FCC TEST REPORT (15.407)

REPORT NO.:	RF140409C02A-2
MODEL NO.:	HTL23
FCC ID:	NM8HTL23
RECEIVED:	Apr. 09, 2014
TESTED:	Apr. 28, 2014 ~ Apr. 30, 2014
ISSUED:	May 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.

TABLE OF CONTENTS

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140409C02A-2	Original release	May 15, 2014

1. CERTIFICATION

PRODUCT:	Smartphone
MODEL NO.:	HTL23
BRAND:	HTC
APPLICANT:	HTC Corporation
TESTED:	Apr. 28, 2014 ~ Apr. 30, 2014
TEST SAMPLE:	Production Unit
STANDARDS:	**FCC Part 15, Subpart E (Section 15.407)**
	ANSI C63.10-2009

The above equipment (model: HTL23) 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 :** May 15, 2014

Ivonne Wu / Supervisor

APPROVED BY : _____ **, DATE :** May 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 -8.65dB at 13.56250MHz.
15.407(b/1/2/3)(b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.13dB at 5725.00MHz.
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.	HTL23
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.8Vdc (Li-ion battery)
MODULATION TYPE	256QAM, 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 802.11ac: up to V9
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) 1 for 802.11ac (80MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz) 1 for 802.11ac (80MHz)
OUTPUT POWER	42.46mW for 5180 ~ 5240MHz 44.26mW for 5260 ~ 5320MHz 44.46mW for 5500 ~ 5700MHz
ANTENNA TYPE	PIFA antenna with -4.5dBi gain (5180 ~ 5240MHz) PIFA antenna with -4.5dBi gain (5260 ~ 5320MHz) PIFA antenna with -4.0dBi 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

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

CHANNEL	FREQUENCY
42	5210 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

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

CHANNEL	FREQUENCY
58	5290MHz

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		

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

CHANNEL	FREQUENCY
106	5530MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥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, and **X-plane** for 5260-5320MHz & 5500-5700MHz**.**

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
	802.11ac (80MHz)		42	42	OFDM	BPSK	V0
-	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
	802.11ac (80MHz)		58	58	OFDM	BPSK	V0
-	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
	802.11ac (80MHz)		106	106	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.

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	100, 116, 140	OFDM	BPSK	6.0

POWER LINE CONDUCTED EMISSION TEST:

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (20MHz)	5260-5320	52 to 64	64	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, 48	OFDM	BPSK	6.0
	802.11n (20MHz)		36 to 48	36, 48	OFDM	BPSK	MCS0
	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
	802.11ac (80MHz)		42	42	OFDM	BPSK	V0
-	802.11a	5260-5320	52 to 64	52, 64	OFDM	BPSK	6.0
	802.11n (20MHz)		52 to 64	52, 64	OFDM	BPSK	MCS0
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
	802.11ac (80MHz)		58	58	OFDM	BPSK	V0
-	802.11a	5500-5700	100 to 140	100, 140	OFDM	BPSK	6.0
	802.11n (20MHz)		100 to 140	100, 140	OFDM	BPSK	MCS0
	802.11n (40MHz)		102 to 134	102, 134	OFDM	BPSK	MCS0
	802.11ac (80MHz)		106	106	OFDM	BPSK	V0

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
	802.11ac (80MHz)		42	42	OFDM	BPSK	V0
-	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
	802.11ac (80MHz)		58	58	OFDM	BPSK	V0
-	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
	802.11ac (80MHz)		106	106	OFDM	BPSK	V0

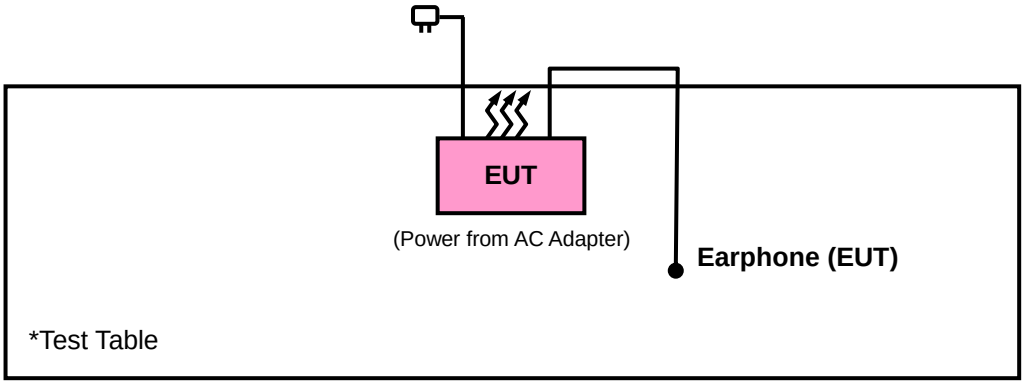
Test CONDITION:

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	Peter Weng
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.

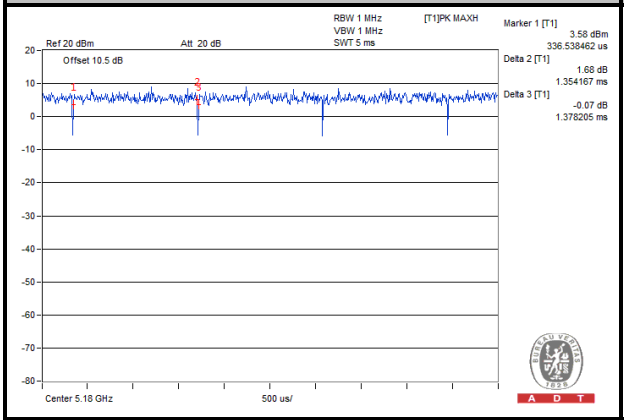
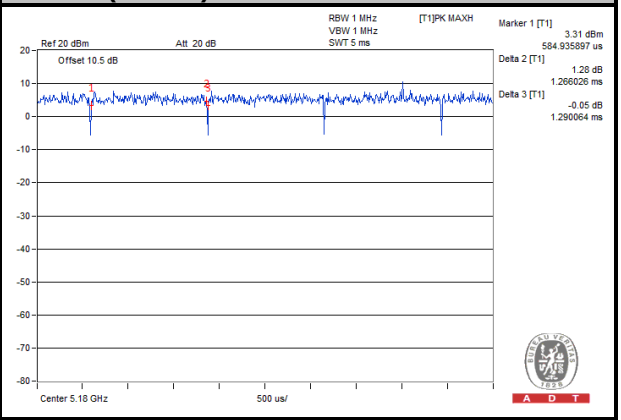
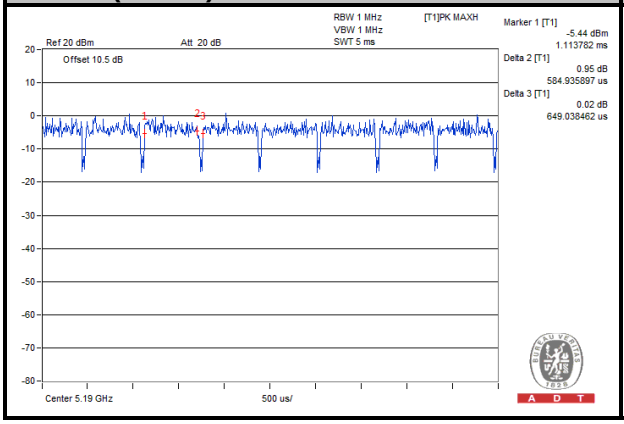
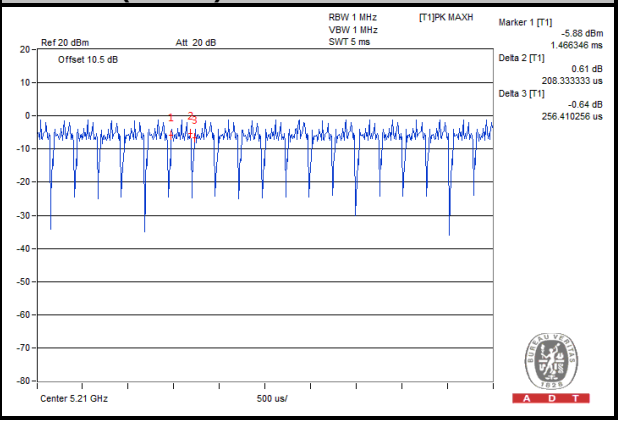
802.11a: Duty cycle = 1.354/1.378 = 0.982

802.11n (20MHz): Duty cycle = 1.266/1.290 = 0.981

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

802.11n (40MHz): Duty cycle = 584.93/649.04 = 0.901, Duty factor = 10 * log(1/0.901) = 0.45

802.11ac (80MHz): Duty cycle = 208.33/256.41 = 0.812, Duty factor = 10 * log(1/0.812) = 0.90

802.11a	802.11n (20MHz)
	
802.11n (40MHz)	**802.11ac (80MHz)**
	

MODULATION TYPE: QPSK

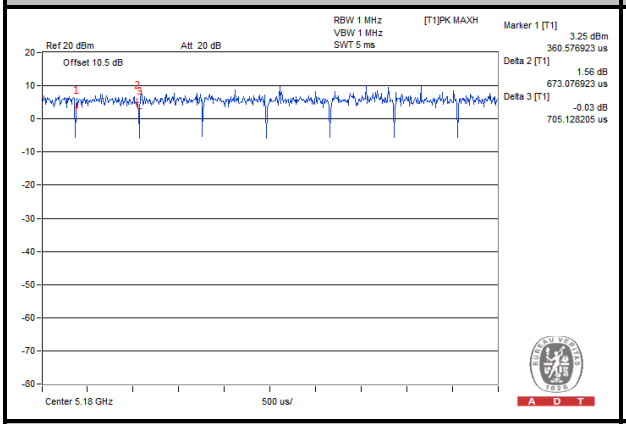
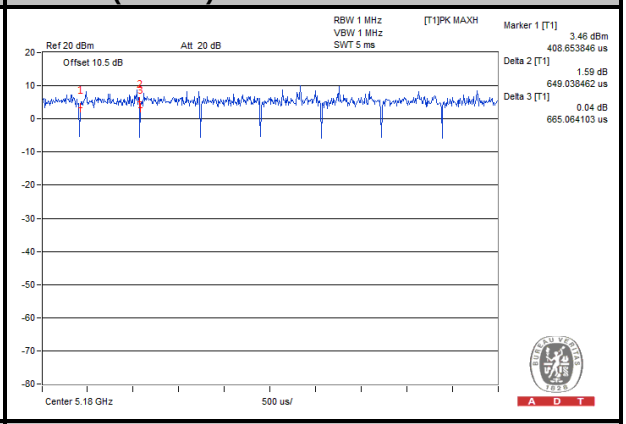
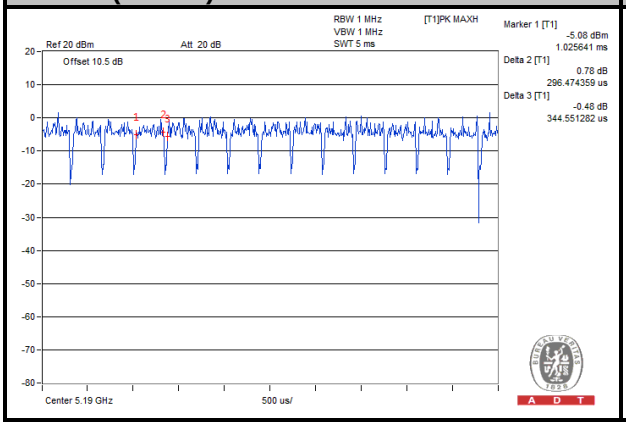
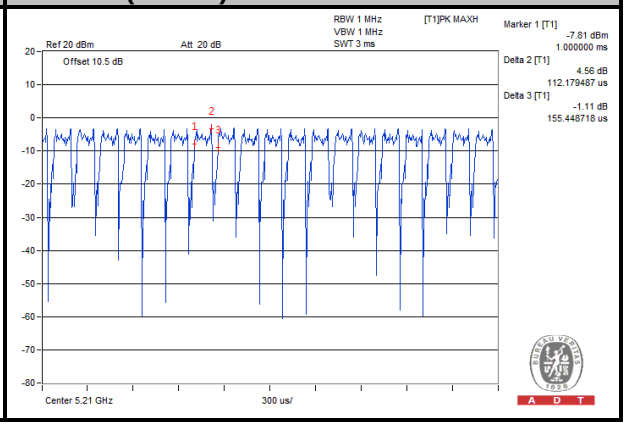
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 673.08/705.13 = 0.954, Duty factor = 10 * log(1/0.954) = 0.20

802.11n (20MHz): Duty cycle = 649.04/665.06 = 0.976, Duty factor = 10 * log(1/0.976) = 0.11

802.11n (40MHz): Duty cycle = 296.47/344.55 = 0.860, Duty factor = 10 * log(1/0.860) = 0.65

802.11ac (80MHz): Duty cycle = 112.18/155.45 = 0.722, Duty factor = 10 * log(1/0.722) = 1.42

802.11a	802.11n (20MHz)
	
