

# FCC TEST REPORT (WLAN\_15.407)

**REPORT NO.:** RF130517C12A-3

**MODEL NO.:** F-09E

**FCC ID:** VQK-F09E

**RECEIVED:** May 17, 2013

**TESTED:** May 21 ~ Jul. 10, 2013

**ISSUED:** Jul. 19, 2013

**APPLICANT:** FUJITSU LIMITED

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**ISSUED BY:** Bureau Veritas Consumer Products Services  
(H.K.) Ltd., Taoyuan Branch

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130517C12A-3	Original release	Jul. 19, 2013

## 1. CERTIFICATION

**PRODUCT:** Mobile Phone

**MODEL:** F-09E

**BRAND:** FUJITSU

**APPLICANT:** FUJITSU LIMITED

**TESTED:** May 21 ~ Jul. 10, 2013

**TEST SAMPLE:** ENGINEERING SAMPLE

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

ANSI C63.10-2009

The above equipment (model: F-09E) 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 :** Ivy Lin , **DATE :** Jul. 19, 2013

Ivy Lin / Specialist

**APPROVED BY :** Ken Liu , **DATE :** Jul. 19, 2013

Ken Liu / Senior Manager

## 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	RESULT	REMARK
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -7.17dB at 0.46119MHz.
15.407(b/1/2/3)(b)(6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.1dB at 11060.00MHz.
15.407(a/1/2)	Max 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
Radiated emissions	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
	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  $k = 2$ .

### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>EUT</b>	Mobile Phone
<b>MODEL NO.</b>	F-09E
<b>POWER SUPPLY</b>	3.8Vdc (Battery) 5.0Vdc (Adapter or cradle or host equipment)
<b>MODULATION TYPE</b>	64QAM, 16QAM, QPSK, BPSK 256QAM for OFDM in 11ac mode only
<b>MODULATION TECHNOLOGY</b>	OFDM
<b>TRANSFER RATE</b>	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 150.0Mbps 802.11ac: up to 433.3Mbps
<b>OPERATING FREQUENCY</b>	5180 ~ 5240MHz, 5260 ~ 5320MHz & 5500 ~ 5700MHz
<b>NUMBER OF CHANNEL</b>	<b>5180 ~ 5240MHz:</b> 802.11a, 802.11n (20MHz): 4 802.11n (40MHz): 2 802.11ac (80MHz): 1 <b>5260 ~ 5320MHz:</b> 802.11a, 802.11n (20MHz): 4 802.11n (40MHz): 2 802.11ac (80MHz): 1 <b>5500 ~ 5700MHz:</b> 802.11a, 802.11n (20MHz): 8 802.11n (40MHz): 3 802.11ac (80MHz): 1
<b>OUTPUT POWER</b>	9.484mW for 5180 ~ 5240MHz 9.247mW for 5260 ~ 5320MHz 8.147mW for 5500 ~ 5700MHz
<b>ANTENNA TYPE</b>	λ/4 Monopole antenna with 0.2dBi gain
<b>ANTENNA CONNECTOR</b>	N/A
<b>DATA CABLE</b>	N/A
<b>I/O PORTS</b>	Refer to user's manual
<b>ACCESSORY DEVICES</b>	Refer to Note as below

**NOTE:**

1. This report is issued as a supplementary report to the original BV ADT report no.: RF130517C12-3 (FCC ID: VQK-F08E). The differences compared with the original report are changing model, FCC ID, enclosure dimension and updating versions of SW and HW. Therefore, only radiated emission below 1GHz had been re-tested and the other original test data are kept in this report.

2. The EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
802.11a	1TX
802.11n (20MHz)	1TX
802.11n (40MHz)	1TX
802.11ac (80MHz)	1TX

3. The EUT contains the following accessories.

No.	Product	Brand	Model	Description
1	Battery	Fujitsu limited	CA54310-0047	Rating: 3.8V, 2100mA Type: Li-ion
2	Cradle	Fujitsu Limited	CA50601-1821	Input: 5.0Vdc, 1.5A Output: 5.0Vdc, 1.5A

4. SW version is R03.2e.
5. HW version is V2.1.0.
6. IMEI Code: 355755050013655 & 357598050000142
7. IEEE 802.11ac is still draft version.
8. The above EUT information is declared by manufacturer and for more detailed feature description, please refer to the manufacturer's specifications or User's Manual.



## 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

2 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
42	5210MHz

### 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

2 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
58	5290MHz

### FOR 5500 ~ 5700MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500 MHz	116	5580 MHz
104	5520 MHz	132	5660 MHz
108	5540 MHz	136	5680 MHz
112	5560 MHz	140	5700 MHz

3 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510 MHz	134	5670 MHz
110	5550 MHz		

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
106	5530MHz

### 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE<1G	PLC	APCM	
A	√	√	√	√	Power from adapter
B	-	√	√	-	Power from cradle

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz      **RE<1G**: Radiated Emission below 1GHz  
**PLC**: Power Line Conducted Emission      **APCM**: Antenna Port Conducted Measurement

**NOTE 1:** The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

**NOTE 2:** "-" 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 RE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
A	802.11ac (80MHz)	5210	42	42	OFDM	BPSK	29.3
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
A	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
A	802.11ac (80MHz)	5290	58	58	OFDM	BPSK	29.3
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
A	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
A	802.11ac (80MHz)	5530	106	106	OFDM	BPSK	29.3

### **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 CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B	802.11a	5180-5320	36 to 64	60	OFDM	BPSK	6.0
A, B	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	6.5

### **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 CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B	802.11a	5180-5320	36 to 64	60	OFDM	BPSK	6.0
A, B	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	6.5

### **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 CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
A	802.11ac (80MHz)	5210	42	42	OFDM	BPSK	29.3
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
A	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
A	802.11ac (80MHz)	5290	58	58	OFDM	BPSK	29.3
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
A	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
A	802.11ac (80MHz)	5530	106	106	OFDM	BPSK	29.3

**TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	25deg. C, 65%RH	120Vac, 60Hz	Cedric Wu
RE<1G	27deg. C, 71%RH	120Vac, 60Hz	Cedric Wu
PLC	25deg. C, 60%RH	120Vac, 60Hz	Nick Chen
APCM	24deg. C, 64%RH	120Vac, 60Hz	Nick Chen

### 3.3 DUTY CYCLE OF TEST SIGNAL

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

**802.11a:** Duty cycle =  $1.363750 / 1.375000 = 0.992$

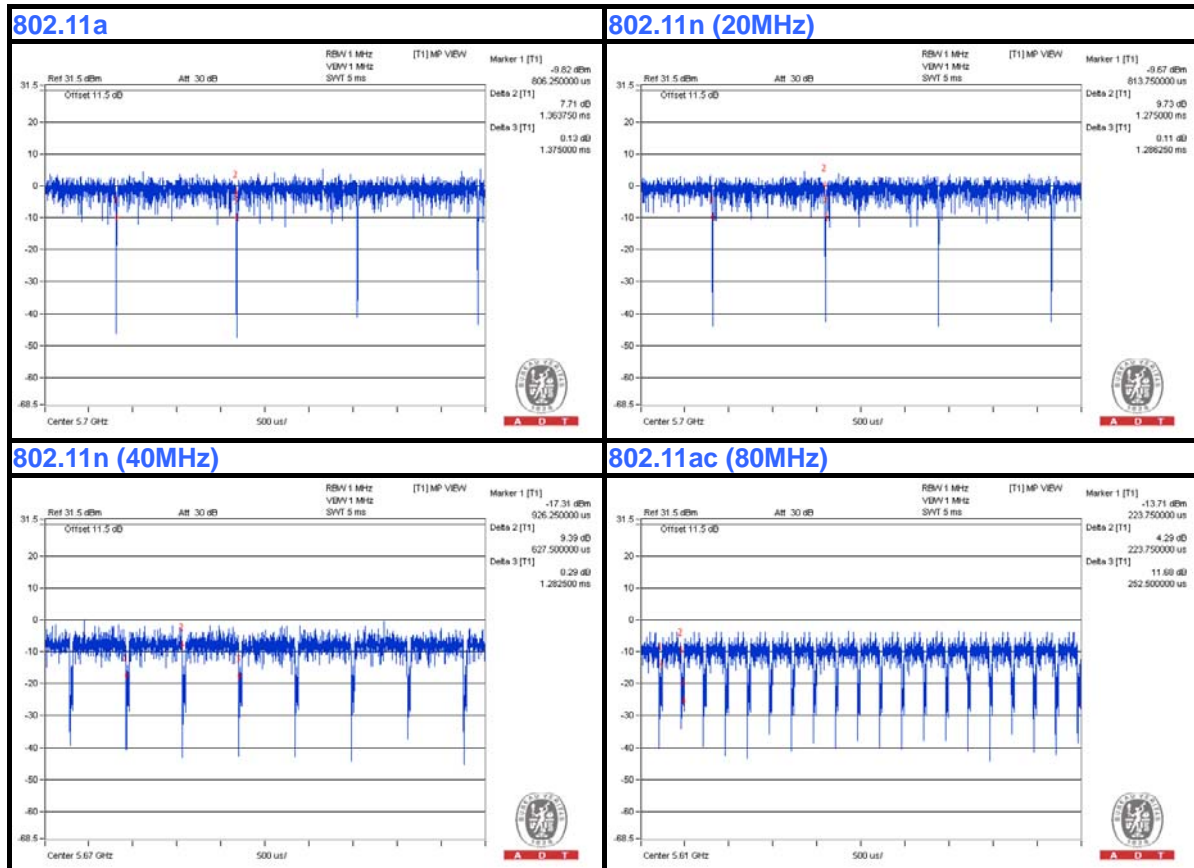
**802.11n (20MHz):** Duty cycle =  $1.275000 / 1.286250 = 0.991$

If duty cycle is < 98%, duty factor shall be considered.

**802.11n (40MHz):** Duty cycle =  $0.627500 / (1.282500 - 0.627500) = 0.958$ ,

Duty factor =  $10 * \log(1/0.958) = 0.19$

**802.11ac (80MHz):** Duty cycle =  $223.750000 / 252.500000 = 0.886$ , Duty factor =  $10 * \log(1/0.886) = 0.53$



### 3.4 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	ADAPTER	NTT docomo	AC Adaptor 04	NA	NA

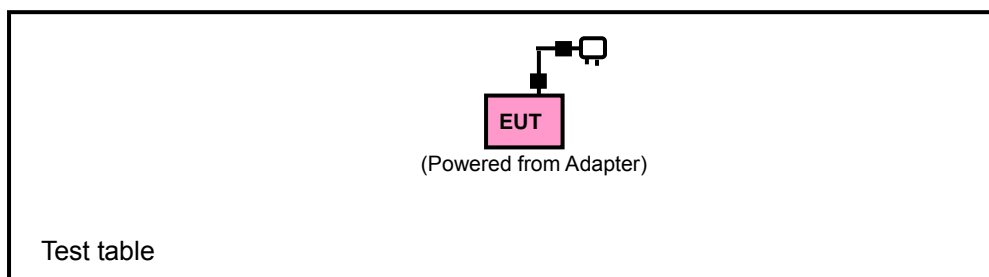
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA

**NOTE:**

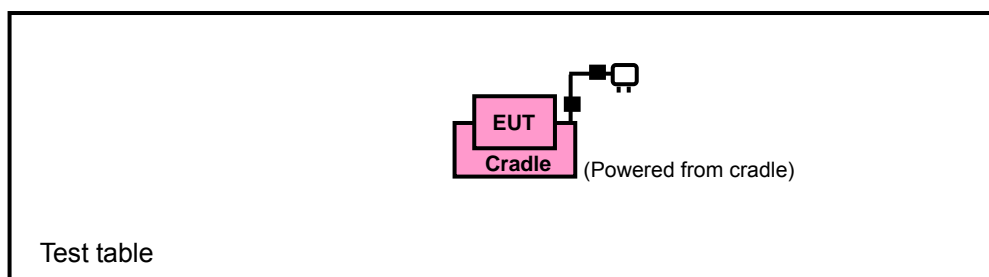
1. 1.05m DC cable with 2 cores.
2. Item 1 is provided by the client.

