FCC TEST REPORT (15.407)

REPORT NO.:	RF130911C29A
MODEL NO.:	MR18-HW
FCC ID:	UDX-60026010
RECEIVED:	Sep. 11, 2013
TESTED:	Nov. 04 ~ Dec. 16, 2013
ISSUED:	Dec. 18, 2013

APPLICANT:	Cisco Systems, Inc.
ADDRESS:	170 West Tasman Drive, San Jose, CA 95134

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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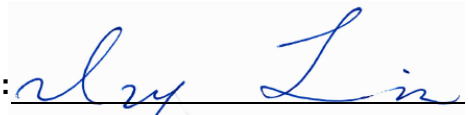
RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130911C29A	Original release	Dec. 18, 2013

1. CERTIFICATION

PRODUCT: Wireless 802.11 abgn AP
MODEL: MR18-HW
BRAND: Cisco
APPLICANT: Cisco Systems, Inc.
TESTED: Nov. 04 ~ Dec. 16, 2013
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**
ANSI C63.10-2009

The above equipment (model: MR18-HW) 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 :** Dec. 18, 2013
Ivy Lin / Specialist

APPROVED BY :  **, DATE :** Dec. 18, 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 -0.55dB at 22.30469MHz
15.407(b/1/2/3)(b)(6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 5725.00MHz, 5350.00MHz, 5470.00MHz
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 802.11 abgn AP
MODEL NO.	MR18-HW
POWER SUPPLY	12Vdc (Adapter) 48Vdc (POE)
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 300.0Mbps
OPERATING FREQUENCY	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	204.944mW for 5260 ~ 5320MHz 206.818mW for 5500 ~ 5700MHz
ANTENNA TYPE	Refer to Note
ANTENNA CONNECTOR	Refer to Note
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.: RF130911C29-1. The differences compared with original report are adding 5.26 ~ 5.32GHz and 5.50 ~ 5.70GHz band. Therefore, the EUT was re-tested and presented in the report.
2. The EUT incorporates a MIMO function. The EUT provides 2 completed transmitters and 2 receivers.

Radio 1	
MODULATION MODE	**TX FUNCTION**
802.11b	2TX
802.11g	2TX
802.11n (20MHz) - MCS 8-15	2TX
802.11n (40MHz) - MCS 8-15	2TX

Radio 2	
MODULATION MODE	**TX FUNCTION**
802.11a	2TX
802.11n (20MHz) - MCS 8-15	2TX
802.11n (40MHz) - MCS 8-15	2TX

Radio 3	
MODULATION MODE	**TX FUNCTION**
802.11b	1TX
802.11g	1TX
802.11a	1TX
802.11n (20MHz) - MCS 0-7	1TX
802.11n (40MHz) - MCS 0-7	1TX

3. The EUT consumes power from the following adapter (support unit).

Brand	Ruckus
Model	HK-AD-120A100-US
Input Power	100-240Vac, 50/60Hz, 0.4A
Output Power	12Vdc, 1.0A
Power Line	1.8m cable without core attached on adapter

4. The EUT consumes power from the following POE (support unit).

Brand	SONICWALL
Model	PD-6083G300
Input Power	100-250Vac, 50/60Hz, 0.5A
Output Power	48Vdc, 0.35A

5. The EUT uses following antennas.

Radio	Antenna Type	Connector	Gain (dBi)		Remark
1	PIFA	IPEX	4		2.4GHz only
2	PIFA	IPEX	5150~5250MHz	4	5GHz only
			5250~5350MHz	4	
			5470~5725MHz	4	
			5725~5825MHz	6	
3	Printed	IPEX	2		2.4GHz + 5GHz combo

6. 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	
A	√	√	√	√	Radio 2, Power from adapter
B	-	√	√	-	Radio 2, Power from POE
C	√	√	√	√	Radio 3, Power from adapter
D	-	√	√	-	Radio 3, Power from POE

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

NOTE 1: "-"means no effect.
NOTE 2: The EUT had been pre-tested on the positioned of X-plane and Z-plane. The worst case was found when positioned on **Z-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)
A, C	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
A, C	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
A, C	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0
A, C	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
A, C	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	7.2
A, C	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)
A, B, C, D	802.11n (20MHz)	5180-5320, 5500-5700	36 to 64, 100 to 140	116	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)
A, B, C, D	802.11n (20MHz)	5180-5320, 5500-5700	36 to 64, 100 to 140	116	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)
A, C	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
A, C	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
A, C	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0
A, C	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
A, C	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	7.2
A, C	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	15.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Chris Lin, Ted Chang
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Chris Lin, Ted Chang
PLC	25deg. C, 68%RH	120Vac, 60Hz	Leo Tsai
APCM	25deg. C, 60%RH	120Vac, 60Hz	Cedric Wu

3.3 DUTY CYCLE OF TEST SIGNAL

Test mode A

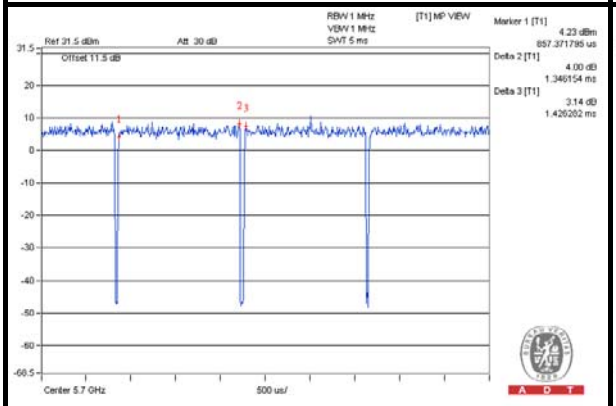
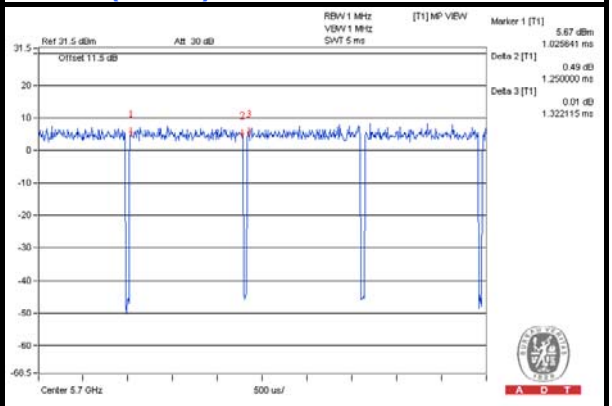
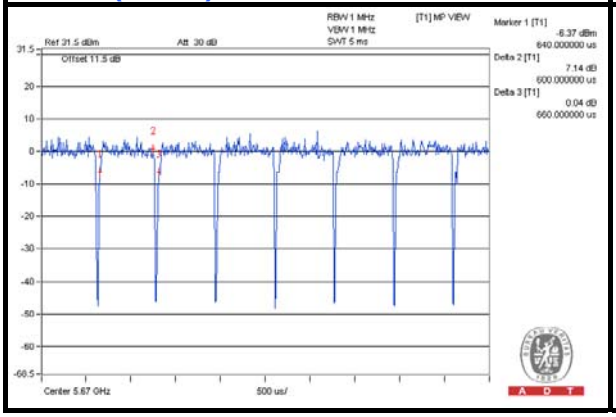
MODULATION TYPE: BPSK

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

802.11a: Duty cycle = 1.346/1.426 = 0.944, Duty factor = 10 * log(1/0.944) = 0.25

802.11n (20MHz): Duty cycle = 1.250/1.322 = 0.946, Duty factor = 10 * log(1/0.946) = 0.24

802.11n (40MHz): Duty cycle = 0.600/0.660 = 0.909, Duty factor = 10 * log(1/0.909) = 0.41

802.11a	802.11n (20MHz)
	
802.11n (40MHz)	
	

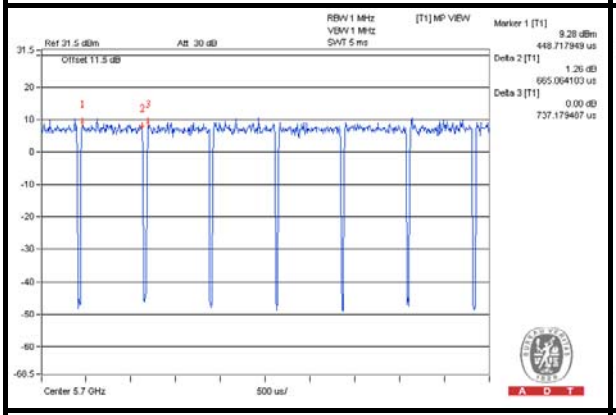
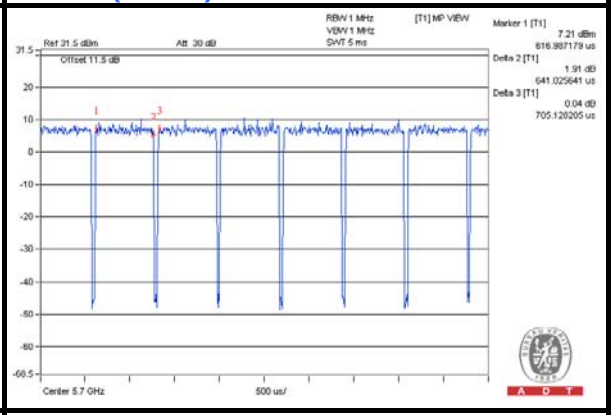
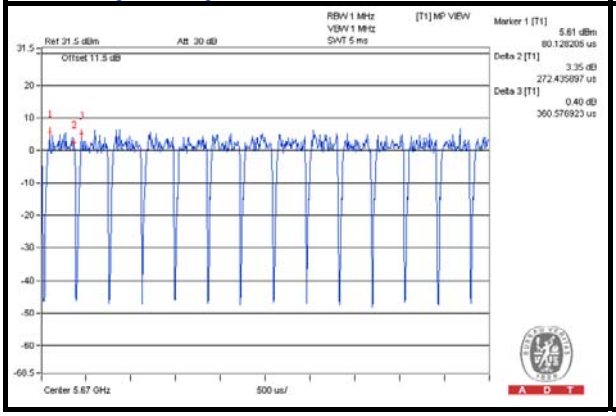
MODULATION TYPE: QPSK

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

802.11a: Duty cycle = 0.665/0.737 = 0.902, Duty factor = 10 * log(1/0.902) = 0.45

802.11n (20MHz): Duty cycle = 0.641/0.705 = 0.909, Duty factor = 10 * log(1/0.909) = 0.41

802.11n (40MHz): Duty cycle = 0.272/0.361 = 0.753, Duty factor = 10 * log(1/0.753) = 1.23

802.11a	802.11n (20MHz)
	
802.11n (40MHz)	
	

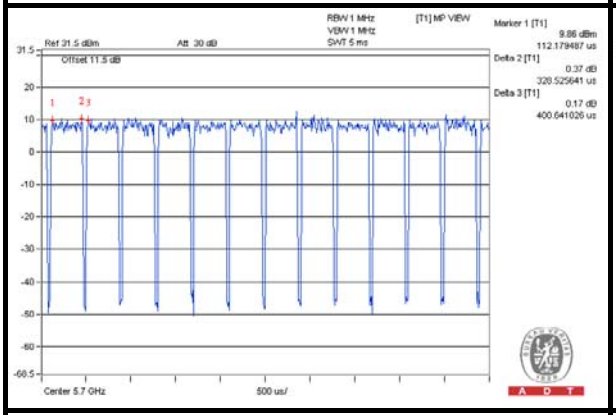
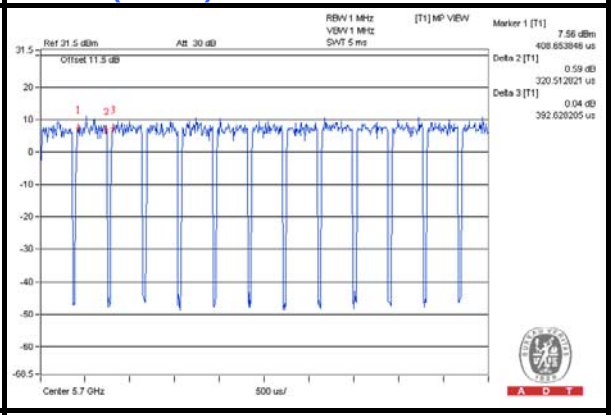
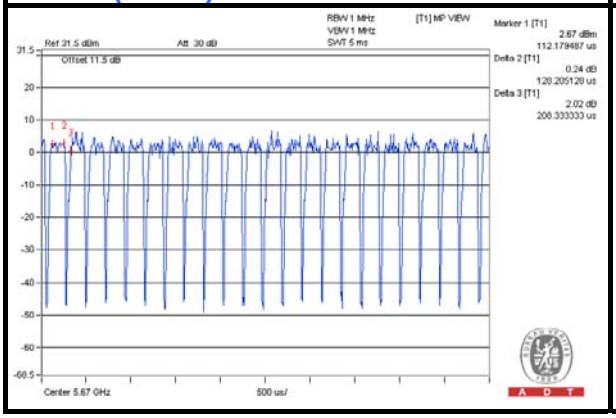
MODULATION TYPE: 16QAM

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

802.11a: Duty cycle = 0.329/0.737 = 0.902, Duty factor = 10 * log(1/0.902) = 0.45

802.11n (20MHz): Duty cycle = 0.321/0.393 = 0.817, Duty factor = 10 * log(1/0.817) = 0.88

802.11n (40MHz): Duty cycle = 0.128/0.208 = 0.615, Duty factor = 10 * log(1/0.615) = 2.11

802.11a	802.11n (20MHz)
	
802.11n (40MHz)	
	

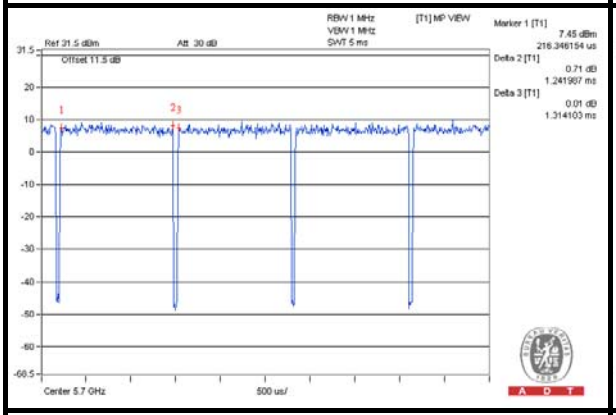
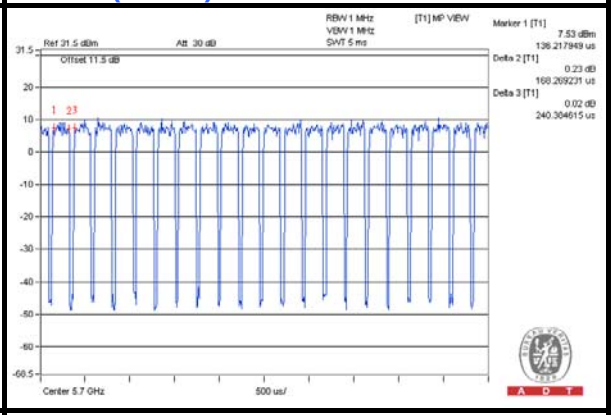
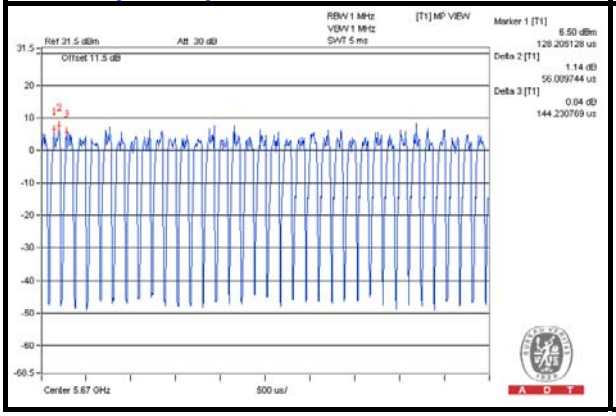
MODULATION TYPE: 64QAM

