

# FCC TEST REPORT (15.407)

**REPORT NO.:** RF120327C08-1  
**MODEL NO.:** F-10D  
**FCC ID:** VQK-F10D  
**RECEIVED:** Mar. 27, 2012  
**TESTED:** Apr. 27 ~ May 09, 2012  
**ISSUED:** May 17, 2012

**APPLICANT:** FUJITSU LIMITED

**ADDRESS:** 1-1, Kamikodanaka 4-chome, Nakahara-ku,  
Kawasaki 211-8588, Japan

**ISSUED BY:** Bureau Veritas Consumer Products Services  
(H.K.) Ltd., Taoyuan Branch

**LAB ADDRESS:** No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist.,  
New Taipei City, Taiwan ( R.O.C. )

**TEST LOCATION:** No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei  
Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

This test report consists of 60 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval or endorsement by TAF or any government agency. The test results in the report only apply to the tested sample.



## 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.....	9
3.2.1 DESCRIPTION OF SUPPORT UNITS .....	10
3.2.2 CONFIGURATION OF SYSTEM UNDER TEST .....	10
3.2.3 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL.....	11
3.3 DUTY CYCLE OF TEST SIGNAL.....	13
3.4 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 PEAK TRANSMIT POWER MEASUREMENT .....	46
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT .....	46
4.3.2 TEST SETUP.....	46
4.3.3 TEST INSTRUMENTS.....	46
4.3.4 TEST PROCEDURE.....	47
4.3.5 DEVIATION FROM TEST STANDARD .....	47
4.3.6 EUT OPERATING CONDITIONS .....	47
4.3.7 TEST RESULTS .....	48
4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT .....	50
4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT .....	50
4.4.2 TEST SETUP.....	50
4.4.3 TEST INSTRUMENTS.....	50
4.4.4 TEST PROCEDURES .....	50
4.4.5 DEVIATION FROM TEST STANDARD .....	50
4.4.6 EUT OPERATING CONDITIONS .....	50
4.4.7 TEST RESULTS .....	51
4.5 PEAK POWER EXCURSION MEASUREMENT .....	52



A D T

4.5.1	LIMITS OF PEAK POWER EXCURSION MEASUREMENT .....	52
4.5.2	TEST SETUP .....	52
4.5.3	TEST INSTRUMENTS.....	52
4.5.4	TEST PROCEDURE.....	52
4.5.5	DEVIATION FROM TEST STANDARD .....	52
4.5.6	EUT OPERATING CONDITIONS .....	52
4.5.7	TEST RESULTS .....	53
4.6	FREQUENCY STABILITY .....	55
4.6.1	LIMITS OF FREQUENCY STABILITY MEASUREMENT .....	55
4.6.2	TEST SETUP .....	55
4.6.3	TEST INSTRUMENTS.....	55
4.6.4	TEST PROCEDURE.....	56
4.6.5	DEVIATION FROM TEST STANDARD .....	56
4.6.6	EUT OPERATING CONDITION .....	56
4.6.7	TEST RESULTS .....	57
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION .....	58
6.	INFORMATION ON THE TESTING LABORATORIES.....	59
7.	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB .....	60



## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120327C08-1	Original release	May 17, 2012

## 1. CERTIFICATION

**PRODUCT:** Mobile Phone  
**MODEL NO.:** F-10D  
**BRAND:** Xi  
**APPLICANT:** FUJITSU LIMITED  
**TESTED:** Apr. 27 ~ May 09, 2012  
**TEST SAMPLE:** ENGINEERING SAMPLE  
**STANDARDS:** FCC Part 15, Subpart E (Section 15.407)  
ANSI C63.10-2009

The above equipment (model: F-10D) 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** : Polly Chien , **DATE:** May 17, 2012  
Polly Chien / Specialist

**APPROVED BY** : Gary Chang , **DATE:** May 17, 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 -12.39dB at 2.60156MHz.
15.407(b/1/2/3)(b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -5.6dB at 16980.00MHz.
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

<b>EUT</b>	Mobile Phone
<b>MODEL NO.</b>	F-10D
<b>POWER SUPPLY</b>	3.7Vdc (Li-ion battery) 5.0Vdc (Adapter)
<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 for 802.11a, 802.11n (20MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 5500 ~ 5700MHz: 11 for 802.11a, 802.11n (20MHz)
<b>OUTPUT POWER</b>	8.472mW for 5180 ~ 5240MHz 8.872mW for 5260 ~ 5320MHz 8.892mW for 5500 ~ 5700MHz
<b>ANTENNA TYPE</b>	$\lambda/4$ Monopole Antenna with -6.9dBi gain (5180 ~ 5240MHz) $\lambda/4$ Monopole Antenna with -7.0dBi gain (5260 ~ 5320MHz) $\lambda/4$ Monopole Antenna with -6.5dBi gain (5500 ~ 5700MHz)
<b>ANTENNA CONNECTOR</b>	NA
<b>DATA CABLE</b>	NA
<b>I/O PORTS</b>	Refer to user's manual
<b>ACCESSORY DEVICES</b>	Battery

**NOTE:**

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

Frequency Band (MHz)	2412~2462	5180~5240	5260~5320	5500~5700
802.11b	√			
802.11g	√			
802.11a		√	√	√
802.11n (20MHz)	√	√	√	√

2. The EUT provides one completed transmitter and one receiver.

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

3. The EUT consumes power from the following internal Li-ion battery and wireless charger.

<b>BATTERY</b>	
<b>BRAND</b>	Fujitsu Limited
<b>MODEL</b>	F27
<b>RATING</b>	3.7Vdc, 1800mAh, 6.7Wh

<b>WIRELESS CHARGER</b>	
<b>BRAND:</b>	NTTdocomo
<b>MODEL:</b>	TA08017-B141
<b>INPUT:</b>	12Vdc, 650mA
<b>OUTPUT:</b>	5W MAX

<b>ADAPTER (FOR WIRELESS CHARGER)</b>	
<b>BRAND:</b>	NTTdocomo
<b>MODEL:</b>	TA08017-B142
<b>INPUT:</b>	100-240Vac, 50-60Hz, 18-24VA
<b>OUTPUT:</b>	12Vdc, 650mA
<b>POWER LINE:</b>	2m non-shielded cable with 1 core

4. The following accessory is for support units only.

<b>PRODUCT</b>	<b>BRAND</b>	<b>MODEL</b>	<b>DESCRIPTION</b>
Adapter	NTTdocomo	TA08017-B219	I/P: 100-240Vac, 50/60Hz, 0.22A O/P: 5.0Vdc, 1.8A
USB cable	NA	NA	1.1m non-shielded cable without core

5. SW version is R20.4e.
6. HW version is V2.1.0.
7. IMEI Code: 352137050015977.
8. The above EUT information was 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	5500MHz	124	5620MHz
104	5520MHz	128	5640MHz
108	5540MHz	132	5660MHz
112	5560MHz	136	5680MHz
116	5580MHz	140	5700MHz
120	5600MHz		

### 3.2.1 DESCRIPTION OF SUPPORT UNITS

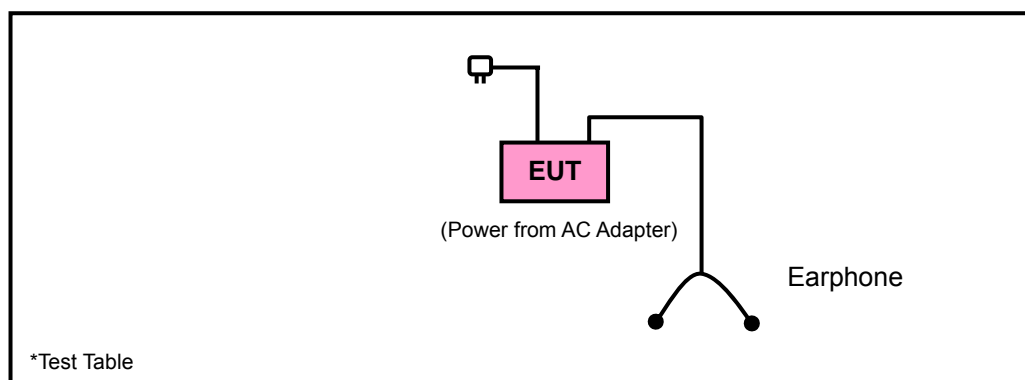
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	EARPHONE	HTC	NA	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	1.2m audio cable.