#### 3.4.1 CONFIGURATION OF SYSTEM UNDER TEST

##### Test Mode A



##### Test Mode B



### 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)**

**789033 D01 General UNII Test Procedures v01 r03**

**ANSI C63.10-2009**

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

**NOTE:** The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.



## 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

APPLICABLE TO	LIMIT	
√	FIELD STRENGTH AT 3m (dBμV/m)	
	PK	AV
	74	54
	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:

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

#### 4.1.3 TEST INSTRUMENTS

Tested date: May 21 ~ Jul. 10, 2013

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 16, 2012	Nov. 15, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jan. 28, 2013	Jan. 27, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Mar. 22, 2013	Mar. 21, 2014
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-209	Sep. 03, 2012	Sep. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 11, 2012	Jul. 10, 2013
Preamplifier Agilent	8449B	3008A01911	Oct. 25, 2012	Oct. 24, 2013
Preamplifier Agilent	8447D	2944A10638	Oct. 25, 2012	Oct. 24, 2013
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 BV ADT	ADT_Radiated_ V7.6.15.9.3	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
High Speed Peak Power Meter	ML2495A	0824012	Aug. 22, 2012	Aug. 21, 2013
Power Sensor	MA2411B	0738171	Jul. 30, 2012	Jul. 29, 2013

- 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 215374.
5. The IC Site Registration No. is IC 7450F-9.

#### 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 chamber. 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.

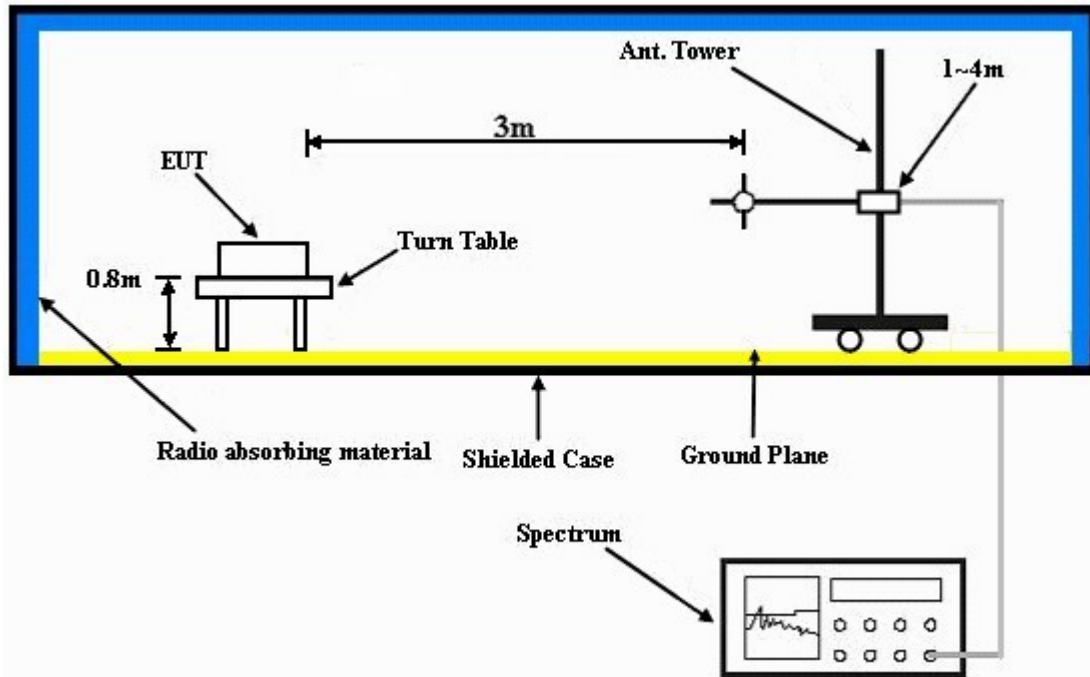
**NOTE:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection 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(Duty cycle < 98%) or 10Hz(Duty cycle > 98%) 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.

#### 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

- Placed the EUT on a testing table.
- Use the software to control the EUT under transmission condition continuously at specific channel frequency.

#### 4.1.8 TEST RESULTS

##### ABOVE 1GHz DATA:

##### 802.11a

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

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	54.9 PK	74.0	-19.1	1.05 H	46	15.70	39.20
2	5150.00	42.8 AV	54.0	-11.2	1.05 H	46	3.60	39.20
3	*5180.00	96.0 PK			1.04 H	43	56.80	39.20
4	*5180.00	84.4 AV			1.04 H	43	45.20	39.20
5	#10360.00	59.4 PK	74.0	-14.6	1.00 H	80	8.60	50.80
6	#10360.00	46.6 AV	54.0	-7.4	1.00 H	80	-4.20	50.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	54.1 PK	74.0	-19.9	1.40 V	347	14.90	39.20
2	5150.00	42.5 AV	54.0	-11.5	1.40 V	347	3.30	39.20
3	*5180.00	90.8 PK			1.43 V	345	51.60	39.20
4	*5180.00	80.3 AV			1.43 V	345	41.10	39.20
5	#10360.00	57.3 PK	74.0	-16.7	1.00 V	300	6.50	50.80
6	#10360.00	44.4 AV	54.0	-9.6	1.00 V	300	-6.40	50.80

##### 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.

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

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	95.6 PK			1.04 H	42	56.40	39.20
2	*5200.00	84.0 AV			1.04 H	42	44.80	39.20
3	#10400.00	59.1 PK	74.0	-14.9	1.00 H	88	8.30	50.80
4	#10400.00	46.2 AV	54.0	-7.8	1.00 H	88	-4.60	50.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	90.5 PK			1.40 V	340	51.30	39.20
2	*5200.00	80.0 AV			1.40 V	340	40.80	39.20
3	#10400.00	57.0 PK	74.0	-17.0	1.00 V	311	6.20	50.80
4	#10400.00	44.0 AV	54.0	-10.0	1.00 V	311	-6.80	50.80

#### 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.

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

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	96.2 PK			1.02 H	46	56.90	39.30
2	*5240.00	85.7 AV			1.02 H	46	46.40	39.30
3	5350.00	55.6 PK	74.0	-18.4	1.05 H	47	16.20	39.40
4	5350.00	42.9 AV	54.0	-11.1	1.05 H	47	3.50	39.40
5	#10480.00	59.7 PK	74.0	-14.3	1.00 H	78	8.60	51.10
6	#10480.00	46.8 AV	54.0	-7.2	1.00 H	78	-4.30	51.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	91.1 PK			1.38 V	342	51.80	39.30
2	*5240.00	80.5 AV			1.38 V	342	41.20	39.30
3	5350.00	55.2 PK	74.0	-18.8	1.40 V	340	15.80	39.40
4	5350.00	42.4 AV	54.0	-11.6	1.40 V	340	3.00	39.40
5	#10480.00	57.5 PK	74.0	-16.5	1.00 V	288	6.40	51.10
6	#10480.00	44.7 AV	54.0	-9.3	1.00 V	288	-6.40	51.10

#### 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.

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

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	55.7 PK	74.0	-18.3	1.00 H	47	16.50	39.20
2	5150.00	42.7 AV	54.0	-11.3	1.00 H	47	3.50	39.20
3	*5260.00	96.6 PK			1.02 H	45	57.30	39.30
4	*5260.00	85.8 AV			1.02 H	45	46.50	39.30
5	#10520.00	59.9 PK	74.0	-14.1	1.00 H	97	8.70	51.20
6	#10520.00	47.0 AV	54.0	-7.0	1.00 H	97	-4.20	51.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	55.2 PK	74.0	-18.8	1.40 V	331	16.00	39.20
2	5150.00	42.5 AV	54.0	-11.5	1.40 V	331	3.30	39.20
3	*5260.00	92.0 PK			1.41 V	330	52.70	39.30
4	*5260.00	81.3 AV			1.41 V	330	42.00	39.30
5	#10520.00	57.9 PK	74.0	-16.1	1.00 V	315	6.70	51.20
6	#10520.00	44.9 AV	54.0	-9.1	1.00 V	315	-6.30	51.20

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

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	98.5 PK			1.01 H	41	59.10	39.40
2	*5300.00	87.7 AV			1.01 H	41	48.30	39.40
3	10600.00	60.6 PK	74.0	-13.4	1.00 H	101	9.10	51.50
4	10600.00	47.6 AV	54.0	-6.4	1.00 H	101	-3.90	51.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	93.8 PK			1.35 V	332	54.40	39.40
2	*5300.00	83.1 AV			1.35 V	332	43.70	39.40
3	10600.00	58.4 PK	74.0	-15.6	1.00 V	322	6.90	51.50
4	10600.00	45.5 AV	54.0	-8.5	1.00 V	322	-6.00	51.50

**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.

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

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	98.7 PK			1.02 H	46	59.30	39.40
2	*5320.00	88.2 AV			1.02 H	46	48.80	39.40
3	5350.00	55.6 PK	74.0	-18.4	1.05 H	48	16.20	39.40
4	5350.00	42.7 AV	54.0	-11.3	1.05 H	48	3.30	39.40
5	10640.00	60.8 PK	74.0	-13.2	1.00 H	97	9.30	51.50
6	10640.00	47.9 AV	54.0	-6.1	1.00 H	97	-3.60	51.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	93.9 PK			1.30 V	339	54.50	39.40
2	*5320.00	83.3 AV			1.30 V	339	43.90	39.40
3	5350.00	55.4 PK	74.0	-18.6	1.30 V	140	16.00	39.40
4	5350.00	42.3 AV	54.0	-11.7	1.30 V	140	2.90	39.40
5	10640.00	58.5 PK	74.0	-15.5	1.00 V	310	7.00	51.50
6	10640.00	46.7 AV	54.0	-7.3	1.00 V	310	-4.80	51.50