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

802.11a: Duty cycle = 1.242/1.314 = 0.945, Duty factor = 10 * log(1/0.945) = 0.24

802.11n (20MHz): Duty cycle = 0.168/0.240 = 0.700, Duty factor = 10 * log(1/0.700) = 1.55

802.11n (40MHz): Duty cycle = 0.056/0.144 = 0.389, Duty factor = 10 * log(1/0.389) = 4.10

802.11a	802.11n (20MHz)
	
802.11n (40MHz)	
	

Test mode C

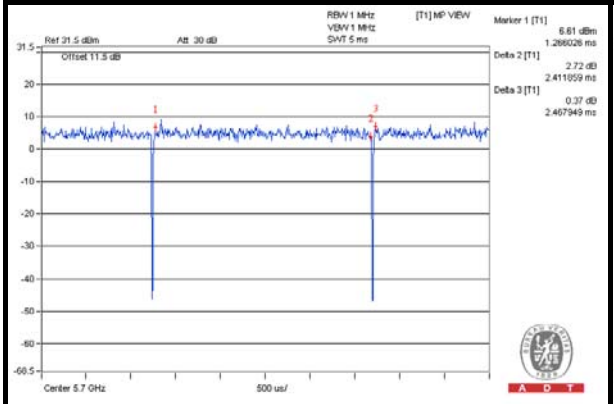
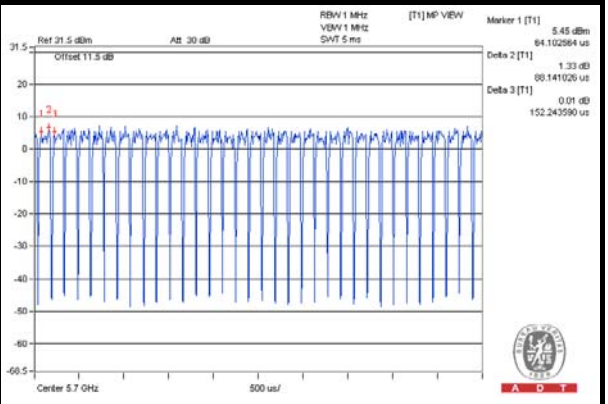
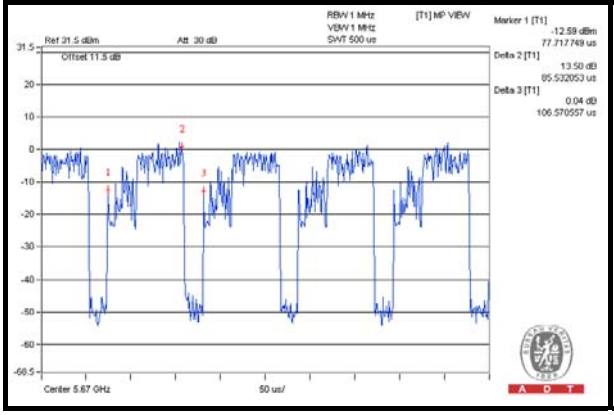
MODULATION TYPE: BPSK

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

802.11a: Duty cycle = 2.412/2.468 = 0.977, Duty factor = 10 * log(1/0.977) = 0.10

802.11n (20MHz): Duty cycle = 0.088/0.152 = 0.579, Duty factor = 10 * log(1/0.579) = 2.37

802.11n (40MHz): Duty cycle = 0.085/0.106 = 0.802, Duty factor = 10 * log(1/0.802) = 0.96

802.11a	802.11n (20MHz)
	
802.11n (40MHz)	
	

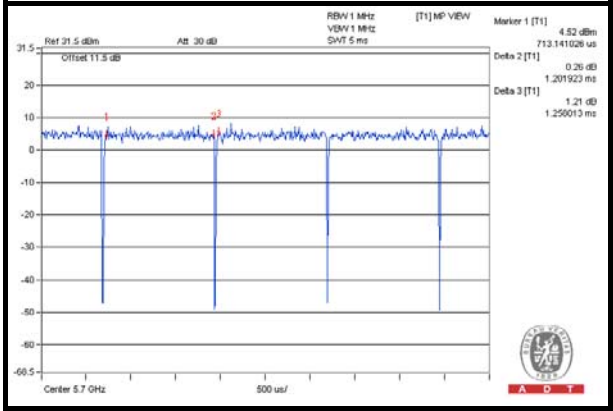
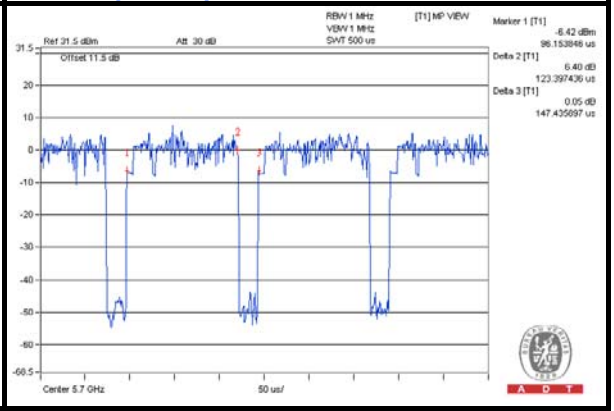
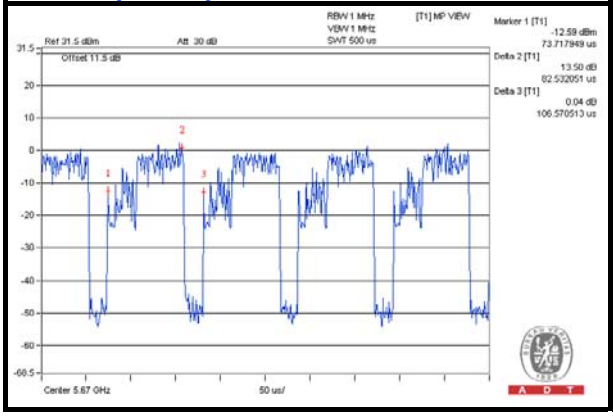
MODULATION TYPE: QPSK

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

802.11a: Duty cycle = 1.202/1.258 = 0.955, Duty factor = 10 * log(1/0.955) = 0.20

802.11n (20MHz): Duty cycle = 0.123/0.147 = 0.837, Duty factor = 10 * log(1/0.837) = 0.77

802.11n (40MHz): Duty cycle = 0.083/0.107 = 0.776, Duty factor = 10 * log(1/0.776) = 1.10

802.11a	802.11n (20MHz)
	
802.11n (40MHz)	
	

MODULATION TYPE: 16QAM

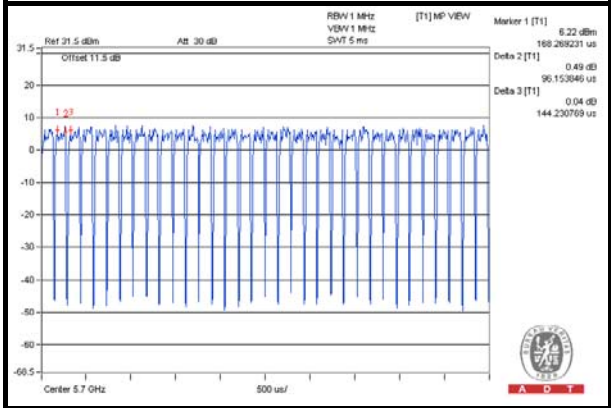
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 0.096/0.144 = 0.667, Duty factor = 10 * log(1/0.667) = 1.76

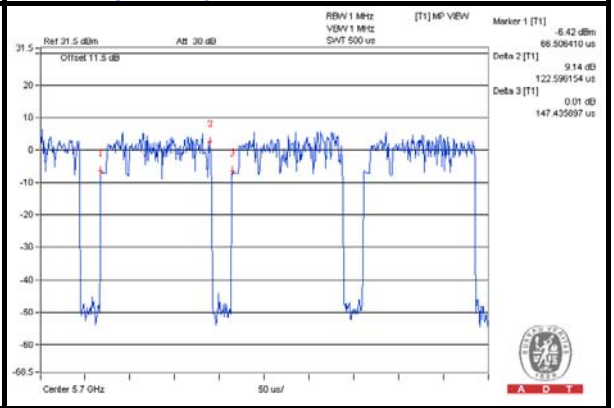
802.11n (20MHz): Duty cycle = 0.123/0.147 = 0.837, Duty factor = 10 * log(1/0.837) = 0.77

802.11n (40MHz): Duty cycle = 0.083/0.107 = 0.776, Duty factor = 10 * log(1/0.776) = 1.10

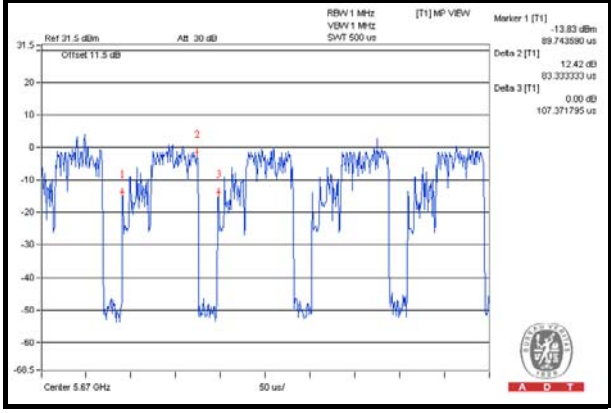
802.11a



802.11n (20MHz)



802.11n (40MHz)



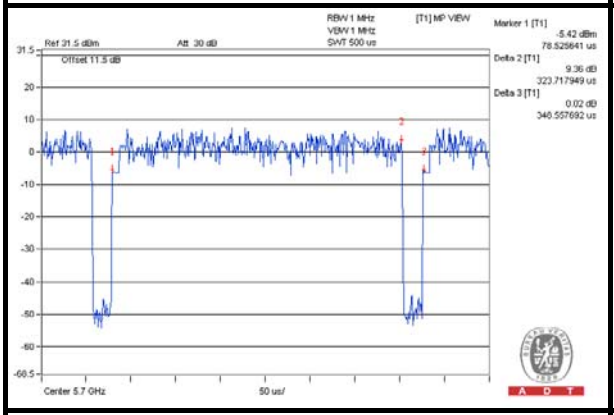
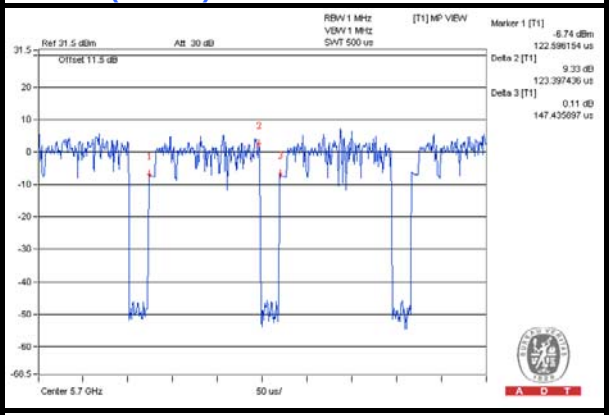
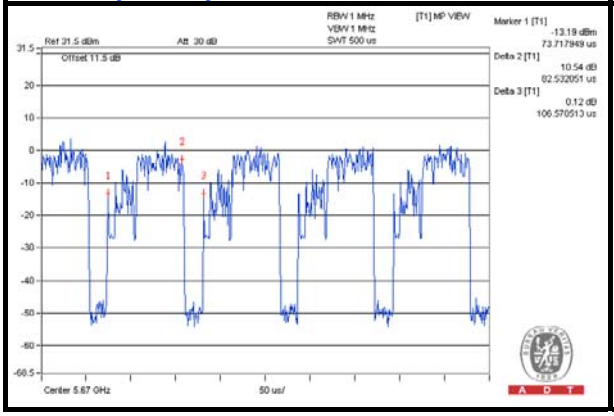
MODULATION TYPE: 64QAM

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

802.11a: Duty cycle = 0.324/0.349 = 0.928, Duty factor = 10 * log(1/0.928) = 0.32

802.11n (20MHz): Duty cycle = 0.123/0.147 = 0.837, Duty factor = 10 * log(1/0.837) = 0.77

802.11n (40MHz): Duty cycle = 0.083/0.107 = 0.776, Duty factor = 10 * log(1/0.776) = 1.10

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.

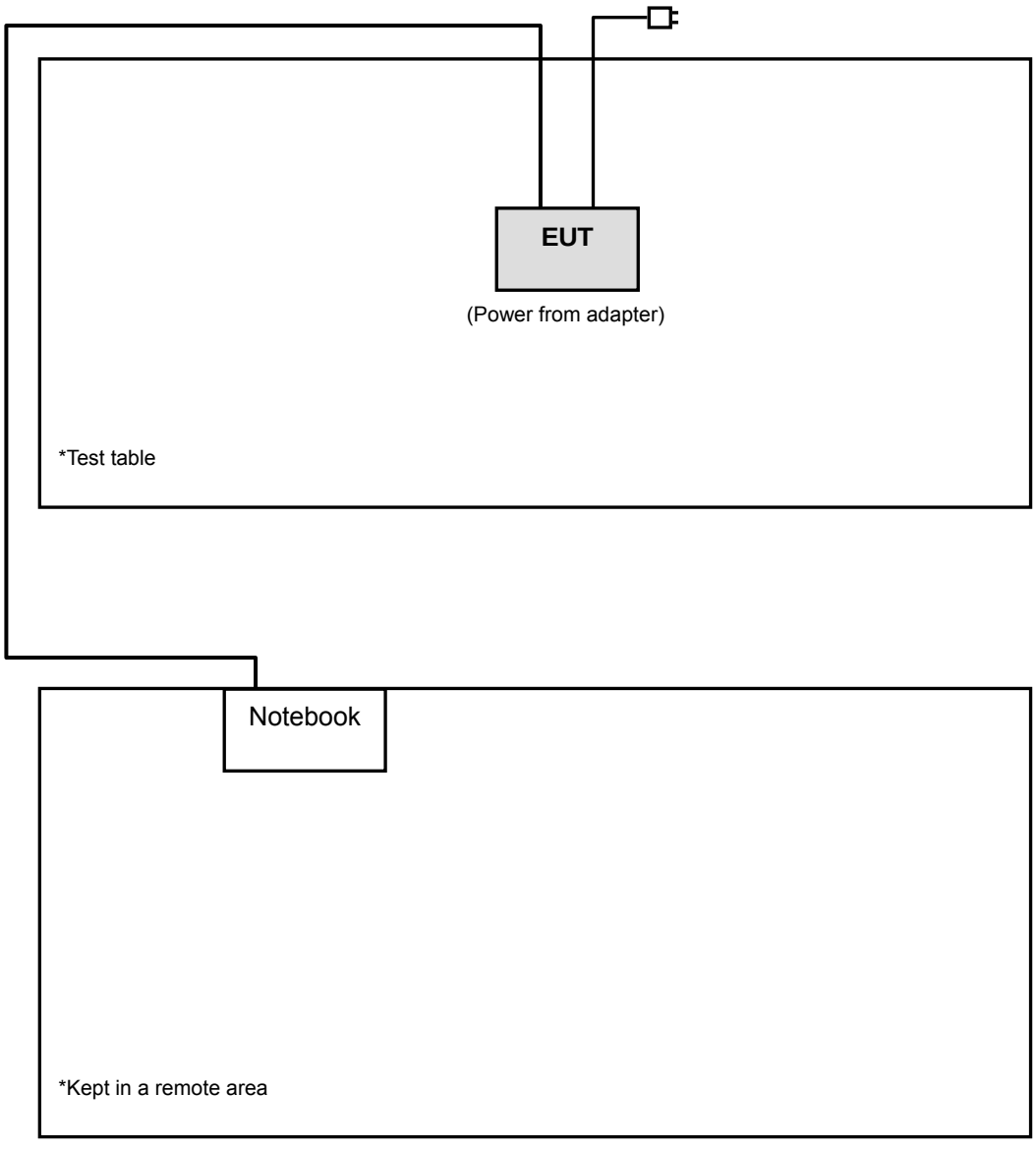
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Adapter	Ruckus	HK-AD-120A100-US	NA	NA
2	Notebook	DELL	E5420	BPQ7MQ1	FCC DoC Approved
3	POE	SONICWALL	PD-6083G300	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	10m RJ45 UTP cable
3	10m RJ45 UTP cable

