



# FCC TEST REPORT (15.407)

**REPORT NO.:** RF130823C23-3

**MODEL NO.:** F-02F

**FCC ID:** VQK-F02F

**RECEIVED:** Aug. 23, 2013

**TESTED:** Sep. 03 ~ Sep. 25, 2013

**ISSUED:** Oct. 17, 2013

**APPLICANT:** FUJITSU LIMITED

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

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130823C23-3	Original release	Oct. 17, 2013



# 1. CERTIFICATION

**PRODUCT:** Tablet PC

**MODEL:** F-02F

**BRAND:** FUJITSU

**APPLICANT:** FUJITSU LIMITED

**TESTED:** Sep. 03 ~ Sep. 25, 2013

**TEST SAMPLE:** ENGINEERING SAMPLE

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

ANSI C63.10-2009

The above equipment (model: F-02F) 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:** Ivy Lin , **DATE:** Oct. 17, 2013  
Ivy Lin / Specialist

**APPROVED BY:** Ken Liu , **DATE:** Oct. 17, 2013  
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 -9.23dB at 0.39609MHz.
15.407(b/1/2/3) (b)(6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.4dB at 10360.00MHz, 10400.00MHz.
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	2.44dB
Radiated emissions	30MHz ~ 200MHz	3.34 dB
	200MHz ~1000MHz	3.35 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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

### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>EUT</b>	Tablet PC
<b>MODEL NO.</b>	F-02F
<b>POWER SUPPLY</b>	3.8Vdc (Battery) 5.0Vdc (Adapter or host equipment) 12.0Vdc (Cradle)
<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>	13.932mW for 5180 ~ 5240MHz 13.521mW for 5260 ~ 5320MHz 14.488mW for 5500 ~ 5700MHz
<b>ANTENNA TYPE</b>	$\lambda/4$ Monopole antenna with -2.0 dBi gain
<b>ANTENNA CONNECTOR</b>	NA
<b>DATA CABLE</b>	NA
<b>I/O PORTS</b>	Refer to user's manual
<b>ACCESSORY DEVICES</b>	Refer to Note as below

**NOTE:**

1. The EUT provides 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

2. The EUT contains the following accessories.

No.	Product	Brand	Model	Description
1	Adapter (For cradle)	NTT docomo	TA08017-B222	Input : 100-240Vac, 1000mA Output: 12.0Vdc, 3000mA 1m shielded AC cable without core 1.8m shielded DC cable with 1 core
2	Cradle	NTT docomo	CA50601-1841	Input : 12.0V, 2000mA Output: 12.0V, 2000mA
3	Battery	Fujitsu Limited	CA54310-0048	3.8Vdc, 9600mA

3. The EUT uses following support unit.

No.	Product	Brand	Model	Description
1	Adapter	NTT docomo	AC Adaptor 04	Input: 100-240Vac, 0.22A, 50-60Hz Output: 5.0V, 1.8A 1.05m DC cable with 2 cores

4. SW version is R23.5e.
5. HW version is V2.0.0.
6. IMEI Code: 357614050011474, 357614050009494
7. IEEE 802.11ac is still draft version
8. 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	√	√	√	√	Power form adapter
B	-	√	√	-	Power from host equipment
C	-	√	√	-	Power from 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:**  
The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane**.

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

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

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, C	802.11a	5180-5320	36 to 64	40	OFDM	BPSK	6.0
A, B, C	802.11a	5500-5700	100 to 140	100	OFDM	BPSK	6.0

**POWER LINE CONDUCTED EMISSION TEST:**

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B, C	802.11a	5180-5320	36 to 64	40	OFDM	BPSK	6.0
A, B, C	802.11a	5500-5700	100 to 140	100	OFDM	BPSK	6.0

**ANTENNA PORT CONDUCTED MEASUREMENT:**

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	7.2
A	802.11n (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	Chris Lin
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Chris Lin
PLC	25deg. C, 65%RH, 23deg. C, 69%RH	120Vac, 60Hz	Chris Lin, Brad Tung
APCM	25deg. C, 60%RH	120Vac, 60Hz	Nick Chen



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### 3.3 DUTY CYCLE OF TEST SIGNAL

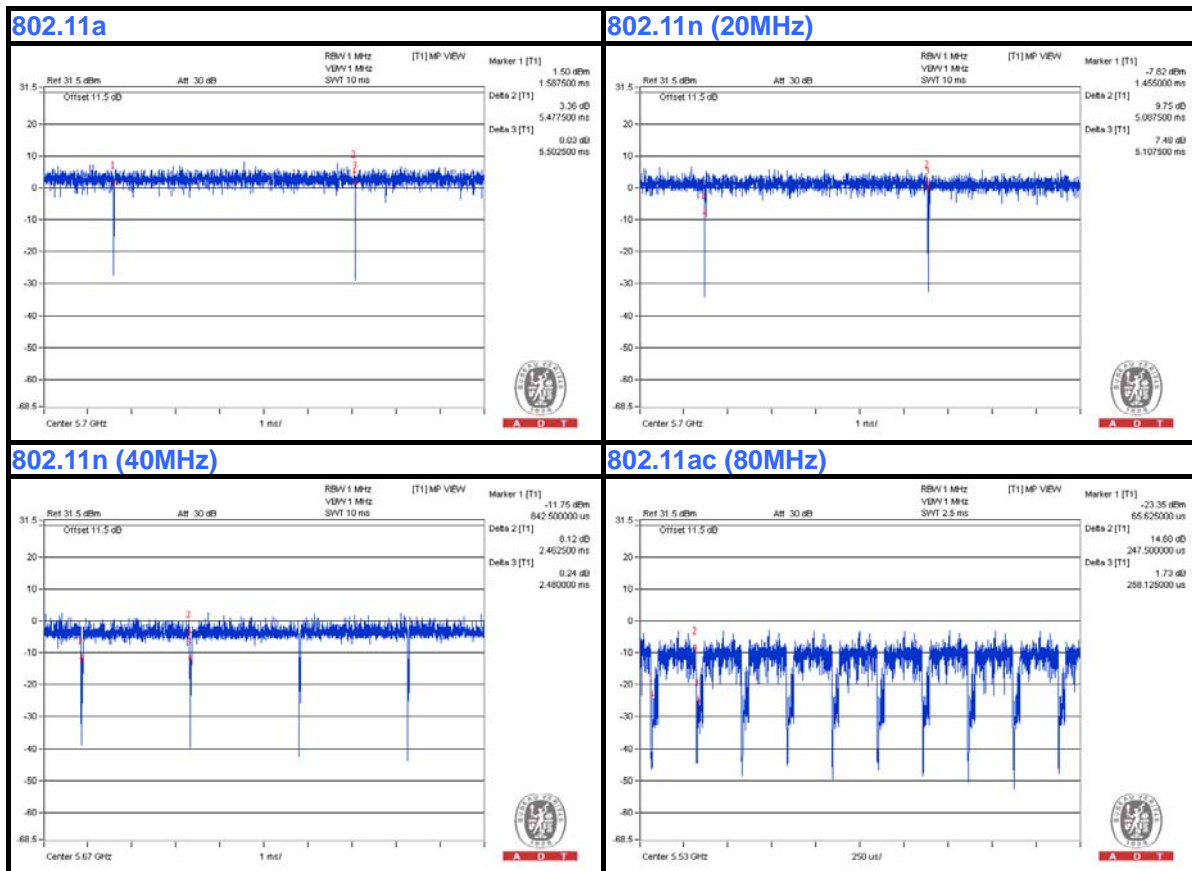
#### MODULATION TYPE: BPSK

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

Duty cycle of test signal is > 98 %, duty factor is not required.

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

802.11ac (80MHz): Duty cycle =  $0.247/0.258 = 0.957$ , Duty factor =  $10 * \log(1/0.957) = 0.19$





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### MODULATION TYPE: QPSK

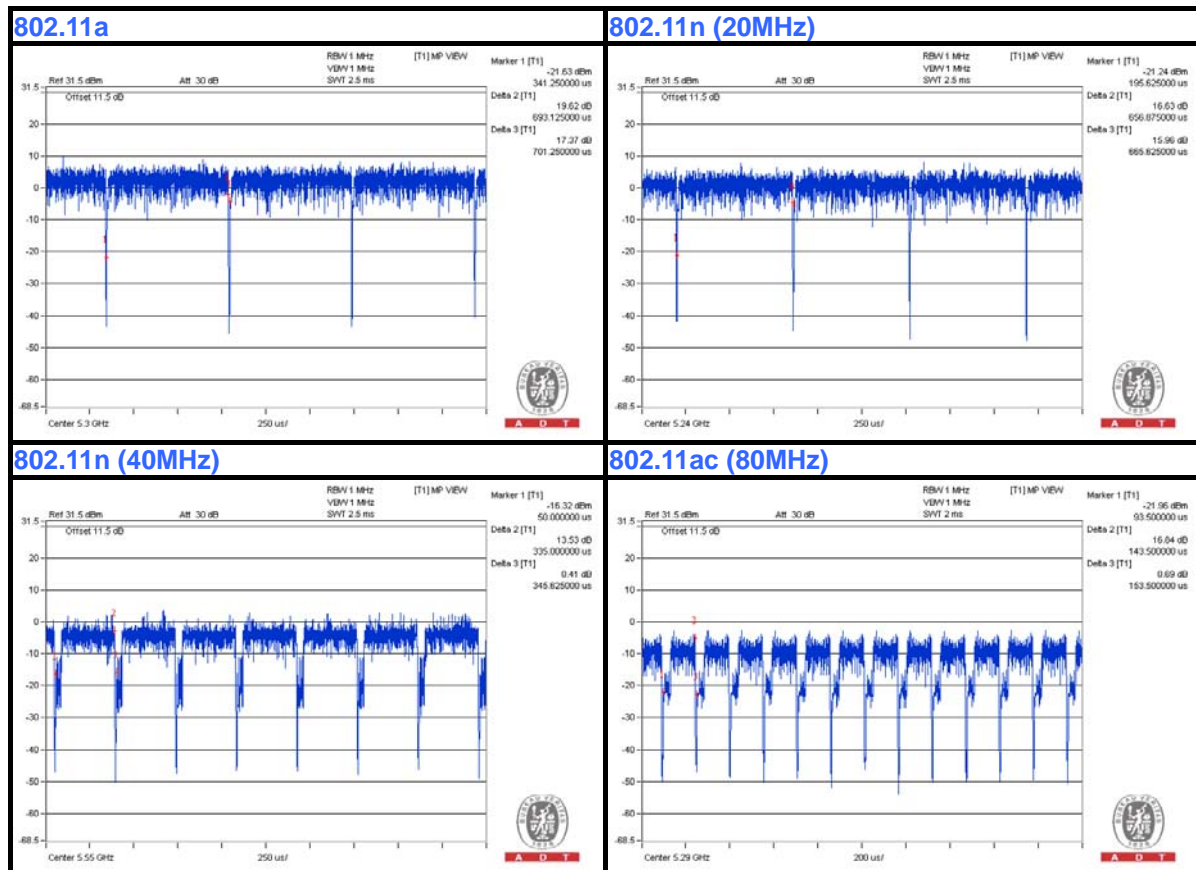
#### 802.11a, 802.11n (20MHz)

Duty cycle of test signal is > 98 %, duty factor is not required.

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

**802.11n (40MHz):** Duty cycle = 335.000/345.625 = 0.969, Duty factor =  $10 * \log(1/0.969) = 0.14$

**802.11ac (80MHz):** Duty cycle = 143.5/153.5 = 0.935, Duty factor =  $10 * \log(1/0.935) = 0.29$



**MODULATION TYPE: 16QAM**

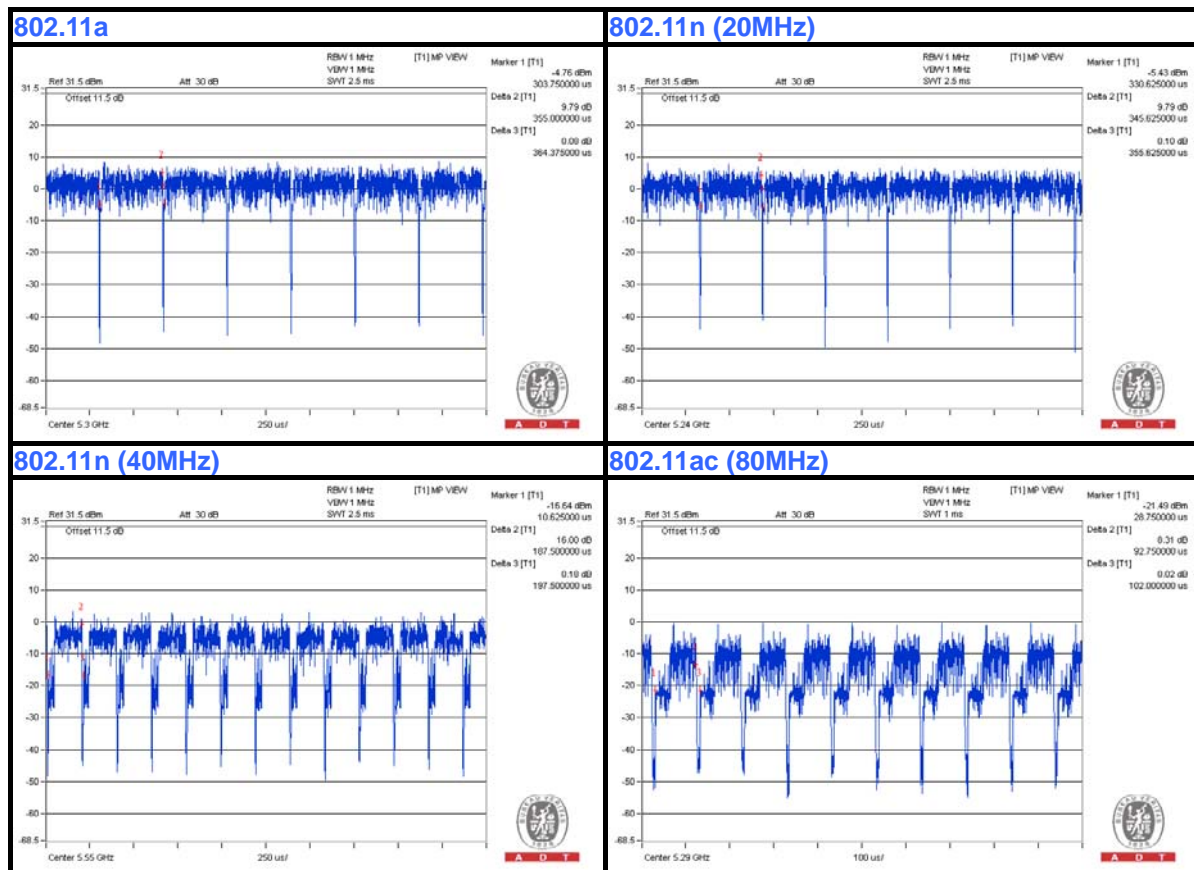
Duty cycle is < 98%, duty factor shall be considered.