#### 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.



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

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	55.8 PK	74.0	-18.2	1.00 H	45	16.20	39.60
2	5460.00	43.2 AV	54.0	-10.8	1.00 H	45	3.60	39.60
3	#5470.00	56.8 PK	74.0	-17.2	1.00 H	49	17.20	39.60
4	#5470.00	43.1 AV	54.0	-10.9	1.00 H	49	3.50	39.60
5	*5500.00	98.9 PK			1.00 H	48	59.20	39.70
6	*5500.00	88.4 AV			1.00 H	48	48.70	39.70
7	11000.00	59.5 PK	74.0	-14.5	1.00 H	105	6.30	53.20
8	11000.00	46.5 AV	54.0	-7.5	1.00 H	105	-6.70	53.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	56.5 PK	74.0	-17.5	1.48 V	335	16.90	39.60
2	5460.00	43.0 AV	54.0	-11.0	1.48 V	335	3.40	39.60
3	#5470.00	56.3 PK	74.0	-17.7	1.47 V	333	16.70	39.60
4	#5470.00	42.9 AV	54.0	-11.1	1.47 V	333	3.30	39.60
5	*5500.00	93.1 PK			1.46 V	333	53.40	39.70
6	*5500.00	82.3 AV			1.46 V	333	42.60	39.70
7	11000.00	57.8 PK	74.0	-16.2	1.00 V	320	4.60	53.20
8	11000.00	44.9 AV	54.0	-9.1	1.00 V	320	-8.30	53.20

**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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 70%RH	TESTED BY	Cedric Wu

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	96.8 PK			1.00 H	39	57.00	39.80
2	*5580.00	85.6 AV			1.00 H	39	45.80	39.80
3	11160.00	58.7 PK	74.0	-15.3	1.00 H	111	5.80	52.90
4	11160.00	45.8 AV	54.0	-8.2	1.00 H	111	-7.10	52.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	91.3 PK			1.39 V	334	51.50	39.80
2	*5580.00	80.6 AV			1.39 V	334	40.80	39.80
3	11160.00	57.0 PK	74.0	-17.0	1.00 V	336	4.10	52.90
4	11160.00	44.2 AV	54.0	-9.8	1.00 V	336	-8.70	52.90

**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.



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

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	95.2 PK			1.00 H	43	55.10	40.10
2	*5700.00	85.9 AV			1.00 H	43	45.80	40.10
3	#5725.00	54.7 PK	74.0	-19.3	1.00 H	46	14.60	40.10
4	#5725.00	42.1 AV	54.0	-11.9	1.00 H	46	2.00	40.10
5	11400.00	58.2 PK	74.0	-15.8	1.00 H	109	5.40	52.80
6	11400.00	45.1 AV	54.0	-8.9	1.00 H	109	-7.70	52.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	90.6 PK			1.38 V	331	50.50	40.10
2	*5700.00	80.0 AV			1.38 V	331	39.90	40.10
3	#5725.00	53.6 PK	74.0	-20.4	1.35 V	327	13.50	40.10
4	#5725.00	41.7 AV	54.0	-12.3	1.35 V	327	1.60	40.10
5	11400.00	55.4 PK	74.0	-18.6	1.00 V	305	2.60	52.80
6	11400.00	43.4 AV	54.0	-10.6	1.00 V	305	-9.40	52.80

**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.



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## 802.11n (20MHz)

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

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	55.1 PK	74.0	-18.9	1.05 H	42	15.90	39.20
2	5150.00	42.6 AV	54.0	-11.4	1.05 H	42	3.40	39.20
3	*5180.00	94.4 PK			1.06 H	41	55.20	39.20
4	*5180.00	83.5 AV			1.06 H	41	44.30	39.20
5	#10360.00	59.0 PK	74.0	-15.0	1.00 H	120	8.20	50.80
6	#10360.00	46.1 AV	54.0	-7.9	1.00 H	120	-4.70	50.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	54.8 PK	74.0	-19.2	1.40 V	344	15.60	39.20
2	5150.00	42.5 AV	54.0	-11.5	1.40 V	344	3.30	39.20
3	*5180.00	90.4 PK			1.42 V	345	51.20	39.20
4	*5180.00	79.2 AV			1.42 V	345	40.00	39.20
5	#10360.00	57.0 PK	74.0	-17.0	1.00 V	325	6.20	50.80
6	#10360.00	44.0 AV	54.0	-10.0	1.00 V	325	-6.80	50.80

## 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.



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

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	94.3 PK			1.05 H	43	55.10	39.20
2	*5200.00	83.2 AV			1.05 H	43	44.00	39.20
3	#10400.00	59.1 PK	74.0	-14.9	1.00 H	123	8.30	50.80
4	#10400.00	46.3 AV	54.0	-7.7	1.00 H	123	-4.50	50.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	90.2 PK			1.35 V	341	51.00	39.20
2	*5200.00	79.1 AV			1.35 V	341	39.90	39.20
3	#10400.00	57.1 PK	74.0	-16.9	1.00 V	330	6.30	50.80
4	#10400.00	44.1 AV	54.0	-9.9	1.00 V	330	-6.70	50.80

**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.



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

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	97.0 PK			1.03 H	43	57.70	39.30
2	*5240.00	86.1 AV			1.03 H	43	46.80	39.30
3	5350.00	55.4 PK	74.0	-18.6	1.05 H	44	16.00	39.40
4	5350.00	42.8 AV	54.0	-11.2	1.05 H	44	3.40	39.40
5	#10480.00	60.6 PK	74.0	-13.4	1.00 H	139	9.50	51.10
6	#10480.00	47.5 AV	54.0	-6.5	1.00 H	139	-3.60	51.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	92.9 PK			1.33 V	351	53.60	39.30
2	*5240.00	81.4 AV			1.33 V	351	42.10	39.30
3	5350.00	55.0 PK	74.0	-19.0	1.33 V	350	15.60	39.40
4	5350.00	42.3 AV	54.0	-11.7	1.33 V	350	2.90	39.40
5	#10480.00	58.5 PK	74.0	-15.5	1.00 V	318	7.40	51.10
6	#10480.00	45.7 AV	54.0	-8.3	1.00 V	318	-5.40	51.10

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

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	55.1 PK	74.0	-18.9	1.03 H	46	15.90	39.20
2	5150.00	41.9 AV	54.0	-12.1	1.03 H	46	2.70	39.20
3	*5260.00	96.3 PK			1.03 H	45	57.00	39.30
4	*5260.00	85.5 AV			1.03 H	45	46.20	39.30
5	#10520.00	60.5 PK	74.0	-13.5	1.00 H	145	9.30	51.20
6	#10520.00	47.3 AV	54.0	-6.7	1.00 H	145	-3.90	51.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	54.3 PK	74.0	-19.7	1.43 V	331	15.10	39.20
2	5150.00	41.5 AV	54.0	-12.5	1.43 V	331	2.30	39.20
3	*5260.00	92.7 PK			1.41 V	330	53.40	39.30
4	*5260.00	81.1 AV			1.41 V	330	41.80	39.30
5	#10520.00	58.3 PK	74.0	-15.7	1.00 V	330	7.10	51.20
6	#10520.00	45.4 AV	54.0	-8.6	1.00 V	330	-5.80	51.20

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

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	98.0 PK			1.02 H	44	58.60	39.40
2	*5300.00	87.2 AV			1.02 H	44	47.80	39.40
3	10600.00	61.4 PK	74.0	-12.6	1.00 H	150	9.90	51.50
4	10600.00	48.3 AV	54.0	-5.7	1.00 H	150	-3.20	51.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	94.2 PK			1.40 V	328	54.80	39.40
2	*5300.00	82.6 AV			1.40 V	328	43.20	39.40
3	10600.00	59.1 PK	74.0	-14.9	1.00 V	345	7.60	51.50
4	10600.00	46.2 AV	54.0	-7.8	1.00 V	345	-5.30	51.50

**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.

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

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	99.0 PK			1.00 H	44	59.60	39.40
2	*5320.00	87.7 AV			1.00 H	44	48.30	39.40
3	5350.00	55.5 PK	74.0	-18.5	1.00 H	51	16.10	39.40
4	5350.00	43.1 AV	54.0	-10.9	1.00 H	51	3.70	39.40
5	10640.00	61.9 PK	74.0	-12.1	1.00 H	153	10.40	51.50
6	10640.00	48.6 AV	54.0	-5.4	1.00 H	153	-2.90	51.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	95.1 PK			1.32 V	320	55.70	39.40
2	*5320.00	83.4 AV			1.32 V	320	44.00	39.40
3	5350.00	55.2 PK	74.0	-18.8	1.33 V	322	15.80	39.40
4	5350.00	42.7 AV	54.0	-11.3	1.33 V	322	3.30	39.40
5	10640.00	59.6 PK	74.0	-14.4	1.00 V	348	8.10	51.50
6	10640.00	46.6 AV	54.0	-7.4	1.00 V	348	-4.90	51.50

#### 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.



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

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	55.6 PK	74.0	-18.4	1.00 H	37	16.00	39.60
2	5460.00	43.3 AV	54.0	-10.7	1.00 H	37	3.70	39.60
3	#5470.00	57.0 PK	74.0	-17.0	1.00 H	49	17.40	39.60
4	#5470.00	43.8 AV	54.0	-10.2	1.00 H	49	4.20	39.60
5	*5500.00	98.3 PK			1.00 H	46	58.60	39.70
6	*5500.00	87.9 AV			1.00 H	46	48.20	39.70
7	11000.00	61.4 PK	74.0	-12.6	1.00 H	155	8.20	53.20
8	11000.00	47.9 AV	54.0	-6.1	1.00 H	155	-5.30	53.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	55.5 PK	74.0	-18.5	1.42 V	337	15.90	39.60
2	5460.00	42.9 AV	54.0	-11.1	1.42 V	337	3.30	39.60
3	#5470.00	56.1 PK	74.0	-17.9	1.42 V	336	16.50	39.60
4	#5470.00	43.3 AV	54.0	-10.7	1.42 V	336	3.70	39.60
5	*5500.00	94.2 PK			1.45 V	334	54.50	39.70
6	*5500.00	83.3 AV			1.45 V	334	43.60	39.70
7	11000.00	60.1 PK	74.0	-13.9	1.00 V	290	6.90	53.20
8	11000.00	46.5 AV	54.0	-7.5	1.00 V	290	-6.70	53.20

**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 DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 70%RH	TESTED BY	Cedric Wu

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	96.2 PK			1.00 H	39	56.40	39.80
2	*5580.00	85.1 AV			1.00 H	39	45.30	39.80
3	11160.00	61.0 PK	74.0	-13.0	1.00 H	161	8.10	52.90
4	11160.00	47.6 AV	54.0	-6.4	1.00 H	161	-5.30	52.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	92.4 PK			1.36 V	330	52.60	39.80
2	*5580.00	81.3 AV			1.36 V	330	41.50	39.80
3	11160.00	59.8 PK	74.0	-14.2	1.00 V	299	6.90	52.90
4	11160.00	46.1 AV	54.0	-7.9	1.00 V	299	-6.80	52.90

**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.



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

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	94.7 PK			1.00 H	39	54.60	40.10
2	*5700.00	82.4 AV			1.00 H	39	42.30	40.10
3	#5725.00	54.6 PK	74.0	-19.4	1.00 H	41	14.50	40.10
4	#5725.00	42.3 AV	54.0	-11.7	1.00 H	41	2.20	40.10
5	11400.00	60.3 PK	74.0	-13.7	1.00 H	177	7.50	52.80
6	11400.00	47.0 AV	54.0	-7.0	1.00 H	177	-5.80	52.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	90.8 PK			1.31 V	336	50.70	40.10
2	*5700.00	80.1 AV			1.31 V	336	40.00	40.10
3	#5725.00	54.1 PK	74.0	-19.9	1.30 V	336	14.00	40.10
4	#5725.00	41.7 AV	54.0	-12.3	1.30 V	336	1.60	40.10
5	11400.00	59.2 PK	74.0	-14.8	1.00 V	302	6.40	52.80
6	11400.00	45.5 AV	54.0	-8.5	1.00 V	302	-7.30	52.80

