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# FCC TEST REPORT (15.407)

**REPORT NO.:** RF150401C19-2 R1

**MODEL NO.:** A0013

**FCC ID:** ZQAT30

**RECEIVED:** Apr. 01, 2015

**TESTED:** Apr. 13, 2015 ~ May 09, 2015

**ISSUED:** May 11, 2015

**APPLICANT:** Nest Labs Inc.

**ADDRESS:** 3400 Hillview Ave. Palo Alto California, United States 94304

**ISSUED BY:** Bureau Veritas Consumer Products Services (H.K.)  
Ltd., Taoyuan Branch

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**TEST LOCATION:** No.19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan  
Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF150401C19-2	Original release	Apr. 22, 2015
RF150401C19-2 R1	Update model name	May 11, 2015



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## 1. CERTIFICATION

**PRODUCT:** Wireless Device  
**MODEL NO.:** A0013  
**APPLICANT:** Nest Labs Inc.  
**TESTED:** Apr. 13, 2015 ~ May 09, 2015  
**TEST SAMPLE:** Identical Prototype  
**STANDARDS:** **FCC Part 15, Subpart E (Section 15.407)**  
ANSI C63.10-2009

The above equipment (model: A0013) 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 :** Evonne Liu , **DATE :** May 11, 2015  
Evonne Liu / Specialist

**APPROVED BY :** Sam Chen , **DATE :** May 11, 2015  
Sam Chen / Senior Project Engineer

## 2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

<b>APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407, Under New Rule)</b>			
<b>STANDARD SECTION</b>	<b>TEST TYPE</b>	<b>RESULT</b>	<b>REMARK</b>
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -13.50dB at 0.16173MHz.
15.407(b/1/2/3) (b)(6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -2.34dB at 5725MHz.
15.407(a/1/2/3)	Max Average Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2/3)	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:

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

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



### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>EUT</b>	Wireless Device
<b>MODEL NO.</b>	A0013
<b>POWER SUPPLY RATING</b>	24Vac (Adapter) 3.8Vdc (battery) 5.0Vdc (host equipment)
<b>MODULATION TYPE</b>	64QAM, 16QAM, QPSK, BPSK
<b>MODULATION TECHNOLOGY</b>	OFDM
<b>TRANSFER RATE</b>	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to MCS7
<b>OPERATING FREQUENCY</b>	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz, 5745 ~ 5825MHz
<b>NUMBER OF CHANNEL</b>	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)
<b>OUTPUT POWER</b>	31.99mW for 5180 ~ 5240MHz 36.31mW for 5260 ~ 5320MHz 35.89mW for 5500 ~ 5700MHz 34.04mW for 5745 ~ 5825MHz
<b>ANTENNA TYPE / PEAK GAIN</b>	Loop antenna with 1.9dBi gain
<b>ANTENNA CONNECTOR</b>	NA
<b>DATA CABLE</b>	Refer to Note as below
<b>I/O PORTS</b>	Refer to user's manual
<b>ACCESSORY DEVICES</b>	Refer to Note as below

**NOTE:**

1. The EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
802.11a	1TX
802.11n (20MHz)	1TX
802.11n (40MHz)	1TX

2. The above EUT information is declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.
3. Testing for radiated emissions above 1GHz was performed with the EUT elevated at 1.5m instead of 0.8m. 1.5m is the required height in ANSI C63.10:2013 as referenced by RSS GEN issue 4. This test height has been permitted by FCC as discussed in FCC/TCB conference call in December 2014.



### 3.2 DESCRIPTION OF TEST MODES

#### WLAN 5180 ~ 5240MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

#### FOR 5260 ~ 5320MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz



**WLAN 5500 ~ 5700MHz**

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

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

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

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

**FOR 5.0GHz (5745 ~ 5825MHz):**

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755MHz	159	5795MHz



### 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	-	√	Battery Mode
B	-	√	√	-	Notebook Mode
C	-	√	√	-	Taco Box Mode

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

**NOTE:** The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane** for 5180-5240MHz and **Z-plane** for 5260-5825MHz.

#### RADIATED EMISSION TEST (ABOVE 1GHz):

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	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 161	149, 157, 165	OFDM	BPSK	6.0
	802.11n (20MHz)		149 to 161	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	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B, C	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	MCS0



**POWER LINE CONDUCTED EMISSION TEST:**

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
B, C	802.11n (20MHz)	5500-5700	100 to 140	140	OFDM	BPSK	MCS0

**BANDEDGE MEASUREMENT:**

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	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 161	149, 157, 165	OFDM	BPSK	6.0
	802.11n (20MHz)		149 to 161	149, 157, 165	OFDM	BPSK	MCS0
	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0



**ANTENNA PORT CONDUCTED MEASUREMENT:**

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	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 161	149, 157, 165	OFDM	BPSK	6.0
	802.11n (20MHz)		149 to 161	149, 157, 165	OFDM	BPSK	MCS0
	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0

**Test CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Gavin Wu
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Gavin Wu
PLC	25deg. C, 65%RH	120Vac, 60Hz	Toby Tian
APCM	25deg. C, 65%RH	3.8Vdc	Dylan Yang



### 3.3 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Taco box	N/A	N/A	N/A	N/A
2	Notebook	N/A	N/A	N/A	N/A

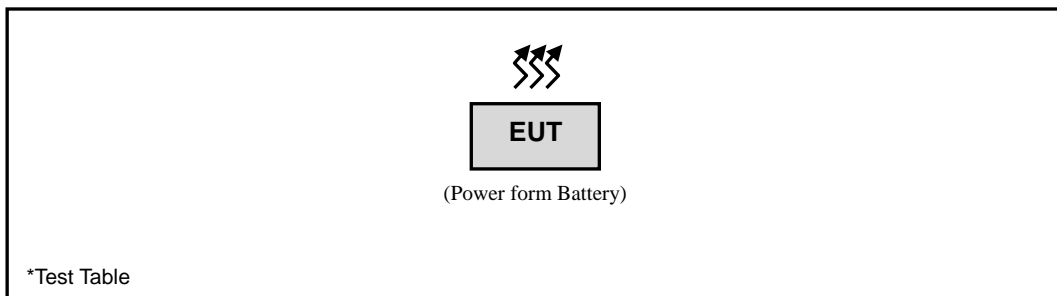
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A
2	N/A

- NOTE:** 1. All power cords of the above support units are non shielded (1.8m).  
2. Item 1 was provided by client.

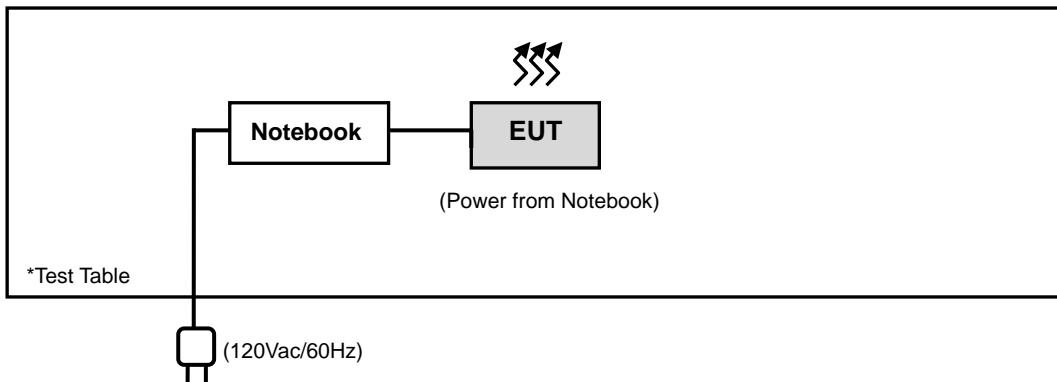
### 3.3.1 CONFIGURATION OF SYSTEM UNDER TEST

#### For Radiation

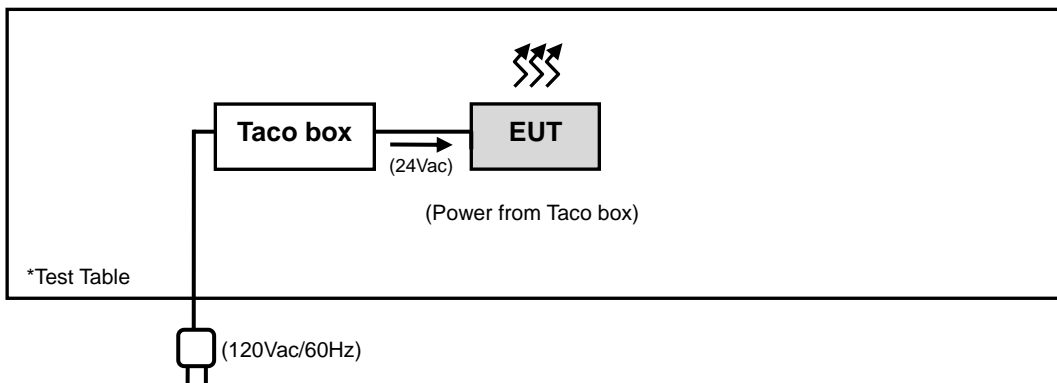
##### MODE A



##### MODE B

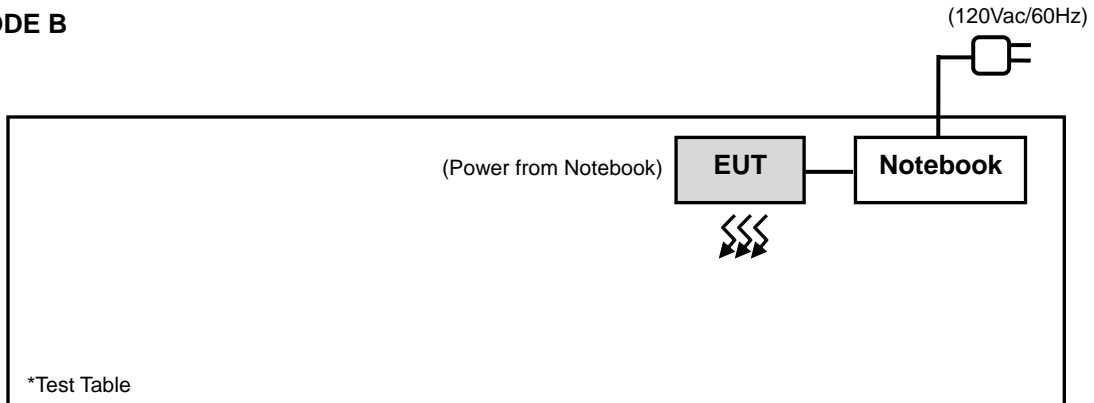


##### MODE C

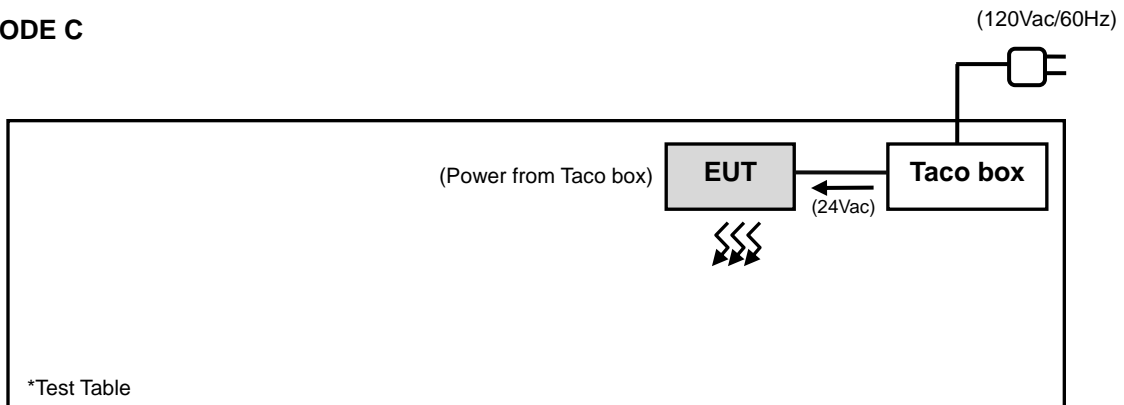


## For Conduction

### MODE B



### MODE C



### 3.4 DUTY CYCLE TEST SIGNAL

#### MODULATION TYPE: BPSK

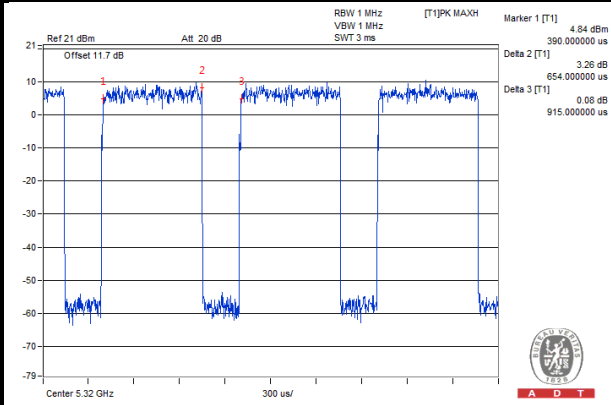
If duty cycle is < 98%

**802.11a:** Duty cycle =  $654/915 = 0.714$ , Duty factor =  $10 * \log(1/0.714) = 1.46$

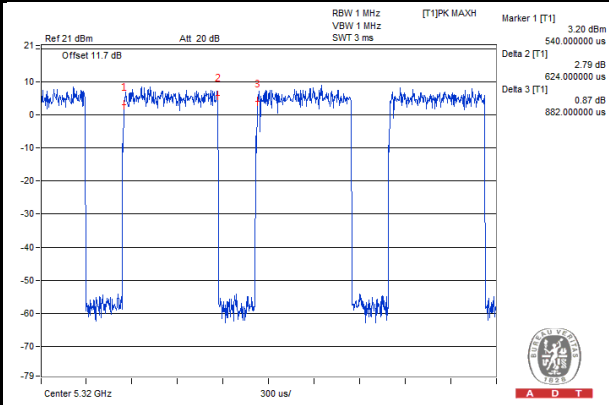
**802.11n (20MHz):** Duty cycle =  $624/882 = 0.707$ , Duty factor =  $10 * \log(1/0.707) = 1.50$

