

FCC PART 15 SUBPART C / IC RSS-210

TEST REPORT

for

Ranger

Model No.: Ranger t

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

of

Applicant: Supportive Hearing Systems Inc.

Address: 283 MacPherson Avenue, Toronto, Ontario M4V 1A4., Canada

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

FCC Registration No.: TW1477, TW0020, TW1072

Industry Canada filed test laboratory Reg. No. 20037

A2LA Accredited No.: 2732.01



Report No.: W6M22001-19619-C-1

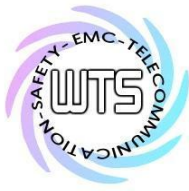
6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.
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Registration number: W6M22001-19619-C-1
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1 General Information

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.

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

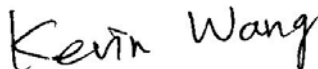
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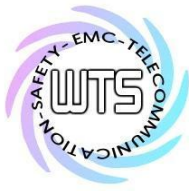
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Tester:

August 31, 2020	Kent Lin	
Date	WTS-Lab.	Name
		Signature

Technical responsibility for area of testing:

August 31, 2020	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

A2LA accredited number: 2732.01

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: Supportive Hearing Systems Inc.

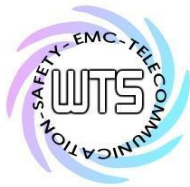
Street: 283 MacPherson Avenue,

Town: Toronto, Ontario M4V 1A4,

Country: Canada

Telephone: (416) 236-4898

Fax: (416) 483-6210



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1.4 Application details

Date of receipt of test sample: February 18, 2020

Date of test: from February 19, 2020 to August 31, 2020

1.5 General information of Test item

Type of test item: Ranger

Model Number: Ranger t

Brand Name: Simeon

Multi-listing model number: ./.

Photos: see Annex

Technical data

Frequency band : 470-608 MHz

Frequency (ch A): 470.075 MHz

Frequency (ch B): 539.325 MHz

Frequency (ch C): 607.825 MHz

Antenna Type: Dipole Antenna

Antenna Gain: 0.524 dBi

Power supply: Battery 3.7Vd.c., 1300mAh, 4.81Wh

Operation modes: Simplex

Manufacturer: (if applicable)

Name: LINKX ELECTRONICS CO., LTD.

Street: 4F-1, No.332 Ming-Chen 2nd Road, Tsou-In Dist.,

Town: Kaohsiung

Country: Taiwan

1.6 Test standards

Technical standard:

FCC RULES PART 15 SUBPART C § 15.236 (2019-10)

CANADA RSS-210 Issue 10 (2019-12)



Registration number: W6M22001-19619-C-1
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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

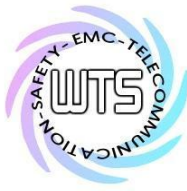
Relative humidity content: 20 ... 75 %

Power supply: Battery 3.7Vd.c., 1300mAh, 4.81Wh

Air pressure: 86-103 KPa

Test item Name	Uncertainty
Estimation Result of Uncertainty of Conducted Emission	Expanded Uncertainty: AMN: 1.06 dB Voltage probe: 1.12 dB
Estimation Result of Uncertainty of Radiated Emission(3M)	Expanded Uncertainty: 0.009-30 MHz: 1.88 dB 30-1000 MHz: 2.79 dB 1-18 GHz: 2.36 dB 18-40 GHz: 1.55 dB
Estimation Result of Uncertainty of Bandwidth Measurement 20 dB Bandwidth, Occupied bandwidth, Channel bandwidth, Necessary Bandwidth	Expanded Uncertainty: 0.45 kHz
Estimation Result of Uncertainty of Frequency Drift Measurement Frequency stability	Expanded Uncertainty: 6.11 Hz
Estimation Result of Uncertainty of EIRP Measurement	Expanded Uncertainty: 30-200MHz: 2.32 dB 200-1000MHz: 2.32 dB 1-18GHz: 3.24 dB 18-40GHz: 2.88 dB

The decision rule is: Measurement uncertainty is not taken into account.



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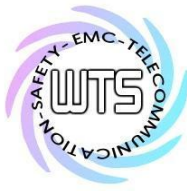
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2.3 Test Equipment List

No.	Test equipment	Type	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2020/6/11	2021/6/10
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	2019/11/1	2020/10/31
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2019/9/24	2020/9/23
ETSTW-CE 008	HF-EICHELLEITUNG RF STEP ATTENUATOR 139dB DPSP	334.6010.02	844581/024	R&S	Function Test	
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2020/7/22	2021/7/21
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2019/10/3	2020/10/2
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	2020/7/16	2021/7/15
ETSTW-RE 012	TUNABLE BANDREJECT FILTER	D.C 0309	146	K&L	Function Test	
ETSTW-RE 013	TUNABLE BANDREJECT FILTER	D.C 0336	397	K&L	Function Test	
ETSTW-RE 018	MICROWAVE HORN ANTENNA	AT4560	27212	AR	2020/7/30	2021/7/29
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	ETS-Lindgren	2020/7/8	2021/7/7
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	ETS-Lindgren	2020/4/22	2021/4/21
ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2020/2/18	2021/2/17
ETSTW-RE 043	Log-Periodic Dipole 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 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 Antenna	3117	00069377	ETS-Lindgren	Function Test	
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2019/9/23	2020/9/22
ETSTW-RE 088	SOLID STATE AMPLIFIER	KMA180265A01	99057	KMIC	2019/9/18	2020/9/17
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	



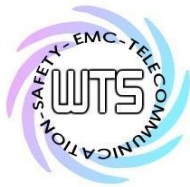
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ETSTW-RE 115	2.4GHz Notch Filter	N0124411	473874	MICROWAVE CIRCUITS	2020/1/13	2021/1/12
ETSTW-RE 120	RF Player	MP9200	MP9210-111022	ADIVIC	Function test	
ETSTW-RE 122	SIGNAL GENERATOR	SMF100A	102149	R&S	2020/6/11	2021/6/10
ETSTW-RE 125	5GHz Notch filter	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-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	2019/10/25	2020/10/24
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849-822/851-40 /12+9SS	3	WI	2020/1/13	2021/1/12
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748-1743/1752-32/5SS	1	WI	2020/1/13	2021/1/12
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880.5-1875.5/1884.5-32/5SS	3	WI	2020/1/13	2021/1/12
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1-904.25-50/8SS	1	WI	2020/1/13	2021/1/12
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2019/9/12	2020/9/11
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	2019/9/18	2020/9/17
ETSTW-Cable 029	Microwave Cable	FA147A0015M2020	30064-3	UTIFLEX	2019/9/18	2020/9/17
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 (S_Cable 9)	279067	HUBER+SUHNER	2020/2/20	2021/2/19
ETSTW-Cable 043	Microwave Cable	SUCOFLEX 104	317576	HUBER+SUHNER	2020/5/15	2021/5/14



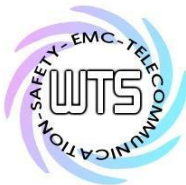
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ETSTW-Cable 047	Microwave Cable	SUCOFLEX 104	325518	HUBER+SUHNER	2020/7/3	2021/7/2
ETSTW-Cable 058	Microwave Cable	SUCOFLEX 104	none	HUBER+SUHNER	2020/6/5	2021/6/4
ETSTW-Cable 064	Microwave Cable	SUCOFLEX 104	MY28891	HUBER+SUHNER	2020/5/15	2021/5/14
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 001	Thermohygrometer	608-H1	45204316	Testo	2019/9/9	2020/9/8
ETSTW-TH 002	Thermohygrometer	608-H1	45204317	Testo	2019/9/9	2020/9/8



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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 50 μ 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 6.3 employing a spectrum analyzer. For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 100 kHz respectively with an appropriate sweep speed. For investigated frequency is above 1GHz, both of RBW and VBW of the spectrum analyzer were 1 MHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The ambient temperature of the UUT was 23°C with a humidity of 40 %.

The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to the frequency specified as follows:

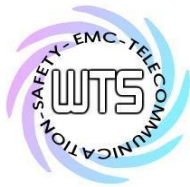
- (1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
- (2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz,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

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

Measurements were made by at the registered open field test site located at The Registration Number:

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

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



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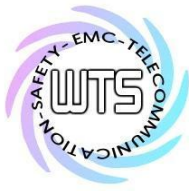
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3 Test results (enclosure)

Test case	Para. Number	Required	Test passed	Test failed
RF Power Output	§15.236(d) IC RSS-210 Issue 10 (G.1)	☒	☒	☐
Occupied Bandwidth	§15.236(f) IC RSS-210 Issue 10 (G.2)	☒	☒	☐
Emission Mask	§15.236(g) ETSI EN 300 422-1 v1.4.2	☒	☒	☐
Radiated Spurious Emission	§15.236(g) IC RSS-210 Issue 10 (G.4) ETSI EN 300 422-1 v1.4.2	☒	☒	☐
Line Conducted Emissions	15.207 IC RSS-Gen	☒	☒	☐
Frequency Stability vs. Temperature Frequency Stability vs. Voltage	§15.236(f)(3) IC RSS-210 Issue 10 (G.3)	☒	☒	☐
Modulation	IC RSS-210 Issue 10 (G.5)	☒	☒	☐

The following is intentionally left blank.



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4 RF Power Output, FCC15.236 (d)

4.1 Test procedure

§ 2.1046 Measurements required: RF power output.

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

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

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

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

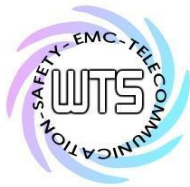
(3) As an alternative to paragraphs (b) (1) and (2) of this section other tones besides those specified may be used as modulating frequencies, upon a sufficient showing of need. However, any tones so chosen must not be harmonically related, the third and fifth order intermodulation products which occur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

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

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

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

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

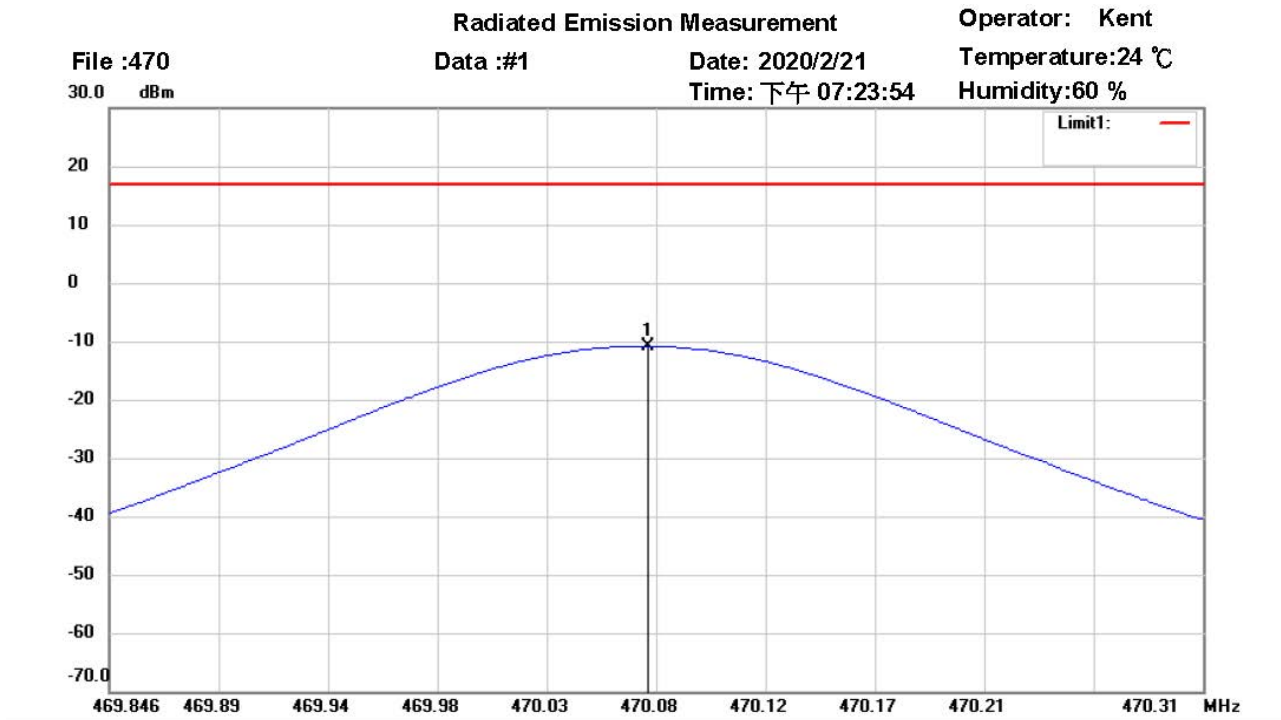


Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

4.2 Test Results



Site : Chamber

Condition : FCC 15.236 POWER

EUT : W6M22001-19619

M/N:

Test Mode : TX 470.075MHz

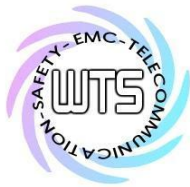
Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	470.0718	-41.71	peak	30.88	-10.83	17.00	150	220	-27.83	



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

Radiated Emission Measurement

Operator: Kent

File :470

Data :#2

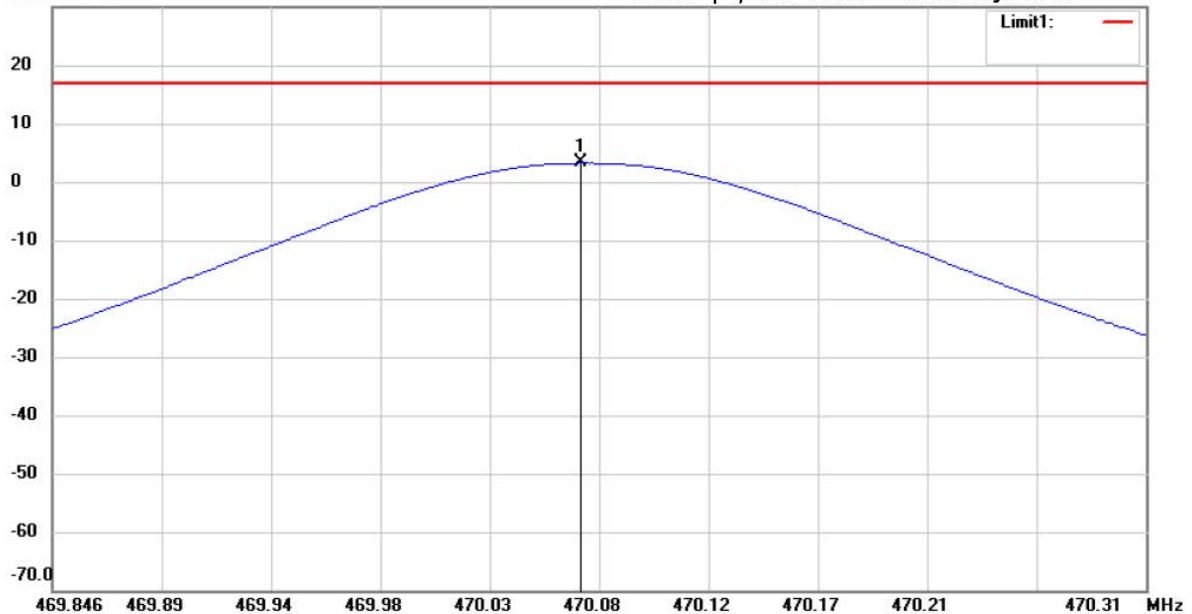
Date: 2020/2/21

Temperature:24 °C

30.0 dBm

Time: 下午 07:25:03

Humidity:60 %



Site : Chamber

Condition : FCC 15.236 POWER

EUT : W6M22001-19619

M/N:

Test Mode : TX 470.075MHz

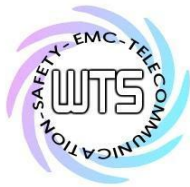
Polarization: *Vertical*

Power : 3.7 Vd.c.

