

FCC PART 15 SUBPART C / IC RSS-210 TEST REPORT

for

Transmitter

Model No.: ACT-24HC

FCC ID: M5X-ACT24HC

IC: 2978A-ACT24HC

of

Applicant: MIPRO Electronics Co., Ltd.

Address: 814 Pei-kang Road Chia-yi 600 Taiwan, R.O.C

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

FCC Registration No.: 930600

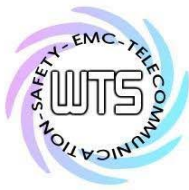
Industry Canada filed test laboratory Reg. No. IC 5679A-1, IC 5107A-1

A2LA Accredited No.: 2732.01



Report No.: W6M21502-14819-C-1

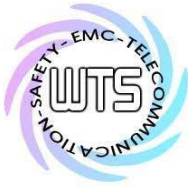
6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.
TEL: 886-2-66068877 FAX: 886-2-66068879 E-mail: wts@wts-lab.com



Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC

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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:

March 12, 2015

Spencer Yang

Date

WTS-Lab.

Name

Signature

Technical responsibility for area of testing:

March 12, 2015

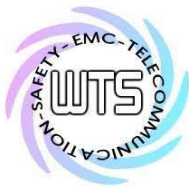
Kevin Wang

Date

WTS

Name

Signature



Worldwide Testing Services(Taiwan) Co., Ltd.

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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. 930600

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: MIPRO Electronics Co., Ltd.

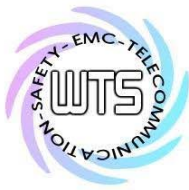
Street: 814 Pei-kang Road

Town: Chia-yi 600

Country: Taiwan, R.O.C

Telephone: +886-5-238-0809

Fax: +886-5-238-0803



Registration number: W6M21502-14819-C-1
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1.4 Application details

Date of receipt of test item: February 25, 2015
Date of test: from February 26, 2015 to March 11, 2015

1.5 General information of Test item

Type of test item: Transmitter
Model Number: ACT-24HC
Brand Name: MIPRO
Multi-listing model number: ACT-2XXXX(X=0~9,A~Z,a~z or Blank)
Photos: see Appendix

Technical data

Frequency band: 2.4 GHz – 2.4835 GHz
Frequency A: 2.402 GHz
Frequency B: 2.442 GHz
Frequency C: 2.482 GHz
Number of Channels: 48
Operation modes: Simplex
Modulation Type: GFSK
Fixed point-to-point operation: ☐ Yes / ☒ No
Type of Antenna: FIX 1/4 λ Antenna
Antenna gain: 0 dBi
Power supply: Battery 3.7Vdc
Emission designator: 1M40G1D



Worldwide Testing Services(Taiwan) Co., Ltd.

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Host device: none

Classification :

Fixed Device	☐
Mobile Device (Human Body distance > 20cm)	☐
Portable Device (Human Body distance < 20cm)	☒

Transmitter

Unom

Power (2402 MHz): Conducted: 7.69 dBm
Power (2442 MHz): Conducted: 8.73 dBm
Power (2482 MHz): Conducted: 7.06 dBm

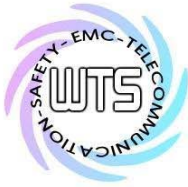
Manufacturer: (if applicable)

Name: ./.
Street: ./.
Town: ./.
Country: ./.

Additional information: ./.

1.6 Test standards

Technical standard : FCC RULES PART 15 SUBPART C § 15.247 (2013-10) ,
RSS-210 Issue 8: December 2010



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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.



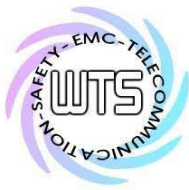
or

The deviations as specified in 2.5 were ascertained in the course of the tests performed.



2.2 Test environment

Temperature:	23 °C
Relative humidity content:	20 ... 75 %
Air pressure:	86 ... 103 kPa
Power supply:	Battery 3.7Vdc
Extreme conditions parameters:	./.

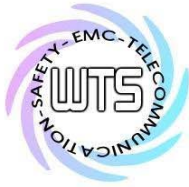


Worldwide Testing Services(Taiwan) Co., Ltd.

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2.3 Test Equipment List

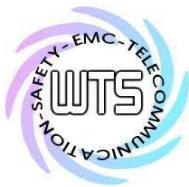
No.	Test equipment	Type	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2014/9/2	2015/9/1
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	Function Test	
ETSTW-CE 008	HF-EICHLITUNG RF STEP ATTENUATOR 139dB DPSP	334.6010.02	844581/024	R&S	Function Test	
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2014/7/8	2015/7/7
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2014/10/13	2015/10/12
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2014/9/2	2015/9/1
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2014/9/2	2015/9/1
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	2014/10/15	2015/10/14
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	ETS-Lindgren	2014/7/01	2015/6/30
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	ETS-Lindgren	2015/3/2	2016/3/1
ETSTW-RE 045	ESA-E SERIES SPECTRUM ANALYZER	E4404B	MY45111242	Agilent	Pre-test Use	
ETSTW-RE 049	TRILOG Super Broadband test Antenna	VULB 9160	9160-3185	Schwarzbeck	2015/2/17	2016/2/16
ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2015/3/2	2016/3/1
ETSTW-RE 051	Attenuator 6dB	50HF-006-1	None	JFW	2015/3/2	2016/3/1
ETSTW-RE 053	Attenuator 3dB	50HF-003-1	None	JFW	2015/3/2	2016/3/1
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2014/6/05	2015/6/04
ETSTW-RE 060	Attenuator 30dB	5015-30	F651012z-01	ATM	2015/3/2	2016/3/1
ETSTW-RE 062	Amplifier Module	CHC 2	None	KMIC	2014/11/26	2015/11/25
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	2014/10/9	2015/10/8
ETSTW-RE 088	SOLID STATE AMPLIFIER	KMA180265A01	99057	KMIC	2014/9/22	2015/9/21
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2015/3/2	2016/3/1
ETSTW-RE 106	Humidity Temperature Meter	TES-1366	091011113	TES	2014/11/7	2015/11/6
ETSTW-RE 111	TRILOG Super Broadband test Antenna	VULB 9160	9160-3309	Schwarz beck	2014/12/5	2015/12/4
ETSTW-RE 112	AC POWER SOURCE	TFC-1005	None	T-Power	Function test	
ETSTW-RE 115	2.4GHz Notch Filter	N0124411	473874	MICROWAVE CIRCUITS	2015/1/7	2016/1/6
ETSTW-RE 120	RF Player	MP9200	MP9210-111022	ADIVIC	Function test	
ETSTW-RE 122	SIGNAL GENERATOR	SMF100A	102149	R&S	2014/6/11	2015/6/10



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ETSTW-RE 125	5GHz Notch filter	5NSL11-5200/E221.3-O/O	1	K&L Microwave	2014/8/12	2015/8/11
ETSTW-RE 126	5GHz Notch filter	5NSL11-5800/E221.3-O/O	1	K&L Microwave	2014/8/12	2015/8/11
ETSTW-RE 127	RF Switch Box	RFS-01	None	WTS	2015/3/2	2016/3/1
ETSTW-RE 128	5.3GHz Notch filter	N0153001	SN487233	Microwave Circits	2014/8/12	2015/8/11
ETSTW-RE 129	5.5GHz Notch filter	N0555984	SN487234	Microwave Circits	2014/8/12	2015/8/11
ETSTW-RE 130	Handheld RF Spectrum Analyzer	N9340A	CN0147000204	Agilent	Pre-test Use	
ETSTW-GSM 002	Universal Radio Communication Tester	CMU 200	109439	R&S	2014/10/20	2015/10/19
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849-822/851-40/12+9SS	3	WI	2015/1/7	2016/1/6
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748-1743/1752-32/5SS	1	WI	2015/1/7	2016/1/6
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880.5-1875.5/1884.5-32/5SS	3	WI	2015/1/7	2016/1/6
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1-904.25-50/8SS	1	WI	2015/1/7	2016/1/6
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2014/9/17	2015/9/16
ETSTW-Cable 010	BNC Cable	5 M BNC Cable	None	JYE BAO CO.,LTD.	2014/10/15	2015/10/14
ETSTW-Cable 011	BNC Cable	BNC Cable 1	None	JYE BAO CO.,LTD.	Pre-test Use NCR	
ETSTW-Cable 012	N TYPE To SMA Cable	Cable 012	None	JYE BAO CO.,LTD.	2014/10/15	2015/10/14
ETSTW-Cable 016	BNC Cable	Switch Box	B Cable 1	Schwarz beck	2015/2/25	2016/2/24
ETSTW-Cable 017	BNC Cable	X Cable	B Cable 2	Schwarz beck	2015/2/25	2016/2/24
ETSTW-Cable 018	BNC Cable	Y Cable	B Cable 3	Schwarz beck	2015/2/25	2016/2/24
ETSTW-Cable 019	BNC Cable	Z Cable	B Cable 4	Schwarz beck	2015/2/25	2016/2/24
ETSTW-Cable 022	N TYPE Cable	5006	0002	JYE BAO CO.,LTD.	2015/2/17	2016/2/16
ETSTW-Cable 026	Microwave Cable	SUCOFLEX 104	279075	HUBER+SUHNER	2015/3/2	2016/3/1
ETSTW-Cable 027	Microwave Cable	SUCOFLEX 104	279083	HUBER+SUHNER	2015/3/2	2016/3/1
ETSTW-Cable 028	Microwave Cable	FA147A0015M2020	30064-2	UTIFLEX	2015/1/16	2016/1/15
ETSTW-Cable 029	Microwave Cable	FA147A0015M2020	30064-3	UTIFLEX	2014/9/22	2015/9/21
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 (S_Cable 9)	279067	HUBER+SUHNER	2015/3/2	2016/3/1
ETSTW-Cable 031	Microwave Cable	SUCOFLEX 104 (S_Cable 10)	238092	HUBER+SUHNER	2014/11/26	2015/11/25
ETSTW-Cable 043	Microwave Cable	SUCOFLEX 104	317576	HUBER+SUHNER	2014/11/26	2015/11/25
ETSTW-Cable 048	Microwave Cable	SUCOFLEX 104	325518	HUBER+SUHNER	2014/11/26	2015/11/25
ETSTW-Cable 053	N TYPE To SMA Cable	RG142	None	JYE BAO CO.,LTD.	2015/2/17	2016/2/16
ETSTW-Cable 058	Microwave Cable	SUCOFLEX 104	none	HUBER+SUHNER	2015/2/17	2016/2/16
WTSTW-SW 002	EMI TEST SOFTWARE	EZ_EMC	None	Farad	Version ETS-03A1	



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2.4 General Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-2009 5.2 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 C63.4-2009 6.4 employing a spectrum analyzer. For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 100kHz respectively with an appropriate sweep speed. For investigated frequency is above 1GHz, both of RBW and VBW of the spectrum analyzer were 1 MHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dB 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

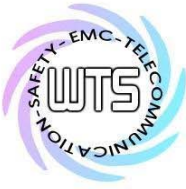
The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m (non metallic table) and arranged according to ANSI C63.4-2009 6.3.1. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to the frequency specified as follows:

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

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

Measurements were made by Worldwide Testing Services(Taiwan) Co., Ltd. at the registered open field test site located at No.5-1, Lishui, Shuang Sing Village, Wanli Dist., New Taipei City 207, Taiwan (R.O.C.). The Registration Number: 930600.

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:

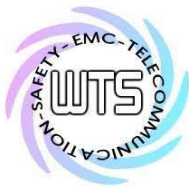
Average = Peak + Duty Factor

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 C63.4-2009 10.2.7: Any measurements that utilize special test software shall be indicated and referenced in the test report. During testing, test software 'EZ EMC' was used for setting up different operation modes.



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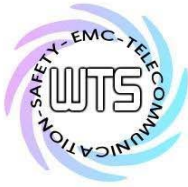
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3 Test results (enclosure)

TEST CASE	Para. Number	Required	Test passed	Test failed
Peak Output Power	15.247(b) IC RSS-210 A8.4	☒	☒	☐
Equivalent isotropically radiated Power	15.247(b) IC RSS-210 A8.4	☒	☒	☐
Spurious Emissions radiated – Transmitter operating	15.247(c): 15.209 IC RSS-210 A8.5	☒	☒	☐
Band Edge Measurement	15.247(d) IC RSS-210 A8.5	☒	☒	☐
Minimum 6 dB Bandwidth	15.247(a)(2) IC RSS-210 A8.2	☒	☒	☐
Peak Power Spectral Density	15.247(e) IC RSS-210 A8.2	☒	☒	☐
Radiated Emission from Digital Part	15.109 IC RSS-210 2.5 IC RSS-Gen Table 2	☐	☐	☐
Power Line Conducted Emission	15.207 IC RSS-Gen	☒	☒	☐

The following is intentionally left blank.



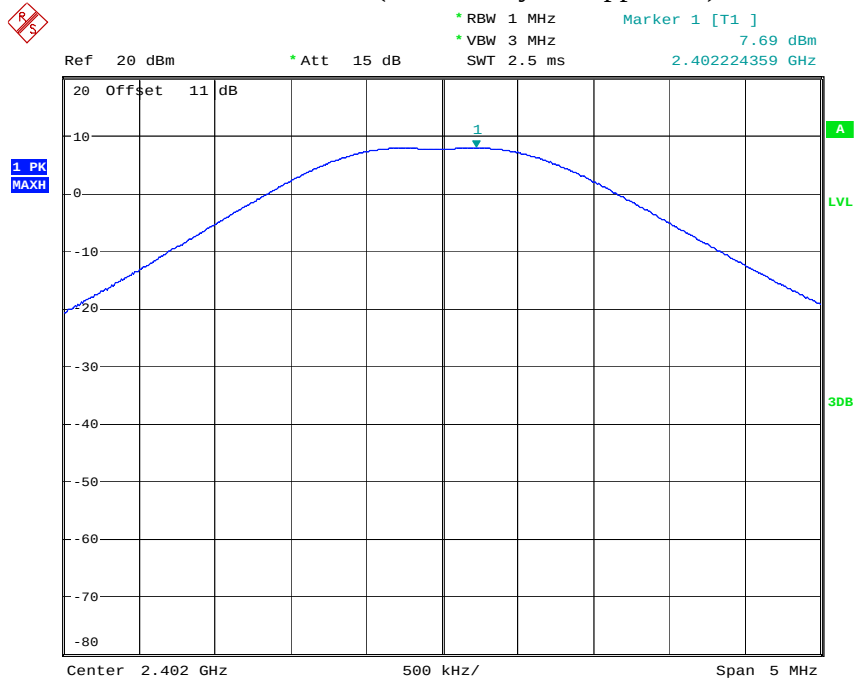
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3.1 Peak Output Power (transmitter)

FCC Rule: 15.247(b)(3)

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

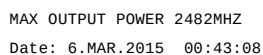
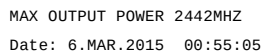
The power was measured with modulation (declared by the applicant).

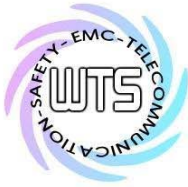


MAX OUTPUT POWER 2402MHZ
Date: 6.MAR.2015 00:35:44



IC: 2978A-ACT24HC





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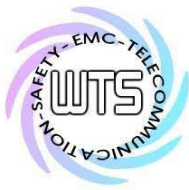
IC: 2978A-ACT24HC

Limits:

Frequency MHz	Power dBm
902 - 928	30
2400 – 2483.5	30
5725 – 5850	30

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

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



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3.2 Equivalent isotropic radiated power

FCC Rule: 15.247(b)(3)

EIRP = max. conducted output power + antenna gain

EIRP = 8.73 dBm + 0 dBi
= 8.73 dBm

Limit: EIRP = +36 dBm for Antenna gain <6dBi

Test equipment used: ETSTW-RE 055

3.3 RF Exposure Compliance Requirements

According to KDB447498 10 D01v05:

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

The enclosure of the device provides ≥ 0.5 cm separation from the antenna elements to significant metal parts of the enclosure to minimize potential perturbations.

Frequency Band: 2402-2482 MHz

Maximum Power fed to Antenna: 7.4645 mW

Separation distances:

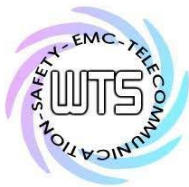
Radiator to user: > 5 mm

Distance prescribed in user manual: > 5 mm

MHz	5	10	15	20	25	mm
2450	10	19	29	38	48	SAR Test Exclusion Threshold (mW)

MHz	30	35	40	45	50	mm
2450	57	67	77	86	96	SAR Test Exclusion Threshold (mW)

MHz	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	mm
2450	96	196	296	396	496	596	696	796	896	996	1096	1196	1296	1396	1496	mW



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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 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:

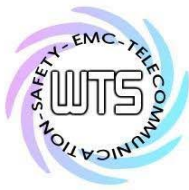
“If the emission is pulsed, modify the unit for continuous operation, use the setting shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.”

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.



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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))

FCC Rule: 15.247(c), 15.35

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

Limits:

For frequencies above 1GHz (Peak measurements).

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

For frequencies above 1GHz (Average measurements).

Max. reading – 20dB

Max. reading – 20 dB

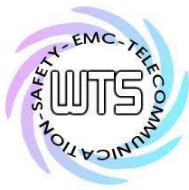
Guidance on Measurement of Digit Transmission Systems:

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

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

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

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



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

Calculation of test results:

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

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

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

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

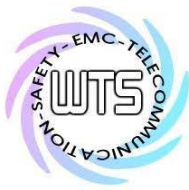
Summary table with radiated data of the test plots

Model:	ACT-24HC	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)	Result (dBuV/m)		Limit (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (m)
	Peak	Ave.	Corr.	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)	Result (dBuV/m)		Limit (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (m)
	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.			
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--



Registration number: W6M21502-14819-C-1

FCC ID: M5X-ACT24HC

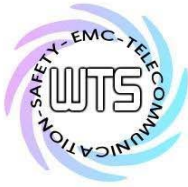
IC: 2978A-ACT24HC

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 for 3m measurement: 30-1000 MHz = ± 4.32 dB, 1-18 GHz = ± 4.95 dB, 18-40 GHz = ± 2.94 dB ; Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.**
6. **See attached diagrams in appendix.**

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

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

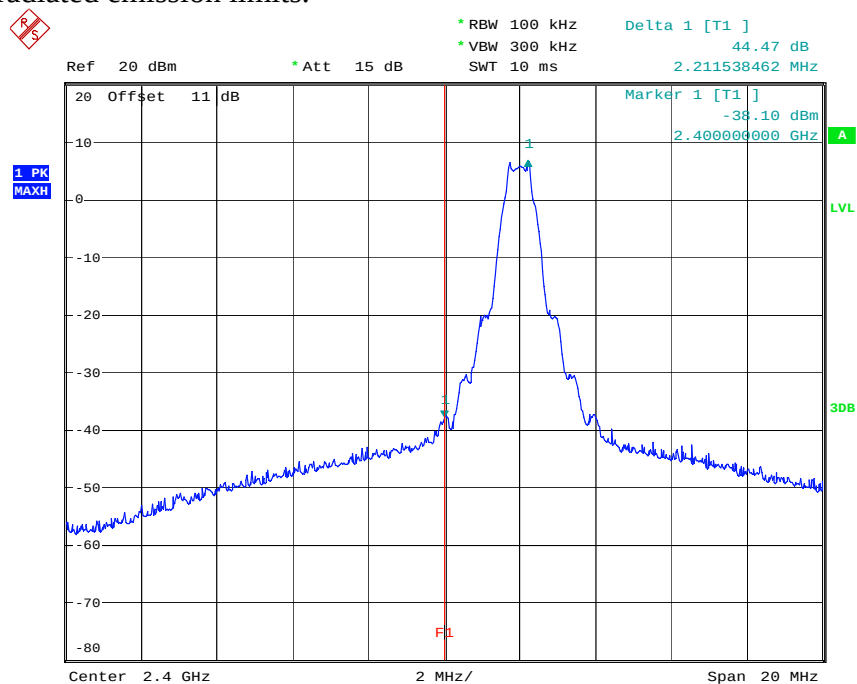


Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC

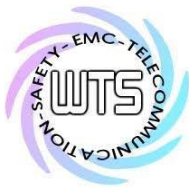
3.6 Radiated Emission on the band edge

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

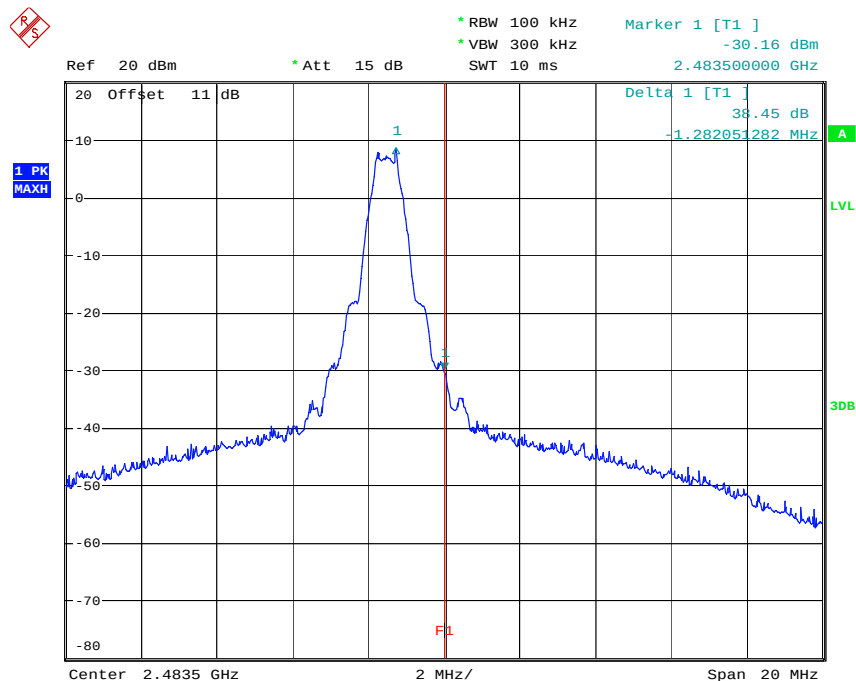
In addition radiated emission which fall in the restricted bands, as defined in section 15.205(a), must also with the radiated emission limits.