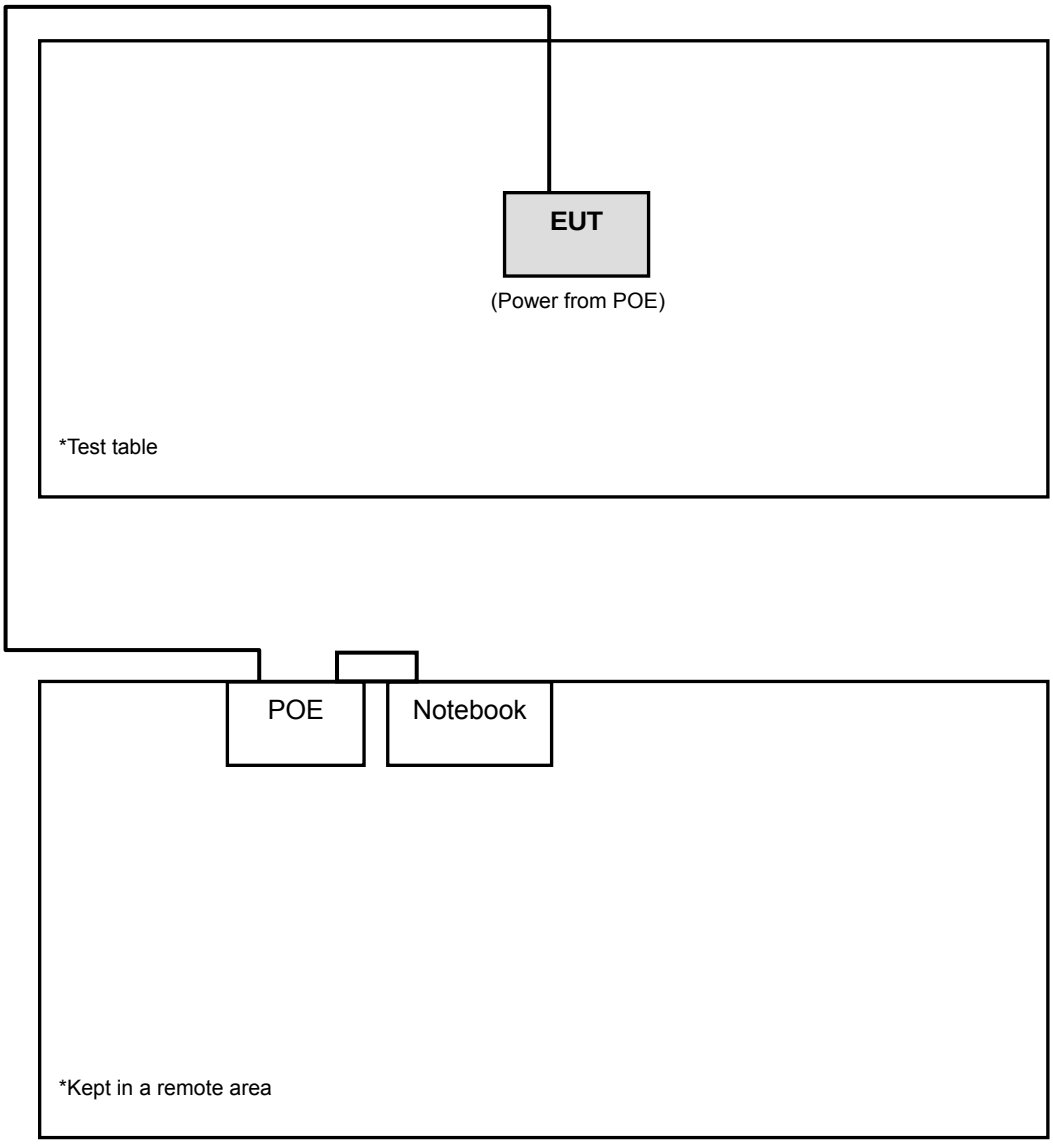
NOTE:
1. All power cords of the above support units are non-shielded (1.8m).
2. Items 2-3 acted as communication partners to transfer data.
3. Items 1 & 3 were provided by the manufacturer.

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST

Adapter mode



POE mode


EUT
(Power from POE)
*Test table
POE
Notebook
*Kept in a remote area

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	ESI7	838496/016	Dec. 25, 2012	Dec. 24, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jan. 31, 2013	Jan. 30, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Mar. 20, 2013	Mar. 19, 2014
HORN Antenna SCHWARZBECK	9120D	209	Sep. 12, 2013	Sep. 11, 2014
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	8447D	2944A10633	Oct. 07, 2013	Oct. 06, 2014
Preamplifier Agilent	8449B	3008A01964	Aug. 26, 2013	Aug. 25, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250723/4	Aug. 23, 2013	Aug. 22, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 106	12738/6+309224/4	Aug. 23, 2013	Aug. 22, 2014
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100	SC93021703	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 18, 2013	Oct. 17, 2014
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 3.
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 988962.
6. The IC Site Registration No. is IC 7450F-3.

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:

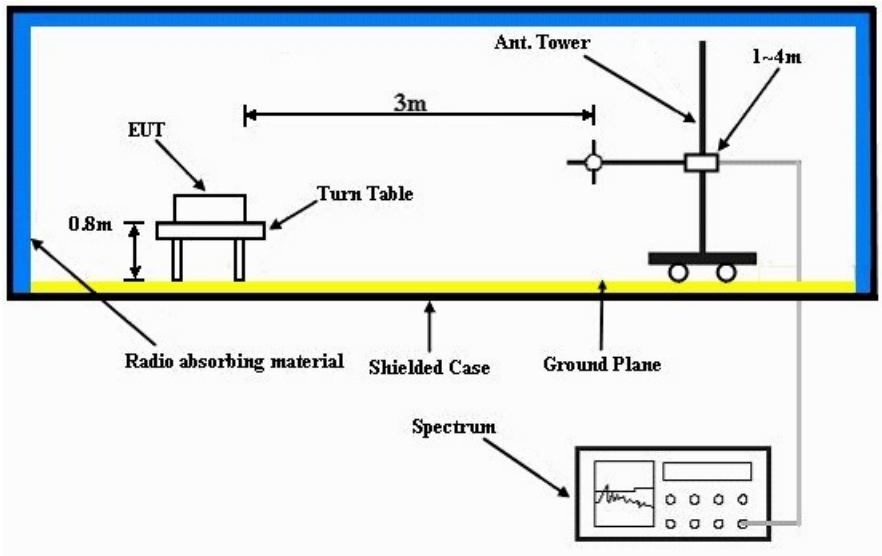
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T(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

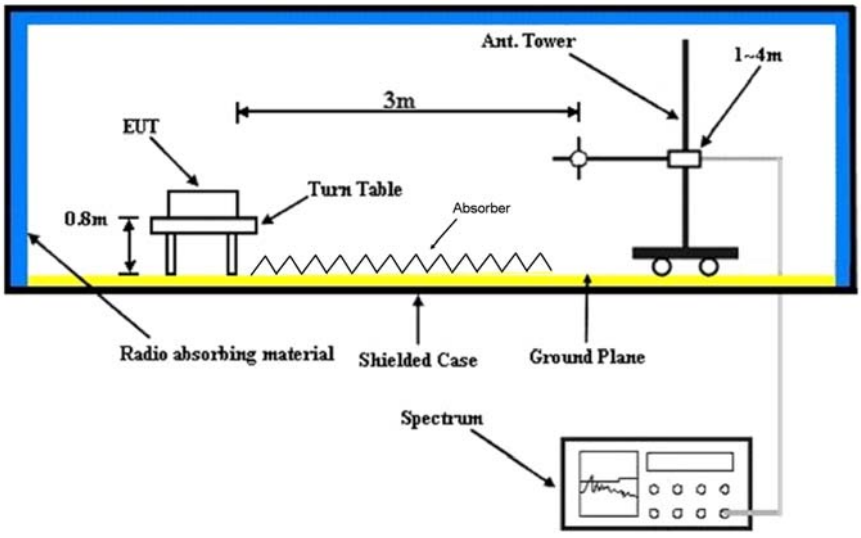
No deviation.

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

4.1.8 TEST RESULTS (A)

ABOVE 1GHz DATA：

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.2 PK	74.0	-16.8	1.22 H	340	52.10	5.10
2	5150.00	48.5 AV	54.0	-5.5	1.22 H	340	43.40	5.10
3	*5260.00	116.7 PK			1.02 H	25	78.80	37.90
4	*5260.00	105.9 AV			1.02 H	25	68.00	37.90
5	#10520.00	66.1 PK	74.0	-7.9	1.02 H	44	48.00	18.10
6	#10520.00	52.9 AV	54.0	-1.1	1.02 H	44	34.80	18.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.7 PK	74.0	-18.3	1.13 V	78	50.60	5.10
2	5150.00	44.2 AV	54.0	-9.8	1.13 V	78	39.10	5.10
3	*5260.00	106.8 PK			1.00 V	52	68.90	37.90
4	*5260.00	96.6 AV			1.00 V	52	58.70	37.90
5	#10520.00	66.3 PK	74.0	-7.7	1.04 V	17	48.20	18.10
6	#10520.00	52.4 AV	54.0	-1.6	1.04 V	17	34.30	18.10

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 the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	116.6 PK			1.17 H	31	78.70	37.90
2	*5300.00	105.4 AV			1.17 H	31	67.50	37.90
3	10600.00	66.3 PK	74.0	-7.7	1.16 H	45	48.70	17.60
4	10600.00	52.4 AV	54.0	-1.6	1.16 H	45	34.80	17.60
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	*5300.00	109.3 PK			1.01 V	349	71.40	37.90
2	*5300.00	99.6 AV			1.01 V	349	61.70	37.90
3	10600.00	65.1 PK	74.0	-8.9	1.00 V	14	47.50	17.60
4	10600.00	50.8 AV	54.0	-3.2	1.00 V	14	33.20	17.60

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 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	115.2 PK			1.09 H	24	77.20	38.00
2	*5320.00	105.2 AV			1.09 H	24	67.20	38.00
3	5350.00	71.7 PK	74.0	-2.3	1.20 H	25	66.30	5.40
4	5350.00	52.8 AV	54.0	-1.2	1.20 H	25	47.40	5.40
5	10640.00	64.9 PK	74.0	-9.1	1.14 H	43	47.50	17.40
6	10640.00	51.4 AV	54.0	-2.6	1.14 H	43	34.00	17.40
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	109.3 PK			1.23 V	350	71.30	38.00
2	*5320.00	99.2 AV			1.23 V	350	61.20	38.00
3	5350.00	63.8 PK	74.0	-10.2	1.48 V	3	58.40	5.40
4	5350.00	47.5 AV	54.0	-6.5	1.48 V	3	42.10	5.40
5	10640.00	64.2 PK	74.0	-9.8	1.08 V	13	46.80	17.40
6	10640.00	50.5 AV	54.0	-3.5	1.08 V	13	33.10	17.40

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, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	64.0 PK	74.0	-10.0	1.00 H	313	58.40	5.60
2	5460.00	47.5 AV	54.0	-6.5	1.00 H	313	41.90	5.60
3	#5470.00	72.2 PK	74.0	-1.8	1.00 H	312	66.50	5.70
4	#5470.00	51.8 AV	54.0	-2.2	1.00 H	312	46.10	5.70
5	*5500.00	114.9 PK			1.00 H	55	76.60	38.30
6	*5500.00	105.4 AV			1.00 H	55	67.10	38.30
7	11000.00	60.4 PK	74.0	-13.6	1.00 H	304	42.20	18.20
8	11000.00	48.7 AV	54.0	-5.3	1.00 H	304	30.50	18.20
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	5460.00	58.6 PK	74.0	-15.4	1.16 V	28	53.00	5.60
2	5460.00	44.5 AV	54.0	-9.5	1.16 V	28	38.90	5.60
3	#5470.00	62.0 PK	74.0	-12.0	1.16 V	28	56.30	5.70
4	#5470.00	47.0 AV	54.0	-7.0	1.16 V	28	41.30	5.70
5	*5500.00	110.0 PK			1.29 V	17	71.70	38.30
6	*5500.00	100.6 AV			1.29 V	17	62.30	38.30
7	11000.00	61.1 PK	74.0	-12.9	1.14 V	62	42.90	18.20
8	11000.00	47.6 AV	54.0	-6.4	1.14 V	62	29.40	18.20

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 the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	116.6 PK			1.09 H	51	78.30	38.30
2	*5580.00	106.8 AV			1.09 H	51	68.50	38.30
3	11160.00	62.1 PK	74.0	-11.9	1.14 H	44	43.80	18.30
4	11160.00	50.0 AV	54.0	-4.0	1.14 H	44	31.70	18.30
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	*5580.00	112.3 PK			1.16 V	12	74.00	38.30
2	*5580.00	103.0 AV			1.16 V	12	64.70	38.30
3	11160.00	63.0 PK	74.0	-11.0	1.03 V	354	44.70	18.30
4	11160.00	50.3 AV	54.0	-3.7	1.03 V	354	32.00	18.30

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 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	113.6 PK			1.41 H	57	75.10	38.50
2	*5700.00	103.9 AV			1.41 H	57	65.40	38.50
3	#5725.00	72.6 PK	74.0	-1.4	1.11 H	302	66.60	6.00
4	**#5725.00**	**53.0 AV**	**54.0**	**-1.0**	**1.11 H**	**302**	**47.00**	**6.00**
5	11400.00	62.2 PK	74.0	-11.8	1.00 H	1	43.40	18.80
6	11400.00	50.0 AV	54.0	-4.0	1.00 H	1	31.20	18.80
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	*5700.00	111.2 PK			1.03 V	3	72.70	38.50
2	*5700.00	101.8 AV			1.03 V	3	63.30	38.50
3	#5725.00	67.3 PK	74.0	-6.7	1.13 V	0	61.30	6.00
4	#5725.00	48.6 AV	54.0	-5.4	1.13 V	0	42.60	6.00
5	11400.00	65.8 PK	74.0	-8.2	1.00 V	7	47.00	18.80
6	11400.00	52.4 AV	54.0	-1.6	1.00 V	7	33.60	18.80

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

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.1 PK	74.0	-16.9	1.30 H	19	52.00	5.10
2	5150.00	46.4 AV	54.0	-7.6	1.30 H	19	41.30	5.10
3	*5260.00	114.4 PK			1.28 H	18	76.50	37.90
4	*5260.00	104.5 AV			1.28 H	18	66.60	37.90
5	#10520.00	65.5 PK	74.0	-8.5	1.00 H	71	47.40	18.10
6	#10520.00	52.3 AV	54.0	-1.7	1.00 H	71	34.20	18.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.8 PK	74.0	-17.2	1.10 V	50	51.70	5.10
2	5150.00	43.4 AV	54.0	-10.6	1.10 V	50	38.30	5.10
3	*5260.00	107.7 PK			1.01 V	42	69.80	37.90
4	*5260.00	97.2 AV			1.01 V	42	59.30	37.90
5	#10520.00	63.9 PK	74.0	-10.1	1.09 V	317	45.80	18.10
6	#10520.00	50.2 AV	54.0	-3.8	1.09 V	317	32.10	18.10

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 the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	114.6 PK			1.21 H	25	76.70	37.90
2	*5300.00	104.7 AV			1.21 H	25	66.80	37.90
3	10600.00	66.4 PK	74.0	-7.6	1.18 H	29	48.80	17.60
4	10600.00	52.2 AV	54.0	-1.8	1.18 H	29	34.60	17.60
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	*5300.00	107.6 PK			1.00 V	42	69.70	37.90
2	*5300.00	97.3 AV			1.00 V	42	59.40	37.90
3	10600.00	65.1 PK	74.0	-8.9	1.09 V	318	47.50	17.60
4	10600.00	50.6 AV	54.0	-3.4	1.09 V	318	33.00	17.60