802.11n (40MHz)	**802.11ac (80MHz)**
	

MODULATION TYPE: 16QAM

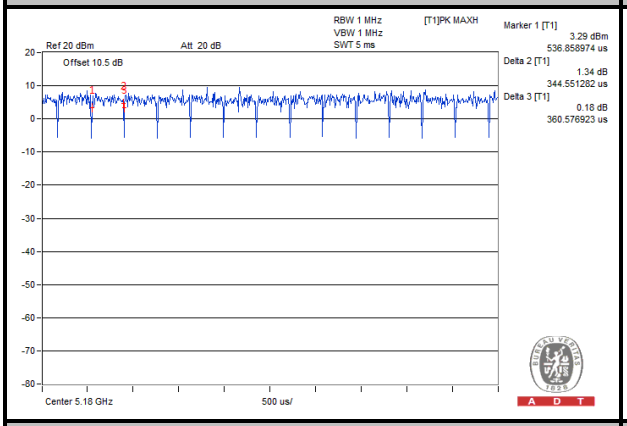
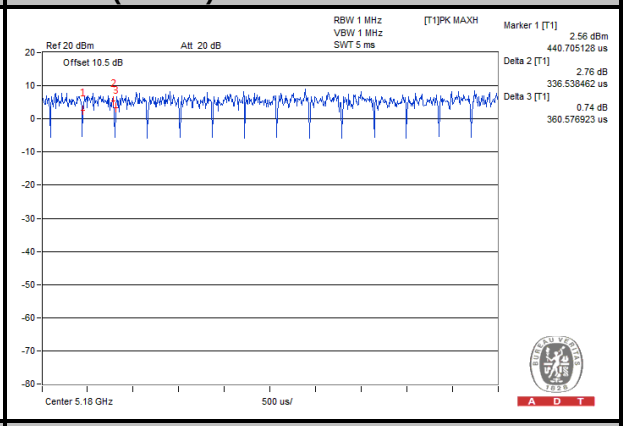
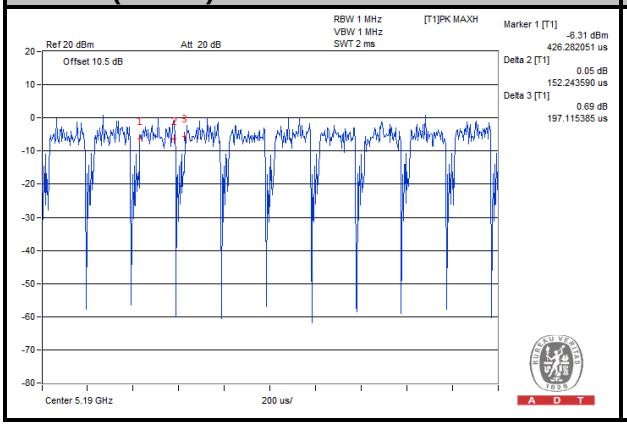
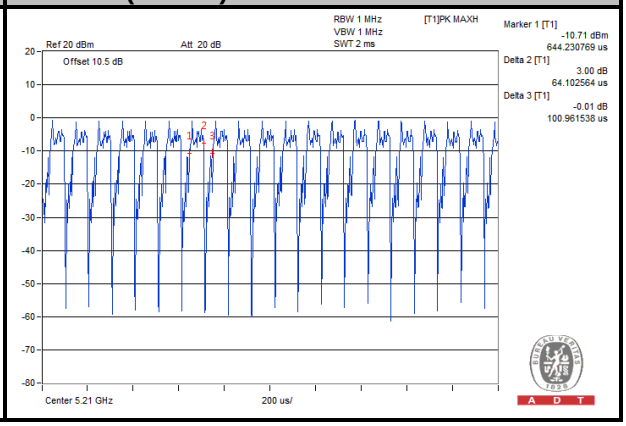
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 344.55/360.58 = 0.955, Duty factor = 10 * log(1/0.955) = 0.20

802.11n (20MHz): Duty cycle = 336.54/360.58 = 0.933, Duty factor = 10 * log(1/0.933) = 0.30

802.11n (40MHz): Duty cycle = 152.24/197.11 = 0.772, Duty factor = 10 * log(1/0.772) = 1.12

802.11ac (80MHz): Duty cycle = 64.10/100.96 = 0.635, Duty factor = 10 * log(1/0.635) = 1.97

802.11a	802.11n (20MHz)
	
802.11n (40MHz)	**802.11ac (80MHz)**
	

MODULATION TYPE: 64QAM

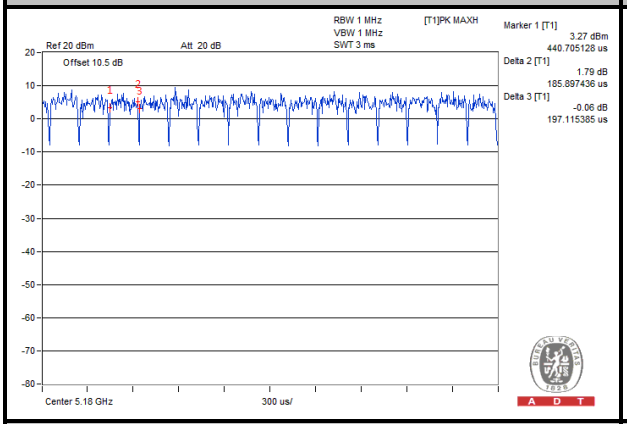
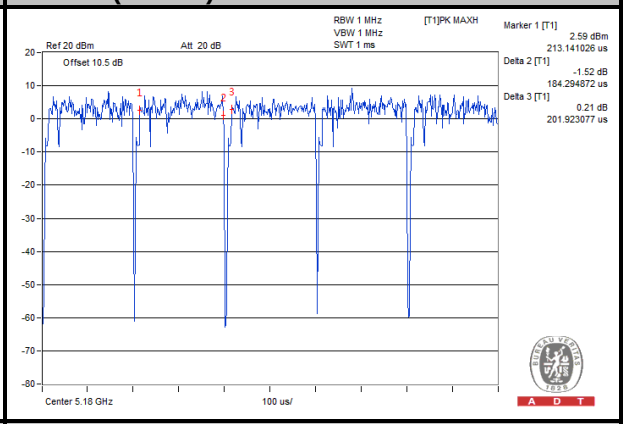
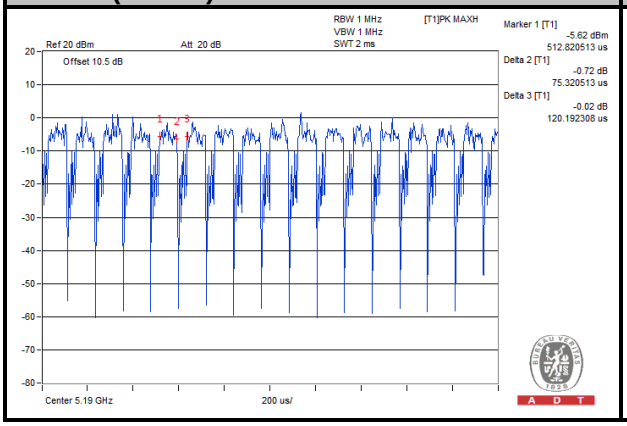
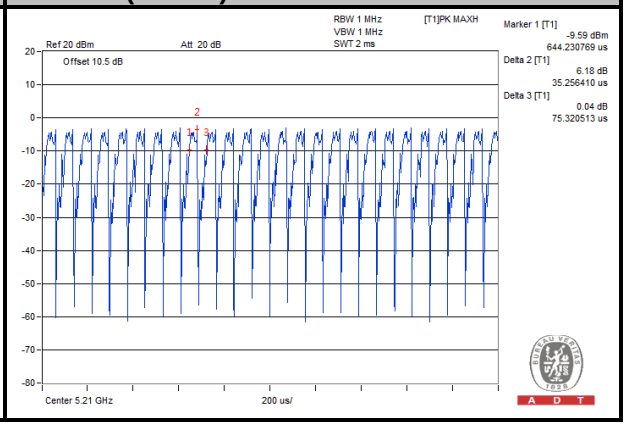
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 185.90/197.11 = 0.943, Duty factor = 10 * log(1/0.943) = 0.25

802.11n (20MHz): Duty cycle = 184.29/201.92 = 0.913, Duty factor = 10 * log(1/0.913) = 0.40

802.11n (40MHz): Duty cycle = 75.32/120.19 = 0.627, Duty factor = 10 * log(1/0.627) = 2.03

802.11ac (80MHz): Duty cycle = 35.26/75.32 = 0.468, Duty factor = 10 * log(1/0.468) = 3.30

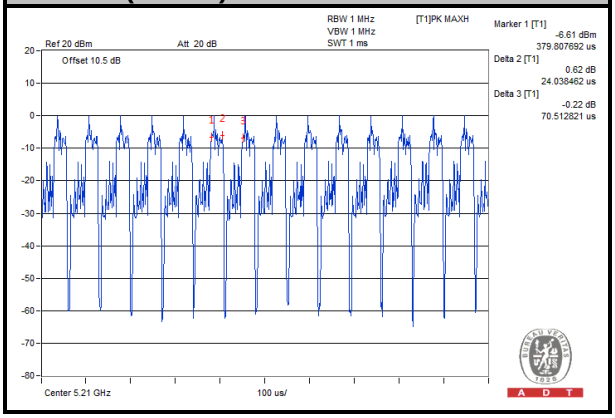
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	**802.11ac (80MHz)**
	

MODULATION TYPE: 256QAM

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

802.11ac (80MHz): Duty cycle = 24.04/70.51 = 0.341, Duty factor = 10 * log(1/0.341) = 4.67

802.11ac (80MHz)



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 AGILENT	N9038A	MY51210203	Jan. 17, 2014	Jan. 16, 2015
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:

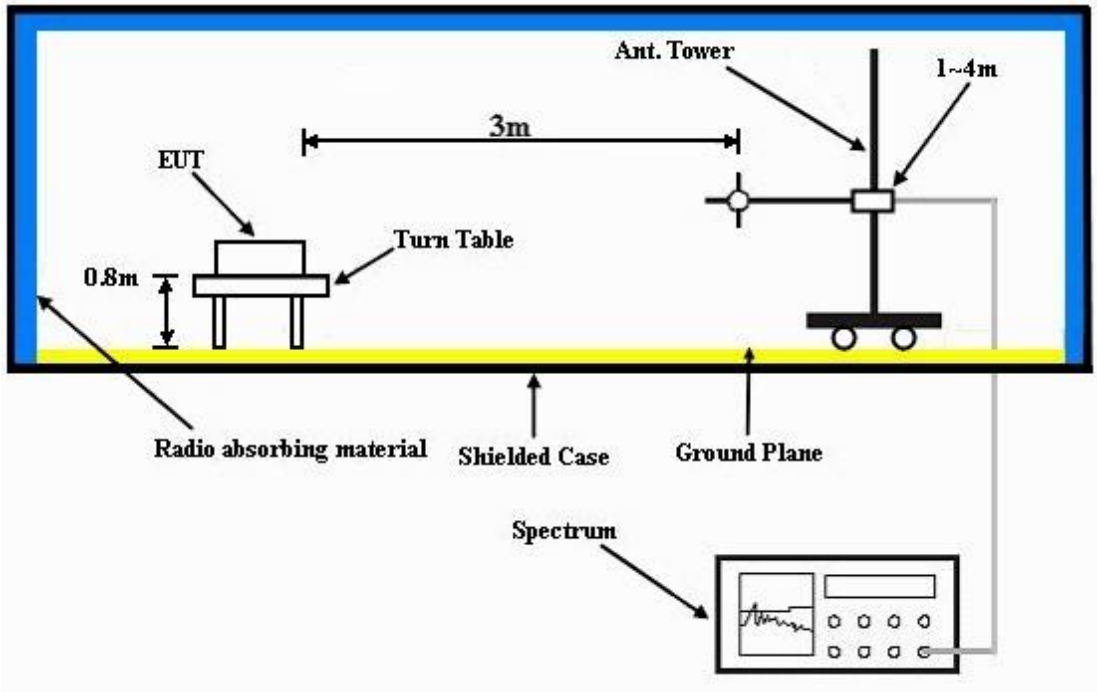
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

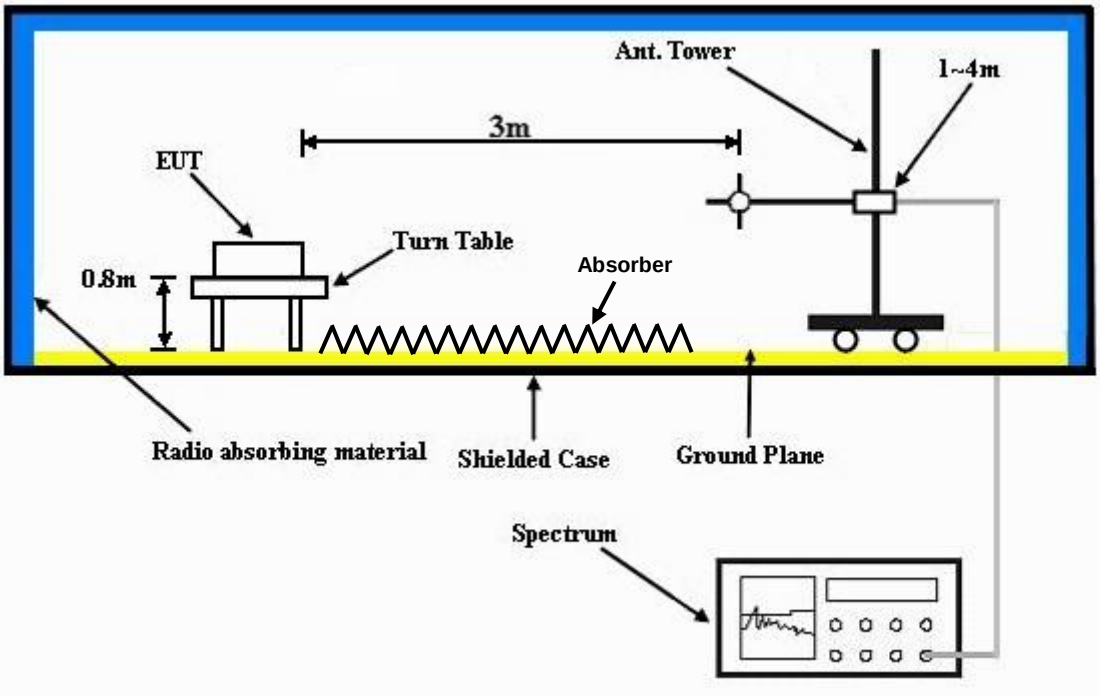
No deviation.