BANDEDGE 2402MHZ
Date: 6.MAR.2015 01:00:34



Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC

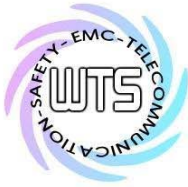


BANDEDGE 2482MHZ
Date: 6.MAR.2015 00:53:11

Limit:

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

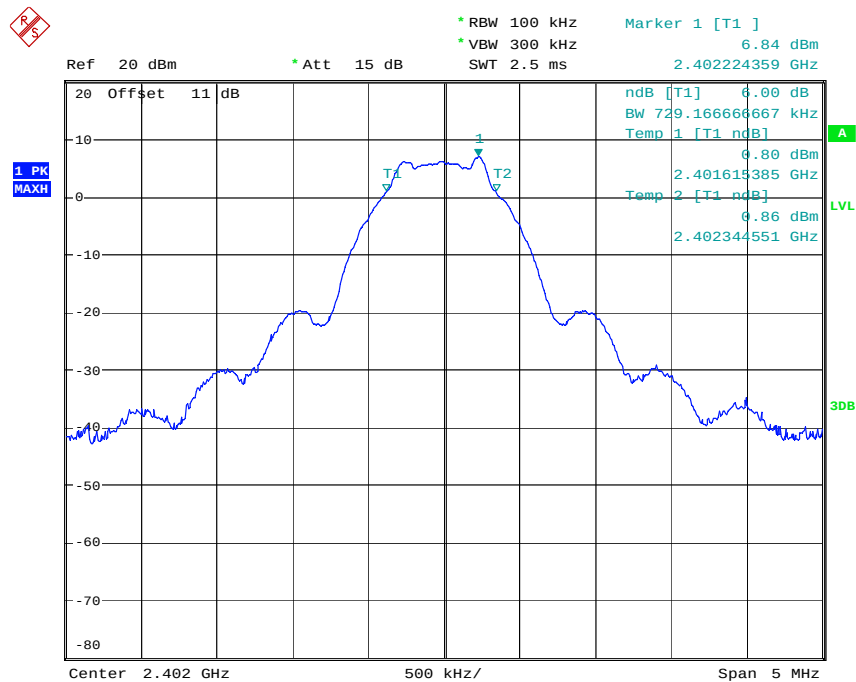
Test equipment used: ETSTW-RE 055, ETSTW-RE 050

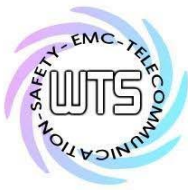


Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC

3.7 Minimum 6 dB Bandwidth

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



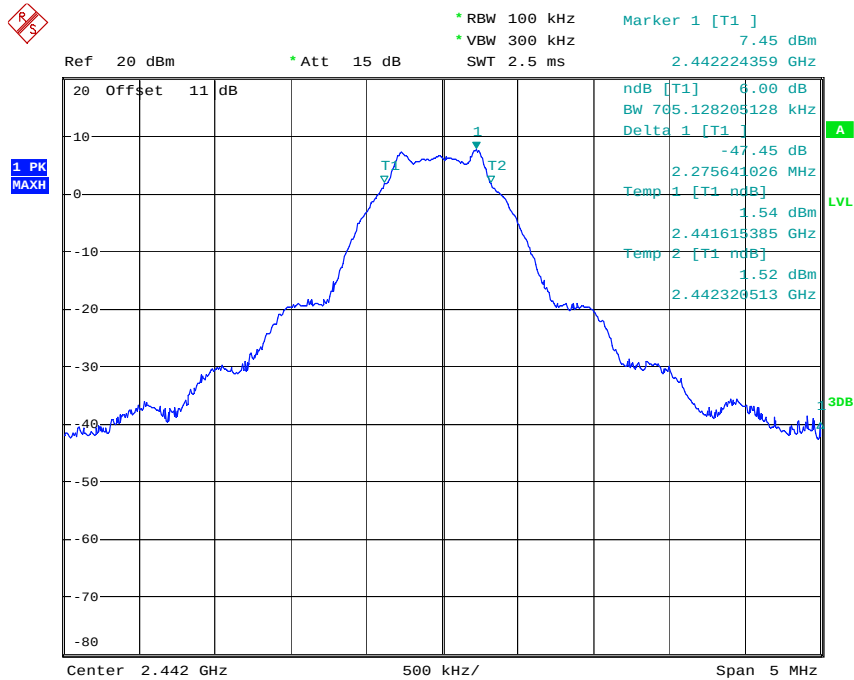


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21502-14819-C-1

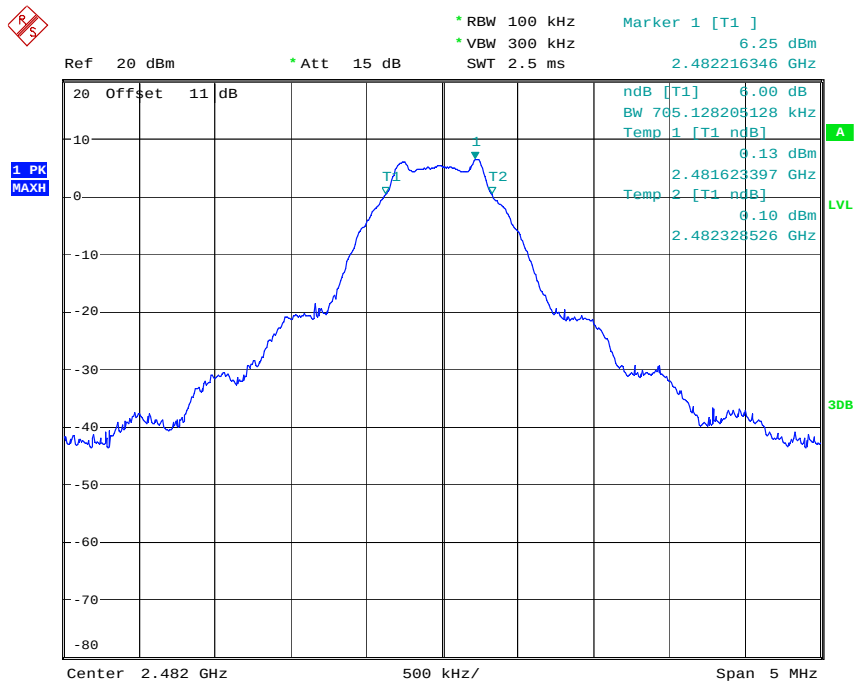
FCC ID: M5X-ACT24HC

IC: 2978A-ACT24HC



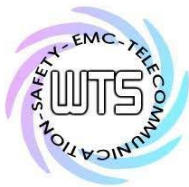
6DB BANDWIDTH 2442MHZ

Date: 6.MAR.2015 00:54:30



6DB BANDWIDTH 2482MHZ

Date: 6.MAR.2015 00:41:21



Registration number: W6M21502-14819-C-1

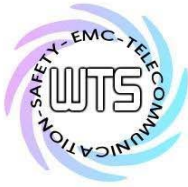
FCC ID: M5X-ACT24HC

IC: 2978A-ACT24HC

Limits:

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

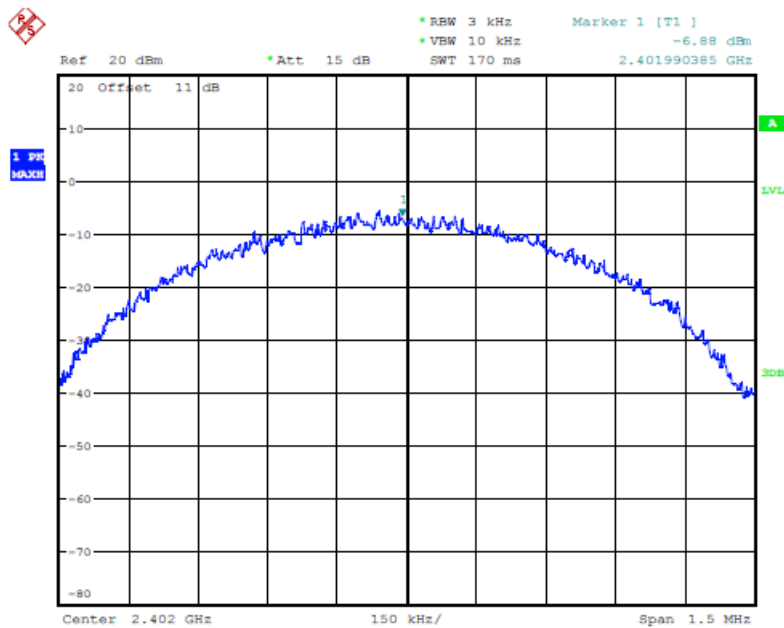
Test equipment used: ETSTW-RE 055, ETSTW-RE 050



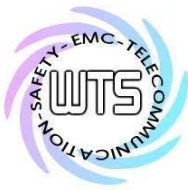
Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC

3.8 Peak Power Spectral Density

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



POWER DENSITY 2402MHZ
Date: 6.MAR.2015 00:43:52

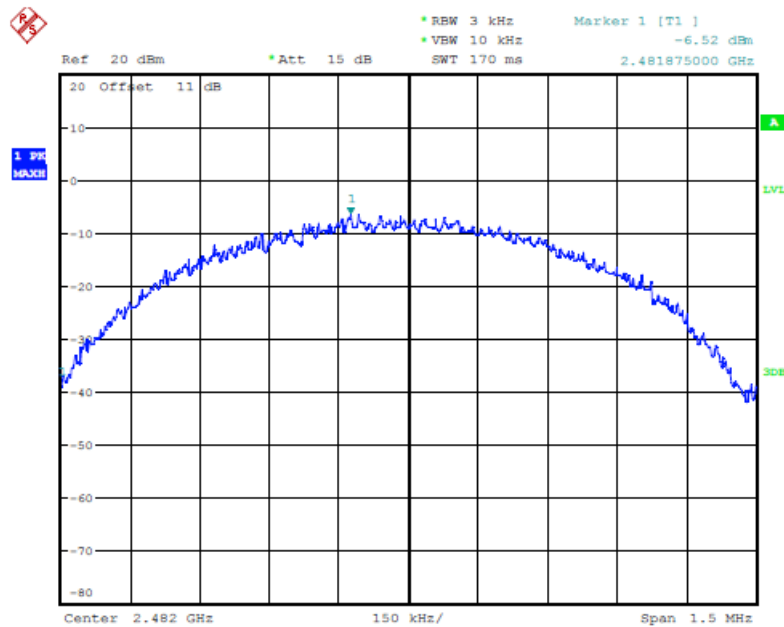
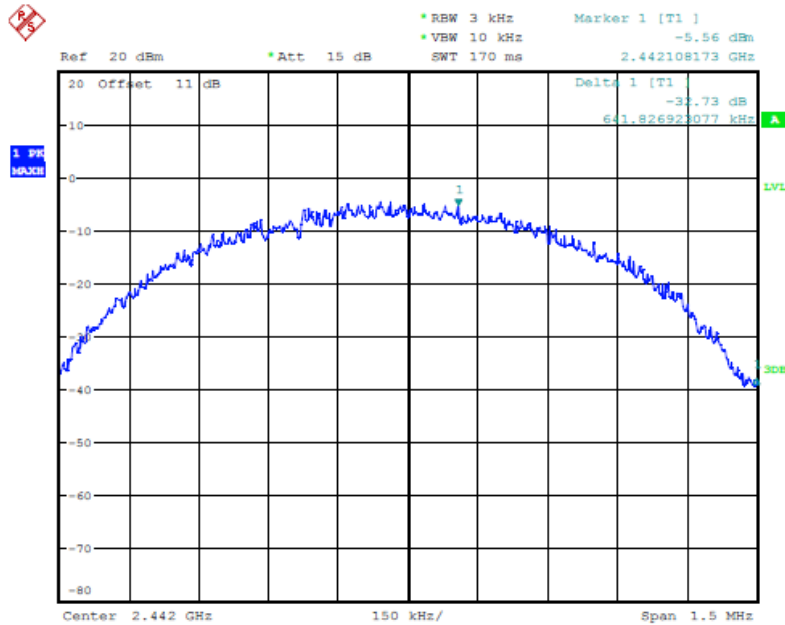


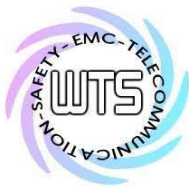
Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21502-14819-C-1

FCC ID: M5X-ACT24HC

IC: 2978A-ACT24HC





Registration number: W6M21502-14819-C-1

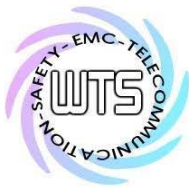
FCC ID: M5X-ACT24HC

IC: 2978A-ACT24HC

Limits:

Frequency Range MHz	dBm
902-928	8
2400-2483.5	8
5725-5850	8

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



Registration number: W6M21502-14819-C-1

FCC ID: M5X-ACT24HC

IC: 2978A-ACT24HC

3.9 Radiated Emission from Digital Part

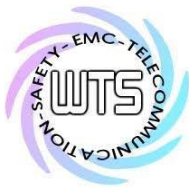
FCC Rule: 15.109

Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

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

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

Explanation: Please refer to separated test report no.: W6M21502-14825-P-15B.



Registration number: W6M21502-14819-C-1

FCC ID: M5X-ACT24HC

IC: 2978A-ACT24HC

3.10 Power Line Conducted Emission

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

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

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

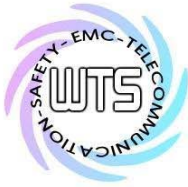
Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result (dBuV)		Limit (dBuV)		Margin (dB)
	QP	Ave.		QP	Ave.	QP	Ave.	
--	--	--	--	--	--	--	--	--
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Polarization: L1

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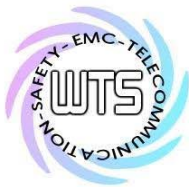
Note:

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. Measurement uncertainty = ± 1.67 dB; Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.
6. Up Line: QP Limit Line, Down Line: Ave Limit Line.
7. The EUT is battery-used, so this test is not required.



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Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21502-14819-C-1

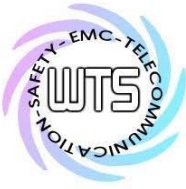
FCC ID: M5X-ACT24HC

IC: 2978A-ACT24HC

Limits:

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

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



Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC

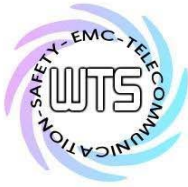
Appendix

A. Photos

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

B. Measurement diagrams

Spurious Emissions radiated



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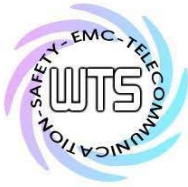
Registration number: W6M21502-14819-C-1

FCC ID: M5X-ACT24HC

IC: 2978A-ACT24HC

External Photos





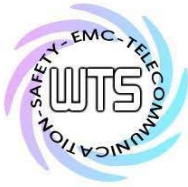
Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21502-14819-C-1

FCC ID: M5X-ACT24HC

IC: 2978A-ACT24HC





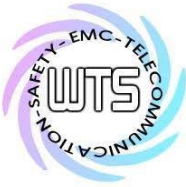
Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21502-14819-C-1

FCC ID: M5X-ACT24HC

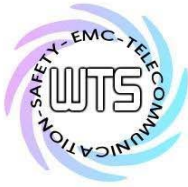
IC: 2978A-ACT24HC





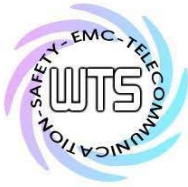
Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC





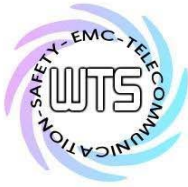
Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC





Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC





Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21502-14819-C-1

FCC ID: M5X-ACT24HC

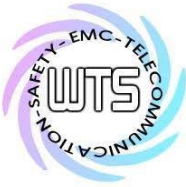
IC: 2978A-ACT24HC

Internal Photos



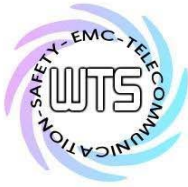
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FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC





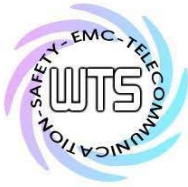
Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC





Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC



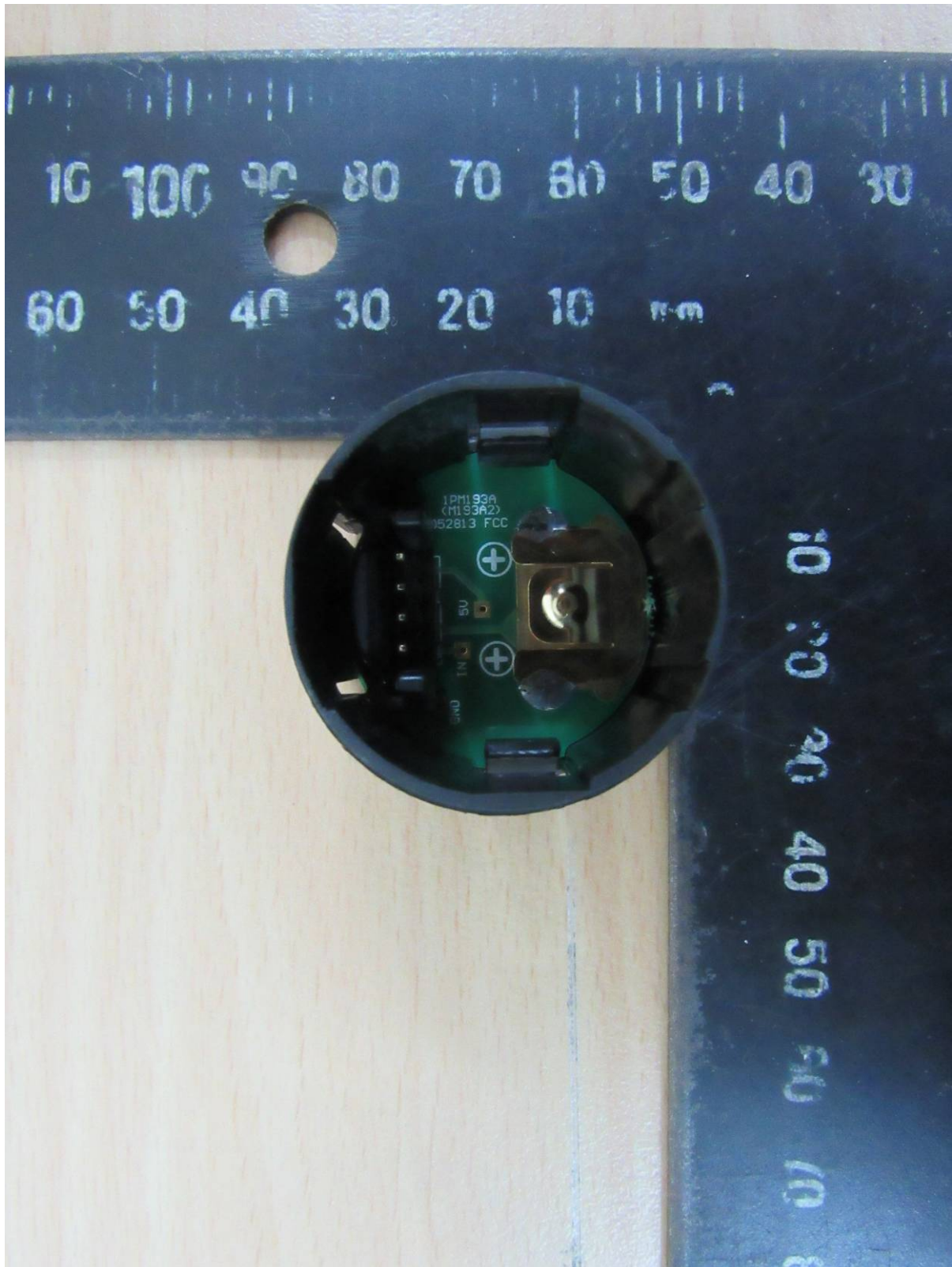


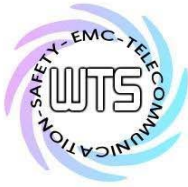
Worldwide Testing Services(Taiwan) Co., Ltd.

