

FCC 47 CFR PART 15 SUBPART E

Applicant : Comtrend Corporation
Product Type : Wireless Gateway
Trade Name : COMTREND
Model Number : NexusLink 3240u, NexusLink 3240, NexusLink 3120ua,
NexusLink 3120, WAP-5895ua, WR-6895
Test Specification : FCC 47 CFR PART 15 SUBPART E
ANSI C63.10:2013
Receive Date : Apr. 19, 2016
Test Period : Apr. 28 ~ Jun. 22, 2016
Issue Date : Sep. 07, 2016

Issue by

A Test Lab Techno Corp.
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Taiwan Accreditation Foundation accreditation number: 1330

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Revision History

Rev.	Issue Date	Revisions	Revised By
00	Aug. 17, 2016	Initial Issue	Snow Wang
01	Sep. 07, 2016	Revised Report Information	Tiffany Lee



Verification of Compliance

Issued Date: Sep. 07, 2016

Applicant : Comtrend Corporation

Product Type : Wireless Gateway

Trade Name : COMTREND

Model Number : NexusLink 3240u, NexusLink 3240, NexusLink 3120ua,
NexusLink 3120, WAP-5895ua, WR-6895

FCC ID : L9VNL3240U

EUT Rated Voltage : DC 12V, 2.5A

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.
No. 140-1, Changan Street, Bade District,
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Taiwan Accreditation Foundation accreditation number: 1330
<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 : Fly Lu Reviewed By : Eric Ou Yang
(Manager) (Fly Lu) (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	Comtrend Corporation 3F-1, No. 10, Lane 609, Chung Hsin Road, Section 5, San Chung Dist, New Taipei City 24159, Taiwan				
Manufacturer	Comtrend Corporation 3F-1, No. 10, Lane 609, Chung Hsin Road, Section 5, San Chung Dist, New Taipei City 24159, Taiwan				
Product Type	Wireless Gateway				
Trade Name	COMTREND				
Model No.	NexusLink 3240u, NexusLink 3240, NexusLink 3120ua, NexusLink 3120, WAP-5895ua, WR-6895 (Refer to Model Different description table)				
FCC ID	L9VNL3240U				
Operate Frequency	Band	Frequency Range (MHz)	Channel Bandwidth	Number of Channels	Data Rate
IEEE 802.11a	U-NII Band I	5180 – 5240	20MHz	4	Up to 54Mbps
	U-NII Band III	5745 – 5825		5	
IEEE 802.11n 5GHz 20 MHz / IEEE 802.11ac 20 MHz	U-NII Band I	5180 – 5240	20MHz	4	Up to 346.8Mbps
	U-NII Band III	5745 – 5825		5	
IEEE 802.11n 5GHz 40 MHz / IEEE 802.11ac 40 MHz	U-NII Band I	5190 – 5230	40MHz	2	Up to 800Mbps
	U-NII Band III	5755 – 5795		2	
IEEE 802.11ac 80 MHz	U-NII Band I	5210	80MHz	1	Up to 1733.2Mbps
	U-NII Band III	5775		1	
Modulation Type	OFDM				
Equipment Type	Indoor access point only master mode function				
Antenna information	Antenna	Trade Name	Model	Type	Max. Gain (dBi)
	ANT-0	Cortec	AN2450-64D02BBF	External antenna (Reversed-SMA Connector)	2.5
	ANT-1	Cortec	NBO351-C195BF	Embedded Antenna	4.0
	ANT-2	Cortec	NBO351-C70BF	Embedded Antenna	3.0
	ANT-3	Cortec	AN2450-64D03BBF	External antenna (Reversed-SMA Connector)	2.5
Antenna Delivery	Reference section 3.1				
Frequency stability specification	± 25 ppm				
Antenna Delivery	0 ~ 40 °C				



Model Different description table

Model	NexusLink 3240u NexusLink 3240	NexusLink 3120ua NexusLink 3120	WAP-5895ua WR-6895
DSL	V	V	X
USB	V	V	V
ETH1-4	V	V	V
ETH WAN	V	V	V
PHONE1-2(VOIP)	V	X	X
A Main borad	V	V	V

Frequency Band		RF Output Power (W)
IEEE 802.11a	U-NII Band I	0.295
	U-NII Band III	0.272
IEEE 802.11ac 20 MHz	U-NII Band I	0.294
	U-NII Band III	0.284
IEEE 802.11ac 40 MHz	U-NII Band I	0.312
	U-NII Band III	0.297
IEEE 802.11ac 80 MHz	U-NII Band I	0.109
	U-NII Band III	0.266



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 802.11ac 20MHz link mode
Mode 4: IEEE 802.11ac 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.

Note: These models PCB Layout are the same. The AC Power Conduction Emission evaluating the test all models, the worst result is NexusLink 3240u. So, other test item is to test the NexusLink 3240u.

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

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

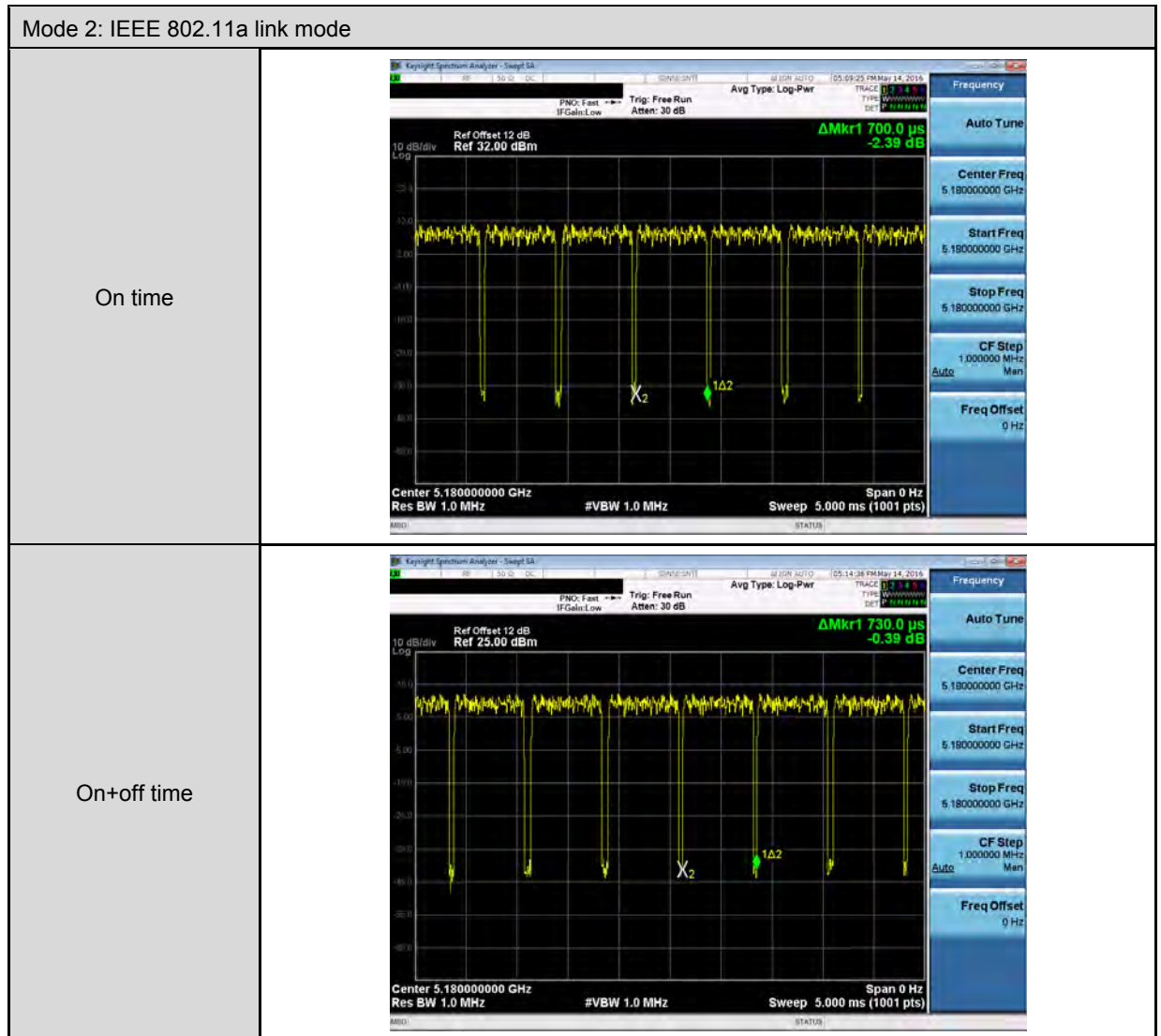
Test Mode	Band	Data Rate	Test Channel
Mode 2	U-NII Band I	6M	36, 40, 44, 48
	U-NII Band III		149,153,157,161,165
Mode 3	U-NII Band I	26M	36, 40, 44, 48
	U-NII Band III		149,153,157,161,165
Mode 4	U-NII Band I	54M	38, 46
	U-NII Band III		151,159
Mode 5	U-NII Band I	117.2M	42
	U-NII Band III		155



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	0.700	0.730	0.959	0.182	1.429
Mode 3: IEEE 802.11ac 20MHz link mode	5180	5.025	5.055	0.994	0.026	0.010
Mode 4: IEEE 802.11ac 40MHz link mode	5190	2.440	2.470	0.988	0.053	0.010
Mode 5: IEEE 802.11ac 80MHz link mode	5210	1.155	1.200	0.963	0.166	0.866

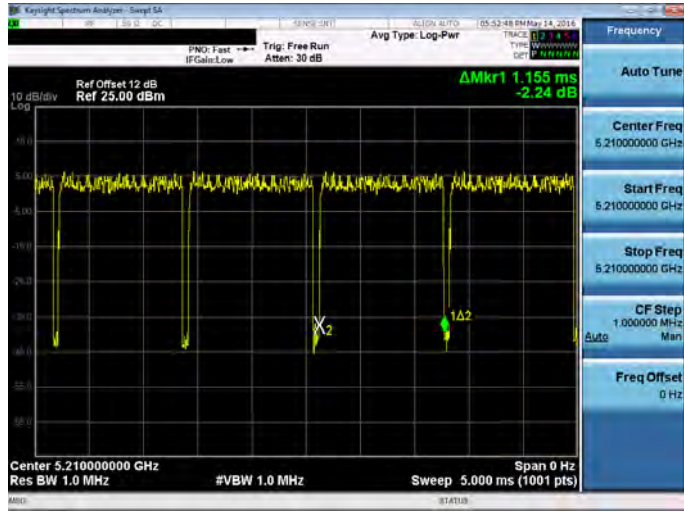
Duty Cycle Graphs







Mode 4: IEEE 802.11ac 40MHz link mode	
On time	 <p>Key parameters from the screenshot:</p> <ul style="list-style-type: none">Center Freq: 5.190000000 GHzStart Freq: 5.190000000 GHzStop Freq: 5.190000000 GHzCF Step: 1.000000 MHzFreq Offset: 0 HzCenter Freq: 5.190000000 GHzRes BW: 1.0 MHz#VBW: 1.0 MHzSweep: 10.00 ms (1001 pts)Span: 0 HzRef Offset: 12 dBRef: 25.00 dBmΔMkr1: 2.440 ms2.96 dBModulation: X2
On+off time	 <p>Key parameters from the screenshot:</p> <ul style="list-style-type: none">Center Freq: 5.190000000 GHzStart Freq: 5.190000000 GHzStop Freq: 5.190000000 GHzCF Step: 1.000000 MHzFreq Offset: 0 HzCenter Freq: 5.190000000 GHzRes BW: 1.0 MHz#VBW: 1.0 MHzSweep: 10.00 ms (1001 pts)Span: 0 HzRef Offset: 12 dBRef: 25.00 dBmΔMkr1: 2.470 ms4.39 dBModulation: X2

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

3.2. EUT Exercise Software

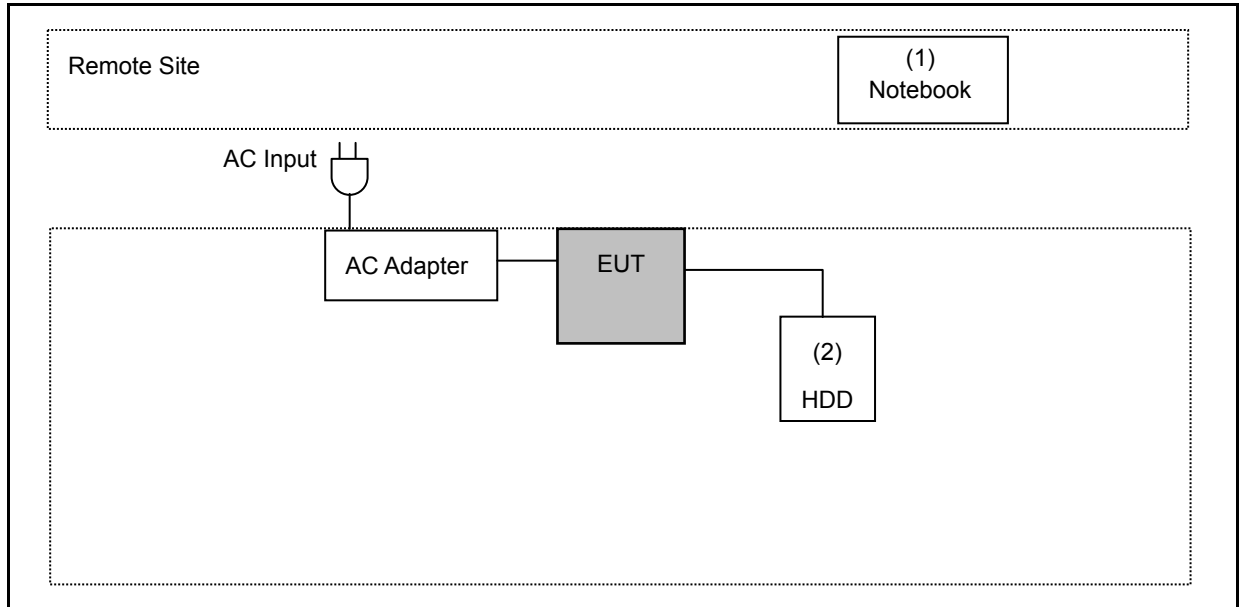
The EUT is operated in the engineering mode to fix the TX frequency for the purposes of measurement. According to its specifications, the EUT must comply with the requirements of Section 15.407 under the FCC Rules Part 15 Subpart E.

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

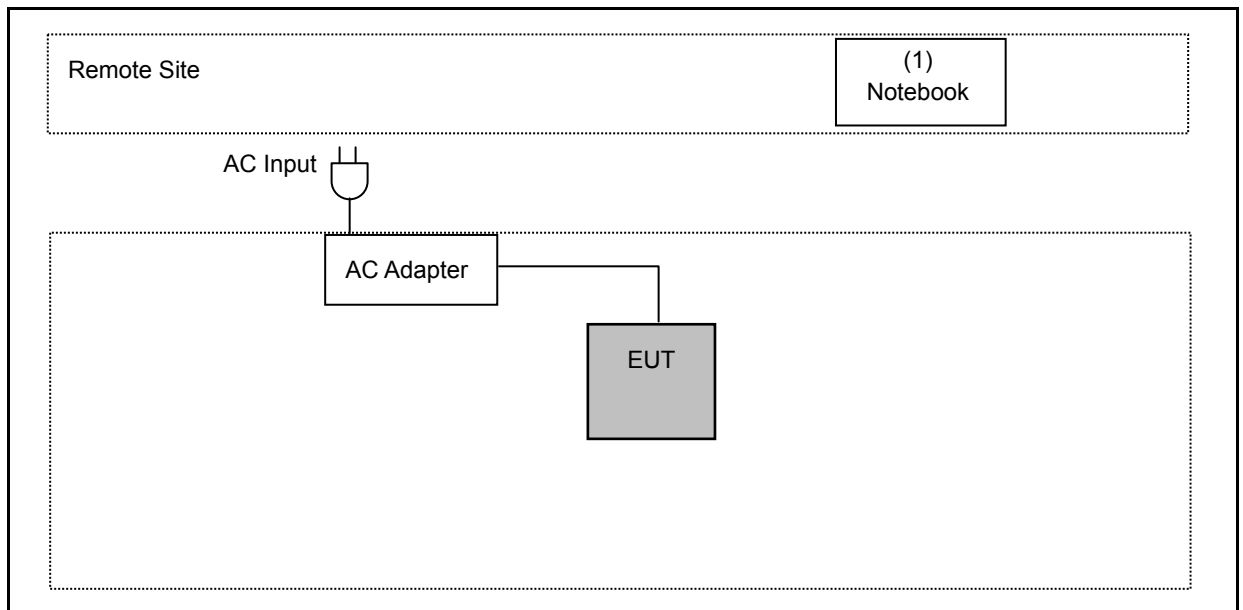
Measurement Software	
1	EZ-EMC Ver. ATL-03A1-1
2	EZ-EMC Ver ATL-ITC-3A1-1

3.3. Configuration of Test System Details

Conducted Emissions



Radiated Emissions



Devices Description					
	Product	Manufacturer	Model Number	Serial Number	Power Cord
(1)	Notebook	DELL	LAPTITU	6699565657	Non-Shielded, 0.8m
(2)	HDD	WD	My Passport	WX21A33S7013	Power by EUT



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 Line Conducted Emission Measurement

■ Limit

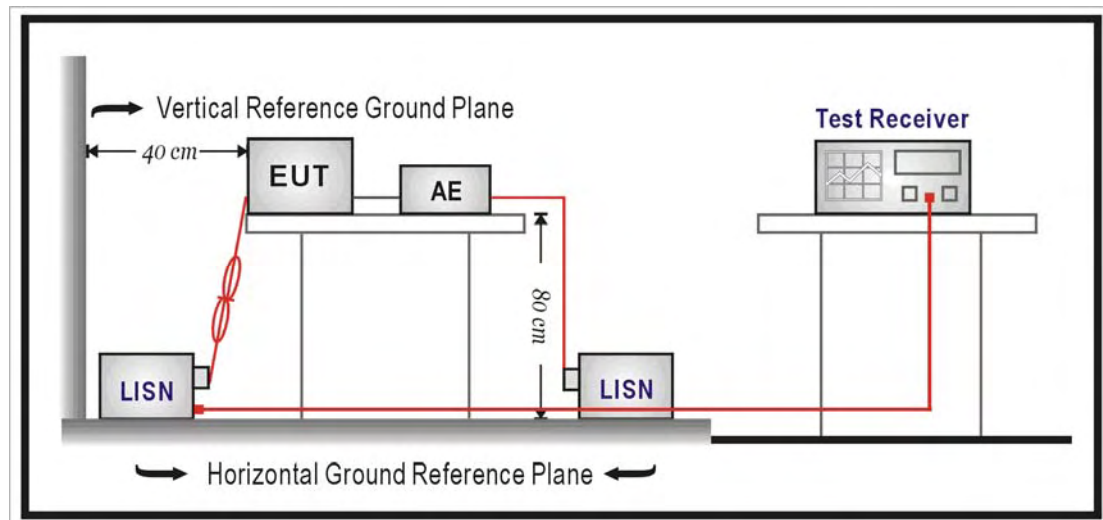
Frequency (MHz)	Quasi-peak	Average
0.15 - 0.5	66 to 56	56 to 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

■ Test Instruments

Describe	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Test Receiver	R&S	ESCI	100367	06/25/2015	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	06/26/2015	1 year
Test Site	ATL	TE02	TE02	N.C.R.	-----

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

■ Test Setup



■ 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.

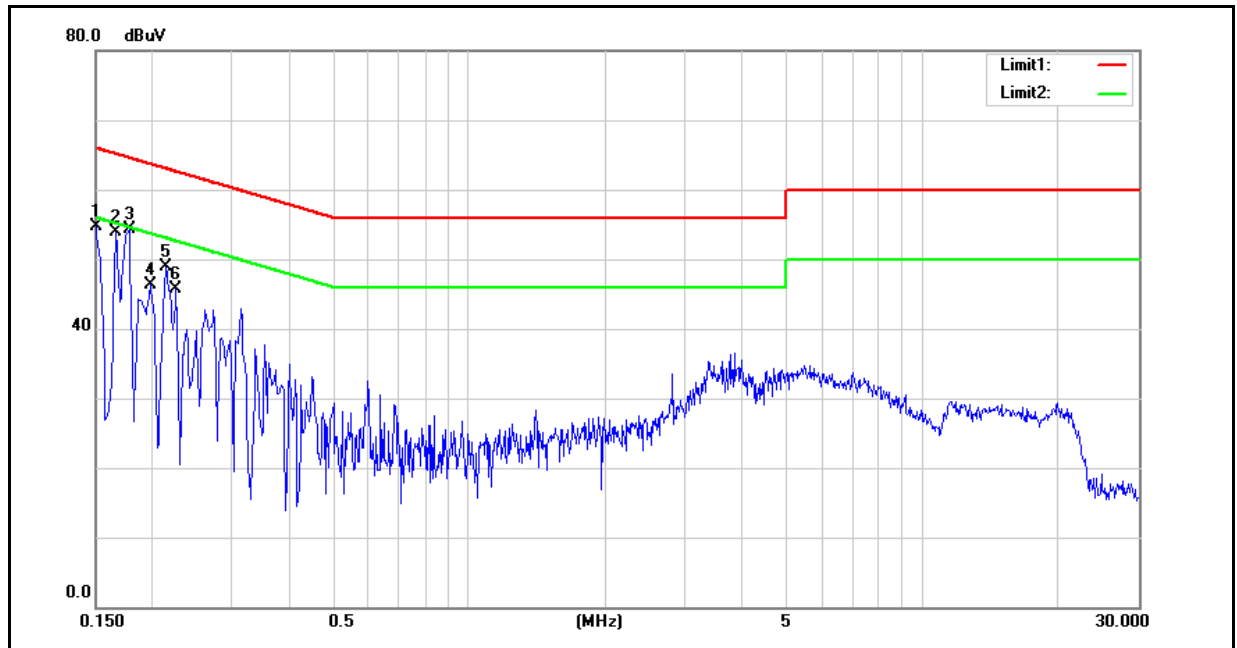
The AMN shall be placed 0,8 m from the boundary of the unit under test and bonded to a ground reference plane for AMNs mounted on top of the ground reference plane. This distance is between the closest points of the AMN and the EUT. All other units of the EUT and associated equipment shall be at least 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 $50\ \Omega$ ports of the LISN shall be resistively terminated into $50\ \Omega$ 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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 1	Date:	04/28/2016
		Test By:	Eric Ou Yang
Description:			



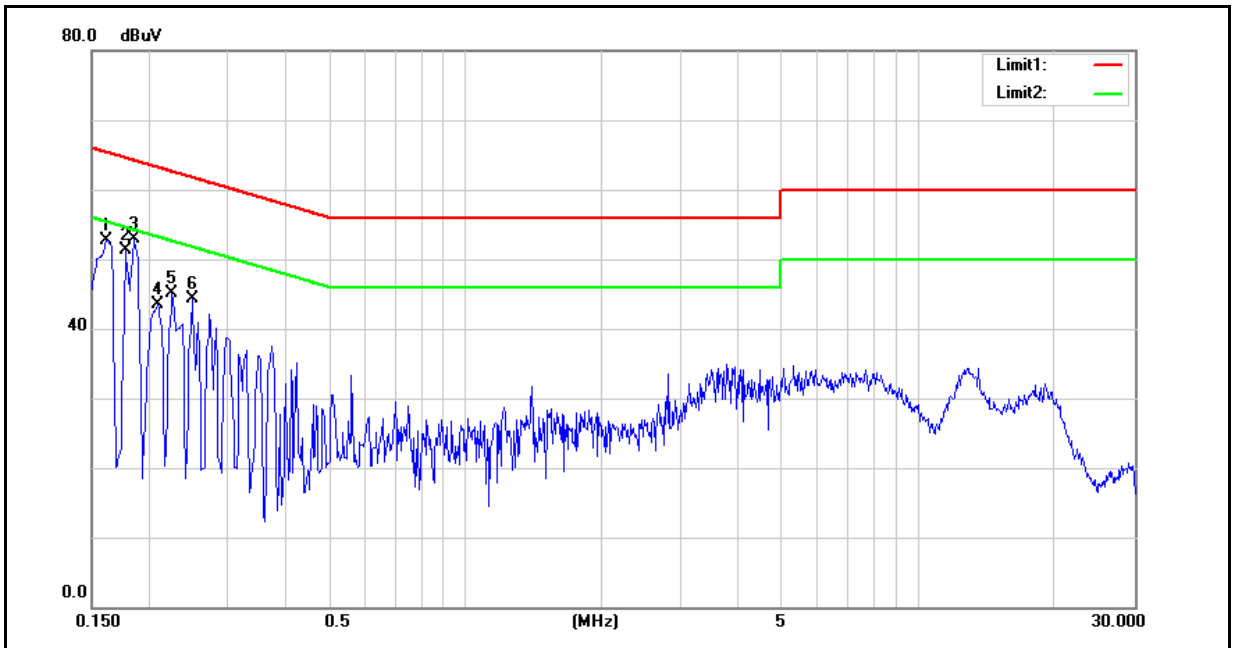
No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1500	41.24	22.58	9.60	50.84	32.18	66.00	56.00	-15.16	-23.82	Pass
2	0.1660	38.90	21.91	9.60	48.50	31.51	65.16	55.16	-16.66	-23.65	Pass
3	0.1780	36.39	18.49	9.59	45.98	28.08	64.58	54.58	-18.60	-26.50	Pass
4	0.1980	33.17	16.22	9.59	42.76	25.81	63.69	53.69	-20.93	-27.88	Pass
5	0.2140	33.80	18.08	9.59	43.39	27.67	63.05	53.05	-19.66	-25.38	Pass
6	0.2260	31.74	16.56	9.59	41.33	26.15	62.60	52.60	-21.27	-26.45	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 1	Date:	04/28/2016
		Test By:	Eric Ou Yang
Description:			



