FCC TEST REPORT (15.407)

REPORT NO.:	RF121211C15-5
MODEL NO.:	PN07200
FCC ID:	NM8PN07200
RECEIVED:	Oct. 25, 2012
TESTED:	Jan. 03, 2013 ~ Jan. 16, 2013
ISSUED:	Jan. 30, 2013

APPLICANT:	HTC Corporation
ADDRESS:	No. 23, Xinghua Rd., Taoyuan City, 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.

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF121211C15-5	Original release	Jan. 30, 2013

1. CERTIFICATION

PRODUCT:	Smartphone
MODEL NO.:	PN07200
BRAND:	HTC
APPLICANT:	HTC Corporation
TESTED:	Jan. 03, 2013 ~ Jan. 16, 2013
TEST SAMPLE:	Production Unit
STANDARDS:	**FCC Part 15, Subpart E (Section 15.407)**
	ANSI C63.10-2009

The above equipment (model: PN07200) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch,** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : _____ **, DATE :** Jan. 30, 2013

Ivonne Wu / Senior Specialist

APPROVED BY : _____ **, DATE :** Jan. 30, 2013

Anderson Chiu / Senior Engineer

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 -0.28dB at 13.55859MHz.
15.407(b/1/2/3)(b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -2.13dB at 42.42MHz.
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

EUT	Smartphone
MODEL NO.	PN07200
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.8Vdc (Li-ion battery)
MODULATION TYPE	256QAM, 64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to MCS7 802.11ac: up to V9
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz) 1 for 802.11ac (80MHz)
OUTPUT POWER	29.992mW for 5180 ~ 5240MHz 42.364mW for 5260 ~ 5320MHz 43.451mW for 5500 ~ 5700MHz
ANTENNA TYPE	PIFA antenna with -2.56dBi gain (5180 ~ 5240MHz) PIFA antenna with -2.07dBi gain (5260 ~ 5320MHz) PIFA antenna with -2dBi gain (5500 ~ 5700MHz)
ANTENNA CONNECTOR	NA
DATA CABLE	Refer to Note as below
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	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
802.11ac (80MHz)	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

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

CHANNEL	FREQUENCY
42	5210MHz

FOR 5260 ~ 5320MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

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

CHANNEL	FREQUENCY
58	5290MHz

FOR 5500 ~ 5700MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	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		

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

CHANNEL	FREQUENCY
106	5530MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥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 **Z-plane** for 5180-5240MHz & 5260-5320MHz and **Y-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	MCS0
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
802.11ac (80MHz)		42	42	OFDM	BPSK	V0
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	MCS0
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (80MHz)		58	58	OFDM	BPSK	V0
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	MCS0
802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
802.11ac (80MHz)		106	106	OFDM	BPSK	V0

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 (40MHz)	5180-5240	38 to 46	38	OFDM	BPSK	MCS0

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 (40MHz)	5180-5240	38 to 46	38	OFDM	BPSK	MCS0

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, 44, 48	OFDM	BPSK	6.0
802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	MCS0
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
802.11ac (80MHz)		42	42	OFDM	BPSK	V0
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	MCS0
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (80MHz)		58	58	OFDM	BPSK	V0
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	MCS0
802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
802.11ac (80MHz)		106	106	OFDM	BPSK	V0

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	MCS0
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
802.11ac (80MHz)		42	42	OFDM	BPSK	V0
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	MCS0
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (80MHz)		58	58	OFDM	BPSK	V0
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	MCS0
802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
802.11ac (80MHz)		106	106	OFDM	BPSK	V0

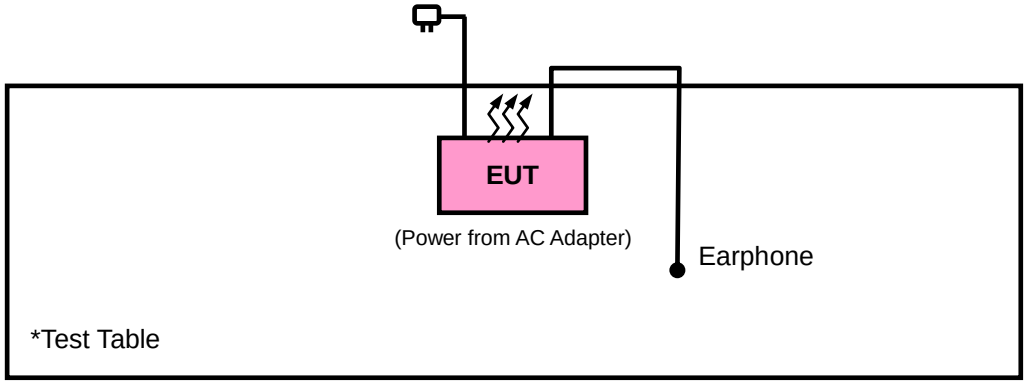
TEST CONDITION:

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.

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.

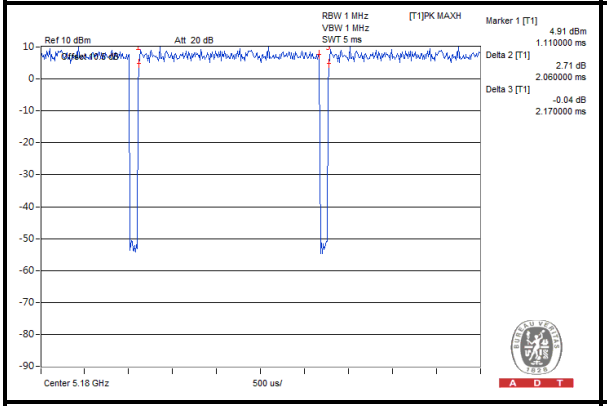
802.11a: Duty cycle = 2.06/2.17 = 0.949, Duty factor = 10 * log(1/0.949) = 0.23

802.11n (20MHz): Duty cycle = 1.92/2.03 = 0.946, Duty factor = 10 * log(1/0.946) = 0.24

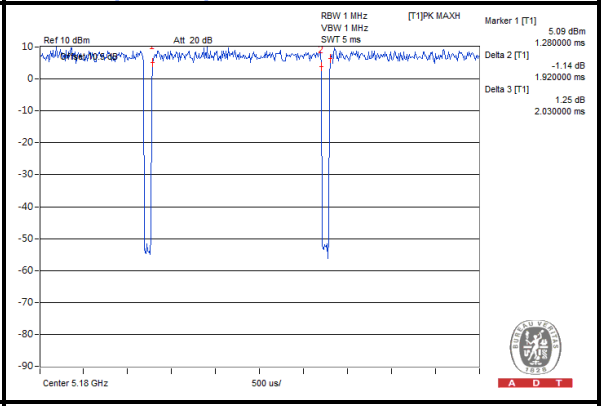
802.11n (40MHz): Duty cycle = 910/1040 = 0.875, Duty factor = 10 * log(1/0.875) = 0.58

802.11ac (80MHz): Duty cycle = 445/528 = 0.843, Duty factor = 10 * log(1/0.843) = 0.74

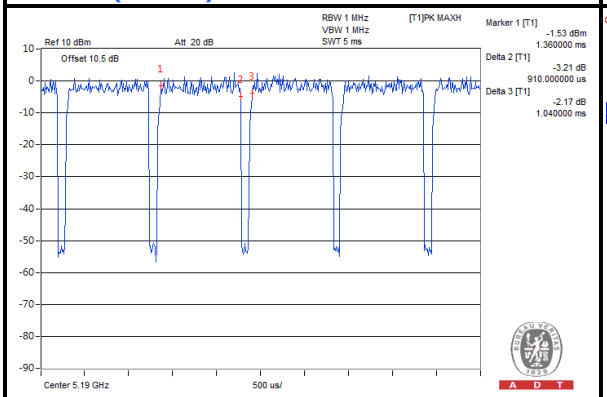
802.11a



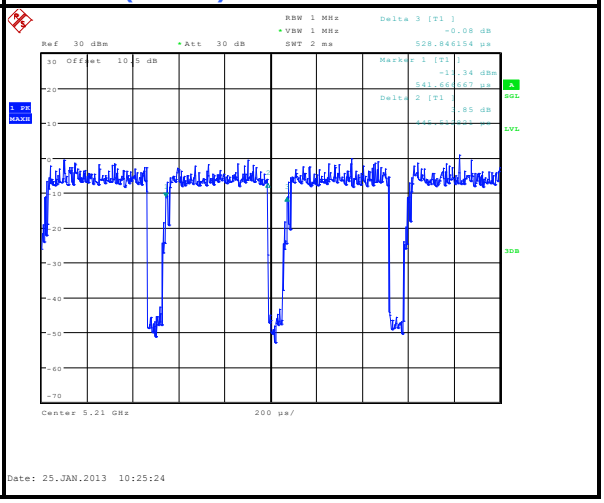
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)



