FCC TEST REPORT (15.407)

REPORT NO.:	RF140306C19-3
MODEL NO.:	0P8B200
FCC ID:	NM80P8B200
RECEIVED:	Mar. 03, 2014
TESTED:	Mar. 23, 2014 ~ Mar. 31, 2014
ISSUED:	Apr. 15, 2014

APPLICANT:	HTC Corporation
ADDRESS:	1F, 6-3 Baoqiang Road, Xindian District, New Taipei City, Taiwan 231

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.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140306C19-3	Original release	Apr. 15, 2014

1. CERTIFICATION

PRODUCT:	Smartphone
MODEL NO.:	0P8B200
BRAND:	HTC
APPLICANT:	HTC Corporation
TESTED:	Mar. 23, 2014 ~ Mar. 31, 2014
TEST SAMPLE:	PRODUCTION UNIT
STANDARDS:	**FCC Part 15, Subpart E (Section 15.407)**
	ANSI C63.10-2009

The above equipment (model: 0P8B200) 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 : _____ **, DATE :** Apr. 15, 2014

Ivonne Wu / Supervisor

APPROVED BY : _____ **, DATE :** Apr. 15, 2014

Sam Chen / Senior Project Engineer

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -5.26dB at 13.55859MHz.
15.407(b/1/2/3)(b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.87dB at 5725MHz.
15.407(a/1/2)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

2.1 MEASUREMENT UNCERTAINTY

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

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

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Smartphone
MODEL NO.	0P8B200
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.8Vdc (Li-ion battery)
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to MCS7
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz)
OUTPUT POWER	42.76mW for 5180 ~ 5240MHz 43.35mW for 5260 ~ 5320MHz 43.95mW for 5500 ~ 5700MHz
ANTENNA TYPE	PIFA antenna with -5.3dBi gain (5180 ~ 5240MHz) PIFA antenna with -5.2dBi gain (5260 ~ 5320MHz) PIFA antenna with -5.9dBi gain (5500 ~ 5700MHz)
ANTENNA CONNECTOR	NA
DATA CABLE	Refer to Note as below
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Refer to Note as below

NOTE:

1. The EUT's accessories list refers to Ext. Pho.
2. 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

WLAN 5180 ~ 5240MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

FOR 5260 ~ 5320MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

WLAN 5500 ~ 5700MHz

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

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

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

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

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

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

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane** for 5180-5240MHz & 5500-5700MHz and **Z-plane** for 5260-5320MHz.

RADIATED EMISSION TEST (ABOVE 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	MCS0
	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
	802.11n (40MHz)		102 to 134	102, 110, 134	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.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (20MHz)	5180-5240	36 to 48	36	OFDM	BPSK	MCS0
	802.11n (20MHz)	5260-5320	52 to 64	64	OFDM	BPSK	MCS0
	802.11a	5500-5700	100 to 140	140	OFDM	BPSK	MCS0

POWER LINE CONDUCTED EMISSION TEST:

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5500-5700	100 to 140	140	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.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	MCS0
	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
	802.11n (40MHz)		102 to 134	102, 110, 134	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.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	MCS0
	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0

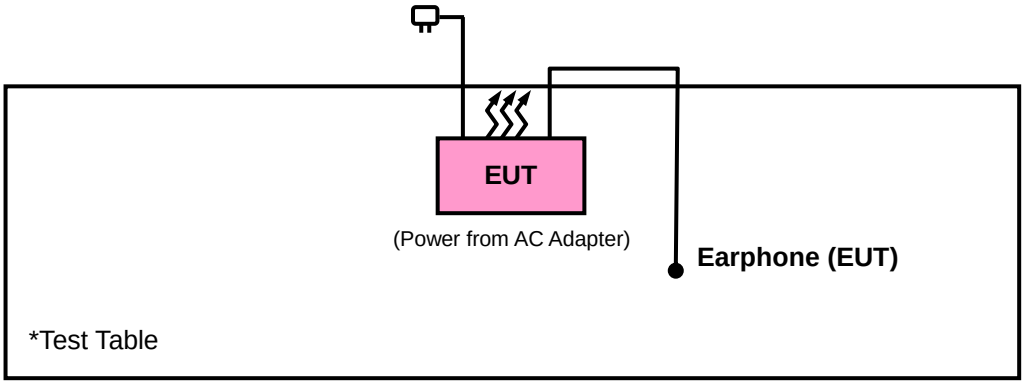
Test CONDITION:

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

3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units.

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST



3.4 DUTY CYCLE TEST SIGNAL

MODULATION TYPE: BPSK

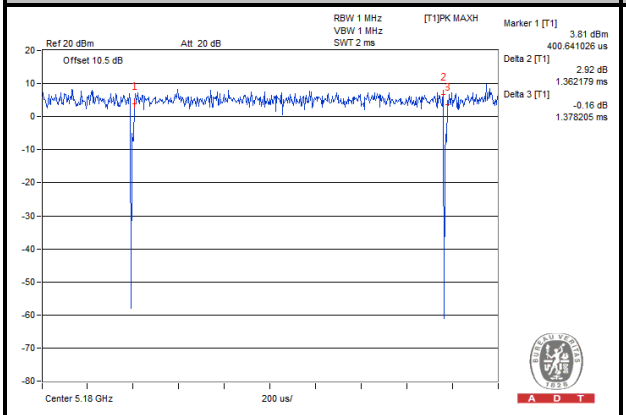
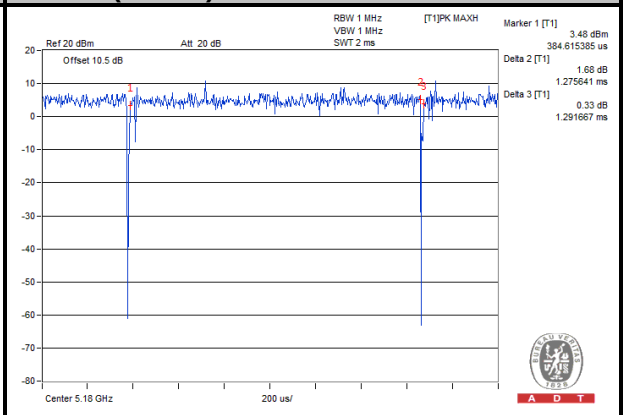
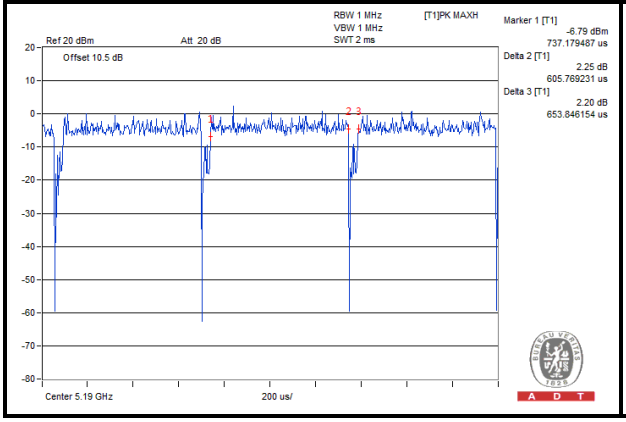
Duty cycle of test signal is > 98 %, duty factor is not required.

802.11a: Duty cycle = 1.362/1.378 = 0.988

802.11n (20MHz): Duty cycle = 1.276/1.292 = 0.988

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

802.11n (40MHz): Duty cycle = 605.77/653.85 = 0.926, Duty factor = 10 * log(1/0.926) = 0.33

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

MODULATION TYPE: QPSK

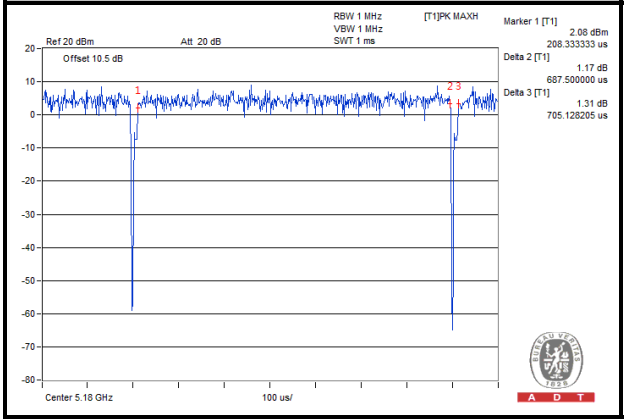
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 687.50/705.13 = 0.975, Duty factor = 10 * log(1/0.975) = 0.11

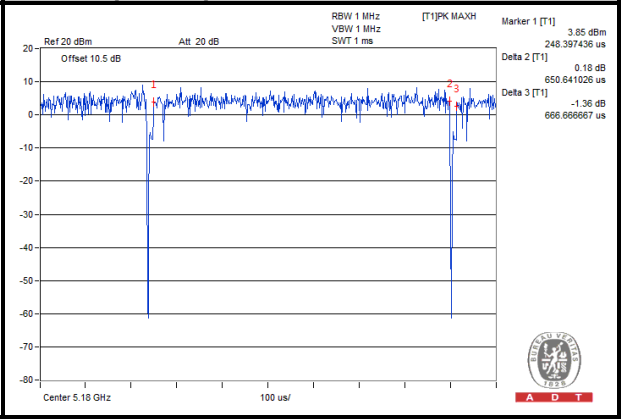
802.11n (20MHz): Duty cycle = 650.64/666.67 = 0.976, Duty factor = 10 * log(1/0.976) = 0.11

802.11n (40MHz): Duty cycle = 306.09/347.76 = 0.880, Duty factor = 10 * log(1/0.880) = 0.55

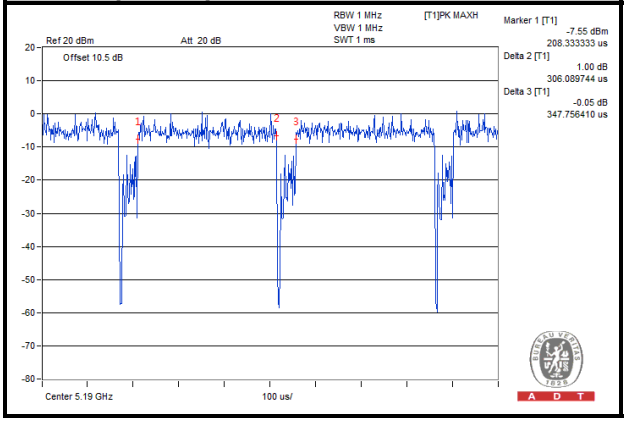
802.11a



802.11n (20MHz)



802.11n (40MHz)



MODULATION TYPE: 16QAM

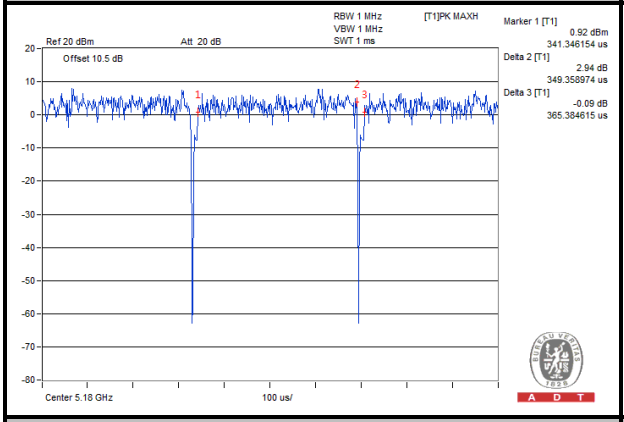
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 349.36/365.38 = 0.956, Duty factor = 10 * log(1/0.956) = 0.19

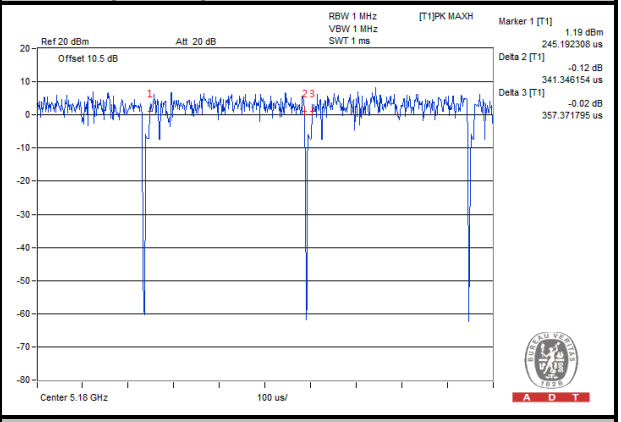
802.11n (20MHz): Duty cycle = 341.35/357.37 = 0.955, Duty factor = 10 * log(1/0.955) = 0.20

802.11n (40MHz): Duty cycle = 157.05/198.72 = 0.790, Duty factor = 10 * log(1/0.790) = 1.02

