

# FCC TEST REPORT (WLAN-15.407)

**REPORT NO.:** RF120524C18-1  
**MODEL NO.:** LEX 700  
**FCC ID:** UZ7LEX700  
**RECEIVED:** May 18, 2012  
**TESTED:** May 18 ~ Jun. 14, 2012  
**ISSUED:** Jul. 04, 2012

**APPLICANT:** Motorola Solutions, Inc.

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**ISSUED BY:** Bureau Veritas Consumer Products Services  
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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 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL .....	9
3.3 DUTY CYCLE OF TEST SIGNAL .....	11
3.4 DESCRIPTION OF SUPPORT UNITS .....	11
3.4.1 CONFIGURATION OF SYSTEM UNDER TEST .....	12
3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS .....	13
4. TEST TYPES AND RESULTS .....	14
4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT .....	14
4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT .....	14
4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS .....	14
4.1.3 TEST INSTRUMENTS .....	15
4.1.4 TEST PROCEDURES .....	16
4.1.5 DEVIATION FROM TEST STANDARD .....	16
4.1.6 TEST SETUP .....	17
4.1.7 EUT OPERATING CONDITION .....	17
4.1.8 TEST RESULTS .....	18
4.2 CONDUCTED EMISSION MEASUREMENT .....	40
4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT .....	40
4.2.2 TEST INSTRUMENTS .....	40
4.2.3 TEST PROCEDURES .....	41
4.2.4 DEVIATION FROM TEST STANDARD .....	41
4.2.5 TEST SETUP .....	41
4.2.6 EUT OPERATING CONDITIONS .....	41
4.2.7 TEST RESULTS .....	42
4.3 AVERAGE TRANSMIT POWER MEASUREMENT .....	50
4.3.1 LIMITS OF AVERAGE TRANSMIT POWER MEASUREMENT .....	50
4.3.2 TEST SETUP .....	50
4.3.3 TEST INSTRUMENTS .....	50
4.3.4 TEST PROCEDURE .....	51
4.3.5 DEVIATION FROM TEST STANDARD .....	51
4.3.6 EUT OPERATING CONDITIONS .....	51
4.3.7 TEST RESULTS .....	52
4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT .....	54
4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT .....	54
4.4.2 TEST SETUP .....	54
4.4.3 TEST INSTRUMENTS .....	54
4.4.4 TEST PROCEDURES .....	54
4.4.5 DEVIATION FROM TEST STANDARD .....	54
4.4.6 EUT OPERATING CONDITIONS .....	54
4.4.7 TEST RESULTS .....	55
4.5 PEAK POWER EXCURSION MEASUREMENT .....	56
4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT .....	56
4.5.2 TEST SETUP .....	56
4.5.3 TEST INSTRUMENTS .....	56
4.5.4 TEST PROCEDURE .....	56
4.5.5 DEVIATION FROM TEST STANDARD .....	56
4.5.6 EUT OPERATING CONDITIONS .....	56
4.5.7 TEST RESULTS .....	57



A D T

4.6	FREQUENCY STABILITY .....	59
4.6.1	LIMITS OF FREQUENCY STABILITY MEASUREMENT .....	59
4.6.2	TEST SETUP .....	59
4.6.3	TEST INSTRUMENTS .....	59
4.6.4	TEST PROCEDURE .....	60
4.6.5	DEVIATION FROM TEST STANDARD .....	60
4.6.6	EUT OPERATING CONDITION .....	60
4.6.7	TEST RESULTS .....	61
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION .....	62
6.	INFORMATION ON THE TESTING LABORATORIES .....	63
7.	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB .....	64



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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120524C18-1	Original release	Jul. 04, 2012

## 1. CERTIFICATION

**PRODUCT:** MISSION CRITICAL HANDHELD

**MODEL:** LEX 700

**BRAND:** Motorola

**APPLICANT:** Motorola Solutions, Inc.

**TESTED:** May 18 ~ Jun. 14, 2012


**TEST SAMPLE:** ENGINEERING SAMPLE

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

ANSI C63.10-2009

The above equipment (model: LEX 700) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**PREPARED BY** :  , **DATE** : Jul. 04, 2012  
Pettie Chen / Specialist

**APPROVED BY** :  , **DATE** : Jul. 04, 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 -12.81dB at 0.29412MHz.
15.407(b/1/2/3)(b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.6dB at 5350.00MHz.
15.407(a/1/2)	Max Average Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	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	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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



### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>EUT</b>	MISSION CRITICAL HANDHELD
<b>MODEL NO.</b>	LEX 700
<b>POWER SUPPLY</b>	5.0Vdc (adapter or host equipment) 3.7Vdc (Li-ion battery)
<b>MODULATION TYPE</b>	64QAM, 16QAM, QPSK, BPSK
<b>MODULATION TECHNOLOGY</b>	OFDM
<b>TRANSFER RATE</b>	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 72.2Mbps
<b>OPERATING FREQUENCY</b>	5180 ~ 5240MHz, 5260 ~ 5320MHz & 5500 ~ 5700MHz
<b>NUMBER OF CHANNEL</b>	5180 ~ 5240MHz: 4 5260 ~ 5320MHz: 4 5500 ~ 5700MHz: 11
<b>OUTPUT POWER</b>	19.187mW for 5180 ~ 5240MHz 41.783mW for 5260 ~ 5320MHz 32.734mW for 5500 ~ 5700MHz
<b>ANTENNA TYPE</b>	Refer to Note as below
<b>DATA CABLE</b>	Refer to Note as below
<b>I/O PORTS</b>	Refer to user's manual
<b>ACCESSORY DEVICES</b>	Refer to Note as below

**NOTE:**

1. The EUT can transmit via both, main or diversity antenna, but only one is TX at given time and the other RX only.

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

2. The EUT has following accessories.

Battery 1	
P/N	82-154162-01
RATING	3.7V, 1880mAh/7.0Wh

Battery 2	
P/N	82-154162-02
RATING	3.7V, 3760mAh/13.9Wh

\*Battery 2 was the worst for final test.

ADAPTER	
BRAND	MOTOROLA
MODEL	IU08-2050120-WP
INPUT	100-240Vac, 50/60Hz, 0.2A
OUTPUT	5Vdc, 1.2A

USB charging cable	
BRAND	MOTOROLA
MODEL	25-128458-01R
CABLE	1.5m shielded cable without core

3. EUT software and firmware version.

OEM NAME	Motorola LEX700
OEM VERSION	0.20.0059
WIRELESS PART NUMBER	31-FUSION-X2.00
WIRELESS FUSION	X_2.00.0.0.041E

4. The following antennas for the EUT.

Item	Type	Gain(dBi)	Connector
Main	Inverted-F	1.8	NA
Div.	Inverted-F	2.75	NA

\*Main antenna path was the worst for the final test.

5. 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

### 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

### FOR 5500 ~ 5700MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz		



### 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE<1G	PLC	APCM	
A	√	√	√	√	Power from adapter
B	-	√	√	-	Power from host equipment

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**.

**NOTE:** "-" means no effect.

#### **RADIATED EMISSION TEST (ABOVE 1GHz):**

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	7.2
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	7.2

#### **RADIATED EMISSION TEST (BELOW 1GHz):**

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B	802.11n (20MHz)	5180-5320	36 to 64	52	OFDM	BPSK	7.2
A, B	802.11a	5500-5700	100 to 140	100	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.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B	802.11n (20MHz)	5180-5320	36 to 64	52	OFDM	BPSK	7.2
A, B	802.11a	5500-5700	100 to 140	100	OFDM	BPSK	6.0

### **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.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	7.2
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	7.2

### **TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	25deg. C, 68%RH	120Vac, 60Hz	Anderson Hong
RE<1G	23deg. C, 67%RH	120Vac, 60Hz	Sun Lin
PLC	23deg. C, 65%RH	120Vac, 60Hz	Felix Chen
APCM	25deg. C, 68%RH	120Vac, 60Hz	Anderson Hong

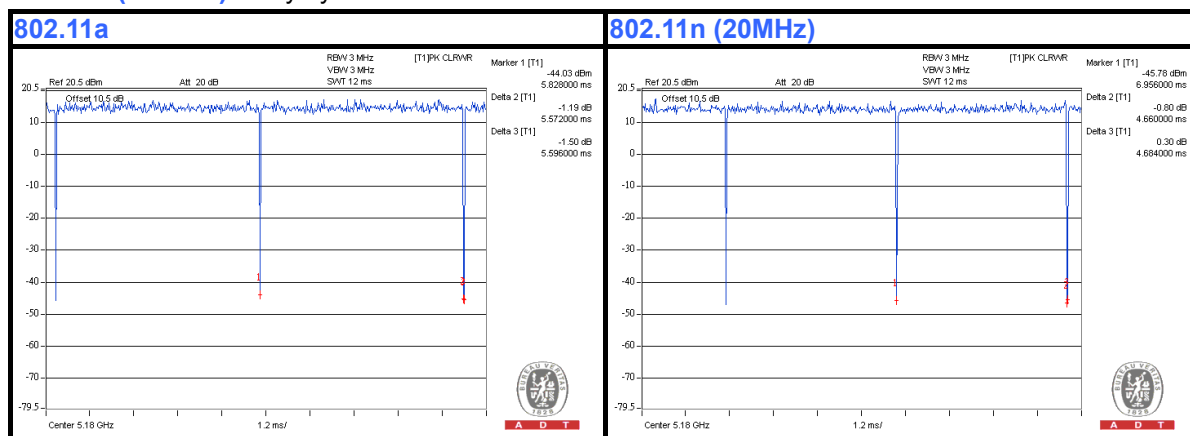
### 3.3 DUTY CYCLE OF TEST SIGNAL

For 802.11a & 802.11n (20MHz):