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
5150	41.01	41.72	54	-12.99	31.32	5.29	37.32	124	259	Average
5150	57.92	58.63	74	-16.08	31.32	5.29	37.32	124	259	Peak
5180	92.18	92.86			31.35	5.31	37.34	124	259	Average
5180	101.84	102.52			31.35	5.31	37.34	124	259	Peak
5350	37.67	37.98	54	-16.33	31.48	5.39	37.18	124	259	Average
5350	57.18	57.49	74	-16.82	31.48	5.39	37.18	124	259	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	41.98	42.69	54	-12.02	31.32	5.29	37.32	100	51	Average
5150	59.87	60.58	74	-14.13	31.32	5.29	37.32	100	51	Peak
5180	94.58	95.26			31.35	5.31	37.34	100	51	Average
5180	103.47	104.15			31.35	5.31	37.34	100	51	Peak
5350	37.44	37.75	54	-16.56	31.48	5.39	37.18	100	51	Average
5350	57.44	57.75	74	-16.56	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. 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
5038	37.4	38.15	54	-16.6	31.24	5.25	37.24	104	251	Average
5038	58.77	59.52	74	-15.23	31.24	5.25	37.24	104	251	Peak
5220	92.9	93.56			31.37	5.33	37.36	104	251	Average
5220	101.96	102.62			31.37	5.33	37.36	104	251	Peak
5372	37.56	37.85	54	-16.44	31.49	5.4	37.18	104	251	Average
5372	59.5	59.79	74	-14.5	31.49	5.4	37.18	104	251	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	37.3	38.01	54	-16.7	31.32	5.29	37.32	100	273	Average
5150	58.58	59.29	74	-15.42	31.32	5.29	37.32	100	273	Peak
5220	94.73	95.39			31.37	5.33	37.36	100	273	Average
5220	103.95	104.61			31.37	5.33	37.36	100	273	Peak
5350	37.51	37.82	54	-16.49	31.48	5.39	37.18	100	273	Average
5350	57.61	57.92	74	-16.39	31.48	5.39	37.18	100	273	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	37.43	38.14	54	-16.57	31.32	5.29	37.32	105	251	Average
5150	58.42	59.13	74	-15.58	31.32	5.29	37.32	105	251	Peak
5240	93.18	93.77			31.39	5.34	37.32	105	251	Average
5240	102.38	102.97			31.39	5.34	37.32	105	251	Peak
5350	37.5	37.81	54	-16.5	31.48	5.39	37.18	105	251	Average
5350	58.21	58.52	74	-15.79	31.48	5.39	37.18	105	251	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	37.33	38.04	54	-16.67	31.32	5.29	37.32	100	274	Average
5150	57.67	58.38	74	-16.33	31.32	5.29	37.32	100	274	Peak
5240	95.04	95.63			31.39	5.34	37.32	100	274	Average
5240	104.49	105.08			31.39	5.34	37.32	100	274	Peak
5350	37.5	37.81	54	-16.5	31.48	5.39	37.18	100	274	Average
5350	59.65	59.96	74	-14.35	31.48	5.39	37.18	100	274	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
5018	37.14	37.93	54	-16.86	31.21	5.24	37.24	104	27	Average
5018	59.74	60.53	74	-14.26	31.21	5.24	37.24	104	27	Peak
5260	97.04	97.56			31.41	5.34	37.27	104	27	Average
5260	106.24	106.76			31.41	5.34	37.27	104	27	Peak
5394	37.81	38.07	54	-16.19	31.51	5.41	37.18	104	27	Average
5394	59.45	59.71	74	-14.55	31.51	5.41	37.18	104	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
5022	37.26	38.03	54	-16.74	31.23	5.24	37.24	104	310	Average
5022	58.73	59.5	74	-15.27	31.23	5.24	37.24	104	310	Peak
5260	91.35	91.87			31.41	5.34	37.27	104	310	Average
5260	100.62	101.14			31.41	5.34	37.27	104	310	Peak
5370	37.66	37.95	54	-16.34	31.49	5.4	37.18	104	310	Average
5370	59.8	60.09	74	-14.2	31.49	5.4	37.18	104	310	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
5132	37.38	38.09	54	-16.62	31.31	5.28	37.3	105	17	Average
5132	60.24	60.95	74	-13.76	31.31	5.28	37.3	105	17	Peak
5300	98.01	98.39			31.44	5.37	37.19	105	17	Average
5300	107.59	107.97			31.44	5.37	37.19	105	17	Peak
5444	44.03	44.17	54	-9.97	31.55	5.44	37.13	105	17	Average
5444	60.48	60.62	74	-13.52	31.55	5.44	37.13	105	17	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
5086	37.91	38.65	54	-16.09	31.27	5.26	37.27	104	310	Average
5086	59.14	59.88	74	-14.86	31.27	5.26	37.27	104	310	Peak
5300	91.5	91.88			31.44	5.37	37.19	104	310	Average
5300	100.27	100.65			31.44	5.37	37.19	104	310	Peak
5438	38.37	38.51	54	-15.63	31.55	5.44	37.13	104	310	Average
5438	59.54	59.68	74	-14.46	31.55	5.44	37.13	104	310	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
5108	37.44	38.16	54	-16.56	31.29	5.27	37.28	115	29	Average
5108	59.29	60.01	74	-14.71	31.29	5.27	37.28	115	29	Peak
5320	98.37	98.73			31.45	5.38	37.19	115	29	Average
5320	107.51	107.87			31.45	5.38	37.19	115	29	Peak
5374	44.7	44.99	54	-9.3	31.49	5.4	37.18	115	29	Average
5374	59.73	60.02	74	-14.27	31.49	5.4	37.18	115	29	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
5108	37.11	37.83	54	-16.89	31.29	5.27	37.28	101	300	Average
5108	58.72	59.44	74	-15.28	31.29	5.27	37.28	101	300	Peak
5320	91.18	91.54			31.45	5.38	37.19	101	300	Average
5320	100.03	100.39			31.45	5.38	37.19	101	300	Peak
5368	38.67	38.96	54	-15.33	31.49	5.4	37.18	101	300	Average
5368	59.22	59.51	74	-14.78	31.49	5.4	37.18	101	300	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
5448	47.72	47.85	54	-6.28	31.56	5.44	37.13	100	27	Average
5448	60.22	60.35	74	-13.78	31.56	5.44	37.13	100	27	Peak
5470	58.8	58.86	68.3	-9.5	31.57	5.45	37.08	100	27	Peak
5500	101.51	101.48			31.6	5.46	37.03	100	27	Average
5500	110.64	110.61			31.6	5.46	37.03	100	27	Peak
5725	59.41	59.29	68.3	-8.89	31.96	5.59	37.43	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
5404	42.57	42.82	54	-11.43	31.52	5.41	37.18	123	3	Average
5404	59.64	59.89	74	-14.36	31.52	5.41	37.18	123	3	Peak
5470	59.09	59.15	68.3	-9.21	31.57	5.45	37.08	123	3	Peak
5500	96.38	96.35			31.6	5.46	37.03	123	3	Average
5500	105.99	105.96			31.6	5.46	37.03	123	3	Peak
5725	57.68	57.56	68.3	-10.62	31.96	5.59	37.43	123	3	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
5420	37.82	38.05	54	-16.18	31.53	5.42	37.18	100	11	Average
5420	59.28	59.51	74	-14.72	31.53	5.42	37.18	100	11	Peak
5470	57.1	57.16	68.3	-11.2	31.57	5.45	37.08	100	11	Peak
5580	101.82	101.77			31.71	5.5	37.16	100	11	Average
5580	111.19	111.14			31.71	5.5	37.16	100	11	Peak
5725	58.44	58.32	68.3	-9.86	31.96	5.59	37.43	100	11	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5396	37.47	37.72	54	-16.53	31.52	5.41	37.18	100	3	Average
5396	59.33	59.58	74	-14.67	31.52	5.41	37.18	100	3	Peak
5470	58.28	58.34	68.3	-10.02	31.57	5.45	37.08	100	3	Peak
5580	98.05	98			31.71	5.5	37.16	100	3	Average
5580	107.72	107.67			31.71	5.5	37.16	100	3	Peak
5725	58.34	58.22	68.3	-9.96	31.96	5.59	37.43	100	3	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
5444	37.93	38.07	54	-16.07	31.55	5.44	37.13	108	25	Average
5444	59.5	59.64	74	-14.5	31.55	5.44	37.13	108	25	Peak
5470	56.82	56.88	68.3	-11.48	31.57	5.45	37.08	108	25	Peak
5700	101.03	100.96			31.9	5.57	37.4	108	25	Average
5700	110.51	110.44			31.9	5.57	37.4	108	25	Peak
5725	65.17	65.05	68.3	-3.13	31.96	5.59	37.43	108	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
5352	37.46	37.77	54	-16.54	31.48	5.39	37.18	109	3	Average
5352	59.2	59.51	74	-14.8	31.48	5.39	37.18	109	3	Peak
5470	57.91	57.97	68.3	-10.39	31.57	5.45	37.08	109	3	Peak
5700	96.2	96.13			31.9	5.57	37.4	109	3	Average
5700	105.49	105.42			31.9	5.57	37.4	109	3	Peak
5725	64.03	63.91	68.3	-4.27	31.96	5.59	37.43	109	3	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
5150	41.71	42.42	54	-12.29	31.32	5.29	37.32	162	244	Average
5150	59.59	60.3	74	-14.41	31.32	5.29	37.32	162	244	Peak
5180	92.59	93.27			31.35	5.31	37.34	162	244	Average
5180	102.55	103.23			31.35	5.31	37.34	162	244	Peak
5370	37.7	37.99	54	-16.3	31.49	5.4	37.18	162	244	Average
5370	59.23	59.52	74	-14.77	31.49	5.4	37.18	162	244	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	42.75	43.46	54	-11.25	31.32	5.29	37.32	100	52	Average
5150	59.65	60.36	74	-14.35	31.32	5.29	37.32	100	52	Peak
5180	94.37	95.05			31.35	5.31	37.34	100	52	Average
5180	104.04	104.72			31.35	5.31	37.34	100	52	Peak
5354	37.45	37.76	54	-16.55	31.48	5.39	37.18	100	52	Average
5354	58.51	58.82	74	-15.49	31.48	5.39	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
5124	37.71	38.42	54	-16.29	31.31	5.28	37.3	153	230	Average
5124	58.95	59.66	74	-15.05	31.31	5.28	37.3	153	230	Peak
5220	91.99	92.65			31.37	5.33	37.36	153	230	Average
5220	102.09	102.75			31.37	5.33	37.36	153	230	Peak
5390	37.54	37.8	54	-16.46	31.51	5.41	37.18	153	230	Average
5390	59.46	59.72	74	-14.54	31.51	5.41	37.18	153	230	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5138	37.62	38.32	54	-16.38	31.31	5.29	37.3	100	44	Average
5138	58.99	59.69	74	-15.01	31.31	5.29	37.3	100	44	Peak
5220	93.84	94.5			31.37	5.33	37.36	100	44	Average
5220	103.73	104.39			31.37	5.33	37.36	100	44	Peak
5356	37.47	37.78	54	-16.53	31.48	5.39	37.18	100	44	Average
5356	59.04	59.35	74	-14.96	31.48	5.39	37.18	100	44	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
5086	37.54	38.28	54	-16.46	31.27	5.26	37.27	167	239	Average
5086	59.95	60.69	74	-14.05	31.27	5.26	37.27	167	239	Peak
5240	93.54	94.13			31.39	5.34	37.32	167	239	Average
5240	102.43	103.02			31.39	5.34	37.32	167	239	Peak
5382	37.59	37.86	54	-16.41	31.51	5.4	37.18	167	239	Average
5382	59.23	59.5	74	-14.77	31.51	5.4	37.18	167	239	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	37.74	38.45	54	-16.26	31.31	5.28	37.3	100	275	Average
5128	59.05	59.76	74	-14.95	31.31	5.28	37.3	100	275	Peak
5240	95.11	95.7			31.39	5.34	37.32	100	275	Average
5240	104.17	104.76			31.39	5.34	37.32	100	275	Peak
5352	37.68	37.99	54	-16.32	31.48	5.39	37.18	100	275	Average
5352	59.17	59.48	74	-14.83	31.48	5.39	37.18	100	275	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
5014	37.27	38.05	54	-16.73	31.21	5.24	37.23	104	27	Average
5014	59.26	60.04	74	-14.74	31.21	5.24	37.23	104	27	Peak
5260	97.14	97.66			31.41	5.34	37.27	104	27	Average
5260	106.49	107.01			31.41	5.34	37.27	104	27	Peak
5446	37.79	37.92	54	-16.21	31.56	5.44	37.13	104	27	Average
5446	59.64	59.77	74	-14.36	31.56	5.44	37.13	104	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
5038	37.11	37.86	54	-16.89	31.24	5.25	37.24	102	300	Average
5038	59.8	60.55	74	-14.2	31.24	5.25	37.24	102	300	Peak
5260	90.48	91			31.41	5.34	37.27	102	300	Average
5260	99.86	100.38			31.41	5.34	37.27	102	300	Peak
5368	37.5	37.79	54	-16.5	31.49	5.4	37.18	102	300	Average
5368	59.24	59.53	74	-14.76	31.49	5.4	37.18	102	300	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
5046	37.26	38.02	54	-16.74	31.24	5.25	37.25	105	11	Average
5046	59.29	60.05	74	-14.71	31.24	5.25	37.25	105	11	Peak
5300	97.98	98.36			31.44	5.37	37.19	105	11	Average
5300	107.14	107.52			31.44	5.37	37.19	105	11	Peak
5388	44.41	44.67	54	-9.59	31.51	5.41	37.18	105	11	Average
5388	59.59	59.85	74	-14.41	31.51	5.41	37.18	105	11	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5088	37.36	38.09	54	-16.64	31.27	5.27	37.27	102	300	Average
5088	59.49	60.22	74	-14.51	31.27	5.27	37.27	102	300	Peak
5300	90.7	91.08			31.44	5.37	37.19	102	300	Average
5300	100.57	100.95			31.44	5.37	37.19	102	300	Peak
5448	39.09	39.22	54	-14.91	31.56	5.44	37.13	102	300	Average
5448	60.69	60.82	74	-13.31	31.56	5.44	37.13	102	300	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
5046	37.34	38.1	54	-16.66	31.24	5.25	37.25	113	27	Average
5046	59.39	60.15	74	-14.61	31.24	5.25	37.25	113	27	Peak
5320	98.04	98.4			31.45	5.38	37.19	113	27	Average
5320	106.98	107.34			31.45	5.38	37.19	113	27	Peak
5350	45.84	46.15	54	-8.16	31.48	5.39	37.18	113	27	Average
5350	59.66	59.97	74	-14.34	31.48	5.39	37.18	113	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
5060	37.16	37.91	54	-16.84	31.25	5.25	37.25	101	300	Average
5060	59.99	60.74	74	-14.01	31.25	5.25	37.25	101	300	Peak
5320	90.84	91.2			31.45	5.38	37.19	101	300	Average
5320	99.91	100.27			31.45	5.38	37.19	101	300	Peak
5458	39.29	39.37	54	-14.71	31.56	5.44	37.08	101	300	Average
5458	59.87	59.95	74	-14.13	31.56	5.44	37.08	101	300	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
5448	48.11	48.24	54	-5.89	31.56	5.44	37.13	100	27	Average
5448	60.38	60.51	74	-13.62	31.56	5.44	37.13	100	27	Peak
5470	63.97	64.03	68.3	-4.33	31.57	5.45	37.08	100	27	Peak
5500	101.33	101.3			31.6	5.46	37.03	100	27	Average
5500	110.13	110.1			31.6	5.46	37.03	100	27	Peak
5725	58.78	58.66	68.3	-9.52	31.96	5.59	37.43	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
5434	43.65	43.81	54	-10.35	31.55	5.42	37.13	102	2	Average
5434	60.75	60.91	74	-13.25	31.55	5.42	37.13	102	2	Peak
5470	58.71	58.77	68.3	-9.59	31.57	5.45	37.08	102	2	Peak
5500	96.22	96.19			31.6	5.46	37.03	102	2	Average
5500	105.78	105.75			31.6	5.46	37.03	102	2	Peak
5725	59.47	59.35	68.3	-8.83	31.96	5.59	37.43	102	2	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
5460	37.89	37.97	54	-16.11	31.56	5.44	37.08	109	26	Average
5460	59.6	59.68	74	-14.4	31.56	5.44	37.08	109	26	Peak
5470	59.08	59.14	68.3	-9.22	31.57	5.45	37.08	109	26	Peak
5580	101.69	101.64			31.71	5.5	37.16	109	26	Average
5580	111.08	111.03			31.71	5.5	37.16	109	26	Peak
5725	58.42	58.3	68.3	-9.88	31.96	5.59	37.43	109	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
5420	37.5	37.73	54	-16.5	31.53	5.42	37.18	100	3	Average
5420	59.83	60.06	74	-14.17	31.53	5.42	37.18	100	3	Peak
5470	57.82	57.88	68.3	-10.48	31.57	5.45	37.08	100	3	Peak
5580	97.4	97.35			31.71	5.5	37.16	100	3	Average
5580	107.06	107.01			31.71	5.5	37.16	100	3	Peak
5725	57.76	57.64	68.3	-10.54	31.96	5.59	37.43	100	3	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
5360	37.65	37.96	54	-16.35	31.48	5.39	37.18	108	26	Average
5360	59.08	59.39	74	-14.92	31.48	5.39	37.18	108	26	Peak
5470	57.96	58.02	68.3	-10.34	31.57	5.45	37.08	108	26	Peak
5700	100.3	100.23			31.9	5.57	37.4	108	26	Average
5700	109.75	109.68			31.9	5.57	37.4	108	26	Peak
5725	64.37	64.25	68.3	-3.93	31.96	5.59	37.43	108	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
5350	37.43	37.74	54	-16.57	31.48	5.39	37.18	108	2	Average
5350	59.94	60.25	74	-14.06	31.48	5.39	37.18	108	2	Peak
5470	58.62	58.68	68.3	-9.68	31.57	5.45	37.08	108	2	Peak
5700	95.72	95.65			31.9	5.57	37.4	108	2	Average
5700	105.69	105.62			31.9	5.57	37.4	108	2	Peak
5725	60.76	60.64	68.3	-7.54	31.96	5.59	37.43	108	2	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	39.17	39.88	54	-14.83	31.32	5.29	37.32	137	261	Average
5150	60.71	61.42	74	-13.29	31.32	5.29	37.32	137	261	Peak
5190	87.05	87.72			31.35	5.32	37.34	137	261	Average
5190	96.12	96.79			31.35	5.32	37.34	137	261	Peak
5358	38.04	38.35	54	-15.96	31.48	5.39	37.18	137	261	Average
5358	58.55	58.86	74	-15.45	31.48	5.39	37.18	137	261	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
5084	39.24	39.98	54	-14.76	31.27	5.26	37.27	101	267	Average
5084	60.09	60.83	74	-13.91	31.27	5.26	37.27	101	267	Peak
5190	88.66	89.33			31.35	5.32	37.34	101	267	Average
5190	97.82	98.49			31.35	5.32	37.34	101	267	Peak
5388	37.98	38.24	54	-16.02	31.51	5.41	37.18	101	267	Average
5388	59.9	60.16	74	-14.1	31.51	5.41	37.18	101	267	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
5060	38.75	39.5	54	-15.25	31.25	5.25	37.25	144	254	Average
5060	59.26	60.01	74	-14.74	31.25	5.25	37.25	144	254	Peak
5230	87.39	87.99			31.39	5.33	37.32	144	254	Average
5230	96.48	97.08			31.39	5.33	37.32	144	254	Peak
5394	38.1	38.36	54	-15.9	31.51	5.41	37.18	144	254	Average
5394	58.88	59.14	74	-15.12	31.51	5.41	37.18	144	254	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
5114	38.79	39.5	54	-15.21	31.29	5.28	37.28	100	274	Average
5114	58.97	59.68	74	-15.03	31.29	5.28	37.28	100	274	Peak
5230	89.01	89.61			31.39	5.33	37.32	100	274	Average
5230	98.21	98.81			31.39	5.33	37.32	100	274	Peak
5362	37.87	38.17	54	-16.13	31.49	5.39	37.18	100	274	Average
5362	59.44	59.74	74	-14.56	31.49	5.39	37.18	100	274	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
5014	37.82	38.6	54	-16.18	31.21	5.24	37.23	105	18	Average
5014	59	59.78	74	-15	31.21	5.24	37.23	105	18	Peak
5270	91.61	92.12			31.41	5.35	37.27	105	18	Average
5270	100.62	101.13			31.41	5.35	37.27	105	18	Peak
5386	40.15	40.42	54	-13.85	31.51	5.4	37.18	105	18	Average
5386	60.06	60.33	74	-13.94	31.51	5.4	37.18	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
5064	37.53	38.27	54	-16.47	31.25	5.26	37.25	102	300	Average
5064	60.03	60.77	74	-13.97	31.25	5.26	37.25	102	300	Peak
5270	85.26	85.77			31.41	5.35	37.27	102	300	Average
5270	95.33	95.84			31.41	5.35	37.27	102	300	Peak
5440	38	38.14	54	-16	31.55	5.44	37.13	102	300	Average
5440	59.66	59.8	74	-14.34	31.55	5.44	37.13	102	300	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
5042	37.62	38.38	54	-16.38	31.24	5.25	37.25	105	19	Average
5042	59.6	60.36	74	-14.4	31.24	5.25	37.25	105	19	Peak
5310	92.04	92.41			31.45	5.37	37.19	105	19	Average
5310	100.91	101.28			31.45	5.37	37.19	105	19	Peak
5388	40.11	40.37	54	-13.89	31.51	5.41	37.18	105	19	Average
5388	59.7	59.96	74	-14.3	31.51	5.41	37.18	105	19	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
5118	37.81	38.52	54	-16.19	31.29	5.28	37.28	101	300	Average
5118	59.47	60.18	74	-14.53	31.29	5.28	37.28	101	300	Peak
5310	85.05	85.42			31.45	5.37	37.19	101	300	Average
5310	94.22	94.59			31.45	5.37	37.19	101	300	Peak
5350	37.93	38.24	54	-16.07	31.48	5.39	37.18	101	300	Average
5350	59.42	59.73	74	-14.58	31.48	5.39	37.18	101	300	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
5406	41.1	41.35	54	-12.9	31.52	5.41	37.18	100	26	Average
5406	58.98	59.23	74	-15.02	31.52	5.41	37.18	100	26	Peak
5470	60.26	60.32	68.3	-8.04	31.57	5.45	37.08	100	26	Peak
5510	95.81	95.81			31.6	5.46	37.06	100	26	Average
5510	105.09	105.09			31.6	5.46	37.06	100	26	Peak
5725	58.34	58.22	68.3	-9.96	31.96	5.59	37.43	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
5430	38.13	38.29	54	-15.87	31.55	5.42	37.13	100	3	Average
5430	59.19	59.35	74	-14.81	31.55	5.42	37.13	100	3	Peak
5470	58.78	58.84	68.3	-9.52	31.57	5.45	37.08	100	3	Peak
5510	90.68	90.68			31.6	5.46	37.06	100	3	Average
5510	99.9	99.9			31.6	5.46	37.06	100	3	Peak
5725	58.3	58.18	68.3	-10	31.96	5.59	37.43	100	3	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
5412	41.85	42.09	54	-12.15	31.53	5.41	37.18	100	27	Average
5412	59.26	59.5	74	-14.74	31.53	5.41	37.18	100	27	Peak
5470	57.12	57.18	68.3	-11.18	31.57	5.45	37.08	100	27	Peak
5550	96.33	96.25			31.68	5.49	37.09	100	27	Average
5550	105.7	105.62			31.68	5.49	37.09	100	27	Peak
5725	58.53	58.41	68.3	-9.77	31.96	5.59	37.43	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
5350	38.49	38.8	54	-15.51	31.48	5.39	37.18	100	3	Average
5350	58.92	59.23	74	-15.08	31.48	5.39	37.18	100	3	Peak
5470	58.35	58.41	68.3	-9.95	31.57	5.45	37.08	100	3	Peak
5550	91.99	91.91			31.68	5.49	37.09	100	3	Average
5550	101.5	101.42			31.68	5.49	37.09	100	3	Peak
5725	58.32	58.2	68.3	-9.98	31.96	5.59	37.43	100	3	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
5422	38	38.23	54	-16	31.53	5.42	37.18	108	11	Average
5422	59.72	59.95	74	-14.28	31.53	5.42	37.18	108	11	Peak
5470	56.84	56.9	68.3	-11.46	31.57	5.45	37.08	108	11	Peak
5670	95.87	95.77			31.88	5.56	37.34	108	11	Average
5670	105.49	105.39			31.88	5.56	37.34	108	11	Peak
5725	59.51	59.39	68.3	-8.79	31.96	5.59	37.43	108	11	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5426	37.81	37.99	54	-16.19	31.53	5.42	37.13	108	3	Average
5426	60.43	60.61	74	-13.57	31.53	5.42	37.13	108	3	Peak
5470	58.55	58.61	68.3	-9.75	31.57	5.45	37.08	108	3	Peak
5670	90.89	90.79			31.88	5.56	37.34	108	3	Average
5670	100.34	100.24			31.88	5.56	37.34	108	3	Peak
5725	58.95	58.83	68.3	-9.35	31.96	5.59	37.43	108	3	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

