



FCC TEST REPORT (15.407)

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MODEL NO.: 0P6B100
FCC ID: NM80P6B100
RECEIVED: Nov. 13, 2013
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ISSUED: Jan. 10, 2014

APPLICANT: HTC Corporation

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Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF131113C12-1	Original release	Jan. 10, 2014



1. CERTIFICATION

PRODUCT: Smartphone
MODEL NO.: 0P6B100
BRAND: HTC
APPLICANT: HTC Corporation
TESTED: Dec. 20, 2013 ~ Jan. 04, 2014
TEST SAMPLE: PRODUCTION UNIT
STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**
ANSI C63.10-2009

The above equipment (model: 0P6B100) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Ivonne Wu , **DATE** : Jan. 10, 2014
Ivonne Wu / Supervisor

APPROVED BY : Sam Chen , **DATE** : Jan. 10, 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 -1.09dB at 13.55859MHz.
15.407(b/1/2/3) (b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.38dB 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.	0P6B100
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 135Mbps 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	44.978mW for 5180 ~ 5240MHz 52.240mW for 5260 ~ 5320MHz 48.306mW for 5500 ~ 5700MHz
ANTENNA TYPE	PIFA antenna with -3.5dBi gain (5180 ~ 5240MHz) PIFA antenna with -3dBi gain (5260 ~ 5320MHz) PIFA antenna with -3dBi 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:

- The EUT's accessories list refers to Ext. Pho.
- There're 2 configurations for the EUT listed as below.
Main sample (A): Battery 1 + LCD Panel 1
2nd sample (B): Battery 2 + LCD Panel 2
❖ Only the worst test data was presented in the report.
- The above EUT information is declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.



3.2 DESCRIPTION OF TEST MODES

FOR 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



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FOR 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 \geq 1G	RE $<$ 1G	PLC	APCM	
A	√	√	√	√	Main sample
B	√	√	-	-	2 nd sample

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

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

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

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

RADIATED EMISSION TEST (ABOVE 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	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	6.5
	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
	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	6.5
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
	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	6.5
	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
	802.11ac (80MHz)		106	106	OFDM	BPSK	V0
B	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	6.5

RADIATED EMISSION TEST (BELOW 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11n (20MHz)	5180-5240	36 to 48	36	OFDM	BPSK	6.5
		5260-5320	52 to 64	64	OFDM	BPSK	6.5
		5500-5700	100 to 140	140	OFDM	BPSK	6.5
B	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	6.5



POWER LINE CONDUCTED EMISSION TEST:

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	6.5

BANDEDGE MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 48	OFDM	BPSK	6.0
	802.11n (20MHz)		36 to 48	36, 48	OFDM	BPSK	6.5
	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
	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	6.5
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
	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	6.5
	802.11n (40MHz)		102 to 134	102, 134	OFDM	BPSK	13.5
	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)
A	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	6.5
	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
	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	6.5
	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
	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	6.5
	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
	802.11ac (80MHz)		106	106	OFDM	BPSK	V0

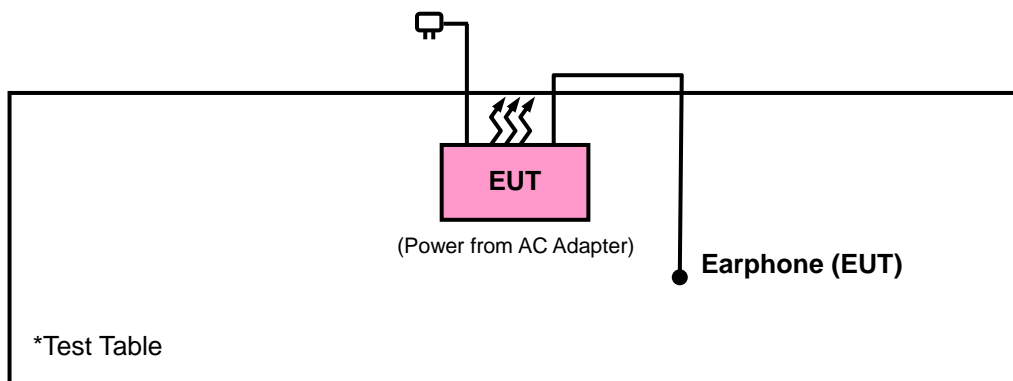
TEST CONDITION:

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

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





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3.4 DUTY CYCLE TEST SIGNAL

MODULATION TYPE: BPSK

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

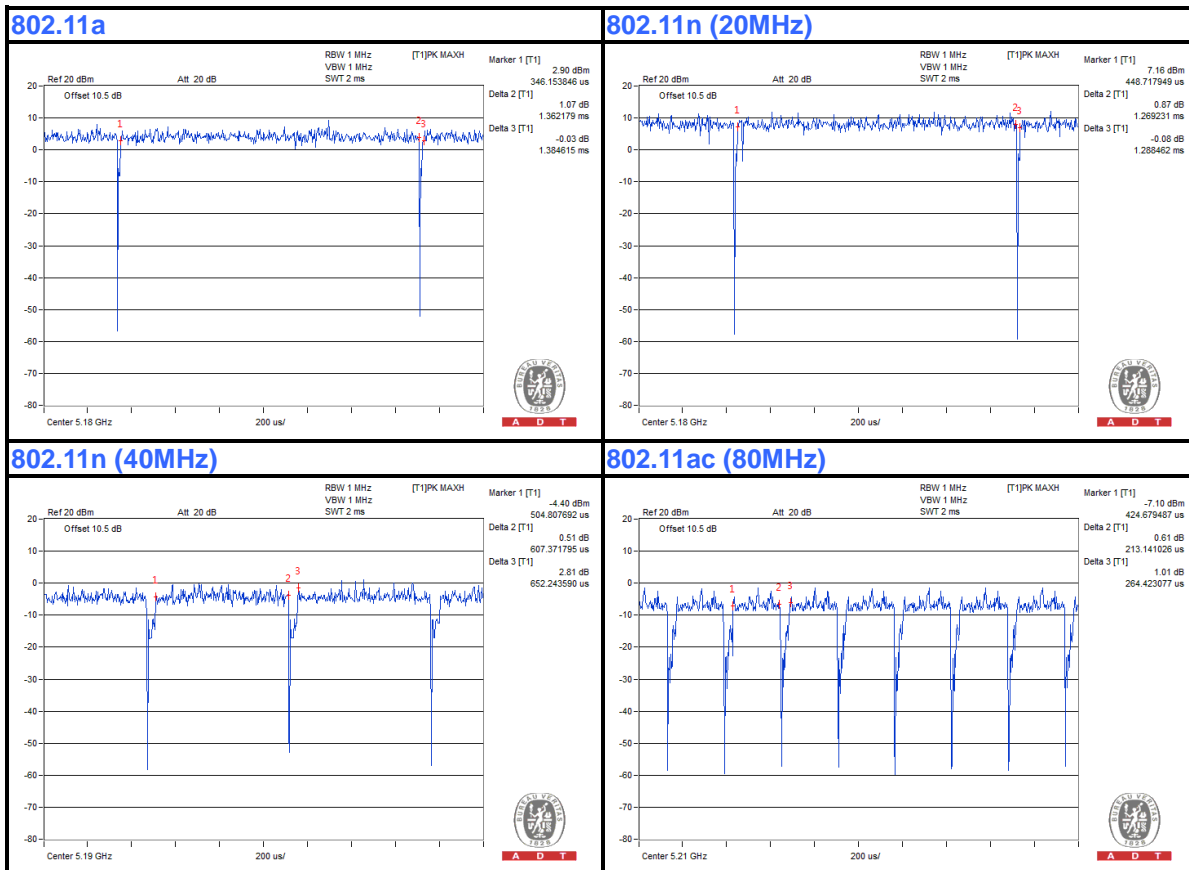
802.11a: Duty cycle = $1.362/1.385 = 0.983$

802.11n (20MHz): Duty cycle = $1.269/1.288 = 0.985$

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

802.11n (40MHz): Duty cycle = $607.37/652.24 = 0.931$, Duty factor = $10 * \log(1/0.931) = 0.31$

802.11ac (80MHz): Duty cycle = $213.14/264.42 = 0.806$, Duty factor = $10 * \log(1/0.806) = 0.94$





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MODULATION TYPE: QPSK

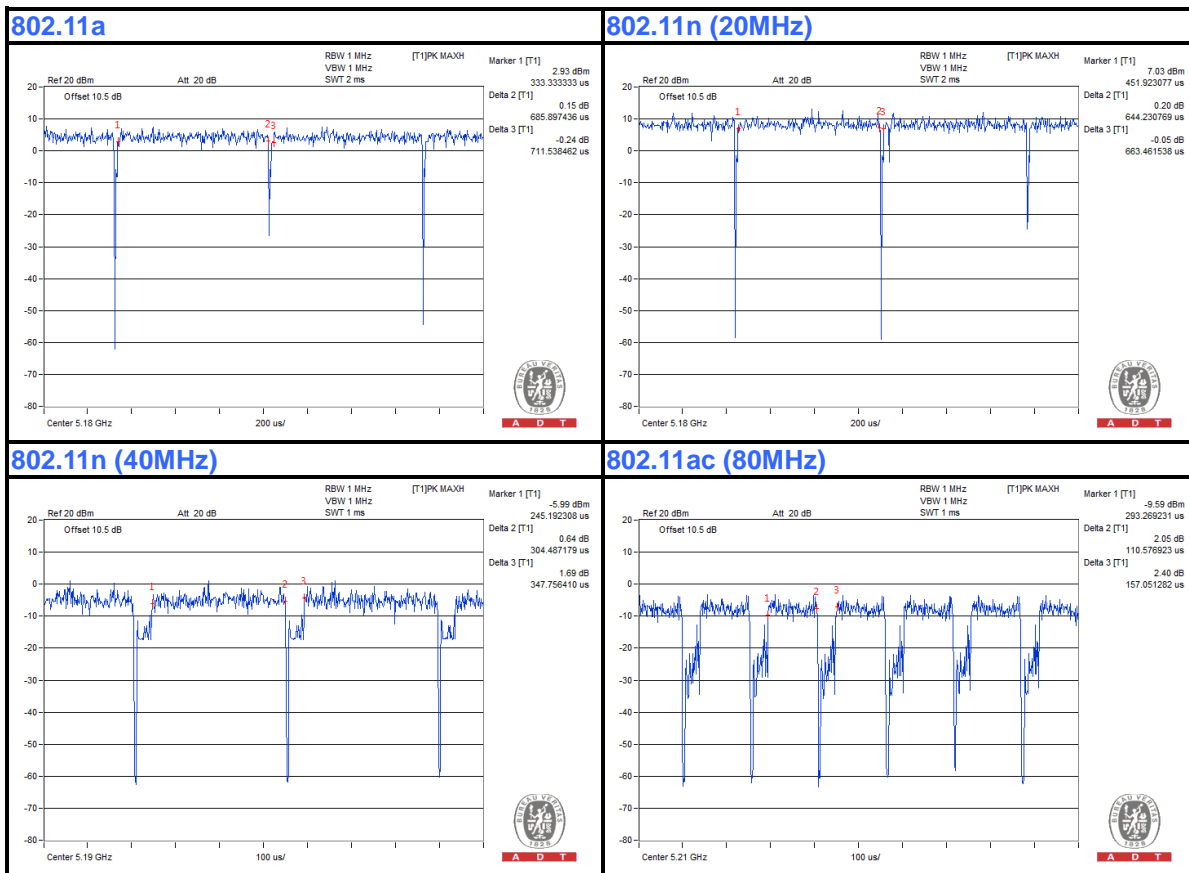
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $685.90/711.54 = 0.964$, Duty factor = $10 * \log(1/0.964) = 0.16$

802.11n (20MHz): Duty cycle = $644.23/663.46 = 0.971$, Duty factor = $10 * \log(1/0.971) = 0.13$

802.11n (40MHz): Duty cycle = $304.49/347.76 = 0.875$, Duty factor = $10 * \log(1/0.875) = 0.58$

802.11ac (80MHz): Duty cycle = $110.58/157.05 = 0.704$, Duty factor = $10 * \log(1/0.704) = 1.52$





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MODULATION TYPE: 16QAM

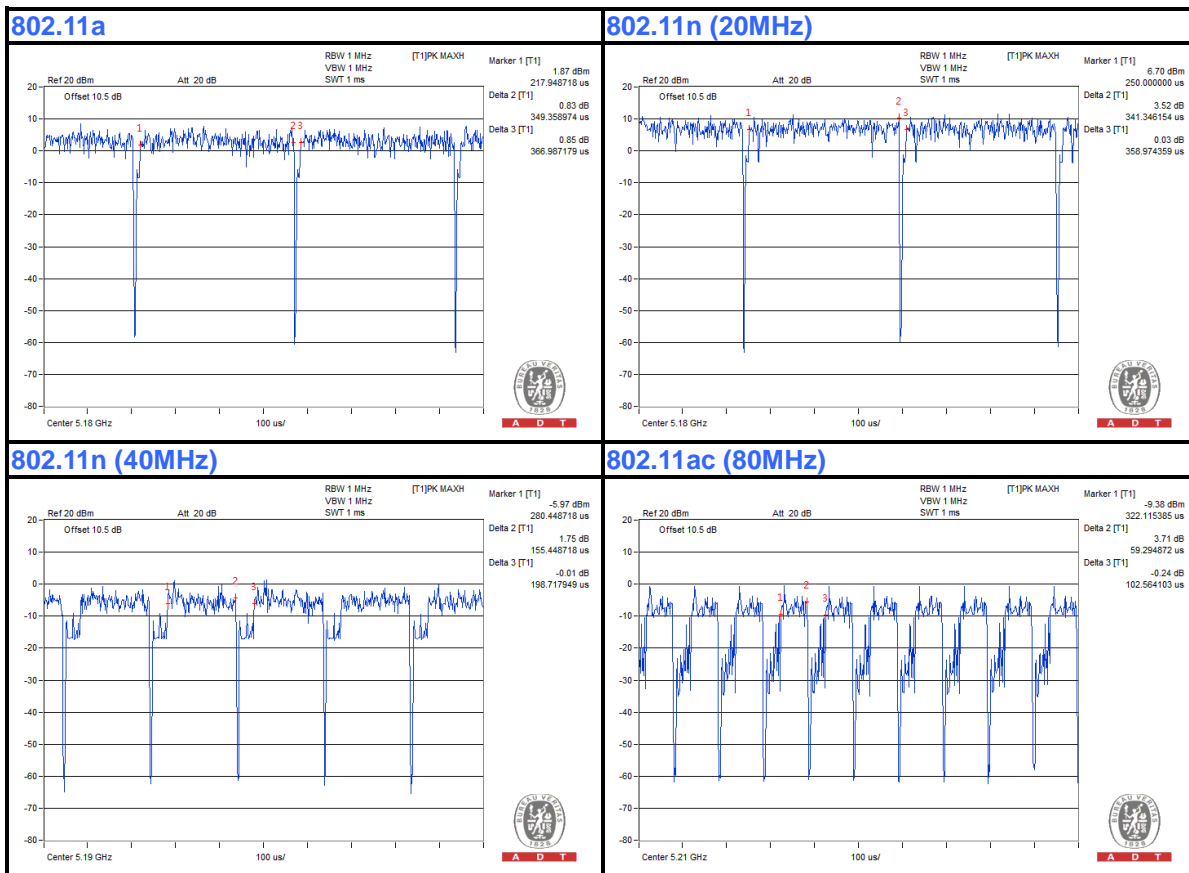
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $349.36/366.99 = 0.952$, Duty factor = $10 * \log(1/0.952) = 0.21$

