

# FCC TEST REPORT

## (Part 15, Subpart E)

Applicant:	ASUSTek Computer Inc.
Address:	4F, NO.150, Li-Te Rd. Peitou, Taipei Taiwan

Manufacturer or Supplier:	ASUSTek Computer Inc.
Address:	4F, NO.150, Li-Te Rd. Peitou, Taipei Taiwan
Product:	LED Projector
Brand Name:	Asus
Model Name:	F1, F1xy (x, y:A~Z; 0~9 or bank)
FCC ID:	MSQ-F1
Date of tests:	Jun. 15, 2018 ~ Jul. 17, 2018

The tests have been carried out according to the requirements of the following standard:

**FCC Part 15, Subpart E, Section 15.407**

**CONCLUSION: The submitted sample was found to COMPLY with the test requirement**

Prepared by Roger Li Engineer / Mobile Department	Approved by Sam Tung Manager / Mobile Department
 Date: Jul. 18, 2018	 Date: Jul. 18, 2018

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# TABLE OF CONTENTS

**RELEASE CONTROL RECORD ..... 4**

**1 SUMMARY OF TEST RESULTS..... 5**

1.1 MEASUREMENT UNCERTAINTY ..... 5

**2 GENERAL INFORMATION ..... 6**

2.1 GENERAL DESCRIPTION OF EUT ..... 6

2.2 DESCRIPTION OF TEST MODES ..... 8

2.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL..... 10

2.3 DUTY CYCLE OF TEST SIGNAL ..... 13

2.4 DESCRIPTION OF SUPPORT UNITS ..... 14

2.4.1 CONFIGURATION OF SYSTEM UNDER TEST ..... 15

2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS ..... 15

**3 TEST TYPES AND RESULTS..... 16**

3.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT ..... 16

3.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT ..... 16

3.1.2 LIMITS OF UNWANTED EMISSION ..... 17

3.1.3 TEST INSTRUMENTS..... 18

3.1.4 TEST PROCEDURES ..... 19

3.1.5 DEVIATION FROM TEST STANDARD ..... 19

3.1.6 TEST SETUP ..... 20

3.1.7 EUT OPERATING CONDITION ..... 21

3.1.8 TEST RESULTS ..... 22

3.2 CONDUCTED EMISSION MEASUREMENT ..... 65

3.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT ..... 65

3.2.2 TEST INSTRUMENTS..... 65

3.2.3 TEST PROCEDURES ..... 65

3.2.4 DEVIATION FROM TEST STANDARD ..... 66

3.2.5 TEST SETUP ..... 66

3.2.6 EUT OPERATING CONDITIONS ..... 66

3.2.7 TEST RESULTS ..... 67

3.3 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT ..... 69

3.3.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT ..... 69

3.3.2 TEST SETUP ..... 70



3.3.3	TEST INSTRUMENTS.....	70
3.3.4	TEST PROCEDURE.....	71
3.3.5	DEVIATION FROM TEST STANDARD .....	73
3.3.6	EUT OPERATING CONDITIONS .....	73
3.3.7	TEST RESULTS .....	74
3.4	MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT.....	87
3.4.1	LIMITS OF MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT .....	87
3.4.2	TEST SETUP .....	87
3.4.3	TEST INSTRUMENTS.....	87
3.4.4	TEST PROCEDURES .....	88
3.4.5	DEVIATION FROM TEST STANDARD .....	88
3.4.6	EUT OPERATING CONDITIONS .....	88
3.4.7	TEST RESULTS .....	89
3.5	FREQUENCY STABILITY .....	96
3.5.1	LIMITS OF FREQUENCY STABILITY MEASUREMENT.....	96
3.5.2	TEST SETUP.....	96
3.5.3	TEST INSTRUMENTS.....	96
3.5.4	TEST PROCEDURE.....	97
3.5.5	DEVIATION FROM TEST STANDARD .....	97
3.5.6	EUT OPERATING CONDITION .....	97
3.5.7	TEST RESULTS .....	98
<b>4</b>	<b>PHOTOGRAPHS OF THE TEST CONFIGURATION .....</b>	<b>100</b>
<b>5</b>	<b>APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB .....</b>	<b>101</b>



**BUREAU  
VERITAS**

Test Report No.: RF180523W001-2

## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF180523W001-2	Original release	Jul. 18, 2018



# 1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -9.20dB at 1.088000MHz.
15.407(b) (1/2/3/4/6)	Radiated Emission & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -1.17dB at 5150MHz.
15.407(a/1/2/3)	Maximum conducted output Power	PASS	Meet the requirement of limit.
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(e)	6 dB 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.

## 1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.66dB
Radiated emissions	9KHz ~ 30MHz	2.68dB
	30MHz ~ 1GMHz	3.26dB
	1GHz ~ 18GHz	4.48dB
	18GHz ~ 40GHz	4.12dB

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



## 2 GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

<b>EUT</b>	LED Projector
<b>MODEL NO.</b>	F1, F1xy (x, y:A~Z; 0~9 or bank)
<b>POWER SUPPLY</b>	19Vdc (adapter or 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 ~ 5805MHz
<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 ~ 5805MHz: 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
<b>AVERAGE POWER</b>	35.075mW for 5180 ~ 5240MHz 31.550mW for 5260 ~ 5320MHz 40.926mW for 5500 ~ 5700MHz 36.058mW for 5745 ~ 5805MHz
<b>ANTENNA TYPE</b>	PIFA Antenna
<b>ANTENNA GAIN</b>	2.2dBi for 5180 ~ 5240MHz 2.2dBi for 5260 ~ 5320MHz 3.5dBi for 5500 ~ 5700MHz 3.5dBi for 5745 ~ 5805MHz
<b>HW VERSION</b>	9943C
<b>SW VERSION</b>	1.19.20180426
<b>I/O PORTS</b>	Refer to user's manual
<b>CABLE SUPPLIED</b>	Power cord: non-shielded, detachable, 1.0m HDMI: non-shielded, detachable, 1.8m

**NOTE:**

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.



2. The EUT was powered by the following adapter:

ADAPTER	
<b>BRAND:</b>	ASUS
<b>MODEL:</b>	ADP-120RH B
<b>INPUT:</b>	AC 100-240V, 2000mA
<b>OUTPUT:</b>	DC 19V, 6320mA

3. The EUT matched the following Power cord and HDMI:

POWER CORD	
<b>BRAND:</b>	N/A
<b>MODEL:</b>	N/A
<b>SIGNAL LINE:</b>	1.0 METER

HDMI	
<b>BRAND:</b>	N/A
<b>MODEL:</b>	N/A
<b>SIGNAL LINE:</b>	1.8 METER

4. The above models are identical except the model name for marketing purpose.  
 5. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

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

6. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.



## 2.2 DESCRIPTION OF TEST MODES

### FOR 5150 ~ 5250MHz

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 5250 ~ 5350MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz



### FOR 5470 ~ 5725MHz

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

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

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

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

### FOR 5725 ~ 5805MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755 MHz	159	5795 MHz



2.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	-	Powered by Adapter with wifi(5G) link
B	-	-	-	√	Powered by Battery with wifi(5G) link
C	-	-	-	-	Powered by USB with wifi(5G) link

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**.  
**NOTE:** "-" means no effect.

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	MCS0
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
A	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
A	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
A	802.11a	5725-5805	149 to 161	149, 157, 161	OFDM	BPSK	6.0
A	802.11n (20MHz)		149 to 161	149, 157, 161	OFDM	BPSK	MCS0
A	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	802.11n (40MHz)	5180-5240	38 to 46	38	OFDM	BPSK	MCS0

**POWER LINE CONDUCTED EMISSION TEST:**

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11n (40MHz)	5180-5240	38 to 46	38	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, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 48	OFDM	BPSK	MCS0
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
A	802.11a	5260-5320	52 to 64	52, 64	OFDM	BPSK	6.0
A	802.11n (20MHz)		52 to 64	52, 64	OFDM	BPSK	MCS0
A	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
A	802.11a	5500-5700	100 to 140	100, 140	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 140	OFDM	BPSK	MCS0
A	802.11n (40MHz)		102 to 134	102, 134	OFDM	BPSK	MCS0
A	802.11a	5725-5805	149 to 161	149, 161	OFDM	BPSK	6.0
A	802.11n (20MHz)		149 to 161	149, 161	OFDM	BPSK	MCS0
A	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)
B	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
B	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	MCS0
B	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
B	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
B	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
B	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
B	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
B	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
B	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
B	802.11a	5725-5805	149 to 161	149, 161	OFDM	BPSK	6.0
B	802.11n (20MHz)		149 to 161	149, 161	OFDM	BPSK	MCS0
B	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0

**TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE<1G	23deg. C, 62%RH	DC 19V	Vincent Chen
RE≥1G	23deg. C, 62%RH	DC 19V	Vincent Chen
PLC	24deg. C, 61%RH	DC 19V	John Wen
APCM	23.5deg. C, 60%RH	DC 19V	Wenliang Wu



### 2.3 DUTY CYCLE OF TEST SIGNAL

Duty cycle of test signal is < 98%, duty factor shall be considered.

**802.11a:** Duty cycle = 1.426/1.531 = 0.931, Duty factor = 10 \* log(1/0.931) = 0.309

**802.11n (20MHz):** Duty cycle = 1.917/2.028 = 0.945, Duty factor = 10 \* log(1/0.945) = 0.244

**802.11n (40MHz):** Duty cycle = 0.942/1.047 = 0.900, Duty factor = 10 \* log(1/0.900) = 1.267





## 2.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	PC	HP	A6608CN	3CR83825X3	N/A

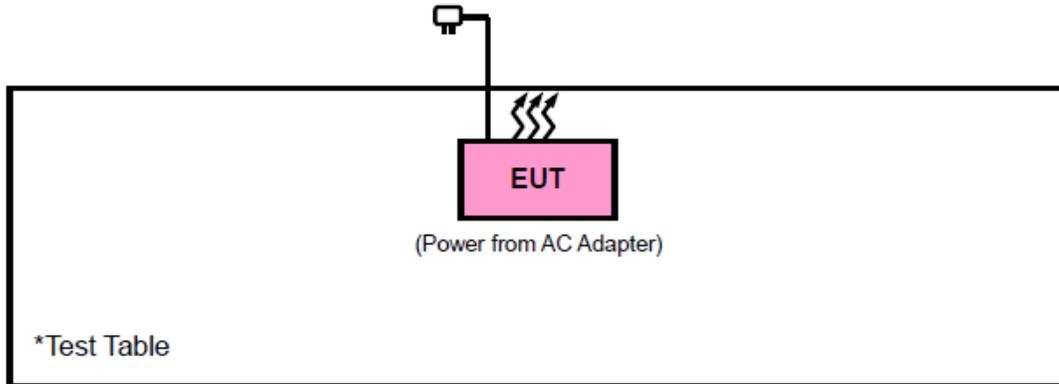
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	AC Line: Unshielded, Detachable 1.5m

**NOTE:**

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



## 2.4.1 CONFIGURATION OF SYSTEM UNDER TEST



## 2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC Part 15, Subpart E (15.407)**

**KDB 789033 D02 General U-NII Test Procedures New Rules v02r01**

**ANSI C63.10-2013**

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

**NOTE:** The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (Certification). The test report has been issued separately.



### 3 TEST TYPES AND RESULTS

#### 3.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

##### 3.1.1 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.



### 3.1.2 LIMITS OF UNWANTED EMISSION

RESTRICTED BANDS	APPLICABLE TO	LIMIT	
	789033 D02 General UNII Test Procedures New Rules v01r04	FIELD STRENGTH AT 3m (dBµV/m)	
	PK : 74	AV : 54	
OUT OF THE RESTRICTED BANDS	APPLICABLE TO	EIRP LIMIT (dBm/MHz)	EQUIVALENT FIELD STRENGTH AT 3m (dBµV/m)
	15.407(b)(1)	PK : -27	PK : 68.3
	15.407(b)(2)		
	15.407(b)(3)		
15.407(b)(4)	See note 2 (FCC 16-24)		

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

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

2. All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.



### 3.1.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	Apr. 21,18	Apr. 20,19
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Nov. 26,16	Nov. 25,18
Horn Antenna	ETS-LINDGREN	3117	00168728	Nov. 26,16	Nov. 25,18
Loop antenna	Daze	ZN30900A	0708	Nov. 20,17	Nov. 19,18
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Dec. 16,16	Dec. 15,18
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	ADT	ADT_Radiated V7.6.15.9.2	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jul. 24,17	Jul. 23,18
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Mar. 16,18	Mar. 15,19
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jul. 24,17	Jul. 23,18
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jul. 24,17	Jul. 23,18
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Jul. 24,17	Jul. 23,18

**NOTE:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in 3m Chamber.
3. The FCC Site Registration No. is 525120.



### 3.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

**NOTE:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

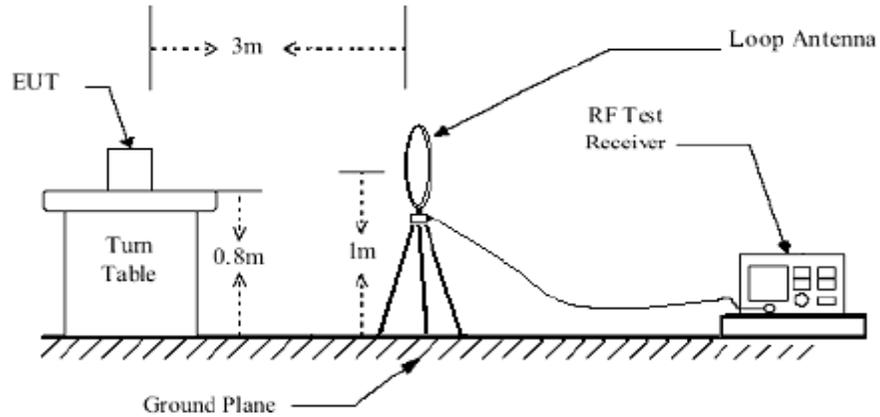
### 3.1.5 DEVIATION FROM TEST STANDARD

No deviation.

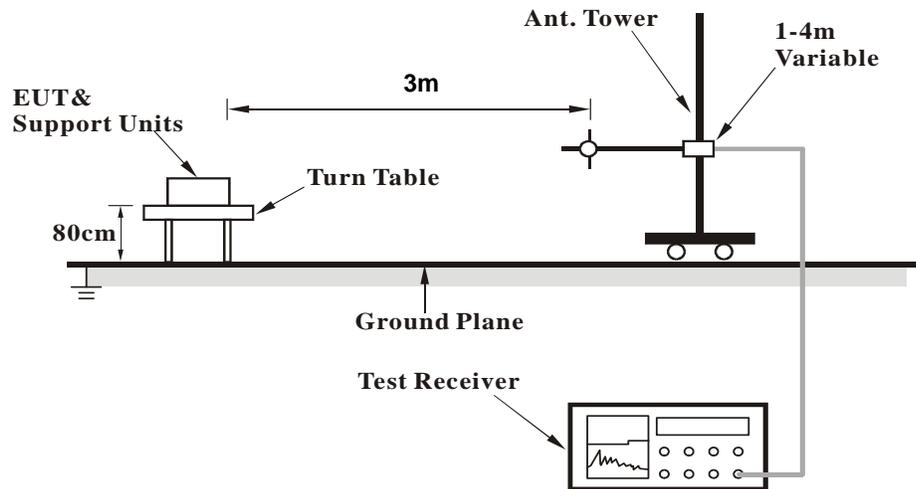


### 3.1.6 TEST SETUP

#### < Frequency Range below 30MHz >

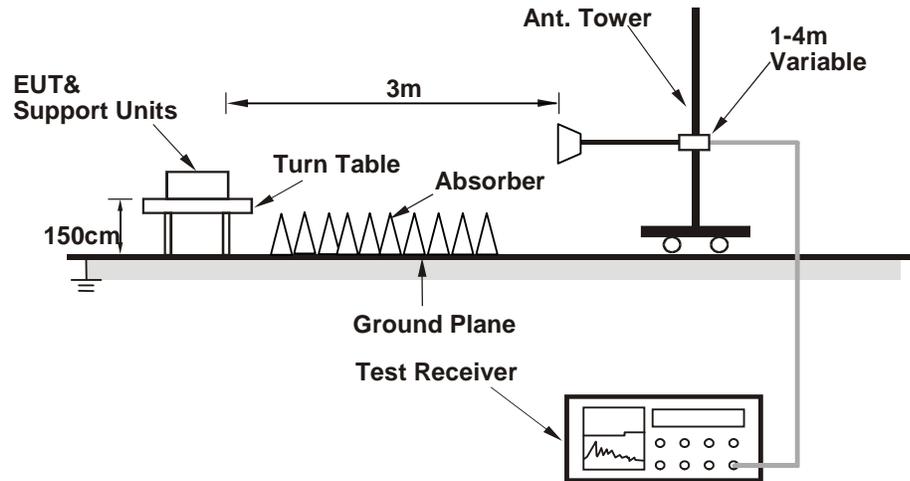


#### < Frequency Range 30MHz~1GHz >





<Frequency Range above 1GHz>



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

### 3.1.7 EUT OPERATING CONDITION

- a. Set the EUT under full load condition and placed them on a testing table.
- b. Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.
- c. The necessary accessories enable the EUT in full functions.



