FCC PART 15 SUBPART C TEST REPORT

for

UHF RFID Reader

Model No.: PWD100

FCC ID: WXAPWD100

of

Applicant: GIGA-TMS INC.

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

NEW TAIPEI CITY, Taiwan 22180

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.: W6M21701-16572-C-2

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



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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 is 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:

June 12, 2017 Robert Ren

Date WTS-Lab. Name Signature

Technical responsibility for area of testing:

June 12, 2017 Kevin Wang Cert 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. 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: GIGA-TMS INC.

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

Town: NEW TAIPEI CITY,

Country: Taiwan 22180
Telephone: +886-2-26954214
Fax: +886-2-26954213



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1.4 Application details

Date of receipt of test item(1st): May 13, 2015

Date of test(1st): from May 14, 2015 to November 03, 2015

Date of receipt of test item(2nd): February 09, 2017

Date of test(2nd): from February 10, 2017 to March 24, 2017

1.5 General information of Test item

Type of test item: UHF RFID Reader

Model Number: PWD100

Multi-listing model number: ./.

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

Normal Mode

Power (ch 1): Conducted: 26.50 dBm Power (ch 25): Conducted: 26.16 dBm Power (ch 50): Conducted: 26.22 dBm

Power supply: Charge: 5 VDC (power from PC)

Battery: 3.7 VDC, 2500 mAh, 9.25 Wh

Operation modes: Half-duplex

Modulation Type: PRASK

Antenna Type: Ceramic Patch Antenna

Antenna gain: 5 dBi

Host device: none

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Classification:

Fixed Device	
Mobile Device (Human Body distance > 20cm)	\boxtimes
Portable Device (Human Body distance < 20cm)	

Manufacturer: (if applicable)

Name: GIGATEK INC.

Street: No. 47, Hsiang Ho Road, Tantzu 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 (2015-10)

Special statement

This test report is based on the original test report no.: W6M21410-14528-C-1.

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2 Technical test

2.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course of the tests performed.	×
or	
The deviations as specified in 3 were ascertained in the course of the tests	

2.2 Test environment

performed.

Temperature: 23 °C

Relative humidity content: 20 ... 75 %

Air pressure: 86 ... 103 kPa

Details of power supply Charge: 5 VDC (power from PC)

Battery: 3.7 VDC, 2500 mAh, 9.25 Wh

Extreme conditions parameters: test voltage : -- extreme

min : -- V max : -- V



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2.3 Test Equipment List

No.	Test equipment	Туре	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2016/5/20	2017/5/19
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	Function	on Test
ETSTW-CE 008	HF-EICHLEITUNG RF STEP ATTENUATOR 139dB DPSP	334.6010.02	844581/024	R&S	Functio	on Test
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2016/7/15	2017/7/14
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2016/9/12	2017/9/11
ETSTW-CE 028	MXE EMI Receiver	N9038A	MY53220110	Agilent	2016/8/26	2017/8/25
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2016/5/20	2017/5/19
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2016/5/25	2017/5/24
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2016/7/4	2017/7/3
ETSTW-RE 012	TUNABLE BANDREJECT FILTER	D.C 0309	146	K&L	Function	on Test
ETSTW-RE 013	TUNABLE BANDREJECT FILTER	D.C 0336	397	K&L	Function	on Test
ETSTW-RE 018	MICROWAVE HORN ANTENNA	AT4560	27212	AR	2016/6/24	2017/6/23
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	ETS-Lindgren	2016/6/29	2017/6/28
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	ETS-Lindgren	2017/3/20	2018/3/19
ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2017/2/7	2018/2/6
ETSTW-RE 043	Log-Periodic Dipole Antenna	HL223	100166	R&S	2017/3/20	2018/3/19
ETSTW-RE 044	Log-Periodic Antenna	HL050	100094	R&S	2016/4/14	2017/4/13
ETSTW-RE 045	ESA-E SERIES SPECTRUM ANALYZER	E4404B	MY45111242	Agilent	Pre-te	st Use
ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2017/3/1	2018/2/28
ETSTW-RE 051	Attenuator 6dB	50HF-006-1	None	JFW	2017/3/1	2018/2/28
ETSTW-RE 053	Attenuator 3dB	50HF-003-1	None	JFW	2017/3/1	2018/2/28
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2017/3/1	2018/2/28
ETSTW-RE 060	Attenuator 30dB	5015-30	F651012z-01	ATM	2017/3/1	2018/2/28
ETSTW-RE 062	Amplifier Module	CHC 2	None	KMIC	2016/4/13	2017/4/12
ETSTW-RE 064	Bluetooth Test Set	MT8852B-042	6K00005709	Anritsu	Function	on Test
ETSTW-RE 069	Double-Ridged Guide Horn Antenna	3117	00069377	ETS-Lindgren	Function	on Test
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2016/9/8	2017/9/7
ETSTW-RE 088	SOLID STATE AMPLIFIER	KMA180265A01	99057	KMIC	2016/9/20	2017/9/19
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2017/3/1	2018/2/28
ETSTW-RE 112	AC POWER SOURCE	TFC-1005	T-0A023536	T-Power	Functi	on test
ETSTW-RE 115	2.4GHz Notch Filter	N0124411	473874	MICROWAVE CIRCUITS	2017/1/12	2018/1/11
ETSTW-RE 120	RF Player	MP9200	MP9210-111022	ADIVIC	Functi	on test
ETSTW-RE 122	SIGNAL GENERATOR	SMF100A	102149	R&S	2016/5/23	2017/5/22



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ETSTW-RE 125	5GHz Notch filter	5NSL11- 5200/E221.3-O/O	1	K&L Microwave	2016/8/10	2017/8/9
ETSTW-RE 126	5GHz Notch filter	5NSL12- 5800/E221.3-O/O	1	K&L Microwave	2016/8/10	2017/8/9
ETSTW-RE 127	RF Switch Box	RFS-01	None	WTS	2017/3/1	2018/2/28
ETSTW-RE 128	5.3GHz Notch filter	N0153001	SN487233	Microwave Circuits	2016/8/10	2017/8/9
ETSTW-RE 129	5.5GHz Notch filter	N0555984	SN487234	Microwave Circuits	2016/8/10	2017/8/9
ETSTW-RE 130	Handheld RF Spectrum Analyzer	N9340A	CN0147000204	Agilent	Pre-te	st Use
ETSTW-RE 142	Amplifier	8447D	2805A03378	Agilent	2016/4/13	2017/4/12
ETSTW-RE 143	Humidity Temperature Meter	TES-1260	110104623	TES	2016/8/19	2017/8/18
ETSTW-RE 147	Bi-log Hybrid Antenna	MCTD 2786B	BLB16M04005	ETC	2017/3/20	2018/3/19
ETSTW-EMI 011	USB Compact Modulator	SFC-U	101689	R&S	2016/5/4	2017/5/3
ETSTW-GSM 002	Universal Radio Communication Tester	CMU 200	109439	R&S	2017/2/24	2018/2/23
ETSTW-GSM 003	Radio Communication Analyzer	MT8820C	6201342073	Anritsu	2017/2/10	2018/2/9
ETSTW-GSM 004	Wideband Radio Communication Tester	CMW500	128092	R&S	2016/12/15	2017/12/14
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849- 822/851-40 /12+9SS	3	WI	2017/1/12	2018/1/11
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748- 1743/1752-32/5SS	1	WI	2017/1/12	2018/1/11
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880.5 -1875.5/1884.5- 32/5SS	3	WI	2017/1/12	2018/1/11
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1- 904.25-50/8SS	1	WI	2017/1/12	2018/1/11
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2016/9/14	2017/9/13
ETSTW-Cable 010	BNC Cable	RGS-142	None	THERMAX	2016/9/12	2017/9/11
ETSTW-Cable 011	SMA to N type Cable	RGU-400	None	THERMAX	Pre-test U	Jse NCR
ETSTW-Cable 012	BNC Cable	RGS-400	None	THERMAX	2016/9/12	2017/9/11
ETSTW-Cable 016	BNC Cable	Switch Box	B Cable 1	Schwarz beck	2017/2/23	2018/2/22
ETSTW-Cable 017	BNC Cable	X Cable	B Cable 2	Schwarz beck	2017/2/23	2018/2/22
ETSTW-Cable 018	BNC Cable	Y Cable	B Cable 3	Schwarz beck	2017/2/23	2018/2/22
ETSTW-Cable 019	BNC Cable	Z Cable	B Cable 4	Schwarz beck	2017/2/23	2018/2/22
ETSTW-Cable 020	N TYPE Cable	OATS Cable 1	N30N30-L335-15M	JYE BAO CO.,LTD.	2016/4/22	2017/4/21
ETSTW-Cable 022	N TYPE Cable	5006	0002	JYE BAO CO.,LTD.	2016/4/7	2017/4/6
ETSTW-Cable 026	Microwave Cable	SUCOFLEX 104	279075	HUBER+SUHNER	2017/3/1	2018/2/28
ETSTW-Cable 027	Microwave Cable	SUCOFLEX 104	279083	HUBER+SUHNER	2016/5/13	2017/5/12
ETSTW-Cable 028	Microwave Cable	FA147A0015M2020	30064-2	UTIFLEX	2016/9/20	2017/9/19
ETSTW-Cable 029	Microwave Cable	FA147A0015M2020	30064-3	UTIFLEX	2016/9/20	2017/9/19
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 (S_Cable 9)	279067	HUBER+SUHNER	2017/3/1	2018/2/28
ETSTW-Cable 031	Microwave Cable	SUCOFLEX 104 (S_Cable 10)	238092	HUBER+SUHNER	2016/4/13	2017/4/12
ETSTW-Cable 043	Microwave Cable	SUCOFLEX 104	317576	HUBER+SUHNER	2016/4/13	2017/4/12
ETSTW-Cable 048	Microwave Cable	SUCOFLEX 104	325518	HUBER+SUHNER	2016/4/13	2017/4/12
	Microwave Cable	SUCOFLEX 104	none	HUBER+SUHNER	2017/2/20	2018/2/19



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ETSTW-Cable 064	Microwave Cable	SUCOFLEX 104	MY28891	HUBER+SUHNER	2016/4/13	2017/4/12
ETSTW-Cable 066	SMA type cable	32022	None	ASTROLAB	2016/9/12	2017/9/11
ETSTW-Cable 071	N TYPE CABLE	EMCCFD400-NM- NM-25000	170239	EMCI	2017/2/20	2018/2/19
WTSTW-SW 002	EMI TEST SOFTWARE	EZ_EMC	None	Farad	Version E	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 $50\mu H$ LISN (if necessary). Both lines were observed. The bandwidth of the spectrum analyzer was 10~kHz with an appropriate sweep speed.

