

# FCC TEST REPORT (15.407)

REPORT NO.: RF120904C23A-1 R2

MODEL NO.: MK3190

**FCC ID:** UZ7MK3190

**RECEIVED:** Aug. 31, 2012

**TESTED:** Sep. 02 ~ Oct. 04, 2012

**ISSUED:** Oct. 11, 2012

**APPLICANT:** Motorola Solutions, Inc.

ADDRESS: One Motorola Plaza, Holtsville, NY 11742-1300

USA

**ISSUED BY:** Bureau Veritas Consumer Products Services

(H.K.) Ltd., Taoyuan Branch

**LAB ADDRESS:** No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist.,

New Taipei City, Taiwan (R.O.C)

**TEST LOCATION:** No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei

Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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# **RELEASE CONTROL RECORD**

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120904C23A-1	Original release	Sep. 27, 2012
RF120904C23A-1 R1	<ol> <li>Added model on page 1, 5, 7 and 8.</li> <li>Revised the worst margin of AC Power Conducted Emission on page 6.</li> <li>Revised Radiated emission test data on page 57 ~ 59 and Page 61 ~ 63.</li> <li>Revised AC Power Conducted Emission test data on page 66 ~ 69 and page 72 ~ 73.</li> </ol>	Oct. 06, 2012
RF120904C23A-1 R2	Revised model	Oct. 11, 2012

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# 1. CERTIFICATION

**PRODUCT:** Micro Kiosk

MODEL NO.: MK3190

**BRAND:** Motorola

**APPLICANT:** Motorola Solutions, Inc.

**TESTED:** Sep. 02 ~ Oct. 04, 2012

TEST SAMPLE: ENGINEERING SAMPLE

STANDARDS: FCC Part 15, Subpart E (Section 15.407)

ANSI C63.10-2009

The above equipment (model: MK3190) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch,** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : \_\_\_\_\_\_\_\_, DATE : \_\_\_\_\_\_ Oct. 11, 2012

Ivy kin / Specialist

APPROVED BY : Cot. 11, 2012

Ken Liu / Manager

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# 2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)							
STANDARD SECTION TEST TYPE RE			REMARK				
15.407(b)(6)	407(b)(6) AC Power Conducted Emission		Meet the requirement of limit. Minimum passing margin is -3.05dB at 1.94531MHz.				
15.407(b/1/2/3) (b)(6)	Spurious Emissions		Meet the requirement of limit. Minimum passing margin is -1.0dB at 5470.00MHz				
15.407(a/1/2)	Average Transmit Power	PASS	Meet the requirement of limit.				
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.				
15.407(a/1/2)	Peak Power Spectral Density	PASS	Meet the requirement of limit.				
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.				
15.203	Antenna Requirement	PASS	No antenna connector is used.				

# 2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
	30MHz ~ 200MHz	2.93 dB
Radiated emissions	200MHz ~1000MHz	2.95 dB
Radiated emissions	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

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# 3. GENERAL INFORMATION

# 3.1 GENERAL DESCRIPTION OF EUT

EUT	Micro Kiosk
MODEL NO.	MK3190
POWER SUPPLY	12Vdc (adapter) 48Vdc (POE)
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 72.2Mbps
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 5260 ~ 5320MHz: 4 5500 ~ 5700MHz: 11
OUTPUT POWER	28.18mW for 5180 ~ 5240MHz 89.13mW for 5260 ~ 5320MHz 87.10mW for 5500 ~ 5700MHz
ANTENNA TYPE	Refer to Note as below
ANTENNA CONNECTOR	NA
DATA CABLE	Refer to Note as below
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	NA

## NOTE:

1. Antenna gain is listed as table below.

Antenna	WLAN Main antenna gain (dBi)			WLAN AUX antenna gain (dBi)						
type	2.4GHz	5.18 ~ 5.24GHz	5.26 ~ 5.32GHz	5.50 ~ 5.70GHz	5745 ~ 5825MHz	2.4GHz	5.18 ~ 5.24GHz	5.26 ~ 5.32GHz	5.50 ~ 5.70GHz	5745 ~ 5825MHz
PCB	1.146	4.203	4.67	4.237	4.275	1.816	2.229	2.508	3.347	3.315

2. The EUT provides one completed transmitter and two receivers.

MODULATION MODE	TX FUNCTION	
802.11b	1TX	
802.11g	1TX	
802.11a	1TX	
802.11n (20MHz)	1TX	

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3. EUT software and firmware version are as below.

OEM NAME	MK3100
OEM VERSION	99.24.0011
Wireless Part Number	31-FUSION-X2.00
Wireless Fusion	X_2.00.0.0.059R

4. The EUT consumes power from the following adapter and POE, which are support units.

Item	Brand	Model Specification		
Adapter	HIPRO	HP-A0502R3D	I/P: 100-240Vac, 50/60Hz, 0.2A O/P: 12Vdc, 4.16A Power cable: 2.2m non-shielded AC cable without core 1.8m shielded DC cable with one core	
POE	Symbol	PD-3001	I/P: 100-250Vac ,50/60Hz,0.5A O/P: 48Vdc,0.35A	

5. The above EUT information is declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

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# 3.2 DESCRIPTION OF TEST MODES

# FOR 5180 ~ 5240MHz

4 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

## FOR 5260 ~ 5320MHz

4 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

# FOR 5500 ~ 5700MHz

11 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500MHz	124	5620MHz
104	5520MHz	128	5640MHz
108	5540MHz	132	5660MHz
112	5560MHz	136	5680MHz
116	5580MHz	140	5700MHz
120	5600MHz		

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# 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE	APPLICABLE TO				DESCRIPTIO		
MODE	RE≥1G	RE<1G	PLC	APCM	ANT.	Power Source	
A1	<b>V</b>	$\checkmark$	$\checkmark$	$\checkmark$	Main And	Power from adapter	
A2	-	$\checkmark$	-	-	Main Ant.	Power from POE	
B1	V	$\checkmark$	$\checkmark$	$\checkmark$	A A t	Power from adapter	
B2	-	<b>V</b>	-	-	Aux Ant.	Power from POE	

Where **RE≥1G:** Radiated Emission above 1GHz

PLC: Power Line Conducted Emission APCM: Antenna Port Conducted Measurement

RE<1G: Radiated Emission below 1GHz

NOTE: "-"means no effect.

# **RADIATED EMISSION TEST (ABOVE 1GHz):**

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

	EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
	A1, B1	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
	A1, B1	802.11n (20MHz)	5160-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.5
1	A1, B1	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
	A1, B1	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
1	A1, B1	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
	A1, B1	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	6.5

## RADIATED EMISSION TEST (BELOW 1GHz):

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGUR E MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A1, A2	802.11a	5180-5320	36 to 64	52	OFDM	BPSK	6.0
B1, B2	802.11n (20MHz)	5180-5320	36 to 64	64	OFDM	BPSK	6.5
A1, A2	802.11a	5500-5700	100 to 140	116	OFDM	BPSK	6.0
B1, B2	802.11n (20MHz)	5500-5700	100 to 140	100	OFDM	BPSK	6.5

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#### POWER LINE CONDUCTED EMISSION TEST:

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

	EUT CONFIGUR E MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
1	A1, A2	802.11a	5180-5320	36 to 64	52	OFDM	BPSK	6.0
ĺ	A1, A2	802.11a	5500-5700	100 to 140	116	OFDM	BPSK	6.0

#### **ANTENNA PORT CONDUCTED MEASUREMENT:**

This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

	EUT CONFIGUR E MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
	A1, B1	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
	A1, B1	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
	A1, B1	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
	A1, B1	802.11n (20MHz)	5200-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.5
ĺ	A1, B1	802.11a	FF00 F700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
	A1, B1	802.11n (20MHz)	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.5

# **TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Sun Lin, Anderson Hong
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Nick Chen, Anderson Hong
PLC	25deg. C, 68%RH	120Vac, 60Hz	Sun Lin
APCM	25deg. C, 67%RH	120Vac, 60Hz	Jack Li

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# 3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	DELL	E5410	1HC2XM1	FCC DoC Approved
2	KEYBOAD	DELL	SK-8115	MY-0DJ325-71619-8 57-1198	FCC DoC Approved
3	MOUSE	DELL	MO56UO	510026062	FCC DoC Approved
4	4 EXTERNAL USB 1.1 FLOPPY SONY		MPF82E	50010254	FCC DoC Approved
5	PRINTER	EPSON	B241A	FAPY139300	FCC DoC Approved
6	NOTEBOOK	DELL	E5420	76WNBT1	FCC DoC Approved
7	EARPHONE	Motorala	NA	NA	NA
8	POE	Symbol	PD-3001	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS					
1	0.4m USB cable with one core.					
2	0.4m USB cable with one core., 2m foil shielded wire, USB Connector, with 1 core.					
3	1.8m foil shielded wire, USB Connector, w/o core.					
4	1.5 m shielded cable, terminated with USB connector, with 1 core.					
5	1.8 m shielded cable, terminated with USB connector, w/o core.					
6	10m RJ45 UTP cable					
7	1.2m audio cable without core					
8	10m RJ45 UTP cable					

#### NOTE:

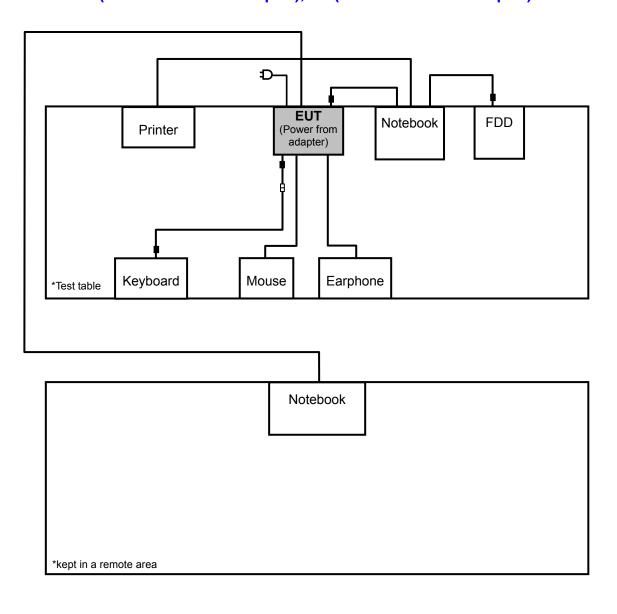
- 1. All power cords of the above support units are non shielded (1.8m).
- 2. Item 7, 8 and 0.4m USB cable with one core were provided by the client.
- 3. Items 6 & 8 acted as communication partners to transfer data.

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# 3.3.1 CONFIGURATION OF SYSTEM UNDER TEST

# Test Mode A1(With Main Ant. & Adapter), B1 (With AUX Ant. & Adapter)



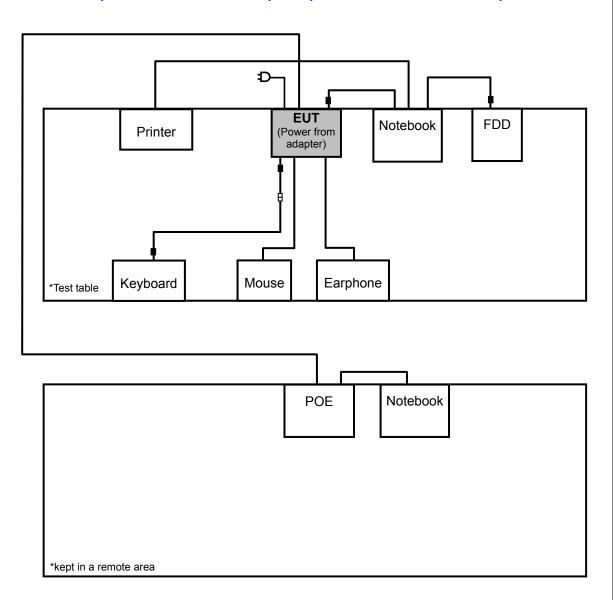
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# Test Mode A2 (With Main Ant. & POE), B2 (Without AUX Ant. & POE)



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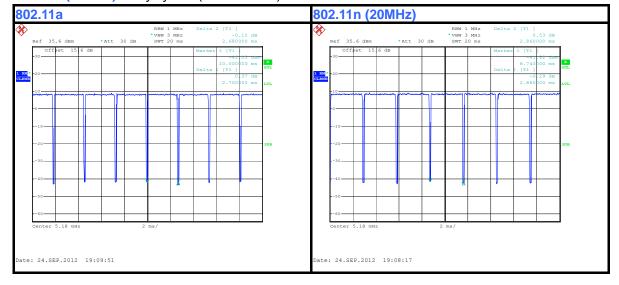


# 3.4 DUTY CYCLE OF TEST SIGNAL

Duty cycle of test signal is > 98 %, duty factor is not required.

**802.11a**: Duty cycle = (2.680/2.700) x 100% = 99.3 %

802.11n (20MHz): Duty cycle =( 2.860/2.880) x 100%= 99.3 %



# 3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

# **FCC Part 15, Subpart E (15.407)**

ANSI C63.10-2009

KDB 789033 D01 General UNII Test Procedures v01r01

All test items have been performed and recorded as per the above standards.

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# 4. TEST TYPES AND RESULTS

## 4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

#### 4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)	
0.009 ~ 0.490	2400/F(kHz)	300	
0.490 ~ 1.705	24000/F(kHz)	30	
1.705 ~ 30.0	30	30	
30 ~ 88	100	3	
88 ~ 216	150	3	
216 ~ 960	200	3	
Above 960	500	3	

#### NOTE:

- 1. The lower limit shall apply at the transition frequencies.
- 2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
- 3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

## 4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m)
PK	PK
-27	68.3

**NOTE:** The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

E = 
$$\frac{1000000\sqrt{30P}}{3}$$
 µV/m, where P is the eirp (Watts).

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# 4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100744	Apr. 19, 2012	Apr. 18, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jan. 30, 2012	Jan. 29, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 03, 2012	Apr. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Sep. 12, 2012	Sep. 11, 2013
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 11, 2012	Jul. 10, 2013
Preamplifier Agilent	8449B	3008A01911	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent	8447D	2944A10638	Oct. 29, 2011	Oct. 28, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295013/4 283403/4	Aug. 28, 2012	Aug. 27, 2013
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 11, 2012	Aug. 10, 2013
Software	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 29, 2011	Oct. 28, 2012

**NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

- 2. The test was performed in HwaYa Chamber 9.
- 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
- 4. The FCC Site Registration No. is 460141.
- 5. The IC Site Registration No. is IC 7450F-4.

