

FCC PART 15 SUBPART C TEST REPORT

for

UHF RFID Reader

Model No.: TS100A

FCC ID: WXATS100A

of

Applicant: GIGA-TMS INC.

Address: 8F, NO.31, LANE 169, KANG-NING ST., HSI-CHIH,
NEW TAIPEI CITY, 22180 TAIWAN

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

FCC Registration No.: TW1477, TW0020, TW1072

Industry Canada filed test laboratory Reg. No. IC 5679A-1, IC 5107A-1

A2LA Accredited No.: 2732.01



Report No.: W6M21811-18603-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



Registration number: W6M21811-18603-C-1
FCC ID: WXATS100A

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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.

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

Reproduction or publication of extracts from the report requires the prior written approval of the Worldwide Testing Services(Taiwan) Co., Ltd.

Tester:

December 17, 2018

Kent Lin

Date

WTS-Lab.

Name

Signature

Technical responsibility for area of testing:

December 17, 2018

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. IC 5679A-1, IC 5107A-1

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: GIGA-TMS INC.

Street: 8F, NO.31, LANE 169, KANG-NING ST., HSI-CHIH,

Town: NEW TAIPEI CITY, 22180

Country: TAIWAN

Telephone: +886-2-26954214

Fax: +886-2-26954213



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1.4 Application details

Date of receipt of test item (1st): March 22, 2018
Date of test (1st): from March 22, 2018 to September 12, 2018
Date of receipt of test item (2nd): November 26, 2018
Date of test (2nd): from November 26, 2018 to December 14, 2018

1.5 General information of Test item

Type of test item: UHF RFID Reader
Model Number: TS100A
Multi-listing model number: TS100
Photos: see Annex

Technical data

Frequency band: 902 - 928 MHz
Frequency (ch A): 902.75 MHz
Frequency (ch B): 915.25 MHz
Frequency (ch C): 927.25 MHz

Transmitter

Unom

Power (ch A): Conducted: 26.50 dBm
Power (ch B): Conducted: 26.16 dBm
Power (ch C): Conducted: 26.22 dBm

Power supply: USB 5 Vd.c.

Operation modes: Half-duplex

Modulation Type: PRASK

Antenna Type: Patch Antenna

Antenna gain: -6.283 dBi

Host device: none

Classification:

Fixed Device	<input checked="" type="checkbox"/>
Mobile Device (Human Body distance > 20cm)	<input type="checkbox"/>
Portable Device (Human Body distance < 20cm)	<input type="checkbox"/>
Modular Radio Device	<input type="checkbox"/>



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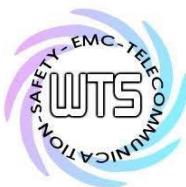
Manufacturer: (if applicable)

Name: GIGATEK INC.
Street: No. 47, Hsiang Ho Road, Tantz District,
Town: Taichung City 42741,
Country: Taiwan, R.O.C.

Additional information: ./.

1.6 Test standards

Technical standard : FCC RULES PART 15 SUBPART C § 15.247 (2017-10)



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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 as specified in 3 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: USB 5 Vd.c.

Extreme conditions parameters: ./.

Test item Name	Uncertainty
Estimation Result of Uncertainty of Conducted Emission	Expanded Uncertainty : 1.54 dB
Estimation Result of Uncertainty of Radiated Emission(3M)	Expanded Uncertainty : 0.009-30 MHz : 2.17 dB 30-1000 MHz : 3.57 dB 1-18 GHz : 2.60 dB 18-40 GHz : 2.58 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 Conducted Output Power Measurement Output power	Expanded Uncertainty : 1.01 dB
Estimation Result of Uncertainty of Power Density Measurement Power density	Expanded Uncertainty : 1.73 dB
Estimation Result of Uncertainty of Band Edge Measurement	Expanded Uncertainty : 0.98 dBc
Estimation Result of Uncertainty of Frequency Separation Measurement Hopping channel separation	Expanded Uncertainty : 552.91 Hz
Estimation Result of Uncertainty of Duty Cycle Measurement Dwell time	Expanded Uncertainty : 0.099 ms



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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	2018/5/30	2019/5/29
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	Function Test	
ETSTW-CE 004	ZWEILEITER-V-NETZACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5	840731/011	R&S	2018/11/1	2019/10/31
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2018/8/21	2019/8/20
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	2018/7/13	2019/7/12
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2018/9/25	2019/9/24
ETSTW-CE 028	MXE EMI Receiver	N9038A	MY53220110	Agilent	2018/7/16	2019/7/15
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2018/5/30	2019/5/29
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2018/5/21	2019/5/20
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	2018/7/13	2019/7/12
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	ETS-Lindgren	2018/7/12	2019/7/11
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	ETS-Lindgren	2018/3/26	2019/3/25
ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2018/1/23	2019/1/22
ETSTW-RE 043	Log-Periodic Dipole Antenna	HL223	100166	R&S	2018/4/13	2019/4/12
ETSTW-RE 044	Log-Periodic Antenna	HL050	100094	R&S	2018/4/26	2019/4/25
ETSTW-RE 045	ESA-E SERIES SPECTRUM ANALYZER	E4404B	MY45111242	Agilent	Pre-test Use	
ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2018/3/1	2019/2/28
ETSTW-RE 051	Attenuator 6dB	50HF-006-1	None	JFW	2018/3/1	2019/2/28
ETSTW-RE 053	Attenuator 3dB	50HF-003-1	None	JFW	2018/3/1	2019/2/28
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2018/3/6	2019/3/5
ETSTW-RE 060	Attenuator 30dB	5015-30	F651012z-01	ATM	2018/3/1	2019/2/28
ETSTW-RE 062	Amplifier Module	CHC 2	None	KMIC	2018/3/30	2019/3/29
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	2018/9/17	2019/9/16
ETSTW-RE 088	SOLID STATE AMPLIFIER	KMA180265A01	99057	KMIC	2018/9/18	2019/9/17
ETSTW-RE 091	Match Pad	MDCS1500	None	WOKEN	2018/4/16	2019/4/15
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2018/2/23	2019/2/22
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	2018/1/15	2019/1/14
ETSTW-RE 120	RF Player	MP9200	MP9210-111022	ADIVIC	Function test	
ETSTW-RE 122	SIGNAL GENERATOR	SMF100A	102149	R&S	2018/5/29	2019/5/28
ETSTW-RE 125	5GHz Notch filter	5NSL11-5200/E221.3-O/O	1	K&L Microwave	2018/8/8	2019/8/7
ETSTW-RE 126	5GHz Notch filter	5NSL12-5800/E221.3-O/O	1	K&L Microwave	2018/8/8	2019/8/7
ETSTW-RE 127	RF Switch Box	RFS-01	None	WTS	2018/2/27	2019/2/26
ETSTW-RE 128	5.3GHz Notch filter	N0153001	SN487233	Microwave Circuits	2018/8/8	2019/8/7
ETSTW-RE 129	5.5GHz Notch filter	N0555984	SN487234	Microwave Circuits	2018/8/8	2019/8/7
ETSTW-RE 130	Handheld RF Spectrum Analyzer	N9340A	CN0147000204	Agilent	Pre-test Use	
ETSTW-RE 142	Amplifier	8447D	2805A03378	Agilent	2018/3/30	2019/3/29
ETSTW-RE 147	Bi-log Hybrid Antenna	MCTD 2786B	BLB16M04005	ETC	2018/3/23	2019/3/22
ETSTW-RE 151	Thermohyrometer	608-h1	45104376	TESTO	2018/8/17	2019/8/16
ETSTW-EMI 011	USB Compact Modulator	SFC-U	101689	R&S	2018/5/10	2019/5/9
ETSTW-EMS 008	Exposure Level Tester	ELT-400	G-0009	Narda	2018/7/17	2019/7/16
ETSTW-GSM 002	Universal Radio Communication Tester	CMU 200	109439	R&S	2018/2/27	2019/2/26
ETSTW-GSM 003	Radio Communication Analyzer	MT8820C	6201342073	Anritsu	2018/3/2	2019/3/1
ETSTW-GSM 004	Wideband Radio Communication Tester	CMW500	128092	R&S	2018/10/19	2019/10/18
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849-822/851-40 /12+9SS	3	WI	2018/1/11	2019/1/10
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748-1743/1752-32/5SS	1	WI	2018/1/11	2019/1/10
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880.5-1875.5/1884.5-32/5SS	3	WI	2018/1/11	2019/1/10
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1-904.25-50/8SS	1	WI	2018/1/11	2019/1/10
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2018/9/12	2019/9/11
ETSTW-GSM 024	Radio Communication Analyzer	MT8821C	None	Anritsu	2018/3/7	2019/3/6
ETSTW-GSM 025	Band Reject Filter	BRM19835	001	Micro-Tronics	2018/8/9	2019/8/8
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	2018/2/22	2019/2/21
ETSTW-Cable 017	BNC Cable	X Cable	B Cable 2	Schwarz beck	2018/2/22	2019/2/21
ETSTW-Cable 018	BNC Cable	Y Cable	B Cable 3	Schwarz beck	2018/2/22	2019/2/21
ETSTW-Cable 019	BNC Cable	Z Cable	B Cable 4	Schwarz beck	2018/2/22	2019/2/21
ETSTW-Cable 020	N TYPE Cable	OATS Cable 1	N30N30-L335-15M	JYE BAO CO.,LTD.	2018/7/2	2019/7/1
ETSTW-Cable 026	Microwave Cable	SUCOFLEX 104	279075	HUBER+SUHNER	2018/2/27	2019/2/26
ETSTW-Cable 027	Microwave Cable	SUCOFLEX 104	279083	HUBER+SUHNER	2018/5/14	2019/5/13
ETSTW-Cable 028	Microwave Cable	FA147A0015M2020	30064-2	UTIFLEX	2018/9/18	2019/9/17
ETSTW-Cable 029	Microwave Cable	FA147A0015M2020	30064-3	UTIFLEX	2018/9/18	2019/9/17
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 (S Cable 9)	279067	HUBER+SUHNER	2018/2/27	2019/2/26
ETSTW-Cable 031	Microwave Cable	SUCOFLEX 104 (S Cable 10)	238092	HUBER+SUHNER	2018/3/30	2019/3/29



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ETSTW-Cable 043	Microwave Cable	SUCOFLEX 104	317576	HUBER+SUHNER	2018/3/30	2019/3/29
ETSTW-Cable 048	Microwave Cable	SUCOFLEX 104	325519	HUBER+SUHNER	2018/3/30	2019/3/29
ETSTW-Cable 058	Microwave Cable	SUCOFLEX 104	none	HUBER+SUHNER	2018/6/9	2019/6/8
ETSTW-Cable 064	Microwave Cable	SUCOFLEX 104	MY28891	HUBER+SUHNER	2018/3/30	2019/3/29
ETSTW-Cable 066	SMA type cable	32022	None	ASTROLAB	2018/8/30	2019/8/29
ETSTW-Cable 071	N TYPE CABLE	EMCCFD400-NM-NM-25000	170239	EMCI	2018/6/9	2019/6/8
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	



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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. The ambient temperature of the UUT was 23°C with a humidity of 40 %.

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 μ 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 μ V + 10.36 dB + 6 dB = 36.36 dB μ V/m @3m

The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m (non metallic table) and arranged according to ANSI C63.10-2013 6.2.2. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to the frequency specified as follows:

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

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

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



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

The formula is as follows:

Average = Peak + Duty Factor

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

$T = 100\text{ms}$ when the pulse train period is over 100 ms or the period of the pulse train.

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

ANSI STANDARD C63.10-2013 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
Peak Output Power	15.247(b)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Equivalent radiated Power	15.247(b)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Spurious Emissions radiated – Transmitter operating	15.247(c)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Spurious Emissions conducted – Transmitter operating	15.247	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Carrier Frequency Separation	15.247(a) (1)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Number of Hopping Frequencies	15.247(a) (1)(i)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Time of Occupancy (Dwell Time)	15.247(a) (1)(i)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
20 dB Bandwidth	15.247(a) (1)(i)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Band-edge Compliance of RF Emission	15.247(d)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Radiated Emission from Receiver Part	15.109	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Power Line Conducted Emission	15.207(a)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The follows is intended to leave blank.



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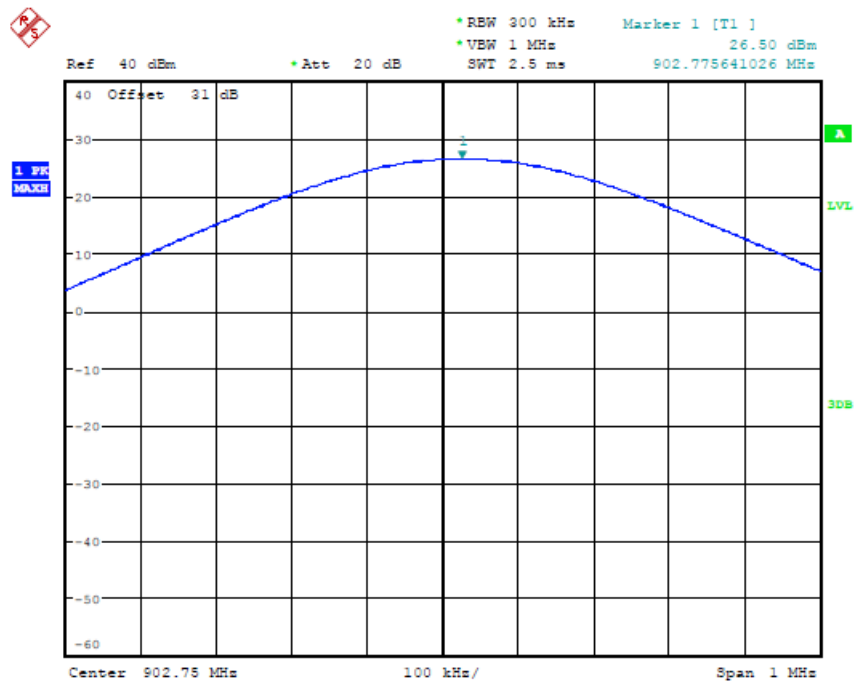
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3.1 Peak Output Power (transmitter)

FCC Rule: 15.247

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

The power was measured with modulation (declared by the applicant).

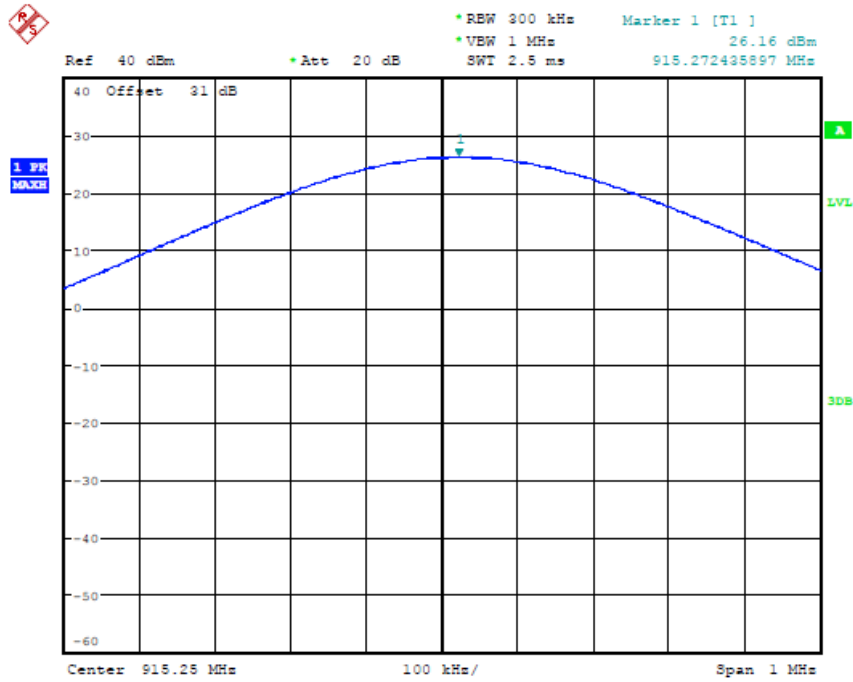


MAX OUTPUT POWER
Date: 10.SEP.2018 11:05:24

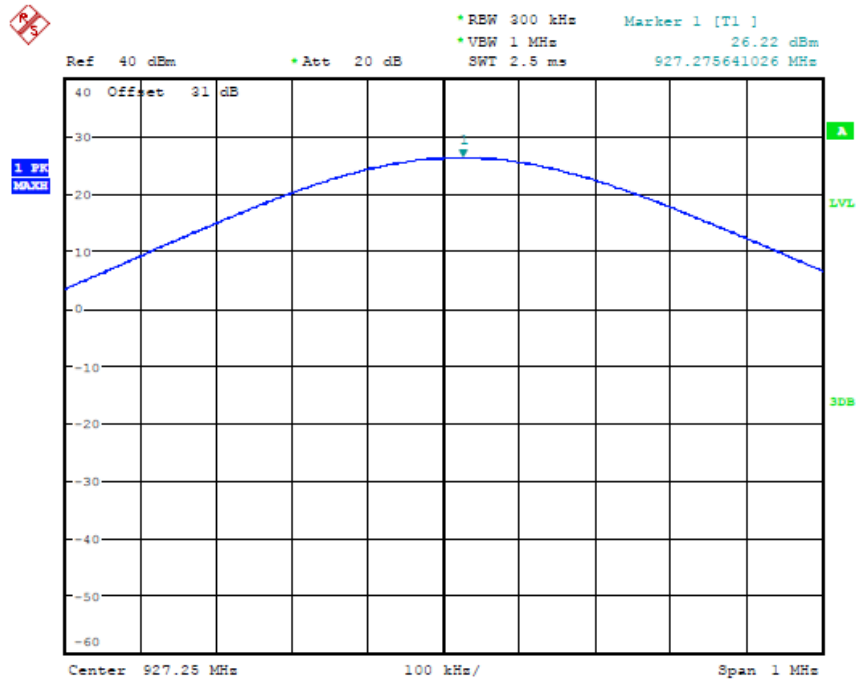


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MAX OUTPUT POWER
Date: 10.SEP.2018 11:06:48



MAX OUTPUT POWER
Date: 10.SEP.2018 11:07:13



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Maximum Peak Output Power

Limits:

Frequency MHz	Number of hopping channels			
	≥ 75	≥ 50	$49 \geq 25$	$74 \geq 15$
902-928	--	30 dBm	24 dBm	--
2400-2483.5 MHz	30 dBm	--	--	21 dBm
5725-5850 MHz	30 dBm	--	--	--

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

Test equipment used: ETSTW-RE 055, ETSTW-RE 050, ETSTW-RE 064



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3.2 Equivalent isotropic radiated power

FCC Rule: 15.247(b)(3)

Test exclusion = max. conducted output power

Test exclusion = 26.50 dBm

RESULT:

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

RF Exposure Compliance Requirements

FCC OET Bulletin 65 Edition 97.01 determines the equations for predicting RF fields and applicable limits.

The prediction for power density in the far-field but will over-predict power density in the near field, where it could be used for walking a “worst case” or conservative prediction.

$$S = \frac{PG}{4\pi R^2}$$

- S – Power Density
- P – Output power ERP
- R – Distance
- D – Cable Loss
- AG – Antenna Gain

Item	Unit	Value	Remarks
P	mW	446.6836	Peak value
D	dB		
AG	dBi	-6.283	
G		0.2353	Calculated Value
R	cm	20	Assumed value
S	mW/cm ²	0.0209	Calculated value

Limits:

Limit for General Population / Uncontrolled Exposure	
Frequency (MHz)	Power Density (mW/cm ²)
1500 – 100.000	1.0



Registration number: W6M21811-18603-C-1

FCC ID: WXATS100A

3.3 Transmitter Radiated Emissions in Restricted Bands

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

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

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

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

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

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

Limits.

For frequencies below 1GHz:

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

For frequencies above 1GHz (Average measurements).

Guidance on Measurement of Digit Transmission Systems:

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

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

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

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

Explanation: See attached diagrams in Appendix.



Registration number: W6M21811-18603-C-1
FCC ID: WXATS100A

3.4 Transmitter Radiated Emissions in restricted Bands

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

Radiated emission measurements were performed from 30 MHz to 26000 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 FHSS Systems:

“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.” Here the correction was added to the limit instead subtracted from the reading.

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

For frequencies above 1GHz (Average measurements).

Limit – duty cycle correction

No duty cycle correction was added to the reading.

54.0dB μ V/m

For frequencies above 1GHz (Peak measurements).

Limit + 20dB

54.0dB μ V/m + 20 dB= 74 dB μ V/m

Test equipment used: ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 062, ETSTW-RE 142, ETSTW-RE 147, ETSTW-RE 064

Explanation: See attached diagrams in appendix.



Worldwide Testing Services(Taiwan) Co., Ltd.

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3.5 Spurious emissions (tx)

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

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.

If in the column's correction factor states a value then the max. Field strength in the same row is corrected by a value gained from the "Marker-Delta-Method" or the „Duty-Cycle Correction Factor“.

Summary table with radiated data of the test plots

Model:	TS100A	Date:	--	Engineer:	--
Mode:	--	Temperature:	-- °C		
Polarization:	--	Humidity:	-- %		

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. Measurement uncertainty above 1GHz: 30-1000 MHz = ±3.57 dB, 1-18 GHz = ± 2.60 dB, 18-40 GHz = ± 2.58 dB ; Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2. The decision rule is "false acceptance".
6. See attached diagrams in 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.