Distance: 3m

Note :

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	470.0672	-26.01	peak	29.28	3.27	17.00	150	75	-13.73	



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

Radiated Emission Measurement

Operator: Kent

File :539

Data :#1

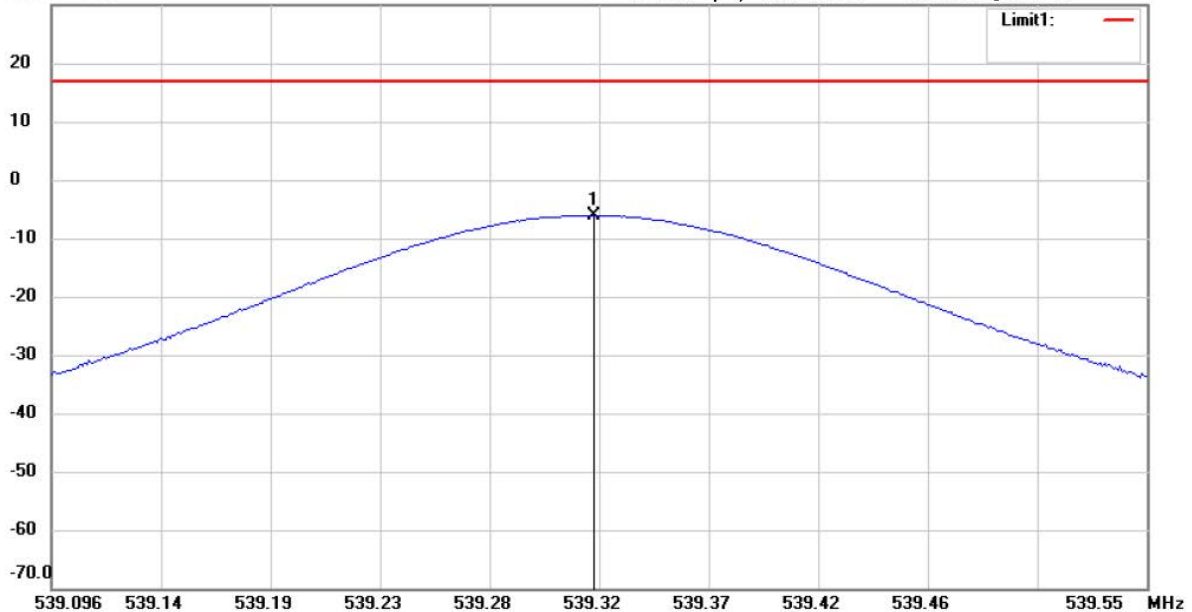
Date: 2020/2/21

Temperature:24 °C

30.0 dBm

Time: 下午 07:26:49

Humidity:60 %



Site : Chamber

Condition : FCC 15.236 POWER

EUT : W6M22001-19619

M/N:

Test Mode : TX 539.325MHz

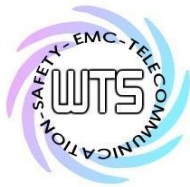
Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

Note :

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	539.3227	-37.78	peak	31.71	-6.07	17.00	150	45	-23.07	



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

Radiated Emission Measurement

Operator: Kent

File :539

Data :#2

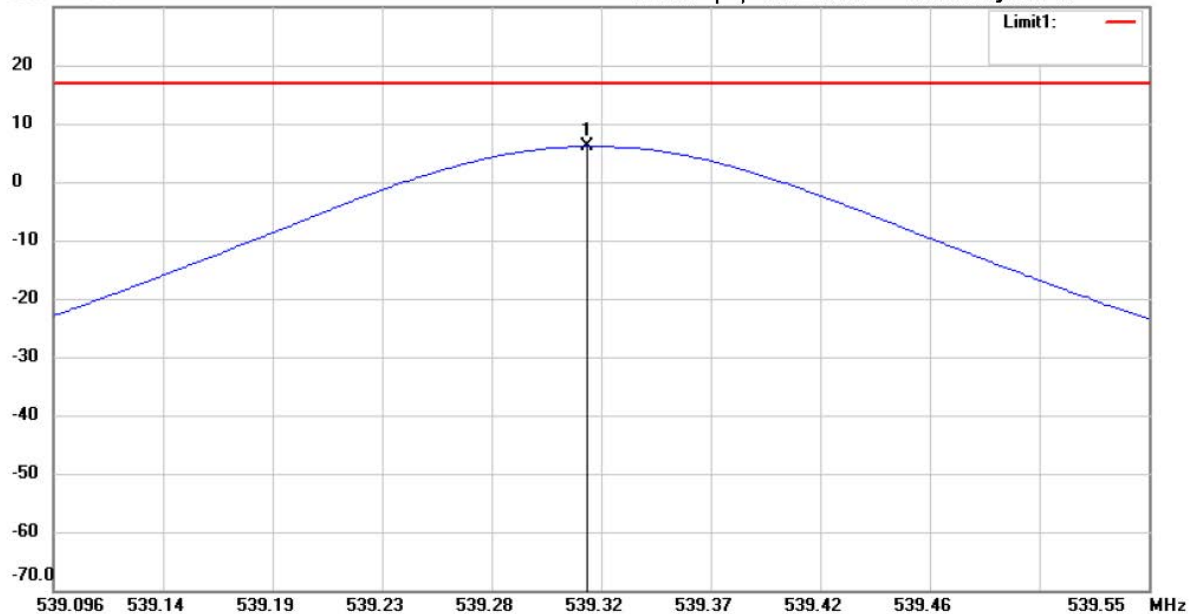
Date: 2020/2/21

Temperature:24 °C

30.0 dBm

Time: 下午 07:27:58

Humidity:60 %



Site : Chamber

Condition : FCC 15.236 POWER

EUT : W6M22001-19619

M/N:

Test Mode : TX 539.325MHz

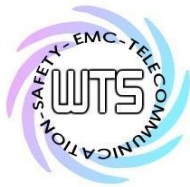
Polarization: *Vertical*

Power : 3.7 Vd.c.

Distance: 3m

Note :

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	539.3190	-24.40	peak	30.50	6.10	17.00	150	345	-10.90	



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

Radiated Emission Measurement

Operator: Kent

File :607

Data :#1

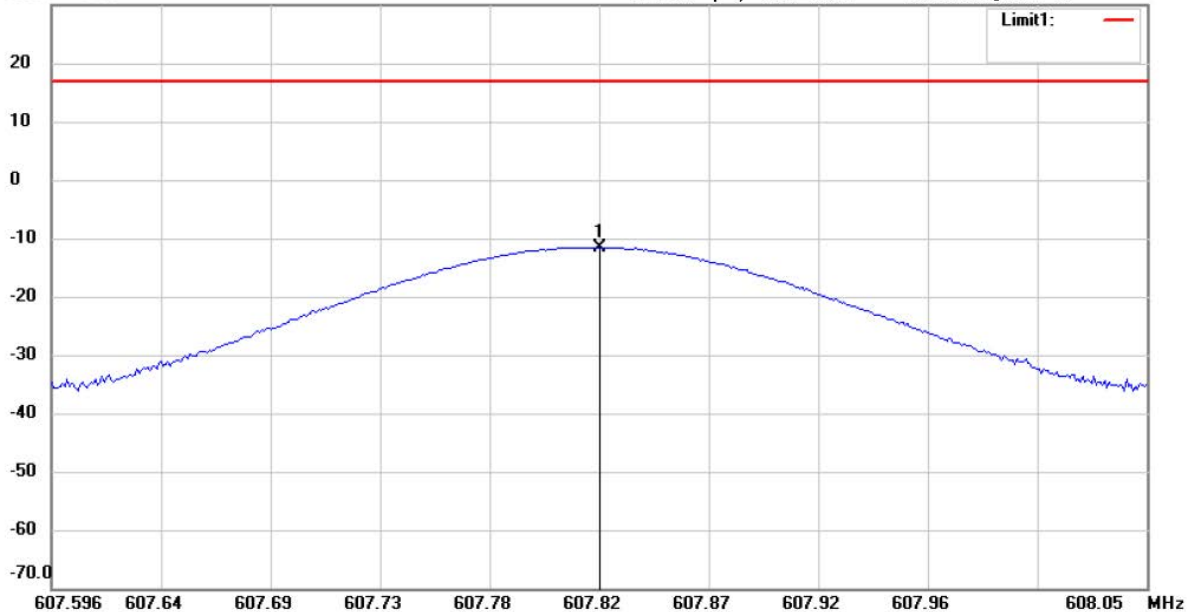
Date: 2020/2/21

Temperature:24 °C

30.0 dBm

Time: 下午 07:29:54

Humidity:60 %



Site : Chamber

Condition : FCC 15.236 POWER

EUT : W6M22001-19619

M/N:

Test Mode : TX 607.825MHz

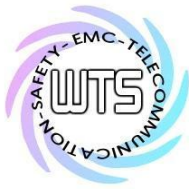
Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	607.8255	-44.90	peak	33.34	-11.56	17.00	150	100	-28.56	



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

Radiated Emission Measurement

Operator: Kent

File :607

Data :#2

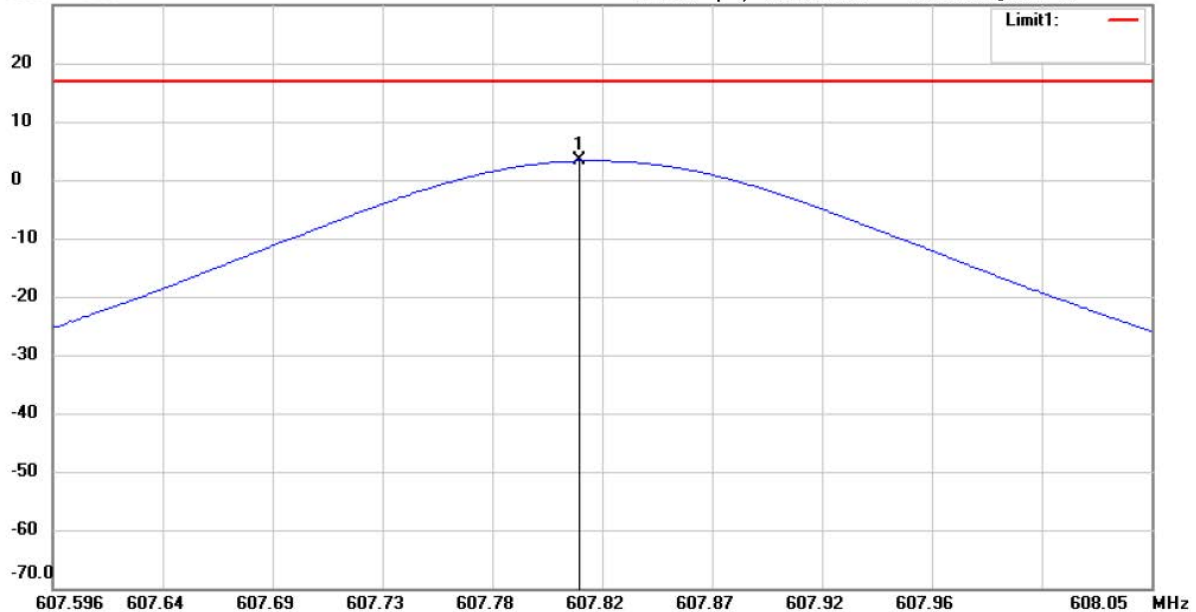
Date: 2020/2/21

Temperature:24 °C

30.0 dBm

Time: 下午 07:31:00

Humidity:60 %



Site : Chamber

Condition : FCC 15.236 POWER

EUT : W6M22001-19619

M/N:

Test Mode : TX 607.825MHz

Note :

Polarization: *Vertical*

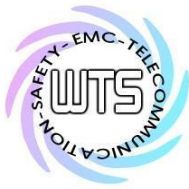
Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	607.8153	-27.10	peak	30.39	3.29	17.00	150	220	-13.71	

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

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



Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

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

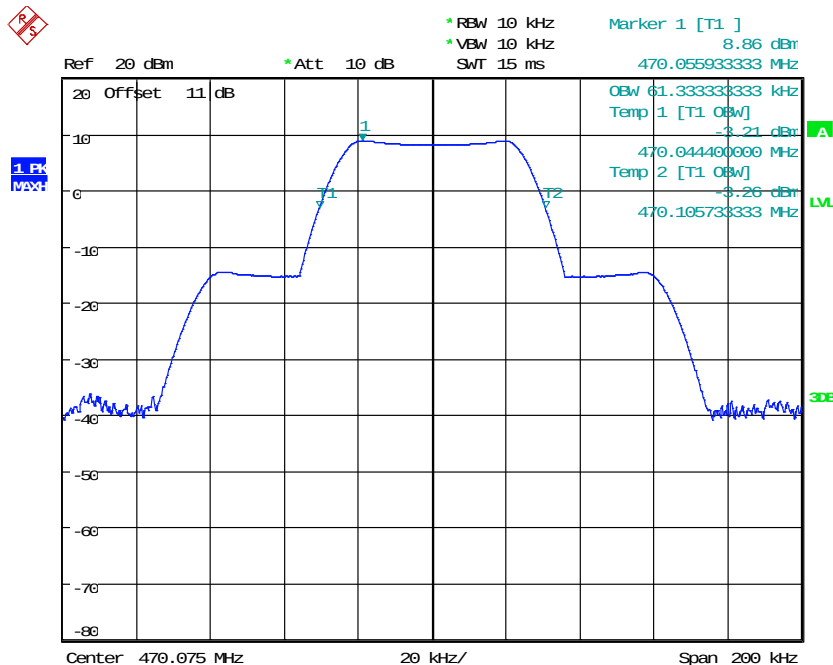
5.1 Test Procedure

Occupied Bandwidth

- (f) The operating frequency within a permissible band of operation as defined in paragraph (c) must comply with the following requirements.
- (1) The frequency selection shall be offset from the upper or lower band limits by 25 kHz or an integral multiple thereof.
 - (2) One or more adjacent 25 kHz segments within the assignable frequencies may be combined to form a channel whose maximum bandwidth shall not exceed 200 kHz. The operating bandwidth shall not exceed 200 kHz.
 - (3) The frequency tolerance of the carrier signal shall be maintained within $\pm 0.005\%$ of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. Battery (1) In the bands allocated and assigned for broadcast television and in the 600 MHz service band: 50 mW EIRP
 - (2) In the 600 MHz guard bands including the duplex gap: 20 mW EIRP (e) Operation is limited to locations separated from licensed services by the following distances. (1) Four kilometers outside the following protected service contours of co-channel TV stations. operated equipment shall be tested using a new battery.

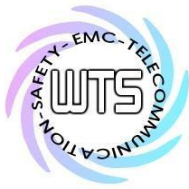
5.2 Test results

Occupied Bandwidth



OCCUPIED BANDWIDTH 470.075MHZ

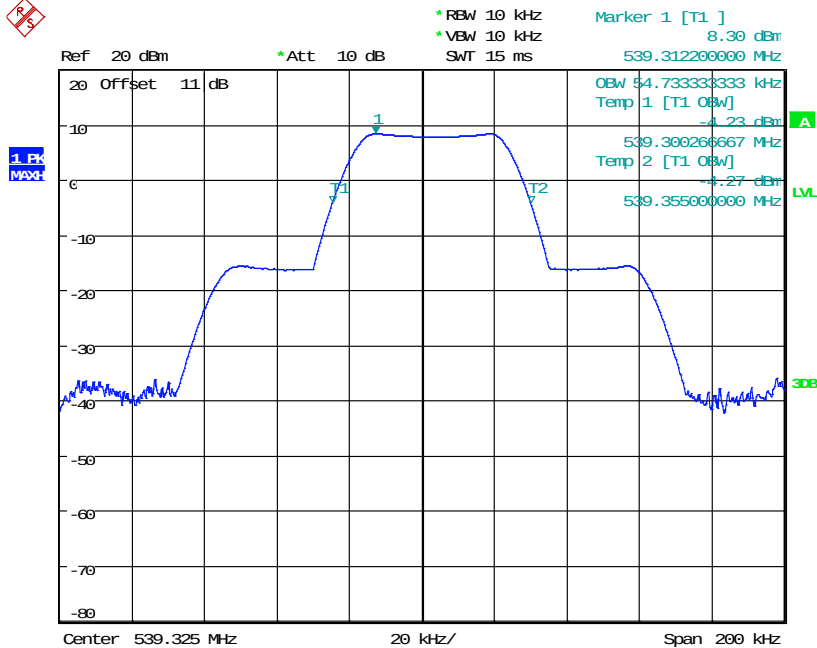
Date: 20.FEB.2020 16:08:29



Registration number: W6M22001-19619-C-1

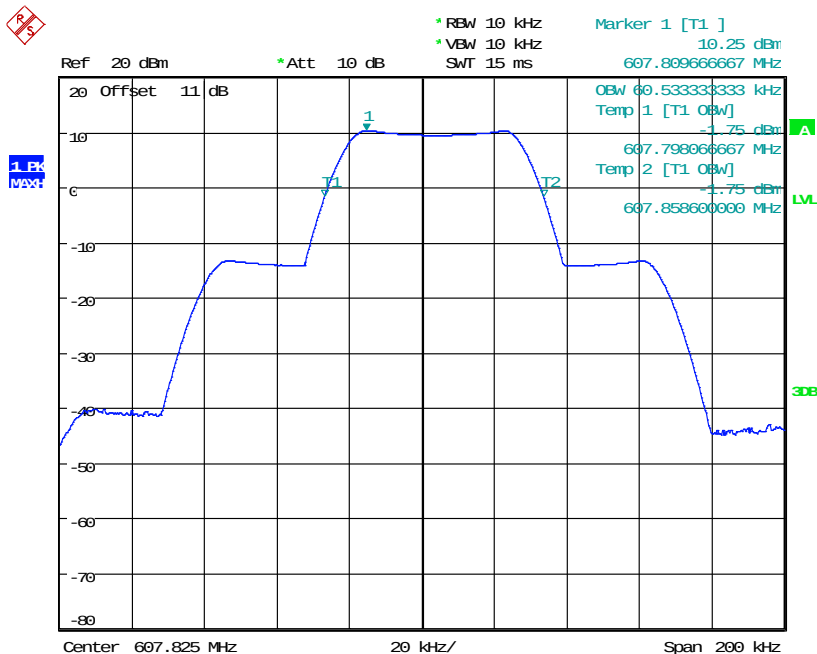
FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1



OCCUPIED BANDWIDTH 539.325MHz

Date: 20.FEB.2020 16:07:04



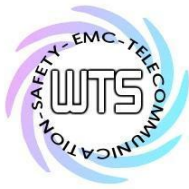
OCCUPIED BANDWIDTH 607.825MHz

Date: 20.FEB.2020 16:05:50

Limit

The operating bandwidth shall not exceed 200 kHz.

