



# FCC TEST REPORT (15.407)

**REPORT NO.:** RF140326C05-5

**MODEL NO.:** F-06F

**FCC ID:** VQK-F06F

**RECEIVED:** Mar. 26, 2014

**TESTED:** Apr. 26 ~ May 08, 2014

**ISSUED:** May 29, 2014

**APPLICANT:** FUJITSU LIMITED

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**ISSUED BY:** Bureau Veritas Consumer Products Services  
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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140326C05-5	Original release	May 29, 2014



# 1. CERTIFICATION

**PRODUCT:** Smart Phone

**MODEL:** F-06F

**BRAND:** FUJITSU

**APPLICANT:** FUJITSU LIMITED

**TESTED:** Apr. 26 ~ May 08, 2014

**TEST SAMPLE:** ENGINEERING SAMPLE

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

ANSI C63.10-2009

The above equipment (model: F-06F) 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 :** Celine Chou , **DATE :** May 29, 2014  
Celine Chou / Specialist

**APPROVED BY :** Ken Liu , **DATE :** May 29, 2014  
Ken Liu / Senior Manager

## 2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -15.95dB at 0.45097MHz.
15.407(b)(1/2/3) (b)(6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -2.8dB at 11060.00MHz.
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>	Smart Phone
<b>MODEL NO.</b>	F-06F
<b>POWER SUPPLY</b>	3.8Vdc (Battery) 5.0Vdc (Adapter or cradle or host equipment)
<b>MODULATION TYPE</b>	256QAM, 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 150Mbps 802.11ac: up to 433.3Mbps
<b>OPERATING FREQUENCY</b>	5180 ~ 5240MHz, 5260 ~ 5320MHz & 5500 ~ 5700MHz
<b>NUMBER OF CHANNEL</b>	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz) 1 for 802.11ac (80MHz)
<b>OUTPUT POWER</b>	33.806mW for 5180 ~ 5240MHz 33.189mW for 5260 ~ 5320MHz 29.376mW for 5500 ~ 5700MHz
<b>ANTENNA TYPE</b>	$\lambda/4$ Monopole antenna with -5.8dBi gain
<b>ANTENNA CONNECTOR</b>	N/A
<b>I/O PORTS</b>	Refer to user's manual
<b>DATA CABLE</b>	N/A
<b>ACCESSORY DEVICES</b>	Refer to Note as below

**NOTE:**

1. The EUT provide one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
802.11a	1TX
802.11n (20MHz)	1TX
802.11n (40MHz)	1TX
802.11ac (80MHz)	1TX



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2. The EUT contains the following accessories.

No.	Product	Brand	Model	Description
1	Battery	NTT docomo	F30	3.8Vdc, 2100mA , 8.0Wh Type: Li-on
2	Cradle	NTT docomo	F46	Input : 5.0Vdc, 1.5A Output : 5.0Vdc, 1.5A

3. SW version is R06.2e.

4. HW version is V2.1.0.

5. IMEI Code: 352295060015393 and 352295060013901.

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



### 3.2 DESCRIPTION OF TEST MODES

#### FOR 5180 ~ 5240MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
42	5210MHz

#### FOR 5260 ~ 5320MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
58	5290MHz

**FOR 5500 ~ 5700MHz**

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500 MHz	116	5580 MHz
104	5520 MHz	132	5660 MHz
108	5540 MHz	136	5680 MHz
112	5560 MHz	140	5700 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510 MHz	134	5670 MHz
110	5550 MHz		

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
106	5530MHz

### 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE $<$ 1G	PLC	APCM	
A	√	√	√	√	Powered by adapter
B	-	√	√	-	Powered by cradle

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:**

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane**.
2. "-" 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	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	15.0
A	802.11ac (80MHz)		42	42	OFDM	BPSK	32.5
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	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0
A	802.11ac (80MHz)		58	58	OFDM	BPSK	32.5
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
A	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	15.0
A	802.11ac (80MHz)		106	106	OFDM	BPSK	32.5

**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	802.11a	5180-5700	36 to 140	36	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	802.11a	5180-5700	36 to 140	36	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	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	15.0
A	802.11ac (80MHz)		42	42	OFDM	BPSK	32.5
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	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0
A	802.11ac (80MHz)		58	58	OFDM	BPSK	32.5
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
A	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	15.0
A	802.11ac (80MHz)		106	106	OFDM	BPSK	32.5

**TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Ted Chang
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Ted Chang
PLC	25deg. C, 65%RH	120Vac, 60Hz	Ted Chang
APCM	25deg. C, 60%RH	120Vac, 60Hz	Cedric Wu

### 3.3 DUTY CYCLE OF TEST SIGNAL

#### MODULATION TYPE: BPSK

Duty cycle of test signal is < 98 %, duty factor is required

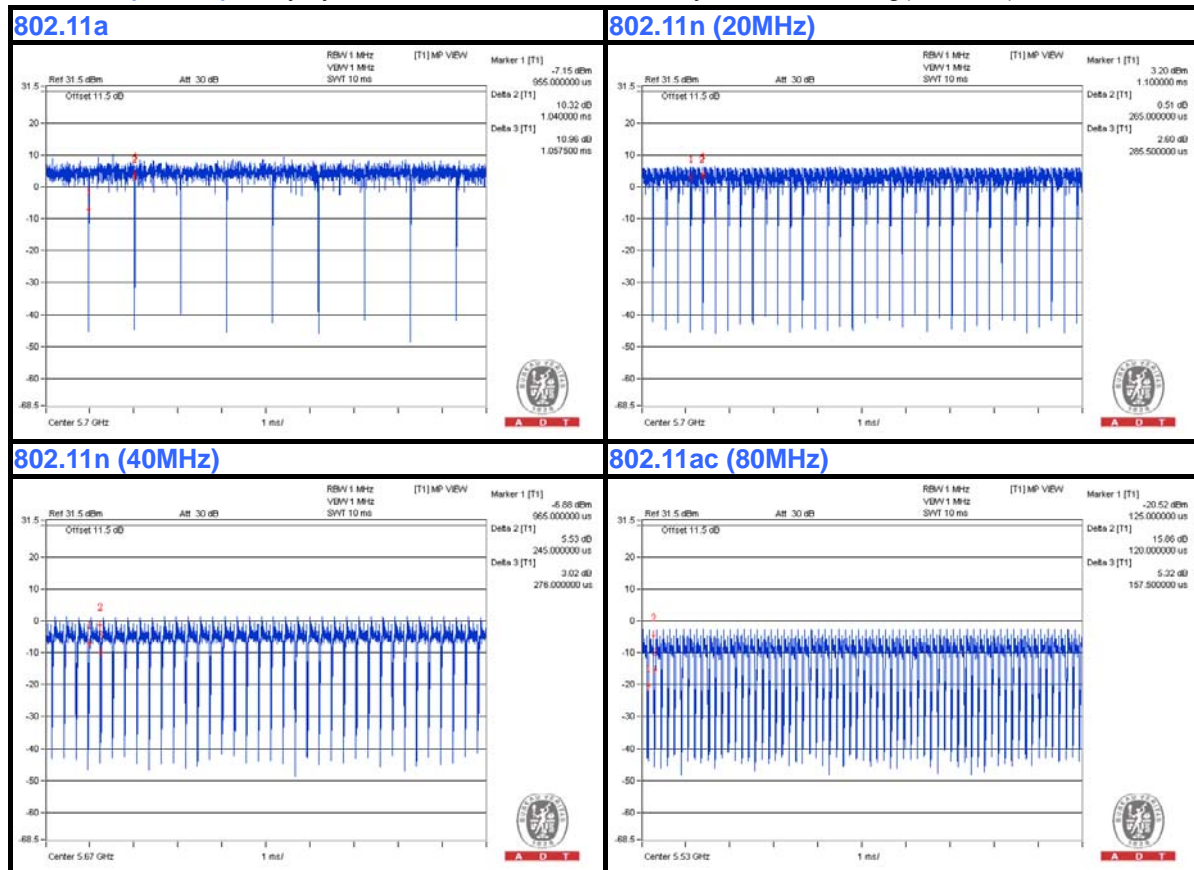
**802.11a:** Duty cycle =  $1.040/1.057 = 0.984$ , duty cycle of test signal is > 98 %, duty factor is not required

Duty cycle of test signal is < 98 %, duty factor is required

**802.11n (20MHz):** Duty cycle =  $0.265/0.285 = 0.930$ , Duty factor =  $10 * \log(1/0.930) = 0.32$

**802.11n (40MHz):** Duty cycle =  $0.245/0.276 = 0.888$ , Duty factor =  $10 * \log(1/0.888) = 0.52$

**802.11ac (80MHz):** Duty cycle =  $0.120/0.158 = 0.759$ , Duty factor =  $10 * \log(1/0.759) = 1.19$





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### MODULATION TYPE: QPSK

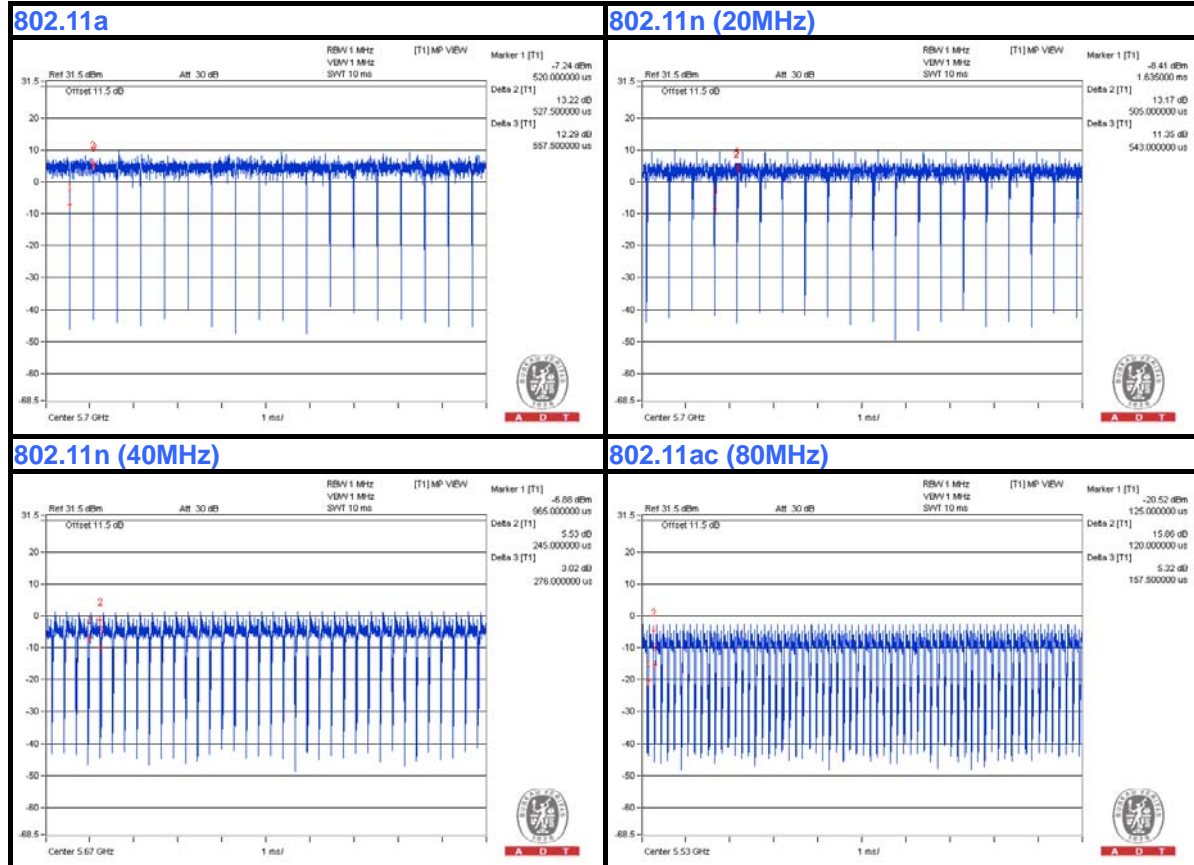
Duty cycle of test signal is < 98 %, duty factor is required

