FCC TEST REPORT (15.407)

REPORT NO.:	RF120328C12F-1
MODEL NO.:	WPEA-127NI
FCC ID:	2AA8Z-XRPAD
RECEIVED:	Aug. 13, 2013
TESTED:	Aug. 31 ~ Sep. 05, 2013
ISSUED:	Nov. 14, 2013

APPLICANT:	PerkinElmer Medical Imaging
ADDRESS:	In der Rehbach 22, Walluf, Germany, 65396

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
RF120328C12F-1	Original release	Nov. 14, 2013

1. CERTIFICATION

PRODUCT: 802.11n 3T3R Mini PCIe Module
MODEL: WPEA-127NI
BRAND: PerkinElmer
APPLICANT: PerkinElmer Medical Imaging
TESTED: Aug. 31 ~ Sep. 05, 2013
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**
ANSI C63.10-2009

The above equipment (model: WPEA-127NI) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch,** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : _____ **, DATE :** Nov. 14, 2013
Pettie Chen / Senior Specialist

APPROVED BY : _____ **, DATE :** Nov. 14, 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 -7.81dB at 19.09766MHz.
15.407(b/1/2/3)(b)(6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -2.0dB at 125.06MHz.
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 U.FL 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	802.11n 3T3R Mini PCIe Module
MODEL NO.	WPEA-127NI
POWER SUPPLY	3.3Vdc (host equipment)
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 450.0Mbps
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz)
OUTPUT POWER	27.290mW for 5180 ~ 5240MHz 51.516mW for 5260 ~ 5320MHz 51.401mW for 5500 ~ 5700MHz
ANTENNA TYPE	The cavity-backed slot antenna with 4.58dBi gain
ANTENNA CONNECTOR	U.FL
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	NA

NOTE:

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

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

*Chain 0 is the worst for 802.11a.

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

3.2 DESCRIPTION OF TEST MODES

FOR 5180 ~ 5240MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

FOR 5260 ~ 5320MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

FOR 5500 ~ 5700MHz

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

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

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

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

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

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

NOTE:
The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane (For 802.11a), Y-plane (For 802.11n(20MHz) & 802.11n(40MHz)).**

RADIATED EMISSION TEST (ABOVE 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	19.5
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	40.5
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	19.5
-	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	40.5
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	19.5
-	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	40.5

RADIATED EMISSION TEST (BELOW 1GHz):

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

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

POWER LINE CONDUCTED EMISSION TEST:

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

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

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

ANTENNA PORT CONDUCTED MEASUREMENT:

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

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	19.5
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	40.5
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	19.5
-	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	40.5
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	19.5
-	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	40.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	22deg. C, 75%RH	120Vac, 60Hz	Brad Tung
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Ted Chang
PLC	25deg. C, 65%RH	120Vac, 60Hz	Ted Chang
APCM	25deg. C, 60%RH	120Vac, 60Hz	Antony Lee

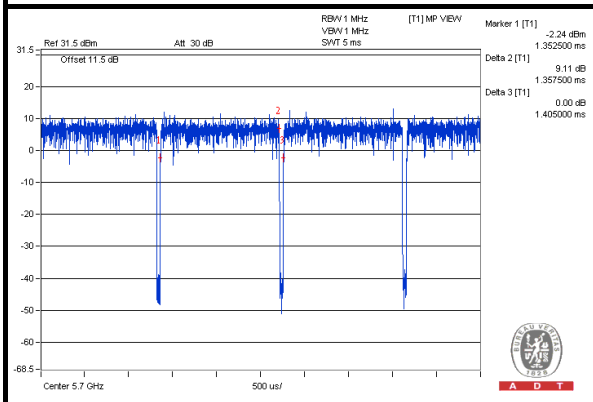
3.3 DUTY CYCLE OF TEST SIGNAL

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

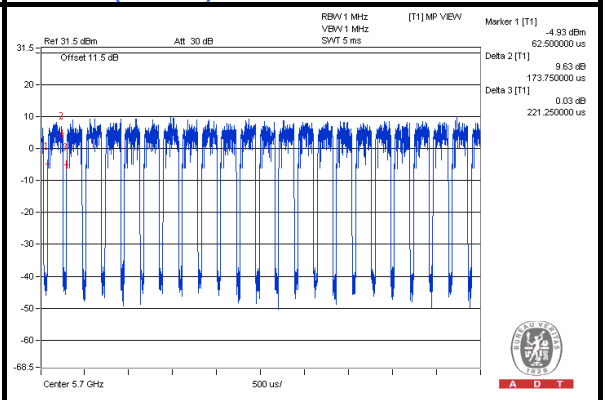
MODULATION TYPE: BPSK

802.11a: Duty cycle = 1.357/1.405 = 0.966, Duty factor = 10 * log(1/0.966) = 0.15
802.11n (20MHz): Duty cycle = 0.174/0.221 = 0.787, Duty factor = 10 * log(1/0.787) = 1.04
802.11n (40MHz): Duty cycle = 0.246/0.280 = 0.879, Duty factor = 10 * log(1/0.879) = 0.56

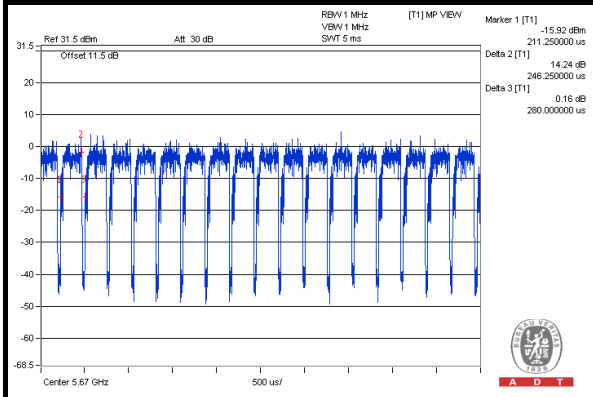
802.11a



802.11n (20MHz)



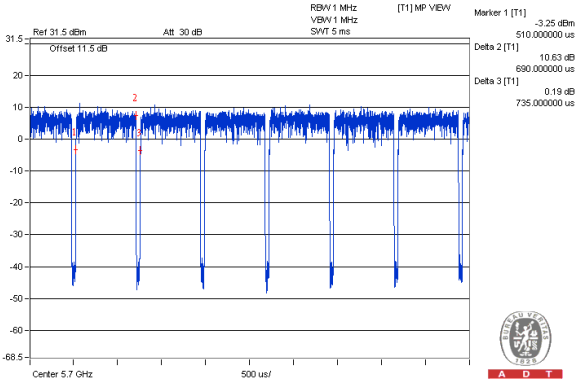
802.11n (40MHz)



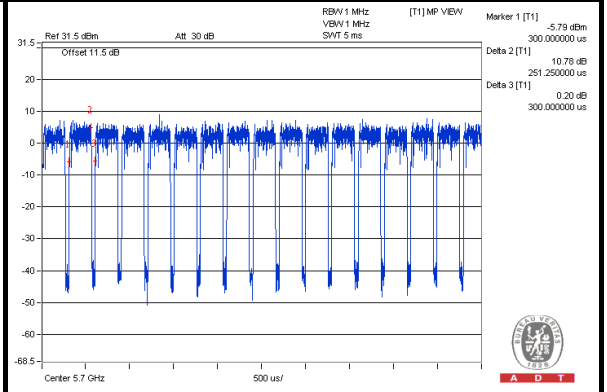
MODULATION TYPE: QPSK

802.11a: Duty cycle = 0.69/0.735 = 0.939, Duty factor = 10 * log(1/0.939) = 0.27
802.11n (20MHz): Duty cycle = 0.251/0.3 = 0.837, Duty factor = 10 * log(1/0.837) = 0.79
802.11n (40MHz): Duty cycle = 0.148/0.18 = 0.822, Duty factor = 10 * log(1/0.822) = 0.79

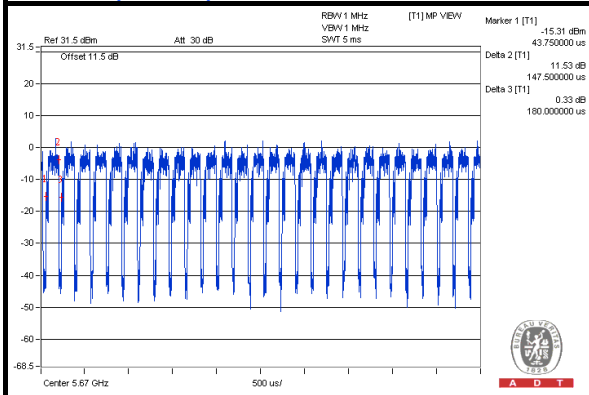
802.11a



802.11n (20MHz)



802.11n (40MHz)



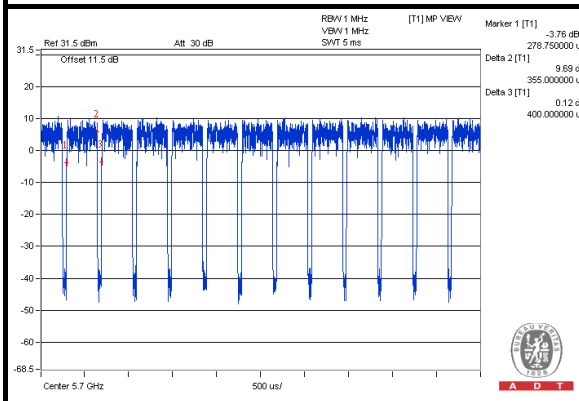
MODULATION TYPE: 16QAM

802.11a: Duty cycle = 355.0/400.0 = 0.888, Duty factor = 10 * log(1/0.888) = 0.52

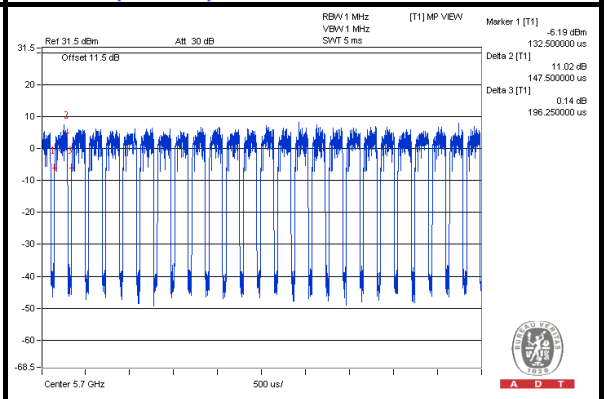
802.11n (20MHz): Duty cycle = 0.148/0.196 = 0.755, Duty factor = 10 * log(1/0.755) = 1.22