RADIATION INTERFERENCE: The test procedure used was according to ANSI STANDARD C63.10-2013 6.3 employing a spectrum analyzer. For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 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 $dB\mu V$) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB.

Example:

Freq (MHz) METER READING + ACF + CABLE LOSS (to the receiver) = FS

33 $20 \text{ dB}\mu\text{V} + 10.36 \text{ dB} + 6 \text{ dB} = 36.36 \text{ dB}\mu\text{V/m} \text{ @3m}$

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.

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



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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.

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 (dwell time/T)

T = 100ms 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)	×	×	
Equivalent radiated Power	15.247(b)	×	×	
Spurious Emissions radiated – Transmitter operating	15.247(c)	×	×	
Spurious Emissions conducted – Transmitter operating	15.247			
Carrier Frequency Separation	15.247(a) (1)	×	×	
Number of Hopping Frequencies	15.247(a) (1)(i)	×	×	
Time of Occupancy (Dwell Time)	15.247(a) (1)(i)	×	×	
20 dB Bandwidth	15.247(a) (1)(i)	×	×	
Band-edge Compliance of RF Emission	15.247(c)	×	×	
Radiated Emission from Receiver Part	15.109	×	×	
Power Line Conducted Emission	15.207(a)	×	×	

The follows is intended to leave blank.



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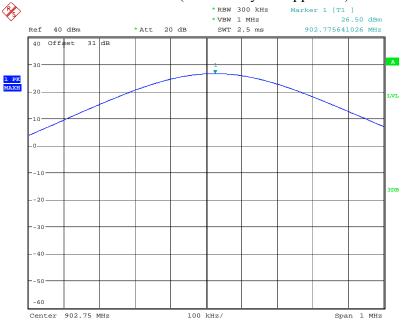
FCC ID: WXAPWD100

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).



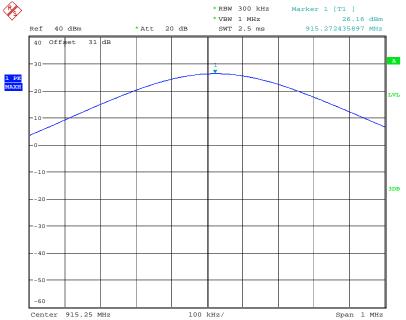
MAX OUTPUT POWER

Date: 3.NOV.2015 11:05:24



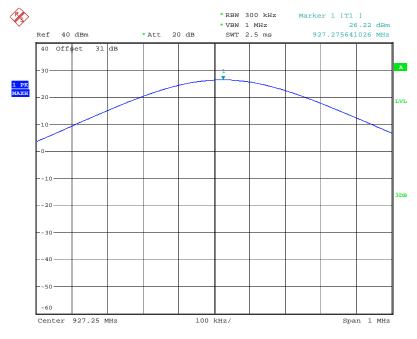
Registration number: W6M1701-16572-C-2

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MAX OUTPUT POWER

Date: 3.NOV.2015 11:06:48



MAX OUTPUT POWER

Date: 3.NOV.2015 11:07:13



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Maximum Peak Output Power

Limits:

Frequency	Number of hopping channels				
MHz	≥ 75	≥ 50	49 ≥ 25	74 ≥ 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 poin-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 RF Exposure Compliance Requirements

According to Supplement C, Edition 01-01 to OET Bulletin 65, Edition 97-01 this spread spectrum transmitter is categorically excluded from routine environmental evaluation because of the low power level, where there is a high likelihood of compliance with RF exposure standards.

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

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	9.3	
G		8.5114	Calculated Value
R	cm	20	Assumed value
S	mW/cm ²	0.7564	Calculated value

Limits:

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

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3.3 Out of Band Radiated Emissions

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.

For frequencies below 1GHz:

Max. reading – 20 dB

Guidance on Measurement of FHSS 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." Here the correction was added to the limit instead subtracted from the reading.

Duty Cycle correction = 20 log (dwell time/100ms)
For frequencies above 1GHz (Peak measurements).
Limit = max. aver. reading-20dB +20dB(because Peak detector is used)

For frequencies above 1GHz (Average measurements). Max. reading – 20 dB - duty cycle correction:

No duty cycle correction was added to the reading

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 111, ETSTW-RE 030, ETSTW-RE 064



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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 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 = $20 \log (dwell time/100ms)$

For frequencies above 1GHz (Average measurements).

Limit – duty cycle correction

No duty cycle correction was added to the reading.

 $54.0dB\mu V/m$

For frequencies above 1GHz (Peak measurements).

Limit + 20dB

 $54.0 dB \mu V/m + 20 dB = 74 dB \mu V/m$

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 111, ETSTW-RE 064



Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100

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:

Mode:

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:	PWD100		Date:					
Mode:				Temperature:		$^{\circ}\mathrm{C}$	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)
		1						

Mode.				remperature.		C	Engineer.	
Polarization:	Vertical			Humidity:		%		
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
					-	-		
						1		

Temperature:



Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100

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: $30-1000 \text{ MHz} = \pm 4.32 \text{ dB}$, $1-18 \text{ GHz} = \pm 4.95 \text{ dB}$, $18-40 \text{ GHz} = \pm 2.94 \text{ dB}$; 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.

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.

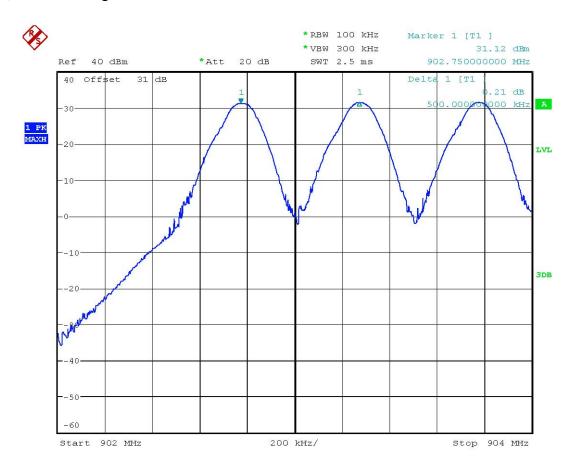
Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 111,ETSTW-RE 064 ETSTW-RE 088, ETSTW-RE 018

FCC ID: WXAPWD100

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.



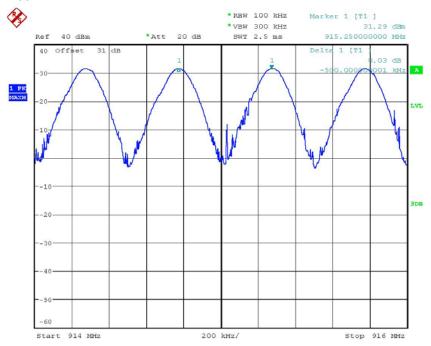
FREQUENCY SEPARATION

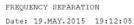
Date: 19.MAY.2015 19:09:17

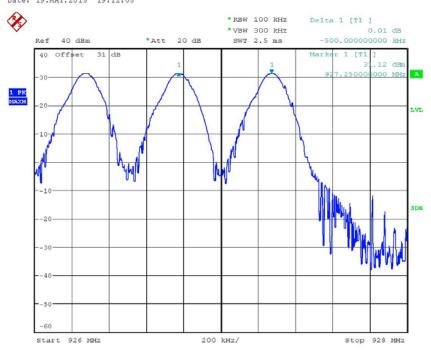


Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100







FREQUENCY SEPARATION
Date: 19.MAY.2015 19:13:28



Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100

Limits:

Frequency Range	Limits			
MHz	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		

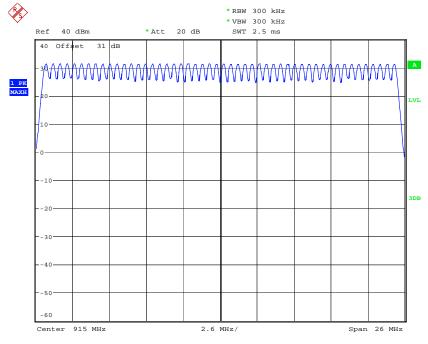
Test equipment used: ETSTW-RE 055, ETSTW-RE 064

FCC ID: WXAPWD100

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: 19.MAY.2015 19:15:07

Limits:

Frequency Range	Limit			
MHz	20dB Bandwidth	Number of Channels		
002 020 MH-	Bandwidth < 250 kHz	≥ 50		
902-928 MHz	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



Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100

3.7.1 Pseudorandom Frequency Hopping Sequence

Channel	MHz	Channel	MHz
Ch1	902.75	Ch26	915.25
Ch2	903.25	Ch27	915.75
Ch3	903.75	Ch28	916.25
Ch4	904.25	Ch29	916.75
Ch5	904.75	Ch30	917.25
Ch6	905.25	Ch31	917.75
Ch7	905.75	Ch32	918.25
Ch8	906.25	Ch33	918.75
Ch9	906.75	Ch34	919.25
Ch10	907.25	Ch35	919.75
Ch11	907.75	Ch36	920.25
Ch12	908.25	Ch37	920.75
Ch13	908.75	Ch38	921.25
Ch14	909.25	Ch39	921.75
Ch15	909.75	Ch40	922.25
Ch16	910.25	Ch41	922.75
Ch17	910.75	Ch42	923.25
Ch18	911.25	Ch43	923.75
Ch19	911.75	Ch44	924.25
Ch20	912.25	Ch45	924.75
Ch21	912.75	Ch46	925.25
Ch22	913.25	Ch47	925.75
Ch23	913.75	Ch48	926.25
Ch24	914.25	Ch49	926.75
Ch25	914.75	Ch50	927.25

3.7.2 Coordination of hopping sequences to other transmitters

This transmitter does not have the ability of being coordinated with other FHSS system for as soon as the transmitter is in operation, the hopping frequency will follow the selected hopping sequence to transmit independently and no coordination is possible. Especially, this transmitter is used as a UHF RFID READER, so no coordination of hopping frequency is required.