Duty cycle of test signal is > 98 %

802.11a: Duty cycle =  $5.572/5.596 \times 100\% = 99.6\%$

802.11n (20MHz): Duty cycle =  $4.660/4.684 \times 100\% = 99.5\%$



### 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.

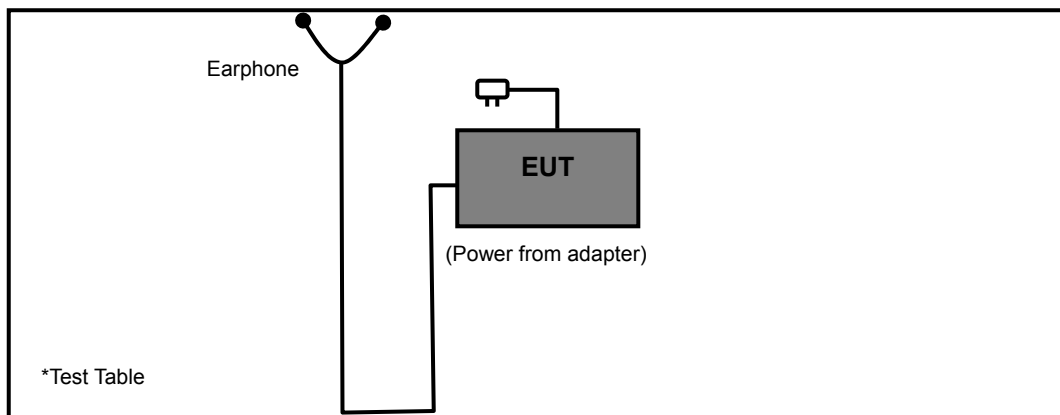
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook	DELL	E5410	1HC2XM1	FCC DoC Approved
2	Earphone	Nokia	NA	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.4m shielded cable without core

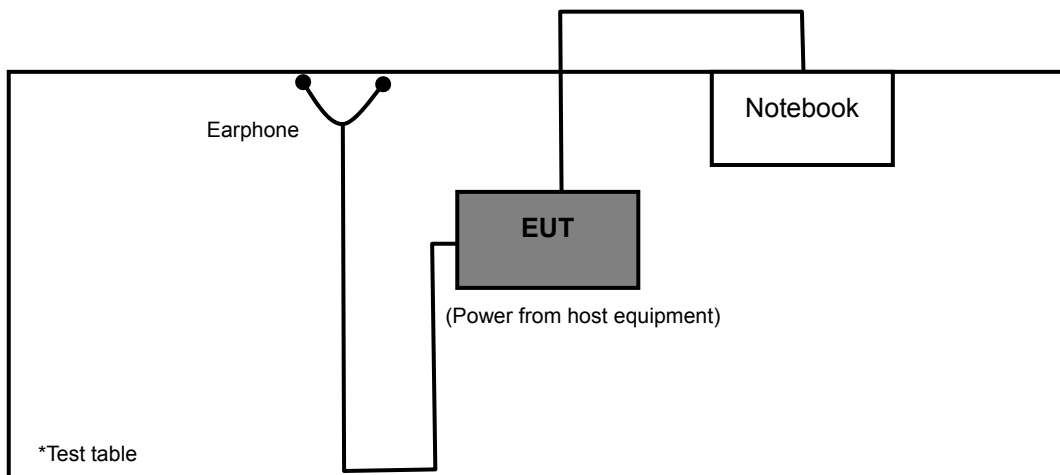
**NOTE:** 1. All power cords of the above support units are non shielded (1.8m).  
2. Item 2 was provided by client.

### 3.4.1 CONFIGURATION OF SYSTEM UNDER TEST

#### Test Mode A



#### Test Mode B



### 3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

**FCC Part 15, Subpart E (15.407)**

**789033 D01 General UNII Test Procedures v01r01**

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	ESCI	100744	Apr. 19, 2012	Apr. 18, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Aug. 04, 2011	Aug. 03, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 03, 2012	Apr. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Sep. 06, 2011	Sep. 05, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 20, 2011	Jul. 19, 2012
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier Agilent	8449B	3008A01911	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent	8447D	2944A10638	Oct. 29, 2011	Oct. 28, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295013/4 283403/4	Aug. 19, 2011	Aug. 18, 2012
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 13, 2011	Aug. 12, 2012
Software	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 29, 2011	Oct. 28, 2012
Turn Table Controller ADT.	SC100.	SC93021704	NA	NA
High Speed Peak Power Meter	ML2495A	1145013	Nov. 16, 2011	Nov. 15, 2012
Power Sensor	MA2411B	1026085	Oct. 13, 2011	Oct. 12, 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 calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
  3. The test was performed in HwaYa Chamber 9.
  4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
  5. The FCC Site Registration No. is 460141.
  6. The IC Site Registration No. is IC 7450F-4.

#### 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:**

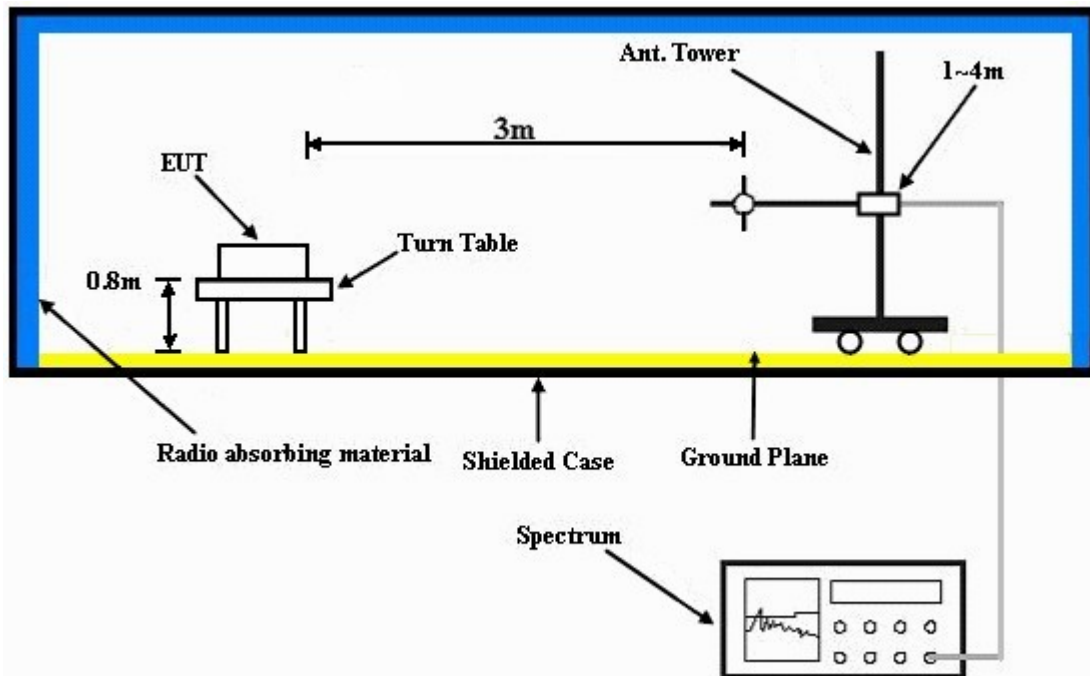
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

##### Test Mode A

- Placed the EUT with earphone on testing table.
- Set the EUT under transmission condition continuously at specific channel frequency.

##### Test Mode B

- Connected the EUT to a notebook via USB cable and placed on a testing table.
- The EUT runs a test program (provided by manufacture) to transmit at specific channel.
- The necessary accessories enable the system in full functions.



