FCC TEST REPORT (15.407)

REPORT NO.:	RF131023C31-1
MODEL NO.:	0P6B700
FCC ID:	NM80P6B700
RECEIVED:	Oct. 23, 2013
TESTED:	Dec. 20, 2013 ~ Jan. 03, 2014
ISSUED:	Jan. 14, 2014

APPLICANT:	HTC Corporation
ADDRESS:	No. 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., New Taipei City, Taiwan (R.O.C)
TEST LOCATION:	No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF131023C31-1	Original release	Jan. 14, 2014

1. CERTIFICATION

PRODUCT:	Smartphone
MODEL NO.:	0P6B700
BRAND:	HTC
APPLICANT:	HTC Corporation
TESTED:	Dec. 20, 2013 ~ Jan. 03, 2014
TEST SAMPLE:	PRODUCTION UNIT
STANDARDS:	**FCC Part 15, Subpart E (Section 15.407)**
	ANSI C63.10-2009

The above equipment (model: 0P6B700) 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. 14, 2014

Ivonne Wu / Supervisor

APPROVED BY : _____ **, DATE :** Jan. 14, 2014

Sam Chen / Senior Project 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 -17.64dB at 13.55859MHz.
15.407(b/1/2/3)(b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.78dB at 5725.00MHz.
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.	0P6B700
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 135Mbps 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	42.855mW for 5180 ~ 5240MHz 48.641mW for 5260 ~ 5320MHz 49.431mW for 5500 ~ 5700MHz
ANTENNA TYPE	PIFA antenna with -3.5dBi gain (5180 ~ 5240MHz) PIFA antenna with -3dBi gain (5260 ~ 5320MHz) PIFA antenna with -3dBi 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. There're 2 configurations for the EUT listed as below.

   Main Sample (A): Battery 1 + LCD Panel 1

   2nd Sample (B): Battery 2 + LCD Panel 2

   ✧Only the worst test data was presented in the report.
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	5210 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

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	
A	√	√	√	√	Main sample
B	√	√	-	-	2nd sample

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

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

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane** for 5180-5240MHz, **X-plane** for 5260-5320MHz, and **Z-plane** for 5500-5700MHz.

RADIATED EMISSION TEST (ABOVE 1GHz):

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 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
	802.11ac (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	6.5
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
	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	6.5
	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
	802.11ac (80MHz)		106	106	OFDM	BPSK	V0
B	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	6.5

RADIATED EMISSION TEST (BELOW 1GHz):

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11n (20MHz)	5180-5240	36 to 48	36	OFDM	BPSK	6.5
		5260-5320	52 to 64	64	OFDM	BPSK	6.5
		5500-5700	100 to 140	140	OFDM	BPSK	6.5
B	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	6.5

POWER LINE CONDUCTED EMISSION TEST:

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

BANDEDGE MEASUREMENT:

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 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
	802.11ac (80MHz)		42	42	OFDM	BPSK	V0
	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
	802.11ac (80MHz)		58	58	OFDM	BPSK	V0
	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
	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.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 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
	802.11ac (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	6.5
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
	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	6.5
	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
	802.11ac (80MHz)		106	106	OFDM	BPSK	V0

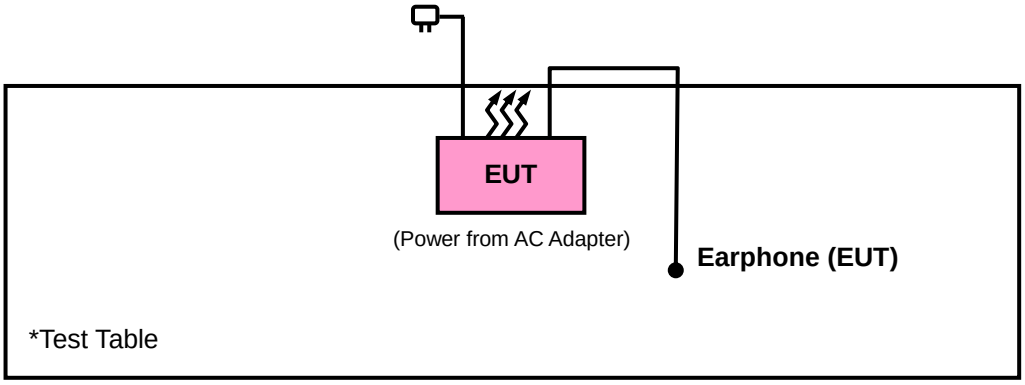
TEST CONDITION:

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	Johnson Liao
APCM	25deg. C, 65%RH	120Vac, 60Hz	Demon Lin

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 TEST SIGNAL

MODULATION TYPE: BPSK

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

802.11a: Duty cycle = 1.364/1.380 = 0.988

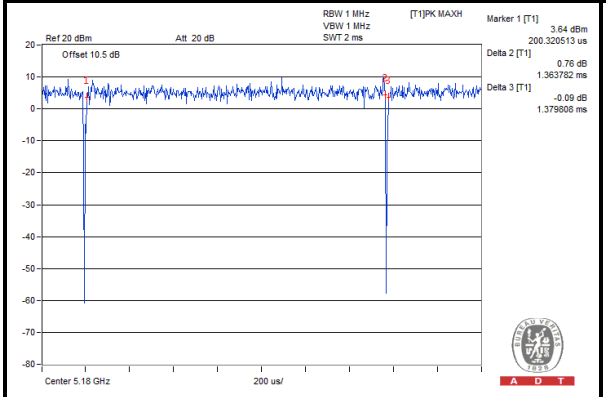
802.11n (20MHz): Duty cycle = 1.270/1.285 = 0.988

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

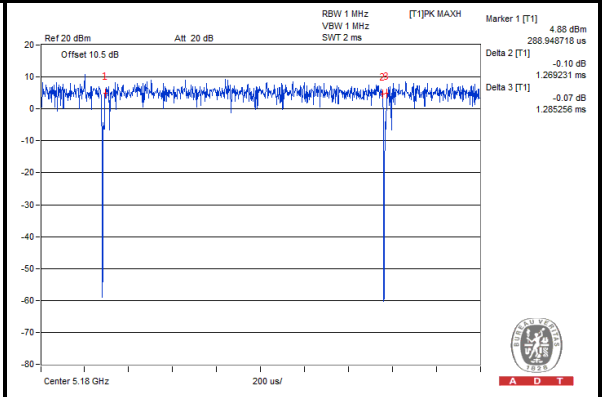
802.11n (40MHz): Duty cycle = 600.96/833.33 = 0.721, Duty factor = 10 * log(1/0.721) = 1.42

802.11ac (80MHz): Duty cycle = 217.95/451.92 = 0.482, Duty factor = 10 * log(1/0.482) = 3.17

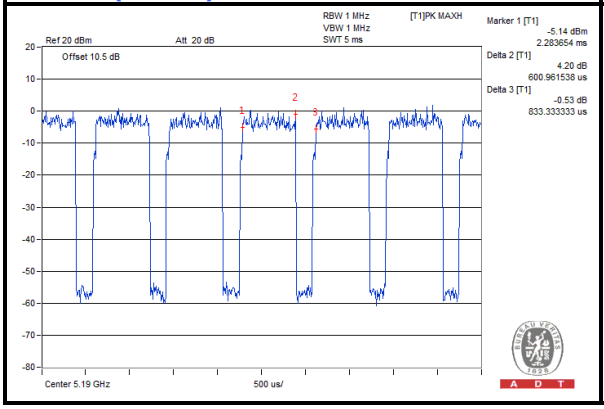
802.11a



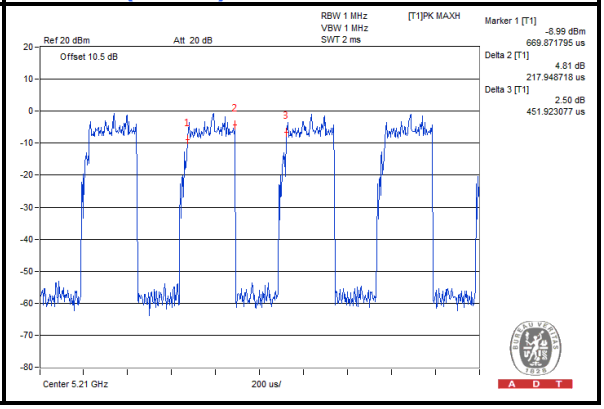
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)



MODULATION TYPE: QPSK

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

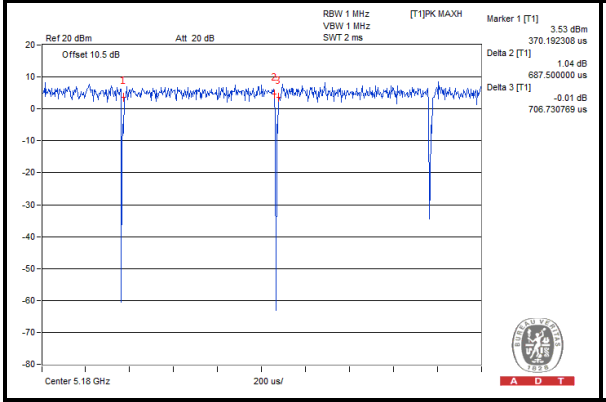
802.11a: Duty cycle = 687.50/706.73 = 0.973, Duty factor = 10 * log(1/0.973) = 0.12

802.11n (20MHz): Duty cycle = 647.43/666.67 = 0.971, Duty factor = 10 * log(1/0.971) = 0.13

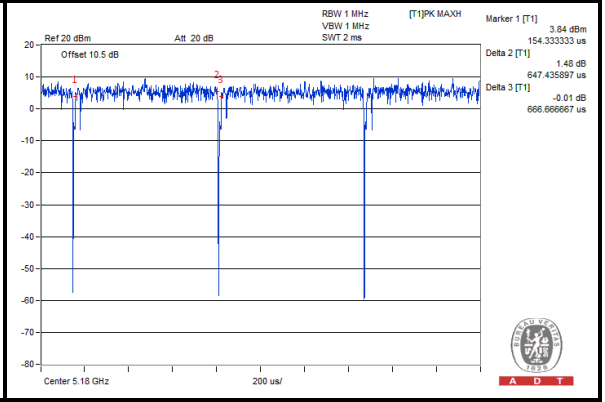
802.11n (40MHz): Duty cycle = 339.74/538.46 = 0.631, Duty factor = 10 * log(1/0.631) = 2.00

802.11ac (80MHz): Duty cycle = 145.83/344.55 = 0.423, Duty factor = 10 * log(1/0.423) = 3.73