802.11ac (80MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 42	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
5132	40.18	40.89	54	-13.82	31.31	5.28	37.3	148	238	Average
5132	59.47	60.18	74	-14.53	31.31	5.28	37.3	148	238	Peak
5210	84.48	85.15			31.37	5.32	37.36	148	238	Average
5210	94.61	95.28			31.37	5.32	37.36	148	238	Peak
5358	38	38.31	54	-16	31.48	5.39	37.18	148	238	Average
5358	59.93	60.24	74	-14.07	31.48	5.39	37.18	148	238	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
5112	40.25	40.97	54	-13.75	31.29	5.27	37.28	100	266	Average
5112	60.09	60.81	74	-13.91	31.29	5.27	37.28	100	266	Peak
5210	86.58	87.25			31.37	5.32	37.36	100	266	Average
5210	96.15	96.82			31.37	5.32	37.36	100	266	Peak
5350	38.19	38.5	54	-15.81	31.48	5.39	37.18	100	266	Average
5350	58.07	58.38	74	-15.93	31.48	5.39	37.18	100	266	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5210MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 58	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
5086	38.7	39.44	54	-15.3	31.27	5.26	37.27	105	19	Average
5086	59.46	60.2	74	-14.54	31.27	5.26	37.27	105	19	Peak
5290	90.63	91.06			31.43	5.37	37.23	105	19	Average
5290	99.81	100.24			31.43	5.37	37.23	105	19	Peak
5396	42.04	42.29	54	-11.96	31.52	5.41	37.18	105	19	Average
5396	60.75	61	74	-13.25	31.52	5.41	37.18	105	19	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
5114	38.29	39	54	-15.71	31.29	5.28	37.28	102	301	Average
5114	60.09	60.8	74	-13.91	31.29	5.28	37.28	102	301	Peak
5290	83.93	84.36			31.43	5.37	37.23	102	301	Average
5290	92.53	92.96			31.43	5.37	37.23	102	301	Peak
5370	38.95	39.24	54	-15.05	31.49	5.4	37.18	102	301	Average
5370	59.35	59.64	74	-14.65	31.49	5.4	37.18	102	301	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5290MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 106	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
5426	44.38	44.56	54	-9.62	31.53	5.42	37.13	100	26	Average
5426	60.47	60.65	74	-13.53	31.53	5.42	37.13	100	26	Peak
5470	60.7	60.76	68.3	-7.6	31.57	5.45	37.08	100	26	Peak
5530	93.53	93.52			31.63	5.47	37.09	100	26	Average
5530	102.87	102.86			31.63	5.47	37.09	100	26	Peak
5725	58.33	58.21	68.3	-9.97	31.96	5.59	37.43	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
5426	40.83	41.01	54	-13.17	31.53	5.42	37.13	100	2	Average
5426	59.51	59.69	74	-14.49	31.53	5.42	37.13	100	2	Peak
5470	58.24	58.3	68.3	-10.06	31.57	5.45	37.08	100	2	Peak
5530	88.66	88.65			31.63	5.47	37.09	100	2	Average
5530	98.22	98.21			31.63	5.47	37.09	100	2	Peak
5725	59.71	59.59	68.3	-8.59	31.96	5.59	37.43	100	2	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5530MHz: 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)
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
98.58	19.05	40.97	43.5	-24.45	8.98	1.06	31.96	100	89	Peak
156.63	25.43	43.13	43.5	-18.07	12.72	1.38	31.8	100	127	Peak
223.59	23.09	42.77	46	-22.91	10.38	1.71	31.77	100	271	Peak
428.8	20.1	33.67	46	-25.9	15.91	2.53	32.01	100	114	Peak
618.5	22.99	32.18	46	-23.01	19.83	3.14	32.16	100	239	Peak
848.1	27.77	32.98	46	-18.23	22.84	3.81	31.86	100	150	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
31.08	33.82	52.23	40	-6.18	12.14	0.57	31.12	100	187	Peak
62.94	28.73	47.79	40	-11.27	11.59	0.85	31.5	100	260	Peak
163.11	17	34.98	43.5	-26.5	12.44	1.41	31.83	100	43	Peak
421.1	20.48	34.27	46	-25.52	15.75	2.51	32.05	100	162	Peak
662.6	24.08	32.34	46	-21.92	20.36	3.29	31.91	100	305	Peak
862.8	27.34	32.37	46	-18.66	23.04	3.86	31.93	100	155	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)
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
101.28	18.94	40.67	43.5	-24.56	9.15	1.07	31.95	100	92	Peak
172.83	20.29	39.12	43.5	-23.21	11.47	1.46	31.76	100	104	Peak
220.62	22.46	42.22	46	-23.54	10.26	1.7	31.72	100	236	Peak
498.8	21.27	32.86	46	-24.73	17.29	2.77	31.65	100	175	Peak
704.6	24.85	32.31	46	-21.15	20.87	3.44	31.77	100	111	Peak
932.1	27.79	32.04	46	-18.21	23.69	4.04	31.98	100	288	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
30.67	35.03	53.44	40	-4.97	12.14	0.57	31.12	100	291	Peak
57.54	31.08	49.37	40	-8.92	12.25	0.81	31.35	100	318	Peak
133.41	16.86	35.44	43.5	-26.64	11.94	1.26	31.78	100	176	Peak
498.8	21.02	32.61	46	-24.98	17.29	2.77	31.65	100	177	Peak
636	23.92	32.79	46	-22.08	20.04	3.2	32.11	100	234	Peak
930	28.45	32.73	46	-17.55	23.68	4.03	31.99	100	293	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)
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	21.67	39.96	40	-18.33	12.25	0.81	31.35	100	115	Peak
133.68	21.13	39.71	43.5	-22.37	11.94	1.26	31.78	100	80	Peak
225.48	22.17	41.79	46	-23.83	10.46	1.72	31.8	100	138	Peak
519.8	20.77	31.72	46	-25.23	17.77	2.85	31.57	100	154	Peak
716.5	25.04	32.19	46	-20.96	21.05	3.48	31.68	100	149	Peak
917.4	28.46	32.85	46	-17.54	23.61	4.01	32.01	100	209	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
30.73	34.82	53.23	40	-5.18	12.14	0.57	31.12	100	39	Peak
56.19	31.77	49.96	40	-8.23	12.35	0.8	31.34	100	191	Peak
201.18	15.06	35.81	43.5	-28.44	9.4	1.6	31.75	100	240	Peak
490.4	21.17	33.04	46	-24.83	17.14	2.75	31.76	100	176	Peak
678.7	24.16	32.09	46	-21.84	20.56	3.35	31.84	100	227	Peak
885.2	29.03	33.78	46	-16.97	23.32	3.92	31.99	100	307	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	Apr. 24, 2014	Apr. 23, 2015
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