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:

$$E = \frac{1000000\sqrt{30P}}{3}$$ μV/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	100744	Apr. 19, 2012	Apr. 18, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 17, 2012	Dec. 16, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Apr. 03, 2012	Apr. 02, 2013
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
Power Meter	ML2495A	1232002	Aug. 10, 2012	Aug. 09, 2013
Power Sensor	MA2411B	1207325	Aug. 15, 2012	Aug. 14, 2013

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

2. The 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 camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

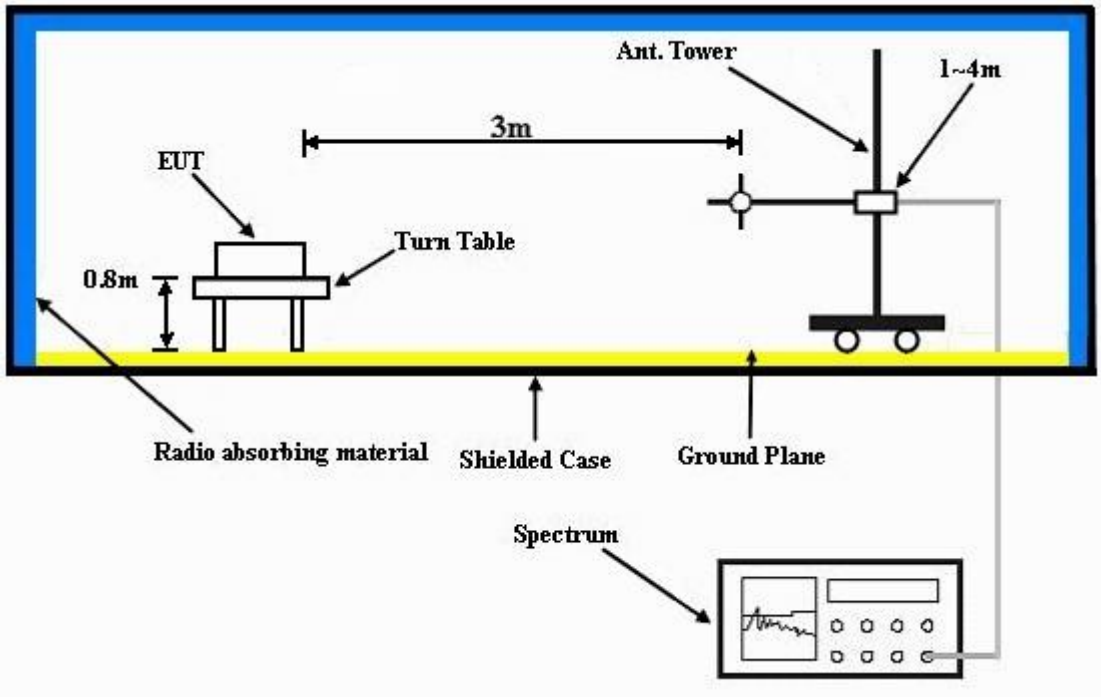
NOTE:

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

4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

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.

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**
5124	40.67	38.3	54	-13.33	32.33	7.34	37.3	100	34	Average
5124	52.11	49.74	74	-21.89	32.33	7.34	37.3	100	34	Peak
5180	87.91	85.55			32.38	7.32	37.34	100	34	Average
5180	97.46	95.1			32.38	7.32	37.34	100	34	Peak
5404	40.87	38.05	54	-13.13	32.6	7.4	37.18	100	34	Average
5404	53.49	50.67	74	-20.51	32.6	7.4	37.18	100	34	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**
5076	39.98	37.67	54	-14.02	32.28	7.3	37.27	100	26	Average
5076	51.93	49.62	74	-22.07	32.28	7.3	37.27	100	26	Peak
5180	87.82	85.46			32.38	7.32	37.34	100	26	Average
5180	97.48	95.12			32.38	7.32	37.34	100	26	Peak
5390	40.53	37.73	54	-13.47	32.58	7.4	37.18	100	26	Average
5390	52.77	49.97	74	-21.23	32.58	7.4	37.18	100	26	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	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
5060	39.83	37.56	54	-14.17	32.27	7.25	37.25	100	23	Average
5060	51.77	49.5	74	-22.23	32.27	7.25	37.25	100	23	Peak
5220	84.75	82.37			32.42	7.32	37.36	100	23	Average
5220	94.43	92.05			32.42	7.32	37.36	100	23	Peak
5436	40.61	37.64	54	-13.39	32.63	7.47	37.13	100	23	Average
5436	52.6	49.63	74	-21.4	32.63	7.47	37.13	100	23	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
5138	40.36	37.99	54	-13.64	32.33	7.34	37.3	100	26	Average
5138	53	50.63	74	-21	32.33	7.34	37.3	100	26	Peak
5220	88.52	86.14			32.42	7.32	37.36	100	26	Average
5220	98.03	95.65			32.42	7.32	37.36	100	26	Peak
5350	40.56	37.79	54	-13.44	32.55	7.4	37.18	100	26	Average
5350	52.84	50.07	74	-21.16	32.55	7.4	37.18	100	26	Peak

REMARKS: 5220MHz: Fundamental frequency.

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
5106	39.75	37.36	54	-14.25	32.32	7.35	37.28	106	340	Average
5106	51.35	48.96	74	-22.65	32.32	7.35	37.28	106	340	Peak
5240	86.73	84.28			32.43	7.34	37.32	106	340	Average
5240	96.58	94.13			32.43	7.34	37.32	106	340	Peak
5366	40.79	38	54	-13.21	32.57	7.4	37.18	106	340	Average
5366	53.1	50.31	74	-20.9	32.57	7.4	37.18	106	340	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	39.67	37.31	54	-14.33	32.35	7.33	37.32	100	26	Average
5150	52.53	50.17	74	-21.47	32.35	7.33	37.32	100	26	Peak
5240	88.42	85.97			32.43	7.34	37.32	100	26	Average
5240	98.02	95.57			32.43	7.34	37.32	100	26	Peak
5356	40.85	38.08	54	-13.15	32.55	7.4	37.18	100	26	Average
5356	53.77	51	74	-20.23	32.55	7.4	37.18	100	26	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	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
5078	39.59	37.28	54	-14.41	32.28	7.3	37.27	105	149	Average
5078	51.16	48.85	74	-22.84	32.28	7.3	37.27	105	149	Peak
5260	88.54	85.98			32.47	7.36	37.27	105	149	Average
5260	98.19	95.63			32.47	7.36	37.27	105	149	Peak
5348	40.5	37.73	54	-13.5	32.55	7.4	37.18	105	149	Average
5348	53.18	50.41	74	-20.82	32.55	7.4	37.18	105	149	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
5128	39.6	37.23	54	-14.4	32.33	7.34	37.3	100	43	Average
5128	51.98	49.61	74	-22.02	32.33	7.34	37.3	100	43	Peak
5260	90.69	88.13			32.47	7.36	37.27	100	43	Average
5260	100.65	98.09			32.47	7.36	37.27	100	43	Peak
5348	40.74	37.97	54	-13.26	32.55	7.4	37.18	100	43	Average
5348	54.8	52.03	74	-19.2	32.55	7.4	37.18	100	43	Peak

REMARKS: 5260MHz: Fundamental frequency.