Test equipment used: ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 062, ETSTW-RE 142, ETSTW-RE 147 ,ETSTW-RE 064, ETSTW-RE 088, ETSTW-RE 018

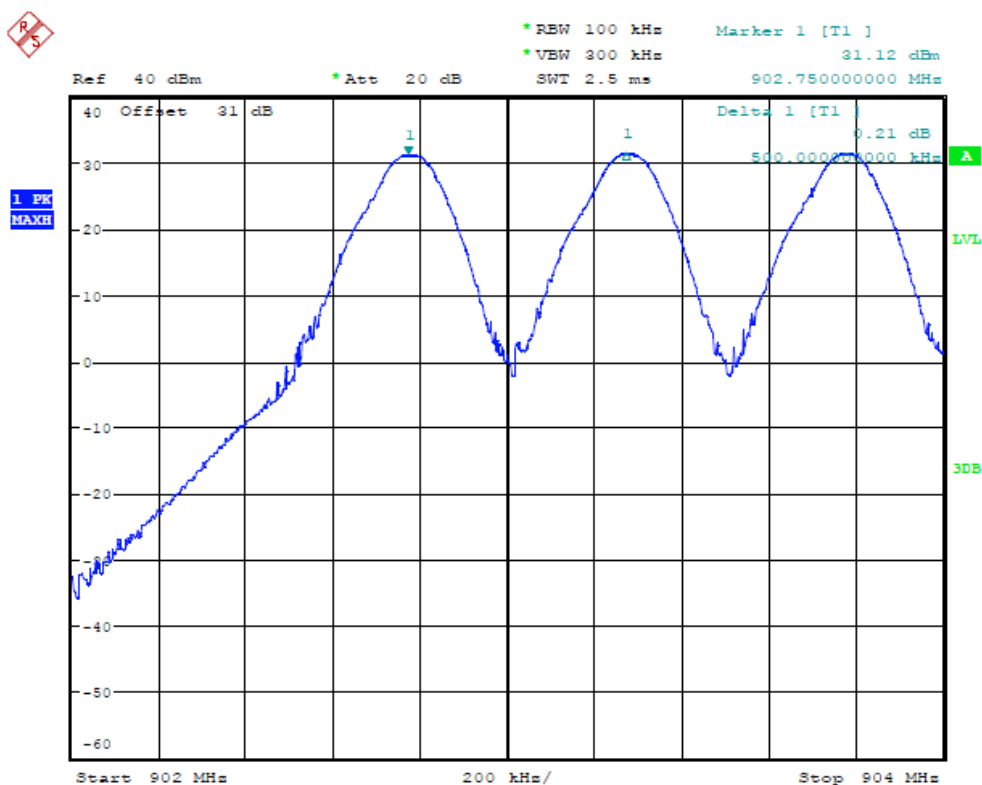


Registration number: W6M21811-18603-C-1
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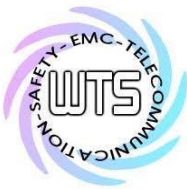
3.6 Carrier Frequency Separation

Carrier Frequency Separation was measured with modulation (declared by manufacturer).

According to FCC rules part 15 subpart C §15.247 frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or 20 dB bandwidth of the hopping channel, whichever is greater.

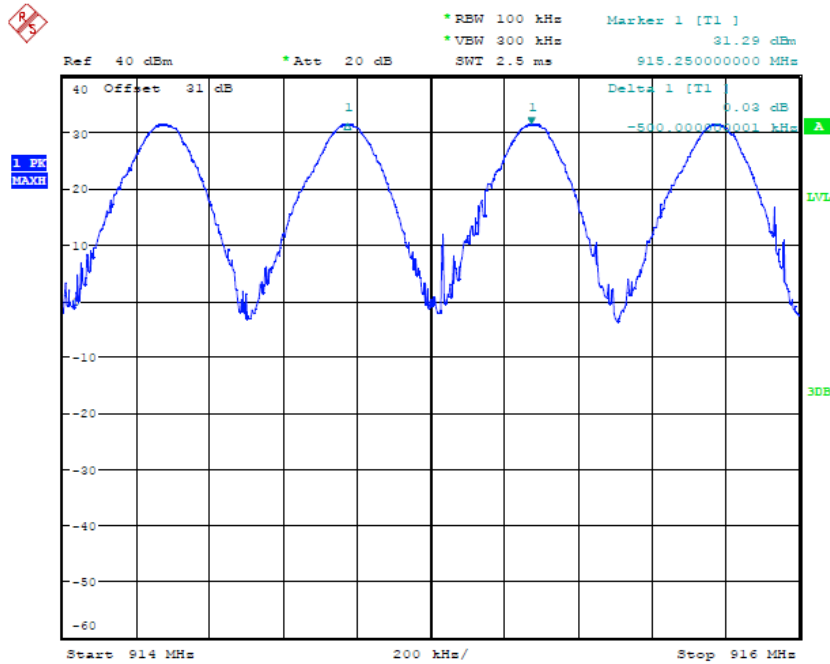


FREQUENCY SEPARATION
Date: 10.SEP.2018 19:09:17

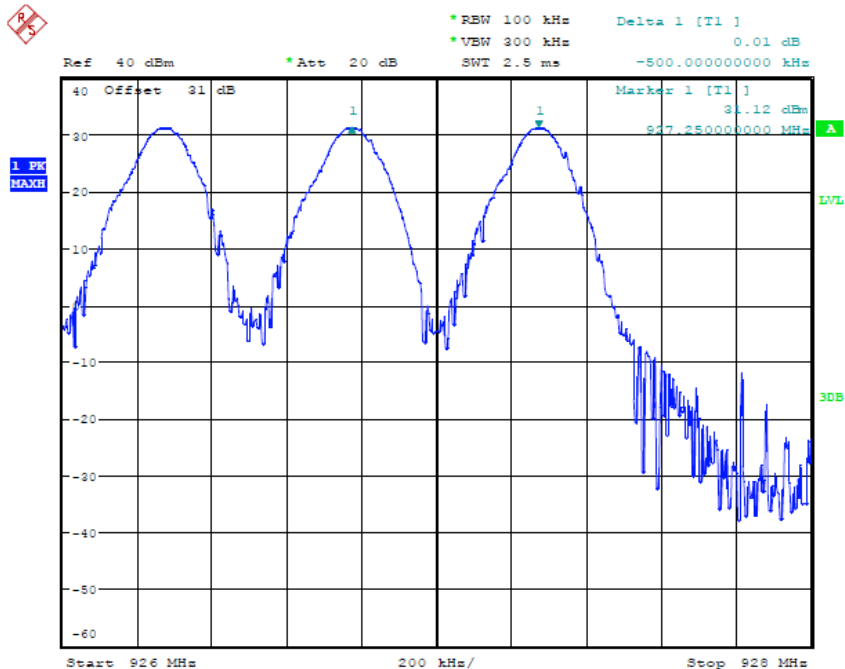


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21811-18603-C-1
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FREQUENCY SEPARATION
Date: 10.SEP.2018 19:12:05



FREQUENCY SEPARATION
Date: 10.SEP.2018 19:13:28



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21811-18603-C-1

FCC ID: WXATS100A

Limits:

Frequency Range MHz	Limits	
	20 dB bandwidth < 25 kHz	20 dB bandwidth > 25 kHz
902-928	25 kHz	20 dB bandwidth
2400-2483.5 5725-5850.0	25 kHz	20 dB bandwidth

Test equipment used: ETSTW-RE 055, ETSTW-RE 064

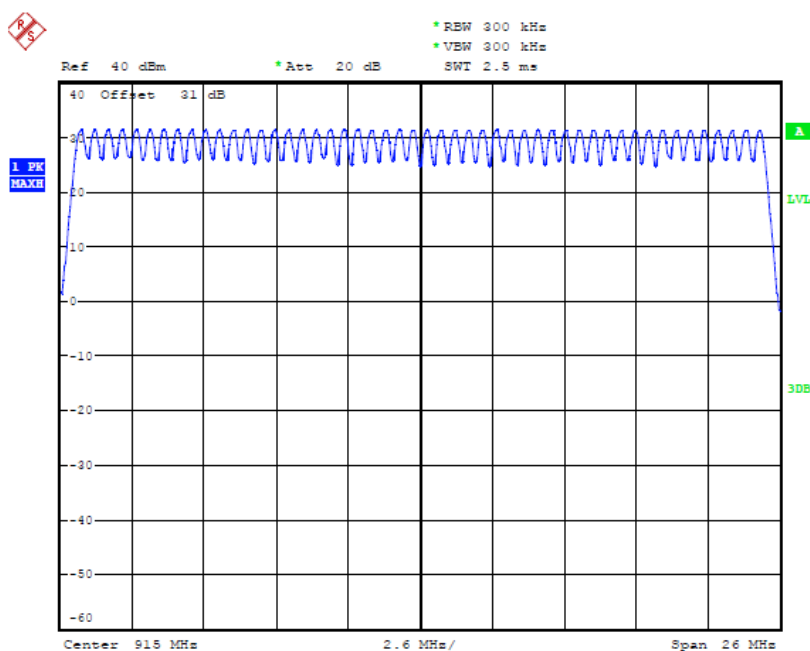


Registration number: W6M21811-18603-C-1
 FCC ID: WXATS100A

3.7 Number of Hopping Frequencies

According to FCC rules part 15 subpart C §15.247 frequency hopping systems operating in the 2400-2483.5 MHz band shall use at least 15 hopping frequencies. Frequency hopping systems in 5725-5850 MHz bands shall use least 75 hopping frequencies.

For frequency hopping systems operating in the 902-928 MHz band: if the 20dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies; if the 20dB bandwidth of the hopping channel 250 kHz or greater, the system shall use at least 25 hopping frequencies.



NUMBER OF HOPPING
 Date: 10.SEP.2018 19:15:07

Limits:

Frequency Range MHz	Limit	
	20dB Bandwidth	Number of Channels
902-928 MHz	Bandwidth < 250 kHz	≥ 50
	Bandwidth ≥ 250 kHz	≥ 25
2400-2483.5	not defined	15
5725-5850.0 MHz	1 MHz	75

Test equipment used: ETSTW-RE 055, ETSTW-RE 064



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3.7.1 Pseudorandom Frequency Hopping Sequence

The generation of the hopping sequence is determined by the Bluetooth core specification and complies with the FCC requirements.

3.7.2 Coordination of hopping sequences to other transmitters

According to the Bluetooth core specification such a coordination is not possible. During scatternet function only one of the two hopping sequences will be used at a definite moment.

3.7.3 System Receiver Hopping Capability

According to the Bluetooth core specification. The system receivers shift frequencies in synchronization with the transmitted signals.



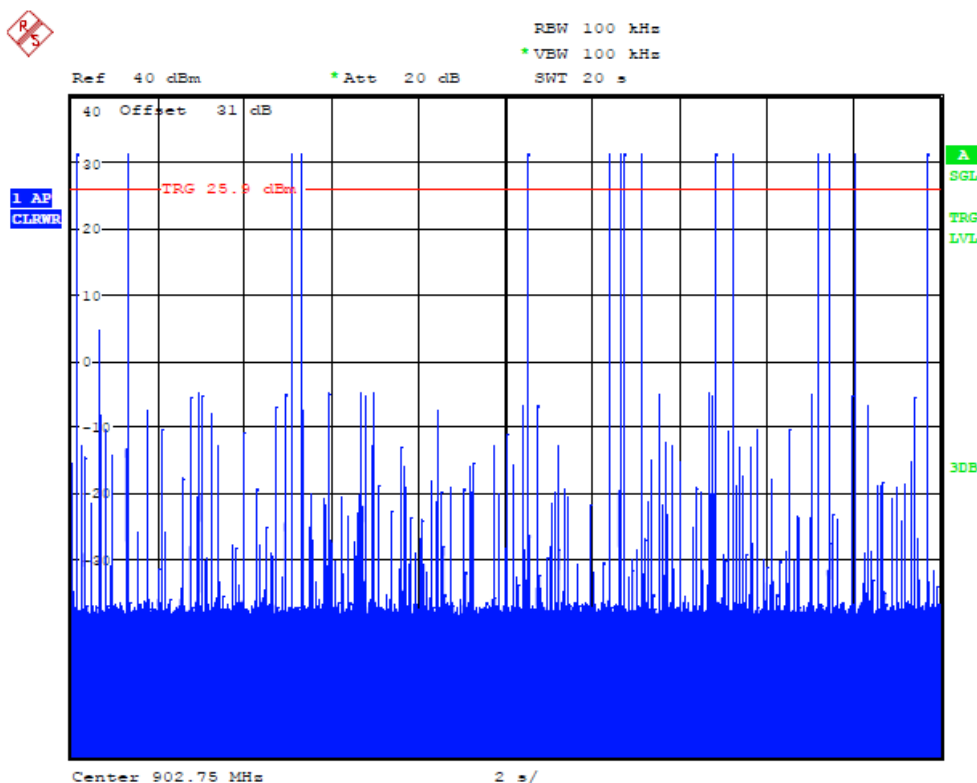
Registration number: W6M21811-18603-C-1
FCC ID: WXATS100A

3.8 Time of Occupancy (Dwell Time)

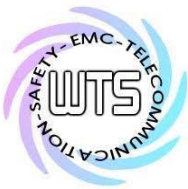
Frequency hopping systems operating in the 5725-5850 MHz band shall use an average time of occupancy on any frequency not greater than 0.4 seconds within a 30 second period.

In 2400-2483.5 MHz band the average time of occupancy on any channel shall not be greater than 0.4 seconds multiplied by the number of hopping channels employed.

For frequency hopping systems operating in the 902-928 MHz band: if the 20dB bandwidth of the hopping channel is less than 250 kHz, the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20dB bandwidth of the hopping channel is 250 kHz or greater, the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.

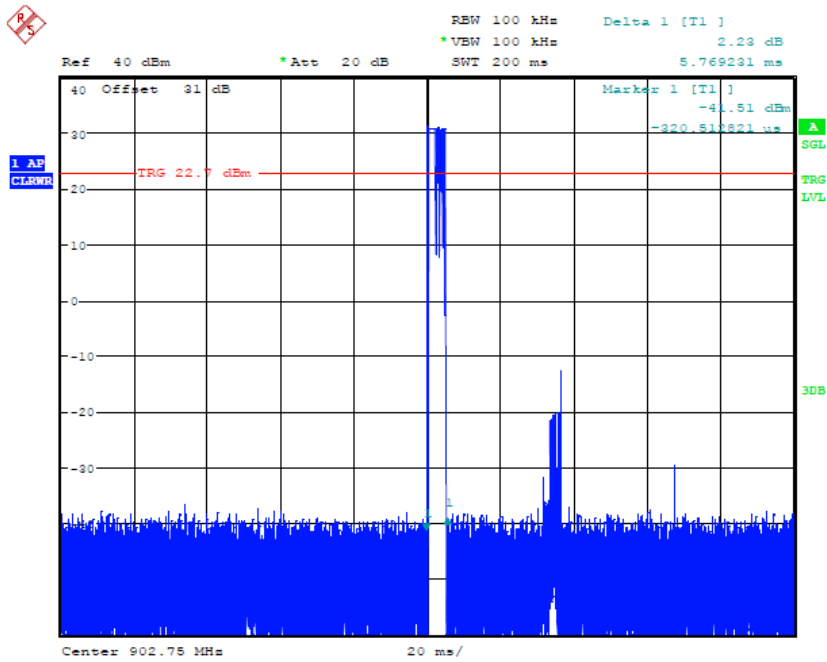


DWELL TIME
Date: 10.SEP.2018 19:19:59

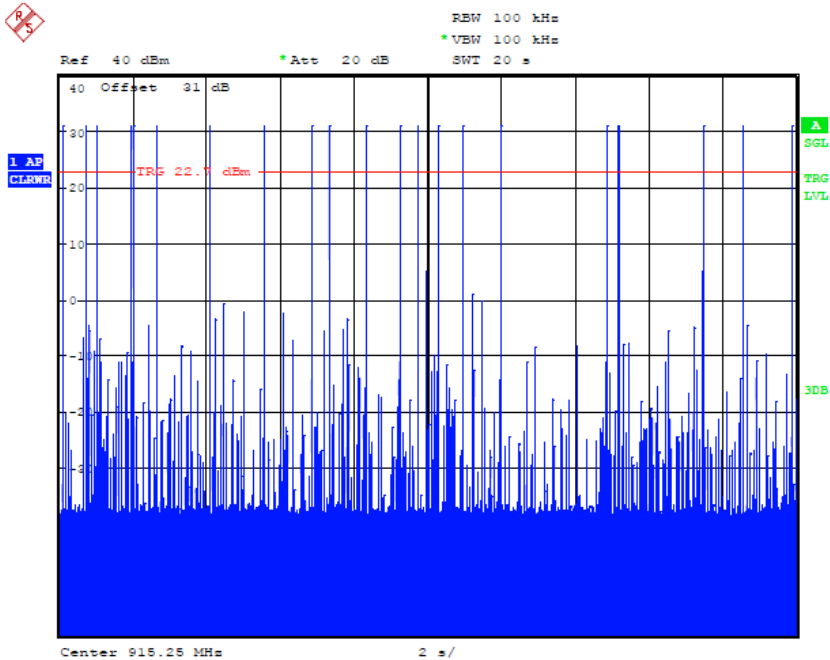


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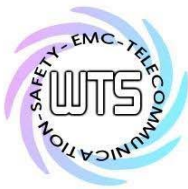
Registration number: W6M21811-18603-C-1
FCC ID: WXATS100A



DWELL TIME (5.769ms x 15 = 86.535ms)
Date: 10.SEP.2018 19:26:57

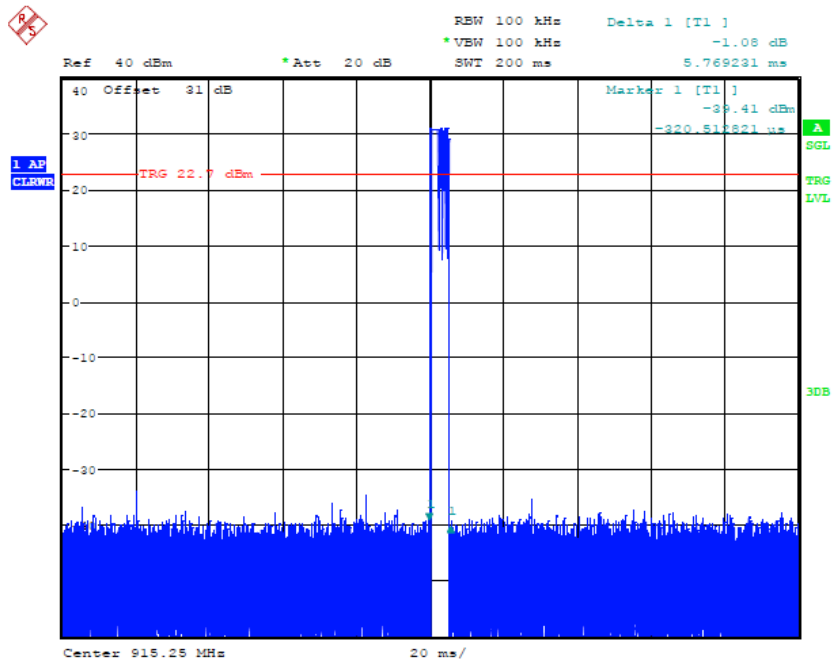


DWELL TIME
Date: 10.SEP.2018 19:40:49

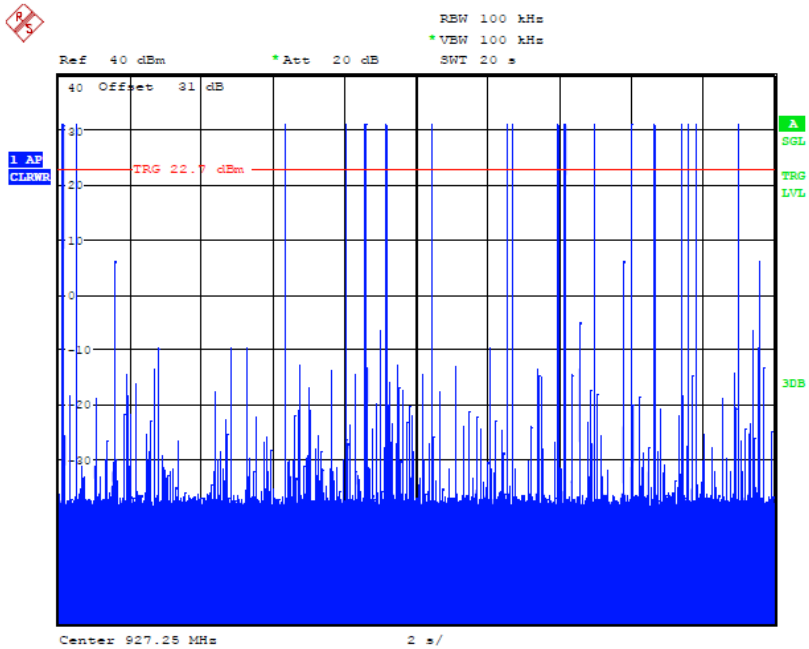


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21811-18603-C-1
FCC ID: WXATS100A



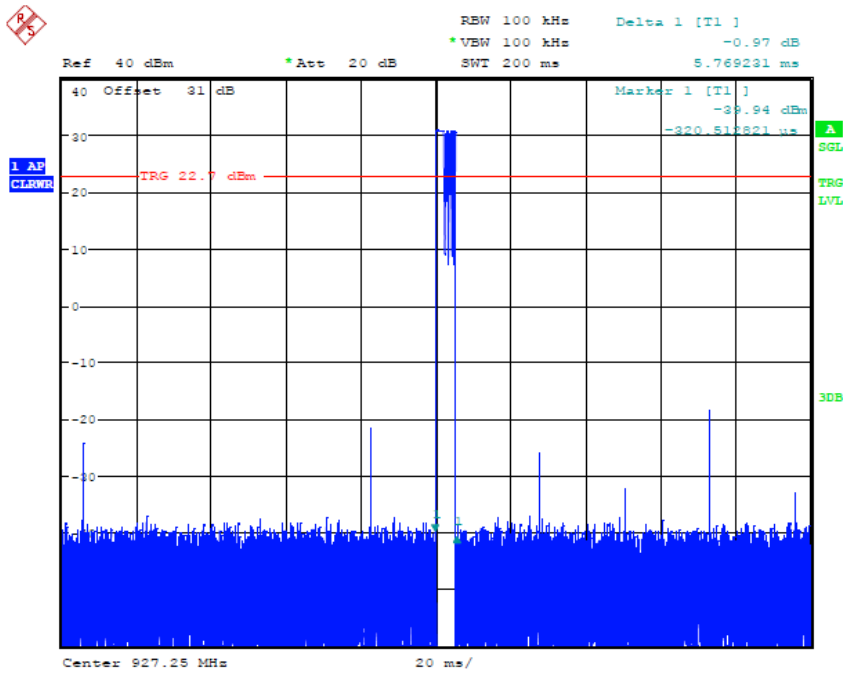
DWELL TIME (5.769ms x 19 = 109.611ms)
Date: 10.SEP.2018 19:41:49



