



# FCC TEST REPORT (15.247)

**REPORT NO.:** RF120621C20-4

**MODEL NO.:** PL83200

**FCC ID:** NM8PL83200

**RECEIVED:** Jun. 21, 2012

**TESTED:** Jul. 19 ~ Aug. 28, 2012

**ISSUED:** Sep. 04, 2012

**APPLICANT:** HTC Corporation

**ADDRESS:** 23, Xinghua Rd., Taoyuan 330, Taiwan, R.O.C.

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

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**TEST LOCATION:** No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei  
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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120621C20-4	Original release	Sep. 04, 2012



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## 1. CERTIFICATION

**PRODUCT:** Smartphone  
**MODEL NO.:** PL83200  
**BRAND:** HTC  
**APPLICANT:** HTC Corporation  
**TESTED:** Jul. 19 ~ Aug. 28, 2012  
**TEST SAMPLE:** Production Unit  
**STANDARDS:** **FCC Part 15, Subpart C (Section 15.247)**  
ANSI C63.10-2009

The above equipment (model: PL83200) 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** : Ivonne Wu , **DATE** : Sep. 04, 2012  
Ivonne Wu / Senior Specialist

**APPROVED BY** : Gary Chang , **DATE** : Sep. 04, 2012  
Gary Chang / Technical Manager



## 2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -4.86dB at 13.55859MHz.
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.39dB at 3836MHz.
15.247(d)	Band Edge Measurement	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

### 2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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

### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>EUT</b>	Smartphone
<b>MODEL NO.</b>	PL83200
<b>POWER SUPPLY</b>	5.0Vdc (adapter or host equipment) 3.8Vdc (Li-ion battery)
<b>MODULATION TYPE</b>	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
<b>MODULATION TECHNOLOGY</b>	DSSS, OFDM
<b>TRANSFER RATE</b>	802.11b: 11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 135.0Mbps
<b>OPERATING FREQUENCY</b>	<b>2.4GHz:</b> 2412 ~ 2462MHz <b>5.0GHz:</b> 5745 ~ 5805MHz
<b>NUMBER OF CHANNEL</b>	<b>2.4GHz:</b> 11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz) <b>5.0GHz:</b> 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
<b>OUTPUT POWER</b>	167.109mW for 2412 ~ 2462MHz 178.238mW for 5745 ~ 5805MHz
<b>ANTENNA TYPE</b>	<b>2.4GHz:</b> PIFA antenna with -2dBi gain <b>5.0GHz:</b> PIFA antenna with -2dBi gain
<b>ANTENNA CONNECTOR</b>	NA
<b>DATA CABLE</b>	Refer to Note as below
<b>I/O PORTS</b>	Refer to user's manual
<b>ACCESSORY DEVICES</b>	Refer to Note as below

**NOTE:**

1. The EUT's accessories list refers to Ext Pho.
2. The EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11a	1TX
802.11n (20MHz)	1TX
802.11n (40MHz)	1TX

3. The above EUT information is declared by the 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 2.4GHz:

11 channels are provided for 802.11b, 802.11g and 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

#### FOR 5.0GHz (5745 ~ 5825MHz):

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745MHz	157	5785MHz
153	5765MHz	161	5805MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755MHz	159	5795MHz



### 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

#### FOR 2.4GHz:

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE≥1G**: Radiated Emission above 1GHz      **RE<1G**: Radiated Emission below 1GHz  
**PLC**: Power Line Conducted Emission      **APCM**: Antenna Port Conducted Measurement

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

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

#### 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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (40MHz)	3 to 9	9	OFDM	BPSK	13.5

#### POWER LINE CONDUCTED EMISSION TEST:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (40MHz)	3 to 9	9	OFDM	BPSK	13.5



**BANDEDGE MEASUREMENT:**

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 11	DSSS	DBPSK	1.0
802.11g	1 to 11	1, 11	OFDM	BPSK	6.0
802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	6.5
802.11n (40MHz)	3 to 9	3, 9	OFDM	BPSK	13.5

**ANTENNA PORT CONDUCTED MEASUREMENT:**

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

**TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu
PLC	25deg. C, 65%RH	120Vac, 60Hz	David Huang
APCM	25deg. C, 65%RH	120Vac, 60Hz	Howard Kao



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### FOR 5.0GHz (5745 ~ 5825MHz):

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE $<$ 1G	PLC	APCM	
-	√	√	√	√	-

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

RE $<$ 1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

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

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	149 to 161	149, 157, 161	OFDM	BPSK	6.0
802.11n (20MHz)	149 to 161	149, 157, 161	OFDM	BPSK	6.5
802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	13.5

### **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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (40MHz)	151 to 159	159	OFDM	BPSK	13.5

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (40MHz)	151 to 159	159	OFDM	BPSK	13.5



**BANDEDGE MEASUREMENT:**

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	149 to 161	149, 161	OFDM	BPSK	6.0
802.11n (20MHz)	149 to 161	149, 161	OFDM	BPSK	6.5
802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	13.5

**ANTENNA PORT CONDUCTED MEASUREMENT:**

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	149 to 161	149, 157, 161	OFDM	BPSK	6.0
802.11n (20MHz)	149 to 161	149, 157, 161	OFDM	BPSK	6.5
802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	13.5

**TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu
PLC	25deg. C, 65%RH	120Vac, 60Hz	David Huang
APCM	25deg. C, 65%RH	120Vac, 60Hz	Howard Kao

### 3.3 DESCRIPTION OF SUPPORT UNITS

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

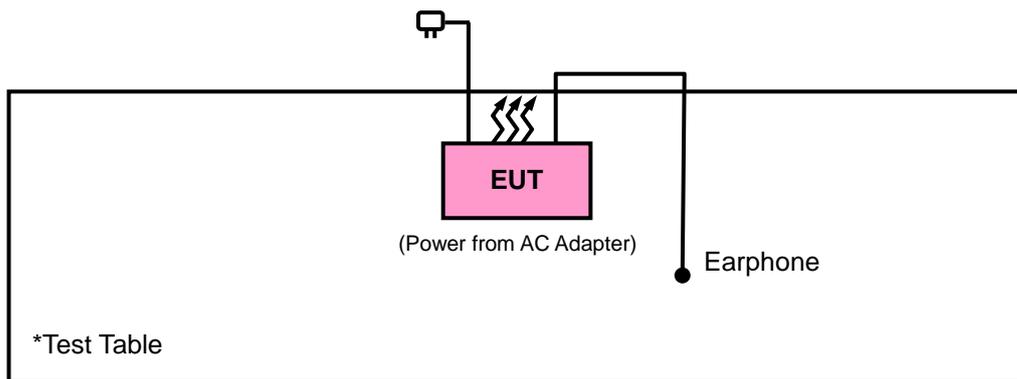
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Earphone	Merry	HS S250	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	1.1m non-shielded cable

**NOTE:**

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

#### 3.3.1 CONFIGURATION OF SYSTEM UNDER TEST



### 3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

**FCC Part 15, Subpart C (15.247)**

ANSI C63.10-2009

KDB 558074 D01 DTS Meas Guidance v01

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 (FOR 2.4GHz BAND)

### 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. Other emissions shall be at least 20dB below the highest level of the desired power:

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.



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#### 4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver Agilent	N9038A	MY51210203	Dec. 22, 2011	Dec. 21, 2012
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 21, 2011	Dec. 20, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Dec. 20, 2011	Dec. 19, 2012
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Dec. 20, 2011	Dec. 19, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 20, 2011	Dec. 19, 2012
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier EMCI	EMC 012645	980115	Dec. 30, 2011	Dec. 29, 2012
Preamplifier EMCI	EMC 330H	980112	Dec. 30, 2011	Dec. 29, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4	Oct. 21, 2011	Oct. 20, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Jan. 02, 2012	Jan. 01, 2013
RF signal cable Worken	RG-213	NA	Jan. 02, 2012	Jan. 01, 2013
Software	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
High Speed Peak Power Meter	ML2495A	0842014	Apr. 28, 2012	Apr. 27, 2013
Power Sensor	MA2411B	0738404	Apr. 28, 2012	Apr. 27, 2013

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
  2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
  3. The test was performed in HwaYa Chamber 9.
  4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
  5. The FCC Site Registration No. is 460141.
  6. The IC Site Registration No. is IC 7450F-4.

#### 4.1.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters 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. Height of receiving antenna 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 lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

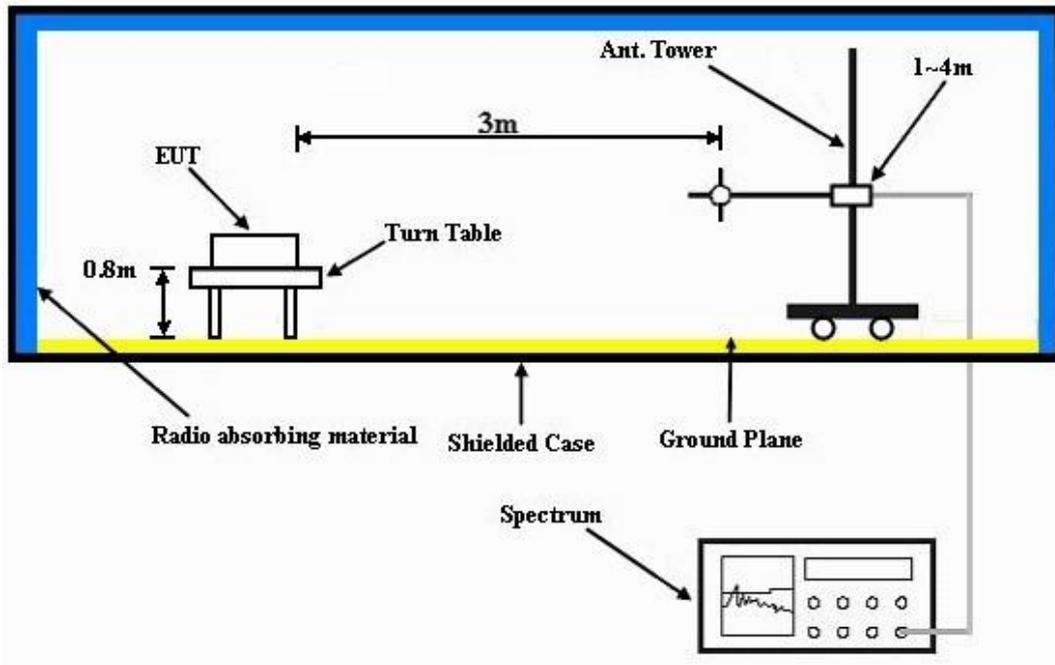
**NOTE:**

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 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

#### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.1.5 TEST SETUP



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

#### 4.1.6 EUT OPERATING CONDITIONS

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



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### 4.1.7 TEST RESULTS

#### ABOVE 1GHz WORST-CASE DATA

##### 802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	44.28	49.67	54	-9.72	27.26	4.87	37.52	100	26	Average
2390	58.02	63.41	74	-15.98	27.26	4.87	37.52	100	26	Peak
2412	102.08	107.42			27.31	4.87	37.52	100	26	Average
2412	105.23	110.57			27.31	4.87	37.52	100	26	Peak
2483.5	38.4	43.3	54	-15.6	27.5	4.92	37.32	100	26	Average
2483.5	56.44	61.34	74	-17.56	27.5	4.92	37.32	100	26	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	42.65	48.04	54	-11.35	27.26	4.87	37.52	100	270	Average
2390	56.42	61.81	74	-17.58	27.26	4.87	37.52	100	270	Peak
2412	101.15	106.49			27.31	4.87	37.52	100	270	Average
2412	104.4	109.74			27.31	4.87	37.52	100	270	Peak
2483.5	40.42	45.32	54	-13.58	27.5	4.92	37.32	100	270	Average
2483.5	56.73	61.63	74	-17.27	27.5	4.92	37.32	100	270	Peak

