



FCC TEST REPORT (15.407)

REPORT NO.: RF110322C09A

MODEL NO.: AU-E-SA-5X-1S-M7000
(refer to item 3.1 for more detail)

FCC ID: LKT-BULTRA-5

RECEIVED: May 19, 2011

TESTED: Nov. 07 ~ Dec. 20, 2011

ISSUED: Dec. 22, 2011

APPLICANT: Alvarion Ltd.

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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.

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TABLE OF CONTENTS

RELEASE CONTROL RECORD	4
1. CERTIFICATION	5
2. SUMMARY OF TEST RESULTS	6
2.1 MEASUREMENT UNCERTAINTY	6
3. GENERAL INFORMATION	7
3.1 GENERAL DESCRIPTION OF EUT	7
3.2 DESCRIPTION OF TEST MODES	8
3.2.1 CONFIGURATION OF SYSTEM UNDER TEST	9
3.2.2 DESCRIPTION OF SUPPORT UNITS	9
3.2.3 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL	10
3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS	12
4. TEST TYPES AND RESULTS	13
4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT	13
4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT	13
4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS	13
4.1.3 TEST INSTRUMENTS	14
4.1.4 TEST PROCEDURES	15
4.1.5 DEVIATION FROM TEST STANDARD	15
4.1.6 TEST SETUP	16
4.1.7 EUT OPERATING CONDITION	16
4.1.8 TEST RESULTS	17
4.2 CONDUCTED EMISSION MEASUREMENT	39
4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	39
4.2.2 TEST INSTRUMENTS	39
4.2.3 TEST PROCEDURES	40
4.2.4 DEVIATION FROM TEST STANDARD	40
4.2.5 TEST SETUP	41
4.2.6 EUT OPERATING CONDITIONS	41
4.2.7 TEST RESULTS	42
4.3 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT	46
4.3.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT	46
4.3.2 TEST SETUP	46
4.3.3 TEST INSTRUMENTS	46
4.3.4 TEST PROCEDURE	47
4.3.5 DEVIATION FROM TEST STANDARD	47
4.3.6 EUT OPERATING CONDITIONS	47
4.3.7 TEST RESULTS	48
4.4 PEAK POWER EXCURSION MEASUREMENT	50
4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT	50
4.4.2 TEST SETUP	50
4.4.3 TEST INSTRUMENTS	50
4.4.4 TEST PROCEDURE	50
4.4.5 DEVIATION FROM TEST STANDARD	50
4.4.6 EUT OPERATING CONDITIONS	50
4.4.7 TEST RESULTS	51
4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT	57
4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT	57
4.5.2 TEST SETUP	57
4.5.3 TEST INSTRUMENTS	57



4.5.4	TEST PROCEDURES	57
4.5.5	DEVIATION FROM TEST STANDARD.....	57
4.5.6	EUT OPERATING CONDITIONS	57
4.5.7	TEST RESULTS	58
4.6	FREQUENCY STABILITY.....	60
4.6.1	LIMITS OF FREQUENCY STABILITY MEASUREMENT	60
4.6.2	TEST SETUP.....	60
4.6.3	TEST INSTRUMENTS.....	60
4.6.4	TEST PROCEDURE.....	61
4.6.5	DEVIATION FROM TEST STANDARD.....	61
4.6.6	EUT OPERATING CONDITION.....	61
4.6.7	TEST RESULTS	62
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION.....	63
6.	INFORMATION ON THE TESTING LABORATORIES	64
7.	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB.....	65



A D T

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	N/A	Dec. 22, 2011



1. CERTIFICATION

PRODUCT: BreezeULTRA

MODEL: AU-E-SA-5X-1S-M7000 (refer to item 3.1 for more detail)

BRAND: Alvarion

APPLICANT: Alvarion Ltd.

TESTED: Nov. 07 ~ Dec. 20, 2011

TEST SAMPLE: ENGINEERING SAMPLE

STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**

ANSI C63.4-2003

ANSI C63.10-2009

The above equipment (Model: AU-E-SA-5X-1S-M7000) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Andrea Hsia , DATE: Dec. 22, 2011
Andrea Hsia / Specialist

APPROVED BY : Gary Chang , DATE: Dec. 22, 2011
Gary Chang / Technical Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -17.07dB at 0.545MHz.
15.407(b/1/2/3) (b)(5)	Electric Field Strength Spurious Emissions, 30MHz ~ 40000MHz	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 99.89MHz, 129.06MHz & 5470.00MHz.
15.407(a/1/2/3)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2/3)	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 MMCX.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.34 dB
	200MHz ~1000MHz	3.35 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	BreezeULTRA
MODEL NO.	AU-E-SA-5X-1S-M7000 (refer to note as below)
FCC ID	LKT-BULTRA-5
POWER SUPPLY	5Vdc (host equipment)
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 300.0Mbps
OPERATING FREQUENCY	5270 ~ 5330MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5270 ~ 5330MHz: 3 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5500 ~ 5700MHz: 4 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz)
OUTPUT POWER	4.8mW for 5270 ~ 5330MHz 4.9mW for 5500 ~ 5700MHz
ANTENNA TYPE	Matrix antenna with 23dBi gain
ANTENNA CONNECTOR	MMCX
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	NA

NOTE:

- The models as below are identical to each other except for their model designation and brand name due to marketing purpose.

MODEL
BU/RB-B350-5X-P6000
BU/RB-B600-5X-P6000
BU/RB-B350D-5X-P6000
BU/RB-B350D-5X-LX-P6000
BU/RB-B600D-5X-P6000
AU-E-SA-5X-1S-M7000
AU-E-SA-5X-2S-M7000
AU-E-SA-5X-3S-M7000
BU/RB-B600 AU-E-5X-1S
BU/RB-B350 AU-E-5X-2S

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

Frequency Band (MHz)	5270~5330	5500~5700
802.11a	√	√
802.11n (20MHz)	√	√
802.11n (40MHz)	√	√

3. The EUT provides two completed transmitters and two receivers.

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

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

3.2 DESCRIPTION OF TEST MODES

FOR 5270 ~ 5330MHz

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

FREQUENCY
5270 MHz
5300 MHz
5330 MHz

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

FREQUENCY
5270 MHz
5310 MHz

FOR 5500 ~ 5700MHz

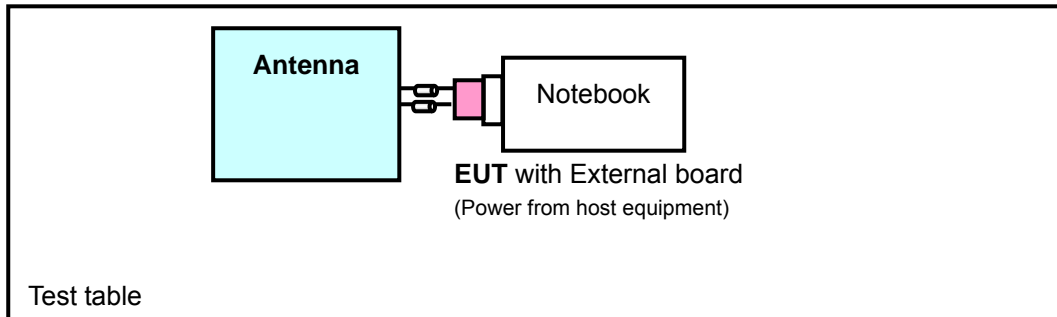
4 channels are provided for 802.11a, 802.11n (20MHz):

FREQUENCY
5500 MHz
5585 MHz
5665 MHz
5700 MHz

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

FREQUENCY
5510 MHz
5575 MHz
5685 MHz

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	DELL	D531	CN-0XM006-48643-81U-2973	QDS-BRCM1020

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

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

3.2.3 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

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

RADIATED EMISSION TEST (ABOVE 1GHz):

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

MODE	FREQ. BAND (MHz)	TESTED FREQUENCY (MHz)	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5270-5330	5270, 5300, 5330	OFDM	BPSK	6.0
802.11n (20MHz)		5270, 5300, 5330	OFDM	BPSK	7.2
802.11n (40MHz)		5270, 5310	OFDM	BPSK	15.0
802.11a	5500-5700	5500, 5585, 5665, 5700	OFDM	BPSK	6.0
802.11n (20MHz)		5500, 5585, 5665, 5700	OFDM	BPSK	7.2
802.11n (40MHz)		5510, 5575, 5685	OFDM	BPSK	15.0

RADIATED EMISSION TEST (BELOW 1GHz):

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

MODE	FREQ. BAND (MHz)	TESTED FREQUENCY (MHz)	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5270-5330	5270	OFDM	BPSK	6.0
802.11a	5500-5700	5500	OFDM	BPSK	6.0

POWER LINE CONDUCTED EMISSION TEST:

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

MODE	FREQ. BAND (MHz)	TESTED FREQUENCY (MHz)	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5270-5330	5270	OFDM	BPSK	6.0
802.11a	5500-5700	5500	OFDM	BPSK	6.0

BANDEDGE MEASUREMENT:

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

MODE	FREQ. BAND (MHz)	TESTED FREQUENCY (MHz)	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5270-5330	5270, 5330	OFDM	BPSK	6.0
802.11n (20MHz)		5270, 5330	OFDM	BPSK	7.2
802.11n (40MHz)		5270, 5310	OFDM	BPSK	15.0
802.11a	5500-5700	5500, 5700	OFDM	BPSK	6.0
802.11n (20MHz)		5500, 5700	OFDM	BPSK	7.2
802.11n (40MHz)		5510, 5685	OFDM	BPSK	15.0

ANTENNA PORT CONDUCTED MEASUREMENT:

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

MODE	FREQ. BAND (MHz)	TESTED FREQUENCY (MHz)	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5270-5330	5270, 5300, 5330	OFDM	BPSK	6.0
802.11n (20MHz)		5270, 5300, 5330	OFDM	BPSK	7.2
802.11n (40MHz)		5270, 5310	OFDM	BPSK	15.0
802.11a	5500-5700	5500, 5585, 5665, 5700	OFDM	BPSK	6.0
802.11n (20MHz)		5500, 5585, 5665, 5700	OFDM	BPSK	7.2
802.11n (40MHz)		5510, 5575, 5685	OFDM	BPSK	15.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE≥1G	25deg. C, 65%RH	5Vdc	Kay Wu
RE<1G	25deg. C, 68%RH	5Vdc	David Huang
PLC	25deg. C, 65%RH	5Vdc	Match Tsui
APCM	25deg. C, 70%RH	5Vdc	Match Tsui



3.3 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)

ANSI C63.4-2003

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

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

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. As shown in 15.35(b), 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

FREQUENCIES (MHz)	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBµV/m) *NOTE 3
	PK	PK
5260 ~ 5350	-27	68.3
5470 ~ 5725	-27	68.3

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

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



4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESIB7	100212	Aug. 02, 2011	Aug. 01, 2012
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Jul. 21, 2011	Jul. 20, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Apr. 13, 2011	Apr. 12, 2012
HORN Antenna SCHWARZBECK	9120D	209	Aug. 25, 2011	Aug. 24, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 20, 2011	Jul. 19, 2012
Preamplifier Agilent	8447D	2944A10633	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent	8449B	3008A01964	Oct. 29, 2011	Oct. 28, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250723/4	Aug. 30, 2011	Aug. 29, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 106	12738/6+309224/4	Aug. 30, 2011	Aug. 29, 2012
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table ADT.	TT100.	TT93021703	NA	NA
Turn Table Controller ADT.	SC100.	SC93021703	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 29, 2011	Oct. 28, 2012
High Speed Peak Power Meter	ML2495A	0824011	Aug. 04, 2011	Aug. 03, 2012
Power Sensor	MA2411B	0738171	Aug. 04, 2011	Aug. 03, 2012