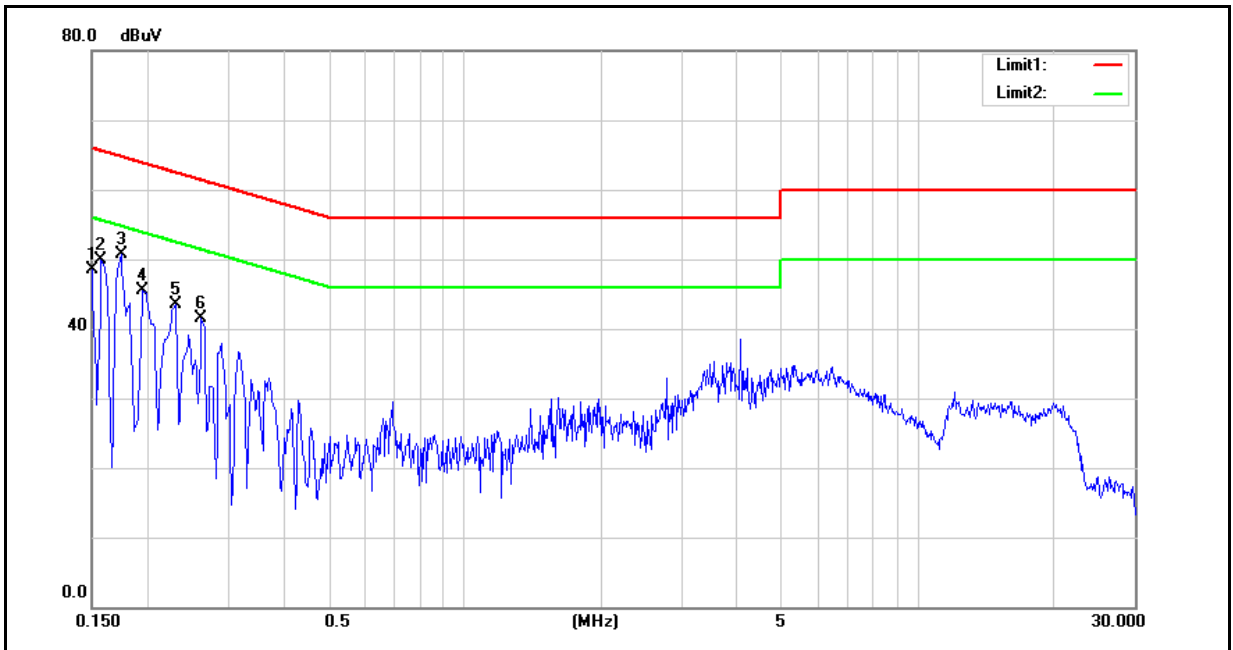
No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1620	41.02	22.83	9.59	50.61	32.42	65.36	55.36	-14.75	-22.94	Pass
2	0.1780	35.96	17.75	9.58	45.54	27.33	64.58	54.58	-19.04	-27.25	Pass
3	0.1874	37.74	20.83	9.58	47.32	30.41	64.15	54.15	-16.83	-23.74	Pass
4	0.2100	32.31	16.41	9.58	41.89	25.99	63.21	53.21	-21.32	-27.22	Pass
5	0.2260	29.58	10.68	9.58	39.16	20.26	62.60	52.60	-23.44	-32.34	Pass
6	0.2500	31.50	16.83	9.59	41.09	26.42	61.76	51.76	-20.67	-25.34	Pass

Note: 1. Result = Correction factor + Reading

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



Standard:	FCC Part 15E	Line:	L1
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	NexusLink 3120ua	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 1	Date:	04/28/2016
		Test By:	Eric Ou Yang
Description:			



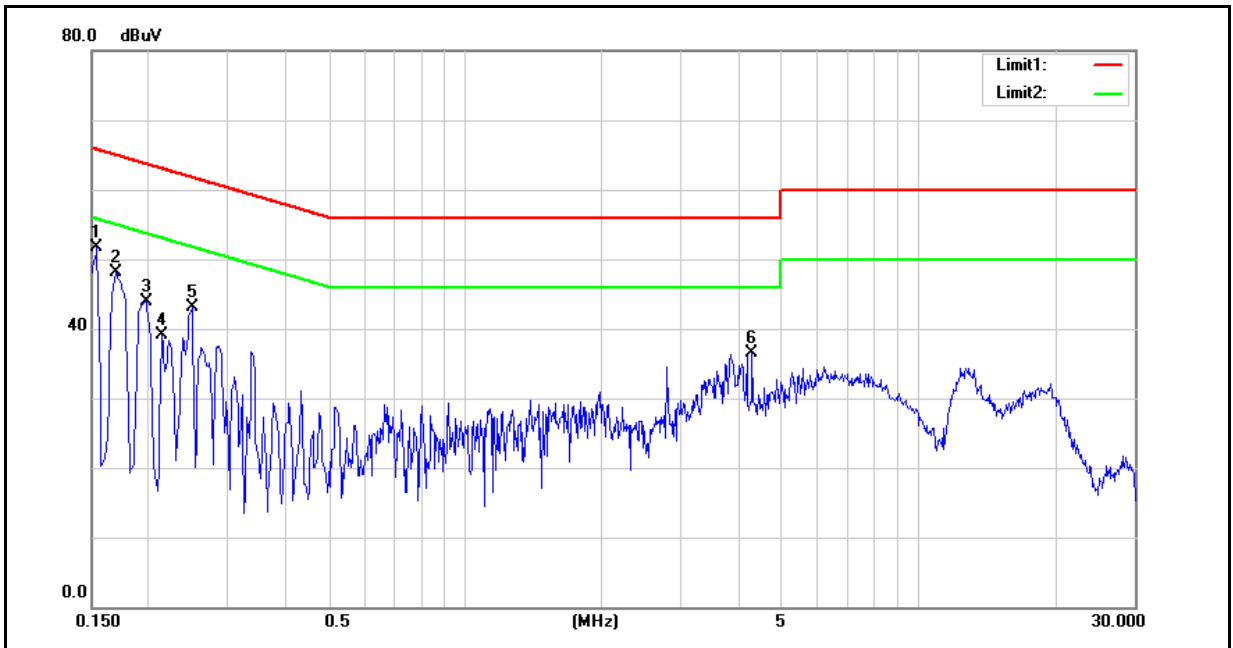
No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1500	40.67	25.39	9.60	50.27	34.99	66.00	56.00	-15.73	-21.01	Pass
2	0.1580	36.52	17.76	9.60	46.12	27.36	65.57	55.57	-19.45	-28.21	Pass
3	0.1740	38.56	24.42	9.60	48.16	34.02	64.77	54.77	-16.61	-20.75	Pass
4	0.1940	32.30	17.79	9.59	41.89	27.38	63.86	53.86	-21.97	-26.48	Pass
5	0.2300	32.30	20.83	9.59	41.89	30.42	62.45	52.45	-20.56	-22.03	Pass
6	0.2620	31.03	20.11	9.60	40.63	29.71	61.37	51.37	-20.74	-21.66	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:	NexusLink 3120ua	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 1	Date:	04/28/2016
		Test By:	Eric Ou Yang
Description:			



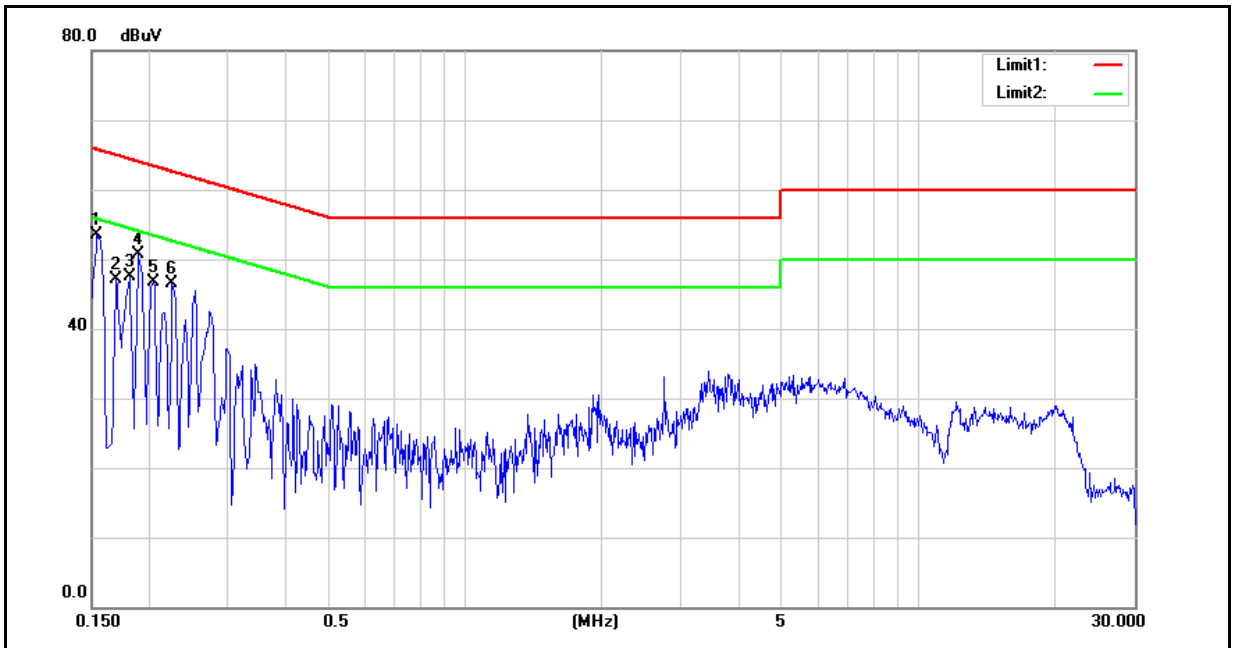
No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1540	42.97	27.28	9.59	52.56	36.87	65.78	55.78	-13.22	-18.91	Pass
2	0.1700	37.22	23.52	9.59	46.81	33.11	64.96	54.96	-18.15	-21.85	Pass
3	0.1980	33.69	19.16	9.58	43.27	28.74	63.69	53.69	-20.42	-24.95	Pass
4	0.2140	34.03	19.80	9.58	43.61	29.38	63.05	53.05	-19.44	-23.67	Pass
5	0.2500	28.64	16.34	9.59	38.23	25.93	61.76	51.76	-23.53	-25.83	Pass
6	4.3060	16.28	6.83	9.76	26.04	16.59	56.00	46.00	-29.96	-29.41	Pass

Note: 1. Result = Correction factor + Reading

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



Standard:	FCC Part 15E	Line:	L1
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	WAP-5895ua	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 1	Date:	04/28/2016
		Test By:	Eric Ou Yang
Description:			



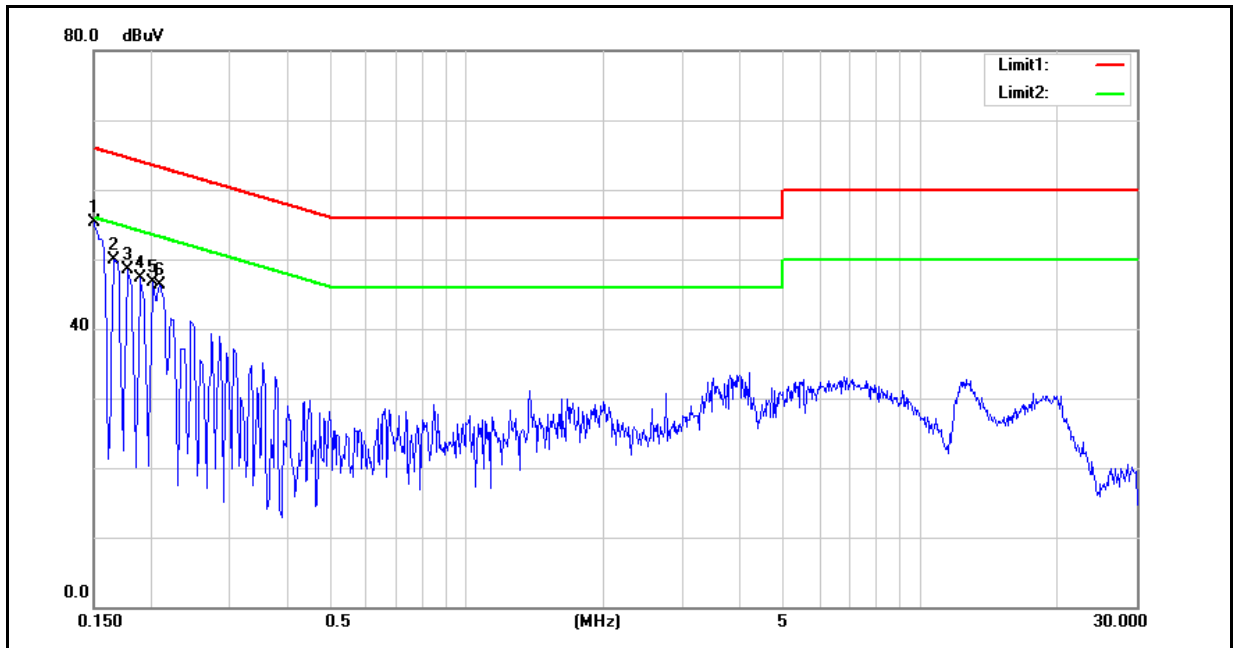
No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1540	42.58	27.41	9.60	52.18	37.01	65.78	55.78	-13.60	-18.77	Pass
2	0.1700	36.71	22.41	9.60	46.31	32.01	64.96	54.96	-18.65	-22.95	Pass
3	0.1820	35.66	21.33	9.59	45.25	30.92	64.39	54.39	-19.14	-23.47	Pass
4	0.1900	36.88	20.34	9.59	46.47	29.93	64.04	54.04	-17.57	-24.11	Pass
5	0.2060	33.12	19.27	9.59	42.71	28.86	63.37	53.37	-20.66	-24.51	Pass
6	0.2260	34.32	20.55	9.59	43.91	30.14	62.60	52.60	-18.69	-22.46	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:	WAP-5895ua	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 1	Date:	04/28/2016
		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	0.1500	44.08	27.07	9.59	53.67	36.66	66.00	56.00	-12.33	-19.34	Pass
2	0.1660	39.31	22.68	9.59	48.90	32.27	65.16	55.16	-16.26	-22.89	Pass
3	0.1780	37.80	21.74	9.58	47.38	31.32	64.58	54.58	-17.20	-23.26	Pass
4	0.1900	36.52	19.48	9.58	46.10	29.06	64.04	54.04	-17.94	-24.98	Pass
5	0.2020	35.58	18.86	9.58	45.16	28.44	63.53	53.53	-18.37	-25.09	Pass
6	0.2100	30.92	14.89	9.58	40.50	24.47	63.21	53.21	-22.71	-28.74	Pass

Note: 1. Result = Correction factor + Reading

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



4.2. 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.

(b)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.

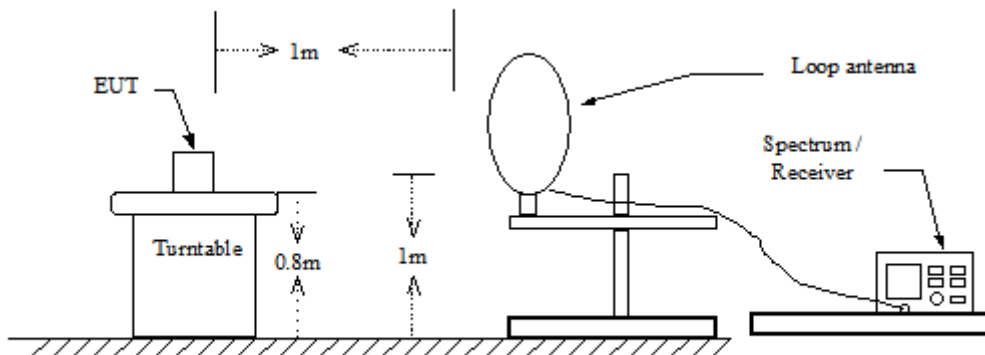
■ Test Instruments

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	06/12/2015	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-1 4000	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-6 00	140301	10/15/2015	1 year
Test Site	ATL	TE01	888001	08/27/2015	1 year

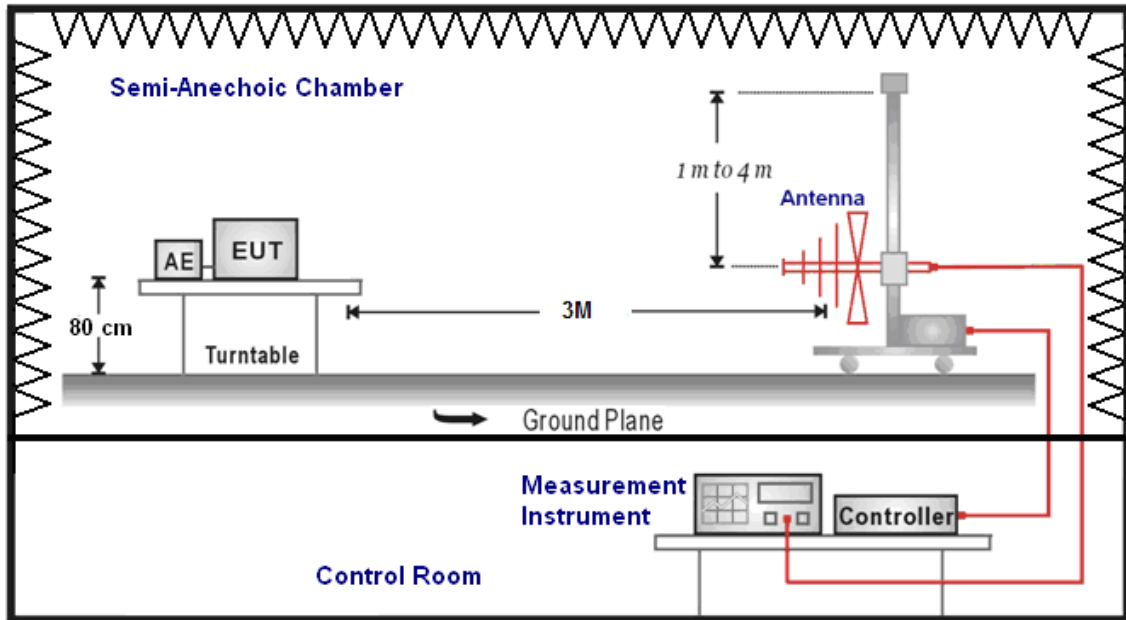
Note: N.C.R. = No Calibration Request.

■ Setup

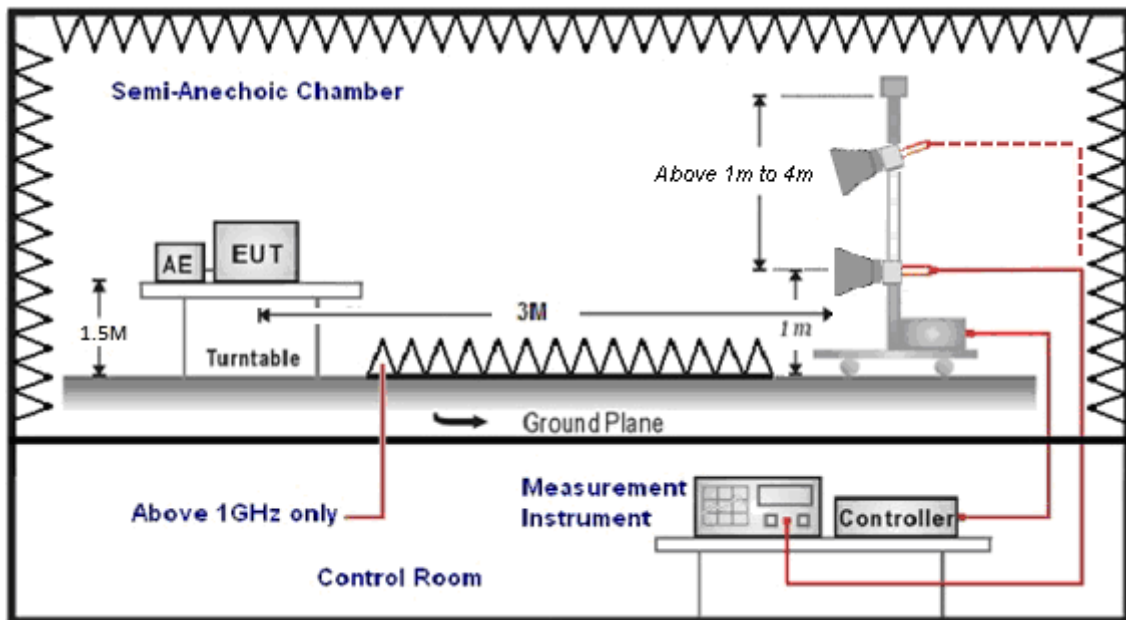
9kHz ~ 30MHz



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

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

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

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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 1	Date:	05/19/2016
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
125.0000	41.05	-7.18	33.87	43.50	-9.63	QP	H
250.0000	46.36	-5.28	41.08	46.00	-4.92	QP	H
426.0000	40.08	-0.91	39.17	46.00	-6.83	QP	H
500.0000	43.84	0.74	44.58	46.00	-1.42	QP	H
625.0000	36.29	3.41	39.70	46.00	-6.30	QP	H
750.0000	33.95	6.03	39.98	46.00	-6.02	QP	H
125.0000	44.25	-7.18	37.07	43.50	-6.43	QP	V
250.0000	42.35	-5.28	37.07	46.00	-8.93	QP	V
459.0000	41.70	-0.01	41.69	46.00	-4.31	QP	V
500.0000	43.63	0.74	44.37	46.00	-1.63	QP	V
569.5000	34.96	2.03	36.99	46.00	-9.01	QP	V
750.0000	31.45	6.03	37.48	46.00	-8.52	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 2	Date:	05/19/2016				
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	46.65	5.21	51.86	68.20	-16.34	peak	H
10360.000	51.41	5.21	56.62	68.20	-11.58	peak	V

Standard:	FCC Part 15E	Test Distance:	3m				
Test item:	Radiated Emission	Power:	AC 120V/60Hz				
Model Number:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 2	Date:	05/19/2016				
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	45.53	5.33	50.86	68.20	-17.34	peak	H
10400.000	48.97	5.33	54.30	68.20	-13.90	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 2	Date:	05/19/2016				
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	47.31	5.55	52.86	68.20	-15.34	peak	H
10480.000	48.33	5.55	53.88	68.20	-14.32	peak	V

Standard:	FCC Part 15E	Test Distance:	3m				
Test item:	Radiated Emission	Power:	AC 120V/60Hz				
Model Number:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 2	Date:	05/19/2016				
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	48.12	6.44	54.56	74.00	-19.44	peak	H
11490.000	38.51	6.44	44.95	54.00	-9.05	AVG	H
11490.000	50.47	6.44	56.91	74.00	-17.09	peak	V
11490.000	40.31	6.44	46.75	54.00	-7.25	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 2	Date:	05/19/2016				
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	46.25	6.63	52.88	74.00	-21.12	peak	H
11570.000	37.73	6.63	44.36	54.00	-9.64	AVG	H
11570.000	46.97	6.63	53.60	74.00	-20.40	peak	V
11570.000	40.49	6.63	47.12	54.00	-6.88	AVG	V

Standard:	FCC Part 15E	Test Distance:	3m				
Test item:	Radiated Emission	Power:	AC 120V/60Hz				
Model Number:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 2	Date:	05/19/2016				
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	46.31	6.85	53.16	74.00	-20.84	peak	H
11650.000	38.02	6.85	44.87	54.00	-9.13	AVG	H
11650.000	47.51	6.85	54.36	74.00	-19.64	peak	V
11650.000	40.07	6.85	46.92	54.00	-7.08	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 3	Date:	05/19/2016				
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	46.56	5.21	51.77	68.20	-16.43	peak	H
10360.000	50.87	5.21	56.08	68.20	-12.12	peak	V

Standard:	FCC Part 15E	Test Distance:	3m				
Test item:	Radiated Emission	Power:	AC 120V/60Hz				
Model Number:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 3	Date:	05/19/2016				
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	45.68	5.33	51.01	68.20	-17.19	peak	H
10400.000	50.56	5.33	55.89	68.20	-12.31	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 3	Date:	05/19/2016				
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	45.33	5.55	50.88	68.20	-17.32	peak	H
10480.000	48.94	5.55	54.49	68.20	-13.71	peak	V

Standard:	FCC Part 15E	Test Distance:	3m				
Test item:	Radiated Emission	Power:	AC 120V/60Hz				
Model Number:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 3	Date:	05/19/2016				
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	46.96	6.44	53.40	74.00	-20.60	peak	H
11490.000	38.59	6.44	45.03	54.00	-8.97	AVG	H
11490.000	47.34	6.44	53.78	74.00	-20.22	peak	V
11490.000	40.56	6.44	47.00	54.00	-7.00	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 3	Date:	05/19/2016				
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	46.96	6.63	53.59	74.00	-20.41	peak	H
11570.000	37.51	6.63	44.14	54.00	-9.86	AVG	H
11570.000	45.94	6.63	52.57	74.00	-21.43	peak	V
11570.000	39.94	6.63	46.57	54.00	-7.43	AVG	V

Standard:	FCC Part 15E	Test Distance:	3m				
Test item:	Radiated Emission	Power:	AC 120V/60Hz				
Model Number:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 3	Date:	05/19/2016				
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	45.76	6.85	52.61	74.00	-21.39	peak	H
11650.000	37.38	6.85	44.23	54.00	-9.77	AVG	H
11650.000	47.48	6.85	54.33	74.00	-19.67	peak	V
11650.000	40.28	6.85	47.13	54.00	-6.87	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 4	Date:	05/19/2016				
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
11590.000	48.85	6.69	55.54	74.00	-18.46	peak	H
11590.000	40.50	6.69	47.19	54.00	-6.81	AVG	H
10380.000	46.12	5.27	51.39	68.20	-16.81	peak	V

Standard:	FCC Part 15E	Test Distance:	3m				
Test item:	Radiated Emission	Power:	AC 120V/60Hz				
Model Number:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 4	Date:	05/19/2016				
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
10380.000	47.10	5.27	52.37	68.20	-15.83	peak	H
10460.000	44.62	5.50	50.12	68.20	-18.08	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:	NexusLink 3240u		Temp.(°C)/Hum.(%RH):	26(°C)/60%RH			
Test Mode:	Mode 4		Date:	05/19/2016			
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
10460.000	46.93	5.50	52.43	68.20	-15.77	peak	H
11550.000	46.37	6.58	52.95	74.00	-21.05	peak	V
11550.000	37.74	6.58	44.32	54.00	-9.68	AVG	V