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



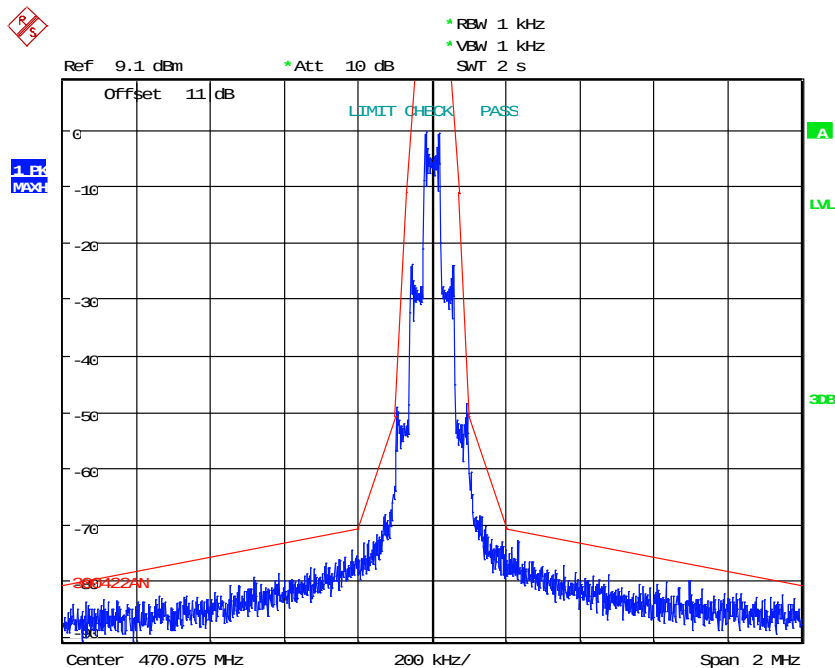
Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

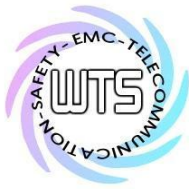
Emission Mask

(g) Emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in Section 8.3 of ETSI EN 300 422-1 V1.4.2 (2011-08) (incorporated by reference, see § 15.38). Emissions outside this band shall comply with the limit specified at the edges of the ETSI mask.



NECESSARY BANDWIDTH 470.075MHz

Date: 20.FEB.2020 16:10:20

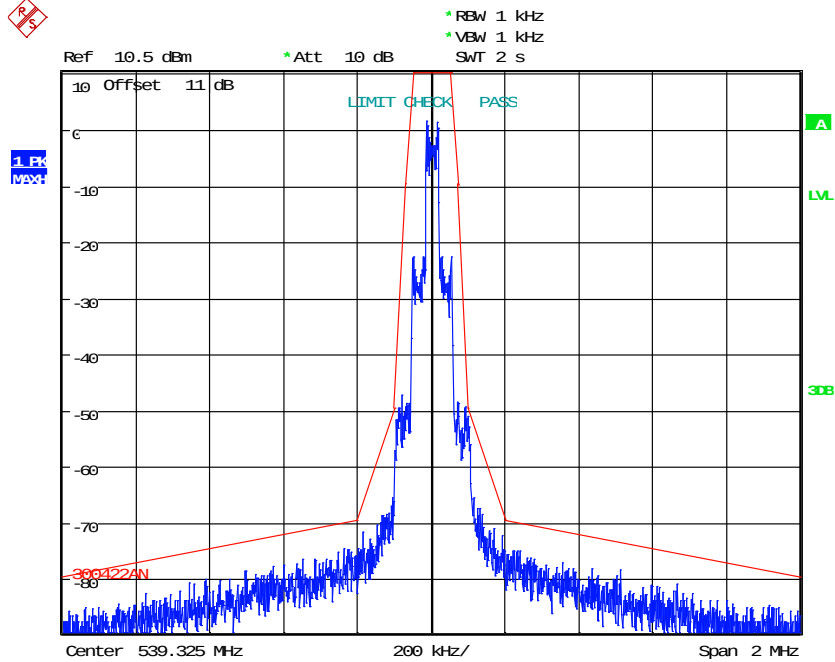


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22001-19619-C-1

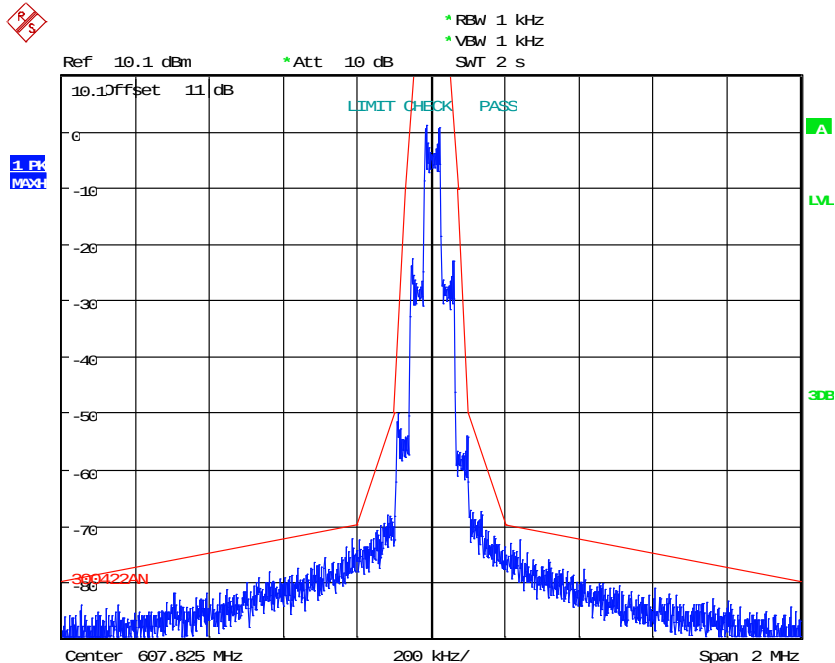
FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1



NECESSARY BANDWIDTH 539.325MHz

Date: 20.FEB.2020 16:12:47



NECESSARY BANDWIDTH 607.825MHz

Date: 20.FEB.2020 16:14:07

Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

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

LIMIT acc. Subclause 8.3.1.2

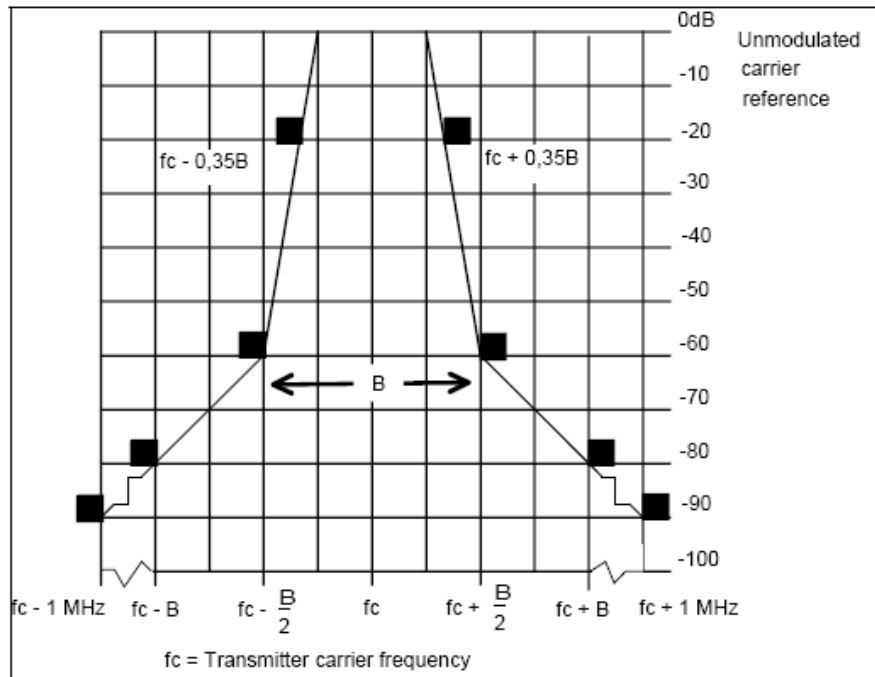


Figure 1: Spectrum mask for analogue systems in all bands

LIMIT acc. Subclause 8.3.2.2

The transmitter output spectrum shall be within the mask defined in figure 2. This mask may also be used for both analogue and digital Assistive Listening Devices.

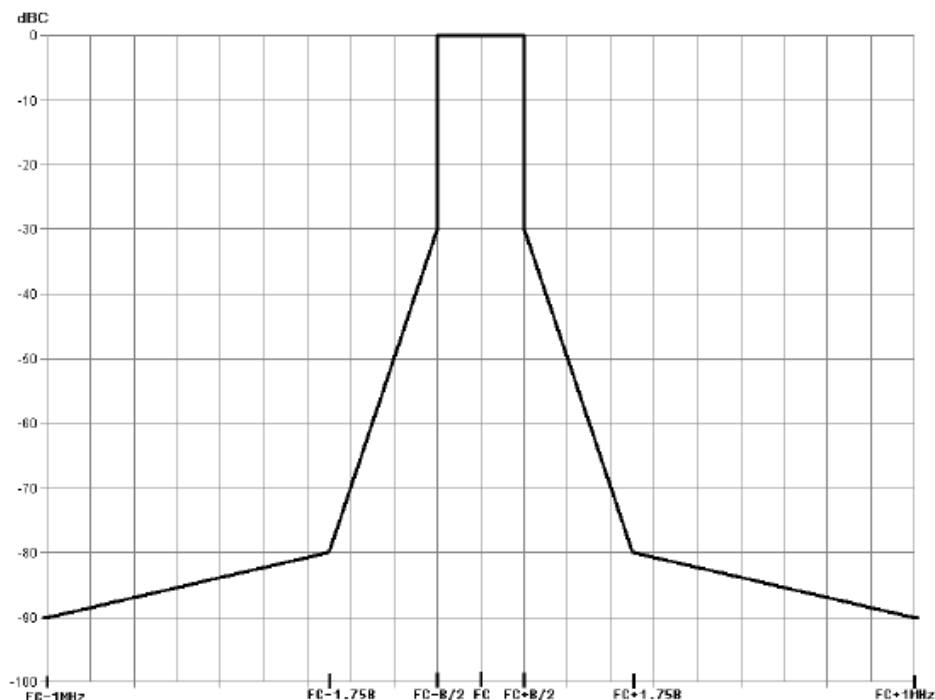
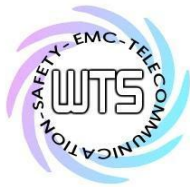


Figure 2: Spectrum mask for digital systems below 1 GHz



Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

6 Radiated Spurious Emission , FCC 15.236(g)

6.1 Test procedure

(g) Emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in Section 8.3 of ETSI EN 300 422-1 V1.4.2 (2011-08) (incorporated by reference, see § 15.38). Emissions outside this band shall comply with the limit specified at the edges of the ETSI mask.

6.2 Test results

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

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

Model:	Ranger t	Date:	--				
Mode:	--	Temperature:	--	°C	Engineer:	--	
Polarization:	Horizontal	Humidity:	--	%			
Frequency (MHz)	Reading (dBm) Peak	Factor (dB) Corr.	Result (dBm)	Limit (dBm)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Polarization: Vertical

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

Note:

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

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



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

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

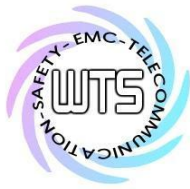
7.1 Test procedure

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

7.2 Test results

470.075 MHz			
Test Temp.	Carrier Freq. (MHz)	Result (ppm)	Limit (ppm)
-20	470.075333	0.708397596	50
-10	470.075583	1.240227623	50
0	470.07645	3.084614157	50
10	470.075933	1.984789661	50
20	470.075483	1.027495612	50
30	470.075483	1.027495612	50
40	470.073766	-2.625113014	50
50	470.073166	-3.901505079	50

539.325 MHz			
Test Temp.	Carrier Freq. (MHz)	Result (ppm)	Limit (ppm)
-20	539.330016	9.300514532	50
-10	539.330333	9.888286284	50
0	539.330433	10.07370324	50
10	539.327783	5.160153896	50
20	539.327866	5.31404997	50
30	539.3286	6.67501043	50
40	539.326733	3.213275854	50
50	539.325116	0.215083669	50



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

607.825 MHz			
Test Temp.	Carrier Freq. (MHz)	Result (ppm)	Limit (ppm)
-20	607.829883	8.033562292	50
-10	607.830083	8.362604368	50
0	607.830583	9.185209559	50
10	607.82805	5.017891663	50
20	607.828233	5.318965163	50
30	607.82885	6.334059968	50
40	607.8275	4.113025953	50
50	607.825716	1.177970633	50

Limit According to FCC 15.236(f)(3)

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

Voltage

470.075 MHz			
Test Volt	Carrier Freq. (MHz)	Result (ppm)	Limit (ppm)
3.35Vd.c.	470.075483	1.027495612	50
3.7Vd.c.	470.075483	1.027495612	50
4.26Vd.c.	470.075483	1.027495612	50

539.325 MHz			
Test Volt	Carrier Freq. (MHz)	Result (ppm)	Limit (ppm)
3.35Vd.c.	539.327866	5.31404997	50
3.7Vd.c.	539.327866	5.31404997	50
4.26Vd.c.	539.327866	5.31404997	50

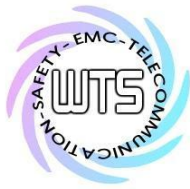
607.825 MHz			
Test Volt	Carrier Freq. (MHz)	Result (ppm)	Limit (ppm)
3.35Vd.c.	607.828233	5.318965163	50
3.7Vd.c.	607.828233	5.318965163	50
4.26Vd.c.	607.828233	5.318965163	50

Limit : $\pm 0.005\%$

Limit According to FCC 15.236(f)(3)

The frequency tolerance of the transmitter shall be 0.005 percent.

Test equipment used: ETSTW-RE 055



Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

8 Modulation

8.1 Test procedure

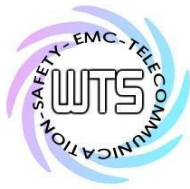
The devices may employ any type of modulation. The type of modulation used shall be reported.

Equipment employing amplitude modulation (AM) or frequency modulation (FM) shall have a modulation index that does not exceed 100% or a frequency deviation that does not exceed ± 75 kHz, respectively.

8.2 Test results

470.075 MHz

Audio Frequency (kHz)	F.D. (+)	F.D. (-)
0.1	23.88	-24.87
0.2	24.66	-25.02
0.3	24.35	-24.33
0.4	24.56	-24.61
0.5	25.06	-24.92
0.8	28.07	-26.73
1	29.11	-27.33
2	29.61	-26.81
3	29.16	-26.48
4	27.55	-24.48
5	25.24	-22.98
6	22.75	-22.01
7	23.67	-23.05
8	23.38	-22.72
9	21.54	-20.87
10	20.77	-20.21
11	20.47	-19.88
12	19.92	-19.39
13	18.55	-18.18
14	16.28	-16.11
15	14.17	-14.09



Worldwide Testing Services(Taiwan) Co., Ltd.