802.11n (40MHz): Duty cycle = 0.1/0.133 = 0.752, Duty factor = 10 * log(1/0.752) = 0.79

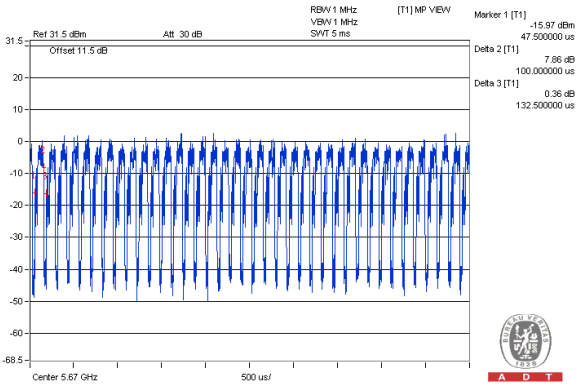
802.11a



802.11n (20MHz)



802.11n (40MHz)



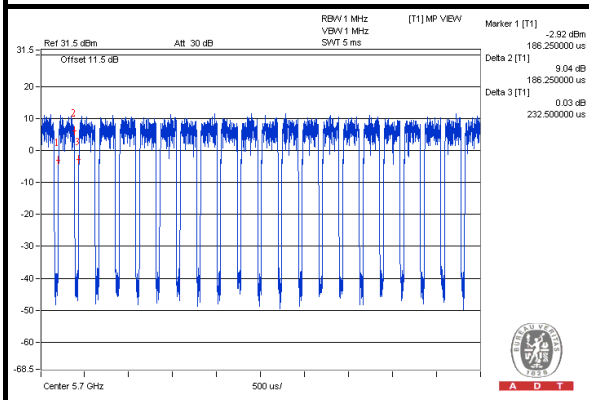
MODULATION TYPE: 64QAM

802.11a: Duty cycle = 186.25/232.50 = 0.798, Duty factor = 10 * log(1/0.798) = 0.98

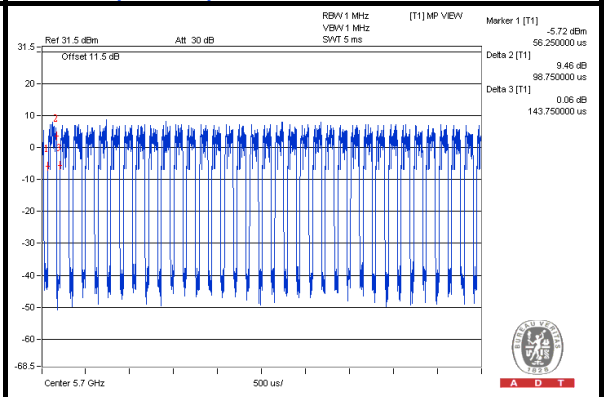
802.11n (20MHz): Duty cycle = 0.099/0.144 = 0.688, Duty factor = 10 * log(1/0.688) = 1.63

802.11n (40MHz): Duty cycle = 0.073/0.109 = 0.67, Duty factor = 10 * log(1/0.67) = 0.79

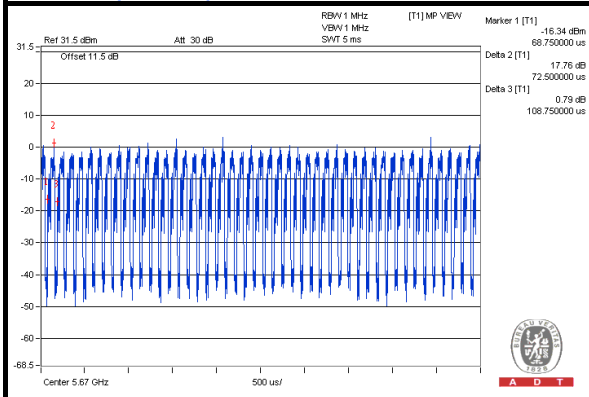
802.11a



802.11n (20MHz)



802.11n (40MHz)



3.4 DESCRIPTION OF SUPPORT UNITS

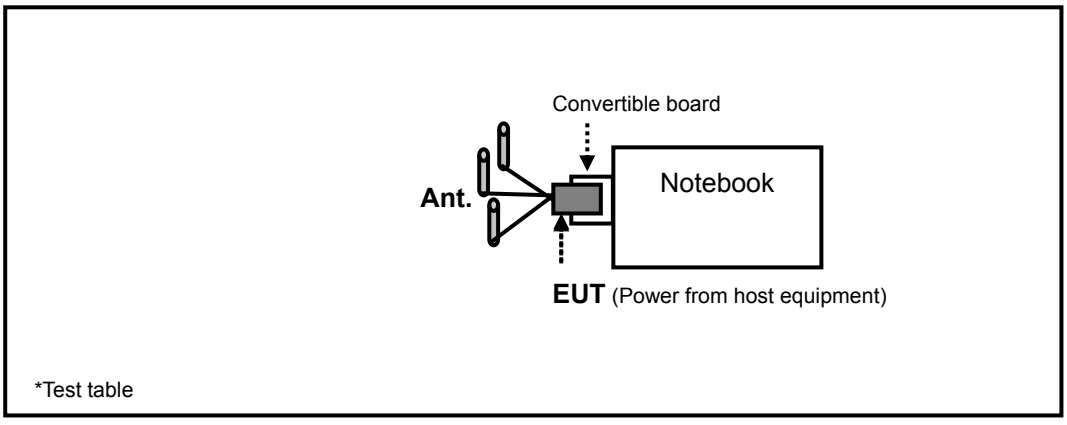
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook	DELL	E5420	33MJMQ1	FCC DoC Approved
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 client.

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 v02
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

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	9120D-209	Sep. 03, 2012	Sep. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 15, 2013	Jul. 14, 2014
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 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
High Speed Peak Power Meter	ML2495A	0824011	Jul. 29, 2013	Jul. 28, 2014
Power Sensor	MA2411B	0738171	Jul. 29, 2013	Jul. 28, 2014
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 10, 2013	Jun. 09, 2014

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in HwaYa Chamber 9.
4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
5. The FCC Site Registration No. is 215374.
6. 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:

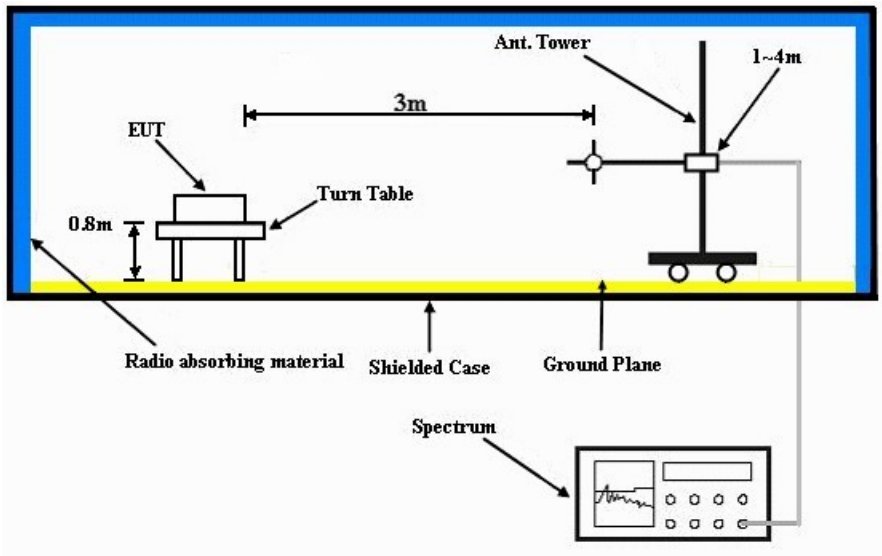
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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

4.1.5 DEVIATION FROM TEST STANDARD

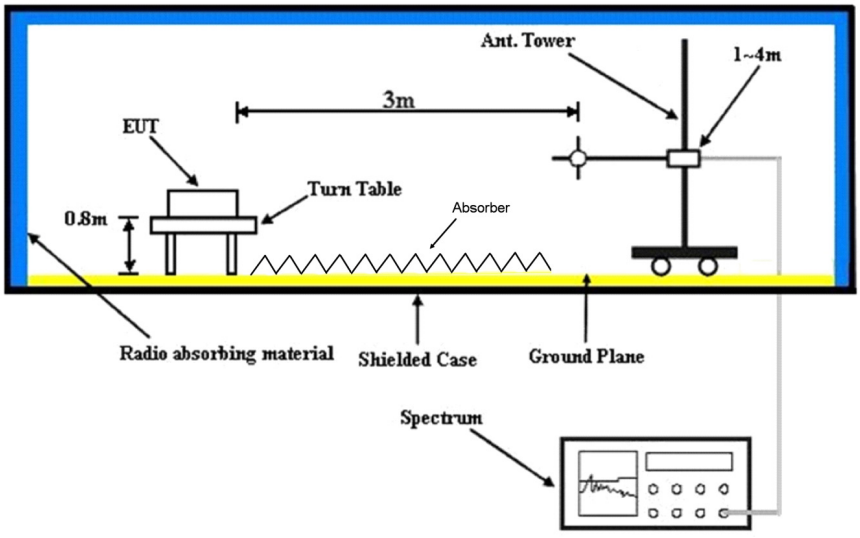
No deviation.