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Chamber 3.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 988962.
 5. 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 chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

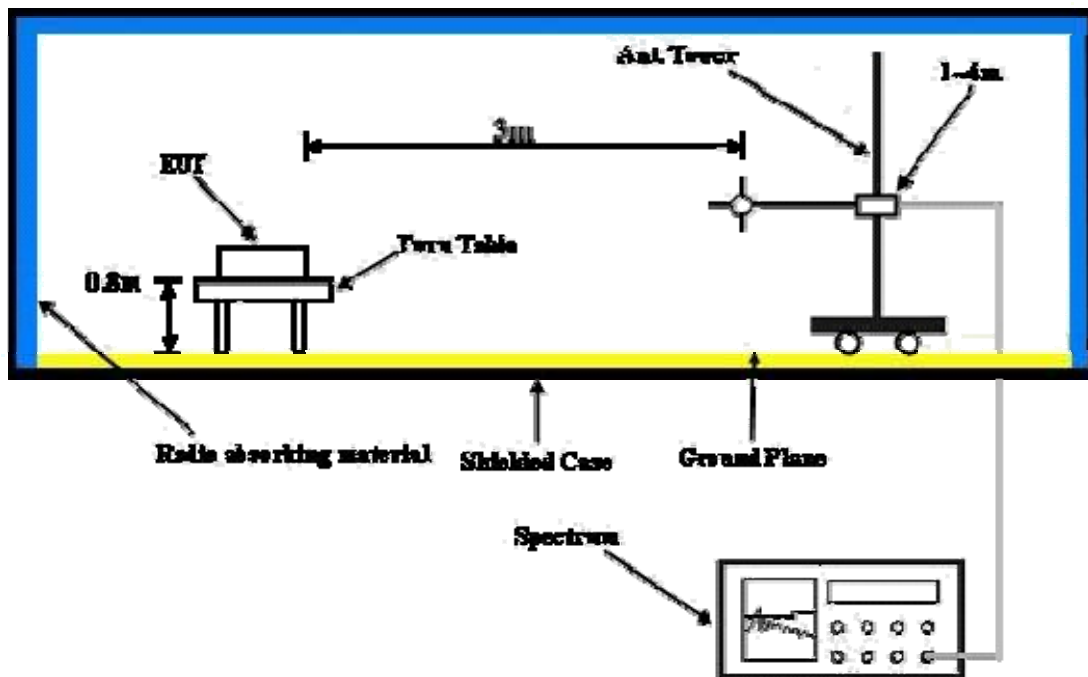
NOTE:

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

4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

4.1.6 TEST SETUP



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

4.1.7 EUT OPERATING CONDITION

- a. Plugged the EUT to notebook via external board and placed on a testing table.
- b. The notebook ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.



4.1.8 TEST RESULTS

ABOVE 1GHz DATA: 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5270MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	57.2 PK	74.0	-16.8	1.00 H	353	20.50	36.70
2	4752.00	49.4 AV	54.0	-4.6	1.00 H	353	12.70	36.70
3	4840.00	56.1 PK	74.0	-17.9	1.00 H	353	19.20	36.90
4	4840.00	47.7 AV	54.0	-6.3	1.00 H	353	10.80	36.90
5	*5270.00	111.6 PK			1.00 H	354	74.00	37.60
6	*5270.00	100.5 AV			1.00 H	354	62.90	37.60
7	#10540.00	56.7 PK	68.3	-11.6	1.00 H	353	8.20	48.50
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	4752.00	53.2 PK	74.0	-20.8	1.00 V	354	16.50	36.70
2	4752.00	42.9 AV	54.0	-11.1	1.00 V	354	6.20	36.70
3	4840.00	55.8 PK	74.0	-18.2	1.00 V	354	18.90	36.90
4	4840.00	42.9 AV	54.0	-11.1	1.00 V	354	6.00	36.90
5	*5270.00	115.1 PK			1.00 V	353	77.50	37.60
6	*5270.00	102.4 AV			1.00 V	353	64.80	37.60
7	#10540.00	56.7 PK	68.3	-11.6	1.00 V	333	8.20	48.50

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5300MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	61.5 PK	74.0	-12.5	1.00 H	351	24.80	36.70
2	4752.00	50.8 AV	54.0	-3.2	1.00 H	351	14.10	36.70
3	4840.00	60.4 PK	74.0	-13.6	1.00 H	351	23.50	36.90
4	4840.00	48.0 AV	54.0	-6.0	1.00 H	351	11.10	36.90
5	*5300.00	114.6 PK			1.00 H	351	76.90	37.70
6	*5300.00	102.9 AV			1.00 H	351	65.20	37.70
7	10600.00	57.0 PK	74.0	-17.0	1.00 H	325	8.40	48.60
8	10600.00	44.8 AV	54.0	-9.2	1.00 H	325	-3.80	48.60
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	4752.00	58.2 PK	74.0	-15.8	1.00 V	352	21.50	36.70
2	4752.00	44.6 AV	54.0	-9.4	1.00 V	352	7.90	36.70
3	4840.00	59.7 PK	74.0	-14.3	1.00 V	352	22.80	36.90
4	4840.00	45.4 AV	54.0	-8.6	1.00 V	352	8.50	36.90
5	*5300.00	117.5 PK			1.00 V	352	79.80	37.70
6	*5300.00	104.9 AV			1.00 V	352	67.20	37.70
7	10600.00	57.0 PK	74.0	-17.0	1.00 V	323	8.40	48.60
8	10600.00	44.9 AV	54.0	-9.1	1.00 V	323	-3.70	48.60

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5330MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	57.2 PK	74.0	-16.8	1.00 H	352	20.50	36.70
2	4752.00	49.4 AV	54.0	-4.6	1.00 H	352	12.70	36.70
3	4840.00	56.1 PK	74.0	-17.9	1.00 H	352	19.20	36.90
4	4840.00	47.7 AV	54.0	-6.3	1.00 H	352	10.80	36.90
5	*5330.00	110.0 PK			1.00 H	352	72.30	37.70
6	*5330.00	97.9 AV			1.00 H	352	60.20	37.70
7	5350.00	64.0 PK	74.0	-10.0	1.00 H	352	26.20	37.80
8	5350.00	49.6 AV	54.0	-4.4	1.00 H	352	11.80	37.80
9	10660.00	56.9 PK	74.0	-17.1	1.00 H	335	8.20	48.70
10	10660.00	44.4 AV	54.0	-9.6	1.00 H	335	-4.30	48.70
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	4752.00	53.2 PK	74.0	-20.8	1.00 V	354	16.50	36.70
2	4752.00	42.9 AV	54.0	-11.1	1.00 V	354	6.20	36.70
3	4840.00	55.8 PK	74.0	-18.2	1.00 V	354	18.90	36.90
4	4840.00	42.9 AV	54.0	-11.1	1.00 V	354	6.00	36.90
5	*5330.00	113.9 PK			1.00 V	354	76.20	37.70
6	*5330.00	101.7 AV			1.00 V	354	64.00	37.70
7	5350.00	68.9 PK	74.0	-5.1	1.00 V	354	31.10	37.80
8	5350.00	52.7 AV	54.0	-1.3	1.00 V	354	14.90	37.80
9	10660.00	56.9 PK	74.0	-17.1	1.00 V	355	8.20	48.70
10	10660.00	44.4 AV	54.0	-9.6	1.00 V	355	-4.30	48.70

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5500MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	59.0 PK	74.0	-15.0	1.00 H	353	22.30	36.70
2	4752.00	48.6 AV	54.0	-5.4	1.00 H	353	11.90	36.70
3	4840.00	58.9 PK	74.0	-15.1	1.00 H	353	22.00	36.90
4	4840.00	47.6 AV	54.0	-6.4	1.00 H	353	10.70	36.90
5	5460.00	61.5 PK	74.0	-12.5	1.00 H	353	23.60	37.90
6	5460.00	48.8 AV	54.0	-5.2	1.00 H	353	10.90	37.90
7	#5470.00	63.9 PK	68.3	-4.4	1.00 H	353	26.00	37.90
8	*5500.00	113.6 PK			1.00 H	353	75.60	38.00
9	*5500.00	101.9 AV			1.00 H	353	63.90	38.00
10	11000.00	58.3 PK	74.0	-15.7	1.00 H	355	9.10	49.20
11	11000.00	45.5 AV	54.0	-8.5	1.00 H	355	-3.70	49.20

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	4752.00	56.3 PK	74.0	-17.7	1.00 V	353	19.60	36.70
2	4752.00	43.3 AV	54.0	-10.7	1.00 V	353	6.60	36.70
3	4840.00	56.7 PK	74.0	-17.3	1.00 V	353	19.80	36.90
4	4840.00	43.0 AV	54.0	-11.0	1.00 V	353	6.10	36.90
5	5460.00	64.1 PK	74.0	-9.9	1.00 V	354	26.20	37.90
6	5460.00	51.2 AV	54.0	-2.8	1.00 V	354	13.30	37.90
7	#5470.00	65.1 PK	68.3	-3.2	1.00 V	353	27.20	37.90
8	*5500.00	115.5 PK			1.00 V	353	77.50	38.00
9	*5500.00	103.3 AV			1.00 V	353	65.30	38.00
10	11000.00	58.3 PK	74.0	-15.7	1.00 V	353	9.10	49.20
11	11000.00	45.5 AV	54.0	-8.5	1.00 V	353	-3.70	49.20

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5585MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	58.1 PK	74.0	-15.9	1.00 H	351	21.40	36.70
2	4752.00	43.6 AV	54.0	-10.4	1.00 H	351	6.90	36.70
3	4840.00	59.7 PK	74.0	-14.3	1.00 H	351	22.80	36.90
4	4840.00	45.5 AV	54.0	-8.5	1.00 H	351	8.60	36.90
5	*5585.00	114.5 PK			1.00 H	351	76.40	38.10
6	*5585.00	102.7 AV			1.00 H	351	64.60	38.10
7	11170.00	57.7 PK	74.0	-16.3	1.00 H	321	8.60	49.10
8	11170.00	45.7 AV	54.0	-8.3	1.00 H	321	-3.40	49.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	61.5 PK	74.0	-12.5	1.00 V	352	24.80	36.70
2	4752.00	50.8 AV	54.0	-3.2	1.00 V	352	14.10	36.70
3	4840.00	60.3 PK	74.0	-13.7	1.00 V	352	23.40	36.90
4	4840.00	47.8 AV	54.0	-6.2	1.00 V	352	10.90	36.90
5	*5585.00	116.3 PK			1.00 V	352	78.20	38.10
6	*5585.00	103.5 AV			1.00 V	352	65.40	38.10
7	11170.00	57.7 PK	74.0	-16.3	1.00 V	322	8.60	49.10
8	11170.00	45.7 AV	54.0	-8.3	1.00 V	322	-3.40	49.10

