



# FCC TEST REPORT (15.407)

**REPORT NO.:** RF130418C13-2

**MODEL NO.:** K008

**FCC ID:** MSQK008

**RECEIVED:** Apr. 18, 2013

**TESTED:** Apr. 30, 2013 ~ May 04, 2013

**ISSUED:** May 09, 2013

**APPLICANT:** ASUSTek COMPUTER INC.

**ADDRESS:** 4F., No. 150, LI-TE Rd., PEITOU, TAIPEI 112, TAIWAN

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

**LAB ADDRESS:** No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist.,  
New Taipei City, Taiwan ( R.O.C )

**TEST LOCATION:** No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei  
Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130418C13-2	Original release	May 09, 2013

## 1. CERTIFICATION

**PRODUCT:** ASUS Pad  
**MODEL NO.:** K008  
**BRAND:** ASUS  
**APPLICANT:** ASUSTek COMPUTER INC.  
**TESTED:** Apr. 30, 2013 ~ May 04, 2013  
**TEST SAMPLE:** Production Unit  
**STANDARDS:** **FCC Part 15, Subpart E (Section 15.407)**  
ANSI C63.10-2009

The above equipment (model: K008) 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** : Vera Huang , **DATE** : May 09, 2013

Vera Huang / Specialist

**APPROVED BY** : Sam chen , **DATE** : May 09, 2013

Sam Chen / Assistant Manager

## 2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

<b>APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)</b>			
<b>STANDARD SECTION</b>	<b>TEST TYPE</b>	<b>RESULT</b>	<b>REMARK</b>
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -4.40dB at 0.49375MHz.
15.407(b/1/2/3) (b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -9.86dB at 204.96MHz.
15.407(a/1/2)	Peak 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:

<b>MEASUREMENT</b>	<b>FREQUENCY</b>	<b>UNCERTAINTY</b>
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>	ASUS Pad
<b>MODEL NO.</b>	K008
<b>POWER SUPPLY</b>	5.2Vdc (adapter or host equipment) 3.8Vdc (Li-ion battery)
<b>MODULATION TYPE</b>	256QAM, 64QAM, 16QAM, QPSK, BPSK
<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 MCS7
<b>OPERATING FREQUENCY</b>	5180 ~ 5240MHz, 5260 ~ 5320MHz & 5500 ~ 5700MHz
<b>NUMBER OF CHANNEL</b>	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz)
<b>OUTPUT POWER</b>	10.965mW for 5180 ~ 5240MHz 11.298mW for 5260 ~ 5320MHz 12.246mW for 5500 ~ 5700MHz
<b>ANTENNA TYPE</b>	PIFA antenna with 2.1dBi gain (5180 ~ 5240MHz) PIFA antenna with 3dBi gain (5260 ~ 5320MHz) PIFA antenna with 4.8dBi gain (5500 ~ 5700MHz)
<b>ANTENNA CONNECTOR</b>	NA
<b>DATA CABLE</b>	Refer to Note as below
<b>I/O PORTS</b>	Refer to user's manual
<b>ACCESSORY DEVICES</b>	Refer to Note as below



**NOTE:**

1. The EUT has following accessories.

ITEM	BRAND	MODEL	DESCRIPTION
AC Adapter 1	ASUS	PSM06A-050Q	I/P: 100-240Vac, 50-60Hz, 0.25A O/P: 5.2Vdc, 1.35A
AC Adapter 2	ASUS	PA-1070-07	I/P: 100-240Vac, 50-60Hz, 0.25A O/P: 5.2Vdc, 1.35A
Li-ion Battery	ASUS	C11P1303	Rating: 3.8Vdc, 15Wh
USB cable	ASUS	AA780300	0.93m non-shielded cable w/o ferrite core
LCD Panel	JDI	LT070ME05000	--
Video Camera 1	Liteon	12P2BA536	--
Video Camera 2	Chicony	CJAC53220003870LH	--
WLAN Module	Qualcomm	WCN3660	--
CPU	Qualcomm	APQ8064	1067 NSP (1067 Pin)
eMMC	Hynix	H26M64002DQR	32G
Mainboard	ASUS	ME571K_MB	--

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

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11a	1TX
802.11n (20MHz)	1TX
802.11n (40MHz)	1TX

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

### 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

#### 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

#### FOR 5500 ~ 5700MHz

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

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

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

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



### 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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

**NOTE:** The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane** for 5180~5320MHz and **Z-plane** for 5500~5700MHz.

#### **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.

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	6.5
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5

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

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (20MHz)	5500-5700	100 to 140	116	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.

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (20MHz)	5500-5700	100 to 140	116	OFDM	BPSK	6.5

**BANDEDGE MEASUREMENT:**

- 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.

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36, 48	OFDM	BPSK	6.0
802.11n (20MHz)		36 to 48	36, 48	OFDM	BPSK	6.5
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11a	5260-5320	52 to 64	52, 64	OFDM	BPSK	6.0
802.11n (20MHz)		52 to 64	52, 64	OFDM	BPSK	6.5
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11a	5500-5700	100 to 140	100, 140	OFDM	BPSK	6.0
802.11n (20MHz)		100 to 140	100, 140	OFDM	BPSK	6.5
802.11n (40MHz)		102 to 134	102, 134	OFDM	BPSK	13.5

**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.

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	6.5
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5

**TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	25deg. C, 65%RH	120Vac, 60Hz	Johnson Liao
RE $<$ 1G	25deg. C, 65%RH	120Vac, 60Hz	David Huang
PLC	25deg. C, 65%RH	120Vac, 60Hz	Anson Lin
APCM	25deg. C, 65%RH	120Vac, 60Hz	Howard Kao

### 3.3 DESCRIPTION OF SUPPORT UNITS

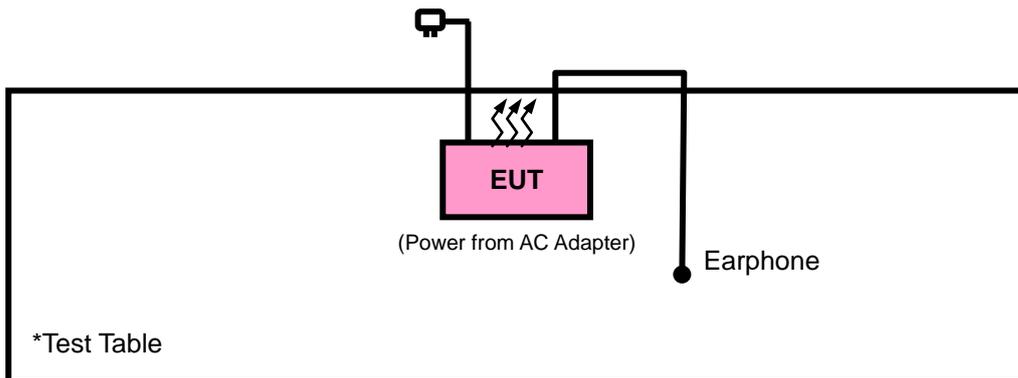
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	EARPHONE	Acon	CW-010M.V	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A

**NOTE:** All power cords of the above support units are non shielded (1.8m).

#### 3.3.1 CONFIGURATION OF SYSTEM UNDER TEST



### 3.4 DUTY CYCLE OF TEST SIGNAL

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

**802.11a:** Duty cycle =  $1.362/1.57 = 0.867$ , Duty factor =  $10 * \log(1/0.867) = 0.62$

**802.11n (20MHz):** Duty cycle =  $1.274/1.482 = 0.859$ , Duty factor =  $10 * \log(1/0.859) = 0.66$

**802.11n (40MHz):** Duty cycle =  $0.609/0.737 = 0.826$ , Duty factor =  $10 * \log(1/0.826) = 0.83$



### 3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

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

ANSI C63.10-2009

KDB 789033 D01 General UNII Test Procedures v01r02

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

## 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 (dB $\mu$ V/m)	
	PK	AV
	74	54
√	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dB $\mu$ V/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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Aug. 21, 2012	Aug. 20, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 17, 2012	Dec. 16, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Mar. 25, 2013	Mar. 24, 2014
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Jan. 07, 2013	Jan. 06, 2014
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 25, 2012	Dec. 24, 2013
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier EMCI	EMC 012645	980115	Dec. 28, 2012	Dec. 27, 2013
Preamplifier EMCI	EMC 184045	980116	Dec. 28, 2012	Dec. 27, 2013
Preamplifier EMCI	EMC 330H	980112	Dec. 28, 2012	Dec. 27, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4	Oct. 19, 2012	Oct. 18, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 19, 2012	Oct. 18, 2013
RF signal cable Worken	RG-213	NA	Dec. 29, 2012	Dec. 28, 2013
Software	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	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 calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in HwaYa Chamber 10.
4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
5. The FCC Site Registration No. is 690701.
6. The IC Site Registration No. is IC 7450F-10.