4.1.6 TEST SETUP

Frequency range 30MHz~1GHz



Frequency range above 1GHz



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

4.1.7 EUT OPERATING CONDITION

a. Connected EUT with a notebook system via the convertible board and placed on a testing table.
b. The notebook 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 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 75%RH	TESTED BY	Brad Tung

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	60.2 PK	74.0	-13.8	1.50 H	169	55.80	4.40
2	5150.00	45.9 AV	54.0	-8.1	1.50 H	169	41.50	4.40
3	*5180.00	105.8 PK			1.50 H	169	64.30	41.50
4	*5180.00	94.5 AV			1.50 H	169	53.00	41.50
5	10360.00	57.2 PK	74.0	-16.8	1.05 H	96	45.70	11.50
6	10360.00	44.7 AV	54.0	-9.3	1.05 H	96	33.20	11.50
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	62.6 PK	74.0	-11.4	1.03 V	180	58.20	4.40
2	5150.00	47.7 AV	54.0	-6.3	1.03 V	180	43.30	4.40
3	*5180.00	108.7 PK			1.03 V	180	67.20	41.50
4	*5180.00	97.4 AV			1.03 V	180	55.90	41.50
5	10360.00	57.4 PK	74.0	-16.6	1.08 V	254	45.90	11.50
6	10360.00	44.8 AV	54.0	-9.2	1.08 V	254	33.30	11.50

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) – 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 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 75%RH	TESTED BY	Brad Tung

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	*5200.00	106.0 PK			1.42 H	172	64.50	41.50
2	*5200.00	94.6 AV			1.42 H	172	53.10	41.50
3	10400.00	57.3 PK	74.0	-16.7	1.00 H	100	45.70	11.60
4	10400.00	44.8 AV	54.0	-9.2	1.00 H	100	33.20	11.60
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	*5200.00	109.0 PK			1.03 V	179	67.50	41.50
2	*5200.00	97.6 AV			1.03 V	179	56.10	41.50
3	10400.00	57.4 PK	74.0	-16.6	1.10 V	255	45.80	11.60
4	10400.00	44.8 AV	54.0	-9.2	1.10 V	255	33.20	11.60

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) – 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 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 75%RH	TESTED BY	Brad Tung

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	*5240.00	106.1 PK			1.50 H	169	64.50	41.60
2	*5240.00	94.7 AV			1.50 H	169	53.10	41.60
3	10480.00	57.0 PK	74.0	-17.0	1.00 H	103	44.90	12.10
4	10480.00	44.5 AV	54.0	-9.5	1.00 H	103	32.40	12.10
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	*5240.00	109.1 PK			1.04 V	177	67.50	41.60
2	*5240.00	97.7 AV			1.04 V	177	56.10	41.60
3	10480.00	57.3 PK	74.0	-16.7	1.11 V	243	45.20	12.10
4	10480.00	44.7 AV	54.0	-9.3	1.11 V	243	32.60	12.10

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 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 75%RH	TESTED BY	Brad Tung

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	105.9 PK			1.55 H	166	64.20	41.70
2	*5260.00	95.3 AV			1.55 H	166	53.60	41.70
3	10520.00	56.0 PK	74.0	-18.0	1.03 H	98	43.80	12.20
4	10520.00	45.1 AV	54.0	-8.9	1.03 H	98	32.90	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	*5260.00	108.9 PK			1.01 V	187	67.20	41.70
2	*5260.00	98.3 AV			1.01 V	187	56.60	41.70
3	10520.00	56.1 PK	74.0	-17.9	1.07 V	213	43.90	12.20
4	10520.00	45.2 AV	54.0	-8.8	1.07 V	213	33.00	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.

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	22deg. C, 75%RH	TESTED BY	Brad Tung

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	105.9 PK			1.52 H	168	64.20	41.70
2	*5300.00	95.3 AV			1.52 H	168	53.60	41.70
3	10600.00	56.0 PK	74.0	-18.0	1.00 H	95	43.70	12.30
4	10600.00	45.1 AV	54.0	-8.9	1.00 H	95	32.80	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	108.9 PK			1.00 V	180	67.20	41.70
2	*5300.00	98.3 AV			1.00 V	180	56.60	41.70
3	10600.00	56.1 PK	74.0	-17.9	1.00 V	200	43.80	12.30
4	10600.00	45.2 AV	54.0	-8.8	1.00 V	200	32.90	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	22deg. C, 75%RH	TESTED BY	Brad Tung

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	105.2 PK			1.57 H	166	63.50	41.70
2	*5320.00	95.0 AV			1.57 H	166	53.30	41.70
3	5350.00	61.1 PK	74.0	-12.9	1.57 H	166	56.50	4.60
4	5350.00	47.7 AV	54.0	-6.3	1.57 H	166	43.10	4.60
5	10640.00	56.2 PK	74.0	-17.8	1.05 H	203	43.80	12.40
6	10640.00	45.3 AV	54.0	-8.7	1.05 H	203	32.90	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	108.0 PK			1.00 V	184	66.30	41.70
2	*5320.00	97.8 AV			1.00 V	184	56.10	41.70
3	5350.00	63.5 PK	74.0	-10.5	1.00 V	184	58.90	4.60
4	5350.00	49.4 AV	54.0	-4.6	1.00 V	184	44.80	4.60
5	10640.00	56.1 PK	74.0	-17.9	1.00 V	193	43.70	12.40
6	10640.00	45.2 AV	54.0	-8.8	1.00 V	193	32.80	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	22deg. C, 75%RH	TESTED BY	Brad Tung

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	63.1 PK	74.0	-10.9	1.12 H	172	58.20	4.90
2	5460.00	46.2 AV	54.0	-7.8	1.12 H	172	41.30	4.90
3	5470.00	66.1 PK	74.0	-7.9	1.12 H	172	61.10	5.00
4	5470.00	48.0 AV	54.0	-6.0	1.12 H	172	43.00	5.00
5	*5500.00	108.0 PK			1.12 H	172	66.00	42.00
6	*5500.00	97.0 AV			1.12 H	172	55.00	42.00
7	11000.00	56.5 PK	74.0	-17.5	1.14 H	88	43.40	13.10
8	11000.00	45.0 AV	54.0	-9.0	1.14 H	88	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	64.1 PK	74.0	-9.9	1.00 V	180	59.20	4.90
2	5460.00	47.4 AV	54.0	-6.6	1.00 V	180	42.50	4.90
3	5470.00	67.5 PK	74.0	-6.5	1.00 V	180	62.50	5.00
4	5470.00	49.8 AV	54.0	-4.2	1.00 V	180	44.80	5.00
5	*5500.00	108.8 PK			1.00 V	180	66.80	42.00
6	*5500.00	98.2 AV			1.00 V	180	56.20	42.00
7	11000.00	56.7 PK	74.0	-17.3	1.08 V	175	43.60	13.10
8	11000.00	45.1 AV	54.0	-8.9	1.08 V	175	32.00	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 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 75%RH	TESTED BY	Brad Tung

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	107.9 PK			1.15 H	180	65.90	42.00
2	*5580.00	97.1 AV			1.15 H	180	55.10	42.00
3	11160.00	56.3 PK	74.0	-17.7	1.03 H	100	43.10	13.20
4	11160.00	45.2 AV	54.0	-8.8	1.03 H	100	32.00	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	108.8 PK			1.00 V	180	66.80	42.00
2	*5580.00	98.1 AV			1.00 V	180	56.10	42.00
3	11160.00	56.4 PK	74.0	-17.6	1.10 V	203	43.20	13.20
4	11160.00	45.3 AV	54.0	-8.7	1.10 V	203	32.10	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	22deg. C, 75%RH	TESTED BY	Brad Tung

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	103.0 PK			1.28 H	183	60.80	42.20
2	*5700.00	91.5 AV			1.28 H	183	49.30	42.20
3	5725.00	59.4 PK	74.0	-14.6	1.28 H	183	54.20	5.20
4	5725.00	46.0 AV	54.0	-8.0	1.28 H	183	40.80	5.20
5	11400.00	56.1 PK	74.0	-17.9	1.00 H	125	42.70	13.40
6	11400.00	45.3 AV	54.0	-8.7	1.00 H	125	31.90	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	103.9 PK			1.00 V	214	61.70	42.20
2	*5700.00	92.4 AV			1.00 V	214	50.20	42.20
3	5725.00	61.9 PK	74.0	-12.1	1.00 V	214	56.70	5.20
4	5725.00	48.4 AV	54.0	-5.6	1.00 V	214	43.20	5.20
5	11400.00	56.2 PK	74.0	-17.8	1.07 V	204	42.80	13.40
6	11400.00	45.4 AV	54.0	-8.6	1.07 V	204	32.00	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.

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	22deg. C, 75%RH	TESTED BY	Brad Tung

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	58.0 PK	74.0	-16.0	1.04 H	171	53.60	4.40
2	5150.00	45.5 AV	54.0	-8.5	1.04 H	171	41.10	4.40
3	*5180.00	98.4 PK			1.04 H	171	56.90	41.50
4	*5180.00	85.5 AV			1.04 H	171	44.00	41.50
5	10360.00	56.1 PK	74.0	-17.9	1.05 H	160	44.60	11.50
6	10360.00	43.2 AV	54.0	-10.8	1.05 H	160	31.70	11.50
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	56.9 PK	74.0	-17.1	1.00 V	278	52.50	4.40
2	5150.00	46.6 AV	54.0	-7.4	1.00 V	278	42.20	4.40
3	*5180.00	106.0 PK			1.00 V	278	64.50	41.50
4	*5180.00	91.6 AV			1.00 V	278	50.10	41.50
5	10360.00	56.4 PK	74.0	-17.6	1.11 V	210	44.90	11.50
6	10360.00	43.7 AV	54.0	-10.3	1.11 V	210	32.20	11.50

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) – 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 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 75%RH	TESTED BY	Brad Tung

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	*5200.00	98.2 PK			1.05 H	177	56.70	41.50
2	*5200.00	85.1 AV			1.05 H	177	43.60	41.50
3	10400.00	56.1 PK	74.0	-17.9	1.02 H	166	44.50	11.60
4	10400.00	43.2 AV	54.0	-10.8	1.02 H	166	31.60	11.60
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	*5200.00	105.3 PK			1.00 V	277	63.80	41.50
2	*5200.00	91.1 AV			1.00 V	277	49.60	41.50
3	10400.00	56.2 PK	74.0	-17.8	1.10 V	200	44.60	11.60
4	10400.00	43.3 AV	54.0	-10.7	1.10 V	200	31.70	11.60

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) – 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 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 75%RH	TESTED BY	Brad Tung

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	*5240.00	98.1 PK			1.08 H	180	56.50	41.60
2	*5240.00	86.0 AV			1.08 H	180	44.40	41.60
3	10480.00	56.0 PK	74.0	-18.0	1.06 H	145	43.90	12.10
4	10480.00	43.1 AV	54.0	-10.9	1.06 H	145	31.00	12.10
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	*5240.00	105.1 PK			1.00 V	272	63.50	41.60
2	*5240.00	92.0 AV			1.00 V	272	50.40	41.60
3	10480.00	56.0 PK	74.0	-18.0	1.10 V	193	43.90	12.10
4	10480.00	43.1 AV	54.0	-10.9	1.10 V	193	31.00	12.10

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 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 75%RH	TESTED BY	Brad Tung

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.2 PK	74.0	-14.8	1.00 H	254	54.80	4.40
2	5150.00	45.0 AV	54.0	-9.0	1.00 H	254	40.60	4.40
3	*5260.00	106.5 PK			1.00 H	182	64.80	41.70
4	*5260.00	94.1 AV			1.00 H	182	52.40	41.70
5	10520.00	55.7 PK	74.0	-18.3	1.06 H	159	43.50	12.20
6	10520.00	42.7 AV	54.0	-11.3	1.06 H	159	30.50	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	58.2 PK	74.0	-15.8	1.09 V	215	53.80	4.40
2	5150.00	46.0 AV	54.0	-8.0	1.09 V	215	41.60	4.40
3	*5260.00	108.9 PK			1.09 V	284	67.20	41.70
4	*5260.00	97.5 AV			1.09 V	284	55.80	41.70
5	10520.00	59.0 PK	74.0	-15.0	1.02 V	48	46.80	12.20
6	10520.00	45.7 AV	54.0	-8.3	1.02 V	48	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.