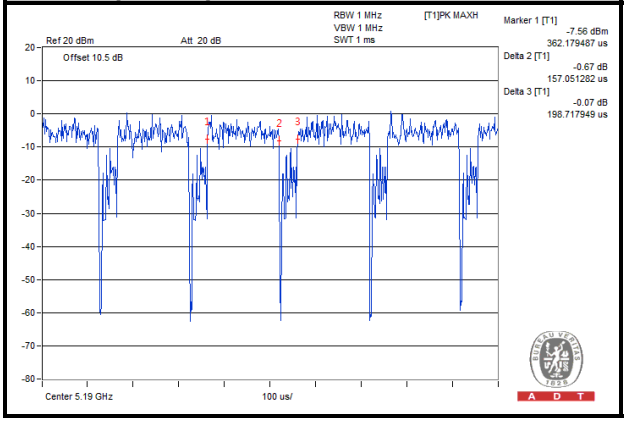
802.11a



802.11n (20MHz)



802.11n (40MHz)



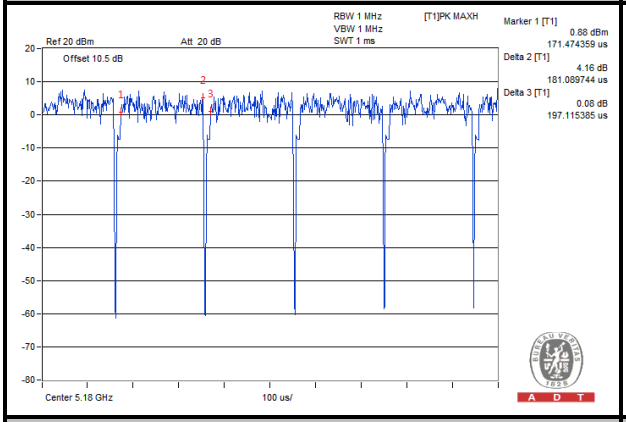
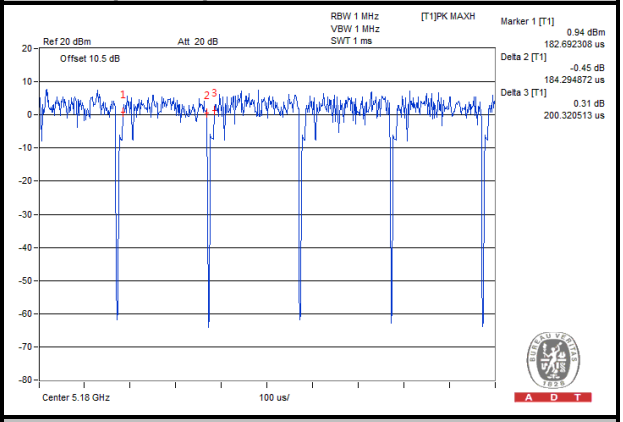
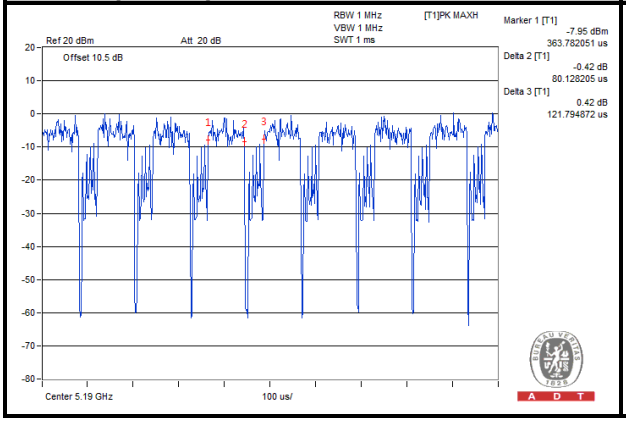
MODULATION TYPE: 64QAM

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

802.11a: Duty cycle = 181.09/197.12 = 0.919, Duty factor = 10 * log(1/0.919) = 0.37

802.11n (20MHz): Duty cycle = 184.29/200.32 = 0.920, Duty factor = 10 * log(1/0.920) = 0.36

802.11n (40MHz): Duty cycle = 80.13/121.79 = 0.658, Duty factor = 10 * log(1/0.658) = 1.82

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

3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)
KDB 789033 D01 General UNII Test Procedures v01r03
ANSI C63.10-2009

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

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

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

NOTE:

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

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

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

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

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

4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100744	Apr. 15, 2013	Apr. 14, 2014
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 21, 2013	Dec. 20, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Feb. 27. 2014	Feb. 26, 2015
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Feb. 19, 2014	Feb. 18, 2015
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 18, 2013	Dec. 17, 2014
Loop Antenna	HFH2-Z2	100070	Mar. 06, 2014	Mar. 05, 2016
Preamplifier EMCI	EMC 012645	980115	Dec. 26, 2013	Dec. 25, 2014
Preamplifier EMCI	EMC 184045	980116	Jan. 13, 2014	Jan. 12, 2015
Preamplifier EMCI	EMC 330H	980112	Dec. 27, 2013	Dec. 26, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4 2950114	Oct. 18, 2013	Oct. 17, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 18, 2013	Oct. 17, 2014
RF signal cable Worken	RG-213	NA	Nov. 07, 2013	Nov. 06, 2014
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	NA	NA	NA
Power Meter	ML2495A	1232002	Aug. 23, 2013	Aug. 22, 2014
Power Sensor	MA2411B	1207325	Aug. 23, 2013	Aug. 22, 2014

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in HwaYa Chamber 10.
4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
5. The FCC Site Registration No. is 690701.
6. The IC Site Registration No. is IC 7450F-10.

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

NOTE:

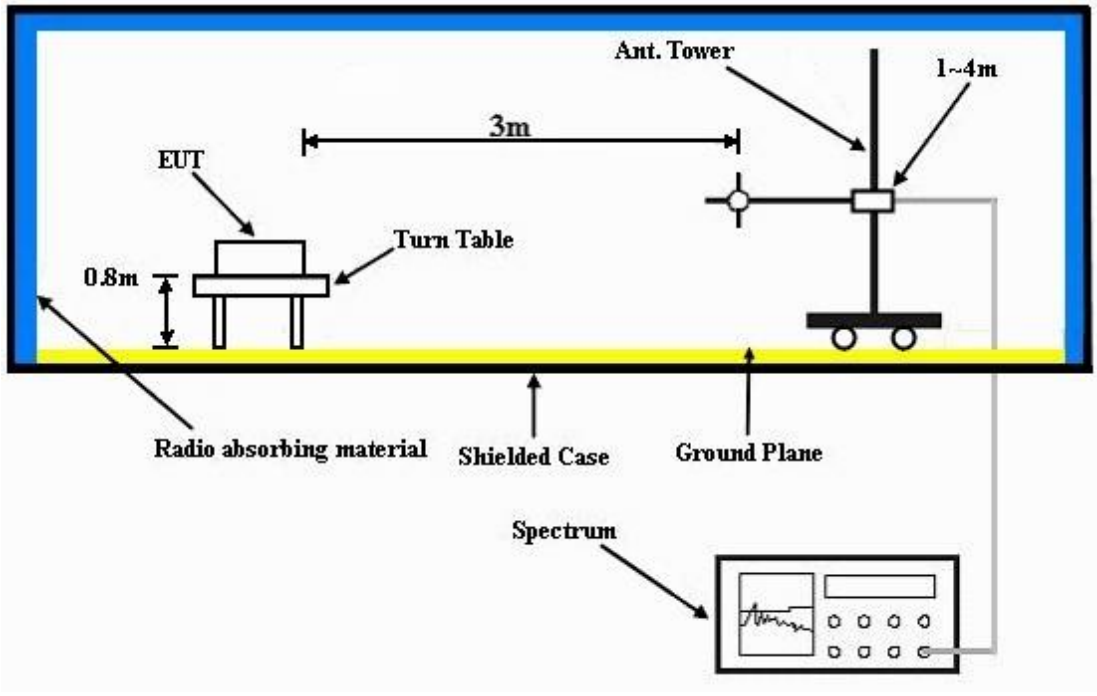
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

4.1.5 DEVIATION FROM TEST STANDARD

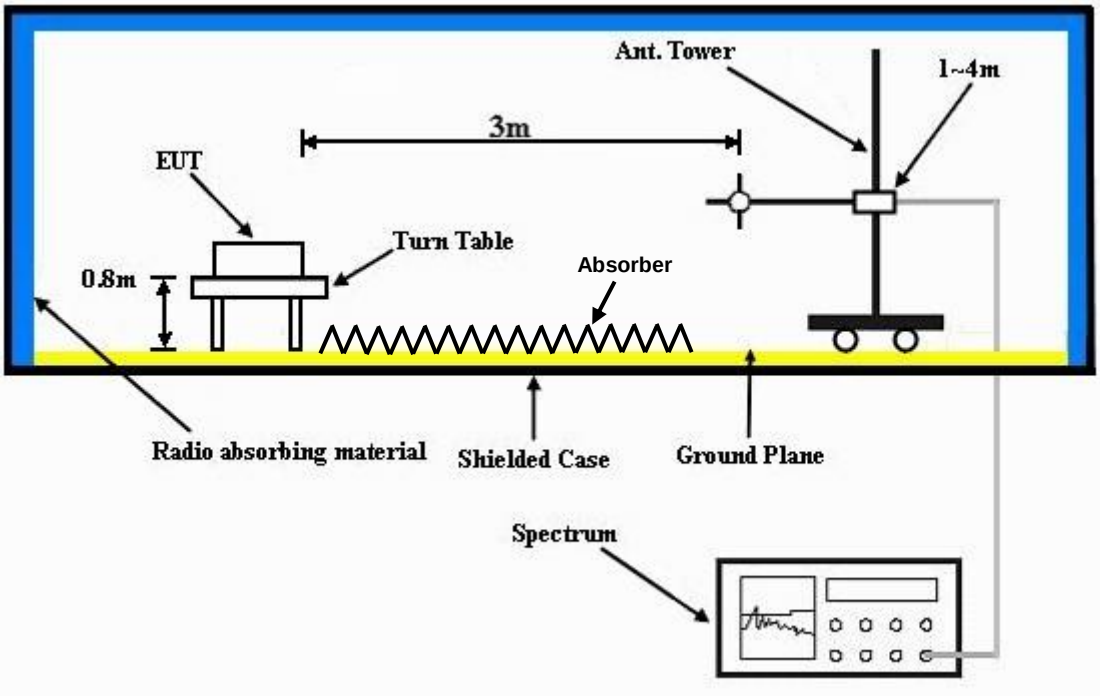
No deviation.

4.1.6 TEST SETUP

Frequency Range 30MHz ~ 1GHz



Frequency Range above 1GHz



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

4.1.7 EUT OPERATING 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.

4.1.8 TEST RESULTS

ABOVE 1GHz WORST-CASE DATA

802.11a

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

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
5128	39.91	40.62	54	-14.09	31.31	5.28	37.3	100	25	Average
5128	57.87	58.58	74	-16.13	31.31	5.28	37.3	100	25	Peak
5180	90.07	90.75			31.35	5.31	37.34	100	25	Average
5180	99.1	99.78			31.35	5.31	37.34	100	25	Peak
5350	37.56	37.87	54	-16.44	31.48	5.39	37.18	100	25	Average
5350	58.06	58.37	74	-15.94	31.48	5.39	37.18	100	25	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
5128	42.33	43.04	54	-11.67	31.31	5.28	37.3	100	53	Average
5128	57.18	57.89	74	-16.82	31.31	5.28	37.3	100	53	Peak
5180	93.23	93.91			31.35	5.31	37.34	100	53	Average
5180	102.44	103.12			31.35	5.31	37.34	100	53	Peak
5400	37.67	37.92	54	-16.33	31.52	5.41	37.18	100	53	Average
5400	57.83	58.08	74	-16.17	31.52	5.41	37.18	100	53	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5180MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 44	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Johnson Liao

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
5150	37.67	38.38	54	-16.33	31.32	5.29	37.32	100	28	Average
5150	59.62	60.33	74	-14.38	31.32	5.29	37.32	100	28	Peak
5220	90	90.66			31.37	5.33	37.36	100	28	Average
5220	99.72	100.38			31.37	5.33	37.36	100	28	Peak
5350	37.45	37.76	54	-16.55	31.48	5.39	37.18	100	28	Average
5350	57.66	57.97	74	-16.34	31.48	5.39	37.18	100	28	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
5150	37.64	38.35	54	-16.36	31.32	5.29	37.32	100	19	Average
5150	57.24	57.95	74	-16.76	31.32	5.29	37.32	100	19	Peak
5220	92.99	93.65			31.37	5.33	37.36	100	19	Average
5220	102.17	102.83			31.37	5.33	37.36	100	19	Peak
5350	37.71	38.02	54	-16.29	31.48	5.39	37.18	100	19	Average
5350	57.09	57.4	74	-16.91	31.48	5.39	37.18	100	19	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5220MHz: Fundamental frequency.