**802.11n (40MHz):** Duty cycle =  $288/573 = 0.502$ , Duty factor =  $10 * \log(1/0.502) = 2.99$

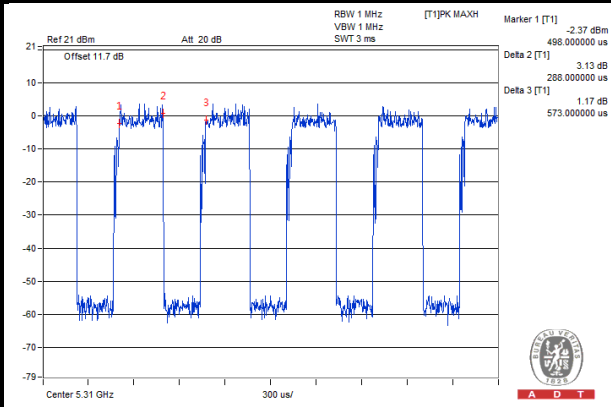
**802.11a**



**802.11n (20MHz)**



**802.11n (40MHz)**







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### MODULATION TYPE: QPSK

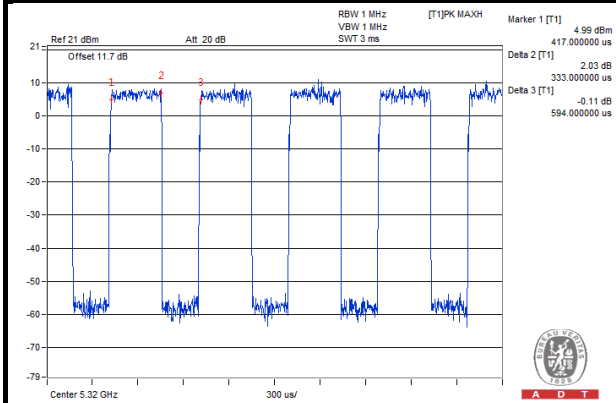
If duty cycle is < 98%

**802.11a:** Duty cycle = 333/594 = 0.560, Duty factor =  $10 * \log(1/0.560) = 2.51$

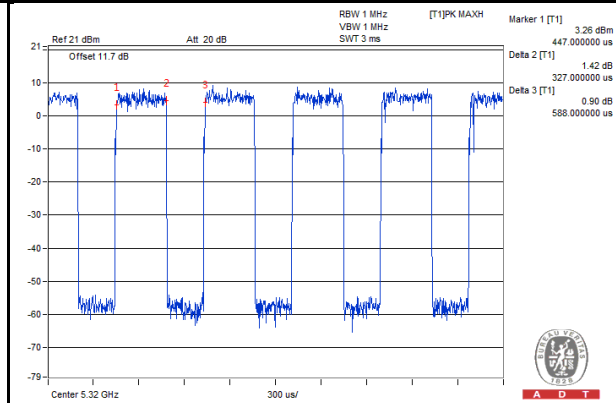
**802.11n (20MHz):** Duty cycle = 327/588 = 0.556, Duty factor =  $10 * \log(1/0.556) = 2.55$

**802.11n (40MHz):** Duty cycle = 147/432 = 0.340, Duty factor =  $10 * \log(1/0.340) = 4.68$

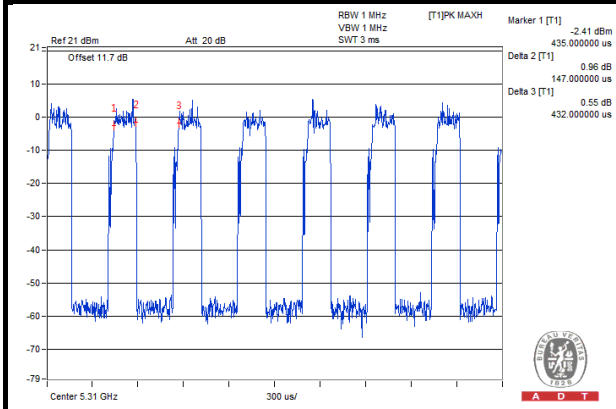
#### 802.11a



#### 802.11n (20MHz)



#### 802.11n (40MHz)





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### MODULATION TYPE: 16QAM

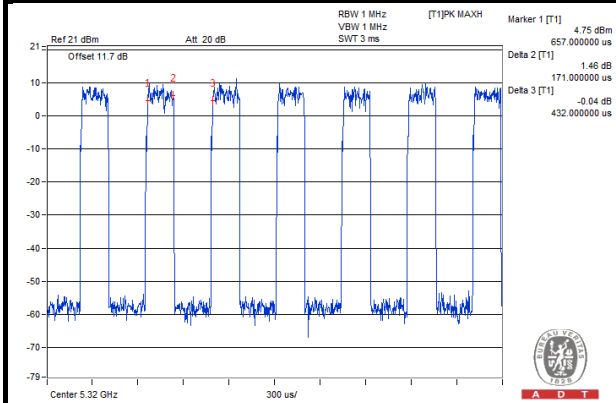
If duty cycle is < 98%

**802.11a:** Duty cycle = 171/432 = 0.395, Duty factor =  $10 * \log(1/0.395) = 4.03$

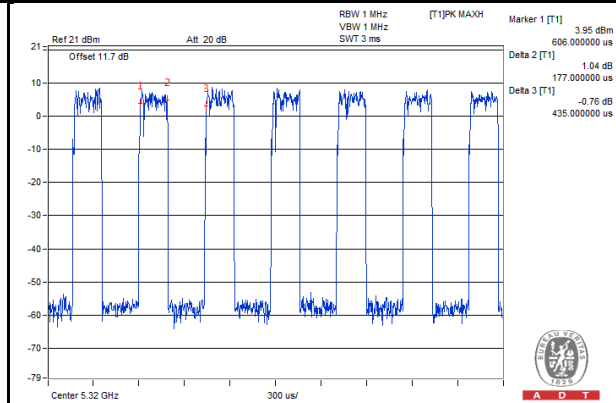
**802.11n (20MHz):** Duty cycle = 177/435 = 0.406, Duty factor =  $10 * \log(1/0.406) = 3.91$

**802.11n (40MHz):** Duty cycle = 75/357 = 0.210, Duty factor =  $10 * \log(1/0.210) = 6.78$

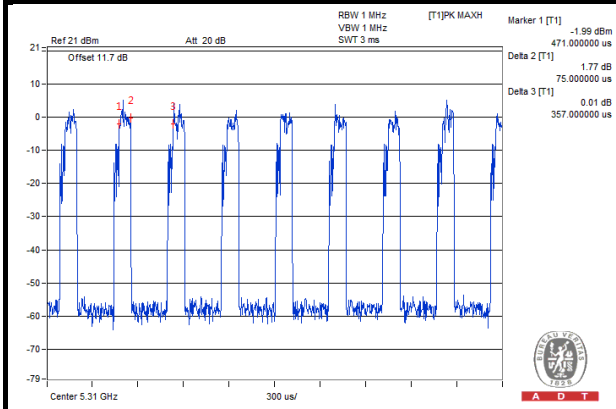
#### 802.11a



#### 802.11n (20MHz)



#### 802.11n (40MHz)



**MODULATION TYPE: 64QAM**

If duty cycle is < 98%

**802.11a:** Duty cycle = 93/354 = 0.262, Duty factor =  $10 * \log(1/0.262) = 5.81$

**802.11n (20MHz):** Duty cycle = 102/360 = 0.283, Duty factor =  $10 * \log(1/0.283) = 5.48$

**802.11n (40MHz):** Duty cycle = 36/318 = 0.113, Duty factor =  $10 * \log(1/0.113) = 9.46$



**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 C63.10-2009**

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:

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:

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



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#### 4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver Agilent	N9038A	MY52260177	May 19, 2014	May 18, 2015
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. 05, 2015	Feb. 04, 2016
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Feb. 10, 2015	Feb. 09, 2016
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Aug. 27, 2014	Aug. 26, 2015
Loop Antenna	EM-6879	269	Aug.13, 2014	Aug.12, 2015
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
Power Meter	ML2495A	1232002	Sep. 17, 2014	Sep. 16, 2015
Power Sensor	MA2411B	1207325	Sep. 17, 2014	Sep. 16, 2015



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- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
  2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
  3. The test was performed in HwaYa Chamber 10.
  4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
  5. The FCC Site Registration No. is 690701.
  6. The IC Site Registration No. is IC 7450F-10.

#### 4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

**NOTE:**

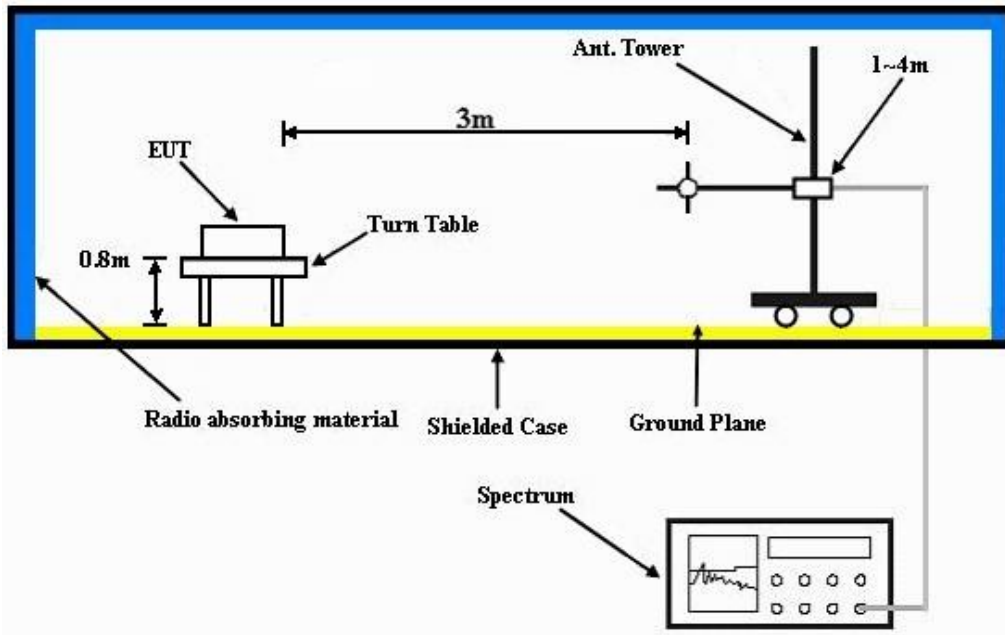
1. For emission measurements above 1 GHz, the EUT shall be placed at a height of 1.5 m above the ground at 3 meter chamber room for test
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3kHz (Duty cycle < 98%) or 10Hz (Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

#### 4.1.5 DEVIATION FROM TEST STANDARD

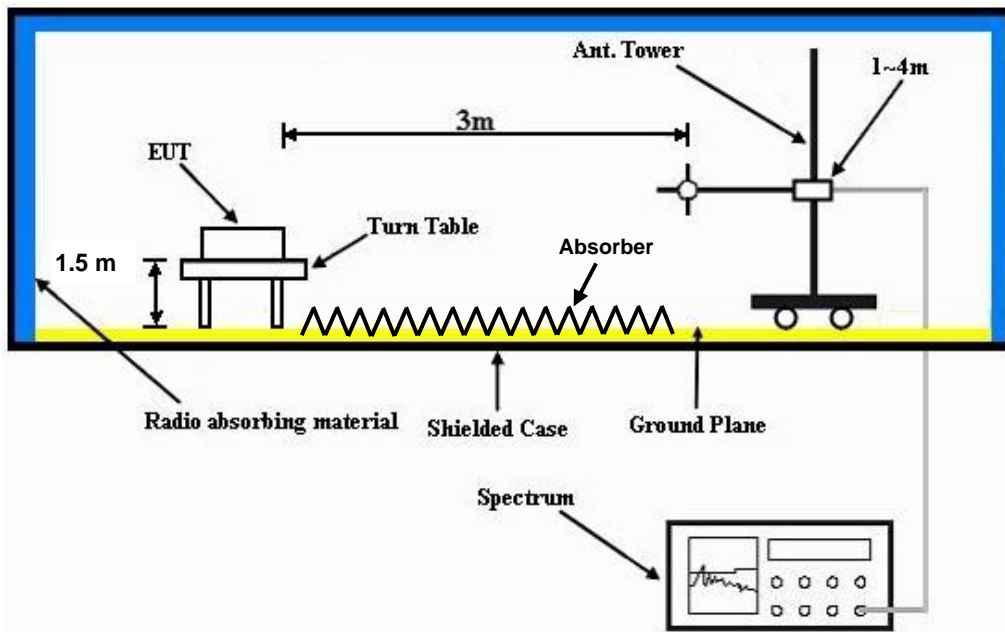
No deviation.

