FCC TEST REPORT

REPORT NO.: RF120720C10I

MODEL NO.: WS-AP3715i

FCC ID: QXO-AP3715I

RECEIVED: Jun. 12, 2013

TESTED: Jun. 12 ~ Sep. 30, 2013

ISSUED: Oct. 09, 2013

APPLICANT: Enterasys Networks, Inc.

ADDRESS: 9 Northeastern Blvd. Salem, NH 03079

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

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.

TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120720C10I	Original release	Oct. 09, 2013

1. CERTIFICATION

PRODUCT: Wireless 802.11abgn Access Point
MODEL: WS-AP3715i
BRAND: Enterasys
APPLICANT: Enterasys Networks, Inc.
TESTED: Jun. 12 ~ Sep. 30, 2013
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**
ANSI C63.10-2009

The above equipment (model: WS-AP3715i) 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 :** Oct. 09, 2013
Ivy Lin / Specialist

APPROVED BY : _____ **, DATE :** Oct. 09, 2013
Ken Liu / Senior 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 -16.96dB at 0.15000MHz.
15.407(b/1/2/3)(b)(6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 5350.00MHz & 165.80MHz.
15.407(a/1/2)	Max Average 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 IPEX 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	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Wireless 802.11abgn Access Point
MODEL NO.	WS-AP3715i
POWER SUPPLY	5Vdc (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	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	108.329mW for 5260 ~ 5320MHz 111.548mW for 5500 ~ 5700MHz
ANTENNA TYPE	PIFA antenna with 6dBi gain
ANTENNA CONNECTOR	IPEX
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	NA

NOTE:

1. This report is prepared for FCC class II permissive change. This report is issued as a supplementary report to the original BV ADT report no. RF120720C10L-1. The difference compared with original report is adding 5260 ~ 5320MHz & 5500 ~ 5700MHz. Therefore, the EUT was re-tested and presented in the test report.
2. The EUT provides three completed transmitters and three receivers.

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

3. 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 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

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.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	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.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (20MHz)	5260-5320	36 to 64	64	OFDM	BPSK	7.2
-	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	7.2

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)	5260-5320	36 to 64	64	OFDM	BPSK	7.2
-	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	7.2

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	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 (SYSTEM)	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Chris Lin
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Chris Lin
PLC	25deg. C, 65%RH	120Vac, 60Hz	Chris Lin
APCM	25deg. C, 60%RH	120Vac, 60Hz	Frank Liu

3.3 DUTY CYCLE OF TEST SIGNAL

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

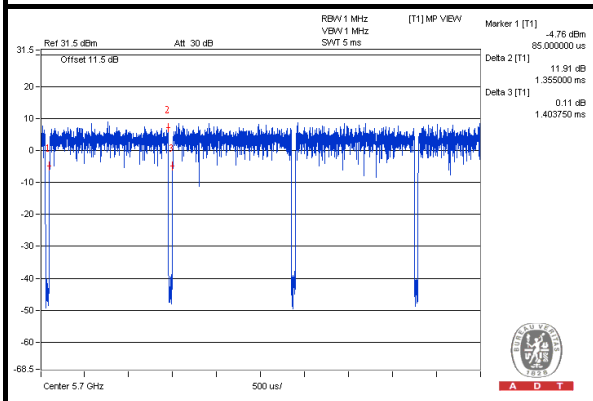
MODULATION TYPE: BPSK

802.11a: Duty cycle = 1.355000/1.403750 = 0.965, Duty factor = 10 * log(1/0.965) = 0.15

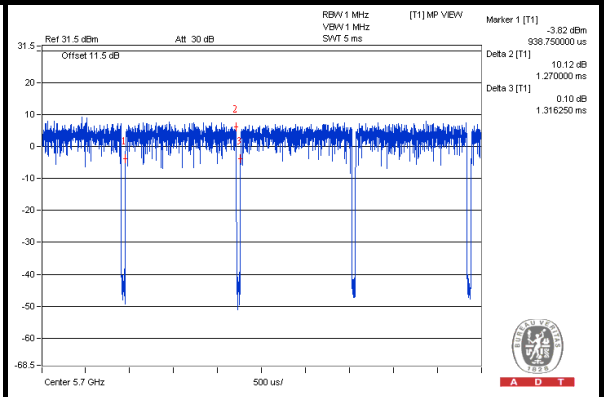
802.11n (20MHz): Duty cycle = 1.270000/1.316250 = 0.965, Duty factor = 10 * log(1/0.965) = 0.15

802.11n (40MHz): Duty cycle = 631.2500/665.0000 = 0.949, Duty factor = 10 * log(1/0.949) = 0.23

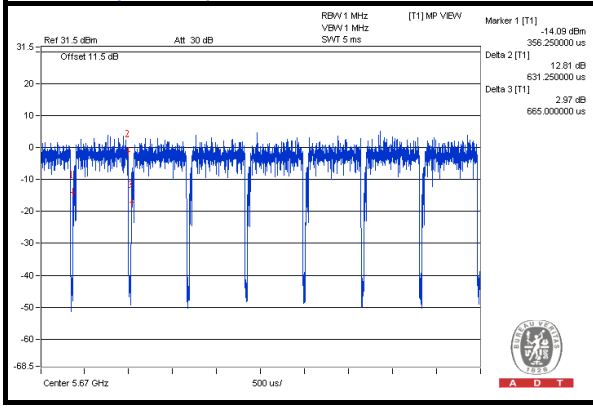
802.11a



802.11n (20MHz)



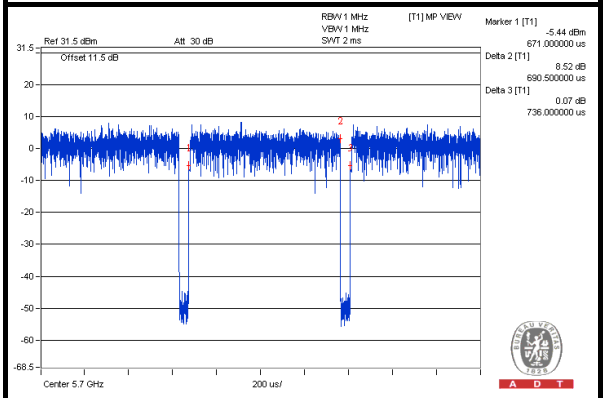
802.11n (40MHz)



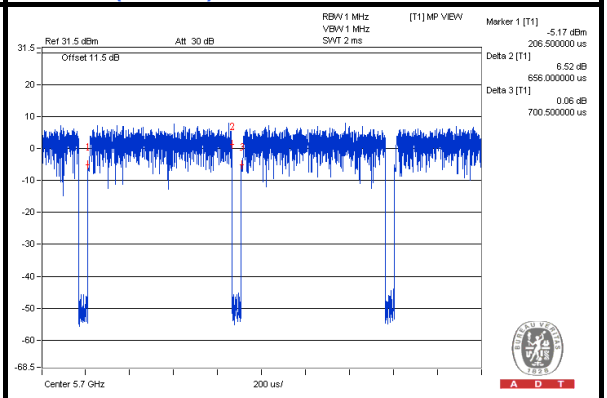
MODULATION TYPE: QPSK

802.11a: Duty cycle = 690.5000/736.0000 = 0.938, Duty factor = 10 * log(1/0.938) = 0.27
802.11n (20MHz): Duty cycle = 656.0000/700.5000 = 0.936, Duty factor = 10 * log(1/0.936) = 0.28
802.11n (40MHz): Duty cycle = 336.0000/368.0000 = 0.913, Duty factor = 10 * log(1/0.913) = 0.40

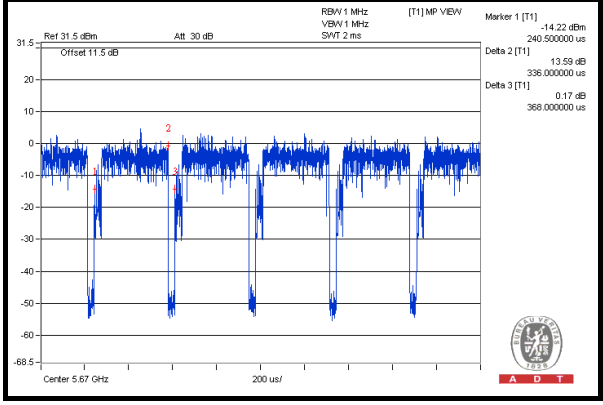
802.11a



802.11n (20MHz)



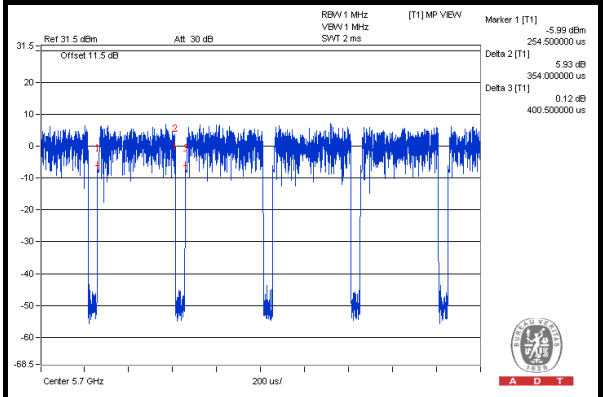
802.11n (40MHz)



