



# FCC TEST REPORT (15.407)

**REPORT NO.:** RF120911C14-4  
**MODEL NO.:** CDMA HTL21  
**FCC ID:** NM8CDMAHTL21  
**RECEIVED:** Sep. 11, 2012  
**TESTED:** Sep. 26 ~ Oct. 12, 2012  
**ISSUED:** Oct. 23, 2012

**APPLICANT:** HTC Corporation

**ADDRESS:** 23, Xinghua Rd., Taoyuan 330, Taiwan, R.O.C.

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

**LAB ADDRESS:** No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist.,  
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**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
RF120911C14-4	Original release	Oct. 23, 2012



# 1. CERTIFICATION

**PRODUCT:** Smartphone  
**MODEL NO.:** CDMA HTL21  
**BRAND:** HTC  
**APPLICANT:** HTC Corporation  
**TESTED:** Sep. 26 ~ Oct. 12, 2012  
**TEST SAMPLE:** Production Unit  
**STANDARDS:** **FCC Part 15, Subpart E (Section 15.407)**  
ANSI C63.10-2009

The above equipment (model: CDMA HTL21) 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** : Ivonne Wu , **DATE** : Oct. 23, 2012  
Ivonne Wu / Senior Specialist

**APPROVED BY** : Ken Liu , **DATE** : Oct. 23, 2012  
Ken Liu / 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 -16.73dB at 0.20469MHz.
15.407(b/1/2/3) (b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.24dB at 5470MHz.
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:

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>	Smartphone
<b>MODEL NO.</b>	CDMA HTL21
<b>POWER SUPPLY</b>	5.0Vdc (adapter or host equipment) 3.8Vdc (Li-ion battery)
<b>MODULATION TYPE</b>	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 135.0Mbps
<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: 11 for 802.11a, 802.11n (20MHz) 5 for 802.11n (40MHz)
<b>OUTPUT POWER</b>	22.28mW for 5180 ~ 5240MHz 24.04mW for 5260 ~ 5320MHz 24.21mW for 5500 ~ 5700MHz
<b>ANTENNA TYPE</b>	PIFA antenna with -7dBi gain (5180 ~ 5240MHz) PIFA antenna with -6dBi gain (5260 ~ 5320MHz) PIFA antenna with -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's accessories list refers to Ext Pho.
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

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510MHz	126	5630MHz
110	5550MHz	134	5670MHz
118	5590MHz		

### 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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

#### 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)
802.11a	5500-5700	100 to 140	100	OFDM	BPSK	6.0

#### 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)
802.11a	5500-5700	100 to 140	100	OFDM	BPSK	6.0

**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≥1G	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu
PLC	25deg. C, 65%RH	120Vac, 60Hz	David Huang
APCM	25deg. C, 65%RH	120Vac, 60Hz	Phoenix Chen

### 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.

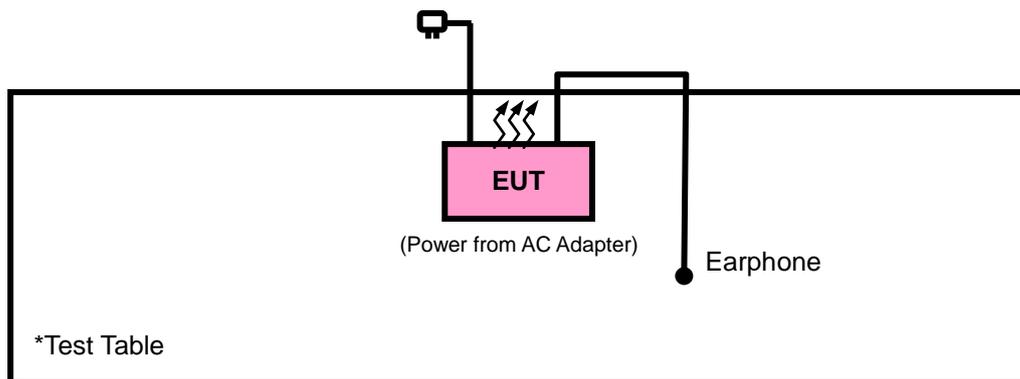
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Earphone	Cotron	HS S250	NA	NA

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

**NOTE:**

1. All power cords of the above support units are non shielded (1.8m).
2. Item 1 was provided by client.

#### 3.3.1 CONFIGURATION OF SYSTEM UNDER TEST



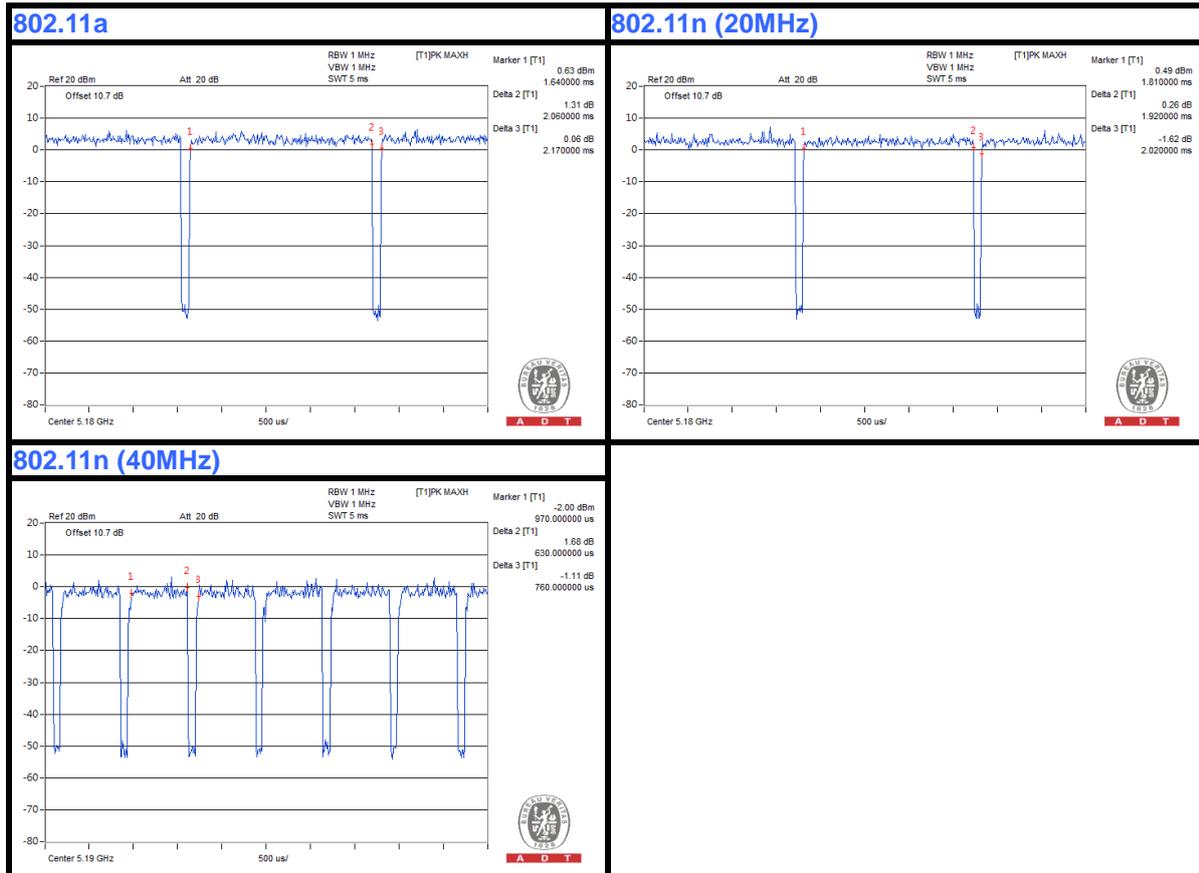
### 3.4 DUTY CYCLE OF TEST SIGNAL

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

**802.11a:** Duty cycle =  $2.060/2.170 = 0.949$ , Duty factor =  $10 * \log(1/0.949) = 0.23$

**802.11n (20MHz):** Duty cycle =  $1.92/2.02 = 0.950$ , Duty factor =  $10 * \log(1/0.950) = 0.22$

**802.11n (40MHz):** Duty cycle =  $630/760 = 0.829$ , Duty factor =  $10 * \log(1/0.829) = 0.81$



### 3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

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

ANSI C63.10-2009

KDB 789033 D01 General UNII Test Procedures v01r01

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

## 4. TEST TYPES AND RESULTS

### 4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

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

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

**NOTE:**

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

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

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

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

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



#### 4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver Agilent	N9038A	MY51210203	Dec. 22, 2011	Dec. 21, 2012
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 21, 2011	Dec. 20, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Dec. 20, 2011	Dec. 19, 2012
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Dec. 20, 2011	Dec. 19, 2012
ORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 20, 2011	Dec. 19, 2012
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier EMCI	EMC 012645	980115	Dec. 30, 2011	Dec. 29, 2012
Preamplifier EMCI	EMC 330H	980112	Dec. 30, 2011	Dec. 29, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4	Oct. 21, 2011	Oct. 20, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Jan. 02, 2012	Jan. 01, 2013
RF signal cable Worken	RG-213	NA	Jan. 02, 2012	Jan. 01, 2013
Software	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 29, 2011	Oct. 28, 2012
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
JFW 20dB attenuation	50HF-020-SMA	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 9.
  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 460141.
  6. The IC Site Registration No. is IC 7450F-4.

