FCC Test Report

Report No.:	RF150720C24-4
FCC ID:	HFS-QTAIR7
Test Model:	QTAIR7
Received Date:	Jul. 20, 2015
Test Date:	Aug. 04, 2015 ~ Aug. 25, 2015
Issued Date:	Sep. 01, 2015
Applicant:	Quanta Computer Inc.
Address:	No. 188, Wen Hwa 2nd RD., Kuei Shan Hsiang, Tao Yuan Shien, Taiwan
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C)
Test Location:	No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
RF150720C24-4	Original Release	Sep. 01, 2015

1 Certificate of Conformity

Product:	Tablet PC
Brand:	Verizon
Test Model:	QTAIR7
Sample Status:	Identical Prototype
Applicant:	Quanta Computer Inc.
Test Date:	Aug. 04, 2015 ~ Aug. 25, 2015
Standards:	47 CFR FCC Part 15, Subpart E (Section 15.407) ANSI C63.10:2013

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

Prepared by : _____ , **Date:** Sep. 01, 2015

Ivonne Wu / Supervisor

Approved by : _____ , **Date:** Sep. 01, 2015

Kay Wu / Supervisor

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (SECTION 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -15.46dB at 0.94297MHz.
15.407(b) (1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -4.54dB at 38.73MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(e)	6dB bandwidth	PASS	Meet the requirement of limit. (U-NII-3 Band only)
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	Expended Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.44 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Tablet PC
Brand	Verizon
Test Model	QTAIR7
Status of EUT	Identical Prototype
Power Supply Rating	5.0Vdc (adapter) 3.85Vdc (Li-ion battery)
Modulation Type	64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to MCS7
Operating Frequency	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz, 5745 ~ 5825MHz
Number of Channel	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
Output Power	19.28mW for 5180 ~ 5240MHz 21.63mW for 5260 ~ 5320MHz 12.36mW for 5500 ~ 5700MHz 12.76mW for 5745 ~ 5825MHz
Antenna Type	PIFA antenna with 2.1dBi gain (5180 ~ 5240MHz) PIFA antenna with 2.1dBi gain (5260 ~ 5320MHz) PIFA antenna with 2.3dBi gain (5500 ~ 5700MHz) PIFA antenna with 1.9dBi gain (5745 ~ 5825MHz)
Accessory Device	Refer to Note as below
Data Cable Supplied	Refer to Note as below

Note:

1. The EUT contains following accessory devices.

Product	Brand	Model	Description
Battery	McNair	MLP3276120-2P	3.85Vdc, 9100mAh
LTE Module	Marvell	88RF858	--
WLAN Chip	Marvell	88W8887	--

2. The above EUT information is declared by 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

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

FOR 5500 ~ 5700MHz

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

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz		

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

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz		

FOR 5745 ~ 5825MHz:

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

Channel	Frequency	Channel	Frequency
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

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

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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

NOTE:
1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane** for 5180-2540MHz & 5260-5320MHz & 5745-5825MHz, and **X-plane** for 5500-5700MHz.
2. "-" means no effect.

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	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	MCS0
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
-	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
-	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
-	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0

Radiated Emission Test (Below 1GHz):

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

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11n (40MHz)	5180-5240	38 to 46	38	OFDM	BPSK	MCS0
-	802.11a	5260-5320	52 to 64	64	OFDM	BPSK	6.0
-	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	MCS0
-	802.11n (40MHz)	5745-5825	151 to 159	151	OFDM	BPSK	MCS0

Power Line Conducted Emission Test:

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

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11n (40MHz)	5745-5825	151 to 159	151	OFDM	BPSK	MCS0

Antenna Port Conducted Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

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

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	MCS0
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
-	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
-	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
-	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0

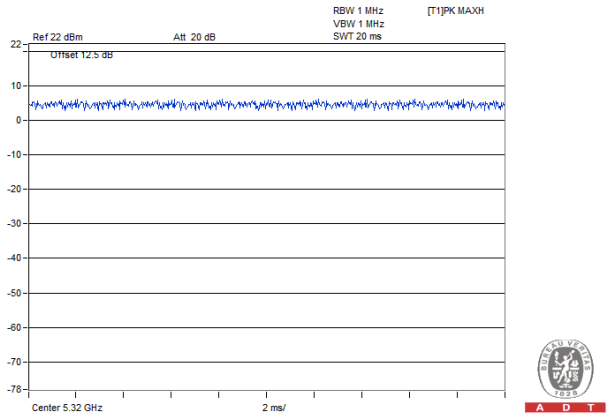
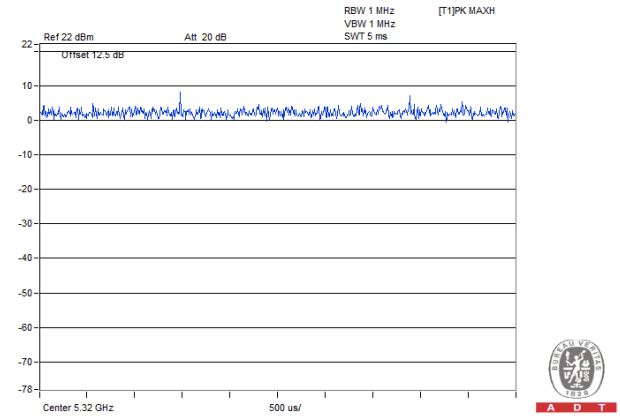
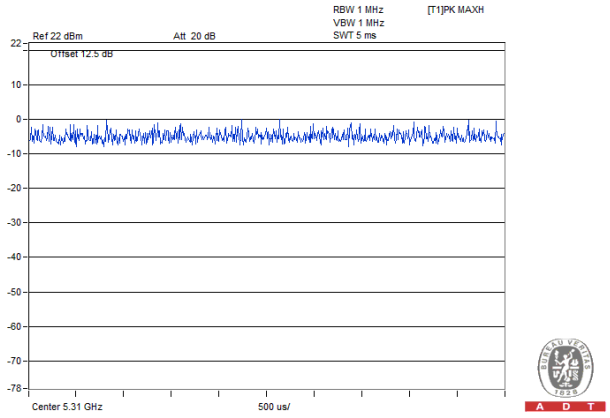
Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Gavin Wu
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Gavin Wu
PLC	25deg. C, 68%RH	120Vac, 60Hz	Toby Tian
APCM	25deg. C, 68%RH	3.85Vdc	Howard Kao

3.3 Duty Cycle of Test Signal

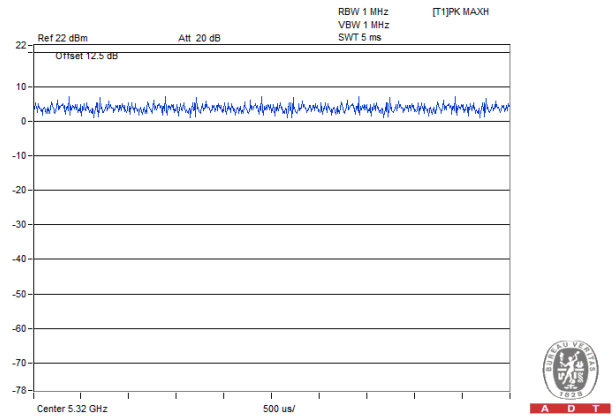
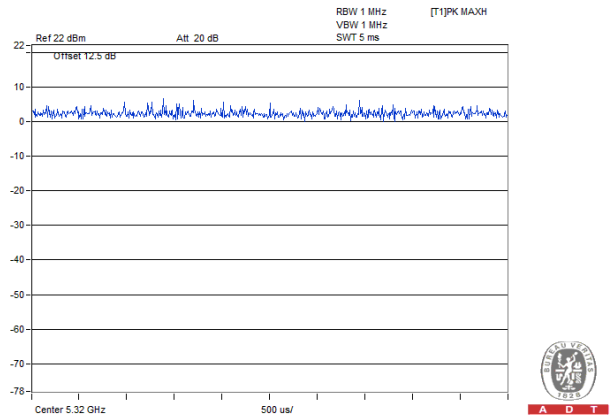
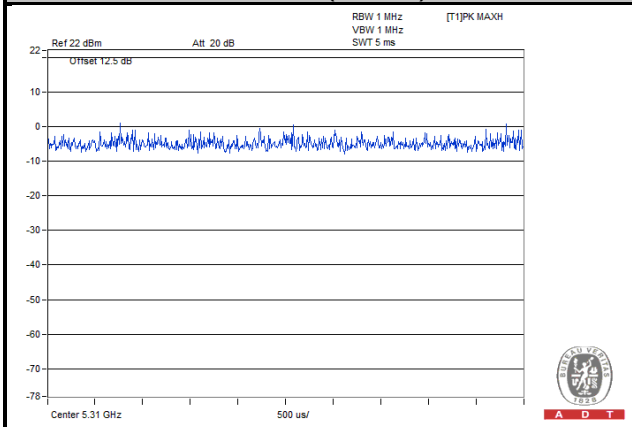
MODULATION TYPE: BPSK

Duty cycle of test signal is 100 %, duty factor is not required.

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

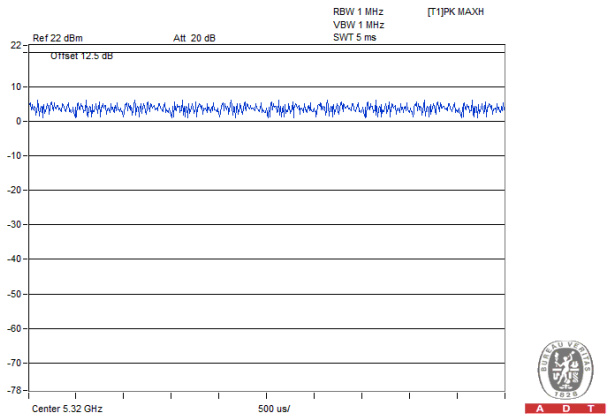
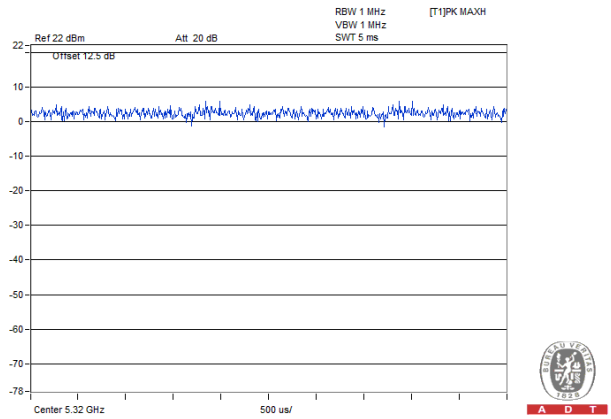
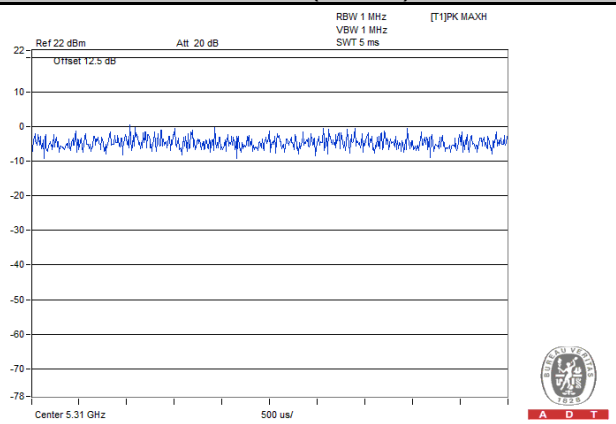
MODULATION TYPE: QPSK

Duty cycle of test signal is 100 %, duty factor is not required.