Standard:	FCC Part 15E		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	NexusLink 3240u		Temp.(°C)/Hum.(%RH):	26(°C)/60%RH			
Test Mode:	Mode 4		Date:	05/19/2016			
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
11550.000	48.45	6.58	55.03	74.00	-18.97	peak	H
11550.000	39.99	6.58	46.57	54.00	-7.43	AVG	H
11590.000	44.47	6.69	51.16	74.00	-22.84	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 5	Date:	05/19/2016				
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	45.02	5.37	50.39	68.20	-17.81	peak	H
10420.000	45.33	5.37	50.70	68.20	-17.50	peak	V

Standard:	FCC Part 15E	Test Distance:	3m				
Test item:	Radiated Emission	Power:	AC 120V/60Hz				
Model Number:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH				
Test Mode:	Mode 5	Date:	05/19/2016				
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	45.33	6.58	51.91	74.00	-22.09	peak	H
11550.000	46.43	6.58	53.01	74.00	-20.99	peak	V
11550.000	39.13	6.58	45.71	54.00	-8.29	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Simultaneous Transmitting (DTS+NII)	Date:	06/20/2016
		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
2751.000	48.37	-13.59	34.78	74.00	-39.22	peak	H
4638.000	45.68	-8.44	37.24	74.00	-36.76	peak	H
7613.000	44.18	0.39	44.57	74.00	-29.43	peak	H
2751.000	49.12	-13.59	35.53	74.00	-38.47	peak	H
4570.000	45.33	-8.65	36.68	74.00	-37.32	peak	H
7579.000	44.11	0.30	44.41	74.00	-29.59	peak	H

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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 2	Date:	05/18/2016
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
5146.100	48.30	8.28	56.58	74.00	-17.42	peak	H
5146.100	39.01	8.28	47.29	54.00	-6.71	AVG	H
5150.000	48.08	8.29	56.37	74.00	-17.63	peak	H
5150.000	40.31	8.29	48.60	54.00	-5.40	AVG	H
5146.100	51.48	8.28	59.76	74.00	-14.24	peak	V
5146.100	42.18	8.28	50.46	54.00	-3.54	AVG	V
5150.000	54.45	8.29	62.74	74.00	-11.26	peak	V
5150.000	43.28	8.29	51.57	54.00	-2.43	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: NexusLink 3240u		Temp.(°C)/Hum.(%RH): 26(°C)/60%RH					
Test Mode: Mode 2		Date: 05/18/2016					
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
4739.040	48.74	7.21	55.95	74.00	-18.05	peak	H
4739.040	39.01	7.21	46.22	54.00	-7.78	AVG	H
5150.000	46.54	8.29	54.83	74.00	-19.17	peak	H
5150.000	38.81	8.29	47.10	54.00	-6.90	AVG	H
5350.000	44.42	8.50	52.92	74.00	-21.08	peak	H
5350.000	35.41	8.50	43.91	54.00	-10.09	AVG	H
5383.200	46.20	8.54	54.74	74.00	-19.26	peak	H
5383.200	35.12	8.54	43.66	54.00	-10.34	AVG	H
5146.080	49.92	8.28	58.20	74.00	-15.80	peak	V
5146.080	39.83	8.28	48.11	54.00	-5.89	AVG	V
5150.000	50.22	8.29	58.51	74.00	-15.49	peak	V
5150.000	41.06	8.29	49.35	54.00	-4.65	AVG	V
5350.000	47.69	8.50	56.19	74.00	-17.81	peak	V
5350.000	38.51	8.50	47.01	54.00	-6.99	AVG	V
5356.320	49.47	8.51	57.98	74.00	-16.02	peak	V
5356.320	37.83	8.51	46.34	54.00	-7.66	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 2	Date:	05/18/2016
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
5350.000	45.23	8.50	53.73	74.00	-20.27	peak	H
5350.000	35.31	8.50	43.81	54.00	-10.19	AVG	H
5376.400	47.58	8.54	56.12	74.00	-17.88	peak	H
5376.400	34.84	8.54	43.38	54.00	-10.62	AVG	H
5350.000	46.62	8.50	55.12	74.00	-18.88	peak	V
5350.000	35.69	8.50	44.19	54.00	-9.81	AVG	V
5364.300	48.84	8.52	57.36	74.00	-16.64	peak	V
5364.300	35.23	8.52	43.75	54.00	-10.25	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: NexusLink 3240u		Temp.(°C)/Hum.(%RH): 26(°C)/60%RH					
Test Mode: Mode 2		Date: 05/18/2016					
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	48.78	9.13	57.91	105.20	-47.29	peak	H
5720.000	51.27	9.17	60.44	110.80	-50.36	peak	H
5725.000	60.08	9.19	69.27	122.20	-52.93	peak	H
5650.000	47.90	9.01	56.91	68.20	-11.29	peak	V
5700.000	52.08	9.13	61.21	105.20	-43.99	peak	V
5720.000	56.71	9.17	65.88	110.80	-44.92	peak	V
5725.000	62.06	9.19	71.25	122.20	-50.95	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 2	Date:	05/18/2016
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	47.47	9.01	56.48	68.20	-11.72	peak	H
5700.000	46.65	9.13	55.78	105.20	-49.42	peak	H
5720.000	48.17	9.17	57.34	110.80	-53.46	peak	H
5725.000	46.74	9.19	55.93	122.20	-66.27	peak	H
5850.000	46.62	9.46	56.08	122.20	-66.12	peak	H
5855.000	47.49	9.48	56.97	110.80	-53.83	peak	H
5875.000	47.07	9.53	56.60	105.20	-48.60	peak	H
5925.000	46.75	9.65	56.40	68.20	-11.80	peak	H
5650.000	48.89	9.01	57.90	68.20	-10.30	peak	V
5700.000	48.04	9.13	57.17	105.20	-48.03	peak	V
5720.000	48.91	9.17	58.08	110.80	-52.72	peak	V
5725.000	49.03	9.19	58.22	122.20	-63.98	peak	V
5850.000	47.80	9.46	57.26	122.20	-64.94	peak	V
5855.000	47.72	9.48	57.20	110.80	-53.60	peak	V
5875.000	48.88	9.53	58.41	105.20	-46.79	peak	V
5925.000	47.99	9.65	57.64	68.20	-10.56	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 2	Date:	05/18/2016
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	48.82	9.46	58.28	122.20	-63.92	peak	H
5855.000	48.41	9.48	57.89	110.80	-52.91	peak	H
5875.000	48.97	9.53	58.50	105.20	-46.70	peak	H
5925.000	48.70	9.65	58.35	68.20	-9.85	peak	H
5850.000	57.08	9.46	66.54	122.20	-55.66	peak	V
5855.000	55.45	9.48	64.93	110.80	-45.87	peak	V
5875.000	52.69	9.53	62.22	105.20	-42.98	peak	V
5925.000	49.97	9.65	59.62	68.20	-8.58	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 3	Date:	05/18/2016
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
5146.100	51.35	8.28	59.63	74.00	-14.37	peak	H
5146.100	39.23	8.28	47.51	54.00	-6.49	AVG	H
5150.000	51.05	8.29	59.34	74.00	-14.66	peak	H
5150.000	40.48	8.29	48.77	54.00	-5.23	AVG	H
5146.100	53.60	8.28	61.88	74.00	-12.12	peak	V
5146.100	41.06	8.28	49.34	54.00	-4.66	AVG	V
5150.000	54.87	8.29	63.16	74.00	-10.84	peak	V
5150.000	42.39	8.29	50.68	54.00	-3.32	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: NexusLink 3240u		Temp.(°C)/Hum.(%RH): 26(°C)/60%RH					
Test Mode: Mode 3		Date: 05/18/2016					
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
5066.400	46.89	8.19	55.08	74.00	-18.92	peak	H
5066.400	35.38	8.19	43.57	54.00	-10.43	AVG	H
5150.000	46.39	8.29	54.68	74.00	-19.32	peak	H
5150.000	36.26	8.29	44.55	54.00	-9.45	AVG	H
5350.000	43.75	8.50	52.25	74.00	-21.75	peak	H
5350.000	35.78	8.50	44.28	54.00	-9.72	AVG	H
5438.880	45.97	8.59	54.56	74.00	-19.44	peak	H
5438.880	35.33	8.59	43.92	54.00	-10.08	AVG	H
5146.080	48.53	8.28	56.81	74.00	-17.19	peak	V
5146.080	39.38	8.28	47.66	54.00	-6.34	AVG	V
5150.000	48.72	8.29	57.01	74.00	-16.99	peak	V
5150.000	40.28	8.29	48.57	54.00	-5.43	AVG	V
5350.000	47.17	8.50	55.67	74.00	-18.33	peak	V
5350.000	38.44	8.50	46.94	54.00	-7.06	AVG	V
5377.440	49.07	8.54	57.61	74.00	-16.39	peak	V
5377.440	37.34	8.54	45.88	54.00	-8.12	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 3	Date:	05/18/2016
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
5350.000	43.48	8.50	51.98	74.00	-22.02	peak	H
5380.140	47.20	8.54	55.74	74.00	-18.26	peak	H
5380.140	34.90	8.54	43.44	54.00	-10.56	AVG	H
5351.540	40.48	8.49	48.97	54.00	-5.03	AVG	H
5350.000	47.92	8.50	56.42	74.00	-17.58	peak	V
5350.000	38.86	8.50	47.36	54.00	-6.64	AVG	V
5361.000	50.83	8.52	59.35	74.00	-14.65	peak	V
5361.000	38.33	8.52	46.85	54.00	-7.15	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 3	Date:	05/18/2016
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	47.04	9.01	56.05	68.20	-12.15	peak	H
5700.000	49.98	9.13	59.11	105.20	-46.09	peak	H
5720.000	56.71	9.17	65.88	110.80	-44.92	peak	H
5725.000	62.41	9.19	71.60	122.20	-50.60	peak	H
5650.000	48.53	9.01	57.54	68.20	-10.66	peak	V
5700.000	53.21	9.13	62.34	105.20	-42.86	peak	V
5720.000	60.21	9.17	69.38	110.80	-41.42	peak	V
5725.000	66.90	9.19	76.09	122.20	-46.11	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 3	Date:	05/18/2016
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	48.78	9.01	57.79	68.20	-10.41	peak	H
5700.000	46.79	9.13	55.92	105.20	-49.28	peak	H
5720.000	47.53	9.17	56.70	110.80	-54.10	peak	H
5725.000	47.35	9.19	56.54	122.20	-65.66	peak	H
5850.000	46.65	9.46	56.11	122.20	-66.09	peak	H
5855.000	46.14	9.48	55.62	110.80	-55.18	peak	H
5875.000	46.47	9.53	56.00	105.20	-49.20	peak	H
5925.000	48.26	9.65	57.91	68.20	-10.29	peak	H
5650.000	47.91	9.01	56.92	68.20	-11.28	peak	V
5700.000	49.47	9.13	58.60	105.20	-46.60	peak	V
5720.000	48.78	9.17	57.95	110.80	-52.85	peak	V
5725.000	48.41	9.19	57.60	122.20	-64.60	peak	V
5850.000	49.04	9.46	58.50	122.20	-63.70	peak	V
5855.000	49.14	9.48	58.62	110.80	-52.18	peak	V
5875.000	49.05	9.53	58.58	105.20	-46.62	peak	V
5925.000	48.95	9.65	58.60	68.20	-9.60	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 3	Date:	05/18/2016
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	52.59	9.46	62.05	122.20	-60.15	peak	H
5855.000	48.41	9.48	57.89	110.80	-52.91	peak	H
5875.000	46.87	9.53	56.40	105.20	-48.80	peak	H
5925.000	47.38	9.65	57.03	68.20	-11.17	peak	H
5850.000	61.51	9.46	70.97	122.20	-51.23	peak	V
5855.000	55.50	9.48	64.98	110.80	-45.82	peak	V
5875.000	51.97	9.53	61.50	105.20	-43.70	peak	V
5925.000	51.42	9.65	61.07	68.20	-7.13	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 4	Date:	05/18/2016
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	52.77	8.28	61.05	74.00	-12.95	peak	H
5146.100	40.54	8.28	48.82	54.00	-5.18	AVG	H
5150.000	52.37	8.29	60.66	74.00	-13.34	peak	H
5150.000	41.97	8.29	50.26	54.00	-3.74	AVG	H
5146.800	62.23	8.28	70.51	74.00	-3.49	peak	V
5146.800	43.05	8.28	51.33	54.00	-2.67	AVG	V
5150.000	61.18	8.29	69.47	74.00	-4.53	peak	V
5150.000	44.45	8.29	52.74	54.00	-1.26	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: NexusLink 3240u		Temp.(°C)/Hum.(%RH): 26(°C)/60%RH					
Test Mode: Mode 4		Date: 05/18/2016					
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
5016.480	46.31	8.14	54.45	74.00	-19.55	peak	H
5016.480	35.43	8.14	43.57	54.00	-10.43	AVG	H
5150.000	45.44	8.29	53.73	74.00	-20.27	peak	H
5150.000	36.27	8.29	44.56	54.00	-9.44	AVG	H
5350.000	43.44	8.50	51.94	74.00	-22.06	peak	H
5389.920	46.12	8.54	54.66	74.00	-19.34	peak	H
5389.920	35.61	8.54	44.15	54.00	-9.85	AVG	H
4874.400	49.85	7.68	57.53	74.00	-16.47	peak	V
4874.400	37.61	7.68	45.29	54.00	-8.71	AVG	V
5150.000	46.98	8.29	55.27	74.00	-18.73	peak	V
5150.000	37.87	8.29	46.16	54.00	-7.84	AVG	V
5350.000	46.79	8.50	55.29	74.00	-18.71	peak	V
5350.000	37.91	8.50	46.41	54.00	-7.59	AVG	V
5376.480	48.65	8.54	57.19	74.00	-16.81	peak	V
5376.480	36.63	8.54	45.17	54.00	-8.83	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: NexusLink 3240u		Temp.(°C)/Hum.(%RH): 26(°C)/60%RH					
Test Mode: Mode 4		Date: 05/18/2016					
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	47.55	9.01	56.56	68.20	-11.64	peak	H
5700.000	48.05	9.13	57.18	105.20	-48.02	peak	H
5720.000	57.29	9.17	66.46	110.80	-44.34	peak	H
5725.000	55.56	9.19	64.75	122.20	-57.45	peak	H
5650.000	49.00	9.01	58.01	68.20	-10.19	peak	V
5700.000	50.12	9.13	59.25	105.20	-45.95	peak	V
5720.000	61.75	9.17	70.92	110.80	-39.88	peak	V
5725.000	66.28	9.19	75.47	122.20	-46.73	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:	NexusLink 3240u	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Test Mode:	Mode 4	Date:	05/18/2016
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	48.42	9.46	57.88	122.20	-64.32	peak	H
5855.000	47.47	9.48	56.95	110.80	-53.85	peak	H
5875.000	47.12	9.53	56.65	105.20	-48.55	peak	H
5925.000	46.57	9.65	56.22	68.20	-11.98	peak	H
5850.000	53.64	9.46	63.10	122.20	-59.10	peak	V
5855.000	51.74	9.48	61.22	110.80	-49.58	peak	V
5875.000	49.72	9.53	59.25	105.20	-45.95	peak	V
5925.000	47.76	9.65	57.41	68.20	-10.79	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: NexusLink 3240u		Temp.(°C)/Hum.(%RH): 26(°C)/60%RH					
Test Mode: Mode 5		Date: 05/18/2016					
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
5145.120	51.12	8.28	59.40	74.00	-14.60	peak	H
5145.120	38.11	8.28	46.39	54.00	-7.61	AVG	H
5150.000	49.95	8.29	58.24	74.00	-15.76	peak	H
5150.000	39.26	8.29	47.55	54.00	-6.45	AVG	H
5350.000	44.48	8.50	52.98	74.00	-21.02	peak	H
5350.000	37.16	8.50	45.66	54.00	-8.34	AVG	H
5402.400	46.03	8.56	54.59	74.00	-19.41	peak	H
5402.400	36.19	8.56	44.75	54.00	-9.25	AVG	H
5143.200	59.57	8.28	67.85	74.00	-6.15	peak	V
5143.200	43.03	8.28	51.31	54.00	-2.69	AVG	V
5150.000	56.65	8.29	64.94	74.00	-9.06	peak	V
5150.000	44.04	8.29	52.33	54.00	-1.67	AVG	V
5350.000	46.90	8.50	55.40	74.00	-18.60	peak	V
5350.000	38.26	8.50	46.76	54.00	-7.24	AVG	V
5368.800	46.79	8.52	55.31	74.00	-18.69	peak	V
5368.800	36.89	8.52	45.41	54.00	-8.59	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:		NexusLink 3240u		Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Test Mode:		Mode 5		Date:		05/18/2016	
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	48.61	9.01	57.62	68.20	-10.58	peak	H
5700.000	51.82	9.13	60.95	105.20	-44.25	peak	H
5720.000	55.74	9.17	64.91	110.80	-45.89	peak	H
5725.000	56.48	9.19	65.67	122.20	-56.53	peak	H
5850.000	53.95	9.46	63.41	122.20	-58.79	peak	H
5855.000	49.24	9.48	58.72	110.80	-52.08	peak	H
5875.000	46.67	9.53	56.20	105.20	-49.00	peak	H
5925.000	46.98	9.65	56.63	68.20	-11.57	peak	H
5712.400	58.14	9.16	67.30	108.67	-41.37	peak	V
5715.000	57.91	9.16	67.07	109.40	-42.33	peak	V
5722.000	68.54	9.18	77.72	115.36	-37.64	peak	V
5725.000	66.51	9.19	75.70	122.20	-46.50	peak	V
5850.000	62.86	9.46	72.32	122.20	-49.88	peak	V
5854.000	62.63	9.48	72.11	113.08	-40.97	peak	V
5860.000	53.84	9.48	63.32	109.40	-46.08	peak	V
5872.000	57.30	9.51	66.81	106.04	-39.23	peak	V

Note: 1. Result = Correction factor + Reading

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

4.3. Maximum Conducted Output Power Measurement

■ **Limit**

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

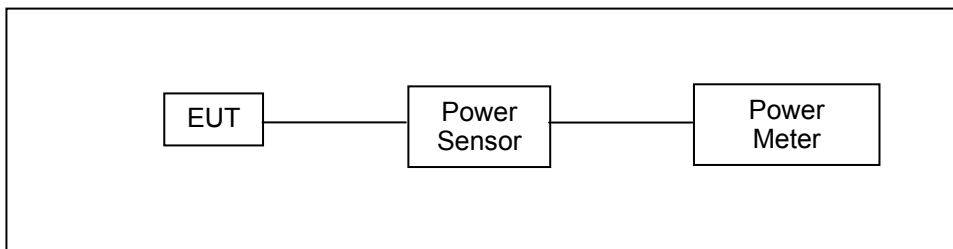
According FCC KDB 662911 D01 v02r01 – for power measurements on IEEE802.11 devices,

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

* MIMO mode : Directional Gain = 9.04 dBi > 6dBi -- For Master

MIMO mode power limit shall be reduced = 30 - 3.04 = 26.96 dBm -- For Master mode (Band 1 / Band 3)

■ **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
Microwave Cable	EMCI	EMCI 104-SM-SM-1500	140303	02/23/2016	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

Test Item		Maximum Conducted Output Power								
Test Mode		Mode 2: IEEE 802.11a link mode								
Date of Test		04/28/2016								
Frequency (MHz)	Data Rate	Max. Output Power								FCC Limit (dBm)
		ANT-0		ANT-1		ANT-2		ANT-3		
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	
5180	6M	17.96	0.063	17.39	0.055	19.57	0.091	18.74	0.075	≤ 26.96
5200		17.72	0.059	17.82	0.061	19.80	0.095	19.03	0.080	
5220		17.65	0.058	17.44	0.055	19.36	0.086	18.87	0.077	
5240		17.61	0.058	17.32	0.054	19.40	0.087	18.69	0.074	
5745		17.20	0.052	17.64	0.058	19.23	0.084	18.92	0.078	≤ 26.96
5765		17.38	0.055	17.39	0.055	19.00	0.079	18.78	0.076	
5785		17.08	0.051	17.59	0.057	18.91	0.078	18.52	0.071	
5805		17.25	0.053	17.72	0.059	18.70	0.074	18.72	0.074	
5825		17.27	0.053	17.79	0.060	18.64	0.073	18.65	0.073	
5180	54M	17.52	0.056	17.78	0.060	19.56	0.090	19.03	0.080	≤ 26.96
5200		17.58	0.057	17.41	0.055	19.51	0.089	18.83	0.076	
5220		17.60	0.058	17.60	0.058	19.74	0.094	19.04	0.080	
5240		17.54	0.057	17.42	0.055	19.55	0.090	19.02	0.080	
5745		17.15	0.052	17.40	0.055	19.11	0.081	18.83	0.076	≤ 26.96
5765		17.06	0.051	17.04	0.051	18.88	0.077	18.72	0.074	
5785		17.02	0.050	17.44	0.055	18.81	0.076	18.13	0.065	
5805		17.04	0.051	17.64	0.058	18.59	0.072	18.52	0.071	
5825		17.10	0.051	17.72	0.059	18.58	0.072	18.42	0.070	



Test Item		Maximum Conducted Output Power		
Test Mode		Mode 2: IEEE 802.11a link mode		
Date of Test		04/28/2016		
Frequency (MHz)	Data Rate	Max. Output Power		FCC Limit (dBm)
		ANT-0+1+2+3		
		(dBm)	(W)	
5180	6M	24.51	0.283	≤ 26.96
5200		24.70	0.295	
5220		24.43	0.277	
5240		24.36	0.273	
5745		24.35	0.272	≤ 26.96
5765		24.22	0.264	
5785		24.11	0.257	
5805		24.16	0.261	
5825		24.15	0.260	
5180	54M	24.58	0.287	≤ 26.96
5200		24.44	0.278	
5220		24.62	0.289	
5240		24.50	0.282	
5745		24.23	0.265	≤ 26.96
5765		24.03	0.253	
5785		23.92	0.247	
5805		24.01	0.252	
5825		24.01	0.252	



Test Item		Maximum Conducted Output Power								
Test Mode		Mode 3: IEEE 802.11ac 20MHz link mode								
Date of Test		04/28/2016								
Frequency (MHz)	Data Rate	Max. Output Power								FCC Limit (dBm)
		ANT-0		ANT-1		ANT-2		ANT-3		
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	
5180	26M	17.57	0.057	17.51	0.056	19.92	0.098	19.16	0.082	≤ 26.96
5200		17.40	0.055	17.53	0.057	19.50	0.089	19.01	0.080	
5220		17.46	0.056	17.62	0.058	19.52	0.090	19.12	0.082	
5240		17.44	0.055	17.52	0.056	19.85	0.097	19.03	0.080	
5745		17.10	0.051	17.55	0.057	19.47	0.089	19.41	0.087	≤ 26.96
5765		17.43	0.055	17.76	0.060	19.25	0.084	19.25	0.084	
5785		17.35	0.054	17.34	0.054	19.24	0.084	19.20	0.083	
5805		17.32	0.054	17.41	0.055	19.01	0.080	19.06	0.081	
5825		17.50	0.056	17.82	0.061	18.98	0.079	18.95	0.079	
5180	312M	17.59	0.057	17.41	0.055	19.80	0.095	19.25	0.084	≤ 26.96
5200		17.48	0.056	17.71	0.059	19.42	0.087	18.88	0.077	
5220		17.32	0.054	17.50	0.056	19.47	0.089	18.85	0.077	
5240		17.39	0.055	17.76	0.060	19.36	0.086	18.70	0.074	
5745		17.43	0.055	17.61	0.058	19.42	0.087	19.08	0.081	≤ 26.96
5765		17.02	0.050	17.39	0.055	19.27	0.085	18.76	0.075	
5785		17.27	0.053	17.63	0.058	18.95	0.079	18.94	0.078	
5805		17.20	0.052	17.40	0.055	18.83	0.076	18.91	0.078	
5825		17.27	0.053	17.76	0.060	18.78	0.076	18.45	0.070	



Test Item		Maximum Conducted Output Power		
Test Mode		Mode 3: IEEE 802.11ac 20MHz link mode		
Date of Test		04/28/2016		
Frequency (MHz)	Data Rate	Max. Output Power		FCC Limit (dBm)
		ANT-0+1+2+3		
		(dBm)	(W)	
5180	26M	24.68	0.294	≤ 26.96
5200		24.48	0.280	
5220		24.54	0.285	
5240		24.60	0.289	
5745		24.53	0.284	≤ 26.96
5765		24.52	0.283	
5785		24.40	0.276	
5805		24.30	0.269	
5825		24.38	0.274	
5180		312M	24.66	
5200	24.47		0.280	
5220	24.40		0.275	
5240	24.39		0.275	
5745	24.49		0.281	≤ 26.96
5765	24.23		0.265	
5785	24.28		0.268	
5805	24.18		0.262	
5825	24.13		0.259	



Test Item		Maximum Conducted Output Power								
Test Mode		Mode 4: IEEE 802.11ac 40MHz link mode								
Date of Test		04/28/2016								
Frequency (MHz)	Data Rate	Max. Output Power								FCC Limit (dBm)
		ANT-0		ANT-1		ANT-2		ANT-3		
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	
5190	54M	15.07	0.032	15.45	0.035	17.82	0.061	17.17	0.052	≤ 26.96
5230		18.03	0.064	17.67	0.058	19.95	0.099	19.61	0.091	
5755		17.46	0.056	17.44	0.055	19.76	0.095	19.58	0.091	
5795		17.68	0.059	17.65	0.058	19.43	0.088	19.23	0.084	
5190	720M	14.77	0.030	14.95	0.031	17.80	0.060	17.16	0.052	≤ 26.96
5230		17.64	0.058	17.90	0.062	19.73	0.094	19.16	0.082	
5755		17.65	0.058	17.80	0.060	19.36	0.086	19.23	0.084	
5755		17.78	0.060	17.69	0.059	19.38	0.087	18.91	0.078	

