

FCC TEST REPORT (15.407)

REPORT NO.: RF120619C12-1
MODEL NO.: WNCE4004
FCC ID: PY312100193
RECEIVED: Jun. 19, 2012
TESTED: Jun. 25 ~ Jul. 12, 2012
ISSUED: Jul. 17, 2012

APPLICANT: NETGEAR, INC.

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

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120619C12-1	Original release	Jul. 17, 2012

1. CERTIFICATION

PRODUCT: N900 Video and Gaming 4-Port WiFi Adapter
MODEL NO.: WNCE4004
BRAND: NETGEAR
APPLICANT: NETGEAR, INC.
TESTED: Jun. 25 ~ Jul. 12, 2012
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10-2009

The above equipment (model: WNCE4004) 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 : Andrea Hsia , DATE : Jul. 17, 2012
Andrea Hsia / Specialist

APPROVED BY : Gary Chang , DATE : Jul. 17, 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 -9.3dB at 0.35100MHz.
15.407(b/1/2/3)(b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.1dB at 5725.00MHz.
15.407(a/1/2)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	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	3.34 dB
	200MHz ~1000MHz	3.35 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	N900 Video and Gaming 4-Port WiFi Adapter
MODEL NO.	WNCE4004
POWER SUPPLY	12Vdc (Adapter)
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 300.0Mbps
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: 7 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz)
OUTPUT POWER	28.9mW for 5180 ~ 5240MHz 130.8mW for 5260 ~ 5320MHz 131.7mW for 5500 ~ 5700MHz
ANTENNA TYPE	Dipoleantenna with 3.5dBi gain
ANTENNA CONNECTOR	UFL
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Adapter

NOTE:

- The frequency bands used in this EUT are listed as follows:

Frequency Band (MHz)	2412~2462	5180~5240	5260~5320	5500~5700	5745~5825
802.11b	√	-	-	-	-
802.11g	√	-	-	-	-
802.11a	-	√	√	√	√
802.11n (20MHz)	√	√	√	√	√
802.11n (40MHz)	-	√	√	√	√

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

MODULATION MODE	TX FUNCTION
802.11b	2TX
802.11g	2TX
802.11a	2TX
802.11n (20MHz)	2TX
802.11n (40MHz)	2TX

3. The EUT consumes power from the following adapter.

ADAPTER 1	
BRAND:	NETGEAR
MODEL:	AD810F10
INPUT:	100-120Vac, 50/60Hz, 0.3A
OUTPUT:	12Vdc, 1A
POWER LINE:	1.8m non-shielded cable without core

ADAPTER 2	
BRAND:	NETGEAR
MODEL:	SAL012F1 NA
INPUT:	100-120Vac, 47/63Hz, 0.6A
OUTPUT:	12Vdc, 1A
POWER LINE:	1.8m non-shielded cable without core

**After pre-testing found adapter 2 was the worse, therefore chosen for the final test and presented in the test report.

4. 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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500 MHz	116	5580 MHz
104	5520 MHz	136	5680 MHz
108	5540 MHz	140	5700 MHz
112	5560 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 $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

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

RADIATED EMISSION TEST (ABOVE 1GHz):

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	7.2
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	15.0
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	7.2
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0
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	7.2
802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	15.0

RADIATED EMISSION TEST (BELOW 1GHz):

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (20MHz)	5180-5320	36 to 64	60	OFDM	BPSK	7.2
802.11n (40MHz)	5500-5700	102 to 134	134	OFDM	BPSK	15.0

POWER LINE CONDUCTED EMISSION TEST:

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (20MHz)	5180-5320	36 to 64	60	OFDM	BPSK	7.2
802.11n (40MHz)	5500-5700	102 to 134	134	OFDM	BPSK	15.0

ANTENNA PORT CONDUCTED MEASUREMENT:

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	7.2
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	15.0
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	7.2
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0
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	7.2
802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	15.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Haru Yang Chris Lin
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Chris Lin
PLC	22deg. C, 60%RH	120Vac, 60Hz	Daniel Lin
APCM	25deg. C, 65%RH	120Vac, 60Hz	Chris Lin

3.3 DUTY CYCLE OF TEST SIGNAL

Duty cycle of test signal is 100 %



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.

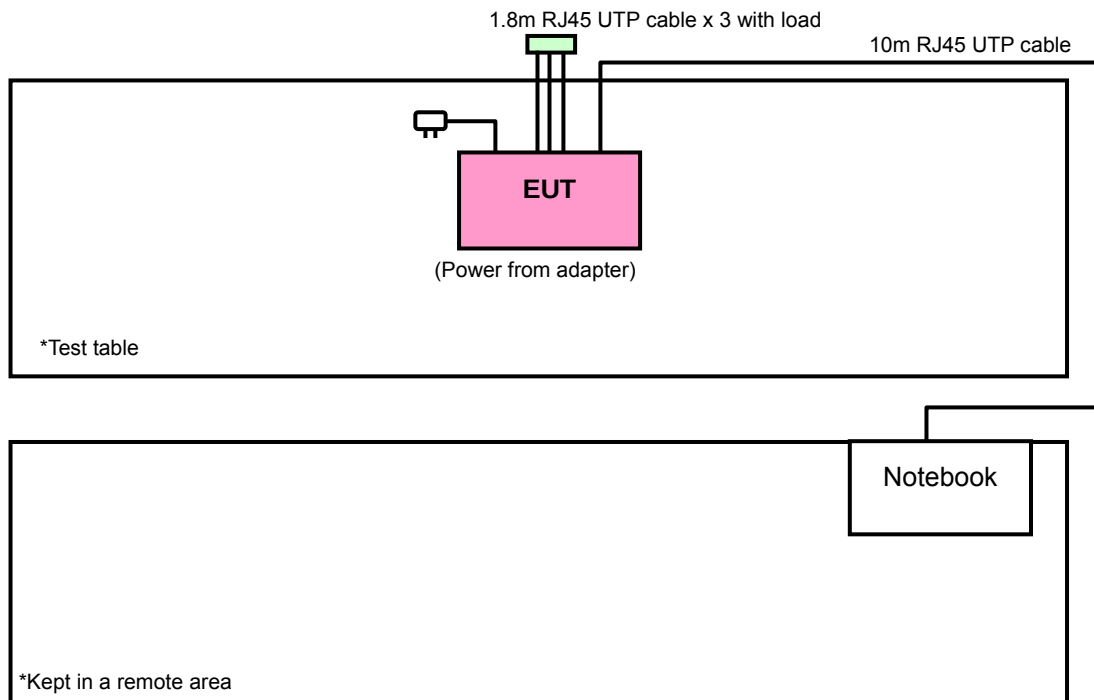
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	DELL	D531	CN-0XM006-48643-81U-2610	QDS-BRCM1020

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m RJ45 cable without core

NOTE:

1. All power cords of the above support units are non shielded (1.8m).
2. Item 1 acted as communication partner to transfer data.

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:

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

4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESIB7	100212	Aug. 02, 2011	Aug. 01, 2012
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Jul. 21, 2011	Jul. 20, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Apr. 06, 2012	Apr. 05, 2013
HORN Antenna SCHWARZBECK	9120D	209	Aug. 25, 2011	Aug. 24, 2012
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	8447D	2944A10633	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent	8449B	3008A01964	Oct. 29, 2011	Oct. 28, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250723/4	Aug. 30, 2011	Aug. 29, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 106	12738/6+309224/ 4	Aug. 30, 2011	Aug. 29, 2012
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table ADT.	TT100	TT93021703	NA	NA
Turn Table Controller ADT.	SC100	SC93021703	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 29, 2011	Oct. 28, 2012
High Speed Peak Power Meter	ML2495A	0842014	Apr. 28, 2012	Apr. 27, 2013
Power Sensor	MA2411B	0738404	Apr. 28, 2012	Apr. 27, 2013

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in HwaYa Chamber 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 chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