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

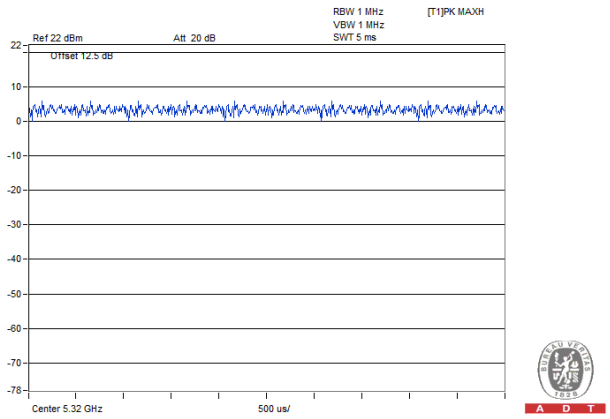
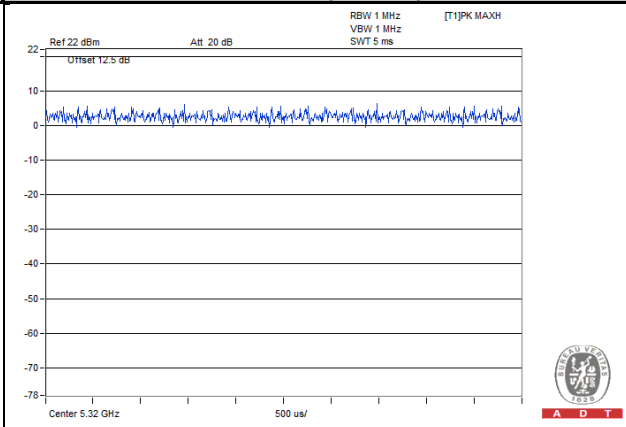
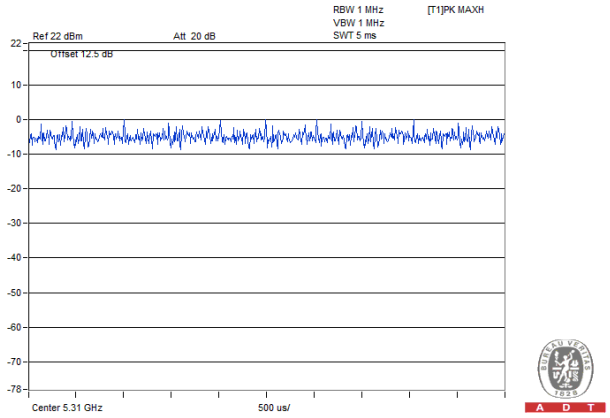
MODULATION TYPE: 16QAM

Duty cycle of test signal is 100 %, duty factor is not required.

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

MODULATION TYPE: 64QAM

Duty cycle of test signal is 100 %, duty factor is not required.

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

3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID
A.	Earphone	Cotron	Max-301	N/A	N/A
B.	Adapter	N/A	N/A	N/A	N/A

Note:

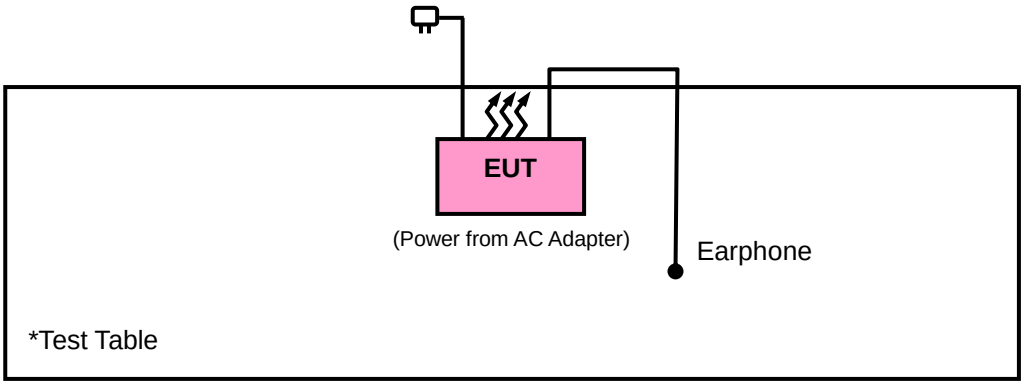
1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as communication partners to transfer data.

No.	Signal Cable Description Of The Above Support Units
1.	N/A
2.	N/A

Note:

1. All power cords of the above support units are non-shielded (1.8m).

3.4.1 Configuration of System under Test



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)
789033 D02 General UNII Test Procedures New Rules v01
ANSI C63.10-2013

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

NOTE: The EUT 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. Other emissions shall be at least 20dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

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

4.1.2 Limits of Unwanted Emission Out of The Restricted Bands

Applicable To	Limit	
789033 D02 General UNII Test Procedures New Rules v01	Field Strength AT 3m	
	PK:74 (dBμV/m)	AV:54 (dBμV/m)
Applicable To	**EIRP Limit**	**Equivalent Field Strength At 3m**
15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBμV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	PK:-27 (dBm/MHz) *1 PK:-17 (dBm/MHz) *2	PK: 68.2(dBμV/m) *1 PK:78.2 (dBμV/m) *2

NOTE: *1 beyond 10MHz of the band edge *2 within 10 MHz of band edge

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

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

4.1.3 Test Instruments

Description & Manaufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY51210203	Jan. 21, 2015	Jan. 21, 2016
Spectrum Analyzer Agilent	N9010A	MY52220314	Sep. 03, 2014	Sep. 02, 2015
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 10, 2014	Dec. 09, 2015
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Feb. 04, 2015	Feb. 04, 2016
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Feb. 09, 2015	Feb. 09, 2016
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Feb. 04, 2015	Feb. 04, 2016
Preamplifier EMCI	EMC 012645	980115	Dec. 12, 2014	Dec. 11, 2015
Preamplifier EMCI	EMC 184045	980116	Jan. 09, 2015	Jan. 08, 2016
Preamplifier EMCI	EMC 330H	980112	Dec. 27, 2014	Dec. 26, 2015
Power Meter Anritsu	ML2495A	1232002	Sep. 17, 2014	Sep. 16, 2015
Power Sensor Anritsu	MA2411B	1207325	Sep. 17, 2014	Sep. 16, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4 2950114	Oct. 18, 2014	Oct. 17, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 18, 2014	Oct. 17, 2015
RF Coaxial Cable Worken	8D-FB	Cable-Ch10-01	Nov. 07, 2014	Nov. 06, 2015
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

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 Chamber 10.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 690701.
5. The IC Site Registration No. is IC7450F-10.

4.1.4 Test Procedures

a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. 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 height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

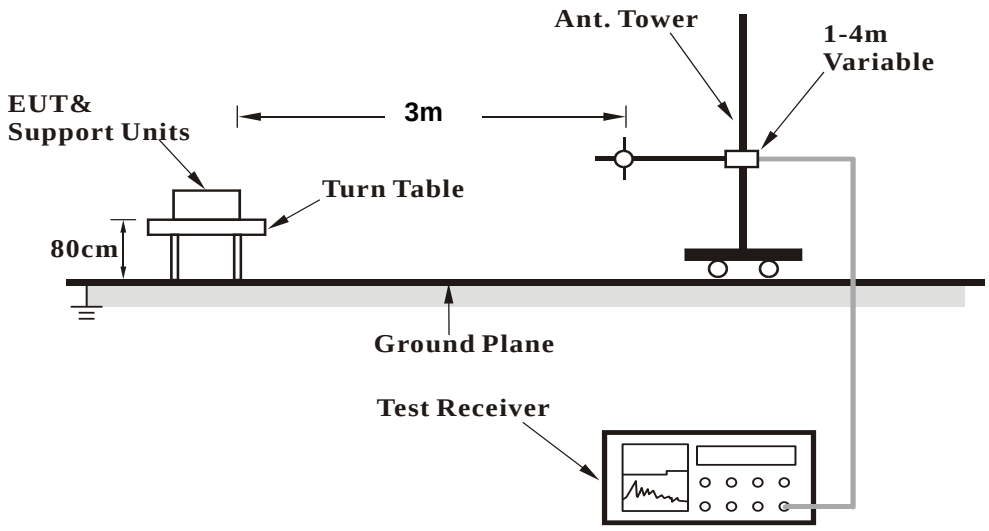
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (10 log(1/duty cycle)).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 Deviation from Test Standard

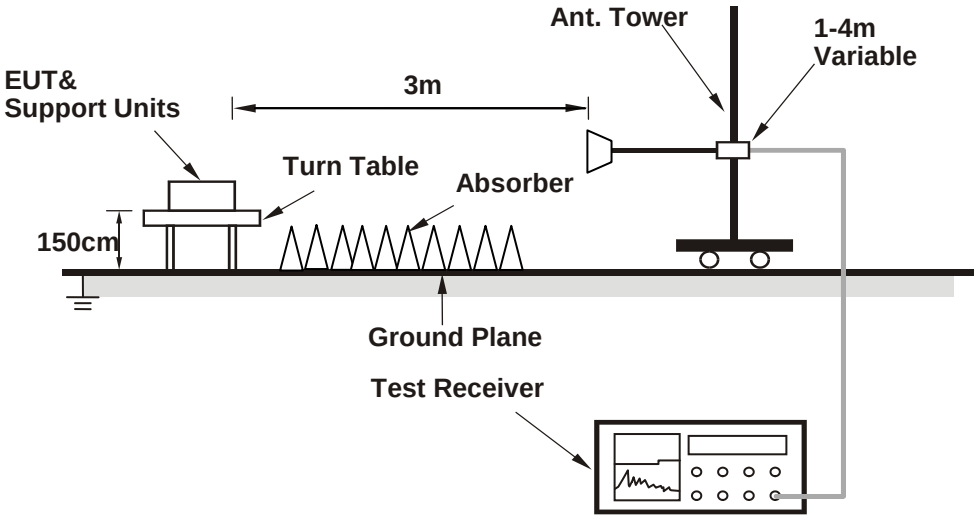
No deviation.

4.1.6 Test Set Up

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

4.1.7 EUT Operating Conditions

a. Placed the EUT on a testing table.
b. Use the software to control the EUT under transmission condition continuously at specific channel frequency.