DWELL TIME
Date: 10.SEP.2018 19:42:49



Registration number: W6M21811-18603-C-1
 FCC ID: WXATS100A



DWELL TIME (5.769ms x 18 = 103.842ms)
 Date: 10.SEP.2018 19:43:30

Limits and measurement periods:

Frequency MHz	Number of channels	Measurement Period	Limit
902 – 928	≥50	20 s	0.4 s
	49 ≥ 25	10 s	0.4 s
2400 – 2483.5	≥ 15	0.4 s * number of used channels	0.4 s
5725- 5850	≥ 75	30 s	0.4s

Test equipment used: ETSTW-RE 055, ETSTW-RE 064



Registration number: W6M21811-18603-C-1

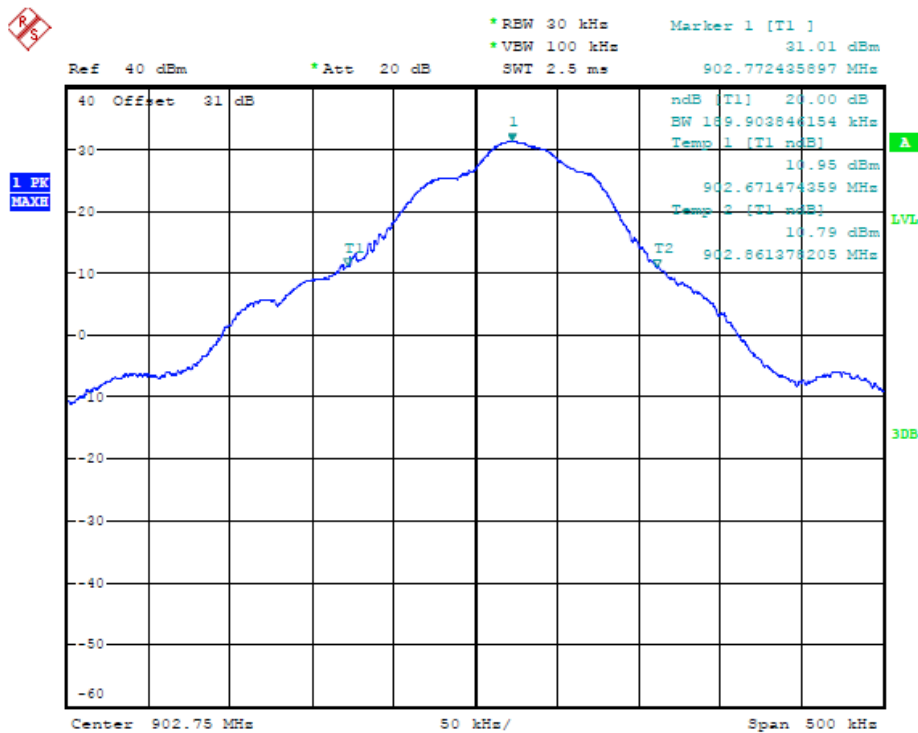
FCC ID: WXATS100A

3.9 20dB Bandwidth

Frequency hopping systems operating in the 5725-5850 MHz bands shall use a maximum 20dB bandwidth of 1 MHz.

The 20dB bandwidth is measured on the lowest, middle and highest hopping channel.

For frequency hopping systems operating in the 902-928 MHz band the maximum 20dB bandwidth of the hopping channel is 500 kHz.



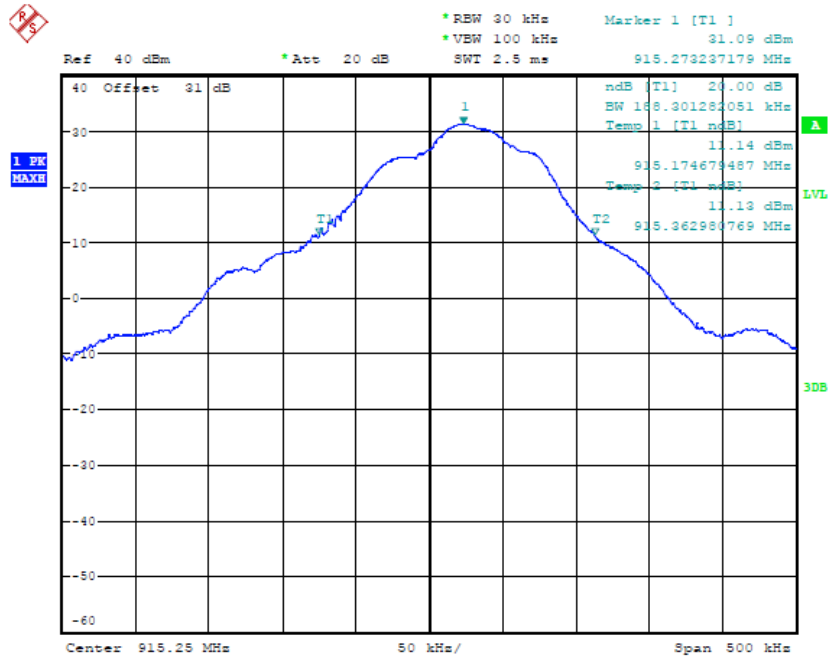
20DB BANDWIDTH

Date: 10.SEP.2018 18:59:02

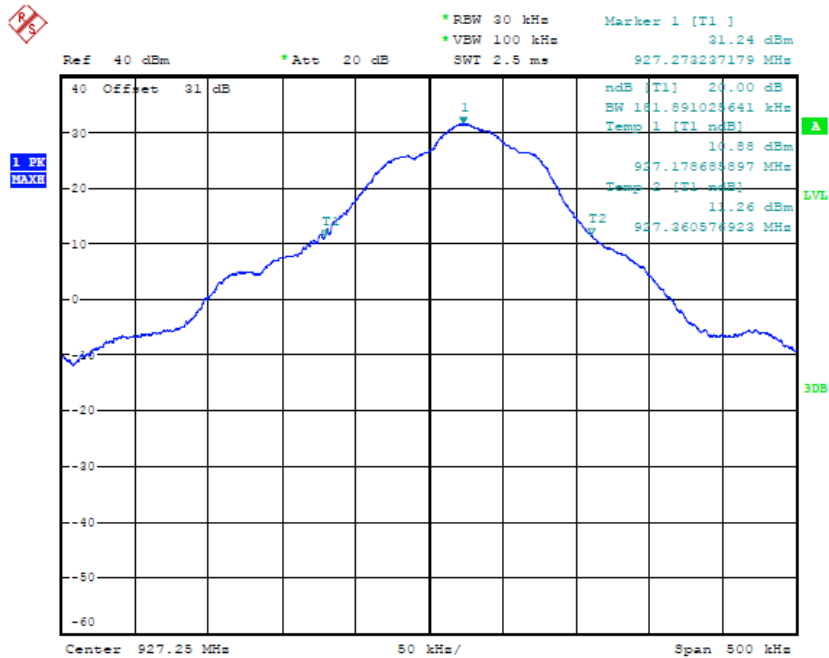


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21811-18603-C-1
 FCC ID: WXATS100A



20DB BANDWIDTH
 Date: 10.SEP.2018 18:58:45



20DB BANDWIDTH
 Date: 10.SEP.2018 18:58:16



Registration number: W6M21811-18603-C-1

FCC ID: WXATS100A

Limits:

Frequency Range / MHz	Limit
902-928	≤ 500 kHz
2400-2483.5	not defined
5725-5850	≤ 1 MHz

Test equipment used: ETSTW-RE 055, ETSTW-RE 064

3.9.1 System Receiver Input Bandwidth

It is determined in the Bluetooth core specification. The value matches to the bandwidth of transmitter signal.

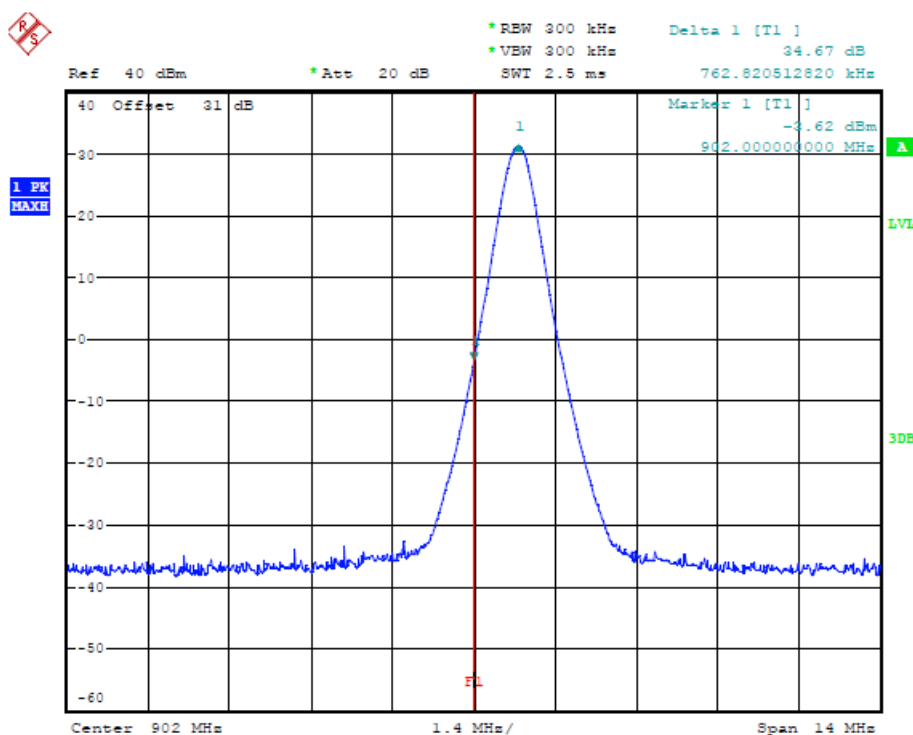


Registration number: W6M21811-18603-C-1
FCC ID: WXATS100A

3.10 Band-edge Compliance of RF Emissions

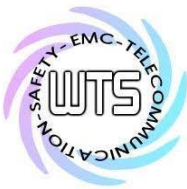
According to FCC rules part 15 subpart C §15.247(c) in any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100 kHz bandwidth within the band that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

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



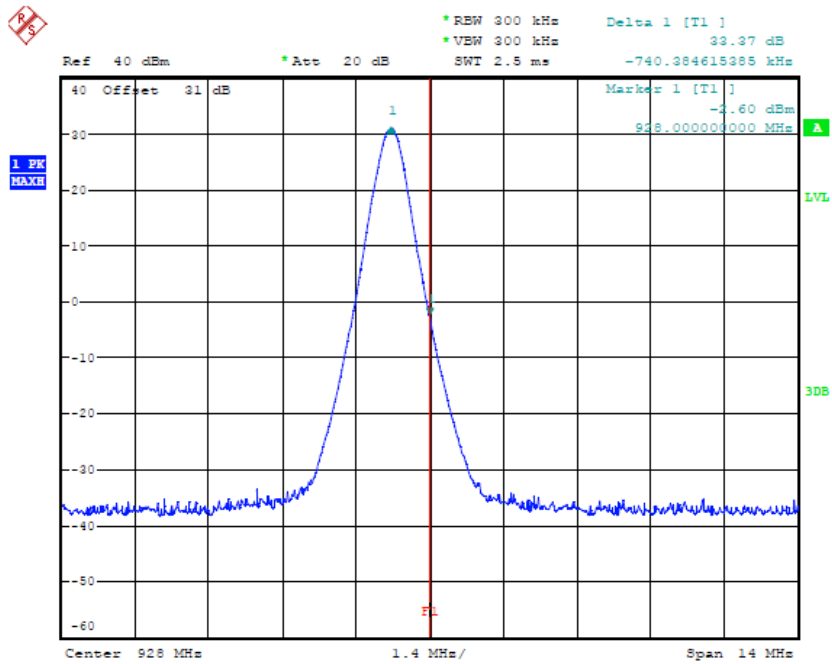
BANDEDGE

Date: 10.SEP.2018 19:00:22

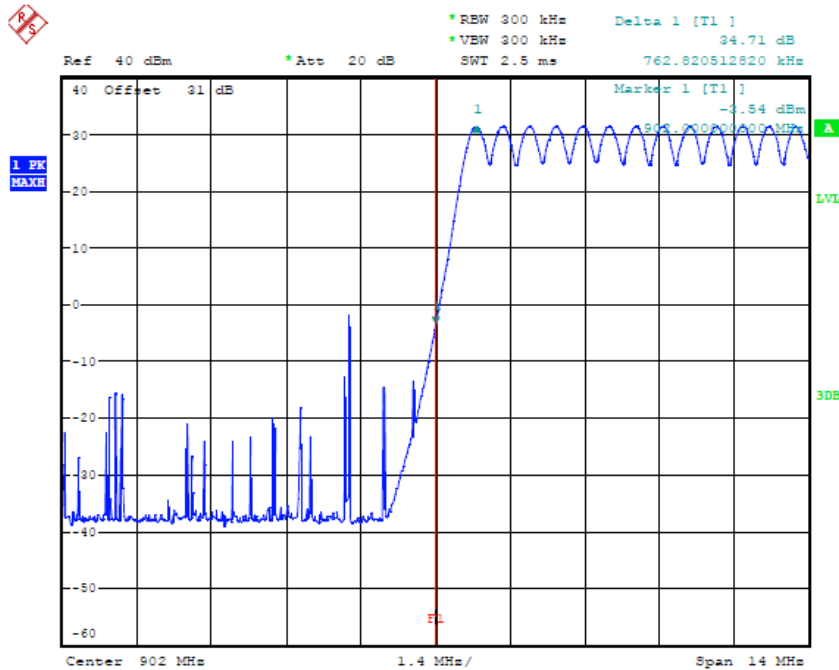


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21811-18603-C-1
FCC ID: WXATS100A



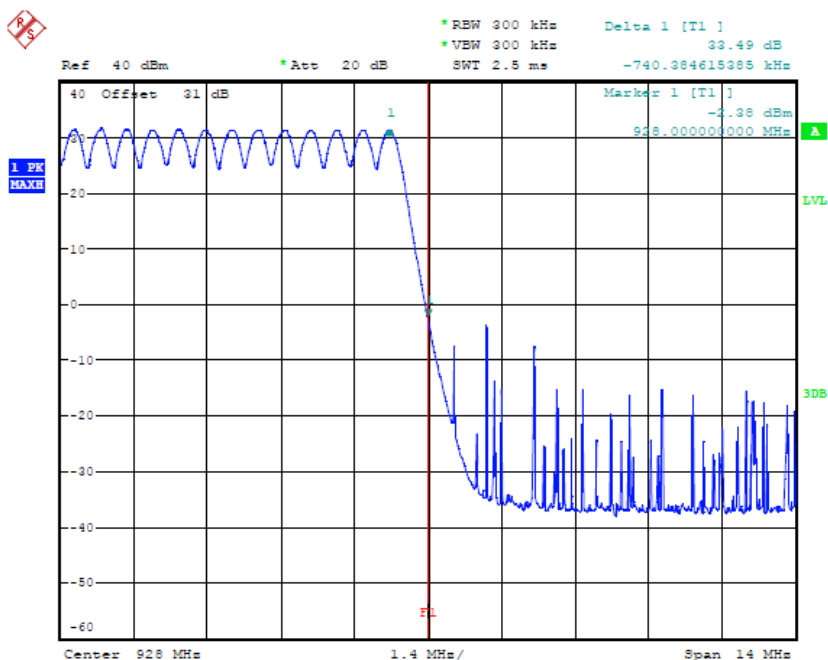
BANDEDGE
Date: 10.SEP.2018 19:01:15



BANDEDGE HOPPING MODE
Date: 10.SEP.2018 19:03:07



Registration number: W6M21811-18603-C-1
 FCC ID: WXATS100A



BANDEDGE HOPPING MODE
 Date: 10.SEP.2018 19:02:45

Limits:

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

Test equipment used: ETSTW-RE 055, ETSTW-RE 064



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21811-18603-C-1

FCC ID: WXATS100A

3.11 Radiated Emissions from Receiver Part

Model: TS100A 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)
--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--

Polarization: Vertical

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

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--

Note

1. Correction Factor = Antenna factor + Cable loss - Preamplifier
2. The formula of measured value as: Test Result = Reading + Correction Factor
3. Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average
4. All not in the table noted test results are more than 20 dB below the relevant limits.
5. Measurement uncertainty above 1GHz: 30-1000 MHz = ±3.57 dB, 1-18 GHz = ± 2.60 dB, 18-40 GHz = ± 2.58 dB ; Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2. The decision rule is “false acceptance”.
6. Please refer to the attached report number: W6M21811-18603-P-15B.

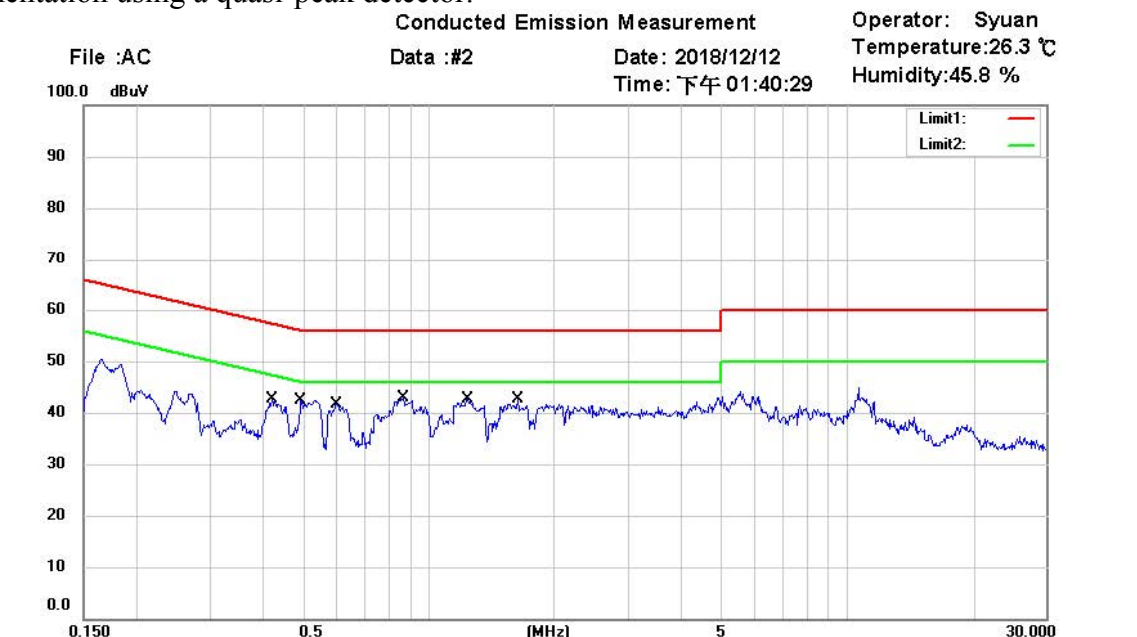


Registration number: W6M21811-18603-C-1
 FCC ID: WXATS100A

3.12 Power Line Conducted Emission

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

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



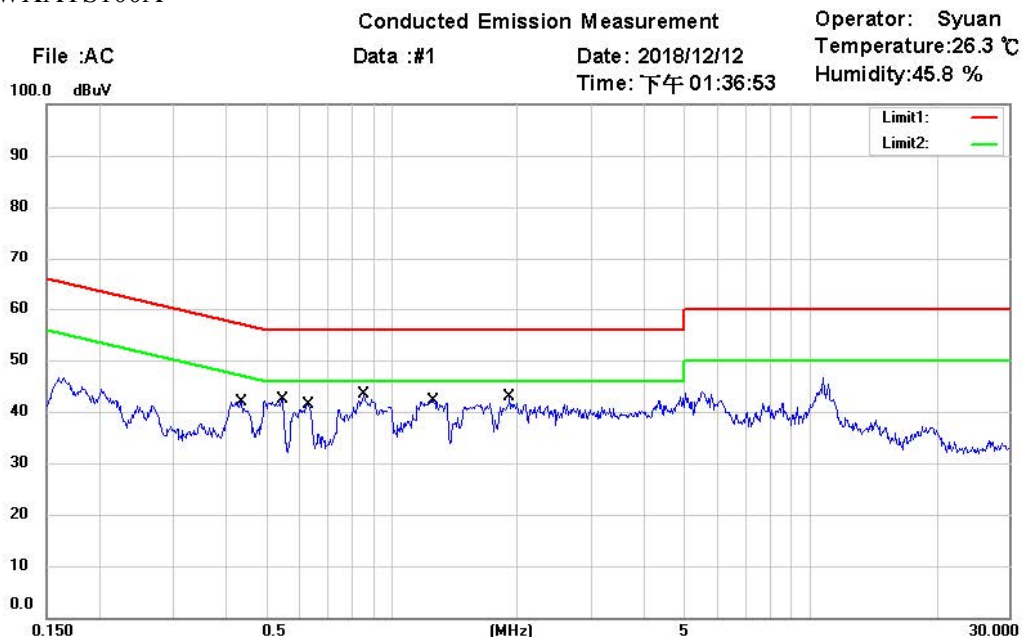
Site : Chamber_03
 Condition : FCC Part 15 Class B Conduction (QP) Phase: N
 EUT : W6M21811-18603 Power : 120 V.a.c.
 M/N:
 Test Mode : USB
 Note :