**802.11a:** Duty cycle =  $355.0/364.375 = 0.974$ , Duty factor =  $10 * \log(1/0.974) = 0.11$

**802.11n (20MHz):** Duty cycle =  $345.625/355.625 = 0.972$ , Duty factor =  $10 * \log(1/0.972) = 0.12$

**802.11n (40MHz):** Duty cycle =  $187.5/197.5 = 0.949$ , Duty factor =  $10 * \log(1/0.949) = 0.23$

**802.11ac (80MHz):** Duty cycle =  $92.75/102.00 = 0.909$ , Duty factor =  $10 * \log(1/0.909) = 0.40$





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### MODULATION TYPE: 64QAM

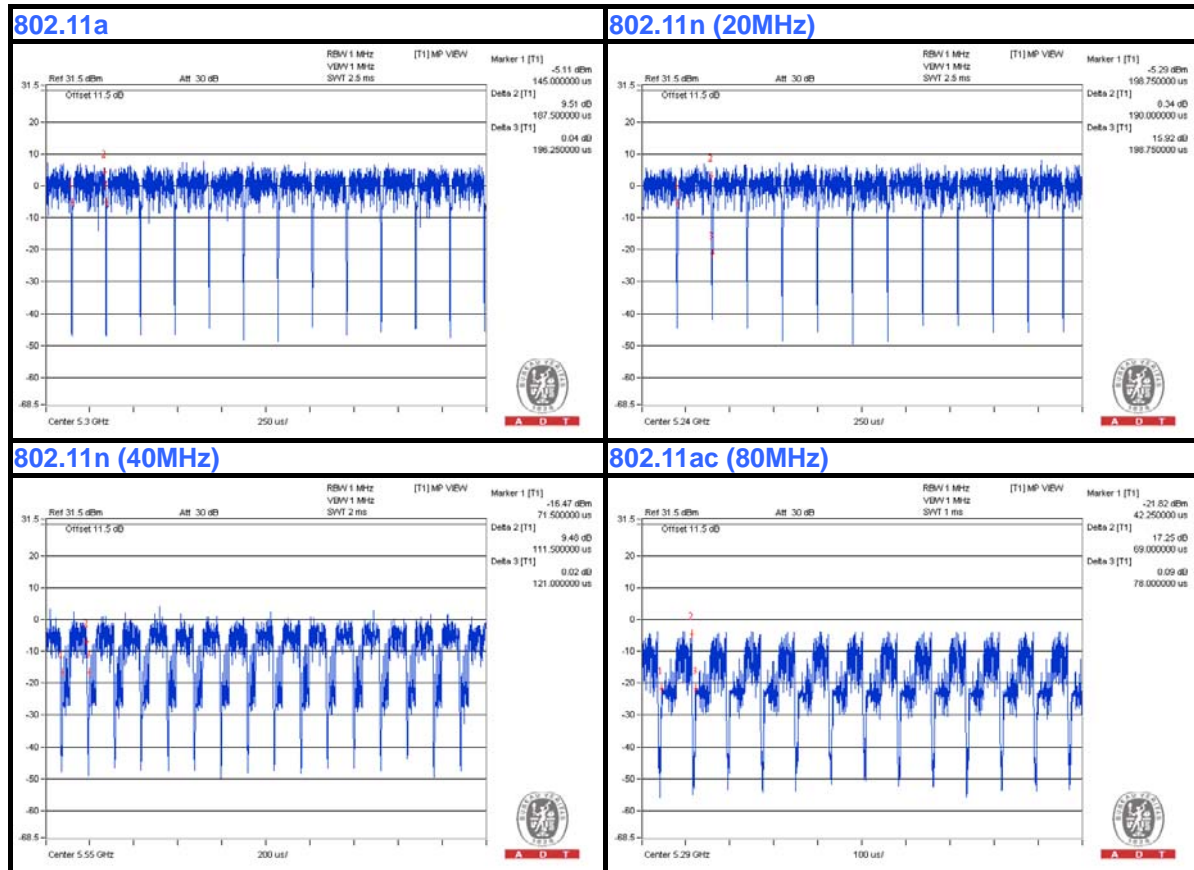
Duty cycle is < 98%, duty factor shall be considered.

**802.11a:** Duty cycle = 187.50/196.25 = 0.955, Duty factor =  $10 * \log(1/0.955) = 0.20$

**802.11n (20MHz):** Duty cycle = 190.0/198.75 = 0.956, Duty factor =  $10 * \log(1/0.956) = 0.20$

**802.11n (40MHz):** Duty cycle = 111.50/121.00 = 0.921, Duty factor =  $10 * \log(1/0.921) = 0.34$

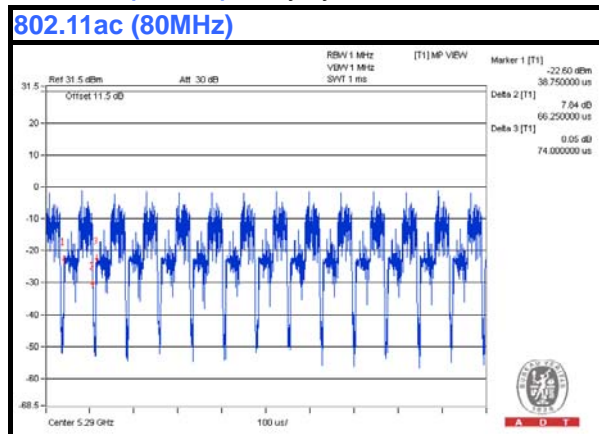
**802.11ac (80MHz):** Duty cycle = 69.00/78.00 = 0.885, Duty factor =  $10 * \log(1/0.885) = 0.53$



### MODULATION TYPE: 256QAM

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

**802.11ac (80MHz):** Duty cycle = 66.25/74.00 = 0.895, Duty factor =  $10 * \log(1/0.895) = 0.50$







### 3.4 DESCRIPTION OF SUPPORT UNITS

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

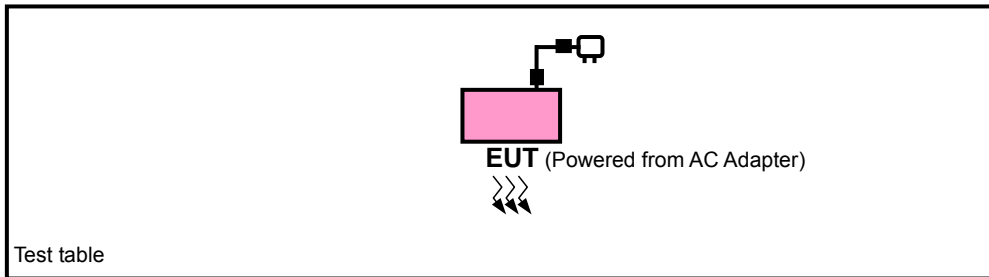
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook	DELL	E5420	BPQ7MQ1	FCC DoC Approved

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

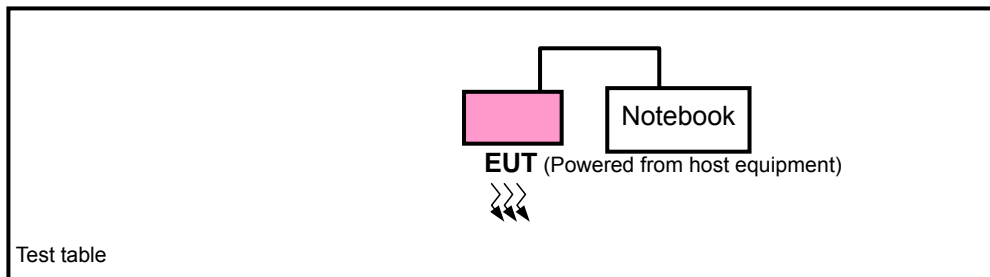
**NOTE:** All power cords of the above support units are non-shielded (1.8m).

### 3.4.1 CONFIGURATION OF SYSTEM UNDER TEST

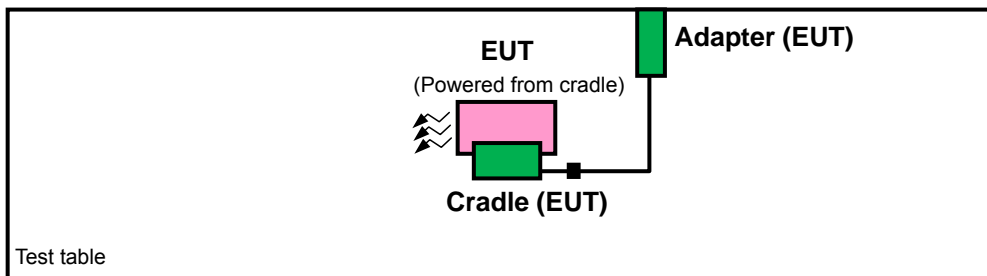
#### Test Mode A



#### Test Mode B



#### Test Mode C



### 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 v01 r03**

**662911 D01 Multiple Transmitter Output v02**

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	ESI7	838496/016	Dec. 25, 2012	Dec. 24, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jan. 31, 2013	Jan. 30, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Mar. 20, 2013	Mar. 19, 2014
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-404	Dec. 22, 2012	Dec. 21, 2013
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 15, 2013	Jul. 14, 2014
Preamplifier Agilent	8447D	2944A10633	Oct. 25, 2012	Oct. 24, 2013
Preamplifier Agilent	8449B	3008A01964	Oct. 25, 2012	Oct. 24, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250723/4	Aug. 23, 2013	Aug. 22, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 106	12738/6+309224/4	Aug. 23, 2013	Aug. 22, 2014
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100	SC93021703	NA	NA
High Speed Peak Power Meter	ML2495A	0824011	Jul. 29, 2013	Jul. 28, 2014
Power Sensor	MA2411B	0738171	Jul. 29, 2013	Jul. 28, 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 3.
  3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
  4. The FCC Site Registration No. is 988962.
  5. The IC Site Registration No. is IC 7450F-3.

#### 4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

**NOTE:**

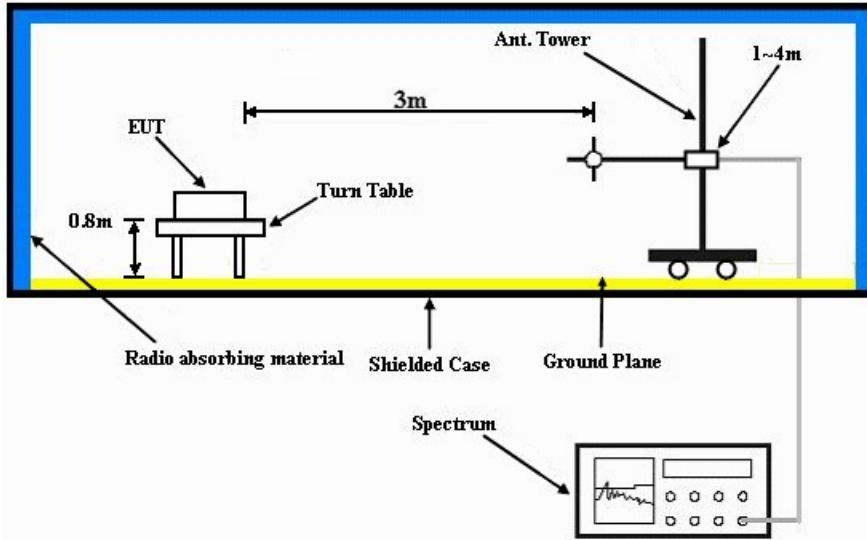
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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

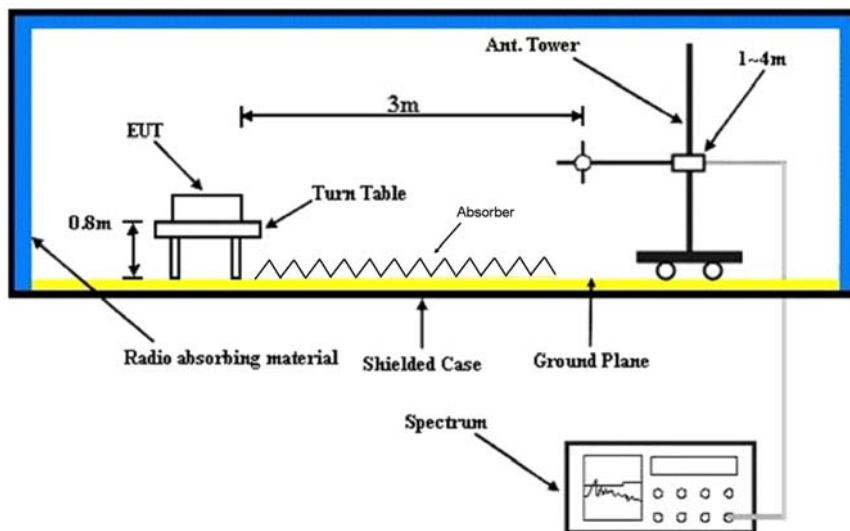
No deviation.