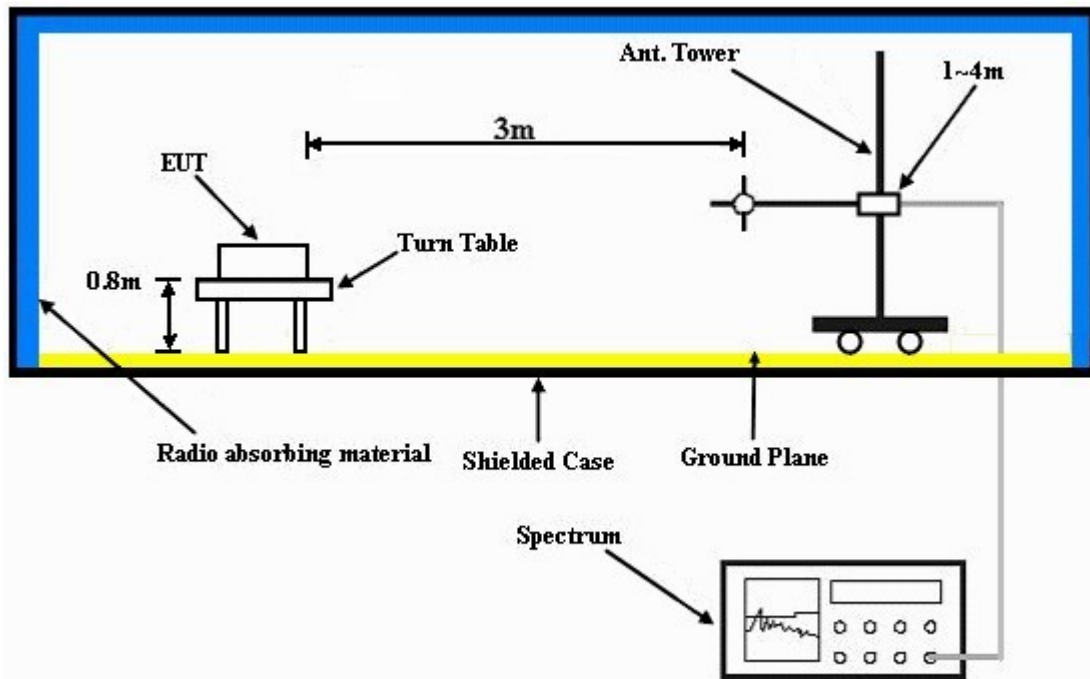
NOTE:

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

4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

4.1.6 TEST SETUP



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

4.1.7 EUT OPERATING CONDITION

- Placed the EUT on the testing table.
- Prepared notebooks to act as communication partner and placed it outside of testing area.
- The communication partner connected with EUT via a RJ45 cable and run a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- The communication partner sent data to EUT by command "PING".
- The necessary accessories enable the system in full functions.

4.1.8 TEST RESULTS

ABOVE 1GHz DATA: 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	Haru Yang

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	54.8 PK	74.0	-19.2	1.13 H	295	17.00	37.80
2	5150.00	42.0 AV	54.0	-12.0	1.13 H	295	4.20	37.80
3	*5180.00	99.9 PK			1.13 H	295	62.00	37.90
4	*5180.00	89.8 AV			1.13 H	295	51.90	37.90
5	#10360.00	58.2 PK	68.3	-10.1	1.00 H	148	9.10	49.10
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	5150.00	55.1 PK	74.0	-18.9	1.02 V	18	17.30	37.80
2	5150.00	43.6 AV	54.0	-10.4	1.02 V	18	5.80	37.80
3	*5180.00	108.5 PK			1.04 V	329	70.60	37.90
4	*5180.00	98.5 AV			1.04 V	329	60.60	37.90
5	#10360.00	57.8 PK	68.3	-10.5	1.37 V	282	8.70	49.10

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.
6. "#": The radiated frequency is out the restricted band.



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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	Haru Yang

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	55.7 PK	74.0	-18.3	1.00 H	294	17.90	37.80
2	5150.00	42.3 AV	54.0	-11.7	1.00 H	294	4.50	37.80
3	*5200.00	100.0 PK			1.00 H	294	62.10	37.90
4	*5200.00	90.0 AV			1.00 H	294	52.10	37.90
5	#10400.00	58.1 PK	68.3	-10.2	1.00 H	157	9.00	49.10
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	5150.00	55.8 PK	74.0	-18.2	1.05 V	174	18.00	37.80
2	5150.00	42.6 AV	54.0	-11.4	1.05 V	174	4.80	37.80
3	*5200.00	108.0 PK			1.05 V	174	70.10	37.90
4	*5200.00	97.9 AV			1.05 V	174	60.00	37.90
5	#10400.00	57.7 PK	68.3	-10.6	1.33 V	278	8.60	49.10

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.
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	Haru Yang

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	1.11 H	297	17.60	37.80
2	5150.00	42.3 AV	54.0	-11.7	1.11 H	297	4.50	37.80
3	*5240.00	100.8 PK			1.11 H	297	62.90	37.90
4	*5240.00	90.3 AV			1.11 H	297	52.40	37.90
5	#10480.00	58.5 PK	68.3	-9.8	1.00 H	166	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	55.1 PK	74.0	-18.9	1.03 V	18	17.30	37.80
2	5150.00	42.5 AV	54.0	-11.5	1.03 V	18	4.70	37.80
3	*5240.00	108.1 PK			1.03 V	18	70.20	37.90
4	*5240.00	97.4 AV			1.03 V	18	59.50	37.90
5	#10480.00	58.0 PK	68.3	-10.3	1.29 V	261	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.



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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	Haru Yang

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	55.8 PK	74.0	-18.2	1.05 H	130	18.00	37.80
2	5150.00	42.9 AV	54.0	-11.1	1.05 H	130	5.10	37.80
3	*5260.00	107.7 PK			1.00 H	128	69.70	38.00
4	*5260.00	99.1 AV			1.00 H	128	61.10	38.00
5	#10300.00	56.8 PK	68.3	-11.5	1.09 H	130	7.70	49.10
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	5150.00	55.7 PK	74.0	-18.3	1.47 V	207	17.90	37.80
2	5150.00	43.3 AV	54.0	-10.7	1.47 V	207	5.50	37.80
3	*5260.00	117.7 PK			1.00 V	168	79.70	38.00
4	*5260.00	104.0 AV			1.00 V	168	66.00	38.00
5	#10300.00	57.3 PK	68.3	-11.0	1.06 V	142	8.20	49.10

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.
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	Haru Yang

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	108.0 PK			1.00 H	136	70.00	38.00
2	*5300.00	98.7 AV			1.00 H	136	60.70	38.00
3	10600.00	56.3 PK	74.0	-17.7	1.06 H	158	6.70	49.60
4	10600.00	44.0 AV	54.0	-10.0	1.06 H	158	-5.60	49.60
5	15900.00	59.5 PK	74.0	-14.5	1.10 H	144	11.50	48.00
6	15900.00	46.6 AV	54.0	-7.4	1.10 H	144	-1.40	48.00
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	117.1 PK			1.00 V	178	79.10	38.00
2	*5300.00	107.7 AV			1.00 V	178	69.70	38.00
3	10600.00	56.7 PK	74.0	-17.3	1.06 V	154	7.10	49.60
4	10600.00	43.9 AV	54.0	-10.1	1.06 V	154	-5.70	49.60
5	15900.00	58.5 PK	74.0	-15.5	1.16 V	144	10.50	48.00
6	15900.00	45.2 AV	54.0	-8.8	1.16 V	144	-2.80	48.00

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.



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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	Haru Yang

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	107.2 PK			1.00 H	129	69.10	38.10
2	*5320.00	97.4 AV			1.00 H	129	59.30	38.10
3	5350.00	64.0 PK	74.0	-10.0	1.00 H	129	25.90	38.10
4	5350.00	46.3 AV	54.0	-7.7	1.00 H	129	8.20	38.10
5	10640.00	59.2 PK	74.0	-14.8	1.16 H	121	9.60	49.60
6	10640.00	47.0 AV	54.0	-7.0	1.16 H	121	-2.60	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	*5320.00	116.6 PK			1.00 V	174	78.50	38.10
2	*5320.00	107.0 AV			1.00 V	174	68.90	38.10
3	5350.00	71.3 PK	74.0	-2.7	1.00 V	161	33.20	38.10
4	5350.00	52.1 AV	54.0	-1.9	1.00 V	161	14.00	38.10
5	10640.00	59.2 PK	74.0	-14.8	1.05 V	126	9.60	49.60
6	10640.00	47.4 AV	54.0	-6.6	1.05 V	126	-2.20	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.



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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	Haru Yang

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	56.3 PK	74.0	-17.7	1.01 H	316	18.00	38.30
2	5460.00	43.4 AV	54.0	-10.6	1.01 H	316	5.10	38.30
3	#5470.00	55.8 PK	68.3	-12.5	1.01 H	316	17.50	38.30
4	*5500.00	98.6 PK			1.01 H	316	60.20	38.40
5	*5500.00	89.3 AV			1.01 H	316	50.90	38.40
6	11000.00	59.8 PK	74.0	-14.2	1.00 H	176	9.50	50.30
7	11000.00	46.3 AV	54.0	-7.7	1.00 H	176	-4.00	50.30
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	5460.00	57.1 PK	74.0	-16.9	1.00 V	38	18.80	38.30
2	5460.00	43.6 AV	54.0	-10.4	1.00 V	38	5.30	38.30
3	#5470.00	58.3 PK	68.3	-10.0	1.00 V	33	20.00	38.30
4	*5500.00	107.4 PK			1.00 V	38	69.00	38.40
5	*5500.00	97.6 AV			1.00 V	38	59.20	38.40
6	11000.00	59.2 PK	74.0	-14.8	1.00 V	291	8.90	50.30
7	11000.00	46.0 AV	54.0	-8.0	1.00 V	291	-4.30	50.30

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.