**3.1.8 TEST RESULTS**

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

**9 KHz – 30 MHz data:** the amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

**30 MHz – 1GHz data:**

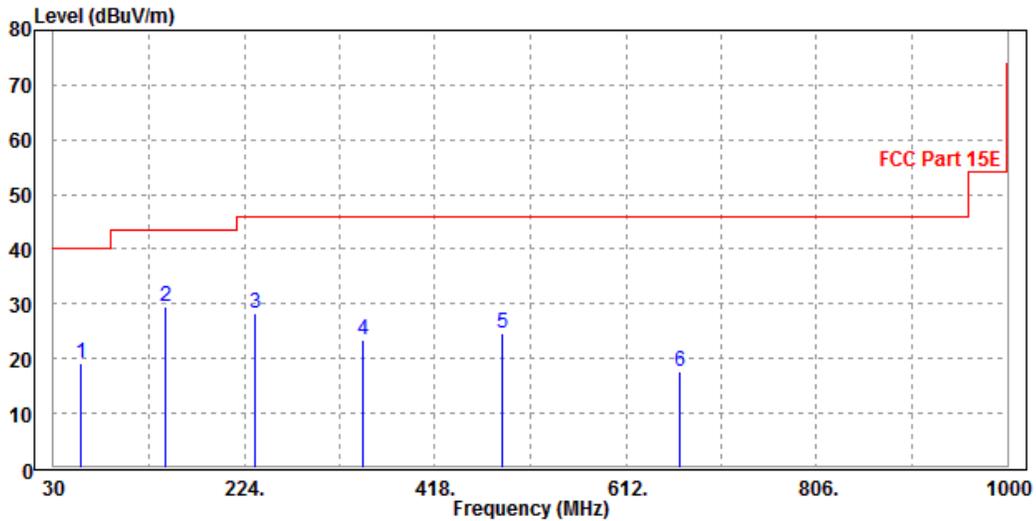
**802.11n (40MHz)**

<b>CHANNEL</b>	TX Channel 38	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	30MHz ~ 1GHz		

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
58.13	19.06	48.81	40	-20.94	6.42	1.16	37.33	100	248	QP
144.46	29.48	55.91	43.5	-14.02	8.54	1.85	36.82	100	15	QP
235.64	28.19	50.61	46	-17.81	11.74	2.37	36.53	100	31	QP
344.28	23.31	42.14	46	-22.69	14.86	2.91	36.6	100	222	QP
485.9	24.77	40.05	46	-21.23	18.23	3.42	36.93	100	289	QP
666.32	17.69	28.66	46	-28.31	22.16	4.19	37.32	100	321	QP

**REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



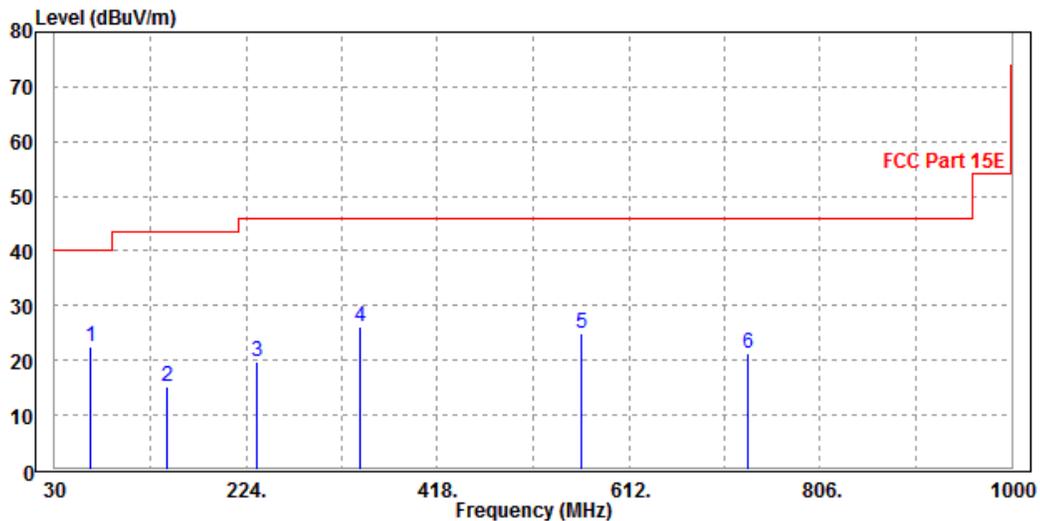


<b>CHANNEL</b>	Channel 38	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	30MHz ~ 1GHz		

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
66.86	22.49	51.78	40	-17.51	6.74	1.25	37.28	100	124	QP
144.46	15.3	41.73	43.5	-28.2	8.54	1.85	36.82	100	302	QP
235.64	19.7	42.12	46	-26.3	11.74	2.37	36.53	100	196	QP
340.4	26.1	45.1	46	-19.9	14.7	2.89	36.59	100	269	QP
564.47	24.83	38.55	46	-21.17	19.62	3.81	37.15	100	33	QP
733.25	21.24	31.21	46	-24.76	23.07	4.41	37.45	100	114	QP

**REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.





ABOVE 1GHz WORST-CASE DATA:

Note: For higher frequency, the emission is too low to be detected.

Band 1  
802.11a

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

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	50.35	51.88	54	-3.65	37.26	7.42	46.21	100	290	Average
5150	60.75	62.28	74	-13.25	37.26	7.42	46.21	100	290	Peak
5180	96.38	97.9			37.27	7.43	46.22	100	290	Average
5180	109.25	110.77			37.27	7.43	46.22	100	290	Peak
5350	47.25	48.69	54	-6.75	37.34	7.47	46.25	100	320	Average
5350	57.34	58.78	74	-16.66	37.34	7.47	46.25	100	320	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	50.38	51.91	54	-3.62	37.26	7.42	46.21	100	300	Average
5150	60.1	61.63	74	-13.9	37.26	7.42	46.21	100	300	Peak
5180	93.67	95.19			37.27	7.43	46.22	100	300	Average
5180	104.03	105.55			37.27	7.43	46.22	100	300	Peak
5350	47.27	48.71	54	-6.73	37.34	7.47	46.25	100	300	Average
5350	57.77	59.21	74	-16.23	37.34	7.47	46.25	100	300	Peak

REMARKS:

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



<b>CHANNEL</b>	TX Channel 40	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	49.55	51.08	54	-4.45	37.26	7.42	46.21	155	352	Average
5150	58.59	60.12	74	-15.41	37.26	7.42	46.21	155	352	Peak
5200	102.02	103.53			37.28	7.43	46.22	155	352	Average
5200	110.74	112.25			37.28	7.43	46.22	155	352	Peak
5350	47.47	48.91	54	-6.53	37.34	7.47	46.25	155	352	Average
5350	56.55	57.99	74	-17.45	37.34	7.47	46.25	155	352	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	50.36	51.89	54	-3.64	37.26	7.42	46.21	120	100	Average
5150	59.06	60.59	74	-14.94	37.26	7.42	46.21	120	100	Peak
5200	101.73	103.24			37.28	7.43	46.22	120	100	Average
5200	110.71	112.22			37.28	7.43	46.22	120	100	Peak
5350	47.47	48.91	54	-6.53	37.34	7.47	46.25	120	100	Average
5350	55.69	57.13	74	-18.31	37.34	7.47	46.25	120	100	Peak

**REMARKS:**

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
2. 5200MHz: Fundamental frequency.



<b>CHANNEL</b>	TX Channel 48	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	48.69	50.22	54	-5.31	37.26	7.42	46.21	140	350	Average
5150	57.98	59.51	74	-16.02	37.26	7.42	46.21	140	350	Peak
5240	100.92	102.41			37.3	7.44	46.23	140	350	Average
5240	109.8	111.29			37.3	7.44	46.23	140	350	Peak
5350	47.4	48.84	54	-6.6	37.34	7.47	46.25	140	350	Average
5350	58.71	60.15	74	-15.29	37.34	7.47	46.25	140	350	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	48.73	50.26	54	-5.27	37.26	7.42	46.21	100	250	Average
5150	58.1	59.63	74	-15.9	37.26	7.42	46.21	100	250	Peak
5240	97.76	99.25			37.3	7.44	46.23	100	250	Average
5240	106.97	108.46			37.3	7.44	46.23	100	250	Peak
5350	46.92	48.36	54	-7.08	37.34	7.47	46.25	100	250	Average
5350	56.62	58.06	74	-17.38	37.34	7.47	46.25	100	250	Peak

**REMARKS:**

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



802.11n (20MHz)

<b>CHANNEL</b>	TX Channel 36	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	49.83	51.36	54	-4.17	37.26	7.42	46.21	100	320	Average
5150	58.85	60.38	74	-15.15	37.26	7.42	46.21	100	320	Peak
5180	95.87	97.39			37.27	7.43	46.22	100	320	Average
5180	102.1	103.62			37.27	7.43	46.22	100	320	Peak
5350	47.21	48.65	54	-6.79	37.34	7.47	46.25	100	320	Average
5350	56.68	58.12	74	-17.32	37.34	7.47	46.25	100	320	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	50.52	52.05	54	-3.48	37.26	7.42	46.21	150	120	Average
5150	61.1	62.63	74	-12.9	37.26	7.42	46.21	150	120	Peak
5180	97.23	98.75			37.27	7.43	46.22	150	120	Average
5180	102.6	104.12			37.27	7.43	46.22	150	120	Peak
5350	47.18	48.62	54	-6.82	37.34	7.47	46.25	150	120	Average
5350	56.61	58.05	74	-17.39	37.34	7.47	46.25	150	120	Peak

REMARKS:

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



<b>CHANNEL</b>	TX Channel 40	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	49.24	50.77	54	-4.76	37.26	7.42	46.21	155	352	Average
5150	57.78	59.31	74	-16.22	37.26	7.42	46.21	155	352	Peak
5200	100.98	102.49			37.28	7.43	46.22	155	352	Average
5200	107.56	109.07			37.28	7.43	46.22	155	352	Peak
5350	47.47	48.91	54	-6.53	37.34	7.47	46.25	155	352	Average
5350	56.9	58.34	74	-17.1	37.34	7.47	46.25	155	352	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	48.7	50.23	54	-5.3	37.26	7.42	46.21	100	260	Average
5150	58.01	59.54	74	-15.99	37.26	7.42	46.21	100	260	Peak
5200	97.75	99.26			37.28	7.43	46.22	100	260	Average
5200	103.61	105.12			37.28	7.43	46.22	100	260	Peak
5350	47.19	48.63	54	-6.81	37.34	7.47	46.25	100	260	Average
5350	56.58	58.02	74	-17.42	37.34	7.47	46.25	100	260	Peak

**REMARKS:**

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
2. 5200MHz: Fundamental frequency.



<b>CHANNEL</b>	TX Channel 48	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	48.59	50.12	54	-5.41	37.26	7.42	46.21	155	103	Average
5150	57.26	58.79	74	-16.74	37.26	7.42	46.21	155	103	Peak
5240	100.42	101.91			37.3	7.44	46.23	155	103	Average
5240	107.74	109.23			37.3	7.44	46.23	155	103	Peak
5350	47.28	48.72	54	-6.72	37.34	7.47	46.25	155	103	Average
5350	56.11	57.55	74	-17.89	37.34	7.47	46.25	155	103	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	48.52	50.05	54	-5.48	37.26	7.42	46.21	100	170	Average
5150	58.22	59.75	74	-15.78	37.26	7.42	46.21	100	170	Peak
5240	91.73	93.22			37.3	7.44	46.23	100	170	Average
5240	101.28	102.77			37.3	7.44	46.23	100	170	Peak
5350	47.21	48.65	54	-6.79	37.34	7.47	46.25	100	170	Average
5350	57.09	58.53	74	-16.91	37.34	7.47	46.25	100	170	Peak

**REMARKS:**

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



802.11n (40MHz)

<b>CHANNEL</b>	TX Channel 38	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	52.83	54.36	54	-1.17	37.26	7.42	46.21	135	353	Average
5150	65.19	66.72	74	-8.81	37.26	7.42	46.21	135	353	Peak
5190	97.71	99.22			37.28	7.43	46.22	135	353	Average
5190	105.54	107.05			37.28	7.43	46.22	135	353	Peak
5350	47.43	48.87	54	-6.57	37.34	7.47	46.25	135	353	Average
5350	56.64	58.08	74	-17.36	37.34	7.47	46.25	135	353	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.59	54.12	54	-1.41	37.26	7.42	46.21	113	290	Average
5150	61.03	62.56	74	-12.97	37.26	7.42	46.21	113	290	Peak
5190	94.72	96.23			37.28	7.43	46.22	113	290	Average
5190	103.02	104.53			37.28	7.43	46.22	113	290	Peak
5350	46.97	48.41	54	-7.03	37.34	7.47	46.25	113	290	Average
5350	57.47	58.91	74	-16.53	37.34	7.47	46.25	113	290	Peak

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 46	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	48.8	50.33	54	-5.2	37.26	7.42	46.21	160	352	Average
5150	56.8	58.33	74	-17.2	37.26	7.42	46.21	160	352	Peak
5230	98.34	99.84			37.29	7.44	46.23	160	352	Average
5230	105.24	106.74			37.29	7.44	46.23	160	352	Peak
5350	47.58	49.02	54	-6.42	37.34	7.47	46.25	160	352	Average
5350	57.47	58.91	74	-16.53	37.34	7.47	46.25	160	352	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	48.89	50.42	54	-5.11	37.26	7.42	46.21	125	301	Average
5150	57.09	58.62	74	-16.91	37.26	7.42	46.21	125	301	Peak
5230	94.33	95.83			37.29	7.44	46.23	125	301	Average
5230	103.27	104.77			37.29	7.44	46.23	125	301	Peak
5350	47.19	48.63	54	-6.81	37.34	7.47	46.25	125	301	Average
5350	56.38	57.82	74	-17.62	37.34	7.47	46.25	125	301	Peak

**REMARKS:**

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



Band 2  
802.11a

<b>CHANNEL</b>	TX Channel 52	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	47.91	49.44	54	-6.09	37.26	7.42	46.21	100	312	Average
5150	58.14	59.67	74	-15.86	37.26	7.42	46.21	100	312	Peak
5260	99.65	101.13			37.3	7.45	46.23	100	312	Average
5260	107.95	109.43			37.3	7.45	46.23	100	312	Peak
5350	46.95	48.39	54	-7.05	37.34	7.47	46.25	100	312	Average
5350	56.27	57.71	74	-17.73	37.34	7.47	46.25	100	312	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	47.9	49.43	54	-6.1	37.26	7.42	46.21	100	50	Average
5150	58.01	59.54	74	-15.99	37.26	7.42	46.21	100	50	Peak
5260	96.81	98.29			37.3	7.45	46.23	100	50	Average
5260	105.78	107.26			37.3	7.45	46.23	100	50	Peak
5350	46.9	48.34	54	-7.1	37.34	7.47	46.25	100	50	Average
5350	56.07	57.51	74	-17.93	37.34	7.47	46.25	100	50	Peak

REMARKS:

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



<b>CHANNEL</b>	TX Channel 60	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	48.19	49.72	54	-5.81	37.26	7.42	46.21	100	48	Average
5150	57.98	59.51	74	-16.02	37.26	7.42	46.21	100	48	Peak
5300	98.28	99.74			37.32	7.46	46.24	100	48	Average
5300	106.66	108.12			37.32	7.46	46.24	100	48	Peak
5350	47.68	49.12	54	-6.32	37.34	7.47	46.25	100	48	Average
5350	57.35	58.79	74	-16.65	37.34	7.47	46.25	100	48	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	48.18	49.71	54	-5.82	37.26	7.42	46.21	115	223	Average
5150	57.08	58.61	74	-16.92	37.26	7.42	46.21	115	223	Peak
5300	95.01	96.47			37.32	7.46	46.24	115	223	Average
5300	103.11	104.57			37.32	7.46	46.24	115	223	Peak
5350	47.28	48.72	54	-6.72	37.34	7.47	46.25	115	223	Average
5350	56.35	57.79	74	-17.65	37.34	7.47	46.25	115	223	Peak

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 64	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	48.13	49.66	54	-5.87	37.26	7.42	46.21	151	352	Average
5150	57.08	58.61	74	-16.92	37.26	7.42	46.21	151	352	Peak
5320	102.48	103.93			37.33	7.46	46.24	151	352	Average
5320	109.32	110.77			37.33	7.46	46.24	151	352	Peak
5350	52.77	54.21	54	-1.23	37.34	7.47	46.25	151	352	Average
5350	62.77	64.21	74	-11.23	37.34	7.47	46.25	151	352	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	48.14	49.67	54	-5.86	37.26	7.42	46.21	100	230	Average
5150	57.21	58.74	74	-16.79	37.26	7.42	46.21	100	230	Peak
5320	95.43	96.88			37.33	7.46	46.24	100	230	Average
5320	103.75	105.2			37.33	7.46	46.24	100	230	Peak
5350	48.84	50.28	54	-5.16	37.34	7.47	46.25	100	230	Average
5350	58.51	59.95	74	-15.49	37.34	7.47	46.25	100	230	Peak