4.1.8 Test Results

ABOVE 1GHz DATA：

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5104	40.9	40.71	54	-13.1	31.28	6.19	37.28	205	11	Average
5104	61.5	61.31	74	-12.5	31.28	6.19	37.28	205	11	Peak
5180	91.48	91.25			31.35	6.22	37.34	205	11	Average
5180	101.17	100.94			31.35	6.22	37.34	205	11	Peak
5458	38.73	37.91	54	-15.27	31.56	6.34	37.08	205	11	Average
5458	60.68	59.86	74	-13.32	31.56	6.34	37.08	205	11	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5012	40.25	40.14	54	-13.75	31.21	6.13	37.23	156	4	Average
5012	60.15	60.04	74	-13.85	31.21	6.13	37.23	156	4	Peak
5180	90.47	90.24			31.35	6.22	37.34	156	4	Average
5180	99.76	99.53			31.35	6.22	37.34	156	4	Peak
5382	38.55	37.91	54	-15.45	31.51	6.31	37.18	156	4	Average
5382	59.86	59.22	74	-14.14	31.51	6.31	37.18	156	4	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5096	38.57	38.38	54	-15.43	31.28	6.19	37.28	203	12	Average
5096	60.48	60.29	74	-13.52	31.28	6.19	37.28	203	12	Peak
5220	92.28	92.03			31.37	6.24	37.36	203	12	Average
5220	101.82	101.57			31.37	6.24	37.36	203	12	Peak
5424	38.69	38.02	54	-15.31	31.53	6.32	37.18	203	12	Average
5424	60.26	59.59	74	-13.74	31.53	6.32	37.18	203	12	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5076	38.25	38.08	54	-15.75	31.27	6.17	37.27	154	4	Average
5076	60.47	60.3	74	-13.53	31.27	6.17	37.27	154	4	Peak
5220	90.98	90.73			31.37	6.24	37.36	154	4	Average
5220	99.96	99.71			31.37	6.24	37.36	154	4	Peak
5384	38.6	37.96	54	-15.4	31.51	6.31	37.18	154	4	Average
5384	59.99	59.35	74	-14.01	31.51	6.31	37.18	154	4	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5016	38.32	38.19	54	-15.68	31.21	6.15	37.23	184	11	Average
5016	61.7	61.57	74	-12.3	31.21	6.15	37.23	184	11	Peak
5240	92.27	91.95			31.39	6.25	37.32	184	11	Average
5240	101.69	101.37			31.39	6.25	37.32	184	11	Peak
5350	38.64	38.05	54	-15.36	31.48	6.29	37.18	184	11	Average
5350	60.4	59.81	74	-13.6	31.48	6.29	37.18	184	11	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5124	38.42	38.22	54	-15.58	31.31	6.19	37.3	195	2	Average
5124	60.72	60.52	74	-13.28	31.31	6.19	37.3	195	2	Peak
5240	90.32	90			31.39	6.25	37.32	195	2	Average
5240	100.22	99.9			31.39	6.25	37.32	195	2	Peak
5390	38.53	37.89	54	-15.47	31.51	6.31	37.18	195	2	Average
5390	60.58	59.94	74	-13.42	31.51	6.31	37.18	195	2	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5060	38.5	38.33	54	-15.5	31.25	6.17	37.25	212	26	Average
5060	59.85	59.68	74	-14.15	31.25	6.17	37.25	212	26	Peak
5260	92.01	91.62			31.41	6.25	37.27	212	26	Average
5260	101.42	101.03			31.41	6.25	37.27	212	26	Peak
5434	38.64	37.9	54	-15.36	31.55	6.32	37.13	212	26	Average
5434	60.26	59.52	74	-13.74	31.55	6.32	37.13	212	26	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5010	38.15	38.04	54	-15.85	31.21	6.13	37.23	186	1	Average
5010	60.65	60.54	74	-13.35	31.21	6.13	37.23	186	1	Peak
5260	89.93	89.54			31.41	6.25	37.27	186	1	Average
5260	99.39	99			31.41	6.25	37.27	186	1	Peak
5402	38.7	38.04	54	-15.3	31.52	6.32	37.18	186	1	Average
5402	60.76	60.1	74	-13.24	31.52	6.32	37.18	186	1	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5106	38.33	38.13	54	-15.67	31.29	6.19	37.28	168	26	Average
5106	60.71	60.51	74	-13.29	31.29	6.19	37.28	168	26	Peak
5300	91.33	90.81			31.44	6.27	37.19	168	26	Average
5300	101.67	101.15			31.44	6.27	37.19	168	26	Peak
5374	38.78	38.16	54	-15.22	31.49	6.31	37.18	168	26	Average
5374	60.46	59.84	74	-13.54	31.49	6.31	37.18	168	26	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5096	38.29	38.1	54	-15.71	31.28	6.19	37.28	196	14	Average
5096	60.08	59.89	74	-13.92	31.28	6.19	37.28	196	14	Peak
5300	89	88.48			31.44	6.27	37.19	196	14	Average
5300	99.21	98.69			31.44	6.27	37.19	196	14	Peak
5354	38.51	37.92	54	-15.49	31.48	6.29	37.18	196	14	Average
5354	60.24	59.65	74	-13.76	31.48	6.29	37.18	196	14	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5100	38.45	38.26	54	-15.55	31.28	6.19	37.28	163	27	Average
5100	61.06	60.87	74	-12.94	31.28	6.19	37.28	163	27	Peak
5320	92.57	92.02			31.45	6.29	37.19	163	27	Average
5320	101.67	101.12			31.45	6.29	37.19	163	27	Peak
5454	43.93	43.11	54	-10.07	31.56	6.34	37.08	163	27	Average
5454	60.75	59.93	74	-13.25	31.56	6.34	37.08	163	27	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5026	38.18	38.04	54	-15.82	31.23	6.15	37.24	194	15	Average
5026	61	60.86	74	-13	31.23	6.15	37.24	194	15	Peak
5320	90.19	89.64			31.45	6.29	37.19	194	15	Average
5320	99.58	99.03			31.45	6.29	37.19	194	15	Peak
5456	41.73	40.91	54	-12.27	31.56	6.34	37.08	194	15	Average
5456	60.97	60.15	74	-13.03	31.56	6.34	37.08	194	15	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5430	38.7	37.96	54	-15.3	31.55	6.32	37.13	173	197	Average
5430	59.84	59.1	74	-14.16	31.55	6.32	37.13	173	197	Peak
5470	59.25	58.42	68.2	-8.95	31.57	6.34	37.08	173	197	Peak
5500	93.25	92.32			31.6	6.36	37.03	173	197	Average
5500	102.75	101.82			31.6	6.36	37.03	173	197	Peak
5725	59.3	58.02	68.2	-8.9	31.96	6.75	37.43	173	197	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
5364	37.98	37.36	54	-16.02	31.49	6.31	37.18	198	133	Average
5364	59.06	58.44	74	-14.94	31.49	6.31	37.18	198	133	Peak
5470	57.92	57.09	68.2	-10.28	31.57	6.34	37.08	198	133	Peak
5500	90.94	90.01			31.6	6.36	37.03	198	133	Average
5500	100.15	99.22			31.6	6.36	37.03	198	133	Peak
5725	56.94	55.66	68.2	-11.26	31.96	6.75	37.43	198	133	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5408	37.89	37.23	54	-16.11	31.52	6.32	37.18	161	189	Average
5408	58.3	57.64	74	-15.7	31.52	6.32	37.18	161	189	Peak
5470	56.64	55.81	68.2	-11.56	31.57	6.34	37.08	161	189	Peak
5580	93.7	92.66			31.71	6.49	37.16	161	189	Average
5580	103.09	102.05			31.71	6.49	37.16	161	189	Peak
5725	57.78	56.5	68.2	-10.42	31.96	6.75	37.43	161	189	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
5446	37.73	36.96	54	-16.27	31.56	6.34	37.13	191	129	Average
5446	59.64	58.87	74	-14.36	31.56	6.34	37.13	191	129	Peak
5470	57.04	56.21	68.2	-11.16	31.57	6.34	37.08	191	129	Peak
5580	91.62	90.58			31.71	6.49	37.16	191	129	Average
5580	100.55	99.51			31.71	6.49	37.16	191	129	Peak
5725	58.29	57.01	68.2	-9.91	31.96	6.75	37.43	191	129	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5406	37.67	37.01	54	-16.33	31.52	6.32	37.18	172	201	Average
5406	59.19	58.53	74	-14.81	31.52	6.32	37.18	172	201	Peak
5470	59.1	58.27	68.2	-9.1	31.57	6.34	37.08	172	201	Peak
5700	92.21	91.02			31.9	6.69	37.4	172	201	Average
5700	102.58	101.39			31.9	6.69	37.4	172	201	Peak
5725	61.86	60.58	68.2	-6.34	31.96	6.75	37.43	172	201	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
5428	37.61	36.89	54	-16.39	31.53	6.32	37.13	215	122	Average
5428	59.75	59.03	74	-14.25	31.53	6.32	37.13	215	122	Peak
5470	58.89	58.06	68.2	-9.31	31.57	6.34	37.08	215	122	Peak
5700	91.44	90.25			31.9	6.69	37.4	215	122	Average
5700	101.51	100.32			31.9	6.69	37.4	215	122	Peak
5725	59.28	58	68.2	-8.92	31.96	6.75	37.43	215	122	Peak

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
*5714	60.29	59.1	68.2	-7.91	31.93	6.69	37.43	176	0	Peak
*5725	65.53	64.25	78.2	-12.67	31.96	6.75	37.43	176	0	Peak
5745	93.96	92.69			31.99	6.75	37.47	176	0	Average
5745	103.51	102.24			31.99	6.75	37.47	176	0	Peak
*5850	59.26	57.74	78.2	-18.94	32.15	6.88	37.51	176	0	Peak
*5861	60.28	58.65	68.2	-7.92	32.18	6.95	37.5	176	0	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
*5714	60.66	59.47	68.2	-7.54	31.93	6.69	37.43	100	279	Peak
*5725	65.45	64.17	78.2	-12.75	31.96	6.75	37.43	100	279	Peak
5745	96.5	95.23			31.99	6.75	37.47	100	279	Average
5745	105.96	104.69			31.99	6.75	37.47	100	279	Peak
*5850	58.53	57.01	78.2	-19.67	32.15	6.88	37.51	100	279	Peak
*5861	58.11	56.48	68.2	-10.09	32.18	6.95	37.5	100	279	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5745MHz: Fundamental frequency.
3. *: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
*5714	58.22	57.03	68.2	-9.98	31.93	6.69	37.43	167	1	Peak
*5725	58.15	56.87	78.2	-20.05	31.96	6.75	37.43	167	1	Peak
5785	93.68	92.36			32.04	6.82	37.54	167	1	Average
5785	103.03	101.71			32.04	6.82	37.54	167	1	Peak
*5850	60.45	58.93	78.2	-17.75	32.15	6.88	37.51	167	1	Peak
*5861	58.38	56.75	68.2	-9.82	32.18	6.95	37.5	167	1	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
*5714	58.45	57.26	68.2	-9.75	31.93	6.69	37.43	100	274	Peak
*5725	59.11	57.83	78.2	-19.09	31.96	6.75	37.43	100	274	Peak
5785	96.16	94.84			32.04	6.82	37.54	100	274	Average
5785	105.4	104.08			32.04	6.82	37.54	100	274	Peak
*5850	58.79	57.27	78.2	-19.41	32.15	6.88	37.51	100	274	Peak
*5861	58.8	57.17	68.2	-9.4	32.18	6.95	37.5	100	274	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5785MHz: Fundamental frequency.
3. *: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
*5714	58.98	57.79	68.2	-9.22	31.93	6.69	37.43	163	359	Peak
*5725	59.76	58.48	78.2	-18.44	31.96	6.75	37.43	163	359	Peak
5825	93.44	91.97			32.12	6.88	37.53	163	359	Average
5825	103.7	102.23			32.12	6.88	37.53	163	359	Peak
*5850	61.41	59.89	78.2	-16.79	32.15	6.88	37.51	163	359	Peak
*5861	59.43	57.8	68.2	-8.77	32.18	6.95	37.5	163	359	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
*5714	57.7	56.51	68.2	-10.5	31.93	6.69	37.43	105	263	Peak
*5725	58.6	57.32	78.2	-19.6	31.96	6.75	37.43	105	263	Peak
5825	95.64	94.17			32.12	6.88	37.53	105	263	Average
5825	105.85	104.38			32.12	6.88	37.53	105	263	Peak
*5850	61.71	60.19	78.2	-16.49	32.15	6.88	37.51	105	263	Peak
*5861	59.42	57.79	68.2	-8.78	32.18	6.95	37.5	105	263	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5825MHz: Fundamental frequency.
3. *: Out of restricted band