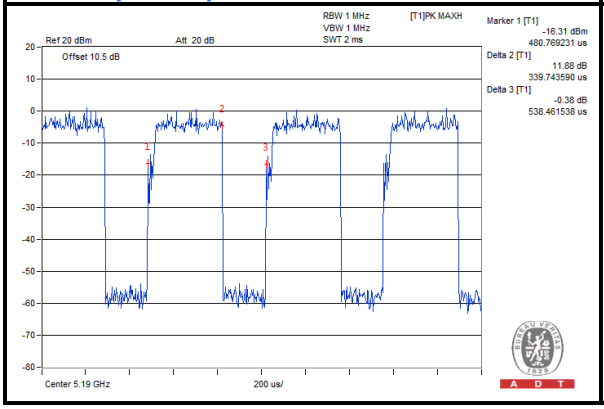
802.11a



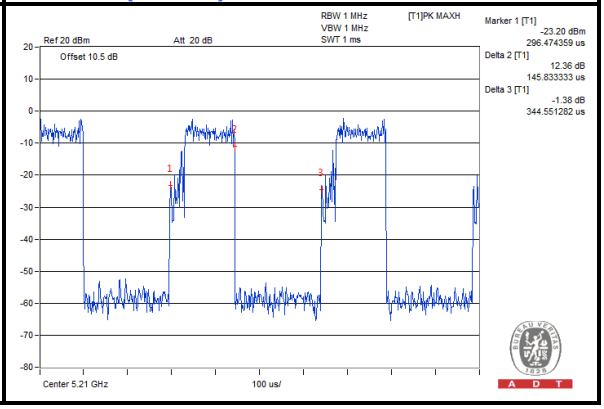
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)



MODULATION TYPE: 16QAM

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

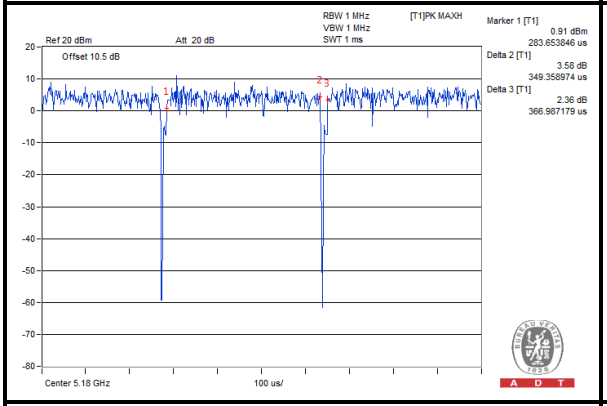
802.11a: Duty cycle = 349.36/366.99 = 0.952, Duty factor = 10 * log(1/0.952) = 0.21

802.11n (20MHz): Duty cycle = 339.74/355.77 = 0.955, Duty factor = 10 * log(1/0.955) = 0.20

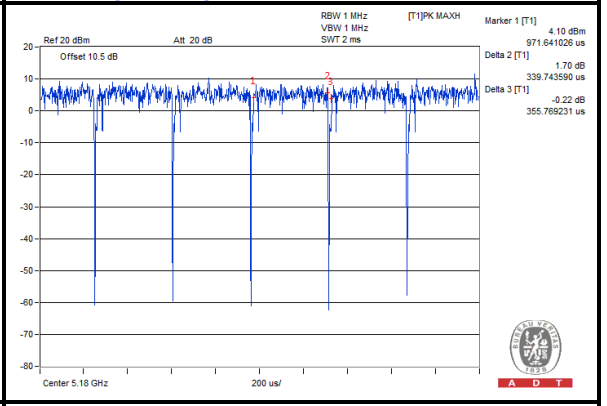
802.11n (40MHz): Duty cycle = 189.10/389.42 = 0.485, Duty factor = 10 * log(1/0.485) = 3.14

802.11ac (80MHz): Duty cycle = 92.95/293.27 = 0.317, Duty factor = 10 * log(1/0.317) = 4.99

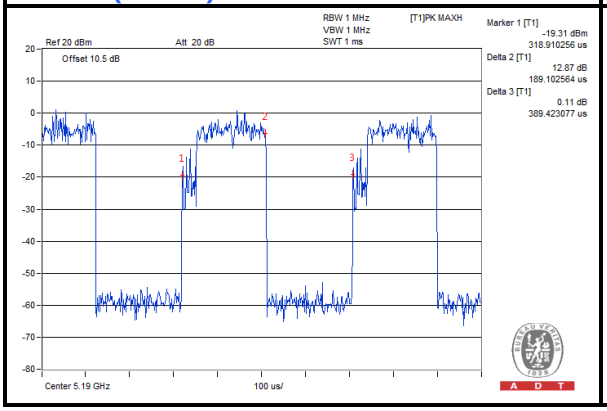
802.11a



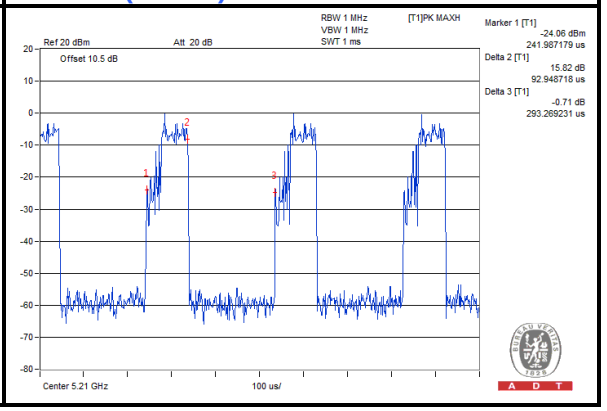
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)



MODULATION TYPE: 64QAM

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

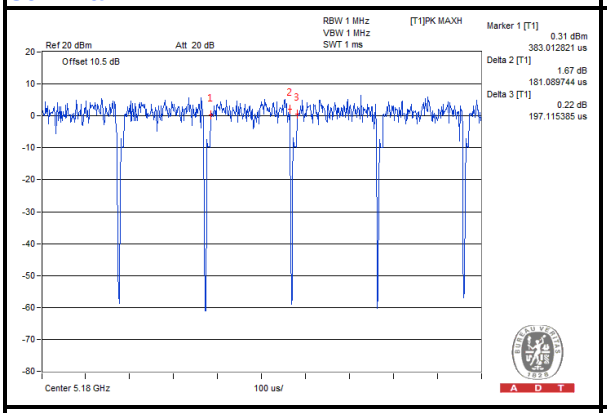
802.11a: Duty cycle = 181.09/197.11 = 0.919, Duty factor = 10 * log(1/0.919) = 0.37

802.11n (20MHz): Duty cycle = 182.20/201.43 = 0.904, Duty factor = 10 * log(1/0.904) = 0.44

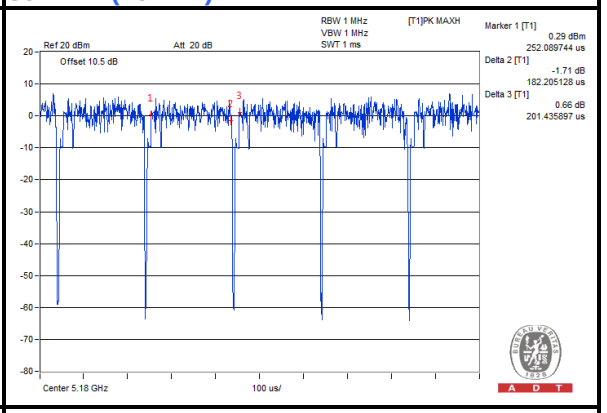
802.11n (40MHz): Duty cycle = 113.78/314.10 = 0.362, Duty factor = 10 * log(1/0.362) = 4.41

802.11ac (80MHz): Duty cycle = 70.51/269.23 = 0.262, Duty factor = 10 * log(1/0.262) = 5.82

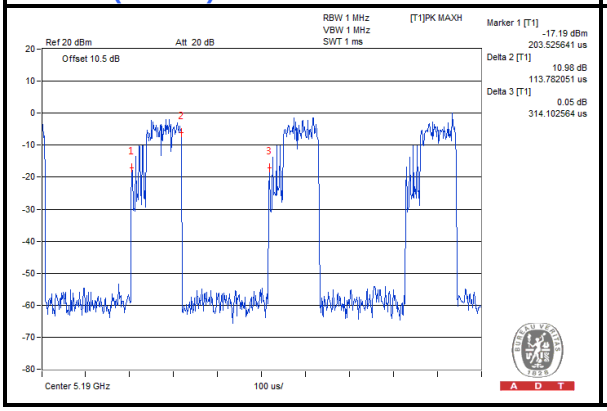
802.11a



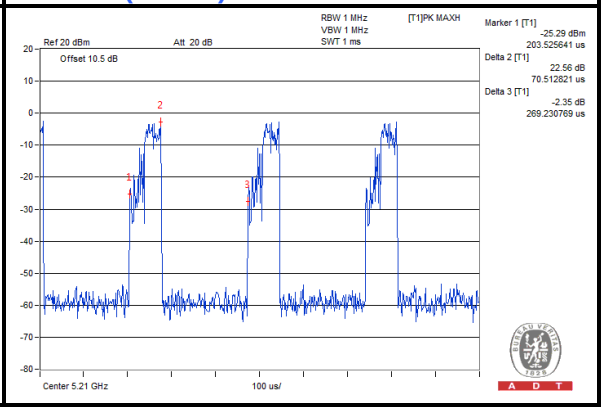
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)

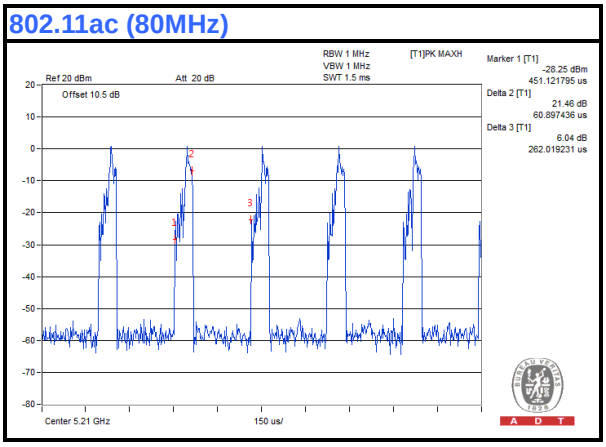


MODULATION TYPE: 256QAM

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

802.11ac (80MHz): Duty cycle = 60.90/262.02 = 0.232, Duty factor = 10 * log(1/0.232) = 6.34

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 v01r03

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

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

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

NOTE:

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

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
	FIELD STRENGTH AT 3m (dBµV/m)	
	PK	AV
	74	54
	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBµV/m)
√	PK	PK
	-27	68.3

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

$$E = \frac{1000000\sqrt{30P}}{3}$$ 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. 15, 2013	Apr. 14, 2014
Spectrum Analyzer ROHDE & SCHWARZ	FSU-26	101645	Jul. 16, 2013	Jul. 15, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Mar. 25, 2013	Mar. 24, 2014
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Jan. 07, 2013	Jan. 06, 2014
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Jan. 07, 2013	Jan. 06, 2014
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier EMCI	EMC 330H	980112	Dec. 28, 2012	Dec. 26, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4	Oct. 18, 2013	Oct. 17, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 18, 2013	Oct. 17, 2014
RF signal cable Worken	RG-213	NA	Nov. 07, 2013	Nov. 06, 2014
Software BV ADT	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. 23, 2013	Aug. 22, 2014
Power Sensor	MA2411B	1207325	Aug. 23, 2013	Aug. 22, 2014

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in HwaYa Chamber 10.
4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
5. The FCC Site Registration No. is 690701.
6. The IC Site Registration No. is IC 7450F-10.