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
5140	39.71	37.32	54	-14.29	32.35	7.34	37.3	100	349	Average
5140	51.81	49.42	74	-22.19	32.35	7.34	37.3	100	349	Peak
5300	88.77	86.06			32.5	7.4	37.19	100	349	Average
5300	98.47	95.76			32.5	7.4	37.19	100	349	Peak
5382	42.87	40.07	54	-11.13	32.58	7.4	37.18	100	349	Average
5382	56.28	53.48	74	-17.72	32.58	7.4	37.18	100	349	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	39.74	37.37	54	-14.26	32.3	7.35	37.28	100	5	Average
5098	51.28	48.91	74	-22.72	32.3	7.35	37.28	100	5	Peak
5300	91.44	88.73			32.5	7.4	37.19	100	5	Average
5300	101.4	98.69			32.5	7.4	37.19	100	5	Peak
5374	44.42	41.63	54	-9.58	32.57	7.4	37.18	100	5	Average
5374	55.28	52.49	74	-18.72	32.57	7.4	37.18	100	5	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	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
5108	39.78	37.39	54	-14.22	32.32	7.35	37.28	103	161	Average
5108	51.84	49.45	74	-22.16	32.32	7.35	37.28	103	161	Peak
5320	89.02	86.29			32.52	7.4	37.19	103	161	Average
5320	98.57	95.84			32.52	7.4	37.19	103	161	Peak
5408	42.7	39.88	54	-11.3	32.6	7.4	37.18	103	161	Average
5408	55.49	52.67	74	-18.51	32.6	7.4	37.18	103	161	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
5094	39.55	37.18	54	-14.45	32.3	7.35	37.28	100	2	Average
5094	52.88	50.51	74	-21.12	32.3	7.35	37.28	100	2	Peak
5320	90.96	88.23			32.52	7.4	37.19	100	2	Average
5320	100.95	98.22			32.52	7.4	37.19	100	2	Peak
5354	43.63	40.86	54	-10.37	32.55	7.4	37.18	100	2	Average
5354	57.4	54.63	74	-16.6	32.55	7.4	37.18	100	2	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	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
5458	41.8	38.7	54	-12.2	32.65	7.53	37.08	100	2	Average
5458	53.2	50.1	74	-20.8	32.65	7.53	37.08	100	2	Peak
5470	56.98	53.86	68.3	-11.32	32.67	7.53	37.08	100	2	Peak
5500	88.78	85.52			32.7	7.59	37.03	100	2	Average
5500	98.48	95.22			32.7	7.59	37.03	100	2	Peak
5725	51.91	48.66	68.3	-16.39	32.97	7.71	37.43	100	2	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	40.38	37.39	54	-13.62	32.65	7.47	37.13	100	216	Average
5446	52.95	49.96	74	-21.05	32.65	7.47	37.13	100	216	Peak
5470	52.03	48.91	68.3	-16.27	32.67	7.53	37.08	100	216	Peak
5500	83.39	80.13			32.7	7.59	37.03	100	216	Average
5500	93.11	89.85			32.7	7.59	37.03	100	216	Peak
5725	52.45	49.2	68.3	-15.85	32.97	7.71	37.43	100	216	Peak

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

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
5456	40.56	37.46	54	-12.2	32.65	7.53	37.08	100	351	Average
5456	51.9	48.8	74	-20.8	32.65	7.53	37.08	100	351	Peak
5470	49.99	46.87	68.3	-18.31	32.67	7.53	37.08	100	351	Peak
5580	88.64	85.45			32.78	7.57	37.16	100	351	Average
5580	98.43	95.24			32.78	7.57	37.16	100	351	Peak
5725	51.15	47.9	68.3	-17.15	32.97	7.71	37.43	100	351	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
5424	40.23	37.39	54	-13.77	32.62	7.4	37.18	103	289	Average
5424	51.97	49.13	74	-22.03	32.62	7.4	37.18	103	289	Peak
5470	50.87	47.75	68.3	-17.43	32.67	7.53	37.08	103	289	Peak
5580	83.31	80.12			32.78	7.57	37.16	103	289	Average
5580	93.26	90.07			32.78	7.57	37.16	103	289	Peak
5725	51.58	48.33	68.3	-16.72	32.97	7.71	37.43	103	289	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	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
5412	40.27	37.43	54	-13.73	32.62	7.4	37.18	105	304	Average
5412	52.57	49.73	74	-21.43	32.62	7.4	37.18	105	304	Peak
5470	50.69	47.57	74	-23.31	32.67	7.53	37.08	105	304	Peak
5700	89.03	85.81			32.93	7.69	37.4	105	304	Average
5700	98.59	95.37			32.93	7.69	37.4	105	304	Peak
5725	55.53	52.28	74	-18.47	32.97	7.71	37.43	105	304	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
5350	40.26	37.49	54	-13.74	32.55	7.4	37.18	100	224	Average
5350	52.73	49.96	74	-21.27	32.55	7.4	37.18	100	224	Peak
5470	51.37	48.25	74	-22.63	32.67	7.53	37.08	100	224	Peak
5700	85.32	82.1			32.93	7.69	37.4	100	224	Average
5700	95.13	91.91			32.93	7.69	37.4	100	224	Peak
5725	57.53	54.28	74	-16.47	32.97	7.71	37.43	100	224	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
5150	40.31	37.95	54	-13.69	32.35	7.33	37.32	100	31	Average
5150	49.46	47.1	74	-24.54	32.35	7.33	37.32	100	31	Peak
5180	85.78	83.42			32.38	7.32	37.34	100	31	Average
5180	94.79	92.43			32.38	7.32	37.34	100	31	Peak
5350	40.52	37.75	54	-13.48	32.55	7.4	37.18	100	31	Average
5350	49.73	46.96	74	-24.27	32.55	7.4	37.18	100	31	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	40.89	38.53	54	-13.11	32.35	7.33	37.32	100	6	Average
5150	52.78	50.42	74	-21.22	32.35	7.33	37.32	100	6	Peak
5180	90.86	88.5			32.38	7.32	37.34	100	6	Average
5180	100.01	97.65			32.38	7.32	37.34	100	6	Peak
5350	40.91	38.14	54	-13.09	32.55	7.4	37.18	100	6	Average
5350	50.98	48.21	74	-23.02	32.55	7.4	37.18	100	6	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	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	40.64	38.28	54	-13.36	32.35	7.33	37.32	100	31	Average
5150	51.39	49.03	74	-22.61	32.35	7.33	37.32	100	31	Peak
5220	86.36	83.98			32.42	7.32	37.36	100	31	Average
5220	96.23	93.85			32.42	7.32	37.36	100	31	Peak
5350	41.49	38.72	54	-12.51	32.55	7.4	37.18	100	31	Average
5350	52.29	49.52	74	-21.71	32.55	7.4	37.18	100	31	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	40.46	38.1	54	-13.54	32.35	7.33	37.32	100	5	Average
5150	51.79	49.43	74	-22.21	32.35	7.33	37.32	100	5	Peak
5220	88.56	86.18			32.42	7.32	37.36	100	5	Average
5220	97.58	95.2			32.42	7.32	37.36	100	5	Peak
5350	40.81	38.04	54	-13.19	32.55	7.4	37.18	100	5	Average
5350	52.03	49.26	74	-21.97	32.55	7.4	37.18	100	5	Peak

REMARKS: 5220MHz: Fundamental frequency.

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	40.52	38.16	54	-13.48	32.35	7.33	37.32	100	32	Average
5150	49.84	47.48	74	-24.16	32.35	7.33	37.32	100	32	Peak
5240	86.18	83.73			32.43	7.34	37.32	100	32	Average
5240	95.38	92.93			32.43	7.34	37.32	100	32	Peak
5350	40.99	38.22	54	-13.01	32.55	7.4	37.18	100	32	Average
5350	51.7	48.93	74	-22.3	32.55	7.4	37.18	100	32	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	40.91	38.55	54	-13.09	32.35	7.33	37.32	100	25	Average
5150	49.15	46.79	74	-24.85	32.35	7.33	37.32	100	25	Peak
5240	89.53	87.08			32.43	7.34	37.32	100	25	Average
5240	98.62	96.17			32.43	7.34	37.32	100	25	Peak
5350	41.1	38.33	54	-12.9	32.55	7.4	37.18	100	25	Average
5350	50.54	47.77	74	-23.46	32.55	7.4	37.18	100	25	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	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	40.76	38.4	54	-13.24	32.35	7.33	37.32	100	333	Average
5150	51.2	48.84	74	-22.8	32.35	7.33	37.32	100	333	Peak
5260	88	85.44			32.47	7.36	37.27	100	333	Average
5260	97.1	94.54			32.47	7.36	37.27	100	333	Peak
5350	40.88	38.11	54	-13.12	32.55	7.4	37.18	100	333	Average
5350	50.26	47.49	74	-23.74	32.55	7.4	37.18	100	333	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	40.74	38.38	54	-13.26	32.35	7.33	37.32	100	26	Average
5150	49.77	47.41	74	-24.23	32.35	7.33	37.32	100	26	Peak
5260	91.77	89.21			32.47	7.36	37.27	100	26	Average
5260	101.13	98.57			32.47	7.36	37.27	100	26	Peak
5350	41.19	38.42	54	-12.81	32.55	7.4	37.18	100	26	Average
5350	52.41	49.64	74	-21.59	32.55	7.4	37.18	100	26	Peak

REMARKS: 5260MHz: Fundamental frequency.