**802.11a:** Duty cycle = 0.528/0.558 = 0.946, Duty factor =  $10 * \log( 1/0.946 ) = 0.24$

**802.11n (20MHz):** Duty cycle = 0.505/0.543 = 0.930, Duty factor =  $10 * \log( 1/0.930 ) = 0.32$

**802.11n (40MHz):** Duty cycle = 0.245/0.276 = 0.888, Duty factor =  $10 * \log( 1/0.888 ) = 0.52$

**802.11ac (80MHz):** Duty cycle = 0.120/0.158 = 0.759, Duty factor =  $10 * \log( 1/0.759 ) = 1.19$





**MODULATION TYPE: 16QAM**

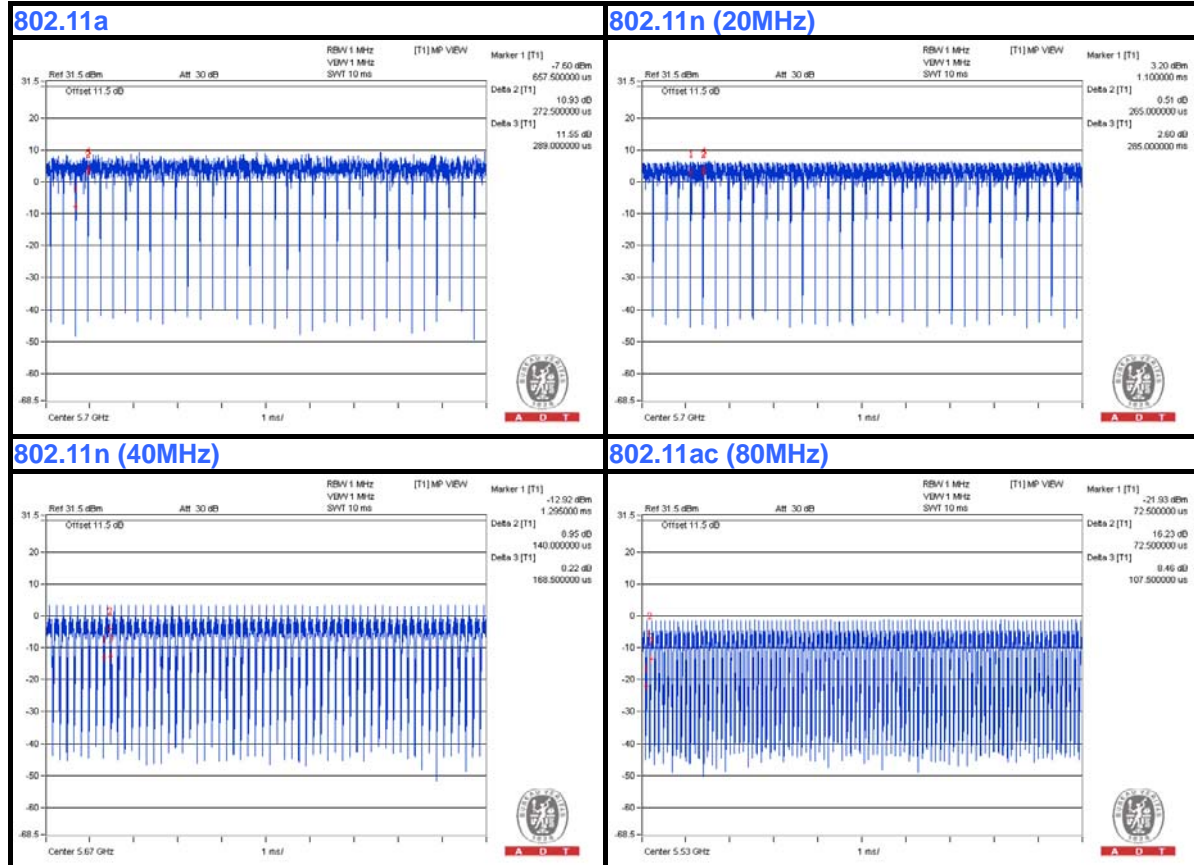
Duty cycle of test signal is < 98 %, duty factor is required

**802.11a:** Duty cycle = 0.273/0.289 = 0.945, Duty factor =  $10 * \log( 1/0.945) = 0.25$

**802.11n (20MHz):** Duty cycle = 0.265/0.285 = 0.930, Duty factor =  $10 * \log( 1/0.930) = 0.32$

**802.11n (40MHz):** Duty cycle = 0.140/0.169 = 0.833, Duty factor =  $10 * \log( 1/0.833) = 0.79$

**802.11ac (80MHz):** Duty cycle = 0.073/0.108 = 0.676, Duty factor =  $10 * \log( 1/0.676) = 1.70$





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### MODULATION TYPE: 64QAM

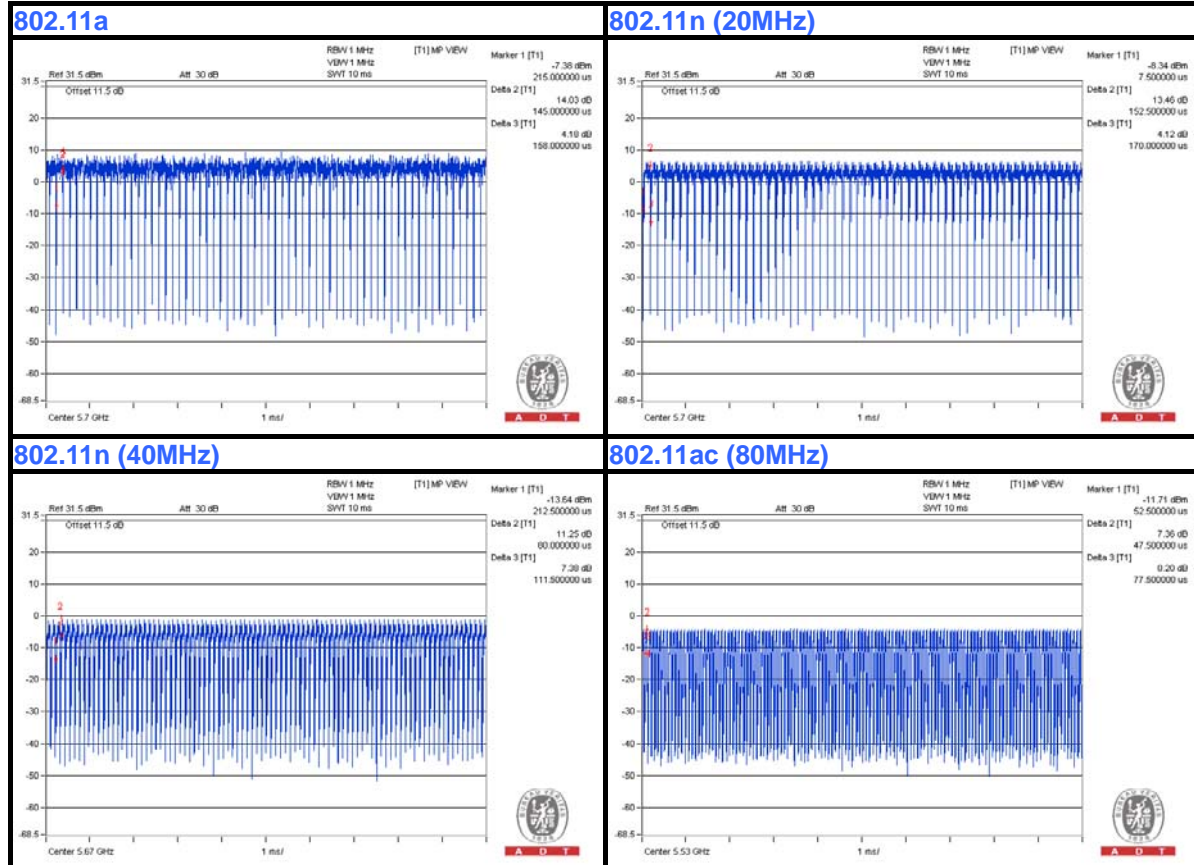
Duty cycle of test signal is < 98 %, duty factor is required

**802.11a:** Duty cycle = 0.145/0.158 = 0.918, Duty factor =  $10 * \log(1/0.918) = 0.37$

**802.11n (20MHz):** Duty cycle = 0.153/0.170 = 0.900, Duty factor =  $10 * \log(1/0.900) = 0.46$

**802.11n (40MHz):** Duty cycle = 0.080/0.112 = 0.721, Duty factor =  $10 * \log(1/0.721) = 1.42$

**802.11ac (80MHz):** Duty cycle = 0.048/0.078 = 0.615, Duty factor =  $10 * \log(1/0.615) = 2.11$







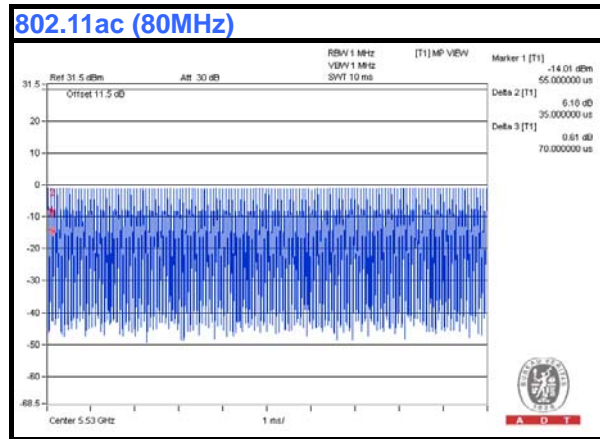
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### MODULATION TYPE: 256QAM

Duty cycle of test signal is < 98 %, duty factor is required

**802.11ac (80MHz):** Duty cycle = 0.035/0.070 = 0.500, Duty factor =  $10 * \log( 1/0.500) = 3.01$

#### 802.11ac (80MHz)



### 3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	ADAPTER	NTT docomo	AC Adapter 04	NA	NA

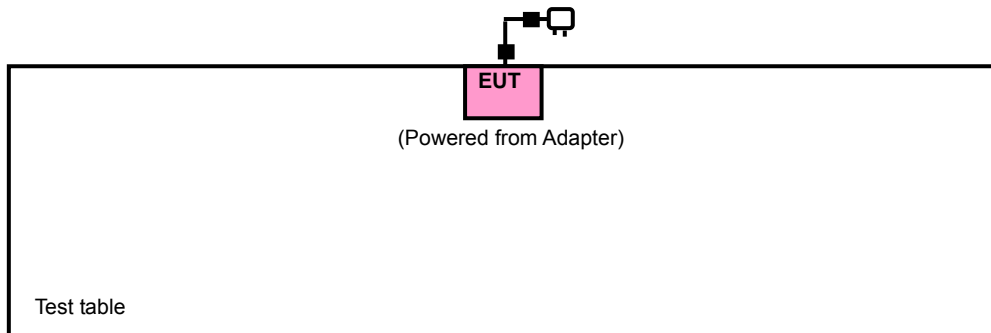
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA

**NOTE:**

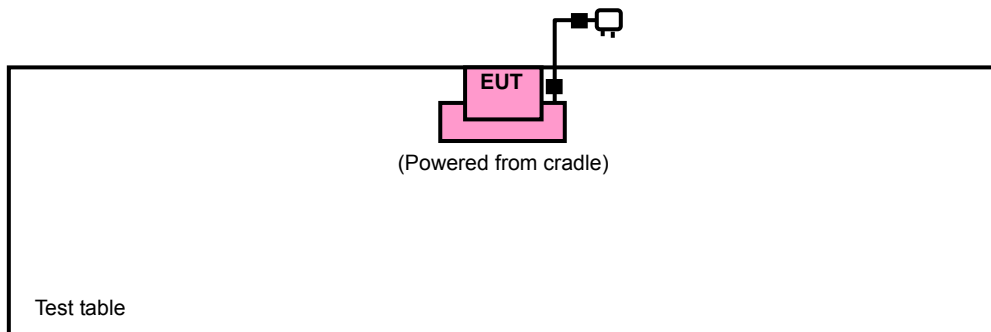
1. All power cords of the above support units are non shielded (1.8m).
2. Item 1 was provided by the client
3. 1.05m DC cable with 2 cores attached on adapter.