802.11n (20MHz): Duty cycle = $341.35/358.97 = 0.951$, Duty factor = $10 * \log(1/0.951) = 0.22$

802.11n (40MHz): Duty cycle = $155.45/198.72 = 0.782$, Duty factor = $10 * \log(1/0.782) = 1.07$

802.11ac (80MHz): Duty cycle = $59.29/102.56 = 0.578$, Duty factor = $10 * \log(1/0.578) = 2.38$





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MODULATION TYPE: 64QAM

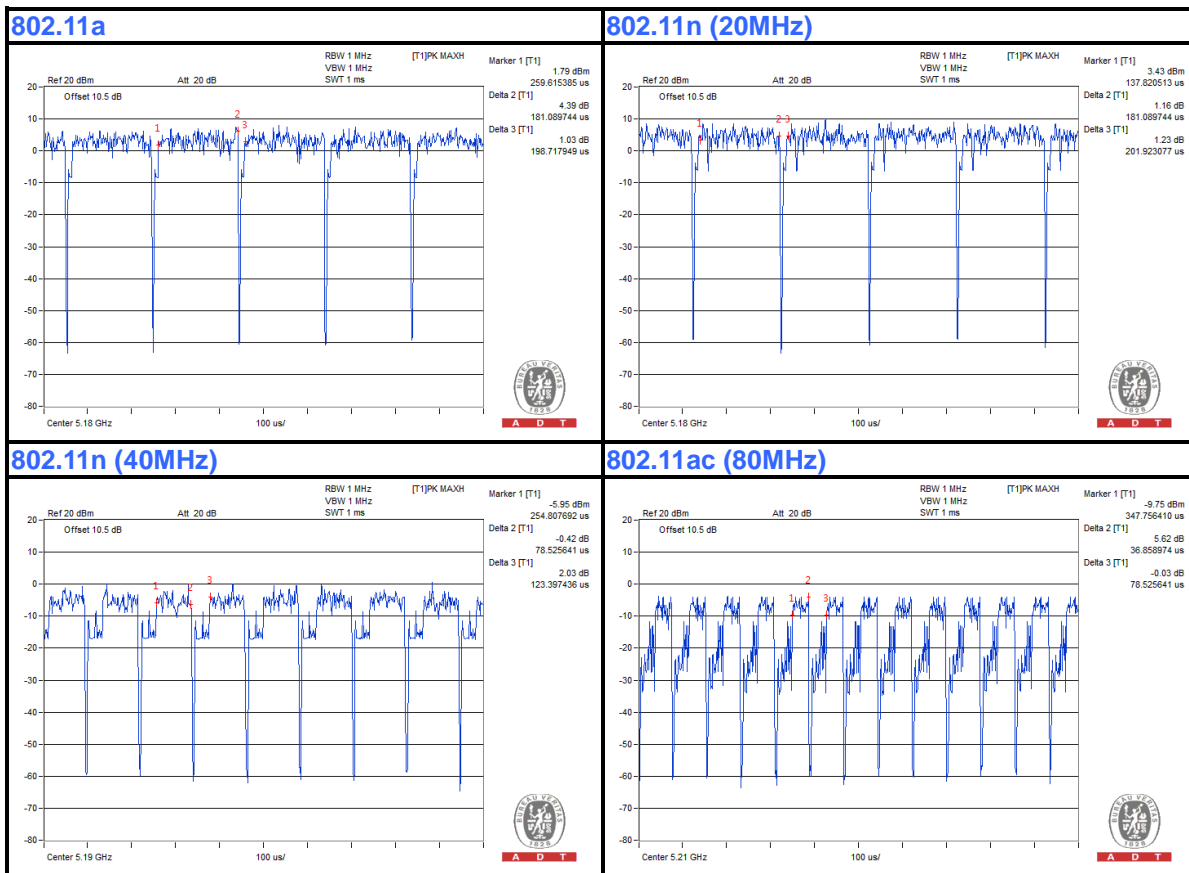
If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $181.09/198.72 = 0.911$, Duty factor = $10 * \log(1/0.911) = 0.40$

802.11n (20MHz): Duty cycle = $181.09/201.92 = 0.897$, Duty factor = $10 * \log(1/0.897) = 0.47$

802.11n (40MHz): Duty cycle = $78.53/123.40 = 0.636$, Duty factor = $10 * \log(1/0.636) = 1.96$

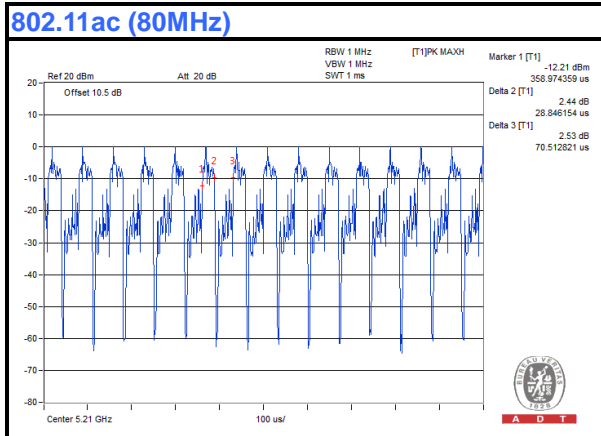
802.11ac (80MHz): Duty cycle = $36.86/78.53 = 0.469$, Duty factor = $10 * \log(1/0.469) = 3.28$



MODULATION TYPE: 256QAM

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

802.11ac (80MHz): Duty cycle = 28.85/70.51 = 0.409, Duty factor = 10 * log(1/0.409) = 3.88



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)

ANSI C63.10-2009

KDB 644545 D01 v01r02

KDB 789033 D01 General UNII Test Procedures v01r03

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:

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



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4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100744	Apr. 15, 2013	Apr. 14, 2014
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 21, 2013	Dec. 20, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Mar. 25, 2013	Mar. 24, 2014
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Jan. 07, 2013	Jan. 06, 2014
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Jan. 07, 2013	Jan. 06, 2014
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier EMCI	EMC 330H	980112	Dec. 28, 2012	Dec. 27, 2013
Preamplifier EMCI	EMC 330H	980112	Dec. 27, 2013	Dec. 26, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4	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:

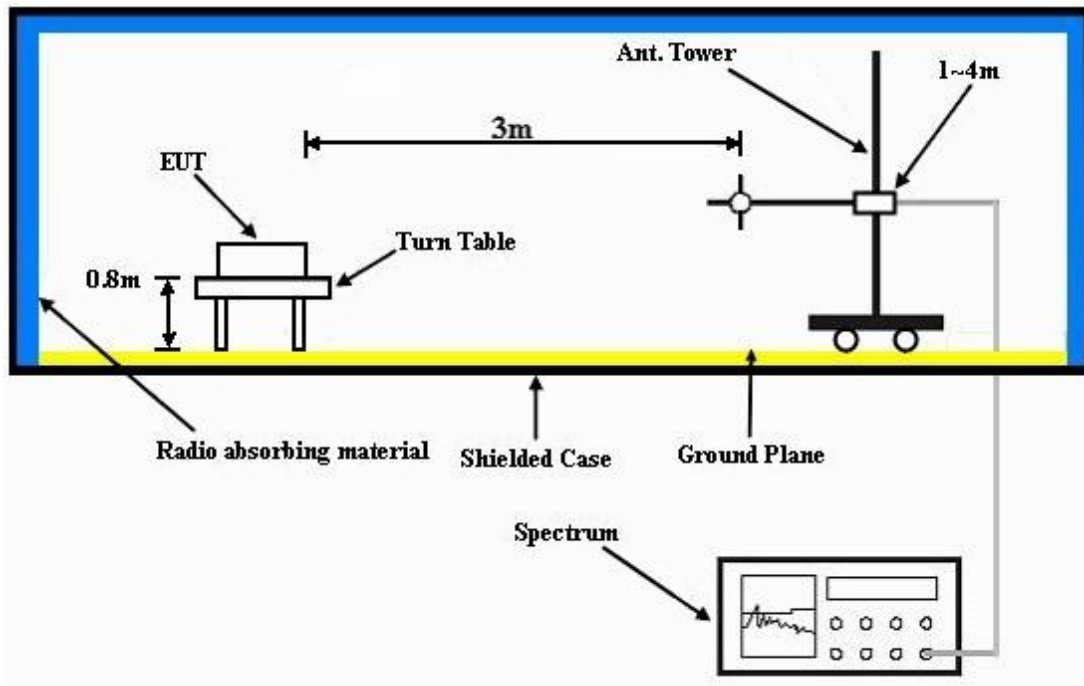
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

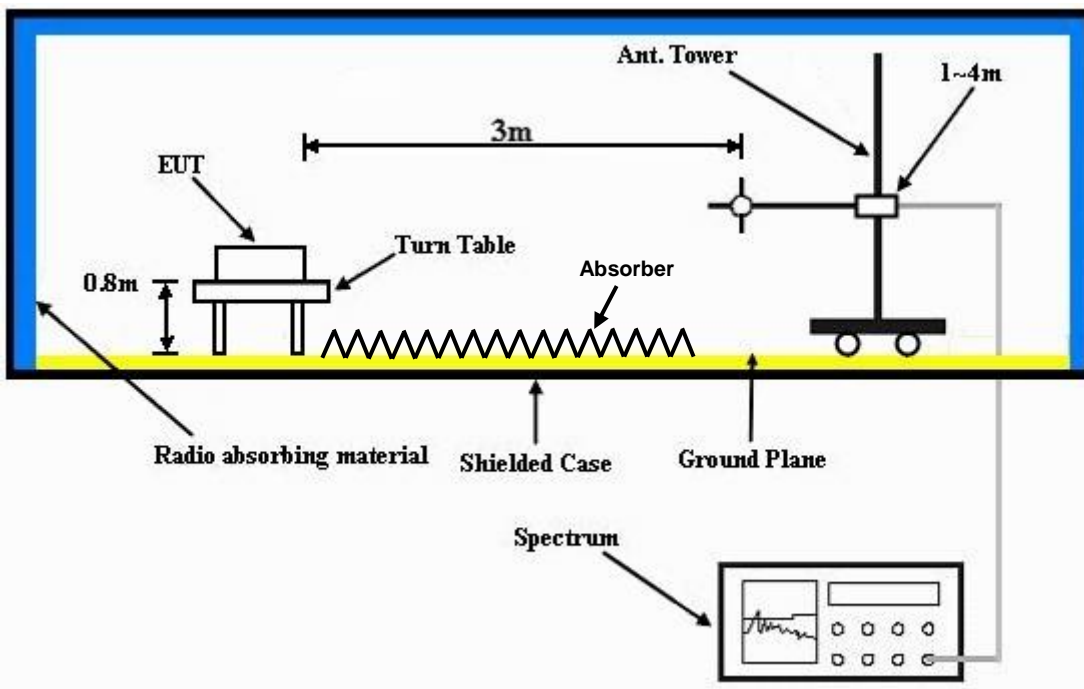
No deviation.

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).



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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.



