

FCC TEST REPORT (15.407)

REPORT NO.: RF111117C11-1
MODEL NO.: AE3000
FCC ID: Q87-AE3000
RECEIVED: Nov. 17, 2011
TESTED: Jan. 31 ~ Mar. 08, 2012
ISSUED: Mar. 09, 2012

APPLICANT: Cisco Consumer Products LLC

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF111117C11-1	Original release	Mar. 09, 2012

1. CERTIFICATION

PRODUCT: 802.11 a/b/g/n dongle

MODEL: AE3000

BRAND: CISCO

APPLICANT: Cisco Consumer Products LLC

TESTED: Jan. 31 ~ Mar. 08, 2012

TEST SAMPLE: ENGINEERING SAMPLE

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

ANSI C63.10-2009

The above equipment (model: AE3000) 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 : Mar. 09, 2012
Andrea Hsia / Specialist

APPROVED BY : Gary Chang, DATE : Mar. 09, 2012
Gary Chang / Technical Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -18.94dB at 0.27109MHz.
15.407(b/1/2/3)(b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -2.6dB at 239.88MHz.
15.407(a/1/2)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

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	802.11 a/b/g/n dongle
MODEL NO.	AE3000
POWER SUPPLY	5Vdc (host equipment)
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 450.0Mbps
OPERATING FREQUENCY	5180 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5180 ~ 5320MHz: 8 for 802.11a, 802.11n (20MHz) 4 for 802.11n (40MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz)
OUTPUT POWER	45.5mW for 5180 ~ 5240MHz 137.6mW for 5260 ~ 5320MHz 111.4mW for 5500 ~ 5700MHz
ANTENNA TYPE	Refer to note as below
ANTENNA CONNECTER	NA
DATA CABLE	1.0m shielded USB cable without core
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Cradle

NOTE:

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

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

2. The following antennas are used in this EUT.

ITEM	TYPE	Gain (dBi)							
		2400MHz	2450MHz	2500MHz	5150MHz	5350MHz	5550MHz	5750MHz	5850MHz
Antenna 1	PIFA	-0.95	-0.4	-0.82	3.25	3.78	3.98	3.84	3.36
Antenna 2		0.29	0.11	0.20	3.82	3.96	3.97	3.29	3.70
Antenna 3	Printed	-0.29	0.27	0.77	3.91	3.48	3.07	3.21	3.95

**Only the highest gain was for the final test.

3. The EUT incorporates a MIMO function. Physically, the EUT provides 3 completed transmitters and 3 receivers.

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11a	1TX
802.11n (20MHz) (MCS 0~7)	1TX
802.11n (20MHz) (MCS 8~15)	2TX
802.11n (20MHz) (MCS 16~23)	3TX
802.11n (40MHz) (MCS 0~7)	1TX
802.11n (40MHz) (MCS 8~15)	2TX
802.11n (40MHz) (MCS 16~23)	3TX

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

3.2 DESCRIPTION OF TEST MODES

FOR 5180 ~ 5240MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

FOR 5260 ~ 5320MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

FOR 5500 ~ 5700MHz

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 $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE:

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX FUNCTION
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0	1TX
802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	7.2	3TX
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	15.0	3TX
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0	1TX
802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2	3TX
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0	3TX
802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	BPSK	6.0	1TX
802.11n (20MHz)		100 to 140	100, 116, 132, 140	OFDM	BPSK	7.2	3TX
802.11n (40MHz)		102 to 134	102, 118, 134	OFDM	BPSK	15.0	3TX

RADIATED EMISSION TEST (BELOW 1GHz):

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX FUNCTION
802.11n (20MHz)	5180-5320	36 to 31	52	OFDM	BPSK	7.2	3TX
802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	7.2	3TX

POWER LINE CONDUCTED EMISSION TEST:

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX FUNCTION
802.11n (20MHz)	5180-5320	36 to 31	52	OFDM	BPSK	7.2	3TX
802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	7.2	3TX

ANTENNA PORT CONDUCTED MEASUREMENT:

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX FUNCTION
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0	1TX
802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	7.2	3TX
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	15.0	3TX
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0	1TX
802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2	3TX
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0	3TX
802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	BPSK	6.0	1TX
802.11n (20MHz)		100 to 140	100, 116, 132, 140	OFDM	BPSK	7.2	3TX
802.11n (40MHz)		102 to 134	102, 118, 134	OFDM	BPSK	15.0	3TX

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE $\geq$ 1G	22deg. C, 65%RH	120Vac, 60Hz	Aska Huang Anderson Hong
RE $<$ 1G	22deg. C, 65%RH	120Vac, 60Hz	Sun Lin
PLC	25deg. C, 68%RH	120Vac, 60Hz	Sun Lin
APCM	23deg. C, 65%RH	120Vac, 60Hz	Anderson Hong

3.3 DUTY CYCLE OF TEST SIGNAL

Duty cycle of test signal is > 98 %

3.4 DESCRIPTION OF SUPPORT UNITS

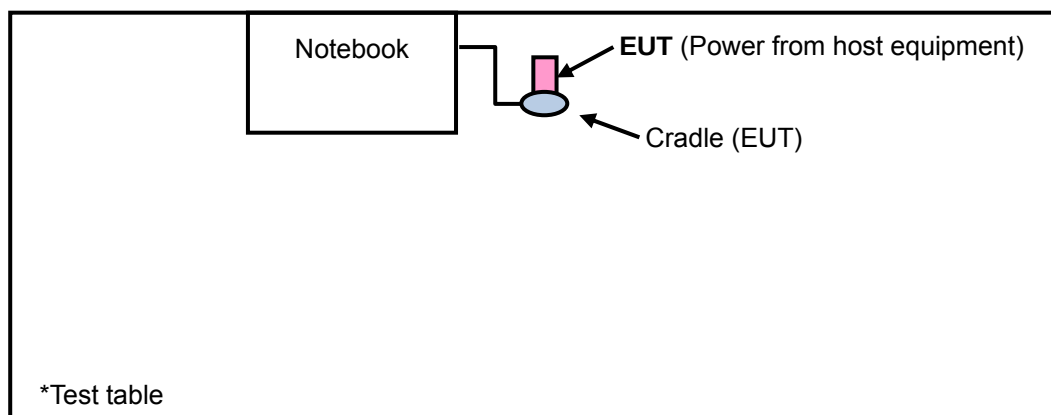
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1.	NOTEBOOK	DELL	E5420	33MLMQ1	NA

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).

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST



3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart E (15.407)

ANSI C63.10-2009

All test items have been performed and recorded as per the above standards.

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m)
PK	PK
-27	68.3

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

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

4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESIB7	100212	Aug. 02, 2011	Aug. 01, 2012
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Jul. 21, 2011	Jul. 20, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Apr. 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.

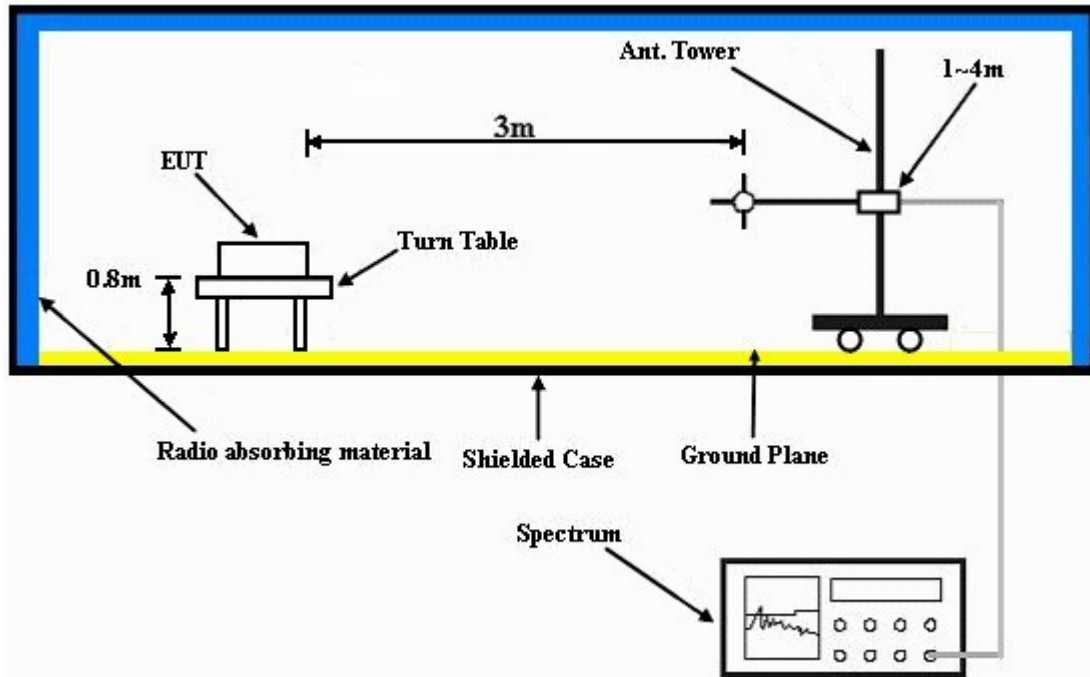
NOTE:

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 1kHz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

4.1.6 TEST SETUP



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

4.1.7 EUT OPERATING CONDITION

- Connected EUT with a notebook system via USB cable and placed on a testing table.
- The notebook ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the system in full functions.

