



# FCC TEST REPORT (15.247)

**REPORT NO.:** RF121129C10-4  
**MODEL NO.:** PN07120  
**FCC ID:** NM8PN07120  
**RECEIVED:** Nov. 29, 2012  
**TESTED:** Dec. 18, 2012 ~ Jan. 23, 2013  
**ISSUED:** Jan. 31, 2013

**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

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

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

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.



# TABLE OF CONTENTS

RELEASE CONTROL RECORD .....	5
1. CERTIFICATION.....	6
2. SUMMARY OF TEST RESULTS.....	7
2.1 MEASUREMENT UNCERTAINTY .....	7
3. GENERAL INFORMATION .....	8
3.1 GENERAL DESCRIPTION OF EUT.....	8
3.2 DESCRIPTION OF TEST MODES.....	10
3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL.....	11
3.3 DESCRIPTION OF SUPPORT UNITS .....	15
3.3.1 CONFIGURATION OF SYSTEM UNDER TEST .....	15
3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS.....	15
4. TEST TYPES AND RESULTS (FOR 2.4GHz BAND) .....	16
4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT .....	16
4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT .....	16
4.1.2 TEST INSTRUMENTS .....	17
4.1.3 TEST PROCEDURES.....	18
4.1.4 DEVIATION FROM TEST STANDARD .....	18
4.1.5 TEST SETUP.....	19
4.1.6 EUT OPERATING CONDITIONS.....	19
4.1.7 TEST RESULTS .....	20
4.2 CONDUCTED EMISSION MEASUREMENT .....	34
4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT .....	34
4.2.2 TEST INSTRUMENTS .....	34
4.2.3 TEST PROCEDURES.....	35
4.2.4 DEVIATION FROM TEST STANDARD .....	35
4.2.5 TEST SETUP.....	36
4.2.6 EUT OPERATING CONDITIONS.....	36
4.2.7 TEST RESULTS .....	37
4.3 6dB BANDWIDTH MEASUREMENT .....	39
4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT .....	39
4.3.2 TEST SETUP.....	39
4.3.3 TEST INSTRUMENTS .....	39
4.3.4 TEST PROCEDURE .....	39
4.3.5 DEVIATION FROM TEST STANDARD .....	39
4.3.6 EUT OPERATING CONDITIONS.....	39
4.3.7 TEST RESULTS .....	40
4.4 CONDUCTED OUTPUT POWER.....	41
4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT .....	41
4.4.2 TEST SETUP.....	41
4.4.3 TEST INSTRUMENTS .....	41
4.4.4 TEST PROCEDURES.....	41
4.4.5 DEVIATION FROM TEST STANDARD .....	42
4.4.6 EUT OPERATING CONDITIONS.....	42
4.4.7 TEST RESULTS .....	43
4.5 POWER SPECTRAL DENSITY MEASUREMENT .....	44
4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT .....	44
4.5.2 TEST SETUP.....	44
4.5.3 TEST INSTRUMENTS .....	44



4.5.4	TEST PROCEDURE .....	44
4.5.5	DEVIATION FROM TEST STANDARD .....	44
4.5.6	EUT OPERATING CONDITION .....	44
4.5.7	TEST RESULTS .....	45
4.6	CONDUCTED OUT OF BAND EMISSION MEASUREMENT .....	46
4.6.1	LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT .....	46
4.6.2	TEST SETUP.....	46
4.6.3	TEST INSTRUMENTS .....	46
4.6.4	TEST PROCEDURE .....	46
4.6.5	DEVIATION FROM TEST STANDARD .....	47
4.6.6	EUT OPERATING CONDITION .....	47
4.6.7	TEST RESULTS .....	47
5.	TEST TYPES AND RESULTS (FOR 5.0GHz BAND) .....	52
5.1	RADIATED EMISSION AND BANDEDGE MEASUREMENT .....	52
5.1.1	LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT .....	52
5.1.2	TEST INSTRUMENTS.....	53
5.1.3	TEST PROCEDURES.....	53
5.1.4	DEVIATION FROM TEST STANDARD .....	53
5.1.5	TEST SETUP.....	53
5.1.6	EUT OPERATING CONDITIONS.....	53
5.1.7	TEST RESULTS .....	54
5.2	CONDUCTED EMISSION MEASUREMENT .....	65
5.2.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT .....	65
5.2.2	TEST INSTRUMENTS .....	65
5.2.3	TEST PROCEDURES.....	65
5.2.4	DEVIATION FROM TEST STANDARD .....	65
5.2.5	TEST SETUP.....	65
5.2.6	EUT OPERATING CONDITIONS.....	65
5.2.7	TEST RESULTS .....	66
5.3	6dB BANDWIDTH MEASUREMENT .....	70
5.3.1	LIMITS OF 6dB BANDWIDTH MEASUREMENT .....	70
5.3.2	TEST SETUP.....	70
5.3.3	TEST INSTRUMENTS .....	70
5.3.4	TEST PROCEDURE .....	70
5.3.5	DEVIATION FROM TEST STANDARD .....	70
5.3.6	EUT OPERATING CONDITIONS.....	70
5.3.7	TEST RESULTS .....	71
5.4	MAXIMUM OUTPUT POWER.....	72
5.4.1	LIMITS OF MAXIMUM OUTPUT POWER MEASUREMENT .....	72
5.4.2	TEST SETUP.....	72
5.4.3	INSTRUMENTS.....	72
5.4.4	TEST PROCEDURES.....	72
5.4.5	DEVIATION FROM TEST STANDARD .....	72
5.4.6	EUT OPERATING CONDITIONS.....	72
5.4.7	TEST RESULTS .....	73
5.5	POWER SPECTRAL DENSITY MEASUREMENT .....	74
5.5.1	LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT .....	74
5.5.2	TEST SETUP.....	74
5.5.3	TEST INSTRUMENTS .....	74
5.5.4	TEST PROCEDURE.....	74
5.5.5	DEVIATION FROM TEST STANDARD .....	74



A D T

5.5.6	EUT OPERATING CONDITION .....	74
5.5.7	TEST RESULTS .....	75
5.6	CONDUCTED OUT OF BAND EMISSION MEASUREMENT .....	76
5.6.1	LIMITS OF OUT OF BAND EMISSION MEASUREMENT .....	76
5.6.2	TEST SETUP .....	76
5.6.3	TEST INSTRUMENTS .....	76
5.6.4	TEST PROCEDURE .....	76
5.6.5	DEVIATION FROM TEST STANDARD .....	76
5.6.6	EUT OPERATING CONDITION .....	76
5.6.7	TEST RESULTS .....	76
6.	PHOTOGRAPHS OF THE TEST CONFIGURATION .....	80
7.	INFORMATION ON THE TESTING LABORATORIES .....	81
8.	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB .....	82



A D T

## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF121129C10-4	Original release	Jan. 31, 2013



A D T

## 1. CERTIFICATION

**PRODUCT:** Smartphone  
**MODEL NO.:** PN07120  
**BRAND:** HTC  
**APPLICANT:** HTC Corporation  
**TESTED:** Dec. 18, 2012 ~ Jan. 23, 2013  
**TEST SAMPLE:** Production Unit  
**STANDARDS:** **FCC Part 15, Subpart C (Section 15.247)**  
ANSI C63.10-2009

The above equipment (model: PN07120) 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** : Evonne Liu , **DATE** : Jan. 31, 2013  
Evonne Liu / Specialist

**APPROVED BY** : Anderson Chiu , **DATE** : Jan. 31, 2013  
Anderson Chiu / Senior Engineer

## 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 -1.26dB at 13.56250MHz.
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -2.69dB at 2483.5MHz.
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  $k = 2$ .



A D T

### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>EUT</b>	Smartphone
<b>MODEL NO.</b>	PN07120
<b>POWER SUPPLY</b>	5.0Vdc (adapter or host equipment) 3.8Vdc (Li-ion battery)
<b>MODULATION TYPE</b>	CCK, DQPSK, DBPSK for DSSS 256 QAM , 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 802.11ac: up to V9
<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) 1 for 802.11ac (80MHz)
<b>OUTPUT POWER</b>	236.592mW for 2412 ~ 2462MHz 263.027mW for 5745 ~ 5825MHz
<b>ANTENNA TYPE</b>	<b>2.4GHz:</b> PIFA antenna with -1dBi gain <b>5.0GHz:</b> PIFA antenna with -2Bi 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



A D T

**NOTE:**

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

<b>MODULATION MODE</b>	<b>TX FUNCTION</b>
<b>802.11b</b>	1TX
<b>802.11g</b>	1TX
<b>802.11a</b>	1TX
<b>802.11n (20MHz)</b>	1TX
<b>802.11n (40MHz)</b>	1TX
<b>802.11 ac (80MHz)</b>	1TX

3. The device has 2 configurations as below.  
Main Sample (A): Battery 1 + LCD Panel 1+ Front Camera 1  
2nd Sample (B): Battery 2 + LCD Panel 2+ Front Camera 2
4. 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:

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
155	5775MHz		

### 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

#### FOR 2.4GHz:

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE $<$ 1G	PLC	APCM	
A	√	√	√	√	Main Sample
B	√	-	-	-	2nd Sample

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.

EUT CONFIGURE MODE	MODE	AVAILABLE CH.	TESTED CH.	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
A	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	MCS0
B	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	MCS0
A	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)
802.11n (20MHz)	1 to 11	6	OFDM	BPSK	MCS0



**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 (20MHz)	1 to 11	6	OFDM	BPSK	MCS0

**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, 6, 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	David Huang
APCM	25deg. C, 65%RH	120Vac, 60Hz	Howard Kao



**A D T**

**FOR 5.0GHz:**

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	Main Sample
B	-	√	√	-	2nd Sample

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.

EUT CONFIGURE MODE	MODE	AVAILABLE CH.	TESTED CH.	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A	802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	MCS0
A	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	MCS0
A	802.11ac (80MHz)	155	155	OFDM	BPSK	V0
B	802.11ac (80MHz)	155	155	OFDM	BPSK	V0

**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 (20MHz)	149 to 165	157	OFDM	BPSK	MCS0

**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.



A D T

EUT CONFIGURE MODE	MODE	MODE	AVAILABLE CHANNEL	TESTED CH.	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11n (20MHz)	802.11n (20MHz)	149 to 165	157	OFDM	BPSK	MCS0
B	802.11n (20MHz)	802.11n (20MHz)	149 to 165	157	OFDM	BPSK	MCS0

**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, 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
802.11ac (80MHz)	155	155	OFDM	BPSK	V0

**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
802.11ac (80MHz)	155	155	OFDM	BPSK	V0

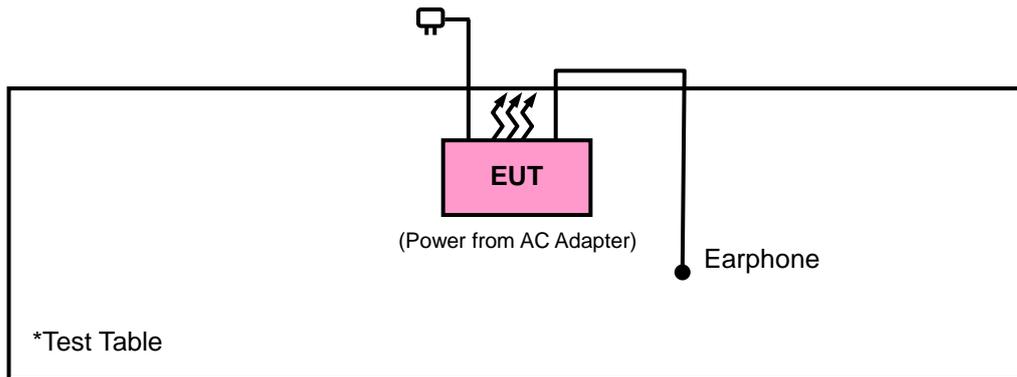
**TEST CONDITION:**

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.

#### 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.



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. 19, 2012	Apr. 18, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 17, 2012	Dec. 16, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Apr. 03, 2012	Apr. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9120 D	209	Sep. 03, 2012	Sep. 02, 2013
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 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	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	1232002	Aug. 10, 2012	Aug. 09, 2013
Power Sensor	MA2411B	1207325	Aug. 15, 2012	Aug. 14, 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 IC7450F-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.