#### 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

- a. Placed the EUT on a testing table.
- b. Use the software to control 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, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.5 PK	74.0	-18.5	1.10 H	240	50.40	5.10
2	5150.00	43.5 AV	54.0	-10.5	1.10 H	240	38.40	5.10
3	*5180.00	104.0 PK			1.02 H	230	66.30	37.70
4	*5180.00	94.1 AV			1.02 H	230	56.40	37.70
5	#10360.00	60.1 PK	74.0	-13.9	1.62 H	147	42.60	17.50
6	#10360.00	48.0 AV	54.0	-6.0	1.62 H	147	30.50	17.50
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	57.8 PK	74.0	-16.2	1.20 V	280	50.40	7.40
2	5150.00	46.6 AV	54.0	-7.4	1.20 V	280	39.20	7.40
3	*5180.00	107.8 PK			1.16 V	279	67.70	40.10
4	*5180.00	97.3 AV			1.16 V	279	57.20	40.10
5	#10360.00	64.5 PK	74.0	-9.5	1.48 V	209	46.90	17.60
6	#10360.00	50.6 AV	54.0	-3.4	1.48 V	209	33.00	17.60

#### 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.





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	102.5 PK			1.00 H	310	62.40	40.10
2	*5200.00	93.0 AV			1.00 H	310	52.90	40.10
3	#10400.00	60.5 PK	74.0	-13.5	1.33 H	228	42.70	17.80
4	#10400.00	48.8 AV	54.0	-5.2	1.33 H	228	31.00	17.80
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	*5200.00	108.3 PK			1.16 V	277	68.20	40.10
2	*5200.00	97.5 AV			1.16 V	277	57.40	40.10
3	#10400.00	63.7 PK	74.0	-10.3	1.07 V	129	45.90	17.80
4	#10400.00	50.5 AV	54.0	-3.5	1.07 V	129	32.70	17.80

**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 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	104.5 PK			1.11 H	238	64.30	40.20
2	*5240.00	94.9 AV			1.11 H	238	54.70	40.20
3	5350.00	58.6 PK	74.0	-15.4	1.20 H	240	50.80	7.80
4	5350.00	48.4 AV	54.0	-5.6	1.20 H	240	40.60	7.80
5	#10480.00	60.4 PK	74.0	-13.6	1.47 H	124	42.50	17.90
6	#10480.00	48.6 AV	54.0	-5.4	1.47 H	124	30.70	17.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	104.7 PK			1.10 V	77	64.50	40.20
2	*5240.00	94.6 AV			1.10 V	77	54.40	40.20
3	5350.00	60.0 PK	74.0	-14.0	1.20 V	80	52.20	7.80
4	5350.00	46.3 AV	54.0	-7.7	1.20 V	80	38.50	7.80
5	#10480.00	63.8 PK	74.0	-10.2	1.14 V	78	45.90	17.90
6	#10480.00	50.5 AV	54.0	-3.5	1.14 V	78	32.60	17.90

**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 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.7 PK	74.0	-16.3	1.20 H	290	50.30	7.40
2	5150.00	45.2 AV	54.0	-8.8	1.20 H	290	37.80	7.40
3	*5260.00	106.3 PK			1.19 H	287	66.00	40.30
4	*5260.00	96.2 AV			1.19 H	287	55.90	40.30
5	#10520.00	56.7 PK	74.0	-17.3	1.30 H	56	39.00	17.70
6	#10520.00	44.7 AV	54.0	-9.3	1.30 H	56	27.00	17.70
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	5150.00	58.1 PK	74.0	-15.9	1.15 V	270	50.70	7.40
2	5150.00	45.4 AV	54.0	-8.6	1.15 V	270	38.00	7.40
3	*5260.00	111.3 PK			1.14 V	265	71.00	40.30
4	*5260.00	100.7 AV			1.14 V	265	60.40	40.30
5	#10520.00	58.0 PK	74.0	-16.0	1.04 V	95	40.30	17.70
6	#10520.00	45.0 AV	54.0	-9.0	1.04 V	95	27.30	17.70

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	106.9 PK			1.07 H	290	66.60	40.30
2	*5300.00	96.7 AV			1.07 H	290	56.40	40.30
3	10600.00	57.2 PK	74.0	-16.8	1.02 H	85	40.20	17.00
4	10600.00	44.4 AV	54.0	-9.6	1.02 H	85	27.40	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	*5300.00	110.7 PK			1.13 V	267	70.40	40.30
2	*5300.00	100.2 AV			1.13 V	267	59.90	40.30
3	10600.00	58.2 PK	74.0	-15.8	1.03 V	65	41.20	17.00
4	10600.00	45.0 AV	54.0	-9.0	1.03 V	65	28.00	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.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	107.0 PK			1.00 H	59	66.70	40.30
2	*5320.00	96.0 AV			1.00 H	59	55.70	40.30
3	5350.00	57.9 PK	74.0	-16.1	1.02 H	65	50.10	7.80
4	5350.00	46.2 AV	54.0	-7.8	1.02 H	65	38.40	7.80
5	10640.00	58.3 PK	74.0	-15.7	1.02 H	66	41.50	16.80
6	10640.00	44.4 AV	54.0	-9.6	1.02 H	66	27.60	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	*5320.00	110.3 PK			1.23 V	266	70.00	40.30
2	*5320.00	100.5 AV			1.23 V	266	60.20	40.30
3	5350.00	59.7 PK	74.0	-14.3	1.13 V	274	51.90	7.80
4	5350.00	49.6 AV	54.0	-4.4	1.13 V	274	41.80	7.80
5	10640.00	62.0 PK	74.0	-12.0	1.02 V	85	45.20	16.80
6	10640.00	46.9 AV	54.0	-7.1	1.02 V	85	30.10	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)  
– 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, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.9 PK	74.0	-15.1	1.05 H	300	50.90	8.00
2	5460.00	45.9 AV	54.0	-8.1	1.05 H	300	37.90	8.00
3	#5470.00	59.7 PK	74.0	-14.3	1.05 H	300	51.50	8.20
4	#5470.00	46.4 AV	54.0	-7.6	1.05 H	300	38.20	8.20
5	*5500.00	107.6 PK			1.03 H	296	66.80	40.80
6	*5500.00	97.7 AV			1.03 H	296	56.90	40.80
7	11000.00	58.1 PK	74.0	-15.9	1.36 H	98	41.20	16.90
8	11000.00	45.3 AV	54.0	-8.7	1.36 H	98	28.40	16.90
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	5460.00	58.1 PK	74.0	-15.9	1.21 V	275	50.10	8.00
2	5460.00	45.9 AV	54.0	-8.1	1.21 V	275	37.90	8.00
3	#5470.00	59.7 PK	74.0	-14.3	1.21 V	275	51.50	8.20
4	#5470.00	46.8 AV	54.0	-7.2	1.21 V	275	38.60	8.20
5	*5500.00	110.7 PK			1.19 V	274	69.90	40.80
6	*5500.00	100.5 AV			1.19 V	274	59.70	40.80
7	11000.00	63.4 PK	74.0	-10.6	1.08 V	239	46.50	16.90
8	11000.00	47.2 AV	54.0	-6.8	1.08 V	239	30.30	16.90

**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 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	106.9 PK			1.02 H	296	66.20	40.70
2	*5580.00	97.4 AV			1.02 H	296	56.70	40.70
3	11160.00	59.8 PK	74.0	-14.2	1.14 H	209	42.50	17.30
4	11160.00	45.4 AV	54.0	-8.6	1.14 H	209	28.10	17.30
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	*5580.00	110.1 PK			1.28 V	260	69.40	40.70
2	*5580.00	99.8 AV			1.28 V	260	59.10	40.70
3	11160.00	63.8 PK	74.0	-10.2	1.36 V	254	46.50	17.30
4	11160.00	47.9 AV	54.0	-6.1	1.36 V	254	30.60	17.30

**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.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	107.0 PK			1.00 H	287	66.20	40.80
2	*5700.00	97.4 AV			1.00 H	287	56.60	40.80
3	#5725.00	58.6 PK	74.0	-15.4	1.02 H	289	50.30	8.30
4	#5725.00	45.8 AV	54.0	-8.2	1.02 H	289	37.50	8.30
5	11400.00	60.3 PK	74.0	-13.7	1.26 H	39	42.10	18.20
6	11400.00	46.3 AV	54.0	-7.7	1.26 H	39	28.10	18.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	110.1 PK			1.09 V	348	69.30	40.80
2	*5700.00	100.2 AV			1.09 V	348	59.40	40.80
3	#5725.00	60.6 PK	74.0	-13.4	1.10 V	350	52.30	8.30
4	#5725.00	47.3 AV	54.0	-6.7	1.10 V	350	39.00	8.30
5	11400.00	64.7 PK	74.0	-9.3	1.05 V	69	46.50	18.20
6	11400.00	48.6 AV	54.0	-5.4	1.05 V	69	30.40	18.20

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)  
– 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, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.1 PK	74.0	-15.9	1.20 H	250	50.70	7.40
2	5150.00	45.8 AV	54.0	-8.2	1.20 H	250	38.40	7.40
3	*5180.00	102.7 PK			1.13 H	242	62.60	40.10
4	*5180.00	92.2 AV			1.13 H	242	52.10	40.10
5	#10360.00	60.5 PK	74.0	-13.5	1.32 H	147	42.90	17.60
6	#10360.00	48.2 AV	54.0	-5.8	1.32 H	147	30.60	17.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.6 PK	74.0	-15.4	1.20 V	280	51.20	7.40
2	5150.00	47.1 AV	54.0	-6.9	1.20 V	280	39.70	7.40
3	*5180.00	106.3 PK			1.17 V	274	66.20	40.10
4	*5180.00	96.7 AV			1.17 V	274	56.60	40.10
5	#10360.00	63.5 PK	74.0	-10.5	1.09 V	55	45.90	17.60
6	#10360.00	50.0 AV	54.0	-4.0	1.09 V	55	32.40	17.60

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 40	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	103.5 PK			1.14 H	239	63.40	40.10
2	*5200.00	93.1 AV			1.14 H	239	53.00	40.10
3	#10400.00	60.3 PK	74.0	-13.7	1.12 H	75	42.50	17.80
4	#10400.00	48.3 AV	54.0	-5.7	1.12 H	75	30.50	17.80
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	*5200.00	106.6 PK			1.16 V	275	66.50	40.10
2	*5200.00	96.8 AV			1.16 V	275	56.70	40.10
3	#10400.00	63.6 PK	74.0	-10.4	1.27 V	209	45.80	17.80
4	#10400.00	50.6 AV	54.0	-3.4	1.27 V	209	32.80	17.80

**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 48	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	104.9 PK			1.00 H	239	64.70	40.20
2	*5240.00	94.2 AV			1.00 H	239	54.00	40.20
3	5350.00	59.4 PK	74.0	-14.6	1.02 H	245	51.60	7.80
4	5350.00	48.0 AV	54.0	-6.0	1.02 H	245	40.20	7.80
5	#10480.00	60.0 PK	74.0	-14.0	1.22 H	114	42.10	17.90
6	#10480.00	48.1 AV	54.0	-5.9	1.22 H	114	30.20	17.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	104.6 PK			1.13 V	79	64.40	40.20
2	*5240.00	94.4 AV			1.13 V	79	54.20	40.20
3	5350.00	59.2 PK	74.0	-14.8	1.15 V	85	51.40	7.80
4	5350.00	47.7 AV	54.0	-6.3	1.15 V	85	39.90	7.80
5	#10480.00	63.0 PK	74.0	-11.0	1.47 V	24	45.10	17.90
6	#10480.00	50.4 AV	54.0	-3.6	1.47 V	24	32.50	17.90

**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 52	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.5 PK	74.0	-16.5	1.25 H	240	50.10	7.40
2	5150.00	44.9 AV	54.0	-9.1	1.25 H	240	37.50	7.40
3	*5260.00	106.1 PK			1.12 H	234	65.80	40.30
4	*5260.00	95.9 AV			1.12 H	234	55.60	40.30
5	#10520.00	58.0 PK	74.0	-16.0	1.17 H	95	40.30	17.70
6	#10520.00	45.3 AV	54.0	-8.7	1.17 H	95	27.60	17.70
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	5150.00	58.8 PK	74.0	-15.2	1.15 V	270	51.40	7.40
2	5150.00	47.0 AV	54.0	-7.0	1.15 V	270	39.60	7.40
3	*5260.00	109.4 PK			1.13 V	265	69.10	40.30
4	*5260.00	99.3 AV			1.13 V	265	59.00	40.30
5	#10520.00	60.2 PK	74.0	-13.8	1.03 V	147	42.50	17.70
6	#10520.00	47.3 AV	54.0	-6.7	1.03 V	147	29.60	17.70

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	105.5 PK			1.00 H	287	65.20	40.30
2	*5300.00	95.4 AV			1.00 H	287	55.10	40.30
3	10600.00	58.5 PK	74.0	-15.5	1.02 H	55	41.50	17.00
4	10600.00	45.4 AV	54.0	-8.6	1.02 H	55	28.40	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	*5300.00	109.1 PK			1.23 V	267	68.80	40.30
2	*5300.00	99.1 AV			1.23 V	267	58.80	40.30
3	10600.00	62.6 PK	74.0	-11.4	1.36 V	201	45.60	17.00
4	10600.00	47.1 AV	54.0	-6.9	1.36 V	201	30.10	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.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	105.7 PK			1.10 H	239	65.40	40.30
2	*5320.00	94.9 AV			1.10 H	239	54.60	40.30
3	5350.00	58.2 PK	74.0	-15.8	1.12 H	241	50.40	7.80
4	5350.00	45.4 AV	54.0	-8.6	1.12 H	241	37.60	7.80
5	10640.00	58.3 PK	74.0	-15.7	1.14 H	139	41.50	16.80
6	10640.00	44.5 AV	54.0	-9.5	1.14 H	139	27.70	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	*5320.00	109.5 PK			1.23 V	267	69.20	40.30
2	*5320.00	99.1 AV			1.23 V	267	58.80	40.30
3	5350.00	60.1 PK	74.0	-13.9	1.25 V	270	52.30	7.80
4	5350.00	47.9 AV	54.0	-6.1	1.25 V	270	40.10	7.80
5	10640.00	60.3 PK	74.0	-13.7	1.15 V	74	43.50	16.80
6	10640.00	45.8 AV	54.0	-8.2	1.15 V	74	29.00	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)  
– 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, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.6 PK	74.0	-15.4	1.05 H	360	50.60	8.00
2	5460.00	45.7 AV	54.0	-8.3	1.05 H	360	37.70	8.00
3	#5470.00	60.2 PK	74.0	-13.8	1.05 H	298	52.00	8.20
4	#5470.00	46.4 AV	54.0	-7.6	1.05 H	298	38.20	8.20
5	*5500.00	106.6 PK			1.03 H	296	65.80	40.80
6	*5500.00	96.3 AV			1.03 H	296	55.50	40.80
7	11000.00	59.5 PK	74.0	-14.5	1.32 H	96	42.60	16.90
8	11000.00	45.0 AV	54.0	-9.0	1.32 H	96	28.10	16.90
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	5460.00	58.4 PK	74.0	-15.6	1.12 V	285	50.40	8.00
2	5460.00	46.3 AV	54.0	-7.7	1.12 V	285	38.30	8.00
3	#5470.00	59.5 PK	74.0	-14.5	1.12 V	285	51.30	8.20
4	#5470.00	46.3 AV	54.0	-7.7	1.12 V	285	38.10	8.20
5	*5500.00	110.4 PK			1.10 V	283	69.60	40.80
6	*5500.00	99.1 AV			1.10 V	283	58.30	40.80
7	11000.00	62.8 PK	74.0	-11.2	1.05 V	166	45.90	16.90
8	11000.00	47.2 AV	54.0	-6.8	1.05 V	166	30.30	16.90