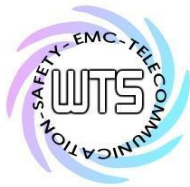
Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

539.325 MHz

Audio Frequency (kHz)	F.D. (+)	F.D. (-)
0.1	19.29	-19.16
0.2	20.04	-19.04
0.3	19.61	-18.36
0.4	19.69	-18.22
0.5	20.09	-18.27
0.8	22.09	-18.91
1	23.61	-20.54
2	27.24	-20.08
3	28.05	-20.19
4	24.74	-20.18
5	24.48	-20.43
6	21.40	-21.09
7	21.44	-21.10
8	21.77	-21.45
9	20.45	-19.86
10	20.26	-19.45
11	18.31	-17.56
12	18.80	-18.06
13	15.93	-15.55
14	12.57	-12.55
15	10.48	-10.58



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

607.825 MHz

Audio Frequency (kHz)	F.D. (+)	F.D. (-)
0.1	21.08	-19.99
0.2	24.59	-23.25
0.3	24.06	-22.27
0.4	24.26	-21.97
0.5	24.37	-22.04
0.8	26.28	-21.56
1	27.18	-20.59
2	25.47	-18.99
3	25.44	-18.60
4	23.93	-19.21
5	23.46	-19.97
6	21.08	-20.51
7	21.53	-20.86
8	21.11	-20.77
9	20.03	-19.50
10	19.31	-18.45
11	18.86	-17.97
12	16.36	-15.80
13	14.59	-14.25
14	11.94	-11.92
15	9.95	-10.08

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

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



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

9 Line Conducted Emission , FCC 15.207

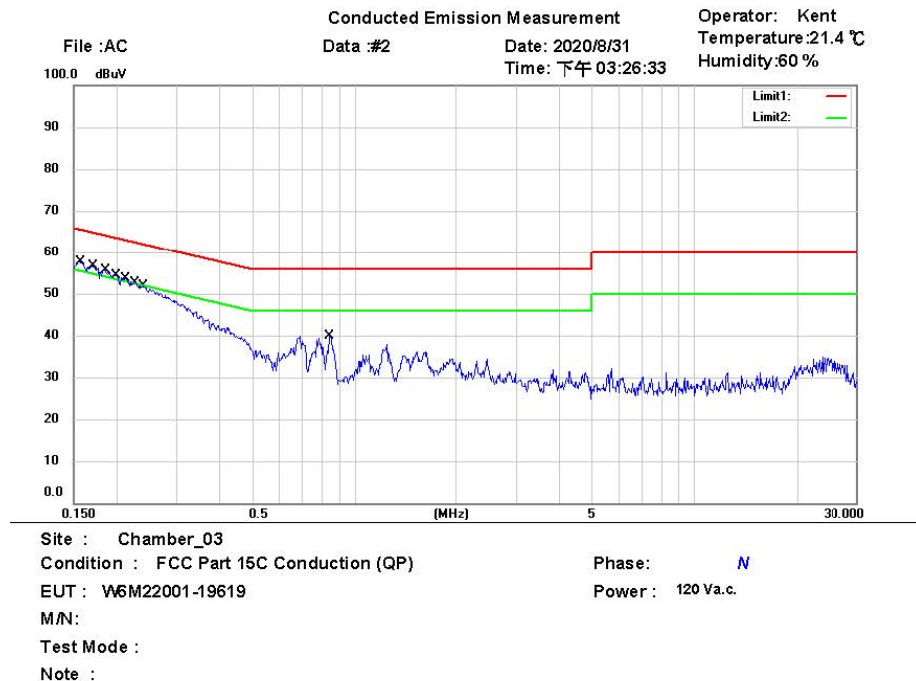
The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power. Near the carrier an Emission Mask is defined by the standard.

9.1 Test procedure

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

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

9.2 Test Results



Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.1558	44.25	QP	9.59	53.84	65.68	-11.84	
	0.1558	26.96	AVG	9.59	36.55	55.68	-19.13	
	0.1698	43.75	QP	9.59	53.34	64.97	-11.63	
	0.1698	24.89	AVG	9.59	34.48	54.97	-20.49	
*	0.1845	43.22	QP	9.58	52.80	64.28	-11.48	
	0.1845	25.73	AVG	9.58	35.31	54.28	-18.97	
	0.1993	41.88	QP	9.58	51.46	63.64	-12.18	
	0.1993	22.97	AVG	9.58	32.55	53.64	-21.09	
	0.2127	40.83	QP	9.58	50.41	63.10	-12.69	
	0.2127	24.06	AVG	9.58	33.64	53.10	-19.46	
	0.2265	39.50	QP	9.58	49.08	62.58	-13.50	
	0.2265	21.09	AVG	9.58	30.67	52.58	-21.91	
	0.2403	38.15	QP	9.57	47.72	62.09	-14.37	
	0.2403	19.53	AVG	9.57	29.10	52.09	-22.99	
	0.8420	22.95	QP	9.49	32.44	56.00	-23.56	
	0.8420	8.72	AVG	9.49	18.21	46.00	-27.79	



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

Conducted Emission Measurement

Operator: Kent

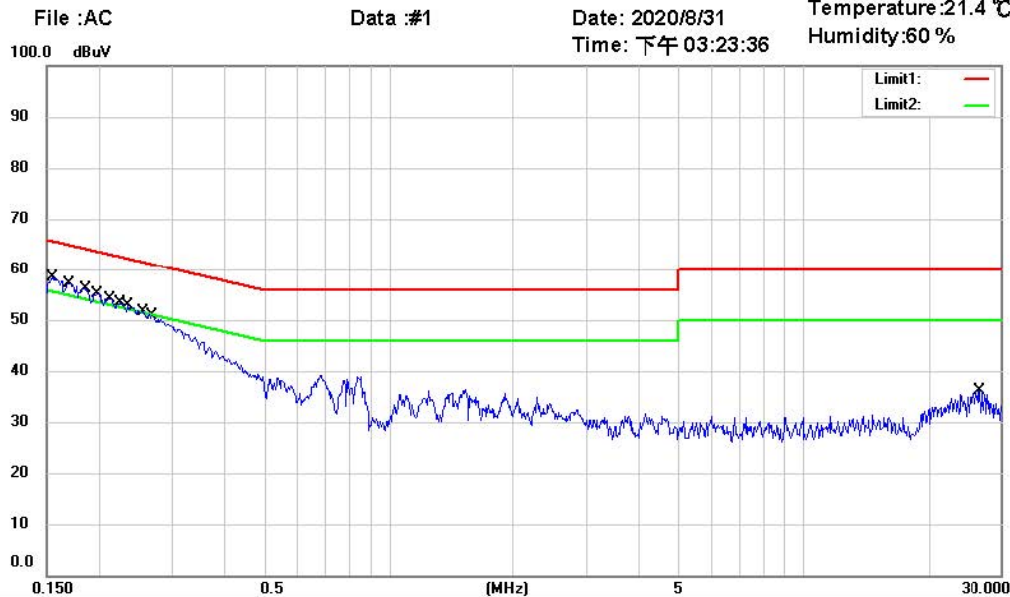
Data :#1

Date: 2020/8/31

Temperature: 21.4 °C

Time: 下午 03:23:36

Humidity: 60 %



Site : Chamber_03

Condition : FCC Part 15C Conduction (QP)

Phase: L1

EUT : W6M22001-19619

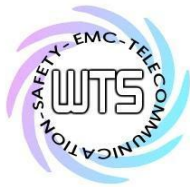
Power : 120 V.a.c.

M/N:

Test Mode :

Note :

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.1545	44.09	QP	9.61	53.70	65.75	-12.05	
	0.1545	26.31	AVG	9.61	35.92	55.75	-19.83	
	0.1690	43.73	QP	9.61	53.34	65.01	-11.67	
	0.1690	25.29	AVG	9.61	34.90	55.01	-20.11	
*	0.1852	43.87	QP	9.60	53.47	64.25	-10.78	
	0.1852	26.02	AVG	9.60	35.62	54.25	-18.63	
	0.1985	42.84	QP	9.60	52.44	63.67	-11.23	
	0.1985	24.28	AVG	9.60	33.88	53.67	-19.79	
	0.2121	41.66	QP	9.60	51.26	63.12	-11.86	
	0.2121	24.49	AVG	9.60	34.09	53.12	-19.03	
	0.2246	40.18	QP	9.60	49.78	62.65	-12.87	
	0.2246	22.20	AVG	9.60	31.80	52.65	-20.85	
	0.2344	36.37	QP	9.59	45.96	62.29	-16.33	
	0.2344	17.37	AVG	9.59	26.96	52.29	-25.33	
	0.2538	37.54	QP	9.59	47.13	61.63	-14.50	
	0.2538	19.53	AVG	9.59	29.12	51.63	-22.51	



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22001-19619-C-1

FCC ID: 2AA9S-RANGERT1

IC: 3918A-RANGERT1

Site : Chamber_03

Condition : FCC Part 15C Conduction (QP)

Phase: **L1**

EUT : W6M22001-19619

Power : 120 Va.c.

M/N:

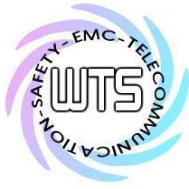
Test Mode :

Note :

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.2692	36.56	QP	9.59	46.15	61.14	-14.99	
	0.2692	17.57	AVG	9.59	27.16	51.14	-23.98	
	26.5625	18.75	QP	10.10	28.85	60.00	-31.15	
	26.5625	6.62	AVG	10.10	16.72	50.00	-33.28	

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

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



Registration number: W6M22001-19619-C-1
FCC ID: 2AA9S-RANGERT1
IC: 3918A-RANGERT1

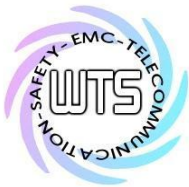
Appendix

A Photos

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

B Measurement diagrams

Radiation Spurious Emission



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M22001-19619-C-1
FCC ID: 2AA9S-RANGERT1
IC: 3918A-RANGERT1

Radiation Spurious Emission



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

Radiated Emission Measurement

Operator: Kent

File :1

Data :#1

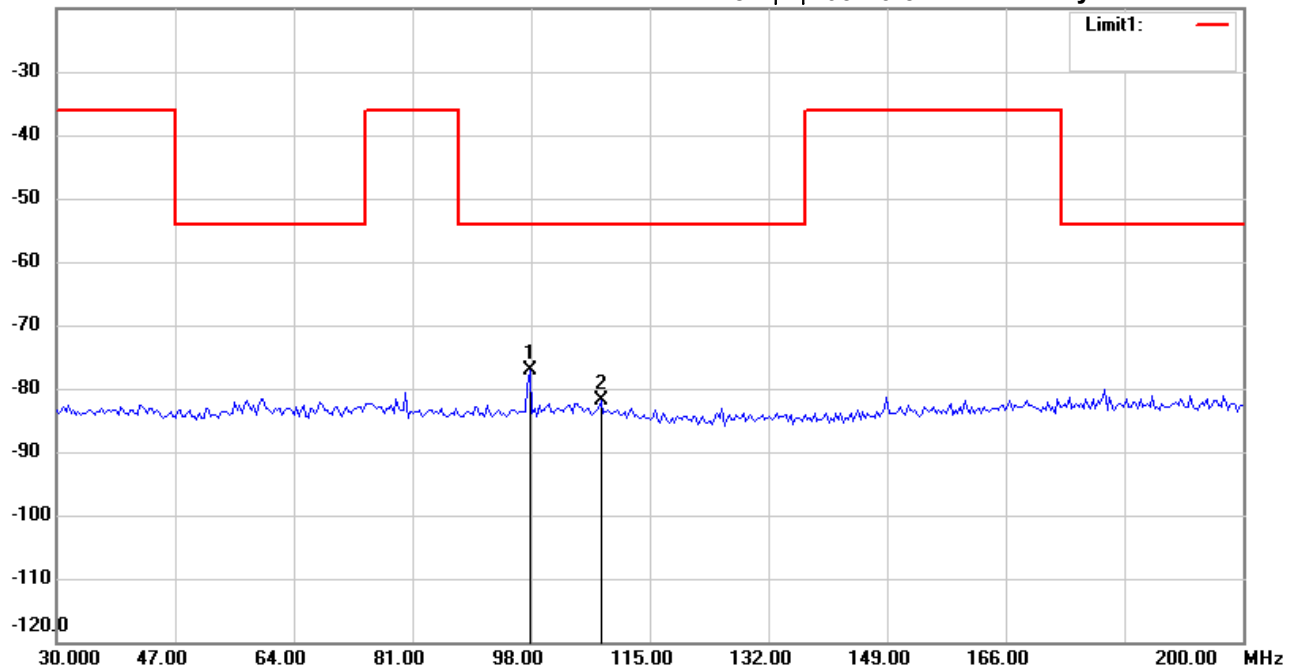
Date: 2020/2/19

Temperature: 24 °C

-20.0 dBm

Time: 下午 03:16:54

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 470.075MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	97.7956	-98.58	peak	21.44	-77.14	-54.00	150	145	-23.14	
	108.0160	-102.90	peak	21.04	-81.86	-54.00	150	195	-27.86	

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



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

Radiated Emission Measurement

Operator: Kent

File :1

Data :#2

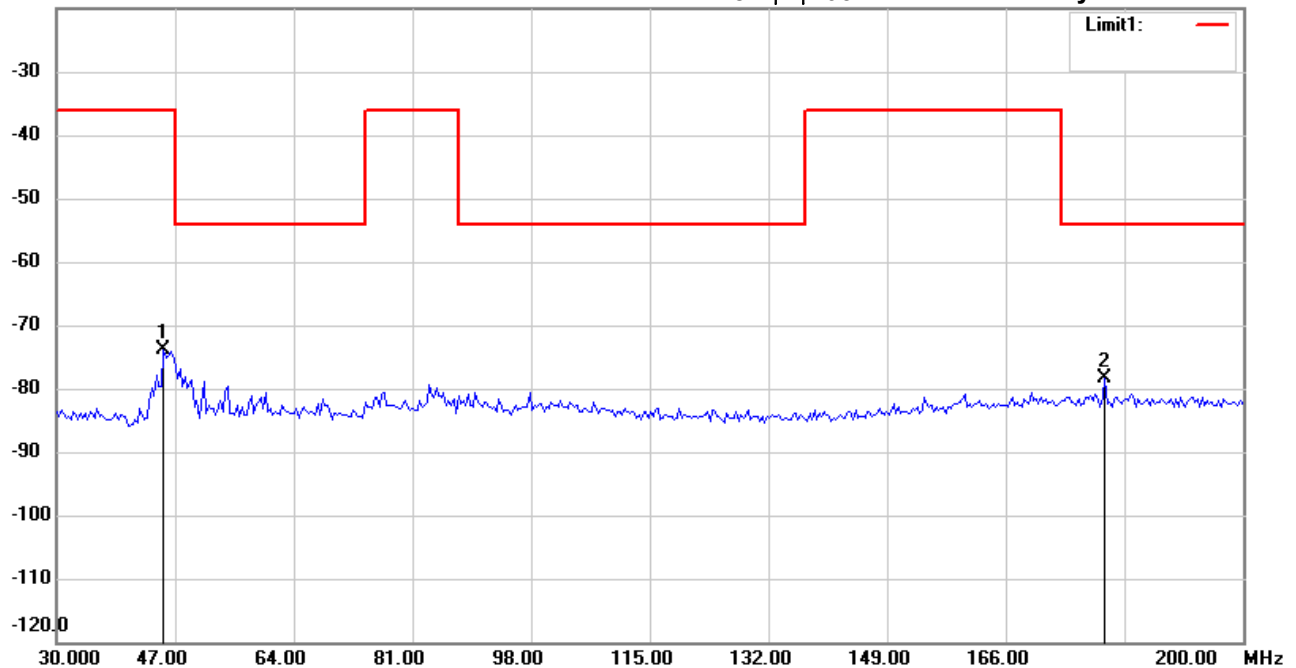
Date: 2020/2/19

Temperature: 24 °C

-20.0 dBm

Time: 下午 03:21:17

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 470.075MHz

Note :

Polarization: Vertical

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	45.3307	-95.00	peak	21.06	-73.94	-36.00	150	130	-37.94	
*	180.2405	-100.95	peak	22.51	-78.44	-54.00	150	110	-24.44	