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

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
5150	37.65	38.36	54	-16.35	31.32	5.29	37.32	100	27	Average
5150	57.56	58.27	74	-16.44	31.32	5.29	37.32	100	27	Peak
5240	90.16	90.75			31.39	5.34	37.32	100	27	Average
5240	99.07	99.66			31.39	5.34	37.32	100	27	Peak
5350	37.49	37.8	54	-16.51	31.48	5.39	37.18	100	27	Average
5350	56.99	57.3	74	-17.01	31.48	5.39	37.18	100	27	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
5150	37.78	38.49	54	-16.22	31.32	5.29	37.32	100	19	Average
5150	56.59	57.3	74	-17.41	31.32	5.29	37.32	100	19	Peak
5240	92.99	93.58			31.39	5.34	37.32	100	19	Average
5240	102.39	102.98			31.39	5.34	37.32	100	19	Peak
5350	37.69	38	54	-16.31	31.48	5.39	37.18	100	19	Average
5350	56.74	57.05	74	-17.26	31.48	5.39	37.18	100	19	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5240MHz: Fundamental frequency.

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

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
5150	37.68	38.39	54	-16.32	31.32	5.29	37.32	122	297	Average
5150	56.61	57.32	74	-17.39	31.32	5.29	37.32	122	297	Peak
5260	92.4	92.92			31.41	5.34	37.27	122	297	Average
5260	101.61	102.13			31.41	5.34	37.27	122	297	Peak
5350	37.63	37.94	54	-16.37	31.48	5.39	37.18	122	297	Average
5350	60.34	60.65	74	-13.66	31.48	5.39	37.18	122	297	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
5150	38.02	38.73	54	-15.98	31.32	5.29	37.32	113	313	Average
5150	56.89	57.6	74	-17.11	31.32	5.29	37.32	113	313	Peak
5260	91.87	92.39			31.41	5.34	37.27	113	313	Average
5260	100.97	101.49			31.41	5.34	37.27	113	313	Peak
5350	37.62	37.93	54	-16.38	31.48	5.39	37.18	113	313	Average
5350	57.72	58.03	74	-16.28	31.48	5.39	37.18	113	313	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5260MHz: Fundamental frequency.

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

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
5070	37.25	38.01	54	-16.75	31.25	5.26	37.27	100	302	Average
5070	59.16	59.92	74	-14.84	31.25	5.26	37.27	100	302	Peak
5300	92.16	92.54			31.44	5.37	37.19	100	302	Average
5300	101.67	102.05			31.44	5.37	37.19	100	302	Peak
5456	40.16	40.24	54	-13.84	31.56	5.44	37.08	100	302	Average
5456	58.83	58.91	74	-15.17	31.56	5.44	37.08	100	302	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
5150	37.64	38.35	54	-16.36	31.32	5.29	37.32	111	314	Average
5150	56.58	57.29	74	-17.42	31.32	5.29	37.32	111	314	Peak
5300	91.8	92.18			31.44	5.37	37.19	111	314	Average
5300	100.59	100.97			31.44	5.37	37.19	111	314	Peak
5352	39.86	40.17	54	-14.14	31.48	5.39	37.18	111	314	Average
5352	57.22	57.53	74	-16.78	31.48	5.39	37.18	111	314	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5300MHz: Fundamental frequency.

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

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
5140	37.39	38.08	54	-16.61	31.32	5.29	37.3	100	303	Average
5140	59.24	59.93	74	-14.76	31.32	5.29	37.3	100	303	Peak
5320	92.97	93.33			31.45	5.38	37.19	100	303	Average
5320	101.89	102.25			31.45	5.38	37.19	100	303	Peak
5414	40.86	41.09	54	-13.14	31.53	5.42	37.18	100	303	Average
5414	59.31	59.54	74	-14.69	31.53	5.42	37.18	100	303	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
5150	37.62	38.33	54	-16.38	31.32	5.29	37.32	124	313	Average
5150	56.91	57.62	74	-17.09	31.32	5.29	37.32	124	313	Peak
5320	91.97	92.33			31.45	5.38	37.19	124	313	Average
5320	101.37	101.73			31.45	5.38	37.19	124	313	Peak
5372	40.01	40.3	54	-13.99	31.49	5.4	37.18	124	313	Average
5372	57.76	58.05	74	-16.24	31.49	5.4	37.18	124	313	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5320MHz: Fundamental frequency.

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

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
5438	40.31	40.45	54	-13.69	31.55	5.44	37.13	109	344	Average
5438	60.07	60.21	74	-13.93	31.55	5.44	37.13	109	344	Peak
5470	58.36	58.42	68.3	-9.94	31.57	5.45	37.08	109	344	Peak
5500	89.43	89.4			31.6	5.46	37.03	109	344	Average
5500	99.1	99.07			31.6	5.46	37.03	109	344	Peak
5725	59.79	59.67	68.3	-8.51	31.96	5.59	37.43	109	344	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
5358	42.43	42.74	54	-11.57	31.48	5.39	37.18	102	84	Average
5358	60.07	60.38	74	-13.93	31.48	5.39	37.18	102	84	Peak
5470	58.8	58.86	68.3	-9.5	31.57	5.45	37.08	102	84	Peak
5500	94.31	94.28			31.6	5.46	37.03	102	84	Average
5500	103.91	103.88			31.6	5.46	37.03	102	84	Peak
5725	57.79	57.67	68.3	-10.51	31.96	5.59	37.43	102	84	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5500MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

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

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
5364	37.66	37.95	54	-16.34	31.49	5.4	37.18	127	62	Average
5364	58.82	59.11	74	-15.18	31.49	5.4	37.18	127	62	Peak
5470	57.39	57.45	68.3	-10.91	31.57	5.45	37.08	127	62	Peak
5580	90.25	90.2			31.71	5.5	37.16	127	62	Average
5580	99.91	99.86			31.71	5.5	37.16	127	62	Peak
5725	57.73	57.61	68.3	-10.57	31.96	5.59	37.43	127	62	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
5448	37.6	37.73	54	-16.4	31.56	5.44	37.13	100	82	Average
5448	59.61	59.74	74	-14.39	31.56	5.44	37.13	100	82	Peak
5470	57.99	58.05	68.3	-10.31	31.57	5.45	37.08	100	82	Peak
5580	93.88	93.83			31.71	5.5	37.16	100	82	Average
5580	103.21	103.16			31.71	5.5	37.16	100	82	Peak
5725	58.21	58.09	68.3	-10.09	31.96	5.59	37.43	100	82	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5580MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

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

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
5458	37.56	37.64	54	-16.44	31.56	5.44	37.08	133	63	Average
5458	59.37	59.45	74	-14.63	31.56	5.44	37.08	133	63	Peak
5470	57.7	57.76	68.3	-10.6	31.57	5.45	37.08	133	63	Peak
5700	91.23	91.16			31.9	5.57	37.4	133	63	Average
5700	100.72	100.65			31.9	5.57	37.4	133	63	Peak
5725	66.43	66.31	68.3	-1.87	31.96	5.59	37.43	133	63	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
5422	37.59	37.82	54	-16.41	31.53	5.42	37.18	100	81	Average
5422	58.71	58.94	74	-15.29	31.53	5.42	37.18	100	81	Peak
5470	57.03	57.09	68.3	-11.27	31.57	5.45	37.08	100	81	Peak
5700	92.79	92.72			31.9	5.57	37.4	100	81	Average
5700	102.23	102.16			31.9	5.57	37.4	100	81	Peak
5725	61.71	61.59	68.3	-6.59	31.96	5.59	37.43	100	81	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5700MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

802.11n (20MHz)

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

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
5128	39.93	40.64	54	-14.07	31.31	5.28	37.3	100	27	Average
5128	57.54	58.25	74	-16.46	31.31	5.28	37.3	100	27	Peak
5180	89.73	90.41			31.35	5.31	37.34	100	27	Average
5180	99.49	100.17			31.35	5.31	37.34	100	27	Peak
5350	37.54	37.85	54	-16.46	31.48	5.39	37.18	100	27	Average
5350	58.26	58.57	74	-15.74	31.48	5.39	37.18	100	27	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
5128	42.9	43.61	54	-11.1	31.31	5.28	37.3	100	52	Average
5128	58.34	59.05	74	-15.66	31.31	5.28	37.3	100	52	Peak
5180	93.38	94.06			31.35	5.31	37.34	100	52	Average
5180	102.77	103.45			31.35	5.31	37.34	100	52	Peak
5392	37.6	37.86	54	-16.4	31.51	5.41	37.18	100	52	Average
5392	56.34	56.6	74	-17.66	31.51	5.41	37.18	100	52	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5180MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 44	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Johnson Liao

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
5150	37.73	38.44	54	-16.27	31.32	5.29	37.32	100	26	Average
5150	55.69	56.4	74	-18.31	31.32	5.29	37.32	100	26	Peak
5220	90.13	90.79			31.37	5.33	37.36	100	26	Average
5220	99.23	99.89			31.37	5.33	37.36	100	26	Peak
5350	37.49	37.8	54	-16.51	31.48	5.39	37.18	100	26	Average
5350	57.51	57.82	74	-16.49	31.48	5.39	37.18	100	26	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	37.73	38.44	54	-16.27	31.32	5.29	37.32	100	22	Average
5150	56.76	57.47	74	-17.24	31.32	5.29	37.32	100	22	Peak
5220	92.72	93.38			31.37	5.33	37.36	100	22	Average
5220	101.73	102.39			31.37	5.33	37.36	100	22	Peak
5350	37.61	37.92	54	-16.39	31.48	5.39	37.18	100	22	Average
5350	57.3	57.61	74	-16.7	31.48	5.39	37.18	100	22	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5220MHz: Fundamental frequency.

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

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
5150	37.63	38.34	54	-16.37	31.32	5.29	37.32	100	27	Average
5150	58.48	59.19	74	-15.52	31.32	5.29	37.32	100	27	Peak
5240	89.83	90.42			31.39	5.34	37.32	100	27	Average
5240	98.94	99.53			31.39	5.34	37.32	100	27	Peak
5350	37.51	37.82	54	-16.49	31.48	5.39	37.18	100	27	Average
5350	58.61	58.92	74	-15.39	31.48	5.39	37.18	100	27	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
5150	37.66	38.37	54	-16.34	31.32	5.29	37.32	100	20	Average
5150	57.54	58.25	74	-16.46	31.32	5.29	37.32	100	20	Peak
5240	92.88	93.47			31.39	5.34	37.32	100	20	Average
5240	101.91	102.5			31.39	5.34	37.32	100	20	Peak
5350	37.46	37.77	54	-16.54	31.48	5.39	37.18	100	20	Average
5350	56.52	56.83	74	-17.48	31.48	5.39	37.18	100	20	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5240MHz: Fundamental frequency.

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

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
5150	37.64	38.35	54	-16.36	31.32	5.29	37.32	140	321	Average
5150	58.43	59.14	74	-15.57	31.32	5.29	37.32	140	321	Peak
5260	92.06	92.58			31.41	5.34	37.27	140	321	Average
5260	101.24	101.76			31.41	5.34	37.27	140	321	Peak
5350	37.54	37.85	54	-16.46	31.48	5.39	37.18	140	321	Average
5350	57.4	57.71	74	-16.6	31.48	5.39	37.18	140	321	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
5076	37.42	38.16	54	-16.58	31.27	5.26	37.27	100	295	Average
5076	58.96	59.7	74	-15.04	31.27	5.26	37.27	100	295	Peak
5260	91.97	92.49			31.41	5.34	37.27	100	295	Average
5260	101.07	101.59			31.41	5.34	37.27	100	295	Peak
5446	40.11	40.24	54	-13.89	31.56	5.44	37.13	100	295	Average
5446	58.76	58.89	74	-15.24	31.56	5.44	37.13	100	295	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5260MHz: Fundamental frequency.

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

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
5022	37.17	37.94	54	-16.83	31.23	5.24	37.24	100	303	Average
5022	58.8	59.57	74	-15.2	31.23	5.24	37.24	100	303	Peak
5300	92.47	92.85			31.44	5.37	37.19	100	303	Average
5300	101.47	101.85			31.44	5.37	37.19	100	303	Peak
5368	40.72	41.01	54	-13.28	31.49	5.4	37.18	100	303	Average
5368	59.08	59.37	74	-14.92	31.49	5.4	37.18	100	303	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
5150	37.65	38.36	54	-16.35	31.32	5.29	37.32	138	324	Average
5150	56.66	57.37	74	-17.34	31.32	5.29	37.32	138	324	Peak
5300	92.44	92.82			31.44	5.37	37.19	138	324	Average
5300	101.7	102.08			31.44	5.37	37.19	138	324	Peak
5352	40.88	41.19	54	-13.12	31.48	5.39	37.18	138	324	Average
5352	58.96	59.27	74	-15.04	31.48	5.39	37.18	138	324	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5300MHz: Fundamental frequency.