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5665MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	61.5 PK	74.0	-12.5	1.00 H	353	24.80	36.70
2	4752.00	50.8 AV	54.0	-3.2	1.00 H	353	14.10	36.70
3	4840.00	60.4 PK	74.0	-13.6	1.00 H	353	23.50	36.90
4	4840.00	48.0 AV	54.0	-6.0	1.00 H	353	11.10	36.90
5	*5665.00	113.6 PK			1.00 H	353	75.30	38.30
6	*5665.00	101.6 AV			1.00 H	353	63.30	38.30
7	11330.00	57.8 PK	74.0	-16.2	1.00 H	312	8.80	49.00
8	11330.00	45.7 AV	54.0	-8.3	1.00 H	312	-3.30	49.00
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	4752.00	58.2 PK	74.0	-15.8	1.00 V	353	21.50	36.70
2	4752.00	44.2 AV	54.0	-9.8	1.00 V	353	7.50	36.70
3	4840.00	59.7 PK	74.0	-14.3	1.00 V	353	22.80	36.90
4	4840.00	45.4 AV	54.0	-8.6	1.00 V	353	8.50	36.90
5	*5665.00	115.3 PK			1.00 V	353	77.00	38.30
6	*5665.00	102.1 AV			1.00 V	353	63.80	38.30
7	11330.00	57.8 PK	74.0	-16.2	1.00 V	321	8.80	49.00
8	11330.00	45.6 AV	54.0	-8.4	1.00 V	321	-3.40	49.00

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5700MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	60.7 PK	74.0	-13.3	1.00 H	352	24.00	36.70
2	4752.00	49.6 AV	54.0	-4.4	1.00 H	352	12.90	36.70
3	4840.00	61.6 PK	74.0	-12.4	1.00 H	352	24.70	36.90
4	4840.00	49.0 AV	54.0	-5.0	1.00 H	352	12.10	36.90
5	5460.00	64.5 PK	74.0	-9.5	1.00 H	352	26.60	37.90
6	5460.00	51.9 AV	54.0	-2.1	1.00 H	352	14.00	37.90
7	*5700.00	112.2 PK			1.00 H	352	73.90	38.30
8	*5700.00	100.8 AV			1.00 H	352	62.50	38.30
9	#5725.00	66.2 PK	68.3	-2.1	1.00 H	352	27.80	38.40
10	11400.00	57.5 PK	74.0	-16.5	1.00 H	333	8.50	49.00
11	11400.00	44.1 AV	54.0	-9.9	1.00 H	333	-4.90	49.00
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	4752.00	57.9 PK	74.0	-16.1	1.00 V	351	21.20	36.70
2	4752.00	44.2 AV	54.0	-9.8	1.00 V	351	7.50	36.70
3	4840.00	58.2 PK	74.0	-15.8	1.00 V	351	21.30	36.90
4	4840.00	44.0 AV	54.0	-10.0	1.00 V	351	7.10	36.90
5	5460.00	67.0 PK	74.0	-7.0	1.00 V	351	29.10	37.90
6	5460.00	52.8 AV	54.0	-1.2	1.00 V	351	14.90	37.90
7	*5700.00	115.3 PK			1.00 V	351	77.00	38.30
8	*5700.00	102.0 AV			1.00 V	351	63.70	38.30
9	#5725.00	64.6 PK	68.3	-3.7	1.00 V	351	26.20	38.40
10	11400.00	57.4 PK	74.0	-16.6	1.00 V	323	8.40	49.00
11	11400.00	45.3 AV	54.0	-8.7	1.00 V	323	-3.70	49.00

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



802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5270MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	57.8 PK	74.0	-16.2	1.00 H	354	21.10	36.70
2	4752.00	49.1 AV	54.0	-4.9	1.00 H	354	12.40	36.70
3	4840.00	56.6 PK	74.0	-17.4	1.00 H	354	19.70	36.90
4	4840.00	46.5 AV	54.0	-7.5	1.00 H	354	9.60	36.90
5	*5270.00	111.3 PK			1.00 H	352	73.70	37.60
6	*5270.00	100.2 AV			1.00 H	352	62.60	37.60
7	#10540.00	56.7 PK	68.3	-11.6	1.00 H	353	8.20	48.50
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	4752.00	54.5 PK	74.0	-19.5	1.00 V	352	17.80	36.70
2	4752.00	42.7 AV	54.0	-11.3	1.00 V	352	6.00	36.70
3	4840.00	56.9 PK	74.0	-17.1	1.00 V	352	20.00	36.90
4	4840.00	42.8 AV	54.0	-11.2	1.00 V	352	5.90	36.90
5	*5270.00	113.7 PK			1.00 V	352	76.10	37.60
6	*5270.00	102.3 AV			1.00 V	352	64.70	37.60
7	#10540.00	56.7 PK	68.3	-11.6	1.00 V	323	8.20	48.50

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5300MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	61.3 PK	74.0	-12.7	1.00 H	351	24.60	36.70
2	4752.00	50.8 AV	54.0	-3.2	1.00 H	351	14.10	36.70
3	4840.00	60.5 PK	74.0	-13.5	1.00 H	351	23.60	36.90
4	4840.00	47.8 AV	54.0	-6.2	1.00 H	351	10.90	36.90
5	*5300.00	113.9 PK			1.00 H	351	76.20	37.70
6	*5300.00	72.5 AV			1.00 H	351	34.80	37.70
7	10600.00	57.0 PK	74.0	-17.0	1.00 H	323	8.40	48.60
8	10600.00	44.3 AV	54.0	-9.7	1.00 H	323	-4.30	48.60
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	4752.00	58.2 PK	74.0	-15.8	1.00 V	352	21.50	36.70
2	4752.00	44.6 AV	54.0	-9.4	1.00 V	352	7.90	36.70
3	4840.00	59.7 PK	74.0	-14.3	1.00 V	352	22.80	36.90
4	4840.00	45.4 AV	54.0	-8.6	1.00 V	352	8.50	36.90
5	*5300.00	116.2 PK			1.00 V	352	78.50	37.70
6	*5300.00	104.2 AV			1.00 V	352	66.50	37.70
7	10600.00	57.1 PK	74.0	-16.9	1.00 V	332	8.50	48.60
8	10600.00	44.9 AV	54.0	-9.1	1.00 V	332	-3.70	48.60

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5330MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	56.2 PK	74.0	-17.8	1.00 H	352	19.50	36.70
2	4752.00	48.9 AV	54.0	-5.1	1.00 H	352	12.20	36.70
3	4840.00	56.1 PK	74.0	-17.9	1.00 H	352	19.20	36.90
4	4840.00	47.6 AV	54.0	-6.4	1.00 H	352	10.70	36.90
5	*5330.00	108.4 PK			1.00 H	352	70.70	37.70
6	*5330.00	97.4 AV			1.00 H	352	59.70	37.70
7	5350.00	65.3 PK	74.0	-8.7	1.00 H	352	27.50	37.80
8	5350.00	49.7 AV	54.0	-4.3	1.00 H	352	11.90	37.80
9	10660.00	56.9 PK	74.0	-17.1	1.00 H	335	8.20	48.70
10	10660.00	44.4 AV	54.0	-9.6	1.00 H	335	-4.30	48.70
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	4752.00	53.2 PK	74.0	-20.8	1.00 V	354	16.50	36.70
2	4752.00	42.9 AV	54.0	-11.1	1.00 V	354	6.20	36.70
3	4840.00	55.4 PK	74.0	-18.6	1.00 V	354	18.50	36.90
4	4840.00	43.0 AV	54.0	-11.0	1.00 V	354	6.10	36.90
5	*5330.00	112.2 PK			1.00 V	354	74.50	37.70
6	*5330.00	100.9 AV			1.00 V	354	63.20	37.70
7	5350.00	70.0 PK	74.0	-4.0	1.00 V	354	32.20	37.80
8	5350.00	52.7 AV	54.0	-1.3	1.00 V	354	14.90	37.80
9	10660.00	56.9 PK	74.0	-17.1	1.00 V	333	8.20	48.70
10	10660.00	45.0 AV	54.0	-9.0	1.00 V	333	-3.70	48.70

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5500MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	59.2 PK	74.0	-14.8	1.00 H	353	22.50	36.70
2	4752.00	49.2 AV	54.0	-4.8	1.00 H	353	12.50	36.70
3	4840.00	58.9 PK	74.0	-15.1	1.00 H	353	22.00	36.90
4	4840.00	48.6 AV	54.0	-5.4	1.00 H	353	11.70	36.90
5	5460.00	61.7 PK	74.0	-12.3	1.00 H	353	23.80	37.90
6	5460.00	48.9 AV	54.0	-5.1	1.00 H	353	11.00	37.90
7	#5470.00	64.6 PK	68.3	-3.7	1.00 H	353	26.70	37.90
8	*5500.00	113.8 PK			1.00 H	353	75.80	38.00
9	*5500.00	102.0 AV			1.00 H	353	64.00	38.00
10	11000.00	57.7 PK	74.0	-16.3	1.00 H	333	8.50	49.20
11	11000.00	45.3 AV	54.0	-8.7	1.00 H	333	-3.90	49.20

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	4752.00	56.2 PK	74.0	-17.8	1.00 V	353	19.50	36.70
2	4752.00	43.2 AV	54.0	-10.8	1.00 V	353	6.50	36.70
3	4840.00	57.9 PK	74.0	-16.1	1.00 V	353	21.00	36.90
4	4840.00	43.0 AV	54.0	-11.0	1.00 V	353	6.10	36.90
5	5460.00	64.3 PK	74.0	-9.7	1.00 V	353	26.40	37.90
6	5460.00	50.7 AV	54.0	-3.3	1.00 V	353	12.80	37.90
7	#5470.00	64.8 PK	68.3	-3.5	1.00 V	353	26.90	37.90
8	*5500.00	114.6 PK			1.00 V	353	76.60	38.00
9	*5500.00	102.8 AV			1.00 V	353	64.80	38.00
10	11000.00	57.7 PK	74.0	-16.3	1.00 V	332	8.50	49.20
11	11000.00	45.3 AV	54.0	-8.7	1.00 V	332	-3.90	49.20

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5585MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	61.5 PK	74.0	-12.5	1.00 H	351	24.80	36.70
2	4752.00	50.6 AV	54.0	-3.4	1.00 H	351	13.90	36.70
3	4840.00	60.4 PK	74.0	-13.6	1.00 H	351	23.50	36.90
4	4840.00	48.0 AV	54.0	-6.0	1.00 H	351	11.10	36.90
5	*5585.00	114.8 PK			1.00 H	351	76.70	38.10
6	*5585.00	102.4 AV			1.00 H	351	64.30	38.10
7	11170.00	57.7 PK	74.0	-16.3	1.00 H	312	8.60	49.10
8	11170.00	45.7 AV	54.0	-8.3	1.00 H	312	-3.40	49.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	58.2 PK	74.0	-15.8	1.00 V	352	21.50	36.70
2	4752.00	44.6 AV	54.0	-9.4	1.00 V	352	7.90	36.70
3	4840.00	59.7 PK	74.0	-14.3	1.00 V	352	22.80	36.90
4	4840.00	45.4 AV	54.0	-8.6	1.00 V	352	8.50	36.90
5	*5585.00	116.3 PK			1.00 V	352	78.20	38.10
6	*5585.00	103.5 AV			1.00 V	352	65.40	38.10
7	11170.00	57.7 PK	74.0	-16.3	1.00 V	321	8.60	49.10
8	11170.00	45.0 AV	54.0	-9.0	1.00 V	321	-4.10	49.10

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5665MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	61.2 PK	74.0	-12.8	1.00 H	353	24.50	36.70
2	4752.00	50.3 AV	54.0	-3.7	1.00 H	353	13.60	36.70
3	4840.00	60.2 PK	74.0	-13.8	1.00 H	353	23.30	36.90
4	4840.00	47.5 AV	54.0	-6.5	1.00 H	353	10.60	36.90
5	*5665.00	113.5 PK			1.00 H	353	75.20	38.30
6	*5665.00	101.3 AV			1.00 H	353	63.00	38.30
7	11330.00	57.8 PK	74.0	-16.2	1.00 H	313	8.80	49.00
8	11330.00	45.4 AV	54.0	-8.6	1.00 H	313	-3.60	49.00