**REMARKS:**

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



802.11n (20MHz)

<b>CHANNEL</b>	TX Channel 52	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	48.09	49.62	54	-5.91	37.26	7.42	46.21	161	352	Average
5150	57.58	59.11	74	-16.42	37.26	7.42	46.21	161	352	Peak
5260	101.19	102.67			37.3	7.45	46.23	161	352	Average
5260	107.84	109.32			37.3	7.45	46.23	161	352	Peak
5350	47.1	48.54	54	-6.9	37.34	7.47	46.25	161	352	Average
5350	56.99	58.43	74	-17.01	37.34	7.47	46.25	161	352	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	48.15	49.68	54	-5.85	37.26	7.42	46.21	100	298	Average
5150	57.2	58.73	74	-16.8	37.26	7.42	46.21	100	298	Peak
5260	97.58	99.06			37.3	7.45	46.23	100	298	Average
5260	103.53	105.01			37.3	7.45	46.23	100	298	Peak
5350	46.92	48.36	54	-7.08	37.34	7.47	46.25	100	298	Average
5350	56.34	57.78	74	-17.66	37.34	7.47	46.25	100	298	Peak

REMARKS:

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



<b>CHANNEL</b>	TX Channel 60	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	48.02	49.55	54	-5.98	37.26	7.42	46.21	100	48	Average
5150	56.44	57.97	74	-17.56	37.26	7.42	46.21	100	48	Peak
5300	97.92	99.38			37.32	7.46	46.24	100	48	Average
5300	108.13	109.59			37.32	7.46	46.24	100	48	Peak
5350	47.37	48.81	54	-6.63	37.34	7.47	46.25	100	48	Average
5350	56.44	57.88	74	-17.56	37.34	7.47	46.25	100	48	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	48.1	49.63	54	-5.9	37.26	7.42	46.21	100	297	Average
5150	56.7	58.23	74	-17.3	37.26	7.42	46.21	100	297	Peak
5300	96.22	97.68			37.32	7.46	46.24	100	297	Average
5300	103.45	104.91			37.32	7.46	46.24	100	297	Peak
5350	47.11	48.55	54	-6.89	37.34	7.47	46.25	100	297	Average
5350	57.85	59.29	74	-16.15	37.34	7.47	46.25	100	297	Peak

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 64	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	48.08	49.61	54	-5.92	37.26	7.42	46.21	100	288	Average
5150	57.18	58.71	74	-16.82	37.26	7.42	46.21	100	288	Peak
5320	97.21	98.66			37.33	7.46	46.24	100	288	Average
5320	105.75	107.2			37.33	7.46	46.24	100	288	Peak
5350	48.74	50.18	54	-5.26	37.34	7.47	46.25	100	288	Average
5350	60.1	61.54	74	-13.9	37.34	7.47	46.25	100	288	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	48.06	49.59	54	-5.94	37.26	7.42	46.21	100	224	Average
5150	57.4	58.93	74	-16.6	37.26	7.42	46.21	100	224	Peak
5320	95.52	96.97			37.33	7.46	46.24	100	224	Average
5320	102.72	104.17			37.33	7.46	46.24	100	224	Peak
5350	47.74	49.18	54	-6.26	37.34	7.47	46.25	100	224	Average
5350	57.93	59.37	74	-16.07	37.34	7.47	46.25	100	224	Peak

**REMARKS:**

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



802.11n (40MHz)

<b>CHANNEL</b>	TX Channel 54	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	48.2	49.73	54	-5.8	37.26	7.42	46.21	100	44	Average
5150	57.23	58.76	74	-16.77	37.26	7.42	46.21	100	44	Peak
5270	94.98	96.45			37.31	7.45	46.23	100	44	Average
5270	103.17	104.64			37.31	7.45	46.23	100	44	Peak
5350	47.39	48.83	54	-6.61	37.34	7.47	46.25	100	44	Average
5350	56.14	57.58	74	-17.86	37.34	7.47	46.25	100	44	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	48.38	49.91	54	-5.62	37.26	7.42	46.21	100	296	Average
5150	57.56	59.09	74	-16.44	37.26	7.42	46.21	100	296	Peak
5270	94.44	95.91			37.31	7.45	46.23	100	296	Average
5270	102.91	104.38			37.31	7.45	46.23	100	296	Peak
5350	47.2	48.64	54	-6.8	37.34	7.47	46.25	100	296	Average
5350	57.29	58.73	74	-16.71	37.34	7.47	46.25	100	296	Peak

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 62	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	48.21	49.74	54	-5.79	37.26	7.42	46.21	100	49	Average
5150	57.09	58.62	74	-16.91	37.26	7.42	46.21	100	49	Peak
5310	93.96	95.42			37.32	7.46	46.24	100	49	Average
5310	103.47	104.93			37.32	7.46	46.24	100	49	Peak
5350	52.39	53.83	54	-1.61	37.34	7.47	46.25	100	49	Average
5350	60.49	61.93	74	-13.51	37.34	7.47	46.25	100	49	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	48.18	49.71	54	-5.82	37.26	7.42	46.21	100	207	Average
5150	56.98	58.51	74	-17.02	37.26	7.42	46.21	100	207	Peak
5310	92.11	93.57			37.32	7.46	46.24	100	207	Average
5310	100.09	101.55			37.32	7.46	46.24	100	207	Peak
5350	52.31	53.75	54	-1.69	37.34	7.47	46.25	100	207	Average
5350	61.91	63.35	74	-12.09	37.34	7.47	46.25	100	207	Peak

**REMARKS:**

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



Band 3

802.11a

<b>CHANNEL</b>	TX Channel 100	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	48.28	49.68	54	-5.72	37.38	7.49	46.27	141	284	Average
5460	56.57	57.97	74	-17.43	37.38	7.49	46.27	141	284	Peak
#5470	52.07	53.46	68.3	-16.23	37.39	7.49	46.27	141	284	Peak
5500	99.27	100.65			37.4	7.5	46.28	141	284	Average
5500	108.07	109.45			37.4	7.5	46.28	141	284	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	47.16	48.56	54	-6.84	37.38	7.49	46.27	100	289	Average
5460	56.99	58.39	74	-17.01	37.38	7.49	46.27	100	289	Peak
#5470	57.05	58.44	68.3	-11.25	37.39	7.49	46.27	100	289	Peak
5500	93.66	95.04			37.4	7.5	46.28	100	289	Average
5500	104.1	105.48			37.4	7.5	46.28	100	289	Peak

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 116	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	46.77	48.17	54	-7.23	37.38	7.49	46.27	150	275	Average
5460	55.99	57.39	74	-18.01	37.38	7.49	46.27	150	275	Peak
#5470	55.77	57.16	68.3	-12.53	37.39	7.49	46.27	150	275	Peak
5580	98.46	99.71			37.45	7.58	46.28	150	275	Average
5580	107.31	108.56			37.45	7.58	46.28	150	275	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	46.73	48.13	54	-7.27	37.38	7.49	46.27	100	220	Average
5460	56.57	57.97	74	-17.43	37.38	7.49	46.27	100	220	Peak
#5470	56.77	58.16	68.3	-11.53	37.39	7.49	46.27	100	220	Peak
5580	94.5	95.75			37.45	7.58	46.28	100	220	Average
5580	102.57	103.82			37.45	7.58	46.28	100	220	Peak

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 140	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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
5700	98.7	99.76			37.52	7.7	46.28	155	271	Average
5700	107.13	108.19			37.52	7.7	46.28	155	271	Peak
#5725	64.1	65.12	68.3	-4.2	37.53	7.73	46.28	155	271	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
5700	93.07	94.13			37.52	7.7	46.28	100	290	Average
5700	103	104.06			37.52	7.7	46.28	100	290	Peak
#5725	60.82	61.84	68.3	-7.48	37.53	7.73	46.28	100	290	Peak

**REMARKS:**

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



802.11n (20MHz)

<b>CHANNEL</b>	TX Channel 100	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	49.28	50.68	54	-4.72	37.38	7.49	46.27	141	284	Average
5460	55.57	56.97	74	-18.43	37.38	7.49	46.27	141	284	Peak
#5470	50.07	51.46	68.3	-18.23	37.39	7.49	46.27	141	284	Peak
5500	100.27	101.65			37.4	7.5	46.28	141	284	Average
5500	110.07	111.45			37.4	7.5	46.28	141	284	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	46.16	47.56	54	-7.84	37.38	7.49	46.27	100	289	Average
5460	58.99	60.39	74	-15.01	37.38	7.49	46.27	100	289	Peak
#5470	55.05	56.44	68.3	-13.25	37.39	7.49	46.27	100	289	Peak
5500	91.66	93.04			37.4	7.5	46.28	100	289	Average
5500	102.1	103.48			37.4	7.5	46.28	100	289	Peak

REMARKS:

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



<b>CHANNEL</b>	TX Channel 116	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	45.77	47.17	54	-8.23	37.38	7.49	46.27	150	275	Average
5460	57.99	59.39	74	-16.01	37.38	7.49	46.27	150	275	Peak
#5470	56.77	58.16	68.3	-11.53	37.39	7.49	46.27	150	275	Peak
5580	96.46	97.71			37.45	7.58	46.28	150	275	Average
5580	109.31	110.56			37.45	7.58	46.28	150	275	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	47.73	49.13	54	-6.27	37.38	7.49	46.27	100	220	Average
5460	55.57	56.97	74	-18.43	37.38	7.49	46.27	100	220	Peak
#5470	54.77	56.16	68.3	-13.53	37.39	7.49	46.27	100	220	Peak
5580	92.5	93.75			37.45	7.58	46.28	100	220	Average
5580	100.57	101.82			37.45	7.58	46.28	100	220	Peak

**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
- 5580MHz: Fundamental frequency.



<b>CHANNEL</b>	TX Channel 140	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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
5700	100.7	101.76			37.52	7.7	46.28	155	271	Average
5700	108.13	109.19			37.52	7.7	46.28	155	271	Peak
#5725	63.1	64.12	68.3	-5.2	37.53	7.73	46.28	155	271	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
5700	95.07	96.13			37.52	7.7	46.28	100	290	Average
5700	107	108.06			37.52	7.7	46.28	100	290	Peak
#5725	59.82	60.84	68.3	-8.48	37.53	7.73	46.28	100	290	Peak

**REMARKS:**

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



802.11n (40MHz)

<b>CHANNEL</b>	TX Channel 102	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	51.77	53.17	54	-2.23	37.38	7.49	46.27	141	286	Average
5460	59.75	61.15	74	-14.25	37.38	7.49	46.27	141	286	Peak
#5470	65.34	66.73	68.3	-2.96	37.39	7.49	46.27	141	286	Peak
5510	95.2	96.56			37.41	7.51	46.28	141	286	Average
5510	101.6	102.96			37.41	7.51	46.28	141	286	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	48.58	49.98	54	-5.42	37.38	7.49	46.27	100	286	Average
5460	57.17	58.57	74	-16.83	37.38	7.49	46.27	100	286	Peak
#5470	62.64	64.03	68.3	-5.66	37.39	7.49	46.27	100	286	Peak
5510	89.99	91.35			37.41	7.51	46.28	100	286	Average
5510	99.38	100.74			37.41	7.51	46.28	100	286	Peak

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 110	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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	47.46	48.86	54	-6.54	37.38	7.49	46.27	150	275	Average
5460	56.95	58.35	74	-17.05	37.38	7.49	46.27	150	275	Peak
#5470	57.23	58.62	68.3	-11.07	37.39	7.49	46.27	150	275	Peak
5550	94.01	95.31			37.43	7.55	46.28	150	275	Average
5550	100.21	101.51			37.43	7.55	46.28	150	275	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	46.88	48.28	54	-7.12	37.38	7.49	46.27	100	220	Average
5460	56.12	57.52	74	-17.88	37.38	7.49	46.27	100	220	Peak
#5470	55.8	57.19	68.3	-12.5	37.39	7.49	46.27	100	220	Peak
5550	90.38	91.68			37.43	7.55	46.28	100	220	Average
5550	96.19	97.49			37.43	7.55	46.28	100	220	Peak

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 134	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5670	94.52	95.63			37.5	7.67	46.28	155	271	Average
5670	100.68	101.79			37.5	7.67	46.28	155	271	Peak
#5725	58.97	59.99	68.3	-9.33	37.53	7.73	46.28	155	271	Peak
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5670	94.04	95.15			37.5	7.67	46.28	100	271	Average
5670	100.61	101.72			37.5	7.67	46.28	100	271	Peak
#5725	59.39	60.41	68.3	-8.91	37.53	7.73	46.28	100	271	Peak

**REMARKS:**

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



Band 4

802.11a

<b>CHANNEL</b>	TX Channel 149	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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
5745	96.1	97.07			37.55	7.76	46.28	150	285	Average
5745	104.71	105.68			37.55	7.76	46.28	150	285	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
5745	89.52	90.49			37.55	7.76	46.28	100	210	Average
5745	100.72	101.69			37.55	7.76	46.28	100	210	Peak

**REMARKS:**

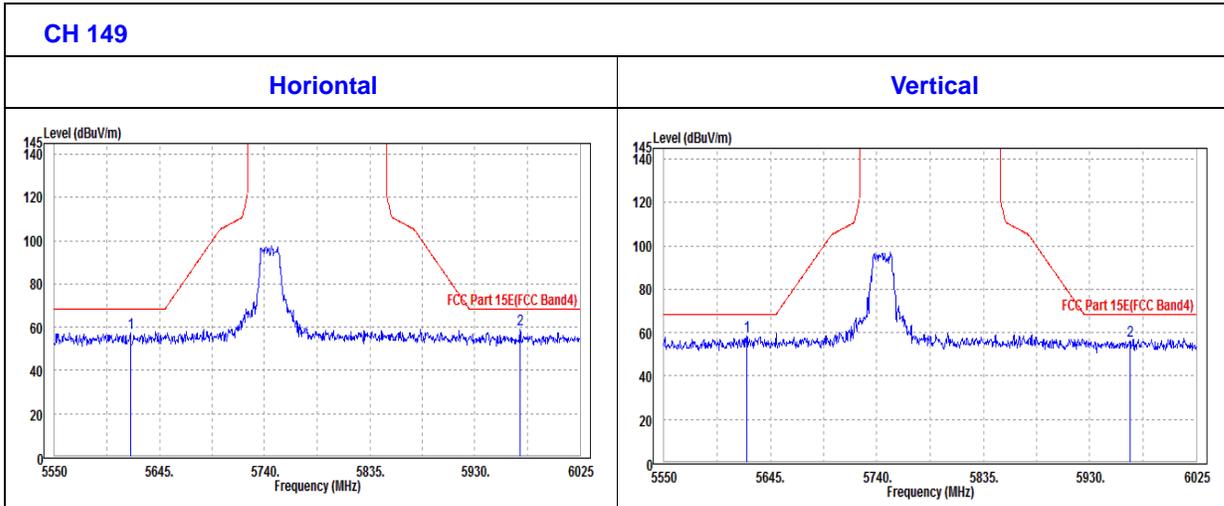
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
2. 5745MHz: Fundamental frequency.