#### 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 v01r03**

ANSI C63.10-2009

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

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

## 4. TEST TYPES AND RESULTS

### 4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

#### 4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

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

**NOTE:**

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

#### 4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
√	FIELD STRENGTH AT 3m (dBμV/m)	
	PK	AV
	74	54
	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m)
	PK	PK
	-27	68.3

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

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

#### 4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 29, 2013	Nov. 28, 2014
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Feb. 11, 2014	Feb. 10, 2015
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Feb. 25, 2014	Feb. 24, 2015
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-209	Sep. 12, 2013	Sep. 11, 2014
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 15, 2013	Jul. 14, 2014
Preamplifier Agilent	8449B	3008A01911	Aug. 22, 2013	Aug. 21, 2014
Preamplifier Agilent	8447D	2944A10638	Oct. 18, 2013	Oct. 17, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	248780/4 309222/4 274092/4	Aug. 26, 2013	Aug. 25, 2014
RF signal cable Worken	5D-FB	Cable-HYCH9-01	Aug. 11, 2013	Aug. 10, 2014
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	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. 18, 2013	Oct. 17, 2014
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 10, 2013	Jun. 09, 2014

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
  2. The test was performed in HwaYa Chamber 9.
  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 215374.
  5. The IC Site Registration No. is IC 7450F-9.

#### 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:**

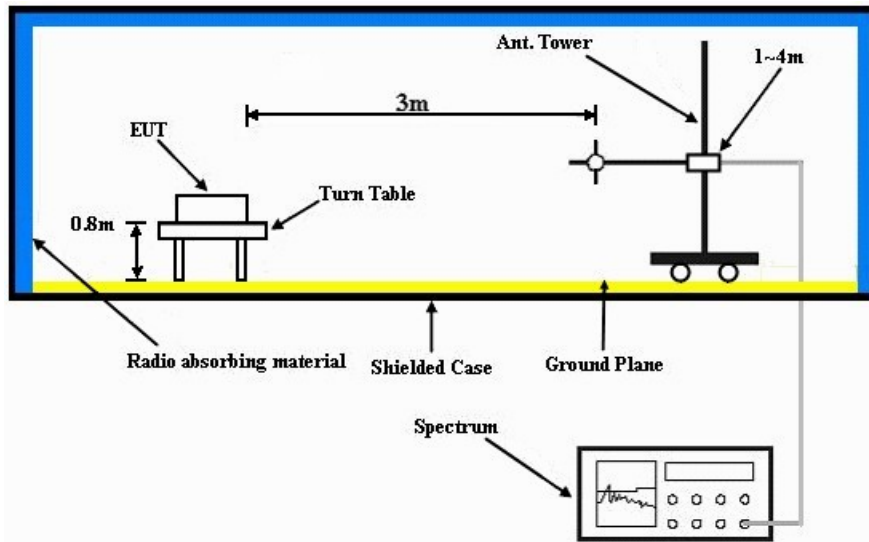
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle < 98%) or 10Hz (Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

#### 4.1.5 DEVIATION FROM TEST STANDARD

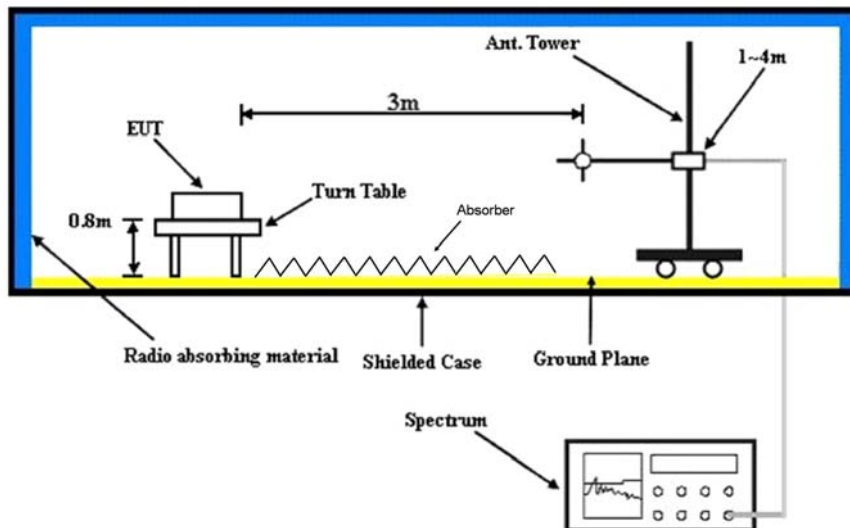
No deviation.

#### 4.1.6 TEST SETUP

##### Frequency range 30MHz~1GHz



##### Frequency range above 1GHz



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

#### 4.1.7 EUT OPERATING CONDITION

##### **Test Mode A**

Set the EUT under transmission condition continuously at specific channel frequency.

##### **Test Mode B**

- a. Plugged the EUT into the cradle and placed them on the test table.
- b. Set the EUT under transmission condition continuously at specific channel frequency.



#### 4.1.8 TEST RESULTS

##### ABOVE 1GHz DATA :

##### 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.0 PK	74.0	-18.0	1.03 H	38	53.60	2.40
2	5150.00	44.9 AV	54.0	-9.1	1.03 H	38	42.50	2.40
3	*5180.00	96.5 PK			1.02 H	98	57.10	39.40
4	*5180.00	85.4 AV			1.02 H	98	46.00	39.40
5	#10360.00	60.4 PK	74.0	-13.6	1.05 H	89	46.50	13.90
6	#10360.00	47.4 AV	54.0	-6.6	1.05 H	89	33.50	13.90

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	5150.00	56.7 PK	74.0	-17.3	1.31 V	10	54.30	2.40
2	5150.00	43.6 AV	54.0	-10.4	1.31 V	10	41.20	2.40
3	*5180.00	90.4 PK			1.31 V	10	51.00	39.40
4	*5180.00	79.3 AV			1.31 V	10	39.90	39.40
5	#10360.00	57.5 PK	74.0	-16.5	1.05 V	63	43.60	13.90
6	#10360.00	45.1 AV	54.0	-8.9	1.05 V	63	31.20	13.90

##### 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)  
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. "#":The radiated frequency is out the restricted band.



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

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	96.5 PK			1.15 H	37	57.00	39.50
2	*5200.00	85.2 AV			1.15 H	37	45.70	39.50
3	#10400.00	59.9 PK	74.0	-14.1	1.54 H	189	45.80	14.10
4	#10400.00	46.6 AV	54.0	-7.4	1.54 H	189	32.50	14.10
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	90.4 PK			1.05 V	194	50.90	39.50
2	*5200.00	79.7 AV			1.05 V	194	40.20	39.50
3	#10400.00	57.7 PK	74.0	-16.3	1.54 V	360	43.60	14.10
4	#10400.00	46.3 AV	54.0	-7.7	1.54 V	360	32.20	14.10

**REMARKS:**

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

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	97.5 PK			1.01 H	41	57.90	39.60
2	*5240.00	86.4 AV			1.01 H	41	46.80	39.60
3	5350.00	59.1 PK	74.0	-14.9	1.01 H	41	56.50	2.60
4	5350.00	45.2 AV	54.0	-8.8	1.01 H	41	42.60	2.60
5	#10480.00	61.9 PK	74.0	-12.1	1.04 H	119	46.60	15.30
6	#10480.00	48.6 AV	54.0	-5.4	1.04 H	119	33.30	15.30

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	*5240.00	89.7 PK			1.00 V	165	50.10	39.60
2	*5240.00	78.1 AV			1.00 V	165	38.50	39.60
3	5350.00	57.2 PK	74.0	-16.8	1.51 V	95	54.60	2.60
4	5350.00	43.9 AV	54.0	-10.1	1.51 V	95	41.30	2.60
5	#10480.00	59.6 PK	74.0	-14.4	1.01 V	252	44.30	15.30
6	#10480.00	47.5 AV	54.0	-6.5	1.01 V	252	32.20	15.30

**REMARKS:**

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBUV/m)	LIMIT (dBUV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBUV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.4 PK	74.0	-17.6	1.02 H	39	54.00	2.40
2	5150.00	44.9 AV	54.0	-9.1	1.02 H	39	42.50	2.40
3	*5260.00	97.5 PK			1.02 H	39	57.90	39.60
4	*5260.00	86.2 AV			1.02 H	39	46.60	39.60
5	#10520.00	62.4 PK	74.0	-11.6	1.30 H	247	46.90	15.50
6	#10520.00	48.7 AV	54.0	-5.3	1.30 H	247	33.20	15.50
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	91.2 PK			1.00 V	165	51.60	39.60
2	*5260.00	79.7 AV			1.00 V	165	40.10	39.60
3	5350.00	57.2 PK	74.0	-16.8	1.03 V	52	54.60	2.60
4	5350.00	44.1 AV	54.0	-9.9	1.03 V	52	41.50	2.60
5	#10520.00	61.4 PK	74.0	-12.6	1.06 V	351	45.90	15.50
6	#10520.00	47.0 AV	54.0	-7.0	1.06 V	351	31.50	15.50

**REMARKS:**

1. Emission Level(dBUV/m) = Raw Value(dBUV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)  
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
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 (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

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	98.5 PK			1.00 H	42	58.90	39.60
2	*5300.00	87.5 AV			1.00 H	42	47.90	39.60
3	10600.00	61.5 PK	74.0	-12.5	1.02 H	6	45.60	15.90
4	10600.00	49.4 AV	54.0	-4.6	1.02 H	6	33.50	15.90
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	*5300.00	95.8 PK			1.15 V	14	56.20	39.60
2	*5300.00	84.3 AV			1.15 V	14	44.70	39.60
3	#10400.00	58.6 PK	74.0	-15.4	1.14 V	51	44.50	14.10
4	#10400.00	45.3 AV	54.0	-8.7	1.14 V	51	31.20	14.10

**REMARKS:**

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

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	99.3 PK			1.00 H	40	59.60	39.70
2	*5320.00	88.0 AV			1.00 H	40	48.30	39.70
3	5350.00	59.4 PK	74.0	-14.6	1.00 H	40	56.80	2.60
4	5350.00	46.1 AV	54.0	-7.9	1.00 H	40	43.50	2.60
5	10640.00	61.9 PK	74.0	-12.1	1.05 H	63	46.00	15.90
6	10640.00	49.1 AV	54.0	-4.9	1.05 H	63	33.20	15.90

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	*5320.00	96.8 PK			1.14 V	3	57.10	39.70
2	*5320.00	85.1 AV			1.14 V	3	45.40	39.70
3	5350.00	57.6 PK	74.0	-16.4	1.14 V	3	55.00	2.60
4	5350.00	44.7 AV	54.0	-9.3	1.14 V	3	42.10	2.60
5	10640.00	61.4 PK	74.0	-12.6	1.59 V	336	45.50	15.90
6	10640.00	47.2 AV	54.0	-6.8	1.59 V	336	31.30	15.90

**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)  
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ \* “: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

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	58.2 PK	74.0	-15.8	1.00 H	228	55.40	2.80
2	5460.00	45.1 AV	54.0	-8.9	1.00 H	228	42.30	2.80
3	#5470.00	59.7 PK	74.0	-14.3	1.00 H	228	56.80	2.90
4	#5470.00	45.2 AV	54.0	-8.8	1.00 H	228	42.30	2.90
5	*5500.00	101.7 PK			1.00 H	228	61.80	39.90
6	*5500.00	89.7 AV			1.00 H	228	49.80	39.90
7	11000.00	62.2 PK	74.0	-11.8	1.05 H	63	45.20	17.00
8	11000.00	48.5 AV	54.0	-5.5	1.05 H	63	31.50	17.00

