

**FCC PART 15 SUBPART C TEST REPORT**

**for**

**Class 1 Bluetooth 2.1 module**

**Model No.: RN-41-N**

**FCC ID: OA3-RN41N**

**of**

Applicant: Microchip Technology Inc.

Address: 2355 West Chandler Blvd. Chandler, Arizona,  
United States 85224-6199

Tested and Prepared

by

**Worldwide Testing Services (Taiwan) Co., Ltd.**

**FCC Registration No.: 930600**

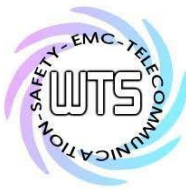
**Industry Canada filed test laboratory Reg. No. IC 5679A-1**

**A2LA Accredited No.: 2732.01**



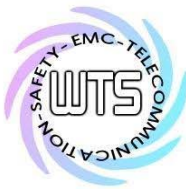
**Report No.: W6M21209-12744-C-1**

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.  
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# Worldwide Testing Services(Taiwan) Co., Ltd.

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## 1 General Information

### 1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.

The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.

Furthermore, there is no guarantee that a test sample which has passed all the relevant tests conforms to a specification.

Neither is there any guarantee that such a test sample will interwork with other genuinely open systems. The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that its performance generally conforms to representative cases of communications equipment.

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:**

October 02, 2012

Rick Chen

*Rick Chen.*

Date

WTS-Lab.

Name

Signature

### **Technical responsibility for area of testing:**

October 02, 2012

Danny Sung

*Danny Sung*

Date

WTS

Name

Signature



# **Worldwide Testing Services(Taiwan) Co., Ltd.**

Registration number: W6M21209-12744-C-1  
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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



**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: Microchip Technology Inc.  
Street: 2355 West Chandler Blvd.  
Town: Chandler, Arizona,  
Country: United States 85224-6199  
Telephone: (480) 792-7200  
Fax: (480) 899-9210



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## 1.4 Application details

Date of receipt of test item: September 21, 2012  
Date of test: from September 24, 2012 to October 02, 2012

## 1.5 General information of Test item

Type of test item: Class 1 Bluetooth 2.1 module

Model Number: RN-41-N

Multi-listing model number: ./.

Photos: see Annex

### Technical data

Frequency band: 2402 - 2480 MHz  
Frequency ( ch A): 2.402 GHz  
Frequency ( ch B): 2.441 GHz  
Frequency ( ch C): 2.480 GHz

### Transmitter

### Unom

#### Normal Mode

Power ( ch A or ch 0): Conducted: 11.91 dBm  
Power ( ch B or ch 39): Conducted: 10.92 dBm  
Power ( ch C or ch 78): Conducted: 9.89 dBm

#### EDR Mode

Power ( ch A or ch 0): Conducted: 11.30 dBm  
Power ( ch B or ch 39): Conducted: 10.55 dBm  
Power ( ch C or ch 78): Conducted: 9.89 dBm

Power supply: 3.3 Vdc

Operation modes: duplex

Modulation Type: GFSK、 $\pi/4$ DQPSK、8DPSK

Antenna Type:  
1) Monopole Antenna ( RAH Series )  
2) Monopole Antenna ( RN-SMA-S )  
3) Monopole Antenna ( MMSO2300 )  
4) Dipole antenna ( RCT )  
5) Dipole antenna ( RN-SMA-7-RP )  
6) Dipole antenna ( MHO Series )  
7) Yagi Antenna



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Antenna Gain:                                    1) Monopole Antenna ( RAH Series ) : 0.56 dBi  
    2) Monopole Antenna ( RN-SMA-S ): 0.56 dBi  
    3) Monopole Antenna ( MMSO2300 ): 1 dBi  
    4) Dipole antenna ( RCT ): 2.20 dBi  
    5) Dipole antenna ( RN-SMA-7-RP ) : 5 dBi  
    6) Dipole antenna ( MHO Series ) : 8 dBi  
    7) Yagi Antenna : 15 dBi

Host device:                                        none

Classification:

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

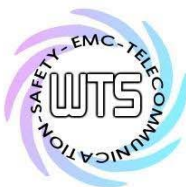
## Manufacturer: (if applicable)

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

Additional information:                        ./.

## 1.6 Test standards

Technical standard : FCC RULES PART 15 Subpart B / Subpart C § 15.247 (2011-10)



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## **2 Technical test**

### **2.1 Summary of test results**

No deviations from the technical specification(s) were ascertained in the course of the tests performed.

**or**

The deviations as specified in 3 were ascertained in the course of the tests performed.

### **2.2 Test environment**

Temperature:	23 °C
Relative humidity content:	20 ... 75 %
Air pressure:	86 ... 103 kPa
Details of power supply	3.3Vdc
Extreme conditions parameters:	test voltage : -- extreme min : -- V max : -- V



# 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	2012/9/5	2013/9/4
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	Function Test	
ETSTW-CE 004	ZWEILEITER-V- NETZNACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5	840731/011	R&S	2011/12/28	2012/12/27
ETSTW-CE 005	Line-Impedance Stabilisation Network	NNBM 8126D	137	Schwarzbeck	2012/9/5	2013/9/4
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2012/3/5	2013/3/4
ETSTW-CE 007	SPECTRUM ANALYZER 5GHz	FSB	849670/001	R&S	Pre-test Use	
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	2012/7/3	2013/7/2
ETSTW-CE 013	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T4-02	20242	FCC	2012/9/6	2013/9/5
ETSTW-CE 024	IMPEDANCE STABILIZATION NETWORK	ISN T800	29454	TESEQ	2012/1/4	2013/1/3
ETSTW-CS 004	COUPLING AND DECOUPLING NETWORK	CDN M016	20053	SCHAFFNER	2012/8/10	2013/8/09
ETSTW-CS 005	RF Power Amplifier	100A250A	306547	AR	Function Test	
ETSTW-CS 010	6 dB Attenuator	SA3N1007-06	None	AISI	Function test	
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2012/8/10	2013/8/09
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2012/9/5	2013/9/4
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2012/9/5	2013/9/4
ETSTW-RE 010	ABSORBING CLAMP	MDS 21	3469	Schwarzbeck	2012/9/5	2013/9/4
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	2010/10/4	2012/10/3
ETSTW-RE 019	MICROWAVE HORN ANTENNA	22240-25	121074	FM	2012/4/03	2013/4/02
ETSTW-RE 020	MICROWAVE HORN ANTENNA	AT4002A	306915	AR	Function Test	
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	ETS-Lindgren	2012/8/01	2013/7/31
ETSTW-RE 028	Log-Periodic Dipole Array Antenna	3148	34429	EMCO	Function Test	
ETSTW-RE 029	Biconical Antenna	3109	33524	EMCO	Function Test	
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	EMCO	2012/2/21	2013/2/20
ETSTW-RE 032	Millivoltmeter	URV 55	849086/013	R&S	2011/10/4	2012/10/3
ETSTW-RE 033	WaveRunner 6000A Serise Oscilloscope	WAVERUNNER 6100A	LCRY0604P1450 8	LeCroy	Function Test	
ETSTW-RE 034	Power Sensor	URV5-Z4	839313/006	R&S	2011/10/4	2012/10/3
ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2012/1/10	2013/1/9





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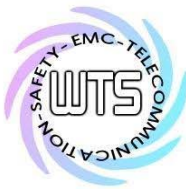
ETSTW-RE 043	Log-Periodic Dipole Antenna	HL223	100166	R&S	2012/4/13	2013/4/12
ETSTW-RE 044	Log-Periodic Antenna	HL050	100094	R&S	2012/4/06	2013/4/05
ETSTW-RE 045	ESA-E SERIES SPECTRUM ANALYZER	E4404B	MY45111242	Agilent	Pre-test Use	
ETSTW-RE 048	Triple Loop Antenna	HXYZ 9170	HXYZ 9170-134	Schwarzbeck	2012/8/28	2013/8/27
ETSTW-RE 049	TRILOG Super Broadband test Antenna	VULB 9160	9160-3185	Schwarzbeck	2012/3/23	2013/3/22
ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2012/3/3	2013/3/2
ETSTW-RE 051	Attenuator 6dB	50HF-006-1	None	JFW	2012/3/3	2013/3/2
ETSTW-RE 053	Attenuator 3dB	50HF-003-1	None	JFW	2012/3/3	2013/3/2
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2012/5/29	2013/5/28
ETSTW-RE 060	Attenuator 30dB	5015-30	F651012z-01	ATM	2012/3/3	2013/3/2
ETSTW-RE 061	Amplifier Module	CHC 1	None	ETS	2012/5/17	2013/5/16
ETSTW-RE 062	Amplifier Module	CHC 2	None	KMIC	2011/11/29	2012/11/28
ETSTW-RE 064	Bluetooth Test Set	MT8852B-042	6K00005709	Anritsu	Function Test	
ETSTW-RE 065	Amplifier	AMF-6F-18002650-25-10P	941608	MITEQ	2012/4/6	2013/4/5
ETSTW-RE 069	Double-Ridged Guide Horn Antenna	3117	00069377	EMCO	Function Test	
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2011/10/5	2012/10/4
ETSTW-RE 073	Power Meter	N1911A	MY45100769	Agilent	2012/1/4	2013/1/3
ETSTW-RE 074	Power Sensor	N1921A	MY45241198	Agilent	2012/1/4	2013/1/3
ETSTW-RE 088	SOLID STATE AMPLIFIER	KMA180265A01	99057	KMIC	2011/10/13	2012/10/12
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2012/3/5	2013/3/4
ETSTW-RE 105	2.4GHz Notch Filter	NO124411	39555	MICROWAVE CIRCUITS, INC.	2012/3/5	2013/3/4
ETSTW-RE 106	Humidity Temperature Meter	TES-1366	091011113	TES	2011/12/1	2012/11/30
ETSTW-RE 111	TRILOG Super Broadband test Antenna	VULB 9160	9160-3309	Schwarz beck	2011/12/27	2012/12/26
ETSTW-RE 112	AC POWER SOURCE	TFC-1005	None	T-Power	Function test	
ETSTW-RE 115	2.4GHz Notch Filter	N0124411	473874	MICROWAVE CIRCUITS	2012/1/12	2013/1/11
ETSTW-RE 120	RF Player	MP9200	MP9210-111022	ADIVIC	Function test	
ETSTW-RE 122	SIGNAL GENERATOR	SMF100A	102149	R&S	2012/7/3	2013/7/2
ETSTW-RE 125	5GHz Notch filter	5NSL11-5200/E221.3-O/O	1	K&L Microwave	2012/8/18	2013/8/17
ETSTW-RE 126	5GHz Notch filter	5NSL11-5800/E221.3-O/O	1	K&L Microwave	2012/8/18	2013/8/17
ETSTW-RE 127	RF Switch Box	RFS-01	None	WTS	2012/3/3	2013/3/2
ETSTW-EMI 001	HARMONICS 1000	HAR1000-1P	093	EMC-PARTNER	2012/8/10	2013/8/09
ETSTW-EMS 001	BASELSTRASSE 160 CH-4242 LAUFEN	CN-EFT1000	354	EMC-PARTNER	Function Test	
ETSTW-EMS 002	Frequency Converter	YF-6020	0308014	None	Function Test	
ETSTW-EMS 003	EMC Immunity Test System	TRA2000IN6	579	EMC-PARTNER	2011/11/2	2012/11/1
ETSTW-EMS 009	Magnetic Field Antenna	MF1000-1	104	EMC-PARTNER	Function Test	



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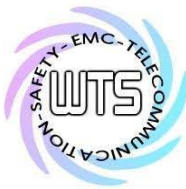
ETSTW-EMS 010	Coupling De-coupling Network	CDN-UTP8	014	EMC-PARTNER	Function Test	
ETSTW-EMS 012	EM Injection Clamp	F-203I-23MM	476	FCC	2012/5/29	2013/5/28
ETSTW-EMS 016	EMF Tester	1390	071208732	TES	2011/10/6	2012/10/5
ETSTW-EMS 017	Multimeter	DM-1220	518614	HOLA	2012/8/10	2013/8/09
ETSTW-EMS 019	Electrostatic Discharge Simulator	ESS-2002	ESS06Y6300	NoiseKen	2011/10/31	2012/10/30
ETSTW-EMS 020	Humidity Temperature Meter	TES-1366	091011116	TES	2011/12/20	2012/12/19
ETSTW-RS 003	RF Power Amplifier	30S1G3	306933	AR	Function Test	
ETSTW-RS 004	RF Power Amplifier	150W1000	307009	AR	Function Test	
ETSTW-RS 006	SIGNAL GENERATOR	SML03	101551	R&S	2012/2/29	2013/2/28
ETSTW-RS 007	14" COLOR VIDEO MONITOR	HS-CM145A	0512011548	None	Function Test	
ETSTW-RS 009	SIGNAL GENERATOR	8648C	3642U01656	HP	2012/2/20	2013/2/19
ETSTW-RS 010	Broadband Field Meter	NBM-520	C-0195	Narda	2012/9/7	2013/9/6
ETSTW-GSM 002	Universal Radio Communication Tester	CMU 200	109439	R&S	2011/10/4	2012/10/3
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849-822/851-40 /12+9SS	3	WI	2012/1/13	2013/1/12
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748-1743/1752-32/5SS	1	WI	2012/1/13	2013/1/12
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880.5-1875.5/1884.5-32/5SS	3	WI	2012/1/13	2013/1/12
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1-904.25-50/8SS	1	WI	2012/1/13	2013/1/12
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2012/9/18	2013/9/17
ETSTW-Cable 002	Microwave Cable	SUCOFLEX 104 (S Cable 7)	238093	HUBER+SUHNER	2012/5/17	2013/5/16
ETSTW-Cable 003	Microwave Cable	SUCOFLEX 104 (S Cable 11)	209953	HUBER+SUHNER	2012/5/17	2013/5/16
ETSTW-Cable 010	BNC Cable	5 M BNC Cable	None	JYE BAO CO.,LTD.	2012/3/5	2013/3/4
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.	2012/3/5	2013/3/4
ETSTW-Cable 013	Microwave Cable	SUCOFLEX 104 (S Cable 5)	232345	HUBER+SUHNER	Function Test	
ETSTW-Cable 016	BNC Cable	Switch Box	B Cable 1	Schwarz beck	2012/3/3	2013/3/2
ETSTW-Cable 017	BNC Cable	X Cable	B Cable 2	Schwarz beck	2012/3/3	2013/3/2
ETSTW-Cable 018	BNC Cable	Y Cable	B Cable 3	Schwarz beck	2012/3/3	2013/3/2
ETSTW-Cable 019	BNC Cable	Z Cable	B Cable 4	Schwarz beck	2012/3/3	2013/3/2
ETSTW-Cable 022	N TYPE Cable	5006	0002	JYE BAO CO.,LTD.	2012/4/6	2013/4/5
ETSTW-Cable 026	Microwave Cable	SUCOFLEX 104	279075	HUBER+SUHNER	2012/3/5	2013/3/4
ETSTW-Cable 027	Microwave Cable	SUCOFLEX 104	279083	HUBER+SUHNER	2012/3/5	2013/3/4
ETSTW-Cable 028	Microwave Cable	FA147A0015M2020	30064-2	UTIFLEX	2011/10/13	2012/10/12
ETSTW-Cable 029	Microwave Cable	FA147A0015M2020	30064-3	UTIFLEX	2011/10/13	2012/10/12
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 (S Cable 9)	279067	HUBER+SUHNER	2012/3/5	2013/3/4
ETSTW-Cable 031	Microwave Cable	SUCOFLEX 104 (S Cable 10)	238092	HUBER+SUHNER	2011/11/29	2012/11/28



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ETSTW-Cable 032	Microwave Cable	SUCOFLEX 104 (S_Cable 12)	237301	HUBER+SUHNER	Function Test	
ETSTW-Cable 039	Microwave Cable	SUCOFLEX 104 (S_Cable 19)	316739	HUBER+SUHNER	2012/5/17	2013/5/16
ETSTW-Cable 040	Microwave Cable	SUCOFLEX 104 (S_Cable 20)	316738	HUBER+SUHNER	Function Test	
ETSTW-Cable 043	Microwave Cable	SUCOFLEX 104	317576	HUBER+SUHNER	2011/11/29	2012/11/28
ETSTW-Cable 047	Microwave Cable	SUCOFLEX 104	325518	HUBER+SUHNER	2011/11/29	2012/11/28
ETSTW-Cable 051	BNC Cable	BNC Cable 6	None	JYE BAO CO.,LTD.	2012/3/30	2013/3/29
ETSTW-Cable 052	BNC Cable	Clamp Cable	None	Schwarz beck	2012/3/30	2013/3/29
ETSTW-Cable 053	N TYPE To SMA Cable	RG142	None	JYE BAO CO.,LTD.	2012/4/6	2013/4/5
ETSTW-Cable 054	BNC To SMA Cable	RG142	None	JYE BAO CO.,LTD.	2012/4/6	2013/4/5
ETSTW-Cable 055	N TYPE Cable	N30N30-JBY240-80CM	20110621-1.1	JYE BAO CO.,LTD.	Function Test	
ETSTW-Cable 056	N TYPE Cable	N30N30-JBY240-80CM	20110621-1.0	JYE BAO CO.,LTD.	Function Test	
ETSTW-Cable 057	N TYPE Cable	N30N30-JBY240-80CM	20110621-1.1	JYE BAO CO.,LTD.	Function Test	
WTSTW-SW 001	EMI TEST SOFTWARE	Harmonics-1000	None	EMC PARTNER	HARCS Version 4.16 Firmware Version 2.18	
WTSTW-SW 002	EMI TEST SOFTWARE	EZ_EMG	None	Farad	Version ETS-03A1	
WTSTW-SW 003	EMS TEST SOFTWARE	i2	None	AUDIX	Version 3.2007-8-17b	



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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 $\mu$ 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 C63.4-2009 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. 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:

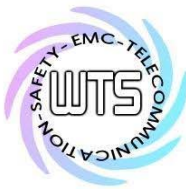
Freq (MHz)      METER READING + ACF + CABLE LOSS (to the receiver) = FS  
33                20 dB $\mu$ V + 10.36 dB + 6 dB = 36.36 dB $\mu$ V/m @3m

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

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 C63.4-2009 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.

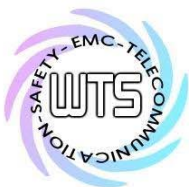


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**3 Test results (enclosure)**

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

The follows is intended to leave blank.