3.7.3 System Receiver Hopping Capability

Due to each hopping frequency will be transmitted in accordance to the frequency tables described above, there is no any frequency will be able to hop more times than others. Therefore each frequency will be used equally.

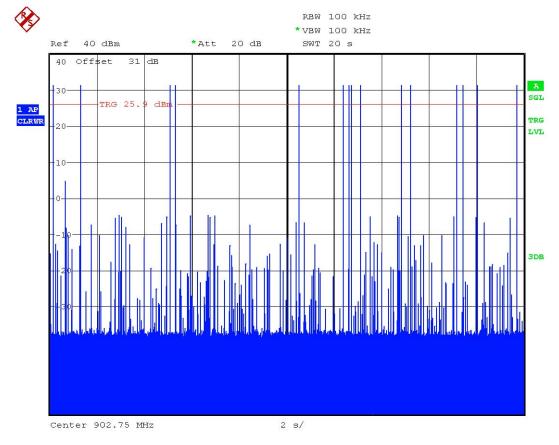
FCC ID: WXAPWD100

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 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.



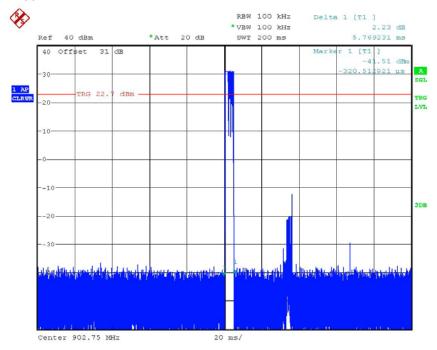
DWELL TIME

Date: 19.MAY.2015 19:19:59

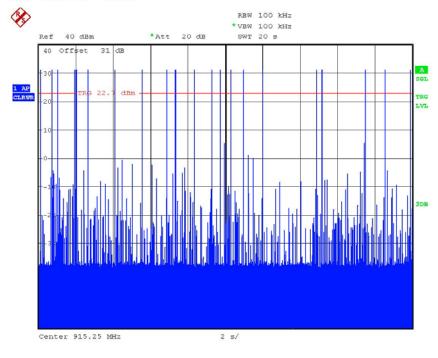


Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100







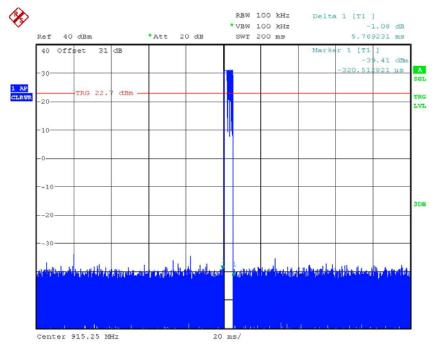
DWELL TIME

Date: 19.MAY.2015 19:40:49

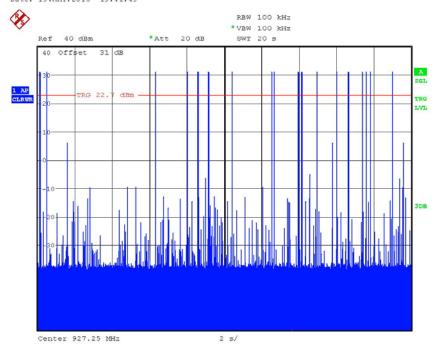


Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100







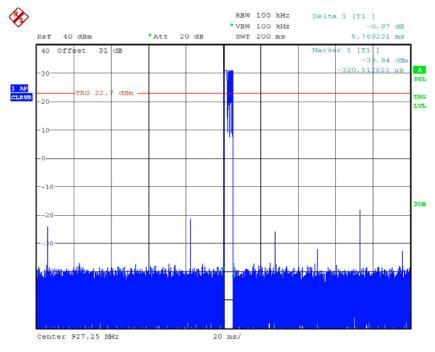
DWELL TIME

Date: 19.MAY.2015 19:42:49



Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100



DWELL TIME (5.769ms + 18 = 103.842ms)
Date: 19.MAY.2015 19:43:30

Limits and measurement periods:

Frequency MHz	Number of channels	Measurement Periode	Limit
902 – 928	≥50	20 s	0.4 s
902 – 928	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

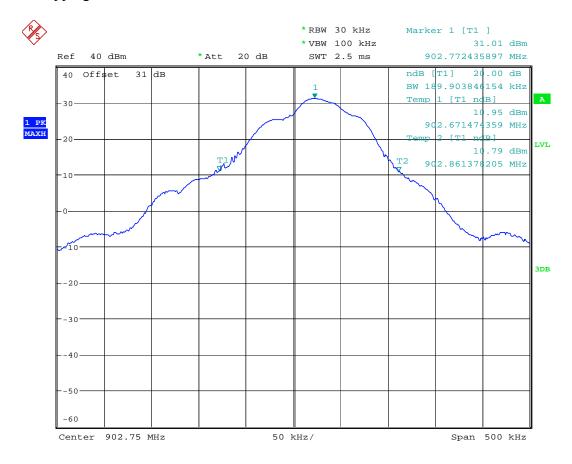
Test equipment used: ETSTW-RE 055, ETSTW-RE 064

FCC ID: WXAPWD100 **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.



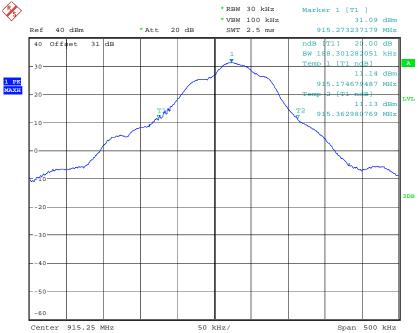
20DB BANDWIDTH

Date: 19.MAY.2015 18:59:02



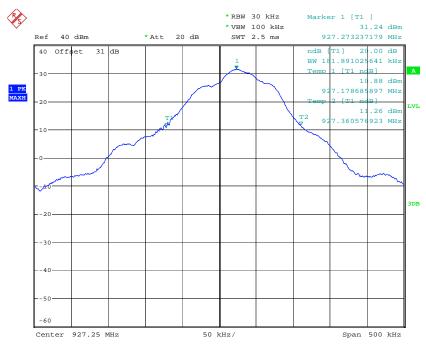
Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100



20DB BANDWIDTH

Date: 19.MAY.2015 18:58:45



20DB BANDWIDTH

Date: 19.MAY.2015 18:58:16



Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100

Limits:

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

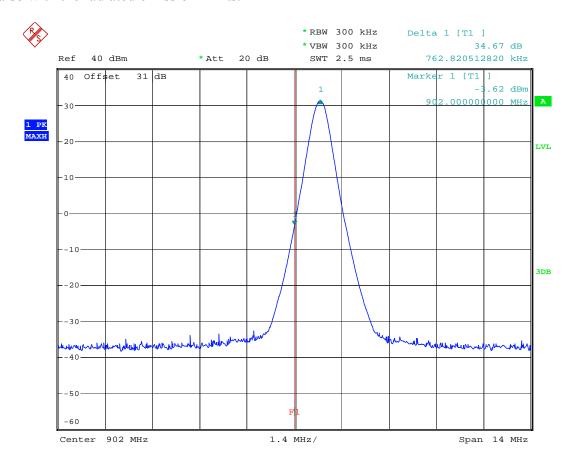
Test equipment used: ETSTW-RE 055, ETSTW-RE 064

FCC ID: WXAPWD100

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.