4.1.4 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters 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:

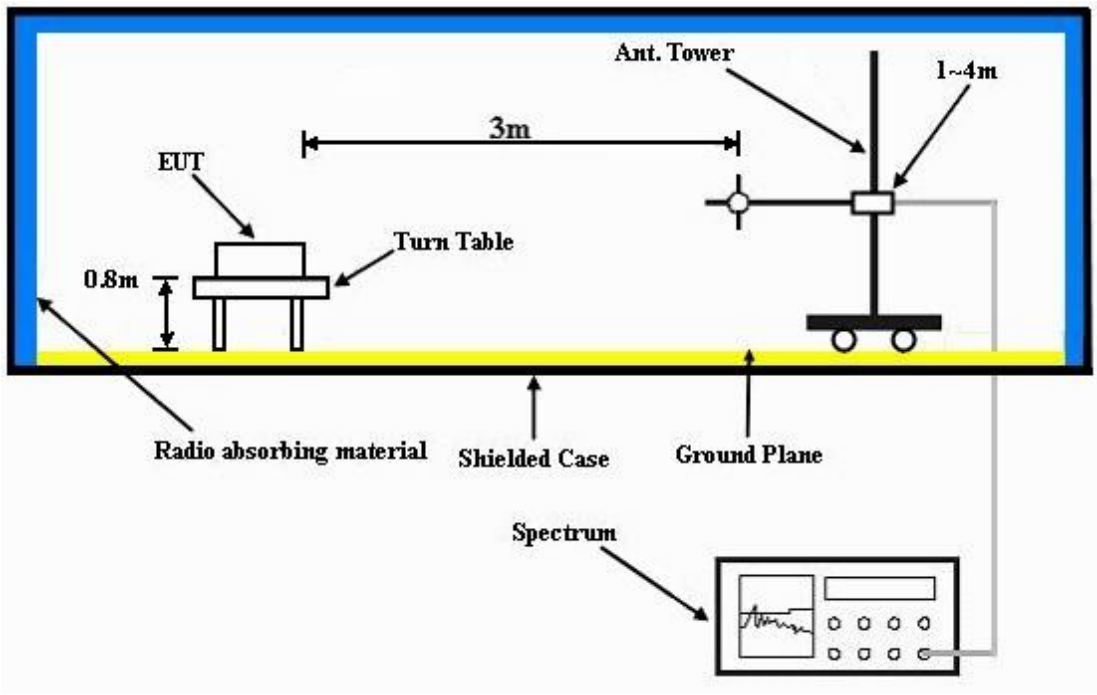
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 1kHz (Duty cycle < 98%) or 10Hz (Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 DEVIATION FROM TEST STANDARD

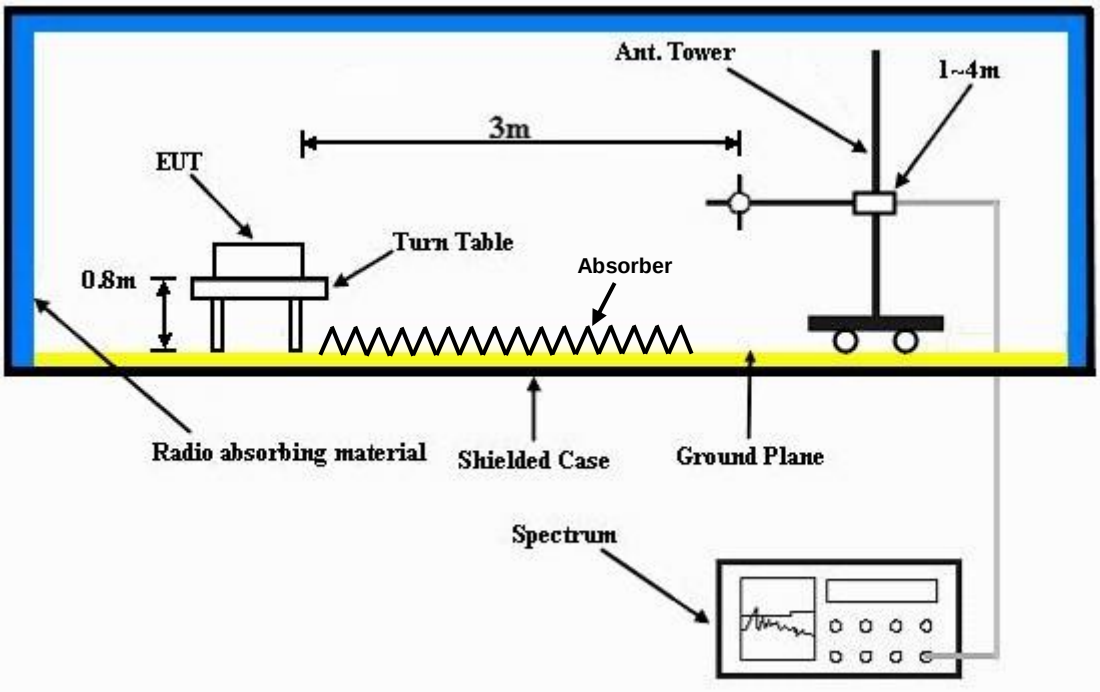
No deviation.