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

### 3.2.2 CONFIGURATION OF SYSTEM UNDER TEST



### 3.2.3 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 **Y-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)
802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	7.2
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	BPSK	6.0
802.11n (20MHz)		100 to 140	100, 116, 132, 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.

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5320	36 to 64	52	OFDM	BPSK	6.0
802.11a	5500-5700	100 to 140	116	OFDM	BPSK	6.0

#### **POWER LINE CONDUCTED EMISSION TEST:**

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5320	36 to 64	52	OFDM	BPSK	6.0
802.11a	5500-5700	100 to 140	116	OFDM	BPSK	6.0

### **BANDEDGE MEASUREMENT:**

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

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

### **ANTENNA PORT CONDUCTED MEASUREMENT:**

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	7.2
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	BPSK	6.0
802.11n (20MHz)		100 to 140	100, 116, 132, 140	OFDM	BPSK	7.2

### **TEST CONDITION:**

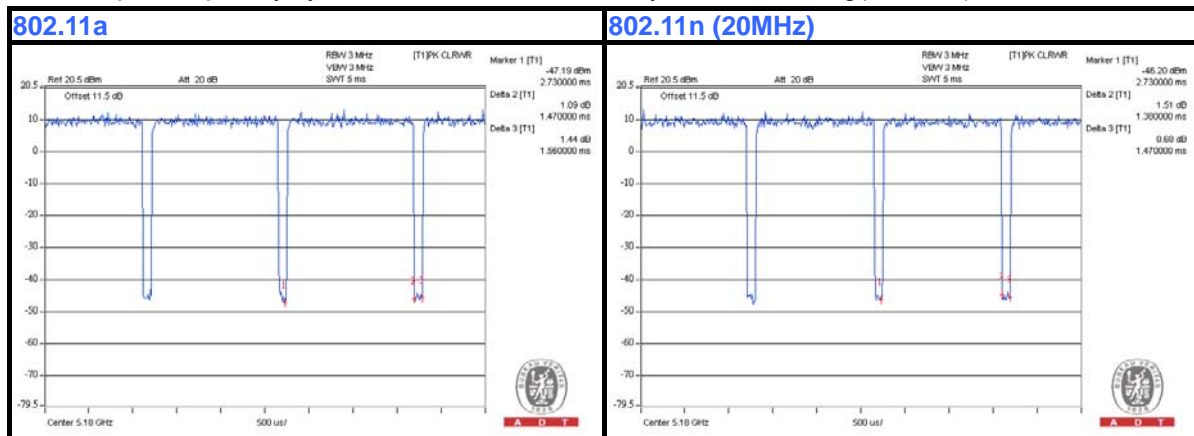
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	25deg. C, 65%RH	120Vac, 60Hz	Haru Yang
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Haru Yang
PLC	23deg. C, 63%RH	120Vac, 60Hz	Brad Wu
APCM	25deg. C, 65%RH	120Vac, 60Hz	Haru Yang

### 3.3 DUTY CYCLE OF TEST SIGNAL

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

**802.11a:** Duty cycle =  $1.47/1.56 = 0.942$ , Duty factor =  $10 * \log(1/0.942) = 0.26$

**802.11n (20MHz):** Duty cycle =  $1.38/1.47 = 0.939$ , Duty factor =  $10 * \log(1/0.939) = 0.27$



### 3.4 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. 06, 2012	Apr. 05, 2013
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
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 15, 2011	Jun. 14, 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:**

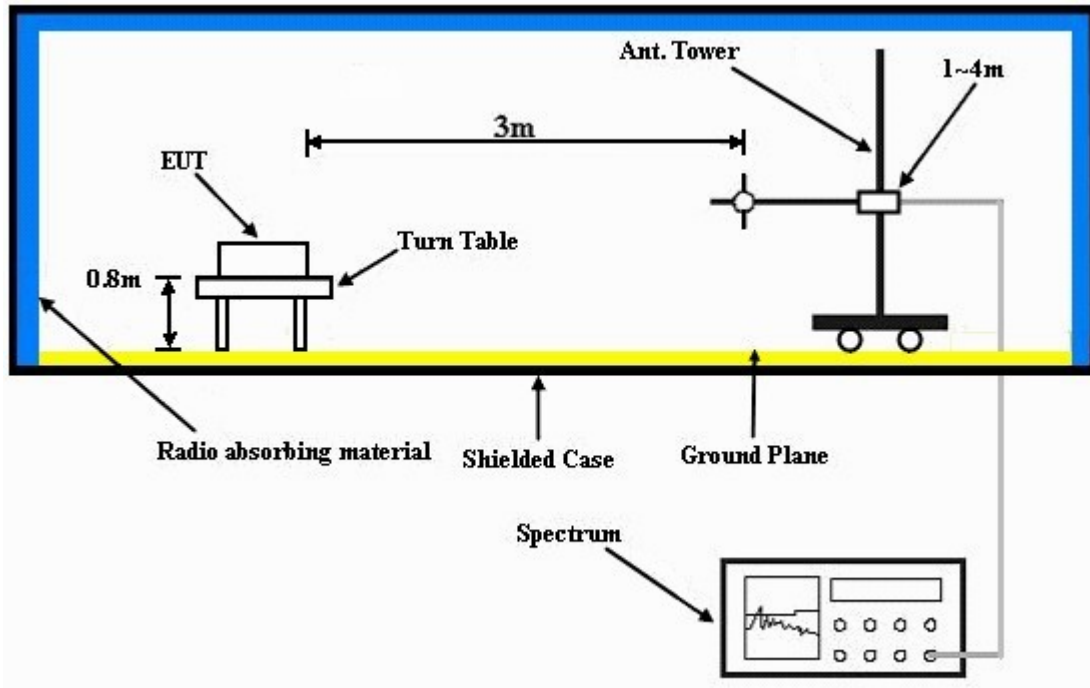
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

- Placed the EUT on a testing table.
- Use the software to control the EUT under transmission condition continuously at specific channel frequency.

