

## FCC Test Report

**Report No.:** RF150722C10A-1

**FCC ID:** 2AFD7-P3302

**Test Model:** P3302

**Received Date:** Jul. 22, 2015

**Test Date:** Aug. 01, 2015 ~ Aug. 17, 2015

**Issued Date:** Oct. 06, 2015

**Applicant:** Poynt Co.

**Address:** 490 S California Avenue Suite 200 Palo Alto, CA 94306 USA

**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.



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### Release Control Record

Issue No.	Description	Date Issued
RF150722C10A-1	Original Release	Oct. 06, 2015

## 1 Certificate of Conformity

**Product:** POS

**Brand:** POYNT

**Test Model:** P3302

**Sample Status:** Production Unit

**Applicant:** Poynt Co.

**Test Date:** Aug. 01, 2015 ~ Aug. 17, 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:**

Oct. 06, 2015

Ivonne Wu / Supervisor

**Approved by :**



**Date:**

Oct. 06, 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 -14.50dB at 0.15400MHz.
15.407(b) (1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -2.16dB at 5714MHz.
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	POS
Brand	POYNT
Test Model	P3302
Status of EUT	Production Unit
Power Supply Rating	12Vdc (adapter) 3.7Vdc (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	7.73mW for 5180 ~ 5240MHz 7.74mW for 5260 ~ 5320MHz 8.87mW for 5500 ~ 5700MHz 8.51mW for 5745 ~ 5825MHz
Antenna Type	PIFA antenna with 1.8dBi gain (5180 ~ 5240MHz) PIFA antenna with 1.7dBi gain (5260 ~ 5320MHz) PIFA antenna with 4dBi gain (5500 ~ 5700MHz) PIFA antenna with 4.6dBi gain (5745 ~ 5825MHz)
Antenna Connector	N/A
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
Adapter	FSP GROUP INC.	FSP040-RHBN2	I/P: 100-240Vac, 50/60Hz, 1.5A O/P: 12Vdc, 3.33A 1.2m shielded cable with one core
Battery	Formosa Electronic Industries IN	P61	3.7Vdc, 14.8Wh
LCD Panel 1	LG	LD070WX7-SMN4	7"
LCD Panel 2	LG	LH430WV1-SD07	4.3"
Photo Camera	LITE-ON CORP.	5BA502T2A	--
Video Camera	NingBo Sunny Opotech	Q034C-200	--
Main Board	Quanta	DA0P61MBAB0	--
eMMC	kingston	EMMC16G-V100-C50	16GB
CPU	nV	T40s	--
WLAN Module	Azurewave	AW-AH640	--
WWAN Module	HUAWEI	MU736	--
Docking	Quanta	DA0P61TB6B0	--

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 $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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

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

**PLC**: Power Line Conducted Emission

**APCM**: Antenna Port Conducted Measurement

#### NOTE:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

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
-	802.11n (40MHz)	5260-5320	54 to 62	62	OFDM	BPSK	MCS0
-	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 $\geq$ 1G	25deg. C, 65%RH	120Vac, 60Hz	Anson Lin
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Anson Lin
PLC	25deg. C, 68%RH	120Vac, 60Hz	Toby Tian
APCM	25deg. C, 68%RH	3.7Vdc	Howard Kao

### 3.3 Duty Cycle of Test Signal

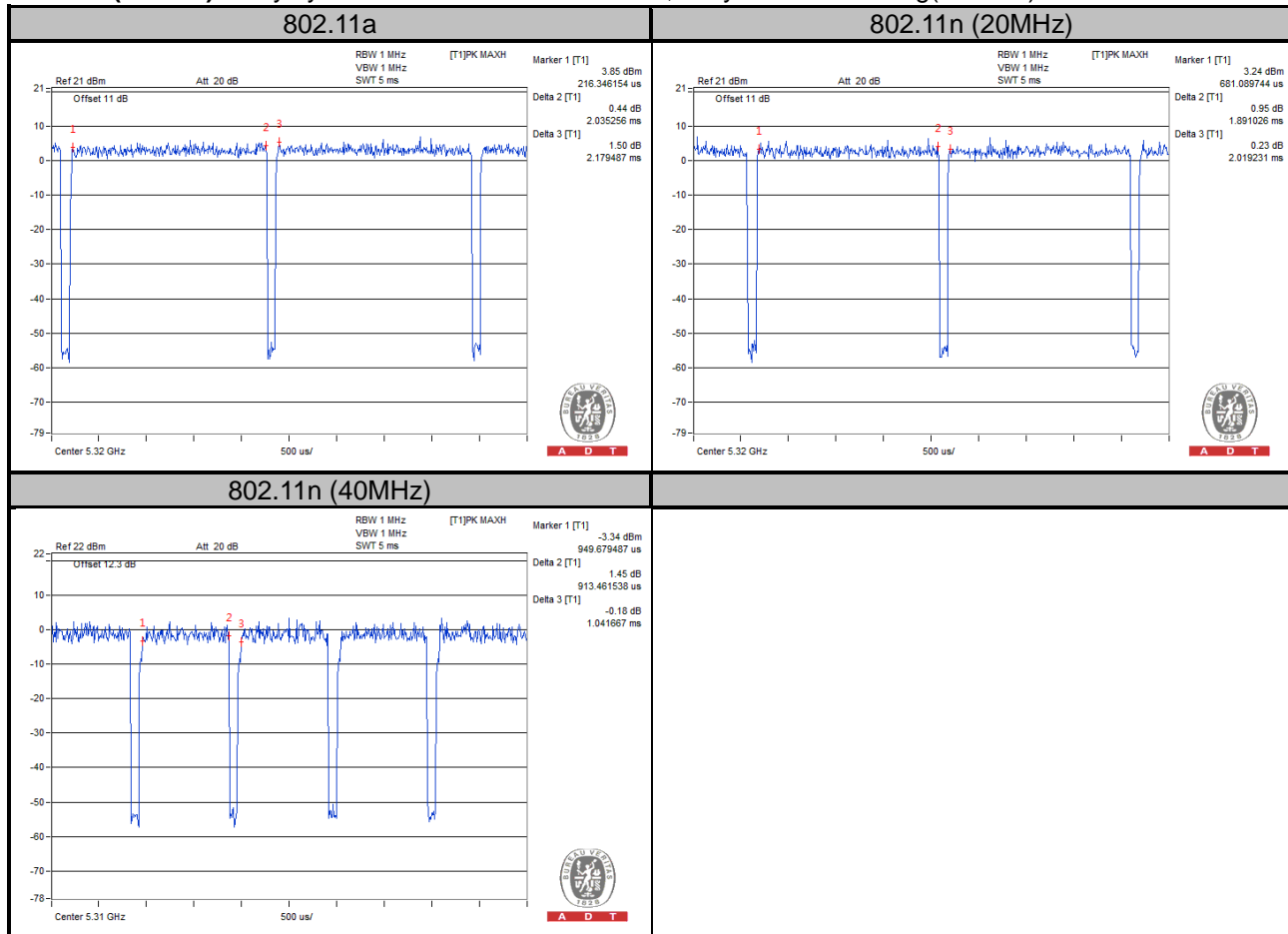
#### MODULATION TYPE: BPSK

Duty cycle of test signal is < 98%, duty factor is required.

**802.11a:** Duty cycle =  $2.035/2.179 = 0.934$ , Duty factor =  $10 * \log(1/0.934) = 0.30$

**802.11n (20MHz):** Duty cycle =  $1.891/2.019 = 0.937$ , Duty factor =  $10 * \log(1/0.937) = 0.28$

**802.11n (40MHz):** Duty cycle =  $913.46/1041.67 = 0.877$ , Duty factor =  $10 * \log(1/0.877) = 0.57$



## MODULATION TYPE: QPSK

Duty cycle of test signal is < 98%, duty factor is required.

**802.11a:** Duty cycle =  $1.026/1.154 = 0.889$ , Duty factor =  $10 * \log(1/0.889) = 0.51$

**802.11n (20MHz):** Duty cycle =  $929.49/1073.72 = 0.866$ , Duty factor =  $10 * \log(1/0.866) = 0.63$

**802.11n (40MHz):** Duty cycle =  $456.73/592.95 = 0.770$ , Duty factor =  $10 * \log(1/0.770) = 1.13$



## MODULATION TYPE: 16QAM

Duty cycle of test signal is < 98%, duty factor is required.

**802.11a:** Duty cycle =  $512.82/633.01 = 0.810$ , Duty factor =  $10 * \log(1/0.810) = 0.91$

**802.11n (20MHz):** Duty cycle =  $480.77/608.97 = 0.789$ , Duty factor =  $10 * \log(1/0.789) = 1.03$

**802.11n (40MHz):** Duty cycle =  $264.42/368.59 = 0.717$ , Duty factor =  $10 * \log(1/0.717) = 1.44$



## MODULATION TYPE: 64QAM

Duty cycle of test signal is < 98%, duty factor is required.

**802.11a:** Duty cycle =  $256.41/392.63 = 0.653$ , Duty factor =  $10 * \log(1/0.653) = 1.85$

**802.11n (20MHz):** Duty cycle =  $248.40/376.60 = 0.659$ , Duty factor =  $10 * \log(1/0.659) = 1.81$

**802.11n (40MHz):** Duty cycle =  $152.24/248.40 = 0.613$ , Duty factor =  $10 * \log(1/0.613) = 2.13$

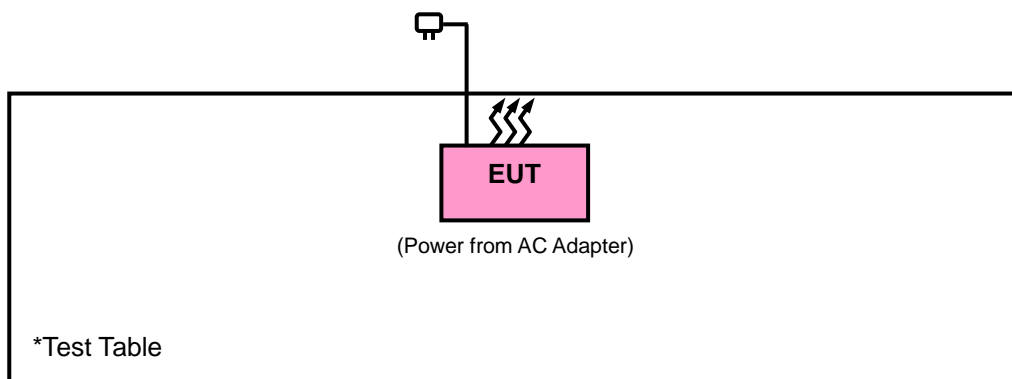




### 3.4 Description of Support Units

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

#### 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) <sup>*1</sup> PK:-17 (dBm/MHz) <sup>*2</sup>	PK: 68.2(dBμV/m) <sup>*1</sup> PK:78.2 (dBμV/m) <sup>*2</sup>