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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	Haru Yang

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	56.0 PK	74.0	-18.0	1.02 H	40	17.90	38.10
2	5350.00	43.1 AV	54.0	-10.9	1.02 H	40	5.00	38.10
3	*5580.00	103.3 PK			1.02 H	40	64.90	38.40
4	*5580.00	93.8 AV			1.02 H	40	55.40	38.40
5	11160.00	59.5 PK	74.0	-14.5	1.00 H	192	9.40	50.10
6	11160.00	45.4 AV	54.0	-8.6	1.00 H	192	-4.70	50.10
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	5350.00	57.1 PK	74.0	-16.9	1.00 V	40	19.00	38.10
2	5350.00	43.7 AV	54.0	-10.3	1.00 V	40	5.60	38.10
3	*5580.00	113.0 PK			1.00 V	40	74.60	38.40
4	*5580.00	103.3 AV			1.00 V	40	64.90	38.40
5	11160.00	58.8 PK	74.0	-15.2	1.00 V	299	8.70	50.10
6	11160.00	45.1 AV	54.0	-8.9	1.00 V	299	-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 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	Haru Yang

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	98.5 PK			1.00 H	41	59.80	38.70
2	*5700.00	88.8 AV			1.00 H	41	50.10	38.70
3	#5725.00	56.6 PK	68.3	-11.7	1.00 H	41	17.80	38.80
4	11400.00	59.8 PK	74.0	-14.2	1.00 H	184	9.70	50.10
5	11400.00	46.5 AV	54.0	-7.5	1.00 H	184	-3.60	50.10
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	*5700.00	106.8 PK			1.00 V	9	68.10	38.70
2	*5700.00	96.9 AV			1.00 V	9	58.20	38.70
3	#5725.00	61.9 PK	68.3	-6.4	1.00 V	6	23.10	38.80
4	11400.00	59.3 PK	74.0	-14.7	1.00 V	283	9.20	50.10
5	11400.00	46.0 AV	54.0	-8.0	1.00 V	283	-4.10	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.
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	Haru Yang

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	54.7 PK	74.0	-19.3	1.14 H	329	16.90	37.80
2	5150.00	42.0 AV	54.0	-12.0	1.14 H	329	4.20	37.80
3	*5180.00	99.5 PK			1.14 H	329	61.60	37.90
4	*5180.00	89.6 AV			1.14 H	329	51.70	37.90
5	#10360.00	57.9 PK	68.3	-10.4	1.00 H	157	8.80	49.10
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	5150.00	56.5 PK	74.0	-17.5	1.04 V	327	18.70	37.80
2	5150.00	42.7 AV	54.0	-11.3	1.04 V	327	4.90	37.80
3	*5180.00	107.7 PK			1.03 V	328	69.80	37.90
4	*5180.00	97.8 AV			1.03 V	328	59.90	37.90
5	#10360.00	57.5 PK	68.3	-10.8	1.33 V	276	8.40	49.10

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.
6. "#": The radiated frequency is out the restricted band.



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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	Haru Yang

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	55.6 PK	74.0	-18.4	1.00 H	295	17.80	37.80
2	5150.00	41.9 AV	54.0	-12.1	1.00 H	295	4.10	37.80
3	*5200.00	100.0 PK			1.00 H	295	62.10	37.90
4	*5200.00	89.9 AV			1.00 H	295	52.00	37.90
5	#10400.00	58.3 PK	68.3	-10.0	1.00 H	163	9.20	49.10
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	5150.00	55.3 PK	74.0	-18.7	1.03 V	175	17.50	37.80
2	5150.00	42.7 AV	54.0	-11.3	1.03 V	175	4.90	37.80
3	*5200.00	107.3 PK			1.03 V	175	69.40	37.90
4	*5200.00	97.1 AV			1.03 V	175	59.20	37.90
5	#10400.00	57.6 PK	68.3	-10.7	1.32 V	269	8.50	49.10

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.
6. "#":The radiated frequency is out the restricted band.



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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	Haru Yang

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	56.4 PK	74.0	-17.6	1.11 H	297	18.60	37.80
2	5150.00	42.3 AV	54.0	-11.7	1.11 H	297	4.50	37.80
3	*5240.00	100.4 PK			1.11 H	297	62.50	37.90
4	*5240.00	90.1 AV			1.11 H	297	52.20	37.90
5	#10480.00	58.7 PK	68.3	-9.6	1.00 H	158	9.20	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	56.3 PK	74.0	-17.7	1.02 V	19	18.50	37.80
2	5150.00	42.4 AV	54.0	-11.6	1.02 V	19	4.60	37.80
3	*5240.00	107.3 PK			1.02 V	19	69.40	37.90
4	*5240.00	97.0 AV			1.02 V	19	59.10	37.90
5	#10480.00	58.2 PK	68.3	-10.1	1.31 V	275	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 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	Haru Yang

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	57.2 PK	74.0	-16.8	1.01 H	139	19.40	37.80
2	5150.00	45.7 AV	54.0	-8.3	1.01 H	139	7.90	37.80
3	*5260.00	109.5 PK			1.04 H	137	71.50	38.00
4	*5260.00	99.6 AV			1.04 H	137	61.60	38.00
5	#10520.00	59.5 PK	68.3	-8.8	1.09 H	241	9.90	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	5150.00	48.3 PK	74.0	-25.7	1.00 V	160	10.50	37.80
2	5150.00	35.8 AV	54.0	-18.2	1.00 V	160	-2.00	37.80
3	*5260.00	117.2 PK			1.00 V	140	79.20	38.00
4	*5260.00	108.0 AV			1.00 V	140	70.00	38.00
5	#10520.00	59.4 PK	68.3	-8.9	1.10 V	139	9.80	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 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	Haru Yang

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	109.5 PK			1.00 H	128	71.50	38.00
2	*5300.00	98.9 AV			1.00 H	128	60.90	38.00
3	10600.00	58.6 PK	74.0	-15.4	1.07 H	162	9.00	49.60
4	10600.00	45.1 AV	54.0	-8.9	1.07 H	162	-4.50	49.60
5	15900.00	59.6 PK	74.0	-14.4	1.00 H	133	11.60	48.00
6	15900.00	47.0 AV	54.0	-7.0	1.00 H	133	-1.00	48.00
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	117.2 PK			1.00 V	166	79.20	38.00
2	*5300.00	107.5 AV			1.00 V	166	69.50	38.00
3	10600.00	58.2 PK	74.0	-15.8	1.00 V	158	8.60	49.60
4	10600.00	44.8 AV	54.0	-9.2	1.00 V	158	-4.80	49.60
5	15900.00	59.7 PK	74.0	-14.3	1.08 V	127	11.70	48.00
6	15900.00	46.7 AV	54.0	-7.3	1.08 V	127	-1.30	48.00

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	Haru Yang

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	108.5 PK			1.00 H	130	70.40	38.10
2	*5320.00	98.0 AV			1.00 H	130	59.90	38.10
3	5350.00	61.3 PK	74.0	-12.7	1.00 H	130	23.20	38.10
4	5350.00	44.6 AV	54.0	-9.4	1.00 H	130	6.50	38.10
5	10640.00	58.7 PK	74.0	-15.3	1.17 H	132	9.10	49.60
6	10640.00	46.8 AV	54.0	-7.2	1.17 H	132	-2.80	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	*5320.00	116.8 PK			1.00 V	163	78.70	38.10
2	*5320.00	106.5 AV			1.00 V	163	68.40	38.10
3	5350.00	72.8 PK	74.0	-1.2	1.00 V	157	34.70	38.10
4	5350.00	52.3 AV	54.0	-1.7	1.00 V	157	14.20	38.10
5	10640.00	59.0 PK	74.0	-15.0	1.04 V	131	9.40	49.60
6	10640.00	47.2 AV	54.0	-6.8	1.04 V	131	-2.40	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.

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	Haru Yang

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	56.1 PK	74.0	-17.9	1.03 H	38	17.80	38.30
2	5460.00	43.3 AV	54.0	-10.7	1.03 H	38	5.00	38.30
3	#5470.00	55.7 PK	68.3	-12.6	1.03 H	38	17.40	38.30
4	*5500.00	100.0 PK			1.03 H	38	61.60	38.40
5	*5500.00	89.9 AV			1.03 H	38	51.50	38.40
6	11000.00	60.1 PK	74.0	-13.9	1.00 H	163	9.80	50.30
7	11000.00	46.7 AV	54.0	-7.3	1.00 H	163	-3.60	50.30
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	5460.00	56.8 PK	74.0	-17.2	1.01 V	38	18.50	38.30
2	5460.00	43.5 AV	54.0	-10.5	1.01 V	38	5.20	38.30
3	#5470.00	60.6 PK	68.3	-7.7	1.01 V	38	22.30	38.30
4	*5500.00	108.5 PK			1.01 V	38	70.10	38.40
5	*5500.00	97.8 AV			1.01 V	38	59.40	38.40
6	11000.00	59.0 PK	74.0	-15.0	1.00 V	276	8.70	50.30
7	11000.00	45.7 AV	54.0	-8.3	1.00 V	276	-4.60	50.30

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.