#### REMARKS:

- 2412MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	41.74	47.13	54	-12.26	27.26	4.87	37.52	100	360	Average
2390	56.25	61.64	74	-17.75	27.26	4.87	37.52	100	360	Peak
2437	102.03	107.2			27.4	4.89	37.46	100	360	Average
2437	105.19	110.36			27.4	4.89	37.46	100	360	Peak
2483.5	42.42	47.32	54	-11.58	27.5	4.92	37.32	100	360	Average
2483.5	56.11	61.01	74	-17.89	27.5	4.92	37.32	100	360	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	41.73	47.12	54	-12.27	27.26	4.87	37.52	100	269	Average
2390	54.62	60.01	74	-19.38	27.26	4.87	37.52	100	269	Peak
2437	102.43	107.6			27.4	4.89	37.46	100	269	Average
2437	105.66	110.83			27.4	4.89	37.46	100	269	Peak
2483.5	42.89	47.79	54	-11.11	27.5	4.92	37.32	100	269	Average
2483.5	56.08	60.98	74	-17.92	27.5	4.92	37.32	100	269	Peak

**REMARKS:**

- 2437MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	39.26	44.65	54	-14.74	27.26	4.87	37.52	117	189	Average
2390	55.37	60.76	74	-18.63	27.26	4.87	37.52	117	189	Peak
2462	103.77	108.8			27.45	4.91	37.39	117	189	Average
2462	106.8	111.83			27.45	4.91	37.39	117	189	Peak
2483.5	45.56	50.46	54	-8.44	27.5	4.92	37.32	117	189	Average
2483.5	57.63	62.53	74	-16.37	27.5	4.92	37.32	117	189	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	39.76	45.15	54	-14.24	27.26	4.87	37.52	100	270	Average
2390	55.03	60.42	74	-18.97	27.26	4.87	37.52	100	270	Peak
2462	105.87	110.9			27.45	4.91	37.39	100	270	Average
2462	108.93	113.96			27.45	4.91	37.39	100	270	Peak
2483.5	47.89	52.79	54	-6.11	27.5	4.92	37.32	100	270	Average
2483.5	59.18	64.08	74	-14.82	27.5	4.92	37.32	100	270	Peak

**REMARKS:**

- 2462MHz: Fundamental frequency.



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802.11g

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	45.93	51.32	54	-8.07	27.26	4.87	37.52	100	360	Average
2390	60.17	65.56	74	-13.83	27.26	4.87	37.52	100	360	Peak
2412	92.3	97.64			27.31	4.87	37.52	100	360	Average
2412	101.69	107.03			27.31	4.87	37.52	100	360	Peak
2483.5	38.24	43.14	54	-15.76	27.5	4.92	37.32	100	360	Average
2483.5	55.58	60.48	74	-18.42	27.5	4.92	37.32	100	360	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	42.69	48.08	54	-11.31	27.26	4.87	37.52	100	240	Average
2390	59.11	64.5	74	-14.89	27.26	4.87	37.52	100	240	Peak
2412	89.29	94.63			27.31	4.87	37.52	100	240	Average
2412	98.84	104.18			27.31	4.87	37.52	100	240	Peak
2483.5	38.26	43.16	54	-15.74	27.5	4.92	37.32	100	240	Average
2483.5	54.78	59.68	74	-19.22	27.5	4.92	37.32	100	240	Peak

REMARKS:

- 2412MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	38.6	43.99	54	-15.4	27.26	4.87	37.52	100	0	Average
2390	55.13	60.52	74	-18.87	27.26	4.87	37.52	100	0	Peak
2437	92.7	97.87			27.4	4.89	37.46	100	0	Average
2437	102.01	107.18			27.4	4.89	37.46	100	0	Peak
2483.5	38.85	43.75	54	-15.15	27.5	4.92	37.32	100	0	Average
2483.5	56.29	61.19	74	-17.71	27.5	4.92	37.32	100	0	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	41.69	47.08	54	-12.31	27.26	4.87	37.52	100	270	Average
2390	54.89	60.28	74	-19.11	27.26	4.87	37.52	100	270	Peak
2437	91.51	96.68			27.4	4.89	37.46	100	270	Average
2437	100.71	105.88			27.4	4.89	37.46	100	270	Peak
2483.5	39.57	44.47	54	-14.43	27.5	4.92	37.32	100	270	Average
2483.5	55.84	60.74	74	-18.16	27.5	4.92	37.32	100	270	Peak

**REMARKS:**

- 2437MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	39.09	44.48	54	-14.91	27.26	4.87	37.52	100	2	Average
2390	54.68	60.07	74	-19.32	27.26	4.87	37.52	100	2	Peak
2462	92.1	97.13			27.45	4.91	37.39	100	2	Average
2462	102.06	107.09			27.45	4.91	37.39	100	2	Peak
2483.5	44.66	49.56	54	-9.34	27.5	4.92	37.32	100	2	Average
2483.5	63.02	67.92	74	-10.98	27.5	4.92	37.32	100	2	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	39.26	44.65	54	-14.74	27.26	4.87	37.52	100	271	Average
2390	54.97	60.36	74	-19.03	27.26	4.87	37.52	100	271	Peak
2462	92.89	97.92			27.45	4.91	37.39	100	271	Average
2462	103.03	108.06			27.45	4.91	37.39	100	271	Peak
2483.5	46.57	51.47	54	-7.43	27.5	4.92	37.32	100	271	Average
2483.5	64.68	69.58	74	-9.32	27.5	4.92	37.32	100	271	Peak

**REMARKS:**

- 2462MHz: Fundamental frequency.



A D T

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	45.19	50.58	54	-8.81	27.26	4.87	37.52	120	0	Average
2390	58.88	64.27	74	-15.12	27.26	4.87	37.52	120	0	Peak
2412	91.36	96.7			27.31	4.87	37.52	120	0	Average
2412	100.62	105.96			27.31	4.87	37.52	120	0	Peak
2483.5	38.59	43.49	54	-15.41	27.5	4.92	37.32	120	0	Average
2483.5	56.08	60.98	74	-17.92	27.5	4.92	37.32	120	0	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	44.7	50.09	54	-9.3	27.26	4.87	37.52	100	270	Average
2390	59.15	64.54	74	-14.85	27.26	4.87	37.52	100	270	Peak
2412	90.5	95.84			27.31	4.87	37.52	100	270	Average
2412	99.83	105.17			27.31	4.87	37.52	100	270	Peak
2483.5	38.62	43.52	54	-15.38	27.5	4.92	37.32	100	270	Average
2483.5	54.97	59.87	74	-19.03	27.5	4.92	37.32	100	270	Peak

REMARKS:

- 2412MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	39	44.39	54	-15	27.26	4.87	37.52	119	0	Average
2390	55.07	60.46	74	-18.93	27.26	4.87	37.52	119	0	Peak
2437	91.69	96.86			27.4	4.89	37.46	119	0	Average
2437	101.69	106.86			27.4	4.89	37.46	119	0	Peak
2483.5	39.01	43.91	54	-14.99	27.5	4.92	37.32	119	0	Average
2483.5	56.67	61.57	74	-17.33	27.5	4.92	37.32	119	0	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	38.21	43.6	54	-15.79	27.26	4.87	37.52	100	270	Average
2390	55.26	60.65	74	-18.74	27.26	4.87	37.52	100	270	Peak
2437	90.72	95.89			27.4	4.89	37.46	100	270	Average
2437	100.04	105.21			27.4	4.89	37.46	100	270	Peak
2483.5	39.35	44.25	54	-14.65	27.5	4.92	37.32	100	270	Average
2483.5	54.95	59.85	74	-19.05	27.5	4.92	37.32	100	270	Peak

**REMARKS:**

- 2437MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	37.76	43.15	54	-16.24	27.26	4.87	37.52	118	0	Average
2390	54.41	59.8	74	-19.59	27.26	4.87	37.52	118	0	Peak
2462	91.49	96.52			27.45	4.91	37.39	118	0	Average
2462	101.33	106.36			27.45	4.91	37.39	118	0	Peak
2483.5	45.19	50.09	54	-8.81	27.5	4.92	37.32	118	0	Average
2483.5	58.83	63.73	74	-15.17	27.5	4.92	37.32	118	0	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	37.64	43.03	54	-16.36	27.26	4.87	37.52	100	268	Average
2390	56.09	61.48	74	-17.91	27.26	4.87	37.52	100	268	Peak
2462	91.66	96.69			27.45	4.91	37.39	100	268	Average
2462	102.09	107.12			27.45	4.91	37.39	100	268	Peak
2483.5	46.07	50.97	54	-7.93	27.5	4.92	37.32	100	268	Average
2483.5	62.79	67.69	74	-11.21	27.5	4.92	37.32	100	268	Peak

**REMARKS:**

- 2462MHz: Fundamental frequency.



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## 802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2386	53.13	58.52	54	-0.87	27.26	4.85	37.5	100	2	Average
2386	71.71	77.1	74	-2.29	27.26	4.85	37.5	100	2	Peak
2422	88.97	94.19			27.35	4.89	37.46	100	2	Average
2422	99.06	104.28			27.35	4.89	37.46	100	2	Peak
2486	38.69	43.59	54	-15.31	27.5	4.92	37.32	100	2	Average
2486	51.2	56.1	74	-22.8	27.5	4.92	37.32	100	2	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2386	49.55	54.94	54	-4.45	27.26	4.85	37.5	101	271	Average
2386	67.72	73.11	74	-6.28	27.26	4.85	37.5	101	271	Peak
2422	85.87	91.09			27.35	4.89	37.46	101	271	Average
2422	97.65	102.87			27.35	4.89	37.46	101	271	Peak
2486	38.61	43.51	54	-15.39	27.5	4.92	37.32	101	271	Average
2486	50.98	55.88	74	-23.02	27.5	4.92	37.32	101	271	Peak

## REMARKS:

- 2422MHz: Fundamental frequency.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	45.86	51.25	54	-8.14	27.26	4.87	37.52	119	1	Average
2390	61.49	66.88	74	-12.51	27.26	4.87	37.52	119	1	Peak
2437	89.61	94.78			27.4	4.89	37.46	119	1	Average
2437	99.67	104.84			27.4	4.89	37.46	119	1	Peak
2483.5	46.45	51.35	54	-7.55	27.5	4.92	37.32	119	1	Average
2483.5	65.15	70.05	74	-8.85	27.5	4.92	37.32	119	1	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	43.32	48.71	54	-10.68	27.26	4.87	37.52	102	272	2390
2390	58.23	63.62	74	-15.77	27.26	4.87	37.52	102	272	2390
2437	86.37	91.54			27.4	4.89	37.46	102	272	2437
2437	96.33	101.5			27.4	4.89	37.46	102	272	2437
2486	43.41	48.31	54	-10.59	27.5	4.92	37.32	102	272	2486
2486	60.71	65.61	74	-13.29	27.5	4.92	37.32	102	272	2486

**REMARKS:**

- 2437MHz: Fundamental frequency.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1GHz ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	37.76	43.15	54	-16.24	27.26	4.87	37.52	118	357	Average
2390	50.16	55.55	74	-23.84	27.26	4.87	37.52	118	357	Peak
2452	88.41	93.49			27.4	4.91	37.39	118	357	Average
2452	98.61	103.69			27.4	4.91	37.39	118	357	Peak
2488	47.6	52.45	54	-6.4	27.55	4.92	37.32	118	357	Average
2488	69.2	74.05	74	-4.8	27.55	4.92	37.32	118	357	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	35.72	41.11	54	-18.28	27.26	4.87	37.52	100	268	Average
2390	48.76	54.15	74	-25.24	27.26	4.87	37.52	100	268	Peak
2452	84.09	89.17			27.4	4.91	37.39	100	268	Average
2452	94.28	99.36			27.4	4.91	37.39	100	268	Peak
2490	44.02	48.87	54	-9.98	27.55	4.92	37.32	100	268	Average
2490	62.22	67.07	74	-11.78	27.55	4.92	37.32	100	268	Peak

**REMARKS:**

- 1. 2452MHz: Fundamental frequency.