#### 4.1.6 TEST SETUP

##### Frequency Range 30MHz ~ 1GHz



##### Frequency Range above 1GHz



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

#### 4.1.7 EUT OPERATING CONDITIONS

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



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**4.1.8 TEST RESULTS**

**ABOVE 1GHz WORST-CASE DATA**

**MODE A**

**802.11a**

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

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	39.27	39.98	54	-14.73	31.32	5.29	37.32	125	232	Average
5150	59.15	59.86	74	-14.85	31.32	5.29	37.32	125	232	Peak
5180	84.46	85.14			31.35	5.31	37.34	125	232	Average
5180	94.86	95.54			31.35	5.31	37.34	125	232	Peak
5398	37.47	37.72	54	-16.53	31.52	5.41	37.18	125	232	Average
5398	58.97	59.22	74	-15.03	31.52	5.41	37.18	125	232	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
5142	44.24	44.93	54	-9.76	31.32	5.29	37.3	101	11	Average
5142	61.4	62.09	74	-12.6	31.32	5.29	37.3	101	11	Peak
5180	90.03	90.71			31.35	5.31	37.34	101	11	Average
5180	99.23	99.91			31.35	5.31	37.34	101	11	Peak
5372	37.6	37.89	54	-16.4	31.49	5.4	37.18	101	11	Average
5372	59.31	59.6	74	-14.69	31.49	5.4	37.18	101	11	Peak

**REMARKS:**

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





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5046	37.75	38.51	54	-16.25	31.24	5.25	37.25	123	227	Average
5046	58.81	59.57	74	-15.19	31.24	5.25	37.25	123	227	Peak
5220	87.22	87.88			31.37	5.33	37.36	123	227	Average
5220	96.89	97.55			31.37	5.33	37.36	123	227	Peak
5422	37.55	37.78	54	-16.45	31.53	5.42	37.18	123	227	Average
5422	58.53	58.76	74	-15.47	31.53	5.42	37.18	123	227	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
5058	38.82	39.57	54	-15.18	31.25	5.25	37.25	100	9	Average
5058	59.2	59.95	74	-14.8	31.25	5.25	37.25	100	9	Peak
5220	91.11	91.77			31.37	5.33	37.36	100	9	Average
5220	100.79	101.45			31.37	5.33	37.36	100	9	Peak
5374	38.07	38.36	54	-15.93	31.49	5.4	37.18	100	9	Average
5374	59.08	59.37	74	-14.92	31.49	5.4	37.18	100	9	Peak

**REMARKS:**

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5016	37.58	38.36	54	-16.42	31.21	5.24	37.23	117	230	Average
5016	59.71	60.49	74	-14.29	31.21	5.24	37.23	117	230	Peak
5240	88.58	89.17			31.39	5.34	37.32	117	230	Average
5240	96.94	97.53			31.39	5.34	37.32	117	230	Peak
5368	37.57	37.86	54	-16.43	31.49	5.4	37.18	117	230	Average
5368	58.76	59.05	74	-15.24	31.49	5.4	37.18	117	230	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5104	38.19	38.92	54	-15.81	31.28	5.27	37.28	110	15	Average
5104	59.11	59.84	74	-14.89	31.28	5.27	37.28	110	15	Peak
5240	92.53	93.12			31.39	5.34	37.32	110	15	Average
5240	102	102.59			31.39	5.34	37.32	110	15	Peak
5366	38.96	39.25	54	-15.04	31.49	5.4	37.18	110	15	Average
5366	58.91	59.2	74	-15.09	31.49	5.4	37.18	110	15	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	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5110	37.36	38.08	54	-16.64	31.29	5.27	37.28	100	182	Average
5110	60.08	60.8	74	-13.92	31.29	5.27	37.28	100	182	Peak
5260	86.48	87			31.41	5.34	37.27	100	182	Average
5260	96.03	96.55			31.41	5.34	37.27	100	182	Peak
5442	37.76	37.9	54	-16.24	31.55	5.44	37.13	100	182	Average
5442	60.99	61.13	74	-13.01	31.55	5.44	37.13	100	182	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
5094	37.45	38.18	54	-16.55	31.28	5.27	37.28	136	310	Average
5094	60.37	61.1	74	-13.63	31.28	5.27	37.28	136	310	Peak
5260	88.96	89.48			31.41	5.34	37.27	136	310	Average
5260	98.25	98.77			31.41	5.34	37.27	136	310	Peak
5366	37.69	37.98	54	-16.31	31.49	5.4	37.18	136	310	Average
5366	60.65	60.94	74	-13.35	31.49	5.4	37.18	136	310	Peak

**REMARKS:**

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5074	37.35	38.09	54	-16.65	31.27	5.26	37.27	100	171	Average
5074	59.24	59.98	74	-14.76	31.27	5.26	37.27	100	171	Peak
5300	87.6	87.98			31.44	5.37	37.19	100	171	Average
5300	97.75	98.13			31.44	5.37	37.19	100	171	Peak
5408	39.33	39.58	54	-14.67	31.52	5.41	37.18	100	171	Average
5408	60.79	61.04	74	-13.21	31.52	5.41	37.18	100	171	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
5004	37.33	38.13	54	-16.67	31.21	5.22	37.23	122	308	Average
5004	59.73	60.53	74	-14.27	31.21	5.22	37.23	122	308	Peak
5300	90.44	90.82			31.44	5.37	37.19	122	308	Average
5300	100.31	100.69			31.44	5.37	37.19	122	308	Peak
5444	40.9	41.04	54	-13.1	31.55	5.44	37.13	122	308	Average
5444	59.77	59.91	74	-14.23	31.55	5.44	37.13	122	308	Peak

**REMARKS:**

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5016	37.11	37.89	54	-16.89	31.21	5.24	37.23	100	171	Average
5016	59.65	60.43	74	-14.35	31.21	5.24	37.23	100	171	Peak
5320	87.55	87.91			31.45	5.38	37.19	100	171	Average
5320	97.81	98.17			31.45	5.38	37.19	100	171	Peak
5350	41.67	41.98	54	-12.33	31.48	5.39	37.18	100	171	Average
5350	61.06	61.37	74	-12.94	31.48	5.39	37.18	100	171	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5112	37.34	38.06	54	-16.66	31.29	5.27	37.28	121	307	Average
5112	60.33	61.05	74	-13.67	31.29	5.27	37.28	121	307	Peak
5320	90.46	90.82			31.45	5.38	37.19	121	307	Average
5320	101.08	101.44			31.45	5.38	37.19	121	307	Peak
5350	42.25	42.56	54	-11.75	31.48	5.39	37.18	121	307	Average
5350	60.98	61.29	74	-13.02	31.48	5.39	37.18	121	307	Peak

**REMARKS:**

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5454	41.23	41.31	54	-12.77	31.56	5.44	37.08	102	203	Average
5454	60.46	60.54	74	-13.54	31.56	5.44	37.08	102	203	Peak
5470	61.01	61.07	68.2	-7.19	31.57	5.45	37.08	102	203	Peak
5500	91.31	91.28			31.6	5.46	37.03	102	203	Average
5500	100.75	100.72			31.6	5.46	37.03	102	203	Peak
5725	58.81	58.69	68.2	-9.39	31.96	5.59	37.43	102	203	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	44.42	44.5	54	-9.58	31.56	5.44	37.08	135	330	Average
5452	60.41	60.49	74	-13.59	31.56	5.44	37.08	135	330	Peak
5470	61.48	61.54	68.2	-6.72	31.57	5.45	37.08	135	330	Peak
5500	95.21	95.18			31.6	5.46	37.03	135	330	Average
5500	104.56	104.53			31.6	5.46	37.03	135	330	Peak
5725	59.96	59.84	68.2	-8.24	31.96	5.59	37.43	135	330	Peak

**REMARKS:**

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5380	38.5	38.77	54	-15.5	31.51	5.4	37.18	106	210	Average
5380	59.22	59.49	74	-14.78	31.51	5.4	37.18	106	210	Peak
5470	56.86	56.92	68.2	-11.34	31.57	5.45	37.08	106	210	Peak
5580	92.46	92.41			31.71	5.5	37.16	106	210	Average
5580	101.62	101.57			31.71	5.5	37.16	106	210	Peak
5725	59.15	59.03	68.2	-9.05	31.96	5.59	37.43	106	210	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	38.87	39.12	54	-15.13	31.52	5.41	37.18	116	307	Average
5404	60.65	60.9	74	-13.35	31.52	5.41	37.18	116	307	Peak
5470	57.32	57.38	68.2	-10.88	31.57	5.45	37.08	116	307	Peak
5580	96.54	96.49			31.71	5.5	37.16	116	307	Average
5580	105.65	105.6			31.71	5.5	37.16	116	307	Peak
5725	59.77	59.65	68.2	-8.43	31.96	5.59	37.43	116	307	Peak

**REMARKS:**

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5420	38.57	38.8	54	-15.43	31.53	5.42	37.18	102	195	Average
5420	59.73	59.96	74	-14.27	31.53	5.42	37.18	102	195	Peak
5470	59.34	59.4	68.2	-8.86	31.57	5.45	37.08	102	195	Peak
5700	91.68	91.61			31.9	5.57	37.4	102	195	Average
5700	100.98	100.91			31.9	5.57	37.4	102	195	Peak
5725	63.41	63.29	68.2	-4.79	31.96	5.59	37.43	102	195	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
5380	38.6	38.87	54	-15.4	31.51	5.4	37.18	112	341	Average
5380	60.73	61	74	-13.27	31.51	5.4	37.18	112	341	Peak
5470	57.45	57.51	68.2	-10.75	31.57	5.45	37.08	112	341	Peak
5700	95.33	95.26			31.9	5.57	37.4	112	341	Average
5700	104.45	104.38			31.9	5.57	37.4	112	341	Peak
5725	64	63.88	68.2	-4.2	31.96	5.59	37.43	112	341	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	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	65.03	64.94	68.2	-3.17	31.93	5.59	37.43	126	64	Peak
5725	68.64	68.52	78.2	-9.56	31.96	5.59	37.43	126	64	Peak
5745	96.43	96.31			31.99	5.6	37.47	126	64	Average
5745	107.51	107.39			31.99	5.6	37.47	126	64	Peak
5850	58.79	58.49	78.2	-19.41	32.15	5.66	37.51	126	64	Peak
5861	58.16	57.82	68.2	-10.04	32.18	5.66	37.5	126	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
5714	60.31	60.22	68.2	-7.89	31.93	5.59	37.43	100	327	Peak
5725	67.79	67.67	78.2	-10.41	31.96	5.59	37.43	100	327	Peak
5745	93.91	93.79			31.99	5.6	37.47	100	327	Average
5745	102.47	102.35			31.99	5.6	37.47	100	327	Peak
5850	58.97	58.67	78.2	-19.23	32.15	5.66	37.51	100	327	Peak
5861	58.32	57.98	68.2	-9.88	32.18	5.66	37.5	100	327	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5745MHz: Fundamental frequency.
- 5714MHz & 5725MHz & 5850MHz & 5861MHz: Out of restricted band



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	59.12	59.03	68.2	-9.08	31.93	5.59	37.43	126	61	Peak
5725	60.35	60.23	78.2	-17.85	31.96	5.59	37.43	126	61	Peak
5785	96.66	96.54			32.04	5.62	37.54	126	61	Average
5785	106.41	106.29			32.04	5.62	37.54	126	61	Peak
5850	59.8	59.5	78.2	-18.4	32.15	5.66	37.51	126	61	Peak
5861	58.65	58.31	68.2	-9.55	32.18	5.66	37.5	126	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	59.47	59.38	68.2	-8.73	31.93	5.59	37.43	101	332	Peak
5725	59.21	59.09	78.2	-18.99	31.96	5.59	37.43	101	332	Peak
5785	93.39	93.27			32.04	5.62	37.54	101	332	Average
5785	102.73	102.61			32.04	5.62	37.54	101	332	Peak
5850	58.48	58.18	78.2	-19.72	32.15	5.66	37.51	101	332	Peak
5861	59.11	58.77	68.2	-9.09	32.18	5.66	37.5	101	332	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5785MHz: Fundamental frequency.
- 5714MHz & 5725MHz & 5850MHz & 5861MHz: Out of restricted band



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	58.98	58.89	68.2	-9.22	31.93	5.59	37.43	137	67	Peak
5725	59.68	59.56	78.2	-18.52	31.96	5.59	37.43	137	67	Peak
5825	97.15	96.92			32.12	5.64	37.53	137	67	Average
5825	106.76	106.53			32.12	5.64	37.53	137	67	Peak
5850	65.71	65.41	78.2	-12.49	32.15	5.66	37.51	137	67	Peak
5861	60.63	60.29	68.2	-7.57	32.18	5.66	37.5	137	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
5714	59.37	59.28	68.2	-8.83	31.93	5.59	37.43	100	326	Peak
5725	59.9	59.78	78.2	-18.3	31.96	5.59	37.43	100	326	Peak
5825	92.86	92.63			32.12	5.64	37.53	100	326	Average
5825	102.41	102.18			32.12	5.64	37.53	100	326	Peak
5850	61.68	61.38	78.2	-16.52	32.15	5.66	37.51	100	326	Peak
5861	58.71	58.37	68.2	-9.49	32.18	5.66	37.5	100	326	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5825MHz: Fundamental frequency.
- 5714MHz & 5724MHz & 5850MHz & 5861MHz: Out of restricted band