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	5460.00	58.9 PK	74.0	-15.1	1.00 V	9	56.10	2.80
2	5460.00	44.9 AV	54.0	-9.1	1.00 V	9	42.10	2.80
3	#5470.00	61.8 PK	74.0	-12.2	1.05 V	9	58.90	2.90
4	#5470.00	46.5 AV	54.0	-7.5	1.05 V	9	43.60	2.90
5	*5500.00	104.3 PK			1.00 V	9	64.40	39.90
6	*5500.00	93.1 AV			1.00 V	9	53.20	39.90
7	11000.00	60.6 PK	74.0	-13.4	1.01 V	5	43.60	17.00
8	11000.00	47.2 AV	54.0	-6.8	1.01 V	5	30.20	17.00

**REMARKS:**

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

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

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	99.8 PK			1.00 H	234	59.80	40.00
2	*5580.00	89.3 AV			1.00 H	234	49.30	40.00
3	11160.00	62.3 PK	74.0	-11.7	1.19 H	62	45.60	16.70
4	11160.00	47.9 AV	54.0	-6.1	1.19 H	62	31.20	16.70
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	*5580.00	103.4 PK			1.00 V	12	63.40	40.00
2	*5580.00	91.9 AV			1.00 V	12	51.90	40.00
3	11160.00	61.0 PK	74.0	-13.0	1.56 V	47	44.30	16.70
4	11160.00	47.9 AV	54.0	-6.1	1.56 V	47	31.20	16.70

**REMARKS:**

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

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	98.9 PK			1.22 H	61	58.70	40.20
2	*5700.00	87.9 AV			1.22 H	61	47.70	40.20
3	#5725.00	58.1 PK	74.0	-15.9	1.22 H	61	54.80	3.30
4	#5725.00	44.7 AV	54.0	-9.3	1.22 H	61	41.40	3.30
5	11400.00	59.4 PK	74.0	-14.6	1.02 H	88	43.60	15.80
6	11400.00	46.0 AV	54.0	-8.0	1.02 H	88	30.20	15.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	100.5 PK			1.16 V	0	60.30	40.20
2	*5700.00	89.0 AV			1.16 V	0	48.80	40.20
3	#5725.00	59.3 PK	74.0	-14.7	1.16 V	0	56.00	3.30
4	#5725.00	45.8 AV	54.0	-8.2	1.16 V	0	42.50	3.30
5	11400.00	61.7 PK	74.0	-12.3	1.02 V	325	45.90	15.80
6	11400.00	48.3 AV	54.0	-5.7	1.02 V	325	32.50	15.80

**REMARKS:**

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



802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.3 PK	74.0	-17.7	1.15 H	40	53.90	2.40
2	5150.00	44.9 AV	54.0	-9.1	1.15 H	40	42.50	2.40
3	*5180.00	93.6 PK			1.15 H	40	54.20	39.40
4	*5180.00	82.4 AV			1.15 H	40	43.00	39.40
5	#10360.00	59.6 PK	74.0	-14.4	1.02 H	220	45.70	13.90
6	#10360.00	47.3 AV	54.0	-6.7	1.02 H	220	33.40	13.90
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	5150.00	56.7 PK	74.0	-17.3	1.05 V	196	54.30	2.40
2	5150.00	43.4 AV	54.0	-10.6	1.05 V	196	41.00	2.40
3	*5180.00	86.8 PK			1.05 V	196	47.40	39.40
4	*5180.00	75.9 AV			1.05 V	196	36.50	39.40
5	#10360.00	57.5 PK	74.0	-16.5	1.15 V	93	43.60	13.90
6	#10360.00	45.1 AV	54.0	-8.9	1.15 V	93	31.20	13.90

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ \* “: Fundamental frequency.
6. “#”:The radiated frequency is out the restricted band.



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

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	92.0 PK			1.00 H	58	52.50	39.50
2	*5200.00	81.5 AV			1.00 H	58	42.00	39.50
3	#10400.00	60.7 PK	74.0	-13.3	1.26 H	66	46.60	14.10
4	#10400.00	47.4 AV	54.0	-6.6	1.26 H	66	33.30	14.10

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	88.9 PK			1.04 V	195	49.40	39.50
2	*5200.00	77.7 AV			1.04 V	195	38.20	39.50
3	#10400.00	57.6 PK	74.0	-16.4	1.01 V	41	43.50	14.10
4	#10400.00	45.3 AV	54.0	-8.7	1.01 V	41	31.20	14.10

**REMARKS:**

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

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	95.2 PK			1.02 H	43	55.60	39.60
2	*5240.00	84.1 AV			1.02 H	43	44.50	39.60
3	5350.00	59.2 PK	74.0	-14.8	1.02 H	44	56.60	2.60
4	5350.00	45.0 AV	54.0	-9.0	1.02 H	44	42.40	2.60
5	#10480.00	61.0 PK	74.0	-13.0	1.59 H	99	45.70	15.30
6	#10480.00	48.5 AV	54.0	-5.5	1.59 H	99	33.20	15.30

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	*5240.00	87.6 PK			1.00 V	144	48.00	39.60
2	*5240.00	76.5 AV			1.00 V	144	36.90	39.60
3	5350.00	56.9 PK	74.0	-17.1	1.00 V	145	54.30	2.60
4	5350.00	43.8 AV	54.0	-10.2	1.00 V	145	41.20	2.60
5	#10480.00	58.6 PK	74.0	-15.4	1.05 V	96	43.30	15.30
6	#10480.00	46.3 AV	54.0	-7.7	1.05 V	96	31.00	15.30

**REMARKS:**

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.1 PK	74.0	-15.9	1.02 H	45	55.70	2.40
2	5150.00	45.0 AV	54.0	-9.0	1.02 H	45	42.60	2.40
3	*5260.00	95.3 PK			1.02 H	41	55.70	39.60
4	*5260.00	84.2 AV			1.02 H	41	44.60	39.60
5	#10520.00	61.1 PK	74.0	-12.9	1.05 H	200	45.60	15.50
6	#10520.00	47.8 AV	54.0	-6.2	1.05 H	200	32.30	15.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.0 PK	74.0	-17.0	1.00 V	144	54.60	2.40
2	5150.00	43.6 AV	54.0	-10.4	1.00 V	144	41.20	2.40
3	*5260.00	88.4 PK			1.00 V	144	48.80	39.60
4	*5260.00	77.4 AV			1.00 V	144	37.80	39.60
5	#10520.00	60.8 PK	74.0	-13.2	1.54 V	88	45.30	15.50
6	#10520.00	45.7 AV	54.0	-8.3	1.54 V	88	30.20	15.50

**REMARKS:**

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

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

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	96.5 PK			1.00 H	43	56.90	39.60
2	*5300.00	85.5 AV			1.00 H	43	45.90	39.60
3	10600.00	62.5 PK	74.0	-11.5	1.08 H	89	46.60	15.90
4	10600.00	49.1 AV	54.0	-4.9	1.08 H	89	33.20	15.90
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	*5300.00	93.2 PK			1.15 V	13	53.60	39.60
2	*5300.00	81.9 AV			1.15 V	13	42.30	39.60
3	10600.00	61.1 PK	74.0	-12.9	1.12 V	221	45.20	15.90
4	10600.00	47.1 AV	54.0	-6.9	1.12 V	221	31.20	15.90

**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)  
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ \* “: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

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	96.3 PK			1.00 H	38	56.60	39.70
2	*5320.00	85.4 AV			1.00 H	38	45.70	39.70
3	5350.00	58.1 PK	74.0	-15.9	1.00 H	38	55.50	2.60
4	5350.00	45.3 AV	54.0	-8.7	1.00 H	38	42.70	2.60
5	10640.00	62.2 PK	74.0	-11.8	1.05 H	85	46.30	15.90
6	10640.00	49.1 AV	54.0	-4.9	1.05 H	85	33.20	15.90

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	*5320.00	94.0 PK			1.14 V	4	54.30	39.70
2	*5320.00	83.0 AV			1.14 V	4	43.30	39.70
3	5350.00	58.1 PK	74.0	-15.9	1.14 V	4	55.50	2.60
4	5350.00	43.8 AV	54.0	-10.2	1.14 V	4	41.20	2.60
5	10640.00	60.5 PK	74.0	-13.5	1.00 V	233	44.60	15.90
6	10640.00	47.1 AV	54.0	-6.9	1.00 V	233	31.20	15.90

**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)  
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ \* ”: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

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	58.9 PK	74.0	-15.1	1.00 H	237	56.10	2.80
2	5460.00	45.2 AV	54.0	-8.8	1.00 H	237	42.40	2.80
3	#5470.00	59.3 PK	74.0	-14.7	1.00 H	237	56.40	2.90
4	#5470.00	45.7 AV	54.0	-8.3	1.00 H	237	42.80	2.90
5	*5500.00	99.0 PK			1.00 H	237	59.10	39.90
6	*5500.00	88.1 AV			1.00 H	237	48.20	39.90
7	11000.00	62.5 PK	74.0	-11.5	1.02 H	96	45.50	17.00
8	11000.00	49.5 AV	54.0	-4.5	1.02 H	96	32.50	17.00
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	5460.00	58.6 PK	74.0	-15.4	1.00 V	9	55.80	2.80
2	5460.00	45.0 AV	54.0	-9.0	1.00 V	9	42.20	2.80
3	#5470.00	59.2 PK	74.0	-14.8	1.00 V	9	56.30	2.90
4	#5470.00	46.0 AV	54.0	-8.0	1.00 V	9	43.10	2.90
5	*5500.00	102.0 PK			1.00 V	9	62.10	39.90
6	*5500.00	91.1 AV			1.00 V	9	51.20	39.90
7	11000.00	60.6 PK	74.0	-13.4	1.01 V	320	43.60	17.00
8	11000.00	47.2 AV	54.0	-6.8	1.01 V	320	30.20	17.00

**REMARKS:**

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





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

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	98.9 PK			1.00 H	234	58.90	40.00
2	*5580.00	87.9 AV			1.00 H	234	47.90	40.00
3	11160.00	60.3 PK	74.0	-13.7	1.00 H	210	43.60	16.70
4	11160.00	46.9 AV	54.0	-7.1	1.00 H	210	30.20	16.70
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	*5580.00	100.9 PK			1.00 V	4	60.90	40.00
2	*5580.00	89.8 AV			1.00 V	4	49.80	40.00
3	11160.00	62.7 PK	74.0	-11.3	1.03 V	357	46.00	16.70
4	11160.00	48.9 AV	54.0	-5.1	1.03 V	357	32.20	16.70

**REMARKS:**

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

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	97.0 PK			1.22 H	63	56.80	40.20
2	*5700.00	85.7 AV			1.22 H	63	45.50	40.20
3	#5725.00	57.5 PK	74.0	-16.5	1.22 H	63	54.20	3.30
4	#5725.00	45.3 AV	54.0	-8.7	1.22 H	63	42.00	3.30
5	11400.00	59.4 PK	74.0	-14.6	1.00 H	89	43.60	15.80
6	11400.00	46.0 AV	54.0	-8.0	1.00 H	89	30.20	15.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	96.2 PK			1.00 V	0	56.00	40.20
2	*5700.00	85.6 AV			1.00 V	0	45.40	40.20
3	#5725.00	58.8 PK	74.0	-15.2	1.00 V	0	55.50	3.30
4	#5725.00	46.1 AV	54.0	-7.9	1.00 V	0	42.80	3.30
5	11400.00	61.4 PK	74.0	-12.6	1.03 V	325	45.60	15.80
6	11400.00	48.1 AV	54.0	-5.9	1.03 V	325	32.30	15.80