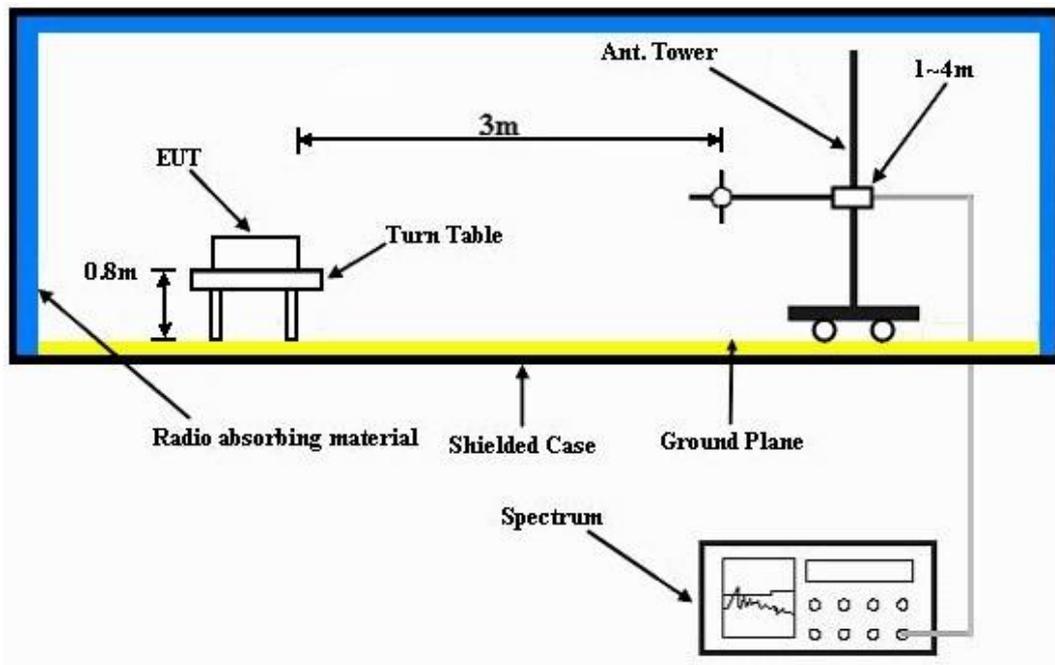
**NOTE:**

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.



A D T

### 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	39.35	44.74	54	-14.65	27.26	4.87	37.52	103	22	Average
2390	54.95	60.34	74	-19.05	27.26	4.87	37.52	103	22	Peak
2412	100.78	106.12			27.31	4.87	37.52	103	22	Average
2412	104.97	110.31			27.31	4.87	37.52	103	22	Peak
2490	49.13	53.98	54	-4.87	27.55	4.92	37.32	103	22	Average
2490	57.89	62.74	74	-16.11	27.55	4.92	37.32	103	22	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	36.97	42.36	54	-17.03	27.26	4.87	37.52	100	315	Average
2390	54.66	60.05	74	-19.34	27.26	4.87	37.52	100	315	Peak
2412	93.35	98.69			27.31	4.87	37.52	100	315	Average
2412	97.49	102.83			27.31	4.87	37.52	100	315	Peak
2490	38.56	43.41	54	-15.44	27.55	4.92	37.32	100	315	Average
2490	54.62	59.47	74	-19.38	27.55	4.92	37.32	100	315	Peak

#### REMARKS:

- 2412MHz: 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	38.73	44.12	54	-15.27	27.26	4.87	37.52	100	20	Average
2390	53.95	59.34	74	-20.05	27.26	4.87	37.52	100	20	Peak
2437	101.32	106.49			27.4	4.89	37.46	100	20	Average
2437	105.27	110.44			27.4	4.89	37.46	100	20	Peak
2492	39.51	44.27	54	-14.49	27.55	4.94	37.25	100	20	Average
2492	55.27	60.03	74	-18.73	27.55	4.94	37.25	100	20	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
2342	37.4	42.96	54	-16.6	27.11	4.82	37.49	100	314	Average
2342	54.12	59.68	74	-19.88	27.11	4.82	37.49	100	314	Peak
2437	92.23	97.4			27.4	4.89	37.46	100	314	Average
2437	96.24	101.41			27.4	4.89	37.46	100	314	Peak
2492	36.89	41.65	54	-17.11	27.55	4.94	37.25	100	314	Average
2492	54.33	59.09	74	-19.67	27.55	4.94	37.25	100	314	Peak

**REMARKS:**

- 2437MHz: Fundamental frequency.



A D T

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
2380	43.56	49	54	-10.44	27.21	4.85	37.5	103	18	Average
2380	55.33	60.77	74	-18.67	27.21	4.85	37.5	103	18	Peak
2462	101.1	106.13			27.45	4.91	37.39	103	18	Average
2462	105.32	110.35			27.45	4.91	37.39	103	18	Peak
2483.5	41.33	46.23	54	-12.67	27.5	4.92	37.32	103	18	Average
2483.5	55.96	60.86	74	-18.04	27.5	4.92	37.32	103	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
2382	38.13	43.57	54	-15.87	27.21	4.85	37.5	100	315	Average
2382	54	59.44	74	-20	27.21	4.85	37.5	100	315	Peak
2462	91.91	96.94			27.45	4.91	37.39	100	315	Average
2462	96.04	101.07			27.45	4.91	37.39	100	315	Peak
2483.5	37.09	41.99	54	-16.91	27.5	4.92	37.32	100	315	Average
2483.5	54.16	59.06	74	-19.84	27.5	4.92	37.32	100	315	Peak

**REMARKS:**

- 2462MHz: Fundamental frequency.



A D T

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	45.54	50.02	54	-8.46	28.17	4.87	37.52	106	26	Average
2390	66.98	71.46	74	-7.02	28.17	4.87	37.52	106	26	Peak
2412	93.74	98.17			28.22	4.87	37.52	106	26	Average
2412	103.83	108.26			28.22	4.87	37.52	106	26	Peak
2488	42.67	46.57	54	-11.33	28.5	4.92	37.32	106	26	Average
2488	57.55	61.45	74	-16.45	28.5	4.92	37.32	106	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	41.4	45.88	54	-12.6	28.17	4.87	37.52	100	313	Average
2390	60.69	65.17	74	-13.31	28.17	4.87	37.52	100	313	Peak
2412	87.88	92.31			28.22	4.87	37.52	100	313	Average
2412	98.06	102.49			28.22	4.87	37.52	100	313	Peak
2486	39.97	43.93	54	-14.03	28.44	4.92	37.32	100	313	Average
2486	55.74	59.7	74	-18.26	28.44	4.92	37.32	100	313	Peak

REMARKS:

- 2412MHz: 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
2354	41.52	46.13	54	-12.48	28.06	4.82	37.49	106	39	Average
2354	55.51	60.12	74	-18.49	28.06	4.82	37.49	106	39	Peak
2437	94.22	98.46			28.33	4.89	37.46	106	39	Average
2437	103.96	108.2			28.33	4.89	37.46	106	39	Peak
2500	41.67	45.48	54	-12.33	28.5	4.94	37.25	106	39	Average
2500	55.91	59.72	74	-18.09	28.5	4.94	37.25	106	39	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	39.84	44.32	54	-14.16	28.17	4.87	37.52	100	311	Average
2390	55.49	59.97	74	-18.51	28.17	4.87	37.52	100	311	Peak
2437	88.07	92.31			28.33	4.89	37.46	100	311	Average
2437	97.73	101.97			28.33	4.89	37.46	100	311	Peak
2483.5	41.19	45.15	54	-12.81	28.44	4.92	37.32	100	311	Average
2483.5	55.98	59.94	74	-18.02	28.44	4.92	37.32	100	311	Peak

**REMARKS:**

1. 2437MHz: Fundamental frequency.



A D T

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
2386	41.96	46.44	54	-12.04	28.17	4.85	37.5	100	35	Average
2386	55.68	60.16	74	-18.32	28.17	4.85	37.5	100	35	Peak
2462	93.63	97.72			28.39	4.91	37.39	100	35	Average
2462	103.31	107.4			28.39	4.91	37.39	100	35	Peak
2483.5	47.1	51.06	54	-6.9	28.44	4.92	37.32	100	35	Average
2483.5	66.52	70.48	74	-7.48	28.44	4.92	37.32	100	35	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	39.84	44.32	54	-14.16	28.17	4.87	37.52	100	311	Average
2390	55.39	59.87	74	-18.61	28.17	4.87	37.52	100	311	Peak
2462	86.9	90.99			28.39	4.91	37.39	100	311	Average
2462	96.21	100.3			28.39	4.91	37.39	100	311	Peak
2483.5	41.15	45.11	54	-12.85	28.44	4.92	37.32	100	311	Average
2483.5	57.3	61.26	74	-16.7	28.44	4.92	37.32	100	311	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	47.59	52.07	54	-6.41	28.17	4.87	37.52	103	30	Average
2390	67.65	72.13	74	-6.35	28.17	4.87	37.52	103	30	Peak
2412	93.21	97.64			28.22	4.87	37.52	103	30	Average
2412	102.85	107.28			28.22	4.87	37.52	103	30	Peak
2483.5	44.68	48.64	54	-9.32	28.44	4.92	37.32	103	30	Average
2483.5	57.79	61.75	74	-16.21	28.44	4.92	37.32	103	30	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	42.66	47.14	54	-11.34	28.17	4.87	37.52	100	310	Average
2390	63.05	67.53	74	-10.95	28.17	4.87	37.52	100	310	Peak
2412	85.78	90.21			28.22	4.87	37.52	100	310	Average
2412	96.27	100.7			28.22	4.87	37.52	100	310	Peak
2486	39.72	43.68	54	-14.28	28.44	4.92	37.32	100	310	Average
2486	55.19	59.15	74	-18.81	28.44	4.92	37.32	100	310	Peak

REMARKS:

- 1. 2412MHz: 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
2358	35.9	40.51	54	-18.1	28.06	4.82	37.49	104	36	Average
2358	50.8	55.41	74	-23.2	28.06	4.82	37.49	104	36	Peak
2437	88.36	92.6			28.33	4.89	37.46	104	36	Average
2437	98.75	102.99			28.33	4.89	37.46	104	36	Peak
2498	35.18	38.99	54	-18.82	28.5	4.94	37.25	104	36	Average
2498	51.43	55.24	74	-22.57	28.5	4.94	37.25	104	36	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
2382	34.41	38.95	54	-19.59	28.11	4.85	37.5	100	310	Average
2382	50.35	54.89	74	-23.65	28.11	4.85	37.5	100	310	Peak
2437	82.57	86.81			28.33	4.89	37.46	100	310	Average
2437	92.66	96.9			28.33	4.89	37.46	100	310	Peak
2490	34.18	38.08	54	-19.82	28.5	4.92	37.32	100	310	Average
2490	50.7	54.6	74	-23.3	28.5	4.92	37.32	100	310	Peak

**REMARKS:**

1. 2437MHz: Fundamental frequency.



A D T

Main Sample (A)

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
2380	42.22	46.76	54	-11.78	28.11	4.85	37.5	104	35	Average
2380	56.46	61	74	-17.54	28.11	4.85	37.5	104	35	Peak
2462	93.34	97.43			28.39	4.91	37.39	104	35	Average
2462	103.2	107.29			28.39	4.91	37.39	104	35	Peak
2483.5	49.34	53.3	54	-4.66	28.44	4.92	37.32	104	35	Average
<b>2483.5</b>	<b>71.31</b>	<b>75.27</b>	<b>74</b>	<b>-2.69</b>	<b>28.44</b>	<b>4.92</b>	<b>37.32</b>	<b>104</b>	<b>35</b>	<b>Peak</b>

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
2370	39.98	44.52	54	-14.02	28.11	4.85	37.5	100	311	Average
2370	55.66	60.2	74	-18.34	28.11	4.85	37.5	100	311	Peak
2462	88.93	93.02			28.39	4.91	37.39	100	311	Average
2462	98.71	102.8			28.39	4.91	37.39	100	311	Peak
2483.5	43.84	47.8	54	-10.16	28.44	4.92	37.32	100	311	Average
2483.5	63.98	67.94	74	-10.02	28.44	4.92	37.32	100	311	Peak

REMARKS:

- 2462MHz: Fundamental frequency.



A D T

2nd Sample (B)

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
2382	35.97	41.76	54	-18.03	26.86	4.85	37.5	102	39	Average
2382	51.9	57.69	74	-22.1	26.86	4.85	37.5	102	39	Peak
2462	90.7	96.08			27.1	4.91	37.39	102	39	Average
2462	100.9	106.28			27.1	4.91	37.39	102	39	Peak
2483.5	46.96	52.21	54	-7.04	27.15	4.92	37.32	102	39	Average
2483.5	63.84	69.09	74	-10.16	27.15	4.92	37.32	102	39	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	35.4	41.14	54	-18.6	26.91	4.87	37.52	100	353	Average
2390	46.83	52.57	74	-27.17	26.91	4.87	37.52	100	353	Peak
2462	81.97	87.35			27.1	4.91	37.39	100	353	Average
2462	91.45	96.83			27.1	4.91	37.39	100	353	Peak
2483.5	39.57	44.82	54	-14.43	27.15	4.92	37.32	100	353	Average
2483.5	55.25	60.5	74	-18.75	27.15	4.92	37.32	100	353	Peak

REMARKS:

- 2462MHz: Fundamental frequency.