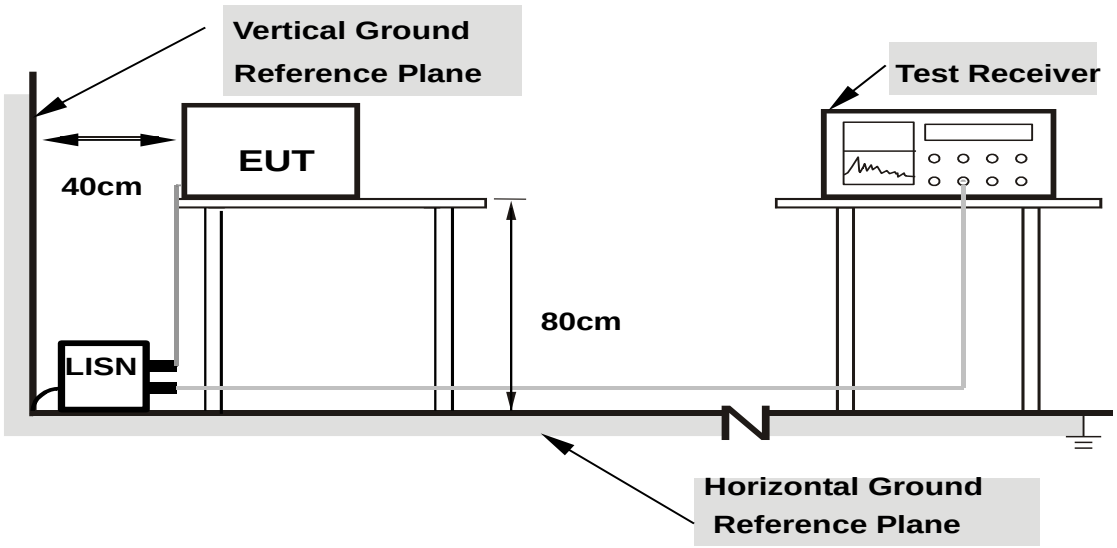
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

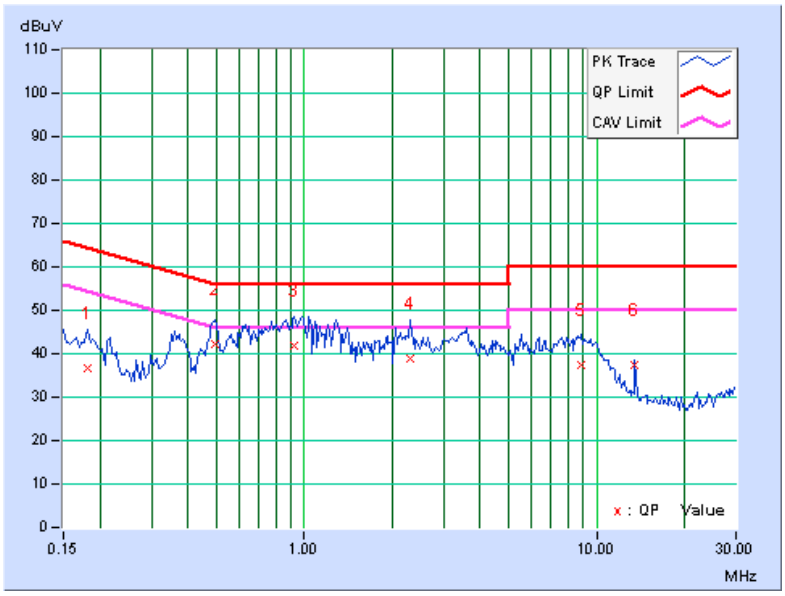
CONDUCTED WORST-CASE DATA：

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	36.51	25.57	36.78	25.84	64.43	54.43	-27.64	-28.58
2	0.49375	0.31	42.02	30.03	42.33	30.34	56.10	46.10	-13.78	-15.77
3	0.92344	0.33	41.35	31.03	41.68	31.36	56.00	46.00	-14.32	-14.64
4	2.29688	0.37	38.62	30.07	38.99	30.44	56.00	46.00	-17.01	-15.56
5	8.89453	0.49	37.10	28.13	37.59	28.62	60.00	50.00	-22.41	-21.38
6	13.55859	0.52	36.95	34.74	37.47	35.26	60.00	50.00	-22.53	-14.74

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

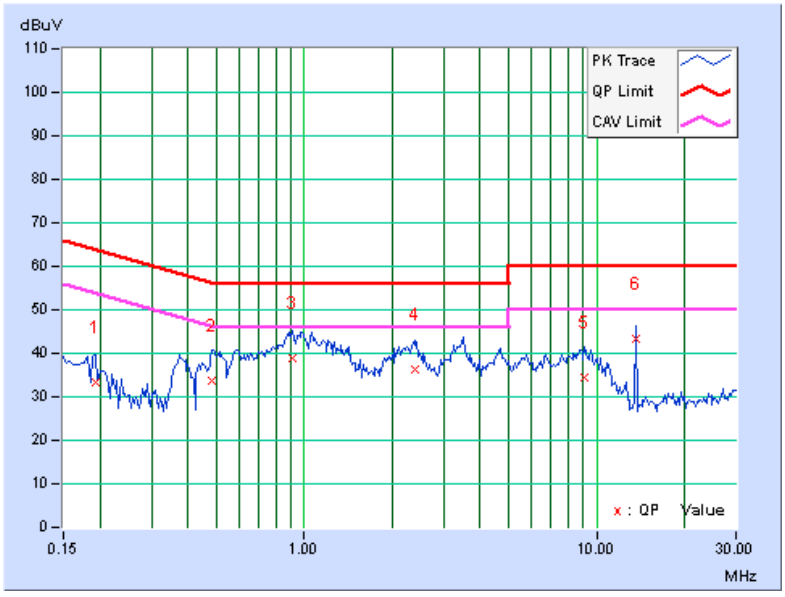


PHASE	Line 2	6dB BANDWIDTH	9kHz

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	0.19297	0.28	32.93	20.40	33.21	20.68	63.91	53.91	-30.70	-33.23
2	0.48203	0.31	33.29	18.76	33.60	19.07	56.30	46.30	-22.71	-27.24
3	0.91172	0.33	38.50	28.03	38.83	28.36	56.00	46.00	-17.17	-17.64
4	2.37891	0.38	35.96	27.69	36.34	28.07	56.00	46.00	-19.66	-17.93
5	9.14453	0.51	34.06	26.62	34.57	27.13	60.00	50.00	-25.43	-22.87
6	13.56250	0.55	42.67	40.80	43.22	41.35	60.00	50.00	-16.78	-8.65

REMARKS:

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



4.3 PEAK TRANSMIT POWER MEASUREMENT

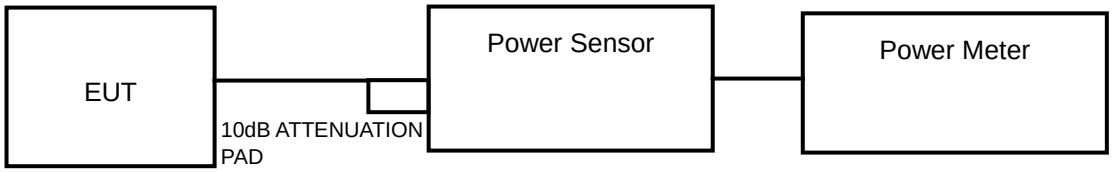
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

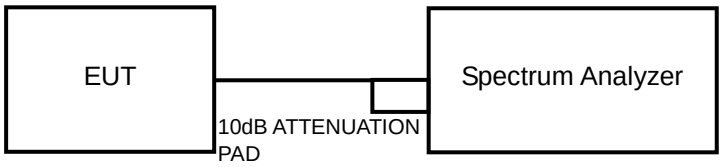
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

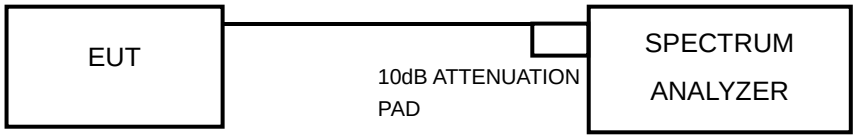
FOR POWER OUTPUT MEASUREMENT



or



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.

<802.11ac (80MHz)>

Method SA-1 is used to perform output power measurement, trigger and gating function of spectrum analyzer 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	41.69	16.20	17	PASS
44	5220	41.21	16.15	17	PASS
48	5240	42.46	16.28	17	PASS
52	5260	43.15	16.35	24	PASS
60	5300	43.55	16.39	24	PASS
64	5320	44.26	16.46	24	PASS
100	5500	44.46	16.48	24	PASS
116	5580	43.55	16.39	24	PASS
140	5700	42.85	16.32	24	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	41.78	16.21	17	PASS
44	5220	42.07	16.24	17	PASS
48	5240	42.36	16.27	17	PASS
52	5260	43.25	16.36	24	PASS
60	5300	43.55	16.39	24	PASS
64	5320	43.75	16.41	24	PASS
100	5500	43.95	16.43	24	PASS
116	5580	43.35	16.37	24	PASS
140	5700	42.95	16.33	24	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	20.94	13.21	17	PASS
46	5230	20.61	13.14	17	PASS
54	5270	21.73	13.37	24	PASS
62	5310	22.18	13.46	24	PASS
102	5510	21.88	13.40	24	PASS
110	5550	21.28	13.28	24	PASS
134	5670	20.84	13.19	24	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	20.51	13.12	17	PASS
58	5290	22.08	13.44	24	PASS
106	5530	21.78	13.38	24	PASS

26dB BANDWIDTH

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	22.26	PASS
44	5220	23.51	PASS
48	5240	23.57	PASS
52	5260	24.00	PASS
60	5300	22.90	PASS
64	5320	23.44	PASS
100	5500	22.86	PASS
116	5580	23.05	PASS
140	5700	22.89	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	23.08	PASS
44	5220	24.01	PASS
48	5240	22.86	PASS
52	5260	25.26	PASS
60	5300	22.85	PASS
64	5320	24.36	PASS
100	5500	22.78	PASS
116	5580	24.35	PASS
140	5700	24.55	PASS

802.11n (40MHz)

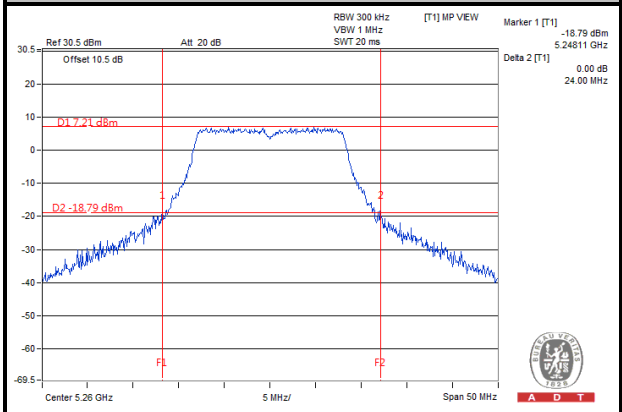
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	45.98	PASS
46	5230	45.46	PASS
54	5270	46.04	PASS
62	5310	46.04	PASS
102	5510	45.86	PASS
110	5550	45.59	PASS
134	5670	45.63	PASS