**NOTE:** <sup>\*1</sup> beyond 10MHz of the band edge <sup>\*2</sup> within 10 MHz of band edge

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

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

#### 4.1.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY51210203	Jan. 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
Loop Antenna	EM-6879	269	Jul. 31, 2015	Jul. 30, 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 preamplifier (model: EMC 330H) 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:**

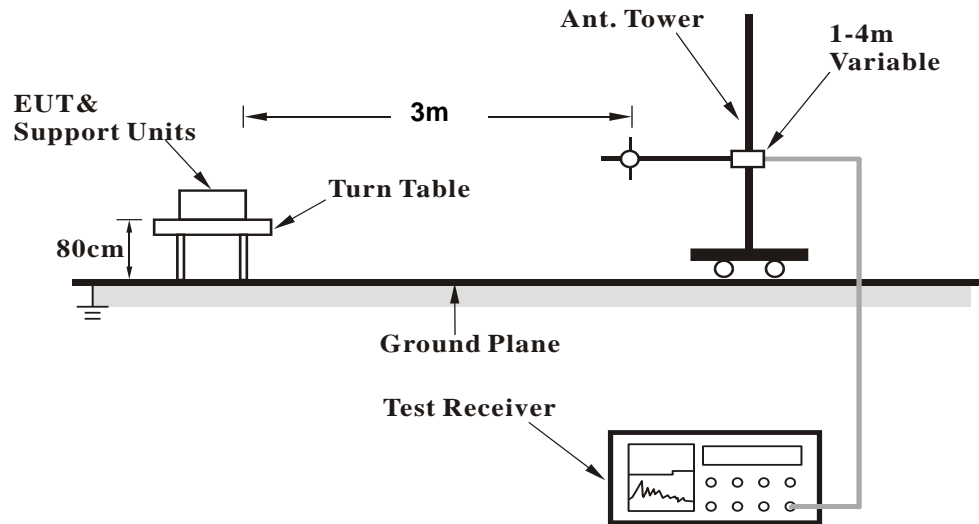
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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 ( $10 \log(1/\text{duty cycle})$ ).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle  $\geq 98\%$ ) 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

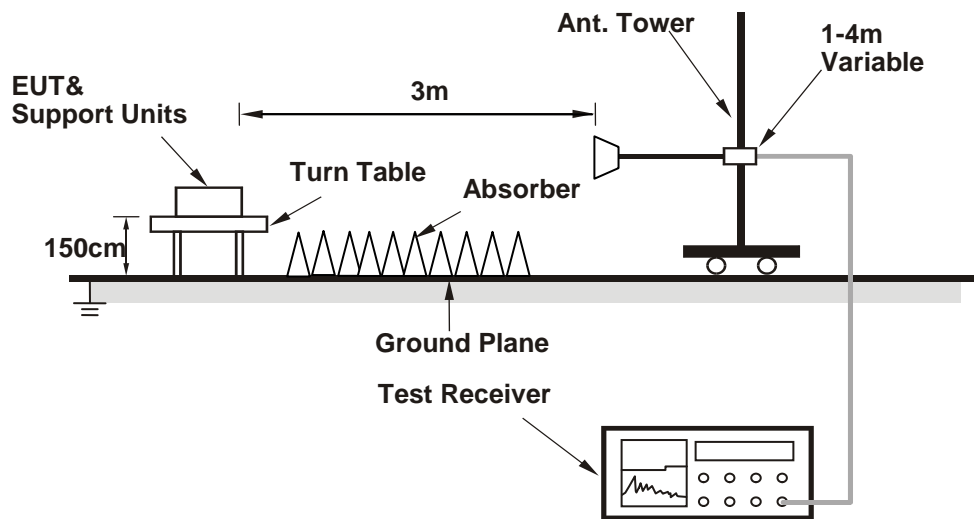
No deviation.

#### 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

- Placed the EUT on a testing table.
- 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	Anson Lin

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	45.53	45.33	54	-8.47	31.32	6.2	37.32	220	62	Average
5150	62.69	62.49	74	-11.31	31.32	6.2	37.32	220	62	Peak
5180	94.97	94.74			31.35	6.22	37.34	220	62	Average
5180	103.04	102.81			31.35	6.22	37.34	220	62	Peak
5448	38.63	37.86	54	-15.37	31.56	6.34	37.13	220	62	Average
5448	60.94	60.17	74	-13.06	31.56	6.34	37.13	220	62	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.61	42.41	54	-11.39	31.32	6.2	37.32	123	44	Average
5150	60.61	60.41	74	-13.39	31.32	6.2	37.32	123	44	Peak
5180	92.33	92.1			31.35	6.22	37.34	123	44	Average
5180	101.15	100.92			31.35	6.22	37.34	123	44	Peak
5450	38.59	37.77	54	-15.41	31.56	6.34	37.08	123	44	Average
5450	60.53	59.71	74	-13.47	31.56	6.34	37.08	123	44	Peak

#### REMARKS:

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

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
5068	39.67	39.52	54	-14.33	31.25	6.17	37.27	219	62	Average
5068	60.07	59.92	74	-13.93	31.25	6.17	37.27	219	62	Peak
5220	94.36	94.11			31.37	6.24	37.36	219	62	Average
5220	103.27	103.02			31.37	6.24	37.36	219	62	Peak
5350	38.67	38.08	54	-15.33	31.48	6.29	37.18	219	62	Average
5350	60.59	60	74	-13.41	31.48	6.29	37.18	219	62	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5012	38.92	38.81	54	-15.08	31.21	6.13	37.23	108	45	Average
5012	60.5	60.39	74	-13.5	31.21	6.13	37.23	108	45	Peak
5220	92.71	92.46			31.37	6.24	37.36	108	45	Average
5220	101.48	101.23			31.37	6.24	37.36	108	45	Peak
5450	38.62	37.8	54	-15.38	31.56	6.34	37.08	108	45	Average
5450	60.3	59.48	74	-13.7	31.56	6.34	37.08	108	45	Peak

## REMARKS:

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

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	39.09	38.9	54	-14.91	31.28	6.19	37.28	214	64	Average
5104	60.16	59.97	74	-13.84	31.28	6.19	37.28	214	64	Peak
5240	94.19	93.87			31.39	6.25	37.32	214	64	Average
5240	103.11	102.79			31.39	6.25	37.32	214	64	Peak
5364	39.14	38.52	54	-14.86	31.49	6.31	37.18	214	64	Average
5364	60.78	60.16	74	-13.22	31.49	6.31	37.18	214	64	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
5034	38.34	38.2	54	-15.66	31.23	6.15	37.24	130	46	Average
5034	60.32	60.18	74	-13.68	31.23	6.15	37.24	130	46	Peak
5240	92.89	92.57			31.39	6.25	37.32	130	46	Average
5240	101.57	101.25			31.39	6.25	37.32	130	46	Peak
5354	38.39	37.8	54	-15.61	31.48	6.29	37.18	130	46	Average
5354	60.95	60.36	74	-13.05	31.48	6.29	37.18	130	46	Peak

## REMARKS:

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

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
5146	38.7	38.5	54	-15.3	31.32	6.2	37.32	198	68	Average
5146	59.84	59.64	74	-14.16	31.32	6.2	37.32	198	68	Peak
5260	95.31	94.92			31.41	6.25	37.27	198	68	Average
5260	104.26	103.87			31.41	6.25	37.27	198	68	Peak
5356	39.18	38.59	54	-14.82	31.48	6.29	37.18	198	68	Average
5356	59.92	59.33	74	-14.08	31.48	6.29	37.18	198	68	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5022	38.4	38.26	54	-15.6	31.23	6.15	37.24	202	46	Average
5022	60.17	60.03	74	-13.83	31.23	6.15	37.24	202	46	Peak
5260	92.5	92.11			31.41	6.25	37.27	202	46	Average
5260	101.34	100.95			31.41	6.25	37.27	202	46	Peak
5438	38.93	38.17	54	-15.07	31.55	6.34	37.13	202	46	Average
5438	60.25	59.49	74	-13.75	31.55	6.34	37.13	202	46	Peak

## REMARKS:

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

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	38.35	38.21	54	-15.65	31.23	6.15	37.24	214	67	Average
5022	59.45	59.31	74	-14.55	31.23	6.15	37.24	214	67	Peak
5300	94.4	93.88			31.44	6.27	37.19	214	67	Average
5300	103.89	103.37			31.44	6.27	37.19	214	67	Peak
5352	43.5	42.91	54	-10.5	31.48	6.29	37.18	214	67	Average
5352	61.47	60.88	74	-12.53	31.48	6.29	37.18	214	67	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
5092	38.26	38.06	54	-15.74	31.28	6.19	37.27	201	44	Average
5092	60.26	60.06	74	-13.74	31.28	6.19	37.27	201	44	Peak
5300	92.43	91.91			31.44	6.27	37.19	201	44	Average
5300	101.17	100.65			31.44	6.27	37.19	201	44	Peak
5394	40.87	40.23	54	-13.13	31.51	6.31	37.18	201	44	Average
5394	60.11	59.47	74	-13.89	31.51	6.31	37.18	201	44	Peak

## REMARKS:

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

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	38.18	37.99	54	-15.82	31.28	6.19	37.28	121	89	Average
5096	60.34	60.15	74	-13.66	31.28	6.19	37.28	121	89	Peak
5320	95.87	95.32			31.45	6.29	37.19	121	89	Average
5320	100.37	99.82			31.45	6.29	37.19	121	89	Peak
5352	44.64	44.05	54	-9.36	31.48	6.29	37.18	121	89	Average
5352	61.22	60.63	74	-12.78	31.48	6.29	37.18	121	89	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
5072	38.04	37.87	54	-15.96	31.27	6.17	37.27	147	25	Average
5072	59.5	59.33	74	-14.5	31.27	6.17	37.27	147	25	Peak
5320	94.73	94.18			31.45	6.29	37.19	147	25	Average
5320	98.37	97.82			31.45	6.29	37.19	147	25	Peak
5444	43.34	42.58	54	-10.66	31.55	6.34	37.13	147	25	Average
5444	59.99	59.23	74	-14.01	31.55	6.34	37.13	147	25	Peak

## REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	46.27	45.45	54	-7.73	31.56	6.34	37.08	217	65	Average
5460	62.56	61.74	74	-11.44	31.56	6.34	37.08	217	65	Peak
5470	63.6	62.77	68.2	-4.6	31.57	6.34	37.08	217	65	Peak
5500	94.63	93.7			31.6	6.36	37.03	217	65	Average
5500	103.64	102.71			31.6	6.36	37.03	217	65	Peak
5725	58.95	57.67	68.2	-9.25	31.96	6.75	37.43	217	65	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5456	42.73	41.91	54	-11.27	31.56	6.34	37.08	175	41	Average
5456	61.38	60.56	74	-12.62	31.56	6.34	37.08	175	41	Peak
5470	59.88	59.05	68.2	-8.32	31.57	6.34	37.08	175	41	Peak
5500	92.42	91.49			31.6	6.36	37.03	175	41	Average
5500	101.59	100.66			31.6	6.36	37.03	175	41	Peak
5725	58.49	57.21	68.2	-9.71	31.96	6.75	37.43	175	41	Peak

#### REMARKS:

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



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	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5454	38.38	37.56	54	-15.62	31.56	6.34	37.08	200	52	Average
5454	59.84	59.02	74	-14.16	31.56	6.34	37.08	200	52	Peak
5470	58.29	57.46	68.2	-9.91	31.57	6.34	37.08	200	52	Peak
5580	92.3	91.26			31.71	6.49	37.16	200	52	Average
5580	102.19	101.15			31.71	6.49	37.16	200	52	Peak
5725	58.75	57.47	68.2	-9.45	31.96	6.75	37.43	200	52	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
5392	37.85	37.21	54	-16.15	31.51	6.31	37.18	210	41	Average
5392	58.39	57.75	74	-15.61	31.51	6.31	37.18	210	41	Peak
5470	57.86	57.03	68.2	-10.34	31.57	6.34	37.08	210	41	Peak
5580	91.05	90.01			31.71	6.49	37.16	210	41	Average
5580	100.25	99.21			31.71	6.49	37.16	210	41	Peak
5725	57.2	55.92	68.2	-11	31.96	6.75	37.43	210	41	Peak

## REMARKS:

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



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	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5426	38.68	37.96	54	-15.32	31.53	6.32	37.13	218	59	Average
5426	60.81	60.09	74	-13.19	31.53	6.32	37.13	218	59	Peak
5470	59.6	58.77	68.2	-8.6	31.57	6.34	37.08	218	59	Peak
5700	94.85	93.66			31.9	6.69	37.4	218	59	Average
5700	103.08	101.89			31.9	6.69	37.4	218	59	Peak
5725	62.8	61.52	68.2	-5.4	31.96	6.75	37.43	218	59	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
5360	38.57	37.96	54	-15.43	31.48	6.31	37.18	193	35	Average
5360	60.28	59.67	74	-13.72	31.48	6.31	37.18	193	35	Peak
5470	58.77	57.94	68.2	-9.43	31.57	6.34	37.08	193	35	Peak
5700	92.84	91.65			31.9	6.69	37.4	193	35	Average
5700	101.18	99.99			31.9	6.69	37.4	193	35	Peak
5725	62.47	61.25	68.2	-5.73	31.96	6.69	37.43	193	35	Peak

## REMARKS:

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



A D T

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	Anson Lin

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	60.25	59.06	68.2	-7.95	31.93	6.69	37.43	205	55	Peak
*5725	66.11	64.83	78.2	-12.09	31.96	6.75	37.43	205	55	Peak
5745	93.73	92.46			31.99	6.75	37.47	205	55	Average
5745	103.4	102.13			31.99	6.75	37.47	205	55	Peak
*5850	59	57.48	78.2	-19.2	32.15	6.88	37.51	205	55	Peak
*5861	58.09	56.46	68.2	-10.11	32.18	6.95	37.5	205	55	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	57.43	56.24	68.2	-10.77	31.93	6.69	37.43	180	22	Peak
*5725	62.55	61.27	78.2	-15.65	31.96	6.75	37.43	180	22	Peak
5745	91.15	89.88			31.99	6.75	37.47	180	22	Average
5745	101.09	99.82			31.99	6.75	37.47	180	22	Peak
*5850	55.75	54.23	78.2	-22.45	32.15	6.88	37.51	180	22	Peak
*5861	56.44	54.81	68.2	-11.76	32.18	6.95	37.5	180	22	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5745MHz: Fundamental frequency.
- \*: 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	Anson Lin

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	59.31	58.12	68.2	-8.89	31.93	6.69	37.43	200	63	Peak
*5725	60.23	58.95	78.2	-17.97	31.96	6.75	37.43	200	63	Peak
5785	93.6	92.28			32.04	6.82	37.54	200	63	Average
5785	103.17	101.85			32.04	6.82	37.54	200	63	Peak
*5850	61.35	59.83	78.2	-16.85	32.15	6.88	37.51	200	63	Peak
*5861	60.2	58.57	68.2	-8	32.18	6.95	37.5	200	63	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
*5714	59.66	58.47	68.2	-8.54	31.93	6.69	37.43	106	18	Peak
*5725	60	58.72	78.2	-18.2	31.96	6.75	37.43	106	18	Peak
5785	91.99	90.67			32.04	6.82	37.54	106	18	Average
5785	101.13	99.81			32.04	6.82	37.54	106	18	Peak
*5850	59.94	58.42	78.2	-18.26	32.15	6.88	37.51	106	18	Peak
*5861	59.64	58.01	68.2	-8.56	32.18	6.95	37.5	106	18	Peak

#### REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5785MHz: Fundamental frequency.
- \*: 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	Anson Lin

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	59.57	58.38	68.2	-8.63	31.93	6.69	37.43	197	63	Peak
*5725	59.75	58.47	78.2	-18.45	31.96	6.75	37.43	197	63	Peak
5825	93.8	92.33			32.12	6.88	37.53	197	63	Average
5825	103.37	101.9			32.12	6.88	37.53	197	63	Peak
*5850	65.61	64.09	78.2	-12.59	32.15	6.88	37.51	197	63	Peak
*5861	62.1	60.47	68.2	-6.1	32.18	6.95	37.5	197	63	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
*5714	60.51	59.32	68.2	-7.69	31.93	6.69	37.43	198	20	Peak
*5725	59.62	58.34	78.2	-18.58	31.96	6.75	37.43	198	20	Peak
5825	91.93	90.46			32.12	6.88	37.53	198	20	Average
5825	101.52	100.05			32.12	6.88	37.53	198	20	Peak
*5850	62.58	61.06	78.2	-15.62	32.15	6.88	37.51	198	20	Peak
*5861	60.02	58.39	68.2	-8.18	32.18	6.95	37.5	198	20	Peak

#### REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5825MHz: Fundamental frequency.
- \*: 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	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5148	44.31	44.11	54	-9.69	31.32	6.2	37.32	213	61	Average
5148	64.25	64.05	74	-9.75	31.32	6.2	37.32	213	61	Peak
5180	93.11	92.88			31.35	6.22	37.34	213	61	Average
5180	102.79	102.56			31.35	6.22	37.34	213	61	Peak
5450	38.65	37.83	54	-15.35	31.56	6.34	37.08	213	61	Average
5450	60.91	60.09	74	-13.09	31.56	6.34	37.08	213	61	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	43.08	42.88	54	-10.92	31.32	6.2	37.32	109	61	Average
5148	62.27	62.07	74	-11.73	31.32	6.2	37.32	109	61	Peak
5180	91.67	91.44			31.35	6.22	37.34	109	61	Average
5180	100.03	99.8			31.35	6.22	37.34	109	61	Peak
5368	40.35	39.73	54	-13.65	31.49	6.31	37.18	109	61	Average
5368	61.31	60.69	74	-12.69	31.49	6.31	37.18	109	61	Peak

## REMARKS:

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

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
5004	39.13	39.02	54	-14.87	31.21	6.13	37.23	210	63	Average
5004	59.92	59.81	74	-14.08	31.21	6.13	37.23	210	63	Peak
5220	93.23	92.98			31.37	6.24	37.36	210	63	Average
5220	102.26	102.01			31.37	6.24	37.36	210	63	Peak
5432	38.63	37.89	54	-15.37	31.55	6.32	37.13	210	63	Average
5432	60.01	59.27	74	-13.99	31.55	6.32	37.13	210	63	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5078	38.7	38.53	54	-15.3	31.27	6.17	37.27	211	51	Average
5078	60.21	60.04	74	-13.79	31.27	6.17	37.27	211	51	Peak
5220	91.01	90.76			31.37	6.24	37.36	211	51	Average
5220	100.96	100.71			31.37	6.24	37.36	211	51	Peak
5410	38.55	37.89	54	-15.45	31.52	6.32	37.18	211	51	Average
5410	60.64	59.98	74	-13.36	31.52	6.32	37.18	211	51	Peak

## REMARKS:

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

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
5082	38.97	38.8	54	-15.03	31.27	6.17	37.27	206	57	Average
5082	60.09	59.92	74	-13.91	31.27	6.17	37.27	206	57	Peak
5240	93.21	92.89			31.39	6.25	37.32	206	57	Average
5240	102.75	102.43			31.39	6.25	37.32	206	57	Peak
5430	38.83	38.09	54	-15.17	31.55	6.32	37.13	206	57	Average
5430	60.79	60.05	74	-13.21	31.55	6.32	37.13	206	57	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
5140	38.87	38.65	54	-15.13	31.32	6.2	37.3	207	48	Average
5140	61.23	61.01	74	-12.77	31.32	6.2	37.3	207	48	Peak
5240	91.89	91.57			31.39	6.25	37.32	207	48	Average
5240	100.82	100.5			31.39	6.25	37.32	207	48	Peak
5442	38.57	37.81	54	-15.43	31.55	6.34	37.13	207	48	Average
5442	60.29	59.53	74	-13.71	31.55	6.34	37.13	207	48	Peak

#### REMARKS:

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



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

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
5136	38.95	38.74	54	-15.05	31.31	6.2	37.3	207	61	Average
5136	60.2	59.99	74	-13.8	31.31	6.2	37.3	207	61	Peak
5260	93.42	93.03			31.41	6.25	37.27	207	61	Average
5260	102.41	102.02			31.41	6.25	37.27	207	61	Peak
5356	39.01	38.42	54	-14.99	31.48	6.29	37.18	207	61	Average
5356	61.29	60.7	74	-12.71	31.48	6.29	37.18	207	61	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
5098	38.21	38.02	54	-15.79	31.28	6.19	37.28	177	43	Average
5098	60.15	59.96	74	-13.85	31.28	6.19	37.28	177	43	Peak
5260	91.15	90.76			31.41	6.25	37.27	177	43	Average
5260	100.44	100.05			31.41	6.25	37.27	177	43	Peak
5360	38.81	38.2	54	-15.19	31.48	6.31	37.18	177	43	Average
5360	61.2	60.59	74	-12.8	31.48	6.31	37.18	177	43	Peak