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#### 4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

#### NOTE:

- 1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
- 2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
- 3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 1kHz for Average detection (AV) at frequency above 1GHz.
- 4. All modes of operation were investigated and the worst-case emissions are reported.

#### 4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

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# 4.1.6 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

# 4.1.7 EUT OPERATING CONDITION

- a. Placed the EUT on testing table.
- b. Set the EUT under transmission condition continuously at specific channel frequency.
- c. The necessary accessories enable the system in full functions.



## 4.1.8 TEST RESULTS

#### **ABOVE 1GHz WORST-CASE DATA:**

# **Test Mode A1 (With Main Ant. & Adapter)**

#### 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin	

		ANTENNA	POLARITY	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)					
1	5150.00	60.5 PK	74.0	-13.5	1.13 H	139	22.30	38.20					
2	5150.00	44.1 AV	54.0	-9.9	1.13 H	139	5.90	38.20					
3	*5180.00	106.7 PK			1.22 H	139	68.50	38.20					
4	*5180.00	96.5 AV			1.22 H	139	58.30	38.20					
5	#10360.00	56.2 PK	68.3	-12.1	1.02 H	77	8.20	48.00					
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M						
NO.	NO. FREQ. (MHz) EMISSION LIMIT (dBuV/m) MARGIN (dB) ANTENNA HEIGHT (m) TABLE ANGLE (dBuV) CORRECT FACTOR												
		(dBuV/m)	(====,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		TILIOTTI (III)	(Degree)	(3231)	(dB/m)					
1	5150.00	(dBuV/m) 66.1 PK	74.0	-7.9	1.00 V	<b>(Degree)</b> 137	27.90	(dB/m) 38.20					
1 2	5150.00 5150.00	,	,	-7.9 -4.3	` ,	, ,	, ,	, ,					
<u> </u>		66.1 PK	74.0		1.00 V	137	27.90	38.20					
2	5150.00	66.1 PK 49.7 AV	74.0		1.00 V 1.00 V	137 137	27.90 11.50	38.20 38.20					

#### **REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

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EUT TEST CONDITION		DETECTOR Peak (PK)	
CHANNEL	Channel 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz		, ,
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION	LIMIT (dBuV/m)	MARGIN (dB)	ANTFNNA	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5200.00	106.9 PK			1.34 H	163	68.70	38.20		
2	*5200.00	96.6 AV			1.34 H	163	58.40	38.20		
3	#10400.00	56.5 PK	68.3	-11.8	1.05 H	67	8.40	48.10		
4	15600.00	55.4 PK	74.0	-18.6	1.22 H	341	6.30	49.10		
5	15600.00	44.8 AV	54.0	-9.2	1.22 H	341	-4.30	49.10		
		ANTENNA	A POLARIT	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M			
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5200.00	107.3 PK			1.28 V	191	69.10	38.20		
2	*5200.00	97.5 AV			1.28 V	191	59.30	38.20		
3	#10400.00	56.7 PK	68.3	-11.6	1.32 V	229	8.60	48.10		
			74.0	47.0	4.07.1/	252	7.00	49.10		
4	15600.00	56.1 PK	74.0	-17.9	1.27 V	352	7.00	49.10		

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

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EUT TEST CONDITION		MEASUREMENT DETAI	L
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5240.00	106.2 PK			1.39 H	172	67.90	38.30		
2	*5240.00	96.1 AV			1.39 H	172	57.80	38.30		
3	#10480.00	56.8 PK	68.3	-11.5	1.09 H	48	8.60	48.20		
4	15720.00	55.8 PK	74.0	-18.2	1.24 H	356	6.90	48.90		
5	15720.00	44.3 AV	54.0	-9.7	1.24 H	356	-4.60	48.90		
		ANTENNA	A POLARIT	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M			
NO.	NO. FREQ. (MHz)  ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M  EMISSION LEVEL (dBuV/m)  MARGIN (dB)  ANTENNA HEIGHT (m)  CORR FAC (dBuV)  (dBuV)  (dBuV)									
		(dBuV/m)	(abav/iii)		HEIGHT (M)	(Degree)	(ubuv)	(dB/m)		
1	*5240.00	(dBuV/m) 106.8 PK	(dBd v/iii)		1.21 V	(Degree) 207	68.50	(dB/m) 38.30		
1 2	*5240.00 *5240.00	,	(ubuv/iii)		` ′	, , ,	` ′	` '		
		106.8 PK	68.3	-11.4	1.21 V	207	68.50	38.30		
2	*5240.00	106.8 PK 96.7 AV		-11.4 -17.2	1.21 V 1.21 V	207 207	68.50 58.40	38.30 38.30		

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

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Reference no.: 120921C14



EUT TEST CONDITION		MEASUREMENT DETAI	L
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5260.00	106.5 PK			1.38 H	168	68.20	38.30		
2	*5260.00	96.2 AV			1.38 H	168	57.90	38.30		
3	#10520.00	56.2 PK	68.3	-12.1	1.04 H	69	7.90	48.30		
4	15780.00	55.2 PK	74.0	-18.8	1.26 H	332	6.40	48.80		
5	15780.00	44.5 AV	54.0	-9.5	1.26 H	332	-4.30	48.80		
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M			
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5260.00	107.6 PK			1.26 V	201	69.30	38.30		
2	*5260.00	97.8 AV			1.26 V	201	59.50	38.30		
3	#10520.00	56.8 PK	68.3	-11.5	1.30 V	269	8.50	48.30		
4	15780.00	56.4 PK	74.0	-17.6	1.22 V	348	7.60	48.80		
5	15780.00	45.2 AV	54.0	-8.8	1.22 V	348	-3.60	48.80		

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

Report No.: RF120904C23A-1 R2

Reference no.: 120921C14

Cancels and replaces the report No.: RF120904C23A-1 R1 dated Oct. 06, 2012



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin	

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5300.00	107.1 PK			1.29 H	157	68.70	38.40		
2	*5300.00	96.6 AV			1.29 H	157	58.20	38.40		
3	10600.00	56.4 PK	74.0	-17.6	1.07 H	58	8.10	48.30		
4	10600.00	45.7 AV	54.0	-8.3	1.07 H	58	-2.60	48.30		
5	15900.00	54.8 PK	74.0	-19.2	1.18 H	352	6.40	48.40		
6	15900.00	44.1 AV	54.0	-9.9	1.18 H	352	-4.30	48.40		
		ANTENNA	POLARIT	Y & TEST DI	STANCE: V	ERTICAL A	T 3 M			
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5300.00	107.5 PK			1.34 V	202	69.10	38.40		
2	*5300.00	97.6 AV			1.34 V	202	59.20	38.40		
3	10600.00	56.9 PK	74.0	-17.1	1.28 V	245	8.60	48.30		
4	10600.00	46.2 AV	54.0	-7.8	1.28 V	245	-2.10	48.30		
5	15900.00	55.7 PK	74.0	-18.3	1.24 V	356	7.30	48.40		
6	15900.00	45.1 AV	54.0	-8.9	1.24 V	356	-3.30	48.40		

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.

Report No.: RF120904C23A-1 R2

Reference no.: 120921C14 Cancels and replaces the report No.: RF120904C23A-1 R1 dated Oct. 06, 2012

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EUT TEST CONDITION		MEASUREMENT DETAI	L
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5320.00	106.7 PK			1.32 H	151	68.30	38.40		
2	*5320.00	96.1 AV			1.32 H	151	57.70	38.40		
3	5350.00	65.4 PK	74.0	-8.6	1.32 H	151	26.90	38.50		
4	5350.00	49.1 AV	54.0	-4.9	1.32 H	151	10.60	38.50		
5	10640.00	55.1 PK	74.0	-18.9	1.22 H	344	6.60	48.50		
6	10640.00	44.2 AV	54.0	-9.8	1.22 H	344	-4.30	48.50		
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M			
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5320.00	107.1 PK			1.13 V	199	68.70	38.40		
2	*5320.00	97.0 AV			1.13 V	199	58.60	38.40		
3	5350.00	66.8 PK	74.0	-7.2	1.12 V	198	28.30	38.50		
4	5350.00	49.7 AV	54.0	-4.3	1.12 V	198	11.20	38.50		
5	10640.00	56.4 PK	74.0	-17.6	1.38 V	219	7.90	48.50		
6	10640 00	45 9 AV	54 0	-8 1	1 38 V	219	-2 60	48 50		

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.

Report No.: RF120904C23A-1 R2

Reference no.: 120921C14 Cancels and replaces the report No.: RF120904C23A-1 R1 dated Oct. 06, 2012



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin	

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	62.8 PK	74.0	-11.2	1.37 H	171	24.10	38.70
2	5460.00	43.3 AV	54.0	-10.7	1.37 H	171	4.60	38.70
3	#5470.00	66.7 PK	68.3	-1.6	1.37 H	171	28.00	38.70
4	*5500.00	104.2 PK			1.28 H	167	65.50	38.70
5	*5500.00	94.2 AV			1.28 H	167	55.50	38.70
6	11000.00	55.6 PK	74.0	-18.4	1.07 H	64	6.40	49.20
7	11000.00	44.8 AV	54.0	-9.2	1.07 H	64	-4.40	49.20
		ANTENNA	POLARIT	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M	
	NO. FREQ. (MHz)  EMISSION LIMIT (dBuV/m)  MARGIN (dB)  ANTENNA HEIGHT (m)  TABLE RAW VALUE (dBuV)  FA							
NO.	FREQ. (MHz)			MARGIN (dB)	, <b>_</b> , .			CORRECTION FACTOR (dB/m)
<b>NO</b> .	FREQ. (MHz) 5460.00	LEVEL		MARGIN (dB) -12.8	, <b>_</b> , .	ANGLE		FACTOR
	,	LEVEL (dBuV/m)	(dBuV/m)		HEIGHT (m)	ANGLE (Degree)	(dBuV)	FACTOR (dB/m)
1	5460.00	LEVEL (dBuV/m) 61.2 PK	(dBuV/m) 74.0	-12.8	<b>HEIGHT (m)</b>	ANGLE (Degree)	(dBuV)	FACTOR (dB/m) 38.70
1 2	5460.00 5460.00	LEVEL (dBuV/m) 61.2 PK 41.7 AV	(dBuV/m) 74.0 54.0	-12.8 -12.3	1.20 V 1.20 V	ANGLE (Degree) 199	(dBuV) 22.50 3.00	FACTOR (dB/m) 38.70 38.70
1 2 3	5460.00 5460.00 <b>#5470.00</b>	LEVEL (dBuV/m) 61.2 PK 41.7 AV 67.3 PK	(dBuV/m) 74.0 54.0	-12.8 -12.3	1.20 V 1.20 V 1.20 V	ANGLE (Degree) 199 199	(dBuV)  22.50  3.00  28.60	FACTOR (dB/m)  38.70  38.70  38.70
1 2 3	5460.00 5460.00 <b>#5470.00</b> *5500.00	LEVEL (dBuV/m) 61.2 PK 41.7 AV 67.3 PK 105.1 PK	(dBuV/m) 74.0 54.0	-12.8 -12.3	1.20 V 1.20 V 1.20 V 1.20 V 1.18 V	ANGLE (Degree)  199 199 199 216	(dBuV)  22.50  3.00  28.60  66.40	FACTOR (dB/m)  38.70  38.70  38.70  38.70

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

Report No.: RF120904C23A-1 R2 Reference no.: 120921C14



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin	

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	105.9 PK			1.17 H	198	67.00	38.90
2	*5580.00	95.6 AV			1.17 H	198	56.70	38.90
3	7439.00	50.9 PK	74.0	-23.1	1.16 H	47	6.80	44.10
4	7439.00	40.0 AV	54.0	-14.0	1.16 H	47	-4.10	44.10
5	11160.00	55.4 PK	74.0	-18.6	1.04 H	99	6.10	49.30
6	11160.00	44.3 AV	54.0	-9.7	1.04 H	99	-5.00	49.30
		ANTENNA	POLARIT	Y & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	106.8 PK			1.22 V	247	67.90	38.90
2	*5580.00	96.5 AV			1.22 V	247	57.60	38.90
3	7439.00	53.4 PK	74.0	-20.6	1.57 V	165	9.30	44.10
4	7439.00	42.1 AV	54.0	-11.9	1.57 V	165	-2.00	44.10
5	11160.00	56.7 PK	74.0	-17.3	1.21 V	332	7.40	49.30
6	11160.00	46.2 AV	54.0	-7.8	1.21 V	332	-3.10	49.30

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.