4.1.8 TEST RESULTS

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Aska 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	5127.00	50.2 PK	74.0	-23.8	1.02 H	169	12.30	37.90
2	5127.00	41.3 AV	54.0	-12.7	1.02 H	169	3.40	37.90
3	*5180.00	100.5 PK			1.02 H	169	62.60	37.90
4	*5180.00	90.9 AV			1.02 H	169	53.00	37.90
5	#10360.00	57.6 PK	68.3	-10.7	1.00 H	51	8.50	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	5127.00	50.8 PK	74.0	-23.2	1.00 V	287	12.90	37.90
2	5127.00	41.6 AV	54.0	-12.4	1.00 V	287	3.70	37.90
3	*5180.00	102.3 PK			1.00 V	287	64.40	37.90
4	*5180.00	92.8 AV			1.00 V	287	54.90	37.90
5	#10360.00	57.8 PK	68.3	-10.5	1.00 V	198	8.70	49.10

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Aska 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	*5200.00	100.3 PK			1.01 H	196	62.40	37.90
2	*5200.00	90.8 AV			1.01 H	196	52.90	37.90
3	#10400.00	57.1 PK	68.3	-11.2	1.00 H	55	7.90	49.20
4	15600.00	59.7 PK	74.0	-14.3	1.00 H	286	10.60	49.10
5	15600.00	46.7 AV	54.0	-7.3	1.00 H	286	-2.40	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	*5200.00	102.2 PK			1.00 V	239	64.30	37.90
2	*5200.00	92.5 AV			1.00 V	239	54.60	37.90
3	#10400.00	57.6 PK	68.3	-10.7	1.00 V	186	8.40	49.20
4	15600.00	59.8 PK	74.0	-14.2	1.00 V	183	10.70	49.10
5	15600.00	46.8 AV	54.0	-7.2	1.00 V	183	-2.30	49.10

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Aska 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	*5240.00	101.4 PK			1.00 H	169	63.40	38.00
2	*5240.00	91.6 AV			1.00 H	169	53.60	38.00
3	5350.00	51.3 PK	74.0	-22.7	1.00 H	169	13.20	38.10
4	5350.00	38.3 AV	54.0	-15.7	1.00 H	169	0.20	38.10
5	#10480.00	57.6 PK	68.3	-10.7	1.00 H	88	8.10	49.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	103.6 PK			1.12 V	302	65.60	38.00
2	*5240.00	93.7 AV			1.12 V	302	55.70	38.00
3	5350.00	51.8 PK	74.0	-22.2	1.12 V	302	13.70	38.10
4	5350.00	39.6 AV	54.0	-14.4	1.12 V	302	1.50	38.10
5	#10480.00	58.6 PK	68.3	-9.7	1.00 V	189	9.10	49.50

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Aska 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	*5260.00	102.5 PK			1.00 H	175	64.50	38.00
2	*5260.00	92.9 AV			1.00 H	175	54.90	38.00
3	5350.00	49.4 PK	74.0	-24.6	1.00 H	175	11.30	38.10
4	5350.00	37.1 AV	54.0	-16.9	1.00 H	175	-1.00	38.10
5	#10520.00	57.8 PK	68.3	-10.5	1.00 H	65	8.20	49.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	103.9 PK			1.12 V	226	65.90	38.00
2	*5260.00	94.1 AV			1.12 V	226	56.10	38.00
3	5350.00	52.8 PK	74.0	-21.2	1.12 V	226	14.70	38.10
4	5350.00	40.7 AV	54.0	-13.3	1.12 V	226	2.60	38.10
5	#10520.00	59.4 PK	68.3	-8.9	1.00 V	223	9.80	49.60

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Aska 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	*5300.00	102.0 PK			1.00 H	175	63.90	38.10
2	*5300.00	92.3 AV			1.00 H	175	54.20	38.10
3	5350.00	53.4 PK	74.0	-20.6	1.00 H	175	15.30	38.10
4	5350.00	43.5 AV	54.0	-10.5	1.00 H	175	5.40	38.10
5	10600.00	58.1 PK	74.0	-15.9	1.00 H	87	8.50	49.60
6	10600.00	45.8 AV	54.0	-8.2	1.00 H	87	-3.80	49.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	104.3 PK			1.00 V	301	66.20	38.10
2	*5300.00	94.4 AV			1.00 V	301	56.30	38.10
3	5350.00	56.4 PK	74.0	-17.6	1.00 V	301	18.30	38.10
4	5350.00	46.3 AV	54.0	-7.7	1.00 V	301	8.20	38.10
5	10600.00	58.6 PK	74.0	-15.4	1.00 V	198	9.00	49.60
6	10600.00	46.2 AV	54.0	-7.8	1.00 V	198	-3.40	49.60

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Aska 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	*5320.00	101.5 PK			1.00 H	171	63.40	38.10
2	*5320.00	92.0 AV			1.00 H	171	53.90	38.10
3	5372.00	54.0 PK	74.0	-20.0	1.00 H	171	15.80	38.20
4	5372.00	44.2 AV	54.0	-9.8	1.00 H	171	6.00	38.20
5	10640.00	57.6 PK	74.0	-16.4	1.00 H	76	8.00	49.60
6	10640.00	45.3 AV	54.0	-8.7	1.00 H	76	-4.30	49.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	104.1 PK			1.01 V	318	66.00	38.10
2	*5320.00	94.5 AV			1.01 V	318	56.40	38.10
3	5372.00	56.0 PK	74.0	-18.0	1.01 V	318	17.80	38.20
4	5372.00	46.3 AV	54.0	-7.7	1.01 V	318	8.10	38.20
5	10640.00	60.4 PK	74.0	-13.6	1.00 V	188	10.80	49.60
6	10640.00	45.8 AV	54.0	-8.2	1.00 V	188	-3.80	49.60

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Aska 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	5447.00	53.3 PK	74.0	-20.7	1.12 H	127	15.00	38.30
2	5447.00	43.5 AV	54.0	-10.5	1.12 H	127	5.20	38.30
3	#5470.00	48.7 PK	68.3	-19.6	1.12 H	127	10.40	38.30
4	*5500.00	100.9 PK			1.12 H	127	62.50	38.40
5	*5500.00	91.1 AV			1.12 H	127	52.70	38.40
6	11000.00	58.3 PK	74.0	-15.7	1.00 H	79	8.00	50.30
7	11000.00	45.8 AV	54.0	-8.2	1.00 H	79	-4.50	50.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5447.00	55.9 PK	74.0	-18.1	1.00 V	201	17.60	38.30
2	5447.00	46.6 AV	54.0	-7.4	1.00 V	201	8.30	38.30
3	#5470.00	54.1 PK	68.3	-14.2	1.00 V	201	15.80	38.30
4	*5500.00	104.4 PK			1.00 V	201	66.00	38.40
5	*5500.00	94.5 AV			1.00 V	201	56.10	38.40
6	11000.00	58.1 PK	74.0	-15.9	1.00 V	199	7.80	50.30
7	11000.00	46.0 AV	54.0	-8.0	1.00 V	199	-4.30	50.30

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Aska 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	*5580.00	100.2 PK			1.11 H	128	61.70	38.50
2	*5580.00	90.5 AV			1.11 H	128	52.00	38.50
3	11160.00	59.1 PK	74.0	-14.9	1.00 H	37	8.90	50.20
4	11160.00	45.9 AV	54.0	-8.1	1.00 H	37	-4.30	50.20
5	#16740.00	61.3 PK	68.3	-7.0	1.00 H	55	11.20	50.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	102.9 PK			1.10 V	172	64.40	38.50
2	*5580.00	93.0 AV			1.10 V	172	54.50	38.50
3	11160.00	58.7 PK	74.0	-15.3	1.00 V	183	8.50	50.20
4	11160.00	46.0 AV	54.0	-8.0	1.00 V	183	-4.20	50.20
5	#16740.00	61.3 PK	68.3	-7.0	1.00 V	128	11.20	50.10

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 132	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Aska 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	5660.00	100.5 PK			1.14 H	151	61.80	38.70
2	5660.00	90.6 AV			1.14 H	151	51.90	38.70
3	11320.00	58.3 PK	74.0	-15.7	1.00 H	26	8.00	50.30
4	11320.00	45.8 AV	54.0	-8.2	1.00 H	26	-4.50	50.30
5	#16980.00	62.3 PK	68.3	-6.0	1.00 H	61	11.20	51.10
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	5660.00	102.6 PK			1.20 V	171	63.90	38.70
2	5660.00	92.5 AV			1.20 V	171	53.80	38.70
3	11320.00	58.3 PK	74.0	-15.7	1.00 V	153	8.00	50.30
4	11320.00	45.6 AV	54.0	-8.4	1.00 V	153	-4.70	50.30
5	#16980.00	62.9 PK	68.3	-5.4	1.00 V	121	11.80	51.10

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. "#":The radiated frequency is out the restricted band.
4. Margin value = Emission level – Limit value.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH hPa	TESTED BY	Aska 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	*5700.00	99.3 PK			1.00 H	151	60.50	38.80
2	*5700.00	90.1 AV			1.00 H	151	51.30	38.80
3	#5725.00	50.8 PK	68.3	-17.5	1.00 H	151	12.00	38.80
4	11400.00	58.3 PK	74.0	-15.7	1.00 H	72	8.20	50.10
5	11400.00	45.6 AV	54.0	-8.4	1.00 H	72	-4.50	50.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	102.2 PK			1.01 V	285	63.40	38.80
2	*5700.00	92.3 AV			1.01 V	285	53.50	38.80
3	#5725.00	53.1 PK	68.3	-15.2	1.01 V	285	14.30	38.80
4	11400.00	57.7 PK	74.0	-16.3	1.00 V	76	7.60	50.10
5	11400.00	45.6 AV	54.0	-8.4	1.00 V	76	-4.50	50.10

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

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Aska 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	5128.00	53.1 PK	74.0	-20.9	1.00 H	169	15.20	37.90
2	5128.00	42.5 AV	54.0	-11.5	1.00 H	169	4.60	37.90
3	*5180.00	101.5 PK			1.00 H	165	63.60	37.90
4	*5180.00	89.6 AV			1.00 H	165	51.70	37.90
5	#10360.00	57.3 PK	68.3	-11.0	1.00 H	123	8.20	49.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5128.00	50.7 PK	74.0	-23.3	1.23 V	285	12.80	37.90
2	5128.00	39.8 AV	54.0	-14.2	1.23 V	285	1.90	37.90
3	*5180.00	100.6 PK			1.34 V	286	62.70	37.90
4	*5180.00	89.0 AV			1.34 V	286	51.10	37.90
5	#10360.00	57.3 PK	68.3	-11.0	1.00 V	147	8.20	49.10