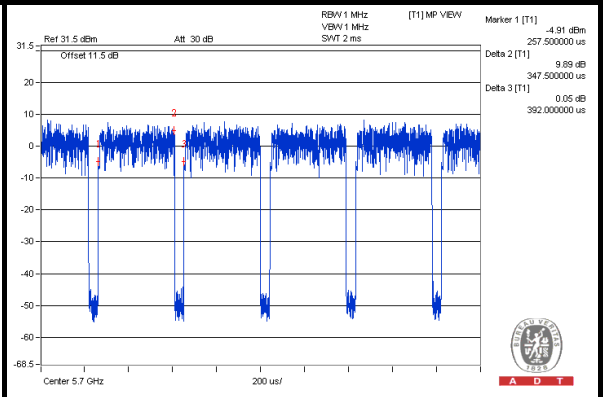
MODULATION TYPE: 16QAM

802.11a: Duty cycle = 354.0000/400.5000 = 0.884, Duty factor = 10 * log(1/0.884) = 0.53
802.11n (20MHz): Duty cycle = 347.5000/392.0000 = 0.886, Duty factor = 10 * log(1/0.886) = 0.53
802.11n (40MHz): Duty cycle = 188.0000/220.0000 = 0.855, Duty factor = 10 * log(1/0.855) = 0.68

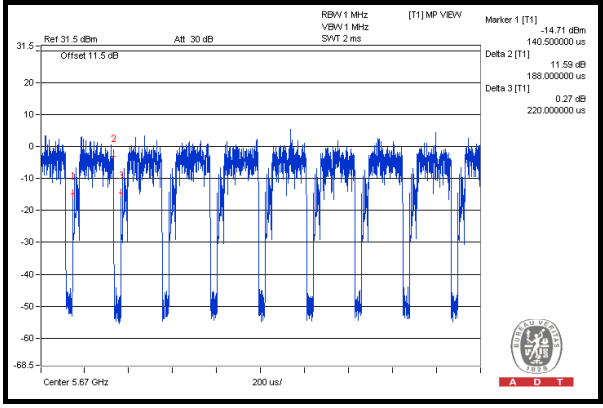
802.11a



802.11n (20MHz)



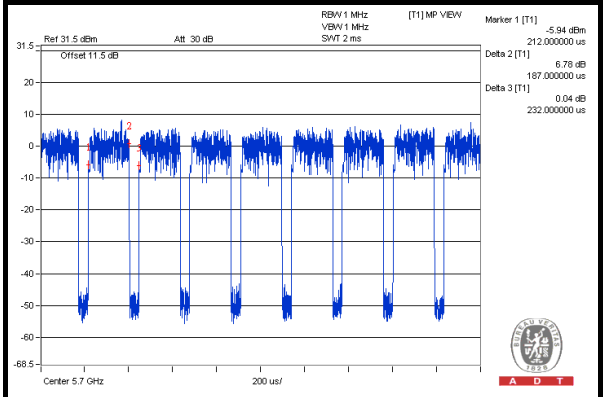
802.11n (40MHz)



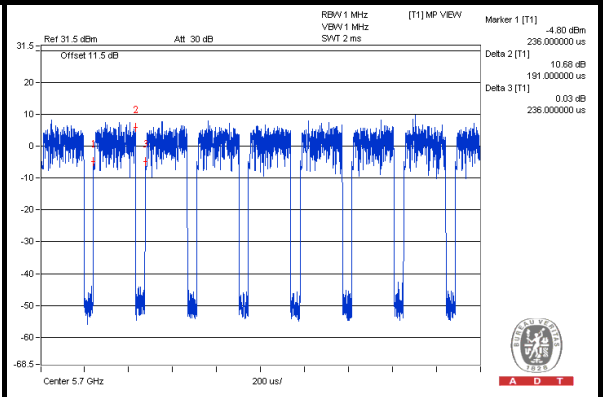
MODULATION TYPE: 64QAM

802.11a: Duty cycle = 187.0000/220.0000 = 0.850, Duty factor = 10 * log(1/0.850) = 0.94
802.11n (20MHz): Duty cycle = 191.0000/236.0000 = 0.809, Duty factor = 10 * log(1/0.809) = 0.92
802.11n (40MHz): Duty cycle = 112.0000/144.0000 = 0.778, Duty factor = 10 * log(1/0.778) = 1.09

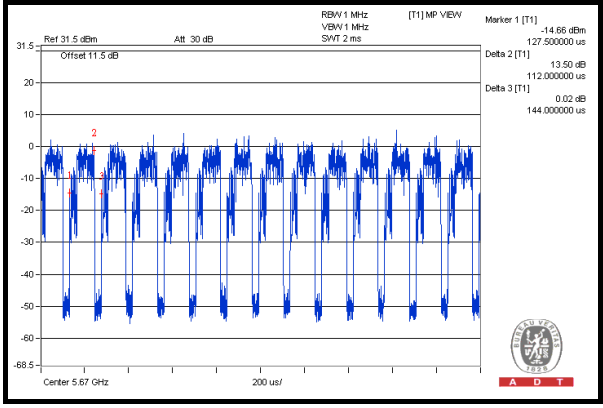
802.11a



802.11n (20MHz)



802.11n (40MHz)



3.4 DESCRIPTION OF SUPPORT UNITS

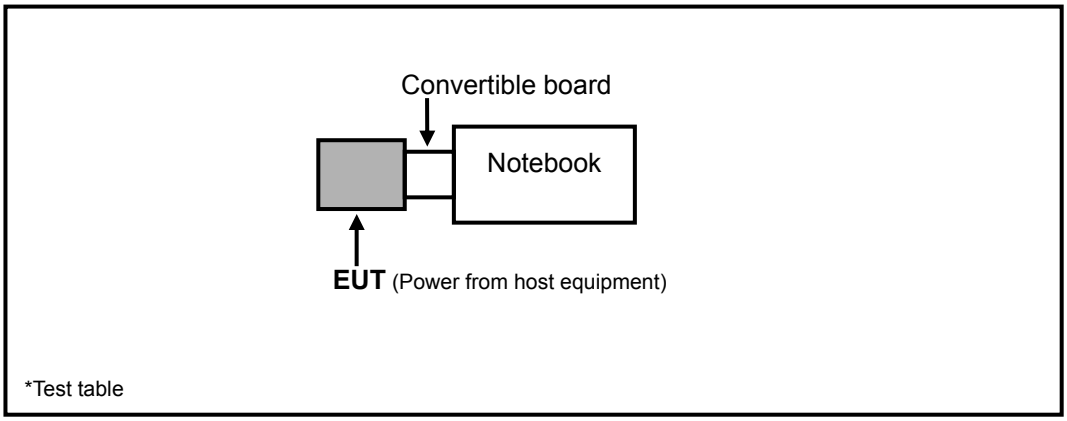
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

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

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

NOTE:
1. All power cords of the above support units are non shielded (1.8m).
2. Item 2 was provided by the manufacturer and used to control EUT transmit at specific channel.

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 v01 r03
662911 D01 Multiple Transmitter Output v01 r02
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

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

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

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

4.1.3 TEST INSTRUMENTS

Test Date: Sep. 26 ~ Sep. 30, 2013

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 16, 2012	Nov. 15, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jan. 28, 2013	Jan. 27, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Mar. 22, 2013	Mar. 21, 2014
HORN Antenna SCHWARZBECK	BBHA 9120 D	209	Sep. 12, 2013	Sep. 11, 2014
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 15, 2013	Jul. 14, 2014
Preamplifier Agilent	8449B	3008A01911	Oct. 25, 2012	Oct. 24, 2013
Preamplifier Agilent	8447D	2944A10638	Oct. 25, 2012	Oct. 24, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309222/4 248780/4 274392/4	Aug. 22, 2013	Aug. 21, 2014
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 11, 2013	Aug. 10, 2014
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 25, 2012	Oct. 24, 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 test was performed in HwaYa Chamber 9.

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

4. The FCC Site Registration No. is 215374.

5. The IC Site Registration No. is IC 7450F-9.

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.

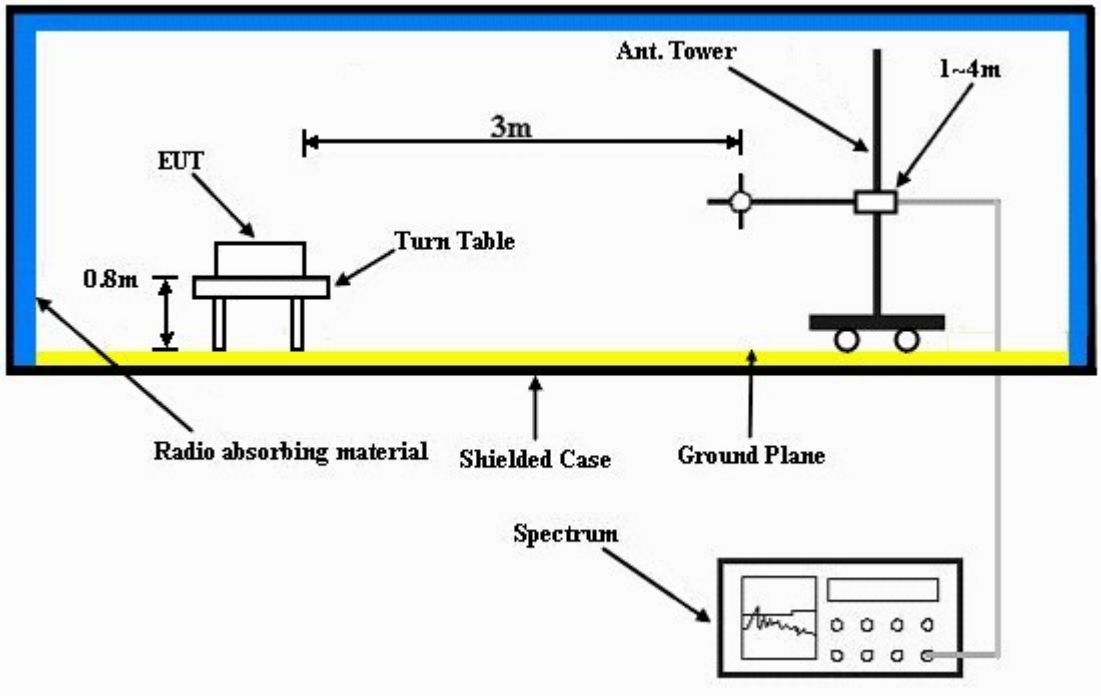
NOTE:

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(Duty cycle < 98%) or 10Hz(Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

4.1.6 TEST SETUP



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 via external board 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

ABOVE 1GHz DATA:

802.11a

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	24deg. C, 66%RH	TESTED BY	Ted Chang

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	58.6 PK	74.0	-15.4	1.02 H	112	54.20	4.40
2	5150.00	45.6 AV	54.0	-8.4	1.02 H	112	41.20	4.40
3	*5260.00	103.1 PK			1.00 H	31	61.40	41.70
4	*5260.00	93.6 AV			1.00 H	31	51.90	41.70
5	#10520.00	56.8 PK	74.0	-17.2	1.59 H	352	44.60	12.20
6	#10520.00	43.3 AV	54.0	-10.7	1.59 H	352	31.10	12.20
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	5150.00	60.9 PK	74.0	-13.1	1.02 V	154	56.50	4.40
2	5150.00	47.5 AV	54.0	-6.5	1.02 V	154	43.10	4.40
3	*5260.00	112.8 PK			1.00 V	136	71.10	41.70
4	*5260.00	103.0 AV			1.00 V	136	61.30	41.70
5	#10520.00	56.6 PK	74.0	-17.4	1.04 V	145	44.40	12.20
6	#10520.00	43.7 AV	54.0	-10.3	1.04 V	145	31.50	12.20

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) – Pre-Amplifier 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 of 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	24deg. C, 66%RH	TESTED BY	Ted Chang

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	102.2 PK			1.00 H	218	60.50	41.70
2	*5300.00	92.8 AV			1.00 H	218	51.10	41.70
3	10600.00	56.2 PK	74.0	-17.8	1.10 H	124	43.90	12.30
4	10600.00	43.5 AV	54.0	-10.5	1.10 H	124	31.20	12.30
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	*5300.00	112.4 PK			1.00 V	143	70.70	41.70
2	*5300.00	102.3 AV			1.00 V	143	60.60	41.70
3	10600.00	59.7 PK	74.0	-14.3	1.52 V	126	47.40	12.30
4	10600.00	46.5 AV	54.0	-7.5	1.52 V	126	34.20	12.30

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) – Pre-Amplifier 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	24deg. C, 66%RH	TESTED BY	Ted Chang

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	102.7 PK			1.00 H	230	61.00	41.70
2	*5320.00	93.3 AV			1.00 H	230	51.60	41.70
3	5350.00	60.1 PK	74.0	-13.9	1.00 H	226	55.50	4.60
4	5350.00	47.4 AV	54.0	-6.6	1.00 H	226	42.80	4.60
5	10640.00	55.4 PK	74.0	-18.6	1.00 H	96	43.00	12.40
6	10640.00	43.6 AV	54.0	-10.4	1.00 H	96	31.20	12.40
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	*5320.00	112.1 PK			1.02 V	209	70.40	41.70
2	*5320.00	103.0 AV			1.02 V	209	61.30	41.70
3	5350.00	70.1 PK	74.0	-3.9	1.00 V	203	65.50	4.60
4	5350.00	50.4 AV	54.0	-3.6	1.00 V	203	45.80	4.60
5	10640.00	56.8 PK	74.0	-17.2	1.00 V	26	44.40	12.40
6	10640.00	44.2 AV	54.0	-9.8	1.00 V	26	31.80	12.40

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) – Pre-Amplifier 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	24deg. C, 66%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	5460.00	61.7 PK	74.0	-12.3	1.00 H	50	56.80	4.90
2	5460.00	46.2 AV	54.0	-7.8	1.00 H	50	41.30	4.90
3	#5470.00	62.5 PK	74.0	-11.5	1.00 H	50	57.50	5.00
4	#5470.00	47.5 AV	54.0	-6.5	1.00 H	50	42.50	5.00
5	*5500.00	101.5 PK			1.00 H	52	59.50	42.00
6	*5500.00	92.7 AV			1.00 H	52	50.70	42.00
7	11000.00	56.5 PK	74.0	-17.5	1.00 H	98	43.40	13.10
8	11000.00	44.4 AV	54.0	-9.6	1.00 H	98	31.30	13.10
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	5460.00	62.0 PK	74.0	-12.0	1.04 V	206	57.10	4.90
2	5460.00	47.0 AV	54.0	-7.0	1.04 V	206	42.10	4.90
3	#5470.00	63.0 PK	74.0	-11.0	1.04 V	206	58.00	5.00
4	#5470.00	48.2 AV	54.0	-5.8	1.04 V	206	43.20	5.00
5	*5500.00	111.3 PK			1.07 V	205	69.30	42.00
6	*5500.00	101.2 AV			1.07 V	205	59.20	42.00
7	11000.00	58.0 PK	74.0	-16.0	1.00 V	22	44.90	13.10
8	11000.00	45.9 AV	54.0	-8.1	1.00 V	22	32.80	13.10

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) – Pre-Amplifier 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 of the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 70%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	*5580.00	103.5 PK			1.00 H	52	61.50	42.00
2	*5580.00	93.3 AV			1.00 H	52	51.30	42.00
3	11160.00	57.4 PK	74.0	-16.6	1.00 H	210	44.20	13.20
4	11160.00	44.3 AV	54.0	-9.7	1.00 H	210	31.10	13.20
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	*5580.00	110.2 PK			1.02 V	103	68.20	42.00
2	*5580.00	100.2 AV			1.02 V	103	58.20	42.00
3	11160.00	61.4 PK	74.0	-12.6	1.00 V	152	48.20	13.20
4	11160.00	47.8 AV	54.0	-6.2	1.00 V	152	34.60	13.20

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) – Pre-Amplifier 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	24deg. C, 66%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	*5700.00	105.8 PK			1.00 H	234	63.60	42.20
2	*5700.00	95.8 AV			1.00 H	234	53.60	42.20
3	#5725.00	61.6 PK	74.0	-12.4	1.00 H	237	56.40	5.20
4	#5725.00	48.7 AV	54.0	-5.3	1.00 H	237	43.50	5.20
5	11400.00	57.0 PK	74.0	-17.0	1.00 H	92	43.60	13.40
6	11400.00	44.9 AV	54.0	-9.1	1.00 H	92	31.50	13.40
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	*5700.00	112.9 PK			1.58 V	58	70.70	42.20
2	*5700.00	103.3 AV			1.58 V	58	61.10	42.20
3	#5725.00	69.0 PK	74.0	-5.0	1.58 V	57	63.80	5.20
4	#5725.00	51.6 AV	54.0	-2.4	1.58 V	57	46.40	5.20
5	11400.00	59.1 PK	74.0	-14.9	1.00 V	20	45.70	13.40
6	11400.00	46.3 AV	54.0	-7.7	1.00 V	20	32.90	13.40

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) – Pre-Amplifier 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 of the restricted band.

802.11n (20MHz)

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	24deg. C, 66%RH	TESTED BY	Ted Chang

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	47.6 PK	74.0	-26.4	1.01 H	129	43.20	4.40
2	5150.00	45.5 AV	54.0	-8.5	1.01 H	129	41.10	4.40
3	*5260.00	103.1 PK			1.00 H	190	61.40	41.70
4	*5260.00	93.7 AV			1.00 H	190	52.00	41.70
5	#10520.00	55.3 PK	74.0	-18.7	1.02 H	62	43.10	12.20
6	#10520.00	43.5 AV	54.0	-10.5	1.02 H	62	31.30	12.20
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	5150.00	61.2 PK	74.0	-12.8	1.01 V	255	56.80	4.40
2	5150.00	47.9 AV	54.0	-6.1	1.01 V	255	43.50	4.40
3	*5260.00	112.7 PK			1.00 V	146	71.00	41.70
4	*5260.00	102.7 AV			1.00 V	146	61.00	41.70
5	#10520.00	57.4 PK	74.0	-16.6	1.00 V	120	45.20	12.20
6	#10520.00	45.7 AV	54.0	-8.3	1.00 V	120	33.50	12.20

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) – Pre-Amplifier 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 of 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	24deg. C, 66%RH	TESTED BY	Ted Chang

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	103.7 PK			1.00 H	187	62.00	41.70
2	*5300.00	93.7 AV			1.00 H	187	52.00	41.70
3	10600.00	55.9 PK	74.0	-18.1	1.42 H	125	43.60	12.30
4	10600.00	43.5 AV	54.0	-10.5	1.42 H	125	31.20	12.30
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	*5300.00	112.5 PK			1.00 V	149	70.80	41.70
2	*5300.00	102.6 AV			1.00 V	149	60.90	41.70
3	10600.00	60.8 PK	74.0	-13.2	1.01 V	154	48.50	12.30
4	10600.00	45.5 AV	54.0	-8.5	1.01 V	154	33.20	12.30

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) – Pre-Amplifier 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	24deg. C, 66%RH	TESTED BY	Ted Chang