4.1.6 TEST SETUP

Frequency Range 30MHz ~ 1GHz



Frequency Range above 1GHz



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

4.1.7 EUT OPERATING CONDITIONS

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 WORST-CASE DATA

TEST MODE A

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**
5014	45.94	37.53	54	-8.06	34.41	7.97	33.97	159	4	Average
5014	60.86	52.45	74	-13.14	34.41	7.97	33.97	159	4	Peak
5180	94.78	86.15			34.47	8.16	34	159	4	Average
5180	101.27	92.64			34.47	8.16	34	159	4	Peak
5438	45.5	36.56	54	-8.5	34.5	8.48	34.04	159	4	Average
5438	59.98	51.04	74	-14.02	34.5	8.48	34.04	159	4	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**
5116	47.07	38.51	54	-6.93	34.45	8.1	33.99	143	273	Average
5116	59.31	50.75	74	-14.69	34.45	8.1	33.99	143	273	Peak
5180	99.57	90.94			34.47	8.16	34	143	273	Average
5180	106.67	98.04			34.47	8.16	34	143	273	Peak
5456	45.53	36.57	54	-8.47	34.5	8.51	34.05	143	273	Average
5456	59.57	50.61	74	-14.43	34.5	8.51	34.05	143	273	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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
5036	43.94	35.5	54	-10.06	34.41	8	33.97	159	1	Average
5036	59.44	51	74	-14.56	34.41	8	33.97	159	1	Peak
5220	94.57	85.86			34.49	8.22	34	159	1	Average
5220	101.84	93.13			34.49	8.22	34	159	1	Peak
5350	45.03	36.18	54	-8.97	34.5	8.38	34.03	159	1	Average
5350	59.8	50.95	74	-14.2	34.5	8.38	34.03	159	1	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	45.72	37.24	54	-8.28	34.43	8.03	33.98	142	273	Average
5076	59.26	50.78	74	-14.74	34.43	8.03	33.98	142	273	Peak
5220	100.2	91.49			34.49	8.22	34	142	273	Average
5220	107.49	98.78			34.49	8.22	34	142	273	Peak
5410	45.1	36.2	54	-8.9	34.5	8.44	34.04	142	273	Average
5410	59.73	50.83	74	-14.27	34.5	8.44	34.04	142	273	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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
5140	46.11	37.52	54	-7.89	34.45	8.13	33.99	156	4	Average
5140	61.09	52.5	74	-12.91	34.45	8.13	33.99	156	4	Peak
5240	94.34	85.6			34.49	8.26	34.01	156	4	Average
5240	101.27	92.53			34.49	8.26	34.01	156	4	Peak
5384	45.06	36.19	54	-8.94	34.5	8.41	34.04	156	4	Average
5384	60.21	51.34	74	-13.79	34.5	8.41	34.04	156	4	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	45.72	37.24	54	-8.28	34.43	8.03	33.98	140	273	Average
5064	59.09	50.61	74	-14.91	34.43	8.03	33.98	140	273	Peak
5240	99.61	90.87			34.49	8.26	34.01	140	273	Average
5240	106.62	97.88			34.49	8.26	34.01	140	273	Peak
5372	46.17	37.29	54	-7.83	34.5	8.41	34.03	140	273	Average
5372	59.95	51.07	74	-14.05	34.5	8.41	34.03	140	273	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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
5020	43	34.59	54	-11	34.41	7.97	33.97	138	35	Average
5020	57.41	49	74	-16.59	34.41	7.97	33.97	138	35	Peak
5260	100.38	91.63			34.5	8.26	34.01	138	35	Average
5260	107.53	98.78			34.5	8.26	34.01	138	35	Peak
5430	43.21	34.27	54	-10.79	34.5	8.48	34.04	138	35	Average
5430	57.64	48.7	74	-16.36	34.5	8.48	34.04	138	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
5090	43.03	34.5	54	-10.97	34.44	8.07	33.98	128	352	Average
5090	57.34	48.81	74	-16.66	34.44	8.07	33.98	128	352	Peak
5260	93.5	84.75			34.5	8.26	34.01	128	352	Average
5260	101.12	92.37			34.5	8.26	34.01	128	352	Peak
5432	43.07	34.13	54	-10.93	34.5	8.48	34.04	128	352	Average
5432	57.65	48.71	74	-16.35	34.5	8.48	34.04	128	352	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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	43.26	34.67	54	-10.74	34.46	8.13	34	140	36	Average
5150	57.38	48.79	74	-16.62	34.46	8.13	34	140	36	Peak
5300	99.66	90.86			34.5	8.32	34.02	140	36	Average
5300	107.33	98.53			34.5	8.32	34.02	140	36	Peak
5352	46.42	37.57	54	-7.58	34.5	8.38	34.03	140	36	Average
5352	58.24	49.39	74	-15.76	34.5	8.38	34.03	140	36	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
5104	42.97	34.45	54	-11.03	34.44	8.07	33.99	153	291	Average
5104	57.53	49.01	74	-16.47	34.44	8.07	33.99	153	291	Peak
5300	92.38	83.58			34.5	8.32	34.02	153	291	Average
5300	100.16	91.36			34.5	8.32	34.02	153	291	Peak
5440	43.58	34.64	54	-10.42	34.5	8.48	34.04	153	291	Average
5440	57.83	48.89	74	-16.17	34.5	8.48	34.04	153	291	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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
5040	43.03	34.58	54	-10.97	34.42	8	33.97	139	35	Average
5040	57.72	49.27	74	-16.28	34.42	8	33.97	139	35	Peak
5320	99.52	90.69			34.5	8.35	34.02	139	35	Average
5320	106.35	97.52			34.5	8.35	34.02	139	35	Peak
5410	46.72	37.82	54	-7.28	34.5	8.44	34.04	139	35	Average
5410	57.64	48.74	74	-16.36	34.5	8.44	34.04	139	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
5094	43.03	34.51	54	-10.97	34.44	8.07	33.99	181	354	Average
5094	57.28	48.76	74	-16.72	34.44	8.07	33.99	181	354	Peak
5320	94.11	85.28			34.5	8.35	34.02	181	354	Average
5320	101.19	92.36			34.5	8.35	34.02	181	354	Peak
5450	44.15	35.19	54	-9.85	34.5	8.51	34.05	181	354	Average
5450	57.99	49.03	74	-16.01	34.5	8.51	34.05	181	354	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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
5352	44.19	35.34	54	-9.81	34.5	8.38	34.03	100	325	Average
5352	58.08	49.23	74	-15.92	34.5	8.38	34.03	100	325	Peak
5470	58.38	49.42	68.3	-9.92	34.5	8.51	34.05	100	325	Peak
5500	93.03	84.01			34.5	8.57	34.05	100	325	Average
5500	101.27	92.25			34.5	8.57	34.05	100	325	Peak
5725	57.89	48.68	68.3	-10.41	34.67	8.65	34.11	100	325	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
5448	45.89	36.92	54	-8.11	34.5	8.51	34.04	100	35	Average
5448	57.98	49.01	74	-16.02	34.5	8.51	34.04	100	35	Peak
5470	59.06	50.1	68.3	-9.24	34.5	8.51	34.05	100	35	Peak
5500	98.41	89.39			34.5	8.57	34.05	100	35	Average
5500	106.35	97.33			34.5	8.57	34.05	100	35	Peak
5725	58.6	49.39	68.3	-9.7	34.67	8.65	34.11	100	35	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5500MHz: Fundamental frequency.
3. 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
5394	42.99	34.09	54	-11.01	34.5	8.44	34.04	101	309	Average
5394	57.9	49	74	-16.1	34.5	8.44	34.04	101	309	Peak
5470	56.71	47.75	68.3	-11.59	34.5	8.51	34.05	101	309	Peak
5580	93.63	84.54			34.57	8.6	34.08	101	309	Average
5580	101.13	92.04			34.57	8.6	34.08	101	309	Peak
5725	55.71	46.5	68.3	-12.59	34.67	8.65	34.11	101	309	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
5352	43.06	34.21	54	-10.94	34.5	8.38	34.03	100	36	Average
5352	57.55	48.7	74	-16.45	34.5	8.38	34.03	100	36	Peak
5470	56.18	47.22	68.3	-12.12	34.5	8.51	34.05	100	36	Peak
5580	98.85	89.76			34.57	8.6	34.08	100	36	Average
5580	107.18	98.09			34.57	8.6	34.08	100	36	Peak
5725	56.95	47.74	68.3	-11.35	34.67	8.65	34.11	100	36	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5580MHz: Fundamental frequency.
3. 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
5422	43.18	34.24	54	-10.82	34.5	8.48	34.04	101	302	Average
5422	58.01	49.07	74	-15.99	34.5	8.48	34.04	101	302	Peak
5470	55.62	46.66	68.3	-12.68	34.5	8.51	34.05	101	302	Peak
5700	93.33	84.13			34.66	8.64	34.1	101	302	Average
5700	101.18	91.98			34.66	8.64	34.1	101	302	Peak
5725	58.97	49.76	68.3	-9.33	34.67	8.65	34.11	101	302	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
5390	43.06	34.19	54	-10.94	34.5	8.41	34.04	100	51	Average
5390	57.96	49.09	74	-16.04	34.5	8.41	34.04	100	51	Peak
5470	57.76	48.8	68.3	-10.54	34.5	8.51	34.05	100	51	Peak
5700	95.9	86.7			34.66	8.64	34.1	100	51	Average
5700	106.35	97.15			34.66	8.64	34.1	100	51	Peak
5725	62.73	53.52	68.3	-5.57	34.67	8.65	34.11	100	51	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5700MHz: Fundamental frequency.
3. 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	45.84	37.25	54	-8.16	34.46	8.13	34	160	4	Average
5150	60.46	51.87	74	-13.54	34.46	8.13	34	160	4	Peak
5180	95.75	87.12			34.47	8.16	34	160	4	Average
5180	102.6	93.97			34.47	8.16	34	160	4	Peak
5356	44.41	35.56	54	-9.59	34.5	8.38	34.03	160	4	Average
5356	59.25	50.4	74	-14.75	34.5	8.38	34.03	160	4	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	49.18	40.59	54	-4.82	34.46	8.13	34	159	271	Average
5150	63.99	55.4	74	-10.01	34.46	8.13	34	159	271	Peak
5180	100.02	91.39			34.47	8.16	34	159	271	Average
5180	107.6	98.97			34.47	8.16	34	159	271	Peak
5440	45.49	36.55	54	-8.51	34.5	8.48	34.04	159	271	Average
5440	59.32	50.38	74	-14.68	34.5	8.48	34.04	159	271	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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
5050	43.95	35.51	54	-10.05	34.42	8	33.98	158	4	Average
5050	59.34	50.9	74	-14.66	34.42	8	33.98	158	4	Peak
5220	95.08	86.37			34.49	8.22	34	158	4	Average
5220	102.7	93.99			34.49	8.22	34	158	4	Peak
5382	45.43	36.56	54	-8.57	34.5	8.41	34.04	158	4	Average
5382	60.43	51.56	74	-13.57	34.5	8.41	34.04	158	4	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
5054	43.96	35.51	54	-10.04	34.43	8	33.98	142	271	Average
5054	59.41	50.96	74	-14.59	34.43	8	33.98	142	271	Peak
5220	100.57	91.86			34.49	8.22	34	142	271	Average
5220	107.46	98.75			34.49	8.22	34	142	271	Peak
5438	44.5	35.56	54	-9.5	34.5	8.48	34.04	142	271	Average
5438	58.96	50.02	74	-15.04	34.5	8.48	34.04	142	271	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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
5034	43.94	35.5	54	-10.06	34.41	8	33.97	160	2	Average
5034	59.55	51.11	74	-14.45	34.41	8	33.97	160	2	Peak
5240	94.86	86.12			34.49	8.26	34.01	160	2	Average
5240	102.05	93.31			34.49	8.26	34.01	160	2	Peak
5394	45.47	36.57	54	-8.53	34.5	8.44	34.04	160	2	Average
5394	60.35	51.45	74	-13.65	34.5	8.44	34.04	160	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
5064	43.99	35.51	54	-10.01	34.43	8.03	33.98	141	271	Average
5064	59.44	50.96	74	-14.56	34.43	8.03	33.98	141	271	Peak
5240	100.94	92.2			34.49	8.26	34.01	141	271	Average
5240	108.59	99.85			34.49	8.26	34.01	141	271	Peak
5428	44.5	35.56	54	-9.5	34.5	8.48	34.04	141	271	Average
5428	59.54	50.6	74	-14.46	34.5	8.48	34.04	141	271	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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
5146	43.33	34.74	54	-10.67	34.46	8.13	34	140	34	Average
5146	57.77	49.18	74	-16.23	34.46	8.13	34	140	34	Peak
5260	100.88	92.13			34.5	8.26	34.01	140	34	Average
5260	107.75	99			34.5	8.26	34.01	140	34	Peak
5424	43.23	34.29	54	-10.77	34.5	8.48	34.04	140	34	Average
5424	58.07	49.13	74	-15.93	34.5	8.48	34.04	140	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
5046	42.93	34.49	54	-11.07	34.42	8	33.98	182	352	Average
5046	57.05	48.61	74	-16.95	34.42	8	33.98	182	352	Peak
5260	94.41	85.66			34.5	8.26	34.01	182	352	Average
5260	103.1	94.35			34.5	8.26	34.01	182	352	Peak
5370	43.06	34.18	54	-10.94	34.5	8.41	34.03	182	352	Average
5370	57.29	48.41	74	-16.71	34.5	8.41	34.03	182	352	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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
5078	43.32	34.84	54	-10.68	34.43	8.03	33.98	139	34	Average
5078	57.67	49.19	74	-16.33	34.43	8.03	33.98	139	34	Peak
5300	100.54	91.74			34.5	8.32	34.02	139	34	Average
5300	107.47	98.67			34.5	8.32	34.02	139	34	Peak
5352	47.57	38.72	54	-6.43	34.5	8.38	34.03	139	34	Average
5352	58	49.15	74	-16	34.5	8.38	34.03	139	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
5044	43.03	34.59	54	-10.97	34.42	8	33.98	181	355	Average
5044	57.92	49.48	74	-16.08	34.42	8	33.98	181	355	Peak
5300	94.44	85.64			34.5	8.32	34.02	181	355	Average
5300	102.52	93.72			34.5	8.32	34.02	181	355	Peak
5454	44.79	35.83	54	-9.21	34.5	8.51	34.05	181	355	Average
5454	57.59	48.63	74	-16.41	34.5	8.51	34.05	181	355	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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