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## 4.1.8 TEST RESULTS

## Above 1GHz WORST-CASE DATA: 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	5150.00	54.9 PK	74.0	-19.1	1.08 H	227	16.70	38.20
2	5150.00	42.3 AV	54.0	-11.7	1.08 H	227	4.10	38.20
3	*5180.00	101.2 PK			1.08 H	225	63.00	38.20
4	*5180.00	89.3 AV			1.08 H	225	51.10	38.20
5	#10360.00	53.6 PK	68.3	-14.7	1.12 H	307	5.60	48.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.2 PK	74.0	-17.8	1.29 V	194	18.00	38.20
2	5150.00	43.3 AV	54.0	-10.7	1.29 V	194	5.10	38.20
3	*5180.00	106.8 PK			1.13 V	187	68.60	38.20
4	*5180.00	95.7 AV			1.13 V	187	57.50	38.20
5	#10360.00	55.2 PK	68.3	-13.1	1.22 V	21	7.20	48.00

## 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.



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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	25deg. C, 68%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	*5200.00	101.7 PK			1.08 H	235	63.50	38.20
2	*5200.00	89.7 AV			1.08 H	235	51.50	38.20
3	#10400.00	53.2 PK	68.3	-15.1	1.22 H	289	5.10	48.10
4	15600.00	54.8 PK	74.0	-19.2	1.17 H	296	5.70	49.10
5	15600.00	42.8 AV	54.0	-11.2	1.17 H	296	-6.30	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	107.2 PK			1.13 V	191	69.00	38.20
2	*5200.00	96.3 AV			1.13 V	191	58.10	38.20
3	#10400.00	55.9 PK	68.3	-12.4	1.28 V	13	7.80	48.10
4	15600.00	56.3 PK	74.0	-17.7	1.32 V	247	7.20	49.10
5	15600.00	44.5 AV	54.0	-9.5	1.32 V	247	-4.60	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.



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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	25deg. C, 68%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	*5240.00	102.0 PK			1.17 H	243	63.70	38.30
2	*5240.00	89.8 AV			1.17 H	243	51.50	38.30
3	#10480.00	53.8 PK	68.3	-14.5	1.16 H	267	5.60	48.20
4	15720.00	54.8 PK	74.0	-19.2	1.08 H	307	5.90	48.90
5	15720.00	42.8 AV	54.0	-11.2	1.08 H	307	-6.10	48.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	107.9 PK			1.18 V	201	69.60	38.30
2	*5240.00	96.7 AV			1.18 V	201	58.40	38.30
3	#10480.00	56.7 PK	68.3	-11.6	1.27 V	15	8.50	48.20
4	15720.00	55.3 PK	74.0	-18.7	1.32 V	235	6.40	48.90
5	15720.00	43.8 AV	54.0	-10.2	1.32 V	235	-5.10	48.90

**REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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	25deg. C, 68%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	5150.00	54.6 PK	74.0	-19.4	1.12 H	92	16.40	38.20
2	5150.00	41.9 AV	54.0	-12.1	1.12 H	92	3.70	38.20
3	*5260.00	103.3 PK			1.12 H	92	65.00	38.30
4	*5260.00	92.1 AV			1.12 H	92	53.80	38.30
5	#10520.00	54.8 PK	68.3	-13.5	1.15 H	311	6.50	48.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.4 PK	74.0	-18.6	1.13 V	190	17.20	38.20
2	5150.00	42.8 AV	54.0	-11.2	1.13 V	190	4.60	38.20
3	*5260.00	110.3 PK			1.13 V	192	72.00	38.30
4	*5260.00	99.1 AV			1.13 V	192	60.80	38.30
5	#10520.00	56.2 PK	68.3	-12.1	1.25 V	23	7.90	48.30

**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 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5300.00	103.8 PK			1.07 H	234	65.40	38.40
2	*5300.00	93.0 AV			1.07 H	234	54.60	38.40
3	10600.00	53.9 PK	74.0	-20.1	1.36 H	207	5.60	48.30
4	10600.00	43.1 AV	54.0	-10.9	1.36 H	207	-5.20	48.30
5	15900.00	53.3 PK	74.0	-20.7	1.08 H	269	4.90	48.40
6	15900.00	43.2 AV	54.0	-10.8	1.08 H	269	-5.20	48.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	109.3 PK			1.12 V	183	70.90	38.40
2	*5300.00	98.3 AV			1.12 V	183	59.90	38.40
3	10600.00	56.3 PK	74.0	-17.7	1.32 V	177	8.00	48.30
4	10600.00	44.8 AV	54.0	-9.2	1.32 V	177	-3.50	48.30
5	15900.00	55.4 PK	74.0	-18.6	1.12 V	32	7.00	48.40
6	15900.00	45.2 AV	54.0	-8.8	1.12 V	32	-3.20	48.40

**REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5320.00	103.8 PK			1.04 H	237	65.40	38.40
2	*5320.00	93.2 AV			1.04 H	237	54.80	38.40
3	5350.00	57.9 PK	74.0	-16.1	1.04 H	237	19.40	38.50
4	5350.00	45.3 AV	54.0	-8.7	1.04 H	237	6.80	38.50
5	10640.00	54.1 PK	74.0	-19.9	1.38 H	211	5.60	48.50
6	10640.00	43.3 AV	54.0	-10.7	1.38 H	211	-5.20	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	*5320.00	109.1 PK			1.00 V	179	70.70	38.40
2	*5320.00	98.5 AV			1.00 V	179	60.10	38.40
3	5350.00	63.4 PK	74.0	-10.6	1.00 V	183	24.90	38.50
4	5350.00	48.7 AV	54.0	-5.3	1.00 V	183	10.20	38.50
5	10640.00	56.6 PK	74.0	-17.4	1.33 V	175	8.10	48.50
6	10640.00	45.1 AV	54.0	-8.9	1.33 V	175	-3.40	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.



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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	25deg. C, 68%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	5460.00	53.2 PK	74.0	-20.8	1.06 H	280	14.50	38.70
2	5460.00	40.9 AV	54.0	-13.1	1.06 H	280	2.20	38.70
3	#5470.00	57.5 PK	68.3	-10.8	1.06 H	280	18.80	38.70
4	*5500.00	102.0 PK			1.05 H	279	63.30	38.70
5	*5500.00	91.2 AV			1.05 H	279	52.50	38.70
6	11000.00	55.0 PK	74.0	-19.0	1.06 H	241	5.80	49.20
7	11000.00	43.9 AV	54.0	-10.1	1.06 H	241	-5.30	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	5460.00	57.5 PK	74.0	-16.5	1.16 V	188	18.80	38.70
2	5460.00	44.2 AV	54.0	-9.8	1.16 V	188	5.50	38.70
3	#5470.00	60.5 PK	68.3	-7.8	1.16 V	188	21.80	38.70
4	*5500.00	109.6 PK			1.04 V	185	70.90	38.70
5	*5500.00	98.5 AV			1.04 V	185	59.80	38.70
6	11000.00	57.8 PK	74.0	-16.2	1.30 V	102	8.60	49.20
7	11000.00	45.9 AV	54.0	-8.1	1.30 V	102	-3.30	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.





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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	25deg. C, 68%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	*5580.00	102.3 PK			1.04 H	243	63.40	38.90
2	*5580.00	91.6 AV			1.04 H	243	52.70	38.90
3	11160.00	54.7 PK	74.0	-19.3	1.08 H	253	5.40	49.30
4	11160.00	43.5 AV	54.0	-10.5	1.08 H	253	-5.80	49.30
5	#16740.00	56.8 PK	68.3	-11.5	1.35 H	178	5.30	51.50
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	*5580.00	109.7 PK			1.03 V	182	70.80	38.90
2	*5580.00	98.6 AV			1.03 V	182	59.70	38.90
3	11160.00	57.2 PK	74.0	-16.8	1.27 V	108	7.90	49.30
4	11160.00	45.3 AV	54.0	-8.7	1.27 V	108	-4.00	49.30
5	#16740.00	58.9 PK	68.3	-9.4	1.02 V	195	7.40	51.50

**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 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5700.00	99.8 PK			1.26 H	188	60.60	39.20
2	*5700.00	89.3 AV			1.26 H	188	50.10	39.20
3	#5725.00	56.3 PK	68.3	-12.0	1.33 H	230	17.10	39.20
4	11400.00	53.9 PK	74.0	-20.1	1.08 H	243	4.60	49.30
5	11400.00	42.7 AV	54.0	-11.3	1.08 H	243	-6.60	49.30
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	*5700.00	107.5 PK			1.31 V	190	68.30	39.20
2	*5700.00	96.7 AV			1.31 V	190	57.50	39.20
3	#5725.00	60.7 PK	68.3	-7.6	1.18 V	180	21.50	39.20
4	11400.00	56.6 PK	74.0	-17.4	1.31 V	105	7.30	49.30
5	11400.00	44.7 AV	54.0	-9.3	1.31 V	105	-4.60	49.30

**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.



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## 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	25deg. C, 68%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	5150.00	54.7 PK	74.0	-19.3	1.07 H	253	16.50	38.20
2	5150.00	42.2 AV	54.0	-11.8	1.07 H	253	4.00	38.20
3	*5180.00	101.5 PK			1.07 H	235	63.30	38.20
4	*5180.00	89.5 AV			1.07 H	235	51.30	38.20
5	#10360.00	55.5 PK	68.3	-12.8	1.25 H	213	7.50	48.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.8 PK	74.0	-16.2	1.03 V	214	19.60	38.20
2	5150.00	44.5 AV	54.0	-9.5	1.03 V	214	6.30	38.20
3	*5180.00	107.2 PK			1.49 V	185	69.00	38.20
4	*5180.00	96.1 AV			1.49 V	185	57.90	38.20
5	#10360.00	57.0 PK	68.3	-11.3	1.03 V	71	9.00	48.00

## 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.



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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	25deg. C, 68%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	*5200.00	103.0 PK			1.00 H	216	64.80	38.20
2	*5200.00	90.8 AV			1.00 H	216	52.60	38.20
3	#10400.00	56.2 PK	68.3	-12.1	1.28 H	215	8.10	48.10
4	15600.00	56.0 PK	74.0	-18.0	1.00 H	59	6.90	49.10
5	15600.00	43.2 AV	54.0	-10.8	1.00 H	59	-5.90	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	109.2 PK			1.14 V	180	71.00	38.20
2	*5200.00	97.0 AV			1.14 V	180	58.80	38.20
3	#10400.00	57.5 PK	68.3	-10.8	1.05 V	76	9.40	48.10
4	15600.00	57.2 PK	74.0	-16.8	1.03 V	89	8.10	49.10
5	15600.00	44.4 AV	54.0	-9.6	1.03 V	89	-4.70	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.