A D T

**802.11n (20MHz)**

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

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5098	38.54	39.27	54	-15.46	31.28	5.27	37.28	124	224	Average
5098	60.22	60.95	74	-13.78	31.28	5.27	37.28	124	224	Peak
5180	84.2	84.88			31.35	5.31	37.34	124	224	Average
5180	93.95	94.63			31.35	5.31	37.34	124	224	Peak
5446	37.78	37.91	54	-16.22	31.56	5.44	37.13	124	224	Average
5446	59.68	59.81	74	-14.32	31.56	5.44	37.13	124	224	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	40.27	40.98	54	-13.73	31.32	5.29	37.32	110	17	Average
5148	62.11	62.82	74	-11.89	31.32	5.29	37.32	110	17	Peak
5180	89.81	90.49			31.35	5.31	37.34	110	17	Average
5180	99.5	100.18			31.35	5.31	37.34	110	17	Peak
5410	37.62	37.87	54	-16.38	31.52	5.41	37.18	110	17	Average
5410	60.71	60.96	74	-13.29	31.52	5.41	37.18	110	17	Peak

**REMARKS:**

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5102	37.3	38.03	54	-16.7	31.28	5.27	37.28	125	228	Average
5102	60.55	61.28	74	-13.45	31.28	5.27	37.28	125	228	Peak
5220	84.87	85.53			31.37	5.33	37.36	125	228	Average
5220	94.65	95.31			31.37	5.33	37.36	125	228	Peak
5362	37.67	37.97	54	-16.33	31.49	5.39	37.18	125	228	Average
5362	59.54	59.84	74	-14.46	31.49	5.39	37.18	125	228	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
5100	37.62	38.35	54	-16.38	31.28	5.27	37.28	136	17	Average
5100	59.52	60.25	74	-14.48	31.28	5.27	37.28	136	17	Peak
5220	90.13	90.79			31.37	5.33	37.36	136	17	Average
5220	100.27	100.93			31.37	5.33	37.36	136	17	Peak
5374	37.63	37.92	54	-16.37	31.49	5.4	37.18	136	17	Average
5374	59.83	60.12	74	-14.17	31.49	5.4	37.18	136	17	Peak

**REMARKS:**

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5130	37.38	38.09	54	-16.62	31.31	5.28	37.3	124	226	Average
5130	60.28	60.99	74	-13.72	31.31	5.28	37.3	124	226	Peak
5240	85.1	85.69			31.39	5.34	37.32	124	226	Average
5240	95.25	95.84			31.39	5.34	37.32	124	226	Peak
5436	37.71	37.87	54	-16.29	31.55	5.42	37.13	124	226	Average
5436	60.14	60.3	74	-13.86	31.55	5.42	37.13	124	226	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5064	37.52	38.26	54	-16.48	31.25	5.26	37.25	137	15	Average
5064	60.01	60.75	74	-13.99	31.25	5.26	37.25	137	15	Peak
5240	91.13	91.72			31.39	5.34	37.32	137	15	Average
5240	100.78	101.37			31.39	5.34	37.32	137	15	Peak
5420	37.84	38.07	54	-16.16	31.53	5.42	37.18	137	15	Average
5420	59.63	59.86	74	-14.37	31.53	5.42	37.18	137	15	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	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5034	38.37	39.14	54	-15.63	31.23	5.24	37.24	112	185	Average
5034	60.74	61.51	74	-13.26	31.23	5.24	37.24	112	185	Peak
5260	91.59	92.11			31.41	5.34	37.27	112	185	Average
5260	100.94	101.46			31.41	5.34	37.27	112	185	Peak
5372	38.83	39.12	54	-15.17	31.49	5.4	37.18	112	185	Average
5372	59.77	60.06	74	-14.23	31.49	5.4	37.18	112	185	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5048	38.46	39.22	54	-15.54	31.24	5.25	37.25	114	25	Average
5048	61	61.76	74	-13	31.24	5.25	37.25	114	25	Peak
5260	95.2	95.72			31.41	5.34	37.27	114	25	Average
5260	104.62	105.14			31.41	5.34	37.27	114	25	Peak
5354	39.24	39.55	54	-14.76	31.48	5.39	37.18	114	25	Average
5354	60.23	60.54	74	-13.77	31.48	5.39	37.18	114	25	Peak

**REMARKS:**

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5050	37.34	38.1	54	-16.66	31.24	5.25	37.25	100	174	Average
5050	60.37	61.13	74	-13.63	31.24	5.25	37.25	100	174	Peak
5320	84.52	84.88			31.45	5.38	37.19	100	174	Average
5320	94.12	94.48			31.45	5.38	37.19	100	174	Peak
5374	38.9	39.19	54	-15.1	31.49	5.4	37.18	100	174	Average
5374	60.22	60.51	74	-13.78	31.49	5.4	37.18	100	174	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5060	37.33	38.08	54	-16.67	31.25	5.25	37.25	120	306	Average
5060	59.94	60.69	74	-14.06	31.25	5.25	37.25	120	306	Peak
5320	88.96	89.32			31.45	5.38	37.19	120	306	Average
5320	98.91	99.27			31.45	5.38	37.19	120	306	Peak
5350	41.55	41.86	54	-12.45	31.48	5.39	37.18	120	306	Average
5350	61.02	61.33	74	-12.98	31.48	5.39	37.18	120	306	Peak

**REMARKS:**

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





A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5050	37.34	38.1	54	-16.66	31.24	5.25	37.25	100	174	Average
5050	60.37	61.13	74	-13.63	31.24	5.25	37.25	100	174	Peak
5320	84.52	84.88			31.45	5.38	37.19	100	174	Average
5320	94.12	94.48			31.45	5.38	37.19	100	174	Peak
5374	38.9	39.19	54	-15.1	31.49	5.4	37.18	100	174	Average
5374	60.22	60.51	74	-13.78	31.49	5.4	37.18	100	174	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5060	37.33	38.08	54	-16.67	31.25	5.25	37.25	120	306	Average
5060	59.94	60.69	74	-14.06	31.25	5.25	37.25	120	306	Peak
5320	88.96	89.32			31.45	5.38	37.19	120	306	Average
5320	98.91	99.27			31.45	5.38	37.19	120	306	Peak
5350	41.55	41.86	54	-12.45	31.48	5.39	37.18	120	306	Average
5350	61.02	61.33	74	-12.98	31.48	5.39	37.18	120	306	Peak

**REMARKS:**

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5450	40.68	40.76	54	-13.32	31.56	5.44	37.08	120	212	Average
5450	60.51	60.59	74	-13.49	31.56	5.44	37.08	120	212	Peak
5470	58.73	58.79	68.2	-9.47	31.57	5.45	37.08	120	212	Peak
5500	90.78	90.75			31.6	5.46	37.03	120	212	Average
5500	100.19	100.16			31.6	5.46	37.03	120	212	Peak
5725	58.43	58.31	68.2	-9.77	31.96	5.59	37.43	120	212	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5454	43.96	44.04	54	-10.04	31.56	5.44	37.08	133	325	Average
5454	60.42	60.5	74	-13.58	31.56	5.44	37.08	133	325	Peak
5470	59.98	60.04	68.2	-8.22	31.57	5.45	37.08	133	325	Peak
5500	94.49	94.46			31.6	5.46	37.03	133	325	Average
5500	104.09	104.06			31.6	5.46	37.03	133	325	Peak
5725	59.04	58.92	68.2	-9.16	31.96	5.59	37.43	133	325	Peak

**REMARKS:**

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5420	38.51	38.74	54	-15.49	31.53	5.42	37.18	116	204	Average
5420	60.15	60.38	74	-13.85	31.53	5.42	37.18	116	204	Peak
5470	59.43	59.49	68.2	-8.77	31.57	5.45	37.08	116	204	Peak
5580	91.67	91.62			31.71	5.5	37.16	116	204	Average
5580	101.25	101.2			31.71	5.5	37.16	116	204	Peak
5725	60.27	60.15	68.2	-7.93	31.96	5.59	37.43	116	204	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
5410	38.79	39.04	54	-15.21	31.52	5.41	37.18	140	325	Average
5410	60.19	60.44	74	-13.81	31.52	5.41	37.18	140	325	Peak
5470	58.05	58.11	68.2	-10.15	31.57	5.45	37.08	140	325	Peak
5580	95.49	95.44			31.71	5.5	37.16	140	325	Average
5580	105.17	105.12			31.71	5.5	37.16	140	325	Peak
5725	60.8	60.68	68.2	-7.4	31.96	5.59	37.43	140	325	Peak

**REMARKS:**

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5436	38.53	38.69	54	-15.47	31.55	5.42	37.13	120	242	Average
5436	60.08	60.24	74	-13.92	31.55	5.42	37.13	120	242	Peak
5470	57.63	57.69	68.2	-10.57	31.57	5.45	37.08	120	242	Peak
5700	90.93	90.86			31.9	5.57	37.4	120	242	Average
5700	100.57	100.5			31.9	5.57	37.4	120	242	Peak
5725	60.28	60.16	68.2	-7.92	31.96	5.59	37.43	120	242	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	38.63	38.71	54	-15.37	31.56	5.44	37.08	124	347	Average
5456	60.4	60.48	74	-13.6	31.56	5.44	37.08	124	347	Peak
5470	58.76	58.82	68.2	-9.44	31.57	5.45	37.08	124	347	Peak
5700	94.48	94.41			31.9	5.57	37.4	124	347	Average
5700	103.75	103.68			31.9	5.57	37.4	124	347	Peak
5725	65.86	65.74	68.2	-2.34	31.96	5.59	37.43	124	347	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	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	62.86	62.77	68.2	-5.34	31.93	5.59	37.43	123	70	Peak
5725	67.26	67.14	78.2	-10.94	31.96	5.59	37.43	123	70	Peak
5745	95.28	95.16			31.99	5.6	37.47	123	70	Average
5745	105.5	105.38			31.99	5.6	37.47	123	70	Peak
5850	58.8	58.5	78.2	-19.4	32.15	5.66	37.51	123	70	Peak
5861	58.96	58.62	68.2	-9.24	32.18	5.66	37.5	123	70	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	59.58	59.49	68.2	-8.62	31.93	5.59	37.43	100	334	Peak
5725	66.71	66.59	78.2	-11.49	31.96	5.59	37.43	100	334	Peak
5745	90.82	90.7			31.99	5.6	37.47	100	334	Average
5745	100.46	100.34			31.99	5.6	37.47	100	334	Peak
5850	59.43	59.13	78.2	-18.77	32.15	5.66	37.51	100	334	Peak
5861	58.82	58.48	68.2	-9.38	32.18	5.66	37.5	100	334	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5745MHz: Fundamental frequency.
- 5714MHz & 5725MHz & 5850MHz & 5861MHz: Out of restricted band



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	58.48	58.39	68.2	-9.72	31.93	5.59	37.43	122	68	Peak
5725	59.9	59.78	78.2	-18.3	31.96	5.59	37.43	122	68	Peak
5785	95.25	95.13			32.04	5.62	37.54	122	68	Average
5785	105.52	105.4			32.04	5.62	37.54	122	68	Peak
5850	58.65	58.35	78.2	-19.55	32.15	5.66	37.51	122	68	Peak
5861	59.53	59.19	68.2	-8.67	32.18	5.66	37.5	122	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
5714	58.96	58.87	68.2	-9.24	31.93	5.59	37.43	100	333	Peak
5725	59.35	59.23	78.2	-18.85	31.96	5.59	37.43	100	333	Peak
5785	91.35	91.23			32.04	5.62	37.54	100	333	Average
5785	101.44	101.32			32.04	5.62	37.54	100	333	Peak
5850	59.05	58.75	78.2	-19.15	32.15	5.66	37.51	100	333	Peak
5861	59.54	59.2	68.2	-8.66	32.18	5.66	37.5	100	333	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5785MHz: Fundamental frequency.
- 5714MHz & 5725MHz & 5850MHz & 5861MHz: Out of restricted band



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	60.93	60.84	68.2	-7.27	31.93	5.59	37.43	142	65	Peak
5725	58.6	58.48	78.2	-19.6	31.96	5.59	37.43	142	65	Peak
5825	95.7	95.47			32.12	5.64	37.53	142	65	Average
5825	105.72	105.49			32.12	5.64	37.53	142	65	Peak
5850	65.11	64.81	78.2	-13.09	32.15	5.66	37.51	142	65	Peak
5861	61.25	60.91	68.2	-6.95	32.18	5.66	37.5	142	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
5714	59.21	59.12	68.2	-8.99	31.93	5.59	37.43	100	339	Peak
5725	60.72	60.6	78.2	-17.48	31.96	5.59	37.43	100	339	Peak
5825	91.23	91			32.12	5.64	37.53	100	339	Average
5825	101.79	101.56			32.12	5.64	37.53	100	339	Peak
5850	60.62	60.32	78.2	-17.58	32.15	5.66	37.51	100	339	Peak
5861	60.32	59.98	68.2	-7.88	32.18	5.66	37.5	100	339	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5825MHz: Fundamental frequency.
- 5714MHz & 5725MHz & 5850MHz & 5861MHz: Out of restricted band