Test Item		Maximum Conducted Output Power				
Test Mode		Mode 4: IEEE 802.11ac 40MHz link mode				
Date of Test		04/28/2016				
Frequency (MHz)	Data Rate	Max. Output Power				FCC Limit (dBm)
		ANT-0+1+2+3				
		(dBm)		(W)		
5190	54M	22.55		0.180		≤ 26.96
5230		24.95		0.312		
5755		24.72		0.297		
5795		24.60		0.288		
5190	720M	22.39		0.174		≤ 26.96
5230		24.71		0.296		
5755		24.60		0.289		
5755		24.52		0.283		



Test Item		Maximum Conducted Output Power								
Test Mode		Mode 5: IEEE 802.11ac 80MHz link mode								
Date of Test		04/28/2016								
Frequency (MHz)	Data Rate	Max. Output Power								FCC Limit (dBm)
		ANT-0		ANT-1		ANT-2		ANT-0+1+2+3		
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	
5210	117.2M	13.51	0.022	13.50	0.022	15.24	0.033	14.87	0.031	≤ 26.96
5775		17.44	0.055	17.25	0.053	19.21	0.083	18.70	0.074	≤ 26.96
5210	1560M	13.54	0.023	13.42	0.022	14.87	0.031	14.89	0.031	≤ 26.96
5775		17.24	0.053	17.48	0.056	18.98	0.079	18.52	0.071	≤ 26.96

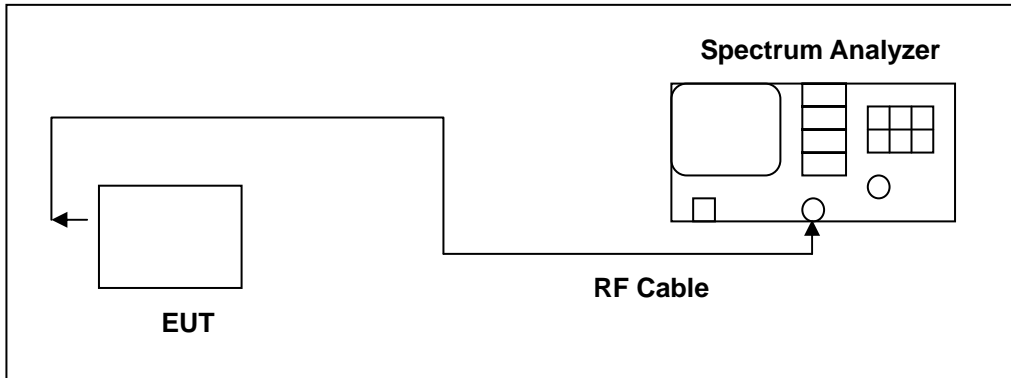
Test Item		Maximum Conducted Output Power								
Test Mode		Mode 5: IEEE 802.11ac 80MHz link mode								
Date of Test		04/28/2016								
Frequency (MHz)	Data Rate	Max. Output Power								FCC Limit (dBm)
		ANT-0+1+2+3								
		(dBm)				(W)				
5210	117.2M	20.37				0.109				≤ 26.96
5775		24.25				0.266				≤ 26.96
5210	1560M	20.26				0.106				≤ 26.96
5775		24.14				0.259				≤ 26.96

4.4. 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
Microwave Cable	EMCI	EMCI 104-SM-SM-1500	140303	02/23/2016	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

Test Item	26dB RF Bandwidth & 99 % Occupied Bandwidth Measurement							
Test Mode	Mode 2: IEEE 802.11a link mode							
Date of Test	05/14/2016							
Frequency (MHz)	26dB Bandwidth (MHz)				99 % Occupied Bandwidth			
	ANT-0	ANT-1	ANT-2	ANT-3	ANT-0	ANT-1	ANT-2	ANT-3
5180	21.810	21.810	22.910	22.420	16.715	16.708	16.896	16.879
5200	21.210	22.270	23.800	22.600	16.650	16.767	16.736	16.789
5240	21.850	22.600	23.480	23.080	16.683	16.753	16.939	16.842

Test Item	26dB RF Bandwidth & 99 % Occupied Bandwidth Measurement							
Test Mode	Mode 3: IEEE 802.11ac 20MHz link mode							
Date of Test	05/14/2016							
Frequency (MHz)	26dB Bandwidth (MHz)				99 % Occupied Bandwidth			
	ANT-0	ANT-1	ANT-2	ANT-3	ANT-0	ANT-1	ANT-2	ANT-3
5180	24.260	23.590	23.230	22.970	18.086	18.016	17.979	17.904
5200	23.960	24.650	23.540	23.700	18.045	18.045	17.970	17.887
5240	24.340	24.190	24.010	23.880	18.075	18.146	17.960	17.951

Test Item	26dB RF Bandwidth & 99 % Occupied Bandwidth Measurement							
Test Mode	Mode 4: IEEE 802.11ac 40MHz link mode							
Date of Test	05/14/2016							
Frequency (MHz)	26dB Bandwidth (MHz)				99 % Occupied Bandwidth			
	ANT-0	ANT-1	ANT-2	ANT-3	ANT-0	ANT-1	ANT-2	ANT-3
5190	41.660	43.100	44.370	43.180	36.261	36.721	36.826	36.710
5230	43.250	43.050	44.170	43.560	36.661	36.661	36.818	36.774

Test Item	26dB RF Bandwidth & 99 % Occupied Bandwidth Measurement							
Test Mode	Mode 5: IEEE 802.11ac 80MHz link mode							
Date of Test	05/14/2016							
Frequency (MHz)	26dB Bandwidth (MHz)				99 % Occupied Bandwidth			
	ANT-0	ANT-1	ANT-2	ANT-3	ANT-0	ANT-1	ANT-2	ANT-3
5210	83.960	83.550	83.070	82.490	75.370	75.124	75.401	75.520

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



■ Test Graphs

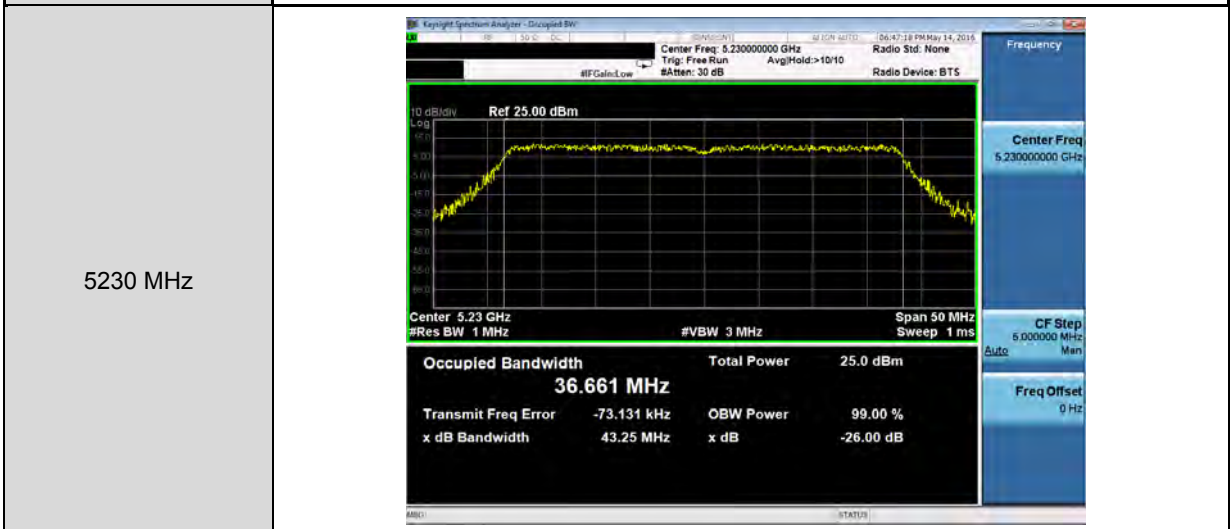
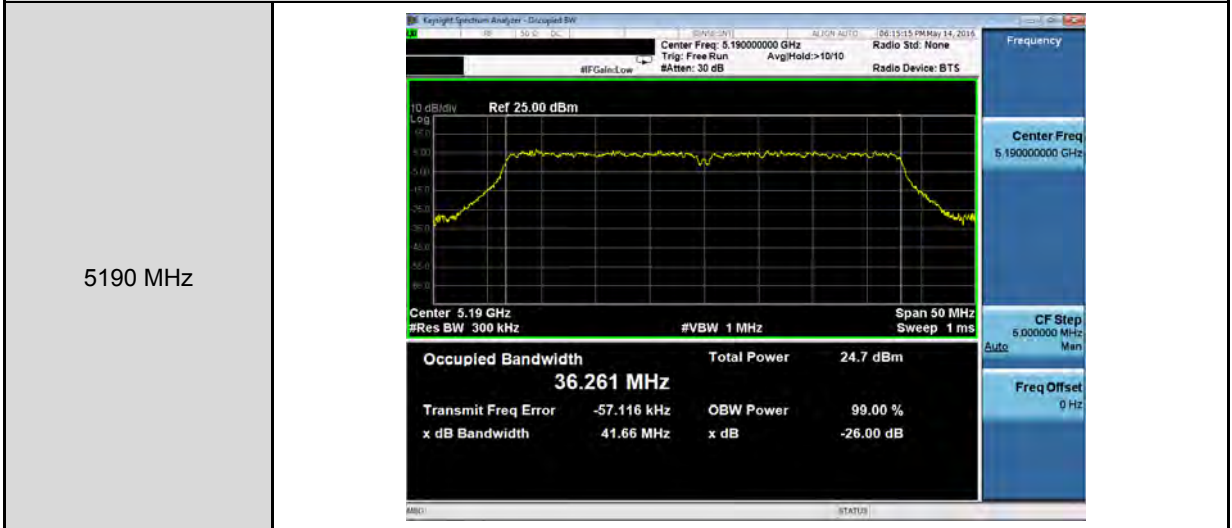
Mode 2: IEEE 802.11a link mode_ ANT-0																			
5180 MHz	<p>Center Freq: 5.18000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>24.6 dBm</td> </tr> <tr> <td>16.715 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>-51.633 kHz</td> <td>x dB</td> <td>-26.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>21.81 MHz</td> <td></td> <td></td> </tr> </table>	Occupied Bandwidth	Total Power	24.6 dBm	16.715 MHz			Transmit Freq Error	OBW Power	99.00 %	-51.633 kHz	x dB	-26.00 dB	x dB Bandwidth			21.81 MHz		
Occupied Bandwidth	Total Power	24.6 dBm																	
16.715 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-51.633 kHz	x dB	-26.00 dB																	
x dB Bandwidth																			
21.81 MHz																			
5200 MHz	<p>Center Freq: 5.20000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>23.3 dBm</td> </tr> <tr> <td>16.650 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>-38.628 kHz</td> <td>x dB</td> <td>-26.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>21.21 MHz</td> <td></td> <td></td> </tr> </table>	Occupied Bandwidth	Total Power	23.3 dBm	16.650 MHz			Transmit Freq Error	OBW Power	99.00 %	-38.628 kHz	x dB	-26.00 dB	x dB Bandwidth			21.21 MHz		
Occupied Bandwidth	Total Power	23.3 dBm																	
16.650 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-38.628 kHz	x dB	-26.00 dB																	
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21.21 MHz																			
5240 MHz	<p>Center Freq: 5.24000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>23.0 dBm</td> </tr> <tr> <td>16.683 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>-77.724 kHz</td> <td>x dB</td> <td>-26.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>21.85 MHz</td> <td></td> <td></td> </tr> </table>	Occupied Bandwidth	Total Power	23.0 dBm	16.683 MHz			Transmit Freq Error	OBW Power	99.00 %	-77.724 kHz	x dB	-26.00 dB	x dB Bandwidth			21.85 MHz		
Occupied Bandwidth	Total Power	23.0 dBm																	
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x dB Bandwidth																			
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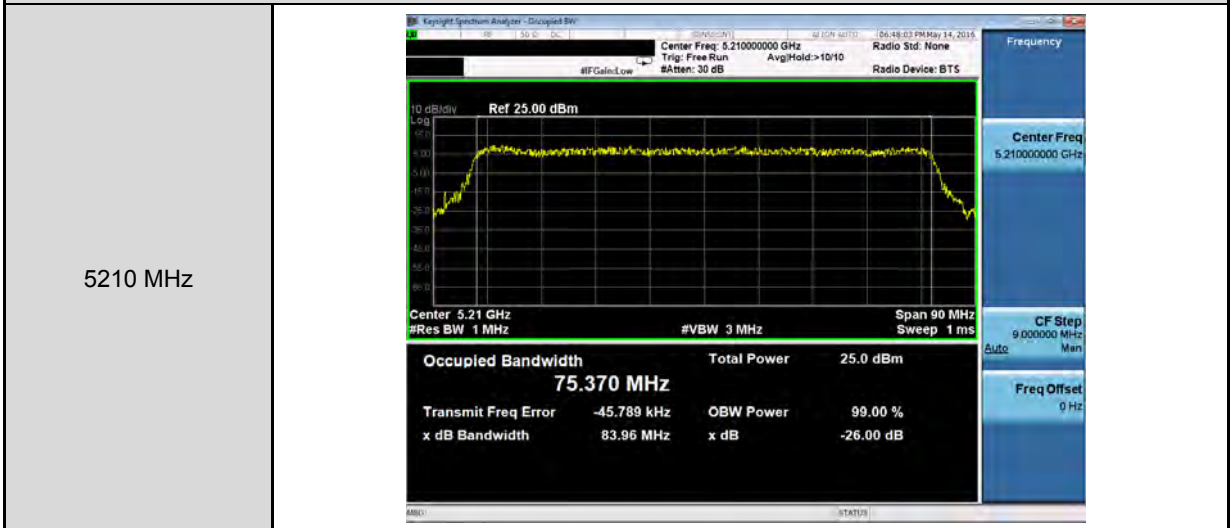
Mode 3: IEEE 802.11ac 20MHz link mode_ANT-0																			
5180 MHz	<p>Center Freq: 5.18000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>23.9 dBm</td></tr><tr><td>18.086 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-76.275 kHz</td><td></td><td></td></tr><tr><td>x dB Bandwidth</td><td>x dB</td><td>-26.00 dB</td></tr><tr><td>24.26 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	23.9 dBm	18.086 MHz			Transmit Freq Error	OBW Power	99.00 %	-76.275 kHz			x dB Bandwidth	x dB	-26.00 dB	24.26 MHz		
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Occupied Bandwidth	Total Power	22.7 dBm																	
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24.34 MHz																			



Mode 4: IEEE 802.11ac 40MHz link mode_ ANT-0



Mode 5: IEEE 802.11ac 80MHz link mode_ ANT-0





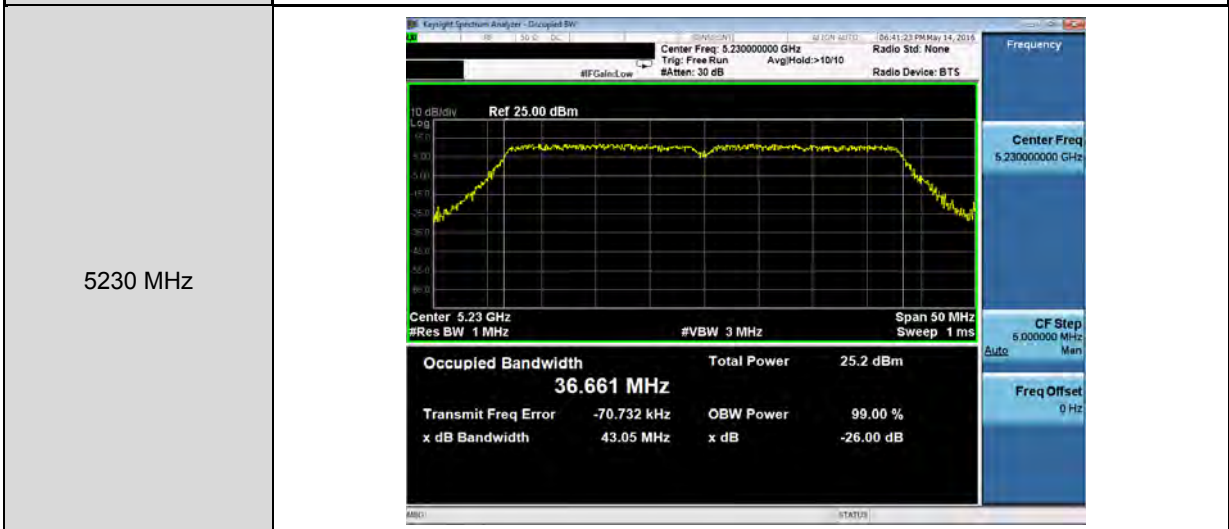
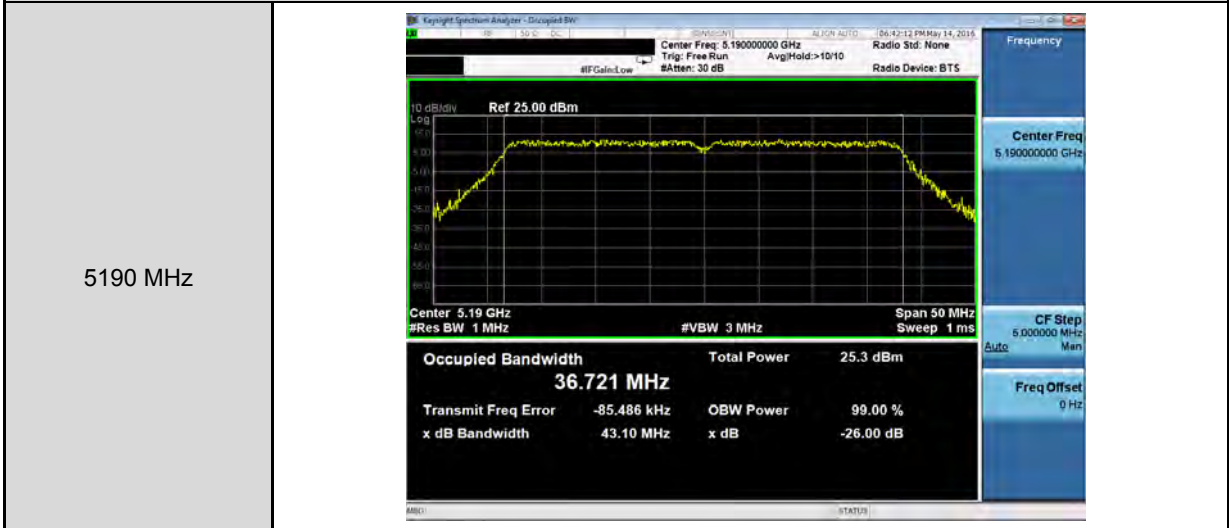
Mode 2: IEEE 802.11a link mode_ ANT-1																			
5180 MHz	<p>Center Freq: 5.18000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>23.2 dBm</td></tr><tr><td>16.708 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-27.864 kHz</td><td></td><td></td></tr><tr><td>x dB Bandwidth</td><td>x dB</td><td>-26.00 dB</td></tr><tr><td>21.81 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	23.2 dBm	16.708 MHz			Transmit Freq Error	OBW Power	99.00 %	-27.864 kHz			x dB Bandwidth	x dB	-26.00 dB	21.81 MHz		
Occupied Bandwidth	Total Power	23.2 dBm																	
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Transmit Freq Error	OBW Power	99.00 %																	
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5200 MHz	<p>Center Freq: 5.20000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>23.6 dBm</td></tr><tr><td>16.767 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-24.501 kHz</td><td></td><td></td></tr><tr><td>x dB Bandwidth</td><td>x dB</td><td>-26.00 dB</td></tr><tr><td>22.27 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	23.6 dBm	16.767 MHz			Transmit Freq Error	OBW Power	99.00 %	-24.501 kHz			x dB Bandwidth	x dB	-26.00 dB	22.27 MHz		
Occupied Bandwidth	Total Power	23.6 dBm																	
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Transmit Freq Error	OBW Power	99.00 %																	
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22.27 MHz																			
5240 MHz	<p>Center Freq: 5.24000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>22.8 dBm</td></tr><tr><td>16.753 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-43.271 kHz</td><td></td><td></td></tr><tr><td>x dB Bandwidth</td><td>x dB</td><td>-26.00 dB</td></tr><tr><td>22.60 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	22.8 dBm	16.753 MHz			Transmit Freq Error	OBW Power	99.00 %	-43.271 kHz			x dB Bandwidth	x dB	-26.00 dB	22.60 MHz		
Occupied Bandwidth	Total Power	22.8 dBm																	
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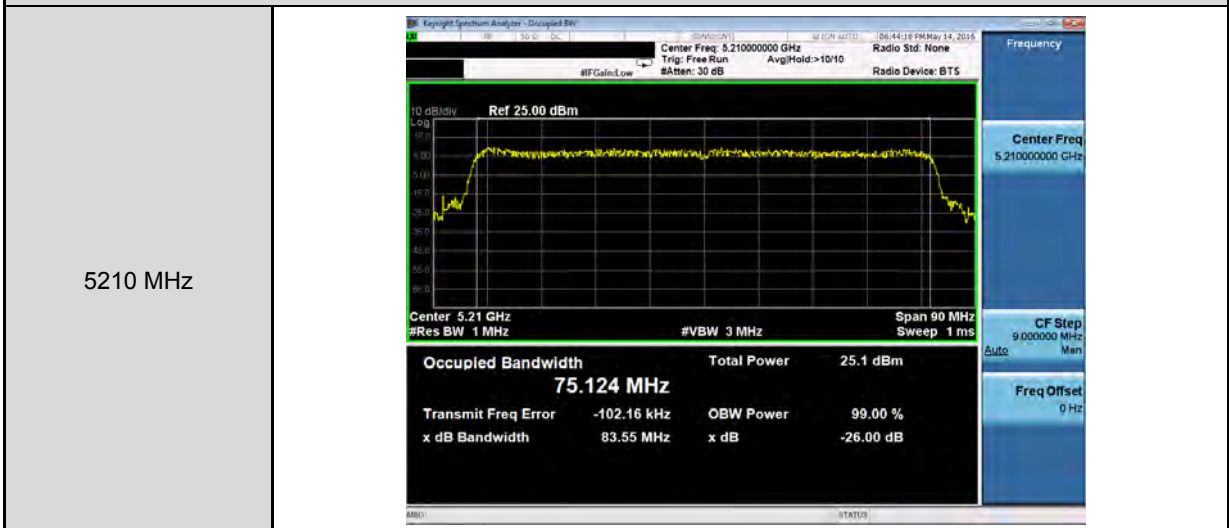
Mode 3: IEEE 802.11ac 20MHz link mode_ANT-1																			
5180 MHz	<p>Center Freq: 5.18000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>23.0 dBm</td></tr><tr><td>18.016 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-74.300 kHz</td><td>x dB</td><td>-26.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>23.59 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	23.0 dBm	18.016 MHz			Transmit Freq Error	OBW Power	99.00 %	-74.300 kHz	x dB	-26.00 dB	x dB Bandwidth			23.59 MHz		
Occupied Bandwidth	Total Power	23.0 dBm																	
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Transmit Freq Error	OBW Power	99.00 %																	
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5200 MHz	<p>Center Freq: 5.20000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>23.1 dBm</td></tr><tr><td>18.045 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-91.940 kHz</td><td>x dB</td><td>-26.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>24.65 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	23.1 dBm	18.045 MHz			Transmit Freq Error	OBW Power	99.00 %	-91.940 kHz	x dB	-26.00 dB	x dB Bandwidth			24.65 MHz		
Occupied Bandwidth	Total Power	23.1 dBm																	
18.045 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-91.940 kHz	x dB	-26.00 dB																	
x dB Bandwidth																			
24.65 MHz																			
5240 MHz	<p>Center Freq: 5.24000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>23.8 dBm</td></tr><tr><td>18.146 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-112.35 kHz</td><td>x dB</td><td>-26.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>24.19 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	23.8 dBm	18.146 MHz			Transmit Freq Error	OBW Power	99.00 %	-112.35 kHz	x dB	-26.00 dB	x dB Bandwidth			24.19 MHz		
Occupied Bandwidth	Total Power	23.8 dBm																	
18.146 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-112.35 kHz	x dB	-26.00 dB																	
x dB Bandwidth																			
24.19 MHz																			