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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	Haru Yang

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	55.7 PK	74.0	-18.3	1.00 H	39	17.60	38.10
2	5350.00	42.4 AV	54.0	-11.6	1.00 H	39	4.30	38.10
3	*5580.00	102.6 PK			1.00 H	39	64.20	38.40
4	*5580.00	93.0 AV			1.00 H	39	54.60	38.40
5	11160.00	59.2 PK	74.0	-14.8	1.00 H	207	9.10	50.10
6	11160.00	45.8 AV	54.0	-8.2	1.00 H	207	-4.30	50.10
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	5350.00	57.3 PK	74.0	-16.7	1.00 V	41	19.20	38.10
2	5350.00	43.4 AV	54.0	-10.6	1.00 V	41	5.30	38.10
3	*5580.00	113.5 PK			1.00 V	41	75.10	38.40
4	*5580.00	102.6 AV			1.00 V	41	64.20	38.40
5	11160.00	58.7 PK	74.0	-15.3	1.00 V	314	8.60	50.10
6	11160.00	45.6 AV	54.0	-8.4	1.00 V	314	-4.50	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.



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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	Haru Yang

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	98.8 PK			1.13 H	38	60.10	38.70
2	*5700.00	88.0 AV			1.13 H	38	49.30	38.70
3	#5725.00	56.4 PK	68.3	-11.9	1.11 H	38	17.60	38.80
4	11400.00	59.9 PK	74.0	-14.1	1.00 H	157	9.80	50.10
5	11400.00	46.3 AV	54.0	-7.7	1.00 H	157	-3.80	50.10
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	*5700.00	107.0 PK			1.09 V	39	68.30	38.70
2	*5700.00	96.7 AV			1.09 V	39	58.00	38.70
3	#5725.00	61.5 PK	68.3	-6.8	1.00 V	27	22.70	38.80
4	11400.00	59.1 PK	74.0	-14.9	1.00 V	297	9.00	50.10
5	11400.00	45.9 AV	54.0	-8.1	1.00 V	297	-4.20	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.
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	Haru Yang

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	55.6 PK	74.0	-18.4	1.00 H	293	17.80	37.80
2	5150.00	43.9 AV	54.0	-10.1	1.00 H	293	6.10	37.80
3	*5190.00	98.4 PK			1.00 H	293	60.50	37.90
4	*5190.00	88.2 AV			1.00 H	293	50.30	37.90
5	#10380.00	58.2 PK	68.3	-10.1	1.00 H	168	9.10	49.10
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	5150.00	68.8 PK	74.0	-5.2	1.05 V	332	31.00	37.80
2	5150.00	51.2 AV	54.0	-2.8	1.05 V	332	13.40	37.80
3	*5190.00	105.6 PK			1.03 V	5	67.70	37.90
4	*5190.00	96.0 AV			1.03 V	5	58.10	37.90
5	#10380.00	57.9 PK	68.3	-10.4	1.41 V	279	8.80	49.10

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.
6. "#": The radiated frequency is out the restricted band.



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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	Haru Yang

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	1.00 H	294	17.60	37.80
2	5150.00	42.7 AV	54.0	-11.3	1.00 H	294	4.90	37.80
3	*5230.00	97.6 PK			1.00 H	294	59.70	37.90
4	*5230.00	87.9 AV			1.00 H	294	50.00	37.90
5	#10460.00	58.5 PK	68.3	-9.8	1.00 H	174	9.10	49.40
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	1.01 V	17	18.40	37.80
2	5150.00	43.2 AV	54.0	-10.8	1.01 V	17	5.40	37.80
3	*5230.00	105.9 PK			1.01 V	17	68.00	37.90
4	*5230.00	95.8 AV			1.01 V	17	57.90	37.90
5	#10460.00	58.2 PK	68.3	-10.1	1.38 V	265	8.80	49.40

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	Haru Yang

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	55.6 PK	74.0	-18.4	1.00 H	129	17.80	37.80
2	5150.00	42.8 AV	54.0	-11.2	1.00 H	129	5.00	37.80
3	*5270.00	104.2 PK			1.00 H	129	66.20	38.00
4	*5270.00	94.0 AV			1.00 H	129	56.00	38.00
5	#10540.00	58.9 PK	68.3	-9.4	1.07 H	259	9.30	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	5150.00	58.4 PK	74.0	-15.6	1.00 V	154	20.60	37.80
2	5150.00	45.5 AV	54.0	-8.5	1.00 V	154	7.70	37.80
3	*5270.00	109.7 PK			1.00 V	154	71.70	38.00
4	*5270.00	99.9 AV			1.00 V	154	61.90	38.00
5	#10540.00	58.7 PK	68.3	-9.6	1.12 V	174	9.10	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 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	Haru Yang

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	*5310.00	101.3 PK			1.00 H	130	63.30	38.00
2	*5310.00	91.3 AV			1.00 H	130	53.30	38.00
3	5350.00	57.5 PK	74.0	-16.5	1.00 H	130	19.40	38.10
4	5350.00	44.1 AV	54.0	-9.9	1.00 H	130	6.00	38.10
5	10620.00	58.5 PK	74.0	-15.5	1.03 H	264	8.90	49.60
6	10620.00	44.6 AV	54.0	-9.4	1.03 H	264	-5.00	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	*5310.00	106.9 PK			1.00 V	170	68.90	38.00
2	*5310.00	96.6 AV			1.00 V	170	58.60	38.00
3	5350.00	69.0 PK	74.0	-5.0	1.00 V	156	30.90	38.10
4	5350.00	50.2 AV	54.0	-3.8	1.00 V	156	12.10	38.10
5	10620.00	58.2 PK	74.0	-15.8	1.08 V	183	8.60	49.60
6	10620.00	44.3 AV	54.0	-9.7	1.08 V	183	-5.30	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.



A D T

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	Haru Yang

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	1.00 H	323	17.60	38.30
2	5460.00	43.4 AV	54.0	-10.6	1.00 H	323	5.10	38.30
3	#5470.00	56.1 PK	68.3	-12.2	1.00 H	323	17.80	38.30
4	*5510.00	97.8 PK			1.00 H	323	59.40	38.40
5	*5510.00	87.6 AV			1.00 H	323	49.20	38.40
6	11020.00	59.8 PK	74.0	-14.2	1.00 H	168	9.60	50.20
7	11020.00	45.6 AV	54.0	-8.4	1.00 H	168	-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	#2460.00	54.3 PK	68.3	-14.0	1.12 V	38	22.70	31.60
3	#5470.00	63.5 PK	68.3	-4.8	1.00 V	38	25.20	38.30
4	*5510.00	106.2 PK			1.12 V	39	67.80	38.40
5	*5510.00	95.2 AV			1.12 V	39	56.80	38.40
6	11020.00	59.2 PK	74.0	-14.8	1.00 V	299	9.00	50.20
7	11020.00	45.4 AV	54.0	-8.6	1.00 V	299	-4.80	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.
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	Haru Yang

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	55.2 PK	74.0	-18.8	1.05 H	14	16.90	38.30
2	5460.00	43.3 AV	54.0	-10.7	1.05 H	14	5.00	38.30
3	#5470.00	55.9 PK	68.3	-12.4	1.05 H	14	17.60	38.30
4	*5550.00	102.8 PK			1.05 H	14	64.40	38.40
5	*5550.00	92.6 AV			1.05 H	14	54.20	38.40
6	11100.00	59.8 PK	74.0	-14.2	1.00 H	152	9.80	50.00
7	11100.00	46.2 AV	54.0	-7.8	1.00 H	152	-3.80	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	5460.00	56.6 PK	74.0	-17.4	1.38 V	15	18.30	38.30
2	5460.00	43.9 AV	54.0	-10.1	1.38 V	15	5.60	38.30
3	#5470.00	57.0 PK	68.3	-11.3	1.38 V	15	18.70	38.30
4	*5550.00	110.6 PK			1.38 V	15	72.20	38.40
5	*5550.00	100.5 AV			1.38 V	15	62.10	38.40
6	11100.00	59.6 PK	74.0	-14.4	1.00 V	273	9.60	50.00
7	11100.00	45.9 AV	54.0	-8.1	1.00 V	273	-4.10	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.