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	104.3 PK			1.10 H	230	62.60	41.70
2	*5320.00	94.0 AV			1.10 H	230	52.30	41.70
3	5350.00	58.4 PK	74.0	-15.6	1.08 H	226	53.80	4.60
4	5350.00	46.6 AV	54.0	-7.4	1.08 H	226	42.00	4.60
5	10640.00	56.3 PK	74.0	-17.7	1.00 H	92	43.90	12.40
6	10640.00	44.2 AV	54.0	-9.8	1.00 H	92	31.80	12.40
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	*5320.00	112.0 PK			1.00 V	200	70.30	41.70
2	*5320.00	102.5 AV			1.00 V	200	60.80	41.70
3	5350.00	69.3 PK	74.0	-4.7	1.00 V	202	64.70	4.60
4	5350.00	49.2 AV	54.0	-4.8	1.00 V	202	44.60	4.60
5	10640.00	58.0 PK	74.0	-16.0	1.00 V	21	45.60	12.40
6	10640.00	45.5 AV	54.0	-8.5	1.00 V	21	33.10	12.40

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) – Pre-Amplifier 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	24deg. C, 66%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	5460.00	58.0 PK	74.0	-16.0	1.80 H	77	53.10	4.90
2	5460.00	45.3 AV	54.0	-8.7	1.80 H	77	40.40	4.90
3	#5470.00	62.0 PK	74.0	-12.0	1.80 H	77	57.00	5.00
4	#5470.00	47.5 AV	54.0	-6.5	1.80 H	77	42.50	5.00
5	*5500.00	103.8 PK			1.80 H	75	61.80	42.00
6	*5500.00	94.0 AV			1.80 H	75	52.00	42.00
7	11000.00	57.3 PK	74.0	-16.7	1.00 H	97	44.20	13.10
8	11000.00	45.0 AV	54.0	-9.0	1.00 H	97	31.90	13.10
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	5460.00	59.1 PK	74.0	-14.9	1.07 V	33	54.20	4.90
2	5460.00	46.7 AV	54.0	-7.3	1.07 V	33	41.80	4.90
3	#5470.00	69.1 PK	74.0	-4.9	1.07 V	33	64.10	5.00
4	#5470.00	50.5 AV	54.0	-3.5	1.07 V	33	45.50	5.00
5	*5500.00	111.5 PK			1.07 V	31	69.50	42.00
6	*5500.00	101.6 AV			1.07 V	31	59.60	42.00
7	11000.00	58.5 PK	74.0	-15.5	1.00 V	24	45.40	13.10
8	11000.00	46.4 AV	54.0	-7.6	1.00 V	24	33.30	13.10

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) – Pre-Amplifier 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 of the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 70%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	*5580.00	101.6 PK			1.00 H	31	59.60	42.00
2	*5580.00	91.8 AV			1.00 H	31	49.80	42.00
3	11160.00	56.5 PK	74.0	-17.5	1.52 H	100	43.30	13.20
4	11160.00	44.3 AV	54.0	-9.7	1.52 H	100	31.10	13.20
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	*5580.00	111.6 PK			1.68 V	257	69.60	42.00
2	*5580.00	101.2 AV			1.68 V	257	59.20	42.00
3	11160.00	59.8 PK	74.0	-14.2	1.06 V	223	46.60	13.20
4	11160.00	45.7 AV	54.0	-8.3	1.06 V	223	32.50	13.20

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) – Pre-Amplifier 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	24deg. C, 66%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	*5700.00	105.4 PK			1.00 H	234	63.20	42.20
2	*5700.00	95.7 AV			1.00 H	234	53.50	42.20
3	#5725.00	61.6 PK	74.0	-12.4	1.00 H	238	56.40	5.20
4	#5725.00	48.0 AV	54.0	-6.0	1.00 H	238	42.80	5.20
5	11400.00	56.9 PK	74.0	-17.1	1.00 H	97	43.50	13.40
6	11400.00	45.1 AV	54.0	-8.9	1.00 H	97	31.70	13.40
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	*5700.00	113.4 PK			1.59 V	59	71.20	42.20
2	*5700.00	104.1 AV			1.59 V	59	61.90	42.20
3	#5725.00	69.2 PK	74.0	-4.8	1.53 V	52	64.00	5.20
4	#5725.00	50.9 AV	54.0	-3.1	1.53 V	52	45.70	5.20
5	11400.00	58.1 PK	74.0	-15.9	1.00 V	25	44.70	13.40
6	11400.00	46.3 AV	54.0	-7.7	1.00 V	25	32.90	13.40

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) – Pre-Amplifier 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 of the restricted band.

802.11n (40MHz)

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	24deg. C, 66%RH	TESTED BY	Ted Chang

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	*5270.00	103.5 PK			2.16 H	161	61.80	41.70
2	*5270.00	93.0 AV			2.16 H	161	51.30	41.70
3	5350.00	58.2 PK	74.0	-15.8	1.02 H	19	53.60	4.60
4	5350.00	45.7 AV	54.0	-8.3	1.02 H	19	41.10	4.60
5	#10540.00	56.1 PK	74.0	-17.9	1.32 H	137	43.80	12.30
6	#10540.00	42.6 AV	54.0	-11.4	1.32 H	137	30.30	12.30
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	*5270.00	110.1 PK			1.00 V	139	68.40	41.70
2	*5270.00	100.3 AV			1.00 V	139	58.60	41.70
3	5350.00	62.4 PK	74.0	-11.6	1.00 V	152	57.80	4.60
4	5350.00	48.2 AV	54.0	-5.8	1.00 V	152	43.60	4.60
5	#10540.00	60.6 PK	74.0	-13.4	1.62 V	241	48.30	12.30
6	#10540.00	45.8 AV	54.0	-8.2	1.62 V	241	33.50	12.30

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) – Pre-Amplifier 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 of 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	24deg. C, 66%RH	TESTED BY	Ted Chang

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	99.5 PK			1.84 H	326	57.80	41.70
2	*5310.00	89.4 AV			1.84 H	326	47.70	41.70
3	5350.00	64.5 PK	74.0	-9.5	1.84 H	329	59.90	4.60
4	5350.00	49.5 AV	54.0	-4.5	1.84 H	329	44.90	4.60
5	10620.00	56.3 PK	74.0	-17.7	1.00 H	95	43.90	12.40
6	10620.00	43.6 AV	54.0	-10.4	1.00 H	95	31.20	12.40
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	*5310.00	105.7 PK			1.00 V	197	64.00	41.70
2	*5310.00	96.2 AV			1.00 V	197	54.50	41.70
3	5350.00	68.6 PK	74.0	-5.4	1.00 V	212	64.00	4.60
4	**5350.00**	**53.0 AV**	**54.0**	**-1.0**	**1.00 V**	**212**	**48.40**	**4.60**
5	10620.00	57.1 PK	74.0	-16.9	1.00 V	25	44.70	12.40
6	10620.00	45.1 AV	54.0	-8.9	1.00 V	25	32.70	12.40

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) – Pre-Amplifier 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	24deg. C, 66%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	5460.00	59.1 PK	74.0	-14.9	1.81 H	322	54.20	4.90
2	5460.00	47.1 AV	54.0	-6.9	1.81 H	322	42.20	4.90
3	#5470.00	68.2 PK	74.0	-5.8	1.81 H	322	63.20	5.00
4	#5470.00	49.9 AV	54.0	-4.1	1.81 H	322	44.90	5.00
5	*5510.00	99.1 PK			1.84 H	328	57.10	42.00
6	*5510.00	89.1 AV			1.84 H	328	47.10	42.00
7	11020.00	56.0 PK	74.0	-18.0	1.00 H	91	42.90	13.10
8	11020.00	42.8 AV	54.0	-11.2	1.00 H	91	29.70	13.10
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	5460.00	61.3 PK	74.0	-12.7	1.00 V	26	56.40	4.90
2	5460.00	48.1 AV	54.0	-5.9	1.00 V	26	43.20	4.90
3	#5470.00	68.5 PK	74.0	-5.5	1.00 V	26	63.50	5.00
4	#5470.00	52.4 AV	54.0	-1.6	1.00 V	26	47.40	5.00
5	*5510.00	104.0 PK			1.00 V	86	62.00	42.00
6	*5510.00	94.0 AV			1.00 V	86	52.00	42.00
7	11020.00	53.3 PK	74.0	-20.7	1.00 V	24	40.20	13.10
8	11020.00	45.9 AV	54.0	-8.1	1.00 V	24	32.80	13.10

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) – Pre-Amplifier 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 of 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	24deg. C, 66%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	*5550.00	102.1 PK			1.00 H	57	60.10	42.00
2	*5550.00	91.4 AV			1.00 H	57	49.40	42.00
3	11100.00	57.7 PK	74.0	-16.3	1.48 H	158	44.60	13.10
4	11100.00	44.3 AV	54.0	-9.7	1.48 H	158	31.20	13.10
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	*5550.00	110.3 PK			1.06 V	199	68.30	42.00
2	*5550.00	99.9 AV			1.06 V	199	57.90	42.00
3	11100.00	61.7 PK	74.0	-12.3	1.36 V	269	48.60	13.10
4	11100.00	46.4 AV	54.0	-7.6	1.36 V	269	33.30	13.10

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) – Pre-Amplifier 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 134	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 66%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	*5670.00	101.8 PK			1.00 H	48	59.60	42.20
2	*5670.00	92.0 AV			1.00 H	48	49.80	42.20
3	#5725.00	63.5 PK	74.0	-10.5	1.00 H	56	58.30	5.20
4	#5725.00	46.7 AV	54.0	-7.3	1.00 H	56	41.50	5.20
5	11340.00	58.0 PK	74.0	-16.0	1.00 H	262	44.70	13.30
6	11340.00	44.1 AV	54.0	-9.9	1.00 H	262	30.80	13.30
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	*5670.00	109.1 PK			1.00 V	246	66.90	42.20
2	*5670.00	99.1 AV			1.00 V	246	56.90	42.20
3	#5725.00	68.0 PK	74.0	-6.0	1.58 V	249	62.80	5.20
4	#5725.00	49.8 AV	54.0	-4.2	1.58 V	249	44.60	5.20
5	11340.00	60.0 PK	74.0	-14.0	1.37 V	318	46.70	13.30
6	11340.00	46.9 AV	54.0	-7.1	1.37 V	318	33.60	13.30

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) – Pre-Amplifier 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 of the restricted band.