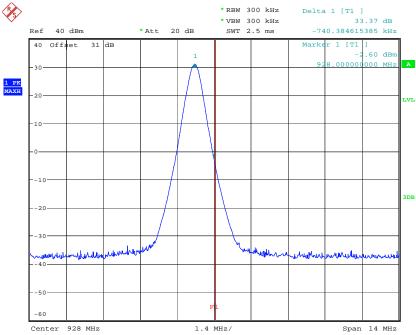
BANDEDGE

Date: 19.MAY.2015 19:00:22



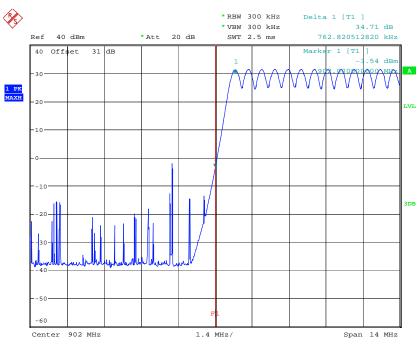
Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100





Date: 19.MAY.2015 19:01:15



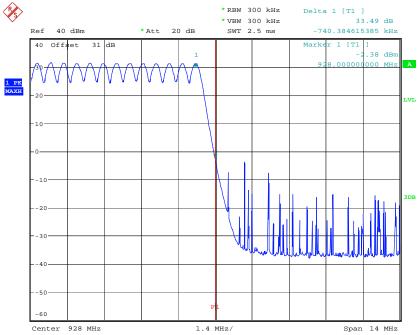
BANDEDGE HOPPING MODE

Date: 19.MAY.2015 19:03:07



Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100



BANDEDGE HOPPING MODE
Date: 19.MAY.2015 19:02:45

Limits:

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

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



Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100

3.11 Radiated Emissions from Receiver Part

FCC Rule: 15.109

Summary table with radiated data of the test plots

Model: PWD100 Date: --

Mode: -- °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	Read	lino	Factor	Res (dBu			mit V/m)	Margin	Table	Ant.
	(dBı	_	(dB)		eak	`	eak	iviaigiii	Degree	High
(MHz)	Peak	Ave.	Corr.	Av	e.	A.	ve.	(dB)	(Deg.)	(cm)
							-		-	
								-		
					1		1		1	

Polarization: Vertical Humidity: -- %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
			-				1	

Frequency	Read	ling	Factor	Res (dBu	sult V/m)		mit ·V/m)	Margin	Table	Ant.
	(dBı	ıV)	(dB)	Pe	eak	Peak			Degree	High
(MHz)	Peak	Ave.	Corr.	Av	/e.	A ⁻	ve.	(dB)	(Deg.)	(cm)
		1		1						

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 = ± 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



Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100

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 055, ETSTW-RE 064, ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 111



Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100

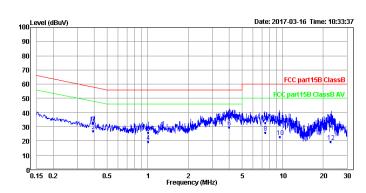
3.12 Power Line Conducted Emission

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.



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



Condition: FCC part15B ClassB ENV216 neutral

EUT : W6M21701-16572 Mode : Charge Power : 120 Va.c.

Power : 120 Va.o Operator : Syuan

			Read		Limit	Over		
	Freq	Level	Level	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBu∀	dBu∀	dB	dBu∀	dB		
1	0.391	32.83	23.03	9.80	58.03	-25.20	neutral	QP
2	0.391	26.99	17.19	9.80	48.03	-21.04	neutral	Average
3	1.006	25.90	16.09	9.81	56.00	-30.10	neutral	QP
4	1.006	19.24	9.43	9.81	46.00	-26.76	neutral	Average
5	4.004	37.07	27.22	9.85	56.00	-18.93	neutral	QP
6 *	4.004	29.55	19.70	9.85	46.00	-16.45	neutral	Average
7	7.446	32.77	22.81	9.96	60.00	-27.23	neutral	QP _
8	7.446	25.72	15.76	9.96	50.00	-24.28	neutral	Average
9	9.557	31.37	21.32	10.05	60.00	-28.63	neutral	QP
10	9.557	22.94	12.89	10.05	50.00	-27.06	neutral	Average
11	22.602	30.27	19.97	10.30	60.00	-29.73	neutral	QP
12	22 602	19 35	9 05	10 30	50 00	-30 65	neutral	Average

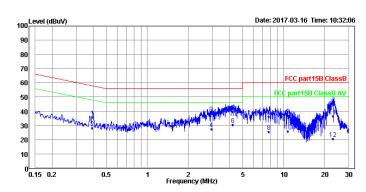


Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100



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



Condition: FCC part15B ClassB ENV216 line

EUT : W6M21701-16572 Mode : Charge Power : 120 Va.c. Operator : Syuan

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBu∀	dBuV	dB	dBuV	dB		
1	0.393	35.76	25.97	9.79	58.00	-22.24	line	QP
2	0.393	28.02	18.23	9.79	48.00	-19.98	line	Average
3	2.943	38.33	28.51	9.82	56.00	-17.67	line	QP
4	2.943	27.31	17.49	9.82	46.00	-18.69	line	Average
5	4.224	39.50	29.65	9.85	56.00	-16.50	line	QP
6 *	4.224	30.24	20.39	9.85	46.00	-15.76	line	Average
7	7.779	36.26	26.35	9.91	60.00	-23.74	line	QP
8	7.779	25.35	15.44	9.91	50.00	-24.65	line	Average
9	10.761	36.78	26.78	10.00	60.00	-23.22	line	QP
10	10.761	25.93	15.93	10.00	50.00	-24.07	line	Average
11	22.979	36.44	26.28	10.16	60.00	-23.56	line	QP
12	22 979	20.36	10 20	10 16	50 00	-29 64	line	Avenage

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:

- 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 = ± 0.74 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.

Test equipment used: ETSTW-CE 001, ETSTW-CE 016, ETSTW-CE 028.

Registration number: W6M1701-16572-C-2

FCC ID: WXAPWD100

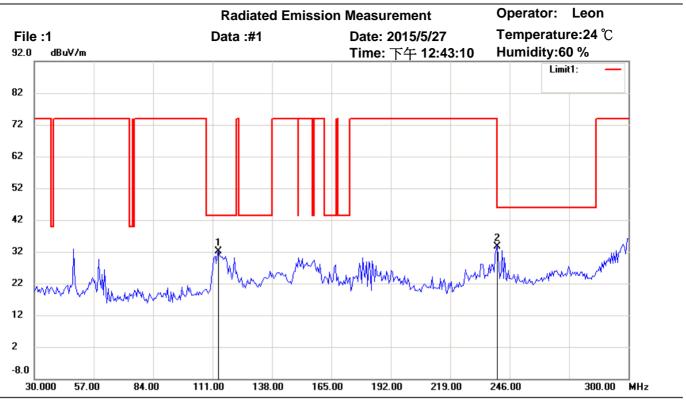
Appendix

Measurement diagrams

Spurious Emissions radiated



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Site: Chamber

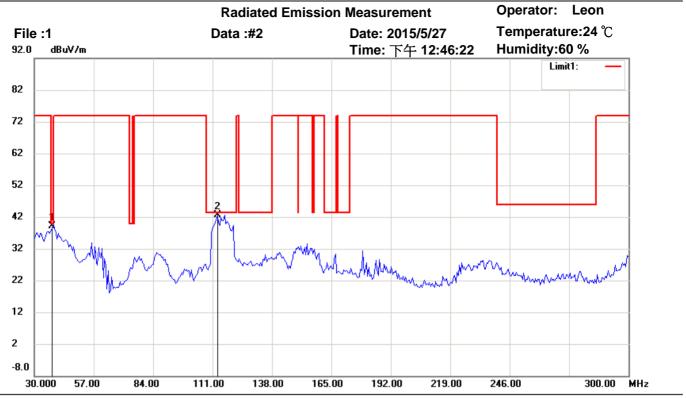
Condition: FCC Restriction Band 30-300 Polarization: Horizontal

Test Mode: TX 902.75MHz

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
*	113.8677	18.54	peak	13.54	32.08	43.50	100	155	-11.42	
	240.4810	19.39	peak	14.21	33.60	46.00	100	90	-12.40	



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Site: Chamber

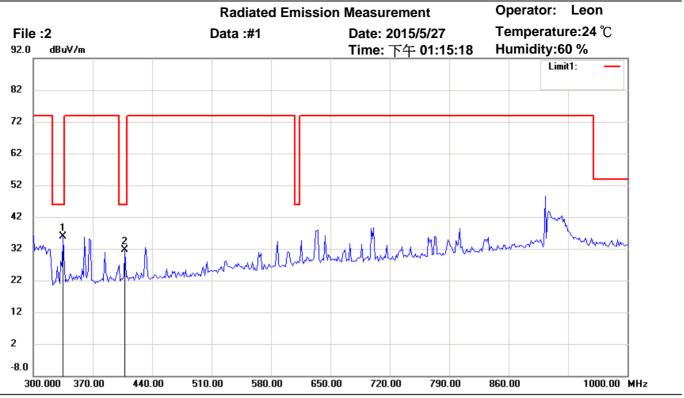
Condition: FCC Restriction Band 30-300 Polarization: Vertical

Test Mode: TX 902.75MHz

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
	38.1162	24.69	QP	14.37	39.06	40.00	100	155	-0.94	
*	113.3267	29.09	QP	13.50	42.59	43.50	100	210	-0.91	



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Site: Chamber

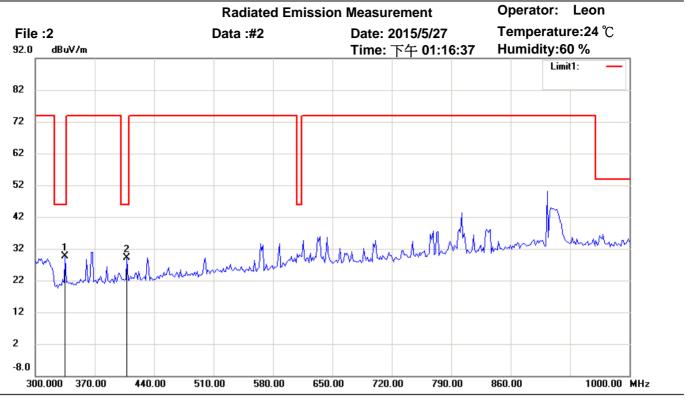
Condition: FCC Restriction Band 300-1000 Polarization: Horizontal

Test Mode: TX 902.75MHz

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
*	335.0701	19.00	peak	16.99	35.99	46.00	100	135	-10.01	
	408.0160	12.59	peak	19.00	31.59	46.00	100	60	-14.41	