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	40.36	38	54	-13.64	32.35	7.33	37.32	100	162	Average
5150	49.81	47.45	74	-24.19	32.35	7.33	37.32	100	162	Peak
5300	87.52	84.81			32.5	7.4	37.19	100	162	Average
5300	96.78	94.07			32.5	7.4	37.19	100	162	Peak
5374	42.55	39.76	54	-11.45	32.57	7.4	37.18	100	162	Average
5374	54.54	51.75	74	-19.46	32.57	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	40.61	38.25	54	-13.39	32.35	7.33	37.32	100	25	Average
5150	50.17	47.81	74	-23.83	32.35	7.33	37.32	100	25	Peak
5300	91.68	88.97			32.5	7.4	37.19	100	25	Average
5300	101.18	98.47			32.5	7.4	37.19	100	25	Peak
5380	43.94	41.14	54	-10.06	32.58	7.4	37.18	100	25	Average
5380	55.73	52.93	74	-18.27	32.58	7.4	37.18	100	25	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	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	40.4	38.04	54	-13.6	32.35	7.33	37.32	100	347	Average
5150	51.08	48.72	74	-22.92	32.35	7.33	37.32	100	347	Peak
5320	88.43	85.7			32.52	7.4	37.19	100	347	Average
5320	97.67	94.94			32.52	7.4	37.19	100	347	Peak
5350	42.89	40.12	54	-11.11	32.55	7.4	37.18	100	347	Average
5350	54.22	51.45	74	-19.78	32.55	7.4	37.18	100	347	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	40.71	38.35	54	-13.29	32.35	7.33	37.32	100	27	Average
5150	50.66	48.3	74	-23.34	32.35	7.33	37.32	100	27	Peak
5320	92.86	90.13			32.52	7.4	37.19	100	27	Average
5320	101.94	99.21			32.52	7.4	37.19	100	27	Peak
5350	44.32	41.55	54	-9.68	32.55	7.4	37.18	100	27	Average
5350	56.2	53.43	74	-17.8	32.55	7.4	37.18	100	27	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	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	41.24	38.14	54	-12.2	32.65	7.53	37.08	100	0	Average
5460	49.77	46.67	74	-20.8	32.65	7.53	37.08	100	0	Peak
5470	52.9	49.78	68.3	-15.4	32.67	7.53	37.08	100	0	Peak
5500	89.65	86.39			32.7	7.59	37.03	100	0	Average
5500	98.86	95.6			32.7	7.59	37.03	100	0	Peak
5725	52	48.75	68.3	-16.3	32.97	7.71	37.43	100	0	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	41.02	37.92	54	-12.98	32.65	7.53	37.08	100	324	Average
5460	51.29	48.19	74	-22.71	32.65	7.53	37.08	100	324	Peak
5470	52.27	49.15	68.3	-16.03	32.67	7.53	37.08	100	324	Peak
5500	86.93	83.67			32.7	7.59	37.03	100	324	Average
5500	96.03	92.77			32.7	7.59	37.03	100	324	Peak
5725	51.42	48.17	68.3	-16.88	32.97	7.71	37.43	100	324	Peak

REMARKS:

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

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	41.24	38.14	54	-12.2	32.65	7.53	37.08	100	0	Average
5460	51.33	48.23	74	-20.8	32.65	7.53	37.08	100	0	Peak
5470	49.38	46.26	68.3	-18.92	32.67	7.53	37.08	100	0	Peak
5580	89.3	86.11			32.78	7.57	37.16	100	0	Average
5580	98.43	95.24			32.78	7.57	37.16	100	0	Peak
5725	51.91	48.66	68.3	-16.39	32.97	7.71	37.43	100	0	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	41.03	37.93	54	-12.97	32.65	7.53	37.08	100	69	Average
5460	51.18	48.08	74	-22.82	32.65	7.53	37.08	100	69	Peak
5470	50.95	47.83	68.3	-17.35	32.67	7.53	37.08	100	69	Peak
5580	86.71	83.52			32.78	7.57	37.16	100	69	Average
5580	96.16	92.97			32.78	7.57	37.16	100	69	Peak
5725	52.14	48.89	68.3	-16.16	32.97	7.71	37.43	100	69	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	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	41.14	38.04	54	-12.2	32.65	7.53	37.08	100	0	Average
5460	51.24	48.14	74	-20.8	32.65	7.53	37.08	100	0	Peak
5470	49.45	46.33	68.3	-18.85	32.67	7.53	37.08	100	0	Peak
5700	88.03	84.81			32.93	7.69	37.4	100	0	Average
5700	97.58	94.36			32.93	7.69	37.4	100	0	Peak
5725	58.22	54.97	68.3	-10.08	32.97	7.71	37.43	100	0	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	40.93	37.83	54	-13.07	32.65	7.53	37.08	100	57	Average
5460	50.79	47.69	74	-23.21	32.65	7.53	37.08	100	57	Peak
5470	51.12	48	68.3	-17.18	32.67	7.53	37.08	100	57	Peak
5700	86.96	83.74			32.93	7.69	37.4	100	57	Average
5700	96.64	93.42			32.93	7.69	37.4	100	57	Peak
5725	63.54	60.29	68.3	-4.76	32.97	7.71	37.43	100	57	Peak

REMARKS:
1. 5700MHz: Fundamental frequency.
2. 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	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	37	Average
5150	54.02	52.14	74	-19.98	31.87	7.33	37.32	100	37	Peak
5190	82.99	81.13			31.88	7.32	37.34	100	37	Average
5190	92.32	90.46			31.88	7.32	37.34	100	37	Peak
5350	40.98	38.79	54	-13.02	31.97	7.4	37.18	100	37	Average
5350	52.82	50.63	74	-21.18	31.97	7.4	37.18	100	37	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
5142	42.34	40.43	54	-11.66	31.87	7.34	37.3	100	28	Average
5142	56.19	54.28	74	-17.81	31.87	7.34	37.3	100	28	Peak
5190	85.91	84.05			31.88	7.32	37.34	100	28	Average
5190	94.85	92.99			31.88	7.32	37.34	100	28	Peak
5350	41.18	38.99	54	-12.82	31.97	7.4	37.18	100	28	Average
5350	50.92	48.73	74	-23.08	31.97	7.4	37.18	100	28	Peak

REMARKS: 5190MHz: Fundamental frequency.

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
5090	39.68	37.81	54	-14.32	31.84	7.3	37.27	105	336	Average
5090	51.48	49.61	74	-22.52	31.84	7.3	37.27	105	336	Peak
5230	83.24	81.31			31.91	7.34	37.32	105	336	Average
5230	92.27	90.34			31.91	7.34	37.32	105	336	Peak
5444	40.7	38.35	54	-13.3	32.01	7.47	37.13	105	336	Average
5444	52.24	49.89	74	-21.76	32.01	7.47	37.13	105	336	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	39.81	37.91	54	-14.19	31.86	7.34	37.3	100	27	Average
5136	52.4	50.5	74	-21.6	31.86	7.34	37.3	100	27	Peak
5230	85.8	83.87			31.91	7.34	37.32	100	27	Average
5230	95.81	93.88			31.91	7.34	37.32	100	27	Peak
5440	40.73	38.38	54	-13.27	32.01	7.47	37.13	100	27	Average
5440	52.23	49.88	74	-21.77	32.01	7.47	37.13	100	27	Peak

REMARKS: 5230MHz: Fundamental frequency.

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
5094	40.33	37.96	54	-13.67	32.3	7.35	37.28	103	151	Average
5094	52.12	49.75	74	-21.88	32.3	7.35	37.28	103	151	Peak
5270	83.51	80.95			32.47	7.36	37.27	103	151	Average
5270	92.81	90.25			32.47	7.36	37.27	103	151	Peak
5352	41.11	38.34	54	-12.89	32.55	7.4	37.18	103	151	Average
5352	53.58	50.81	74	-20.42	32.55	7.4	37.18	103	151	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
5146	40.5	38.14	54	-13.5	32.35	7.33	37.32	100	37	Average
5146	52.02	49.66	74	-21.98	32.35	7.33	37.32	100	37	Peak
5270	86.54	83.98			32.47	7.36	37.27	100	37	Average
5270	95.25	92.69			32.47	7.36	37.27	100	37	Peak
5360	41.3	38.53	54	-12.7	32.55	7.4	37.18	100	37	Average
5360	52.72	49.95	74	-21.28	32.55	7.4	37.18	100	37	Peak

REMARKS: 5270MHz: Fundamental frequency.

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
5054	40.18	37.93	54	-13.82	32.25	7.25	37.25	104	342	Average
5054	51.89	49.64	74	-22.11	32.25	7.25	37.25	104	342	Peak
5310	85.69	82.96			32.52	7.4	37.19	104	342	Average
5310	94.98	92.25			32.52	7.4	37.19	104	342	Peak
5350	45.34	42.57	54	-8.66	32.55	7.4	37.18	104	342	Average
5350	64.58	61.81	74	-9.42	32.55	7.4	37.18	104	342	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
5088	40.44	38.13	54	-13.56	32.28	7.3	37.27	100	27	Average
5088	52.3	49.99	74	-21.7	32.28	7.3	37.27	100	27	Peak
5310	87.08	84.35			32.52	7.4	37.19	100	27	Average
5310	97.39	94.66			32.52	7.4	37.19	100	27	Peak
5350	46.36	43.59	54	-7.64	32.55	7.4	37.18	100	27	Average
5350	64.19	61.42	74	-9.81	32.55	7.4	37.18	100	27	Peak

REMARKS: 5310MHz: Fundamental frequency.