Report No.: RF120904C23A-1 R2

Reference no.: 120921C14 Cancels and replaces the report No.: RF120904C23A-1 R1 dated Oct. 06, 2012



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin	

		ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
		ANIENNA	POLARITY	& IEST DIS	I ANCE: HO	RIZONTAL	AI3M				
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)			
1	*5700.00	105.4 PK			1.28 H	221	66.20	39.20			
2	*5700.00	95.0 AV			1.28 H	221	55.80	39.20			
3	#5725.00	66.7 PK	68.3	-1.6	1.12 H	157	27.50	39.20			
4	11400.00	54.7 PK	74.0	-19.3	1.04 H	98	5.40	49.30			
5	11400.00	43.2 AV	54.0	-10.8	1.04 H	98	-6.10	49.30			
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M				
NO.	FREQ. (MHz)	EMISSION LEVEL	LIMIT	MARGIN (dB)	ANTENNA	TABLE	RAW VALUE	CORRECTION			
	,	(dBuV/m)	(dBuV/m)	WARGIN (UB)	HEIGHT (m)	ANGLE (Degree)	(dBuV)	FACTOR (dB/m)			
1	*5700.00		(dBuV/m)	MARGIN (db)	<b>HEIGHT (m)</b> 1.06 V		(dBuV) 66.10				
1 2	,	(dBuV/m)	(dBuV/m)	MARGIN (UB)	` ,	(Degree)		(dB/m)			
	*5700.00	(dBuV/m) 105.3 PK	(dBuV/m) 68.3	-1.7	1.06 V	<b>(Degree)</b> 129	66.10	(dB/m) 39.20			
2	*5700.00 *5700.00	(dBuV/m) 105.3 PK 95.5 AV			1.06 V 1.06 V	(Degree) 129 129	66.10 56.30	(dB/m) 39.20 39.20			

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

Report No.: RF120904C23A-1 R2 28 of 94



# 802.11n (20MHz)

EUT TEST CONDITION	TEST CONDITION MEASUREMENT DETAIL		L
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)							
1	5150.00	60.7 PK	74.0	-13.3	1.35 H	162	22.50	38.20							
2	5150.00	44.5 AV	54.0	-9.5	1.35 H	162	6.30	38.20							
3	*5180.00	106.0 PK			1.35 H	162	67.80	38.20							
4	*5180.00	96.3 AV			1.35 H	162	58.10	38.20							
5	#10360.00	55.7 PK	68.3	-12.6	1.07 H	85	7.70	48.00							
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)							
1	5150.00	66.7 PK	74.0	-7.3	1.28 V	191	28.50	38.20							
2	5150.00	49.8 AV	54.0	-4.2	1.28 V	191	11.60	38.20							
3	*5180.00	107.2 PK			1.16 V	193	69.00	38.20							
_					4.40.17	400	50.00	20.20							
4	*5180.00	97.5 AV			1.16 V	193	59.30	38.20							

# **REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

Report No.: RF120904C23A-1 R2 Reference no.: 120921C14



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 40	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin	

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION	LIMIT (dBuV/m)	MARGIN (dB)	ANTFNNA	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5200.00	106.4 PK			1.38 H	177	68.20	38.20		
2	*5200.00	96.1 AV			1.38 H	177	57.90	38.20		
3	#10400.00	56.8 PK	68.3	-11.5	1.07 H	78	8.70	48.10		
4	15600.00	55.7 PK	74.0	-18.3	1.13 H	334	6.60	49.10		
5	15600.00	44.3 AV	54.0	-9.7	1.13 H	334	-4.80	49.10		
		ANTENNA	A POLARIT	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M			
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5200.00	107.1 PK			1.24 V	199	68.90	38.20		
2	*5200.00	97.2 AV			1.24 V	199	59.00	38.20		
3	#10400.00	56.9 PK	68.3	-11.4	1.37 V	243	8.80	48.10		
	15600.00	55.8 PK	74.0	-18.2	1.25 V	356	6.70	49.10		
4	15600.00	33.6 FK	74.0	-10.2	1.25 V	330	0.70	43.10		

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

Report No.: RF120904C23A-1 R2 Reference no.: 120921C14

Cancels and replaces the report No.: RF120904C23A-1 R1 dated Oct. 06, 2012

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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin	

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	106.4 PK			1.41 H	152	68.10	38.30
2	*5240.00	96.2 AV			1.41 H	152	57.90	38.30
3	#10480.00	56.0 PK	68.3	-12.3	1.12 H	51	7.80	48.20
4	15720.00	55.3 PK	74.0	-18.7	1.22 H	344	6.40	48.90
5	15720.00	44.2 AV	54.0	-9.8	1.22 H	344	-4.70	48.90
		ANTENNA	A POLARIT	Y & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	107.2 PK			1.14 V	201	68.90	38.30
2	*5240.00	96.8 AV			1.14 V	201	58.50	38.30
3	#10480.00	56.5 PK	68.3	-11.8	1.32 V	252	8.30	48.20
4	15720.00	56.4 PK	74.0	-17.6	1.24 V	352	7.50	48.90

## **REMARKS:**

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

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Reference no.: 120921C14



EUT TEST CONDITION	JT TEST CONDITION MEASUREMENT DETA		
CHANNEL Channel 52 F		FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5260.00	106.3 PK			1.45 H	177	68.00	38.30		
2	*5260.00	96.0 AV			1.45 H	177	57.70	38.30		
3	#10520.00	55.8 PK	68.3	-12.5	1.08 H	54	7.50	48.30		
4	15780.00	55.6 PK	74.0	-18.4	1.38 H	310	6.80	48.80		
5	15780.00	44.7 AV	54.0	-9.3	1.38 H	310	-4.10	48.80		
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M			
NO.	I I LIMIT I ANTENNA I RAW VALUE I							CORRECTION FACTOR (dB/m)		
1	*5260.00	107.4 PK			1.34 V	169	69.10	38.30		
2	*5260.00	97.5 AV			1.34 V	169	59.20	38.30		
3	#10520.00	56.1 PK	68.3	-12.2	1.22 V	271	7.80	48.30		
4	15780.00	56.8 PK	74.0	-17.2	1.18 V	356	8.00	48.80		
5	15780.00	45.6 AV	54.0	-8.4	1.18 V	356	-3.20	48.80		

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

Report No.: RF120904C23A-1 R2 32 of 94

Reference no.: 120921C14 Cancels and replaces the report No.: RF120904C23A-1 R1 dated Oct. 06, 2012



EUT TEST CONDITION	CONDITION MEASUREMENT DETAIL		
CHANNEL	ANNEL Channel 60 FREQUENCY RA		1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)			
1	*5300.00	106.7 PK			1.22 H	165	68.30	38.40			
2	*5300.00	96.1 AV			1.22 H	165	57.70	38.40			
3	10600.00	56.7 PK	74.0	-17.3	1.15 H	69	8.40	48.30			
4	10600.00	45.4 AV	54.0	-8.6	1.15 H	69	-2.90	48.30			
5	15900.00	54.6 PK	74.0	-19.4	1.24 H	342	6.20	48.40			
6	15900.00	43.7 AV	54.0	-10.3	1.24 H	342	-4.70	48.40			
		ANTENNA	POLARIT	Y & TEST DI	STANCE: V	ERTICAL A	T 3 M				
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)			
1	*5300.00	107.2 PK			1.22 V	198	68.80	38.40			
2	*5300.00	97.2 AV			1.22 V	198	58.80	38.40			
3	10600.00	56.7 PK	74.0	-17.3	1.22 V	251	8.40	48.30			
4	10600.00	46.5 AV	54.0	-7.5	1.22 V	251	-1.80	48.30			
5	15900.00	55.1 PK	74.0	-18.9	1.18 V	358	6.70	48.40			

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.

Report No.: RF120904C23A-1 R2

Reference no.: 120921C14 Cancels and replaces the report No.: RF120904C23A-1 R1 dated Oct. 06, 2012



EUT TEST CONDITION	CONDITION MEASUREMENT DETAIL		
CHANNEL	ANNEL Channel 64 FREQUENCY RANGE		1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5320.00	107.1 PK			1.18 H	138	68.70	38.40		
2	*5320.00	96.6 AV			1.18 H	138	58.20	38.40		
3	5350.00	68.5 PK	74.0	-5.5	1.18 H	138	30.00	38.50		
4	5350.00	50.3 AV	54.0	-3.7	1.18 H	138	11.80	38.50		
5	10640.00	54.8 PK	74.0	-19.2	1.21 H	358	6.30	48.50		
6	10640.00	44.1 AV	54.0	-9.9	1.21 H	358	-4.40	48.50		
		ANTENNA	POLARIT	Y & TEST DI	STANCE: V	ERTICAL A	T 3 M			
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5320.00	107.7 PK			1.14 V	199	69.30	38.40		
2	*5320.00	97.2 AV			1.14 V	199	58.80	38.40		
3	5350.00	68.4 PK	74.0	-5.6	1.13 V	201	29.90	38.50		
4	5350.00	50.5 AV	54.0	-3.5	1.13 V	201	12.00	38.50		
5	10640.00	56.8 PK	74.0	-17.2	1.31 V	227	8.30	48.50		
6	10640.00	46.2 AV	54.0	-7.8	1.31 V	227	-2.30	48.50		

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.

Report No.: RF120904C23A-1 R2

Reference no.: 120921C14 Cancels and replaces the report No.: RF120904C23A-1 R1 dated Oct. 06, 2012



EUT TEST CONDITION	TTEST CONDITION MEASUREMENT DETAIL		
CHANNEL Channel 100 FR		FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	5460.00	58.2 PK	74.0	-15.8	1.39 H	158	19.50	38.70		
2	5460.00	41.2 AV	54.0	-12.8	1.39 H	158	2.50	38.70		
3	#5470.00	67.2 PK	68.3	-1.1	1.39 H	158	28.50	38.70		
4	*5500.00	104.7 PK			1.39 H	158	66.00	38.70		
5	*5500.00	94.2 AV			1.39 H	158	55.50	38.70		
6	11000.00	55.1 PK	74.0	-18.9	1.08 H	76	5.90	49.20		
7	11000.00	44.0 AV	54.0	-10.0	1.08 H	76	-5.20	49.20		
		ANTENNA	A POLARIT	Y & TEST DI	STANCE: V	ERTICAL A	T 3 M			
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	5460.00	60.0 PK	74.0	-14.0	1.09 V	203	21.30	38.70		
2	5460.00	42.5 AV	54.0	-11.5	1.09 V	203	3.80	38.70		
3	#5470.00	67.1 PK	68.3	-1.2	1.12 V	203	28.40	38.70		
4	*5500.00	105.3 PK			1.09 V	199	66.60	38.70		
5	*5500.00	95.8 AV			1.09 V	199	57.10	38.70		
6	11000.00	56.1 PK	74.0	-17.9	1.24 V	337	6.90	49.20		

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

Report No.: RF120904C23A-1 R2

Reference no.: 120921C14 Cancels and replaces the report No.: RF120904C23A-1 R1 dated Oct. 06, 2012

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EUT TEST CONDITION	JT TEST CONDITION MEASUREMENT DETA		
CHANNEL Channel 116 F		FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5580.00	105.6 PK			1.12 H	204	66.70	38.90		
2	*5580.00	95.2 AV			1.12 H	204	56.30	38.90		
3	7439.00	50.4 PK	74.0	-23.6	1.28 H	54	6.30	44.10		
4	7439.00	39.8 AV	54.0	-14.2	1.28 H	54	-4.30	44.10		
5	11160.00	55.8 PK	74.0	-18.2	1.08 H	107	6.50	49.30		
6	11160.00	44.1 AV	54.0	-9.9	1.08 H	107	-5.20	49.30		
		ANTENNA	A POLARIT	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M			
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5580.00	106.5 PK			1.28 V	251	67.60	38.90		
2	*5580.00	96.1 AV			1.28 V	251	57.20	38.90		
3	7439.00	53.1 PK	74.0	-20.9	1.64 V	177	9.00	44.10		
4	7439.00	41.8 AV	54.0	-12.2	1.64 V	177	-2.30	44.10		
5	11160.00	56.9 PK	74.0	-17.1	1.13 V	347	7.60	49.30		
6	11160.00	45.8 AV	54.0	-8.2	1.13 V	347	-3.50	49.30		

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.

Report No.: RF120904C23A-1 R2 Reference no.: 120921C14



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EUT TEST CONDITION		MEASUREMENT DETAI	L
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

		ANITENINIA	DOL A DITY	e TECT DIC	TANCE: UO	DIZONTAL	AT 2 M			
	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5700.00	105.3 PK			1.12 H	160	66.10	39.20		
2	*5700.00	95.7 AV			1.12 H	160	56.50	39.20		
3	#5725.00	66.7 PK	68.3	-1.6	1.12 H	160	27.50	39.20		
4	11400.00	54.8 PK	74.0	-19.2	1.08 H	108	5.50	49.30		
5	11400.00	43.6 AV	54.0	-10.4	1.08 H	108	-5.70	49.30		
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M			
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5700.00	106.0 PK			1.41 V	123	66.80	39.20		
2	*5700.00	96.2 AV			1.41 V	123	57.00	39.20		
3	#5725.00	66.9 PK	68.3	-1.4	1.41 V	123	27.70	39.20		
4	11400.00	55.4 PK	74.0	-18.6	1.18 V	357	6.10	49.30		
4	11100.00	33.7 T K	74.0	10.0	1.10 V	001	0.10	10.00		

### **REMARKS:**

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

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Reference no.: 120921C14



# Test Mode B1 (With AUX Ant. & Adapter)

#### 802.11a

EUT TEST CONDITION		MEASUREMENT DETAI	L
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	5150.00	64.3 PK	74.0	-9.7	1.18 H	213	26.50	37.80		
2	5150.00	47.1 AV	54.0	-6.9	1.18 H	213	9.30	37.80		
3	*5180.00	106.6 PK			1.40 H	216	68.80	37.80		
4	*5180.00	96.7 AV			1.40 H	216	58.90	37.80		
5	#10360.00	56.0 PK	68.3	-12.3	1.34 H	201	7.20	48.80		
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M			
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	5150.00	68.8 PK	74.0	-5.2	1.29 V	251	31.00	37.80		
2	5150.00	52.4 AV	54.0	-1.6	1.29 V	251	14.60	37.80		
3	*5180.00	108.7 PK			1.07 V	251	70.90	37.80		
4	*5180.00	98.6 AV			1.07 V	251	60.80	37.80		
5	#10360.00	56.7 PK	68.3	-11.6	1.07 V	325	7.90	48.80		

#### **REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

Report No.: RF120904C23A-1 R2

Reference no.: 120921C14



EUT TEST CONDITION		MEASUREMENT DETAI	L
CHANNEL	Channel 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5200.00	106.4 PK			1.34 H	212	68.50	37.90		
2	*5200.00	96.2 AV			1.34 H	212	58.30	37.90		
3	#10400.00	55.1 PK	68.3	-13.2	1.31 H	205	6.30	48.80		
4	15600.00	54.9 PK	74.0	-19.1	1.07 H	45	6.50	48.40		
5	15600.00	43.5 AV	54.0	-10.5	1.07 H	45	-4.90	48.40		
		ANTENNA	A POLARIT	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M			
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5200.00	108.4 PK			1.21 V	258	70.50	37.90		
2	*5200.00	98.7 AV			1.21 V	258	60.80	37.90		
3	#10400.00	56.7 PK	68.3	-11.6	1.08 V	352	7.90	48.80		
4	15600.00	55.6 PK	74.0	-18.4	1.18 V	127	7.20	48.40		
5	15600.00	45.1 AV	54.0	-8.9	1.18 V	127	-3.30	48.40		