#### 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.

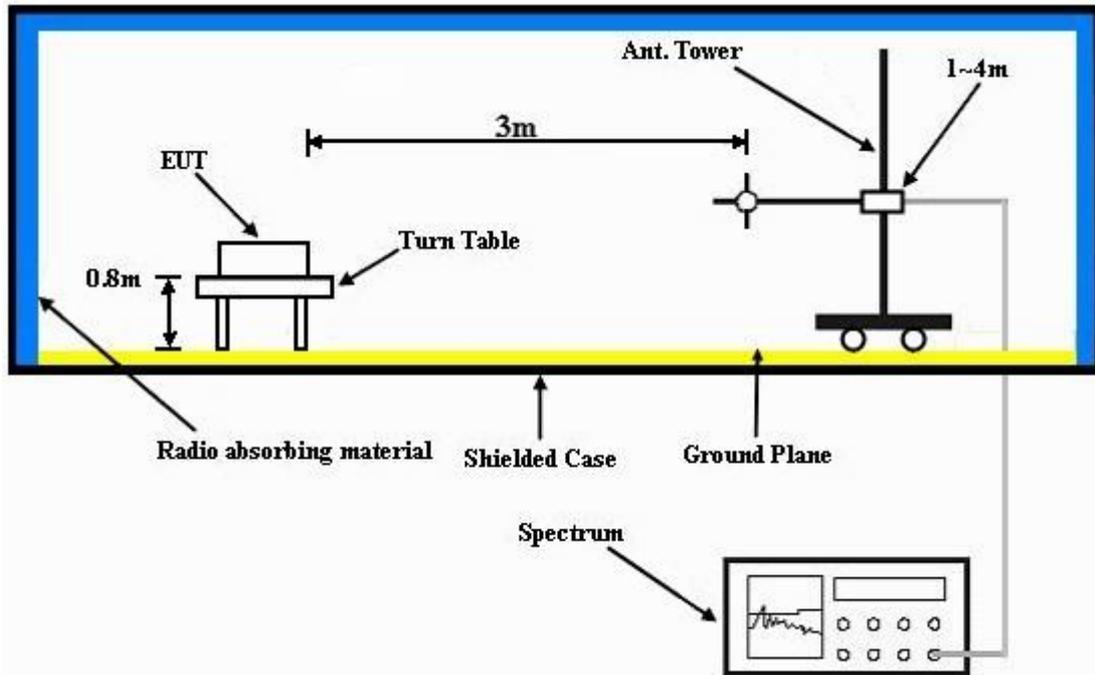
**NOTE:**

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

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



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### 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	Kay Wu

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	42.46	40.58	54	-11.54	31.87	7.33	37.32	100	130	Average
5150	57.13	55.25	74	-16.87	31.87	7.33	37.32	100	130	Peak
5180	90.61	88.75			31.88	7.32	37.34	100	130	Average
5180	99.82	97.96			31.88	7.32	37.34	100	130	Peak
5350	42.21	40.02	54	-11.79	31.97	7.4	37.18	100	130	Average
5350	56.21	54.02	74	-17.79	31.97	7.4	37.18	100	130	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	41.51	39.63	54	-12.49	31.87	7.33	37.32	100	276	Average
5150	57.09	55.21	74	-16.91	31.87	7.33	37.32	100	276	Peak
5180	91.11	89.25			31.88	7.32	37.34	100	276	Average
5180	100.41	98.55			31.88	7.32	37.34	100	276	Peak
5350	39.88	37.69	54	-14.12	31.97	7.4	37.18	100	276	Average
5350	56.99	54.8	74	-17.01	31.97	7.4	37.18	100	276	Peak

REMARKS: 5180MHz: Fundamental frequency.



A D T

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	Kay Wu

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	41.79	39.91	54	-12.21	31.87	7.33	37.32	104	188	Average
5150	55.98	54.1	74	-18.02	31.87	7.33	37.32	104	188	Peak
5220	92.28	90.42			31.9	7.32	37.36	104	188	Average
5220	101.66	99.8			31.9	7.32	37.36	104	188	Peak
5350	43.24	41.05	54	-10.76	31.97	7.4	37.18	104	188	Average
5350	55.74	53.55	74	-18.26	31.97	7.4	37.18	104	188	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	41.56	39.68	54	-12.44	31.87	7.33	37.32	100	83	Average
5150	55.73	53.85	74	-18.27	31.87	7.33	37.32	100	83	Peak
5220	93.37	91.51			31.9	7.32	37.36	100	83	Average
5220	102.5	100.64			31.9	7.32	37.36	100	83	Peak
5350	43	40.81	54	-11	31.97	7.4	37.18	100	83	Average
5350	56.62	54.43	74	-17.38	31.97	7.4	37.18	100	83	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	Kay Wu

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	41.87	39.99	54	-12.13	31.87	7.33	37.32	125	241	Average
5150	56.9	55.02	74	-17.1	31.87	7.33	37.32	125	241	Peak
5240	92.23	90.3			31.91	7.34	37.32	125	241	Average
5240	101.3	99.37			31.91	7.34	37.32	125	241	Peak
5350	45.33	43.14	54	-8.67	31.97	7.4	37.18	125	241	Average
5350	56.3	54.11	74	-17.7	31.97	7.4	37.18	125	241	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	42.17	40.29	54	-11.83	31.87	7.33	37.32	100	83	Average
5150	56.33	54.45	74	-17.67	31.87	7.33	37.32	100	83	Peak
5240	93.7	91.77			31.91	7.34	37.32	100	83	Average
5240	102.66	100.73			31.91	7.34	37.32	100	83	Peak
5350	43.53	41.34	54	-10.47	31.97	7.4	37.18	100	83	Average
5350	56.44	54.25	74	-17.56	31.97	7.4	37.18	100	83	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	Kay Wu

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	42.43	40.55	54	-11.57	31.87	7.33	37.32	126	238	Average
5150	56.2	54.32	74	-17.8	31.87	7.33	37.32	126	238	Peak
5260	93.11	91.1			31.92	7.36	37.27	126	238	Average
5260	102.35	100.34			31.92	7.36	37.27	126	238	Peak
5350	45	42.81	54	-9	31.97	7.4	37.18	126	238	Average
5350	57.64	55.45	74	-16.36	31.97	7.4	37.18	126	238	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	42.66	40.78	54	-11.34	31.87	7.33	37.32	100	81	Average
5150	55.85	53.97	74	-18.15	31.87	7.33	37.32	100	81	Peak
5260	94.92	92.91			31.92	7.36	37.27	100	81	Average
5260	104.07	102.06			31.92	7.36	37.27	100	81	Peak
5350	44.73	42.54	54	-9.27	31.97	7.4	37.18	100	81	Average
5350	55.98	53.79	74	-18.02	31.97	7.4	37.18	100	81	Peak

REMARKS: 5260MHz: Fundamental frequency.