A D T

**802.11n (40MHz)**

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

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5110	41.25	41.97	54	-12.75	31.29	5.27	37.28	126	224	Average
5110	60.39	61.11	74	-13.61	31.29	5.27	37.28	126	224	Peak
5190	84.46	85.13			31.35	5.32	37.34	126	224	Average
5190	94.15	94.82			31.35	5.32	37.34	126	224	Peak
5452	38.66	38.74	54	-15.34	31.56	5.44	37.08	126	224	Average
5452	59.77	59.85	74	-14.23	31.56	5.44	37.08	126	224	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	46.26	46.97	54	-7.74	31.32	5.29	37.32	123	14	Average
5150	62.58	63.29	74	-11.42	31.32	5.29	37.32	123	14	Peak
5190	89.84	90.51			31.35	5.32	37.34	123	14	Average
5190	98.61	99.28			31.35	5.32	37.34	123	14	Peak
5444	38.73	38.87	54	-15.27	31.55	5.44	37.13	123	14	Average
5444	60.5	60.64	74	-13.5	31.55	5.44	37.13	123	14	Peak

**REMARKS:**

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





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	38.39	39.1	54	-15.61	31.32	5.29	37.32	125	224	Average
5150	60.13	60.84	74	-13.87	31.32	5.29	37.32	125	224	Peak
5230	84.09	84.69			31.39	5.33	37.32	125	224	Average
5230	92.7	93.3			31.39	5.33	37.32	125	224	Peak
5424	38.48	38.71	54	-15.52	31.53	5.42	37.18	125	224	Average
5424	59.51	59.74	74	-14.49	31.53	5.42	37.18	125	224	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5070	39.72	40.48	54	-14.28	31.25	5.26	37.27	122	15	Average
5070	59.49	60.25	74	-14.51	31.25	5.26	37.27	122	15	Peak
5230	88.85	89.45			31.39	5.33	37.32	122	15	Average
5230	97.79	98.39			31.39	5.33	37.32	122	15	Peak
5424	38.88	39.11	54	-15.12	31.53	5.42	37.18	122	15	Average
5424	59.8	60.03	74	-14.2	31.53	5.42	37.18	122	15	Peak

**REMARKS:**

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5138	37.52	38.22	54	-16.48	31.31	5.29	37.3	100	177	Average
5138	59.71	60.41	74	-14.29	31.31	5.29	37.3	100	177	Peak
5270	89.59	90.1			31.41	5.35	37.27	100	177	Average
5270	99.26	99.77			31.41	5.35	37.27	100	177	Peak
5420	40.01	40.24	54	-13.99	31.53	5.42	37.18	100	177	Average
5420	59.15	59.38	74	-14.85	31.53	5.42	37.18	100	177	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5018	37.34	38.13	54	-16.66	31.21	5.24	37.24	112	21	Average
5018	59.18	59.97	74	-14.82	31.21	5.24	37.24	112	21	Peak
5270	91.47	91.98			31.41	5.35	37.27	112	21	Average
5270	100.56	101.07			31.41	5.35	37.27	112	21	Peak
5370	40.04	40.33	54	-13.96	31.49	5.4	37.18	112	21	Average
5370	59.34	59.63	74	-14.66	31.49	5.4	37.18	112	21	Peak

**REMARKS:**

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5008	37.55	38.35	54	-16.45	31.21	5.22	37.23	110	176	Average
5008	59.65	60.45	74	-14.35	31.21	5.22	37.23	110	176	Peak
5310	88.89	89.26			31.45	5.37	37.19	110	176	Average
5310	98.54	98.91			31.45	5.37	37.19	110	176	Peak
5352	46.51	46.82	54	-7.49	31.48	5.39	37.18	110	176	Average
5352	66.89	67.2	74	-7.11	31.48	5.39	37.18	110	176	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5088	37.57	38.3	54	-16.43	31.27	5.27	37.27	101	19	Average
5088	60.04	60.77	74	-13.96	31.27	5.27	37.27	101	19	Peak
5310	89.93	90.3			31.45	5.37	37.19	101	19	Average
5310	99.9	100.27			31.45	5.37	37.19	101	19	Peak
5352	46.02	46.33	54	-7.98	31.48	5.39	37.18	101	19	Average
5352	66.57	66.88	74	-7.43	31.48	5.39	37.18	101	19	Peak

**REMARKS:**

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5416	41.2	41.43	54	-12.8	31.53	5.42	37.18	118	223	Average
5416	61.02	61.25	74	-12.98	31.53	5.42	37.18	118	223	Peak
5470	61.24	61.3	68.2	-6.96	31.57	5.45	37.08	118	223	Peak
5510	88.47	88.47			31.6	5.46	37.06	118	223	Average
5510	98	98			31.6	5.46	37.06	118	223	Peak
5725	58.4	58.28	68.2	-9.8	31.96	5.59	37.43	118	223	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5408	42.81	43.06	54	-11.19	31.52	5.41	37.18	112	336	Average
5408	61.33	61.58	74	-12.67	31.52	5.41	37.18	112	336	Peak
5470	61.63	61.69	68.2	-6.57	31.57	5.45	37.08	112	336	Peak
5510	91.64	91.64			31.6	5.46	37.06	112	336	Average
5510	101.52	101.52			31.6	5.46	37.06	112	336	Peak
5725	60.81	60.69	68.2	-7.39	31.96	5.59	37.43	112	336	Peak

**REMARKS:**

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	39.73	39.81	54	-14.27	31.56	5.44	37.08	108	211	Average
5460	60.12	60.2	74	-13.88	31.56	5.44	37.08	108	211	Peak
5470	59.36	59.42	68.2	-8.84	31.57	5.45	37.08	108	211	Peak
5550	89.19	89.11			31.68	5.49	37.09	108	211	Average
5550	98.52	98.44			31.68	5.49	37.09	108	211	Peak
5725	58.43	58.31	68.2	-9.77	31.96	5.59	37.43	108	211	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5424	40.73	40.96	54	-13.27	31.53	5.42	37.18	130	333	Average
5424	59.95	60.18	74	-14.05	31.53	5.42	37.18	130	333	Peak
5470	57.72	57.78	68.2	-10.48	31.57	5.45	37.08	130	333	Peak
5550	92.52	92.44			31.68	5.49	37.09	130	333	Average
5550	102.28	102.2			31.68	5.49	37.09	130	333	Peak
5725	59.61	59.49	68.2	-8.59	31.96	5.59	37.43	130	333	Peak

**REMARKS:**

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



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5376	38.92	39.21	54	-15.08	31.49	5.4	37.18	105	201	Average
5376	59.21	59.5	74	-14.79	31.49	5.4	37.18	105	201	Peak
5470	57.6	57.66	68.2	-10.6	31.57	5.45	37.08	105	201	Peak
5670	88.16	88.06			31.88	5.56	37.34	105	201	Average
5670	97.73	97.63			31.88	5.56	37.34	105	201	Peak
5725	58.35	58.23	68.2	-9.85	31.96	5.59	37.43	105	201	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5412	39.06	39.3	54	-14.94	31.53	5.41	37.18	126	334	Average
5412	60.72	60.96	74	-13.28	31.53	5.41	37.18	126	334	Peak
5470	58.75	58.81	68.2	-9.45	31.57	5.45	37.08	126	334	Peak
5670	91.79	91.69			31.88	5.56	37.34	126	334	Average
5670	101.35	101.25			31.88	5.56	37.34	126	334	Peak
5725	59.54	59.42	68.2	-8.66	31.96	5.59	37.43	126	334	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	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	63.27	63.18	68.2	-4.93	31.93	5.59	37.43	124	60	Peak
5725	66.4	66.28	78.2	-11.8	31.96	5.59	37.43	124	60	Peak
5755	93.49	93.35			32.01	5.6	37.47	124	60	Average
5755	103.41	103.27			32.01	5.6	37.47	124	60	Peak
5850	60.2	59.9	78.2	-18	32.15	5.66	37.51	124	60	Peak
5861	59.91	59.57	68.2	-8.29	32.18	5.66	37.5	124	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
5714	61.36	61.27	68.2	-6.84	31.93	5.59	37.43	112	2	Peak
5725	61.22	61.1	78.2	-16.98	31.96	5.59	37.43	112	2	Peak
5755	89.19	89.05			32.01	5.6	37.47	112	2	Average
5755	99.27	99.13			32.01	5.6	37.47	112	2	Peak
5850	58.12	57.82	78.2	-20.08	32.15	5.66	37.51	112	2	Peak
5861	58.71	58.37	68.2	-9.49	32.18	5.66	37.5	112	2	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5755MHz: Fundamental frequency.
- 5714MHz & 5725MHz & 5850MHz & 5861MHz: 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	Gavin Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5714	59.44	59.35	68.2	-8.76	31.93	5.59	37.43	118	59	Peak
5725	59.65	59.53	78.2	-18.55	31.96	5.59	37.43	118	59	Peak
5795	93.54	93.38			32.07	5.63	37.54	118	59	Average
5795	103.4	103.24			32.07	5.63	37.54	118	59	Peak
5850	59.98	59.68	78.2	-18.22	32.15	5.66	37.51	118	59	Peak
5861	60.89	60.55	68.2	-7.31	32.18	5.66	37.5	118	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
5714	58.3	58.21	68.2	-9.9	31.93	5.59	37.43	100	345	Peak
5725	59.28	59.16	78.2	-18.92	31.96	5.59	37.43	100	345	Peak
5795	88.82	88.66			32.07	5.63	37.54	100	345	Average
5795	98.19	98.03			32.07	5.63	37.54	100	345	Peak
5850	59.41	59.11	78.2	-18.79	32.15	5.66	37.51	100	345	Peak
5861	59.29	58.95	68.2	-8.91	32.18	5.66	37.5	100	345	Peak

**REMARKS:**

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5795MHz: Fundamental frequency.
- 5714MHz & 5725MHz & 5850MHz & 5861MHz: Out of restricted band





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**BELOW 1GHz WORST-CASE DATA:**

**MODE A**

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

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
175.26	27.95	47.39	43.5	-15.55	11.19	1.16	31.79	135	47	Peak
196.86	30.63	51.52	43.5	-12.87	9.57	1.28	31.74	125	216	Peak
261.12	30.2	48.76	46	-15.8	11.79	1.52	31.87	113	243	Peak
330.8	33.3	49.71	46	-12.7	13.68	1.72	31.81	119	306	Peak
339.9	36.76	52.95	46	-9.24	13.89	1.74	31.82	139	84	Peak
358.8	32.55	48.36	46	-13.45	14.36	1.79	31.96	105	254	Peak

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
196.86	25.54	46.43	43.5	-17.96	9.57	1.28	31.74	121	93	Peak
261.66	21.81	40.36	46	-24.19	11.82	1.52	31.89	128	32	Peak
290.55	24.17	41.57	46	-21.83	12.68	1.61	31.69	112	330	Peak
329.4	22.63	39.07	46	-23.37	13.66	1.71	31.81	121	1	Peak
339.9	26.69	42.88	46	-19.31	13.89	1.74	31.82	129	302	Peak
359.5	24.62	40.42	46	-21.38	14.38	1.79	31.97	107	201	Peak

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

Margin value = Emission level – Limit value



A D T

**MODE B**

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

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
172.59	30.44	49.57	43.5	-13.06	11.47	1.16	31.76	109	214	Peak
243.4	29.83	49.02	46	-16.17	11.19	1.46	31.84	130	5	Peak
256.98	23.51	42.2	46	-22.49	11.68	1.51	31.88	138	164	Peak
304.51	34.48	51.66	46	-11.52	13.06	1.65	31.89	100	220	Peak
363.68	26.87	42.54	46	-19.13	14.47	1.81	31.95	135	90	Peak
410.24	28.68	43.2	46	-17.32	15.54	1.93	31.99	125	127	Peak

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
245.34	29.89	49	46	-16.11	11.28	1.48	31.87	131	133	Peak
599.39	33.94	44.33	46	-12.06	19.59	2.26	32.24	130	22	Peak
627.52	33.91	43.81	46	-12.09	19.94	2.31	32.15	118	227	Peak
719.67	33.66	41.75	46	-12.34	21.09	2.48	31.66	114	289	Peak
777.87	34.14	41.04	46	-11.86	21.92	2.58	31.4	107	316	Peak
797.27	33.7	40.32	46	-12.3	22.19	2.61	31.42	111	74	Peak

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



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**MODE C**

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

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
43.23	22.24	39.05	40	-17.76	13.59	0.71	31.11	139	54	Peak
97.77	13.53	35.52	43.5	-29.97	8.91	1.06	31.96	128	204	Peak
140.16	16.07	34.04	43.5	-27.43	12.37	1.3	31.64	119	183	Peak
352.5	23.3	38.75	46	-22.7	14.19	2.23	31.87	136	348	Peak
501.6	21.39	32.88	46	-24.61	17.35	2.78	31.62	134	45	Peak
595.4	24.96	34.59	46	-21.04	19.5	3.07	32.2	114	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
43.5	24.21	41.02	40	-15.79	13.59	0.71	31.11	124	345	Peak
97.77	13.84	35.83	43.5	-29.66	8.91	1.06	31.96	140	117	Peak
141.24	15.67	33.59	43.5	-27.83	12.41	1.3	31.63	130	242	Peak
358.1	18.65	34	46	-27.35	14.33	2.26	31.94	116	340	Peak
496.7	22.26	33.91	46	-23.74	17.25	2.77	31.67	126	181	Peak
655.6	24.89	33.33	46	-21.11	20.28	3.26	31.98	108	163	Peak

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



## 4.2 CONDUCTED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

**NOTE:**

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

### 4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100612	Sep. 30, 2014	Sep. 29, 2015
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 26, 2014	Dec. 25, 2015
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Mar. 02, 2015	Mar. 01, 2016
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 21, 2014	Jul. 20, 2015
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. Test Date: Feb. 11, 2015.