A D T

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	Haru Yang

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	*5670.00	100.7 PK			1.12 H	39	62.10	38.60
2	*5670.00	91.5 AV			1.12 H	39	52.90	38.60
3	#5725.00	55.6 PK	68.3	-12.7	1.12 H	39	16.80	38.80
4	11340.00	60.0 PK	74.0	-14.0	1.00 H	149	9.80	50.20
5	11340.00	46.3 AV	54.0	-7.7	1.00 H	149	-3.90	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	*5670.00	109.8 PK			1.08 V	38	71.20	38.60
2	*5670.00	100.1 AV			1.08 V	38	61.50	38.60
3	#5725.00	67.2 PK	68.3	-1.1	1.19 V	39	28.40	38.80
4	11340.00	59.7 PK	74.0	-14.3	1.00 V	264	9.50	50.20
5	11340.00	45.8 AV	54.0	-8.2	1.00 V	264	-4.40	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.
6. "#":The radiated frequency is out the restricted band.

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

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

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	107.67	33.9 QP	43.5	-9.6	1.50 H	246	23.50	10.40
2	249.60	35.8 QP	46.0	-10.2	1.00 H	117	22.80	13.00
3	374.04	37.8 QP	46.0	-8.2	1.00 H	123	20.90	16.90
4	624.85	32.1 QP	46.0	-13.9	1.24 H	45	9.80	22.30
5	751.23	35.2 QP	46.0	-10.8	1.00 H	13	10.80	24.40
6	875.67	32.8 QP	46.0	-13.2	1.24 H	202	6.30	26.50
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	55.89	36.8 QP	40.0	-3.2	1.08 V	348	23.10	13.70
2	107.67	38.4 QP	43.5	-5.1	1.49 V	120	28.00	10.40
3	249.60	32.9 QP	46.0	-13.1	1.00 V	65	19.90	13.00
4	286.55	28.5 QP	46.0	-17.5	1.00 V	182	14.10	14.40
5	374.04	35.4 QP	46.0	-10.6	1.00 V	179	18.50	16.90
6	624.85	29.6 QP	46.0	-16.4	1.25 V	16	7.30	22.30

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.

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 134	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

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	107.67	34.7 QP	43.5	-8.8	1.50 H	248	24.30	10.40
2	202.94	35.8 QP	43.5	-7.7	2.00 H	63	24.70	11.10
3	249.60	35.1 QP	46.0	-10.9	1.00 H	101	22.10	13.00
4	374.04	38.1 QP	46.0	-7.9	1.00 H	132	21.20	16.90
5	624.85	32.9 QP	46.0	-13.1	1.24 H	46	10.60	22.30
6	751.23	34.8 QP	46.0	-11.2	1.24 H	15	10.40	24.40
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	55.18	36.9 QP	40.0	-3.1	1.00 V	19	23.20	13.70
2	107.67	40.1 QP	43.5	-3.4	1.24 V	133	29.70	10.40
3	249.60	31.8 QP	46.0	-14.2	1.00 V	53	18.80	13.00
4	374.04	36.3 QP	46.0	-9.7	1.00 V	187	19.40	16.90
5	624.85	30.3 QP	46.0	-15.7	2.00 V	14	8.00	22.30
6	799.84	36.4 QP	46.0	-9.6	1.00 V	173	10.80	25.60

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.

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	100311	Jul. 06, 2012	Jul. 05, 2013
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.

4.2.3 TEST PROCEDURES

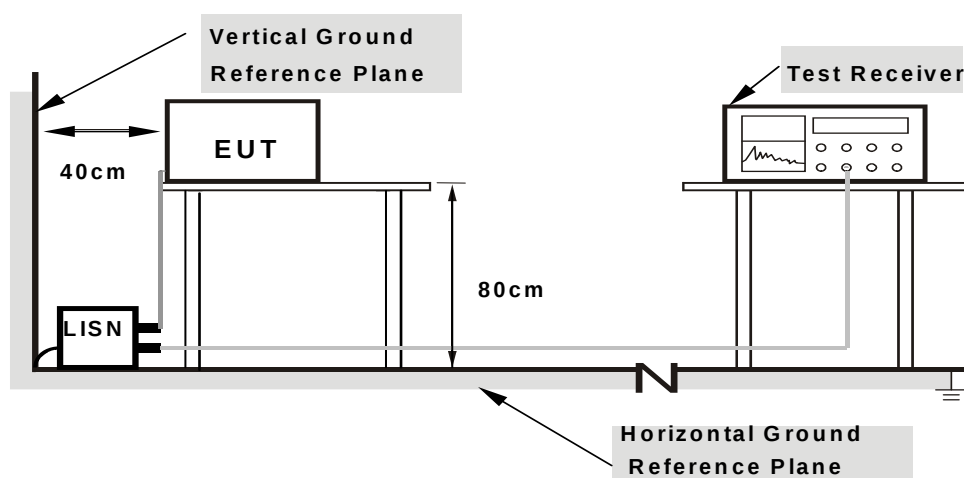
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



Note: 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

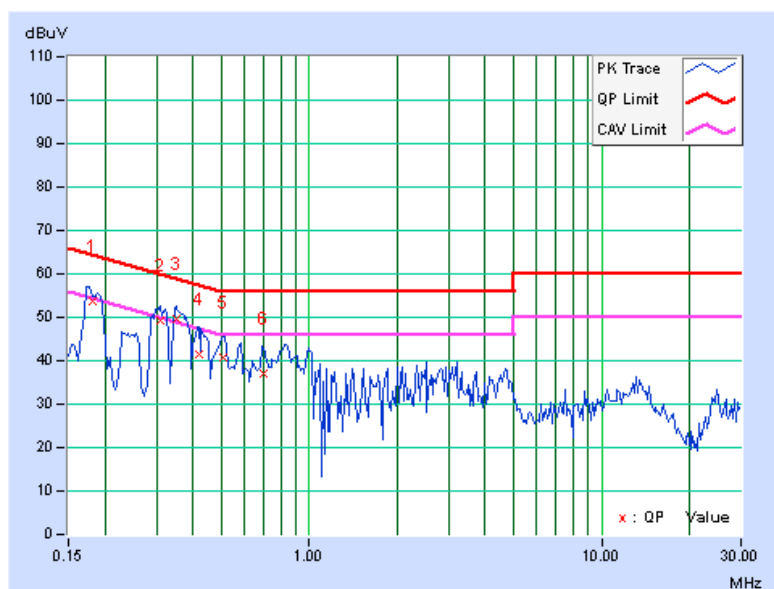
CONDUCTED WORST-CASE DATA : 802.11n (20MHz)

PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST DATE	Jul. 12, 2012	CHANNEL	Channel 60

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18036	0.17	53.56	43.26	53.73	43.43	64.47	54.47	-10.74	-11.04
2	0.31016	0.19	49.03	37.90	49.22	38.09	59.97	49.97	-10.75	-11.88
3	0.35100	0.19	49.45	37.35	49.64	37.54	58.94	48.94	-9.30	-11.40
4	0.41953	0.20	41.11	25.67	41.31	25.87	57.46	47.46	-16.15	-21.59
5	0.50547	0.21	40.39	24.79	40.60	25.00	56.00	46.00	-15.40	-21.00
6	0.69688	0.21	36.65	22.00	36.86	22.21	56.00	46.00	-19.14	-23.79

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.

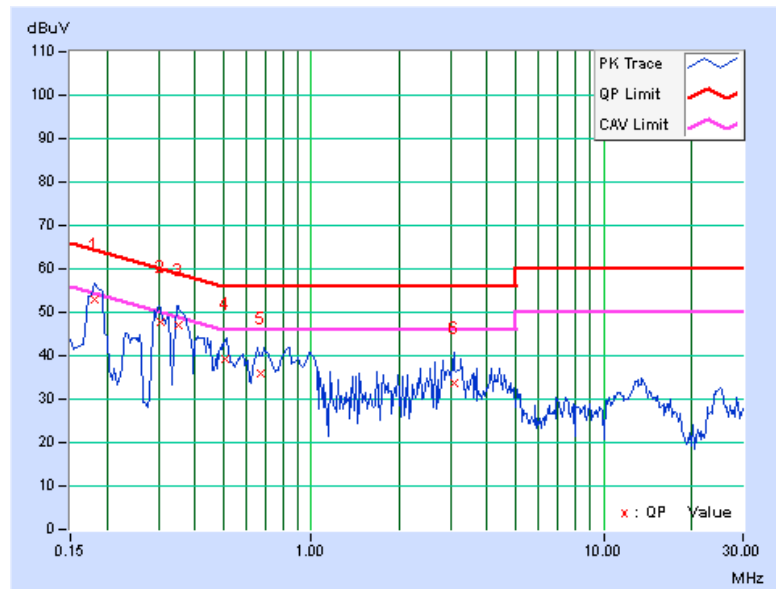


PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST DATE	Jul. 12, 2012	CHANNEL	Channel 60

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18125	0.16	52.93	41.66	53.09	41.82	64.43	54.43	-11.34	-12.61
2	0.30625	0.17	47.62	35.23	47.79	35.40	60.07	50.07	-12.29	-14.68
3	0.34922	0.17	47.04	33.30	47.21	33.47	58.98	48.98	-11.77	-15.51
4	0.50547	0.18	39.08	23.15	39.26	23.33	56.00	46.00	-16.74	-22.67
5	0.67195	0.18	35.79	18.36	35.97	18.54	56.00	46.00	-20.03	-27.46
6	3.07031	0.33	33.31	22.33	33.64	22.66	56.00	46.00	-22.36	-23.34

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.