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

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
5026	37.11	37.88	54	-16.89	31.23	5.24	37.24	100	302	Average
5026	59.96	60.73	74	-14.04	31.23	5.24	37.24	100	302	Peak
5320	93.12	93.48			31.45	5.38	37.19	100	302	Average
5320	102.19	102.55			31.45	5.38	37.19	100	302	Peak
5350	41.34	41.65	54	-12.66	31.48	5.39	37.18	100	302	Average
5350	59.5	59.81	74	-14.5	31.48	5.39	37.18	100	302	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
5150	37.63	38.34	54	-16.37	31.32	5.29	37.32	138	323	Average
5150	58.93	59.64	74	-15.07	31.32	5.29	37.32	138	323	Peak
5320	93.01	93.37			31.45	5.38	37.19	138	323	Average
5320	102.14	102.5			31.45	5.38	37.19	138	323	Peak
5372	41.17	41.46	54	-12.83	31.49	5.4	37.18	138	323	Average
5372	57.78	58.07	74	-16.22	31.49	5.4	37.18	138	323	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5320MHz: Fundamental frequency.

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

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
5430	40.99	41.15	54	-13.01	31.55	5.42	37.13	100	345	Average
5430	59.24	59.4	74	-14.76	31.55	5.42	37.13	100	345	Peak
5470	57.88	57.94	68.3	-10.42	31.57	5.45	37.08	100	345	Peak
5500	88.06	88.03			31.6	5.46	37.03	100	345	Average
5500	97.72	97.69			31.6	5.46	37.03	100	345	Peak
5725	57.49	57.37	68.3	-10.81	31.96	5.59	37.43	100	345	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
5412	42.96	43.2	54	-11.04	31.53	5.41	37.18	102	62	Average
5412	59.31	59.55	74	-14.69	31.53	5.41	37.18	102	62	Peak
5470	59.59	59.65	68.3	-8.71	31.57	5.45	37.08	102	62	Peak
5500	92.89	92.86			31.6	5.46	37.03	102	62	Average
5500	102.33	102.3			31.6	5.46	37.03	102	62	Peak
5725	57.21	57.09	68.3	-11.09	31.96	5.59	37.43	102	62	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5500MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

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

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
5368	37.5	37.79	54	-16.5	31.49	5.4	37.18	127	62	Average
5368	59.39	59.68	74	-14.61	31.49	5.4	37.18	127	62	Peak
5470	58.28	58.34	68.3	-10.02	31.57	5.45	37.08	127	62	Peak
5580	90.01	89.96			31.71	5.5	37.16	127	62	Average
5580	99.43	99.38			31.71	5.5	37.16	127	62	Peak
5725	57.55	57.43	68.3	-10.75	31.96	5.59	37.43	127	62	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
5362	37.46	37.76	54	-16.54	31.49	5.39	37.18	100	89	Average
5362	58.63	58.93	74	-15.37	31.49	5.39	37.18	100	89	Peak
5470	57.2	57.26	68.3	-11.1	31.57	5.45	37.08	100	89	Peak
5580	93.42	93.37			31.71	5.5	37.16	100	89	Average
5580	102.86	102.81			31.71	5.5	37.16	100	89	Peak
5725	58.43	58.31	68.3	-9.87	31.96	5.59	37.43	100	89	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5580MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

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

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
5398	37.55	37.8	54	-16.45	31.52	5.41	37.18	132	62	Average
5398	59.33	59.58	74	-14.67	31.52	5.41	37.18	132	62	Peak
5470	57.68	57.74	68.3	-10.62	31.57	5.45	37.08	132	62	Peak
5700	90.86	90.79			31.9	5.57	37.4	132	62	Average
5700	99.96	99.89			31.9	5.57	37.4	132	62	Peak
5725	65.61	65.49	68.3	-2.69	31.96	5.59	37.43	132	62	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
5382	37.56	37.83	54	-16.44	31.51	5.4	37.18	100	81	Average
5382	59.56	59.83	74	-14.44	31.51	5.4	37.18	100	81	Peak
5470	58.68	58.74	68.3	-9.62	31.57	5.45	37.08	100	81	Peak
5700	92.59	92.52			31.9	5.57	37.4	100	81	Average
5700	102.29	102.22			31.9	5.57	37.4	100	81	Peak
5725	66.14	66.02	68.3	-2.16	31.96	5.59	37.43	100	81	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5700MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

802.11n (40MHz)

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

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
5150	39.24	39.95	54	-14.76	31.32	5.29	37.32	100	27	Average
5150	57.03	57.74	74	-16.97	31.32	5.29	37.32	100	27	Peak
5190	84.02	84.69			31.35	5.32	37.34	100	27	Average
5190	93.05	93.72			31.35	5.32	37.34	100	27	Peak
5350	37.49	37.8	54	-16.51	31.48	5.39	37.18	100	27	Average
5350	56.24	56.55	74	-17.76	31.48	5.39	37.18	100	27	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
5150	41.24	41.95	54	-12.76	31.32	5.29	37.32	100	51	Average
5150	58.09	58.8	74	-15.91	31.32	5.29	37.32	100	51	Peak
5190	87.49	88.16			31.35	5.32	37.34	100	51	Average
5190	96.6	97.27			31.35	5.32	37.34	100	51	Peak
5350	37.49	37.8	54	-16.51	31.48	5.39	37.18	100	51	Average
5350	57.6	57.91	74	-16.4	31.48	5.39	37.18	100	51	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5190MHz: Fundamental frequency.

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

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
5150	37.68	38.39	54	-16.32	31.32	5.29	37.32	100	27	Average
5150	56.55	57.26	74	-17.45	31.32	5.29	37.32	100	27	Peak
5230	84.55	85.15			31.39	5.33	37.32	100	27	Average
5230	94.06	94.66			31.39	5.33	37.32	100	27	Peak
5350	37.48	37.79	54	-16.52	31.48	5.39	37.18	100	27	Average
5350	56.51	56.82	74	-17.49	31.48	5.39	37.18	100	27	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
5150	37.82	38.53	54	-16.18	31.32	5.29	37.32	100	19	Average
5150	55.86	56.57	74	-18.14	31.32	5.29	37.32	100	19	Peak
5230	86.87	87.47			31.39	5.33	37.32	100	19	Average
5230	96.37	96.97			31.39	5.33	37.32	100	19	Peak
5350	37.5	37.81	54	-16.5	31.48	5.39	37.18	100	19	Average
5350	59.08	59.39	74	-14.92	31.48	5.39	37.18	100	19	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5230MHz: Fundamental frequency.

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

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
5150	37.74	38.45	54	-16.26	31.32	5.29	37.32	138	322	Average
5150	56.68	57.39	74	-17.32	31.32	5.29	37.32	138	322	Peak
5270	86.8	87.31			31.41	5.35	37.27	138	322	Average
5270	97.13	97.64			31.41	5.35	37.27	138	322	Peak
5350	37.66	37.97	54	-16.34	31.48	5.39	37.18	138	322	Average
5350	57.64	57.95	74	-16.36	31.48	5.39	37.18	138	322	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
5070	37.1	37.86	54	-16.9	31.25	5.26	37.27	109	296	Average
5070	59.48	60.24	74	-14.52	31.25	5.26	37.27	109	296	Peak
5270	86.32	86.83			31.41	5.35	37.27	109	296	Average
5270	95.19	95.7			31.41	5.35	37.27	109	296	Peak
5442	37.64	37.78	54	-16.36	31.55	5.44	37.13	109	296	Average
5442	58.8	58.94	74	-15.2	31.55	5.44	37.13	109	296	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5270MHz: Fundamental frequency.

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

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
5150	37.68	38.39	54	-16.32	31.32	5.29	37.32	138	322	Average
5150	57.63	58.34	74	-16.37	31.32	5.29	37.32	138	322	Peak
5310	87	87.37			31.45	5.37	37.19	138	322	Average
5310	96.22	96.59			31.45	5.37	37.19	138	322	Peak
5350	38.47	38.78	54	-15.53	31.48	5.39	37.18	138	322	Average
5350	56.65	56.96	74	-17.35	31.48	5.39	37.18	138	322	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
5124	37.33	38.04	54	-16.67	31.31	5.28	37.3	100	304	Average
5124	58.97	59.68	74	-15.03	31.31	5.28	37.3	100	304	Peak
5310	86.73	87.1			31.45	5.37	37.19	100	304	Average
5310	96.09	96.46			31.45	5.37	37.19	100	304	Peak
5370	38.23	38.52	54	-15.77	31.49	5.4	37.18	100	304	Average
5370	58.97	59.26	74	-15.03	31.49	5.4	37.18	100	304	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5310MHz: Fundamental frequency.

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

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
5386	38.39	38.66	54	-15.61	31.51	5.4	37.18	108	345	Average
5386	58.81	59.08	74	-15.19	31.51	5.4	37.18	108	345	Peak
5470	58.36	58.42	68.3	-9.94	31.57	5.45	37.08	108	345	Peak
5510	82.77	82.77			31.6	5.46	37.06	108	345	Average
5510	92.17	92.17			31.6	5.46	37.06	108	345	Peak
5725	57.79	57.67	68.3	-10.51	31.96	5.59	37.43	108	345	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
5420	39.66	39.89	54	-14.34	31.53	5.42	37.18	102	84	Average
5420	59.18	59.41	74	-14.82	31.53	5.42	37.18	102	84	Peak
5470	60.3	60.36	68.3	-8	31.57	5.45	37.08	102	84	Peak
5510	88.22	88.22			31.6	5.46	37.06	102	84	Average
5510	97.05	97.05			31.6	5.46	37.06	102	84	Peak
5725	57.76	57.64	68.3	-10.54	31.96	5.59	37.43	102	84	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5510MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

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

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
5440	38.28	38.42	54	-15.72	31.55	5.44	37.13	129	65	Average
5440	59.16	59.3	74	-14.84	31.55	5.44	37.13	129	65	Peak
5470	58.52	58.58	68.3	-9.78	31.57	5.45	37.08	129	65	Peak
5550	84.69	84.61			31.68	5.49	37.09	129	65	Average
5550	93.85	93.77			31.68	5.49	37.09	129	65	Peak
5725	57.04	56.92	68.3	-11.26	31.96	5.59	37.43	129	65	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
5350	38.14	38.45	54	-15.86	31.48	5.39	37.18	100	83	Average
5350	58.98	59.29	74	-15.02	31.48	5.39	37.18	100	83	Peak
5470	57.68	57.74	68.3	-10.62	31.57	5.45	37.08	100	83	Peak
5550	88.28	88.2			31.68	5.49	37.09	100	83	Average
5550	97.67	97.59			31.68	5.49	37.09	100	83	Peak
5725	58.54	58.42	68.3	-9.76	31.96	5.59	37.43	100	83	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5550MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

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

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
5454	38.08	38.16	54	-15.92	31.56	5.44	37.08	138	62	Average
5454	60.24	60.32	74	-13.76	31.56	5.44	37.08	138	62	Peak
5470	56.92	56.98	68.3	-11.38	31.57	5.45	37.08	138	62	Peak
5670	84.42	84.32			31.88	5.56	37.34	138	62	Average
5670	93.56	93.46			31.88	5.56	37.34	138	62	Peak
5725	58.86	58.74	68.3	-9.44	31.96	5.59	37.43	138	62	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
5358	37.93	38.24	54	-16.07	31.48	5.39	37.18	100	82	Average
5358	59.62	59.93	74	-14.38	31.48	5.39	37.18	100	82	Peak
5470	57.24	57.3	68.3	-11.06	31.57	5.45	37.08	100	82	Peak
5670	89.13	89.03			31.88	5.56	37.34	100	82	Average
5670	98.13	98.03			31.88	5.56	37.34	100	82	Peak
5725	58.44	58.32	68.3	-9.86	31.96	5.59	37.43	100	82	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5670MHz: Fundamental frequency.
3. 5470MHz & 5725MHz: Out of restricted band

BELOW 1GHz WORST-CASE DATA:

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Johnson Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
57.81	24	42.39	40	-16	12.15	0.81	31.35	100	224	Peak
146.64	27.46	45.17	43.5	-16.04	12.58	1.33	31.62	100	154	Peak
227.1	27.61	47.2	46	-18.39	10.5	1.73	31.82	100	350	Peak
400.1	21.72	36.06	46	-24.28	15.35	2.43	32.12	100	106	Peak
584.9	22.82	32.65	46	-23.18	19.26	3.04	32.13	100	57	Peak
815.2	27.39	32.77	46	-18.61	22.42	3.73	31.53	100	152	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
30.81	29.12	47.53	40	-10.88	12.14	0.57	31.12	100	174	QP
57.27	26.34	44.63	40	-13.66	12.25	0.81	31.35	100	86	Peak
146.37	31.68	49.39	43.5	-11.82	12.58	1.33	31.62	100	158	Peak
433	19.24	32.72	46	-26.76	15.98	2.55	32.01	100	289	Peak
642.3	26.89	35.63	46	-19.11	20.12	3.22	32.08	100	95	Peak
885.2	27.58	32.33	46	-18.42	23.32	3.92	31.99	100	178	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Johnson Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
57.81	24	42.39	40	-16	12.15	0.81	31.35	100	345	Peak
146.37	26.77	44.48	43.5	-16.73	12.58	1.33	31.62	100	152	Peak
238.71	24.6	43.62	46	-21.4	10.99	1.78	31.79	100	108	Peak
463.8	21.06	33.75	46	-24.94	16.6	2.66	31.95	100	102	Peak
702.5	25.15	32.64	46	-20.85	20.85	3.44	31.78	100	187	Peak
976.9	28.7	32.42	54	-25.3	23.94	4.12	31.78	100	255	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
30.75	29.63	48.04	40	-10.37	12.14	0.57	31.12	100	168	QP
125.31	28.56	47.89	43.5	-14.94	11.35	1.21	31.89	100	162	Peak
227.37	28.41	48	46	-17.59	10.5	1.73	31.82	100	158	Peak
339.9	22.93	38.67	46	-23.07	13.89	2.19	31.82	100	304	Peak
642.3	26.89	35.63	46	-19.11	20.12	3.22	32.08	100	286	Peak
919.5	27.59	31.96	46	-18.41	23.62	4.01	32	100	197	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value

