

FCC 47 CFR PART 15 SUBPART E

Applicant : Intel Corporation

Product Type : Cloud Rest

Trade Name : Intel

Model Number : Aero Platform

Test Specification : FCC 47 CFR PART 15 SUBPART E
ANSI C63.10:2013

Receive Date : Jul. 19, 2016

Test Period : Jul. 24 ~ Jul. 29, 2016

Issue Date : Jul. 29, 2016

Issue by

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Taiwan Accreditation Foundation accreditation number: 1330

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Revision History

Rev.	Issue Date	Revisions	Revised By
00	Jul. 29, 2016	Initial Issue	Snow Wang

Verification of Compliance

Issued Date: Jul. 29, 2016

Applicant : Intel Corporation
Product Type : Cloud Rest
Trade Name : Intel
Model Number : Aero Platform
FCC ID : 2AB8ZAERO
EUT Rated Voltage : DC 12V, 2A
Test Voltage : 120 Vac / 60 Hz
Applicable Standard : FCC 47 CFR PART 15 SUBPART E
ANSI C63.10:2013
Test Result : Complied

Performing Lab. : A Test Lab Techno Corp.

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<http://www.atl-lab.com.tw/e-index.htm>



A Test Lab Techno Corp. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by A Test Lab Techno Corp. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Approved By : Jack Chang
(Manager) (Jack Chang)

Reviewed By : Eric Ou Yang
(Testing Engineer) (Eric Ou Yang)

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1 General Information

1.1. Summary of Test Result

Standard	Item	Result	Remark
FCC			
15.407(b)(6) 15.207	AC Power Conducted Emission	PASS	---
15.407(b) 15.205 / 15.209	Transmitter Radiated Emissions	PASS	---
15.407(a)	Maximum Conducted Output Power	PASS	---
15.407(a)	26dB RF Bandwidth	Reference	---
15.407(e)	6dB RF Bandwidth	PASS	-----
15.407(a)	Peak Power Spectral Density	PASS	---
15.407(g)	Frequency Stability	PASS	---
15.407(a) 15.203	Antenna Requirement	PASS	---

The test results of this report relate only to the tested sample(s) identified in this report. Manufacturer or whom it may concern should recognize the pass or fail of the test result.

1.2. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty
Conducted Emission	9kHz ~ 150KHz	2.7 dB
	150kHz ~ 30MHz	2.8 dB
Radiated Emission	9kHz ~ 30MHz	1.457 dB
	30MHz ~ 1000MHz	6.300 dB
	1000MHz ~ 18000MHz	5.474 dB
	18000MHz ~ 26500MHz	5.630 dB
	26500MHz ~ 40000MHz	5.054 dB
Conducted Output Power		+0.27 dB / -0.28 dB
RF Bandwidth		4.96%
Power Spectral Density		+0.71 dB / -0.77 dB
Frequency Stability		+ 2.212 x 10 ⁻⁷ % / - 2.170 x 10 ⁻⁷ %
Duty Cycle		1.06%
Time Occupancy		1.40%



2 EUT Description

Applicant	Intel Corporation 2200 Mission College Blvd, Santa Clara, California, United States 95054		
Manufacturer	Thunder Software Technology Co.,Ltd 4F,Taixiang Building,1A Longxiang Rd.,Haidian District,Beijing 100191,P.R.China		
Product Type	Cloud Rest		
Trade Name	Intel		
Model No.	Aero Platform		
FCC ID	2AB8ZAERO		
Operate Frequency	Frequency Band		Frequency Range (MHz)
	IEEE 802.11a	U-NII Band I	5180 – 5240
		U-NII Band III	5745 – 5825
	IEEE 802.11n 20 MHz	U-NII Band I	5180 – 5240
		U-NII Band III	5745 – 5825
	IEEE 802.11n 40 MHz	U-NII Band I	5190 – 5230
		U-NII Band III	5755 – 5795
	IEEE 802.11ac 80 MHz	U-NII Band I	5210
		U-NII Band III	5775
Modulation Type	OFDM		
Equipment Type	Client devices		
Antenna information	Type	Max. Gain (dBi)	
	FPC antenna	U-NII Band I	4.76
		U-NII Band III	4.64
Antenna Delivery	See section 3.1		
Frequency stability specification	± 20 ppm		

Frequency Band		RF Output Power (W)
IEEE 802.11a	U-NII Band I	0.043
	U-NII Band III	0.087
IEEE 802.11n 20 MHz	U-NII Band I	0.017
	U-NII Band III	0.154
IEEE 802.11n 40 MHz	U-NII Band I	0.022
	U-NII Band III	0.101
IEEE 802.11ac 80 MHz	U-NII Band I	0.022
	U-NII Band III	0.034

3 Test Methodology

3.1. Mode of Operation

Decision of Test ATL has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: Normal Operation Mode
Mode 2: IEEE 802.11a Link Mode
Mode 3: IEEE 802.11n 20MHz Link Mode
Mode 4: IEEE 802.11n 40MHz Link Mode
Mode 5: IEEE 802.11ac 80MHz Link Mode

Software used to control the EUT for staying in continuous transmitting mode was programmed.

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in normal link mode only.

By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that "X axis" position was the worst, then the final test was executed the worst condition and test data were recorded in this report.

Equipment Type	
Outdoor access point	---
Indoor access point	---
Fixed point-to-point access points	---
Client devices	V

Test Mode	ANT-0	ANT-1	ANT-0+1
Mode 2	V	V	---
Mode 3	V	V	V
Mode 4	V	V	V
Mode 5	V	V	V

Test Mode	Band	Data Rate	Test Channel
Mode 2	U-NII Band I	6M	36, 40, 44, 48
	U-NII Band III		149,153,157,161,165
Mode 3	U-NII Band I	13M	36, 40, 44, 48
	U-NII Band III		149,153,157,161,165
Mode 4	U-NII Band I	27M	38, 46
	U-NII Band III		151,159
Mode 5	U-NII Band I	58.6M	42
	U-NII Band III		155

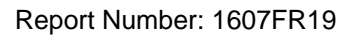


Duty cycle

Test Mode	Frequency (MHz)	on time (ms)	on+off time (ms)	Duty cycle	Duty Factor (dB)	1/T Minimum VBW (kHz)
Mode 2: IEEE 802.11a Link Mode	5180.0	2.080	2.160	0.963	0.164	0.481
Mode 3: IEEE 802.11n 20MHz Link Mode	5180.0	1.000	1.165	0.858	0.663	1.000
Mode 4: IEEE 802.11n 40MHz Link Mode	5190.0	0.507	0.594	0.854	0.688	1.972
Mode 5: IEEE 802.11ac 80MHz Link Mode	5210.0	0.264	0.306	0.863	0.641	3.788

Duty Cycle Graphs

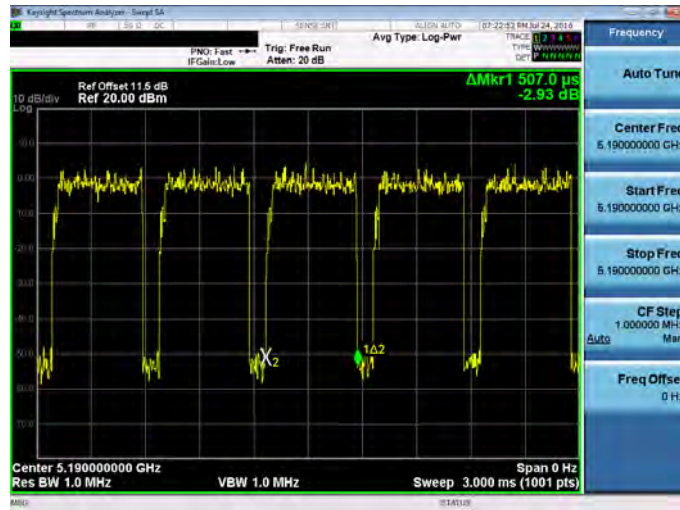
Mode 2: IEEE 802.11a Link Mode	
On time	
On+off time	



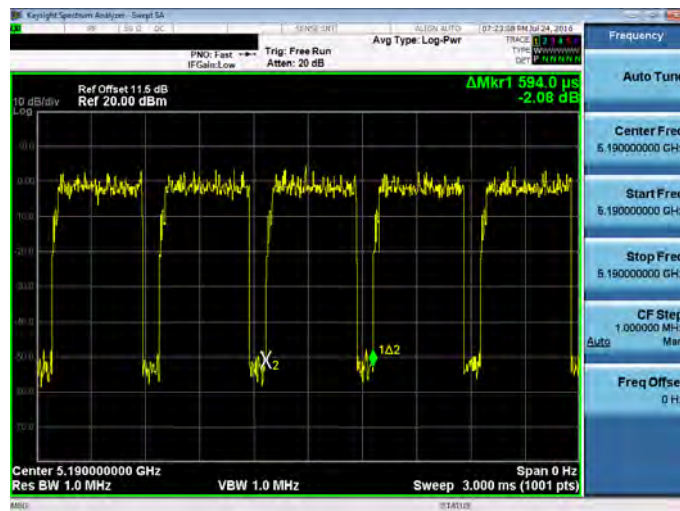


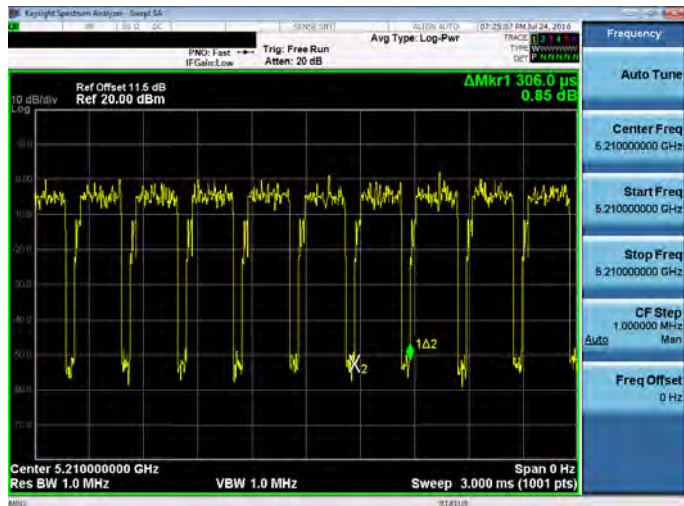
Mode 4: IEEE 802.11n 40MHz Link Mode

On time



On+off time



Mode 5: IEEE 802.11ac 80MHz Link Mode	
On time	
On+off time	

3.2. EUT Exercise Software

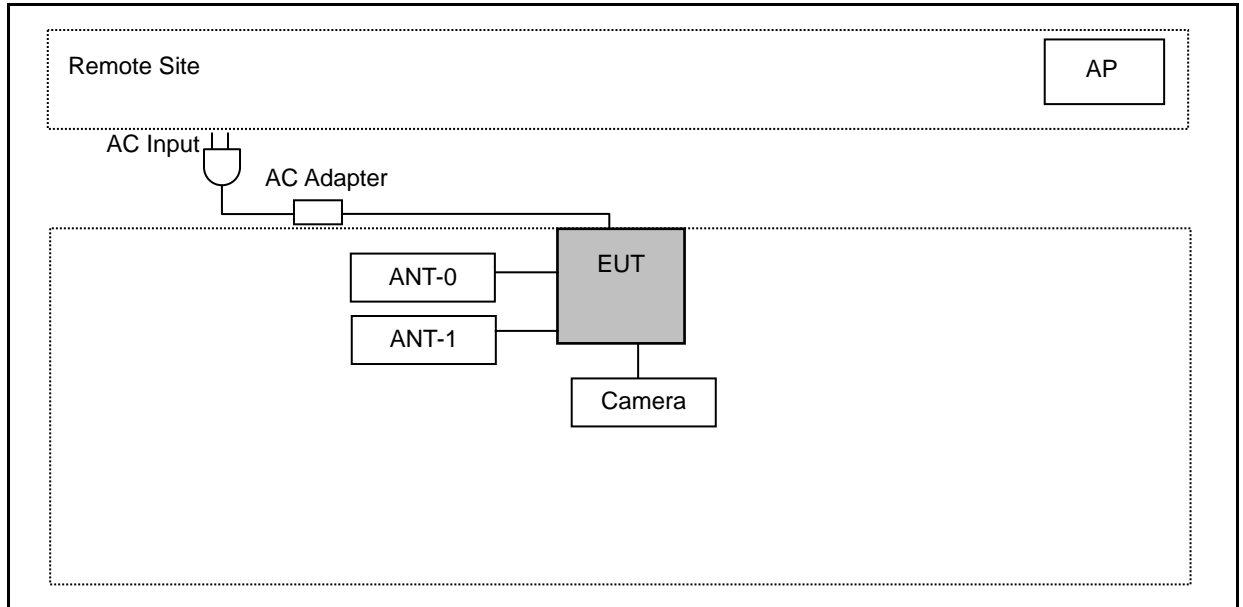
The EUT is operated in the engineering mode to fix the TX frequency for the purposes of measurement. According to its specifications, the EUT must comply with the requirements of Section 15.407 under the FCC Rules Part 15 Subpart E.

1.	Setup the EUT shown on 3.3.
2.	Turn on the power of all equipment.
3.	EUT run test program.

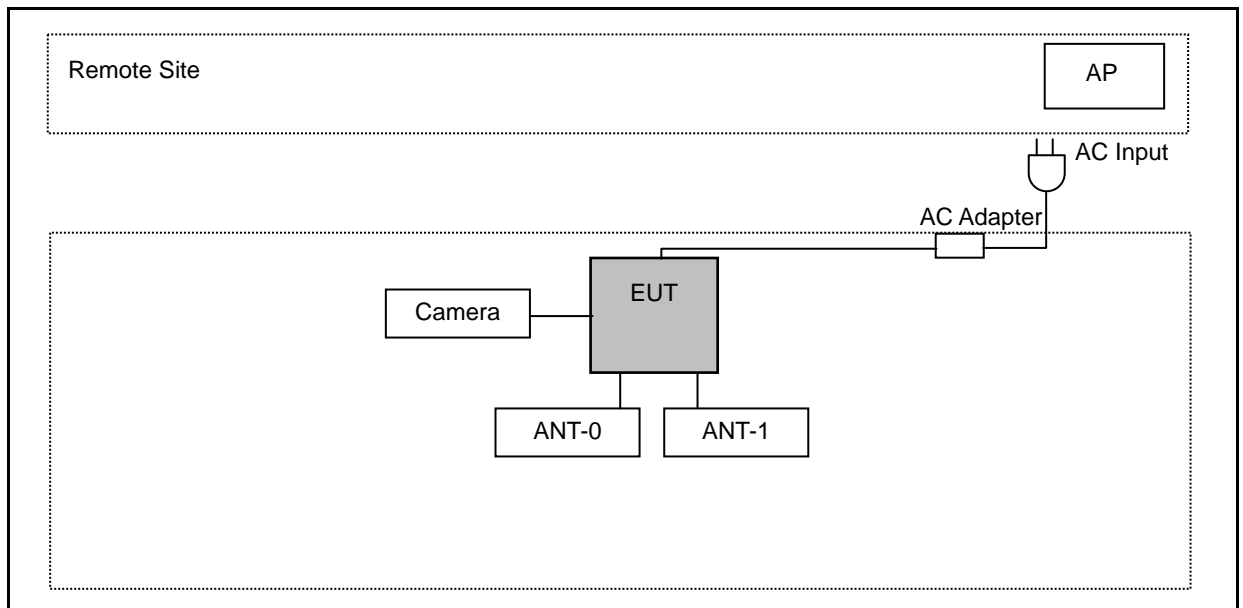
Measurement Software	
1	EZ-EMC Ver. ATL-03A1-1
2	EZ-EMC Ver ATL-ITC-3A1-1

3.3. Configuration of Test System Details

Conducted Emissions



Radiated Emissions



3.4. Test Site Environment

Items	Required (IEC 60068-1)	Actual
Temperature (°C)	15-35	26
Humidity (%RH)	25-75	60
Barometric pressure (mbar)	860-1060	950

4 Test Results

4.1. AC Power Conducted Emission Measurement

■ Limit

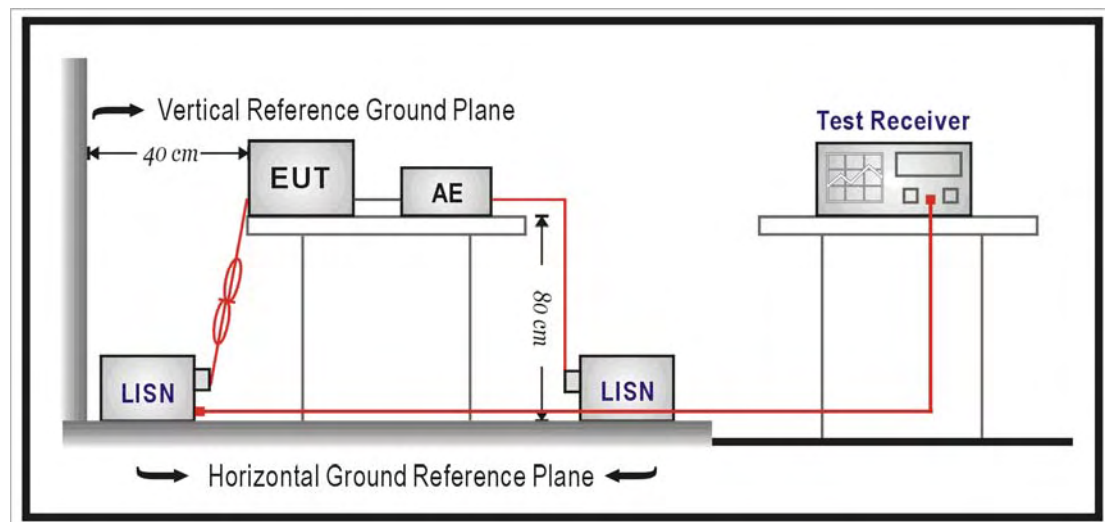
Frequency (MHz)	Quasi-peak	Average
0.15 - 0.5	66 to 56	56 to 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

■ Test Instruments

Describe	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Test Receiver	R&S	ESCI	100367	05/31/2016	1 year
LISN	R&S	ENV216	101040	03/15/2016	1 year
LISN	R&S	ENV216	101041	03/07/2016	1 year
RF Cable	Woken	00100D1380194M	TE-02-02	05/31/2016	1 year
Test Site	ATL	TE02	TE02	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

■ Test Setup



4.2. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a $50\Omega//50\mu\text{H}$ coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a $50\Omega//50\mu\text{H}$ coupling impedance with 50ohm termination.