A D T

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	47.49	51.97	54	-6.51	28.17	4.87	37.52	100	42	Average
2390	65.38	69.86	74	-8.62	28.17	4.87	37.52	100	42	Peak
2422	87.74	92.03			28.28	4.89	37.46	100	42	Average
2422	98.42	102.71			28.28	4.89	37.46	100	42	Peak
2490	40.54	44.44	54	-13.46	28.5	4.92	37.32	100	42	Average
2490	56.48	60.38	74	-17.52	28.5	4.92	37.32	100	42	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	46.54	51.02	54	-7.46	28.17	4.87	37.52	100	327	Average
2390	62.15	66.63	74	-11.85	28.17	4.87	37.52	100	327	Peak
2422	85.89	90.18			28.28	4.89	37.46	100	327	Average
2422	96.26	100.55			28.28	4.89	37.46	100	327	Peak
2488	39.88	43.78	54	-14.12	28.5	4.92	37.32	100	327	Average
2488	55.82	59.72	74	-18.18	28.5	4.92	37.32	100	327	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	43.48	47.96	54	-10.52	28.17	4.87	37.52	104	45	Average
2390	59.12	63.6	74	-14.88	28.17	4.87	37.52	104	45	Peak
2437	89.78	94.02			28.33	4.89	37.46	104	45	Average
2437	99.71	103.95			28.33	4.89	37.46	104	45	Peak
2483.5	42.64	46.6	54	-11.36	28.44	4.92	37.32	104	45	Average
2483.5	60.37	64.33	74	-13.63	28.44	4.92	37.32	104	45	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	41.82	46.3	54	-12.18	28.17	4.87	37.52	100	327	Average
2390	57.83	62.31	74	-16.17	28.17	4.87	37.52	100	327	Peak
2437	84.09	88.33			28.33	4.89	37.46	100	327	Average
2437	96.9	101.14			28.33	4.89	37.46	100	327	Peak
2483.5	40.88	44.84	54	-13.12	28.44	4.92	37.32	100	327	Average
2483.5	57.63	61.59	74	-16.37	28.44	4.92	37.32	100	327	Peak

**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
2368	39.19	43.78	54	-14.81	28.06	4.85	37.5	100	41	Average
2368	55.42	60.01	74	-18.58	28.06	4.85	37.5	100	41	Peak
2452	87.29	91.44			28.33	4.91	37.39	100	41	Average
2452	97.67	101.82			28.33	4.91	37.39	100	41	Peak
2488	47.5	51.4	54	-6.5	28.5	4.92	37.32	100	41	Average
2488	66.49	70.39	74	-7.51	28.5	4.92	37.32	100	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
2318	41.52	46.25	54	-12.48	27.95	4.79	37.47	100	311	Average
2318	55.45	60.18	74	-18.55	27.95	4.79	37.47	100	311	Peak
2452	84.1	88.25			28.33	4.91	37.39	100	311	Average
2452	93.17	97.32			28.33	4.91	37.39	100	311	Peak
2483.5	40.88	44.84	54	-13.12	28.44	4.92	37.32	100	311	Average
2483.5	62.11	66.07	74	-11.89	28.44	4.92	37.32	100	311	Peak

**REMARKS:**

- 2452MHz: Fundamental frequency.



A D T

**BELOW 1GHz WORST-CASE DATA: 802.11 n (20MHz)**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	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
46.2	22.59	39.65	40	-17.41	13.39	0.74	31.19	121	208	Peak
152.58	32.06	49.66	43.5	-11.44	12.71	1.35	31.66	124	99	Peak
242.22	23.57	42.44	46	-22.43	11.15	1.8	31.82	135	222	Peak
328.7	21.11	37.14	46	-24.89	13.64	2.15	31.82	100	38	Peak
579.3	23.2	33.17	46	-22.8	19.12	3.03	32.12	119	100	Peak
775.3	27	32.86	46	-19	21.87	3.63	31.36	130	140	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
30.27	29.71	48.3	40	-10.29	11.98	0.57	31.14	102	342	QP
47.01	28.65	45.84	40	-11.35	13.28	0.75	31.22	121	201	QP
156.9	30.3	48	43.5	-13.2	12.72	1.38	31.8	124	91	Peak
387.5	19.82	34.41	46	-26.18	15.05	2.38	32.02	117	240	Peak
546.4	23.55	34.11	46	-22.45	18.37	2.93	31.86	112	257	Peak
756.4	26.7	32.9	46	-19.3	21.61	3.59	31.4	102	48	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	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	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

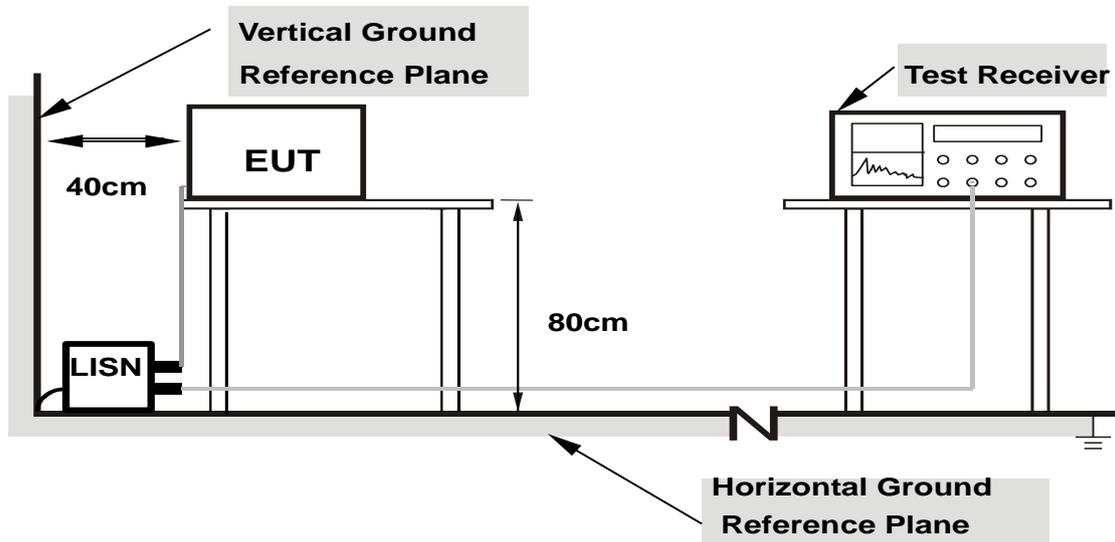
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

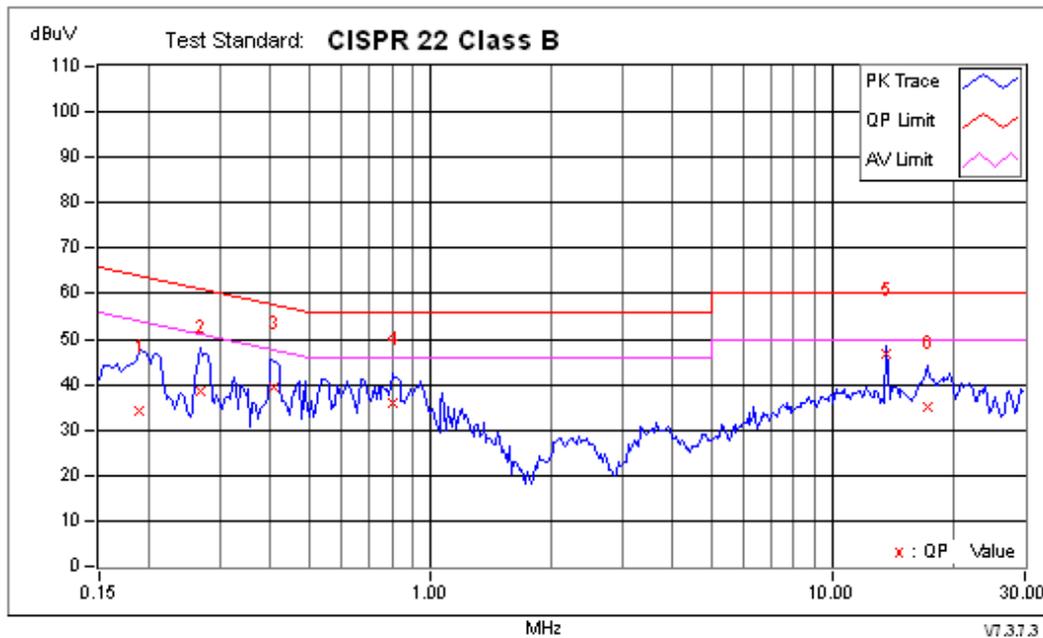
#### 4.2.6 EUT OPERATING CONDITIONS

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
--------------	--------	----------------------	------

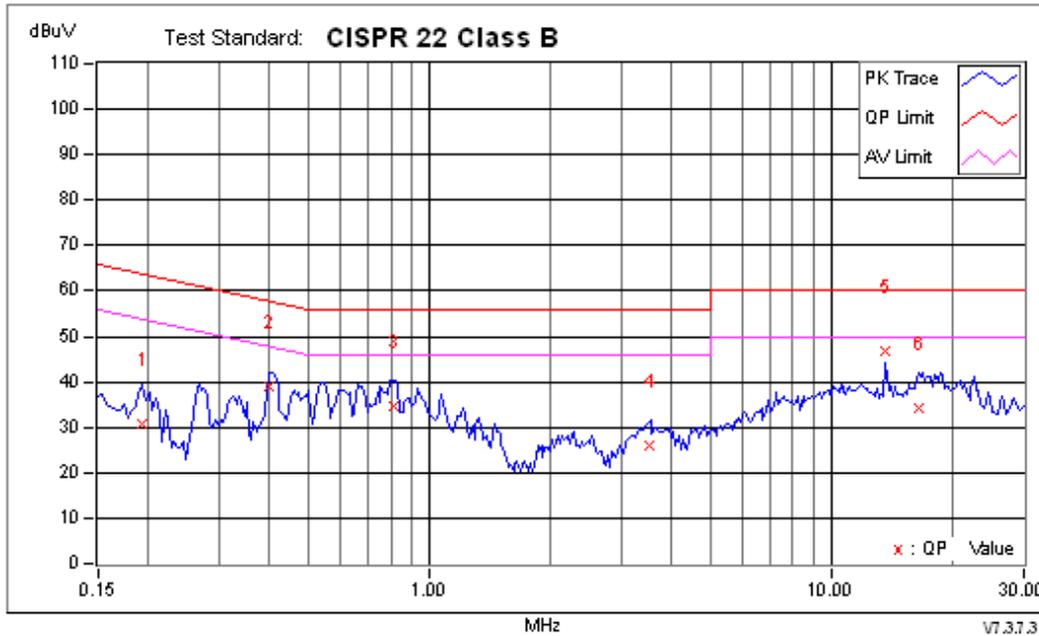


No.	Frequency MHz	Corr. Factor dB	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
			QP	AV	QP	AV	QP	AV	QP	AV	
1	0.18906	0.17	34.10	21.52	34.27	21.69	64.08	54.08	-29.81	-32.39	
2	0.26719	0.18	38.22	28.35	38.40	28.53	61.20	51.20	-22.80	-22.67	
3	0.40781	0.21	39.37	26.37	39.58	26.58	57.69	47.69	-18.11	-21.11	
4	0.80625	0.24	35.68	24.38	35.92	24.62	56.00	46.00	-20.08	-21.38	
+5	13.56250	0.53	46.11	42.34	46.64	42.87	60.00	50.00	-13.36	-7.13	
6	17.12109	0.61	34.34	27.25	34.95	27.86	60.00	50.00	-25.05	-22.14	

### 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
-------	--------	---------------	------



No.	Frequency MHz	Corr. Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
			QP	AV	QP	AV	QP	AV	QP	AV	
1	0.19297	0.16	30.44	18.42	30.60	18.58	63.91	53.91	-33.31	-35.33	
2	0.40000	0.20	38.68	25.99	38.88	26.19	57.85	47.85	-18.97	-21.66	
3	0.81406	0.24	34.43	24.27	34.67	24.51	56.00	46.00	-21.33	-21.49	
4	3.49609	0.36	25.59	19.51	25.95	19.87	56.00	46.00	-30.05	-26.13	
+5	13.55859	0.59	46.25	42.36	46.84	42.95	60.00	50.00	-13.16	-7.05	
6	16.41016	0.67	33.66	26.96	34.33	27.63	60.00	50.00	-25.67	-22.37	