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FCC ID: M5X-ACT24HC

IC: 2978A-ACT24HC

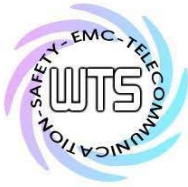




Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC





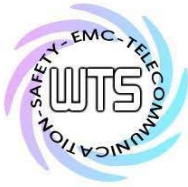
Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21502-14819-C-1

FCC ID: M5X-ACT24HC

IC: 2978A-ACT24HC



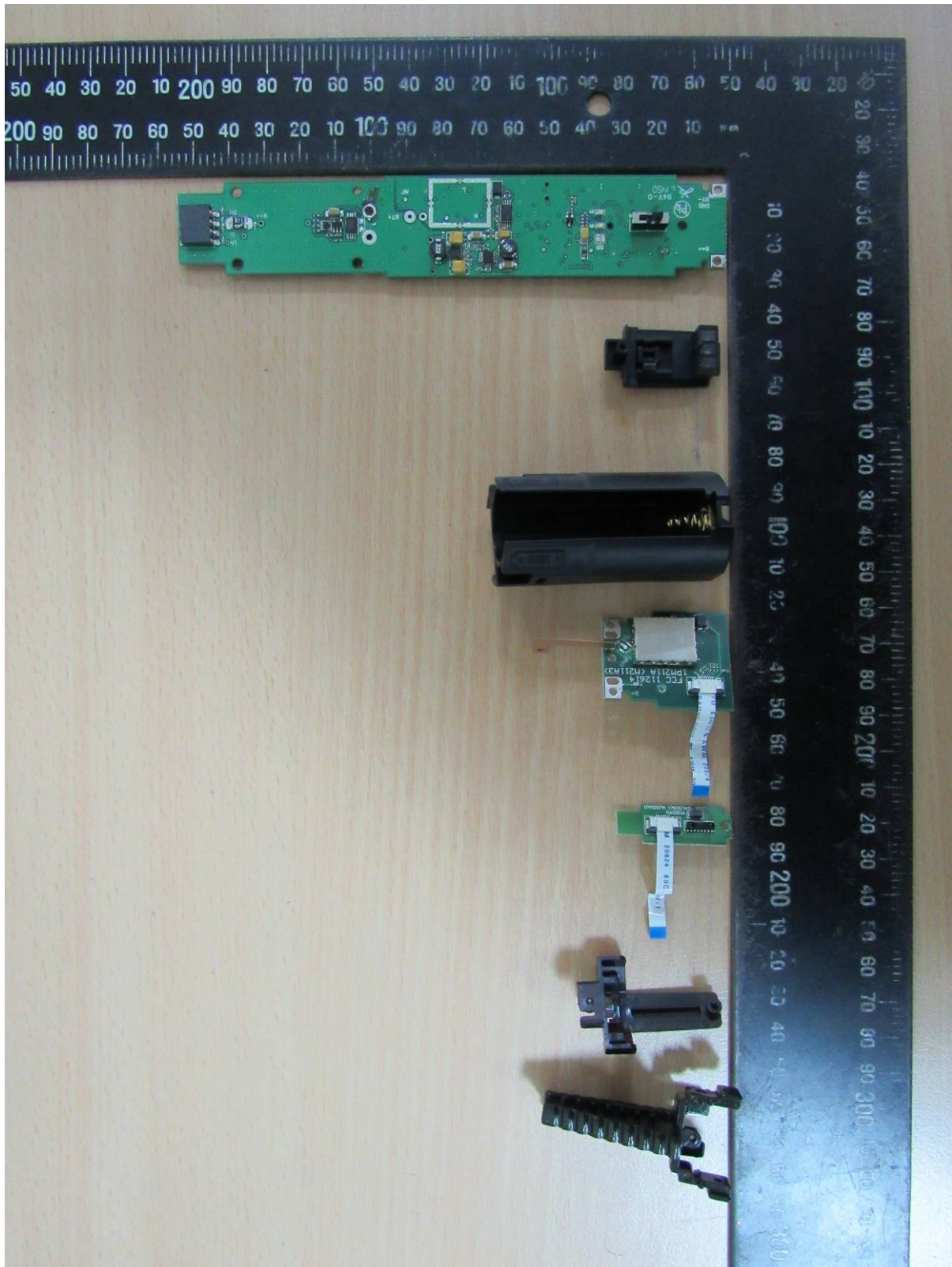


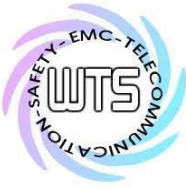
Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21502-14819-C-1

FCC ID: M5X-ACT24HC

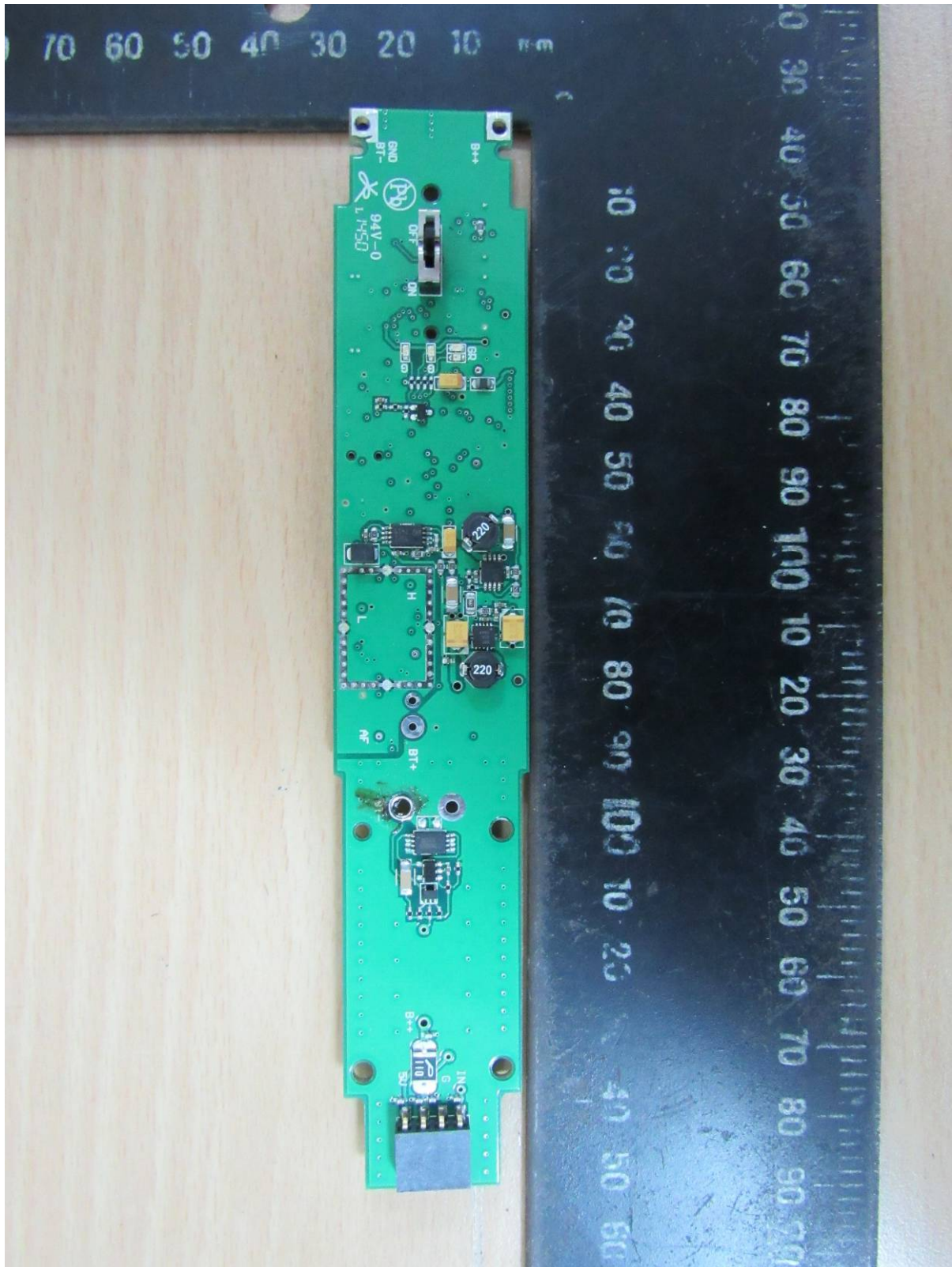
IC: 2978A-ACT24HC



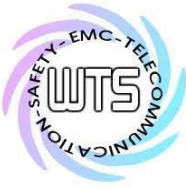


Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC

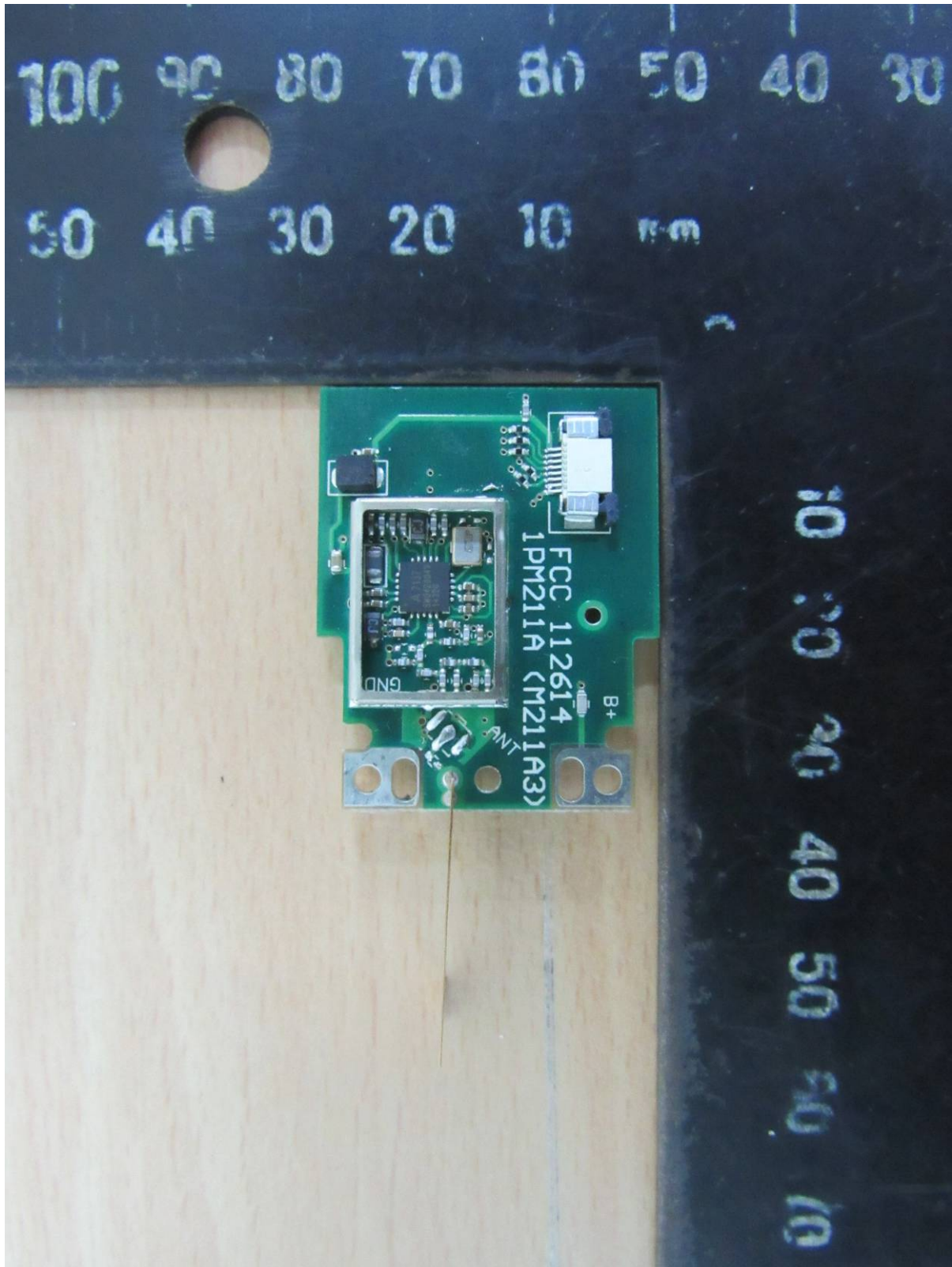


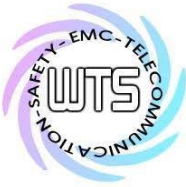




Worldwide Testing Services(Taiwan) Co., Ltd.

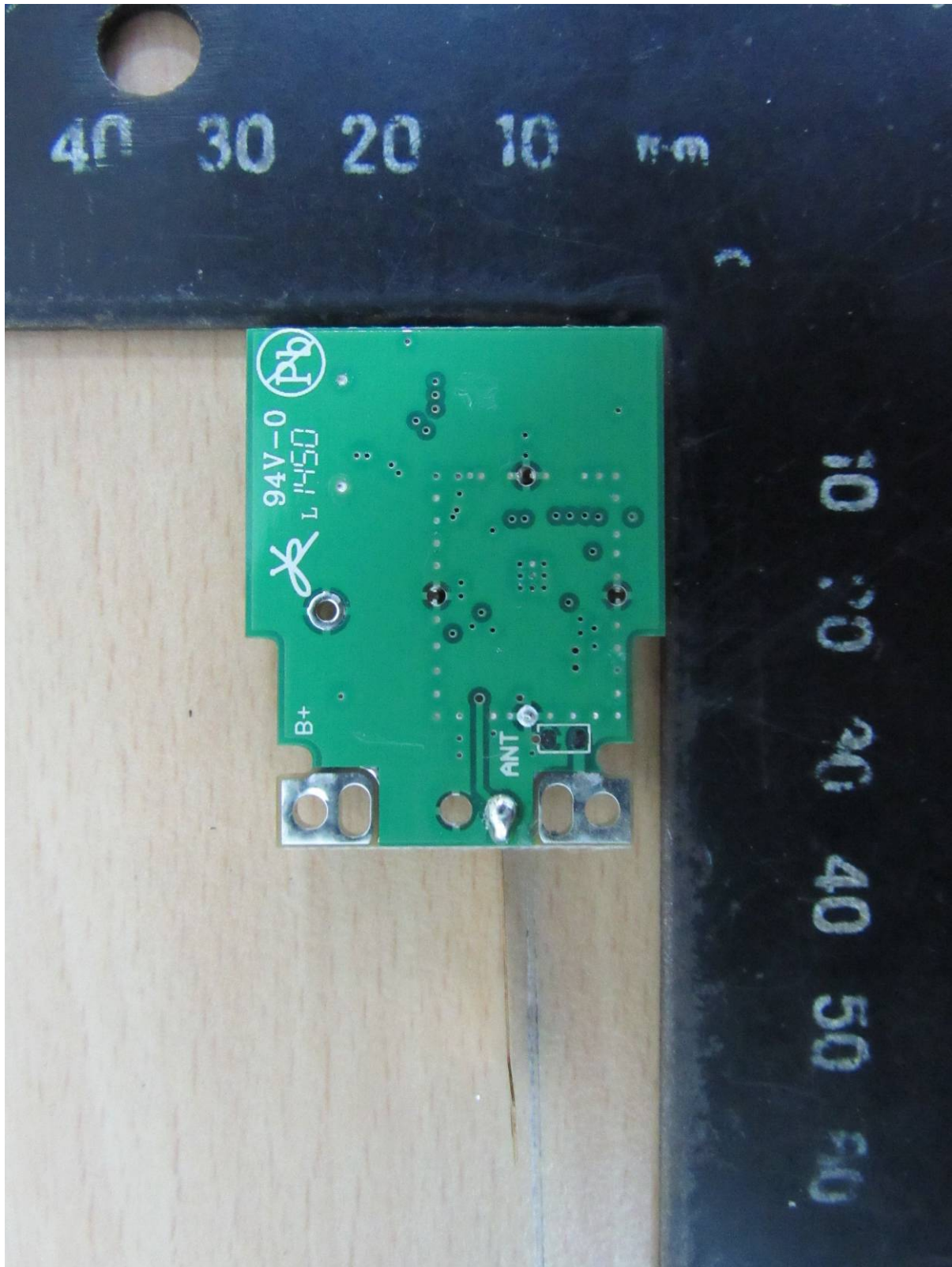
Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC

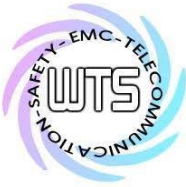




Worldwide Testing Services(Taiwan) Co., Ltd.

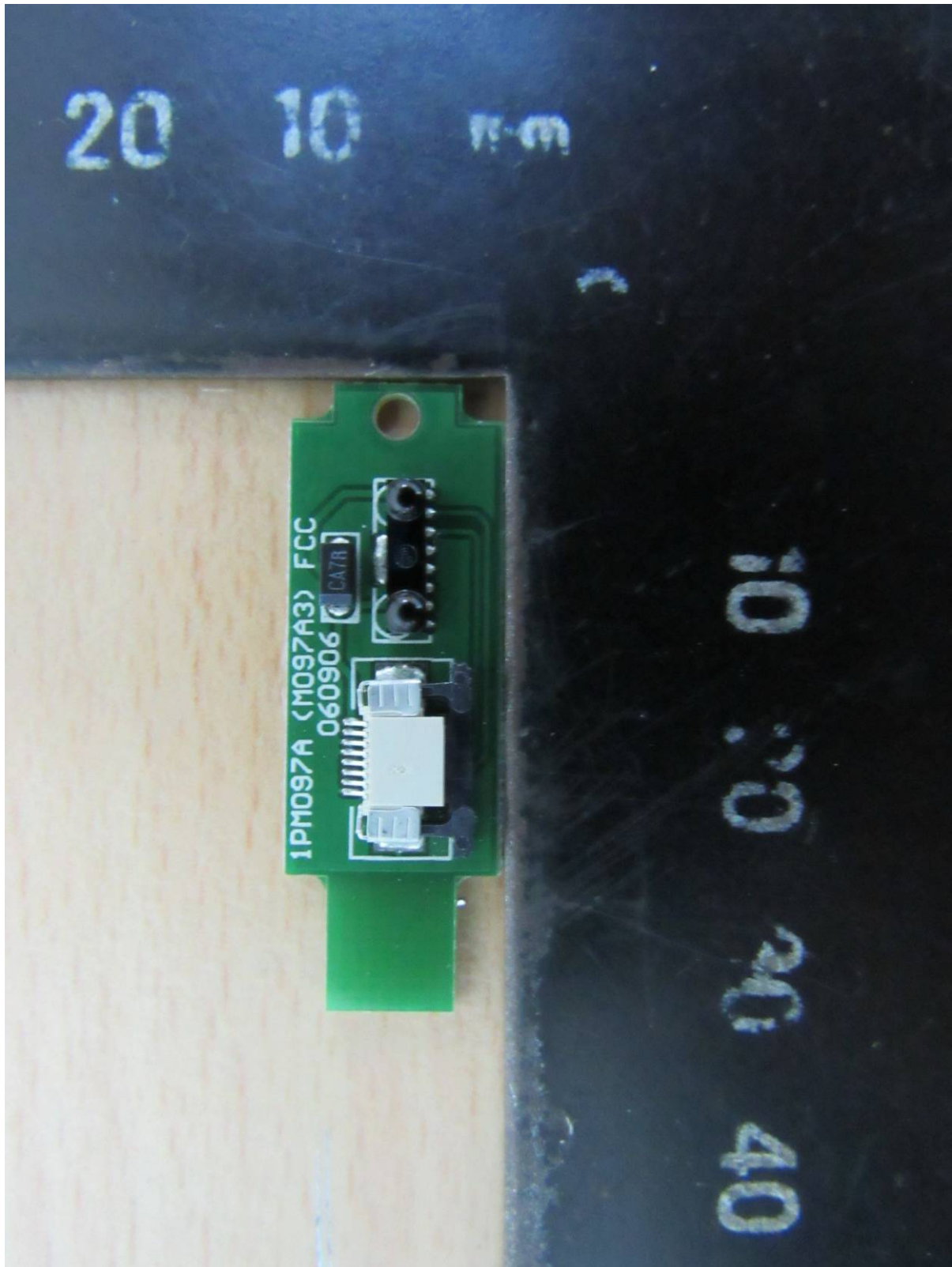
Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC

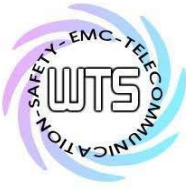




Worldwide Testing Services(Taiwan) Co., Ltd.

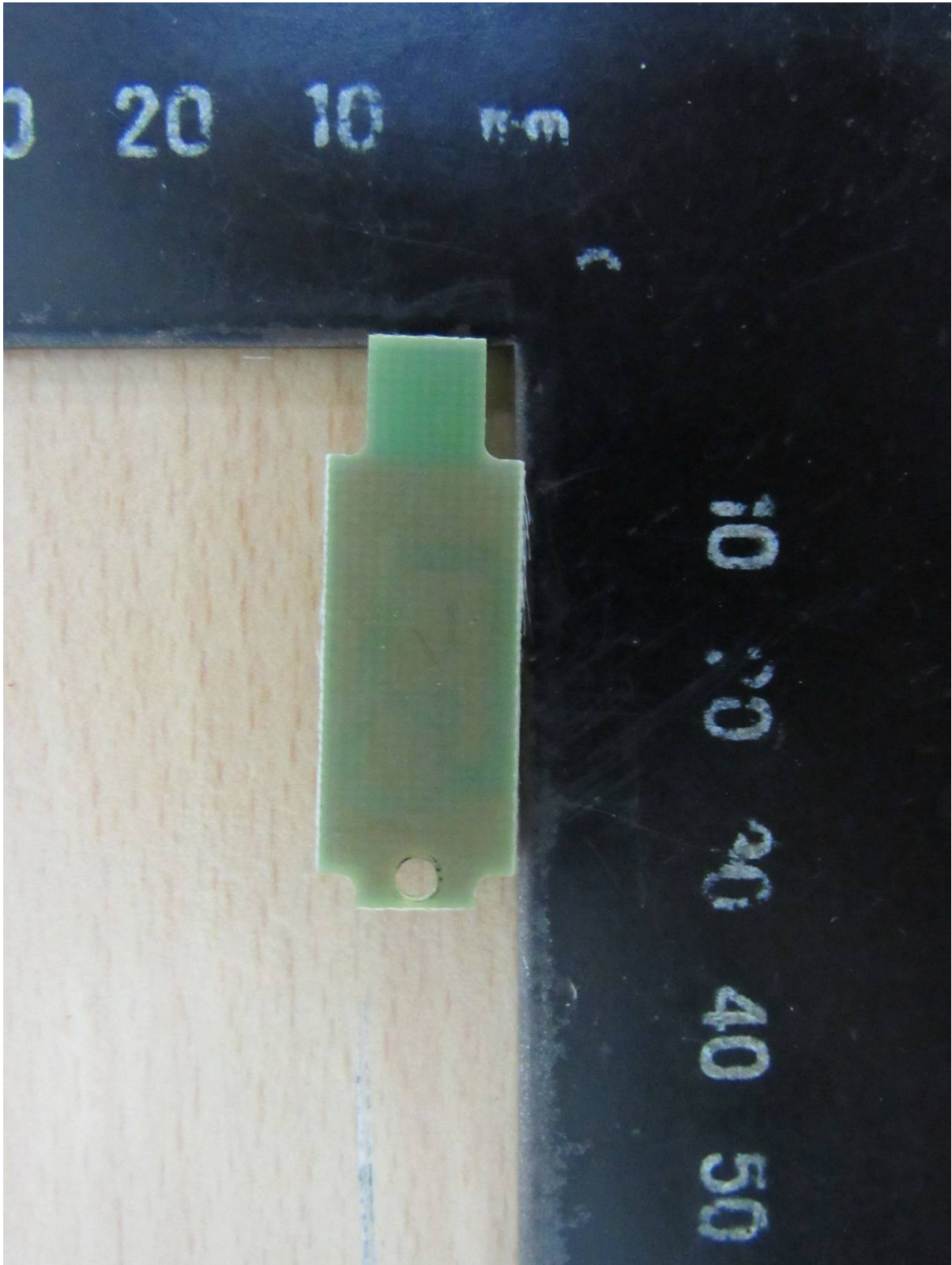
Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC

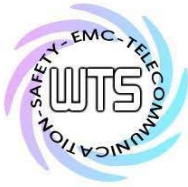




Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21502-14819-C-1
FCC ID: M5X-ACT24HC
IC: 2978A-ACT24HC