Tabletop device shall be placed on a non-conducting platform, of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The wall of screened room shall be located 40cm to the rear of the EUT. Other surfaces of tabletop or floor standing EUT shall be at least 80cm from any other ground conducting surface including one or more LISNs. For floor-standing device shall be placed under the EUT with a 12mm insulating material.

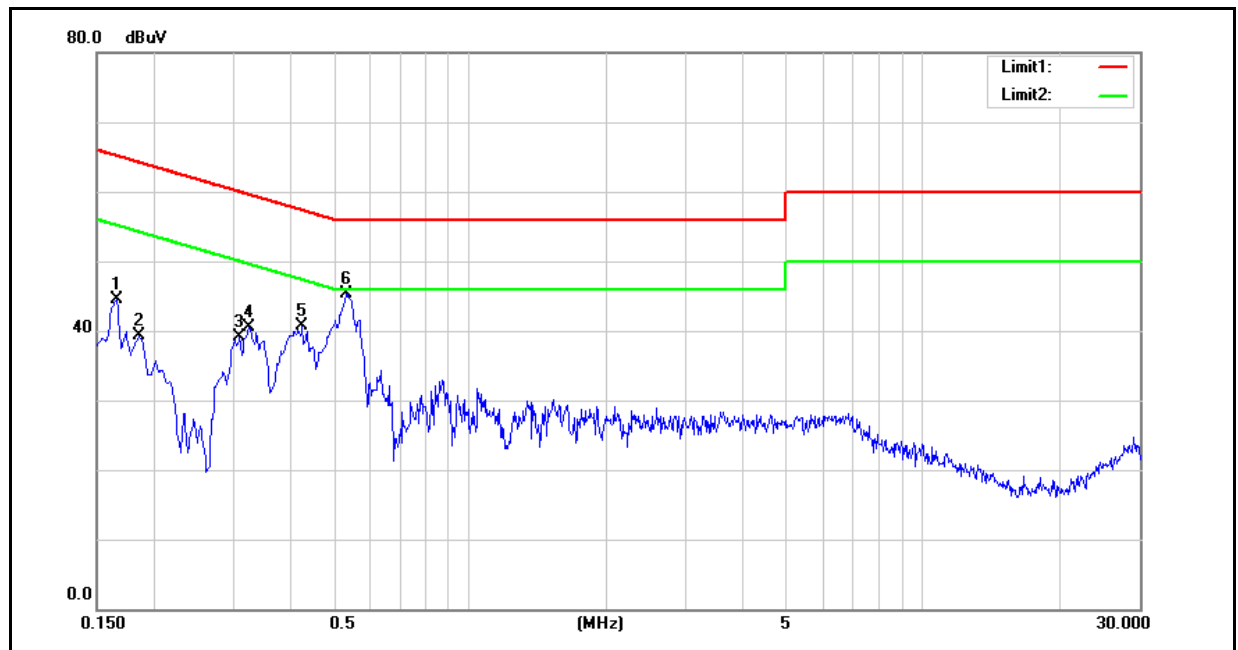
Conducted emissions were investigated over the frequency range from 0.15 MHz to 30 MHz using a resolution bandwidth of 9 kHz. The equipment under test (EUT) shall be meet the limits in section 4.1, as applicable, including the average limit and the quasi-peak limit when using respectively, an average detector and quasi-peak detector measured in accordance with the methods described of related standard. When all of peak value were complied with quasi-peak and average limit from 150kHz to 30MHz then quasi-peak and average measurement was unnecessary.

The AMN shall be placed 0,8 m from the boundary of the unit under test and bonded to a ground reference plane for AMNs mounted on top of the ground reference plane. This distance is between the closest points of the AMN and the EUT. All other units of the EUT and associated equipment shall be at least 0,8 m from the AMN. If the mains power cable is longer than 1m then the cable shall be folded back and forth at the centre of the lead to form a bundle no longer than 0.4m. All of interconnecting cables that hang closer than 40cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long. All of EUT and AE shall be separate place more than 0.1m. All 50 Ω ports of the LISN shall be resistively terminated into 50 Ω loads when not connected to the measuring instrument.

If the reading of the measuring receiver shows fluctuations close to the limit, the reading shall be observed for at least 15 s at each measurement frequency; the higher reading shall be recorded with the exception of any brief isolated high reading which shall be ignored.

Test Result

Standard:	FCC Part 15E	Line:	L1
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	Aero Platform	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 1	Date:	07/26/2016
		Test By:	Eric Ou Yang
Description:			



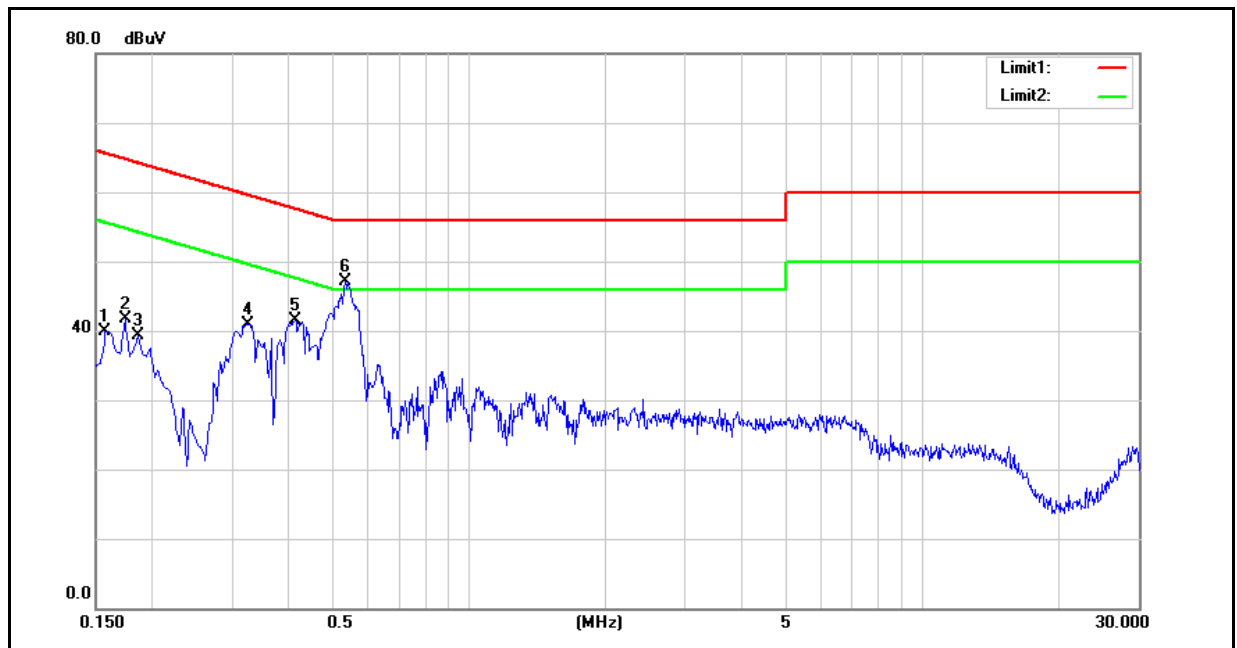
No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1660	28.08	16.46	9.60	37.68	26.06	65.16	55.16	-27.48	-29.10	Pass
2	0.1860	28.41	21.08	9.59	38.00	30.67	64.21	54.21	-26.21	-23.54	Pass
3	0.3100	28.57	19.63	9.60	38.17	29.23	59.97	49.97	-21.80	-20.74	Pass
4	0.3260	29.41	22.68	9.60	39.01	32.28	59.55	49.55	-20.54	-17.27	Pass
5	0.4260	29.83	22.64	9.60	39.43	32.24	57.33	47.33	-17.90	-15.09	Pass
6	0.5340	34.68	27.91	9.61	44.29	37.52	56.00	46.00	-11.71	-8.48	Pass

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E	Line:	N
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	Aero Platform	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 1	Date:	07/26/2016
		Test By:	Eric Ou Yang
Description:			



No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1580	29.10	20.56	9.59	38.69	30.15	65.57	55.57	-26.88	-25.42	Pass
2	0.1740	26.19	16.70	9.59	35.78	26.29	64.77	54.77	-28.99	-28.48	Pass
3	0.1860	26.79	19.49	9.58	36.37	29.07	64.21	54.21	-27.84	-25.14	Pass
4	0.3260	30.09	23.88	9.59	39.68	33.47	59.55	49.55	-19.87	-16.08	Pass
5	0.4140	30.94	22.43	9.59	40.53	32.02	57.57	47.57	-17.04	-15.55	Pass
6	0.5340	36.21	29.32	9.60	45.81	38.92	56.00	46.00	-10.19	-7.08	Pass

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.

4.3. Transmitter Radiated Emissions Measurement

■ Limit

(1)Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(a)For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(d)For transmitters operating in the 5.725-5.85 GHz band:

(i)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.

(2)Limits of Radiated Emission Measurement

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequency Range (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	10	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. As shown in 15.35(b), 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.

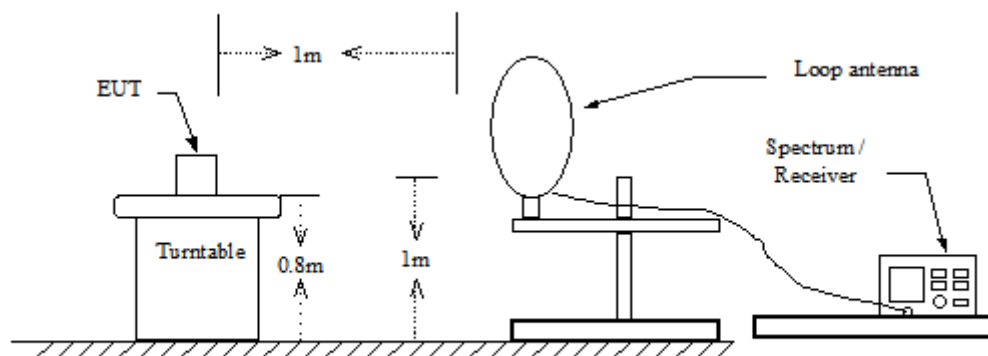
Test Instruments

3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/08/2016	1 year
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/08/2016	1 year
Pre Amplifier	Agilent	8449B	3008A02237	10/07/2015	1 year
Pre Amplifier	Agilent	8447D	2944A11119	01/11/2016	1 year
Broadband Antenna	Schwarzbeck	VULB9168	416	09/25/2015	1 year
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/06/2016	1 year
Horn Antenna (18~40GHz)	ETS	3116	86467	09/01/2015	1 year
Loop Antenna	COM-POWER CORPORATION	AL-130	121014	02/01/2016	1 year
Microwave Cable	EMCI	EMC102-KM-KM- 14000	151001	10/15/2015	1 year
Microwave Cable	EMCI	EMC-104-SM-SM- 14000	140202	10/15/2015	1 year
Microwave Cable	EMCI	EMC104-SM-SM- 600	140301	10/15/2015	1 year
Test Site	ATL	TE01	888001	08/27/2015	1 year

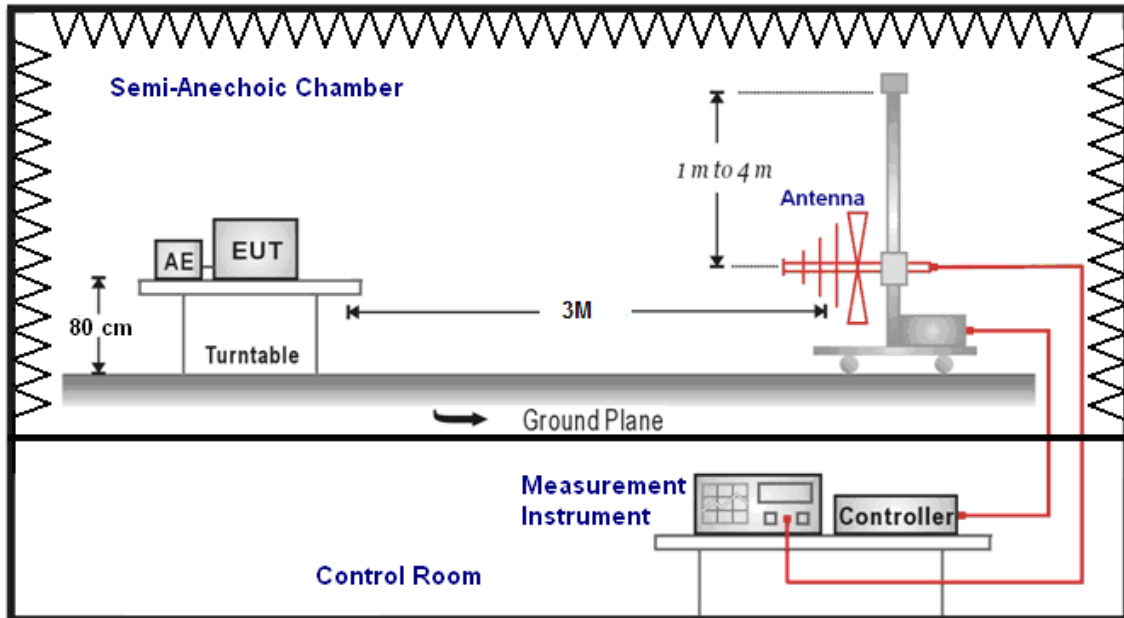
Note: N.C.R. = No Calibration Request.