A D T

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	Kay Wu

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	42.4	40.52	54	-11.6	31.87	7.33	37.32	100	137	Average
5150	57.78	55.9	74	-16.22	31.87	7.33	37.32	100	137	Peak
5300	93.32	91.17			31.94	7.4	37.19	100	137	Average
5300	102.51	100.36			31.94	7.4	37.19	100	137	Peak
5350	45.7	43.51	54	-8.3	31.97	7.4	37.18	100	137	Average
5350	57.66	55.47	74	-16.34	31.97	7.4	37.18	100	137	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	41.89	40.01	54	-12.11	31.87	7.33	37.32	100	82	Average
5150	56.12	54.24	74	-17.88	31.87	7.33	37.32	100	82	Peak
5300	94.58	92.43			31.94	7.4	37.19	100	82	Average
5300	103.63	101.48			31.94	7.4	37.19	100	82	Peak
5350	45.69	43.5	54	-8.31	31.97	7.4	37.18	100	82	Average
5350	57.31	55.12	74	-16.69	31.97	7.4	37.18	100	82	Peak

REMARKS: 5300MHz: Fundamental frequency.



A D T

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	Kay Wu

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	42.53	40.65	54	-11.47	31.87	7.33	37.32	100	162	Average
5150	56.75	54.87	74	-17.25	31.87	7.33	37.32	100	162	Peak
5320	92.95	90.79			31.95	7.4	37.19	100	162	Average
5320	102.38	100.22			31.95	7.4	37.19	100	162	Peak
5350	44.96	42.77	54	-9.04	31.97	7.4	37.18	100	162	Average
5350	57.34	55.15	74	-16.66	31.97	7.4	37.18	100	162	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	41.85	39.97	54	-12.15	31.87	7.33	37.32	100	79	Average
5150	56.46	54.58	74	-17.54	31.87	7.33	37.32	100	79	Peak
5320	92.53	90.37			31.95	7.4	37.19	100	79	Average
5320	101.64	99.48			31.95	7.4	37.19	100	79	Peak
5352	46.06	43.87	54	-7.94	31.97	7.4	37.18	100	79	Average
5352	58.92	56.73	74	-15.08	31.97	7.4	37.18	100	79	Peak

REMARKS: 5320MHz: Fundamental frequency.



A D T

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	Kay Wu

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	46.87	44.41	54	-7.13	32.01	7.53	37.08	107	170	Average
5460	58.51	56.05	74	-15.49	32.01	7.53	37.08	107	170	Peak
5470	58.35	55.88	68.3	-9.95	32.02	7.53	37.08	107	170	Peak
5500	94.18	91.58			32.04	7.59	37.03	107	170	Average
5500	103.3	100.7			32.04	7.59	37.03	107	170	Peak
5725	56.93	54.29	68.3	-11.37	32.36	7.71	37.43	107	170	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	43.91	41.45	54	-10.09	32.01	7.53	37.08	100	163	Average
5460	56.67	54.21	74	-17.33	32.01	7.53	37.08	100	163	Peak
5470	58.66	56.19	68.3	-9.64	32.02	7.53	37.08	100	163	Peak
5500	93.78	91.18			32.04	7.59	37.03	100	163	Average
5500	102.67	100.07			32.04	7.59	37.03	100	163	Peak
5725	55.84	53.2	68.3	-12.46	32.36	7.71	37.43	100	163	Peak

**REMARKS:**

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



A D T

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	Kay Wu

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	42.92	40.46	54	-11.08	32.01	7.53	37.08	108	168	Average
5460	57.12	54.66	74	-16.88	32.01	7.53	37.08	108	168	Peak
5470	55.79	53.32	68.3	-12.51	32.02	7.53	37.08	108	168	Peak
5580	95.02	92.47			32.14	7.57	37.16	108	168	Average
5580	104.11	101.56			32.14	7.57	37.16	108	168	Peak
5725	56.15	53.51	68.3	-12.15	32.36	7.71	37.43	108	168	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	42.18	39.72	54	-11.82	32.01	7.53	37.08	100	160	Average
5460	56.68	54.22	74	-17.32	32.01	7.53	37.08	100	160	Peak
5470	55.4	52.93	68.3	-12.9	32.02	7.53	37.08	100	160	Peak
5580	93.18	90.63			32.14	7.57	37.16	100	160	Average
5580	102.67	100.12			32.14	7.57	37.16	100	160	Peak
5725	54.64	52	68.3	-13.66	32.36	7.71	37.43	100	160	Peak

**REMARKS:**

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



**A D T**

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	Kay Wu

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	42.19	39.73	54	-11.81	32.01	7.53	37.08	100	136	Average
5460	56.47	54.01	74	-17.53	32.01	7.53	37.08	100	136	Peak
5470	55.3	52.83	68.3	-13	32.02	7.53	37.08	100	136	Peak
5700	91.78	89.18			32.31	7.69	37.4	100	136	Average
5700	100.91	98.31			32.31	7.69	37.4	100	136	Peak
5725	58.01	55.37	68.3	-10.29	32.36	7.71	37.43	100	136	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	42.31	39.85	54	-11.69	32.01	7.53	37.08	120	186	Average
5460	57.67	55.21	74	-16.33	32.01	7.53	37.08	120	186	Peak
5470	56.98	54.51	68.3	-11.32	32.02	7.53	37.08	120	186	Peak
5700	92.65	90.05			32.31	7.69	37.4	120	186	Average
5700	101.46	98.86			32.31	7.69	37.4	120	186	Peak
5725	60.27	57.63	68.3	-8.03	32.36	7.71	37.43	120	186	Peak

**REMARKS:**

1. 5700MHz: Fundamental frequency.
2. 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	Kay Wu

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
5146	41.82	39.94	54	-12.18	31.87	7.33	37.32	100	248	Average
5146	58.93	57.05	74	-15.07	31.87	7.33	37.32	100	248	Peak
5180	91.53	89.67			31.88	7.32	37.34	100	248	Average
5180	101.04	99.18			31.88	7.32	37.34	100	248	Peak
5460	42.05	39.59	54	-11.95	32.01	7.53	37.08	100	248	Average
5460	58.22	55.76	74	-15.78	32.01	7.53	37.08	100	248	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	43.56	41.68	54	-10.44	31.87	7.33	37.32	102	96	Average
5150	59.54	57.66	74	-14.46	31.87	7.33	37.32	102	96	Peak
5180	94.35	92.49			31.88	7.32	37.34	102	96	Average
5180	103.82	101.96			31.88	7.32	37.34	102	96	Peak
5390	39.97	37.77	54	-14.03	31.98	7.4	37.18	102	96	Average
5390	58.88	56.68	74	-15.12	31.98	7.4	37.18	102	96	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	Kay Wu

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
5080	40.37	38.51	54	-13.63	31.83	7.3	37.27	126	243	Average
5080	59.31	57.45	74	-14.69	31.83	7.3	37.27	126	243	Peak
5220	92.91	91.05			31.9	7.32	37.36	126	243	Average
5220	102.66	100.8			31.9	7.32	37.36	126	243	Peak
5410	42.34	40.13	54	-11.66	31.99	7.4	37.18	126	243	Average
5410	58.21	56	74	-15.79	31.99	7.4	37.18	126	243	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
5078	41.07	39.21	54	-12.93	31.83	7.3	37.27	101	80	Average
5078	59.01	57.15	74	-14.99	31.83	7.3	37.27	101	80	Peak
5220	94.89	93.03			31.9	7.32	37.36	101	80	Average
5220	104.54	102.68			31.9	7.32	37.36	101	80	Peak
5414	40.28	38.06	54	-13.72	32	7.4	37.18	101	80	Average
5414	58.07	55.85	74	-15.93	32	7.4	37.18	101	80	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	Kay Wu

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
5104	40.16	38.25	54	-13.84	31.84	7.35	37.28	126	244	Average
5104	59.82	57.91	74	-14.18	31.84	7.35	37.28	126	244	Peak
5240	93.66	91.73			31.91	7.34	37.32	126	244	Average
5240	103.45	101.52			31.91	7.34	37.32	126	244	Peak
5356	42.34	40.15	54	-11.66	31.97	7.4	37.18	126	244	Average
5356	59.3	57.11	74	-14.7	31.97	7.4	37.18	126	244	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
5050	40.25	38.43	54	-13.75	31.82	7.25	37.25	100	80	Average
5050	58.23	56.41	74	-15.77	31.82	7.25	37.25	100	80	Peak
5240	94.34	92.41			31.91	7.34	37.32	100	80	Average
5240	103.72	101.79			31.91	7.34	37.32	100	80	Peak
5452	40.91	38.45	54	-13.09	32.01	7.53	37.08	100	80	Average
5452	58.84	56.38	74	-15.16	32.01	7.53	37.08	100	80	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	Kay Wu

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
5082	40.04	38.18	54	-13.96	31.83	7.3	37.27	125	244	5082
5082	57.98	56.12	74	-16.02	31.83	7.3	37.27	125	244	5082
5260	93.86	91.85			31.92	7.36	37.27	125	244	5260
5260	103.13	101.12			31.92	7.36	37.27	125	244	5260
5458	41.16	38.7	54	-12.84	32.01	7.53	37.08	125	244	5458
5458	58.36	55.9	74	-15.64	32.01	7.53	37.08	125	244	5458
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
5142	40.32	38.41	54	-13.68	31.87	7.34	37.3	100	81	Average
5142	58.9	56.99	74	-15.1	31.87	7.34	37.3	100	81	Peak
5260	95.26	93.25			31.92	7.36	37.27	100	81	Average
5260	104.72	102.71			31.92	7.36	37.27	100	81	Peak
5452	41.45	38.99	54	-12.55	32.01	7.53	37.08	100	81	Average
5452	58.48	56.02	74	-15.52	32.01	7.53	37.08	100	81	Peak

REMARKS: 5260MHz: Fundamental frequency.