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	4752.00	58.2 PK	74.0	-15.8	1.00 V	353	21.50	36.70
2	4752.00	44.2 AV	54.0	-9.8	1.00 V	353	7.50	36.70
3	4840.00	59.7 PK	74.0	-14.3	1.00 V	353	22.80	36.90
4	4840.00	45.5 AV	54.0	-8.5	1.00 V	353	8.60	36.90
5	*5665.00	113.5 PK			1.00 V	353	75.20	38.30
6	*5665.00	101.3 AV			1.00 V	353	63.00	38.30
7	11330.00	57.6 PK	74.0	-16.4	1.00 V	333	8.60	49.00
8	11330.00	45.7 AV	54.0	-8.3	1.00 V	333	-3.30	49.00

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5700MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	59.8 PK	74.0	-14.2	1.00 H	352	23.10	36.70
2	4752.00	49.1 AV	54.0	-4.9	1.00 H	352	12.40	36.70
3	4840.00	60.0 PK	74.0	-14.0	1.00 H	352	23.10	36.90
4	4840.00	48.1 AV	54.0	-5.9	1.00 H	352	11.20	36.90
5	5460.00	65.0 PK	74.0	-9.0	1.00 H	352	27.10	37.90
6	5460.00	52.1 AV	54.0	-1.9	1.00 H	352	14.20	37.90
7	*5700.00	111.6 PK			1.00 H	352	73.30	38.30
8	*5700.00	100.1 AV			1.00 H	352	61.80	38.30
9	#5725.00	65.4 PK	68.3	-2.9	1.00 H	352	27.00	38.40
10	11400.00	57.5 PK	74.0	-16.5	1.00 H	336	8.50	49.00
11	11400.00	44.1 AV	54.0	-9.9	1.00 H	336	-4.90	49.00
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	4752.00	58.5 PK	74.0	-15.5	1.00 V	351	21.80	36.70
2	4752.00	44.1 AV	54.0	-9.9	1.00 V	351	7.40	36.70
3	4840.00	58.4 PK	74.0	-15.6	1.00 V	351	21.50	36.90
4	4840.00	44.0 AV	54.0	-10.0	1.00 V	351	7.10	36.90
5	5460.00	66.2 PK	74.0	-7.8	1.00 V	351	28.30	37.90
6	5460.00	52.8 AV	54.0	-1.2	1.00 V	351	14.90	37.90
7	*5700.00	114.0 PK			1.00 V	351	75.70	38.30
8	*5700.00	101.8 AV			1.00 V	351	63.50	38.30
9	#5725.00	65.2 PK	68.3	-3.1	1.00 V	351	26.80	38.40
10	11400.00	56.8 PK	74.0	-17.2	1.00 V	333	7.80	49.00
11	11400.00	44.1 AV	54.0	-9.9	1.00 V	333	-4.90	49.00

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

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5270MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	46.8 PK	74.0	-27.2	1.00 H	355	10.10	36.70
2	4752.00	43.5 AV	54.0	-10.5	1.00 H	355	6.80	36.70
3	4840.00	57.3 PK	74.0	-16.7	1.00 H	355	20.40	36.90
4	4840.00	43.6 AV	54.0	-10.4	1.00 H	355	6.70	36.90
5	*5270.00	111.4 PK			1.00 H	355	73.80	37.60
6	*5270.00	99.8 AV			1.00 H	355	62.20	37.60
7	#10540.00	57.2 PK	68.3	-11.1	1.00 H	352	8.70	48.50
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	4752.00	59.6 PK	74.0	-14.4	1.00 V	353	22.90	36.70
2	4752.00	48.5 AV	54.0	-5.5	1.00 V	353	11.80	36.70
3	4840.00	60.2 PK	74.0	-13.8	1.00 V	353	23.30	36.90
4	4840.00	48.7 AV	54.0	-5.3	1.00 V	353	11.80	36.90
5	*5270.00	109.4 PK			1.00 V	353	71.80	37.60
6	*5270.00	97.7 AV			1.00 V	353	60.10	37.60
7	#10540.00	57.2 PK	68.3	-11.1	1.00 V	355	8.70	48.50

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5310MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	59.0 PK	74.0	-15.0	1.00 H	354	22.30	36.70
2	4752.00	48.9 AV	54.0	-5.1	1.00 H	354	12.20	36.70
3	4840.00	59.8 PK	74.0	-14.2	1.00 H	354	22.90	36.90
4	4840.00	49.2 AV	54.0	-4.8	1.00 H	354	12.30	36.90
5	*5310.00	110.4 PK			1.00 H	354	72.70	37.70
6	*5310.00	97.8 AV			1.00 H	354	60.10	37.70
7	5350.00	68.6 PK	74.0	-5.4	1.00 H	354	30.80	37.80
8	5350.00	52.3 AV	54.0	-1.7	1.00 H	354	14.50	37.80
9	10620.00	57.1 PK	74.0	-16.9	1.00 H	322	8.50	48.60
10	10620.00	44.4 AV	54.0	-9.6	1.00 H	322	-4.20	48.60
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	4752.00	57.1 PK	74.0	-16.9	1.00 V	354	20.40	36.70
2	4752.00	44.2 AV	54.0	-9.8	1.00 V	354	7.50	36.70
3	4840.00	58.5 PK	74.0	-15.5	1.00 V	354	21.60	36.90
4	4840.00	43.6 AV	54.0	-10.4	1.00 V	354	6.70	36.90
5	*5310.00	112.0 PK			1.00 V	354	74.30	37.70
6	*5310.00	100.4 AV			1.00 V	354	62.70	37.70
7	5350.00	67.2 PK	74.0	-6.8	1.00 V	354	29.40	37.80
8	5350.00	53.2 AV	54.0	-0.8	1.00 V	354	15.40	37.80
9	10620.00	57.4 PK	74.0	-16.6	1.00 V	358	8.80	48.60
10	10620.00	44.4 AV	54.0	-9.6	1.00 V	358	-4.20	48.60

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5510MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	59.4 PK	74.0	-14.6	1.00 H	353	22.70	36.70
2	4752.00	48.8 AV	54.0	-5.2	1.00 H	353	12.10	36.70
3	4840.00	59.8 PK	74.0	-14.2	1.00 H	353	22.90	36.90
4	4840.00	48.7 AV	54.0	-5.3	1.00 H	353	11.80	36.90
5	5460.00	62.1 PK	74.0	-11.9	1.00 H	353	24.20	37.90
6	5460.00	50.0 AV	54.0	-4.0	1.00 H	353	12.10	37.90
7	#5470.00	66.9 PK	68.3	-1.4	1.00 H	353	29.00	37.90
8	*5510.00	108.3 PK			1.00 H	353	70.30	38.00
9	*5510.00	96.4 AV			1.00 H	353	58.40	38.00
10	11020.00	58.1 PK	74.0	-15.9	1.00 H	333	8.90	49.20
11	11020.00	44.9 AV	54.0	-9.1	1.00 H	333	-4.30	49.20
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	4752.00	57.3 PK	74.0	-16.7	1.00 V	354	20.60	36.70
2	4752.00	43.6 AV	54.0	-10.4	1.00 V	354	6.90	36.70
3	4840.00	57.7 PK	74.0	-16.3	1.00 V	354	20.80	36.90
4	4840.00	43.4 AV	54.0	-10.6	1.00 V	354	6.50	36.90
5	5460.00	59.5 PK	74.0	-14.5	1.00 V	354	21.60	37.90
6	5460.00	45.5 AV	54.0	-8.5	1.00 V	354	7.60	37.90
7	#5470.00	67.3 PK	68.3	-1.0	1.00 V	354	29.40	37.90
8	*5510.00	108.7 PK			1.00 V	354	70.70	38.00
9	*5510.00	96.5 AV			1.00 V	354	58.50	38.00
10	11020.00	58.4 PK	74.0	-15.6	1.00 V	325	9.20	49.20
11	11020.00	45.5 AV	54.0	-8.5	1.00 V	325	-3.70	49.20

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5575MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	59.4 PK	74.0	-14.6	1.00 H	354	22.70	36.70
2	4752.00	48.8 AV	54.0	-5.2	1.00 H	354	12.10	36.70
3	4840.00	59.8 PK	74.0	-14.2	1.00 H	354	22.90	36.90
4	4840.00	48.8 AV	54.0	-5.2	1.00 H	354	11.90	36.90
5	*5575.00	107.7 PK			1.00 H	354	69.60	38.10
6	*5575.00	95.9 AV			1.00 H	354	57.80	38.10
7	11150.00	57.5 PK	74.0	-16.5	1.00 H	312	8.40	49.10
8	11150.00	45.7 AV	54.0	-8.3	1.00 H	312	-3.40	49.10

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	57.3 PK	74.0	-16.7	1.00 V	354	20.60	36.70
2	4752.00	43.6 AV	54.0	-10.4	1.00 V	354	6.90	36.70
3	4840.00	57.7 PK	74.0	-16.3	1.00 V	354	20.80	36.90
4	4840.00	43.4 AV	54.0	-10.6	1.00 V	354	6.50	36.90
5	*5575.00	109.8 PK			1.00 V	354	71.70	38.10
6	*5575.00	97.5 AV			1.00 V	354	59.40	38.10
7	11150.00	57.5 PK	74.0	-16.5	1.00 V	321	8.40	49.10
8	11150.00	45.7 AV	54.0	-8.3	1.00 V	321	-3.40	49.10

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5685MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	59.4 PK	74.0	-14.6	1.00 H	354	22.70	36.70
2	4752.00	48.8 AV	54.0	-5.2	1.00 H	354	12.10	36.70
3	4840.00	59.8 PK	74.0	-14.2	1.00 H	354	22.90	36.90
4	4840.00	48.8 AV	54.0	-5.2	1.00 H	354	11.90	36.90
5	*5685.00	108.4 PK			1.00 H	354	70.10	38.30
6	*5685.00	96.3 AV			1.00 H	354	58.00	38.30
7	#5725.00	66.3 PK	68.3	-2.0	1.00 H	354	27.90	38.40
8	11370.00	58.0 PK	74.0	-16.0	1.00 H	312	9.00	49.00
9	11370.00	45.4 AV	54.0	8.6	1.00 H	312	-3.60	49.00
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	4752.00	57.3 PK	74.0	-16.7	1.00 V	353	20.60	36.70
2	4752.00	43.6 AV	54.0	-10.4	1.00 V	353	6.90	36.70
3	4840.00	57.7 PK	74.0	-16.3	1.00 V	353	20.80	36.90
4	4840.00	43.4 AV	54.0	-10.6	1.00 V	353	6.50	36.90
5	*5685.00	109.7 PK			1.00 V	353	71.40	38.30
6	*5685.00	97.3 AV			1.00 V	353	59.00	38.30
7	#5725.00	67.2 PK	68.3	-1.1	1.00 V	353	28.80	38.40
8	11370.00	57.6 PK	74.0	-16.4	1.00 V	332	8.60	49.00
9	11370.00	45.4 AV	54.0	-8.6	1.00 V	332	-3.60	49.00