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

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Report Format Version 5.0.0

EUT TEST CONDITION		MEASUREMENT DETAI	L
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5240.00	106.1 PK			1.33 H	207	68.20	37.90		
2	*5240.00	96.1 AV			1.33 H	207	58.20	37.90		
3	#10480.00	55.2 PK	68.3	-13.1	1.29 H	198	6.20	49.00		
4	15720.00	54.6 PK	74.0	-19.4	1.02 H	32	6.40	48.20		
5	15720.00	43.4 AV	54.0	-10.6	1.02 H	32	-4.80	48.20		
		ANTENNA	A POLARIT	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M			
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5240.00	108.2 PK			1.16 V	251	70.30	37.90		
2	*5240.00	98.6 AV			1.16 V	251	60.70	37.90		
3	#10480.00	56.2 PK	68.3	-12.1	1.04 V	347	7.20	49.00		
4	15720.00	55.2 PK	74.0	-18.8	1.14 V	147	7.00	48.20		
5	15720.00	44.8 AV	54.0	-9.2	1.14 V	147	-3.40	48.20		

### **REMARKS:**

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

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EUT TEST CONDITION		MEASUREMENT DETAI	L
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin

		ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)			
1	*5260.00	106.6 PK			1.34 H	198	68.70	37.90			
2	*5260.00	96.4 AV			1.34 H	198	58.50	37.90			
3	#10520.00	54.8 PK	68.3	-13.5	1.35 H	204	5.70	49.10			
4	15780.00	54.2 PK	74.0	-19.8	1.08 H	41	6.20	48.00			
5	15780.00	42.8 AV	54.0	-11.2	1.08 H	41	-5.20	48.00			
		ANTENNA	A POLARIT	Y & TEST DI	STANCE: V	ERTICAL A	T 3 M				
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)			
1	*5260.00	108.5 PK			1.27 V	252	70.60	37.90			
2	*5260.00	98.7 AV			1.27 V	252	60.80	37.90			
3	*5260.00 #10520.00		68.3	-11.6	1.27 V 1.08 V	252 332	60.80 7.60	37.90 49.10			
		98.7 AV	68.3 74.0	-11.6 -18.2							

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

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EUT TEST CONDITION		MEASUREMENT DETAI	L
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	106.4 PK			1.37 H	189	68.40	38.00
2	*5300.00	96.8 AV			1.37 H	189	58.80	38.00
3	10600.00	54.2 PK	74.0	-19.8	1.24 H	207	5.20	49.00
4	10600.00	43.2 AV	54.0	-10.8	1.24 H	207	-5.80	49.00
5	15900.00	54.9 PK	74.0	-19.1	1.04 H	58	7.30	47.60
6	15900.00	43.9 AV	54.0	-10.1	1.04 H	58	-3.70	47.60
		ANTENNA	POLARIT	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	109.1 PK			1.22 V	239	71.10	38.00
2	*5300.00	98.8 AV			1.22 V	239	60.80	38.00
3	10600.00	55.8 PK	74.0	-18.2	1.09 V	341	6.80	49.00
4	10600.00	45.6 AV	54.0	-8.4	1.09 V	341	-3.40	49.00
5	15900.00	55.8 PK	74.0	-18.2	1.08 V	152	8.20	47.60
6	15900.00	44.7 AV	54.0	-9.3	1.08 V	152	-2.90	47.60

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.

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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin	

		<b>ANTENNA</b>	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	106.2 PK			1.35 H	212	68.20	38.00
2	*5320.00	96.0 AV			1.35 H	212	58.00	38.00
3	5350.00	66.8 PK	74.0	-7.2	1.35 H	212	28.70	38.10
4	5350.00	47.9 AV	54.0	-6.1	1.35 H	212	9.80	38.10
5	10640.00	54.8 PK	74.0	-19.2	1.05 H	51	5.60	49.20
6	10640.00	43.6 AV	54.0	-10.4	1.05 H	51	-5.60	49.20
		ANTENNA	A POLARIT	Y & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	108.3 PK			1.04 V	255	70.30	38.00
2	*5320.00	98.2 AV			1.04 V	255	60.20	38.00
3	5350.00	69.3 PK	74.0	-4.7	1.05 V	254	31.20	38.10
4	5350.00	52.1 AV	54.0	-1.9	1.05 V	254	14.00	38.10
5	10640.00	57.3 PK	74.0	-16.7	1.17 V	329	8.10	49.20

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.

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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin	

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	61.4 PK	74.0	-12.6	1.34 H	227	23.10	38.30
2	5460.00	43.6 AV	54.0	-10.4	1.34 H	227	5.30	38.30
3	#5470.00	65.8 PK	68.3	-2.5	1.34 H	227	27.50	38.30
4	*5500.00	105.3 PK			1.34 H	227	67.00	38.30
5	*5500.00	95.1 AV			1.34 H	227	56.80	38.30
6	11000.00	54.1 PK	74.0	-19.9	1.07 H	68	4.40	49.70
7	11000.00	42.8 AV	54.0	-11.2	1.07 H	68	-6.90	49.70
		ANTENNA	POLARITY	Y & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	64.8 PK	74.0	-9.2	1.12 V	254	26.50	38.30
2	5460.00	47.3 AV	54.0	-6.7	1.12 V	254	9.00	38.30
3	#5470.00	67.1 PK	68.3	-1.2	1.12 V	254	28.80	38.30
4	*5500.00	107.0 PK			1.01 V	255	68.70	38.30
5	*5500.00	97.2 AV			1.01 V	255	58.90	38.30
6	11000.00	54.7 PK	74.0	-19.3	1.06 V	341	5.00	49.70

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

Report No.: RF120904C23A-1 R2

Reference no.: 120921C14

Cancels and replaces the report No.: RF120904C23A-1 R1 dated Oct. 06, 2012



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin	

		ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)			
1	*5580.00	106.6 PK			1.17 H	223	68.20	38.40			
2	*5580.00	96.5 AV			1.17 H	223	58.10	38.40			
3	11160.00	55.9 PK	74.0	-18.1	1.27 H	345	6.40	49.50			
4	11160.00	43.0 AV	54.0	-11.0	1.27 H	345	-6.50	49.50			
5	#16740.00	57.7 PK	68.3	-10.6	1.00 H	13	7.90	49.80			
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M				
	I I I I I I I I I I I I I I I I I I I										
NO.	FREQ. (MHz)	LEVEL		MARGIN (dB)		ANGLE		CORRECTION FACTOR (dB/m)			
<b>NO</b> .	*5580.00	LEVEL		MARGIN (dB)		ANGLE		FACTOR			
		LEVEL (dBuV/m)		MARGIN (dB)	HEIGHT (m)	ANGLE (Degree)	(dBuV)	FACTOR (dB/m)			
1	*5580.00	<b>LEVEL</b> (dBuV/m) 108.7 PK		MARGIN (dB) -17.3	<b>HEIGHT (m)</b> 1.00 V	ANGLE (Degree) 255	(dBuV) 70.30	FACTOR (dB/m) 38.40			
1 2	*5580.00 *5580.00	LEVEL (dBuV/m) 108.7 PK 98.8 AV	(dBuV/m)		1.00 V 1.00 V	ANGLE (Degree) 255 255	(dBuV) 70.30 60.40	FACTOR (dB/m) 38.40 38.40			

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

Report No.: RF120904C23A-1 R2

Reference no.: 120921C14



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin	

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)	
1	*5700.00	105.6 PK			1.06 H	180	66.90	38.70	
2	*5700.00	95.6 AV			1.06 H	180	56.90	38.70	
3	#5725.00	64.4 PK	68.3	-3.9	1.06 H	180	25.70	38.70	
4	11490.00	56.3 PK	74.0	-17.7	1.00 H	82	6.90	49.40	
5	11490.00	43.1 AV	54.0	-10.9	1.00 H	82	-6.30	49.40	
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M		
	I I LIMIT I I ANTENNA I RAW VALUE I								
NO.	FREQ. (MHz)	LEVEL		MARGIN (dB)	, <b>_</b> , .	ANGLE			
<b>NO</b> .	*5700.00	LEVEL		MARGIN (dB)	, <b>_</b> , .	ANGLE		FACTOR	
		LEVEL (dBuV/m)		MARGIN (dB)	HEIGHT (m)	ANGLE (Degree)	(dBuV)	FACTOR (dB/m)	
1	*5700.00	<b>LEVEL</b> (dBuV/m) 107.2 PK		MARGIN (dB)	<b>HEIGHT (m)</b>	ANGLE (Degree)	( <b>dBuV</b> ) 68.50	FACTOR (dB/m) 38.70	
1 2	*5700.00 *5700.00	LEVEL (dBuV/m) 107.2 PK 97.2 AV	(dBuV/m)		1.04 V 1.04 V	ANGLE (Degree) 224 224	(dBuV) 68.50 58.50	FACTOR (dB/m) 38.70 38.70	

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

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## 802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin	

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M		
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)	
1	5150.00	65.8 PK	74.0	-8.2	1.03 H	188	28.00	37.80	
2	5150.00	48.8 AV	54.0	-5.2	1.03 H	188	11.00	37.80	
3	*5180.00	106.7 PK			1.03 H	188	68.90	37.80	
4	*5180.00	96.4 AV			1.03 H	188	58.60	37.80	
5	#10360.00	56.1 PK	68.3	-12.2	1.39 H	227	7.30	48.80	
	ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
					• · · · · · · · · · · ·	_	. •		
NO.	FREQ. (MHz)	EMISSION	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)	
<b>NO</b> .	FREQ. (MHz) 5150.00	EMISSION LEVEL			ANTENNA	TABLE ANGLE	RAW VALUE	FACTOR	
		EMISSION LEVEL (dBuV/m)	(dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	FACTOR (dB/m)	
1	5150.00	EMISSION LEVEL (dBuV/m) 68.7 PK	(dBuV/m) 74.0	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	<b>FACTOR</b> (dB/m) 37.80	
1 2	5150.00 5150.00	EMISSION LEVEL (dBuV/m) 68.7 PK 52.5 AV	(dBuV/m) 74.0	MARGIN (dB)	ANTENNA HEIGHT (m) 1.00 V 1.00 V	TABLE ANGLE (Degree) 204 204	RAW VALUE (dBuV) 30.90 14.70	FACTOR (dB/m) 37.80 37.80	

### **REMARKS:**

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

Report No.: RF120904C23A-1 R2

Reference no.: 120921C14 Cancels and replaces the report No.: RF120904C23A-1 R1 dated Oct. 06, 2012

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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 40	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin	

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	106.2 PK			1.01 H	194	68.30	37.90
2	*5200.00	96.0 AV			1.01 H	194	58.10	37.90
3	#10400.00	54.8 PK	68.3	-13.5	1.28 H	217	6.00	48.80
4	15600.00	54.7 PK	74.0	-19.3	1.08 H	72	6.30	48.40
5	15600.00	43.1 AV	54.0	-10.9	1.08 H	72	-5.30	48.40
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	108.6 PK			1.14 V	204	70.70	37.90
2	*5200.00	98.2 AV			1.14 V	204	60.30	37.90
_	#10400.00	50 0 DV	68.3	-12.1	1.01 V	342	7.40	48.80
3	#10400.00	56.2 PK	00.5	-12.1	1.01 V	0.2	7.40	10.00
4	15600.00	55.8 PK	74.0	-18.2	1.27 V	135	7.40	48.40

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

Report No.: RF120904C23A-1 R2



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin	

		ANTENNA I	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	106.4 PK			1.08 H	167	68.50	37.90
2	*5240.00	96.2 AV			1.08 H	167	58.30	37.90
3	#10480.00	54.8 PK	68.3	-13.5	1.24 H	159	5.80	49.00
4	15720.00	54.9 PK	74.0	-19.1	1.08 H	41	6.70	48.20
5	15720.00	43.8 AV	54.0	-10.2	1.08 H	41	-4.40	48.20
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
<b>NO</b> .	FREQ. (MHz) *5240.00	LEVEL		MARGIN (dB)	7	ANGLE		FACTOR
		LEVEL (dBuV/m)		MARGIN (dB)	HEIGHT (m)	ANGLE (Degree)	(dBuV)	FACTOR (dB/m)
1	*5240.00	<b>LEVEL</b> (dBuV/m) 108.8 PK		MARGIN (dB) -11.5	<b>HEIGHT (m)</b>	ANGLE (Degree)	( <b>dBuV</b> ) 70.90	<b>FACTOR</b> (dB/m) 37.90
1 2	*5240.00 *5240.00	LEVEL (dBuV/m) 108.8 PK 98.7 AV	(dBuV/m)		1.06 V 1.06 V	ANGLE (Degree) 189	(dBuV) 70.90 60.80	FACTOR (dB/m) 37.90 37.90

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

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Reference no.: 120921C14



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin	

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	106.4 PK			1.01 H	184	68.50	37.90
2	*5260.00	96.1 AV			1.01 H	184	58.20	37.90
3	#10520.00	54.2 PK	68.3	-14.1	1.38 H	214	5.10	49.10
4	15780.00	53.8 PK	74.0	-20.2	1.01 H	58	5.80	48.00
5	15780.00	42.4 AV	54.0	-11.6	1.01 H	58	-5.60	48.00
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
<b>NO</b> .	*5260.00	LEVEL		MARGIN (dB)		ANGLE	_	FACTOR
		LEVEL (dBuV/m)		MARGIN (dB)	HEIGHT (m)	ANGLE (Degree)	(dBuV)	FACTOR (dB/m)
1	*5260.00	<b>LEVEL</b> (dBuV/m) 108.3 PK		MARGIN (dB) -11.4	<b>HEIGHT (m)</b> 1.04 V	ANGLE (Degree) 208	(dBuV) 70.40	FACTOR (dB/m) 37.90
1 2	*5260.00 *5260.00	LEVEL (dBuV/m) 108.3 PK 98.2 AV	(dBuV/m)		1.04 V 1.04 V	ANGLE (Degree) 208 208	(dBuV) 70.40 60.30	FACTOR (dB/m) 37.90 37.90

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

Report No.: RF120904C23A-1 R2

Reference no.: 120921C14 Cancels and replaces the report No.: RF120904C23A-1 R1 dated Oct. 06, 2012

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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin	

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	106.8 PK			1.05 H	186	68.80	38.00
2	*5300.00	96.7 AV			1.05 H	186	58.70	38.00
3	10600.00	54.4 PK	74.0	-19.6	1.22 H	213	5.40	49.00
4	10600.00	43.6 AV	54.0	-10.4	1.22 H	213	-5.40	49.00
5	15900.00	54.2 PK	74.0	-19.8	1.08 H	63	6.60	47.60
6	15900.00	43.3 AV	54.0	-10.7	1.08 H	63	-4.30	47.60
		ANTENNA	A POLARIT	Y & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	108.9 PK			1.04 V	221	70.90	38.00
2	*5300.00	98.7 AV			1.04 V	221	60.70	38.00
3	10600.00	55.2 PK	74.0	-18.8	1.12 V	356	6.20	49.00
4	10600.00	45.7 AV	54.0	-8.3	1.12 V	356	-3.30	49.00
5	15900.00	56.2 PK	74.0	-17.8	1.01 V	141	8.60	47.60
6	15900.00	46.2 AV	54.0	-7.8	1.01 V	141	-1.40	47.60

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.