A D T

**BELOW 1GHz WORST-CASE DATA: 802.11n (40MHz)**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
88.59	23.17	45.76	43.5	-20.33	8.27	1.01	31.87	100	159	Peak
124.23	31.47	50.87	43.5	-12.03	11.28	1.21	31.89	100	147	Peak
240.33	29.33	48.26	46	-16.67	11.07	1.79	31.79	100	210	Peak
593.3	24.12	33.77	46	-21.88	19.46	3.07	32.18	100	184	Peak
646.5	25.92	34.56	46	-20.08	20.17	3.23	32.04	100	173	Peak
770.4	26.89	32.76	46	-19.11	21.81	3.62	31.3	100	201	Peak

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
31.89	30.19	48.42	40	-9.81	12.3	0.58	31.11	100	196	Peak
172.56	30.2	49.03	43.5	-13.3	11.47	1.46	31.76	100	154	Peak
246.54	31.73	50.47	46	-14.27	11.32	1.82	31.88	100	149	Peak
308.4	24.99	41.69	46	-21.01	13.15	2.08	31.93	100	237	Peak
423.9	22.05	35.75	46	-23.95	15.81	2.52	32.03	100	320	Peak
737.5	26.26	32.89	46	-19.74	21.34	3.54	31.51	100	334	Peak

## 4.2 CONDUCTED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB $\mu$ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

- NOTE:** 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

### 4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 19, 2011	Nov. 18, 2012
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 29, 2011	Dec. 28, 2012
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 30, 2011	Dec. 29, 2012
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 06, 2012	Jul. 05, 2013
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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

#### 4.2.3 TEST PROCEDURES

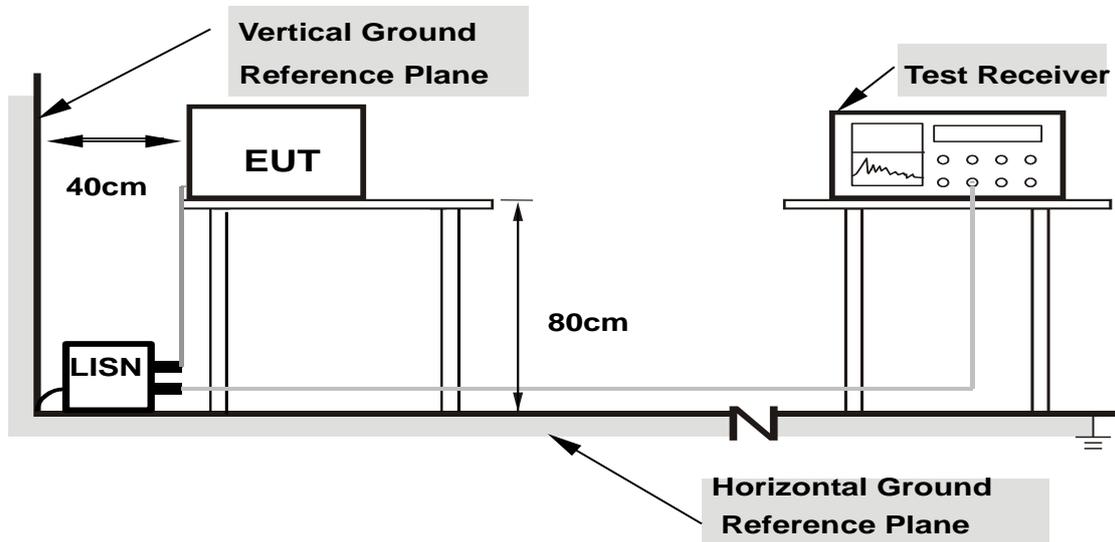
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

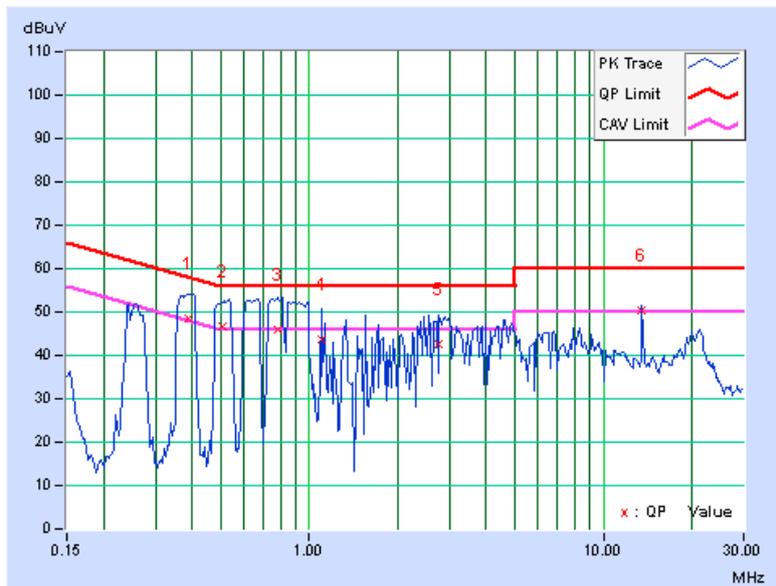
**CONDUCTED WORST-CASE DATA : 802.11g**

<b>PHASE</b>	Line 1	<b>6dB BANDWIDTH</b>	9kHz
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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	0.38828	0.20	48.38	28.55	48.58	28.75	58.10
2	0.50547	0.21	46.61	25.44	46.82	25.65	56.00	46.00	-9.18	-20.35
3	0.78281	0.22	45.73	22.34	45.95	22.56	56.00	46.00	-10.05	-23.44
4	1.10547	0.24	43.33	19.62	43.57	19.86	56.00	46.00	-12.43	-26.14
5	2.76563	0.33	42.26	23.57	42.59	23.90	56.00	46.00	-13.41	-22.10
<b>6</b>	<b>13.55859</b>	<b>0.57</b>	<b>49.87</b>	<b>44.57</b>	<b>50.44</b>	<b>45.14</b>	<b>60.00</b>	<b>50.00</b>	<b>-9.56</b>	<b>-4.86</b>

**REMARKS:**

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

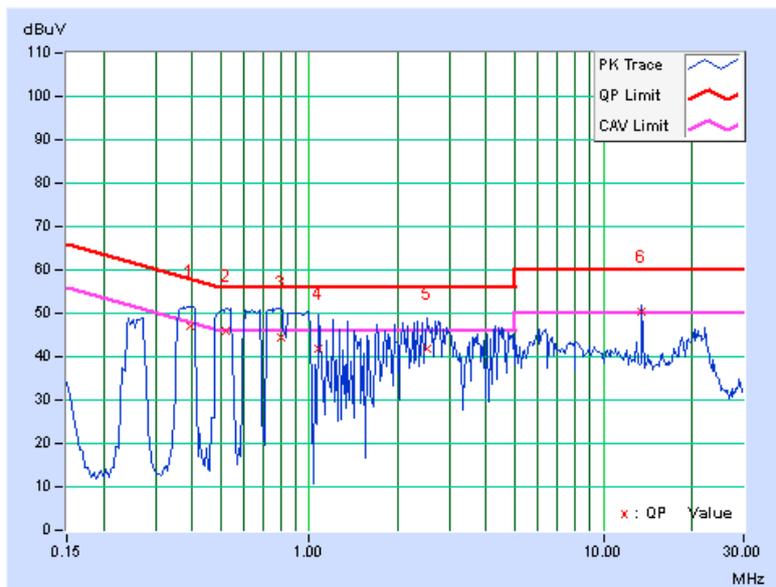


PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.39219	0.18	46.72	26.14	46.90	26.32	58.02
2	0.52109	0.18	45.58	24.35	45.76	24.53	56.00	46.00	-10.24	-21.47
3	0.80234	0.19	44.36	20.52	44.55	20.71	56.00	46.00	-11.45	-25.29
4	1.07031	0.20	41.58	18.00	41.78	18.20	56.00	46.00	-14.22	-27.80
5	2.50781	0.30	41.70	20.48	42.00	20.78	56.00	46.00	-14.00	-25.22
6	13.55859	0.66	49.87	44.43	50.53	45.09	60.00	50.00	-9.47	-4.91

**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.

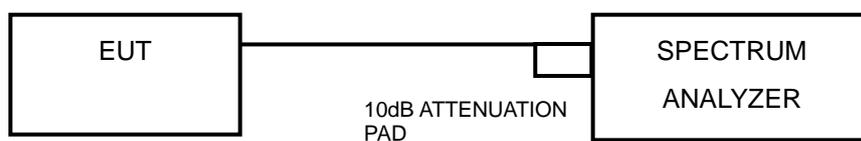


### 4.3 6dB BANDWIDTH MEASUREMENT

#### 4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

#### 4.3.2 TEST SETUP



#### 4.3.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

#### 4.3.4 TEST PROCEDURE

- Set resolution bandwidth (RBW) = approximately 1% of the emission bandwidth
- Set the video bandwidth (VBW)  $\geq 3 \times$  RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

#### 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 lowest, middle and highest channel frequencies individually.

### 4.3.7 TEST RESULTS

#### 802.11b

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	8.09	0.5	PASS
6	2437	8.07	0.5	PASS
11	2462	8.08	0.5	PASS

#### 802.11g

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.80	0.5	PASS
6	2437	16.73	0.5	PASS
11	2462	16.65	0.5	PASS

#### 802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.90	0.5	PASS
6	2437	18.05	0.5	PASS
11	2462	17.84	0.5	PASS

#### 802.11n (40MHz)

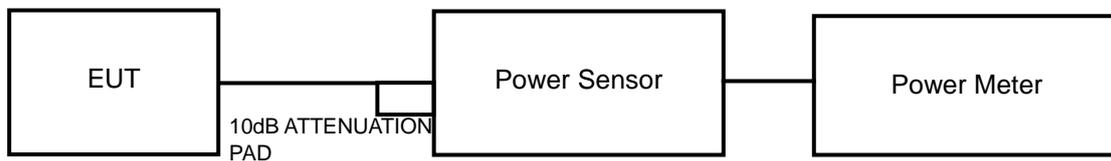
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	37.48	0.5	PASS
6	2437	37.29	0.5	PASS
9	2452	37.11	0.5	PASS