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 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	114.2 PK			1.10 H	19	76.20	38.00
2	*5320.00	104.5 AV			1.10 H	19	66.50	38.00
3	5350.00	71.7 PK	74.0	-2.3	1.10 H	19	66.30	5.40
4	**5350.00**	**53.0 AV**	**54.0**	**-1.0**	**1.10 H**	**19**	**47.60**	**5.40**
5	10640.00	66.2 PK	74.0	-7.8	1.06 H	47	48.80	17.40
6	10640.00	51.3 AV	54.0	-2.7	1.06 H	47	33.90	17.40
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	108.8 PK			1.36 V	349	70.80	38.00
2	*5320.00	98.9 AV			1.36 V	349	60.90	38.00
3	5350.00	64.7 PK	74.0	-9.3	1.35 V	358	59.30	5.40
4	5350.00	48.5 AV	54.0	-5.5	1.35 V	358	43.10	5.40
5	10640.00	64.2 PK	74.0	-9.8	1.00 V	356	46.80	17.40
6	10640.00	50.1 AV	54.0	-3.9	1.00 V	356	32.70	17.40

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, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	63.3 PK	74.0	-10.7	1.09 H	21	57.70	5.60
2	5460.00	48.1 AV	54.0	-5.9	1.09 H	21	42.50	5.60
3	**#5470.00**	**73.0 PK**	**74.0**	**-1.0**	**1.09 H**	**21**	**67.30**	**5.70**
4	#5470.00	50.3 AV	54.0	-3.7	1.09 H	21	44.60	5.70
5	*5500.00	114.3 PK			1.00 H	314	76.00	38.30
6	*5500.00	104.6 AV			1.00 H	314	66.30	38.30
7	11000.00	58.9 PK	74.0	-15.1	1.10 H	30	40.70	18.20
8	11000.00	48.6 AV	54.0	-5.4	1.10 H	30	30.40	18.20
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	5460.00	58.5 PK	74.0	-15.5	1.08 V	0	52.90	5.60
2	5460.00	45.0 AV	54.0	-9.0	1.08 V	0	39.40	5.60
3	#5470.00	66.0 PK	74.0	-8.0	1.08 V	0	60.30	5.70
4	#5470.00	47.5 AV	54.0	-6.5	1.08 V	0	41.80	5.70
5	*5500.00	110.2 PK			1.18 V	8	71.90	38.30
6	*5500.00	99.8 AV			1.18 V	8	61.50	38.30
7	11000.00	60.0 PK	74.0	-14.0	1.00 V	345	41.80	18.20
8	11000.00	48.3 AV	54.0	-5.7	1.00 V	345	30.10	18.20

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 the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	116.5 PK			1.00 H	57	78.20	38.30
2	*5580.00	106.5 AV			1.00 H	57	68.20	38.30
3	11160.00	61.4 PK	74.0	-12.6	1.14 H	42	43.10	18.30
4	11160.00	49.1 AV	54.0	-4.9	1.14 H	42	30.80	18.30
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	*5580.00	111.9 PK			1.15 V	13	73.60	38.30
2	*5580.00	102.0 AV			1.15 V	13	63.70	38.30
3	11160.00	62.5 PK	74.0	-11.5	1.04 V	355	44.20	18.30
4	11160.00	49.9 AV	54.0	-4.1	1.04 V	355	31.60	18.30

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 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	114.0 PK			1.40 H	46	75.50	38.50
2	*5700.00	103.3 AV			1.40 H	46	64.80	38.50
3	#5725.00	72.4 PK	74.0	-1.6	1.55 H	300	66.40	6.00
4	#5725.00	52.3 AV	54.0	-1.7	1.55 H	300	46.30	6.00
5	11400.00	65.7 PK	74.0	-8.3	1.03 H	69	46.90	18.80
6	11400.00	49.2 AV	54.0	-4.8	1.03 H	69	30.40	18.80
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	*5700.00	109.7 PK			1.14 V	2	71.20	38.50
2	*5700.00	99.3 AV			1.14 V	2	60.80	38.50
3	#5725.00	68.7 PK	74.0	-5.3	1.14 V	0	62.70	6.00
4	#5725.00	49.3 AV	54.0	-4.7	1.14 V	0	43.30	6.00
5	11400.00	63.4 PK	74.0	-10.6	1.03 V	65	44.60	18.80
6	11400.00	48.2 AV	54.0	-5.8	1.03 V	65	29.40	18.80

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

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.6 PK	74.0	-17.4	1.07 H	94	51.50	5.10
2	5150.00	47.6 AV	54.0	-6.4	1.07 H	94	42.50	5.10
3	*5270.00	113.9 PK			1.23 H	19	76.00	37.90
4	*5270.00	102.3 AV			1.23 H	19	64.40	37.90
5	#10540.00	64.7 PK	74.0	-9.3	1.15 H	39	46.70	18.00
6	#10540.00	51.4 AV	54.0	-2.6	1.15 H	39	33.40	18.00
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	1000.00	42.9 PK	74.0	-31.1	1.20 V	30	50.90	-8.00
2	1000.00	31.0 AV	54.0	-23.0	1.20 V	30	39.00	-8.00
3	*5270.00	105.8 PK			1.13 V	9	67.90	37.90
4	*5270.00	95.8 AV			1.13 V	9	57.90	37.90
5	#10540.00	64.9 PK	74.0	-9.1	1.05 V	358	46.90	18.00
6	#10540.00	50.7 AV	54.0	-3.3	1.05 V	358	32.70	18.00

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	108.3 PK			1.08 H	18	70.40	37.90
2	*5310.00	98.1 AV			1.08 H	18	60.20	37.90
3	5350.00	70.5 PK	74.0	-3.5	1.09 H	19	65.10	5.40
4	5350.00	52.9 AV	54.0	-1.1	1.09 H	19	47.50	5.40
5	10620.00	64.5 PK	74.0	-9.5	1.05 H	98	47.00	17.50
6	10620.00	50.6 AV	54.0	-3.4	1.05 H	98	33.10	17.50
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	*5310.00	103.3 PK			1.24 V	353	65.40	37.90
2	*5310.00	93.0 AV			1.24 V	353	55.10	37.90
3	5350.00	63.3 PK	74.0	-10.7	1.30 V	340	57.90	5.40
4	5350.00	50.0 AV	54.0	-4.0	1.30 V	340	44.60	5.40
5	10620.00	62.0 PK	74.0	-12.0	1.15 V	89	44.50	17.50
6	10620.00	48.9 AV	54.0	-5.1	1.15 V	89	31.40	17.50

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 102	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.1 PK	74.0	-13.9	1.00 H	313	54.50	5.60
2	5460.00	45.7 AV	54.0	-8.3	1.00 H	313	40.10	5.60
3	#5470.00	67.9 PK	74.0	-6.1	1.00 H	313	62.20	5.70
4	**#5470.00**	**53.0 AV**	**54.0**	**-1.0**	**1.00 H**	**313**	**47.30**	**5.70**
5	*5510.00	106.7 PK			1.00 H	55	68.40	38.30
6	*5510.00	96.8 AV			1.00 H	55	58.50	38.30
7	11020.00	64.8 PK	74.0	-9.2	1.05 H	98	46.50	18.30
8	11020.00	48.7 AV	54.0	-5.3	1.05 H	98	30.40	18.30

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.8 PK	74.0	-16.2	1.28 V	351	52.20	5.60
2	5460.00	44.3 AV	54.0	-9.7	1.28 V	351	38.70	5.60
3	#5470.00	62.1 PK	74.0	-11.9	1.28 V	351	56.40	5.70
4	#5470.00	48.5 AV	54.0	-5.5	1.28 V	351	42.80	5.70
5	*5510.00	104.3 PK			1.17 V	4	66.00	38.30
6	*5510.00	93.8 AV			1.17 V	4	55.50	38.30
7	11020.00	63.3 PK	74.0	-10.7	1.14 V	85	45.00	18.30
8	11020.00	47.0 AV	54.0	-7.0	1.14 V	85	28.70	18.30

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 the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	113.1 PK			1.00 H	310	74.80	38.30
2	*5550.00	103.6 AV			1.00 H	310	65.30	38.30
3	11100.00	59.2 PK	74.0	-14.8	1.14 H	62	40.90	18.30
4	11100.00	48.7 AV	54.0	-5.3	1.14 H	62	30.40	18.30
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	*5550.00	109.7 PK			1.17 V	10	71.40	38.30
2	*5550.00	99.7 AV			1.17 V	10	61.40	38.30
3	11100.00	60.5 PK	74.0	-13.5	1.66 V	322	42.20	18.30
4	11100.00	47.8 AV	54.0	-6.2	1.66 V	322	29.50	18.30

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 134	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	113.2 PK			1.18 H	46	74.80	38.40
2	*5670.00	102.5 AV			1.18 H	46	64.10	38.40
3	#5725.00	71.5 PK	74.0	-2.5	1.55 H	302	65.50	6.00
4	**#5725.00**	**53.0 AV**	**54.0**	**-1.0**	**1.55 H**	**302**	**47.00**	**6.00**
5	11340.00	65.3 PK	74.0	-8.7	1.08 H	126	46.70	18.60
6	11340.00	49.8 AV	54.0	-4.2	1.08 H	126	31.20	18.60
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	*5670.00	108.6 PK			1.03 V	3	70.20	38.40
2	*5670.00	98.4 AV			1.03 V	3	60.00	38.40
3	#5725.00	69.9 PK	74.0	-4.1	1.10 V	10	63.90	6.00
4	#5725.00	50.8 AV	54.0	-3.2	1.10 V	10	44.80	6.00
5	11340.00	63.5 PK	74.0	-10.5	1.14 V	207	44.90	18.60
6	11340.00	48.3 AV	54.0	-5.7	1.14 V	207	29.70	18.60

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

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.07	35.2 QP	40.0	-4.8	2.00 H	9	50.00	-14.80
2	181.25	32.8 QP	43.5	-10.7	2.00 H	104	48.20	-15.40
3	375.29	32.8 QP	46.0	-13.2	1.00 H	126	43.80	-11.00
4	600.38	40.1 QP	46.0	-5.9	1.25 H	354	46.50	-6.40
5	625.60	40.7 QP	46.0	-5.3	1.00 H	11	46.40	-5.70
6	749.79	32.8 QP	46.0	-13.2	1.00 H	211	36.30	-3.50
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	59.01	36.9 QP	40.0	-3.1	1.00 V	6	51.70	-14.80
2	220.06	26.4 QP	46.0	-19.6	1.24 V	196	42.70	-16.30
3	375.29	37.0 QP	46.0	-9.0	1.24 V	188	48.00	-11.00
4	600.38	38.4 QP	46.0	-7.6	1.00 V	77	44.80	-6.40
5	749.79	31.8 QP	46.0	-14.2	1.99 V	16	35.30	-3.50
6	875.91	32.8 QP	46.0	-13.2	1.24 V	325	34.30	-1.50

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.

4.1.1 TEST RESULTS (B)

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.07	32.0 QP	40.0	-8.0	1.99 H	16	46.80	-14.80
2	138.56	27.7 QP	43.5	-15.8	1.99 H	112	42.50	-14.80
3	223.94	28.3 QP	46.0	-17.7	1.24 H	107	44.70	-16.40
4	375.29	35.7 QP	46.0	-10.3	1.00 H	129	46.70	-11.00
5	600.38	41.2 QP	46.0	-4.8	1.99 H	16	47.60	-6.40
6	625.60	40.9 QP	46.0	-5.1	1.24 H	339	46.60	-5.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	59.01	37.2 QP	40.0	-2.8	1.00 V	20	52.00	-14.80
2	225.88	29.5 QP	46.0	-16.5	1.00 V	176	46.00	-16.50
3	375.29	37.7 QP	46.0	-8.3	1.25 V	187	48.70	-11.00
4	600.38	39.9 QP	46.0	-6.1	1.00 V	27	46.30	-6.40
5	625.60	37.0 QP	46.0	-9.0	1.51 V	172	42.70	-5.70
6	875.91	31.2 QP	46.0	-14.8	1.25 V	286	32.70	-1.50

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

4.1.2 TEST RESULTS (C)

ABOVE 1GHz DATA：

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.3 PK	74.0	-15.7	1.02 H	154	53.20	5.10
2	5150.00	46.2 AV	54.0	-7.8	1.02 H	154	41.10	5.10
3	*5260.00	95.3 PK			1.02 H	307	57.40	37.90
4	*5260.00	84.2 AV			1.02 H	307	46.30	37.90
5	#10520.00	60.8 PK	74.0	-13.2	1.00 H	154	42.70	18.10
6	#10520.00	46.7 AV	54.0	-7.3	1.00 H	154	28.60	18.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.7 PK	74.0	-15.3	1.54 V	184	53.60	5.10
2	5150.00	47.2 AV	54.0	-6.8	1.54 V	184	42.10	5.10
3	*5260.00	115.0 PK			1.10 V	300	77.10	37.90
4	*5260.00	104.5 AV			1.10 V	300	66.60	37.90
5	#10520.00	61.4 PK	74.0	-12.6	1.02 V	325	43.30	18.10
6	#10520.00	49.7 AV	54.0	-4.3	1.02 V	325	31.60	18.10

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 the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	103.1 PK			1.00 H	10	65.20	37.90
2	*5300.00	92.0 AV			1.00 H	10	54.10	37.90
3	10600.00	58.9 PK	74.0	-15.1	1.02 H	154	41.30	17.60
4	10600.00	47.5 AV	54.0	-6.5	1.02 H	154	29.90	17.60
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	*5300.00	114.9 PK			1.10 V	299	77.00	37.90
2	*5300.00	103.7 AV			1.10 V	299	65.80	37.90
3	10600.00	63.9 PK	74.0	-10.1	1.09 V	58	46.30	17.60
4	10600.00	49.1 AV	54.0	-4.9	1.09 V	58	31.50	17.60

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 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	100.2 PK			1.00 H	305	62.20	38.00
2	*5320.00	89.2 AV			1.00 H	305	51.20	38.00
3	5350.00	57.9 PK	74.0	-16.1	1.02 H	305	52.50	5.40
4	5350.00	45.6 AV	54.0	-8.4	1.02 H	305	40.20	5.40
5	10640.00	59.1 PK	74.0	-14.9	1.54 H	199	41.70	17.40
6	10640.00	46.3 AV	54.0	-7.7	1.54 H	199	28.90	17.40
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	112.3 PK			1.01 V	322	74.30	38.00
2	*5320.00	101.3 AV			1.01 V	322	63.30	38.00
3	5350.00	70.4 PK	74.0	-3.6	1.00 V	318	65.00	5.40
4	5350.00	50.3 AV	54.0	-3.7	1.00 V	318	44.90	5.40
5	10640.00	61.0 PK	74.0	-13.0	1.55 V	115	43.60	17.40
6	10640.00	48.6 AV	54.0	-5.4	1.55 V	115	31.20	17.40

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, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	56.4 PK	74.0	-17.6	1.00 H	175	50.80	5.60
2	5460.00	44.8 AV	54.0	-9.2	1.00 H	175	39.20	5.60
3	#5470.00	58.2 PK	74.0	-15.8	1.00 H	175	52.50	5.70
4	#5470.00	46.2 AV	54.0	-7.8	1.00 H	175	40.50	5.70
5	*5500.00	95.5 PK			1.01 H	2	57.20	38.30
6	*5500.00	84.5 AV			1.01 H	2	46.20	38.30
7	11000.00	60.0 PK	74.0	-14.0	1.54 H	99	41.80	18.20
8	11000.00	46.9 AV	54.0	-7.1	1.54 H	99	28.70	18.20
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	5460.00	64.2 PK	74.0	-9.8	1.00 V	2	58.60	5.60
2	5460.00	46.3 AV	54.0	-7.7	1.00 V	2	40.70	5.60
3	#5470.00	72.0 PK	74.0	-2.0	1.00 V	2	66.30	5.70
4	#5470.00	52.8 AV	54.0	-1.2	1.00 V	2	47.10	5.70
5	*5500.00	110.4 PK			1.00 V	354	72.10	38.30
6	*5500.00	99.4 AV			1.00 V	354	61.10	38.30
7	11000.00	61.8 PK	74.0	-12.2	1.02 V	358	43.60	18.20
8	11000.00	48.7 AV	54.0	-5.3	1.02 V	358	30.50	18.20