Report No.: RF120904C23A-1 R2 Reference no.: 120921C14



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin	

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	106.6 PK			1.12 H	182	68.60	38.00
2	*5320.00	96.2 AV			1.12 H	182	58.20	38.00
3	5350.00	67.1 PK	74.0	-6.9	1.12 H	182	29.00	38.10
4	5350.00	48.0 AV	54.0	-6.0	1.12 H	182	9.90	38.10
5	10640.00	54.3 PK	74.0	-19.7	1.08 H	42	5.10	49.20
6	10640.00	42.8 AV	54.0	-11.2	1.08 H	42	-6.40	49.20
		ANTENNA	A POLARITY	Y & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	108.6 PK			1.02 V	204	70.60	38.00
2	*5320.00	98.5 AV			1.02 V	204	60.50	38.00
3	5350.00	69.8 PK	74.0	-4.2	1.02 V	204	31.70	38.10
4	5350.00	52.6 AV	54.0	-1.4	1.02 V	204	14.50	38.10
5	10640.00	56.8 PK	74.0	-17.2	1.18 V	347	7.60	49.20
6	10640.00	45.8 AV	54.0	-8.2	1.18 V	347	-3.40	49.20

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.

Report No.: RF120904C23A-1 R2



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin	

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	64.7 PK	74.0	-9.3	1.00 H	219	26.40	38.30
2	5460.00	46.1 AV	54.0	-7.9	1.00 H	219	7.80	38.30
3	#5470.00	65.4 PK	68.3	-2.9	1.00 H	219	27.10	38.30
4	*5500.00	105.1 PK			1.00 H	219	66.80	38.30
5	*5500.00	95.1 AV			1.00 H	219	56.80	38.30
6	11000.00	54.7 PK	74.0	-19.3	1.34 H	224	5.00	49.70
7	11000.00	44.3 AV	54.0	-9.7	1.34 H	224	-5.40	49.70
		ANTENNA	A POLARIT	Y & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	Y & TEST DI	STANCE: V ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	T 3 M RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
<b>NO</b> .	FREQ. (MHz) 5460.00	EMISSION LEVEL	LIMIT		ANTENNA	TABLE ANGLE	RAW VALUE	FACTOR
	, , ,	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	FACTOR (dB/m)
1	5460.00	EMISSION LEVEL (dBuV/m) 65.7 PK	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	FACTOR (dB/m) 38.30
1 2	5460.00 5460.00	EMISSION LEVEL (dBuV/m) 65.7 PK 47.4 AV	LIMIT (dBuV/m) 74.0 54.0	<b>MARGIN (dB)</b> -8.3 -6.6	ANTENNA HEIGHT (m) 1.03 V 1.03 V	TABLE ANGLE (Degree) 207 207	RAW VALUE (dBuV) 27.40 9.10	FACTOR (dB/m) 38.30 38.30
1 2 3	5460.00 5460.00 <b>#5470.00</b>	EMISSION LEVEL (dBuV/m) 65.7 PK 47.4 AV 67.3 PK	LIMIT (dBuV/m) 74.0 54.0	<b>MARGIN (dB)</b> -8.3 -6.6	ANTENNA HEIGHT (m) 1.03 V 1.03 V 1.03 V	TABLE ANGLE (Degree) 207 207 207	RAW VALUE (dBuV)  27.40  9.10  29.00	FACTOR (dB/m)  38.30  38.30  38.30
1 2 3 4	5460.00 5460.00 <b>#5470.00</b> *5500.00	EMISSION LEVEL (dBuV/m) 65.7 PK 47.4 AV 67.3 PK 107.3 PK	LIMIT (dBuV/m) 74.0 54.0	<b>MARGIN (dB)</b> -8.3 -6.6	ANTENNA HEIGHT (m) 1.03 V 1.03 V 1.03 V 1.22 V	TABLE ANGLE (Degree) 207 207 207 210	RAW VALUE (dBuV)  27.40  9.10  29.00  69.00	FACTOR (dB/m)  38.30  38.30  38.30  38.30

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

Report No.: RF120904C23A-1 R2



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin	

		ANTENNA I	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	106.8 PK			1.02 H	241	68.40	38.40
2	*5580.00	96.9 AV			1.02 H	241	58.50	38.40
3	11160.00	54.6 PK	74.0	-19.4	1.28 H	248	5.10	49.50
4	11160.00	44.7 AV	54.0	-9.3	1.28 H	248	-4.80	49.50
5	#16740.00	56.9 PK	68.3	-11.4	1.02 H	74	7.10	49.80
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
<b>NO</b> .	*5580.00	LEVEL		MARGIN (dB)	, <b>_</b> , .	ANGLE		FACTOR
		LEVEL (dBuV/m)		MARGIN (dB)	HEIGHT (m)	ANGLE (Degree)	(dBuV)	FACTOR (dB/m)
1	*5580.00	<b>LEVEL</b> (dBuV/m) 108.9 PK		MARGIN (dB) -18.4	<b>HEIGHT (m)</b>	ANGLE (Degree)	( <b>dBuV</b> ) 70.50	FACTOR (dB/m) 38.40
1 2	*5580.00 *5580.00	LEVEL (dBuV/m) 108.9 PK 98.7 AV	(dBuV/m)		1.01 V 1.01 V	ANGLE (Degree) 212 212	(dBuV) 70.50 60.30	FACTOR (dB/m) 38.40 38.40

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

Report No.: RF120904C23A-1 R2 Reference no.: 120921C14



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz	
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Sun Lin	

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5700.00	105.2 PK			1.02 H	182	66.50	38.70		
2	*5700.00	95.2 AV			1.02 H	182	56.50	38.70		
3	#5725.00	64.7 PK	68.3	-3.6	1.02 H	182	26.00	38.70		
4	11400.00	54.7 PK	74.0	-19.3	1.38 H	228	5.30	49.40		
5	11400.00	42.2 AV	54.0	-11.8	1.38 H	228	-7.20	49.40		
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M			
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	*5700.00	106.8 PK			1.04 V	202	68.10	38.70		
2	*5700.00	96.7 AV			1.04 V	202	58.00	38.70		
2	*5700.00 #5725.00	96.7 AV 66.8 PK	68.3	-1.5	1.04 V 1.04 V	202 202	58.00 28.10	38.70 38.70		
			68.3 74.0	-1.5 -18.8						

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. "#":The radiated frequency is out the restricted band.

Report No.: RF120904C23A-1 R2 Reference no.: 120921C14



#### **BELOW 1GHz WORST-CASE DATA: 802.11a**

<b>EUT TEST CONDITION</b>		MEASUREMENT DETAIL		
CHANNEL	Channel 52	FREQUENCY RANGE	Below 1000MHz	
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Nick Chen	
TEST MODE	A1 (With Main Ant. & ac	dapter)		

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)	
1	191.02	28.0 QP	43.5	-15.5	1.00 H	65	16.17	11.81	
2	371.44	27.7 QP	46.0	-18.3	1.00 H	11	10.94	16.76	
3	815.70	27.3 QP	46.0	-18.7	1.50 H	25	1.85	25.46	
4	903.00	27.5 QP	46.0	-18.5	1.50 H	308	1.03	26.47	
5	922.40	27.4 QP	46.0	-18.6	1.50 H	115	0.79	26.64	
6	955.38	28.6 QP	46.0	-17.4	1.00 H	239	1.63	26.94	
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M		
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)	
1	37.76	28.2 QP	40.0	-11.8	1.50 V	135	15.43	12.81	
2	62.98	25.1 QP	40.0	-14.9	1.00 V	125	12.08	13.06	
3	107.60	27.2 QP	43.5	-16.3	1.00 V	307	16.97	10.23	
4	140.58	24.9 QP	43.5	-18.6	1.00 V	19	11.41	13.48	
5	179.38	26.4 QP	43.5	-17.1	1.00 V	9	13.71	12.72	
6	435.46	27.9 QP	46.0	-18.1	1.00 V	336	9.52	18.42	
7	825.40	27.6 QP	46.0	-18.4	1.00 V	206	2.06	25.57	
8	866.14	27.4 QP	46.0	-18.7	1.50 V	340	1.30	26.05	
9	910.76	28.2 QP	46.0	-17.8	1.00 V	4	1.65	26.54	

### **REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.

Report No.: RF120904C23A-1 R2



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 52	FREQUENCY RANGE	Below 1000MHz	
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anderson Hong	
TEST MODE	A2 (With Main Ant. & Po	DE)		

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	76.08	35.8 QP	40.0	-4.2	1.25 H	141	25.00	10.80		
2	115.69	39.8 QP	43.5	-3.7	1.75 H	304	28.60	11.20		
3	165.32	37.1 QP	43.5	-6.4	1.25 H	247	23.40	13.70		
4	191.07	40.1 QP	43.5	-3.4	1.41 H	98	28.30	11.80		
5	216.92	37.8 QP	46.0	-8.2	1.50 H	224	26.10	11.70		
6	289.52	36.7 QP	46.0	-9.3	1.75 H	264	22.20	14.50		
		ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
		, , , , , , , , , , , , , , , , , , , ,			OTANOL: V		1 0 111			
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
<b>NO</b> .	FREQ. (MHz) 45.59	EMISSION LEVEL	LIMIT		ANTENNA	TABLE ANGLE	RAW VALUE	FACTOR		
	` ,	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	FACTOR (dB/m)		
1	45.59	EMISSION LEVEL (dBuV/m) 35.1 QP	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	<b>FACTOR</b> (dB/m) 13.30		
1 2	45.59 62.47	EMISSION LEVEL (dBuV/m) 35.1 QP 36.4 QP	LIMIT (dBuV/m) 40.0 40.0	-4.9 -3.6	ANTENNA HEIGHT (m) 1.25 V 1.05 V	TABLE ANGLE (Degree) 114 61	RAW VALUE (dBuV) 21.80 23.30	FACTOR (dB/m) 13.30 13.10		
1 2 3	45.59 62.47 88.71	EMISSION LEVEL (dBuV/m) 35.1 QP 36.4 QP 36.5 QP	LIMIT (dBuV/m) 40.0 40.0 43.5	-4.9 -3.6 -7.0	ANTENNA HEIGHT (m) 1.25 V 1.05 V 1.25 V	TABLE ANGLE (Degree) 114 61 212	RAW VALUE (dBuV)  21.80  23.30  28.10	FACTOR (dB/m)  13.30  13.10  8.40		

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.

Report No.: RF120904C23A-1 R2 Reference no.: 120921C14



## 802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 64	FREQUENCY RANGE	Below 1000MHz	
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak	
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Anderson Hong	
TEST MODE	B1 (With AUX Ant. & Ad	lapter)		

		ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)			
1	96.04	37.7 QP	43.5	-5.8	1.75 H	269	28.80	8.90			
2	117.23	39.7 QP	43.5	-3.8	1.50 H	212	28.30	11.40			
3	165.69	37.4 QP	43.5	-6.1	1.50 H	262	23.70	13.70			
4	191.41	40.0 QP	43.5	-3.5	1.02 H	51	28.20	11.80			
5	220.61	36.9 QP	46.0	-9.1	1.25 H	108	25.00	11.90			
6	239.08	36.1 QP	46.0	-9.9	1.50 H	169	23.50	12.60			
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M				
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	NO. FREQ. (MHz) LEVEL LIMIT MARGIN (dB) ANTENNA ANGLE RAW VALUE FACTOR							
1											
1	47.62	34.1 QP	40.0	-5.9	1.75 V	107	20.70	13.40			
2	47.62 61.36	34.1 QP 36.1 QP	40.0 40.0	-5.9 -3.9	1.75 V 1.50 V	107 251	20.70 22.90	13.40 13.20			
				***							
2	61.36	36.1 QP	40.0	-3.9	1.50 V	251	22.90	13.20			
2	61.36 89.78	36.1 QP 34.9 QP	40.0 43.5	-3.9 -8.6	1.50 V 1.75 V	251 221	22.90 26.70	13.20 8.20			

### **REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.

Report No.: RF120904C23A-1 R2



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 64	FREQUENCY RANGE	Below 1000MHz	
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak	
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Anderson Hong	
TEST MODE	B2 (With AUX Ant. & PC	DE)		

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)	
1	76.07	35.8 QP	40.0	-4.2	1.50 H	254	25.00	10.80	
2	95.64	36.9 QP	43.5	-6.6	1.75 H	341	28.10	8.80	
3	115.62	39.7 QP	43.5	-3.8	1.07 H	202	28.50	11.20	
4	152.32	38.2 QP	43.5	-5.3	1.50 H	269	24.40	13.80	
5	165.07	36.9 QP	43.5	-6.6	1.50 H	352	23.20	13.70	
6	191.12	40.1 QP	43.5	-3.4	1.08 H	185	28.30	11.80	
	ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
		ANTENNA	A POLARITY	Y & TEST DI	<u>STANCE: V</u>	<u>ERTICAL A</u>	T 3 M		
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	Y & TEST DI	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	T 3 M RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)	
<b>NO</b> .	FREQ. (MHz) 45.49	EMISSION LEVEL	LIMIT		ANTENNA	TABLE ANGLE	RAW VALUE	FACTOR	
	` ,	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	FACTOR (dB/m)	
1	45.49	EMISSION LEVEL (dBuV/m) 35.0 QP	LIMIT (dBuV/m) 40.0	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	<b>FACTOR</b> (dB/m) 13.30	
1 2	45.49 63.48	EMISSION LEVEL (dBuV/m) 35.0 QP 36.2 QP	LIMIT (dBuV/m) 40.0 40.0	MARGIN (dB) -5.0 -3.8	ANTENNA HEIGHT (m) 1.50 V 1.08 V	TABLE ANGLE (Degree) 322 53	RAW VALUE (dBuV) 21.70 23.20	FACTOR (dB/m) 13.30 13.00	
1 2 3	45.49 63.48 88.91	EMISSION LEVEL (dBuV/m) 35.0 QP 36.2 QP 35.7 QP	LIMIT (dBuV/m) 40.0 40.0 43.5	-5.0 -3.8 -7.8	ANTENNA HEIGHT (m) 1.50 V 1.08 V 1.50 V	TABLE ANGLE (Degree) 322 53 252	RAW VALUE (dBuV)  21.70  23.20  27.40	FACTOR (dB/m)  13.30  13.00  8.30	

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.