## 4.4 CONDUCTED OUTPUT POWER

### 4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

### 4.4.2 TEST SETUP



### 4.4.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

### 4.4.4 TEST PROCEDURES

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

### 4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

### 4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6.



#### 4.4.7 TEST RESULTS

##### 802.11b

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	108.393	20.35	30	PASS
6	2437	119.950	20.79	30	PASS
11	2462	124.451	20.95	30	PASS

##### 802.11g

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	151.356	21.8	30	PASS
6	2437	161.808	22.09	30	PASS
11	2462	163.682	22.14	30	PASS

##### 802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	130.017	21.14	30	PASS
6	2437	144.877	21.61	30	PASS
11	2462	140.281	21.47	30	PASS

##### 802.11n (40MHz)

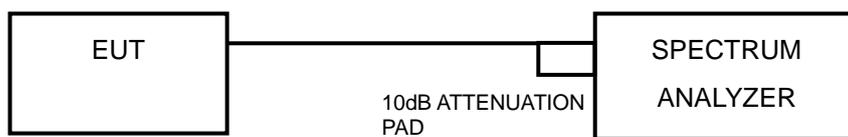
CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
3	2422	147.231	21.68	30	PASS
6	2437	157.036	21.96	30	PASS
9	2452	167.109	22.23	30	PASS

## 4.5 POWER SPECTRAL DENSITY MEASUREMENT

### 4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

### 4.5.2 TEST SETUP



### 4.5.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

### 4.5.4 TEST PROCEDURE

- a. Set the RBW = 100 kHz, VBW = 300 kHz, Detector = peak.
- b. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
- c. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
- d. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{ kHz}/100\text{ kHz})$

### 4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

### 4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

## 4.5.7 TEST RESULTS

### 802.11b

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	10.51	-4.69	8	PASS
6	2437	10.89	-4.31	8	PASS
11	2462	10.89	-4.31	8	PASS

### 802.11g

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	1.74	-13.46	8	PASS
6	2437	2.86	-12.34	8	PASS
11	2462	2.69	-12.51	8	PASS

### 802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	1.22	-13.98	8	PASS
6	2437	1.74	-13.46	8	PASS
11	2462	1.58	-13.62	8	PASS

### 802.11n (40MHz)

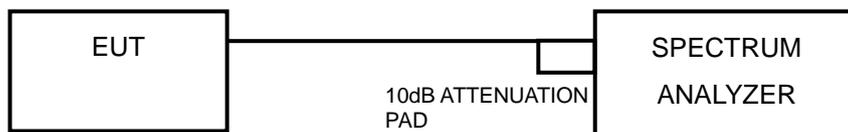
Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-1.28	-16.48	8	PASS
6	2437	-1.16	-16.36	8	PASS
9	2452	-0.89	-16.09	8	PASS

## 4.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT

### 4.6.1 LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT

Below  $-20\text{dB}$  of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

### 4.6.2 TEST SETUP



### 4.6.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

### 4.6.4 TEST PROCEDURE

#### MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW  $\geq$  300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

## MEASUREMENT PROCEDURE OOB

1. Set RBW = 100 kHz.
2. Set VBW  $\geq$  300 kHz.
3. Set span to encompass the spectrum to be examined.
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

### 4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

### 4.6.6 EUT OPERATING CONDITION

Same as Item 4.3.6

### 4.6.7 TEST RESULTS

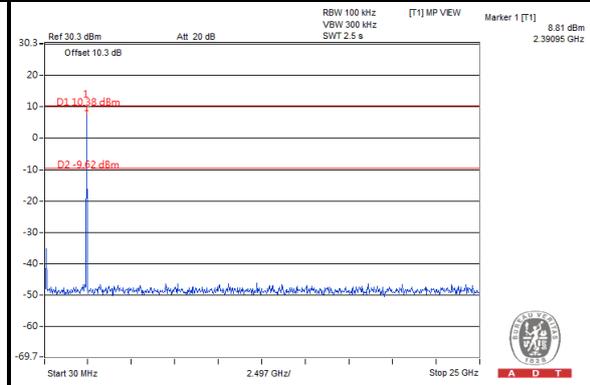
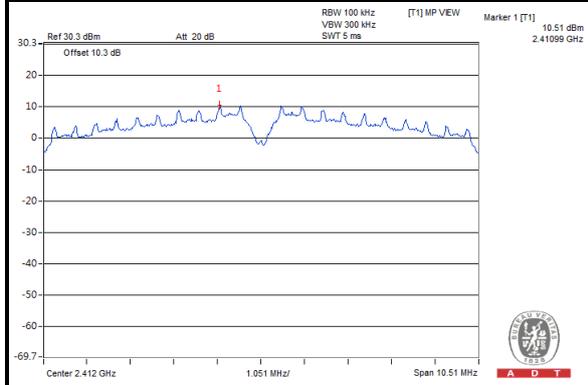
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.



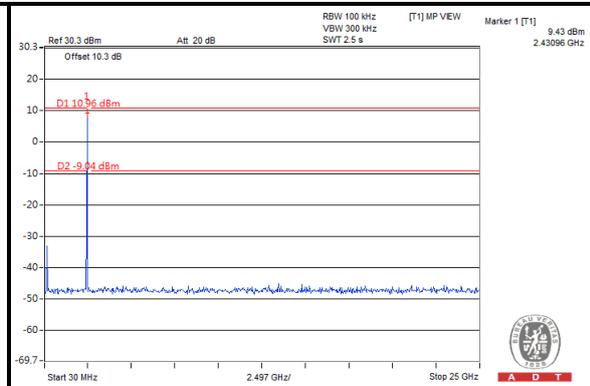
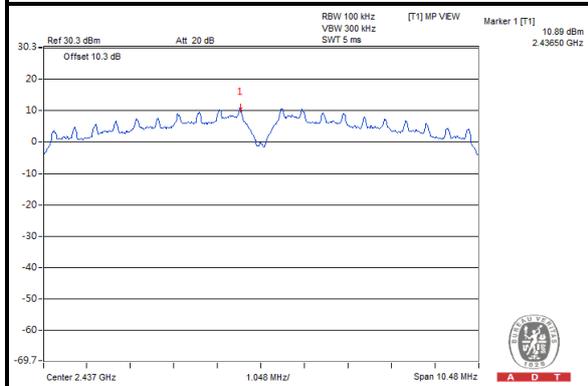
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### 802.11b

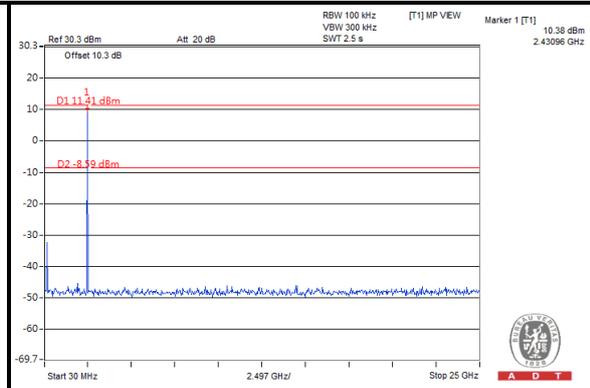
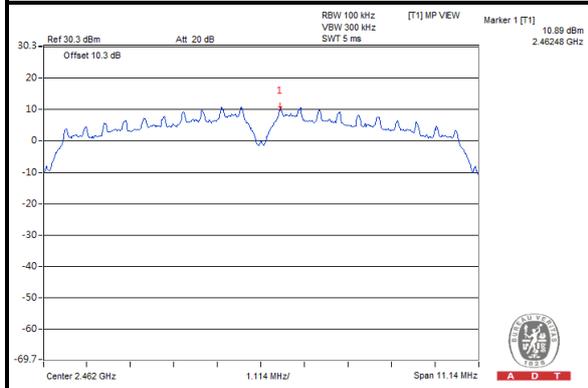
#### CH 1



#### CH 6



#### CH 11

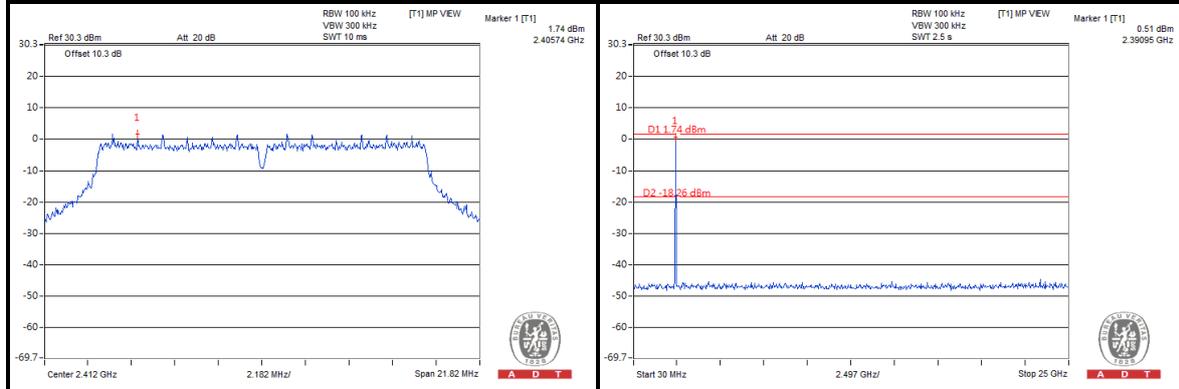




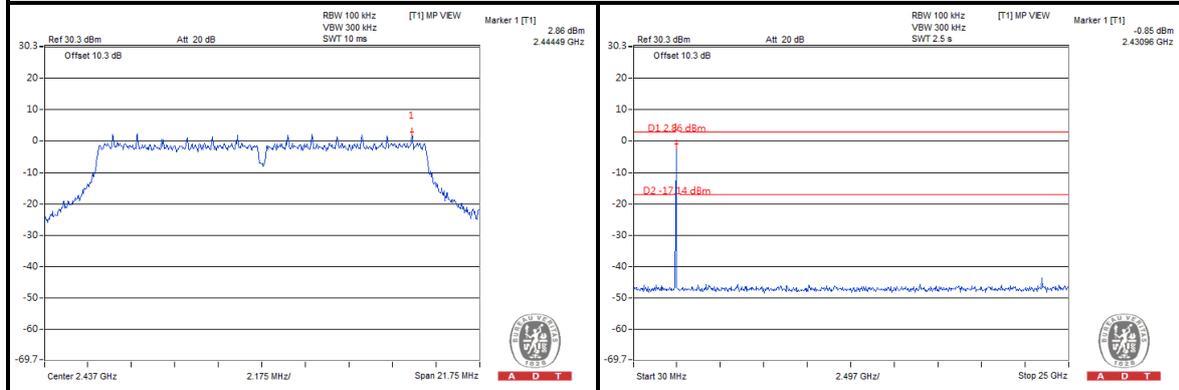
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### 802.11g

