FCC TEST REPORT (15.407)

REPORT NO.:	RF120424C46-1
MODEL NO.:	WPEA-127NI
FCC ID:	Y7A-WPEA127NI
RECEIVED:	Apr. 24, 2012
TESTED:	May 10 ~ Jun. 06, 2012
ISSUED:	Jun. 13, 2012

APPLICANT:	Aircell Business Aviation Services, LLC
ADDRESS:	303 S Technology Ct, Bldg. A., Broomfield, CO 80021

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
TEST LOCATION:	No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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

TABLE OF CONTENTS

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120424C46-1	Original release	Jun. 13, 2012

1. CERTIFICATION

PRODUCT: 802.11a/b/g/n Industrial-Grade Mini Card
MODEL: WPEA-127NI
BRAND: Aircell
APPLICANT: Aircell Business Aviation Services, LLC
TESTED: May 10 ~ Jun. 06, 2012
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**
ANSI C63.10-2009

The above equipment (model: WPEA-127NI) 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 :** Jun. 13, 2012
Pettie Chen / Specialist

APPROVED BY : _____ , **DATE :** Jun. 13, 2012
Gary Chang / Technical Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -16.06dB at 0.20078MHz.
15.407(b/1/2/3) (b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 5360.00 & 5725.00 MHz.
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	Antenna connector is UFL not a standard connector.

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	3.19 dB
	200MHz ~1000MHz	3.21 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	802.11a/b/g/n Industrial-Grade Mini Card
MODEL NO.	WPEA-127NI
POWER SUPPLY	3.3Vdc (host equipment)
MODULATION TYPE	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 450.0Mbps
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) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz)
OUTPUT POWER	27.606mW for 5180 ~ 5240MHz 51.785mW for 5260 ~ 5320MHz 49.310mW for 5500 ~ 5700MHz
ANTENNA TYPE	5180 ~ 5240MHz: Omnidirectional antenna with 3.9dBi gain 5260 ~ 5320MHz: Omnidirectional antenna with 3.9dBi gain 5500 ~ 5700MHz: Omnidirectional antenna with 4dBi gain
ANTENNA CONNECTOR	UFL
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	NA

NOTE:

1. The EUT incorporates a MIMO function. Physically, the EUT provides three completed transmitters and three receivers.

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11a	1TX
802.11n (20MHz)	3TX
802.11n (40MHz)	3TX

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

3.2 DESCRIPTION OF TEST MODES

FOR 5180 ~ 5240MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

FOR 5260 ~ 5320MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

FOR 5500 ~ 5700MHz

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

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

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

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

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

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

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)
-	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	19.5
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	40.5
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	19.5
-	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	40.5
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	19.5
-	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	40.5

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)
-	802.11n (20MHz)	5180-5320	36 to 64	48, 64	OFDM	BPSK	19.5
-	802.11n (20MHz)	5500-5700	100 to 140	116	OFDM	BPSK	19.5

POWER LINE CONDUCTED EMISSION TEST:

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (20MHz)	5180-5320	36 to 64	48, 64	OFDM	BPSK	19.5
-	802.11n (20MHz)	5500-5700	100 to 140	116	OFDM	BPSK	19.5

ANTENNA PORT CONDUCTED MEASUREMENT:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	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	19.5
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	40.5
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	19.5
-	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	40.5
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	19.5
-	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	40.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Sun Lin
RE<1G	22deg. C, 65%RH	120Vac, 60Hz	Aska Huang
PLC	23deg. C, 65%RH	120Vac, 60Hz	Felix Chen
APCM	23deg. C, 65%RH	120Vac, 60Hz	Brad Wu

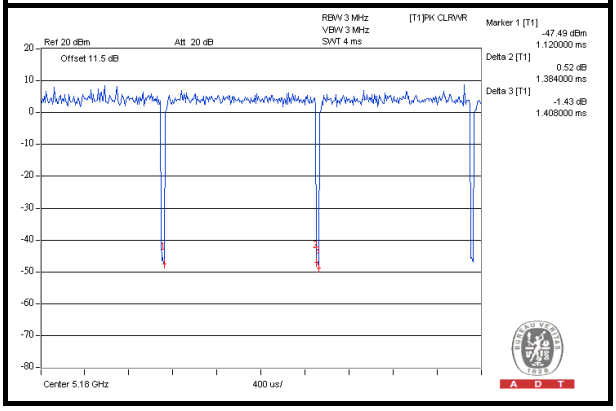
3.3 DUTY CYCLE OF TEST SIGNAL

For 802.11a:

Duty cycle of test signal is > 98 %

802.11a: Duty cycle = 1.384/1.408 = 0.983

802.11a



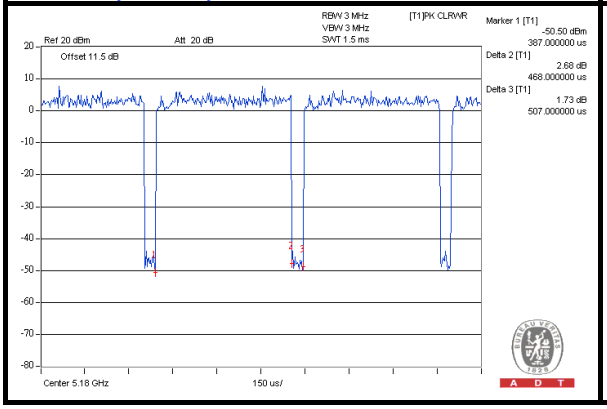
For 802.11n (20MHz) & 802.11n (40MHz):

Duty cycle of test signal is < 98%, duty factor shall be considered.

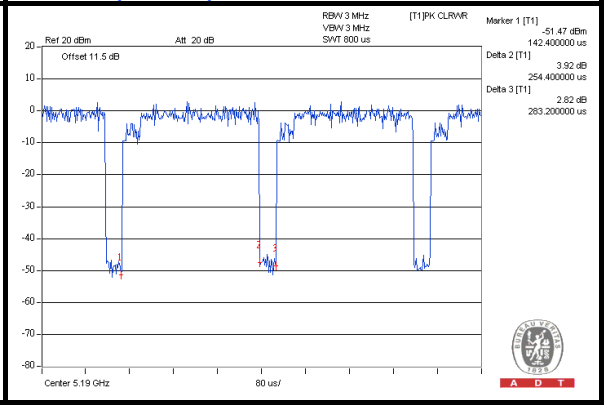
802.11n (20MHz): Duty cycle = 0.468/0.507 = 0.923, Duty factor = 10 * log(1/0.923) = 0.36

802.11n (40MHz): Duty cycle = 0.254/0.283 = 0.898, Duty factor = 10 * log(1/0.898) = 0.50

802.11n (20MHz)



802.11n (40MHz)



3.4 DESCRIPTION OF SUPPORT UNITS

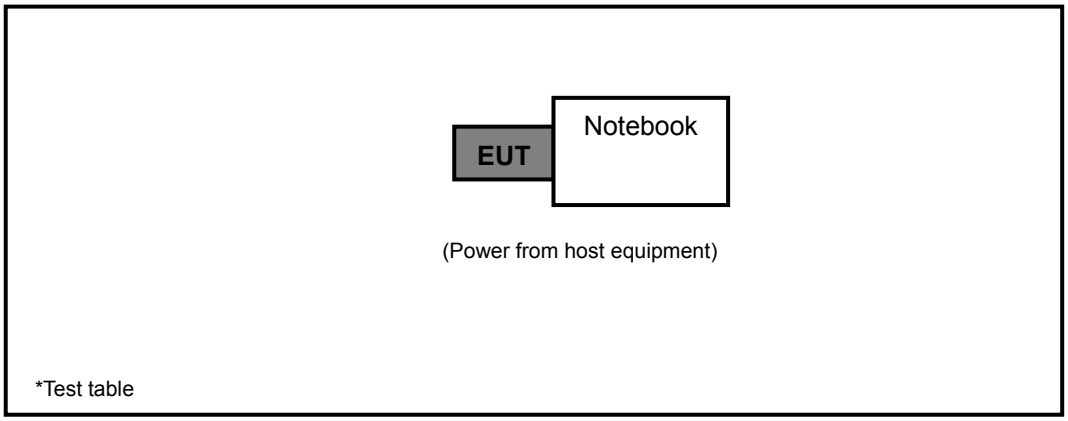
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	DELL	E5410	NA	FCC DoC Approved

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

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

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST



3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)
789033 D01 General UNII Test Procedures v01r01
ANSI C63.10-2009

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

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

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

NOTE:

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

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

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	ESI7	838496/016	Jan. 03, 2012	Jan. 02, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jan. 30, 2012	Jan. 29, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Apr. 06, 2012	Apr. 05, 2013
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-408	Jan. 05, 2012	Jan. 04, 2013
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 20, 2011	Jul. 19, 2012
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier Agilent	8449B	3008A01961	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent	8447D	2944A10738	Oct. 29, 2011	Oct. 28, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309220/4	Nov. 03, 2011	Nov. 02, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250724/4	Nov. 03, 2011	Nov. 02, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295012/4	Nov. 03, 2011	Nov. 02, 2012
Software ADT	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA	NA
Turn Table ADT	TT100.	TT93021704	NA	NA
Turn Table Controller ADT	SC100.	SC93021704	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 29, 2011	Oct. 28, 2012
High Speed Peak Power Meter	ML2495A	0824011	Aug. 04, 2011	Aug. 03, 2012
Power Sensor	MA2411B	0738171	Aug. 04, 2011	Aug. 03, 2012

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 4.

