



# FCC TEST REPORT (15.247)

**REPORT NO.:** RF130911C28-1  
**MODEL NO.:** TC1020/QV1030/QV1030  
**FCC ID:** HFS-FG6Q  
**RECEIVED:** Sep. 11, 2013  
**TESTED:** Sep. 18, 2013 ~ Oct. 02, 2013  
**ISSUED:** Oct. 08, 2013

**APPLICANT:** Quanta Computer Inc.

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

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130911C28-1	Original release	Oct. 08, 2013

## 1. CERTIFICATION

**PRODUCT:** Tablet  
**MODEL NO.:** TC1020/QV1030/QV1030  
**BRAND:** Le Pan/Gigaset/Gigaset  
**APPLICANT:** Quanta Computer Inc.  
**TESTED:** Sep. 18, 2013 ~ Oct. 02, 2013  
**TEST SAMPLE:** Identical Prototype  
**STANDARDS:** **FCC Part 15, Subpart C (Section 15.247)**  
ANSI C63.10-2009

The above equipment (model: TC1020/QV1030/QV1030) 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** : Vera Huang , **DATE** : Oct. 08, 2013  
Vera Huang / Specialist

**APPROVED BY** : Sam chen , **DATE** : Oct. 08, 2013  
Sam Chen / Assistant 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 -12.09dB at 0.18906MHz.
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.26dB at 4874MHz.
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  $k = 2$ .



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### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>EUT</b>	Tablet
<b>MODEL NO.</b>	TC1020/QV1030/QV1030
<b>POWER SUPPLY</b>	5.0Vdc (adapter or host equipment) 3.7Vdc (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 MCS7
<b>OPERATING FREQUENCY</b>	<b>2.4GHz:</b> 2412 ~ 2462MHz <b>5.0GHz:</b> 5745 ~ 5825MHz
<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> 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
<b>OUTPUT POWER</b>	135.207mW for 2412 ~ 2462MHz 162.555mW for 5745 ~ 5825MHz
<b>ANTENNA TYPE</b>	<b>2.4GHz:</b> PIFA antenna with -2.61dBi gain <b>5.0GHz:</b> PIFA antenna with -2.9dBi 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





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**NOTE:**

1. The detail information of brand and model names is as below.

BRAND NAME	MODEL NAME	DESCRIPTION
Le Pan	TC1020	Silver
Gigaset	QV1030	Black
Gigaset	QV1030	Silver

2. The EUT contains the following accessories.

ITEM	BRAND	MODEL	SPECIFICATION
AC Adapter	Tamura	MII050200B	I/P: 100-240Vac, 300mA, 50-60Hz O/P: 5Vdc, 2000mA
Battery	Getac	FG6Q (P/N: 541385760001)	Rating: 3.7Vdc, 3350mAh
USB cable	MEC IMEX INCORPORATED	65-15317-300	0.75m cable

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):

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

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	MCS0
802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	MCS0

#### 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)
802.11g	1 to 11	6	OFDM	BPSK	6.0

#### POWER LINE CONDUCTED EMISSION TEST:

The EUT was tested with the following mode.

TEST CONDITION
BT Link + WLAN (2.4G) Link + USB Cable + Adapter + Earphone



**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	MCS0
802.11n (40MHz)	3 to 9	3, 9	OFDM	BPSK	MCS0

**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	MCS0
802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	MCS0

**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	Johnson Liao
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 X-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 165	149, 157, 165	OFDM	BPSK	6.0
802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	MCS0
802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	MCS0

### 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)
802.11a	149 to 165	149	OFDM	BPSK	6.0

### POWER LINE CONDUCTED EMISSION TEST:

The EUT was tested with the following mode.

TEST CONDITION
BT Link + WLAN (5G) Link + USB Cable + Adapter + Earphone



**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 165	149, 165	OFDM	BPSK	6.0
802.11n (20MHz)	149 to 165	149, 165	OFDM	BPSK	MCS0
802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	MCS0

**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 165	149, 157, 165	OFDM	BPSK	6.0
802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	MCS0
802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	MCS0

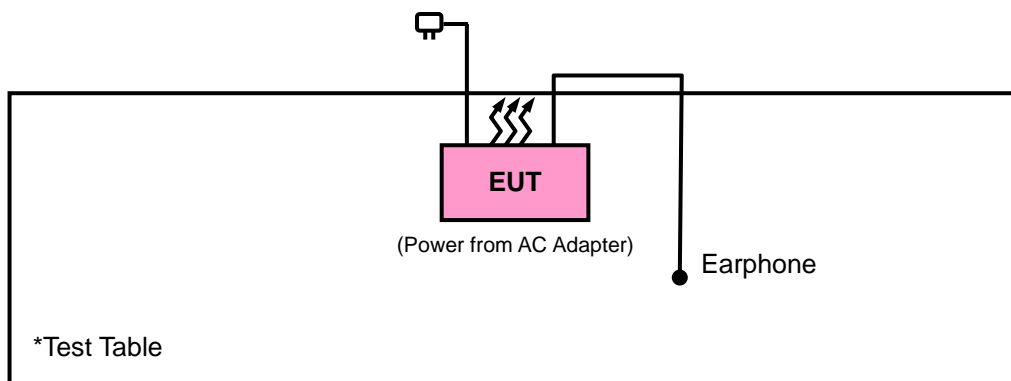
**TEST CONDITION:**

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	Johnson Liao
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.

#### 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 v02

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 ROHDE & SCHWARZ	ESCI	100744	Apr. 15, 2013	Apr. 14, 2014
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 17, 2012	Dec. 16, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Mar. 25, 2013	Mar. 24, 2014
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Jan. 07, 2013	Jan. 06, 2014
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 25, 2012	Dec. 24, 2013
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier EMCI	EMC 012645	980115	Dec. 28, 2012	Dec. 27, 2013
Preamplifier EMCI	EMC 184045	980116	Dec. 28, 2012	Dec. 27, 2013
Preamplifier EMCI	EMC 330H	980112	Dec. 28, 2012	Dec. 27, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4	Oct. 19, 2012	Oct. 18, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 19, 2012	Oct. 18, 2013
RF signal cable Worken	RG-213	NA	Dec. 29, 2012	Dec. 28, 2013
Software BV ADT	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
Power Meter	ML2495A	1012010	Jul. 31, 2013	Jul. 30, 2014
Power Sensor	MA2411B	1315050	Jul. 31, 2013	Jul. 30, 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 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 10.
  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 690701.
  6. The IC Site Registration No. is IC 7450F-10.

#### 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.

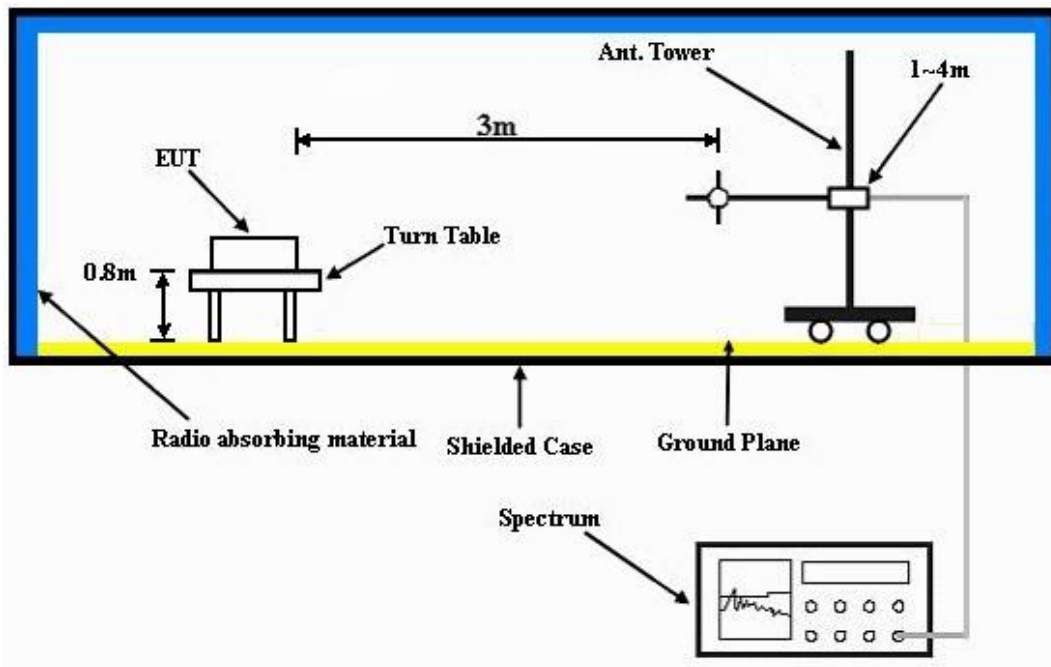
**NOTE:**

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
2386	44.89	43.05	54	-9.11	31.93	5.4	35.49	116	346	Average
2386	54.31	52.47	74	-19.69	31.93	5.4	35.49	116	346	Peak
2412	103.55	101.63			31.96	5.43	35.47	116	346	Average
2412	105.07	103.15			31.96	5.43	35.47	116	346	Peak
2498	41.86	39.64	54	-12.14	32.1	5.53	35.41	116	346	Average
2498	51.44	49.22	74	-22.56	32.1	5.53	35.41	116	346	Peak
4824	51.63	43.21	54	-2.37	34.26	8.26	34.1	100	69	Average
4824	54.47	46.05	74	-19.53	34.26	8.26	34.1	100	69	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	47.58	45.74	54	-6.42	31.93	5.4	35.49	118	273	Average
2386	56.61	54.77	74	-17.39	31.93	5.4	35.49	118	273	Peak
2412	105.92	104			31.96	5.43	35.47	118	273	Average
2412	107.09	105.17			31.96	5.43	35.47	118	273	Peak
2494	42.16	39.94	54	-11.84	32.1	5.53	35.41	118	273	Average
2494	53.12	50.9	74	-20.88	32.1	5.53	35.41	118	273	Peak
4824	53.25	44.83	54	-0.75	34.26	8.26	34.1	101	212	Average
4824	54.92	46.5	74	-19.08	34.26	8.26	34.1	101	212	Peak

#### REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 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	41.45	39.59	54	-12.55	31.93	5.4	35.47	116	20	Average
2390	52.49	50.63	74	-21.51	31.93	5.4	35.47	116	20	Peak
2437	103.09	101.08			32.01	5.46	35.46	116	20	Average
2437	105.23	103.22			32.01	5.46	35.46	116	20	Peak
2484	40.86	38.68	54	-13.14	32.1	5.5	35.42	116	20	Average
2484	54.39	52.21	74	-19.61	32.1	5.5	35.42	116	20	Peak
4874	51.13	42.62	54	-2.87	34.3	8.27	34.06	116	233	Average
4874	53.77	45.26	74	-20.23	34.3	8.27	34.06	116	233	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	43.56	41.7	54	-10.44	31.93	5.4	35.47	118	270	Average
2390	56.18	54.32	74	-17.82	31.93	5.4	35.47	118	270	Peak
2437	106.8	104.79			32.01	5.46	35.46	118	270	Average
2437	107.38	105.37			32.01	5.46	35.46	118	270	Peak
2484	42.87	40.69	54	-11.13	32.1	5.5	35.42	118	270	Average
2484	55.38	53.2	74	-18.62	32.1	5.5	35.42	118	270	Peak
<b>4874</b>	<b>53.74</b>	<b>45.23</b>	<b>54</b>	<b>-0.26</b>	<b>34.3</b>	<b>8.27</b>	<b>34.06</b>	<b>100</b>	<b>210</b>	<b>Average</b>
4874	54.52	46.01	74	-19.48	34.3	8.27	34.06	100	210	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 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	40.56	38.7	54	-13.44	31.93	5.4	35.47	131	231	Average
2390	51.6	49.74	74	-22.4	31.93	5.4	35.47	131	231	Peak
2462	102.58	100.48			32.04	5.5	35.44	131	231	Average
2462	105.21	103.11			32.04	5.5	35.44	131	231	Peak
2484	43.83	41.65	54	-10.17	32.1	5.5	35.42	131	231	Average
2484	53.96	51.78	74	-20.04	32.1	5.5	35.42	131	231	Peak
4924	51.45	42.85	54	-2.55	34.34	8.28	34.02	103	311	Average
4924	52.91	44.31	74	-21.09	34.34	8.28	34.02	103	311	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	40.56	38.7	54	-13.44	31.93	5.4	35.47	115	277	Average
2390	52.64	50.78	74	-21.36	31.93	5.4	35.47	115	277	Peak
2462	105.78	103.68			32.04	5.5	35.44	115	277	Average
2462	107.4	105.3			32.04	5.5	35.44	115	277	Peak
2484	44.85	42.67	54	-9.15	32.1	5.5	35.42	115	277	Average
2484	56.23	54.05	74	-17.77	32.1	5.5	35.42	115	277	Peak
4924	53.55	44.95	54	-0.45	34.34	8.28	34.02	100	208	Average
4924	55.19	46.59	74	-18.81	34.34	8.28	34.02	100	208	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 2462MHz: Fundamental frequency.



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	49.68	47.82	54	-4.32	31.93	5.4	35.47	137	206	Average
2390	66.12	64.26	74	-7.88	31.93	5.4	35.47	137	206	Peak
2412	95.62	93.7			31.96	5.43	35.47	137	206	Average
2412	105.05	103.13			31.96	5.43	35.47	137	206	Peak
2496	41.89	39.67	54	-12.11	32.1	5.53	35.41	137	206	Average
2496	55.56	53.34	74	-18.44	32.1	5.53	35.41	137	206	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
2388	49.85	48.01	54	-4.15	31.93	5.4	35.49	116	273	Average
2388	67.3	65.46	74	-6.7	31.93	5.4	35.49	116	273	Peak
2412	98.64	96.72			31.96	5.43	35.47	116	273	Average
2412	107.76	105.84			31.96	5.43	35.47	116	273	Peak
2492	42.23	40.01	54	-11.77	32.1	5.53	35.41	116	273	Average
2492	56.33	54.11	74	-17.67	32.1	5.53	35.41	116	273	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 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	44.59	42.73	54	-9.41	31.93	5.4	35.47	113	206	Average
2390	60.2	58.34	74	-13.8	31.93	5.4	35.47	113	206	Peak
2437	100.71	98.7			32.01	5.46	35.46	113	206	Average
2437	108.78	106.77			32.01	5.46	35.46	113	206	Peak
2484	42.83	40.65	54	-11.17	32.1	5.5	35.42	113	206	Average
2484	58.22	56.04	74	-15.78	32.1	5.5	35.42	113	206	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	45.92	44.08	54	-8.08	31.93	5.4	35.49	117	271	Average
2386	62.87	61.03	74	-11.13	31.93	5.4	35.49	117	271	Peak
2437	102.72	100.71			32.01	5.46	35.46	117	271	Average
2437	111.08	109.07			32.01	5.46	35.46	117	271	Peak
2484	40.86	38.68	54	-13.14	32.1	5.5	35.42	117	271	Average
2484	61.61	59.43	74	-12.39	32.1	5.5	35.42	117	271	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 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
2378	40.47	38.69	54	-13.53	31.9	5.37	35.49	128	232	Average
2378	56.19	54.41	74	-17.81	31.9	5.37	35.49	128	232	Peak
2462	97.14	95.04			32.04	5.5	35.44	128	232	Average
2462	105.17	103.07			32.04	5.5	35.44	128	232	Peak
2484	46.83	44.65	54	-7.17	32.1	5.5	35.42	128	232	Average
2484	65.76	63.58	74	-8.24	32.1	5.5	35.42	128	232	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
2388	40.77	38.93	54	-13.23	31.93	5.4	35.49	116	270	Average
2388	55.74	53.9	74	-18.26	31.93	5.4	35.49	116	270	Peak
2462	100.8	98.7			32.04	5.5	35.44	116	270	Average
2462	108.87	106.77			32.04	5.5	35.44	116	270	Peak
2483.5	50.42	48.27	54	-3.58	32.07	5.5	35.42	116	270	Average
2483.5	70.11	67.96	74	-3.89	32.07	5.5	35.42	116	270	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 2462MHz: Fundamental frequency.



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	47.56	45.7	54	-6.44	31.93	5.4	35.47	138	203	Average
2390	72.63	70.77	74	-1.37	31.93	5.4	35.47	138	203	Peak
2412	98.99	97.07			31.96	5.43	35.47	138	203	Average
2412	105.78	103.86			31.96	5.43	35.47	138	203	Peak
2486	40.9	38.69	54	-13.1	32.1	5.53	35.42	138	203	Average
2486	57.1	54.89	74	-16.9	32.1	5.53	35.42	138	203	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
2388	49.47	47.63	54	-4.53	31.93	5.4	35.49	117	271	Average
2388	73.08	71.24	74	-0.92	31.93	5.4	35.49	117	271	Peak
2412	99.75	97.83			31.96	5.43	35.47	117	271	Average
2412	108.11	106.19			31.96	5.43	35.47	117	271	Peak
2500	42.87	40.65	54	-11.13	32.1	5.53	35.41	117	271	Average
2500	56.37	54.15	74	-17.63	32.1	5.53	35.41	117	271	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 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
2386	37.66	35.82	54	-16.34	31.93	5.4	35.49	114	18	Average
2386	58.26	56.42	74	-15.74	31.93	5.4	35.49	114	18	Peak
2437	98.21	96.2			32.01	5.46	35.46	114	18	Average
2437	106.36	104.35			32.01	5.46	35.46	114	18	Peak
2484	37	34.82	54	-17	32.1	5.5	35.42	114	18	Average
2484	55	52.82	74	-19	32.1	5.5	35.42	114	18	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
2388	41.07	39.23	54	-12.93	31.93	5.4	35.49	100	83	Average
2388	60.49	58.65	74	-13.51	31.93	5.4	35.49	100	83	Peak
2437	100.79	98.78			32.01	5.46	35.46	100	83	Average
2437	109.85	107.84			32.01	5.46	35.46	100	83	Peak
2486	41.99	39.78	54	-12.01	32.1	5.53	35.42	100	83	Average
2486	59.97	57.76	74	-14.03	32.1	5.53	35.42	100	83	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 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
2362	40.5	38.76	54	-13.5	31.87	5.37	35.5	130	230	Average
2362	55.11	53.37	74	-18.89	31.87	5.37	35.5	130	230	Peak
2462	96.98	94.88			32.04	5.5	35.44	130	230	Average
2462	104.25	102.15			32.04	5.5	35.44	130	230	Peak
2488	47.19	44.98	54	-6.81	32.1	5.53	35.42	130	230	Average
2488	69.44	67.23	74	-4.56	32.1	5.53	35.42	130	230	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	41.65	39.81	54	-12.35	31.93	5.4	35.49	115	269	Average
2386	55.8	53.96	74	-18.2	31.93	5.4	35.49	115	269	Peak
2462	101	98.9			32.04	5.5	35.44	115	269	Average
2462	108.79	106.69			32.04	5.5	35.44	115	269	Peak
2484	50.37	48.19	54	-3.63	32.1	5.5	35.42	115	269	Average
2484	71.4	69.22	74	-2.6	32.1	5.5	35.42	115	269	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 2462MHz: Fundamental frequency.



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
2390	50.85	48.99	54	-3.15	31.93	5.4	35.47	117	56	Average
2390	68.42	66.56	74	-5.58	31.93	5.4	35.47	117	56	Peak
2422	92.93	90.97			31.99	5.43	35.46	117	56	Average
2422	101.35	99.39			31.99	5.43	35.46	117	56	Peak
2486	42.75	40.54	54	-11.25	32.1	5.53	35.42	117	56	Average
2486	56.5	54.29	74	-17.5	32.1	5.53	35.42	117	56	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
2388	53.58	51.74	54	-0.42	31.93	5.4	35.49	117	270	Average
2388	71.8	69.96	74	-2.2	31.93	5.4	35.49	117	270	Peak
2422	96.08	94.12			31.99	5.43	35.46	117	270	Average
2422	104.24	102.28			31.99	5.43	35.46	117	270	Peak
2484	42.83	40.65	54	-11.17	32.1	5.5	35.42	117	270	Average
2484	59.45	57.27	74	-14.55	32.1	5.5	35.42	117	270	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 2422MHz: 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	49.83	47.97	54	-4.17	31.93	5.4	35.47	113	199	Average
2390	66.52	64.66	74	-7.48	31.93	5.4	35.47	113	199	Peak
2437	95.3	93.29			32.01	5.46	35.46	113	199	Average
2437	104.05	102.04			32.01	5.46	35.46	113	199	Peak
2484	47.58	45.4	54	-6.42	32.1	5.5	35.42	113	199	Average
2484	64.34	62.16	74	-9.66	32.1	5.5	35.42	113	199	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	51.37	49.51	54	-2.63	31.93	5.4	35.47	115	271	Average
2390	68.99	67.13	74	-5.01	31.93	5.4	35.47	115	271	Peak
2437	98.44	96.43			32.01	5.46	35.46	115	271	Average
2437	107.02	105.01			32.01	5.46	35.46	115	271	Peak
2484	50.75	48.57	54	-3.25	32.1	5.5	35.42	115	271	Average
2484	69.73	67.55	74	-4.27	32.1	5.5	35.42	115	271	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 2437MHz: Fundamental frequency.



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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	41.85	39.99	54	-12.15	31.93	5.4	35.47	117	55	Average
2390	56.99	55.13	74	-17.01	31.93	5.4	35.47	117	55	Peak
2452	92.93	90.87			32.04	5.46	35.44	117	55	Average
2452	101.24	99.18			32.04	5.46	35.44	117	55	Peak
2484	47.46	45.28	54	-6.54	32.1	5.5	35.42	117	55	Average
2484	66.99	64.81	74	-7.01	32.1	5.5	35.42	117	55	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	43.11	41.27	54	-10.89	31.93	5.4	35.49	117	271	Average
2386	60.69	58.85	74	-13.31	31.93	5.4	35.49	117	271	Peak
2452	96.27	94.21			32.04	5.46	35.44	117	271	Average
2452	105.31	103.25			32.04	5.46	35.44	117	271	Peak
2484	51.63	49.45	54	-2.37	32.1	5.5	35.42	117	271	Average
2484	71.41	69.23	74	-2.59	32.1	5.5	35.42	117	271	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 2452MHz: Fundamental frequency.