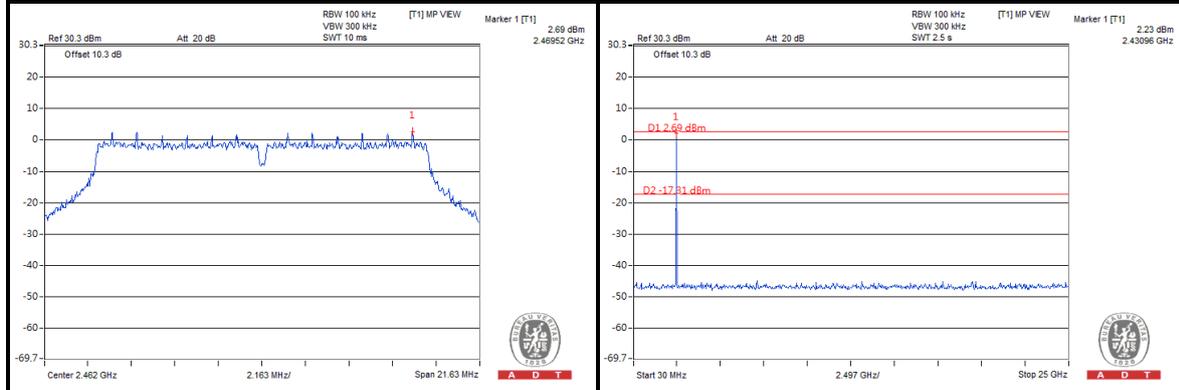
#### CH 1



#### CH 6



#### CH 11

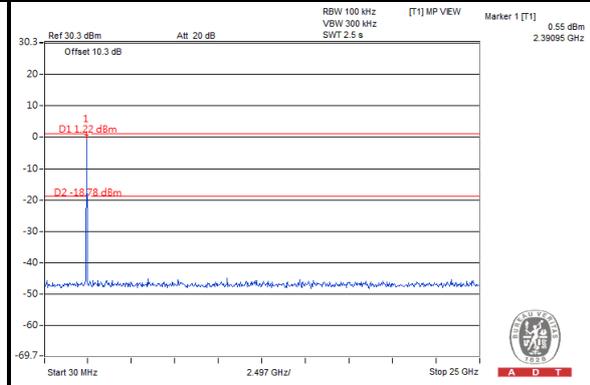
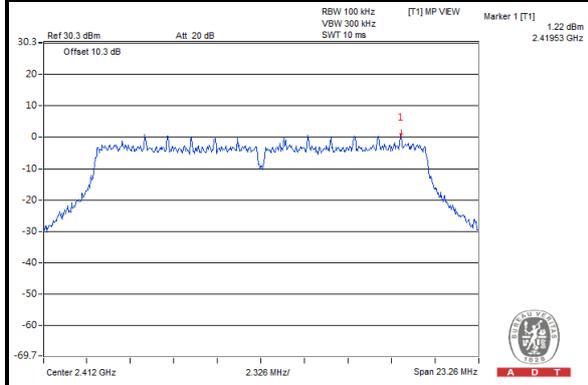




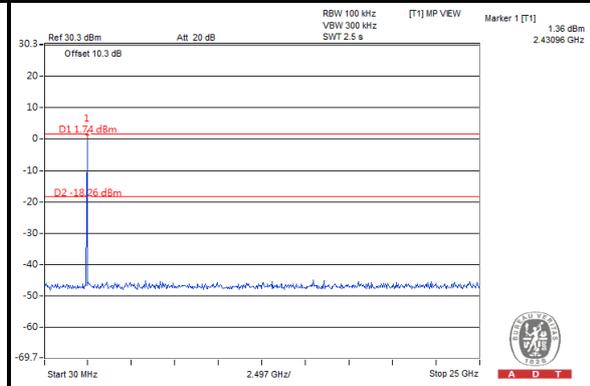
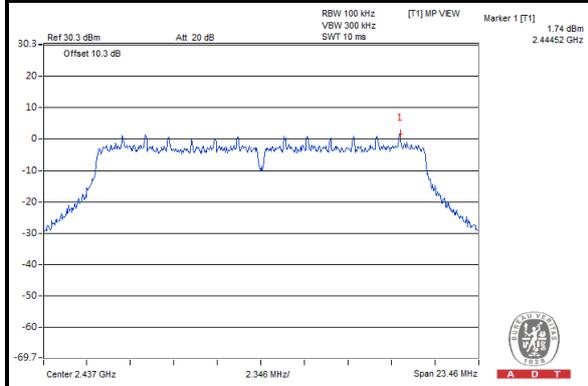
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### 802.11n (20MHz)

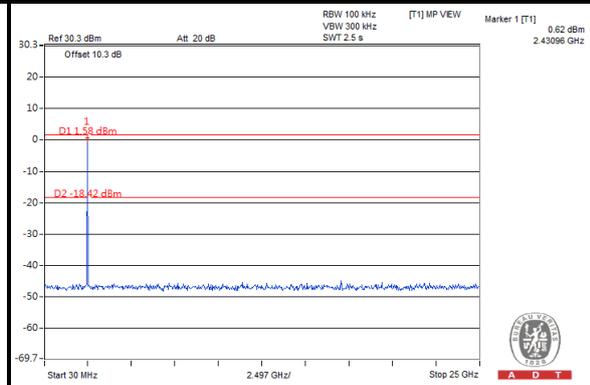
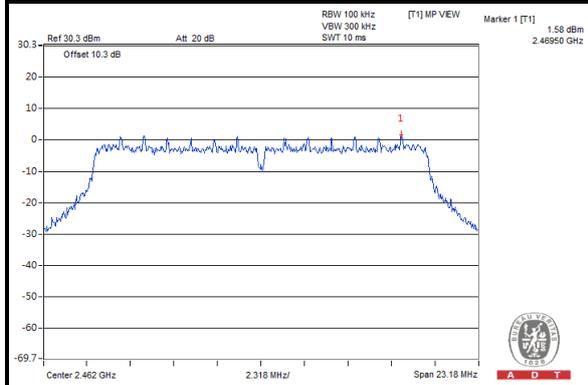
#### CH 1



#### CH 6



#### CH 11

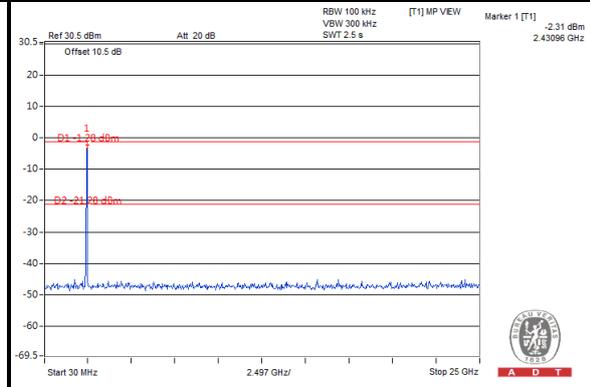
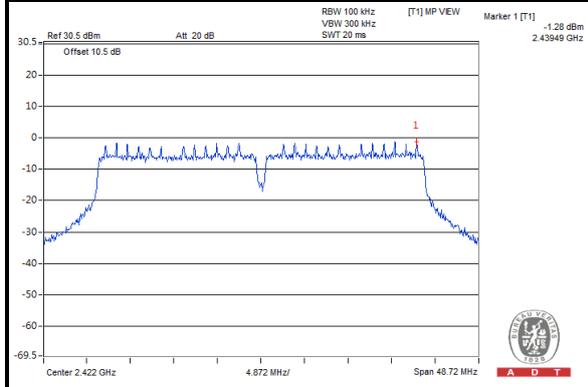




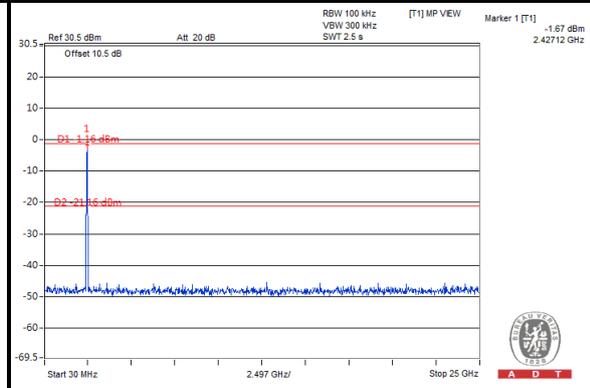
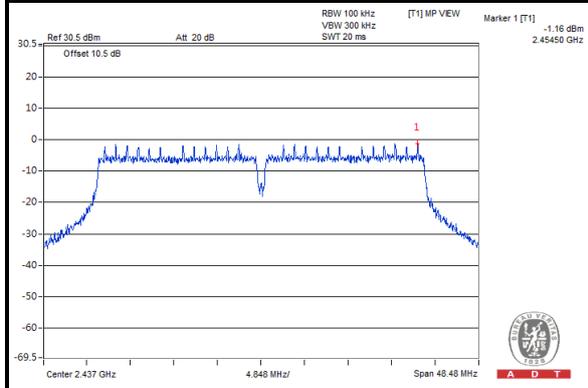
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### 802.11n (40MHz)

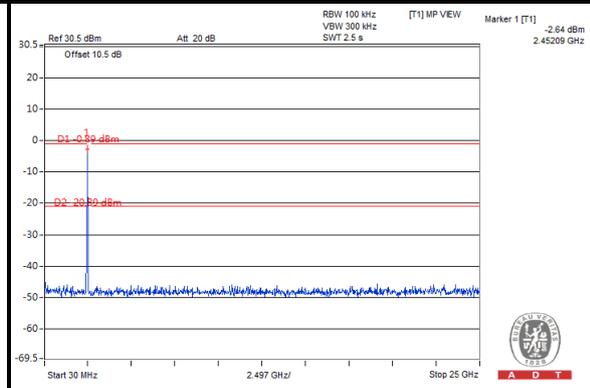
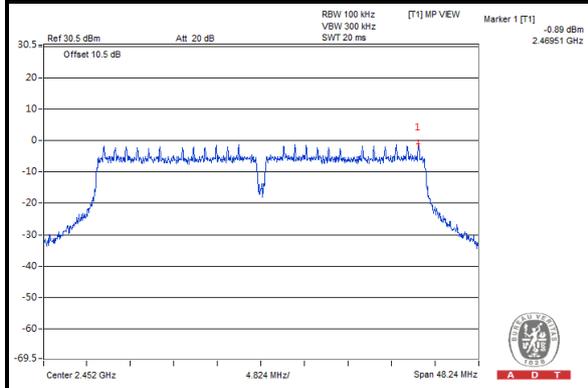
#### CH 1



#### CH 6



#### CH 11



## 5. TEST TYPES AND RESULTS (FOR 5.0GHz BAND)

### 5.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

#### 5.1.1 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. Other emissions shall be at least 20dB below the highest level of the desired power:

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.



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### 5.1.2 TEST INSTRUMENTS

Same as item 4.1.2.

### 5.1.3 TEST PROCEDURES

Same as item 4.1.3.

### 5.1.4 DEVIATION FROM TEST STANDARD

No deviation.

### 5.1.5 TEST SETUP

Same as item 4.1.5.

### 5.1.6 EUT OPERATING CONDITIONS

Same as 4.1.6.