Mode 4: IEEE 802.11ac 40MHz link mode_ANT-1



Mode 5: IEEE 802.11ac 80MHz link mode_ANT-1





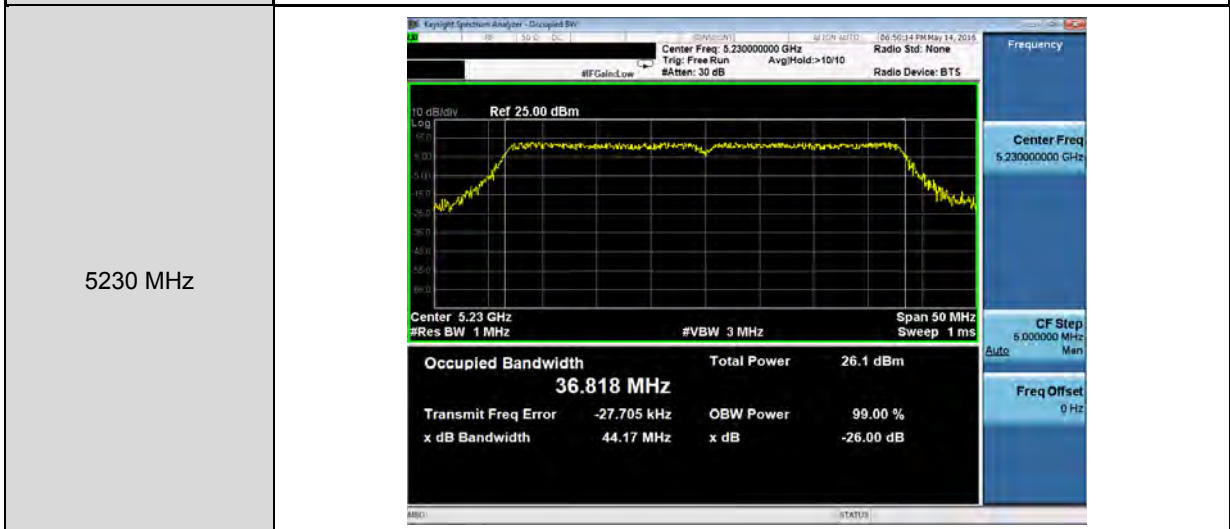
Mode 2: IEEE 802.11a link mode_ANT-2													
5180 MHz	<p>Center Freq: 5.18000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td></tr><tr><td>16.896 MHz</td><td>25.1 dBm</td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td></tr><tr><td>-46.221 kHz</td><td>99.00 %</td></tr><tr><td>x dB Bandwidth</td><td>x dB</td></tr><tr><td>22.91 MHz</td><td>-26.00 dB</td></tr></table>	Occupied Bandwidth	Total Power	16.896 MHz	25.1 dBm	Transmit Freq Error	OBW Power	-46.221 kHz	99.00 %	x dB Bandwidth	x dB	22.91 MHz	-26.00 dB
Occupied Bandwidth	Total Power												
16.896 MHz	25.1 dBm												
Transmit Freq Error	OBW Power												
-46.221 kHz	99.00 %												
x dB Bandwidth	x dB												
22.91 MHz	-26.00 dB												
5200 MHz	<p>Center Freq: 5.20000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td></tr><tr><td>16.736 MHz</td><td>24.3 dBm</td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td></tr><tr><td>-66.763 kHz</td><td>99.00 %</td></tr><tr><td>x dB Bandwidth</td><td>x dB</td></tr><tr><td>23.80 MHz</td><td>-26.00 dB</td></tr></table>	Occupied Bandwidth	Total Power	16.736 MHz	24.3 dBm	Transmit Freq Error	OBW Power	-66.763 kHz	99.00 %	x dB Bandwidth	x dB	23.80 MHz	-26.00 dB
Occupied Bandwidth	Total Power												
16.736 MHz	24.3 dBm												
Transmit Freq Error	OBW Power												
-66.763 kHz	99.00 %												
x dB Bandwidth	x dB												
23.80 MHz	-26.00 dB												
5240 MHz	<p>Center Freq: 5.24000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td></tr><tr><td>16.939 MHz</td><td>25.3 dBm</td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td></tr><tr><td>-71.729 kHz</td><td>99.00 %</td></tr><tr><td>x dB Bandwidth</td><td>x dB</td></tr><tr><td>23.48 MHz</td><td>-26.00 dB</td></tr></table>	Occupied Bandwidth	Total Power	16.939 MHz	25.3 dBm	Transmit Freq Error	OBW Power	-71.729 kHz	99.00 %	x dB Bandwidth	x dB	23.48 MHz	-26.00 dB
Occupied Bandwidth	Total Power												
16.939 MHz	25.3 dBm												
Transmit Freq Error	OBW Power												
-71.729 kHz	99.00 %												
x dB Bandwidth	x dB												
23.48 MHz	-26.00 dB												



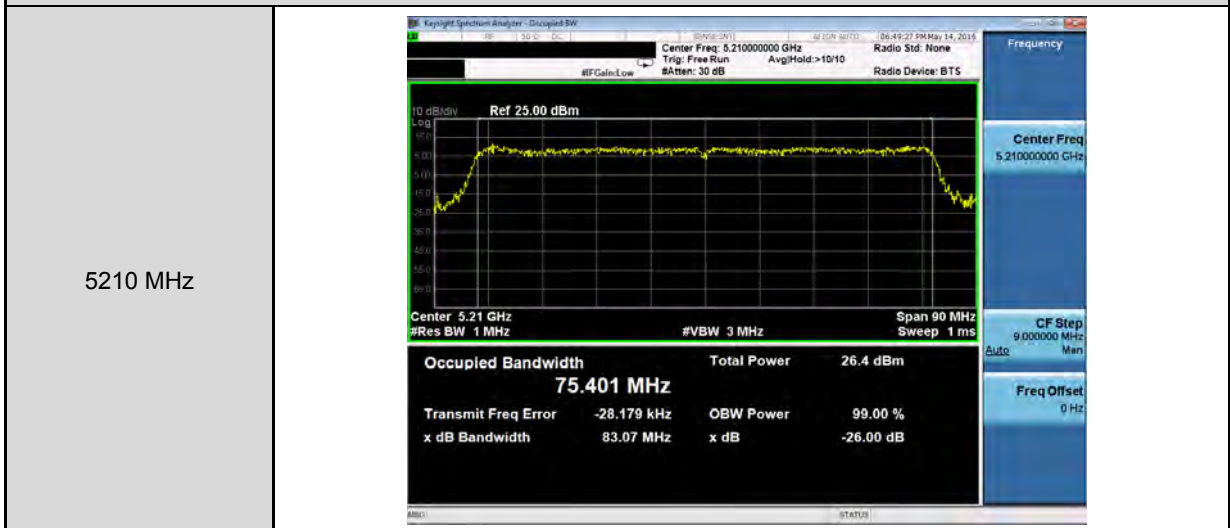
Mode 3: IEEE 802.11ac 20MHz link mode_ANT-2																			
5180 MHz	<p>Center Freq: 5.18000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>24.2 dBm</td></tr><tr><td>17.979 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-51.668 kHz</td><td></td><td></td></tr><tr><td>x dB Bandwidth</td><td>x dB</td><td>-26.00 dB</td></tr><tr><td>23.23 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	24.2 dBm	17.979 MHz			Transmit Freq Error	OBW Power	99.00 %	-51.668 kHz			x dB Bandwidth	x dB	-26.00 dB	23.23 MHz		
Occupied Bandwidth	Total Power	24.2 dBm																	
17.979 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-51.668 kHz																			
x dB Bandwidth	x dB	-26.00 dB																	
23.23 MHz																			
5200 MHz	<p>Center Freq: 5.20000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>24.3 dBm</td></tr><tr><td>17.970 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-42.830 kHz</td><td></td><td></td></tr><tr><td>x dB Bandwidth</td><td>x dB</td><td>-26.00 dB</td></tr><tr><td>23.54 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	24.3 dBm	17.970 MHz			Transmit Freq Error	OBW Power	99.00 %	-42.830 kHz			x dB Bandwidth	x dB	-26.00 dB	23.54 MHz		
Occupied Bandwidth	Total Power	24.3 dBm																	
17.970 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
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23.54 MHz																			
5240 MHz	<p>Center Freq: 5.24000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>24.8 dBm</td></tr><tr><td>17.960 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-66.345 kHz</td><td></td><td></td></tr><tr><td>x dB Bandwidth</td><td>x dB</td><td>-26.00 dB</td></tr><tr><td>24.01 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	24.8 dBm	17.960 MHz			Transmit Freq Error	OBW Power	99.00 %	-66.345 kHz			x dB Bandwidth	x dB	-26.00 dB	24.01 MHz		
Occupied Bandwidth	Total Power	24.8 dBm																	
17.960 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-66.345 kHz																			
x dB Bandwidth	x dB	-26.00 dB																	
24.01 MHz																			



Mode 4: IEEE 802.11ac 40MHz link mode_ANT-2



Mode 5: IEEE 802.11ac 80MHz link mode_ANT-2





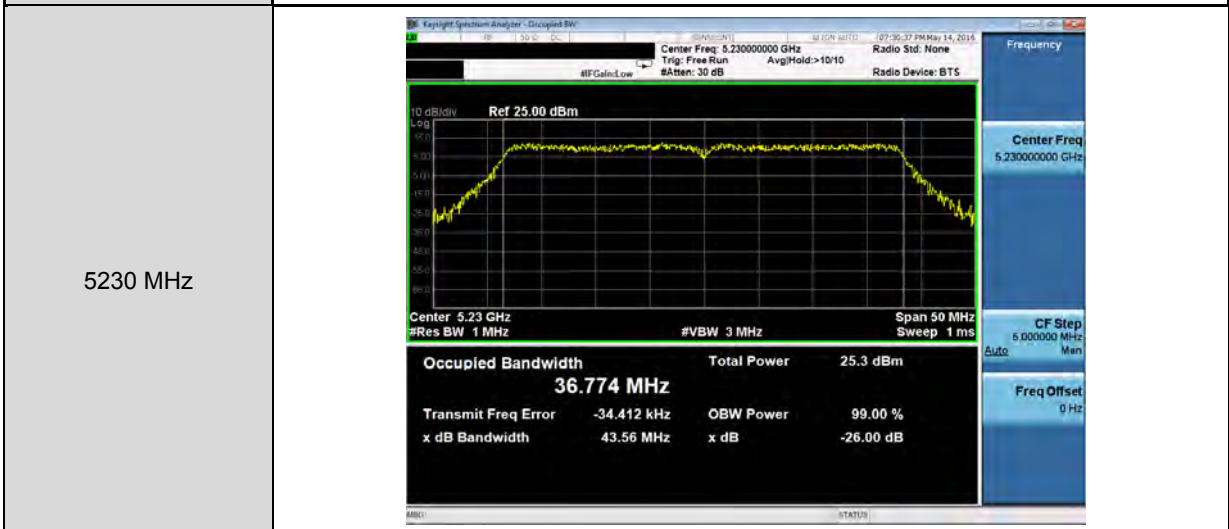
Mode 2: IEEE 802.11a link mode_ ANT-3																
5180 MHz	<p>Center Freq: 5.18000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>24.5 dBm</td></tr><tr><td>16.879 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-19.230 kHz</td><td>x dB</td><td>-26.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td>22.42 MHz</td></tr></table>	Occupied Bandwidth	Total Power	24.5 dBm	16.879 MHz			Transmit Freq Error	OBW Power	99.00 %	-19.230 kHz	x dB	-26.00 dB	x dB Bandwidth		22.42 MHz
Occupied Bandwidth	Total Power	24.5 dBm														
16.879 MHz																
Transmit Freq Error	OBW Power	99.00 %														
-19.230 kHz	x dB	-26.00 dB														
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5200 MHz	<p>Center Freq: 5.20000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>23.6 dBm</td></tr><tr><td>16.789 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-57.476 kHz</td><td>x dB</td><td>-26.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td>22.60 MHz</td></tr></table>	Occupied Bandwidth	Total Power	23.6 dBm	16.789 MHz			Transmit Freq Error	OBW Power	99.00 %	-57.476 kHz	x dB	-26.00 dB	x dB Bandwidth		22.60 MHz
Occupied Bandwidth	Total Power	23.6 dBm														
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Transmit Freq Error	OBW Power	99.00 %														
-57.476 kHz	x dB	-26.00 dB														
x dB Bandwidth		22.60 MHz														
5240 MHz	<p>Center Freq: 5.24000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>23.7 dBm</td></tr><tr><td>16.842 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-52.691 kHz</td><td>x dB</td><td>-26.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td>23.08 MHz</td></tr></table>	Occupied Bandwidth	Total Power	23.7 dBm	16.842 MHz			Transmit Freq Error	OBW Power	99.00 %	-52.691 kHz	x dB	-26.00 dB	x dB Bandwidth		23.08 MHz
Occupied Bandwidth	Total Power	23.7 dBm														
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Transmit Freq Error	OBW Power	99.00 %														
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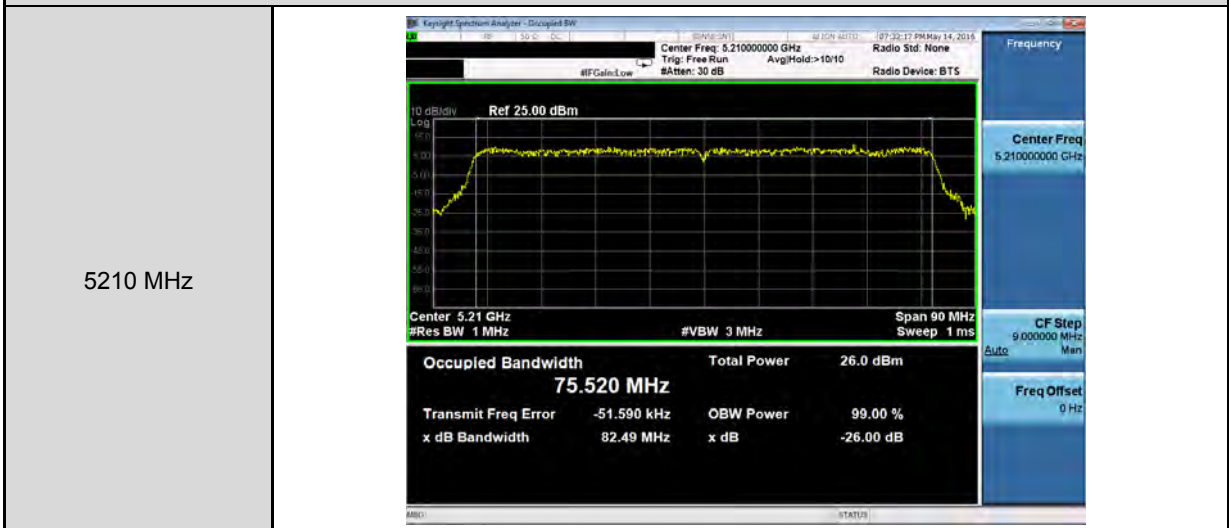
Mode 3: IEEE 802.11ac 20MHz link mode_ANT-3																			
5180 MHz	<p>Center Freq: 5.18000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>24.3 dBm</td> </tr> <tr> <td>17.904 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>-63.929 kHz</td> <td></td> <td></td> </tr> <tr> <td>x dB Bandwidth</td> <td>x dB</td> <td>-26.00 dB</td> </tr> <tr> <td>22.97 MHz</td> <td></td> <td></td> </tr> </table>	Occupied Bandwidth	Total Power	24.3 dBm	17.904 MHz			Transmit Freq Error	OBW Power	99.00 %	-63.929 kHz			x dB Bandwidth	x dB	-26.00 dB	22.97 MHz		
Occupied Bandwidth	Total Power	24.3 dBm																	
17.904 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-63.929 kHz																			
x dB Bandwidth	x dB	-26.00 dB																	
22.97 MHz																			
5200 MHz	<p>Center Freq: 5.20000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>23.9 dBm</td> </tr> <tr> <td>17.887 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>-50.324 kHz</td> <td></td> <td></td> </tr> <tr> <td>x dB Bandwidth</td> <td>x dB</td> <td>-26.00 dB</td> </tr> <tr> <td>23.70 MHz</td> <td></td> <td></td> </tr> </table>	Occupied Bandwidth	Total Power	23.9 dBm	17.887 MHz			Transmit Freq Error	OBW Power	99.00 %	-50.324 kHz			x dB Bandwidth	x dB	-26.00 dB	23.70 MHz		
Occupied Bandwidth	Total Power	23.9 dBm																	
17.887 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-50.324 kHz																			
x dB Bandwidth	x dB	-26.00 dB																	
23.70 MHz																			
5240 MHz	<p>Center Freq: 5.24000000 GHz #Res BW: 300 kHz #VBW: 1 MHz Span: 25 MHz Sweep: 1 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>24.1 dBm</td> </tr> <tr> <td>17.951 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>-80.656 kHz</td> <td></td> <td></td> </tr> <tr> <td>x dB Bandwidth</td> <td>x dB</td> <td>-26.00 dB</td> </tr> <tr> <td>23.88 MHz</td> <td></td> <td></td> </tr> </table>	Occupied Bandwidth	Total Power	24.1 dBm	17.951 MHz			Transmit Freq Error	OBW Power	99.00 %	-80.656 kHz			x dB Bandwidth	x dB	-26.00 dB	23.88 MHz		
Occupied Bandwidth	Total Power	24.1 dBm																	
17.951 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-80.656 kHz																			
x dB Bandwidth	x dB	-26.00 dB																	
23.88 MHz																			



Mode 4: IEEE 802.11ac 40MHz link mode_ANT-3



Mode 5: IEEE 802.11ac 80MHz link mode_ANT-3



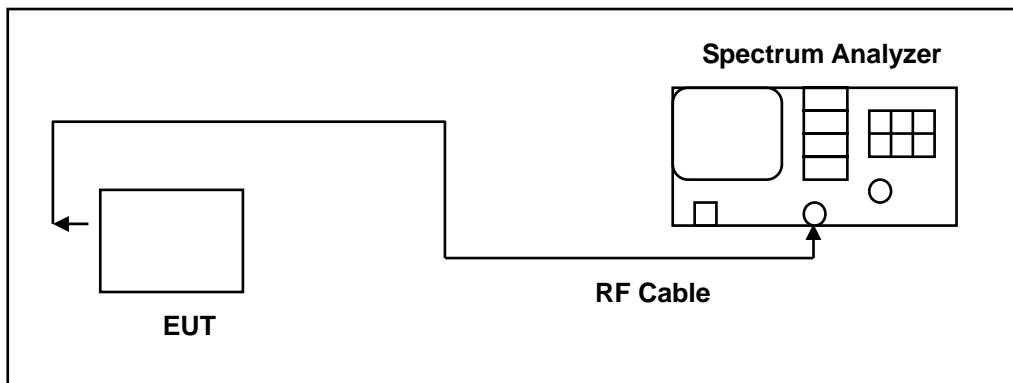
4.5. 6dB RF Bandwidth Measurement

■ 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
Microwave Cable	EMCI	EMCI 104-SM-SM-1500	140303	02/23/2016	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

Test Item	6dB RF Bandwidth				
Test Mode	Mode 2: IEEE 802.11a link mode				
Date of Test	05/14/2016				
Frequency (MHz)	6dB Bandwidth (kHz)				Limit (kHz)
	ANT-0	ANT-1	ANT-2	ANT-3	
5745	16480	16500	16510	16520	> 500
5785	16470	16500	16480	16510	> 500
5825	16490	16450	16510	16450	> 500

Test Item	6dB RF Bandwidth				
Test Mode	Mode 3: IEEE 802.11ac 20MHz link mode				
Date of Test	05/14/2016				
Frequency (MHz)	6dB Bandwidth (kHz)				Limit (kHz)
	ANT-0	ANT-1	ANT-2	ANT-3	
5745	17650	17840	17630	17820	> 500
5785	17800	17840	17630	17650	> 500
5825	17810	17790	17820	17620	> 500

Test Item	6dB RF Bandwidth				
Test Mode	Mode 4: IEEE 802.11ac 40MHz link mode				
Date of Test	05/14/2016				
Frequency (MHz)	6dB Bandwidth (kHz)				Limit (kHz)
	ANT-0	ANT-1	ANT-2	ANT-3	
5755	36360	36290	35670	36290	> 500
5795	36410	36080	36350	36450	> 500

Test Item	6dB RF Bandwidth				
Test Mode	Mode 5: IEEE 802.11ac 80MHz link mode				
Date of Test	05/14/2016				
Frequency (MHz)	6dB Bandwidth (kHz)				Limit (kHz)
	ANT-0	ANT-1	ANT-2	ANT-3	
5775	75260	75410	78840	74740	> 500



■ Test Graphs

Mode 2: IEEE 802.11a link mode_ANT-0																			
5745 MHz	<p>Center Freq: 5.74500000 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>23.9 dBm</td> </tr> <tr> <td>16.441 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>-66.513 kHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>16.48 MHz</td> <td></td> <td></td> </tr> </table>	Occupied Bandwidth	Total Power	23.9 dBm	16.441 MHz			Transmit Freq Error	OBW Power	99.00 %	-66.513 kHz	x dB	-6.00 dB	x dB Bandwidth			16.48 MHz		
Occupied Bandwidth	Total Power	23.9 dBm																	
16.441 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-66.513 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
16.48 MHz																			
5785 MHz	<p>Center Freq: 5.78500000 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>22.9 dBm</td> </tr> <tr> <td>16.433 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>-65.933 kHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>16.47 MHz</td> <td></td> <td></td> </tr> </table>	Occupied Bandwidth	Total Power	22.9 dBm	16.433 MHz			Transmit Freq Error	OBW Power	99.00 %	-65.933 kHz	x dB	-6.00 dB	x dB Bandwidth			16.47 MHz		
Occupied Bandwidth	Total Power	22.9 dBm																	
16.433 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-65.933 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
16.47 MHz																			
5825 MHz	<p>Center Freq: 5.82500000 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>23.8 dBm</td> </tr> <tr> <td>16.440 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>-62.818 kHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>16.49 MHz</td> <td></td> <td></td> </tr> </table>	Occupied Bandwidth	Total Power	23.8 dBm	16.440 MHz			Transmit Freq Error	OBW Power	99.00 %	-62.818 kHz	x dB	-6.00 dB	x dB Bandwidth			16.49 MHz		
Occupied Bandwidth	Total Power	23.8 dBm																	
16.440 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-62.818 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
16.49 MHz																			



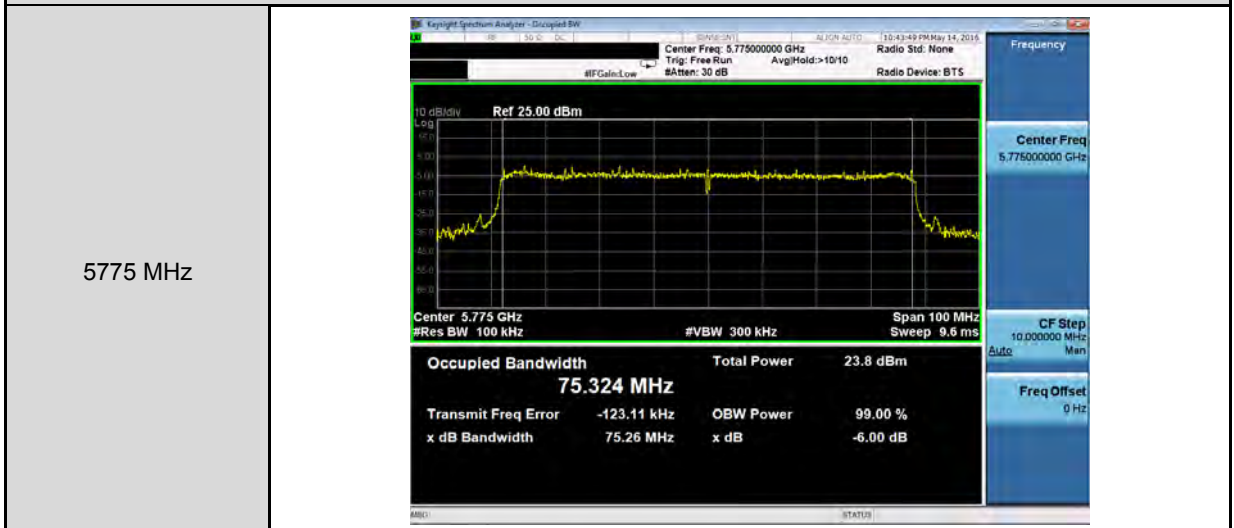
Mode 3: IEEE 802.11ac 20MHz link mode_ANT-0																			
5745 MHz	<p>Center Freq: 5.74500000 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>22.7 dBm</td></tr><tr><td>17.753 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-63.751 kHz</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>17.65 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	22.7 dBm	17.753 MHz			Transmit Freq Error	OBW Power	99.00 %	-63.751 kHz	x dB	-6.00 dB	x dB Bandwidth			17.65 MHz		
Occupied Bandwidth	Total Power	22.7 dBm																	
17.753 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-63.751 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
17.65 MHz																			
5785 MHz	<p>Center Freq: 5.78500000 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>22.6 dBm</td></tr><tr><td>17.765 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-70.849 kHz</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>17.80 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	22.6 dBm	17.765 MHz			Transmit Freq Error	OBW Power	99.00 %	-70.849 kHz	x dB	-6.00 dB	x dB Bandwidth			17.80 MHz		
Occupied Bandwidth	Total Power	22.6 dBm																	
17.765 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-70.849 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
17.80 MHz																			
5825 MHz	<p>Center Freq: 5.82500000 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms</p> <table border="1"><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>22.5 dBm</td></tr><tr><td>17.756 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-69.117 kHz</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>17.81 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	22.5 dBm	17.756 MHz			Transmit Freq Error	OBW Power	99.00 %	-69.117 kHz	x dB	-6.00 dB	x dB Bandwidth			17.81 MHz		
Occupied Bandwidth	Total Power	22.5 dBm																	
17.756 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-69.117 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
17.81 MHz																			



Mode 4: IEEE 802.11ac 40MHz link mode_ANT-0



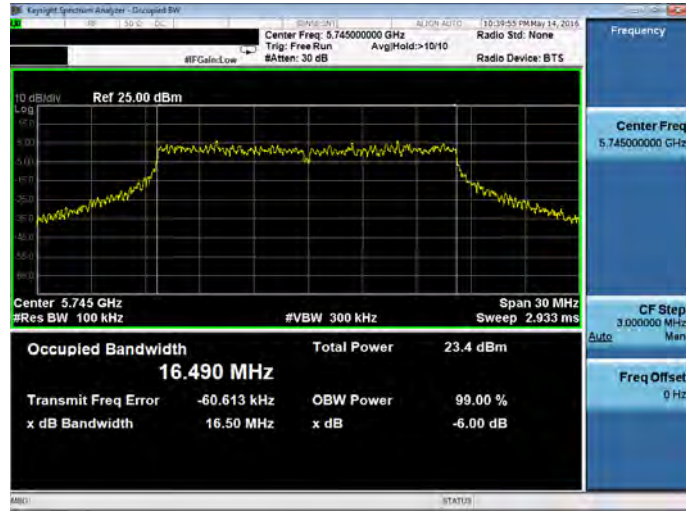
Mode 5: IEEE 802.11ac 80MHz link mode_ANT-0