**REMARKS:**

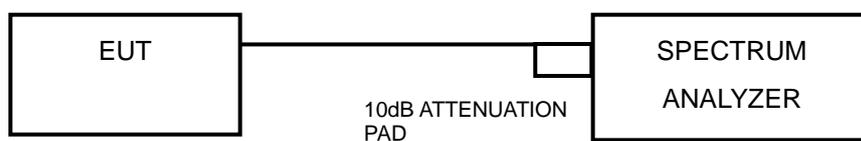
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

### 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.



### 4.3.7 TEST RESULTS

#### 802.11b

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	8.04	0.5	PASS
6	2437	9.05	0.5	PASS
11	2462	8.06	0.5	PASS

#### 802.11g

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.54	0.5	PASS
6	2437	16.57	0.5	PASS
11	2462	16.46	0.5	PASS

#### 802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.74	0.5	PASS
6	2437	17.75	0.5	PASS
11	2462	17.80	0.5	PASS

#### 802.11n (40MHz)

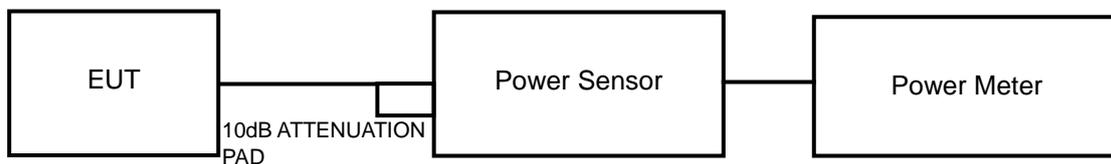
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	36.66	0.5	PASS
6	2437	36.48	0.5	PASS
9	2452	36.21	0.5	PASS

## 4.4 CONDUCTED OUTPUT POWER

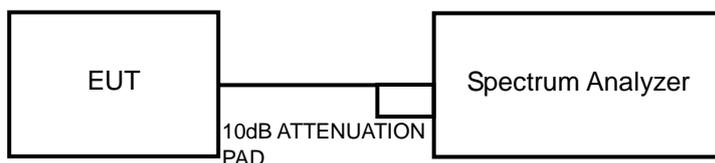
### 4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

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

### 4.4.2 TEST SETUP



or



### 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 or spectrum analyzer 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.



A D T

#### 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	123.310	20.91	30	PASS
6	2437	128.825	21.1	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	217.270	23.37	30	PASS
6	2437	234.963	23.71	30	PASS
11	2462	208.930	23.2	30	PASS

##### 802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	226.464	23.55	30	PASS
6	2437	236.592	23.74	30	PASS
11	2462	226.464	23.55	30	PASS

##### 802.11n (40MHz)

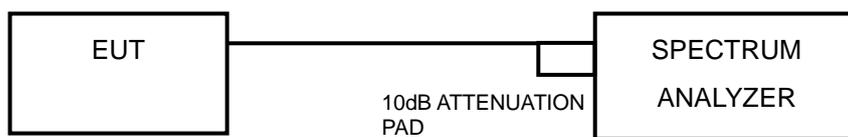
CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
3	2422	188.365	22.75	30	PASS
6	2437	183.654	22.64	30	PASS
9	2452	188.799	22.76	30	PASS

## 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	10.24	-4.96	8	PASS
6	2437	9.97	-5.23	8	PASS
11	2462	9.87	-5.33	8	PASS

### 802.11g

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	4.17	-11.03	8	PASS
6	2437	4.36	-10.84	8	PASS
11	2462	4.49	-10.71	8	PASS

### 802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	4.31	-10.89	8	PASS
6	2437	4.48	-10.72	8	PASS
11	2462	4.53	-10.67	8	PASS

### 802.11n (40MHz)

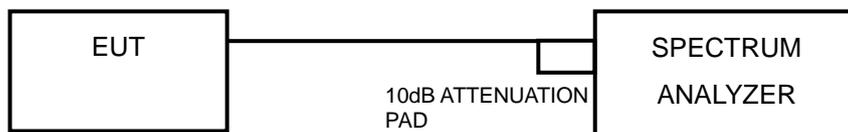
Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-0.34	-15.54	8	PASS
6	2437	-0.31	-15.51	8	PASS
9	2452	-0.34	-15.54	8	PASS

## 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

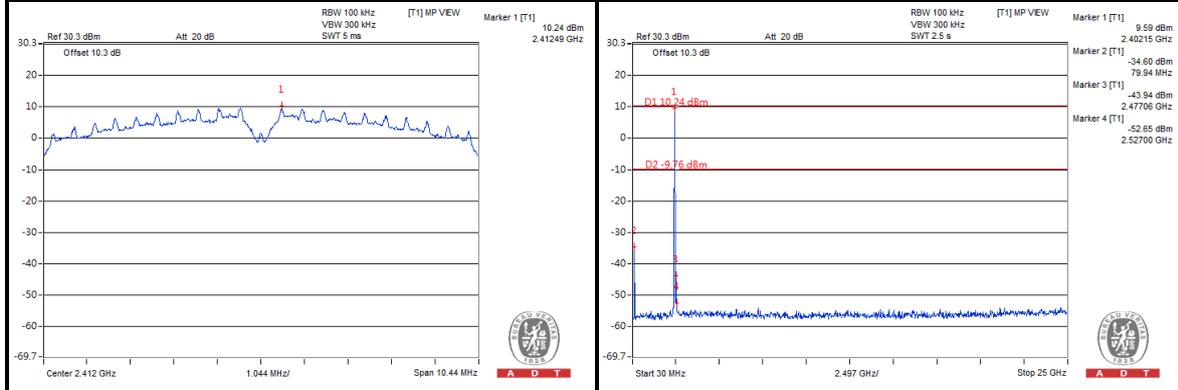
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.