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Aska 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	*5200.00	100.7 PK			1.00 H	167	62.80	37.90
2	*5200.00	89.6 AV			1.00 H	167	51.70	37.90
3	#10400.00	58.2 PK	68.3	-10.1	1.00 H	159	9.00	49.20
4	15600.00	59.3 PK	74.0	-14.7	1.00 H	134	10.20	49.10
5	15600.00	46.8 AV	54.0	-7.2	1.00 H	134	-2.30	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	*5200.00	99.6 PK			1.00 V	286	61.70	37.90
2	*5200.00	89.0 AV			1.00 V	286	51.10	37.90
3	#10400.00	57.1 PK	68.3	-11.2	1.00 V	137	7.90	49.20
4	15600.00	59.3 PK	74.0	-14.7	1.00 V	213	10.20	49.10
5	15600.00	46.3 AV	54.0	-7.7	1.00 V	213	-2.80	49.10

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Aska 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	*5240.00	102.2 PK			1.23 H	166	64.20	38.00
2	*5240.00	90.4 AV			1.23 H	166	52.40	38.00
3	5350.00	50.4 PK	74.0	-23.6	1.15 H	169	12.30	38.10
4	5350.00	37.6 AV	54.0	-16.4	1.15 H	169	-0.50	38.10
5	#10480.00	58.0 PK	68.3	-10.3	1.00 H	79	8.50	49.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	100.8 PK			1.00 V	288	62.80	38.00
2	*5240.00	89.9 AV			1.00 V	288	51.90	38.00
3	5350.00	49.9 PK	74.0	-24.1	1.00 V	279	11.80	38.10
4	5350.00	37.1 AV	54.0	-16.9	1.00 V	279	-1.00	38.10
5	#10480.00	57.0 PK	68.3	-11.3	1.00 V	127	7.50	49.50

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Aska 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	*5260.00	106.6 PK			1.00 H	346	68.60	38.00
2	*5260.00	94.7 AV			1.00 H	346	56.70	38.00
3	5350.00	52.6 PK	74.0	-21.4	1.00 H	348	14.50	38.10
4	5350.00	40.3 AV	54.0	-13.7	1.00 H	348	2.20	38.10
5	#10520.00	58.4 PK	68.3	-9.9	1.00 H	127	8.80	49.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	106.2 PK			1.00 V	288	68.20	38.00
2	*5260.00	94.7 AV			1.00 V	288	56.70	38.00
3	5350.00	55.5 PK	74.0	-18.5	1.00 V	322	17.40	38.10
4	5350.00	44.1 AV	54.0	-9.9	1.00 V	322	6.00	38.10
5	#10520.00	57.6 PK	68.3	-10.7	1.00 V	172	8.00	49.60

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Aska 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	*5300.00	107.2 PK			1.00 H	347	69.10	38.10
2	*5300.00	94.8 AV			1.00 H	347	56.70	38.10
3	10600.00	57.9 PK	74.0	-16.1	1.00 H	128	8.30	49.60
4	10600.00	45.6 AV	54.0	-8.4	1.00 H	128	-4.00	49.60
5	15900.00	58.6 PK	74.0	-15.4	1.00 H	216	10.50	48.10
6	15900.00	45.5 AV	54.0	-8.5	1.00 H	216	-2.60	48.10
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	*5300.00	107.8 PK			1.00 V	42	69.70	38.10
2	*5300.00	94.9 AV			1.00 V	42	56.80	38.10
3	10600.00	59.3 PK	74.0	-14.7	1.00 V	137	9.70	49.60
4	10600.00	46.3 AV	54.0	-7.7	1.00 V	137	-3.30	49.60
5	15900.00	58.2 PK	74.0	-15.8	1.00 V	231	10.10	48.10
6	15900.00	45.4 AV	54.0	-8.6	1.00 V	231	-2.70	48.10

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Aska 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	*5320.00	107.8 PK			1.20 H	173	69.70	38.10
2	*5320.00	95.9 AV			1.20 H	173	57.80	38.10
3	5372.00	61.5 PK	74.0	-12.5	1.19 H	173	23.30	38.20
4	5372.00	50.0 AV	54.0	-4.0	1.19 H	173	11.80	38.20
5	10640.00	58.8 PK	74.0	-15.2	1.00 H	43	9.20	49.60
6	10640.00	45.2 AV	54.0	-8.8	1.00 H	43	-4.40	49.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	107.2 PK			1.02 V	144	69.10	38.10
2	*5320.00	95.2 AV			1.02 V	144	57.10	38.10
3	5372.00	58.6 PK	74.0	-15.4	1.02 V	326	20.40	38.20
4	5372.00	48.9 AV	54.0	-5.1	1.02 V	326	10.70	38.20
5	10640.00	58.6 PK	74.0	-15.4	1.00 V	278	9.00	49.60
6	10640.00	45.6 AV	54.0	-8.4	1.00 V	278	-4.00	49.60

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Anderson Hong

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	63.1 PK	74.0	-10.9	1.05 H	167	24.80	38.30
2	5460.00	51.0 AV	54.0	-3.0	1.05 H	167	12.70	38.30
3	#5470.00	62.4 PK	68.3	-5.9	1.05 H	169	24.10	38.30
4	*5500.00	107.6 PK			1.05 H	169	69.20	38.40
5	*5500.00	96.3 AV			1.05 H	169	57.90	38.40
6	11000.00	59.1 PK	74.0	-14.9	1.00 H	70	8.80	50.30
7	11000.00	46.8 AV	54.0	-7.2	1.00 H	70	-3.50	50.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5448.00	63.2 PK	74.0	-10.8	1.00 V	148	24.90	38.30
2	5448.00	50.3 AV	54.0	-3.7	1.00 V	148	12.00	38.30
3	#5470.00	59.9 PK	68.3	-8.4	1.00 V	148	21.60	38.30
4	*5500.00	107.3 PK			1.00 V	148	68.90	38.40
5	*5500.00	95.7 AV			1.00 V	148	57.30	38.40
6	11000.00	60.0 PK	74.0	-14.0	1.00 V	52	9.70	50.30
7	11000.00	46.8 AV	54.0	-7.2	1.00 V	52	-3.50	50.30

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Anderson Hong

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	107.9 PK			1.26 H	173	69.40	38.50
2	*5580.00	96.6 AV			1.26 H	173	58.10	38.50
3	11160.00	59.5 PK	74.0	-14.5	1.00 H	62	9.30	50.20
4	11160.00	47.2 AV	54.0	-6.8	1.00 H	62	-3.00	50.20
5	#16740.00	62.0 PK	68.3	-6.3	1.00 H	70	11.90	50.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	107.4 PK			1.20 V	176	68.90	38.50
2	*5580.00	96.2 AV			1.20 V	176	57.70	38.50
3	11160.00	60.3 PK	74.0	-13.7	1.00 V	59	10.10	50.20
4	11160.00	47.2 AV	54.0	-6.8	1.00 V	59	-3.00	50.20
5	#16740.00	62.1 PK	68.3	-6.2	1.00 V	31	12.00	50.10

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 132	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Anderson Hong

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	*5660.00	107.5 PK			1.12 H	169	68.80	38.70
2	*5660.00	96.5 AV			1.12 H	169	57.80	38.70
3	11320.00	59.1 PK	74.0	-14.9	1.00 H	65	8.80	50.30
4	11320.00	46.8 AV	54.0	-7.2	1.00 H	65	-3.50	50.30
5	#16980.00	63.3 PK	68.3	-5.0	1.00 H	98	12.20	51.10
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	*5660.00	107.3 PK			1.20 V	174	68.60	38.70
2	*5660.00	96.2 AV			1.20 V	174	57.50	38.70
3	11320.00	59.9 PK	74.0	-14.1	1.00 V	63	9.60	50.30
4	11320.00	46.8 AV	54.0	-7.2	1.00 V	63	-3.50	50.30
5	#16980.00	62.6 PK	68.3	-5.7	1.00 V	65	11.50	51.10

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. "#": The radiated frequency is out the restricted band.
4. Margin value = Emission level – Limit value.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Anderson Hong

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	106.8 PK			1.33 H	173	68.00	38.80
2	*5700.00	96.0 AV			1.33 H	173	57.20	38.80
3	#5725.00	60.5 PK	68.3	-7.8	1.33 H	173	21.70	38.80
4	11400.00	58.8 PK	74.0	-15.2	1.00 H	60	8.70	50.10
5	11400.00	46.4 AV	54.0	-7.6	1.00 H	60	-3.70	50.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	107.1 PK			1.19 V	174	68.30	38.80
2	*5700.00	95.7 AV			1.19 V	174	56.90	38.80
3	#5725.00	58.7 PK	68.3	-9.6	1.19 V	174	19.90	38.80
4	11400.00	59.5 PK	74.0	-14.5	1.00 V	59	9.40	50.10
5	11400.00	46.4 AV	54.0	-7.6	1.00 V	59	-3.70	50.10

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

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Anderson Hong

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	56.5 PK	74.0	-17.5	1.12 H	166	18.60	37.90
2	5150.00	44.8 AV	54.0	-9.2	1.12 H	166	6.90	37.90
3	*5190.00	100.8 PK			1.12 H	166	62.90	37.90
4	*5190.00	89.8 AV			1.12 H	166	51.90	37.90
5	#10380.00	59.0 PK	68.3	-9.3	1.00 H	46	9.80	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	5150.00	56.8 PK	74.0	-17.2	1.00 V	286	18.90	37.90
2	5150.00	44.1 AV	54.0	-9.9	1.00 V	286	6.20	37.90
3	*5190.00	98.5 PK			1.00 V	286	60.60	37.90
4	*5190.00	88.9 AV			1.00 V	286	51.00	37.90
5	#10380.00	58.5 PK	68.3	-9.8	1.00 V	80	9.30	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	
CHANNEL	Channel 46	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Anderson Hong