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4.1.8 TEST RESULTS

ABOVE 1GHz WORST-CASE DATA

TEST MODE: A

802.11a

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

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	38.13	38.84	54	-15.87	31.32	5.29	37.32	100	301	Average
5150	58.94	59.65	74	-15.06	31.32	5.29	37.32	100	301	Peak
5180	87.71	88.39			31.35	5.31	37.34	100	301	Average
5180	96.15	96.83			31.35	5.31	37.34	100	301	Peak
5350	37.85	38.16	54	-16.15	31.48	5.39	37.18	100	301	Average
5350	59.18	59.49	74	-14.82	31.48	5.39	37.18	100	301	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	44.25	44.96	54	-9.75	31.32	5.29	37.32	122	46	Average
5150	61.45	62.16	74	-12.55	31.32	5.29	37.32	122	46	Peak
5180	93.26	93.94			31.35	5.31	37.34	122	46	Average
5180	102.24	102.92			31.35	5.31	37.34	122	46	Peak
5350	37.85	38.16	54	-16.15	31.48	5.39	37.18	122	46	Average
5350	58.07	58.38	74	-15.93	31.48	5.39	37.18	122	46	Peak

REMARKS:

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



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

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	37.54	38.25	54	-16.46	31.32	5.29	37.32	100	301	Average
5150	58.1	58.81	74	-15.9	31.32	5.29	37.32	100	301	Peak
5220	88.3	88.96			31.37	5.33	37.36	100	301	Average
5220	97.42	98.08			31.37	5.33	37.36	100	301	Peak
5350	37.84	38.15	54	-16.16	31.48	5.39	37.18	100	301	Average
5350	58.37	58.68	74	-15.63	31.48	5.39	37.18	100	301	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	37.59	38.3	54	-16.41	31.32	5.29	37.32	122	46	Average
5150	59.67	60.38	74	-14.33	31.32	5.29	37.32	122	46	Peak
5220	92.8	93.46			31.37	5.33	37.36	122	46	Average
5220	102.12	102.78			31.37	5.33	37.36	122	46	Peak
5350	37.9	38.21	54	-16.1	31.48	5.39	37.18	122	46	Average
5350	58.65	58.96	74	-15.35	31.48	5.39	37.18	122	46	Peak

REMARKS:

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



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

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	37.5	38.21	54	-16.5	31.32	5.29	37.32	100	301	Average
5150	57.47	58.18	74	-16.53	31.32	5.29	37.32	100	301	Peak
5240	88.11	88.7			31.39	5.34	37.32	100	301	Average
5240	97.7	98.29			31.39	5.34	37.32	100	301	Peak
5350	37.84	38.15	54	-16.16	31.48	5.39	37.18	100	301	Average
5350	57.42	57.73	74	-16.58	31.48	5.39	37.18	100	301	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	37.54	38.25	54	-16.46	31.32	5.29	37.32	122	46	Average
5150	58.98	59.69	74	-15.02	31.32	5.29	37.32	122	46	Peak
5240	92.47	93.06			31.39	5.34	37.32	122	46	Average
5240	101.58	102.17			31.39	5.34	37.32	122	46	Peak
5350	37.9	38.21	54	-16.1	31.48	5.39	37.18	122	46	Average
5350	59.64	59.95	74	-14.36	31.48	5.39	37.18	122	46	Peak

REMARKS:

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



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

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
5134	37.44	38.15	54	-16.56	31.31	5.28	37.3	100	311	Average
5134	60.01	60.72	74	-13.99	31.31	5.28	37.3	100	311	Peak
5260	87.12	87.64			31.41	5.34	37.27	100	311	Average
5260	97.03	97.55			31.41	5.34	37.27	100	311	Peak
5436	37.78	37.94	54	-16.22	31.55	5.42	37.13	100	311	Average
5436	60.15	60.31	74	-13.85	31.55	5.42	37.13	100	311	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5046	37.47	38.23	54	-16.53	31.24	5.25	37.25	100	360	Average
5046	59.64	60.4	74	-14.36	31.24	5.25	37.25	100	360	Peak
5260	93.93	94.45			31.41	5.34	37.27	100	360	Average
5260	102.8	103.32			31.41	5.34	37.27	100	360	Peak
5416	37.87	38.1	54	-16.13	31.53	5.42	37.18	100	360	Average
5416	60.3	60.53	74	-13.7	31.53	5.42	37.18	100	360	Peak

REMARKS:

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



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

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
5034	37.35	38.12	54	-16.65	31.23	5.24	37.24	100	335	Average
5034	60.76	61.53	74	-13.24	31.23	5.24	37.24	100	335	Peak
5300	88.78	89.16			31.44	5.37	37.19	100	335	Average
5300	98.15	98.53			31.44	5.37	37.19	100	335	Peak
5350	38.68	38.99	54	-15.32	31.48	5.39	37.18	100	335	Average
5350	61.1	61.41	74	-12.9	31.48	5.39	37.18	100	335	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	37.6	38.32	54	-16.4	31.29	5.27	37.28	100	2	Average
5108	59.8	60.52	74	-14.2	31.29	5.27	37.28	100	2	Peak
5300	94.25	94.63			31.44	5.37	37.19	100	2	Average
5300	103.57	103.95			31.44	5.37	37.19	100	2	Peak
5400	40.83	41.08	54	-13.17	31.52	5.41	37.18	100	2	Average
5400	60.26	60.51	74	-13.74	31.52	5.41	37.18	100	2	Peak

REMARKS:

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



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

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
5138	37.59	38.29	54	-16.41	31.31	5.29	37.3	100	335	Average
5138	58.92	59.62	74	-15.08	31.31	5.29	37.3	100	335	Peak
5320	88.63	88.99			31.45	5.38	37.19	100	335	Average
5320	98.1	98.46			31.45	5.38	37.19	100	335	Peak
5424	38.52	38.75	54	-15.48	31.53	5.42	37.18	100	335	Average
5424	59.36	59.59	74	-14.64	31.53	5.42	37.18	100	335	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5124	37.53	38.24	54	-16.47	31.31	5.28	37.3	100	6	Average
5124	59.58	60.29	74	-14.42	31.31	5.28	37.3	100	6	Peak
5320	93.88	94.24			31.45	5.38	37.19	100	6	Average
5320	102.4	102.76			31.45	5.38	37.19	100	6	Peak
5410	40.33	40.58	54	-13.67	31.52	5.41	37.18	100	6	Average
5410	59.15	59.4	74	-14.85	31.52	5.41	37.18	100	6	Peak

REMARKS:

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



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

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	37.93	38.01	54	-16.07	31.56	5.44	37.08	100	337	Average
5460	57.89	57.97	74	-16.11	31.56	5.44	37.08	100	337	Peak
5470	58.35	58.41	68.3	-9.95	31.57	5.45	37.08	100	337	Peak
5500	90.22	90.19			31.6	5.46	37.03	100	337	Average
5500	99.31	99.28			31.6	5.46	37.03	100	337	Peak
5725	59.07	58.95	68.3	-9.23	31.96	5.59	37.43	100	337	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
5460	38.29	38.37	54	-15.71	31.56	5.44	37.08	100	66	Average
5460	58.09	58.17	74	-15.91	31.56	5.44	37.08	100	66	Peak
5470	58.97	59.03	68.3	-9.33	31.57	5.45	37.08	100	66	Peak
5500	95.55	95.52			31.6	5.46	37.03	100	66	Average
5500	104.67	104.64			31.6	5.46	37.03	100	66	Peak
5725	57.23	57.11	68.3	-11.07	31.96	5.59	37.43	100	66	Peak

REMARKS:

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



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

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	37.87	37.95	54	-16.13	31.56	5.44	37.08	100	337	Average
5460	59.18	59.26	74	-14.82	31.56	5.44	37.08	100	337	Peak
5470	59.94	60	68.3	-8.36	31.57	5.45	37.08	100	337	Peak
5580	90.06	90.01			31.71	5.5	37.16	100	337	Average
5580	99.38	99.33			31.71	5.5	37.16	100	337	Peak
5725	59.52	59.4	68.3	-8.78	31.96	5.59	37.43	100	337	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
5460	38.04	38.12	54	-15.96	31.56	5.44	37.08	118	65	Average
5460	57.47	57.55	74	-16.53	31.56	5.44	37.08	118	65	Peak
5470	56.93	56.99	68.3	-11.37	31.57	5.45	37.08	118	65	Peak
5580	95.09	95.04			31.71	5.5	37.16	118	65	Average
5580	104.72	104.67			31.71	5.5	37.16	118	65	Peak
5725	57.6	57.48	68.3	-10.7	31.96	5.59	37.43	118	65	Peak

REMARKS:

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



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

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	37.87	37.95	54	-16.13	31.56	5.44	37.08	107	338	Average
5460	59.14	59.22	74	-14.86	31.56	5.44	37.08	107	338	Peak
5470	58.25	58.31	68.3	-10.05	31.57	5.45	37.08	107	338	Peak
5700	91.47	91.4			31.9	5.57	37.4	107	338	Average
5700	101.24	101.17			31.9	5.57	37.4	107	338	Peak
5724	59.58	59.46	68.3	-8.72	31.96	5.59	37.43	107	338	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
5460	38.01	38.09	54	-15.99	31.56	5.44	37.08	105	65	Average
5460	57.5	57.58	74	-16.5	31.56	5.44	37.08	105	65	Peak
5470	57.82	57.88	68.3	-10.48	31.57	5.45	37.08	105	65	Peak
5700	95.89	95.82			31.9	5.57	37.4	105	65	Average
5700	105.09	105.02			31.9	5.57	37.4	105	65	Peak
5724	66.54	66.42	68.3	-1.76	31.96	5.59	37.43	105	65	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5700MHz: Fundamental frequency.
- 5470MHz & 5724MHz: Out of restricted band



802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5026	42.19	42.96	54	-11.81	31.23	5.24	37.24	114	127	Average
5026	59.86	60.63	74	-14.14	31.23	5.24	37.24	114	127	Peak
5180	89.54	90.22			31.35	5.31	37.34	114	127	Average
5180	98.79	99.47			31.35	5.31	37.34	114	127	Peak
5404	37.72	37.97	54	-16.28	31.52	5.41	37.18	114	127	Average
5404	60.33	60.58	74	-13.67	31.52	5.41	37.18	114	127	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	47.49	48.2	54	-6.51	31.32	5.29	37.32	100	46	Average
5150	64.41	65.12	74	-9.59	31.32	5.29	37.32	100	46	Peak
5180	95.26	95.94			31.35	5.31	37.34	100	46	Average
5180	104.28	104.96			31.35	5.31	37.34	100	46	Peak
5408	37.74	37.99	54	-16.26	31.52	5.41	37.18	100	46	Average
5408	59.78	60.03	74	-14.22	31.52	5.41	37.18	100	46	Peak

REMARKS:

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



A D T

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

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
5122	37.57	38.3	54	-16.43	31.29	5.28	37.3	100	310	Average
5122	59.71	60.44	74	-14.29	31.29	5.28	37.3	100	310	Peak
5220	89.36	90.02			31.37	5.33	37.36	100	310	Average
5220	98.29	98.95			31.37	5.33	37.36	100	310	Peak
5450	37.92	38	54	-16.08	31.56	5.44	37.08	100	310	Average
5450	60.65	60.73	74	-13.35	31.56	5.44	37.08	100	310	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	37.95	38.67	54	-16.05	31.29	5.27	37.28	100	46	Average
5112	59.38	60.1	74	-14.62	31.29	5.27	37.28	100	46	Peak
5220	95.06	95.72			31.37	5.33	37.36	100	46	Average
5220	104.67	105.33			31.37	5.33	37.36	100	46	Peak
5436	37.8	37.96	54	-16.2	31.55	5.42	37.13	100	46	Average
5436	59.44	59.6	74	-14.56	31.55	5.42	37.13	100	46	Peak

REMARKS:

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



A D T

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

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	37.56	38.31	54	-16.44	31.25	5.25	37.25	100	310	Average
5060	59.17	59.92	74	-14.83	31.25	5.25	37.25	100	310	Peak
5240	90.4	90.99			31.39	5.34	37.32	100	310	Average
5240	99.76	100.35			31.39	5.34	37.32	100	310	Peak
5430	37.83	37.99	54	-16.17	31.55	5.42	37.13	100	310	Average
5430	59.96	60.12	74	-14.04	31.55	5.42	37.13	100	310	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
5056	37.86	38.61	54	-16.14	31.25	5.25	37.25	100	43	Average
5056	58.37	59.12	74	-15.63	31.25	5.25	37.25	100	43	Peak
5240	94.95	95.54			31.39	5.34	37.32	100	43	Average
5240	103.76	104.35			31.39	5.34	37.32	100	43	Peak
5426	37.73	37.91	54	-16.27	31.53	5.42	37.13	100	43	Average
5426	59.59	59.77	74	-14.41	31.53	5.42	37.13	100	43	Peak

REMARKS:

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



A D T

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

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
5148	37.55	38.26	54	-16.45	31.32	5.29	37.32	100	312	Average
5148	60.68	61.39	74	-13.32	31.32	5.29	37.32	100	312	Peak
5260	89.26	89.78			31.41	5.34	37.27	100	312	Average
5260	98.48	99			31.41	5.34	37.27	100	312	Peak
5382	37.89	38.16	54	-16.11	31.51	5.4	37.18	100	312	Average
5382	59.89	60.16	74	-14.11	31.51	5.4	37.18	100	312	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
5054	37.45	38.21	54	-16.55	31.24	5.25	37.25	100	5	Average
5054	59.52	60.28	74	-14.48	31.24	5.25	37.25	100	5	Peak
5260	95.48	96			31.41	5.34	37.27	100	5	Average
5260	104.6	105.12			31.41	5.34	37.27	100	5	Peak
5382	37.74	38.01	54	-16.26	31.51	5.4	37.18	100	5	Average
5382	60.03	60.3	74	-13.97	31.51	5.4	37.18	100	5	Peak

REMARKS:

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



A D T

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

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
5098	37.6	38.33	54	-16.4	31.28	5.27	37.28	100	332	Average
5098	59.03	59.76	74	-14.97	31.28	5.27	37.28	100	332	Peak
5300	89.34	89.72			31.44	5.37	37.19	100	332	Average
5300	97.17	97.55			31.44	5.37	37.19	100	332	Peak
5350	39.25	39.56	54	-14.75	31.48	5.39	37.18	100	332	Average
5350	59.75	60.06	74	-14.25	31.48	5.39	37.18	100	332	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
5146	37.5	38.21	54	-16.5	31.32	5.29	37.32	100	3	Average
5146	59.69	60.4	74	-14.31	31.32	5.29	37.32	100	3	Peak
5300	95.51	95.89			31.44	5.37	37.19	100	3	Average
5300	104.98	105.36			31.44	5.37	37.19	100	3	Peak
5354	41.74	42.05	54	-12.26	31.48	5.39	37.18	100	3	Average
5354	59.67	59.98	74	-14.33	31.48	5.39	37.18	100	3	Peak

REMARKS:

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



A D T

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

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
5102	37.41	38.14	54	-16.59	31.28	5.27	37.28	100	302	Average
5102	59.32	60.05	74	-14.68	31.28	5.27	37.28	100	302	Peak
5320	89.73	90.09			31.45	5.38	37.19	100	302	Average
5320	99.12	99.48			31.45	5.38	37.19	100	302	Peak
5350	42.14	42.45	54	-11.86	31.48	5.39	37.18	100	302	Average
5350	60.24	60.55	74	-13.76	31.48	5.39	37.18	100	302	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5144	37.7	38.41	54	-16.3	31.32	5.29	37.32	100	2	Average
5144	59.45	60.16	74	-14.55	31.32	5.29	37.32	100	2	Peak
5320	95.09	95.45			31.45	5.38	37.19	100	2	Average
5320	104.23	104.59			31.45	5.38	37.19	100	2	Peak
5350	45.48	45.79	54	-8.52	31.48	5.39	37.18	100	2	Average
5350	62.84	63.15	74	-11.16	31.48	5.39	37.18	100	2	Peak

REMARKS:

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



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

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	103	334	Average
5460	57.01	57.09	74	-16.99	31.56	5.44	37.08	103	334	Peak
5470	57.44	57.5	68.3	-10.86	31.57	5.45	37.08	103	334	Peak
5500	89.89	89.86			31.6	5.46	37.03	103	334	Average
5500	96.16	96.13			31.6	5.46	37.03	103	334	Peak
5725	58.17	58.05	68.3	-10.13	31.96	5.59	37.43	103	334	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
5460	39.76	39.84	54	-14.24	31.56	5.44	37.08	111	82	Average
5460	61	61.08	74	-13	31.56	5.44	37.08	111	82	Peak
5470	61.67	61.73	68.3	-6.63	31.57	5.45	37.08	111	82	Peak
5500	95.59	95.56			31.6	5.46	37.03	111	82	Average
5500	105.34	105.31			31.6	5.46	37.03	111	82	Peak
5725	57.82	57.7	68.3	-10.48	31.96	5.59	37.43	111	82	Peak

REMARKS:

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



A D T

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

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	37.96	38.04	54	-16.04	31.56	5.44	37.08	100	334	Average
5460	59.73	59.81	74	-14.27	31.56	5.44	37.08	100	334	Peak
5470	59.38	59.44	68.3	-8.92	31.57	5.45	37.08	100	334	Peak
5580	89.89	89.84			31.71	5.5	37.16	100	334	Average
5580	99.75	99.7			31.71	5.5	37.16	100	334	Peak
5725	60.02	59.9	68.3	-8.28	31.96	5.59	37.43	100	334	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
5460	38.08	38.16	54	-15.92	31.56	5.44	37.08	109	82	Average
5460	57.02	57.1	74	-16.98	31.56	5.44	37.08	109	82	Peak
5470	57.52	57.58	68.3	-10.78	31.57	5.45	37.08	109	82	Peak
5580	96.64	96.59			31.71	5.5	37.16	109	82	Average
5580	105.96	105.91			31.71	5.5	37.16	109	82	Peak
5725	58.84	58.72	68.3	-9.46	31.96	5.59	37.43	109	82	Peak

REMARKS:

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



A D T

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

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	37.96	0.96	54	-16.04	31.56	5.44	0	106	334	Average
5460	57.36	20.36	74	-16.64	31.56	5.44	0	106	334	Peak
5470	58.62	21.6	68.3	-9.68	31.57	5.45	0	106	334	Peak
5700	90.61	53.14			31.9	5.57	0	106	334	Average
5700	98.98	61.51			31.9	5.57	0	106	334	Peak
5725	61.23	23.68	68.3	-7.07	31.96	5.59	0	106	334	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
5460	38.01	1.01	54	-15.99	31.56	5.44	0	107	65	Average
5460	58.84	21.84	74	-15.16	31.56	5.44	0	107	65	Peak
5470	57.84	20.82	68.3	-10.46	31.57	5.45	0	107	65	Peak
5700	96.21	58.74			31.9	5.57	0	107	65	Average
5700	105.89	68.42			31.9	5.57	0	107	65	Peak
5725	66.92	29.37	68.3	-1.38	31.96	5.59	0	107	65	Peak

REMARKS:

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



A D T

802.11n (40MHz)

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

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
5074	38.36	39.1	54	-15.64	31.27	5.26	37.27	100	310	Average
5074	59.86	60.6	74	-14.14	31.27	5.26	37.27	100	310	Peak
5190	83.09	83.76			31.35	5.32	37.34	100	310	Average
5190	92.21	92.88			31.35	5.32	37.34	100	310	Peak
5410	38.34	38.59	54	-15.66	31.52	5.41	37.18	100	310	Average
5410	60.75	61	74	-13.25	31.52	5.41	37.18	100	310	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	40.89	41.6	54	-13.11	31.32	5.29	37.32	100	47	Average
5150	59.28	59.99	74	-14.72	31.32	5.29	37.32	100	47	Peak
5190	88.88	89.55			31.35	5.32	37.34	100	47	Average
5190	97.58	98.25			31.35	5.32	37.34	100	47	Peak
5366	38.17	38.46	54	-15.83	31.49	5.4	37.18	100	47	Average
5366	60.23	60.52	74	-13.77	31.49	5.4	37.18	100	47	Peak

REMARKS:

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



A D T

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

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
5016	37.92	38.7	54	-16.08	31.21	5.24	37.23	100	310	Average
5016	59.69	60.47	74	-14.31	31.21	5.24	37.23	100	310	Peak
5230	82.77	83.37			31.39	5.33	37.32	100	310	Average
5230	92.31	92.91			31.39	5.33	37.32	100	310	Peak
5368	38.21	38.5	54	-15.79	31.49	5.4	37.18	100	310	Average
5368	60.06	60.35	74	-13.94	31.49	5.4	37.18	100	310	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
5028	39.27	40.04	54	-14.73	31.23	5.24	37.24	100	44	Average
5028	59.72	60.49	74	-14.28	31.23	5.24	37.24	100	44	Peak
5230	88.73	89.33			31.39	5.33	37.32	100	44	Average
5230	95.66	96.26			31.39	5.33	37.32	100	44	Peak
5416	38.04	38.27	54	-15.96	31.53	5.42	37.18	100	44	Average
5416	59.3	59.53	74	-14.7	31.53	5.42	37.18	100	44	Peak

REMARKS:

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



A D T

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

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	37.88	38.64	54	-16.12	31.24	5.25	37.25	100	312	Average
5046	59.59	60.35	74	-14.41	31.24	5.25	37.25	100	312	Peak
5270	82.98	83.49			31.41	5.35	37.27	100	312	Average
5270	91.86	92.37			31.41	5.35	37.27	100	312	Peak
5362	38.17	38.47	54	-15.83	31.49	5.39	37.18	100	312	Average
5362	60.23	60.53	74	-13.77	31.49	5.39	37.18	100	312	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	37.76	38.53	54	-16.24	31.23	5.24	37.24	100	2	Average
5022	59.63	60.4	74	-14.37	31.23	5.24	37.24	100	2	Peak
5270	88.72	89.23			31.41	5.35	37.27	100	2	Average
5270	97.43	97.94			31.41	5.35	37.27	100	2	Peak
5424	38.62	38.85	54	-15.38	31.53	5.42	37.18	100	2	Average
5424	59.31	59.54	74	-14.69	31.53	5.42	37.18	100	2	Peak

REMARKS:

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



A D T

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

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
5126	37.96	38.67	54	-16.04	31.31	5.28	37.3	100	312	Average
5126	59.45	60.16	74	-14.55	31.31	5.28	37.3	100	312	Peak
5310	82.92	83.29			31.45	5.37	37.19	100	312	Average
5310	91.93	92.3			31.45	5.37	37.19	100	312	Peak
5356	38.94	39.25	54	-15.06	31.48	5.39	37.18	100	312	Average
5356	60.51	60.82	74	-13.49	31.48	5.39	37.18	100	312	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
5044	37.81	38.57	54	-16.19	31.24	5.25	37.25	100	5	Average
5044	59.31	60.07	74	-14.69	31.24	5.25	37.25	100	5	Peak
5310	88.68	89.05			31.45	5.37	37.19	100	5	Average
5310	97.54	97.91			31.45	5.37	37.19	100	5	Peak
5448	40.57	40.7	54	-13.43	31.56	5.44	37.13	100	5	Average
5448	60.42	60.55	74	-13.58	31.56	5.44	37.13	100	5	Peak

REMARKS:

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



A D T

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

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	38.29	38.54	54	-15.71	31.52	5.41	37.18	100	333	Average
5406	59.34	59.59	74	-14.66	31.52	5.41	37.18	100	333	Peak
5470	58.09	58.15	68.3	-10.21	31.57	5.45	37.08	100	333	Peak
5510	84.45	84.45			31.6	5.46	37.06	100	333	Average
5510	93.57	93.57			31.6	5.46	37.06	100	333	Peak
5725	58.63	58.51	68.3	-9.67	31.96	5.59	37.43	100	333	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
5376	38.63	38.92	54	-15.37	31.49	5.4	37.18	100	65	Average
5376	59.66	59.95	74	-14.34	31.49	5.4	37.18	100	65	Peak
5470	61.16	61.22	68.3	-7.14	31.57	5.45	37.08	100	65	Peak
5510	90.06	90.06			31.6	5.46	37.06	100	65	Average
5510	99.41	99.41			31.6	5.46	37.06	100	65	Peak
5725	59.26	59.14	68.3	-9.04	31.96	5.59	37.43	100	65	Peak

REMARKS:

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



A D T

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

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	37.87	38.18	54	-16.13	31.48	5.39	37.18	100	337	Average
5360	60.35	60.66	74	-13.65	31.48	5.39	37.18	100	337	Peak
5470	58.31	58.37	68.3	-9.99	31.57	5.45	37.08	100	337	Peak
5550	84.19	84.11			31.68	5.49	37.09	100	337	Average
5550	93.65	93.57			31.68	5.49	37.09	100	337	Peak
5725	59.63	59.51	68.3	-8.67	31.96	5.59	37.43	100	337	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
5442	38.75	38.89	54	-15.25	31.55	5.44	37.13	100	63	Average
5442	59.94	60.08	74	-14.06	31.55	5.44	37.13	100	63	Peak
5470	57.46	57.52	68.3	-10.84	31.57	5.45	37.08	100	63	Peak
5550	90.5	90.42			31.68	5.49	37.09	100	63	Average
5550	100.36	100.28			31.68	5.49	37.09	100	63	Peak
5725	58.93	58.81	68.3	-9.37	31.96	5.59	37.43	100	63	Peak

REMARKS:

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



A D T

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

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	38.2	38.43	54	-15.8	31.53	5.42	37.18	100	330	Average
5420	60.01	60.24	74	-13.99	31.53	5.42	37.18	100	330	Peak
5470	59.09	59.15	68.3	-9.21	31.57	5.45	37.08	100	330	Peak
5670	84.42	84.32			31.88	5.56	37.34	100	330	Average
5670	93.62	93.52			31.88	5.56	37.34	100	330	Peak
5725	59.68	59.56	68.3	-8.62	31.96	5.59	37.43	100	330	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
5436	38.38	38.54	54	-15.62	31.55	5.42	37.13	100	46	Average
5436	59.57	59.73	74	-14.43	31.55	5.42	37.13	100	46	Peak
5470	58.73	58.79	68.3	-9.57	31.57	5.45	37.08	100	46	Peak
5670	90.78	90.68			31.88	5.56	37.34	100	46	Average
5670	99.9	99.8			31.88	5.56	37.34	100	46	Peak
5725	60.43	60.31	68.3	-7.87	31.96	5.59	37.43	100	46	Peak

REMARKS:

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



A D T

802.11ac (80MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 42	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	David Huang

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
5094	40.15	40.88	54	-13.85	31.28	5.27	37.28	100	310	Average
5094	59.39	60.12	74	-14.61	31.28	5.27	37.28	100	310	Peak
5210	81.13	81.8			31.37	5.32	37.36	100	310	Average
5210	90.68	91.35			31.37	5.32	37.36	100	310	Peak
5456	38.97	39.05	54	-15.03	31.56	5.44	37.08	100	310	Average
5456	59.78	59.86	74	-14.22	31.56	5.44	37.08	100	310	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	44.9	45.61	54	-9.1	31.32	5.29	37.32	100	44	Average
5150	63.12	63.83	74	-10.88	31.32	5.29	37.32	100	44	Peak
5210	87.15	87.82			31.37	5.32	37.36	100	44	Average
5210	96.46	97.13			31.37	5.32	37.36	100	44	Peak
5438	39.18	39.32	54	-14.82	31.55	5.44	37.13	100	44	Average
5438	59.26	59.4	74	-14.74	31.55	5.44	37.13	100	44	Peak

REMARKS:

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 58	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	David Huang

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
5112	38.74	39.46	54	-15.26	31.29	5.27	37.28	100	312	Average
5112	59.76	60.48	74	-14.24	31.29	5.27	37.28	100	312	Peak
5290	81.14	81.57			31.43	5.37	37.23	100	312	Average
5290	90.29	90.72			31.43	5.37	37.23	100	312	Peak
5378	40.54	40.81	54	-13.46	31.51	5.4	37.18	100	312	Average
5378	59.72	59.99	74	-14.28	31.51	5.4	37.18	100	312	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
5078	38.51	39.25	54	-15.49	31.27	5.26	37.27	100	4	Average
5078	59.11	59.85	74	-14.89	31.27	5.26	37.27	100	4	Peak
5290	87	87.43			31.43	5.37	37.23	100	4	Average
5290	96.17	96.6			31.43	5.37	37.23	100	4	Peak
5358	42.3	42.61	54	-11.7	31.48	5.39	37.18	100	4	Average
5358	60.84	61.15	74	-13.16	31.48	5.39	37.18	100	4	Peak

REMARKS:

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



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 106	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	David Huang