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5022	40.52	40.38	54	-13.48	31.23	6.15	37.24	206	11	Average
5022	61.22	61.08	74	-12.78	31.23	6.15	37.24	206	11	Peak
5180	90.68	90.45			31.35	6.22	37.34	206	11	Average
5180	100.2	99.97			31.35	6.22	37.34	206	11	Peak
5442	38.66	37.9	54	-15.34	31.55	6.34	37.13	206	11	Average
5442	61.14	60.38	74	-12.86	31.55	6.34	37.13	206	11	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5050	39.34	39.2	54	-14.66	31.24	6.15	37.25	179	0	Average
5050	61.16	61.02	74	-12.84	31.24	6.15	37.25	179	0	Peak
5180	88.93	88.7			31.35	6.22	37.34	179	0	Average
5180	98.31	98.08			31.35	6.22	37.34	179	0	Peak
5366	38.69	38.07	54	-15.31	31.49	6.31	37.18	179	0	Average
5366	61.2	60.58	74	-12.8	31.49	6.31	37.18	179	0	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5142	38.61	38.39	54	-15.39	31.32	6.2	37.3	203	11	Average
5142	60.21	59.99	74	-13.79	31.32	6.2	37.3	203	11	Peak
5220	91.27	91.02			31.37	6.24	37.36	203	11	Average
5220	100.78	100.53			31.37	6.24	37.36	203	11	Peak
5434	38.8	38.06	54	-15.2	31.55	6.32	37.13	203	11	Average
5434	60.73	59.99	74	-13.27	31.55	6.32	37.13	203	11	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5130	38.64	38.43	54	-15.36	31.31	6.2	37.3	179	3	Average
5130	60.02	59.81	74	-13.98	31.31	6.2	37.3	179	3	Peak
5220	88.92	88.67			31.37	6.24	37.36	179	3	Average
5220	98.77	98.52			31.37	6.24	37.36	179	3	Peak
5390	38.65	38.01	54	-15.35	31.51	6.31	37.18	179	3	Average
5390	61.35	60.71	74	-12.65	31.51	6.31	37.18	179	3	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5008	38.31	38.2	54	-15.69	31.21	6.13	37.23	176	12	Average
5008	60.04	59.93	74	-13.96	31.21	6.13	37.23	176	12	Peak
5240	91.58	91.26			31.39	6.25	37.32	176	12	Average
5240	100.78	100.46			31.39	6.25	37.32	176	12	Peak
5362	38.59	37.97	54	-15.41	31.49	6.31	37.18	176	12	Average
5362	62.43	61.81	74	-11.57	31.49	6.31	37.18	176	12	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
5148	38.37	38.17	54	-15.63	31.32	6.2	37.32	196	1	Average
5148	61.57	61.37	74	-12.43	31.32	6.2	37.32	196	1	Peak
5240	88.92	88.6			31.39	6.25	37.32	196	1	Average
5240	98.41	98.09			31.39	6.25	37.32	196	1	Peak
5450	38.76	37.94	54	-15.24	31.56	6.34	37.08	196	1	Average
5450	60.94	60.12	74	-13.06	31.56	6.34	37.08	196	1	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5124	38.47	38.27	54	-15.53	31.31	6.19	37.3	213	25	Average
5124	61.48	61.28	74	-12.52	31.31	6.19	37.3	213	25	Peak
5260	90.98	90.59			31.41	6.25	37.27	213	25	Average
5260	100.23	99.84			31.41	6.25	37.27	213	25	Peak
5448	38.69	37.92	54	-15.31	31.56	6.34	37.13	213	25	Average
5448	61.68	60.91	74	-12.32	31.56	6.34	37.13	213	25	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5102	38.34	38.15	54	-15.66	31.28	6.19	37.28	205	16	Average
5102	60.24	60.05	74	-13.76	31.28	6.19	37.28	205	16	Peak
5260	88.6	88.21			31.41	6.25	37.27	205	16	Average
5260	98.03	97.64			31.41	6.25	37.27	205	16	Peak
5406	38.54	37.88	54	-15.46	31.52	6.32	37.18	205	16	Average
5406	61.17	60.51	74	-12.83	31.52	6.32	37.18	205	16	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5094	38.42	38.23	54	-15.58	31.28	6.19	37.28	178	26	Average
5094	60.96	60.77	74	-13.04	31.28	6.19	37.28	178	26	Peak
5300	90.36	89.84			31.44	6.27	37.19	178	26	Average
5300	100.6	100.08			31.44	6.27	37.19	178	26	Peak
5380	38.63	37.99	54	-15.37	31.51	6.31	37.18	178	26	Average
5380	60.63	59.99	74	-13.37	31.51	6.31	37.18	178	26	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5124	38.37	38.17	54	-15.63	31.31	6.19	37.3	161	17	Average
5124	60.53	60.33	74	-13.47	31.31	6.19	37.3	161	17	Peak
5300	88.49	87.97			31.44	6.27	37.19	161	17	Average
5300	98.63	98.11			31.44	6.27	37.19	161	17	Peak
5454	38.71	37.89	54	-15.29	31.56	6.34	37.08	161	17	Average
5454	60.72	59.9	74	-13.28	31.56	6.34	37.08	161	17	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5042	38.2	38.06	54	-15.8	31.24	6.15	37.25	186	26	Average
5042	60.48	60.34	74	-13.52	31.24	6.15	37.25	186	26	Peak
5320	91.05	90.5			31.45	6.29	37.19	186	26	Average
5320	100.72	100.17			31.45	6.29	37.19	186	26	Peak
5358	41.93	41.32	54	-12.07	31.48	6.31	37.18	186	26	Average
5358	60.79	60.18	74	-13.21	31.48	6.31	37.18	186	26	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5046	38.3	38.16	54	-15.7	31.24	6.15	37.25	194	17	Average
5046	61.13	60.99	74	-12.87	31.24	6.15	37.25	194	17	Peak
5320	89.43	88.88			31.45	6.29	37.19	194	17	Average
5320	99.07	98.52			31.45	6.29	37.19	194	17	Peak
5376	40.33	39.71	54	-13.67	31.49	6.31	37.18	194	17	Average
5376	60.48	59.86	74	-13.52	31.49	6.31	37.18	194	17	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5382	38.12	37.48	54	-15.88	31.51	6.31	37.18	186	198	Average
5382	59.24	58.6	74	-14.76	31.51	6.31	37.18	186	198	Peak
5470	59.03	58.2	68.2	-9.17	31.57	6.34	37.08	186	198	Peak
5500	91.86	90.93			31.6	6.36	37.03	186	198	Average
5500	101.92	100.99			31.6	6.36	37.03	186	198	Peak
5725	58.52	57.24	68.2	-9.68	31.96	6.75	37.43	186	198	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
5454	38.01	37.19	54	-15.99	31.56	6.34	37.08	204	125	Average
5454	58.94	58.12	74	-15.06	31.56	6.34	37.08	204	125	Peak
5470	58.33	57.5	68.2	-9.87	31.57	6.34	37.08	204	125	Peak
5500	89.94	89.01			31.6	6.36	37.03	204	125	Average
5500	99.43	98.5			31.6	6.36	37.03	204	125	Peak
5725	58.41	57.13	68.2	-9.79	31.96	6.75	37.43	204	125	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5444	37.57	36.81	54	-16.43	31.55	6.34	37.13	170	186	Average
5444	59.85	59.09	74	-14.15	31.55	6.34	37.13	170	186	Peak
5470	57.62	56.79	68.2	-10.58	31.57	6.34	37.08	170	186	Peak
5580	91.23	90.19			31.71	6.49	37.16	170	186	Average
5580	101.01	99.97			31.71	6.49	37.16	170	186	Peak
5725	58.63	57.35	68.2	-9.57	31.96	6.75	37.43	170	186	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
5408	37.86	37.2	54	-16.14	31.52	6.32	37.18	192	126	Average
5408	58.65	57.99	74	-15.35	31.52	6.32	37.18	192	126	Peak
5470	56.96	56.13	68.2	-11.24	31.57	6.34	37.08	192	126	Peak
5580	89.02	87.98			31.71	6.49	37.16	192	126	Average
5580	99.36	98.32			31.71	6.49	37.16	192	126	Peak
5725	58.02	56.74	68.2	-10.18	31.96	6.75	37.43	192	126	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5428	37.47	36.75	54	-16.53	31.53	6.32	37.13	153	185	Average
5428	58.9	58.18	74	-15.1	31.53	6.32	37.13	153	185	Peak
5470	58.14	57.31	68.2	-10.06	31.57	6.34	37.08	153	185	Peak
5700	92.37	91.18			31.9	6.69	37.4	153	185	Average
5700	101.97	100.78			31.9	6.69	37.4	153	185	Peak
5725	58.78	57.5	68.2	-9.42	31.96	6.75	37.43	153	185	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
5454	37.69	36.87	54	-16.31	31.56	6.34	37.08	189	125	Average
5454	59.85	59.03	74	-14.15	31.56	6.34	37.08	189	125	Peak
5470	58.25	57.42	68.2	-9.95	31.57	6.34	37.08	189	125	Peak
5700	89.65	88.46			31.9	6.69	37.4	189	125	Average
5700	99.68	98.49			31.9	6.69	37.4	189	125	Peak
5725	62.13	60.85	68.2	-6.07	31.96	6.75	37.43	189	125	Peak

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
*5714	59.67	58.48	68.2	-8.53	31.93	6.69	37.43	176	347	Peak
*5725	66.43	65.15	78.2	-11.77	31.96	6.75	37.43	176	347	Peak
5745	93.26	91.99			31.99	6.75	37.47	176	347	Average
5745	102.87	101.6			31.99	6.75	37.47	176	347	Peak
*5850	59.78	58.26	78.2	-18.42	32.15	6.88	37.51	176	347	Peak
*5861	59.21	57.58	68.2	-8.99	32.18	6.95	37.5	176	347	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
*5714	60.98	59.79	68.2	-7.22	31.93	6.69	37.43	100	272	Peak
*5725	69.33	68.05	78.2	-8.87	31.96	6.75	37.43	100	272	Peak
5745	95.77	94.5			31.99	6.75	37.47	100	272	Average
5745	104.98	103.71			31.99	6.75	37.47	100	272	Peak
*5850	59.92	58.4	78.2	-18.28	32.15	6.88	37.51	100	272	Peak
*5861	60.6	58.97	68.2	-7.6	32.18	6.95	37.5	100	272	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5745MHz: Fundamental frequency.
3. *: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
*5714	59.58	58.39	68.2	-8.62	31.93	6.69	37.43	174	358	Peak
*5725	58.98	57.7	78.2	-19.22	31.96	6.75	37.43	174	358	Peak
5785	92.52	91.2			32.04	6.82	37.54	174	358	Average
5785	102.44	101.12			32.04	6.82	37.54	174	358	Peak
*5850	58.15	56.63	78.2	-20.05	32.15	6.88	37.51	174	358	Peak
*5861	58.64	57.01	68.2	-9.56	32.18	6.95	37.5	174	358	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
*5714	59.24	58.05	68.2	-8.96	31.93	6.69	37.43	100	285	Peak
*5725	59.37	58.09	78.2	-18.83	31.96	6.75	37.43	100	285	Peak
5785	95.38	94.06			32.04	6.82	37.54	100	285	Average
5785	104.5	103.18			32.04	6.82	37.54	100	285	Peak
*5850	58.95	57.43	78.2	-19.25	32.15	6.88	37.51	100	285	Peak
*5861	59.73	58.1	68.2	-8.47	32.18	6.95	37.5	100	285	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5785MHz: Fundamental frequency.
3. *: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	58.45	57.26	68.2	-9.75	31.93	6.69	37.43	179	1	Peak
5725	59.36	58.08	78.2	-18.84	31.96	6.75	37.43	179	1	Peak
5825	92.81	91.34			32.12	6.88	37.53	179	1	Average
5825	102.5	101.03			32.12	6.88	37.53	179	1	Peak
5850	60.58	59.06	78.2	-17.62	32.15	6.88	37.51	179	1	Peak
5861	59.69	58.06	68.2	-8.51	32.18	6.95	37.5	179	1	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
5714	60.88	59.69	68.2	-7.32	31.93	6.69	37.43	104	279	Peak
5725	58.79	57.51	78.2	-19.41	31.96	6.75	37.43	104	279	Peak
5825	95.78	94.31			32.12	6.88	37.53	104	279	Average
5825	104.68	103.21			32.12	6.88	37.53	104	279	Peak
5850	63.67	62.15	78.2	-14.53	32.15	6.88	37.51	104	279	Peak
5861	61.4	59.77	68.2	-6.8	32.18	6.95	37.5	104	279	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5825MHz: Fundamental frequency.
3. *: Out of restricted band