Report No.: RF120904C23A-1 R2



#### 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 116	FREQUENCY RANGE	Below 1000MHz	
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Nick Chen	
TEST MODE	A1 (With Main Ant. & Ac	dapter)		

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.76	20.5 QP	40.0	-19.5	1.50 H	145	7.73	12.81
2	191.02	26.4 QP	43.5	-17.1	1.50 H	123	14.56	11.81
3	319.06	26.3 QP	46.0	-19.8	1.00 H	29	10.86	15.39
4	357.86	27.0 QP	46.0	-19.0	1.00 H	9	10.58	16.41
5	371.44	27.5 QP	46.0	-18.5	1.00 H	9	10.74	16.76
6	811.82	26.1 QP	46.0	-19.9	1.00 H	167	0.65	25.41
7	842.86	26.2 QP	46.0	-19.8	1.00 H	9	0.44	25.78
8	866.14	27.3 QP	46.0	-18.7	1.00 H	9	1.23	26.05
9	889.42	27.8 QP	46.0	-18.2	1.00 H	15	1.52	26.32
10	918.52	27.1 QP	46.0	-18.9	1.50 H	78	0.53	26.61
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.76	28.5 QP	40.0	-11.5	1.00 V	319	15.73	12.81
2	62.98	25.6 QP	40.0	-14.4	1.00 V	278	12.53	13.06
3	107.60	24.9 QP	43.5	-18.6	1.50 V	224	14.64	10.23
4	140.58	25.7 QP	43.5	-17.8	1.00 V	211	12.19	13.48
5	179.38	26.9 QP	43.5	-16.6	1.00 V	192	14.15	12.72
6	837.04	27.4 QP	46.0	-18.6	1.50 V	4	1.73	25.71
7	897.18	27.6 QP	46.0	-18.4	1.00 V	11	1.16	26.41
8	920.46	27.5 QP	46.0	-18.5	1.50 V	257	0.91	26.63
9	949.56	28.1 QP	46.0	-17.9	1.00 V	65	1.22	26.89

### **REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.

Report No.: RF120904C23A-1 R2 Reference no.: 120921C14

Report Format Version 5.0.0



EUT TEST CONDITION	DITION MEASUREMENT DETAIL		
CHANNEL	Channel 116	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Anderson Hong
TEST MODE	A2 (With Main Ant. & Po	DE)	

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	88.51	39.8 QP	43.5	-3.7	1.75 H	304	31.40	8.40		
2	115.94	38.6 QP	43.5	-4.9	1.75 H	285	27.40	11.20		
3	153.47	39.0 QP	43.5	-4.5	1.75 H	264	25.10	13.90		
4	191.02	40.0 QP	43.5	-3.5	1.34 H	122	28.20	11.80		
5	204.77	38.6 QP	43.5	-4.9	1.25 H	304	27.30	11.30		
6	288.08	39.1 QP	46.0	-6.9	1.50 H	298	24.70	14.40		
	ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M									
		ANTENNA	A POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M			
NO.	FREQ. (MHz)	EMISSION	LIMIT (dBuV/m)	/ & TEST DI	STANCE: V ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	T 3 M RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
<b>NO</b> .	FREQ. (MHz) 47.69	EMISSION LEVEL	LIMIT		ANTENNA	TABLE ANGLE	RAW VALUE	FACTOR		
	` ,	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	FACTOR (dB/m)		
1	47.69	EMISSION LEVEL (dBuV/m) 35.0 QP	LIMIT (dBuV/m)	<b>MARGIN (dB)</b> -5.0	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	FACTOR (dB/m) 13.40		
1 2	47.69 63.06	EMISSION LEVEL (dBuV/m) 35.0 QP 36.4 QP	LIMIT (dBuV/m) 40.0 40.0	-5.0 -3.6	ANTENNA HEIGHT (m) 1.25 V 1.08 V	TABLE ANGLE (Degree) 243 108	RAW VALUE (dBuV) 21.60 23.30	FACTOR (dB/m) 13.40 13.10		
1 2 3	47.69 63.06 88.82	EMISSION LEVEL (dBuV/m) 35.0 QP 36.4 QP 36.1 QP	LIMIT (dBuV/m) 40.0 40.0 43.5	-5.0 -3.6 -7.4	ANTENNA HEIGHT (m) 1.25 V 1.08 V 1.50 V	TABLE ANGLE (Degree) 243 108 62	RAW VALUE (dBuV)  21.60  23.30  27.70	FACTOR (dB/m) 13.40 13.10 8.40		

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.

Report No.: RF120904C23A-1 R2



## 802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 100	FREQUENCY RANGE	Below 1000MHz	
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak	
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Anderson Hong	
TEST MODE	B1 (With AUX Ant. & Ac	lapter)		

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	77.08	35.7 QP	40.0	-4.3	1.25 H	343	25.20	10.50
2	91.22	38.7 QP	43.5	-4.8	1.50 H	341	30.40	8.30
3	114.41	39.8 QP	43.5	-3.7	1.75 H	245	28.80	11.00
4	152.43	39.3 QP	43.5	-4.2	1.75 H	203	25.50	13.80
5	191.31	40.4 QP	43.5	-3.1	1.08 H	201	28.60	11.80
6	205.27	36.4 QP	43.5	-7.1	1.75 H	96	25.10	11.30
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	50.41	34.7 QP	40.0	-5.3	1.75 V	31	21.30	13.40
2	63.61	35.8 QP	40.0	-4.2	1.50 V	299	22.80	13.00
3	126.47	36.7 QP	43.5	-6.8	1.50 V	304	24.40	12.30
4	140.82	35.7 QP	43.5	-7.8	1.25 V	61	22.20	13.50
5	180.58	36.9 QP	43.5	-6.6	1.75 V	247	24.30	12.60

## **REMARKS:**

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.

Report No.: RF120904C23A-1 R2 62 of 94 Report Format Version 5.0.0



EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 100	FREQUENCY RANGE	Below 1000MHz	
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak	
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Anderson Hong	
TEST MODE	B2 (With AUX Ant. & PC	OE)		

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)	
1	76.41	36.7 QP	40.0	-3.3	1.25 H	125	26.00	10.70	
2	88.32	38.5 QP	43.5	-5.0	1.75 H	185	30.10	8.40	
3	115.47	39.5 QP	43.5	-4.0	1.75 H	269	28.30	11.20	
4	191.12	40.0 QP	43.5	-3.5	1.07 H	42	28.20	11.80	
5	204.38	37.5 QP	43.5	-6.0	1.25 H	69	26.20	11.30	
6	215.89	38.1 QP	43.5	-5.4	1.75 H	171	26.40	11.70	
	ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
		ANTENNA	POLARITY	Y & TEST DI	STANCE: V	ERTICAL A	T 3 M		
NO.	FREQ. (MHz)	EMISSION	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)	
<b>NO</b> .	FREQ. (MHz)	EMISSION LEVEL	LIMIT		ANTENNA	TABLE ANGLE	RAW VALUE	FACTOR	
	` ,	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	FACTOR (dB/m)	
1	47.71	EMISSION LEVEL (dBuV/m) 36.0 QP	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	FACTOR (dB/m) 13.40	
1 2	47.71 63.04	EMISSION LEVEL (dBuV/m) 36.0 QP 36.2 QP	LIMIT (dBuV/m) 40.0 40.0	-4.0 -3.8	ANTENNA HEIGHT (m) 1.50 V 1.08 V	TABLE ANGLE (Degree) 196 169	RAW VALUE (dBuV) 22.60 23.10	FACTOR (dB/m) 13.40 13.10	
1 2 3	47.71 63.04 88.67	EMISSION LEVEL (dBuV/m) 36.0 QP 36.2 QP 35.5 QP	LIMIT (dBuV/m) 40.0 40.0 43.5	-4.0 -3.8 -8.0	ANTENNA HEIGHT (m) 1.50 V 1.08 V 1.50 V	TABLE ANGLE (Degree) 196 169	RAW VALUE (dBuV)  22.60 23.10 27.10	FACTOR (dB/m)  13.40  13.10  8.40	

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

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- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.

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#### 4.2 CONDUCTED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTE	D LIMIT (dBμV)
	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 lower limit shall apply at the transition frequencies.

- 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
- 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

### 4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100291	Nov. 23, 2011	Nov. 22, 2012
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 29, 2011	Dec. 28, 2012
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 02, 2012	Jul. 01, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 07, 2012	Feb. 06, 2013
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

**NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

- 2. The test was performed in HwaYa Shielded Room 1.
- 3. The VCCI Site Registration No. is C-2040.

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#### 4.2.3 TEST PROCEDURES

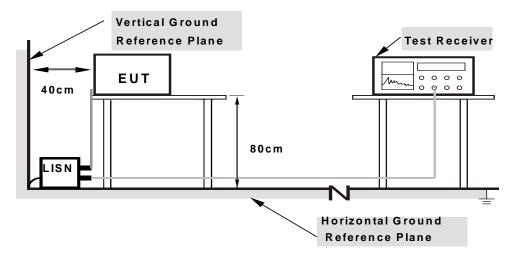
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

**NOTE:** All modes of operation were investigated and the worst-case emissions are reported.

#### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.2.5 TEST SETUP



Note: 1.Support units were connected to second LISN. 2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

For the actual test configuration, please refer to the attached file (Test Setup Photo).

#### 4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

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## 4.2.7 TEST RESULTS

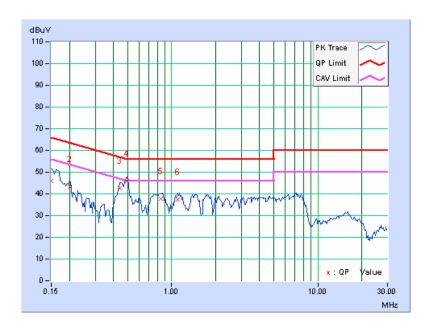
### **CONDUCTED WORST-CASE DATA: 802.11a**

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 52	TEST MODE	A1 (With Main Ant. & Adapter)

Na	Freq.	Corr. Factor	Readin	g Value	_	Emission Limit Margin		Limit		gin
No		Factor	[dB	(uV)]	[dB	(uV)]	[dB	(uV)]	(dl	B)
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.11	45.91	28.47	46.02	28.58	66.00	56.00	-19.98	-27.42
2	0.20078	0.13	43.34	36.47	43.47	36.60	63.58	53.58	-20.11	-16.98
3	0.44297	0.13	42.35	32.86	42.48	32.99	57.01	47.01	-14.52	-14.01
4	0.49375	0.14	45.97	39.57	46.11	39.71	56.10	46.10	-10.00	-6.40
5	0.84141	0.17	37.77	30.75	37.94	30.92	56.00	46.00	-18.06	-15.08
6	1.09766	0.19	37.38	30.16	37.57	30.35	56.00	46.00	-18.43	-15.65

**REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

- 2. The emission levels of other frequencies were very low against the limit.
- 3. Margin value = Emission level Limit value
- 4. Correction factor = Insertion loss + Cable loss5. Emission Level = Correction Factor + Reading Value.



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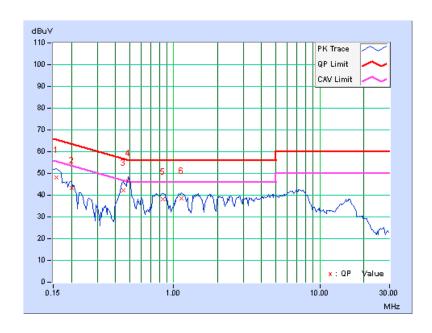
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PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 52	TEST MODE	A1 (With Main Ant. & Adapter)

No	Freq.	Corr. Factor	Readin	g Value	ue Emission Limit Margin		Limit		gin	
NO		Factor	[dB	(uV)]	[dB	(uV)]	[dB	(uV)]	(dl	B)
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	0.13	48.03	34.90	48.16	35.03	65.58	55.58	-17.42	-20.55
2	0.20078	0.14	43.02	35.80	43.16	35.94	63.58	53.58	-20.42	-17.64
3	0.45078	0.16	42.22	31.69	42.38	31.85	56.86	46.86	-14.49	-15.02
4	0.48984	0.16	46.39	38.49	46.55	38.65	56.17	46.17	-9.62	-7.52
5	0.84141	0.19	38.13	31.11	38.32	31.30	56.00	46.00	-17.68	-14.70
6	1.12500	0.21	38.32	31.23	38.53	31.44	56.00	46.00	-17.47	-14.56

- 2. The emission levels of other frequencies were very low against the limit.
- 3. Margin value = Emission level Limit value
- 4. Correction factor = Insertion loss + Cable loss
- 5. Emission Level = Correction Factor + Reading Value.



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Reference no.: 120921C14 Cancels and replaces the report No.: RF120904C23A-1 R1 dated Oct. 06, 2012

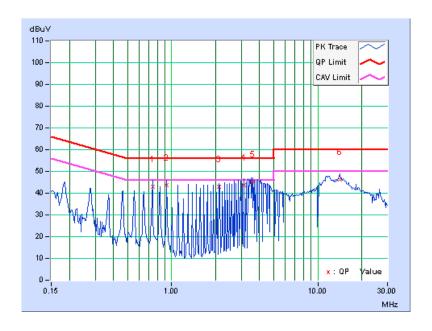
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PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 52	ITEST MODE	A2 (With Main Ant. & POE)

I Fred I	Freq. Corr.		Freq. Eactor Level			Lir	nit	Margin		
	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)		
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.73984	0.16	42.93	42.39	43.09	42.55	56.00	46.00	-12.91	-3.45
2	0.92344	0.18	43.58	42.29	43.76	42.47	56.00	46.00	-12.24	-3.53
3	2.12109	0.23	42.62	42.43	42.85	42.66	56.00	46.00	-13.15	-3.34
4	3.13672	0.29	43.34	42.39	43.63	42.68	56.00	46.00	-12.37	-3.32
5	3.59766	0.32	44.95	42.61	45.27	42.93	56.00	46.00	-10.73	-3.07
6	14.21094	0.86	45.57	41.27	46.43	42.13	60.00	50.00	-13.57	-7.87

- 2. The emission levels of other frequencies were very low against the limit.
- 3. Margin value = Emission level Limit value
- 4. Correction factor = Insertion loss + Cable loss
- 5. Emission Level = Correction Factor + Reading Value.