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
5376	39.35	39.64	54	-14.65	31.49	5.4	37.18	100	333	Average
5376	59.53	59.82	74	-14.47	31.49	5.4	37.18	100	333	Peak
5470	58.89	58.95	68.3	-9.41	31.57	5.45	37.08	100	333	Peak
5530	81.93	81.92			31.63	5.47	37.09	100	333	Average
5530	91.01	91			31.63	5.47	37.09	100	333	Peak
5725	58.65	58.53	68.3	-9.65	31.96	5.59	37.43	100	333	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
5456	39.74	39.82	54	-14.26	31.56	5.44	37.08	100	64	Average
5456	60.32	60.4	74	-13.68	31.56	5.44	37.08	100	64	Peak
5470	59.06	59.12	68.3	-9.24	31.57	5.45	37.08	100	64	Peak
5530	88.2	88.19			31.63	5.47	37.09	100	64	Average
5530	97.55	97.54			31.63	5.47	37.09	100	64	Peak
5725	58.98	58.86	68.3	-9.32	31.96	5.59	37.43	100	64	Peak

REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5530MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band



A D T

TEST MODE: B

802.11n (20MHz)

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

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	37.81	37.89	54	-16.19	31.56	5.44	37.08	110	162	Average
5460	58.87	58.95	74	-15.13	31.56	5.44	37.08	110	162	Peak
5470	58.86	58.92	68.3	-9.44	31.57	5.45	37.08	110	162	Peak
5700	90.57	90.5			31.9	5.57	37.4	110	162	Average
5700	100.31	100.24			31.9	5.57	37.4	110	162	Peak
5725	59.53	59.41	68.3	-8.77	31.96	5.59	37.43	110	162	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
5460	37.91	37.99	54	-16.09	31.56	5.44	37.08	100	311	Average
5460	57.61	57.69	74	-16.39	31.56	5.44	37.08	100	311	Peak
5470	56.92	56.98	68.3	-11.38	31.57	5.45	37.08	100	311	Peak
5700	95.47	95.4			31.9	5.57	37.4	100	311	Average
5700	104.87	104.8			31.9	5.57	37.4	100	311	Peak
5725	66.29	66.17	68.3	-2.01	31.96	5.59	37.43	100	311	Peak

REMARKS:

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



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BELOW 1GHz WORST-CASE DATA:

TEST MODE: A

802.11n (20MHz)

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

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
56.19	21.61	39.8	40	-18.39	12.35	0.8	31.34	102	152	Peak
112.35	24.19	44.64	43.5	-19.31	10.27	1.14	31.86	100	149	Peak
194.97	30.37	50.82	43.5	-13.13	9.7	1.57	31.72	100	230	Peak
326.6	22.48	38.57	46	-23.52	13.59	2.15	31.83	100	177	Peak
570.9	22.65	32.77	46	-23.35	18.95	3.01	32.08	100	265	Peak
716.5	27.01	34.16	46	-18.99	21.05	3.48	31.68	100	128	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30.81	30.21	48.62	40	-9.79	12.14	0.57	31.12	100	56	Peak
63.48	27.23	46.44	40	-12.77	11.47	0.86	31.54	100	193	Peak
173.91	22.89	41.82	43.5	-20.61	11.38	1.46	31.77	100	111	Peak
374.2	18.22	33.1	46	-27.78	14.73	2.32	31.93	100	239	Peak
559.7	23	33.41	46	-23	18.68	2.97	32.06	100	121	Peak
676.6	25.75	33.7	46	-20.25	20.54	3.34	31.83	100	241	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
 Margin value = Emission level – Limit value



A D T

802.11n (20MHz)

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

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
62.94	21.23	40.29	40	-18.77	11.59	0.85	31.5	100	156	Peak
145.56	23.25	41.01	43.5	-20.25	12.54	1.32	31.62	100	238	Peak
188.49	29.88	49.85	43.5	-13.62	10.19	1.54	31.7	100	117	Peak
318.9	21.16	37.54	46	-24.84	13.4	2.12	31.9	100	132	Peak
505.8	21.4	32.74	46	-24.6	17.46	2.8	31.6	100	24	Peak
885.2	26.9	31.65	46	-19.1	23.32	3.92	31.99	100	225	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
39.18	26.88	43.85	40	-13.12	13.39	0.64	31	100	108	Peak
107.76	19.11	40.05	43.5	-24.39	9.81	1.11	31.86	100	291	Peak
189.03	22.62	42.65	43.5	-20.88	10.12	1.54	31.69	100	77	Peak
392.4	18.91	33.41	46	-27.09	15.17	2.4	32.07	100	152	Peak
612.9	24.22	33.44	46	-21.78	19.76	3.13	32.11	100	84	Peak
757.1	26.6	32.79	46	-19.4	21.63	3.59	31.41	100	112	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value



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802.11n (20MHz)

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

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
63.48	20.62	39.83	40	-19.38	11.47	0.86	31.54	100	125	Peak
112.35	23.91	44.36	43.5	-19.59	10.27	1.14	31.86	100	196	Peak
186.87	29.52	49.45	43.5	-13.98	10.26	1.53	31.72	100	174	Peak
342	20.02	35.68	46	-25.98	13.96	2.2	31.82	100	206	Peak
505.1	21.5	32.86	46	-24.5	17.44	2.8	31.6	100	172	Peak
749.4	26.41	32.62	46	-19.59	21.52	3.57	31.3	100	110	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
31.89	28.53	46.76	40	-11.47	12.3	0.58	31.11	100	170	Peak
68.61	24.42	44.41	40	-15.58	10.89	0.89	31.77	100	152	Peak
173.64	22.31	41.24	43.5	-21.19	11.38	1.46	31.77	100	113	Peak
407.1	18.7	32.8	46	-27.3	15.48	2.45	32.03	100	134	Peak
561.1	22.75	33.11	46	-23.25	18.72	2.98	32.06	100	226	Peak
848.1	26.14	31.35	46	-19.86	22.84	3.81	31.86	100	169	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value



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TEST MODE: B

802.11n (20MHz)

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

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
69.96	17.98	38.13	40	-22.02	10.77	0.90	31.82	117	52	Peak
184.98	27.67	47.52	43.5	-15.83	10.39	1.52	31.76	103	252	Peak
286.77	19.18	36.34	46	-26.82	12.57	1.99	31.72	128	180	Peak
426.7	21.54	35.16	46	-24.46	15.87	2.53	32.02	100	154	Peak
660.5	24.88	33.2	46	-21.12	20.34	3.28	31.94	100	204	Peak
897.1	28.54	33.11	46	-17.46	23.47	3.96	32.0	100	124	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
30.54	30.34	48.75	40	-9.66	12.14	0.57	31.12	103	269	Peak
69.69	24.84	44.99	40	-15.16	10.77	0.9	31.82	112	102	Peak
188.22	22.46	42.43	43.5	-21.04	10.19	1.54	31.7	119	227	Peak
461	21.41	34.2	46	-24.59	16.54	2.65	31.98	100	142	Peak
666.8	24.55	32.7	46	-21.45	20.41	3.3	31.86	100	230	Peak
959.4	28.46	32.45	46	-17.54	23.84	4.09	31.92	100	184	Peak

REMARKS: Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
 Margin value = Emission level – Limit value

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.2.2 TEST INSTRUMENTS

Tested Date: Dec. 21, 2013

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Nov. 17, 2013	Nov. 16, 2014
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100104	Dec. 06, 2013	Dec. 05, 2014
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 17, 2013	Jul. 16, 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.



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4.2.3 TEST PROCEDURES

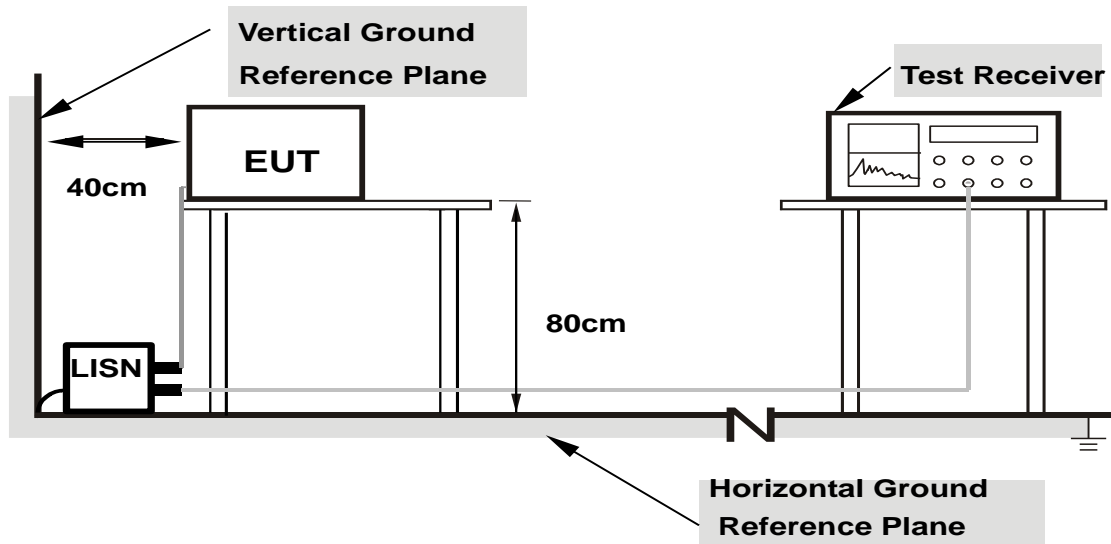
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

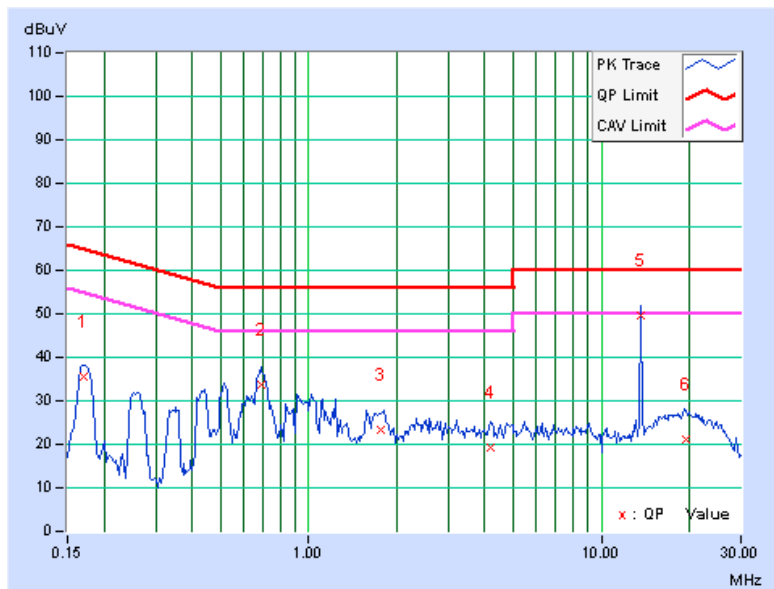
CONDUCTED WORST-CASE DATA :

PHASE	Line 1	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.16953	0.17	35.23	25.93	35.40	26.10	64.98
2	0.68516	0.24	33.42	25.31	33.66	25.55	56.00	46.00	-22.34	-20.45
3	1.75391	0.28	23.12	14.53	23.40	14.81	56.00	46.00	-32.60	-31.19
4	4.17578	0.37	18.88	11.70	19.25	12.07	56.00	46.00	-36.75	-33.93
5	13.56250	0.50	49.08	43.51	49.58	44.01	60.00	50.00	-10.42	-5.99
6	19.41406	0.63	20.44	13.90	21.07	14.53	60.00	50.00	-38.93	-35.47

REMARKS:

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

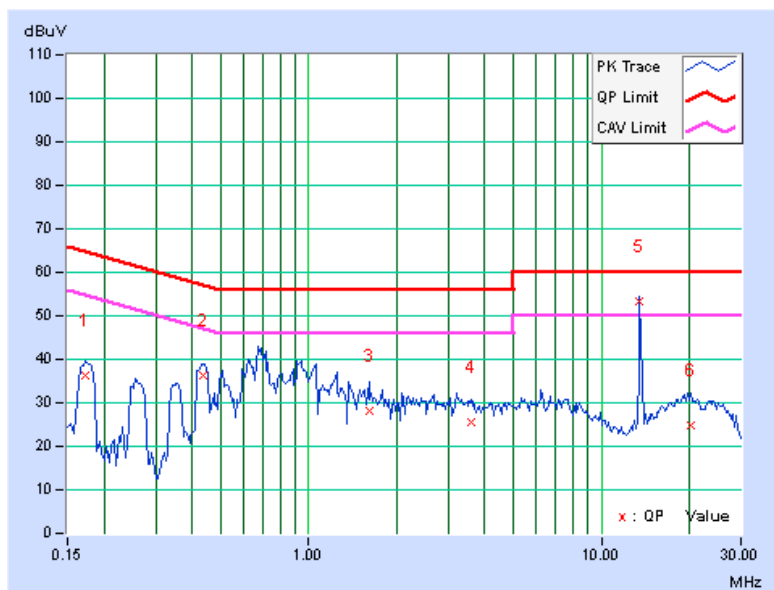


PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.17344	0.18	36.08	28.12	36.26	28.30	64.79
2	0.43516	0.25	35.94	24.94	36.19	25.19	57.15	47.15	-20.96	-21.96
3	1.60547	0.26	27.83	15.56	28.09	15.82	56.00	46.00	-27.91	-30.18
4	3.58594	0.37	25.05	13.73	25.42	14.10	56.00	46.00	-30.58	-31.90
5	13.55859	0.57	52.69	48.34	53.26	48.91	60.00	50.00	-6.74	-1.09
6	20.24219	0.73	24.17	17.27	24.90	18.00	60.00	50.00	-35.10	-32.00

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

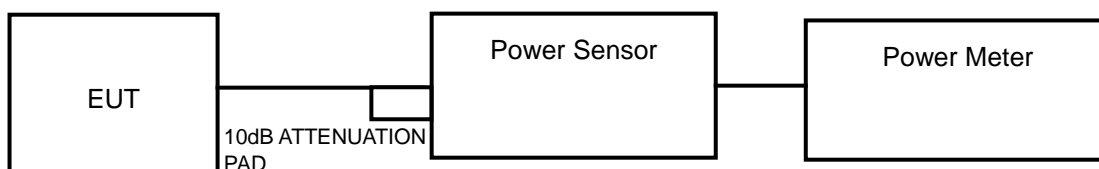
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