4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

5. The FCC Site Registration No. is 460141.

6. The IC Site Registration No. is IC7450F-4.

4.1.4 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

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

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

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

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

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

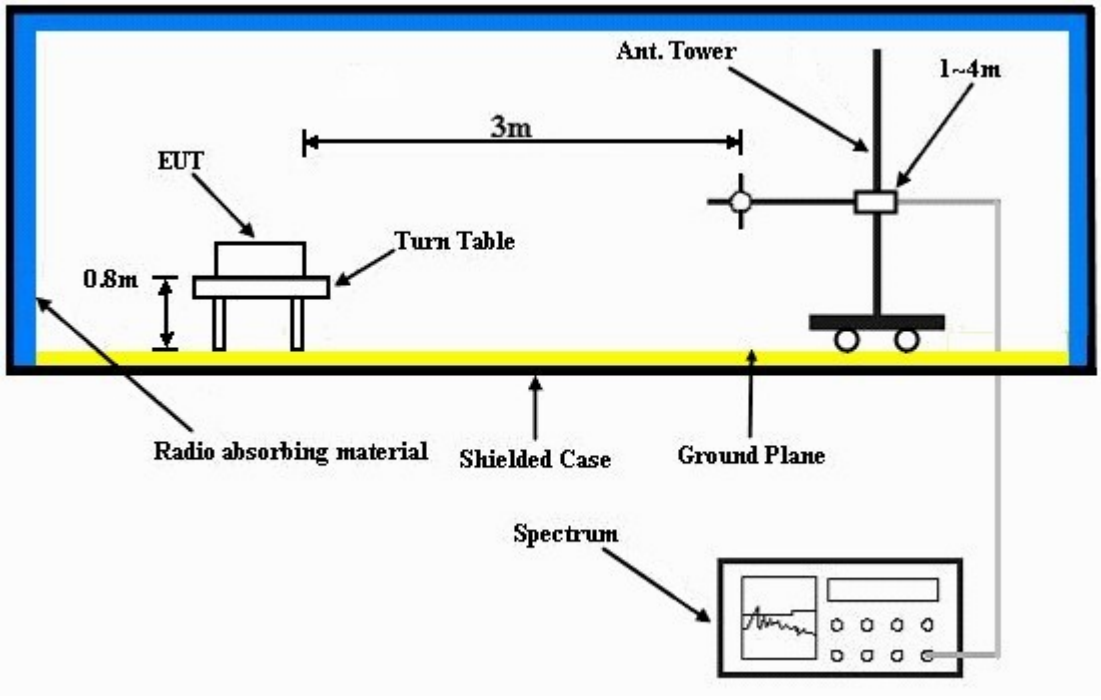
NOTE:

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

4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

4.1.6 TEST SETUP



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

4.1.7 EUT OPERATING CONDITION

a. Plugged the EUT into notebook and placed them on the testing table.
b. The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
c. The necessary accessories enable the system in full functions.

4.1.8 TEST RESULTS

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5150.00	59.2 PK	74.0	-14.8	1.09 H	52	20.60	38.60
2	5150.00	42.7 AV	54.0	-11.3	1.09 H	52	4.10	38.60
3	*5180.00	100.3 PK			1.09 H	52	61.70	38.60
4	*5180.00	87.7 AV			1.09 H	52	49.10	38.60
5	#10360.00	58.9 PK	68.3	-9.4	1.04 H	157	9.40	49.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5150.00	65.6 PK	74.0	-8.4	1.07 V	188	27.00	38.60
2	5150.00	47.2 AV	54.0	-6.8	1.07 V	188	8.60	38.60
3	*5180.00	109.9 PK			1.18 V	171	71.30	38.60
4	*5180.00	97.1 AV			1.18 V	171	58.50	38.60
5	#10360.00	58.3 PK	68.3	-10.0	1.00 V	337	8.80	49.50

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.2 PK	74.0	-18.8	1.07 H	50	16.60	38.60
2	5150.00	41.7 AV	54.0	-12.3	1.07 H	50	3.10	38.60
3	*5200.00	100.5 PK			1.07 H	50	61.90	38.60
4	*5200.00	88.3 AV			1.07 H	50	49.70	38.60
5	#10400.00	58.5 PK	68.3	-9.8	1.00 H	173	9.00	49.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.8 PK	74.0	-18.2	1.06 V	199	17.20	38.60
2	5150.00	42.8 AV	54.0	-11.2	1.06 V	199	4.20	38.60
3	*5200.00	110.6 PK			1.06 V	199	72.00	38.60
4	*5200.00	97.7 AV			1.06 V	199	59.10	38.60
5	#10400.00	57.8 PK	68.3	-10.5	1.00 V	324	8.30	49.50

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.1 PK	74.0	-18.9	1.08 H	49	16.50	38.60
2	5150.00	41.8 AV	54.0	-12.2	1.08 H	49	3.20	38.60
3	*5240.00	101.9 PK			1.08 H	49	63.20	38.70
4	*5240.00	88.8 AV			1.08 H	49	50.10	38.70
5	#10480.00	58.9 PK	68.3	-9.4	1.00 H	177	9.20	49.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.2 PK	74.0	-17.8	1.06 V	193	17.60	38.60
2	5150.00	42.5 AV	54.0	-11.5	1.06 V	193	3.90	38.60
3	*5240.00	110.6 PK			1.06 V	193	71.90	38.70
4	*5240.00	97.6 AV			1.06 V	193	58.90	38.70
5	#10480.00	58.3 PK	68.3	-10.0	1.00 V	341	8.60	49.70

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	100.3 PK			1.07 H	52	61.60	38.70
2	*5260.00	87.9 AV			1.07 H	52	49.20	38.70
3	5350.00	57.0 PK	74.0	-17.0	1.07 H	52	18.20	38.80
4	5350.00	43.3 AV	54.0	-10.7	1.07 H	52	4.50	38.80
5	#10520.00	59.3 PK	68.3	-9.0	1.00 H	153	9.50	49.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	109.9 PK			1.03 V	196	71.20	38.70
2	*5260.00	97.1 AV			1.03 V	196	58.40	38.70
3	5350.00	58.8 PK	74.0	-15.2	1.03 V	196	20.00	38.80
4	5350.00	45.3 AV	54.0	-8.7	1.03 V	196	6.50	38.80
5	#10520.00	58.7 PK	68.3	-9.6	1.00 V	295	8.90	49.80

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	100.1 PK			1.18 H	51	61.30	38.80
2	*5300.00	87.5 AV			1.18 H	51	48.70	38.80
3	5350.00	56.7 PK	74.0	-17.3	1.18 H	51	17.90	38.80
4	5350.00	43.4 AV	54.0	-10.6	1.18 H	51	4.60	38.80
5	10600.00	59.4 PK	74.0	-14.6	1.00 H	144	9.40	50.00
6	10600.00	45.3 AV	54.0	-8.7	1.00 H	144	-4.70	50.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	110.9 PK			1.03 V	193	72.10	38.80
2	*5300.00	98.3 AV			1.03 V	193	59.50	38.80
3	5350.00	58.2 PK	74.0	-15.8	1.03 V	193	19.40	38.80
4	5350.00	45.0 AV	54.0	-9.0	1.03 V	193	6.20	38.80
5	10600.00	58.7 PK	74.0	-15.3	1.00 V	274	8.70	50.00
6	10600.00	45.1 AV	54.0	-8.9	1.00 V	274	-4.90	50.00

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	100.8 PK			1.06 H	45	62.00	38.80
2	*5320.00	88.1 AV			1.06 H	45	49.30	38.80
3	5350.00	55.3 PK	74.0	-18.7	1.06 H	45	16.50	38.80
4	5350.00	43.4 AV	54.0	-10.6	1.06 H	45	4.60	38.80
5	10640.00	59.7 PK	74.0	-14.3	1.00 H	158	9.50	50.20
6	10640.00	45.6 AV	54.0	-8.4	1.00 H	158	-4.60	50.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	110.3 PK			1.03 V	194	71.50	38.80
2	*5320.00	97.2 AV			1.03 V	194	58.40	38.80
3	5350.00	66.2 PK	74.0	-7.8	1.02 V	160	27.40	38.80
4	5350.00	48.1 AV	54.0	-5.9	1.02 V	160	9.30	38.80
5	10640.00	59.1 PK	74.0	-14.9	1.02 V	264	8.90	50.20
6	10640.00	44.9 AV	54.0	-9.1	1.02 V	264	-5.30	50.20

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	55.9 PK	74.0	-18.1	1.03 H	49	16.90	39.00
2	5460.00	43.3 AV	54.0	-10.7	1.03 H	49	4.30	39.00
3	#5470.00	56.5 PK	68.3	-11.8	1.03 H	49	17.50	39.00
4	*5500.00	100.5 PK			1.03 H	49	61.40	39.10
5	*5500.00	88.0 AV			1.03 H	49	48.90	39.10
6	11000.00	60.5 PK	74.0	-13.5	1.00 H	155	8.90	51.60
7	11000.00	46.0 AV	54.0	-8.0	1.00 H	155	-5.60	51.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.7 PK	74.0	-15.3	1.00 V	200	19.70	39.00
2	5460.00	45.1 AV	54.0	-8.9	1.00 V	200	6.10	39.00
3	#5470.00	67.1 PK	68.3	-1.2	1.00 V	200	28.10	39.00
4	*5500.00	109.2 PK			1.00 V	163	70.10	39.10
5	*5500.00	96.6 AV			1.00 V	163	57.50	39.10
6	11000.00	60.2 PK	74.0	-13.8	1.00 V	217	8.60	51.60
7	11000.00	46.2 AV	54.0	-7.8	1.00 V	217	-5.40	51.60

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5350.00	57.2 PK	74.0	-16.8	1.00 H	47	18.40	38.80
2	5350.00	43.0 AV	54.0	-11.0	1.00 H	47	4.20	38.80
3	*5580.00	100.5 PK			1.00 H	47	61.30	39.20
4	*5580.00	87.6 AV			1.00 H	47	48.40	39.20
5	11160.00	60.5 PK	74.0	-13.5	1.00 H	169	9.20	51.30
6	11160.00	46.2 AV	54.0	-7.8	1.00 H	169	-5.10	51.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5350.00	58.2 PK	74.0	-15.8	1.08 V	178	19.40	38.80
2	5350.00	43.4 AV	54.0	-10.6	1.08 V	178	4.60	38.80
3	*5580.00	109.8 PK			1.08 V	178	70.60	39.20
4	*5580.00	97.1 AV			1.08 V	178	57.90	39.20
5	11600.00	60.2 PK	74.0	-13.8	1.00 V	208	8.70	51.50
6	11600.00	46.0 AV	54.0	-8.0	1.00 V	208	-5.50	51.50

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	100.1 PK			1.10 H	47	60.60	39.50
2	*5700.00	86.6 AV			1.10 H	47	47.10	39.50
3	#5725.00	65.4 PK	68.3	-2.9	1.10 H	47	25.90	39.50
4	11400.00	60.8 PK	74.0	-13.2	1.00 H	193	9.20	51.60
5	11400.00	46.6 AV	54.0	-7.4	1.00 H	193	-5.00	51.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	109.2 PK			1.06 V	163	69.70	39.50
2	*5700.00	96.4 AV			1.06 V	163	56.90	39.50
3	**#5725.00**	**67.3 PK**	**68.3**	**-1.0**	**1.06 V**	**161**	**27.80**	**39.50**
4	11400.00	61.1 PK	74.0	-12.9	1.00 V	227	9.50	51.60
5	11400.00	46.9 AV	54.0	-7.1	1.00 V	227	-4.70	51.60