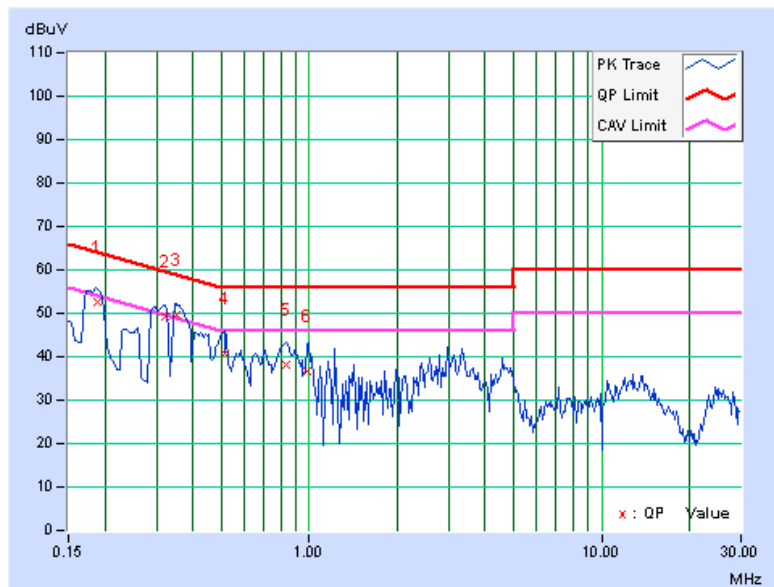
802.11n (40MHz)

PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST DATE	Jul. 12, 2012	CHANNEL	Channel 134

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18906	0.17	52.53	41.07	52.70	41.24	64.08	54.08	-11.38	-12.84
2	0.32188	0.19	49.18	34.42	49.37	34.61	59.66	49.66	-10.29	-15.05
3	0.34922	0.19	49.40	36.70	49.59	36.89	58.98	48.98	-9.39	-12.09
4	0.51328	0.21	40.57	23.43	40.78	23.64	56.00	46.00	-15.22	-22.36
5	0.83359	0.22	37.99	23.83	38.21	24.05	56.00	46.00	-17.79	-21.95
6	0.98203	0.23	36.45	20.42	36.68	20.65	56.00	46.00	-19.32	-25.35

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.

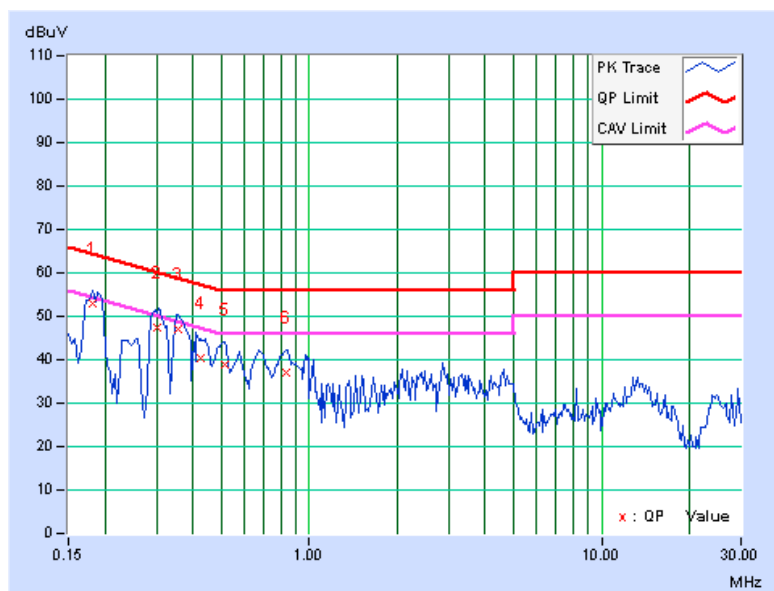


PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST DATE	Jul. 12, 2012	CHANNEL	Channel 134

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18125	0.16	52.77	41.74	52.93	41.90	64.43	54.43	-11.50	-12.53
2	0.30132	0.17	47.30	35.73	47.47	35.90	60.21	50.21	-12.74	-14.31
3	0.35703	0.17	46.95	34.87	47.12	35.04	58.80	48.80	-11.67	-13.75
4	0.42344	0.18	40.10	24.44	40.28	24.62	57.38	47.38	-17.10	-22.76
5	0.51719	0.18	38.56	20.47	38.74	20.65	56.00	46.00	-17.26	-25.35
6	0.83359	0.19	36.75	23.10	36.94	23.29	56.00	46.00	-19.06	-22.71

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

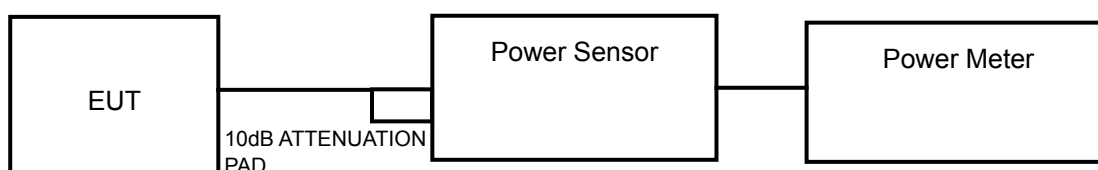
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

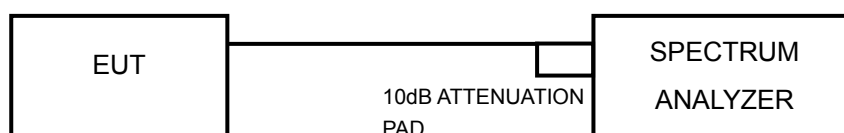
NOTE: Where B is the 26dB emission bandwidth in MHz.

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

An average power sensor was used on the output port of the EUT. A power meter was used to read the response of the average power sensor. Record the power level.

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

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	10.63	10.44	22.6	13.55	16.5	PASS
44	5220	10.02	10.52	21.3	13.29	16.5	PASS
48	5240	10.26	10.12	20.9	13.20	16.5	PASS
52	5260	17.41	17.05	105.8	20.24	23.5	PASS
60	5300	17.76	17.50	115.9	20.64	23.5	PASS
64	5320	17.93	17.74	121.5	20.85	23.5	PASS
100	5500	14.30	14.77	56.9	17.55	23.5	PASS
116	5580	17.50	18.07	120.4	20.80	23.5	PASS
140	5700	14.50	13.67	51.5	17.12	23.5	PASS

NOTE:

5.150 ~ 5.250GHz: Directional gain = 3.5dBi + 10log(2) = 6.5dBi > 6dBi , so the conducted power limit shall be reduced to 17-(6.5-6) = 16.5dBm.

5.250 ~ 5.350GHz: Directional gain = 3.5dBi + 10log(2) = 6.5dBi > 6dBi , so the conducted power limit shall be reduced to 24-(6.5-6) = 23.5dBm.

5.470 ~ 5.725GHz: Directional gain = 3.5dBi + 10log(2) = 6.5dBi > 6dBi , so the conducted power limit shall be reduced to 24-(6.5-6) = 23.5dBm.

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				
36	5180	10.86	10.01	22.2	13.47	16.5	PASS
44	5220	10.54	10.04	21.4	13.31	16.5	PASS
48	5240	10.11	10.51	21.5	13.32	16.5	PASS
52	5260	18.18	17.26	119.0	20.75	23.5	PASS
60	5300	18.17	18.14	130.8	21.17	23.5	PASS
64	5320	18.06	18.19	129.9	21.14	23.5	PASS
100	5500	15.34	14.45	62.1	17.93	23.5	PASS
116	5580	18.24	17.57	123.8	20.93	23.5	PASS
140	5700	14.33	13.08	47.4	16.76	23.5	PASS

NOTE:

5.150 ~ 5.250GHz: Directional gain = 3.5dBi + 10log(2) = 6.5dBi > 6dBi , so the conducted power limit shall be reduced to 17-(6.5-6) = 16.5dBm.