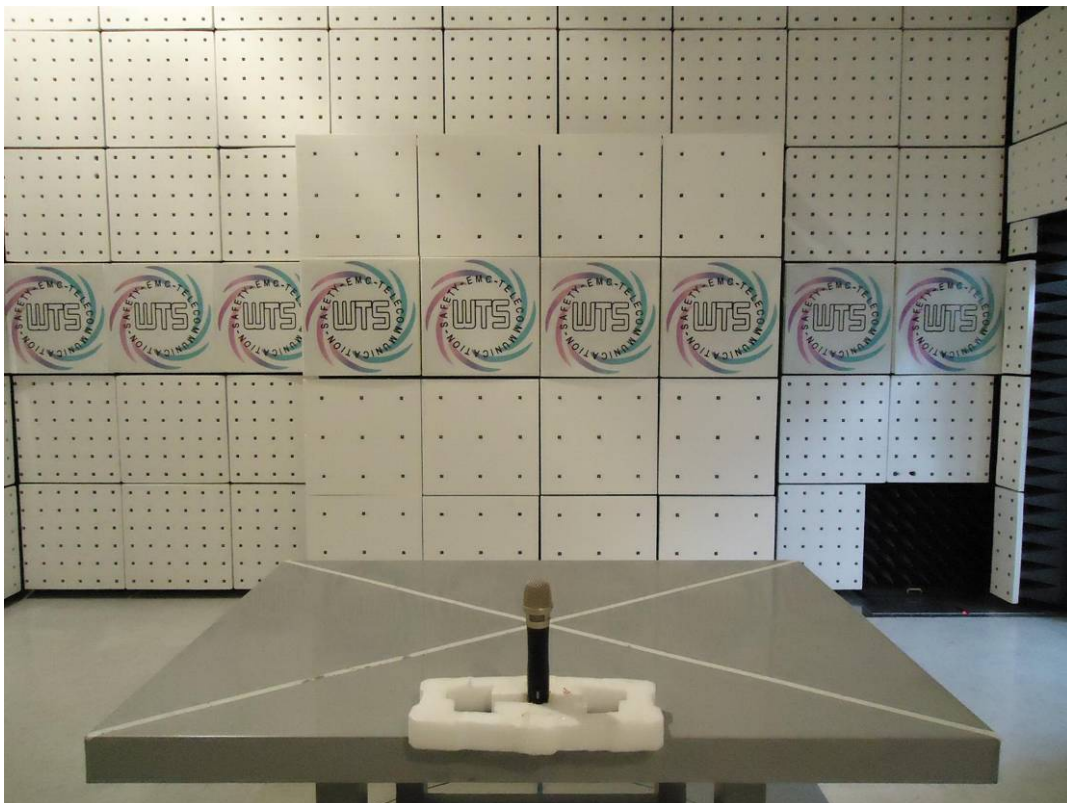
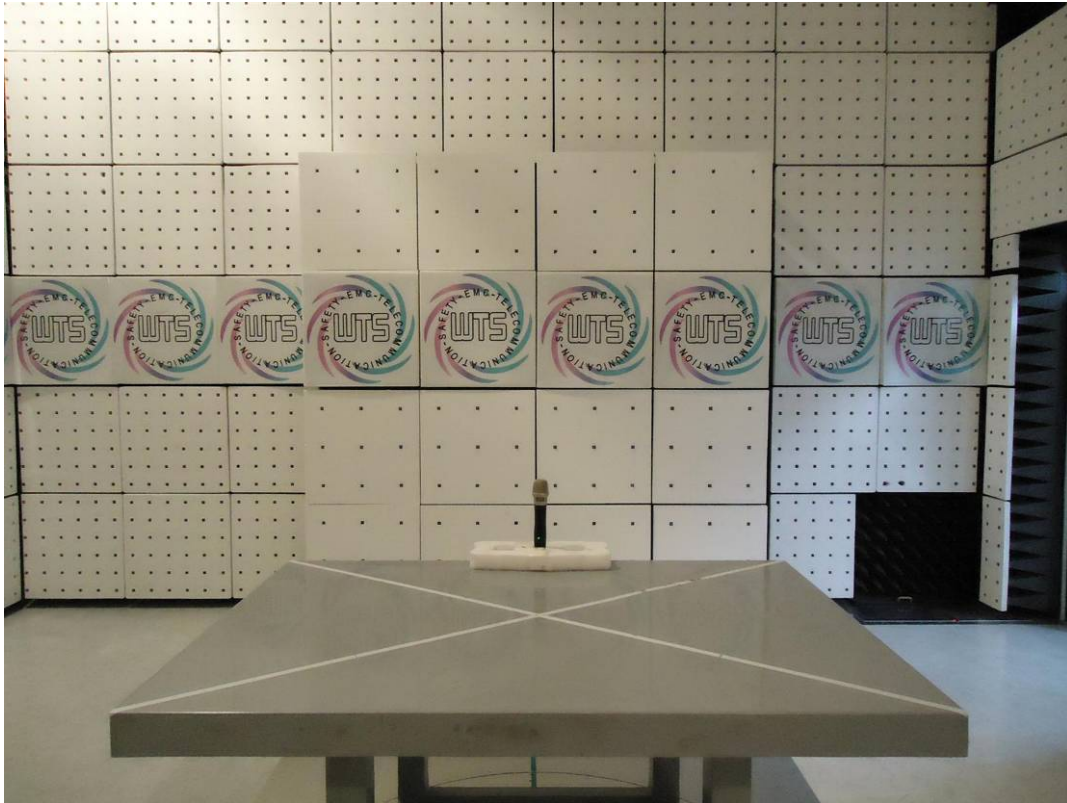


Registration number: W6M21502-14819-C-1

FCC ID: M5X-ACT24HC

IC: 2978A-ACT24HC

**Set Up Photo of Radiated Emission
RF**





Radiated Emission Measurement

Operator: Leon

File :1

Data :#1

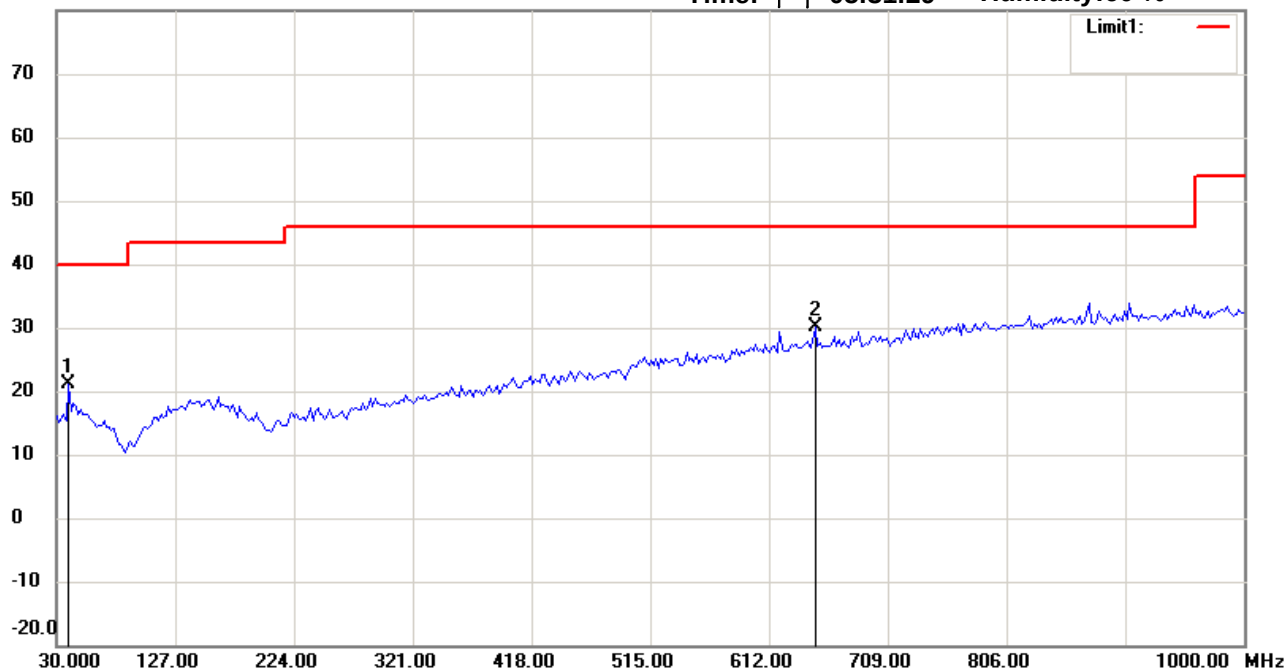
Date: 2015/3/5

Temperature:24 °C

80.0 dBuV/m

Time: 下午 05:31:29

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

EUT : W6M21502-14819

M/N:

Test Mode : TX 2402MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	39.7194	6.65	peak	14.56	21.21	40.00	100	55	-18.79	
*	650.1002	5.67	peak	24.56	30.23	46.00	100	140	-15.77	



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

Operator: Leon

File :1

Data :#2

Date: 2015/3/5

Temperature:24 °C

80.0 dBuV/m

Time: 下午 05:32:14

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

EUT : W6M21502-14819

M/N:

Test Mode : TX 2402MHz

Note :

Polarization: Vertical

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	39.7194	5.49	peak	14.56	20.05	40.00	100	155	-19.95	
*	545.1303	12.36	peak	21.73	34.09	46.00	100	130	-11.91	

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



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Radiated Emission Measurement

Operator: Leon

File :3

Data :#1

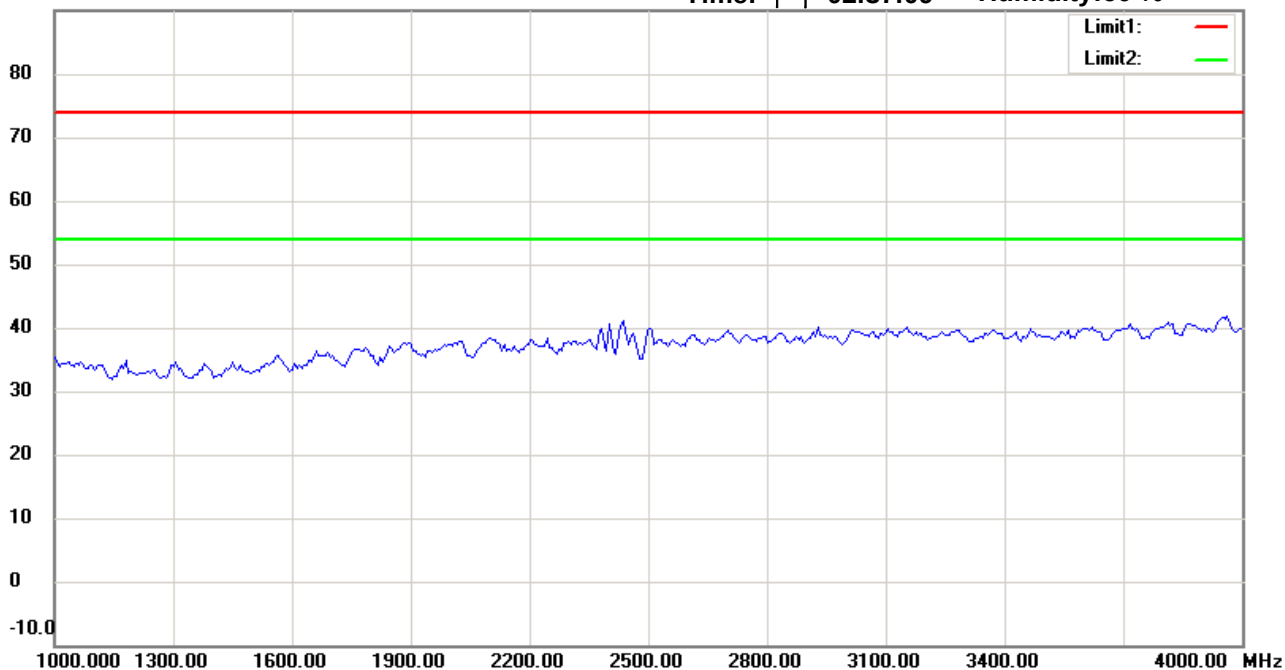
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:37:09

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2402MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

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



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

Operator: Leon

File :3

Data :#6

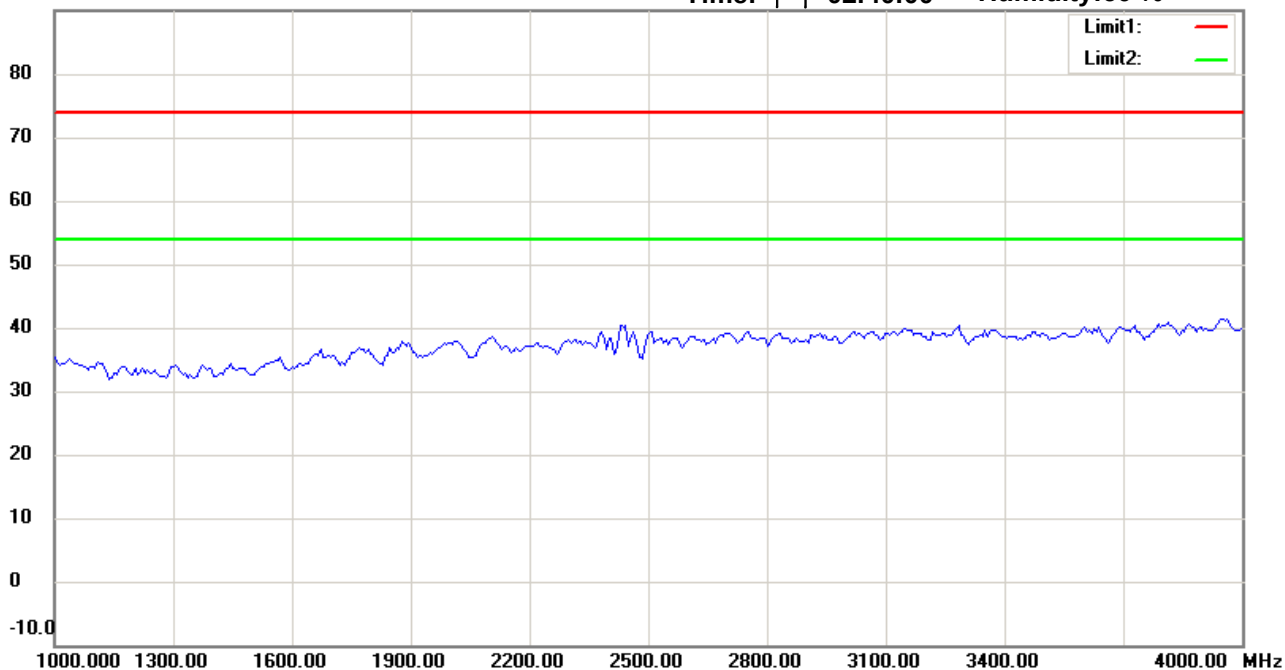
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:40:00

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2402MHz

Note :

Polarization: *Vertical*

Power : 3.7 Vd.c.

Distance: 3m

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

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



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

Operator: Leon

File :3

Data :#2

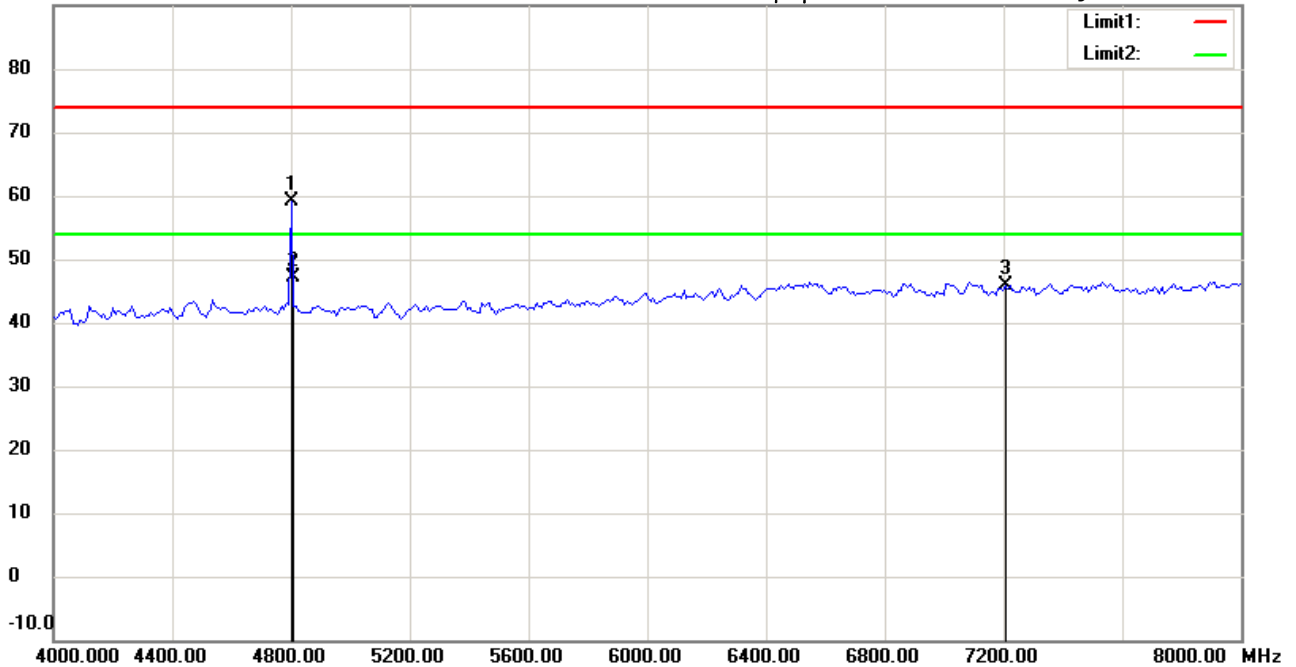
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:37:54

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2402MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	4801.603	58.53	peak	0.66	59.19	74.00	100	145	-14.81	
	4804.050	46.59	peak	0.66	47.25	74.00	100	145	-26.75	
	7206.000	41.50	peak	4.27	45.77	74.00	100	230	-28.23	

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



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Radiated Emission Measurement

Operator: Leon

File :3

Data :#7

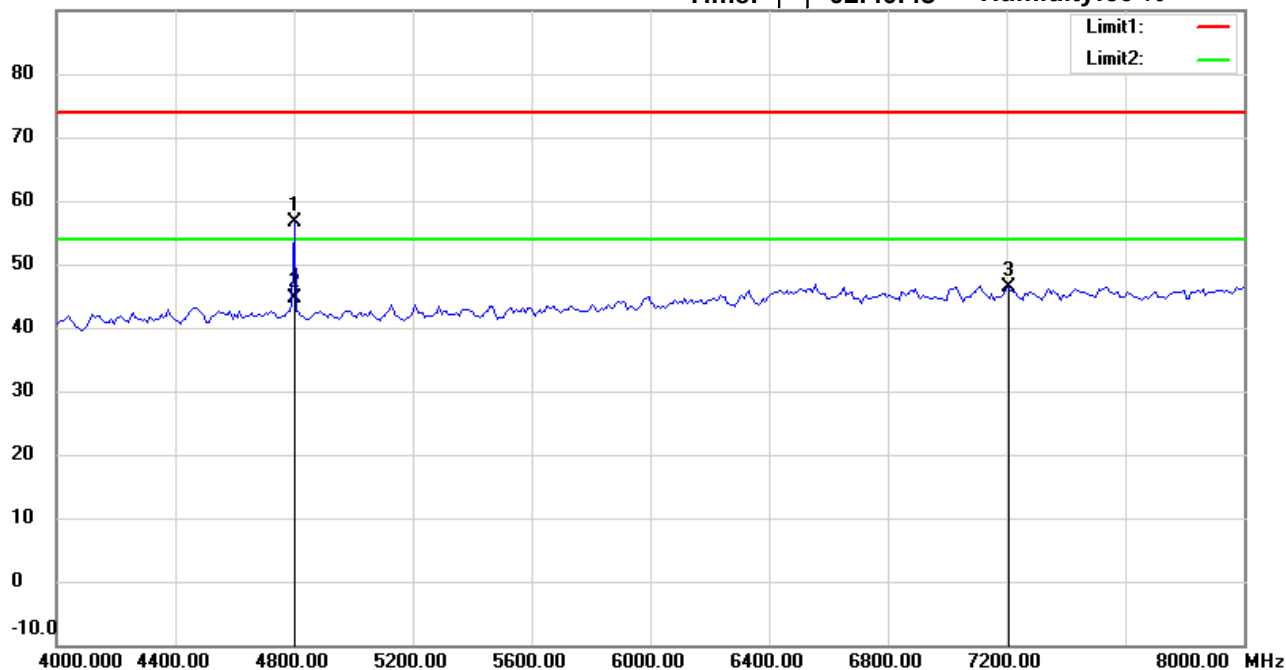
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:40:45

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2402MHz

Note :

Polarization: **Vertical**

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	4801.603	55.97	peak	0.66	56.63	74.00	100	185	-17.37	
*	4801.603	44.03	AVG	0.66	44.69	54.00	100	185	-9.31	
	7206.000	42.22	peak	4.27	46.49	74.00	100	220	-27.51	

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



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Radiated Emission Measurement