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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) QP
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
57	15.35	39.59	40	-24.65	7.09	0.9	32.23	166	225	Peak
87.78	25.2	47.1	40	-14.8	8.8	1.11	31.81	147	258	Peak
135.57	22.32	43.94	43.5	-21.18	9.25	1.38	32.25	159	215	Peak
407.8	21.07	32.92	46	-24.93	17.95	2.41	32.21	115	214	Peak
526.1	21	29.79	46	-25	20.66	2.7	32.15	177	41	Peak
623.4	23.34	30.48	46	-22.66	22.1	2.93	32.17	215	165	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
56.19	17.36	41.54	40	-22.64	7.15	0.9	32.23	144	205	Peak
90.48	23.31	44.97	43.5	-20.19	8.94	1.11	31.71	174	105	Peak
157.71	21.61	41.74	43.5	-21.89	10.62	1.52	32.27	105	325	Peak
400.8	18.16	29.98	46	-27.84	18.06	2.34	32.22	145	265	Peak
489	20.01	30.53	46	-25.99	18.96	2.63	32.11	174	125	Peak
586.3	22.1	30.87	46	-23.9	20.6	2.82	32.19	155	219	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
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	100288	Nov. 09, 2012	Nov. 08, 2013
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 21, 2012	Dec. 20, 2013
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 02, 2013	Jul. 01, 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 2.
  3. The VCCI Site Registration No. is C-2047.

#### 4.2.3 TEST PROCEDURES

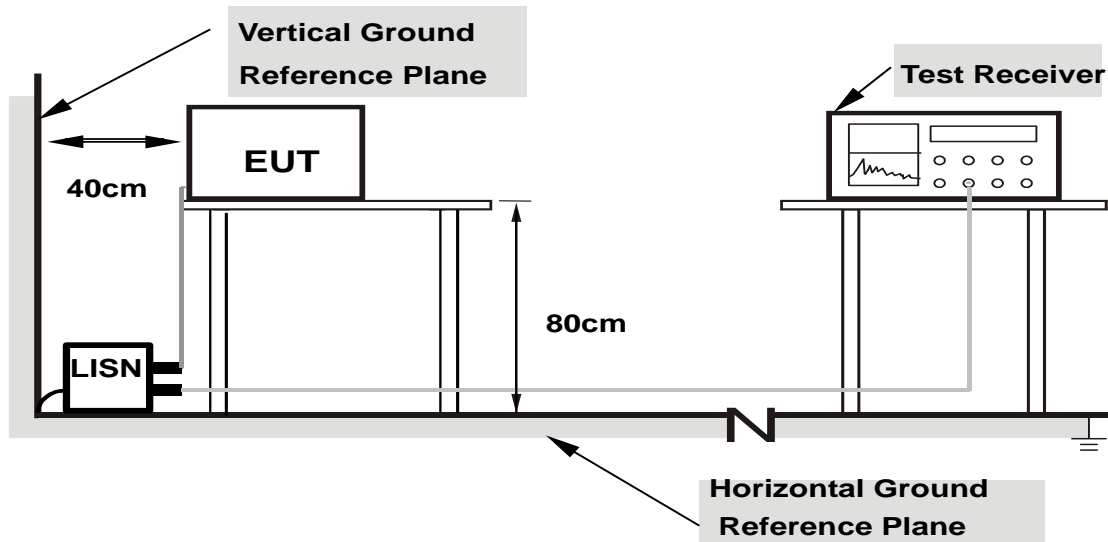
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

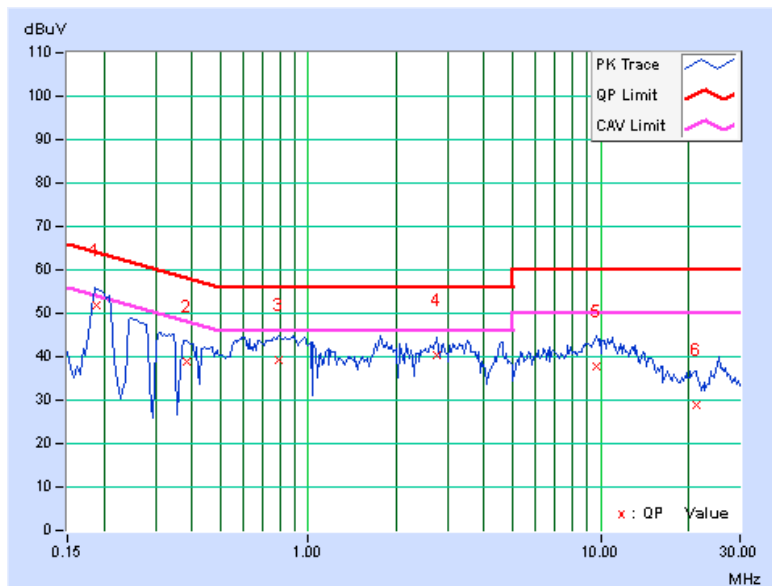
**CONDUCTED WORST-CASE DATA :**

<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	0.18906	0.17	51.82	40.96	51.99	41.13	64.08
2	0.38438	0.21	38.82	22.94	39.03	23.15	58.18	48.18	-19.16	-25.04
3	0.79453	0.25	39.09	19.09	39.34	19.34	56.00	46.00	-16.66	-26.66
4	2.76563	0.31	40.14	24.80	40.45	25.11	56.00	46.00	-15.55	-20.89
5	9.73047	0.43	37.48	25.76	37.91	26.19	60.00	50.00	-22.09	-23.81
6	21.25781	0.63	28.22	20.13	28.85	20.76	60.00	50.00	-31.15	-29.24

**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

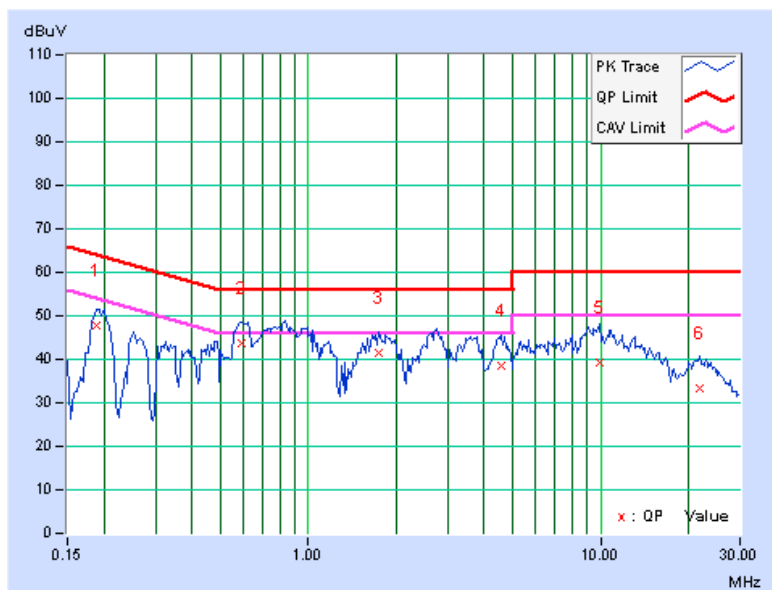


PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.18906	0.18	47.65	38.31	47.83	38.49	64.08
2	0.59141	0.24	43.28	23.78	43.52	24.02	56.00	46.00	-12.48	-21.98
3	1.74219	0.27	41.33	25.74	41.60	26.01	56.00	46.00	-14.40	-19.99
4	4.55859	0.40	38.16	24.53	38.56	24.93	56.00	46.00	-17.44	-21.07
5	9.94922	0.48	38.88	27.36	39.36	27.84	60.00	50.00	-20.64	-22.16
6	21.93359	0.71	32.73	22.59	33.44	23.30	60.00	50.00	-26.56	-26.70

**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

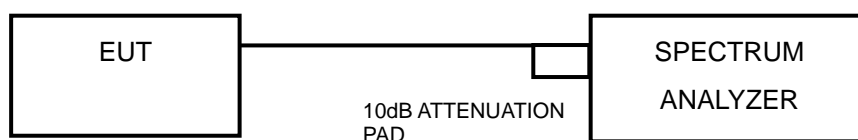


### 4.3 6dB BANDWIDTH MEASUREMENT

#### 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

- a. Set resolution bandwidth (RBW) = approximately 1% of the emission bandwidth
- b. Set the video bandwidth (VBW)  $\geq 3 \times$  RBW, Detector = Peak.
- c. Trace mode = max hold.
- d. Sweep = auto couple.
- e. 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.



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#### 4.3.7 TEST RESULTS

##### 802.11b

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	8.10	0.5	PASS
6	2437	8.12	0.5	PASS
11	2462	8.14	0.5	PASS

##### 802.11g

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	15.69	0.5	PASS
6	2437	15.45	0.5	PASS
11	2462	15.09	0.5	PASS

##### 802.11n (20MHz)

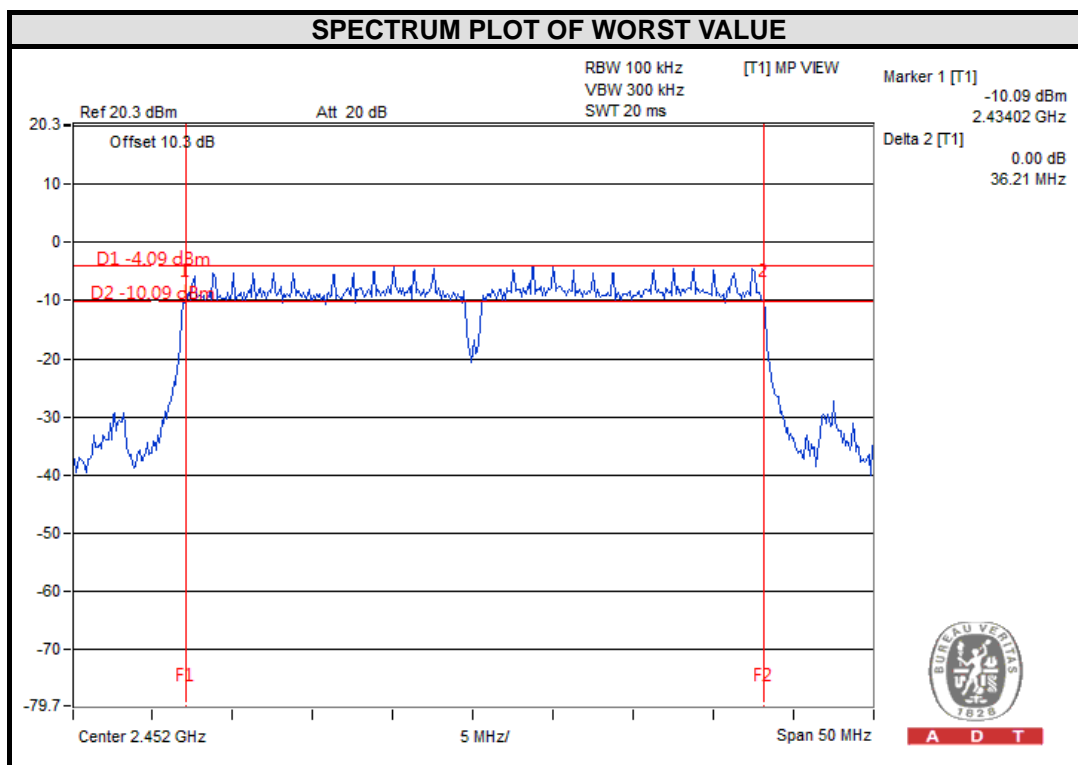
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	15.45	0.5	PASS
6	2437	15.66	0.5	PASS
11	2462	15.22	0.5	PASS