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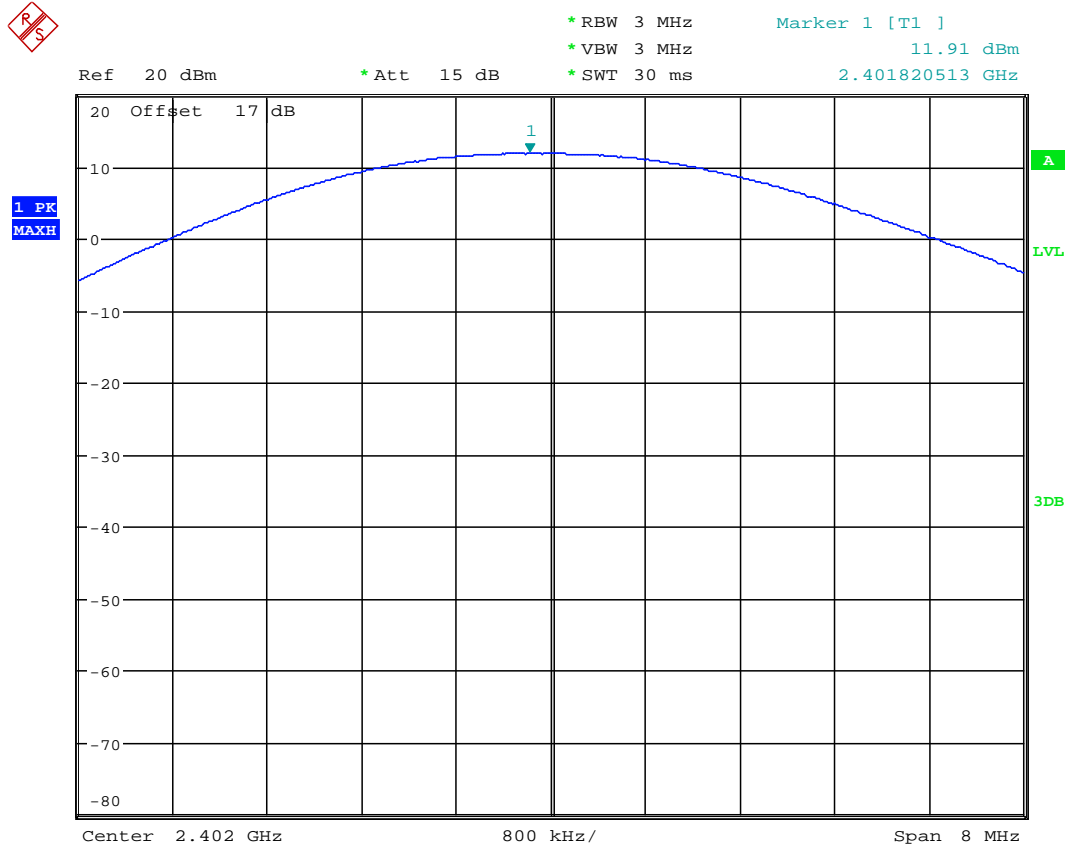
## 3.1 Peak Output Power (transmitter)

FCC Rule: 15.247

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

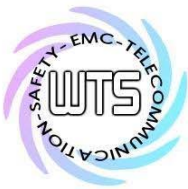
The power was measured with modulation (declared by the applicant).

Normal mode



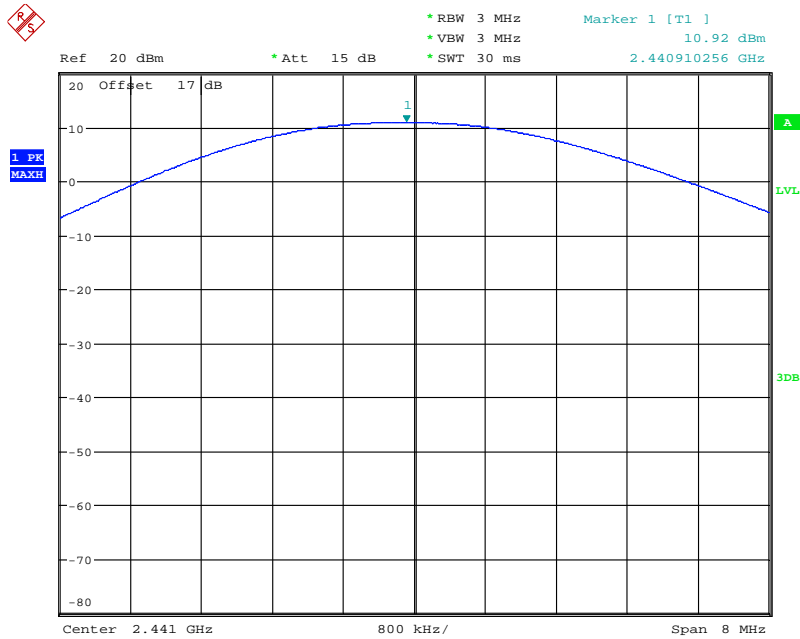
MAX OUTPUT POWER CH0

Date: 1.OCT.2012 06:02:15

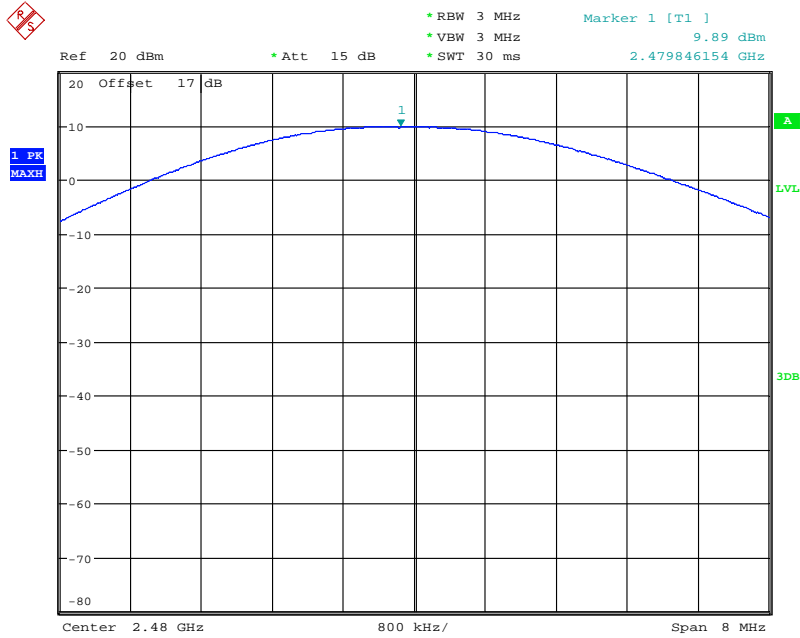


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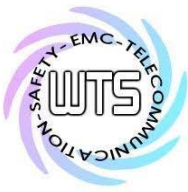


MAX OUTPUT POWER CH39  
Date: 1.OCT.2012 06:02:55



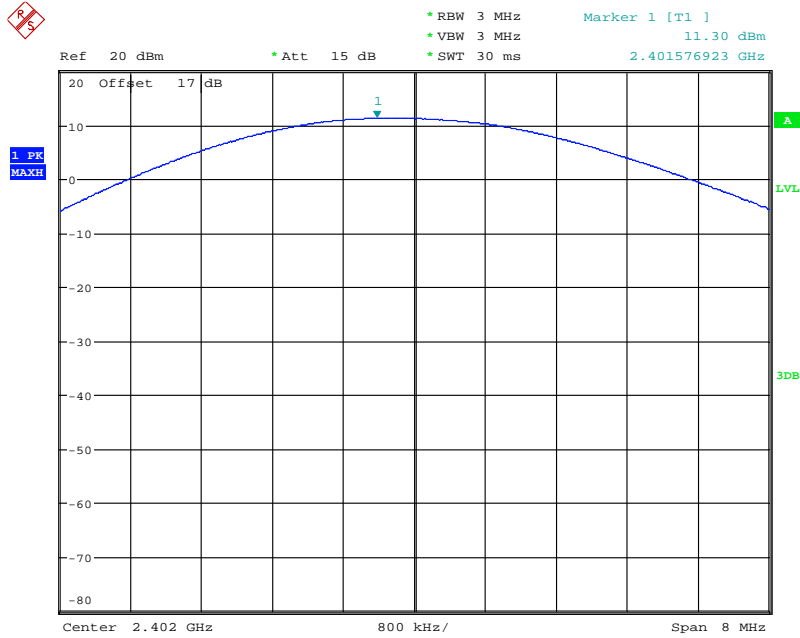
MAX OUTPUT POWER CH78  
Date: 1.OCT.2012 06:03:27



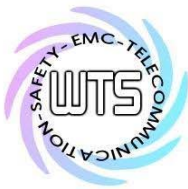


Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N

EDR mode

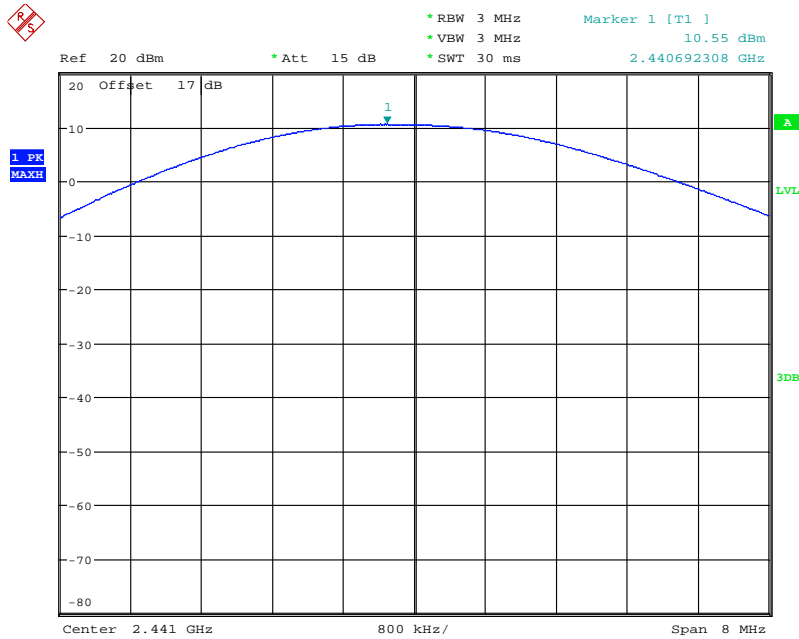


MAX OUTPUT POWER CH0 EDR MODE  
Date: 1.OCT.2012 08:08:34

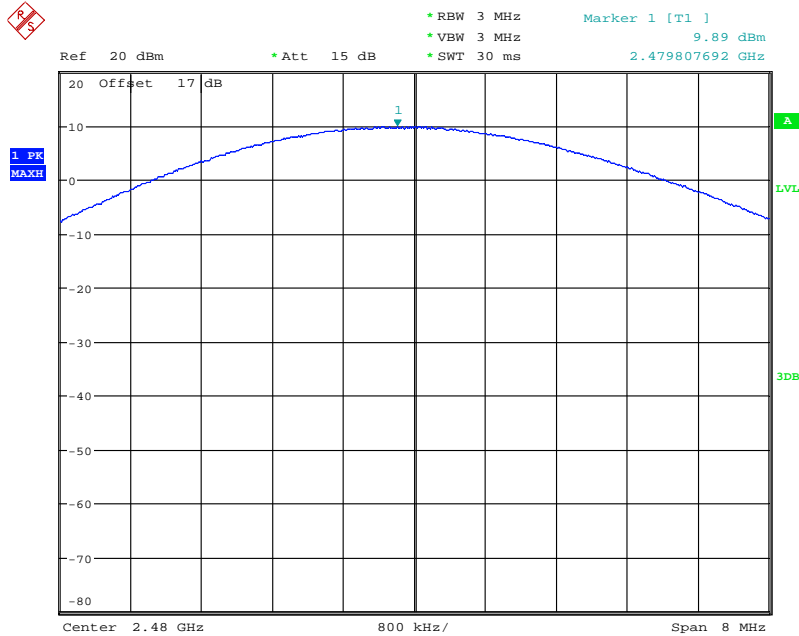


# Worldwide Testing Services(Taiwan) Co., Ltd.

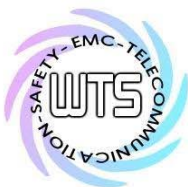
Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N



MAX OUTPUT POWER CH39 EDR MODE  
 Date: 1.OCT.2012 08:09:10



MAX OUTPUT POWER CH78 EDR MODE  
 Date: 1.OCT.2012 06:12:23



Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N

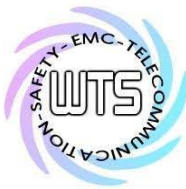
## Maximum Peak Output Power

Limits:

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

In case of employing transmitter antennas having antenna gain  $> 6\text{dBi}$  and using fixed point-to point operation consider §15.247 (b)(4)(i).

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.

The antenna used for this Bluetooth transceiver module must not be co-located or operating in conjunction with any other antenna or transmitter.

### **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.

Limits:

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

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

Explanation: See attached diagrams in appendix.



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

For frequencies above 1GHz (Average measurements).

Limit – duty cycle correction

No duty cycle correction was added to the reading.

54.0dB $\mu$ V/m

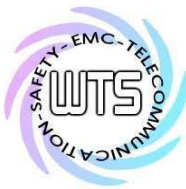
For frequencies above 1GHz (Peak measurements).

Limit + 20dB

54.0dB $\mu$ 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

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))

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

Calculation of test results:

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

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

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

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

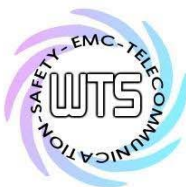
### Summary table with radiated data of the test plots

#### Monopole Antenna ( RAH Series )

Model: RN-41-N Date: 2012/9/27  
 Mode: TX mode ( CH0 ) Temperature: 24 °C Engineer: Leon  
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
166.0721	25.98	peak	14.79	40.77	43.50	-2.73	300	100
191.3427	27.64	peak	12.75	40.39	43.50	-3.11	165	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1601.2020	60.27	---	-8.99	51.28	---	74.00	54.00	-22.72	155	100
4801.6030	57.29	53.83	-1.38	55.91	52.45	74.00	54.00	-1.55	250	100
7206.0000	41.54	---	4.16	45.70	---	74.00	54.00	-28.30	140	100
9608.0000	35.24	---	6.44	41.68	---	74.00	54.00	-32.32	330	100
12010.0000	33.80	---	11.23	45.03	---	74.00	54.00	-28.97	120	100



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Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
98.0361	26.06	peak	10.43	36.49	43.50	-7.01	275	100
191.3427	24.59	peak	12.75	37.34	43.50	-6.16	115	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1595.1900	61.44	58.26	-9.04	52.40	49.22	74.00	54.00	-4.78	235	100
4801.6030	59.90	53.86	-1.38	58.52	52.48	74.00	54.00	-1.52	310	100
7206.0000	44.10	---	4.16	48.26	---	74.00	54.00	-25.74	105	100
9608.0000	34.22	---	6.44	40.66	---	74.00	54.00	-33.34	140	100
12010.0000	32.89	---	11.23	44.12	---	74.00	54.00	-29.88	205	100

Mode: TX mode ( CH39 )

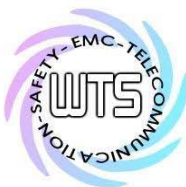
Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
166.0721	26.44	peak	14.79	41.23	43.50	-2.27	115	100
206.8937	29.03	peak	12.20	41.23	43.50	-2.27	245	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1625.2510	60.79	---	-8.79	52.00	---	74.00	54.00	-22.00	275	100
4881.7640	54.88	53.51	-1.13	53.75	52.38	74.00	54.00	-1.62	260	100
7323.0000	39.51	---	4.38	43.89	---	74.00	54.00	-30.11	135	100
9764.0000	33.81	---	6.83	40.64	---	74.00	54.00	-33.36	240	100
12205.0000	32.03	---	12.44	44.47	---	74.00	54.00	-29.53	130	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
166.0721	21.27	peak	14.79	36.06	43.50	-7.44	75	100
191.3427	22.61	peak	12.75	35.36	43.50	-8.14	215	100



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Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1625.2510	60.75	---	-8.79	51.96	---	74.00	54.00	-22.04	100	100
4881.7640	57.31	53.59	-1.13	56.18	52.46	74.00	54.00	-1.54	130	100
7323.0000	43.54	---	4.38	47.92	---	74.00	54.00	-26.08	215	100
9764.0000	33.42	---	6.83	40.25	---	74.00	54.00	-33.75	90	100
12205.0000	32.17	---	12.44	44.61	---	74.00	54.00	-29.39	330	100

Mode: TX mode ( CH78 )  
 Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
191.3427	26.61	peak	12.75	39.36	43.50	-4.14	285	100
828.9380	18.54	peak	25.69	44.23	46.00	-1.77	140	100

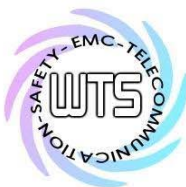
Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1655.3110	61.90	60.86	-8.53	53.37	52.33	74.00	54.00	-1.67	155	100
4960.0000	52.74	---	-0.84	51.90	---	74.00	54.00	-22.10	160	100
7440.0000	40.99	---	4.56	45.55	---	74.00	54.00	-28.45	220	100
9920.0000	33.11	---	7.22	40.33	---	74.00	54.00	-33.67	55	100
12400.0000	32.53	---	12.88	45.41	---	74.00	54.00	-28.59	130	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
191.3427	23.27	peak	12.75	36.02	43.50	-7.48	320	100
828.9380	16.34	peak	25.69	42.03	46.00	-3.97	170	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1649.2990	63.28	60.86	-8.58	54.70	52.28	74.00	54.00	-1.72	95	100
3308.6170	48.18	---	-3.68	44.50	---	74.00	54.00	-29.50	150	100
4960.0000	52.62	---	-0.84	51.78	---	74.00	54.00	-22.22	340	100
7440.0000	41.01	---	4.56	45.57	---	74.00	54.00	-28.43	140	100
9920.0000	33.88	---	7.22	41.10	---	74.00	54.00	-32.90	170	100
12400.0000	32.03	---	12.88	44.91	---	74.00	54.00	-29.09	150	100





# Worldwide Testing Services(Taiwan) Co., Ltd.

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 FCC ID: OA3-RN41N

## (2) Monopole Antenna ( RN-SMA-S )

Mode: TX mode ( CH0 )  
 Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
166.0721	24.02	peak	14.79	38.81	43.50	-4.69	115	100
191.3427	27.70	peak	12.75	40.45	43.50	-3.05	90	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
3206.4130	54.35	---	-3.69	50.66	---	74.00	54.00	-23.34	140	100
4801.6030	54.73	53.66	-1.38	53.35	52.28	74.00	54.00	-1.72	125	100
7206.0000	41.80	---	4.16	45.96	---	74.00	54.00	-28.04	240	100
9608.0000	34.44	---	6.44	40.88	---	74.00	54.00	-33.12	250	100
12010.0000	33.05	---	11.23	44.28	---	74.00	54.00	-29.72	140	100

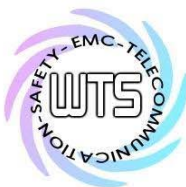
Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
171.9037	20.09	peak	14.43	34.52	43.50	-8.98	225	100
191.3427	22.92	peak	12.75	35.67	43.50	-7.83	175	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
3206.4130	57.99	56.16	-3.69	54.30	52.47	74.00	54.00	-1.53	60	100
4801.6030	58.44	53.85	-1.38	57.06	52.47	74.00	54.00	-1.53	90	100
7206.0000	42.24	---	4.16	46.40	---	74.00	54.00	-27.60	130	100
9608.0000	34.61	---	6.44	41.05	---	74.00	54.00	-32.95	260	100
12010.0000	32.18	---	11.23	43.41	---	74.00	54.00	-30.59	170	100

Mode: TX mode ( CH39 )  
 Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
166.0721	24.43	peak	14.79	39.22	43.50	-4.28	285	100
191.3427	27.06	peak	12.75	39.81	43.50	-3.69	310	100