BELOW 1GHz WORST-CASE DATA :

5260 ~ 5320MHz

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	24deg. C, 66%RH	TESTED BY	Ted Chang

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	165.80	41.5 QP	43.5	-2.0	1.49 H	189	56.00	-14.50
2	198.78	39.6 QP	43.5	-3.9	1.24 H	202	56.10	-16.50
3	299.66	36.8 QP	46.0	-9.2	1.00 H	169	49.00	-12.20
4	528.58	30.4 QP	46.0	-15.6	1.49 H	181	38.20	-7.80
5	699.30	31.4 QP	46.0	-14.6	1.24 H	207	36.20	-4.80
6	835.10	31.9 QP	46.0	-14.1	1.00 H	347	33.90	-2.00
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	99.84	29.8 QP	43.5	-13.7	1.24 V	112	48.60	-18.80
2	189.08	31.1 QP	43.5	-12.4	1.24 V	262	47.20	-16.10
3	299.66	37.1 QP	46.0	-8.9	1.24 V	141	49.30	-12.20
4	450.98	31.8 QP	46.0	-14.2	1.24 V	107	40.50	-8.70
5	600.36	28.1 QP	46.0	-17.9	1.99 V	15	34.20	-6.10
6	699.30	29.1 QP	46.0	-16.9	1.99 V	252	33.90	-4.80

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) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

5500 ~ 5700MHz

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 66%RH	TESTED BY	Ted Chang

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	165.80	41.3 QP	43.5	-2.2	1.51 H	15	55.80	-14.50
2	299.66	37.9 QP	46.0	-8.1	1.01 H	178	50.10	-12.20
3	450.98	29.4 QP	46.0	-16.6	1.51 H	81	38.10	-8.70
4	528.58	30.5 QP	46.0	-15.5	1.25 H	175	38.30	-7.80
5	600.36	32.9 QP	46.0	-13.1	1.01 H	161	39.00	-6.10
6	699.30	32.4 QP	46.0	-13.6	1.01 H	207	37.20	-4.80
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	62.98	32.2 QP	40.0	-7.8	1.00 V	64	46.90	-14.70
2	165.80	33.1 QP	43.5	-10.4	1.99 V	343	47.60	-14.50
3	299.66	27.0 QP	46.0	-19.0	1.00 V	115	39.20	-12.20
4	450.98	34.6 QP	46.0	-11.4	1.00 V	67	43.30	-8.70
5	600.36	27.5 QP	46.0	-18.5	1.49 V	63	33.60	-6.10
6	776.90	29.5 QP	46.0	-16.5	1.24 V	22	32.50	-3.00

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) – Pre-Amplifier 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

Test Date: Jun. 12, 2013

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Nov. 09, 2012	Nov. 08, 2013
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 21, 2012	Dec. 20, 2013
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 06, 2012	Jul. 05, 2013
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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

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

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

4.2.3 TEST PROCEDURES

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

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

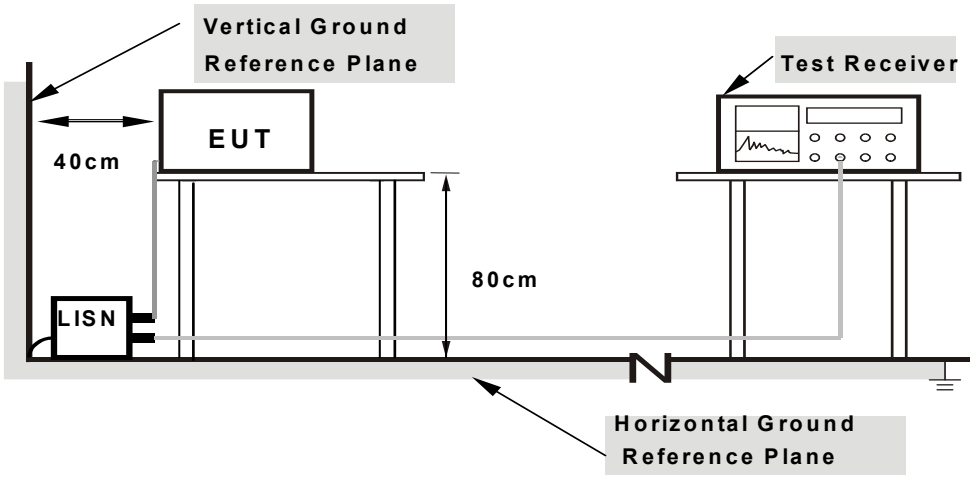
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA :

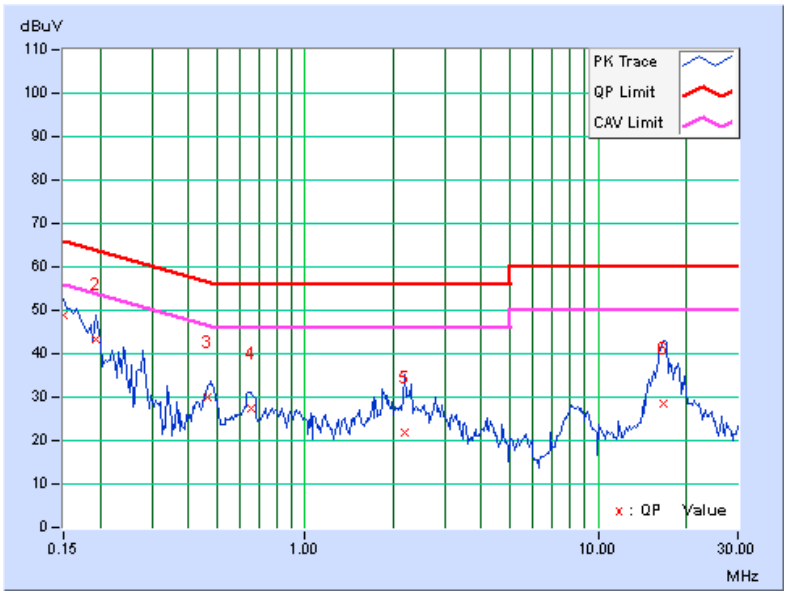
5260 ~ 5320MHz

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	**0.15000**	**0.18**	**48.86**	**36.78**	**49.04**	**36.96**	**66.00**	**56.00**	**-16.96**	**-19.04**
2	0.19297	0.17	43.12	30.60	43.29	30.77	63.91	53.91	-20.62	-23.14
3	0.46641	0.22	29.91	21.62	30.13	21.84	56.58	46.58	-26.45	-24.74
4	0.65391	0.24	27.19	16.31	27.43	16.55	56.00	46.00	-28.57	-29.45
5	2.18359	0.29	21.65	14.40	21.94	14.69	56.00	46.00	-34.06	-31.31
6	16.62500	0.57	28.07	22.57	28.64	23.14	60.00	50.00	-31.36	-26.86

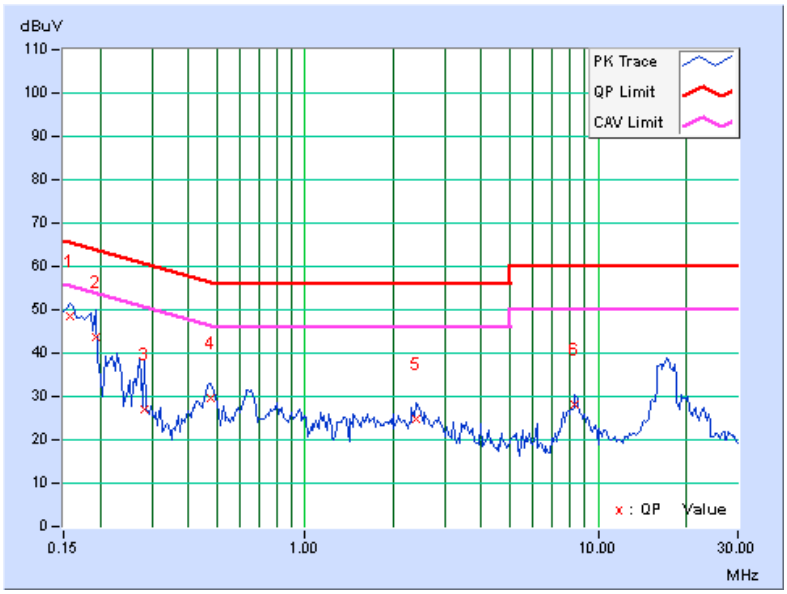
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading 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	0.15781	0.18	48.39	35.45	48.57	35.63	65.58	55.58	-17.00	-19.94
2	0.19297	0.18	43.40	22.76	43.58	22.94	63.91	53.91	-20.33	-30.97
3	0.28281	0.21	26.67	17.02	26.88	17.23	60.73	50.73	-33.85	-33.50
4	0.47422	0.25	29.23	20.40	29.48	20.65	56.44	46.44	-26.96	-25.79
5	2.39844	0.30	24.42	14.68	24.72	14.98	56.00	46.00	-31.28	-31.02
6	8.35156	0.46	27.68	16.37	28.14	16.83	60.00	50.00	-31.86	-33.17

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.