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### 802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	36.09	0.5	PASS
6	2437	36.17	0.5	PASS
9	2452	36.21	0.5	PASS



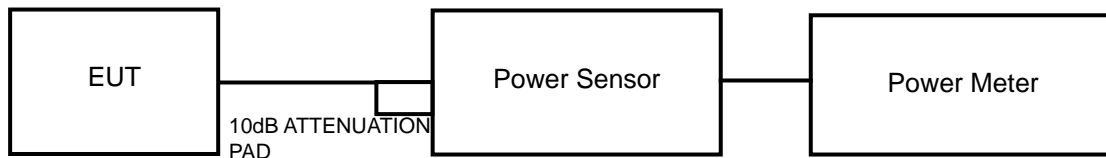


## 4.4 CONDUCTED OUTPUT POWER

### 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.



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#### 4.4.7 TEST RESULTS

##### 802.11b

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	76.033	18.81	30	PASS
6	2437	64.121	18.07	30	PASS
11	2462	58.210	17.65	30	PASS

##### 802.11g

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	102.802	20.12	30	PASS
6	2437	135.207	21.31	30	PASS
11	2462	113.501	20.55	30	PASS

##### 802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	93.541	19.71	30	PASS
6	2437	127.644	21.06	30	PASS
11	2462	107.399	20.31	30	PASS

##### 802.11n (40MHz)

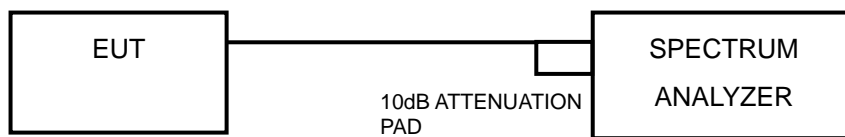
CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
3	2422	69.502	18.42	30	PASS
6	2437	106.905	20.29	30	PASS
9	2452	83.946	19.24	30	PASS

## 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

- Set the RBW = 3 kHz, VBW = 10 kHz, Detector = peak.
- Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
- Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

### 4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

### 4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6



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## 4.5.7 TEST RESULTS

### 802.11b

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-5.81	8	PASS
6	2437	-8.67	8	PASS
11	2462	-8.16	8	PASS

### 802.11g

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-15.25	8	PASS
6	2437	-11.87	8	PASS
11	2462	-14.56	8	PASS

### 802.11n (20MHz)

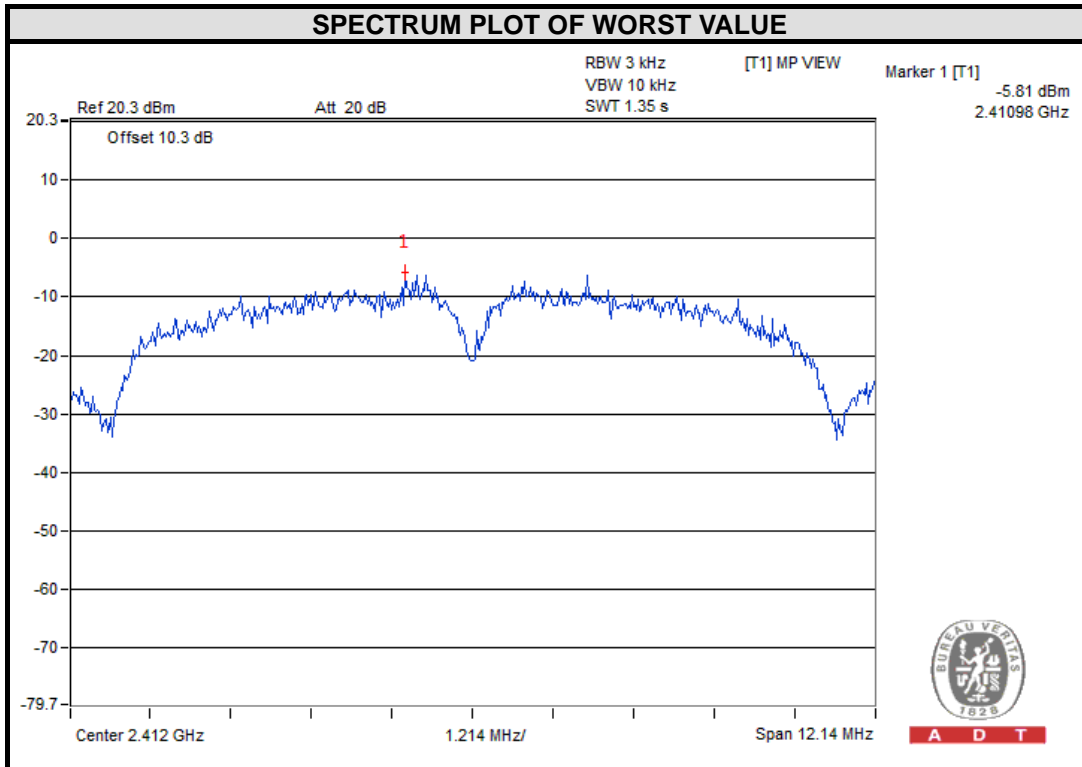
Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-14.42	8	PASS
6	2437	-11.80	8	PASS
11	2462	-14.86	8	PASS

### 802.11n (40MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-17.92	8	PASS
6	2437	-16.36	8	PASS
9	2452	-18.17	8	PASS



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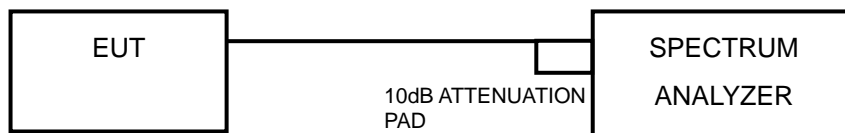


## 4.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT

### 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

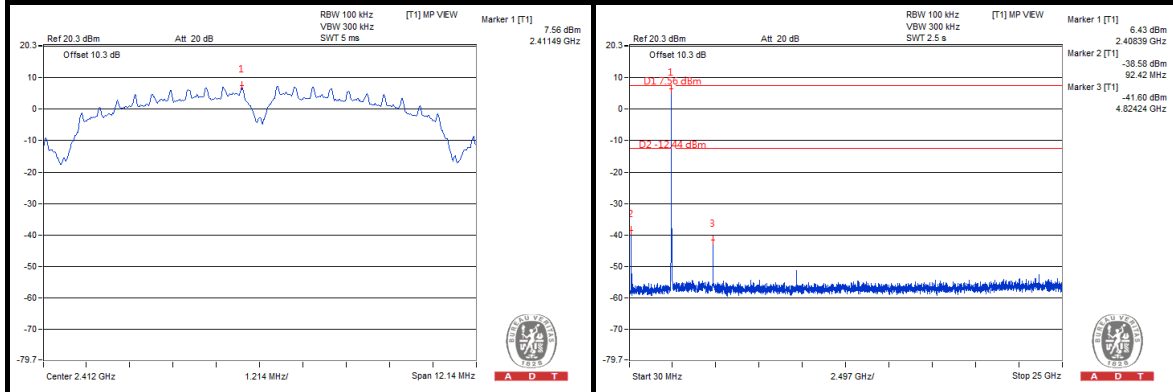
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.