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	54.6 PK	74.0	-19.4	1.00 H	169	16.70	37.90
2	5150.00	43.5 AV	54.0	-10.5	1.00 H	169	5.60	37.90
3	*5230.00	100.7 PK			1.00 H	167	62.70	38.00
4	*5230.00	89.4 AV			1.00 H	167	51.40	38.00
5	#10460.00	58.1 PK	68.3	-10.2	1.00 H	80	8.60	49.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	54.0 PK	74.0	-20.0	1.00 V	287	16.10	37.90
2	5150.00	43.2 AV	54.0	-10.8	1.00 V	287	5.30	37.90
3	*5230.00	98.1 PK			1.00 V	287	60.10	38.00
4	*5230.00	88.0 AV			1.00 V	287	50.00	38.00
5	#10460.00	57.8 PK	68.3	-10.5	1.00 V	39	8.30	49.50

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Anderson Hong

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	1.36 H	175	19.20	37.90
2	5150.00	44.5 AV	54.0	-9.5	1.36 H	175	6.60	37.90
3	*5270.00	105.7 PK			1.36 H	175	67.70	38.00
4	*5270.00	94.3 AV			1.36 H	175	56.30	38.00
5	#10540.00	59.1 PK	68.3	-9.2	1.00 H	75	9.50	49.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.2 PK	74.0	-16.8	1.00 V	291	19.30	37.90
2	5150.00	44.0 AV	54.0	-10.0	1.00 V	291	6.10	37.90
3	*5270.00	103.6 PK			1.00 V	291	65.60	38.00
4	*5270.00	93.2 AV			1.00 V	291	55.20	38.00
5	#10540.00	59.0 PK	68.3	-9.3	1.00 V	42	9.40	49.60

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 62	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Anderson Hong

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	103.9 PK			1.23 H	175	65.80	38.10
2	*5310.00	92.9 AV			1.23 H	175	54.80	38.10
3	5350.00	63.1 PK	74.0	-10.9	1.23 H	175	25.00	38.10
4	5350.00	48.8 AV	54.0	-5.2	1.23 H	175	10.70	38.10
5	10620.00	58.6 PK	74.0	-15.4	1.04 H	123	9.00	49.60
6	10620.00	45.5 AV	54.0	-8.5	1.04 H	123	-4.10	49.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	102.3 PK			1.00 V	289	64.20	38.10
2	*5310.00	92.2 AV			1.00 V	289	54.10	38.10
3	5350.00	63.8 PK	74.0	-10.2	1.00 V	286	25.70	38.10
4	5350.00	47.6 AV	54.0	-6.4	1.00 V	286	9.50	38.10
5	10620.00	58.4 PK	74.0	-15.6	1.07 V	81	8.80	49.60
6	10620.00	45.8 AV	54.0	-8.2	1.07 V	81	-3.80	49.60

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 102	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Anderson Hong

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	60.7 PK	74.0	-13.3	1.27 H	173	22.40	38.30
2	5460.00	48.9 AV	54.0	-5.1	1.27 H	173	10.60	38.30
3	#5470.00	64.4 PK	68.3	-3.9	1.27 H	173	26.10	38.30
4	*5510.00	105.8 PK			1.27 H	173	67.40	38.40
5	*5510.00	94.2 AV			1.27 H	173	55.80	38.40
6	11020.00	60.2 PK	74.0	-13.8	1.00 H	14	9.90	50.30
7	11020.00	46.6 AV	54.0	-7.4	1.00 H	14	-3.70	50.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.8 PK	74.0	-15.2	1.00 V	149	20.50	38.30
2	5460.00	46.4 AV	54.0	-7.6	1.00 V	149	8.10	38.30
3	#5470.00	62.6 PK	68.3	-5.7	1.00 V	149	24.30	38.30
4	*5510.00	103.3 PK			1.00 V	149	64.90	38.40
5	*5510.00	92.5 AV			1.00 V	149	54.10	38.40
6	11020.00	59.4 PK	74.0	-14.6	1.00 V	50	9.10	50.30
7	11020.00	46.2 AV	54.0	-7.8	1.00 V	50	-4.10	50.30

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 110	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Anderson Hong

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	103.3 PK			1.27 H	174	64.80	38.50
2	*5550.00	93.6 AV			1.27 H	174	55.10	38.50
3	11100.00	59.4 PK	74.0	-14.6	1.00 H	90	9.30	50.10
4	11100.00	46.7 AV	54.0	-7.3	1.00 H	90	-3.40	50.10
5	#16650.00	62.8 PK	68.3	-5.5	1.03 H	72	13.10	49.70
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	*5550.00	103.1 PK			1.09 V	136	64.60	38.50
2	*5550.00	91.9 AV			1.09 V	136	53.40	38.50
3	11100.00	59.0 PK	74.0	-15.0	1.00 V	80	8.90	50.10
4	11100.00	46.5 AV	54.0	-7.5	1.00 V	80	-3.60	50.10
5	#16650.00	60.2 PK	68.3	-8.1	1.09 V	93	10.50	49.70

- 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.
 6. “#”:The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 134	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Anderson Hong

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	105.3 PK			1.35 H	173	66.60	38.70
2	*5670.00	94.5 AV			1.35 H	173	55.80	38.70
3	#5725.00	60.8 PK	68.3	-7.5	1.35 H	173	22.00	38.80
4	11340.00	59.8 PK	74.0	-14.2	1.00 H	73	9.60	50.20
5	11340.00	47.1 AV	54.0	-6.9	1.00 H	73	-3.10	50.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	104.8 PK			1.06 V	138	66.10	38.70
2	*5670.00	93.4 AV			1.06 V	138	54.70	38.70
3	#5725.00	59.0 PK	68.3	-9.3	1.06 V	138	20.20	38.80
4	11340.00	59.3 PK	74.0	-14.7	1.00 V	73	9.10	50.20
5	11340.00	46.9 AV	54.0	-7.1	1.00 V	73	-3.30	50.20

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Sun 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	74.62	33.4 QP	40.0	-6.6	2.00 H	103	22.10	11.30
2	239.88	43.3 QP	46.0	-2.7	1.25 H	31	30.60	12.70
3	480.97	37.7 QP	46.0	-8.3	1.50 H	124	18.10	19.60
4	601.52	41.3 QP	46.0	-4.7	1.25 H	325	18.90	22.40
5	722.07	35.1 QP	46.0	-10.9	1.00 H	85	11.70	23.40
6	960.00	42.1 QP	46.0	-3.9	1.00 H	85	15.30	26.80
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	74.62	27.8 QP	40.0	-12.2	2.00 V	172	16.50	11.30
2	132.95	31.5 QP	43.5	-12.0	1.00 V	271	18.50	13.00
3	239.88	32.3 QP	46.0	-13.7	1.25 V	88	19.60	12.70
4	480.97	32.0 QP	46.0	-14.0	1.50 V	130	12.40	19.60
5	601.52	32.2 QP	46.0	-13.8	1.00 V	328	9.80	22.40
6	960.00	38.8 QP	46.0	-7.2	1.00 V	115	12.00	26.80

- 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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH	TESTED BY	Sun 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	74.62	33.7 QP	40.0	-6.3	1.50 H	97	22.40	11.30
2	239.88	43.4 QP	46.0	-2.6	1.00 H	43	30.70	12.70
3	480.97	38.3 QP	46.0	-7.7	1.50 H	4	18.70	19.60
4	601.52	38.7 QP	46.0	-7.3	1.25 H	169	16.30	22.40
5	722.07	34.4 QP	46.0	-11.6	1.50 H	88	11.00	23.40
6	960.00	41.7 QP	46.0	-4.3	1.00 H	79	14.90	26.80
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	132.95	31.3 QP	43.5	-12.2	2.00 V	10	18.30	13.00
2	166.00	27.8 QP	43.5	-15.7	1.50 V	154	14.00	13.80
3	235.99	32.6 QP	46.0	-13.4	1.75 V	82	20.00	12.60
4	480.97	31.4 QP	46.0	-14.6	1.50 V	130	11.80	19.60
5	601.52	30.8 QP	46.0	-15.2	1.50 V	67	8.40	22.40
6	960.00	38.3 QP	46.0	-7.7	1.50 V	124	11.50	26.80

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).
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. 22, 2011	Dec. 21, 2012
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Dec. 30, 2011	Dec. 29, 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_Conc_ 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

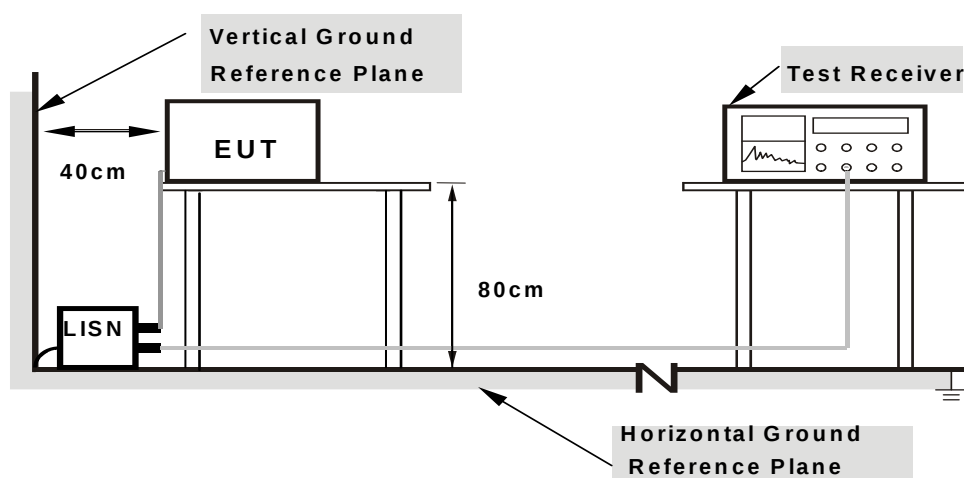
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