Setup

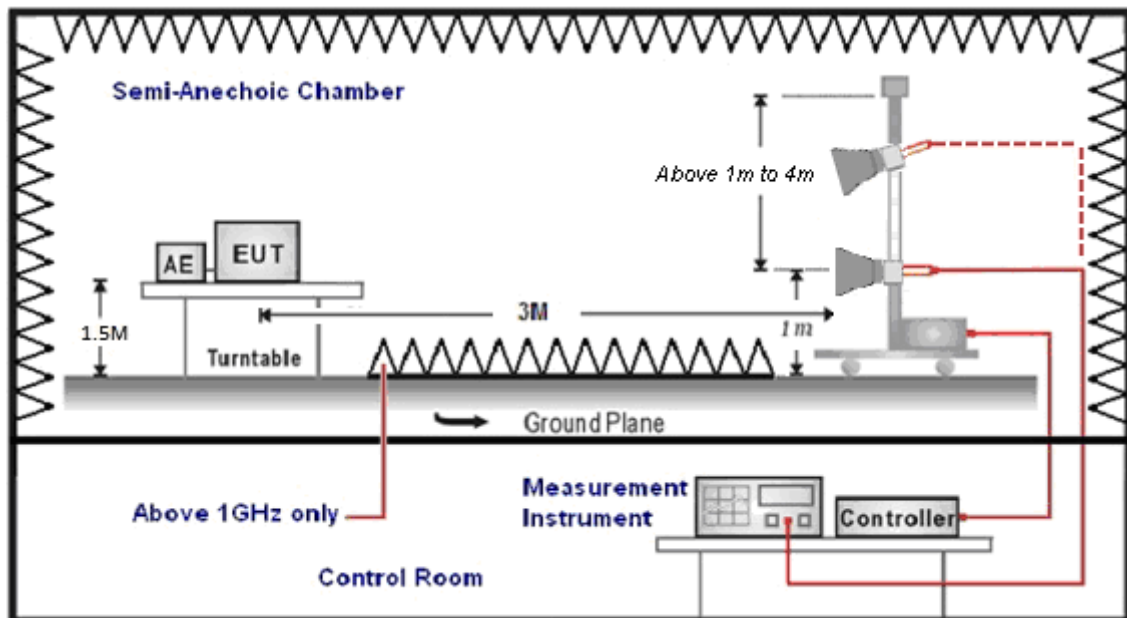
9kHz ~ 30MHz



30MHz ~ 1GHz



Above 1GHz



■ Test Procedure

Final radiation measurements were made on a three-meter, Semi Anechoic Chamber. The EUT system was placed on a nonconductive turntable which is 0.8 or 1.5 meters height (below 1GHz use 0.8m turntable / above 1GHz use 1.5m turntable), top surface 1.0 x 1.5 meter. The spectrum was examined from 250 MHz to 2.5 GHz in order to cover the whole spectrum below 10th harmonic which could generate from the EUT. During the test, EUT was set to transmit continuously & Measurements spectrum range from 9 kHz to 40 GHz is investigated.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For restricted measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 3 MHz for peak measurements and 10 Hz for average measurements when Duty cycle > 0.98 / 1/T for average measurements when Duty cycle < 0.98.

For out of band measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 3 MHz for peak measurements.

A nonconductive material surrounded the EUT to supporting the EUT for standing on three orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

SCHWARZBECK MESS-ELEKTRONIK Trilog-Broadband Antenna at 3 Meter and the ETS-Lindgren Double-Ridged Waveguide Horn antenna Schwarzbeck Mess-Elektronik Broadband Horn Antenna was used in frequencies 1 – 40 GHz at a distance of 3 meter. The antenna at an angle toward the source of the emission. All test results were extrapolated to equivalent signal at 3 meters utilizing an inverse linear distance extrapolation Factor (20dB/decade).

For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test.

The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.

The following procedures were used to convert the emission levels measured in decibels referenced to 1 microvolt (dBuV) into field intensity in micro volts per meter (uV/m).

The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro volts per meter (dBuV/m).

The actual field intensity in referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.

$$(1) \text{ Amplitude (dBuV/m) = FI (dBuV) + AF (dBuV) + CL (dBuV) - Gain (dB)}$$

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

$$(2) \text{ Actual Amplitude (dBuV/m) = Amplitude (dBuV) - Dis(dB)}$$

The FCC specified emission limits were calculated according the EUT operating frequency and by following linear interpolation equations:

(a) For fundamental frequency : Transmitter Output < +30dBm

(b) For spurious frequency : Spurious emission limits = fundamental emission limit /10

Measuring Instruments and setting

The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000MHz
Stop Frequency	40GHz
RBW/VBW(Emission in restricted band)	1MHz / 3MHz for Peak 1MHz / (1/T) for Average
RBW/VBW(Emission in non-restricted band)	1MHz / 3MHz for Peak



■ Test Result

Below 1GHz

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	Aero Platform	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 1	Date:	07/24/2016
Description:		Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
201.5000	41.46	-7.79	33.67	43.50	-9.83	QP	H
331.0000	29.93	-2.94	26.99	46.00	-19.01	QP	H
453.0000	31.41	-0.12	31.29	46.00	-14.71	QP	H
587.0000	30.33	2.53	32.86	46.00	-13.14	QP	H
711.0000	27.12	4.95	32.07	46.00	-13.93	QP	H
939.5000	26.97	9.43	36.40	46.00	-9.60	QP	H
188.0000	40.38	-7.14	33.24	43.50	-10.26	QP	V
290.0000	31.68	-3.71	27.97	46.00	-18.03	QP	V
352.5000	32.28	-2.63	29.65	46.00	-16.35	QP	V
452.5000	31.56	-0.13	31.43	46.00	-14.57	QP	V
621.0000	29.47	3.33	32.80	46.00	-13.20	QP	V
870.0000	25.80	7.97	33.77	46.00	-12.23	QP	V

Note: 1. No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).

2. Result = Correction factor + Reading

3. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Above 1GHz

Standard:	FCC Part 15E	Test Distance:	3m				
Test item:	Radiated Emission	Power:	AC 120V/60Hz				
Model Number:	Aero Platform	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH				
Test Mode:	Mode 2	Date:	07/24/2016				
Frequency:	5180MHz	Test By:	Eric Ou Yang				
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
10360.000	44.27	5.21	49.48	68.20	-18.72	peak	H
10360.000	45.57	5.21	50.78	68.20	-17.42	peak	V

Standard:	FCC Part 15E	Test Distance:	3m				
Test item:	Radiated Emission	Power:	AC 120V/60Hz				
Model Number:	Aero Platform	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 2	Date:	07/24/2016				
Frequency:	5200MHz	Test By:	Eric Ou Yang				
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
10400.000	43.47	5.33	48.80	68.20	-19.40	peak	H
10400.000	43.94	5.33	49.27	68.20	-18.93	peak	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	Aero Platform		Temp.(°C)/Hum.(%RH):	26(°C)/60%RH			
Test Mode:	Mode 2		Date:	07/24/2016			
Frequency:	5240MHz		Test By:	Eric Ou Yang			
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
10480.000	43.91	5.55	49.46	68.20	-18.74	peak	H
10480.000	43.76	5.55	49.31	68.20	-18.89	peak	V

Standard:	FCC Part 15E		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	Aero Platform		Temp.(℃)/Hum.(%RH):	26(℃)/60%RH			
Test Mode:	Mode 2		Date:	07/24/2016			
Frequency:	5745MHz		Test By:	Eric Ou Yang			
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
11490.000	43.95	6.44	50.39	74.00	-23.61	peak	H
11490.000	43.96	6.44	50.40	74.00	-23.60	peak	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	Aero Platform		Temp.(°C)/Hum.(%RH):	26(°C)/60%RH			
Test Mode:	Mode 2		Date:	07/24/2016			
Frequency:	5785MHz		Test By:	Eric Ou Yang			
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
11570.000	45.05	6.63	51.68	74.00	-22.32	peak	H
11570.000	43.98	6.63	50.61	74.00	-23.39	peak	V

Standard:	FCC Part 15E		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	Aero Platform		Temp.(℃)/Hum.(%RH):	26(℃)/60%RH			
Test Mode:	Mode 2		Date:	07/24/2016			
Frequency:	5825MHz		Test By:	Eric Ou Yang			
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
11650.000	45.01	6.85	51.86	74.00	-22.14	peak	H
11650.000	44.88	6.85	51.73	74.00	-22.27	peak	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	Aero Platform		Temp.(°C)/Hum.(%RH):	26(°C)/60%RH			
Test Mode:	Mode 3		Date:	07/24/2016			
Frequency:	5180MHz		Test By:	Eric Ou Yang			
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
10360.000	45.20	5.21	50.41	68.20	-17.79	peak	H
10360.000	44.77	5.21	49.98	68.20	-18.22	peak	V

Standard:	FCC Part 15E		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	Aero Platform		Temp.(℃)/Hum.(%RH):	26(℃)/60%RH			
Test Mode:	Mode 3		Date:	07/24/2016			
Frequency:	5200MHz		Test By:	Eric Ou Yang			
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
10400.000	42.75	5.33	48.08	68.20	-20.12	peak	H
10400.000	43.54	5.33	48.87	68.20	-19.33	peak	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	Aero Platform		Temp.(℃)/Hum.(%RH):	26(℃)/60%RH			
Test Mode:	Mode 3		Date:	07/24/2016			
Frequency:	5240MHz		Test By:	Eric Ou Yang			
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
10480.000	43.47	5.55	49.02	68.20	-19.18	peak	H
10480.000	45.32	5.55	50.87	68.20	-17.33	peak	V

Standard:	FCC Part 15E	Test Distance:	3m				
Test item:	Radiated Emission	Power:	AC 120V/60Hz				
Model Number:	Aero Platform	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 3	Date:	07/24/2016				
Frequency:	5745MHz	Test By:	Eric Ou Yang				
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
11490.000	43.59	6.44	50.03	74.00	-23.97	peak	H
11490.000	45.41	6.44	51.85	74.00	-22.15	peak	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	Aero Platform		Temp.(°C)/Hum.(%RH):	26(°C)/60%RH			
Test Mode:	Mode 3		Date:	07/24/2016			
Frequency:	5785MHz		Test By:	Eric Ou Yang			
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
11570.000	44.14	6.63	50.77	74.00	-23.23	peak	H
11570.000	44.53	6.63	51.16	74.00	-22.84	peak	V

Standard:	FCC Part 15E		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	Aero Platform		Temp.(℃)/Hum.(%RH):	26(℃)/60%RH			
Test Mode:	Mode 3		Date:	07/24/2016			
Frequency:	5825MHz		Test By:	Eric Ou Yang			
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
11650.000	44.02	6.85	50.87	74.00	-23.13	peak	H
11650.000	43.93	6.85	50.78	74.00	-23.22	peak	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	Aero Platform		Temp.(°C)/Hum.(%RH):	26(°C)/60%RH			
Test Mode:	Mode 4		Date:	07/24/2016			
Frequency:	5190MHz		Test By:	Eric Ou Yang			
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
10380.000	44.70	5.27	49.97	68.20	-18.23	peak	H
10380.000	43.88	5.27	49.15	68.20	-19.05	peak	V

Standard:	FCC Part 15E		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	Aero Platform		Temp.(℃)/Hum.(%RH):	26(℃)/60%RH			
Test Mode:	Mode 4		Date:	07/24/2016			
Frequency:	5230MHz		Test By:	Eric Ou Yang			
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
10460.000	44.32	5.50	49.82	68.20	-18.38	peak	H
10460.000	44.54	5.50	50.04	68.20	-18.16	peak	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	Aero Platform		Temp.(°C)/Hum.(%RH):	26(°C)/60%RH			
Test Mode:	Mode 4		Date:	07/24/2016			
Frequency:	5755MHz		Test By:	Eric Ou Yang			
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
11510.000	44.49	6.47	50.96	74.00	-23.04	peak	H
11510.000	44.76	6.47	51.23	74.00	-22.77	peak	V

Standard:	FCC Part 15E		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	Aero Platform		Temp.(℃)/Hum.(%RH):	26(℃)/60%RH			
Test Mode:	Mode 4		Date:	07/24/2016			
Frequency:	5795MHz		Test By:	Eric Ou Yang			
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
11590.000	43.95	6.69	50.64	74.00	-23.36	peak	H
11590.000	43.81	6.69	50.50	74.00	-23.50	peak	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	Aero Platform		Temp.(°C)/Hum.(%RH):	26(°C)/60%RH			
Test Mode:	Mode 5		Date:	07/24/2016			
Frequency:	5210MHz		Test By:	Eric Ou Yang			
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
10420.000	42.69	5.37	48.06	68.20	-20.14	peak	H
10420.000	43.82	5.37	49.19	68.20	-19.01	peak	V

Standard:	FCC Part 15E		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	Aero Platform		Temp.(℃)/Hum.(%RH):	26(℃)/60%RH			
Test Mode:	Mode 5		Date:	07/24/2016			
Frequency:	5775MHz		Test By:	Eric Ou Yang			
Description:							
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
11550.000	45.38	6.58	51.96	74.00	-22.04	peak	H
11550.000	43.85	6.58	50.43	74.00	-23.57	peak	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.

**Band Edge**

Standard:		FCC Part 15E		Test Distance:		3m	
Test item:		Radiated Emission		Power:		AC 120V/60Hz	
Model Number:		Aero Platform		Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Test Mode:		Mode 2		Date:		07/24/2016	
Frequency:		5180 MHz		Test By:		Eric Ou Yang	
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
5148.200	54.48	8.29	62.77	74.00	-11.23	peak	H
5148.200	42.02	8.29	50.31	54.00	-3.69	AVG	H
5150.000	53.19	8.29	61.48	74.00	-12.52	peak	H
5150.000	43.76	8.29	52.05	54.00	-1.95	AVG	H
5146.800	54.55	8.28	62.83	74.00	-11.17	peak	V
5146.800	41.49	8.28	49.77	54.00	-4.23	AVG	V
5150.000	54.52	8.29	62.81	74.00	-11.19	peak	V
5150.000	43.66	8.29	51.95	54.00	-2.05	AVG	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:		FCC Part 15E			Test Distance:		3m	
Test item:		Radiated Emission			Power:		AC 120V/60Hz	
Model Number:		Aero Platform			Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Test Mode:		Mode 2			Date:		07/24/2016	
Frequency:		5200 MHz			Test By:		Eric Ou Yang	
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V	
5146.080	51.95	8.28	60.23	74.00	-13.77	peak	H	
5146.080	35.69	8.28	43.97	54.00	-10.03	AVG	H	
5150.000	54.39	8.29	62.68	74.00	-11.32	peak	H	
5150.000	42.62	8.29	50.91	54.00	-3.09	AVG	H	
5350.000	47.59	8.50	56.09	74.00	-17.91	peak	H	
5350.000	35.55	8.50	44.05	54.00	-9.95	AVG	H	
5397.600	49.13	8.55	57.68	74.00	-16.32	peak	H	
5397.600	35.59	8.55	44.14	54.00	-9.86	AVG	H	
4613.280	51.75	6.77	58.52	74.00	-15.48	peak	V	
4613.280	37.37	6.77	44.14	54.00	-9.86	AVG	V	
5150.000	47.87	8.29	56.16	74.00	-17.84	peak	V	
5150.000	41.46	8.29	49.75	54.00	-4.25	AVG	V	
5350.000	46.95	8.50	55.45	74.00	-18.55	peak	V	
5350.000	35.58	8.50	44.08	54.00	-9.92	AVG	V	
5409.120	49.90	8.57	58.47	74.00	-15.53	peak	V	
5409.120	35.62	8.57	44.19	54.00	-9.81	AVG	V	

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:		FCC Part 15E			Test Distance:		3m	
Test item:		Radiated Emission			Power:		AC 120V/60Hz	
Model Number:		Aero Platform			Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Test Mode:		Mode 2			Date:		07/24/2016	
Frequency:		5240 MHz			Test By:		Eric Ou Yang	
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V	
4565.280	50.91	6.59	57.50	74.00	-16.50	peak	H	
4565.280	37.54	6.59	44.13	54.00	-9.87	AVG	H	
5150.000	45.04	8.29	53.33	74.00	-20.67	peak	H	
5150.000	35.81	8.29	44.10	54.00	-9.90	AVG	H	
5350.000	46.45	8.50	54.95	74.00	-19.05	peak	H	
5350.000	35.47	8.50	43.97	54.00	-10.03	AVG	H	
5354.400	49.32	8.51	57.83	74.00	-16.17	peak	H	
5354.400	35.54	8.51	44.05	54.00	-9.95	AVG	H	
4748.640	50.33	7.24	57.57	74.00	-16.43	peak	V	
4748.640	36.94	7.24	44.18	54.00	-9.82	AVG	V	
5150.000	47.65	8.29	55.94	74.00	-18.06	peak	V	
5150.000	35.96	8.29	44.25	54.00	-9.75	AVG	V	
5350.000	48.81	8.50	57.31	74.00	-16.69	peak	V	
5350.000	35.71	8.50	44.21	54.00	-9.79	AVG	V	
5388.000	49.09	8.54	57.63	74.00	-16.37	peak	V	
5388.000	35.63	8.54	44.17	54.00	-9.83	AVG	V	

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:		FCC Part 15E			Test Distance:		3m	
Test item:		Radiated Emission			Power:		AC 120V/60Hz	
Model Number:		Aero Platform			Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Test Mode:		Mode 2			Date:		07/24/2016	
Frequency:		5745 MHz			Test By:		Eric Ou Yang	
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V	
5650.000	48.36	9.01	57.37	68.20	-10.83	peak	H	
5700.000	48.19	9.13	57.32	105.20	-47.88	peak	H	
5720.000	57.25	9.17	66.42	110.80	-44.38	peak	H	
5725.000	65.75	9.19	74.94	122.20	-47.26	peak	H	
5650.000	47.46	9.01	56.47	68.20	-11.73	peak	V	
5700.000	48.24	9.13	57.37	105.20	-47.83	peak	V	
5720.000	58.66	9.17	67.83	110.80	-42.97	peak	V	
5725.000	64.37	9.19	73.56	122.20	-48.64	peak	V	