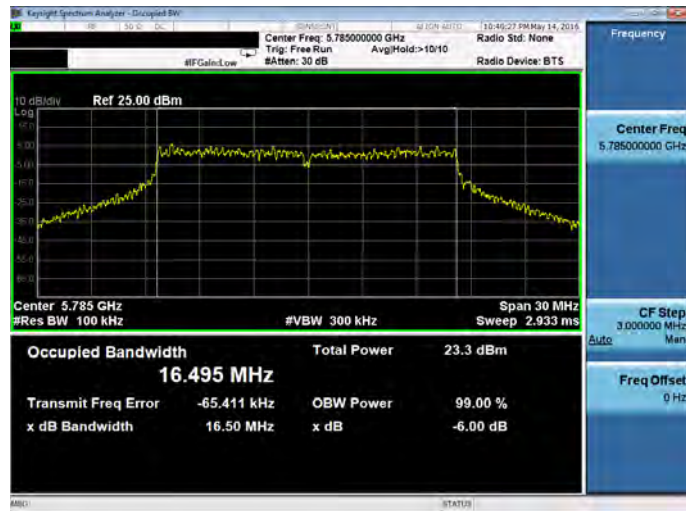


Mode 2: IEEE 802.11a link mode_ANT-1

5745 MHz



5785 MHz



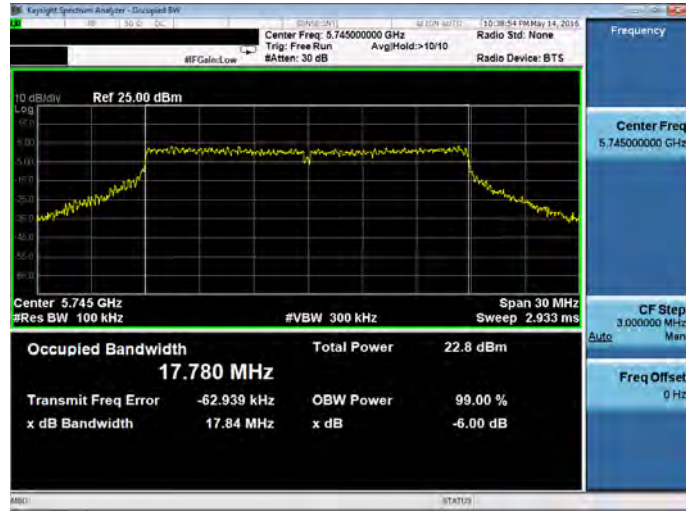
5825 MHz



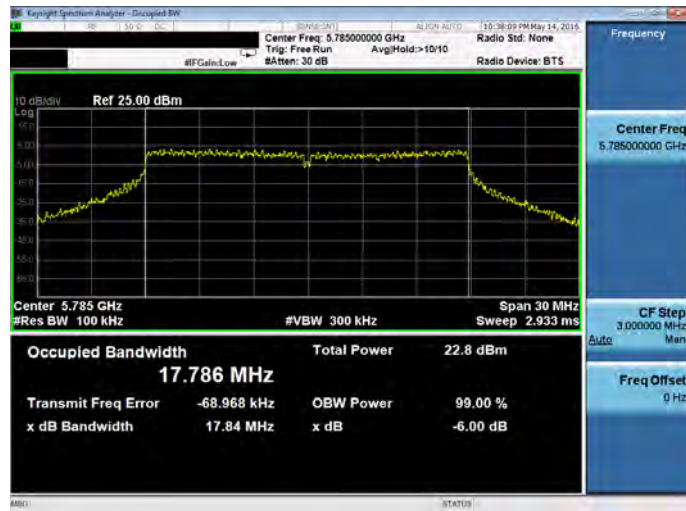


Mode 3: IEEE 802.11ac 20MHz link mode_ANT-1

5745 MHz



5785 MHz

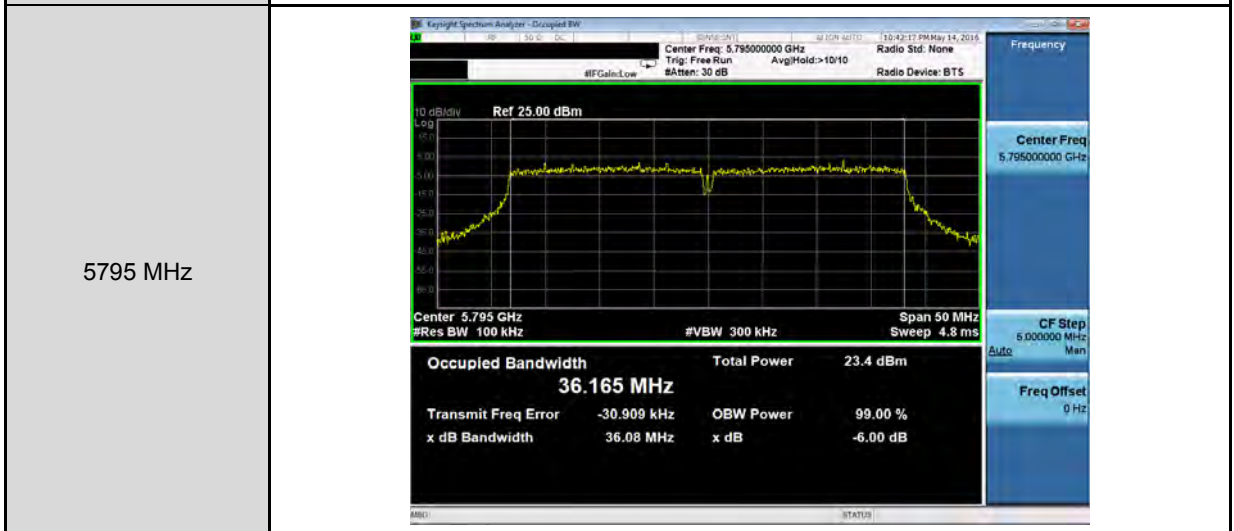


5825 MHz

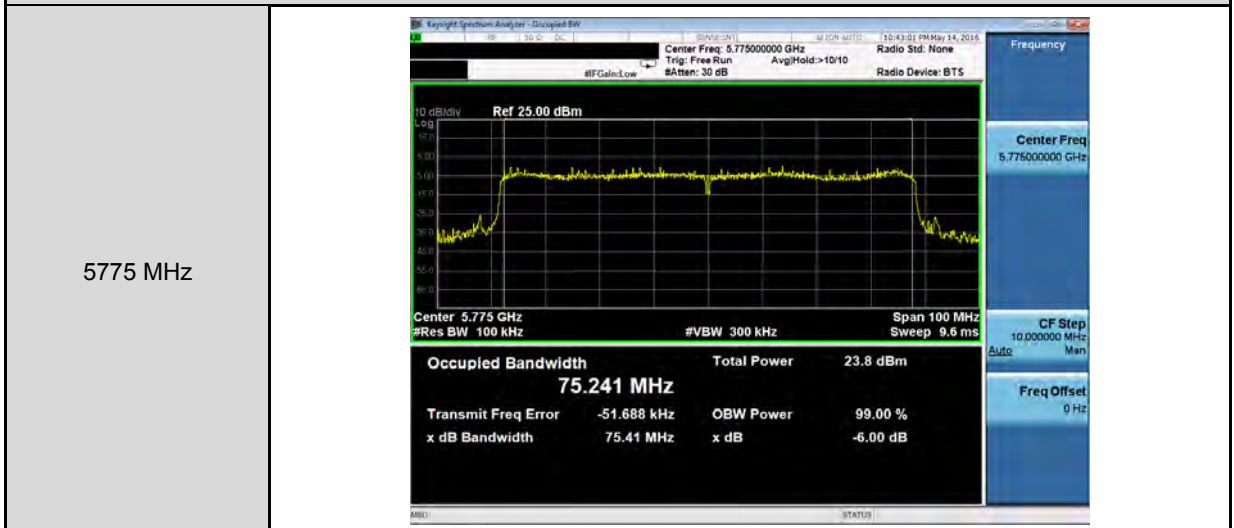




Mode 4: IEEE 802.11ac 40MHz link mode_ANT-1



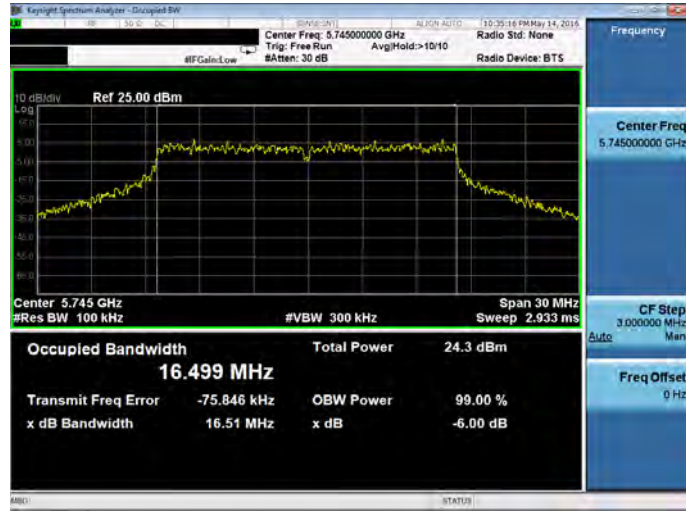
Mode 5: IEEE 802.11ac 80MHz link mode_ANT-1





Mode 2: IEEE 802.11a link mode_ANT-2

5745 MHz



5785 MHz



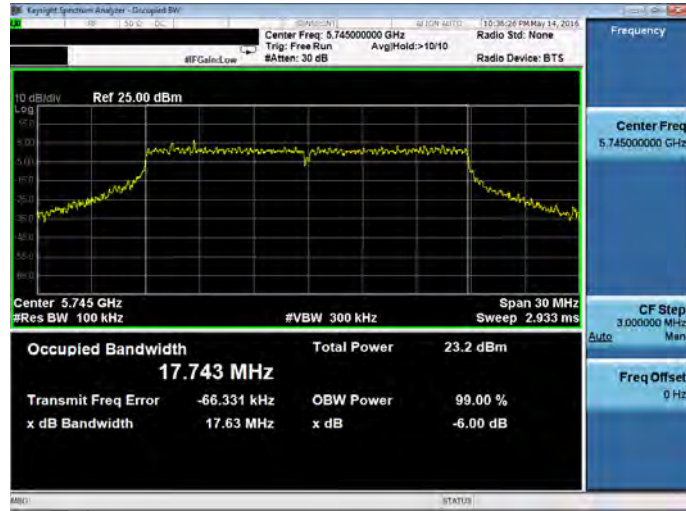
5825 MHz





Mode 3: IEEE 802.11ac 20MHz link mode_ANT-2

5745 MHz



5785 MHz



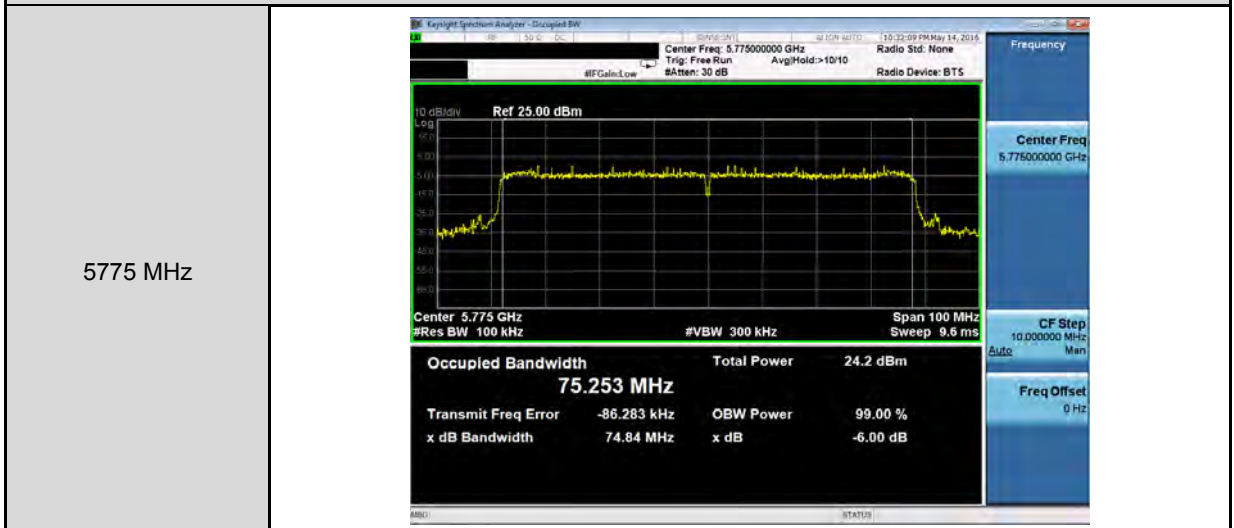
5825 MHz



Mode 4: IEEE 802.11ac 40MHz link mode_ANT-2



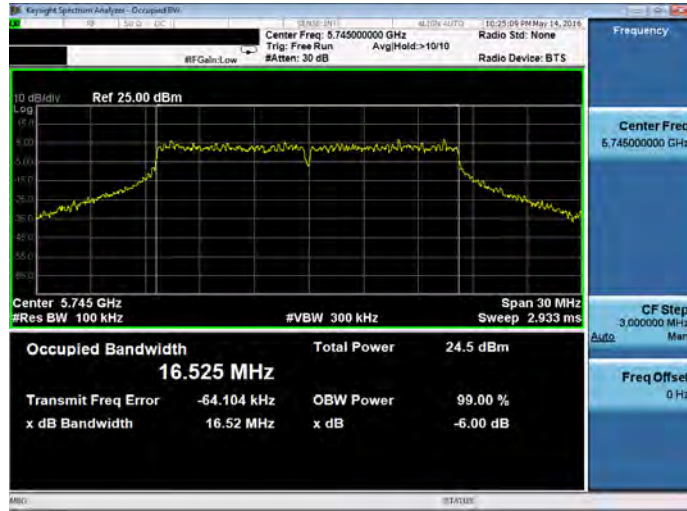
Mode 5: IEEE 802.11ac 80MHz link mode_ANT-2



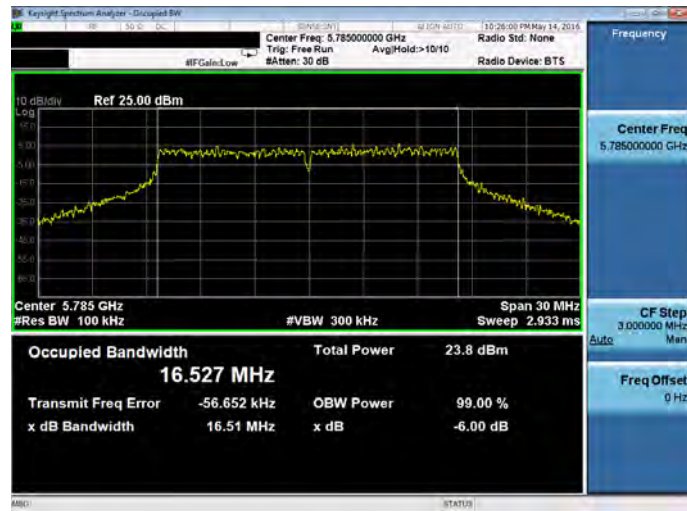


Mode 2: IEEE 802.11a link mode_ANT-3

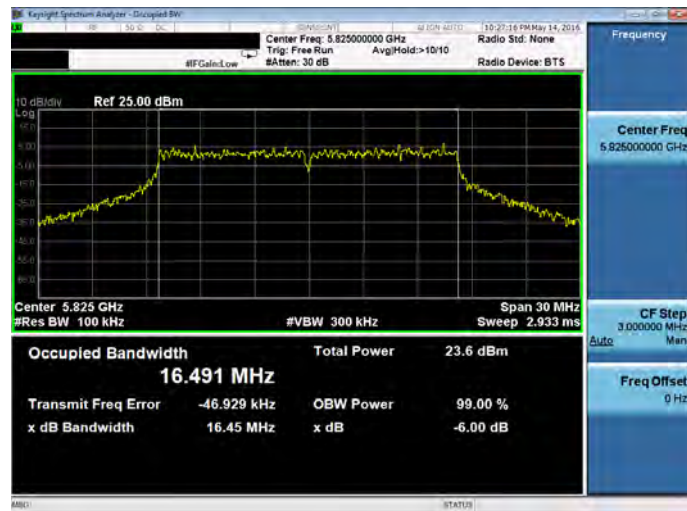
5745 MHz



5785 MHz



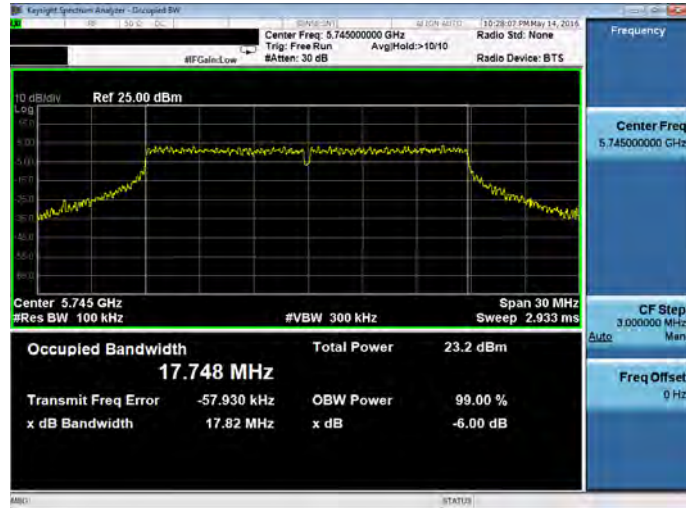
5825 MHz





Mode 3: IEEE 802.11ac 20MHz link mode_ANT-3

5745 MHz



5785 MHz



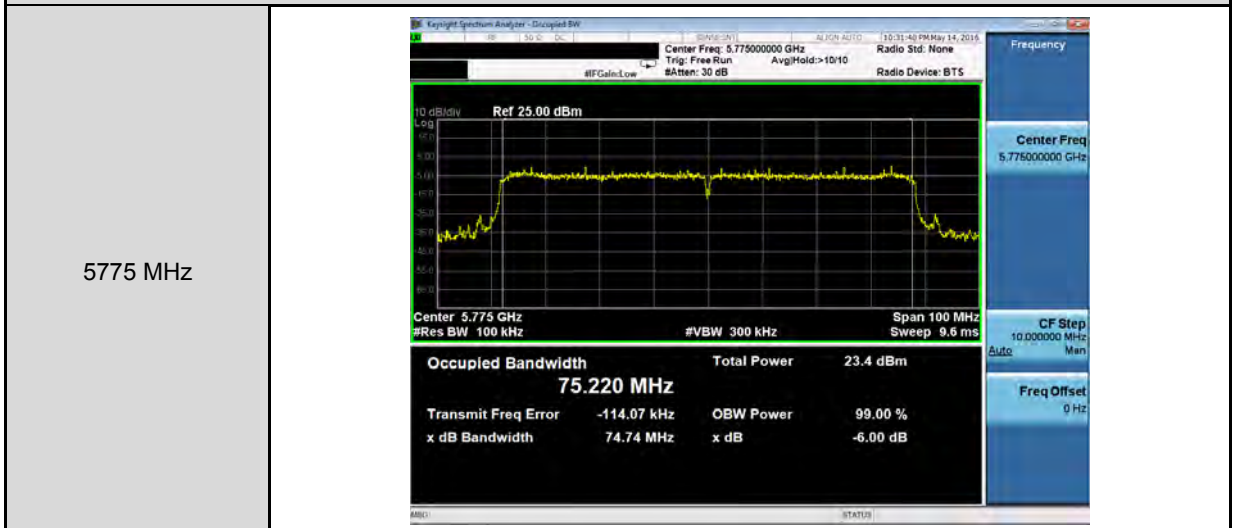
5825 MHz



Mode 4: IEEE 802.11ac 40MHz link mode_ANT-3



Mode 5: IEEE 802.11ac 80MHz link mode_ANT-3



4.6. Peak Power Spectral Density Measurement

■ **Limit**

Conducted power spectral density

Frequency Range (MHz)	FCC Limit	
	Master	Client
5.150 ~ 5.250 GHz	17 dBm/MHz	11 dBm/MHz
5.725 ~ 5.850 GHz	30 dBm/500KHz	---

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

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

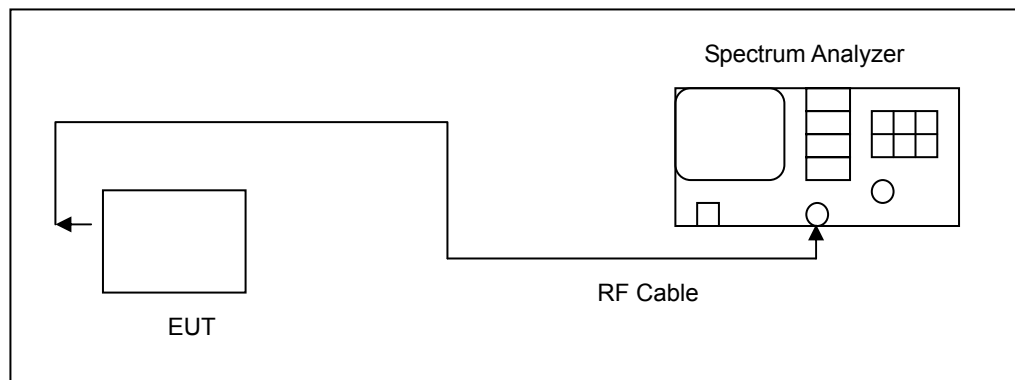
5.150 ~ 5.250 GHz

- * MIMO mode : Directional Gain = 9.04 dBi > 6dBi -- For Master mode
MIMO mode power limit shall be reduced = 17 - 3.04 = 13.96 dBm /MHz

5.725 ~ 5.850 GHz

- * MIMO mode : Directional Gain == 9.04 dBi > 6dBi
MIMO mode power limit shall be reduced = 30 - 3.04 = 26.96 dBm / 500KHz

■ **Test Setup**



■ **Test Instruments**

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/15/2015	1 year
Microwave Cable	EMCI	EMCI 104-SM-SM-1500	140303	02/23/2016	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

Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a link mode			
Date of Test	06/02/20016			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	-2.174	0.182	-1.992	< 13.96
5200	-2.158	0.182	-1.976	
5240	-2.148	0.182	-1.966	
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	-3.014	0.182	-2.832	< 13.96
5200	-2.435	0.182	-2.253	
5240	-3.044	0.182	-2.862	
Frequency (MHz)	ANT-2			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	-1.555	0.182	-1.373	< 13.96
5200	-1.682	0.182	-1.500	
5240	-1.457	0.182	-1.275	
Frequency (MHz)	ANT-3			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	-1.918	0.182	-1.736	< 13.96
5200	-2.238	0.182	-2.056	
5240	-2.725	0.182	-2.543	
Frequency (MHz)	ANT-0+1+2+3			Limit (dBm/MHz)
	Calculated (dBm/MHz)			
5180	4.070			< 13.96
5200	4.084			
5240	3.902			

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



Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a link mode			
Date of Test	05/15/2016			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-2.12	0.182	5.05	< 26.96
5785	-2.47	0.182	4.70	
5825	-1.77	0.182	5.40	
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-2.22	0.182	4.95	< 26.96
5785	-1.64	0.182	5.53	
5825	-1.70	0.182	5.47	
Frequency (MHz)	ANT-2			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-1.71	0.182	5.47	< 26.96
5785	-2.27	0.182	4.90	
5825	-1.90	0.182	5.27	
Frequency (MHz)	ANT-3			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-2.00	0.182	5.17	< 26.96
5785	-1.66	0.182	5.51	
5825	-2.12	0.182	5.06	
Frequency (MHz)	ANT-0+1+2+3			Limit (dBm/500KHz)
	Limit (dBm/500KHz)			Limit (dBm/500KHz)
5745	11.19			< 26.96
5785	11.20			
5825	11.32			

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

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



Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11ac 20MHz link mode			
Date of Test	06/02/20016			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
	5180	-2.166	0.026	-2.140
	5200	-2.101	0.026	-2.075
5240	-2.353	0.026	-2.327	< 13.96
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
	5180	-2.902	0.026	-2.876
	5200	-2.595	0.026	-2.569
5240	-2.829	0.026	-2.803	< 13.96
Frequency (MHz)	ANT-2			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
	5180	-1.307	0.026	-1.281
	5200	-1.553	0.026	-1.527
5240	-1.780	0.026	-1.754	< 13.96
Frequency (MHz)	ANT-3			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
	5180	-2.403	0.026	-2.377
	5200	-2.020	0.026	-1.994
5240	-2.285	0.026	-2.259	< 13.96
Frequency (MHz)	ANT-0+1+2+3			
		Calculated (dBm/MHz)		Limit (dBm/MHz)
	5180	3.891		< 13.96
	5200	3.995		
5240	3.751			

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



Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11ac 20MHz link mode			
Date of Test	05/15/2016			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
	5745	-2.45	0.026	4.56
	5785	-2.67	0.026	4.35
5825	-2.45	0.026	4.56	< 26.96
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
	5745	-2.08	0.026	4.94
	5785	-1.80	0.026	5.21
5825	-1.62	0.026	5.40	< 26.96
Frequency (MHz)	ANT-2			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
	5745	-1.82	0.026	5.20
	5785	-1.91	0.026	5.11
5825	-2.23	0.026	4.78	< 26.96
Frequency (MHz)	ANT-3			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
	5745	-1.96	0.026	5.06
	5785	-2.00	0.026	5.01
5825	-2.33	0.026	4.68	< 26.96
Frequency (MHz)	ANT-0+1+2+3			
		Calculated (dBm/500KHz)		Limit (dBm/500KHz)
	5745	10.97		< 26.96
	5785	10.95		
5825	10.89			

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

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



Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11ac 40MHz link mode			
Date of Test	06/02/20016			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5190	-5.107	0.053	-5.054	< 13.96
5230	-4.968	0.053	-4.915	
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5190	-5.632	0.053	-5.579	< 13.96
5230	-5.827	0.053	-5.774	
Frequency (MHz)	ANT-2			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5190	-4.240	0.053	-4.187	< 13.96
5230	-4.678	0.053	-4.625	
Frequency (MHz)	ANT-3			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5190	-5.288	0.053	-5.235	< 13.96
5230	-5.274	0.053	-5.221	
Frequency (MHz)	ANT-0+1+2+3			Limit (dBm/MHz)
	Calculated (dBm/MHz)			
5190	1.038			< 13.96
5230	0.907			

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



Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11ac 40MHz link mode			
Date of Test	05/15/2016			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5755	-4.68	0.053	2.36	< 26.96
5795	-4.48	0.053	2.56	
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5755	-5.24	0.053	1.80	< 26.96
5795	-5.70	0.053	1.34	
Frequency (MHz)	ANT-2			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5755	-4.51	0.053	2.53	< 26.96
5795	-4.50	0.053	2.55	
Frequency (MHz)	ANT-3			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5755	-4.54	0.053	2.51	< 26.96
5795	-4.66	0.053	2.38	
Frequency (MHz)	ANT-0+1+2+3			Limit (dBm/500KHz)
	Calculated (dBm/500KHz)			
5755	8.33			< 26.96
5795	8.26			