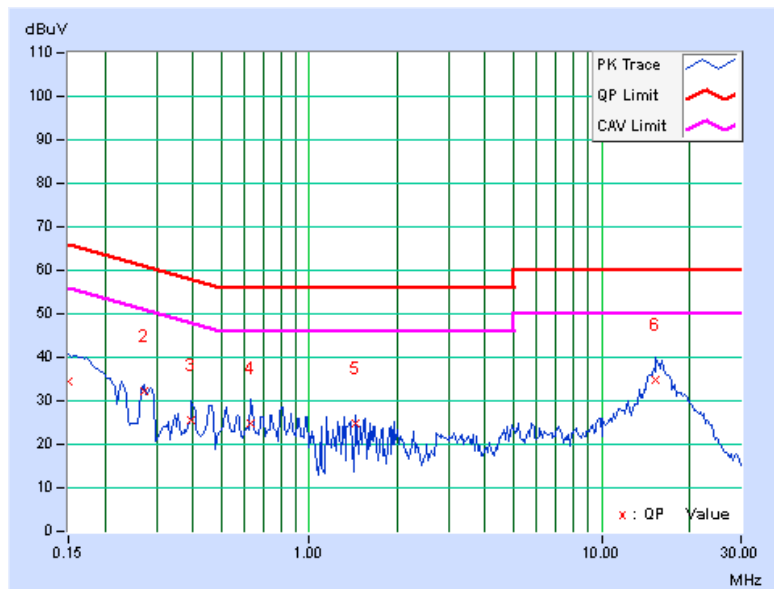
4.2.7 TEST RESULTS

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

CHANNEL	Channel 52	6dB BANDWIDTH	9kHz
PHASE	Line 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.15	34.38	17.29	34.53	17.44	66.00	56.00	-31.47	-38.56
2	0.27109	0.16	32.11	31.72	32.27	31.88	61.08	51.08	-28.82	-19.21
3	0.39609	0.17	25.34	19.28	25.51	19.45	57.93	47.93	-32.43	-28.49
4	0.62656	0.18	24.70	20.27	24.88	20.45	56.00	46.00	-31.12	-25.55
5	1.44531	0.22	24.43	16.83	24.65	17.05	56.00	46.00	-31.35	-28.95
6	15.35547	0.54	34.32	28.26	34.86	28.80	60.00	50.00	-25.14	-21.20

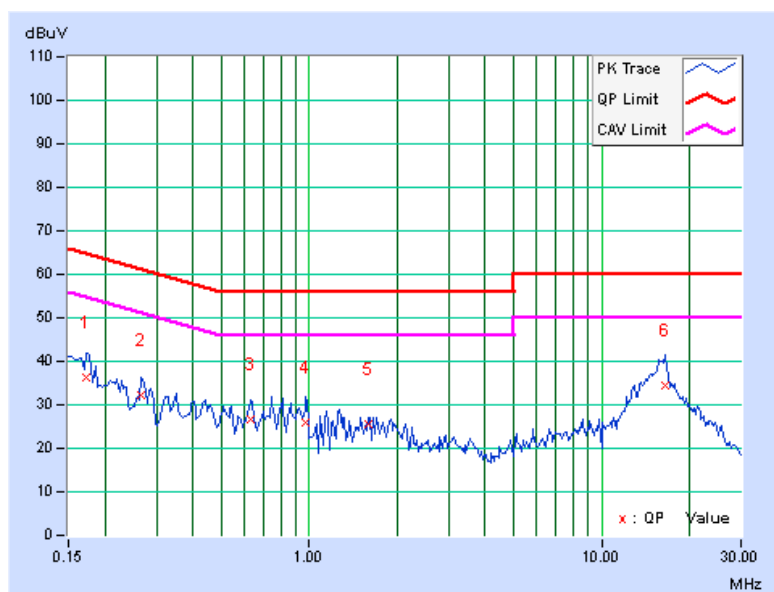
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



CHANNEL	Channel 52	6dB BANDWIDTH	9kHz
PHASE	Line 2		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17344	0.13	36.35	26.82	36.48	26.95	64.79	54.79	-28.31	-27.84
2	0.26719	0.15	32.07	29.52	32.22	29.67	61.20	51.20	-28.99	-21.54
3	0.62656	0.17	26.36	20.56	26.53	20.73	56.00	46.00	-29.47	-25.27
4	0.97422	0.19	25.57	19.34	25.76	19.53	56.00	46.00	-30.24	-26.47
5	1.59766	0.23	25.43	18.05	25.66	18.28	56.00	46.00	-30.34	-27.72
6	16.45703	0.63	33.93	27.57	34.56	28.20	60.00	50.00	-25.44	-21.80

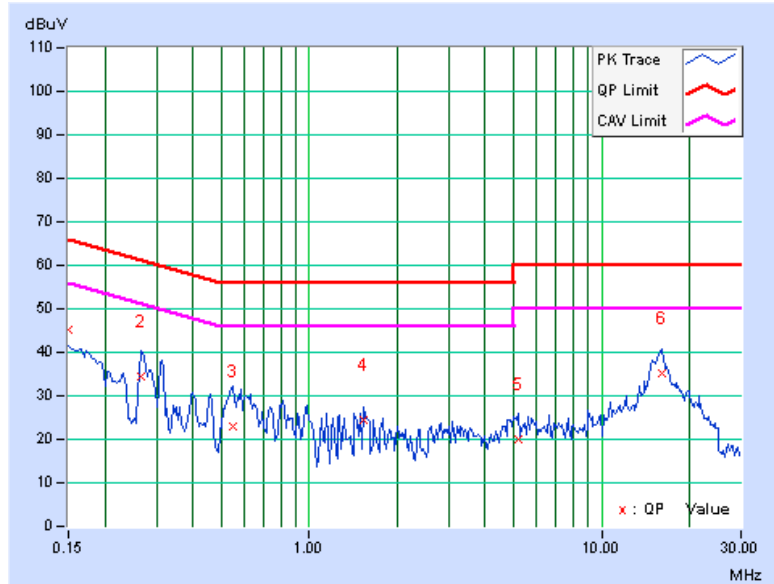
- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value =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



CHANNEL	Channel 100	6dB BANDWIDTH	9kHz
PHASE	Line 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.15	44.95	28.00	45.10	28.15	66.00	56.00	-20.90	-27.85
2	0.26719	0.16	34.16	31.25	34.32	31.41	61.20	51.20	-26.89	-19.80
3	0.54844	0.17	22.72	13.03	22.89	13.20	56.00	46.00	-33.11	-32.80
4	1.53906	0.23	24.32	16.36	24.55	16.59	56.00	46.00	-31.45	-29.41
5	5.21094	0.36	19.82	12.97	20.18	13.33	60.00	50.00	-39.82	-36.67
6	16.08594	0.55	34.56	29.30	35.11	29.85	60.00	50.00	-24.89	-20.15

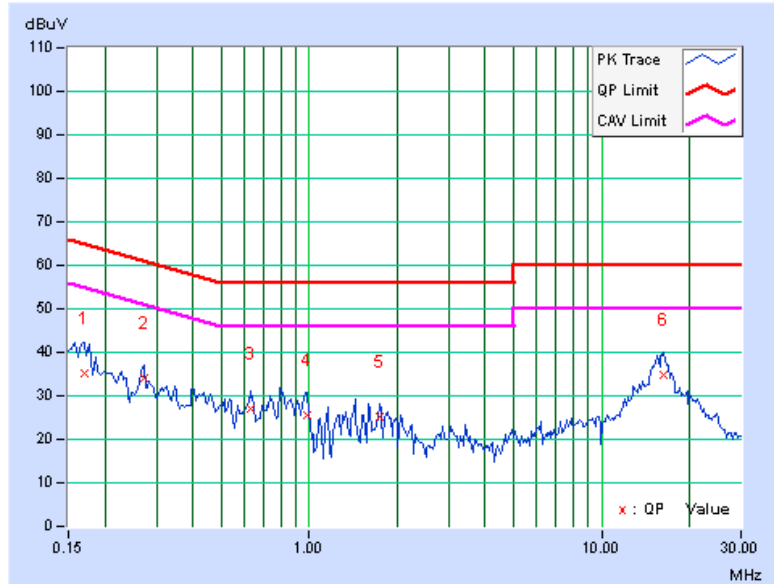
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



CHANNEL	Channel 100	6dB BANDWIDTH	9kHz
PHASE	Line 2		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16953	0.13	35.06	26.26	35.19	26.39	64.98	54.98	-29.79	-28.59
2	0.27109	0.15	34.00	32.00	34.15	32.15	61.08	51.08	-26.94	-18.94
3	0.62656	0.17	26.71	20.64	26.88	20.81	56.00	46.00	-29.12	-25.19
4	0.98594	0.19	25.51	17.89	25.70	18.08	56.00	46.00	-30.30	-27.92
5	1.73828	0.24	24.97	17.10	25.21	17.34	56.00	46.00	-30.79	-28.66
6	16.35547	0.63	34.20	28.14	34.83	28.77	60.00	50.00	-25.17	-21.23

- 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 PEAK TRANSMIT POWER MEASUREMENT

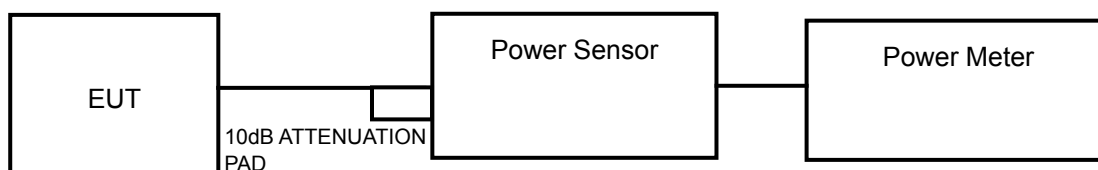
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.250 ~ 5.350GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.470 ~ 5.725GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB

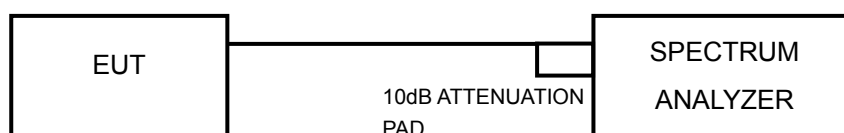
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