## REMARKS:

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5046	38.74	38.6	54	-15.26	31.24	6.15	37.25	205	63	Average
5046	59.43	59.29	74	-14.57	31.24	6.15	37.25	205	63	Peak
5300	92.33	91.81			31.44	6.27	37.19	205	63	Average
5300	102.83	102.31			31.44	6.27	37.19	205	63	Peak
5420	42.44	41.77	54	-11.56	31.53	6.32	37.18	205	63	Average
5420	60.71	60.04	74	-13.29	31.53	6.32	37.18	205	63	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5130	39	38.79	54	-15	31.31	6.2	37.3	159	40	Average
5130	59.36	59.15	74	-14.64	31.31	6.2	37.3	159	40	Peak
5300	91.56	91.04			31.44	6.27	37.19	159	40	Average
5300	100.89	100.37			31.44	6.27	37.19	159	40	Peak
5350	42.97	42.38	54	-11.03	31.48	6.29	37.18	159	40	Average
5350	59.71	59.12	74	-14.29	31.48	6.29	37.18	159	40	Peak

## REMARKS:

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5140	38.34	38.12	54	-15.66	31.32	6.2	37.3	201	60	Average
5140	60.59	60.37	74	-13.41	31.32	6.2	37.3	201	60	Peak
5320	93.51	92.96			31.45	6.29	37.19	201	60	Average
5320	102.15	101.6			31.45	6.29	37.19	201	60	Peak
5350	44.76	44.17	54	-9.24	31.48	6.29	37.18	201	60	Average
5350	63.6	63.01	74	-10.4	31.48	6.29	37.18	201	60	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
5006	38.39	38.28	54	-15.61	31.21	6.13	37.23	176	41	Average
5006	60.43	60.32	74	-13.57	31.21	6.13	37.23	176	41	Peak
5320	91.66	91.11			31.45	6.29	37.19	176	41	Average
5320	100.9	100.35			31.45	6.29	37.19	176	41	Peak
5350	43.34	42.75	54	-10.66	31.48	6.29	37.18	176	41	Average
5350	64.37	63.78	74	-9.63	31.48	6.29	37.18	176	41	Peak

## REMARKS:

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



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

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
5452	46.22	45.4	54	-7.78	31.56	6.34	37.08	209	56	Average
5452	62.21	61.39	74	-11.79	31.56	6.34	37.08	209	56	Peak
5470	62.77	61.94	68.2	-5.43	31.57	6.34	37.08	209	56	Peak
5500	93.48	92.55			31.6	6.36	37.03	209	56	Average
5500	102.35	101.42			31.6	6.36	37.03	209	56	Peak
5725	59.15	57.87	68.2	-9.05	31.96	6.75	37.43	209	56	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5404	44.71	44.05	54	-9.29	31.52	6.32	37.18	193	26	Average
5404	60.04	59.38	74	-13.96	31.52	6.32	37.18	193	26	Peak
5470	59.49	58.66	68.2	-8.71	31.57	6.34	37.08	193	26	Peak
5500	90.81	89.88			31.6	6.36	37.03	193	26	Average
5500	100.56	99.63			31.6	6.36	37.03	193	26	Peak
5725	58.6	57.32	68.2	-9.6	31.96	6.75	37.43	193	26	Peak

## REMARKS:

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





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	Anson Lin

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
5456	46.22	45.4	54	-7.78	31.56	6.34	37.08	211	62	Average
5456	59.86	59.04	74	-14.14	31.56	6.34	37.08	211	62	Peak
5470	57.56	56.73	68.2	-10.64	31.57	6.34	37.08	211	62	Peak
5580	93.47	92.43			31.71	6.49	37.16	211	62	Average
5580	102.22	101.18			31.71	6.49	37.16	211	62	Peak
5725	58.44	57.16	68.2	-9.76	31.96	6.75	37.43	211	62	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5372	38.75	38.13	54	-15.25	31.49	6.31	37.18	190	25	Average
5372	60.39	59.77	74	-13.61	31.49	6.31	37.18	190	25	Peak
5470	57.81	56.98	68.2	-10.39	31.57	6.34	37.08	190	25	Peak
5580	91.45	90.41			31.71	6.49	37.16	190	25	Average
5580	100.14	99.1			31.71	6.49	37.16	190	25	Peak
5725	58.72	57.44	68.2	-9.48	31.96	6.75	37.43	190	25	Peak

## REMARKS:

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

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	Anson Lin

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
5362	38.56	37.94	54	-15.44	31.49	6.31	37.18	209	61	Average
5362	60.2	59.58	74	-13.8	31.49	6.31	37.18	209	61	Peak
5470	58.39	57.56	68.2	-9.81	31.57	6.34	37.08	209	61	Peak
5700	92.87	91.68			31.9	6.69	37.4	209	61	Average
5700	102.66	101.47			31.9	6.69	37.4	209	61	Peak
5725	63.95	62.67	68.2	-4.25	31.96	6.75	37.43	209	61	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
5366	38.43	37.81	54	-15.57	31.49	6.31	37.18	186	24	Average
5366	60.69	60.07	74	-13.31	31.49	6.31	37.18	186	24	Peak
5470	57.58	56.75	68.2	-10.62	31.57	6.34	37.08	186	24	Peak
5700	91.02	89.83			31.9	6.69	37.4	186	24	Average
5700	100.76	99.57			31.9	6.69	37.4	186	24	Peak
5725	61.38	60.1	68.2	-6.82	31.96	6.75	37.43	186	24	Peak

#### REMARKS:

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



A D T

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	Anson Lin

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	61.43	60.24	68.2	-6.77	31.93	6.69	37.43	218	61	Peak
*5725	66.95	65.67	78.2	-11.25	31.96	6.75	37.43	218	61	Peak
5745	92.41	91.14			31.99	6.75	37.47	218	61	Average
5745	102.65	101.38			31.99	6.75	37.47	218	61	Peak
*5850	60.53	59.01	78.2	-17.67	32.15	6.88	37.51	218	61	Peak
*5861	60.52	58.89	68.2	-7.68	32.18	6.95	37.5	218	61	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	58.97	57.78	68.2	-9.23	31.93	6.69	37.43	176	20	Peak
*5725	64.12	62.84	78.2	-14.08	31.96	6.75	37.43	176	20	Peak
5745	90.48	89.21			31.99	6.75	37.47	176	20	Average
5745	100.5	99.23			31.99	6.75	37.47	176	20	Peak
*5850	59.45	57.93	78.2	-18.75	32.15	6.88	37.51	176	20	Peak
*5861	58.04	56.41	68.2	-10.16	32.18	6.95	37.5	176	20	Peak

## REMARKS:

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



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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	Anson Lin

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	61.42	60.23	68.2	-6.78	31.93	6.69	37.43	202	56	Peak
*5725	59.92	58.64	78.2	-18.28	31.96	6.75	37.43	202	56	Peak
5785	92.57	91.25			32.04	6.82	37.54	202	56	Average
5785	101.97	100.65			32.04	6.82	37.54	202	56	Peak
*5850	60.29	58.77	78.2	-17.91	32.15	6.88	37.51	202	56	Peak
*5861	60.48	58.85	68.2	-7.72	32.18	6.95	37.5	202	56	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	59.16	57.97	68.2	-9.04	31.93	6.69	37.43	209	32	Peak
*5725	59.62	58.34	78.2	-18.58	31.96	6.75	37.43	209	32	Peak
5785	90.44	89.12			32.04	6.82	37.54	209	32	Average
5785	100.52	99.2			32.04	6.82	37.54	209	32	Peak
*5850	58.59	57.07	78.2	-19.61	32.15	6.88	37.51	209	32	Peak
*5861	59.68	58.05	68.2	-8.52	32.18	6.95	37.5	209	32	Peak

## REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5785MHz: Fundamental frequency.
- \*: 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	Anson Lin

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	59.03	57.84	68.2	-9.17	31.93	6.69	37.43	211	57	Peak
*5725	59.69	58.41	78.2	-18.51	31.96	6.75	37.43	211	57	Peak
5825	92.39	90.92			32.12	6.88	37.53	211	57	Average
5825	102.6	101.13			32.12	6.88	37.53	211	57	Peak
*5850	66.41	64.89	78.2	-11.79	32.15	6.88	37.51	211	57	Peak
*5861	60.28	58.65	68.2	-7.92	32.18	6.95	37.5	211	57	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	58.91	57.72	68.2	-9.29	31.93	6.69	37.43	196	31	Peak
*5725	60.53	59.25	78.2	-17.67	31.96	6.75	37.43	196	31	Peak
5825	90.99	89.52			32.12	6.88	37.53	196	31	Average
5825	100.74	99.27			32.12	6.88	37.53	196	31	Peak
*5850	62.33	60.81	78.2	-15.87	32.15	6.88	37.51	196	31	Peak
*5861	60.27	58.64	68.2	-7.93	32.18	6.95	37.5	196	31	Peak

## REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5825MHz: Fundamental frequency.
- \*: 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	Anson Lin

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	45	44.8	54	-9	31.32	6.2	37.32	216	51	Average
5150	66.55	66.35	74	-7.45	31.32	6.2	37.32	216	51	Peak
5190	91.25	91.02			31.35	6.22	37.34	216	51	Average
5190	100.94	100.71			31.35	6.22	37.34	216	51	Peak
5364	39.11	38.49	54	-14.89	31.49	6.31	37.18	216	51	Average
5364	61.13	60.51	74	-12.87	31.49	6.31	37.18	216	51	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	43.9	43.7	54	-10.1	31.32	6.2	37.32	208	39	Average
5148	65.84	65.64	74	-8.16	31.32	6.2	37.32	208	39	Peak
5190	90.27	90.04			31.35	6.22	37.34	208	39	Average
5190	98.85	98.62			31.35	6.22	37.34	208	39	Peak
5400	39.08	38.42	54	-14.92	31.52	6.32	37.18	208	39	Average
5400	61.12	60.46	74	-12.88	31.52	6.32	37.18	208	39	Peak

## REMARKS:

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

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
5120	40.54	40.36	54	-13.46	31.29	6.19	37.3	218	58	Average
5120	61.45	61.27	74	-12.55	31.29	6.19	37.3	218	58	Peak
5230	91.53	91.22			31.39	6.24	37.32	218	58	Average
5230	101.06	100.75			31.39	6.24	37.32	218	58	Peak
5452	39.19	38.37	54	-14.81	31.56	6.34	37.08	218	58	Average
5452	61.19	60.37	74	-12.81	31.56	6.34	37.08	218	58	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	39.88	39.68	54	-14.12	31.31	6.19	37.3	217	23	Average
5124	60.75	60.55	74	-13.25	31.31	6.19	37.3	217	23	Peak
5230	90.5	90.19			31.39	6.24	37.32	217	23	Average
5230	99.03	98.72			31.39	6.24	37.32	217	23	Peak
5436	39.1	38.36	54	-14.9	31.55	6.32	37.13	217	23	Average
5436	60.61	59.87	74	-13.39	31.55	6.32	37.13	217	23	Peak