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 the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	101.3 PK			1.02 H	307	63.00	38.30
2	*5580.00	90.4 AV			1.02 H	307	52.10	38.30
3	11160.00	61.6 PK	74.0	-12.4	1.51 H	100	43.30	18.30
4	11160.00	47.0 AV	54.0	-7.0	1.51 H	100	28.70	18.30
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	*5580.00	113.1 PK			1.08 V	2	74.80	38.30
2	*5580.00	101.8 AV			1.08 V	2	63.50	38.30
3	11160.00	61.9 PK	74.0	-12.1	1.02 V	169	43.60	18.30
4	11160.00	49.5 AV	54.0	-4.5	1.02 V	169	31.20	18.30

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 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	99.1 PK			1.01 H	352	60.60	38.50
2	*5700.00	88.2 AV			1.01 H	352	49.70	38.50
3	#5725.00	60.5 PK	74.0	-13.5	1.01 H	353	54.50	6.00
4	#5725.00	46.2 AV	54.0	-7.8	1.01 H	353	40.20	6.00
5	11400.00	62.7 PK	74.0	-11.3	1.84 H	152	43.90	18.80
6	11400.00	47.4 AV	54.0	-6.6	1.84 H	152	28.60	18.80
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	*5700.00	110.0 PK			1.02 V	299	71.50	38.50
2	*5700.00	99.2 AV			1.02 V	299	60.70	38.50
3	#5725.00	72.9 PK	74.0	-1.1	1.00 V	298	66.90	6.00
4	#5725.00	51.5 AV	54.0	-2.5	1.00 V	298	45.50	6.00
5	11400.00	62.4 PK	74.0	-11.6	1.08 V	159	43.60	18.80
6	11400.00	49.3 AV	54.0	-4.7	1.08 V	159	30.50	18.80

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

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.8 PK	74.0	-16.2	1.02 H	158	52.70	5.10
2	5150.00	45.6 AV	54.0	-8.4	1.02 H	158	40.50	5.10
3	*5260.00	95.2 PK			1.02 H	307	57.30	37.90
4	*5260.00	80.4 AV			1.02 H	307	42.50	37.90
5	#10520.00	60.7 PK	74.0	-13.3	1.63 H	269	42.60	18.10
6	#10520.00	46.9 AV	54.0	-7.1	1.63 H	269	28.80	18.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.2 PK	74.0	-16.8	1.00 V	154	52.10	5.10
2	5150.00	45.6 AV	54.0	-8.4	1.00 V	154	40.50	5.10
3	*5260.00	114.8 PK			1.10 V	300	76.90	37.90
4	*5260.00	104.2 AV			1.10 V	300	66.30	37.90
5	#10520.00	61.6 PK	74.0	-12.4	1.00 V	247	43.50	18.10
6	#10520.00	48.6 AV	54.0	-5.4	1.00 V	247	30.50	18.10

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 the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	102.9 PK			1.00 H	10	65.00	37.90
2	*5300.00	91.7 AV			1.00 H	10	53.80	37.90
3	10600.00	59.5 PK	74.0	-14.5	1.54 H	206	41.90	17.60
4	10600.00	46.3 AV	54.0	-7.7	1.54 H	206	28.70	17.60
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	*5300.00	114.8 PK			1.10 V	299	76.90	37.90
2	*5300.00	103.5 AV			1.10 V	299	65.60	37.90
3	10600.00	61.4 PK	74.0	-12.6	1.23 V	250	43.80	17.60
4	10600.00	48.7 AV	54.0	-5.3	1.23 V	250	31.10	17.60

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 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	100.2 PK			1.00 H	14	62.20	38.00
2	*5320.00	89.7 AV			1.00 H	14	51.70	38.00
3	5350.00	58.9 PK	74.0	-15.1	1.24 H	15	53.50	5.40
4	5350.00	45.9 AV	54.0	-8.1	1.24 H	15	40.50	5.40
5	10640.00	58.6 PK	74.0	-15.4	1.00 H	261	41.20	17.40
6	10640.00	46.2 AV	54.0	-7.8	1.00 H	261	28.80	17.40
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	112.7 PK			1.01 V	323	74.70	38.00
2	*5320.00	101.7 AV			1.01 V	323	63.70	38.00
3	**5350.00**	**73.0 PK**	**74.0**	**-1.0**	**1.00 V**	**317**	**67.60**	**5.40**
4	5350.00	52.7 AV	54.0	-1.3	1.00 V	317	47.30	5.40
5	10640.00	61.1 PK	74.0	-12.9	1.20 V	111	43.70	17.40
6	10640.00	48.5 AV	54.0	-5.5	1.20 V	111	31.10	17.40

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, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	56.8 PK	74.0	-17.2	1.10 H	20	51.20	5.60
2	5460.00	43.5 AV	54.0	-10.5	1.10 H	20	37.90	5.60
3	#5470.00	58.4 PK	74.0	-15.6	1.10 H	20	52.70	5.70
4	#5470.00	44.9 AV	54.0	-9.1	1.10 H	20	39.20	5.70
5	*5500.00	94.7 PK			1.01 H	3	56.40	38.30
6	*5500.00	84.2 AV			1.01 H	3	45.90	38.30
7	11000.00	58.9 PK	74.0	-15.1	1.05 H	301	40.70	18.20
8	11000.00	46.8 AV	54.0	-7.2	1.05 H	301	28.60	18.20
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	5460.00	65.5 PK	74.0	-8.5	1.00 V	12	59.90	5.60
2	5460.00	46.2 AV	54.0	-7.8	1.00 V	12	40.60	5.60
3	#5470.00	71.5 PK	74.0	-2.5	1.00 V	12	65.80	5.70
4	#5470.00	52.8 AV	54.0	-1.2	1.00 V	12	47.10	5.70
5	*5500.00	109.6 PK			1.00 V	0	71.30	38.30
6	*5500.00	99.5 AV			1.00 V	0	61.20	38.30
7	11000.00	61.1 PK	74.0	-12.9	1.05 V	99	42.90	18.20
8	11000.00	48.6 AV	54.0	-5.4	1.05 V	99	30.40	18.20

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 the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	98.6 PK			1.01 H	0	60.30	38.30
2	*5580.00	87.3 AV			1.01 H	0	49.00	38.30
3	11160.00	59.6 PK	74.0	-14.4	1.14 H	85	41.30	18.30
4	11160.00	47.0 AV	54.0	-7.0	1.14 H	85	28.70	18.30
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	*5580.00	112.9 PK			1.02 V	299	74.60	38.30
2	*5580.00	102.4 AV			1.02 V	299	64.10	38.30
3	11160.00	61.8 PK	74.0	-12.2	1.05 V	41	43.50	18.30
4	11160.00	49.8 AV	54.0	-4.2	1.05 V	41	31.50	18.30

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 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	96.3 PK			1.00 H	325	57.80	38.50
2	*5700.00	85.5 AV			1.00 H	325	47.00	38.50
3	#5725.00	62.9 PK	74.0	-11.1	1.10 H	330	56.90	6.00
4	#5725.00	46.1 AV	54.0	-7.9	1.10 H	330	40.10	6.00
5	11400.00	58.9 PK	74.0	-15.1	1.24 H	51	40.10	18.80
6	11400.00	47.5 AV	54.0	-6.5	1.24 H	51	28.70	18.80
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	*5700.00	108.0 PK			1.10 V	300	69.50	38.50
2	*5700.00	98.0 AV			1.10 V	300	59.50	38.50
3	#5725.00	72.6 PK	74.0	-1.4	1.00 V	298	66.60	6.00
4	#5725.00	51.9 AV	54.0	-2.1	1.00 V	298	45.90	6.00
5	11400.00	61.4 PK	74.0	-12.6	1.05 V	214	42.60	18.80
6	11400.00	49.2 AV	54.0	-4.8	1.05 V	214	30.40	18.80

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

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.3 PK	74.0	-17.7	1.10 H	320	51.20	5.10
2	5150.00	43.6 AV	54.0	-10.4	1.10 H	320	38.50	5.10
3	*5270.00	99.6 PK			1.01 H	314	61.70	37.90
4	*5270.00	89.7 AV			1.01 H	314	51.80	37.90
5	#10540.00	58.6 PK	74.0	-15.4	1.14 H	87	40.60	18.00
6	#10540.00	47.0 AV	54.0	-7.0	1.14 H	87	29.00	18.00
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	5150.00	64.0 PK	74.0	-10.0	1.14 V	300	58.90	5.10
2	5150.00	47.7 AV	54.0	-6.3	1.14 V	300	42.60	5.10
3	*5270.00	111.2 PK			1.01 V	335	73.30	37.90
4	*5270.00	100.8 AV			1.01 V	335	62.90	37.90
5	#10540.00	60.3 PK	74.0	-13.7	1.14 V	58	42.30	18.00
6	#10540.00	48.0 AV	54.0	-6.0	1.14 V	58	30.00	18.00

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	91.2 PK			1.00 H	14	53.30	37.90
2	*5310.00	81.9 AV			1.00 H	14	44.00	37.90
3	5350.00	57.0 PK	74.0	-17.0	1.10 H	20	51.60	5.40
4	5350.00	45.8 AV	54.0	-8.2	1.10 H	20	40.40	5.40
5	10620.00	57.8 PK	74.0	-16.2	1.14 H	74	40.30	17.50
6	10620.00	45.9 AV	54.0	-8.1	1.14 H	74	28.40	17.50
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	*5310.00	104.5 PK			1.00 V	317	66.60	37.90
2	*5310.00	93.9 AV			1.00 V	317	56.00	37.90
3	5350.00	71.1 PK	74.0	-2.9	1.00 V	317	65.70	5.40
4	**5350.00**	**53.0 AV**	**54.0**	**-1.0**	**1.00 V**	**317**	**47.60**	**5.40**
5	10620.00	60.1 PK	74.0	-13.9	1.07 V	85	42.60	17.50
6	10620.00	47.9 AV	54.0	-6.1	1.07 V	85	30.40	17.50

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 102	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	56.0 PK	74.0	-18.0	1.10 H	10	50.40	5.60
2	5460.00	43.7 AV	54.0	-10.3	1.10 H	10	38.10	5.60
3	#5470.00	57.2 PK	74.0	-16.8	1.10 H	10	51.50	5.70
4	#5470.00	44.7 AV	54.0	-9.3	1.10 H	10	39.00	5.70
5	*5510.00	89.8 PK			1.00 H	3	51.50	38.30
6	*5510.00	79.3 AV			1.00 H	3	41.00	38.30
7	11020.00	58.6 PK	74.0	-15.4	1.14 H	25	40.30	18.30
8	11020.00	46.4 AV	54.0	-7.6	1.14 H	25	28.10	18.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	67.3 PK	74.0	-6.7	1.00 V	3	61.70	5.60
2	5460.00	48.9 AV	54.0	-5.1	1.00 V	3	43.30	5.60
3	**#5470.00**	**73.0 PK**	**74.0**	**-1.0**	**1.00 V**	**3**	**67.30**	**5.70**
4	#5470.00	52.7 AV	54.0	-1.3	1.00 V	3	47.00	5.70
5	*5510.00	104.0 PK			1.11 V	1	65.70	38.30
6	*5510.00	94.1 AV			1.11 V	1	55.80	38.30
7	11020.00	60.6 PK	74.0	-13.4	1.06 V	107	42.30	18.30
8	11020.00	48.4 AV	54.0	-5.6	1.06 V	107	30.10	18.30

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 the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	95.4 PK			1.01 H	298	57.10	38.30
2	*5550.00	84.7 AV			1.01 H	298	46.40	38.30
3	11100.00	58.3 PK	74.0	-15.7	1.14 H	85	40.00	18.30
4	11100.00	46.7 AV	54.0	-7.3	1.14 H	85	28.40	18.30
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	*5550.00	110.3 PK			1.03 V	301	72.00	38.30
2	*5550.00	99.7 AV			1.03 V	301	61.40	38.30
3	11100.00	60.3 PK	74.0	-13.7	1.47 V	203	42.00	18.30
4	11100.00	48.9 AV	54.0	-5.1	1.47 V	203	30.60	18.30

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 134	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	95.2 PK			1.11 H	327	56.80	38.40
2	*5670.00	84.7 AV			1.11 H	327	46.30	38.40
3	#5725.00	62.3 PK	74.0	-11.7	1.15 H	330	56.30	6.00
4	#5725.00	46.3 AV	54.0	-7.7	1.15 H	330	40.30	6.00
5	11340.00	58.9 PK	74.0	-15.1	1.14 H	50	40.30	18.60
6	11340.00	47.6 AV	54.0	-6.4	1.14 H	50	29.00	18.60
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	*5670.00	105.3 PK			1.12 V	298	66.90	38.40
2	*5670.00	95.3 AV			1.12 V	298	56.90	38.40
3	#5725.00	72.9 PK	74.0	-1.1	1.10 V	299	66.90	6.00
4	**#5725.00**	**53.0 AV**	**54.0**	**-1.0**	**1.10 V**	**299**	**47.00**	**6.00**
5	11340.00	60.8 PK	74.0	-13.2	1.04 V	85	42.20	18.60
6	11340.00	48.6 AV	54.0	-5.4	1.04 V	85	30.00	18.60

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

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.07	26.7 QP	40.0	-13.3	1.25 H	52	41.50	-14.80
2	142.44	22.1 QP	43.5	-21.4	1.00 H	75	36.40	-14.30
3	249.17	29.8 QP	46.0	-16.2	1.50 H	239	44.20	-14.40
4	375.29	28.9 QP	46.0	-17.1	1.00 H	232	39.90	-11.00
5	625.60	37.8 QP	46.0	-8.2	1.25 H	7	43.50	-5.70
6	751.73	32.3 QP	46.0	-13.7	1.50 H	68	35.70	-3.40
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	59.01	33.2 QP	40.0	-6.8	1.25 V	3	48.00	-14.80
2	107.52	31.6 QP	43.5	-11.9	1.50 V	67	49.10	-17.50
3	249.17	25.0 QP	46.0	-21.0	1.00 V	285	39.40	-14.40
4	375.29	24.3 QP	46.0	-21.7	1.00 V	189	35.30	-11.00
5	600.38	37.9 QP	46.0	-8.1	1.25 V	303	44.30	-6.40
6	625.60	34.2 QP	46.0	-11.8	1.50 V	277	39.90	-5.70

REMARKS:

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

4.1.3 TEST RESULTS (D)

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.07	26.8 QP	40.0	-13.2	1.25 H	102	41.60	-14.80
2	144.38	18.5 QP	43.5	-25.0	1.00 H	100	32.60	-14.10
3	266.63	34.3 QP	46.0	-11.7	1.00 H	250	47.90	-13.60
4	375.29	23.2 QP	46.0	-22.8	1.50 H	240	34.20	-11.00
5	600.38	37.3 QP	46.0	-8.7	1.25 H	17	43.70	-6.40
6	875.91	32.2 QP	46.0	-13.8	1.50 H	262	33.70	-1.50
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	57.07	26.7 QP	40.0	-13.3	1.25 V	313	41.50	-14.80
2	266.63	26.7 QP	46.0	-19.3	1.00 V	109	40.30	-13.60
3	450.97	21.3 QP	46.0	-24.7	1.50 V	172	30.70	-9.40
4	600.38	33.0 QP	46.0	-13.0	1.25 V	287	39.40	-6.40
5	780.83	27.8 QP	46.0	-18.2	1.00 V	9	30.50	-2.70
6	967.11	29.8 QP	54.0	-24.2	1.50 V	52	29.40	0.40

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

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	100288	Nov. 17, 2013	Nov. 16, 2014
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 21, 2012	Dec. 20, 2013
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 17, 2013	Jul. 16, 2014
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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