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.4200	28.38	QP	9.90	38.28	57.45	-19.17	
	0.4200	22.09	AVG	9.90	31.99	47.45	-15.46	
	0.4932	26.22	QP	9.90	36.12	56.11	-19.99	
	0.4932	12.27	AVG	9.90	22.17	46.11	-23.94	
	0.5990	28.94	QP	9.91	38.85	56.00	-17.15	
*	0.5990	25.08	AVG	9.91	34.99	46.00	-11.01	
	0.8645	30.09	QP	9.92	40.01	56.00	-15.99	
	0.8645	17.50	AVG	9.92	27.42	46.00	-18.58	
	1.2358	30.41	QP	9.92	40.33	56.00	-15.67	
	1.2358	24.59	AVG	9.92	34.51	46.00	-11.49	
	1.6340	26.99	QP	9.93	36.92	56.00	-19.08	
	1.6340	13.56	AVG	9.93	23.49	46.00	-22.51	



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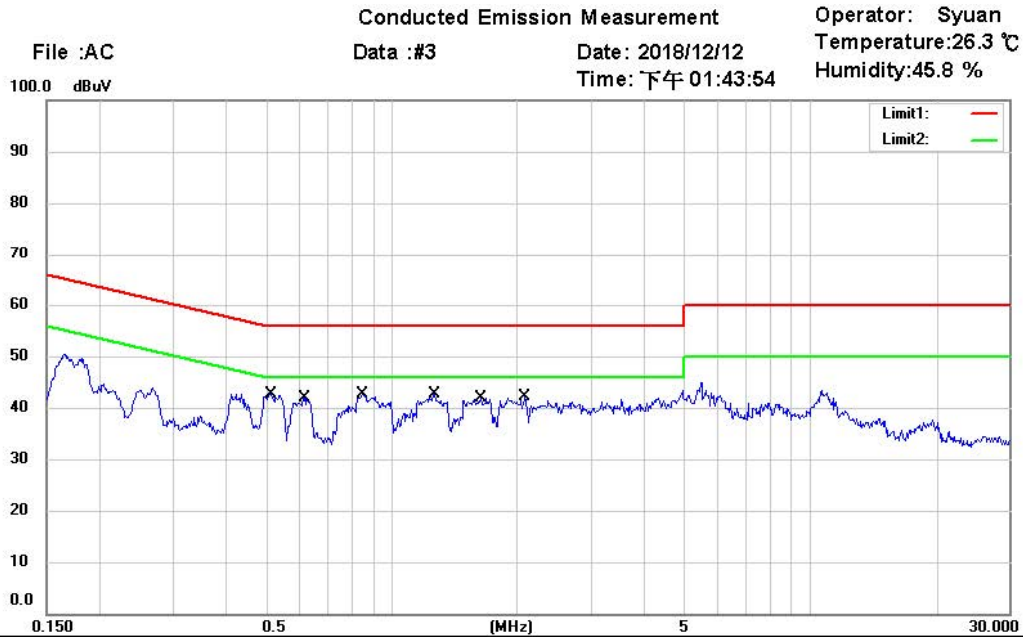
Site : Chamber_03
 Condition : FCC Part 15 Class B Conduction (QP) Phase: L1
 EUT : W6M21811-18603 Power : 120 Va.c.
 M/N:
 Test Mode : USB
 Note :

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.4352	27.12	QP	9.90	37.02	57.15	-20.13	
	0.4352	14.93	AVG	9.90	24.83	47.15	-22.32	
	0.5450	27.78	QP	9.90	37.68	56.00	-18.32	
	0.5450	13.43	AVG	9.90	23.33	46.00	-22.67	
	0.6282	27.55	QP	9.90	37.45	56.00	-18.55	
	0.6282	19.20	AVG	9.90	29.10	46.00	-16.90	
	0.8532	29.22	QP	9.91	39.13	56.00	-16.87	
*	0.8532	24.23	AVG	9.91	34.14	46.00	-11.86	
	1.2560	27.74	QP	9.92	37.66	56.00	-18.34	
	1.2560	19.73	AVG	9.92	29.65	46.00	-16.35	
	1.9108	28.95	QP	9.93	38.88	56.00	-17.12	
	1.9108	20.36	AVG	9.93	30.29	46.00	-15.71	



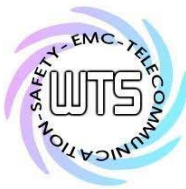
Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21811-18603-C-1
 FCC ID: WXATS100A



Site : Chamber_03
 Condition : FCC Part 15 Class B Conduction (QP) Phase: N
 EUT : W6M21811-18603 Power : 120 Va.c.
 M/N:
 Test Mode : WiFi
 Note :

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.5112	28.03	QP	9.90	37.93	56.00	-18.07	
	0.5112	16.79	AVG	9.90	26.69	46.00	-19.31	
	0.6147	25.95	QP	9.91	35.86	56.00	-20.14	
	0.6147	14.75	AVG	9.91	24.66	46.00	-21.34	
	0.8465	28.45	QP	9.91	38.36	56.00	-17.64	
*	0.8465	19.65	AVG	9.91	29.56	46.00	-16.44	
	1.2628	26.93	QP	9.92	36.85	56.00	-19.15	
	1.2628	18.08	AVG	9.92	28.00	46.00	-18.00	
	1.6340	27.01	QP	9.93	36.94	56.00	-19.06	
	1.6340	13.09	AVG	9.93	23.02	46.00	-22.98	
	2.0863	27.00	QP	9.93	36.93	56.00	-19.07	
	2.0863	14.09	AVG	9.93	24.02	46.00	-21.98	

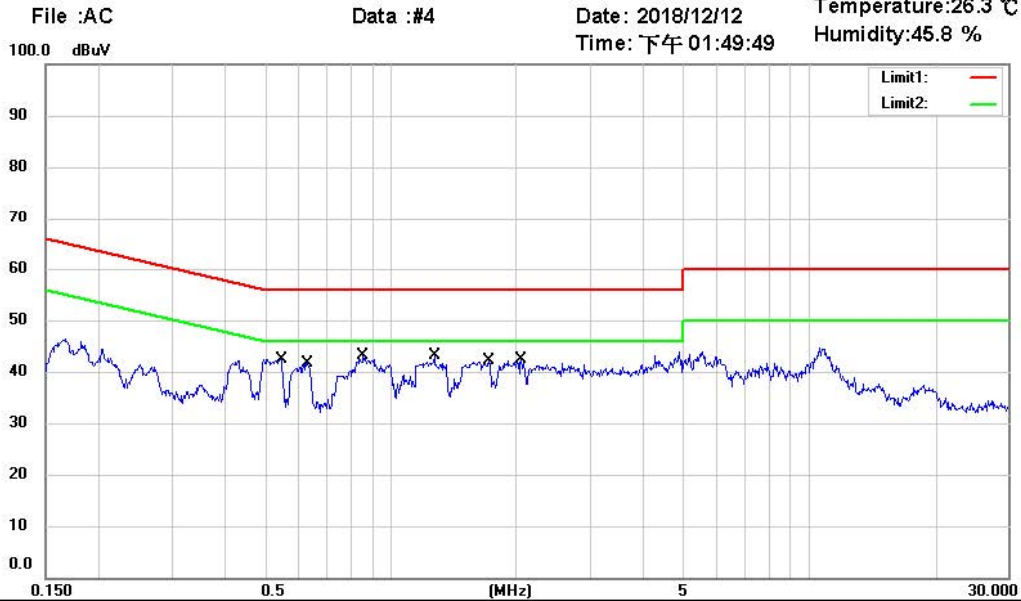


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21811-18603-C-1
 FCC ID: WXATS100A

Conducted Emission Measurement

Operator: Syuan
 Temperature: 26.3 °C
 Humidity: 45.8 %



Site : Chamber_03

Condition : FCC Part 15 Class B Conduction (QP)

Phase: L1

EUT : W6M21811-18603

Power : 120 Va.c.

M/N:

Test Mode : WiFi

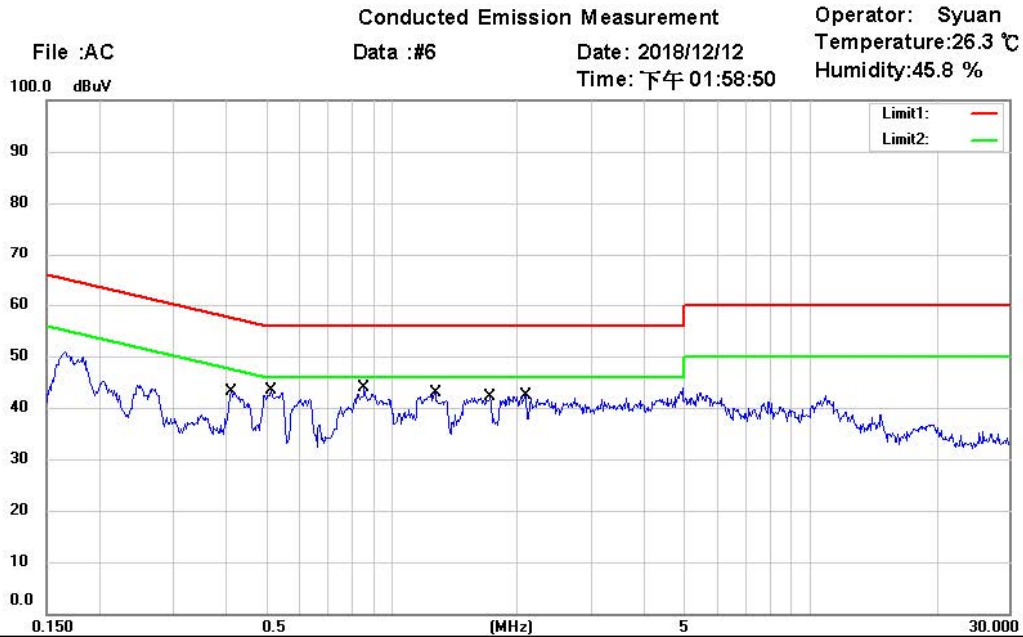
Note :

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.5450	28.94	QP	9.90	38.84	56.00	-17.16	
	0.5450	13.73	AVG	9.90	23.63	46.00	-22.37	
	0.6282	26.82	QP	9.90	36.72	56.00	-19.28	
	0.6282	16.42	AVG	9.90	26.32	46.00	-19.68	
	0.8555	29.32	QP	9.91	39.23	56.00	-16.77	
*	0.8555	21.80	AVG	9.91	31.71	46.00	-14.29	
	1.2718	28.19	QP	9.92	38.11	56.00	-17.89	
	1.2718	17.80	AVG	9.92	27.72	46.00	-18.28	
	1.7128	25.24	QP	9.92	35.16	56.00	-20.84	
	1.7128	11.66	AVG	9.92	21.58	46.00	-24.42	
	2.0503	24.45	QP	9.93	34.38	56.00	-21.62	
	2.0503	12.83	AVG	9.93	22.76	46.00	-23.24	



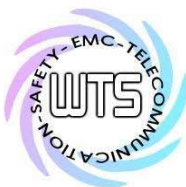
Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21811-18603-C-1
 FCC ID: WXATS100A



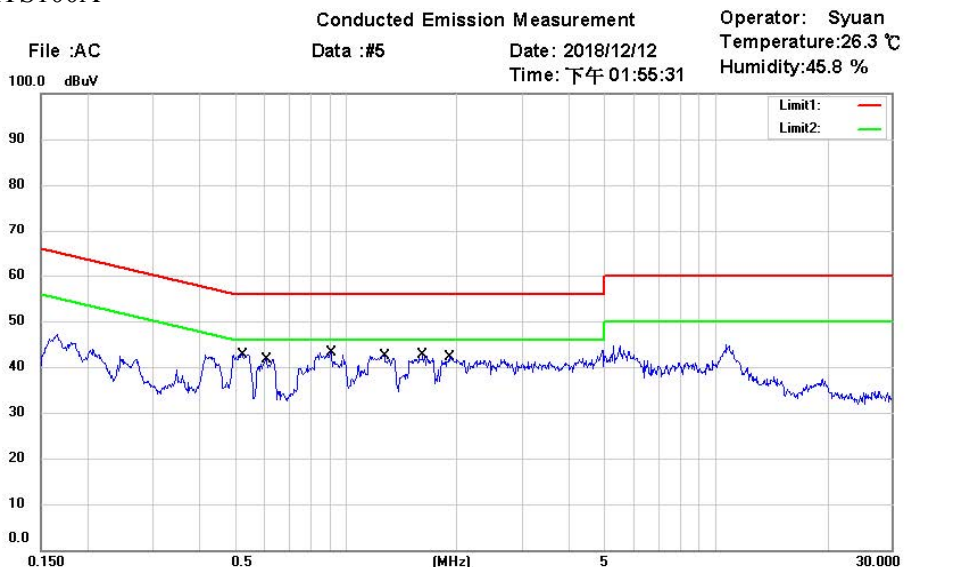
Site : Chamber_03
 Condition : FCC Part 15 Class B Conduction (QP) Phase: N
 EUT : W6M21811-18603 Power : 120 Va.c.
 M/N:
 Test Mode : BT
 Note :

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.4121	29.03	QP	9.90	38.93	57.61	-18.68	
	0.4121	23.34	AVG	9.90	33.24	47.61	-14.37	
	0.5135	27.03	QP	9.90	36.93	56.00	-19.07	
	0.5135	15.46	AVG	9.90	25.36	46.00	-20.64	
	0.8555	29.68	QP	9.92	39.60	56.00	-16.40	
*	0.8555	24.16	AVG	9.92	34.08	46.00	-11.92	
	1.2695	28.72	QP	9.92	38.64	56.00	-17.36	
	1.2695	19.41	AVG	9.92	29.33	46.00	-16.67	
	1.7240	26.50	QP	9.93	36.43	56.00	-19.57	
	1.7240	10.54	AVG	9.93	20.47	46.00	-25.53	
	2.0885	27.51	QP	9.93	37.44	56.00	-18.56	
	2.0885	16.78	AVG	9.93	26.71	46.00	-19.29	



Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21811-18603-C-1
 FCC ID: WXATS100A



Site : Chamber_03
 Condition : FCC Part 15 Class B Conduction (QP) Phase: L1
 EUT : W6M21811-18603 Power : 120 V.a.c.
 M/N:
 Test Mode : BT
 Note :

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.5225	28.29	QP	9.90	38.19	56.00	-17.81	
	0.5225	16.58	AVG	9.90	26.48	46.00	-19.52	
	0.6057	27.41	QP	9.90	37.31	56.00	-18.69	
	0.6057	20.20	AVG	9.90	30.10	46.00	-15.90	
	0.9050	28.46	QP	9.91	38.37	56.00	-17.63	
	0.9050	15.14	AVG	9.91	25.05	46.00	-20.95	
	1.2695	28.72	QP	9.92	38.64	56.00	-17.36	
*	1.2695	20.40	AVG	9.92	30.32	46.00	-15.68	
	1.6138	26.35	QP	9.92	36.27	56.00	-19.73	
	1.6138	17.98	AVG	9.92	27.90	46.00	-18.10	
	1.9040	27.61	QP	9.93	37.54	56.00	-18.46	
	1.9040	16.08	AVG	9.93	26.01	46.00	-19.99	

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

Note:

- The formula of measured value as: Test Result = Reading + Correction Factor
- The Correction Factor = Cable Loss + LISN Insertion Loss + Pulse Limit Loss
- Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average
- All not in the table noted test results are more than 20 dB below the relevant limits.
- Measurement uncertainty = ±1.54 dB; Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2. The decision rule is “false acceptance”.
- Up Line: QP Limit Line, Down Line: Ave Limit Line.

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



Registration number: W6M21811-18603-C-1
FCC ID: WXATS100A

Appendix

Measurement diagrams

Spurious Emissions radiated



Radiated Emission Measurement

Operator: Vincent

File :1

Data :#1

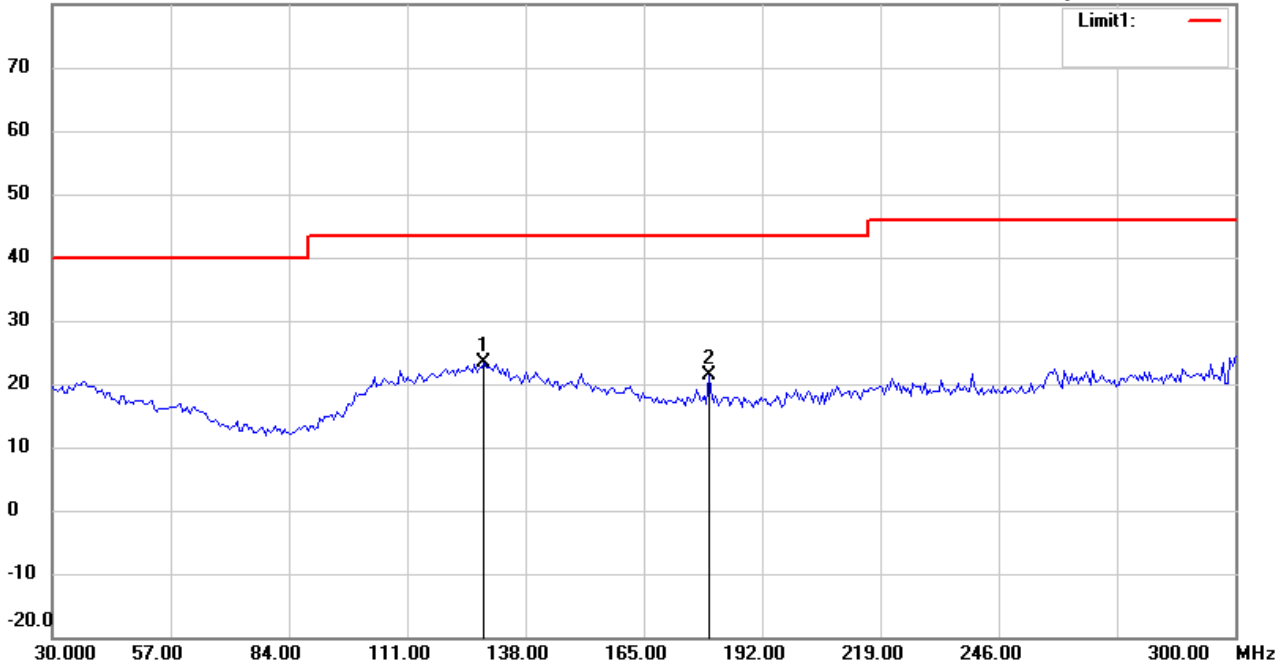
Date: 11/30/2018

Temperature:23.5 °C

80.0 dBuV/m

Time: 12:05:01 AM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

Polarization: *Horizontal*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 902.75MHz

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
*	128.4770	29.84	peak	-6.35	23.49	43.50	100	195	-20.01	
	179.8797	32.06	peak	-10.78	21.28	43.50	100	265	-22.22	



Radiated Emission Measurement

Operator: Vincent

File :1

Data :#2

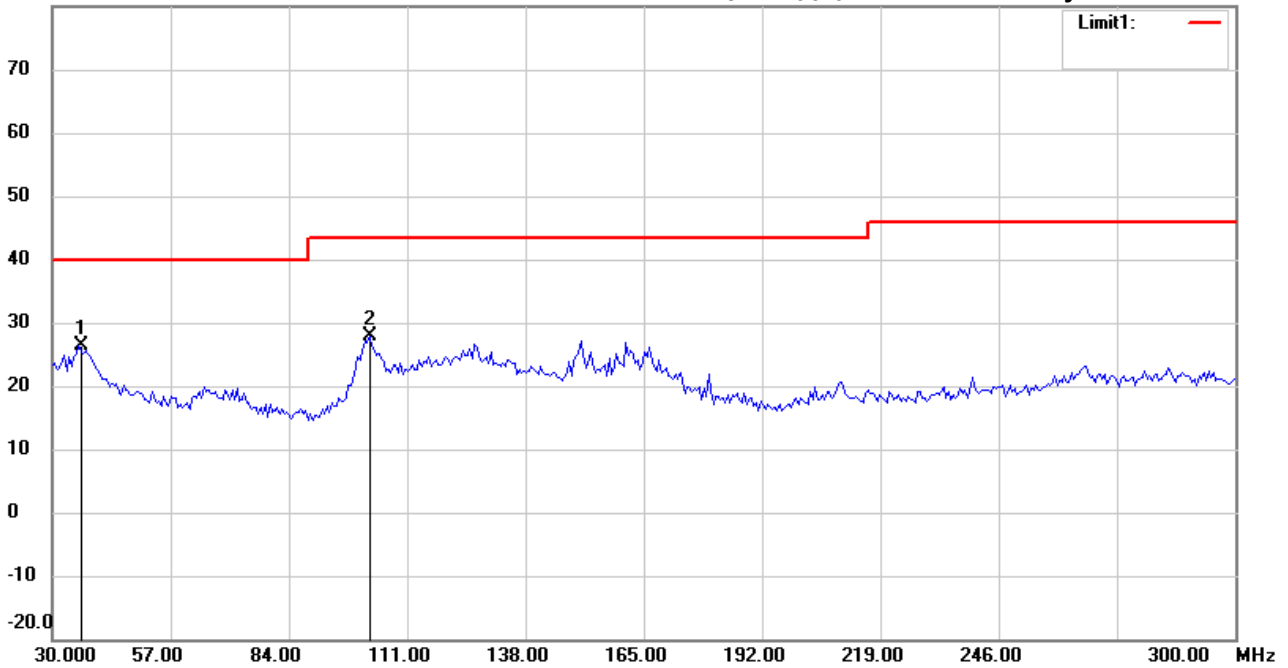
Date: 11/30/2018

Temperature:23.5 °C

80.0 dBuV/m

Time: 12:06:02 AM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

EUT : W6M21811-18603

M/N:

Test Mode : TX 902.75MHz

Note :

Polarization: *Vertical*

Power : 5 Vd.c.(USB)

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
*	35.9520	35.10	peak	-8.78	26.32	40.00	100	110	-13.68	
	102.5050	37.27	peak	-9.27	28.00	43.50	100	240	-15.50	



Radiated Emission Measurement

Operator: Vincent

File :2

Data :#1

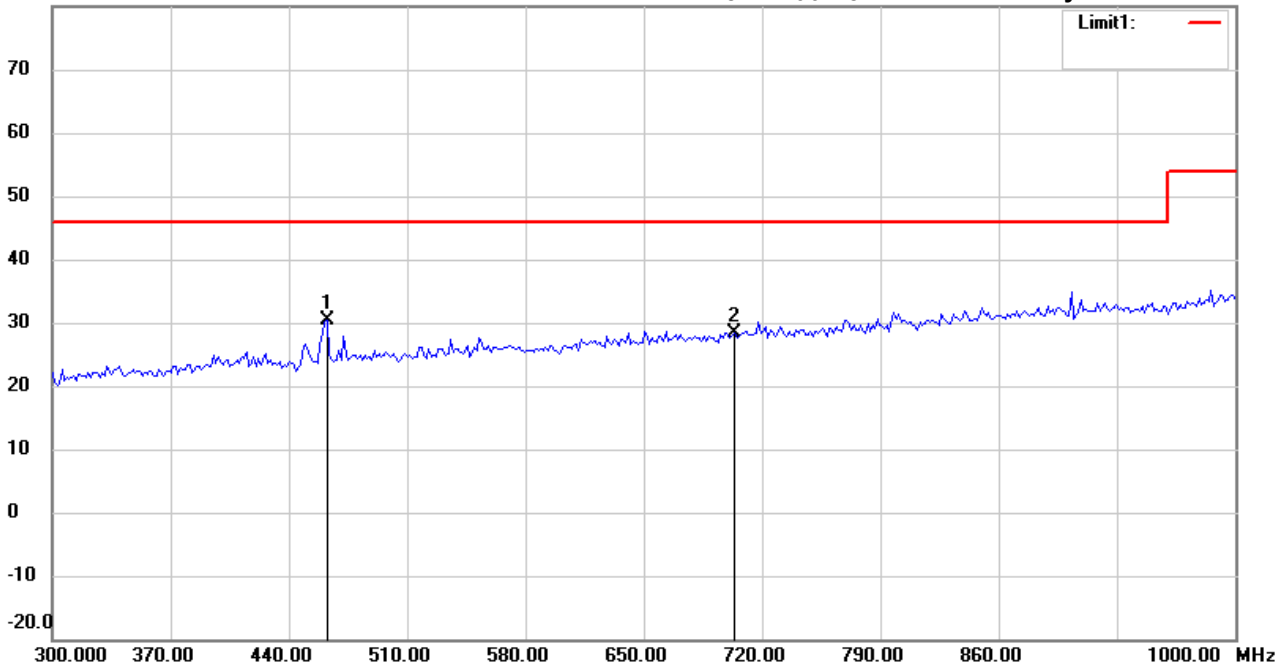
Date: 11/30/2018

Temperature:23.5 °C

80.0 dBuV/m

Time: 12:00:48 AM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

Polarization: *Horizontal*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 902.75MHz

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
*	462.7255	33.30	peak	-2.83	30.47	46.00	100	225	-15.53	
	704.0080	27.55	peak	0.91	28.46	46.00	100	100	-17.54	



Radiated Emission Measurement

Operator: Vincent

File :2

Data :#2

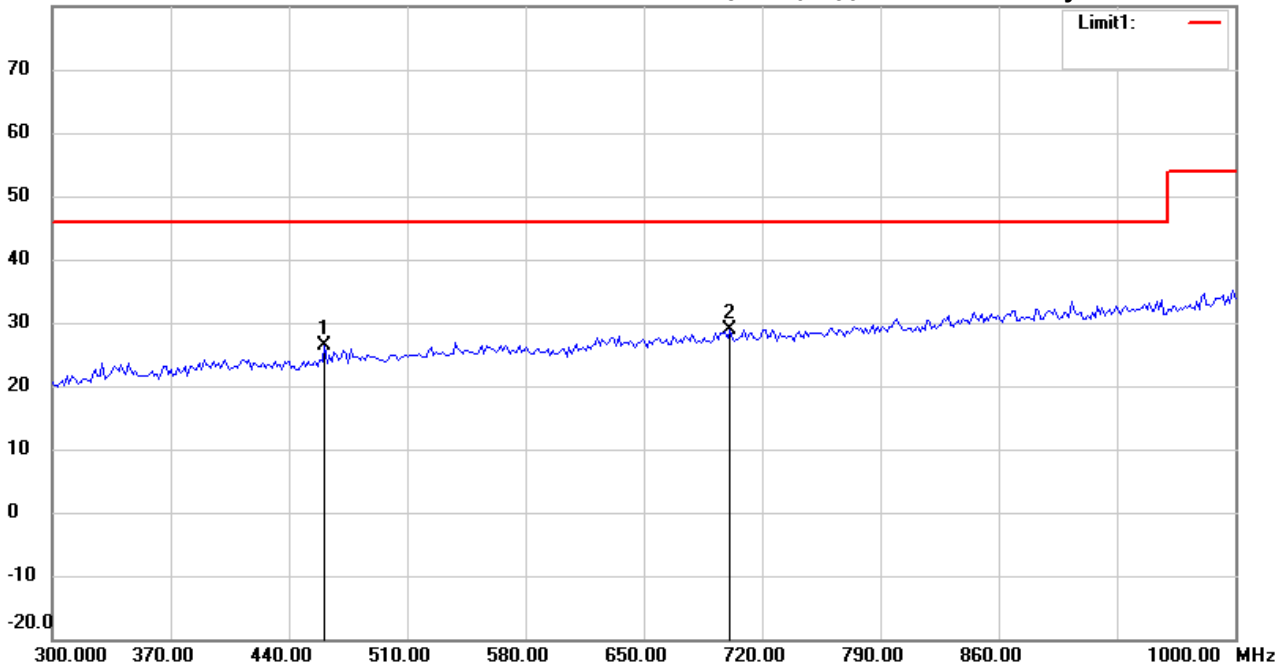
Date: 11/30/2018

Temperature:23.5 °C

80.0 dBuV/m

Time: 12:02:39 AM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

Polarization: *Vertical*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 902.75MHz

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
	461.3226	29.31	peak	-2.85	26.46	46.00	100	105	-19.54	
*	701.2024	28.08	peak	0.87	28.95	46.00	100	280	-17.05	



Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
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 Fax:+886-2-6606-8875

Radiated Emission Measurement

Operator: Vincent

File :3

Data :#1

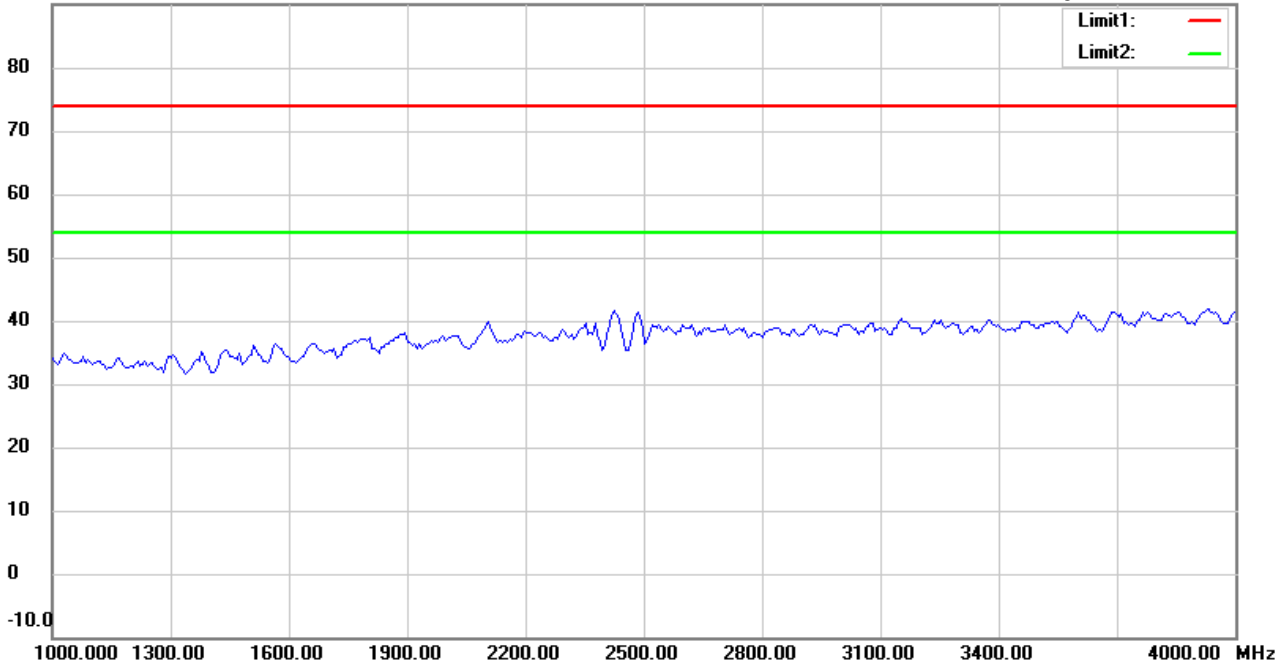
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 8:08:23 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: *Horizontal*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 902.75MHz

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:+886-2-6606-8875

Radiated Emission Measurement

Operator: Vincent

File :3

Data :#4

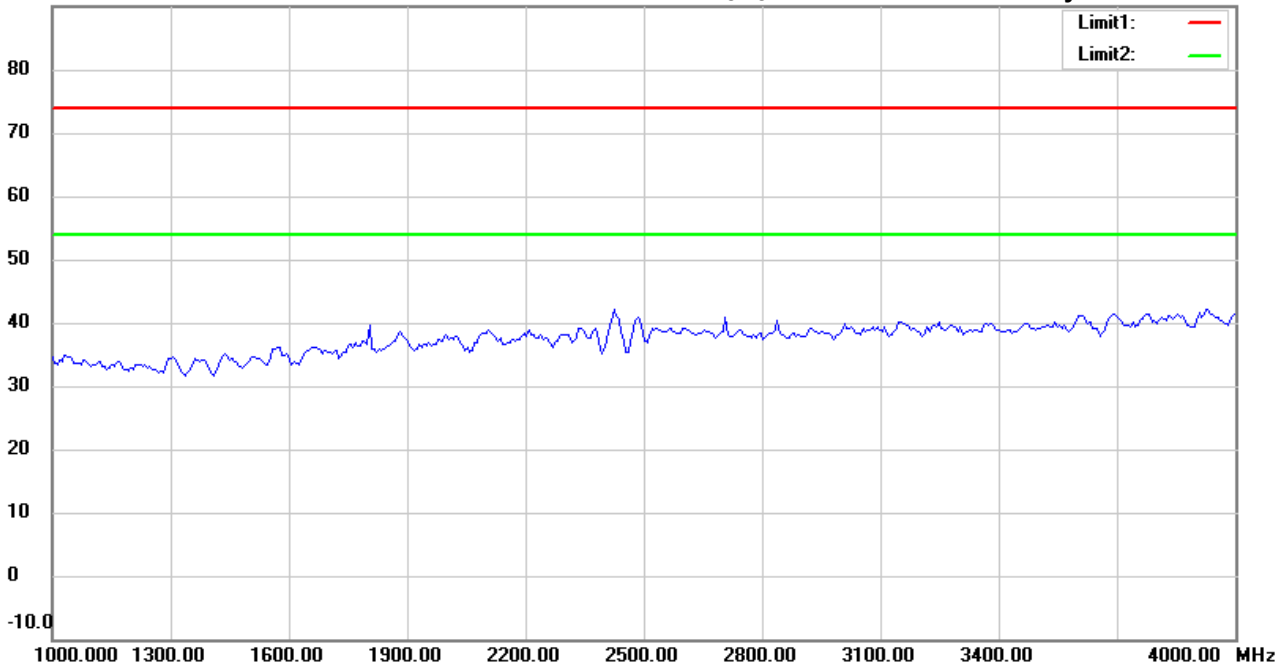
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 8:11:44 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21811-18603

M/N:

Test Mode : TX 902.75MHz

Note :

Polarization: *Vertical*

Power : 5 Vd.c.(USB)

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
-----	-----------------	----------------	----------	---------------------	-----------------	----------------	--------------	----------------	-------------	---------

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



Radiated Emission Measurement

Operator: Vincent

File :3

Data :#2

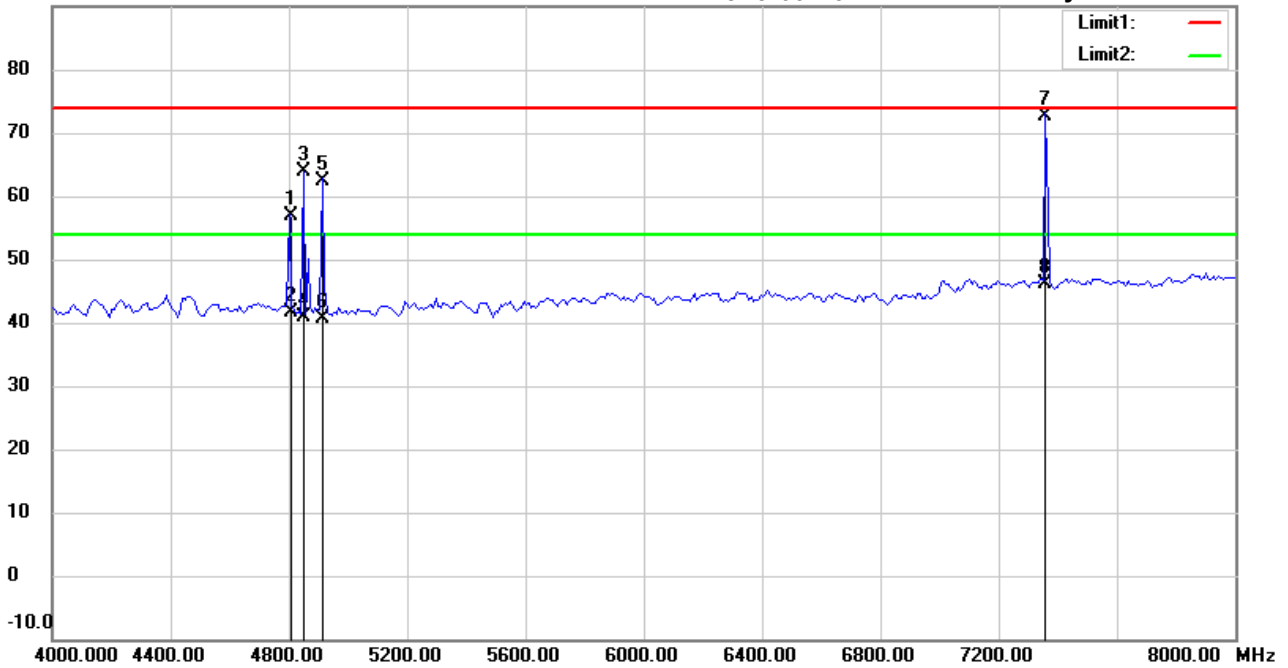
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 8:09:23 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21811-18603

M/N:

Test Mode : TX 902.75MHz

Note :

Polarization: *Horizontal*

Power : 5 Vd.c.(USB)

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
	4804.509	56.20	peak	0.75	56.95	74.00	150	0	-17.05	
	4804.509	40.84	AVG	0.75	41.59	54.00	150	0	-12.41	
	4843.426	63.06	peak	0.72	63.78	74.00	150	240	-10.22	
	4843.426	40.24	AVG	0.72	40.96	54.00	150	240	-13.04	
	4913.808	61.59	peak	0.69	62.28	74.00	150	360	-11.72	
	4913.808	40.00	AVG	0.69	40.69	54.00	150	360	-13.31	
*	7355.130	66.89	peak	5.82	72.71	74.00	150	120	-1.29	
	7355.130	40.20	AVG	5.82	46.02	54.00	150	120	-7.98	



Radiated Emission Measurement

Operator: Vincent

File :3

Data :#5

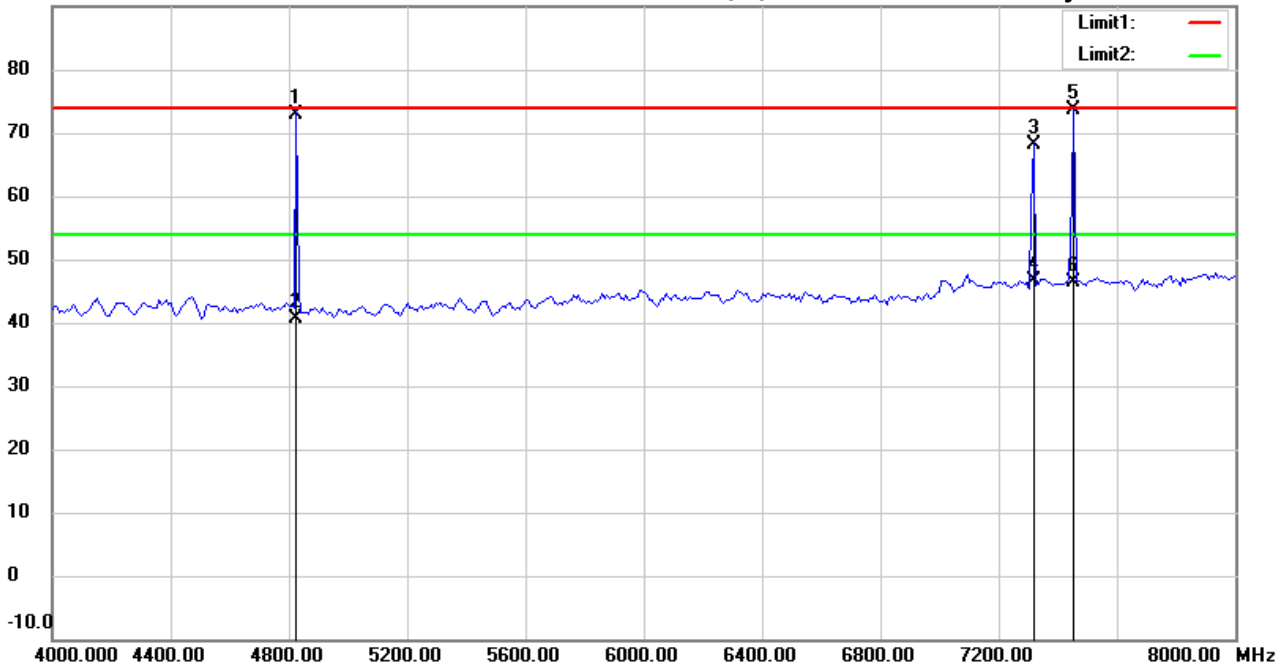
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 8:12:44 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21811-18603

M/N:

Test Mode : TX 902.75MHz

Note :

Polarization: *Vertical*

Power : 5 Vd.c.(USB)

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
	4824.393	72.16	peak	0.73	72.89	74.00	150	145	-1.11	
	4824.393	39.79	AVG	0.73	40.52	54.00	150	145	-13.48	
	7317.575	62.61	peak	5.61	68.22	74.00	150	140	-5.78	
	7317.575	40.97	AVG	5.61	46.58	54.00	150	140	-7.42	
*	7449.720	67.59	peak	5.98	73.57	74.00	150	140	-0.43	
	7449.720	40.33	AVG	5.98	46.31	54.00	150	140	-7.69	



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 Fax:+886-2-6606-8875

Radiated Emission Measurement

Operator: Vincent

File :3

Data :#3

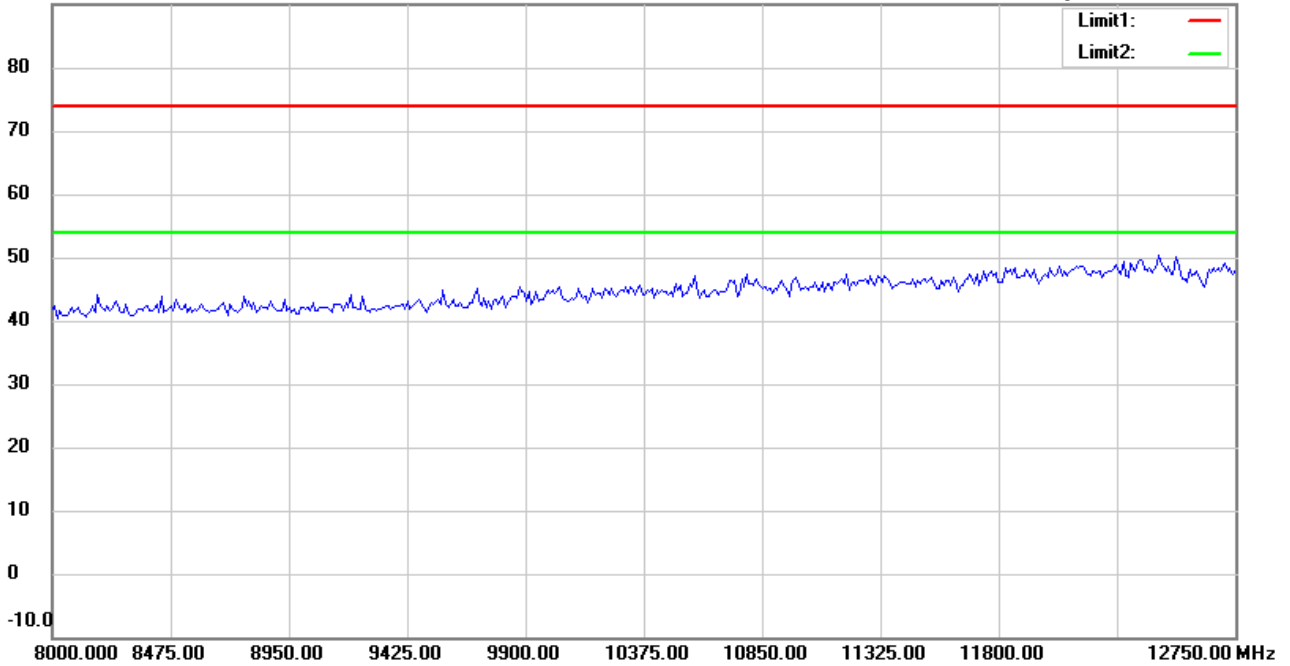
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 8:09:36 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: *Horizontal*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 902.75MHz