A D T

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	Kay Wu

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
5036	40.08	38.32	54	-13.92	31.81	7.19	37.24	102	163	Average
5036	59.55	57.79	74	-14.45	31.81	7.19	37.24	102	163	Peak
5300	94.41	92.26			31.94	7.4	37.19	102	163	Average
5300	104.95	102.8			31.94	7.4	37.19	102	163	Peak
5376	41.8	39.61	54	-12.2	31.97	7.4	37.18	102	163	Average
5376	59.49	57.3	74	-14.51	31.97	7.4	37.18	102	163	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
5056	40	38.18	54	-14	31.82	7.25	37.25	100	81	Average
5056	58.56	56.74	74	-15.44	31.82	7.25	37.25	100	81	Peak
5300	94.2	92.05			31.94	7.4	37.19	100	81	Average
5300	104.1	101.95			31.94	7.4	37.19	100	81	Peak
5374	42.21	40.02	54	-11.79	31.97	7.4	37.18	100	81	Average
5374	59.5	57.31	74	-14.5	31.97	7.4	37.18	100	81	Peak

REMARKS: 5300MHz: Fundamental frequency.



A D T

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	Kay Wu

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
5046	39.9	38.08	54	-14.1	31.82	7.25	37.25	103	190	Average
5046	58.67	56.85	74	-15.33	31.82	7.25	37.25	103	190	Peak
5320	95.16	93			31.95	7.4	37.19	103	190	Average
5320	105.1	102.94			31.95	7.4	37.19	103	190	Peak
5366	41.8	39.61	54	-12.2	31.97	7.4	37.18	103	190	Average
5366	60.17	57.98	74	-13.83	31.97	7.4	37.18	103	190	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
5144	40.22	38.34	54	-13.78	31.87	7.33	37.32	100	82	Average
5144	58.05	56.17	74	-15.95	31.87	7.33	37.32	100	82	Peak
5320	93.48	91.32			31.95	7.4	37.19	100	82	Average
5320	103.59	101.43			31.95	7.4	37.19	100	82	Peak
5370	43.6	41.41	54	-10.4	31.97	7.4	37.18	100	82	Average
5370	59.23	57.04	74	-14.77	31.97	7.4	37.18	100	82	Peak

REMARKS: 5320MHz: Fundamental frequency.



A D T

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	Kay Wu

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	45.6	43.14	54	-8.4	32.01	7.53	37.08	100	173	Average
5460	59.74	57.28	74	-14.26	32.01	7.53	37.08	100	173	Peak
5470	60.83	58.36	68.3	-7.47	32.02	7.53	37.08	100	173	Peak
5500	94.85	92.25			32.04	7.59	37.03	100	173	Average
5500	105.38	102.78			32.04	7.59	37.03	100	173	Peak
5725	57.74	55.1	68.3	-10.56	32.36	7.71	37.43	100	173	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
5456	44.33	41.87	54	-9.67	32.01	7.53	37.08	102	171	Average
5456	59.65	57.19	74	-14.35	32.01	7.53	37.08	102	171	Peak
5470	61.15	58.68	68.3	-7.15	32.02	7.53	37.08	102	171	Peak
5500	95.44	92.84			32.04	7.59	37.03	102	171	Average
5500	105.13	102.53			32.04	7.59	37.03	102	171	Peak
5725	56.12	53.48	68.3	-12.18	32.36	7.71	37.43	102	171	Peak

**REMARKS:**

1. 5500MHz: Fundamental frequency.
2. 5470MHz & 5725MHz: Out of restricted band



A D T

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	Kay Wu

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
5386	40.67	38.47	54	-13.33	31.98	7.4	37.18	119	176	Average
5386	58.6	56.4	74	-15.4	31.98	7.4	37.18	119	176	Peak
5470	58.34	55.87	68.3	-9.96	32.02	7.53	37.08	119	176	Peak
5580	95.86	93.31			32.14	7.57	37.16	119	176	Average
5580	105.59	103.04			32.14	7.57	37.16	119	176	Peak
5725	57.25	54.61	68.3	-11.05	32.36	7.71	37.43	119	176	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
5426	40.56	38.22	54	-13.44	32	7.47	37.13	100	182	Average
5426	59.07	56.73	74	-14.93	32	7.47	37.13	100	182	Peak
5470	56.48	54.01	68.3	-11.82	32.02	7.53	37.08	100	182	Peak
5580	95.57	93.02			32.14	7.57	37.16	100	182	Average
5580	105.35	102.8			32.14	7.57	37.16	100	182	Peak
5725	56.77	54.13	68.3	-11.53	32.36	7.71	37.43	100	182	Peak

**REMARKS:**

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



A D T

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	Kay Wu

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	40.3	38.08	54	-13.7	32	7.4	37.18	114	156	Average
5424	58.81	56.59	74	-15.19	32	7.4	37.18	114	156	Peak
5470	56.48	54.01	68.3	-11.82	32.02	7.53	37.08	114	156	Peak
5700	92.02	89.42			32.31	7.69	37.4	114	156	Average
5700	102.5	99.9			32.31	7.69	37.4	114	156	Peak
5725	65.15	62.51	68.3	-3.15	32.36	7.71	37.43	114	156	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
5430	40.43	38.08	54	-13.57	32.01	7.47	37.13	100	179	Average
5430	58.06	55.71	74	-15.94	32.01	7.47	37.13	100	179	Peak
5470	58.52	56.05	68.3	-9.78	32.02	7.53	37.08	100	179	Peak
5700	92.64	90.04			32.31	7.69	37.4	100	179	Average
5700	101.66	99.06			32.31	7.69	37.4	100	179	Peak
5725	65.34	62.7	68.3	-2.96	32.36	7.71	37.43	100	179	Peak

**REMARKS:**

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



A D T

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	Kay Wu

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	46.35	44.47	54	-7.65	31.87	7.33	37.32	127	244	Average
5150	63.62	61.74	74	-10.38	31.87	7.33	37.32	127	244	Peak
5190	89.77	87.91			31.88	7.32	37.34	127	244	Average
5190	99.29	97.43			31.88	7.32	37.34	127	244	Peak
5350	40.09	37.9	54	-13.91	31.97	7.4	37.18	127	244	Average
5350	56.44	54.25	74	-17.56	31.97	7.4	37.18	127	244	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	48.86	46.98	54	-5.14	31.87	7.33	37.32	102	82	Average
5150	64.42	62.54	74	-9.58	31.87	7.33	37.32	102	82	Peak
5190	92.17	90.31			31.88	7.32	37.34	102	82	Average
5190	101.68	99.82			31.88	7.32	37.34	102	82	Peak
5350	40.09	37.9	54	-13.91	31.97	7.4	37.18	102	82	Average
5350	57.12	54.93	74	-16.88	31.97	7.4	37.18	102	82	Peak

REMARKS: 5190MHz: Fundamental frequency.