Operator: Leon

File :3

Data :#3

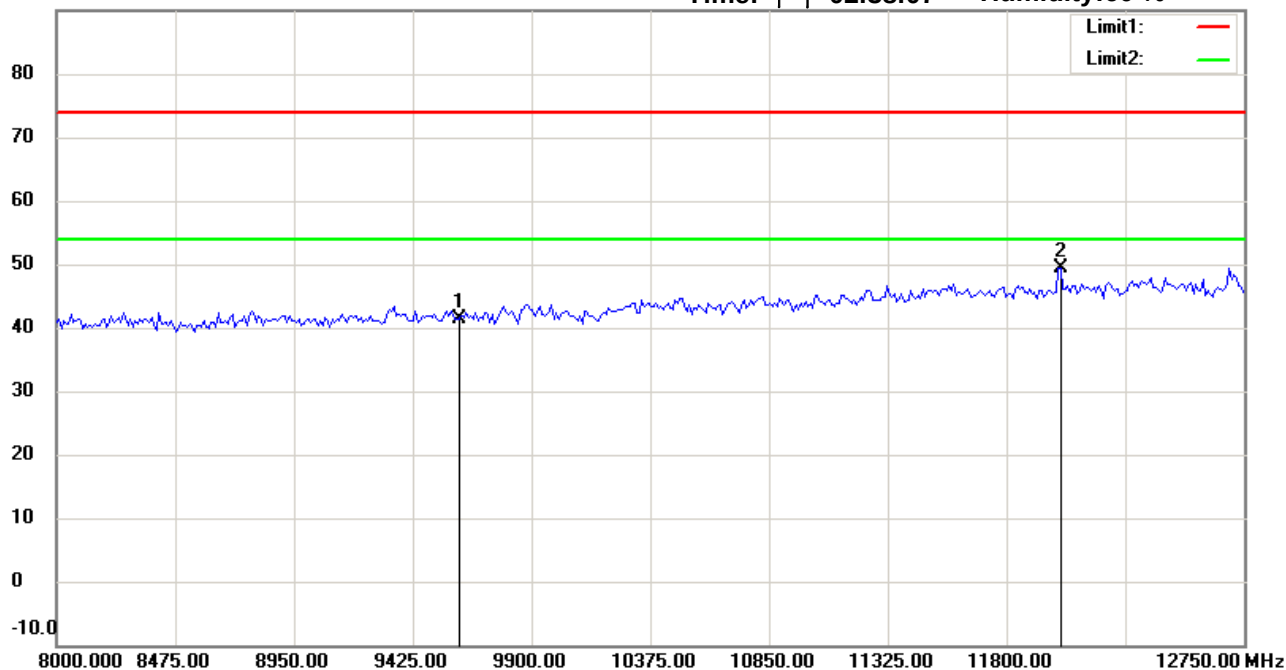
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:38:07

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2402MHz

Note :

Polarization: **Horizontal**

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	9608.000	33.86	peak	7.56	41.42	74.00	100	95	-32.58	
*	12017.034	36.41	peak	12.93	49.34	74.00	100	170	-24.66	

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



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Radiated Emission Measurement

Operator: Leon

File :3

Data :#8

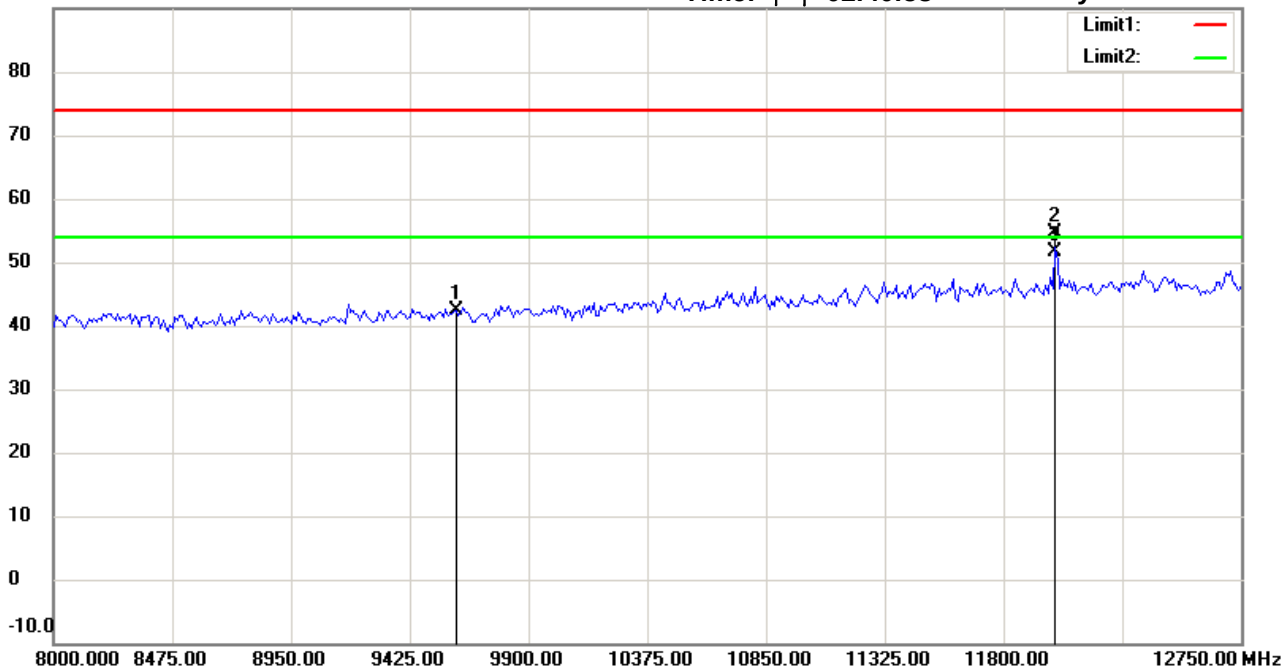
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:40:58

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2402MHz

Note :

Polarization: **Vertical**

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	9608.000	34.79	peak	7.56	42.35	74.00	100	225	-31.65	
	12007.515	41.65	peak	12.87	54.52	74.00	100	165	-19.48	
*	12007.515	38.71	AVG	12.87	51.58	54.00	100	165	-2.42	

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



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Radiated Emission Measurement

Operator: Leon

File :3

Data :#4

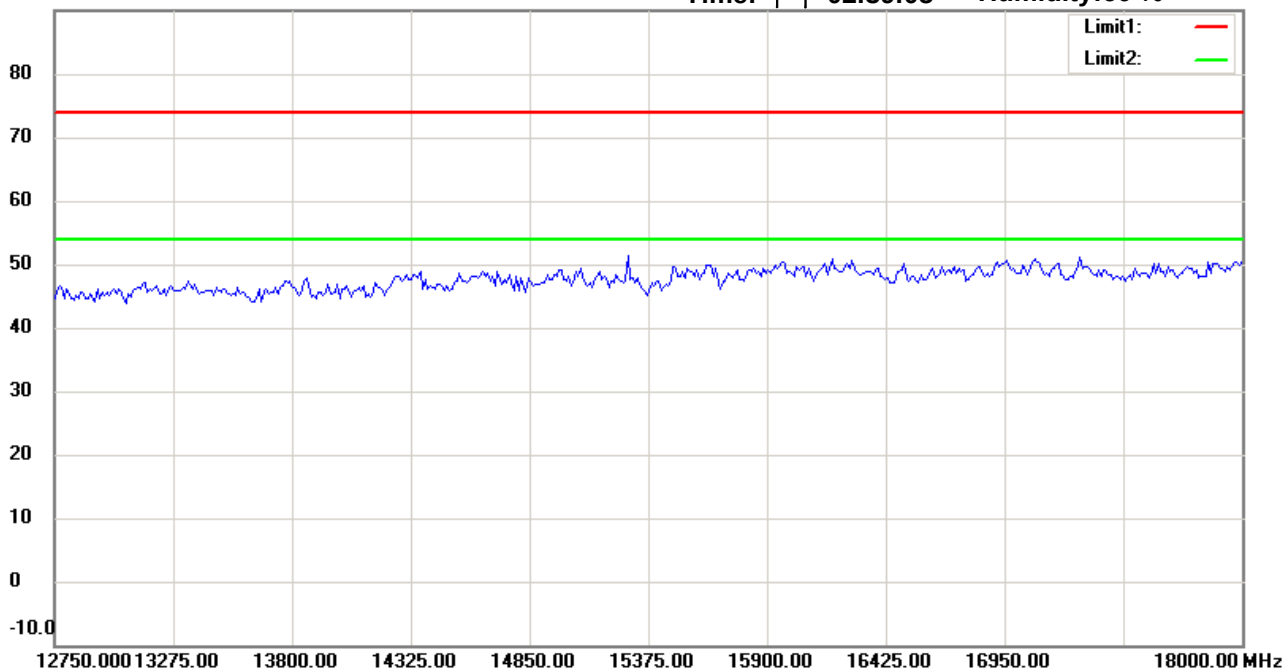
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:39:05

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2402MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

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



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Radiated Emission Measurement

Operator: Leon

File :3

Data :#9

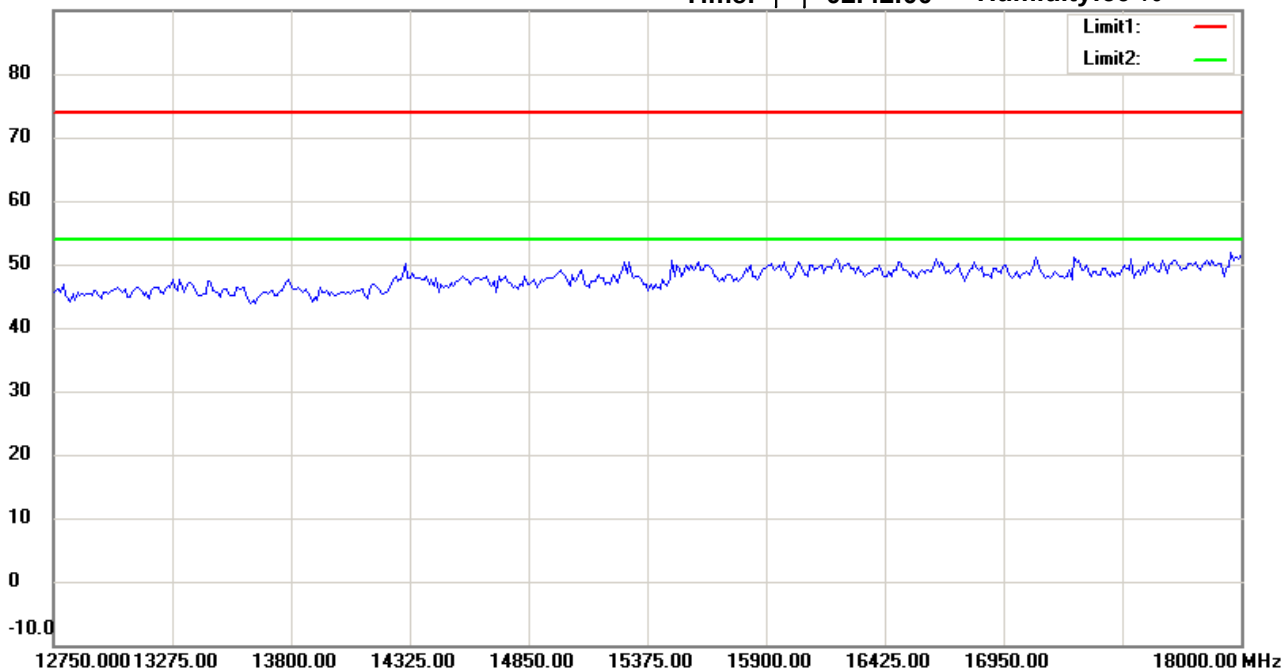
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:42:00

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2402MHz

Note :

Polarization: Vertical

Power : 3.7 Vd.c.

Distance: 3m

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



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Radiated Emission Measurement

Operator: Leon

File :3

Data :#5

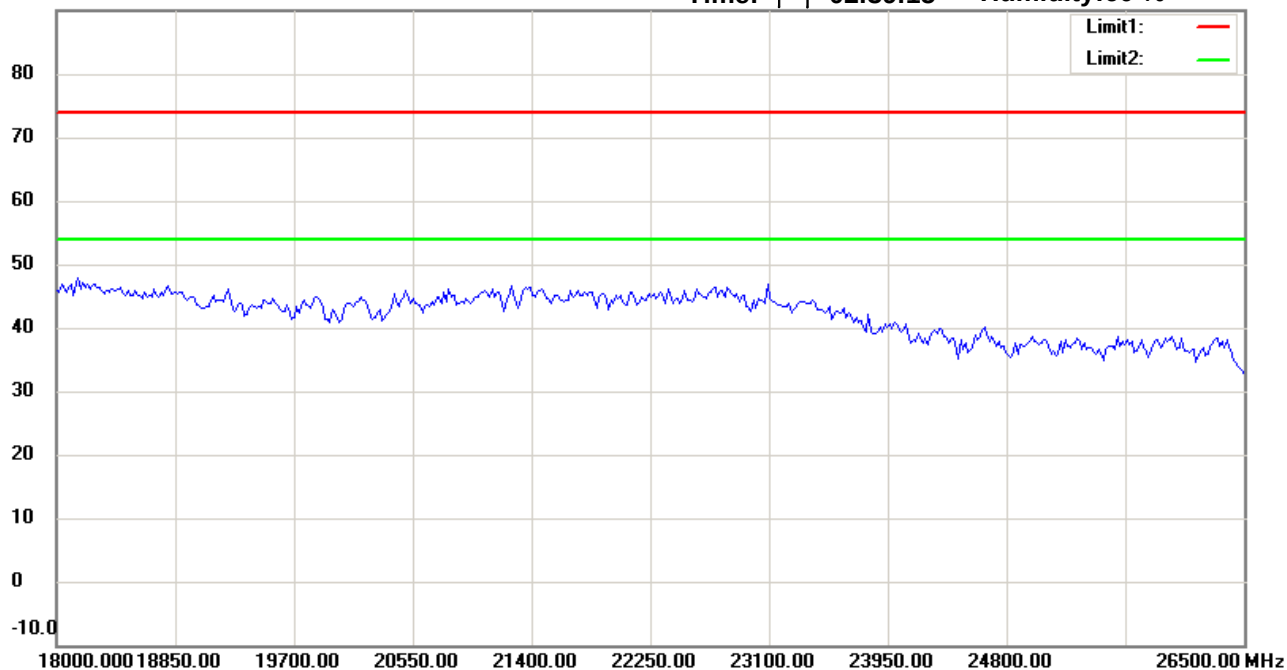
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:39:15

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2402MHz

Note :

Polarization: **Horizontal**

Power : 3.7 Vd.c.

Distance: 3m

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

*: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: Leon

File :3

Data :#10

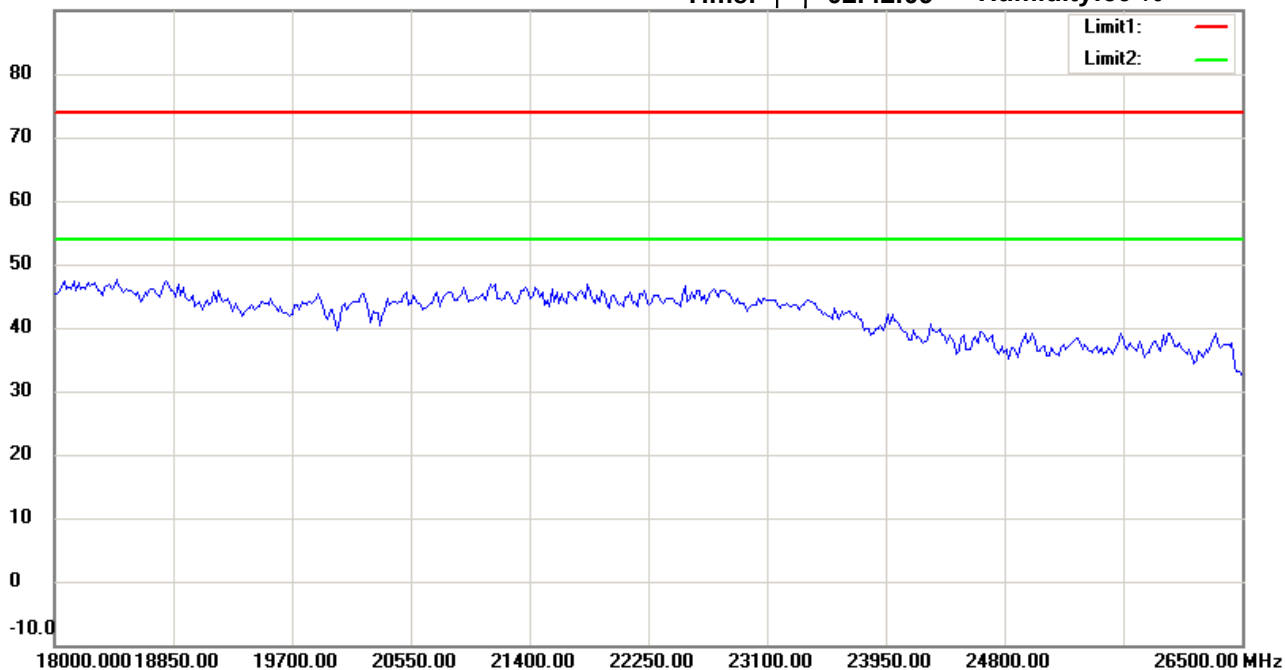
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:42:09

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2402MHz

Note :

Polarization: **Vertical**

Power : 3.7 Vd.c.

Distance: 3m

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

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



Radiated Emission Measurement

Operator: Leon

File :1

Data :#1

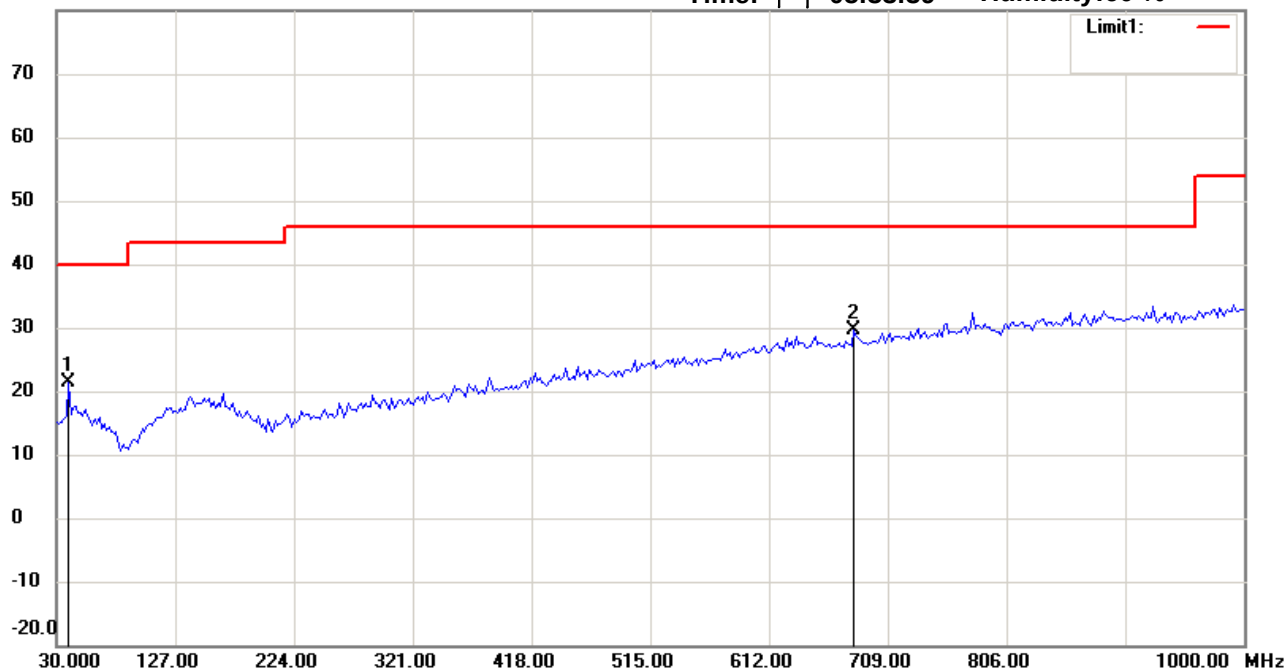
Date: 2015/3/5

Temperature:24 °C

80.0 dBuV/m

Time: 下午 05:33:39

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

EUT : W6M21502-14819

M/N:

Test Mode : TX 2442MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	39.7194	6.80	peak	14.56	21.36	40.00	100	35	-18.64	
*	681.2024	4.69	peak	24.97	29.66	46.00	100	90	-16.34	



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Radiated Emission Measurement

Operator: Leon

File :1

Data :#2

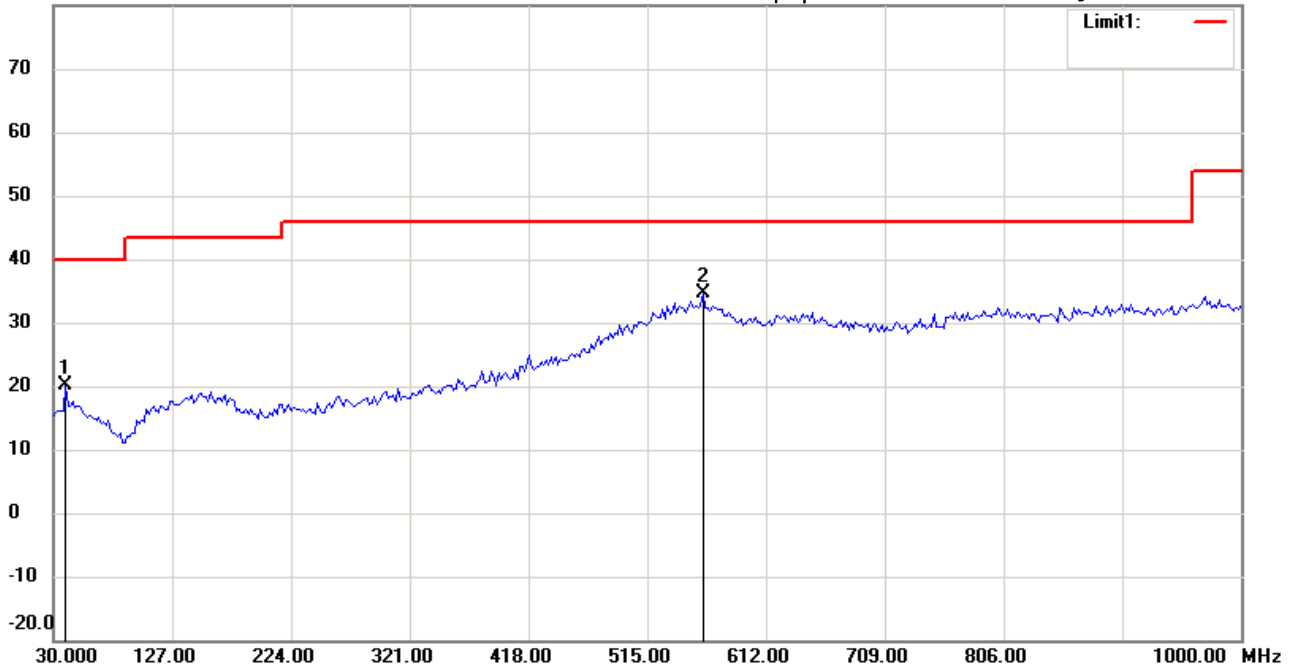
Date: 2015/3/5

Temperature:24 °C

80.0 dBuV/m

Time: 下午 05:34:24

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

EUT : W6M21502-14819

M/N:

Test Mode : TX 2442MHz

Note :

Polarization: **Vertical**

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	39.7194	5.67	peak	14.56	20.23	40.00	100	110	-19.77	
*	560.6814	12.64	peak	22.09	34.73	46.00	100	95	-11.27	

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



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

Operator: Leon

File :3

Data :#1

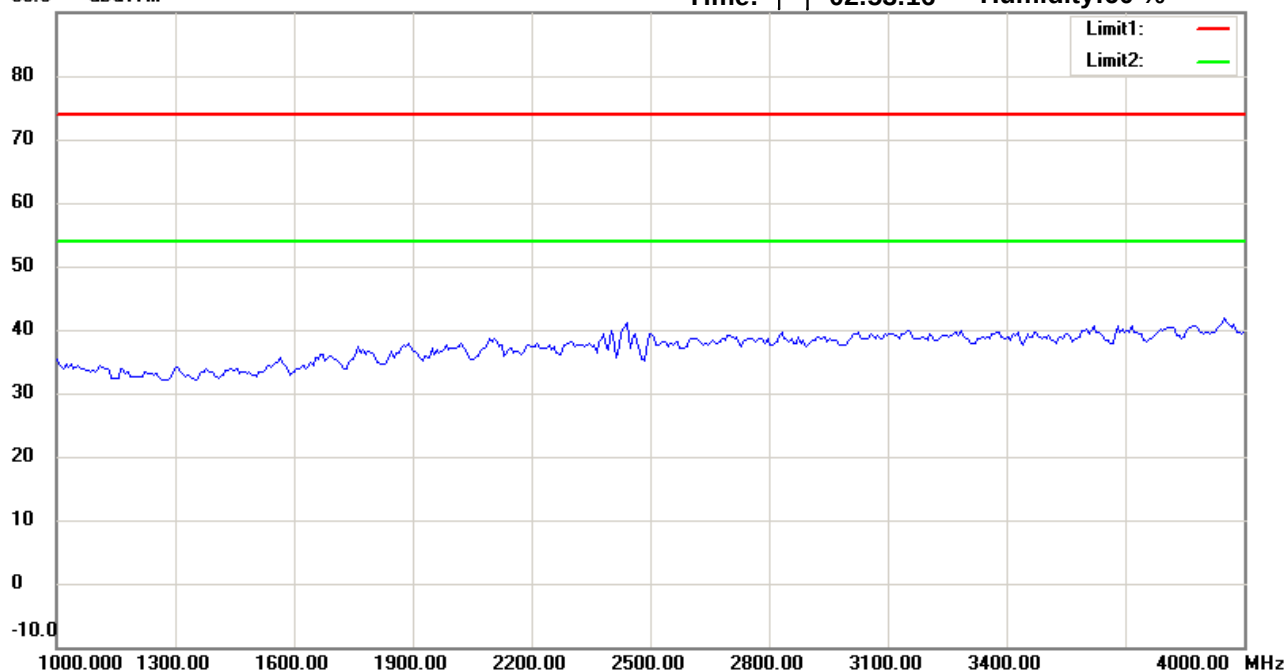
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:53:16

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2442MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

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

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



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

Operator: Leon

File :3

Data :#6

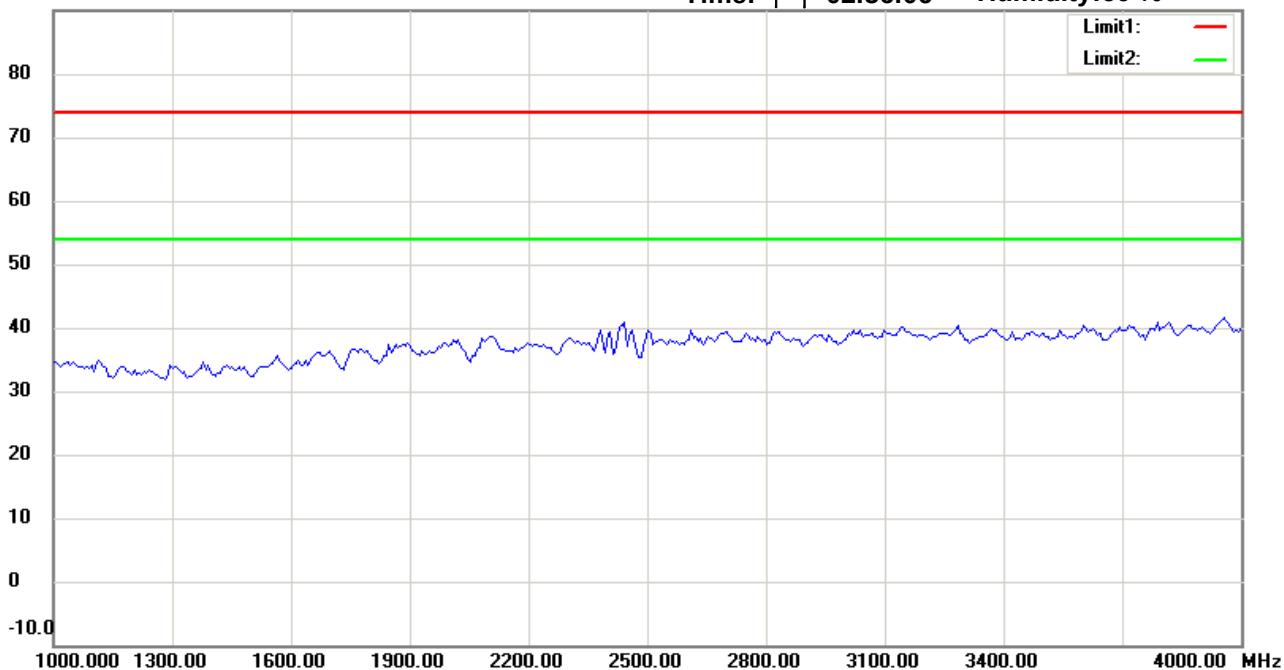
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:56:06

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2442MHz

Note :

Polarization: **Vertical**

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
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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:+886-2-6606-8875

Radiated Emission Measurement

Operator: Leon

File :3

Data :#2

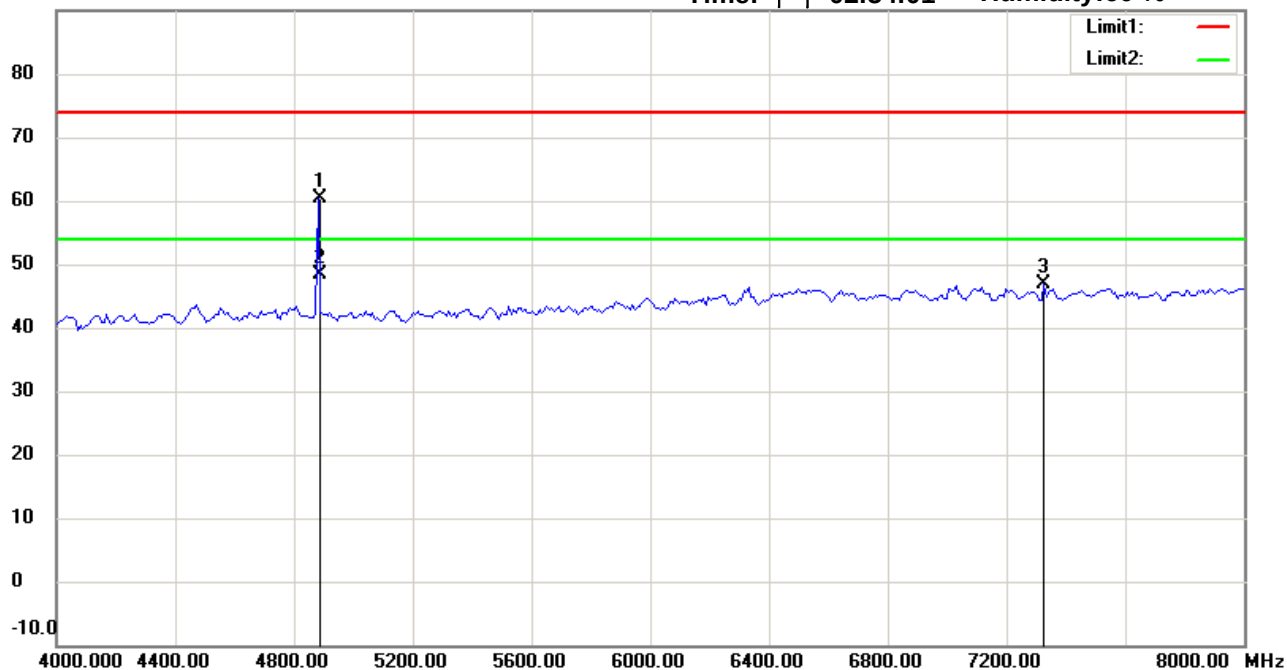
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:54:01

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2442MHz

Note :

Polarization: **Horizontal**

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	4881.764	59.52	peak	0.74	60.26	74.00	100	230	-13.74	
*	4881.764	47.58	AVG	0.74	48.32	54.00	100	230	-5.68	
	7326.653	42.43	peak	4.45	46.88	74.00	100	155	-27.12	

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



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Radiated Emission Measurement

Operator: Leon

File :3

Data :#7

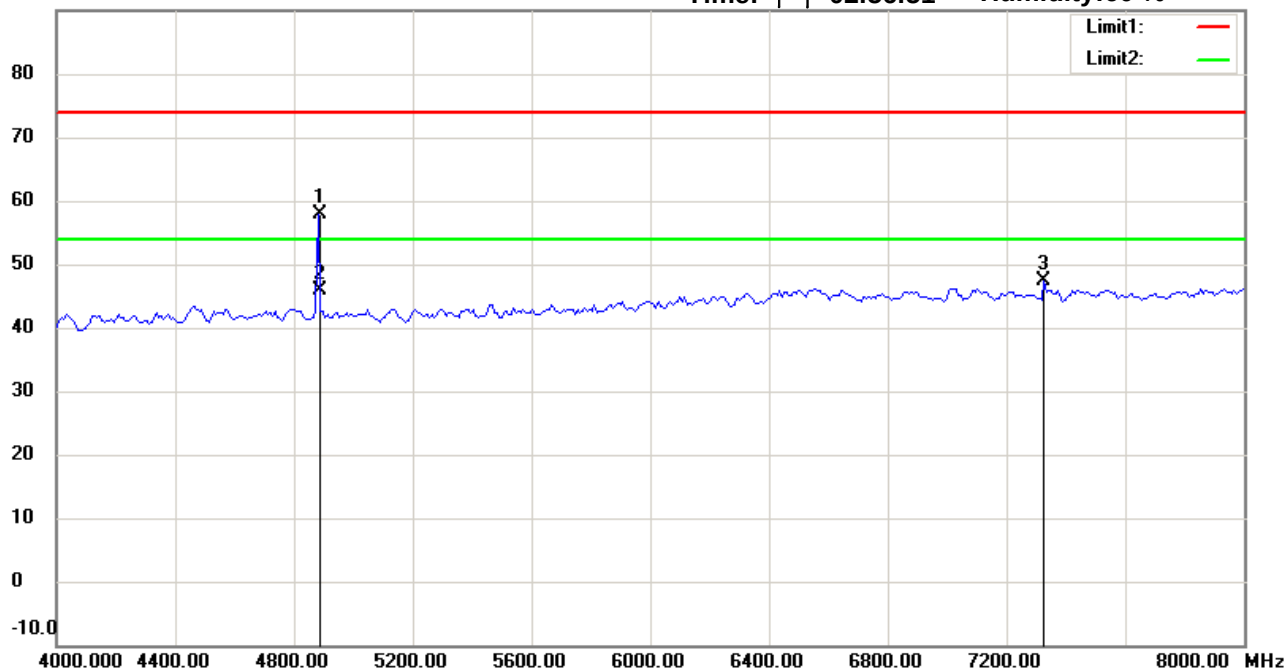
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:56:51

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2442MHz

Note :

Polarization: **Vertical**

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	4881.764	57.20	peak	0.74	57.94	74.00	100	195	-16.06	
*	4881.764	45.26	AVG	0.74	46.00	54.00	100	195	-8.00	
	7326.653	42.81	peak	4.45	47.26	74.00	100	205	-26.74	

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



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

Operator: Leon

File :3

Data :#3

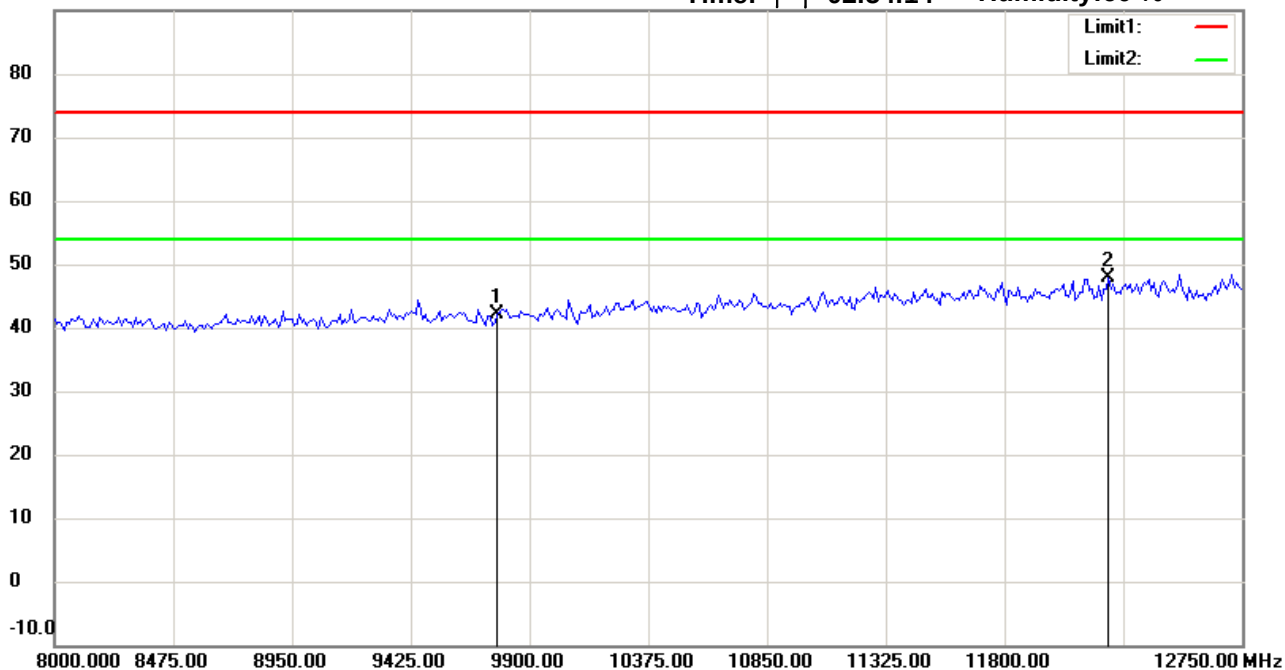
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:54:14

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2442MHz

Note :

Polarization: **Horizontal**

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	9768.000	34.56	peak	7.69	42.25	74.00	100	55	-31.75	
*	12210.000	34.11	peak	13.79	47.90	74.00	100	90	-26.10	

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



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Radiated Emission Measurement

Operator: Leon

File :3

Data :#8

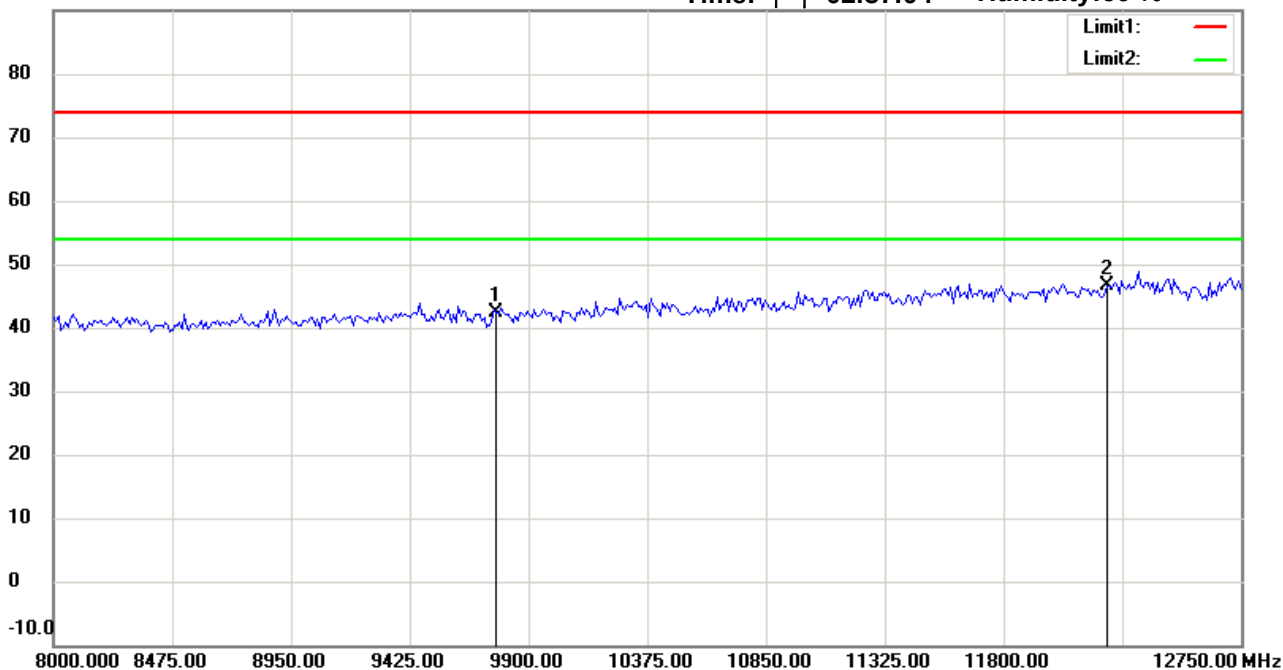
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:57:04

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2442MHz

Note :

Polarization: **Vertical**

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	9768.000	34.62	peak	7.69	42.31	74.00	100	145	-31.69	
*	12210.000	32.86	peak	13.79	46.65	74.00	100	90	-27.35	

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



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

Operator: Leon

File :3

Data :#4

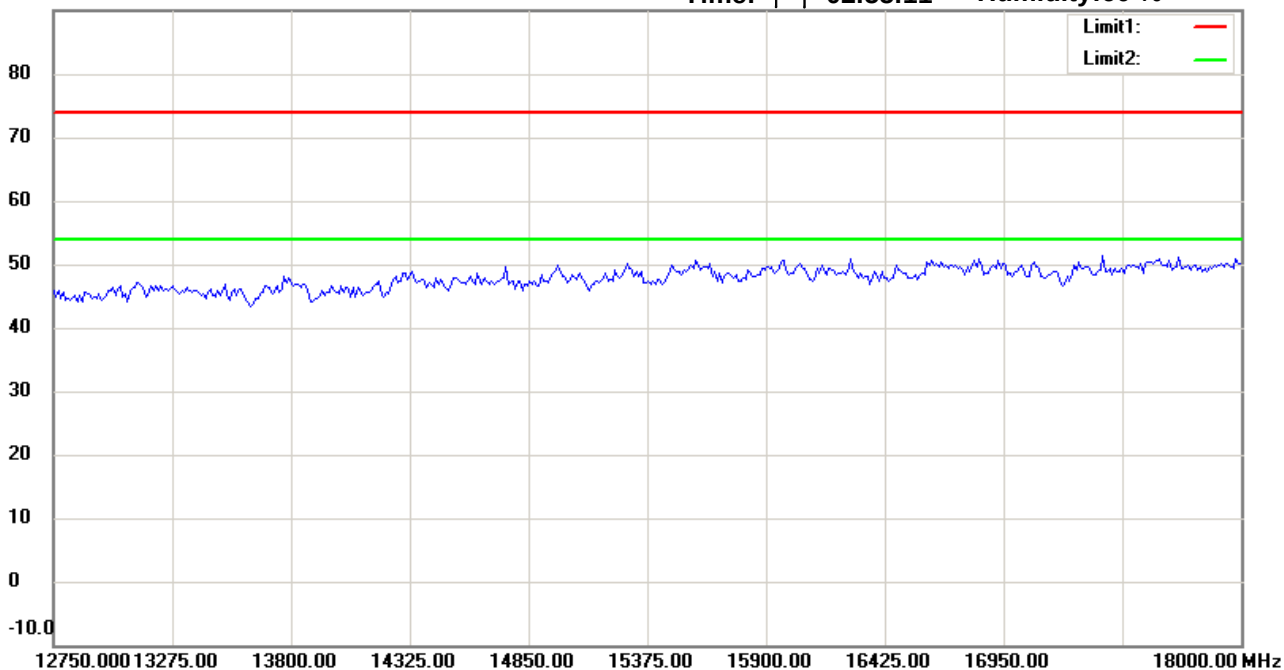
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:55:11

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2442MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

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



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Tel:+886-2-6606-8877
Fax:+886-2-6606-8875

Radiated Emission Measurement

Operator: Leon

File :3

Data :#9

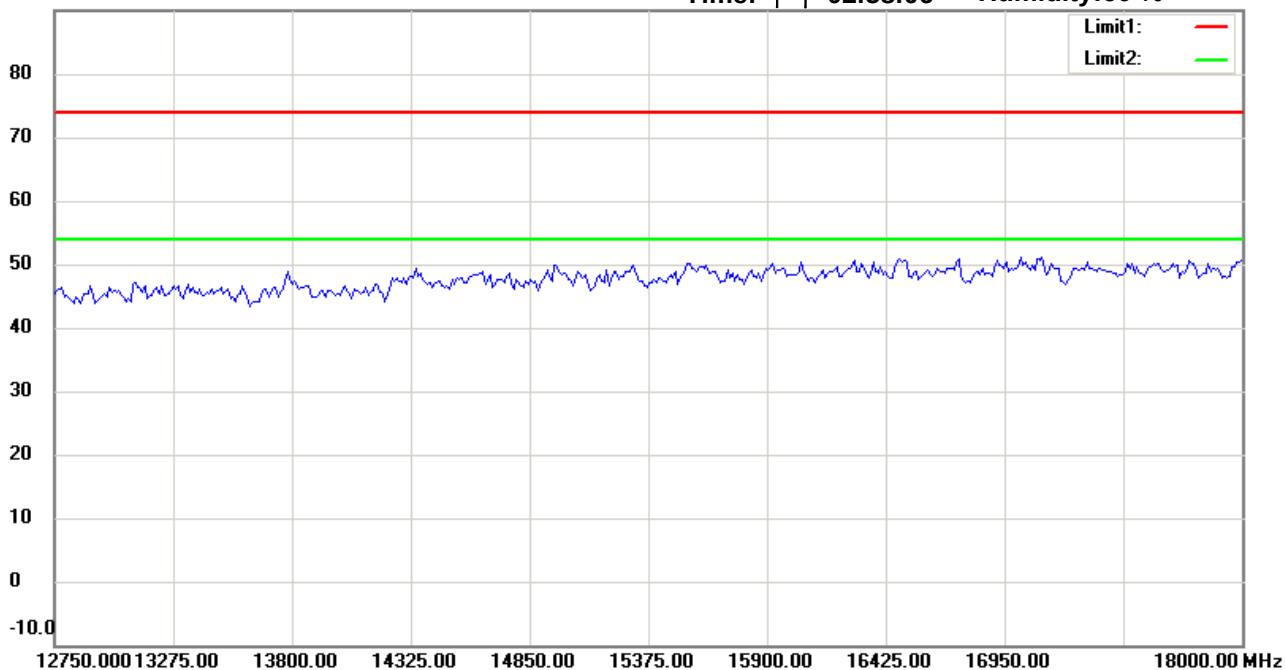
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:58:06

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2442MHz

Note :

Polarization: **Vertical**

Power : 3.7 Vd.c.