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:		FCC Part 15E			Test Distance:		3m	
Test item:		Radiated Emission			Power:		AC 120V/60Hz	
Model Number:		Aero Platform			Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Test Mode:		Mode 2			Date:		07/24/2016	
Frequency:		5785 MHz			Test By:		Eric Ou Yang	
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V	
5650.000	47.63	9.01	56.64	68.20	-11.56	peak	H	
5700.000	50.89	9.13	60.02	105.20	-45.18	peak	H	
5720.000	53.38	9.17	62.55	110.80	-48.25	peak	H	
5725.000	53.62	9.19	62.81	122.20	-59.39	peak	H	
5850.000	49.05	9.46	58.51	122.20	-63.69	peak	H	
5855.000	49.64	9.48	59.12	110.80	-51.68	peak	H	
5875.000	46.21	9.53	55.74	105.20	-49.46	peak	H	
5925.000	45.99	9.65	55.64	68.20	-12.56	peak	H	
5650.000	46.00	9.01	55.01	68.20	-13.19	peak	V	
5700.000	46.80	9.13	55.93	105.20	-49.27	peak	V	
5720.000	46.78	9.17	55.95	110.80	-54.85	peak	V	
5725.000	49.58	9.19	58.77	122.20	-63.43	peak	V	
5850.000	47.49	9.46	56.95	122.20	-65.25	peak	V	
5855.000	46.58	9.48	56.06	110.80	-54.74	peak	V	
5875.000	45.60	9.53	55.13	105.20	-50.07	peak	V	
5925.000	46.74	9.65	56.39	68.20	-11.81	peak	V	

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	Aero Platform	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 2	Date:	07/24/2016
Frequency:	5825 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
5850.000	61.07	9.46	70.53	122.20	-51.67	peak	H
5855.000	55.55	9.48	65.03	110.80	-45.77	peak	H
5875.000	47.22	9.53	56.75	105.20	-48.45	peak	H
5925.000	47.59	9.65	57.24	68.20	-10.96	peak	H
5850.000	51.70	9.46	61.16	122.20	-61.04	peak	V
5855.000	49.92	9.48	59.40	110.80	-51.40	peak	V
5875.000	45.27	9.53	54.80	105.20	-50.40	peak	V
5925.000	46.58	9.65	56.23	68.20	-11.97	peak	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	Aero Platform			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Test Mode:	Mode 3			Date:	07/24/2016		
Frequency:	5180 MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
5127.900	51.99	8.27	60.26	74.00	-13.74	peak	H
5127.900	40.33	8.27	48.60	54.00	-5.40	AVG	H
5150.000	50.88	8.29	59.17	74.00	-14.83	peak	H
5150.000	42.78	8.29	51.07	54.00	-2.93	AVG	H
5143.300	49.21	8.28	57.49	74.00	-16.51	peak	V
5143.300	36.96	8.28	45.24	54.00	-8.76	AVG	V
5150.000	49.59	8.29	57.88	74.00	-16.12	peak	V
5150.000	41.23	8.29	49.52	54.00	-4.48	AVG	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	Aero Platform	Temp.(°C)/Hum. (%RH):	26(°C)/60%RH
Test Mode:	Mode 3	Date:	07/24/2016
Frequency:	5200 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
4738.080	50.86	7.20	58.06	74.00	-15.94	peak	H
4738.080	37.21	7.20	44.41	54.00	-9.59	AVG	H
5150.000	48.56	8.29	56.85	74.00	-17.15	peak	H
5150.000	40.70	8.29	48.99	54.00	-5.01	AVG	H
5350.000	48.05	8.50	56.55	74.00	-17.45	peak	H
5350.000	37.55	8.50	46.05	54.00	-7.95	AVG	H
5401.440	49.85	8.56	58.41	74.00	-15.59	peak	H
5401.440	36.79	8.56	45.35	54.00	-8.65	AVG	H
5092.320	48.79	8.22	57.01	74.00	-16.99	peak	V
5092.320	37.02	8.22	45.24	54.00	-8.76	AVG	V
5150.000	46.71	8.29	55.00	74.00	-19.00	peak	V
5150.000	36.02	8.29	44.31	54.00	-9.69	AVG	V
5350.000	47.05	8.50	55.55	74.00	-18.45	peak	V
5350.000	35.75	8.50	44.25	54.00	-9.75	AVG	V
5430.240	48.48	8.59	57.07	74.00	-16.93	peak	V
5430.240	36.52	8.59	45.11	54.00	-8.89	AVG	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	Aero Platform	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 3	Date:	07/24/2016
Frequency:	5240 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
4728.480	49.87	7.17	57.04	74.00	-16.96	peak	H
4728.480	37.84	7.17	45.01	54.00	-8.99	AVG	H
5150.000	46.40	8.29	54.69	74.00	-19.31	peak	H
5150.000	38.03	8.29	46.32	54.00	-7.68	AVG	H
5350.000	47.62	8.50	56.12	74.00	-17.88	peak	H
5350.000	37.68	8.50	46.18	54.00	-7.82	AVG	H
5358.240	47.99	8.51	56.50	74.00	-17.50	peak	H
5358.240	37.48	8.51	45.99	54.00	-8.01	AVG	H
4732.320	50.74	7.18	57.92	74.00	-16.08	peak	V
4732.320	37.71	7.18	44.89	54.00	-9.11	AVG	V
5150.000	46.10	8.29	54.39	74.00	-19.61	peak	V
5150.000	37.32	8.29	45.61	54.00	-8.39	AVG	V
5350.000	47.77	8.50	56.27	74.00	-17.73	peak	V
5350.000	37.64	8.50	46.14	54.00	-7.86	AVG	V
5390.880	49.98	8.54	58.52	74.00	-15.48	peak	V
5390.880	37.40	8.54	45.94	54.00	-8.06	AVG	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:		FCC Part 15E			Test Distance:		3m	
Test item:		Radiated Emission			Power:		AC 120V/60Hz	
Model Number:		Aero Platform			Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Test Mode:		Mode 3			Date:		07/24/2016	
Frequency:		5745 MHz			Test By:		Eric Ou Yang	
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V	
5650.000	48.35	9.01	57.36	68.20	-10.84	peak	H	
5700.000	51.77	9.13	60.90	105.20	-44.30	peak	H	
5720.000	59.35	9.17	68.52	110.80	-42.28	peak	H	
5725.000	64.28	9.19	73.47	122.20	-48.73	peak	H	
5650.000	46.86	9.01	55.87	68.20	-12.33	peak	V	
5700.000	47.92	9.13	57.05	105.20	-48.15	peak	V	
5720.000	59.57	9.17	68.74	110.80	-42.06	peak	V	
5725.000	66.29	9.19	75.48	122.20	-46.72	peak	V	

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:		FCC Part 15E			Test Distance:		3m	
Test item:		Radiated Emission			Power:		AC 120V/60Hz	
Model Number:		Aero Platform			Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Test Mode:		Mode 3			Date:		07/24/2016	
Frequency:		5785 MHz			Test By:		Eric Ou Yang	
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V	
5650.000	46.92	9.01	55.93	68.20	-12.27	peak	H	
5700.000	49.45	9.13	58.58	105.20	-46.62	peak	H	
5720.000	50.31	9.17	59.48	110.80	-51.32	peak	H	
5725.000	51.17	9.19	60.36	122.20	-61.84	peak	H	
5850.000	48.79	9.46	58.25	122.20	-63.95	peak	H	
5855.000	47.25	9.48	56.73	110.80	-54.07	peak	H	
5875.000	46.84	9.53	56.37	105.20	-48.83	peak	H	
5925.000	46.61	9.65	56.26	68.20	-11.94	peak	H	
5650.000	46.34	9.01	55.35	68.20	-12.85	peak	V	
5700.000	46.82	9.13	55.95	105.20	-49.25	peak	V	
5720.000	47.99	9.17	57.16	110.80	-53.64	peak	V	
5725.000	48.94	9.19	58.13	122.20	-64.07	peak	V	
5850.000	46.66	9.46	56.12	122.20	-66.08	peak	V	
5855.000	45.85	9.48	55.33	110.80	-55.47	peak	V	
5875.000	46.81	9.53	56.34	105.20	-48.86	peak	V	
5925.000	47.17	9.65	56.82	68.20	-11.38	peak	V	

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	Aero Platform	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 3	Date:	07/24/2016
Frequency:	5825 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
5850.000	61.49	9.46	70.95	122.20	-51.25	peak	H
5855.000	57.07	9.48	66.55	110.80	-44.25	peak	H
5875.000	48.52	9.53	58.05	105.20	-47.15	peak	H
5925.000	46.90	9.65	56.55	68.20	-11.65	peak	H
5850.000	60.47	9.46	69.93	122.20	-52.27	peak	V
5855.000	54.40	9.48	63.88	110.80	-46.92	peak	V
5875.000	48.11	9.53	57.64	105.20	-47.56	peak	V
5925.000	46.05	9.65	55.70	68.20	-12.50	peak	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	Aero Platform	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 4	Date:	07/24/2016
Frequency:	5190 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
5146.100	51.81	8.28	60.09	74.00	-13.91	peak	H
5146.100	43.33	8.28	51.61	54.00	-2.39	AVG	H
5150.000	50.52	8.29	58.81	74.00	-15.19	peak	H
5150.000	44.03	8.29	52.32	54.00	-1.68	AVG	H
5144.000	50.45	8.28	58.73	74.00	-15.27	peak	V
5144.000	41.36	8.28	49.64	54.00	-4.36	AVG	V
5150.000	50.79	8.29	59.08	74.00	-14.92	peak	V
5150.000	42.61	8.29	50.90	54.00	-3.10	AVG	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	Aero Platform	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 4	Date:	07/24/2016
Frequency:	5230 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
5127.840	50.00	8.27	58.27	74.00	-15.73	peak	H
5127.840	39.15	8.27	47.42	54.00	-6.58	AVG	H
5150.000	48.97	8.29	57.26	74.00	-16.74	peak	H
5150.000	42.11	8.29	50.40	54.00	-3.60	AVG	H
5350.000	47.16	8.50	55.66	74.00	-18.34	peak	H
5350.000	38.24	8.50	46.74	54.00	-7.26	AVG	H
5420.640	48.54	8.58	57.12	74.00	-16.88	peak	H
5420.640	37.42	8.58	46.00	54.00	-8.00	AVG	H
5014.560	48.51	8.14	56.65	74.00	-17.35	peak	V
5014.560	37.63	8.14	45.77	54.00	-8.23	AVG	V
5150.000	48.63	8.29	56.92	74.00	-17.08	peak	V
5150.000	40.01	8.29	48.30	54.00	-5.70	AVG	V
5350.000	48.16	8.50	56.66	74.00	-17.34	peak	V
5350.000	37.97	8.50	46.47	54.00	-7.53	AVG	V
5377.440	48.21	8.54	56.75	74.00	-17.25	peak	V
5377.440	37.82	8.54	46.36	54.00	-7.64	AVG	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	Aero Platform	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 4	Date:	07/24/2016
Frequency:	5755 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
5650.000	48.25	9.01	57.26	68.20	-10.94	peak	H
5700.000	52.09	9.13	61.22	105.20	-43.98	peak	H
5720.000	58.08	9.17	67.25	110.80	-43.55	peak	H
5725.000	58.20	9.19	67.39	122.20	-54.81	peak	H
5650.000	46.97	9.01	55.98	68.20	-12.22	peak	V
5700.000	49.10	9.13	58.23	105.20	-46.97	peak	V
5720.000	57.31	9.17	66.48	110.80	-44.32	peak	V
5725.000	54.72	9.19	63.91	122.20	-58.29	peak	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	Aero Platform	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 4	Date:	07/24/2016
Frequency:	5795 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
5850.000	56.68	9.46	66.14	122.20	-56.06	peak	H
5855.000	54.18	9.48	63.66	110.80	-47.14	peak	H
5875.000	49.92	9.53	59.45	105.20	-45.75	peak	H
5925.000	46.52	9.65	56.17	68.20	-12.03	peak	H
5850.000	47.27	9.46	56.73	122.20	-65.47	peak	V
5855.000	47.67	9.48	57.15	110.80	-53.65	peak	V
5875.000	46.07	9.53	55.60	105.20	-49.60	peak	V
5925.000	46.78	9.65	56.43	68.20	-11.77	peak	V

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:		FCC Part 15E			Test Distance:		3m	
Test item:		Radiated Emission			Power:		AC 120V/60Hz	
Model Number:		Aero Platform			Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Test Mode:		Mode 5			Date:		07/24/2016	
Frequency:		5210 MHz			Test By:		Eric Ou Yang	
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V	
5131.680	53.06	8.27	61.33	74.00	-12.67	peak	H	
5131.680	42.97	8.27	51.24	54.00	-2.76	AVG	H	
5150.000	51.58	8.29	59.87	74.00	-14.13	peak	H	
5150.000	43.09	8.29	51.38	54.00	-2.62	AVG	H	
5350.000	47.66	8.50	56.16	74.00	-17.84	peak	H	
5350.000	39.00	8.50	47.50	54.00	-6.50	AVG	H	
5403.360	48.48	8.56	57.04	74.00	-16.96	peak	H	
5403.360	39.24	8.56	47.80	54.00	-6.20	AVG	H	
5131.680	54.18	8.27	62.45	74.00	-11.55	peak	V	
5131.680	43.76	8.27	52.03	54.00	-1.97	AVG	V	
5150.000	52.76	8.29	61.05	74.00	-12.95	peak	V	
5150.000	43.86	8.29	52.15	54.00	-1.85	AVG	V	
5350.000	46.78	8.50	55.28	74.00	-18.72	peak	V	
5350.000	39.42	8.50	47.92	54.00	-6.08	AVG	V	
5363.040	48.41	8.52	56.93	74.00	-17.07	peak	V	
5363.040	38.82	8.52	47.34	54.00	-6.66	AVG	V	

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:		FCC Part 15E			Test Distance:		3m	
Test item:		Radiated Emission			Power:		AC 120V/60Hz	
Model Number:		Aero Platform			Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Test Mode:		Mode 5			Date:		07/24/2016	
Frequency:		5775 MHz			Test By:		Eric Ou Yang	
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V	
5650.000	49.25	9.01	58.26	68.20	-9.94	peak	H	
5700.000	53.50	9.13	62.63	105.20	-42.57	peak	H	
5720.000	59.39	9.17	68.56	110.80	-42.24	peak	H	
5725.000	58.29	9.19	67.48	122.20	-54.72	peak	H	
5850.000	58.81	9.46	68.27	122.20	-53.93	peak	H	
5855.000	51.55	9.48	61.03	110.80	-49.77	peak	H	
5875.000	49.56	9.53	59.09	105.20	-46.11	peak	H	
5925.000	45.96	9.65	55.61	68.20	-12.59	peak	H	
5650.000	47.56	9.01	56.57	68.20	-11.63	peak	V	
5700.000	52.99	9.13	62.12	105.20	-43.08	peak	V	
5720.000	54.42	9.17	63.59	110.80	-47.21	peak	V	
5725.000	56.33	9.19	65.52	122.20	-56.68	peak	V	
5850.000	57.70	9.46	67.16	122.20	-55.04	peak	V	
5855.000	49.86	9.48	59.34	110.80	-51.46	peak	V	
5875.000	47.16	9.53	56.69	105.20	-48.51	peak	V	
5925.000	46.25	9.65	55.90	68.20	-12.30	peak	V	

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.

4.4. Maximum Conducted Output Power and Transmit power control Measurement

■ Limit

Frequency Range (MHz)	FCC Maximum Conducted Output Power Limit
5.150 ~ 5.250 GHz	The lesser of 250mW (24dBm)
5.725 ~ 5.850 GHz	The lesser of 1W (30dBm)

And According to 15.407 (a), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

According FCC KDB 662911 D01 v02r01 – for power measurements on IEEE802.11 devices,

Directional gain = $10 \cdot \log\left\{\frac{10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_n/10}}{NANT}\right\}$ dBi

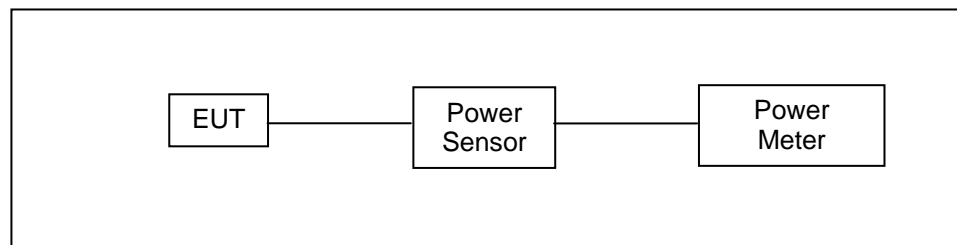
* CDD mode : Directional Gain = $10 \cdot \log\left\{\frac{10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_n/10}}{NANT}\right\}$
= 4.76 dBi < 6dBi (5.150 ~ 5.250 GHz)

* CDD mode : Directional Gain = $10 \cdot \log\left\{\frac{10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_n/10}}{NANT}\right\}$
= 4.64 dBi < 6dBi (5.725 ~ 5.850 GHz)

* CDD mode power limit shall be reduced = 24 dBm (5.150 ~ 5.250 GHz)

* CDD mode power limit shall be reduced = 30 dBm (5.725 ~ 5.850 GHz)

■ Test Setup



■ Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Power Sensor	Anritsu	MA2411B	1126022	08/24/2015	1 year
Power Meter	Anritsu	ML2495A	1135009	08/24/2015	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

Note: N.C.R. = No Calibration Request.