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

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



Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz link mode			
Date of Test	06/02/20016			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5210	-7.483	0.166	-7.317	< 13.96
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5210	-8.376	0.166	-8.210	< 13.96
Frequency (MHz)	ANT-2			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5210	-7.585	0.166	-7.419	< 13.96
Frequency (MHz)	ANT-3			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5210	-7.955	0.166	-7.789	< 13.96
Frequency (MHz)	ANT-0+1+2+3			Limit (dBm/MHz)
	Calculated (dBm/MHz)			
5210	-1.649			< 13.96

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



Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz link mode			
Date of Test	05/15/2016			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/MHz)
5775	-6.89	0.166	0.27	< 26.96
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/MHz)
5775	-8.44	0.166	-1.28	< 26.96
Frequency (MHz)	ANT-2			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/MHz)
5775	-7.69	0.166	-0.53	< 26.96
Frequency (MHz)	ANT-3			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/MHz)
5775	-8.84	0.166	-1.68	< 26.96
Frequency (MHz)	ANT-0+1+2+3			Limit (dBm/MHz)
	Calculated (dBm/500KHz)			
5775	5.28			< 26.96

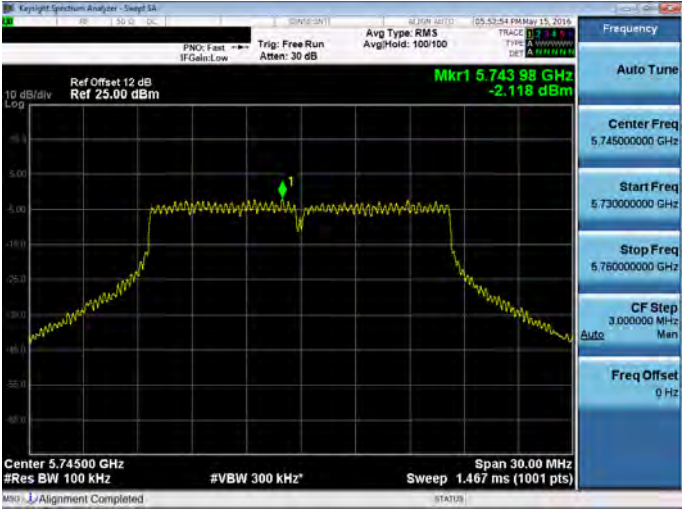
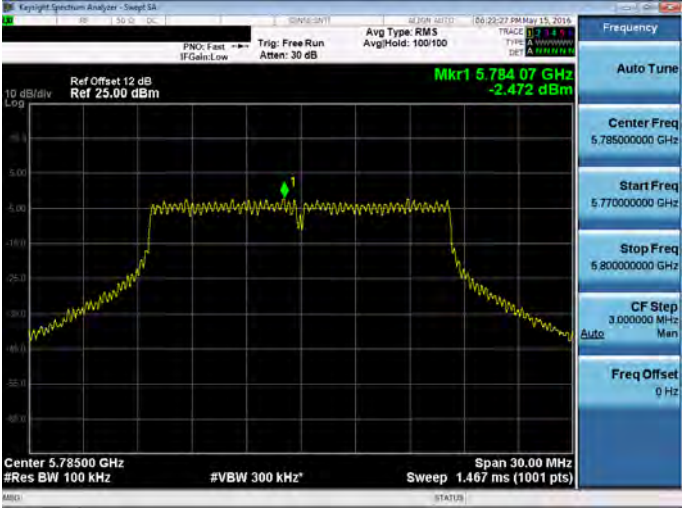
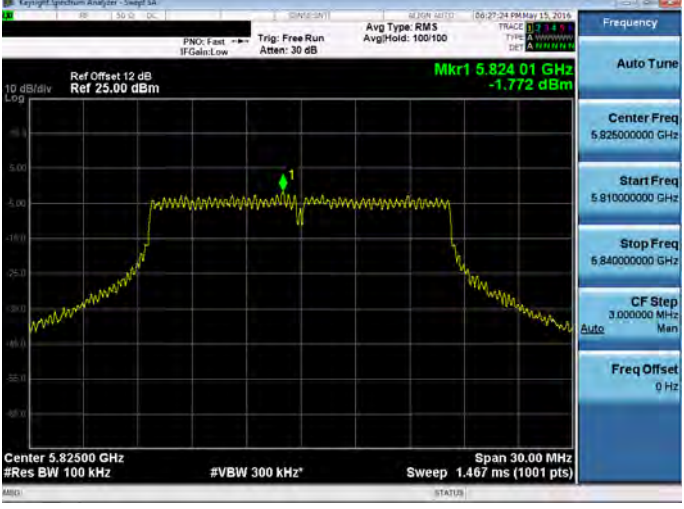
Note: Method SA-2, Power density = measured result + 10log (1/duty cycle) = measured result + duty factor.

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

■ Test Graphs

Mode 2: IEEE 802.11a link mode_ ANT-0	
5180 MHz	<p>Key parameters from the screenshot:</p> <ul style="list-style-type: none"> Center Freq: 5.18000 GHz Start Freq: 5.16000000 GHz Stop Freq: 5.20000000 GHz Mkr1: 5.186 12 GHz, -5.174 dBm Ref Level: 27.00 dBm Span: 40.00 MHz Res BW: 1.0 MHz Sweep: 1.000 ms (1001 pts)
5200 MHz	<p>Key parameters from the screenshot:</p> <ul style="list-style-type: none"> Center Freq: 5.20000 GHz Start Freq: 5.18000000 GHz Stop Freq: 5.22000000 GHz Mkr1: 5.195 16 GHz, -5.158 dBm Ref Level: 27.00 dBm Span: 40.00 MHz Res BW: 1.0 MHz Sweep: 1.000 ms (1001 pts)
5240 MHz	<p>Key parameters from the screenshot:</p> <ul style="list-style-type: none"> Center Freq: 5.24000 GHz Start Freq: 5.22000000 GHz Stop Freq: 5.26000000 GHz Mkr1: 5.237 76 GHz, -5.148 dBm Ref Level: 27.00 dBm Span: 40.00 MHz Res BW: 1.0 MHz Sweep: 1.000 ms (1001 pts)

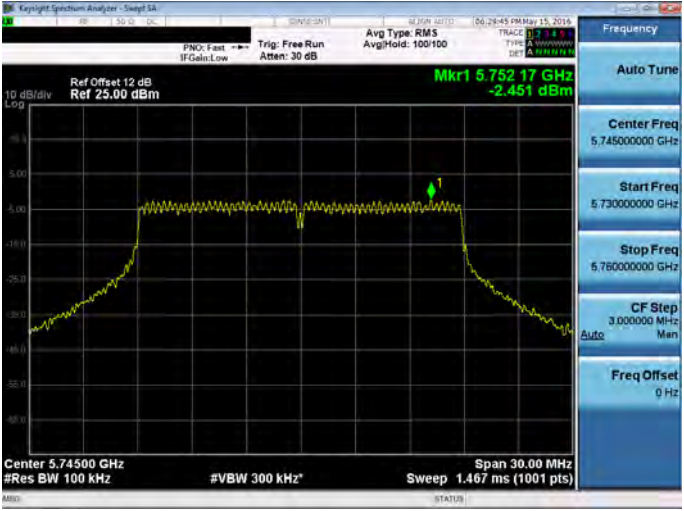
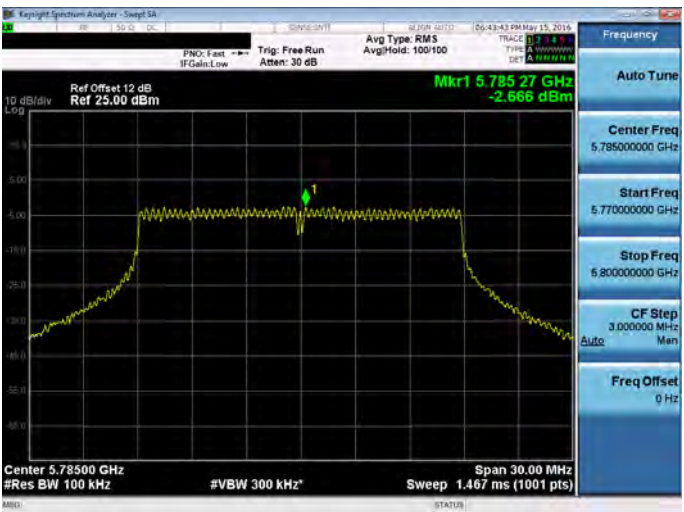
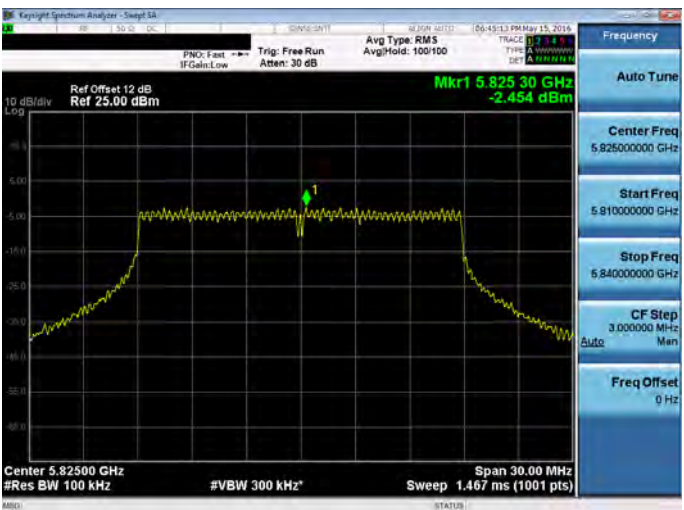


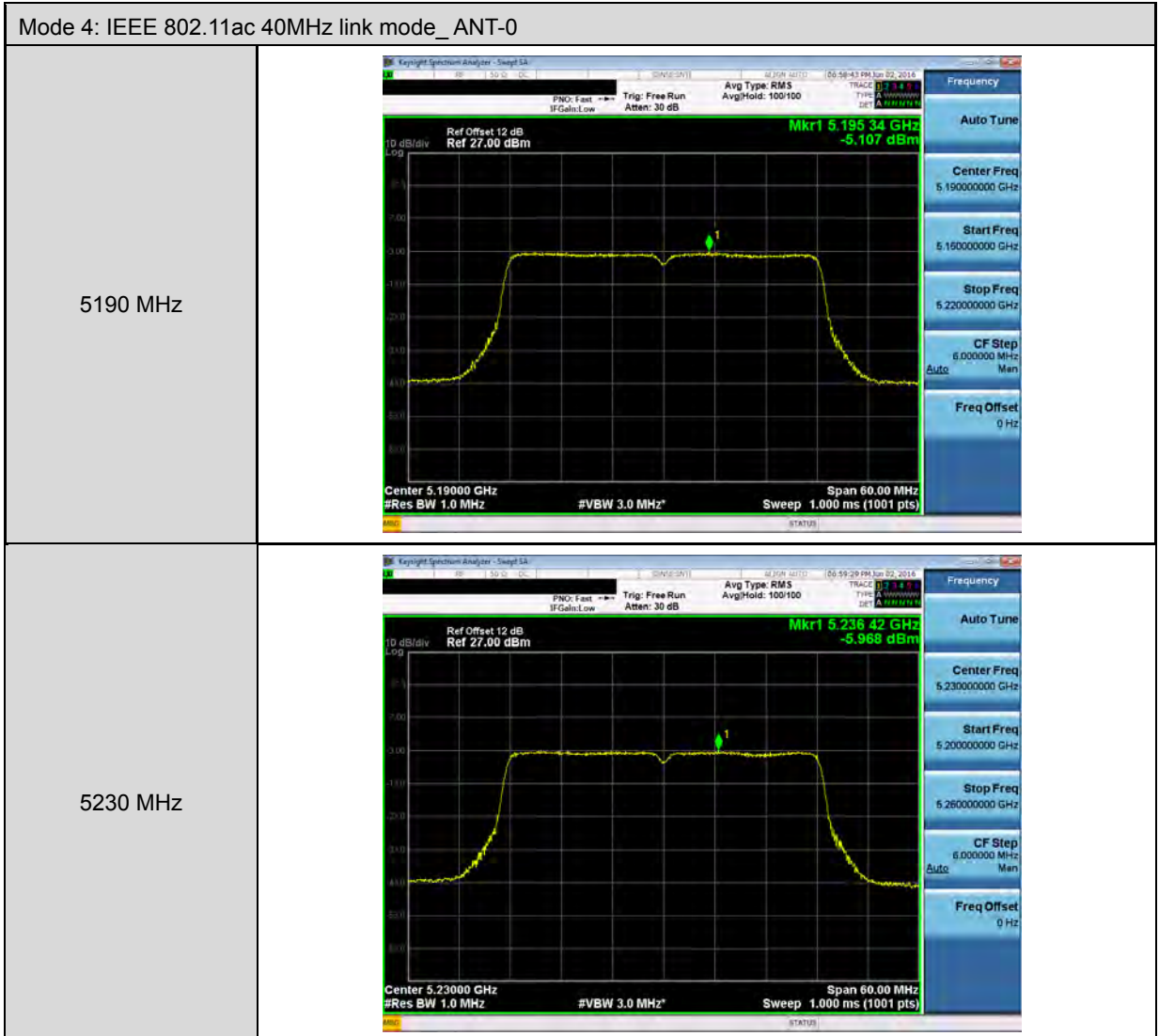
Mode 2: IEEE 802.11a link mode_ ANT-0	
5745 MHz	
5785 MHz	
5825 MHz	



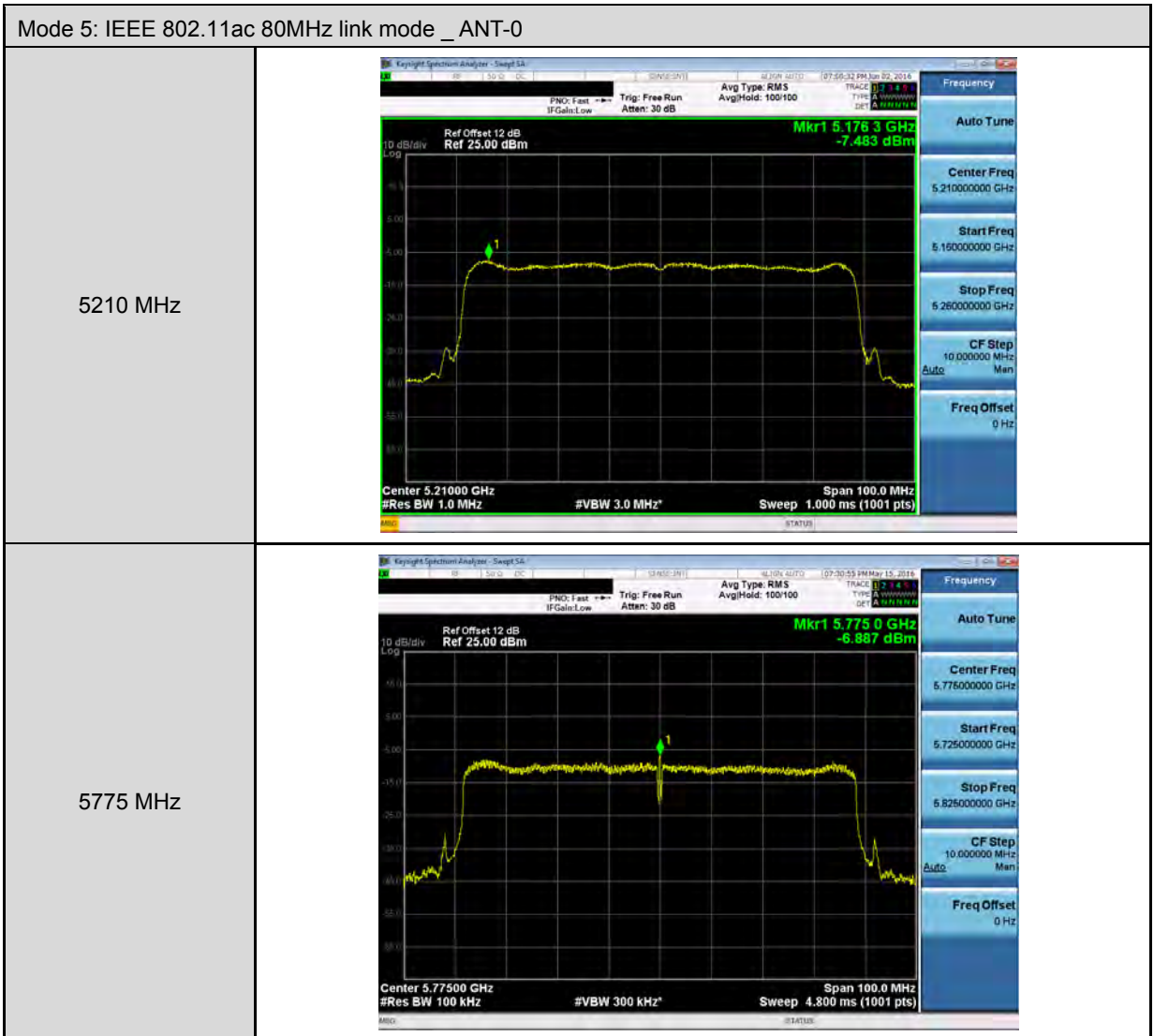
Mode 3: IEEE 802.11ac 20MHz link mode _ ANT-0	
5180 MHz	
5200 MHz	
5240 MHz	






Mode 3: IEEE 802.11ac 20MHz link mode _ ANT-0	
5745 MHz	
5785 MHz	
5825 MHz	





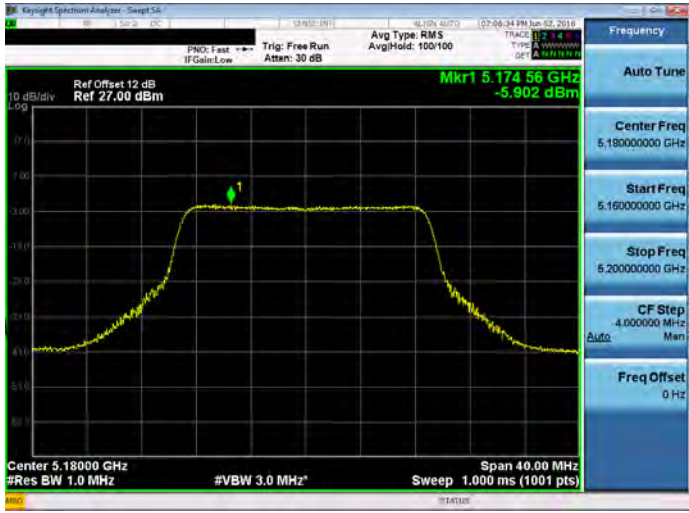

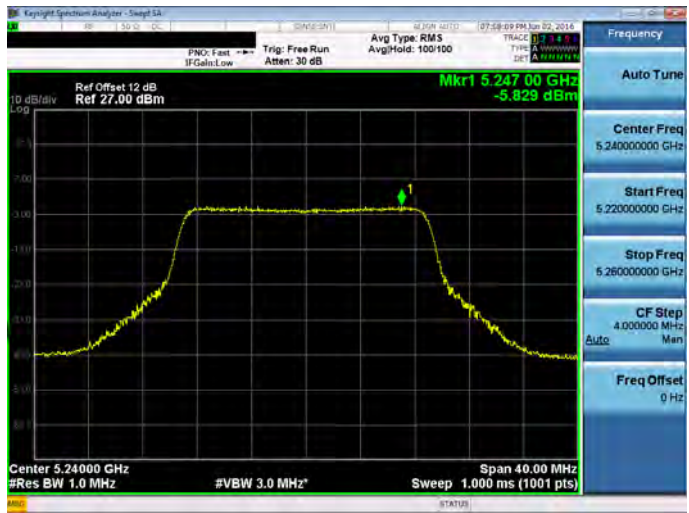


Mode 2: IEEE 802.11a link mode_ ANT-1	
<p>5180 MHz</p>	
<p>5200 MHz</p>	
<p>5240 MHz</p>	

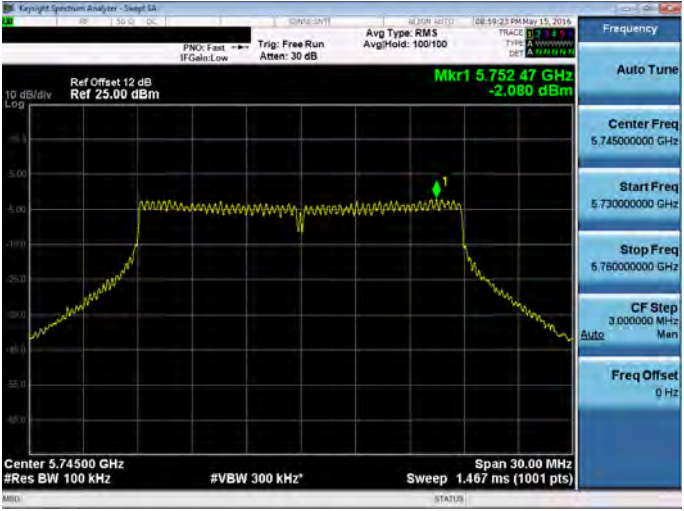
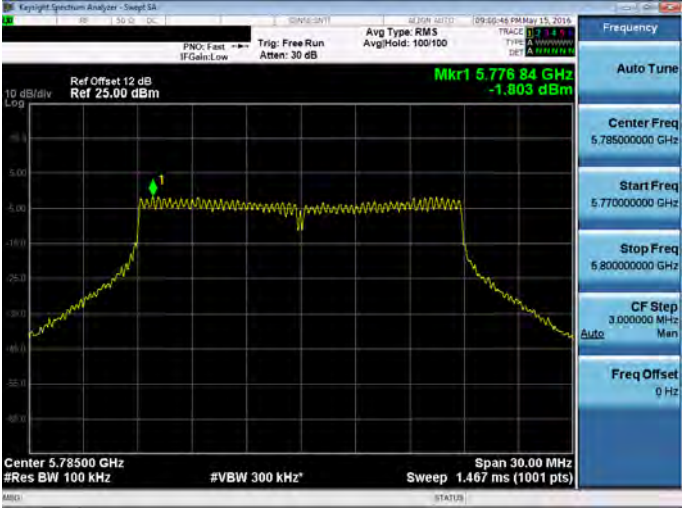
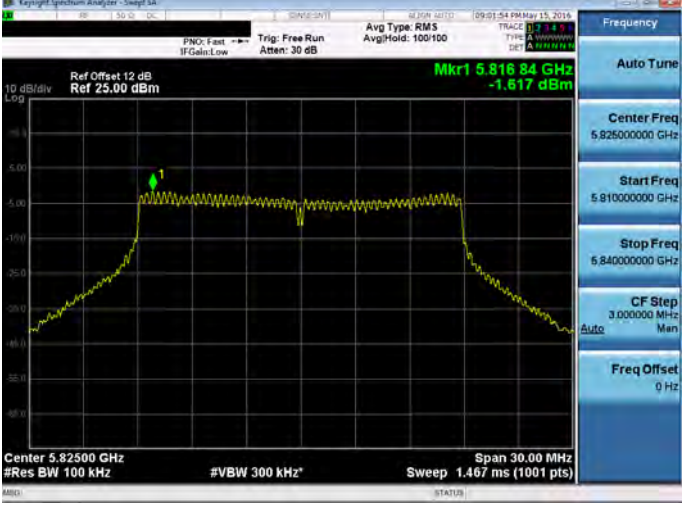


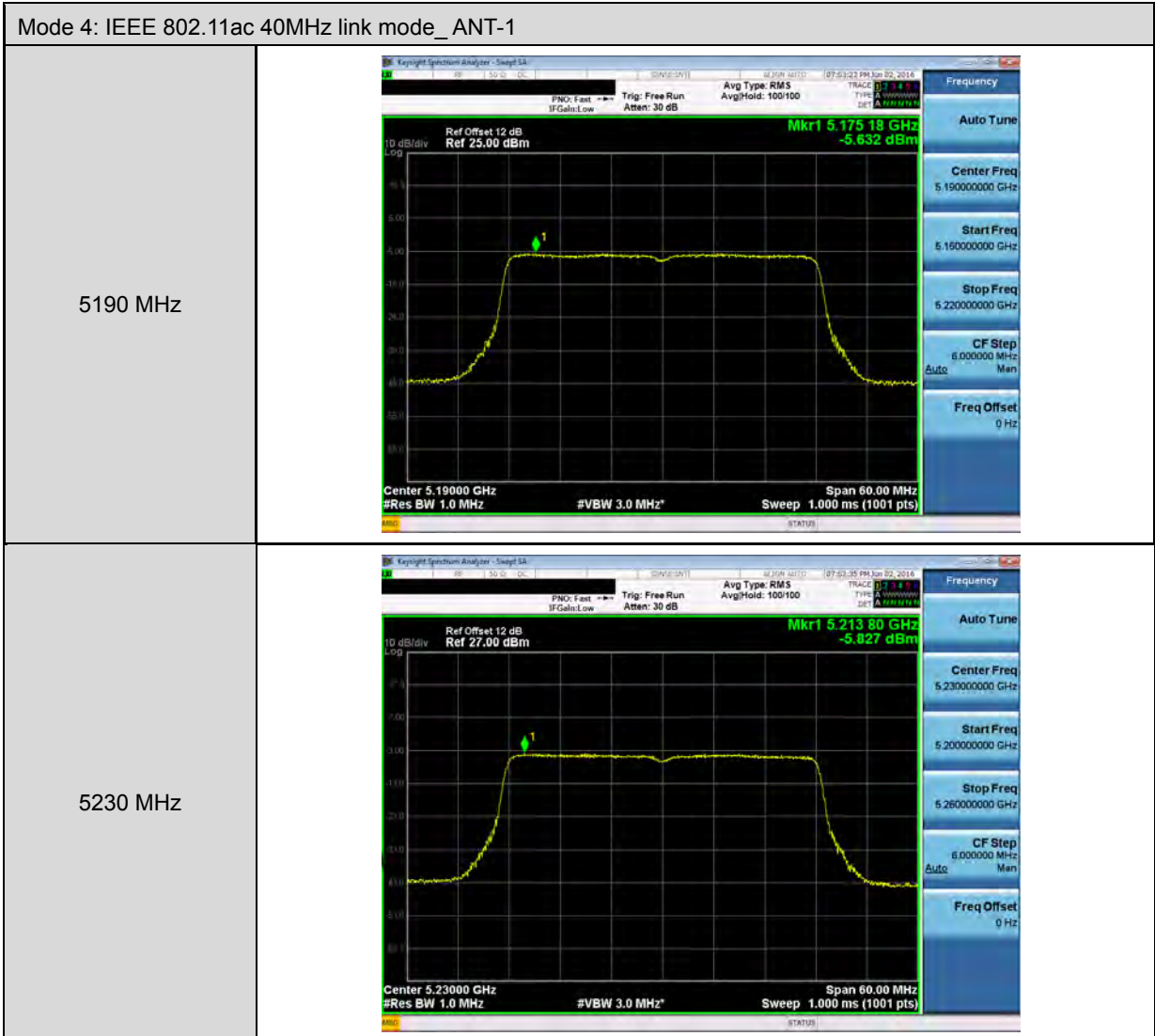
Mode 2: IEEE 802.11a link mode_ANT-1	
5745 MHz	
5785 MHz	
5825 MHz	