#### 4.2.3 TEST PROCEDURES

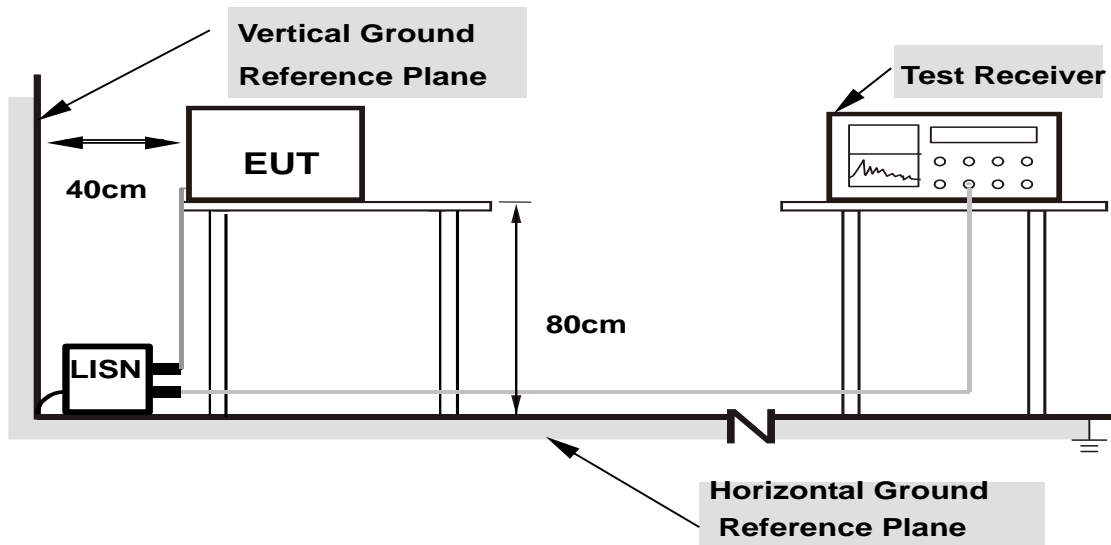
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

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

#### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.2.5 TEST SETUP



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

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

#### 4.2.6 EUT OPERATING CONDITIONS

Same as section 4.1.6.

### 4.2.7 TEST RESULTS

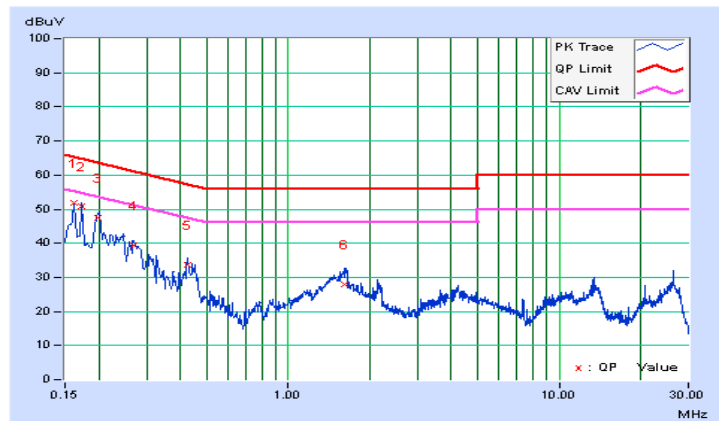
#### MODE B

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	2015/4/14

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	0.16173	0.05	51.82	34.50	51.87	34.55	65.37	55.37	-13.50	-20.82
2	0.17328	0.05	50.67	34.10	50.72	34.15	64.80	54.80	-14.08	-20.65
3	0.19717	0.06	47.26	31.45	47.32	31.51	63.73	53.73	-16.41	-22.22
4	0.26765	0.06	39.20	26.69	39.26	26.75	61.19	51.19	-21.93	-24.44
5	0.42370	0.06	33.46	24.07	33.52	24.13	57.38	47.38	-23.85	-23.24
6	1.60452	0.10	27.77	20.93	27.87	21.03	56.00	46.00	-28.13	-24.97

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





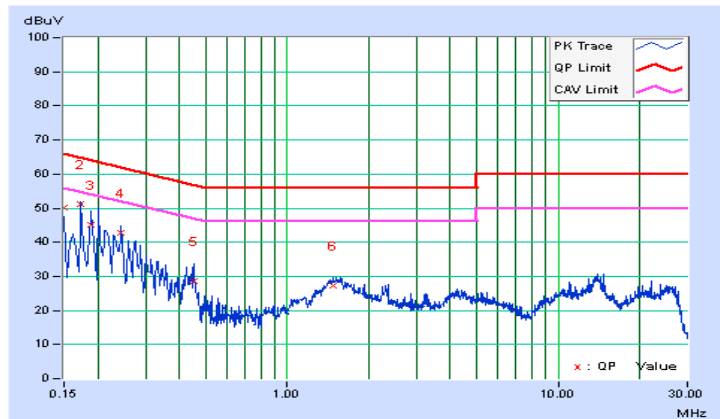
A D T

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	2015/4/14

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.05	49.98	30.71	50.03	30.76	66.00	56.00	-15.97	-25.24
2	0.17346	0.05	50.98	34.25	51.03	34.30	64.79	54.79	-13.76	-20.49
3	0.18903	0.05	45.23	27.18	45.28	27.23	64.08	54.08	-18.80	-26.85
4	0.24384	0.05	42.68	29.02	42.73	29.07	61.96	51.96	-19.23	-22.89
5	0.45107	0.06	28.71	20.58	28.77	20.64	56.86	46.86	-28.08	-26.21
6	1.46826	0.09	27.24	20.93	27.33	21.02	56.00	46.00	-28.67	-24.98

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





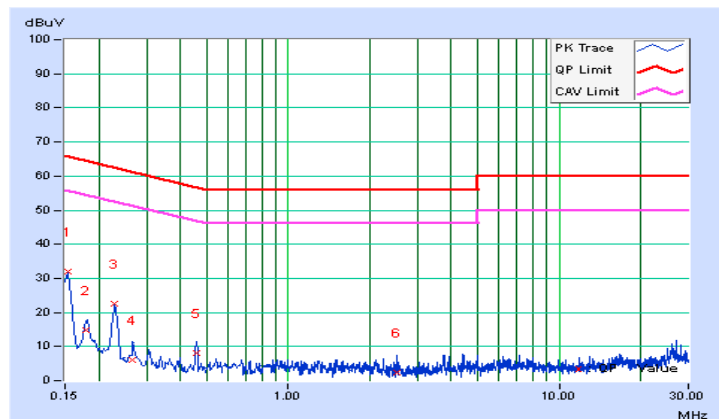
**MODE C**

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	2015/5/9

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	0.15391	0.05	32.00	32.22	32.05	32.27	65.79	55.79	-33.74	-23.52
2	0.18027	0.06	14.71	9.19	14.77	9.25	64.47	54.47	-49.71	-45.23
3	0.22820	0.06	22.40	22.45	22.46	22.51	62.51	52.51	-40.05	-30.00
4	0.26730	0.06	6.03	1.44	6.09	1.50	61.20	51.20	-55.11	-49.70
5	0.45889	0.06	8.14	7.14	8.20	7.20	56.71	46.71	-48.51	-39.51
6	2.53119	0.14	2.17	-2.23	2.31	-2.09	56.00	46.00	-53.69	-48.09

**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





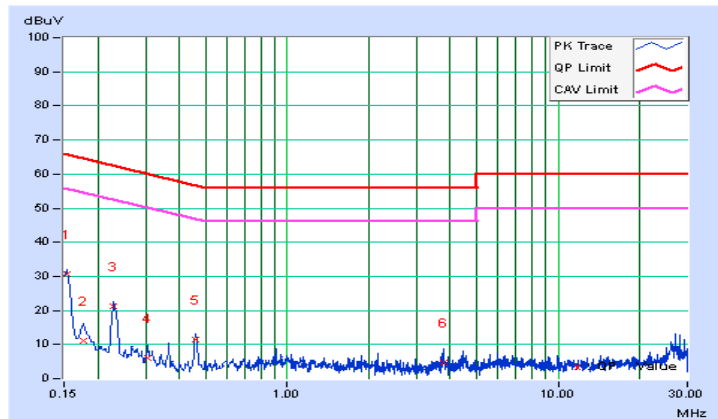
A D T

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	2015/5/9

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	0.15391	0.05	30.53	30.75	30.58	30.80	65.79	55.79	-35.21	-24.99
2	0.17744	0.05	11.18	6.17	11.23	6.22	64.60	54.60	-53.37	-48.38
3	0.22851	0.05	21.26	21.31	21.31	21.36	62.50	52.50	-41.19	-31.14
4	0.30640	0.06	5.84	3.26	5.90	3.32	60.07	50.07	-54.17	-46.75
5	0.45937	0.06	11.48	11.17	11.54	11.23	56.70	46.70	-45.16	-35.47
6	3.75893	0.18	4.66	0.50	4.84	0.68	56.00	46.00	-51.16	-45.32

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

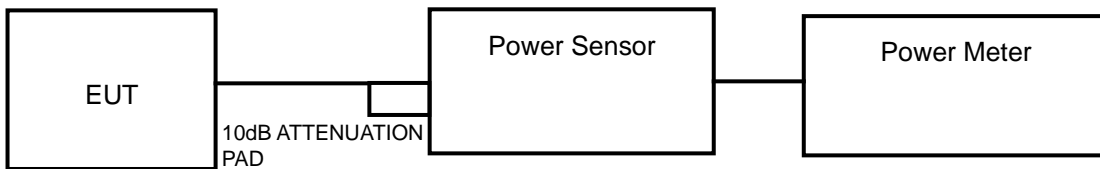
#### 4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT

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)

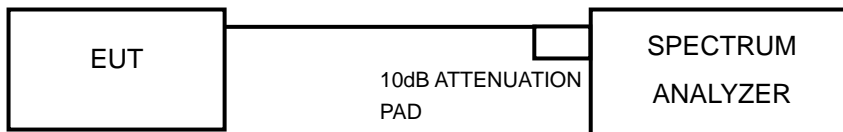
**NOTE:** Where B is the 26dB emission bandwidth in MHz.

#### 4.3.2 TEST SETUP

##### FOR POWER OUTPUT MEASUREMENT



##### FOR 26dB BANDWIDTH AND OCCUPIED BANDWIDTH



#### 4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

#### 4.3.4 TEST PROCEDURE

##### FOR AVERAGE POWER MEASUREMENT

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%.

##### FOR OCCUPIED BANDWIDTH

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with RBW = 1% to 5% of the OBW and VBW  $\geq 3 \cdot$  RBW.

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

#### 4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.3.6 EUT OPERATING CONDITIONS

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



#### 4.3.7 TEST RESULTS

##### POWER OUTPUT

###### 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	MAX. CONDUCTED POWER (mW)	MAX. CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	31.84	15.03	24.00	PASS
44	5220	31.99	15.05	24.00	PASS
48	5240	31.92	15.04	24.00	PASS
52	5260	35.65	15.52	24.00	PASS
60	5300	36.31	15.60	24.00	PASS
64	5320	35.73	15.53	23.91	PASS
100	5500	33.50	15.25	23.92	PASS
116	5580	34.20	15.34	24.00	PASS
140	5700	35.89	15.55	23.99	PASS
149	5745	34.04	15.32	30.00	PASS
157	5785	33.65	15.27	30.00	PASS
165	5825	32.96	15.18	30.00	PASS

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

1.  $11\text{dBm} + 10\log(20.47) = 24.11\text{ dBm} > 24\text{dBm}$ .
2.  $11\text{dBm} + 10\log(21.48) = 24.32\text{ dBm} > 24\text{dBm}$ .
3.  $11\text{dBm} + 10\log(19.53) = 23.91\text{ dBm} < 24\text{dBm}$ .
4.  $11\text{dBm} + 10\log(19.58) = 23.92\text{ dBm} < 24\text{dBm}$ .
5.  $11\text{dBm} + 10\log(20.82) = 24.18\text{ dBm} > 24\text{dBm}$ .
6.  $11\text{dBm} + 10\log(19.89) = 23.99\text{ dBm} < 24\text{dBm}$ .