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5080.00	55.9 PK	74.0	-18.1	1.25 H	77	17.40	38.50
2	5080.00	43.4 AV	54.0	-10.6	1.25 H	77	4.90	38.50
3	5150.00	55.6 PK	74.0	-18.4	1.66 H	308	17.00	38.60
4	5150.00	42.8 AV	54.0	-11.2	1.66 H	308	4.20	38.60
5	*5180.00	93.5 PK			1.66 H	308	54.90	38.60
6	*5180.00	81.8 AV			1.66 H	308	43.20	38.60
7	5440.00	57.8 PK	74.0	-16.2	1.00 H	122	18.80	39.00
8	5440.00	44.5 AV	54.0	-9.5	1.00 H	122	5.50	39.00
9	#10360.00	58.5 PK	68.3	-9.8	1.00 H	149	9.00	49.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5080.00	57.6 PK	74.0	-16.4	1.17 V	292	19.10	38.50
2	5080.00	49.2 AV	54.0	-4.8	1.17 V	292	10.70	38.50
3	5150.00	55.8 PK	74.0	-18.2	1.43 V	103	17.20	38.60
4	5150.00	44.1 AV	54.0	-9.9	1.43 V	103	5.50	38.60
5	*5180.00	104.8 PK			1.43 V	102	66.20	38.60
6	*5180.00	93.3 AV			1.43 V	102	54.70	38.60
7	5440.00	59.8 PK	74.0	-14.2	1.20 V	287	20.80	39.00
8	5440.00	51.8 AV	54.0	-2.2	1.20 V	287	12.80	39.00
9	#10360.00	58.2 PK	68.3	-10.1	1.00 V	253	8.70	49.50

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.4 PK	74.0	-18.6	1.07 H	166	16.80	38.60
2	5150.00	42.4 AV	54.0	-11.6	1.07 H	166	3.80	38.60
3	*5200.00	92.8 PK			1.07 H	166	54.20	38.60
4	*5200.00	81.4 AV			1.07 H	166	42.80	38.60
5	5440.00	57.8 PK	74.0	-16.2	1.00 H	119	18.80	39.00
6	5440.00	44.0 AV	54.0	-10.0	1.00 H	119	5.00	39.00
7	#10400.00	59.0 PK	68.3	-9.3	1.00 H	152	9.50	49.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.5 PK	74.0	-17.5	1.27 V	288	17.90	38.60
2	5150.00	43.5 AV	54.0	-10.5	1.27 V	288	4.90	38.60
3	*5200.00	105.2 PK			1.27 V	288	66.60	38.60
4	*5200.00	94.0 AV			1.27 V	288	55.40	38.60
5	5440.00	58.9 PK	74.0	-15.1	1.20 V	291	19.90	39.00
6	5440.00	50.2 AV	54.0	-3.8	1.20 V	291	11.20	39.00
7	#10400.00	58.6 PK	68.3	-9.7	1.00 V	264	9.10	49.50

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4840.00	57.0 PK	74.0	-17.0	1.13 H	152	18.60	38.40
2	4840.00	44.5 AV	54.0	-9.5	1.13 H	152	6.10	38.40
3	5150.00	55.5 PK	74.0	-18.5	1.06 H	256	16.90	38.60
4	5150.00	42.8 AV	54.0	-11.2	1.06 H	256	4.20	38.60
5	*5240.00	94.2 PK			1.06 H	256	55.50	38.70
6	*5240.00	82.3 AV			1.06 H	256	43.60	38.70
7	5440.00	58.3 PK	74.0	-15.7	1.00 H	120	19.30	39.00
8	5440.00	45.0 AV	54.0	-9.0	1.00 H	120	6.00	39.00
9	#10480.00	58.5 PK	68.3	-9.8	1.00 H	144	8.80	49.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4840.00	62.5 PK	74.0	-11.5	1.17 V	213	24.10	38.40
2	4840.00	49.2 AV	54.0	-4.8	1.17 V	213	10.80	38.40
3	5150.00	56.4 PK	74.0	-17.6	1.06 V	179	17.80	38.60
4	5150.00	43.2 AV	54.0	-10.8	1.06 V	179	4.60	38.60
5	*5240.00	105.8 PK			1.22 V	179	67.10	38.70
6	*5240.00	93.6 AV			1.22 V	179	54.90	38.70
7	5440.00	59.0 PK	74.0	-15.0	1.21 V	291	20.00	39.00
8	5440.00	50.1 AV	54.0	-3.9	1.21 V	291	11.10	39.00
9	#10480.00	59.1 PK	68.3	-9.2	1.00 V	271	9.40	49.70

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5080.00	56.9 PK	74.0	-17.1	1.14 H	271	18.40	38.50
2	5080.00	43.3 AV	54.0	-10.7	1.14 H	271	4.80	38.50
3	5150.00	55.3 PK	74.0	-18.7	1.08 H	265	16.70	38.60
4	5150.00	43.1 AV	54.0	-10.9	1.08 H	265	4.50	38.60
5	*5260.00	99.1 PK			1.08 H	265	60.40	38.70
6	*5260.00	87.9 AV			1.08 H	265	49.20	38.70
7	5440.00	57.6 PK	74.0	-16.4	1.00 H	341	18.60	39.00
8	5440.00	44.7 AV	54.0	-9.3	1.00 H	341	5.70	39.00
9	#10520.00	58.8 PK	68.3	-9.5	1.00 H	153	9.00	49.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5080.00	57.6 PK	74.0	-16.4	1.15 V	294	19.10	38.50
2	5080.00	48.6 AV	54.0	-5.4	1.15 V	294	10.10	38.50
3	5150.00	55.8 PK	74.0	-18.2	1.25 V	288	17.20	38.60
4	5150.00	43.4 AV	54.0	-10.6	1.25 V	288	4.80	38.60
5	*5260.00	110.7 PK			1.25 V	288	72.00	38.70
6	*5260.00	99.2 AV			1.25 V	288	60.50	38.70
7	5440.00	59.4 PK	74.0	-14.6	1.18 V	291	20.40	39.00
8	5440.00	50.8 AV	54.0	-3.2	1.18 V	291	11.80	39.00
9	#10520.00	59.5 PK	68.3	-8.8	1.16 V	238	9.70	49.80

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4840.00	46.4 PK	74.0	-27.6	1.15 H	277	8.00	38.40
2	4840.00	34.5 AV	54.0	-19.5	1.15 H	277	-3.90	38.40
3	*5300.00	100.8 PK			1.04 H	257	62.00	38.80
4	*5300.00	89.1 AV			1.04 H	257	50.30	38.80
5	5350.00	56.4 PK	74.0	-17.6	1.04 H	257	17.60	38.80
6	5350.00	44.0 AV	54.0	-10.0	1.04 H	257	5.20	38.80
7	5400.00	47.3 PK	74.0	-26.7	1.00 H	357	8.40	38.90
8	5400.00	34.6 AV	54.0	-19.4	1.00 H	357	-4.30	38.90
9	10600.00	59.5 PK	74.0	-14.5	1.00 H	155	9.50	50.00
10	10600.00	45.2 AV	54.0	-8.8	1.00 H	155	-4.80	50.00

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4840.00	58.0 PK	74.0	-16.0	1.58 V	113	19.60	38.40
2	4840.00	48.6 AV	54.0	-5.4	1.58 V	113	10.20	38.40
3	*5300.00	111.7 PK			1.12 V	290	72.90	38.80
4	*5300.00	100.5 AV			1.12 V	290	61.70	38.80
5	5350.00	58.7 PK	74.0	-15.3	1.12 V	290	19.90	38.80
6	5350.00	46.4 AV	54.0	-7.6	1.12 V	290	7.60	38.80
7	5400.00	59.1 PK	74.0	-14.9	1.22 V	291	20.20	38.90
8	5400.00	50.3 AV	54.0	-3.7	1.22 V	291	11.40	38.90
9	10600.00	59.7 PK	74.0	-14.3	1.12 V	247	9.70	50.00
10	10600.00	46.0 AV	54.0	-8.0	1.12 V	247	-4.00	50.00

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4840.00	46.9 PK	74.0	-27.1	1.05 H	291	8.50	38.40
2	4840.00	34.0 AV	54.0	-20.0	1.05 H	291	-4.40	38.40
3	*5320.00	101.0 PK			1.05 H	255	62.20	38.80
4	*5320.00	89.0 AV			1.05 H	255	50.20	38.80
5	5350.00	61.0 PK	74.0	-13.0	1.05 H	255	22.20	38.80
6	5350.00	45.3 AV	54.0	-8.7	1.05 H	255	6.50	38.80
7	5400.00	47.6 PK	74.0	-26.4	1.00 H	311	8.70	38.90
8	5400.00	44.4 AV	54.0	-9.6	1.00 H	311	5.50	38.90
9	10640.00	60.3 PK	74.0	-13.7	1.00 H	163	10.10	50.20
10	10640.00	46.1 AV	54.0	-7.9	1.00 H	163	-4.10	50.20

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4840.00	57.2 PK	74.0	-16.8	1.26 V	262	18.80	38.40
2	4840.00	48.4 AV	54.0	-5.6	1.26 V	262	10.00	38.40
3	*5320.00	112.4 PK			1.38 V	132	73.60	38.80
4	*5320.00	100.9 AV			1.38 V	132	62.10	38.80
5	5350.00	62.4 PK	74.0	-11.6	1.04 V	210	23.60	38.80
6	5350.00	48.1 AV	54.0	-5.9	1.04 V	210	9.30	38.80
7	5400.00	59.3 PK	74.0	-14.7	1.19 V	291	20.40	38.90
8	5400.00	49.6 AV	54.0	-4.4	1.19 V	291	10.70	38.90
9	10640.00	60.3 PK	74.0	-13.7	1.07 V	264	10.10	50.20
10	10640.00	45.9 AV	54.0	-8.1	1.07 V	264	-4.30	50.20

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4840.00	56.0 PK	74.0	-18.0	1.07 H	216	17.60	38.40
2	4840.00	43.4 AV	54.0	-10.6	1.07 H	216	5.00	38.40
3	5440.00	57.0 PK	74.0	-17.0	1.00 H	149	18.00	39.00
4	5440.00	34.4 AV	54.0	-19.6	1.00 H	149	-4.60	39.00
5	5460.00	56.9 PK	74.0	-17.1	1.25 H	252	17.90	39.00
6	5460.00	44.4 AV	54.0	-9.6	1.25 H	252	5.40	39.00
7	#5470.00	57.6 PK	68.3	-10.7	1.25 H	252	18.60	39.00
8	*5500.00	98.8 PK			1.25 H	252	59.70	39.10
9	*5500.00	87.8 AV			1.25 H	252	48.70	39.10
10	11000.00	59.7 PK	74.0	-14.3	1.00 H	144	8.10	51.60
11	11000.00	46.4 AV	54.0	-7.6	1.00 H	144	-5.20	51.60