# Worldwide Testing Services(Taiwan) Co., Ltd.

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Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
3260.5210	52.40	---	-3.68	48.72	---	74.00	54.00	-25.28	160	100
4881.7640	54.00	53.37	-1.13	52.87	52.24	74.00	54.00	-1.76	205	100
7323.0000	41.07	---	4.38	45.45	---	74.00	54.00	-28.55	130	100
9764.0000	34.92	---	6.83	41.75	---	74.00	54.00	-32.25	140	100
12205.0000	32.49	---	12.44	44.93	---	74.00	54.00	-29.07	130	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
169.9600	18.91	peak	14.63	33.54	43.50	-9.96	245	100
191.3427	22.58	peak	12.75	35.33	43.50	-8.17	110	100

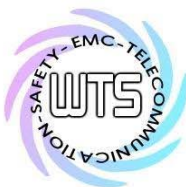
Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
3254.5090	55.77	---	-3.68	52.09	---	74.00	54.00	-21.91	170	100
4881.7640	56.87	53.38	-1.13	55.74	52.25	74.00	54.00	-1.75	190	100
7323.0000	43.38	---	4.38	47.76	---	74.00	54.00	-26.24	140	100
9764.0000	34.39	---	6.83	41.22	---	74.00	54.00	-32.78	340	100
12205.0000	32.57	---	12.44	45.01	---	74.00	54.00	-28.99	60	100

Mode: TX mode ( CH78 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
191.3427	26.85	peak	12.75	39.60	43.50	-3.90	105	100
828.9380	18.44	peak	25.69	44.13	46.00	-1.87	240	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1655.3110	57.18	---	-8.53	48.65	---	74.00	54.00	-25.35	110	100
4960.0000	49.22	---	-0.84	48.38	---	74.00	54.00	-25.62	170	100
7440.0000	40.69	---	4.56	45.25	---	74.00	54.00	-28.75	260	100
9920.0000	33.78	---	7.22	41.00	---	74.00	54.00	-33.00	220	100
12400.0000	31.25	---	12.88	44.13	---	74.00	54.00	-29.87	130	100



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Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
169.9600	23.65	peak	14.63	38.28	43.50	-5.22	80	100
828.9380	12.41	peak	25.69	38.10	46.00	-7.90	225	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1655.3110	58.60	---	-8.53	50.07	---	74.00	54.00	-23.93	240	100
4960.0000	51.97	---	-0.84	51.13	---	74.00	54.00	-22.87	270	100
7440.0000	40.70	---	4.56	45.26	---	74.00	54.00	-28.74	160	100
9920.0000	33.14	---	7.22	40.36	---	74.00	54.00	-33.64	115	100
12400.0000	31.25	---	12.88	44.13	---	74.00	54.00	-29.87	80	100

### (3) Monopole Antenna ( MMSO2300 )

Mode: TX mode ( CH0 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
255.4910	29.42	peak	14.11	43.53	46.00	-2.47	180	100
803.6672	17.85	peak	25.42	43.27	46.00	-2.73	255	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1601.2020	60.22	---	-8.99	51.23	---	74.00	54.00	-22.77	165	100
4801.6030	55.35	53.76	-1.38	53.97	52.38	74.00	54.00	-1.62	150	100
7206.0000	40.17	---	4.16	44.33	---	74.00	54.00	-29.67	300	100
9608.0000	33.75	---	6.44	40.19	---	74.00	54.00	-33.81	140	100
12010.0000	33.11	---	11.23	44.34	---	74.00	54.00	-29.66	220	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
82.4850	28.03	peak	9.17	37.20	40.00	-2.80	275	100
127.1944	22.85	peak	13.62	36.47	43.50	-7.03	135	100



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Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1601.2020	60.29	---	-8.99	51.30	---	74.00	54.00	-22.70	120	100
3206.4130	63.11	56.16	-3.69	59.42	52.47	74.00	54.00	-1.53	310	100
4801.6030	58.08	53.59	-1.38	56.70	52.21	74.00	54.00	-1.79	145	100
7206.0000	43.87	---	4.16	48.03	---	74.00	54.00	-25.97	260	100
9608.0000	33.60	---	6.44	40.04	---	74.00	54.00	-33.96	170	100
12010.0000	33.11	---	11.23	44.34	---	74.00	54.00	-29.66	230	100

Mode: TX mode ( CH39 )  
 Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
191.3427	25.02	peak	12.75	37.77	43.50	-5.73	125	100
815.3306	19.07	peak	25.54	44.61	46.00	-1.39	75	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4881.7640	52.20	51.67	-1.13	51.07	50.54	74.00	54.00	-3.46	120	100
7323.0000	41.12	---	4.38	45.50	---	74.00	54.00	-28.50	230	100
9764.0000	34.83	---	6.83	41.66	---	74.00	54.00	-32.34	270	100
12205.0000	32.91	---	12.44	45.35	---	74.00	54.00	-28.65	110	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
169.9600	22.09	peak	14.63	36.72	43.50	-6.78	215	100
815.3307	18.68	peak	25.54	44.22	46.00	-1.78	330	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
3254.5090	59.18	56.10	-3.68	55.50	52.42	74.00	54.00	-1.58	165	100
4881.7640	56.27	53.58	-1.13	55.14	52.45	74.00	54.00	-1.55	300	100
7323.0000	44.07	---	4.38	48.45	---	74.00	54.00	-25.55	130	100
9764.0000	35.37	---	6.83	42.20	---	74.00	54.00	-31.80	245	100
12205.0000	32.22	---	12.44	44.66	---	74.00	54.00	-29.34	210	100



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Mode: TX mode ( CH78 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
169.9600	25.09	peak	14.63	39.72	43.50	-3.78	215	100
828.9380	17.94	peak	25.69	43.63	46.00	-2.37	255	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
3308.6170	55.88	---	-3.68	52.20	---	74.00	54.00	-21.80	140	100
4961.9240	52.02	---	-0.83	51.19	---	74.00	54.00	-22.81	240	100
7440.0000	40.95	---	4.56	45.51	---	74.00	54.00	-28.49	175	100
9920.0000	33.62	---	7.22	40.84	---	74.00	54.00	-33.16	215	100
12400.0000	31.87	---	12.88	44.75	---	74.00	54.00	-29.25	300	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
169.9600	21.06	peak	14.63	35.69	43.50	-7.81	245	100
828.9380	17.75	peak	25.69	43.44	46.00	-2.56	190	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
3308.6170	63.94	56.15	-3.68	60.26	52.47	74.00	54.00	-1.53	230	100
4961.9240	56.61	53.16	-0.83	55.78	52.33	74.00	54.00	-1.67	270	100
7440.0000	41.54	---	4.56	46.10	---	74.00	54.00	-27.90	165	100
9920.0000	33.72	---	7.22	40.94	---	74.00	54.00	-33.06	130	100
12400.0000	31.46	---	12.88	44.34	---	74.00	54.00	-29.66	260	100

#### (4) Dipole antenna ( RCT )

Mode: TX mode ( CH0 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
191.3427	24.48	peak	12.75	37.23	43.50	-6.27	140	100
803.6673	18.86	peak	25.42	44.28	46.00	-1.72	230	100



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Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1601.2020	57.06	---	-8.99	48.07	---	74.00	54.00	-25.93	245	100
4801.6030	54.22	53.62	-1.38	52.84	52.24	74.00	54.00	-1.76	245	100
7206.0000	40.89	---	4.16	45.05	---	74.00	54.00	-28.95	110	100
9608.0000	34.11	---	6.44	40.55	---	74.00	54.00	-33.45	110	100
12010.0000	33.15	---	11.23	44.38	---	74.00	54.00	-29.62	130	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
96.0922	28.71	peak	10.03	38.74	43.50	-4.76	70	100
803.6673	18.55	peak	25.42	43.97	46.00	-2.03	230	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
3206.4130	57.61	55.96	-3.69	53.92	52.27	74.00	54.00	-1.73	210	100
4801.6030	59.66	53.77	-1.38	58.28	52.39	74.00	54.00	-1.61	210	100
7206.0000	43.71	---	4.16	47.87	---	74.00	54.00	-26.13	260	100
9608.0000	34.67	---	6.44	41.11	---	74.00	54.00	-32.89	220	100
12010.0000	32.61	---	11.23	43.84	---	74.00	54.00	-30.16	165	100

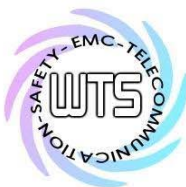
Mode: TX mode ( CH39 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
191.3427	25.90	peak	12.75	38.65	43.50	-4.85	40	100
815.3307	19.06	QP	25.54	44.60	46.00	-1.40	310	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1625.2510	55.59	---	-8.79	46.80	---	74.00	54.00	-27.20	230	100
4881.7640	54.83	53.16	-1.13	53.70	52.03	74.00	54.00	-1.97	155	100
7323.0000	41.10	---	4.38	45.48	---	74.00	54.00	-28.52	70	100
9764.0000	33.92	---	6.83	40.75	---	74.00	54.00	-33.25	170	100
12205.0000	32.96	---	12.44	45.40	---	74.00	54.00	-28.60	140	100





# Worldwide Testing Services(Taiwan) Co., Ltd.

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 FCC ID: OA3-RN41N

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
98.0361	28.73	peak	10.43	39.16	43.50	-4.34	310	100
815.3307	18.69	peak	25.54	44.23	46.00	-1.77	260	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
3254.5090	58.58	56.11	-3.68	54.90	52.43	74.00	54.00	-1.57	230	100
4881.7640	57.10	53.39	-1.13	55.97	52.26	74.00	54.00	-1.74	210	100
7323.0000	44.73	---	4.38	49.11	---	74.00	54.00	-24.89	130	100
9764.0000	34.00	---	6.83	40.83	---	74.00	54.00	-33.17	90	100
12205.0000	31.78	---	12.44	44.22	---	74.00	54.00	-29.78	340	100

Mode: TX mode ( CH78 )

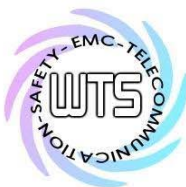
Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
191.3427	25.58	peak	12.75	38.33	43.50	-5.17	110	100
828.9380	19.13	QP	25.69	44.82	46.00	-1.18	230	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1649.2990	60.53	59.61	-8.58	51.95	51.03	74.00	54.00	-2.97	105	100
4953.9080	51.83	---	-0.86	50.97	---	74.00	54.00	-23.03	200	100
7440.0000	41.00	---	4.56	45.56	---	74.00	54.00	-28.44	170	100
9920.0000	33.12	---	7.22	40.34	---	74.00	54.00	-33.66	125	100
12400.0000	32.26	---	12.88	45.14	---	74.00	54.00	-28.86	250	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
96.0922	30.78	peak	10.03	40.81	43.50	-2.69	20	100
828.9380	19.17	QP	25.69	44.86	46.00	-1.14	150	100



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Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1649.2990	61.85	60.78	-8.58	53.27	52.20	74.00	54.00	-1.80	145	100
3308.6170	58.62	56.11	-3.68	54.94	52.43	74.00	54.00	-1.57	250	100
4960.0000	52.69	---	-0.84	51.85	---	74.00	54.00	-22.15	230	100
7440.0000	40.89	---	4.56	45.45	---	74.00	54.00	-28.55	165	100
9920.0000	33.91	---	7.22	41.13	---	74.00	54.00	-32.87	280	100
12400.0000	32.11	---	12.88	44.99	---	74.00	54.00	-29.01	310	100

### (5) Dipole antenna ( RN-SMA-7-RP )

Mode: TX mode ( CH0 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
166.0721	24.56	peak	14.79	39.35	43.50	-4.15	120	100
803.6673	13.43	peak	25.42	38.85	46.00	-7.15	40	100

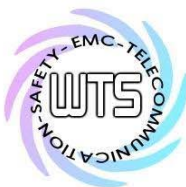
Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1595.1900	61.29	60.15	-9.04	52.25	51.11	74.00	54.00	-2.89	140	100
4801.6030	53.51	52.39	-1.38	52.13	51.01	74.00	54.00	-2.99	215	100
7206.0000	40.33	---	4.16	44.49	---	74.00	54.00	-29.51	140	100
9608.0000	34.88	---	6.44	41.32	---	74.00	54.00	-32.68	115	100
12010.0000	33.26	---	11.23	44.49	---	74.00	54.00	-29.51	210	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
96.0922	29.73	peak	10.03	39.76	43.50	-3.74	70	100
803.6673	18.14	peak	25.42	43.56	46.00	-2.44	160	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1601.2020	62.01	60.55	-8.99	53.02	51.56	74.00	54.00	-2.44	120	100
3206.4130	59.09	56.10	-3.69	55.40	52.41	74.00	54.00	-1.59	230	100
4801.6030	58.69	53.67	-1.38	57.31	52.29	74.00	54.00	-1.71	210	100
7206.0000	43.19	---	4.16	47.35	---	74.00	54.00	-26.65	245	100
9608.0000	34.15	---	6.44	40.59	---	74.00	54.00	-33.41	95	100
12010.0000	32.00	---	11.23	43.23	---	74.00	54.00	-30.77	265	100





# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

Mode: TX mode ( CH39 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
166.0721	24.43	peak	14.79	39.22	43.50	-4.28	280	100
815.3307	14.53	peak	25.54	40.07	46.00	-5.93	40	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1625.2510	64.73	61.12	-8.79	55.94	52.33	74.00	54.00	-1.67	120	100
4881.7640	53.85	52.57	-1.13	52.72	51.44	74.00	54.00	-2.56	205	100
7323.0000	41.32	---	4.38	45.70	---	74.00	54.00	-28.30	140	100
9764.0000	32.74	---	6.83	39.57	---	74.00	54.00	-34.43	70	100
12205.0000	32.01	---	12.44	44.45	---	74.00	54.00	-29.55	120	100

Polarization: Vertical

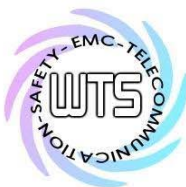
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
96.0922	30.83	peak	10.03	40.86	43.50	-2.64	310	100
815.3307	18.06	peak	25.54	43.60	46.00	-2.40	60	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1625.2510	63.97	60.86	-8.79	55.18	52.07	74.00	54.00	-1.93	115	100
3260.5210	60.08	55.87	-3.68	56.40	52.19	74.00	54.00	-1.81	240	100
4881.7640	56.94	53.43	-1.13	55.81	52.30	74.00	54.00	-1.70	160	100
7323.0000	42.15	---	4.38	46.53	---	74.00	54.00	-27.47	275	100
9764.0000	34.79	---	6.83	41.62	---	74.00	54.00	-32.38	305	100
12205.0000	32.04	---	12.44	44.48	---	74.00	54.00	-29.52	140	100

Mode: TX mode ( CH78 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
166.0721	24.37	peak	14.79	39.16	43.50	-4.34	20	100
828.9380	14.27	peak	25.69	39.96	46.00	-6.04	140	100



# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1655.3110	66.43	61.00	-8.53	57.90	52.47	74.00	54.00	-1.53	190	100
4953.9080	53.63	52.69	-0.86	52.77	51.83	74.00	54.00	-2.17	210	100
7440.0000	40.81	---	4.56	45.37	---	74.00	54.00	-28.63	150	100
9920.0000	33.56	---	7.22	40.78	---	74.00	54.00	-33.22	145	100
12400.0000	32.26	---	12.88	45.14	---	74.00	54.00	-28.86	230	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
96.0922	28.89	peak	10.03	38.92	43.50	-4.58	130	100
828.9380	18.45	QP	25.69	44.14	46.00	-1.86	60	100

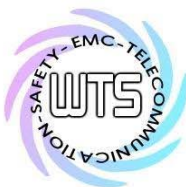
Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1649.2990	65.03	60.99	-8.58	56.45	52.41	74.00	54.00	-1.59	310	100
3308.6170	58.09	55.96	-3.68	54.41	52.28	74.00	54.00	-1.72	250	100
4960.0000	52.53	---	-0.84	51.69	---	74.00	54.00	-22.31	135	100
7440.0000	40.96	---	4.56	45.52	---	74.00	54.00	-28.48	220	100
9920.0000	33.85	---	7.22	41.07	---	74.00	54.00	-32.93	175	100
12400.0000	32.18	---	12.88	45.06	---	74.00	54.00	-28.94	120	100

## (6) Dipole antenna ( MHO Series)

Mode: TX mode ( CH0 )  
 Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
164.1283	20.63	peak	14.87	35.50	43.50	-8.00	30	100
802.0040	18.04	QP	25.40	43.44	46.00	-2.56	150	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1601.2020	53.74	---	-8.99	44.75	---	74.00	54.00	-29.25	145	100
4801.6030	55.05	53.76	-1.38	53.67	52.38	74.00	54.00	-1.62	210	100
7206.0000	40.70	---	4.16	44.86	---	74.00	54.00	-29.14	100	100
9608.0000	34.34	---	6.44	40.78	---	74.00	54.00	-33.22	145	100
12010.0000	32.84	---	11.23	44.07	---	74.00	54.00	-29.93	230	100



# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
169.9600	23.38	peak	14.63	38.01	43.50	-5.49	40	100
803.6673	17.38	peak	25.42	42.80	46.00	-3.20	130	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1601.2020	60.23	---	-8.99	51.24	---	74.00	54.00	-22.76	245	100
4801.6030	58.07	53.81	-1.38	56.69	52.43	74.00	54.00	-1.57	225	100
7206.0000	45.82	---	4.16	49.98	---	74.00	54.00	-24.02	130	100
9608.0000	33.92	---	6.44	40.36	---	74.00	54.00	-33.64	255	100
12010.0000	33.86	---	11.23	45.09	---	74.00	54.00	-28.91	140	100

Mode: TX mode ( CH39 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
166.0721	24.26	peak	14.79	39.05	43.50	-4.45	110	100
815.3307	18.04	QP	25.54	43.58	46.00	-2.42	150	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4881.7640	52.82	---	-1.13	51.69	---	74.00	54.00	-22.31	85	100
7323.0000	43.28	---	4.38	47.66	---	74.00	54.00	-26.34	275	100
9764.0000	34.63	---	6.83	41.46	---	74.00	54.00	-32.54	320	100
12205.0000	33.34	---	12.44	45.78	---	74.00	54.00	-28.22	245	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
171.9038	24.32	peak	14.43	38.75	43.50	-4.75	60	100
815.3307	16.07	peak	25.54	41.61	46.00	-4.39	40	100



# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1625.2510	62.66	61.24	-8.79	53.87	52.45	74.00	54.00	-1.55	115	100
4881.7640	53.76	---	-1.13	52.63	---	74.00	54.00	-21.37	135	100
7323.0000	42.78	---	4.38	47.16	---	74.00	54.00	-26.84	220	100
9764.0000	33.83	---	6.83	40.66	---	74.00	54.00	-33.34	155	100
12205.0000	32.60	---	12.44	45.04	---	74.00	54.00	-28.96	160	120

Mode: TX mode ( CH78 )  
 Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
166.0721	25.17	peak	14.79	39.96	43.50	-3.54	200	100
828.9380	18.64	QP	25.69	44.33	46.00	-1.67	150	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4961.9240	53.94	50.57	-0.83	53.11	49.74	74.00	54.00	-4.26	220	100
7440.0000	40.84	---	4.56	45.40	---	74.00	54.00	-28.60	195	100
9920.0000	33.50	---	7.22	40.72	---	74.00	54.00	-33.28	95	100
12400.0000	31.77	---	12.88	44.65	---	74.00	54.00	-29.35	105	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
166.0721	24.04	peak	14.79	38.83	43.50	-4.67	140	100
828.9380	17.94	peak	25.69	43.63	46.00	-2.37	170	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1654.0510	68.10	59.45	-8.54	59.56	50.91	74.00	54.00	-3.09	0	100
4953.9080	51.88	---	-0.86	51.02	---	74.00	54.00	-22.98	195	100
7440.0000	40.70	---	4.56	45.26	---	74.00	54.00	-28.74	330	100
9920.0000	33.86	---	7.22	41.08	---	74.00	54.00	-32.92	110	100
12400.0000	32.61	---	12.88	45.49	---	74.00	54.00	-28.51	245	100



Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

## (7) Yagi Antenna

Mode: TX mode ( CH0 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
166.0721	25.63	peak	14.79	40.42	43.50	-3.08	230	100
802.1442	19.13	QP	25.40	44.53	46.00	-1.47	40	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4803.9960	59.93	54.41	-1.38	58.55	53.03	74.00	54.00	-0.97	167	100
7206.0000	43.22	---	4.16	47.38	---	74.00	54.00	-26.62	355	100
9608.0000	34.65	---	6.44	41.09	---	74.00	54.00	-32.91	140	100
12010.0000	33.36	---	11.23	44.59	---	74.00	54.00	-29.41	255	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
96.0922	29.89	peak	10.03	39.92	43.50	-3.58	210	100
801.7234	17.72	peak	25.40	43.12	46.00	-2.88	250	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4803.9740	59.19	51.81	-1.38	57.81	50.43	74.00	54.00	-3.57	153	100
7206.0000	43.36	---	4.16	47.52	---	74.00	54.00	-26.48	95	100
9608.0000	33.99	---	6.44	40.43	---	74.00	54.00	-33.57	315	100
12010.0000	33.53	---	11.23	44.76	---	74.00	54.00	-29.24	245	100

Mode: TX mode ( CH39 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
166.0721	25.31	peak	14.79	40.10	43.50	-3.40	220	100
813.3868	19.03	QP	25.52	44.55	46.00	-1.45	50	100



# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4881.9760	55.28	47.68	-1.13	54.15	46.55	74.00	54.00	-7.45	0	100
7323.0000	41.07	---	4.38	45.45	---	74.00	54.00	-28.55	165	100
9764.0000	34.08	---	6.83	40.91	---	74.00	54.00	-33.09	345	100
12205.0000	31.97	---	12.44	44.41	---	74.00	54.00	-29.59	295	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
96.0922	29.39	peak	10.03	39.42	43.50	-4.08	210	100
815.3307	15.55	peak	25.54	41.09	46.00	-4.91	130	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4882.0430	59.53	50.49	-1.13	58.40	49.36	74.00	54.00	-4.64	75	100
7323.0000	42.30	---	4.38	46.68	---	74.00	54.00	-27.32	125	100
9764.0000	35.02	---	6.83	41.85	---	74.00	54.00	-32.15	140	100
12205.0000	32.34	---	12.44	44.78	---	74.00	54.00	-29.22	255	100

Mode: TX mode ( CH78 )

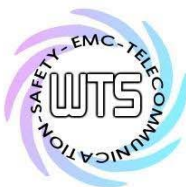
Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
164.1283	26.32	peak	14.87	41.19	43.50	-2.31	300	100
828.9380	18.13	QP	25.69	43.82	46.00	-2.18	280	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4953.9080	51.25	---	-0.86	50.39	---	74.00	54.00	-23.61	45	100
7440.0000	40.63	---	4.56	45.19	---	74.00	54.00	-28.81	160	100
9920.0000	33.09	---	7.22	40.31	---	74.00	54.00	-33.69	90	100
12400.0000	32.50	---	12.88	45.38	---	74.00	54.00	-28.62	215	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
66.9340	26.05	peak	11.83	37.88	40.00	-2.12	210	100
96.0922	28.33	peak	10.03	38.36	43.50	-5.14	40	100



# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4953.9080	52.84	---	-0.86	51.98	---	74.00	54.00	-22.02	225	100
7440.0000	40.55	---	4.56	45.11	---	74.00	54.00	-28.89	150	100
9920.0000	33.71	---	7.22	40.93	---	74.00	54.00	-33.07	75	100
12400.0000	31.86	---	12.88	44.74	---	74.00	54.00	-29.26	145	100

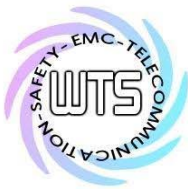
- Note**
- 1. Correction Factor = Antenna factor + Cable loss - Preamplifier**
  - 2. The formula of measured value as: Test Result = Reading + Correction Factor**
  - 3. Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average**
  - 4. All not in the table noted test results are more than 20 dB below the relevant limits.**
  - 5. Measurement uncertainty above 1GHz: 30-1000 MHz = ± 3.72 dB, 1-18 GHz = ± 5.56 dB, 18-40 GHz = ± 3.46 dB ; Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.**
  - 6. Up Line: PK Limit Line, Down Line: Ave Limit Line.**
  - 7. 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



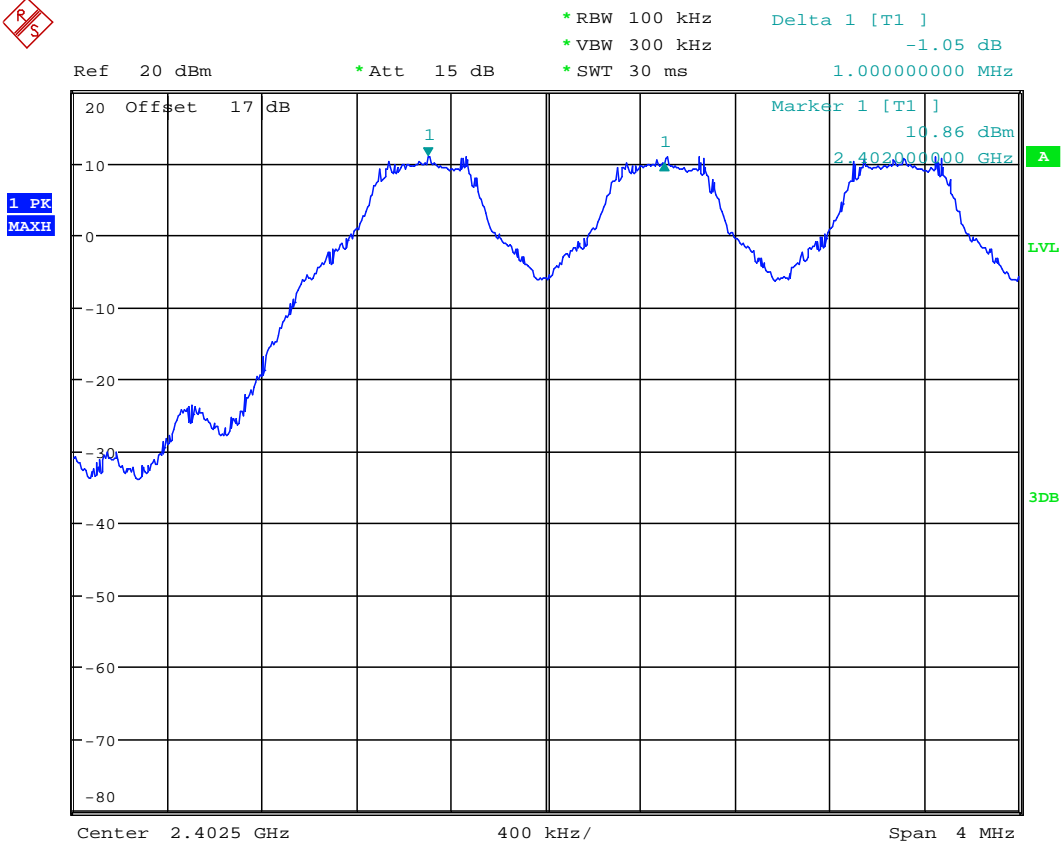


Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N

## 3.6 Carrier Frequency Separation

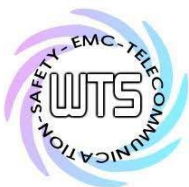
Carrier Frequency Separation was measured with modulation (declared by manufacturer).

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.



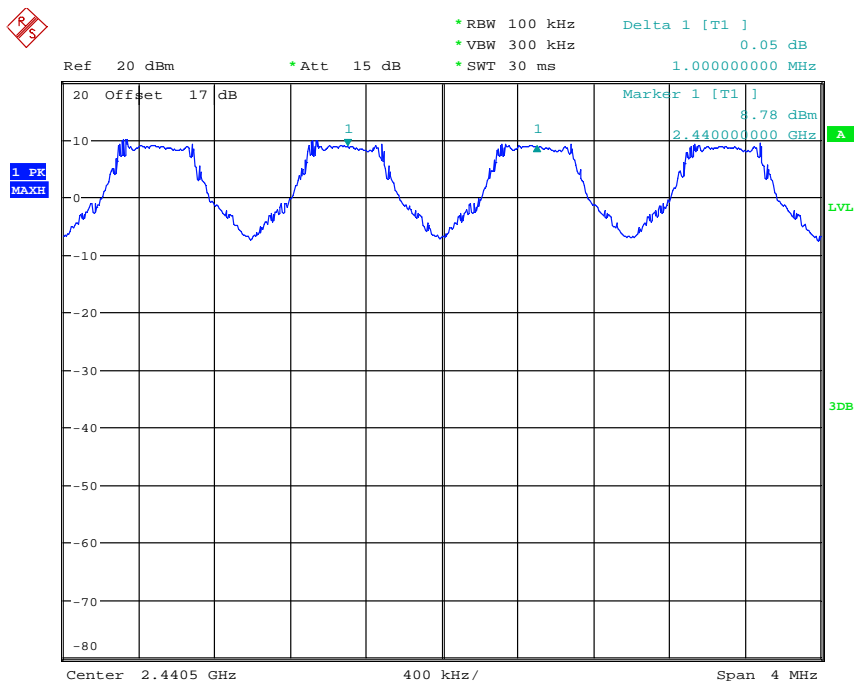
FREQUENCY SEPARATION CH0  
Date: 1.OCT.2012 06:07:15



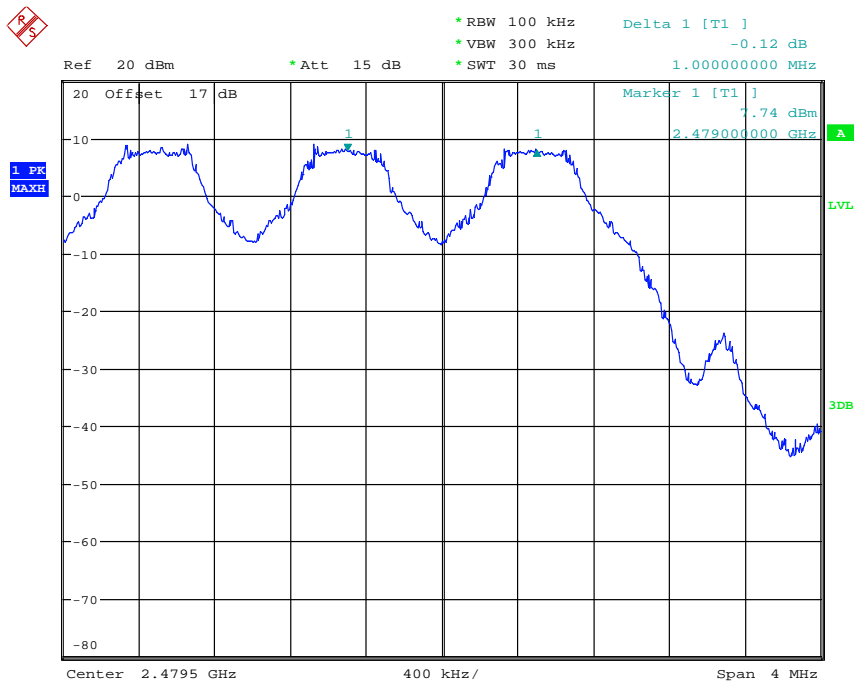


# Worldwide Testing Services(Taiwan) Co., Ltd.

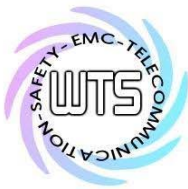
Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N



FREQUENCY SEPARATION CH39  
Date: 1.OCT.2012 06:07:59



FREQUENCY SEPARATION CH78  
Date: 1.OCT.2012 06:08:47



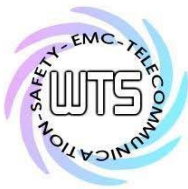
# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N

## Limits:

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

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

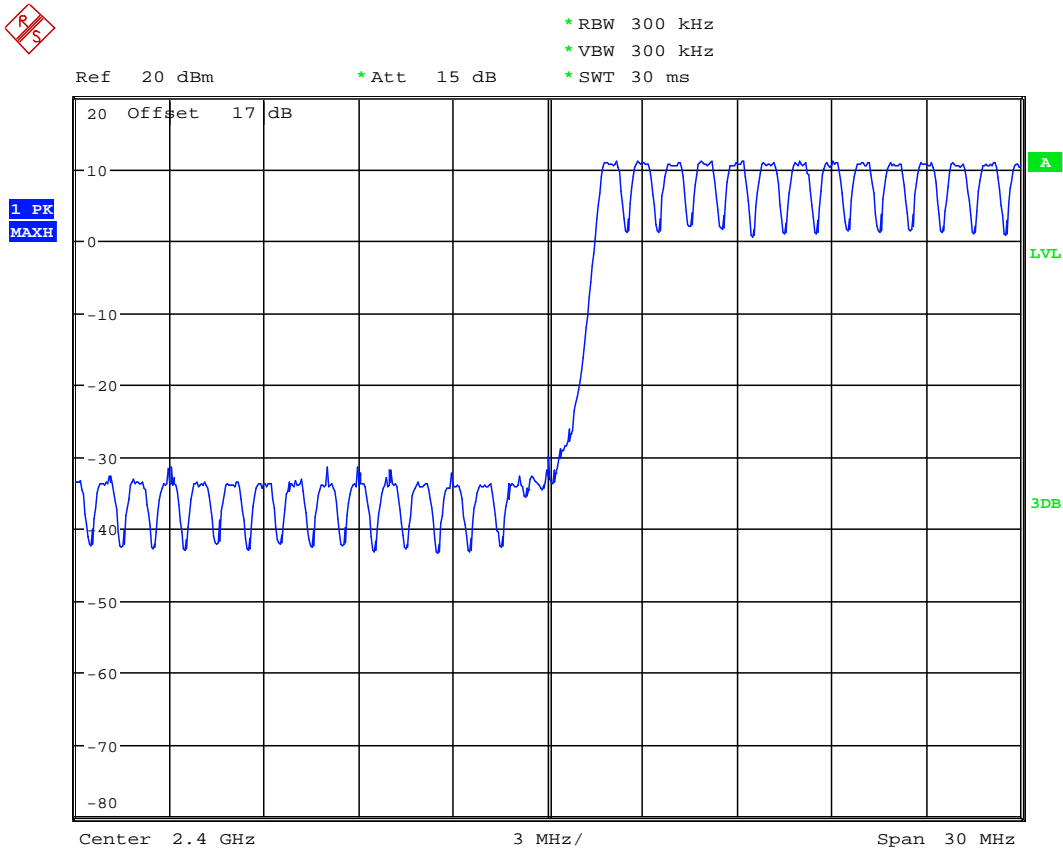


Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N

### 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.



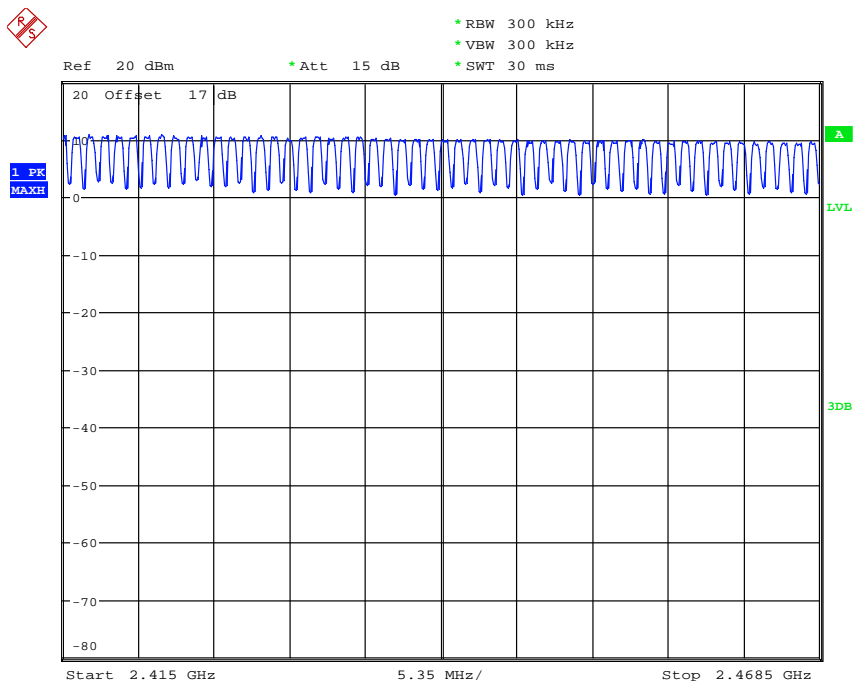
NUMBER OF HOPPING CH0-13

Date: 1.OCT.2012 06:04:31

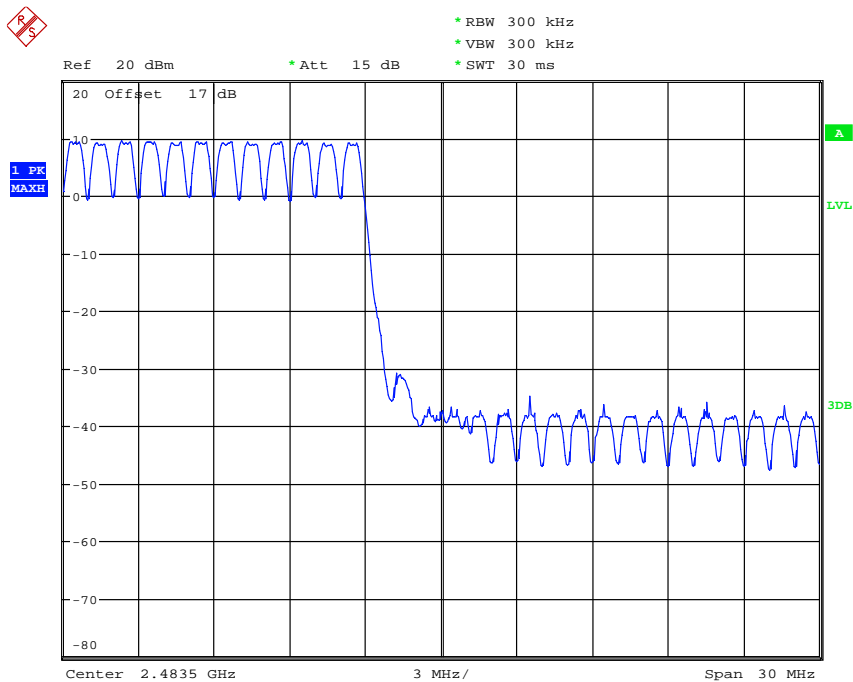


# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N



NUMBER OF HOPPING CH14-66  
Date: 1.OCT.2012 06:06:23



NUMBER OF HOPPING CH67-78  
Date: 1.OCT.2012 06:05:11



Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N

**Limits:**

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

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

**3.7.1 Pseudorandom Frequency Hopping Sequence**

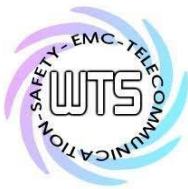
The generation of the hopping sequence is determined by the Bluetooth cord specification and complies with the FCC requirements.