#### 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.

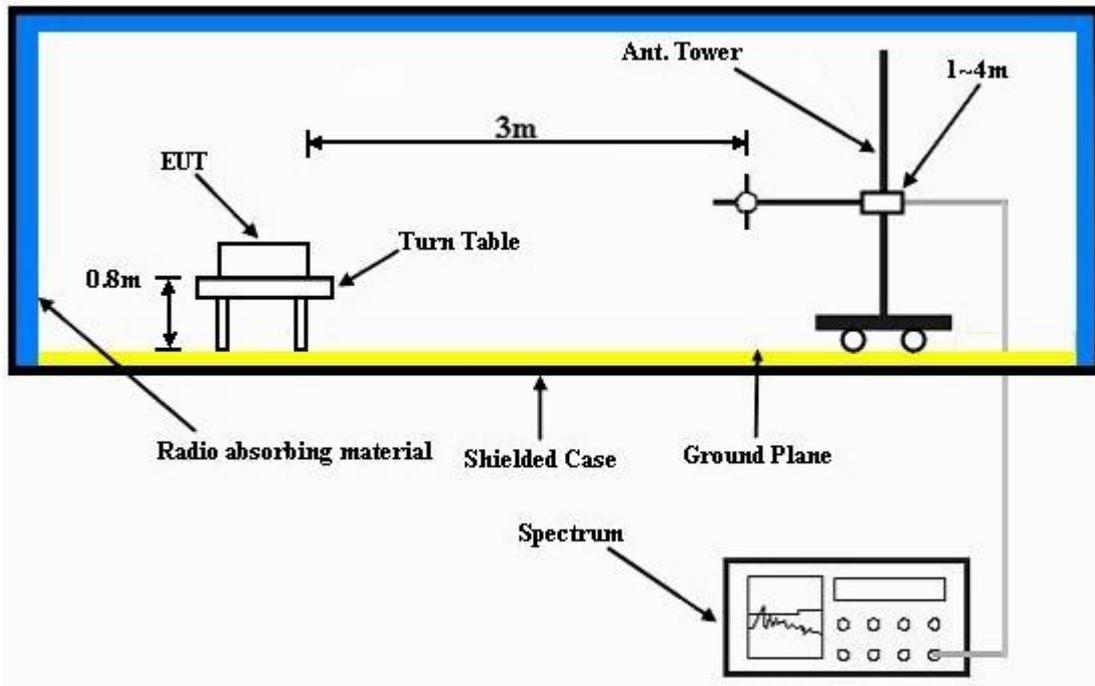
**NOTE:**

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

#### 4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

#### 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	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Johnson Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5008	39.19	38.07	54	-14.81	31.21	7.14	37.23	100	180	Average
5008	51.5	50.38	74	-22.5	31.21	7.14	37.23	100	180	Peak
5180	79.14	77.81			31.35	7.32	37.34	100	180	Average
5180	88.44	87.11			31.35	7.32	37.34	100	180	Peak
5396	39.59	37.85	54	-14.41	31.52	7.4	37.18	100	180	Average
5396	52.14	50.4	74	-21.86	31.52	7.4	37.18	100	180	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5046	39.51	38.27	54	-14.49	31.24	7.25	37.25	100	102	Average
5046	51.86	50.62	74	-22.14	31.24	7.25	37.25	100	102	Peak
5180	85.3	83.97			31.35	7.32	37.34	100	102	Average
5180	94.57	93.24			31.35	7.32	37.34	100	102	Peak
5420	39.47	37.72	54	-14.53	31.53	7.4	37.18	100	102	Average
5420	51.5	49.75	74	-22.5	31.53	7.4	37.18	100	102	Peak

REMARKS: 5180MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 44	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Johnson Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5048	39.4	38.16	54	-14.6	31.24	7.25	37.25	103	294	Average
5048	51.25	50.01	74	-22.75	31.24	7.25	37.25	103	294	Peak
5220	82.62	81.29			31.37	7.32	37.36	103	294	Average
5220	91.62	90.29			31.37	7.32	37.36	103	294	Peak
5416	39.45	37.7	54	-14.55	31.53	7.4	37.18	103	294	Average
5416	51.4	49.65	74	-22.6	31.53	7.4	37.18	103	294	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	39.47	38.14	54	-14.53	31.32	7.33	37.32	100	33	Average
5150	50.83	49.5	74	-23.17	31.32	7.33	37.32	100	33	Peak
5220	85.96	84.63			31.37	7.32	37.36	100	33	Average
5220	94.36	93.03			31.37	7.32	37.36	100	33	Peak
5460	39.72	37.71	54	-14.28	31.56	7.53	37.08	100	33	Average
5460	51.72	49.71	74	-22.28	31.56	7.53	37.08	100	33	Peak

REMARKS: 5220MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5090	39.19	37.88	54	-14.81	31.28	7.3	37.27	102	294	Average
5090	51.45	50.14	74	-22.55	31.28	7.3	37.27	102	294	Peak
5240	82.18	80.77			31.39	7.34	37.32	102	294	Average
5240	91.3	89.89			31.39	7.34	37.32	102	294	Peak
5442	39.57	37.68	54	-14.43	31.55	7.47	37.13	102	294	Average
5442	51.07	49.18	74	-22.93	31.55	7.47	37.13	102	294	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5046	39.07	37.83	54	-14.93	31.24	7.25	37.25	100	44	Average
5046	51.61	50.37	74	-22.39	31.24	7.25	37.25	100	44	Peak
5240	86.13	84.72			31.39	7.34	37.32	100	44	Average
5240	95.48	94.07			31.39	7.34	37.32	100	44	Peak
5422	39.51	37.76	54	-14.49	31.53	7.4	37.18	100	44	Average
5422	51.74	49.99	74	-22.26	31.53	7.4	37.18	100	44	Peak

REMARKS: 5240MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5138	39.21	37.86	54	-14.79	31.31	7.34	37.3	102	293	Average
5138	51.88	50.53	74	-22.12	31.31	7.34	37.3	102	293	Peak
5260	83.34	81.84			31.41	7.36	37.27	102	293	Average
5260	92.98	91.48			31.41	7.36	37.27	102	293	Peak
5350	39.43	37.73	54	-14.57	31.48	7.4	37.18	102	293	Average
5350	52.85	51.15	74	-21.15	31.48	7.4	37.18	102	293	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5016	39.05	37.93	54	-14.95	31.21	7.14	37.23	100	147	Average
5016	51.32	50.2	74	-22.68	31.21	7.14	37.23	100	147	Peak
5260	85.52	84.02			31.41	7.36	37.27	100	147	Average
5260	95.58	94.08			31.41	7.36	37.27	100	147	Peak
5450	39.71	37.7	54	-14.29	31.56	7.53	37.08	100	147	Average
5450	51.7	49.69	74	-22.3	31.56	7.53	37.08	100	147	Peak