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4840.00	57.6 PK	74.0	-16.4	1.58 V	111	19.20	38.40
2	4840.00	48.6 AV	54.0	-5.4	1.58 V	111	10.20	38.40
3	5440.00	59.9 PK	74.0	-14.1	1.22 V	291	20.90	39.00
4	5440.00	50.4 AV	54.0	-3.6	1.22 V	291	11.40	39.00
5	5460.00	58.0 PK	74.0	-16.0	1.00 V	135	19.00	39.00
6	5460.00	45.4 AV	54.0	-8.6	1.00 V	135	6.40	39.00
7	#5470.00	64.4 PK	68.3	-3.9	1.00 V	135	25.40	39.00
8	*5500.00	112.3 PK			1.33 V	134	73.20	39.10
9	*5500.00	100.2 AV			1.33 V	134	61.10	39.10
10	11000.00	60.1 PK	74.0	-13.9	1.00 V	266	8.50	51.60
11	11000.00	46.7 AV	54.0	-7.3	1.00 V	266	-4.90	51.60

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5080.00	56.3 PK	74.0	-17.7	1.09 H	211	17.80	38.50
2	5080.00	43.5 AV	54.0	-10.5	1.09 H	211	5.00	38.50
3	5350.00	56.8 PK	74.0	-17.2	1.25 H	118	18.00	38.80
4	5350.00	44.0 AV	54.0	-10.0	1.25 H	118	5.20	38.80
5	5440.00	57.0 PK	74.0	-17.0	1.00 H	137	18.00	39.00
6	5440.00	43.9 AV	54.0	-10.1	1.00 H	137	4.90	39.00
7	*5580.00	100.2 PK			1.25 H	118	61.00	39.20
8	*5580.00	88.2 AV			1.25 H	118	49.00	39.20
9	11160.00	59.5 PK	74.0	-14.5	1.00 H	139	8.20	51.30
10	11160.00	46.4 AV	54.0	-7.6	1.00 H	139	-4.90	51.30

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5080.00	57.5 PK	74.0	-16.5	1.42 V	294	19.00	38.50
2	5080.00	47.8 AV	54.0	-6.2	1.42 V	294	9.30	38.50
3	5350.00	57.1 PK	74.0	-16.9	1.44 V	93	18.30	38.80
4	5350.00	44.7 AV	54.0	-9.3	1.44 V	93	5.90	38.80
5	5440.00	60.5 PK	74.0	-13.5	1.21 V	290	21.50	39.00
6	5440.00	51.6 AV	54.0	-2.4	1.21 V	290	12.60	39.00
7	*5580.00	111.8 PK			1.44 V	93	72.60	39.20
8	*5580.00	99.7 AV			1.44V	93	60.50	39.20
9	11160.00	59.8 PK	74.0	-14.2	1.00 V	243	8.50	51.30
10	11160.00	46.8 AV	54.0	-7.2	1.00 V	243	-4.50	51.30

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4840.00	56.6 PK	74.0	-17.4	1.04 H	213	18.20	38.40
2	4840.00	43.8 AV	54.0	-10.2	1.04 H	213	5.40	38.40
3	5360.00	56.1 PK	74.0	-17.9	1.20 H	131	17.30	38.80
4	5360.00	44.0 AV	54.0	-10.0	1.20 H	131	5.20	38.80
5	*5700.00	101.2 PK			1.26 H	117	61.70	39.50
6	*5700.00	89.1 AV			1.26 H	117	49.60	39.50
7	#5725.00	59.7 PK	68.3	-8.6	1.26 H	117	20.20	39.50
8	11400.00	60.3 PK	74.0	-13.7	1.00 H	131	8.70	51.60
9	11400.00	47.5 AV	54.0	-6.5	1.00 H	131	-4.10	51.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4840.00	57.3 PK	74.0	-16.7	1.57 V	108	18.90	38.40
2	4840.00	47.5 AV	54.0	-6.5	1.57 V	108	9.10	38.40
3	5360.00	58.9 PK	74.0	-15.1	1.10 V	287	20.10	38.80
4	5360.00	49.4 AV	54.0	-4.6	1.10 V	287	10.60	38.80
5	*5700.00	112.3 PK			1.15 V	235	72.80	39.50
6	*5700.00	100.3 AV			1.15 V	235	60.80	39.50
7	#5725.00	67.0 PK	68.3	-1.3	1.25 V	132	27.50	39.50
8	11400.00	60.6 PK	74.0	-13.4	1.00 V	249	9.00	51.60
9	11400.00	47.6 AV	54.0	-6.4	1.00 V	249	-4.00	51.60

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5040.00	56.3 PK	74.0	-17.7	1.00 H	271	17.90	38.40
2	5040.00	43.8 AV	54.0	-10.2	1.00 H	271	5.40	38.40
3	5150.00	54.1 PK	74.0	-19.9	1.66 H	266	15.50	38.60
4	5150.00	43.1 AV	54.0	-10.9	1.66 H	266	4.50	38.60
5	*5190.00	94.5 PK			1.66 H	266	55.90	38.60
6	*5190.00	83.6 AV			1.66 H	266	45.00	38.60
7	5360.00	58.3 PK	74.0	-15.7	1.00 H	158	19.50	38.80
8	5360.00	45.1 AV	54.0	-8.9	1.00 H	158	6.30	38.80
9	#10380.00	57.9 PK	68.3	-10.4	1.08 H	239	8.40	49.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5040.00	57.5 PK	74.0	-16.5	1.00 V	182	19.10	38.40
2	5040.00	49.6 AV	54.0	-4.4	1.00 V	182	11.20	38.40
3	5150.00	60.3 PK	74.0	-13.7	1.27 V	292	21.70	38.60
4	5150.00	47.7 AV	54.0	-6.3	1.27 V	292	9.10	38.60
5	*5190.00	104.9 PK			1.28 V	290	66.30	38.60
6	*5190.00	93.8 AV			1.28 V	290	55.20	38.60
7	5360.00	60.5 PK	74.0	-13.5	1.11 V	291	21.70	38.80
8	5360.00	52.9 AV	54.0	-1.1	1.11 V	291	14.10	38.80
9	#10380.00	58.0 PK	68.3	-10.3	1.00 V	177	8.50	49.50

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5040.00	56.5 PK	74.0	-17.5	1.00 H	265	18.10	38.40
2	5040.00	43.7 AV	54.0	-10.3	1.00 H	265	5.30	38.40
3	5150.00	55.4 PK	74.0	-18.6	1.48 H	259	16.80	38.60
4	5150.00	43.3 AV	54.0	-10.7	1.48 H	259	4.70	38.60
5	*5230.00	93.5 PK			1.48 H	259	54.90	38.60
6	*5230.00	83.2 AV			1.48 H	259	44.60	38.60
7	5360.00	58.0 PK	74.0	-16.0	1.00 H	147	19.20	38.80
8	5360.00	44.9 AV	54.0	-9.1	1.00 H	147	6.10	38.80
9	#10460.00	58.7 PK	68.3	-9.6	1.07 H	252	9.10	49.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5040.00	58.1 PK	74.0	-15.9	1.32 V	290	19.70	38.40
2	5040.00	50.6 AV	54.0	-3.4	1.32 V	290	12.20	38.40
3	5150.00	56.1 PK	74.0	-17.9	1.40 V	292	17.50	38.60
4	5150.00	44.1 AV	54.0	-9.9	1.40 V	292	5.50	38.60
5	*5230.00	104.1 PK			1.40 V	292	65.50	38.60
6	*5230.00	93.2 AV			1.40 V	292	54.60	38.60
7	5360.00	60.1 PK	74.0	-13.9	1.10 V	290	21.30	38.80
8	**5360.00**	**53.0 AV**	**54.0**	**-1.0**	**1.10 V**	**290**	**14.20**	**38.80**
9	#10460.00	58.8 PK	68.3	-9.5	1.00 V	183	9.20	49.60

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5040.00	55.3 PK	74.0	-18.7	1.00 H	190	16.90	38.40
2	5040.00	45.9 AV	54.0	-8.1	1.00 H	190	7.50	38.40
3	5150.00	55.8 PK	74.0	-18.2	1.00 H	200	17.20	38.60
4	5150.00	42.1 AV	54.0	-11.9	1.00 H	200	3.50	38.60
5	*5270.00	97.0 PK			1.00 H	215	58.30	38.70
6	*5270.00	85.7 AV			1.00 H	215	47.00	38.70
7	5360.00	57.0 PK	74.0	-17.0	1.25 H	280	18.20	38.80
8	5360.00	46.1 AV	54.0	-7.9	1.25 H	280	7.30	38.80
9	#10540.00	56.2 PK	68.3	-12.1	1.00 H	20	6.40	49.80

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5040.00	56.7 PK	74.0	-17.3	1.00 V	191	18.30	38.40
2	5040.00	46.3 AV	54.0	-7.7	1.00 V	191	7.90	38.40
3	5150.00	56.2 PK	74.0	-17.8	1.00 V	19	17.60	38.60
4	5150.00	43.8 AV	54.0	-10.2	1.00 V	19	5.20	38.60
5	*5270.00	107.4 PK			1.36 V	134	68.70	38.70
6	*5270.00	96.0 AV			1.36 V	134	57.30	38.70
7	5360.00	58.2 PK	74.0	-15.8	1.26 V	288	19.40	38.80
8	5360.00	47.4 AV	54.0	-6.6	1.26 V	288	8.60	38.80
9	#10540.00	57.5 PK	68.3	-10.8	1.00 V	18	7.70	49.80

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5040.00	55.7 PK	74.0	-18.3	1.00 H	195	17.30	38.40
2	5040.00	43.7 AV	54.0	-10.3	1.00 H	195	5.30	38.40
3	*5310.00	91.6 PK			1.28 H	255	52.80	38.80
4	*5310.00	86.2 AV			1.28 H	255	47.40	38.80
5	5350.00	55.6 PK	74.0	-18.4	1.27 H	254	16.80	38.80
6	5350.00	44.7 AV	54.0	-9.3	1.27 H	254	5.90	38.80
7	5360.00	63.3 PK	74.0	-10.7	1.15 H	285	24.50	38.80
8	5360.00	46.4 AV	54.0	-7.6	1.15 H	285	7.60	38.80
9	10620.00	57.6 PK	74.0	-16.4	1.00 H	10	7.50	50.10
10	10620.00	45.1 AV	54.0	-8.9	1.00 H	10	-5.00	50.10