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### 5.1.7 TEST RESULTS

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
3830	50.3	51.61	54	-3.7	29.55	6.19	37.05	100	282	Average
3830	52.86	54.17	74	-21.14	29.55	6.19	37.05	100	282	Peak
5725	65.18	62.54	76.01	-10.83	32.36	7.71	37.43	100	130	Average
5725	80.22	77.58	84.6	-4.38	32.36	7.71	37.43	100	130	Peak
5745	96.01	93.36			32.38	7.74	37.47	100	130	Average
5745	104.6	101.95			32.38	7.74	37.47	100	130	Peak
5825	41.39	38.59	76.01	-34.62	32.51	7.82	37.53	100	130	Average
5825	52.57	49.77	84.6	-32.03	32.51	7.82	37.53	100	130	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
3828	48.05	49.36	54	-5.95	29.55	6.19	37.05	100	88	Average
3828	52.13	53.44	74	-21.87	29.55	6.19	37.05	100	88	Peak
5725	65.93	63.29	76.74	-10.81	32.36	7.71	37.43	112	198	Average
5725	82.83	80.19	84.99	-2.16	32.36	7.71	37.43	112	198	Peak
5745	96.74	94.09			32.38	7.74	37.47	112	198	Average
5745	104.99	102.34			32.38	7.74	37.47	112	198	Peak
5825	41.7	38.9	76.74	-35.04	32.51	7.82	37.53	112	198	Average
5825	53.08	50.28	84.99	-31.91	32.51	7.82	37.53	112	198	Peak

#### REMARKS:

- 5745MHz: Fundamental frequency.
- 5725MHz & 5825MHz: Out of restricted band



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
3856	50.52	51.74	54	-3.48	29.61	6.2	37.03	100	287	Average
3856	53.23	54.45	74	-20.77	29.61	6.2	37.03	100	287	Peak
5725	43.6	40.96	75.99	-32.39	32.36	7.71	37.43	104	38	Average
5725	54.32	51.68	85.39	-31.07	32.36	7.71	37.43	104	38	Peak
5785	95.99	93.3			32.43	7.8	37.54	104	38	Average
5785	105.39	102.7			32.43	7.8	37.54	104	38	Peak
5825	46.57	43.77	75.99	-29.42	32.51	7.82	37.53	104	38	Average
5825	58.5	55.7	85.39	-26.89	32.51	7.82	37.53	104	38	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
3856	49.75	50.97	54	-4.25	29.61	6.2	37.03	100	47	Average
3856	53.55	54.77	74	-20.45	29.61	6.2	37.03	100	47	Peak
5725	43.98	41.34	77.02	-33.04	32.36	7.71	37.43	112	193	Average
5725	55.47	52.83	86.86	-31.39	32.36	7.71	37.43	112	193	Peak
5785	97.02	94.33			32.43	7.8	37.54	112	193	Average
5785	106.86	104.17			32.43	7.8	37.54	112	193	Peak
5825	47.62	44.82	77.02	-29.4	32.51	7.82	37.53	112	193	Average
5825	60.37	57.57	86.86	-26.49	32.51	7.82	37.53	112	193	Peak

**REMARKS:**

- 5785MHz: Fundamental frequency.
- 5725MHz & 5825MHz: Out of restricted band



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 161	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
3872	47.49	48.66	54	-6.51	29.64	6.21	37.02	100	311	Average
3872	51.85	53.02	74	-22.15	29.64	6.21	37.02	100	311	Peak
5725	43.21	40.57	77.89	-34.68	32.36	7.71	37.43	104	37	Average
5725	54.56	51.92	87.16	-32.6	32.36	7.71	37.43	104	37	Peak
5805	97.89	95.15			32.48	7.8	37.54	104	37	Average
5805	107.16	104.42			32.48	7.8	37.54	104	37	Peak
5825	67.1	64.3	77.89	-10.79	32.51	7.82	37.53	104	37	Average
5825	86.71	83.91	87.16	-0.45	32.51	7.82	37.53	104	37	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
3872	49.1	50.27	54	-4.9	29.64	6.21	37.02	102	72	Average
3872	51.62	52.79	74	-22.38	29.64	6.21	37.02	102	72	Peak
5725	42.8	40.16	78.34	-35.54	32.36	7.71	37.43	100	189	Average
5725	53.66	51.02	87.23	-33.57	32.36	7.71	37.43	100	189	Peak
5805	98.34	95.6			32.48	7.8	37.54	100	189	Average
5805	107.23	104.49			32.48	7.8	37.54	100	189	Peak
5825	67.75	64.95	78.34	-10.59	32.51	7.82	37.53	100	189	Average
5825	86.2	83.4	87.23	-1.03	32.51	7.82	37.53	100	189	Peak

**REMARKS:**

- 5805MHz: Fundamental frequency.
- 5725MHz & 5825MHz: Out of restricted band



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802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
3828	50.89	52.2	54	-3.11	29.55	6.19	37.05	100	308	Average
3828	53.73	55.04	74	-20.27	29.55	6.19	37.05	100	308	Peak
5725	69.21	66.57	77	-7.79	32.36	7.71	37.43	104	41	Average
5725	83.23	80.59	85.89	-2.66	32.36	7.71	37.43	104	41	Peak
5745	97	94.35			32.38	7.74	37.47	104	41	Average
5745	105.89	103.24			32.38	7.74	37.47	104	41	Peak
5825	41.36	38.56	77	-35.64	32.51	7.82	37.53	104	41	Average
5825	51.69	48.89	85.89	-34.2	32.51	7.82	37.53	104	41	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
3832	51.58	52.86	54	-2.42	29.58	6.19	37.05	100	106	Average
3832	53.1	54.38	74	-20.9	29.58	6.19	37.05	100	106	Peak
5725	68.96	66.32	76.71	-7.75	32.36	7.71	37.43	101	195	Average
5725	82.41	79.77	86.22	-3.81	32.36	7.71	37.43	101	195	Peak
5745	96.71	94.06			32.38	7.74	37.47	101	195	Average
5745	106.22	103.57			32.38	7.74	37.47	101	195	Peak
5825	43.26	40.46	76.71	-33.45	32.51	7.82	37.53	101	195	Average
5825	53.81	51.01	86.22	-32.41	32.51	7.82	37.53	101	195	Peak

REMARKS:

- 5745MHz: Fundamental frequency.
- 5725MHz & 5825MHz: Out of restricted band



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
3856	50.9	52.12	54	-3.1	29.61	6.2	37.03	100	360	Average
3856	53.96	55.18	74	-20.04	29.61	6.2	37.03	100	360	Peak
5725	47.33	44.69	74.81	-27.48	32.36	7.71	37.43	102	249	Average
5725	54.58	51.94	84.3	-29.72	32.36	7.71	37.43	102	249	Peak
5785	94.81	92.12			32.43	7.8	37.54	102	249	Average
5785	104.3	101.61			32.43	7.8	37.54	102	249	Peak
5825	49.35	46.55	74.81	-25.46	32.51	7.82	37.53	102	249	Average
5825	61.54	58.74	84.3	-22.76	32.51	7.82	37.53	102	249	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
3856	51.13	52.35	54	-2.87	29.61	6.2	37.03	100	0	Average
3856	52.76	53.98	74	-21.24	29.61	6.2	37.03	100	0	Peak
5725	43.1	40.46	73.03	-29.93	32.36	7.71	37.43	100	349	Average
5725	55.95	53.31	81.91	-25.96	32.36	7.71	37.43	100	349	Peak
5785	93.03	90.34			32.43	7.8	37.54	100	349	Average
5785	101.91	99.22			32.43	7.8	37.54	100	349	Peak
5825	43.92	41.12	73.03	-29.11	32.51	7.82	37.53	100	349	Average
5825	57.08	54.28	81.91	-24.83	32.51	7.82	37.53	100	349	Peak

**REMARKS:**

- 5785MHz: Fundamental frequency.
- 5725MHz & 5825MHz: Out of restricted band



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 161	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
3868	48.91	50.1	54	-5.09	29.64	6.2	37.03	100	106	Average
3868	52.6	53.79	74	-21.4	29.64	6.2	37.03	100	106	Peak
5725	42.84	40.2	77.37	-34.53	32.36	7.71	37.43	106	145	Average
5725	53.46	50.82	85.74	-32.28	32.36	7.71	37.43	106	145	Peak
5805	97.37	94.63			32.48	7.8	37.54	106	145	Average
5805	105.74	103			32.48	7.8	37.54	106	145	Peak
5825	69.81	67.01	77.37	-7.56	32.51	7.82	37.53	106	145	Average
5825	84.22	81.42	85.74	-1.52	32.51	7.82	37.53	106	145	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
3868	49.1	50.29	54	-4.9	29.64	6.2	37.03	100	302	Average
3868	51.87	53.06	74	-22.13	29.64	6.2	37.03	100	302	Peak
5725	42.19	39.55	75.59	-33.4	32.36	7.71	37.43	100	346	Average
5725	52.96	50.32	84.14	-31.18	32.36	7.71	37.43	100	346	Peak
5805	95.59	92.85			32.48	7.8	37.54	100	346	Average
5805	104.14	101.4			32.48	7.8	37.54	100	346	Peak
5825	67.31	64.51	75.59	-8.28	32.51	7.82	37.53	100	346	Average
5825	83.44	80.64	84.14	-0.7	32.51	7.82	37.53	100	346	Peak

**REMARKS:**

- 5805MHz: Fundamental frequency.
- 5725MHz & 5825MHz: Out of restricted band



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802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 151	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
3836	49.3	50.58	54	-4.7	29.58	6.19	37.05	100	360	Average
3836	53.89	55.17	74	-20.11	29.58	6.19	37.05	100	360	Peak
5725	63.85	61.21	72.01	-8.16	32.36	7.71	37.43	106	153	Average
5725	79.33	76.69	81.72	-2.39	32.36	7.71	37.43	106	153	Peak
5755	92.01	89.33			32.41	7.74	37.47	106	153	Average
5755	101.72	99.04			32.41	7.74	37.47	106	153	Peak
5825	44.9	42.1	72.01	-27.11	32.51	7.82	37.53	106	153	Average
5825	62.07	59.27	81.72	-19.65	32.51	7.82	37.53	106	153	Peak

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
<b>3836</b>	<b>53.61</b>	<b>54.89</b>	<b>54</b>	<b>-0.39</b>	<b>29.58</b>	<b>6.19</b>	<b>37.05</b>	<b>100</b>	<b>0</b>	<b>Average</b>
3836	54.28	55.56	74	-19.72	29.58	6.19	37.05	100	0	Peak
5725	62.25	59.61	71.03	-8.78	32.36	7.71	37.43	100	130	Average
5725	75.35	72.71	80.59	-5.24	32.36	7.71	37.43	100	130	Peak
5755	91.03	88.35			32.41	7.74	37.47	100	130	Average
5755	100.59	97.91			32.41	7.74	37.47	100	130	Peak
5825	43.37	40.57	71.03	-27.66	32.51	7.82	37.53	100	130	Average
5825	59.38	56.58	80.59	-21.21	32.51	7.82	37.53	100	130	Peak

**REMARKS:**

- 5755MHz: Fundamental frequency.
- 5725MHz & 5825MHz: Out of restricted band



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 159	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
3864	49.01	50.23	54	-4.99	29.61	6.2	37.03	100	360	Average
3864	53.87	55.09	74	-20.13	29.61	6.2	37.03	100	360	Peak
5725	45.2	42.56	70.29	-25.09	32.36	7.71	37.43	100	250	Average
5725	56.71	54.07	79.73	-23.02	32.36	7.71	37.43	100	250	Peak
5795	90.29	87.57			32.46	7.8	37.54	100	250	Average
5795	99.73	97.01			32.46	7.8	37.54	100	250	Peak
5825	62.44	59.64	70.29	-7.85	32.51	7.82	37.53	100	250	Average
5825	76.49	73.69	79.73	-3.24	32.51	7.82	37.53	100	250	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
3864	53.16	54.38	54	-0.84	29.61	6.2	37.03	100	0	Average
3864	54.49	55.71	74	-19.51	29.61	6.2	37.03	100	0	Peak
5725	45.47	42.83	71.79	-26.32	32.36	7.71	37.43	122	193	Average
5725	57.01	54.37	81.41	-24.4	32.36	7.71	37.43	122	193	Peak
5795	91.79	89.07			32.46	7.8	37.54	122	193	Average
5795	101.41	98.69			32.46	7.8	37.54	122	193	Peak
5825	64.7	61.9	71.79	-7.09	32.51	7.82	37.53	122	193	Average
5825	79.88	77.08	81.41	-1.53	32.51	7.82	37.53	122	193	Peak