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
5450	41.48	39.02	54	-12.2	32.01	7.53	37.08	100	29	Average
5450	52.98	50.52	74	-20.8	32.01	7.53	37.08	100	29	Peak
5470	56.04	53.57	68.3	-12.26	32.02	7.53	37.08	100	29	Peak
5510	80.51	77.94			32.04	7.59	37.06	100	29	Average
5510	90.47	87.9			32.04	7.59	37.06	100	29	Peak
5725	51.32	48.68	68.3	-16.98	32.36	7.71	37.43	100	29	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	41.55	39.2	54	-12.45	32.01	7.47	37.13	100	19	Average
5436	53.91	51.56	74	-20.09	32.01	7.47	37.13	100	19	Peak
5470	55.61	53.14	68.3	-12.69	32.02	7.53	37.08	100	19	Peak
5510	81.6	79.03			32.04	7.59	37.06	100	19	Average
5510	92.01	89.44			32.04	7.59	37.06	100	19	Peak
5725	52.25	49.61	68.3	-16.05	32.36	7.71	37.43	100	19	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	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	41.5	39.04	54	-12.2	32.01	7.53	37.08	100	0	Average
5460	50.61	48.15	74	-20.8	32.01	7.53	37.08	100	0	Peak
5470	50.69	48.22	68.3	-17.61	32.02	7.53	37.08	100	0	Peak
5550	81.97	79.37			32.11	7.58	37.09	100	0	Average
5550	91.13	88.53			32.11	7.58	37.09	100	0	Peak
5725	52.45	49.81	68.3	-15.85	32.36	7.71	37.43	100	0	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	41.2	36.35	54	-12.8	32.01	7.53	34.69	100	28	Average
5460	49.55	44.7	74	-24.45	32.01	7.53	34.69	100	28	Peak
5470	51.2	46.34	68.3	-17.1	32.02	7.53	34.69	100	28	Peak
5550	79.31	74.36			32.11	7.58	34.74	100	28	Average
5550	88.51	83.56			32.11	7.58	34.74	100	28	Peak
5725	51.46	46.16	68.3	-16.84	32.36	7.71	34.77	100	28	Peak

REMARKS:
1. 5550MHz: Fundamental frequency.
2. 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	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	41.5	39.04	54	-12.2	32.01	7.53	37.08	100	240	Average
5460	51.75	49.29	74	-20.8	32.01	7.53	37.08	100	240	Peak
5470	50.33	47.86	68.3	-17.97	32.02	7.53	37.08	100	240	Peak
5670	83.28	80.68			32.28	7.66	37.34	100	240	Average
5670	92.69	90.09			32.28	7.66	37.34	100	240	Peak
5725	53.64	51	68.3	-14.66	32.36	7.71	37.43	100	240	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	41.3	38.84	54	-12.7	32.01	7.53	37.08	100	216	Average
5460	51.56	49.1	74	-22.44	32.01	7.53	37.08	100	216	Peak
5470	51.33	48.86	68.3	-16.97	32.02	7.53	37.08	100	216	Peak
5670	78.86	76.26			32.28	7.66	37.34	100	216	Average
5670	88.57	85.97			32.28	7.66	37.34	100	216	Peak
5725	52.43	49.79	68.3	-15.87	32.36	7.71	37.43	100	216	Peak

REMARKS:
1. 5670MHz: Fundamental frequency.
2. 5470MHz & 5725MHz: Out of restricted band

802.11ac (80MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 42	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
5142	42.06	39.67	54	-11.94	32.35	7.34	37.3	109	33	Average
5142	53.61	51.22	74	-20.39	32.35	7.34	37.3	109	33	Peak
5210	79.35	76.97			32.42	7.32	37.36	109	33	Average
5210	89.15	86.77			32.42	7.32	37.36	109	33	Peak
5366	41.58	38.79	54	-12.42	32.57	7.4	37.18	109	33	Average
5366	52.47	49.68	74	-21.53	32.57	7.4	37.18	109	33	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
5142	43.5	41.11	54	-10.5	32.35	7.34	37.3	100	34	Average
5142	57.32	54.93	74	-16.68	32.35	7.34	37.3	100	34	Peak
5210	82.13	79.75			32.42	7.32	37.36	100	34	Average
5210	91.58	89.2			32.42	7.32	37.36	100	34	Peak
5422	41.49	38.65	54	-12.51	32.62	7.4	37.18	100	34	Average
5422	52.51	49.67	74	-21.49	32.62	7.4	37.18	100	34	Peak

REMARKS: 5210MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 58	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
5114	41.33	38.94	54	-12.67	32.32	7.35	37.28	106	35	Average
5114	51.57	49.18	74	-22.43	32.32	7.35	37.28	106	35	Peak
5290	80.29	77.66			32.48	7.38	37.23	106	35	Average
5290	91.05	88.42			32.48	7.38	37.23	106	35	Peak
5352	45.29	42.52	54	-8.71	32.55	7.4	37.18	106	35	Average
5352	59.33	56.56	74	-14.67	32.55	7.4	37.18	106	35	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
5064	41.36	39.09	54	-12.64	32.27	7.25	37.25	100	29	Average
5064	52.14	49.87	74	-21.86	32.27	7.25	37.25	100	29	Peak
5290	82.86	80.23			32.48	7.38	37.23	100	29	Average
5290	92.64	90.01			32.48	7.38	37.23	100	29	Peak
5354	46.27	43.5	54	-7.73	32.55	7.4	37.18	100	29	Average
5354	61.04	58.27	74	-12.96	32.55	7.4	37.18	100	29	Peak

REMARKS: 5290MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 106	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
5446	43.59	40.6	54	-12.2	32.65	7.47	37.13	100	346	Average
5446	55.2	52.21	74	-20.8	32.65	7.47	37.13	100	346	Peak
5470	53.55	50.43	68.3	-14.75	32.67	7.53	37.08	100	346	Peak
5530	79.07	75.86			32.72	7.58	37.09	100	346	Average
5530	88.92	85.71			32.72	7.58	37.09	100	346	Peak
5725	51.1	47.85	68.3	-17.2	32.97	7.71	37.43	100	346	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
5458	42.41	39.31	54	-11.59	32.65	7.53	37.08	122	4	Average
5458	53.91	50.81	74	-20.09	32.65	7.53	37.08	122	4	Peak
5470	55.21	52.09	68.3	-13.09	32.67	7.53	37.08	122	4	Peak
5530	78.27	75.06			32.72	7.58	37.09	122	4	Average
5530	87.66	84.45			32.72	7.58	37.09	122	4	Peak
5725	51.32	48.07	68.3	-16.98	32.97	7.71	37.43	122	4	Peak

REMARKS: 5530MHz: Fundamental frequency.

BELOW 1GHz WORST-CASE DATA：802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	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
42.42	29.66	46.46	40	-10.34	13.58	0.7	31.08	165	188	Peak
146.1	28.77	46.48	43.5	-14.73	12.58	1.33	31.62	132	185	Peak
219.27	24.9	44.73	46	-21.1	10.18	1.69	31.7	147	182	Peak
329.4	22.37	38.36	46	-23.63	13.66	2.16	31.81	135	166	Peak
631.1	23.87	32.83	46	-22.13	19.99	3.18	32.13	167	94	Peak
751.5	27.06	33.26	46	-18.94	21.55	3.58	31.33	115	233	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
30.27	33.73	52.32	40	-6.27	11.98	0.57	31.14	112	157	QP
42.42	37.87	54.67	40	-2.13	13.58	0.7	31.08	185	163	QP
69.69	34.21	54.36	40	-5.79	10.77	0.9	31.82	135	360	Peak
588.4	23.38	33.12	46	-22.62	19.34	3.06	32.14	149	130	Peak
703.2	25.01	32.49	46	-20.99	20.86	3.44	31.78	146	183	Peak
855.8	27.85	32.96	46	-18.15	22.94	3.84	31.89	110	193	Peak