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

FOR 26dB BANDWIDTH

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

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

POWER OUTPUT: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	30.5	14.85	17	PASS
40	5200	30.7	14.87	17	PASS
48	5240	29.0	14.63	17	PASS
52	5260	41.1	16.14	24	PASS
60	5300	40.9	16.12	24	PASS
64	5320	45.5	16.58	24	PASS
100	5500	40.6	16.08	24	PASS
116	5580	41.9	16.22	24	PASS
132	5660	41.4	16.17	24	PASS
140	5700	40.9	16.12	24	PASS

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
36	5180	10.16	10.19	10.12	31.1	14.9	17	PASS
40	5200	10.13	10.31	10.19	31.5	15.0	17	PASS
48	5240	10.16	10.62	10.21	32.4	15.1	17	PASS
52	5260	16.12	16.16	16.05	122.5	20.9	24	PASS
60	5300	16.02	15.98	15.86	118.2	20.7	24	PASS
64	5320	15.98	15.76	15.62	113.8	20.6	24	PASS
100	5500	15.02	14.86	14.95	93.6	19.7	24	PASS
116	5580	14.65	15.02	15.13	93.5	19.7	24	PASS
132	5660	14.68	14.79	14.82	89.8	19.5	24	PASS
140	5700	15.68	15.37	15.25	104.9	20.2	24	PASS

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
38	5190	11.68	11.52	11.79	44.0	16.4	17	PASS
46	5230	11.76	11.86	11.80	45.5	16.6	17	PASS
54	5270	16.41	16.65	16.78	137.6	21.4	24	PASS
62	5310	14.68	14.79	13.86	83.8	19.2	24	PASS
102	5510	15.07	15.37	15.76	104.2	20.2	24	PASS
110	5550	14.85	15.46	15.89	104.5	20.2	24	PASS
134	5670	15.12	15.93	15.99	111.4	20.5	24	PASS

26dB BANDWIDTH: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	20.08	PASS
40	5200	20.08	PASS
48	5240	21.01	PASS
52	5260	25.62	PASS
60	5300	25.49	PASS
64	5320	25.63	PASS
100	5500	23.51	PASS
116	5580	21.67	PASS
132	5660	25.02	PASS
140	5700	23.16	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
36	5180	20.19	19.99	20.40	PASS
40	5200	20.20	20.14	20.46	PASS
48	5240	20.19	20.07	20.35	PASS
52	5260	25.12	23.53	22.03	PASS
60	5300	26.12	25.21	22.77	PASS
64	5320	27.09	23.40	21.60	PASS
100	5500	25.85	20.23	20.33	PASS
116	5580	22.65	20.29	20.88	PASS
132	5660	22.03	20.22	22.09	PASS
140	5700	24.39	20.23	22.65	PASS

802.11n (40MHz)

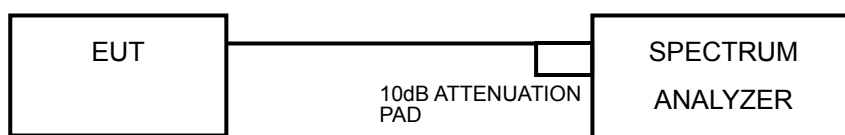
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
38	5190	41.72	41.44	42.14	PASS
46	5230	41.81	41.78	42.24	PASS
54	5270	68.39	54.70	53.86	PASS
62	5310	53.51	41.95	42.08	PASS
102	5510	53.96	41.68	42.10	PASS
110	5550	49.86	41.51	43.53	PASS
134	5670	48.89	41.52	54.94	PASS

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

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

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6.

4.4.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.83	4	PASS
40	5200	3.88	4	PASS
48	5240	3.64	4	PASS
52	5260	5.29	11	PASS
60	5300	5.08	11	PASS
64	5320	5.14	11	PASS
100	5500	5.02	11	PASS
116	5580	5.40	11	PASS
132	5660	5.18	11	PASS
140	5700	5.01	11	PASS

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2			
36	5180	-1.53	-1.22	-1.19	3.453	4	PASS
40	5200	-1.16	-1.20	-1.09	3.623	4	PASS
48	5240	-1.57	-1.02	-1.65	3.365	4	PASS
52	5260	4.80	4.86	4.73	9.557	11	PASS
60	5300	4.47	4.56	4.55	9.276	11	PASS
64	5320	4.85	4.32	4.16	9.207	11	PASS
100	5500	3.87	3.53	3.72	8.447	11	PASS
116	5580	3.44	3.64	3.69	8.305	11	PASS
132	5660	3.18	3.34	3.62	8.121	11	PASS
140	5700	4.44	3.96	4.12	8.941	11	PASS

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

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2			
38	5190	-1.71	-2.65	-2.48	2.436	4	PASS
46	5230	-1.82	-2.08	-2.71	2.501	4	PASS
54	5270	3.03	3.22	2.80	7.713	11	PASS
62	5310	1.31	0.59	-0.31	5.28	11	PASS
102	5510	1.90	1.03	1.49	6.172	11	PASS
110	5550	1.70	1.23	1.63	6.187	11	PASS
134	5670	1.58	1.55	1.53	6.199	11	PASS

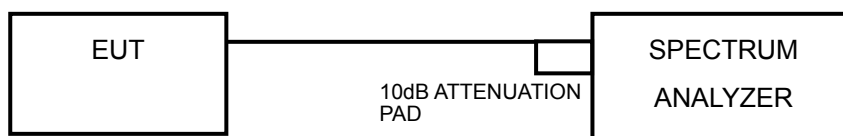
NOTE: Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

- 1) Set RBW = 1 MHz, VBW $\leq$ 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.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

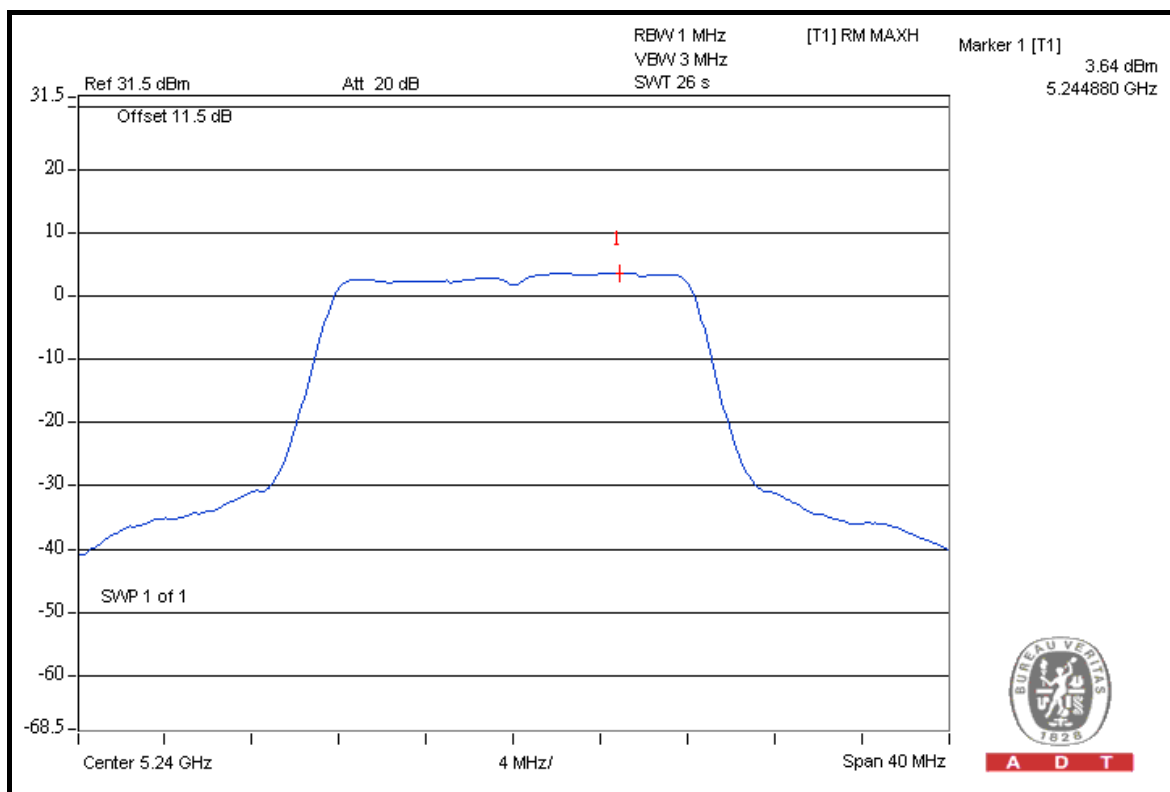
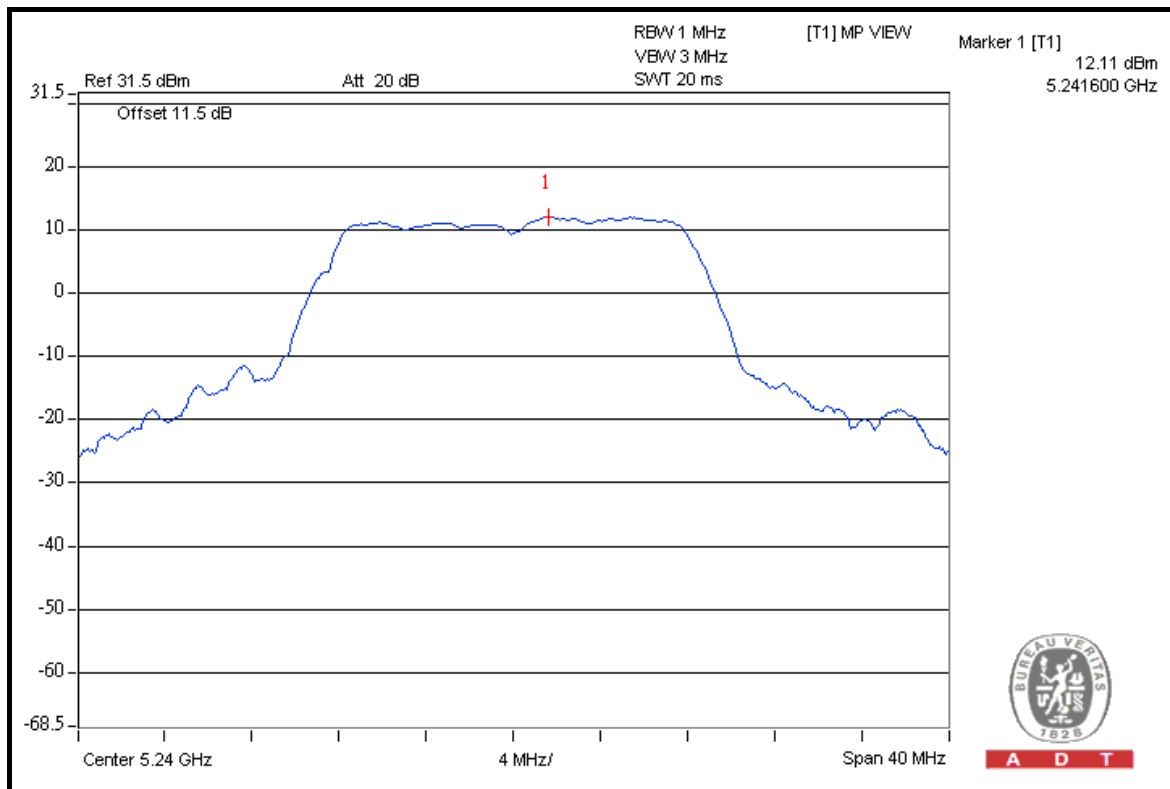
4.5.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	12.28	3.83	8.45	13	PASS
40	5200	12.31	3.88	8.43	13	PASS
48	5240	12.11	3.64	8.47	13	PASS
52	5260	13.70	5.29	8.41	13	PASS
60	5300	13.44	5.08	8.36	13	PASS
64	5320	13.47	5.14	8.33	13	PASS
100	5500	13.36	5.02	8.34	13	PASS
116	5580	12.98	5.40	7.58	13	PASS
132	5660	13.48	5.18	8.30	13	PASS
140	5700	13.45	5.01	8.44	13	PASS