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5142	44.5	44.28	54	-9.5	31.32	6.2	37.3	188	12	Average
5142	61.25	61.03	74	-12.75	31.32	6.2	37.3	188	12	Peak
5190	89.09	88.86			31.35	6.22	37.34	188	12	Average
5190	98.26	98.03			31.35	6.22	37.34	188	12	Peak
5350	39.08	38.49	54	-14.92	31.48	6.29	37.18	188	12	Average
5350	60.75	60.16	74	-13.25	31.48	6.29	37.18	188	12	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
5008	42.2	42.09	54	-11.8	31.21	6.13	37.23	189	3	Average
5008	61.11	61	74	-12.89	31.21	6.13	37.23	189	3	Peak
5190	87.55	87.32			31.35	6.22	37.34	189	3	Average
5190	96.8	96.57			31.35	6.22	37.34	189	3	Peak
5358	38.97	38.36	54	-15.03	31.48	6.31	37.18	189	3	Average
5358	61.02	60.41	74	-12.98	31.48	6.31	37.18	189	3	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	38.92	38.72	54	-15.08	31.32	6.2	37.32	178	11	Average
5150	60.68	60.48	74	-13.32	31.32	6.2	37.32	178	11	Peak
5230	88.79	88.48			31.39	6.24	37.32	178	11	Average
5230	98.89	98.58			31.39	6.24	37.32	178	11	Peak
5384	39.17	38.53	54	-14.83	31.51	6.31	37.18	178	11	Average
5384	60.23	59.59	74	-13.77	31.51	6.31	37.18	178	11	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5116	38.77	38.57	54	-15.23	31.29	6.19	37.28	187	2	Average
5116	60.48	60.28	74	-13.52	31.29	6.19	37.28	187	2	Peak
5230	86.77	86.46			31.39	6.24	37.32	187	2	Average
5230	96.5	96.19			31.39	6.24	37.32	187	2	Peak
5424	38.98	38.31	54	-15.02	31.53	6.32	37.18	187	2	Average
5424	60.95	60.28	74	-13.05	31.53	6.32	37.18	187	2	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5024	38.72	38.58	54	-15.28	31.23	6.15	37.24	210	26	Average
5024	60.68	60.54	74	-13.32	31.23	6.15	37.24	210	26	Peak
5270	89.78	89.39			31.41	6.25	37.27	210	26	Average
5270	98.84	98.45			31.41	6.25	37.27	210	26	Peak
5450	39.27	38.45	54	-14.73	31.56	6.34	37.08	210	26	Average
5450	60.73	59.91	74	-13.27	31.56	6.34	37.08	210	26	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5070	38.72	38.57	54	-15.28	31.25	6.17	37.27	204	2	Average
5070	59.66	59.51	74	-14.34	31.25	6.17	37.27	204	2	Peak
5270	87.18	86.79			31.41	6.25	37.27	204	2	Average
5270	96.09	95.7			31.41	6.25	37.27	204	2	Peak
5446	38.89	38.12	54	-15.11	31.56	6.34	37.13	204	2	Average
5446	60.53	59.76	74	-13.47	31.56	6.34	37.13	204	2	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5066	38.69	38.52	54	-15.31	31.25	6.17	37.25	191	26	Average
5066	60.66	60.49	74	-13.34	31.25	6.17	37.25	191	26	Peak
5310	89.65	89.12			31.45	6.27	37.19	191	26	Average
5310	98.87	98.34			31.45	6.27	37.19	191	26	Peak
5416	41.88	41.21	54	-12.12	31.53	6.32	37.18	191	26	Average
5416	60.48	59.81	74	-13.52	31.53	6.32	37.18	191	26	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5056	38.29	38.12	54	-15.71	31.25	6.17	37.25	193	17	Average
5056	60.49	60.32	74	-13.51	31.25	6.17	37.25	193	17	Peak
5310	86.84	86.31			31.45	6.27	37.19	193	17	Average
5310	96.8	96.27			31.45	6.27	37.19	193	17	Peak
5422	40.61	39.94	54	-13.39	31.53	6.32	37.18	193	17	Average
5422	61	60.33	74	-13	31.53	6.32	37.18	193	17	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5422	40.7	40.03	54	-13.3	31.53	6.32	37.18	150	177	Average
5422	59.17	58.5	74	-14.83	31.53	6.32	37.18	150	177	Peak
5470	61.77	60.94	68.2	-6.43	31.57	6.34	37.08	150	177	Peak
5510	88.81	87.91			31.6	6.36	37.06	150	177	Average
5510	98.08	97.18			31.6	6.36	37.06	150	177	Peak
5725	58.2	56.92	68.2	-10	31.96	6.75	37.43	150	177	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
5450	40.1	39.28	54	-13.9	31.56	6.34	37.08	163	166	Average
5450	59.42	58.6	74	-14.58	31.56	6.34	37.08	163	166	Peak
5470	59.89	59.06	68.2	-8.31	31.57	6.34	37.08	163	166	Peak
5510	86.2	85.3			31.6	6.36	37.06	163	166	Average
5510	96.47	95.57			31.6	6.36	37.06	163	166	Peak
5725	58.47	57.25	68.2	-9.73	31.96	6.69	37.43	163	166	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5370	37.9	37.28	54	-16.1	31.49	6.31	37.18	120	188	Average
5370	60.03	59.41	74	-13.97	31.49	6.31	37.18	120	188	Peak
5470	57.32	56.49	68.2	-10.88	31.57	6.34	37.08	120	188	Peak
5550	89.09	88.08			31.68	6.42	37.09	120	188	Average
5550	98.4	97.39			31.68	6.42	37.09	120	188	Peak
5725	59.42	58.14	68.2	-8.78	31.96	6.75	37.43	120	188	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
5388	37.83	37.19	54	-16.17	31.51	6.31	37.18	213	126	Average
5388	59.54	58.9	74	-14.46	31.51	6.31	37.18	213	126	Peak
5470	57.68	56.85	68.2	-10.52	31.57	6.34	37.08	213	126	Peak
5550	86.75	85.74			31.68	6.42	37.09	213	126	Average
5550	96.34	95.33			31.68	6.42	37.09	213	126	Peak
5725	59.85	58.57	68.2	-8.35	31.96	6.75	37.43	213	126	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5432	37.9	37.16	54	-16.1	31.55	6.32	37.13	125	193	Average
5432	59.64	58.9	74	-14.36	31.55	6.32	37.13	125	193	Peak
5470	57.03	56.2	68.2	-11.17	31.57	6.34	37.08	125	193	Peak
5670	89.21	88.05			31.88	6.62	37.34	125	193	Average
5670	98.75	97.59			31.88	6.62	37.34	125	193	Peak
5725	57.95	56.67	68.2	-10.25	31.96	6.75	37.43	125	193	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
5424	38.18	37.51	54	-15.82	31.53	6.32	37.18	197	122	Average
5424	59.42	58.75	74	-14.58	31.53	6.32	37.18	197	122	Peak
5470	57.24	56.41	68.2	-10.96	31.57	6.34	37.08	197	122	Peak
5670	87.53	86.37			31.88	6.62	37.34	197	122	Average
5670	96.89	95.73			31.88	6.62	37.34	197	122	Peak
5725	58.64	57.36	68.2	-9.56	31.96	6.75	37.43	197	122	Peak

REMARKS:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 151	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
*5714	62.24	61.05	68.2	-5.96	31.93	6.69	37.43	176	353	Peak
*5725	63.68	62.4	78.2	-14.52	31.96	6.75	37.43	176	353	Peak
5755	91.29	90			32.01	6.75	37.47	176	353	Average
5755	100.5	99.21			32.01	6.75	37.47	176	353	Peak
*5850	59.51	57.99	78.2	-18.69	32.15	6.88	37.51	176	353	Peak
*5861	60.98	59.35	68.2	-7.22	32.18	6.95	37.5	176	353	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
*5714	63.37	62.18	68.2	-4.83	31.93	6.69	37.43	106	292	Peak
*5725	65.02	63.74	78.2	-13.18	31.96	6.75	37.43	106	292	Peak
5755	93.72	92.43			32.01	6.75	37.47	106	292	Average
5755	102.72	101.43			32.01	6.75	37.47	106	292	Peak
*5850	60.66	59.14	78.2	-17.54	32.15	6.88	37.51	106	292	Peak
*5861	58.91	57.28	68.2	-9.29	32.18	6.95	37.5	106	292	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5755MHz: Fundamental frequency.
3. *: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 159	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
*5714	60.07	58.88	68.2	-8.13	31.93	6.69	37.43	172	342	Peak
*5725	59.08	57.8	78.2	-19.12	31.96	6.75	37.43	172	342	Peak
5795	91.02	89.67			32.07	6.82	37.54	172	342	Average
5795	100.86	99.51			32.07	6.82	37.54	172	342	Peak
*5850	60.54	59.02	78.2	-17.66	32.15	6.88	37.51	172	342	Peak
*5861	59.83	58.2	68.2	-8.37	32.18	6.95	37.5	172	342	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
*5714	58.45	57.26	68.2	-9.75	31.93	6.69	37.43	105	270	Peak
*5725	61.47	60.19	78.2	-16.73	31.96	6.75	37.43	105	270	Peak
5795	93.21	91.86			32.07	6.82	37.54	105	270	Average
5795	102.95	101.6			32.07	6.82	37.54	105	270	Peak
*5850	61.84	60.32	78.2	-16.36	32.15	6.88	37.51	105	270	Peak
*5861	60.63	59	68.2	-7.57	32.18	6.95	37.5	105	270	Peak

REMARKS:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 5795MHz: Fundamental frequency.
3. *: Out of restricted band

BELOW 1GHz WORST-CASE DATA:

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
70.74	30.41	50.82	40	-9.59	10.53	0.85	31.79	127	356	Peak
113.42	29.1	49.47	43.5	-14.4	10.37	1.12	31.86	119	114	Peak
166.77	34.66	53.25	43.5	-8.84	12.05	1.13	31.77	138	152	Peak
254.07	29.72	48.53	46	-16.28	11.59	1.5	31.9	102	72	Peak
612.97	21.92	31.98	46	-24.08	19.76	2.29	32.11	114	317	Peak
701.24	23.23	31.73	46	-22.77	20.83	2.45	31.78	108	349	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
41.64	34.1	50.93	40	-5.9	13.56	0.66	31.05	103	202	Peak
68.8	33.51	53.54	40	-6.49	10.89	0.85	31.77	130	330	Peak
159.01	28.21	46.19	43.5	-15.29	12.73	1.14	31.85	128	154	Peak
253.1	23.17	42.01	46	-22.83	11.57	1.5	31.91	130	253	Peak
606.18	21.34	31.54	46	-24.66	19.68	2.27	32.15	116	258	Peak
723.55	23.95	31.94	46	-22.05	21.15	2.49	31.63	105	303	Peak

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

Margin value = Emission level – Limit value

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
70.74	31.02	51.43	40	-8.98	10.53	0.85	31.79	113	350	Peak
114.39	29.47	49.76	43.5	-14.03	10.46	1.12	31.87	116	84	Peak
169.68	34.96	53.76	43.5	-8.54	11.76	1.17	31.73	134	143	Peak
250.19	29.58	48.55	46	-16.42	11.48	1.49	31.94	116	85	Peak
676.99	23.37	32.25	46	-22.63	20.54	2.41	31.83	106	129	Peak
759.44	25.1	32.33	46	-20.9	21.66	2.55	31.44	131	6	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
40.67	34.52	51.34	40	-5.48	13.55	0.65	31.02	131	224	Peak
68.8	33.03	53.06	40	-6.97	10.89	0.85	31.77	128	276	Peak
158.04	26.38	44.35	43.5	-17.12	12.73	1.13	31.83	110	7	Peak
531.49	21.03	32.55	46	-24.97	18.04	2.14	31.7	137	72	Peak
660.5	22.96	32.18	46	-23.04	20.34	2.38	31.94	109	175	Peak
760.41	24.31	31.54	46	-21.69	21.67	2.55	31.45	115	321	Peak

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

Margin value = Emission level – Limit value

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
70.74	31.3	51.71	40	-8.7	10.53	0.85	31.79	140	244	Peak
163.86	32.85	51.2	43.5	-10.65	12.34	1.13	31.82	118	140	Peak
175.5	33.52	52.96	43.5	-9.98	11.19	1.16	31.79	107	303	Peak
255.04	30.72	49.49	46	-15.28	11.62	1.51	31.9	126	42	Peak
583.87	21.59	32.26	46	-24.41	19.23	2.23	32.13	115	252	Peak
688.63	23.17	31.9	46	-22.83	20.68	2.43	31.84	102	331	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
40.67	34.12	50.94	40	-5.88	13.55	0.65	31.02	106	131	Peak
60.07	31.12	49.73	40	-8.88	11.94	0.81	31.36	136	122	Peak
66.86	34.58	54.29	40	-5.42	11.12	0.85	31.68	122	13	Peak
162.89	26.8	45.06	43.5	-16.7	12.44	1.13	31.83	133	332	Peak
595.51	21.83	32.28	46	-24.17	19.5	2.25	32.2	131	246	Peak
700.27	23.36	31.88	46	-22.64	20.82	2.45	31.79	139	226	Peak

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

Margin value = Emission level – Limit value

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 151	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
73.65	30.82	51.87	40	-9.18	9.81	0.85	31.71	137	96	Peak
168.71	35.61	54.33	43.5	-7.89	11.86	1.16	31.74	127	350	Peak
181.32	31.56	51.49	43.5	-11.94	10.67	1.22	31.82	112	318	Peak
253.1	29.96	48.8	46	-16.04	11.57	1.5	31.91	139	24	Peak
533.43	20.76	32.23	46	-25.24	18.08	2.15	31.7	101	185	Peak
761.38	25.53	32.74	46	-20.47	21.68	2.55	31.44	137	327	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
38.73	35.46	52.44	40	-4.54	13.39	0.63	31	121	235	Peak
64.92	34.82	54.22	40	-5.18	11.35	0.84	31.59	134	126	Peak
90.14	26.31	49	43.5	-17.19	8.3	0.97	31.96	140	143	Peak
167.74	29.47	48.12	43.5	-14.03	11.96	1.15	31.76	129	162	Peak
256.98	23.8	42.49	46	-22.2	11.68	1.51	31.88	133	358	Peak
514.03	21.3	33.12	46	-24.7	17.64	2.12	31.58	123	155	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 (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	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.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Apr. 27, 2015	Apr. 26, 2016
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 26, 2014	Dec. 25, 2015
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 30, 2014	Dec. 29, 2015
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 21, 2015	Jul. 20, 2016
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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

2. The test was performed in HwaYa Shielded Room 2.

3. The VCCI Site Registration No. is C-2047.

4.2.3 Test Procedures

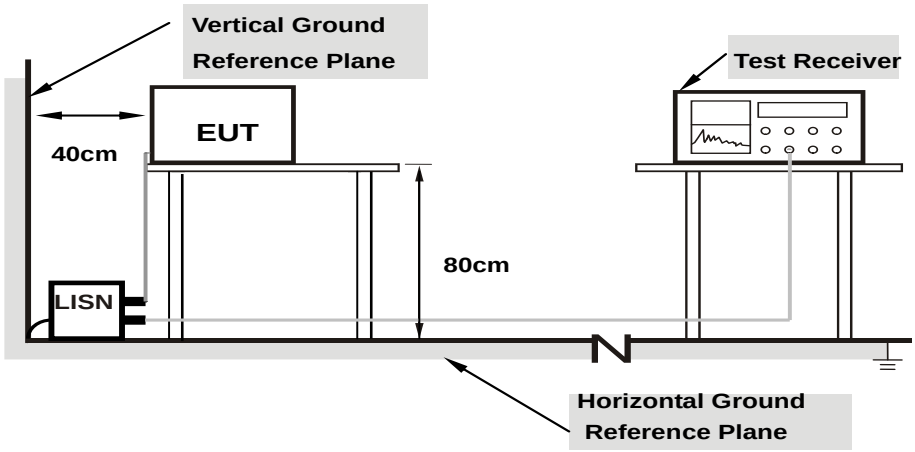
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

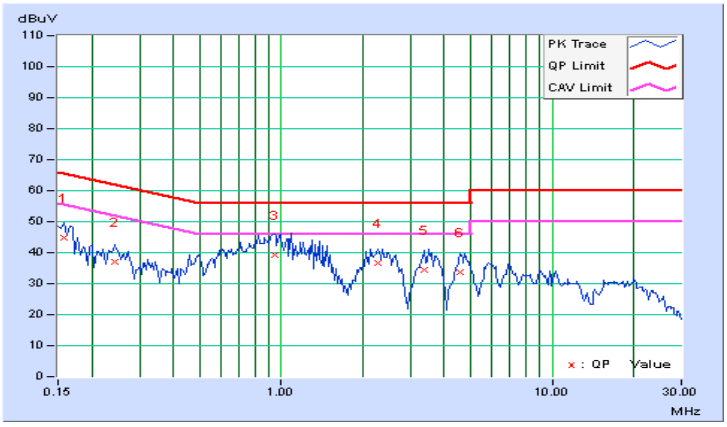
4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Toby Tian	Test Date	2015/8/7

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	0.17	44.59	36.07	44.76	36.24	65.58	55.58	-20.82	-19.34
2	0.24375	0.17	36.88	27.32	37.05	27.49	61.97	51.97	-24.92	-24.48
3	0.94297	0.23	39.13	30.31	39.36	30.54	56.00	46.00	-16.64	-15.46
4	2.27734	0.28	36.23	28.09	36.51	28.37	56.00	46.00	-19.49	-17.63
5	3.36328	0.32	34.10	25.92	34.42	26.24	56.00	46.00	-21.58	-19.76
6	4.58594	0.36	33.18	25.22	33.54	25.58	56.00	46.00	-22.46	-20.42

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

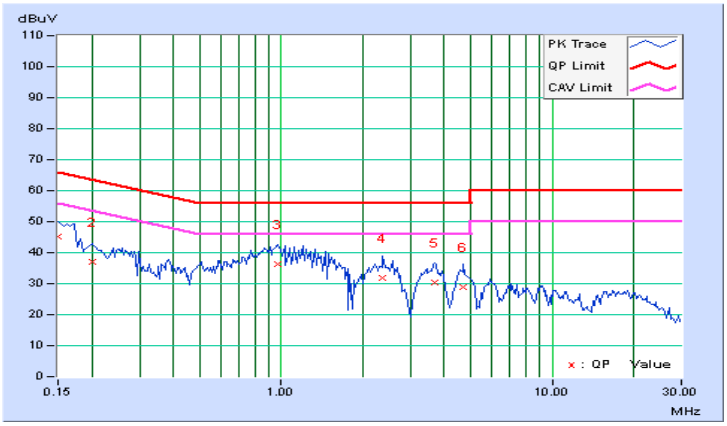


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Toby Tian	Test Date	2015/8/7

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.17	44.92	34.19	45.09	34.36	66.00	56.00	-20.91	-21.64
2	0.20078	0.18	36.70	24.91	36.88	25.09	63.58	53.58	-26.70	-28.49
3	0.96641	0.24	36.21	27.21	36.45	27.45	56.00	46.00	-19.55	-18.55
4	2.35938	0.31	31.55	23.93	31.86	24.24	56.00	46.00	-24.14	-21.76
5	3.69922	0.37	29.93	21.91	30.30	22.28	56.00	46.00	-25.70	-23.72
6	4.71484	0.40	28.50	20.82	28.90	21.22	56.00	46.00	-27.10	-24.78

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 Transmit Power Measurment

4.3.1 Limits of Transmit Power Measurement

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Mobile and Portable client device	250mW (24 dBm)
U-NII-2A	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	√		1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

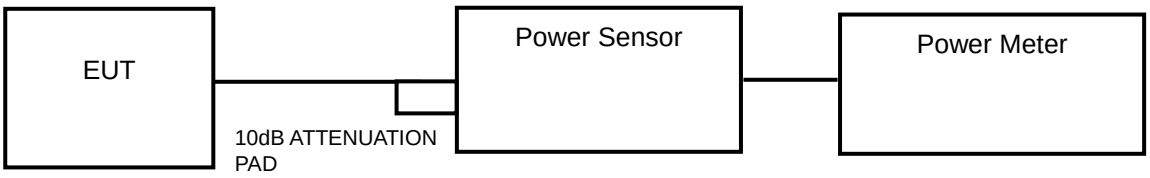
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};

Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

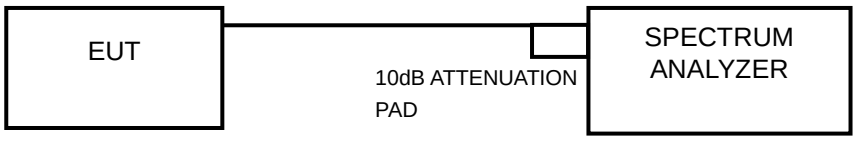
4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT



or

FOR 26dB BANDWIDTH



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

FOR AVERAGE POWER MEASUREMENT

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

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

FOR 26dB BANDWIDTH

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

4.3.5 Deviation fromTest Standard

No deviation.