REMARKS: 5260MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5020	39.04	37.88	54	-14.96	31.21	7.19	37.24	103	293	Average
5020	51.83	50.67	74	-22.17	31.21	7.19	37.24	103	293	Peak
5300	82.57	80.92			31.44	7.4	37.19	103	293	Average
5300	91.93	90.28			31.44	7.4	37.19	103	293	Peak
5420	39.53	37.78	54	-14.47	31.53	7.4	37.18	103	293	Average
5420	52	50.25	74	-22	31.53	7.4	37.18	103	293	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5042	39.12	37.88	54	-14.88	31.24	7.25	37.25	100	147	Average
5042	52.04	50.8	74	-21.96	31.24	7.25	37.25	100	147	Peak
5300	84.39	82.74			31.44	7.4	37.19	100	147	Average
5300	94.26	92.61			31.44	7.4	37.19	100	147	Peak
5356	39.6	37.9	54	-14.4	31.48	7.4	37.18	100	147	Average
5356	52.63	50.93	74	-21.37	31.48	7.4	37.18	100	147	Peak

REMARKS: 5300MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5096	39.29	37.94	54	-14.71	31.28	7.35	37.28	100	293	Average
5096	52.55	51.2	74	-21.45	31.28	7.35	37.28	100	293	Peak
5320	82.01	80.35			31.45	7.4	37.19	100	293	Average
5320	91.94	90.28			31.45	7.4	37.19	100	293	Peak
5394	39.73	38	54	-14.27	31.51	7.4	37.18	100	293	Average
5394	52.1	50.37	74	-21.9	31.51	7.4	37.18	100	293	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5098	39.36	38.01	54	-14.64	31.28	7.35	37.28	100	23	Average
5098	51.01	49.66	74	-22.99	31.28	7.35	37.28	100	23	Peak
5320	83.33	81.67			31.45	7.4	37.19	100	23	Average
5320	92.71	91.05			31.45	7.4	37.19	100	23	Peak
5372	39.51	37.8	54	-14.49	31.49	7.4	37.18	100	23	Average
5372	51.89	50.18	74	-22.11	31.49	7.4	37.18	100	23	Peak

REMARKS: 5320MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5424	39.46	37.71	54	-14.54	31.53	7.4	37.18	100	61	Average
5424	52.05	50.3	74	-21.95	31.53	7.4	37.18	100	61	Peak
5470	50.12	48.1	68.3	-18.18	31.57	7.53	37.08	100	61	Peak
5500	81.11	78.95			31.6	7.59	37.03	100	61	Average
5500	90.81	88.65			31.6	7.59	37.03	100	61	Peak
5725	52.05	49.81	68.3	-16.25	31.96	7.71	37.43	100	61	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5358	40.07	38.37	54	-13.93	31.48	7.4	37.18	100	225	Average
5358	51.49	49.79	74	-22.51	31.48	7.4	37.18	100	225	Peak
5470	50.93	48.91	68.3	-17.37	31.57	7.53	37.08	100	225	Peak
5500	86.38	84.22			31.6	7.59	37.03	100	225	Average
5500	96.04	93.88			31.6	7.59	37.03	100	225	Peak
5725	50.47	48.23	68.3	-17.83	31.96	7.71	37.43	100	225	Peak

**REMARKS:**

- 5500MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5444	39.7	37.81	54	-14.3	31.55	7.47	37.13	100	63	Average
5444	51.65	49.76	74	-22.35	31.55	7.47	37.13	100	63	Peak
5470	51.25	49.23	68.3	-17.05	31.57	7.53	37.08	100	63	Peak
5580	84.14	82.02			31.71	7.57	37.16	100	63	Average
5580	93.78	91.66			31.71	7.57	37.16	100	63	Peak
5725	51.15	48.91	68.3	-17.15	31.96	7.71	37.43	100	63	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5446	39.72	37.82	54	-14.28	31.56	7.47	37.13	117	218	Average
5446	51.99	50.09	74	-22.01	31.56	7.47	37.13	117	218	Peak
5470	50.63	48.61	68.3	-17.67	31.57	7.53	37.08	117	218	Peak
5580	86.54	84.42			31.71	7.57	37.16	117	218	Average
5580	96.21	94.09			31.71	7.57	37.16	117	218	Peak
5725	51.4	49.16	68.3	-16.9	31.96	7.71	37.43	117	218	Peak

**REMARKS:**

- 5580MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5452	39.8	37.79	54	-14.2	31.56	7.53	37.08	100	281	Average
5452	51.94	49.93	74	-22.06	31.56	7.53	37.08	100	281	Peak
5470	50.51	48.49	68.3	-17.79	31.57	7.53	37.08	100	281	Peak
5700	82.27	80.08			31.9	7.69	37.4	100	281	Average
5700	91.88	89.69			31.9	7.69	37.4	100	281	Peak
5725	52.65	50.41	68.3	-15.65	31.96	7.71	37.43	100	281	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5436	39.72	37.83	54	-14.28	31.55	7.47	37.13	100	167	Average
5436	51.6	49.71	74	-22.4	31.55	7.47	37.13	100	167	Peak
5470	49.41	47.39	68.3	-18.89	31.57	7.53	37.08	100	167	Peak
5700	84.28	82.09			31.9	7.69	37.4	100	167	Average
5700	93.86	91.67			31.9	7.69	37.4	100	167	Peak
5725	52.4	50.16	68.3	-15.9	31.96	7.71	37.43	100	167	Peak

**REMARKS:**

- 5700MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band



802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5122	39.45	38.12	54	-14.55	31.29	7.34	37.3	100	320	Average
5122	52.58	51.25	74	-21.42	31.29	7.34	37.3	100	320	Peak
5180	79.2	77.87			31.35	7.32	37.34	100	320	Average
5180	88.94	87.61			31.35	7.32	37.34	100	320	Peak
5352	39.86	38.16	54	-14.14	31.48	7.4	37.18	100	320	Average
5352	52.27	50.57	74	-21.73	31.48	7.4	37.18	100	320	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5124	40.54	39.19	54	-13.46	31.31	7.34	37.3	100	101	Average
5124	51.34	49.99	74	-22.66	31.31	7.34	37.3	100	101	Peak
5180	86.25	84.92			31.35	7.32	37.34	100	101	Average
5180	95.57	94.24			31.35	7.32	37.34	100	101	Peak
5376	39.87	38.16	54	-14.13	31.49	7.4	37.18	100	101	Average
5376	51.55	49.84	74	-22.45	31.49	7.4	37.18	100	101	Peak

REMARKS: 5180MHz: Fundamental frequency.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 44	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Johnson Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5094	39.47	38.12	54	-14.53	31.28	7.35	37.28	100	320	Average
5094	52.44	51.09	74	-21.56	31.28	7.35	37.28	100	320	Peak
5220	80.12	78.79			31.37	7.32	37.36	100	320	Average
5220	90.18	88.85			31.37	7.32	37.36	100	320	Peak
5458	39.91	37.9	54	-14.09	31.56	7.53	37.08	100	320	Average
5458	52.07	50.06	74	-21.93	31.56	7.53	37.08	100	320	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5034	39.22	38.04	54	-14.78	31.23	7.19	37.24	109	102	Average
5034	51.43	50.25	74	-22.57	31.23	7.19	37.24	109	102	Peak
5220	86.75	85.42			31.37	7.32	37.36	109	102	Average
5220	96.18	94.85			31.37	7.32	37.36	109	102	Peak
5352	39.73	38.03	54	-14.27	31.48	7.4	37.18	109	102	Average
5352	52.22	50.52	74	-21.78	31.48	7.4	37.18	109	102	Peak