## 4.1.8 TEST RESULTS

### 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	5150.00	46.6 PK	74.0	-27.4	1.12 H	154	8.80	37.80
2	5150.00	35.0 AV	54.0	-19.0	1.12 H	154	-2.80	37.80
3	*5180.00	97.4 PK			1.12 H	154	59.50	37.90
4	*5180.00	87.4 AV			1.12 H	154	49.50	37.90
5	#10360.00	57.8 PK	68.3	-10.5	1.00 H	122	8.70	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	5150.00	46.3 PK	74.0	-27.7	1.00 V	54	8.50	37.80
2	5150.00	34.4 AV	54.0	-19.6	1.00 V	54	-3.40	37.80
3	*5180.00	85.4 PK			1.00 V	54	47.50	37.90
4	*5180.00	75.4 AV			1.00 V	54	37.50	37.90
5	#10360.00	57.7 PK	68.3	-10.6	1.00 V	255	8.60	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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	98.0 PK			1.13 H	151	60.10	37.90
2	*5200.00	87.2 AV			1.13 H	151	49.30	37.90
3	#10400.00	57.9 PK	68.3	-10.4	1.00 H	111	8.80	49.10
4	15600.00	60.1 PK	74.0	-13.9	1.00 H	279	11.00	49.10
5	15600.00	47.6 AV	54.0	-6.4	1.00 H	279	-1.50	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	*5200.00	85.2 PK			1.00 V	72	47.30	37.90
2	*5200.00	75.4 AV			1.00 V	72	37.50	37.90
3	#10400.00	58.1 PK	68.3	-10.2	1.00 V	247	9.00	49.10
4	15600.00	59.1 PK	74.0	-14.9	1.00 V	133	10.00	49.10
5	15600.00	47.1 AV	54.0	-6.9	1.00 V	133	-2.00	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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	98.3 PK			1.00 H	192	60.40	37.90
2	*5240.00	87.8 AV			1.00 H	192	49.90	37.90
3	5350.00	46.9 PK	74.0	-27.1	1.00 H	192	8.80	38.10
4	5350.00	34.6 AV	54.0	-19.4	1.00 H	192	-3.50	38.10
5	#10480.00	58.3 PK	68.3	-10.0	1.00 H	125	8.80	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	86.8 PK			1.00 V	132	48.90	37.90
2	*5240.00	76.8 AV			1.00 V	132	38.90	37.90
3	5350.00	47.6 PK	74.0	-26.4	1.00 V	132	9.50	38.10
4	5350.00	34.2 AV	54.0	-19.8	1.00 V	132	-3.90	38.10
5	#10480.00	59.3 PK	68.3	-9.0	1.00 V	243	9.80	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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	98.2 PK			1.00 H	194	60.20	38.00
2	*5260.00	88.4 AV			1.00 H	194	50.40	38.00
3	#10520.00	58.2 PK	68.3	-10.1	1.00 H	118	8.60	49.60
4	15780.00	60.6 PK	74.0	-13.4	1.00 H	261	12.10	48.50
5	15780.00	46.8 AV	54.0	-7.2	1.00 H	261	-1.70	48.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	86.9 PK			1.08 V	69	48.90	38.00
2	*5260.00	76.9 AV			1.08 V	69	38.90	38.00
3	#10520.00	58.0 PK	68.3	-10.3	1.00 V	241	8.40	49.60
4	15780.00	59.6 PK	74.0	-14.4	1.00 V	149	11.10	48.50
5	15780.00	46.5 AV	54.0	-7.5	1.00 V	149	-2.00	48.50