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

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

4.2.3 TEST PROCEDURES

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

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

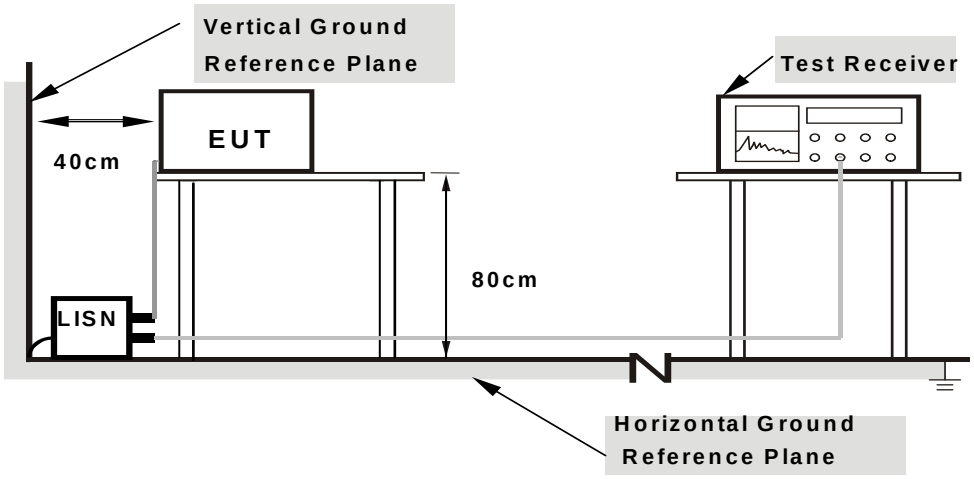
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

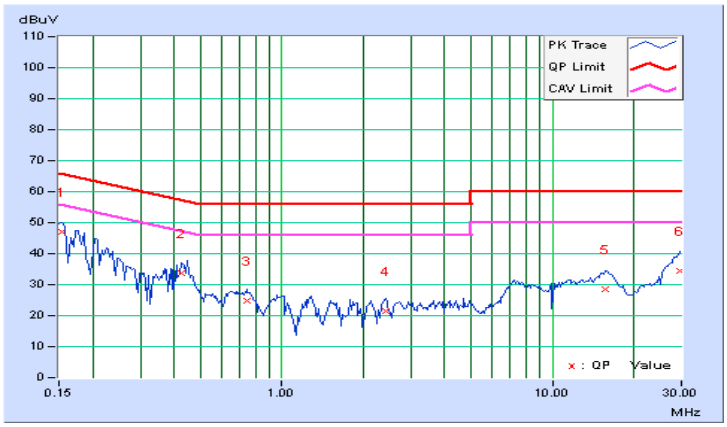
4.2.7 TEST RESULTS (A)

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

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	0.17	46.86	34.46	47.03	34.63	65.79	55.79	-18.75	-21.15
2	0.42344	0.21	33.42	21.10	33.63	21.31	57.38	47.38	-23.75	-26.07
3	0.74375	0.24	24.62	17.77	24.86	18.01	56.00	46.00	-31.14	-27.99
4	2.41406	0.30	21.35	15.18	21.65	15.48	56.00	46.00	-34.35	-30.52
5	15.69531	0.55	28.07	18.82	28.62	19.37	60.00	50.00	-31.38	-30.63
6	29.58594	0.52	33.86	24.29	34.38	24.81	60.00	50.00	-25.62	-25.19

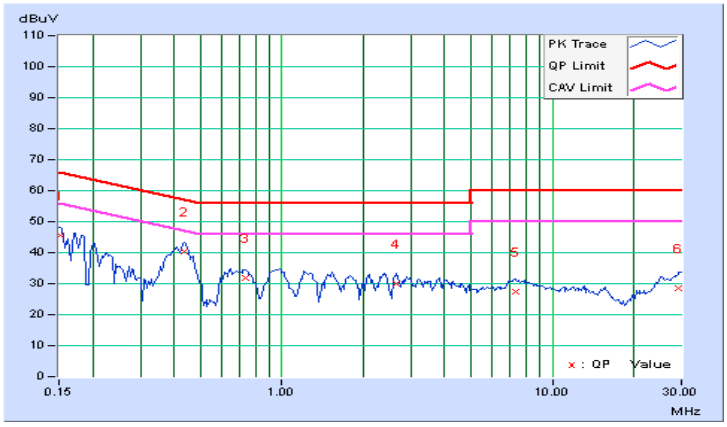
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116		

No	Freq.	Corr. Factor	Reading Value [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	0.15255	0.18	45.35	32.30	45.53	32.48	65.86	55.86	-20.33	-23.38
2	0.43516	0.25	40.17	34.44	40.42	34.69	57.15	47.15	-16.73	-12.46
3	0.73203	0.24	31.53	24.57	31.77	24.81	56.00	46.00	-24.23	-21.19
4	2.66016	0.32	29.64	23.25	29.96	23.57	56.00	46.00	-26.04	-22.43
5	7.35547	0.44	27.15	20.06	27.59	20.50	60.00	50.00	-32.41	-29.50
6	29.35547	0.61	28.00	21.22	28.61	21.83	60.00	50.00	-31.39	-28.17

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.



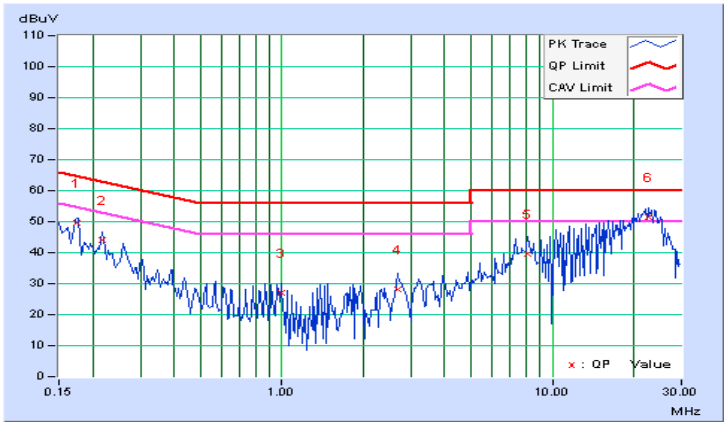
4.2.8 TEST RESULTS (B)

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

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17479	0.17	49.28	39.79	49.45	39.96	64.73	54.73	-15.28	-14.77
2	0.21641	0.17	43.91	35.15	44.08	35.32	62.96	52.96	-18.87	-17.63
3	1.00149	0.27	26.80	26.64	27.07	26.91	56.00	46.00	-28.93	-19.09
4	2.69649	0.31	27.71	25.18	28.02	25.49	56.00	46.00	-27.98	-20.51
5	8.09642	0.41	39.26	38.05	39.67	38.46	60.00	50.00	-20.33	-11.54
6	22.55078	0.62	50.81	48.71	51.43	49.33	60.00	50.00	-8.57	-0.67

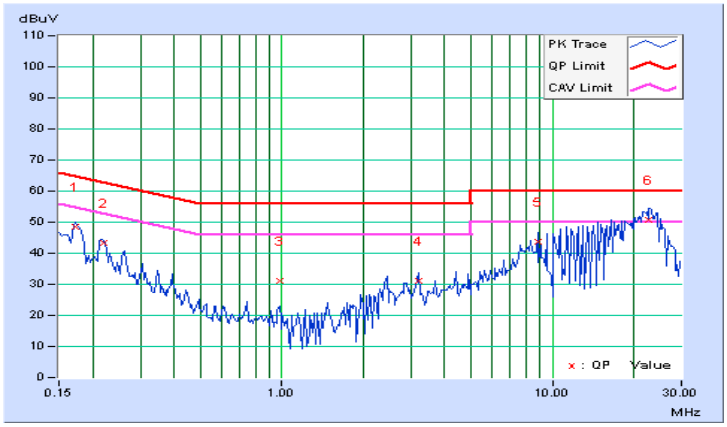
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17344	0.18	48.38	38.20	48.56	38.38	64.79	54.79	-16.23	-16.41
2	0.21896	0.19	43.12	33.99	43.31	34.18	62.86	52.86	-19.55	-18.68
3	0.97813	0.23	30.83	28.47	31.06	28.70	56.00	46.00	-24.94	-17.30
4	3.18750	0.35	30.91	28.30	31.26	28.65	56.00	46.00	-24.74	-17.35
5	8.82422	0.46	43.21	41.59	43.67	42.05	60.00	50.00	-16.33	-7.95
6	22.79297	0.71	50.00	48.46	50.71	49.17	60.00	50.00	-9.29	-0.83

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.



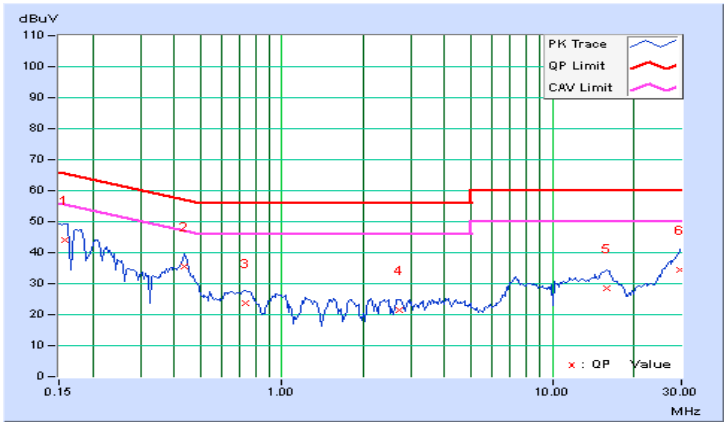
4.2.9 TEST RESULTS (C)

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

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15790	0.17	44.05	29.42	44.22	29.59	65.57	55.57	-21.35	-25.98
2	0.43516	0.21	35.28	24.89	35.49	25.10	57.15	47.15	-21.66	-22.05
3	0.73203	0.24	23.49	13.07	23.73	13.31	56.00	46.00	-32.27	-32.69
4	2.71484	0.31	21.14	14.35	21.45	14.66	56.00	46.00	-34.55	-31.34
5	15.82422	0.55	27.80	18.63	28.35	19.18	60.00	50.00	-31.65	-30.82
6	29.74219	0.51	33.92	24.43	34.43	24.94	60.00	50.00	-25.57	-25.06

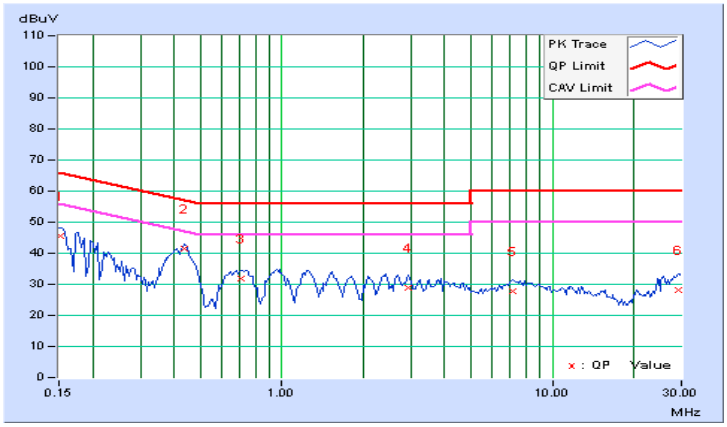
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15128	0.18	45.27	31.55	45.45	31.73	65.93	55.93	-20.47	-24.19
2	0.43516	0.25	41.11	34.40	41.36	34.65	57.15	47.15	-15.79	-12.50
3	0.70469	0.24	31.67	23.55	31.91	23.79	56.00	46.00	-24.09	-22.21
4	2.94531	0.33	28.49	23.16	28.82	23.49	56.00	46.00	-27.18	-22.51
5	7.12500	0.44	27.16	20.47	27.60	20.91	60.00	50.00	-32.40	-29.09
6	29.14063	0.62	27.39	20.48	28.01	21.10	60.00	50.00	-31.99	-28.90

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.



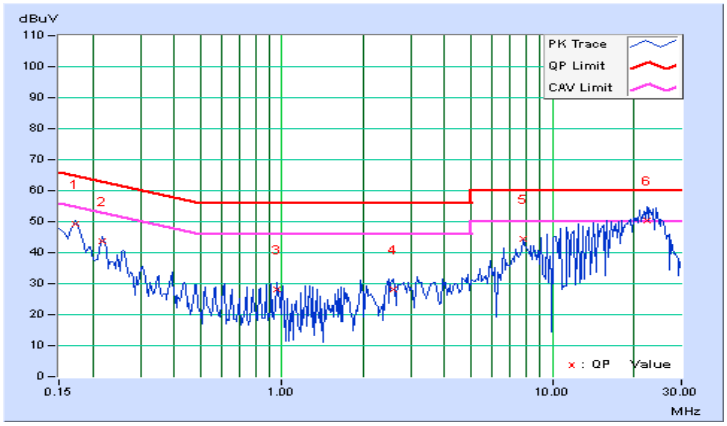
4.2.10 TEST RESULTS (D)

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

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17344	0.17	49.12	39.57	49.29	39.74	64.79	54.79	-15.50	-15.05
2	0.21641	0.17	43.48	34.78	43.65	34.95	62.96	52.96	-19.30	-18.00
3	0.95859	0.27	28.02	27.85	28.29	28.12	56.00	46.00	-27.71	-17.88
4	2.57031	0.31	27.93	25.68	28.24	25.99	56.00	46.00	-27.76	-20.01
5	7.84493	0.41	43.99	40.95	44.40	41.36	60.00	50.00	-15.60	-8.64
6	**22.30469**	**0.62**	**49.79**	**48.83**	**50.41**	**49.45**	**60.00**	**50.00**	**-9.59**	**-0.55**

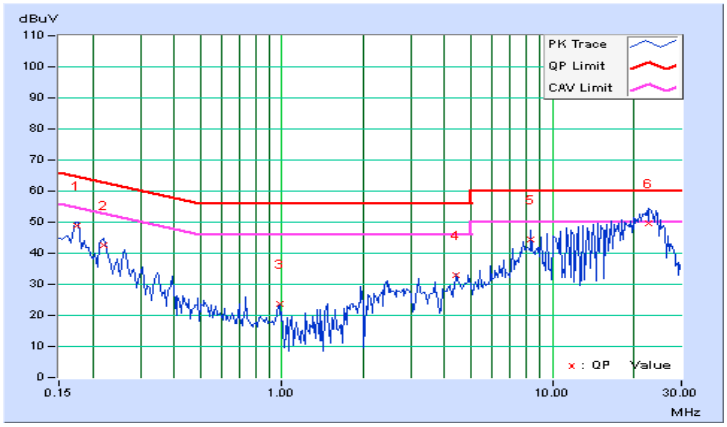
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 116		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17479	0.18	48.74	38.49	48.92	38.67	64.73	54.73	-15.81	-16.06
2	0.22031	0.19	42.58	33.34	42.77	33.53	62.81	52.81	-20.04	-19.28
3	0.98203	0.23	23.61	22.17	23.84	22.40	56.00	46.00	-32.16	-23.60
4	4.41016	0.40	32.43	29.42	32.83	29.82	56.00	46.00	-23.17	-16.18
5	8.33585	0.46	44.07	41.48	44.53	41.94	60.00	50.00	-15.47	-8.06
6	22.79297	0.71	49.08	48.64	49.79	49.35	60.00	50.00	-10.21	-0.65

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.

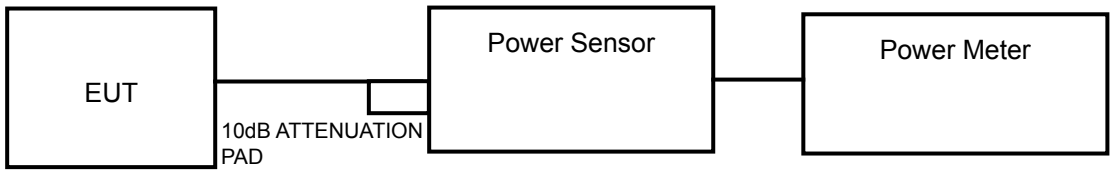
Per KDB 662911 D01 Multiple Transmitter Output v02 Method of conducted output power measurement on IEEE 802.11 devices,

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.