**3.7.2 Coordination of hopping sequences to other transmitters**

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

**3.7.3 System Receiver Hopping Capability**

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



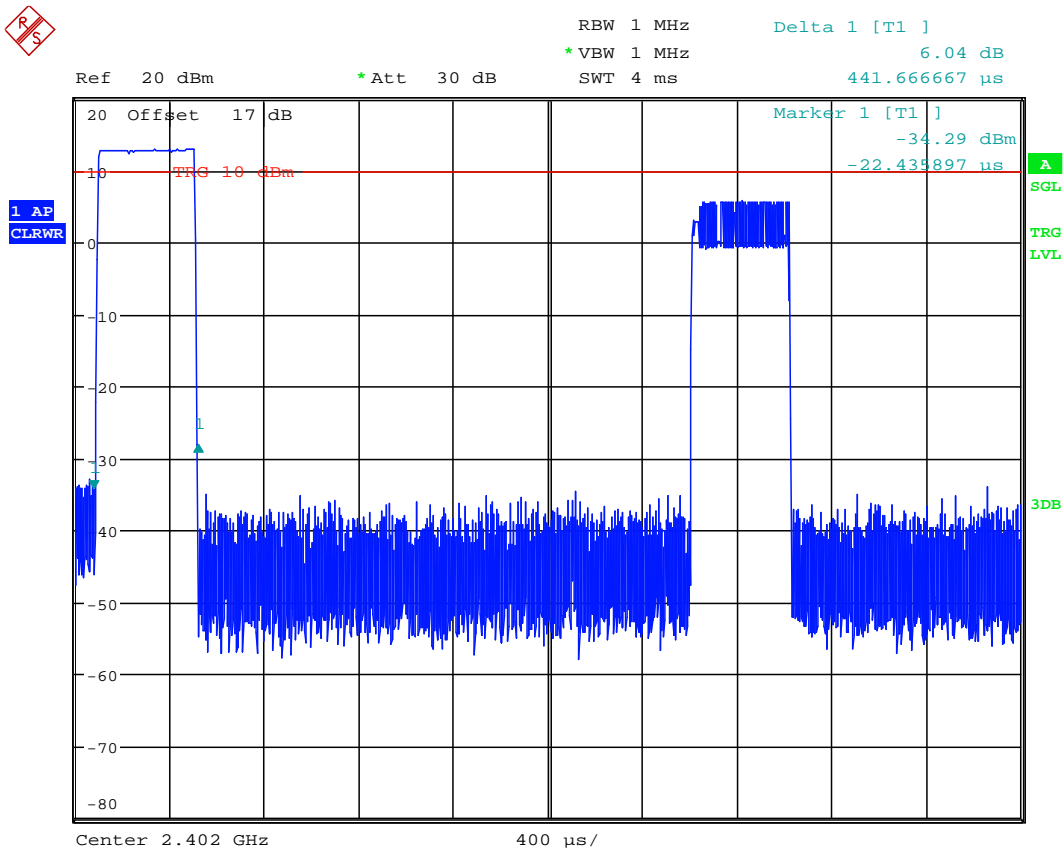
Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N

### 3.8 Time of Occupancy (Dwell Time)

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

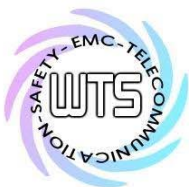
In 2400-2483.5 MHz band the average time of occupancy on any channel shall not be greater than 0.4 seconds multiplied by the number of hopping channels employed.

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



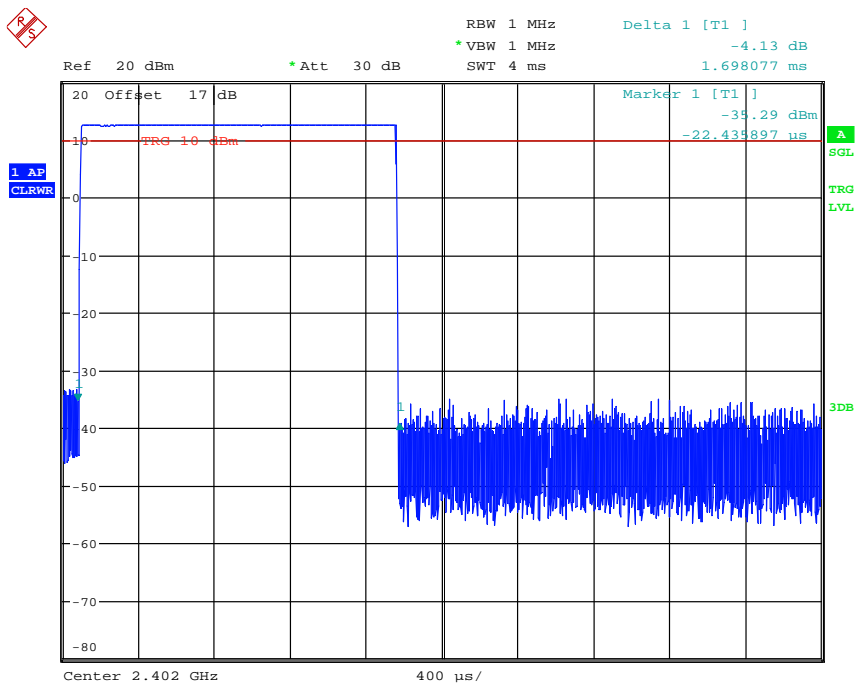
DWELL TIME CH0 DH1 (0.441ms \* 320events = 141.12ms)

Date: 1.OCT.2012 08:12:26

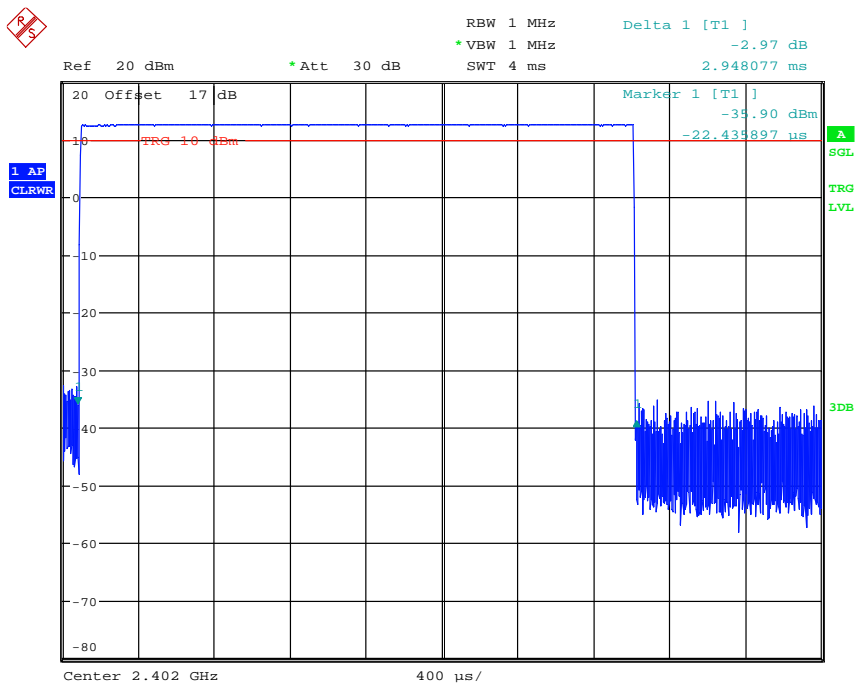


# Worldwide Testing Services(Taiwan) Co., Ltd.

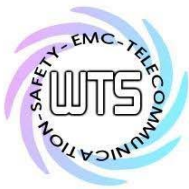
Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N



DWELL TIME CH0 DH3 (1.698ms \* 160events = 271.68ms)  
Date: 1.OCT.2012 08:14:31

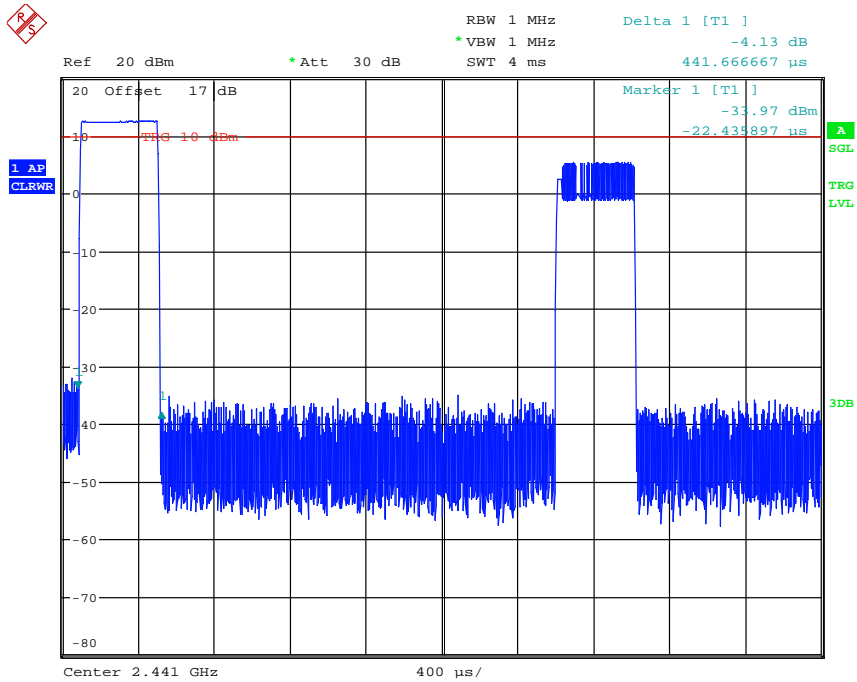


DWELL TIME CH0 DH5 (2.948ms \* 110events = 324.28ms)  
Date: 1.OCT.2012 08:15:13

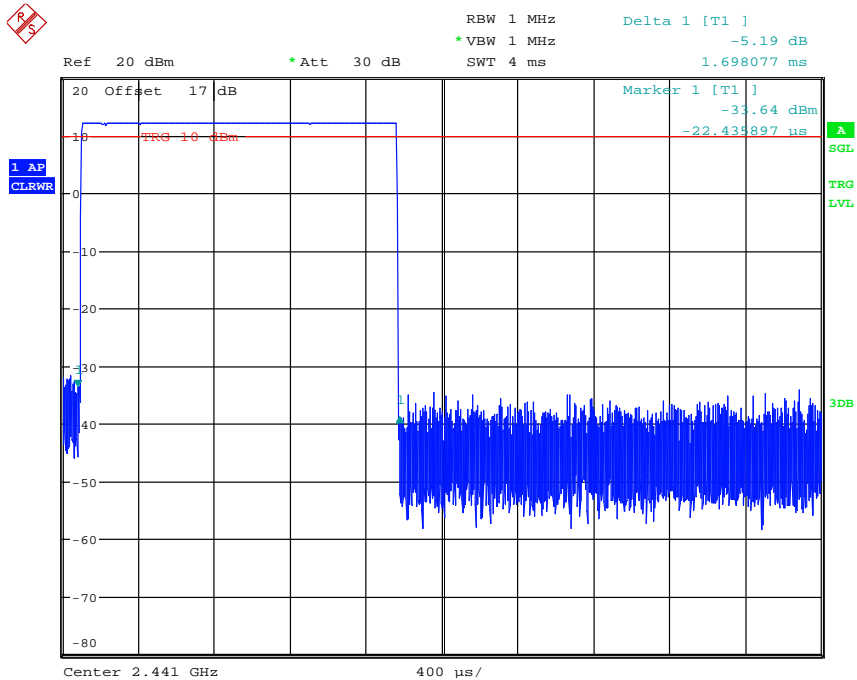


# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N

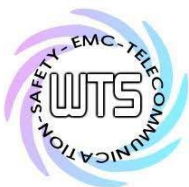


DWELL TIME CH39 DH1 (0.441ms \* 320events = 141.12ms)  
Date: 1.OCT.2012 08:12:44



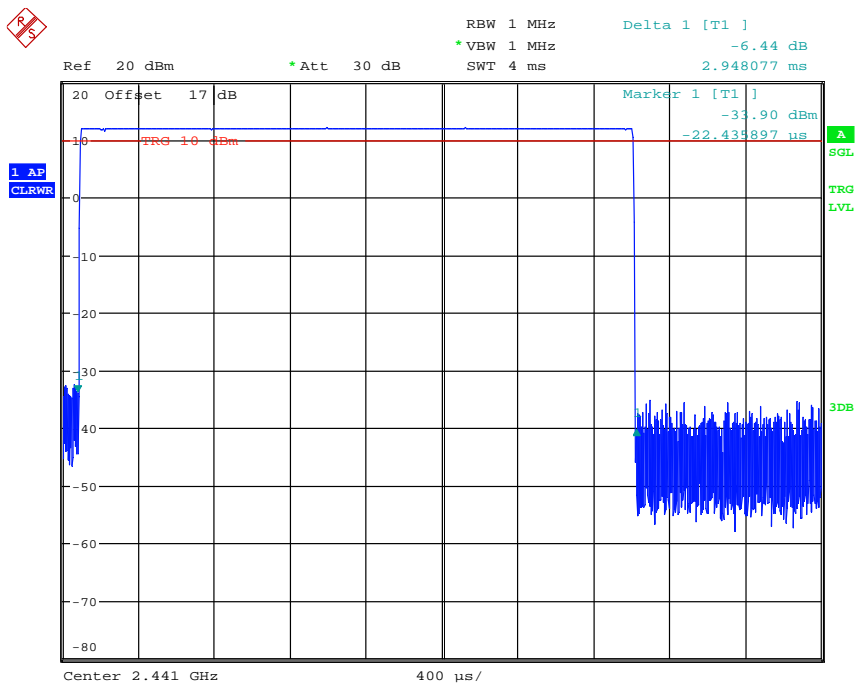
DWELL TIME CH39 DH3 (1.698ms \* 160events = 271.68ms)  
Date: 1.OCT.2012 08:14:14



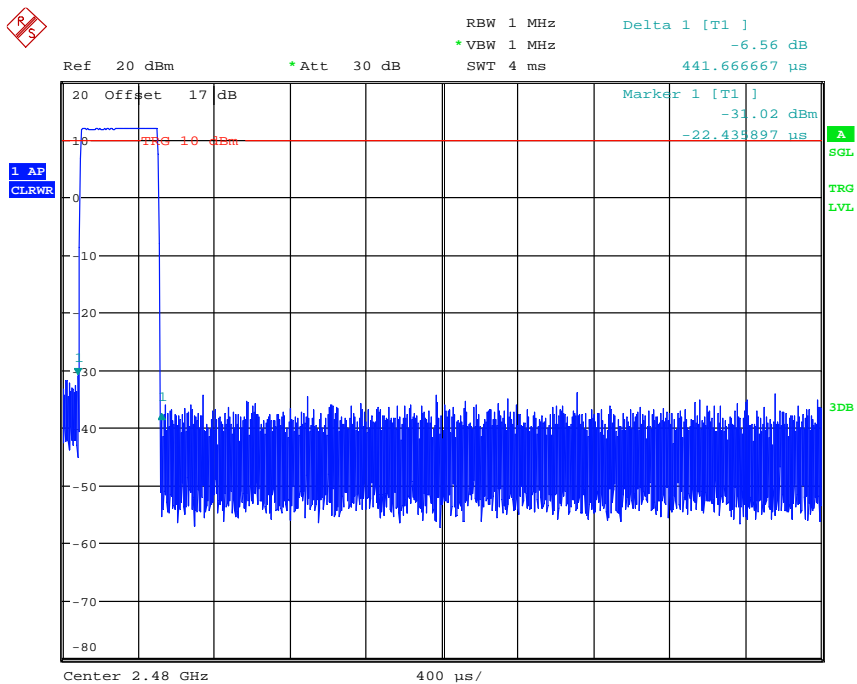


# Worldwide Testing Services(Taiwan) Co., Ltd.

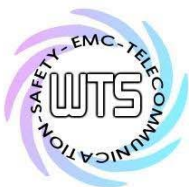
Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N



DWELL TIME CH39 DH5 (2.948ms \* 110events = 324.28ms)  
Date: 1.OCT.2012 08:15:30

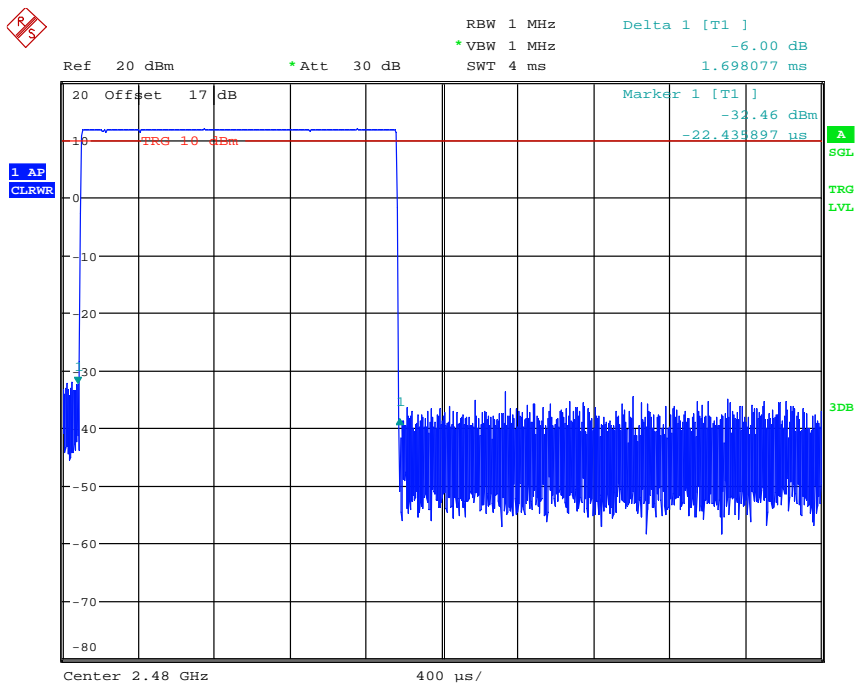


DWELL TIME CH78 DH1 (0.441ms \* 320events = 141.12ms)  
Date: 1.OCT.2012 08:13:02