**REMARKS:**

- 5795MHz: Fundamental frequency.
- 5725MHz & 5825MHz: Out of restricted band



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**BELOW 1GHz WORST-CASE DATA : 802.11n (40MHz)**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 159	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
88.32	23.01	45.6	43.5	-20.49	8.27	1.01	31.87	100	49	Peak
124.5	32.32	51.72	43.5	-11.18	11.28	1.21	31.89	100	143	Peak
254.1	30.03	48.49	46	-15.97	11.59	1.85	31.9	100	206	Peak
342.7	22.27	37.93	46	-23.73	13.96	2.2	31.82	100	173	Peak
423.9	22.34	36.04	46	-23.66	15.81	2.52	32.03	100	169	Peak
622	24.41	33.55	46	-21.59	19.87	3.15	32.16	100	151	Peak

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
33.24	34.64	52.68	40	-5.36	12.47	0.58	31.09	100	176	Peak
171.21	31.01	49.74	43.5	-12.49	11.57	1.45	31.75	100	145	Peak
247.62	31.69	50.41	46	-14.31	11.36	1.82	31.9	100	210	Peak
485.5	22.21	34.24	46	-23.79	17.04	2.73	31.8	100	153	Peak
603.1	23.5	32.95	46	-22.5	19.65	3.1	32.2	100	199	Peak
720	26.72	33.8	46	-19.28	21.09	3.49	31.66	100	193	Peak

## 5.2 CONDUCTED EMISSION MEASUREMENT

### 5.2.1 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.

### 5.2.2 TEST INSTRUMENTS

Same as item 4.2.2.

### 5.2.3 TEST PROCEDURES

Same as item 4.2.3.

### 5.2.4 DEVIATION FROM TEST STANDARD

No deviation.

### 5.2.5 TEST SETUP

Same as item 4.2.5.

### 5.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

### 5.2.7 TEST RESULTS

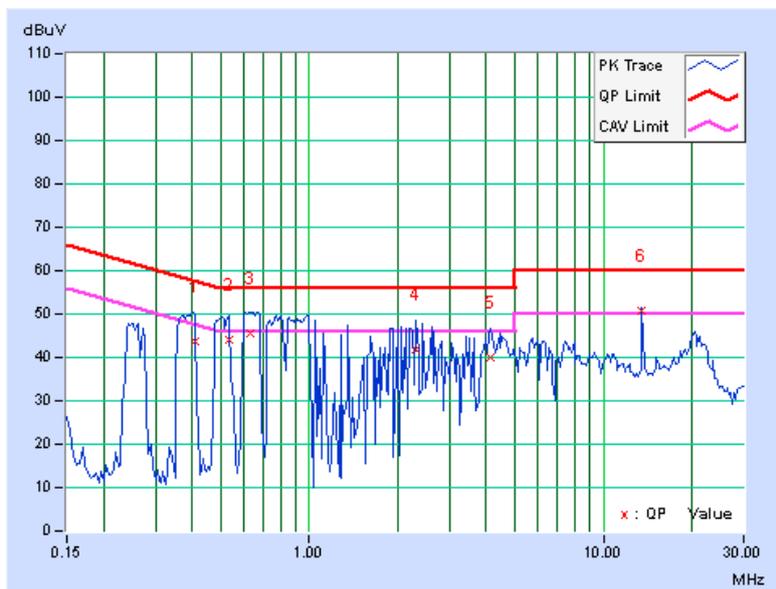
**CONDUCTED WORST-CASE DATA : 802.11n (40MHz)**

<b>PHASE</b>	Line 1	<b>6dB BANDWIDTH</b>	9kHz
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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	0.40781	0.20	43.64	17.38	43.84	17.58	57.69	47.69	-13.85	-30.11
2	0.53672	0.21	43.82	22.05	44.03	22.26	56.00	46.00	-11.97	-23.74
3	0.62656	0.21	45.24	23.14	45.45	23.35	56.00	46.00	-10.55	-22.65
4	2.30859	0.31	41.57	22.17	41.88	22.48	56.00	46.00	-14.12	-23.52
5	4.14063	0.39	39.76	21.18	40.15	21.57	56.00	46.00	-15.85	-24.43
6	13.55859	0.57	50.01	44.45	50.58	45.02	60.00	50.00	-9.42	-4.98

**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.





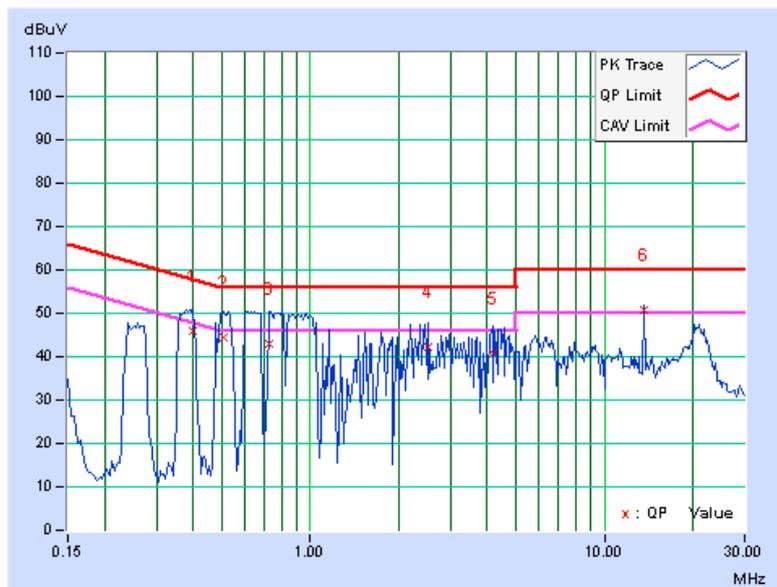
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PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.40000	0.18	45.83	24.16	46.01	24.34	57.85
2	0.50938	0.18	44.23	22.11	44.41	22.29	56.00	46.00	-11.59	-23.71
3	0.72813	0.19	42.93	19.53	43.12	19.72	56.00	46.00	-12.88	-26.28
4	2.53125	0.30	41.86	22.39	42.16	22.69	56.00	46.00	-13.84	-23.31
5	4.16016	0.39	40.23	21.47	40.62	21.86	56.00	46.00	-15.38	-24.14
6	13.56250	0.66	50.01	44.41	50.67	45.07	60.00	50.00	-9.33	-4.93

**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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### **5.3 6dB BANDWIDTH MEASUREMENT**

#### **5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT**

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

#### **5.3.2 TEST SETUP**

Same as item 4.3.2.

#### **5.3.3 TEST INSTRUMENTS**

Refer to section 4.1.2 to get information of above instrument.

#### **5.3.4 TEST PROCEDURE**

Same as item 4.3.4.

#### **5.3.5 DEVIATION FROM TEST STANDARD**

No deviation.

#### **5.3.6 EUT OPERATING CONDITIONS**

Same as item 4.3.6.



### 5.3.7 TEST RESULTS

#### 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.75	0.5	PASS
157	5785	16.68	0.5	PASS
161	5805	16.64	0.5	PASS

#### 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	17.91	0.5	PASS
157	5785	17.84	0.5	PASS
161	5805	17.91	0.5	PASS

#### 802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	37.32	0.5	PASS
159	5795	37.30	0.5	PASS



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## **5.4 MAXIMUM OUTPUT POWER**

### **5.4.1 LIMITS OF MAXIMUM OUTPUT POWER MEASUREMENT**

For systems using digital modulation in the 5725–5850 MHz bands: 1 Watt (30dBm)

### **5.4.2 TEST SETUP**

Same as Item 4.4.2.

### **5.4.3 INSTRUMENTS**

Refer to section 4.1.2 to get information of above instrument.

### **5.4.4 TEST PROCEDURES**

Same as Item 4.4.4.

### **5.4.5 DEVIATION FROM TEST STANDARD**

No deviation.

### **5.4.6 EUT OPERATING CONDITIONS**

Same as Item 4.3.6.



## 5.4.7 TEST RESULTS

### 802.11a

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
149	5745	47.206	16.74	30	PASS
157	5785	46.881	16.71	30	PASS
161	5805	46.238	16.65	30	PASS

### 802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
149	5745	46.452	16.67	30	PASS
157	5785	45.290	16.56	30	PASS
161	5805	44.668	16.5	30	PASS

### 802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
151	5755	176.198	22.46	30	PASS
159	5795	178.238	22.51	30	PASS



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## **5.5 POWER SPECTRAL DENSITY MEASUREMENT**

### **5.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT**

The Maximum of Power Spectral Density Measurement is 8dBm.

### **5.5.2 TEST SETUP**

Same as item 4.5.2.

### **5.5.3 TEST INSTRUMENTS**

Refer to section 4.1.2 to get information of above instrument.

### **5.5.4 TEST PROCEDURE.**

Same as item 4.5.4.

### **5.5.5 DEVIATION FROM TEST STANDARD**

No deviation.

### **5.5.6 EUT OPERATING CONDITION**

Same as item 4.3.6.

## 5.5.7 TEST RESULTS

### 802.11a

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
149	5745	3.07	-12.13	8	PASS
157	5785	2.65	-12.55	8	PASS
161	5805	2.93	-12.27	8	PASS

### 802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
149	5745	3.09	-12.11	8	PASS
157	5785	2.92	-12.28	8	PASS
161	5805	2.86	-12.34	8	PASS

### 802.11n (40MHz)

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
151	5755	-1.85	-17.05	8	PASS
159	5795	-2.01	-17.21	8	PASS

## **5.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT**

### **5.6.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT**

Below  $-20\text{dB}$  of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

### **5.6.2 TEST SETUP**

Same as Item 4.6.2

### **5.6.3 TEST INSTRUMENTS**

Refer to section 4.1.2 to get information of above instrument.

### **5.6.4 TEST PROCEDURE**

Same as Item 4.6.4

### **5.6.5 DEVIATION FROM TEST STANDARD**

No deviation.

### **5.6.6 EUT OPERATING CONDITION**

Same as Item 4.3.6

### **5.6.7 TEST RESULTS**

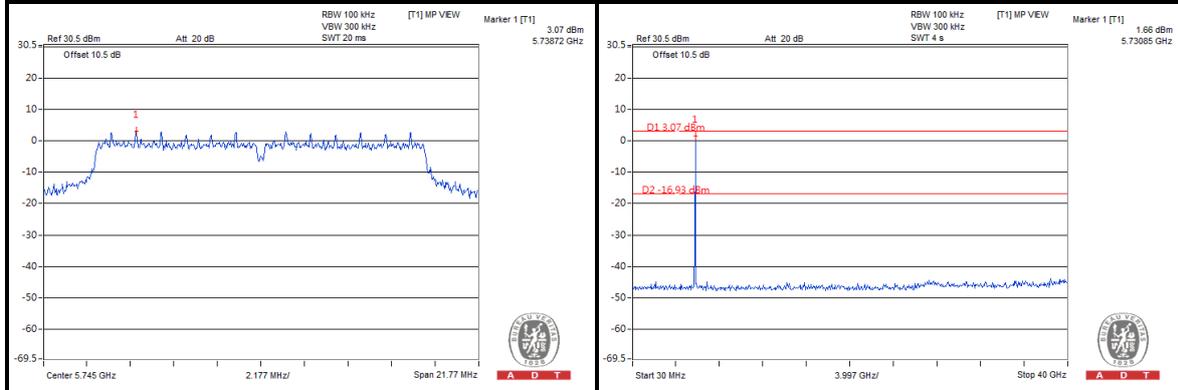
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.