802.11ac (80MHz)

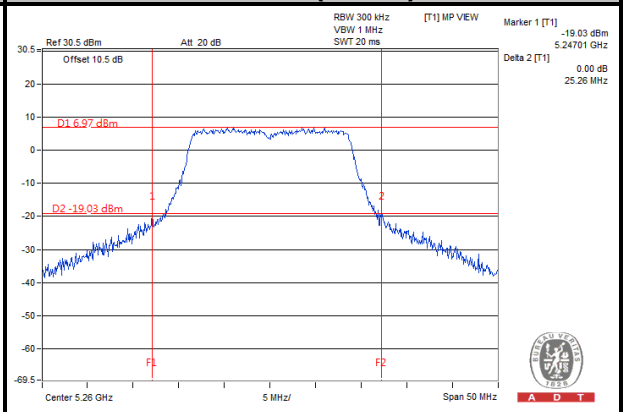
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
42	5210	83.38	PASS
58	5290	83.22	PASS
106	5530	83.03	PASS

SPECTRUM PLOT OF WORST VALUE

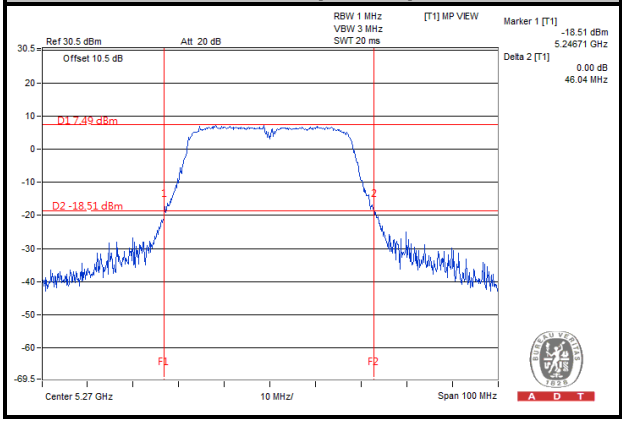
802.11a



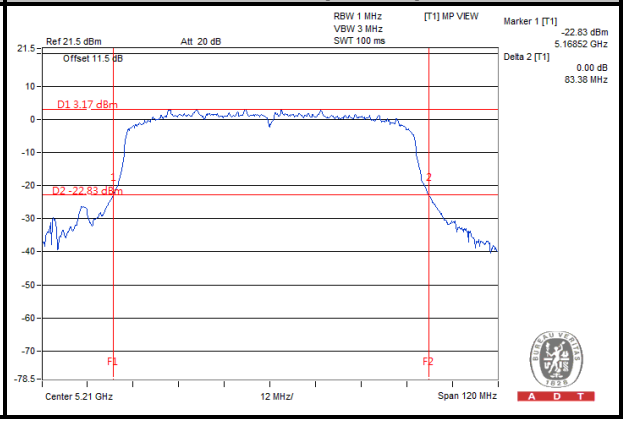
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)

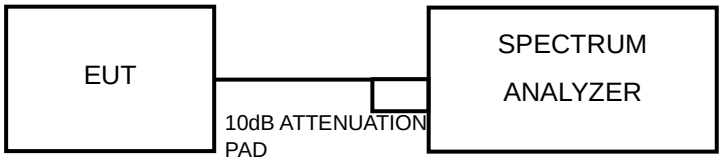


4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

<802.11a, 802.11n (20MHz)>
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), 802.11ac (80MHz)>
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	3.39	4	PASS
44	5220	3.50	4	PASS
48	5240	3.68	4	PASS
52	5260	3.74	11	PASS
60	5300	4.03	11	PASS
64	5320	4.21	11	PASS
100	5500	4.44	11	PASS
116	5580	4.59	11	PASS
140	5700	4.20	11	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.11	4	PASS
44	5220	3.39	4	PASS
48	5240	3.36	4	PASS
52	5260	3.45	11	PASS
60	5300	3.71	11	PASS
64	5320	3.91	11	PASS
100	5500	4.04	11	PASS
116	5580	4.36	11	PASS
140	5700	3.98	11	PASS

802.11n (40MHz)

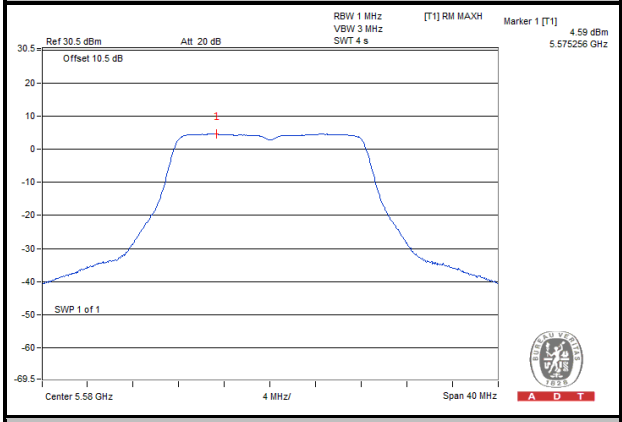
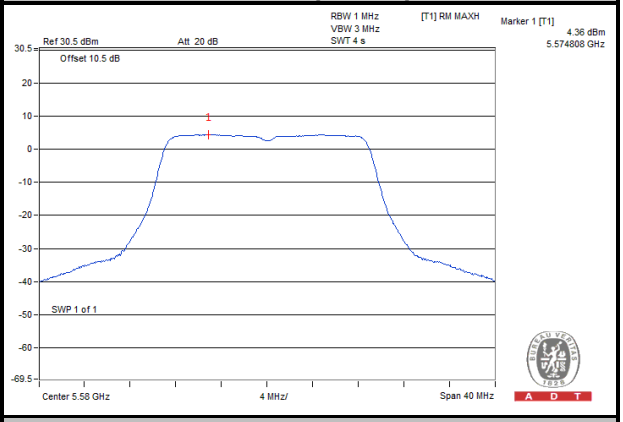
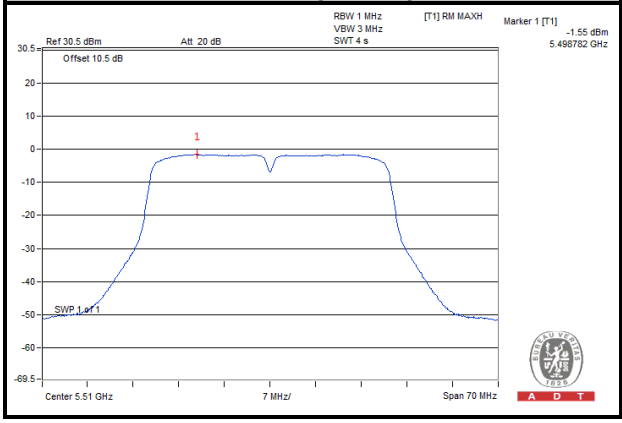
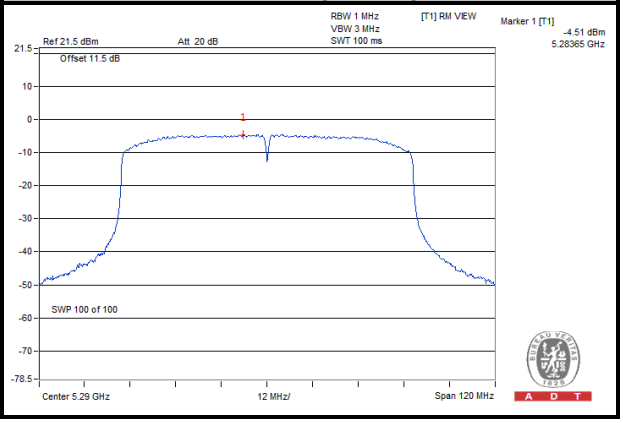
CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-2.64	0.45	-2.19	4	PASS
46	5230	-2.32	0.45	-1.87	4	PASS
54	5270	-1.92	0.45	-1.47	11	PASS
62	5310	-1.71	0.45	-1.26	11	PASS
102	5510	-1.55	0.45	-1.10	11	PASS
110	5550	-1.66	0.45	-1.21	11	PASS
134	5670	-2.13	0.45	-1.68	11	PASS

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

802.11ac (80MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
42	5210	-4.76	0.90	-3.86	4	PASS
58	5290	-4.51	0.90	-3.61	11	PASS
106	5530	-4.87	0.90	-3.97	11	PASS

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

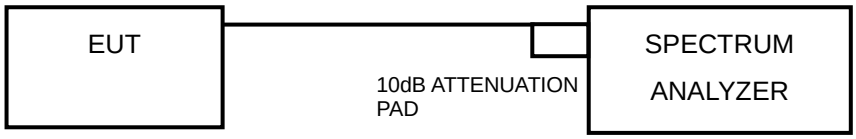
SPECTRUM PLOT OF WORST VALUE	
802.11a	**802.11n (20MHz)**
	
802.11n (40MHz)	**802.11ac (80MHz)**
	

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.

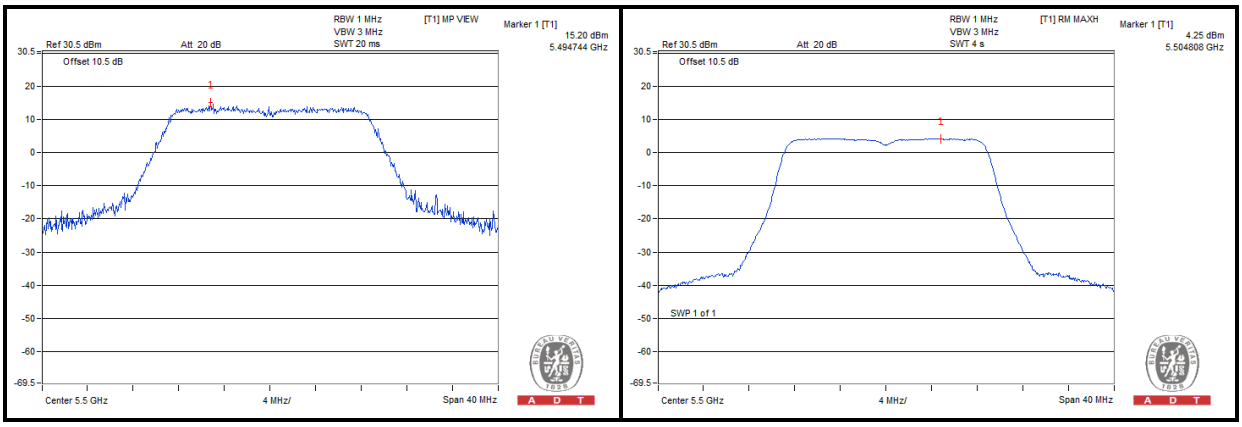
4.5.6 EUT OPERATING CONDITION

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	5500	13.96	4.44	4.44	9.52	13	PASS
	QPSK		14.40	4.44	4.24	9.96	13	PASS
	16QAM		14.16	4.41	4.21	9.75	13	PASS
	64QAM		14.10	4.39	4.14	9.71	13	PASS
802.11n (20MHz)	BPSK	5500	13.92	4.04	4.04	9.88	13	PASS
	QPSK		14.53	4.35	4.24	10.18	13	PASS
	16QAM		14.34	4.50	4.20	9.84	13	PASS
	64QAM		15.20	4.65	4.25	10.55	13	PASS
802.11n (40MHz)	BPSK	5310	7.66	-1.26	-1.71	8.92	13	PASS
	QPSK		7.98	-1.22	-1.87	9.20	13	PASS
	16QAM		8.24	-0.75	-1.87	8.99	13	PASS
	64QAM		8.65	0.09	-1.94	8.56	13	PASS
802.11ac (80MHz)	BPSK	5290	3.78	-3.61	-4.51	7.39	13	PASS
	QPSK		3.59	-3.07	-4.49	6.66	13	PASS
	16QAM		3.70	-2.12	-4.09	5.82	13	PASS
	64QAM		3.65	-2.10	-4.07	5.75	13	PASS
	256QAM		4.21	-0.87	-4.17	5.08	13	PASS

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

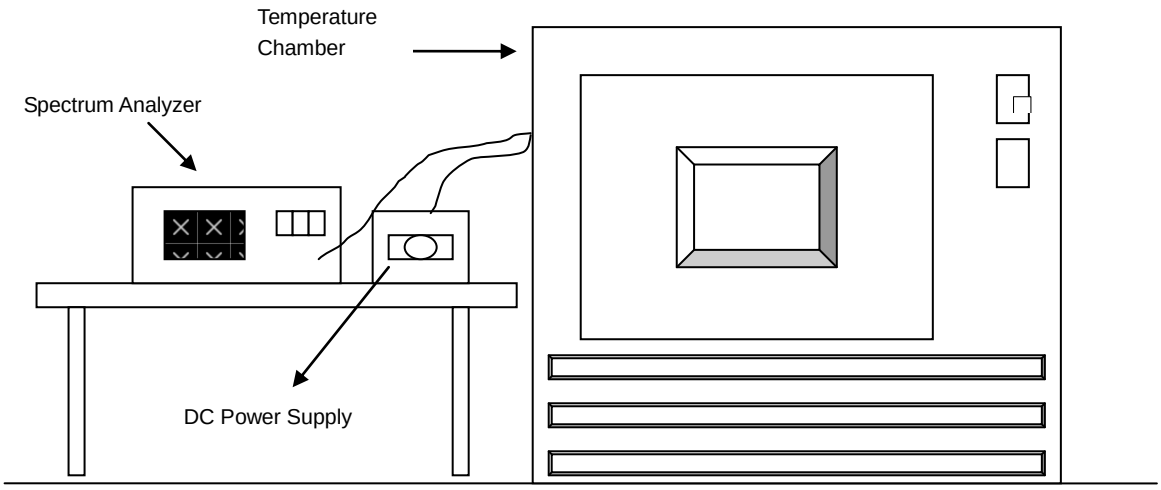

RBW 1 MHz
VBW 3 MHz
SWT 20 ms
[T1] MP VIEW
Marker 1 [T1]
15.20 dBm
5.494744 GHz
Ref 30.5 dBm
Att 20 dB
Offset 10.5 dB
Center 5.5 GHz
4 MHz/
Span 40 MHz
RBW 1 MHz
VBW 3 MHz
SWT 4 s
[T1] RM MAXH
Marker 1 [T1]
4.25 dBm
5.504808 GHz
Ref 30.5 dBm
Att 20 dB
Offset 10.5 dB
SWP 1 of 1
Center 5.5 GHz
4 MHz/
Span 40 MHz