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5040.00	56.1 PK	74.0	-17.9	1.00 V	190	17.70	38.40
2	5040.00	44.3 AV	54.0	-9.7	1.00 V	190	5.90	38.40
3	*5310.00	107.0 PK			1.11 V	131	68.20	38.80
4	*5310.00	95.5 AV			1.11 V	131	56.70	38.80
5	5350.00	65.4 PK	74.0	-8.6	1.13 V	283	26.60	38.80
6	5350.00	51.1 AV	54.0	-2.9	1.13 V	283	12.30	38.80
7	5360.00	64.9 PK	74.0	-9.1	1.14 V	290	26.10	38.80
8	5360.00	47.7 AV	54.0	-6.3	1.14 V	290	8.90	38.80
9	10620.00	58.8 PK	74.0	-15.2	1.00 V	9	8.70	50.10
10	10620.00	46.5 AV	54.0	-7.5	1.00 V	9	-3.60	50.10

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5040.00	55.3 PK	74.0	-18.7	1.00 H	209	16.90	38.40
2	5040.00	44.7 AV	54.0	-9.3	1.00 H	209	6.30	38.40
3	5360.00	56.5 PK	74.0	-17.5	1.25 H	280	17.70	38.80
4	5360.00	45.7 AV	54.0	-8.3	1.25 H	280	6.90	38.80
5	5460.00	56.6 PK	74.0	-17.4	1.38 H	253	17.60	39.00
6	5460.00	45.1 AV	54.0	-8.9	1.38 H	253	6.10	39.00
7	#5470.00	60.6 PK	68.3	-7.7	1.38 H	253	21.60	39.00
8	*5510.00	96.5 PK			1.36 H	256	57.40	39.10
9	*5510.00	86.3 AV			1.36 H	256	47.20	39.10
10	11020.00	58.5 PK	74.0	-15.5	1.00 H	35	7.00	51.50
11	11020.00	46.8 AV	54.0	-7.2	1.00 H	35	-4.70	51.50

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5040.00	56.7 PK	74.0	-17.3	1.00 V	290	18.30	38.40
2	5040.00	45.2 AV	54.0	-8.8	1.00 V	290	6.80	38.40
3	5360.00	57.8 PK	74.0	-16.2	1.28 V	291	19.00	38.80
4	5360.00	46.1 AV	54.0	-7.9	1.28 V	291	7.30	38.80
5	5460.00	61.3 PK	74.0	-12.7	1.00 V	191	22.30	39.00
6	5460.00	48.3 AV	54.0	-5.7	1.00 V	191	9.30	39.00
7	#5470.00	67.2 PK	68.3	-1.1	1.00 V	191	28.20	39.00
8	*5510.00	106.0 PK			1.00 V	202	66.90	39.10
9	*5510.00	95.0 AV			1.00 V	202	55.90	39.10
10	11020.00	59.7 PK	74.0	-14.3	1.00 V	20	8.20	51.50
11	11020.00	47.2 AV	54.0	-6.8	1.00 V	20	-4.30	51.50

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5040.00	55.7 PK	74.0	-18.3	1.00 H	295	17.30	38.40
2	5040.00	43.0 AV	54.0	-11.0	1.00 H	295	4.60	38.40
3	5360.00	58.1 PK	74.0	-15.9	1.00 H	285	19.30	38.80
4	5360.00	44.0 AV	54.0	-10.0	1.00 H	285	5.20	38.80
5	*5550.00	98.1 PK			1.35 H	256	59.00	39.10
6	*5550.00	88.0 AV			1.35 H	256	48.90	39.10
7	11100.00	57.4 PK	74.0	-16.6	1.00 H	75	6.10	51.30
8	11100.00	46.9 AV	54.0	-7.1	1.00 H	75	-4.40	51.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5040.00	56.1 PK	74.0	-17.9	1.00 V	291	17.70	38.40
2	5040.00	44.6 AV	54.0	-9.4	1.00 V	291	6.20	38.40
3	5360.00	59.2 PK	74.0	-14.8	1.00 V	292	20.40	38.80
4	5360.00	45.5 AV	54.0	-8.5	1.00 V	292	6.70	38.80
5	*5550.00	107.7 PK			1.00 V	207	68.60	39.10
6	*5550.00	97.2 AV			1.00 V	207	58.10	39.10
7	11100.00	58.6 PK	74.0	-15.4	1.00 V	79	7.30	51.30
8	11100.00	47.3 AV	54.0	-6.7	1.00 V	79	-4.00	51.30

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5040.00	55.0 PK	74.0	-19.0	1.00 H	244	16.60	38.40
2	5040.00	43.8 AV	54.0	-10.2	1.00 H	244	5.40	38.40
3	5360.00	57.7 PK	74.0	-16.3	1.00 H	300	18.90	38.80
4	5360.00	44.6 AV	54.0	-9.4	1.00 H	300	5.80	38.80
5	*5670.00	97.7 PK			1.00 H	25	58.30	39.40
6	*5670.00	86.0 AV			1.00 H	25	46.60	39.40
7	#5725.00	60.2 PK	68.3	-8.1	1.00 H	30	20.70	39.50
8	11340.00	57.3 PK	74.0	-16.7	1.00 H	111	5.60	51.70
9	11340.00	46.0 AV	54.0	-8.0	1.00 H	111	-5.70	51.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5040.00	56.0 PK	74.0	-18.0	1.00 V	250	17.60	38.40
2	5040.00	44.4 AV	54.0	-9.6	1.00 V	250	6.00	38.40
3	5360.00	58.9 PK	74.0	-15.1	1.00 V	277	20.10	38.80
4	5360.00	45.1 AV	54.0	-8.9	1.00 V	277	6.30	38.80
5	*5670.00	107.8 PK			1.29 V	236	68.40	39.40
6	*5670.00	97.0 AV			1.29 V	236	57.60	39.40
7	#5725.00	61.1 PK	68.3	-7.2	1.18 V	227	21.60	39.50
8	11340.00	58.5 PK	74.0	-15.5	1.00 V	97	6.80	51.70
9	11340.00	47.0 AV	54.0	-7.0	1.00 V	97	-4.70	51.70

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Alan Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	182.91	36.3 QP	43.5	-7.2	1.75 H	33	23.50	12.80
2	232.07	37.5 QP	46.0	-8.5	1.25 H	2	24.60	12.90
3	264.69	40.3 QP	46.0	-5.7	1.00 H	304	26.10	14.20
4	299.62	42.1 QP	46.0	-3.9	1.00 H	17	26.40	15.70
5	385.18	35.8 QP	46.0	-10.2	1.50 H	298	17.80	18.00
6	497.54	44.4 QP	46.0	-1.6	2.00 H	4	23.40	21.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	35.72	36.2 QP	40.0	-3.8	1.25 V	207	23.10	13.10
2	299.62	37.7 QP	46.0	-8.3	1.75 V	315	22.00	15.70
3	365.95	33.0 QP	46.0	-13.0	1.50 V	19	15.50	17.50
4	426.41	36.6 QP	46.0	-9.4	1.25 V	196	17.50	19.10
5	499.48	41.8 QP	46.0	-4.2	2.00 V	308	20.70	21.10
6	848.75	40.7 QP	46.0	-5.3	1.00 V	54	12.90	27.80

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Alan Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	198.71	34.8 QP	43.5	-8.7	2.00 H	270	23.20	11.60
2	232.05	37.1 QP	46.0	-8.9	1.50 H	11	24.20	12.90
3	266.63	39.8 QP	46.0	-6.2	1.75 H	286	25.50	14.30
4	299.62	42.8 QP	46.0	-3.2	1.00 H	6	27.10	15.70
5	336.84	34.0 QP	46.0	-12.0	3.00 H	13	17.30	16.70
6	498.82	44.2 QP	46.0	-1.8	1.25 H	236	23.10	21.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	34.85	34.3 QP	40.0	-5.7	1.00 V	228	21.40	12.90
2	85.81	30.7 QP	40.0	-9.3	1.25 V	19	21.50	9.20
3	105.58	32.5 QP	43.5	-11.0	1.75 V	16	22.10	10.40
4	142.44	29.2 QP	43.5	-14.3	2.00 V	279	15.20	14.00
5	299.62	37.2 QP	46.0	-8.8	2.00 V	306	21.50	15.70
6	497.65	40.5 QP	46.0	-5.5	1.50 V	316	19.50	21.00

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

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

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 19, 2011	Nov. 18, 2012
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 29, 2011	Dec. 28, 2012
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 30, 2011	Dec. 29, 2012
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 07, 2011	Jul. 06, 2012
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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

2. The test was performed in HwaYa Shielded Room 2.

3. The VCCI Site Registration No. is C-2047.

4.2.3 TEST PROCEDURES

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

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

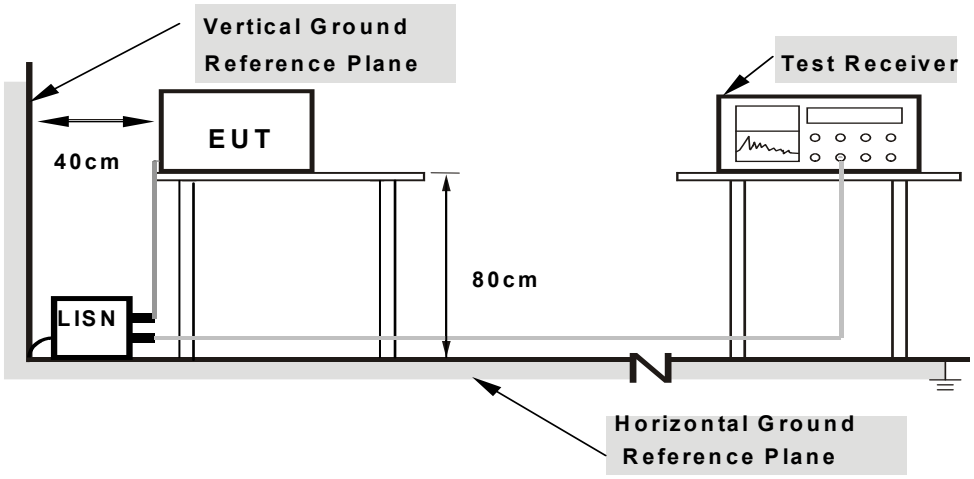
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