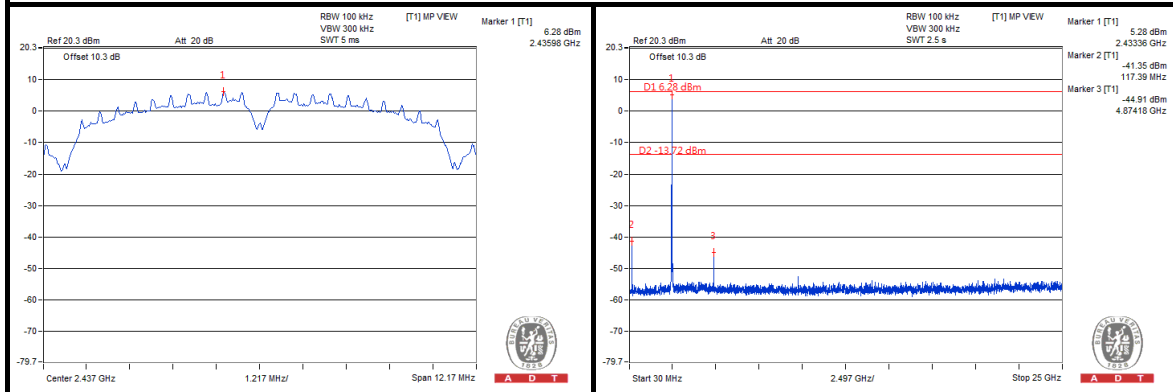
A D T

### 802.11b

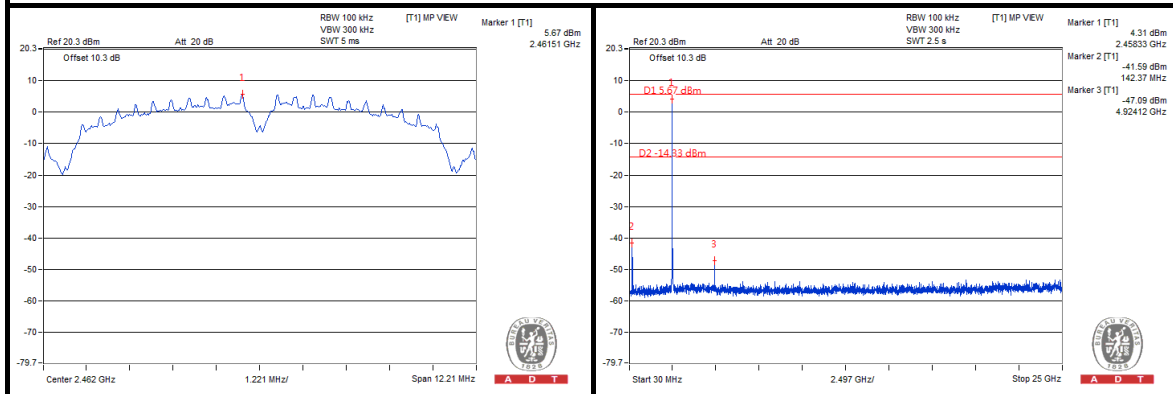
#### CH 1



#### CH 6



#### CH 11



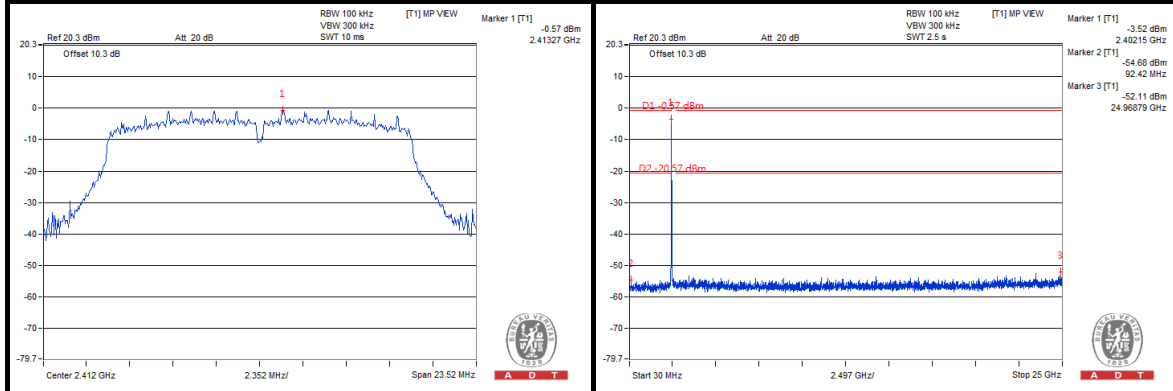




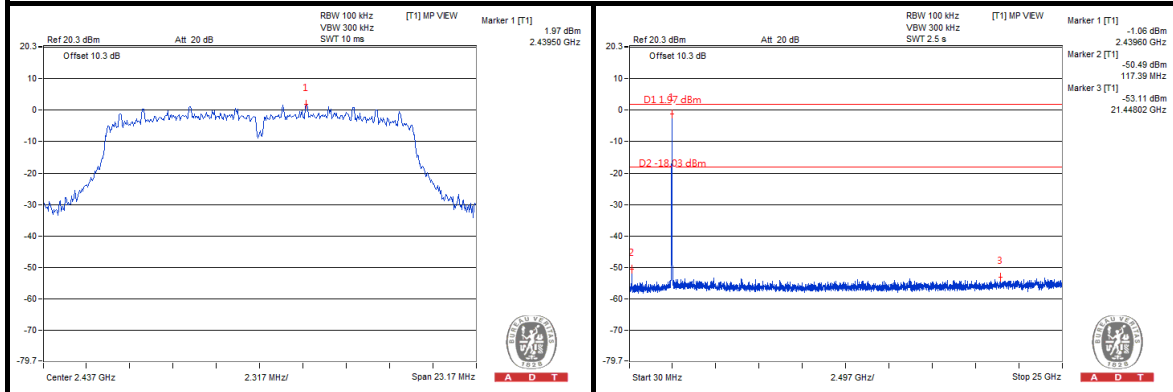
A D T

### 802.11g

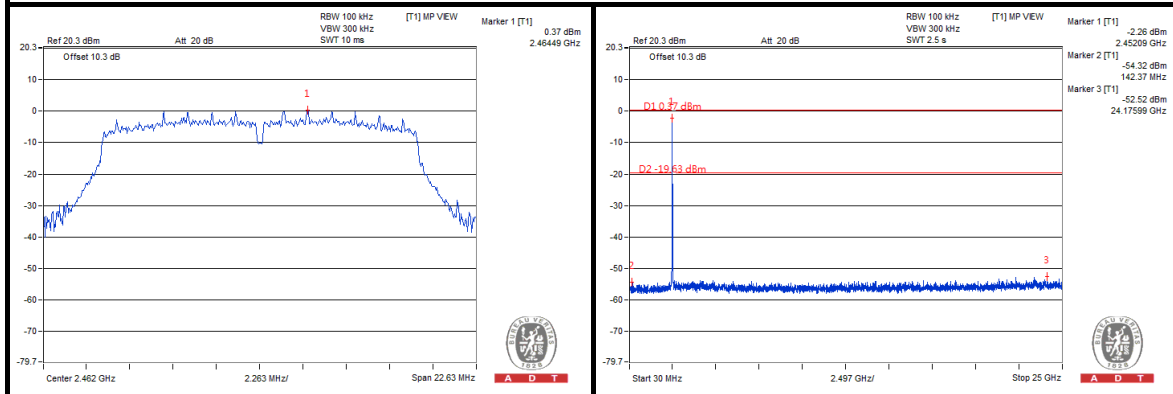
#### CH 1



#### CH 6



#### CH 11

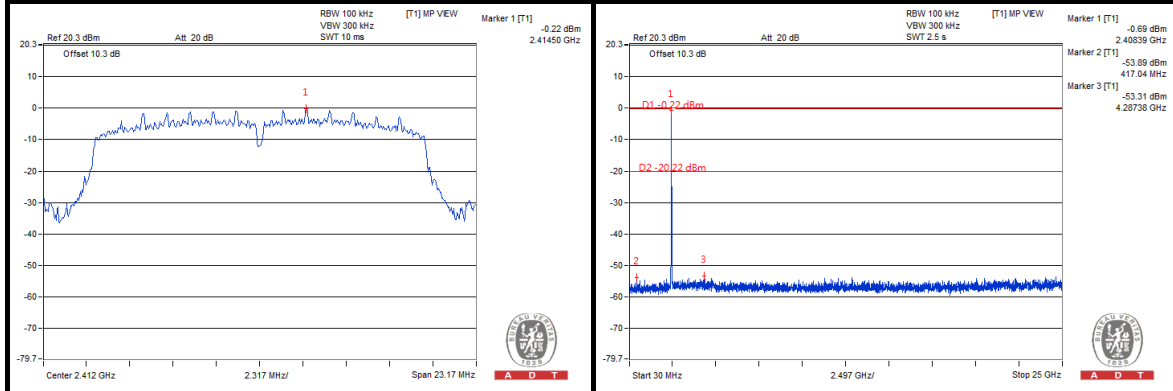




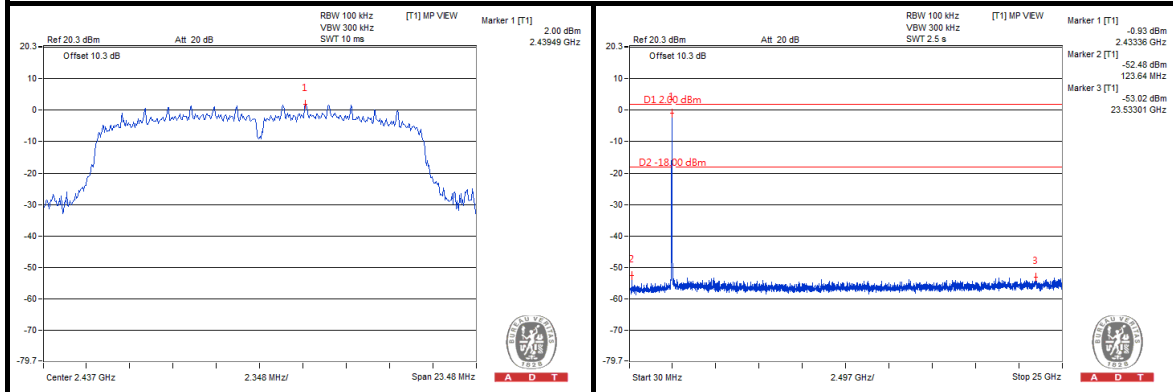
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### 802.11n (20MHz)