5130	43.38	34.82	54	-10.62	34.45	8.1	33.99	139	35	Average
5130	58.39	49.83	74	-15.61	34.45	8.1	33.99	139	35	Peak
5320	100.25	91.42			34.5	8.35	34.02	139	35	Average
5320	107.71	98.88			34.5	8.35	34.02	139	35	Peak
5350	47.63	38.78	54	-6.37	34.5	8.38	34.03	139	35	Average
5350	63	54.15	74	-11	34.5	8.38	34.03	139	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
5058	42.96	34.48	54	-11.04	34.43	8.03	33.98	181	354	Average
5058	57.37	48.89	74	-16.63	34.43	8.03	33.98	181	354	Peak
5320	94.27	85.44			34.5	8.35	34.02	181	354	Average
5320	101.58	92.75			34.5	8.35	34.02	181	354	Peak
5350	44.01	35.16	54	-9.99	34.5	8.38	34.03	181	354	Average
5350	58.42	49.57	74	-15.58	34.5	8.38	34.03	181	354	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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	44.97	36.01	54	-9.03	34.5	8.51	34.05	100	325	Average
5458	58.33	49.37	74	-15.67	34.5	8.51	34.05	100	325	Peak
5470	59.66	50.7	68.3	-8.64	34.5	8.51	34.05	100	325	Peak
5500	93.68	84.66			34.5	8.57	34.05	100	325	Average
5500	101.47	92.45			34.5	8.57	34.05	100	325	Peak
5725	56.8	47.59	68.3	-11.5	34.67	8.65	34.11	100	325	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	47.43	38.47	54	-6.57	34.5	8.51	34.05	100	34	Average
5460	58.53	49.57	74	-15.47	34.5	8.51	34.05	100	34	Peak
5470	64.79	55.83	68.3	-3.51	34.5	8.51	34.05	100	34	Peak
5500	99.5	90.48			34.5	8.57	34.05	100	34	Average
5500	106.7	97.68			34.5	8.57	34.05	100	34	Peak
5725	55.51	46.3	68.3	-12.79	34.67	8.65	34.11	100	34	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5500MHz: Fundamental frequency.
3. 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
5442	43.22	34.28	54	-10.78	34.5	8.48	34.04	101	310	Average
5442	58.27	49.33	74	-15.73	34.5	8.48	34.04	101	310	Peak
5470	56.86	47.9	68.3	-11.44	34.5	8.51	34.05	101	310	Peak
5580	93.95	84.86			34.57	8.6	34.08	101	310	Average
5580	101.24	92.15			34.57	8.6	34.08	101	310	Peak
5725	56.62	47.41	68.3	-11.68	34.67	8.65	34.11	101	310	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	43.09	34.13	54	-10.91	34.5	8.51	34.05	100	31	Average
5460	57.64	48.68	74	-16.36	34.5	8.51	34.05	100	31	Peak
5470	56.7	47.74	68.3	-11.6	34.5	8.51	34.05	100	31	Peak
5580	98.95	89.86			34.57	8.6	34.08	100	31	Average
5580	106.58	97.49			34.57	8.6	34.08	100	31	Peak
5725	56.93	47.72	68.3	-11.37	34.67	8.65	34.11	100	31	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5580MHz: Fundamental frequency.
3. 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
5428	43.13	34.19	54	-10.87	34.5	8.48	34.04	101	302	Average
5428	58.19	49.25	74	-15.81	34.5	8.48	34.04	101	302	Peak
5470	55.52	46.56	68.3	-12.78	34.5	8.51	34.05	101	302	Peak
5700	93.83	84.63			34.66	8.64	34.1	101	302	Average
5700	102.21	93.01			34.66	8.64	34.1	101	302	Peak
5725	66.32	57.11	68.3	-1.98	34.67	8.65	34.11	101	302	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
5408	43.14	34.24	54	-10.86	34.5	8.44	34.04	100	51	Average
5408	57.78	48.88	74	-16.22	34.5	8.44	34.04	100	51	Peak
5470	56.97	48.01	68.3	-11.33	34.5	8.51	34.05	100	51	Peak
5700	96.05	86.85			34.66	8.64	34.1	100	51	Average
5700	106.32	97.12			34.66	8.64	34.1	100	51	Peak
5725	66.52	57.31	68.3	-1.78	34.67	8.65	34.11	100	51	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5700MHz: Fundamental frequency.
3. 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
5066	44.99	36.51	54	-9.01	34.43	8.03	33.98	160	3	Average
5066	60.12	51.64	74	-13.88	34.43	8.03	33.98	160	3	Peak
5190	89.33	80.67			34.47	8.19	34	160	3	Average
5190	97.31	88.65			34.47	8.19	34	160	3	Peak
5368	44.5	35.62	54	-9.5	34.5	8.41	34.03	160	3	Average
5368	59.43	50.55	74	-14.57	34.5	8.41	34.03	160	3	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
5148	45.16	36.57	54	-8.84	34.46	8.13	34	144	271	Average
5148	60.09	51.5	74	-13.91	34.46	8.13	34	144	271	Peak
5190	93.93	85.27			34.47	8.19	34	144	271	Average
5190	101.57	92.91			34.47	8.19	34	144	271	Peak
5448	45.52	36.55	54	-8.48	34.5	8.51	34.04	144	271	Average
5448	60.07	51.1	74	-13.93	34.5	8.51	34.04	144	271	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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
5046	44.99	36.55	54	-9.01	34.42	8	33.98	159	2	Average
5046	60.21	51.77	74	-13.79	34.42	8	33.98	159	2	Peak
5230	89.5	80.8			34.49	8.22	34.01	159	2	Average
5230	96.57	87.87			34.49	8.22	34.01	159	2	Peak
5352	44.41	35.56	54	-9.59	34.5	8.38	34.03	159	2	Average
5352	59.73	50.88	74	-14.27	34.5	8.38	34.03	159	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
5138	45.1	36.51	54	-8.9	34.45	8.13	33.99	142	270	Average
5138	59.01	50.42	74	-14.99	34.45	8.13	33.99	142	270	Peak
5230	95.4	86.7			34.49	8.22	34.01	142	270	Average
5230	101.99	93.29			34.49	8.22	34.01	142	270	Peak
5432	44.43	35.49	54	-9.57	34.5	8.48	34.04	142	270	Average
5432	59.16	50.22	74	-14.84	34.5	8.48	34.04	142	270	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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
5042	43.53	35.09	54	-10.47	34.42	8	33.98	140	33	Average
5042	57.28	48.84	74	-16.72	34.42	8	33.98	140	33	Peak
5270	94.43	85.65			34.5	8.29	34.01	140	33	Average
5270	102.17	93.39			34.5	8.29	34.01	140	33	Peak
5444	43.94	35	54	-10.06	34.5	8.48	34.04	140	33	Average
5444	57.79	48.85	74	-16.21	34.5	8.48	34.04	140	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
5150	43.52	34.93	54	-10.48	34.46	8.13	34	182	353	Average
5150	57.87	49.28	74	-16.13	34.46	8.13	34	182	353	Peak
5270	87.84	79.06			34.5	8.29	34.01	182	353	Average
5270	95.69	86.91			34.5	8.29	34.01	182	353	Peak
5392	43.55	34.68	54	-10.45	34.5	8.41	34.04	182	353	Average
5392	57.84	48.97	74	-16.16	34.5	8.41	34.04	182	353	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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
5096	43.38	34.86	54	-10.62	34.44	8.07	33.99	139	35	Average
5096	57.57	49.05	74	-16.43	34.44	8.07	33.99	139	35	Peak
5310	93.93	85.13			34.5	8.32	34.02	139	35	Average
5310	101.51	92.71			34.5	8.32	34.02	139	35	Peak
5444	45.02	36.08	54	-8.98	34.5	8.48	34.04	139	35	Average
5444	58.23	49.29	74	-15.77	34.5	8.48	34.04	139	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
5150	43.57	34.98	54	-10.43	34.46	8.13	34	179	354	Average
5150	57.08	48.49	74	-16.92	34.46	8.13	34	179	354	Peak
5310	88.24	79.44			34.5	8.32	34.02	179	354	Average
5310	95.63	86.83			34.5	8.32	34.02	179	354	Peak
5458	43.79	34.83	54	-10.21	34.5	8.51	34.05	179	354	Average
5458	58.1	49.14	74	-15.9	34.5	8.51	34.05	179	354	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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
5448	43.59	34.62	54	-10.41	34.5	8.51	34.04	100	325	Average
5448	57.91	48.94	74	-16.09	34.5	8.51	34.04	100	325	Peak
5470	56.73	47.77	68.3	-11.57	34.5	8.51	34.05	100	325	Peak
5510	87.44	78.42			34.51	8.57	34.06	100	325	Average
5510	95.12	86.1			34.51	8.57	34.06	100	325	Peak
5725	57.48	48.27	68.3	-10.82	34.67	8.65	34.11	100	325	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
5392	43.55	34.68	54	-10.45	34.5	8.41	34.04	100	35	Average
5392	57.69	48.82	74	-16.31	34.5	8.41	34.04	100	35	Peak
5470	57.58	48.62	68.3	-10.72	34.5	8.51	34.05	100	35	Peak
5510	93.68	84.66			34.51	8.57	34.06	100	35	Average
5510	102.43	93.41			34.51	8.57	34.06	100	35	Peak
5725	56.45	47.24	68.3	-11.85	34.67	8.65	34.11	100	35	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5510MHz: Fundamental frequency.
3. 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
5360	45.38	36.53	54	-8.62	34.5	8.38	34.03	103	308	Average
5360	59.94	51.09	74	-14.06	34.5	8.38	34.03	103	308	Peak
5470	57.44	48.48	68.3	-10.86	34.5	8.51	34.05	103	308	Peak
5550	88.1	79.04			34.54	8.59	34.07	103	308	Average
5550	97.19	88.13			34.54	8.59	34.07	103	308	Peak
5725	58.71	49.5	68.3	-9.59	34.67	8.65	34.11	103	308	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
5394	44.46	35.56	54	-9.54	34.5	8.44	34.04	100	36	Average
5394	59.23	50.33	74	-14.77	34.5	8.44	34.04	100	36	Peak
5470	58.27	49.31	68.3	-10.03	34.5	8.51	34.05	100	36	Peak
5550	94.11	85.05			34.54	8.59	34.07	100	36	Average
5550	101.96	92.9			34.54	8.59	34.07	100	36	Peak
5725	57.99	48.78	68.3	-10.31	34.67	8.65	34.11	100	36	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5550MHz: Fundamental frequency.
3. 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
5444	44.5	35.56	54	-9.5	34.5	8.48	34.04	101	301	Average
5444	60.12	51.18	74	-13.88	34.5	8.48	34.04	101	301	Peak
5470	57.75	48.79	68.3	-10.55	34.5	8.51	34.05	101	301	Peak
5670	87.83	78.67			34.63	8.63	34.1	101	301	Average
5670	95.02	85.86			34.63	8.63	34.1	101	301	Peak
5725	58.43	49.22	68.3	-9.87	34.67	8.65	34.11	101	301	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	44.21	35.25	54	-9.79	34.5	8.51	34.05	100	90	Average
5460	61.15	52.19	74	-12.85	34.5	8.51	34.05	100	90	Peak
5470	58.91	49.95	68.3	-9.39	34.5	8.51	34.05	100	90	Peak
5670	91.12	81.96			34.63	8.63	34.1	100	90	Average
5670	99.86	90.7			34.63	8.63	34.1	100	90	Peak
5725	59.03	49.82	68.3	-9.27	34.67	8.65	34.11	100	90	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5670MHz: Fundamental frequency.
3. 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
5148	44.71	36.12	54	-9.29	34.46	8.13	34	156	150	Average
5148	59.6	51.01	74	-14.4	34.46	8.13	34	156	150	Peak
5210	87.34	78.66			34.49	8.19	34	156	150	Average
5210	95.1	86.42			34.49	8.19	34	156	150	Peak
5438	44.52	35.58	54	-9.48	34.5	8.48	34.04	156	150	Average
5438	59.25	50.31	74	-14.75	34.5	8.48	34.04	156	150	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	46.16	37.57	54	-7.84	34.46	8.13	34	157	271	Average
5146	60.62	52.03	74	-13.38	34.46	8.13	34	157	271	Peak
5210	92.19	83.51			34.49	8.19	34	157	271	Average
5210	99.1	90.42			34.49	8.19	34	157	271	Peak
5352	45.3	36.45	54	-8.7	34.5	8.38	34.03	157	271	Average
5352	59.43	50.58	74	-14.57	34.5	8.38	34.03	157	271	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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
5056	44	35.52	54	-10	34.43	8.03	33.98	139	36	Average
5056	57.33	48.85	74	-16.67	34.43	8.03	33.98	139	36	Peak
5290	92.44	83.64			34.5	8.32	34.02	139	36	Average
5290	100.94	92.14			34.5	8.32	34.02	139	36	Peak
5350	47.36	38.51	54	-6.64	34.5	8.38	34.03	139	36	Average
5350	60.48	51.63	74	-13.52	34.5	8.38	34.03	139	36	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
5080	43.95	35.47	54	-10.05	34.43	8.03	33.98	183	353	Average
5080	58.11	49.63	74	-15.89	34.43	8.03	33.98	183	353	Peak
5290	86.27	77.47			34.5	8.32	34.02	183	353	Average
5290	94.73	85.93			34.5	8.32	34.02	183	353	Peak
5350	44.06	35.21	54	-9.94	34.5	8.38	34.03	183	353	Average
5350	58.14	49.29	74	-15.86	34.5	8.38	34.03	183	353	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 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
5440	45.08	36.14	54	-8.92	34.5	8.48	34.04	100	325	Average
5440	59.26	50.32	74	-14.74	34.5	8.48	34.04	100	325	Peak
5470	57.47	48.51	68.3	-10.83	34.5	8.51	34.05	100	325	Peak
5530	85.11	76.07			34.53	8.58	34.07	100	325	Average
5530	92.46	83.42			34.53	8.58	34.07	100	325	Peak
5725	56.86	47.65	68.3	-11.44	34.67	8.65	34.11	100	325	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
5454	45.53	36.57	54	-8.47	34.5	8.51	34.05	100	34	Average
5454	59.28	50.32	74	-14.72	34.5	8.51	34.05	100	34	Peak
5470	59.88	50.92	68.3	-8.42	34.5	8.51	34.05	100	34	Peak
5530	90.98	81.94			34.53	8.58	34.07	100	34	Average
5530	97.8	88.76			34.53	8.58	34.07	100	34	Peak
5725	57.75	48.54	68.3	-10.55	34.67	8.65	34.11	100	34	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5530MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