802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Johnson Liao

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
41.07	17.87	34.67	40	-22.13	13.55	0.67	31.02	100	107	Peak
157.44	25.14	42.84	43.5	-18.36	12.72	1.38	31.8	100	293	Peak
271.92	20.51	38.47	46	-25.49	12.11	1.92	31.99	100	155	Peak
342.7	19.84	35.5	46	-26.16	13.96	2.2	31.82	100	190	Peak
771.1	34.88	40.75	46	-11.12	21.82	3.62	31.31	100	67	Peak
903.4	27.51	32.03	46	-18.49	23.53	3.97	32.02	100	268	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
30.72	28.97	47.38	40	-11.03	12.14	0.57	31.12	100	139	QP
112.89	31.32	51.77	43.5	-12.18	10.27	1.14	31.86	100	244	Peak
195.24	26.65	47.1	43.5	-16.85	9.7	1.57	31.72	100	58	Peak
365.1	24.42	39.6	46	-21.58	14.49	2.28	31.95	100	211	Peak
642.3	26.89	35.63	46	-19.11	20.12	3.22	32.08	100	31	Peak
865.6	27.61	32.64	46	-18.39	23.06	3.86	31.95	100	75	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor

Margin value = Emission level – Limit value

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	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. 17, 2013	Nov. 16, 2014
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 27, 2013	Dec. 26, 2014
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 23, 2013	Dec. 22, 2014
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 08, 2013	Jul. 07, 2014
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.

4.2.3 TEST PROCEDURES

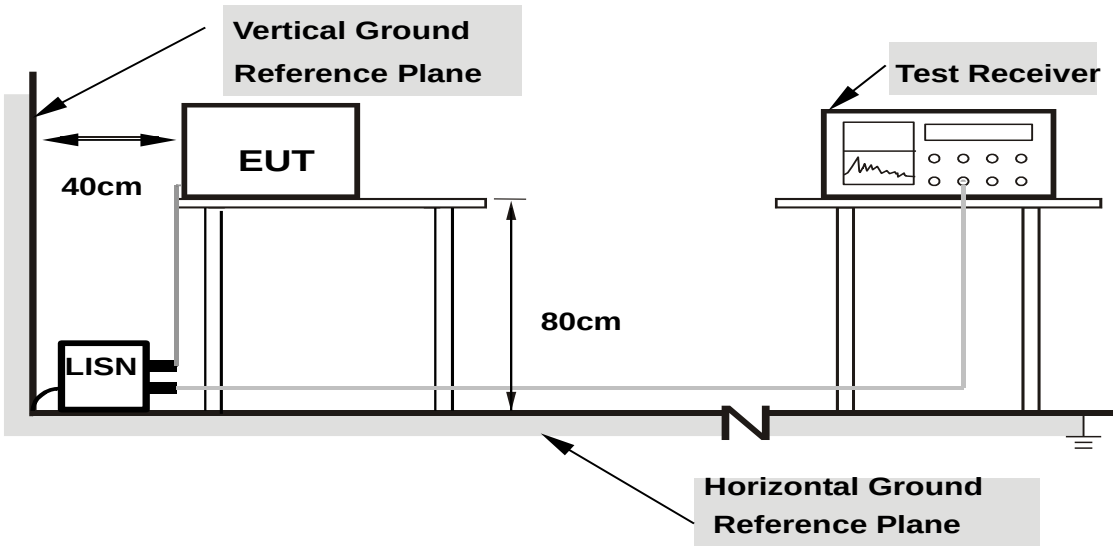
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

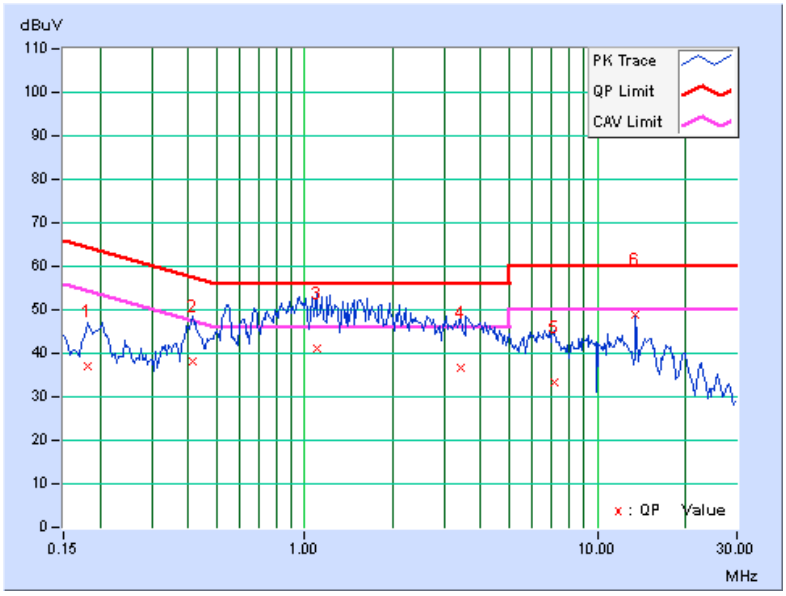
CONDUCTED WORST-CASE DATA：

PHASE	Line 1	6dB BANDWIDTH	9kHz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18125	0.27	36.66	23.56	36.93	23.83	64.43	54.43	-27.49	-30.59
2	0.41563	0.30	38.01	27.85	38.31	28.15	57.54	47.54	-19.22	-19.38
3	1.10156	0.34	40.64	28.93	40.98	29.27	56.00	46.00	-15.02	-16.73
4	3.42969	0.41	36.32	26.63	36.73	27.04	56.00	46.00	-19.27	-18.96
5	7.11719	0.47	32.86	22.79	33.33	23.26	60.00	50.00	-26.67	-26.74
6	13.55859	0.52	48.48	44.22	49.00	44.74	60.00	50.00	-11.00	-5.26

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

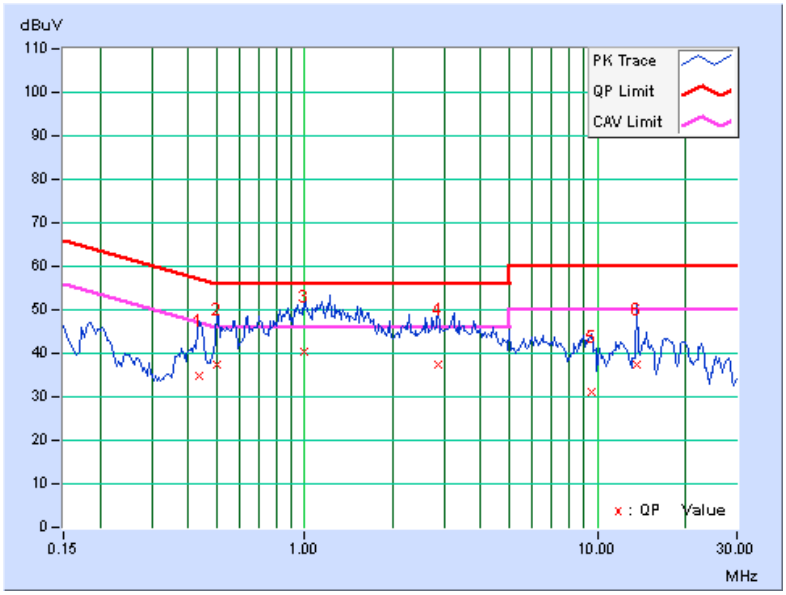


PHASE	Line 2	6dB BANDWIDTH	9kHz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.43516	0.30	34.33	25.83	34.63	26.13	57.15	47.15	-22.52	-21.02
2	0.50156	0.31	37.17	27.72	37.48	28.03	56.00	46.00	-18.52	-17.97
3	0.99375	0.34	39.87	30.84	40.21	31.18	56.00	46.00	-15.79	-14.82
4	2.86719	0.40	36.96	28.09	37.36	28.49	56.00	46.00	-18.64	-17.51
5	9.52734	0.51	30.63	22.18	31.14	22.69	60.00	50.00	-28.86	-27.31
6	13.56250	0.55	36.87	21.18	37.42	21.73	60.00	50.00	-22.58	-28.27

REMARKS:

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



4.3 PEAK TRANSMIT POWER MEASUREMENT

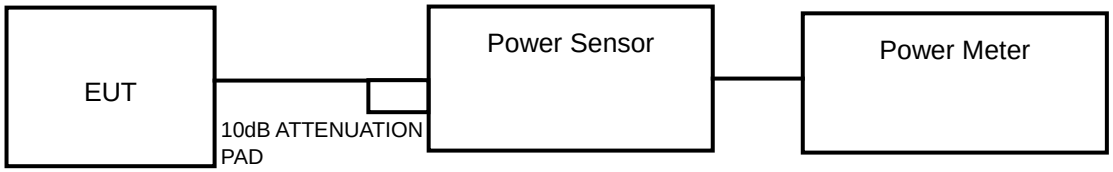
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

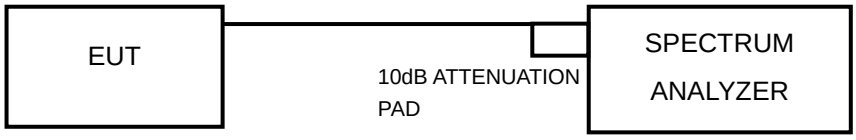
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

<802.11a, 802.11n (20MHz), 802.11n (40MHz)>

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

FOR 26dB BANDWIDTH

1) Set RBW = approximately 1% of the emission bandwidth.
2) Set the VBW > RBW.
3) Detector = Peak.
4) Trace mode = max hold.
5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.3.7 TEST RESULTS

POWER OUTPUT

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	41.88	16.22	17	PASS
44	5220	41.98	16.23	17	PASS
48	5240	42.76	16.31	17	PASS
52	5260	42.95	16.33	24	PASS
60	5300	41.78	16.21	24	PASS
64	5320	43.15	16.35	24	PASS
100	5500	42.76	16.31	24	PASS
116	5580	40.55	16.08	24	PASS
140	5700	40.83	16.11	24	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	41.88	16.22	17	PASS
44	5220	42.27	16.26	17	PASS
48	5240	42.76	16.31	17	PASS
52	5260	42.95	16.33	24	PASS
60	5300	42.56	16.29	24	PASS
64	5320	43.35	16.37	24	PASS
100	5500	43.95	16.43	24	PASS
116	5580	41.30	16.16	24	PASS
140	5700	40.64	16.09	24	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	21.43	13.31	17	PASS
46	5230	21.28	13.28	17	PASS
54	5270	21.58	13.34	24	PASS
62	5310	21.68	13.36	24	PASS
102	5510	21.38	13.30	24	PASS
110	5550	21.04	13.23	24	PASS
134	5670	20.75	13.17	24	PASS

26dB BANDWIDTH

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	23.14	PASS
44	5220	23.87	PASS
48	5240	24.15	PASS
52	5260	22.99	PASS
60	5300	23.40	PASS
64	5320	24.08	PASS
100	5500	23.23	PASS
116	5580	23.10	PASS
140	5700	23.05	PASS

802.11n (20MHz)

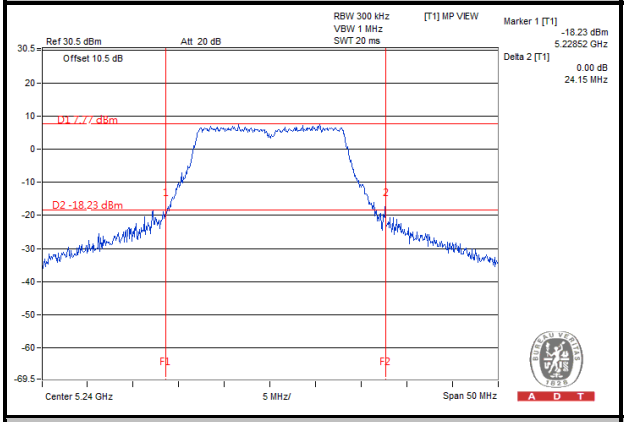
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	23.84	PASS
44	5220	23.20	PASS
48	5240	24.23	PASS
52	5260	24.32	PASS
60	5300	23.80	PASS
64	5320	23.48	PASS
100	5500	24.58	PASS
116	5580	23.59	PASS
140	5700	24.37	PASS