**REMARKS:**

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	98.8 PK			1.00 H	193	60.80	38.00
2	*5300.00	88.6 AV			1.00 H	193	50.60	38.00
3	10600.00	57.9 PK	74.0	-16.1	1.00 H	121	8.30	49.60
4	10600.00	45.3 AV	54.0	-8.7	1.00 H	121	-4.30	49.60
5	15900.00	57.9 PK	74.0	-16.1	1.00 H	274	9.90	48.00
6	15900.00	45.9 AV	54.0	-8.1	1.00 H	274	-2.10	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	*5300.00	86.2 PK			1.72 V	132	48.20	38.00
2	*5300.00	76.2 AV			1.72 V	132	38.20	38.00
3	10600.00	58.0 PK	74.0	-16.0	1.00 V	243	8.40	49.60
4	10600.00	45.5 AV	54.0	-8.5	1.00 V	243	-4.10	49.60
5	15900.00	58.3 PK	74.0	-15.7	1.00 V	155	10.30	48.00
6	15900.00	45.3 AV	54.0	-8.7	1.00 V	155	-2.70	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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	99.2 PK			1.00 H	195	61.10	38.10
2	*5320.00	88.9 AV			1.00 H	195	50.80	38.10
3	5350.00	46.8 PK	74.0	-27.2	1.00 H	195	8.70	38.10
4	5350.00	35.4 AV	54.0	-18.6	1.00 H	195	-2.70	38.10
5	10640.00	57.4 PK	74.0	-16.6	1.00 H	121	7.80	49.60
6	10640.00	46.1 AV	54.0	-7.9	1.00 H	121	-3.50	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	*5320.00	87.0 PK			1.72 V	132	48.90	38.10
2	*5320.00	76.9 AV			1.72 V	132	38.80	38.10
3	5350.00	46.5 PK	74.0	-27.5	1.72 V	132	8.40	38.10
4	5350.00	34.0 AV	54.0	-20.0	1.72 V	132	-4.10	38.10
5	10640.00	58.6 PK	74.0	-15.4	1.00 V	243	9.00	49.60
6	10640.00	45.3 AV	54.0	-8.7	1.00 V	243	-4.30	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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	5460.00	47.2 PK	74.0	-26.8	1.06 H	191	8.90	38.30
2	5460.00	34.9 AV	54.0	-19.1	1.06 H	191	-3.40	38.30
3	#5470.00	48.3 PK	68.3	-20.0	1.00 H	191	10.00	38.30
4	*5500.00	98.6 PK			1.06 H	191	60.20	38.40
5	*5500.00	88.7 AV			1.06 H	191	50.30	38.40
6	11000.00	58.6 PK	74.0	-15.4	1.00 H	131	8.30	50.30
7	11000.00	46.3 AV	54.0	-7.7	1.00 H	131	-4.00	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	46.5 PK	74.0	-27.5	1.00 V	187	8.20	38.30
2	5460.00	34.2 AV	54.0	-19.8	1.00 V	187	-4.10	38.30
3	#5470.00	48.3 PK	68.3	-20.0	1.06 V	191	10.00	38.30
4	*5500.00	90.2 PK			1.00 V	187	51.80	38.40
5	*5500.00	80.1 AV			1.00 V	187	41.70	38.40
6	11000.00	58.7 PK	74.0	-15.3	1.00 V	243	8.40	50.30
7	11000.00	46.2 AV	54.0	-7.8	1.00 V	243	-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 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	98.5 PK			1.26 H	177	60.10	38.40
2	*5580.00	88.2 AV			1.26 H	177	49.80	38.40
3	11160.00	58.3 PK	74.0	-15.7	1.00 H	132	8.20	50.10
4	11160.00	45.6 AV	54.0	-8.4	1.00 H	132	-4.50	50.10
5	#16740.00	60.4 PK	68.3	-7.9	1.00 H	213	10.30	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	90.7 PK			1.00 V	201	52.30	38.40
2	*5580.00	80.4 AV			1.00 V	201	42.00	38.40
3	11160.00	59.2 PK	74.0	-14.8	1.00 V	192	9.10	50.10
4	11160.00	45.8 AV	54.0	-8.2	1.00 V	192	-4.30	50.10
5	#16740.00	60.6 PK	68.3	-7.7	1.00 V	138	10.50	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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 132	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	99.5 PK			1.25 H	178	60.90	38.60
2	*5660.00	89.1 AV			1.25 H	178	50.50	38.60
3	11320.00	58.2 PK	74.0	-15.8	1.00 H	136	8.00	50.20
4	11320.00	45.5 AV	54.0	-8.5	1.00 H	136	-4.70	50.20
5	#16980.00	62.6 PK	68.3	-5.7	1.00 H	168	11.50	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	90.7 PK			1.10 V	71	52.10	38.60
2	*5660.00	80.4 AV			1.10 V	71	41.80	38.60
3	11320.00	58.7 PK	74.0	-15.3	1.00 V	196	8.50	50.20
4	11320.00	45.7 AV	54.0	-8.3	1.00 V	196	-4.50	50.20
5	#16980.00	61.8 PK	68.3	-6.5	1.00 V	211	10.70	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. 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 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	*5700.00	99.4 PK			1.12 H	180	60.70	38.70
2	*5700.00	89.1 AV			1.12 H	180	50.40	38.70
3	#5725.00	49.0 PK	68.3	-19.3	1.12 H	180	10.20	38.80
4	11400.00	58.0 PK	74.0	-16.0	1.00 H	168	7.90	50.10
5	11400.00	45.4 AV	54.0	-8.6	1.00 H	168	-4.70	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	91.1 PK			1.00 V	67	52.40	38.70
2	*5700.00	80.5 AV			1.00 V	67	41.80	38.70
3	#5725.00	45.8 PK	68.3	-22.5	1.00 V	64	7.00	38.80
4	11400.00	58.2 PK	74.0	-15.8	1.00 V	268	8.10	50.10
5	11400.00	45.3 AV	54.0	-8.7	1.00 V	268	-4.80	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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	5150.00	45.3 PK	74.0	-28.7	1.12 H	197	7.50	37.80
2	5150.00	33.5 AV	54.0	-20.5	1.12 H	197	-4.30	37.80
3	*5180.00	97.3 PK			1.12 H	197	59.40	37.90
4	*5180.00	86.6 AV			1.12 H	197	48.70	37.90
5	#10360.00	57.2 PK	68.3	-11.1	1.00 H	267	8.10	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	5150.00	46.0 PK	74.0	-28.0	1.00 V	53	8.20	37.80
2	5150.00	33.3 AV	54.0	-20.7	1.00 V	53	-4.50	37.80
3	*5180.00	84.3 PK			1.00 V	53	46.40	37.90
4	*5180.00	74.5 AV			1.00 V	53	36.60	37.90
5	#10360.00	57.4 PK	68.3	-10.9	1.00 V	138	8.30	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 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	96.3 PK			1.00 H	195	58.40	37.90
2	*5200.00	86.3 AV			1.00 H	195	48.40	37.90
3	#10400.00	57.2 PK	68.3	-11.1	1.00 H	169	8.10	49.10
4	15600.00	60.8 PK	74.0	-13.2	1.00 H	213	11.70	49.10
5	15600.00	47.4 AV	54.0	-6.6	1.00 H	213	-1.70	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	84.5 PK			1.00 V	90	46.60	37.90
2	*5200.00	74.5 AV			1.00 V	90	36.60	37.90
3	#10400.00	58.0 PK	68.3	-10.3	1.00 V	132	8.90	49.10
4	15600.00	60.1 PK	74.0	-13.9	1.00 V	251	11.00	49.10
5	15600.00	46.9 AV	54.0	-7.1	1.00 V	251	-2.20	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 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	96.9 PK			1.21 H	196	59.00	37.90
2	*5240.00	86.5 AV			1.21 H	196	48.60	37.90
3	5350.00	46.8 PK	74.0	-27.2	1.21 H	196	8.70	38.10
4	5350.00	33.5 AV	54.0	-20.5	1.21 H	196	-4.60	38.10
5	#10480.00	57.5 PK	68.3	-10.8	1.00 H	243	8.00	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	85.6 PK			1.09 V	71	47.70	37.90
2	*5240.00	75.0 AV			1.09 V	71	37.10	37.90
3	5350.00	47.2 PK	74.0	-26.8	1.09 V	71	9.10	38.10
4	5350.00	34.0 AV	54.0	-20.0	1.09 V	71	-4.10	38.10
5	#10480.00	58.3 PK	68.3	-10.0	1.00 V	147	8.80	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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	97.4 PK			1.00 H	194	59.40	38.00
2	*5260.00	87.3 AV			1.00 H	194	49.30	38.00
3	5350.00	46.9 PK	74.0	-27.1	1.00 H	194	8.80	38.10
4	5350.00	33.2 AV	54.0	-20.8	1.00 H	194	-4.90	38.10
5	#10520.00	58.2 PK	68.3	-10.1	1.00 H	218	8.60	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	86.0 PK			1.09 V	45	48.00	38.00
2	*5260.00	75.7 AV			1.09 V	45	37.70	38.00
3	5350.00	46.9 PK	74.0	-27.1	1.09 V	45	8.80	38.10
4	5350.00	34.1 AV	54.0	-19.9	1.09 V	45	-4.00	38.10
5	#10520.00	57.7 PK	68.3	-10.6	1.00 V	149	8.10	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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	97.8 PK			1.00 H	194	59.80	38.00
2	*5300.00	87.6 AV			1.00 H	194	49.60	38.00
3	5350.00	46.3 PK	74.0	-27.7	1.00 H	194	8.20	38.10
4	5350.00	34.2 AV	54.0	-19.8	1.00 H	194	-3.90	38.10
5	10600.00	58.2 PK	74.0	-15.8	1.00 H	218	8.60	49.60
6	10600.00	45.5 AV	54.0	-8.5	1.00 H	218	-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	*5300.00	85.9 PK			1.19 V	70	47.90	38.00
2	*5300.00	75.9 AV			1.19 V	70	37.90	38.00
3	5350.00	46.5 PK	74.0	-27.5	1.19 V	70	8.40	38.10
4	5350.00	34.0 AV	54.0	-20.0	1.19 V	70	-4.10	38.10
5	10600.00	57.9 PK	74.0	-16.1	1.00 V	157	8.30	49.60
6	10600.00	45.5 AV	54.0	-8.5	1.00 V	157	-4.10	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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	98.2 PK			1.00 H	191	60.10	38.10
2	*5320.00	88.0 AV			1.00 H	191	49.90	38.10
3	5350.00	46.9 PK	74.0	-27.1	1.00 H	191	8.80	38.10
4	5350.00	34.5 AV	54.0	-19.5	1.00 H	191	-3.60	38.10
5	10640.00	58.4 PK	74.0	-15.6	1.00 H	242	8.80	49.60
6	10640.00	45.3 AV	54.0	-8.7	1.00 H	242	-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	87.2 PK			1.18 V	82	49.10	38.10
2	*5320.00	77.1 AV			1.18 V	82	39.00	38.10
3	5350.00	47.1 PK	74.0	-26.9	1.18 V	82	9.00	38.10
4	5350.00	33.9 AV	54.0	-20.1	1.18 V	82	-4.20	38.10
5	10640.00	58.3 PK	74.0	-15.7	1.00 V	138	8.70	49.60
6	10640.00	45.3 AV	54.0	-8.7	1.00 V	138	-4.30	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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	5460.00	46.6 PK	74.0	-27.4	1.04 H	194	8.30	38.30
2	5460.00	34.4 AV	54.0	-19.6	1.04 H	194	-3.90	38.30
3	#5470.00	47.1 PK	68.3	-21.2	1.04 H	194	8.80	38.30
4	*5500.00	97.7 PK			1.04 H	194	59.30	38.40
5	*5500.00	87.5 AV			1.04 H	194	49.10	38.40
6	11000.00	58.4 PK	74.0	-15.6	1.00 H	222	8.10	50.30
7	11000.00	46.2 AV	54.0	-7.8	1.00 H	222	-4.10	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	46.2 PK	74.0	-27.8	1.00 V	187	7.90	38.30
2	5460.00	33.7 AV	54.0	-20.3	1.00 V	187	-4.60	38.30
3	#5470.00	48.0 PK	68.3	-20.3	1.00 V	187	9.70	38.30
4	*5500.00	88.4 PK			1.00 V	187	50.00	38.40
5	*5500.00	78.6 AV			1.00 V	187	40.20	38.40
6	11000.00	58.9 PK	74.0	-15.1	1.00 V	133	8.60	50.30
7	11000.00	45.9 AV	54.0	-8.1	1.00 V	133	-4.40	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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	97.6 PK			1.15 H	173	59.20	38.40
2	*5580.00	87.5 AV			1.15 H	173	49.10	38.40
3	11160.00	58.8 PK	74.0	-15.2	1.00 H	197	8.70	50.10
4	11160.00	45.7 AV	54.0	-8.3	1.00 H	197	-4.40	50.10
5	#16740.00	61.8 PK	68.3	-6.5	1.00 H	255	11.70	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	*5580.00	88.5 PK			1.00 V	71	50.10	38.40
2	*5580.00	78.3 AV			1.00 V	71	39.90	38.40
3	11160.00	58.1 PK	74.0	-15.9	1.00 V	146	8.00	50.10
4	11160.00	45.7 AV	54.0	-8.3	1.00 V	146	-4.40	50.10
5	#16740.00	61.2 PK	68.3	-7.1	1.00 V	122	11.10	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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	98.2 PK			1.01 H	174	59.60	38.60
2	*5660.00	88.4 AV			1.01 H	174	49.80	38.60
3	11320.00	58.5 PK	74.0	-15.5	1.00 H	153	8.30	50.20
4	11320.00	45.7 AV	54.0	-8.3	1.00 H	153	-4.50	50.20
5	#16980.00	62.7 PK	68.3	-5.6	1.00 H	147	11.60	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	88.8 PK			1.00 V	68	50.20	38.60
2	*5660.00	78.7 AV			1.00 V	68	40.10	38.60
3	11320.00	58.8 PK	74.0	-15.2	1.00 V	157	8.60	50.20
4	11320.00	45.7 AV	54.0	-8.3	1.00 V	157	-4.50	50.20
5	#16980.00	62.6 PK	68.3	-5.7	1.00 V	188	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. 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 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. 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	*5700.00	98.8 PK			1.00 H	177	60.10	38.70
2	*5700.00	88.4 AV			1.00 H	177	49.70	38.70
3	#5725.00	48.3 PK	68.3	-20.0	1.00 H	177	9.50	38.80
4	11400.00	58.6 PK	74.0	-15.4	1.00 H	216	8.50	50.10
5	11400.00	45.1 AV	54.0	-8.9	1.00 H	216	-5.00	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	89.8 PK			1.00 V	69	51.10	38.70
2	*5700.00	80.0 AV			1.00 V	69	41.30	38.70
3	#5725.00	45.2 PK	68.3	-23.1	1.00 V	69	6.40	38.80
4	11400.00	58.3 PK	74.0	-15.7	1.00 V	188	8.20	50.10
5	11400.00	45.5 AV	54.0	-8.5	1.00 V	188	-4.60	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.