Note :

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

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



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#6

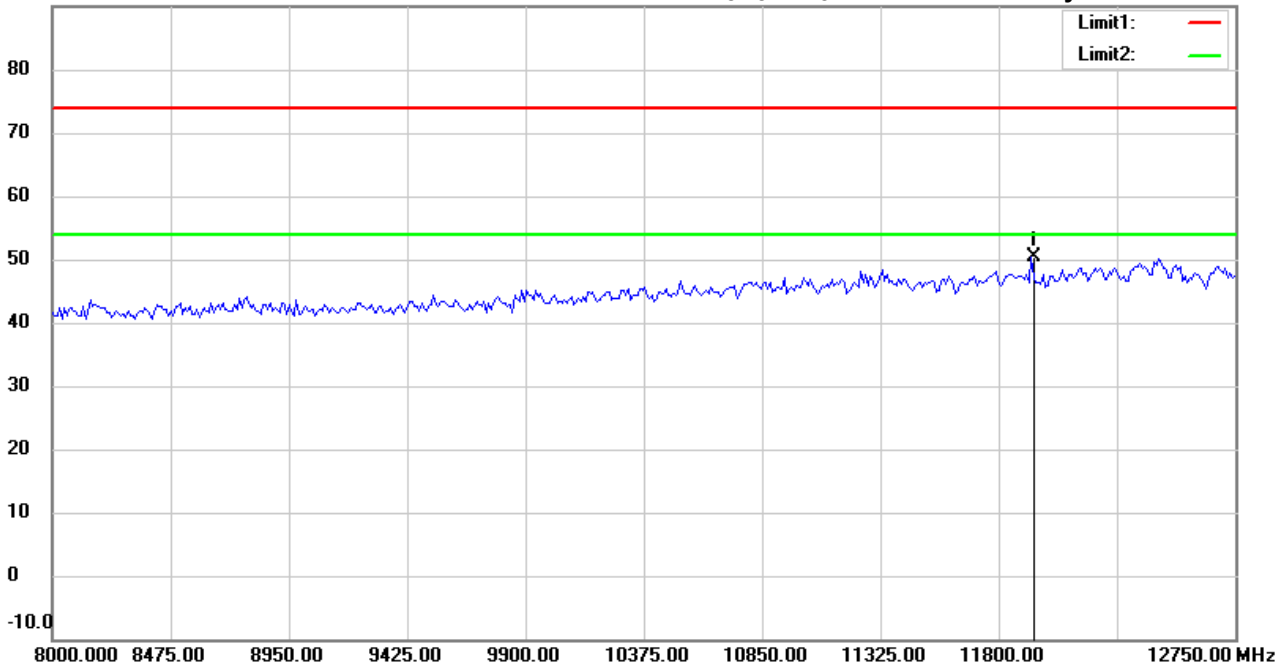
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 8:12:57 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: *Vertical*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 902.75MHz

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
*	11931.363	36.25	peak	14.08	50.33	74.00	150	130	-23.67	

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



Radiated Emission Measurement

Operator: Vincent

File :1

Data :#1

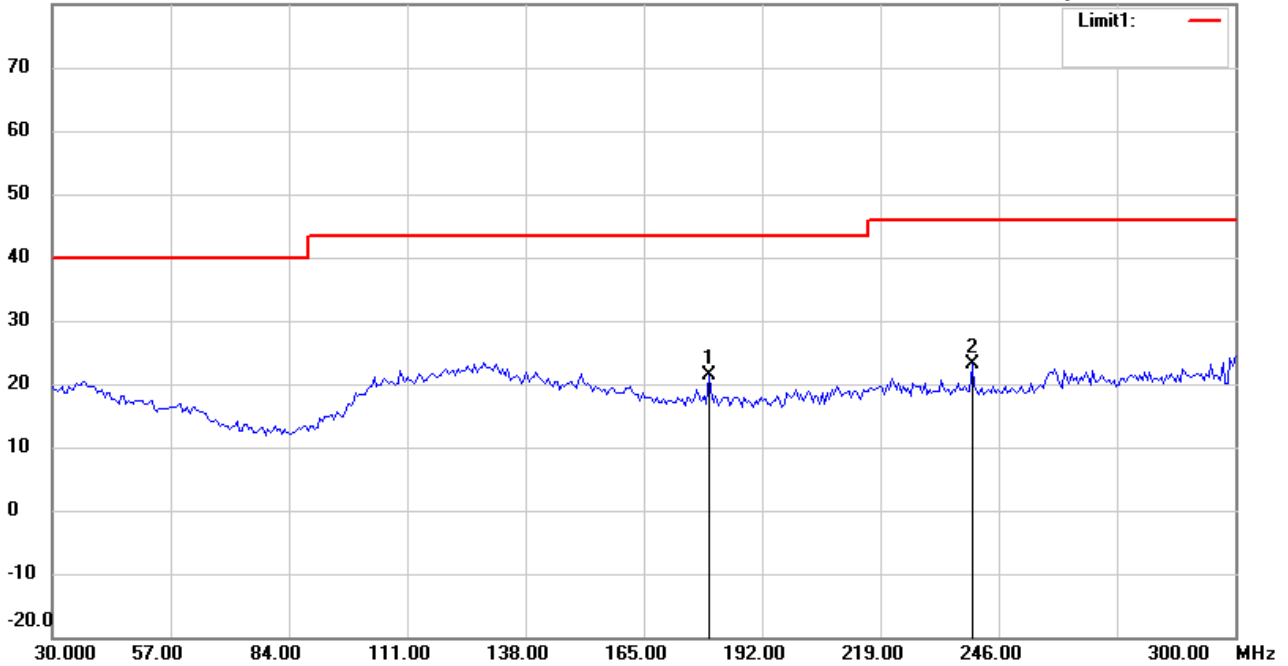
Date: 11/30/2018

Temperature:23.5 °C

80.0 dBuV/m

Time: 12:08:01 AM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

Polarization: *Horizontal*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 915.25MHz

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
*	179.8797	32.06	peak	-10.78	21.28	43.50	100	205	-22.22	
	239.9397	31.04	peak	-7.86	23.18	46.00	100	230	-22.82	



Radiated Emission Measurement

Operator: Vincent

File :1

Data :#2

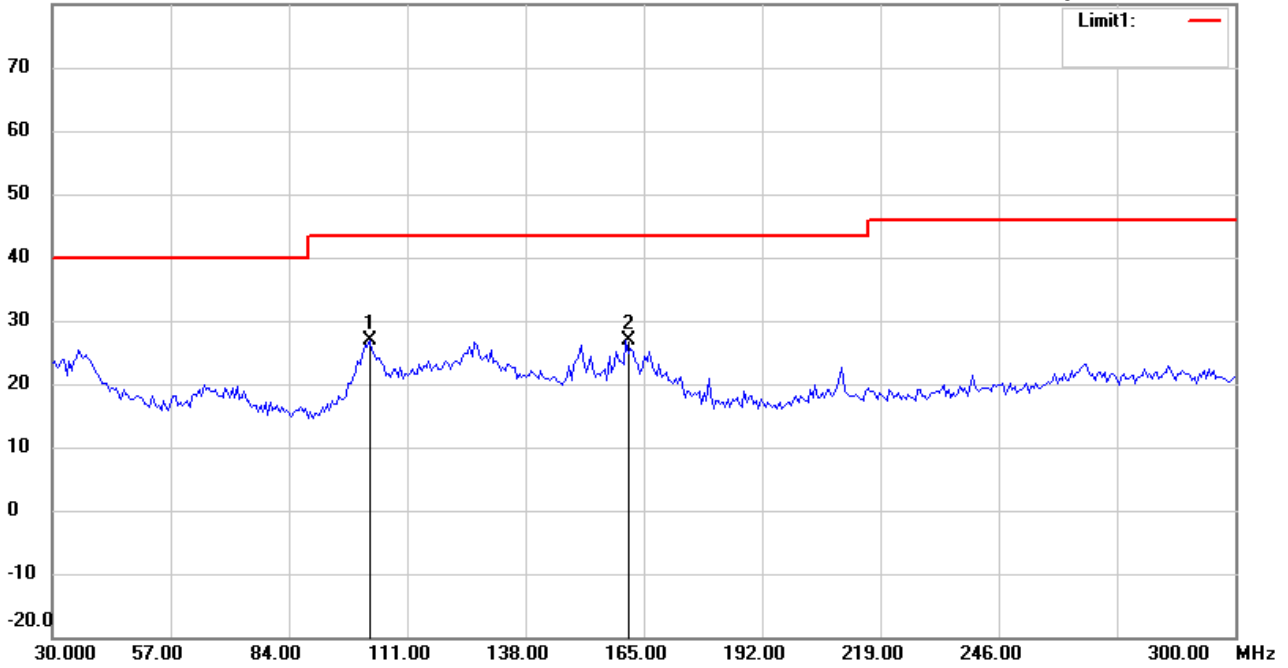
Date: 11/30/2018

Temperature:23.5 °C

80.0 dBuV/m

Time: 12:10:14 AM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

Polarization: *Vertical*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 915.25MHz

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
*	102.5050	36.27	peak	-9.27	27.00	43.50	100	305	-16.50	
	160.9420	35.61	peak	-8.72	26.89	43.50	100	140	-16.61	



Radiated Emission Measurement

Operator: Vincent

File :2

Data :#1

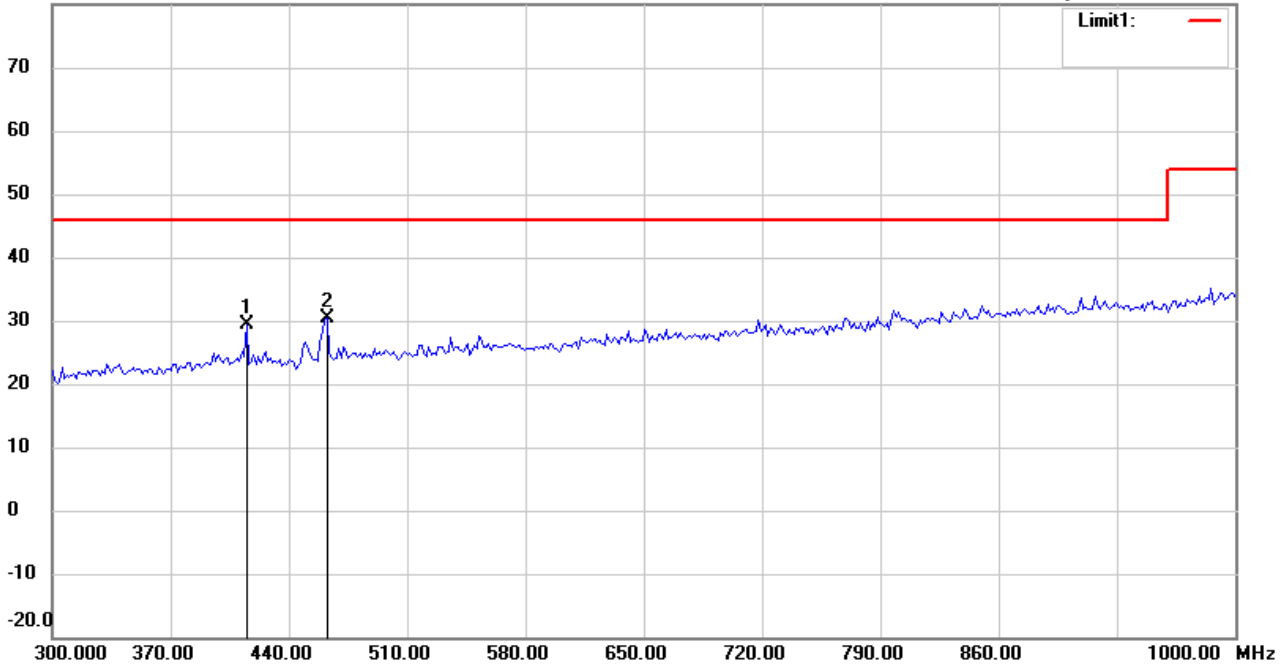
Date: 11/30/2018

Temperature:23.5 °C

80.0 dBuV/m

Time: 12:12:17 AM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

Polarization: *Horizontal*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 915.25MHz

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
	415.0300	32.72	peak	-3.24	29.48	46.00	100	305	-16.52	
*	462.7255	33.30	peak	-2.83	30.47	46.00	100	225	-15.53	



Radiated Emission Measurement

Operator: Vincent

File :2

Data :#2

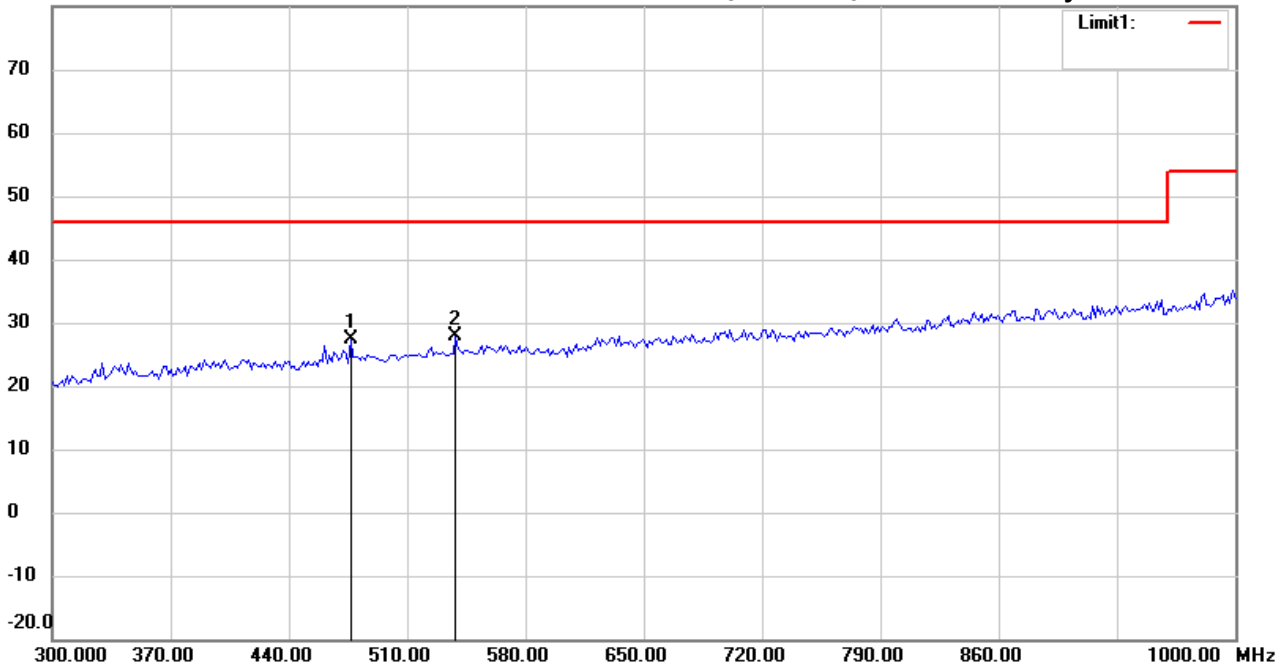
Date: 11/30/2018

Temperature:23.5 °C

80.0 dBuV/m

Time: 12:14:25 AM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

Polarization: *Vertical*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 915.25MHz

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
	476.7534	30.04	peak	-2.56	27.48	46.00	100	250	-18.52	
*	538.4770	29.32	peak	-1.37	27.95	46.00	100	165	-18.05	



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#1

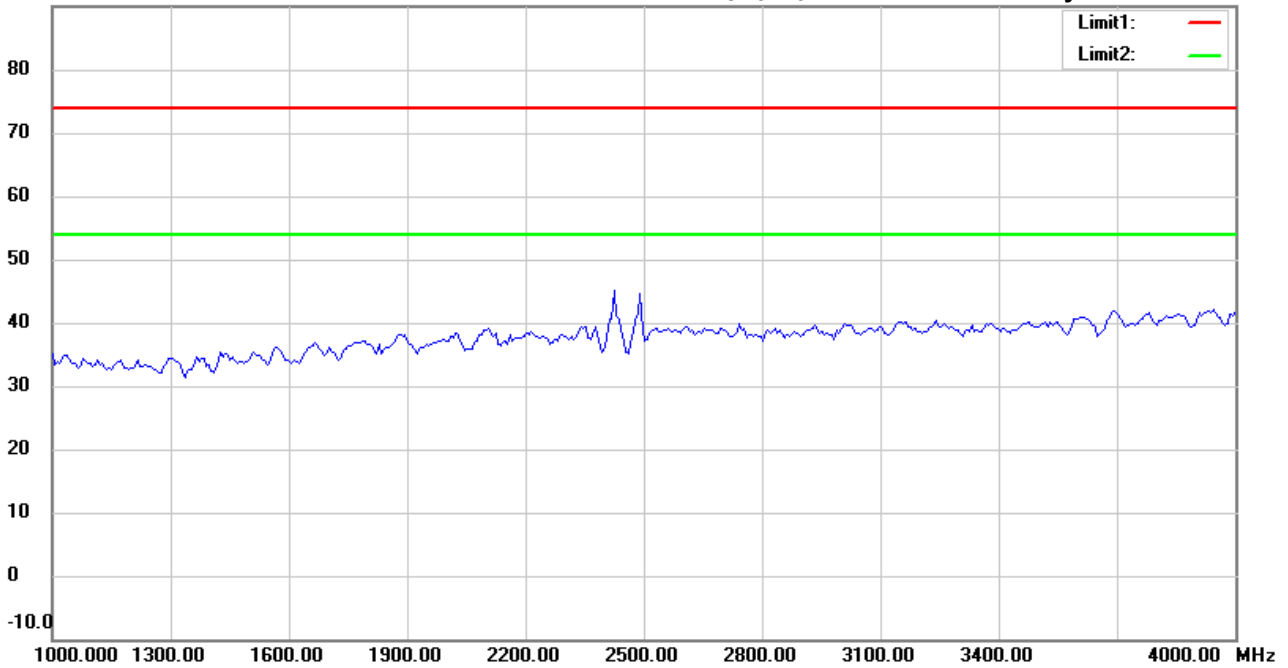
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 9:46:11 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: *Horizontal*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 915.25MHz

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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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#4

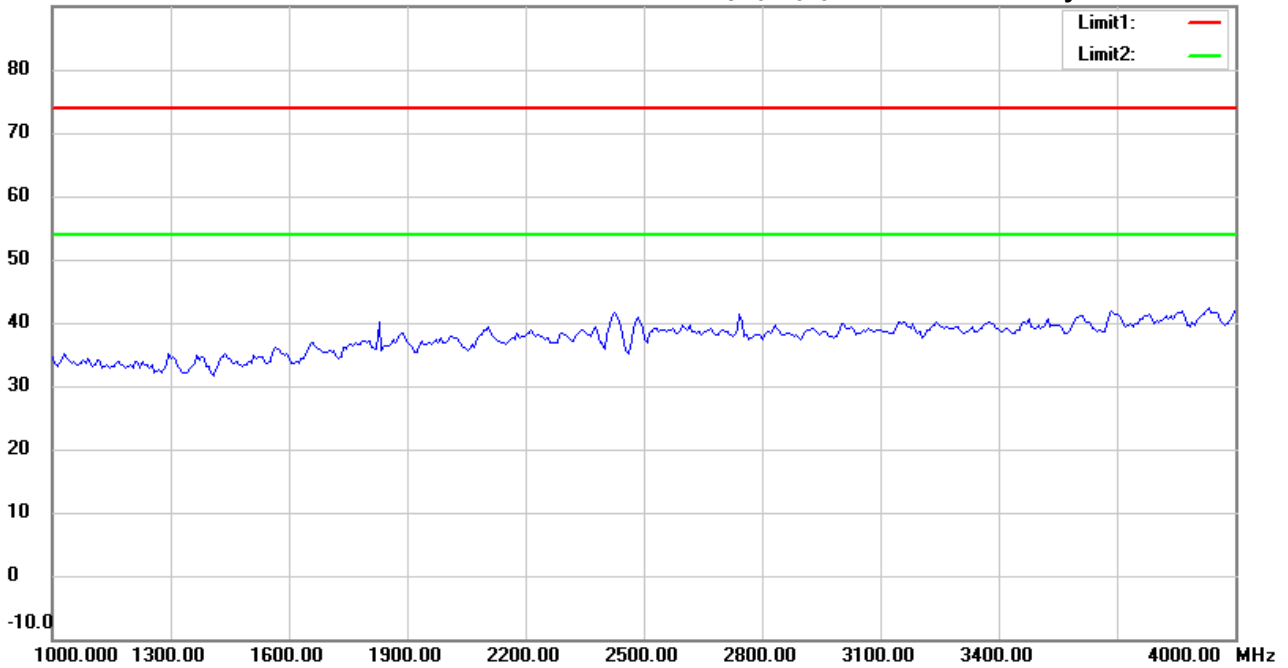
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 9:49:32 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: *Vertical*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 915.25MHz