REMARKS: 5220MHz: Fundamental frequency.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5054	39.35	38.11	54	-14.65	31.24	7.25	37.25	102	294	Average
5054	51.95	50.71	74	-22.05	31.24	7.25	37.25	102	294	Peak
5240	82.38	80.97			31.39	7.34	37.32	102	294	Average
5240	92.05	90.64			31.39	7.34	37.32	102	294	Peak
5454	39.91	37.9	54	-14.09	31.56	7.53	37.08	102	294	Average
5454	52.15	50.14	74	-21.85	31.56	7.53	37.08	102	294	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5136	39.54	38.19	54	-14.46	31.31	7.34	37.3	100	45	Average
5136	53.06	51.71	74	-20.94	31.31	7.34	37.3	100	45	Peak
5240	86.08	84.67			31.39	7.34	37.32	100	45	Average
5240	95.65	94.24			31.39	7.34	37.32	100	45	Peak
5450	40	37.99	54	-14	31.56	7.53	37.08	100	45	Average
5450	51.95	49.94	74	-22.05	31.56	7.53	37.08	100	45	Peak

REMARKS: 5240MHz: Fundamental frequency.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5088	39.43	38.13	54	-14.57	31.27	7.3	37.27	103	295	Average
5088	52.31	51.01	74	-21.69	31.27	7.3	37.27	103	295	Peak
5260	82.83	81.33			31.41	7.36	37.27	103	295	Average
5260	92.43	90.93			31.41	7.36	37.27	103	295	Peak
5408	39.84	38.1	54	-14.16	31.52	7.4	37.18	103	295	Average
5408	53.6	51.86	74	-20.4	31.52	7.4	37.18	103	295	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5132	39.57	38.22	54	-14.43	31.31	7.34	37.3	100	44	Average
5132	51.92	50.57	74	-22.08	31.31	7.34	37.3	100	44	Peak
5260	85.59	84.09			31.41	7.36	37.27	100	44	Average
5260	95.16	93.66			31.41	7.36	37.27	100	44	Peak
5450	39.97	37.96	54	-14.03	31.56	7.53	37.08	100	44	Average
5450	52.31	50.3	74	-21.69	31.56	7.53	37.08	100	44	Peak

REMARKS: 5260MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	39.33	38	54	-14.67	31.32	7.33	37.32	102	295	Average
5150	49.82	48.49	74	-24.18	31.32	7.33	37.32	102	295	Peak
5300	82.26	80.61			31.44	7.4	37.19	102	295	Average
5300	92.83	91.18			31.44	7.4	37.19	102	295	Peak
5350	39.81	38.11	54	-14.19	31.48	7.4	37.18	102	295	Average
5350	49.99	48.29	74	-24.01	31.48	7.4	37.18	102	295	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	39.71	38.38	54	-14.29	31.32	7.33	37.32	100	357	Average
5150	50.68	49.35	74	-23.32	31.32	7.33	37.32	100	357	Peak
5300	85.37	83.72			31.44	7.4	37.19	100	357	Average
5300	95.74	94.09			31.44	7.4	37.19	100	357	Peak
5350	40.2	38.5	54	-13.8	31.48	7.4	37.18	100	357	Average
5350	51.94	50.24	74	-22.06	31.48	7.4	37.18	100	357	Peak

REMARKS: 5300MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	39.68	38.35	54	-14.32	31.32	7.33	37.32	100	185	Average
5150	49.84	48.51	74	-24.16	31.32	7.33	37.32	100	185	Peak
5320	81.32	79.66			31.45	7.4	37.19	100	185	Average
5320	90.39	88.73			31.45	7.4	37.19	100	185	Peak
5350	40	38.3	54	-14	31.48	7.4	37.18	100	185	Average
5350	51.6	49.9	74	-22.4	31.48	7.4	37.18	100	185	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	39.68	38.35	54	-14.32	31.32	7.33	37.32	103	356	Average
5150	49.75	48.42	74	-24.25	31.32	7.33	37.32	103	356	Peak
5320	83.01	81.35			31.45	7.4	37.19	103	356	Average
5320	92.96	91.3			31.45	7.4	37.19	103	356	Peak
5350	40.2	38.5	54	-13.8	31.48	7.4	37.18	103	356	Average
5350	49.84	48.14	74	-24.16	31.48	7.4	37.18	103	356	Peak

REMARKS: 5320MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	39.83	37.82	54	-14.17	31.56	7.53	37.08	100	56	Average
5460	50.37	48.36	74	-23.63	31.56	7.53	37.08	100	56	Peak
5470	49.61	47.59	68.3	-18.69	31.57	7.53	37.08	100	56	Peak
5500	81.75	79.59			31.6	7.59	37.03	100	56	Average
5500	91.28	89.12			31.6	7.59	37.03	100	56	Peak
5725	51.94	49.7	68.3	-16.36	31.96	7.71	37.43	100	56	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	39.94	37.93	54	-14.06	31.56	7.53	37.08	100	220	Average
5460	49.52	47.51	74	-24.48	31.56	7.53	37.08	100	220	Peak
5470	51.58	49.56	68.3	-16.72	31.57	7.53	37.08	100	220	Peak
5500	87.34	85.18			31.6	7.59	37.03	100	220	Average
5500	96.58	94.42			31.6	7.59	37.03	100	220	Peak
5725	50.4	48.16	68.3	-17.9	31.96	7.71	37.43	100	220	Peak

**REMARKS:**

- 5500MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	39.93	37.92	54	-14.07	31.56	7.53	37.08	100	122	Average
5460	49.34	47.33	74	-24.66	31.56	7.53	37.08	100	122	Peak
5470	49.97	47.95	68.3	-18.33	31.57	7.53	37.08	100	122	Peak
5580	85.39	83.27			31.71	7.57	37.16	100	122	Average
5580	94.61	92.49			31.71	7.57	37.16	100	122	Peak
5725	51.53	49.29	68.3	-16.77	31.96	7.71	37.43	100	122	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	39.93	37.92	54	-14.07	31.56	7.53	37.08	100	218	Average
5460	50.12	48.11	74	-23.88	31.56	7.53	37.08	100	218	Peak
5470	49.56	47.54	68.3	-18.74	31.57	7.53	37.08	100	218	Peak
5580	87.39	85.27			31.71	7.57	37.16	100	218	Average
5580	96.74	94.62			31.71	7.57	37.16	100	218	Peak
5725	50.58	48.34	68.3	-17.72	31.96	7.71	37.43	100	218	Peak

**REMARKS:**

1. 5580MHz: Fundamental frequency.
2. 5470MHz & 5725MHz: Out of restricted band



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	39.76	37.75	54	-14.24	31.56	7.53	37.08	108	267	Average
5460	51.08	49.07	74	-22.92	31.56	7.53	37.08	108	267	Peak
5470	51.33	49.31	68.3	-16.97	31.57	7.53	37.08	108	267	Peak
5700	84.11	81.92			31.9	7.69	37.4	108	267	Average
5700	93.42	91.23			31.9	7.69	37.4	108	267	Peak
5725	54.77	52.53	68.3	-13.53	31.96	7.71	37.43	108	267	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	40.12	38.11	54	-13.88	31.56	7.53	37.08	108	56	Average
5460	49.7	47.69	74	-24.3	31.56	7.53	37.08	108	56	Peak
5470	50.07	48.05	68.3	-18.23	31.57	7.53	37.08	108	56	Peak
5700	84.91	82.72			31.9	7.69	37.4	108	56	Average
5700	95.16	92.97			31.9	7.69	37.4	108	56	Peak
5725	54.12	51.88	68.3	-14.18	31.96	7.71	37.43	108	56	Peak