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	22deg. C, 75%RH	TESTED BY	Brad Tung

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	105.4 PK			1.08 H	178	63.70	41.70
2	*5300.00	93.5 AV			1.08 H	178	51.80	41.70
3	10600.00	56.8 PK	74.0	-17.2	1.20 H	351	44.50	12.30
4	10600.00	42.4 AV	54.0	-11.6	1.20 H	351	30.10	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	105.5 PK			1.00 V	165	63.80	41.70
2	*5300.00	94.3 AV			1.00 V	165	52.60	41.70
3	10600.00	59.2 PK	74.0	-14.8	1.05 V	48	46.90	12.30
4	10600.00	45.8 AV	54.0	-8.2	1.05 V	48	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.

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	22deg. C, 75%RH	TESTED BY	Brad Tung

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	105.5 PK			1.06 H	191	63.80	41.70
2	*5320.00	94.2 AV			1.06 H	191	52.50	41.70
3	5350.00	56.9 PK	74.0	-17.1	1.49 H	201	52.30	4.60
4	5350.00	46.1 AV	54.0	-7.9	1.49 H	201	41.50	4.60
5	10640.00	56.0 PK	74.0	-18.0	1.69 H	341	43.60	12.40
6	10640.00	43.0 AV	54.0	-11.0	1.69 H	341	30.60	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	106.4 PK			1.00 V	176	64.70	41.70
2	*5320.00	95.0 AV			1.00 V	176	53.30	41.70
3	5350.00	59.3 PK	74.0	-14.7	1.02 V	153	54.70	4.60
4	5350.00	47.1 AV	54.0	-6.9	1.02 V	153	42.50	4.60
5	10640.00	59.9 PK	74.0	-14.1	1.24 V	257	47.50	12.40
6	10640.00	46.0 AV	54.0	-8.0	1.24 V	257	33.60	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	22deg. C, 75%RH	TESTED BY	Brad Tung

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	1.00 H	268	53.10	4.90
2	5460.00	45.0 AV	54.0	-9.0	1.00 H	268	40.10	4.90
3	5470.00	62.2 PK	74.0	-11.8	1.00 H	268	57.20	5.00
4	5470.00	47.8 AV	54.0	-6.2	1.00 H	268	42.80	5.00
5	*5500.00	106.2 PK			1.05 H	187	64.20	42.00
6	*5500.00	93.8 AV			1.05 H	187	51.80	42.00
7	11000.00	57.0 PK	74.0	-17.0	1.74 H	124	43.90	13.10
8	11000.00	43.7 AV	54.0	-10.3	1.74 H	124	30.60	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	58.3 PK	74.0	-15.7	1.00 V	226	53.40	4.90
2	5460.00	46.6 AV	54.0	-7.4	1.00 V	226	41.70	4.90
3	5470.00	62.9 PK	74.0	-11.1	1.00 V	256	57.90	5.00
4	5470.00	48.2 AV	54.0	-5.8	1.00 V	256	43.20	5.00
5	*5500.00	107.7 PK			1.00 V	194	65.70	42.00
6	*5500.00	94.9 AV			1.00 V	194	52.90	42.00
7	11000.00	59.7 PK	74.0	-14.3	1.67 V	143	46.60	13.10
8	11000.00	46.8 AV	54.0	-7.2	1.67 V	143	33.70	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 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 75%RH	TESTED BY	Brad Tung

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	107.9 PK			1.01 H	189	65.90	42.00
2	*5580.00	96.2 AV			1.01 H	189	54.20	42.00
3	11160.00	57.0 PK	74.0	-17.0	1.41 H	259	43.80	13.20
4	11160.00	43.8 AV	54.0	-10.2	1.41 H	259	30.60	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	108.1 PK			1.00 V	222	66.10	42.00
2	*5580.00	96.2 AV			1.00 V	222	54.20	42.00
3	11160.00	61.9 PK	74.0	-12.1	1.02 V	214	48.70	13.20
4	11160.00	46.7 AV	54.0	-7.3	1.02 V	214	33.50	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	22deg. C, 75%RH	TESTED BY	Brad Tung

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	183	63.60	42.20
2	*5700.00	94.0 AV			1.00 H	183	51.80	42.20
3	5725.00	58.8 PK	74.0	-15.2	1.03 H	254	53.60	5.20
4	5725.00	45.7 AV	54.0	-8.3	1.03 H	254	40.50	5.20
5	11400.00	57.0 PK	74.0	-17.0	1.55 H	241	43.60	13.40
6	11400.00	44.7 AV	54.0	-9.3	1.55 H	241	31.30	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	106.3 PK			1.00 V	214	64.10	42.20
2	*5700.00	94.1 AV			1.00 V	214	51.90	42.20
3	5725.00	60.5 PK	74.0	-13.5	1.19 V	209	55.30	5.20
4	5725.00	47.1 AV	54.0	-6.9	1.19 V	209	41.90	5.20
5	11400.00	61.9 PK	74.0	-12.1	1.03 V	257	48.50	13.40
6	11400.00	47.6 AV	54.0	-6.4	1.03 V	257	34.20	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.

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	22deg. C, 75%RH	TESTED BY	Brad Tung

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	57.7 PK	74.0	-16.3	1.00 H	122	53.30	4.40
2	5150.00	45.6 AV	54.0	-8.4	1.00 H	122	41.20	4.40
3	*5190.00	98.3 PK			1.00 H	185	56.80	41.50
4	*5190.00	87.4 AV			1.00 H	185	45.90	41.50
5	10380.00	54.1 PK	74.0	-19.9	1.98 H	184	42.50	11.60
6	10380.00	42.8 AV	54.0	-11.2	1.98 H	184	31.20	11.60
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	58.8 PK	74.0	-15.2	1.13 V	95	54.40	4.40
2	5150.00	46.5 AV	54.0	-7.5	1.13 V	95	42.10	4.40
3	*5190.00	103.2 PK			1.00 V	286	61.70	41.50
4	*5190.00	90.5 AV			1.00 V	286	49.00	41.50
5	10380.00	58.1 PK	74.0	-15.9	1.00 V	159	46.50	11.60
6	10380.00	45.3 AV	54.0	-8.7	1.00 V	159	33.70	11.60

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) – 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 46	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 75%RH	TESTED BY	Brad Tung

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	*5230.00	99.7 PK			1.00 H	184	58.10	41.60
2	*5230.00	87.7 AV			1.00 H	184	46.10	41.60
3	5350.00	57.8 PK	74.0	-16.2	1.00 H	215	53.20	4.60
4	5350.00	45.9 AV	54.0	-8.1	1.00 H	215	41.30	4.60
5	10460.00	55.5 PK	74.0	-18.5	1.52 H	218	43.60	11.90
6	10460.00	42.2 AV	54.0	-11.8	1.52 H	218	30.30	11.90
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	*5230.00	103.0 PK			1.30 V	278	61.40	41.60
2	*5230.00	90.9 AV			1.30 V	278	49.30	41.60
3	5350.00	58.8 PK	74.0	-15.2	1.00 V	261	54.20	4.60
4	5350.00	47.1 AV	54.0	-6.9	1.00 V	261	42.50	4.60
5	10460.00	60.5 PK	74.0	-13.5	1.36 V	258	48.60	11.90
6	10460.00	46.5 AV	54.0	-7.5	1.36 V	258	34.60	11.90

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 54	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 75%RH	TESTED BY	Brad Tung

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	58.3 PK	74.0	-15.7	1.03 H	204	53.90	4.40
2	5150.00	45.4 AV	54.0	-8.6	1.03 H	204	41.00	4.40
3	*5270.00	101.4 PK			1.00 H	182	59.70	41.70
4	*5270.00	89.9 AV			1.00 H	182	48.20	41.70
5	10540.00	55.4 PK	74.0	-18.6	1.00 H	152	43.10	12.30
6	10540.00	42.9 AV	54.0	-11.1	1.00 H	152	30.60	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	5150.00	59.1 PK	74.0	-14.9	1.23 V	125	54.70	4.40
2	5150.00	47.0 AV	54.0	-7.0	1.23 V	125	42.60	4.40
3	*5270.00	104.8 PK			1.19 V	286	63.10	41.70
4	*5270.00	93.1 AV			1.19 V	286	51.40	41.70
5	10540.00	59.5 PK	74.0	-14.5	1.00 V	235	47.20	12.30
6	10540.00	45.9 AV	54.0	-8.1	1.00 V	235	33.60	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 62	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 75%RH	TESTED BY	Brad Tung

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	100.2 PK			1.00 H	153	58.50	41.70
2	*5310.00	88.1 AV			1.00 H	153	46.40	41.70
3	5350.00	58.1 PK	74.0	-15.9	1.00 H	123	53.50	4.60
4	5350.00	45.6 AV	54.0	-8.4	1.00 H	123	41.00	4.60
5	10620.00	55.0 PK	74.0	-19.0	1.01 H	262	42.60	12.40
6	10620.00	43.5 AV	54.0	-10.5	1.01 H	262	31.10	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	103.7 PK			1.12 V	175	62.00	41.70
2	*5310.00	91.3 AV			1.12 V	175	49.60	41.70
3	5350.00	59.9 PK	74.0	-14.1	1.00 V	241	55.30	4.60
4	5350.00	46.9 AV	54.0	-7.1	1.00 V	241	42.30	4.60
5	10620.00	60.6 PK	74.0	-13.4	1.00 V	348	48.20	12.40
6	10620.00	46.9 AV	54.0	-7.1	1.00 V	348	34.50	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	22deg. C, 75%RH	TESTED BY	Brad Tung