TEST MODE B

802.11n (20MHz)

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
5432	43.31	34.37	54	-10.69	34.5	8.48	34.04	100	43	Average
5432	54.32	45.38	74	-19.68	34.5	8.48	34.04	100	43	Peak
5470	52.18	43.22	68.3	-16.12	34.5	8.51	34.05	100	43	Peak
5700	83.62	74.42			34.66	8.64	34.1	100	43	Average
5700	91.72	82.52			34.66	8.64	34.1	100	43	Peak
5725	53.17	43.96	68.3	-15.13	34.67	8.65	34.11	100	43	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
5372	43.15	34.27	54	-10.85	34.5	8.41	34.03	100	51	Average
5372	53.26	44.38	74	-20.74	34.5	8.41	34.03	100	51	Peak
5470	52.69	43.73	68.3	-15.61	34.5	8.51	34.05	100	51	Peak
5700	89.45	80.25			34.66	8.64	34.1	100	51	Average
5700	96.77	87.57			34.66	8.64	34.1	100	51	Peak
5725	56.82	47.61	68.3	-11.48	34.67	8.65	34.11	100	51	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5700MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

BELOW 1GHz WORST-CASE DATA:

TEST MODE A

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK)
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
36.48	11.34	29.45	40	-28.66	13.38	0.74	32.23	154	158	Peak
68.34	11.42	34.83	40	-28.58	7.91	0.9	32.22	156	220	Peak
94.8	29.31	50.89	43.5	-14.19	9.3	1.11	31.99	156	32	Peak
429.5	18.06	30.08	46	-27.94	17.75	2.41	32.18	156	225	Peak
650.7	22.79	29.85	46	-23.21	22.1	2.99	32.15	105	148	Peak
759.2	24.09	29.7	46	-21.91	23.3	3.22	32.13	166	205	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
48.9	19.3	42.48	40	-20.7	8.14	0.9	32.22	166	215	Peak
89.67	20.26	41.96	43.5	-23.24	8.9	1.11	31.71	107	85	Peak
130.44	15.77	37.42	43.5	-27.73	9.2	1.38	32.23	105	126	Peak
390.3	17.32	29.67	46	-28.68	17.5	2.34	32.19	166	219	Peak
501.6	20.32	30.6	46	-25.68	19.19	2.63	32.1	133	216	Peak
613.6	23.12	30.76	46	-22.88	21.67	2.87	32.18	168	51	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK)
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
43.77	7.15	28.62	40	-32.85	9.85	0.9	32.22	156	215	Peak
130.71	22	43.64	43.5	-21.5	9.21	1.38	32.23	103	205	Peak
185.79	18.24	38.48	43.5	-25.26	10.4	1.61	32.25	111	125	Peak
383.3	15.49	28.42	46	-30.51	16.9	2.34	32.17	165	225	Peak
640.9	21.37	28.44	46	-24.63	22.1	2.99	32.16	148	152	Peak
734.7	23.75	29.39	46	-22.25	23.33	3.16	32.13	106	215	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
33.78	19.62	36.02	40	-20.38	15.1	0.74	32.24	166	219	Peak
89.67	21.12	42.82	43.5	-22.38	8.9	1.11	31.71	126	225	Peak
130.71	17.06	38.7	43.5	-26.44	9.21	1.38	32.23	145	184	Peak
343.4	13.89	27.72	46	-32.11	16.06	2.19	32.08	133	265	Peak
595.4	20.43	28.9	46	-25.57	20.85	2.87	32.19	156	78	Peak
689.2	23.24	29.06	46	-22.76	23.23	3.05	32.1	125	66	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK)
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
89.13	25.86	47.66	43.5	-17.64	8.85	1.11	31.76	166	251	Peak
133.14	25.84	47.47	43.5	-17.66	9.23	1.38	32.24	103	259	Peak
183.9	20	40.23	43.5	-23.5	10.4	1.61	32.24	155	148	Peak
407.1	16.82	28.67	46	-29.18	17.95	2.41	32.21	166	259	Peak
529.6	19.12	27.97	46	-26.88	20.61	2.7	32.16	154	188	Peak
642.3	22.31	29.38	46	-23.69	22.1	2.99	32.16	102	177	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
48.9	17.99	41.17	40	-22.01	8.14	0.9	32.22	165	148	Peak
132.6	19.12	40.76	43.5	-24.38	9.22	1.38	32.24	199	55	Peak
183.36	14.3	34.53	43.5	-29.2	10.4	1.61	32.24	165	20	Peak
423.9	15.92	28	46	-30.08	17.7	2.41	32.19	165	225	Peak
601	20.61	28.83	46	-25.39	21.1	2.87	32.19	104	158	Peak
727	23.5	29.06	46	-22.5	23.4	3.16	32.12	174	119	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value

TEST MODE B

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK)
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
96.69	26.68	48.08	43.5	-16.82	9.42	1.28	32.1	102	203	Peak
129.63	28.4	50.08	43.5	-15.1	9.17	1.38	32.23	143	102	Peak
274.62	21.24	37.72	46	-24.76	13.7	1.94	32.12	132	88	Peak
536.6	21.07	29.96	46	-24.93	20.52	2.76	32.17	107	13	Peak
722.8	27.21	32.8	46	-18.79	23.36	3.16	32.11	117	105	Peak
929.3	28.77	30.21	46	-17.23	26.2	3.62	31.26	137	89	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
33.51	23.42	39.7	40	-16.58	15.22	0.74	32.24	189	302	Peak
90.75	23.42	45.1	43.5	-20.08	8.98	1.11	31.77	147	55	Peak
130.44	22.47	44.12	43.5	-21.03	9.2	1.38	32.23	132	65	Peak
521.9	21.22	30.15	46	-24.78	20.51	2.7	32.14	112	74	Peak
693.4	25.04	30.84	46	-20.96	23.19	3.11	32.1	123	105	Peak
928.6	28.8	30.25	46	-17.2	26.2	3.62	31.27	146	79	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

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

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

4.2.2 TEST INSTRUMENTS

Tested Date: Dec. 25, 2013

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Nov. 17, 2013	Nov. 16, 2014
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100104	Dec. 06, 2013	Dec. 05, 2014
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 17, 2013	Jul. 16, 2014
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.

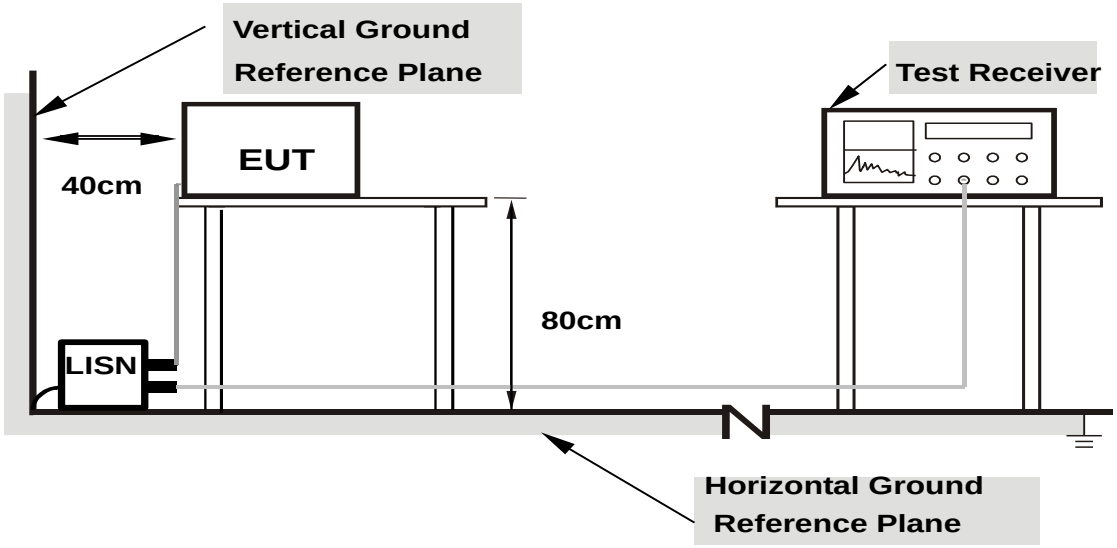
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

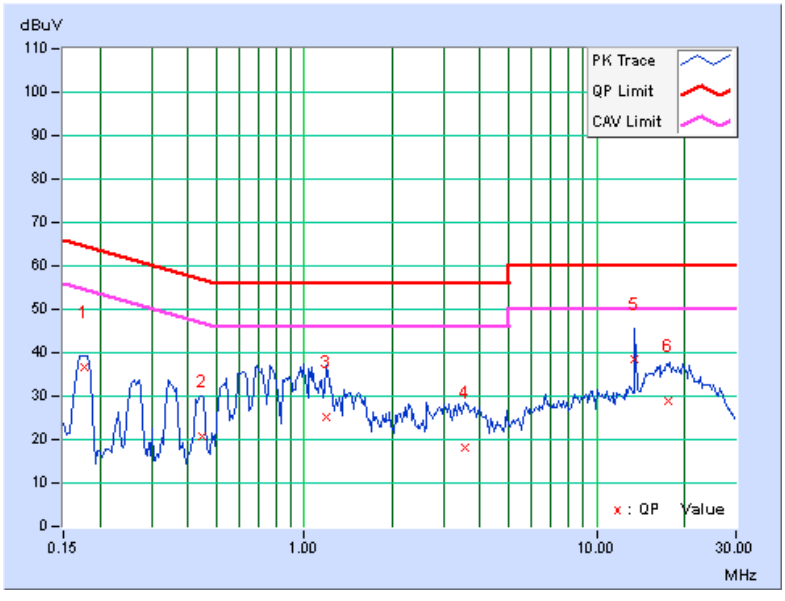
CONDUCTED WORST-CASE DATA：

PHASE	Line 1	6dB BANDWIDTH	9kHz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17734	0.17	36.63	25.82	36.80	25.99	64.61	54.61	-27.81	-28.62
2	0.44688	0.21	20.53	6.90	20.74	7.11	56.93	46.93	-36.19	-39.82
3	1.18750	0.27	24.94	12.60	25.21	12.87	56.00	46.00	-30.79	-33.13
4	3.53906	0.35	17.79	8.76	18.14	9.11	56.00	46.00	-37.86	-36.89
5	13.55859	0.50	37.90	31.86	38.40	32.36	60.00	50.00	-21.60	-17.64
6	17.52344	0.59	28.18	17.59	28.77	18.18	60.00	50.00	-31.23	-31.82