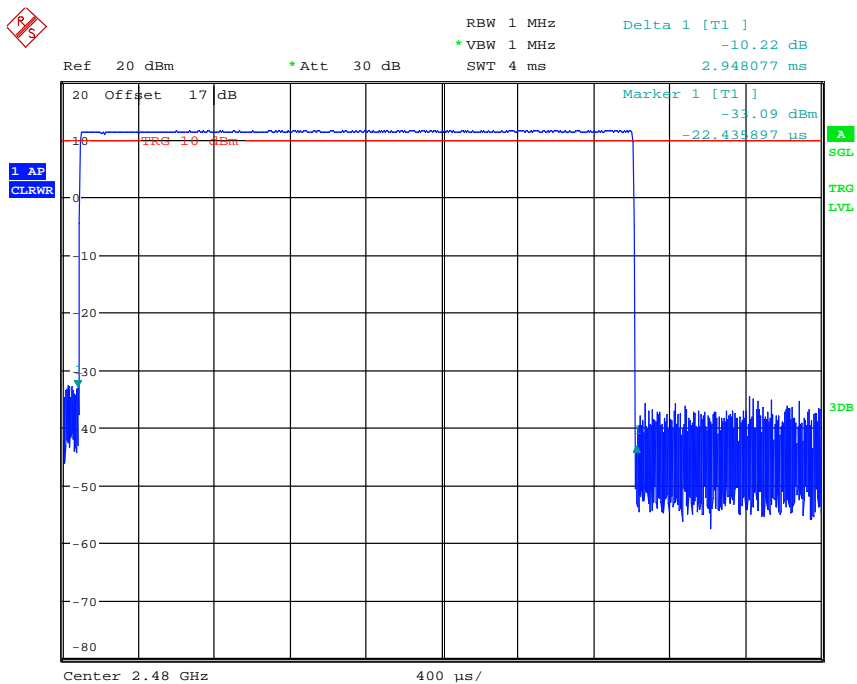


# Worldwide Testing Services(Taiwan) Co., Ltd.

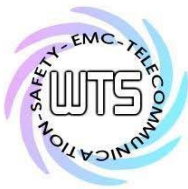
Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N



DWELL TIME CH78 DH3 (1.698ms \* 160events = 271.68ms)  
Date: 1.OCT.2012 08:13:59



DWELL TIME CH78 DH5 (2.948ms \* 110events = 324.28ms)  
Date: 1.OCT.2012 08:15:48



# **Worldwide Testing Services(Taiwan) Co., Ltd.**

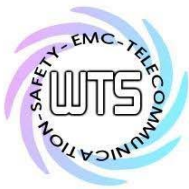
Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N

## **Limits and measurement periods:**

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

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

Explanation: See attached diagrams in appendix, which show the On-time and the number of counted events during the measurement period



Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N

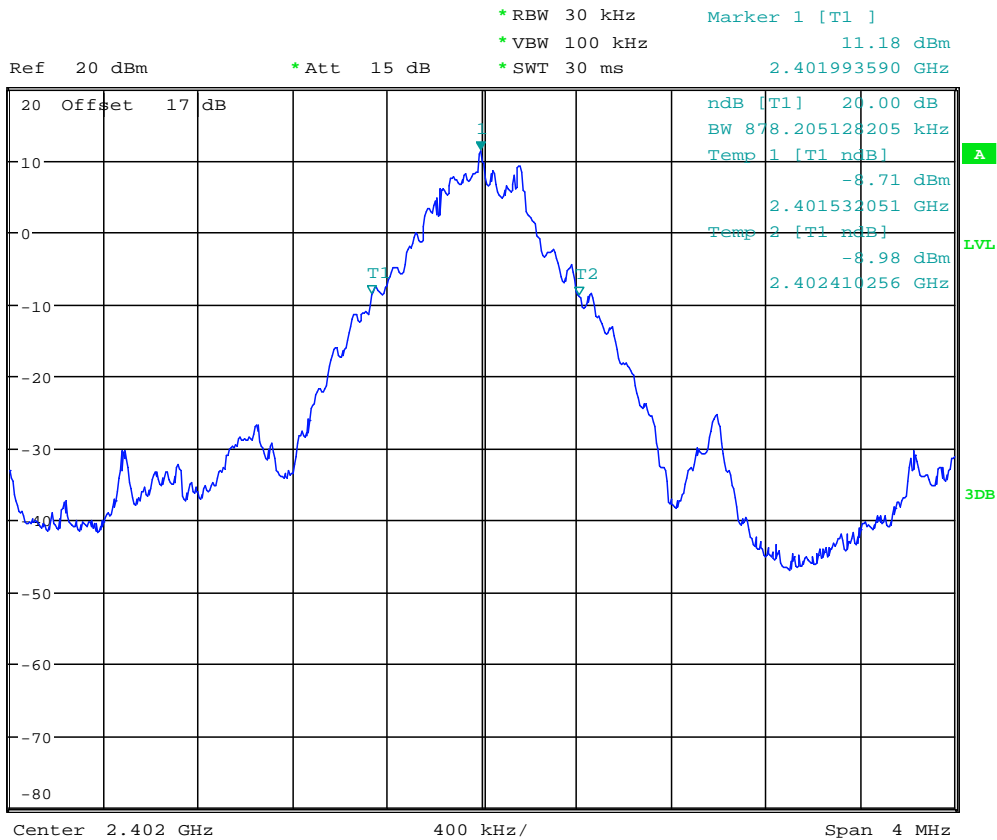
### 3.9 20dB Bandwidth

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.

Normal mode



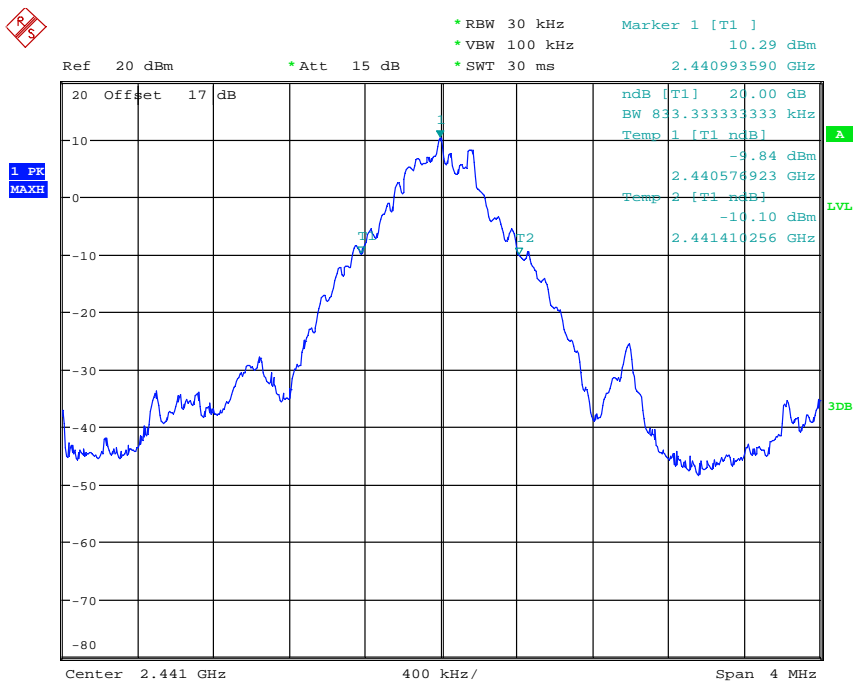
20DB BANDWIDTH CH0

Date: 1.OCT.2012 06:02:23

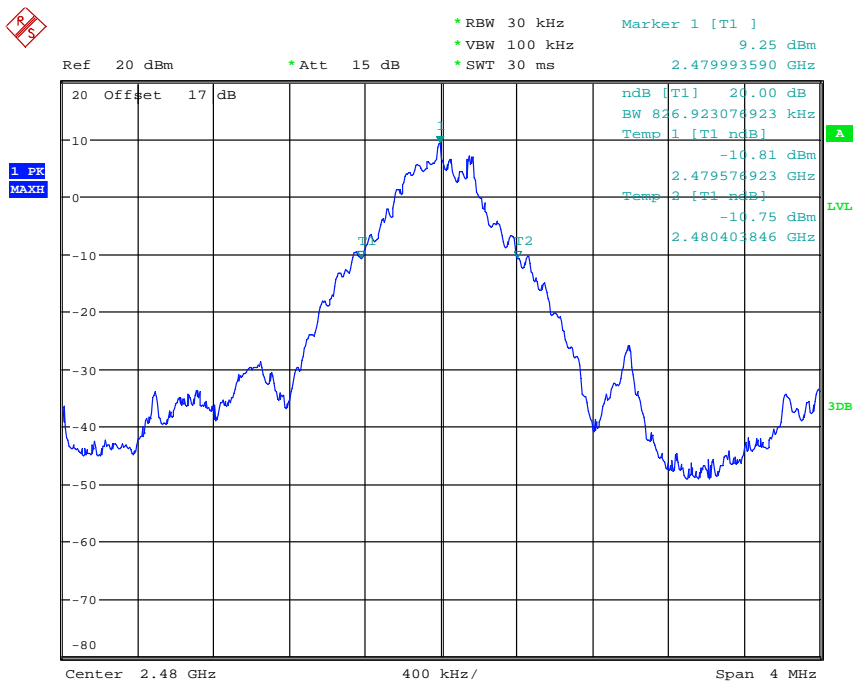


# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N



20DB BANDWIDTH CH39  
 Date: 1.OCT.2012 06:03:03



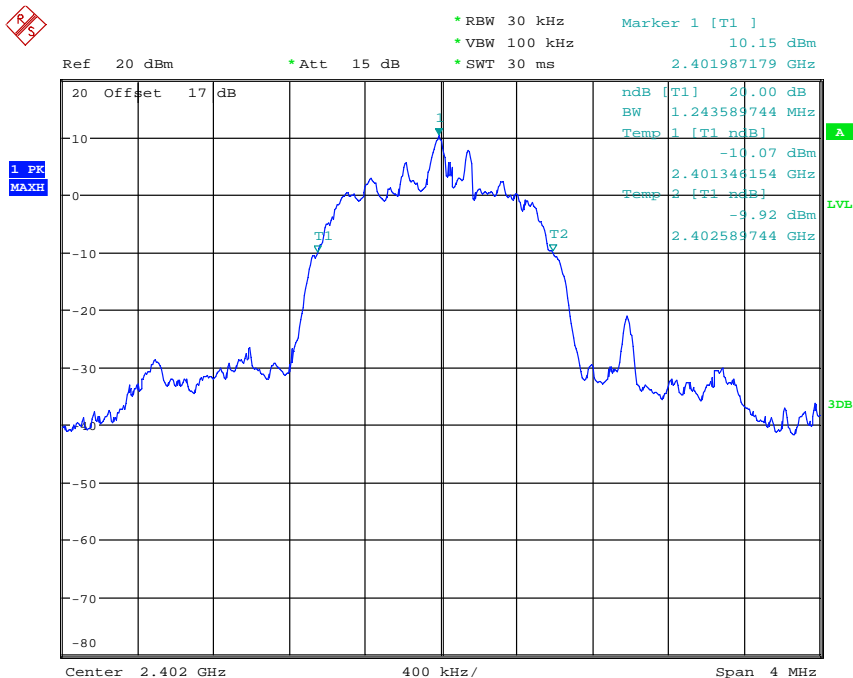
20DB BANDWIDTH CH78  
 Date: 1.OCT.2012 06:03:35



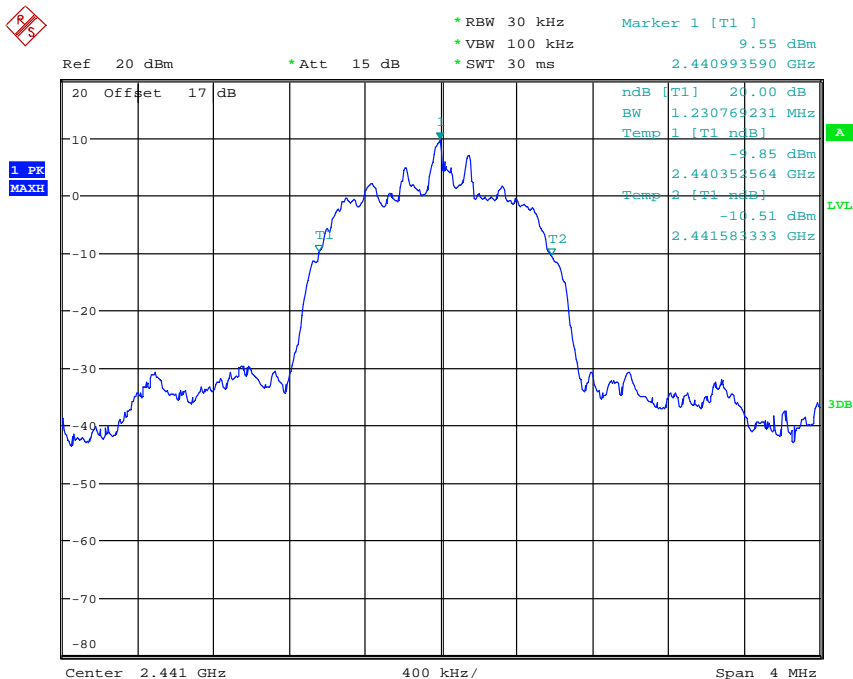
# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

EDR mode



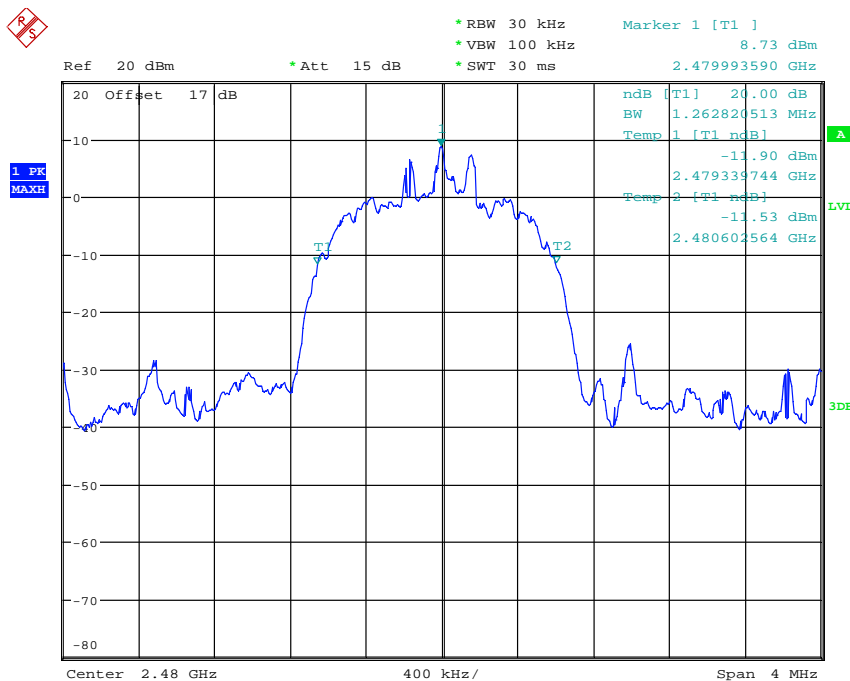
20DB BANDWIDTH CH0 EDR MODE  
 Date: 1.OCT.2012 08:08:42



20DB BANDWIDTH CH39 EDR MODE  
 Date: 1.OCT.2012 08:09:18



Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N



20DB BANDWIDTH CH78 EDR MODE  
 Date: 1.OCT.2012 06:12:31

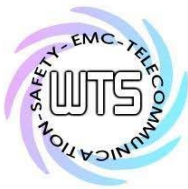
### Limits:

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

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

### 3.9.1 System Receiver Input Bandwidth

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



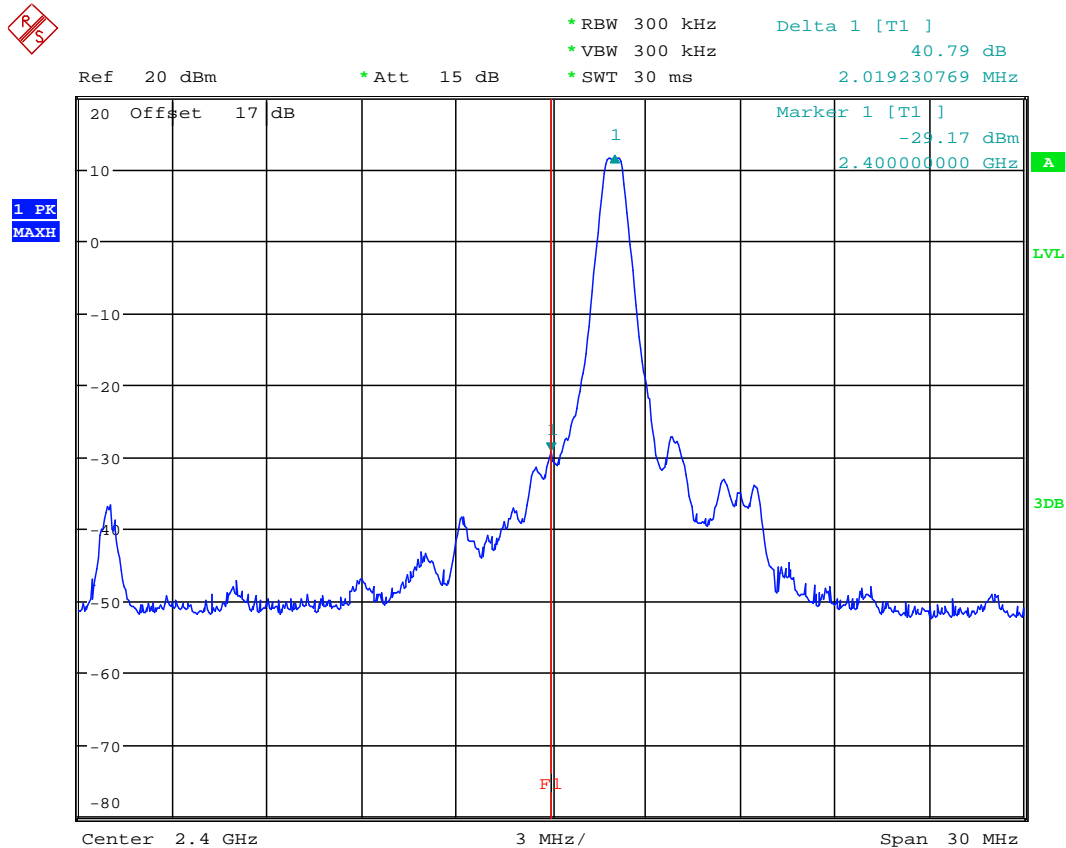
Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N