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	59.4 PK	74.0	-14.6	1.02 H	190	54.50	4.90
2	5460.00	47.0 AV	54.0	-7.0	1.02 H	190	42.10	4.90
3	5470.00	64.4 PK	74.0	-9.6	1.02 H	190	59.40	5.00
4	5470.00	50.1 AV	54.0	-3.9	1.02 H	190	45.10	5.00
5	*5510.00	101.0 PK			1.01 H	234	59.00	42.00
6	*5510.00	89.7 AV			1.01 H	234	47.70	42.00
7	11020.00	55.4 PK	74.0	-18.6	1.01 H	125	42.30	13.10
8	11020.00	44.3 AV	54.0	-9.7	1.01 H	125	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	5460.00	60.3 PK	74.0	-13.7	1.08 V	174	55.40	4.90
2	5460.00	47.0 AV	54.0	-7.0	1.08 V	174	42.10	4.90
3	5470.00	66.2 PK	74.0	-7.8	1.08 V	174	61.20	5.00
4	5470.00	51.6 AV	54.0	-2.4	1.08 V	174	46.60	5.00
5	*5510.00	103.4 PK			1.12 V	227	61.40	42.00
6	*5510.00	90.0 AV			1.12 V	227	48.00	42.00
7	11020.00	60.6 PK	74.0	-13.4	1.23 V	265	47.50	13.10
8	11020.00	47.7 AV	54.0	-6.3	1.23 V	265	34.60	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 110	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 75%RH	TESTED BY	Brad Tung

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	195	60.10	42.00
2	*5550.00	90.4 AV			1.00 H	195	48.40	42.00
3	11100.00	56.9 PK	74.0	-17.1	1.95 H	167	43.80	13.10
4	11100.00	44.3 AV	54.0	-9.7	1.95 H	167	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	104.3 PK			1.00 V	205	62.30	42.00
2	*5550.00	92.5 AV			1.00 V	205	50.50	42.00
3	11100.00	61.6 PK	74.0	-12.4	1.06 V	224	48.50	13.10
4	11100.00	47.3 AV	54.0	-6.7	1.06 V	224	34.20	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	22deg. C, 75%RH	TESTED BY	Brad Tung

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	102.6 PK			1.00 H	193	60.40	42.20
2	*5670.00	91.3 AV			1.00 H	193	49.10	42.20
3	5725.00	58.7 PK	74.0	-15.3	1.00 H	125	53.50	5.20
4	5725.00	46.3 AV	54.0	-7.7	1.00 H	125	41.10	5.20
5	11340.00	56.9 PK	74.0	-17.1	1.22 H	335	43.60	13.30
6	11340.00	44.1 AV	54.0	-9.9	1.22 H	335	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	102.7 PK			1.00 V	221	60.50	42.20
2	*5670.00	91.6 AV			1.00 V	221	49.40	42.20
3	5725.00	60.4 PK	74.0	-13.6	1.02 V	35	55.20	5.20
4	5725.00	48.4 AV	54.0	-5.6	1.02 V	35	43.20	5.20
5	11340.00	61.8 PK	74.0	-12.2	1.53 V	269	48.50	13.30
6	11340.00	46.9 AV	54.0	-7.1	1.53 V	269	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.

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	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	**125.06**	**41.5 QP**	**43.5**	**-2.0**	**1.49 H**	**210**	**57.20**	**-15.70**
2	299.66	32.2 QP	46.0	-13.8	1.00 H	55	44.40	-12.20
3	431.58	31.1 QP	46.0	-14.9	1.49 H	154	40.30	-9.20
4	575.14	33.0 QP	46.0	-13.0	1.24 H	172	39.80	-6.80
5	664.38	36.4 QP	46.0	-9.6	1.00 H	90	41.60	-5.20
6	835.10	38.7 QP	46.0	-7.3	1.24 H	243	40.70	-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	121.18	33.4 QP	43.5	-10.1	1.99 V	93	49.70	-16.30
2	297.72	29.9 QP	46.0	-16.1	1.99 V	10	42.20	-12.30
3	336.52	31.3 QP	46.0	-14.7	1.24 V	39	42.70	-11.40
4	431.58	30.6 QP	46.0	-15.4	1.24 V	151	39.80	-9.20
5	666.32	30.1 QP	46.0	-15.9	1.49 V	67	35.30	-5.20
6	885.54	36.0 QP	46.0	-10.0	1.00 V	9	37.10	-1.10

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%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	125.06	40.8 QP	43.5	-2.7	1.51 H	7	56.50	-15.70
2	336.52	31.1 QP	46.0	-14.9	1.01 H	353	42.50	-11.40
3	431.58	32.5 QP	46.0	-13.5	2.00 H	114	41.70	-9.20
4	575.14	32.9 QP	46.0	-13.1	1.26 H	165	39.70	-6.80
5	664.38	33.5 QP	46.0	-12.5	1.26 H	97	38.70	-5.20
6	837.04	32.7 QP	46.0	-13.3	1.26 H	15	34.70	-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	111.48	33.5 QP	43.5	-10.0	1.99 V	111	50.60	-17.10
2	299.66	30.6 QP	46.0	-15.4	1.49 V	16	42.80	-12.20
3	336.52	30.4 QP	46.0	-15.6	1.24 V	74	41.80	-11.40
4	431.58	29.7 QP	46.0	-16.3	1.00 V	144	38.90	-9.20
5	666.32	32.7 QP	46.0	-13.3	1.49 V	16	37.90	-5.20
6	837.04	34.5 QP	46.0	-11.5	1.99 V	204	36.50	-2.00

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

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
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 04, 2013	Feb. 03, 2014
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 08, 2013	Jul. 07, 2014
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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

2. The test was performed in HwaYa Shielded Room 1.

3. The VCCI Site Registration No. is C-2040.

4.2.3 TEST PROCEDURES

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

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

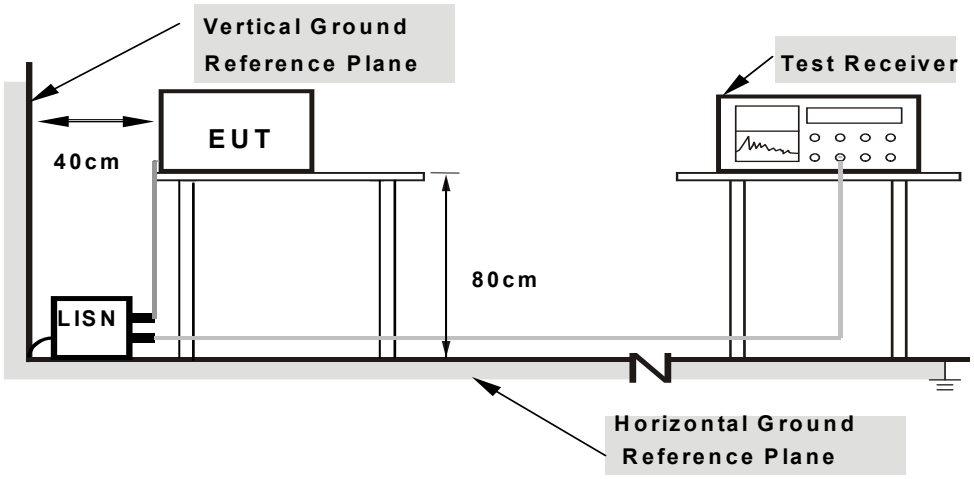
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

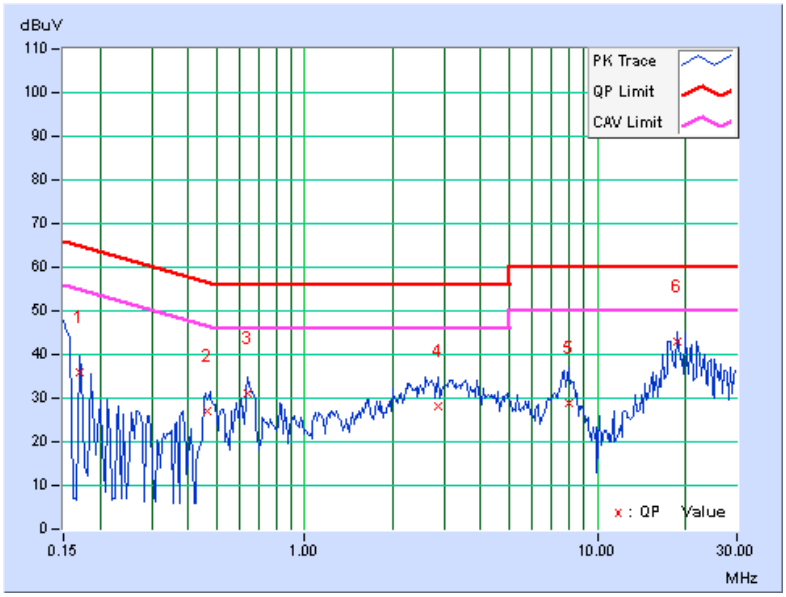
4.2.7 TEST RESULTS

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

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 64		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16953	0.16	35.68	17.04	35.84	17.20	64.98	54.98	-29.15	-37.79
2	0.46250	0.23	26.97	13.14	27.20	13.37	56.65	46.65	-29.45	-33.28
3	0.63828	0.24	30.77	12.61	31.01	12.85	56.00	46.00	-24.99	-33.15
4	2.84766	0.34	27.95	21.47	28.29	21.81	56.00	46.00	-27.71	-24.19
5	7.95313	0.61	28.20	20.23	28.81	20.84	60.00	50.00	-31.19	-29.16
6	18.69922	1.16	41.75	38.50	42.91	39.66	60.00	50.00	-17.09	-10.34