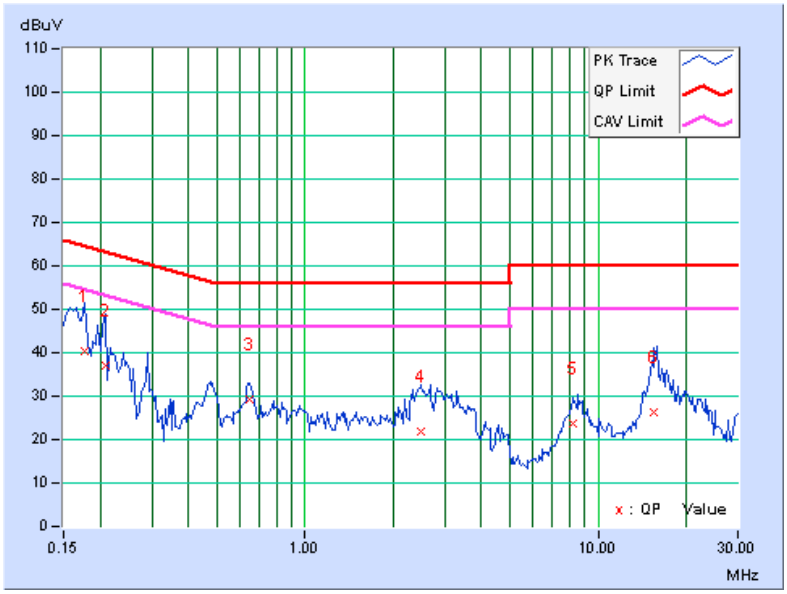
5500 ~ 5700MHz

802.11n (20MHz)

PHASE	Line 1	**6dB BANDWIDTH**	9kHz
CHANNEL	Channel 140		

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	0.17734	0.17	40.26	30.78	40.43	30.95	64.61	54.61	-24.18	-23.66
2	0.20859	0.17	36.90	24.06	37.07	24.23	63.26	53.26	-26.19	-29.03
3	0.64609	0.23	28.98	17.01	29.21	17.24	56.00	46.00	-26.79	-28.76
4	2.50000	0.30	21.59	17.72	21.89	18.02	56.00	46.00	-34.11	-27.98
5	8.25000	0.41	23.18	19.74	23.59	20.15	60.00	50.00	-36.41	-29.85
6	15.57813	0.55	25.82	20.50	26.37	21.05	60.00	50.00	-33.63	-28.95

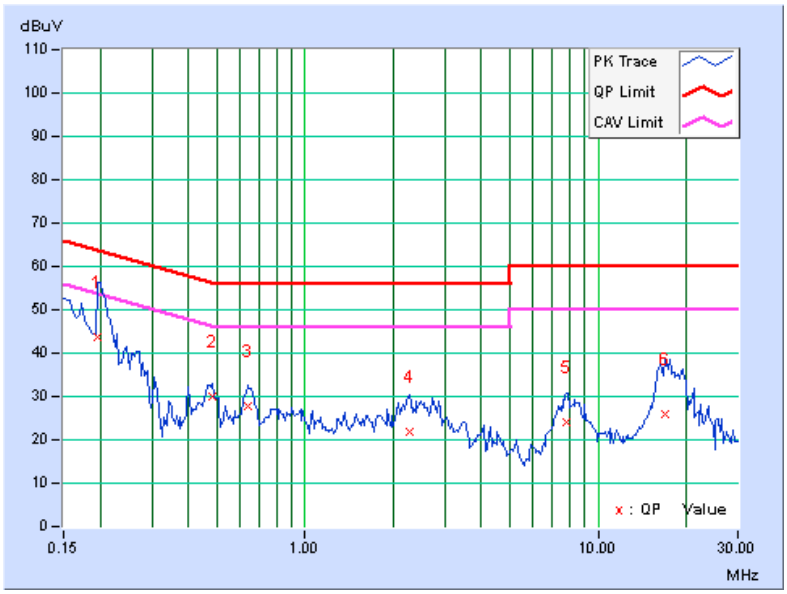
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 140		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19687	0.18	43.40	19.69	43.58	19.87	63.74	53.74	-20.16	-33.87
2	0.48203	0.25	29.61	22.90	29.86	23.15	56.30	46.30	-26.45	-23.16
3	0.63828	0.24	27.66	17.65	27.90	17.89	56.00	46.00	-28.10	-28.11
4	2.28125	0.30	21.43	14.80	21.73	15.10	56.00	46.00	-34.27	-30.90
5	7.79297	0.45	23.64	13.62	24.09	14.07	60.00	50.00	-35.91	-35.93
6	16.96875	0.65	25.35	23.76	26.00	24.41	60.00	50.00	-34.00	-25.59

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.

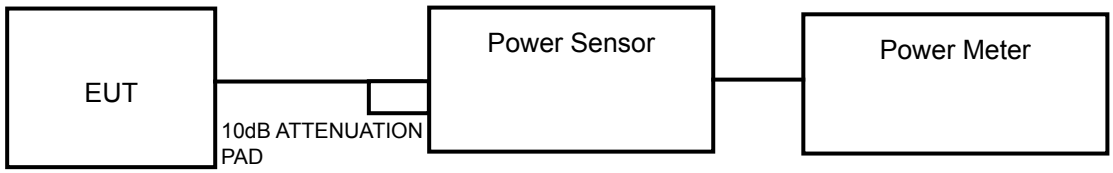
Per KDB 662911 D01 Multiple Transmitter Output v02 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;
Array Gain = 5 log(NANT/NSS) dB or 3 dB, whichever is less for 20-MHz channel widths with NANT ≥ 5.

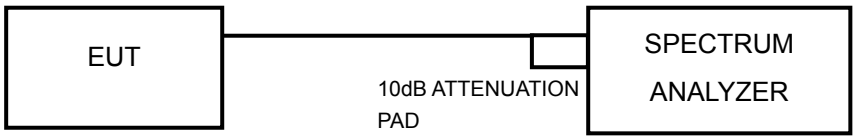
For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Test Date: Jun. 19, 2013

FOR POWER OUTPUT MEASUREMENT

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
High Speed Peak Power Meter	ML2495A	0824012	Aug. 22, 2012	Aug. 21, 2013
Power Sensor	MA2411B	0738138	Aug. 23, 2012	Aug. 22, 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. Measurement Bandwidth of ML2495A is 65MHz greater than 26dB bandwidth of emission.

FOR 26dB BANDWIDTH

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100040	Jul. 16, 2012	Jul. 15, 2013

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

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

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
52	5260	14.87	14.91	14.67	90.973	19.59	23.93	PASS
60	5300	15.10	14.96	14.87	94.382	19.75	24	PASS
64	5320	14.97	14.97	15.05	94.799	19.77	24	PASS
100	5500	14.84	14.53	14.47	86.848	19.39	24	PASS
116	5580	14.84	14.53	14.47	86.848	19.39	24	PASS
140	5700	14.85	14.69	14.53	88.372	19.46	24	PASS

NOTE:
CHAIN 0
1. 11dBm + 10log(26.89) = 25.30 dBm > 24dBm.
2. 11dBm + 10log(27.27) = 25.36 dBm > 24dBm.
3. 11dBm + 10log(24.00) = 24.80 dBm > 24dBm.
4. 11dBm + 10log(28.09) = 25.49 dBm > 24dBm.
5. 11dBm + 10log(25.31) = 25.03 dBm > 24dBm.
6. 11dBm + 10log(21.42) = 24.31 dBm > 24dBm.

CHAIN 1
1. 11dBm + 10log(24.18) = 24.83 dBm > 24dBm.
2. 11dBm + 10log(23.46) = 24.70 dBm > 24dBm.
3. 11dBm + 10log(23.92) = 24.79 dBm > 24dBm.
4. 11dBm + 10log(21.06) = 24.23 dBm > 24dBm.
5. 11dBm + 10log(20.91) = 24.20 dBm > 24dBm.
6. 11dBm + 10log(20.32) = 24.08 dBm > 24dBm.

CHAIN 2
1. 11dBm + 10log(19.62) = 23.93 dBm < 24dBm.
2. 11dBm + 10log(21.26) = 24.28 dBm > 24dBm.
3. 11dBm + 10log(22.86) = 24.59 dBm > 24dBm.
4. 11dBm + 10log(20.32) = 24.08 dBm > 24dBm.
5. 11dBm + 10log(23.52) = 24.71 dBm > 24dBm.
6. 11dBm + 10log(20.74) = 24.17 dBm > 24dBm.

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				
52	5260	15.27	15.18	14.81	96.881	19.86	24	PASS
60	5300	15.30	15.36	15.40	102.914	20.12	24	PASS
64	5320	15.76	15.30	15.24	104.974	20.21	24	PASS
100	5500	15.26	15.14	15.02	98.002	19.91	24	PASS
116	5580	14.82	15.02	15.04	94.023	19.73	24	PASS
140	5700	15.20	15.46	15.33	102.388	20.10	24	PASS

NOTE:

CHAIN 0

1. 11dBm + 10log(27.89) = 25.45 dBm > 24dBm.
2. 11dBm + 10log(27.65) = 25.42 dBm > 24dBm.
3. 11dBm + 10log(25.90) = 25.13 dBm > 24dBm.
4. 11dBm + 10log(33.16) = 26.21 dBm > 24dBm.
5. 11dBm + 10log(28.54) = 25.55 dBm > 24dBm.
6. 11dBm + 10log(22.35) = 24.49 dBm > 24dBm.

CHAIN 1

1. 11dBm + 10log(25.85) = 25.12 dBm > 24dBm.
2. 11dBm + 10log(23.21) = 24.66 dBm > 24dBm.
3. 11dBm + 10log(25.63) = 25.09 dBm > 24dBm.
4. 11dBm + 10log(26.32) = 25.20 dBm > 24dBm.
5. 11dBm + 10log(22.02) = 24.43 dBm > 24dBm.
6. 11dBm + 10log(21.75) = 24.37 dBm > 24dBm.