Distance: 3m

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



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

Operator: Leon

File :3

Data :#5

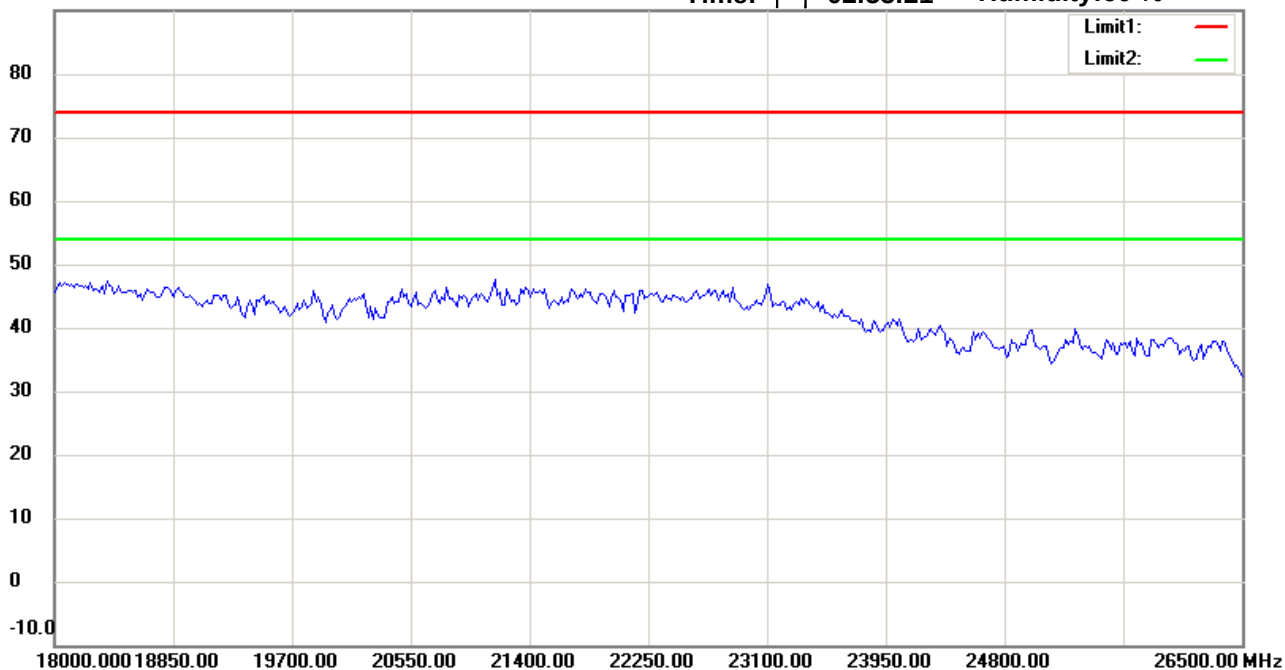
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:55:21

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2442MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

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



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

Operator: Leon

File :3

Data :#10

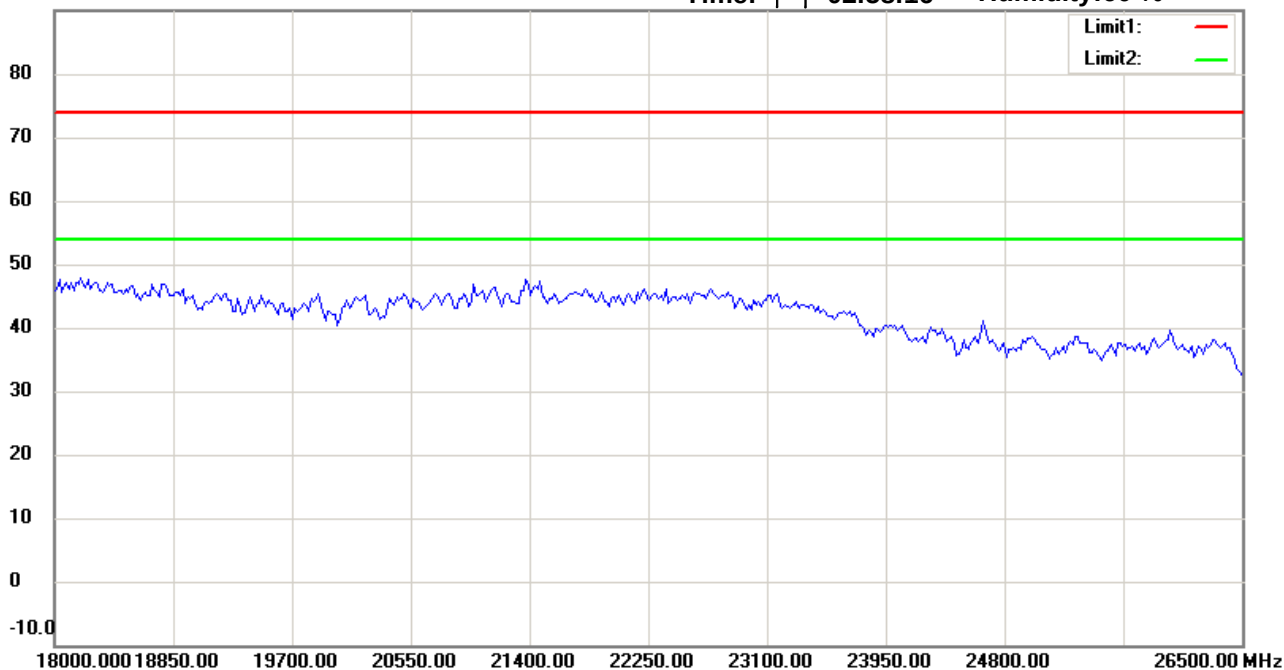
Date: 2015/2/27

Temperature:24 °C

90.0 dBuV/m

Time: 下午 02:58:16

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2442MHz

Note :

Polarization: **Vertical**

Power : 3.7 Vd.c.

Distance: 3m

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



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

Operator: Leon

File :1

Data :#1

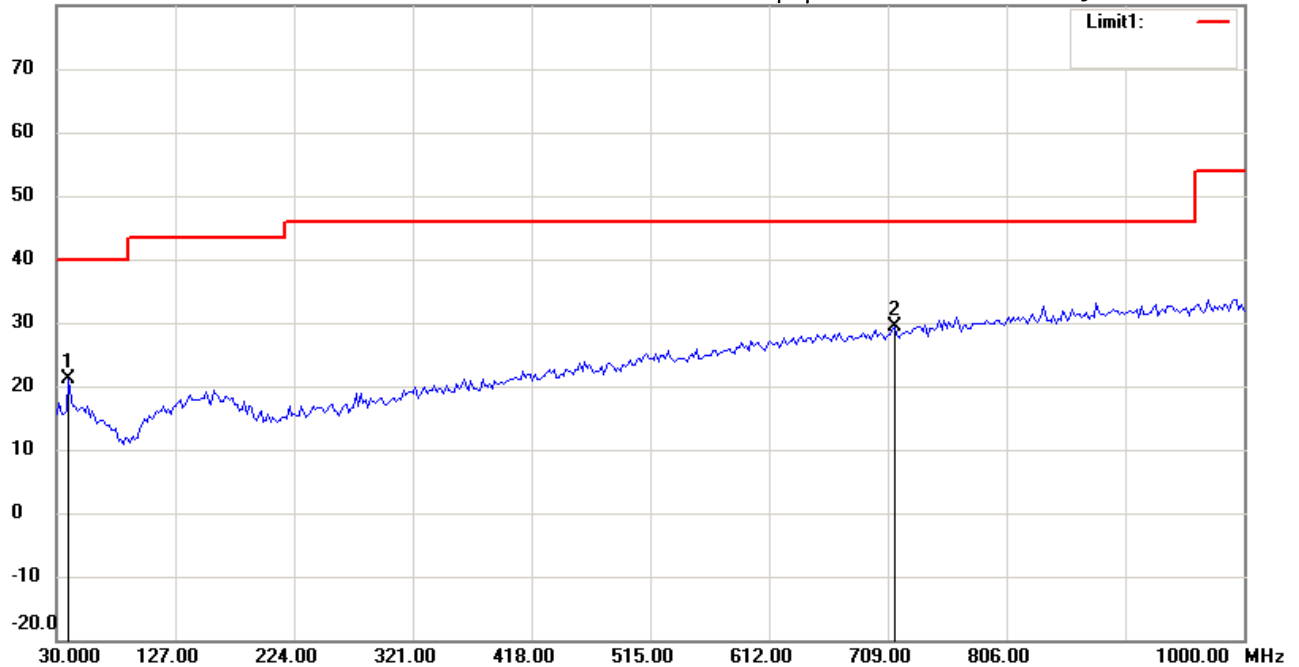
Date: 2015/3/5

Temperature:24 °C

80.0 dBuV/m

Time: 下午 05:35:42

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

EUT : W6M21502-14819

M/N:

Test Mode : TX 2482MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	39.7194	6.59	peak	14.56	21.15	40.00	100	95	-18.85	
*	714.2485	3.93	peak	25.42	29.35	46.00	100	140	-16.65	

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



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Radiated Emission Measurement

Operator: Leon

File :1

Data :#2

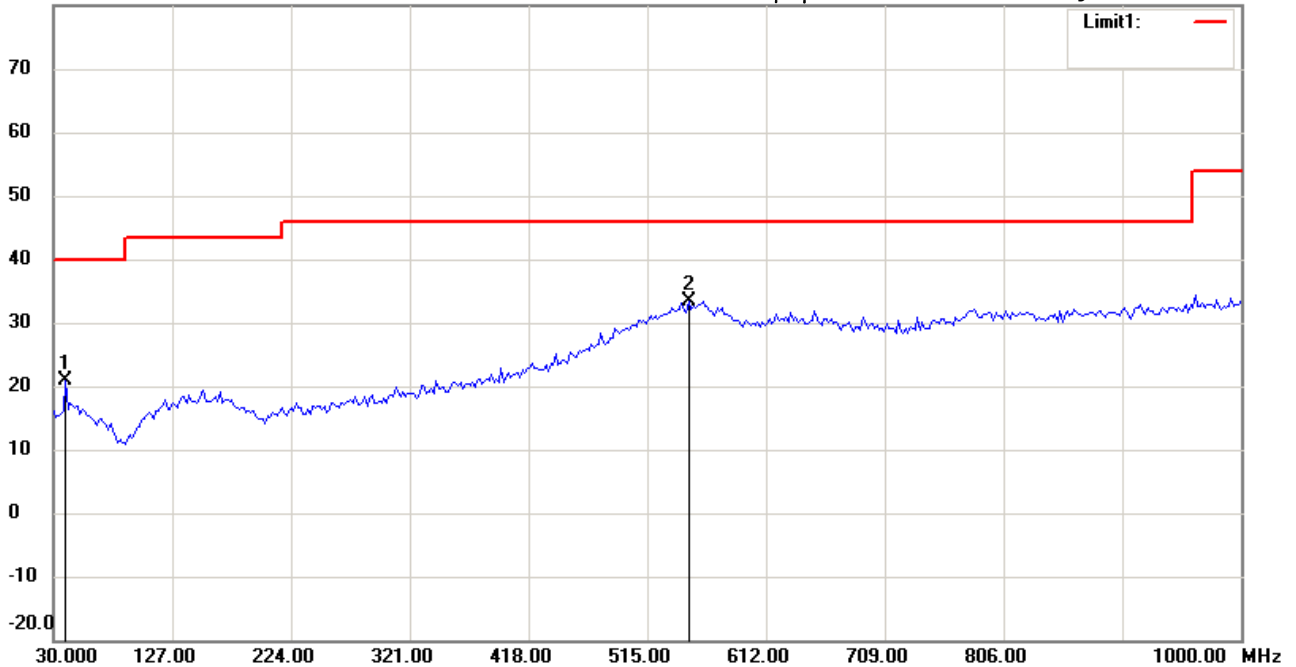
Date: 2015/3/5

Temperature:24 °C

80.0 dBuV/m

Time: 下午 05:36:27

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_30-1000MHz

EUT : W6M21502-14819

M/N:

Test Mode : TX 2482MHz

Note :

Polarization: *Vertical*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	39.7194	6.31	peak	14.56	20.87	40.00	100	165	-19.13	
*	549.0180	11.51	peak	21.80	33.31	46.00	100	130	-12.69	

*: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: Leon

File :3

Data :#1

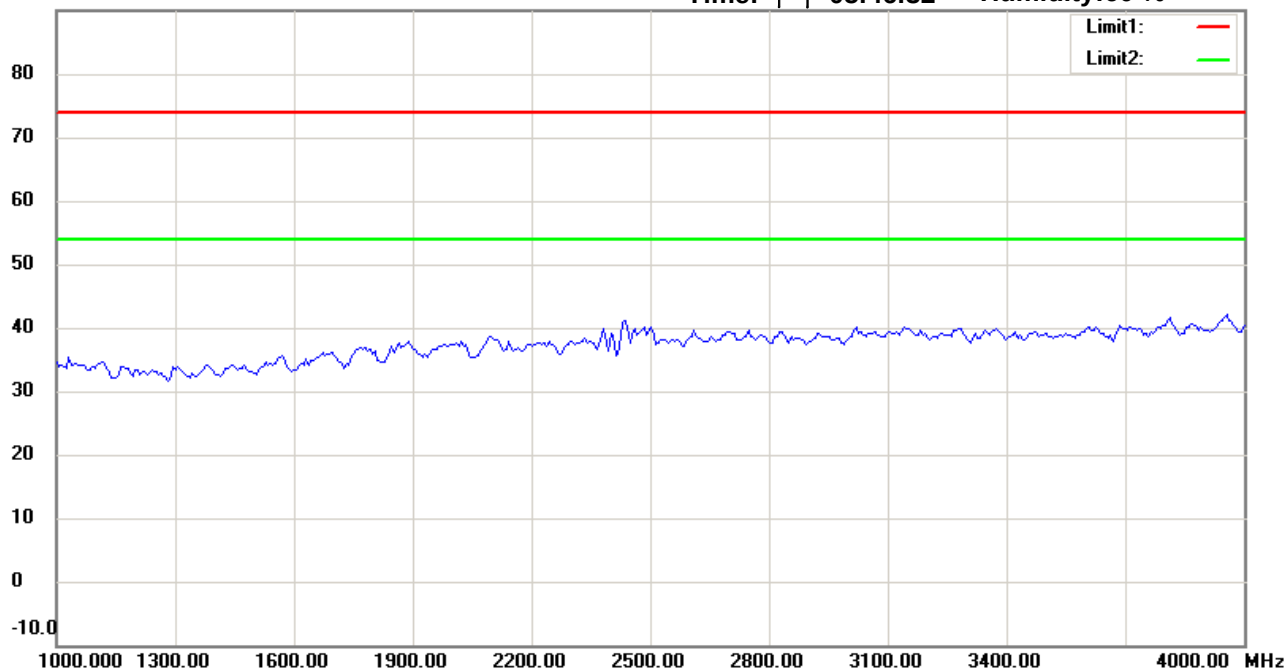
Date: 2015/3/5

Temperature:24 °C

90.0 dBuV/m

Time: 下午 05:46:32

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2482MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

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

Operator: Leon

File :3

Data :#6

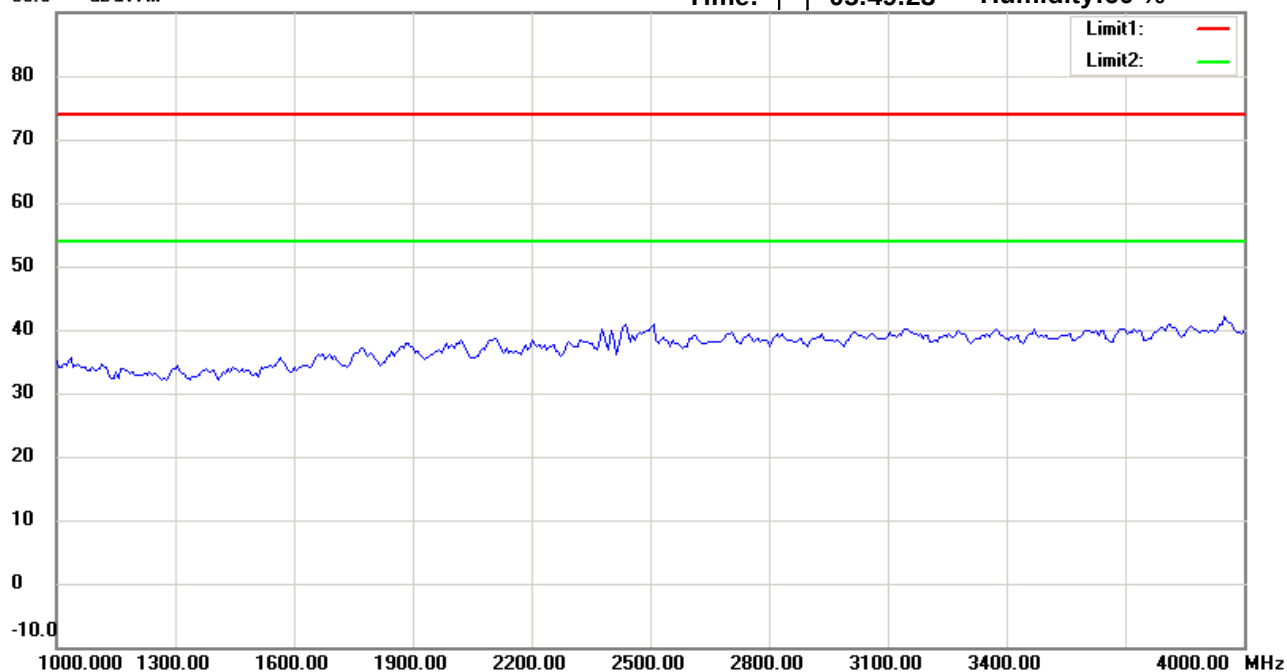
Date: 2015/3/5

Temperature:24 °C

90.0 dBuV/m

Time: 下午 05:49:23

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2482MHz

Note :

Polarization: **Vertical**

Power : 3.7 Vd.c.