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5690MHz	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4752.00	57.3 PK	74.0	-16.7	1.00 H	354	20.60	36.70
2	4752.00	43.6 AV	54.0	-10.4	1.00 H	354	6.90	36.70
3	4840.00	57.7 PK	74.0	-16.3	1.00 H	354	20.80	36.90
4	4840.00	43.4 AV	54.0	-10.6	1.00 H	354	6.50	36.90
5	*5690.00	102.9 PK			1.00 H	354	64.60	38.30
6	*5690.00	90.3 AV			1.00 H	354	52.00	38.30
7	#5725.00	65.3 PK	68.3	-3.0	1.00 H	354	26.90	38.40
8	11380.00	58.0 PK	74.0	-16.0	1.00 H	325	9.0	49.00
9	11380.00	45.6 AV	54.0	-8.4	1.00 H	325	-3.4	49.00

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	4752.00	59.4 PK	74.0	-14.6	1.00 V	353	22.70	36.70
2	4752.00	48.8 AV	54.0	-5.2	1.00 V	353	12.10	36.70
3	4840.00	59.8 PK	74.0	-14.2	1.00 V	353	22.90	36.90
4	4840.00	48.7 AV	54.0	-5.3	1.00 V	353	11.80	36.90
5	*5690.00	104.7 PK			1.00 V	353	66.40	38.30
6	*5690.00	92.7 AV			1.00 V	353	54.40	38.30
7	#5725.00	66.9 PK	68.3	-1.4	1.00 V	353	28.50	38.40
8	11380.00	57.7 PK	74.0	-16.3	1.00 V	332	8.70	49.00
9	11380.00	45.4 AV	54.0	-8.6	1.00 V	332	-3.60	49.00

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



BELOW 1GHz WORST-CASE DATA : 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5270MHz	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	David Huang

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	99.89	41.9 QP	43.5	-1.6	2.00 H	64	31.60	10.30
2	129.06	42.5 QP	43.5	-1.0	2.00 H	208	29.20	13.30
3	333.21	40.9 QP	46.0	-5.1	1.00 H	199	25.10	15.80
4	480.97	37.9 QP	46.0	-8.1	2.00 H	220	18.20	19.70
5	665.68	41.7 QP	46.0	-4.3	1.25 H	217	18.10	23.60
6	797.89	38.2 QP	46.0	-7.8	2.00 H	247	13.00	25.20
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	37.68	34.9 QP	40.0	-5.1	1.00 V	193	21.40	13.50
2	99.89	39.4 QP	43.5	-4.1	1.25 V	235	29.10	10.30
3	129.06	38.7 QP	43.5	-4.8	2.00 V	307	25.40	13.30
4	366.26	35.5 QP	46.0	-10.5	1.00 V	187	18.90	16.60
5	665.68	40.5 QP	46.0	-5.5	1.25 V	10	16.90	23.60
6	912.61	42.0 QP	46.0	-4.0	1.25 V	184	14.90	27.10

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
FREQUENCY	5500MHz	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	David Huang

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	99.89	42.5 QP	43.5	-1.0	2.00 H	217	32.20	10.30
2	129.06	42.0 QP	43.5	-1.5	2.00 H	199	28.70	13.30
3	234.05	34.4 QP	46.0	-11.6	1.00 H	157	22.20	12.20
4	333.21	40.2 QP	46.0	-5.8	1.00 H	181	24.40	15.80
5	480.97	38.2 QP	46.0	-7.8	2.00 H	125	18.50	19.70
6	663.74	44.8 QP	46.0	-1.2	1.00 H	238	21.20	23.60
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	99.89	39.9 QP	43.5	-3.6	1.00 V	232	29.60	10.30
2	129.06	37.7 QP	43.5	-5.8	2.00 V	292	24.40	13.30
3	366.26	34.1 QP	46.0	-11.9	1.25 V	193	17.50	16.60
4	455.70	34.5 QP	46.0	-11.5	1.00 V	265	15.50	19.00
5	665.68	40.0 QP	46.0	-6.0	1.00 V	10	16.40	23.60
6	797.89	36.5 QP	46.0	-9.5	1.25 V	235	11.30	25.20

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

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

- NOTE:** 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 19, 2011	Nov. 18, 2012
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 30, 2010	Dec. 29, 2011
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 06, 2011	Jan. 05, 2012
LISN ROHDE & SCHWARZ	ESH3-Z5	100312	Jul. 07, 2011	Jul. 06, 2012
V-LISN SCHWARZBECK	NNBL 8226-2	8226-142	Jun. 30, 2011	Jun. 29, 2012
LISN ROHDE & SCHWARZ	ENV216	100072	Jun. 10, 2011	Jun. 09, 2012
Software ADT	ADT_Cond_ V7.3.7	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.

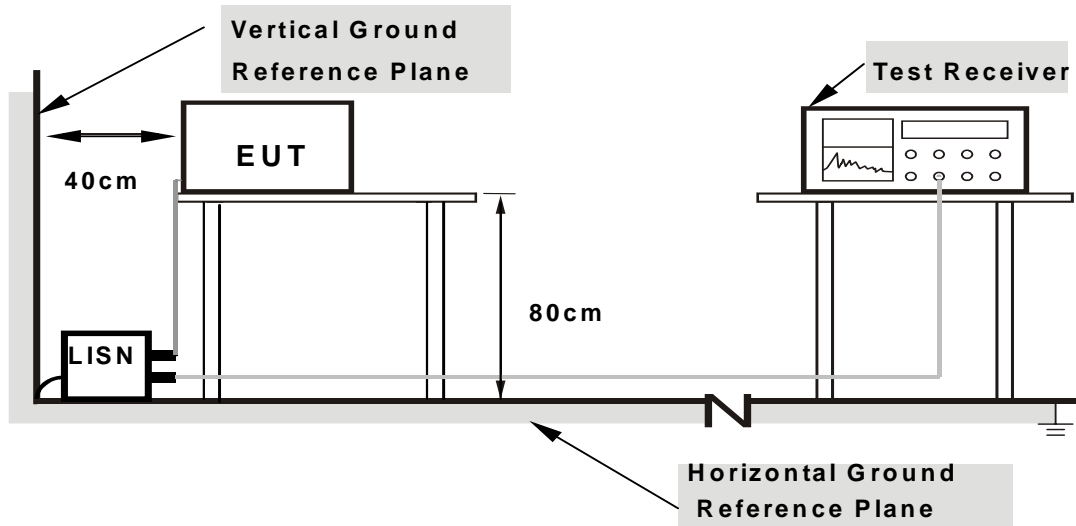
4.2.3 TEST PROCEDURES

- 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.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

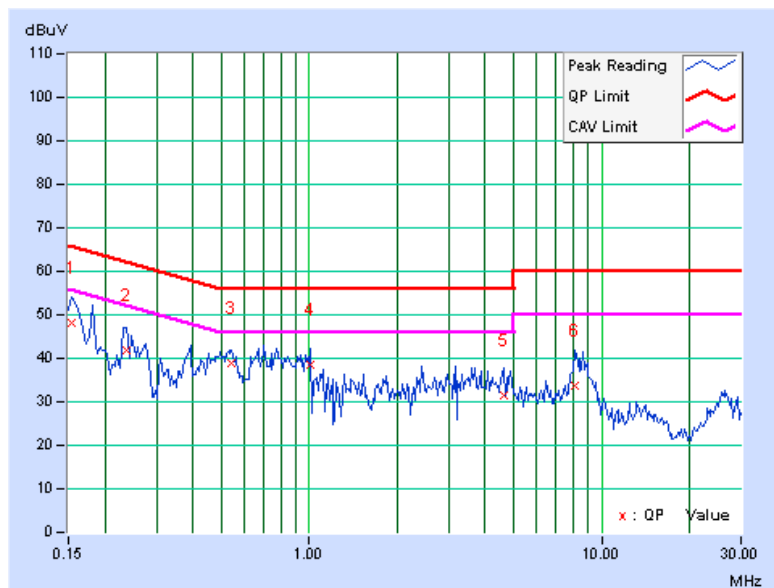
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA : 802.11a

FREQUENCY	5270MHz	PHASE	Line 1
6dB BANDWIDTH	9kHz		

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	(dB)	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.154	0.15	48.04	-	48.19	-	65.79	55.79	-17.60	-
2	0.236	0.15	41.79	-	41.94	-	62.24	52.24	-20.29	-
3	0.545	0.17	38.76	-	38.93	-	56.00	46.00	-17.07	-
4	1.012	0.19	38.22	-	38.41	-	56.00	46.00	-17.59	-
5	4.605	0.34	31.24	-	31.58	-	56.00	46.00	-24.42	-
6	8.121	0.48	33.40	-	33.88	-	60.00	50.00	-26.12	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.

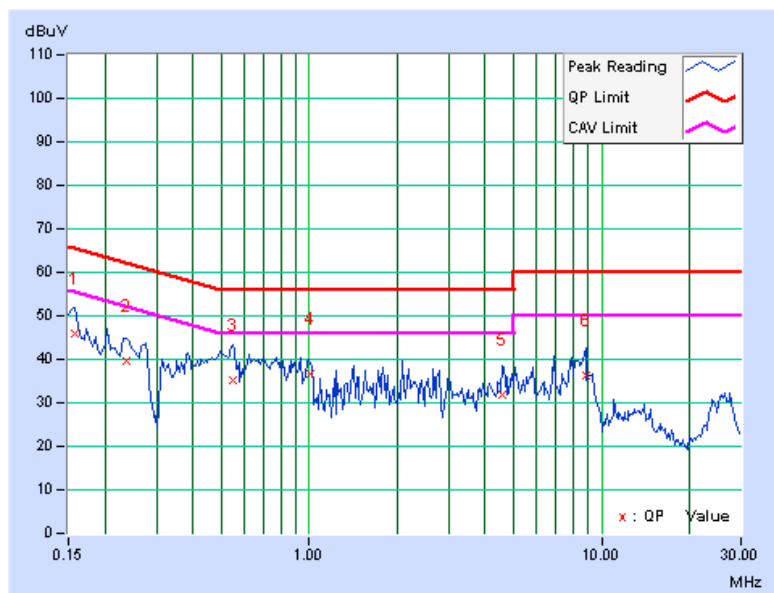




FREQUENCY	5270MHz	PHASE	Line 2
6dB BANDWIDTH	9kHz		

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.159	0.16	45.69	-	45.85	-	65.54	55.54	-19.69	-
2	0.236	0.17	39.53	-	39.70	-	62.24	52.24	-22.53	-
3	0.549	0.19	35.00	-	35.19	-	56.00	46.00	-20.81	-
4	1.013	0.21	36.48	-	36.69	-	56.00	46.00	-19.31	-
5	4.578	0.34	31.38	-	31.72	-	56.00	46.00	-24.28	-
6	8.821	0.46	35.67	-	36.13	-	60.00	50.00	-23.87	-

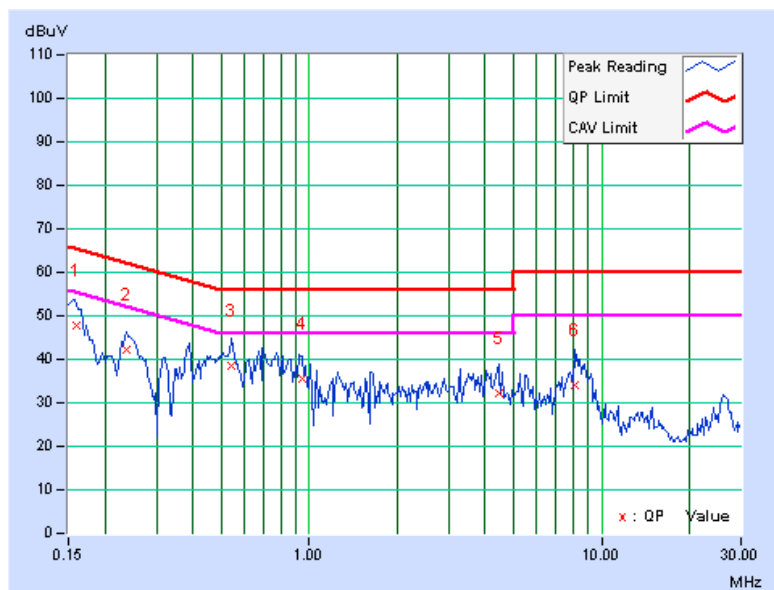
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.