# BELOW 1GHz WORST-CASE DATA : 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Haru Yang

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	37.68	19.9 QP	40.0	-20.1	1.75 H	14	6.60	13.30
2	181.55	28.1 QP	43.5	-15.4	1.99 H	259	15.60	12.50
3	284.60	23.5 QP	46.0	-22.5	1.50 H	78	9.10	14.40
4	519.86	26.4 QP	46.0	-19.6	1.50 H	347	6.00	20.40
5	572.36	28.5 QP	46.0	-17.5	1.50 H	55	7.00	21.50
6	624.85	29.5 QP	46.0	-16.5	1.50 H	132	7.20	22.30
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	31.84	24.8 QP	40.0	-15.2	1.50 V	15	12.80	12.00
2	99.89	19.4 QP	43.5	-24.1	1.50 V	15	10.00	9.40
3	146.56	19.4 QP	43.5	-24.1	1.24 V	309	5.40	14.00
4	284.60	17.5 QP	46.0	-28.5	1.50 V	15	3.10	14.40
5	519.86	24.6 QP	46.0	-21.4	1.50 V	15	4.20	20.40
6	624.85	25.3 QP	46.0	-20.7	1.24 V	334	3.00	22.30

## 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.



A D T

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

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	129.06	21.4 QP	43.5	-22.1	1.74 H	29	8.80	12.60
2	181.55	25.6 QP	43.5	-17.9	1.74 H	45	13.10	12.50
3	284.60	24.6 QP	46.0	-21.4	1.00 H	328	10.20	14.40
4	519.86	28.1 QP	46.0	-17.9	1.50 H	36	7.70	20.40
5	624.85	30.2 QP	46.0	-15.8	1.24 H	13	7.90	22.30
6	727.90	26.6 QP	46.0	-19.4	1.00 H	107	2.90	23.70
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	31.84	24.3 QP	40.0	-15.7	1.50 V	328	12.30	12.00
2	99.89	19.1 QP	43.5	-24.4	1.25 V	146	9.70	9.40
3	284.60	17.5 QP	46.0	-28.5	1.25 V	14	3.10	14.40
4	519.86	24.6 QP	46.0	-21.4	1.50 V	12	4.20	20.40
5	572.36	23.6 QP	46.0	-22.4	1.50 V	206	2.10	21.50
6	624.85	26.5 QP	46.0	-19.5	1.25 V	27	4.20	22.30

**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.

## 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. 22, 2011	Dec. 21, 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

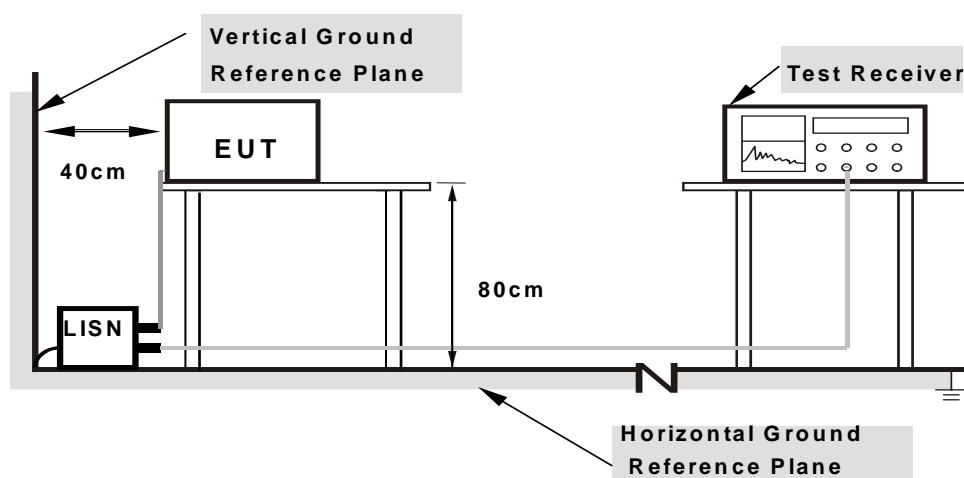
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance 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:**
- Support units were connected to second LISN.
  - Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