**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.



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## 802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Cedric Wu

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	55.0 PK	74.0	-19.0	1.05 H	44	15.80	39.20
2	5150.00	42.7 AV	54.0	-11.3	1.05 H	44	3.50	39.20
3	*5190.00	90.8 PK			1.04 H	43	51.60	39.20
4	*5190.00	79.3 AV			1.04 H	43	40.10	39.20
5	#10380.00	57.9 PK	74.0	-16.1	1.00 H	70	7.10	50.80
6	#10380.00	44.7 AV	54.0	-9.3	1.00 H	70	-6.10	50.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	55.0 PK	74.0	-19.0	1.40 V	346	15.80	39.20
2	5150.00	42.0 AV	54.0	-12.0	1.40 V	346	2.80	39.20
3	*5190.00	86.9 PK			1.43 V	345	47.70	39.20
4	*5190.00	76.0 AV			1.43 V	345	36.80	39.20
5	#10380.00	56.7 PK	74.0	-17.3	1.00 V	270	5.90	50.80
6	#10380.00	43.6 AV	54.0	-10.4	1.00 V	270	-7.20	50.80

## 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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 46	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Cedric Wu

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	*5230.00	92.1 PK			1.04 H	49	52.80	39.30
2	*5230.00	81.6 AV			1.04 H	49	42.30	39.30
3	5350.00	55.4 PK	74.0	-18.6	1.05 H	50	16.00	39.40
4	5350.00	42.6 AV	54.0	-11.4	1.05 H	50	3.20	39.40
5	#10460.00	58.5 PK	74.0	-15.5	1.00 H	77	7.50	51.00
6	#10460.00	45.2 AV	54.0	-8.8	1.00 H	77	-5.80	51.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	88.0 PK			1.38 V	350	48.60	39.40
2	*5320.00	77.2 AV			1.38 V	350	37.80	39.40
3	5350.00	54.6 PK	74.0	-19.4	1.38 V	351	15.20	39.40
4	5350.00	41.9 AV	54.0	-12.1	1.38 V	351	2.50	39.40
5	#10460.00	57.2 PK	74.0	-16.8	1.00 V	277	6.20	51.00
6	#10460.00	44.1 AV	54.0	-9.9	1.00 V	277	-6.90	51.00

#### 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.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Cedric Wu

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	54.8 PK	74.0	-19.2	1.00 H	41	15.60	39.20
2	5150.00	41.8 AV	54.0	-12.2	1.00 H	41	2.60	39.20
3	*5270.00	93.8 PK			1.01 H	43	54.50	39.30
4	*5270.00	82.6 AV			1.01 H	43	43.30	39.30
5	#10540.00	58.9 PK	74.0	-15.1	1.00 H	68	7.60	51.30
6	#10540.00	45.7 AV	54.0	-8.3	1.00 H	68	-5.60	51.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	54.3 PK	74.0	-19.7	1.40 V	351	15.10	39.20
2	5150.00	41.2 AV	54.0	-12.8	1.40 V	351	2.00	39.20
3	*5270.00	89.5 PK			1.40 V	349	50.20	39.30
4	*5270.00	78.8 AV			1.40 V	349	39.50	39.30
5	#10540.00	57.7 PK	74.0	-16.3	1.00 V	267	6.40	51.30
6	#10540.00	44.5 AV	54.0	-9.5	1.00 V	267	-6.80	51.30

#### 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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 62	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Cedric Wu

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	*5310.00	96.1 PK			1.01 H	45	56.70	39.40
2	*5310.00	84.6 AV			1.01 H	45	45.20	39.40
3	5350.00	61.7 PK	74.0	-12.3	1.00 H	46	22.30	39.40
4	5350.00	42.8 AV	54.0	-11.2	1.00 H	46	3.40	39.40
5	10620.00	59.8 PK	74.0	-14.2	1.00 H	64	8.30	51.50
6	10620.00	46.7 AV	54.0	-7.3	1.00 H	64	-4.80	51.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	*5310.00	91.4 PK			1.33 V	358	52.00	39.40
2	*5310.00	80.9 AV			1.33 V	358	41.50	39.40
3	5350.00	61.1 PK	74.0	-12.9	1.35 V	357	21.70	39.40
4	5350.00	42.1 AV	54.0	-11.9	1.35 V	357	2.70	39.40
5	10620.00	58.6 PK	74.0	-15.4	1.00 V	257	7.10	51.50
6	10620.00	45.4 AV	54.0	-8.6	1.00 V	257	-6.10	51.50

#### 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 102	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Cedric Wu

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	60.6 PK	74.0	-13.4	1.10 H	44	21.00	39.60
2	5460.00	42.9 AV	54.0	-11.1	1.10 H	44	3.30	39.60
3	#5470.00	62.7 PK	74.0	-11.3	1.07 H	45	23.10	39.60
4	#5470.00	43.2 AV	54.0	-10.8	1.07 H	45	3.60	39.60
5	*5510.00	95.0 PK			1.09 H	44	55.30	39.70
6	*5510.00	83.5 AV			1.09 H	44	43.80	39.70
7	11020.00	59.6 PK	74.0	-14.4	1.00 H	60	6.40	53.20
8	11020.00	46.6 AV	54.0	-7.4	1.00 H	60	-6.60	53.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	57.1 PK	74.0	-16.9	1.42 V	345	17.50	39.60
2	5460.00	42.9 AV	54.0	-11.1	1.42 V	345	3.30	39.60
3	#5470.00	57.9 PK	74.0	-16.1	1.40 V	344	18.30	39.60
4	#5470.00	43.0 AV	54.0	-11.0	1.40 V	344	3.40	39.60
5	*5510.00	90.4 PK			1.45 V	342	50.70	39.70
6	*5510.00	79.4 AV			1.45 V	342	39.70	39.70
7	11020.00	58.8 PK	74.0	-15.2	1.00 V	250	5.60	53.20
8	11020.00	45.9 AV	54.0	-8.1	1.00 V	250	-7.30	53.20

**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 DETAIL	
CHANNEL	Channel 110	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Cedric Wu

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	*5550.00	93.8 PK			1.19 H	47	54.00	39.80
2	*5550.00	82.1 AV			1.19 H	47	42.30	39.80
3	11100.00	59.2 PK	74.0	-14.8	1.00 H	54	6.30	52.90
4	11100.00	46.1 AV	54.0	-7.9	1.00 H	54	-6.80	52.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	*5550.00	89.5 PK			1.39 V	341	49.70	39.80
2	*5550.00	78.4 AV			1.39 V	341	38.60	39.80
3	11100.00	58.5 PK	74.0	-15.5	1.00 V	247	5.60	52.90
4	11100.00	45.5 AV	54.0	-8.5	1.00 V	247	-7.40	52.90

**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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 134	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Cedric Wu

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	*5670.00	92.0 PK			1.16 H	45	52.00	40.00
2	*5670.00	80.5 AV			1.16 H	45	40.50	40.00
3	#5725.00	54.9 PK	74.0	-19.1	1.16 H	51	14.80	40.10
4	#5725.00	42.3 AV	54.0	-11.7	1.16 H	51	2.20	40.10
5	11340.00	58.5 PK	74.0	-15.5	1.00 H	51	5.60	52.90
6	11340.00	45.5 AV	54.0	-8.5	1.00 H	51	-7.40	52.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	*5670.00	87.8 PK			1.40 V	344	47.80	40.00
2	*5670.00	76.9 AV			1.40 V	344	36.90	40.00
3	#5725.00	54.3 PK	74.0	-19.7	1.41 V	345	14.20	40.10
4	#5725.00	41.6 AV	54.0	-12.4	1.41 V	345	1.50	40.10
5	11340.00	58.0 PK	74.0	-16.0	1.00 V	243	5.10	52.90
6	11340.00	44.9 AV	54.0	-9.1	1.00 V	243	-8.00	52.90

#### 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.

# 802.11ac (80MHz)

EUT TEST CONDITION		MEBSUREMENT DETBIL	
CHBNNEL	Channel 42	FREQUENCY RBNGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTBL CONDITIONS	25deg. C, 65%RH	TESTED BY	Cedric Wu

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	54.8 PK	74.0	-19.2	1.15 H	45	15.60	39.20
2	5150.00	41.9 AV	54.0	-12.1	1.15 H	45	2.70	39.20
3	*5210.00	87.0 PK			1.15 H	45	47.70	39.30
4	*5210.00	75.0 AV			1.15 H	45	35.70	39.30
5	#10420.00	57.6 PK	74.0	-16.4	1.00 H	90	6.70	50.90
6	#10420.00	45.0 AV	54.0	-9.0	1.00 H	90	-5.90	50.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	54.6 PK	74.0	-19.4	1.55 V	344	15.40	39.20
2	5150.00	41.8 AV	54.0	-12.2	1.55 V	344	2.60	39.20
3	*5210.00	82.3 PK			1.54 V	344	43.00	39.30
4	*5210.00	70.6 AV			1.54 V	344	31.30	39.30
5	#10420.00	56.4 PK	74.0	-17.6	1.00 V	245	5.50	50.90
6	#10420.00	43.7 AV	54.0	-10.3	1.00 V	245	-7.20	50.90

## 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 of the restricted band.



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EUT TEST CONDITION		MEBSUREMENT DETBIL	
CHBNNEL	Channel 58	FREQUENCY RBNGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTBL CONDITIONS	25deg. C, 65%RH	TESTED BY	Cedric Wu

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	*5290.00	90.5 PK			1.13 H	43	51.10	39.40
2	*5290.00	77.9 AV			1.13 H	43	38.50	39.40
3	5350.00	58.6 PK	74.0	-15.4	1.10 H	42	19.20	39.40
4	5350.00	42.6 AV	54.0	-11.4	1.10 H	42	3.20	39.40
5	#10580.00	58.8 PK	74.0	-15.2	1.00 H	97	7.40	51.40
6	#10580.00	46.3 AV	54.0	-7.7	1.00 H	97	-5.10	51.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	*5290.00	84.6 PK			1.50 V	341	45.20	39.40
2	*5290.00	72.9 AV			1.50 V	341	33.50	39.40
3	5350.00	57.9 PK	74.0	-16.1	1.47 V	340	18.50	39.40
4	5350.00	42.0 AV	54.0	-12.0	1.47 V	340	2.60	39.40
5	#10580.00	57.3 PK	74.0	-16.7	1.00 V	237	5.90	51.40
6	#10580.00	45.1 AV	54.0	-8.9	1.00 V	237	-6.30	51.40

**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 of the restricted band.



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EUT TEST CONDITION		MEBSUREMENT DETBIL	
CHBNNEL	Channel 106	FREQUENCY RBNGE	1 ~ 40GHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTBL CONDITIONS	25deg. C, 65%RH	TESTED BY	Cedric Wu