FREQUENCY	5500MHz	PHASE	Line 1
6dB BANDWIDTH	9kHz		

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.159	0.15	47.71	-	47.86	-	65.52	55.52	-17.67	-
2	0.236	0.15	41.96	-	42.11	-	62.24	52.24	-20.12	-
3	0.545	0.17	38.49	-	38.66	-	56.00	46.00	-17.34	-
4	0.944	0.19	35.40	-	35.59	-	56.00	46.00	-20.41	-
5	4.453	0.34	31.96	-	32.30	-	56.00	46.00	-23.70	-
6	8.076	0.48	33.47	-	33.95	-	60.00	50.00	-26.05	-

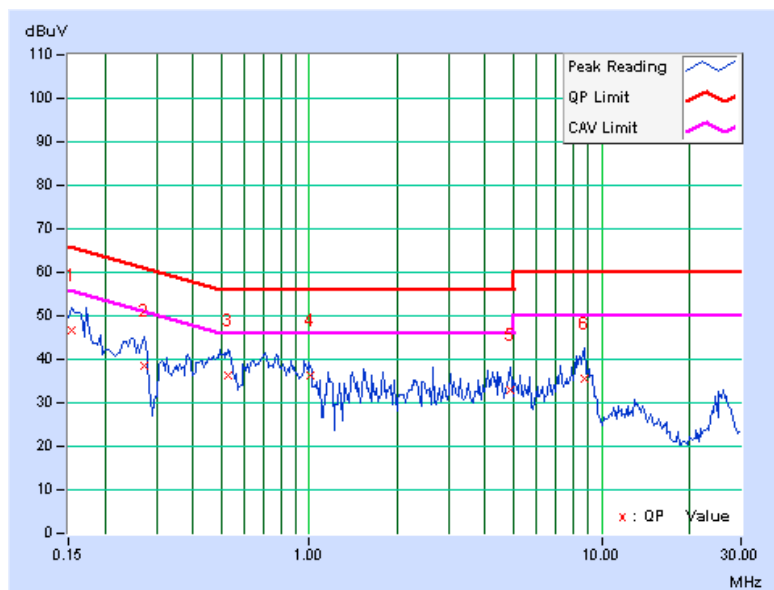
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.



FREQUENCY	5500MHz	PHASE	Line 2
6dB BANDWIDTH	9kHz		

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.154	0.16	46.44	-	46.60	-	65.79	55.79	-19.19	-
2	0.271	0.18	38.41	-	38.59	-	61.08	51.08	-22.50	-
3	0.526	0.19	35.93	-	36.12	-	56.00	46.00	-19.88	-
4	1.013	0.21	36.27	-	36.48	-	56.00	46.00	-19.52	-
5	4.884	0.35	32.57	-	32.92	-	56.00	46.00	-23.08	-
6	8.714	0.46	35.11	-	35.57	-	60.00	50.00	-24.43	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.



4.3 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

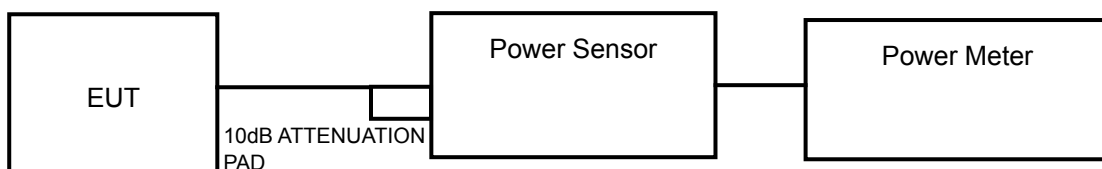
4.3.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

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

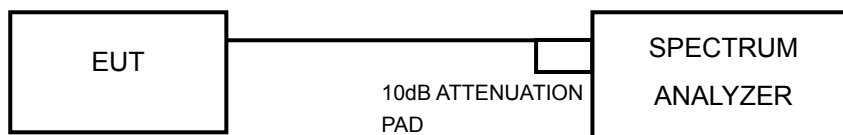
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

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

FOR 26dB BANDWIDTH

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

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

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



4.3.7 TEST RESULTS

POWER OUTPUT: 802.11a

CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
	CHAIN 0	CHAIN 1				
5270	2.0	2.1	3.2	5.1	7	PASS
5300	1.9	2.2	3.2	5.1	7	PASS
5330	2.0	2.0	3.2	5.0	7	PASS
5500	2.1	2.2	3.3	5.2	7	PASS
5585	1.9	2.0	3.1	5.0	7	PASS
5665	1.8	2.0	3.1	4.9	7	PASS
5700	2.0	2.1	3.2	5.1	7	PASS

NOTE: Directional gain =23dBi > 6dBi, so the limit shall be reduced to 24-(23-6) = 7dBm.

802.11n (20MHz)

CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
	CHAIN 0	CHAIN 1				
5270	1.8	2.1	3.1	5.0	7	PASS
5300	1.9	1.8	3.1	4.9	7	PASS
5330	1.9	2.0	3.1	5.0	7	PASS
5500	1.8	1.9	3.1	4.9	7	PASS
5585	2.0	2.1	3.2	5.1	7	PASS
5665	1.9	2.1	3.2	5.0	7	PASS
5700	2.1	2.2	3.3	5.2	7	PASS

NOTE: Directional gain =23dBi > 6dBi, so the limit shall be reduced to 24-(23-6) = 7dBm.

802.11n (40MHz)

CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
	CHAIN 0	CHAIN 1				
5270	4.3	3.2	4.8	6.8	7	PASS
5310	3.9	3.0	4.4	6.5	7	PASS
5510	3.4	4.1	4.8	6.8	7	PASS
5575	4.0	3.7	4.9	6.9	7	PASS
5685	1.7	2.8	3.4	5.3	7	PASS

NOTE: Directional gain =23dBi > 6dBi, so the limit shall be reduced to 24-(23-6) = 7dBm.

26dB BANDWIDTH: 802.11a

CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)		PASS / FAIL
	CHAIN 0	CHAIN 1	
5270	25.47	25.33	PASS
5300	25.52	25.22	PASS
5330	25.87	25.70	PASS
5500	25.44	25.22	PASS
5585	25.75	25.28	PASS
5665	25.91	25.52	PASS
5700	25.39	25.39	PASS

802.11n (20MHz)

CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)		PASS / FAIL
	CHAIN 0	CHAIN 1	
5270	26.03	26.99	PASS
5300	25.78	26.19	PASS
5330	26.18	26.14	PASS
5500	26.18	26.79	PASS
5585	25.94	26.14	PASS
5665	26.72	25.95	PASS
5700	26.50	26.16	PASS

802.11n (40MHz)

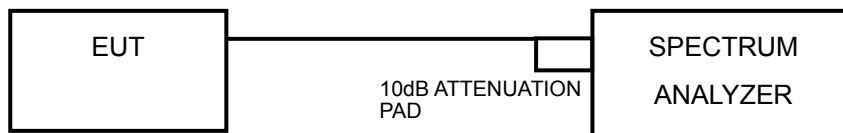
CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)		PASS / FAIL
	CHAIN 0	CHAIN 1	
5270	53.43	53.82	PASS
5310	55.16	54.19	PASS
5510	53.37	53.12	PASS
5575	53.63	53.85	PASS
5685	53.63	53.21	PASS