**OOBE DATA**

**802.11a**

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
5618.88	57.37	58.56	68.3	-10.93	37.47	7.62	46.28	115	360	Peak
5970.85	59.15	59.77	68.3	-9.15	37.68	7.98	46.28	115	360	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
5624.1	58.21	59.39	68.3	-10.09	37.47	7.63	46.28	115	360	Peak
5965.63	56.5	57.13	68.3	-11.8	37.68	7.97	46.28	115	360	Peak





<b>CHANNEL</b>	TX Channel 157	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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
5785	101.05	101.97			37.57	7.79	46.28	145	275	Average
5785	109.92	110.84			37.57	7.79	46.28	145	275	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
5785	96.65	97.57			37.57	7.79	46.28	100	0	Average
5785	104.83	105.75			37.57	7.79	46.28	100	0	Peak

**REMARKS:**

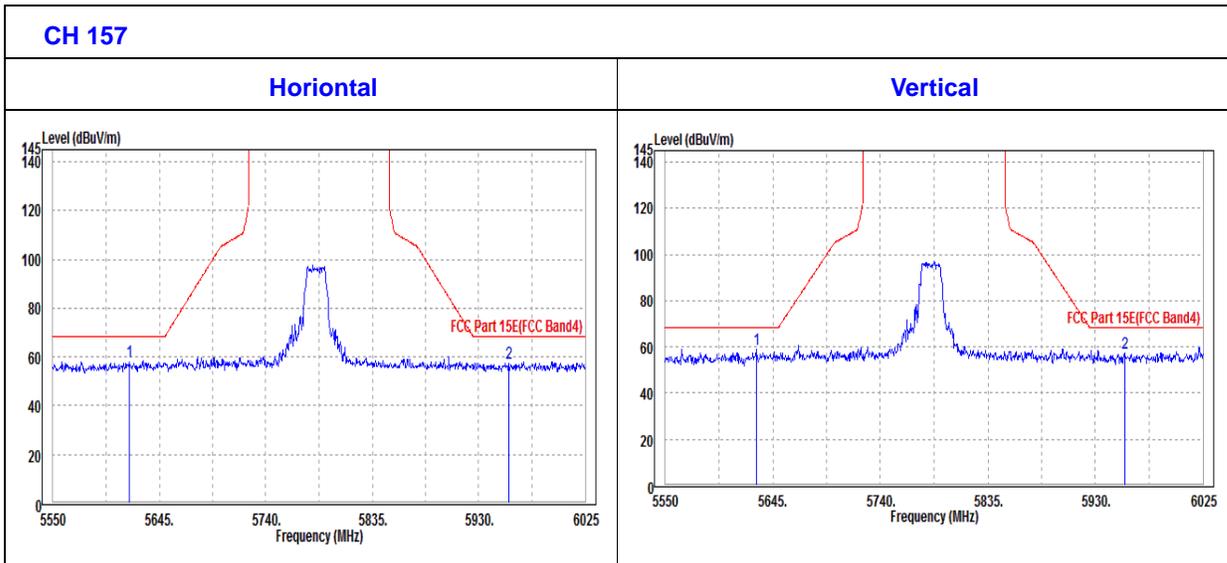
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
2. 5785MHz: Fundamental frequency.



**OOBE DATA**

**802.11a**

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
5618.4	58.05	59.24	68.3	-10.25	37.47	7.62	46.28	100	360	Peak
5957.08	57.52	58.16	68.3	-10.78	37.67	7.97	46.28	100	360	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
5630.28	58.9	60.07	68.3	-9.4	37.48	7.63	46.28	100	360	Peak
5955.65	57.31	57.96	68.3	-10.99	37.67	7.96	46.28	100	360	Peak





<b>CHANNEL</b>	TX Channel 161	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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
5805	100.91	101.8			37.58	7.81	46.28	107	280	Average
5805	109.97	110.86			37.58	7.81	46.28	107	280	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
5805	96.63	97.52			37.58	7.81	46.28	100	232	Average
5805	105.46	106.35			37.58	7.81	46.28	100	232	Peak

**REMARKS:**

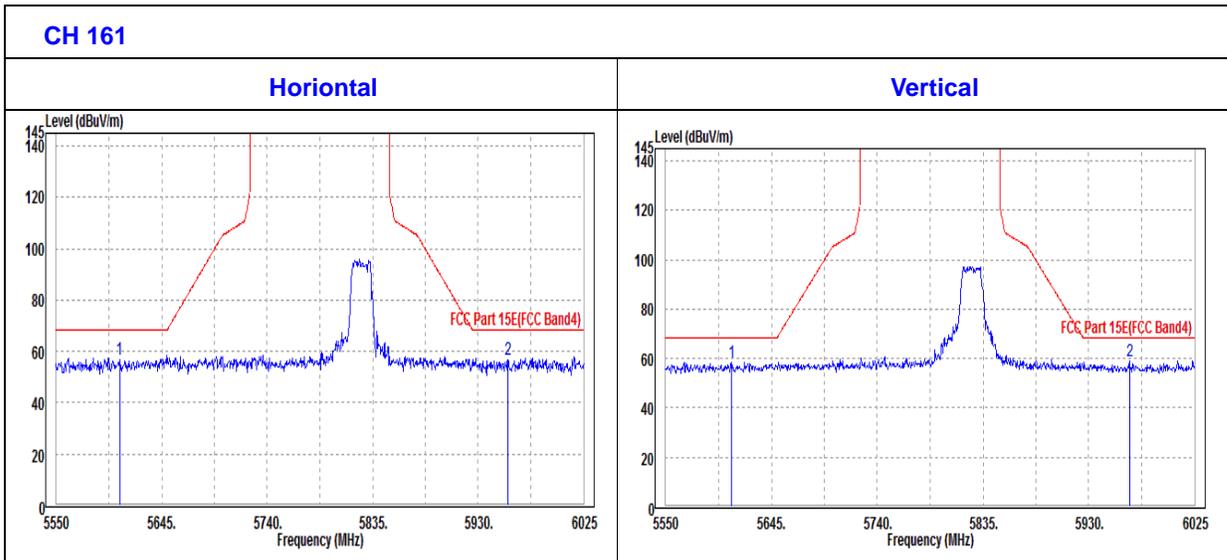
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
2. 5825MHz: Fundamental frequency.



**OOBE DATA**

**802.11a**

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
5631.23	57.39	58.56	68.3	-10.91	37.48	7.63	46.28	107	280	Peak
5954.7	57.36	58.01	68.3	-10.94	37.67	7.96	46.28	107	280	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
5618.4	56.47	57.66	68.3	-11.83	37.47	7.62	46.28	107	280	Peak
5957.55	57.5	58.14	68.3	-10.8	37.67	7.97	46.28	107	280	Peak





802.11n (20MHz)

<b>CHANNEL</b>	TX Channel 149	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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
5745	90.43	91.41			37.55	7.75	46.28	120	263	Average
5745	98.43	99.41			37.55	7.75	46.28	120	263	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
5745	88.43	89.41			37.55	7.75	46.28	100	179	Average
5745	98.85	99.83			37.55	7.75	46.28	100	179	Peak

**REMARKS:**

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



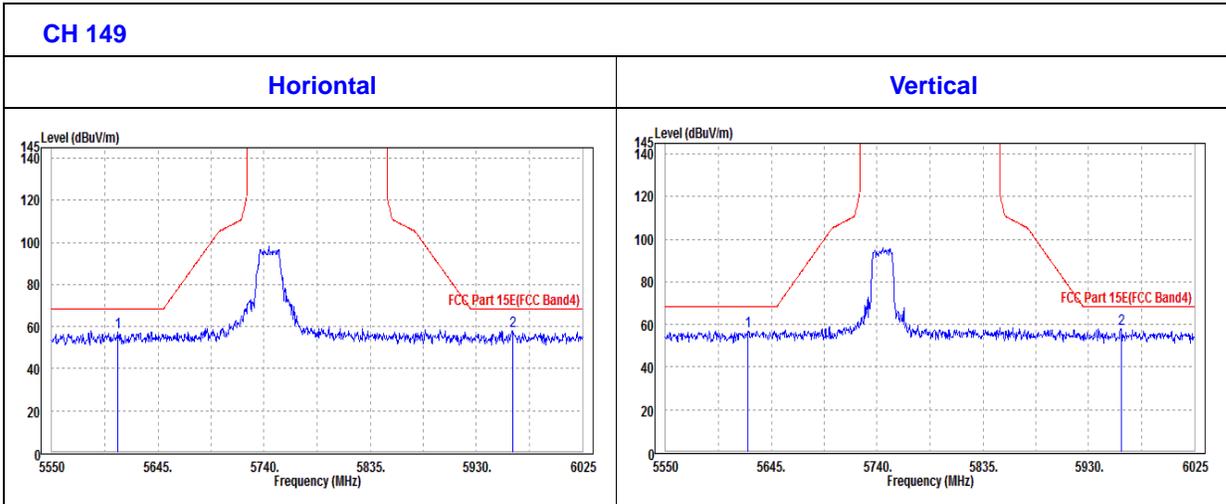
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Test Report No.: RF180523W001-2

**OOBE DATA**

**802.11n (20MHZ)**

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
5608.9	57.1	58.3	68.3	-11.2	37.47	7.61	46.28	107	280	Peak
5962.3	57.82	58.45	68.3	-10.48	37.68	7.97	46.28	107	280	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
5623.63	57.01	58.19	68.3	-11.29	37.47	7.63	46.28	107	280	Peak
5958.98	58.06	58.69	68.3	-10.24	37.68	7.97	46.28	107	280	Peak





<b>CHANNEL</b>	TX Channel 157	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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
5785	91.24	92.16			37.57	7.79	46.28	148	277	Average
5785	99.59	100.51			37.57	7.79	46.28	148	277	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
5785	96.31	97.23			37.57	7.79	46.28	100	0	Average
5785	104.77	105.69			37.57	7.79	46.28	100	0	Peak

**REMARKS:**

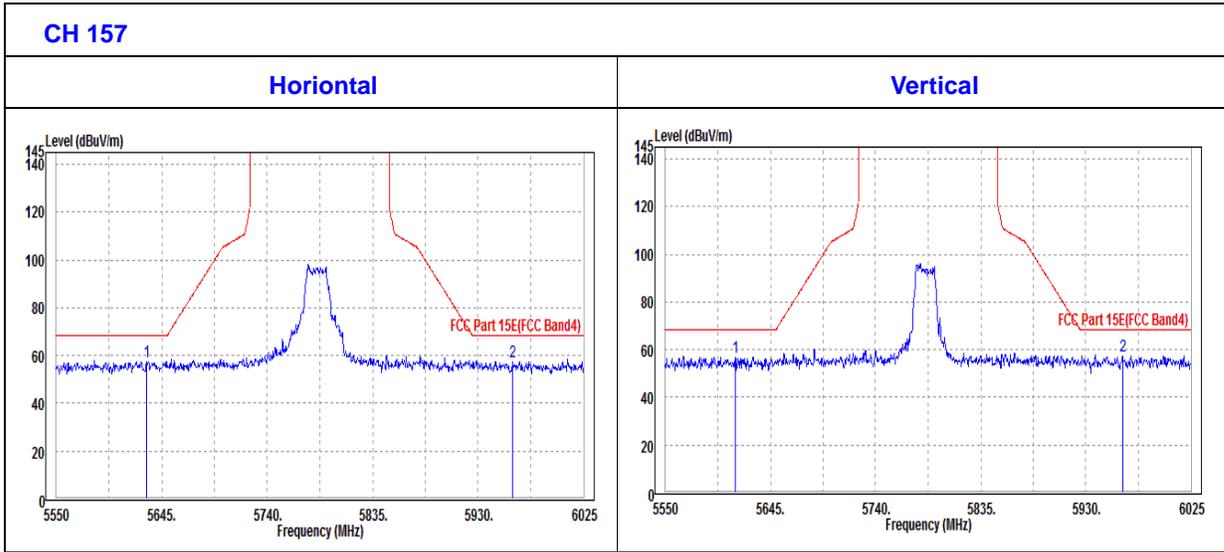
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
2. 5785MHz: Fundamental frequency.



**OOBE DATA**

**802.11n (20MHZ)**

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
5631.23	57.58	58.75	68.3	-10.72	37.48	7.63	46.28	107	280	Peak
5961.35	57.23	57.86	68.3	-11.07	37.68	7.97	46.28	107	280	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
5613.18	56.88	58.07	68.3	-11.42	37.47	7.62	46.28	107	280	Peak
5963.25	57.21	57.84	68.3	-11.09	37.68	7.97	46.28	107	280	Peak





<b>CHANNEL</b>	TX Channel 161	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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
5805	101.13	102.02			37.58	7.81	46.28	107	280	Average
5805	109.49	110.38			37.58	7.81	46.28	107	280	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
5805	96.87	97.76			37.58	7.81	46.28	100	232	Average
5805	104.76	105.65			37.58	7.81	46.28	100	232	Peak

**REMARKS:**

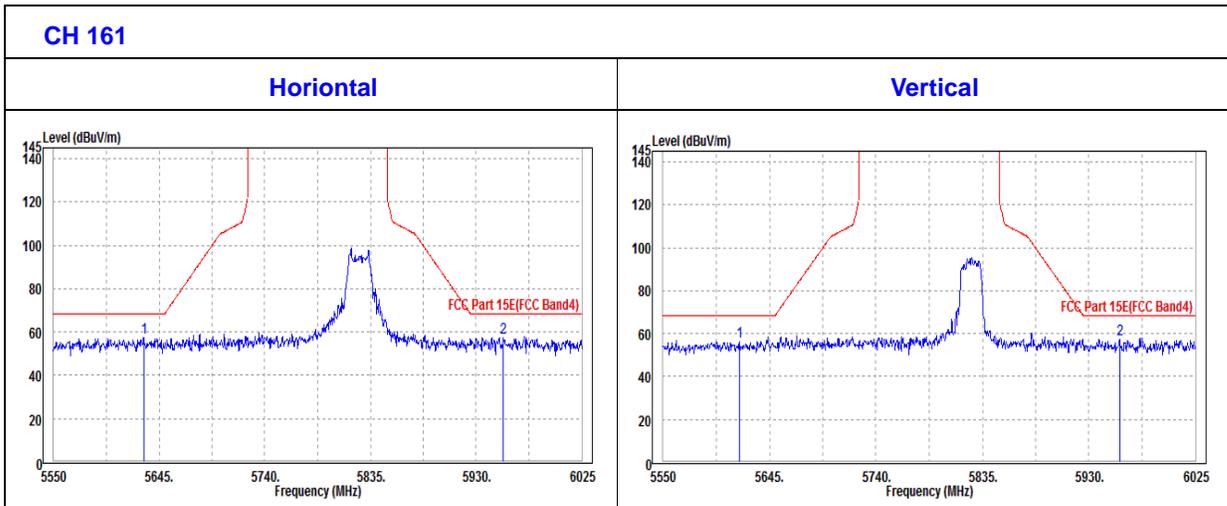
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
2. 5825MHz: Fundamental frequency.



**OOBE DATA**

**802.11n (20MHZ)**

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
5631.23	57.39	58.56	68.3	-10.91	37.48	7.63	46.28	107	280	Peak
5954.7	57.36	58.01	68.3	-10.94	37.67	7.96	46.28	107	280	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
5618.4	56.47	57.66	68.3	-11.83	37.47	7.62	46.28	107	280	Peak
5957.55	57.5	58.14	68.3	-10.8	37.67	7.97	46.28	107	280	Peak





802.11n (40MHz)

<b>CHANNEL</b>	TX Channel 151	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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
5755	96.1	97.07			37.55	7.76	46.28	150	285	Average
5755	104.71	105.68			37.55	7.76	46.28	150	285	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
5755	89.52	90.49			37.55	7.76	46.28	100	210	Average
5755	100.72	101.69			37.55	7.76	46.28	100	210	Peak

**REMARKS:**

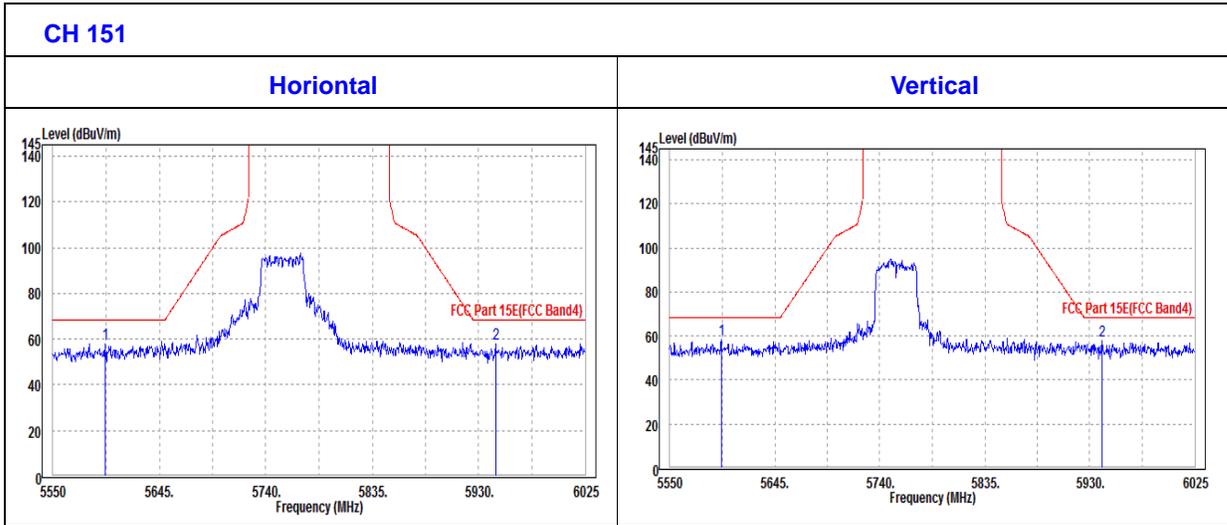
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
2. 5755MHz: Fundamental frequency.