A D T

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	25deg. C, 68%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	*5240.00	101.7 PK			1.01 H	218	63.40	38.30
2	*5240.00	89.6 AV			1.01 H	218	51.30	38.30
3	#10480.00	55.5 PK	68.3	-12.8	1.31 H	215	7.30	48.20
4	15720.00	55.4 PK	74.0	-18.6	1.00 H	63	6.50	48.90
5	15720.00	42.7 AV	54.0	-11.3	1.00 H	63	-6.20	48.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	107.9 PK			1.15 V	181	69.60	38.30
2	*5240.00	95.8 AV			1.15 V	181	57.50	38.30
3	#10480.00	56.9 PK	68.3	-11.4	1.09 V	75	8.70	48.20
4	15720.00	56.7 PK	74.0	-17.3	1.05 V	93	7.80	48.90
5	15720.00	43.9 AV	54.0	-10.1	1.05 V	93	-5.00	48.90

**REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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	
CHANNEL	Channel 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5260.00	104.1 PK			1.00 H	215	65.80	38.30
2	*5260.00	93.0 AV			1.00 H	215	54.70	38.30
3	#10520.00	56.5 PK	68.3	-11.8	1.32 H	211	8.20	48.30
4	15780.00	56.5 PK	74.0	-17.5	1.01 H	65	7.70	48.80
5	15780.00	43.8 AV	54.0	-10.2	1.01 H	65	-5.00	48.80
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	*5260.00	112.0 PK			1.02 V	191	73.70	38.30
2	*5260.00	100.9 AV			1.02 V	191	62.60	38.30
3	#10520.00	58.1 PK	68.3	-10.2	1.07 V	71	9.80	48.30
4	15780.00	58.1 PK	74.0	-15.9	1.08 V	95	9.30	48.80
5	15780.00	45.1 AV	54.0	-8.9	1.08 V	95	-3.70	48.80

**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.
5. “ \* “: Fundamental frequency.
6. “#”: The radiated frequency is out the restricted band.



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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	25deg. C, 68%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	*5300.00	104.1 PK			1.09 H	213	65.70	38.40
2	*5300.00	93.2 AV			1.09 H	213	54.80	38.40
3	10600.00	53.7 PK	74.0	-20.3	1.34 H	196	5.40	48.30
4	10600.00	42.8 AV	54.0	-11.2	1.34 H	196	-5.50	48.30
5	15900.00	53.7 PK	74.0	-20.3	1.12 H	277	5.30	48.40
6	15900.00	43.5 AV	54.0	-10.5	1.12 H	277	-4.90	48.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	111.7 PK			1.12 V	197	73.30	38.40
2	*5300.00	100.5 AV			1.12 V	197	62.10	38.40
3	10600.00	56.8 PK	74.0	-17.2	1.28 V	165	8.50	48.30
4	10600.00	45.2 AV	54.0	-8.8	1.28 V	165	-3.10	48.30
5	15900.00	55.1 PK	74.0	-18.9	1.07 V	52	6.70	48.40
6	15900.00	44.7 AV	54.0	-9.3	1.07 V	52	-3.70	48.40

**REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5320.00	103.9 PK			1.05 H	216	65.50	38.40
2	*5320.00	92.8 AV			1.05 H	216	54.40	38.40
3	5350.00	62.8 PK	74.0	-11.2	1.05 H	216	24.30	38.50
4	5350.00	45.8 AV	54.0	-8.2	1.05 H	216	7.30	38.50
5	10640.00	54.5 PK	74.0	-19.5	1.39 H	215	6.00	48.50
6	10640.00	43.7 AV	54.0	-10.3	1.39 H	215	-4.80	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	*5320.00	110.5 PK			1.00 V	186	72.10	38.40
2	*5320.00	99.2 AV			1.00 V	186	60.80	38.40
3	5350.00	68.9 PK	74.0	-5.1	1.00 V	185	30.40	38.50
4	5350.00	50.4 AV	54.0	-3.6	1.00 V	185	11.90	38.50
5	10640.00	57.1 PK	74.0	-16.9	1.32 V	181	8.60	48.50
6	10640.00	45.6 AV	54.0	-8.4	1.32 V	181	-2.90	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.





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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	25deg. C, 68%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	5460.00	57.6 PK	74.0	-16.4	1.01 H	230	18.90	38.70
2	5460.00	43.6 AV	54.0	-10.4	1.01 H	230	4.90	38.70
3	#5470.00	58.9 PK	68.3	-9.4	1.01 H	230	20.20	38.70
4	*5500.00	102.8 PK			1.01 H	230	64.10	38.70
5	*5500.00	91.4 AV			1.01 H	230	52.70	38.70
6	11000.00	55.5 PK	74.0	-18.5	1.05 H	248	6.30	49.20
7	11000.00	42.5 AV	54.0	-11.5	1.05 H	248	-6.70	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	5460.00	59.5 PK	74.0	-14.5	1.06 V	179	20.80	38.70
2	5460.00	46.2 AV	54.0	-7.8	1.06 V	179	7.50	38.70
3	#5470.00	63.7 PK	68.3	-4.6	1.06 V	181	25.00	38.70
4	*5500.00	110.1 PK			1.06 V	181	71.40	38.70
5	*5500.00	98.9 AV			1.06 V	181	60.20	38.70
6	11000.00	56.2 PK	74.0	-17.8	1.28 V	105	7.00	49.20
7	11000.00	43.6 AV	54.0	-10.4	1.28 V	105	-5.60	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.



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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	25deg. C, 68%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	*5580.00	102.8 PK			1.00 H	210	63.90	38.90
2	*5580.00	91.6 AV			1.00 H	210	52.70	38.90
3	11160.00	56.4 PK	74.0	-17.6	1.09 H	255	7.10	49.30
4	11160.00	43.8 AV	54.0	-10.2	1.09 H	255	-5.50	49.30
5	#16740.00	57.9 PK	68.3	-10.4	1.36 H	181	6.40	51.50
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	*5580.00	109.8 PK			1.03 V	175	70.90	38.90
2	*5580.00	98.4 AV			1.03 V	175	59.50	38.90
3	11160.00	57.9 PK	74.0	-16.1	1.24 V	111	8.60	49.30
4	11160.00	45.2 AV	54.0	-8.8	1.24 V	111	-4.10	49.30
5	#16740.00	59.7 PK	68.3	-8.6	1.02 V	198	8.20	51.50

**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 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%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	*5700.00	101.9 PK			1.00 H	211	62.70	39.20
2	*5700.00	90.7 AV			1.00 H	211	51.50	39.20
3	#5725.00	58.8 PK	68.3	-9.5	1.00 H	211	19.60	39.20
4	11400.00	55.3 PK	74.0	-18.7	1.05 H	241	6.00	49.30
5	11400.00	43.1 AV	54.0	-10.9	1.05 H	241	-6.20	49.30
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	*5700.00	109.3 PK			1.08 V	196	70.10	39.20
2	*5700.00	98.0 AV			1.08 V	196	58.80	39.20
3	#5725.00	63.1 PK	68.3	-5.2	1.08 V	196	23.90	39.20
4	11400.00	57.8 PK	74.0	-16.2	1.32 V	108	8.50	49.30
5	11400.00	44.9 AV	54.0	-9.1	1.32 V	108	-4.40	49.30

**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.



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## 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	25deg. C, 68%RH	TESTED BY	Anderson Hong
TEST MODE	A		

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	189.08	21.8 QP	43.5	-21.7	2.00 H	5	9.80	12.00
2	295.78	20.9 QP	46.0	-25.1	2.00 H	5	6.20	14.70
3	515.00	24.9 QP	46.0	-21.1	1.25 H	6	4.40	20.50
4	524.70	24.7 QP	46.0	-21.3	2.00 H	5	4.00	20.70
5	544.10	27.8 QP	46.0	-18.2	1.25 H	6	6.70	21.10
6	831.22	30.7 QP	46.0	-15.3	2.00 H	128	5.10	25.60
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	107.60	23.8 QP	43.5	-19.7	1.00 V	223	13.40	10.40
2	189.08	30.1 QP	43.5	-13.4	1.00 V	245	18.10	12.00
3	216.24	23.9 QP	46.0	-22.1	1.25 V	26	12.10	11.80
4	243.40	24.4 QP	46.0	-21.6	1.00 V	10	11.60	12.80
5	350.10	19.9 QP	46.0	-26.1	1.00 V	132	3.70	16.20
6	699.30	26.8 QP	46.0	-19.2	1.25 V	126	4.00	22.80