4.3.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 Test Result

POWER OUTPUT:

802.11a

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	19.28	12.85	24	Pass
44	5220	18.75	12.73	24	Pass
48	5240	18.32	12.63	24	Pass
52	5260	18.03	12.56	24	Pass
60	5300	21.63	13.35	24	Pass
64	5320	20.80	13.18	24	Pass
100	5500	10.74	10.31	24	Pass
116	5580	12.36	10.92	24	Pass
140	5700	11.91	10.76	24	Pass
149	5745	10.38	10.16	30	Pass
157	5785	12.16	10.85	30	Pass
165	5825	12.76	11.06	30	Pass

NOTE:

For U-NII-2A, U-NII-2C Band:

1. 11dBm + 10log(19.98) = 24.01 dBm > 24dBm.
2. 11dBm + 10log(19.93) = 24.00 dBm > 24dBm.
3. 11dBm + 10log(20.16) = 24.04 dBm > 24dBm.
4. 11dBm + 10log(19.97) = 24.00 dBm > 24dBm.
5. 11dBm + 10log(20.07) = 24.03 dBm > 24dBm.
6. 11dBm + 10log(20.60) = 24.14 dBm > 24dBm.

802.11n (20MHz)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	16.41	12.15	24	Pass
44	5220	16.00	12.04	24	Pass
48	5240	15.60	11.93	24	Pass
52	5260	14.93	11.74	24	Pass
60	5300	14.89	11.73	24	Pass
64	5320	17.42	12.41	24	Pass
100	5500	10.50	10.21	24	Pass
116	5580	10.45	10.19	24	Pass
140	5700	9.57	9.81	24	Pass
149	5745	8.61	9.35	30	Pass
157	5785	9.73	9.88	30	Pass
165	5825	8.57	9.33	30	Pass

NOTE:

For U-NII-2A, U-NII-2C Band:

1. 11dBm + 10log(20.45) = 24.11 dBm > 24dBm.
2. 11dBm + 10log(20.42) = 24.10 dBm > 24dBm.
3. 11dBm + 10log(20.51) = 24.12 dBm > 24dBm.
4. 11dBm + 10log(20.40) = 24.10 dBm > 24dBm.
5. 11dBm + 10log(20.39) = 24.09 dBm > 24dBm.
6. 11dBm + 10log(20.46) = 24.11 dBm > 24dBm.

802.11n (40MHz)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	17.82	12.51	24	Pass
46	5230	17.62	12.46	24	Pass
54	5270	16.75	12.24	24	Pass
62	5310	14.79	11.70	24	Pass
102	5510	9.42	9.74	24	Pass
110	5550	9.02	9.55	24	Pass
134	5670	8.81	9.45	24	Pass
151	5755	9.64	9.84	30	Pass
159	5795	8.63	9.36	30	Pass

NOTE:

For U-NII-2A, U-NII-2C Band:

1. 11dBm + 10log(41.96) = 27.23 dBm > 24dBm.
2. 11dBm + 10log(41.83) = 27.21 dBm > 24dBm.
3. 11dBm + 10log(41.90) = 27.22 dBm > 24dBm.
4. 11dBm + 10log(41.80) = 27.21 dBm > 24dBm.
5. 11dBm + 10log(41.84) = 27.22 dBm > 24dBm.

26dB BANDWIDTH:

802.11a

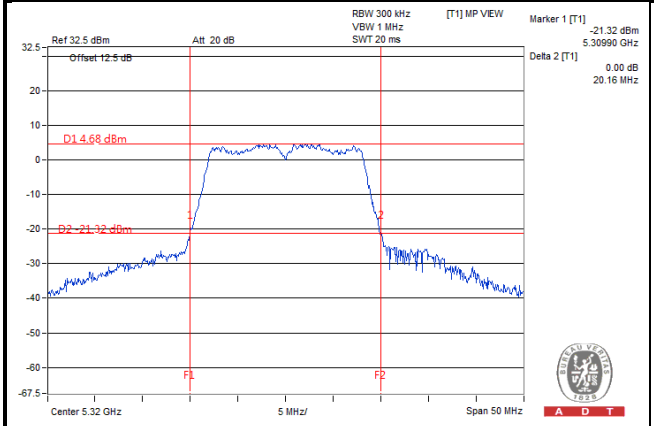
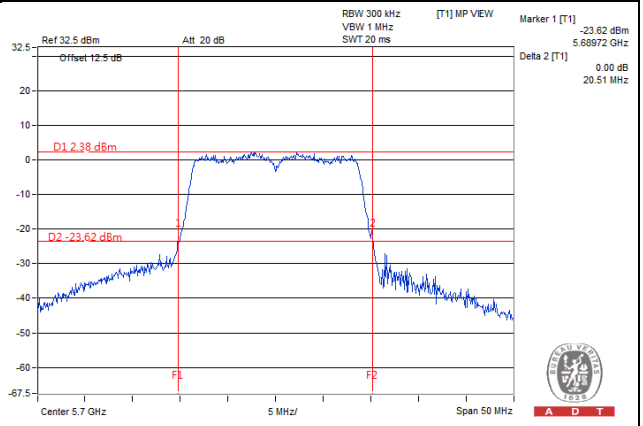
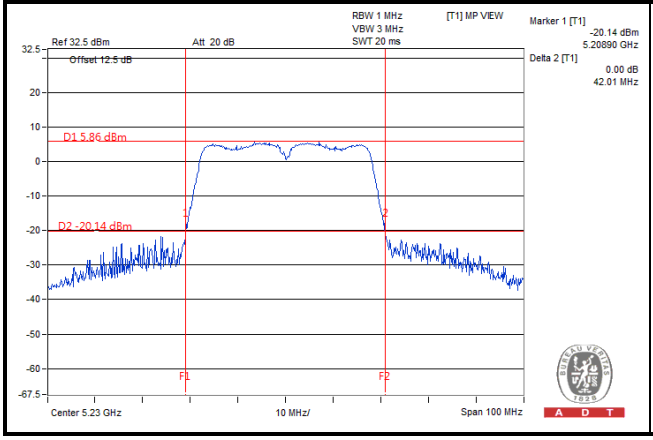
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	Pass / Fail
36	5180	20.03	Pass
44	5220	19.83	Pass
48	5240	20.15	Pass
52	5260	19.98	Pass
60	5300	19.93	Pass
64	5320	20.16	Pass
100	5500	19.96	Pass
116	5580	19.97	Pass
140	5700	19.96	Pass

802.11n (20MHz)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	Pass / Fail
36	5180	20.34	Pass
44	5220	20.41	Pass
48	5240	20.40	Pass
52	5260	20.45	Pass
60	5300	20.42	Pass
64	5320	20.51	Pass
100	5500	20.43	Pass
116	5580	20.35	Pass
140	5700	20.51	Pass

802.11n (40MHz)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	Pass / Fail
38	5190	41.95	Pass
46	5230	42.01	Pass
54	5270	41.96	Pass
62	5310	41.83	Pass
102	5510	41.66	Pass
110	5550	41.95	Pass
134	5670	41.99	Pass

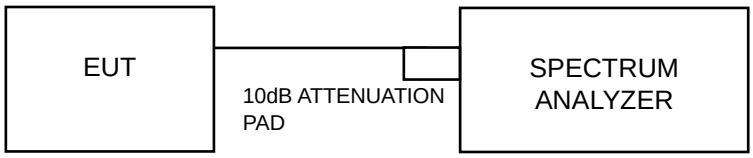
Spectrum Plot of Worst Value	
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	
	

4.4 Peak Power Spectral Density Measurement

4.4.1 Limits of Peak Power Spectral Density Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Mobile and Portable client device	11dBm/ MHz
U-NII-2A	√		11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3	√		30dBm/ 500MHz

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

For U-NII-1, U-NII-2A, U-NII-2C band:

Using method SA-1

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3. Sweep time = auto, trigger set to “free run”.
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value

For U-NII-3:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500 kHz/300kHz)
5. Sweep time = auto, trigger set to “free run”.
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value

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

For U-NII-1, U-NII-2A, U-NII-2C Band

802.11a

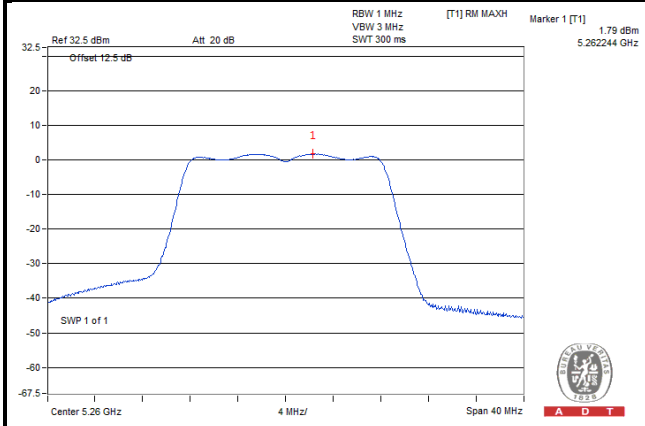
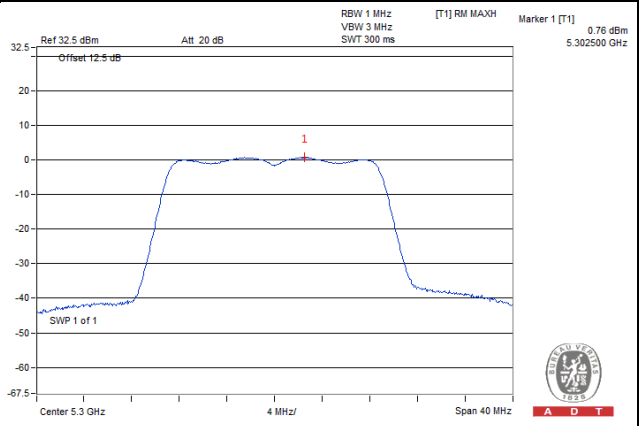
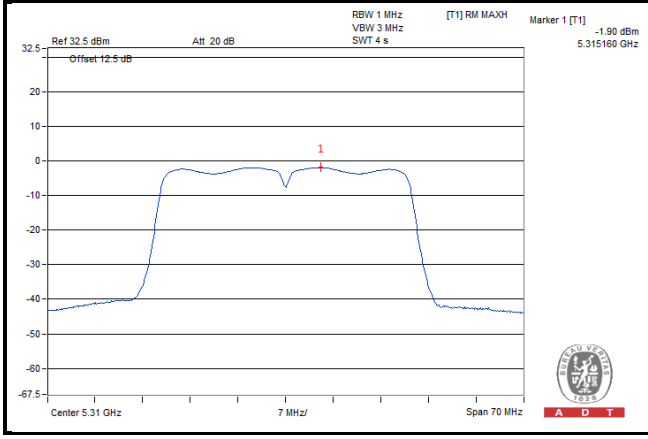
Channel	Frequency (MHz)	PSD (dBm)	Maximum Limit (dBm)	Pass / Fail
36	5180	1.63	11	Pass
44	5220	1.75	11	Pass
48	5240	1.67	11	Pass
52	5260	1.79	11	Pass
60	5300	1.67	11	Pass
64	5320	1.70	11	Pass
100	5500	-0.27	11	Pass
116	5580	0.31	11	Pass
140	5700	-0.71	11	Pass

802.11n (20MHz)

Channel	Frequency (MHz)	PSD (dBm)	Maximum Limit (dBm)	Pass / Fail
36	5180	0.49	11	Pass
44	5220	0.70	11	Pass
48	5240	0.71	11	Pass
52	5260	0.66	11	Pass
60	5300	0.76	11	Pass
64	5320	0.58	11	Pass
100	5500	-0.27	11	Pass
116	5580	-0.75	11	Pass
140	5700	-1.74	11	Pass