CHAIN 2

1. 11dBm + 10log(20.89) = 24.20 dBm > 24dBm.
2. 11dBm + 10log(20.76) = 24.17 dBm > 24dBm.
3. 11dBm + 10log(24.14) = 24.83 dBm > 24dBm.
4. 11dBm + 10log(24.45) = 24.88 dBm > 24dBm.
5. 11dBm + 10log(26.90) = 25.30 dBm > 24dBm.
6. 11dBm + 10log(23.25) = 24.66 dBm > 24dBm.

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				
54	5270	15.86	15.56	15.29	**108.329**	20.35	24	PASS
62	5310	12.13	12.61	12.75	53.406	17.28	24	PASS
102	5510	11.06	9.75	9.85	31.866	15.03	24	PASS
110	5550	15.92	15.50	15.68	**111.548**	20.48	24	PASS
134	5670	15.86	15.43	15.80	111.481	20.47	24	PASS

NOTE:

CHAIN 0

1. 11dBm + 10log(82.74) = 30.18 dBm > 24dBm.
2. 11dBm + 10log(92.51) = 30.66 dBm > 24dBm.
3. 11dBm + 10log(90.39) = 30.56 dBm > 24dBm.
4. 11dBm + 10log(90.08) = 30.55 dBm > 24dBm.
5. 11dBm + 10log(84.96) = 30.29 dBm > 24dBm.

CHAIN 1

1. 11dBm + 10log(74.27) = 29.71 dBm > 24dBm.
2. 11dBm + 10log(78.31) = 29.94 dBm > 24dBm.
3. 11dBm + 10log(81.62) = 30.12 dBm > 24dBm.
4. 11dBm + 10log(78.33) = 29.94 dBm > 24dBm.
5. 11dBm + 10log(69.86) = 29.44 dBm > 24dBm.

CHAIN 2

1. 11dBm + 10log(64.66) = 29.11 dBm > 24dBm.
2. 11dBm + 10log(66.09) = 29.20 dBm > 24dBm.
3. 11dBm + 10log(86.07) = 30.35 dBm > 24dBm.
4. 11dBm + 10log(81.98) = 30.14 dBm > 24dBm.
5. 11dBm + 10log(81.92) = 30.13 dBm > 24dBm.

26dB BANDWIDTH:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
52	5260	26.89	24.18	19.62	PASS
60	5300	27.27	23.46	21.26	PASS
64	5320	24.00	23.92	22.86	PASS
100	5500	28.09	21.06	20.32	PASS
116	5580	25.31	20.91	23.52	PASS
140	5700	21.42	20.32	20.74	PASS

802.11n (20MHz)

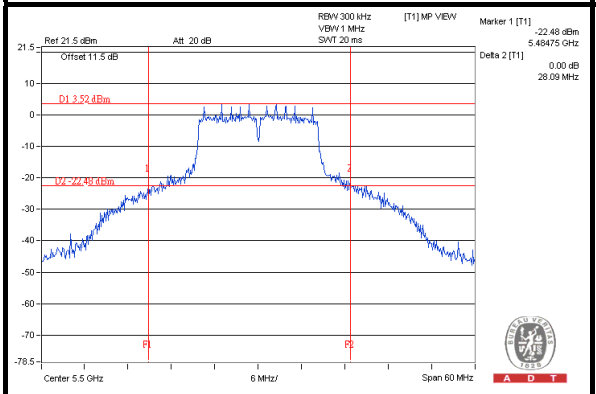
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
52	5260	27.89	25.85	20.89	PASS
60	5300	27.65	23.21	20.76	PASS
64	5320	25.90	25.63	24.14	PASS
100	5500	33.16	26.32	24.45	PASS
116	5580	28.54	22.02	26.90	PASS
140	5700	22.35	21.75	23.25	PASS

802.11n (40MHz)

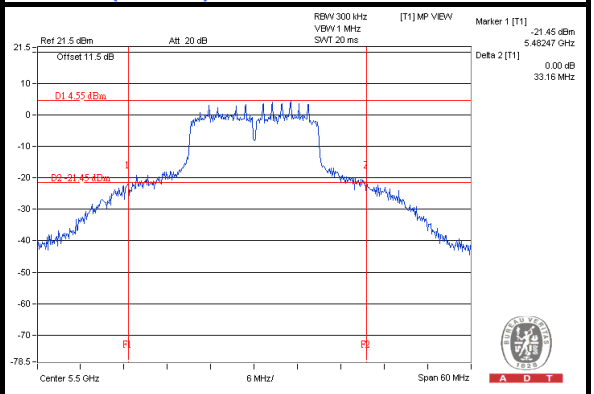
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
54	5270	82.74	74.27	64.66	PASS
62	5310	92.51	78.31	66.09	PASS
102	5510	90.39	81.62	86.07	PASS
110	5550	90.08	78.33	81.98	PASS
134	5670	84.96	69.86	81.92	PASS

SPECTRUM PLOT OF WORST VALUE

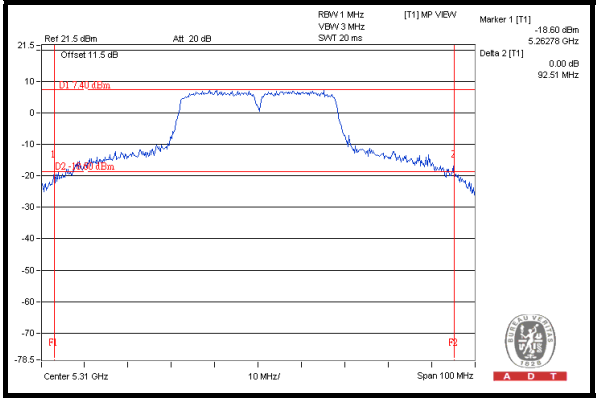
802.11a



802.11n (20MHz)



802.11n (40MHz)



EUT MAXIMUM CONDUCTED POWER

802.11a

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	94.799	19.77
5470~5725	88.372	19.46

NOTE: Manufacturer provides Transmit Power Control description to meet this requirement.

802.11n (20MHz)

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	104.974	20.21
5470~5725	102.388	20.10

NOTE: Manufacturer provides Transmit Power Control description to meet this requirement.

802.11n (40MHz)

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	108.329	20.35
5470~5725	111.548	20.48

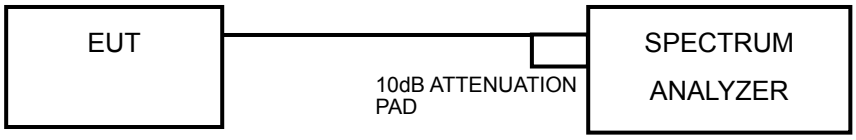
NOTE: Manufacturer provides Transmit Power Control description to meet this requirement.

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

Test Date: Jun. 19, 2013

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100040	Jul. 16, 2012	Jul. 15, 2013

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

4.4.4 TEST PROCEDURES

Using method SA-2 alternative

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 30 KHz, Set VBW ≥ 1 MHz, Detector = RMS
3) Set Channel power measure = 1MHz
4) Sweep time = 0.3 second (For 802.11a, 802.11n (20MHz)),
   Sweep time = 0.6 second (For 802.11n (40MHz))
5) Perform a single sweep.
6) Record the max value and add 10 log (1/duty cycle)

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6.

4.4.7 TEST RESULTS

802.11a

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					
52	5260	1.16	1.30	1.31	6.03	0.15	6.18	6.23	PASS
60	5300	1.01	1.39	1.47	6.07	0.15	6.22	6.23	PASS
64	5320	1.24	1.35	1.22	6.04	0.15	6.19	6.23	PASS
100	5500	1.25	1.14	1.28	6.00	0.15	6.15	6.23	PASS
116	5580	1.55	0.20	1.84	6.02	0.15	6.17	6.23	PASS
140	5700	1.36	0.79	1.54	6.01	0.15	6.16	6.23	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. Directional gain = 6dBi + 10log(3) = 10.77dBi > 6dBi , so the power density limit shall be reduced to 11-(10.77-6) = 6.23dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

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					
52	5260	1.09	1.35	1.34	6.03	0.16	6.19	6.23	PASS
60	5300	1.01	1.21	1.42	5.99	0.16	6.15	6.23	PASS
64	5320	1.03	1.28	1.48	6.04	0.16	6.20	6.23	PASS
100	5500	1.07	1.36	1.15	5.97	0.16	6.13	6.23	PASS
116	5580	1.05	0.55	1.64	5.87	0.16	6.03	6.23	PASS
140	5700	1.37	0.70	1.40	5.94	0.16	6.10	6.23	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. Directional gain = 6dBi + 10log(3) = 10.77dBi > 6dBi , so the power density limit shall be reduced to 11-(10.77-6) = 6.23dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

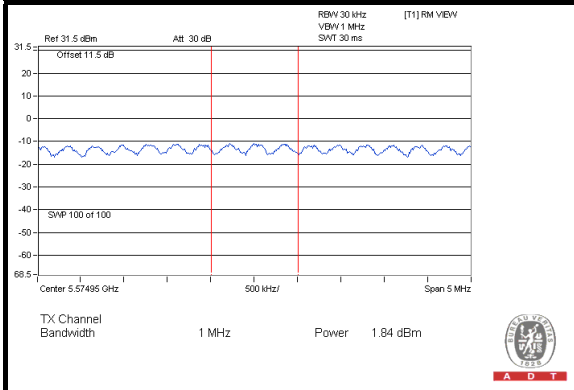
CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	TOTAL PSD WITH DUTY FACTOR (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2					
54	5270	-1.56	-1.86	-1.33	3.19	0.22	3.41	6.23	PASS
62	5310	-1.03	-2.59	-1.55	3.10	0.22	3.32	6.23	PASS
102	5510	-1.64	-2.13	-1.93	2.88	0.22	3.10	6.23	PASS
110	5550	-1.19	-2.16	-1.30	3.24	0.22	3.46	6.23	PASS
134	5670	-1.83	-2.66	-1.49	2.81	0.22	3.03	6.23	PASS