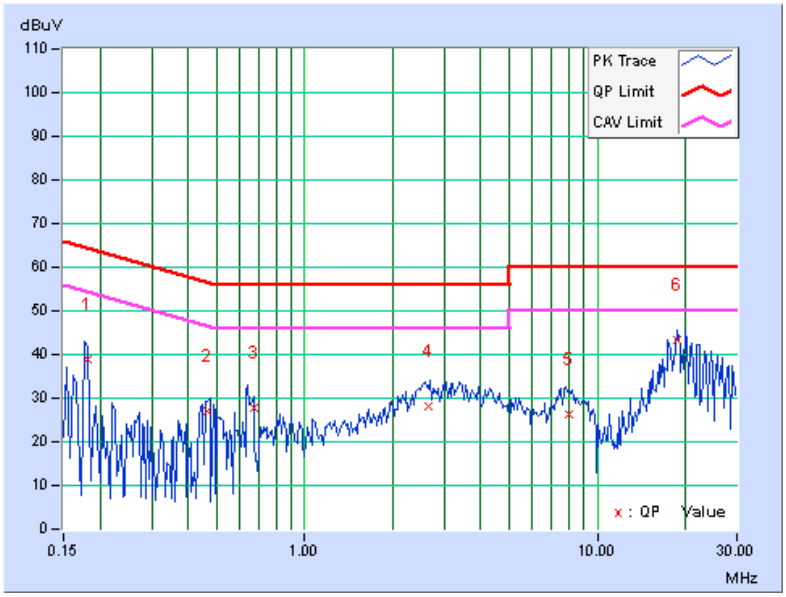
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



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	0.18125	0.17	38.74	19.00	38.91	19.17	64.43	54.43	-25.52	-35.26
2	0.46641	0.24	26.89	8.98	27.13	9.22	56.58	46.58	-29.45	-37.36
3	0.66953	0.24	27.37	11.98	27.61	12.22	56.00	46.00	-28.39	-33.78
4	2.63281	0.31	27.73	19.16	28.04	19.47	56.00	46.00	-27.96	-26.53
5	8.01953	0.53	25.72	18.79	26.25	19.32	60.00	50.00	-33.75	-30.68
6	18.70313	0.89	42.42	39.32	43.31	40.21	60.00	50.00	-16.69	-9.79

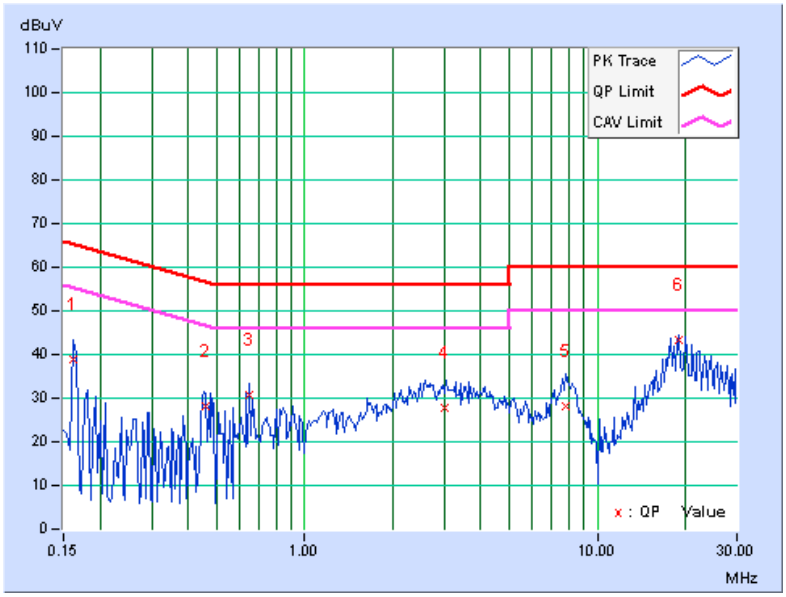
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Line 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	0.16172	0.16	38.85	19.20	39.01	19.36	65.38	55.38	-26.37	-36.02
2	0.45859	0.23	27.81	16.62	28.04	16.85	56.72	46.72	-28.68	-29.87
3	0.65000	0.24	30.66	15.49	30.90	15.73	56.00	46.00	-25.10	-30.27
4	3.02734	0.35	27.60	19.31	27.95	19.66	56.00	46.00	-28.05	-26.34
5	7.76953	0.60	27.65	19.50	28.25	20.10	60.00	50.00	-31.75	-29.90
6	**19.09766**	**1.18**	**42.25**	**41.01**	**43.43**	**42.19**	**60.00**	**50.00**	**-16.57**	**-7.81**

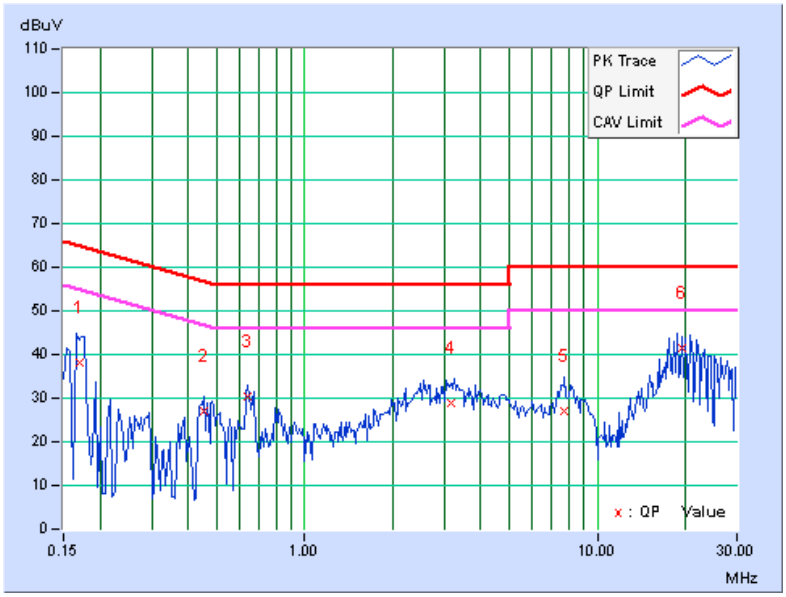
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 140		

No	Freq.	Corr. Factor	Reading Value		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	0.16953	0.17	37.91	17.75	38.08	17.92	64.98	54.98	-26.91	-37.07
2	0.45078	0.24	26.72	19.56	26.96	19.80	56.86	46.86	-29.90	-27.06
3	0.63828	0.24	29.96	12.95	30.20	13.19	56.00	46.00	-25.80	-32.81
4	3.17578	0.34	28.70	18.48	29.04	18.82	56.00	46.00	-26.96	-27.18
5	7.65625	0.51	26.50	18.90	27.01	19.41	60.00	50.00	-32.99	-30.59
6	19.52734	0.91	40.49	39.22	41.40	40.13	60.00	50.00	-18.60	-9.87

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.

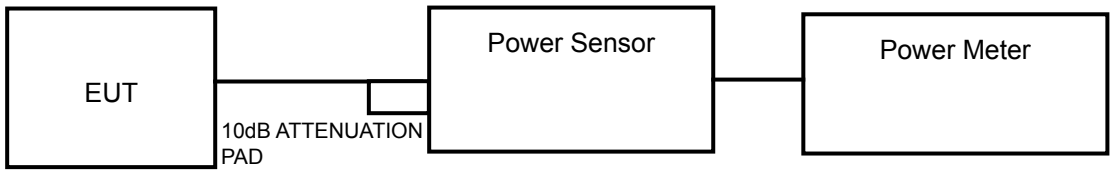
Per KDB 662911 D01 Multiple Transmitter Output v01r02 Method of conducted output power measurement on IEEE 802.11 devices,

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.

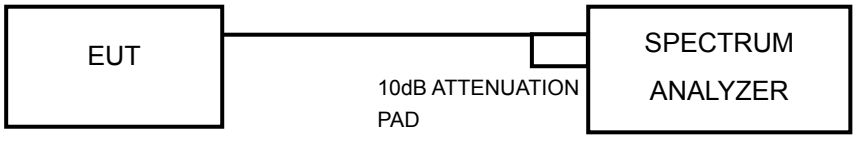
For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

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

FOR 26dB BANDWIDTH

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

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

POWER OUTPUT:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	27.102	14.33	17	PASS
40	5200	**27.290**	14.36	17	PASS
48	5240	26.363	14.21	17	PASS
52	5260	34.834	15.42	24	PASS
60	5300	35.156	15.46	24	PASS
64	5320	34.834	15.42	24	PASS
100	5500	32.137	15.07	24	PASS
116	5580	32.584	15.13	24	PASS
140	5700	33.266	15.22	24	PASS

NOTE:

For 5180~5240MHz:

1. 4dBm + 10log(24.72) = 17.93dBm > 17dBm.
2. 4dBm + 10log(25.22) = 18.02dBm > 17dBm.
3. 4dBm + 10log(25.31) = 18.03dBm > 17dBm.

For 5260~5700MHz:

1. 11dBm + 10log(25.32) = 25.03dBm > 24dBm.
2. 11dBm + 10log(24.95) = 24.97dBm > 24dBm.
3. 11dBm + 10log(25.25) = 25.02dBm > 24dBm.
4. 11dBm + 10log(25.95) = 25.14dBm > 24dBm.
5. 11dBm + 10log(25.74) = 25.11dBm > 24dBm.
6. 11dBm + 10log(25.96) = 25.14dBm > 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				
36	5180	6.68	5.29	5.64	11.701	10.68	17	PASS
40	5200	6.91	5.37	5.94	12.278	10.89	17	PASS
48	5240	6.64	6.02	6.31	12.888	11.10	17	PASS
52	5260	12.26	11.37	11.81	45.707	16.60	24	PASS
60	5300	12.08	12.22	11.37	46.525	16.68	24	PASS
64	5320	12.57	12.61	11.82	**51.516**	17.12	24	PASS
100	5500	12.26	12.12	11.72	47.979	16.81	24	PASS
116	5580	12.52	12.34	11.52	49.196	16.92	24	PASS
140	5700	12.62	12.12	12.26	**51.401**	17.11	24	PASS

NOTE:

For 5180~5240MHz:

CHAIN 0

1. 4dBm + 10log(25.54) = 18.07dBm > 17dBm.
2. 4dBm + 10log(25.66) = 18.09dBm > 17dBm.
3. 4dBm + 10log(25.17) = 18.01dBm > 17dBm.

CHAIN 1

1. 4dBm + 10log(24.15) = 17.83dBm > 17dBm.
2. 4dBm + 10log(24.98) = 17.98dBm > 17dBm.
3. 4dBm + 10log(24.40) = 17.87dBm > 17dBm.