802.11n (40MHz)

Channel	Frequency (MHz)	PSD (dBm)	Maximum Limit (dBm)	Pass / Fail
38	5190	-2.01	11	Pass
46	5230	-2.20	11	Pass
54	5270	-1.96	11	Pass
62	5310	-1.90	11	Pass
102	5510	-3.82	11	Pass
110	5550	-3.39	11	Pass
134	5670	-3.46	11	Pass

Spectrum Plot of Worst Value	
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	
	

For U-NII-3 Band

802.11a

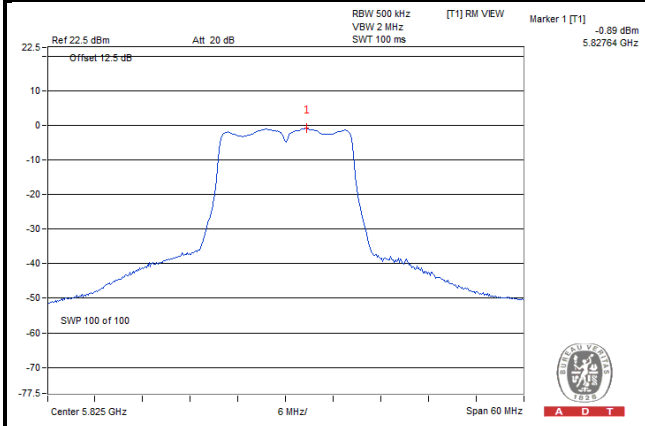
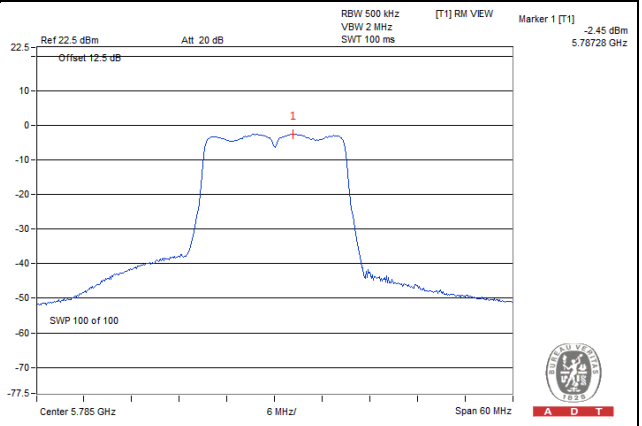
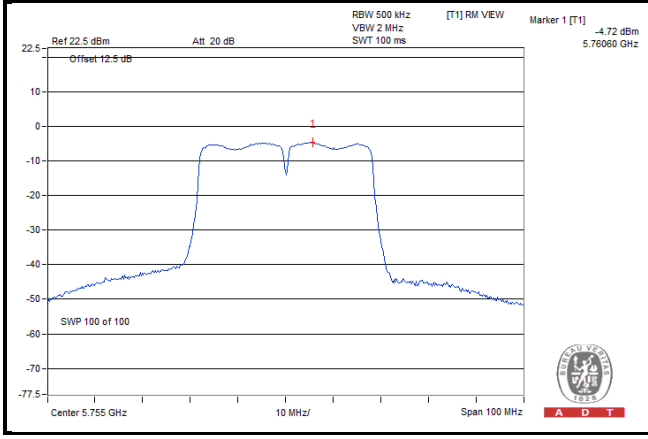
Channel	Freq. (MHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
149	5745	-1.15	30	Pass
157	5785	-1.35	30	Pass
165	5825	-0.89	30	Pass

802.11n (20MHz)

Channel	Freq. (MHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
149	5745	-2.70	30	Pass
157	5785	-2.45	30	Pass
165	5825	-3.41	30	Pass

802.11n (40MHz)

Channel	Freq. (MHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
151	5755	-4.72	30	Pass
159	5795	-5.21	30	Pass

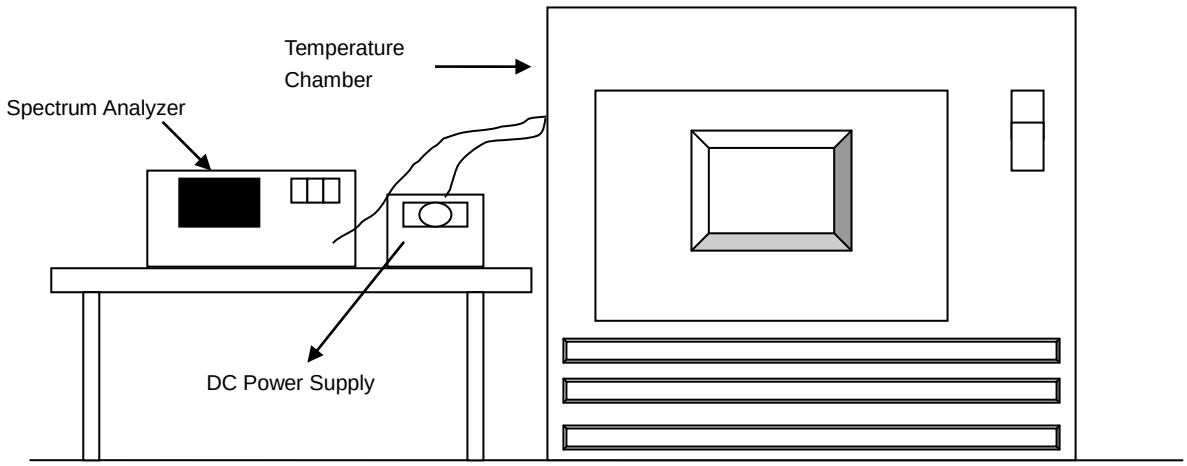
Spectrum Plot of Worst Value	
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	
	

4.5 Frequency Stability

4.5.1 Limit of Frequency Stability Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.5.4 Test Procedure

a. 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.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

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

4.5.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5320MHz									
Temp. (℃)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
50	3.85	5320.038027	7.148	5320.038229	7.186	5320.037651	7.077	5320.038304	7.200
40	3.85	5320.038025	7.148	5320.037940	7.132	5320.038124	7.166	5320.037866	7.118
30	3.85	5320.038728	7.280	5320.038692	7.273	5320.039380	7.402	5320.039320	7.391
20	3.85	5320.037806	7.106	5320.038051	7.152	5320.038226	7.185	5320.037792	7.104
10	3.85	5320.041497	7.800	5320.041408	7.783	5320.041656	7.830	5320.041395	7.781
0	3.85	5320.040262	7.568	5320.040299	7.575	5320.039968	7.513	5320.039900	7.500
-10	3.85	5320.038374	7.213	5320.038167	7.174	5320.038431	7.224	5320.038963	7.324
-20	3.85	5320.038490	7.235	5320.038049	7.152	5320.038069	7.156	5320.038336	7.206
-30	3.85	5320.037213	6.995	5320.036808	6.919	5320.037020	6.959	5320.037141	6.981

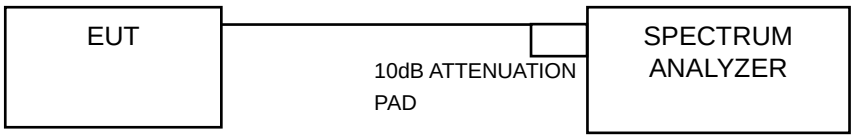
Frequency Stability Versus Temp.									
Operating Frequency: 5320MHz									
Temp. (℃)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	3.5	5320.037637	7.075	5320.037886	7.121	5320.037958	7.135	5320.037879	7.120
	3.85	5320.037806	7.106	5320.038051	7.152	5320.038226	7.185	5320.037792	7.104
	4.40	5320.039447	7.415	5320.039302	7.388	5320.039053	7.341	5320.039309	7.389

4.6 6dB Bandwidth Measurment

4.6.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

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

MEASUREMENT PROCEDURE REF

a. Set resolution bandwidth (RBW) = 100kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.6.7 Test Results

802.11a

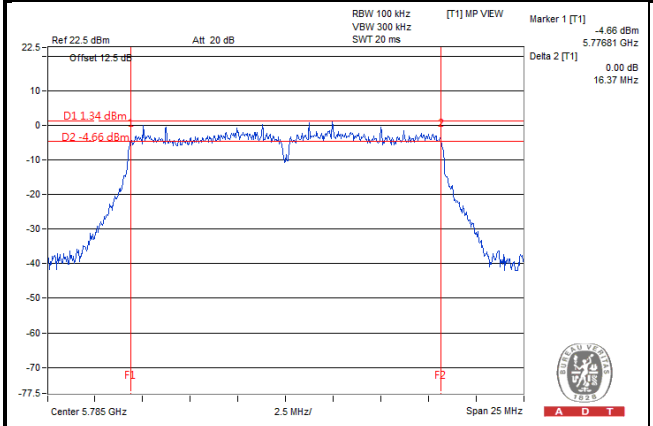
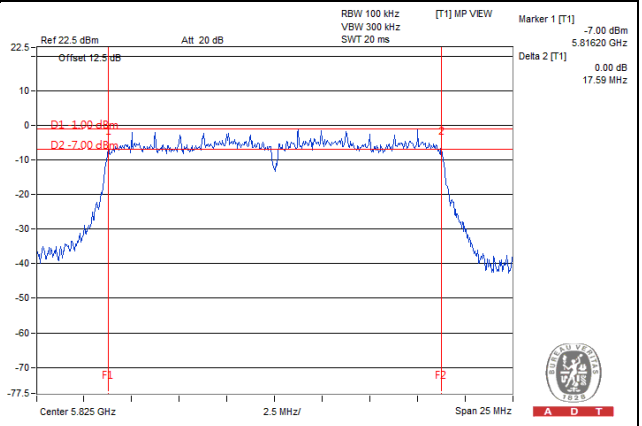
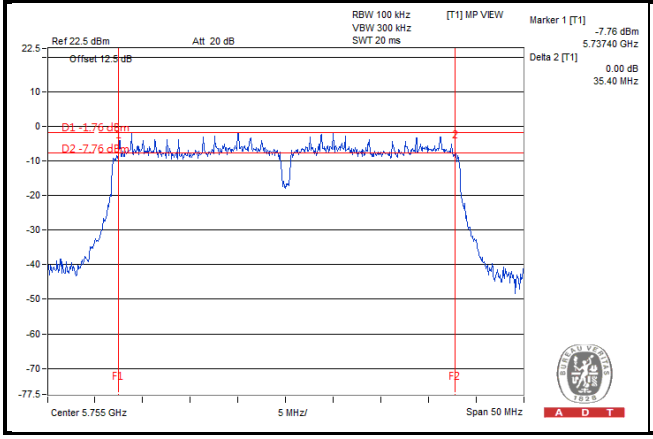
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.36	0.5	Pass
157	5785	16.37	0.5	Pass
165	5825	16.33	0.5	Pass

802.11n (20MHz)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	17.13	0.5	Pass
157	5785	17.33	0.5	Pass
165	5825	17.59	0.5	Pass

802.11n (40MHz)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	35.40	0.5	Pass
159	5795	35.29	0.5	Pass

Spectrum Plot of Worst Value	
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	
	

5 Pictures of Test Arrangements

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

Appendix – 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/Telecom Lab
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety
Tel: 886-3-3183232
Fax: 886-3-3270892

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

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

--- END ---