Distance: 3m

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

*: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: Leon

File :3

Data :#2

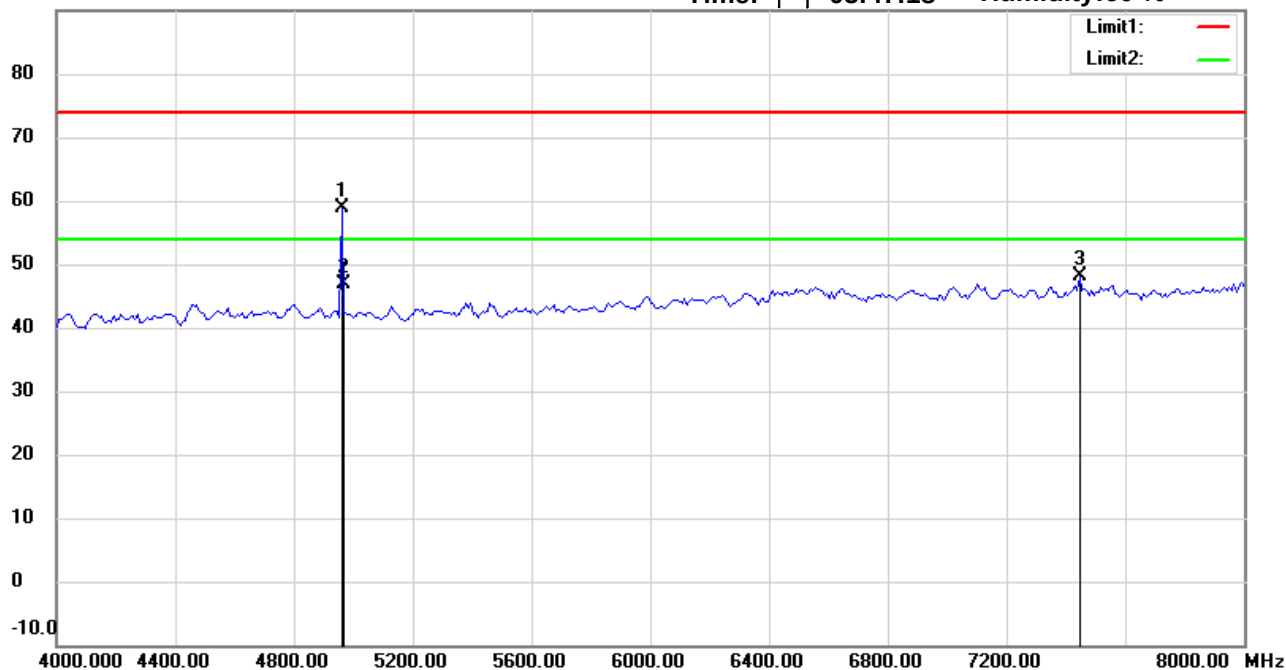
Date: 2015/3/5

Temperature:24 °C

90.0 dBuV/m

Time: 下午 05:47:18

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2482MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	4960.000	57.92	peak	0.88	58.80	74.00	100	155	-15.20	
*	4961.924	45.98	AVG	0.88	46.86	54.00	100	155	-7.14	
	7440.000	43.51	peak	4.73	48.24	74.00	100	230	-25.76	

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



Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8875

Radiated Emission Measurement

Operator: Leon

File :3

Data :#7

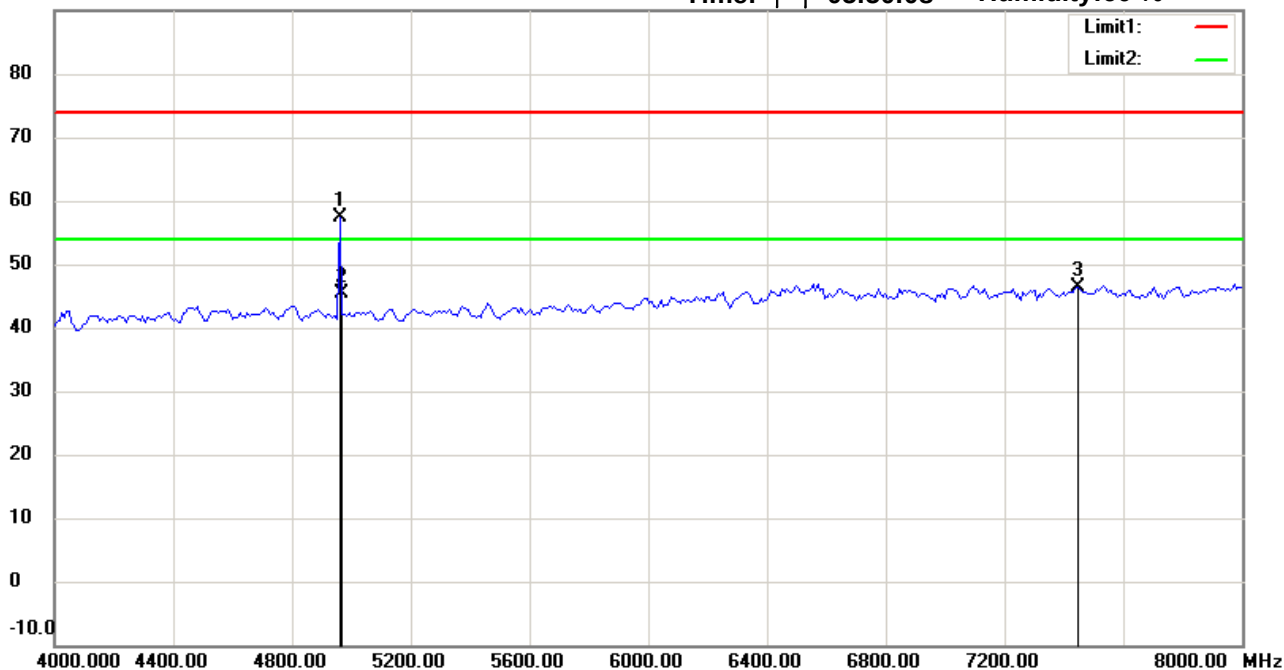
Date: 2015/3/5

Temperature:24 °C

90.0 dBuV/m

Time: 下午 05:50:08

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2482MHz

Note :

Polarization: **Vertical**

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	4960.000	56.55	peak	0.88	57.43	74.00	100	210	-16.57	
*	4961.924	44.61	AVG	0.88	45.49	54.00	100	210	-8.51	
	7440.000	41.70	peak	4.73	46.43	74.00	100	175	-27.57	

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



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

Operator: Leon

File :3

Data :#3

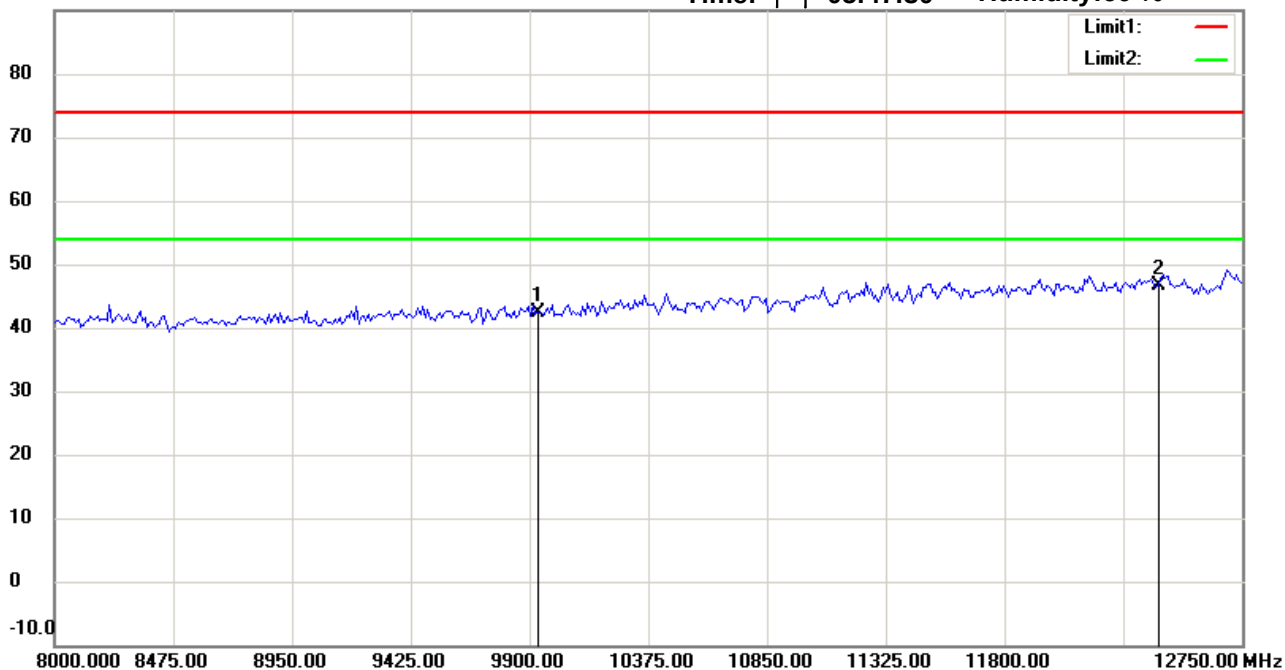
Date: 2015/3/5

Temperature:24 °C

90.0 dBuV/m

Time: 下午 05:47:30

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2482MHz

Note :

Polarization: **Horizontal**

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	9928.000	34.27	peak	8.04	42.31	74.00	100	175	-31.69	
*	12410.000	32.34	peak	14.30	46.64	74.00	100	210	-27.36	

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



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

Operator: Leon

File :3

Data :#8

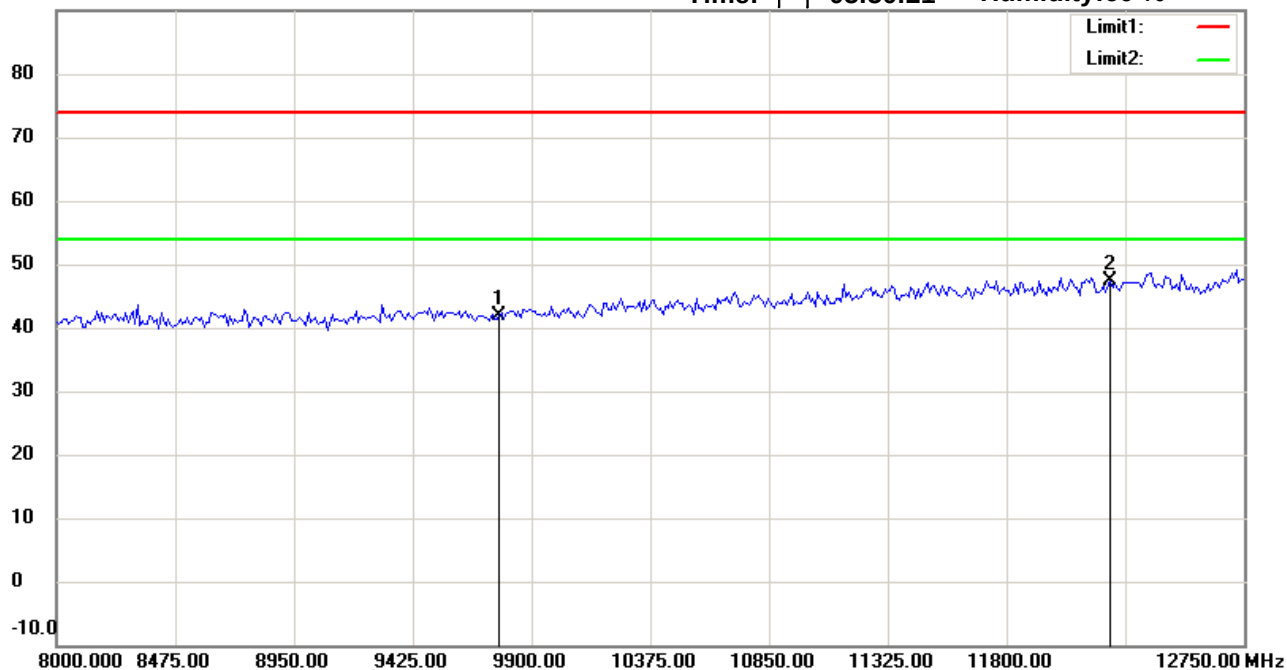
Date: 2015/3/5

Temperature:24 °C

90.0 dBuV/m

Time: 下午 05:50:21

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2482MHz

Note :

Polarization: **Vertical**

Power : 3.7 Vd.c.

Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	9768.000	34.08	peak	7.69	41.77	74.00	100	145	-32.23	
*	12210.000	33.67	peak	13.79	47.46	74.00	100	230	-26.54	

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



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

Operator: Leon

File :3

Data :#4

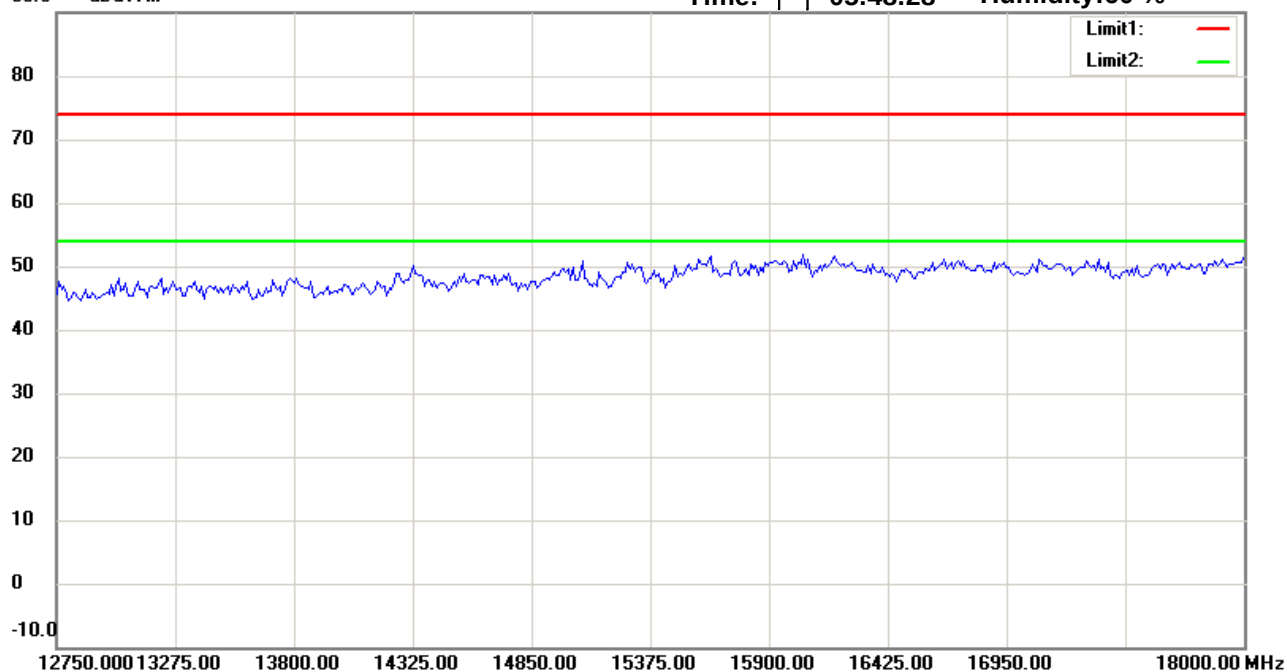
Date: 2015/3/5

Temperature:24 °C

90.0 dBuV/m

Time: 下午 05:48:28

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2482MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

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



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Radiated Emission Measurement

Operator: Leon

File :3

Data :#9

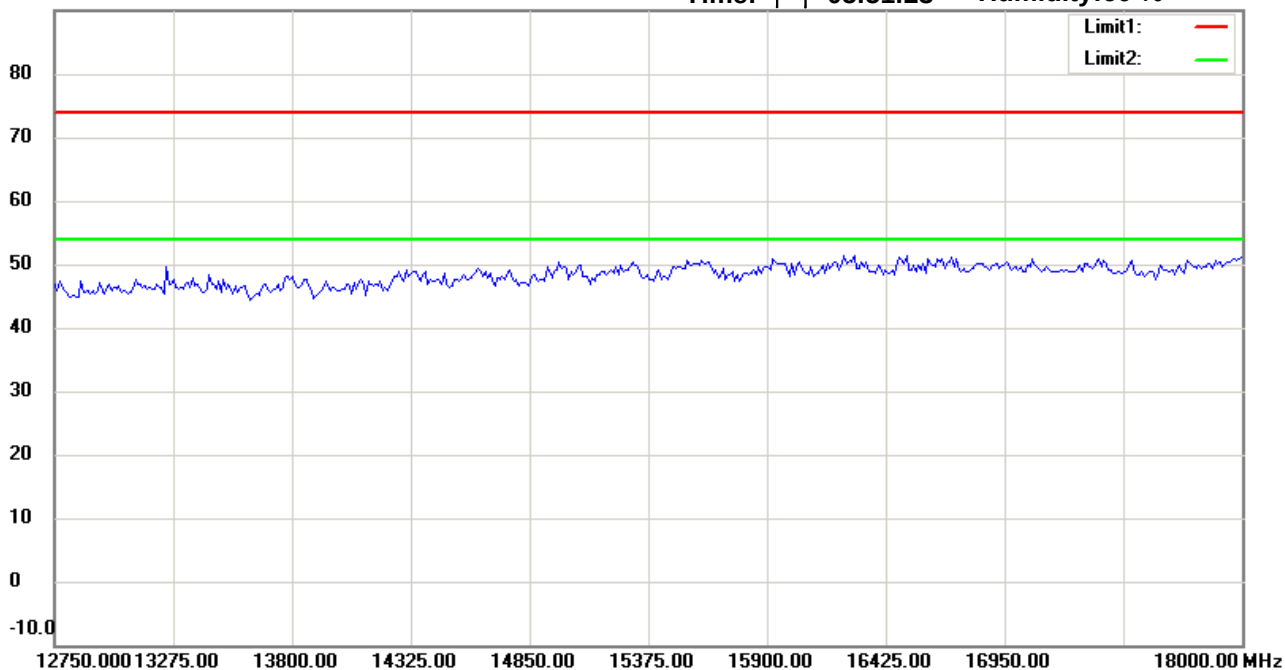
Date: 2015/3/5

Temperature:24 °C

90.0 dBuV/m

Time: 下午 05:51:23

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2482MHz

Note :

Polarization: **Vertical**

Power : 3.7 Vd.c.

Distance: 3m

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

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



Address:6F.,No.58,Ln 188,Ruey Kuang Rd,Neihu,Taipei
Tel:+886-2-6606-8877
Fax:+886-2-6606-8875

Radiated Emission Measurement

Operator: Leon

File :3

Data :#5

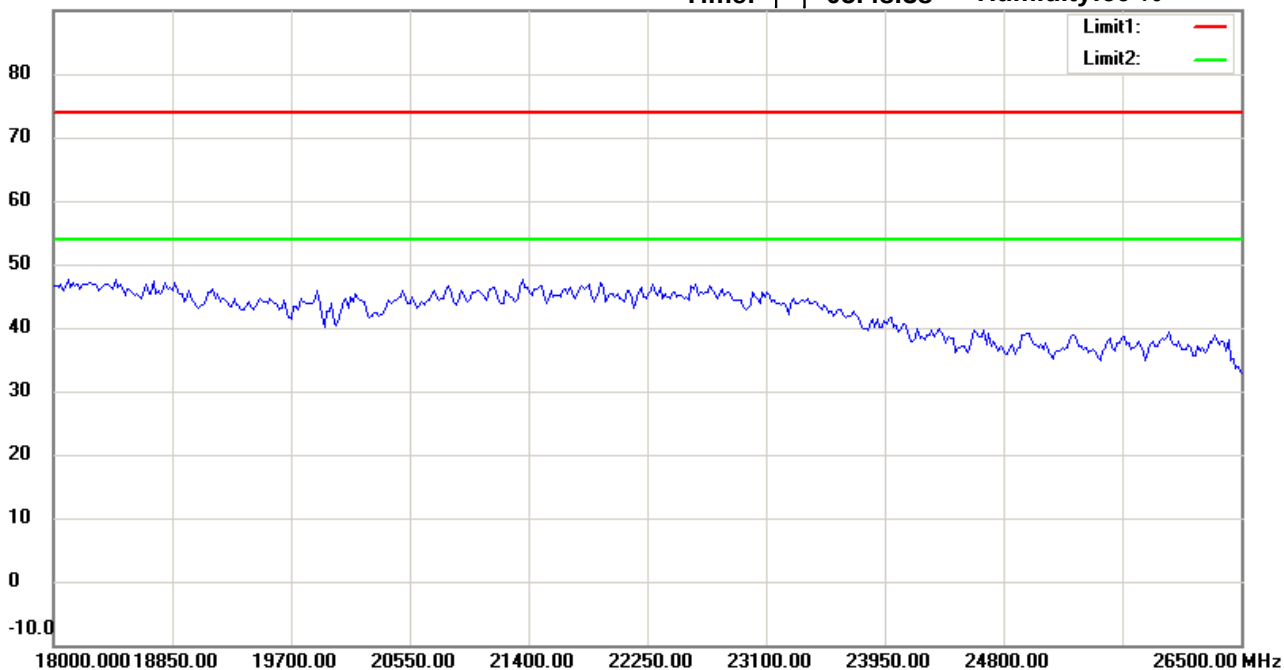
Date: 2015/3/5

Temperature:24 °C

90.0 dBuV/m

Time: 下午 05:48:38

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2482MHz

Note :

Polarization: *Horizontal*

Power : 3.7 Vd.c.

Distance: 3m

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



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Radiated Emission Measurement

Operator: Leon

File :3

Data :#10

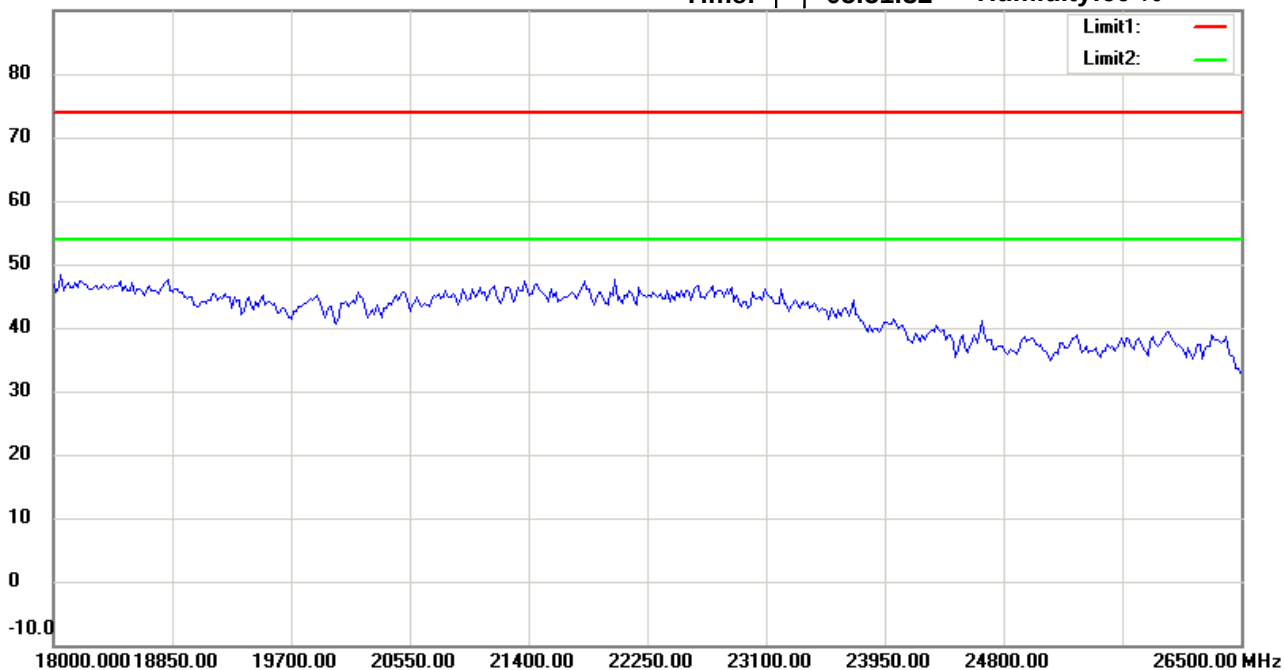
Date: 2015/3/5

Temperature:24 °C

90.0 dBuV/m

Time: 下午 05:51:32

Humidity:60 %



Site : Chamber

Condition : FCC_part 15 RE-Class C_Above 1GHz_PK

EUT : W6M21502-14819

M/N:

Test Mode : TX 2482MHz

Note :

Polarization: Vertical

Power : 3.7 Vd.c.

Distance: 3m

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