A D T

### 802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAX. CONDUCTED POWER (mW)	MAX. CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	27.54	14.40	24.00	PASS
44	5220	27.86	14.45	24.00	PASS
48	5240	27.73	14.43	24.00	PASS
52	5260	28.05	14.48	24.00	PASS
60	5300	28.64	14.57	23.87	PASS
64	5320	28.25	14.51	23.90	PASS
100	5500	27.10	14.33	24.00	PASS
116	5580	28.25	14.51	24.00	PASS
140	5700	29.04	14.63	23.89	PASS
149	5745	27.48	14.39	30.00	PASS
157	5785	27.73	14.43	30.00	PASS
165	5825	27.42	14.38	30.00	PASS

**NOTE:**

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

1.  $11\text{dBm} + 10\log(21.58) = 24.34\text{ dBm} > 24\text{dBm}$ .
2.  $11\text{dBm} + 10\log(19.36) = 23.87\text{ dBm} > 24\text{dBm}$ .
3.  $11\text{dBm} + 10\log(19.49) = 23.90\text{ dBm} > 24\text{dBm}$ .
4.  $11\text{dBm} + 10\log(21.29) = 24.28\text{ dBm} > 24\text{dBm}$ .
5.  $11\text{dBm} + 10\log(21.93) = 24.41\text{ dBm} > 24\text{dBm}$ .
6.  $11\text{dBm} + 10\log(19.46) = 23.89\text{ dBm} > 24\text{dBm}$ .

**802.11n (40MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	MAX. CONDUCTED POWER (mW)	MAX. CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	29.51	14.70	24.00	PASS
46	5230	29.24	14.66	24.00	PASS
54	5270	29.31	14.67	24.00	PASS
62	5310	29.85	14.75	24.00	PASS
102	5510	28.58	14.56	24.00	PASS
110	5550	28.84	14.60	24.00	PASS
134	5670	30.34	14.82	24.00	PASS
151	5755	27.86	14.45	30.00	PASS
159	5795	28.31	14.52	30.00	PASS

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

1.  $11\text{dBm} + 10\log(41.12) = 27.14\text{ dBm} > 24\text{dBm}$ .
2.  $11\text{dBm} + 10\log(41.42) = 27.17\text{ dBm} > 24\text{dBm}$ .
3.  $11\text{dBm} + 10\log(40.55) = 27.08\text{ dBm} > 24\text{dBm}$ .
4.  $11\text{dBm} + 10\log(40.77) = 27.10\text{ dBm} > 24\text{dBm}$ .
5.  $11\text{dBm} + 10\log(42.75) = 27.31\text{ dBm} > 24\text{dBm}$ .

**A D T****26dB BANDWIDTH****802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	20.47	PASS
60	5300	21.48	PASS
64	5320	19.53	PASS
100	5500	19.58	PASS
116	5580	20.82	PASS
140	5700	19.89	PASS

**802.11n (20MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	21.58	PASS
60	5300	19.36	PASS
64	5320	19.49	PASS
100	5500	21.29	PASS
116	5580	21.93	PASS
140	5700	19.46	PASS

**802.11n (40MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
54	5270	41.12	PASS
62	5310	41.42	PASS
102	5510	40.55	PASS
110	5550	40.77	PASS
134	5670	42.75	PASS

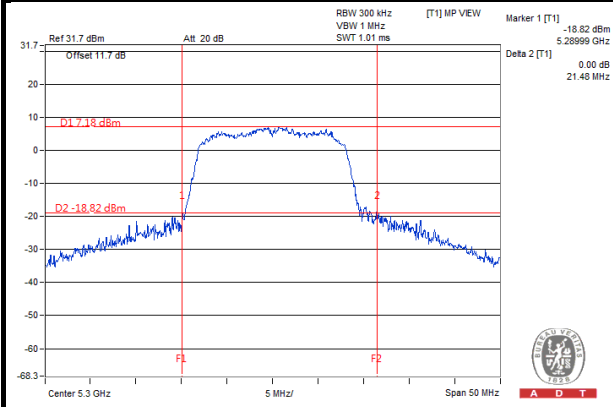




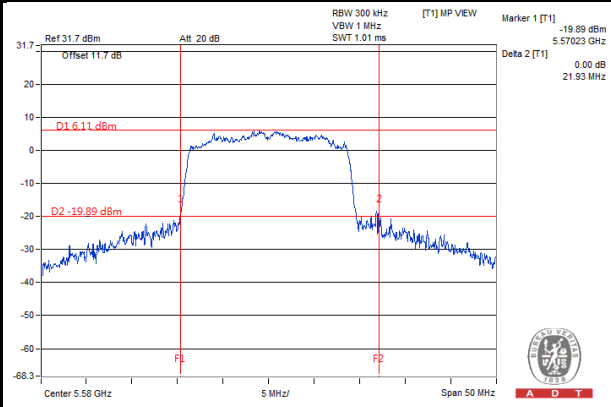
A D T

### SPECTRUM PLOT OF WORST VALUE

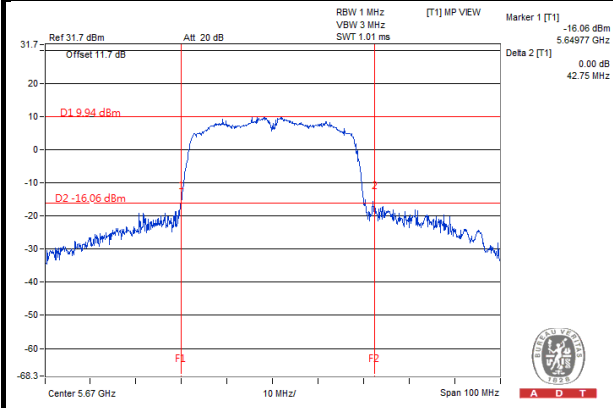
#### 802.11a



#### 802.11n (20MHz)



#### 802.11n (40MHz)



**OCCUPIED BANDWIDTH****802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	PASS / FAIL
36	5180	16.59	PASS
44	5220	16.59	PASS
48	5240	16.59	PASS

**802.11n (20MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	PASS / FAIL
36	5180	17.55	PASS
44	5220	17.55	PASS
48	5240	17.55	PASS

**802.11n (40MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)	PASS / FAIL
38	5190	36.32	PASS
46	5230	36.40	PASS

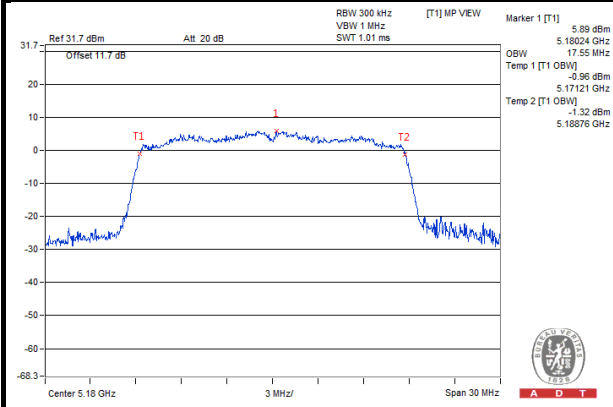




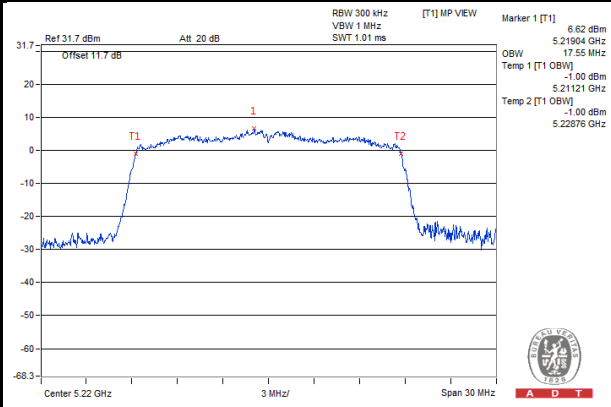
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### 802.11n (20MHz)

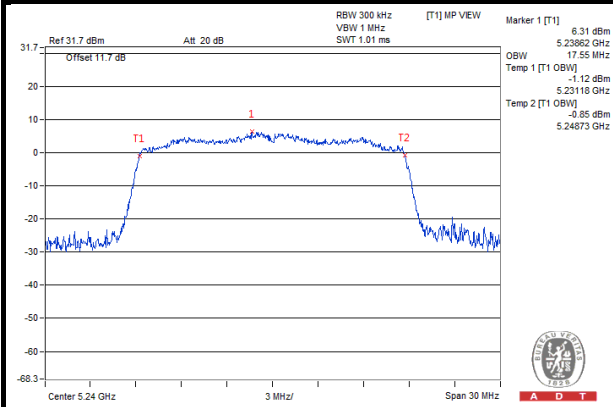
#### Channel 36



#### Channel 44



#### Channel 48

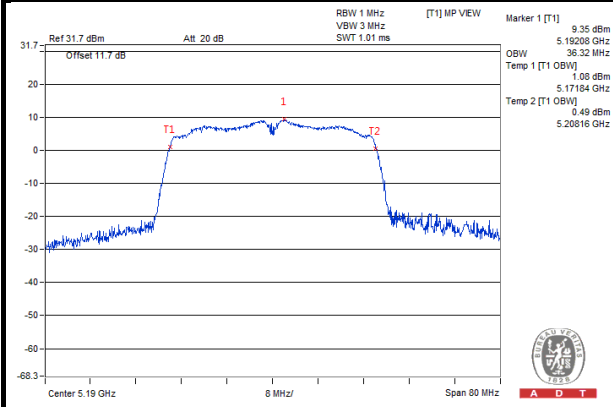




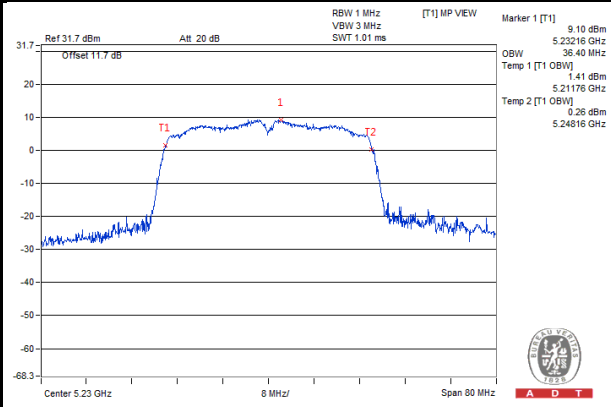
A D T

### 802.11n (40MHz)

#### Channel 38



#### Channel 46

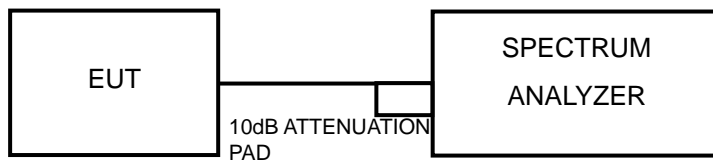


## 4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

### 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/ 500kHz

### 4.4.2 TEST SETUP



### 4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

### 4.4.4 TEST PROCEDURES

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

Using method SA-1 alternative

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 30 kHz, Set VBW  $\geq$  1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = 4 second.
- 5) Perform a single sweep.
- 6) Record the max value

Using method SA-2 alternative

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 30 kHz, Set VBW  $\geq$  1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = 4 second.
- 5) Perform a single sweep.
- 6) Record the max value and add 10 log (1/duty cycle)

**For U-NII-3 band:**

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 500 kHz, Set VBW  $\geq$  3 RBW, 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)

**4.4.5 DEVIATION FROM TEST STANDARD**

No deviation.

**4.4.6 EUT OPERATING CONDITIONS**

Same as Item 4.3.6.