**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 116	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	107.0 PK			1.06 H	292	66.30	40.70
2	*5580.00	96.8 AV			1.06 H	292	56.10	40.70
3	11160.00	59.8 PK	74.0	-14.2	1.36 H	52	42.50	17.30
4	11160.00	45.4 AV	54.0	-8.6	1.36 H	52	28.10	17.30
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	*5580.00	109.5 PK			1.08 V	286	68.80	40.70
2	*5580.00	98.1 AV			1.08 V	286	57.40	40.70
3	11160.00	63.8 PK	74.0	-10.2	1.05 V	139	46.50	17.30
4	11160.00	47.4 AV	54.0	-6.6	1.05 V	139	30.10	17.30

**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.





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	106.2 PK			1.03 H	294	65.40	40.80
2	*5700.00	96.8 AV			1.03 H	294	56.00	40.80
3	#5725.00	58.6 PK	74.0	-15.4	1.05 H	295	50.30	8.30
4	#5725.00	46.1 AV	54.0	-7.9	1.05 H	295	37.80	8.30
5	11400.00	60.3 PK	74.0	-13.7	1.36 H	99	42.10	18.20
6	11400.00	46.8 AV	54.0	-7.2	1.36 H	99	28.60	18.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	109.7 PK			1.03 V	265	68.90	40.80
2	*5700.00	99.8 AV			1.03 V	265	59.00	40.80
3	#5725.00	60.6 PK	74.0	-13.4	1.05 V	270	52.30	8.30
4	#5725.00	47.3 AV	54.0	-6.7	1.05 V	270	39.00	8.30
5	11400.00	64.7 PK	74.0	-9.3	1.36 V	208	46.50	18.20
6	11400.00	48.8 AV	54.0	-5.2	1.36 V	208	30.60	18.20

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)  
– 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, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.3 PK	74.0	-16.7	1.20 H	250	49.90	7.40
2	5150.00	46.1 AV	54.0	-7.9	1.20 H	250	38.70	7.40
3	*5190.00	99.2 PK			1.14 H	243	59.10	40.10
4	*5190.00	88.9 AV			1.14 H	243	48.80	40.10
5	#10380.00	60.1 PK	74.0	-13.9	1.32 H	47	42.50	17.60
6	#10380.00	47.8 AV	54.0	-6.2	1.32 H	47	30.20	17.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.0 PK	74.0	-16.0	1.20 V	265	50.60	7.40
2	5150.00	46.1 AV	54.0	-7.9	1.20 V	265	38.70	7.40
3	*5190.00	103.1 PK			1.16 V	259	63.00	40.10
4	*5190.00	92.8 AV			1.16 V	259	52.70	40.10
5	#10380.00	64.1 PK	74.0	-9.9	1.26 V	52	46.50	17.60
6	#10380.00	50.3 AV	54.0	-3.7	1.26 V	52	32.70	17.60

**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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	101.3 PK			1.13 H	240	61.10	40.20
2	*5230.00	90.5 AV			1.13 H	240	50.30	40.20
3	5350.00	58.0 PK	74.0	-16.0	1.15 H	245	50.20	7.80
4	5350.00	47.4 AV	54.0	-6.6	1.15 H	245	39.60	7.80
5	#10460.00	60.4 PK	74.0	-13.6	1.39 H	64	42.50	17.90
6	#10460.00	48.1 AV	54.0	-5.9	1.39 H	64	30.20	17.90
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	*5230.00	101.4 PK			1.21 V	76	61.20	40.20
2	*5230.00	90.5 AV			1.21 V	76	50.30	40.20
3	5350.00	59.0 PK	74.0	-15.0	1.25 V	80	51.20	7.80
4	5350.00	46.3 AV	54.0	-7.7	1.25 V	80	38.50	7.80
5	#10460.00	63.6 PK	74.0	-10.4	1.14 V	7	45.70	17.90
6	#10460.00	50.4 AV	54.0	-3.6	1.14 V	7	32.50	17.90

**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 54	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.8 PK	74.0	-16.2	1.02 H	245	50.40	7.40
2	5150.00	44.8 AV	54.0	-9.2	1.02 H	245	37.40	7.40
3	*5270.00	100.9 PK			1.00 H	241	60.60	40.30
4	*5270.00	91.0 AV			1.00 H	241	50.70	40.30
5	#10540.00	59.1 PK	74.0	-14.9	1.24 H	159	41.50	17.60
6	#10540.00	46.1 AV	54.0	-7.9	1.24 H	159	28.50	17.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.3 PK	74.0	-15.7	1.26 V	270	50.90	7.40
2	5150.00	45.5 AV	54.0	-8.5	1.26 V	270	38.10	7.40
3	*5270.00	105.5 PK			1.25 V	261	65.20	40.30
4	*5270.00	95.1 AV			1.25 V	261	54.80	40.30
5	#10540.00	62.2 PK	74.0	-11.8	1.05 V	88	44.60	17.60
6	#10540.00	47.5 AV	54.0	-6.5	1.05 V	88	29.90	17.60

**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.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	102.5 PK			1.08 H	285	62.20	40.30
2	*5310.00	91.7 AV			1.08 H	285	51.40	40.30
3	5350.00	58.1 PK	74.0	-15.9	1.10 H	288	50.30	7.80
4	5350.00	45.7 AV	54.0	-8.3	1.10 H	288	37.90	7.80
5	10620.00	57.0 PK	74.0	-17.0	1.15 H	208	40.10	16.90
6	10620.00	45.1 AV	54.0	-8.9	1.15 H	208	28.20	16.90
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	105.9 PK			1.25 V	268	65.60	40.30
2	*5310.00	95.3 AV			1.25 V	268	55.00	40.30
3	5350.00	59.5 PK	74.0	-14.5	1.26 V	270	51.70	7.80
4	5350.00	48.6 AV	54.0	-5.4	1.26 V	270	40.80	7.80
5	10620.00	61.4 PK	74.0	-12.6	1.05 V	85	44.50	16.90
6	10620.00	47.2 AV	54.0	-6.8	1.05 V	85	30.30	16.90

**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, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.2 PK	74.0	-14.8	1.05 H	298	51.20	8.00
2	5460.00	46.5 AV	54.0	-7.5	1.05 H	298	38.50	8.00
3	#5470.00	61.3 PK	74.0	-12.7	1.05 H	298	53.10	8.20
4	#5470.00	46.6 AV	54.0	-7.4	1.05 H	298	38.40	8.20
5	*5510.00	102.7 PK			1.02 H	296	61.90	40.80
6	*5510.00	92.0 AV			1.02 H	296	51.20	40.80
7	11020.00	59.3 PK	74.0	-14.7	1.26 H	308	42.30	17.00
8	11020.00	45.4 AV	54.0	-8.6	1.26 H	308	28.40	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	1.32 V	275	50.90	8.00
2	5460.00	46.0 AV	54.0	-8.0	1.32 V	275	38.00	8.00
3	#5470.00	60.5 PK	74.0	-13.5	1.32 V	275	52.30	8.20
4	#5470.00	47.7 AV	54.0	-6.3	1.32 V	275	39.50	8.20
5	*5510.00	106.4 PK			1.31 V	272	65.60	40.80
6	*5510.00	95.5 AV			1.31 V	272	54.70	40.80
7	11040.00	63.0 PK	74.0	-11.0	1.25 V	96	46.00	17.00
8	11040.00	47.6 AV	54.0	-6.4	1.25 V	96	30.60	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 110	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	103.4 PK			1.03 H	296	62.70	40.70
2	*5550.00	92.7 AV			1.03 H	296	52.00	40.70
3	11100.00	58.4 PK	74.0	-15.6	1.28 H	69	41.20	17.20
4	11100.00	45.7 AV	54.0	-8.3	1.28 H	69	28.50	17.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	105.5 PK			1.08 V	287	64.80	40.70
2	*5550.00	94.7 AV			1.08 V	287	54.00	40.70
3	11100.00	63.7 PK	74.0	-10.3	1.06 V	85	46.50	17.20
4	11100.00	47.7 AV	54.0	-6.3	1.06 V	85	30.50	17.20

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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 134	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	102.8 PK			1.00 H	296	62.10	40.70
2	*5670.00	92.5 AV			1.00 H	296	51.80	40.70
3	#5725.00	58.5 PK	74.0	-15.5	1.02 H	298	50.20	8.30
4	#5725.00	47.2 AV	54.0	-6.8	1.02 H	298	38.90	8.30
5	11340.00	60.4 PK	74.0	-13.6	1.32 H	85	42.50	17.90
6	11340.00	46.4 AV	54.0	-7.6	1.32 H	85	28.50	17.90
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	*5670.00	104.1 PK			1.35 V	252	63.40	40.70
2	*5670.00	93.2 AV			1.35 V	252	52.50	40.70
3	#5725.00	59.2 PK	74.0	-14.8	1.36 V	255	50.90	8.30
4	#5725.00	45.7 AV	54.0	-8.3	1.36 V	255	37.40	8.30
5	11340.00	64.4 PK	74.0	-9.6	1.08 V	55	46.50	17.90
6	11340.00	48.5 AV	54.0	-5.5	1.08 V	55	30.60	17.90

**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.



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	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.7 PK	74.0	-16.3	1.22 H	245	50.30	7.40
2	5150.00	46.2 AV	54.0	-7.8	1.22 H	245	38.80	7.40
3	*5210.00	97.8 PK			1.20 H	241	57.70	40.10
4	*5210.00	88.2 AV			1.20 H	241	48.10	40.10
5	#10420.00	59.2 PK	74.0	-14.8	1.15 H	98	41.50	17.70
6	#10420.00	46.1 AV	54.0	-7.9	1.15 H	98	28.40	17.70
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	5150.00	59.7 PK	74.0	-14.3	1.30 V	275	52.30	7.40
2	5150.00	46.4 AV	54.0	-7.6	1.30 V	275	39.00	7.40
3	*5210.00	102.1 PK			1.27 V	273	62.00	40.10
4	*5210.00	91.9 AV			1.27 V	273	51.80	40.10
5	#10420.00	61.3 PK	74.0	-12.7	1.18 V	56	43.60	17.70
6	#10420.00	48.2 AV	54.0	-5.8	1.18 V	56	30.50	17.70

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 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	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5290.00	99.1 PK			1.20 H	237	58.80	40.30
2	*5290.00	88.8 AV			1.20 H	237	48.50	40.30
3	5350.00	58.1 PK	74.0	-15.9	1.21 H	240	50.30	7.80
4	5350.00	45.6 AV	54.0	-8.4	1.21 H	240	37.80	7.80
5	#10580.00	58.5 PK	74.0	-15.5	1.32 H	229	41.30	17.20
6	#10580.00	45.1 AV	54.0	-8.9	1.32 H	229	27.90	17.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.9 PK	74.0	-14.1	1.25 V	268	52.50	7.40
2	5150.00	45.4 AV	54.0	-8.6	1.25 V	268	38.00	7.40
3	*5290.00	102.9 PK			1.24 V	267	62.60	40.30
4	*5290.00	92.7 AV			1.24 V	267	52.40	40.30
5	#10580.00	60.8 PK	74.0	-13.2	1.03 V	220	43.60	17.20
6	#10580.00	46.8 AV	54.0	-7.2	1.03 V	220	29.60	17.20

**REMARKS:**

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 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	Chris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.8 PK	74.0	-15.2	1.02 H	305	50.80	8.00
2	5460.00	45.9 AV	54.0	-8.1	1.02 H	305	37.90	8.00
3	#5470.00	59.3 PK	74.0	-14.7	1.02 H	305	51.10	8.20
4	#5470.00	46.4 AV	54.0	-7.6	1.02 H	305	38.20	8.20
5	*5530.00	97.2 PK			1.00 H	300	56.50	40.70
6	*5530.00	86.9 AV			1.00 H	300	46.20	40.70
7	11060.00	58.6 PK	74.0	-15.4	1.33 H	85	41.60	17.00
8	11060.00	45.1 AV	54.0	-8.9	1.33 H	85	28.10	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	59.0 PK	74.0	-15.0	1.22 V	264	51.00	8.00
2	5460.00	46.8 AV	54.0	-7.2	1.22 V	264	38.80	8.00
3	#5470.00	61.4 PK	74.0	-12.6	1.22 V	264	53.20	8.20
4	#5470.00	48.3 AV	54.0	-5.7	1.22 V	264	40.10	8.20
5	*5530.00	101.4 PK			1.20 V	262	60.70	40.70
6	*5530.00	91.3 AV			1.20 V	262	50.60	40.70
7	11060.00	62.6 PK	74.0	-11.4	1.05 V	87	45.60	17.00
8	11060.00	46.6 AV	54.0	-7.4	1.05 V	87	29.60	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).
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 40	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin
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	57.07	28.3 QP	40.0	-11.7	1.25 H	257	42.90	-14.60
2	187.07	22.6 QP	43.5	-20.9	1.00 H	7	38.50	-15.90
3	359.77	21.8 QP	46.0	-24.2	1.50 H	7	32.90	-11.10
4	584.85	21.7 QP	46.0	-24.3	1.00 H	254	28.20	-6.50
5	716.80	23.8 QP	46.0	-22.2	1.25 H	34	27.90	-4.10
6	914.72	27.9 QP	46.0	-18.1	1.50 H	267	28.00	-0.10
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	57.07	28.2 QP	40.0	-11.8	1.25 V	200	42.80	-14.60
2	189.01	16.2 QP	43.5	-27.3	1.00 V	154	32.30	-16.10
3	377.23	18.0 QP	46.0	-28.0	1.50 V	31	28.70	-10.70
4	503.36	21.1 QP	46.0	-24.9	1.50 V	272	29.30	-8.20
5	703.22	24.5 QP	46.0	-21.5	1.00 V	164	29.00	-4.50
6	883.68	27.9 QP	46.0	-18.1	1.25 V	146	28.90	-1.00