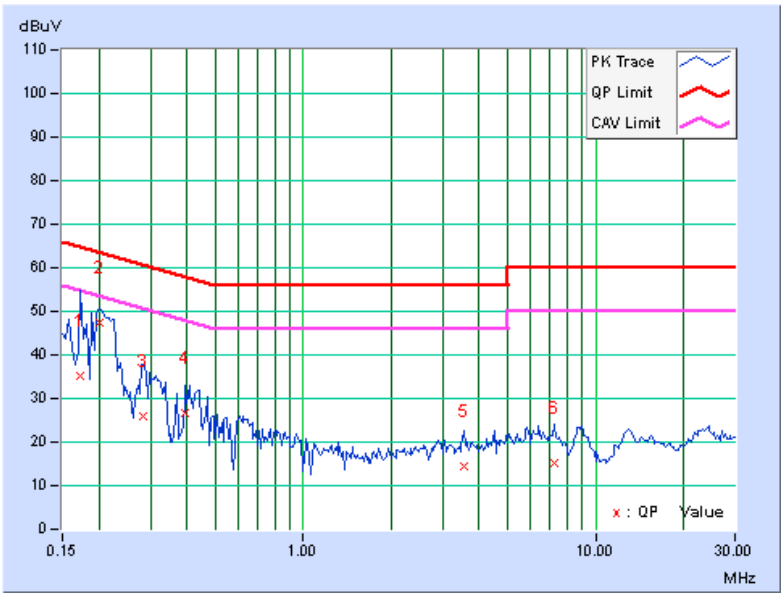
4.2.7 TEST RESULTS

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

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 64		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17344	0.15	34.92	19.12	35.07	19.27	64.79	54.79	-29.72	-35.52
2	**0.20078**	**0.15**	**47.37**	**27.67**	**47.52**	**27.82**	**63.58**	**53.58**	**-16.06**	**-25.76**
3	0.28281	0.16	25.94	6.32	26.10	6.48	60.73	50.73	-34.63	-44.25
4	0.39609	0.17	26.43	8.03	26.60	8.20	57.93	47.93	-31.34	-39.74
5	3.54297	0.32	14.08	7.44	14.40	7.76	56.00	46.00	-41.60	-38.24
6	7.18359	0.39	14.93	7.94	15.32	8.33	60.00	50.00	-44.68	-41.67

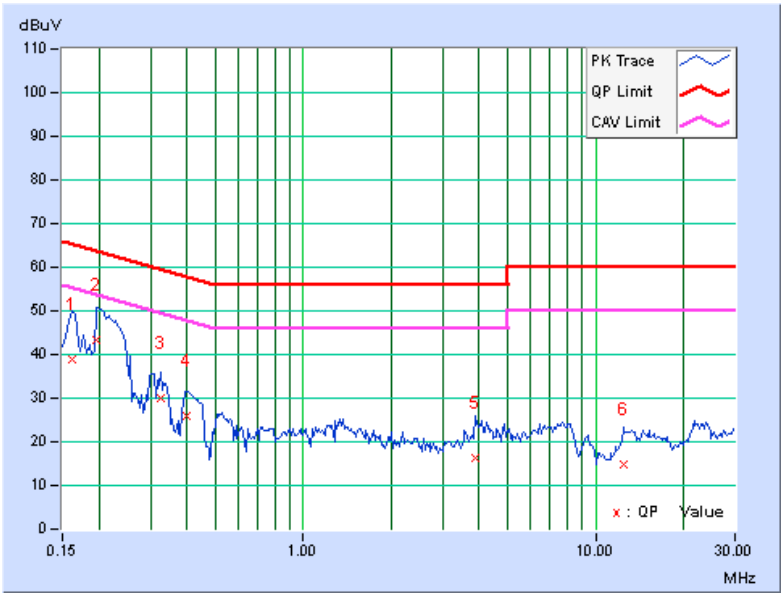
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 64		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16172	0.13	38.59	14.97	38.72	15.10	65.38	55.38	-26.65	-40.27
2	0.19687	0.14	43.08	24.44	43.22	24.58	63.74	53.74	-20.52	-29.16
3	0.32578	0.15	29.99	12.21	30.14	12.36	59.56	49.56	-29.42	-37.20
4	0.40000	0.16	25.95	6.98	26.11	7.14	57.85	47.85	-31.74	-40.71
5	3.85938	0.34	16.11	5.53	16.45	5.87	56.00	46.00	-39.55	-40.13
6	12.44531	0.54	14.40	8.93	14.94	9.47	60.00	50.00	-45.06	-40.53

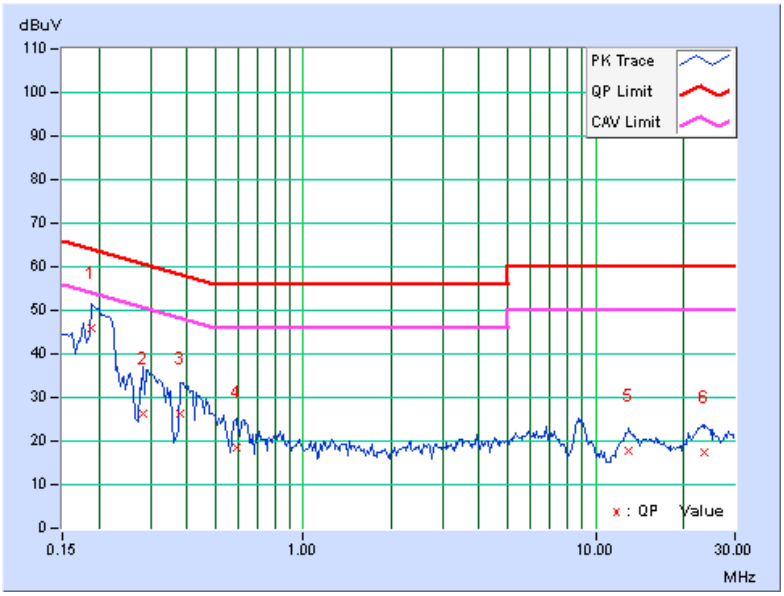
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18906	0.15	45.81	21.42	45.96	21.57	64.08	54.08	-18.12	-32.51
2	0.28281	0.16	26.11	9.54	26.27	9.70	60.73	50.73	-34.46	-41.03
3	0.38047	0.17	25.95	5.47	26.12	5.64	58.27	48.27	-32.15	-42.63
4	0.59141	0.18	18.45	6.25	18.63	6.43	56.00	46.00	-37.37	-39.57
5	13.03125	0.49	17.11	11.39	17.60	11.88	60.00	50.00	-42.40	-38.12
6	23.64453	0.59	16.88	11.36	17.47	11.95	60.00	50.00	-42.53	-38.05

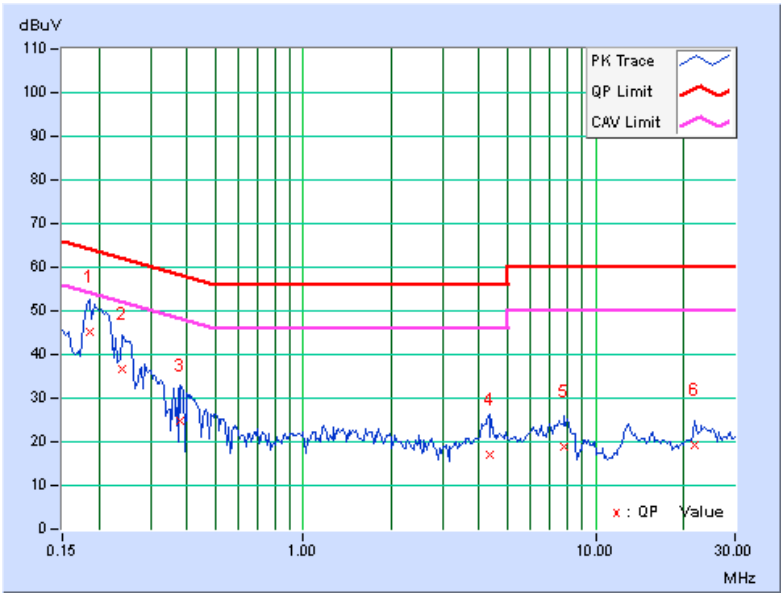
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18516	0.14	44.95	19.79	45.09	19.93	64.25	54.25	-19.16	-34.32
2	0.23984	0.14	36.67	13.76	36.81	13.90	62.10	52.10	-25.29	-38.20
3	0.38047	0.16	24.70	15.08	24.86	15.24	58.27	48.27	-33.41	-33.03
4	4.32813	0.36	16.52	7.36	16.88	7.72	56.00	46.00	-39.12	-38.28
5	7.84375	0.43	18.35	12.11	18.78	12.54	60.00	50.00	-41.22	-37.46
6	21.96875	0.69	18.46	10.96	19.15	11.65	60.00	50.00	-40.85	-38.35

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



4.3 PEAK TRANSMIT POWER MEASUREMENT

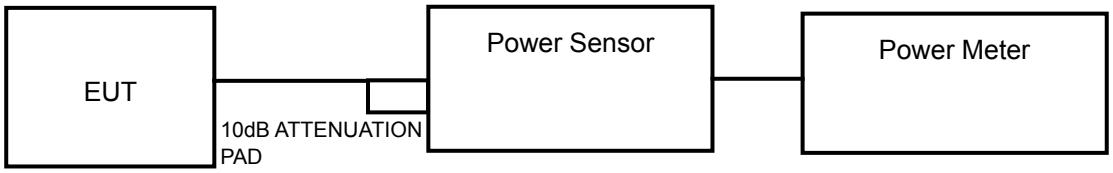
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.250 ~ 5.350GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.470 ~ 5.725GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB

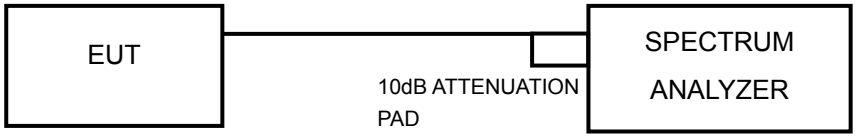
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

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

FOR 26dB BANDWIDTH

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

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

POWER OUTPUT: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	26.363	14.21	17	PASS
44	5220	27.164	14.34	17	PASS
48	5240	27.606	14.41	17	PASS
52	5260	34.754	15.41	24	PASS
60	5300	33.574	15.26	24	PASS
64	5320	32.211	15.08	24	PASS
100	5500	32.659	15.14	24	PASS
116	5580	33.343	15.23	24	PASS
140	5700	32.359	15.10	24	PASS

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
36	5180	6.96	5.71	7.92	14.884	11.73	14.3	PASS
44	5220	7.21	6.56	7.96	16.041	12.05	14.3	PASS
48	5240	6.86	7.27	7.84	16.268	12.11	14.3	PASS
52	5260	12.21	11.73	12.03	47.487	16.77	21.3	PASS
60	5300	12.23	12.34	12.14	50.219	17.01	21.3	PASS
64	5320	12.27	12.36	12.48	51.785	17.14	21.3	PASS
100	5500	12.36	11.11	11.41	43.967	16.43	21.2	PASS
116	5580	12.11	11.99	11.67	46.757	16.70	21.2	PASS
140	5700	11.89	11.43	12.67	47.845	16.80	21.2	PASS

NOTE:
5180~5240MHz: Directional gain = 3.9dBi + 10log(3) = 8.7dBi > 6dBi , so the conducted power limit shall be reduced to 17-(8.7-6) = 14.3dBm.
5260~5320MHz: Directional gain = 3.9dBi + 10log(3) = 8.7dBi > 6dBi , so the conducted power limit shall be reduced to 24-(8.7-6) = 21.3dBm.
5500~5700MHz: Directional gain = 4dBi + 10log(3) = 8.8dBi > 6dBi , so the conducted power limit shall be reduced to 24-(8.8-6) = 21.2dBm.