■ **Test Procedure**

The test is performed in accordance with KDB789033: D02 General UNII Test Procedures New Rules v01r02, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices

Section (E) Maximum Conducted Output Power

3. Measurement using a Power Meter (PM)

b) Method PM-G (Measurement using a gated RF average power meter)



Test Result

Model Number		Aero Platform				
Test Item		Maximum Conducted Output Power				
Test Mode		Mode 2: IEEE 802.11a Link Mode				
Date of Test		07/24/2016				
Frequency (MHz)	Data Rate	ANT-0		ANT-1		FCC Limit (dBm)
		Max. Outup Power				
		(dBm)	(W)	(dBm)	(W)	
5180	6M	15.92	0.039	15.72	0.037	≤ 24
5200		16.06	0.040	15.86	0.039	
5220		16.31	0.043	16.13	0.041	
5240		16.01	0.040	15.84	0.038	
5745		16.96	0.050	16.72	0.047	≤ 30
5765		19.24	0.084	19.01	0.080	
5785		19.40	0.087	19.17	0.083	
5805		19.16	0.082	18.95	0.079	
5825		18.29	0.067	17.93	0.062	
5180	54M	15.87	0.039	15.65	0.037	≤ 24
5200		16.03	0.040	15.96	0.039	
5220		16.26	0.042	15.86	0.039	
5240		15.99	0.040	15.74	0.037	
5745		16.92	0.049	16.76	0.047	≤ 30
5765		19.20	0.083	18.96	0.079	
5785		19.34	0.086	19.13	0.082	
5805		19.12	0.082	19.05	0.080	
5825		18.26	0.067	17.92	0.062	



Model Number		Aero Platform				
Test Item		Maximum Conducted Output Power				
Test Mode		Mode 3: IEEE 802.11n 20MHz Link Mode				
Date of Test		07/24/2016				
Frequency (MHz)	Data Rate	ANT-0		ANT-1		FCC Limit (dBm)
		Max. Outup Power				
		(dBm)	(W)	(dBm)	(W)	
5180	13M	9.40	0.009	9.13	0.008	≤ 24
5200		9.45	0.009	9.26	0.008	
5220		9.53	0.009	9.29	0.008	
5240		9.55	0.009	9.28	0.008	
5745		15.81	0.038	15.51	0.036	≤ 30
5765		18.75	0.075	18.61	0.073	
5785		18.95	0.079	18.76	0.075	
5805		18.79	0.076	18.70	0.074	
5825	17.00	0.050	16.91	0.049		
5180	130M	9.35	0.009	9.10	0.008	≤ 24
5200		9.40	0.009	9.22	0.008	
5220		9.51	0.009	9.27	0.008	
5240		9.53	0.009	9.24	0.008	
5745		15.77	0.038	15.48	0.035	≤ 30
5765		18.70	0.074	18.60	0.072	
5785		18.93	0.078	18.72	0.074	
5805		18.78	0.076	18.65	0.073	
5825	16.96	0.050	16.89	0.049		



Model Number		Aero Platform		
Test Item		Maximum Conducted Output Power		
Test Mode		Mode 3: IEEE 802.11n 20MHz Link Mode		
Date of Test		07/24/2016		
Frequency (MHz)	Data Rate	ANT-0+1		FCC Limit (dBm)
		Max. Outup Power		
		(dBm)	(W)	
5180	13M	12.28	0.017	≤ 24
5200		12.37	0.017	
5220		12.42	0.017	
5240		12.43	0.017	
5745		18.67	0.074	≤ 30
5765		21.69	0.148	
5785		21.87	0.154	
5805		21.76	0.150	
5825	130M	19.97	0.099	≤ 24
5180		12.24	0.017	
5200		12.32	0.017	
5220		12.40	0.017	
5240		12.40	0.017	≤ 30
5745		18.64	0.073	
5765		21.66	0.147	
5785		21.84	0.153	
5805	21.73	0.149		
5825	19.94	0.099		



Model Number		Aero Platform				
Test Item		Maximum Conducted Output Power				
Test Mode		Mode 4: IEEE 802.11n 40MHz Link Mode				
Date of Test		07/24/2016				
Frequency (MHz)	Data Rate	ANT-0		ANT-1		FCC Limit (dBm)
		Max. Outup Power				
		(dBm)	(W)	(dBm)	(W)	
5190	27M	10.36	0.011	10.29	0.011	≤ 24
5230		10.22	0.011	10.17	0.010	
5755		14.94	0.031	14.90	0.031	≤ 30
5795		17.07	0.051	17.02	0.050	
5190	270M	10.32	0.011	10.28	0.011	≤ 24
5230		10.18	0.010	10.15	0.010	
5755		14.89	0.031	14.88	0.031	≤ 30
5795		17.05	0.051	17.01	0.050	

Model Number		Aero Platform		
Test Item		Maximum Conducted Output Power		
Test Mode		Mode 4: IEEE 802.11n 40MHz Link Mode		
Date of Test		07/24/2016		
Frequency (MHz)	Data Rate	ANT-0+1		FCC Limit (dBm)
		Max. Outup Power		
		(dBm)	(W)	
5190	27M	13.34	0.022	≤ 24
5230		13.21	0.021	
5755		17.93	0.062	≤ 30
5795		20.06	0.101	
5190	270M	13.31	0.021	≤ 24
5230		13.18	0.021	
5755		17.90	0.062	≤ 30
5795		20.04	0.101	



Model Number		Aero Platform				
Test Item		Maximum Conducted Output Power				
Test Mode		Mode 5: IEEE 802.11ac 80MHz Link Mode				
Date of Test		07/24/2016				
Frequency (MHz)	Data Rate	ANT-0		ANT-1		FCC Limit (dBm)
		Max. Outup Power				
		(dBm)	(W)	(dBm)	(W)	
5210	58.6M	10.49	0.011	10.15	0.010	≤ 24
5775		12.50	0.018	12.08	0.016	≤ 30
5210	780M	10.43	0.011	10.14	0.010	≤ 24
5775		12.44	0.018	12.05	0.016	≤ 30

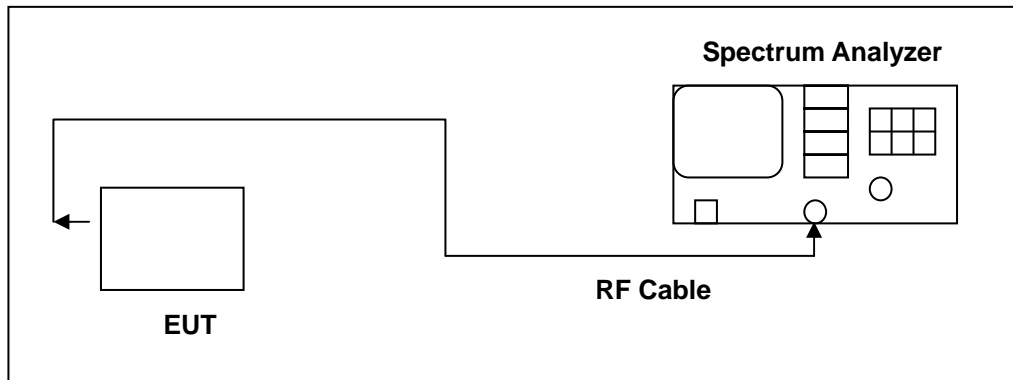
Model Number		Aero Platform		
Test Item		Maximum Conducted Output Power		
Test Mode		Mode 5: IEEE 802.11ac 80MHz Link Mode		
Date of Test		07/24/2016		
Frequency (MHz)	Data Rate	ANT-0+1		FCC Limit (dBm)
		Max. Outup Power		
		(dBm)	(W)	
5210	58.6M	13.33	0.022	≤ 24
5775		15.31	0.034	≤ 30
5210	780M	13.30	0.021	≤ 24
5775		15.26	0.034	≤ 30

4.5. 26dB RF Bandwidth & 99 % Occupied Bandwidth Measurement

■ Limit

N/A

■ Test Setup



■ Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/15/2015	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

■ Test Procedure

The test is performed in accordance with KDB789033: D02 General UNII Test Procedures New Rules v01r02, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	>26dB Bandwidth
RBW	Approximately 1% of the emission bandwidth
VBW	VBW > RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto



■ Test Result

Model Number	Aero Platform	
Test Item	26dB RF Bandwidth & 99 % Occupied Bandwidth Measurement	
Test Mode	Mode 2: IEEE 802.11a Link Mode	
Date of Test	07/28/2016	
Frequency (MHz)	ANT-0	
	26dB Bandwidth (MHz)	99 % Occupied Bandwidth
5180	23.660	16.676
5200	23.550	16.672
5240	22.860	16.618

Model Number	Aero Platform			
Test Item	26dB RF Bandwidth & 99 % Occupied Bandwidth Measurement			
Test Mode	Mode 3: IEEE 802.11n 20MHz Link Mode			
Date of Test	07/28/2016			
Frequency (MHz)	ANT-0		ANT-1	
	26dB Bandwidth (MHz)	99 % Occupied Bandwidth	26dB Bandwidth (MHz)	99 % Occupied Bandwidth
5180	23.940	17.804	23.140	17.670
5200	23.710	17.742	23.930	17.675
5240	23.810	17.782	23.810	17.667

Model Number	Aero Platform			
Test Item	26dB RF Bandwidth & 99 % Occupied Bandwidth Measurement			
Test Mode	Mode 4: IEEE 802.11n 40MHz Link Mode			
Date of Test	07/28/2016			
Frequency (MHz)	ANT-0		ANT-1	
	26dB Bandwidth (MHz)	99 % Occupied Bandwidth	26dB Bandwidth (MHz)	99 % Occupied Bandwidth
5190	45.220	36.322	45.320	36.249
5230	45.560	36.327	43.990	36.233

Note: The 99% occupied bandwidth not crossed 5250MHz.



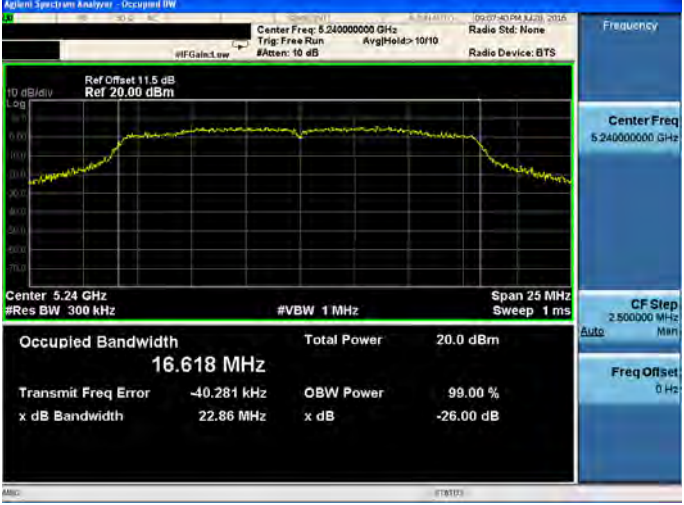


Model Number	Aero Platform			
Test Item	26dB RF Bandwidth & 99 % Occupied Bandwidth Measurement			
Test Mode	Mode 5: IEEE 802.11ac 80MHz Link Mode			
Date of Test	07/28/2016			
Frequency (MHz)	ANT-0		ANT-1	
	26dB Bandwidth (MHz)	99 % Occupied Bandwidth	26dB Bandwidth (MHz)	99 % Occupied Bandwidth
5210	84.590	74.904	84.510	74.817

Note: The 99% occupied bandwidth not crossed 5250MHz.



Test Graphs

Mode 2: IEEE 802.11a Link Mode_ ANT-0


5180 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.18000000 GHz Trig: Free Run AvalHold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 20.00 dBm</p> <p>Center 5.18 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 16.676 MHz</p> <p>Total Power 20.3 dBm</p> <p>Transmit Freq Error -32.501 kHz OBW Power 99.00 % x dB Bandwidth 23.66 MHz x dB -26.00 dB</p> <p>Frequency Center Freq 5.18000000 GHz CF Step 2.500000 MHz Freq Offset 0 Hz</p> <p>Alignment Completed</p>
5200 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.20000000 GHz Trig: Free Run AvalHold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 20.00 dBm</p> <p>Center 5.2 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 16.672 MHz</p> <p>Total Power 20.3 dBm</p> <p>Transmit Freq Error -24.893 kHz OBW Power 99.00 % x dB Bandwidth 23.55 MHz x dB -26.00 dB</p> <p>Frequency Center Freq 5.20000000 GHz CF Step 2.500000 MHz Freq Offset 0 Hz</p> <p>Alignment Completed</p>
5240 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.24000000 GHz Trig: Free Run AvalHold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 20.00 dBm</p> <p>Center 5.24 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 16.618 MHz</p> <p>Total Power 20.0 dBm</p> <p>Transmit Freq Error -40.281 kHz OBW Power 99.00 % x dB Bandwidth 22.86 MHz x dB -26.00 dB</p> <p>Frequency Center Freq 5.24000000 GHz CF Step 2.500000 MHz Freq Offset 0 Hz</p> <p>Alignment Completed</p>

Mode 3: IEEE 802.11n 20MHz Link Mode_ ANT-0	
5180 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.18000000 GHz Trig: Free Run Ave/Hold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 20.00 dBm</p> <p>Center 5.18 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 17.804 MHz</p> <p>Total Power 20.5 dBm</p> <p>Transmit Freq Error -23.336 kHz OBW Power 99.00 % x dB Bandwidth 23.94 MHz x dB -26.00 dB</p> <p>Frequency Center Freq 5.18000000 GHz CF Step 2.500000 MHz Auto Man Freq Offset 0 Hz</p>
5200 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.20000000 GHz Trig: Free Run Ave/Hold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 20.00 dBm</p> <p>Center 5.2 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 17.742 MHz</p> <p>Total Power 19.9 dBm</p> <p>Transmit Freq Error -17.115 kHz OBW Power 99.00 % x dB Bandwidth 23.71 MHz x dB -26.00 dB</p> <p>Frequency Center Freq 5.20000000 GHz CF Step 2.500000 MHz Auto Man Freq Offset 0 Hz</p>
5240 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.24000000 GHz Trig: Free Run Ave/Hold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 20.00 dBm</p> <p>Center 5.24 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 17.782 MHz</p> <p>Total Power 20.2 dBm</p> <p>Transmit Freq Error -31.553 kHz OBW Power 99.00 % x dB Bandwidth 23.81 MHz x dB -26.00 dB</p> <p>Frequency Center Freq 5.24000000 GHz CF Step 2.500000 MHz Auto Man Freq Offset 0 Hz</p>

Mode 4: IEEE 802.11n 40MHz Link Mode_ ANT-0




5190 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.19000000 GHz Trig: Free Run AvalHold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 20.00 dBm</p> <p>Center 5.19 GHz #Res BW 1 MHz #VBW 3 MHz Span 50 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 36.322 MHz Total Power 21.1 dBm Transmit Freq Error -14.734 kHz OBW Power 99.00 % x dB Bandwidth 45.22 MHz x dB -26.00 dB</p> <p>Frequency Center Freq 5.19000000 GHz CF Step 5.000000 MHz Auto Man Freq Offset 0 Hz</p>
5230 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.23000000 GHz Trig: Free Run AvalHold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 20.00 dBm</p> <p>Center 5.23 GHz #Res BW 1 MHz #VBW 3 MHz Span 50 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 36.327 MHz Total Power 21.7 dBm Transmit Freq Error -30.330 kHz OBW Power 99.00 % x dB Bandwidth 45.56 MHz x dB -26.00 dB</p> <p>Frequency Center Freq 5.23000000 GHz CF Step 5.000000 MHz Auto Man Freq Offset 0 Hz</p>