A D T

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	Kay Wu

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	42.46	40.58	54	-11.54	31.87	7.33	37.32	126	244	Average
5150	56.05	54.17	74	-17.95	31.87	7.33	37.32	126	244	Peak
5230	90.66	88.73			31.91	7.34	37.32	126	244	Average
5230	100.21	98.28			31.91	7.34	37.32	126	244	Peak
5350	40.08	37.89	54	-13.92	31.97	7.4	37.18	126	244	Average
5350	55.78	53.59	74	-18.22	31.97	7.4	37.18	126	244	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	43.52	41.64	54	-10.48	31.87	7.33	37.32	101	81	Average
5150	56.81	54.93	74	-17.19	31.87	7.33	37.32	101	81	Peak
5230	91.22	89.29			31.91	7.34	37.32	101	81	Average
5230	101.04	99.11			31.91	7.34	37.32	101	81	Peak
5350	40.02	37.83	54	-13.98	31.97	7.4	37.18	101	81	Average
5350	56.48	54.29	74	-17.52	31.97	7.4	37.18	101	81	Peak

REMARKS: 5230MHz: Fundamental frequency.



A D T

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	Kay Wu

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	42.21	40.33	54	-11.79	31.87	7.33	37.32	100	163	Average
5150	57.55	55.67	74	-16.45	31.87	7.33	37.32	100	163	Peak
5270	90.38	88.37			31.92	7.36	37.27	100	163	Average
5270	100.14	98.13			31.92	7.36	37.27	100	163	Peak
5350	40.51	38.32	54	-13.49	31.97	7.4	37.18	100	163	Average
5350	57.04	54.85	74	-16.96	31.97	7.4	37.18	100	163	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	42.4	40.52	54	-11.6	31.87	7.33	37.32	100	82	Average
5150	56.77	54.89	74	-17.23	31.87	7.33	37.32	100	82	Peak
5270	90.9	88.89			31.92	7.36	37.27	100	82	Average
5270	101.19	99.18			31.92	7.36	37.27	100	82	Peak
5350	40.69	38.5	54	-13.31	31.97	7.4	37.18	100	82	Average
5350	57.58	55.39	74	-16.42	31.97	7.4	37.18	100	82	Peak

REMARKS: 5270MHz: Fundamental frequency.



A D T

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	Kay Wu

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	42.43	40.55	54	-11.57	31.87	7.33	37.32	100	163	Average
5150	56.83	54.95	74	-17.17	31.87	7.33	37.32	100	163	Peak
5310	89.64	87.48	54			7.4	37.19	100	163	Average
5310	100.03	97.87	74			7.4	37.19	100	163	Peak
5354	46.34	44.15	54	-7.66	31.97	7.4	37.18	100	163	Average
5354	59.34	57.15	74	-14.66	31.97	7.4	37.18	100	163	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	42.51	40.63	54	-11.49	31.87	7.33	37.32	100	80	Average
5150	56.5	54.62	74	-17.5	31.87	7.33	37.32	100	80	Peak
5310	90.05	87.89	54			7.4	37.19	100	80	Average
5310	100.22	98.06	74			7.4	37.19	100	80	Peak
5354	46.65	44.46	54	-7.35	31.97	7.4	37.18	100	80	Average
5354	64.48	62.29	74	-9.52	31.97	7.4	37.18	100	80	Peak

REMARKS: 5310MHz: Fundamental frequency.



A D T

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	Kay Wu

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	46.51	44.05	54	-7.49	32.01	7.53	37.08	100	156	Average
5460	62.09	59.63	74	-11.91	32.01	7.53	37.08	100	156	Peak
5470	67.06	64.59	68.3	-1.24	32.02	7.53	37.08	100	156	Peak
5510	91.19	88.62			32.04	7.59	37.06	100	156	Average
5510	100.76	98.19			32.04	7.59	37.06	100	156	Peak
5725	56.85	54.21	68.3	-11.45	32.36	7.71	37.43	100	156	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	45.22	42.76	54	-8.78	32.01	7.53	37.08	100	164	Average
5460	59.89	57.43	74	-14.11	32.01	7.53	37.08	100	164	Peak
5470	65.07	62.6	68.3	-3.23	32.02	7.53	37.08	100	164	Peak
5510	89.94	87.37			32.04	7.59	37.06	100	164	Average
5510	99.85	97.28			32.04	7.59	37.06	100	164	Peak
5725	57.1	54.46	68.3	-11.2	32.36	7.71	37.43	100	164	Peak

**REMARKS:**

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



A D T

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	Kay Wu

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	42.71	40.25	54	-11.29	32.01	7.53	37.08	100	148	Average
5460	57.63	55.17	74	-16.37	32.01	7.53	37.08	100	148	Peak
5470	56.85	54.38	68.3	-11.45	32.02	7.53	37.08	100	148	Peak
5550	89.73	87.13			32.11	7.58	37.09	100	148	Average
5550	99.32	96.72			32.11	7.58	37.09	100	148	Peak
5725	56.16	53.52	68.3	-12.14	32.36	7.71	37.43	100	148	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	42.88	40.42	54	-11.12	32.01	7.53	37.08	100	182	Average
5460	56.7	54.24	74	-17.3	32.01	7.53	37.08	100	182	Peak
5470	56.44	53.97	68.3	-11.86	32.02	7.53	37.08	100	182	Peak
5550	91.16	88.56			32.11	7.58	37.09	100	182	Average
5550	101	98.4			32.11	7.58	37.09	100	182	Peak
5725	56.85	54.21	68.3	-11.45	32.36	7.71	37.43	100	182	Peak

**REMARKS:**

1. 5550MHz: Fundamental frequency.
2. 5470MHz & 5725MHz: Out of restricted band



**A D T**

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	Kay Wu

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	42.24	39.78	54	-11.76	32.01	7.53	37.08	116	158	Average
5460	54.99	52.53	74	-19.01	32.01	7.53	37.08	116	158	Peak
5470	56.1	53.63	68.3	-12.2	32.02	7.53	37.08	116	158	Peak
5670	90.34	87.74			32.28	7.66	37.34	116	158	Average
5670	99.25	96.65			32.28	7.66	37.34	116	158	Peak
5725	55.55	52.91	68.3	-12.75	32.36	7.71	37.43	116	158	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	41.91	39.45	54	-12.09	32.01	7.53	37.08	100	178	Average
5460	56.81	54.35	74	-17.19	32.01	7.53	37.08	100	178	Peak
5470	56.24	53.77	68.3	-12.06	32.02	7.53	37.08	100	178	Peak
5670	90.02	87.42			32.28	7.66	37.34	100	178	Average
5670	100	97.4			32.28	7.66	37.34	100	178	Peak
5725	57.26	54.62	68.3	-11.04	32.36	7.71	37.43	100	178	Peak

**REMARKS:**

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



A D T

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

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
43.5	21.78	38.59	40	-18.22	13.59	0.71	31.11	100	221	Peak
132.33	25.45	44.22	43.5	-18.05	11.81	1.25	31.83	100	142	Peak
237.63	20.33	39.4	46	-25.67	10.95	1.78	31.8	100	133	Peak
612.2	23.27	32.5	46	-22.73	19.75	3.12	32.1	100	220	Peak
760.6	25.69	31.87	46	-20.31	21.67	3.6	31.45	100	74	Peak
886.6	27.14	31.86	46	-18.86	23.34	3.93	31.99	100	332	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
35.4	33.89	51.39	40	-6.11	12.94	0.61	31.05	100	253	Peak
42.96	30.52	47.32	40	-9.48	13.58	0.7	31.08	100	333	Peak
132.33	22.99	41.76	43.5	-20.51	11.81	1.25	31.83	100	360	Peak
615	23.89	33.09	46	-22.11	19.79	3.13	32.12	100	58	Peak
718.6	25.12	32.22	46	-20.88	21.08	3.49	31.67	122	25	Peak
832.7	28.95	34.26	46	-17.05	22.65	3.78	31.74	100	0	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	100289	Nov. 19, 2011	Nov. 18, 2012
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 29, 2011	Dec. 28, 2012
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 30, 2011	Dec. 29, 2012
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