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	58.1 PK	74.0	-15.9	1.02 H	50	18.50	39.60
2	5460.00	45.9 AV	54.0	-8.1	1.02 H	50	6.30	39.60
3	#5470.00	61.7 PK	74.0	-12.3	1.02 H	50	22.10	39.60
4	#5470.00	48.9 AV	54.0	-5.1	1.02 H	50	9.30	39.60
5	*5530.00	90.5 PK			1.04 H	43	50.80	39.70
6	*5530.00	78.5 AV			1.04 H	43	38.80	39.70
7	11060.00	65.9 PK	74.0	-8.1	1.23 H	52	12.90	53.00
8	11060.00	53.9 AV	54.0	-0.1	1.23 H	52	0.90	53.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	58.7 PK	74.0	-15.3	1.10 V	20	19.10	39.60
2	5460.00	45.9 AV	54.0	-8.1	1.10 V	20	6.30	39.60
3	#5470.00	59.8 PK	74.0	-14.2	1.10 V	20	20.20	39.60
4	#5470.00	48.7 AV	54.0	-5.3	1.10 V	20	9.10	39.60
5	*5530.00	84.9 PK			1.03 V	5	45.20	39.70
6	*5530.00	73.5 AV			1.03 V	5	33.80	39.70
7	11060.00	62.5 PK	74.0	-11.5	1.13 V	208	9.50	53.00
8	11060.00	51.6 AV	54.0	-2.4	1.13 V	208	-1.40	53.00

**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 of the restricted band.



## BELOW 1GHz WORST-CASE DATA :

5260 ~ 5320MHz

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	27deg. C, 71%RH	TESTED BY	Cedric Wu
TEST MODE	A		

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	161.92	17.4 QP	43.5	-26.1	1.00 H	233	31.10	-13.70
2	322.94	21.0 QP	46.0	-25.0	1.00 H	252	32.90	-11.90
3	386.96	21.0 QP	46.0	-25.0	1.50 H	198	31.90	-10.90
4	544.10	25.8 QP	46.0	-20.2	1.25 H	318	33.70	-7.90
5	639.16	26.5 QP	46.0	-19.5	1.25 H	282	32.10	-5.60
6	745.86	29.0 QP	46.0	-17.0	1.00 H	272	32.60	-3.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	99.84	27.8 QP	43.5	-15.7	1.25 V	48	46.60	-18.80
2	367.56	20.2 QP	46.0	-25.8	1.00 V	70	31.40	-11.20
3	592.60	25.3 QP	46.0	-20.7	1.00 V	250	31.70	-6.40
4	763.32	28.2 QP	46.0	-17.8	1.50 V	47	31.40	-3.20
5	848.68	29.8 QP	46.0	-16.2	1.50 V	16	31.90	-2.10
6	957.32	32.0 QP	46.0	-14.0	1.00 V	160	32.00	0.00

### 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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	27deg. C, 71%RH	TESTED BY	Cedric Wu
TEST MODE	B		

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	101.78	21.8 QP	43.5	-21.7	1.00 H	206	40.50	-18.70
2	418.00	21.8 QP	46.0	-24.2	1.50 H	284	31.50	-9.70
3	582.90	26.0 QP	46.0	-20.0	1.50 H	8	32.60	-6.60
4	767.20	29.0 QP	46.0	-17.0	1.00 H	6	32.20	-3.20
5	846.74	29.6 QP	46.0	-16.4	1.25 H	332	31.70	-2.10
6	918.52	30.0 QP	46.0	-16.0	1.50 H	220	30.60	-0.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	99.84	27.3 QP	43.5	-16.2	1.00 V	51	46.10	-18.80
2	280.26	19.1 QP	46.0	-26.9	1.50 V	224	32.00	-12.90
3	497.54	22.9 QP	46.0	-23.1	1.75 V	267	31.20	-8.30
4	646.92	25.8 QP	46.0	-20.2	1.75 V	42	31.40	-5.60
5	773.02	28.5 QP	46.0	-17.5	1.25 V	13	31.40	-2.90
6	833.16	32.0 QP	46.0	-14.0	1.50 V	30	34.20	-2.20

**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

5500 ~ 5700MHz  
802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	27deg. C, 71%RH	TESTED BY	Cedric Wu
TEST MODE	A		

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	101.78	18.5 QP	43.5	-25.0	1.50 H	204	37.20	-18.70
2	369.50	20.3 QP	46.0	-25.7	1.24 H	352	31.40	-11.10
3	449.04	23.2 QP	46.0	-22.8	1.00 H	230	32.40	-9.20
4	683.78	27.2 QP	46.0	-18.8	1.00 H	7	32.30	-5.10
5	802.12	28.7 QP	46.0	-17.3	1.24 H	310	31.50	-2.80
6	889.42	29.9 QP	46.0	-16.1	1.24 H	306	31.40	-1.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	62.98	20.3 QP	40.0	-19.7	1.50 V	1	35.10	-14.80
2	99.84	27.5 QP	43.5	-16.0	1.50 V	51	46.30	-18.80
3	439.34	22.9 QP	46.0	-23.1	1.24 V	42	32.30	-9.40
4	602.30	25.4 QP	46.0	-20.6	1.00 V	236	31.60	-6.20
5	699.30	26.6 QP	46.0	-19.4	1.24 V	245	31.50	-4.90
6	796.30	28.5 QP	46.0	-17.5	1.24 V	14	31.30	-2.80

#### 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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	27deg. C, 71%RH	TESTED BY	Cedric Wu
TEST MODE	B		

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	45.52	17.0 QP	40.0	-23.0	1.24 H	70	31.20	-14.20
2	146.40	18.4 QP	43.5	-25.1	1.50 H	265	32.60	-14.20
3	462.62	23.1 QP	46.0	-22.9	1.50 H	71	32.10	-9.00
4	639.16	26.7 QP	46.0	-19.3	1.24 H	23	32.30	-5.60
5	743.92	28.4 QP	46.0	-17.6	1.75 H	178	32.10	-3.70
6	873.90	29.8 QP	46.0	-16.2	1.24 H	100	31.30	-1.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL 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	62.98	21.6 QP	40.0	-18.4	1.00 V	16	36.40	-14.80
2	386.96	21.1 QP	46.0	-24.9	1.25 V	129	32.00	-10.90
3	592.60	25.9 QP	46.0	-20.1	1.50 V	12	32.30	-6.40
4	743.92	27.9 QP	46.0	-18.1	1.50 V	7	31.60	-3.70
5	788.54	29.5 QP	46.0	-16.5	1.25 V	141	32.40	-2.90
6	912.70	30.4 QP	46.0	-15.6	1.25 V	35	31.20	-0.80

**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

## 4.2 CONDUCTED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED 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

Tested date: May 28, 2013

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Nov. 09, 2012	Nov. 08, 2013
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 21, 2012	Dec. 20, 2013
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 06, 2012	Jul. 05, 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 2.
3. The VCCI Site Registration No. is C-2047.

#### 4.2.3 TEST PROCEDURES

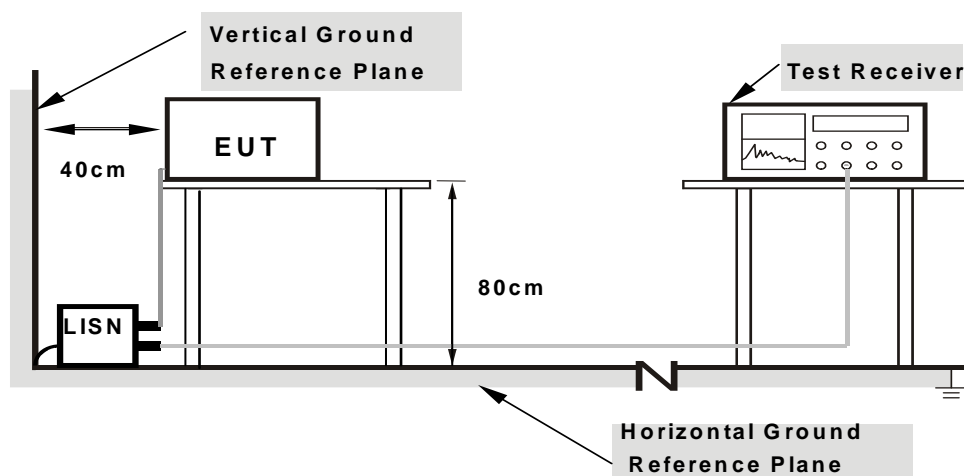
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- 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.

## 4.2.7 TEST RESULTS

### CONDUCTED WORST-CASE DATA :

5260 ~ 5320MHz

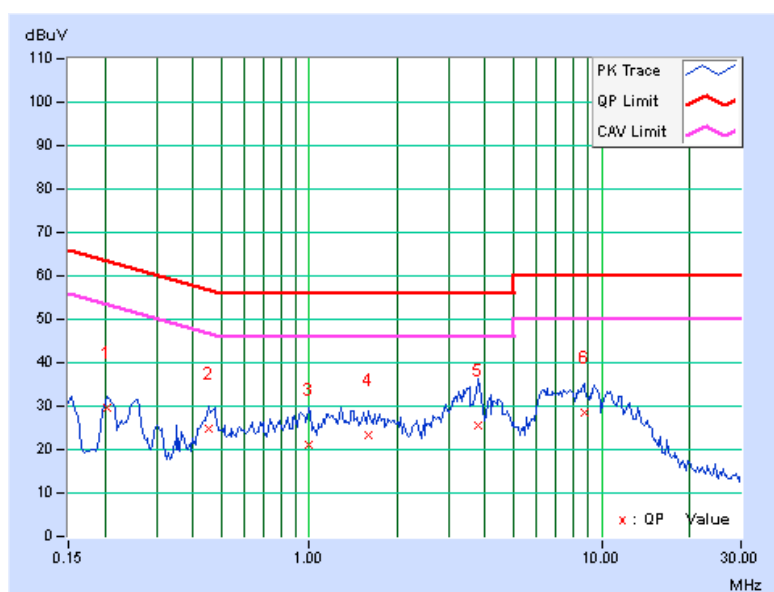
802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 60	TEST MODE	A

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.20459	0.20	29.32	22.03	29.52	22.23	63.42	53.42	-33.90	-31.19
2	0.45468	0.23	24.45	18.77	24.68	19.00	56.79	46.79	-32.11	-27.79
3	0.99632	0.29	20.79	11.90	21.08	12.19	56.00	46.00	-34.92	-33.81
4	1.58850	0.31	22.97	14.08	23.28	14.39	56.00	46.00	-32.72	-31.61
5	3.79924	0.39	25.14	13.92	25.53	14.31	56.00	46.00	-30.47	-31.69
6	8.69920	0.47	28.10	21.98	28.57	22.45	60.00	50.00	-31.43	-27.55