**REMARKS:**

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin
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	165.73	37.7 QP	43.5	-5.8	1.25 H	231	52.00	-14.30
2	222.00	35.6 QP	46.0	-10.4	1.00 H	295	51.50	-15.90
3	251.11	33.4 QP	46.0	-12.6	1.50 H	60	47.50	-14.10
4	278.27	29.8 QP	46.0	-16.2	1.00 H	124	42.60	-12.80
5	664.41	37.1 QP	46.0	-8.9	1.25 H	66	42.00	-4.90
6	840.99	35.0 QP	46.0	-11.0	1.50 H	56	36.60	-1.60
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	51.24	32.6 QP	40.0	-7.4	1.25 V	14	46.60	-14.00
2	165.73	31.4 QP	43.5	-12.1	1.00 V	163	45.70	-14.30
3	231.70	37.8 QP	46.0	-8.2	2.00 V	125	53.60	-15.80
4	499.48	27.1 QP	46.0	-18.9	1.50 V	153	35.40	-8.30
5	664.41	31.0 QP	46.0	-15.0	1.00 V	90	35.90	-4.90
6	840.99	33.9 QP	46.0	-12.1	1.25 V	102	35.50	-1.60

**REMARKS:**

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 40	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin
TEST MODE	C		

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	57.07	28.0 QP	40.0	-12.0	1.25 H	308	42.60	-14.60
2	146.32	28.7 QP	43.5	-14.8	1.00 H	295	42.70	-14.00
3	359.77	40.1 QP	46.0	-5.9	1.50 H	336	51.20	-11.10
4	408.28	29.2 QP	46.0	-16.8	1.00 H	2	39.40	-10.20
5	695.46	23.5 QP	46.0	-22.5	1.50 H	344	28.10	-4.60
6	957.41	28.7 QP	46.0	-17.3	1.25 H	7	28.00	0.70
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	57.07	27.5 QP	40.0	-12.5	1.25 V	209	42.10	-14.60
2	136.62	24.8 QP	43.5	-18.7	1.00 V	155	39.30	-14.50
3	359.77	31.0 QP	46.0	-15.0	1.50 V	309	42.10	-11.10
4	528.58	23.3 QP	46.0	-22.7	1.25 V	160	31.00	-7.70
5	827.40	26.6 QP	46.0	-19.4	1.00 V	183	28.30	-1.70
6	949.65	27.9 QP	46.0	-18.1	1.50 V	250	27.50	0.40

**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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin
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	57.07	28.1 QP	40.0	-11.9	1.25 H	35	42.70	-14.60
2	187.07	22.0 QP	43.5	-21.5	1.00 H	11	37.90	-15.90
3	359.77	22.1 QP	46.0	-23.9	1.50 H	338	33.20	-11.10
4	586.79	22.6 QP	46.0	-23.4	1.25 H	11	29.00	-6.40
5	757.55	25.6 QP	46.0	-20.4	1.00 H	74	28.50	-2.90
6	969.05	28.8 QP	54.0	-25.2	1.50 H	25	28.00	0.80
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	57.07	28.0 QP	40.0	-12.0	1.25 V	207	42.60	-14.60
2	169.61	16.0 QP	43.5	-27.5	1.00 V	185	30.00	-14.00
3	433.50	19.8 QP	46.0	-26.2	1.50 V	277	29.30	-9.50
4	586.79	21.8 QP	46.0	-24.2	1.00 V	146	28.20	-6.40
5	833.23	31.9 QP	46.0	-14.1	1.50 V	210	33.60	-1.70
6	951.59	29.1 QP	46.0	-16.9	1.00 V	154	28.60	0.50

**REMARKS:**

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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Chris Lin
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	57.07	29.0 QP	40.0	-11.0	1.25 H	42	43.60	-14.60
2	165.73	36.9 QP	43.5	-6.6	1.50 H	231	51.20	-14.30
3	225.88	36.2 QP	46.0	-9.8	1.25 H	296	52.50	-16.30
4	431.56	26.2 QP	46.0	-19.8	1.00 H	251	35.70	-9.50
5	666.35	37.3 QP	46.0	-8.7	1.00 H	76	42.20	-4.90
6	840.99	34.7 QP	46.0	-11.3	1.50 H	65	36.30	-1.60
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	51.24	33.0 QP	40.0	-7.0	1.25 V	233	47.00	-14.00
2	134.68	31.0 QP	43.5	-12.5	1.00 V	183	45.70	-14.70
3	231.70	38.1 QP	46.0	-7.9	1.50 V	146	53.90	-15.80
4	470.37	28.9 QP	46.0	-17.1	1.00 V	160	37.70	-8.80
5	664.41	30.6 QP	46.0	-15.4	1.25 V	122	35.50	-4.90
6	840.99	33.9 QP	46.0	-12.1	1.50 V	97	35.50	-1.60

**REMARKS:**

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



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

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	57.07	28.0 QP	40.0	-12.0	1.25 H	9	42.60	-14.60
2	146.32	28.0 QP	43.5	-15.5	1.00 H	315	42.00	-14.00
3	359.77	39.8 QP	46.0	-6.2	1.50 H	327	50.90	-11.10
4	408.28	30.4 QP	46.0	-15.6	1.00 H	18	40.60	-10.20
5	705.16	23.8 QP	46.0	-22.2	2.00 H	261	28.20	-4.40
6	912.78	27.4 QP	46.0	-18.6	1.25 H	181	27.60	-0.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.07	26.9 QP	40.0	-13.1	1.25 V	232	41.50	-14.60
2	152.15	23.0 QP	43.5	-20.5	1.00 V	19	36.40	-13.40
3	359.77	31.2 QP	46.0	-14.8	1.50 V	304	42.30	-11.10
4	528.58	23.6 QP	46.0	-22.4	1.25 V	147	31.30	-7.70
5	745.91	24.6 QP	46.0	-21.4	1.00 V	174	27.80	-3.20
6	833.23	29.1 QP	46.0	-16.9	1.50 V	276	30.80	-1.70

**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.

## 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. 16, 2012	Nov. 15, 2013
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 04, 2013	Feb. 03, 2014
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 08, 2013	Jul. 07, 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

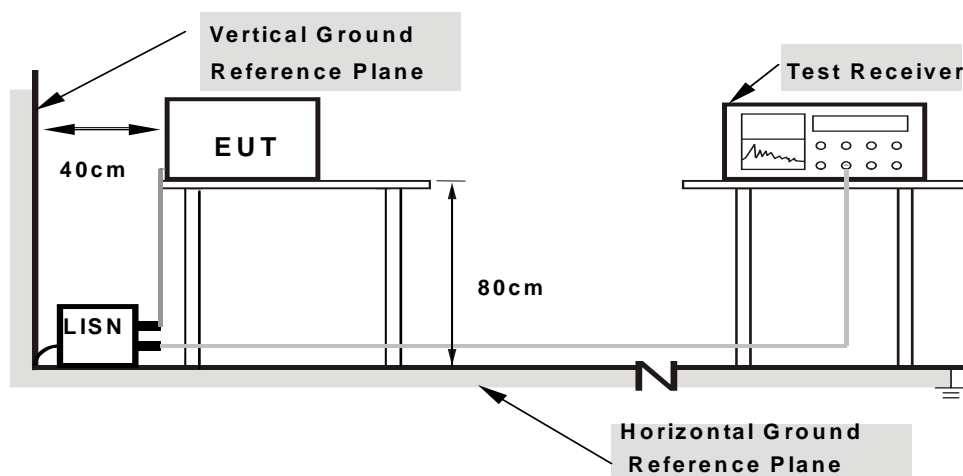
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

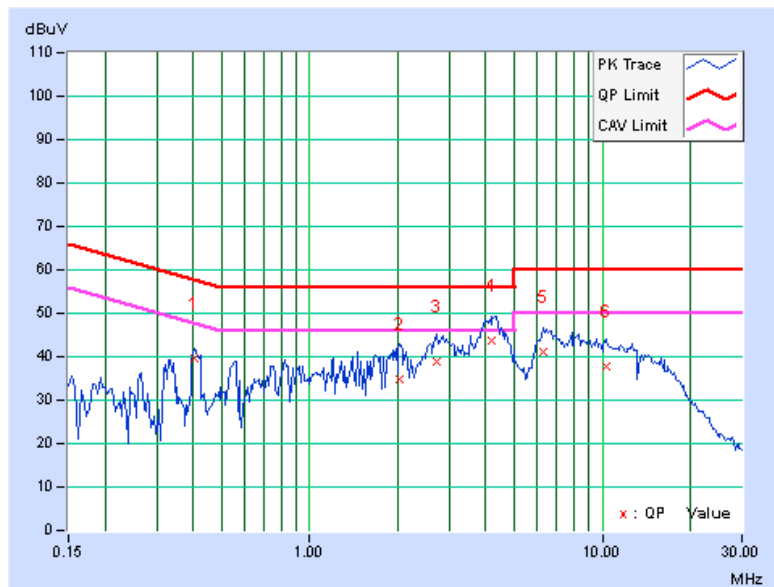
### CONDUCTED WORST-CASE DATA : 802.11a

<b>PHASE</b>	Line 1	<b>6dB BANDWIDTH</b>	9kHz
<b>CHANNEL</b>	Channel 40	<b>TEST MODE</b>	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	0.40391	0.23	39.58	34.10	39.81	34.33	57.77	47.77	-17.96	-13.44
2	2.03125	0.29	34.60	25.77	34.89	26.06	56.00	46.00	-21.11	-19.94
3	2.71484	0.33	38.38	25.97	38.71	26.30	56.00	46.00	-17.29	-19.70
4	4.20313	0.41	43.14	28.53	43.55	28.94	56.00	46.00	-12.45	-17.06
5	6.25781	0.52	40.72	35.27	41.24	35.79	60.00	50.00	-18.76	-14.21
6	10.28516	0.73	36.91	31.37	37.64	32.10	60.00	50.00	-22.36	-17.90

#### 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





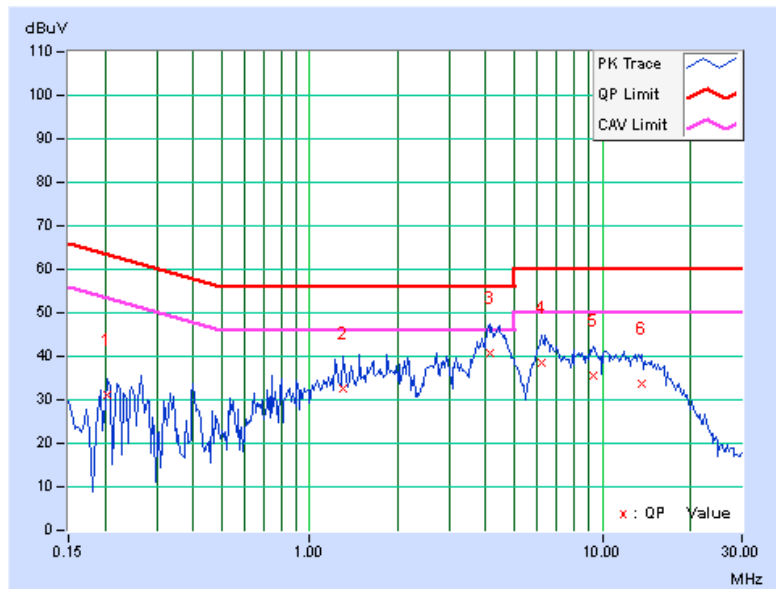
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<b>PHASE</b>	Line 2	<b>6dB BANDWIDTH</b>	9kHz
<b>CHANNEL</b>	Channel 40	<b>TEST MODE</b>	A

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	0.20469	0.17	31.00	19.35	31.17	19.52	63.42	53.42	-32.25	-33.90
2	1.30859	0.26	32.49	23.57	32.75	23.83	56.00	46.00	-23.25	-22.17
3	4.11328	0.38	40.26	26.54	40.64	26.92	56.00	46.00	-15.36	-19.08
4	6.19531	0.46	38.06	32.52	38.52	32.98	60.00	50.00	-21.48	-17.02
5	9.27734	0.57	34.87	28.85	35.44	29.42	60.00	50.00	-24.56	-20.58
6	13.65234	0.72	33.02	26.73	33.74	27.45	60.00	50.00	-26.26	-22.55