Mode 5: IEEE 802.11ac 80MHz Link Mode_ ANT-0

5210 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.21000000 GHz Trig: Free Run AvalHold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 20.00 dBm</p> <p>Center 5.21 GHz #Res BW 1 MHz #VBW 3 MHz Span 90 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 74.904 MHz Total Power 21.2 dBm Transmit Freq Error -19.019 kHz OBW Power 99.00 % x dB Bandwidth 84.59 MHz x dB -26.00 dB</p> <p>Frequency Center Freq 5.21000000 GHz CF Step 9.000000 MHz Auto Man Freq Offset 0 Hz</p>
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Mode 3: IEEE 802.11n 20MHz Link Mode_ ANT-1

5180 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.18000000 GHz Trig: Free Run AvalHold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 20.00 dBm</p> <p>Center 5.18 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 17.670 MHz</p> <p>Total Power 19.4 dBm</p> <p>Transmit Freq Error -15.364 kHz OBW Power 99.00 % x dB Bandwidth 23.14 MHz x dB -26.00 dB</p> <p>Frequency Center Freq 5.18000000 GHz</p> <p>CF Step 2.500000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>
5200 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.20000000 GHz Trig: Free Run AvalHold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 20.00 dBm</p> <p>Center 5.2 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 17.675 MHz</p> <p>Total Power 20.1 dBm</p> <p>Transmit Freq Error -19.209 kHz OBW Power 99.00 % x dB Bandwidth 23.93 MHz x dB -26.00 dB</p> <p>Frequency Center Freq 5.20000000 GHz</p> <p>CF Step 2.500000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>
5240 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.24000000 GHz Trig: Free Run AvalHold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 20.00 dBm</p> <p>Center 5.24 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 17.667 MHz</p> <p>Total Power 20.5 dBm</p> <p>Transmit Freq Error -22.875 kHz OBW Power 99.00 % x dB Bandwidth 23.81 MHz x dB -26.00 dB</p> <p>Frequency Center Freq 5.24000000 GHz</p> <p>CF Step 2.500000 MHz Auto Man</p> <p>Freq Offset 0 Hz</p>

Mode 4: IEEE 802.11n 40MHz Link Mode_ ANT-1

5190 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.19000000 GHz Trig: Free Run #Atten: 10 dB Radio Std: None Avg/Hold: 10/10 Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 20.00 dBm</p> <p>Center 5.19 GHz #Res BW 1 MHz #VBW 3 MHz Span 50 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 36.249 MHz Total Power 21.3 dBm Transmit Freq Error -28.449 kHz OBW Power 99.00 % x dB Bandwidth 45.32 MHz x dB -26.00 dB</p> <p>Frequency Center Freq 5.19000000 GHz CF Step 5.000000 MHz Auto Man Freq Offset 0 Hz</p>
5230 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.23000000 GHz Trig: Free Run #Atten: 10 dB Radio Std: None Avg/Hold: 10/10 Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 20.00 dBm</p> <p>Center 5.23 GHz #Res BW 1 MHz #VBW 3 MHz Span 50 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 36.233 MHz Total Power 21.6 dBm Transmit Freq Error -74.040 kHz OBW Power 99.00 % x dB Bandwidth 43.99 MHz x dB -26.00 dB</p> <p>Frequency Center Freq 5.23000000 GHz CF Step 5.000000 MHz Auto Man Freq Offset 0 Hz</p>

Mode 5: IEEE 802.11ac 80MHz Link Mode_ ANT-1

5210 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.21000000 GHz Trig: Free Run #Atten: 10 dB Radio Std: None Avg/Hold: 10/10 Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 20.00 dBm</p> <p>Center 5.21 GHz #Res BW 1 MHz #VBW 3 MHz Span 90 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 74.817 MHz Total Power 21.4 dBm Transmit Freq Error -46.728 kHz OBW Power 99.00 % x dB Bandwidth 84.51 MHz x dB -26.00 dB</p> <p>Frequency Center Freq 5.21000000 GHz CF Step 9.000000 MHz Auto Man Freq Offset 0 Hz</p>
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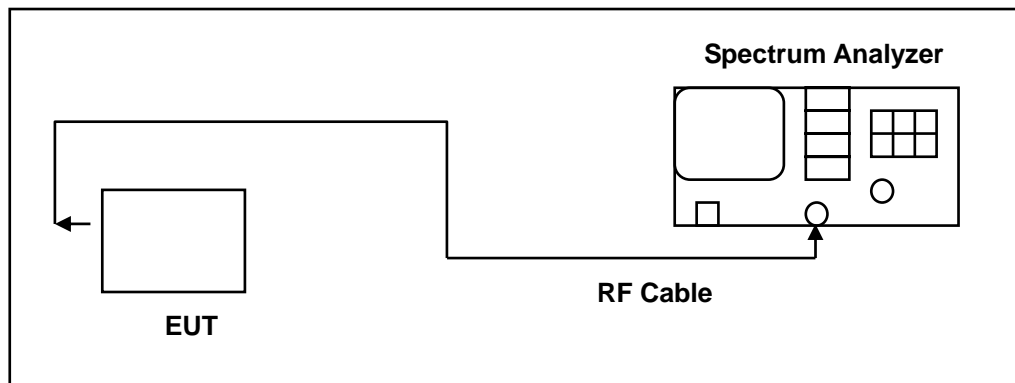
4.6. 6dB RF Bandwidth Measurement

■ Limit

6dB RF Bandwidth

Systems using digital modulation techniques may operate in the 5725~5850MHz bands. The minimum 6 dB band-width shall be at least 500 kHz.

■ Test Setup



■ Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/15/2015	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

■ Test Procedure

6dB RF Bandwidth

The EUT tested to UNII test procedure of KDB789033 D02 for compliance to FCC 47CFR 15.407 requirements. The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100 kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A peak output reading was taken, a DISPLAY line was drawn 6 dB lower than peak level. The 6 dB bandwidth was determined from where the channel output spectrum intersected the display line. The test was performed at 3 channels.



■ Test Result

Model Number	Aero Platform	
Test Item	6dB RF Bandwidth	
Test Mode	Mode 2: IEEE 802.11a Link Mode	
Date of Test	07/25/2016	
Frequency (MHz)	6dB Bandwidth (kHz)	
	ANT-0	
5745	16180	> 500
5785	16080	> 500
5825	15880	> 500




Model Number	Aero Platform	
Test Item	6dB RF Bandwidth	
Test Mode	Mode 3: IEEE 802.11n 20MHz Link Mode	
Date of Test	03/19/2016	
Frequency (MHz)	6dB Bandwidth (kHz)	
	ANT-0	ANT-1
5745	17390	17530
5785	17500	17570
5825	17400	17370

Model Number	Aero Platform	
Test Item	6dB RF Bandwidth	
Test Mode	Mode 4: IEEE 802.11n 40MHz Link Mode	
Date of Test	03/19/2016	
Frequency (MHz)	6dB Bandwidth (kHz)	
	ANT-0	ANT-1
5755	35860	35600
5795	35810	35490






Model Number	Aero Platform		
Test Item	6dB RF Bandwidth		
Test Mode	Mode 5: IEEE 802.11ac 80MHz Link Mode		
Date of Test	03/19/2016		
Frequency (MHz)	6dB Bandwidth (kHz)		Limit (kHz)
	ANT-0	ANT-1	
5775	74960	74900	> 500

Test Graphs



Mode 2: IEEE 802.11a Link Mode_ANT-0	
5745 MHz	 <p>Center Freq: 5.745 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <p>Occupied Bandwidth: 16.857 MHz Total Power: 23.6 dBm Transmit Freq Error: -29.215 kHz OBW Power: 99.00 % x dB Bandwidth: 16.18 MHz x dB: -6.00 dB</p>
5785 MHz	 <p>Center Freq: 5.785 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <p>Occupied Bandwidth: 19.228 MHz Total Power: 25.8 dBm Transmit Freq Error: 32.036 kHz OBW Power: 99.00 % x dB Bandwidth: 16.08 MHz x dB: -6.00 dB</p>
5825 MHz	 <p>Center Freq: 5.825 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <p>Occupied Bandwidth: 17.789 MHz Total Power: 25.1 dBm Transmit Freq Error: -14.657 kHz OBW Power: 99.00 % x dB Bandwidth: 15.88 MHz x dB: -6.00 dB</p>

Mode 3: IEEE 802.11n 20MHz Link Mode_ANT-0


5745 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.745000000 GHz Trig: Free Run Ave/Hold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 30.00 dBm</p> <p>Center 5.745 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 17.826 MHz</p> <p>Total Power 22.2 dBm</p> <p>Transmit Freq Error -35.109 kHz OBW Power 99.00 % x dB Bandwidth 17.39 MHz x dB -6.00 dB</p> <p>Frequency: 5.745000000 GHz CF Step 2.500000 MHz Man Freq Offset 0 Hz</p>
5785 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.785000000 GHz Trig: Free Run Ave/Hold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 30.00 dBm</p> <p>Center 5.785 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 19.125 MHz</p> <p>Total Power 25.5 dBm</p> <p>Transmit Freq Error 55.386 kHz OBW Power 99.00 % x dB Bandwidth 17.50 MHz x dB -6.00 dB</p> <p>Frequency: 5.785000000 GHz CF Step 2.500000 MHz Man Freq Offset 0 Hz</p>
5825 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.825000000 GHz Trig: Free Run Ave/Hold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 30.00 dBm</p> <p>Center 5.825 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 18.016 MHz</p> <p>Total Power 23.4 dBm</p> <p>Transmit Freq Error -2.796 kHz OBW Power 99.00 % x dB Bandwidth 17.40 MHz x dB -6.00 dB</p> <p>Frequency: 5.825000000 GHz CF Step 2.500000 MHz Man Freq Offset 0 Hz</p>



Mode 4: IEEE 802.11n 40MHz Link Mode_ANT-0




5755 MHz	 <p>Center Freq: 5.755 GHz #Res BW: 1 MHz #VBW: 3 MHz Span: 50 MHz Sweep: 1 ms</p> <p>Occupied Bandwidth: 36.294 MHz Total Power: 22.5 dBm Transmit Freq Error: -2.252 kHz OBW Power: 99.00 % x dB Bandwidth: 35.86 MHz x dB: -6.00 dB</p>
5795 MHz	 <p>Center Freq: 5.795 GHz #Res BW: 1 MHz #VBW: 3 MHz Span: 50 MHz Sweep: 1 ms</p> <p>Occupied Bandwidth: 36.453 MHz Total Power: 25.2 dBm Transmit Freq Error: 22.737 kHz OBW Power: 99.00 % x dB Bandwidth: 35.81 MHz x dB: -6.00 dB</p>

Mode 5: IEEE 802.11ac 80MHz Link Mode_ANT-0

5775 MHz	 <p>Center Freq: 5.775 GHz #Res BW: 1 MHz #VBW: 3 MHz Span: 90 MHz Sweep: 1 ms</p> <p>Occupied Bandwidth: 74.929 MHz Total Power: 20.6 dBm Transmit Freq Error: 40.698 kHz OBW Power: 99.00 % x dB Bandwidth: 74.96 MHz x dB: -6.00 dB</p>
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Mode 3: IEEE 802.11n 20MHz Link Mode_ANT-1

5745 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.745000000 GHz Trig: Free Run Ave/Hold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 30.00 dBm</p> <p>Center 5.745 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 17.714 MHz</p> <p>Total Power 22.5 dBm</p> <p>Transmit Freq Error -23.796 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 17.53 MHz</p> <p>x dB -6.00 dB</p> <p>Frequency Center Freq 5.745000000 GHz</p> <p>CF Step 2.500000 MHz Man</p> <p>Freq Offset 0 Hz</p>
5785 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.785000000 GHz Trig: Free Run Ave/Hold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 30.00 dBm</p> <p>Center 5.785 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 18.669 MHz</p> <p>Total Power 25.4 dBm</p> <p>Transmit Freq Error 28.382 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 17.57 MHz</p> <p>x dB -6.00 dB</p> <p>Frequency Center Freq 5.785000000 GHz</p> <p>CF Step 2.500000 MHz Man</p> <p>Freq Offset 0 Hz</p>
5825 MHz	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.825000000 GHz Trig: Free Run Ave/Hold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 11.5 dB Ref 30.00 dBm</p> <p>Center 5.825 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 17.889 MHz</p> <p>Total Power 23.9 dBm</p> <p>Transmit Freq Error -1.251 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 17.37 MHz</p> <p>x dB -6.00 dB</p> <p>Frequency Center Freq 5.825000000 GHz</p> <p>CF Step 2.500000 MHz Man</p> <p>Freq Offset 0 Hz</p>



Mode 4: IEEE 802.11n 40MHz Link Mode_ANT-1

5755 MHz	 <p>Center Freq: 5.755 GHz #Res BW: 1 MHz #VBW: 3 MHz Span: 50 MHz Sweep: 1 ms</p> <p>Occupied Bandwidth: 36.275 MHz Total Power: 23.1 dBm Transmit Freq Error: -33.402 kHz OBW Power: 99.00 % x dB Bandwidth: 35.60 MHz x dB: -6.00 dB</p>
5795 MHz	 <p>Center Freq: 5.795 GHz #Res BW: 1 MHz #VBW: 3 MHz Span: 50 MHz Sweep: 1 ms</p> <p>Occupied Bandwidth: 36.358 MHz Total Power: 25.4 dBm Transmit Freq Error: -31.923 kHz OBW Power: 99.00 % x dB Bandwidth: 35.49 MHz x dB: -6.00 dB</p>

Mode 5: IEEE 802.11ac 80MHz Link Mode_ANT-1

5775 MHz	 <p>Center Freq: 5.775 GHz #Res BW: 1 MHz #VBW: 3 MHz Span: 90 MHz Sweep: 1 ms</p> <p>Occupied Bandwidth: 74.910 MHz Total Power: 20.7 dBm Transmit Freq Error: 8.007 kHz OBW Power: 99.00 % x dB Bandwidth: 74.90 MHz x dB: -6.00 dB</p>
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4.7. Peak Power Spectral Density Measurement

■ Limit

Conducted power spectral density

Frequency Range (MHz)	FCC Limit
5.150 ~ 5.250 GHz	11 dBm/MHz
5.725 ~ 5.850 GHz	30 dBm/500KHz

And According to 15.407 (a), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

According FCC KDB 662911 D01 v02r01 – for Power Spectral Density Measurement on IEEE802.11 devices,

Directional gain = $10 \cdot \log\{[10^{G1/20} + 10^{G2/20} + \dots + 10^{Gn/20}]^2 / NANT\}$

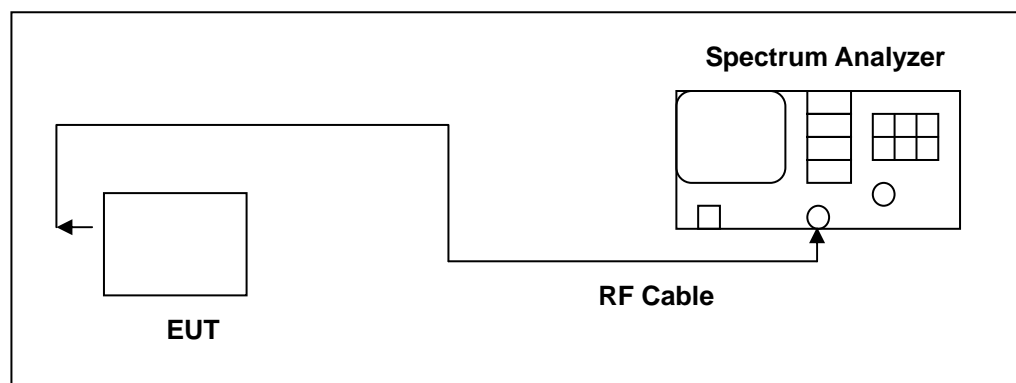
* CDD mode : Directional Gain = $10 \cdot \log\{[10^{G1/20} + 10^{G2/20} + \dots + 10^{Gn/20}]^2 / NANT\}$
= 7.77 dBi > 6dBi (5.150 ~ 5.250 GHz)

* CDD mode : Directional Gain = $10 \cdot \log\{[10^{G1/20} + 10^{G2/20} + \dots + 10^{Gn/20}]^2 / NANT\}$
= 7.65 dBi > 6dBi (5.725 ~ 5.850 GHz)

* CDD mode power limit shall be reduced = 11 - 1.77 = 9.23 dBm/MHz (5.150 ~ 5.250 GHz)

* CDD mode power limit shall be reduced = 30 - 1.65 = 28.35 dBm/ 500KHz (5.725 ~ 5.850 GHz)

■ Test Setup



■ Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/15/2015	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

**■ Test Procedure**

The test is performed in accordance with KDB789033: D02 General UNII Test Procedures New Rules v01r02, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1 MHz (5725 ~ 5850MHz use 100 kHz)
VBW	3 MHz (5725 ~ 5850MHz use 300 kHz)
Detector	RMS
Trace	AVERAGE
Sweep Time	Auto
Trace Average	100 times
Note: If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/100\text{kHz})$ to the measured result.	