4.4 PEAK POWER EXCURSION MEASUREMENT

4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB

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 PROCEDURE

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

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.2.6



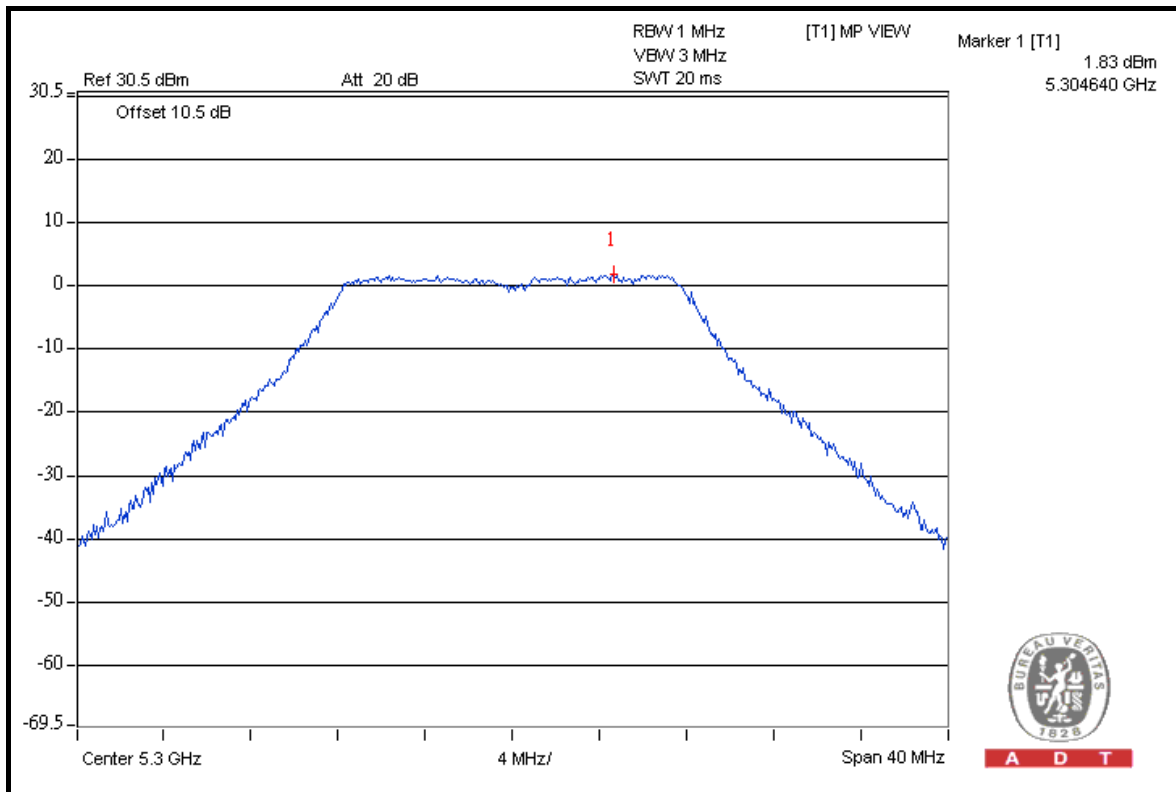
4.4.7 TEST RESULTS

802.11a

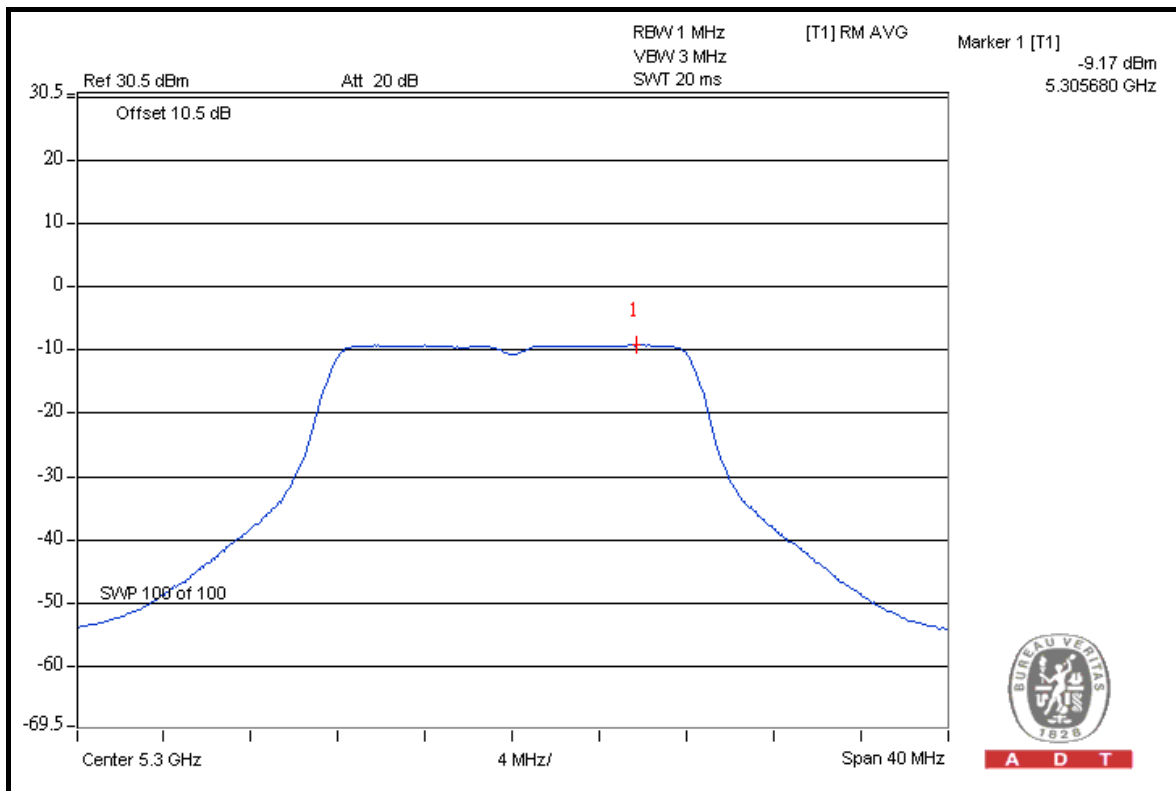
TX chain	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
0	5270	1.73	-9.12	10.85	13	PASS
	5300	1.83	-9.17	11.00	13	PASS
	5330	1.79	-9.14	10.93	13	PASS
	5500	1.75	-9.19	10.94	13	PASS
	5585	1.78	-9.20	10.98	13	PASS
	5665	1.51	-9.19	10.70	13	PASS
	5700	1.86	-9.03	10.89	13	PASS
1	5270	1.50	-9.08	10.58	13	PASS
	5300	1.46	-9.17	10.63	13	PASS
	5330	1.26	-9.07	10.33	13	PASS
	5500	1.55	-9.04	10.59	13	PASS
	5585	1.37	-9.32	10.69	13	PASS
	5665	1.48	-9.30	10.78	13	PASS
	5700	1.58	-9.18	10.76	13	PASS



A D T



A D T



A D T

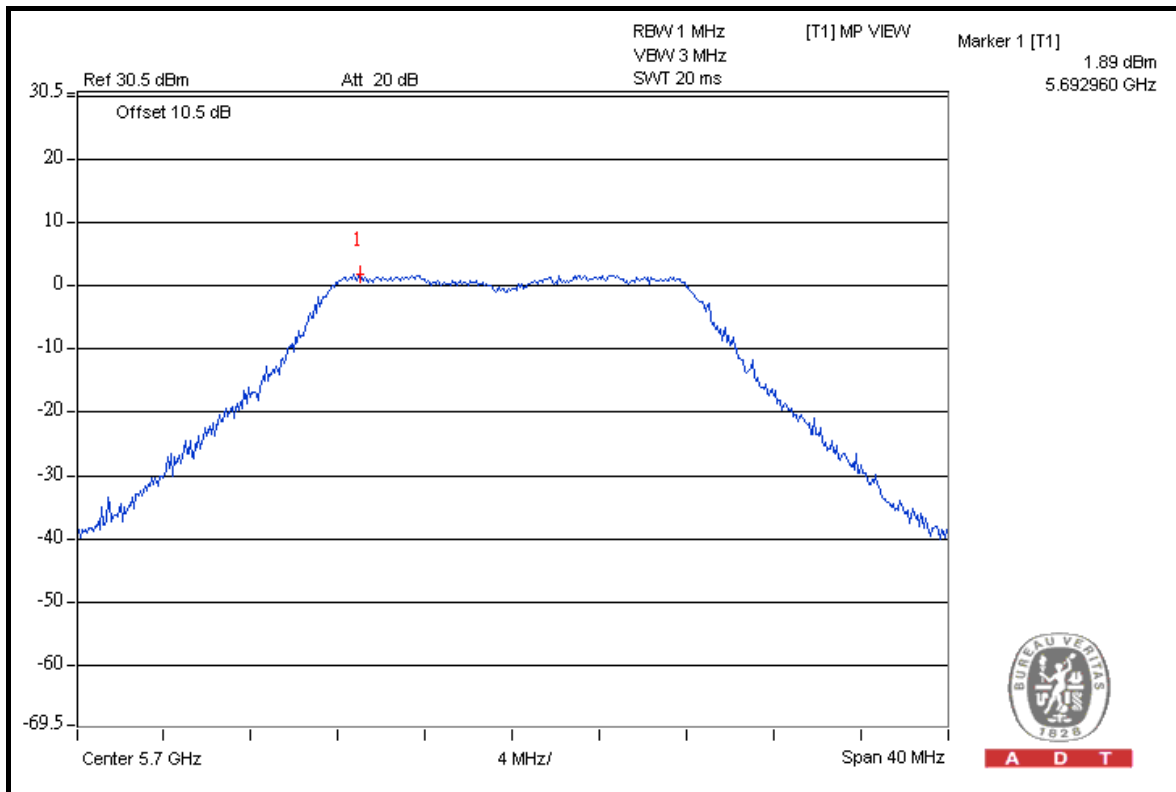


802.11n (20MHz)

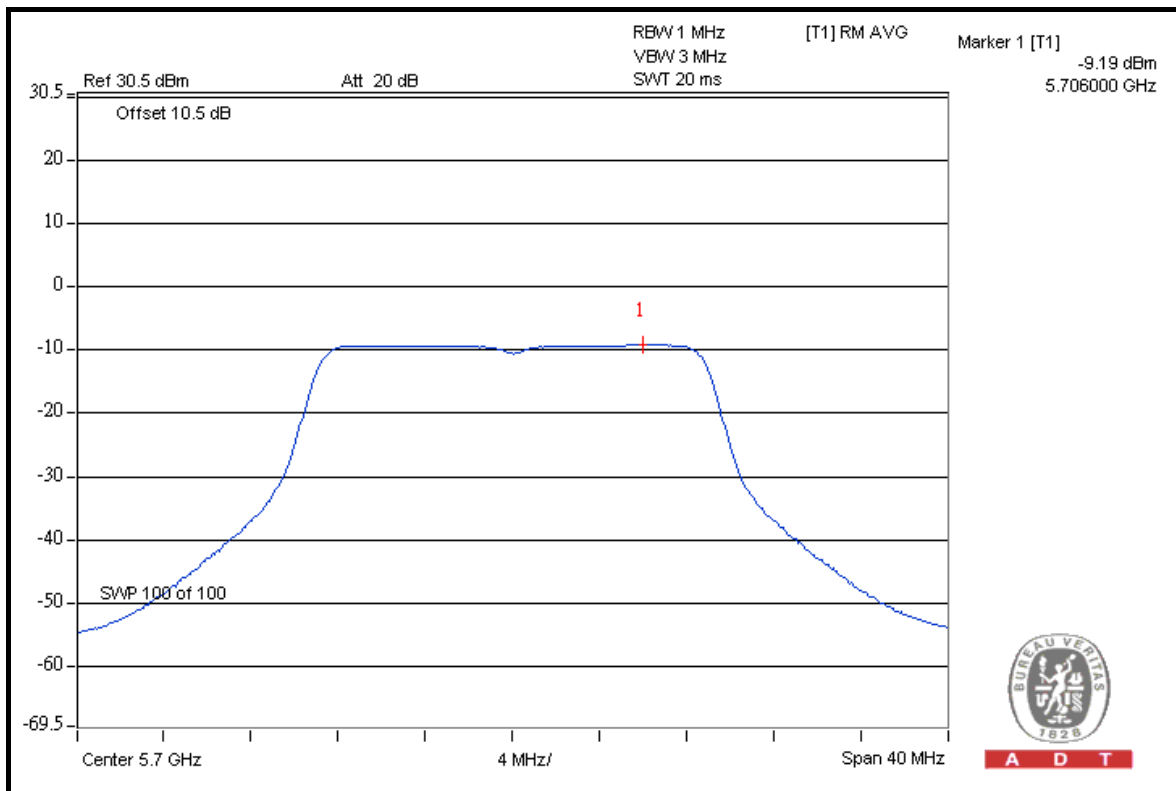
TX chain	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
0	5270	1.47	-9.19	10.66	13	PASS
	5300	1.80	-9.11	10.91	13	PASS
	5330	1.51	-9.08	10.59	13	PASS
	5500	1.32	-9.11	10.43	13	PASS
	5585	1.57	-9.17	10.74	13	PASS
	5665	1.53	-9.16	10.69	13	PASS
	5700	1.63	-9.08	10.71	13	PASS
1	5270	1.57	-9.16	10.73	13	PASS
	5300	1.31	-9.22	10.53	13	PASS
	5330	1.24	-9.29	10.53	13	PASS
	5500	1.34	-9.25	10.59	13	PASS
	5585	1.49	-9.19	10.68	13	PASS
	5665	1.77	-9.10	10.87	13	PASS
	5700	1.89	-9.19	11.08	13	PASS



A D T



A D T



A D T



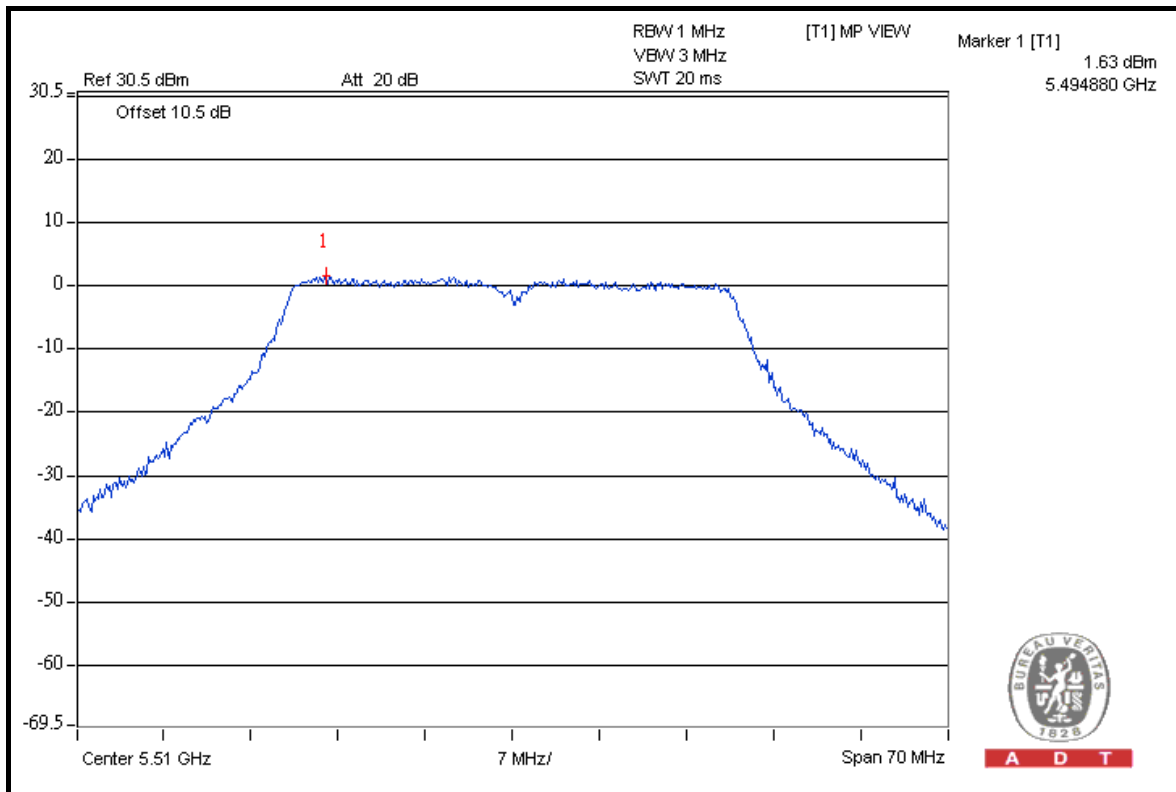
A D T

802.11n (40MHz)