**REMARKS:**

- 5700MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band



802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5008	39.91	38.79	54	-14.09	31.21	7.14	37.23	100	318	Average
5008	50.9	49.78	74	-23.1	31.21	7.14	37.23	100	318	Peak
5190	75.28	73.95			31.35	7.32	37.34	100	318	Average
5190	84.41	83.08			31.35	7.32	37.34	100	318	Peak
5376	40.07	38.36	54	-13.93	31.49	7.4	37.18	100	318	Average
5376	51.11	49.4	74	-22.89	31.49	7.4	37.18	100	318	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	41.41	40.08	54	-12.59	31.32	7.33	37.32	110	99	Average
5150	55.13	53.8	74	-18.87	31.32	7.33	37.32	110	99	Peak
5190	83.85	82.52			31.35	7.32	37.34	110	99	Average
5190	93.26	91.93			31.35	7.32	37.34	110	99	Peak
5410	40.26	38.52	54	-13.74	31.52	7.4	37.18	110	99	Average
5410	51.63	49.89	74	-22.37	31.52	7.4	37.18	110	99	Peak

REMARKS: 5190MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	39.17	37.84	54	-14.83	31.32	7.33	37.32	102	296	Average
5150	49.66	48.33	74	-24.34	31.32	7.33	37.32	102	296	Peak
5230	78.17	76.76			31.39	7.34	37.32	102	296	Average
5230	87.25	85.84			31.39	7.34	37.32	102	296	Peak
5350	39.22	37.52	54	-14.78	31.48	7.4	37.18	102	296	Average
5350	49.61	47.91	74	-24.39	31.48	7.4	37.18	102	296	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	39.85	38.52	54	-14.15	31.32	7.33	37.32	100	32	Average
5150	51.77	50.44	74	-22.23	31.32	7.33	37.32	100	32	Peak
5230	82.82	81.41			31.39	7.34	37.32	100	32	Average
5230	92.16	90.75			31.39	7.34	37.32	100	32	Peak
5426	40.26	38.39	54	-13.74	31.53	7.47	37.13	100	32	Average
5426	52.81	50.94	74	-21.19	31.53	7.47	37.13	100	32	Peak

REMARKS: 5230MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5136	40.04	38.69	54	-13.96	31.31	7.34	37.3	101	293	Average
5136	51.75	50.4	74	-22.25	31.31	7.34	37.3	101	293	Peak
5270	78.73	77.23			31.41	7.36	37.27	101	293	Average
5270	88.07	86.57			31.41	7.36	37.27	101	293	Peak
5446	40.29	38.39	54	-13.71	31.56	7.47	37.13	101	293	Average
5446	52.2	50.3	74	-21.8	31.56	7.47	37.13	101	293	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5114	40.3	38.94	54	-13.7	31.29	7.35	37.28	100	45	Average
5114	51.21	49.85	74	-22.79	31.29	7.35	37.28	100	45	Peak
5270	81.86	80.36			31.41	7.36	37.27	100	45	Average
5270	92.2	90.7			31.41	7.36	37.27	100	45	Peak
5412	40.2	38.45	54	-13.8	31.53	7.4	37.18	100	45	Average
5412	52.24	50.49	74	-21.76	31.53	7.4	37.18	100	45	Peak

REMARKS: 5270MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5110	51.13	49.77	74	-22.87	31.29	7.35	37.28	100	297	Peak
5110	40.28	38.92	54	-13.72	31.29	7.35	37.28	100	297	Average
5310	87.44	85.78			31.45	7.4	37.19	100	297	Peak
5310	78.52	76.86			31.45	7.4	37.19	100	297	Average
5352	41.63	39.93	54	-12.37	31.48	7.4	37.18	100	297	Average
5352	53.26	51.56	74	-20.74	31.48	7.4	37.18	100	297	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5052	40.05	38.81	54	-13.95	31.24	7.25	37.25	100	34	Average
5052	51.32	50.08	74	-22.68	31.24	7.25	37.25	100	34	Peak
5310	81.12	79.46			31.45	7.4	37.19	100	34	Average
5310	90.24	88.58			31.45	7.4	37.19	100	34	Peak
5350	40.73	39.03	54	-13.27	31.48	7.4	37.18	100	34	Average
5350	52.38	50.68	74	-21.62	31.48	7.4	37.18	100	34	Peak

REMARKS: 5310MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5420	40.39	38.64	54	-13.61	31.53	7.4	37.18	102	61	Average
5420	52.39	50.64	74	-21.61	31.53	7.4	37.18	102	61	Peak
5470	50.59	48.57	68.3	-17.71	31.57	7.53	37.08	102	61	Peak
5510	79.07	76.94			31.6	7.59	37.06	102	61	Average
5510	88.33	86.2			31.6	7.59	37.06	102	61	Peak
5725	51.1	48.86	68.3	-17.2	31.96	7.71	37.43	102	61	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	40.54	38.53	54	-13.46	31.56	7.53	37.08	100	223	Average
5460	52.13	50.12	74	-21.87	31.56	7.53	37.08	100	223	Peak
5470	51.37	49.35	68.3	-16.93	31.57	7.53	37.08	100	223	Peak
5510	82.48	80.35			31.6	7.59	37.06	100	223	Average
5510	92.32	90.19			31.6	7.59	37.06	100	223	Peak
5725	49.87	47.63	68.3	-18.43	31.96	7.71	37.43	100	223	Peak

**REMARKS:**

1. 5510MHz: Fundamental frequency.
2. 5470MHz & 5725MHz: Out of restricted band



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5436	40.35	38.46	54	-13.65	31.55	7.47	37.13	102	49	Average
5436	51.58	49.69	74	-22.42	31.55	7.47	37.13	102	49	Peak
5470	49.62	47.6	68.3	-18.68	31.57	7.53	37.08	102	49	Peak
5550	80.95	78.78			31.68	7.58	37.09	102	49	Average
5550	90.39	88.22			31.68	7.58	37.09	102	49	Peak
5725	51.16	48.92	68.3	-17.14	31.96	7.71	37.43	102	49	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5368	40.18	38.47	54	-13.82	31.49	7.4	37.18	108	214	Average
5368	51.22	49.51	74	-22.78	31.49	7.4	37.18	108	214	Peak
5470	49.66	47.64	68.3	-18.64	31.57	7.53	37.08	108	214	Peak
5550	83.31	81.14			31.68	7.58	37.09	108	214	Average
5550	92.9	90.73			31.68	7.58	37.09	108	214	Peak
5725	49.96	47.72	68.3	-18.34	31.96	7.71	37.43	108	214	Peak

**REMARKS:**

- 5550MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5434	40.65	38.76	54	-13.35	31.55	7.47	37.13	109	270	Average
5434	51.22	49.33	74	-22.78	31.55	7.47	37.13	109	270	Peak
5470	50.67	48.65	68.3	-17.63	31.57	7.53	37.08	109	270	Peak
5670	80.79	78.59			31.88	7.66	37.34	109	270	Average
5670	90.76	88.56			31.88	7.66	37.34	109	270	Peak
5725	50.76	48.52	68.3	-17.54	31.96	7.71	37.43	109	270	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5402	40.11	38.37	54	-13.89	31.52	7.4	37.18	100	117	Average
5402	52.13	50.39	74	-21.87	31.52	7.4	37.18	100	117	Peak
5470	50.23	48.21	68.3	-18.07	31.57	7.53	37.08	100	117	Peak
5670	82.86	80.66			31.88	7.66	37.34	100	117	Average
5670	92.45	90.25			31.88	7.66	37.34	100	117	Peak
5725	51.37	49.13	68.3	-16.93	31.96	7.71	37.43	100	117	Peak