CHAIN 2

1. 4dBm + 10log(24.68) = 17.92dBm > 17dBm.
2. 4dBm + 10log(24.19) = 17.84dBm > 17dBm.
3. 4dBm + 10log(24.44) = 17.88dBm > 17dBm.

For 5260~5700MHz:

CHAIN 0

1. 11dBm + 10log(23.72) = 24.75dBm > 24dBm.
2. 11dBm + 10log(24.60) = 24.91dBm > 24dBm.
3. 11dBm + 10log(25.22) = 25.02dBm > 24dBm.
4. 11dBm + 10log(24.51) = 24.89dBm > 24dBm.
5. 11dBm + 10log(24.85) = 24.95dBm > 24dBm.
6. 11dBm + 10log(24.76) = 24.94dBm > 24dBm.

CHAIN 1

1. 11dBm + 10log(24.87) = 24.96dBm > 24dBm.
2. 11dBm + 10log(24.51) = 24.89dBm > 24dBm.
3. 11dBm + 10log(24.05) = 24.81dBm > 24dBm.
4. 11dBm + 10log(24.49) = 24.89dBm > 24dBm.
5. 11dBm + 10log(25.00) = 24.98dBm > 24dBm.
6. 11dBm + 10log(23.21) = 24.66dBm > 24dBm.

CHAIN 2
1. 11dBm + 10log(23.15) = 24.65dBm > 24dBm.
2. 11dBm + 10log(24.45) = 24.88dBm > 24dBm.
3. 11dBm + 10log(24.14) = 24.83dBm > 24dBm.
4. 11dBm + 10log(23.94) = 24.79dBm > 24dBm.
5. 11dBm + 10log(24.08) = 24.82dBm > 24dBm.
6. 11dBm + 10log(24.23) = 24.84dBm > 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				
38	5190	8.12	6.68	7.14	16.318	12.13	17	PASS
46	5230	8.42	7.86	7.77	19.043	12.80	17	PASS
54	5270	12.00	11.45	11.06	42.577	16.29	24	PASS
62	5310	11.52	11.54	10.64	40.035	16.02	24	PASS
102	5510	10.82	10.72	10.55	35.231	15.47	24	PASS
110	5550	12.16	12.14	10.99	45.372	16.57	24	PASS
134	5670	11.92	11.82	11.11	43.677	16.40	24	PASS

NOTE:
For 5190~5230MHz:
CHAIN 0
1. 4dBm + 10log(55.18) = 21.42dBm > 17dBm.
2. 4dBm + 10log(55.84) = 21.47dBm > 17dBm.

CHAIN 1
1. 4dBm + 10log(52.74) = 21.22dBm > 17dBm.
2. 4dBm + 10log(52.39) = 21.19dBm > 17dBm.

CHAIN 2
1. 4dBm + 10log(52.14) = 21.17dBm > 17dBm.
2. 4dBm + 10log(52.87) = 21.23dBm > 17dBm.

For 5270~5670MHz:
CHAIN 0
1. 11dBm + 10log(56.27) = 28.50dBm > 24dBm.
2. 11dBm + 10log(55.46) = 28.44dBm > 24dBm.
3. 11dBm + 10log(55.13) = 28.41dBm > 24dBm.
4. 11dBm + 10log(56.36) = 28.51dBm > 24dBm.
5. 11dBm + 10log(57.45) = 28.59dBm > 24dBm.

CHAIN 1
1. 11dBm + 10log(52.91) = 28.24dBm > 24dBm.
2. 11dBm + 10log(52.39) = 28.19dBm > 24dBm.
3. 11dBm + 10log(52.21) = 28.18dBm > 24dBm.
4. 11dBm + 10log(52.87) = 28.23dBm > 24dBm.
5. 11dBm + 10log(53.24) = 28.26dBm > 24dBm.

CHAIN 2
1. 11dBm + 10log(52.04) = 28.16dBm > 24dBm.
2. 11dBm + 10log(52.03) = 28.16dBm > 24dBm.
3. 11dBm + 10log(52.31) = 28.19dBm > 24dBm.
4. 11dBm + 10log(52.06) = 28.17dBm > 24dBm.
5. 11dBm + 10log(52.48) = 28.20dBm > 24dBm.

26dB BANDWIDTH:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	24.72	PASS
40	5200	25.22	PASS
48	5240	25.31	PASS
52	5260	25.32	PASS
60	5300	24.95	PASS
64	5320	25.25	PASS
100	5500	25.95	PASS
116	5580	25.74	PASS
140	5700	25.96	PASS

802.11n (20MHz)

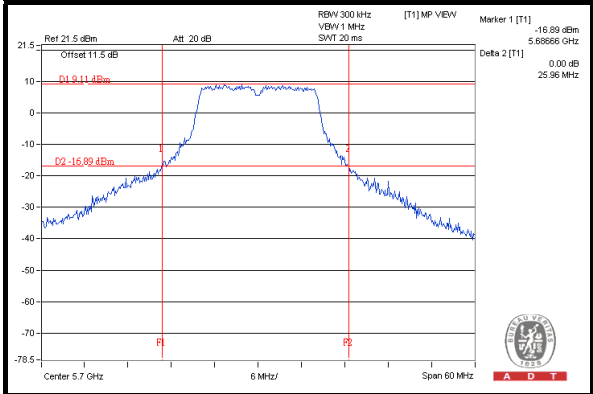
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
36	5180	25.54	24.15	24.68	PASS
40	5200	25.66	24.98	24.19	PASS
48	5240	25.17	24.40	24.44	PASS
52	5260	23.72	24.87	23.15	PASS
60	5300	24.60	24.51	24.45	PASS
64	5320	25.22	24.05	24.14	PASS
100	5500	24.51	24.49	23.94	PASS
116	5580	24.85	25.00	24.08	PASS
140	5700	24.76	23.21	24.23	PASS

802.11n (40MHz)

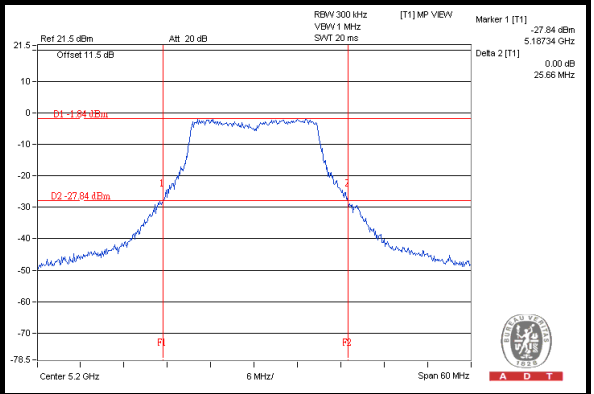
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
38	5190	55.18	52.74	52.14	PASS
46	5230	55.84	52.39	52.87	PASS
54	5270	56.27	52.91	52.04	PASS
62	5310	55.46	52.39	52.03	PASS
102	5510	55.13	52.21	52.31	PASS
110	5550	56.36	52.87	52.06	PASS
134	5670	57.45	53.24	52.48	PASS

SPECTRUM PLOT OF WORST VALUE

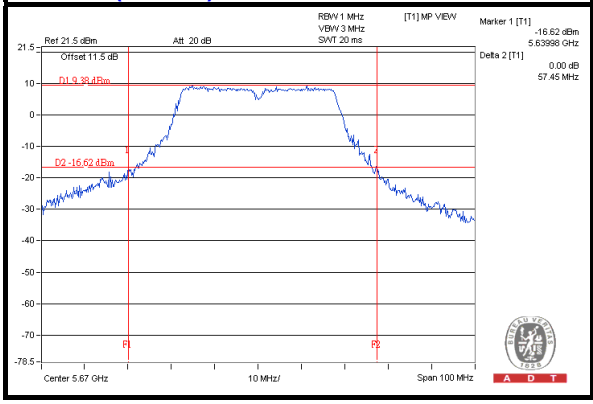
802.11a



802.11n (20MHz)



802.11n (40MHz)

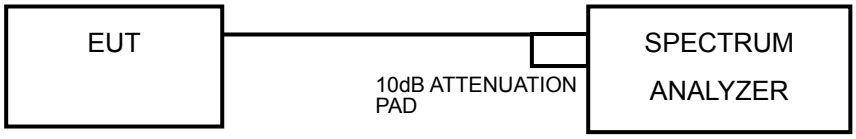


4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

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-2

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

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	1.58	0.15	1.73	4	PASS
40	5200	1.79	0.15	1.94	4	PASS
48	5240	0.86	0.15	1.01	4	PASS
52	5260	2.10	0.15	2.25	11	PASS
60	5300	2.67	0.15	2.82	11	PASS
64	5320	2.49	0.15	2.64	11	PASS
100	5500	2.51	0.15	2.66	11	PASS
116	5580	3.37	0.15	3.52	11	PASS
140	5700	4.17	0.15	4.32	11	PASS

NOTE: 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					
36	5180	-5.93	-9.27	-9.04	-3.02	1.04	-1.99	0.65	PASS
40	5200	-6.44	-7.18	-7.33	-2.19	1.04	-1.15	0.65	PASS
48	5240	-6.07	-7.15	-7.21	-2.01	1.04	-0.97	0.65	PASS
52	5260	-1.74	-3.15	-2.48	2.35	1.04	3.39	7.65	PASS
60	5300	-2.36	-1.71	-3.10	2.42	1.04	3.46	7.65	PASS
64	5320	-1.70	-1.37	-2.54	2.93	1.04	3.97	7.65	PASS
100	5500	-1.37	-1.47	-1.86	3.21	1.04	4.25	7.65	PASS
116	5580	-0.55	-0.91	-1.08	3.93	1.04	4.97	7.65	PASS
140	5700	-0.11	-0.85	-0.61	4.26	1.04	5.30	7.65	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. **For 5180~5240MHz:**
   Directional gain = 4.58dBi + 10log(3) = 9.35dBi > 6dBi , so the power density limit shall be reduced to 4-(9.35-6) = 0.65dBm.
   For 5260~5700MHz:
   Directional gain = 4.58dBi + 10log(3) = 9.35dBi > 6dBi , so the power density limit shall be reduced to 11-(9.35-6) = 7.65dBm.
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					
38	5190	-7.30	-9.02	-8.40	-3.41	0.56	-2.85	0.65	PASS
46	5230	-6.91	-7.85	-7.38	-2.59	0.56	-2.03	0.65	PASS
54	5270	-4.41	-4.81	-4.41	0.23	0.56	0.79	7.65	PASS
62	5310	-5.19	-5.13	-4.54	-0.17	0.56	0.39	7.65	PASS
102	5510	-5.14	-5.07	-4.69	-0.19	0.56	0.37	7.65	PASS
110	5550	-2.93	-3.59	-3.19	1.54	0.56	2.10	7.65	PASS
134	5670	-1.88	-2.41	-2.50	2.52	0.56	3.08	7.65	PASS