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 TEST INSTRUMENTS

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

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

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

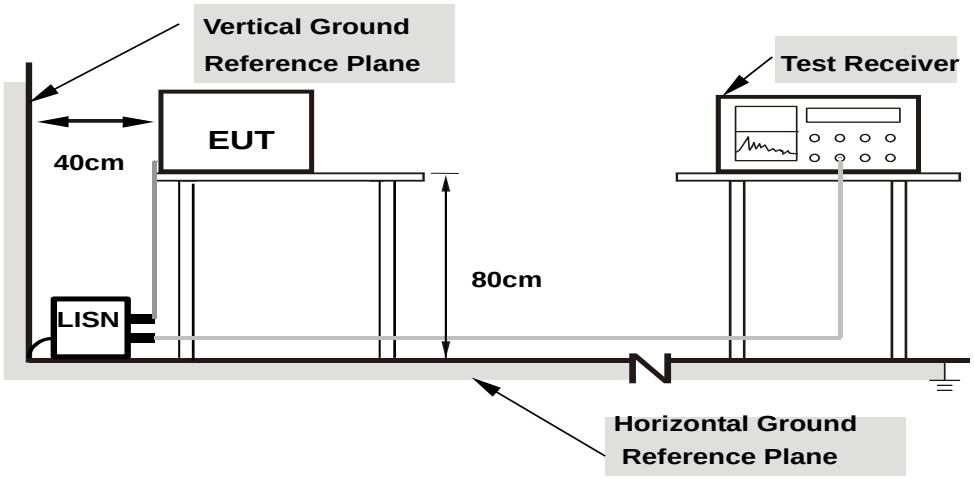
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

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

4.2.6 EUT OPERATING CONDITIONS

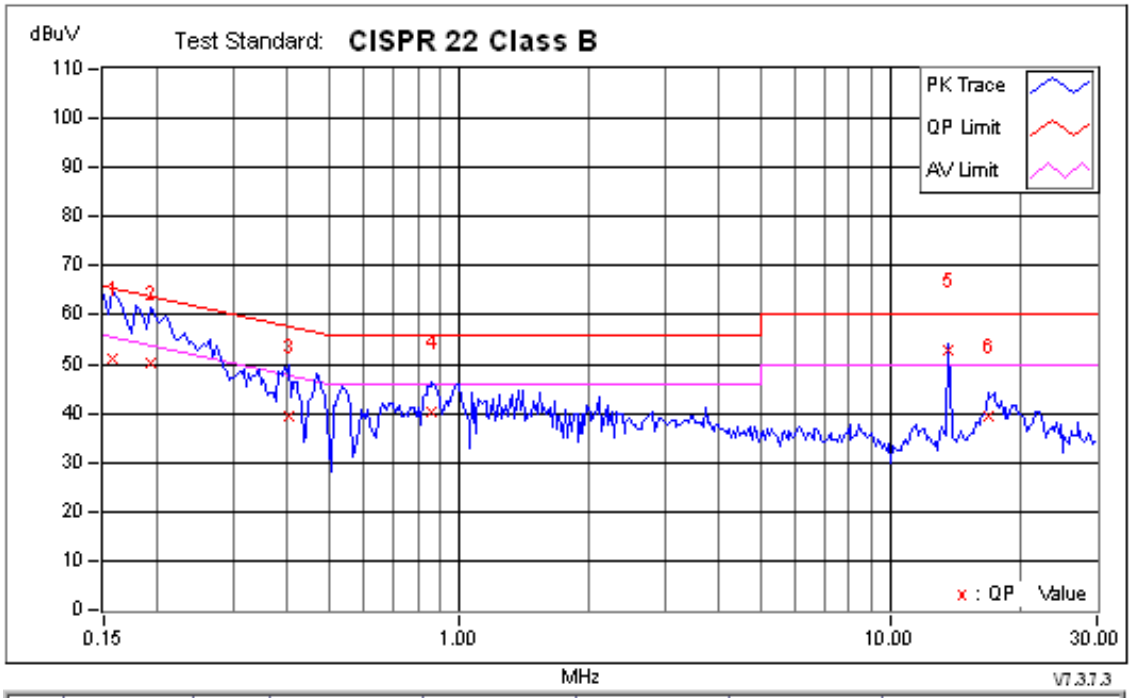
Same as 4.1.6.

4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA：

802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz

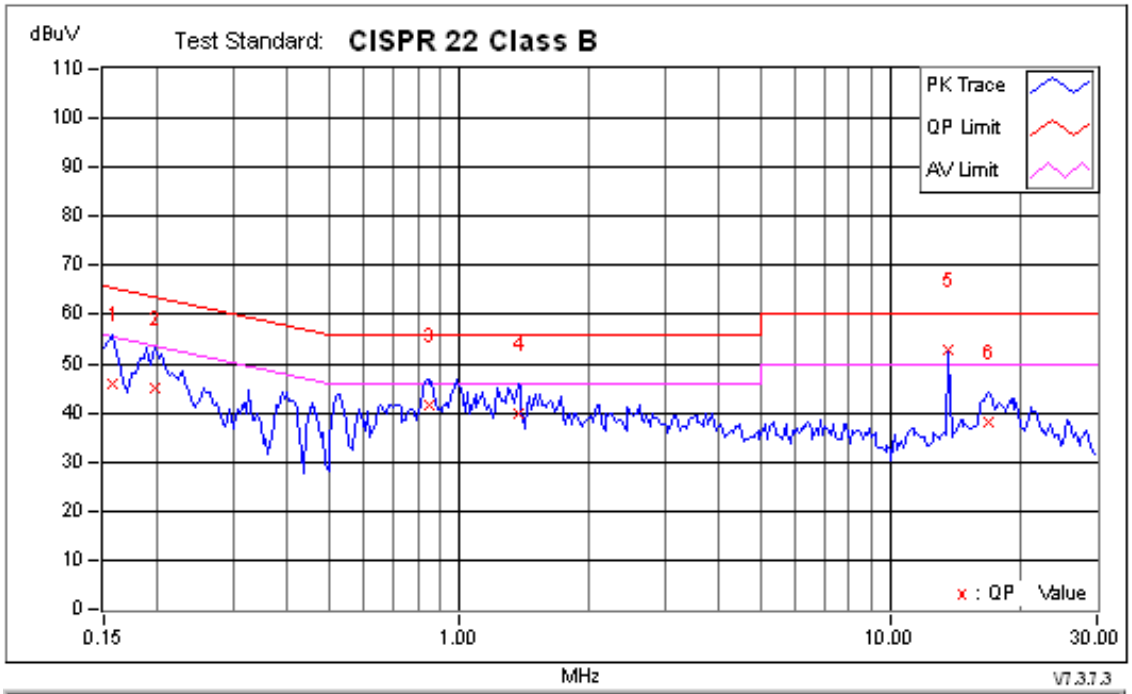


	Frequency	Corr. Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
No.	MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV	Notes
1	0.15781	0.17	51.05	35.71	51.22	35.88	65.58	55.58	-14.35	-19.69	
2	0.19297	0.17	50.19	37.81	50.36	37.98	63.91	53.91	-13.55	-15.93	
3	0.40391	0.21	39.26	30.52	39.47	30.73	57.77	47.77	-18.30	-17.04	
4	0.86484	0.25	40.21	28.76	40.46	29.01	56.00	46.00	-15.54	-16.99	
+5	13.56250	0.53	52.36	49.00	52.89	49.53	60.00	50.00	-7.11	-0.47	
6	16.82031	0.60	38.60	28.73	39.20	29.33	60.00	50.00	-20.80	-20.67	

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.

PHASE	Line 2	6dB BANDWIDTH	9kHz



	Frequency	Corr. Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
No.	MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV	Notes
1	0.15781	0.16	45.55	30.20	45.71	30.36	65.58	55.58	-19.87	-25.22	
2	0.19687	0.16	44.81	32.46	44.97	32.62	63.74	53.74	-18.77	-21.12	
3	0.84922	0.24	41.43	29.62	41.67	29.86	56.00	46.00	-14.33	-16.14	
4	1.36719	0.27	39.67	29.03	39.94	29.30	56.00	46.00	-16.06	-16.70	
+5	13.55859	0.59	52.27	49.13	52.86	49.72	60.00	50.00	-7.14	-0.28	
6	16.75781	0.68	37.22	28.75	37.90	29.43	60.00	50.00	-22.10	-20.57	

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.