802.11n (40MHz)

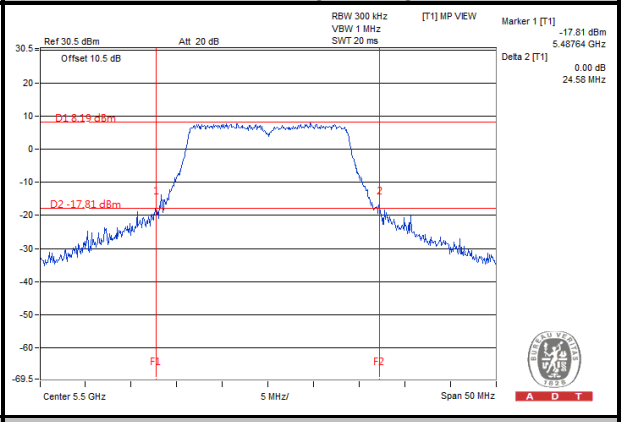
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	47.27	PASS
46	5230	46.45	PASS
54	5270	46.77	PASS
62	5310	49.75	PASS
102	5510	45.98	PASS
110	5550	46.22	PASS
134	5670	46.23	PASS

SPECTRUM PLOT OF WORST VALUE

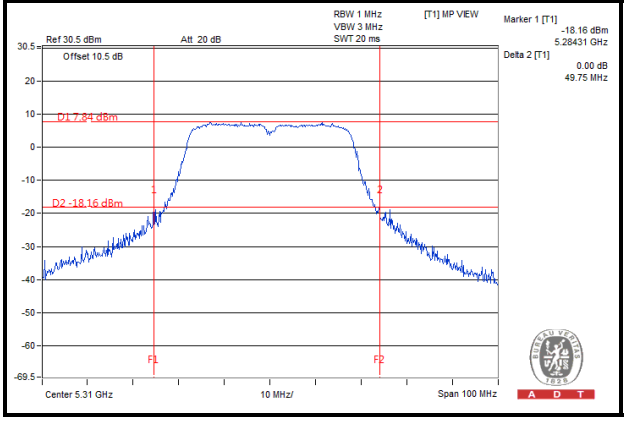
802.11a



802.11n (20MHz)



802.11n (40MHz)

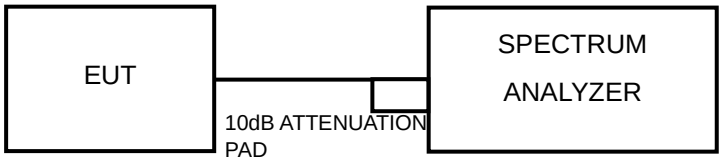


4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	4dBm
5.250 ~ 5.350GHz	11dBm
5.470 ~ 5.725GHz	11dBm

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

<802.11a, 802.11n (20MHz)>
Using method SA-1
1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3) Sweep time = 4second.
4) Perform a single sweep.

<802.11n (40MHz)>
Using method SA-2 alternative
1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3) Sweep time = 4second.
4) Perform a single sweep.
5) Record the max value and add 10 log (1/duty cycle)

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

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.59	4	PASS
44	5220	3.72	4	PASS
48	5240	3.81	4	PASS
52	5260	4.18	11	PASS
60	5300	4.23	11	PASS
64	5320	4.46	11	PASS
100	5500	5.03	11	PASS
116	5580	4.62	11	PASS
140	5700	4.02	11	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.40	4	PASS
44	5220	3.45	4	PASS
48	5240	3.78	4	PASS
52	5260	3.91	11	PASS
60	5300	3.99	11	PASS
64	5320	4.12	11	PASS
100	5500	4.62	11	PASS
116	5580	4.38	11	PASS
140	5700	3.72	11	PASS

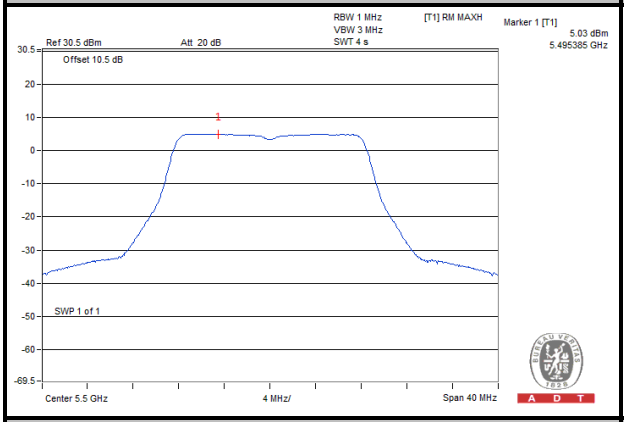
802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-2.36	0.33	-2.03	4	PASS
46	5230	-2.17	0.33	-1.84	4	PASS
54	5270	-1.87	0.33	-1.54	11	PASS
62	5310	-1.68	0.33	-1.35	11	PASS
102	5510	-1.21	0.33	-0.88	11	PASS
110	5550	-1.33	0.33	-1.00	11	PASS
134	5670	-2.02	0.33	-1.69	11	PASS

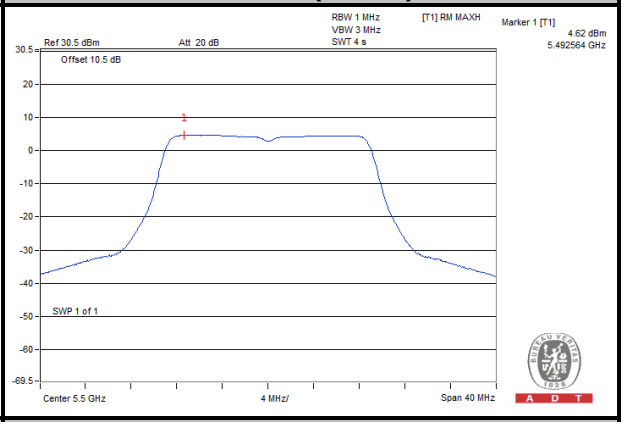
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

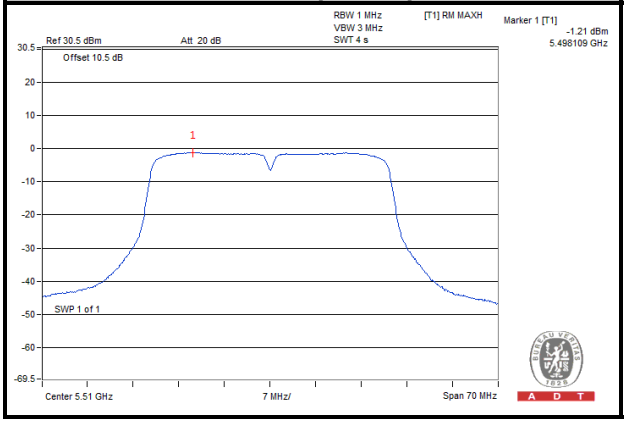
802.11a



802.11n (20MHz)



802.11n (40MHz)

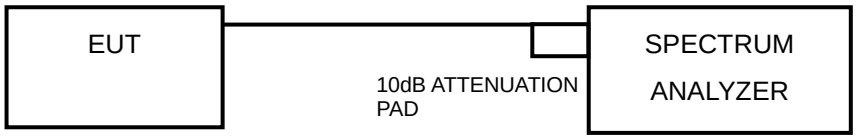


4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

Shall not exceed 13 dB.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

a. Set the RBW = 1 kHz, VBW ≥ 3 MHz, Detector = peak.
b. Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.
c. Use the peak search function to find the peak of the spectrum.
d. Measure the PPSD.
e. Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.
Find the worst channel and modulation mode as above test procedure, and follow KDB 789033 D01 General UNII Test Procedures v01r03 and repeat step 1 to 5 for final testing of each modulation mode on a single channel (all modulation types) in a single operating band to compliance with the peak excursion requirement.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

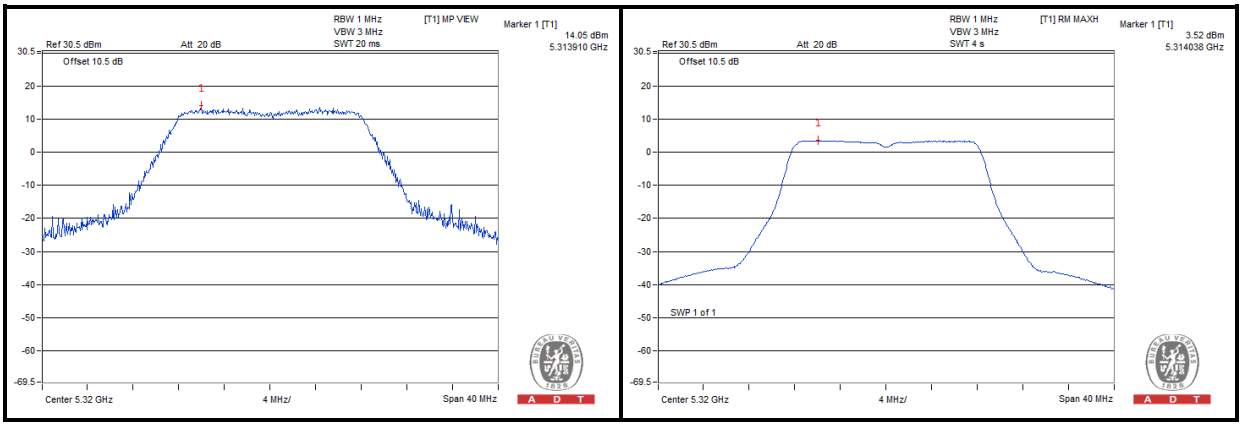
4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6.

4.5.7 TEST RESULTS

MODULATION MODE	MODULATION TYPE	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/FAIL
802.11a	BPSK	5320	13.50	4.46	4.46	9.04	13	PASS
	QPSK		14.68	4.38	4.49	10.19	13	PASS
	16QAM		14.05	3.52	3.71	10.34	13	PASS
	64QAM		13.60	3.44	3.81	9.79	13	PASS
802.11n (20MHz)	BPSK	5500	14.02	4.62	4.62	9.40	13	PASS
	QPSK		14.52	4.67	4.78	9.74	13	PASS
	16QAM		14.10	3.72	3.92	10.18	13	PASS
	64QAM		13.98	3.77	4.13	9.85	13	PASS
802.11n (40MHz)	BPSK	5310	8.15	-1.68	-1.35	9.50	13	PASS
	QPSK		8.37	-1.61	-1.06	9.43	13	PASS
	16QAM		8.97	-1.70	-0.68	9.65	13	PASS
	64QAM		8.85	-1.65	0.17	8.68	13	PASS

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

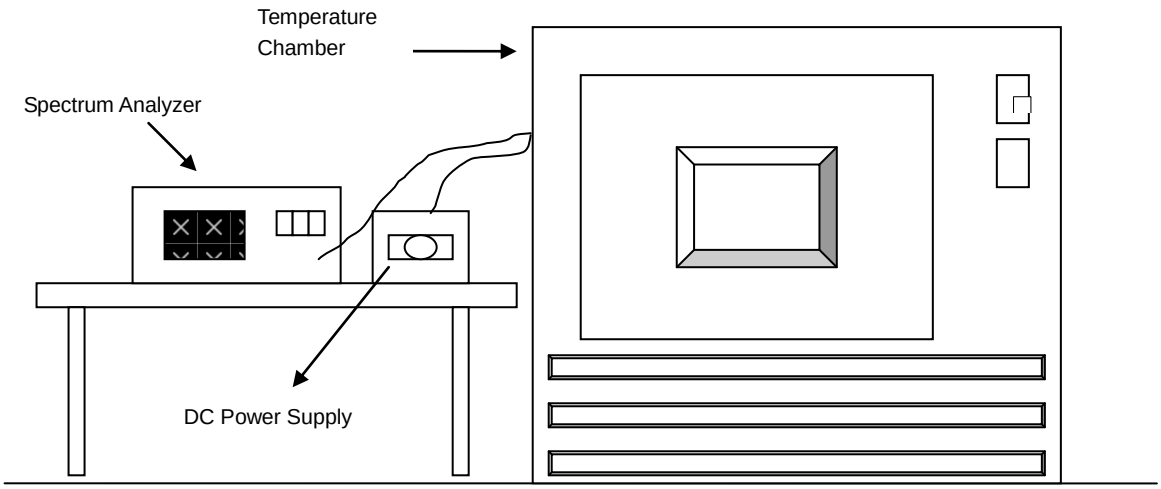


4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.6.4 TEST PROCEDURE

a. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
b. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
c. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