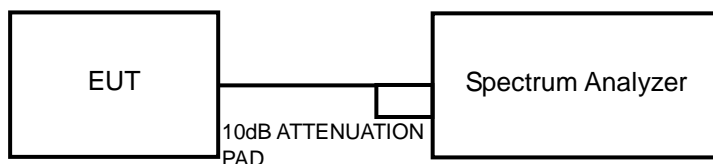
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

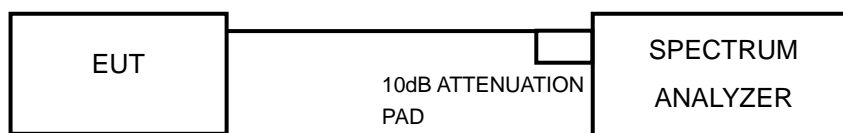
FOR POWER OUTPUT MEASUREMENT



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

<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	35.975	15.56	17	PASS
44	5220	36.308	15.60	17	PASS
48	5240	36.058	15.57	17	PASS
52	5260	36.813	15.66	24	PASS
60	5300	36.141	15.58	24	PASS
64	5320	36.224	15.59	24	PASS
100	5500	38.107	15.81	24	PASS
116	5580	35.481	15.50	24	PASS
140	5700	36.559	15.63	24	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	44.668	16.50	17	PASS
44	5220	44.978	16.53	17	PASS
48	5240	40.926	16.12	17	PASS
52	5260	51.286	17.10	24	PASS
60	5300	52.240	17.18	24	PASS
64	5320	50.699	17.05	24	PASS
100	5500	48.306	16.84	24	PASS
116	5580	47.863	16.80	24	PASS
140	5700	45.814	16.61	24	PASS



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802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	18.578	12.69	17	PASS
46	5230	18.880	12.76	17	PASS
54	5270	20.749	13.17	24	PASS
62	5310	21.281	13.28	24	PASS
102	5510	20.606	13.14	24	PASS
110	5550	18.621	12.70	24	PASS
134	5670	18.450	12.66	24	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	19.231	12.84	17	PASS
58	5290	22.080	13.44	24	PASS
106	5530	25.446	14.06	24	PASS

**26dB BANDWIDTH: 802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	23.20	PASS
44	5220	22.89	PASS
48	5240	22.64	PASS
52	5260	22.73	PASS
60	5300	22.72	PASS
64	5320	22.67	PASS
100	5500	22.78	PASS
116	5580	22.49	PASS
140	5700	22.58	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	25.05	PASS
44	5220	25.20	PASS
48	5240	23.01	PASS
52	5260	26.15	PASS
60	5300	28.55	PASS
64	5320	25.54	PASS
100	5500	25.02	PASS
116	5580	26.05	PASS
140	5700	24.33	PASS

802.11n (40MHz)

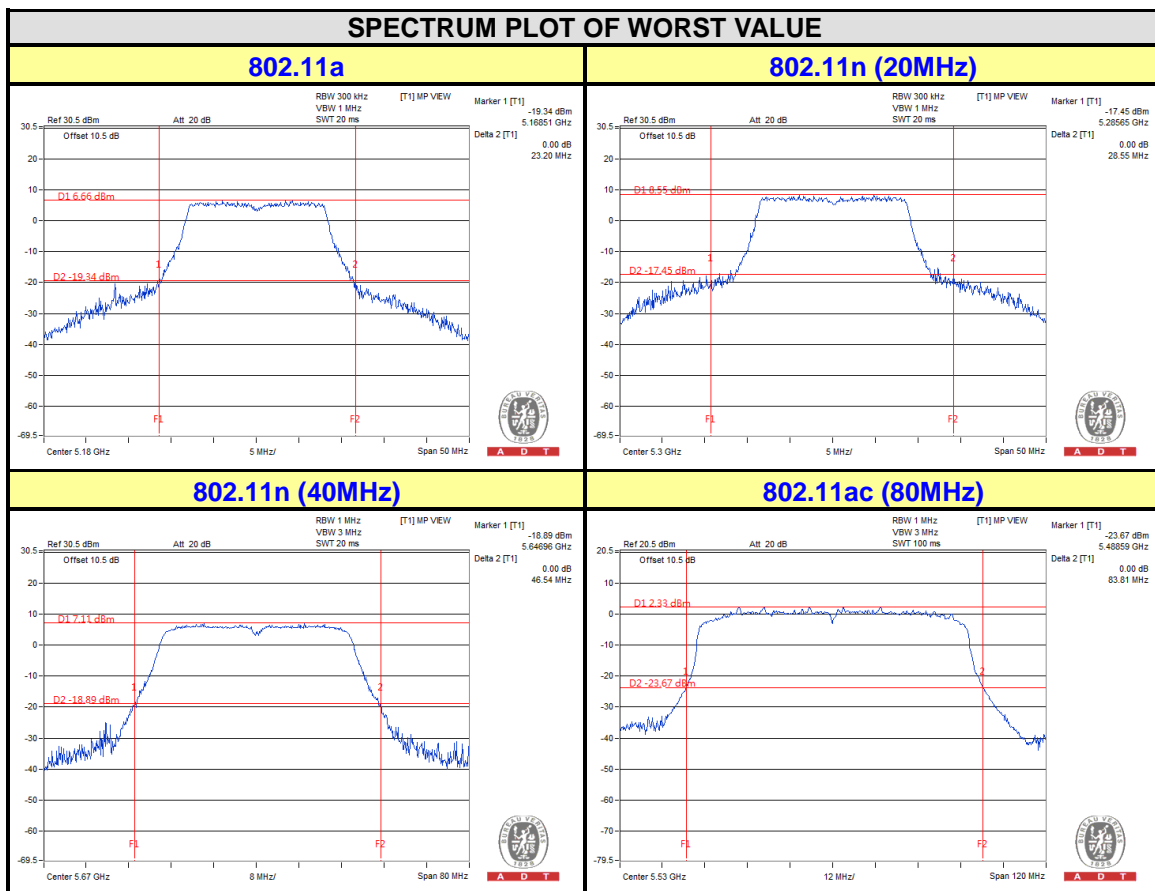
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	46.28	PASS
46	5230	45.84	PASS
54	5270	45.67	PASS
62	5310	46.33	PASS
102	5510	46.25	PASS
110	5550	45.78	PASS
134	5670	46.54	PASS



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802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
42	5210	83.59	PASS
58	5290	83.71	PASS
106	5530	83.81	PASS

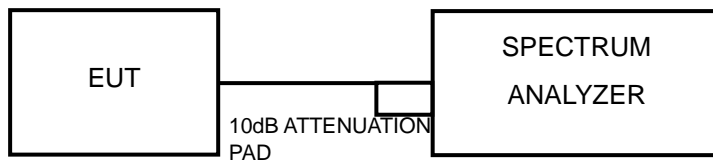


4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

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 \geq 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 \geq 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	3.03	4	PASS
44	5220	3.07	4	PASS
48	5240	3.24	4	PASS
52	5260	3.41	11	PASS
60	5300	3.51	11	PASS
64	5320	3.60	11	PASS
100	5500	4.07	11	PASS
116	5580	3.81	11	PASS
140	5700	3.19	11	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.50	4	PASS
44	5220	3.61	4	PASS
48	5240	3.41	4	PASS
52	5260	4.65	11	PASS
60	5300	4.74	11	PASS
64	5320	4.94	11	PASS
100	5500	4.97	11	PASS
116	5580	4.79	11	PASS
140	5700	4.26	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	-2.33	0.31	-2.02	4	PASS
46	5230	-2.49	0.31	-2.18	4	PASS
54	5270	-2.11	0.31	-1.80	11	PASS
62	5310	-1.90	0.31	-1.59	11	PASS
102	5510	-1.87	0.31	-1.56	11	PASS
110	5550	-1.92	0.31	-1.61	11	PASS
134	5670	-2.42	0.31	-2.11	11	PASS

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

802.11ac (80MHz)

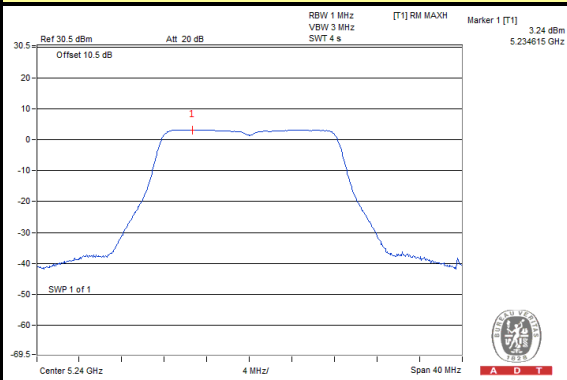
CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
42	5210	-6.48	0.94	-5.54	4	PASS
58	5290	-5.79	0.94	-4.85	11	PASS
106	5530	-6.11	0.94	-5.17	11	PASS



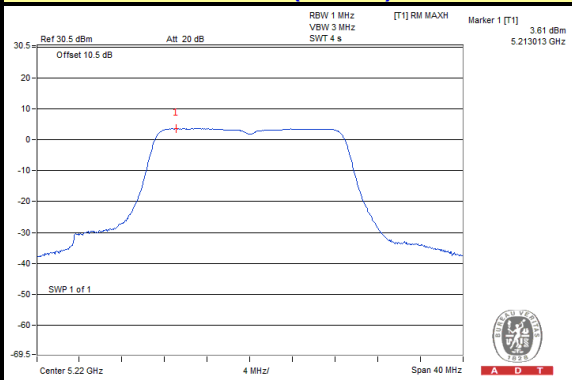
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SPECTRUM PLOT OF WORST VALUE

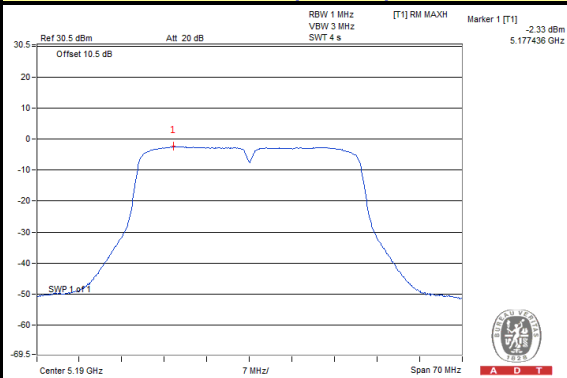
802.11a



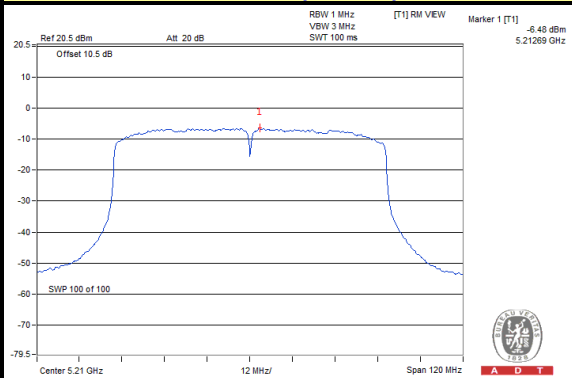
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)

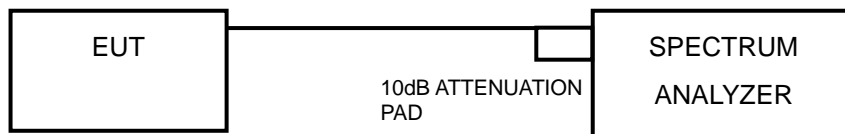


4.5 PEAK POWER EXCURSION MEASUREMENT

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

- Set the RBW = 1 kHz, VBW \geq 3 MHz, Detector = peak.
- Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.
- Use the peak search function to find the peak of the spectrum.
- Measure the PPSD.
- 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

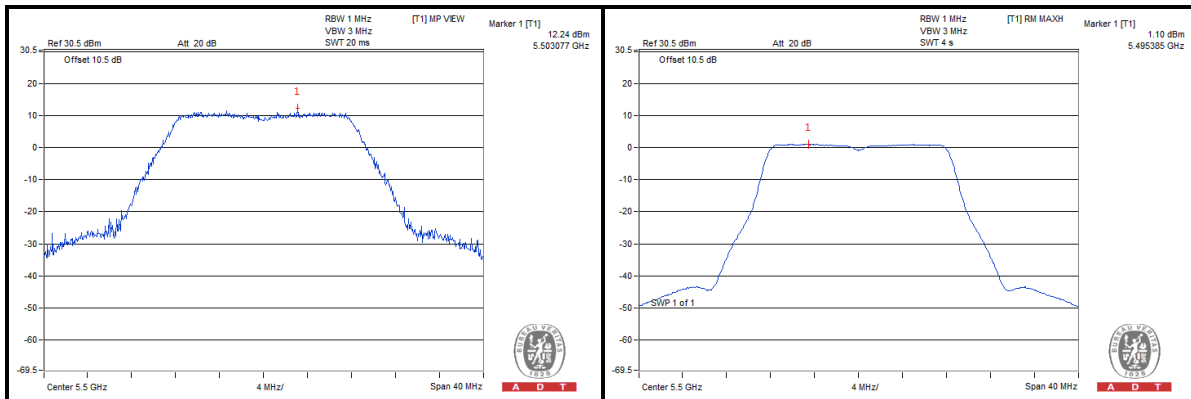
Same as Item 4.3.6

4.5.7 TEST RESULTS

MODULATION MODE	MODULATION TYPE	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS/ FAIL
802.11a	BPSK	5500	14.31	4.07	10.24	13	PASS
	QPSK		13.62	4.06	9.56	13	PASS
	16QAM		14.65	4.01	10.64	13	PASS
	64QAM		12.24	1.10	11.14	13	PASS
802.11n (20MHz)	BPSK	5300	14.32	4.74	9.58	13	PASS
	QPSK		14.54	5.02	9.52	13	PASS
	16QAM		15.02	4.90	10.12	13	PASS
	64QAM		12.72	2.62	10.10	13	PASS