## REMARKS:

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

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	39.34	39.21	54	-14.66	31.21	6.15	37.23	210	42	Average
5016	59.9	59.77	74	-14.1	31.21	6.15	37.23	210	42	Peak
5270	91.63	91.24			31.41	6.25	37.27	210	42	Average
5270	100.5	100.11			31.41	6.25	37.27	210	42	Peak
5432	40.4	39.66	54	-13.6	31.55	6.32	37.13	210	42	Average
5432	60.8	60.06	74	-13.2	31.55	6.32	37.13	210	42	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5016	39.28	39.15	54	-14.72	31.21	6.15	37.23	221	52	Average
5016	61.17	61.04	74	-12.83	31.21	6.15	37.23	221	52	Peak
5270	89.13	88.74			31.41	6.25	37.27	221	52	Average
5270	98.82	98.43			31.41	6.25	37.27	221	52	Peak
5382	39.83	39.19	54	-14.17	31.51	6.31	37.18	221	52	Average
5382	60.44	59.8	74	-13.56	31.51	6.31	37.18	221	52	Peak

#### REMARKS:

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

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	38.94	38.83	54	-15.06	31.21	6.13	37.23	214	31	Average
5008	61.11	61	74	-12.89	31.21	6.13	37.23	214	31	Peak
5310	91.38	90.85			31.45	6.27	37.19	214	31	Average
5310	100.42	99.89			31.45	6.27	37.19	214	31	Peak
5350	45.04	44.45	54	-8.96	31.48	6.29	37.18	214	31	Average
5350	66.8	66.21	74	-7.2	31.48	6.29	37.18	214	31	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
5132	39.07	38.86	54	-14.93	31.31	6.2	37.3	217	67	Average
5132	59.99	59.78	74	-14.01	31.31	6.2	37.3	217	67	Peak
5310	89.77	89.24			31.45	6.27	37.19	217	67	Average
5310	98.91	98.38			31.45	6.27	37.19	217	67	Peak
5350	44.58	43.99	54	-9.42	31.48	6.29	37.18	217	67	Average
5350	63.2	62.61	74	-10.8	31.48	6.29	37.18	217	67	Peak

## REMARKS:

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



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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	Anson Lin

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
5456	44.92	44.1	54	-9.08	31.56	6.34	37.08	174	90	Average
5456	63.49	62.67	74	-10.51	31.56	6.34	37.08	174	90	Peak
5470	63.73	62.9	68.2	-4.47	31.57	6.34	37.08	174	90	Peak
5510	92.11	91.21			31.6	6.36	37.06	174	90	Average
5510	101.45	100.55			31.6	6.36	37.06	174	90	Peak
5725	61.44	60.16	68.2	-6.76	31.96	6.75	37.43	174	90	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
5452	43.8	42.98	54	-10.2	31.56	6.34	37.08	218	45	Average
5452	61.42	60.6	74	-12.58	31.56	6.34	37.08	218	45	Peak
5470	62.5	61.67	68.2	-5.7	31.57	6.34	37.08	218	45	Peak
5510	90.22	89.32			31.6	6.36	37.06	218	45	Average
5510	100	99.1			31.6	6.36	37.06	218	45	Peak
5725	60.29	59.01	68.2	-7.91	31.96	6.75	37.43	218	45	Peak

## REMARKS:

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

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	Anson Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5454	41.97	41.15	54	-12.03	31.56	6.34	37.08	210	58	Average
5454	62.92	62.1	74	-11.08	31.56	6.34	37.08	210	58	Peak
5470	60.08	59.25	68.2	-8.12	31.57	6.34	37.08	210	58	Peak
5550	92.8	91.79			31.68	6.42	37.09	210	58	Average
5550	101.85	100.84			31.68	6.42	37.09	210	58	Peak
5725	60.6	59.32	68.2	-7.6	31.96	6.75	37.43	210	58	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5426	41.51	40.79	54	-12.49	31.53	6.32	37.13	217	33	Average
5426	61.81	61.09	74	-12.19	31.53	6.32	37.13	217	33	Peak
5470	59.26	58.43	68.2	-8.94	31.57	6.34	37.08	217	33	Peak
5550	91.12	90.11			31.68	6.42	37.09	217	33	Average
5550	100.59	99.58			31.68	6.42	37.09	217	33	Peak
5725	59.66	58.38	68.2	-8.54	31.96	6.75	37.43	217	33	Peak

#### REMARKS:

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

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	Anson Lin

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	39.09	38.37	54	-14.91	31.53	6.32	37.13	194	96	Average
5428	60.4	59.68	74	-13.6	31.53	6.32	37.13	194	96	Peak
5470	58.34	57.51	68.2	-9.86	31.57	6.34	37.08	194	96	Peak
5670	92.41	91.25			31.88	6.62	37.34	194	96	Average
5670	101.42	100.26			31.88	6.62	37.34	194	96	Peak
5725	62.07	60.79	68.2	-6.13	31.96	6.75	37.43	194	96	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5382	39.03	38.39	54	-14.97	31.51	6.31	37.18	205	28	Average
5382	60.39	59.75	74	-13.61	31.51	6.31	37.18	205	28	Peak
5470	59.74	58.91	68.2	-8.46	31.57	6.34	37.08	205	28	Peak
5670	90.66	89.5			31.88	6.62	37.34	205	28	Average
5670	99.71	98.55			31.88	6.62	37.34	205	28	Peak
5725	61.71	60.43	68.2	-6.49	31.96	6.75	37.43	205	28	Peak

#### REMARKS:

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



A D T

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	Anson Lin

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	66.04	64.85	68.2	-2.16	31.93	6.69	37.43	189	89	Peak
5725	70.8	69.52	78.2	-7.4	31.96	6.75	37.43	189	89	Peak
5755	91.67	90.38			32.01	6.75	37.47	189	89	Average
5755	101.44	100.15			32.01	6.75	37.47	189	89	Peak
5850	60	58.48	78.2	-18.2	32.15	6.88	37.51	189	89	Peak
5861	61.65	60.02	68.2	-6.55	32.18	6.95	37.5	189	89	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	65.41	64.22	68.2	-2.79	31.93	6.69	37.43	210	22	Peak
5725	70.01	68.73	78.2	-8.19	31.96	6.75	37.43	210	22	Peak
5755	89.46	88.17			32.01	6.75	37.47	210	22	Average
5755	99.43	98.14			32.01	6.75	37.47	210	22	Peak
5850	60.7	59.18	78.2	-17.5	32.15	6.88	37.51	210	22	Peak
5861	59.92	58.29	68.2	-8.28	32.18	6.95	37.5	210	22	Peak

## REMARKS:

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



A D T

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	Anson Lin

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	60.71	59.52	68.2	-7.49	31.93	6.69	37.43	179	74	Peak
5725	61	59.72	78.2	-17.2	31.96	6.75	37.43	179	74	Peak
5795	91.56	90.21			32.07	6.82	37.54	179	74	Average
5795	101.52	100.17			32.07	6.82	37.54	179	74	Peak
5850	61.71	60.19	78.2	-16.49	32.15	6.88	37.51	179	74	Peak
5861	61.05	59.42	68.2	-7.15	32.18	6.95	37.5	179	74	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	60.8	59.61	68.2	-7.4	31.93	6.69	37.43	199	37	Peak
5725	61.77	60.49	78.2	-16.43	31.96	6.75	37.43	199	37	Peak
5795	89.88	88.53			32.07	6.82	37.54	199	37	Average
5795	99.66	98.31			32.07	6.82	37.54	199	37	Peak
5850	62.68	61.16	78.2	-15.52	32.15	6.88	37.51	199	37	Peak
5861	60.77	59.14	68.2	-7.43	32.18	6.95	37.5	199	37	Peak

## REMARKS:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5795MHz: Fundamental frequency.
- \*: 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	Anson Lin

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
200.1	28.06	49.18	43.5	-15.44	9.36	1.29	31.77	136	154	Peak
214.41	32.34	52.66	43.5	-11.16	9.97	1.35	31.64	124	218	Peak
250.05	31.19	50.16	46	-14.81	11.48	1.49	31.94	111	101	Peak
360.2	27.23	43.02	46	-18.77	14.38	1.8	31.97	102	147	Peak
479.9	26.84	39.71	46	-19.16	16.93	2.05	31.85	101	22	Peak
637.4	29.28	38.99	46	-16.72	20.06	2.33	32.1	121	307	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
65.37	25.81	45.2	40	-14.19	11.35	0.85	31.59	133	113	Peak
216.03	28.34	48.59	46	-17.66	10.05	1.36	31.66	132	55	Peak
250.05	27.11	46.08	46	-18.89	11.48	1.49	31.94	106	67	Peak
479.9	32.82	45.69	46	-13.18	16.93	2.05	31.85	114	78	Peak
498.8	28.51	40.78	46	-17.49	17.29	2.09	31.65	127	76	Peak
637.4	30.47	40.18	46	-15.53	20.06	2.33	32.1	115	55	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 62	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Quasi-peak (QP)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Anson Lin

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
198.75	27.45	48.49	43.5	-16.05	9.43	1.29	31.76	118	144	Peak
213.06	32.36	52.71	43.5	-11.14	9.93	1.35	31.63	138	345	Peak
250.05	32.06	51.03	46	-13.94	11.48	1.49	31.94	130	251	Peak
360.2	27.35	43.14	46	-18.65	14.38	1.8	31.97	122	29	Peak
479.9	26.4	39.27	46	-19.6	16.93	2.05	31.85	100	97	Peak
637.4	28.39	38.1	46	-17.61	20.06	2.33	32.1	106	33	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
59.43	25.84	44.35	40	-14.16	12.04	0.8	31.35	137	79	Peak
224.67	27.23	47.19	46	-18.77	10.42	1.4	31.78	120	229	Peak
250.05	28.13	47.1	46	-17.87	11.48	1.49	31.94	111	30	Peak
479.9	32.67	45.54	46	-13.33	16.93	2.05	31.85	115	140	Peak
500.9	28.53	40.73	46	-17.47	17.33	2.09	31.62	105	108	Peak
637.4	31.45	41.16	46	-14.55	20.06	2.33	32.1	131	268	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	Anson Lin