### 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.

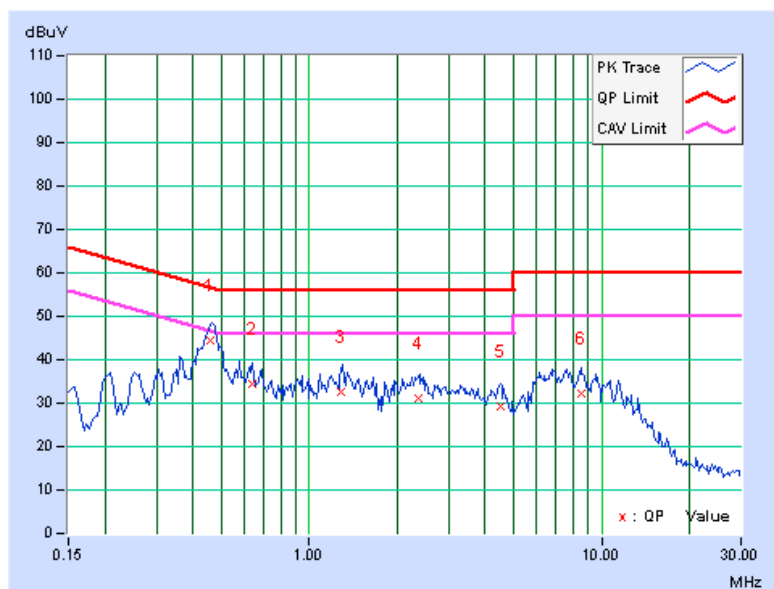


PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 60	TEST MODE	A

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.46119	0.27	43.99	39.23	44.26	39.50	56.67	46.67	-12.41	-7.17
2	0.63700	0.27	34.07	28.36	34.34	28.63	56.00	46.00	-21.66	-17.37
3	1.29153	0.28	32.28	26.73	32.56	27.01	56.00	46.00	-23.44	-18.99
4	2.37753	0.34	30.94	24.34	31.28	24.68	56.00	46.00	-24.72	-21.32
5	4.50203	0.46	28.94	23.13	29.40	23.59	56.00	46.00	-26.60	-22.41
6	8.48827	0.54	31.73	25.33	32.27	25.87	60.00	50.00	-27.73	-24.13

#### 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.



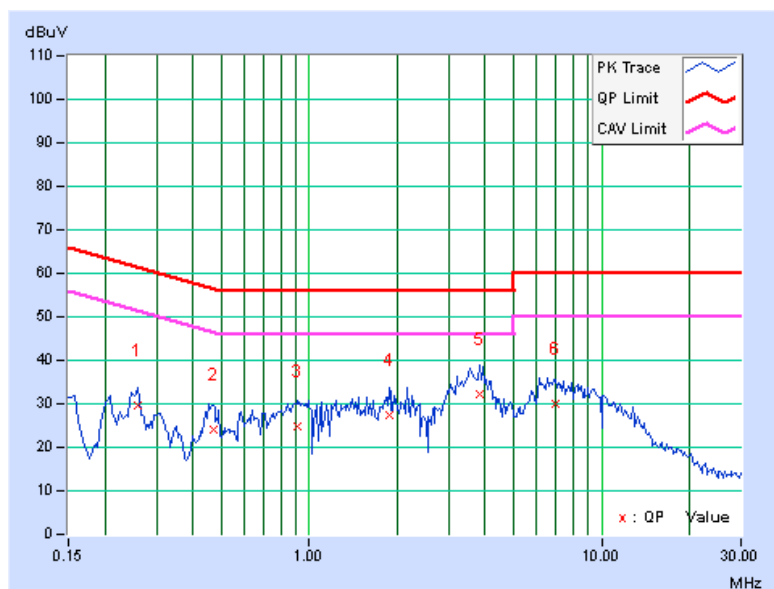


PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 60	TEST MODE	B

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.25927	0.21	29.39	21.54	29.60	21.75	61.45	51.45	-31.86	-29.71
2	0.47284	0.23	23.93	15.97	24.16	16.20	56.46	46.46	-32.31	-30.27
3	0.91034	0.28	24.65	14.46	24.93	14.74	56.00	46.00	-31.07	-31.26
4	1.86981	0.32	27.15	17.61	27.47	17.93	56.00	46.00	-28.53	-28.07
5	3.81877	0.39	31.69	20.01	32.08	20.40	56.00	46.00	-23.92	-25.60
6	6.93205	0.44	29.74	24.02	30.18	24.46	60.00	50.00	-29.82	-25.54

# 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.

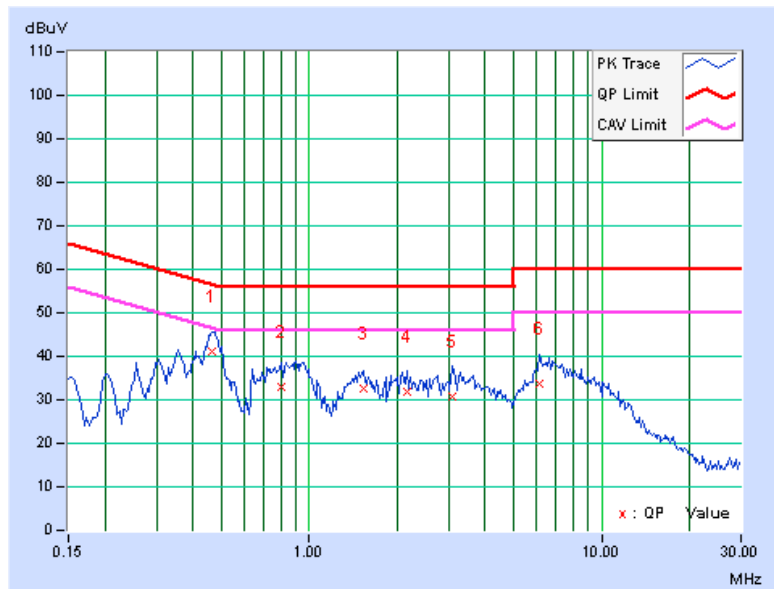


PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 60	TEST MODE	B

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.46635	0.27	40.84	36.34	41.11	36.61	56.58	46.58	-15.47	-9.97
2	0.80100	0.26	32.65	27.16	32.91	27.42	56.00	46.00	-23.09	-18.58
3	1.52586	0.29	32.45	26.62	32.74	26.91	56.00	46.00	-23.26	-19.09
4	2.15447	0.33	31.38	26.02	31.71	26.35	56.00	46.00	-24.29	-19.65
5	3.10156	0.39	30.21	23.72	30.60	24.11	56.00	46.00	-25.40	-21.89
6	6.16272	0.49	33.18	27.85	33.67	28.34	60.00	50.00	-26.33	-21.66

#### 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.



5500 ~ 5700MHz

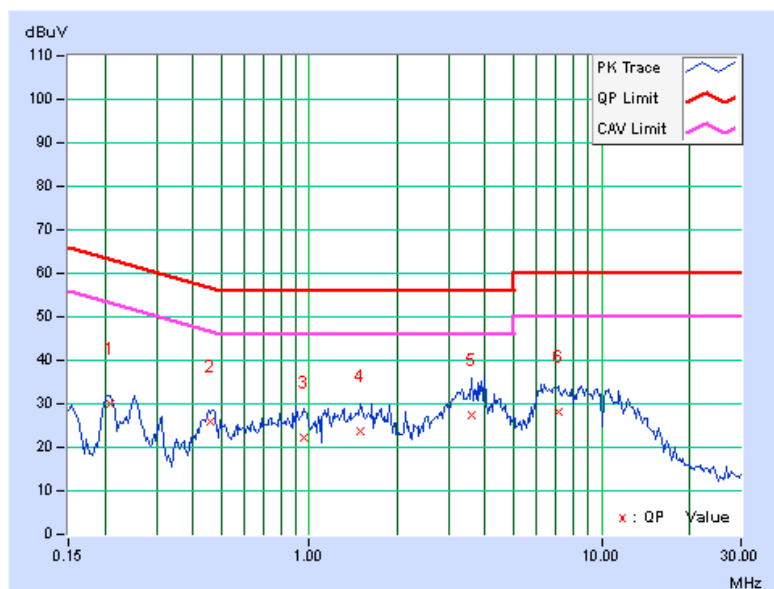
802.11n (20MHz)

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 140	TEST MODE	A

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.20847	0.20	29.70	21.29	29.90	21.49	63.27	53.27	-33.37	-31.78
2	0.46106	0.23	25.55	20.21	25.78	20.44	56.67	46.67	-30.90	-26.24
3	0.95319	0.28	21.88	12.54	22.16	12.82	56.00	46.00	-33.84	-33.18
4	1.50247	0.31	23.57	14.23	23.88	14.54	56.00	46.00	-32.12	-31.46
5	3.58203	0.38	26.88	16.60	27.26	16.98	56.00	46.00	-28.74	-29.02
6	7.10794	0.45	27.78	22.69	28.23	23.14	60.00	50.00	-31.77	-26.86

#### 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.

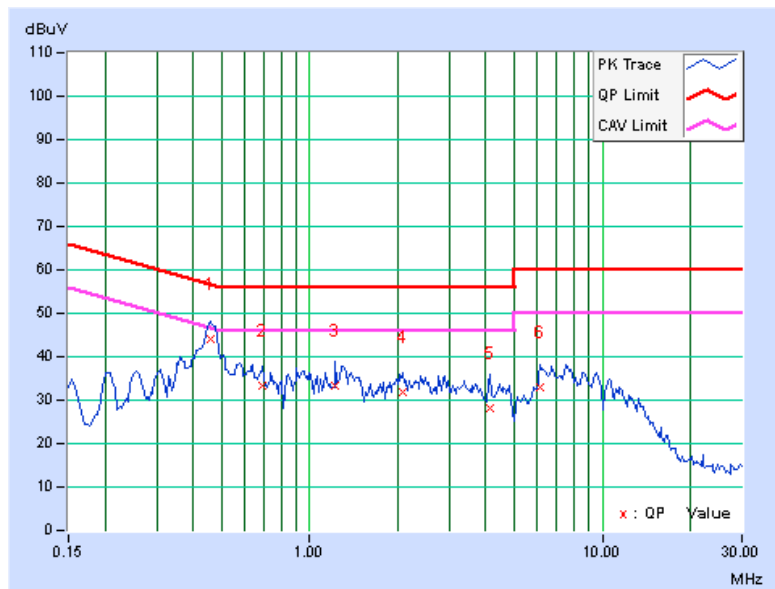


PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 140	TEST MODE	A

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.45916	0.27	43.90	39.13	44.17	39.40	56.71	46.71	-12.54	-7.31
2	0.68768	0.27	33.14	26.76	33.41	27.03	56.00	46.00	-22.59	-18.97
3	1.22522	0.27	33.10	27.73	33.37	28.00	56.00	46.00	-22.63	-18.00
4	2.08537	0.33	31.59	25.21	31.92	25.54	56.00	46.00	-24.08	-20.46
5	4.13541	0.45	27.54	20.06	27.99	20.51	56.00	46.00	-28.01	-25.49
6	6.16248	0.49	32.37	27.31	32.86	27.80	60.00	50.00	-27.14	-22.20