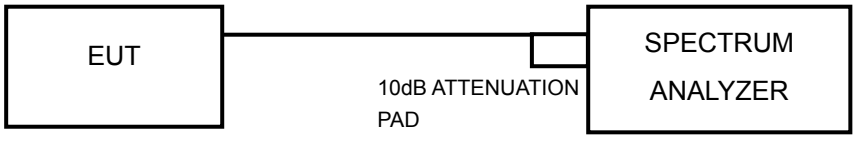
For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

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 (A)

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				
52	5260	19.97	19.13	181.158	22.58	23.96	PASS
60	5300	19.72	19.08	174.666	22.42	24	PASS
64	5320	19.99	19.54	189.720	22.78	23.89	PASS
100	5500	17.84	17.67	119.293	20.77	23.78	PASS
116	5580	19.98	20.16	203.294	23.08	23.85	PASS
140	5700	17.41	17.60	112.625	20.52	23.83	PASS

NOTE:

CHAIN 0

1. 11dBm + 10log(19.98) = 24.01 dBm > 24dBm
2. 11dBm + 10log(21.98) = 24.42 dBm > 24dBm
3. 11dBm + 10log(19.46) = 23.89 dBm < 24dBm
4. 11dBm + 10log(19.44) = 23.89 dBm < 24dBm
5. 11dBm + 10log(19.27) = 23.85 dBm < 24dBm
6. 11dBm + 10log(19.42) = 23.88 dBm < 24dBm

CHAIN 1

1. 11dBm + 10log(19.77) = 23.96 dBm < 24dBm
2. 11dBm + 10log(20.14) = 24.04 dBm > 24dBm
3. 11dBm + 10log(19.69) = 23.94 dBm < 24dBm
4. 11dBm + 10log(18.95) = 23.78 dBm < 24dBm
5. 11dBm + 10log(19.36) = 23.87 dBm < 24dBm
6. 11dBm + 10log(19.20) = 23.83 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				
52	5260	20.16	19.13	185.599	22.69	24	PASS
60	5300	20.00	19.50	189.125	22.77	24	PASS
64	5320	20.20	20.01	**204.944**	23.12	24	PASS
100	5500	17.18	17.31	106.067	20.26	24	PASS
116	5580	20.36	19.92	**206.818**	23.16	24	PASS
140	5700	17.21	17.41	107.683	20.32	24	PASS

NOTE:

CHAIN 0

1. 11dBm + 10log(21.11) = 24.24 dBm > 24dBm
2. 11dBm + 10log(20.96) = 24.21 dBm > 24dBm
3. 11dBm + 10log(22.30) = 24.48 dBm > 24dBm
4. 11dBm + 10log(20.45) = 24.11 dBm > 24dBm
5. 11dBm + 10log(20.03) = 24.02 dBm > 24dBm
6. 11dBm + 10log(20.44) = 24.10 dBm > 24dBm

CHAIN 1

1. 11dBm + 10log(21.30) = 24.28 dBm > 24dBm
2. 11dBm + 10log(20.89) = 24.20 dBm > 24dBm
3. 11dBm + 10log(20.80) = 24.18 dBm > 24dBm
4. 11dBm + 10log(20.13) = 24.04 dBm > 24dBm
5. 11dBm + 10log(20.15) = 24.04 dBm > 24dBm
6. 11dBm + 10log(20.56) = 24.13 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				
54	5270	20.27	19.78	201.474	23.04	24	PASS
62	5310	17.70	17.37	113.460	20.55	24	PASS
102	5510	13.76	13.19	44.613	16.49	24	PASS
110	5550	20.51	19.67	205.143	23.12	24	PASS
134	5670	18.99	19.03	159.233	22.02	24	PASS

NOTE:

CHAIN 0

1. 11dBm + 10log(76.65) = 29.85 dBm > 24dBm
2. 11dBm + 10log(48.69) = 27.87 dBm > 24dBm
3. 11dBm + 10log(48.50) = 27.86 dBm > 24dBm
4. 11dBm + 10log(65.14) = 29.14 dBm > 24dBm
5. 11dBm + 10log(48.64) = 27.87 dBm > 24dBm

CHAIN 1

1. 11dBm + 10log(76.49) = 29.84 dBm > 24dBm
2. 11dBm + 10log(48.88) = 27.89 dBm > 24dBm
3. 11dBm + 10log(45.80) = 27.61 dBm > 24dBm
4. 11dBm + 10log(60.98) = 28.85 dBm > 24dBm
5. 11dBm + 10log(49.73) = 27.97 dBm > 24dBm

26dB BANDWIDTH:

802.11a

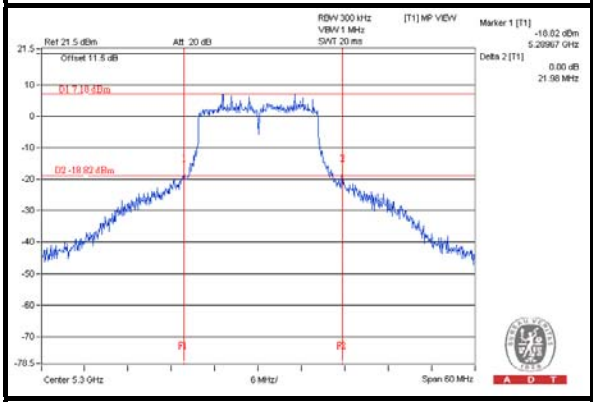
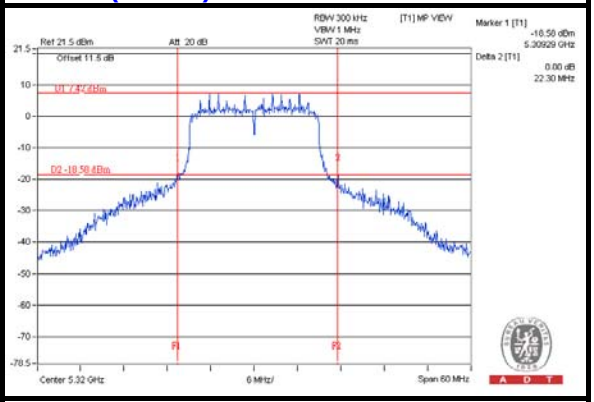
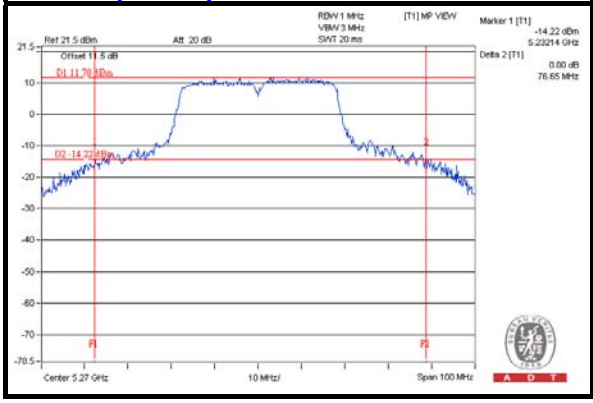
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
52	5260	19.98	19.77	PASS
60	5300	21.98	20.14	PASS
64	5320	19.46	19.69	PASS
100	5500	19.44	18.95	PASS
116	5580	19.27	19.36	PASS
140	5700	19.42	19.20	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
52	5260	21.11	21.30	PASS
60	5300	20.96	20.89	PASS
64	5320	22.30	20.80	PASS
100	5500	20.45	20.13	PASS
116	5580	20.03	20.15	PASS
140	5700	20.44	20.56	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
54	5270	76.65	76.49	PASS
62	5310	48.69	48.88	PASS
102	5510	48.50	45.80	PASS
110	5550	65.14	60.98	PASS
134	5670	48.64	49.73	PASS

SPECTRUM PLOT OF WORST VALUE	
802.11a	**802.11n (20MHz)**
	
802.11n (40MHz)	
	

4.3.8 TEST RESULTS (C)

POWER OUTPUT:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
52	5260	97.275	19.88	24	PASS
60	5300	93.541	19.71	24	PASS
64	5320	40.738	16.10	24	PASS
100	5500	38.548	15.86	24	PASS
116	5580	83.176	19.20	24	PASS
140	5700	30.903	14.90	24	PASS

NOTE:

1. 11dBm + 10log(37.54) = 26.74 dBm > 24dBm
2. 11dBm + 10log(36.56) = 26.63 dBm > 24dBm
3. 11dBm + 10log(28.86) = 25.60 dBm > 24dBm
4. 11dBm + 10log(22.95) = 24.61 dBm > 24dBm
5. 11dBm + 10log(40.26) = 27.05 dBm > 24dBm
6. 11dBm + 10log(25.90) = 26.74 dBm > 24dBm

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
52	5260	96.605	19.85	24	PASS
60	5300	97.499	19.89	24	PASS
64	5320	91.201	19.60	24	PASS
100	5500	36.224	15.59	24	PASS
116	5580	81.283	19.10	24	PASS
140	5700	24.831	13.95	24	PASS

NOTE:

1. 11dBm + 10log(34.83) = 26.42 dBm > 24dBm
2. 11dBm + 10log(37.01) = 26.68 dBm > 24dBm
3. 11dBm + 10log(23.70) = 24.75 dBm > 24dBm
4. 11dBm + 10log(20.72) = 24.16 dBm > 24dBm
5. 11dBm + 10log(37.47) = 26.74 dBm > 24dBm
6. 11dBm + 10log(22.37) = 24.50 dBm > 24dBm

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
54	5270	96.605	19.85	24	PASS
62	5310	17.701	12.48	24	PASS
102	5510	18.493	12.67	24	PASS
110	5550	77.090	18.87	24	PASS
134	5670	43.853	16.42	24	PASS

NOTE:

1. 11dBm + 10log(91.21) = 30.60 dBm > 24dBm
2. 11dBm + 10log(51.09) = 28.08 dBm > 24dBm
3. 11dBm + 10log(50.12) = 28.00 dBm > 24dBm
4. 11dBm + 10log(95.40) = 30.80 dBm > 24dBm
5. 11dBm + 10log(90.74) = 30.58 dBm > 24dBm

26dB BANDWIDTH:

802.11a

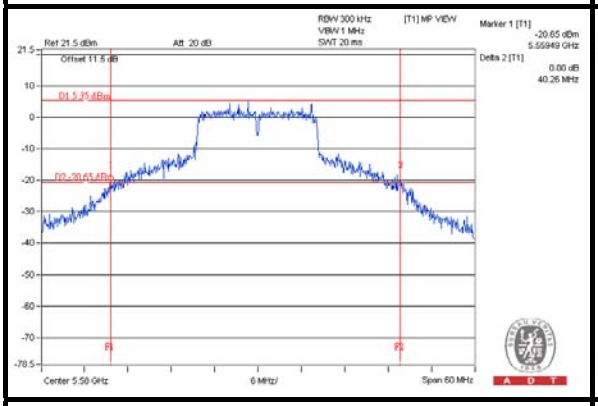
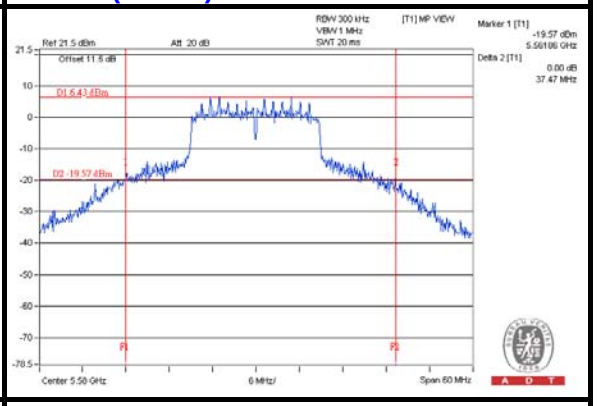
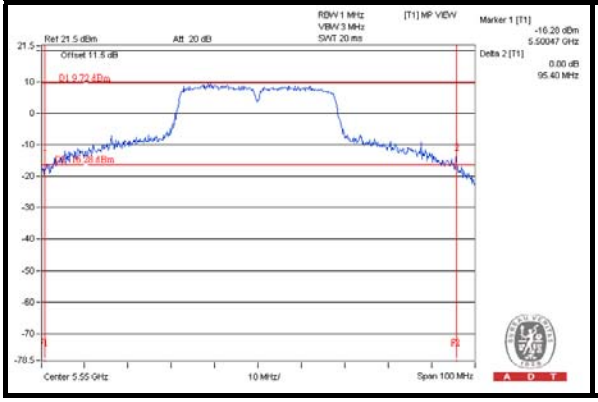
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	37.54	PASS
60	5300	36.56	PASS
64	5320	28.86	PASS
100	5500	22.95	PASS
116	5580	40.26	PASS
140	5700	25.90	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	34.83	PASS
60	5300	37.01	PASS
64	5320	23.70	PASS
100	5500	20.72	PASS
116	5580	37.47	PASS
140	5700	22.37	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
54	5270	91.21	PASS
62	5310	51.09	PASS
102	5510	50.12	PASS
110	5550	95.40	PASS
134	5670	90.74	PASS

SPECTRUM PLOT OF WORST VALUE	
802.11a	**802.11n (20MHz)**
	
802.11n (40MHz)	
	

EUT MAXIMUM CONDUCTED POWER

TEST MOMDE A

802.11a

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	189.720	22.78
5470~5725	203.294	23.08

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	204.944	23.12
5470~5725	206.818	23.16

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	201.474	23.04
5470~5725	205.143	23.12

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

TEST MOMDE C

802.11a

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	97.275	19.88
5470~5725	83.176	19.20

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	97.499	19.89
5470~5725	81.283	19.10

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	96.605	19.85
5470~5725	77.090	18.87

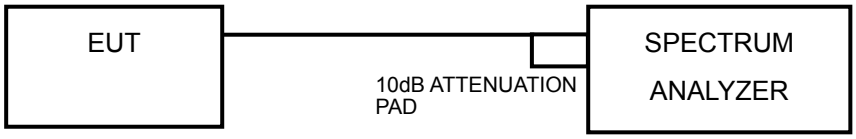
NOTE: Manufacturer provides Transmit Power Control description to meet this requirement.