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Reference no.: 120921C14 Cancels and replaces the report No.: RF120904C23A-1 R1 dated Oct. 06, 2012

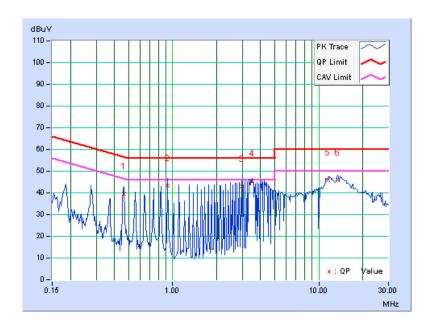
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PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 52	TEST MODE	A2 (With Main Ant. & POE)

No	i Fred		Corr. Reading Value			Emission Level		Limit		Margin	
NO	No Fa	Factor	[dB	(uV)]	[dB	(uV)]	[dB	(uV)]	(dl	B)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	
1	0.46250	0.16	39.56	38.88	39.72	39.04	56.65	46.65	-16.93	-7.61	
2	0.92344	0.20	43.13	42.46	43.33	42.66	56.00	46.00	-12.67	-3.34	
3	2.95313	0.29	42.61	42.01	42.90	42.30	56.00	46.00	-13.10	-3.70	
4	3.50781	0.32	45.35	40.71	45.67	41.03	56.00	46.00	-10.33	-4.97	
5	11.62891	0.65	45.36	31.14	46.01	31.79	60.00	50.00	-13.99	-18.21	
6	13.48047	0.72	45.36	41.18	46.08	41.90	60.00	50.00	-13.92	-8.10	

- 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
- 2. The emission levels of other frequencies were very low against the limit.
- 3. Margin value = Emission level Limit value
- 4. Correction factor = Insertion loss + Cable loss
- 5. Emission Level = Correction Factor + Reading Value.



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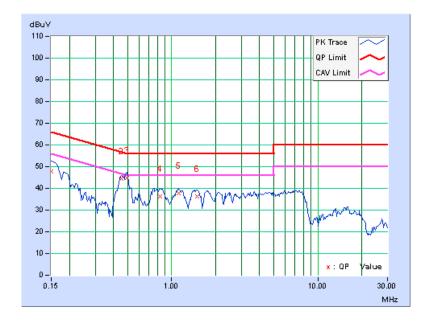
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PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116	TEST MODE	A1 (With Main Ant. & adapter)

No	Freq. Corr.		Freq. Corr. Factor		Readin	g Value		ssion vel	Lir	nit	Mar	gin
NO	No Troq.	Factor	[dB	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)		
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.		
1	0.15000	0.11	47.77	31.78	47.88	31.89	66.00	56.00	-18.12	-24.11		
2	0.45469	0.14	44.13	38.58	44.27	38.72	56.79	46.79	-12.52	-8.07		
3	0.49375	0.14	44.72	35.32	44.86	35.46	56.10	46.10	-11.25	-10.65		
4	0.83359	0.17	36.26	29.36	36.43	29.53	56.00	46.00	-19.57	-16.47		
5	1.11328	0.19	37.44	30.83	37.63	31.02	56.00	46.00	-18.37	-14.98		
6	1.49609	0.20	36.18	30.30	36.38	30.50	56.00	46.00	-19.62	-15.50		

- 2. The emission levels of other frequencies were very low against the limit.
- 3. Margin value = Emission level Limit value
- 4. Correction factor = Insertion loss + Cable loss
- 5. Emission Level = Correction Factor + Reading Value.



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Reference no.: 120921C14 Cancels and replaces the report No.: RF120904C23A-1 R1 dated Oct. 06, 2012

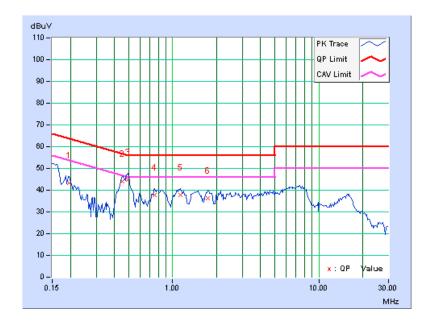
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PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116	TEST MODE	A1 (With Main Ant. & adapter)

No	Freq. Corr.		Readin	g Value	e Emission Level		Limit		Margin	
NO	No F	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19687	0.14	43.27	34.87	43.41	35.01	63.74	53.74	-20.33	-18.73
2	0.45469	0.16	44.05	38.77	44.21	38.93	56.79	46.79	-12.58	-7.86
3	0.49375	0.16	44.58	35.38	44.74	35.54	56.10	46.10	-11.37	-10.57
4	0.75547	0.19	37.44	29.96	37.63	30.15	56.00	46.00	-18.37	-15.85
5	1.12891	0.21	37.39	31.10	37.60	31.31	56.00	46.00	-18.40	-14.69
6	1.74219	0.22	36.10	30.09	36.32	30.31	56.00	46.00	-19.68	-15.69

- 2. The emission levels of other frequencies were very low against the limit.
- 3. Margin value = Emission level Limit value
- 4. Correction factor = Insertion loss + Cable loss
- 5. Emission Level = Correction Factor + Reading Value.

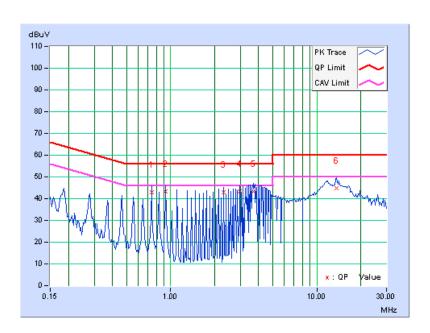




PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116	ITEST MODE	A2 (With Main Ant. & POE)

No	Freq. Corr.		I Corr TReading Vallie I			ssion vel	Limit		Margin		
NO	No Fa	Factor	[dB	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	
1	0.73984	0.16	42.90	42.30	43.06	42.46	56.00	46.00	-12.94	-3.54	
2	0.92734	0.18	43.05	41.79	43.23	41.97	56.00	46.00	-12.77	-4.03	
3	2.31250	0.24	42.71	41.63	42.95	41.87	56.00	46.00	-13.05	-4.13	
4	2.96094	0.28	42.94	42.50	43.22	42.78	56.00	46.00	-12.78	-3.22	
5	3.69922	0.32	42.84	38.03	43.16	38.35	56.00	46.00	-12.84	-7.65	
6	13.60531	0.83	43.92	41.64	44.75	42.47	60.00	50.00	-15.25	-7.53	

- 2. The emission levels of other frequencies were very low against the limit.
- 3. Margin value = Emission level Limit value
- 4. Correction factor = Insertion loss + Cable loss
- 5. Emission Level = Correction Factor + Reading Value.



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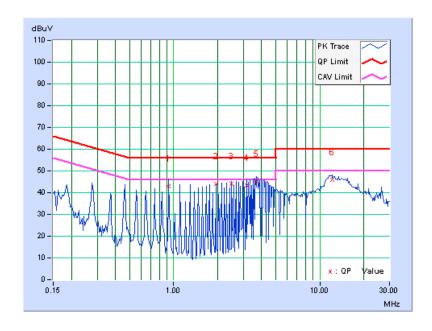


PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116	TEST MODE	A2 (With Main Ant. & POE)

Na	Freq.	Corr. Factor	Readin	g Value	_	sion vel	Lir	nit	Mar	gin
No		Factor	[dB	(uV)]	[dB	(uV)]	[dB	(uV)]	(dl	B)
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.92734	0.20	42.87	42.20	43.07	42.40	56.00	46.00	-12.93	-3.60
2	1.94531	0.23	43.66	42.72	43.89	42.95	56.00	46.00	-12.11	-3.05
3	2.50000	0.26	43.97	40.66	44.23	40.92	56.00	46.00	-11.77	-5.08
4	3.14844	0.30	43.05	41.74	43.35	42.04	56.00	46.00	-12.65	-3.96
5	3.70313	0.33	44.80	39.97	45.13	40.30	56.00	46.00	-10.87	-5.70
6	12.13281	0.67	45.23	42.23	45.90	42.90	60.00	50.00	-14.10	-7.10

**REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

- 2. The emission levels of other frequencies were very low against the limit.
- 3. Margin value = Emission level Limit value
- 4. Correction factor = Insertion loss + Cable loss
- 5. Emission Level = Correction Factor + Reading Value.



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# 4.3 PEAK TRANSMIT POWER MEASUREMENT

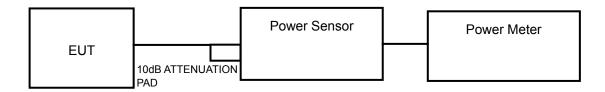
# 4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.250 ~ 5.350GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.470 ~ 5.725GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB

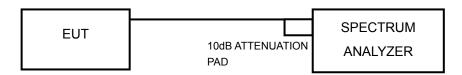
**NOTE:** Where B is the 26dB emission bandwidth in MHz.

# 4.3.2 TEST SETUP

#### FOR POWER OUTPUT MEASUREMENT



### **FOR 26dB BANDWIDTH**



# 4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

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#### 4.3.4 TEST PROCEDURE

#### FOR AVERAGE POWER MEASUREMENT

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

#### **FOR 26dB BANDWIDTH**

- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

#### 4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

# 4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

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# 4.3.7 TEST RESULTS

# Test Mode A1 (With Main Ant. & Adapter)

**POWER OUTPUT: 802.11a** 

Channal	Frequency	Chain				Data	Rate			
Channel	(MHz)	Chain	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
CH 36	5180 MHz	MAIN	14.50	14.46	14.37	14.44	14.43	14.47	14.41	14.3
CH 40	5200 MHz	MAIN	14.30	14.27	14.29	14.26	14.29	14.26	14.26	14.23
CH 48	5240 MHz	MAIN	14.30	14.22	14.26	14.29	14.26	14.29	14.19	14.26
CH 52	5260 MHz	MAIN	18.80	18.73	18.69	18.76	18.76	18.73	18.73	18.73
CH 60	5300 MHz	MAIN	17.60	17.56	17.46	17.59	17.56	17.56	17.59	17.53
CH 64	5320 MHz	MAIN	17.80	17.79	17.73	17.69	17.77	17.69	17.64	17.76
CH 100	5500 MHz	MAIN	16.90	16.86	16.86	16.86	16.82	16.83	16.88	16.77
CH 116	5580MHz	MAIN	18.10	18.06	18.04	18	18.04	18.06	17.89	17.98
CH 140	5700 MHz	MAIN	16.40	16.33	16.37	16.39	16.31	16.26	16.29	16.38

# 802.11n (20MHz)

Channal	Channel Frequency Chain			Data Rate							
Channel	(MHz)	Chain	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	
CH 36	5180 MHz	MAIN	14.30	14.26	14.21	14.29	14.26	14.21	14.26	14.29	
CH 40	5200 MHz	MAIN	14.20	14.16	14.09	14.13	14.14	14.17	14.14	14.1	
CH 48	5240 MHz	MAIN	14.10	14.06	14.07	14.09	14.05	14.06	13.98	14.09	
CH 52	5260 MHz	MAIN	18.70	18.69	18.63	18.64	18.64	18.59	18.69	18.63	
CH 60	5300 MHz	MAIN	17.40	17.36	17.31	17.29	17.33	17.34	17.34	17.26	
CH 64	5320 MHz	MAIN	17.60	17.59	17.55	17.55	17.56	17.56	17.5	17.54	
CH 100	5500 MHz	MAIN	15.80	15.69	15.73	15.69	15.78	15.79	15.73	15.73	
CH 116	5580MHz	MAIN	18.00	17.98	17.93	17.73	17.94	17.99	17.84	17.83	
CH 140	5700 MHz	MAIN	17.90	17.86	17.73	17.84	17.86	17.86	17.83	17.86	

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#### **26dB BANDWIDTH: 802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	27.29	PASS
40	5200	27.12	PASS
48	5240	25.39	PASS
52	5260	38.38	PASS
60	5300	38.27	PASS
64	5320	38.78	PASS
100	5500	34.77	PASS
116	5580	39.77	PASS
140	5700	36.94	PASS

# 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	25.17	PASS
40	5200	27.02	PASS
48	5240	26.29	PASS
52	5260	39.02	PASS
60	5300	38.26	PASS
64	5320	38.04	PASS
100	5500	39.36	PASS
116	5580	39.98	PASS
140	5700	35.38	PASS

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# Test Mode B1 (With AUX Ant. & Adapter)

**POWER OUTPUT: 802.11a** 

Channal	Frequency	Data Rate Chain								
Channel	(MHz)	Chain	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
CH 36	5180 MHz	AUX	13.80	13.76	13.67	13.69	13.73	13.77	13.64	13.67
CH 40	5200 MHz	AUX	14.10	14.06	14.03	14.09	13.98	13.97	13.93	13.9
CH 48	5240 MHz	AUX	13.00	12.98	12.96	12.94	12.93	12.89	12.91	12.94
CH 52	5260 MHz	AUX	13.80	13.76	13.7	13.69	13.73	13.71	13.74	13.76
CH 60	5300 MHz	AUX	18.60	18.59	18.54	18.52	18.54	18.59	18.51	18.53
CH 64	5320 MHz	AUX	19.20	19.12	19.14	19.13	19.06	19.07	19.05	19.07
CH 100	5500 MHz	AUX	19.00	18.9	18.87	18.86	18.97	18.96	18.91	18.8
CH 116	5580MHz	AUX	16.90	16.87	16.81	16.86	16.88	16.73	16.82	16.89
CH 140	5700 MHz	AUX	18.50	18.43	18.47	18.46	18.45	18.44	18.46	18.37

# 802.11n (20MHz)

Channal	Frequency	Chain				Data	Rate			
Channel	(MHz)	Chain	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 36	5180 MHz	AUX	13.40	13.35	13.34	13.33	13.28	13.37	13.34	13.36
CH 40	5200 MHz	AUX	13.40	13.34	13.36	13.32	13.26	13.35	13.32	13.37
CH 48	5240 MHz	AUX	14.00	13.97	13.95	13.96	13.91	13.88	13.91	13.89
CH 52	5260 MHz	AUX	14.10	14.08	14.02	14.06	13.89	13.87	13.88	13.86
CH 60	5300 MHz	AUX	19.50	19.48	19.45	19.43	19.46	19.41	19.38	19.46
CH 64	5320 MHz	AUX	19.40	19.35	19.34	19.28	19.25	19.32	19.34	19.35
CH 100	5500 MHz	AUX	19.40	19.38	19.36	19.35	19.36	19.28	19.26	19.29
CH 116	5580MHz	AUX	17.00	16.97	16.96	16.91	16.88	16.86	16.91	16.92
CH 140	5700 MHz	AUX	18.60	18.52	18.5	18.49	18.45	18.46	18.52	18.53

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# **26dB BANDWIDTH: 802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	25.07	PASS
40	5200	25.00	PASS
48	5240	23.26	PASS
52	5260	33.32	PASS
60	5300	36.8	PASS
64	5320	38.68	PASS
100	5500	30.38	PASS
116	5580	34.32	PASS
140	5700	33.09	PASS

# 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	24.08	PASS
40	5200	25.12	PASS
48	5240	24.74	PASS
52	5260	32.38	PASS
60	5300	36.67	PASS
64	5320	38.99	PASS
100	5500	33.36	PASS
116	5580	37.89	PASS
140	5700	36.19	PASS

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### 4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

#### 4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	4dBm
5.250 ~ 5.350GHz	11dBm
5.470 ~ 5.725GHz	11dBm

#### 4.4.2 TEST SETUP



### 4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

#### 4.4.4 TEST PROCEDURES

Using method SA-1

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
- 3) Sweep time = auto, trigger set to "free run".
- 4) Trace average at least 100 traces in power averaging mode.
- 5) Record the max value

#### 4.4.5 DEVIATION FROM TEST STANDARD

Cancels and replaces the report No.: RF120904C23A-1 R1 dated Oct. 06, 2012

No deviation.