5.250 ~ 5.350GHz: Directional gain = 3.5dBi + 10log(2) = 6.5dBi > 6dBi , so the conducted power limit shall be reduced to 24-(6.5-6) = 23.5dBm.

5.470 ~ 5.725GHz: Directional gain = 3.5dBi + 10log(2) = 6.5dBi > 6dBi , so the conducted power limit shall be reduced to 24-(6.5-6) = 23.5dBm.

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				
38	5190	12.01	11.15	28.9	14.61	16.5	PASS
46	5230	12.05	11.10	28.9	14.61	16.5	PASS
54	5270	17.63	16.64	104.1	20.17	23.5	PASS
62	5310	15.58	14.83	66.6	18.23	23.5	PASS
102	5510	11.37	11.88	29.1	14.64	23.5	PASS
110	5550	18.04	17.90	125.3	20.98	23.5	PASS
134	5670	18.47	17.88	131.7	21.20	23.5	PASS

NOTE:

5.150 ~ 5.250GHz: Directional gain = $3.5\text{dBi} + 10\log(2) = 6.5\text{dBi} > 6\text{dBi}$, so the conducted power limit shall be reduced to $17-(6.5-6) = 16.5\text{dBm}$.

5.250 ~ 5.350GHz: Directional gain = $3.5\text{dBi} + 10\log(2) = 6.5\text{dBi} > 6\text{dBi}$, so the conducted power limit shall be reduced to $24-(6.5-6) = 23.5\text{dBm}$.

5.470 ~ 5.725GHz: Directional gain = $3.5\text{dBi} + 10\log(2) = 6.5\text{dBi} > 6\text{dBi}$, so the conducted power limit shall be reduced to $24-(6.5-6) = 23.5\text{dBm}$.

26dB BANDWIDTH: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
36	5180	24.81	23.97	PASS
44	5220	24.62	24.32	PASS
48	5240	25.15	24.04	PASS
52	5260	25.00	25.26	PASS
60	5300	25.00	24.93	PASS
64	5320	27.24	25.78	PASS
100	5500	25.11	23.87	PASS
116	5580	25.64	26.14	PASS
140	5700	25.94	25.02	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
36	5180	25.49	25.78	PASS
44	5220	25.35	25.70	PASS
48	5240	26.20	25.85	PASS
52	5260	28.39	26.22	PASS
60	5300	29.27	28.76	PASS
64	5320	27.50	28.22	PASS
100	5500	26.78	25.93	PASS
116	5580	29.71	28.98	PASS
140	5700	25.70	26.25	PASS

802.11n (40MHz)

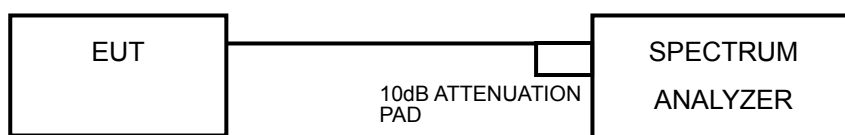
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
38	5190	55.63	53.97	PASS
46	5230	53.62	53.17	PASS
54	5270	67.12	54.97	PASS
62	5310	53.84	53.56	PASS
102	5510	54.32	54.62	PASS
110	5550	67.60	55.09	PASS
134	5670	55.79	55.82	PASS

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

Using method SA-1 alternative

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1 MHz, Set VBW $\geq$ 3 MHz, Detector = RMS
- 3) Sweep time = 26 second.
- 4) Perform a single sweep.
- 5) Record the max value

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

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1			
36	5180	-0.99	-1.04	1.977	3.5	PASS
44	5220	-1.33	-1.40	1.647	3.5	PASS
48	5240	-1.30	-0.88	1.910	3.5	PASS
52	5260	6.69	5.48	9.137	10.5	PASS
60	5300	6.79	6.50	9.402	10.5	PASS
64	5320	7.02	6.77	9.908	10.5	PASS
100	5500	3.93	4.78	7.351	10.5	PASS
116	5580	6.09	6.99	9.527	10.5	PASS
140	5700	4.42	3.50	6.865	10.5	PASS

NOTE:

- 5.150 ~ 5.250GHz:** Directional gain = $3.5\text{dBi} + 10\log(2) = 6.5\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $4-(6.5-6) = 3.5\text{dBm}$.
5.250 ~ 5.350GHz: Directional gain = $3.5\text{dBi} + 10\log(2) = 6.5\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $11-(6.5-6) = 10.5\text{dBm}$.
5.470 ~ 5.725GHz: Directional gain = $3.5\text{dBi} + 10\log(2) = 6.5\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $11-(6.5-6) = 10.5\text{dBm}$.
- 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.

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1			
36	5180	-0.54	-1.55	1.713	3.5	PASS
44	5220	-1.40	-1.50	1.331	3.5	PASS
48	5240	-0.78	-1.00	2.110	3.5	PASS
52	5260	7.40	5.91	9.578	10.5	PASS
60	5300	6.94	6.36	9.611	10.5	PASS
64	5320	7.12	6.57	9.861	10.5	PASS
100	5500	4.72	3.97	7.165	10.5	PASS
116	5580	6.89	6.70	9.716	10.5	PASS
140	5700	3.97	2.30	6.129	10.5	PASS

NOTE:

1. **5.150 ~ 5.250GHz:** Directional gain = $3.5\text{dBi} + 10\log(2) = 6.5\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $4-(6.5-6) = 3.5\text{dBm}$.
5.250 ~ 5.350GHz: Directional gain = $3.5\text{dBi} + 10\log(2) = 6.5\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $11-(6.5-6) = 10.5\text{dBm}$.
5.470 ~ 5.725GHz: Directional gain = $3.5\text{dBi} + 10\log(2) = 6.5\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $11-(6.5-6) = 10.5\text{dBm}$.
2. 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.

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1			
38	5190	-2.18	-4.39	-0.161	3.5	PASS
46	5230	-2.25	-2.86	0.045	3.5	PASS
54	5270	4.11	1.99	6.192	10.5	PASS
62	5310	1.38	0.41	3.755	10.5	PASS
102	5510	-2.98	-2.51	0.071	10.5	PASS
110	5550	3.70	3.74	6.649	10.5	PASS
134	5670	4.51	3.72	7.131	10.5	PASS

NOTE:

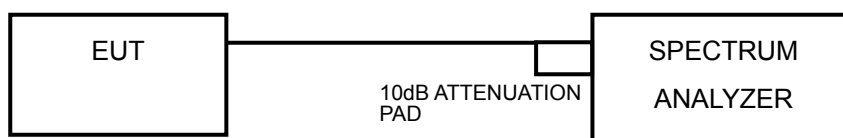
1. **5.150 ~ 5.250GHz:** Directional gain = $3.5\text{dBi} + 10\log(2) = 6.5\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $4-(6.5-6) = 3.5\text{dBm}$.
5.250 ~ 5.350GHz: Directional gain = $3.5\text{dBi} + 10\log(2) = 6.5\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $11-(6.5-6) = 10.5\text{dBm}$.
5.470 ~ 5.725GHz: Directional gain = $3.5\text{dBi} + 10\log(2) = 6.5\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $11-(6.5-6) = 10.5\text{dBm}$.
2. 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.

4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

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

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

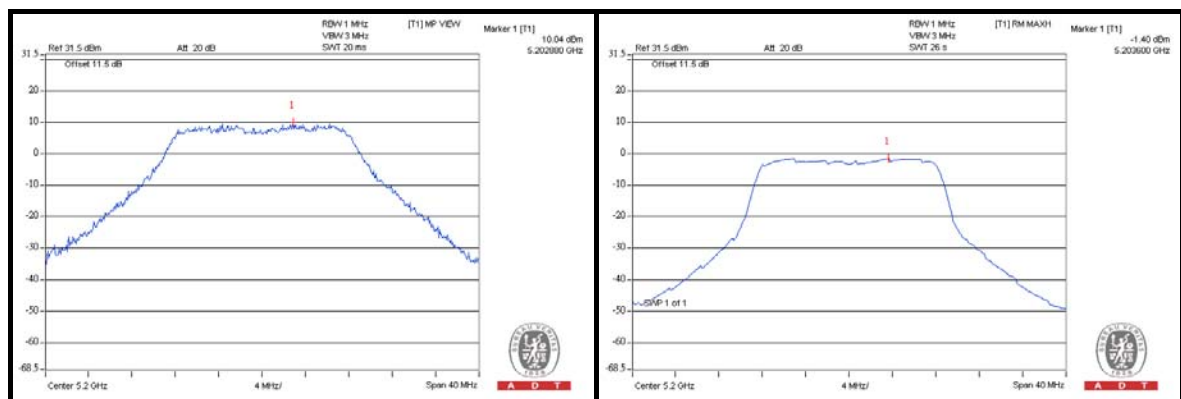
4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