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Site: Chamber

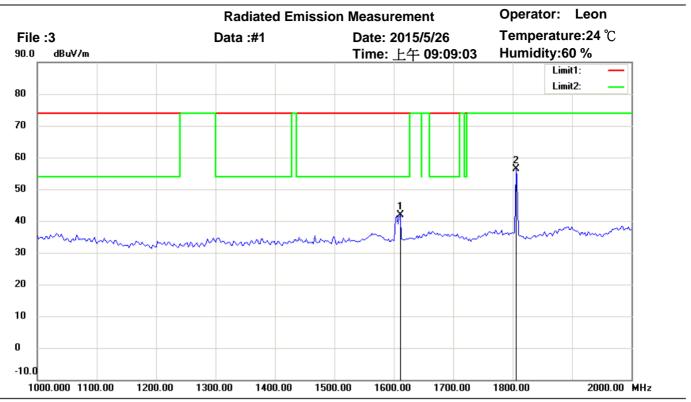
Condition: FCC Restriction Band 300-1000 Polarization: Vertical

Test Mode: TX 902.75MHz

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
*	335.0701	12.57	peak	16.99	29.56	46.00	100	20	-16.44	
	408.0160	10.03	peak	19.00	29.03	46.00	100	185	-16.97	



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Site: Chamber

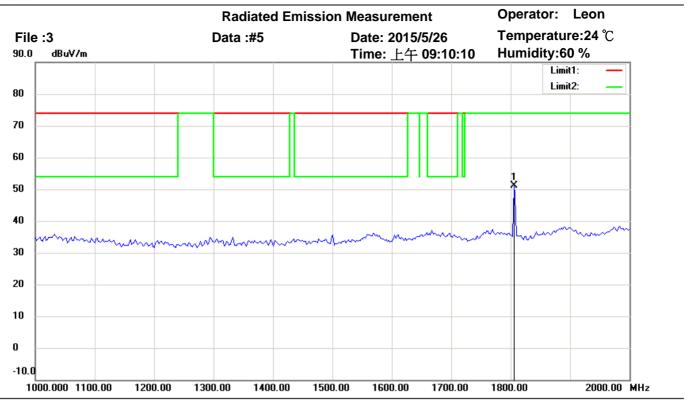
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Horizontal

Test Mode: TX 902.75MHz

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
	1611.222	49.57	peak	-7.71	41.86	74.00	100	155	-32.14	
*	1805.611	63.55	peak	-7.20	56.35	74.00	100	90	-17.65	



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Site: Chamber

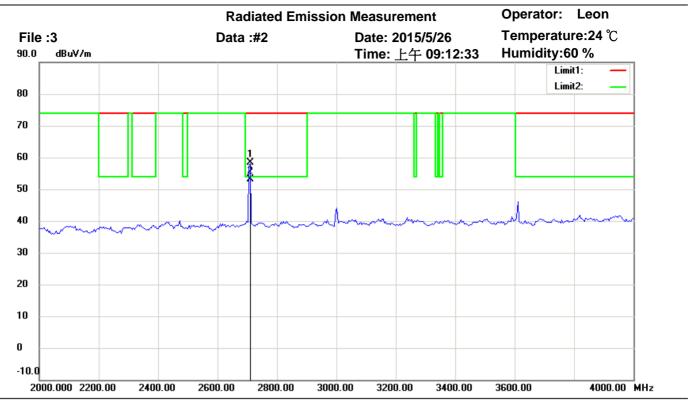
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Vertical

Test Mode: TX 902.75MHz

N	Λk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	*	1805.611	58.25	peak	-7.20	51.05	74.00	100	35	-22.95	



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Site: Chamber

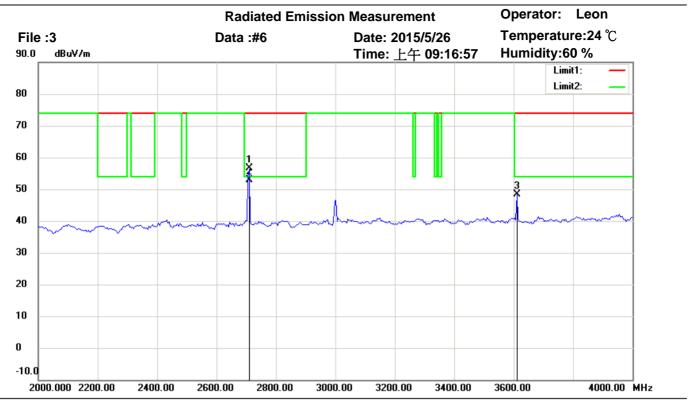
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Horizontal

Test Mode: TX 902.75MHz

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
	2708.495	61.40	peak	-3.08	58.32	74.00	100	308	-15.68	
*	2708.495	56.17	AVG	-3.08	53.09	54.00	100	308	-0.91	



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Site: Chamber

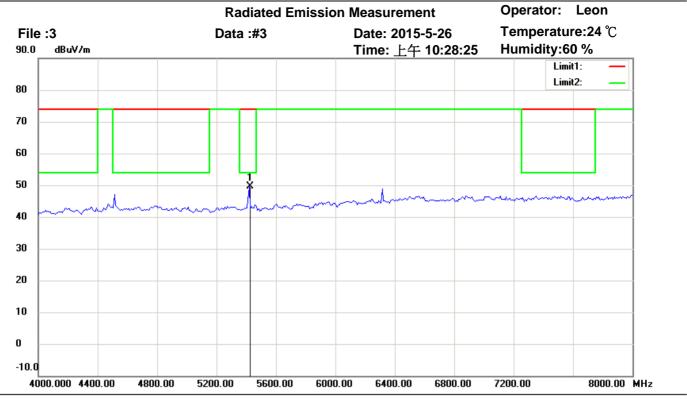
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Vertical

Test Mode: TX 902.75MHz

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
	2708.272	59.59	peak	-3.08	56.51	74.00	100	168	-17.49	
*	2708.272	56.08	AVG	-3.08	53.00	54.00	100	168	-1.00	
	3611.222	49.64	peak	-1.18	48.46	74.00	100	125	-25.54	



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Site: Chamber

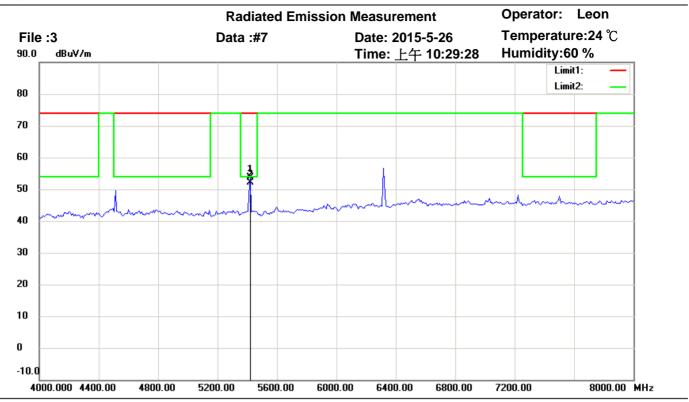
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Horizontal

Test Mode: TX 902.75MHz

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
*	5418.838	47.40	peak	2.34	49.74	74.00	100	55	-24.26	



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Site: Chamber

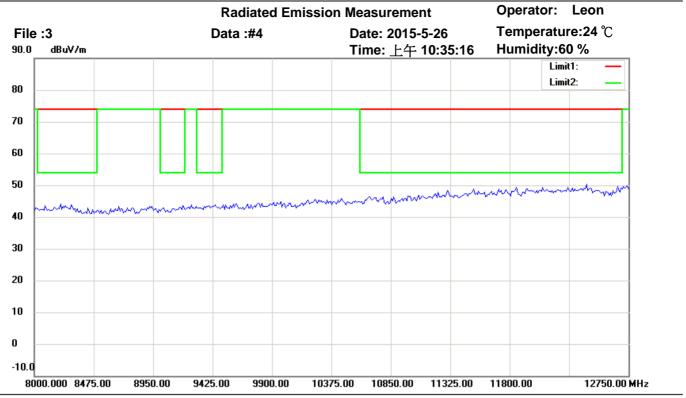
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Vertical

Test Mode: TX 902.75MHz

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
	5416.652	51.26	peak	2.33	53.59	74.00	100	220	-20.41	
*	5416.652	49.85	AVG	2.33	52.18	54.00	100	220	-1.82	



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Site: Chamber

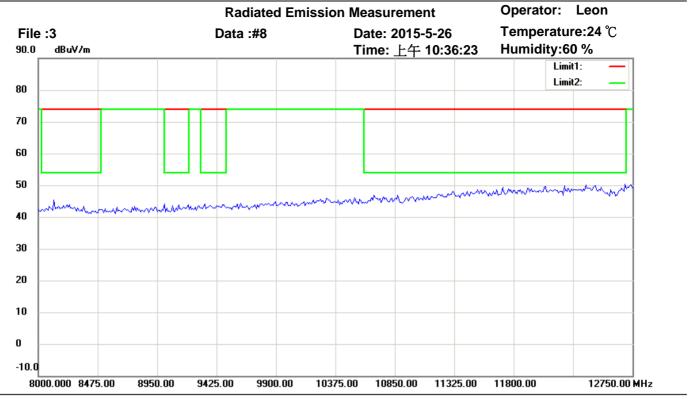
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Horizontal

Test Mode: TX 902.75MHz

	Frequency	Reading	Detector	Corr. factor	Result	Limit	Ant.Pos	Tab.Pos	Margin	Comment	1
Mk.	(MHz)	(dBuV)		(dB/m)	(dBuV/m)	(dBuV/m)	(cm)	(deg.)	(dB)		l