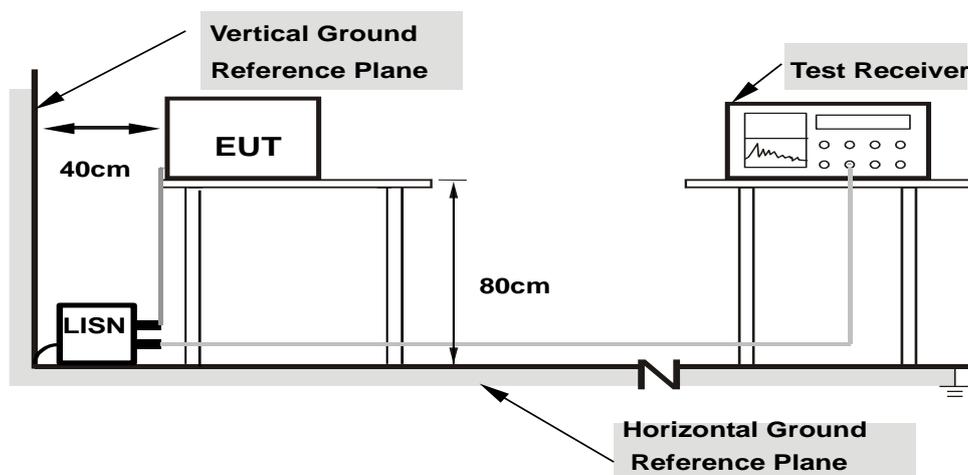
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

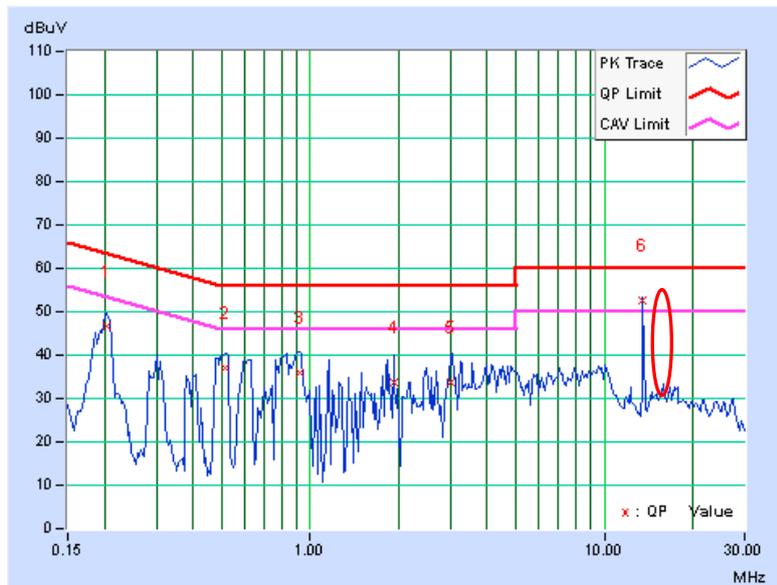
802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.20469	0.15	46.54	35.03	46.69	35.18	63.42
2	0.51719	0.17	36.75	22.23	36.92	22.40	56.00	46.00	-19.08	-23.60
3	0.91953	0.19	35.59	17.58	35.78	17.77	56.00	46.00	-20.22	-28.23
4	1.91797	0.25	33.30	16.42	33.55	16.67	56.00	46.00	-22.45	-29.33
5	3.00391	0.30	33.34	19.07	33.64	19.37	56.00	46.00	-22.36	-26.63
6	13.55859	0.50	52.02	51.27	52.52	51.77	60.00	50.00	-7.48	1.77

#### 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.
6. This is NFC signal inductive with measurement system. Please check P47-48 to see test result for EUT with a suitable dummy load.





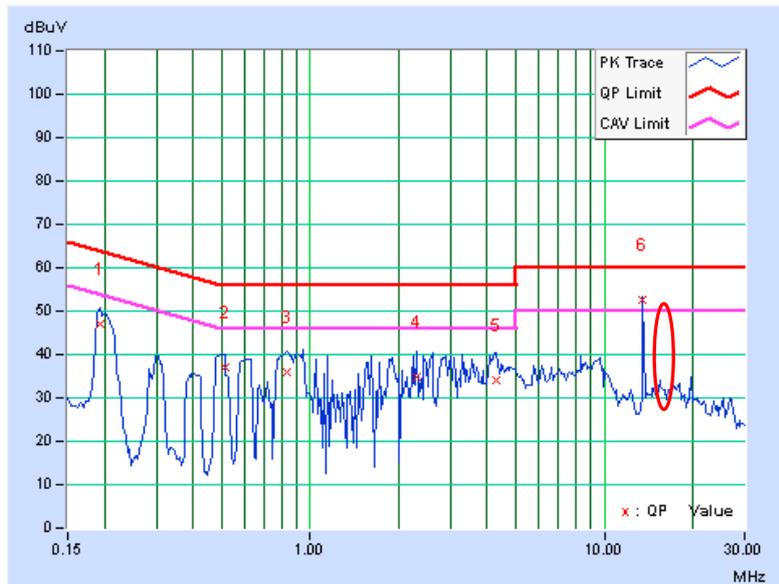
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PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.19297	0.14	46.81	33.07	46.95	33.21	63.91
2	0.51328	0.17	36.79	22.19	36.96	22.36	56.00	46.00	-19.04	-23.64
3	0.82969	0.18	35.84	17.49	36.02	17.67	56.00	46.00	-19.98	-28.33
4	2.31641	0.27	34.65	18.21	34.92	18.48	56.00	46.00	-21.08	-27.52
5	4.28906	0.36	33.85	23.24	34.21	23.60	56.00	46.00	-21.79	-22.40
6	13.55859	0.57	52.04	51.27	52.61	51.84	60.00	50.00	-7.39	1.84

**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.
6. This is NFC signal inductive with measurement system. Please check P47-48 to see test result for EUT with a suitable dummy load.





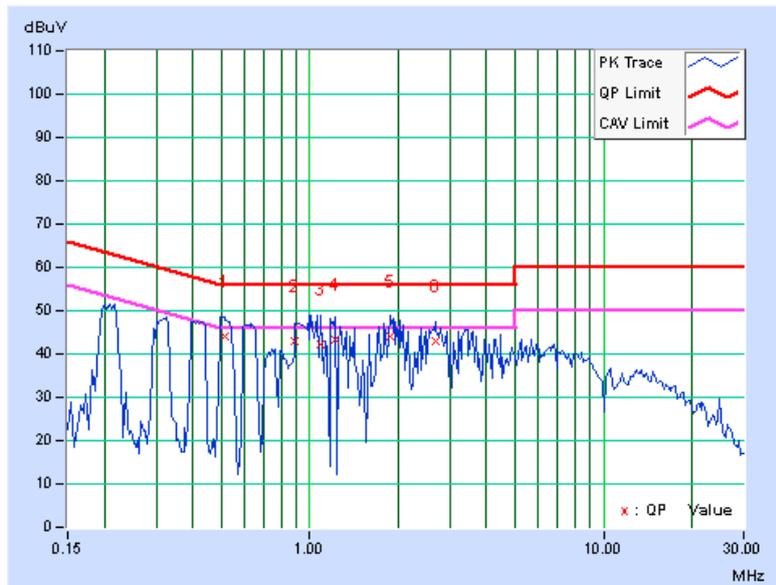
**Test with suitable dummy load**

<b>PHASE</b>	Line 1	<b>6dB BANDWIDTH</b>	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	0.51328	0.19	43.74	30.70	43.93	30.89	56.00	46.00	-12.07	-15.11
2	0.89219	0.20	42.63	23.24	42.83	23.44	56.00	46.00	-13.17	-22.56
3	1.08594	0.22	41.96	28.53	42.18	28.75	56.00	46.00	-13.82	-17.25
4	1.21484	0.23	43.16	23.72	43.39	23.95	56.00	46.00	-12.61	-22.05
5	1.88281	0.29	43.89	26.62	44.18	26.91	56.00	46.00	-11.82	-19.09
6	2.68359	0.32	42.80	27.44	43.12	27.76	56.00	46.00	-12.88	-18.24