**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





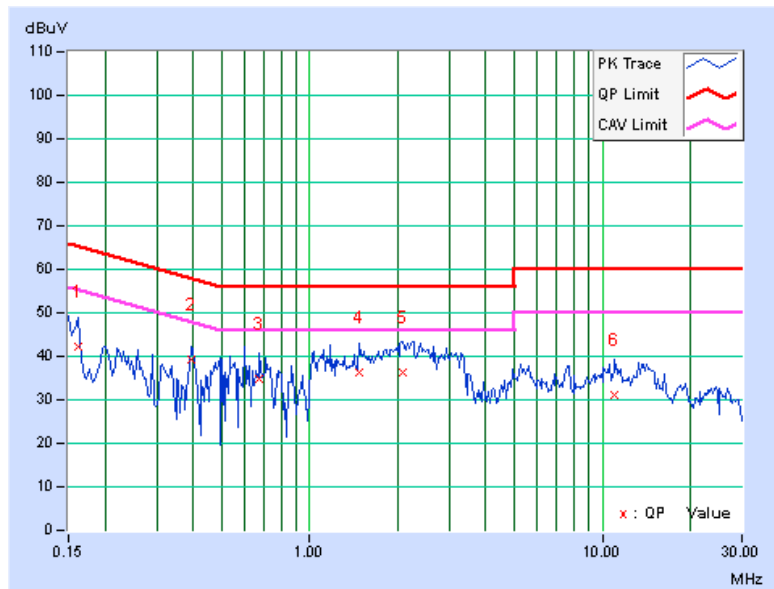
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<b>PHASE</b>	Line 1	<b>6dB BANDWIDTH</b>	9kHz
<b>CHANNEL</b>	Channel 40	<b>TEST MODE</b>	B

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.16172	0.16	42.13	34.73	42.29	34.89	65.38
2	0.39226	0.23	38.86	35.05	39.09	35.28	58.02	48.02	-18.93	-12.74
3	0.67344	0.24	34.49	26.75	34.73	26.99	56.00	46.00	-21.27	-19.01
4	1.46875	0.27	36.12	30.90	36.39	31.17	56.00	46.00	-19.61	-14.83
5	2.07422	0.29	35.93	31.62	36.22	31.91	56.00	46.00	-19.78	-14.09
6	10.97266	0.77	30.31	22.22	31.08	22.99	60.00	50.00	-28.92	-27.01

**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





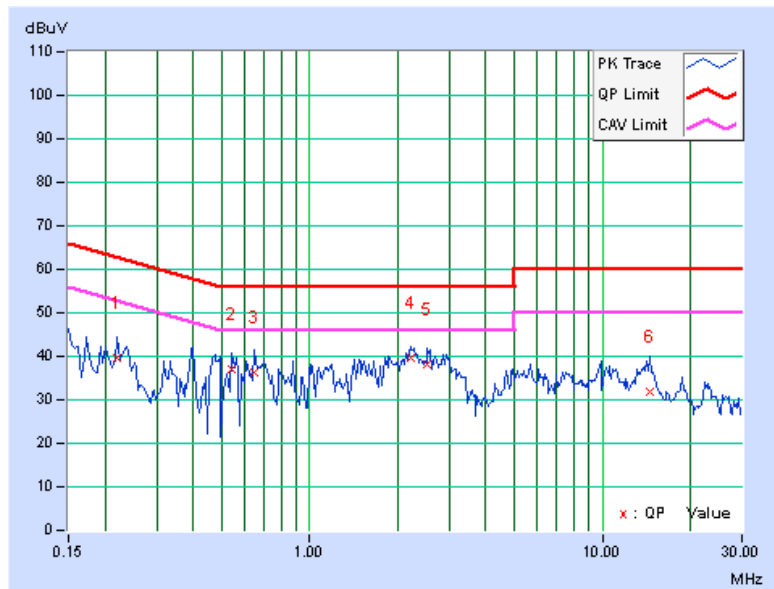
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<b>PHASE</b>	Line 2	<b>6dB BANDWIDTH</b>	9kHz
<b>CHANNEL</b>	Channel 40	<b>TEST MODE</b>	B

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	0.22031	0.18	39.58	31.62	39.76	31.80	62.81	52.81	-23.05	-21.01
2	0.54063	0.24	36.97	32.36	37.21	32.60	56.00	46.00	-18.79	-13.40
3	0.65000	0.24	36.11	26.87	36.35	27.11	56.00	46.00	-19.65	-18.89
4	2.20703	0.29	39.20	35.57	39.49	35.86	56.00	46.00	-16.51	-10.14
5	2.52734	0.31	37.90	32.94	38.21	33.25	56.00	46.00	-17.79	-12.75
6	14.56641	0.75	31.18	24.43	31.93	25.18	60.00	50.00	-28.07	-24.82

**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





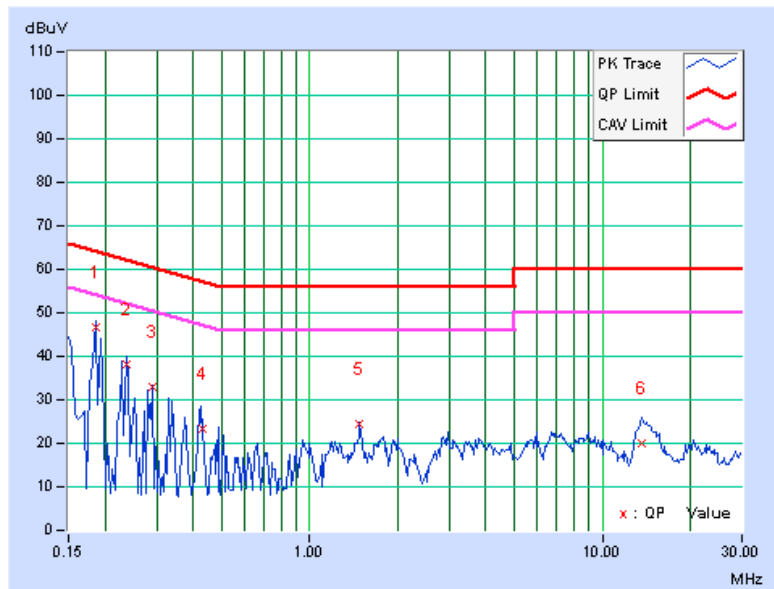
A D T

<b>PHASE</b>	Line 1	<b>6dB BANDWIDTH</b>	9kHz
<b>CHANNEL</b>	Channel 40	<b>TEST MODE</b>	C

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	0.18516	0.16	46.37	34.69	46.53	34.85	64.25	54.25	-17.72	-19.40
2	0.23594	0.17	37.97	19.67	38.14	19.84	62.24	52.24	-24.10	-32.40
3	0.29063	0.19	32.71	19.21	32.90	19.40	60.51	50.51	-27.60	-31.10
4	0.42862	0.23	23.27	12.64	23.50	12.87	57.28	47.28	-33.78	-34.41
5	1.48438	0.27	24.06	23.95	24.33	24.22	56.00	46.00	-31.67	-21.78
6	13.64844	0.90	19.28	11.35	20.18	12.25	60.00	50.00	-39.82	-37.75

**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







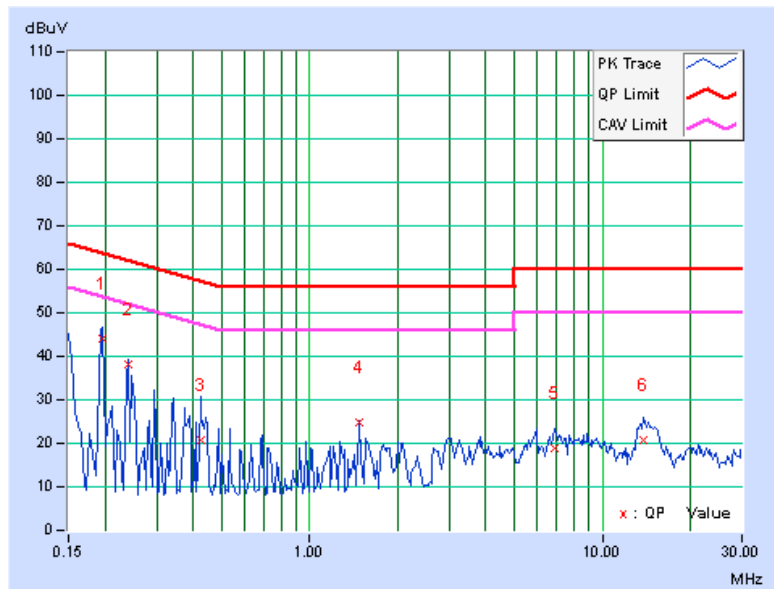
A D T

<b>PHASE</b>	Line 2	<b>6dB BANDWIDTH</b>	9kHz
<b>CHANNEL</b>	Channel 40	<b>TEST MODE</b>	C

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	0.19687	0.17	44.07	33.55	44.24	33.72	63.74	53.74	-19.50	-20.02
2	0.23984	0.18	37.97	26.76	38.15	26.94	62.10	52.10	-23.95	-25.16
3	0.42472	0.24	20.55	8.37	20.79	8.61	57.36	47.36	-36.56	-38.74
4	1.48438	0.26	24.42	24.01	24.68	24.27	56.00	46.00	-31.32	-21.73
5	6.87109	0.49	18.30	11.15	18.79	11.64	60.00	50.00	-41.21	-38.36
6	13.75000	0.72	19.99	14.12	20.71	14.84	60.00	50.00	-39.29	-35.16

**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





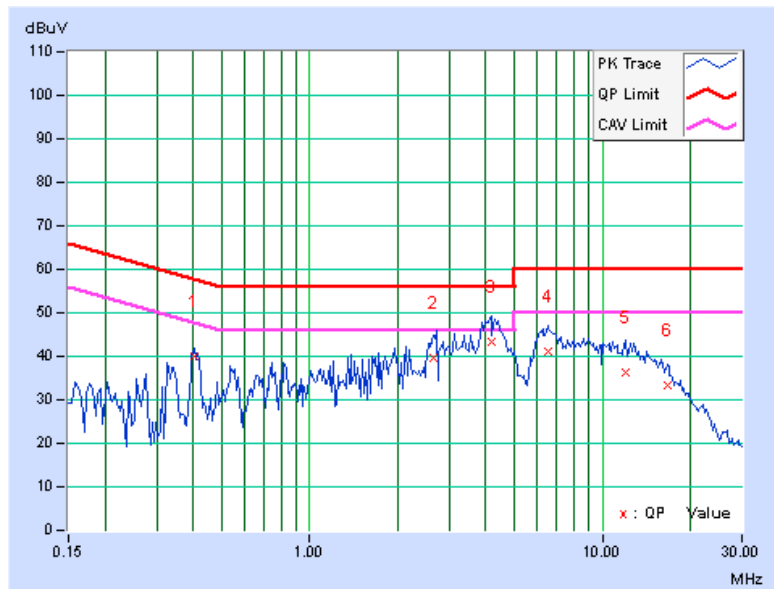
A D T

<b>PHASE</b>	Line 1	<b>6dB BANDWIDTH</b>	9kHz
<b>CHANNEL</b>	Channel 100	<b>TEST MODE</b>	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	0.40391	0.23	39.88	34.21	40.11	34.44	57.77	47.77	-17.66	-13.33
2	2.63281	0.32	39.46	27.71	39.78	28.03	56.00	46.00	-16.22	-17.97
3	4.16797	0.41	42.77	28.04	43.18	28.45	56.00	46.00	-12.82	-17.55
4	6.53125	0.54	40.58	35.37	41.12	35.91	60.00	50.00	-18.88	-14.09
5	12.02734	0.82	35.32	29.82	36.14	30.64	60.00	50.00	-23.86	-19.36
6	16.68750	1.06	32.42	27.17	33.48	28.23	60.00	50.00	-26.52	-21.77

**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





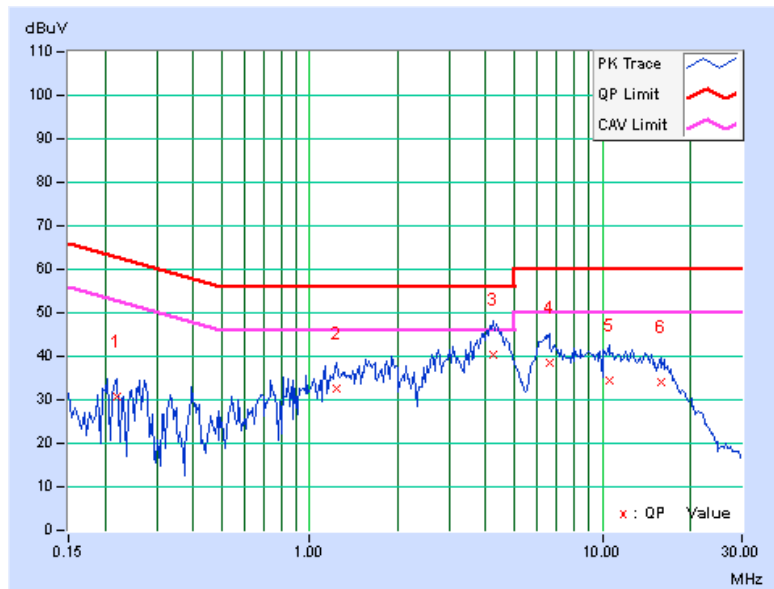
A D T

<b>PHASE</b>	Line 2	<b>6dB BANDWIDTH</b>	9kHz
<b>CHANNEL</b>	Channel 100	<b>TEST MODE</b>	A

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.22031	0.18	30.55	18.85	30.73	19.03	62.81
2	1.24219	0.26	32.16	23.04	32.42	23.30	56.00	46.00	-23.58	-22.70
3	4.25781	0.39	39.93	26.54	40.32	26.93	56.00	46.00	-15.68	-19.07
4	6.57813	0.47	37.95	32.25	38.42	32.72	60.00	50.00	-21.58	-17.28
5	10.52344	0.62	33.99	28.09	34.61	28.71	60.00	50.00	-25.39	-21.29
6	15.80078	0.79	33.30	26.86	34.09	27.65	60.00	50.00	-25.91	-22.35