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Site: Chamber

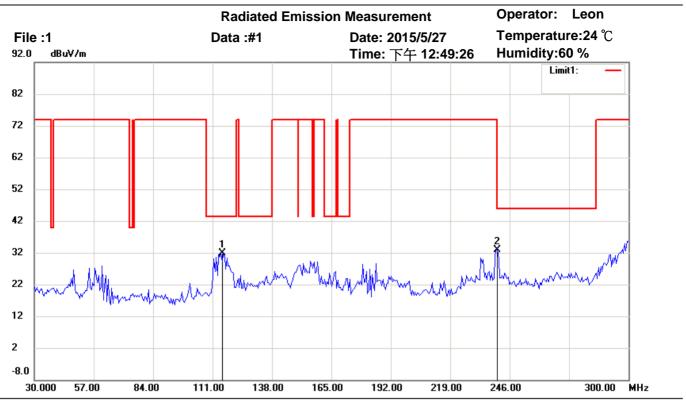
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Vertical

Test Mode: TX 902.75MHz

	Frequency	Reading	Detector	Corr. factor	Result	Limit	Ant.Pos	Tab.Pos	Margin	Comment	1
Mk.	(MHz)	(dBuV)		(dB/m)	(dBuV/m)	(dBuV/m)	(cm)	(deg.)	(dB)		l



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Site: Chamber

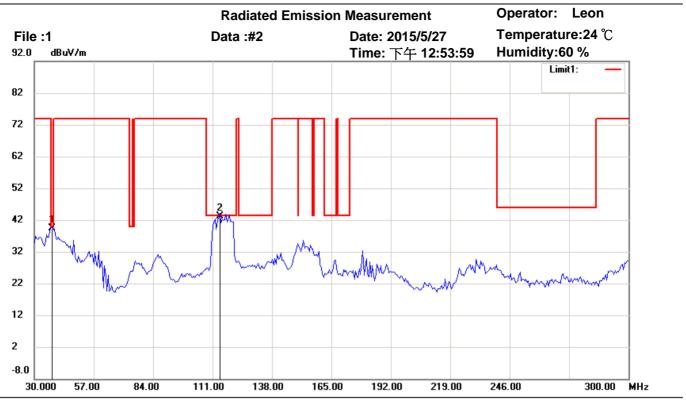
Condition: FCC Restriction Band 30-300 Polarization: Horizontal

Test Mode: TX 915.25MHz

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
*	114.9500	18.24	peak	13.62	31.86	43.50	100	75	-11.64	
	240.4810	18.65	peak	14.21	32.86	46.00	100	120	-13.14	



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Site: Chamber

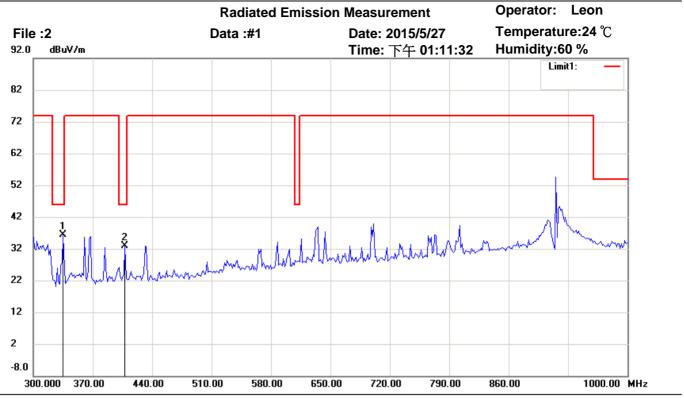
Condition: FCC Restriction Band 30-300 Polarization: Vertical

Test Mode: TX 915.25MHz

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
	38.1162	24.95	QP	14.37	39.32	40.00	100	55	-0.68	
*	114.4088	29.63	QP	13.58	43.21	43.50	100	35	-0.29	



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Site: Chamber

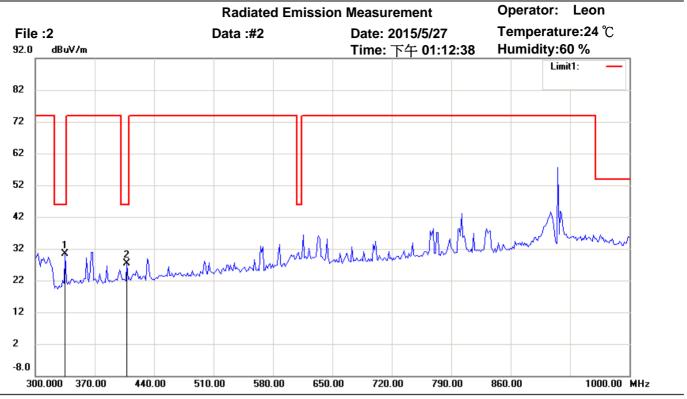
Condition: FCC Restriction Band 300-1000 Polarization: Horizontal

Test Mode: TX 915.25MHz

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
*	335.0701	19.42	peak	16.99	36.41	46.00	100	25	-9.59	
	408.0160	13.88	peak	19.00	32.88	46.00	100	80	-13.12	



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Site: Chamber

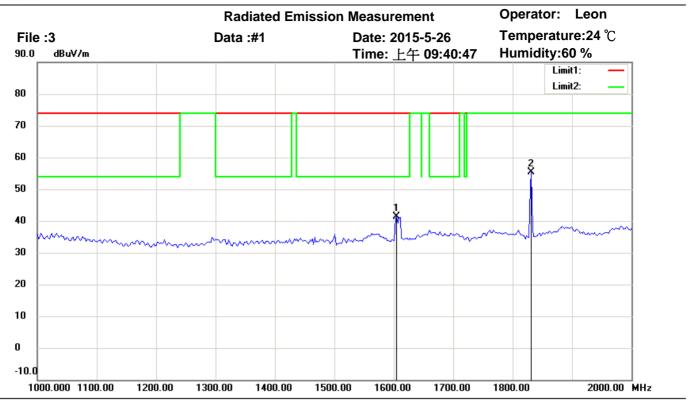
Condition: FCC Restriction Band 300-1000 Polarization: Vertical

Test Mode: TX 915.25MHz

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
*	335.0701	13.35	peak	16.99	30.34	46.00	100	50	-15.66	
	408.0160	8.42	peak	19.00	27.42	46.00	100	75	-18.58	



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Site: Chamber

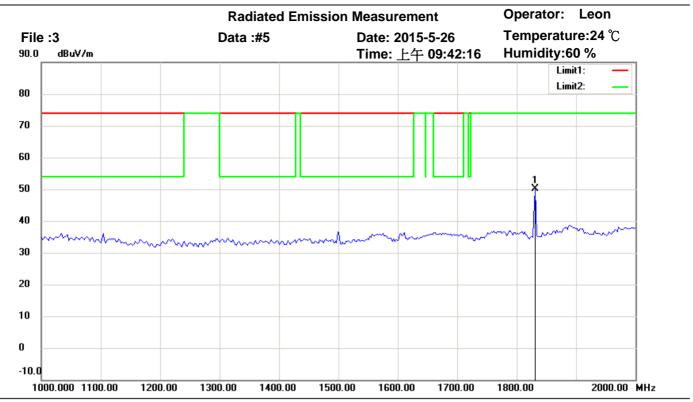
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Horizontal

Test Mode: TX 915.25MHz

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
	1605.210	49.22	peak	-7.74	41.48	74.00	100	95	-32.52	
*	1831.663	62.27	peak	-6.86	55.41	74.00	100	160	-18.59	



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Site: Chamber

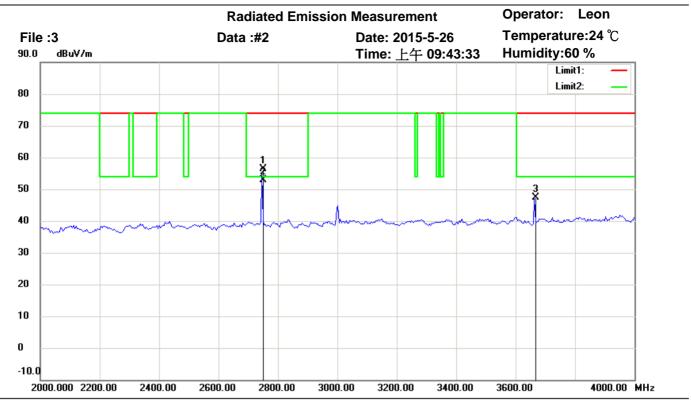
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Vertical

Test Mode: TX 915.25MHz

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
*	1831.663	57.00	peak	-6.86	50.14	74.00	100	130	-23.86	



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Site: Chamber

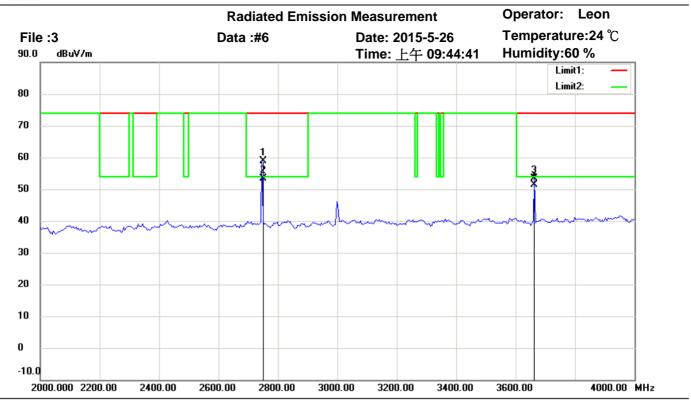
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Horizontal

Test Mode: TX 915.25MHz

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
	2745.958	59.32	peak	-2.97	56.35	74.00	100	310	-17.65	
*	2745.958	55.82	AVG	-2.97	52.85	54.00	100	310	-1.15	
	3663.327	48.53	peak	-1.15	47.38	74.00	100	75	-26.62	