**REMARKS:**

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



802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

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	48.6 PK	74.0	-25.4	1.14 H	208	46.20	2.40
2	5150.00	34.8 AV	54.0	-19.2	1.14 H	208	32.40	2.40
3	*5190.00	89.7 PK			1.25 H	222	50.20	39.50
4	*5190.00	78.9 AV			1.25 H	222	39.40	39.50
5	#10380.00	58.3 PK	74.0	-15.7	1.09 H	102	44.20	14.10
6	#10380.00	46.9 AV	54.0	-7.1	1.09 H	102	32.80	14.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.9 PK	74.0	-17.1	1.41 V	46	54.50	2.40
2	5150.00	43.2 AV	54.0	-10.8	1.41 V	46	40.80	2.40
3	*5190.00	84.7 PK			1.41 V	46	45.20	39.50
4	*5190.00	74.6 AV			1.41 V	46	35.10	39.50
5	#10380.00	57.9 PK	74.0	-16.1	1.06 V	78	43.80	14.10
6	#10380.00	45.5 AV	54.0	-8.5	1.06 V	78	31.40	14.10

REMARKS:

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 46	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

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	*5230.00	89.8 PK			1.00 H	226	50.20	39.60
2	*5230.00	79.6 AV			1.00 H	226	40.00	39.60
3	#10460.00	59.6 PK	74.0	-14.4	1.12 H	108	44.80	14.80
4	#10460.00	47.2 AV	54.0	-6.8	1.12 H	108	32.40	14.80

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	*5230.00	85.4 PK			1.48 V	49	45.80	39.60
2	*5230.00	75.2 AV			1.48 V	49	35.60	39.60
3	#10460.00	58.2 PK	74.0	-15.8	1.02 V	82	43.40	14.80
4	#10460.00	46.4 AV	54.0	-7.6	1.02 V	82	31.60	14.80

**REMARKS:**

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

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

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	*5270.00	91.0 PK			1.00 H	224	51.40	39.60
2	*5270.00	80.5 AV			1.00 H	224	40.90	39.60
3	#10540.00	60.4 PK	74.0	-13.6	1.04 H	112	44.80	15.60
4	#10540.00	47.8 AV	54.0	-6.2	1.04 H	112	32.20	15.60
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	*5270.00	85.5 PK			1.48 V	58	45.90	39.60
2	*5270.00	75.5 AV			1.48 V	58	35.90	39.60
3	#10540.00	59.4 PK	74.0	-14.6	1.04 V	89	43.80	15.60
4	#10540.00	47.5 AV	54.0	-6.5	1.04 V	89	31.90	15.60

**REMARKS:**

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	91.5 PK			1.12 H	222	51.90	39.60
2	*5310.00	80.7 AV			1.12 H	222	41.10	39.60
3	5350.00	55.0 PK	74.0	-19.0	1.01 H	214	52.40	2.60
4	5350.00	36.1 AV	54.0	-17.9	1.01 H	214	33.50	2.60
5	10620.00	60.8 PK	74.0	-13.2	1.04 H	100	44.90	15.90
6	10620.00	48.3 AV	54.0	-5.7	1.04 H	100	32.40	15.90

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	*5310.00	86.4 PK			1.38 V	52	46.80	39.60
2	*5310.00	76.0 AV			1.38 V	52	36.40	39.60
3	5350.00	50.4 PK	74.0	-23.6	1.38 V	52	47.80	2.60
4	5350.00	34.0 AV	54.0	-20.0	1.38 V	52	31.40	2.60
5	10620.00	59.5 PK	74.0	-14.5	1.08 V	67	43.60	15.90
6	10620.00	47.1 AV	54.0	-6.9	1.08 V	67	31.20	15.90

**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)  
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ \* ”: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 102	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

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	57.9 PK	74.0	-16.1	1.07 H	224	55.10	2.80
2	5460.00	45.6 AV	54.0	-8.4	1.07 H	224	42.80	2.80
3	#5470.00	59.1 PK	74.0	-14.9	1.07 H	224	56.20	2.90
4	#5470.00	47.6 AV	54.0	-6.4	1.07 H	224	44.70	2.90
5	*5510.00	91.0 PK			1.07 H	224	51.10	39.90
6	*5510.00	81.5 AV			1.07 H	224	41.60	39.90
7	11020.00	61.6 PK	74.0	-12.4	1.02 H	108	44.60	17.00
8	11020.00	50.8 AV	54.0	-3.2	1.02 H	108	33.80	17.00
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	5460.00	53.2 PK	74.0	-20.8	1.52 V	58	50.40	2.80
2	5460.00	39.2 AV	54.0	-14.8	1.52 V	58	36.40	2.80
3	#5470.00	54.1 PK	74.0	-19.9	1.52 V	58	51.20	2.90
4	#5470.00	40.8 AV	54.0	-13.2	1.52 V	58	37.90	2.90
5	*5510.00	86.7 PK			1.52 V	58	46.80	39.90
6	*5510.00	76.4 AV			1.52 V	58	36.50	39.90
7	11020.00	61.1 PK	74.0	-12.9	1.02 V	92	44.10	17.00
8	11020.00	48.2 AV	54.0	-5.8	1.02 V	92	31.20	17.00

**REMARKS:**

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	91.4 PK			1.04 H	212	51.40	40.00
2	*5550.00	81.9 AV			1.04 H	212	41.90	40.00
3	11100.00	60.9 PK	74.0	-13.1	1.09 H	105	44.20	16.70
4	11100.00	50.6 AV	54.0	-3.4	1.09 H	105	33.90	16.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	87.1 PK			1.49 V	62	47.10	40.00
2	*5550.00	76.9 AV			1.49 V	62	36.90	40.00
3	11100.00	61.5 PK	74.0	-12.5	1.09 V	100	44.80	16.70
4	11100.00	48.1 AV	54.0	-5.9	1.09 V	100	31.40	16.70

**REMARKS:**

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 134	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	91.6 PK			1.69 H	267	51.40	40.20
2	*5670.00	79.7 AV			1.69 H	267	39.50	40.20
3	#5725.00	58.0 PK	74.0	-16.0	1.69 H	267	54.70	3.30
4	#5725.00	43.9 AV	54.0	-10.1	1.69 H	267	40.60	3.30
5	11340.00	60.9 PK	74.0	-13.1	1.05 H	118	44.80	16.10
6	11340.00	50.3 AV	54.0	-3.7	1.05 H	118	34.20	16.10

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	*5670.00	87.4 PK			1.56 V	68	47.20	40.20
2	*5670.00	77.1 AV			1.56 V	68	36.90	40.20
3	#5725.00	55.5 PK	74.0	-18.5	1.56 V	68	52.20	3.30
4	#5725.00	41.1 AV	54.0	-12.9	1.56 V	68	37.80	3.30
5	11340.00	60.9 PK	74.0	-13.1	1.06 V	102	44.80	16.10
6	11340.00	47.8 AV	54.0	-6.2	1.06 V	102	31.70	16.10

**REMARKS:**

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

802.11ac (80MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 42	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

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	49.2 PK	74.0	-24.8	1.12 H	225	46.80	2.40
2	5150.00	34.5 AV	54.0	-19.5	1.12 H	225	32.10	2.40
3	*5210.00	85.1 PK			1.12 H	225	45.60	39.50
4	*5210.00	76.2 AV			1.12 H	225	36.70	39.50
5	#10420.00	59.3 PK	74.0	-14.7	1.06 H	82	44.90	14.40
6	#10420.00	49.2 AV	54.0	-4.8	1.06 H	82	34.80	14.40

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	5150.00	46.6 PK	74.0	-27.4	1.69 V	64	44.20	2.40
2	5150.00	33.2 AV	54.0	-20.8	1.69 V	64	30.80	2.40
3	*5210.00	80.4 PK			1.69 V	64	40.90	39.50
4	*5210.00	70.9 AV			1.69 V	64	31.40	39.50
5	#10420.00	57.2 PK	74.0	-16.8	1.08 V	78	42.80	14.40
6	#10420.00	46.8 AV	54.0	-7.2	1.08 V	78	32.40	14.40

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 58	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

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	*5290.00	87.4 PK			1.00 H	225	47.80	39.60
2	*5290.00	77.4 AV			1.00 H	225	37.80	39.60
3	5350.00	49.4 PK	74.0	-24.6	1.21 H	232	46.80	2.60
4	5350.00	37.5 AV	54.0	-16.5	1.21 H	232	34.90	2.60
5	#10580.00	60.9 PK	74.0	-13.1	1.08 H	92	45.20	15.70
6	#10580.00	50.8 AV	54.0	-3.2	1.08 H	92	35.10	15.70

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	*5290.00	81.7 PK			1.72 V	77	42.10	39.60
2	*5290.00	71.6 AV			1.72 V	77	32.00	39.60
3	5350.00	47.5 PK	74.0	-26.5	1.72 V	77	44.90	2.60
4	5350.00	35.3 AV	54.0	-18.7	1.72 V	77	32.70	2.60
5	#10580.00	58.3 PK	74.0	-15.7	1.09 V	82	42.60	15.70
6	#10580.00	48.4 AV	54.0	-5.6	1.09 V	82	32.70	15.70

**REMARKS:**

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 106	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang

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	50.3 PK	74.0	-23.7	1.17 H	229	47.50	2.80
2	5460.00	37.4 AV	54.0	-16.6	1.17 H	229	34.60	2.80
3	#5470.00	51.9 PK	74.0	-22.1	1.17 H	229	49.00	2.90
4	#5470.00	38.8 AV	54.0	-15.2	1.17 H	229	35.90	2.90
5	*5530.00	87.0 PK			1.17 H	229	47.10	39.90
6	*5530.00	77.4 AV			1.17 H	229	37.50	39.90
7	11060.00	61.2 PK	74.0	-12.8	1.04 H	94	44.40	16.80
8	11060.00	51.2 AV	54.0	-2.8	1.04 H	94	34.40	16.80
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	5460.00	50.2 PK	74.0	-23.8	1.52 V	51	47.40	2.80
2	5460.00	37.4 AV	54.0	-16.6	1.52 V	51	34.60	2.80
3	#5470.00	48.8 PK	74.0	-25.2	1.52 V	51	45.90	2.90
4	#5470.00	35.5 AV	54.0	-18.5	1.52 V	51	32.60	2.90
5	*5530.00	82.0 PK			1.52 V	51	42.10	39.90
6	*5530.00	72.7 AV			1.52 V	51	32.80	39.90
7	11060.00	59.2 PK	74.0	-14.8	1.09 V	77	42.40	16.80
8	11060.00	49.2 AV	54.0	-4.8	1.09 V	77	32.40	16.80

**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.

**BELOW 1GHz WORST-CASE DATA : 802.11a**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang
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	36.22	20.1 QP	40.0	-19.9	1.24 H	52	35.30	-15.20
2	197.88	23.9 QP	43.5	-19.6	1.24 H	270	40.30	-16.40
3	284.94	20.2 QP	46.0	-25.8	1.00 H	139	32.80	-12.60
4	477.69	23.6 QP	46.0	-22.4	1.00 H	39	32.30	-8.70
5	617.60	26.2 QP	46.0	-19.8	1.49 H	3	32.00	-5.80
6	779.26	27.9 QP	46.0	-18.1	1.24 H	249	30.70	-2.80

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	30.00	27.9 QP	40.0	-12.1	1.00 V	59	43.70	-15.80
2	57.98	21.7 QP	40.0	-18.3	1.00 V	215	36.10	-14.40
3	194.78	18.0 QP	43.5	-25.5	1.00 V	108	34.20	-16.20
4	367.32	19.8 QP	46.0	-26.2	1.00 V	88	30.60	-10.80
5	465.26	23.1 QP	46.0	-22.9	1.00 V	23	31.80	-8.70
6	661.12	25.8 QP	46.0	-20.2	1.00 V	351	31.20	-5.40

**REMARKS:**

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Ted Chang
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	36.22	18.5 QP	40.0	-21.5	2.00 H	64	33.70	-15.20
2	99.95	21.0 QP	43.5	-22.5	2.00 H	81	39.60	-18.60
3	157.47	19.4 QP	43.5	-24.1	2.00 H	253	33.10	-13.70
4	336.23	21.6 QP	46.0	-24.4	1.50 H	11	33.00	-11.40
5	515.00	23.4 QP	46.0	-22.6	2.00 H	271	31.40	-8.00
6	622.26	25.8 QP	46.0	-20.2	1.50 H	283	31.50	-5.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	36.22	31.6 QP	40.0	-8.4	1.49 V	118	46.80	-15.20
2	99.95	25.9 QP	43.5	-17.6	1.00 V	214	44.50	-18.60
3	132.60	23.1 QP	43.5	-20.4	1.00 V	272	38.40	-15.30
4	235.19	21.0 QP	46.0	-25.0	1.24 V	12	36.00	-15.00
5	438.83	22.8 QP	46.0	-23.2	1.24 V	106	31.90	-9.10
6	664.23	27.5 QP	46.0	-18.5	1.99 V	15	32.90	-5.40

**REMARKS:**

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

## 4.2 CONDUCTED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (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. 29, 2013	Nov. 28, 2014
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 27, 2013	Dec. 26, 2014
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 13, 2014	Feb. 12, 2015
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 17, 2013	Jul. 16, 2014
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
  2. The test was performed in HwaYa Shielded Room 1.
  3. The VCCI Site Registration No. is C-2040.