*: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: Kent

File : 2

Data : #1

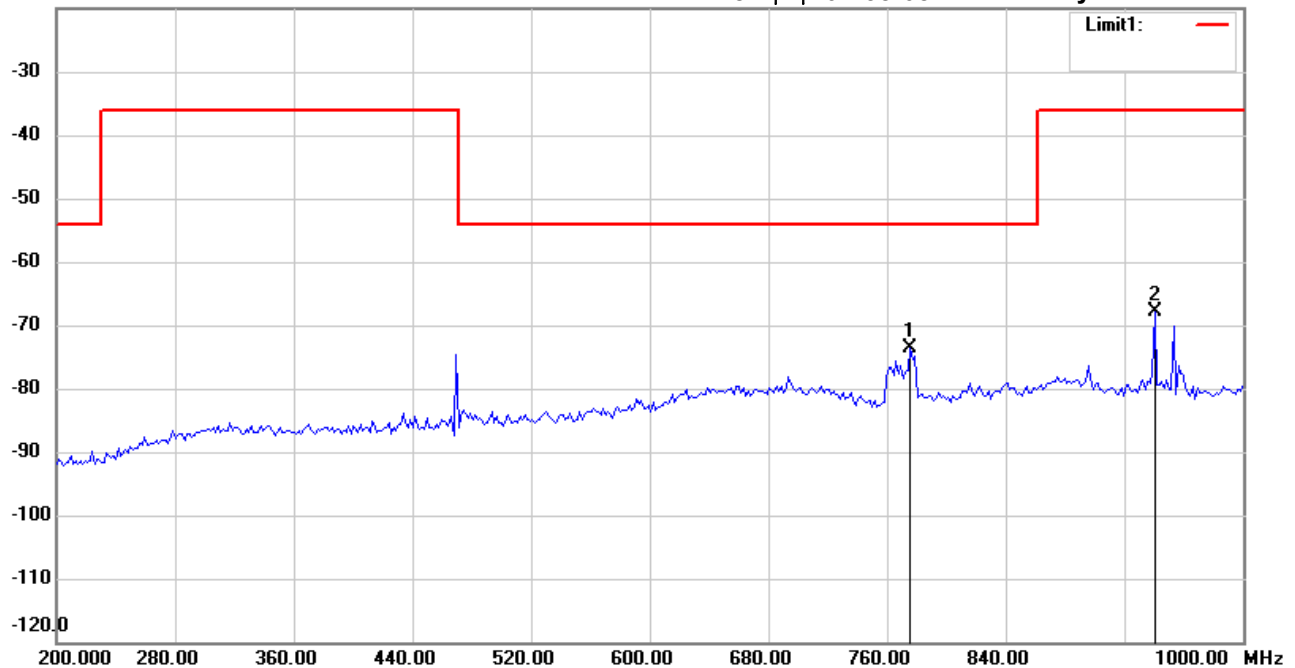
Date: 2020/2/21

Temperature: 24 °C

-20.0 dBm

Time: 下午 07:38:08

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 470.075MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	775.5511	-69.10	peak	-4.41	-73.51	-54.00	150	220	-19.51	
	940.6814	-65.13	peak	-2.69	-67.82	-36.00	150	45	-31.82	

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



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

Operator: Kent

File : 2

Data : #2

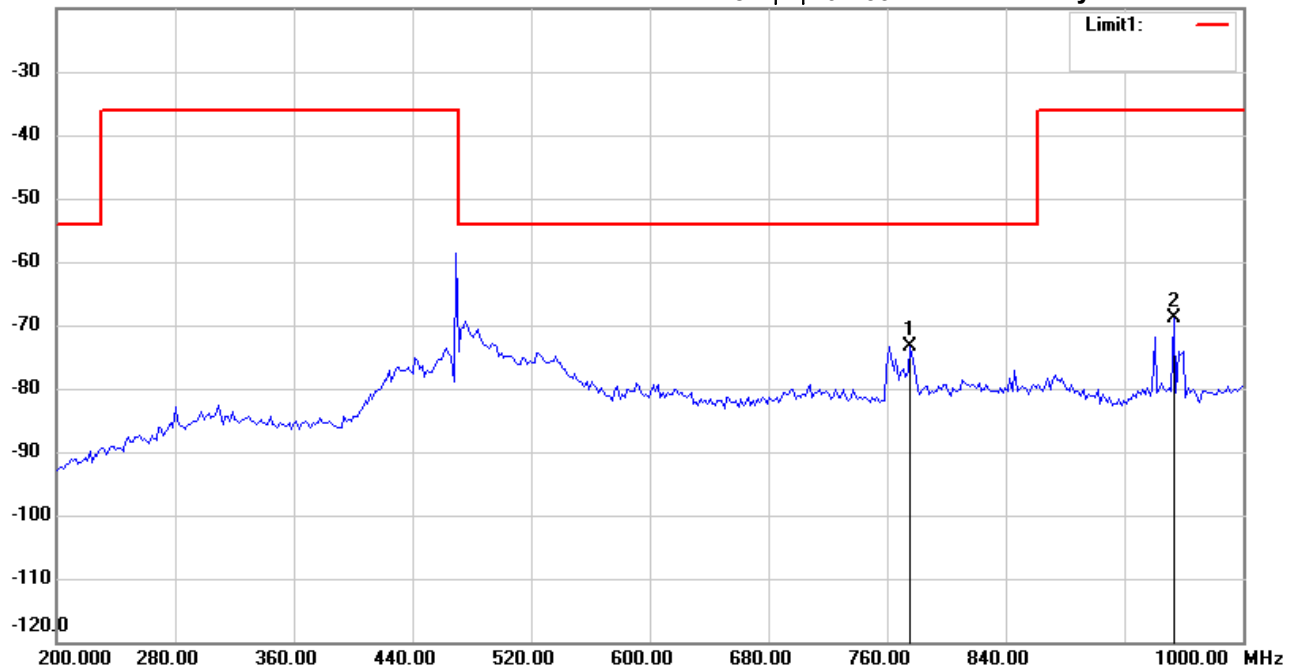
Date: 2020/2/21

Temperature: 24 °C

-20.0 dBm

Time: 下午 07:39:27

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 470.075MHz

Note :

Polarization: Vertical

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	775.5511	-70.13	peak	-3.17	-73.30	-54.00	150	330	-19.30	
	953.5070	-65.88	peak	-2.91	-68.79	-36.00	150	160	-32.79	

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



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

Radiated Emission Measurement

Operator: Kent

File :3

Data :#1

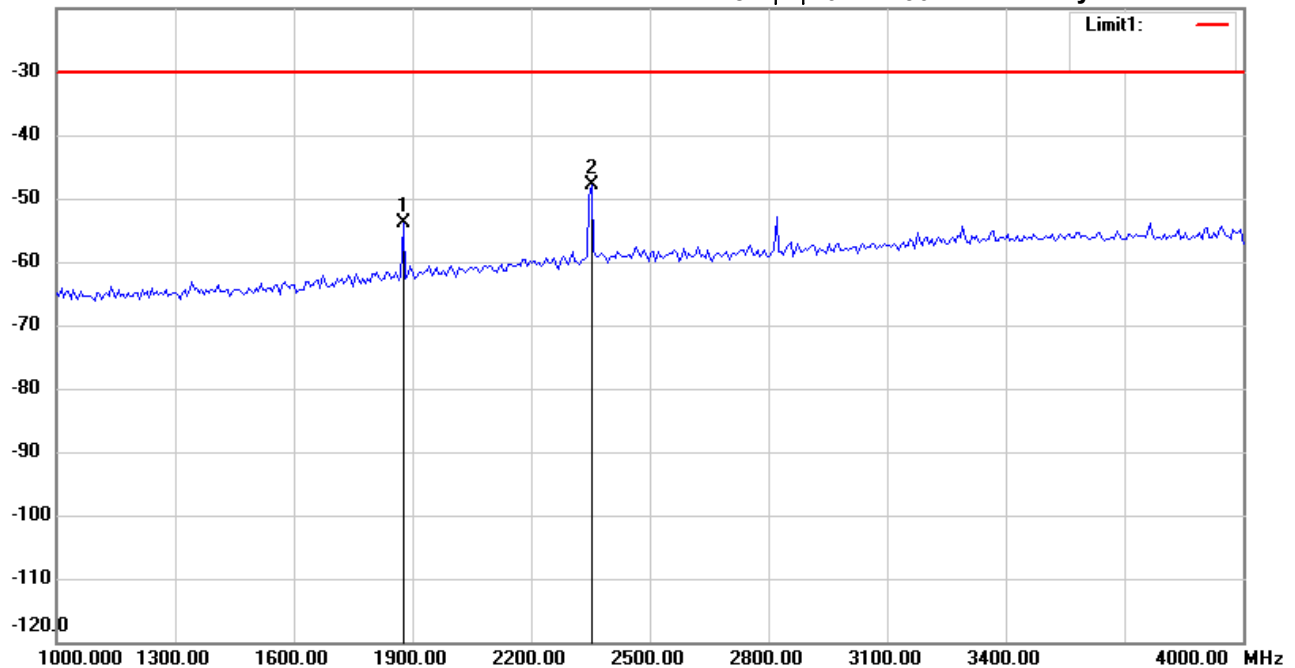
Date: 2020/2/21

Temperature: 24 °C

-20.0 dBm

Time: 下午 07:47:30

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 470.075MHz

Note :

Polarization: **Horizontal**

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1877.755	-54.05	peak	0.30	-53.75	-30.00	150	245	-23.75	
*	2352.705	-50.94	peak	3.01	-47.93	-30.00	150	160	-17.93	

*: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: Kent

File : 3

Data : #3

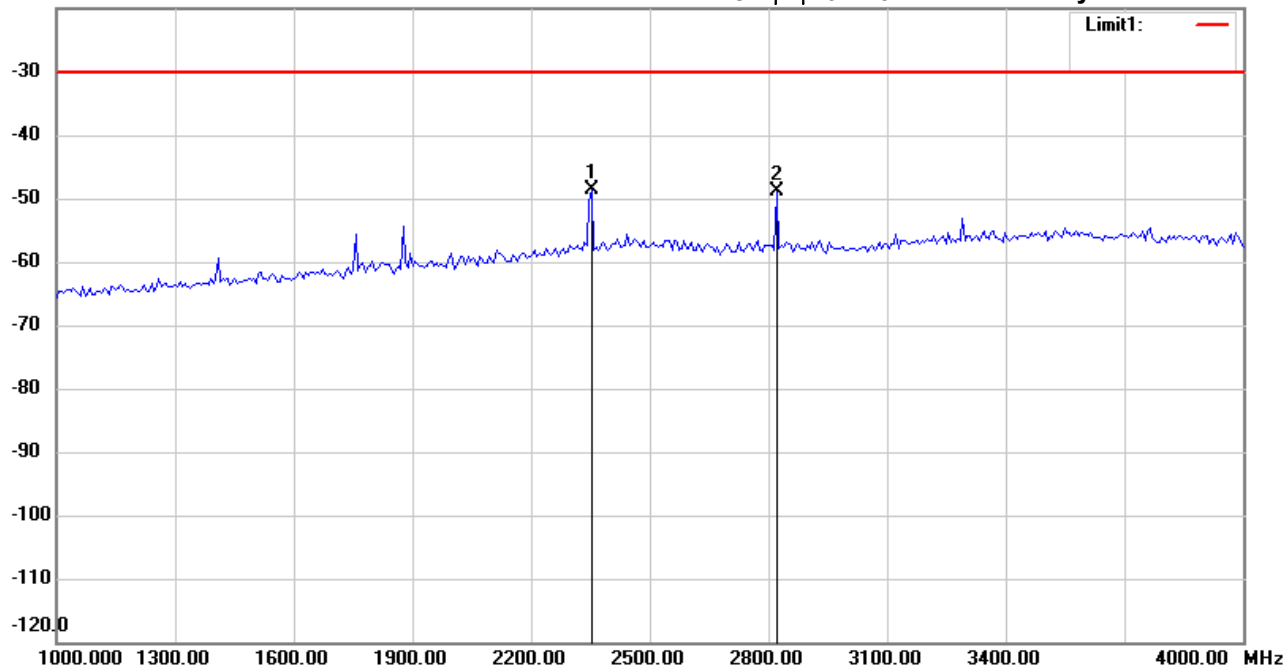
Date: 2020/2/21

Temperature: 24 °C

-20.0 dBm

Time: 下午 07:49:44

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 470.075MHz

Note :

Polarization: *Vertical*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	2352.705	-53.01	peak	4.51	-48.50	-30.00	150	245	-18.50	
	2821.643	-54.15	peak	5.24	-48.91	-30.00	150	195	-18.91	

*: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: Kent

File : 3

Data : #2

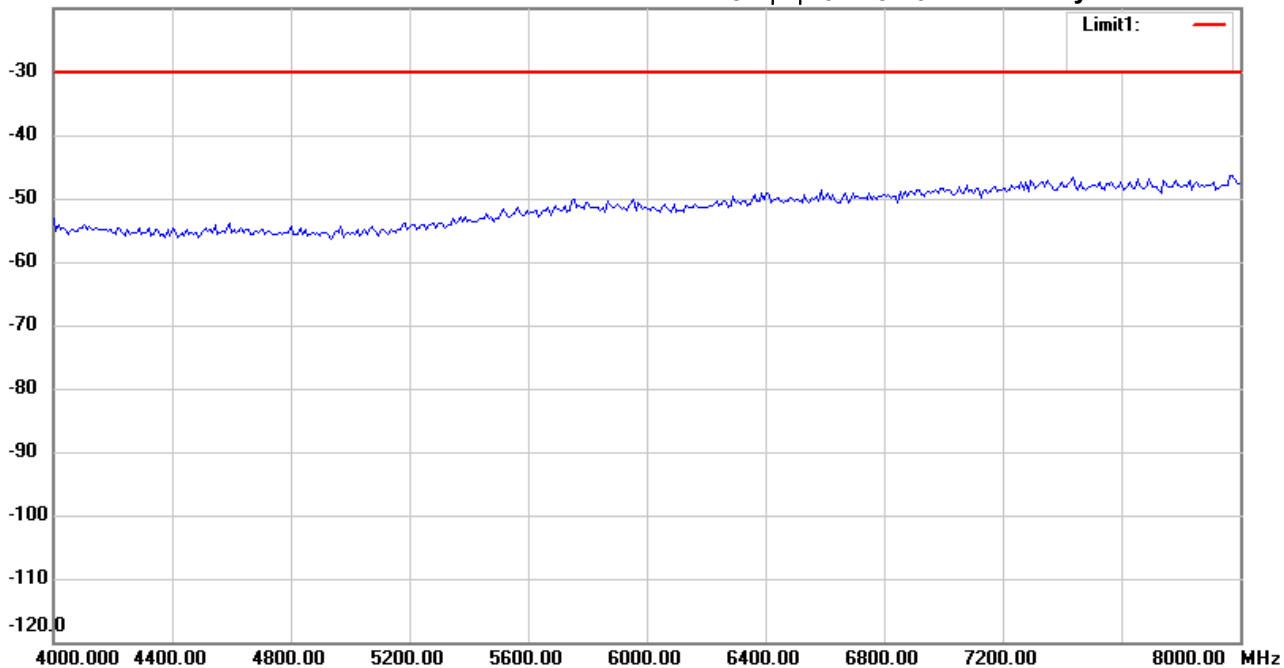
Date: 2020/2/21

Temperature: 24 °C

-20.0 dBm

Time: 下午 07:48:23

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 470.075MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

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

File : 3

Data : #4

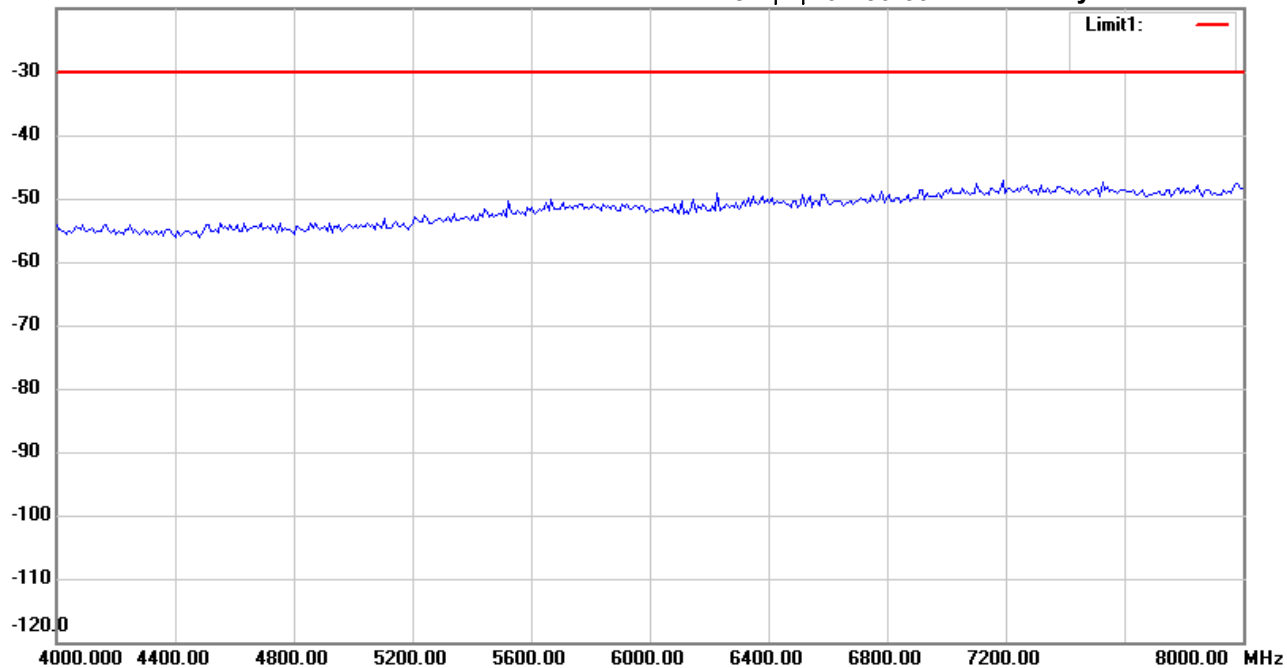
Date: 2020/2/21

Temperature: 24 °C

-20.0 dBm

Time: 下午 07:50:39

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 470.075MHz

Note :

Polarization: **Vertical**

Power : 3.7 Vd.c.