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
802.11n (40MHz)	BPSK	5310	7.52	-1.90	-1.59	9.11	13	PASS
	QPSK		8.60	-1.78	-1.20	9.80	13	PASS
	16QAM		8.23	-1.90	-0.83	9.06	13	PASS
	64QAM		8.58	-1.74	0.22	8.36	13	PASS
802.11ac (80MHz)	BPSK	5290	2.78	-5.79	-4.85	7.63	13	PASS
	QPSK		2.74	-5.68	-4.16	6.90	13	PASS
	16QAM		2.99	-5.46	-3.08	6.07	13	PASS
	64QAM		2.80	-5.24	-1.96	4.76	13	PASS
	256QAM		3.27	-5.38	-1.50	4.77	13	PASS

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

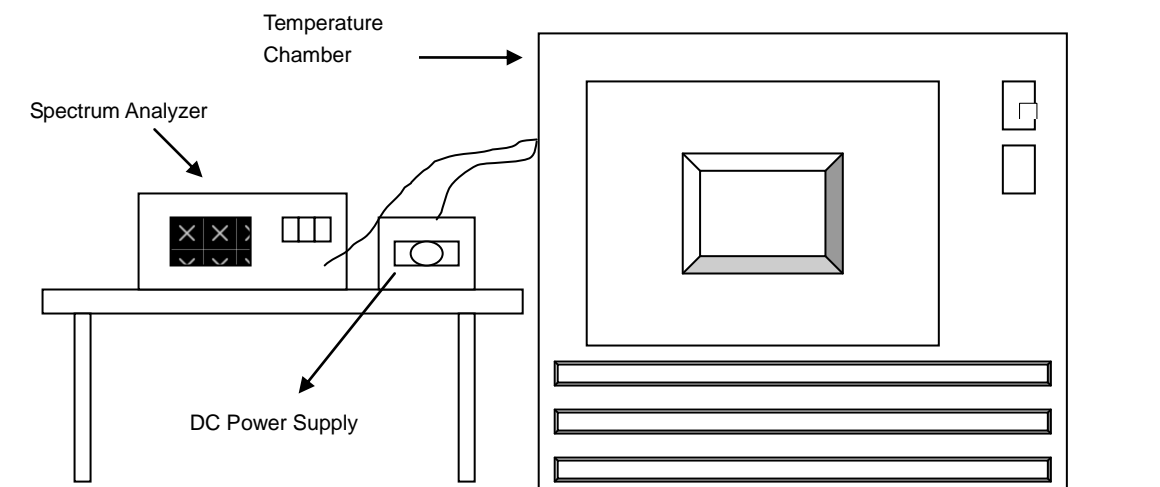


4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.6.4 TEST PROCEDURE

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

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

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



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4.6.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	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)
50	3.8	5320.015319	2.880	5320.015496	2.913	5320.015098	2.838	5320.015276	2.871
40	3.8	5320.015931	2.995	5320.016043	3.016	5320.015664	2.944	5320.015946	2.997
30	3.8	5320.016945	3.185	5320.017086	3.212	5320.017454	3.281	5320.017637	3.315
20	3.8	5320.018066	3.396	5320.018332	3.446	5320.017957	3.375	5320.018066	3.396
10	3.8	5320.019380	3.643	5320.019377	3.642	5320.019946	3.749	5320.019302	3.628
0	3.8	5320.018115	3.405	5320.017852	3.356	5320.018163	3.414	5320.018399	3.458
-10	3.8	5320.016833	3.164	5320.016327	3.069	5320.016537	3.108	5320.016878	3.173
-20	3.8	5320.016002	3.008	5320.015675	2.946	5320.015918	2.992	5320.016148	3.035
-30	3.8	5320.015032	2.826	5320.014839	2.789	5320.014991	2.818	5320.014949	2.810

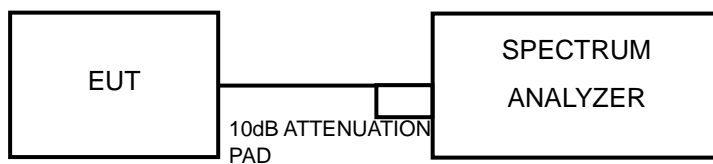
FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	3.6	5320.017887	3.362	5320.017671	3.322	5320.017580	3.305	5320.017579	3.304
	3.8	5320.018066	3.396	5320.018332	3.446	5320.017957	3.375	5320.018066	3.396
	4.35	5320.018950	3.562	5320.019639	3.692	5320.019799	3.722	5320.019296	3.627

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

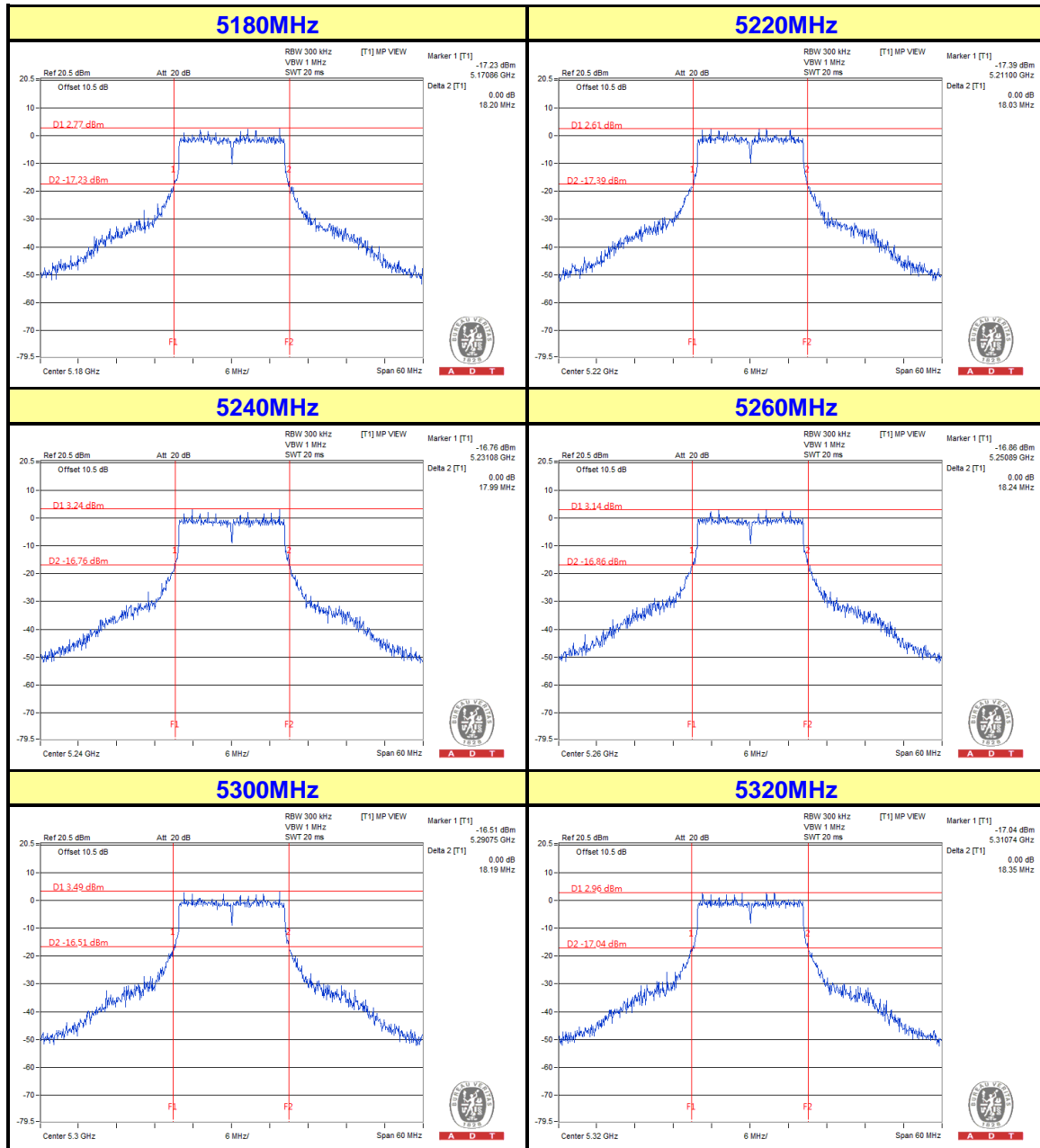
- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak
- 4) Trace mode = max hold.
- 5) Measurement the maximum width of the emission that is 20dB down from the peak of the emission. Compare this with RBW setting of the analyzer. Readjust RBW and repeat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



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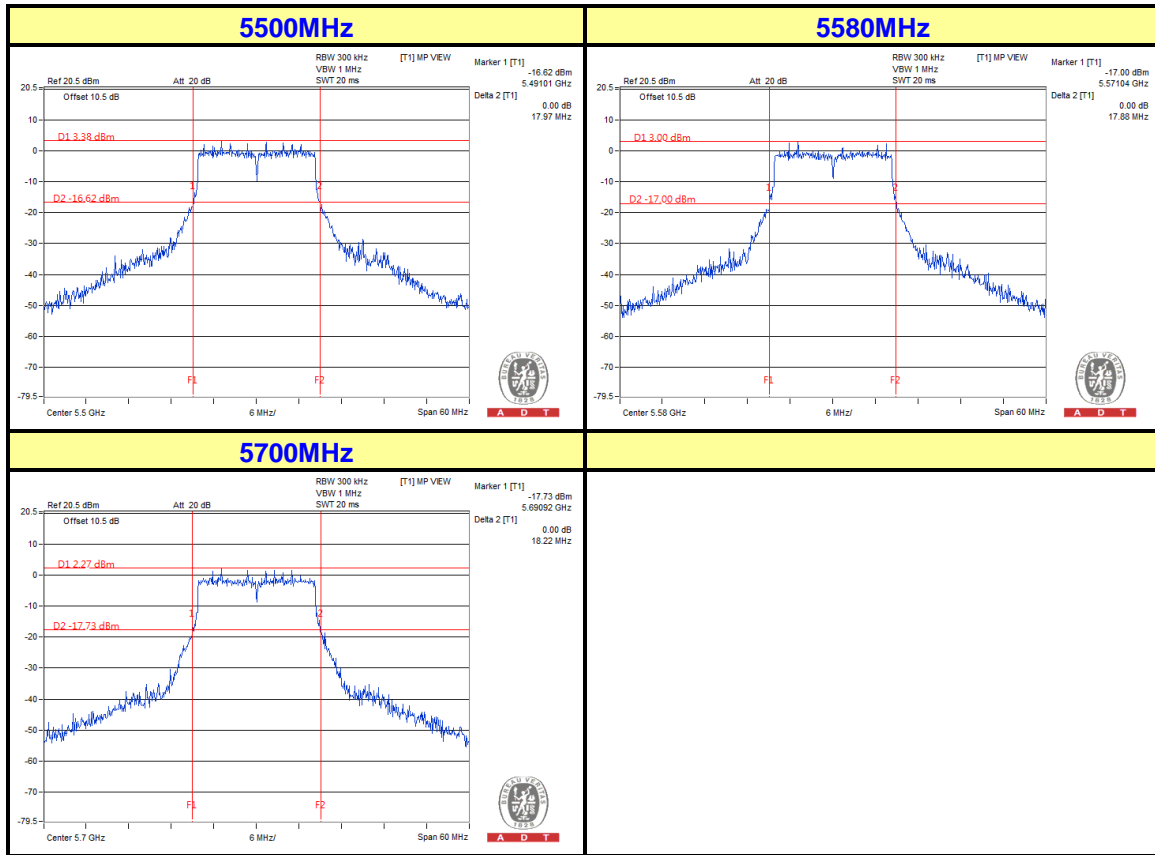
4.7.5 TEST RESULTS