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

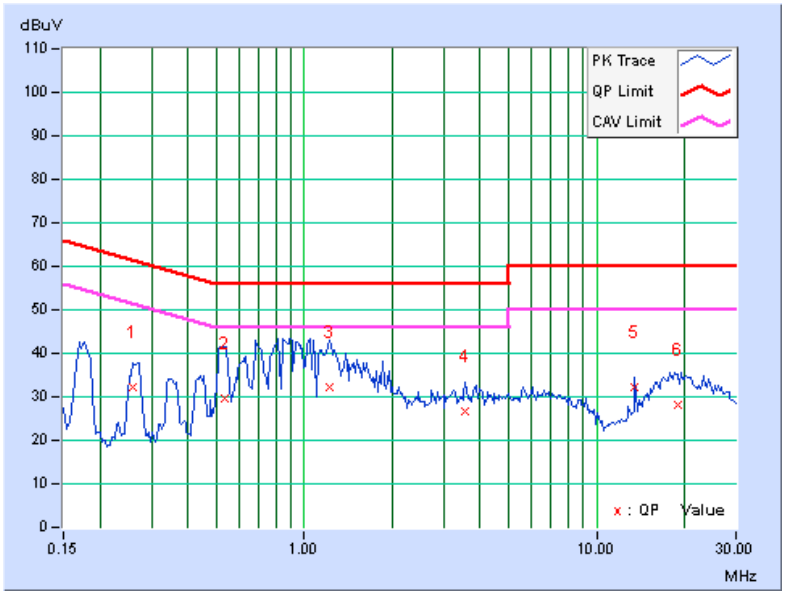


PHASE	Line 2	6dB BANDWIDTH	9kHz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17344	0.18	37.05	27.95	37.23	28.13	64.79	54.79	-27.56	-26.66
2	0.53672	0.25	30.11	19.36	30.36	19.61	56.00	46.00	-25.64	-26.39
3	1.01953	0.23	31.26	17.33	31.49	17.56	56.00	46.00	-24.51	-28.44
4	2.88672	0.33	26.75	17.03	27.08	17.36	56.00	46.00	-28.92	-28.64
5	13.55859	0.57	32.05	28.84	32.62	29.41	60.00	50.00	-27.38	-20.59
6	18.27344	0.69	28.13	20.85	28.82	21.54	60.00	50.00	-31.18	-28.46

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

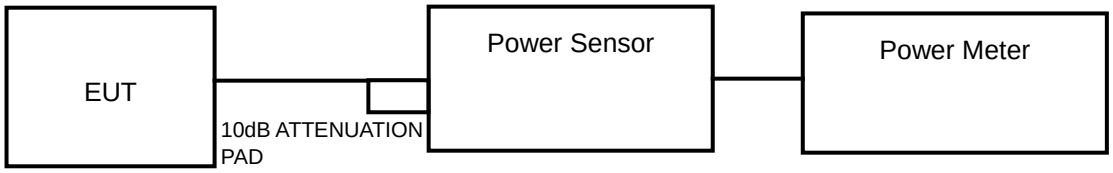
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

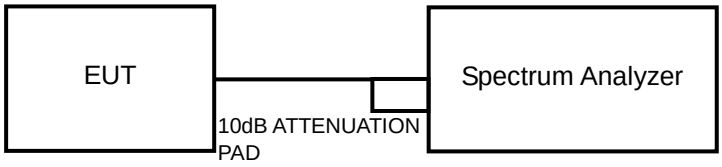
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

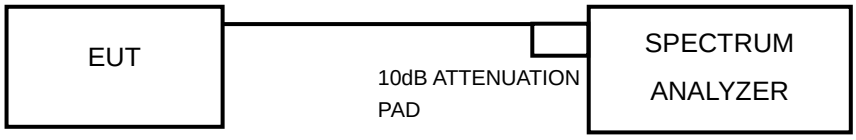
FOR POWER OUTPUT MEASUREMENT



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

<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.

<802.11ac (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	39.537	15.97	17	PASS
44	5220	40.087	16.03	17	PASS
48	5240	40.272	16.05	17	PASS
52	5260	41.115	16.14	24	PASS
60	5300	38.726	15.88	24	PASS
64	5320	39.446	15.96	24	PASS
100	5500	42.073	16.24	24	PASS
116	5580	40.738	16.10	24	PASS
140	5700	39.446	15.96	24	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	48.195	16.83	17	PASS
44	5220	47.206	16.74	17	PASS
48	5240	47.753	16.79	17	PASS
52	5260	48.641	16.87	24	PASS
60	5300	48.529	16.86	24	PASS
64	5320	48.529	16.86	24	PASS
100	5500	49.431	16.94	24	PASS
116	5580	48.753	16.88	24	PASS
140	5700	45.499	16.58	24	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	21.979	13.42	17	PASS
46	5230	21.380	13.30	17	PASS
54	5270	20.845	13.19	24	PASS
62	5310	19.143	12.82	24	PASS
102	5510	21.086	13.24	24	PASS
110	5550	20.045	13.02	24	PASS
134	5670	18.493	12.67	24	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	18.197	12.60	17	PASS
58	5290	20.941	13.21	24	PASS
106	5530	21.380	13.30	24	PASS

26dB BANDWIDTH: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	27.77	PASS
44	5220	26.16	PASS
48	5240	29.26	PASS
52	5260	25.23	PASS
60	5300	24.65	PASS
64	5320	28.91	PASS
100	5500	24.70	PASS
116	5580	22.51	PASS
140	5700	22.49	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	42.39	PASS
44	5220	43.11	PASS
48	5240	39.67	PASS
52	5260	43.39	PASS
60	5300	29.78	PASS
64	5320	41.62	PASS
100	5500	26.76	PASS
116	5580	23.89	PASS
140	5700	23.87	PASS

802.11n (40MHz)

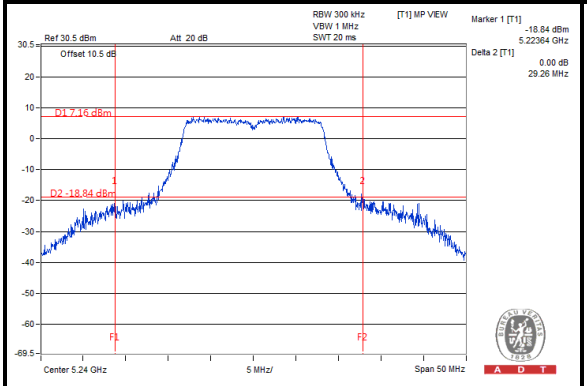
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	45.63	PASS
46	5230	45.32	PASS
54	5270	45.98	PASS
62	5310	45.49	PASS
102	5510	46.00	PASS
110	5550	45.83	PASS
134	5670	45.23	PASS

802.11ac (80MHz)

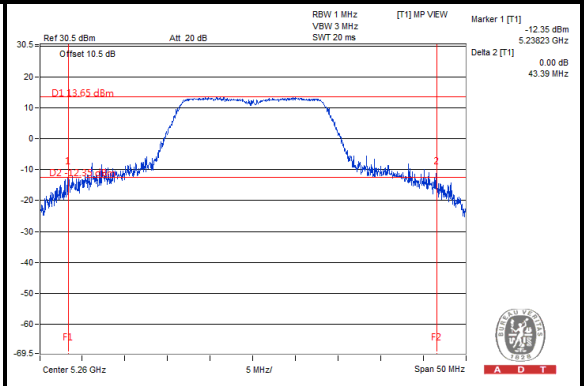
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
42	5210	82.84	PASS
58	5290	82.60	PASS
106	5530	83.15	PASS

SPECTRUM PLOT OF WORST VALUE

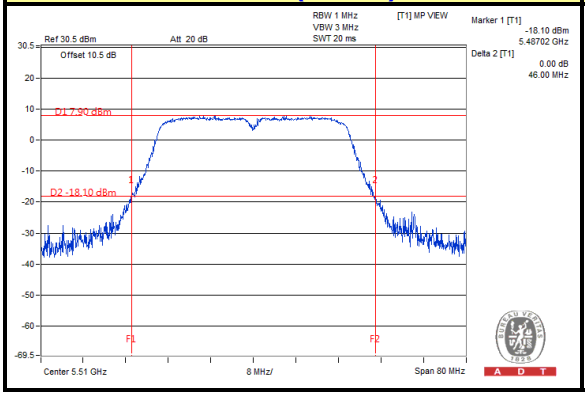
802.11a



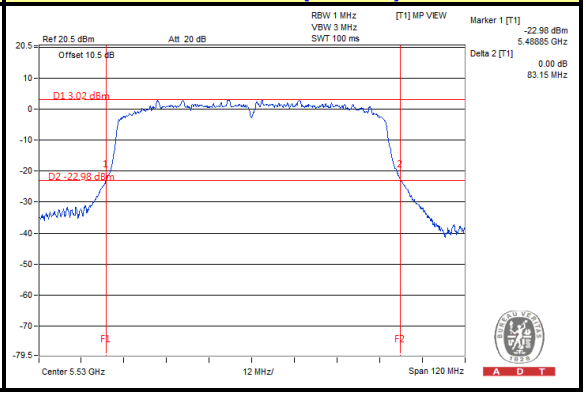
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)

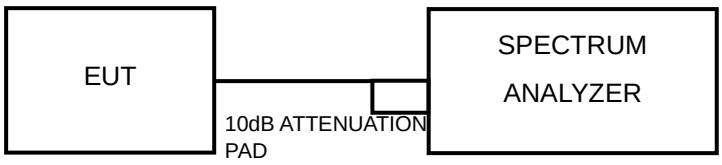


4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

<802.11a, 802.11n (20MHz) >
Using method SA-1
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.

<802.11n (40MHz), 802.11ac (80MHz)>
Using method SA-2 alternative
1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 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)

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6.