Distance: 3m

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

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



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

Radiated Emission Measurement

Operator: Kent

File : 1

Data : #1

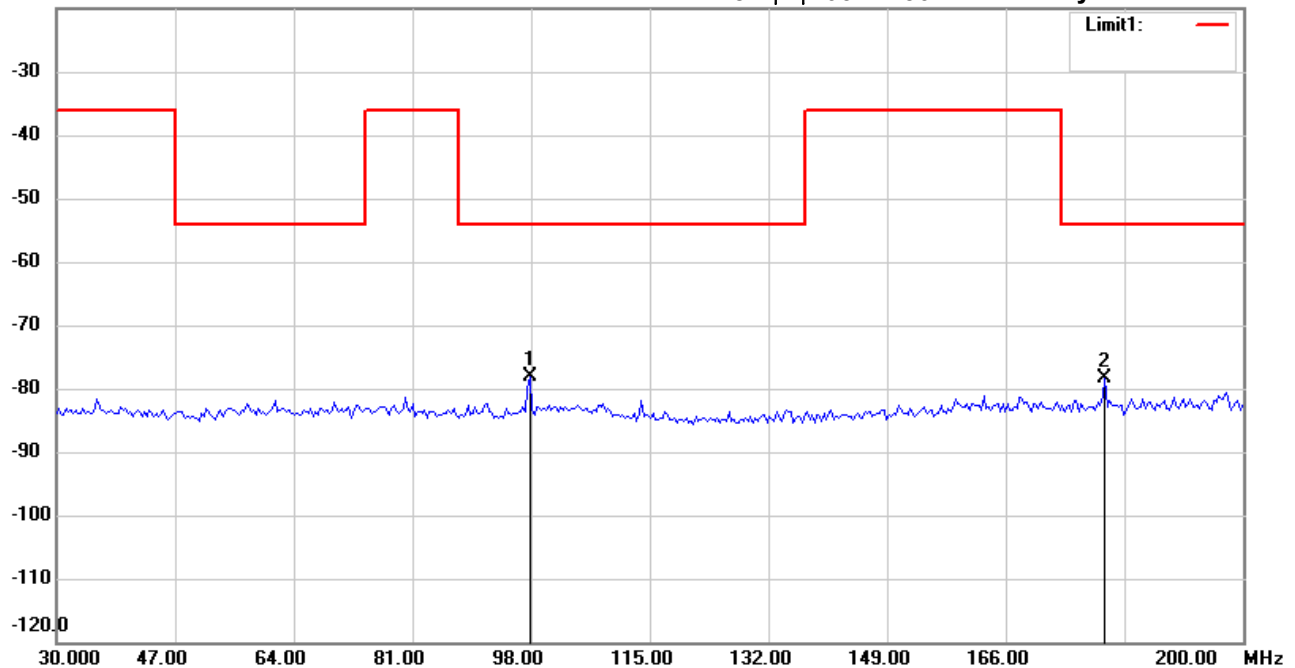
Date: 2020/2/19

Temperature: 24 °C

-20.0 dBm

Time: 下午 03:17:56

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 539.325MHz

Note :

Polarization: Horizontal

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	97.7956	-99.58	peak	21.44	-78.14	-54.00	150	220	-24.14	
	180.2405	-99.93	peak	21.52	-78.41	-54.00	150	195	-24.41	

*: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: Kent

File :1

Data :#2

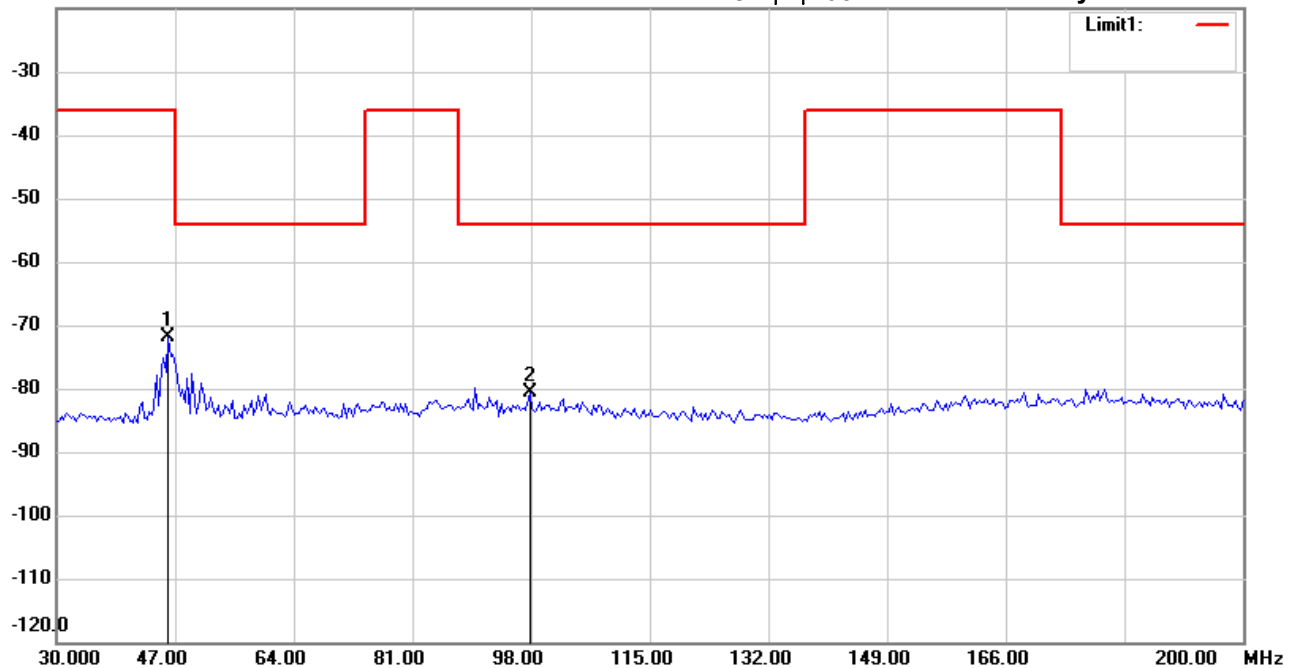
Date: 2020/2/19

Temperature: 24 °C

-20.0 dBm

Time: 下午 03:22:27

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 539.325MHz

Note :

Polarization: Vertical

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	46.0120	-93.01	peak	21.09	-71.92	-36.00	150	160	-35.92	
*	97.7956	-102.39	peak	21.70	-80.69	-54.00	150	115	-26.69	

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



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

Radiated Emission Measurement

Operator: Kent

File : 2

Data : #1

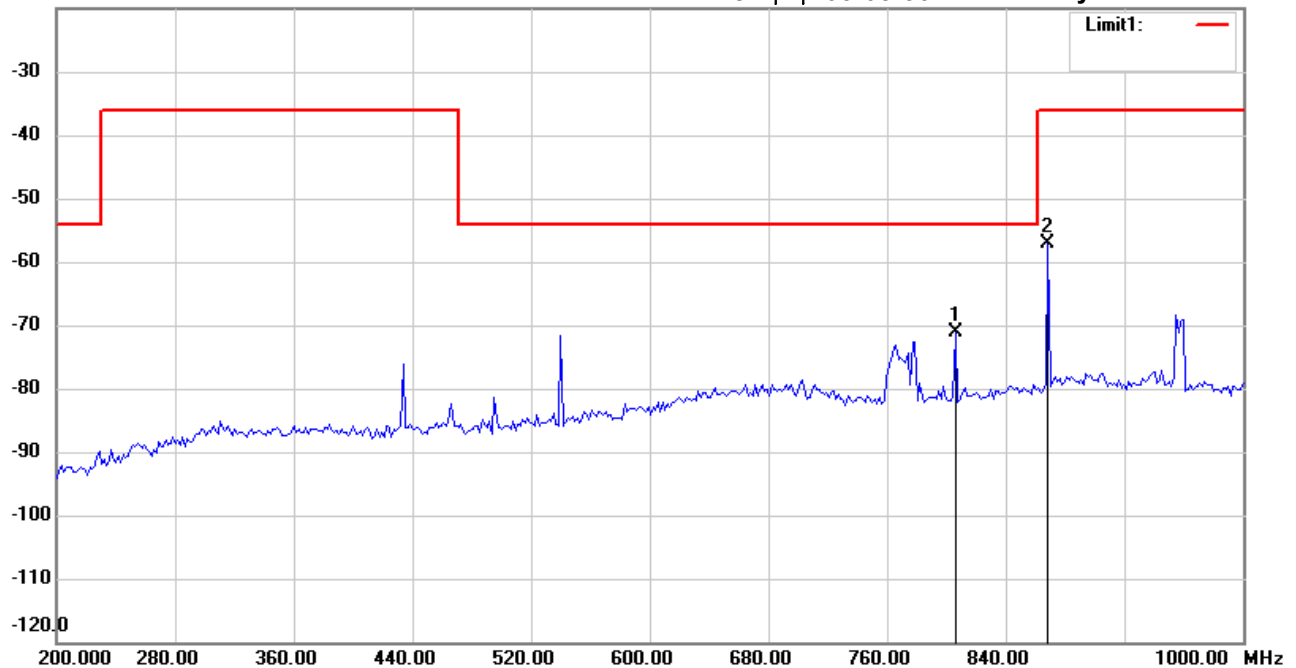
Date: 2020/2/19

Temperature: 24 °C

-20.0 dBm

Time: 下午 03:05:36

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 539.325MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	806.0120	-67.08	peak	-3.98	-71.06	-54.00	150	195	-17.06	
	868.5371	-54.95	peak	-2.15	-57.10	-36.00	150	115	-21.10	

*: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: Kent

File : 2

Data : #2

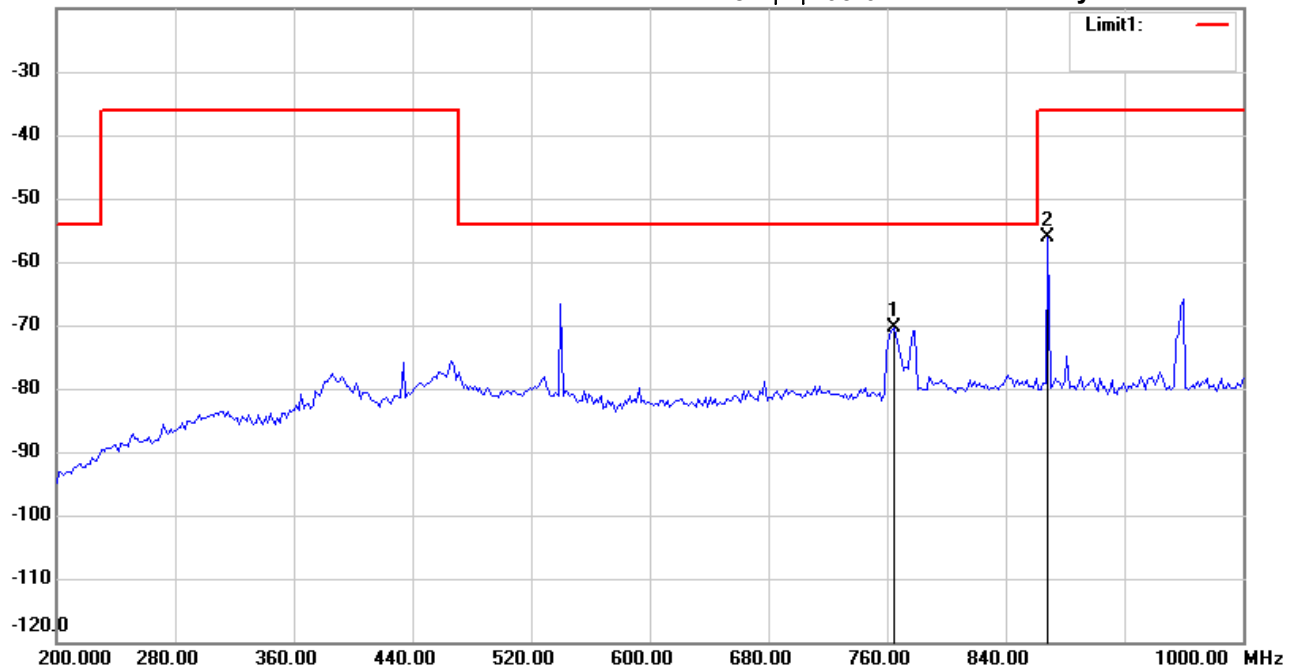
Date: 2020/2/19

Temperature: 24 °C

-20.0 dBm

Time: 下午 03:07:14

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 539.325MHz

Note :

Polarization: Vertical

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	764.3287	-66.98	peak	-3.38	-70.36	-54.00	150	330	-16.36	
	868.5371	-53.96	peak	-2.10	-56.06	-36.00	150	45	-20.06	

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



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Radiated Emission Measurement

Operator: Kent

File :3

Data :#1

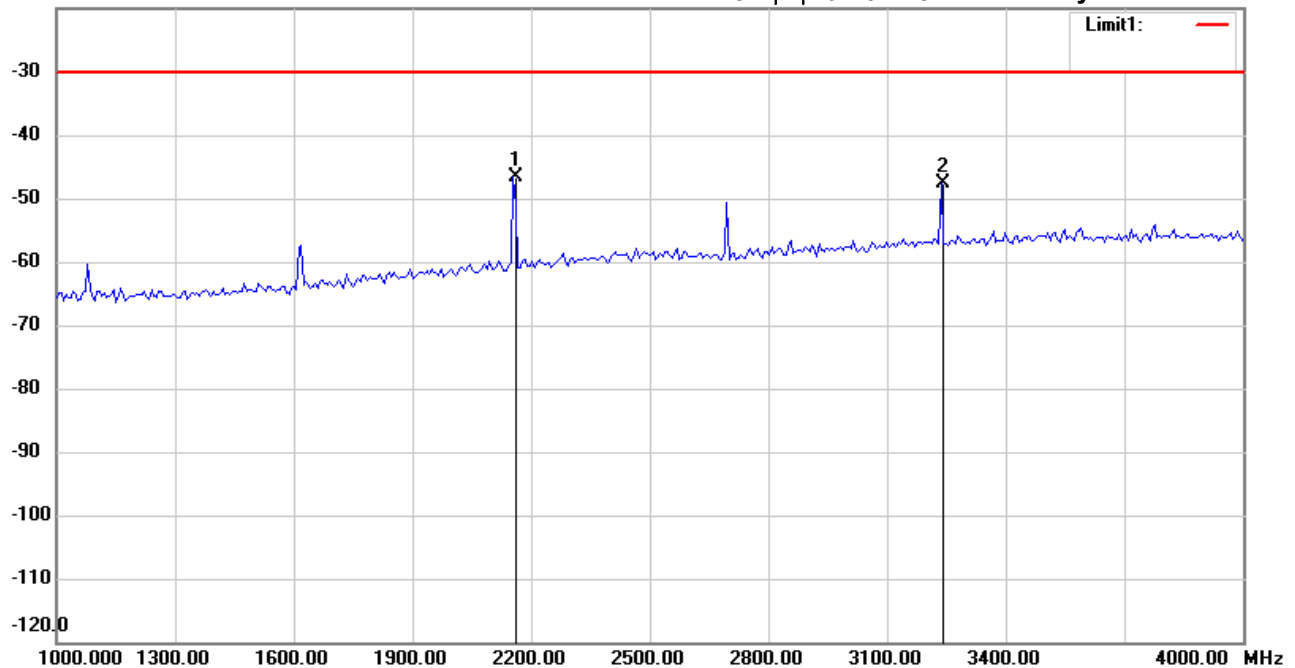
Date: 2020/2/21

Temperature: 24 °C

-20.0 dBm

Time: 下午 07:52:25

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 539.325MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	2154.309	-48.55	peak	1.94	-46.61	-30.00	150	95	-16.61	
	3236.473	-53.70	peak	6.11	-47.59	-30.00	150	330	-17.59	

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



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Radiated Emission Measurement