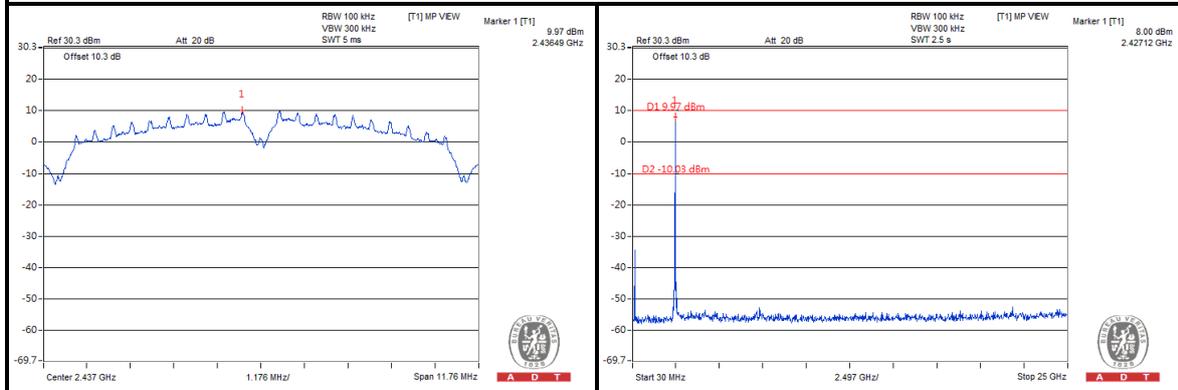
A D T

### 802.11b

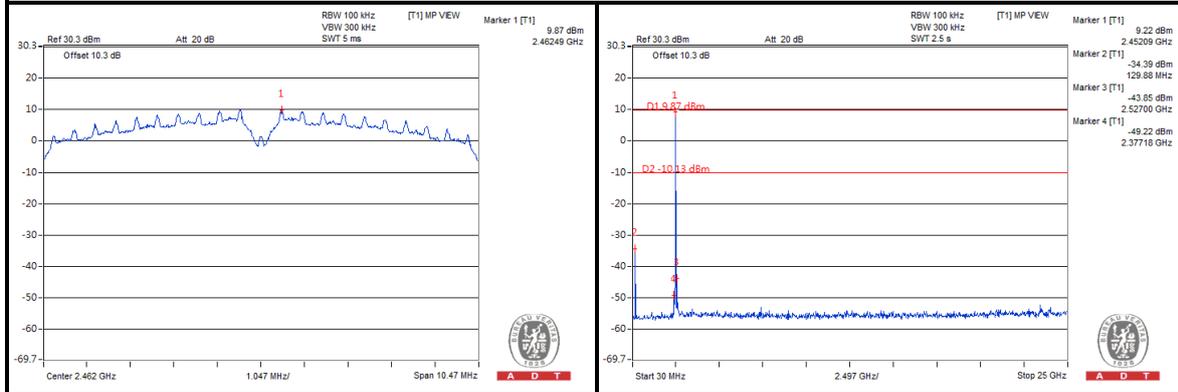
#### CH 1



#### CH 6



#### CH 11

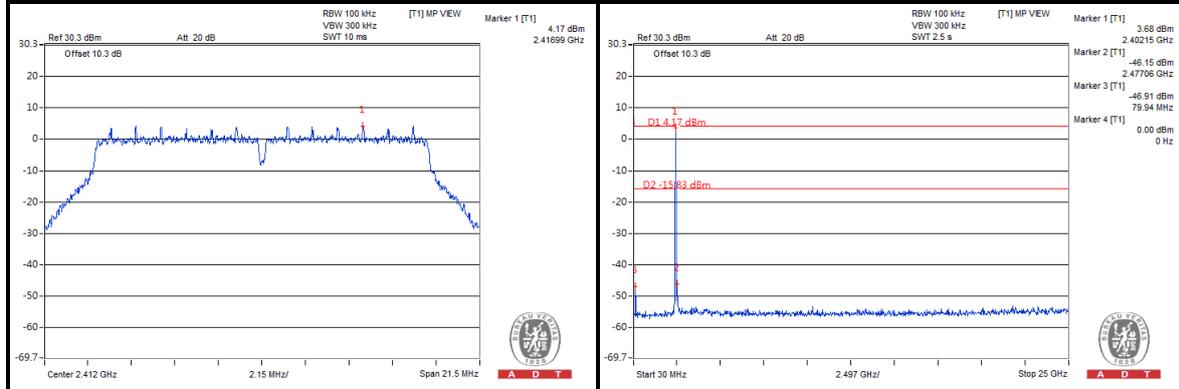




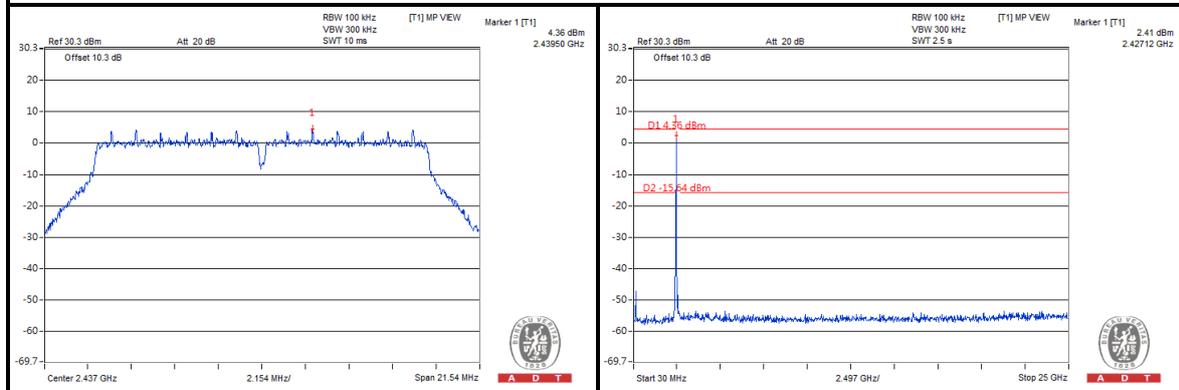
A D T

### 802.11g

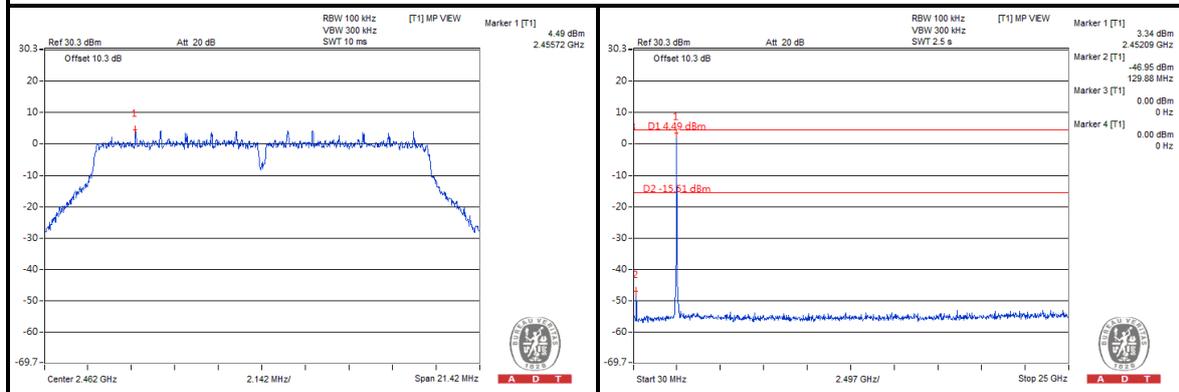
#### CH 1



#### CH 6



#### CH 11

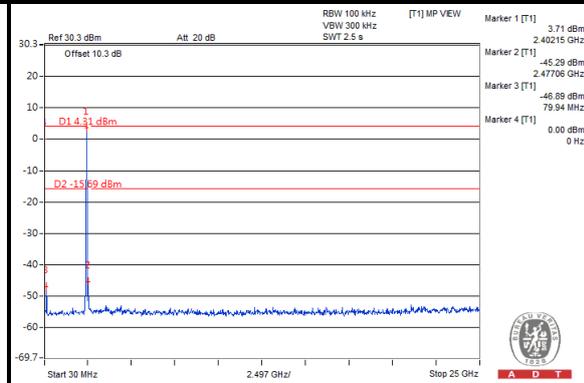
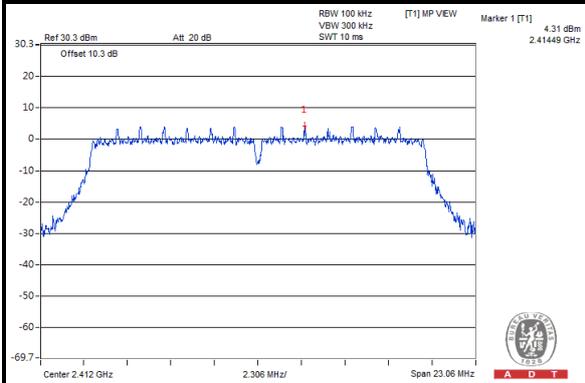




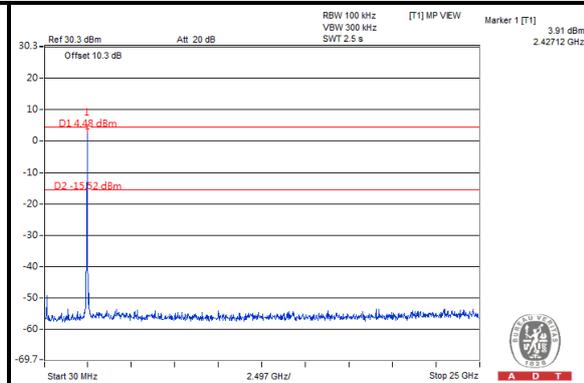
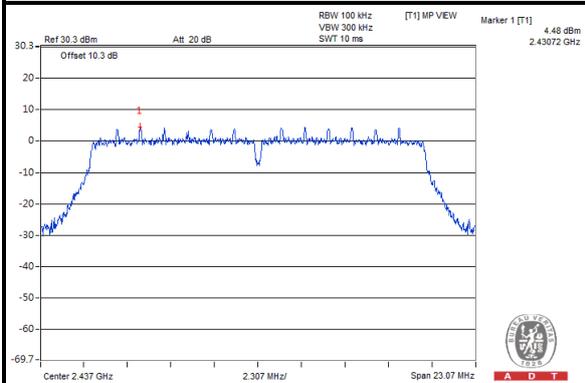
A D T

### 802.11n (20MHz)

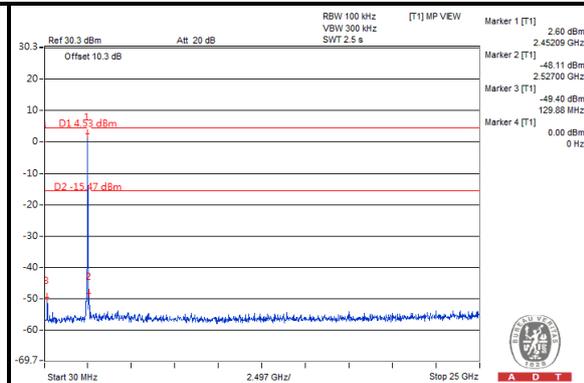
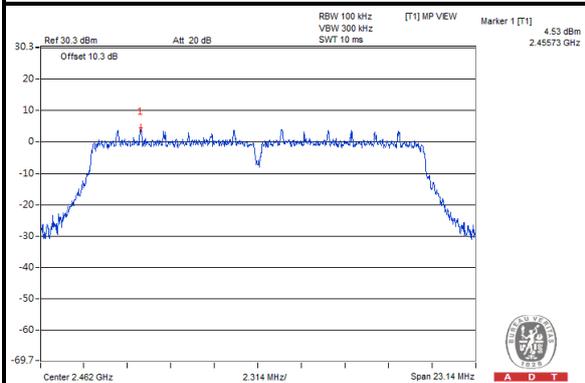
#### CH 1



#### CH 6



#### CH 11

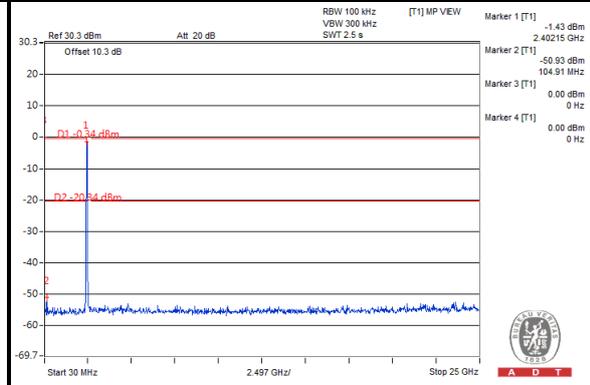
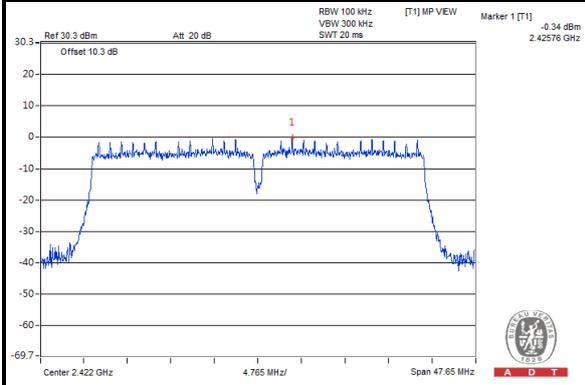




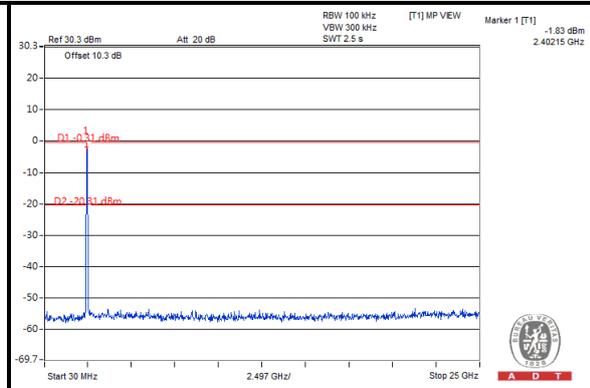
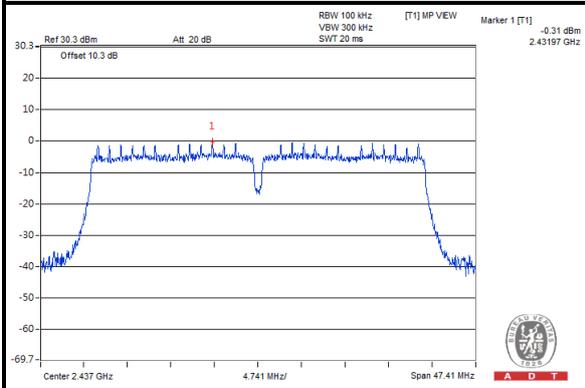
A D T

### 802.11n (40MHz)

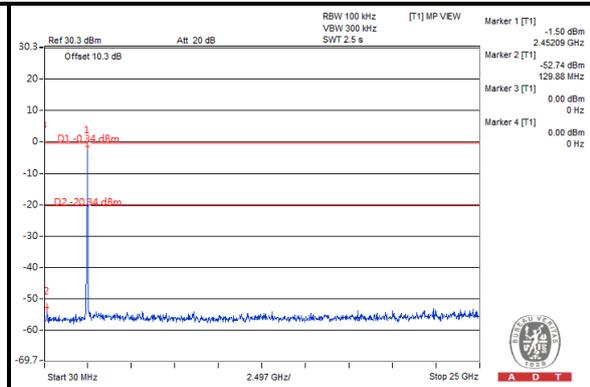
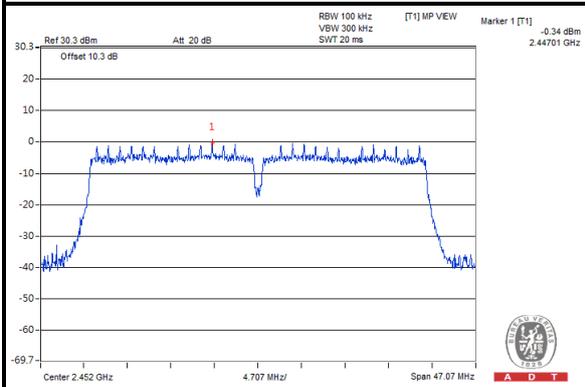
#### CH 3



#### 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.



A D T

### 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.



A D T

### 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	47.07	43.82	68.85	-21.78	32.97	7.71	37.43	100	107	Average
5725	63.2	59.95	78.6	-15.4	32.97	7.71	37.43	100	107	Peak
5745	88.85	85.59			32.99	7.74	37.47	100	107	Average
5745	98.6	95.34			32.99	7.74	37.47	100	107	Peak
5850	43.64	40.21	68.85	-25.21	33.11	7.83	37.51	100	107	Average
5850	57.2	53.77	78.6	-21.4	33.11	7.83	37.51	100	107	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	47.78	44.53	71.19	-23.41	32.97	7.71	37.43	100	144	Average
5725	63.39	60.14	81.03	-17.64	32.97	7.71	37.43	100	144	Peak
5745	91.19	87.93			32.99	7.74	37.47	100	144	Average
5745	101.03	97.77			32.99	7.74	37.47	100	144	Peak
5850	43.94	40.51	71.19	-27.25	33.11	7.83	37.51	100	144	Average
5850	56.64	53.21	81.03	-24.39	33.11	7.83	37.51	100	144	Peak

#### REMARKS:

- 5745MHz: Fundamental frequency.
- 5725MHz & 5850MHz: Out of restricted band



A D T

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	41.36	38.11	66.97	-25.61	32.97	7.71	37.43	100	114	Average
5725	56.88	53.63	76.6	-19.72	32.97	7.71	37.43	100	114	Peak
5785	86.97	83.68			33.03	7.8	37.54	100	114	Average
5785	96.6	93.31			33.03	7.8	37.54	100	114	Peak
5850	41.64	38.21	66.97	-25.33	33.11	7.83	37.51	100	114	Average
5850	56.56	53.13	76.6	-20.04	33.11	7.83	37.51	100	114	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	41.61	38.36	70.66	-29.05	32.97	7.71	37.43	100	140	Average
5725	56.21	52.96	80.8	-24.59	32.97	7.71	37.43	100	140	Peak
5785	90.66	87.37			33.03	7.8	37.54	100	140	Average
5785	100.8	97.51			33.03	7.8	37.54	100	140	Peak
5850	41.81	38.38	70.66	-28.85	33.11	7.83	37.51	100	140	Average
5850	56.1	52.67	80.8	-24.7	33.11	7.83	37.51	100	140	Peak

**REMARKS:**

- 5785MHz: Fundamental frequency.
- 5725MHz & 5850MHz: Out of restricted band



A D T

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	40.78	37.53	68.8	-28.02	32.97	7.71	37.43	100	98	Average
5725	50.3	47.05	78.81	-28.51	32.97	7.71	37.43	100	98	Peak
5825	88.8	85.42			33.09	7.82	37.53	100	98	Average
5825	98.81	95.43			33.09	7.82	37.53	100	98	Peak
5850	41.42	37.99	68.8	-27.38	33.11	7.83	37.51	100	98	Average
5850	53.42	49.99	78.81	-25.39	33.11	7.83	37.51	100	98	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	40.77	37.52	70.91	-30.14	32.97	7.71	37.43	108	141	Average
5725	50.54	47.29	80.75	-30.21	32.97	7.71	37.43	108	141	Peak
5825	90.91	87.53			33.09	7.82	37.53	108	141	Average
5825	100.75	97.37			33.09	7.82	37.53	108	141	Peak
5850	41.61	38.18	70.91	-29.3	33.11	7.83	37.51	108	141	Average
5850	52.92	49.49	80.75	-27.83	33.11	7.83	37.51	108	141	Peak