## 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.

## 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	25deg. C, 65%RH	TESTED BY	Anderson Hong
TEST MODE	B		

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	111.48	27.9 QP	43.5	-15.6	1.50 H	130	17.10	10.80
2	177.44	36.2 QP	43.5	-7.3	1.00 H	147	23.20	13.00
3	262.80	29.8 QP	46.0	-16.2	1.00 H	129	16.30	13.50
4	365.62	29.8 QP	46.0	-16.2	2.00 H	140	13.20	16.60
5	544.10	27.6 QP	46.0	-18.4	1.00 H	102	6.50	21.10
6	600.36	31.9 QP	46.0	-14.1	1.25 H	82	9.50	22.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	43.58	25.3 QP	40.0	-14.7	1.00 V	46	11.50	13.80
2	107.60	27.0 QP	43.5	-16.5	1.00 V	275	16.60	10.40
3	134.76	27.3 QP	43.5	-16.2	1.00 V	9	14.20	13.10
4	189.08	29.0 QP	43.5	-14.5	1.25 V	30	17.00	12.00
5	299.66	26.4 QP	46.0	-19.6	1.50 V	61	11.50	14.90
6	549.92	26.2 QP	46.0	-19.8	1.00 V	69	4.90	21.30

## 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.



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## 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Anderson Hong
TEST MODE	A		

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	189.08	22.3 QP	43.5	-21.2	1.50 H	143	10.30	12.00
2	243.40	17.2 QP	46.0	-28.8	1.50 H	52	4.40	12.80
3	295.78	19.6 QP	46.0	-26.4	1.50 H	268	4.90	14.70
4	515.00	24.6 QP	46.0	-21.4	1.25 H	8	4.10	20.50
5	524.70	24.9 QP	46.0	-21.1	1.00 H	16	4.20	20.70
6	544.10	27.2 QP	46.0	-18.8	1.00 H	309	6.10	21.10
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	107.60	22.9 QP	43.5	-20.6	1.25 V	17	12.50	10.40
2	134.76	22.0 QP	43.5	-21.5	1.25 V	212	8.90	13.10
3	189.08	30.0 QP	43.5	-13.5	1.00 V	38	18.00	12.00
4	216.24	24.2 QP	46.0	-21.8	1.00 V	34	12.40	11.80
5	243.40	24.3 QP	46.0	-21.7	1.00 V	84	11.50	12.80
6	699.30	26.6 QP	46.0	-19.4	1.00 V	33	3.80	22.80

## 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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## 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anderson Hong
TEST MODE	B		

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	111.48	27.3 QP	43.5	-16.2	1.50 H	148	16.50	10.80
2	175.50	35.8 QP	43.5	-7.7	2.00 H	115	22.60	13.20
3	258.92	29.2 QP	46.0	-16.8	1.00 H	129	15.80	13.40
4	365.62	30.0 QP	46.0	-16.0	2.00 H	152	13.40	16.60
5	544.10	27.6 QP	46.0	-18.4	2.00 H	17	6.50	21.10
6	600.36	32.3 QP	46.0	-13.7	1.00 H	96	9.90	22.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	107.60	26.3 QP	43.5	-17.2	1.00 V	230	15.90	10.40
2	134.76	26.4 QP	43.5	-17.1	1.25 V	17	13.30	13.10
3	189.08	28.8 QP	43.5	-14.7	1.00 V	299	16.80	12.00
4	365.62	26.6 QP	46.0	-19.4	1.50 V	131	10.00	16.60
5	437.40	26.8 QP	46.0	-19.2	2.00 V	8	8.40	18.40
6	600.36	30.4 QP	46.0	-15.6	1.00 V	3	8.00	22.40

## REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
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 $\mu$ 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. 29, 2011	Dec. 28, 2012
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 30, 2011	Dec. 29, 2012
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 07, 2011	Jul. 06, 2012
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.



#### 4.2.3 TEST PROCEDURES

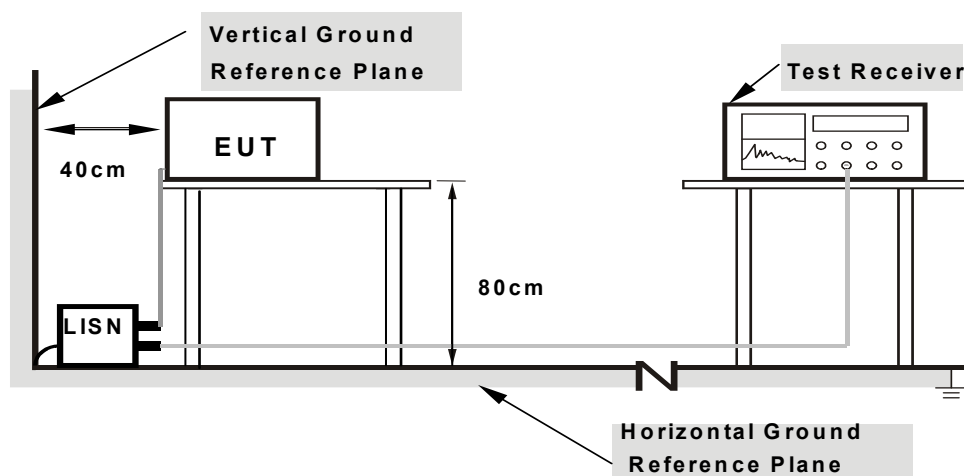
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

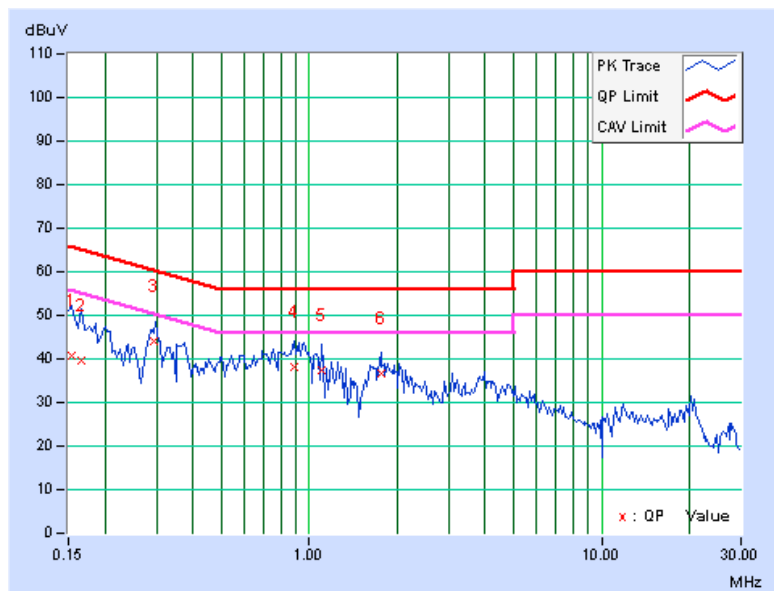
## 4.2.7 TEST RESULTS

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

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 52	TEST MODE	A

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	0.15391	0.17	40.66	20.24	40.83	20.41	65.79	55.79	-24.96	-35.38
2	0.16562	0.17	39.44	29.97	39.61	30.14	65.18	55.18	-25.57	-25.04
3	0.29412	0.18	43.97	37.41	44.15	37.59	60.41	50.41	-16.25	-12.81
4	0.89219	0.22	37.77	29.90	37.99	30.12	56.00	46.00	-18.01	-15.88
5	1.10156	0.24	37.29	29.28	37.53	29.52	56.00	46.00	-18.47	-16.48
6	1.75391	0.28	36.52	29.36	36.80	29.64	56.00	46.00	-19.20	-16.36

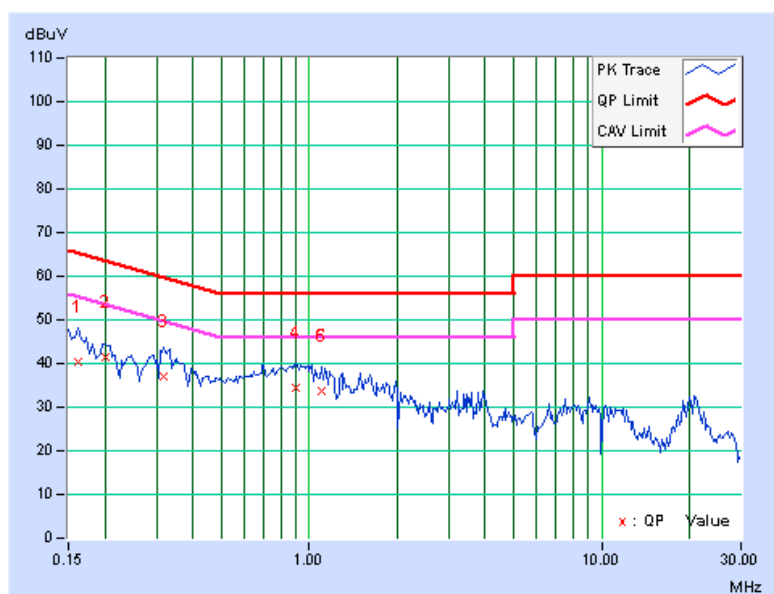
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. The emission levels of other frequencies were very low against the limit.
  3. Margin value = Emission level - Limit value
  4. Correction factor = Insertion loss + Cable loss
  5. Emission Level = Correction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



PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 52	TEST MODE	A

No	Freq.	Corr. Factor	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	0.16172	0.17	40.33	27.29	40.50	27.46	65.38	55.38	-24.88	-27.92
2	0.20078	0.15	41.23	27.12	41.38	27.27	63.58	53.58	-22.20	-26.31
3	0.31797	0.17	36.86	26.92	37.03	27.09	59.76	49.76	-22.73	-22.67
4	0.89609	0.19	34.19	26.27	34.38	26.46	56.00	46.00	-21.62	-19.54
5	1.09766	0.20	33.34	25.83	33.54	26.03	56.00	46.00	-22.46	-19.97
6	1.09766	0.20	33.61	25.77	33.81	25.97	56.00	46.00	-22.19	-20.03

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

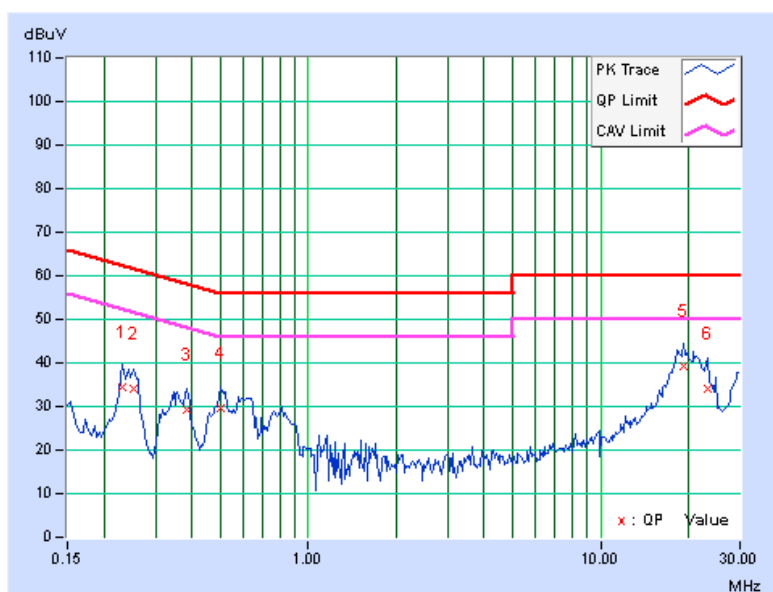


### 802.11n(20MHz)

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 52	TEST MODE	B

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	0.23203	0.15	34.19	25.51	34.34	25.66	62.38	52.38	-28.03	-26.71
2	0.25156	0.16	33.84	26.37	34.00	26.53	61.71	51.71	-27.71	-25.18
3	0.38438	0.17	29.21	20.06	29.38	20.23	58.18	48.18	-28.81	-27.96
4	0.50156	0.17	29.42	16.51	29.59	16.68	56.00	46.00	-26.41	-29.32
5	19.20313	0.61	38.76	33.34	39.37	33.95	60.00	50.00	-20.63	-16.05
6	23.25000	0.60	33.40	27.74	34.00	28.34	60.00	50.00	-26.00	-21.66

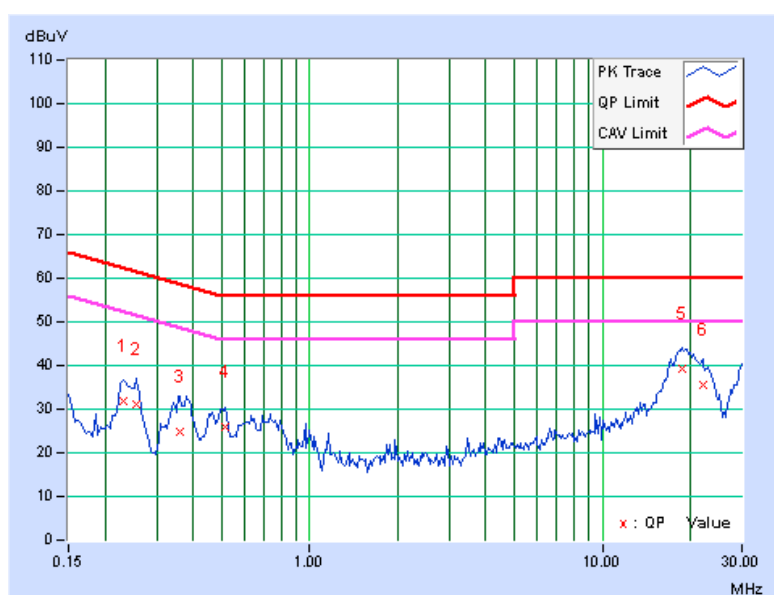
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. The emission levels of other frequencies were very low against the limit.
  3. Margin value = Emission level - Limit value
  4. Correction factor = Insertion loss + Cable loss
  5. Emission Level = Correction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



PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 52	TEST MODE	B

No	Freq.	Corr. Factor	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	0.23203	0.14	31.73	24.96	31.87	25.10	62.38	52.38	-30.50	-27.27
2	0.25547	0.15	31.13	23.95	31.28	24.10	61.58	51.58	-30.30	-27.48
3	0.36094	0.16	24.56	17.14	24.72	17.30	58.71	48.71	-33.99	-31.41
4	0.51328	0.17	25.75	14.27	25.92	14.44	56.00	46.00	-30.08	-31.56
5	18.67578	0.69	38.68	33.30	39.37	33.99	60.00	50.00	-20.63	-16.01
6	21.98047	0.69	34.98	30.65	35.67	31.34	60.00	50.00	-24.33	-18.66

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

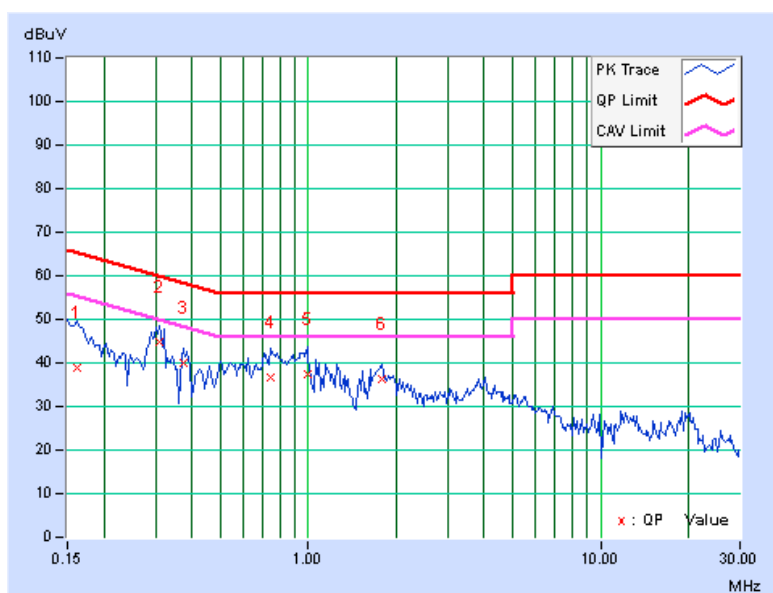


# 802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 100	TEST MODE	A

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	0.16172	0.17	38.85	24.67	39.02	24.84	65.38	55.38	-26.36	-30.54
2	0.31016	0.19	44.45	34.57	44.64	34.76	59.97	49.97	-15.33	-15.21
3	0.37648	0.20	39.78	33.66	39.98	33.86	58.36	48.36	-18.38	-14.50
4	0.74766	0.22	36.32	25.88	36.54	26.10	56.00	46.00	-19.46	-19.90
5	0.99375	0.23	37.05	28.61	37.28	28.84	56.00	46.00	-18.72	-17.16
6	1.77734	0.28	36.15	29.16	36.43	29.44	56.00	46.00	-19.57	-16.56

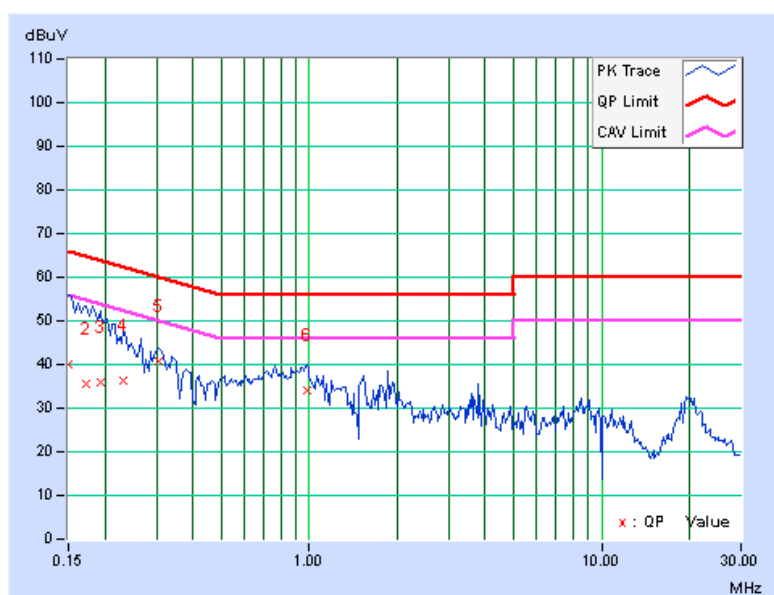
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. The emission levels of other frequencies were very low against the limit.
  3. Margin value = Emission level - Limit value
  4. Correction factor = Insertion loss + Cable loss
  5. Emission Level = Correction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



PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 100	TEST MODE	A

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	0.17	39.70	21.34	39.87	21.51	66.00	56.00	-26.13	-34.49
2	0.17344	0.16	35.26	21.12	35.42	21.28	64.79	54.79	-29.37	-33.51
3	0.19297	0.15	35.72	23.61	35.87	23.76	63.91	53.91	-28.03	-30.14
4	0.23203	0.15	36.33	20.43	36.48	20.58	62.38	52.38	-25.89	-31.79
5	0.30625	0.17	40.65	34.40	40.82	34.57	60.07	50.07	-19.26	-15.51
6	0.98203	0.19	34.05	25.87	34.24	26.06	56.00	46.00	-21.76	-19.94

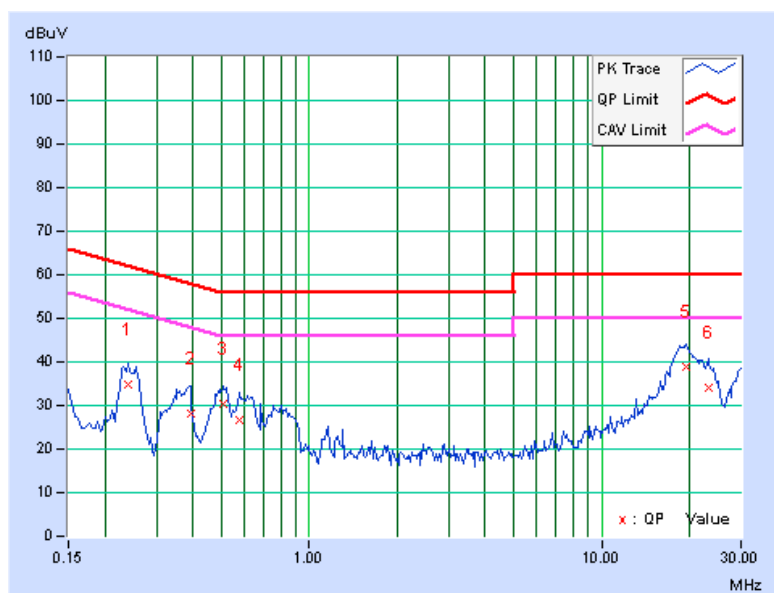
**REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.  
2. The emission levels of other frequencies were very low against the limit.  
3. Margin value = Emission level - Limit value  
4. Correction factor = Insertion loss + Cable loss  
5. Emission Level = Correction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



PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 100	TEST MODE	B

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	0.23984	0.15	34.64	27.11	34.79	27.26	62.10	52.10	-27.31	-24.84
2	0.39219	0.17	28.03	18.18	28.20	18.35	58.02	48.02	-29.82	-29.67
3	0.50938	0.17	30.31	18.25	30.48	18.42	56.00	46.00	-25.52	-27.58
4	0.57578	0.18	26.63	15.17	26.81	15.35	56.00	46.00	-29.19	-30.65
5	19.48828	0.62	38.18	32.99	38.80	33.61	60.00	50.00	-21.20	-16.39
6	23.12500	0.60	33.52	27.93	34.12	28.53	60.00	50.00	-25.88	-21.47

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

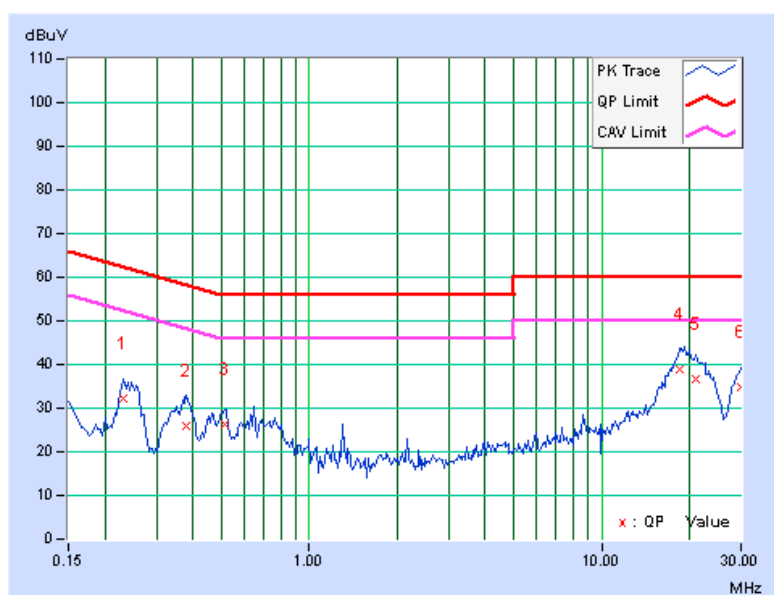




PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 100	TEST MODE	B

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	0.23203	0.14	32.04	25.67	32.18	25.81	62.38	52.38	-30.19	-26.56
2	0.38047	0.16	25.78	18.01	25.94	18.17	58.27	48.27	-32.33	-30.10
3	0.51328	0.17	26.15	14.53	26.32	14.70	56.00	46.00	-29.68	-31.30
4	18.44922	0.68	38.22	32.89	38.90	33.57	60.00	50.00	-21.10	-16.43
5	21.08203	0.70	35.96	30.61	36.66	31.31	60.00	50.00	-23.34	-18.69
6	29.98047	0.53	34.23	27.12	34.76	27.65	60.00	50.00	-25.24	-22.35

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



### 4.3 AVERAGE TRANSMIT POWER MEASUREMENT

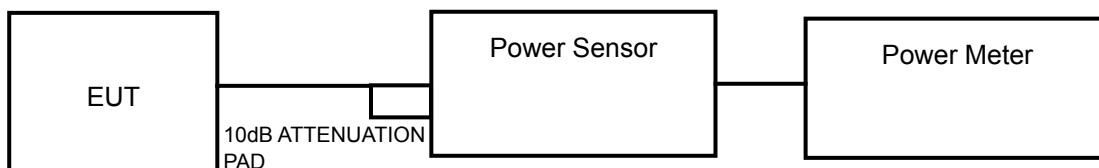
#### 4.3.1 LIMITS OF AVERAGE TRANSMIT POWER MEASUREMENT

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

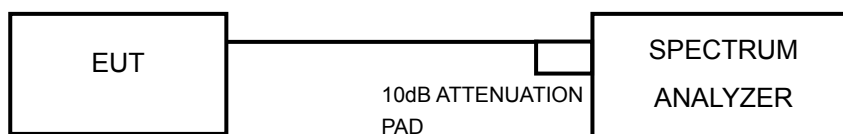
**NOTE:** Where B is the 26dB emission bandwidth in MHz.

#### 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

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst.

##### 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	17.906	12.53	17	PASS
40	5200	19.187	12.83	17	PASS
48	5240	18.880	12.76	17	PASS
52	5260	41.783	16.21	24	PASS
60	5300	36.983	15.68	24	PASS
64	5320	38.107	15.81	24	PASS
100	5500	29.174	14.65	24	PASS
116	5580	29.854	14.75	24	PASS
140	5700	22.961	13.61	24	PASS

##### 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	15.241	11.83	17	PASS
40	5200	15.668	11.95	17	PASS
48	5240	16.255	12.11	17	PASS
52	5260	37.844	15.78	24	PASS
60	5300	39.084	15.92	24	PASS
64	5320	40.926	16.12	24	PASS
100	5500	32.734	15.15	24	PASS
116	5580	31.117	14.93	24	PASS
140	5700	29.174	14.65	24	PASS



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**26dB BANDWIDTH: 802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	22.50	PASS
44	5220	23.31	PASS
48	5240	22.83	PASS
52	5260	29.90	PASS
60	5300	29.52	PASS
64	5320	29.55	PASS
100	5500	29.43	PASS
116	5580	29.33	PASS
140	5700	24.38	PASS

**802.11n (20MHz)**

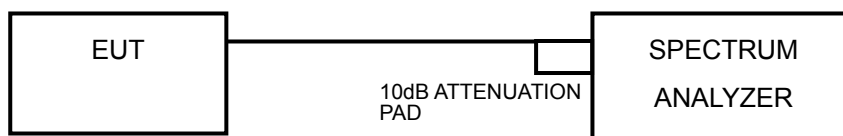
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	23.87	PASS
44	5220	23.48	PASS
48	5240	24.38	PASS
52	5260	27.66	PASS
60	5300	26.53	PASS
64	5320	25.49	PASS
100	5500	24.81	PASS
116	5580	24.10	PASS
140	5700	25.02	PASS