## 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.

Normal mode



BANDEDGE CH0

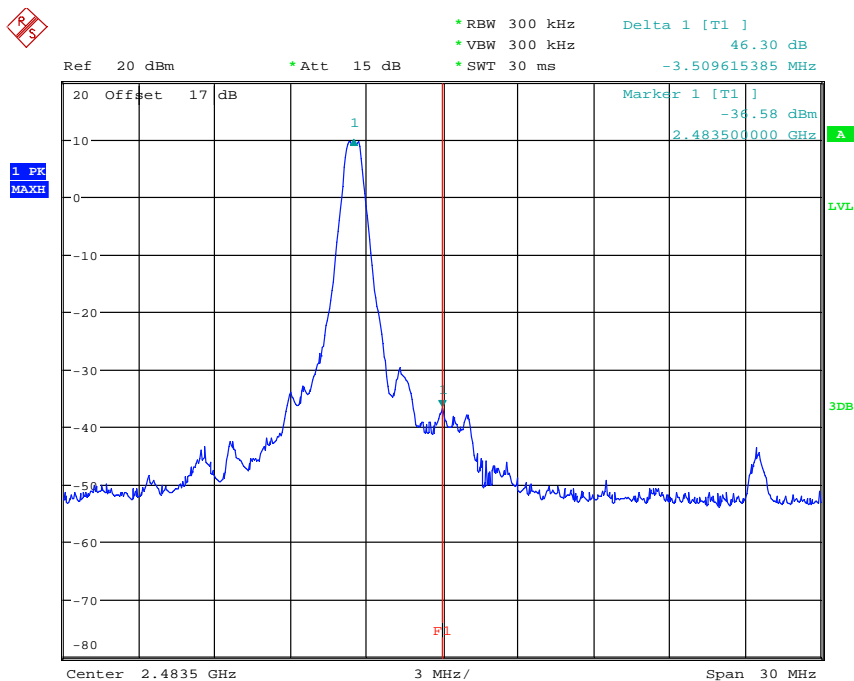
Date: 1.OCT.2012 06:02:35





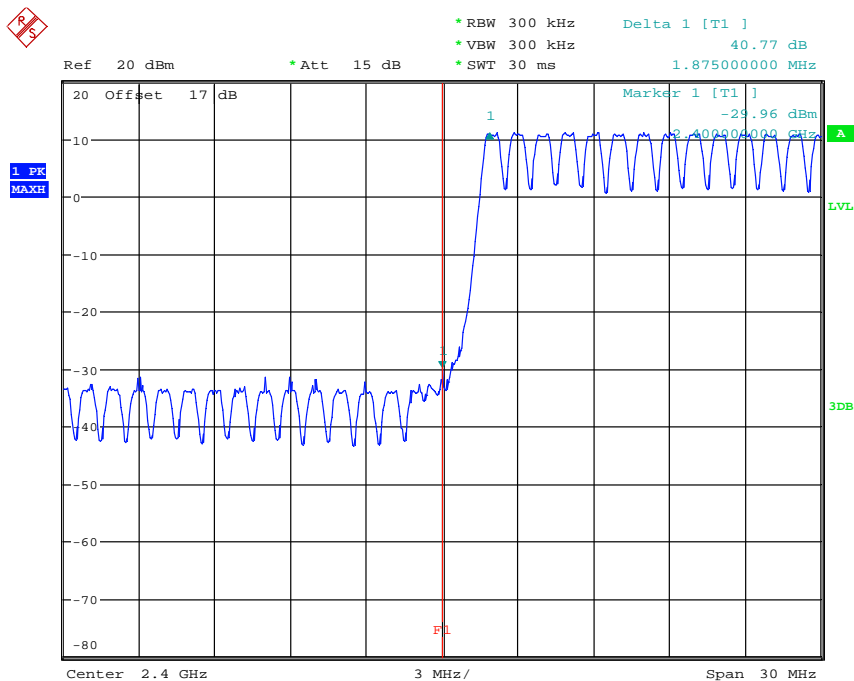
# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N



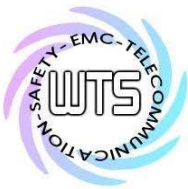
BANDEDGE CH78

Date: 1.OCT.2012 06:03:43

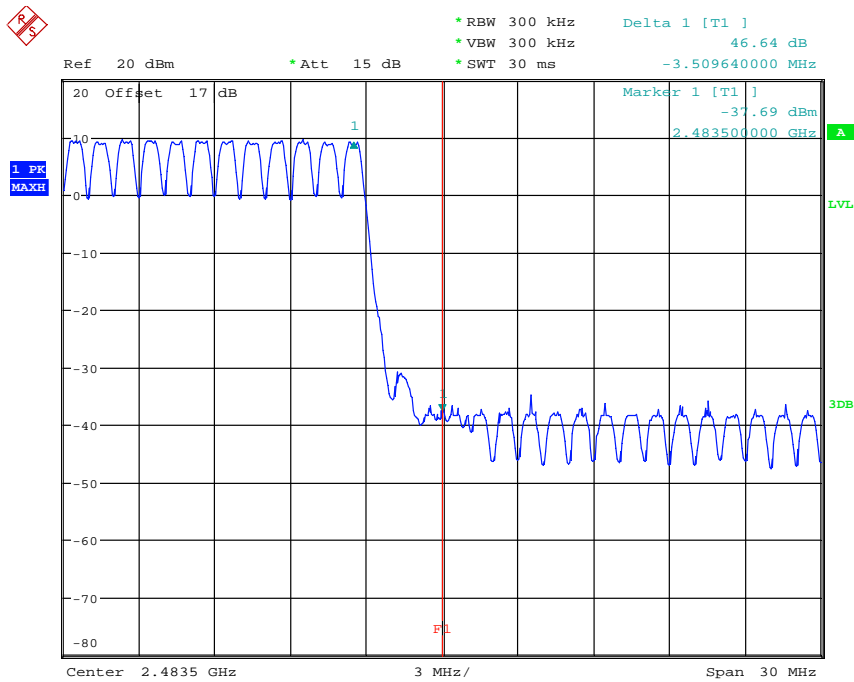


BANDEDGE CH0 HOPPING MODE

Date: 1.OCT.2012 06:04:31

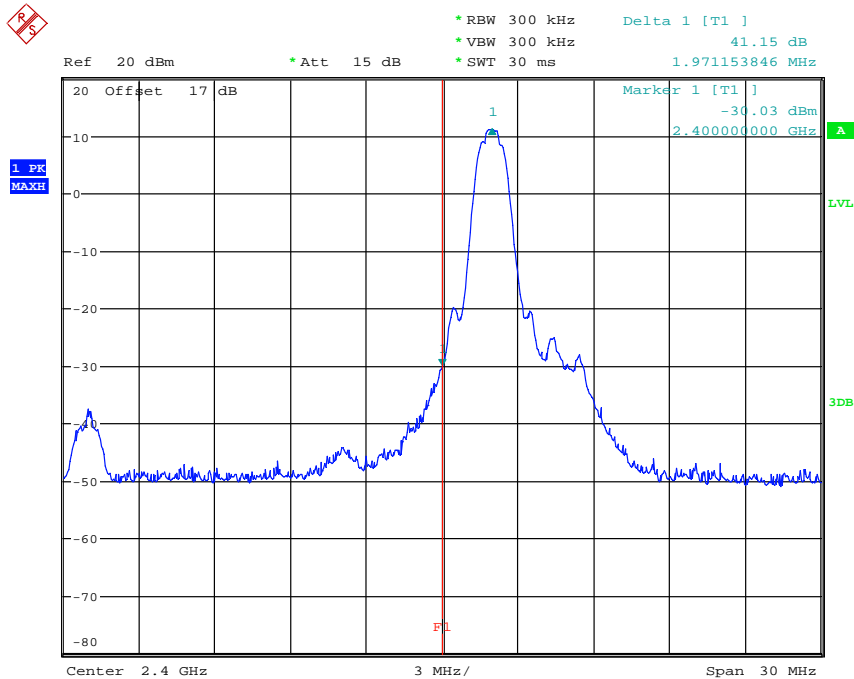


Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N

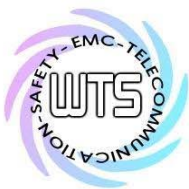


BANDEDGE CH78 HOPPING MODE  
Date: 1.OCT.2012 06:05:12

## EDR mode

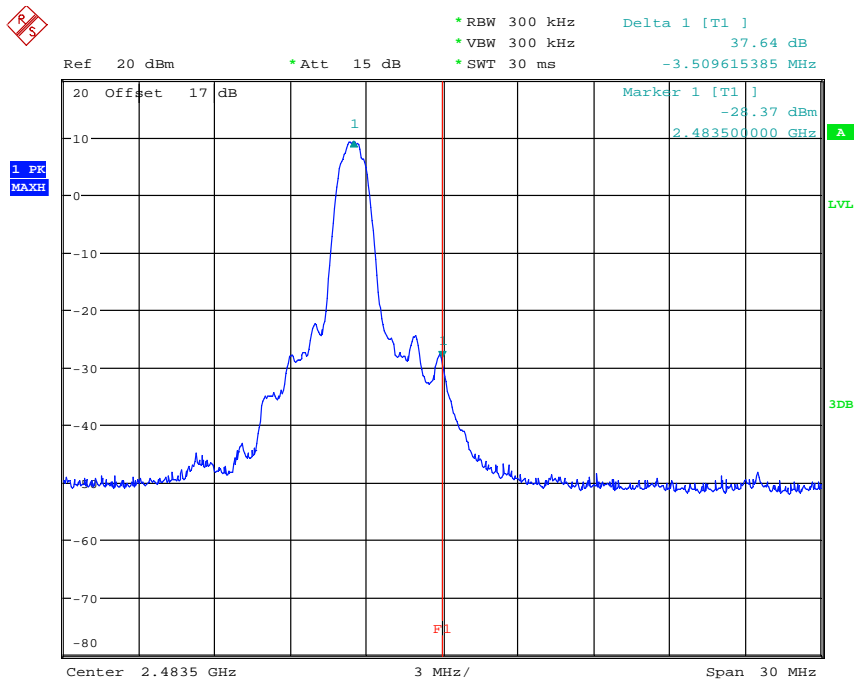


BANDEDGE CH0 EDR MODE  
Date: 1.OCT.2012 08:08:50

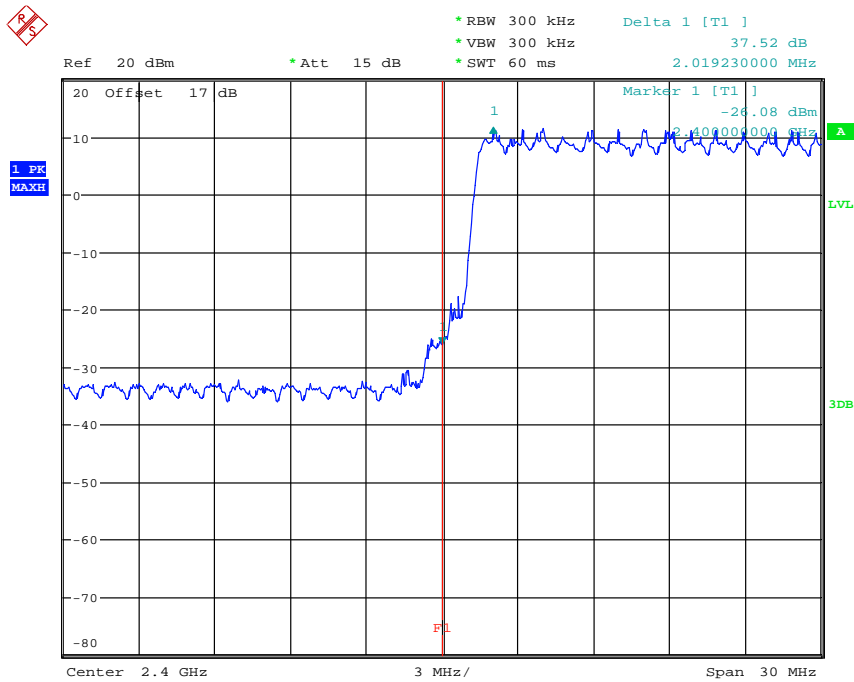


# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
FCC ID: OA3-RN41N



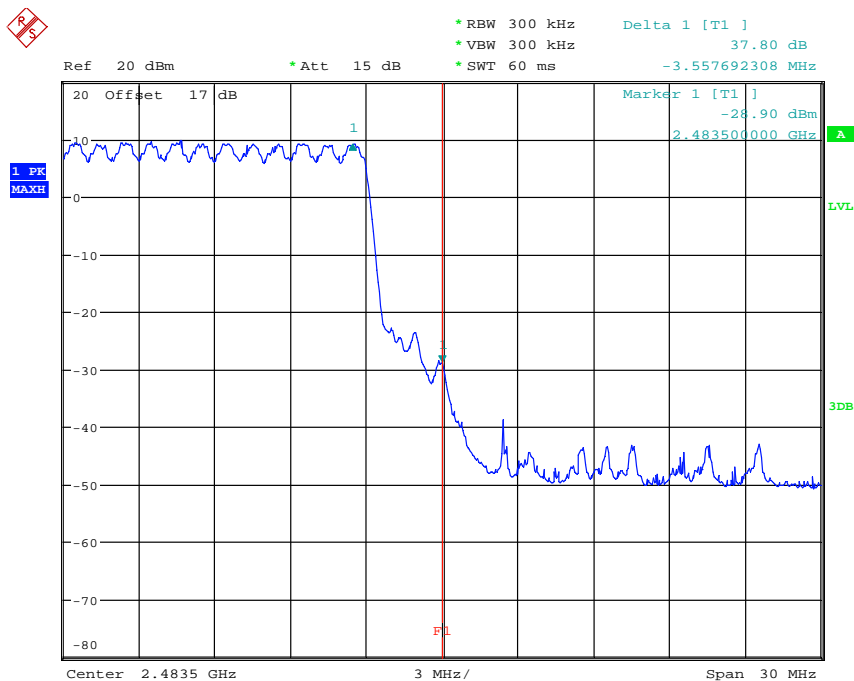
BANDEDGE CH78 EDR MODE  
Date: 1.OCT.2012 06:12:43



BANDEDGE CH0 EDR HOPPING MODE  
Date: 1.OCT.2012 06:14:43



Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N



BANDEDGE CH78 EDR HOPPING MODE  
 Date: 1.OCT.2012 06:28:20

### Limits:

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

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



Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

## 3.11 Radiated Emissions from Receiver Part

FCC Rule: 15.109

### Summary table with radiated data of the test plots

#### (1) Monopole Antenna ( RAH Series )

Model: RN-41-N Date: 2012/9/25  
 Mode: RX mode ( CH0 ) Temperature: 24 °C Engineer: Vic  
 Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
70.8216	26.91	peak	11.03	37.94	40.00	-2.06	160	100
179.6793	28.14	peak	13.64	41.78	43.50	-1.72	325	100
191.3427	27.06	peak	12.75	39.81	43.50	-3.69	175	100
288.5371	27.19	peak	15.35	42.54	46.00	-3.46	245	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4804.0000	42.35	---	-1.38	40.97	---	74.00	54.00	-33.03	130	100
7206.0000	40.99	---	4.16	45.15	---	74.00	54.00	-28.85	210	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
39.7194	24.53	peak	13.65	38.18	40.00	-1.82	270	100
70.8216	26.83	peak	11.03	37.86	40.00	-2.14	280	100
156.3527	26.49	peak	15.05	41.54	43.50	-1.96	340	100
168.0160	25.53	peak	14.71	40.24	43.50	-3.26	155	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4804.0000	42.28	---	-1.38	40.90	---	74.00	54.00	-33.10	220	100
7206.0000	41.31	---	4.16	45.47	---	74.00	54.00	-28.53	130	100



# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

Mode: RX mode ( CH39 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
70.8216	26.88	peak	11.03	37.91	40.00	-2.09	145	100
156.3527	26.70	peak	15.05	41.75	43.50	-1.75	75	100
171.9038	26.96	peak	14.43	41.39	43.50	-2.11	285	100
179.6793	27.80	peak	13.64	41.44	43.50	-2.06	330	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4882.0000	41.68	---	-1.13	40.55	---	74.00	54.00	-33.45	320	100
7323.0000	40.22	---	4.38	44.60	---	74.00	54.00	-29.40	100	100

Polarization: Vertical

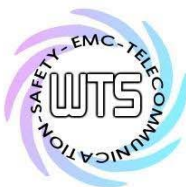
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
39.7194	23.92	peak	13.65	37.57	40.00	-2.43	275	100
70.8216	26.45	peak	11.03	37.48	40.00	-2.52	345	100
156.3527	26.26	peak	15.05	41.31	43.50	-2.19	85	100
168.0160	26.20	peak	14.71	40.91	43.50	-2.59	165	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4882.0000	41.49	---	-1.13	40.36	---	74.00	54.00	-33.64	140	100
7323.0000	40.88	---	4.38	45.26	---	74.00	54.00	-28.74	160	100

Mode: RX mode ( CH78 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
70.8216	26.44	peak	11.03	37.47	40.00	-2.53	325	100
171.9038	26.03	peak	14.43	40.46	43.50	-3.04	275	100
263.2665	28.85	peak	14.36	43.21	46.00	-2.79	115	100
284.6493	28.14	peak	15.32	43.46	46.00	-2.54	85	100



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Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4960.0000	41.25	---	-0.84	40.41	---	74.00	54.00	-33.59	140	100
7440.0000	40.44	---	4.56	45.00	---	74.00	54.00	-29.00	230	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
39.7194	24.47	peak	13.65	38.12	40.00	-1.88	280	100
55.2705	23.78	peak	13.69	37.47	40.00	-2.53	275	100
70.8216	26.14	peak	11.03	37.17	40.00	-2.83	135	100
156.3527	26.32	peak	15.05	41.37	43.50	-2.13	45	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4960.0000	41.29	---	-0.84	40.45	---	74.00	54.00	-33.55	95	100
7440.0000	41.29	---	4.56	45.85	---	74.00	54.00	-28.15	135	100

## (2) Monopole Antenna ( RN-SMA-S )

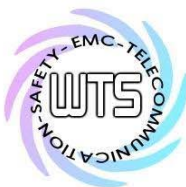
Mode: RX mode ( CH0 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
70.8216	27.08	peak	11.03	38.11	40.00	-1.89	275	100
168.0160	26.03	peak	14.71	40.74	43.50	-2.76	165	100
179.6793	28.05	peak	13.64	41.69	43.50	-1.81	145	100
288.5371	28.38	peak	15.35	43.73	46.00	-2.27	330	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4804.0000	41.91	---	-1.38	40.53	---	74.00	54.00	-33.47	170	100
7206.0000	41.27	---	4.16	45.43	---	74.00	54.00	-28.57	260	100





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Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
39.7194	23.57	peak	13.65	37.22	40.00	-2.78	220	100
70.8216	26.15	peak	11.03	37.18	40.00	-2.82	145	100
156.3527	26.20	peak	15.05	41.25	43.50	-2.25	125	100
179.6794	28.04	peak	13.64	41.68	43.50	-1.82	85	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4804.0000	42.06	---	-1.38	40.68	---	74.00	54.00	-33.32	145	100
7206.0000	41.23	---	4.16	45.39	---	74.00	54.00	-28.61	230	100

Mode: RX mode ( CH39 )

Polarization: Horizontal

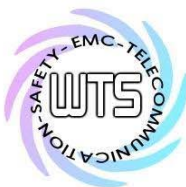
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
70.8215	26.60	peak	11.03	37.63	40.00	-2.37	175	100
179.6793	27.28	peak	13.64	40.92	43.50	-2.58	330	100
288.5371	28.42	peak	15.35	43.77	46.00	-2.23	250	100
335.1904	24.07	peak	16.52	40.59	46.00	-5.41	130	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4882.0000	41.31	---	-1.13	40.18	---	74.00	54.00	-33.82	35	100
7323.0000	40.78	---	4.38	45.16	---	74.00	54.00	-28.84	160	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
35.8317	23.93	peak	13.39	37.32	40.00	-2.68	165	100
70.8216	26.76	peak	11.03	37.79	40.00	-2.21	245	100
156.3527	26.39	peak	15.05	41.44	43.50	-2.06	85	100
168.0160	27.00	peak	14.71	41.71	43.50	-1.79	275	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4882.0000	41.68	---	-1.13	40.55	---	74.00	54.00	-33.45	275	100
7323.0000	40.87	---	4.38	45.25	---	74.00	54.00	-28.75	160	100