### 4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

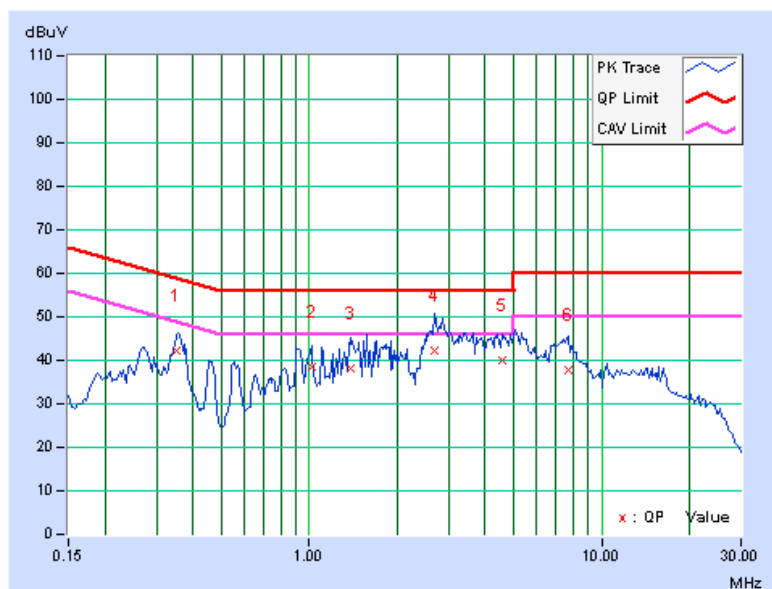
## 4.2.7 TEST RESULTS

### CONDUCTED WORST-CASE DATA : 802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 52		

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	0.35313	0.19	42.16	33.94	42.35	34.13	58.89	48.89	-16.54	-14.76
2	1.01563	0.23	38.35	28.12	38.58	28.35	56.00	46.00	-17.42	-17.65
3	1.39453	0.26	37.80	28.64	38.06	28.90	56.00	46.00	-17.94	-17.10
4	2.69531	0.33	41.91	33.11	42.24	33.44	56.00	46.00	-13.76	-12.56
5	4.56250	0.40	39.58	29.89	39.98	30.29	56.00	46.00	-16.02	-15.71
6	7.67578	0.45	37.27	27.61	37.72	28.06	60.00	50.00	-22.28	-21.94

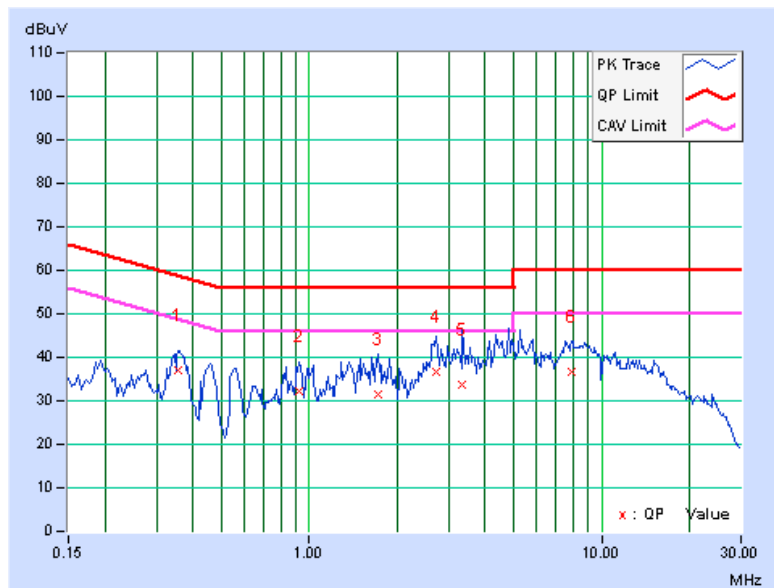
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. The emission levels of other frequencies were very low against the limit.
  3. Margin value = Emission level - Limit value
  4. Correction factor = Insertion loss + Cable loss
  5. Emission Level = Correction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



PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 52		

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	0.35703	0.17	36.96	27.31	37.13	27.48	58.80	48.80	-21.66	-21.31
2	0.92344	0.19	32.03	25.18	32.22	25.37	56.00	46.00	-23.78	-20.63
3	1.71484	0.25	31.41	23.75	31.66	24.00	56.00	46.00	-24.34	-22.00
4	2.71484	0.31	36.36	29.22	36.67	29.53	56.00	46.00	-19.33	-16.47
5	3.34766	0.34	33.50	26.16	33.84	26.50	56.00	46.00	-22.16	-19.50
6	7.90234	0.50	36.24	28.20	36.74	28.70	60.00	50.00	-23.26	-21.30

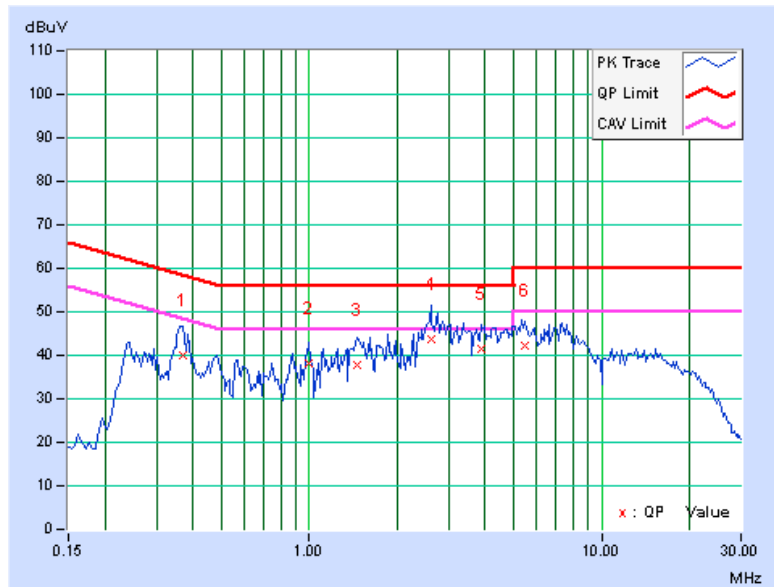
**REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.  
2. The emission levels of other frequencies were very low against the limit.  
3. Margin value = Emission level - Limit value  
4. Correction factor = Insertion loss + Cable loss  
5. Emission Level = Correction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



PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	Channel 162		

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	0.36875	0.20	39.90	31.33	40.10	31.53	58.53	48.53	-18.43	-17.00
2	0.98984	0.23	37.76	28.11	37.99	28.34	56.00	46.00	-18.01	-17.66
3	1.45703	0.26	37.54	27.39	37.80	27.65	56.00	46.00	-18.20	-18.35
4	<b>2.60156</b>	<b>0.33</b>	<b>43.28</b>	<b>33.23</b>	<b>43.61</b>	<b>33.56</b>	<b>56.00</b>	<b>46.00</b>	<b>-12.39</b>	<b>-12.44</b>
5	3.85938	0.38	41.00	30.92	41.38	31.30	56.00	46.00	-14.62	-14.70
6	5.49219	0.41	41.83	33.01	42.24	33.42	60.00	50.00	-17.76	-16.58