#### 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.

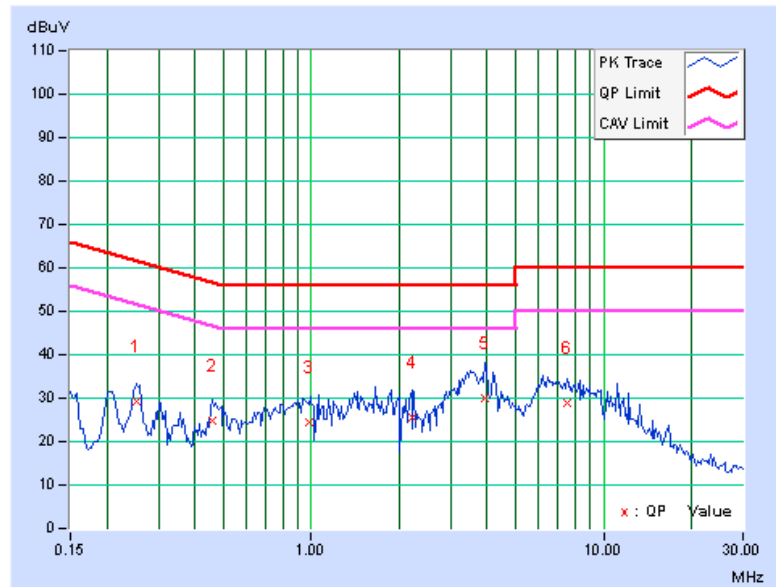


PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 140	TEST MODE	B

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.25310	0.21	29.18	21.83	29.39	22.04	61.65	51.65	-32.27	-29.62
2	0.46144	0.23	24.77	17.27	25.00	17.50	56.67	46.67	-31.67	-29.17
3	0.98930	0.29	24.17	13.99	24.46	14.28	56.00	46.00	-31.54	-31.72
4	2.20559	0.33	25.17	14.76	25.50	15.09	56.00	46.00	-30.50	-30.91
5	3.91218	0.40	29.59	18.11	29.99	18.51	56.00	46.00	-26.01	-27.49
6	7.54246	0.45	28.52	22.92	28.97	23.37	60.00	50.00	-31.03	-26.63

#### 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.

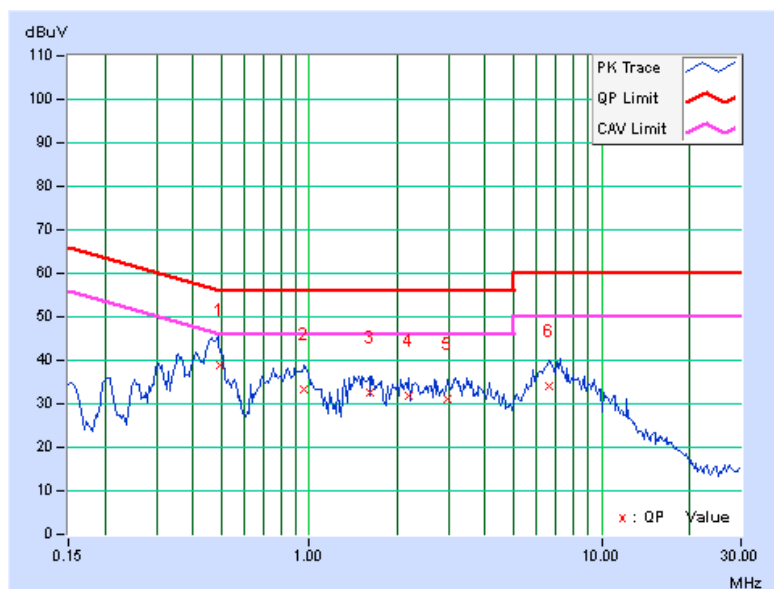


PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 140	TEST MODE	B

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.49608	0.27	38.80	33.93	39.07	34.20	56.07	46.07	-17.00	-11.87
2	0.95695	0.26	32.96	27.50	33.22	27.76	56.00	46.00	-22.78	-18.24
3	1.60409	0.30	32.45	26.46	32.75	26.76	56.00	46.00	-23.25	-19.24
4	2.19464	0.33	31.52	25.84	31.85	26.17	56.00	46.00	-24.15	-19.83
5	2.95546	0.38	30.61	24.13	30.99	24.51	56.00	46.00	-25.01	-21.49
6	6.63858	0.50	33.49	28.20	33.99	28.70	60.00	50.00	-26.01	-21.30

# 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.



### 4.3 PEAK TRANSMIT POWER MEASUREMENT

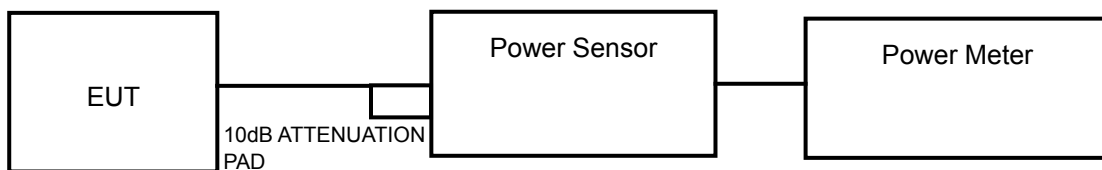
#### 4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

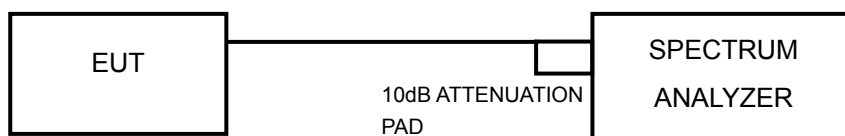
**NOTE:** Where B is the 26dB emission bandwidth in MHz.

#### 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.

#### 4.3.4 TEST PROCEDURE

##### FOR AVERAGE POWER MEASUREMENT

###### For 802.11a, 802.11n (20MHz), 802.11n (40MHz)

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 802.11ac (80MHz)

Method SA-1

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1 MHz.
- 3) Set VBW  $\geq$  3 MHz.
- 4) Number of points in sweep  $\geq$  2 Span / RBW.
- 5) Sweep time = auto.
- 6) Set trigger to free run (duty cycle  $\geq$  98 percent); Set video trigger (duty cycle  $<$  98 percent)
- 7) Detector = RMS.
- 8) Trace average at least 100 traces in power averaging mode
- 9) Compute power by integrating the spectrum across the 26 dB EBW of the signal.

##### 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.



#### 4.3.7 TEST RESULTS

##### POWER OUTPUT:

##### 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	9.204	9.64	17	PASS
40	5200	9.141	9.61	17	PASS
48	5240	<b>9.484</b>	9.77	17	PASS
52	5260	9.183	9.63	24	PASS
60	5300	9.078	9.58	24	PASS
64	5320	9.078	9.58	24	PASS
100	5500	8.035	9.05	24	PASS
116	5580	7.621	8.82	24	PASS
140	5700	7.998	9.03	24	PASS

##### 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	9.036	9.56	17	PASS
40	5200	8.974	9.53	17	PASS
48	5240	9.183	9.63	17	PASS
52	5260	<b>9.247</b>	9.66	24	PASS
60	5300	9.099	9.59	24	PASS
64	5320	9.057	9.57	24	PASS
100	5500	7.889	8.97	24	PASS
116	5580	7.962	9.01	24	PASS
140	5700	<b>8.147</b>	9.11	24	PASS

#### 802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	8.356	9.22	17	PASS
46	5230	8.337	9.21	17	PASS
54	5270	8.414	9.25	24	PASS
62	5310	8.872	9.48	24	PASS
102	5510	6.808	8.33	24	PASS
110	5550	6.237	7.95	24	PASS
134	5670	7.638	8.83	24	PASS

#### 802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	6.109	7.86	17	PASS
58	5290	6.281	7.98	24	PASS
106	5530	7.396	8.69	24	PASS

## 26dB BANDWIDTH:

### 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	22.41	PASS
40	5200	22.54	PASS
48	5240	22.29	PASS
52	5260	22.56	PASS
60	5300	22.53	PASS
64	5320	22.46	PASS
100	5500	22.78	PASS
116	5580	22.31	PASS
140	5700	22.40	PASS

### 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	22.83	PASS
40	5200	22.70	PASS
48	5240	22.62	PASS
52	5260	22.57	PASS
60	5300	22.73	PASS
64	5320	23.01	PASS
100	5500	22.60	PASS
116	5580	22.55	PASS
140	5700	22.56	PASS

#### 802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	45.97	PASS
46	5230	45.33	PASS
54	5270	47.70	PASS
62	5310	45.45	PASS
102	5510	45.58	PASS
110	5550	44.80	PASS
134	5670	45.37	PASS

#### 802.11ac (80MHz)

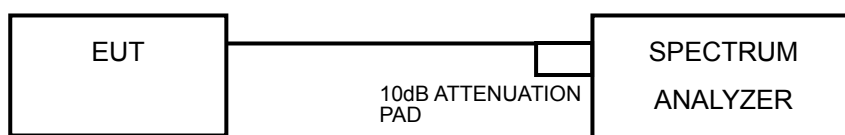
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
42	5210	88.32	PASS
58	5290	87.10	PASS
106	5530	86.54	PASS

## 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

[802.11a, 802.11n \(20MHz\):](#)

Using method SA-1 alternative

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 30 KHz, Set VBW  $\geq$  1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = 0.3 second.
- 5) Perform a single sweep.
- 6) Record the max value

#### 802.11n (40MHz), 802.11ac (80MHz):

Using method SA-2 alternative

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 30 KHz, Set VBW  $\geq$  1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = 0.6 second (For 802.11n (40MHz)),  
Sweep time = 1.15 second (For 802.11ac (80MHz))
- 5) Perform a single sweep.
- 6) Record the max value and add 10 log (1/duty cycle)

#### 4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6.

#### 4.4.7 TEST RESULTS

##### 802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	-4.51	4	PASS
40	5200	-4.36	4	PASS
48	5240	-4.24	4	PASS
52	5260	-3.75	11	PASS
60	5300	-3.71	11	PASS
64	5320	-3.17	11	PASS
100	5500	-3.04	11	PASS
116	5580	-3.06	11	PASS
140	5700	-3.01	11	PASS

##### 802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	-4.51	4	PASS
40	5200	-4.41	4	PASS
48	5240	-3.90	4	PASS
52	5260	-4.29	11	PASS
60	5300	-3.39	11	PASS
64	5320	-3.19	11	PASS
100	5500	-3.21	11	PASS
116	5580	-3.22	11	PASS
140	5700	-2.79	11	PASS

### 802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-7.84	0.19	-7.65	4	PASS
46	5230	-7.02	0.19	-6.83	4	PASS
54	5270	-7.09	0.19	-6.90	11	PASS
62	5310	-6.36	0.19	-6.17	11	PASS
102	5510	-6.59	0.19	-6.40	11	PASS
110	5550	-7.10	0.19	-6.91	11	PASS
134	5670	-5.96	0.19	-5.77	11	PASS

**NOTE:** Refer to section 3.3 for duty cycle spectrum plot.

### 802.11ac (80MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
42	5210	-10.27	0.53	-9.74	4	PASS
58	5290	-10.32	0.53	-9.79	11	PASS
106	5530	-9.10	0.53	-8.57	11	PASS

**NOTE:** Refer to section 3.3 for duty cycle spectrum plot.



## 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  $\geq$  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.

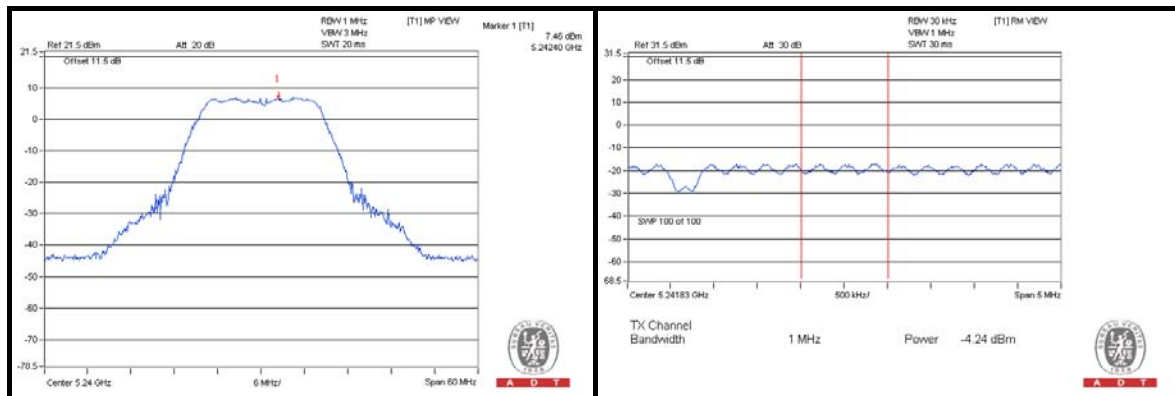
### 4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