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

FREQUENCY BAND	LIMIT
5.250 ~ 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 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.
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 (A)

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					
52	5260	4.83	5.18	8.02	0.25	8.27	11	PASS
60	5300	5.83	5.81	8.83	0.25	9.08	11	PASS
64	5320	5.47	4.63	8.08	0.25	8.33	11	PASS
100	5500	3.04	2.40	5.74	0.25	5.99	11	PASS
116	5580	4.95	5.31	8.14	0.25	8.39	11	PASS
140	5700	2.23	2.17	5.21	0.25	5.46	11	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 = 4dBi + 10log(2/2) = 4dBi < 6dBi, so the limit no need to reduced.
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					
52	5260	5.17	4.55	7.88	0.24	8.12	11	PASS
60	5300	6.00	5.52	8.78	0.24	9.02	11	PASS
64	5320	5.21	5.58	8.41	0.24	8.65	11	PASS
100	5500	2.20	2.05	5.14	0.24	5.38	11	PASS
116	5580	5.01	5.00	8.02	0.24	8.26	11	PASS
140	5700	0.98	1.53	4.27	0.24	4.51	11	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 = 4dBi + 10log(2/2) = 4dBi < 6dBi, so the limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

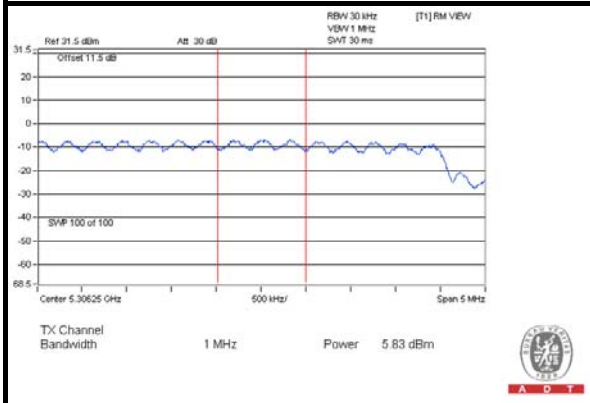
CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)		TOTAL PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	TOTAL PSD WITH DUTY FACTOR (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1					
54	5270	3.05	3.01	6.04	0.41	6.45	11	PASS
62	5310	-0.61	0.08	2.76	0.41	3.17	11	PASS
102	5510	-4.69	-5.13	-1.89	0.41	-1.48	11	PASS
110	5550	2.08	1.30	4.72	0.41	5.13	11	PASS
134	5670	0.43	-0.18	3.15	0.41	3.56	11	PASS

NOTE:

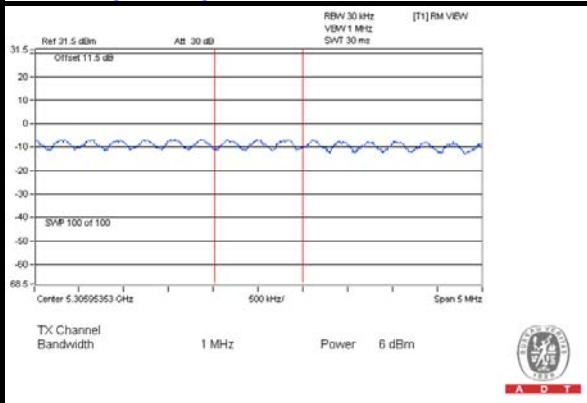
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 4dBi + 10log(2/2) = 4dBi < 6dBi, so the limit no need to reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

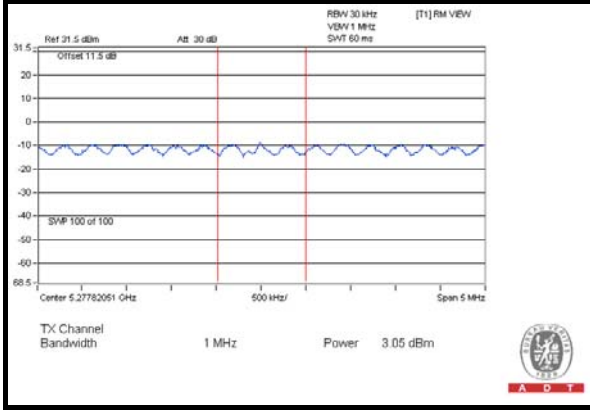
802.11a



802.11n (20MHz)



802.11n (40MHz)



4.4.8 TEST RESULTS (C)

802.11a

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
52	5260	3.98	0.10	4.08	11	PASS
60	5300	4.43	0.10	4.53	11	PASS
64	5320	1.09	0.10	1.19	11	PASS
100	5500	1.23	0.10	1.33	11	PASS
116	5580	4.08	0.10	4.18	11	PASS
140	5700	-0.10	0.10	0.00	11	PASS

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

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
52	5260	4.10	2.37	6.47	11	PASS
60	5300	4.34	2.37	6.71	11	PASS
64	5320	1.40	2.37	3.77	11	PASS
100	5500	-0.05	2.37	2.32	11	PASS
116	5580	3.65	2.37	6.02	11	PASS
140	5700	-1.85	2.37	0.52	11	PASS

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

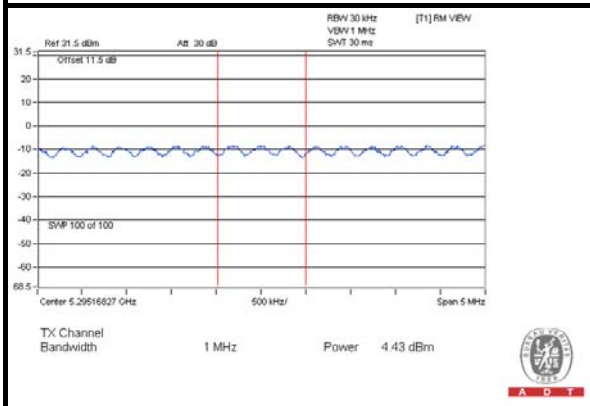
802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
54	5270	1.05	0.96	2.01	11	PASS
62	5310	-5.07	0.96	-4.11	11	PASS
102	5510	-5.58	0.96	-4.62	11	PASS
110	5550	0.60	0.96	1.56	11	PASS
134	5670	-1.64	0.96	-0.68	11	PASS

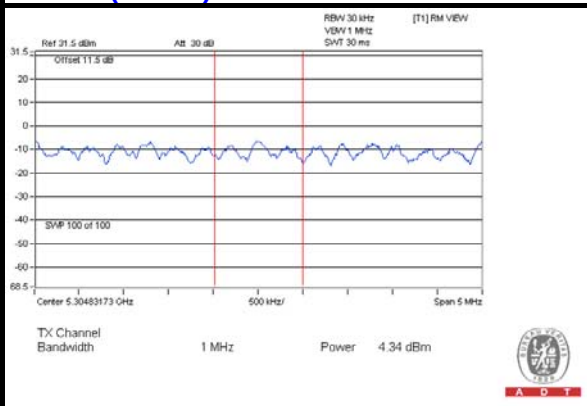
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

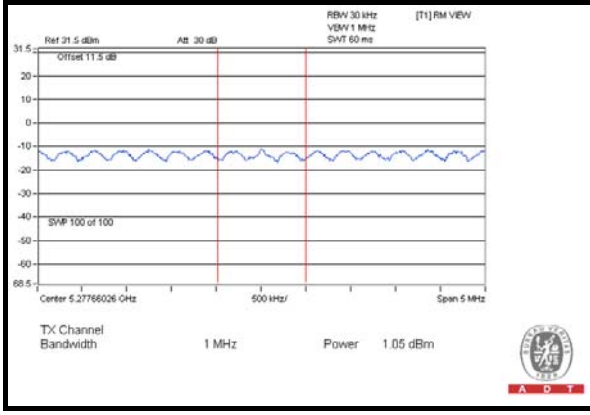
802.11a



802.11n (20MHz)



802.11n (40MHz)

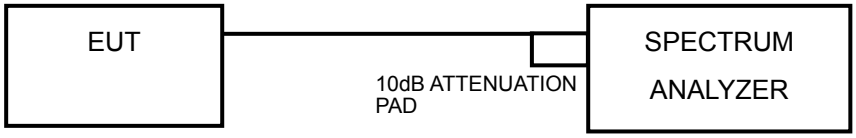


4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

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

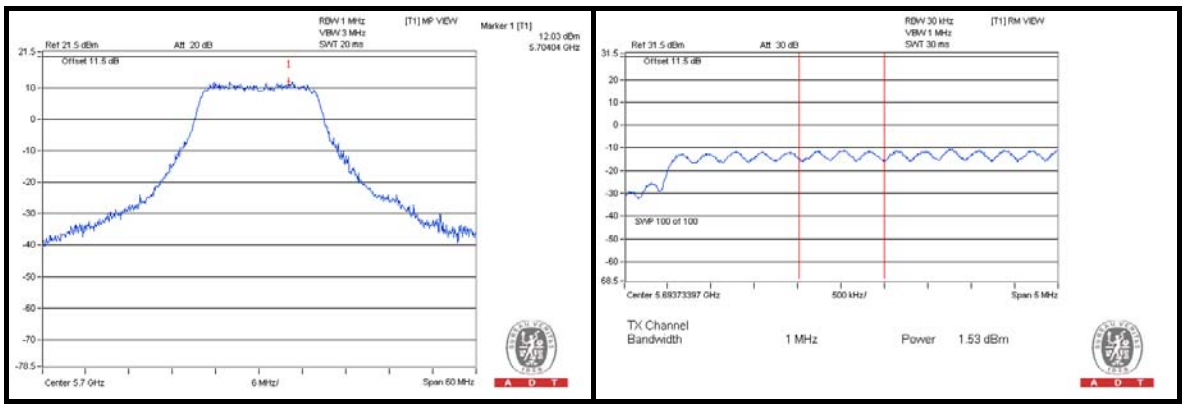
No deviation.

4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

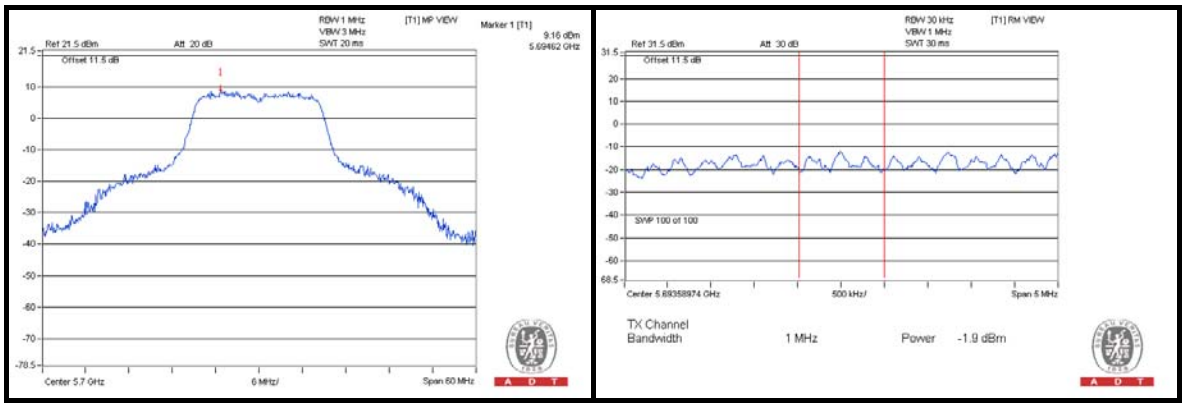
4.5.7 TEST RESULTS (A)

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	11.24	2.23	2.48	8.76	13	PASS
	QPSK		12.03	1.53	1.98	10.05	13	PASS
	16QAM		12.35	1.46	2.32	10.03	13	PASS
	64QAM		10.58	1.79	2.03	8.55	13	PASS
802.11n (20MHz)	BPSK	5700	9.68	0.98	1.22	8.46	13	PASS
	QPSK		11.77	1.56	1.97	9.80	13	PASS
	16QAM		12.03	1.16	2.04	9.99	13	PASS
	64QAM		12.52	0.93	2.48	10.04	13	PASS
802.11n (40MHz)	BPSK	5700	9.04	0.43	0.84	8.20	13	PASS
	QPSK		10.86	-0.19	1.04	9.82	13	PASS
	16QAM		10.73	-0.25	1.86	8.87	13	PASS
	64QAM		11.02	-0.22	3.88	7.14	13	PASS



4.5.8 TEST RESULTS (C)

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	8.78	-0.1	0	8.78	13	PASS
	QPSK		9.45	-0.57	-0.37	9.82	13	PASS
	16QAM		9.77	-1.21	0.55	9.22	13	PASS
	64QAM		9.21	-0.65	-0.33	9.54	13	PASS
802.11n (20MHz)	BPSK	5700	8.89	-1.85	0.52	8.37	13	PASS
	QPSK		9.16	-1.9	-1.13	10.29	13	PASS
	16QAM		9.08	-1.98	-1.21	10.29	13	PASS
	64QAM		8.39	-2.02	-1.25	9.64	13	PASS
802.11n (40MHz)	BPSK	5700	8.25	-1.64	-0.68	8.93	13	PASS
	QPSK		8.45	-2.63	-1.53	9.98	13	PASS
	16QAM		8.47	-2.63	-1.53	10	13	PASS
	64QAM		8.44	-2.66	-1.56	10	13	PASS

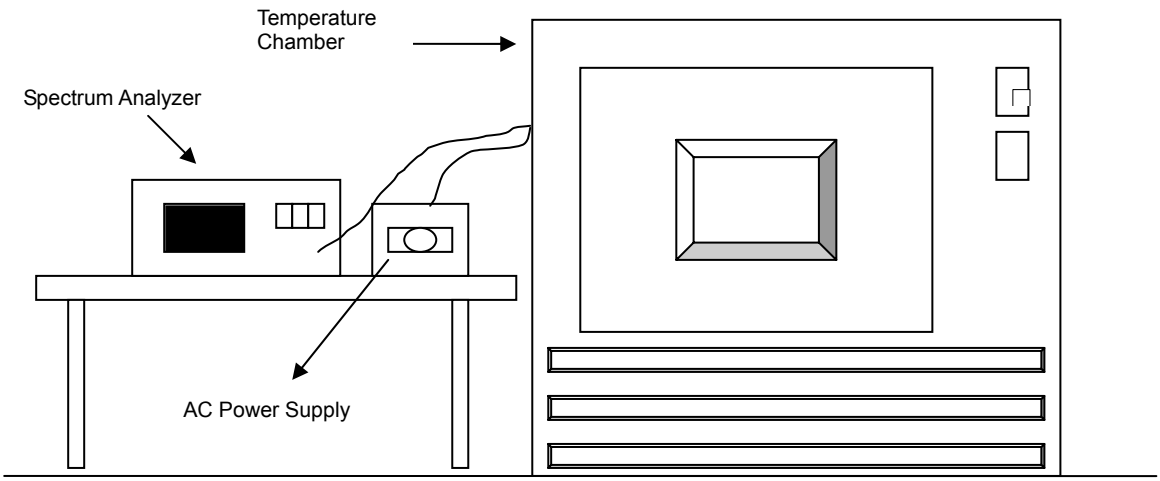


4.6 FREQUENCY STABILITY

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 (A)

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	5319.9698	-0.00057	5319.9730	-0.00051	5319.9768	-0.00044	5319.9725	-0.00052
40	120	5319.9897	-0.00019	5319.9843	-0.00030	5319.9914	-0.00016	5319.9813	-0.00035
30	120	5320.0161	0.00030	5320.0184	0.00035	5320.0100	0.00019	5320.0144	0.00027
20	120	5319.9917	-0.00016	5319.9975	-0.00005	5320.0002	0.00000	5319.9918	-0.00015
10	120	5320.0196	0.00037	5320.0206	0.00039	5320.0162	0.00030	5320.0226	0.00042
0	120	5320.0240	0.00045	5320.0220	0.00041	5320.0201	0.00038	5320.0166	0.00031
-10	120	5320.0166	0.00031	5320.0132	0.00025	5320.0190	0.00036	5320.0235	0.00044
-20	120	5320.0082	0.00015	5320.0132	0.00025	5320.0121	0.00023	5320.0072	0.00014
-30	120	5319.9779	-0.00042	5319.9846	-0.00029	5319.9799	-0.00038	5319.9813	-0.00035

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	5319.9926	-0.00014	5319.9975	-0.00005	5320.001	0.00002	5319.9923	-0.00014
	120	5319.9917	-0.00016	5319.9975	-0.00005	5320.0002	0.00000	5319.9918	-0.00015
	102	5319.9927	-0.00014	5319.9978	-0.00004	5319.9999	0.00000	5319.9911	-0.00017

4.6.8 TEST RESULTS (C)

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	5319.9782	-0.00041	5319.9734	-0.00050	5319.9728	-0.00051	5319.9700	-0.00056
40	120	5319.9811	-0.00036	5319.9810	-0.00036	5319.9840	-0.00030	5319.9799	-0.00038
30	120	5319.9960	-0.00008	5320.0044	0.00008	5319.9987	-0.00002	5320.0019	0.00004
20	120	5320.0092	0.00017	5320.0076	0.00014	5319.9996	-0.00001	5320.0005	0.00001
10	120	5320.0090	0.00017	5320.0055	0.00010	5320.0050	0.00009	5320.0032	0.00006
0	120	5320.0060	0.00011	5320.0047	0.00009	5320.0034	0.00006	5320.0127	0.00024
-10	120	5319.9842	-0.00030	5319.9939	-0.00011	5319.9918	-0.00015	5319.9850	-0.00028
-20	120	5320.0209	0.00039	5320.0244	0.00046	5320.0270	0.00051	5320.0209	0.00039
-30	120	5320.0051	0.00010	5320.0062	0.00012	5320.0046	0.00009	5320.0053	0.00010

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	5320.0082	0.00015	5320.0077	0.00014	5319.9989	-0.00002	5320.0004	0.00001
	120	5320.0092	0.00017	5320.0076	0.00014	5319.9996	-0.00001	5320.0005	0.00001
	102	5320.0084	0.00016	5320.0079	0.00015	5319.9995	-0.00001	5320.001	0.00002

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:
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Hwa Ya EMC/RF/Safety Telecom Lab:
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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.

---END---