**REMARKS:**

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





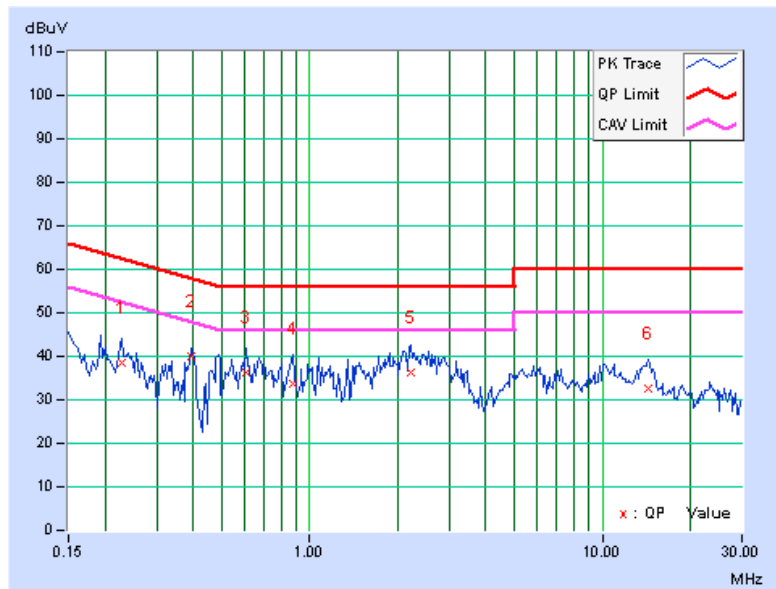
A D T

<b>PHASE</b>	Line 1	<b>6dB BANDWIDTH</b>	9kHz
<b>CHANNEL</b>	Channel 100	<b>TEST MODE</b>	B

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.22812	0.17	38.30	31.34	38.47	31.51	62.52
<b>2</b>	<b>0.39609</b>	<b>0.23</b>	<b>39.88</b>	<b>38.48</b>	<b>40.11</b>	<b>38.71</b>	<b>57.93</b>	<b>47.93</b>	<b>-17.83</b>	<b>-9.23</b>
3	0.60703	0.24	36.13	28.69	36.37	28.93	56.00	46.00	-19.63	-17.07
4	0.87656	0.25	33.34	26.33	33.59	26.58	56.00	46.00	-22.41	-19.42
5	2.23047	0.30	36.03	29.35	36.33	29.65	56.00	46.00	-19.67	-16.35
6	14.32031	0.94	31.51	24.05	32.45	24.99	60.00	50.00	-27.55	-25.01

**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





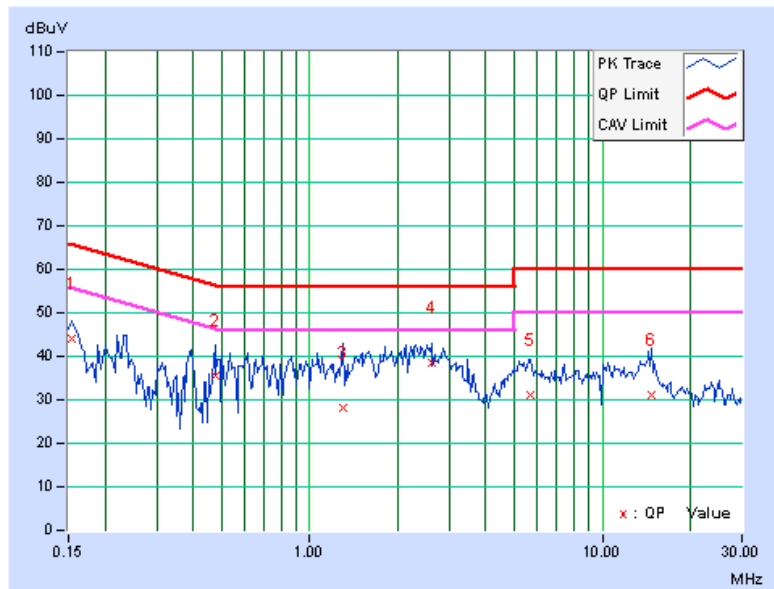
A D T

<b>PHASE</b>	Line 2	<b>6dB BANDWIDTH</b>	9kHz
<b>CHANNEL</b>	Channel 100	<b>TEST MODE</b>	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	0.15391	0.17	43.88	38.03	44.05	38.20	65.79	55.79	-21.74	-17.59
2	0.47422	0.24	35.32	28.40	35.56	28.64	56.44	46.44	-20.88	-17.80
3	1.29297	0.26	27.95	18.09	28.21	18.35	56.00	46.00	-27.79	-27.65
4	2.60156	0.31	38.28	33.64	38.59	33.95	56.00	46.00	-17.41	-12.05
5	5.66406	0.44	30.58	25.19	31.02	25.63	60.00	50.00	-28.98	-24.37
6	14.71094	0.75	30.47	23.91	31.22	24.66	60.00	50.00	-28.78	-25.34

**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





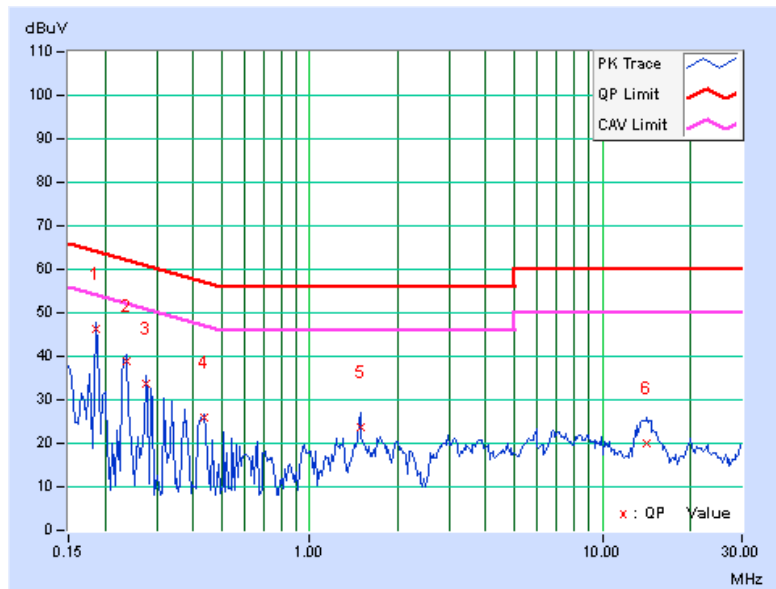
A D T

<b>PHASE</b>	Line 1	<b>6dB BANDWIDTH</b>	9kHz
<b>CHANNEL</b>	Channel 100	<b>TEST MODE</b>	C

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.18516	0.16	46.15	34.89	46.31	35.05	64.25
2	0.23594	0.17	38.57	26.88	38.74	27.05	62.24	52.24	-23.50	-25.19
3	0.27500	0.19	33.68	17.76	33.87	17.95	60.97	50.97	-27.10	-33.02
4	0.43516	0.23	25.56	8.66	25.79	8.89	57.15	47.15	-31.36	-38.26
5	1.48828	0.27	23.25	21.45	23.52	21.72	56.00	46.00	-32.48	-24.28
6	14.18750	0.93	18.91	11.42	19.84	12.35	60.00	50.00	-40.16	-37.65

**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





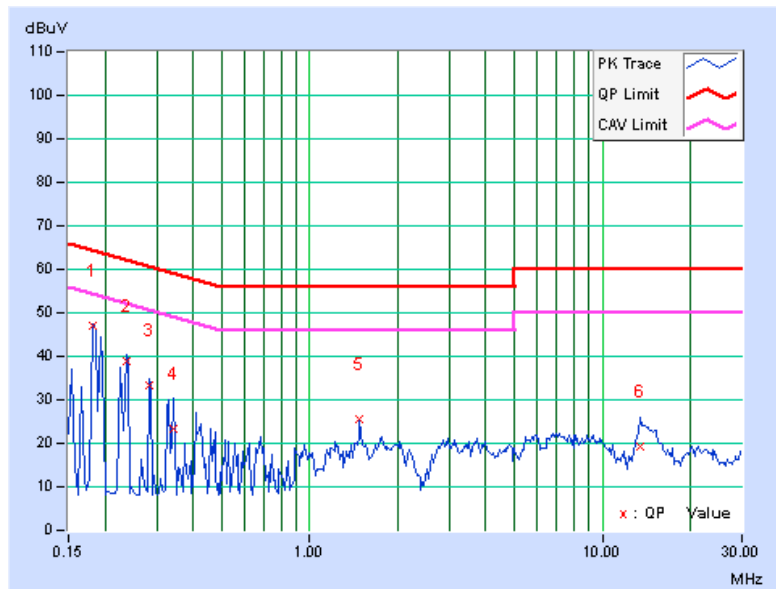
A D T

<b>PHASE</b>	Line 2	<b>6dB BANDWIDTH</b>	9kHz
<b>CHANNEL</b>	Channel 100	<b>TEST MODE</b>	C

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	0.18125	0.17	46.69	31.86	46.86	32.03	64.43	54.43	-17.57	-22.40
2	0.23594	0.18	38.61	25.85	38.79	26.03	62.24	52.24	-23.45	-26.21
3	0.28281	0.20	33.02	16.48	33.22	16.68	60.73	50.73	-27.51	-34.05
4	0.34141	0.22	23.07	4.18	23.29	4.40	59.17	49.17	-35.88	-44.77
5	1.48438	0.26	25.22	23.77	25.48	24.03	56.00	46.00	-30.52	-21.97
6	13.53906	0.71	18.51	11.06	19.22	11.77	60.00	50.00	-40.78	-38.23

**REMARKS:**

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



### 4.3 PEAK TRANSMIT POWER MEASUREMENT

#### 4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	The lesser of 50mW (17dBm) or 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.

Per KDB 662911 D01 Multiple Transmitter Output v02 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;

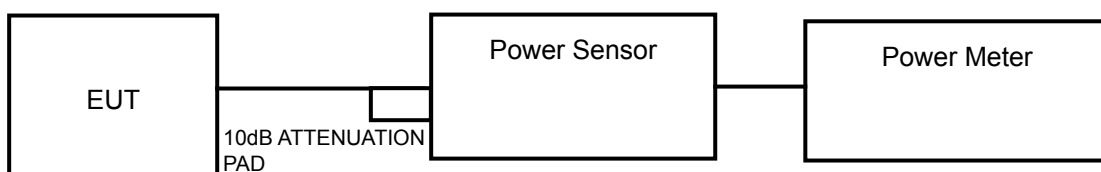
Array Gain = 5 log(NANT/NSS) dB or 3 dB, whichever is less for 20-MHz channel widths with NANT ≥ 5.

For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

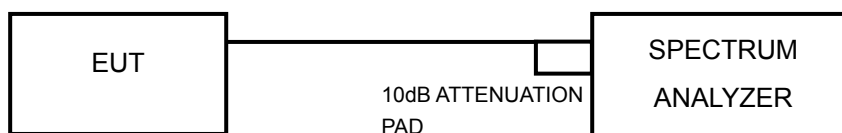
#### 4.3.2 TEST SETUP

##### FOR POWER OUTPUT MEASUREMENT

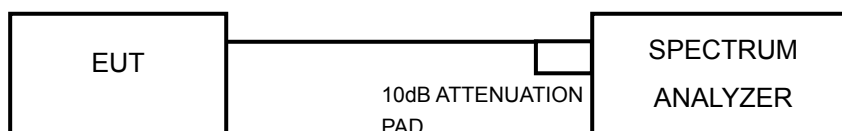
For 802.11a, 802.11n (20MHz), 802.11n (40MHz)



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	13.646	11.35	17	PASS
40	5200	<b>13.932</b>	11.44	17	PASS
48	5240	13.868	11.42	17	PASS
52	5260	<b>13.521</b>	11.31	24	PASS
60	5300	12.912	11.11	24	PASS
64	5320	13.366	11.26	24	PASS
100	5500	14.125	11.50	24	PASS
116	5580	13.900	11.43	24	PASS
140	5700	14.158	11.51	24	PASS

#### NOTE:

##### For 5180~5240MHz:

1.  $4\text{dBm} + 10\log(24.26) = 17.85 \text{ dBm} > 17\text{dBm}$
2.  $4\text{dBm} + 10\log(25.58) = 18.08 \text{ dBm} > 17\text{dBm}$
3.  $4\text{dBm} + 10\log(25.59) = 18.08 \text{ dBm} > 17\text{dBm}$

##### For 5260~5700MHz:

1.  $11\text{dBm} + 10\log(23.24) = 24.66 \text{ dBm} > 24\text{dBm}$
2.  $11\text{dBm} + 10\log(23.01) = 24.62 \text{ dBm} > 24\text{dBm}$
3.  $11\text{dBm} + 10\log(24.86) = 24.96 \text{ dBm} > 24\text{dBm}$
4.  $11\text{dBm} + 10\log(22.32) = 24.49 \text{ dBm} > 24\text{dBm}$
5.  $11\text{dBm} + 10\log(22.46) = 24.51 \text{ dBm} > 24\text{dBm}$
6.  $11\text{dBm} + 10\log(22.75) = 24.57 \text{ dBm} > 24\text{dBm}$

### 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	12.882	11.10	17	PASS
40	5200	12.474	10.96	17	PASS
48	5240	12.162	10.85	17	PASS
52	5260	12.618	11.01	24	PASS
60	5300	12.388	10.93	24	PASS
64	5320	12.134	10.84	24	PASS
100	5500	<b>14.488</b>	11.61	24	PASS
116	5580	13.900	11.43	24	PASS
140	5700	<b>14.488</b>	11.61	24	PASS

**NOTE:**

**For 5180~5240MHz:**

1.  $4\text{dBm} + 10\log(24.82) = 17.95\text{ dBm} > 17\text{dBm}$
2.  $4\text{dBm} + 10\log(25.49) = 18.06\text{ dBm} > 17\text{dBm}$
3.  $4\text{dBm} + 10\log(23.10) = 17.64\text{ dBm} > 17\text{dBm}$

**For 5260~5700MHz:**

1.  $11\text{dBm} + 10\log(22.88) = 24.59\text{ dBm} > 24\text{dBm}$
2.  $11\text{dBm} + 10\log(23.24) = 24.66\text{ dBm} > 24\text{dBm}$
3.  $11\text{dBm} + 10\log(22.80) = 24.58\text{ dBm} > 24\text{dBm}$
4.  $11\text{dBm} + 10\log(22.87) = 24.59\text{ dBm} > 24\text{dBm}$
5.  $11\text{dBm} + 10\log(22.71) = 24.56\text{ dBm} > 24\text{dBm}$
6.  $11\text{dBm} + 10\log(22.67) = 24.55\text{ dBm} > 24\text{dBm}$