**REMARKS:**

- 5825MHz: Fundamental frequency.
- 5725MHz & 5850MHz: Out of restricted band



A D T

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	48.16	44.91	68.27	-20.11	32.97	7.71	37.43	100	118	Average
5725	64.49	61.24	77.94	-13.45	32.97	7.71	37.43	100	118	Peak
5745	88.27	85.01			32.99	7.74	37.47	100	118	Average
5745	97.94	94.68			32.99	7.74	37.47	100	118	Peak
5850	40.81	37.38	68.27	-27.46	33.11	7.83	37.51	100	118	Average
5850	51.68	48.25	77.94	-26.26	33.11	7.83	37.51	100	118	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	48.88	45.63	69.87	-20.99	32.97	7.71	37.43	100	137	Average
5725	62.97	59.72	79.46	-16.49	32.97	7.71	37.43	100	137	Peak
5745	89.87	86.61			32.99	7.74	37.47	100	137	Average
5745	99.46	96.2			32.99	7.74	37.47	100	137	Peak
5850	41.17	37.74	69.87	-28.7	33.11	7.83	37.51	100	137	Average
5850	52.27	48.84	79.46	-27.19	33.11	7.83	37.51	100	137	Peak

REMARKS:

- 5745MHz: Fundamental frequency.
- 5725MHz & 5850MHz: Out of restricted band



A D T

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	40.92	37.67	68.57	-27.65	32.97	7.71	37.43	100	350	Average
5725	53.28	50.03	79.3	-26.02	32.97	7.71	37.43	100	350	Peak
5785	88.57	85.28			33.03	7.8	37.54	100	350	Average
5785	99.3	96.01			33.03	7.8	37.54	100	350	Peak
5850	41.14	37.71	68.57	-27.43	33.11	7.83	37.51	100	350	Average
5850	52.05	48.62	79.3	-27.25	33.11	7.83	37.51	100	350	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	41.47	38.22	69.18	-27.71	32.97	7.71	37.43	100	131	Average
5725	51.39	48.14	78.48	-27.09	32.97	7.71	37.43	100	131	Peak
5785	89.18	85.89			33.03	7.8	37.54	100	131	Average
5785	98.48	95.19			33.03	7.8	37.54	100	131	Peak
5850	41.18	37.75	69.18	-28	33.11	7.83	37.51	100	131	Average
5850	52.56	49.13	78.48	-25.92	33.11	7.83	37.51	100	131	Peak

**REMARKS:**

- 5785MHz: Fundamental frequency.
- 5725MHz & 5850MHz: Out of restricted band



A D T

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	40.85	37.6	69.19	-28.34	32.97	7.71	37.43	100	290	Average
5725	51.05	47.8	78.98	-27.93	32.97	7.71	37.43	100	290	Peak
5825	89.19	85.81			33.09	7.82	37.53	100	290	Average
5825	98.98	95.6			33.09	7.82	37.53	100	290	Peak
5850	42.74	39.31	69.19	-26.45	33.11	7.83	37.51	100	290	Average
5850	61.35	57.92	78.98	-17.63	33.11	7.83	37.51	100	290	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	40.87	37.62	70.22	-29.35	32.97	7.71	37.43	109	134	Average
5725	51.33	48.08	79.92	-28.59	32.97	7.71	37.43	109	134	Peak
5825	90.22	86.84			33.09	7.82	37.53	109	134	Average
5825	99.92	96.54			33.09	7.82	37.53	109	134	Peak
5850	43.1	39.67	70.22	-27.12	33.11	7.83	37.51	109	134	Average
5850	59	55.57	79.92	-20.92	33.11	7.83	37.51	109	134	Peak

**REMARKS:**

- 5825MHz: Fundamental frequency.
- 5725MHz & 5850MHz: Out of restricted band



A D T

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	45.34	42.09	63.64	-18.3	32.97	7.71	37.43	100	110	Average
5725	57.42	54.17	73.19	-15.77	32.97	7.71	37.43	100	110	Peak
5755	83.64	80.36			33.01	7.74	37.47	100	110	Average
5755	93.19	89.91			33.01	7.74	37.47	100	110	Peak
5850	41.42	38.04	63.64	-22.22	33.09	7.82	37.53	100	110	Average
5850	53.68	50.3	73.19	-19.51	33.09	7.82	37.53	100	110	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	45.19	41.94	64.67	-19.48	32.97	7.71	37.43	100	135	Average
5725	60.36	57.11	74.25	-13.89	32.97	7.71	37.43	100	135	Peak
5755	84.67	81.39			33.01	7.74	37.47	100	135	Average
5755	94.25	90.97			33.01	7.74	37.47	100	135	Peak
5850	43.32	39.94	64.67	-21.35	33.09	7.82	37.53	100	135	Average
5850	52.8	49.42	74.25	-21.45	33.09	7.82	37.53	100	135	Peak

REMARKS:

- 5755MHz: Fundamental frequency.
- 5725MHz & 5850MHz: Out of restricted band



A D T

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	41.52	38.27	63.13	-21.61	32.97	7.71	37.43	100	120	Average
5725	52.79	49.54	73.13	-20.34	32.97	7.71	37.43	100	120	Peak
5795	83.13	79.82			33.05	7.8	37.54	100	120	Average
5795	93.13	89.82			33.05	7.8	37.54	100	120	Peak
5850	41.24	37.81	63.13	-21.89	33.11	7.83	37.51	100	120	Average
5850	52.44	49.01	73.13	-20.69	33.11	7.83	37.51	100	120	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	41.7	38.45	65.03	-23.33	32.97	7.71	37.43	100	138	Average
5725	52.49	49.24	74.99	-22.5	32.97	7.71	37.43	100	138	Peak
5795	85.03	81.72			33.05	7.8	37.54	100	138	Average
5795	94.99	91.68			33.05	7.8	37.54	100	138	Peak
5850	41.57	38.14	65.03	-23.46	33.11	7.83	37.51	100	138	Average
5850	53.72	50.29	74.99	-21.27	33.11	7.83	37.51	100	138	Peak

**REMARKS:**

- 5795MHz: Fundamental frequency.
- 5725MHz & 5850MHz: Out of restricted band



A D T

802.11ac (80MHz)

Main Sample (A)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 155	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	46.69	43.44	61.93	-15.24	32.97	7.71	37.43	100	108	Average
5725	59.26	56.01	72.19	-12.93	32.97	7.71	37.43	100	108	Peak
5775	81.93	78.63			33.03	7.77	37.5	100	108	Average
5775	92.19	88.89			33.03	7.77	37.5	100	108	Peak
5850	43.69	40.26	61.93	-18.24	33.11	7.83	37.51	100	108	Average
5850	54.24	50.81	72.19	-17.95	33.11	7.83	37.51	100	108	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	48.33	45.08	63.74	-15.41	32.97	7.71	37.43	100	141	Average
5725	59.83	56.58	72.96	-13.13	32.97	7.71	37.43	100	141	Peak
5775	83.74	80.44			33.03	7.77	37.5	100	141	Average
5775	92.96	89.66			33.03	7.77	37.5	100	141	Peak
5850	43.62	40.19	63.74	-20.12	33.11	7.83	37.51	100	141	Average
5850	54.21	50.78	72.96	-18.75	33.11	7.83	37.51	100	141	Peak

REMARKS:

- 5775MHz: Fundamental frequency.
- 5725MHz & 5850MHz: Out of restricted band



A D T

**2nd Sample (B)**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 155	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	50.7	48.46	74.18	-23.48	31.96	7.71	37.43	105	18	Average
5725	61.98	59.74	76.14	-14.16	31.96	7.71	37.43	105	18	Peak
5775	94.18	91.87			32.04	7.77	37.5	105	18	Average
5775	96.14	93.83			32.04	7.77	37.5	105	18	Peak
5850	42.73	40.26	74.18	-31.45	32.15	7.83	37.51	105	18	Average
5850	55.06	52.59	76.14	-21.08	32.15	7.83	37.51	105	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
5725	52.03	49.79	75.2	-23.17	31.96	7.71	37.43	100	337	Average
5725	62.92	60.68	77.65	-14.73	31.96	7.71	37.43	100	337	Peak
5775	95.2	92.89			32.04	7.77	37.5	100	337	Average
5775	97.65	95.34			32.04	7.77	37.5	100	337	Peak
5850	44.85	42.38	75.2	-30.35	32.15	7.83	37.51	100	337	Average
5850	55.43	52.96	77.65	-22.22	32.15	7.83	37.51	100	337	Peak

**REMARKS:**

- 5775MHz: Fundamental frequency.
- 5725MHz & 5850MHz: Out of restricted band



A D T

**BELOW 1GHz WORST-CASE DATA : 802.11n (20MHz)**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	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
45.66	23.27	40.19	40	-16.73	13.5	0.74	31.16	121	340	Peak
111.54	29.95	50.48	43.5	-13.55	10.18	1.14	31.85	129	65	Peak
233.85	22.11	41.39	46	-23.89	10.79	1.76	31.83	106	245	Peak
390.3	19.8	34.36	46	-26.2	15.1	2.38	32.04	124	158	Peak
558.3	22.93	33.35	46	-23.07	18.66	2.97	32.05	136	301	Peak
738.2	27.37	33.98	46	-18.63	21.35	3.54	31.5	118	100	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
36.21	28.57	46.07	40	-11.43	12.94	0.61	31.05	112	256	QP
43.23	30.16	46.97	40	-9.84	13.59	0.71	31.11	114	231	QP
158.25	30.95	48.67	43.5	-12.55	12.73	1.38	31.83	113	242	Peak
420.4	20.66	34.48	46	-25.34	15.73	2.5	32.05	129	208	Peak
627.6	25.25	34.29	46	-20.75	19.94	3.17	32.15	100	139	Peak
824.3	28.78	34.14	46	-17.22	22.54	3.75	31.65	102	224	Peak



A D T

## 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

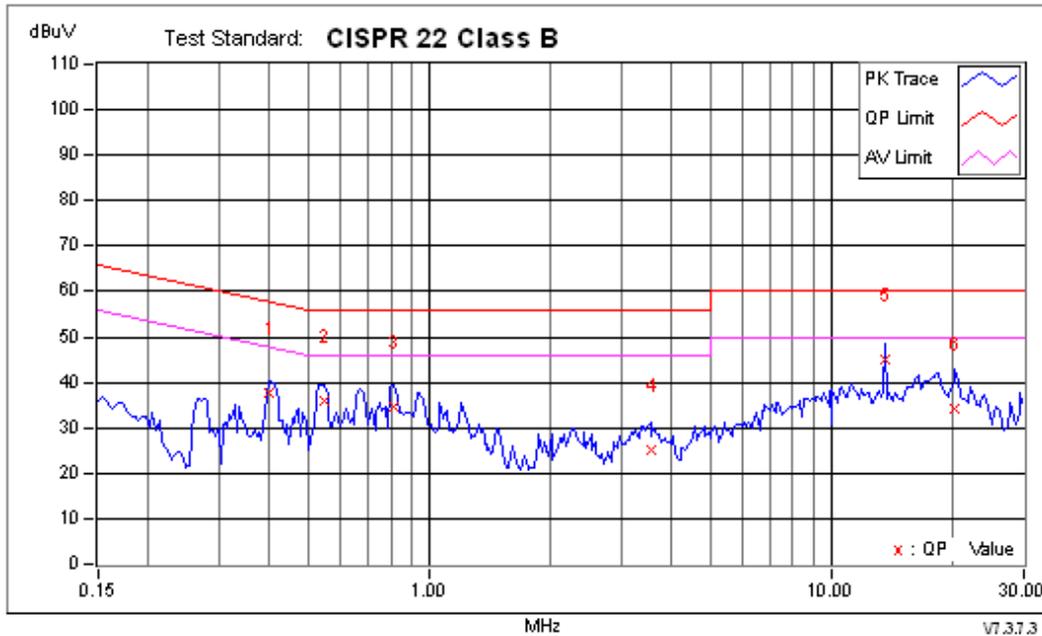
Same as 4.1.6

## 5.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA : 802.11n (20MHz)

Main Sample (A)