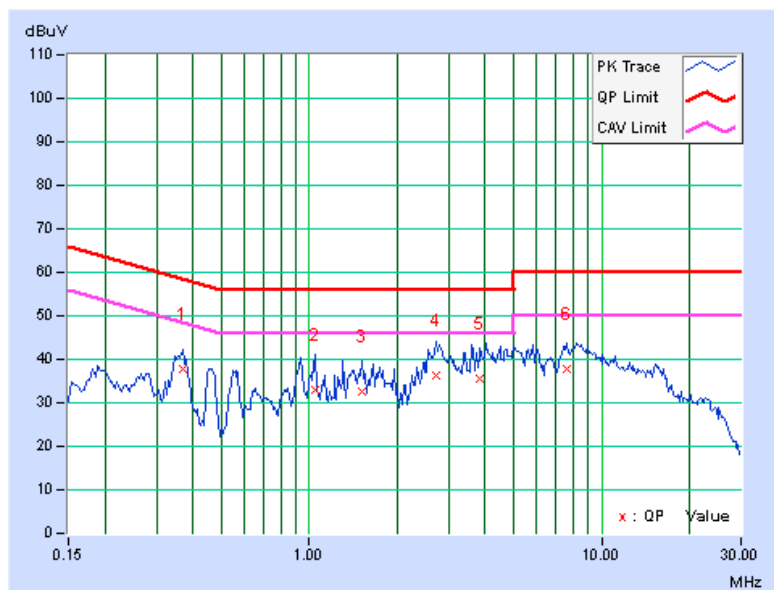
**REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.  
2. The emission levels of other frequencies were very low against the limit.  
3. Margin value = Emission level - Limit value  
4. Correction factor = Insertion loss + Cable loss  
5. Emission Level = Correction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



PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	Channel 162		

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	0.36875	0.18	37.46	28.37	37.64	28.55	58.53	48.53	-20.89	-19.98
2	1.05078	0.19	32.88	26.31	33.07	26.50	56.00	46.00	-22.93	-19.50
3	1.51172	0.23	32.23	25.02	32.46	25.25	56.00	46.00	-23.54	-20.75
4	2.70313	0.31	36.12	29.08	36.43	29.39	56.00	46.00	-19.57	-16.61
5	3.85156	0.37	35.02	28.50	35.39	28.87	56.00	46.00	-20.61	-17.13
6	7.64453	0.50	37.23	29.53	37.73	30.03	60.00	50.00	-22.27	-19.97

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



### 4.3 PEAK TRANSMIT POWER MEASUREMENT

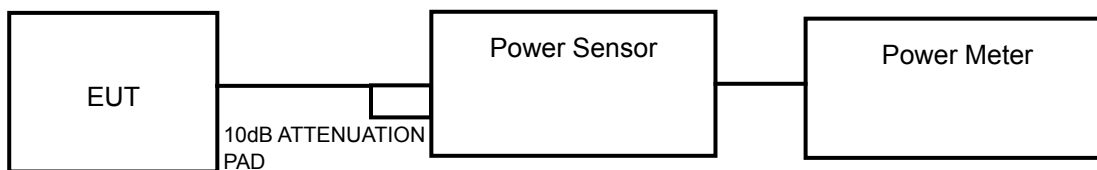
#### 4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	The lesser of 50mW (17dBm) or $4\text{dBm} + 10\log B$
5.250 ~ 5.350GHz	The lesser of 250mW (24dBm) or $11\text{dBm} + 10\log B$
5.470 ~ 5.725GHz	The lesser of 250mW (24dBm) or $11\text{dBm} + 10\log B$

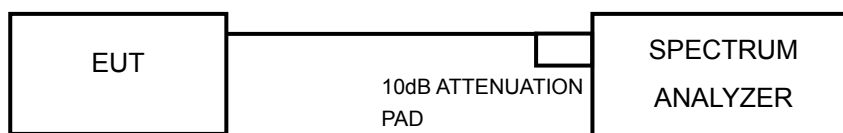
**NOTE:** Where B is the 26dB emission bandwidth in MHz.

#### 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	7.816	8.93	17	PASS
44	5220	8.472	9.28	17	PASS
48	5240	8.375	9.23	17	PASS
52	5260	8.872	9.48	24	PASS
60	5300	8.337	9.21	24	PASS
64	5320	8.690	9.39	24	PASS
100	5500	8.091	9.08	24	PASS
116	5580	8.892	9.49	24	PASS
132	5660	8.511	9.30	24	PASS
140	5700	8.570	9.33	24	PASS

##### 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	7.962	9.01	17	PASS
44	5220	8.375	9.23	17	PASS
48	5240	7.852	8.95	17	PASS
52	5260	8.204	9.14	24	PASS
60	5300	8.375	9.23	24	PASS
64	5320	8.017	9.04	24	PASS
100	5500	8.054	9.06	24	PASS
116	5580	8.185	9.13	24	PASS
132	5660	8.241	9.16	24	PASS
140	5700	8.035	9.05	24	PASS



#### 26dB BANDWIDTH: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	22.70	PASS
44	5220	22.73	PASS
48	5240	22.54	PASS
52	5260	22.77	PASS
60	5300	23.03	PASS
64	5320	22.82	PASS
100	5500	22.26	PASS
116	5580	22.98	PASS
132	5660	22.75	PASS
140	5700	22.99	PASS

#### 802.11n (20MHz)

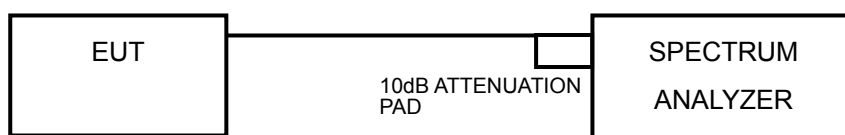
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	24.38	PASS
44	5220	24.28	PASS
48	5240	24.08	PASS
52	5260	24.15	PASS
60	5300	24.37	PASS
64	5320	24.27	PASS
100	5500	24.04	PASS
116	5580	24.34	PASS
132	5660	24.29	PASS
140	5700	24.01	PASS

## 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 = 8 second.
- 4) Perform a single sweep.
- 5) Record the max value and add 10 log (1/duty cycle)

### 4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

### 4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6.

#### 4.4.7 TEST RESULTS

##### 802.11a

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	-0.49	0.26	-0.23	4	PASS
44	5220	-0.37	0.26	-0.11	4	PASS
48	5240	-0.36	0.26	-0.10	4	PASS
52	5260	-0.05	0.26	0.21	11	PASS
60	5300	-0.43	0.26	-0.17	11	PASS
64	5320	-0.19	0.26	0.07	11	PASS
100	5500	-0.55	0.26	-0.29	11	PASS
116	5580	-0.14	0.26	0.12	11	PASS
132	5660	-0.36	0.26	-0.10	11	PASS
140	5700	-0.31	0.26	-0.05	11	PASS

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

##### 802.11n (20MHz)

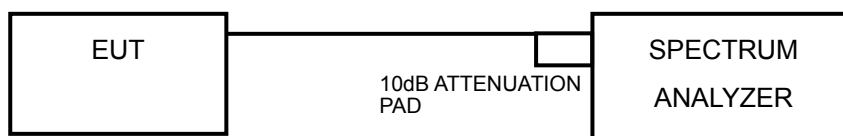
CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	-0.84	0.27	-0.57	4	PASS
44	5220	-0.62	0.27	-0.35	4	PASS
48	5240	-0.96	0.27	-0.69	4	PASS
52	5260	-0.86	0.27	-0.59	11	PASS
60	5300	-0.78	0.27	-0.51	11	PASS
64	5320	-0.87	0.27	-0.60	11	PASS
100	5500	-0.95	0.27	-0.68	11	PASS
116	5580	-0.89	0.27	-0.62	11	PASS
132	5660	-0.88	0.27	-0.61	11	PASS
140	5700	-1.04	0.27	-0.77	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.