**802.11n (40MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	11.588	10.64	17	PASS
46	5230	11.614	10.65	17	PASS
54	5270	10.520	10.22	24	PASS
62	5310	10.495	10.21	24	PASS
102	5510	13.062	11.16	24	PASS
110	5550	13.428	11.28	24	PASS
134	5670	13.646	11.35	24	PASS

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

1.  $4\text{dBm} + 10\log(45.52) = 20.58\text{ dBm} > 17\text{dBm}$
2.  $4\text{dBm} + 10\log(45.29) = 20.56\text{ dBm} > 17\text{dBm}$

**For 5270~5670MHz:**

1.  $11\text{dBm} + 10\log(45.80) = 27.61\text{ dBm} > 24\text{dBm}$
2.  $11\text{dBm} + 10\log(50.26) = 28.01\text{ dBm} > 24\text{dBm}$
3.  $11\text{dBm} + 10\log(44.81) = 27.51\text{ dBm} > 24\text{dBm}$
4.  $11\text{dBm} + 10\log(45.40) = 27.57\text{ dBm} > 24\text{dBm}$
5.  $11\text{dBm} + 10\log(45.97) = 27.62\text{ dBm} > 24\text{dBm}$

**802.11ac (80MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	12.417	10.94	17	PASS
58	5290	12.274	10.89	24	PASS
106	5530	11.912	10.76	24	PASS

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

1.  $4\text{dBm} + 10\log(85.20) = 23.30\text{ dBm} > 17\text{dBm}$

**For 5260~5700MHz:**

1.  $11\text{dBm} + 10\log(85.19) = 30.30\text{ dBm} > 24\text{dBm}$
2.  $11\text{dBm} + 10\log(84.35) = 30.26\text{ dBm} > 24\text{dBm}$

**26dB BANDWIDTH:**

**802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	24.26	PASS
40	5200	25.58	PASS
48	5240	25.59	PASS
52	5260	23.24	PASS
60	5300	23.01	PASS
64	5320	24.86	PASS
100	5500	22.32	PASS
116	5580	22.46	PASS
140	5700	22.75	PASS

**802.11n (20MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	24.82	PASS
40	5200	25.49	PASS
48	5240	23.10	PASS
52	5260	22.88	PASS
60	5300	23.24	PASS
64	5320	22.80	PASS
100	5500	22.87	PASS
116	5580	22.71	PASS
140	5700	22.67	PASS



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**802.11n (40MHz)**

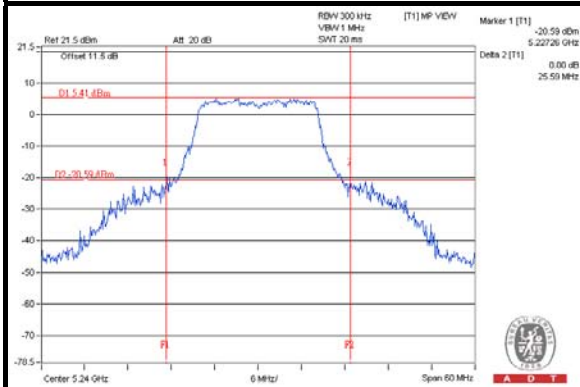
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	45.52	PASS
46	5230	45.29	PASS
54	5270	45.80	PASS
62	5310	50.26	PASS
102	5510	44.81	PASS
110	5550	45.40	PASS
134	5670	45.97	PASS

**802.11ac (80MHz)**

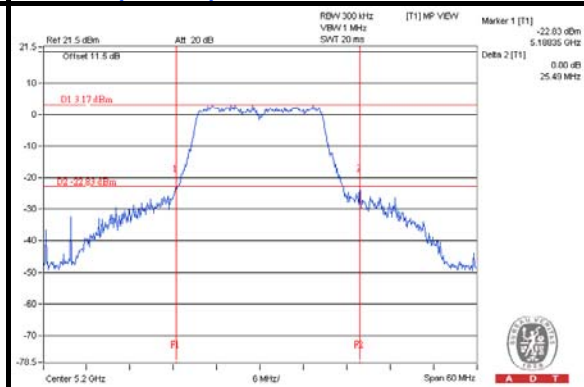
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
42	5210	85.20	PASS
58	5290	85.19	PASS
106	5530	84.35	PASS

**SPECTRUM PLOT OF WORST VALUE**

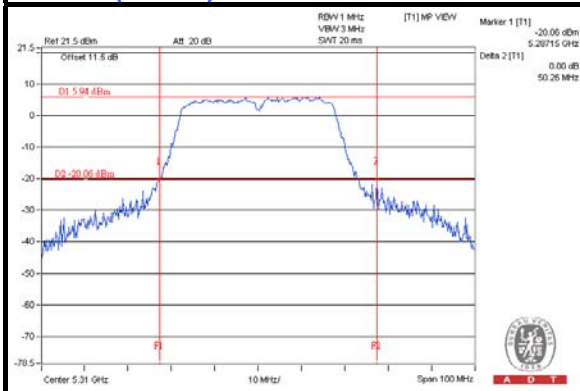
**802.11a**



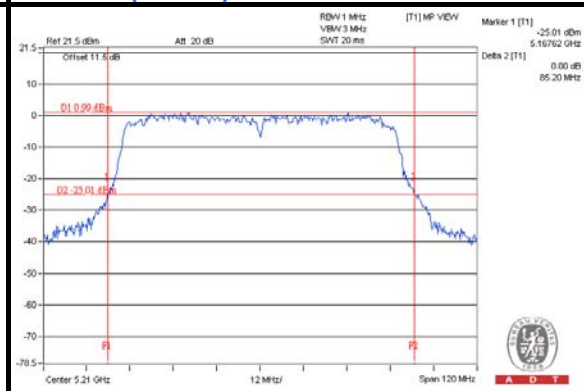
**802.11n (20MHz)**



**802.11n (40MHz)**



**802.11ac (80MHz)**

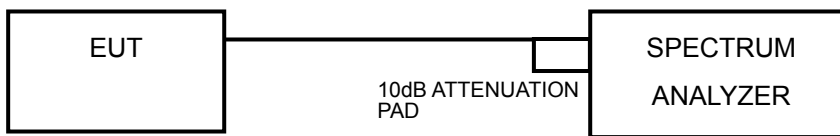


#### 4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

##### 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, 802.11n (20MHz), 802.11n (40MHz):**

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

##### **802.11ac (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	0.96	4	PASS
40	5200	-0.21	4	PASS
48	5240	0.05	4	PASS
52	5260	0.22	11	PASS
60	5300	0.35	11	PASS
64	5320	0.39	11	PASS
100	5500	0.89	11	PASS
116	5580	1.13	11	PASS
140	5700	0.48	11	PASS

##### 802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	-1.24	4	PASS
40	5200	-1.82	4	PASS
48	5240	-2.31	4	PASS
52	5260	-2.07	11	PASS
60	5300	-1.28	11	PASS
64	5320	-2.20	11	PASS
100	5500	0.30	11	PASS
116	5580	-0.43	11	PASS
140	5700	-1.53	11	PASS

##### 802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-4.81	4	PASS
46	5230	-4.87	4	PASS
54	5270	-5.45	11	PASS
62	5310	-4.98	11	PASS
102	5510	-2.66	11	PASS
110	5550	-2.71	11	PASS
134	5670	-3.45	11	PASS



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### 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	-9.56	0.19	-9.37	4	PASS
58	5290	-9.70	0.19	-9.51	11	PASS
106	5530	-7.93	0.19	-7.74	11	PASS

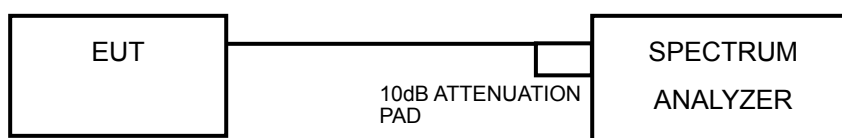
**NOTE:** Refer to section 3.3 for duty cycle spectrum plot.

## 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

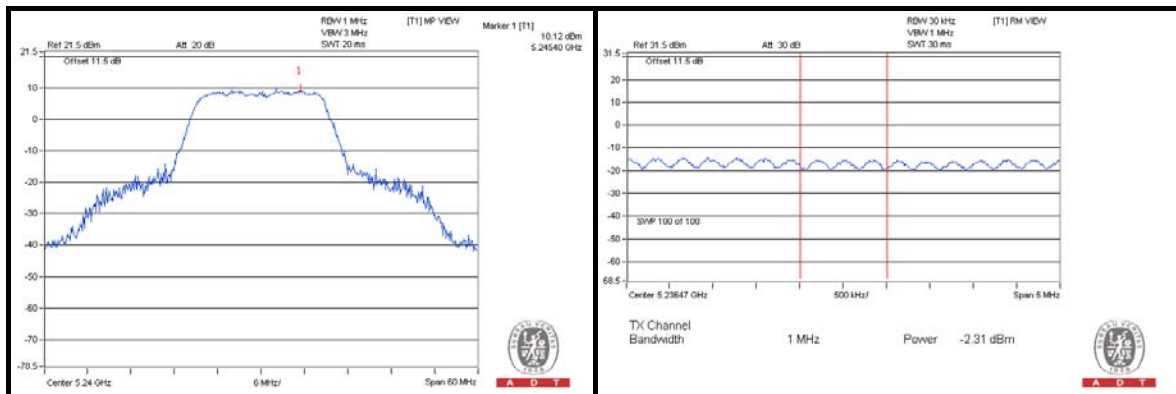
Same as 4.2.6



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### 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	5300	12.14	0.35	0.35	11.79	13	PASS
	QPSK		12.64	0.71	0.71	11.93	13	PASS
	16QAM		11.97	0.05	0.16	11.81	13	PASS
	64QAM		10.87	-0.26	-0.06	10.93	13	PASS
802.11n (20MHz)	BPSK	5240	10.12	-2.31	-2.31	12.43	13	PASS
	QPSK		9.45	-1.27	-1.27	10.72	13	PASS
	16QAM		10.08	-1.12	-1.00	11.08	13	PASS
	64QAM		9.90	-0.93	-0.73	10.63	13	PASS
802.11n (40MHz)	BPSK	5550	9.29	-2.71	-2.71	12.00	13	PASS
	QPSK		8.81	-2.67	-2.53	11.34	13	PASS
	16QAM		8.91	-3.01	-2.78	11.69	13	PASS
	64QAM		8.93	-2.57	-2.23	11.16	13	PASS
802.11ac (80MHz)	BPSK	5290	1.66	-9.56	-9.37	11.17	13	PASS
	QPSK		3.52	-6.21	-5.92	9.44	13	PASS
	16QAM		4.47	-5.86	-5.46	9.93	13	PASS
	64QAM		4.31	-6.78	-6.25	10.56	13	PASS
	256QAM		3.82	-6.20	-5.70	9.52	13	PASS

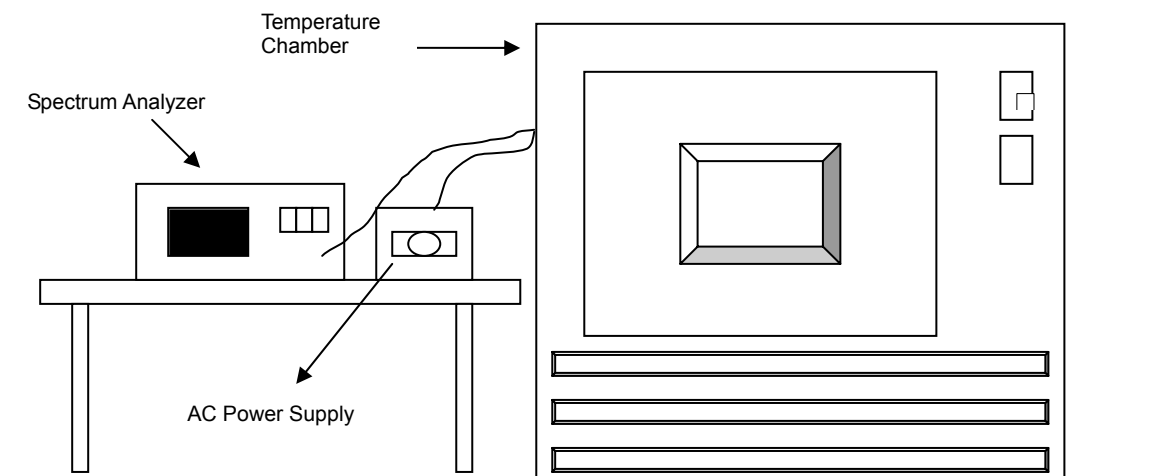


## 4.6 FREQUENCY STABILITY

### 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	5320.0264	0.00050	5320.0248	0.00047	5320.02	0.00038	5320.0274	0.00052
40	120	5319.9857	-0.00027	5319.9837	-0.00031	5319.9867	-0.00025	5319.9841	-0.00030
30	120	5320.015	0.00028	5320.0195	0.00037	5320.0209	0.00039	5320.0169	0.00032
20	120	5319.9975	-0.00005	5320.0001	0.00000	5319.9997	-0.00001	5319.999	-0.00002
10	120	5319.9856	-0.00027	5319.9925	-0.00014	5319.9909	-0.00017	5319.9894	-0.00020
0	120	5320.0121	0.00023	5320.0136	0.00026	5320.0166	0.00031	5320.0196	0.00037
-10	120	5319.9812	-0.00035	5319.9876	-0.00023	5319.9843	-0.00030	5319.9845	-0.00029
-20	120	5319.9872	-0.00024	5319.9794	-0.00039	5319.9834	-0.00031	5319.9893	-0.00020
-30	120	5320.0272	0.00051	5320.0256	0.00048	5320.0239	0.00045	5320.0242	0.00045

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5200MHz									
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	5319.998	-0.00004	5319.9992	-0.00002	5320.0001	0.00000	5319.9996	-0.00001
	120	5319.9975	-0.00005	5320.0001	0.00000	5319.9997	-0.00001	5319.999	-0.00002
	102	5319.9985	-0.00003	5320.001	0.00002	5319.9999	0.00000	5319.9985	-0.00003



## 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:

**Linko EMC/RF Lab:**

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Fax: 886-2-26051924

**Hsin Chu EMC/RF Lab:**

Tel: 886-3-5935343

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**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---**