PHASE	Line 1	6dB BANDWIDTH	9kHz
-------	--------	---------------	------

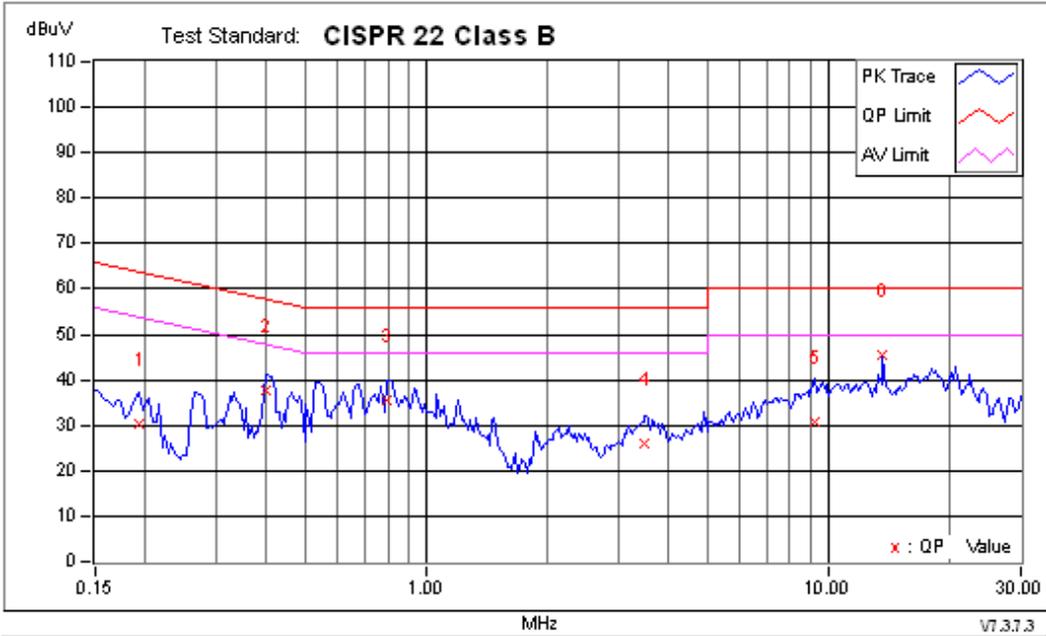


No.	Frequency MHz	Corr. Factor dB	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
			QP	AV	QP	AV	QP	AV	QP	AV	
1	0.40000	0.21	37.43	25.07	37.64	25.28	57.85	47.85	-20.21	-22.57	
2	0.54453	0.22	35.69	26.51	35.91	26.73	56.00	46.00	-20.09	-19.27	
3	0.81406	0.24	34.56	25.03	34.80	25.27	56.00	46.00	-21.20	-20.73	
4	3.55078	0.35	24.79	18.88	25.14	19.23	56.00	46.00	-30.86	-26.77	
+5	13.55859	0.53	44.54	40.61	45.07	41.14	60.00	50.00	-14.93	-8.86	
6	20.22266	0.68	33.52	26.61	34.20	27.29	60.00	50.00	-25.80	-22.71	

### 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
-------	--------	---------------	------



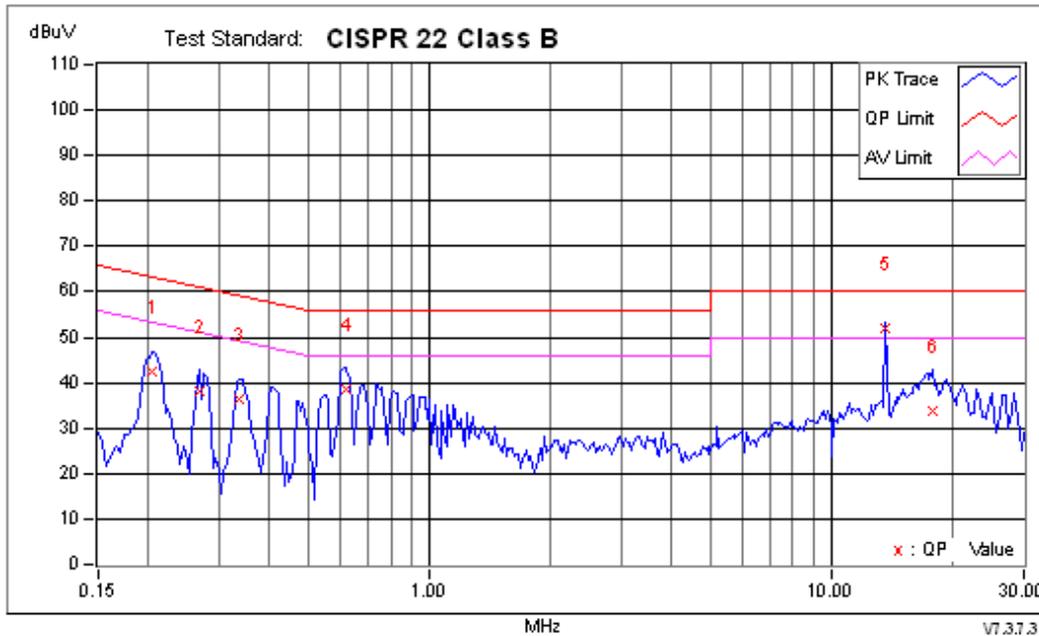
No.	Frequency MHz	Corr. Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
			QP	AV	QP	AV	QP	AV	QP	AV	
1	0.19297	0.16	30.36	18.68	30.52	18.84	63.91	53.91	-33.39	-35.07	
2	0.39609	0.20	37.43	23.59	37.63	23.79	57.93	47.93	-20.31	-24.15	
3	0.79453	0.24	35.17	25.15	35.41	25.39	56.00	46.00	-20.59	-20.61	
4	3.48438	0.36	25.51	19.45	25.87	19.81	56.00	46.00	-30.13	-26.19	
5	9.19922	0.48	30.45	23.01	30.93	23.49	60.00	50.00	-29.07	-26.51	
+6	13.55859	0.59	44.78	40.81	45.37	41.40	60.00	50.00	-14.63	-8.60	

**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.

2nd Sample (B)

PHASE	Line 1	6dB BANDWIDTH	9kHz
-------	--------	---------------	------

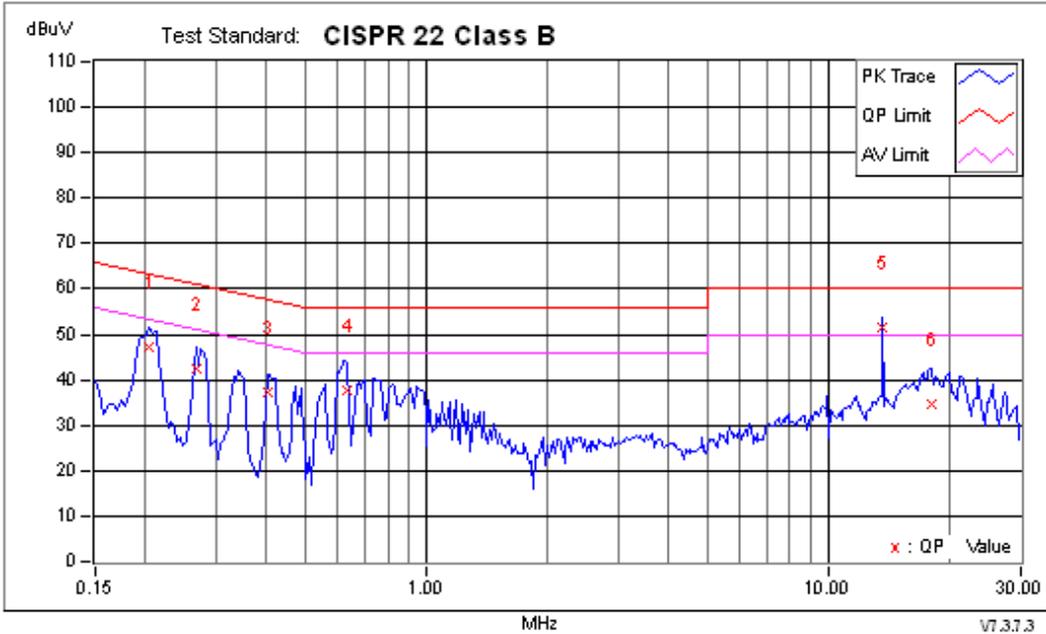


No.	Frequency MHz	Corr. Factor dB	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
			QP	AV	QP	AV	QP	AV	QP	AV	
1	0.20469	0.17	42.21	31.82	42.38	31.99	63.42	53.42	-21.04	-21.43	
2	0.26719	0.18	37.90	23.76	38.08	23.94	61.20	51.20	-23.12	-27.26	
3	0.33750	0.20	36.24	23.53	36.44	23.73	59.26	49.26	-22.83	-25.54	
4	0.61875	0.23	38.19	24.65	38.42	24.88	56.00	46.00	-17.58	-21.12	
+5	13.56250	0.50	51.27	48.23	51.77	48.73	60.00	50.00	-8.23	-1.27	
6	17.79297	0.59	33.26	25.42	33.85	26.01	60.00	50.00	-26.15	-23.99	

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
-------	--------	---------------	------



No.	Frequency MHz	Corr. Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
			QP	AV	QP	AV	QP	AV	QP	AV	
1	0.20469	0.18	47.23	36.68	47.41	36.86	63.42	53.42	-16.01	-16.56	
2	0.26719	0.20	42.36	27.78	42.56	27.98	61.20	51.20	-18.64	-23.22	
3	0.40391	0.25	36.99	23.68	37.24	23.93	57.77	47.77	-20.53	-23.84	
4	0.63047	0.24	37.60	20.95	37.84	21.19	56.00	46.00	-18.16	-24.81	
+5	13.56250	0.57	51.13	48.17	51.70	48.74	60.00	50.00	-8.30	-1.26	
6	17.98438	0.68	34.00	25.19	34.68	25.87	60.00	50.00	-25.32	-24.13	

**REMARKS:**

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



A D T

### **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	16.60	0.5	PASS
157	5785	16.57	0.5	PASS
165	5825	16.48	0.5	PASS

#### 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	17.86	0.5	PASS
157	5785	17.71	0.5	PASS
165	5825	17.77	0.5	PASS

#### 802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	36.77	0.5	PASS
159	5795	36.66	0.5	PASS

#### 802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
155	5775	83.60	0.5	PASS



A D T

## **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	253.513	24.04	30	PASS
157	5785	243.781	23.87	30	PASS
165	5825	239.332	23.79	30	PASS

### 802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
149	5745	260.615	24.16	30	PASS
157	5785	263.027	24.2	30	PASS
165	5825	246.037	23.91	30	PASS

### 802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
151	5755	172.584	22.37	30	PASS
159	5795	189.671	22.78	30	PASS

### 802.11ac (80MHz)

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
155	5775	184.077	22.65	30	PASS



A D T

## **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	3.37	-11.83	8	PASS
157	5785	3.64	-11.56	8	PASS
165	5825	4.00	-11.20	8	PASS

### 802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
149	5745	3.51	-11.69	8	PASS
157	5785	3.63	-11.57	8	PASS
165	5825	4.08	-11.12	8	PASS

### 802.11n (40MHz)

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
151	5755	-1.99	-17.19	8	PASS
159	5795	-1.40	-16.60	8	PASS

### 802.11ac (80MHz)

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
155	5775	-4.84	-20.04	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**

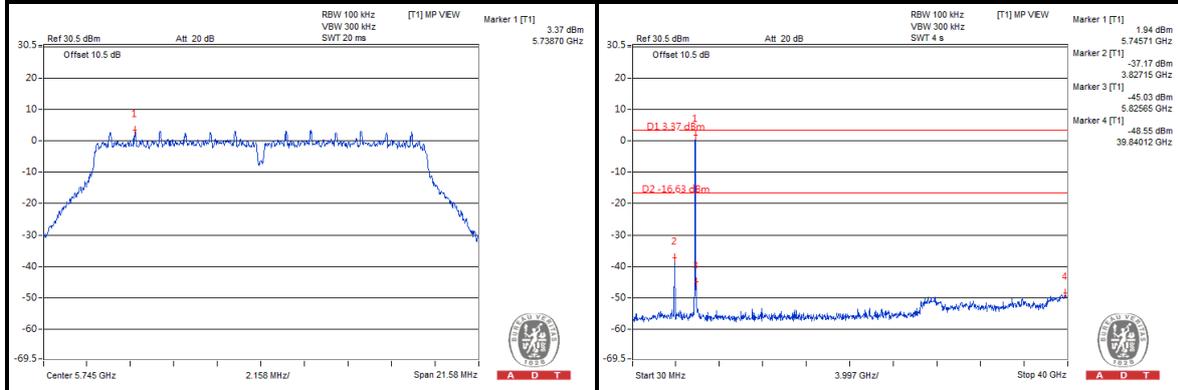
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.