Operator: Kent

File : 3

Data : #3

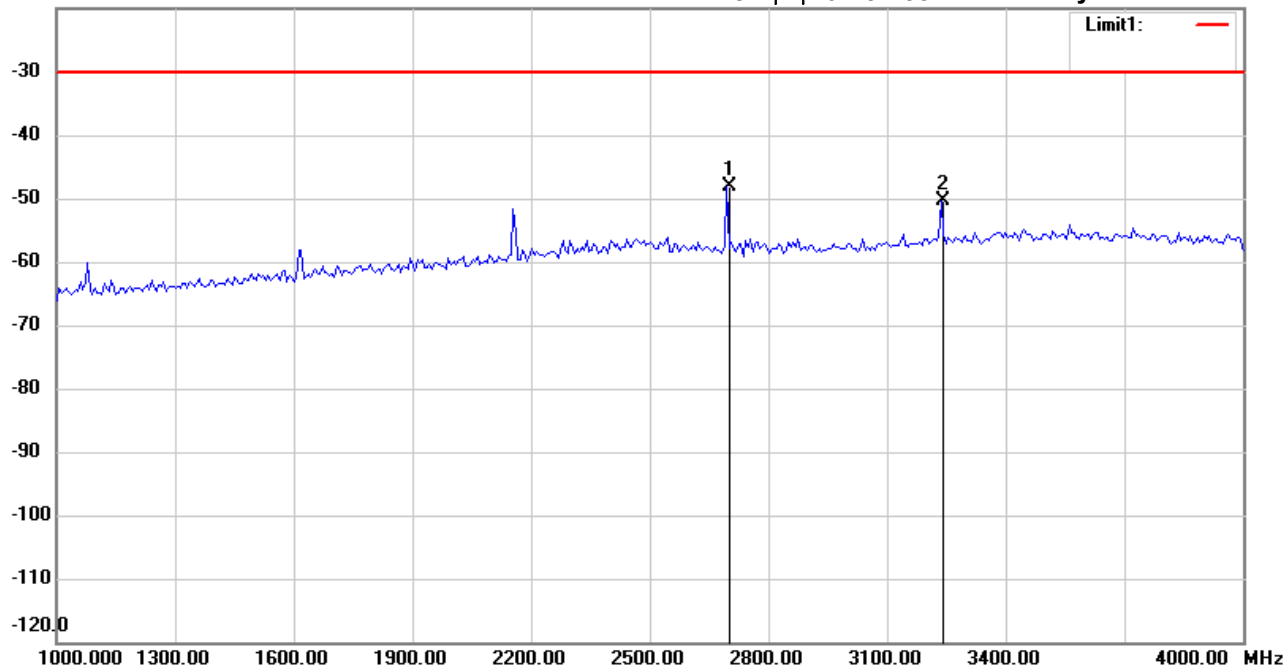
Date: 2020/2/21

Temperature: 24 °C

-20.0 dBm

Time: 下午 07:54:58

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 539.325MHz

Note :

Polarization: *Vertical*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	2695.391	-53.35	peak	5.32	-48.03	-30.00	150	110	-18.03	
	3236.473	-56.66	peak	6.35	-50.31	-30.00	150	195	-20.31	

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



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Radiated Emission Measurement

Operator: Kent

File : 3

Data : #2

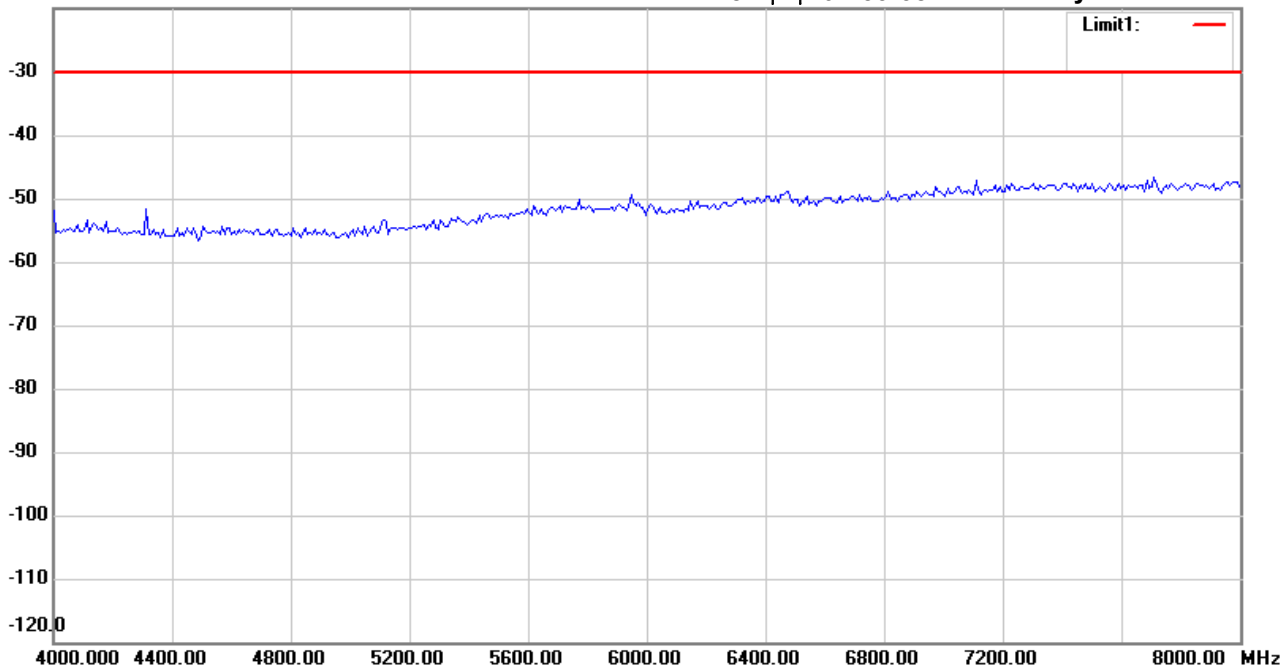
Date: 2020/2/21

Temperature: 24 °C

-20.0 dBm

Time: 下午 07:53:38

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 539.325MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
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*:Maximum data x:Over limit !:over margin



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Radiated Emission Measurement

Operator: Kent

File : 3

Data : #4

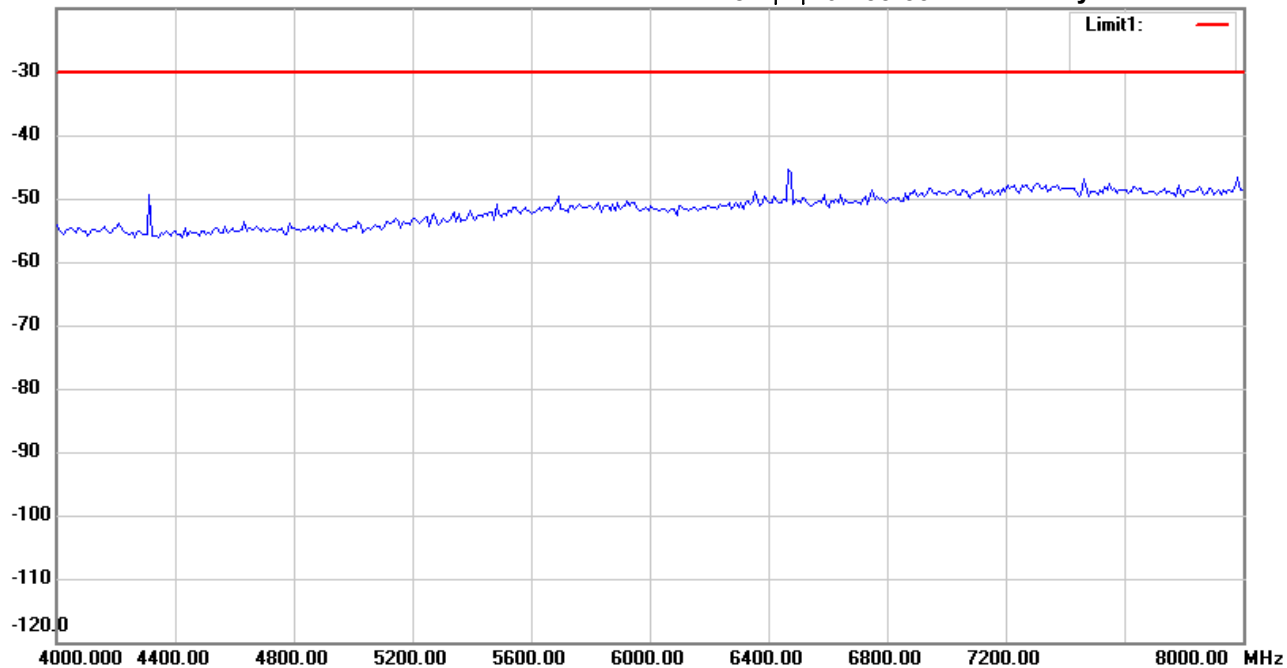
Date: 2020/2/21

Temperature: 24 °C

-20.0 dBm

Time: 下午 07:55:53

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 539.325MHz

Note :

Polarization: *Vertical*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
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*:Maximum data x:Over limit !:over margin



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Radiated Emission Measurement

Operator: Kent

File :1

Data :#1

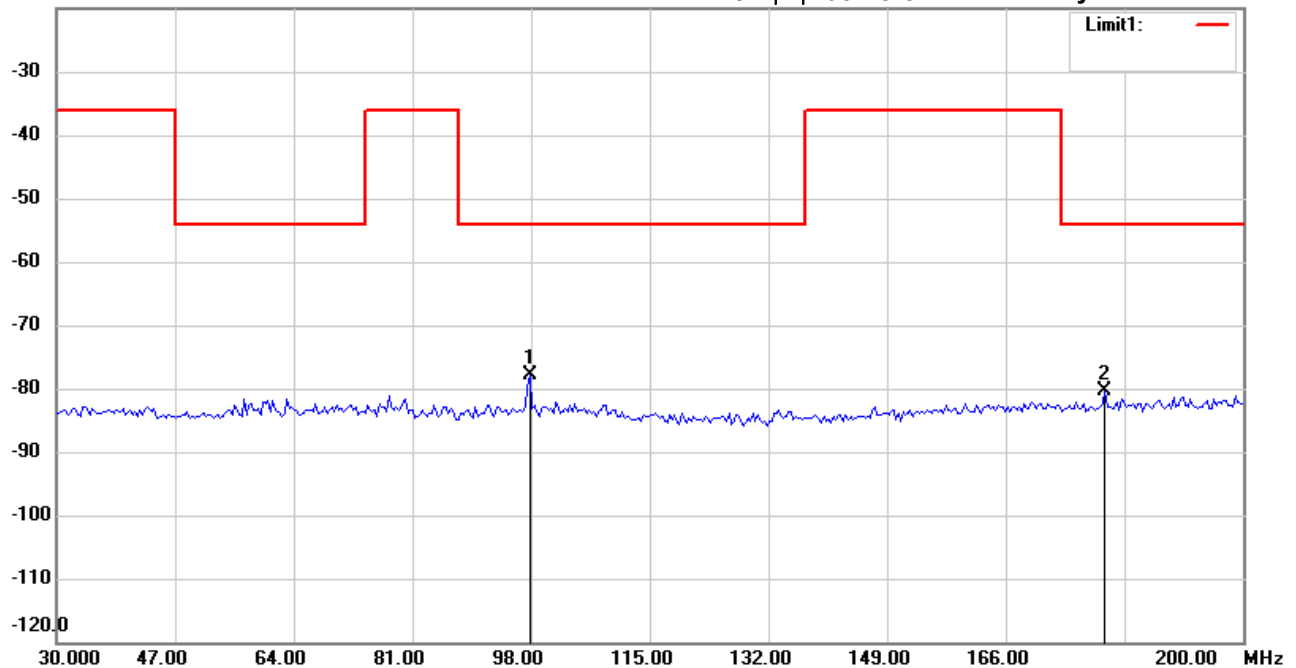
Date: 2020/2/19

Temperature: 24 °C

-20.0 dBm

Time: 下午 03:18:54

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 607.825MHz

Note :

Polarization: Horizontal

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	97.7956	-99.29	peak	21.44	-77.85	-54.00	150	95	-23.85	
	180.2405	-101.99	peak	21.52	-80.47	-54.00	150	330	-26.47	

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



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Radiated Emission Measurement

Operator: Kent

File :1

Data :#2

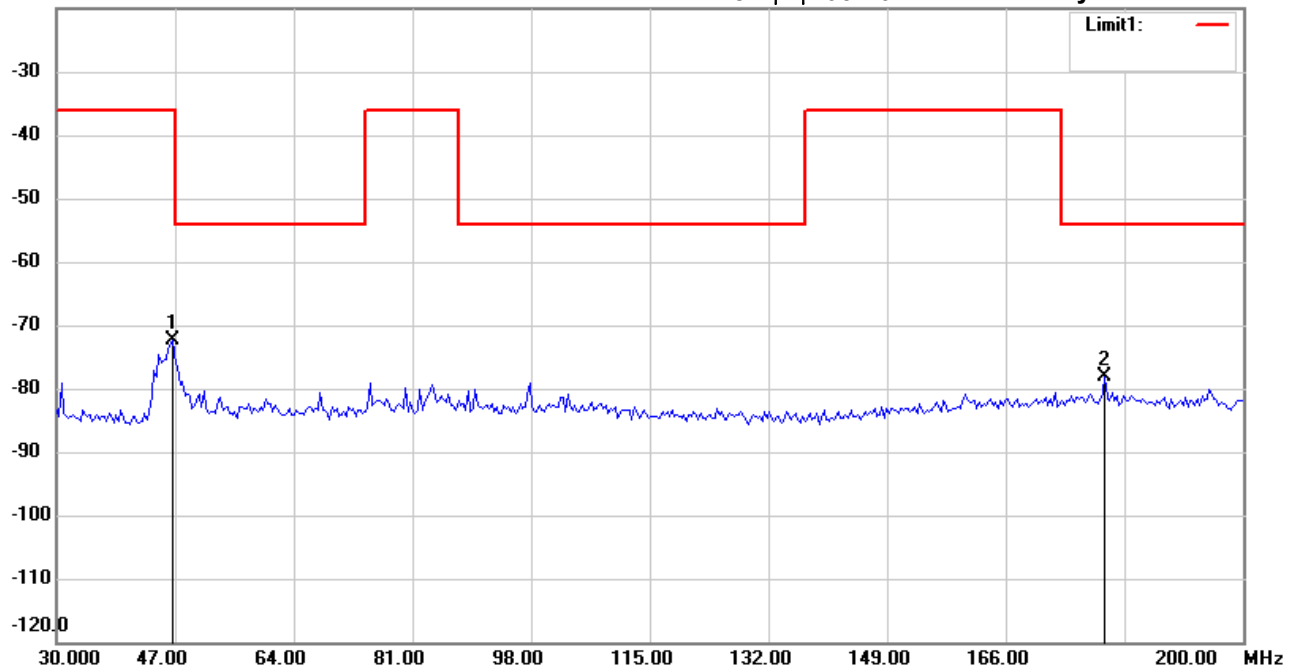
Date: 2020/2/19

Temperature: 24 °C

-20.0 dBm

Time: 下午 03:20:21

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 607.825MHz

Note :

Polarization: Vertical

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	46.6934	-93.56	peak	21.13	-72.43	-36.00	150	145	-36.43	
*	180.2405	-100.60	peak	22.51	-78.09	-54.00	150	110	-24.09	

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



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Radiated Emission Measurement

Operator: Kent

File : 2

Data : #1

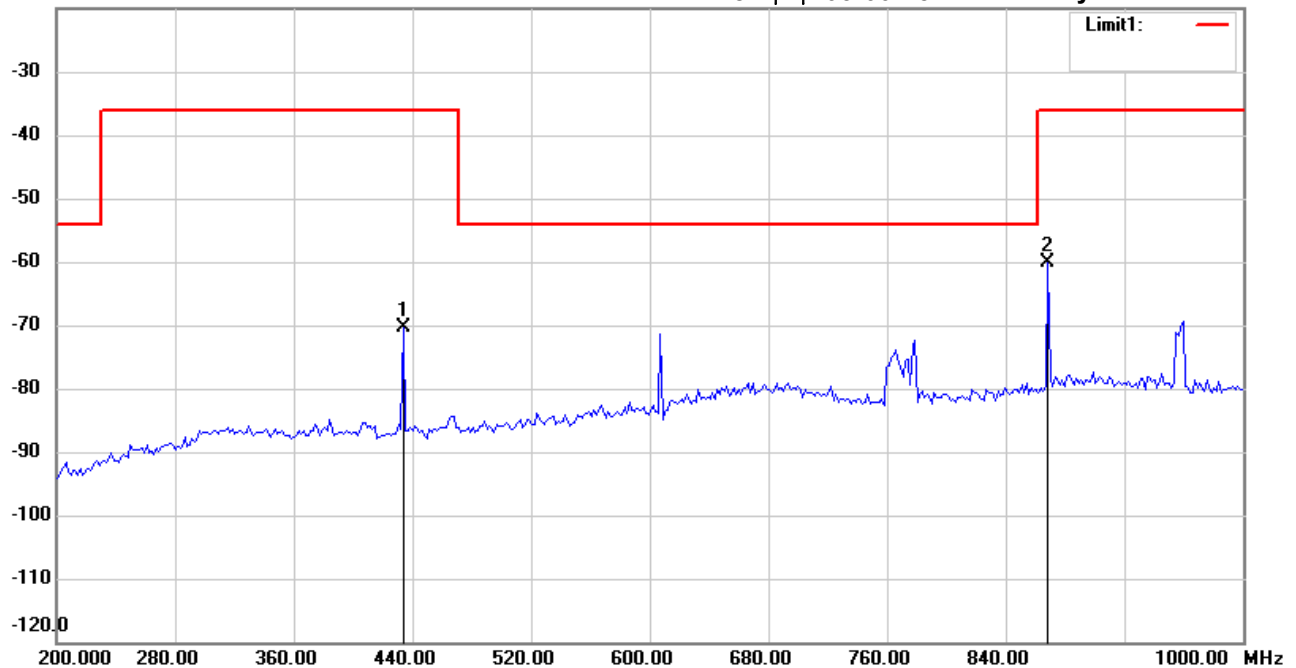
Date: 2020/2/19

Temperature: 24 °C

-20.0 dBm

Time: 下午 03:00:15

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 607.825MHz

Note :