**REMARKS:**

- 5670MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band



**BELOW 1GHz WORST-CASE DATA : 802.11n (20MHz)**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	David Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
99.39	23.2	45.03	43.5	-20.3	9.06	1.07	31.96	100	45	Peak
150.96	33.02	50.6	43.5	-10.48	12.71	1.35	31.64	100	65	Peak
204.96	33.64	54.15	43.5	-9.86	9.56	1.62	31.69	100	258	Peak
320.3	23.6	39.94	46	-22.4	13.43	2.12	31.89	100	132	Peak
448.4	23.05	36.13	46	-22.95	16.29	2.61	31.98	100	119	Peak
686.4	25.38	33.18	46	-20.62	20.66	3.38	31.84	100	223	Peak
ANTENNA POLARITY & test distance: VERTICAL at 3 m										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
44.85	29.53	46.34	40	-10.47	13.6	0.73	31.14	10	158	Peak
158.79	31.21	48.95	43.5	-12.29	12.73	1.38	31.85	101	56	Peak
204.42	30.87	51.38	43.5	-12.63	9.56	1.62	31.69	100	28	Peak
474.3	25.06	37.42	46	-20.94	16.81	2.7	31.87	100	171	Peak
643.7	24.3	33	46	-21.7	20.14	3.22	32.06	100	136	Peak
799.1	28.24	33.76	46	-17.76	22.22	3.69	31.43	100	227	Peak



## 4.2 CONDUCTED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB $\mu$ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

- NOTE:** 1. The lower limit shall apply at the transition frequencies.  
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.  
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

### 4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	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

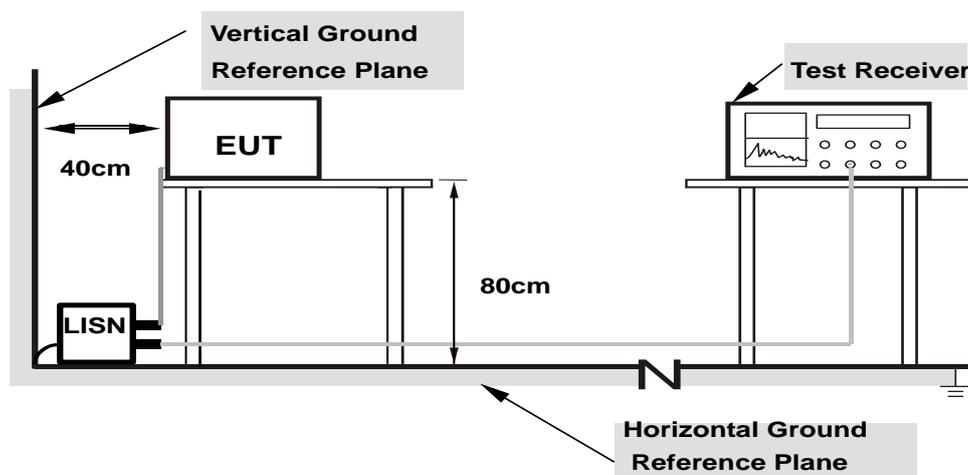
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance 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:**
- Support units were connected to second LISN.
  - 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

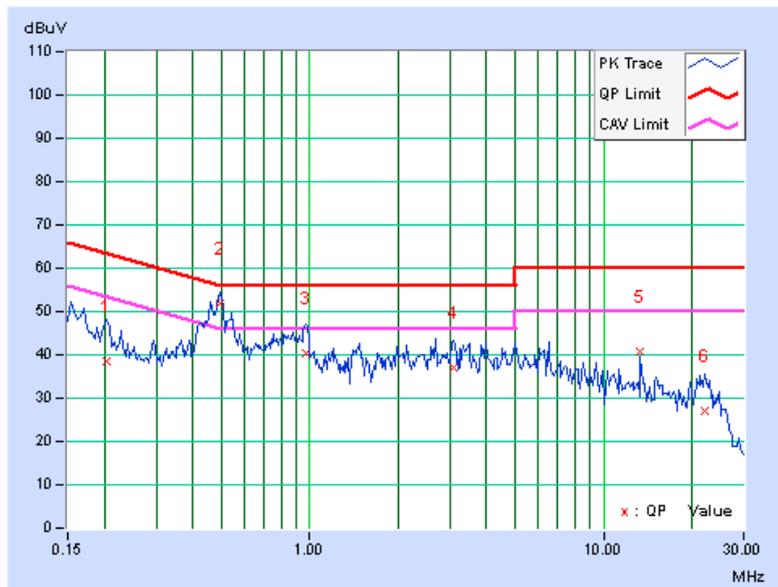
**CONDUCTED WORST-CASE DATA : 802.11n (20MHz)**

<b>PHASE</b>	Line 1	<b>6dB BANDWIDTH</b>	9kHz
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No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
	[MHz]		[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.20469	0.12	38.29	27.48	38.41	27.60	63.42	53.42	-25.01	-25.82
<b>2</b>	<b>0.49375</b>	<b>0.16</b>	<b>51.55</b>	<b>38.76</b>	<b>51.71</b>	<b>38.92</b>	<b>56.10</b>	<b>46.10</b>	<b>-4.40</b>	<b>-7.19</b>
3	0.96641	0.21	40.09	27.55	40.30	27.76	56.00	46.00	-15.70	-18.24
4	3.07813	0.29	36.70	26.98	36.99	27.27	56.00	46.00	-19.01	-18.73
5	13.37891	0.85	40.00	36.98	40.85	37.83	60.00	50.00	-19.15	-12.17
6	22.20313	1.30	25.75	15.27	27.05	16.57	60.00	50.00	-32.95	-33.43

**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.

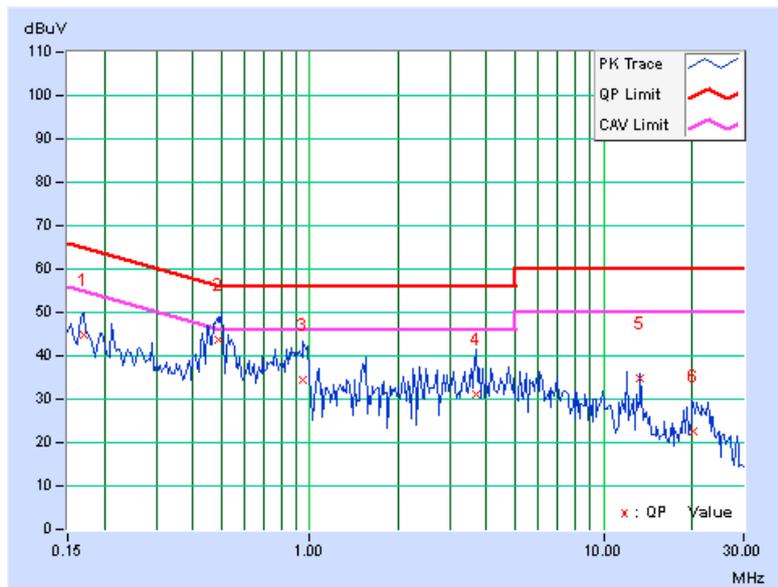


PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16953	0.17	44.61	29.60	44.78	29.77	64.98	54.98	-20.20	-25.21
2	0.48594	0.22	43.40	29.68	43.62	29.90	56.24	46.24	-12.62	-16.34
3	0.95078	0.25	34.34	22.54	34.59	22.79	56.00	46.00	-21.41	-23.21
4	3.69922	0.36	30.66	19.98	31.02	20.34	56.00	46.00	-24.98	-25.66
5	13.37500	0.70	34.24	31.41	34.94	32.11	60.00	50.00	-25.06	-17.89
6	20.24219	0.94	21.80	7.41	22.74	8.35	60.00	50.00	-37.26	-41.65

**REMARKS:**

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



### 4.3 PEAK TRANSMIT POWER MEASUREMENT

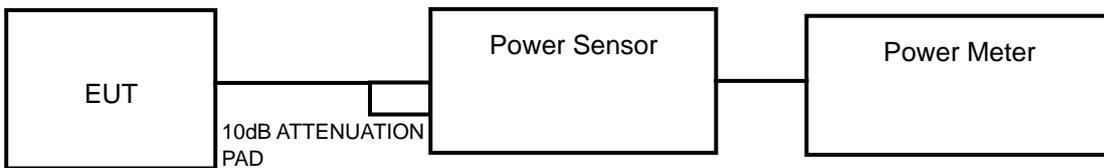
#### 4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

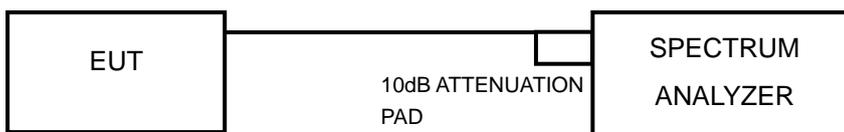
**NOTE:** Where B is the 26dB emission bandwidth in MHz.