### 4.2.3 TEST PROCEDURES

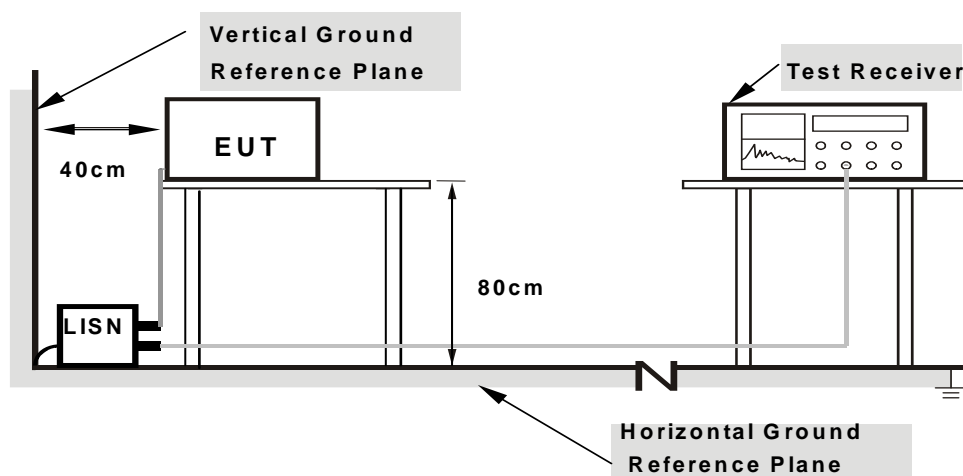
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

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

### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

### 4.2.5 TEST SETUP



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

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

### 4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.



## 4.2.7 TEST RESULTS

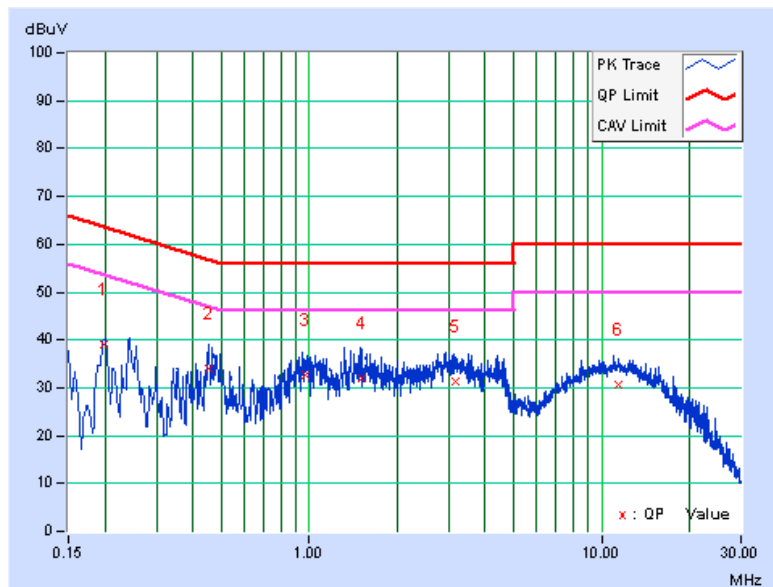
### CONDUCTED WORST-CASE DATA : 802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz
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	0.19717	0.09	38.84	33.62	38.93	33.71	63.73	53.73	-24.80	-20.02
2	0.45097	0.12	33.89	24.51	34.01	24.63	56.86	46.86	-22.85	-22.23
3	0.97084	0.21	32.33	24.07	32.54	24.28	56.00	46.00	-23.46	-21.72
4	1.50747	0.23	31.72	23.54	31.95	23.77	56.00	46.00	-24.05	-22.23
5	3.14897	0.26	30.91	21.04	31.17	21.30	56.00	46.00	-24.83	-24.70
6	11.37470	0.63	30.00	24.33	30.63	24.96	60.00	50.00	-29.37	-25.04

#### 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

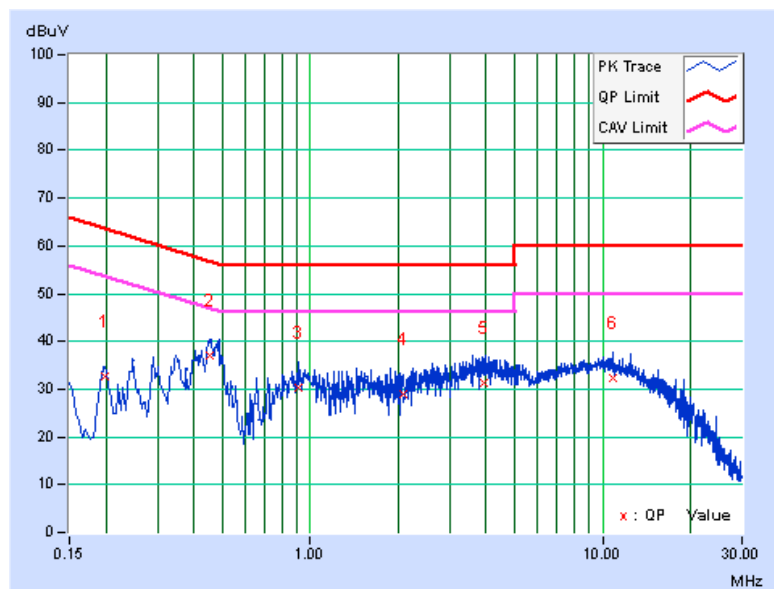


PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	A		

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	0.19717	0.09	32.51	27.53	32.60	27.62	63.73	53.73	-31.13	-26.11
2	<b>0.45097</b>	<b>0.17</b>	<b>37.01</b>	<b>30.73</b>	<b>37.18</b>	<b>30.90</b>	<b>56.86</b>	<b>46.86</b>	<b>-19.67</b>	<b>-15.95</b>
3	0.90655	0.21	30.05	21.64	30.26	21.85	56.00	46.00	-25.74	-24.15
4	2.07900	0.22	28.80	19.96	29.02	20.18	56.00	46.00	-26.98	-25.82
5	3.91142	0.26	31.17	22.72	31.43	22.98	56.00	46.00	-24.57	-23.02
6	10.79693	0.58	31.87	26.29	32.45	26.87	60.00	50.00	-27.55	-23.13

**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

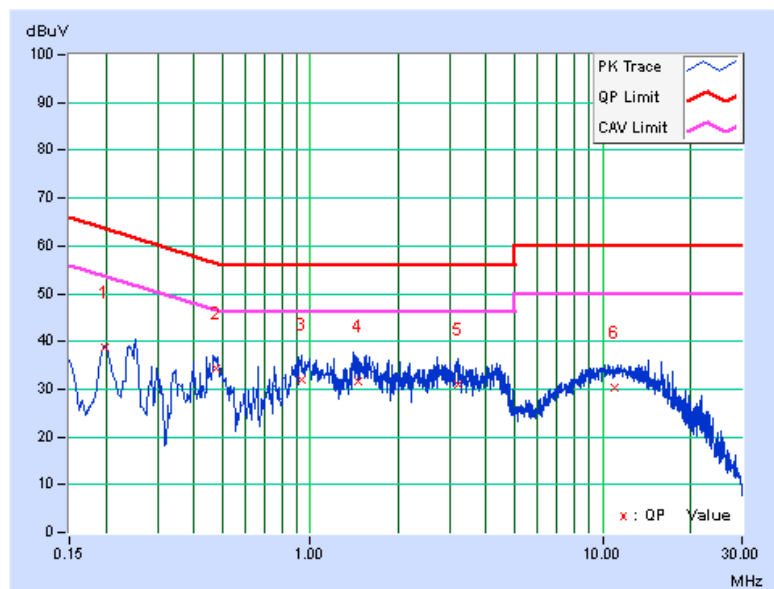


PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	B		

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	0.19717	0.09	38.48	33.33	38.57	33.42	63.73	53.73	-25.16	-20.31
2	0.47663	0.12	34.28	25.51	34.40	25.63	56.40	46.40	-21.99	-20.76
3	0.93076	0.20	31.87	23.54	32.07	23.74	56.00	46.00	-23.93	-22.26
4	1.44905	0.23	31.55	23.25	31.78	23.48	56.00	46.00	-24.22	-22.52
5	3.18807	0.26	30.62	20.81	30.88	21.07	56.00	46.00	-25.12	-24.93
6	10.93769	0.60	29.67	24.05	30.27	24.65	60.00	50.00	-29.73	-25.35

**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

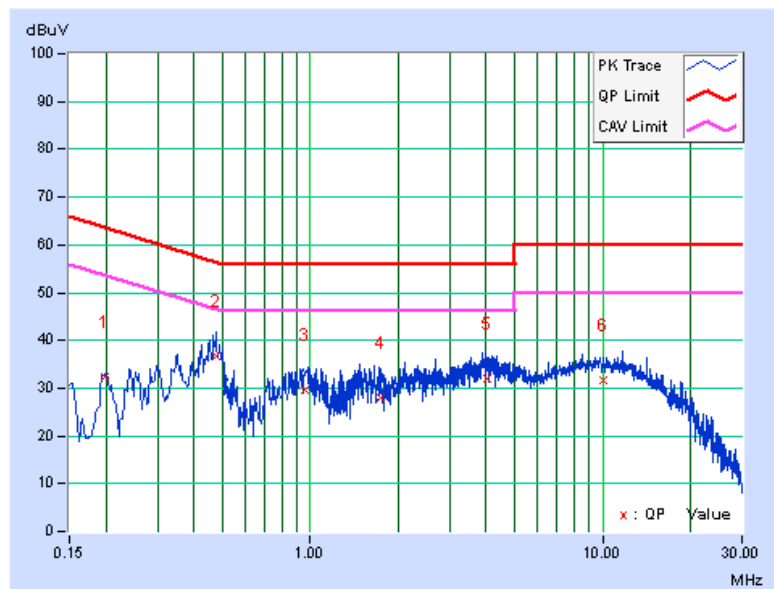


PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	B		

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	0.19717	0.09	32.09	27.05	32.18	27.14	63.73	53.73	-31.55	-26.59
2	0.47412	0.18	36.63	30.12	36.81	30.30	56.44	46.44	-19.64	-16.15
3	0.95309	0.22	29.48	20.64	29.70	20.86	56.00	46.00	-26.30	-25.14
4	1.74255	0.22	27.81	19.28	28.03	19.50	56.00	46.00	-27.97	-26.50
5	4.01308	0.26	31.77	23.05	32.03	23.31	56.00	46.00	-23.97	-22.69
6	10.01493	0.54	31.02	25.74	31.56	26.28	60.00	50.00	-28.44	-23.72