Test Result

Model Number	Aero Platform			
Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a link mode			
Date of Test	07/29/2016			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	4.751	0.164	4.915	< 11
5200	4.836	0.164	5.000	
5240	4.610	0.164	4.774	

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) = measured result + duty factor.

Model Number	Aero Platform			
Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a link mode			
Date of Test	07/25/2016			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-2.73	0.164	4.42	< 30
5785	-0.76	0.164	6.39	
5825	-1.82	0.164	5.34	

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500k/100k)



Model Number	Aero Platform			
Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11ac 20MHz link mode			
Date of Test	07/29/2016			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	-2.252	0.663	-1.589	< 11
5200	-2.462	0.663	-1.799	
5240	-2.998	0.663	-2.335	
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	-2.086	0.663	-1.423	< 11
5200	-2.638	0.663	-1.975	
5240	-2.813	0.663	-2.150	
Frequency (MHz)	ANT-0+1			Limit (dBm/MHz)
	Calculated (dBm/MHz)			
5180	1.505			< 9.23
5200	1.124			
5240	0.769			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) = measured result + duty factor.



Model Number	Aero Platform			
Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11ac 20MHz link mode			
Date of Test	07/25/2016			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-4.18	0.663	3.47	< 30
5785	-0.97	0.663	6.68	
5825	-2.80	0.663	4.85	
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-4.48	0.663	3.17	< 30
5785	-1.41	0.663	6.24	
5825	-3.33	0.663	4.32	
Frequency (MHz)	ANT-0+1			Limit (dBm/500KHz)
	Calculated (dBm/500KHz)			
5745	6.33			< 28.35
5785	9.48			
5825	7.61			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500k/100k)



Model Number	Aero Platform			
Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11ac 40MHz link mode			
Date of Test	07/29/2016			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5190	-4.327	0.688	-3.639	< 11
5230	-4.338	0.688	-3.650	
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5190	-5.324	0.688	-4.636	< 11
5230	-4.787	0.688	-4.099	
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/MHz)			Limit (dBm/MHz)
5190	-1.099			< 9.23
5230	-0.859			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) = measured result + duty factor.



Model Number	Aero Platform			
Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11ac 40MHz link mode			
Date of Test	07/25/2016			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5755	-7.80	0.688	-0.13	< 30
5795	-5.74	0.688	1.94	
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5755	-8.00	0.688	-0.32	< 30
5795	-5.87	0.688	1.81	
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/500KHz)			Limit (dBm/500KHz)
5755	2.79			< 28.35
5795	4.88			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500k/100k)



Model Number	Aero Platform			
Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz link mode			
Date of Test	07/29/2016			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5210	-7.268	0.641	-6.627	< 11
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5210	-8.227	0.641	-7.586	< 11
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/MHz)			Limit (dBm/MHz)
5210	-4.070			< 9.23

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) = measured result + duty factor.



Model Number	Aero Platform			
Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz link mode			
Date of Test	07/25/2016			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/MHz)
5775	-12.66	0.641	-5.03	< 30
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/MHz)
5775	-12.99	0.641	-5.36	< 30
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/500KHz)			Limit (dBm/MHz)
5775	-2.18			< 28.35

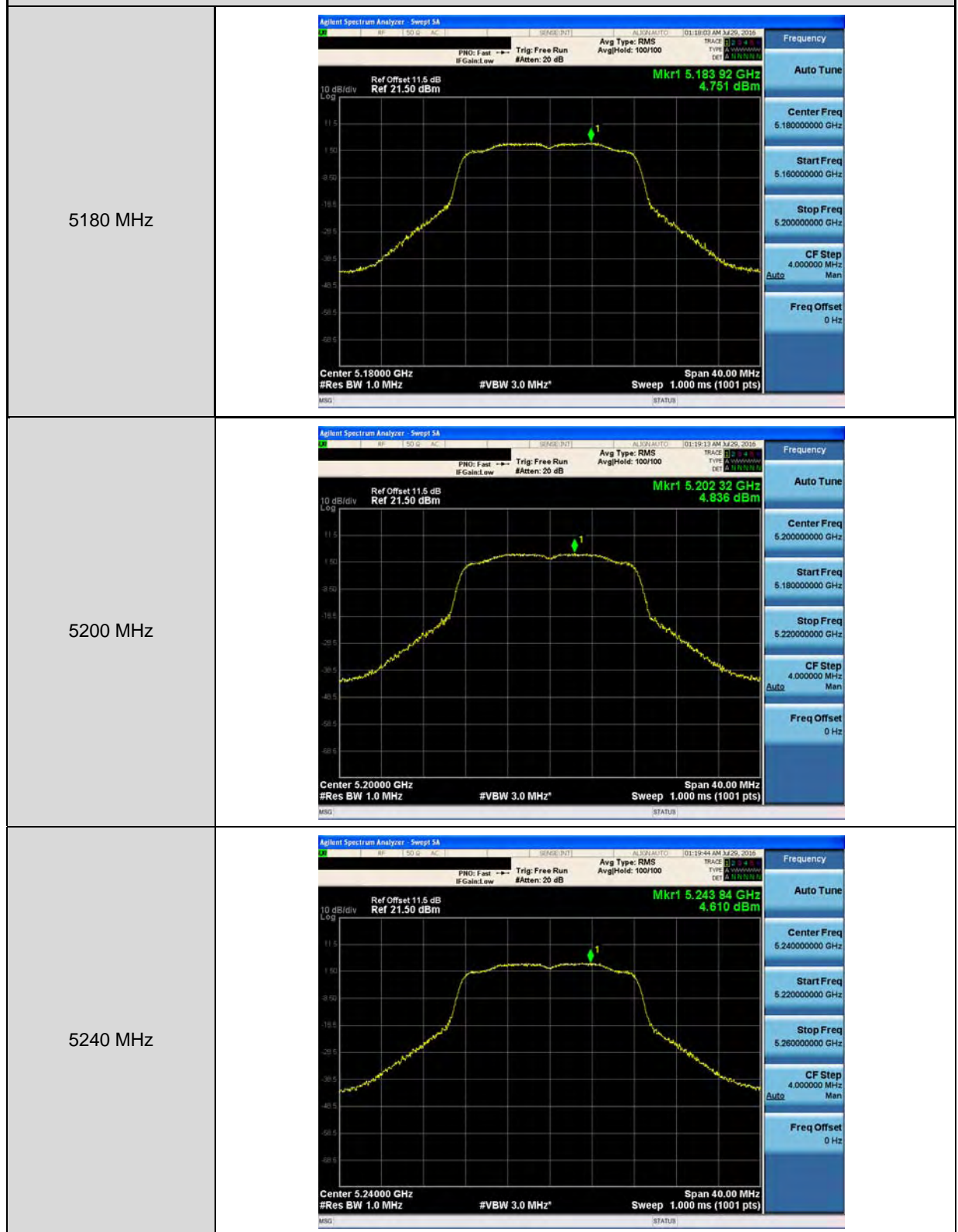
Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500k/100k)






■ Test Graphs

Mode 2: IEEE 802.11a Link Mode_ ANT-0








Mode 2: IEEE 802.11a Link Mode_ ANT-0

5745 MHz	
5785 MHz	
5825 MHz	


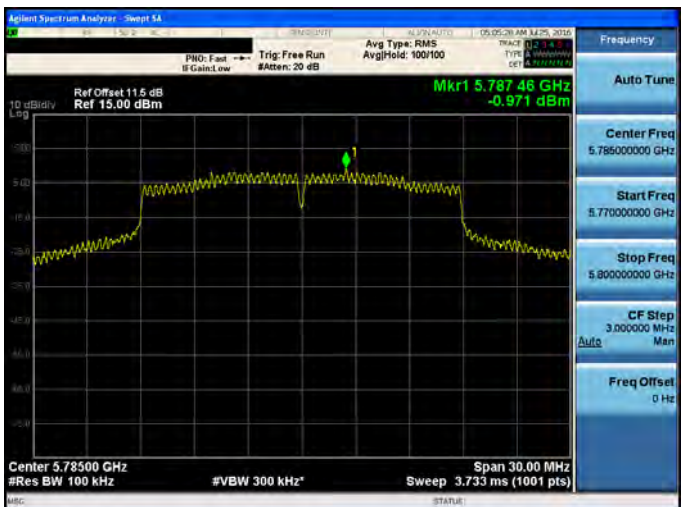
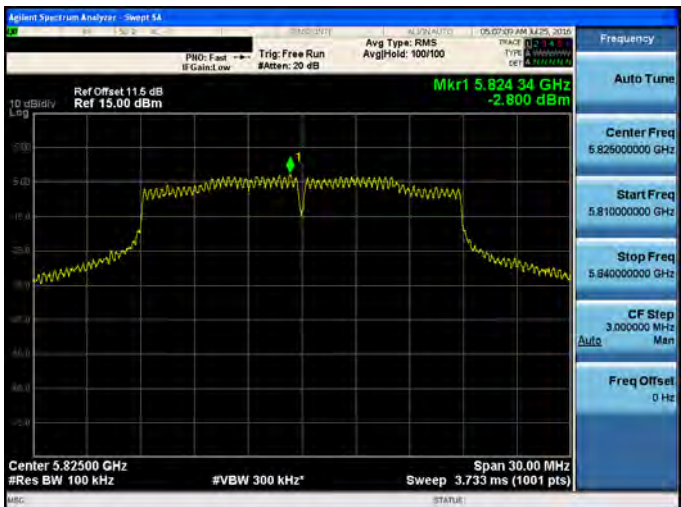


Mode 3: IEEE 802.11n 20MHz Link Mode _ANT-0

5180 MHz	
5200 MHz	
5240 MHz	

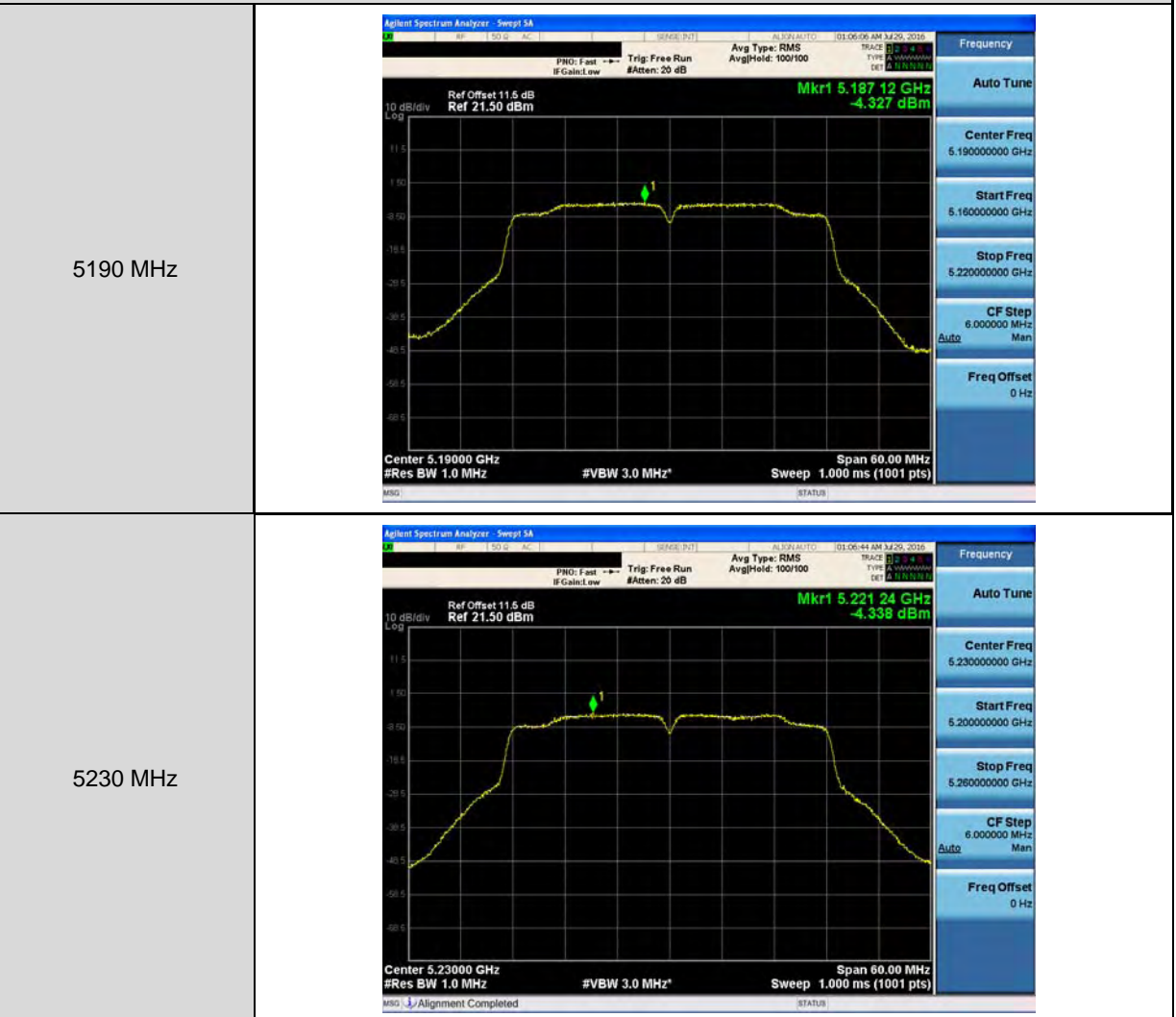


Mode 3: IEEE 802.11n 20MHz Link Mode _ANT-0

5745 MHz	
5785 MHz	
5825 MHz	

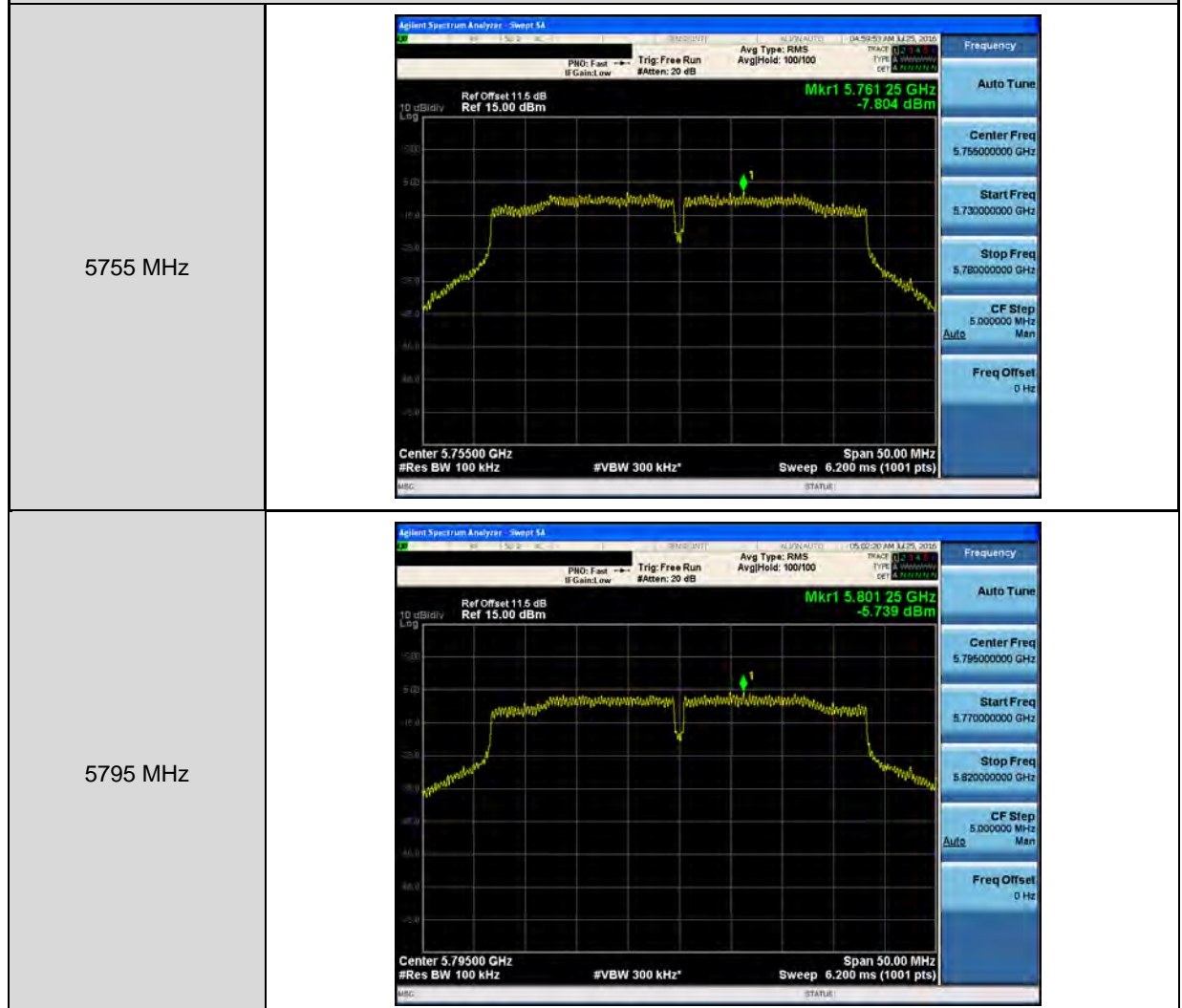


Mode 4: IEEE 802.11n 40MHz Link Mode_ ANT-0





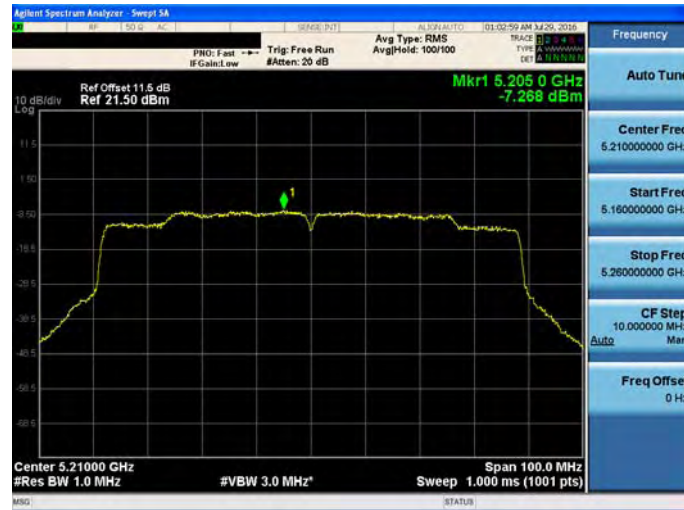
Mode 4: IEEE 802.11n 40MHz Link Mode_ ANT-0