Polarization: Horizontal

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	434.0681	-60.28	peak	-10.05	-70.33	-36.00	150	330	-34.33	
*	868.5371	-57.94	peak	-2.15	-60.09	-36.00	150	160	-24.09	

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



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Radiated Emission Measurement

Operator: Kent

File : 2

Data : #2

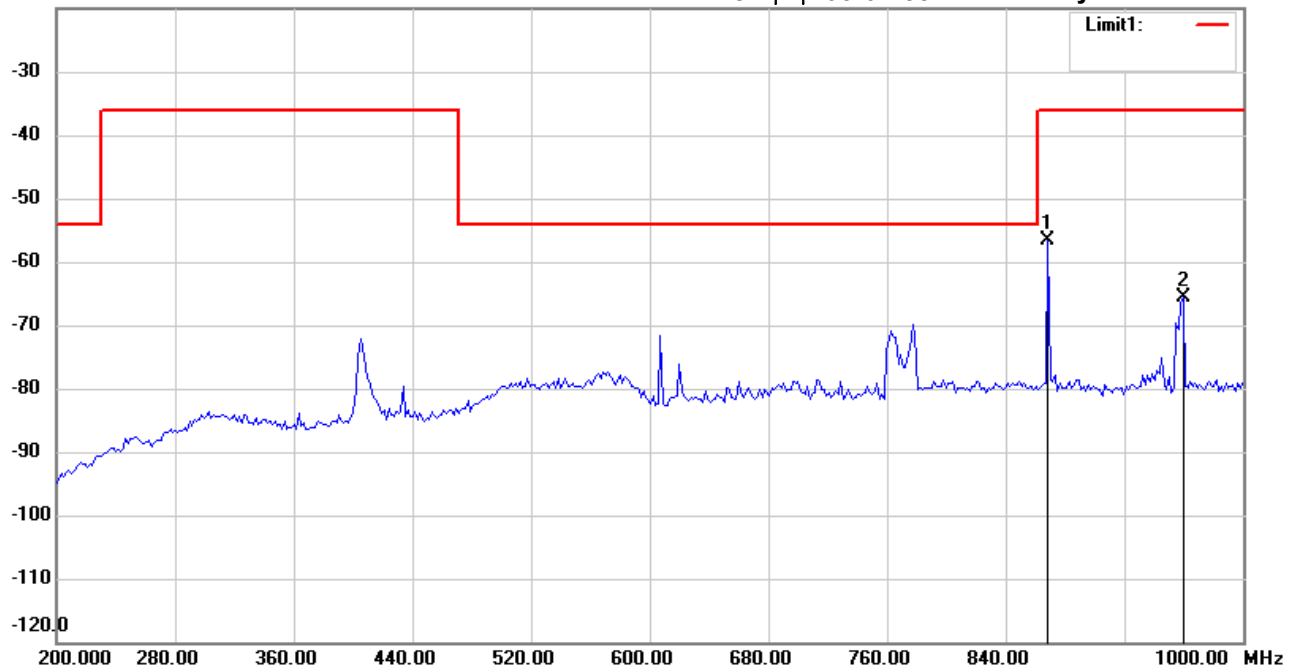
Date: 2020/2/19

Temperature: 24 °C

-20.0 dBm

Time: 下午 03:02:55

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 607.825MHz

Note :

Polarization: Vertical

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	868.5371	-54.54	peak	-2.10	-56.64	-36.00	150	45	-20.64	
	959.9198	-62.76	peak	-2.88	-65.64	-36.00	150	130	-29.64	

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



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Radiated Emission Measurement

Operator: Kent

File : 3

Data : #1

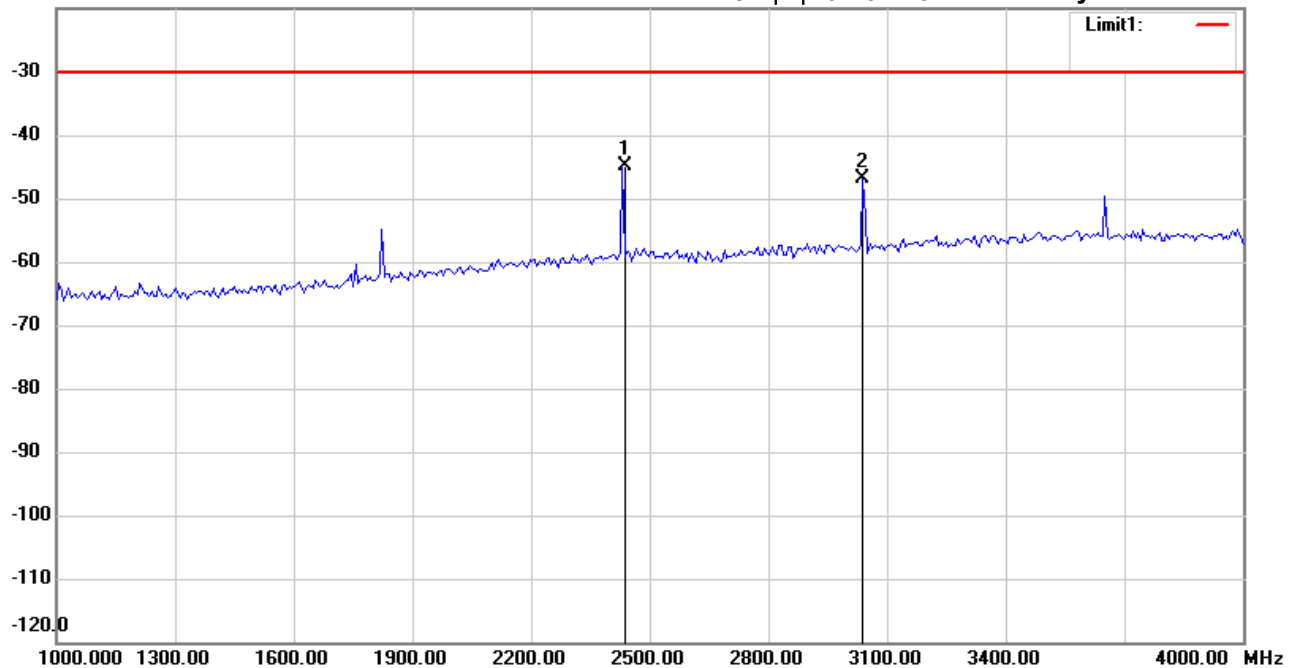
Date: 2020/2/21

Temperature: 24 °C

-20.0 dBm

Time: 下午 07:57:45

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 607.825MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	2430.862	-48.26	peak	3.43	-44.83	-30.00	150	245	-14.83	
	3038.076	-52.08	peak	5.23	-46.85	-30.00	150	160	-16.85	

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



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Radiated Emission Measurement

Operator: Kent

File : 3

Data : #3

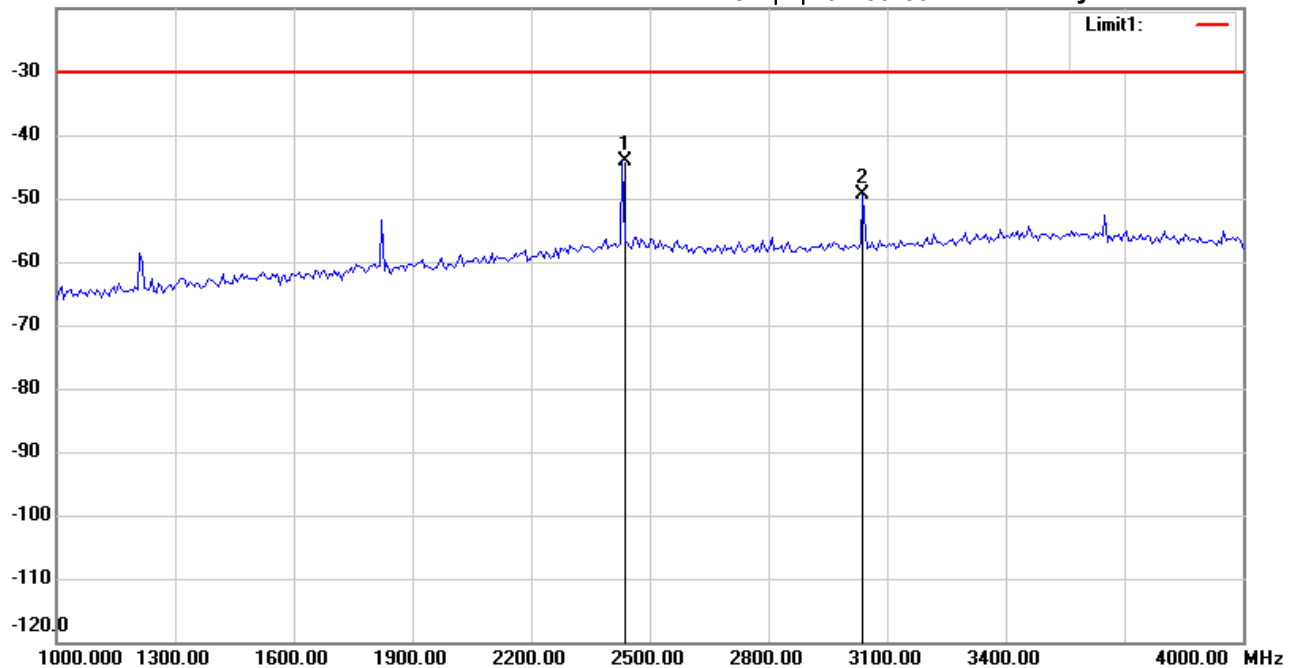
Date: 2020/2/21

Temperature: 24 °C

-20.0 dBm

Time: 下午 07:59:59

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 607.825MHz

Note :

Polarization: Vertical

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	2430.862	-49.10	peak	5.00	-44.10	-30.00	150	30	-14.10	
	3038.076	-54.71	peak	5.33	-49.38	-30.00	150	160	-19.38	

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



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Radiated Emission Measurement

Operator: Kent

File : 3

Data : #2

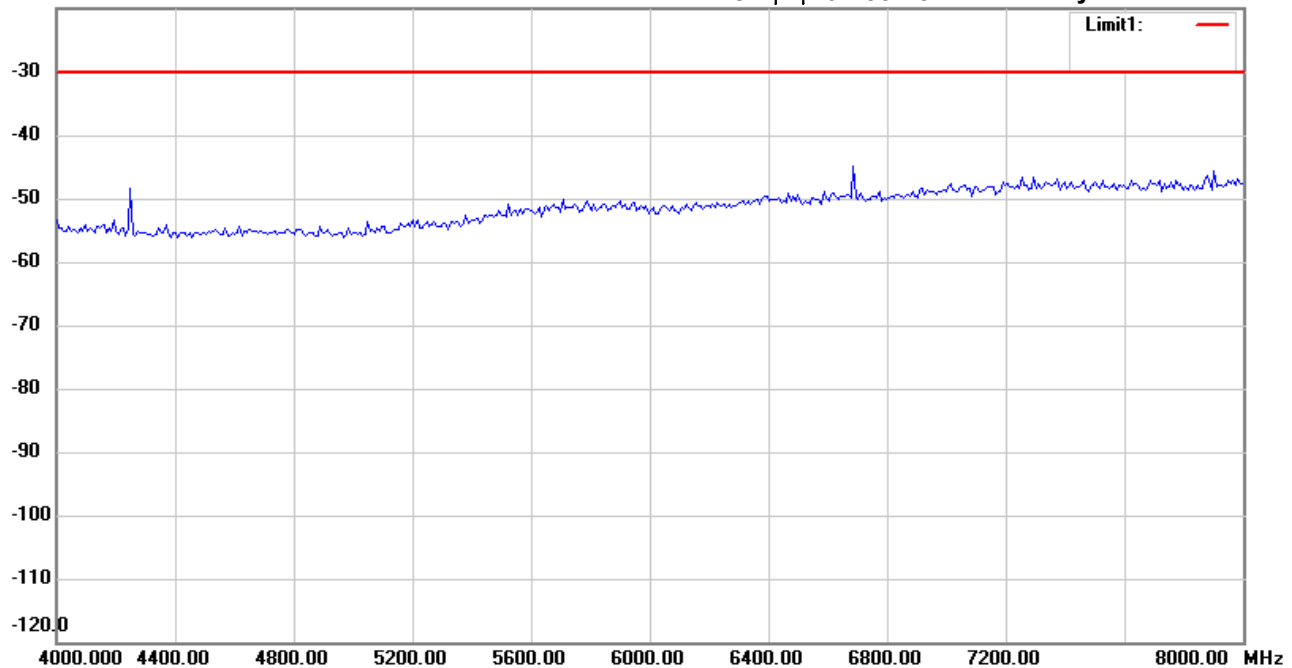
Date: 2020/2/21

Temperature: 24 °C

-20.0 dBm

Time: 下午 07:58:48

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 607.825MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
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*:Maximum data x:Over limit !:over margin



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Radiated Emission Measurement

Operator: Kent

File : 3

Data : #4

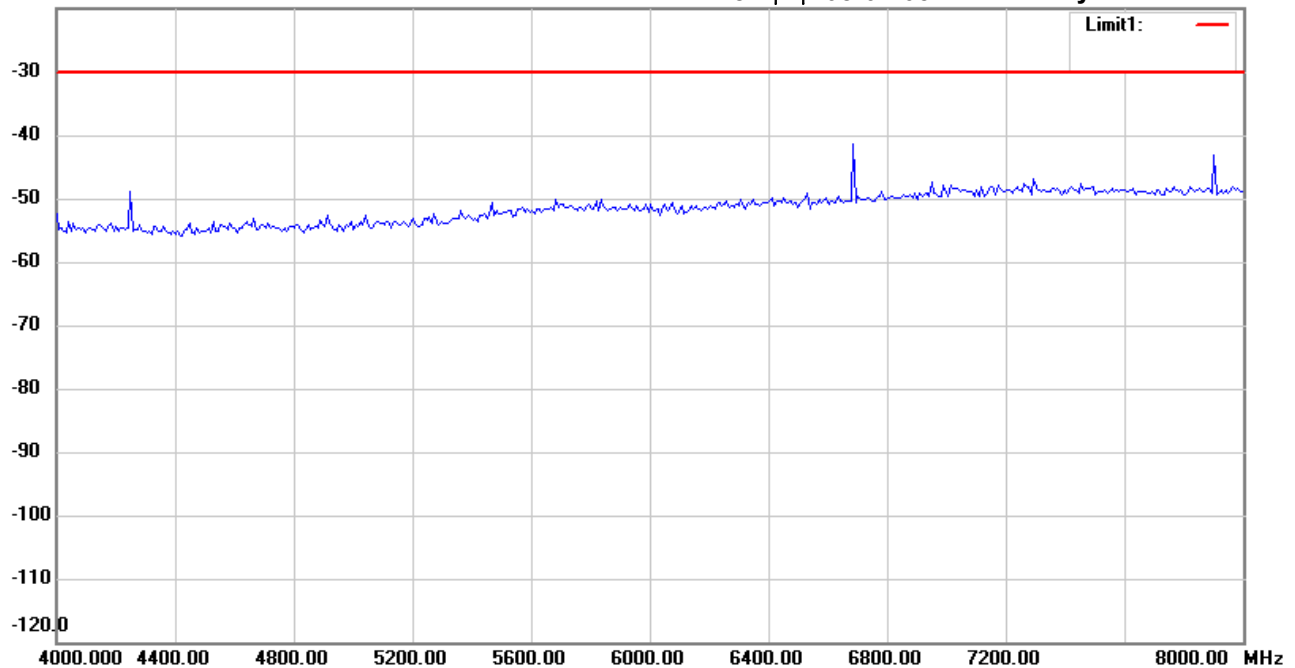
Date: 2020/2/21

Temperature: 24 °C

-20.0 dBm

Time: 下午 08:01:05

Humidity: 60 %



Site : Chamber

Condition : ETSI EN300_422-TX_Spurious_OP

EUT : W6M22001-19619

M/N:

Test Mode : TX 607.825MHz

Note :

Polarization: Vertical

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBm)	Detector	Corr. factor (dB)	Result (dBm)	Limit (dBm)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
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*:Maximum data x:Over limit !:over margin