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	5320.040354	7.585	5320.040115	7.540	5320.040209	7.558	5320.040278	7.571
50	3.8	5320.041240	7.752	5320.040532	7.619	5320.041209	7.746	5320.040777	7.665
40	3.8	5320.041023	7.711	5320.041122	7.730	5320.040604	7.632	5320.040957	7.699
30	3.8	5320.042100	7.914	5320.042188	7.930	5320.041815	7.860	5320.042413	7.972
20	3.8	5320.042978	8.079	5320.043051	8.092	5320.043385	8.155	5320.042993	8.081
10	3.8	5320.044546	8.373	5320.044387	8.343	5320.045021	8.463	5320.044226	8.313
0	3.8	5320.043199	8.120	5320.043216	8.123	5320.043180	8.117	5320.043239	8.128
-10	3.8	5320.041850	7.867	5320.041759	7.849	5320.041793	7.856	5320.041587	7.817
-20	3.8	5320.040754	7.661	5320.041221	7.748	5320.040696	7.650	5320.041028	7.712
-30	3.8	5320.039878	7.496	5320.039892	7.498	5320.039776	7.477	5320.040177	7.552

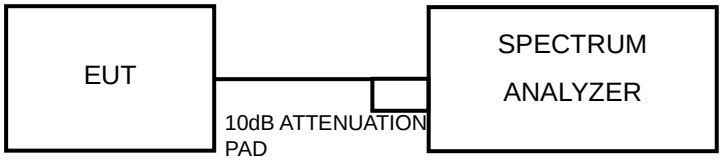
FREQUEMCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (℃)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	3.4	5320.042919	8.067	5320.043161	8.113	5320.042578	8.003	5320.042625	8.012
	3.8	5320.042978	8.079	5320.043051	8.092	5320.043385	8.155	5320.042993	8.081
	4.35	5320.044137	8.296	5320.044324	8.332	5320.044753	8.412	5320.044318	8.330

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

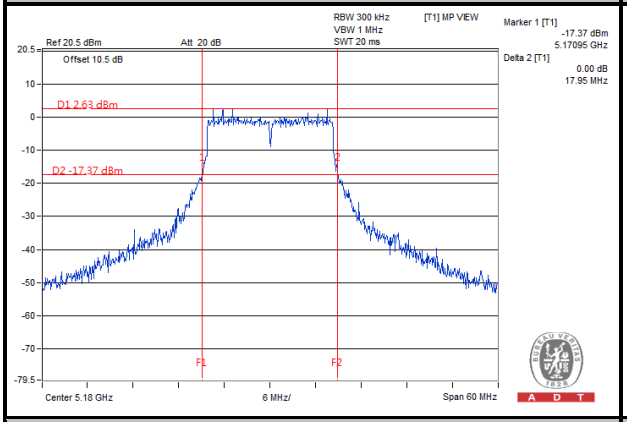
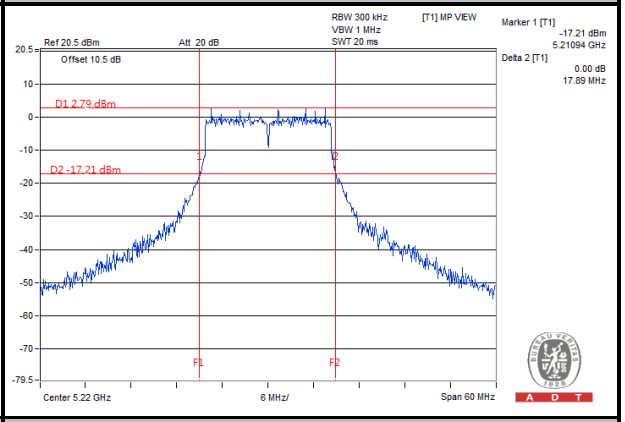
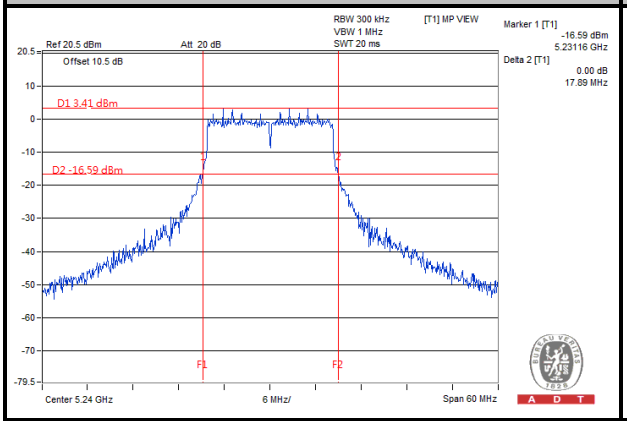
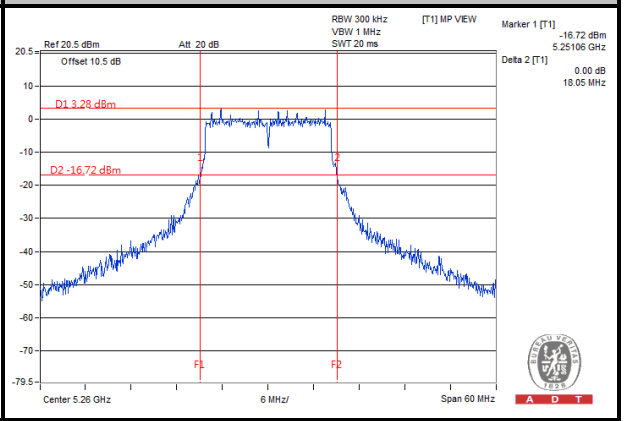
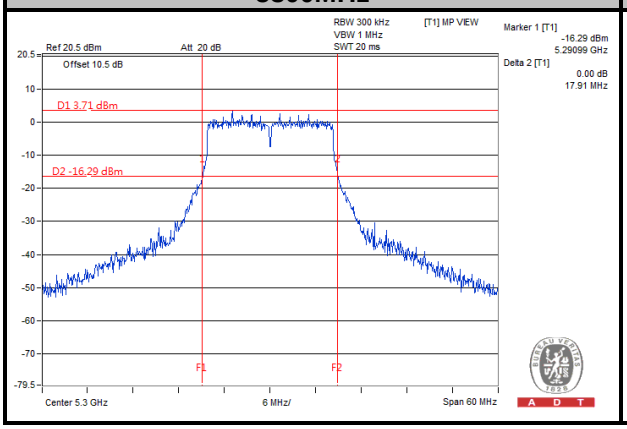
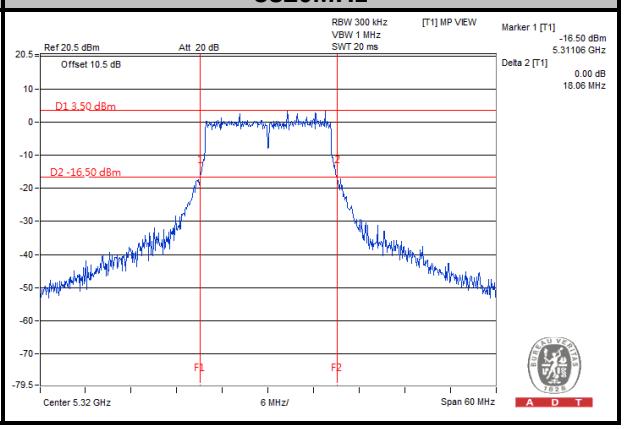
789033 D01 General UNII Test Procedures v01r03

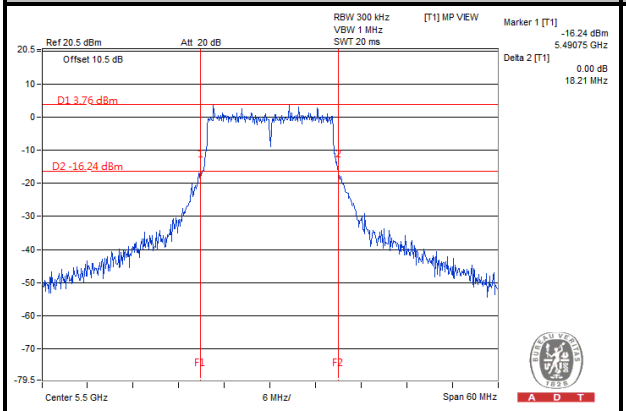
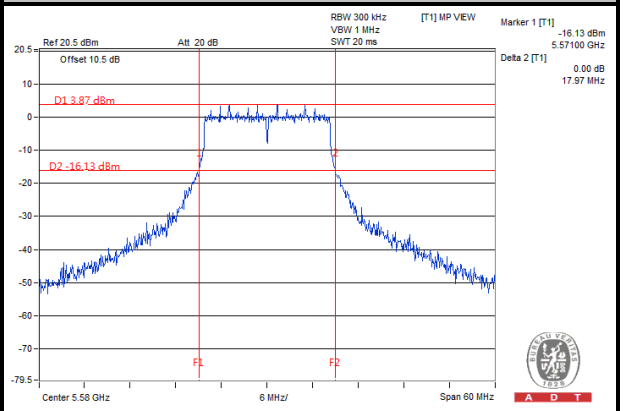
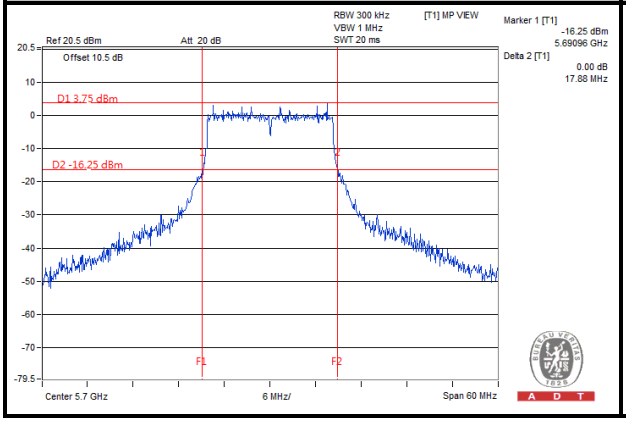
Emission bandwidth

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

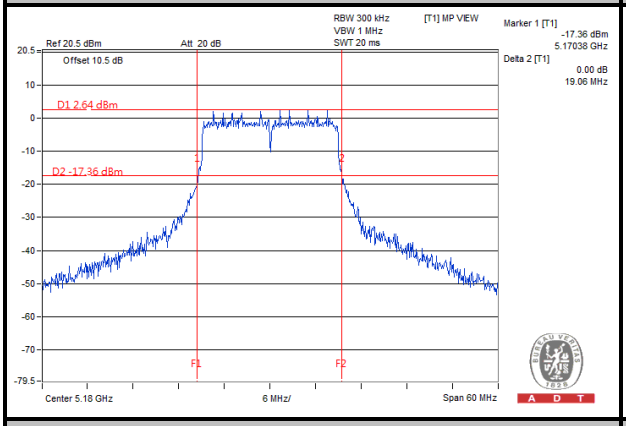
802.11a

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

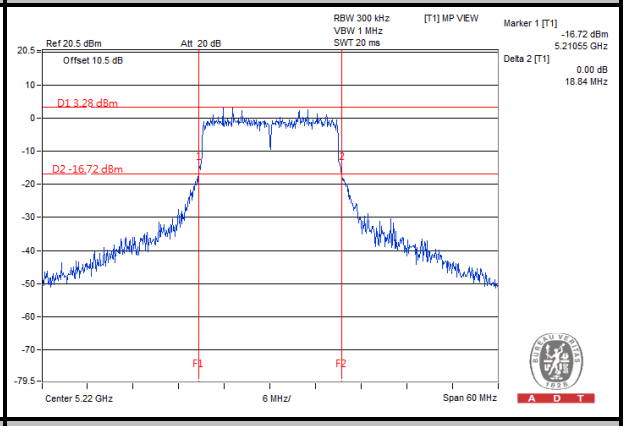
5500MHz	5580MHz
	
5700MHz	
	

802.11n (20MHz)