# Worldwide Testing Services(Taiwan) Co., Ltd.

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Mode: RX mode ( CH78 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
70.8216	27.34	peak	11.03	38.37	40.00	-1.63	85	100
171.9038	26.12	peak	14.43	40.55	43.50	-2.95	345	100
179.6793	26.71	peak	13.64	40.35	43.50	-3.15	195	100
276.8737	28.98	peak	15.10	44.08	46.00	-1.92	220	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4960.0000	41.37	---	-0.84	40.53	---	74.00	54.00	-33.47	170	100
7440.0000	40.45	---	4.56	45.01	---	74.00	54.00	-28.99	260	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
30.0000	24.19	peak	13.20	37.39	40.00	-2.61	300	100
39.7194	23.63	peak	13.65	37.28	40.00	-2.72	265	100
70.8216	26.90	peak	11.03	37.93	40.00	-2.07	240	100
156.3527	25.97	peak	15.05	41.02	43.50	-2.48	175	100

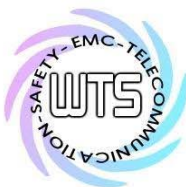
Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4960.0000	41.17	---	-0.84	40.33	---	74.00	54.00	-33.67	215	100
7440.0000	40.63	---	4.56	45.19	---	74.00	54.00	-28.81	140	100

### (3) Monopole Antenna ( MMSO2300 )

Mode: RX mode ( CH0 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
51.3828	24.39	peak	14.02	38.41	40.00	-1.59	85	100
168.0160	25.54	peak	14.71	40.25	43.50	-3.25	45	100
191.3427	26.96	peak	12.75	39.71	43.50	-3.79	325	100
335.1904	26.13	peak	16.52	42.65	46.00	-3.35	110	100



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Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4804.0000	42.07	---	-1.38	40.69	---	74.00	54.00	-33.31	140	100
7206.0000	40.96	---	4.16	45.12	---	74.00	54.00	-28.88	200	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9440	23.57	peak	13.25	36.82	40.00	-3.18	330	100
51.3828	23.45	peak	14.02	37.47	40.00	-2.53	275	100
156.3527	25.01	peak	15.05	40.06	43.50	-3.44	165	100
168.0160	26.78	peak	14.71	41.49	43.50	-2.01	145	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4804.0000	42.10	---	-1.38	40.72	---	74.00	54.00	-33.28	250	100
7206.0000	41.91	---	4.16	46.07	---	74.00	54.00	-27.93	110	100

Mode: RX mode ( CH39 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
51.3828	23.76	peak	14.02	37.78	40.00	-2.22	175	100
156.3527	25.72	peak	15.05	40.77	43.50	-2.73	240	100
168.0160	25.83	peak	14.71	40.54	43.50	-2.96	330	100
191.3427	26.11	peak	12.75	38.86	43.50	-4.64	195	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4882.0000	41.65	---	-1.13	40.52	---	74.00	54.00	-33.48	65	100
7323.0000	40.39	---	4.38	44.77	---	74.00	54.00	-29.23	160	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9440	24.41	peak	13.25	37.66	40.00	-2.34	340	100
51.3828	22.89	peak	14.02	36.91	40.00	-3.09	220	100
156.3527	25.81	peak	15.05	40.86	43.50	-2.64	195	100
216.6132	29.15	peak	12.44	41.59	46.00	-4.41	245	100



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Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4882.0000	42.31	---	-1.13	41.18	---	74.00	54.00	-32.82	270	100
7323.0000	40.70	---	4.38	45.08	---	74.00	54.00	-28.92	150	100

Mode: RX mode ( CH78 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
51.3828	23.61	peak	14.02	37.63	40.00	-2.37	145	100
156.3527	23.93	peak	15.05	38.98	43.50	-4.52	325	100
168.0160	24.36	peak	14.71	39.07	43.50	-4.43	110	100
179.6793	27.22	peak	13.64	40.86	43.50	-2.64	275	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4960.0000	40.98	---	-0.84	40.14	---	74.00	54.00	-33.86	130	100
7440.0000	41.05	---	4.56	45.61	---	74.00	54.00	-28.39	270	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9440	23.79	peak	13.25	37.04	40.00	-2.96	145	100
51.3828	24.43	peak	14.02	38.45	40.00	-1.55	330	100
156.3527	25.23	peak	15.05	40.28	43.50	-3.22	285	100
168.0160	26.42	peak	14.71	41.13	43.50	-2.37	95	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4960.0000	41.38	---	-0.84	40.54	---	74.00	54.00	-33.46	255	100
7440.0000	41.20	---	4.56	45.76	---	74.00	54.00	-28.24	130	100



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## (4) Dipole antenna ( RCT )

Mode: RX mode ( CH0 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
63.0461	25.10	peak	12.64	37.74	40.00	-2.26	165	100
142.7455	25.46	peak	14.88	40.34	43.50	-3.16	275	100
168.0160	26.59	peak	14.71	41.30	43.50	-2.20	80	100
203.0060	28.01	peak	12.32	40.33	43.50	-3.17	135	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4804.0000	42.16	---	-1.38	40.78	---	74.00	54.00	-33.22	135	100
7206.0000	41.14	---	4.16	45.30	---	74.00	54.00	-28.70	200	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
30.0000	25.03	peak	13.20	38.23	40.00	-1.77	60	100
39.7194	24.16	peak	13.65	37.81	40.00	-2.19	125	100
142.7455	26.84	peak	14.88	41.72	43.50	-1.78	240	100
168.0160	27.00	peak	14.71	41.71	43.50	-1.79	75	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4804.0000	42.74	---	-1.38	41.36	---	74.00	54.00	-32.64	220	100
7206.0000	41.62	---	4.16	45.78	---	74.00	54.00	-28.22	160	100

Mode: RX mode ( CH39 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
63.0461	24.62	peak	12.64	37.26	40.00	-2.74	325	100
168.0160	26.95	peak	14.71	41.66	43.50	-1.84	145	100
203.0060	29.77	peak	12.32	42.09	43.50	-1.41	220	100
228.2766	29.56	peak	13.31	42.87	46.00	-3.13	195	100



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Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4882.0000	42.13	---	-1.13	41.00	---	74.00	54.00	-33.00	310	100
7323.0000	40.84	---	4.38	45.22	---	74.00	54.00	-28.78	330	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
63.0461	25.19	peak	12.64	37.83	40.00	-2.17	300	100
142.7455	26.81	peak	14.88	41.69	43.50	-1.81	180	100
156.3527	26.36	peak	15.05	41.41	43.50	-2.09	275	100
168.0160	26.48	peak	14.71	41.19	43.50	-2.31	145	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4882.0000	41.76	---	-1.13	40.63	---	74.00	54.00	-33.37	255	100
7323.0000	40.56	---	4.38	44.94	---	74.00	54.00	-29.06	120	100

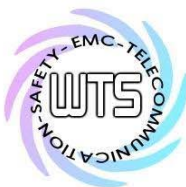
Mode: RX mode ( CH78 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
156.3527	25.77	peak	15.05	40.82	43.50	-2.68	135	100
168.0160	26.74	peak	14.71	41.45	43.50	-2.05	140	100
228.2766	30.24	peak	13.31	43.55	46.00	-2.45	220	100
335.1904	27.17	peak	16.52	43.69	46.00	-2.31	75	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4960.0000	41.35	---	-0.84	40.51	---	74.00	54.00	-33.49	210	100
7440.0000	41.11	---	4.56	45.67	---	74.00	54.00	-28.33	160	100





# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
30.0000	25.52	peak	13.20	38.72	40.00	-1.28	170	100
63.0461	25.62	peak	12.64	38.26	40.00	-1.74	240	100
142.7455	26.00	peak	14.88	40.88	43.50	-2.62	155	100
168.0160	26.42	peak	14.71	41.13	43.50	-2.37	275	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4960.0000	41.18	---	-0.84	40.34	---	74.00	54.00	-33.66	220	100
7440.0000	40.89	---	4.56	45.45	---	74.00	54.00	-28.55	130	100

## (5) Dipole antenna ( RN-SMA-7-RP )

Mode: RX mode ( CH0 )

Polarization: Horizontal

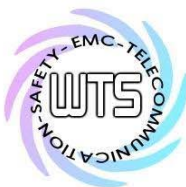
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
64.9900	26.40	peak	12.24	38.64	40.00	-1.36	145	100
168.0160	27.14	peak	14.71	41.85	43.50	-1.65	95	100
251.6032	29.70	peak	14.03	43.73	46.00	-2.27	220	100
331.3026	27.21	peak	16.41	43.62	46.00	-2.38	175	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4804.0000	42.50	---	-1.38	41.12	---	74.00	54.00	-32.88	175	100
7206.0000	40.65	---	4.16	44.81	---	74.00	54.00	-29.19	130	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
39.7194	23.89	peak	13.65	37.54	40.00	-2.46	115	100
55.2705	24.09	peak	13.69	37.78	40.00	-2.22	275	100
68.8778	27.11	peak	11.42	38.53	40.00	-1.47	305	100
156.3527	26.48	peak	15.05	41.53	43.50	-1.97	165	100





# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4804.0000	42.31	---	-1.38	40.93	---	74.00	54.00	-33.07	275	100
7206.0000	41.10	---	4.16	45.26	---	74.00	54.00	-28.74	105	100

Mode: RX mode ( CH39 )

Polarization: Horizontal

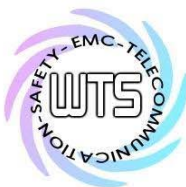
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
66.9340	24.96	peak	11.83	36.79	40.00	-3.21	85	100
156.3527	25.49	peak	15.05	40.54	43.50	-2.96	145	100
168.0160	25.85	peak	14.71	40.56	43.50	-2.94	220	100
255.4910	30.06	peak	14.11	44.17	46.00	-1.83	175	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4882.0000	41.65	---	-1.13	40.52	---	74.00	54.00	-33.48	235	100
7323.0000	40.91	---	4.38	45.29	---	74.00	54.00	-28.71	100	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
51.3828	24.19	peak	14.02	38.21	40.00	-1.79	330	100
59.1583	25.64	peak	13.35	38.99	40.00	-1.01	185	100
70.8216	27.10	peak	11.03	38.13	40.00	-1.87	165	100
168.0160	27.20	peak	14.71	41.91	43.50	-1.59	275	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4882.0000	42.23	---	-1.13	41.10	---	74.00	54.00	-32.90	125	100
7323.0000	41.13	---	4.38	45.51	---	74.00	54.00	-28.49	160	100



# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

Mode: RX mode ( CH78 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
68.8777	26.02	peak	11.42	37.44	40.00	-2.56	165	100
168.0160	26.74	peak	14.71	41.45	43.50	-2.05	140	100
191.3427	28.70	peak	12.75	41.45	43.50	-2.05	285	100
251.6032	29.43	peak	14.03	43.46	46.00	-2.54	330	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4960.0000	41.40	---	-0.84	40.56	---	74.00	54.00	-33.44	220	100
7440.0000	40.58	---	4.56	45.14	---	74.00	54.00	-28.86	30	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
39.7194	24.28	peak	13.65	37.93	40.00	-2.07	145	100
59.1583	25.10	peak	13.35	38.45	40.00	-1.55	260	100
66.9340	26.38	peak	11.83	38.21	40.00	-1.79	220	100
168.0160	27.19	peak	14.71	41.90	43.50	-1.60	85	100

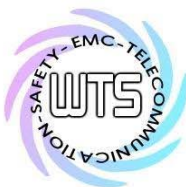
Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
4960.0000	41.21	---	-0.84	40.37	---	74.00	54.00	-33.63	315	100
7440.0000	40.80	---	4.56	45.36	---	74.00	54.00	-28.64	160	100

## (6) Dipole antenna ( MHO Series)

Mode: RX mode ( CH0 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	24.26	peak	14.12	38.38	40.00	-1.62	165	100
156.3527	24.62	peak	15.05	39.67	43.50	-3.83	40	100
168.0160	26.57	peak	14.71	41.28	43.50	-2.22	245	100
191.3427	26.73	peak	12.75	39.48	43.50	-4.02	285	100



# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1589.1780	52.08	---	-9.09	42.99	---	74.00	54.00	-31.01	55	100
2402.8060	51.99	---	-5.83	46.16	---	74.00	54.00	-27.84	275	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4390	23.79	peak	14.12	37.91	40.00	-2.09	200	100
107.7555	29.26	peak	12.27	41.53	43.50	-1.97	315	100
168.0160	26.51	peak	14.71	41.22	43.50	-2.28	115	100
214.6693	28.90	peak	12.34	41.24	43.50	-2.26	275	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1589.1780	58.95	---	-9.09	49.86	---	74.00	54.00	-24.14	165	100
2402.8060	57.43	---	-5.83	51.60	---	74.00	54.00	-22.40	350	100

Mode: RX mode ( CH39 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
49.4388	24.27	peak	14.12	38.39	40.00	-1.61	95	100
156.3527	24.85	peak	15.05	39.90	43.50	-3.60	275	100
168.0160	26.69	peak	14.71	41.40	43.50	-2.10	245	100
276.8737	27.60	peak	15.10	42.70	46.00	-3.30	110	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1617.2350	53.34	---	-8.85	44.49	---	74.00	54.00	-29.51	100	100
2430.8620	50.12	---	-5.74	44.38	---	74.00	54.00	-29.62	75	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9440	23.06	peak	13.25	36.31	40.00	-3.69	165	100
41.6633	24.34	peak	13.78	38.12	40.00	-1.88	345	100
156.3527	26.18	peak	15.05	41.23	43.50	-2.27	110	100
168.0160	26.45	peak	14.71	41.16	43.50	-2.34	275	100



# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1617.2350	57.89	---	-8.85	49.04	---	74.00	54.00	-24.96	200	100
2430.8620	59.17	53.95	-5.74	53.43	48.21	74.00	54.00	-5.79	165	100

Mode: RX mode ( CH78 )  
 Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
51.3828	23.14	peak	14.02	37.16	40.00	-2.84	45	100
156.3527	25.35	peak	15.05	40.40	43.50	-3.10	80	100
168.0160	26.21	peak	14.71	40.92	43.50	-2.58	265	100
191.3427	26.46	peak	12.75	39.21	43.50	-4.29	225	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1645.2910	54.66	---	-8.62	46.04	---	74.00	54.00	-27.96	275	100
2472.9460	51.07	---	-5.61	45.46	---	74.00	54.00	-28.54	140	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9440	24.37	peak	13.25	37.62	40.00	-2.38	220	100
49.4390	23.62	peak	14.12	37.74	40.00	-2.26	75	100
59.1583	24.85	peak	13.35	38.20	40.00	-1.80	315	100
156.3527	25.96	peak	15.05	41.01	43.50	-2.49	165	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1645.2910	58.60	---	-8.62	49.98	---	74.00	54.00	-24.02	285	100
2472.9460	56.80	---	-5.61	51.19	---	74.00	54.00	-22.81	140	100



Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

## (7) Yagi Antenna

Mode: RX mode ( CH0 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
142.7455	24.37	peak	14.88	39.25	43.50	-4.25	165	100
179.6793	23.10	peak	13.64	36.74	43.50	-6.76	55	100
191.3427	28.31	peak	12.75	41.06	43.50	-2.44	330	100
203.0060	25.32	peak	12.32	37.64	43.50	-5.86	275	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1589.1780	51.53	---	-9.09	42.44	---	74.00	54.00	-31.56	225	100
2402.8060	50.87	---	-5.83	45.04	---	74.00	54.00	-28.96	70	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
30.0000	24.87	peak	13.20	38.07	40.00	-1.93	275	100
191.3427	28.64	peak	12.75	41.39	43.50	-2.11	330	100
203.0060	29.37	peak	12.32	41.69	43.50	-1.81	140	100
228.2766	30.35	peak	13.31	43.66	46.00	-2.34	165	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1589.1780	52.78	---	-9.09	43.69	---	74.00	54.00	-30.31	245	100
2402.8060	50.11	---	-5.83	44.28	---	74.00	54.00	-29.72	190	100

Mode: RX mode ( CH39 )

Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
142.7455	24.44	peak	14.88	39.32	43.50	-4.18	245	100
179.6793	24.59	peak	13.64	38.23	43.50	-5.27	85	100
191.3427	29.23	peak	12.75	41.98	43.50	-1.52	60	100
348.7976	26.50	peak	16.89	43.39	46.00	-2.61	135	100



# Worldwide Testing Services(Taiwan) Co., Ltd.

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Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1617.2350	52.11	---	-8.85	43.26	---	74.00	54.00	-30.74	285	100
2430.8620	50.04	---	-5.74	44.30	---	74.00	54.00	-29.70	55	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
30.0000	24.79	peak	13.20	37.99	40.00	-2.01	115	100
142.7455	26.88	peak	14.88	41.76	43.50	-1.74	140	100
168.0160	27.02	peak	14.71	41.73	43.50	-1.77	275	100
191.3427	29.34	peak	12.75	42.09	43.50	-1.41	90	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1617.2350	53.66	---	-8.85	44.81	---	74.00	54.00	-29.19	245	100
2430.8620	50.07	---	-5.74	44.33	---	74.00	54.00	-29.67	110	100

Mode: RX mode ( CH78 )

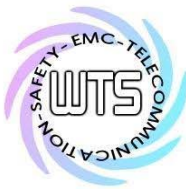
Polarization: Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
142.7455	26.03	peak	14.88	40.91	43.50	-2.59	215	100
191.3427	28.17	peak	12.75	40.92	43.50	-2.58	40	100
203.0060	25.86	peak	12.32	38.18	43.50	-5.32	135	100
333.2465	24.26	peak	16.46	40.72	46.00	-5.28	85	100

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1645.2910	53.28	---	-8.62	44.66	---	74.00	54.00	-29.34	245	100
2472.9460	50.86	---	-5.61	45.25	---	74.00	54.00	-28.75	330	100

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
31.9440	23.84	peak	13.25	37.09	40.00	-2.91	220	100
47.4950	23.19	peak	14.07	37.26	40.00	-2.74	175	100
142.7455	26.44	peak	14.88	41.32	43.50	-2.18	340	100
179.6794	28.41	peak	13.64	42.05	43.50	-1.45	155	100



# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21209-12744-C-1  
 FCC ID: OA3-RN41N

Frequency (MHz)	Reading (dBuV)		Factor (dB) Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
	Peak	Ave.		Peak	Ave.	Peak	Ave.			
1645.2910	53.42	---	-8.62	44.80	---	74.00	54.00	-29.20	195	100
2472.9460	48.88	---	-5.61	43.27	---	74.00	54.00	-30.73	320	100

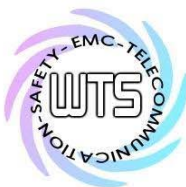
- Note**
1. **Correction Factor = Antenna factor + Cable loss - Preamplifier**
  2. **The formula of measured value as: Test Result = Reading + Correction Factor**
  3. **Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average**
  4. **All not in the table noted test results are more than 20 dB below the relevant limits.**
  5. **Measurement uncertainty above 1GHz: 30-1000 MHz = ± 3.72 dB, 1-18 GHz = ± 5.56 dB, 18-40 GHz = ± 3.46 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.**

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





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### 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.

Frequency	Level (dB $\mu$ V)	
	quasi-peak	average
150 kHz	lower limit line	Lower limit line

**Limits:**

Frequency of Emission (MHz)	Conducted Limit (dB $\mu$ V)	
	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 =  $\pm 1.10$  dB; Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.
6. This test is not required because there is no AC power line or signal line for this EUT.

Test equipment used: ETSTW-CE 001, ETSTW-CE 004, ETSTW-CE 006, ETSTW-RE 045, ETSTW-RE 064