**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.

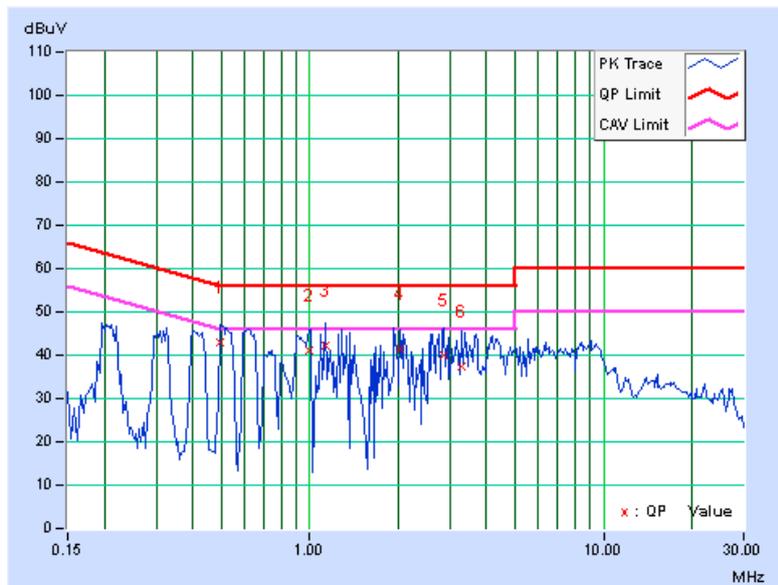


PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.49766	0.19	42.89	26.77	43.08	26.96	56.04
2	0.98984	0.22	41.00	18.63	41.22	18.85	56.00	46.00	-14.78	-27.15
3	1.13672	0.23	42.03	21.62	42.26	21.85	56.00	46.00	-13.74	-24.15
4	2.03516	0.30	41.17	23.31	41.47	23.61	56.00	46.00	-14.53	-22.39
5	2.85156	0.35	39.80	22.12	40.15	22.47	56.00	46.00	-15.85	-23.53
6	3.27734	0.37	36.87	22.89	37.24	23.26	56.00	46.00	-18.76	-22.74

**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

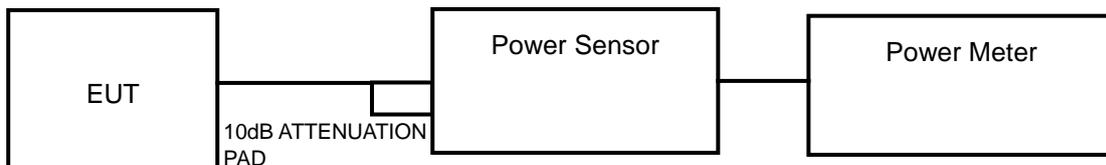
#### 4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

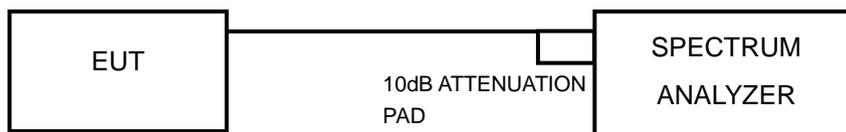
**NOTE:** Where B is the 26dB emission bandwidth in MHz.

#### 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	21.78	13.38	17	PASS
44	5220	20.42	13.10	17	PASS
48	5240	20.14	13.04	17	PASS
52	5260	24.04	13.81	24	PASS
60	5300	22.03	13.43	24	PASS
64	5320	21.53	13.33	24	PASS
100	5500	24.21	13.84	24	PASS
116	5580	21.88	13.40	24	PASS
140	5700	20.00	13.01	24	PASS

#### 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	21.93	13.41	17	PASS
44	5220	21.13	13.25	17	PASS
48	5240	20.42	13.10	17	PASS
52	5260	23.50	13.71	24	PASS
60	5300	22.49	13.52	24	PASS
64	5320	21.48	13.32	24	PASS
100	5500	23.99	13.80	24	PASS
116	5580	21.88	13.40	24	PASS
140	5700	20.04	13.02	24	PASS

#### 802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	22.28	13.48	17	PASS
46	5230	21.93	13.41	17	PASS
54	5270	19.50	12.90	24	PASS
62	5310	19.68	12.94	24	PASS
102	5510	20.89	13.20	24	PASS
110	5550	20.00	13.01	24	PASS
134	5670	18.16	12.59	24	PASS



**26dB BANDWIDTH: 802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	23.46	PASS
44	5220	23.64	PASS
48	5240	24.22	PASS
52	5260	23.68	PASS
60	5300	23.49	PASS
64	5320	23.41	PASS
100	5500	24.61	PASS
116	5580	24.26	PASS
140	5700	25.25	PASS

**802.11n (20MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	24.10	PASS
44	5220	24.22	PASS
48	5240	24.63	PASS
52	5260	23.90	PASS
60	5300	24.07	PASS
64	5320	23.73	PASS
100	5500	28.53	PASS
116	5580	28.50	PASS
140	5700	25.83	PASS

**802.11n (40MHz)**

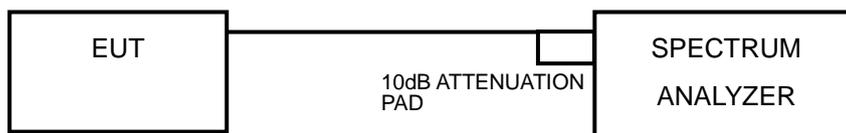
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	53.47	PASS
46	5230	54.82	PASS
54	5270	53.75	PASS
62	5310	51.70	PASS
102	5510	72.88	PASS
110	5550	64.91	PASS
134	5670	65.55	PASS

#### 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)

##### 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	2.44	0.23	2.67	4	PASS
44	5220	2.30	0.23	2.53	4	PASS
48	5240	2.52	0.23	2.75	4	PASS
52	5260	4.09	0.23	4.32	11	PASS
60	5300	2.17	0.23	2.40	11	PASS
64	5320	3.00	0.23	3.23	11	PASS
100	5500	4.19	0.23	4.42	11	PASS
116	5580	3.83	0.23	4.06	11	PASS
140	5700	3.68	0.23	3.91	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	0.57	0.22	0.79	4	PASS
44	5220	1.28	0.22	1.50	4	PASS
48	5240	1.70	0.22	1.92	4	PASS
52	5260	3.23	0.22	3.45	11	PASS
60	5300	2.41	0.22	2.63	11	PASS
64	5320	2.71	0.22	2.93	11	PASS
100	5500	3.15	0.22	3.37	11	PASS
116	5580	2.57	0.22	2.79	11	PASS
140	5700	2.86	0.22	3.08	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	-1.39	0.81	-0.58	4	PASS
46	5230	-1.35	0.81	-0.54	4	PASS
54	5270	-1.27	0.81	-0.46	11	PASS
62	5310	-1.40	0.81	-0.59	11	PASS
102	5510	-0.50	0.81	0.31	11	PASS
110	5550	-0.69	0.81	0.12	11	PASS
134	5670	-0.71	0.81	0.10	11	PASS

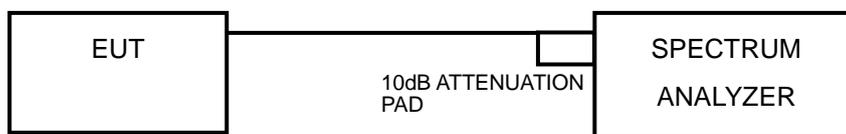
**NOTE:** Refer to section 3.3 for duty cycle spectrum plot.

## 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

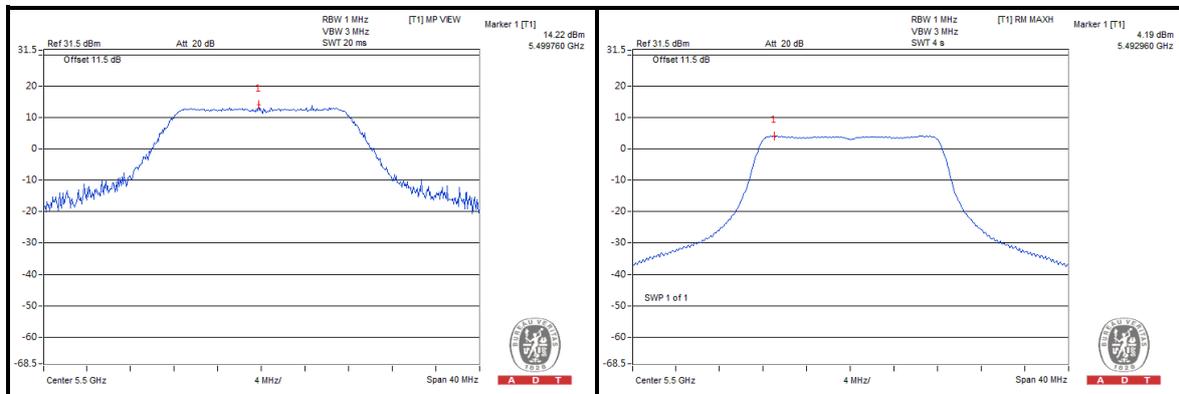
Same as 4.2.6

### 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	12.23	2.44	2.67	9.56	13	PASS
44	5220	12.03	2.30	2.53	9.50	13	PASS
48	5240	12.21	2.52	2.75	9.46	13	PASS
52	5260	13.49	4.09	4.32	9.17	13	PASS
60	5300	11.10	2.17	2.40	8.70	13	PASS
64	5320	12.40	3.00	3.23	9.17	13	PASS
100	5500	14.22	4.19	4.42	9.80	13	PASS
116	5580	13.16	3.83	4.06	9.10	13	PASS
140	5700	13.35	3.68	3.91	9.44	13	PASS