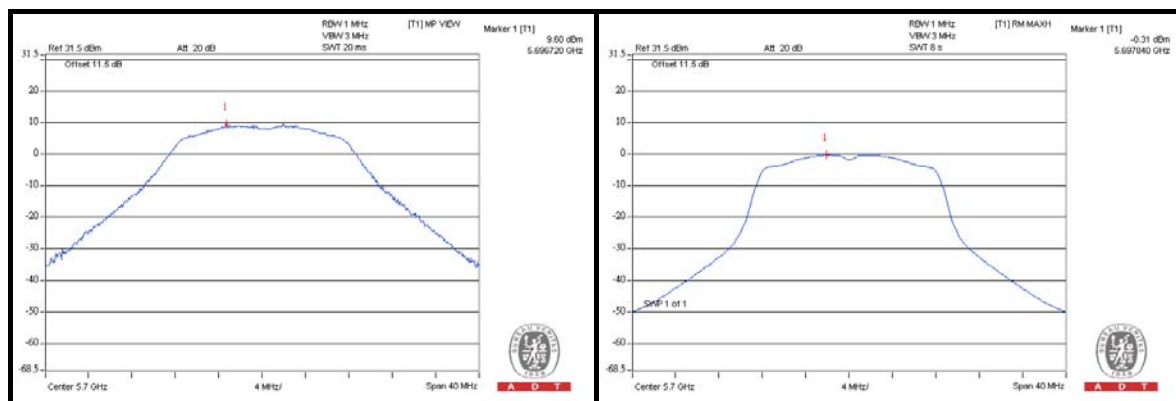
### 4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

## 4.5.7 TEST RESULTS

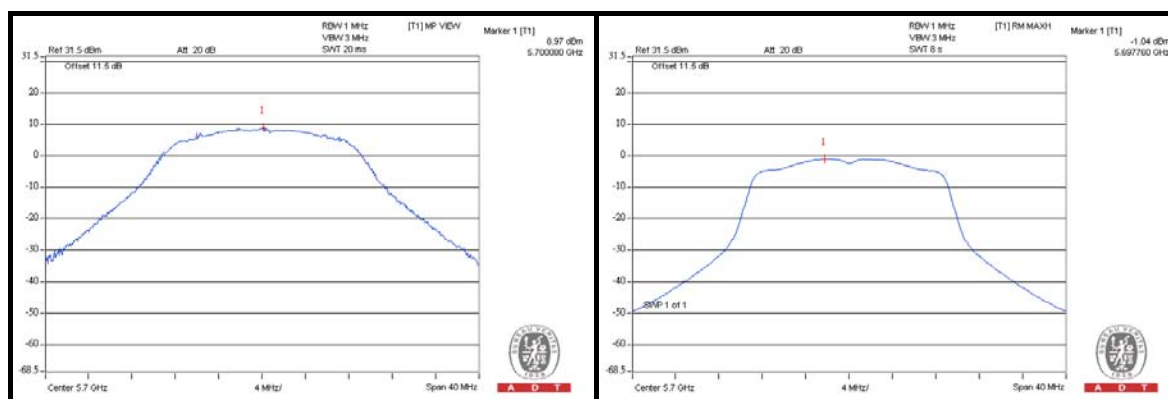
### 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	9.29	-0.23	9.52	13	PASS
44	5220	9.47	-0.11	9.58	13	PASS
48	5240	9.44	-0.10	9.54	13	PASS
52	5260	9.68	0.21	9.47	13	PASS
60	5300	9.39	-0.17	9.56	13	PASS
64	5320	9.57	0.07	9.50	13	PASS
100	5500	9.26	-0.29	9.55	13	PASS
116	5580	9.65	0.12	9.53	13	PASS
132	5660	9.48	-0.10	9.58	13	PASS
140	5700	9.60	-0.05	9.65	13	PASS



# 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
36	5180	9.08	-0.57	9.65	13	PASS
44	5220	9.14	-0.35	9.49	13	PASS
48	5240	8.80	-0.69	9.49	13	PASS
52	5260	9.09	-0.59	9.68	13	PASS
60	5300	9.19	-0.51	9.70	13	PASS
64	5320	8.95	-0.60	9.55	13	PASS
100	5500	8.94	-0.68	9.62	13	PASS
116	5580	9.03	-0.62	9.65	13	PASS
132	5660	9.00	-0.61	9.61	13	PASS
140	5700	8.97	-0.77	9.74	13	PASS

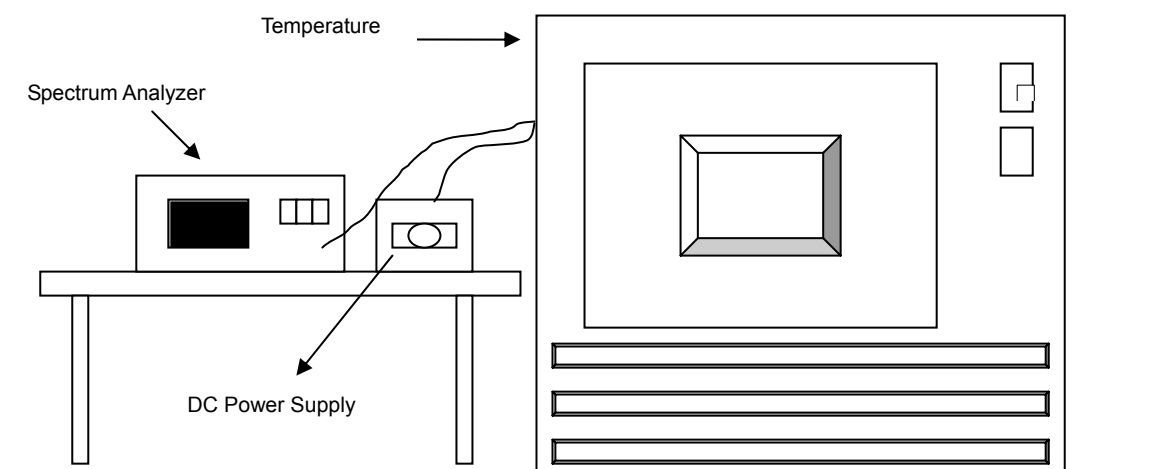


## 4.6 FREQUENCY STABILITY

### 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.



#### 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)
55	110.0	5320.087933	16.529	5320.087966	16.535	5320.087792	16.502	5320.087984	16.538
50	110.0	5320.088576	16.650	5320.088698	16.673	5320.088410	16.618	5320.088266	16.591
40	110.0	5320.089834	16.886	5320.089530	16.829	5320.089522	16.827	5320.089425	16.809
30	110.0	5320.091642	17.226	5320.091319	17.165	5320.091263	17.155	5320.091471	17.194
20	110.0	5320.093302	17.538	5320.093186	17.516	5320.093152	17.510	5320.092576	17.402
10	110.0	5320.090765	17.061	5320.090523	17.016	5320.090598	17.030	5320.090680	17.045
0	110.0	5320.090229	16.960	5320.090304	16.974	5320.090210	16.957	5320.089978	16.913
-10	110.0	5320.088689	16.671	5320.088822	16.696	5320.088658	16.665	5320.088725	16.678
-20	110.0	5320.087787	16.501	5320.088327	16.603	5320.087659	16.477	5320.088004	16.542
-30	110.0	5320.087738	16.492	5320.088308	16.599	5320.087997	16.541	5320.088167	16.573

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	5320.091641	17.226	5320.091551	17.209	5320.091653	17.228	5320.091491	17.198
	110.0	5320.093302	17.538	5320.093186	17.516	5320.093152	17.510	5320.092576	17.402
	126.5	5320.091158	17.135	5320.090614	17.033	5320.090487	17.009	5320.091317	17.165

## 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](http://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: 886-3-3270892

**Email:** [service.adt@tw.bureauveritas.com](mailto:service.adt@tw.bureauveritas.com)  
**Web Site:** [www.adt.com.tw](http://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---**