## 4.5.7 TEST RESULTS

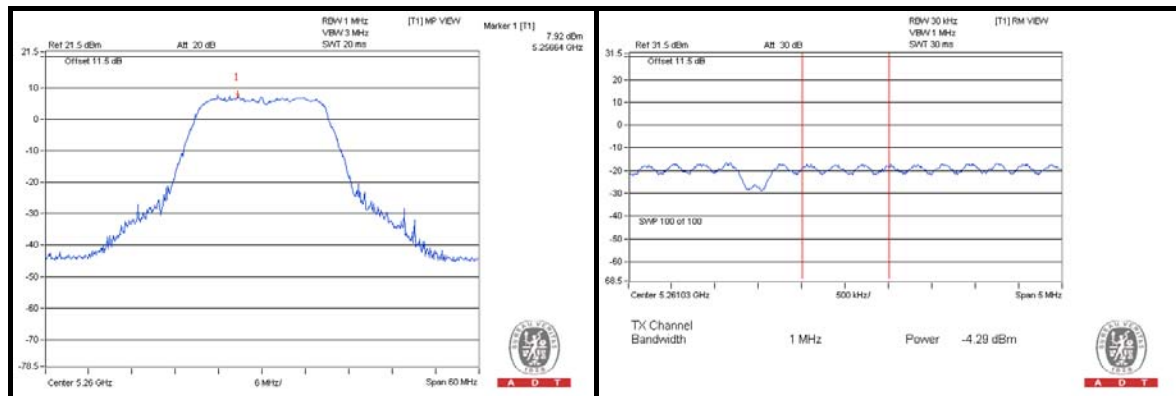
### 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	6.87	-4.51	11.38	13	PASS
40	5200	6.39	-4.36	10.75	13	PASS
48	5240	7.46	-4.24	11.70	13	PASS
52	5260	7.73	-3.75	11.48	13	PASS
60	5300	7.40	-3.71	11.11	13	PASS
64	5320	8.01	-3.17	11.18	13	PASS
100	5500	7.83	-3.04	10.87	13	PASS
116	5580	7.91	-3.06	10.97	13	PASS
140	5700	8.26	-3.01	11.27	13	PASS



### 802.11n (20MHz)

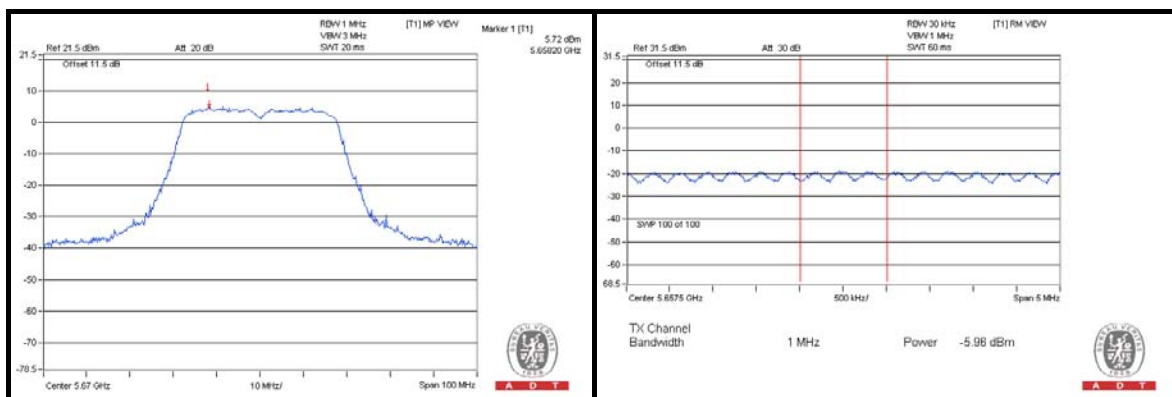
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	7.34	-4.51	11.85	13	PASS
40	5200	6.50	-4.41	10.91	13	PASS
48	5240	7.09	-3.90	10.99	13	PASS
52	5260	7.92	-4.29	12.21	13	PASS
60	5300	7.44	-3.39	10.83	13	PASS
64	5320	8.38	-3.19	11.57	13	PASS
100	5500	7.81	-3.21	11.02	13	PASS
116	5580	7.83	-3.22	11.05	13	PASS
140	5700	8.09	-2.79	10.88	13	PASS



### 802.11n (40MHz)

CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
38	5190	3.56	-7.84	-7.65	11.21	13	PASS
46	5230	3.89	-7.02	-6.83	10.72	13	PASS
54	5270	3.97	-7.09	-6.90	10.87	13	PASS
62	5310	4.80	-6.36	-6.17	10.97	13	PASS
102	5510	4.70	-6.59	-6.40	11.10	13	PASS
110	5550	3.70	-7.10	-6.91	10.61	13	PASS
134	5670	5.72	-5.96	-5.77	11.49	13	PASS

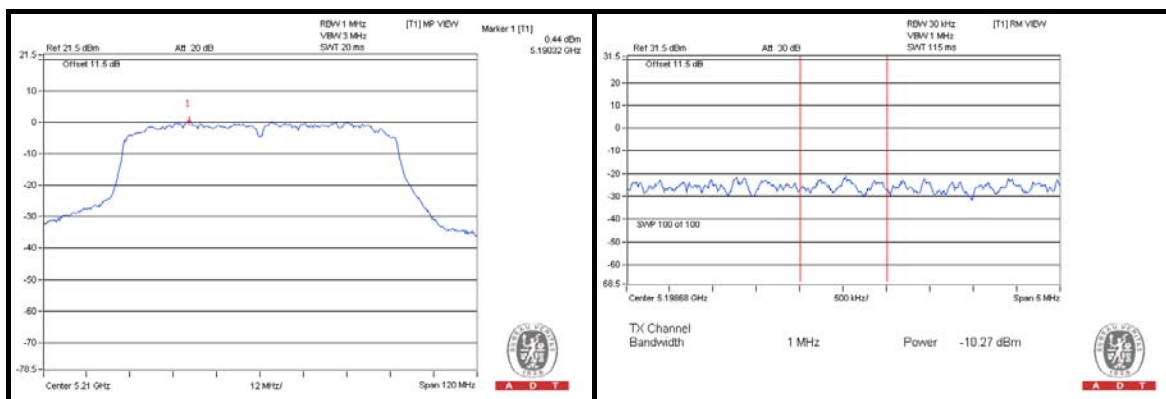
**NOTE:** Refer to section 3.3 for duty cycle spectrum plot.



### 802.11ac (80MHz)

CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
42	5210	0.44	-10.27	-9.74	10.18	13	PASS
58	5290	0.24	-10.32	-9.79	10.03	13	PASS
106	5530	1.30	-9.10	-8.57	9.87	13	PASS

**NOTE:** Refer to section 3.3 for duty cycle spectrum plot.

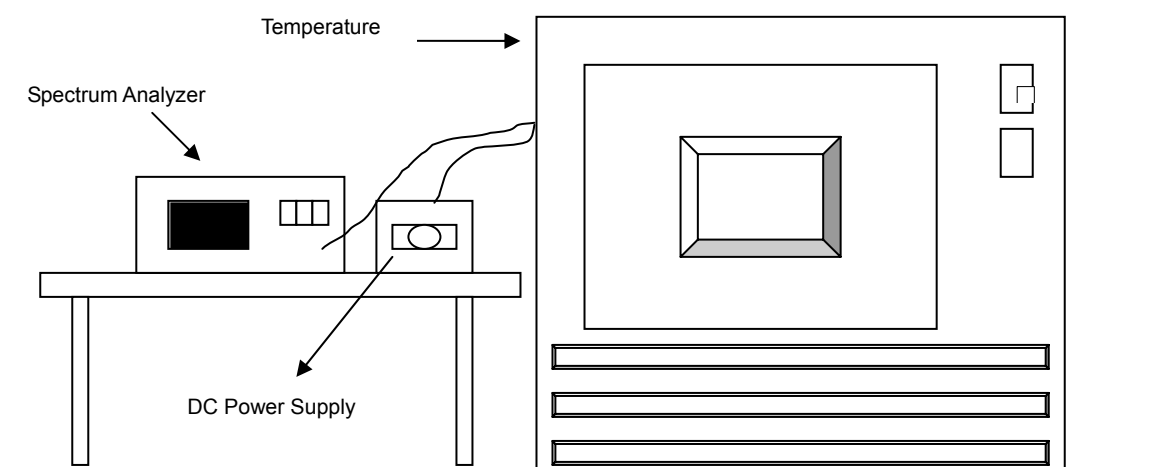


## 4.6 FREQUENCY STABILITY

### 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

Test date: Jun. 01, 2013

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
SPECTRUM ANALYZER R&S	FSP40	100269	Jan. 28, 2013	Jan. 27, 2014
WIT STANDARD TEMPERATURE AND HUMIDITY CHAMBER	TH-4S-C	W981030	Jun. 13, 2012	Jun. 12, 2013

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

#### 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.

#### 4.6.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
50	3.9	5319.9951	-0.00009	5319.9957	-0.00008	5319.9937	-0.00012	5319.9966	-0.00006
40	3.9	5320.0084	0.00016	5320.0065	0.00012	5319.9971	-0.00005	5319.9990	-0.00002
30	3.9	5320.0246	0.00046	5320.0236	0.00044	5320.0205	0.00039	5320.0238	0.00045
20	3.9	5320.0173	0.00033	5320.0164	0.00031	5320.0180	0.00034	5320.0112	0.00021
10	3.9	5319.9749	-0.00047	5319.9716	-0.00053	5319.9781	-0.00041	5319.9799	-0.00038
0	3.9	5319.9968	-0.00006	5319.9956	-0.00008	5319.9982	-0.00003	5319.9877	-0.00023
-10	3.9	5319.9983	-0.00003	5319.9953	-0.00009	5319.9997	-0.00001	5319.9955	-0.00008
-20	3.9	5319.9832	-0.00032	5319.9924	-0.00014	5319.9832	-0.00032	5319.9820	-0.00034
-30	3.9	5320.0152	0.00029	5320.0196	0.00037	5320.0145	0.00027	5320.0132	0.00025

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	4.29	5320.0173	0.00033	5320.0160	0.00030	5320.0167	0.00031	5320.0123	0.00023
	3.9	5320.0173	0.00033	5320.0164	0.00031	5320.0180	0.00034	5320.0112	0.00021
	3.51	5320.0171	0.00032	5320.0168	0.00032	5320.0175	0.00033	5320.0129	0.00024



## 5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

## 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:**

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Fax: 886-2-26051924

**Hsin Chu EMC/RF Lab:**

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**Hwa Ya EMC/RF/Safety Telecom Lab:**

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**Web Site:** [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

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

## **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---**