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Site: Chamber

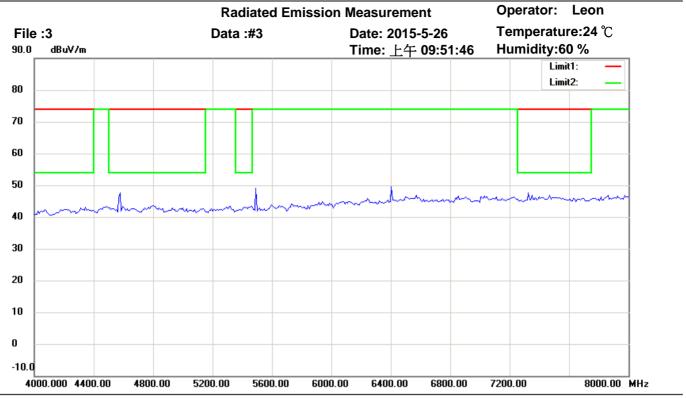
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Vertical

Test Mode: TX 915.25MHz

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
	2745.881	61.91	peak	-2.97	58.94	74.00	100	178	-15.06	
*	2745.881	56.43	AVG	-2.97	53.46	54.00	100	178	-0.54	
	3661.089	54.45	peak	-1.16	53.29	74.00	100	160	-20.71	
	3661.089	52.64	AVG	-1.16	51.48	54.00	100	160	-2.52	



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Site: Chamber

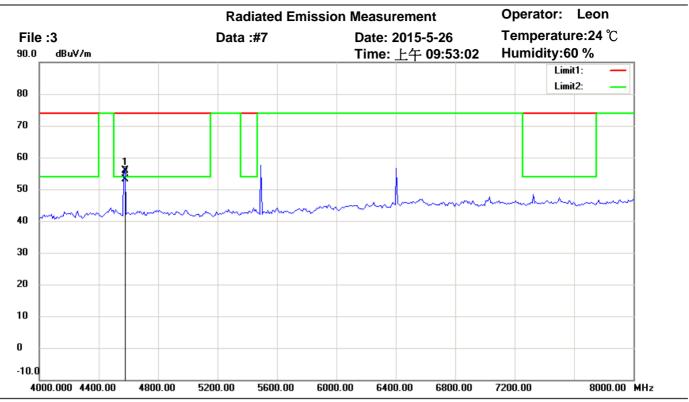
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Horizontal

Test Mode: TX 915.25MHz

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



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Site: Chamber

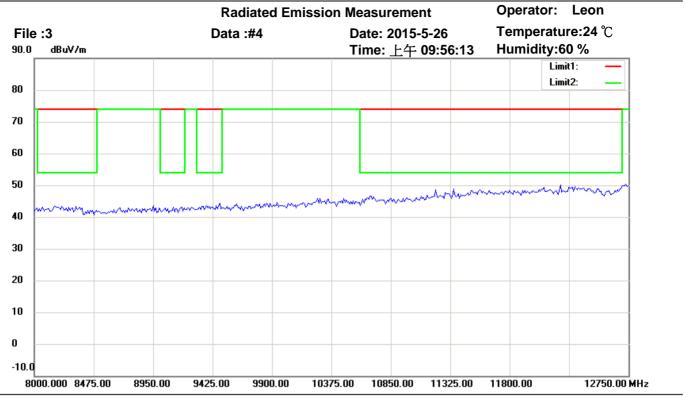
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Vertical

Test Mode: TX 915.25MHz

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
	4576.394	55.11	peak	0.82	55.93	74.00	100	178	-18.07	
*	4576.394	52.43	AVG	0.82	53.25	54.00	100	178	-0.75	



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Site: Chamber

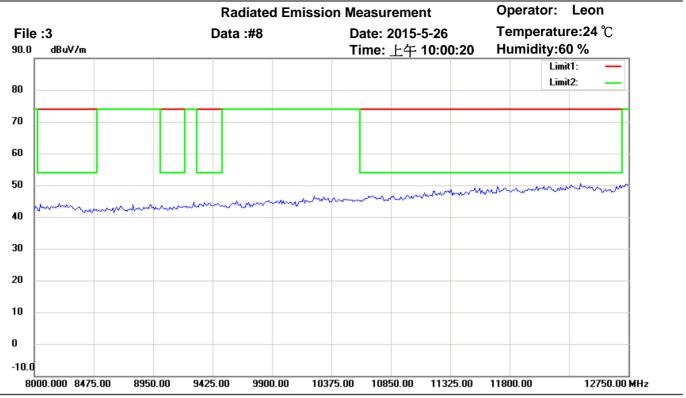
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Horizontal

Test Mode: TX 915.25MHz

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



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Site: Chamber

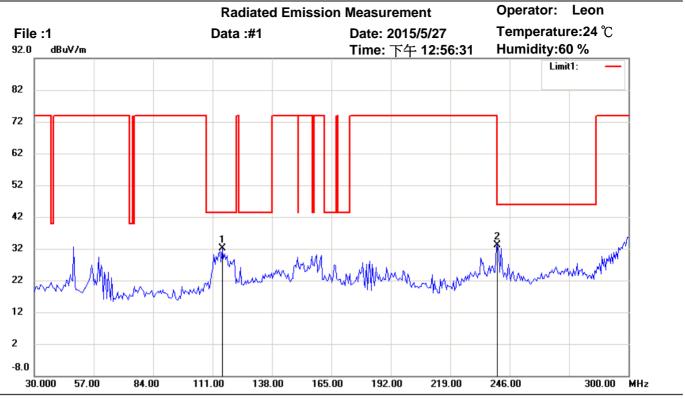
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Vertical

Test Mode: TX 915.25MHz

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



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Site: Chamber

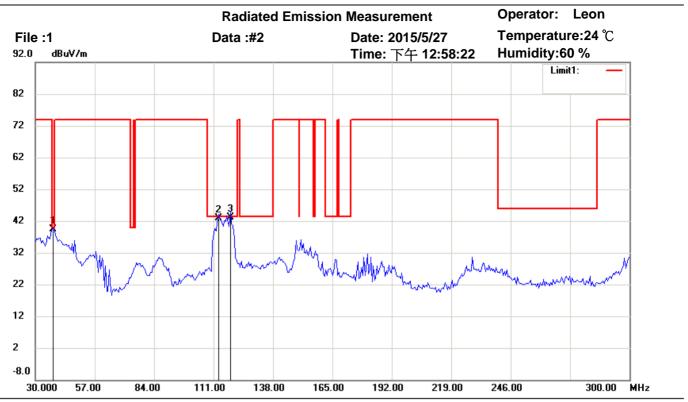
Condition: FCC Restriction Band 30-300 Polarization: Horizontal

Test Mode: TX 927.25MHz

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
*	115.4910	18.54	peak	13.66	32.20	43.50	100	75	-11.30	
	240.4810	18.92	peak	14.21	33.13	46.00	100	60	-12.87	



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Site: Chamber

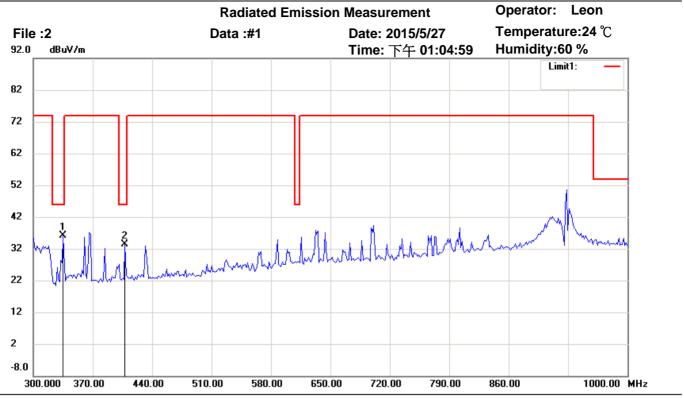
Condition: FCC Restriction Band 30-300 Polarization: Vertical

Test Mode: TX 927.25MHz

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
	38.1162	25.10	QP	14.37	39.47	40.00	100	10	-0.53	
	113.3267	29.42	QP	13.50	42.92	43.50	100	95	-0.58	
*	118.7375	29.31	QP	13.89	43.20	43.50	100	35	-0.30	



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Site: Chamber

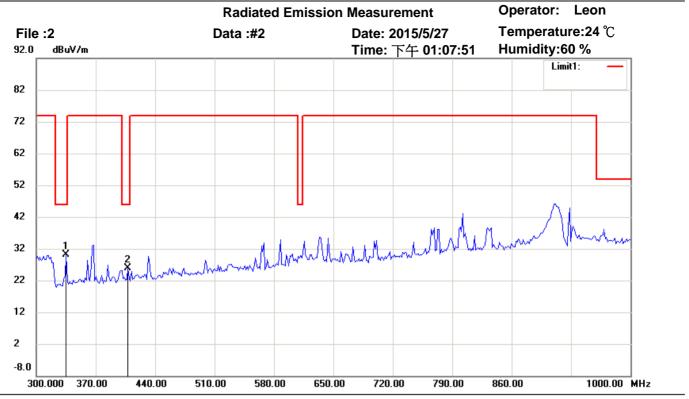
Condition: FCC Restriction Band 300-1000 Polarization: Horizontal

Test Mode: TX 927.25MHz

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
*	335.0701	19.13	peak	16.99	36.12	46.00	100	155	-9.88	
	408.0160	14.30	peak	19.00	33.30	46.00	100	90	-12.70	