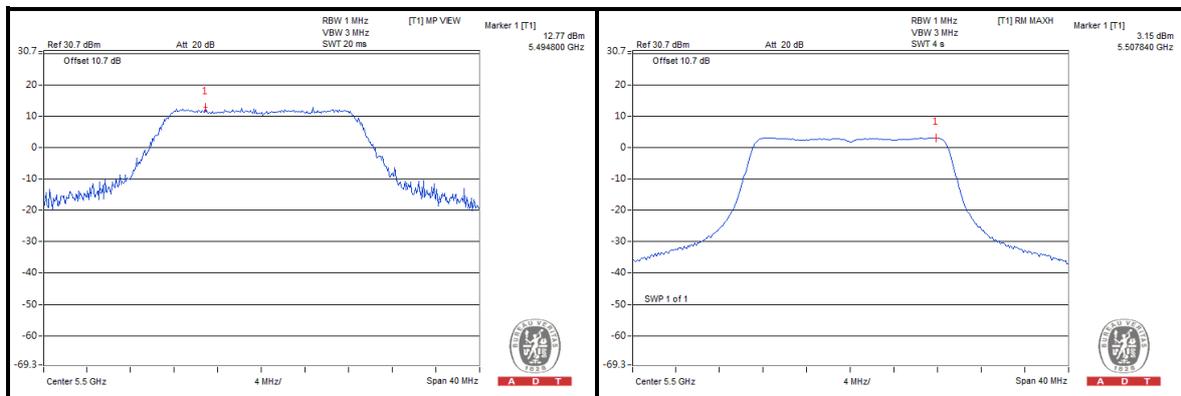
**NOTE:** Refer to section 3.3 for duty cycle spectrum plot.



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	9.62	0.57	0.79	8.83	13	PASS
44	5220	9.94	1.28	1.50	8.44	13	PASS
48	5240	11.23	1.70	1.92	9.31	13	PASS
52	5260	12.68	3.23	3.45	9.23	13	PASS
60	5300	11.13	2.41	2.63	8.50	13	PASS
64	5320	11.58	2.71	2.93	8.65	13	PASS
100	5500	12.77	3.15	3.37	9.40	13	PASS
116	5580	12.06	2.57	2.79	9.27	13	PASS
140	5700	12.12	2.86	3.08	9.04	13	PASS

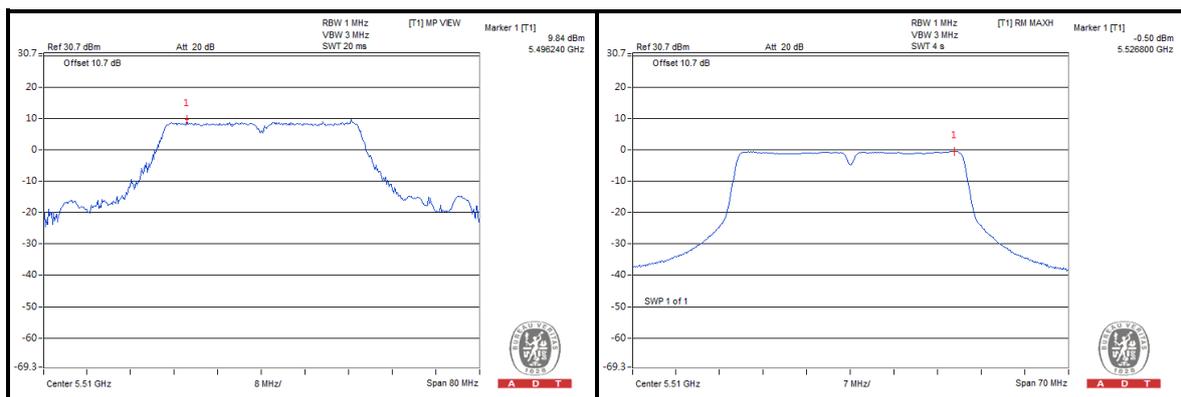
**NOTE:** Refer to section 3.3 for duty cycle spectrum plot.



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	8.41	-1.39	-0.58	8.99	13	PASS
46	5230	7.67	-1.35	-0.54	8.21	13	PASS
54	5270	7.99	-1.27	-0.46	8.45	13	PASS
62	5310	7.80	-1.40	-0.59	8.39	13	PASS
102	5510	9.84	-0.50	0.31	9.53	13	PASS
110	5550	9.37	-0.69	0.12	9.25	13	PASS
134	5670	8.90	-0.71	0.10	8.80	13	PASS

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

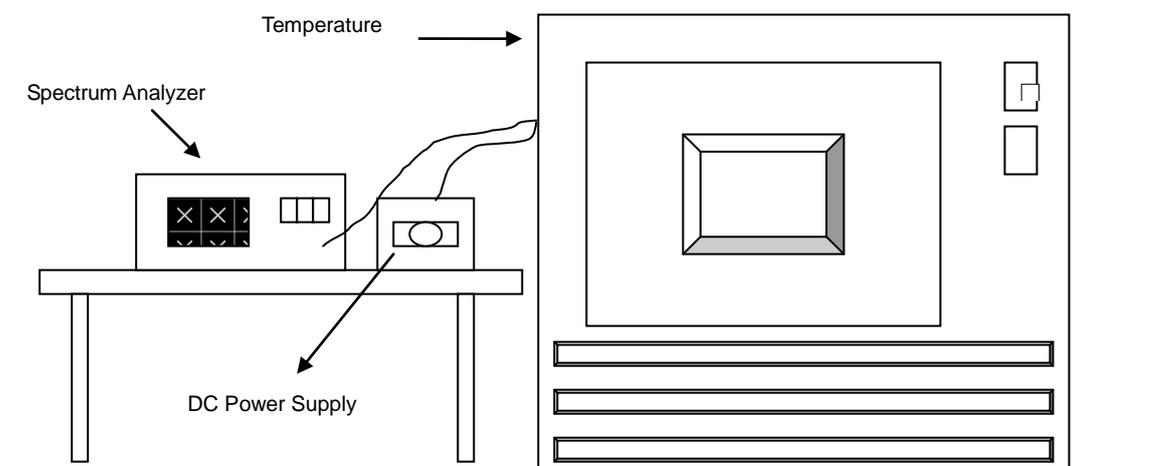


## 4.6 FREQUENCY STABILITY

### 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)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
60	3.8	5320.014340	2.695	5320.014216	2.672	5320.014097	2.650	5320.013825	2.599
50	3.8	5320.014528	2.731	5320.014436	2.714	5320.014144	2.659	5320.014448	2.716
40	3.8	5320.015759	2.962	5320.015828	2.975	5320.015770	2.964	5320.015515	2.916
30	3.8	5320.017282	3.248	5320.017022	3.200	5320.017600	3.308	5320.017254	3.243
20	3.8	5320.017190	3.231	5320.017177	3.229	5320.016888	3.174	5320.017074	3.209
10	3.8	5320.017313	3.254	5320.017328	3.257	5320.016872	3.171	5320.017047	3.204
0	3.8	5320.016071	3.021	5320.015709	2.953	5320.015621	2.936	5320.015561	2.925
-10	3.8	5320.014938	2.808	5320.014732	2.769	5320.014722	2.767	5320.015204	2.858
-20	3.8	5320.013868	2.607	5320.013710	2.577	5320.013875	2.608	5320.013872	2.608

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)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	3.6	5320.016392	3.081	5320.016197	3.045	5320.015899	2.989	5320.016212	3.047
	3.8	5320.017190	3.231	5320.017177	3.229	5320.016888	3.174	5320.017074	3.209
	4.35	5320.018511	3.480	5320.018195	3.420	5320.018833	3.540	5320.018782	3.530

## 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

**Hsin Chu EMC/RF Lab:**

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**Email:** [service.adt@tw.bureauveritas.com](mailto:service.adt@tw.bureauveritas.com)

**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---