**OOBE DATA**

**802.11n (40MHZ)**

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
5596.55	57.71	58.93	68.3	-10.59	37.46	7.6	46.28	107	280	Peak
5945.2	57.73	58.39	68.3	-10.57	37.67	7.95	46.28	107	280	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
5596.55	58.71	59.93	68.3	-9.59	37.46	7.6	46.28	107	280	Peak
5940.93	57.96	58.63	68.3	-10.34	37.66	7.95	46.28	107	280	Peak





<b>CHANNEL</b>	TX Channel 159	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

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
5795	97.51	98.41			37.58	7.8	46.28	100	260	Average
5795	105.48	106.38			37.58	7.8	46.28	100	260	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
5795	89.72	90.62			37.58	7.8	46.28	100	280	Average
5795	100.42	101.32			37.58	7.8	46.28	100	280	Peak

**REMARKS:**

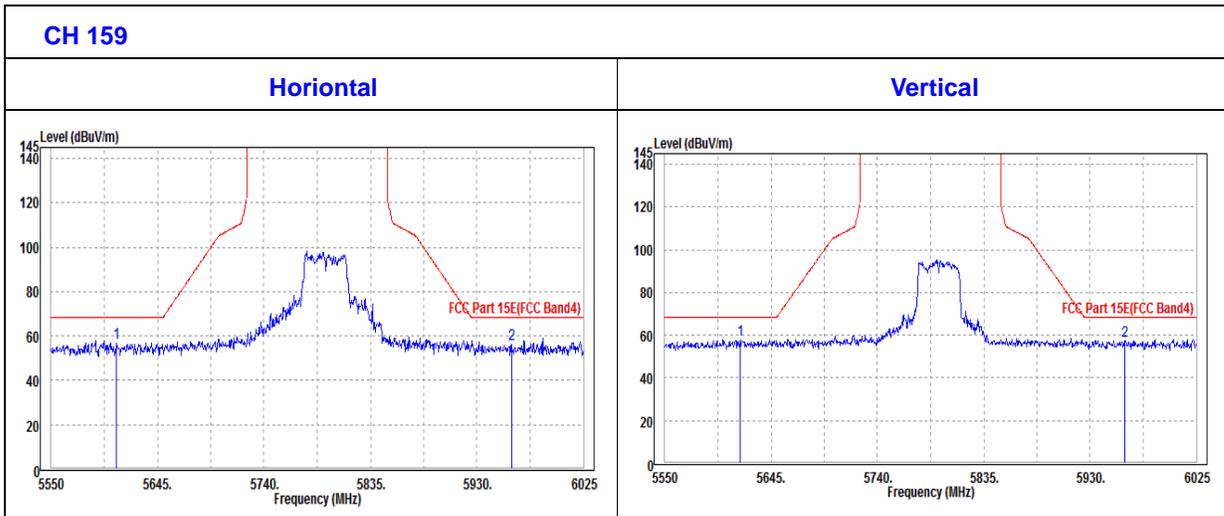
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
2. 5795MHz: Fundamental frequency.



**OOBE DATA**

**802.11n (40MHZ)**

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
5608.43	56.81	58.01	68.3	-11.49	37.47	7.61	46.28	107	280	Peak
5960.88	56.07	56.7	68.3	-12.23	37.68	7.97	46.28	107	280	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
5617.45	57.94	59.13	68.3	-10.36	37.47	7.62	46.28	107	280	Peak
5961.35	57.61	58.24	68.3	-10.69	37.68	7.97	46.28	107	280	Peak





### 3.2 CONDUCTED EMISSION MEASUREMENT

#### 3.2.1 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.

#### 3.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR3	101900	Mar. 15,18	Mar. 14,19
EMC32 test software	Rohde&Schwarz	EMC32	NA	NA	NA
LISN network	Rohde&Schwarz	ENV216	101922	Sep. 18,17	Sep. 17,18

- NOTE:**
1. The test was performed in CE shielded room.
  2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

#### 3.2.3 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.

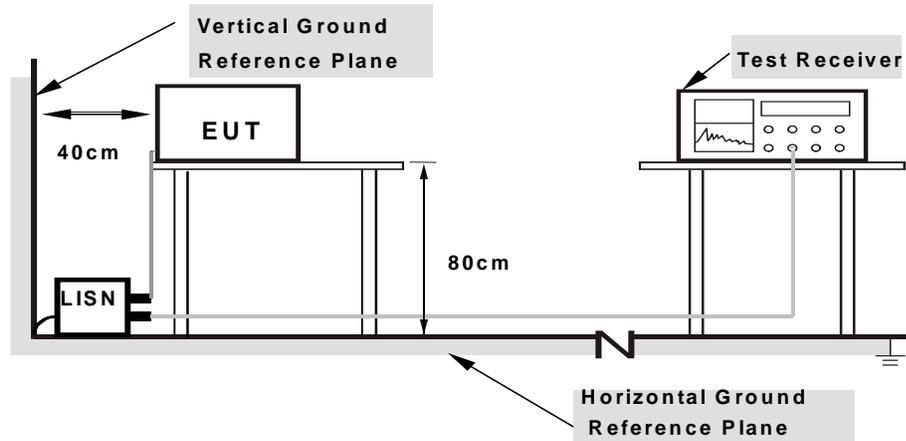
**NOTE:** All modes of operation were investigated and the worst-case emissions are reported.



### 3.2.4 DEVIATION FROM TEST STANDARD

No deviation.

### 3.2.5 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).

### 3.2.6 EUT OPERATING CONDITIONS

Same as 3.1.6.



### 3.2.7 TEST RESULTS

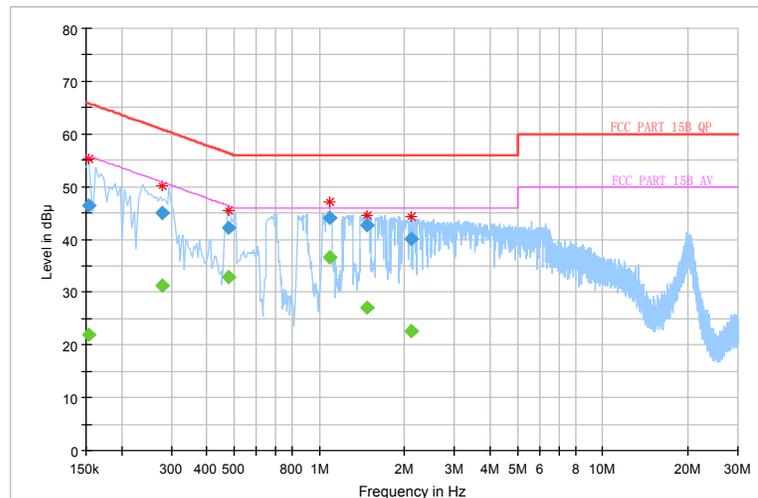
**CONDUCTED WORST-CASE DATA :**

<b>Frequency Range</b>	150KHz ~ 30MHz	<b>Detector Function &amp; Resolution Bandwidth</b>	Quasi-Peak (QP) / Average (AV), 9 kHz
<b>Input Power</b>	120Vac, 60Hz	<b>Environmental Conditions</b>	24deg. C, 55RH
<b>Tested By</b>	John Wen	<b>TEST DATE</b>	2018/06/15

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	CAverage (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.154000	---	22.01	55.78	-33.77	L1	ON	9.6
0.154000	46.42	---	65.78	-19.36	L1	ON	9.6
0.280000	---	31.27	50.82	-19.55	L1	ON	9.7
0.280000	45.04	---	60.82	-15.78	L1	ON	9.7
0.476000	---	32.85	46.41	-13.56	L1	ON	9.7
0.476000	42.18	---	56.41	-14.23	L1	ON	9.7
1.088000	---	36.56	46.00	-9.44	L1	ON	9.7
1.088000	44.05	---	56.00	-11.95	L1	ON	9.7
1.468000	---	26.96	46.00	-19.04	L1	ON	9.7
1.468000	42.72	---	56.00	-13.28	L1	ON	9.7
2.112000	---	22.68	46.00	-23.32	L1	ON	9.7
2.112000	40.06	---	56.00	-15.94	L1	ON	9.7

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value = Emission level - Limit value
  5. Correction factor = Insertion loss + Cable loss
  6. Emission Level = Correction Factor + Reading Value.

Full Spectrum



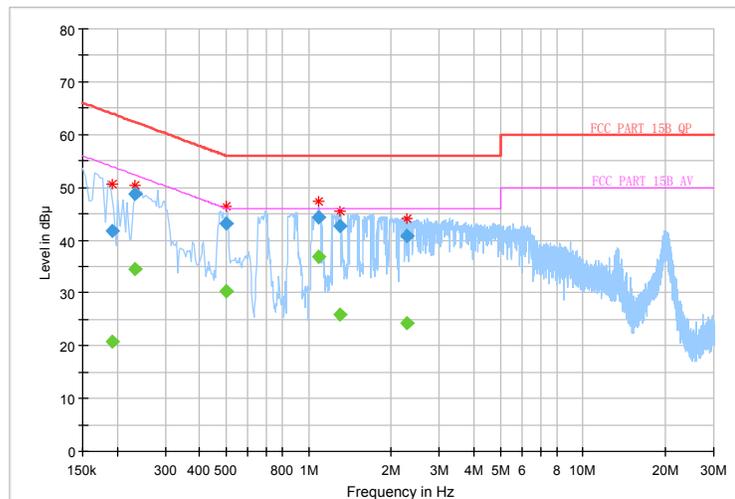


<b>Frequency Range</b>	150KHz ~ 30MHz	<b>Detector Function &amp; Resolution Bandwidth</b>	Quasi-Peak (QP) / Average (AV), 9 kHz
<b>Input Power</b>	120Vac, 60Hz	<b>Environmental Conditions</b>	24deg. C, 55RH
<b>Tested By</b>	John Wen	<b>TEST DATE</b>	2018/06/15

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	CAverage (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.192000	---	20.77	53.95	-33.18	N	ON	10.0
0.192000	41.75	---	63.95	-22.20	N	ON	10.0
0.232000	---	34.52	52.38	-17.86	N	ON	9.9
0.232000	48.70	---	62.38	-13.68	N	ON	9.9
0.500000	---	30.39	46.00	-15.61	N	ON	10.1
0.500000	43.19	---	56.00	-12.81	N	ON	10.1
<b>1.088000</b>	---	<b>36.80</b>	<b>46.00</b>	<b>-9.20</b>	<b>N</b>	<b>ON</b>	<b>9.9</b>
1.088000	44.29	---	56.00	-11.71	N	ON	9.9
1.296000	---	25.83	46.00	-20.17	N	ON	9.9
1.296000	42.68	---	56.00	-13.32	N	ON	9.9
2.282000	---	24.18	46.00	-21.82	N	ON	9.8
2.282000	40.80	---	56.00	-15.20	N	ON	9.8

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value = Emission level - Limit value
  5. Correction factor = Insertion loss + Cable loss
  6. Emission Level = Correction Factor + Reading Value.

Full Spectrum





### 3.3 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

#### 3.3.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT 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)
	√	Client devices	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)

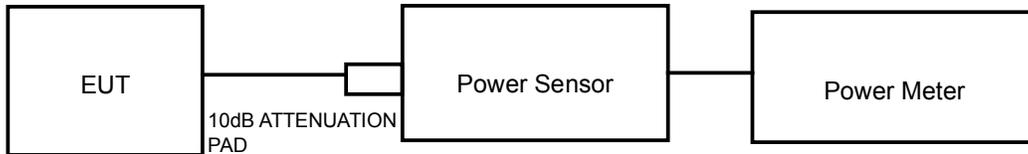
**NOTE:** Where B is the 26dB emission bandwidth in MHz.



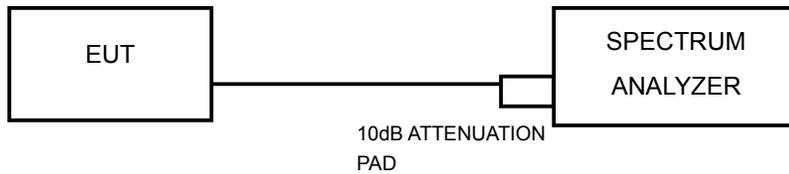
### 3.3.2 TEST SETUP

#### FOR POWER OUTPUT MEASUREMENT

##### 802.11a, 802.11n (20MHz), 802.11n (40MHz) TEST CONFIGURATION



##### 11ac TEST CONFIGURATION



##### FOR 26dB BANDWIDTH



### 3.3.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Meter	ANRITSU	ML2495A	1506002	Mar. 02,18	Mar. 01,19
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510523	Mar. 16,18	Mar. 15,19
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510332	Mar. 16,18	Mar. 15,19
Power Sensor	ANRITSU	MA2411B	1339352	Mar. 16,18	Mar. 15,19

**NOTE:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in RF Oven room.



### 3.3.4 TEST PROCEDURE

#### FOR POWER MEASUREMENT

##### For 802.11a, 802.11n (20MHz), 802.11n (40MHz)

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

##### For 802.11ac (80MHz)

1. Measure the duty cycle,  $x$ , of the transmitter output signal as described in II.B.
2. Set span to encompass the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
3. Set RBW = 1 MHz.
4. Set VBW  $\geq$  3 MHz.
5. Number of points in sweep  $\geq 2 \times \text{span} / \text{RBW}$ . (This ensures that bin-to-bin spacing is  $\leq \text{RBW}/2$ , so that narrowband signals are not lost between frequency bins.)
6. Sweep time = auto.
7. Detector = power averaging (rms), if available. Otherwise, use sample detector mode.
8. Do not use sweep triggering. Allow the sweep to “free run.”
9. Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed to ensure that the average accurately represents the true average over the on and off periods of the transmitter.
10. Add  $10 \log (1/x)$ , where  $x$  is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission). For example, add  $10 \log (1/0.25) = 6 \text{ dB}$  if the duty cycle is 25%.



#### FOR 99 PERCENT OCCUPIED BANDWIDTH

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW  $\geq 3 \cdot$  RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

#### 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 6dB BANDWIDTH

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW)  $\geq 3$  RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



### 3.3.5 DEVIATION FROM TEST STANDARD

No deviation.

### 3.3.6 EUT OPERATING CONDITIONS

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



### 3.3.7 TEST RESULTS

**OUTPUT POWER:**

**802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	12.93	19.63	24	PASS
40	5200	12.94	19.68	24	PASS
48	5240	13.12	20.51	24	PASS
52	5260	13.14	20.61	24	PASS
60	5300	13.10	20.42	24	PASS
64	5320	12.83	19.19	24	PASS
100	5500	12.32	17.06	24	PASS
116	5580	11.03	12.68	24	PASS
140	5700	11.17	13.09	24	PASS
149	5745	13.98	25.00	30	PASS
157	5785	14.36	27.29	30	PASS
161	5805	14.63	29.04	30	PASS

**802.11n (20MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	12.91	19.54	24	PASS
40	5200	12.87	19.36	24	PASS
48	5240	12.98	19.86	24	PASS
52	5260	12.80	19.05	24	PASS
60	5300	12.75	18.84	24	PASS
64	5320	12.72	18.71	24	PASS
100	5500	11.83	15.24	24	PASS
116	5580	11.01	12.62	24	PASS
140	5700	11.08	12.82	24	PASS
149	5745	13.70	23.44	30	PASS
157	5785	14.11	25.76	30	PASS
161	5805	14.79	30.13	30	PASS



802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	12.69	18.58	24	PASS
46	5230	12.57	18.07	24	PASS
54	5270	12.65	18.41	24	PASS
62	5310	12.81	19.10	24	PASS
102	5510	11.84	15.28	24	PASS
110	5550	11.50	14.13	24	PASS
134	5670	11.62	14.52	24	PASS
151	5755	14.79	30.13	30	PASS
161	5805	14.66	29.24	30	PASS



**99% OCCUPIED BANDWIDTH & 26dB BANDWIDTH/6dB BANDWIDTH:**

**802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	16.92	<b>21.48</b>	PASS
40	5200	16.80	21.47	PASS
48	5240	<b>16.98</b>	21.23	PASS
52	5260	17.16	<b>22.69</b>	PASS
60	5300	<b>17.22</b>	22.54	PASS
64	5320	17.16	21.80	PASS
100	5500	16.98	21.66	PASS
116	5580	17.04	<b>21.76</b>	PASS
140	5700	<b>17.16</b>	21.53	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
149	5745	<b>17.10</b>	16.30	PASS
157	5785	16.98	16.29	PASS
161	5805	16.98	<b>16.31</b>	PASS



802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	18.12	25.50	PASS
40	5200	18.06	22.71	PASS
48	5240	18.06	23.02	PASS
52	5260	18.00	25.57	PASS
60	5300	18.12	22.10	PASS
64	5320	18.06	24.92	PASS
100	5500	18.00	23.50	PASS
116	5580	18.18	21.45	PASS
140	5700	18.06	22.57	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
149	5745	17.76	17.52	PASS
157	5785	18.00	16.91	PASS
161	5805	18.00	17.14	PASS



802.11n (40MHz)