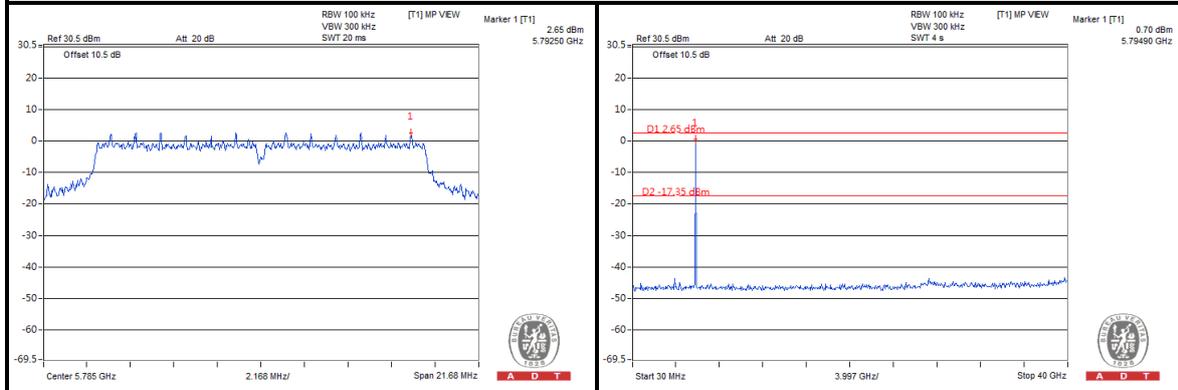
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### 802.11a

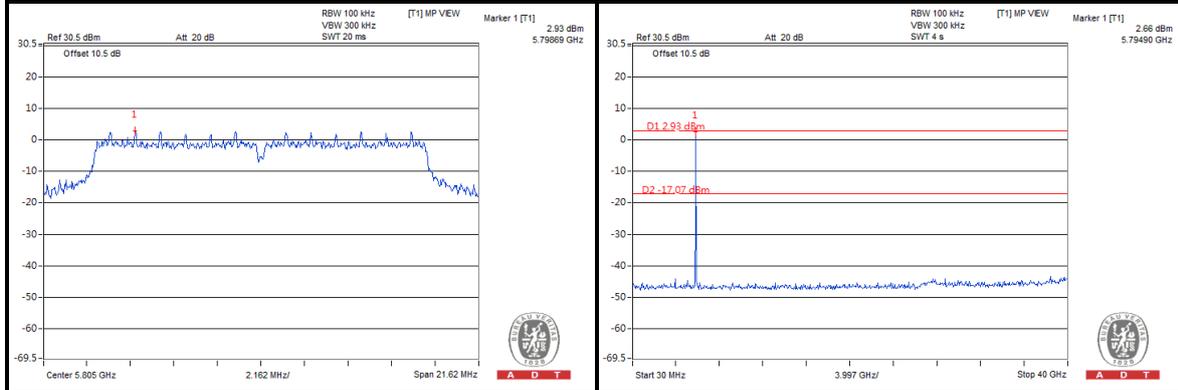
#### CH 149



#### CH 157



#### CH 161

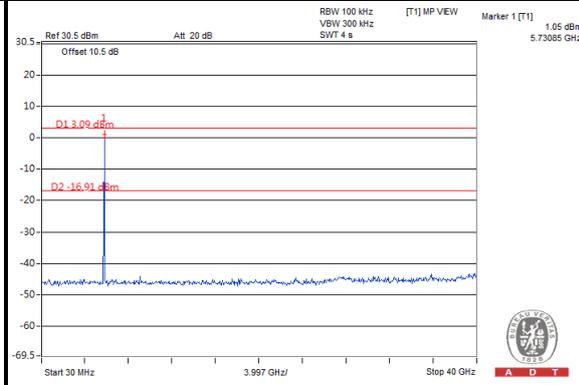
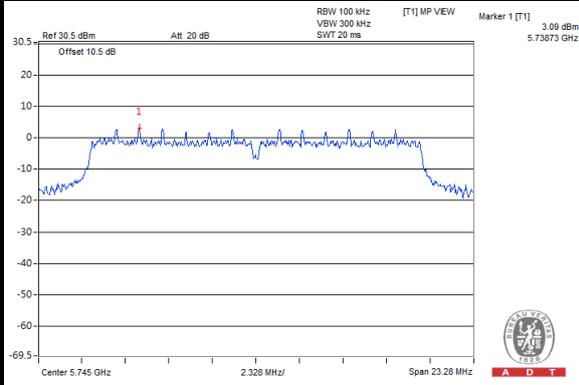




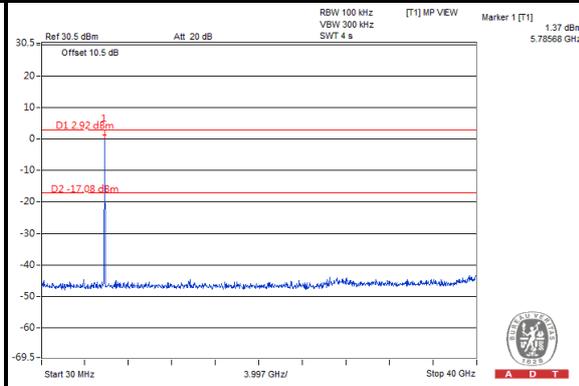
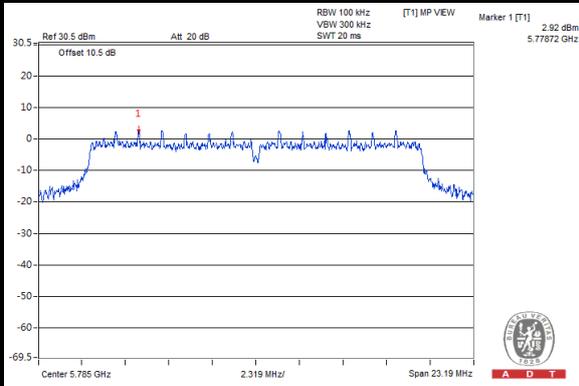
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### 802.11n(20MHz)

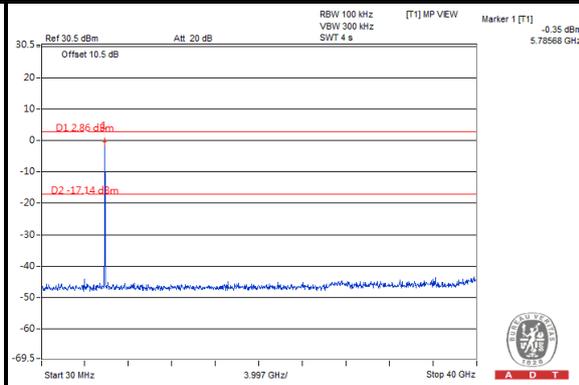
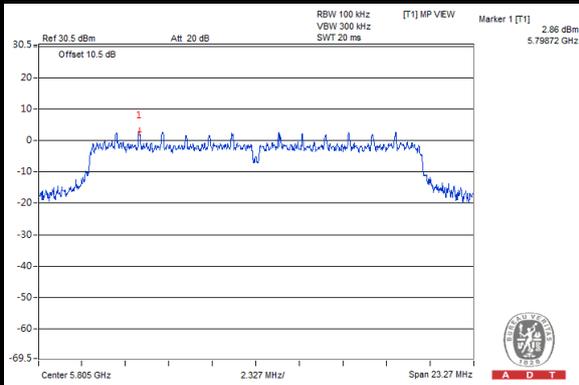
#### CH 149



#### CH 157



#### CH 161

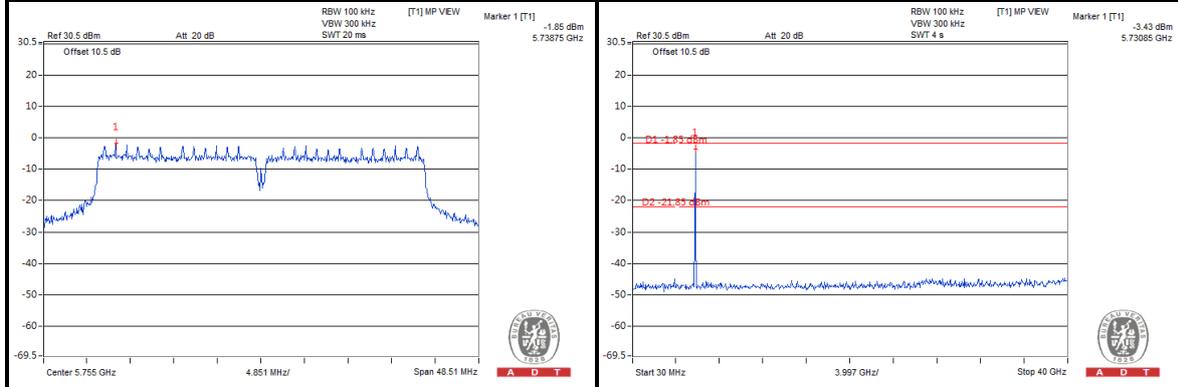




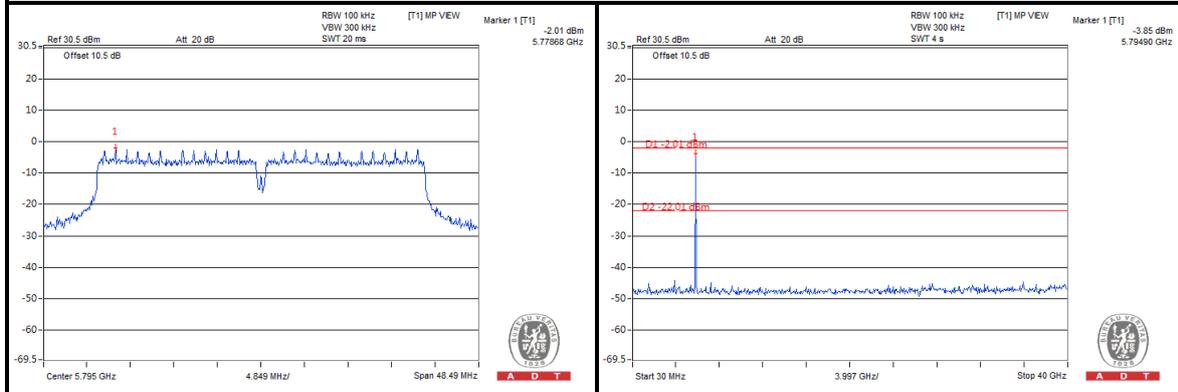
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### 802.11n(40MHz)

#### CH 151



#### CH 159





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## 6. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

## 7. 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:**

Tel: 886-2-26052180

Fax: 886-2-26051924

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

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



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## 8. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

---END---