#### 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

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

##### FOR 26dB BANDWIDTH

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

#### 4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.3.6 EUT OPERATING CONDITIONS

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



### 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	10.233	10.10	17	PASS
44	5220	10.304	10.13	17	PASS
48	5240	10.864	10.36	17	PASS
52	5260	11.066	10.44	24	PASS
60	5300	9.550	9.80	24	PASS
64	5320	9.886	9.95	24	PASS
100	5500	9.550	9.80	24	PASS
116	5580	11.967	10.78	24	PASS
140	5700	9.057	9.57	24	PASS

#### 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	10.641	10.27	17	PASS
44	5220	10.351	10.15	17	PASS
48	5240	10.965	10.40	17	PASS
52	5260	11.298	10.53	24	PASS
60	5300	9.638	9.84	24	PASS
64	5320	9.954	9.98	24	PASS
100	5500	9.616	9.83	24	PASS
116	5580	12.246	10.88	24	PASS
140	5700	9.078	9.58	24	PASS

#### 802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	10.069	10.03	17	PASS
46	5230	10.328	10.14	17	PASS
54	5270	11.092	10.45	24	PASS
62	5310	9.661	9.85	24	PASS
102	5510	9.840	9.93	24	PASS
110	5550	10.666	10.28	24	PASS
134	5670	11.041	10.43	24	PASS

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

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	22.67	PASS
44	5220	22.69	PASS
48	5240	22.43	PASS
52	5260	22.44	PASS
60	5300	22.66	PASS
64	5320	22.54	PASS
100	5500	22.43	PASS
116	5580	22.94	PASS
140	5700	22.78	PASS

**802.11n (20MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	23.20	PASS
44	5220	22.84	PASS
48	5240	23.03	PASS
52	5260	22.94	PASS
60	5300	22.96	PASS
64	5320	22.93	PASS
100	5500	22.97	PASS
116	5580	22.83	PASS
140	5700	23.20	PASS

**802.11n (40MHz)**

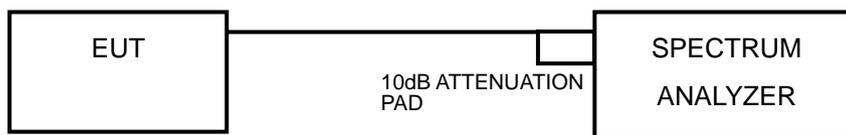
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	46.51	PASS
46	5230	46.63	PASS
54	5270	46.27	PASS
62	5310	45.66	PASS
102	5510	46.41	PASS
110	5550	45.70	PASS
134	5670	45.88	PASS

## 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

Using method SA-2 alternative

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1 MHz, Set VBW  $\geq$  3 MHz, Detector = RMS
- 3) Sweep time = 4second.
- 4) Perform a single sweep.
- 5) Record the max value and add 10 log (1/duty cycle)



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#### 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 W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	-2.21	0.62	-1.59	4	PASS
44	5220	-2.18	0.62	-1.56	4	PASS
48	5240	-2.04	0.62	-1.42	4	PASS
52	5260	-1.92	0.62	-1.30	11	PASS
60	5300	-1.68	0.62	-1.06	11	PASS
64	5320	-1.62	0.62	-1.00	11	PASS
100	5500	-2.05	0.62	-1.43	11	PASS
116	5580	-1.72	0.62	-1.10	11	PASS
140	5700	-2.74	0.62	-2.12	11	PASS

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



**802.11n (20MHz)**

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	-2.47	0.66	-1.81	4	PASS
44	5220	-2.45	0.66	-1.79	4	PASS
48	5240	-2.32	0.66	-1.66	4	PASS
52	5260	-2.12	0.66	-1.46	11	PASS
60	5300	-1.96	0.66	-1.30	11	PASS
64	5320	-1.90	0.66	-1.24	11	PASS
100	5500	-2.31	0.66	-1.65	11	PASS
116	5580	-1.98	0.66	-1.32	11	PASS
140	5700	-3.01	0.66	-2.35	11	PASS

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

**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	-5.20	0.83	-4.37	4	PASS
46	5230	-5.27	0.83	-4.44	4	PASS
54	5270	-4.85	0.83	-4.02	11	PASS
62	5310	-4.72	0.83	-3.89	11	PASS
102	5510	-5.51	0.83	-4.68	11	PASS
110	5550	-5.20	0.83	-4.37	11	PASS
134	5670	-4.84	0.83	-4.01	11	PASS

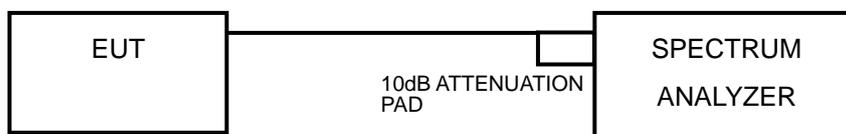
**NOTE:** Refer to section 3.3 for duty cycle spectrum plot.

## 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

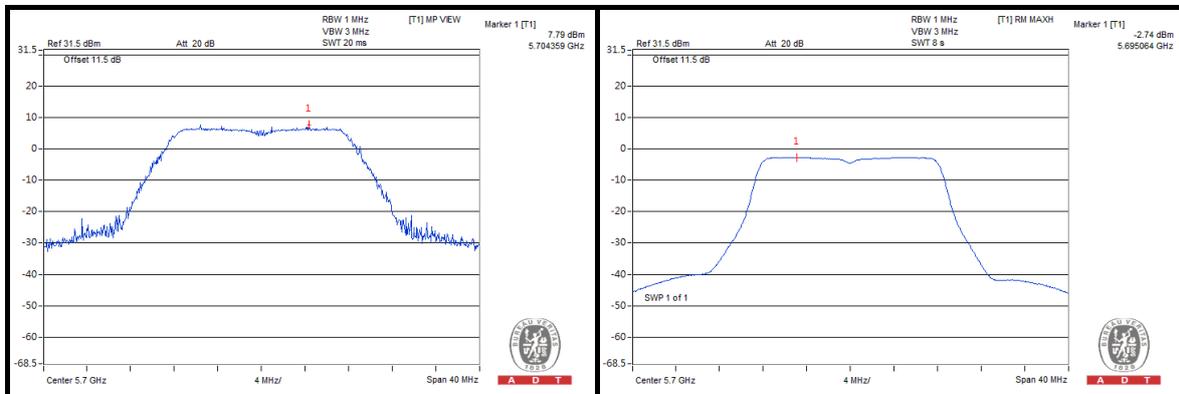
Same as 4.2.6

### 4.5.7 TEST RESULTS

#### 802.11a

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
36	5180	7.96	-2.21	-1.59	9.55	13	PASS
44	5220	7.73	-2.18	-1.56	9.29	13	PASS
48	5240	7.80	-2.04	-1.42	9.22	13	PASS
52	5260	8.20	-1.92	-1.30	9.50	13	PASS
60	5300	8.24	-1.68	-1.06	9.30	13	PASS
64	5320	8.43	-1.62	-1.00	9.43	13	PASS
100	5500	8.07	-2.05	-1.43	9.50	13	PASS
116	5580	8.10	-1.72	-1.10	9.20	13	PASS
140	5700	7.79	-2.74	-2.12	9.91	13	PASS