4.5.7 TEST RESULTS

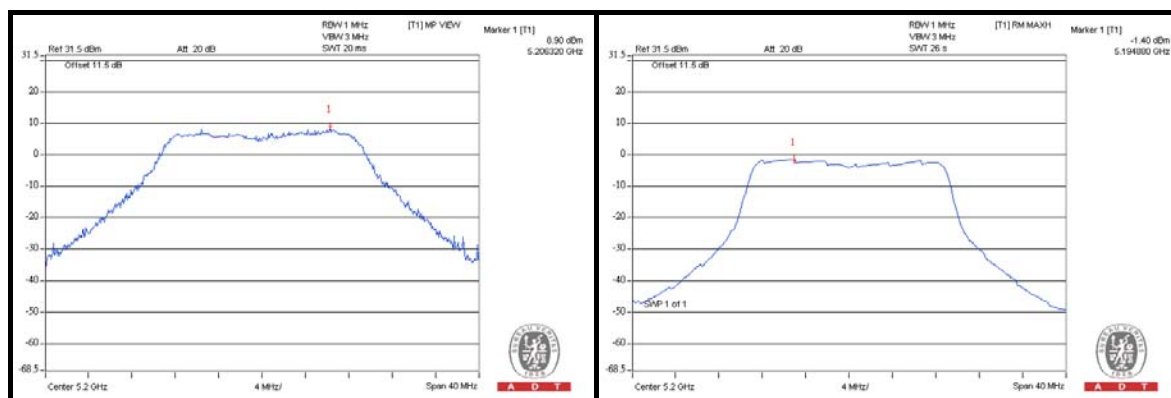
802.11a

CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)		PPSD (dBm)		PEAK EXCURSION (dB)		LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1		
36	5180	8.47	10.11	-0.99	-1.04	9.46	11.15	13	PASS
44	5220	7.83	10.04	-1.33	-1.40	9.16	11.44	13	PASS
48	5240	8.24	9.62	-1.30	-0.88	9.54	10.50	13	PASS
52	5260	15.07	16.55	6.69	5.48	8.38	11.07	13	PASS
60	5300	15.77	17.03	6.79	6.50	8.98	10.53	13	PASS
64	5320	16.15	17.39	7.02	6.77	9.13	10.62	13	PASS
100	5500	14.09	14.66	3.93	4.78	10.16	9.88	13	PASS
116	5580	16.40	17.52	6.09	6.99	10.31	10.53	13	PASS
140	5700	13.52	13.42	4.42	3.50	9.10	9.92	13	PASS



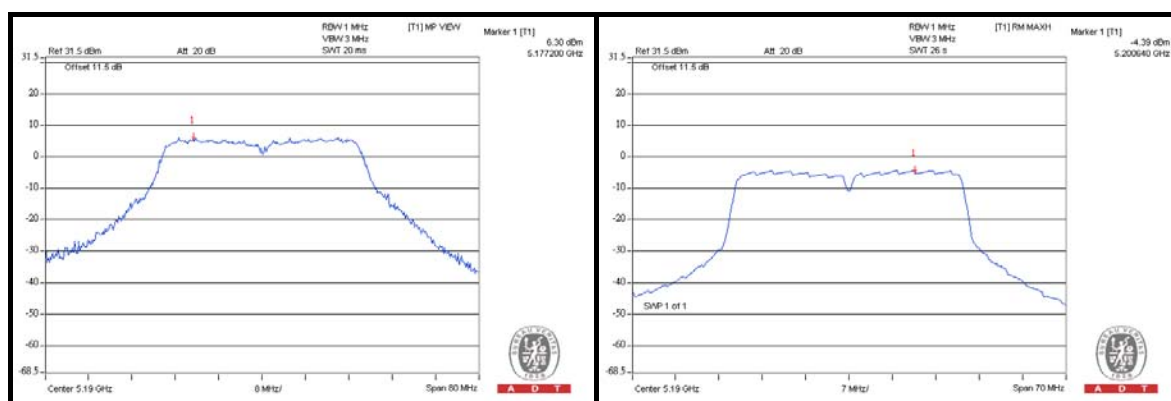
802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)		PPSD (dBm)		PEAK EXCURSION (dB)		LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1		
36	5180	9.24	7.61	-0.54	-1.55	9.78	9.16	13	PASS
44	5220	8.90	7.78	-1.40	-1.50	10.30	9.28	13	PASS
48	5240	8.62	8.32	-0.78	-1.00	9.40	9.32	13	PASS
52	5260	16.46	14.78	7.40	5.91	9.06	8.87	13	PASS
60	5300	16.77	15.81	6.94	6.36	9.83	9.45	13	PASS
64	5320	16.47	15.92	7.12	6.57	9.35	9.35	13	PASS
100	5500	13.73	12.16	4.72	3.97	9.01	8.19	13	PASS
116	5580	16.78	15.34	6.89	6.70	9.89	8.64	13	PASS
140	5700	12.64	10.88	3.97	2.30	8.67	8.58	13	PASS



802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)		PPSD (dBm)		PEAK EXCURSION (dB)		LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1		
38	5190	6.22	6.30	-2.18	-4.39	8.40	10.69	13	PASS
46	5230	6.43	6.17	-2.25	-2.86	8.68	9.03	13	PASS
54	5270	11.65	11.89	4.11	1.99	7.54	9.90	13	PASS
62	5310	9.84	9.88	1.38	0.41	8.46	9.47	13	PASS
102	5510	5.81	6.85	-2.98	-2.51	8.79	9.36	13	PASS
110	5550	12.32	12.88	3.70	3.74	8.62	9.14	13	PASS
134	5670	12.52	12.80	4.51	3.72	8.01	9.08	13	PASS

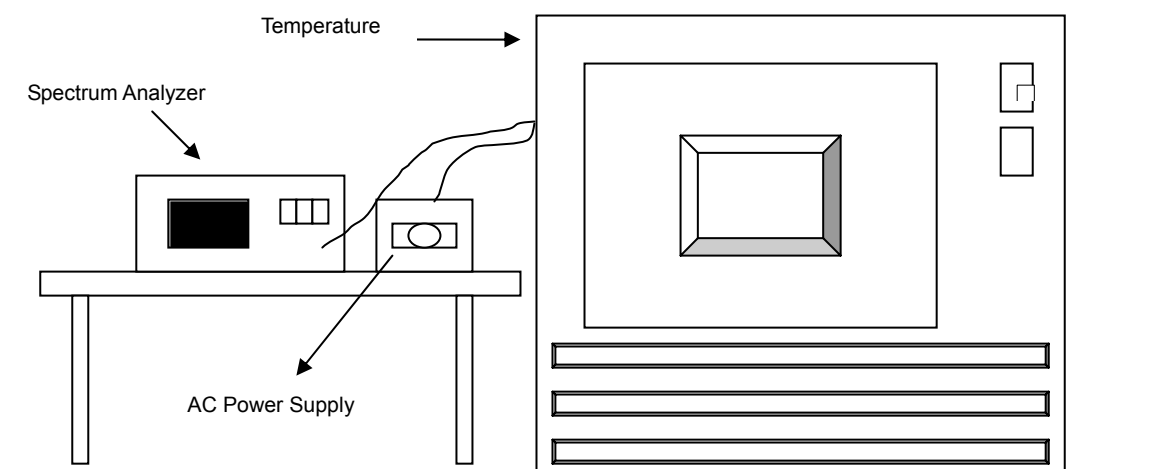


4.6 FREQUENCY STABILITY

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

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
50	110.0	5320.003110	0.585	5320.002926	0.550	5320.003553	0.668	5320.003363	0.632
40	110.0	5320.003627	0.682	5320.003608	0.678	5320.003553	0.668	5320.003410	0.641
30	110.0	5320.004496	0.845	5320.004580	0.861	5320.004852	0.912	5320.004600	0.865
20	110.0	5320.006308	1.186	5320.006319	1.188	5320.006463	1.215	5320.006676	1.255
10	110.0	5320.007698	1.447	5320.007446	1.400	5320.007463	1.403	5320.007492	1.408
0	110.0	5320.005716	1.074	5320.005718	1.075	5320.006140	1.154	5320.005620	1.056
-10	110.0	5320.004616	0.868	5320.004924	0.926	5320.004931	0.927	5320.005205	0.978
-20	110.0	5320.004281	0.805	5320.004637	0.872	5320.004464	0.839	5320.004159	0.782
-30	110.0	5320.002674	0.503	5320.002982	0.561	5320.003408	0.641	5320.003301	0.620

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	93.5	5320.004471	0.840	5320.004564	0.858	5320.004271	0.803	5320.004488	0.844
	110.0	5320.006308	1.186	5320.006319	1.188	5320.006463	1.215	5320.006676	1.255
	126.5	5320.007940	1.492	5320.007626	1.433	5320.007949	1.494	5320.007775	1.461

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---