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

4.6.7 TEST RESULTS

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (℃)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
60	3.8	5320.042509	7.990	5320.042614	8.010	5320.042001	7.895	5320.042137	7.920
50	3.8	5320.043180	8.117	5320.042727	8.031	5320.042933	8.070	5320.043071	8.096
40	3.8	5320.043756	8.225	5320.044091	8.288	5320.044282	8.324	5320.044082	8.286
30	3.8	5320.044951	8.449	5320.045455	8.544	5320.044959	8.451	5320.045497	8.552
20	3.8	5320.046705	8.779	5320.046452	8.732	5320.046508	8.742	5320.046471	8.735
10	3.8	5320.045295	8.514	5320.045044	8.467	5320.044816	8.424	5320.044758	8.413
0	3.8	5320.043892	8.250	5320.043779	8.229	5320.043849	8.242	5320.043606	8.197
-10	3.8	5320.043297	8.139	5320.042891	8.062	5320.043104	8.102	5320.043176	8.116
-20	3.8	5320.041744	7.847	5320.042030	7.900	5320.041825	7.862	5320.042230	7.938
-30	3.8	5320.038777	7.289	5320.048784	9.170	5320.049031	9.216	5320.048791	9.171

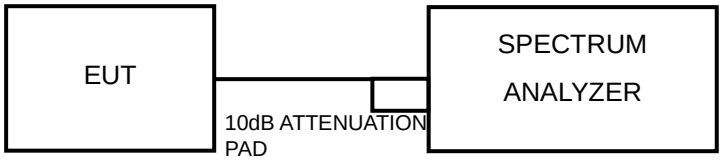
FREQUEMCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (℃)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	3.6	5320.044880	8.436	5320.045028	8.464	5320.044360	8.338	5320.044833	8.427
	3.8	5320.044951	8.449	5320.045455	8.544	5320.044959	8.451	5320.045497	8.552
	4.35	5320.046175	8.680	5320.046480	8.737	5320.046305	8.704	5320.046637	8.766

4.7 20dBc BANDWIDTH MEASUREMENT

4.7.1 LIMITS OF 20dBc BANDWIDTH MEASUREMENT

20dBc point shall not overlap in 5150~5700MHz.

4.7.2 TEST SETUP



4.7.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.7.4 TEST PROCEDURES

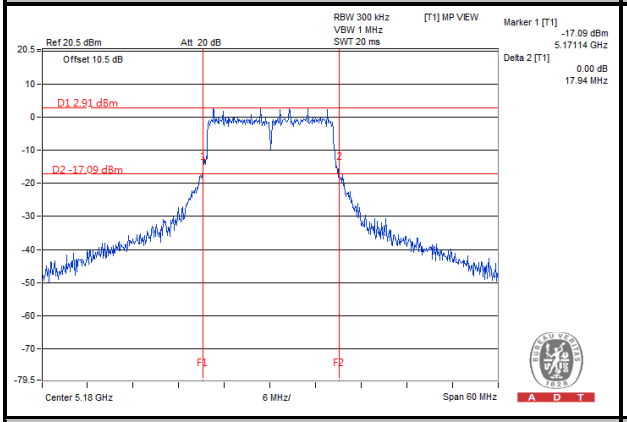
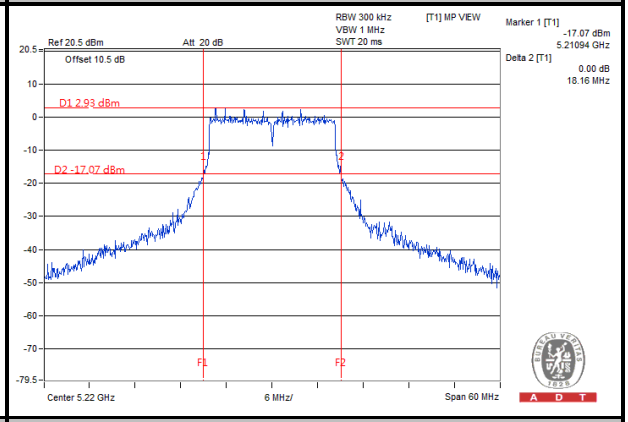
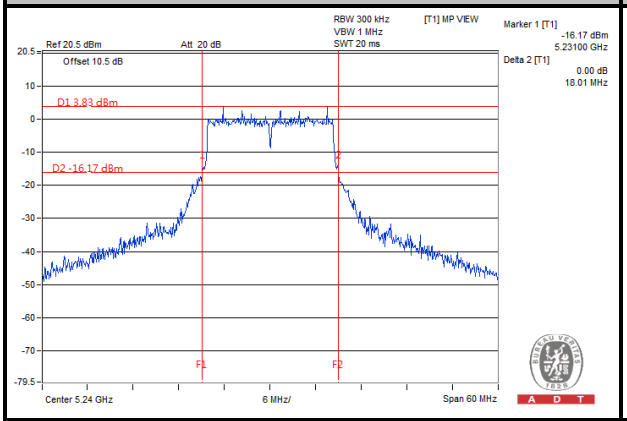
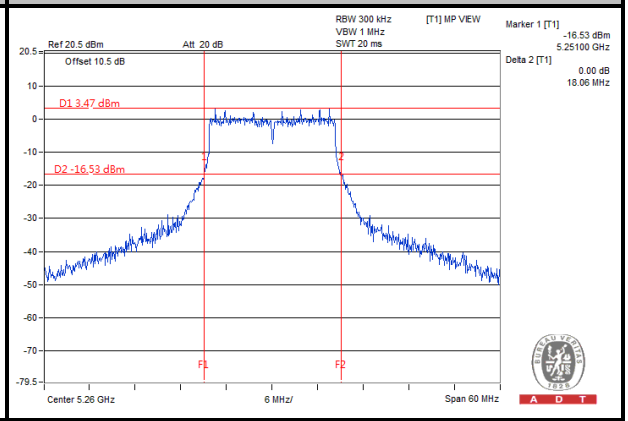
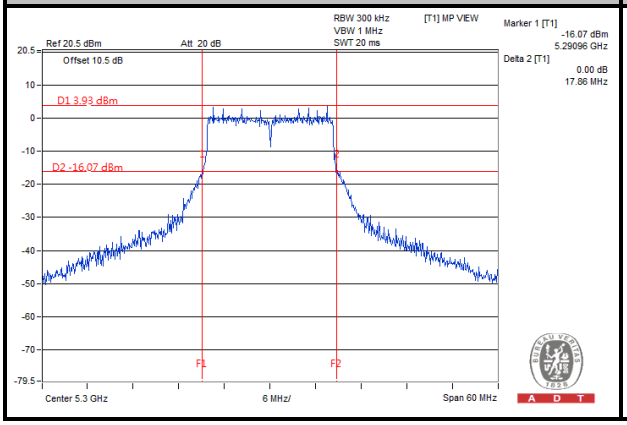
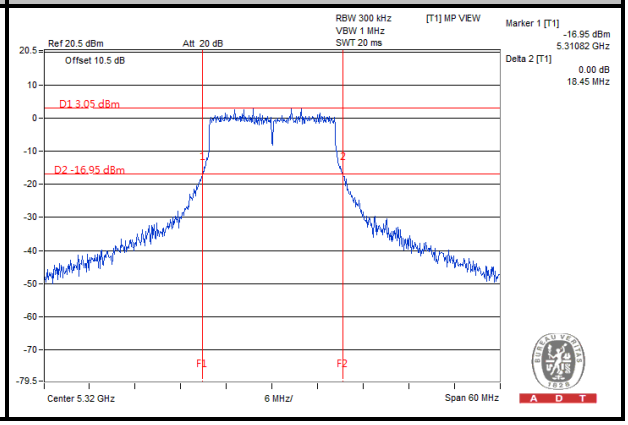
789033 D01 General UNII Test Procedures v01r03

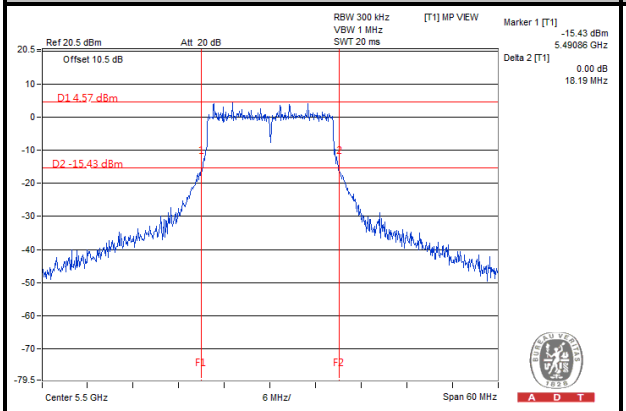
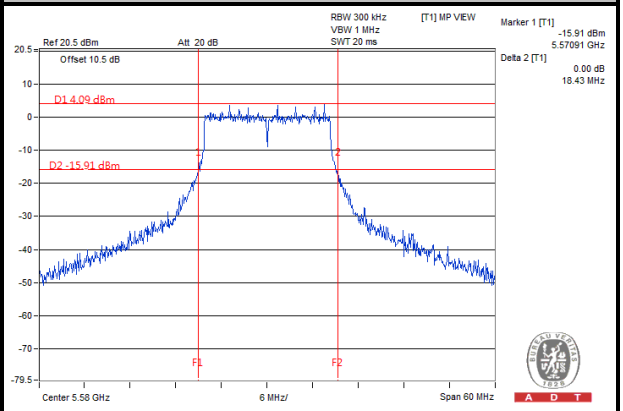
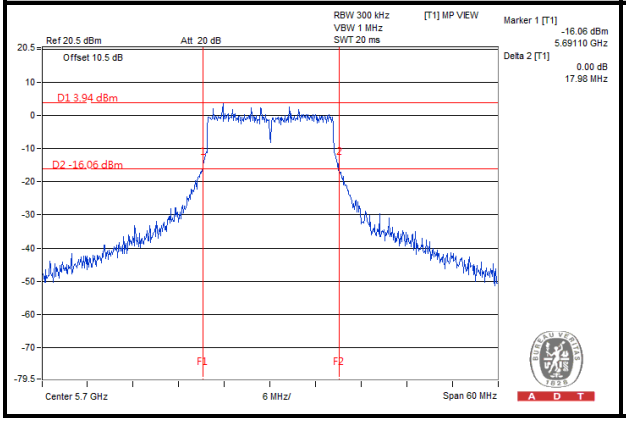
Emission bandwidth

1) Set RBW = approximately 1% of the emission bandwidth.
2) Set the VBW > RBW.
3) Detector = Peak
4) Trace mode = max hold.
5) Measurement the maximum width of the emission that is 20dB down from the peak of the emission. Compare this with RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.7.5 TEST RESULTS

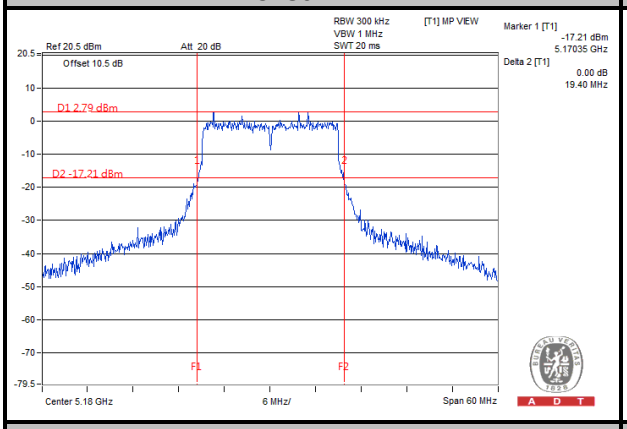
802.11a

5180MHz	5220MHz
	
5240MHz	**5260MHz**
	
5300MHz	**5320MHz**
	

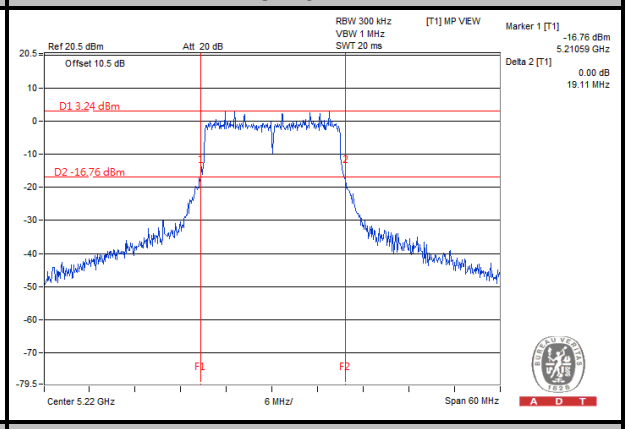
5500MHz	5580MHz
	
5700MHz	
	

802.11n (20MHz)