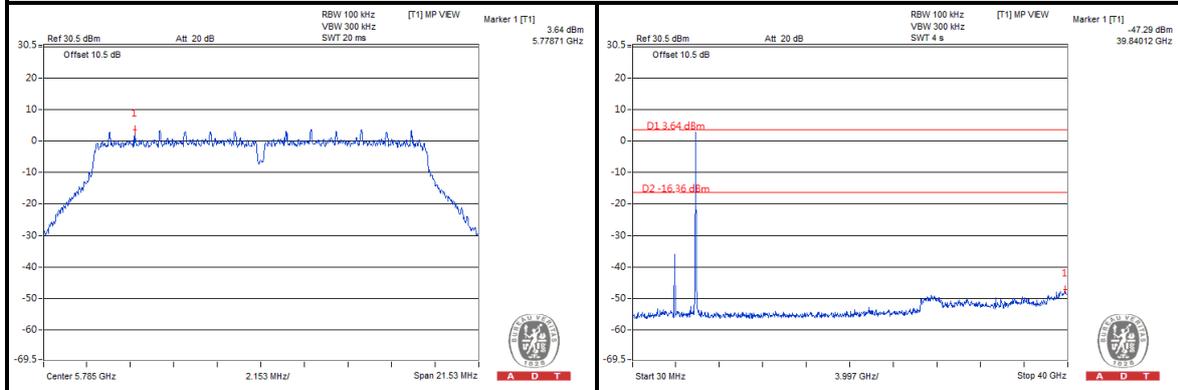
A D T

### 802.11a

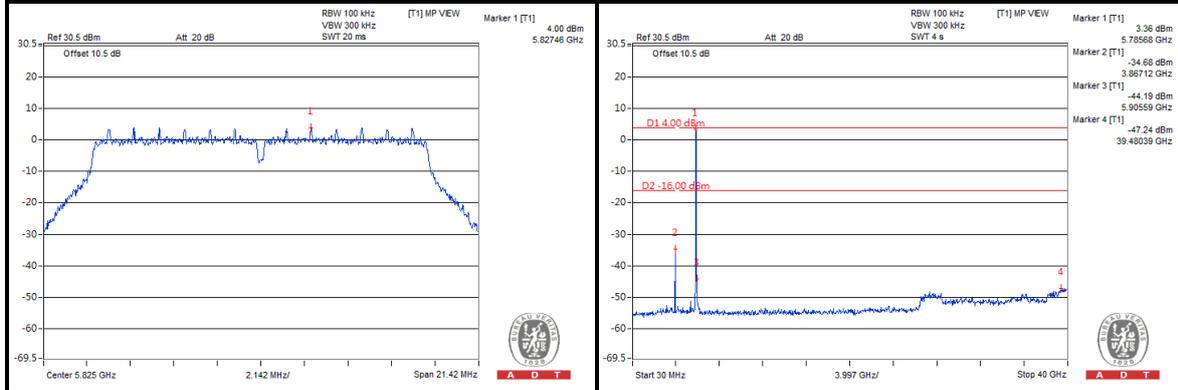
#### CH 149



#### CH 157



#### CH 165

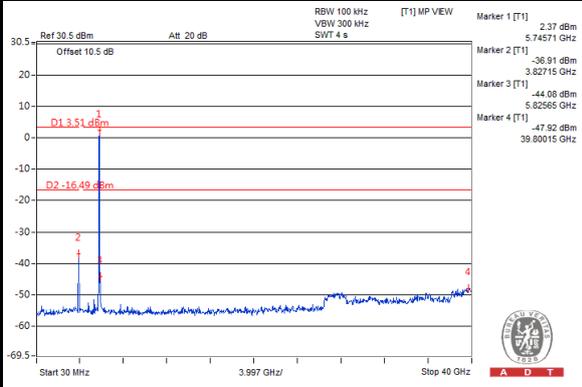
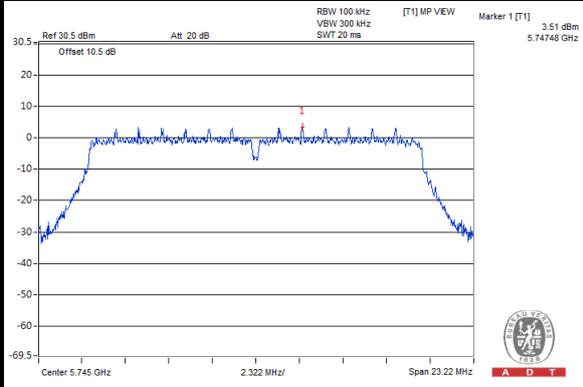




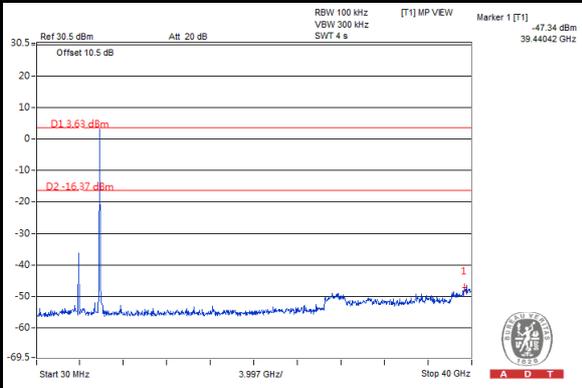
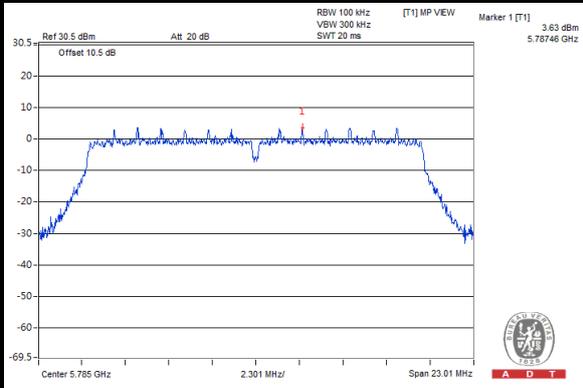
A D T

### 802.11n(20MHz)

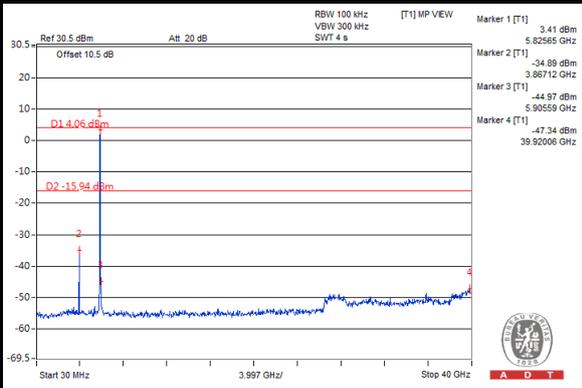
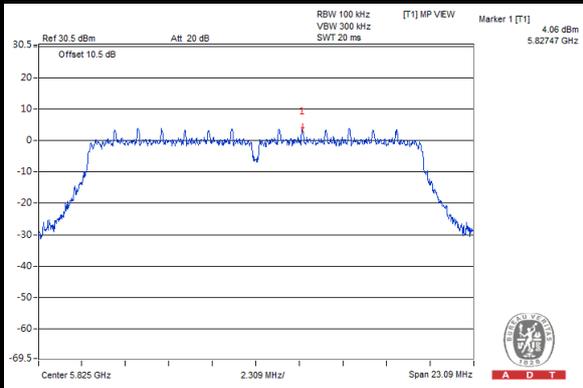
#### CH 149



#### CH 157



#### CH 165

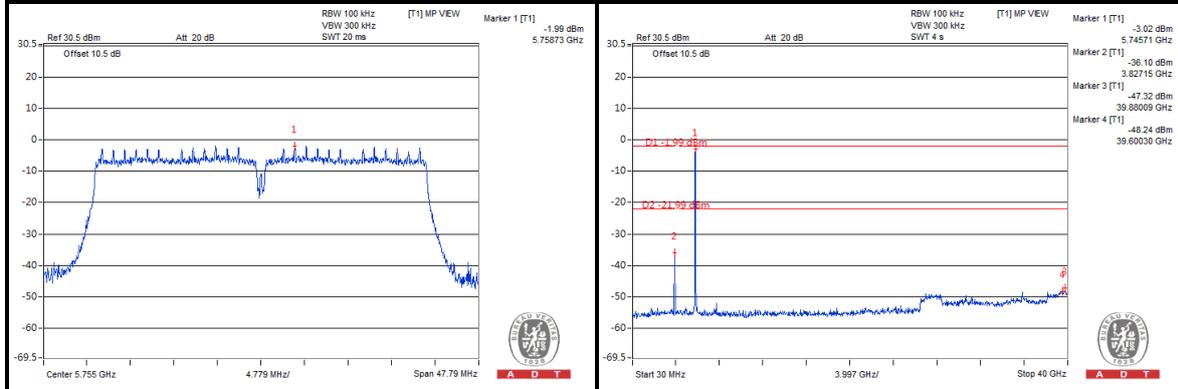




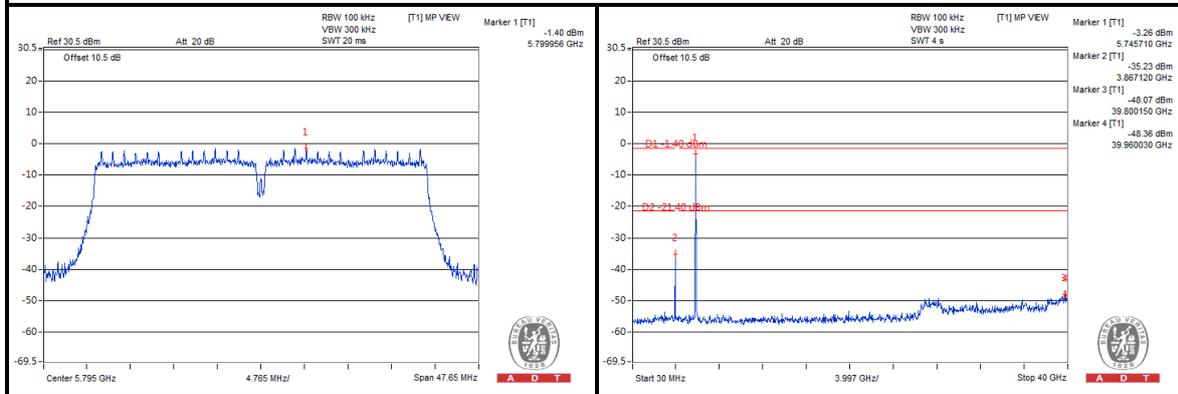
A D T

### 802.11n(40MHz)

#### CH 151

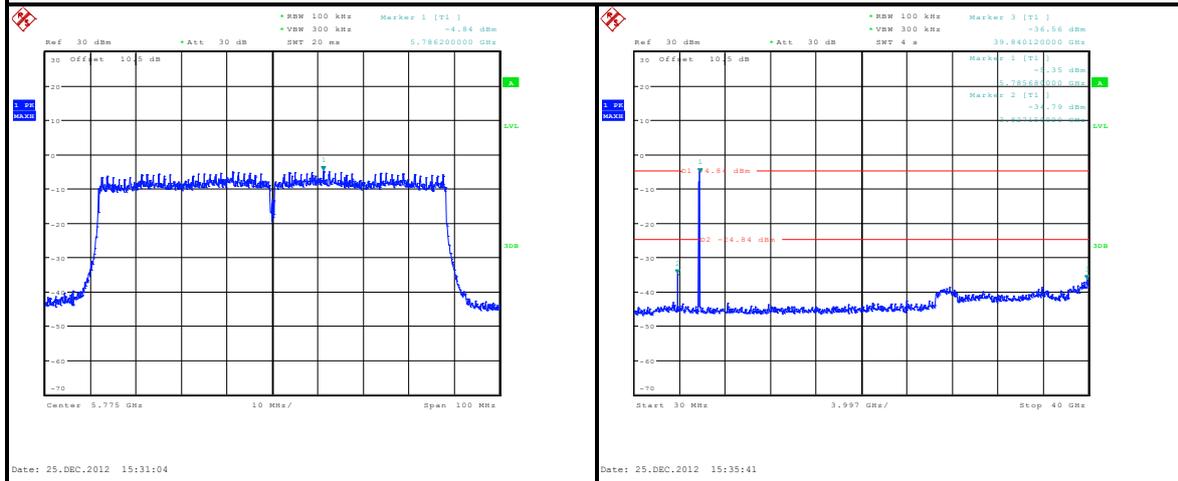


#### CH 159



### 802.11ac n(80MHz)

#### CH 155





A D T

## 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

**Hsin Chu EMC/RF Lab:**

Tel: 886-3-5935343

Fax: 886-3-5935342

**Hwa Ya EMC/RF/Safety Telecom Lab:**

Tel: 886-3-3183232

Fax: 886-3-3270892

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

**Web Site:** [www.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.



A D T

## 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---