4.4.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.81	4	PASS
44	5220	3.85	4	PASS
48	5240	3.90	4	PASS
52	5260	3.96	11	PASS
60	5300	4.16	11	PASS
64	5320	4.22	11	PASS
100	5500	4.53	11	PASS
116	5580	4.34	11	PASS
140	5700	3.75	11	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.64	4	PASS
44	5220	3.67	4	PASS
48	5240	3.73	4	PASS
52	5260	4.55	11	PASS
60	5300	4.64	11	PASS
64	5320	4.74	11	PASS
100	5500	4.96	11	PASS
116	5580	4.72	11	PASS
140	5700	4.14	11	PASS

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-3.09	1.42	-1.67	4	PASS
46	5230	-3.08	1.42	-1.66	4	PASS
54	5270	-2.63	1.42	-1.21	11	PASS
62	5310	-2.72	1.42	-1.30	11	PASS
102	5510	-2.37	1.42	-0.95	11	PASS
110	5550	-2.48	1.42	-1.06	11	PASS
134	5670	-3.30	1.42	-1.88	11	PASS

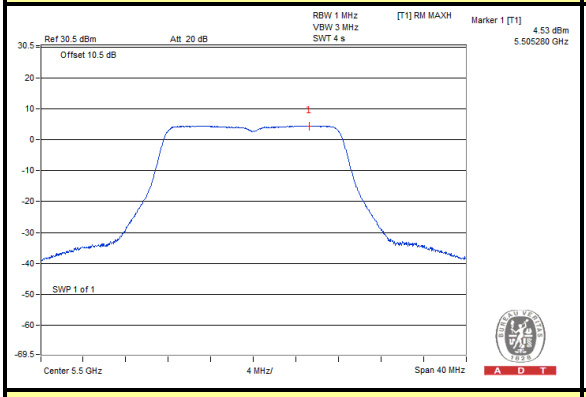
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (80MHz)

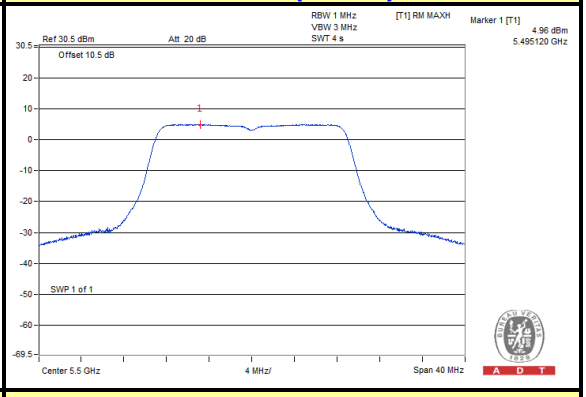
CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
42	5210	-5.45	3.17	-2.28	4	PASS
58	5290	-5.34	3.17	-2.17	11	PASS
106	5530	-5.40	3.17	-2.23	11	PASS

SPECTRUM PLOT OF WORST VALUE

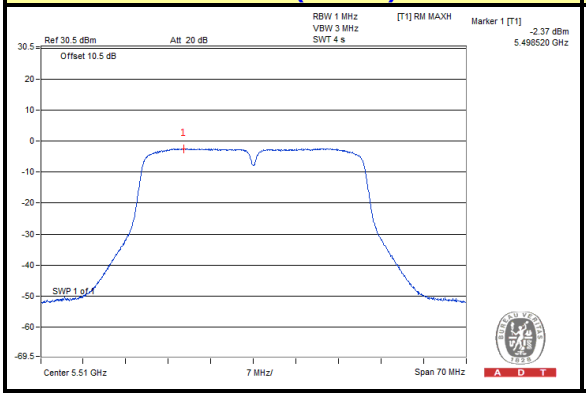
802.11a



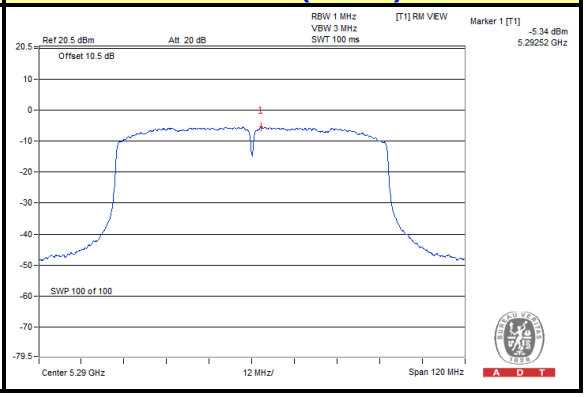
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)

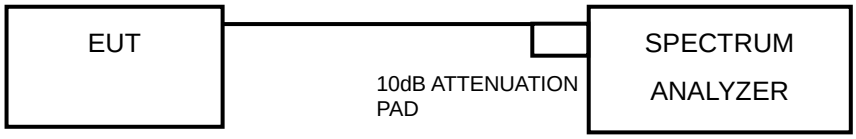


4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY 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

a. Set the RBW = 1 kHz, VBW ≥ 3 MHz, Detector = peak.

b. Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.

c. Use the peak search function to find the peak of the spectrum.

d. Measure the PPSD.

e. Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.
Find the worst channel and modulation mode as above test procedure, and follow KDB 789033 D01 General UNII Test Procedures v01r03 and repeat step 1 to 5 for final testing of each modulation mode on a single channel (all modulation types) in a single operating band to compliance with the peak excursion requirement.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

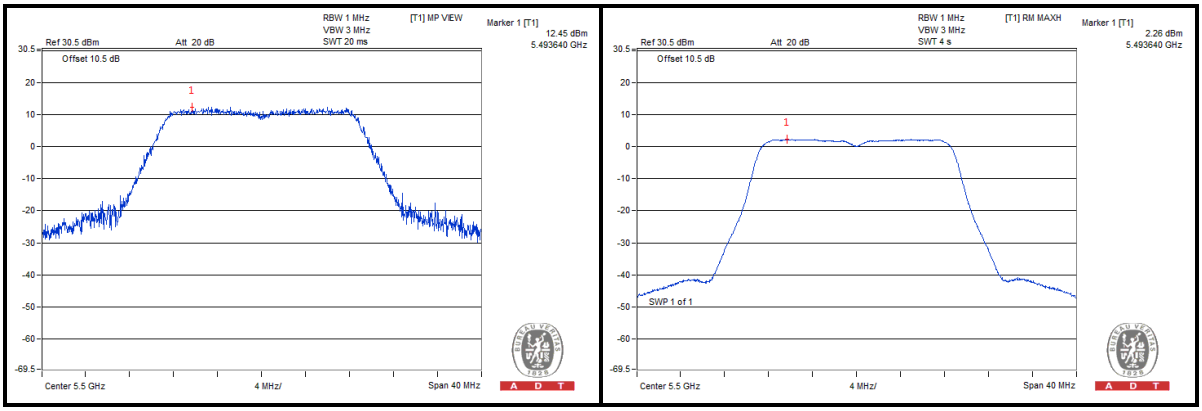
Same as Item 4.3.6

4.5.7 TEST RESULTS

MODULATION MODE	MODULATION TYPE	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/ FAIL
802.11a	BPSK	5500	13.48	4.53	8.95	13	PASS
	QPSK		14.42	4.32	10.10	13	PASS
	16QAM		14.29	4.34	9.95	13	PASS
	64QAM		10.91	1.05	9.86	13	PASS
802.11n (20MHz)	BPSK	5500	14.44	4.96	9.48	13	PASS
	QPSK		14.84	4.96	9.88	13	PASS
	16QAM		14.68	4.95	9.73	13	PASS
	64QAM		12.45	2.26	10.19	13	PASS

MODULATION MODE	MODULATION TYPE	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS /FAIL
802.11n (40MHz)	BPSK	5190	7.31	-3.09	-1.67	8.98	13	PASS
	QPSK		7.72	-3.31	-1.31	9.03	13	PASS
	16QAM		8.76	-4.52	-1.38	10.14	13	PASS
	64QAM		8.36	-5.63	-1.22	9.58	13	PASS
802.11ac (80MHz)	BPSK	5530	3.09	-5.45	-2.28	5.37	13	PASS
	QPSK		2.99	-5.36	-1.63	4.62	13	PASS
	16QAM		3.24	-5.12	-0.13	3.37	13	PASS
	64QAM		3.15	-4.87	0.95	2.20	13	PASS
	256QAM		3.46	-5.01	1.33	2.13	13	PASS

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

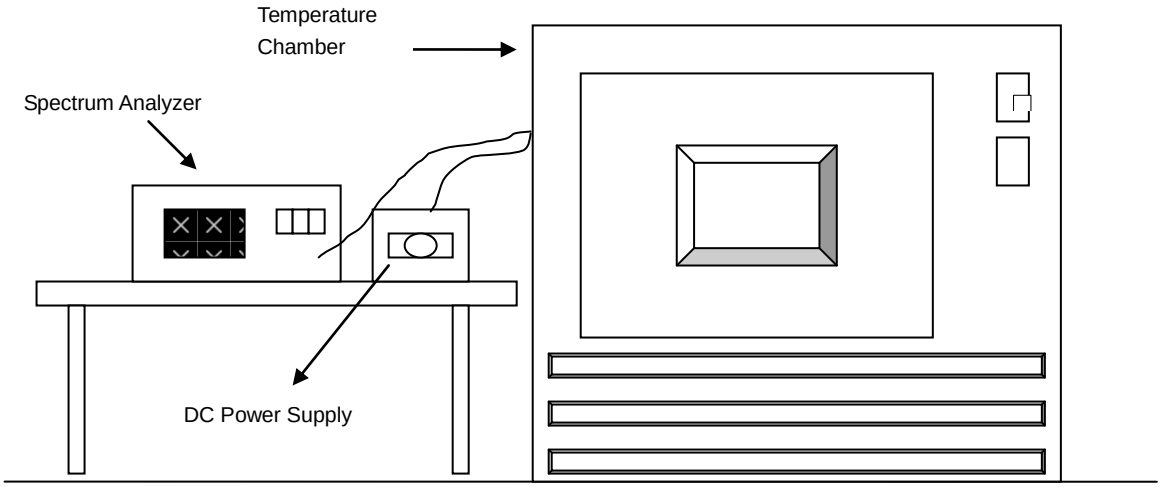


4.6 FREQUENCY STABILITY

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

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
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)
50	3.8	5320.015122	2.842	5320.015242	2.865	5320.014849	2.791	5320.014924	2.805
40	3.8	5320.015773	2.965	5320.015413	2.897	5320.015280	2.872	5320.015875	2.984
30	3.8	5320.016994	3.194	5320.016858	3.169	5320.017027	3.201	5320.016728	3.144
20	3.8	5320.017948	3.374	5320.017999	3.383	5320.018255	3.431	5320.017966	3.377
10	3.8	5320.019440	3.654	5320.019585	3.681	5320.019498	3.665	5320.019599	3.684
0	3.8	5320.017966	3.377	5320.017674	3.322	5320.018339	3.447	5320.017710	3.329
-10	3.8	5320.016426	3.088	5320.016769	3.152	5320.016735	3.146	5320.017013	3.198
-20	3.8	5320.015926	2.994	5320.015701	2.951	5320.015733	2.957	5320.016073	3.021
-30	3.8	5320.014835	2.789	5320.014935	2.807	5320.015103	2.839	5320.014932	2.807

FREQUEMCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
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)
20	3.6	5320.017570	3.303	5320.017273	3.247	5320.017510	3.291	5320.017310	3.254
	3.8	5320.017948	3.374	5320.017999	3.383	5320.018255	3.431	5320.017966	3.377
	4.35	5320.019210	3.611	5320.019205	3.610	5320.019408	3.648	5320.019331	3.634

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. INFORMATION ON THE TESTING LABORATORIES

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

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

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
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 any modifications are made to the EUT by the lab during the test.

---END---