#### 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

Using method SA-1

- 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.
- 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
44	5220	3.87	4	PASS
48	5240	3.87	4	PASS
52	5260	7.60	11	PASS
60	5300	7.22	11	PASS
64	5320	7.23	11	PASS
100	5500	7.08	11	PASS
116	5580	7.03	11	PASS
140	5700	5.04	11	PASS

##### 802.11n (20MHz)

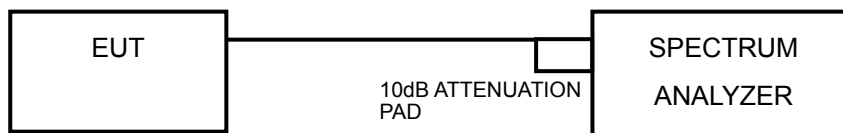
CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.41	4	PASS
44	5220	3.17	4	PASS
48	5240	3.60	4	PASS
52	5260	6.86	11	PASS
60	5300	6.20	11	PASS
64	5320	6.29	11	PASS
100	5500	5.48	11	PASS
116	5580	5.47	11	PASS
140	5700	5.68	11	PASS

## 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  $\geq$  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

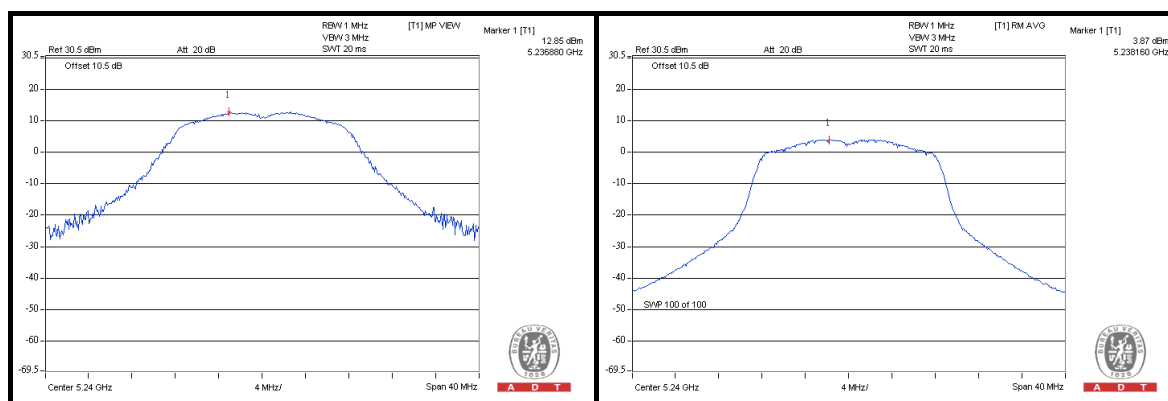
Same as 4.2.6



## 4.5.7 TEST RESULTS

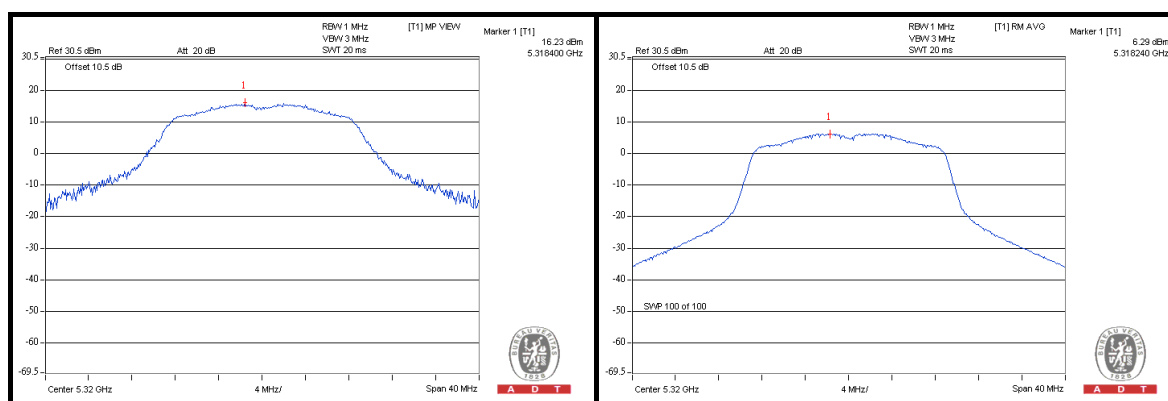
### 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	12.74	3.83	8.91	13	PASS
44	5220	12.67	3.87	8.80	13	PASS
48	5240	12.85	3.87	8.98	13	PASS
52	5260	16.39	7.60	8.79	13	PASS
60	5300	16.05	7.22	8.83	13	PASS
64	5320	15.96	7.23	8.73	13	PASS
100	5500	16.05	7.08	8.97	13	PASS
116	5580	15.70	7.03	8.67	13	PASS
140	5700	13.99	5.04	8.95	13	PASS



## 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	12.89	3.41	9.48	13	PASS
44	5220	12.66	3.17	9.49	13	PASS
48	5240	13.02	3.60	9.42	13	PASS
52	5260	16.66	6.86	9.80	13	PASS
60	5300	15.90	6.20	9.70	13	PASS
64	5320	16.23	6.29	9.94	13	PASS
100	5500	15.03	5.48	9.55	13	PASS
116	5580	15.11	5.47	9.64	13	PASS
140	5700	14.97	5.68	9.29	13	PASS

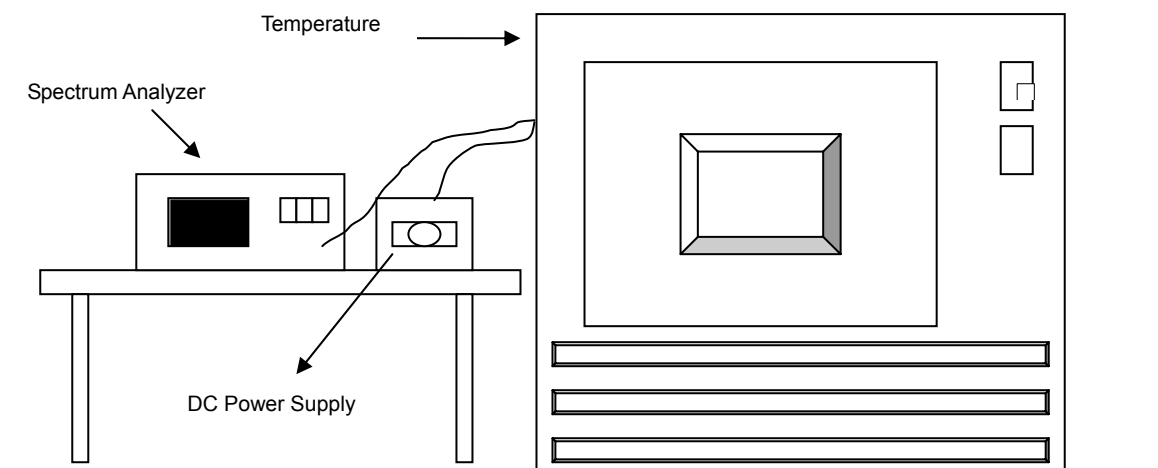


## 4.6 FREQUENCY STABILITY

### 4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

### 4.6.2 TEST SETUP



### 4.6.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

#### 4.6.4 TEST PROCEDURE

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



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## 4.6.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	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)
60	3.7	5320.008752	1.645	5320.008647	1.625	5320.009144	1.719	5320.008286	1.558
50	3.7	5320.008707	1.637	5320.008349	1.569	5320.008734	1.642	5320.008564	1.610
40	3.7	5320.010563	1.986	5320.010721	2.015	5320.011097	2.086	5320.009950	1.870
30	3.7	5320.011036	2.074	5320.011088	2.084	5320.010933	2.055	5320.011369	2.137
20	3.7	5320.013157	2.473	5320.013253	2.491	5320.013230	2.487	5320.013333	2.506
10	3.7	5320.011210	2.107	5320.011326	2.129	5320.011602	2.181	5320.010983	2.064
0	3.7	5320.009596	1.804	5320.009655	1.815	5320.009699	1.823	5320.009465	1.779
-10	3.7	5320.009045	1.700	5320.008768	1.648	5320.008613	1.619	5320.009094	1.709
-20	3.7	5320.008530	1.603	5320.007821	1.470	5320.008034	1.510	5320.007911	1.487
-30	3.7	5320.008430	1.585	5320.008185	1.539	5320.008563	1.610	5320.008155	1.533

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	3.15	5320.010971	2.062	5320.011472	2.156	5320.010813	2.033	5320.010989	2.066
	3.7	5320.013157	2.473	5320.013253	2.491	5320.013230	2.487	5320.013333	2.506
	4.255	5320.011627	2.186	5320.011530	2.167	5320.011702	2.200	5320.011097	2.086

## 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.

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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---**