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



Radiated Emission Measurement

Operator: Vincent

File :3

Data :#2

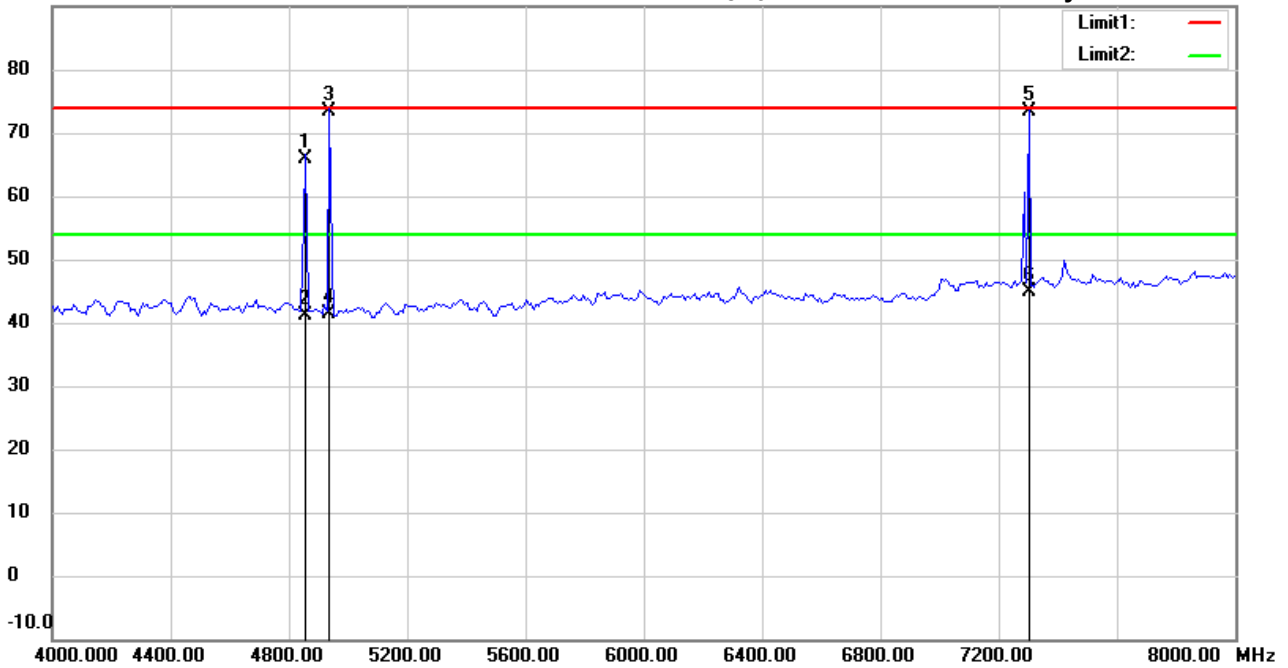
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 9:47:11 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21811-18603

M/N:

Test Mode : TX 915.25MHz

Note :

Polarization: *Horizontal*

Power : 5 Vd.c.(USB)

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
	4855.010	65.05	peak	0.71	65.76	74.00	150	0	-8.24	
	4855.010	40.46	AVG	0.71	41.17	54.00	150	0	-12.83	
*	4934.169	72.55	peak	0.73	73.28	74.00	150	0	-0.72	
	4934.169	40.76	AVG	0.73	41.49	54.00	150	0	-12.51	
	7294.930	67.78	peak	5.50	73.28	74.00	150	0	-0.72	
	7294.930	39.38	AVG	5.50	44.88	54.00	150	0	-9.12	



Radiated Emission Measurement

Operator: Vincent

File :3

Data :#5

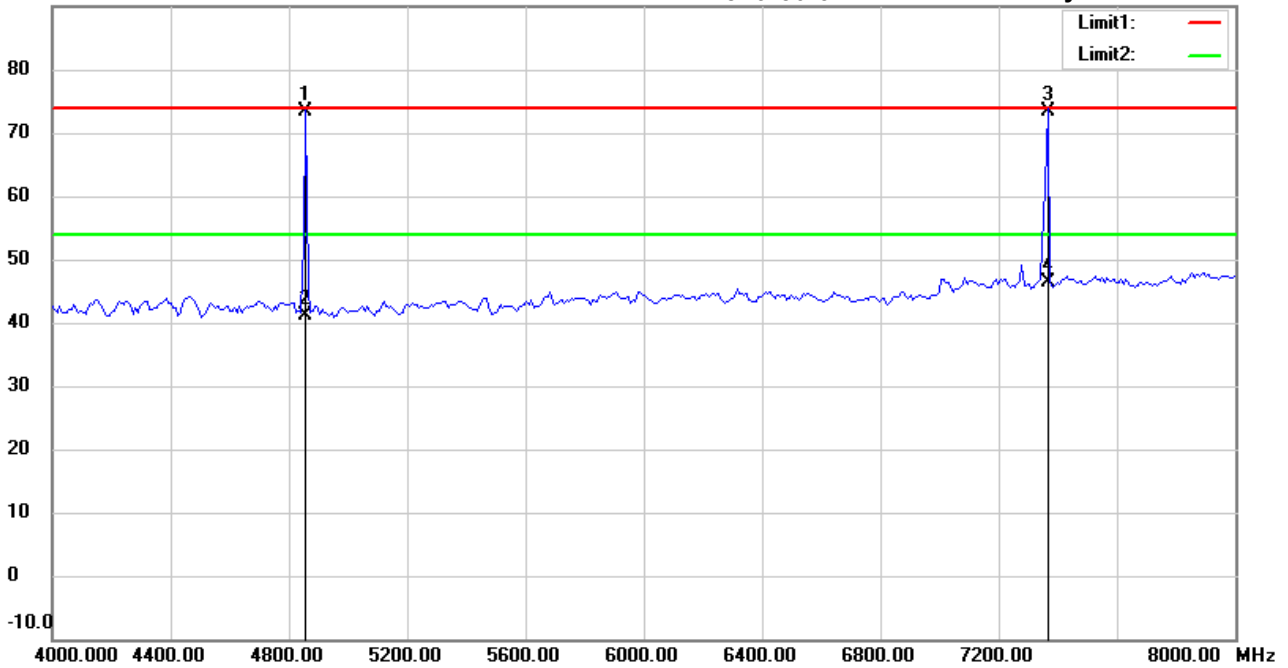
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 9:50:32 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21811-18603

M/N:

Test Mode : TX 915.25MHz

Note :

Polarization: *Vertical*

Power : 5 Vd.c.(USB)

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
*	4851.242	72.78	peak	0.71	73.49	74.00	150	0	-0.51	
	4851.242	40.41	AVG	0.71	41.12	54.00	150	0	-12.88	
	7359.018	67.59	peak	5.84	73.43	74.00	150	0	-0.57	
	7359.018	40.47	AVG	5.84	46.31	54.00	150	0	-7.69	



Radiated Emission Measurement

Operator: Vincent

File :3

Data :#3

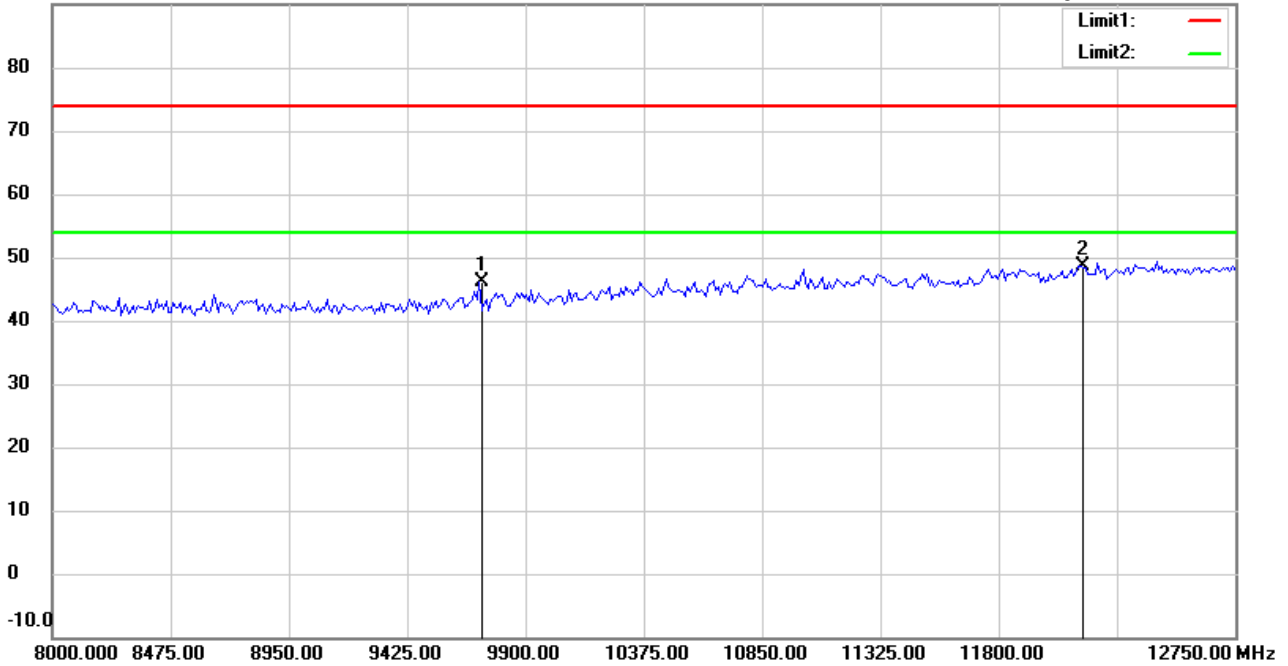
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 9:47:24 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: *Horizontal*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 915.25MHz

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
	9713.427	37.68	peak	8.39	46.07	74.00	150	110	-27.93	
*	12131.263	33.77	peak	14.87	48.64	74.00	150	165	-25.36	



Radiated Emission Measurement

Operator: Vincent

File :3

Data :#6

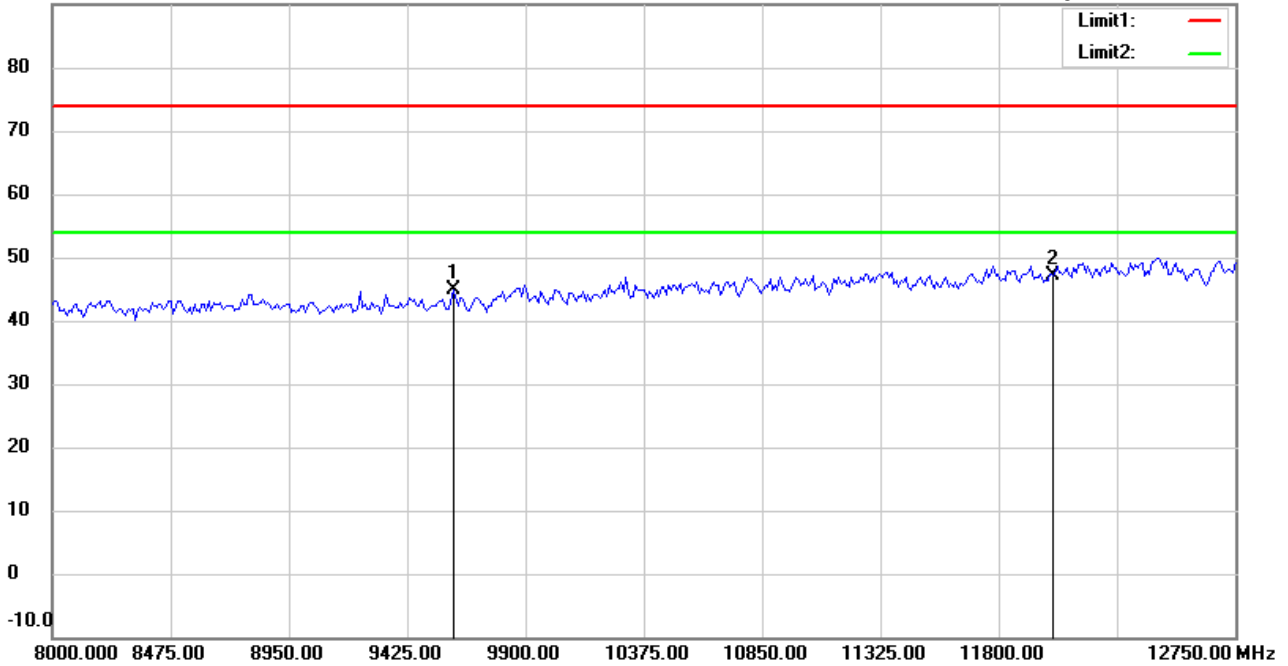
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 9:50:45 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: *Vertical*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 915.25MHz

Note :

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	9608.000	36.63	peak	8.25	44.88	74.00	150	305	-29.12	
*	12010.000	33.70	peak	13.50	47.20	74.00	150	160	-26.80	



Radiated Emission Measurement

Operator: Vincent

File :1

Data :#1

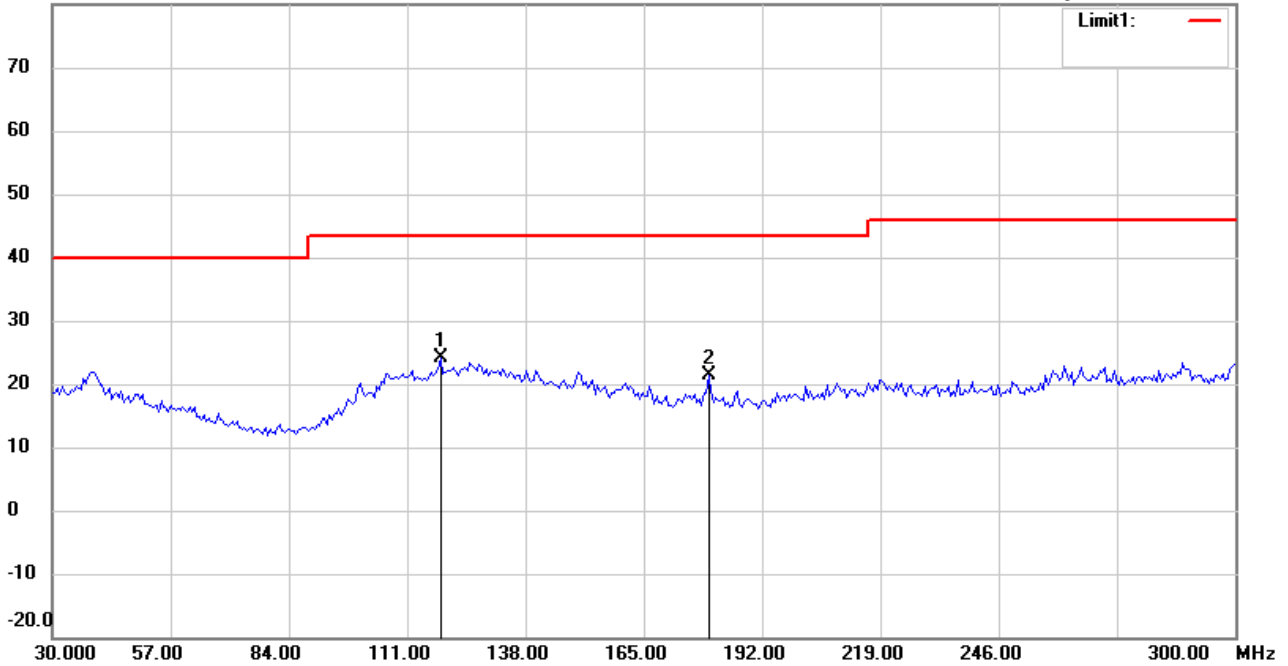
Date: 11/29/2018

Temperature:23.5 °C

80.0 dBuV/m

Time: 11:36:26 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

Polarization: *Horizontal*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 927.25MHz

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
*	118.7374	30.71	peak	-6.69	24.02	43.50	100	115	-19.48	
	179.8797	32.28	peak	-10.78	21.50	43.50	100	240	-22.00	



Radiated Emission Measurement

Operator: Vincent

File :1

Data :#2

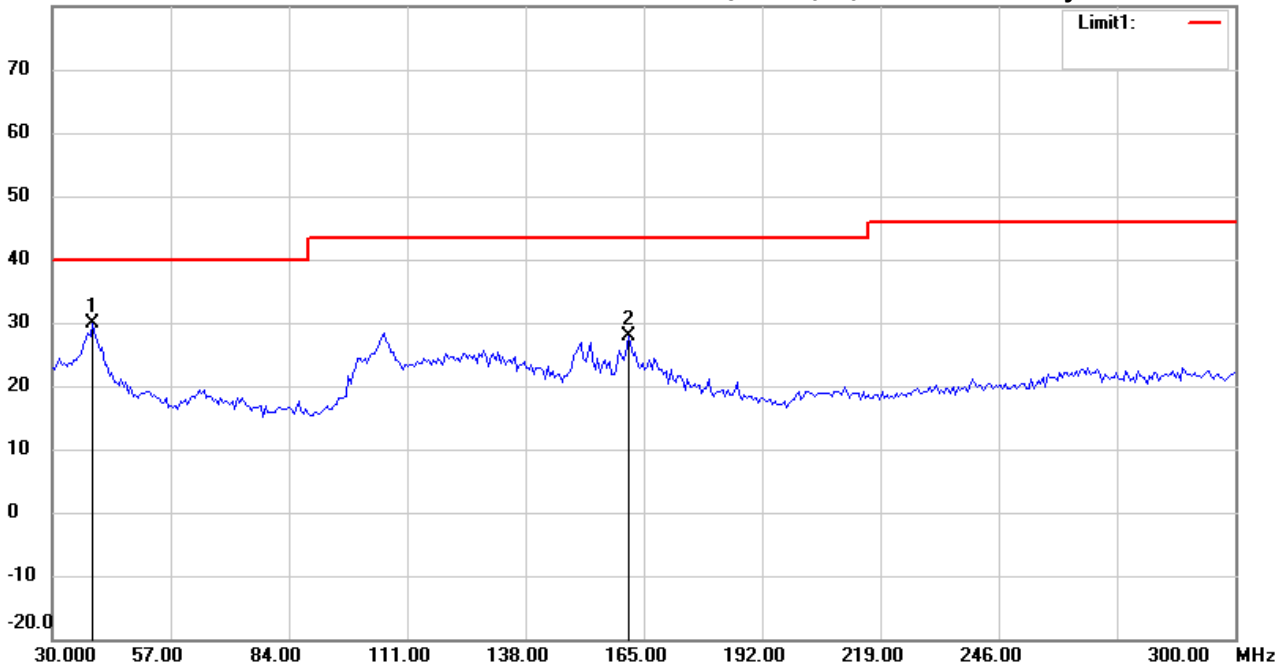
Date: 11/29/2018

Temperature:23.5 °C

80.0 dBuV/m

Time: 11:40:40 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

Polarization: *Vertical*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 927.25MHz

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
*	39.1984	39.09	peak	-9.14	29.95	40.00	100	130	-10.05	
	161.4830	36.75	peak	-8.79	27.96	43.50	100	220	-15.54	



Radiated Emission Measurement

Operator: Vincent

File :2

Data :#1

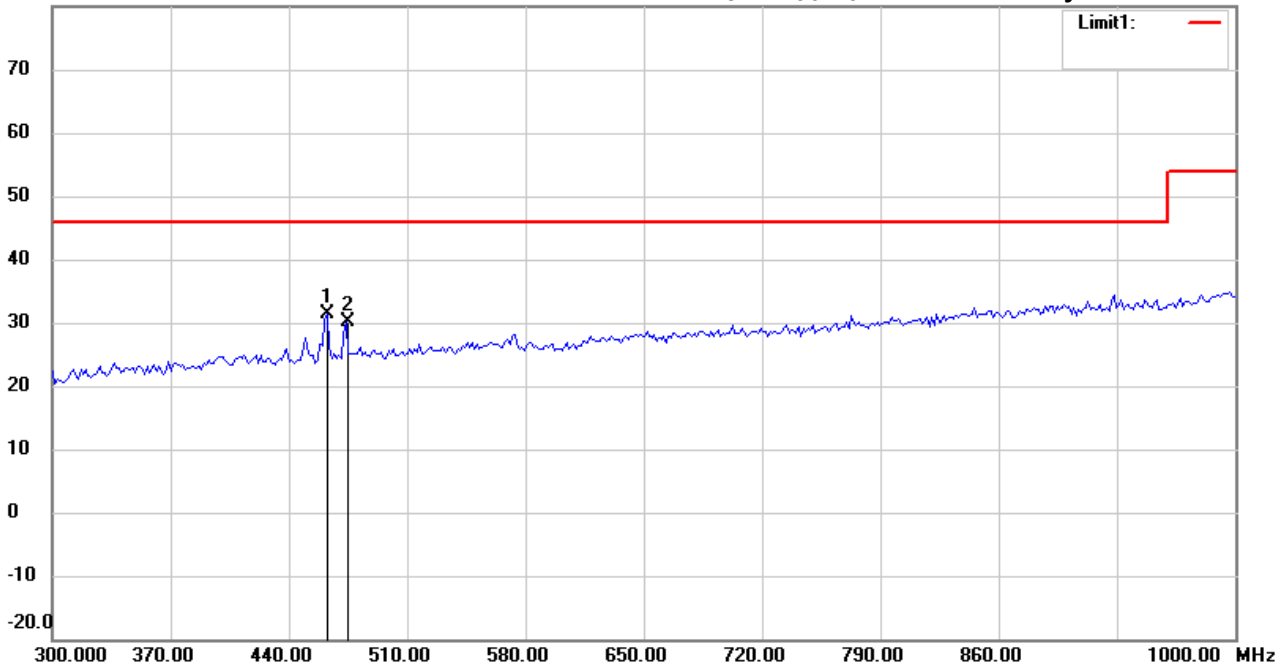
Date: 11/29/2018

Temperature:23.5 °C

80.0 dBuV/m

Time: 11:30:49 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

Polarization: *Horizontal*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 927.25MHz