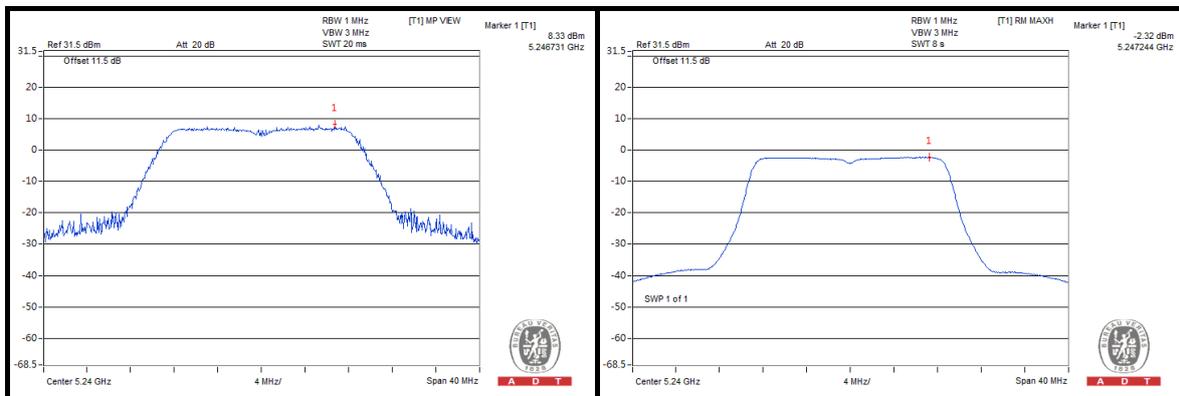
**NOTE:** Refer to section 3.3 for duty cycle spectrum plot.



802.11n (20MHz)

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
36	5180	7.90	-2.47	-1.81	9.71	13	PASS
44	5220	7.77	-2.45	-1.79	9.56	13	PASS
48	5240	8.33	-2.32	-1.66	9.99	13	PASS
52	5260	8.10	-2.12	-1.46	9.56	13	PASS
60	5300	8.34	-1.96	-1.30	9.64	13	PASS
64	5320	8.01	-1.90	-1.24	9.25	13	PASS
100	5500	7.65	-2.31	-1.65	9.30	13	PASS
116	5580	8.29	-1.98	-1.32	9.61	13	PASS
140	5700	7.32	-3.01	-2.35	9.67	13	PASS

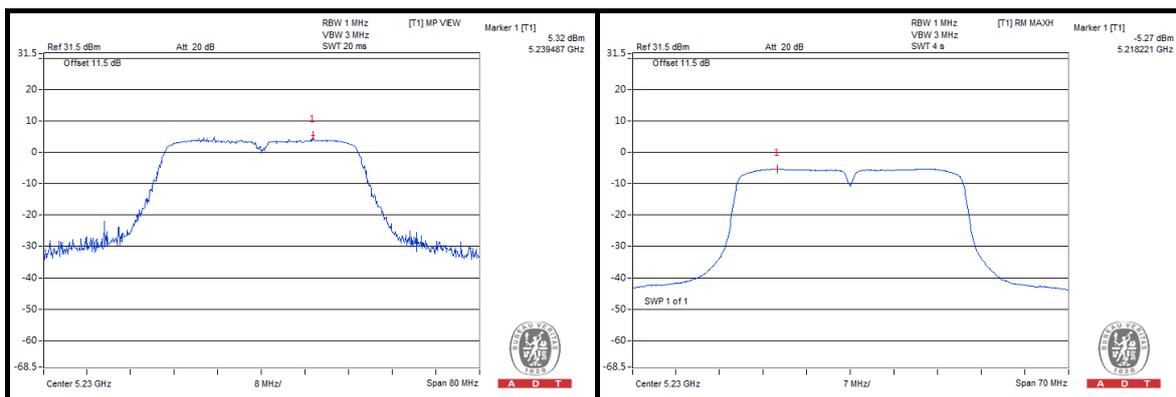
**NOTE:** Refer to section 3.3 for duty cycle spectrum plot.



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	4.68	-5.20	-4.37	9.05	13	PASS
46	5230	5.32	-5.27	-4.44	9.76	13	PASS
54	5270	4.94	-4.85	-4.02	8.96	13	PASS
62	5310	5.19	-4.72	-3.89	9.08	13	PASS
102	5510	4.06	-5.51	-4.68	8.74	13	PASS
110	5550	4.82	-5.20	-4.37	9.19	13	PASS
134	5670	5.64	-4.84	-4.01	9.65	13	PASS

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

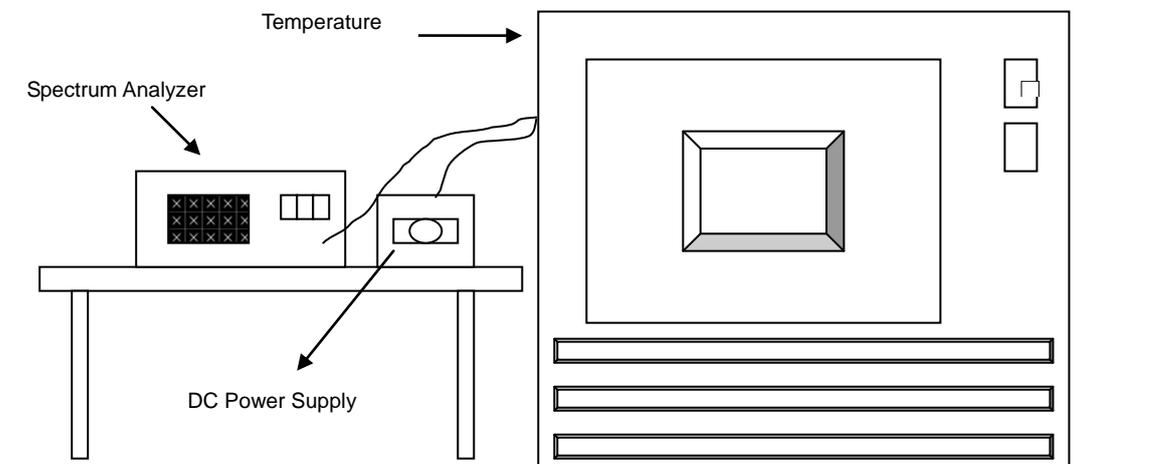


## 4.6 FREQUENCY STABILITY

### 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

Refer to section 4.1.3 to get information of above instrument.

#### 4.6.4 TEST PROCEDURE

- a. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
- b. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
- c. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

#### 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 (ppm)						
50	3.8	5320.015622	2.936	5320.015461	2.906	5320.015496	2.913	5320.015124	2.843
40	3.8	5320.015851	2.980	5320.015673	2.946	5320.015979	3.004	5320.016148	3.035
30	3.8	5320.017207	3.234	5320.017227	3.238	5320.017084	3.211	5320.016828	3.163
20	3.8	5320.045080	8.474	5320.045003	8.459	5320.045424	8.538	5320.045387	8.531
10	3.8	5320.019673	3.698	5320.019861	3.733	5320.019616	3.687	5320.019640	3.692
0	3.8	5320.018225	3.426	5320.017730	3.333	5320.018405	3.460	5320.018094	3.401
-10	3.8	5320.016356	3.074	5320.016549	3.111	5320.016474	3.097	5320.016412	3.085
-20	3.8	5320.015717	2.954	5320.015936	2.995	5320.016238	3.052	5320.015855	2.980
-30	3.8	5320.015250	2.867	5320.014887	2.798	5320.014764	2.775	5320.015180	2.853

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)						
20	3.6	5320.044956	8.450	5320.044629	8.389	5320.044870	8.434	5320.044865	8.433
	3.8	5320.045080	8.474	5320.045003	8.459	5320.045424	8.538	5320.045387	8.531
	4.35	5320.046219	8.688	5320.046521	8.745	5320.045972	8.641	5320.046077	8.661



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## 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:

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Fax: 886-2-26051924

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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.



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## 7. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

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