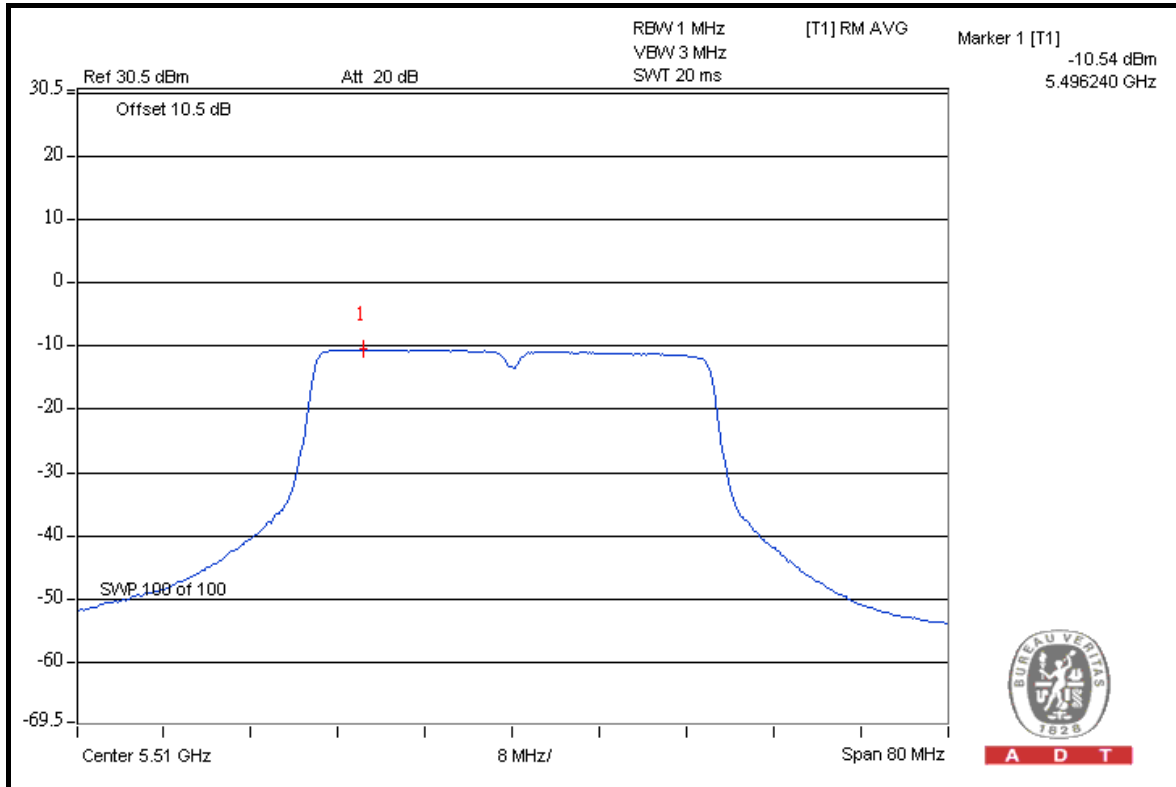
TX chain	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
0	5270	1.26	-10.00	11.26	13	PASS
	5310	0.98	-10.48	11.46	13	PASS
	5510	0.17	-10.87	11.04	13	PASS
	5575	0.86	-10.52	11.38	13	PASS
	5685	-1.12	-12.68	11.56	13	PASS
1	5270	0.69	-11.30	11.99	13	PASS
	5310	0.56	-11.41	11.97	13	PASS
	5510	1.63	-10.54	12.17	13	PASS
	5575	1.25	-10.69	11.94	13	PASS
	5685	0.23	-11.48	11.71	13	PASS



A D T



A D T



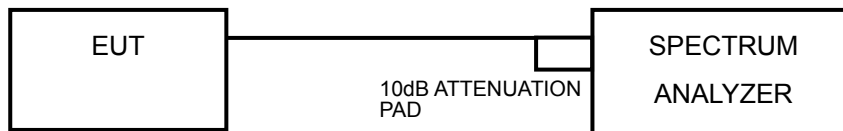
A D T

4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

FREQUENCY BAND	LIMIT(dBm)
5.25 ~ 5.35GHz and 5.470 ~ 5.725GHz	11
5.725~5825GHz	17

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 PROCEDURES

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1 MHz, Set VBW \geq 3 MHz, Detector = RMS
- 3) Sweep time = auto, trigger set to " free run " .
- 4) Trace average at least 100 traces in power averaging mode.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITIONS

Same as 4.3.6.

4.5.7 TEST RESULTS

802.11a

CHAN. FREQ. (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
	CHAIN 0	CHAIN 1			
5270	-9.12	-9.08	-6.14	-6	PASS
5300	-9.17	-9.17	-6.19	-6	PASS
5330	-9.14	-9.07	-6.10	-6	PASS
5500	-9.19	-9.04	-6.11	-6	PASS
5585	-9.20	-9.32	-6.27	-6	PASS
5665	-9.19	-9.30	-6.23	-6	PASS
5700	-9.03	-9.18	-6.10	-6	PASS

NOTE 1: Directional gain =23dBi > 6dBi, so the limit shall be reduced to 11-(23-6) = -6dBm.

NOTE 2: Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer

802.11n (20MHz)

CHAN. FREQ. (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
	CHAIN 0	CHAIN 1			
5270	-9.19	-9.16	-6.19	-6	PASS
5300	-9.11	-9.22	-6.18	-6	PASS
5330	-9.08	-9.29	-6.18	-6	PASS
5500	-9.11	-9.25	-6.18	-6	PASS
5585	-9.17	-9.19	-6.17	-6	PASS
5665	-9.16	-9.10	-6.15	-6	PASS
5700	-9.08	-9.19	-6.13	-6	PASS

NOTE 1: Directional gain =23dBi > 6dBi, so the limit shall be reduced to 11-(23-6) = -6dBm.

NOTE 2: Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer

802.11n (40MHz)

CHAN. FREQ. (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
	CHAIN 0	CHAIN 1			
5270	-10.00	-11.30	-7.64	-6	PASS
5310	-10.48	-11.41	-7.92	-6	PASS
5510	-10.87	-10.54	-7.71	-6	PASS
5575	-10.52	-10.69	-7.60	-6	PASS
5685	-12.68	-11.48	-9.05	-6	PASS

NOTE 1: Directional gain =23dBi > 6dBi, so the limit shall be reduced to 11-(23-6) = -6dBm.

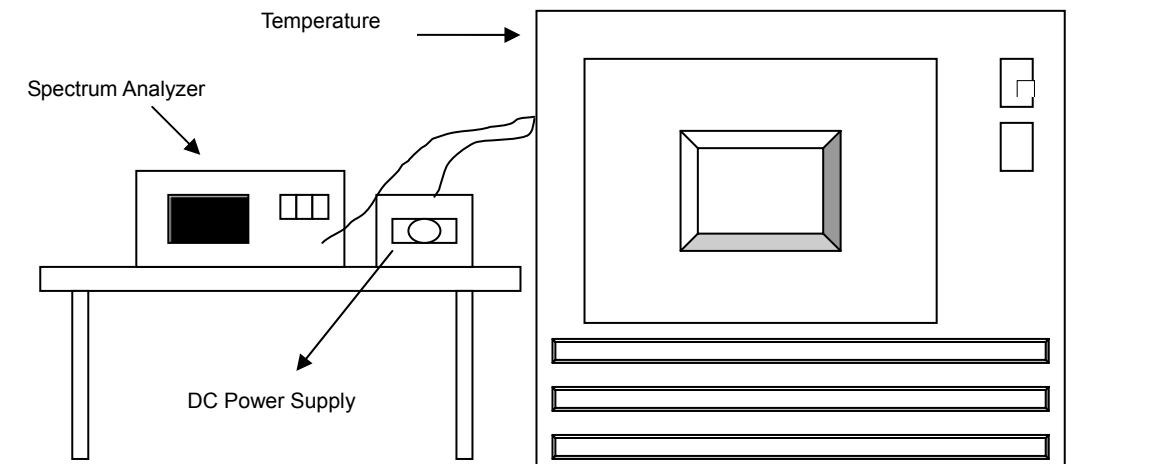
NOTE 2: Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer

4.6 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 DC voltage.
- b. Turn the EUT on and couple its output to a spectrum analyzer.
- c. Turn the EUT off and set the chamber to the highest temperature specified.
- d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

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

4.6.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5330MHz									
TEMP. ()	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
50	5.0	5329.989186	-2.029	5329.989677	-1.937	5329.989254	-2.016	5329.989323	-2.003
40	5.0	5329.983524	-3.091	5329.983350	-3.124	5329.983216	-3.149	5329.983240	-3.144
30	5.0	5329.979207	-3.901	5329.979937	-3.764	5329.979643	-3.819	5329.979559	-3.835
20	5.0	5329.977292	-4.260	5329.976914	-4.331	5329.977218	-4.274	5329.977252	-4.268
10	5.0	5329.979742	-3.801	5329.979405	-3.864	5329.979420	-3.861	5329.979352	-3.874
0	5.0	5329.984550	-2.899	5329.984224	-2.960	5329.984371	-2.932	5329.984110	-2.981
-10	5.0	5329.978821	-3.974	5329.979048	-3.931	5329.979388	-3.867	5329.979021	-3.936
-20	5.0	5329.982640	-3.257	5329.982619	-3.261	5329.983044	-3.181	5329.982649	-3.255
30	5.0	5329.997358	-0.496	5329.997814	-0.410	5329.997840	-0.405	5329.997773	-0.418

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5330MHz									
TEMP. ()	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	4.3	5329.977307	-4.258	5329.977841	-4.157	5329.977386	-4.243	5329.977128	-4.291
	5.0	5329.977487	-4.224	5329.977759	-4.173	5329.977264	-4.266	5329.977324	-4.254
	5.8	5329.977339	-4.252	5329.977234	-4.271	5329.977757	-4.173	5329.976952	-4.324



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.

Copies of accreditation and authorization certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5.phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3185050

Email: service.adt@tw.bureauveritas.com

Web Site: www.adt.com.tw

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



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

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

---END---