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
204.69	28.1	48.92	43.5	-15.4	9.56	1.31	31.69	133	62	Peak
211.71	31.65	52.05	43.5	-11.85	9.85	1.35	31.6	133	173	Peak
250.05	32.23	51.2	46	-13.77	11.48	1.49	31.94	102	263	Peak
360.2	26.6	42.39	46	-19.4	14.38	1.8	31.97	101	134	Peak
479.9	27.61	40.48	46	-18.39	16.93	2.05	31.85	110	293	Peak
637.4	28.53	38.24	46	-17.47	20.06	2.33	32.1	107	287	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
59.16	25.65	44.16	40	-14.35	12.04	0.8	31.35	128	124	Peak
219	27.37	47.52	46	-18.63	10.18	1.37	31.7	114	249	Peak
250.05	28.2	47.17	46	-17.8	11.48	1.49	31.94	132	82	Peak
479.9	32.88	45.75	46	-13.12	16.93	2.05	31.85	136	170	Peak
500.9	28.89	41.09	46	-17.11	17.33	2.09	31.62	129	317	Peak
637.4	30.72	40.43	46	-15.28	20.06	2.33	32.1	100	112	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	Anson Lin

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
201.99	27.86	48.86	43.5	-15.64	9.44	1.3	31.74	121	24	Peak
216.03	30.94	51.19	46	-15.06	10.05	1.36	31.66	116	334	Peak
250.05	32.41	51.38	46	-13.59	11.48	1.49	31.94	102	312	Peak
316.1	26.68	43.58	46	-19.32	13.33	1.68	31.91	117	359	Peak
479.9	27.29	40.16	46	-18.71	16.93	2.05	31.85	114	207	Peak
637.4	27.92	37.63	46	-18.08	20.06	2.33	32.1	134	59	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
59.16	25.34	43.85	40	-14.66	12.04	0.8	31.35	133	1	Peak
217.65	25.93	46.15	46	-20.07	10.09	1.36	31.67	106	251	Peak
250.05	28.36	47.33	46	-17.64	11.48	1.49	31.94	127	170	Peak
479.9	33.2	46.07	46	-12.8	16.93	2.05	31.85	124	311	Peak
498.8	28.92	41.19	46	-17.08	17.29	2.09	31.65	139	151	Peak
637.4	31.54	41.25	46	-14.46	20.06	2.33	32.1	109	227	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	ESCI	100613	Nov. 11, 2014	Nov. 10, 2015
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 26, 2014	Dec. 25, 2015
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 26, 2015	Feb. 25, 2016
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 24, 2015	Jul. 23, 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 1.
  3. The VCCI Site Registration No. is C-2040.

#### 4.2.3 Test Procedures

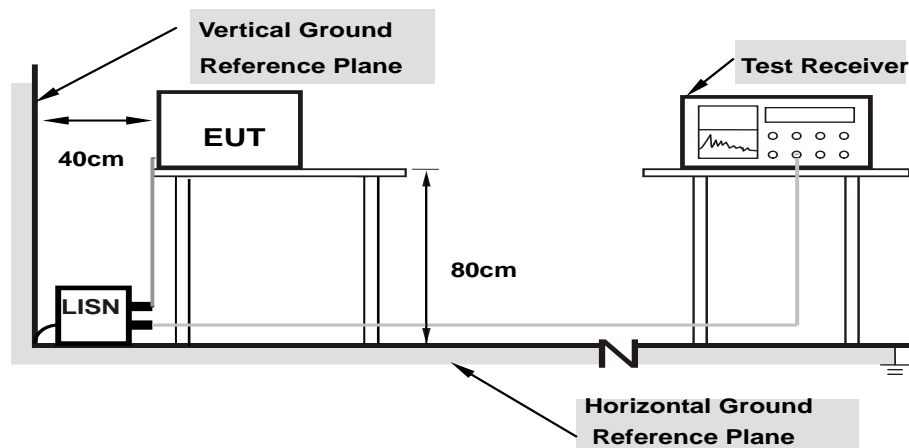
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

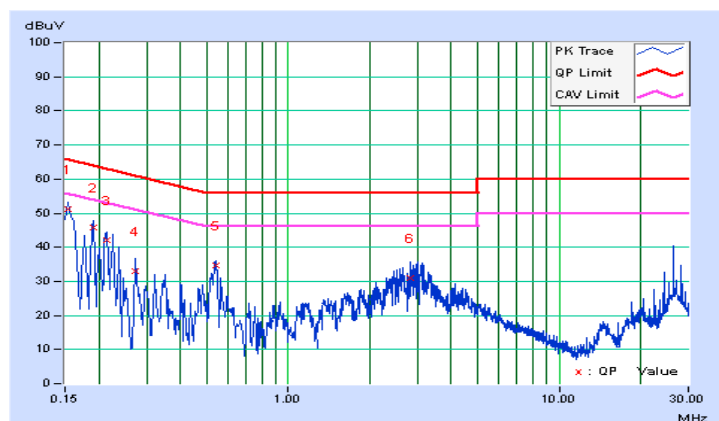
#### 4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2015/8/1

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	0.15400	0.05	51.02	34.97	51.07	35.02	65.78	55.78	-14.71	-20.76
2	0.19000	0.06	45.88	30.26	45.94	30.32	64.04	54.04	-18.10	-23.72
3	0.21350	0.06	42.04	27.08	42.10	27.14	63.07	53.07	-20.97	-25.93
4	0.27400	0.06	33.06	15.08	33.12	15.14	61.00	51.00	-27.88	-35.86
5	0.53828	0.06	34.49	25.58	34.55	25.64	56.00	46.00	-21.45	-20.36
6	2.82600	0.15	30.88	19.44	31.03	19.59	56.00	46.00	-24.97	-26.41

#### 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

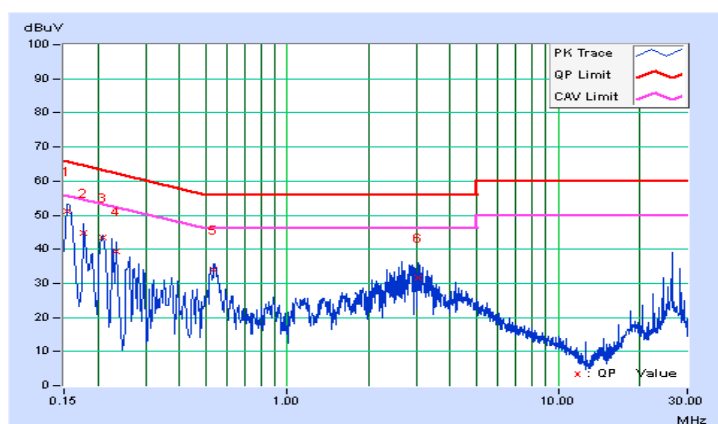


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Toby Tian	Test Date	2015/8/1

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	0.15400	0.05	51.23	35.34	51.28	35.39	65.78	55.78	-14.50	-20.39
2	0.17801	0.05	44.64	28.32	44.69	28.37	64.58	54.58	-19.89	-26.21
3	0.20960	0.05	43.32	28.33	43.37	28.38	63.22	53.22	-19.85	-24.84
4	0.23400	0.05	39.46	24.56	39.51	24.61	62.31	52.31	-22.79	-27.69
5	0.53404	0.06	34.11	23.44	34.17	23.50	56.00	46.00	-21.83	-22.50
6	3.05400	0.15	31.60	20.09	31.75	20.24	56.00	46.00	-24.25	-25.76

#### 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 Measurement

#### 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 $\leq$ 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  $N_{ANT} \leq 4$ ;

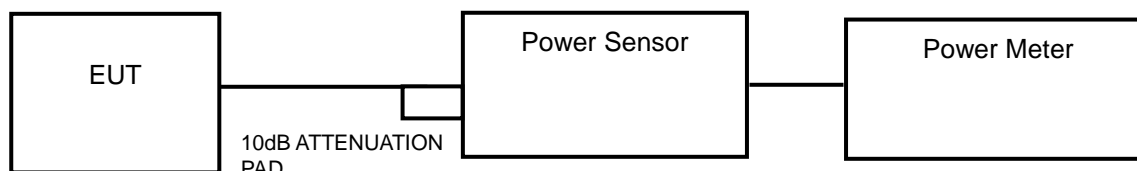
Array Gain = 0 dB (i.e., no array gain) for channel widths  $\geq 40$  MHz for any  $N_{ANT}$ ;

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

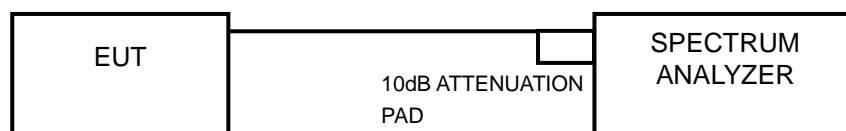
For power measurements on all other devices: Array Gain =  $10 \log(N_{ANT}/N_{SS})$  dB.

#### 4.3.2 Test Setup

##### FOR POWER OUTPUT MEASUREMENT



##### 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 from Test Standard

No deviation.

#### 4.3.6 EUT Operating Conditions

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



#### 4.3.7 Test Result

##### POWER OUTPUT:

##### 802.11a

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	7.28	8.62	24	Pass
44	5220	7.18	8.56	24	Pass
48	5240	7.38	8.68	24	Pass
52	5260	7.36	8.67	23.8	Pass
60	5300	7.74	8.89	23.84	Pass
64	5320	7.60	8.81	23.93	Pass
100	5500	8.38	9.23	24	Pass
116	5580	8.87	9.48	23.91	Pass
140	5700	8.43	9.26	23.75	Pass
149	5745	8.45	9.27	30	Pass
157	5785	8.51	9.3	30	Pass
165	5825	7.03	8.47	30	Pass

##### NOTE:

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

1.  $11\text{dBm} + 10\log(19.07) = 23.80\text{ dBm} < 24\text{dBm}$ .
2.  $11\text{dBm} + 10\log(19.25) = 23.84\text{ dBm} < 24\text{dBm}$ .
3.  $11\text{dBm} + 10\log(19.62) = 23.93\text{ dBm} < 24\text{dBm}$ .
4.  $11\text{dBm} + 10\log(20.09) = 24.03\text{ dBm} > 24\text{dBm}$ .
5.  $11\text{dBm} + 10\log(19.53) = 23.91\text{ dBm} < 24\text{dBm}$ .
6.  $11\text{dBm} + 10\log(18.82) = 23.75\text{ dBm} < 24\text{dBm}$ .

### 802.11n (20MHz)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	7.60	8.81	24	Pass
44	5220	7.73	8.88	24	Pass
48	5240	7.46	8.73	24	Pass
52	5260	7.57	8.79	23.86	Pass
60	5300	7.71	8.87	23.88	Pass
64	5320	7.69	8.86	23.82	Pass
100	5500	8.75	9.42	23.82	Pass
116	5580	8.59	9.34	23.86	Pass
140	5700	7.80	8.92	23.89	Pass
149	5745	8.45	9.27	30	Pass
157	5785	8.18	9.13	30	Pass
165	5825	7.13	8.53	30	Pass

#### NOTE:

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

1.  $11\text{dBm} + 10\log(19.33) = 23.86\text{ dBm} < 24\text{dBm}$ .
2.  $11\text{dBm} + 10\log(19.40) = 23.88\text{ dBm} < 24\text{dBm}$ .
3.  $11\text{dBm} + 10\log(19.15) = 23.82\text{ dBm} < 24\text{dBm}$ .
4.  $11\text{dBm} + 10\log(19.15) = 23.82\text{ dBm} < 24\text{dBm}$ .
5.  $11\text{dBm} + 10\log(19.32) = 23.86\text{ dBm} < 24\text{dBm}$ .
6.  $11\text{dBm} + 10\log(19.45) = 23.89\text{ dBm} < 24\text{dBm}$ .