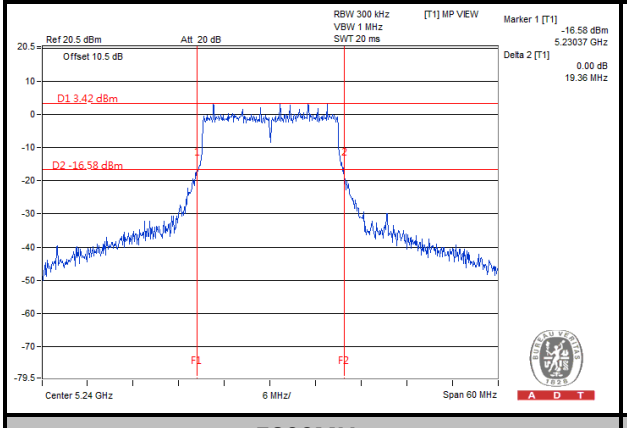
5180MHz



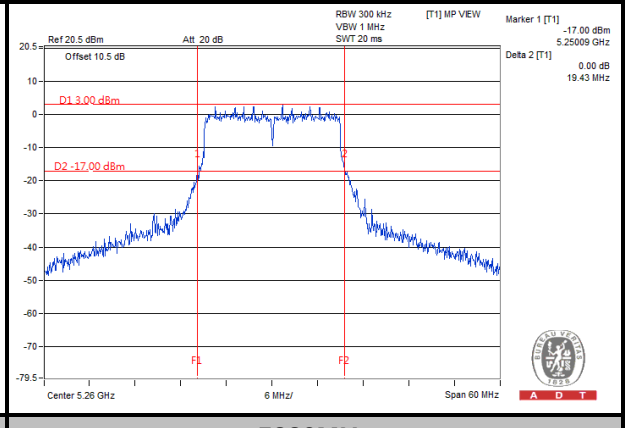
5220MHz



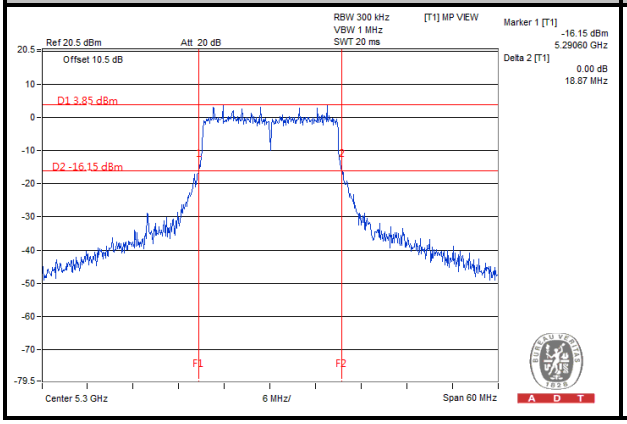
5240MHz



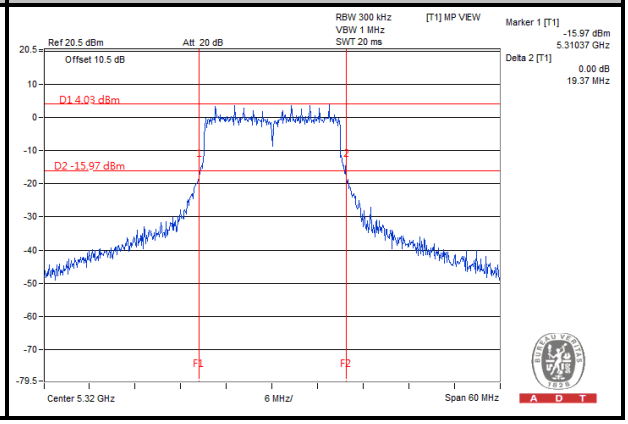
5260MHz



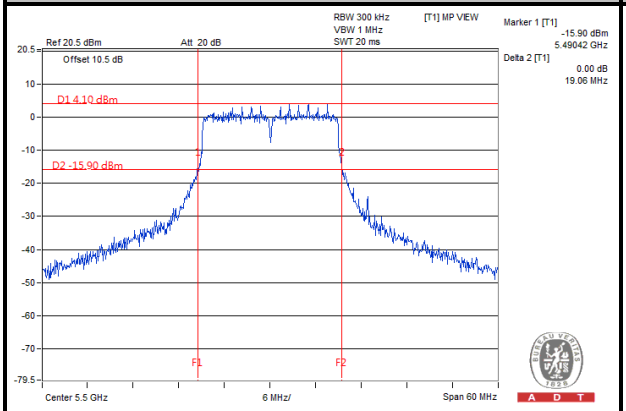
5300MHz



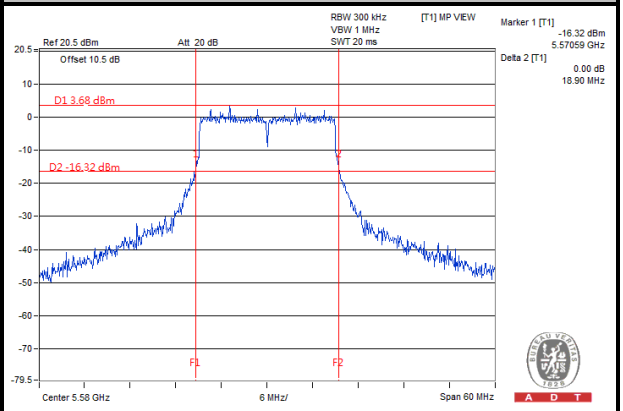
5320MHz



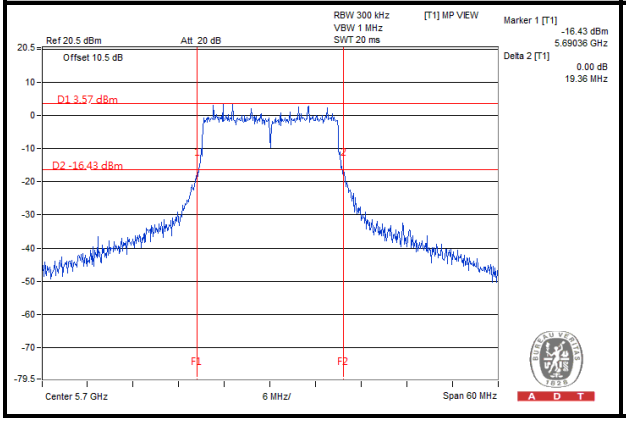
5500MHz



5580MHz

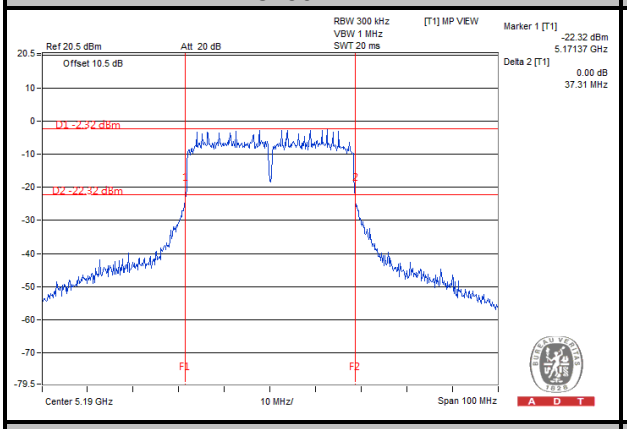


5700MHz

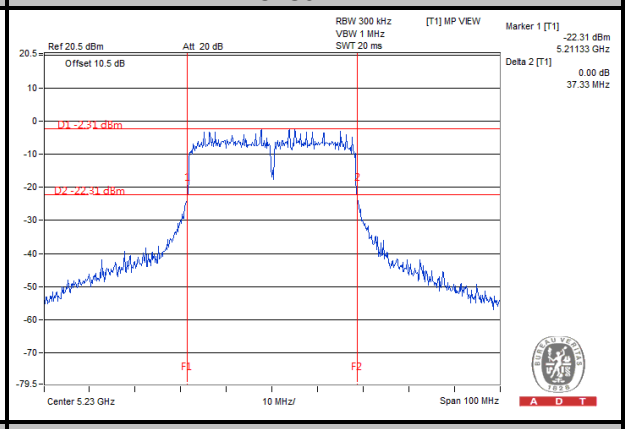


802.11n (40MHz)

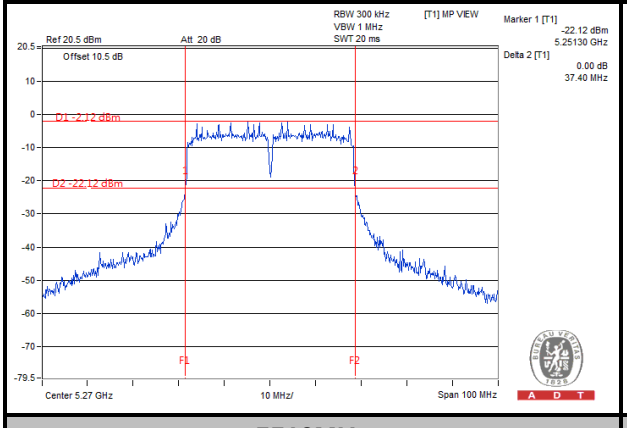
5190MHz



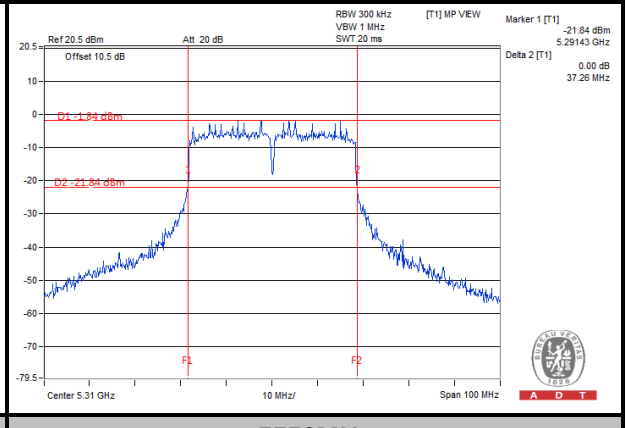
5230MHz



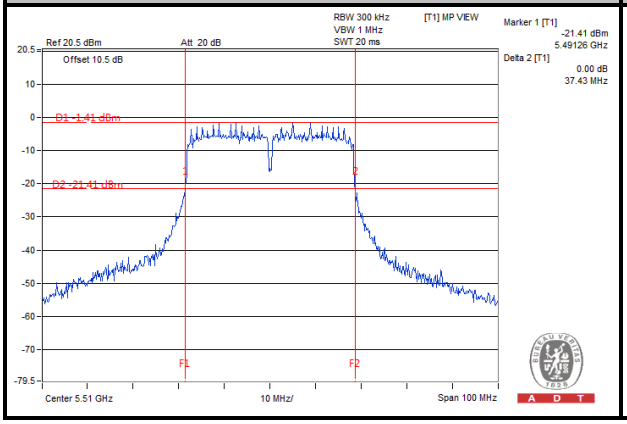
5270MHz



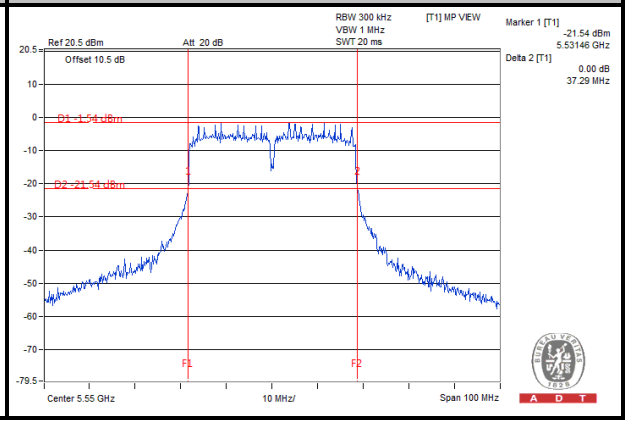
5310MHz

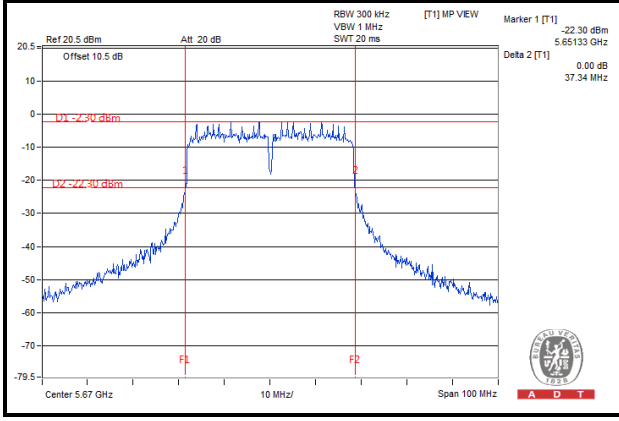


5510MHz



5550MHz



5670MHz	
	

RBW 300 kHz
VBW 1 MHz
SWT 20 ms
[T1] MP VIEW
Marker 1 [T1]
-22.30 dBm
5.65133 GHz
Delta 2 [T1]
0.00 dB
37.34 MHz
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 -2.30 dBm
D2 -22.30 dBm
F1
F2
Center 5.67 GHz
10 MHz/
Span 100 MHz

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.
If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
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:
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Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

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

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

---END---