NOTE:

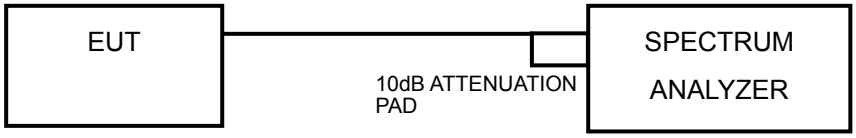
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. **For 5190~5230MHz:**
   Directional gain = 4.58dBi + 10log(3) = 9.35dBi > 6dBi , so the power density limit shall be reduced to 4-(9.35-6) = 0.65dBm.
   For 5270~5670MHz:
   Directional gain = 4.58dBi + 10log(3) = 9.35dBi > 6dBi , so the power density limit shall be reduced to 11-(9.35-6) = 7.65dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

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

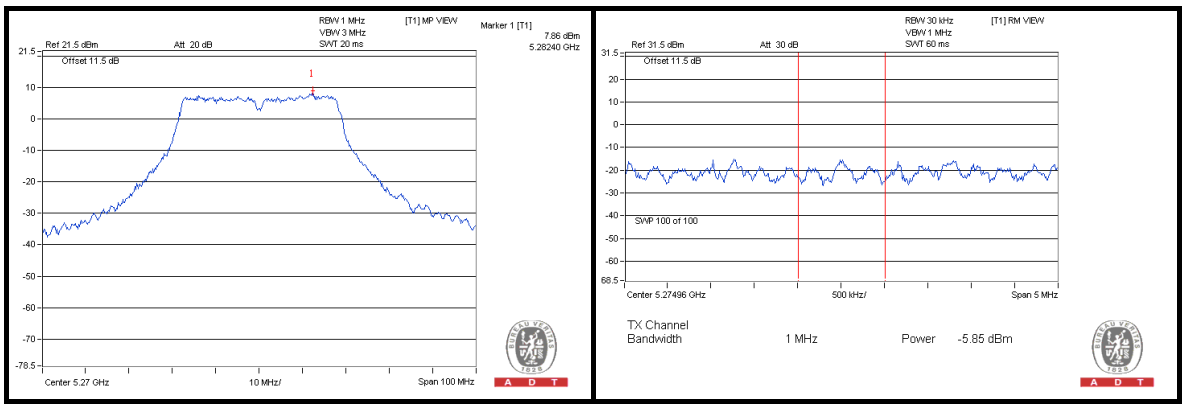
No deviation.

4.5.6 EUT OPERATING CONDITIONS

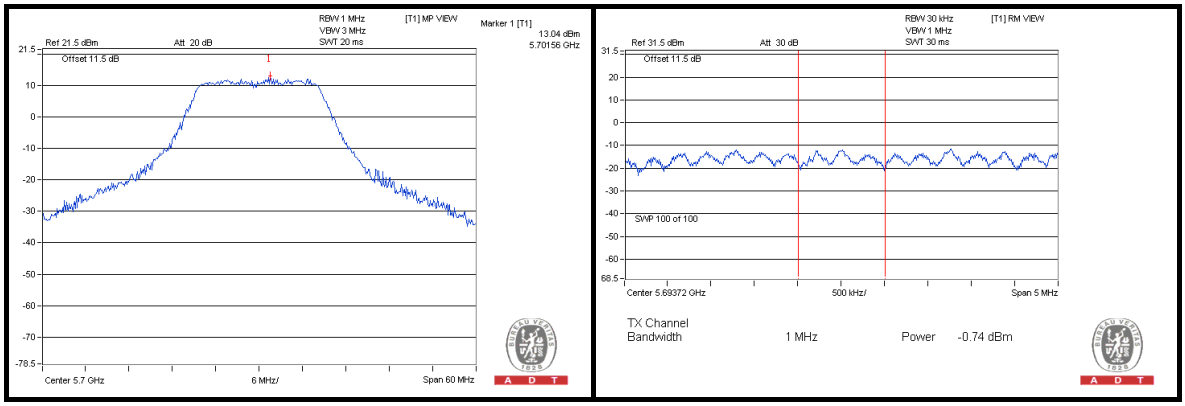
Same as 4.2.6

4.5.7 TEST RESULTS

MODULATION MODE	MODULATION TYPE	CHAN. 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	5300	13.85	2.67	2.82	11.03	13	PASS
	QPSK		14.11	2.49	2.76	11.35	13	PASS
	16QAM		14.79	1.94	2.46	12.33	13	PASS
	64QAM		14.82	1.93	2.91	11.91	13	PASS
802.11n (20MHz)	BPSK	5320	11.37	-2.36	-0.66	12.03	13	PASS
	QPSK		11.31	-2.19	-1.40	12.71	13	PASS
	16QAM		11.43	-2.13	-0.91	12.34	13	PASS
	64QAM		11.08	-2.68	-1.05	12.13	13	PASS
802.11n (40MHz)	BPSK	5270	6.96	-4.41	-3.85	10.81	13	PASS
	QPSK		7.10	-4.98	-4.19	11.29	13	PASS
	16QAM		7.86	-5.85	-5.06	12.92	13	PASS
	64QAM		7.45	-5.68	-4.89	12.34	13	PASS



MODULATION MODE	MODULATION TYPE	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS /FAIL
802.11a	BPSK	5700	15.31	4.17	4.32	10.99	13	PASS
	QPSK		16.03	3.22	3.49	11.35	13	PASS
	16QAM		16.40	3.55	4.07	12.33	13	PASS
	64QAM		16.88	3.64	4.62	12.26	13	PASS
802.11n (20MHz)	BPSK	5700	12.74	-0.11	0.93	11.81	13	PASS
	QPSK		13.04	-0.74	0.05	12.99	13	PASS
	16QAM		12.85	-0.95	0.27	12.58	13	PASS
	64QAM		13.05	-1.34	0.29	12.76	13	PASS
802.11n (40MHz)	BPSK	5670	9.41	-1.88	-1.32	10.73	13	PASS
	QPSK		9.95	-3.35	-2.56	12.51	13	PASS
	16QAM		10.00	-3.23	-2.44	12.44	13	PASS
	64QAM		10.03	-2.90	-2.11	12.14	13	PASS

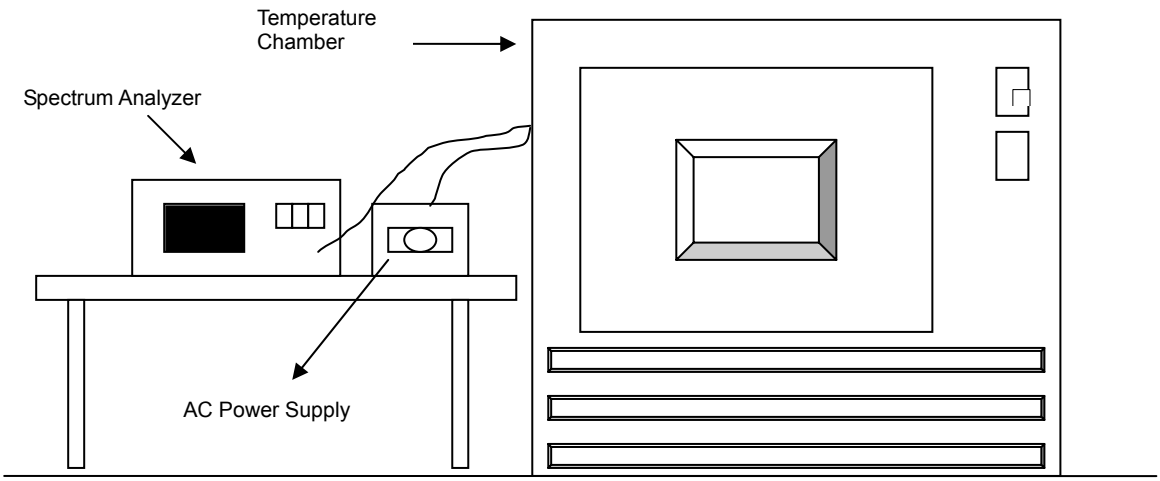


4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.6.4 TEST PROCEDURE

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

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

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

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

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

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

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

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

4.6.7 TEST RESULTS

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
55	120	5319.9917	-0.00016	5319.9862	-0.00026	5319.9829	-0.00032	5319.9933	-0.00013
50	120	5319.9816	-0.00035	5319.9885	-0.00022	5319.9843	-0.00030	5319.9831	-0.00032
40	120	5319.9978	-0.00004	5319.9935	-0.00012	5319.9884	-0.00022	5319.9909	-0.00017
30	120	5320.0050	0.00009	5320.0087	0.00016	5320.0008	0.00002	5320.0100	0.00019
20	120	5320.0117	0.00022	5320.0091	0.00017	5320.0129	0.00024	5320.0157	0.00030
10	120	5319.9823	-0.00033	5319.9760	-0.00045	5319.9730	-0.00051	5319.9734	-0.00050
0	120	5320.0239	0.00045	5320.0212	0.00040	5320.0294	0.00055	5320.0269	0.00051
-10	120	5319.9963	-0.00007	5319.9948	-0.00010	5319.9978	-0.00004	5319.9920	-0.00015
-20	120	5319.9864	-0.00026	5319.9800	-0.00038	5319.9863	-0.00026	5319.9808	-0.00036

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	5320.0110	0.00021	5320.0088	0.00017	5320.0128	0.00024	5320.0161	0.00030
	120	5320.0117	0.00022	5320.0091	0.00017	5320.0129	0.00024	5320.0157	0.00030
	102	5320.0124	0.00023	5320.0084	0.00016	5320.0136	0.00026	5320.0149	0.00028

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. INFORMATION ON THE TESTING LABORATORIES

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

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

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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.

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