### 802.11n (40MHz)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	6.58	8.18	24	Pass
46	5230	6.52	8.14	24	Pass
54	5270	6.59	8.19	24	Pass
62	5310	6.79	8.32	24	Pass
102	5510	7.85	8.95	24	Pass
110	5550	7.80	8.92	24	Pass
134	5670	7.24	8.60	24	Pass
151	5755	7.67	8.85	30	Pass
159	5795	6.97	8.43	30	Pass

#### NOTE:

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

1.  $11\text{dBm} + 10\log(41.22) = 27.15\text{ dBm} > 24\text{dBm}$ .
2.  $11\text{dBm} + 10\log(41.32) = 27.16\text{ dBm} > 24\text{dBm}$ .
3.  $11\text{dBm} + 10\log(40.88) = 27.12\text{ dBm} > 24\text{dBm}$ .
4.  $11\text{dBm} + 10\log(41.10) = 27.14\text{ dBm} > 24\text{dBm}$ .
5.  $11\text{dBm} + 10\log(41.13) = 27.14\text{ dBm} > 24\text{dBm}$ .

## 26dB BANDWIDTH:

### 802.11a

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	Pass / Fail
36	5180	18.96	Pass
44	5220	18.85	Pass
48	5240	19.07	Pass
52	5260	19.07	Pass
60	5300	19.25	Pass
64	5320	19.62	Pass
100	5500	20.09	Pass
116	5580	19.53	Pass
140	5700	18.82	Pass

### 802.11n (20MHz)

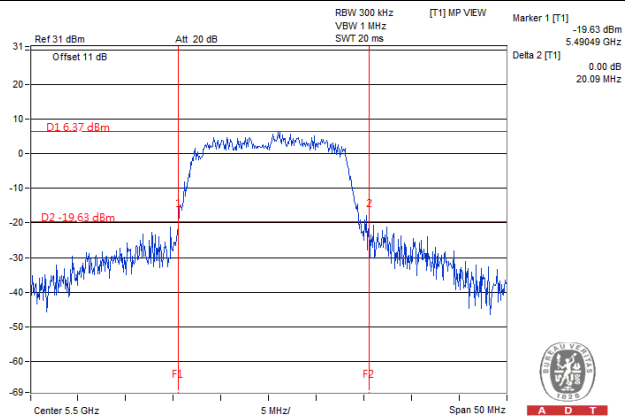
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	Pass / Fail
36	5180	19.53	Pass
44	5220	19.25	Pass
48	5240	19.74	Pass
52	5260	19.33	Pass
60	5300	19.40	Pass
64	5320	19.15	Pass
100	5500	19.15	Pass
116	5580	19.32	Pass
140	5700	19.45	Pass

### 802.11n (40MHz)

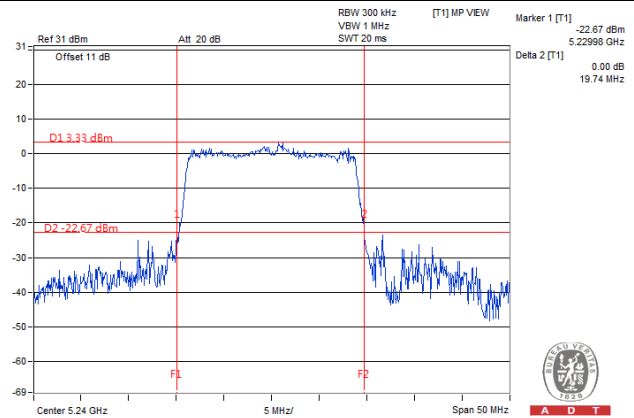
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	Pass / Fail
38	5190	40.91	Pass
46	5230	40.74	Pass
54	5270	41.22	Pass
62	5310	41.32	Pass
102	5510	40.88	Pass
110	5550	41.10	Pass
134	5670	41.13	Pass

# Spectrum Plot of Worst Value

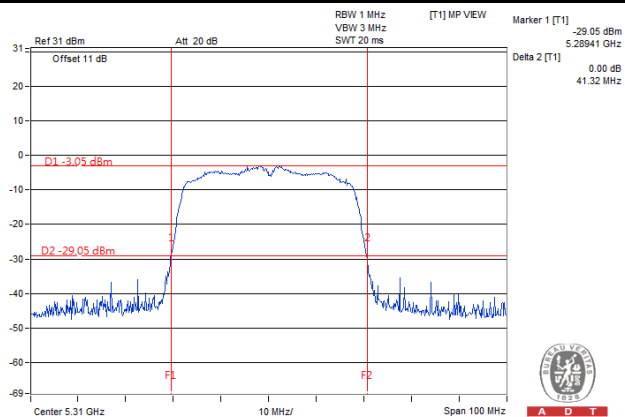
## 802.11a



## 802.11n (20MHz)



## 802.11n (40MHz)

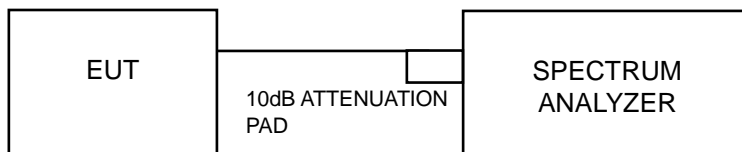


#### 4.4 Peak Power Spectral Density Measurement

##### 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-2

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 and add 10 log (1/duty cycle)

**For U-NII-3:**

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW  $\geq$  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  $BWCF = 10\log(500 \text{ kHz}/300\text{kHz})$
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 and add  $10 \log (1/\text{duty cycle})$

**4.4.5 Deviation from Test Standard**

No deviation.

**4.4.6 EUT Operating Conditions**

Same as Item 4.3.6.

#### 4.4.7 Test Results

##### 802.11a

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Maximum Limit (dBm)	Pass / Fail
36	5180	0.01	0.30	0.31	11	Pass
44	5220	-0.69	0.30	-0.39	11	Pass
48	5240	0.10	0.30	0.40	11	Pass
52	5260	-1.20	0.30	-0.90	11	Pass
60	5300	-0.51	0.30	-0.21	11	Pass
64	5320	0.69	0.30	0.99	11	Pass
100	5500	0.07	0.30	0.37	11	Pass
116	5580	1.51	0.30	1.81	11	Pass
140	5700	-0.67	0.30	-0.37	11	Pass

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

##### 802.11n (20MHz)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Maximum Limit (dBm)	Pass / Fail
36	5180	-1.28	0.28	-1.00	11	Pass
44	5220	0.16	0.28	0.44	11	Pass
48	5240	-0.10	0.28	0.18	11	Pass
52	5260	-1.20	0.28	-0.92	11	Pass
60	5300	-0.74	0.28	-0.46	11	Pass
64	5320	-0.52	0.28	-0.24	11	Pass
100	5500	-0.11	0.28	0.17	11	Pass
116	5580	1.52	0.28	1.80	11	Pass
140	5700	0.36	0.28	0.64	11	Pass

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



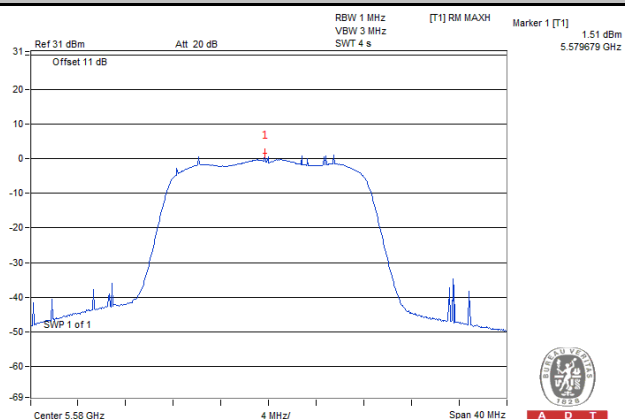
### 802.11n (40MHz)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Maximum Limit (dBm)	Pass / Fail
38	5190	-12.99	0.57	-12.42	11	Pass
46	5230	-13.05	0.57	-12.48	11	Pass
54	5270	-12.74	0.57	-12.17	11	Pass
62	5310	-12.36	0.57	-11.79	11	Pass
102	5510	-10.94	0.57	-10.37	11	Pass
110	5550	-11.00	0.57	-10.43	11	Pass
134	5670	-12.50	0.57	-11.93	11	Pass

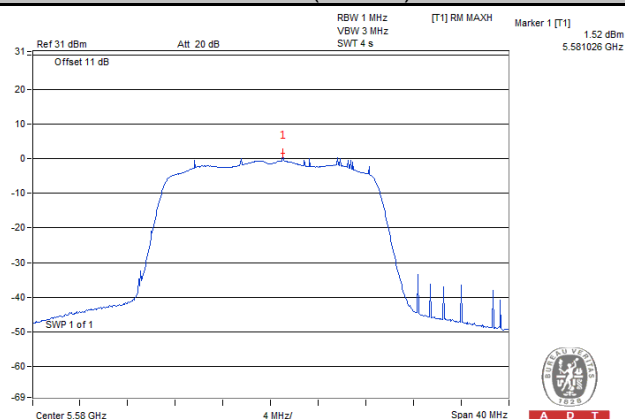
**NOTE:** Refer to section 3.3 for duty cycle spectrum plot.