4.3 PEAK TRANSMIT POWER MEASUREMENT

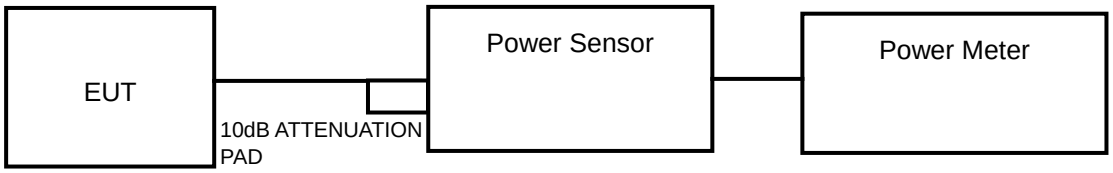
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

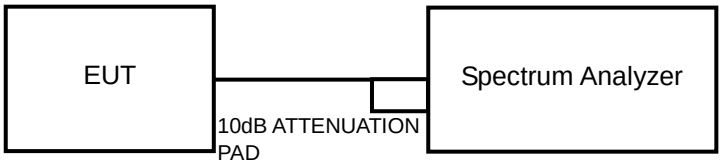
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

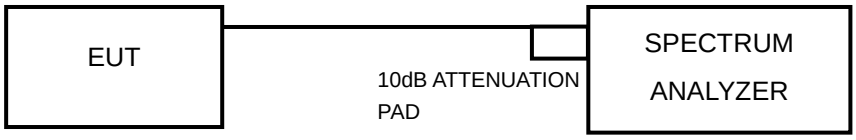
FOR POWER OUTPUT MEASUREMENT



or



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

<802.11a, 802.11n (20MHz), 802.11n (40MHz)>

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

<802.11 ac (80MHz)>

Method SA-1 is used to perform output power measurement, trigger and gating function of spectrum analyzer 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	27.861	14.45	17	PASS
44	5220	29.174	14.65	17	PASS
48	5240	29.923	14.76	17	PASS
52	5260	40.458	16.07	24	PASS
60	5300	41.305	16.16	24	PASS
64	5320	42.364	16.27	24	PASS
100	5500	40.365	16.06	24	PASS
116	5580	42.364	16.27	24	PASS
140	5700	43.451	16.38	24	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	27.227	14.35	17	PASS
44	5220	28.907	14.61	17	PASS
48	5240	29.992	14.77	17	PASS
52	5260	40.179	16.04	24	PASS
60	5300	41.783	16.21	24	PASS
64	5320	42.170	16.25	24	PASS
100	5500	40.644	16.09	24	PASS
116	5580	41.591	16.19	24	PASS
140	5700	43.053	16.34	24	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	24.717	13.93	17	PASS
46	5230	24.547	13.90	17	PASS
54	5270	26.303	14.20	24	PASS
62	5310	27.606	14.41	24	PASS
102	5510	22.284	13.48	24	PASS
110	5550	22.909	13.60	24	PASS
134	5670	23.442	13.70	24	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	23.121	13.64	17	PASS
58	5290	20.749	13.17	24	PASS
106	5530	19.011	12.79	24	PASS

26dB BANDWIDTH: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	20.97	PASS
44	5220	20.99	PASS
48	5240	20.97	PASS
52	5260	20.86	PASS
60	5300	20.96	PASS
64	5320	20.95	PASS
100	5500	21.03	PASS
116	5580	20.93	PASS
140	5700	20.90	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	21.56	PASS
44	5220	21.31	PASS
48	5240	21.20	PASS
52	5260	21.15	PASS
60	5300	21.26	PASS
64	5320	21.37	PASS
100	5500	21.42	PASS
116	5580	21.44	PASS
140	5700	21.93	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	41.44	PASS
46	5230	41.41	PASS
54	5270	41.54	PASS
62	5310	41.46	PASS
102	5510	41.55	PASS
110	5550	41.38	PASS
134	5670	41.65	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
42	5210	83.20	PASS
58	5290	83.20	PASS
106	5530	83.20	PASS

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.4.2 TEST SETUP

4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

<802.11a, 802.11n (20MHz), 802.11n (40MHz)>
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 ≥ 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)

<802.11ac (80MHz)>
Using method SA-1
1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3) Sweep time = 4second.
4) Perform a single sweep.

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	2.99	0.23	3.22	4	PASS
44	5220	3.15	0.23	3.38	4	PASS
48	5240	3.36	0.23	3.59	4	PASS
52	5260	4.55	0.23	4.78	11	PASS
60	5300	4.29	0.23	4.52	11	PASS
64	5320	4.31	0.23	4.54	11	PASS
100	5500	4.48	0.23	4.71	11	PASS
116	5580	4.29	0.23	4.52	11	PASS
140	5700	4.21	0.23	4.44	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	2.72	0.24	2.96	4	PASS
44	5220	2.90	0.24	3.14	4	PASS
48	5240	3.16	0.24	3.40	4	PASS
52	5260	4.19	0.24	4.43	11	PASS
60	5300	4.06	0.24	4.30	11	PASS
64	5320	4.18	0.24	4.42	11	PASS
100	5500	4.00	0.24	4.24	11	PASS
116	5580	3.85	0.24	4.09	11	PASS
140	5700	3.93	0.24	4.17	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	-1.23	0.58	-0.65	4	PASS
46	5230	-0.34	0.58	0.24	4	PASS
54	5270	-0.50	0.58	0.08	11	PASS
62	5310	-0.85	0.58	-0.27	11	PASS
102	5510	-1.75	0.58	-1.17	11	PASS
110	5550	-1.75	0.58	-1.17	11	PASS
134	5670	-1.92	0.58	-1.34	11	PASS

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

802.11ac (80MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
42	5210	-3.37	4	PASS
58	5290	-3.93	11	PASS
106	5530	-4.28	11	PASS

4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB.

4.5.2 TEST SETUP

4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

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

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITIONS

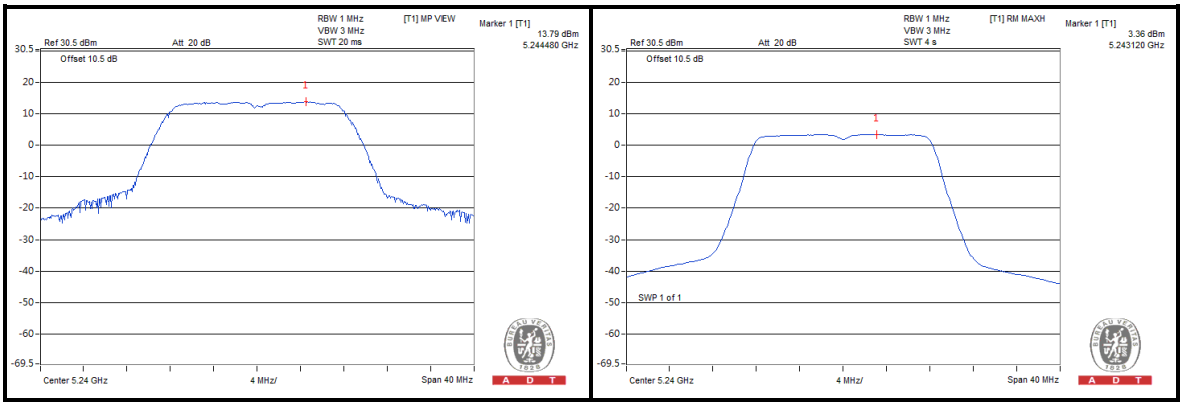
Same as 4.2.6

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	13.40	2.99	3.22	10.18	13	PASS
44	5220	13.54	3.15	3.38	10.16	13	PASS
48	5240	13.79	3.36	3.59	10.20	13	PASS
52	5260	13.44	4.55	4.78	8.66	13	PASS
60	5300	13.20	4.29	4.52	8.68	13	PASS
64	5320	13.19	4.31	4.54	8.65	13	PASS
100	5500	13.43	4.48	4.71	8.72	13	PASS
116	5580	13.10	4.29	4.52	8.58	13	PASS
140	5700	13.04	4.21	4.44	8.60	13	PASS

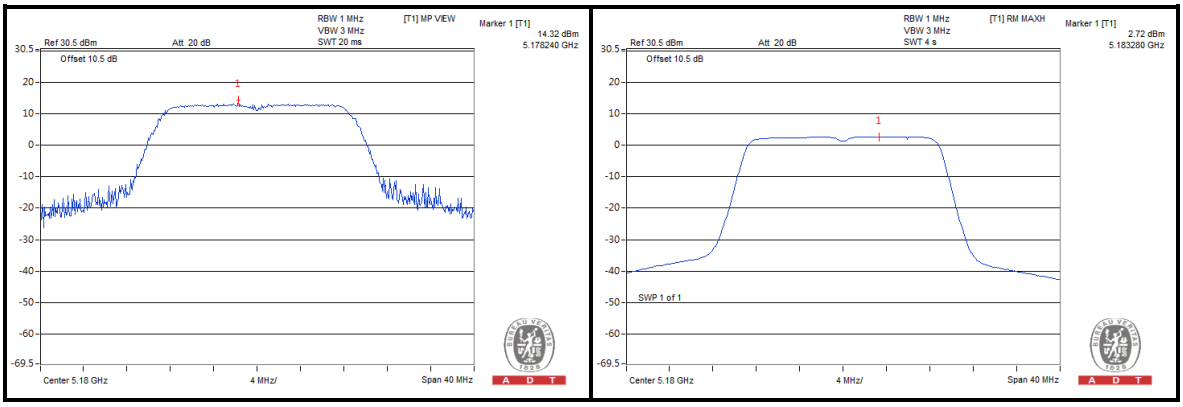
NOTE: Refer to section 3.3 for duty cycle spectrum plot.