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
*	462.7255	34.23	peak	-2.83	31.40	46.00	100	110	-14.60	
	473.9480	32.73	peak	-2.61	30.12	46.00	100	235	-15.88	



Radiated Emission Measurement

Operator: Vincent

File :2

Data :#2

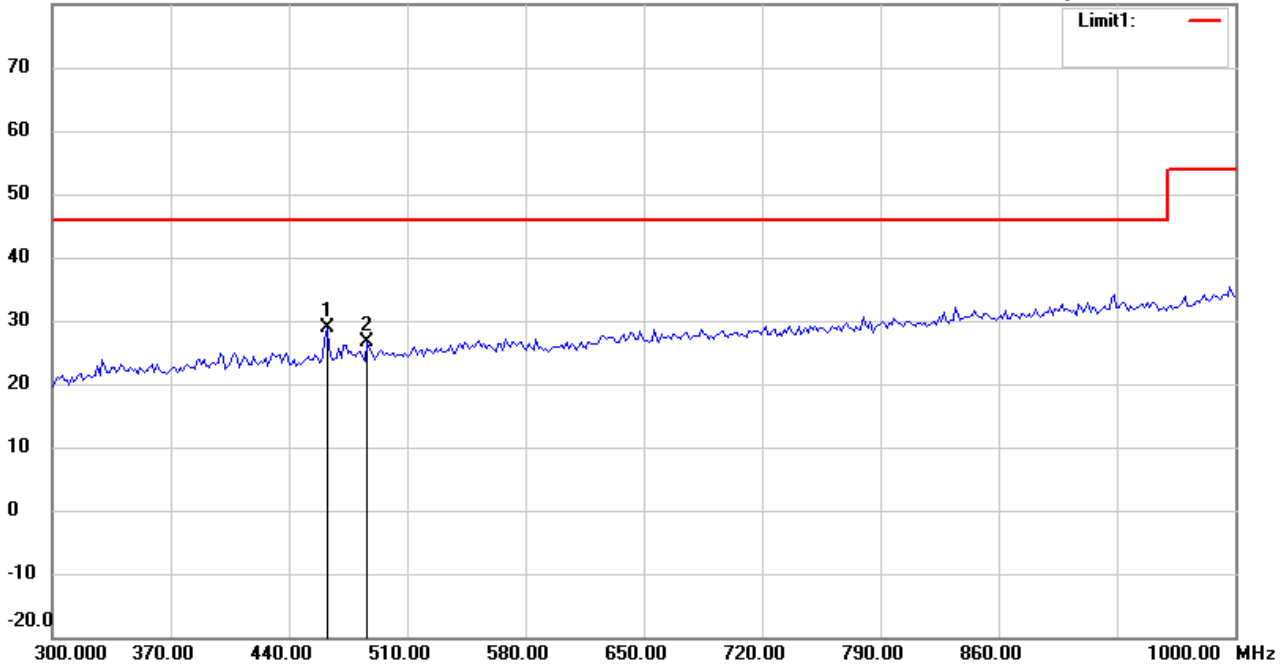
Date: 11/29/2018

Temperature:23.5 °C

80.0 dBuV/m

Time: 11:33:59 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

Polarization: *Vertical*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 927.25MHz

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
*	462.7255	31.61	peak	-2.83	28.78	46.00	100	110	-17.22	
	486.5731	29.03	peak	-2.41	26.62	46.00	100	240	-19.38	



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#1

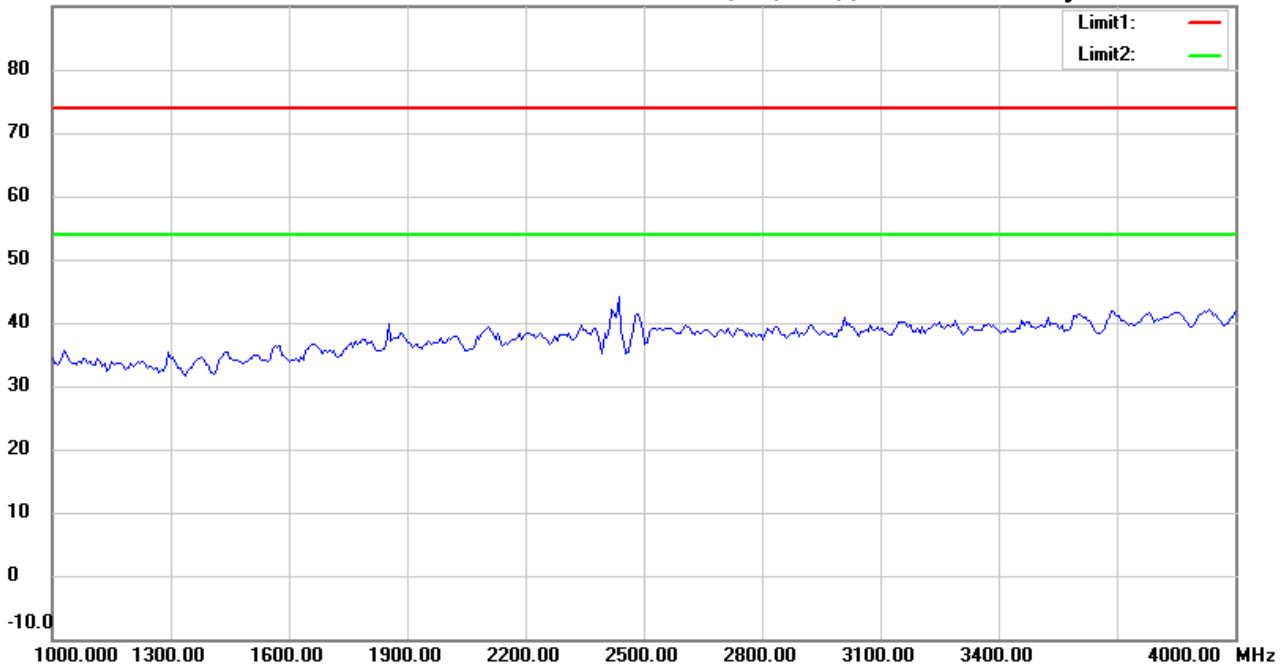
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 10:21:03 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: *Horizontal*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 927.25MHz

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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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#4

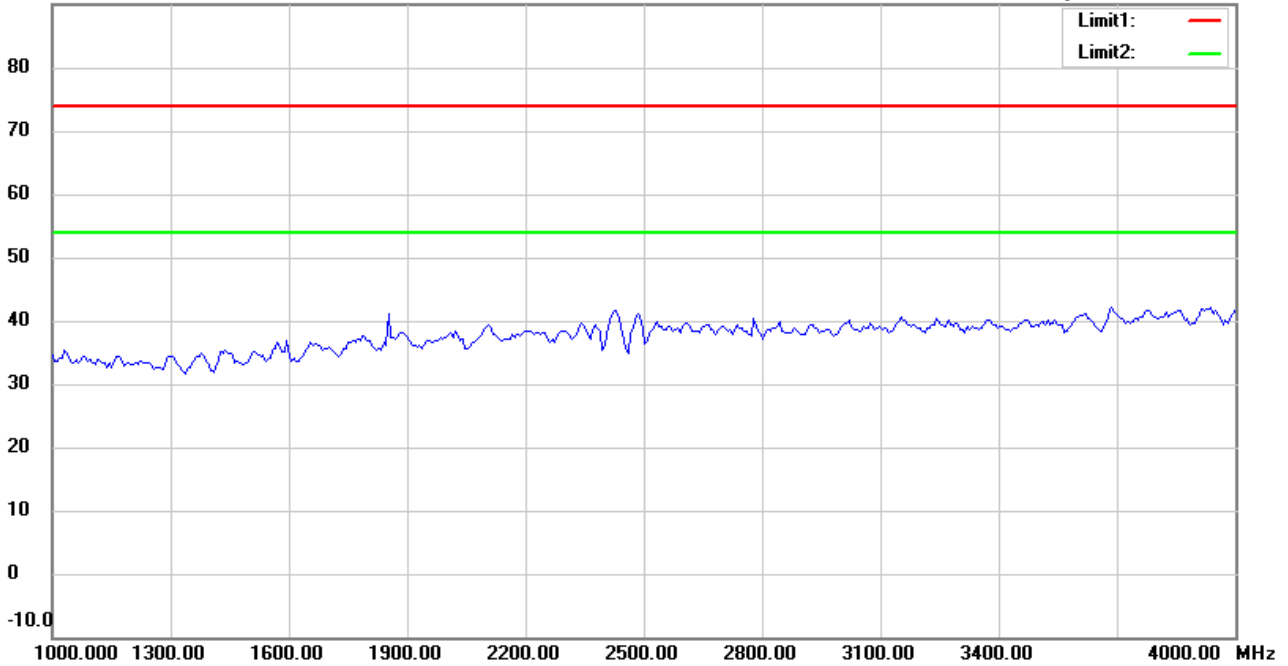
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 10:24:24 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: *Vertical*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 927.25MHz

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



Radiated Emission Measurement

Operator: Vincent

File :3

Data :#2

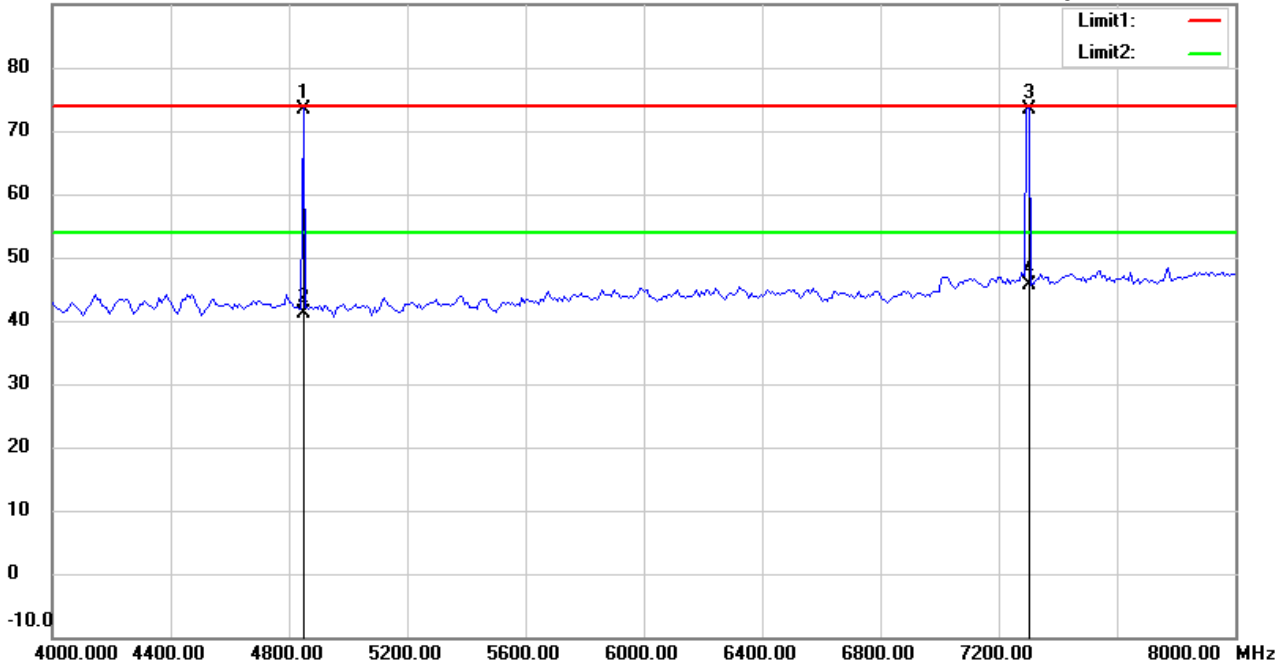
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 10:22:03 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21811-18603

M/N:

Test Mode : TX 927.25MHz

Note :

Polarization: *Horizontal*

Power : 5 Vd.c.(USB)

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
	4843.667	72.61	peak	0.72	73.33	74.00	150	0	-0.67	
	4843.667	40.31	AVG	0.72	41.03	54.00	150	0	-12.97	
*	7297.174	67.91	peak	5.51	73.42	74.00	150	0	-0.58	
	7297.174	40.07	AVG	5.51	45.58	54.00	150	0	-8.42	



Radiated Emission Measurement

Operator: Vincent

File :3

Data :#5

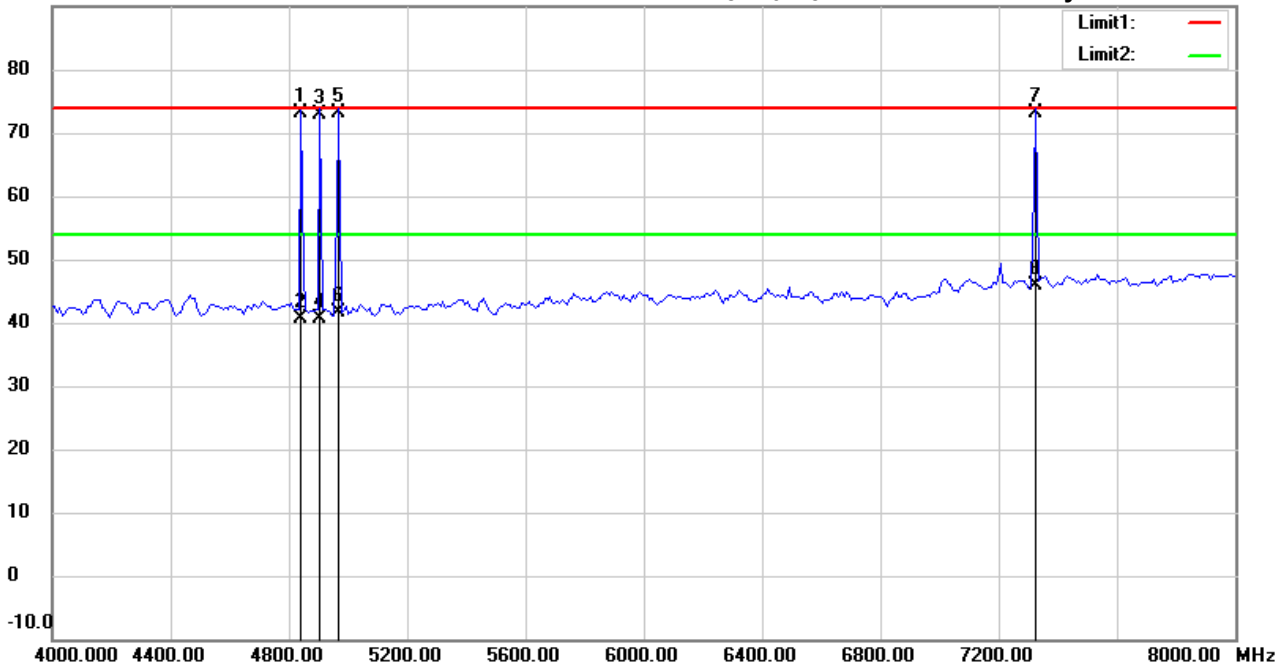
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 10:25:24 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21811-18603

M/N:

Test Mode : TX 927.25MHz

Note :

Polarization: *Vertical*

Power : 5 Vd.c.(USB)

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
*	4835.290	72.35	peak	0.72	73.07	74.00	150	0	-0.93	
	4835.290	39.97	AVG	0.72	40.69	54.00	150	0	-13.31	
	4903.827	72.11	peak	0.68	72.79	74.00	150	0	-1.21	
	4903.827	40.05	AVG	0.68	40.73	54.00	150	0	-13.27	
	4967.676	72.26	peak	0.79	73.05	74.00	150	0	-0.95	
	4967.676	40.80	AVG	0.79	41.59	54.00	150	0	-12.41	
	7326.513	67.38	peak	5.66	73.04	74.00	150	0	-0.96	
	7326.513	40.33	AVG	5.66	45.99	54.00	150	0	-8.01	



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#3

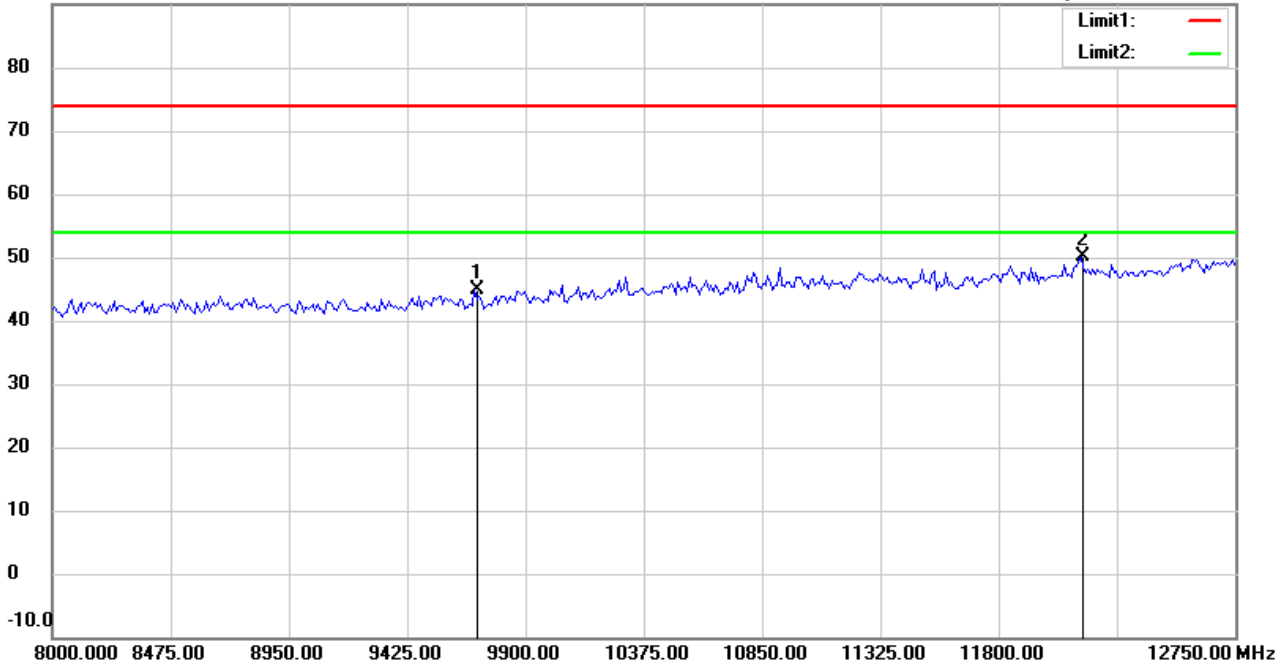
Date: 11/29/2018

Temperature: 23.5 °C

90.0 dBuV/m

Time: 10:22:16 PM

Humidity: 76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: *Horizontal*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 927.25MHz

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
	9694.389	36.66	peak	8.32	44.98	74.00	150	305	-29.02	
*	12131.263	35.18	peak	14.87	50.05	74.00	150	120	-23.95	

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



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Radiated Emission Measurement

Operator: Vincent

File :3

Data :#6

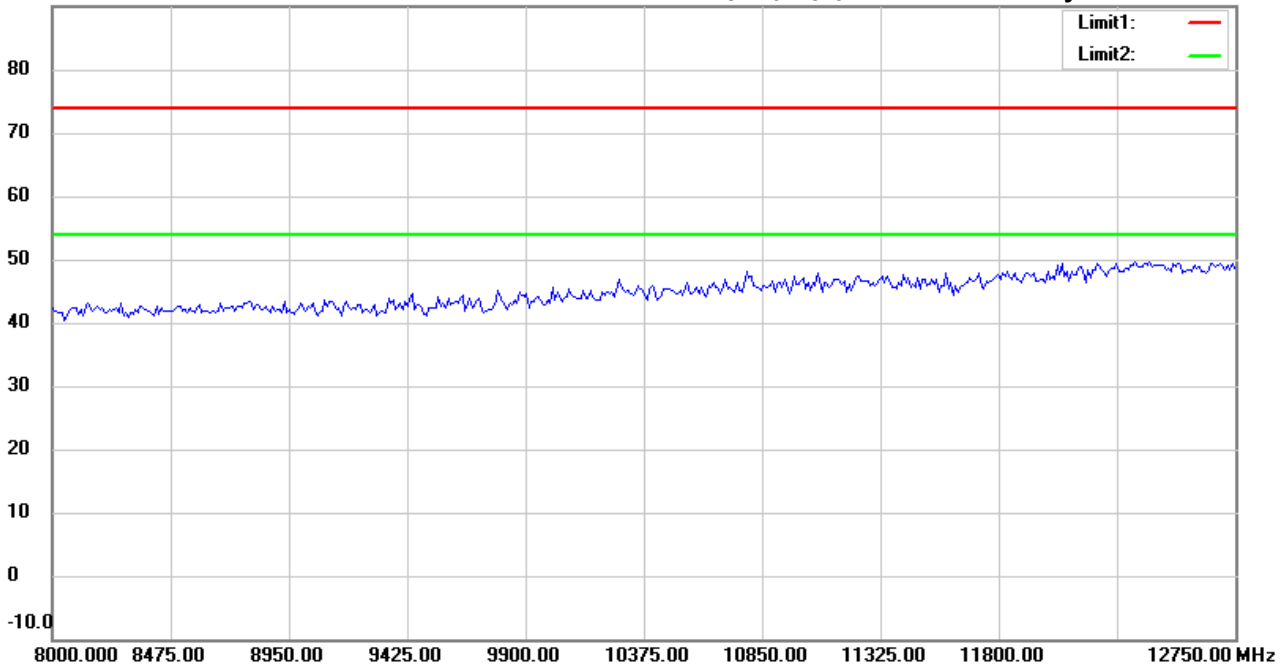
Date: 11/29/2018

Temperature:23.5 °C

90.0 dBuV/m

Time: 10:25:37 PM

Humidity:76.1 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

Polarization: *Vertical*

EUT : W6M21811-18603

Power : 5 Vd.c.(USB)

M/N:

Distance: 3m

Test Mode : TX 927.25MHz

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