A D T

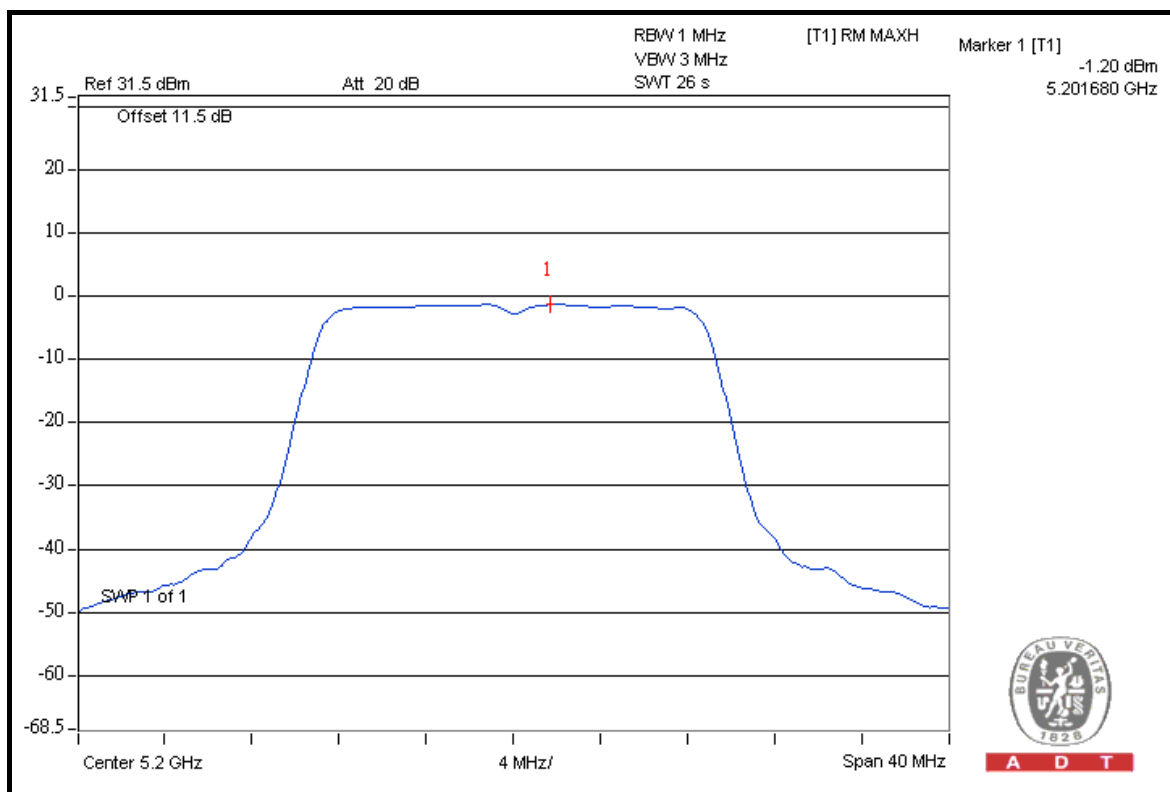
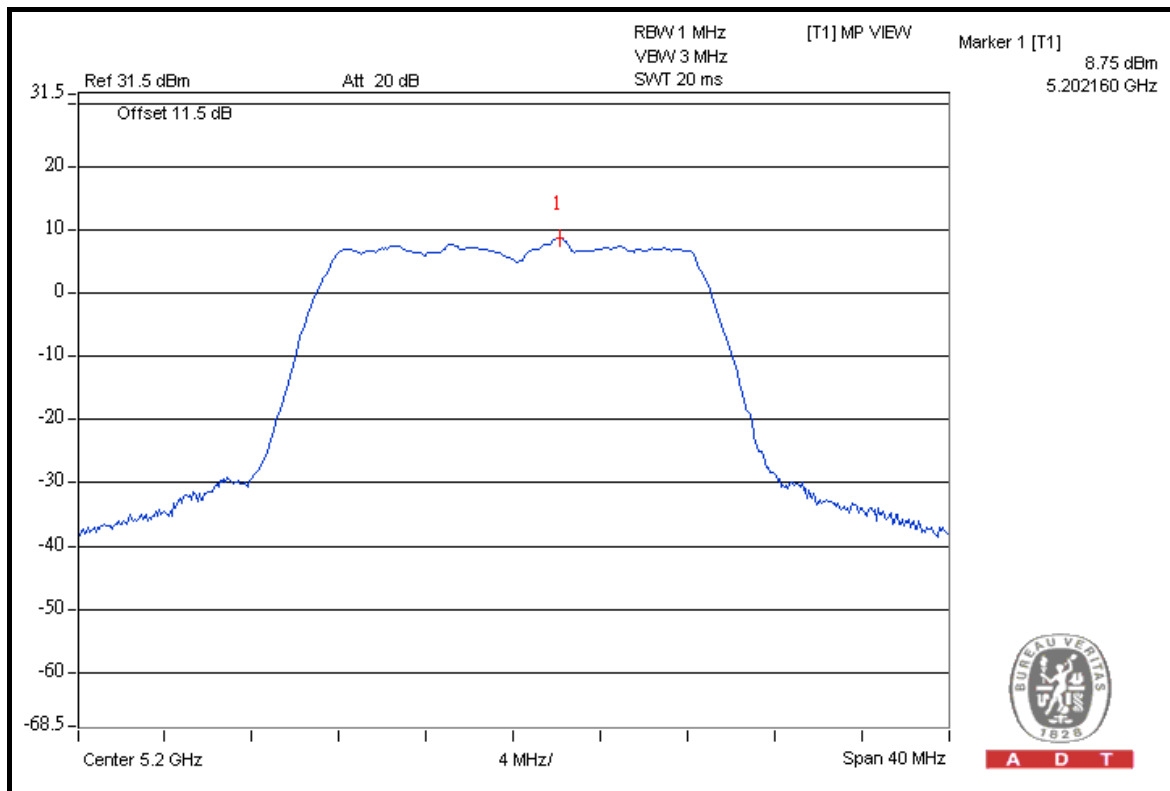


**A D T****802.11n (20MHz)**

CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)			PPSD (dBm)			PEAK EXCURSION (dB)			LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2		
36	5180	7.17	8.44	8.05	-1.53	-1.22	-1.19	8.70	9.66	9.24	13	PASS
40	5200	7.42	8.75	8.21	-1.16	-1.20	-1.09	8.58	9.95	9.30	13	PASS
48	5240	7.35	8.67	8.14	-1.57	-1.02	-1.65	8.92	9.69	9.79	13	PASS
52	5260	13.28	14.33	13.78	4.80	4.86	4.73	8.48	9.47	9.05	13	PASS
60	5300	13.16	13.96	13.55	4.47	4.56	4.55	8.69	9.40	9.00	13	PASS
64	5320	13.21	13.94	13.21	4.85	4.32	4.16	8.36	9.62	9.05	13	PASS
100	5500	12.35	13.08	12.47	3.87	3.53	3.72	8.48	9.55	8.75	13	PASS
116	5580	11.99	13.36	12.69	3.44	3.64	3.69	8.55	9.72	9.00	13	PASS
132	5660	11.97	13.08	12.46	3.18	3.34	3.62	8.79	9.74	8.84	13	PASS
140	5700	12.98	13.63	12.82	4.44	3.96	4.12	8.54	9.67	8.70	13	PASS