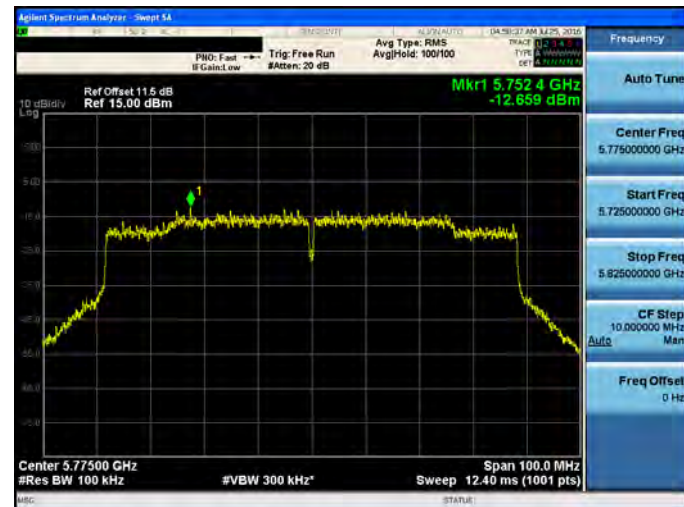
Mode 5: IEEE 802.11ac 80MHz Link Mode _ ANT-0

5210 MHz






Mode 5: IEEE 802.11ac 80MHz Link Mode _ ANT-0

5775 MHz



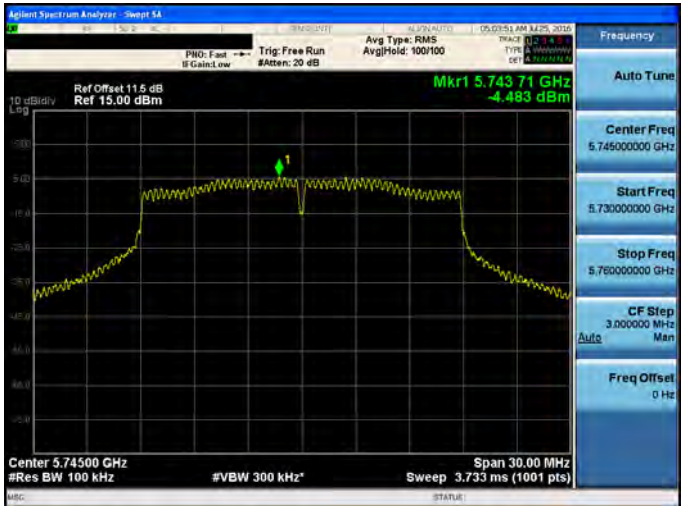
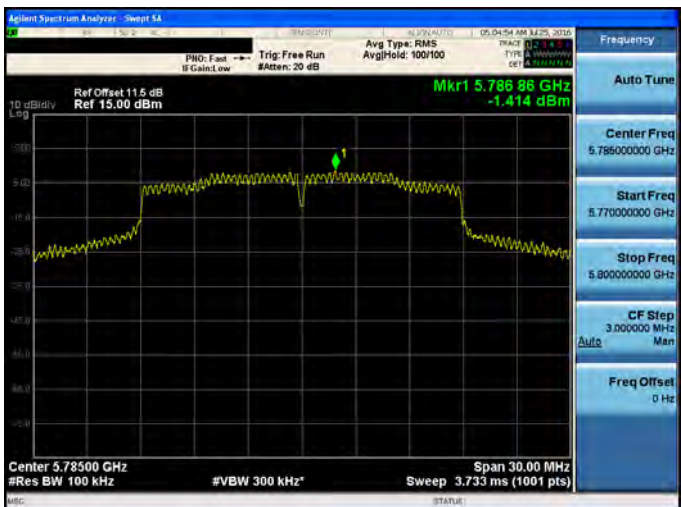
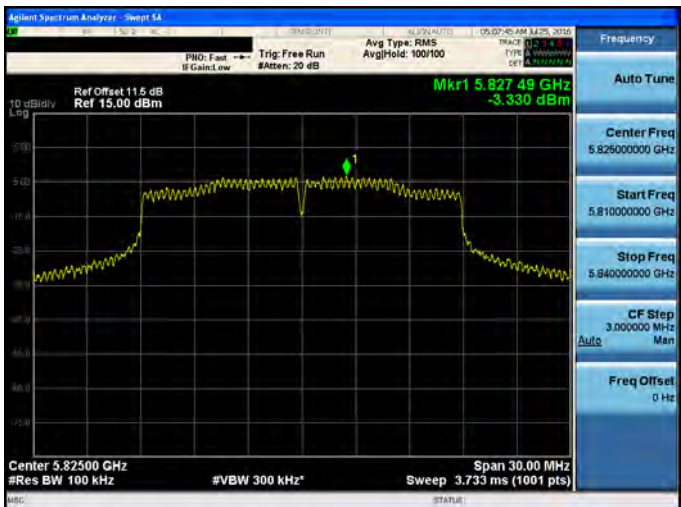


Mode 3: IEEE 802.11n 20MHz Link Mode _ANT-1

5180 MHz	
5200 MHz	
5240 MHz	

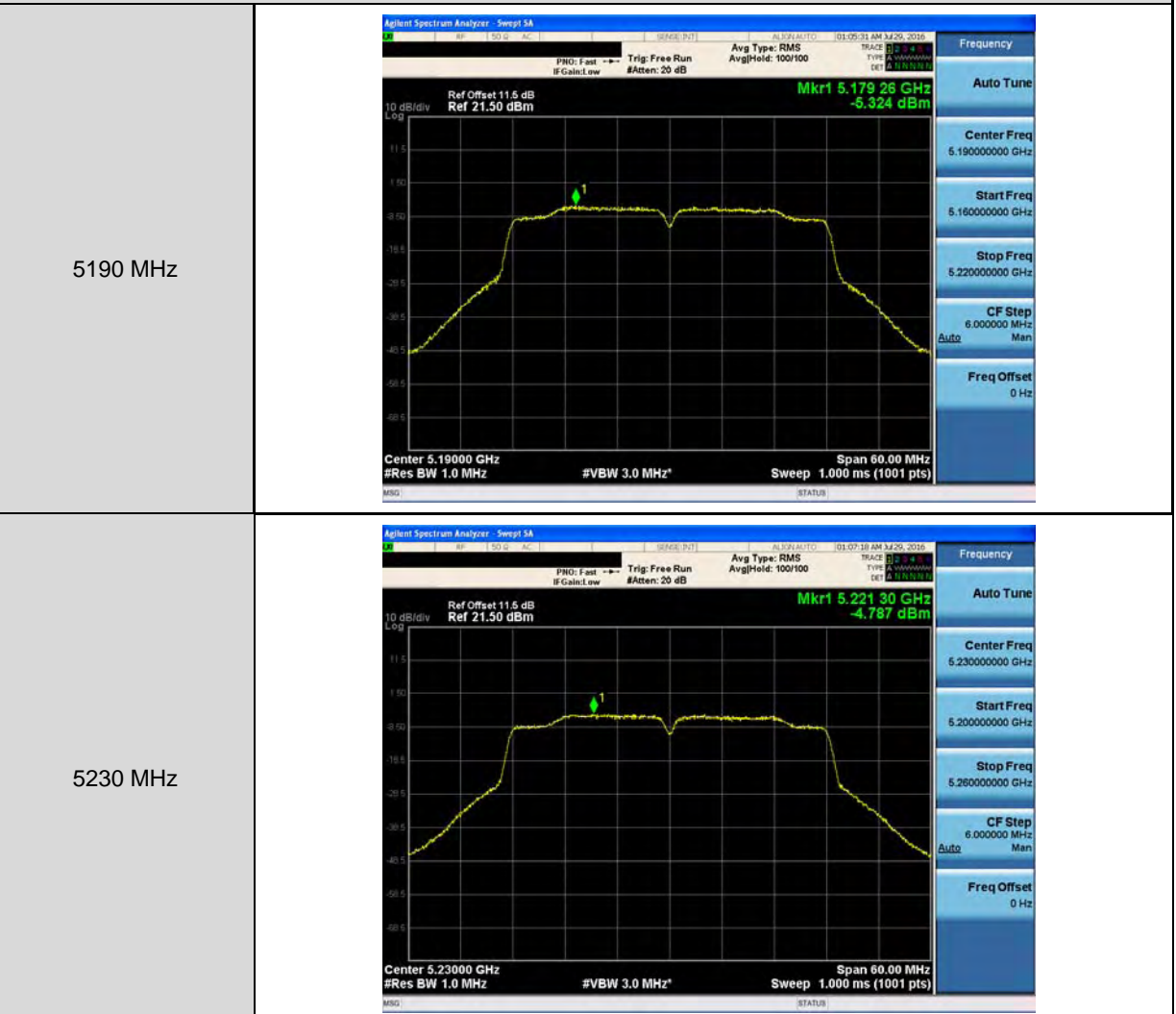


Mode 3: IEEE 802.11n 20MHz Link Mode _ANT-1

5745 MHz	
5785 MHz	
5825 MHz	




Mode 4: IEEE 802.11n 40MHz Link Mode_ ANT-1





Mode 4: IEEE 802.11n 40MHz Link Mode_ ANT-1

5755 MHz	
5795 MHz	



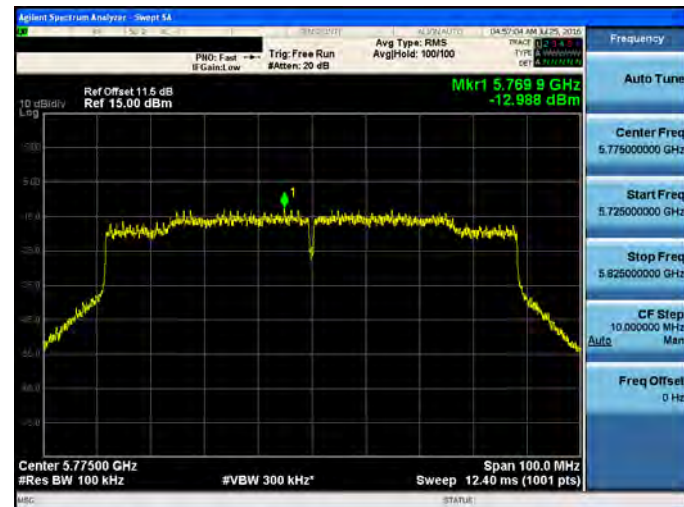
Mode 5: IEEE 802.11ac 80MHz Link Mode _ ANT-1

5210 MHz



Mode 5: IEEE 802.11ac 80MHz Link Mode _ ANT-1

5775 MHz

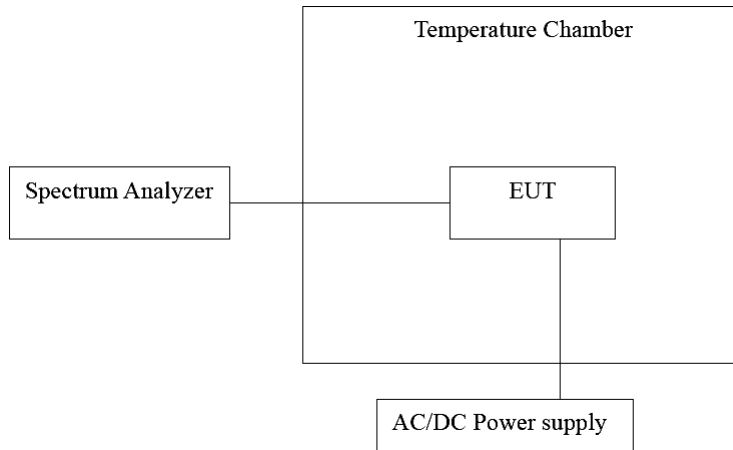


4.8. Frequency Stability Measurement

■ Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

■ Test Setup



■ Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4408B	MY45107753	07/27/2015	1 year
Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	04/18/2016	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

■ Test Procedure

1. The EUT was placed inside the environmental test chamber and powered by nominal AC/DC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. 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.



■ Test Result

Temperature Variations

Model Number	Aero Platform					
Test Item	Frequency Stability					
Date of Test	07/24/2016					
Frequency	Temp. (°C)	Voltage (Vac)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	0	120	5199.9637	-36300	-6.981	Pass
	10		5199.9609	-39100	-7.519	Pass
	20		5199.9494	-50600	-9.731	Pass
	30		5199.9314	-68600	-13.192	Pass
	45		5199.9308	-69200	-13.308	Pass
5785 MHz	0	120	5784.9614	-38600	-6.672	Pass
	10		5784.9548	-45200	-7.813	Pass
	20		5784.9418	-58200	-10.061	Pass
	30		5784.9317	-68300	-11.806	Pass
	45		5784.9228	-77200	-13.345	Pass

Voltage Variations

Model Number	Aero Platform					
Test Item	Frequency Stability					
Date of Test	07/24/2016					
Frequency	Temp. (°C)	Voltage (Vac)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	20	138.00	5199.9609	-39100	-7.519	Pass
		120.00	5199.9612	-38800	-7.462	Pass
		102.00	5199.9605	-39500	-7.596	Pass
5785 MHz	20	138.00	5784.9607	-39300	-6.793	Pass
		120.00	5784.9678	-32200	-5.566	Pass
		102.00	5784.969	-31000	-5.359	Pass

Note: The manufacturer's frequency stability specification is better than 20ppm.

4.9. Antenna Requirement

■ Limit

For intentional device, according to 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And According to 15.407 (a), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

■ Antenna Connector Construction

See section 2 – antenna information.

■ Directional Gain Calculated

For Maximum Conducted Output Power

Directional Gain = $10 \cdot \log\{[10^{(G1/10)} + 10^{(G2/10)} + \dots + 10^{(Gn/10)}] / NANT\}$ dBi

Operate Freq. Band		Directional Gain (dBi)
IEEE 802.11a	U-NII Band I	4.76
	U-NII Band III	4.64
IEEE 802.11an 20MHz	U-NII Band I	4.76
	U-NII Band III	4.64
IEEE 802.11an 40MHz	U-NII Band I	4.76
	U-NII Band III	4.64
IEEE 802.11ac 80MHz	U-NII Band I	4.76
	U-NII Band III	4.64

For Peak Power Spectral Density

Directional Gain = $10 \cdot \log\{[10^{(G1/20)} + 10^{(G2/20)} + \dots + 10^{(Gn/20)}]^2 / NANT\}$

Operate Freq. Band		Directional Gain (dBi)
IEEE 802.11a	U-NII Band I	7.77
	U-NII Band III	7.65
IEEE 802.11an 20MHz	U-NII Band I	7.77
	U-NII Band III	7.65
IEEE 802.11an 40MHz	U-NII Band I	7.77
	U-NII Band III	7.65
IEEE 802.11ac 80MHz	U-NII Band I	7.77
	U-NII Band III	7.65