**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 TRANSMIT POWER MEASUREMENT

#### 4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT

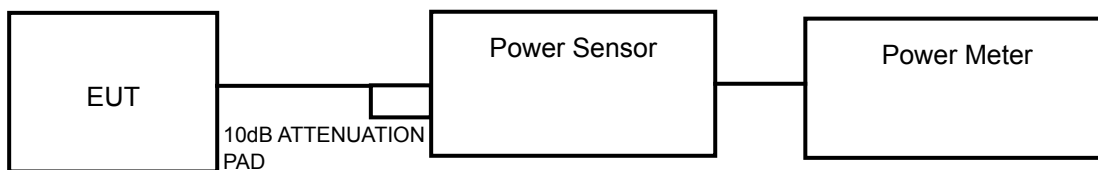
FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.250 ~ 5.350GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.470 ~ 5.725GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB

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

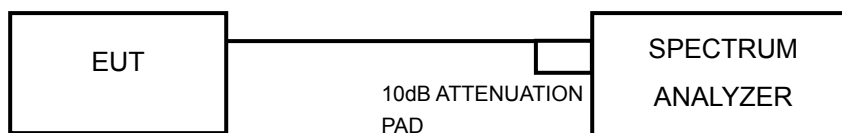
#### 4.3.2 TEST SETUP

##### FOR POWER OUTPUT MEASUREMENT

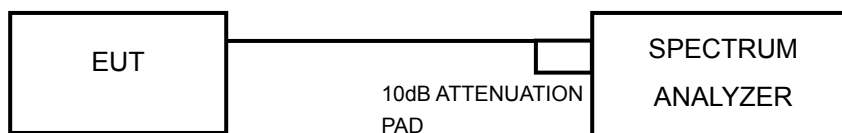
For 802.11a, 802.11n (20MHz), 802.11n (40MHz)



For 802.11ac (80MHz)



##### 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

##### For 802.11a, 802.11n (20MHz), 802.11n (40MHz)

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

##### For 802.11ac (80MHz)

- 1) Set span to encompass the entire 26 dB EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- 2) Set sweep trigger to "free run".
- 3) Set RBW = 1 MHz.
- 4) Set VBW  $\geq$  3 MHz
- 5) Number of points in sweep  $\geq$  2 Span / RBW.
- 6) Sweep time  $\leq$  (number of points in sweep) \* T
- 7) Detector = RMS.
- 8) Trace mode = max hold.
- 9) Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.

#### 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	33.729	15.28	17	PASS
40	5200	<b>33.806</b>	15.29	17	PASS
48	5240	32.509	15.12	17	PASS
52	5260	<b>33.189</b>	15.21	24	PASS
60	5300	32.063	15.06	24	PASS
64	5320	32.137	15.07	24	PASS
100	5500	28.249	14.51	24	PASS
116	5580	<b>29.376</b>	14.68	24	PASS
140	5700	28.249	14.51	24	PASS

#### NOTE:

##### For 5180~5240MHz:

1.  $4\text{dBm} + 10\log ( 20.40 ) = 17.10 > 17\text{dBm}$
2.  $4\text{dBm} + 10\log ( 20.15 ) = 17.04 > 17\text{dBm}$
3.  $4\text{dBm} + 10\log ( 20.46 ) = 17.11 > 17\text{dBm}$

##### For 5260~5700MHz:

1.  $11\text{dBm} + 10\log ( 20.91 ) = 24.20 > 24\text{dBm}$
2.  $11\text{dBm} + 10\log ( 20.73 ) = 24.17 > 24\text{dBm}$
3.  $11\text{dBm} + 10\log ( 20.30 ) = 24.07 > 24\text{dBm}$
4.  $11\text{dBm} + 10\log ( 20.88 ) = 24.20 > 24\text{dBm}$
5.  $11\text{dBm} + 10\log ( 20.40 ) = 24.10 > 24\text{dBm}$
6.  $11\text{dBm} + 10\log ( 21.04 ) = 24.23 > 24\text{dBm}$





**802.11n (20MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	26.424	14.22	17	PASS
40	5200	26.853	14.29	17	PASS
48	5240	25.177	14.01	17	PASS
52	5260	24.660	13.92	24	PASS
60	5300	24.099	13.82	24	PASS
64	5320	24.491	13.89	24	PASS
100	5500	23.014	13.62	24	PASS
116	5580	23.714	13.75	24	PASS
140	5700	24.099	13.82	24	PASS

**NOTE:**

**For 5180~5240MHz:**

- 1.  $4\text{dBm} + 10\log ( 20.98 ) = 17.22 > 17\text{dBm}$
- 2.  $4\text{dBm} + 10\log ( 20.97 ) = 17.22 > 17\text{dBm}$
- 3.  $4\text{dBm} + 10\log ( 20.63 ) = 17.14 > 17\text{dBm}$

**For 5260~5700MHz:**

- 1.  $11\text{dBm} + 10\log ( 20.83 ) = 24.19 > 24\text{dBm}$
- 2.  $11\text{dBm} + 10\log ( 20.67 ) = 24.15 > 24\text{dBm}$
- 3.  $11\text{dBm} + 10\log ( 20.68 ) = 24.16 > 24\text{dBm}$
- 4.  $11\text{dBm} + 10\log ( 20.55 ) = 24.13 > 24\text{dBm}$
- 5.  $11\text{dBm} + 10\log ( 20.91 ) = 24.20 > 24\text{dBm}$
- 6.  $11\text{dBm} + 10\log ( 20.85 ) = 24.19 > 24\text{dBm}$

**802.11n (40MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	22.961	13.61	17	PASS
46	5230	22.751	13.57	17	PASS
54	5270	21.928	13.41	24	PASS
62	5310	22.233	13.47	24	PASS
102	5510	18.072	12.57	24	PASS
110	5550	17.865	12.52	24	PASS
134	5670	18.030	12.56	24	PASS

**NOTE:****For 5190~5230MHz:**

1.  $4\text{dBm} + 10\log ( 44.56 ) = 20.49 > 17\text{dBm}$
2.  $4\text{dBm} + 10\log ( 44.61 ) = 20.49 > 17\text{dBm}$

**For 5270~5670MHz:**

1.  $11\text{dBm} + 10\log ( 44.55 ) = 27.49 > 24\text{dBm}$
2.  $11\text{dBm} + 10\log ( 44.57 ) = 27.49 > 24\text{dBm}$
3.  $11\text{dBm} + 10\log ( 44.49 ) = 27.48 > 24\text{dBm}$
4.  $11\text{dBm} + 10\log ( 44.45 ) = 27.48 > 24\text{dBm}$
5.  $11\text{dBm} + 10\log ( 44.27 ) = 27.46 > 24\text{dBm}$

**802.11ac (80MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	17.418	12.41	17	PASS
58	5290	17.579	12.45	24	PASS
106	5530	14.997	11.76	24	PASS

**NOTE:****For 5180~5240MHz:**

1.  $4\text{dBm} + 10\log ( 84.28 ) = 23.26 > 17\text{dBm}$

**For 5260~5700MHz:**

1.  $11\text{dBm} + 10\log ( 84.51 ) = 30.27 > 24\text{dBm}$
2.  $11\text{dBm} + 10\log ( 84.23 ) = 30.25 > 24\text{dBm}$



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**26dB BANDWIDTH:**

**802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	20.40	PASS
40	5200	20.15	PASS
48	5240	20.46	PASS
52	5260	20.91	PASS
60	5300	20.73	PASS
64	5320	20.30	PASS
100	5500	20.88	PASS
116	5580	20.40	PASS
140	5700	21.04	PASS

**802.11n (20MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	20.98	PASS
40	5200	20.97	PASS
48	5240	20.63	PASS
52	5260	20.83	PASS
60	5300	20.67	PASS
64	5320	20.68	PASS
100	5500	20.55	PASS
116	5580	20.91	PASS
140	5700	20.85	PASS

**802.11n (40MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	44.56	PASS
46	5230	44.61	PASS
54	5270	44.55	PASS
62	5310	44.57	PASS
102	5510	44.49	PASS
110	5550	44.45	PASS
134	5670	44.27	PASS



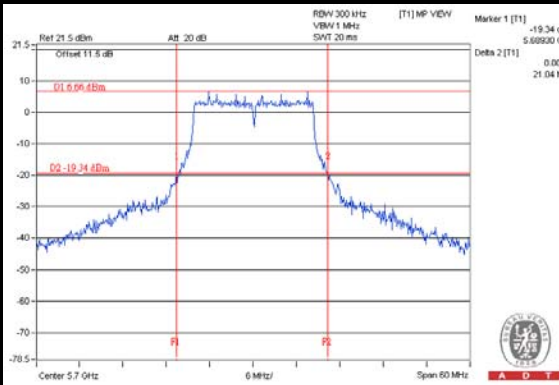
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802.11ac (80MHz)

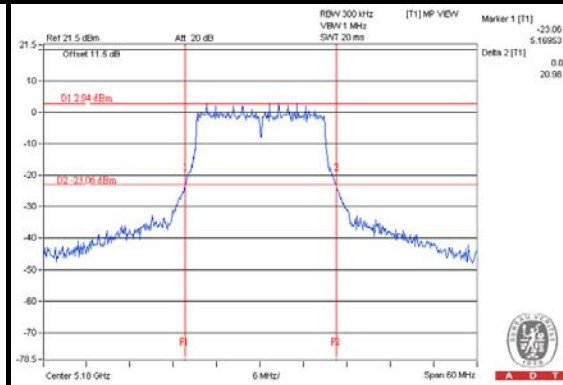
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
42	5210	84.28	PASS
58	5290	84.51	PASS
106	5530	84.23	PASS

SPECTRUM PLOT OF WORST VALUE

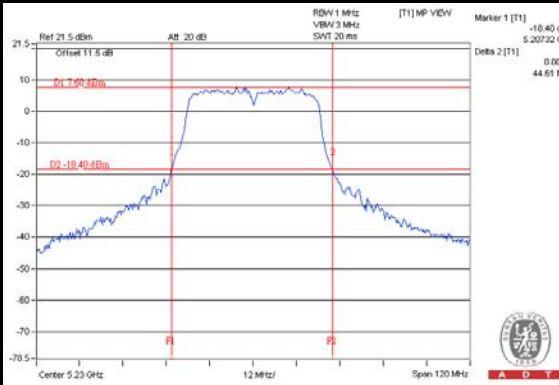
802.11a



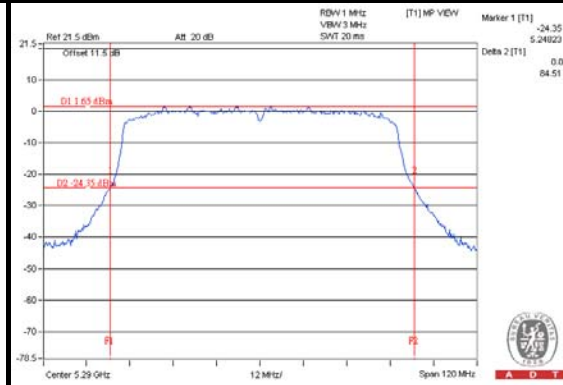
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)

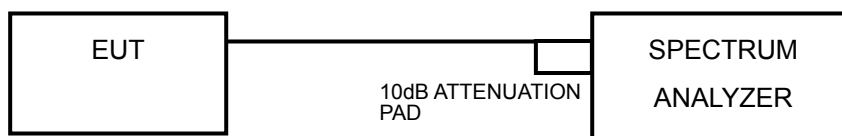


#### 4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

##### 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

##### 802.11a:

Using method SA-1

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 30 KHz, Set VBW  $\geq$  1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max value

##### 802.11n (20MHz), 802.11n (40MHz), 802.11ac (80MHz):

Using method SA-2

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 30 KHz, Set VBW  $\geq$  1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max value and add  $10 \log (1/\text{duty cycle})$