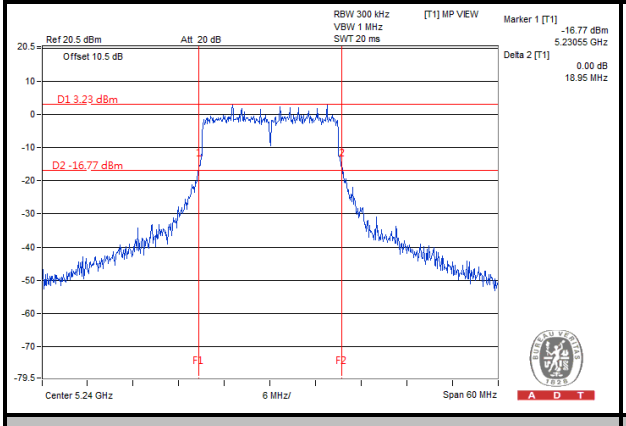
5180MHz



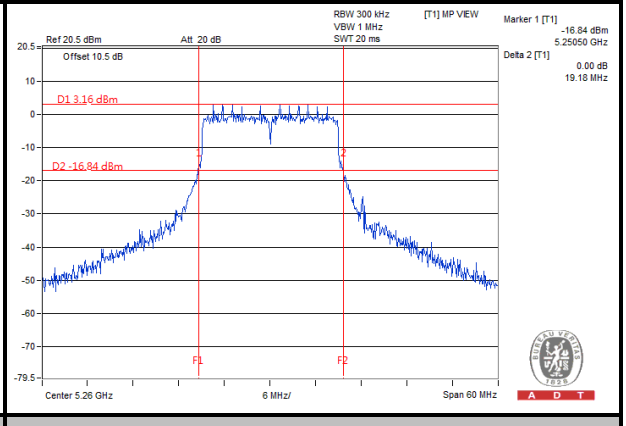
5220MHz



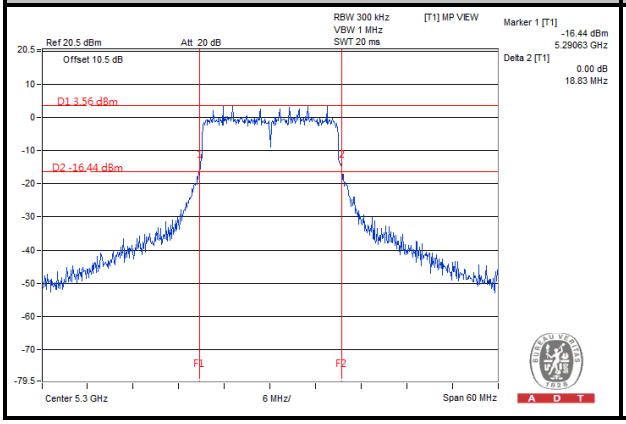
5240MHz



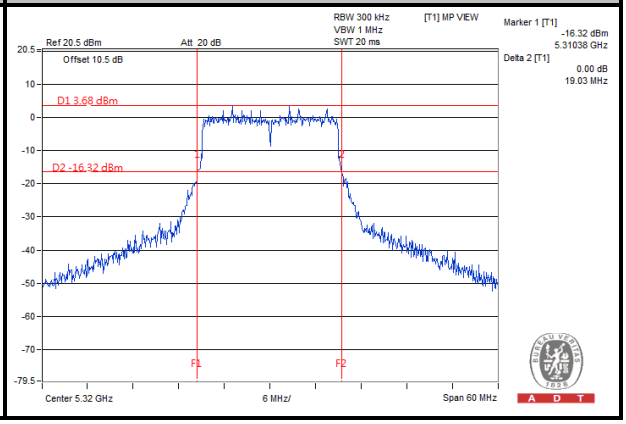
5260MHz

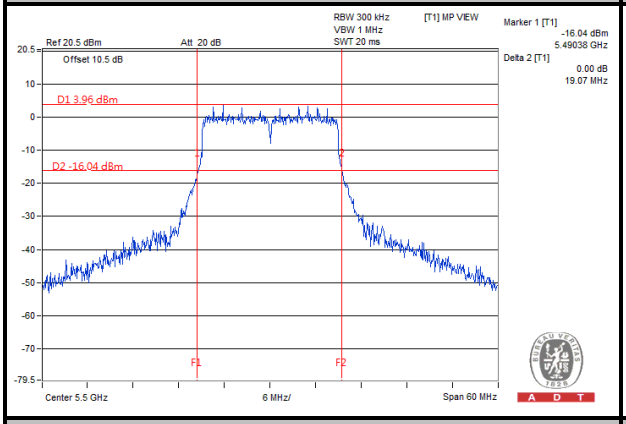
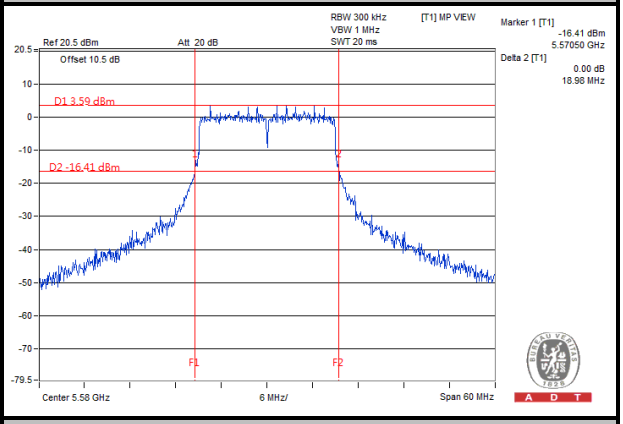
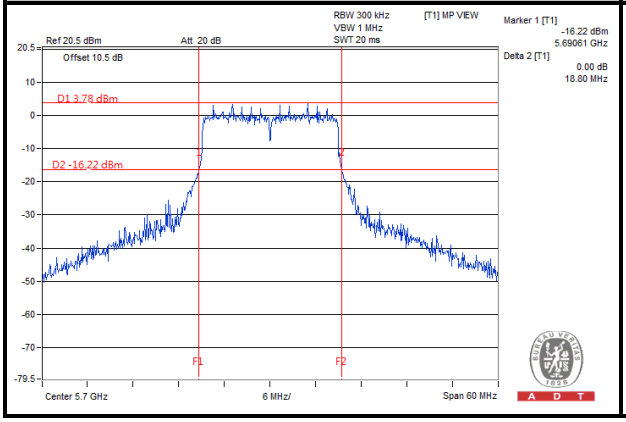


5300MHz



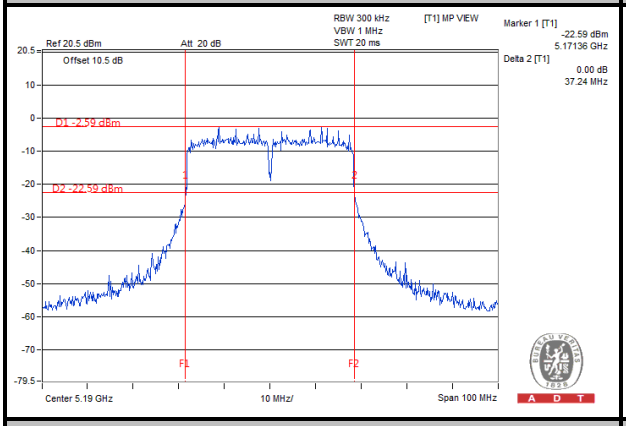
5320MHz



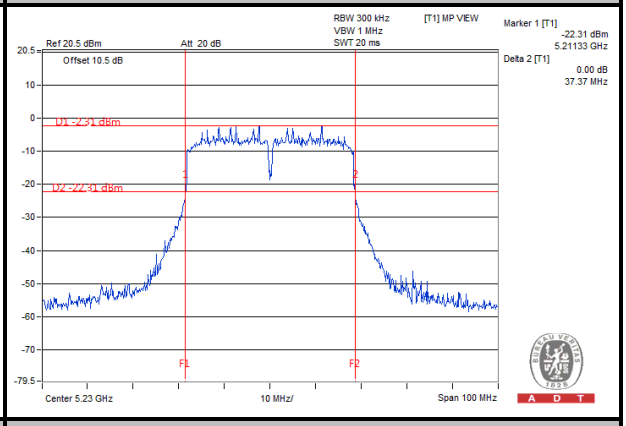
5500MHz	5580MHz
	
5700MHz	
	

802.11n (40MHz)

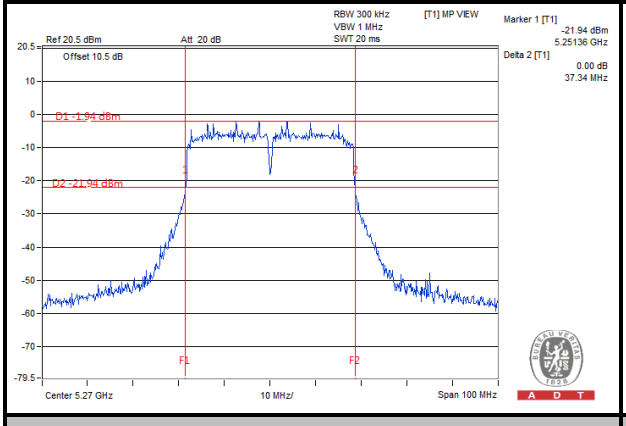
5190MHz



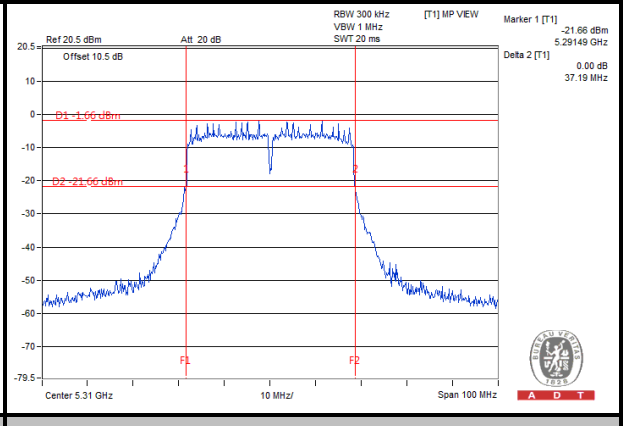
5230MHz



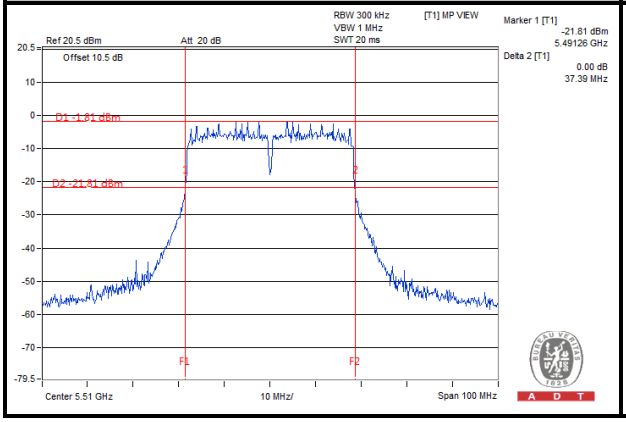
5270MHz



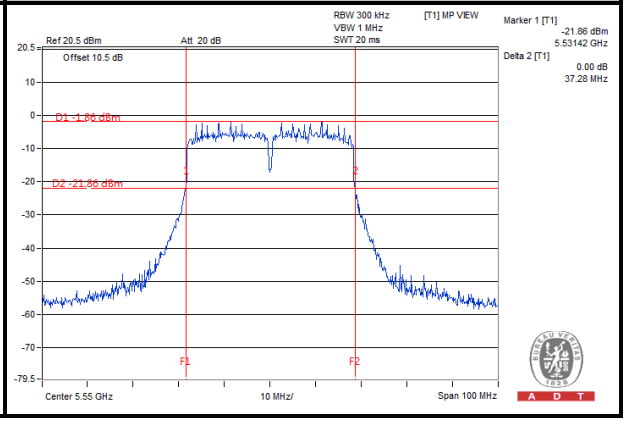
5310MHz

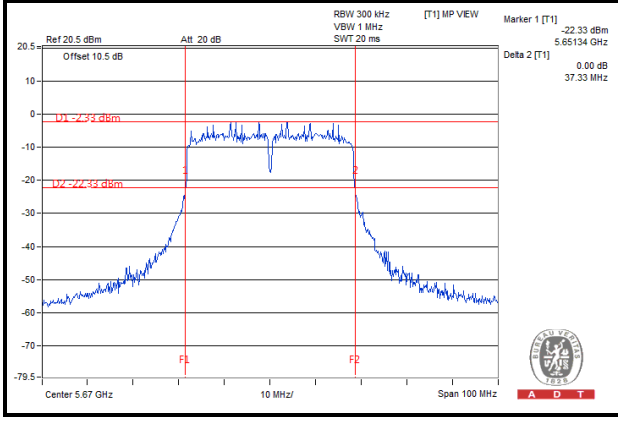


5510MHz



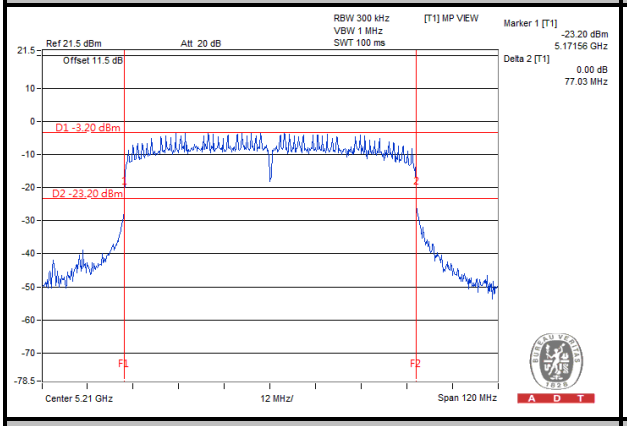
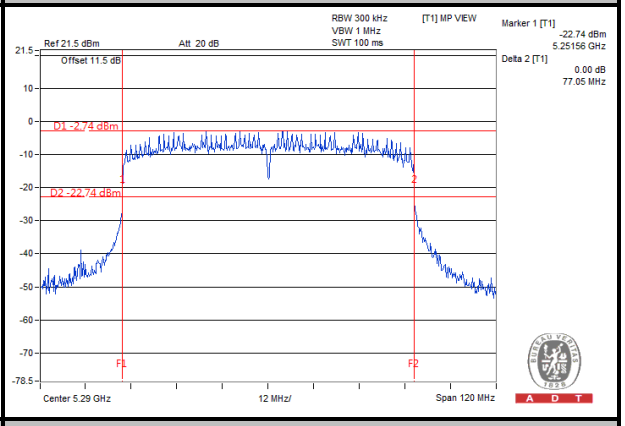
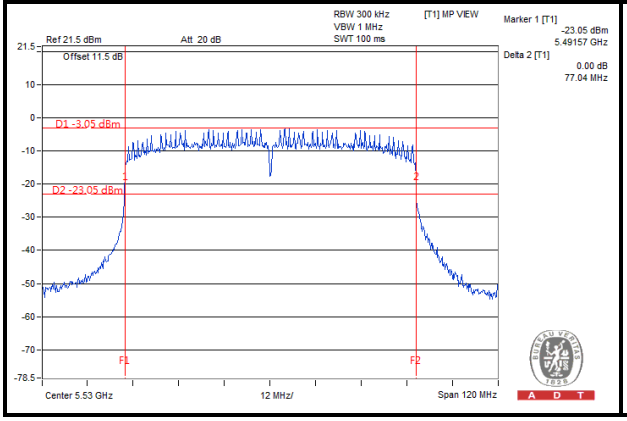
5550MHz



5670MHz	
	

RBW 300 kHz
VBW 1 MHz
SWT 20 ms
[T1] MP VIEW
Marker 1 [T1]
-22.33 dBm
5.65134 GHz
Delta 2 [T1]
0.00 dB
37.33 MHz
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
D1 -2.33 dBm
D2 -22.33 dBm
F1
F2
Center 5.67 GHz
10 MHz/
Span 100 MHz

802.11ac (80MHz)

5210MHz	5290MHz
	
5530MHz	
	

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:
Tel: 886-3-3183232
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.

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