#### 4.4.6 EUT OPERATING CONDITIONS

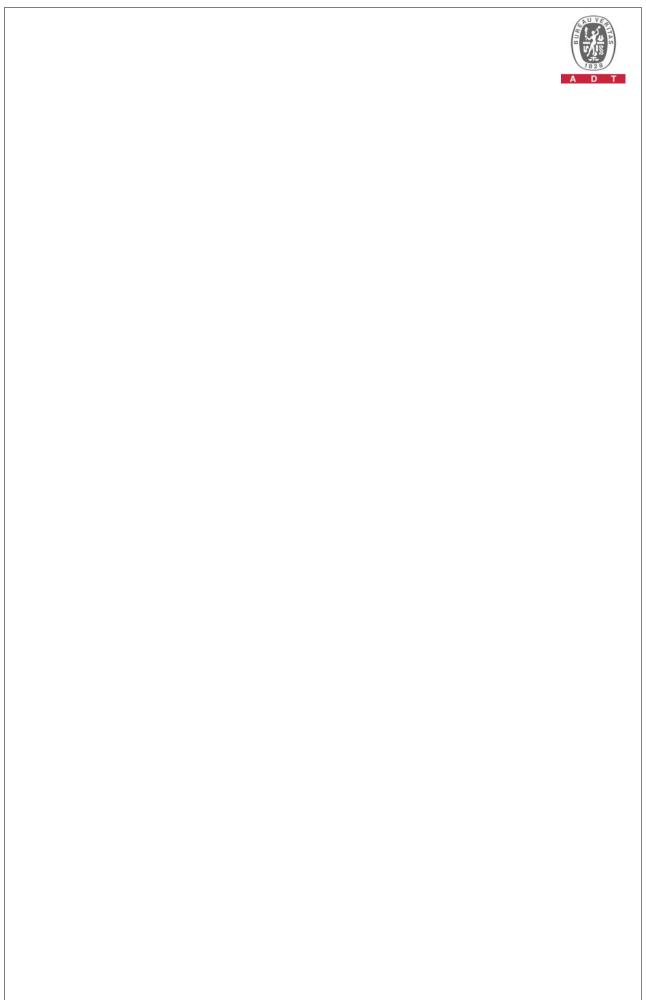
Same as 4.3.6.

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# 4.4.7 TEST RESULTS

# Test Mode A1 (With Main Ant. & Adapter)

# 802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.44	4	PASS
40	5200	3.52	4	PASS
48	5240	3.62	4	PASS
52	5260	6.63	11	PASS
60	5300	6.04	11	PASS
64	5320	5.41	11	PASS
100	5500	4.73	11	PASS
116	5580	6.99	11	PASS
140	5700	5.12	11	PASS

# 802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.39	4	PASS
40	5200	3.33	4	PASS
48	5240	3.83	4	PASS
52	5260	6.55	11	PASS
60	5300	5.92	11	PASS
64	5320	5.27	11	PASS
100	5500	5.68	11	PASS
116	5580	7.04	11	PASS
140	5700	6.21	11	PASS

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# Test Mode B1 (With AUX Ant. & Adapter)

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.26	4	PASS
40	5200	3.83	4	PASS
48	5240	3.67	4	PASS
52	5260	6.75	11	PASS
60	5300	7.60	11	PASS
64	5320	7.68	11	PASS
100	5500	5.70	11	PASS
116	5580	6.95	11	PASS
140	5700	5.00	11	PASS

# 802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.82	4	PASS
40	5200	3.72	4	PASS
48	5240	3.56	4	PASS
52	5260	6.07	11	PASS
60	5300	6.55	11	PASS
64	5320	6.70	11	PASS
100	5500	4.81	11	PASS
116	5580	6.96	11	PASS
140	5700	5.87	11	PASS

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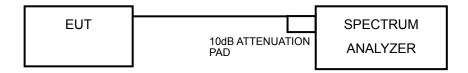


#### 4.5 PEAK POWER EXCURSION MEASUREMENT

#### 4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB.

#### 4.5.2 TEST SETUP



# 4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

#### 4.5.4 TEST PROCEDURE

- 1) Set RBW = 1 MHz, VBW ≥ 3 MHz, Detector = peak.
- 2) Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.
- 3) Use the peak search function to find the peak of the spectrum.
- 4) Measure the PPSD.
- 5) Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

#### 4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

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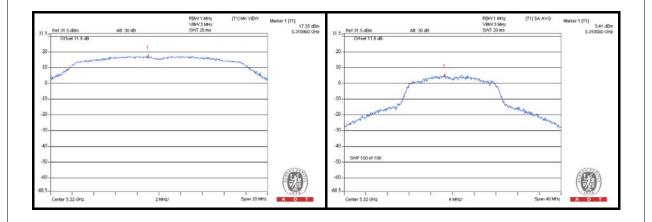


# 4.5.7 TEST RESULTS

# Test Mode A1 (With Main Ant. & Adapter)

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	14.91	3.44	11.47	13	PASS
40	5200	14.95	3.52	11.43	13	PASS
48	5240	14.69	3.62	11.07	13	PASS
52	5260	18.18	6.63	11.55	13	PASS
60	5300	17.46	6.04	11.42	13	PASS
64	5320	17.35	5.41	11.94	13	PASS
100	5500	16.59	4.73	11.86	13	PASS
116	5580	18.18	6.99	11.19	13	PASS
140	5700	16.65	5.12	11.53	13	PASS

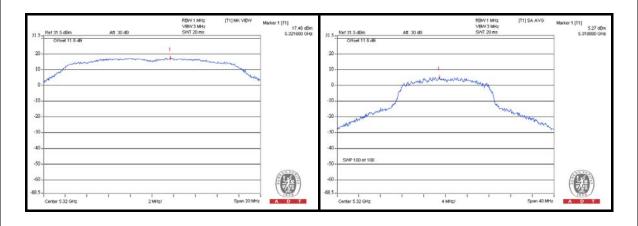


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# 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	14.94	3.39	11.55	13	PASS
40	5200	14.74	3.33	11.41	13	PASS
48	5240	14.94	3.83	11.11	13	PASS
52	5260	18.17	6.55	11.62	13	PASS
60	5300	17.47	5.92	11.55	13	PASS
64	5320	17.46	5.27	12.19	13	PASS
100	5500	17.45	5.68	11.77	13	PASS
116	5580	18.35	7.04	11.31	13	PASS
140	5700	16.81	6.21	10.60	13	PASS

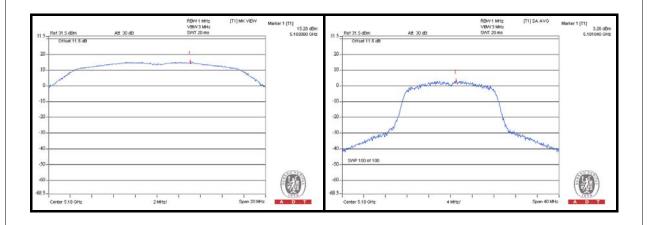




# Test Mode B1 (With AUX Ant. & Adapter)

# 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	15.28	3.26	12.02	13	PASS
40	5200	15.31	3.83	11.48	13	PASS
48	5240	15.26	3.67	11.59	13	PASS
52	5260	18.2	6.75	11.45	13	PASS
60	5300	18.98	7.60	11.38	13	PASS
64	5320	19.14	7.68	11.46	13	PASS
100	5500	16.89	5.70	11.19	13	PASS
116	5580	18.01	6.95	11.06	13	PASS
140	5700	16.53	5.00	11.53	13	PASS

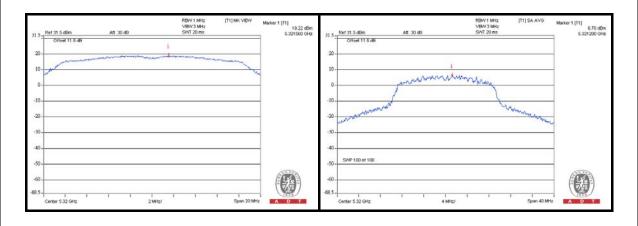


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# 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	14.96	3.82	11.14	13	PASS
40	5200	15.11	3.72	11.39	13	PASS
48	5240	15.5	3.56	11.94	13	PASS
52	5260	18.31	6.07	12.24	13	PASS
60	5300	18.05	6.55	11.50	13	PASS
64	5320	19.22	6.70	12.52	13	PASS
100	5500	17.07	4.81	12.26	13	PASS
116	5580	17.94	6.96	10.98	13	PASS
140	5700	17.26	5.87	11.39	13	PASS



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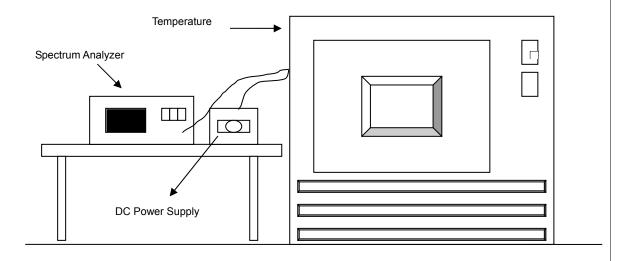


# 4.6 FREQUENCY STABILITY

# 4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency of the carrier signal shall be maintained within band of operation

# 4.6.2 TEST SETUP



# 4.6.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

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#### 4.6.4 TEST PROCEDURE

- a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
- b. Turn the EUT on and couple its output to a spectrum analyzer.
- c. Turn the EUT off and set the chamber to the highest temperature specified.
- d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

#### 4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

# 4.6.6 EUT OPERATING CONDITION

Set the EUT transmit at un-modulation mode to test frequency stability.

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# 4.6.7 TEST RESULTS

# Test Mode A1 (With Main Ant. & Adapter)

	FREQUEMCY STABILITY VERSUS TEMP.								
			OF	ERATING F	REQUENCY	: 5320MHz			
	POWER	0 MIN	NUTE	2 MII	NUTE	5 MIN	NUTE	10 MI	NUTE
<b>TEMP.</b> (℃)	SUPPLY (Vdc)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
55	110.0	5320.018213	3.423	5320.018358	3.451	5320.018213	3.423	5320.018425	3.463
50	110.0	5320.018244	3.429	5320.018266	3.433	5320.018725	3.520	5320.018358	3.451
40	110.0	5320.019943	3.749	5320.019524	3.670	5320.019535	3.672	5320.019366	3.640
30	110.0	5320.020870	3.923	5320.021365	4.016	5320.021462	4.034	5320.020952	3.938
20	110.0	5320.021039	3.955	5320.021251	3.995	5320.020852	3.920	5320.021230	3.991
10	110.0	5320.022126	4.159	5320.021254	3.995	5320.022537	4.236	5320.021455	4.033
0	110.0	5320.019844	3.730	5320.019873	3.736	5320.019896	3.740	5320.021220	3.989
-10	110.0	5320.019166	3.603	5320.019568	3.678	5320.019550	3.675	5320.019254	3.619
-20	110.0	5320.018023	3.388	5320.018325	3.445	5320.018358	3.451	5320.018353	3.450

	FREQUEMCY STABILITY VERSUS VOLTAGE								
	OPERATING FREQUENCY: 5320MHz								
	POWER	0 MIN	NUTE	2 MINUTE 5 MINUTE 10 MINUTE					NUTE
	TEMP. (°C) SUPPLY (Vdc)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
	93.50	5320.020124	3.783	5320.019987	3.757	5320.020285	3.813	5320.019528	3.671
20	110.00	5320.021037	3.954	5320.021435	4.029	5320.020456	3.845	5320.022360	4.203
	126.50	5320.023214	4.364	5320.023236	4.368	5320.023356	4.390	5320.023369	4.393

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# 5. PHOTOGRAPHS OF THE TEST CONFIGURATION Please refer to the attached file (Test Setup Photo).

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# 6. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

 Linko EMC/RF Lab:
 Hsin Chu EMC/RF Lab:

 Tel: 886-2-26052180
 Tel: 886-3-5935343

 Fax: 886-2-26051924
 Fax: 886-3-5935342

# Hwa Ya EMC/RF/Safety Telecom Lab:

Tel: 886-3-3183232 Fax: 886-3-3270892

Email: <a href="mailto:service.adt@tw.bureauveritas.com">service.adt@tw.bureauveritas.com</a>
Web Site: <a href="mailto:www.bureauveritas-adt.com">www.bureauveritas-adt.com</a>

The address and road map of all our labs can be found in our web site also.

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# 7. APPENDIX A - MODIFICATIONS RECORDERS FOR

ENGINEERING CHANGES TO THE EUT BY THE LAB
No modifications were made to the EUT by the lab during the test.
END

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