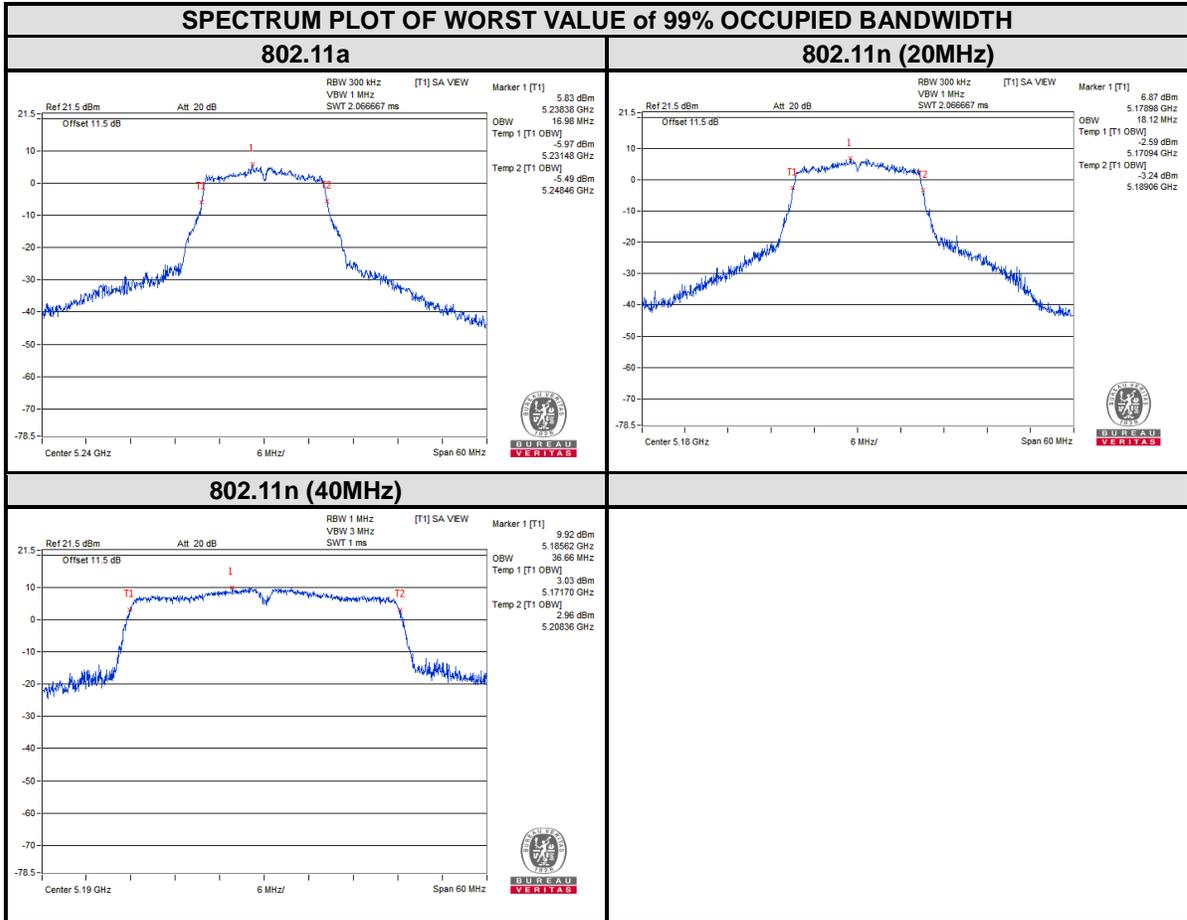
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
38	5190	36.66	49.56	PASS
46	5230	36.54	49.32	PASS
54	5270	36.78	60.31	PASS
62	5310	36.66	58.80	PASS
102	5510	36.66	53.00	PASS
110	5550	36.60	55.75	PASS
134	5670	36.66	64.02	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
151	5755	36.48	35.64	PASS
159	5795	36.66	35.16	PASS



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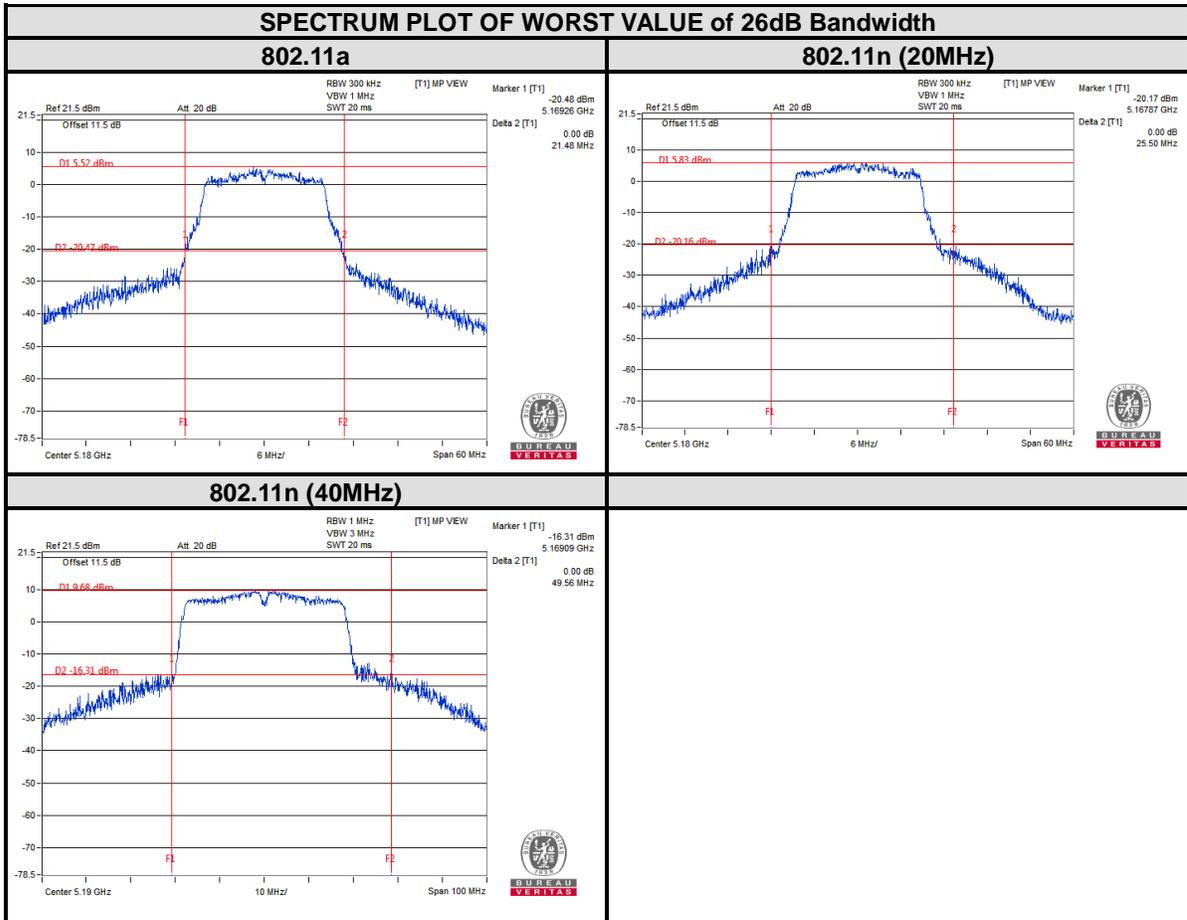
For U-NII-1:





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Test Report No.: RF180523W001-2

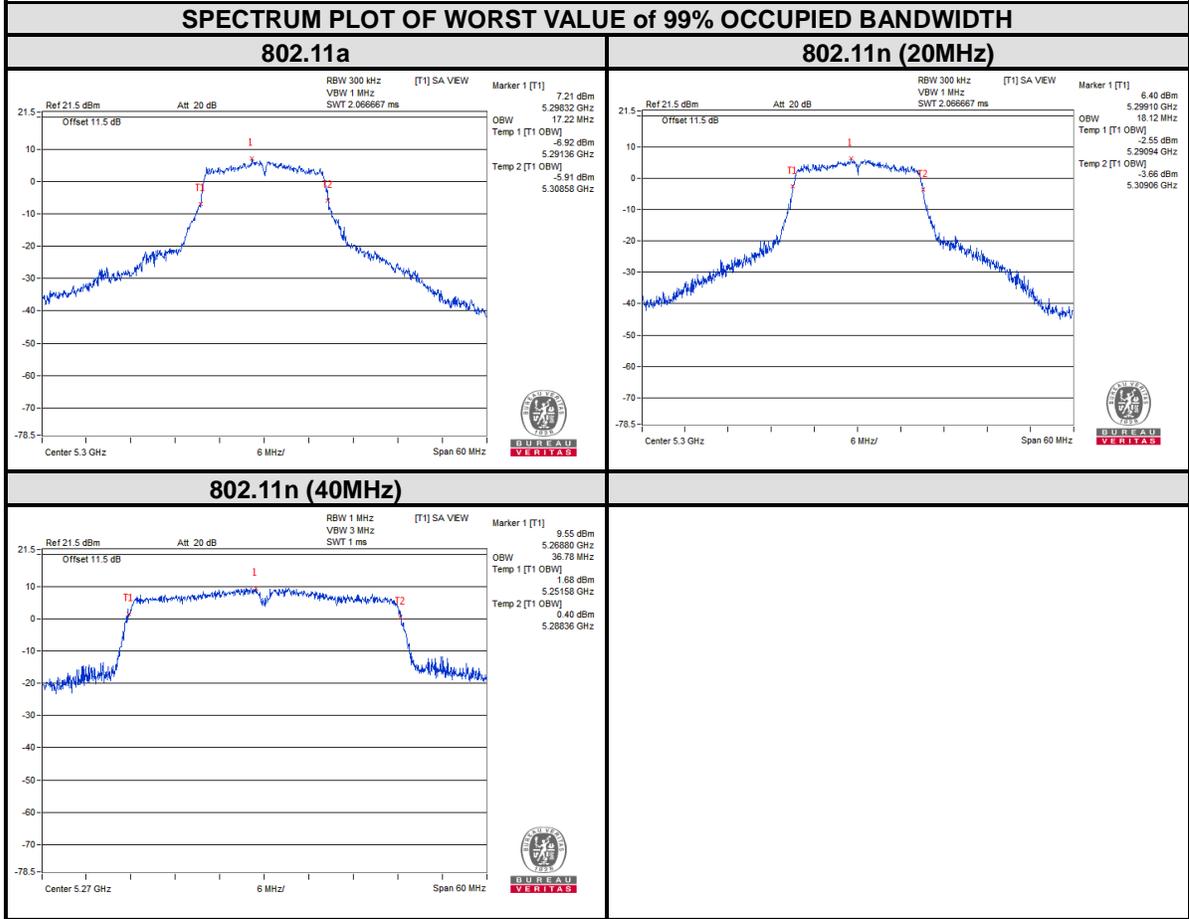




BUREAU VERITAS

Test Report No.: RF180523W001-2

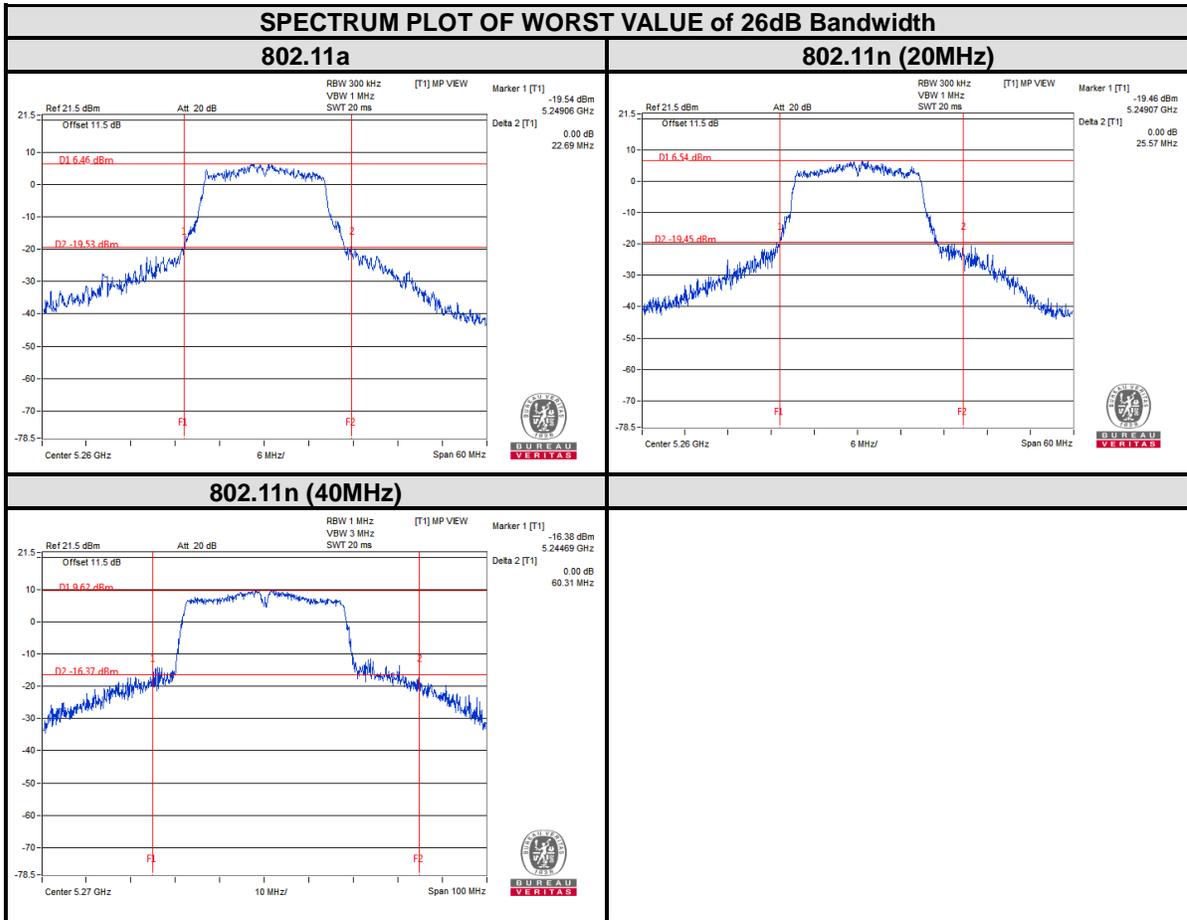
For U-NII-2A:





BUREAU VERITAS

Test Report No.: RF180523W001-2

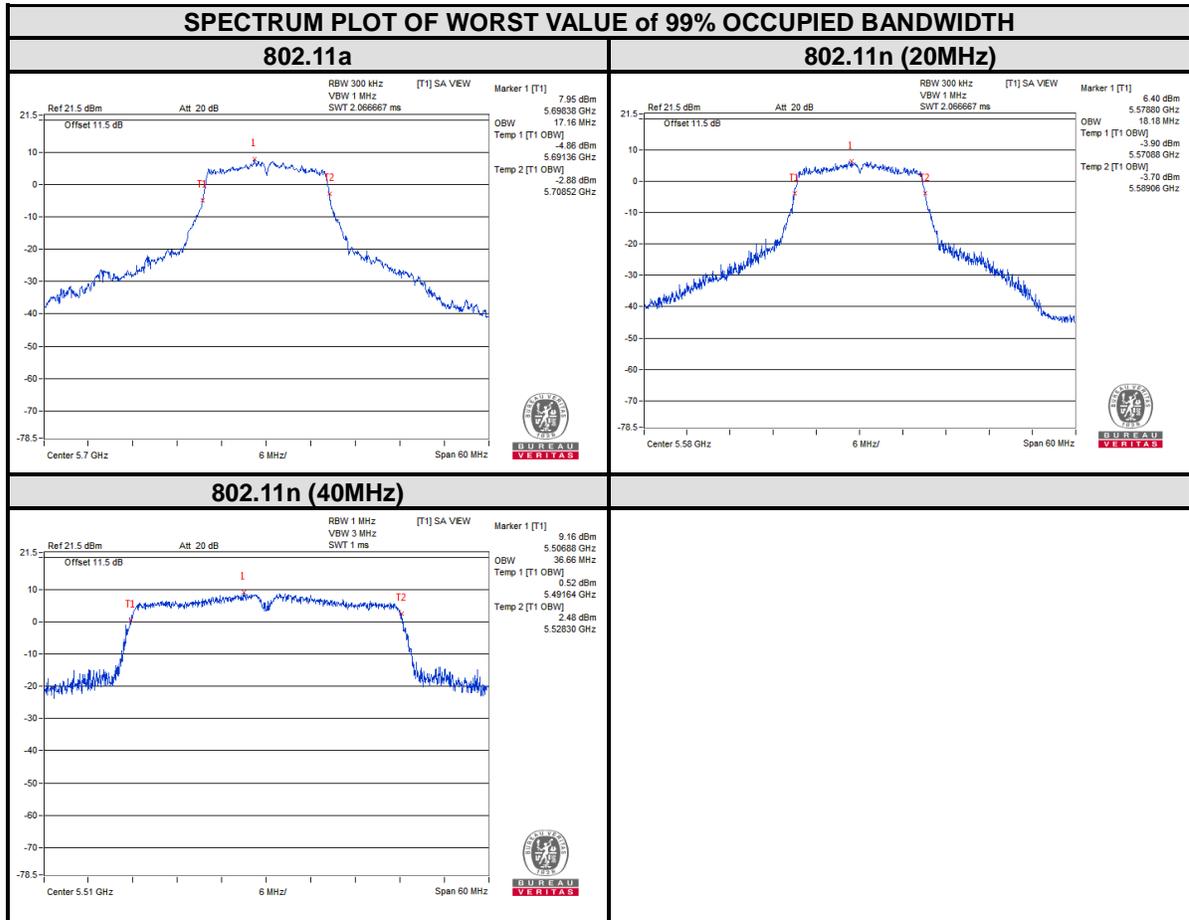




BUREAU VERITAS

Test Report No.: RF180523W001-2

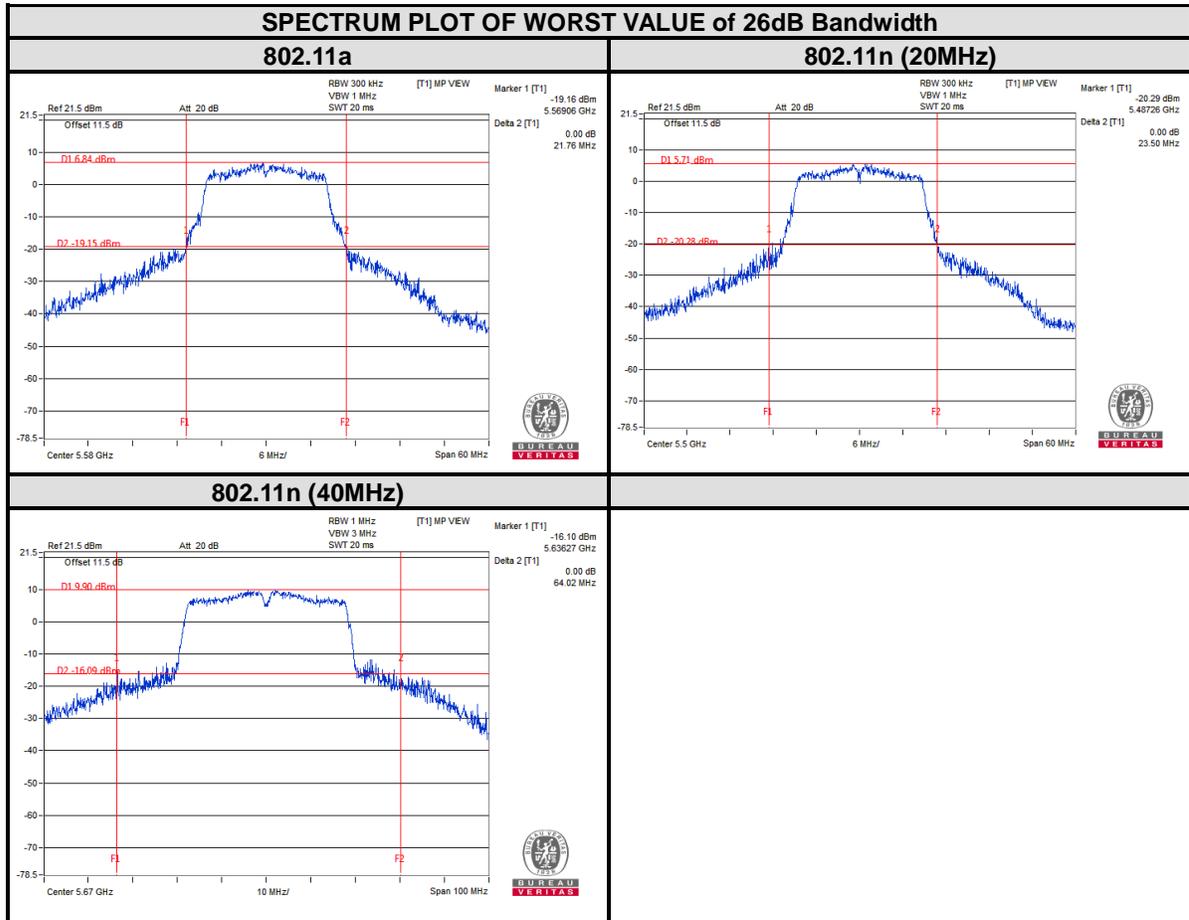
For U-NII-2C:





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Test Report No.: RF180523W001-2

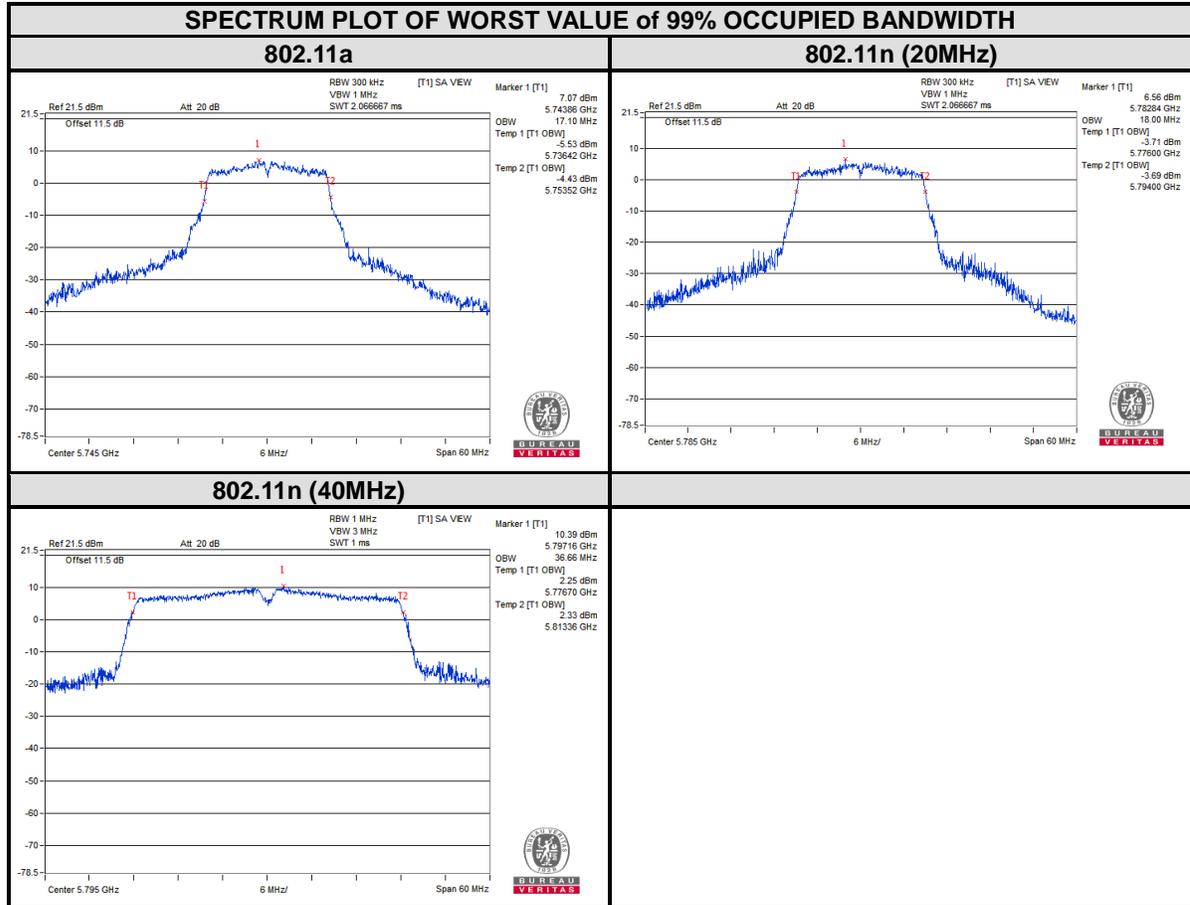




BUREAU VERITAS

Test Report No.: RF180523W001-2

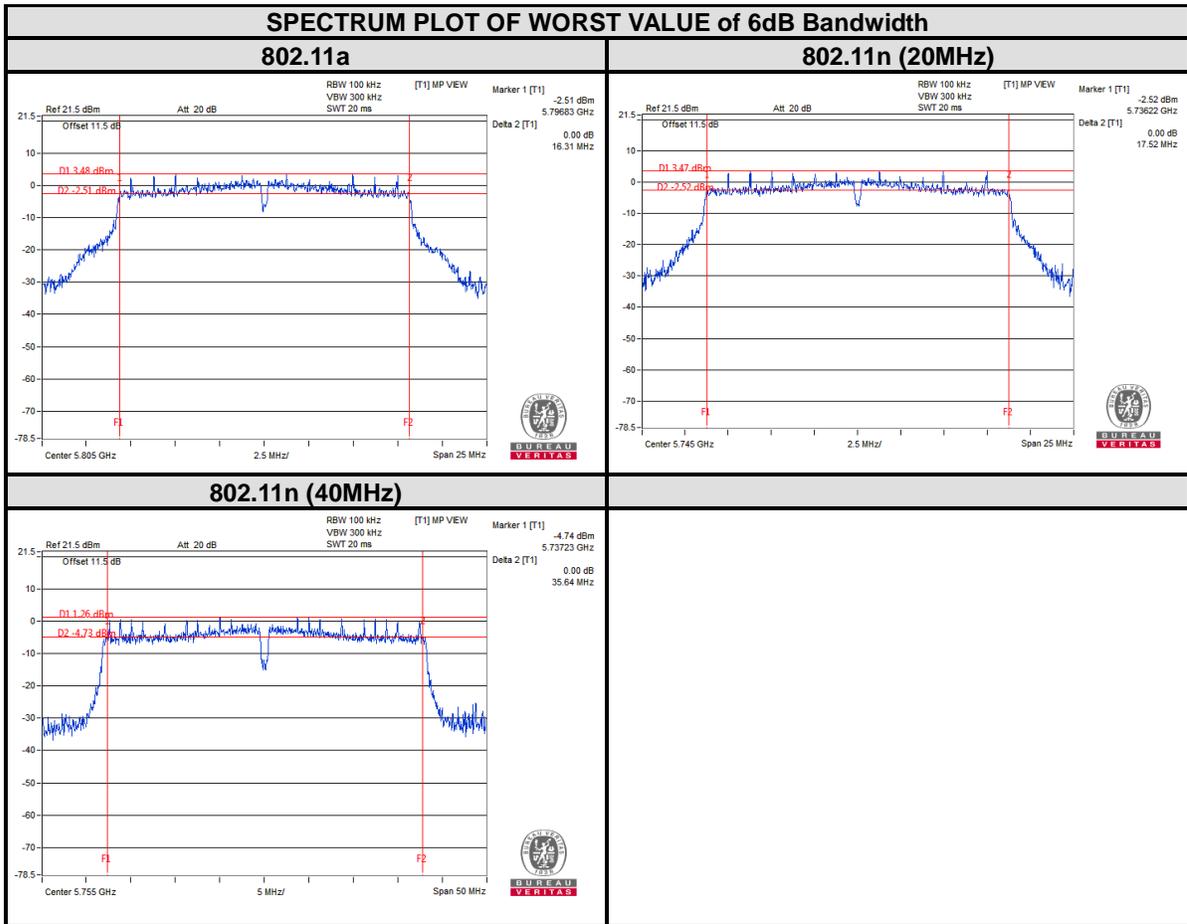
For U-NII-3:





BUREAU VERITAS

Test Report No.: RF180523W001-2





### 3.4 MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

#### 3.4.1 LIMITS OF MAXIMUM 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	
	√	Client devices	11dBm/ MHz
U-NII-2A	√		11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

#### 3.4.2 TEST SETUP



#### 3.4.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.



### 3.4.4 TEST PROCEDURES

Using method SA-2

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1 MHz, Set VBW  $\geq$  3 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Add  $10 \log (1/x)$ , where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission).
- 7) Record the max value

### 3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

### 3.4.6 EUT OPERATING CONDITIONS

Same as 3.1.6.



### 3.4.7 TEST RESULTS

For U-NII-1 & U-NII-2A & U-NII-2C :

#### 802.11a

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
36	5180	7.95	0.309	8.259	11	PASS
40	5200	<b>7.99</b>	0.309	8.299	11	PASS
48	5240	7.56	0.309	7.869	11	PASS
52	5260	<b>9.35</b>	0.309	9.659	11	PASS
60	5300	9.23	0.309	9.539	11	PASS
64	5320	9.04	0.309	9.349	11	PASS
100	5500	8.75	0.309	9.059	11	PASS
116	5580	9.76	0.309	10.069	11	PASS
140	5700	<b>10.08</b>	0.309	10.389	11	PASS

#### 802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
36	5180	<b>8.91</b>	0.244	9.154	11	PASS
40	5200	8.87	0.244	9.114	11	PASS
48	5240	8.77	0.244	9.014	11	PASS
52	5260	9.15	0.244	9.394	11	PASS
60	5300	<b>9.43</b>	0.244	9.674	11	PASS
64	5320	8.98	0.244	9.224	11	PASS
100	5500	7.96	0.244	8.204	11	PASS
116	5580	8.41	0.244	8.654	11	PASS
140	5700	<b>9.50</b>	0.244	9.744	11	PASS



802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
38	5190	<b>7.29</b>	1.267	8.557	11	PASS
46	5230	6.04	1.267	7.307	11	PASS
54	5270	<b>6.30</b>	1.267	7.567	11	PASS
62	5310	5.81	1.267	7.077	11	PASS
102	5510	5.72	1.267	6.987	11	PASS
110	5550	<b>7.08</b>	1.267	8.347	11	PASS
134	5670	6.74	1.267	8.007	11	PASS



For U-NII-3:

802.11a

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	12.78	16.28	0.309	16.589	30	PASS
157	5785	<b>16.29</b>	19.79	0.309	20.099	30	PASS
161	5805	12.62	19.81	0.309	20.119	30	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	12.33	15.83	0.244	16.074	30	PASS
157	5785	12.78	16.28	0.244	16.524	30	PASS
161	5805	<b>12.83</b>	16.33	0.244	16.574	30	PASS

802.11n (40MHz)

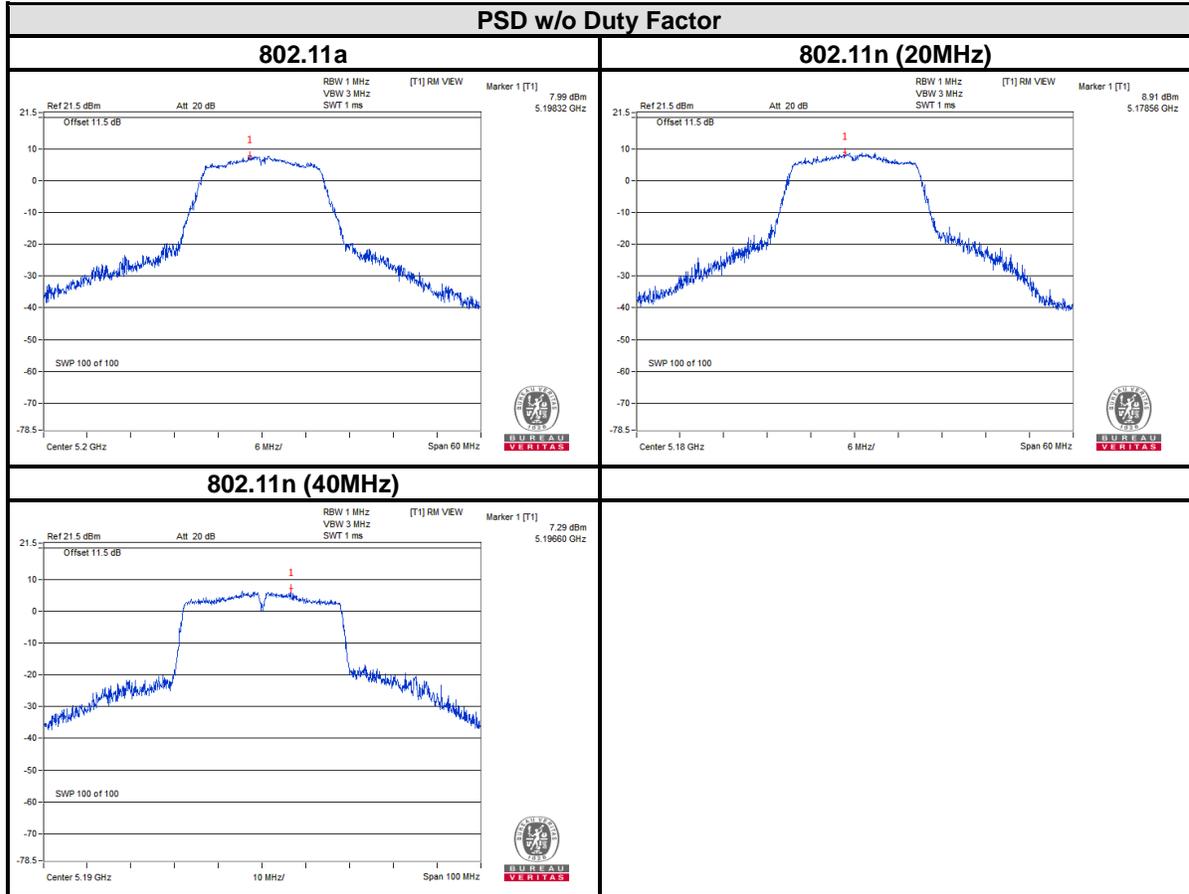
CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
151	5755	10.15	13.65	1.267	14.917	30	PASS
159	5795	<b>11.12</b>	14.62	1.267	15.887	30	PASS