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	14.32	2.72	2.96	11.36	13	PASS
44	5220	13.78	2.90	3.14	10.64	13	PASS
48	5240	13.67	3.16	3.40	10.27	13	PASS
52	5260	13.81	4.19	4.43	9.38	13	PASS
60	5300	13.56	4.06	4.30	9.26	13	PASS
64	5320	14.24	4.18	4.42	9.82	13	PASS
100	5500	14.20	4.00	4.24	9.96	13	PASS
116	5580	13.43	3.85	4.09	9.34	13	PASS
140	5700	13.28	3.93	4.17	9.11	13	PASS

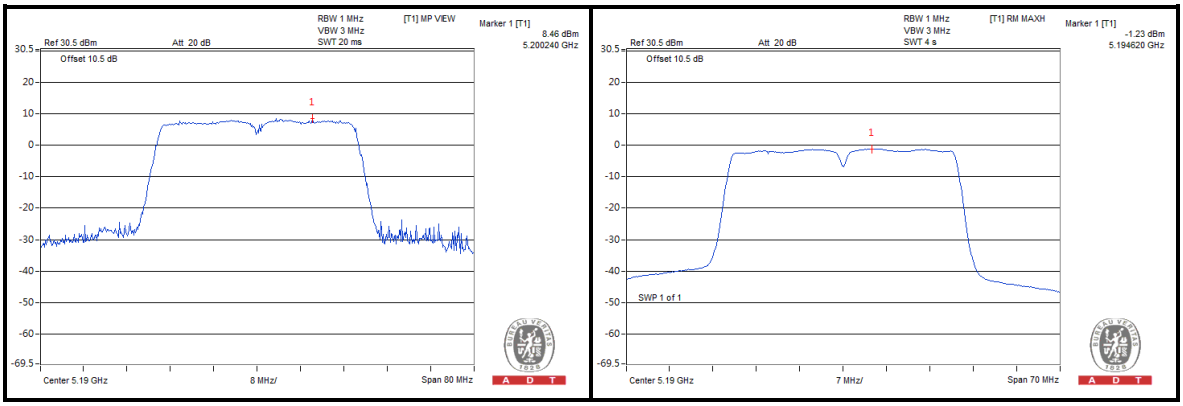
NOTE: Refer to section 3.3 for duty cycle spectrum plot.



802.11n (40MHz)

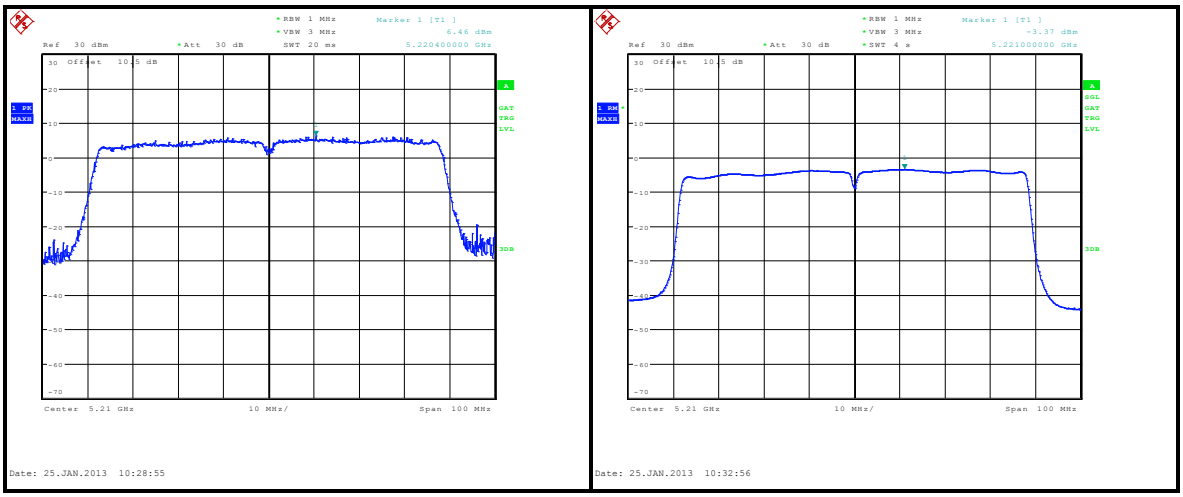
CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
38	5190	8.46	-1.23	-0.65	9.11	13	PASS
46	5230	8.50	-0.34	0.24	8.26	13	PASS
54	5270	8.39	-0.50	0.08	8.31	13	PASS
62	5310	8.72	-0.85	-0.27	8.99	13	PASS
102	5510	7.40	-1.75	-1.17	8.57	13	PASS
110	5550	7.35	-1.75	-1.17	8.52	13	PASS
134	5670	7.49	-1.92	-1.34	8.83	13	PASS

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



802.11ac (80MHz)

CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
42	5210	6.46	-3.37	9.83	13	PASS
58	5290	5.89	-3.93	9.82	13	PASS
106	5530	5.45	-4.28	9.73	13	PASS

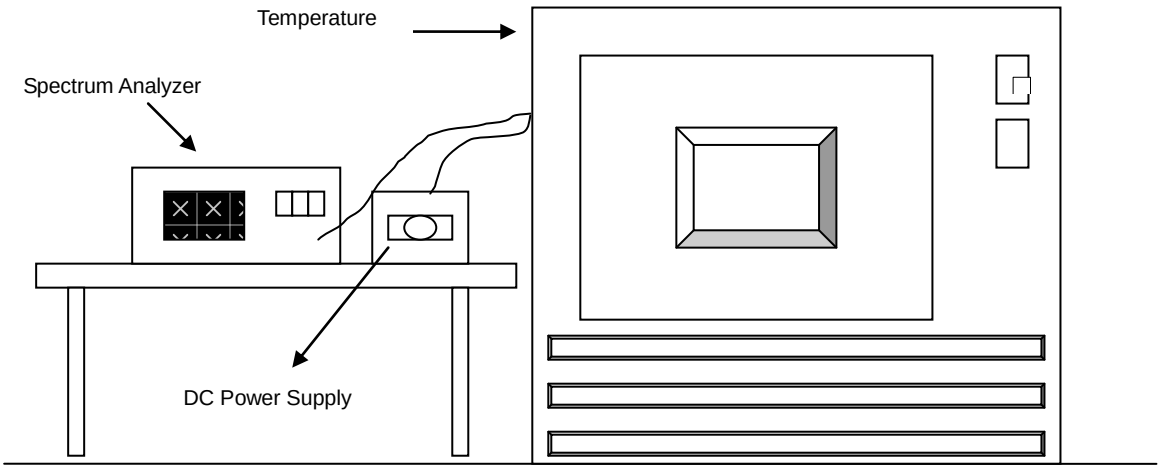


4.6 FREQUENCY STABILITY

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

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5300MHz									
TEMP. (℃)	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)
55	3.8	5320.012755	2.398	5320.013297	2.499	5320.012800	2.406	5320.013040	2.451
50	3.8	5320.013509	2.539	5320.013206	2.482	5320.013342	2.508	5320.013546	2.546
40	3.8	5320.015015	2.822	5320.014647	2.753	5320.014980	2.816	5320.015053	2.830
30	3.8	5320.015902	2.989	5320.015996	3.007	5320.016497	3.101	5320.015835	2.977
20	3.8	5320.016297	3.063	5320.016287	3.061	5320.015949	2.998	5320.016284	3.061
10	3.8	5320.016032	3.014	5320.015975	3.003	5320.016164	3.038	5320.016029	3.013
0	3.8	5320.014664	2.756	5320.014278	2.684	5320.014226	2.674	5320.014648	2.753
-10	3.8	5320.013015	2.446	5320.013008	2.445	5320.013142	2.470	5320.012878	2.421

FREQUEMCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5300MHz									
TEMP. (℃)	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	5320.015579	2.928	5320.015226	2.862	5320.015118	2.842	5320.015060	2.831
	3.8	5320.016297	3.063	5320.016287	3.061	5320.015949	2.998	5320.016284	3.061
	4.2	5320.017717	3.330	5320.017746	3.336	5320.017421	3.275	5320.017754	3.337

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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Web Site: 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---