Emission Measurement

Operator: Allen

File :4

Data :#8

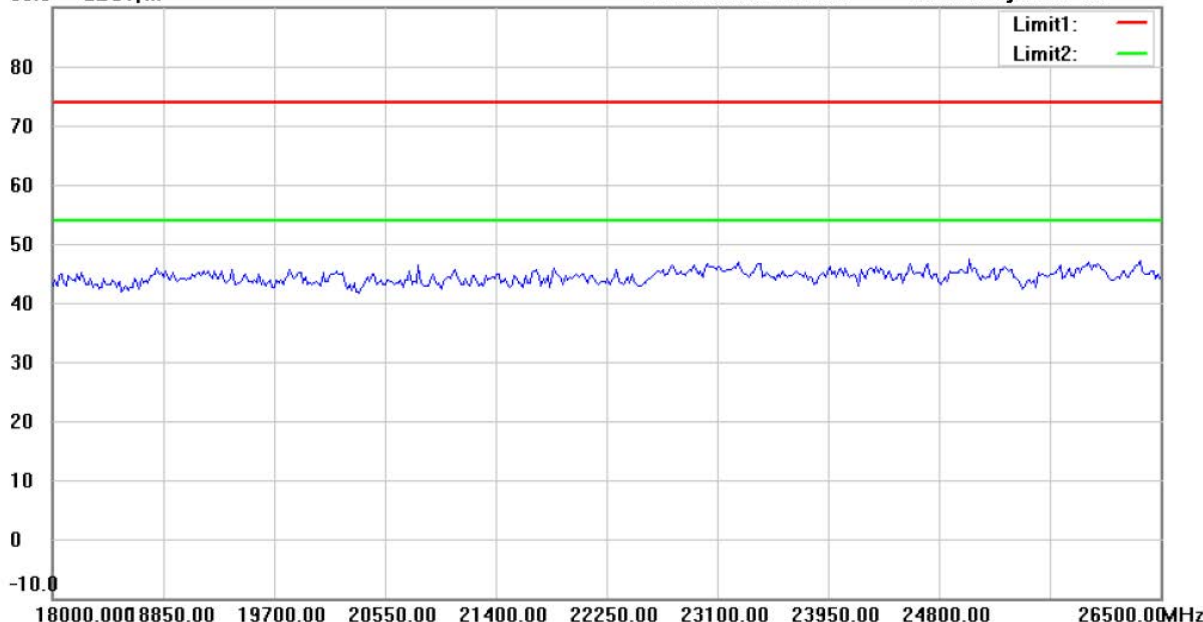
Date: 4/14/2022

Temperature:26.8 °C

Time: 3:55:01 AM

Humidity:56.3 %

90.0 dBuV/m



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: **Vertical**

EUT : W6M22203-21701

Power : 120 Va.c.

M/N:

Distance: 3m

Test Mode :

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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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 the Appendix.

All other not noted test plots do not contain significant test results in relation to the limits.

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



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22203-21701-C-1

FCC ID: 2ANR7-T56011

Limits: 15.209

Frequency of Emission (MHz)	Field Strength of Fundamental Limit uV/m	Measurement distance
0.009 – 0.490	2400 / f (KHz)	300
0.49 – 1.705	24000 / f (KHz)	30
1.705 – 30	30	30
30 – 88	100	3
88 – 216	150	3
216 – 960	200	3
Above 960	500	3

* In the emission table above, the tighter limit applies at the band edges.

The test was performed in the anechoic chamber at 3 meter test distance, i.e. the distance between measuring antenna and EUT boundary. The results were extrapolated by using the square of an inverse linear distance factor DF:

$$DF = 40 \log (D_1/D_2) = 80 \text{ dB, where}$$

For D_1 is the 300 meter specified measurement distance.

D_2 is the 3 meter test measurement distance.

The DF = 80 dB was applied for limit calculation at 3 meter test distance measurements.

For D_1 is the 30 meter specified measurement distance.

D_2 is the 3 meter test measurement distance.

The DF = 40 dB was applied for limit calculation at 3 meter test distance measurements.

If the frequency between 9 – 490 kHz,

$$\text{Limit} = 20\log(2400/f(\text{kHz})) + 80$$

If the frequency between 490 – 1705 kHz,

$$\text{Limit} = 20\log(2400/f(\text{kHz})) + 40$$

If the frequency between 1705 – 30000 kHz,

$$\text{Limit} = 20\log 30 + 40$$

Test equipment used: ETSTW-RE 004, ETSTW-RE 027, ETSTW-RE 030, ETSTW-RE 146, ETSTW-RE 159.