802.11a





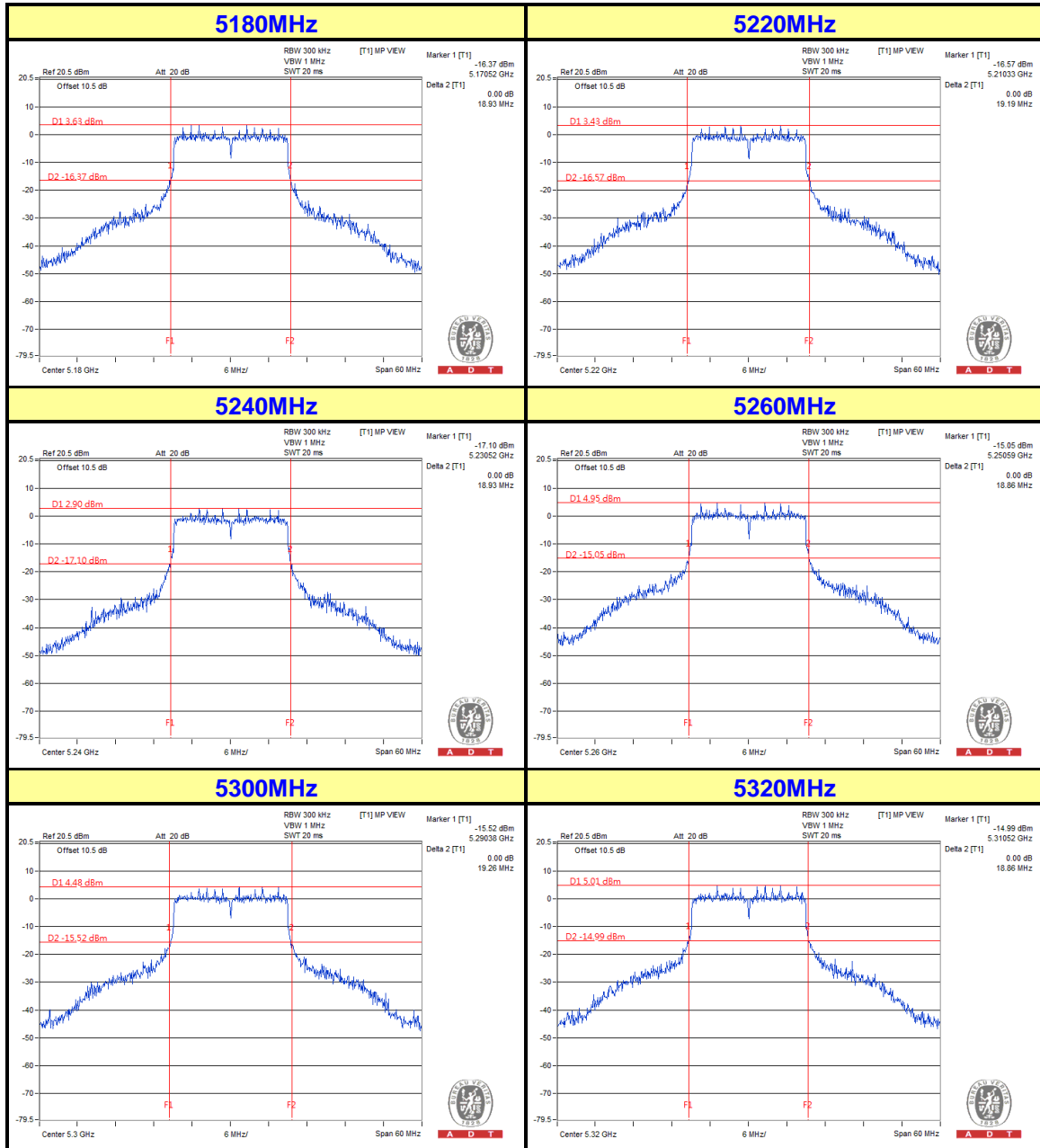
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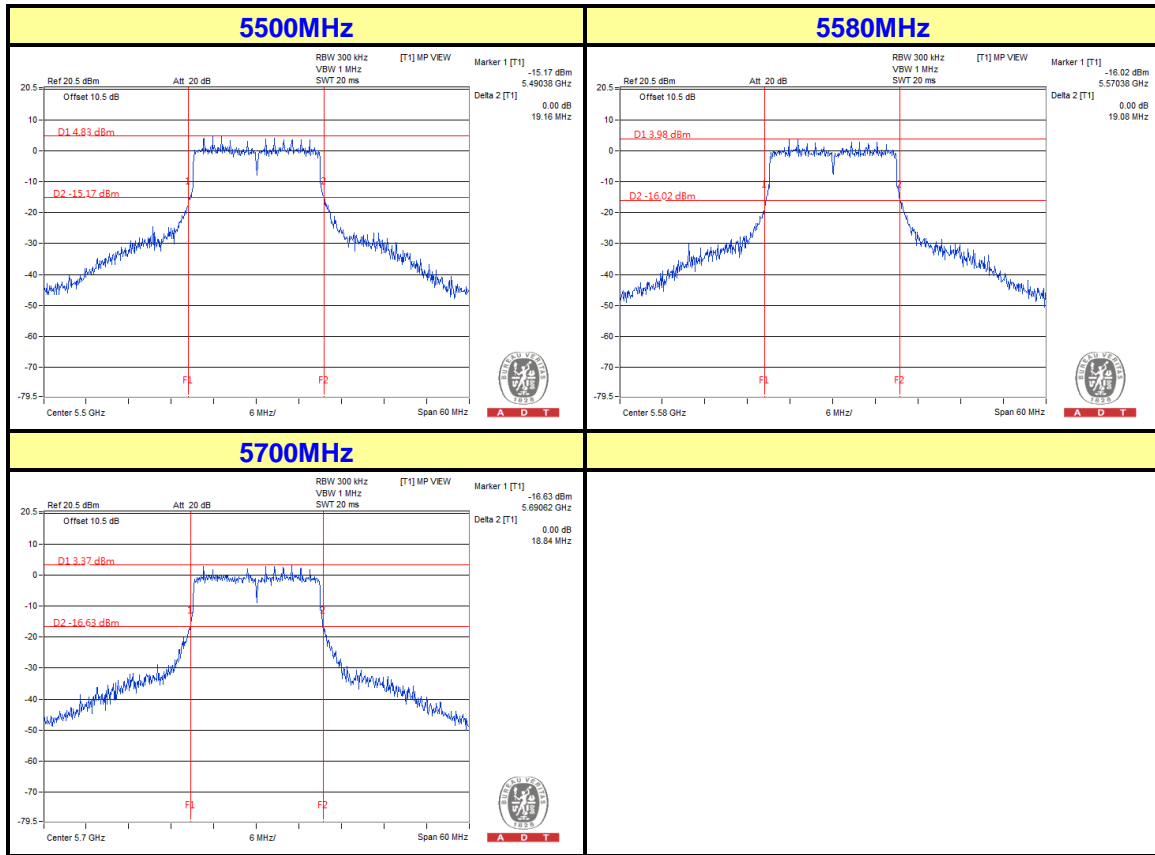
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802.11n (20MHz)





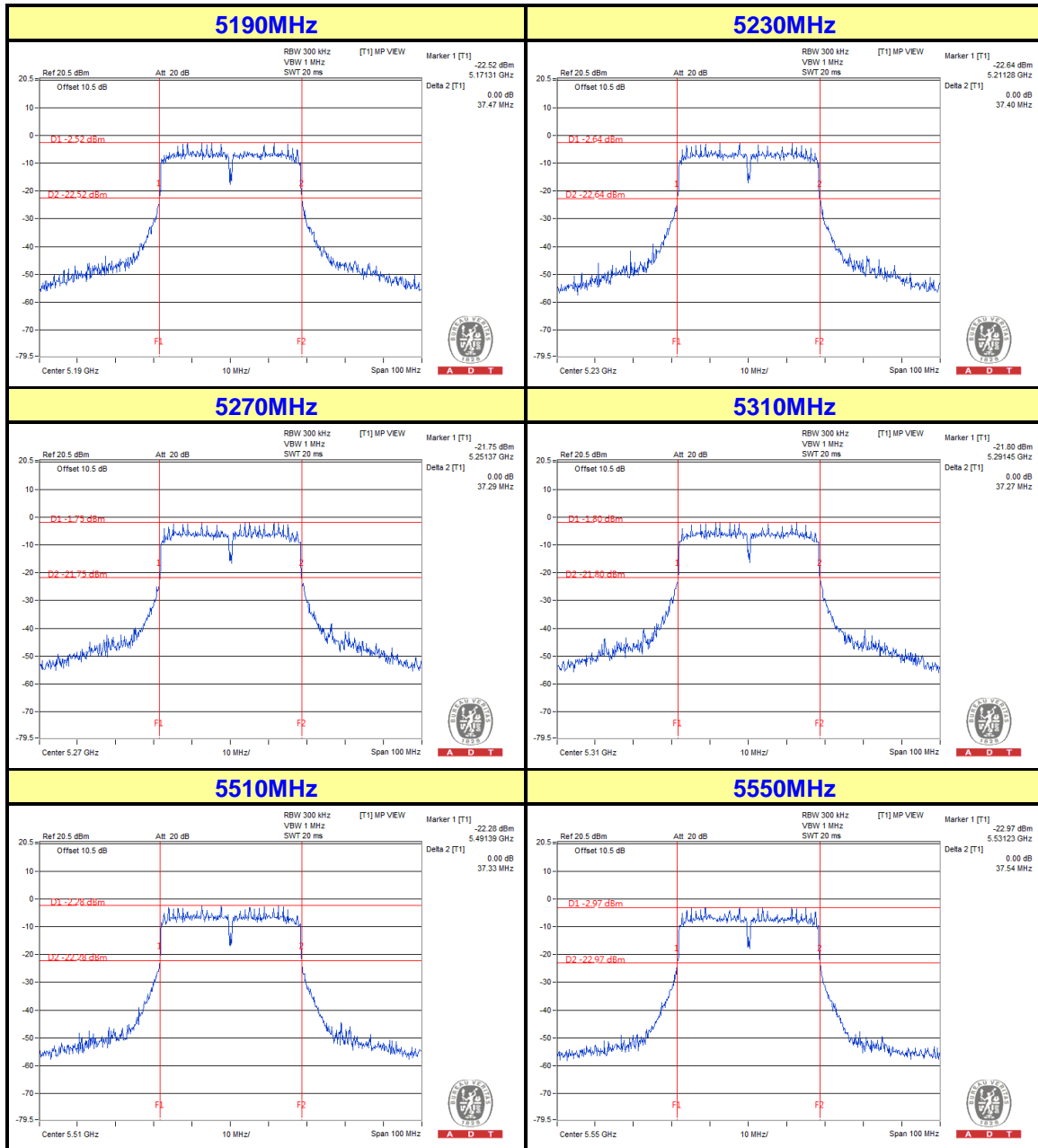
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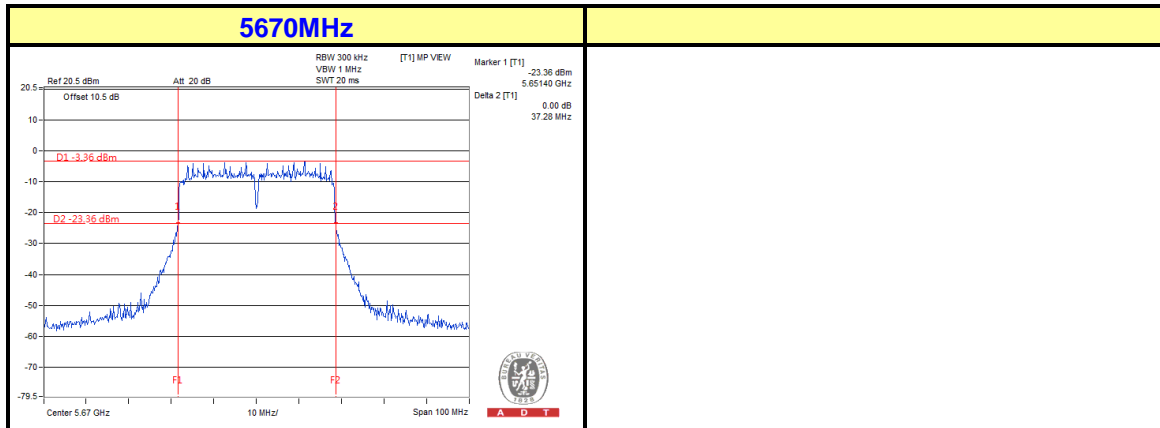
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802.11n (40MHz)





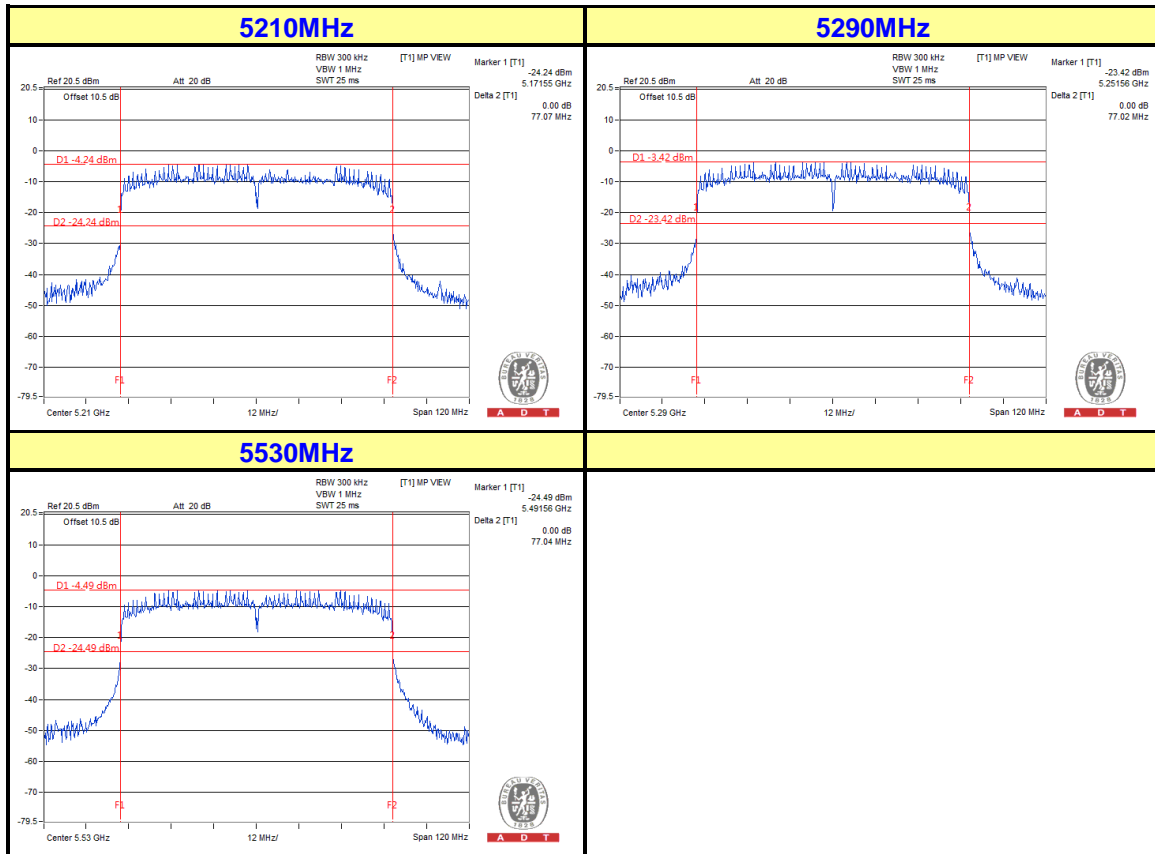
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802.11ac (80MHz)





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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:

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Web Site: www.bureauveritas-adt.com

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



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

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

---END---