#### 4.4.7 TEST RESULTS

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

##### 802.11a

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	2.49	1.46	3.95	11	PASS
44	5220	2.50	1.46	3.96	11	PASS
48	5240	2.52	1.46	3.98	11	PASS
52	5260	3.26	1.46	4.72	11	PASS
60	5300	3.30	1.46	4.76	11	PASS
64	5320	3.30	1.46	4.76	11	PASS
100	5500	2.81	1.46	4.27	11	PASS
116	5580	3.08	1.46	4.54	11	PASS
140	5700	3.40	1.46	4.86	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	1.81	1.50	3.31	11	PASS
44	5220	1.84	1.50	3.34	11	PASS
48	5240	1.89	1.50	3.39	11	PASS
52	5260	2.01	1.50	3.51	11	PASS
60	5300	2.11	1.50	3.61	11	PASS
64	5320	2.07	1.50	3.57	11	PASS
100	5500	1.63	1.50	3.13	11	PASS
116	5580	1.96	1.50	3.46	11	PASS
140	5700	2.32	1.50	3.82	11	PASS

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



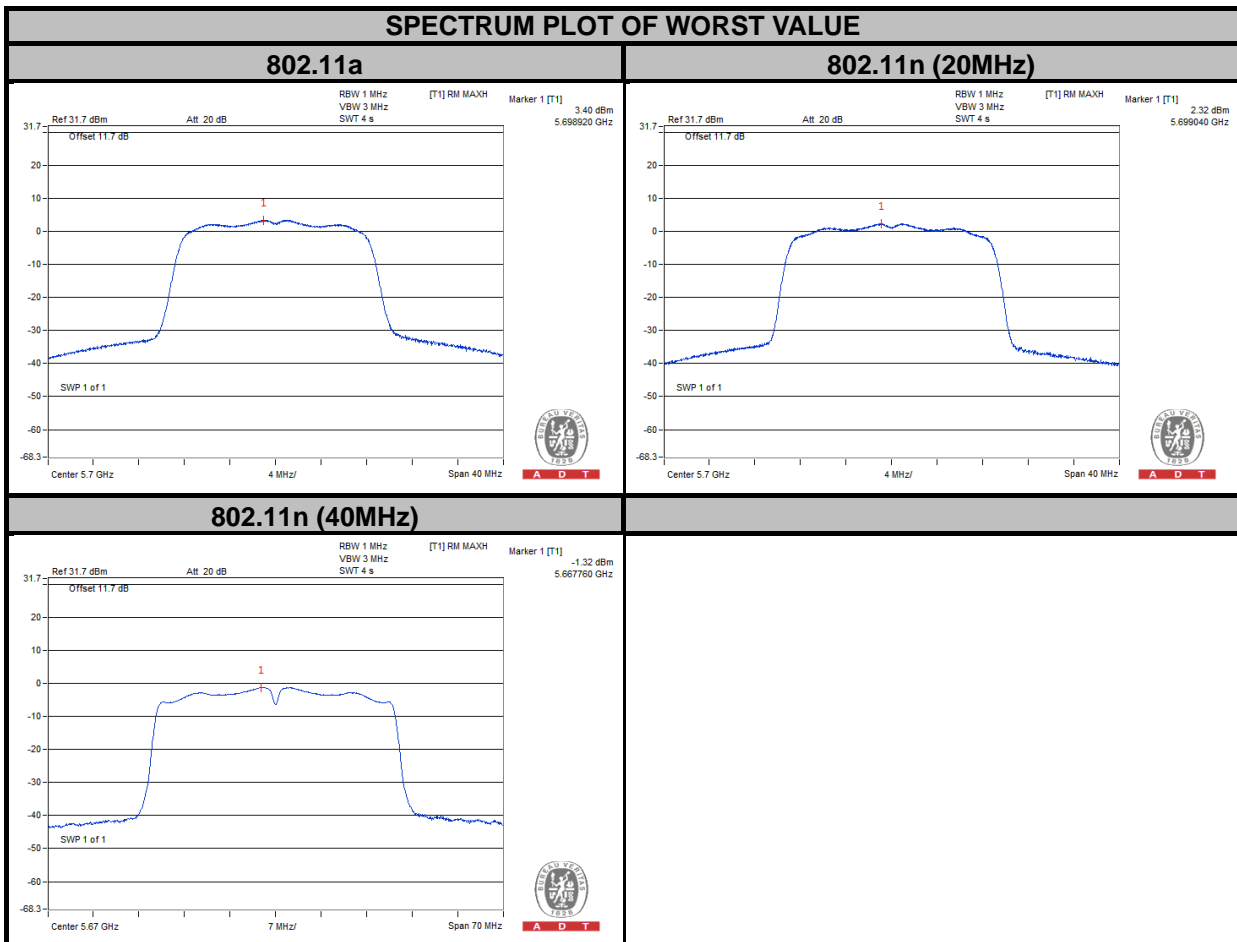


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**802.11n (40MHz)**

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-1.75	2.99	1.24	11	PASS
46	5230	-1.67	2.99	1.32	11	PASS
54	5270	-1.47	2.99	1.52	11	PASS
62	5310	-1.49	2.99	1.50	11	PASS
102	5510	-1.91	2.99	1.08	11	PASS
110	5550	-1.80	2.99	1.19	11	PASS
134	5670	-1.32	2.99	1.67	11	PASS

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





**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	-0.67	1.46	0.79	30	PASS
157	5785	-1.04	1.46	0.42	30	PASS
165	5825	-0.87	1.46	0.59	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	-2.24	1.50	-0.74	30	PASS
157	5785	-2.76	1.50	-1.26	30	PASS
165	5825	-2.43	1.50	-0.93	30	PASS

**802.11n (40MHz)**

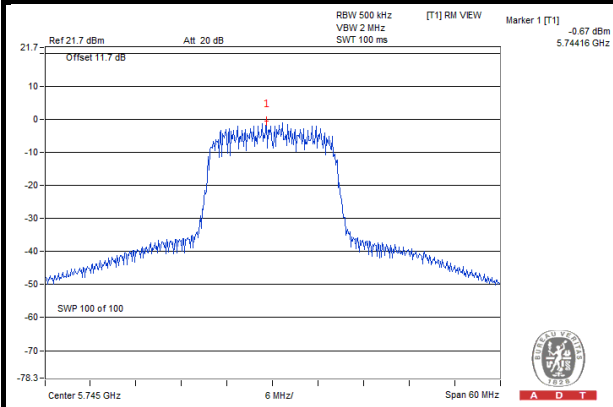
CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	LIMIT (dBm/500kHz)	PASS/FAIL
151	5755	-6.03	2.99	-3.04	30	PASS
159	5795	-6.82	2.99	-3.83	30	PASS



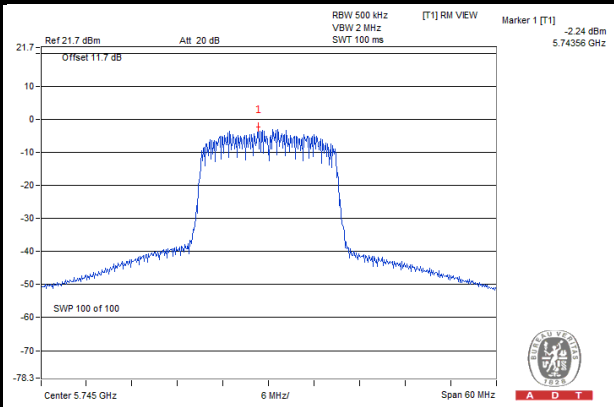
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### SPECTRUM PLOT OF WORST VALUE

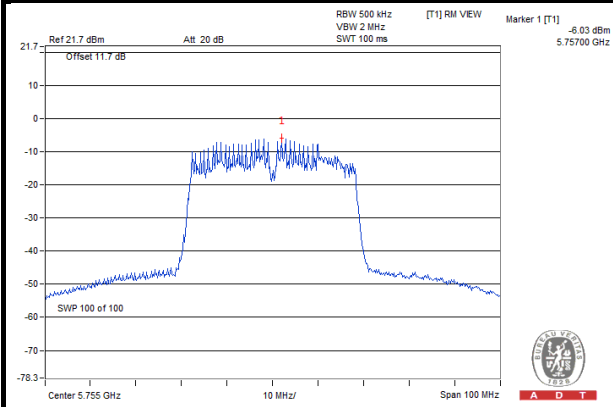
#### 802.11a



#### 802.11n (20MHz)



#### 802.11n (40MHz)

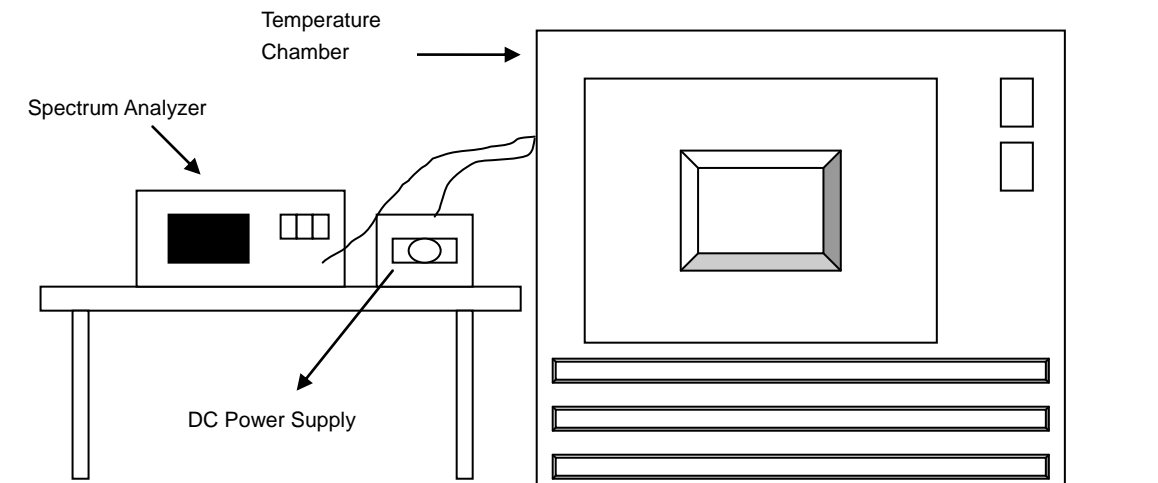


## 4.5 FREQUENCY STABILITY

### 4.5.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

### 4.5.2 TEST SETUP



### 4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.



#### 4.5.4 TEST PROCEDURE

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

#### 4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.5.6 EUT OPERATING CONDITION

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



#### 4.5.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
40	3.7	5320.057914	10.886	5320.057343	10.779	5320.057876	10.879	5320.058182	10.936
30	3.7	5320.059464	11.177	5320.059520	11.188	5320.059725	11.227	5320.059170	11.122
20	3.7	5320.060086	11.294	5320.060355	11.345	5320.060202	11.316	5320.059558	11.195
10	3.7	5320.061781	11.613	5320.061816	11.620	5320.061507	11.561	5320.061876	11.631
0	3.7	5320.059895	11.258	5320.060176	11.311	5320.059958	11.270	5320.059837	11.248

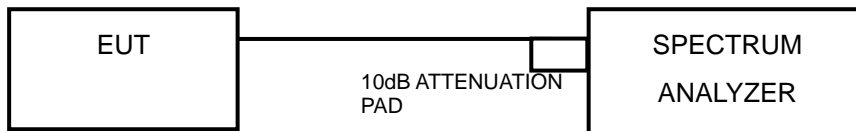
FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	3.4	5320.059842	11.248	5320.059979	11.274	5320.059856	11.251	5320.059242	11.136
	3.7	5320.060086	11.294	5320.060355	11.345	5320.060202	11.316	5320.059558	11.195
	4.3	5320.060926	11.452	5320.061306	11.524	5320.061094	11.484	5320.061391	11.540

## 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

- 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 CONDITIONS

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



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#### 4.6.7 TEST RESULTS

##### 802.11a

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	15.13	0.5	PASS
157	5785	15.15	0.5	PASS
165	5825	15.13	0.5	PASS

##### 802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	15.15	0.5	PASS
157	5785	15.16	0.5	PASS
165	5825	15.15	0.5	PASS

##### 802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	35.17	0.5	PASS
159	5795	35.20	0.5	PASS

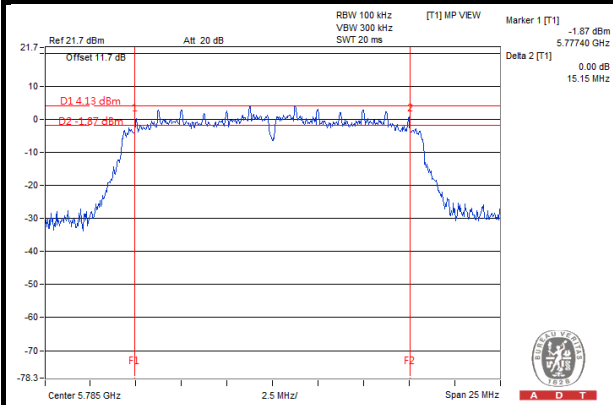




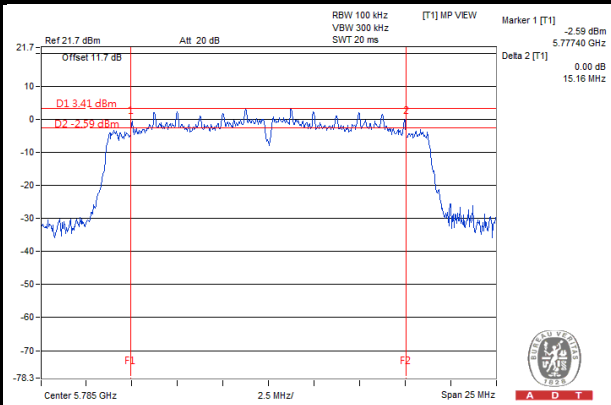
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### SPECTRUM PLOT OF WORST VALUE

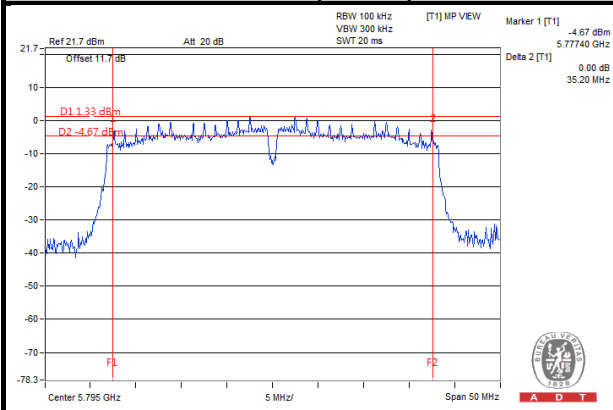
#### 802.11a



#### 802.11n (20MHz)



#### 802.11n (40MHz)





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## 5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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## 6. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Fax: 886-2-26051924

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

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

**---END---**