A D T





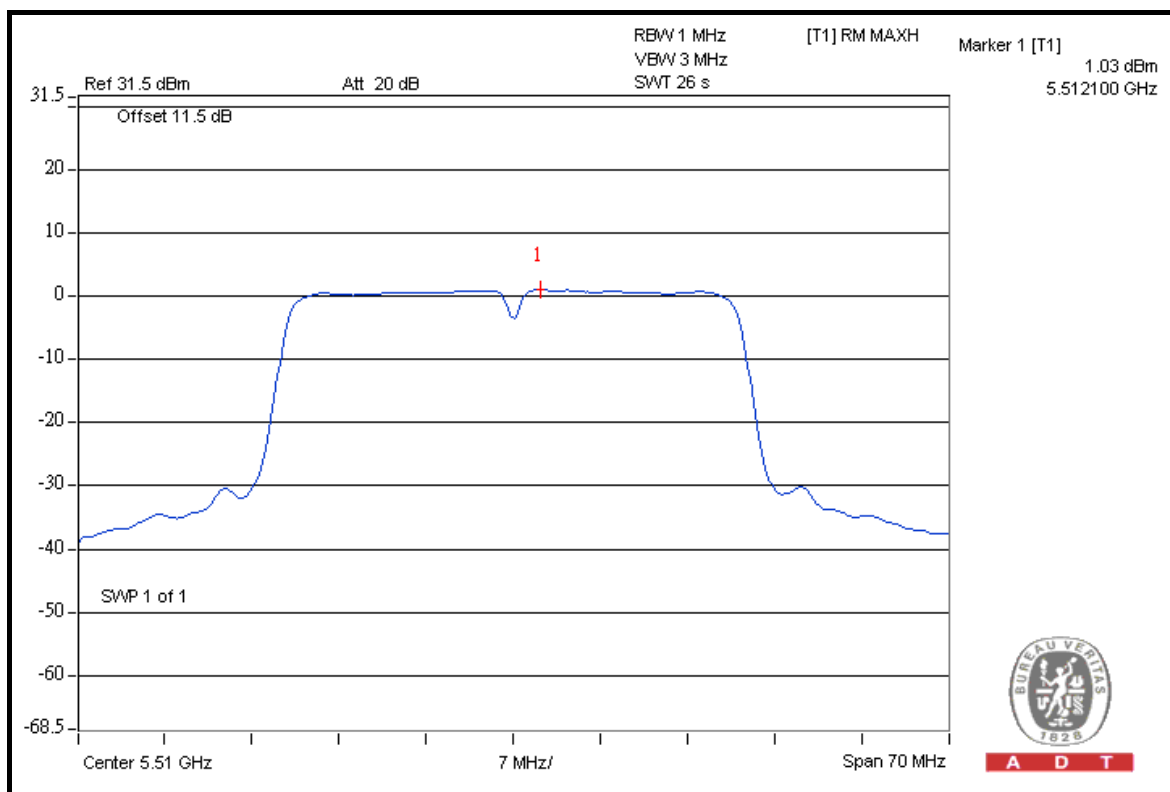
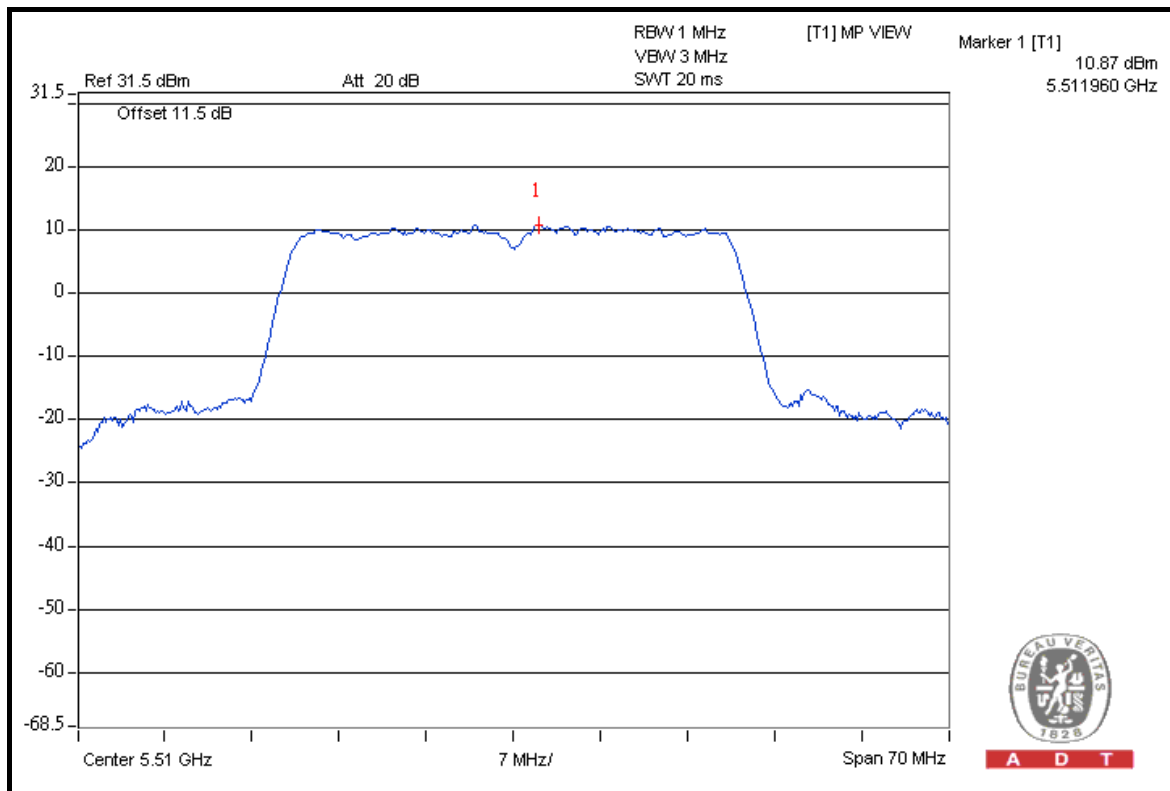
A D T

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)			PPSD (dBm)			PEAK EXCURSION (dB)			LIMIT (dB)	PASS/ FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 0	CHAIN 1	CHAIN 2		
38	5190	7.22	6.86	6.53	-1.71	-2.65	-2.48	8.93	9.51	9.01	13	PASS
46	5230	7.25	7.34	6.37	-1.82	-2.08	-2.71	9.07	9.42	9.08	13	PASS
54	5270	11.70	12.54	11.70	3.03	3.22	2.80	8.67	9.32	8.90	13	PASS
62	5310	10.20	9.98	8.66	1.31	0.59	-0.31	8.89	9.39	8.97	13	PASS
102	5510	10.56	10.87	10.34	1.90	1.03	1.49	8.66	9.84	8.85	13	PASS
110	5550	10.34	10.57	10.42	1.70	1.23	1.63	8.64	9.34	8.79	13	PASS
134	5670	10.21	11.03	10.45	1.58	1.55	1.53	8.63	9.48	8.92	13	PASS



A D T

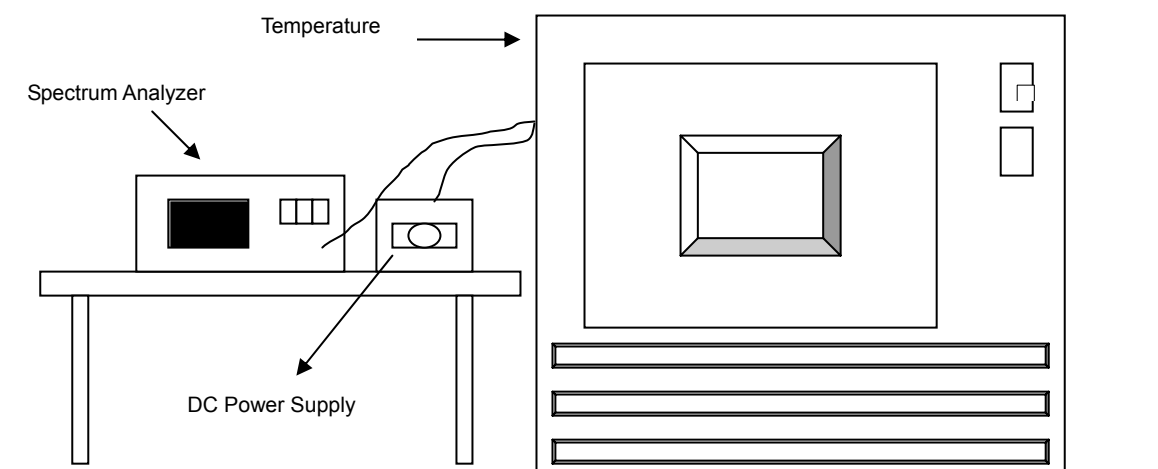


4.6 FREQUENCY STABILITY

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: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
50	110.0	5319.989708	-1.935	5319.989556	-1.963	5319.990147	-1.852	5319.989751	-1.927
40	110.0	5319.983381	-3.124	5319.983373	-3.125	5319.983427	-3.115	5319.983646	-3.074
30	110.0	5319.979965	-3.766	5319.980361	-3.692	5319.980143	-3.732	5319.979779	-3.801
20	110.0	5319.977306	-4.266	5319.977426	-4.243	5319.977362	-4.255	5319.977387	-4.251
10	110.0	5319.979423	-3.868	5319.979563	-3.842	5319.979764	-3.804	5319.979827	-3.792
0	110.0	5319.984401	-2.932	5319.984357	-2.940	5319.984438	-2.925	5319.984623	-2.891
-10	110.0	5319.978908	-3.965	5319.979241	-3.902	5319.979277	-3.895	5319.978879	-3.970
-20	110.0	5319.982907	-3.213	5319.983436	-3.113	5319.983470	-3.107	5319.983115	-3.174
-30	110.0	5319.997780	-0.417	5319.997852	-0.404	5319.997738	-0.425	5319.997782	-0.417

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	93.5	5319.979683	-3.819	5319.979974	-3.764	5319.979778	-3.801	5319.980160	-3.729
	110.0	5319.977306	-4.266	5319.977426	-4.243	5319.977362	-4.255	5319.977387	-4.251
	126.5	5319.980265	-3.710	5319.980345	-3.695	5319.980617	-3.643	5319.980281	-3.707

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---