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Site: Chamber

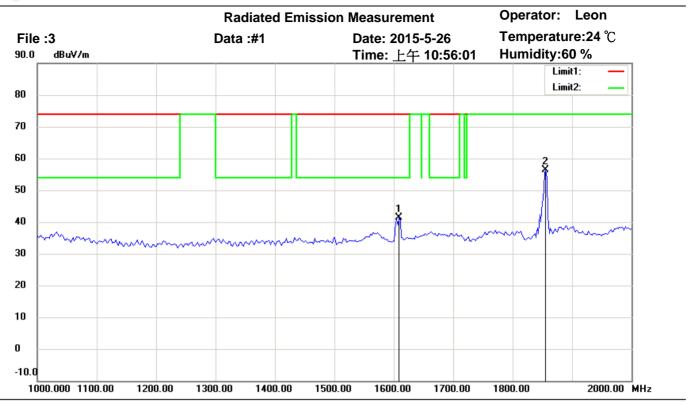
Condition: FCC Restriction Band 300-1000 Polarization: Vertical

Test Mode: TX 927.25MHz

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
*	335.0701	13.06	peak	16.99	30.05	46.00	100	175	-15.95	
	408.0160	6.87	peak	19.00	25.87	46.00	100	135	-20.13	



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Site: Chamber

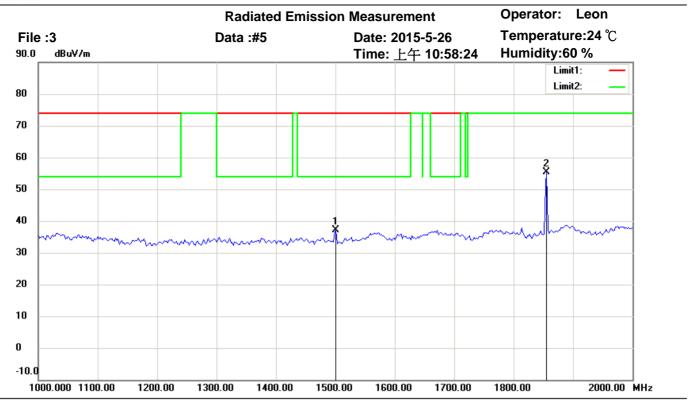
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Horizontal

Test Mode: TX 927.25MHz

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
	1609.218	48.98	peak	-7.72	41.26	74.00	100	155	-32.74	
*	1855.711	62.98	peak	-6.56	56.42	74.00	100	90	-17.58	



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Site: Chamber

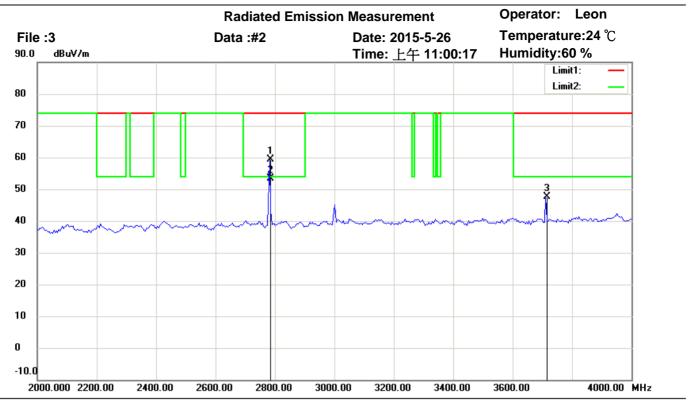
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Vertical

Test Mode: TX 927.25MHz

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
	1501.002	45.94	peak	-8.92	37.02	74.00	100	145	-36.98	
*	1855.711	61.96	peak	-6.56	55.40	74.00	100	110	-18.60	



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Site: Chamber

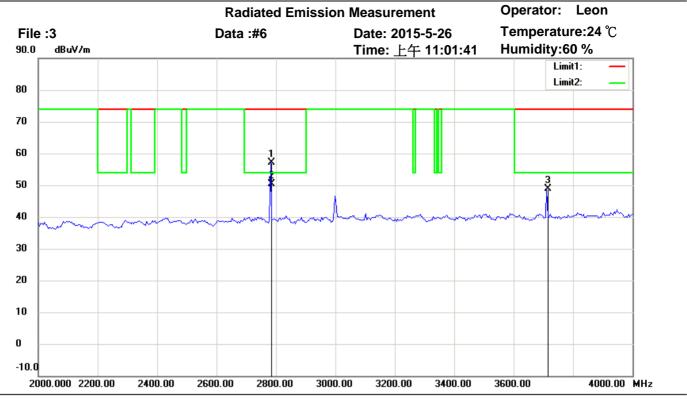
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Horizontal

Test Mode: TX 927.25MHz

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
	2781.848	62.14	peak	-2.86	59.28	74.00	100	322	-14.72	
*	2781.848	56.31	AVG	-2.86	53.45	54.00	100	322	-0.55	
	3711.423	48.86	peak	-1.13	47.73	74.00	100	90	-26.27	



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Site: Chamber

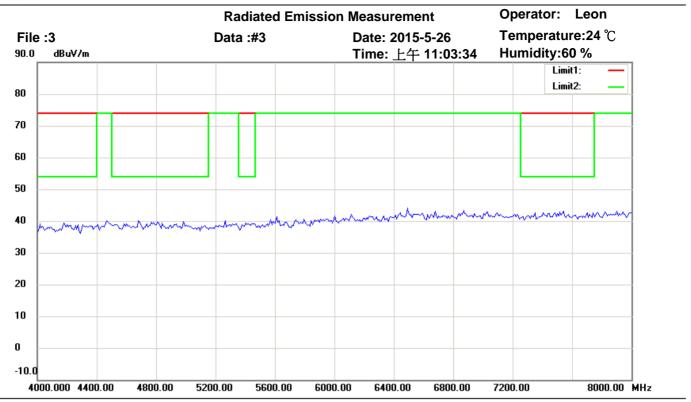
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Vertical

Test Mode: TX 927.25MHz

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
	2781.805	60.01	peak	-2.86	57.15	74.00	100	315	-16.85	
*	2781.805	53.18	AVG	-2.86	50.32	54.00	100	315	-3.68	
	3711.423	50.03	peak	-1.13	48.90	74.00	100	175	-25.10	



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Site: Chamber

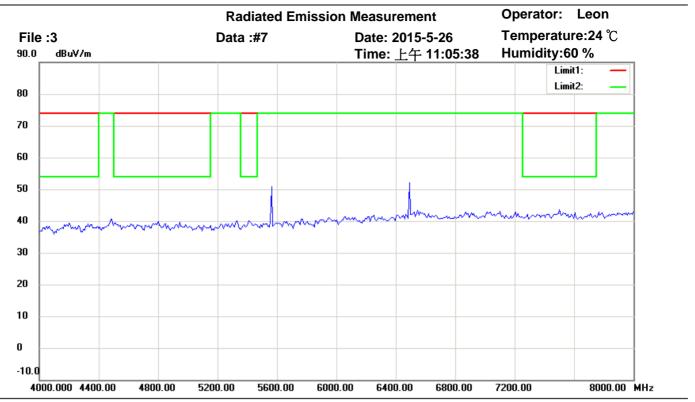
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Horizontal

Test Mode: TX 927.25MHz

	Frequency	Reading	Detector	Corr. factor	Result	Limit	Ant.Pos	Tab.Pos	Margin	Comment	1
Mk.	(MHz)	(dBuV)		(dB/m)	(dBuV/m)	(dBuV/m)	(cm)	(deg.)	(dB)		l



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Site: Chamber

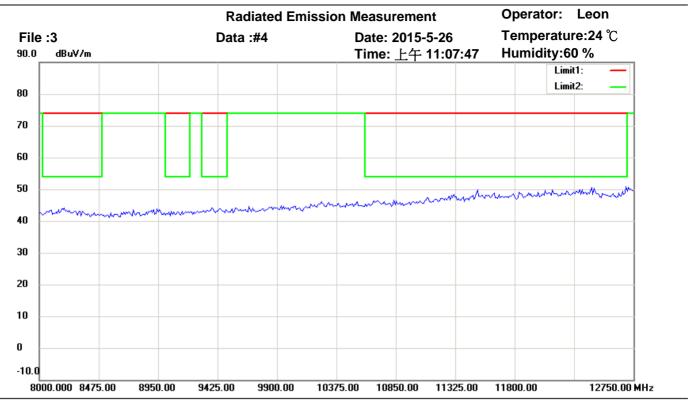
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Vertical

Test Mode: TX 927.25MHz

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



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Site: Chamber

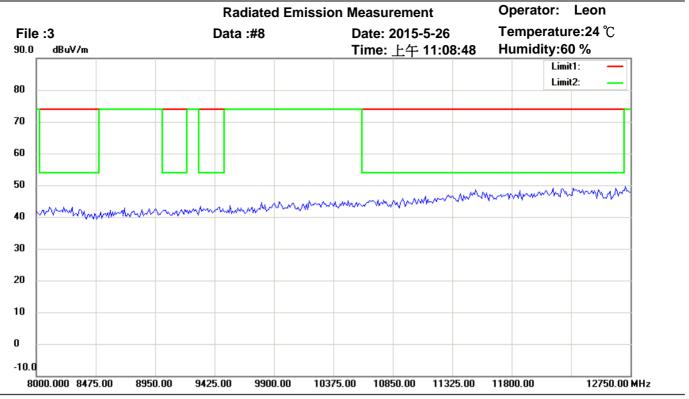
Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Horizontal

Test Mode: TX 927.25MHz

	Frequency	Reading	Detector	Corr. factor	Result	Limit	Ant.Pos	Tab.Pos	Margin	Comment	1
Mk.	(MHz)	(dBuV)		(dB/m)	(dBuV/m)	(dBuV/m)	(cm)	(deg.)	(dB)		l



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Site: Chamber

Condition: FCC Restriction Band_Above 1GHz_PK Polarization: Vertical

Test Mode: TX 927.25MHz

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