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Test Report No.: RF180523W001-2

For 5180~5240MHz

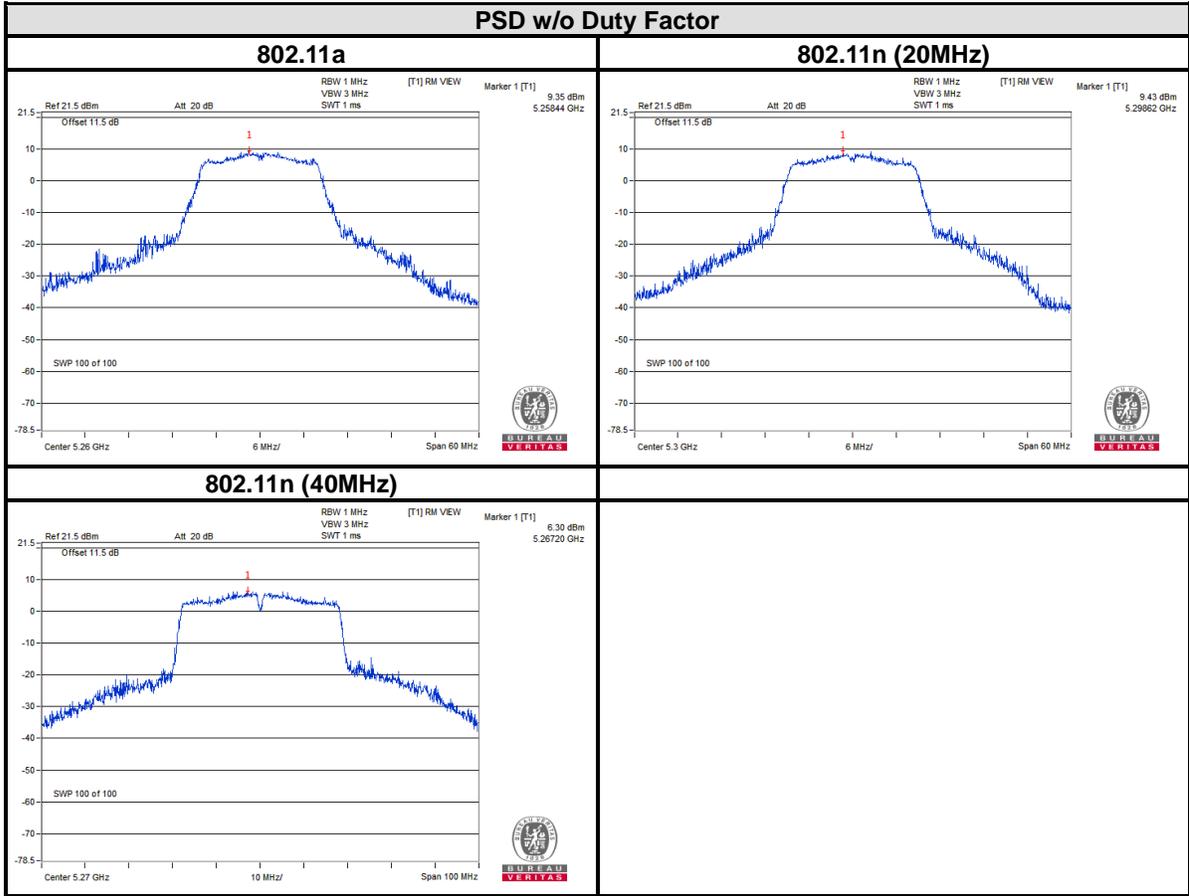




BUREAU VERITAS

Test Report No.: RF180523W001-2

For 5260~5320MHz

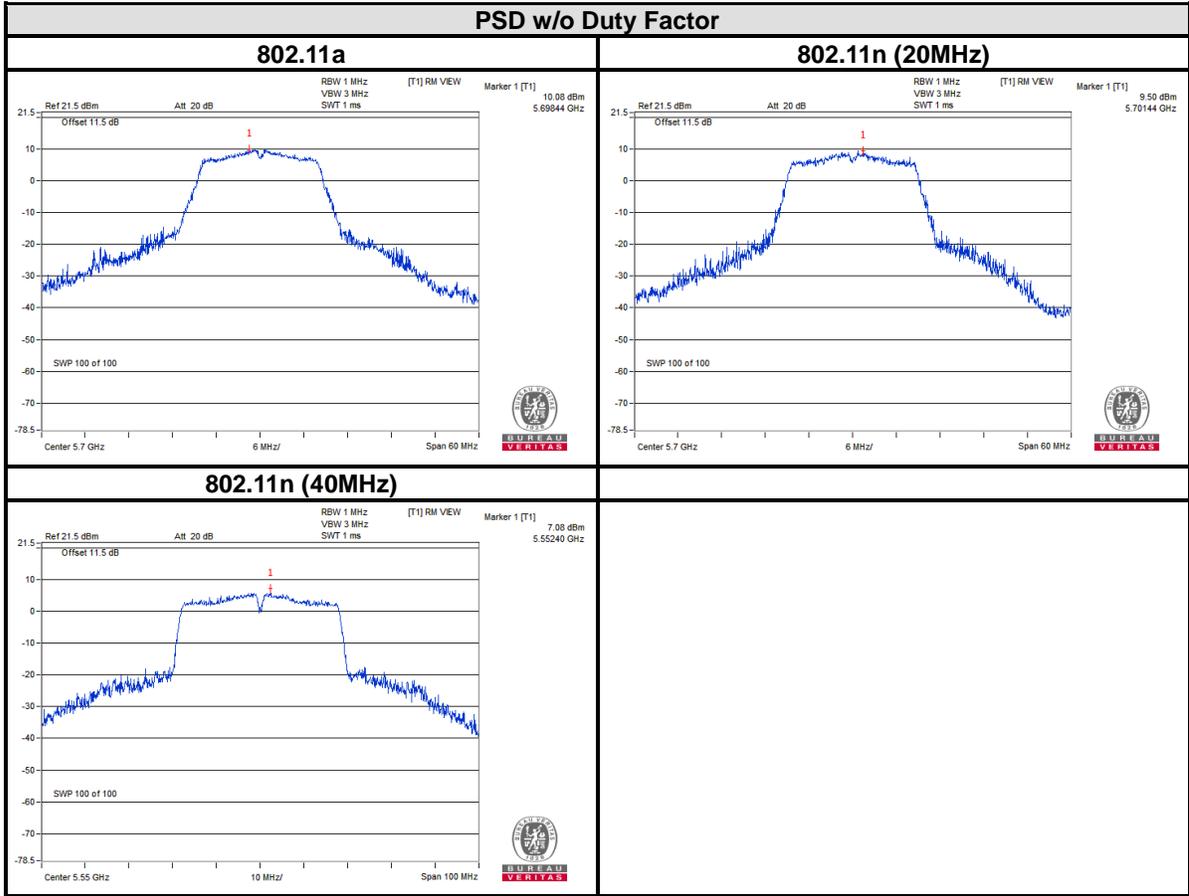




BUREAU VERITAS

Test Report No.: RF180523W001-2

For 5500~5700MHz

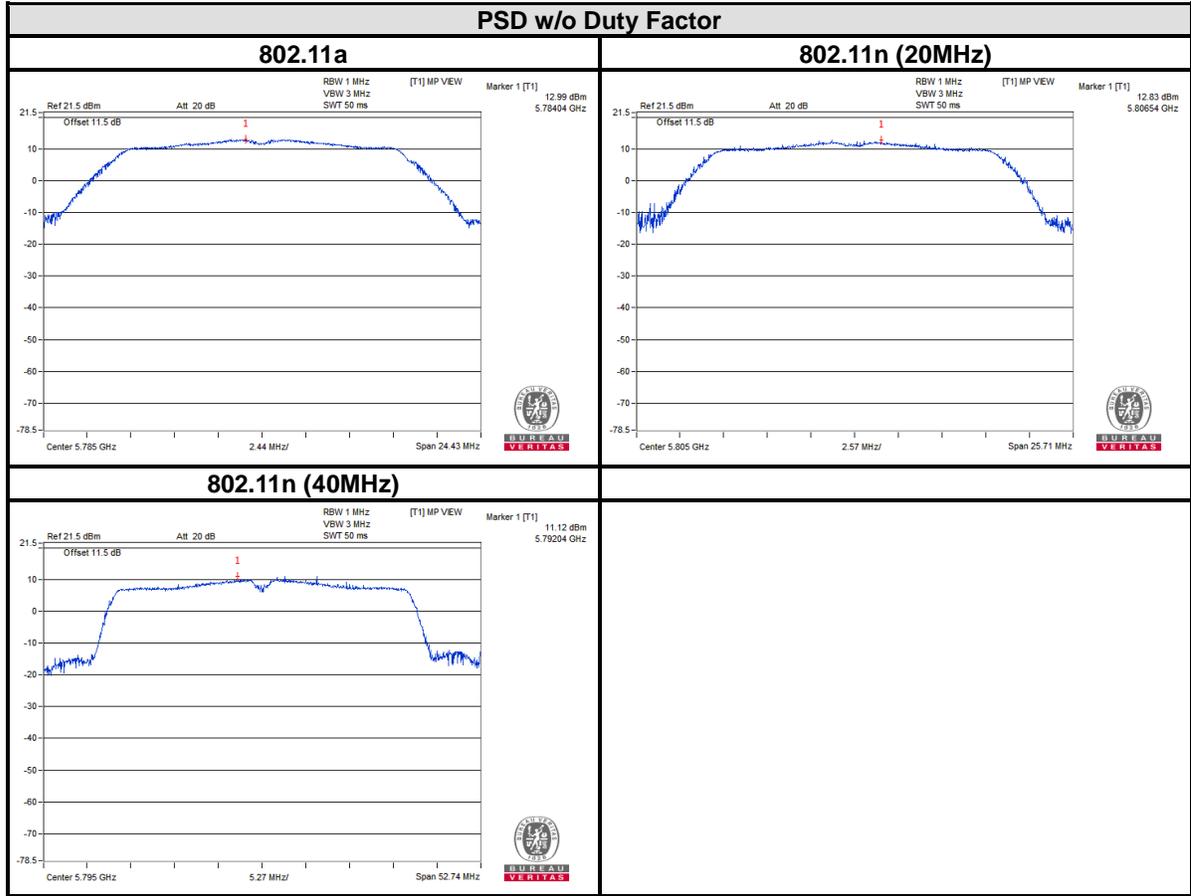




BUREAU VERITAS

Test Report No.: RF180523W001-2

For 5745~5805MHz



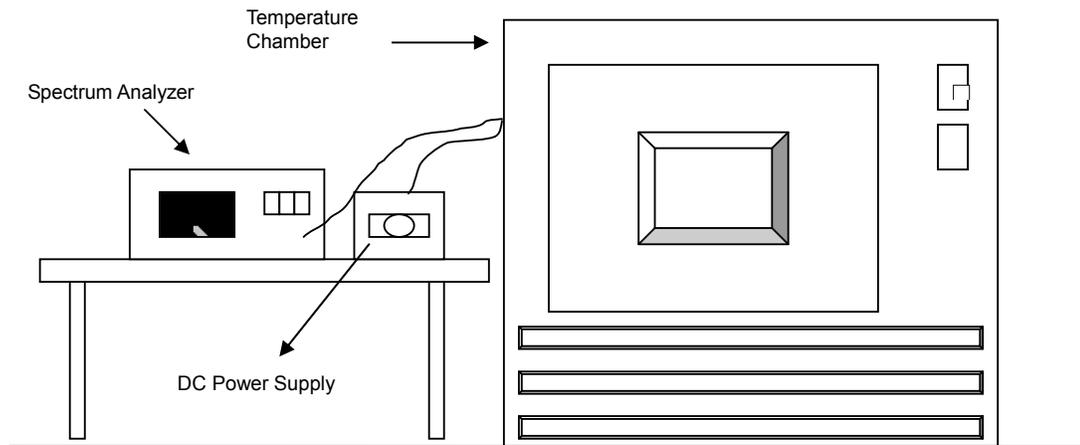


### 3.5 FREQUENCY STABILITY

#### 3.5.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

#### 3.5.2 TEST SETUP



#### 3.5.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.



### 3.5.4 TEST PROCEDURE

- a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
- b. Turn the EUT on and couple its output to a spectrum analyzer.
- c. Turn the EUT off and set the chamber to the highest temperature specified.
- d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

### 3.5.5 DEVIATION FROM TEST STANDARD

No deviation.

### 3.5.6 EUT OPERATING CONDITION

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



3.5.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.										
OPERATING FREQUENCY: 5180MHz										
TEMP. (°C)	Power Supply (Vdc)	0 MINUTE		2 MINUTES		5 MINUTES		10 MINUTE		RESULT
		Measured Frequency (MHz)	Frequency Drift (ppm)							
50	120	5179.9824	-3.398	5179.9772	-4.402	5179.9872	-2.471	5179.9781	-4.228	PASS
40	120	5179.9785	-4.151	5179.9697	-5.849	5179.9721	-5.386	5179.9775	-4.344	PASS
30	120	5179.9708	-5.637	5179.9733	-5.154	5179.9704	-5.714	5179.9704	-5.714	PASS
20	120	5179.9799	-3.880	5179.9738	-5.058	5179.984	-3.089	5179.9758	-4.672	PASS
10	120	5179.9809	-3.687	5179.9799	-3.880	5179.9859	-2.722	5179.9757	-4.691	PASS
0	120	5180.0016	0.309	5179.9932	-1.313	5180.0008	0.154	5179.9938	-1.197	PASS
-10	120	5179.9813	-3.610	5179.9799	-3.880	5179.9818	-3.514	5179.9778	-4.286	PASS
-20	120	5180.0176	3.398	5180.0186	3.591	5180.0252	4.865	5180.019	3.668	PASS
-30	120	5179.9916	-1.622	5179.9908	-1.776	5179.9969	-0.598	5179.9963	-0.714	PASS

FREQUENCY STABILITY VERSUS VOLTAGE										
OPERATING FREQUENCY: 5180MHz										
TEMP. (°C)	Power Supply (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE		RESULT
		Measured Frequency (MHz)	Frequency Drift (ppm)							
20	138	5179.9802	-3.822	5179.9749	-4.846	5179.9835	-3.185	5179.9774	-4.363	PASS
	120	5179.9799	-3.880	5179.9738	-5.058	5179.984	-3.089	5179.9758	-4.672	PASS
	102	5179.9793	-3.996	5179.9754	-4.749	5179.9837	-3.147	5179.9766	-4.517	PASS



FREQUENCY STABILITY VERSUS TEMP.										
OPERATING FREQUENCY: 5805MHz										
TEMP. (°C)	Power Supply (Vdc)	0 MINUTE		2 MINUTES		5 MINUTES		10 MINUTE		RESULT
		Measured Frequency (MHz)	Frequency Drift (ppm)							
50	120	5805.0048	0.827	5805.0089	1.533	5805.0094	1.619	5805.005	0.861	PASS
40	120	5805.0076	1.309	5805.0114	1.964	5805.0154	2.653	5805.0066	1.137	PASS
30	120	5804.9862	-2.377	5804.9929	-1.223	5804.9922	-1.344	5804.988	-2.067	PASS
20	120	5804.9975	-0.431	5805	0.000	5805.0029	0.500	5804.9951	-0.844	PASS
10	120	5805.007	1.206	5805.0071	1.223	5805.0059	1.016	5804.9959	-0.706	PASS
0	120	5804.9846	-2.653	5804.9873	-2.188	5804.9964	-0.620	5804.9894	-1.826	PASS
-10	120	5805.0095	1.637	5805.0177	3.049	5805.0142	2.446	5805.0087	1.499	PASS
-20	120	5805.0082	1.413	5805.0137	2.360	5805.0139	2.394	5805.0147	2.532	PASS
-30	120	5805.006	1.034	5805.0037	0.637	5805.0005	0.086	5805.0067	1.154	PASS

FREQUENCY STABILITY VERSUS VOLTAGE										
OPERATING FREQUENCY: 5805MHz										
TEMP. (°C)	Power Supply (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE		RESULT
		Measured Frequency (MHz)	Frequency Drift (ppm)							
20	138	5804.9987	-0.224	5805.0007	0.121	5805.0039	0.672	5804.9952	-0.827	PASS
	120	5804.9975	-0.431	5805	0.000	5805.0029	0.500	5804.9951	-0.844	PASS
	102	5804.9975	-0.431	5805.0009	0.155	5805.0046	0.792	5804.996	-0.689	PASS



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## 4 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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## **5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB**

No modifications were made to the EUT by the lab during the test.

**---END---**