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
38	5190	8.46	7.03	8.43	19.027	12.79	14.3	PASS
46	5230	8.21	7.38	8.38	18.979	12.78	14.3	PASS
54	5270	11.76	11.53	11.80	44.356	16.47	21.3	PASS
62	5310	11.63	11.01	11.51	41.331	16.16	21.3	PASS
102	5510	11.11	10.73	10.81	36.793	15.66	21.2	PASS
110	5550	11.86	11.63	12.88	49.310	16.93	21.2	PASS
134	5670	11.67	11.73	11.35	43.229	16.36	21.2	PASS

NOTE:
5180~5240MHz: Directional gain = 3.9dBi + 10log(3) = 8.7dBi > 6dBi , so the conducted power limit shall be reduced to 17-(8.7-6) = 14.3dBm.
5260~5320MHz: Directional gain = 3.9dBi + 10log(3) = 8.7dBi > 6dBi , so the conducted power limit shall be reduced to 24-(8.7-6) = 21.3dBm.
5500~5700MHz: Directional gain = 4dBi + 10log(3) = 8.8dBi > 6dBi , so the conducted power limit shall be reduced to 24-(8.8-6) = 21.2dBm.

26dB BANDWIDTH: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	24.70	PASS
44	5220	25.42	PASS
48	5240	24.58	PASS
52	5260	25.78	PASS
60	5300	25.60	PASS
64	5320	25.67	PASS
100	5500	25.94	PASS
116	5580	26.31	PASS
140	5700	26.47	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
36	5180	26.12	24.80	25.58	PASS
44	5220	26.13	24.35	25.13	PASS
48	5240	25.65	24.86	25.32	PASS
52	5260	26.23	25.77	25.57	PASS
60	5300	26.08	25.66	25.85	PASS
64	5320	26.30	26.51	25.60	PASS
100	5500	26.58	25.53	25.24	PASS
116	5580	25.78	25.52	26.67	PASS
140	5700	26.45	26.50	27.06	PASS

802.11n (40MHz)

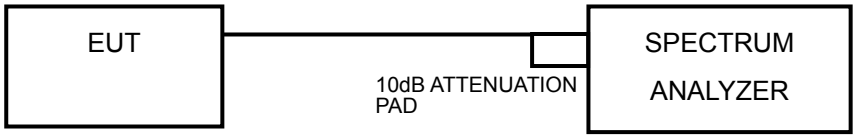
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
38	5190	54.95	53.55	52.46	PASS
46	5230	55.02	52.95	53.06	PASS
54	5270	55.63	53.81	52.79	PASS
62	5310	55.65	54.87	53.27	PASS
102	5510	55.02	53.84	52.21	PASS
110	5550	55.45	55.65	52.28	PASS
134	5670	55.18	57.40	54.46	PASS

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

For 802.11a

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 = auto, trigger set to “free run”.
4) Trace average at least 100 traces in power averaging mode.
5) Record the max value

For 802.11n (20MHz)

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 = 3 second*.

4) Perform a single sweep.

5) Record the max value and add 10 log (1/duty cycle)

*Sweep time ≥ 10 * (number of points in sweep) * (total on/off period of the transmitted signal)
≥ 10 * 501 * 507us= 2.54 second

802.11n (40MHz)

Using method SA-2 alternative

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.

2) Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS

3) Sweep time = 2 second*.

4) Perform a single sweep.

5) Record the max value and add 10 log (1/duty cycle)

*Sweep time ≥ 10 * (number of points in sweep) * (total on/off period of the transmitted signal)
≥ 10 * 501 * 283.2us= 1.42 second

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6.

4.4.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.55	4	PASS
44	5220	3.68	4	PASS
48	5240	3.66	4	PASS
52	5260	4.82	11	PASS
60	5300	4.42	11	PASS
64	5320	4.47	11	PASS
100	5500	4.37	11	PASS
116	5580	4.35	11	PASS
140	5700	4.28	11	PASS

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	TOTAL PSD WITH DUTY FACTOR (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2					
36	5180	-4.36	-5.91	-3.62	0.228	0.36	0.588	1.3	PASS
44	5220	-4.15	-5.04	-3.68	0.456	0.36	0.816	1.3	PASS
48	5240	-4.70	-4.44	-3.86	0.425	0.36	0.785	1.3	PASS
52	5260	1.15	-0.07	0.42	5.270	0.36	5.630	8.3	PASS
60	5300	1.26	0.63	0.54	5.574	0.36	5.934	8.3	PASS
64	5320	1.29	0.69	0.93	5.617	0.36	5.977	8.3	PASS
100	5500	1.12	-0.60	-0.00	4.869	0.36	5.229	8.2	PASS
116	5580	0.94	0.25	-0.09	5.072	0.36	5.432	8.2	PASS
140	5700	1.00	-0.32	1.01	5.346	0.36	5.706	8.2	PASS

NOTE:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Refer to section 3.3 for duty cycle spectrum plot.
3. **5180~5240MHz:** Directional gain = 3.9dBi + 10log(3) = 8.7dBi > 6dBi , so the conducted power limit shall be reduced to 4-(8.7-6) = 1.3dBm.
   5260~5320MHz: Directional gain = 3.9dBi + 10log(3) = 8.7dBi > 6dBi , so the conducted power limit shall be reduced to 11-(8.7-6) = 8.3dBm.
   5500~5700MHz: Directional gain = 4dBi + 10log(3) = 8.8dBi > 6dBi , so the conducted power limit shall be reduced to 11-(8.8-6) = 8.2dBm.

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	TOTAL PSD WITH DUTY FACTOR (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2					
38	5190	-5.43	-7.32	-6.11	-1.492	0.50	-0.992	1.3	PASS
46	5230	-5.47	-6.94	-6.24	-1.466	0.50	-0.966	1.3	PASS
54	5270	-2.15	-3.05	-2.82	2.054	0.50	2.554	8.3	PASS
62	5310	-2.47	-3.41	-2.88	1.806	0.50	2.306	8.3	PASS
102	5510	-2.94	-3.75	-3.95	1.157	0.50	1.657	8.2	PASS
110	5550	-2.27	-2.83	-2.06	2.234	0.50	2.734	8.2	PASS
134	5670	-2.27	-2.43	-3.23	2.101	0.50	2.601	8.2	PASS

NOTE:

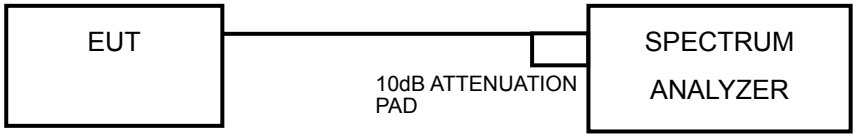
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Refer to section 3.3 for duty cycle spectrum plot.
3. **5180~5240MHz:** Directional gain = 3.9dBi + 10log(3) = 8.7dBi > 6dBi , so the conducted power limit shall be reduced to 4-(8.7-6) = 1.3dBm.
   5260~5320MHz: Directional gain = 3.9dBi + 10log(3) = 8.7dBi > 6dBi , so the conducted power limit shall be reduced to 11-(8.7-6) = 8.3dBm.
   5500~5700MHz: Directional gain = 4dBi + 10log(3) = 8.8dBi > 6dBi , so the conducted power limit shall be reduced to 11-(8.8-6) = 8.2dBm.

4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

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

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

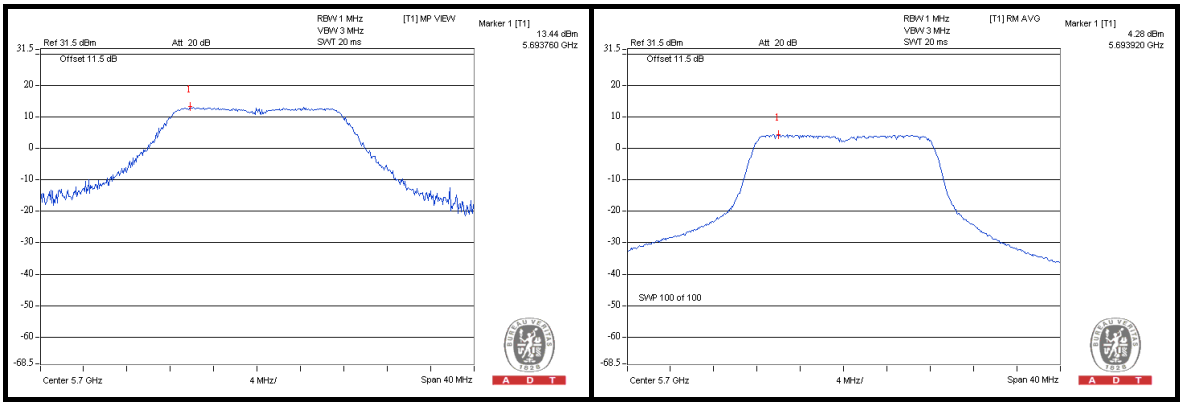
4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