NOTE:

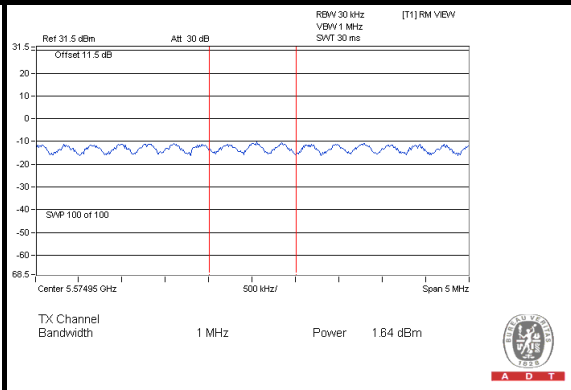
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 6dBi + 10log(3) = 10.77dBi > 6dBi , so the power density limit shall be reduced to 11-(10.77-6) = 6.23dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

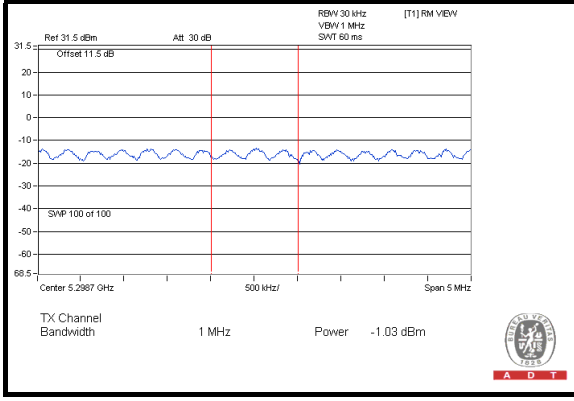
802.11a



802.11n (20MHz)



802.11n (40MHz)

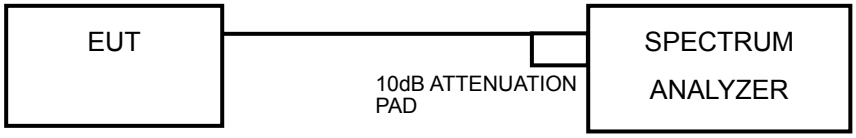


4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Test Date: Sep. 30, 2013

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100040	Jul. 19, 2013	Jul. 18, 2014

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

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.

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

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITIONS

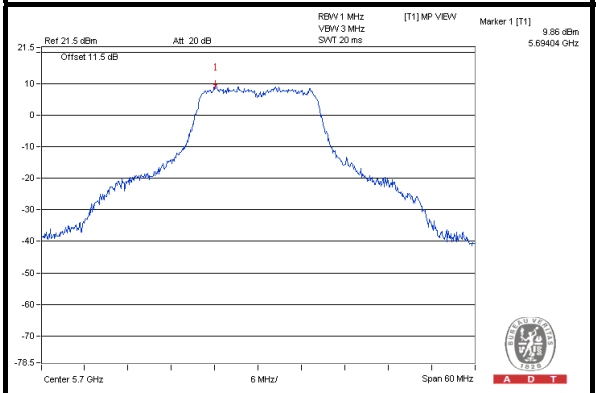
Same as 4.2.6

4.5.7 TEST RESULTS

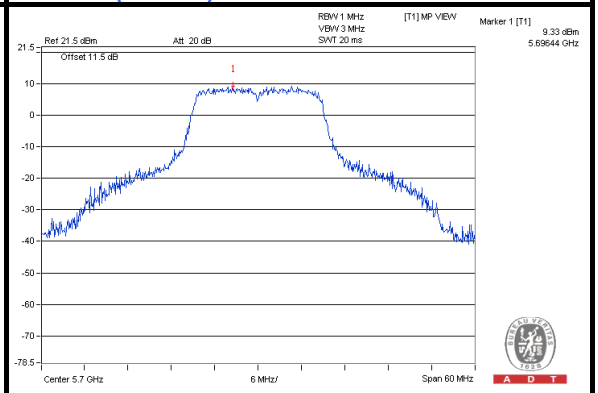
MODULATION MODE	MODULATION TYPE	FREQ. (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS /FAIL
802.11a	BPSK	5700	11.22	1.54	1.69	9.53	13	PASS
	QPSK		9.85	-0.35	-0.08	9.93	13	PASS
	16QAM		9.86	-0.89	-0.36	10.22	13	PASS
	64QAM		8.60	-1.64	-0.70	9.30	13	PASS
802.11n (20MHz)	BPSK	5700	10.19	1.37	1.52	8.67	13	PASS
	QPSK		9.43	0.3	0.58	8.85	13	PASS
	16QAM		9.42	-0.12	0.41	9.01	13	PASS
	64QAM		9.33	-0.72	0.20	9.13	13	PASS
802.11n (40MHz)	BPSK	5670	7.67	-1.99	-1.76	9.43	13	PASS
	QPSK		7.66	-2.23	-1.83	9.49	13	PASS
	16QAM		8.26	-2.55	-1.87	10.13	13	PASS
	64QAM		7.42	-3.57	-2.48	9.90	13	PASS

SPECTRUM PLOT OF WORST VALUE

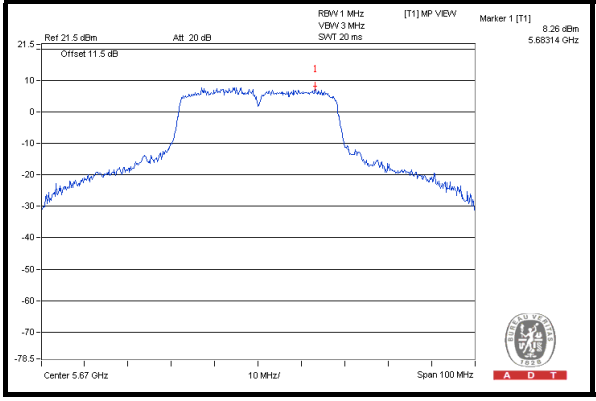
802.11a



802.11n (20MHz)



802.11n (40MHz)

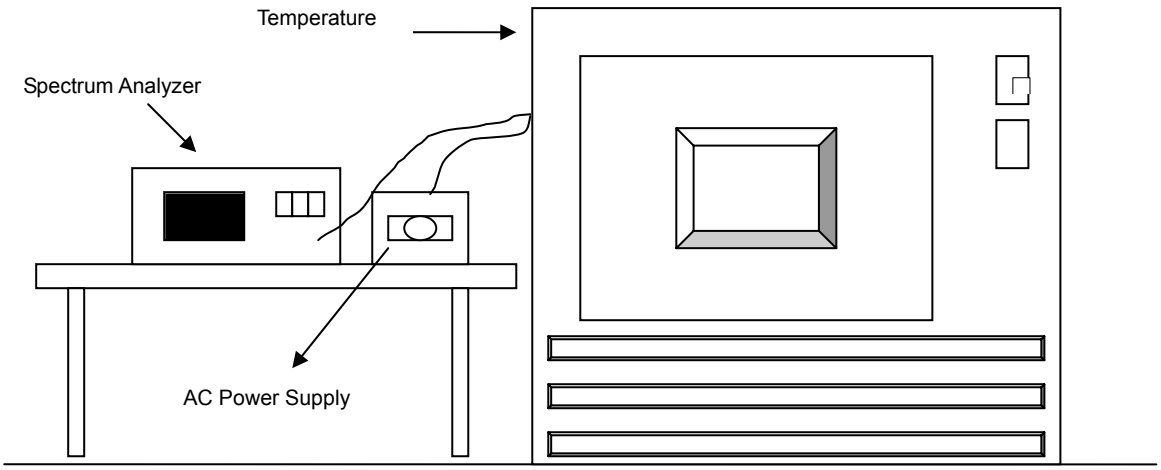


4.6 FREQUENCY STABILITY

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

Test Date: Jun. 19, 2013

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 10, 2013	Jun. 09, 2014

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

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 (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
50	120	5319.9846	-0.00029	5319.9867	-0.00025	5319.9853	-0.00028	5319.9795	-0.00039
40	120	5319.9739	-0.00049	5319.9686	-0.00059	5319.9706	-0.00055	5319.9753	-0.00046
30	120	5319.9831	-0.00032	5319.9869	-0.00025	5319.9799	-0.00038	5319.9857	-0.00027
20	120	5320.0224	0.00042	5320.0249	0.00047	5320.0281	0.00053	5320.0212	0.00040
10	120	5319.9727	-0.00051	5319.9800	-0.00038	5319.9742	-0.00048	5319.9743	-0.00048
0	120	5319.9873	-0.00024	5319.9856	-0.00027	5319.9854	-0.00027	5319.9777	-0.00042
-10	120	5319.9823	-0.00033	5319.9742	-0.00048	5319.9827	-0.00033	5319.9805	-0.00037
-20	120	5319.9772	-0.00043	5319.9758	-0.00045	5319.9787	-0.00040	5319.9763	-0.00045
-30	120	5320.0110	0.00021	5320.0079	0.00015	5320.0042	0.00008	5320.0015	0.00003

FREQUEMCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5320.0228	0.00043	5320.0243	0.00046	5320.0289	0.00054	5320.0213	0.00040
	120	5320.0224	0.00042	5320.0249	0.00047	5320.0281	0.00053	5320.0212	0.00040
	102	5320.0219	0.00041	5320.0253	0.00048	5320.0273	0.00051	5320.0222	0.00042

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. INFORMATION ON THE TESTING LABORATORIES

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

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

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

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

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

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

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

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

---END---