#### 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 (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	1.59	4	PASS
40	5200	1.28	4	PASS
48	5240	1.44	4	PASS
52	5260	1.57	11	PASS
60	5300	1.47	11	PASS
64	5320	1.16	11	PASS
100	5500	1.36	11	PASS
116	5580	1.56	11	PASS
140	5700	1.61	11	PASS

##### 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	-3.43	0.32	-3.11	4	PASS
40	5200	-3.38	0.32	-3.06	4	PASS
48	5240	-1.91	0.32	-1.59	4	PASS
52	5260	-1.92	0.32	-1.60	11	PASS
60	5300	-2.33	0.32	-2.01	11	PASS
64	5320	-1.92	0.32	-1.60	11	PASS
100	5500	0.13	0.32	0.45	11	PASS
116	5580	0.28	0.32	0.60	11	PASS
140	5700	0.12	0.32	0.44	11	PASS

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



**802.11n (40MHz)**

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-8.45	0.52	-7.93	4	PASS
46	5230	-8.79	0.52	-8.27	4	PASS
54	5270	-8.85	0.52	-8.33	11	PASS
62	5310	-8.62	0.52	-8.10	11	PASS
102	5510	-7.16	0.52	-6.64	11	PASS
110	5550	-7.57	0.52	-7.05	11	PASS
134	5670	-3.37	0.52	-2.85	11	PASS

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

**802.11ac (80MHz)**

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
42	5210	-17.77	1.19	-16.58	4	PASS
58	5290	-19.06	1.19	-17.88	11	PASS
106	5530	-6.27	1.19	-5.08	11	PASS

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

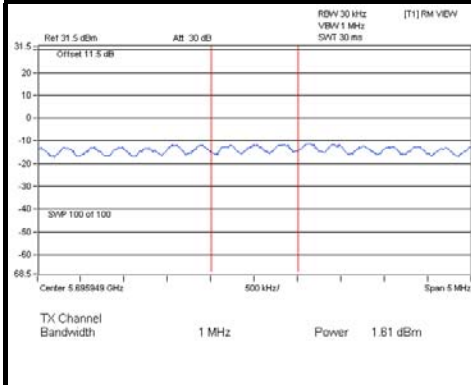




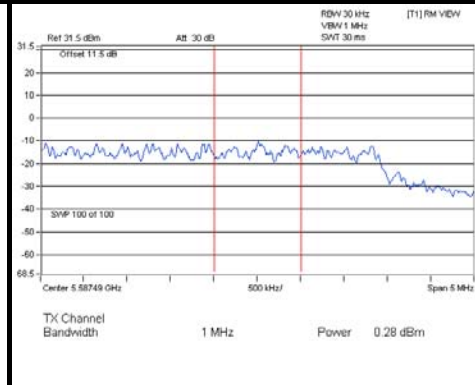
A D T

### SPECTRUM PLOT OF WORST VALUE

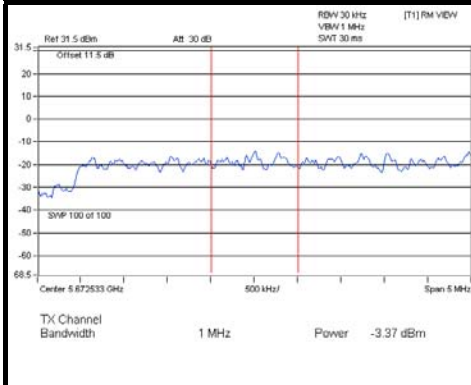
#### 802.11a



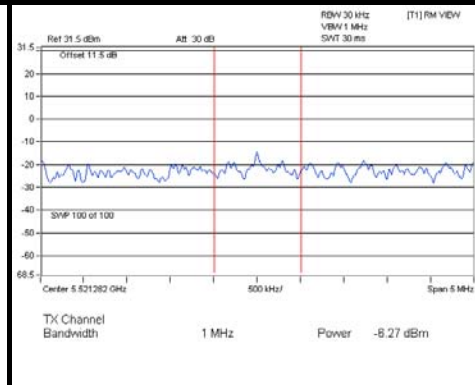
#### 802.11n (20MHz)



#### 802.11n (40MHz)



#### 802.11ac (80MHz)

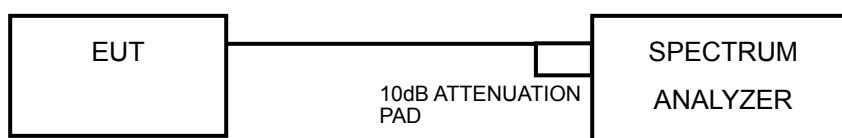


## 4.5 PEAK POWER EXCURSION MEASUREMENT

### 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.  
Find the worst channel and modulation mode as above test procedure, and follow KDB 789033 D01 General UNII Test Procedures v01r03 and repeat step 1 to 5 for final testing of each modulation mode on a single channel (all modulation types) in a single operating band to compliance with the peak excursion requirement.

### 4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

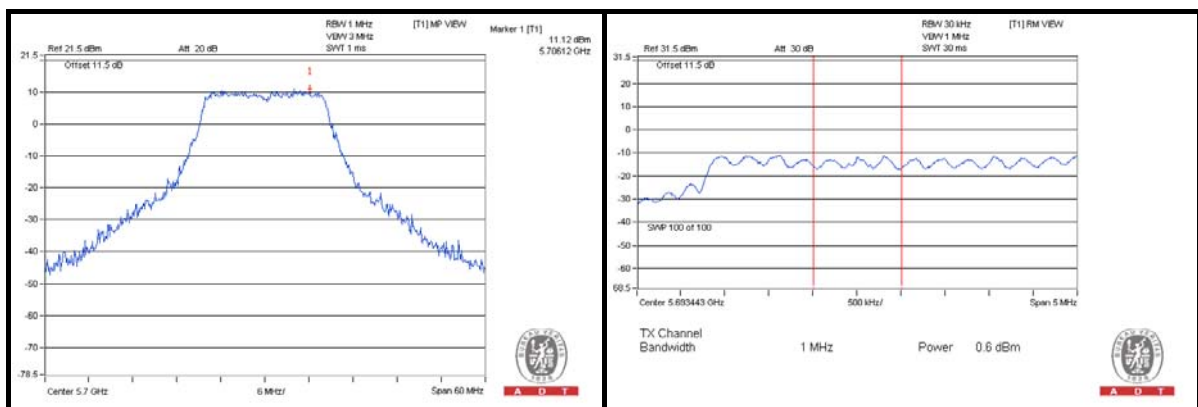
### 4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6



### 4.5.7 TEST RESULTS

MODULATION MODE	MODULATION TYPE	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS /FAIL
802.11a	BPSK	5180	10.35	1.61	1.61	8.74	13	PASS
	QPSK		10.47	1.08	1.32	9.15	13	PASS
	16QAM		11.12	0.60	0.85	10.27	13	PASS
	64QAM		10.96	0.72	1.09	9.87	13	PASS
802.11n (20MHz)	BPSK	5180	8.94	0.12	0.44	8.50	13	PASS
	QPSK		8.94	0.12	0.44	8.50	13	PASS
	16QAM		9.25	-0.02	0.30	8.95	13	PASS
	64QAM		9.44	1.12	1.58	7.86	13	PASS
802.11n (40MHz)	BPSK	5190	7.01	-3.37	-2.85	9.86	13	PASS
	QPSK		7.01	-3.37	-2.85	9.86	13	PASS
	16QAM		5.30	-3.64	-2.85	8.15	13	PASS
	64QAM		4.98	-3.68	-2.26	7.24	13	PASS
802.11ac (80MHz)	BPSK	5210	1.00	-6.27	-5.08	6.08	13	PASS
	QPSK		1.00	-6.27	-5.08	6.08	13	PASS
	16QAM		1.05	-7.48	-5.78	6.83	13	PASS
	64QAM		1.18	-7.05	-4.94	6.12	13	PASS
	256QAM		2.13	-6.84	-3.83	5.96	13	PASS

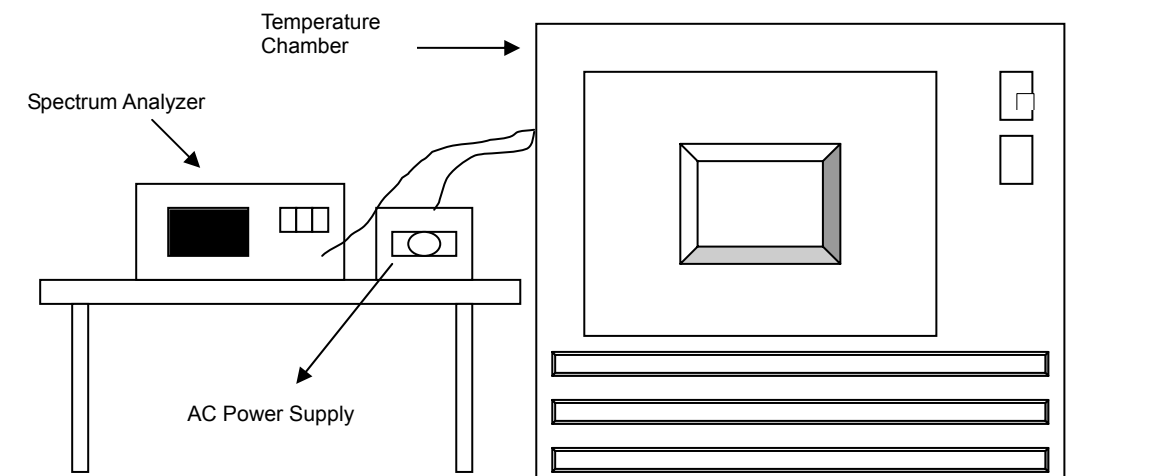


## 4.6 FREQUENCY STABILITY

### 4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

### 4.6.2 TEST SETUP



### 4.6.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

#### 4.6.4 TEST PROCEDURE

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

#### 4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.6.6 EUT OPERATING CONDITION

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



### 4.6.7 TEST RESULTS

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 (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
50	120	5319.9865	-0.00025	5319.9886	-0.00021	5319.9883	-0.00022	5319.9903	-0.00018
40	120	5319.9805	-0.00037	5319.9812	-0.00035	5319.9808	-0.00036	5319.9813	-0.00035
30	120	5319.9819	-0.00034	5319.9775	-0.00042	5319.9806	-0.00036	5319.9814	-0.00035
20	120	5319.9747	-0.00048	5319.9778	-0.00042	5319.9792	-0.00039	5319.9773	-0.00043
10	120	5319.9784	-0.00041	5319.9832	-0.00032	5319.9832	-0.00032	5319.981	-0.00036
0	120	5319.976	-0.00045	5319.9738	-0.00049	5319.9738	-0.00049	5319.9722	-0.00052
-10	120	5319.9842	-0.00030	5319.9861	-0.00026	5319.9882	-0.00022	5319.9857	-0.00027
-20	120	5319.9793	-0.00039	5319.9797	-0.00038	5319.9821	-0.00034	5319.9823	-0.00033
-30	120	5319.9855	-0.00027	5319.9863	-0.00026	5319.9877	-0.00023	5319.9869	-0.00025

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 (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5319.9741	-0.00049	5319.9785	-0.00040	5319.9787	-0.00040	5319.9776	-0.00042
	120	5319.9747	-0.00048	5319.9778	-0.00042	5319.9792	-0.00039	5319.9773	-0.00043
	102	5319.9756	-0.00046	5319.9782	-0.00041	5319.9794	-0.00039	5319.9779	-0.00042

## 5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



## 6. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Fax: 886-2-26051924

**Hsin Chu EMC/RF Lab:**

Tel: 886-3-5935343

Fax: 886-3-5935342

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**Email:** [service.adt@tw.bureauveritas.com](mailto:service.adt@tw.bureauveritas.com)

**Web Site:** [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

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



## **7. APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB**

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

**---END---**