4.5.7 TEST RESULTS

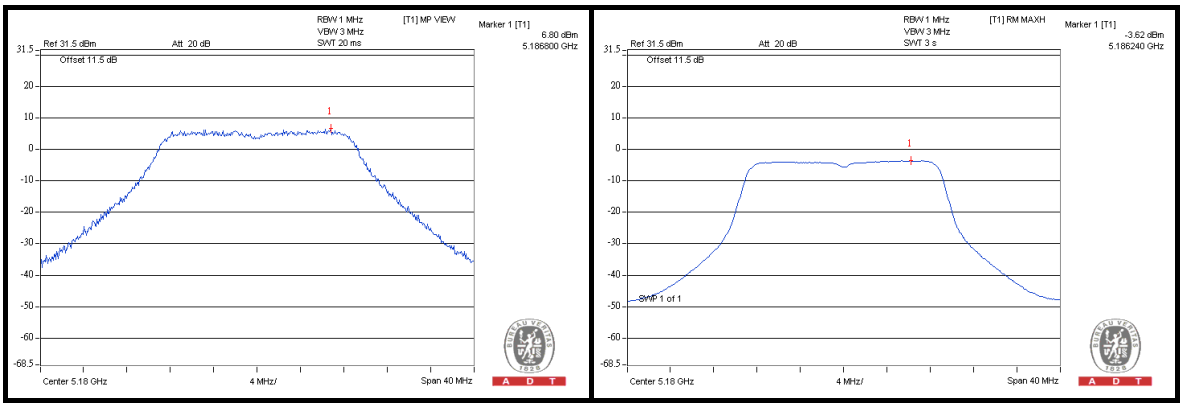
802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	12.36	3.55	8.81	13	PASS
44	5220	12.61	3.68	8.93	13	PASS
48	5240	12.71	3.66	9.05	13	PASS
52	5260	13.63	4.82	8.81	13	PASS
60	5300	13.54	4.42	9.12	13	PASS
64	5320	13.36	4.47	8.89	13	PASS
100	5500	13.44	4.37	9.07	13	PASS
116	5580	13.20	4.35	8.85	13	PASS
140	5700	13.44	4.28	9.16	13	PASS



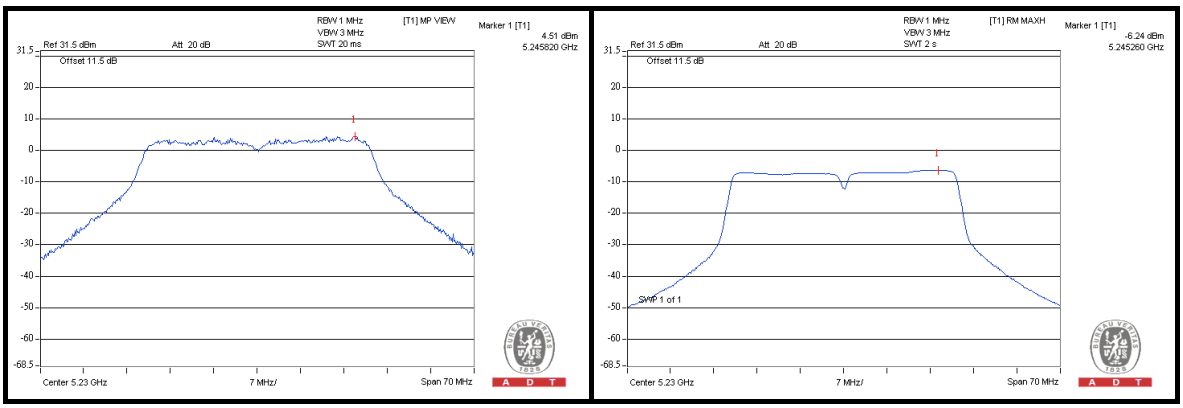
802.11n (20MHz)

TX chain	CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
0	36	5180	4.49	-4.36	-4.00	8.49	13	PASS
	40	5200	4.58	-4.15	-3.79	8.37	13	PASS
	48	5240	4.33	-4.70	-4.34	8.67	13	PASS
	52	5260	9.44	1.15	1.51	7.93	13	PASS
	60	5300	9.33	1.26	1.62	7.71	13	PASS
	64	5320	9.37	1.29	1.65	7.72	13	PASS
	100	5500	9.80	1.12	1.48	8.32	13	PASS
	116	5580	9.13	0.94	1.30	7.83	13	PASS
	140	5700	9.05	1.00	1.36	7.69	13	PASS
1	36	5180	4.03	-5.91	-5.55	9.58	13	PASS
	40	5200	4.83	-5.04	-4.68	9.51	13	PASS
	48	5240	5.77	-4.44	-4.08	9.85	13	PASS
	52	5260	9.24	-0.07	0.29	8.95	13	PASS
	60	5300	10.00	0.63	0.99	9.01	13	PASS
	64	5320	9.93	0.69	1.05	8.88	13	PASS
	100	5500	8.61	-0.60	-0.24	8.85	13	PASS
	116	5580	9.51	0.25	0.61	8.9	13	PASS
	140	5700	9.24	-0.32	0.04	9.2	13	PASS
2	36	5180	6.80	-3.62	-3.26	10.06	13	PASS
	40	5200	6.72	-3.68	-3.32	10.04	13	PASS
	48	5240	6.52	-3.86	-3.50	10.02	13	PASS
	52	5260	10.57	0.42	0.78	9.79	13	PASS
	60	5300	10.65	0.54	0.90	9.75	13	PASS
	64	5320	11.00	0.93	1.29	9.71	13	PASS
	100	5500	10.00	-0.00	0.36	9.64	13	PASS
	116	5580	10.20	-0.09	0.27	9.93	13	PASS
	140	5700	11.23	1.01	1.37	9.86	13	PASS



802.11n (40MHz)

TX chain	CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
0	38	5190	3.49	-5.43	-4.93	8.42	13	PASS
	46	5230	3.43	-5.47	-4.97	8.40	13	PASS
	54	5270	6.77	-2.15	-1.65	8.42	13	PASS
	62	5310	6.87	-2.47	-1.97	8.84	13	PASS
	102	5510	6.30	-2.94	-2.44	8.74	13	PASS
	110	5550	7.12	-2.27	-1.77	8.89	13	PASS
	134	5670	6.54	-2.27	-1.77	8.31	13	PASS
1	38	5190	3.14	-7.32	-6.82	9.96	13	PASS
	46	5230	3.36	-6.94	-6.44	9.80	13	PASS
	54	5270	7.47	-3.05	-2.55	10.02	13	PASS
	62	5310	7.10	-3.41	-2.91	10.01	13	PASS
	102	5510	6.65	-3.75	-3.25	9.90	13	PASS
	110	5550	7.54	-2.83	-2.33	9.87	13	PASS
	134	5670	7.69	-2.43	-1.93	9.62	13	PASS
2	38	5190	4.61	-6.11	-5.61	10.22	13	PASS
	46	5230	4.51	-6.24	-5.74	10.25	13	PASS
	54	5270	7.73	-2.82	-2.32	10.05	13	PASS
	62	5310	7.46	-2.88	-2.38	9.84	13	PASS
	102	5510	5.98	-3.95	-3.45	9.43	13	PASS
	110	5550	8.08	-2.06	-1.56	9.64	13	PASS
	134	5670	6.44	-3.23	-2.73	9.17	13	PASS

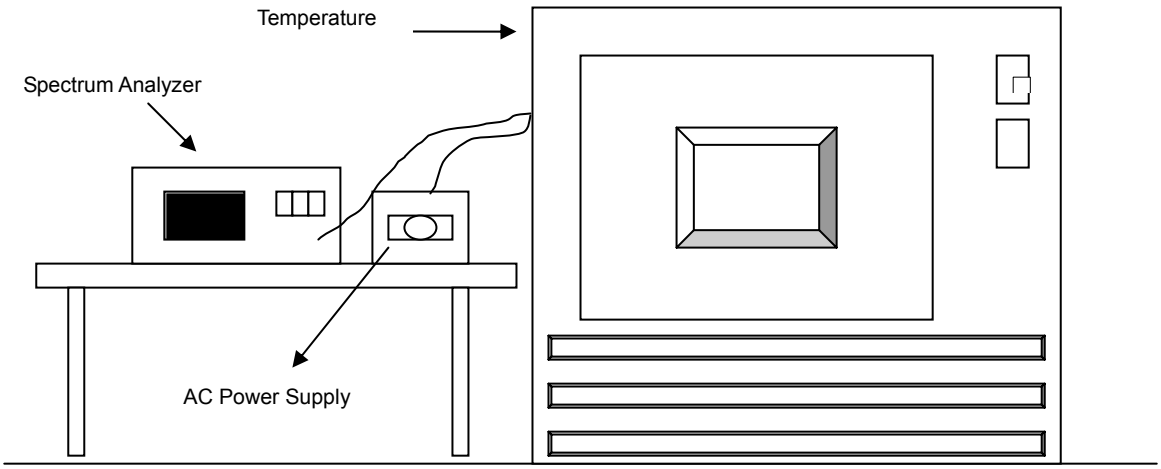


4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency of the carrier signal shall be maintained within band of operation

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.6.4 TEST PROCEDURE

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.

b. Turn the EUT on and couple its output to a spectrum analyzer.

c. Turn the EUT off and set the chamber to the highest temperature specified.

d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.

e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.

f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

Set the EUT transmit at un-modulation mode to test frequency stability.

4.6.7 TEST RESULTS

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
55	110	5319.988917	-2.083	5319.988897	-2.087	5319.989181	-2.034	5319.988873	-2.092
50	110	5319.988706	-2.123	5319.988839	-2.098	5319.989121	-2.045	5319.989032	-2.062
40	110	5319.990487	-1.788	5319.990427	-1.799	5319.990844	-1.721	5319.990570	-1.773
30	110	5319.991425	-1.612	5319.991813	-1.539	5319.991421	-1.613	5319.991751	-1.551
20	110	5319.992689	-1.374	5319.992616	-1.388	5319.992798	-1.354	5319.992445	-1.420
10	110	5319.991410	-1.615	5319.991366	-1.623	5319.991440	-1.609	5319.991473	-1.603
0	110	5319.990261	-1.831	5319.990640	-1.759	5319.990537	-1.779	5319.990375	-1.809
-10	110	5319.989569	-1.961	5319.989498	-1.974	5319.990155	-1.851	5319.989592	-1.956
-20	110	5319.988211	-2.216	5319.988199	-2.218	5319.988534	-2.155	5319.988761	-2.113
-30	110	5319.987729	-2.307	5319.988035	-2.249	5319.988147	-2.228	5319.987610	-2.329

FREQUEMCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	93.5	5319.991479	-1.602	5319.991858	-1.530	5319.991284	-1.638	5319.991601	-1.579
	110.0	5319.992689	-1.374	5319.992616	-1.388	5319.992798	-1.354	5319.992445	-1.420
	126.5	5319.991907	-1.521	5319.992071	-1.490	5319.991661	-1.567	5319.992148	-1.476

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.adt.com.tw

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

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

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

---END---