# Spectrum Plot of Worst Value

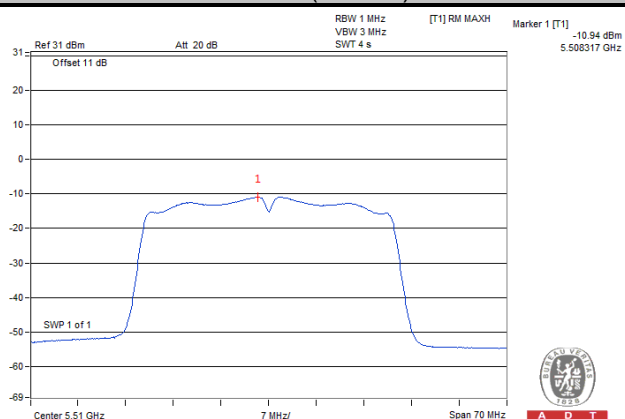
## 802.11a



## 802.11n (20MHz)



## 802.11n (40MHz)



## For U-NII-3 Band

### 802.11a

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/500kHz)	Pass / Fail
149	5745	-12.50	0.30	-12.20	30	Pass
157	5785	-13.00	0.30	-12.70	30	Pass
165	5825	-12.85	0.30	-12.55	30	Pass

### 802.11n (20MHz)

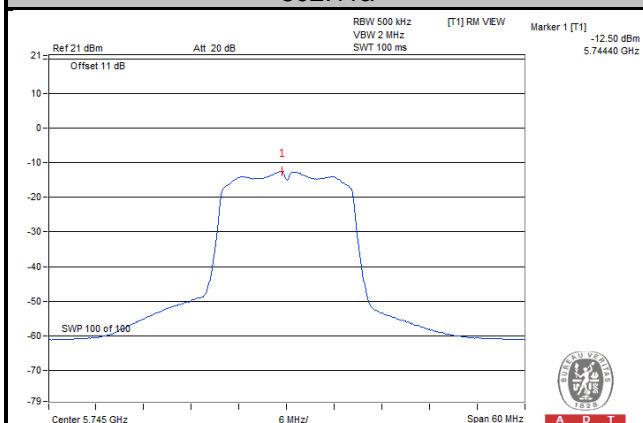
Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/500kHz)	Pass / Fail
149	5745	-12.89	0.28	-12.61	30	Pass
157	5785	-13.22	0.28	-12.94	30	Pass
165	5825	-13.32	0.28	-13.04	30	Pass

### 802.11n (40MHz)

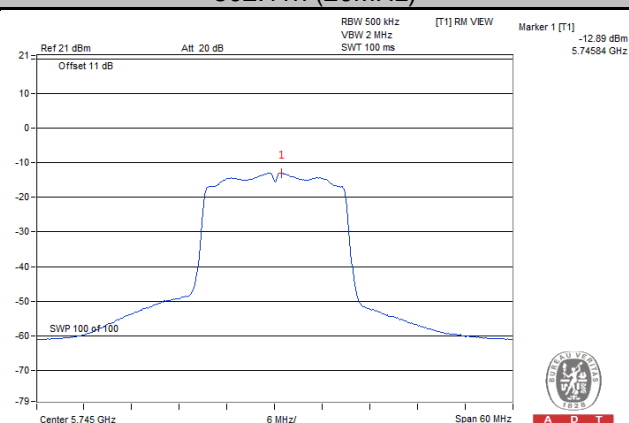
Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm)	Duty Factor	PSD with Duty Factor (dBm)	Limit (dBm/500kHz)	Pass / Fail
151	5755	-16.28	0.57	-15.71	30	Pass
159	5795	-16.58	0.57	-16.01	30	Pass

# Spectrum Plot of Worst Value

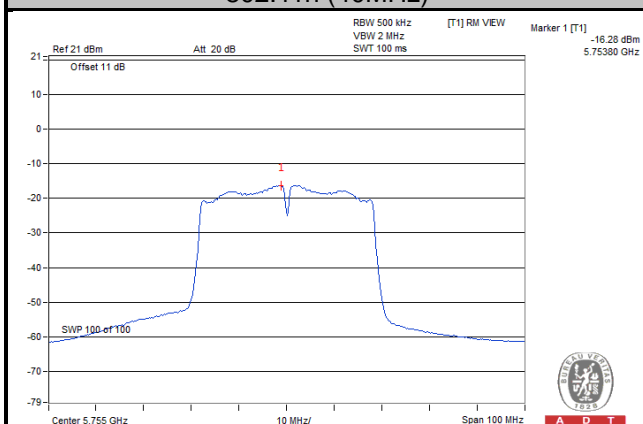
## 802.11a



## 802.11n (20MHz)



## 802.11n (40MHz)

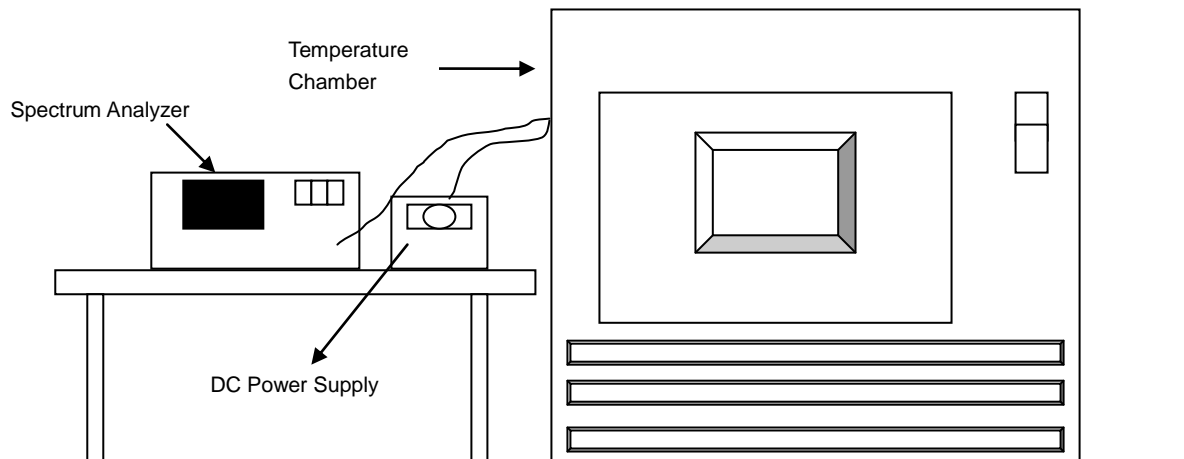


## 4.5 Frequency Stability

### 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

- 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.
- 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.
- 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. (°C)	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	3.7	5320.037421	7.034	5320.036984	6.952	5320.036924	6.941	5320.036939	6.943
40	3.7	5320.037421	7.034	5320.036956	6.947	5320.036858	6.928	5320.037007	6.956
30	3.7	5320.038307	7.201	5320.038405	7.219	5320.038456	7.229	5320.038375	7.213
20	3.7	5320.037999	7.143	5320.037848	7.114	5320.038100	7.162	5320.038330	7.205
10	3.7	5320.040458	7.605	5320.040355	7.586	5320.040628	7.637	5320.040427	7.599
0	3.7	5320.038855	7.304	5320.039200	7.368	5320.038926	7.317	5320.039441	7.414
-10	3.7	5320.037520	7.053	5320.037633	7.074	5320.037708	7.088	5320.037525	7.054
-20	3.7	5320.037027	6.960	5320.037114	6.976	5320.037019	6.958	5320.037486	7.046
-30	3.7	5320.035793	6.728	5320.036310	6.825	5320.036092	6.784	5320.035547	6.682

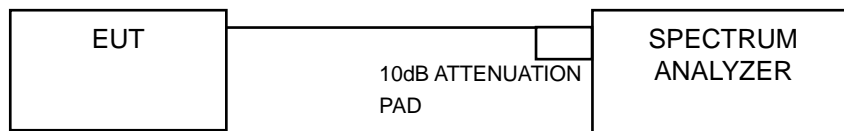
Frequency Stability Versus Temp.									
Operating Frequency: 5320MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	3.3	5320.037795	7.104	5320.037808	7.107	5320.037487	7.046	5320.037665	7.080
	3.7	5320.037999	7.143	5320.037848	7.114	5320.038100	7.162	5320.038330	7.205
	4.26	5320.039768	7.475	5320.039199	7.368	5320.039161	7.361	5320.039173	7.363

## 4.6 6dB Bandwidth Measurement

### 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

- Set resolution bandwidth (RBW) = 100kHz
- Set the video bandwidth (VBW)  $\geq 3 \times$  RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- 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	15.10	0.5	Pass
157	5785	15.73	0.5	Pass
165	5825	13.45	0.5	Pass

##### 802.11n (20MHz)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	14.69	0.5	Pass
157	5785	15.72	0.5	Pass
165	5825	17.62	0.5	Pass

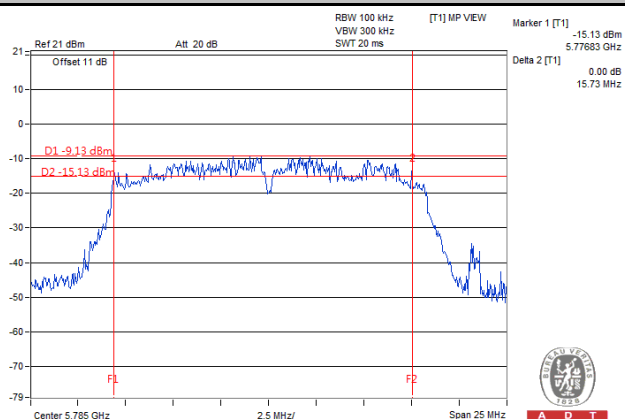
##### 802.11n (40MHz)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	35.23	0.5	Pass
159	5795	31.32	0.5	Pass

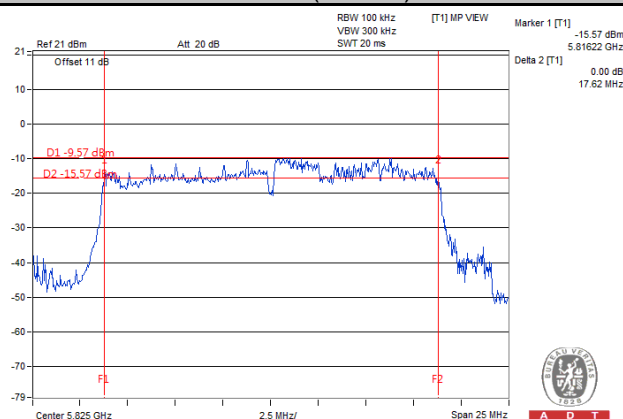


# Spectrum Plot of Worst Value

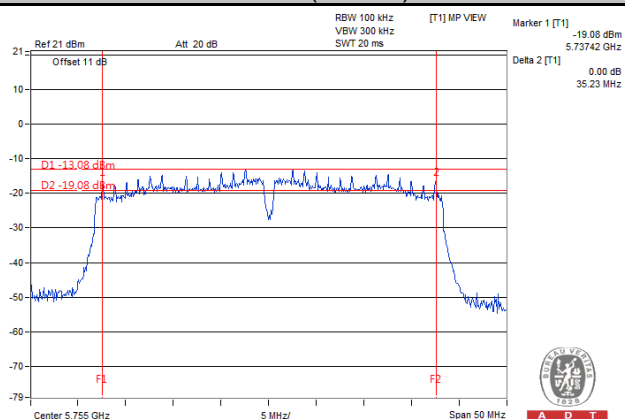
## 802.11a



## 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](mailto:service.adt@tw.bureauveritas.com)

**Web Site:** [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

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

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