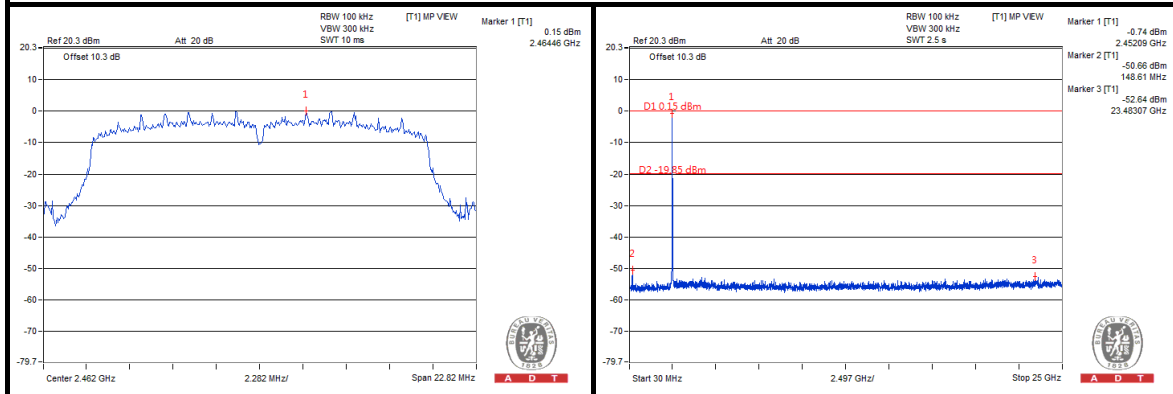
#### CH 1



#### CH 6



#### CH 11

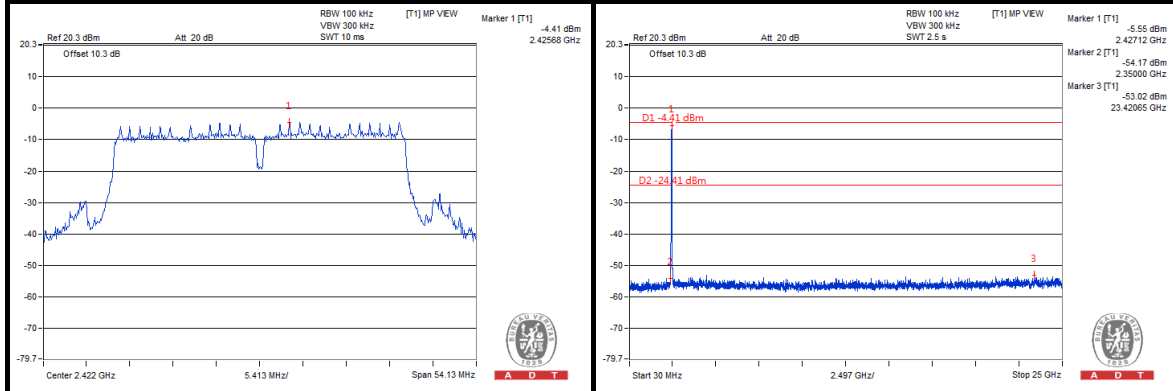




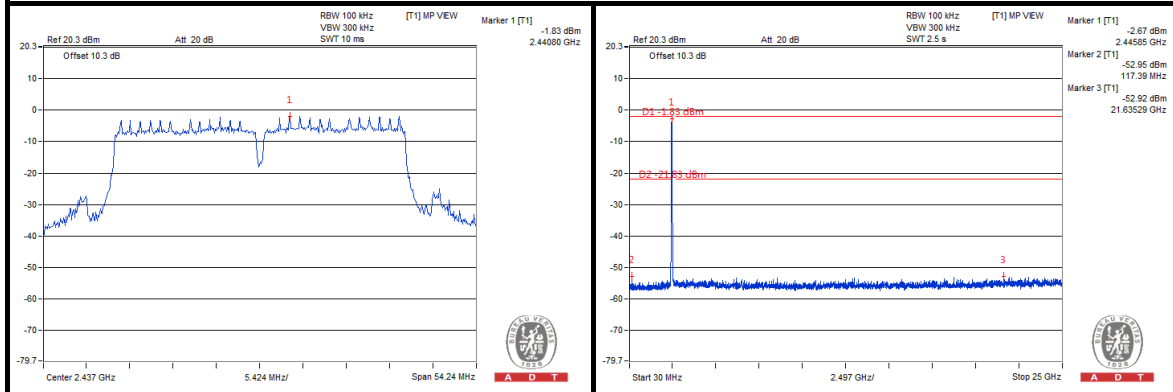
A D T

### 802.11n (40MHz)

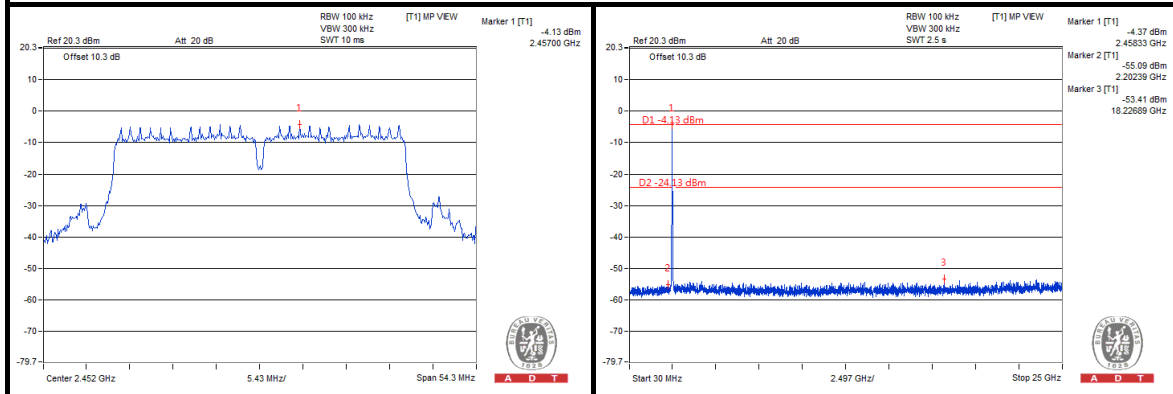
#### CH 3



#### CH 6



#### CH 9



## 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
5725	62.79	53.58	83.66	-20.87	34.67	8.65	34.11	134	14	Average
5725	80.65	71.44	90.47	-9.82	34.67	8.65	34.11	134	14	Peak
5745	103.66	94.41			34.7	8.66	34.11	134	14	Average
5745	110.47	101.22			34.7	8.66	34.11	134	14	Peak
5825	45.25	35.88	83.66	-38.41	34.81	8.69	34.13	134	14	Average
5825	57.54	48.17	90.47	-32.93	34.81	8.69	34.13	134	14	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
5725	58.08	48.87	78.82	-20.74	34.67	8.65	34.11	192	198	Average
5725	75.31	66.1	85.8	-10.49	34.67	8.65	34.11	192	198	Peak
5745	98.82	89.57			34.7	8.66	34.11	192	198	Average
5745	105.8	96.55			34.7	8.66	34.11	192	198	Peak
5825	44.76	35.39	78.82	-34.06	34.81	8.69	34.13	192	198	Average
5825	56.79	47.42	85.8	-29.01	34.81	8.69	34.13	192	198	Peak

#### REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 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
5725	46.89	37.68	84.21	-37.32	34.67	8.65	34.11	122	14	Average
5725	57.78	48.57	90.48	-32.7	34.67	8.65	34.11	122	14	Peak
5785	104.21	94.9			34.76	8.68	34.13	122	14	Average
5785	110.48	101.17			34.76	8.68	34.13	122	14	Peak
5825	52.07	42.7	84.21	-32.14	34.81	8.69	34.13	122	14	Average
5825	68.01	58.64	90.48	-22.47	34.81	8.69	34.13	122	14	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
5725	46.58	37.37	77	-30.42	34.67	8.65	34.11	126	192	Average
5725	56.4	47.19	84.08	-27.68	34.67	8.65	34.11	126	192	Peak
5785	97	87.69			34.76	8.68	34.13	126	192	Average
5785	104.08	94.77			34.76	8.68	34.13	126	192	Peak
5825	51.1	41.73	77	-25.9	34.81	8.69	34.13	126	192	Average
5825	63.29	53.92	84.08	-20.79	34.81	8.69	34.13	126	192	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 5785MHz: Fundamental frequency.
- 5725MHz & 5825MHz: Out of restricted band



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	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
5725	49.6	40.39	82.03	-32.43	34.67	8.65	34.11	197	94	Average
5725	56.01	46.8	88.9	-32.89	34.67	8.65	34.11	197	94	Peak
5825	102.03	92.66			34.81	8.69	34.13	197	94	Average
5825	108.9	99.53			34.81	8.69	34.13	197	94	Peak
5850	56.96	47.53	82.03	-25.07	34.87	8.7	34.14	197	94	Average
5850	71.78	62.35	88.9	-17.12	34.87	8.7	34.14	197	94	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
5725	43.44	34.23	77	-33.56	34.67	8.65	34.11	124	274	Average
5725	54.49	45.28	84.51	-30.02	34.67	8.65	34.11	124	274	Peak
5825	97	87.63			34.81	8.69	34.13	124	274	Average
5825	104.51	95.14			34.81	8.69	34.13	124	274	Peak
5850	52.3	42.87	77	-24.7	34.87	8.7	34.14	124	274	Average
5850	67.86	58.43	84.51	-16.65	34.87	8.7	34.14	124	274	Peak

**REMARKS:**

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
2. 5825MHz: Fundamental frequency.
3. 5725MHz & 5850MHz: 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
5725	56.17	46.96	81.71	-25.54	34.67	8.65	34.11	123	13	Average
5725	71.71	62.5	88.51	-16.8	34.67	8.65	34.11	123	13	Peak
5745	101.71	92.46			34.7	8.66	34.11	123	13	Average
5745	108.51	99.26			34.7	8.66	34.11	123	13	Peak
5825	46.61	37.24	81.71	-35.1	34.81	8.69	34.13	123	13	Average
5825	57.43	48.06	88.51	-31.08	34.81	8.69	34.13	123	13	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
5725	51.18	41.97	76.1	-24.92	34.67	8.65	34.11	193	198	Average
5725	61.53	52.32	83.55	-22.02	34.67	8.65	34.11	193	198	Peak
5745	96.1	86.85			34.7	8.66	34.11	193	198	Average
5745	103.55	94.3			34.7	8.66	34.11	193	198	Peak
5825	44.76	35.39	76.1	-31.34	34.81	8.69	34.13	193	198	Average
5825	55.72	46.35	83.55	-27.83	34.81	8.69	34.13	193	198	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 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
5725	45.48	36.27	82.19	-36.71	34.67	8.65	34.11	125	11	Average
5725	57.12	47.91	88.67	-31.55	34.67	8.65	34.11	125	11	Peak
5785	102.19	92.88			34.76	8.68	34.13	125	11	Average
5785	108.67	99.36			34.76	8.68	34.13	125	11	Peak
5825	49.29	39.92	82.19	-32.9	34.81	8.69	34.13	125	11	Average
5825	60.17	50.8	88.67	-28.5	34.81	8.69	34.13	125	11	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
5725	44.58	35.37	76.89	-32.31	34.67	8.65	34.11	127	204	Average
5725	56.97	47.76	84.58	-27.61	34.67	8.65	34.11	127	204	Peak
5785	96.89	87.58			34.76	8.68	34.13	127	204	Average
5785	104.58	95.27			34.76	8.68	34.13	127	204	Peak
5825	46.05	36.68	76.89	-30.84	34.81	8.69	34.13	127	204	Average
5825	57.93	48.56	84.58	-26.65	34.81	8.69	34.13	127	204	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 5785MHz: Fundamental frequency.
- 5725MHz & 5825MHz: Out of restricted band



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	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
5725	44.33	35.12	79.78	-35.45	34.67	8.65	34.11	199	96	Average
5725	55.99	46.78	86.36	-30.37	34.67	8.65	34.11	199	96	Peak
5825	99.78	90.41			34.81	8.69	34.13	199	96	Average
5825	106.36	96.99			34.81	8.69	34.13	199	96	Peak
5850	52.96	43.53	79.78	-26.82	34.87	8.7	34.14	199	96	Average
5850	65.03	55.6	86.36	-21.33	34.87	8.7	34.14	199	96	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
5725	43.37	34.16	75	-31.63	34.67	8.65	34.11	125	274	Average
5725	55.28	46.07	81.93	-26.65	34.67	8.65	34.11	125	274	Peak
5825	95	85.63			34.81	8.69	34.13	125	274	Average
5825	101.93	92.56			34.81	8.69	34.13	125	274	Peak
5850	47.48	38.05	75	-27.52	34.87	8.7	34.14	125	274	Average
5850	57.11	47.68	81.93	-24.82	34.87	8.7	34.14	125	274	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 5825MHz: Fundamental frequency.
- 5725MHz & 5850MHz: 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
5725	58.5	49.29	77.99	-19.49	34.67	8.65	34.11	134	13	Average
5725	68.16	58.95	84.98	-16.82	34.67	8.65	34.11	134	13	Peak
5755	97.99	88.74			34.7	8.66	34.11	134	13	Average
5755	104.98	95.73			34.7	8.66	34.11	134	13	Peak
5825	45.86	36.49	77.99	-32.13	34.81	8.69	34.13	134	13	Average
5825	57.28	47.91	84.98	-27.7	34.81	8.69	34.13	134	13	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
5725	53.29	44.08	72.83	-19.54	34.67	8.65	34.11	127	198	Average
5725	65.39	56.18	81.72	-16.33	34.67	8.65	34.11	127	198	Peak
5755	92.83	83.58			34.7	8.66	34.11	127	198	Average
5755	101.72	92.47			34.7	8.66	34.11	127	198	Peak
5825	46.75	37.38	72.83	-26.08	34.81	8.69	34.13	127	198	Average
5825	57.14	47.77	81.72	-24.58	34.81	8.69	34.13	127	198	Peak

## REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 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
5725	50.87	41.66	79.84	-28.97	34.67	8.65	34.11	123	13	Average
5725	64.67	55.46	86.7	-22.03	34.67	8.65	34.11	123	13	Peak
5795	99.84	90.53			34.76	8.68	34.13	123	13	Average
5795	106.7	97.39			34.76	8.68	34.13	123	13	Peak
5825	61.46	52.09	79.84	-18.38	34.81	8.69	34.13	123	13	Average
5825	78.86	69.49	86.7	-7.84	34.81	8.69	34.13	123	13	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
5725	47.48	38.27	74.72	-27.24	34.67	8.65	34.11	115	212	Average
5725	58.77	49.56	83	-24.23	34.67	8.65	34.11	115	212	Peak
5795	94.72	85.41			34.76	8.68	34.13	115	212	Average
5795	103	93.69			34.76	8.68	34.13	115	212	Peak
5825	56.09	46.72	74.72	-18.63	34.81	8.69	34.13	115	212	Average
5825	71.43	62.06	83	-11.57	34.81	8.69	34.13	115	212	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value
- 5795MHz: Fundamental frequency.
- 5725MHz & 5825MHz: Out of restricted band



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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) QP
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
55.11	12.9	36.96	40	-27.1	7.27	0.9	32.23	177	41	Peak
87.24	20.24	42.23	40	-19.76	8.76	1.11	31.86	101	235	Peak
138.54	18.65	40.26	43.5	-24.85	9.28	1.38	32.27	152	124	Peak
345.5	17.5	31.24	46	-28.5	16.14	2.19	32.07	145	128	Peak
407.8	21.59	33.44	46	-24.41	17.95	2.41	32.21	177	215	Peak
584.9	20.22	29.12	46	-25.78	20.48	2.82	32.2	152	326	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
55.65	17.11	41.23	40	-22.89	7.21	0.9	32.23	145	175	Peak
87.78	22.91	44.81	40	-17.09	8.8	1.11	31.81	145	215	Peak
139.35	16.01	37.6	43.5	-27.49	9.3	1.38	32.27	118	42	Peak
342	16.23	30.06	46	-29.77	16.06	2.19	32.08	114	215	Peak
533.1	20.71	29.61	46	-25.29	20.57	2.7	32.17	102	152	Peak
635.3	22.84	29.97	46	-23.16	22.1	2.93	32.16	142	135	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin Value = Emission Level - Limit Value



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## 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

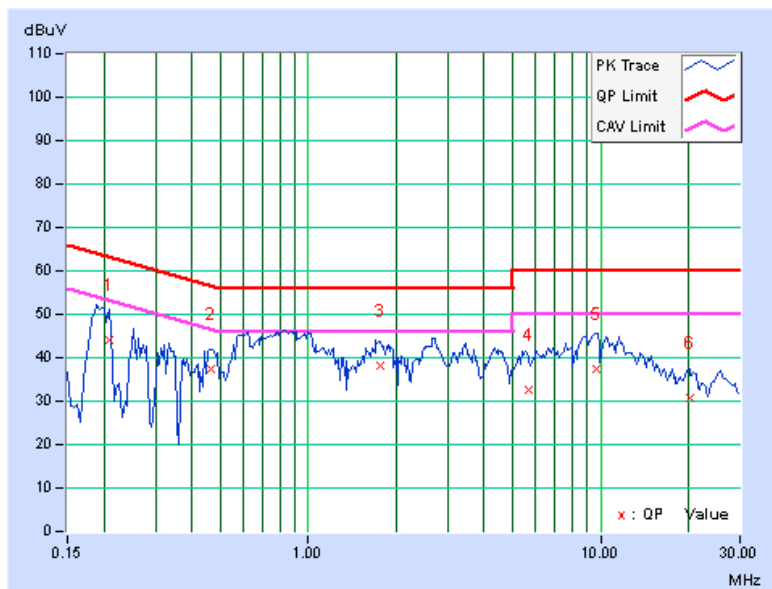
**CONDUCTED WORST-CASE DATA :**

<b>PHASE</b>	Line 1	<b>6dB BANDWIDTH</b>	9kHz
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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	0.20859	0.17	43.96	29.75	44.13	29.92	63.26	53.26	-19.13	-23.34
2	0.46250	0.22	37.19	20.94	37.41	21.16	56.65	46.65	-19.24	-25.49
3	1.75781	0.28	37.82	20.41	38.10	20.69	56.00	46.00	-17.90	-25.31
4	5.64453	0.39	32.22	19.98	32.61	20.37	60.00	50.00	-27.39	-29.63
5	9.66016	0.43	36.92	24.33	37.35	24.76	60.00	50.00	-22.65	-25.24
6	20.12109	0.64	29.93	20.40	30.57	21.04	60.00	50.00	-29.43	-28.96

**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







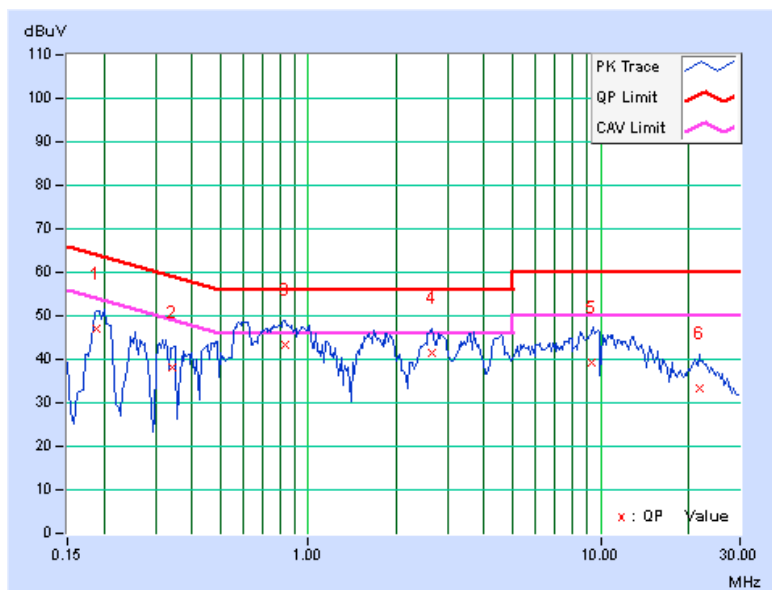
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PHASE	Line 2	6dB BANDWIDTH	9kHz
-------	--------	---------------	------

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	0.18906	0.18	46.87	37.27	47.05	37.45	64.08
2	0.34141	0.23	37.95	21.99	38.18	22.22	59.17	49.17	-20.99	-26.95
<b>3</b>	<b>0.83750</b>	<b>0.24</b>	<b>43.18</b>	<b>25.54</b>	<b>43.42</b>	<b>25.78</b>	<b>56.00</b>	<b>46.00</b>	<b>-12.58</b>	<b>-20.22</b>
4	2.64063	0.32	41.03	26.90	41.35	27.22	56.00	46.00	-14.65	-18.78
5	9.33594	0.47	38.79	27.19	39.26	27.66	60.00	50.00	-20.74	-22.34
6	21.76172	0.72	32.63	22.51	33.35	23.23	60.00	50.00	-26.65	-26.77

**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



### **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	15.52	0.5	PASS
157	5785	15.75	0.5	PASS
165	5825	15.82	0.5	PASS

#### 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	15.42	0.5	PASS
157	5785	15.36	0.5	PASS
165	5825	15.50	0.5	PASS

#### 802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	36.34	0.5	PASS
159	5795	36.45	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.



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## 5.4.7 TEST RESULTS

### 802.11a

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
149	5745	162.555	22.11	30	PASS
157	5785	161.065	22.07	30	PASS
165	5825	161.065	22.07	30	PASS

### 802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
149	5745	130.918	21.17	30	PASS
157	5785	126.765	21.03	30	PASS
165	5825	156.315	21.94	30	PASS

### 802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
151	5755	120.781	20.82	30	PASS
159	5795	133.660	21.26	30	PASS

## **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/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
149	5745	-10.73	8	PASS
157	5785	-12.33	8	PASS
165	5825	-12.35	8	PASS

### 802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
149	5745	-14.42	8	PASS
157	5785	-14.81	8	PASS
165	5825	-13.33	8	PASS

### 802.11n (40MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
151	5755	-18.12	8	PASS
159	5795	-16.59	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.

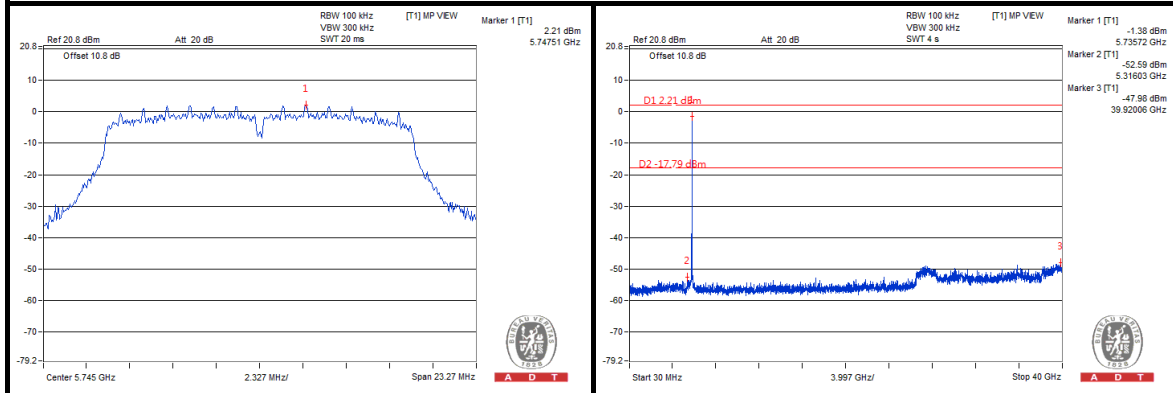




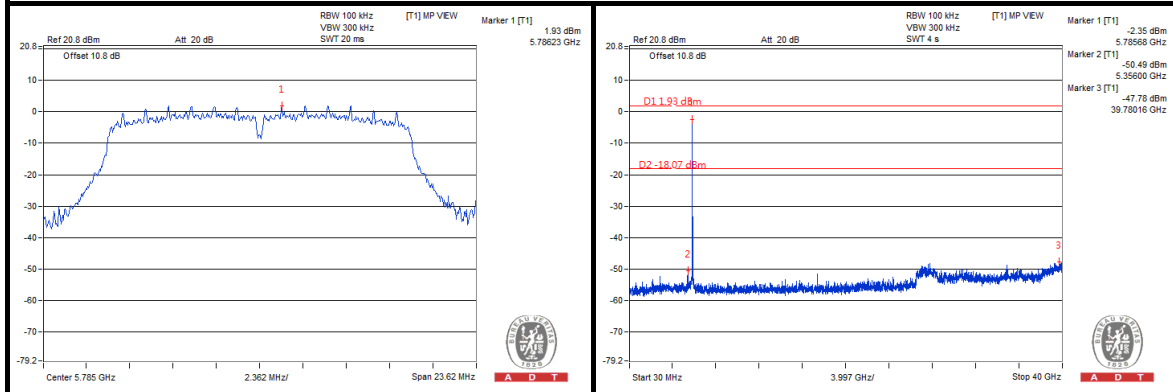
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### 802.11a

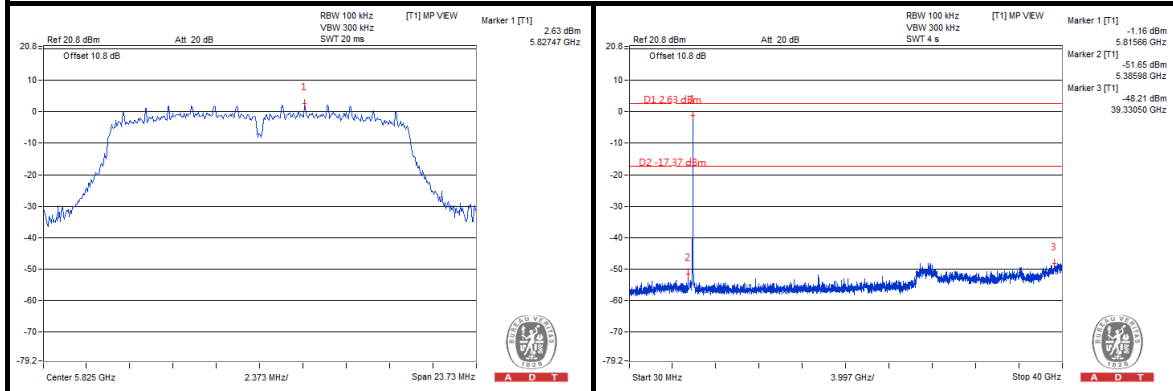
#### CH 149



#### CH 157



#### CH 165

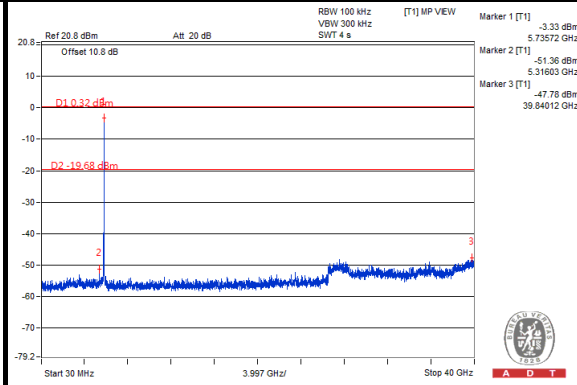
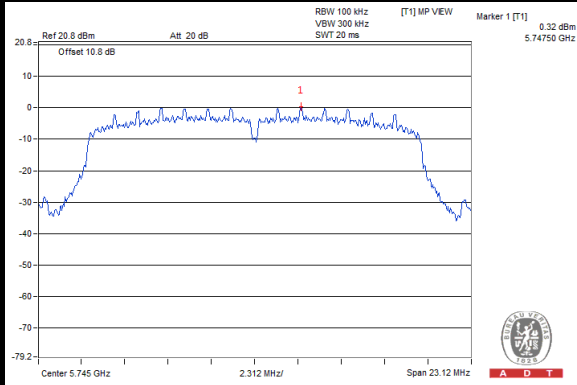




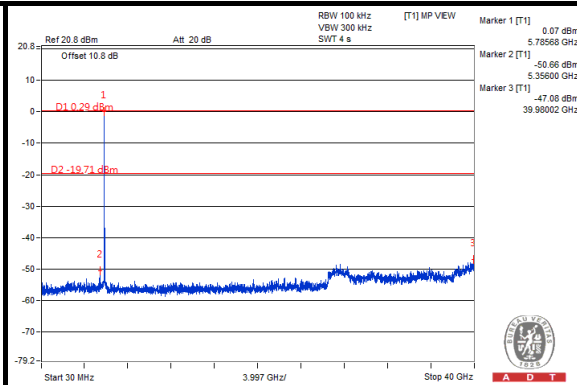
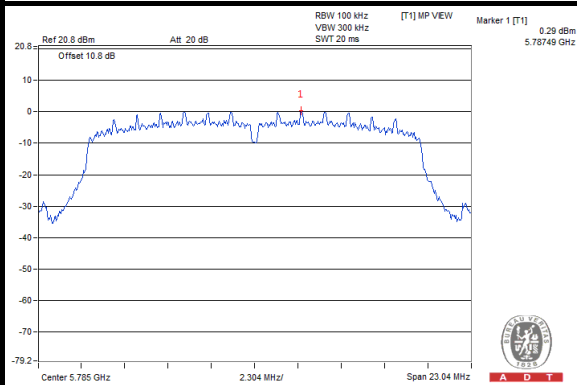
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### 802.11n (20MHz)

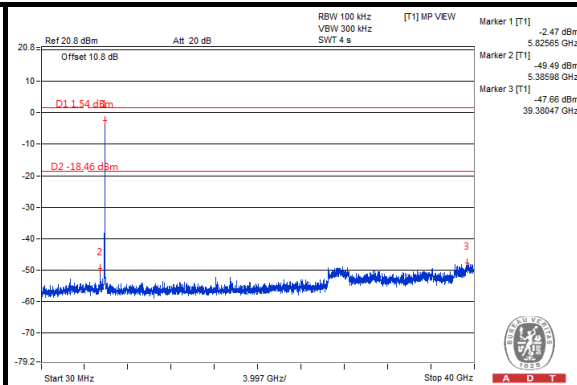
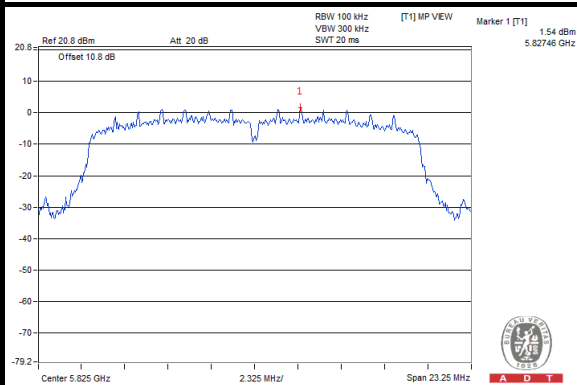
#### CH 149



#### CH 157



#### CH 165

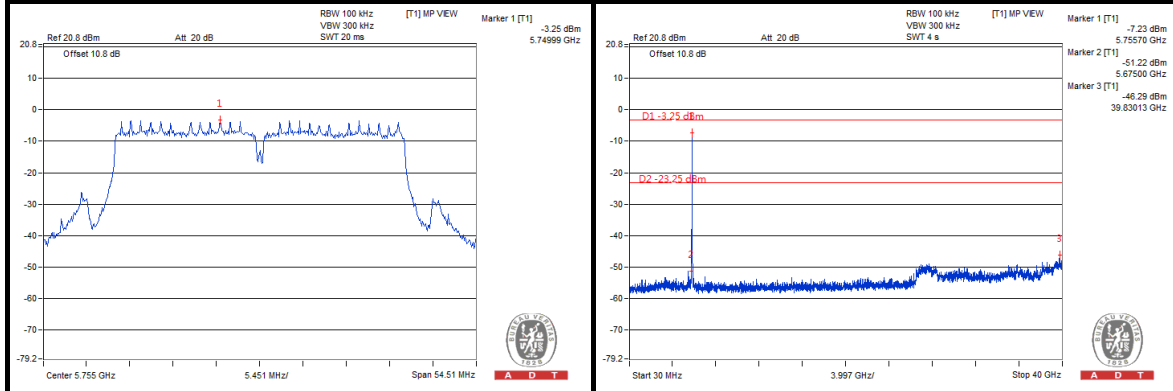




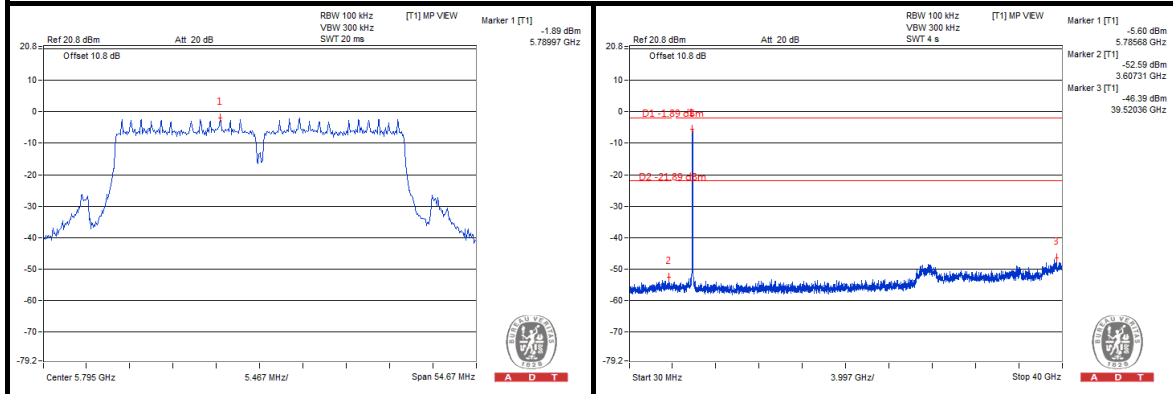
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### 802.11n (40MHz)

#### CH 151

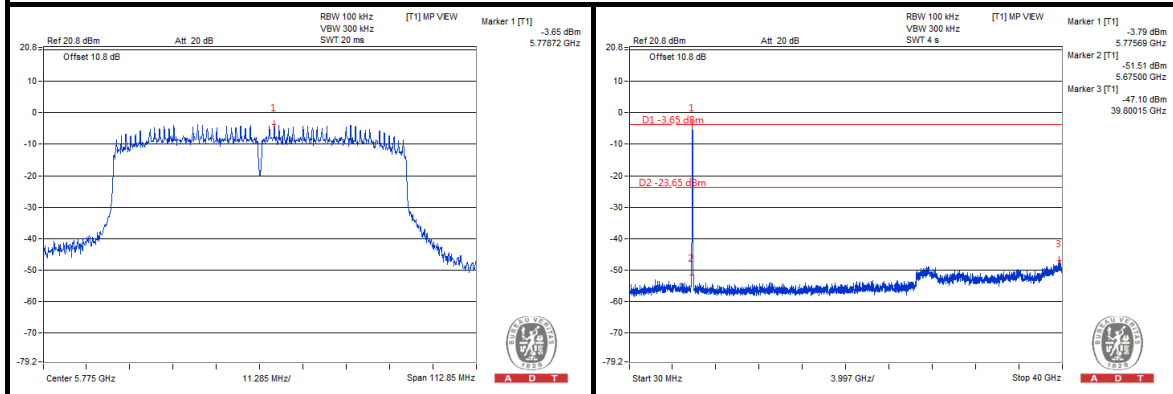


#### CH 159



### 802.11ac (80MHz)

#### CH 155





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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.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.



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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---