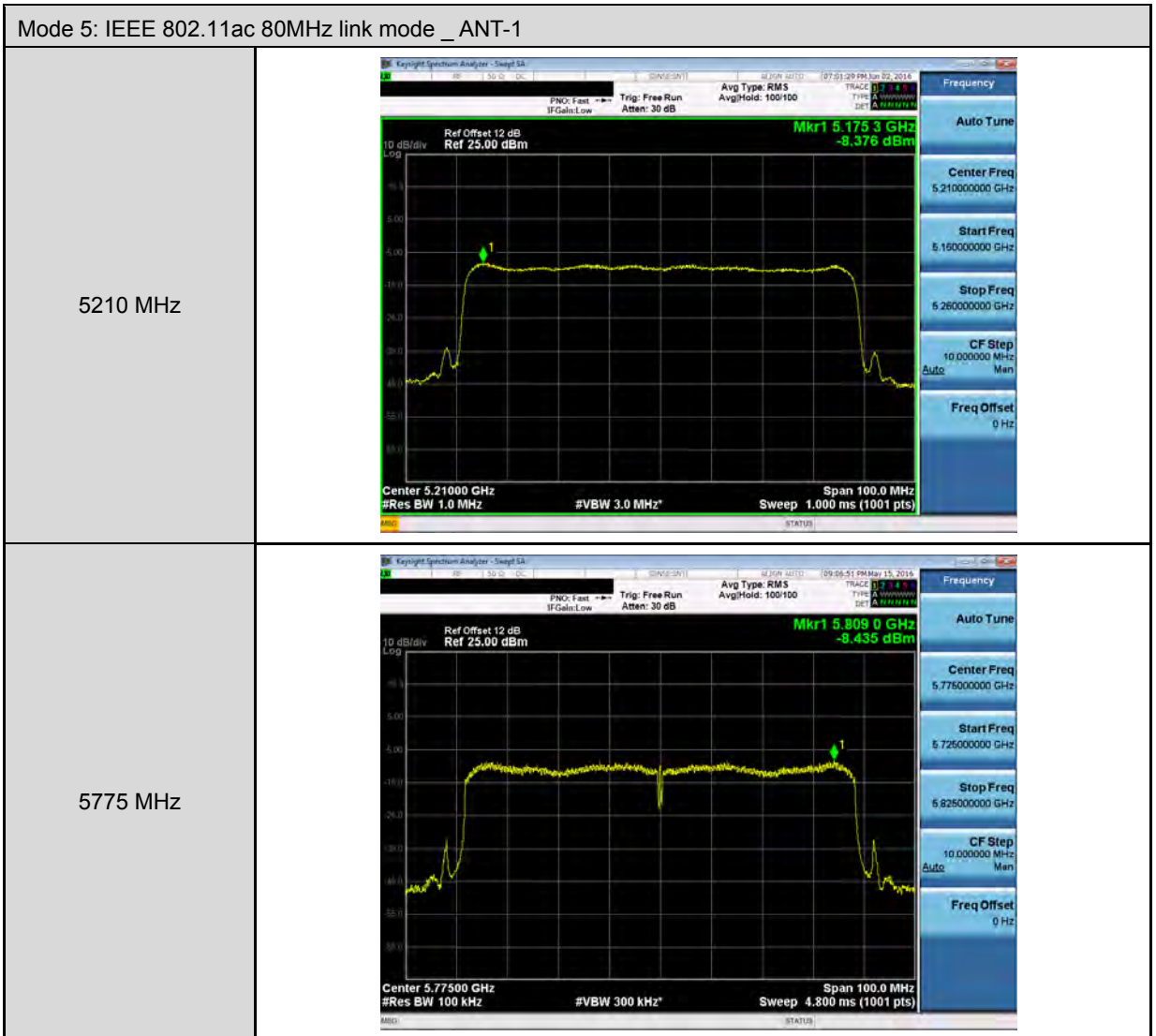
Mode 3: IEEE 802.11ac 20MHz link mode _ ANT-1	
5180 MHz	
5200 MHz	
5240 MHz	



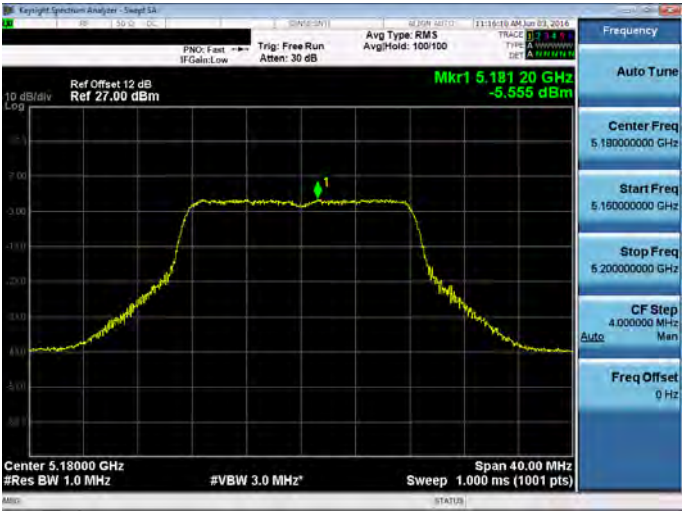
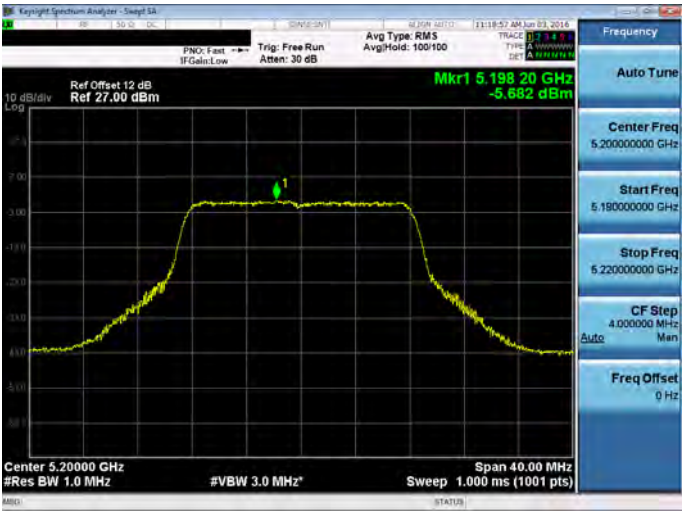
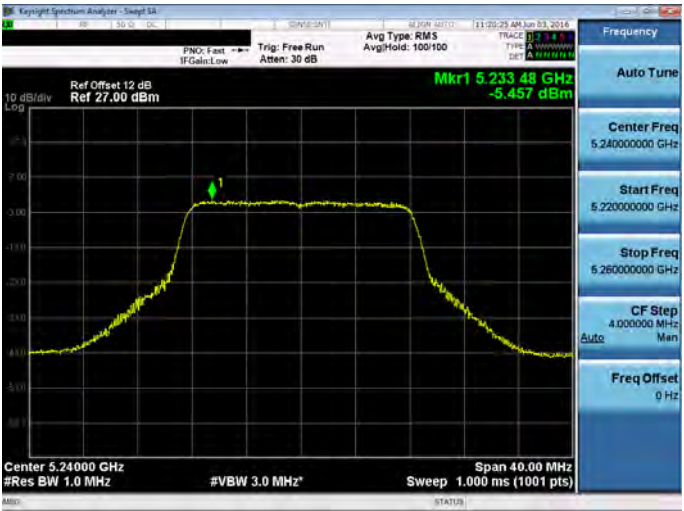
Mode 3: IEEE 802.11ac 20MHz link mode _ ANT-1	
5745 MHz	 <p>Key parameters from the screenshot:</p> <ul style="list-style-type: none">Center Freq: 5.74500000 GHzStart Freq: 5.73000000 GHzStop Freq: 5.76000000 GHzSpan: 30.00 MHzResolution BW: 100 kHzMarker 1: 5.75247 GHz, -2.080 dBm
5785 MHz	 <p>Key parameters from the screenshot:</p> <ul style="list-style-type: none">Center Freq: 5.78500000 GHzStart Freq: 5.77000000 GHzStop Freq: 5.80000000 GHzSpan: 30.00 MHzResolution BW: 100 kHzMarker 1: 5.77684 GHz, -1.803 dBm
5825 MHz	 <p>Key parameters from the screenshot:</p> <ul style="list-style-type: none">Center Freq: 5.82500000 GHzStart Freq: 5.81000000 GHzStop Freq: 5.84000000 GHzSpan: 30.00 MHzResolution BW: 100 kHzMarker 1: 5.81684 GHz, -1.617 dBm



Mode 4: IEEE 802.11ac 40MHz link mode_ANT-1	
5755 MHz	
5795 MHz	



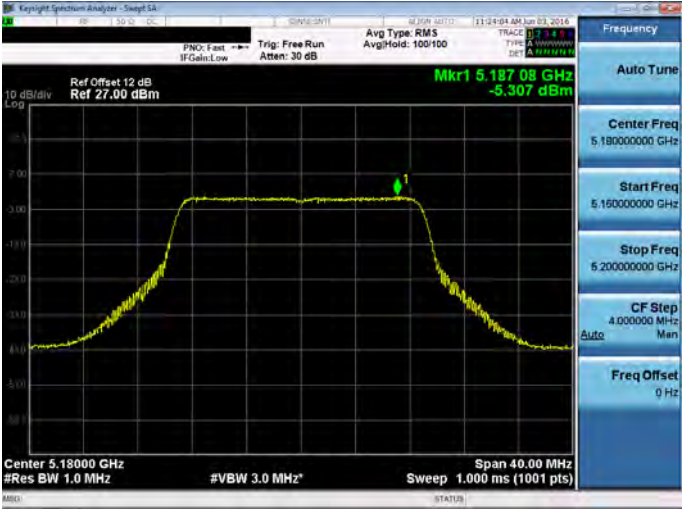
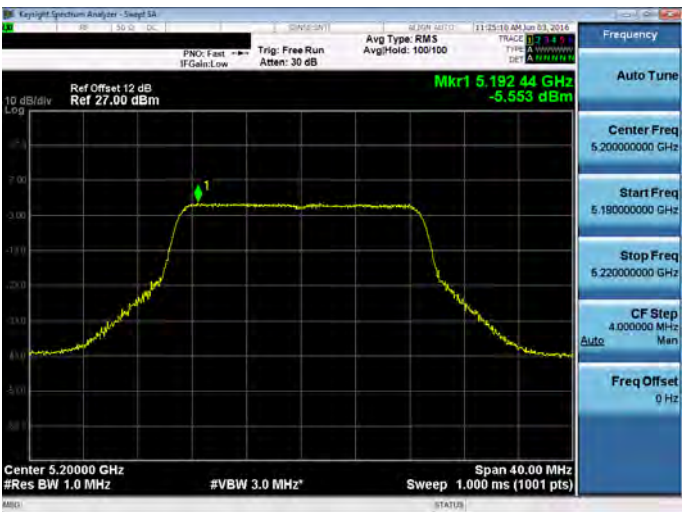
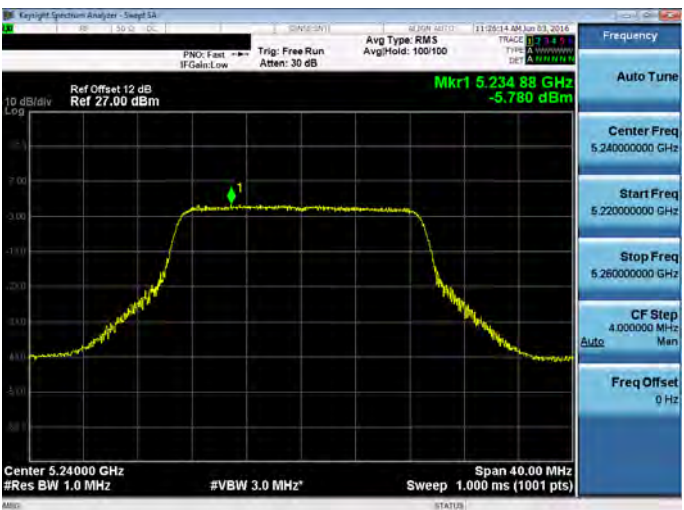


Mode 2: IEEE 802.11a link mode_ANT-2	
5180 MHz	
5200 MHz	
5240 MHz	



Mode 2: IEEE 802.11a link mode_ANT-2	
5745 MHz	
5785 MHz	
5825 MHz	

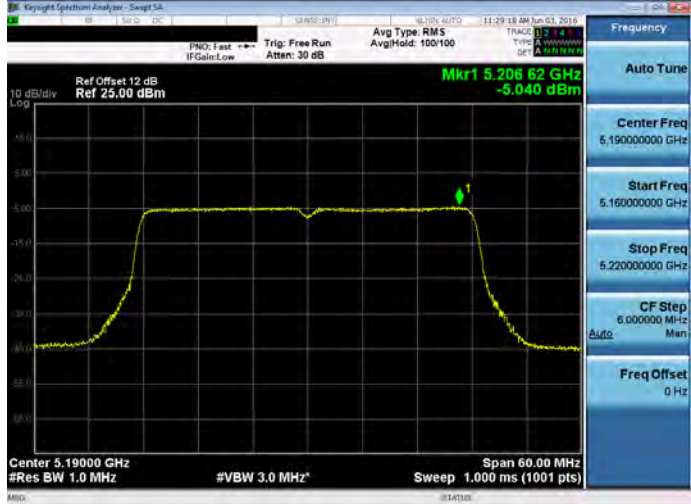
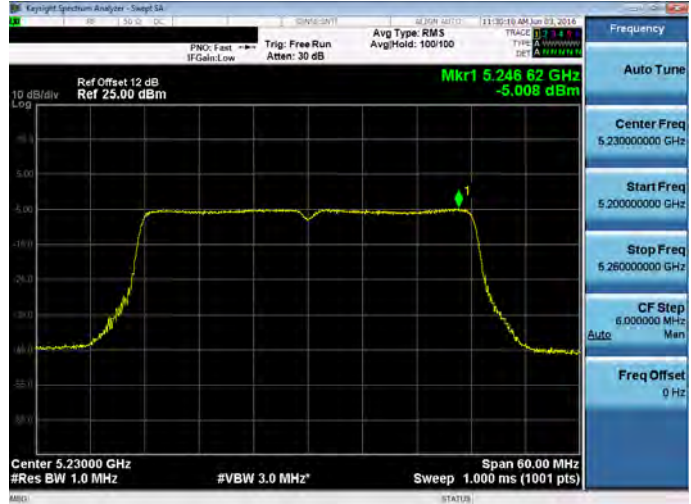


Mode 3: IEEE 802.11ac 20MHz link mode _ ANT-2	
5180 MHz	
5200 MHz	
5240 MHz	

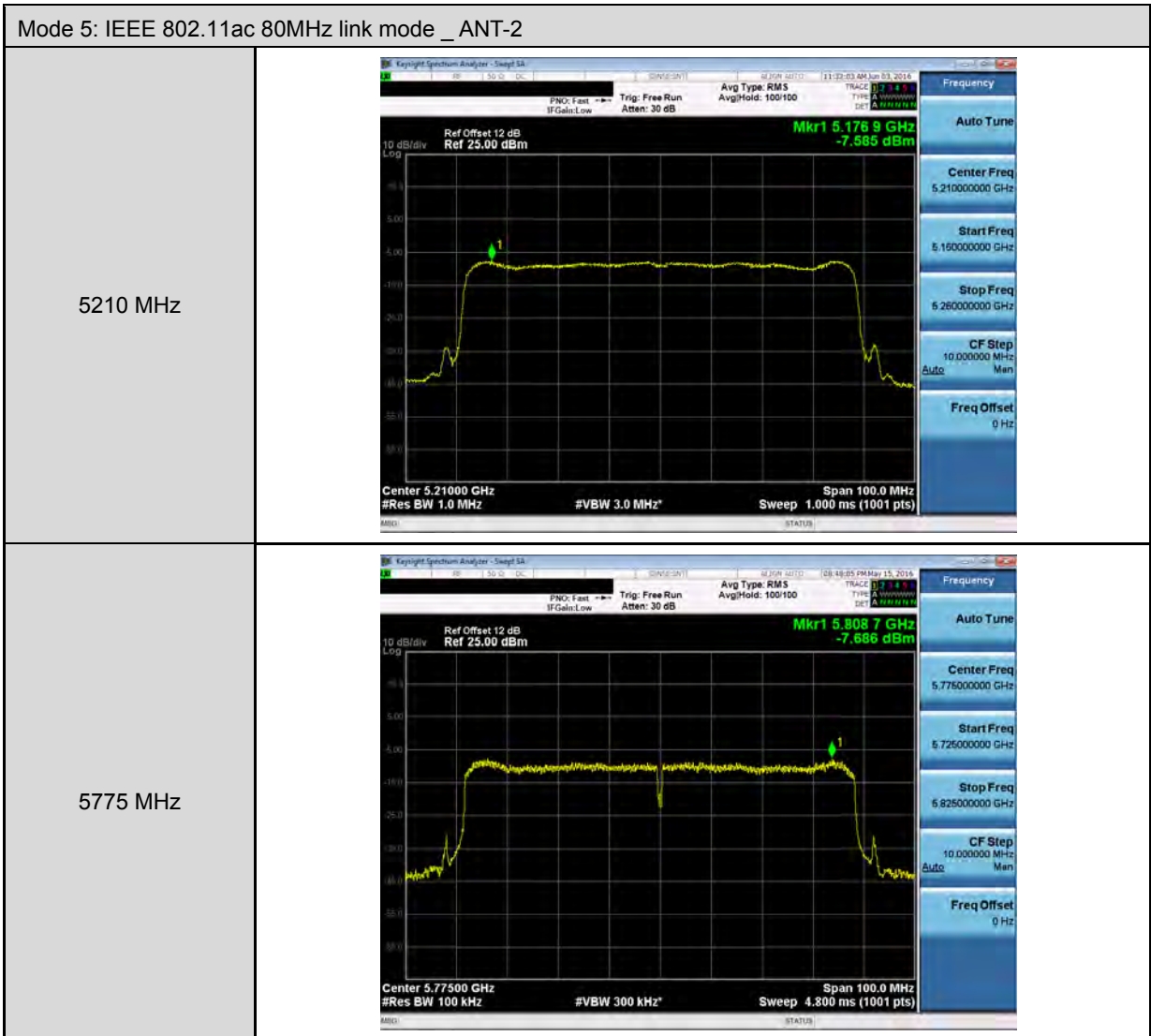


Mode 3: IEEE 802.11ac 20MHz link mode _ ANT-2	
5745 MHz	
5785 MHz	
5825 MHz	



Mode 4: IEEE 802.11ac 40MHz link mode_ANT-2	
5190 MHz	
5230 MHz	





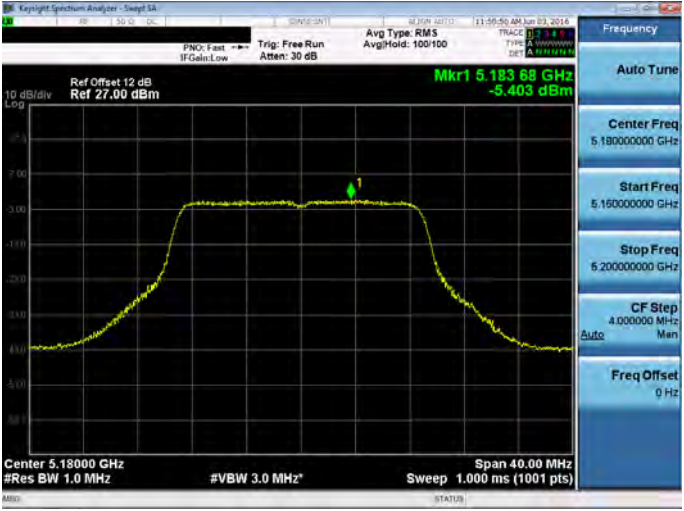
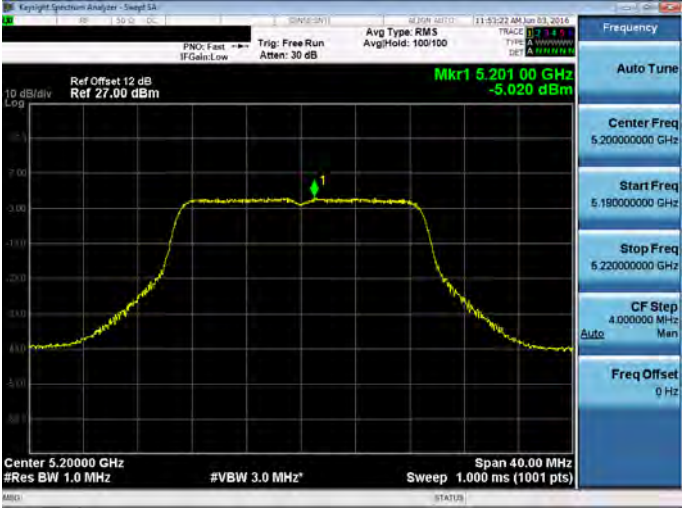
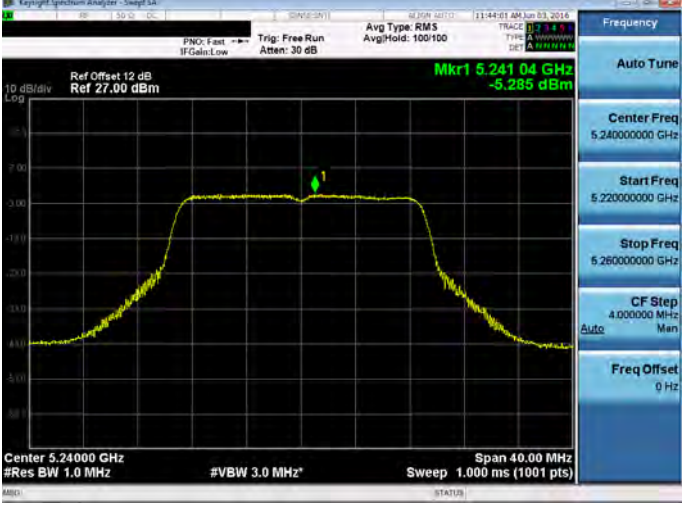


Mode 2: IEEE 802.11a link mode_ANT-3	
5180 MHz	
5200 MHz	
5240 MHz	



Mode 2: IEEE 802.11a link mode_ANT-3	
5745 MHz	
5785 MHz	
5825 MHz	

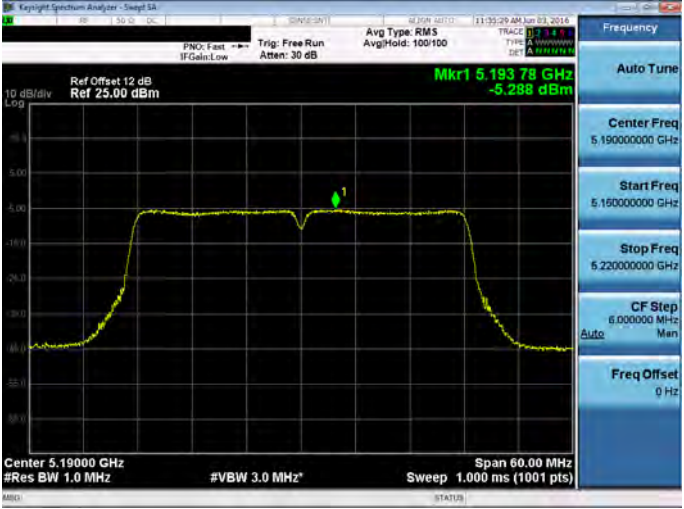
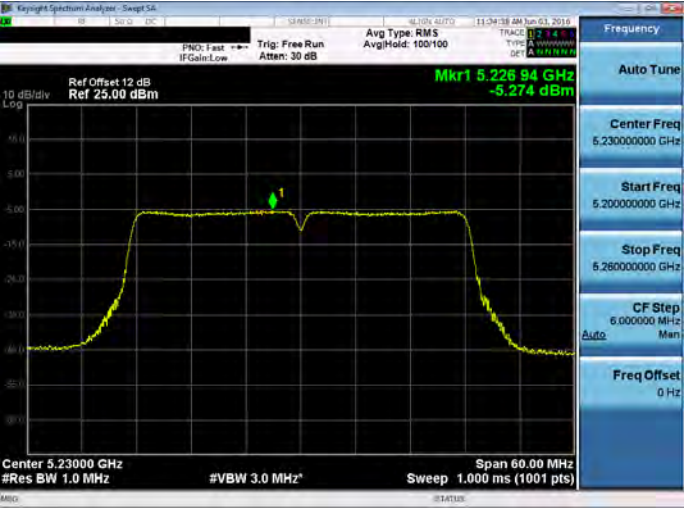


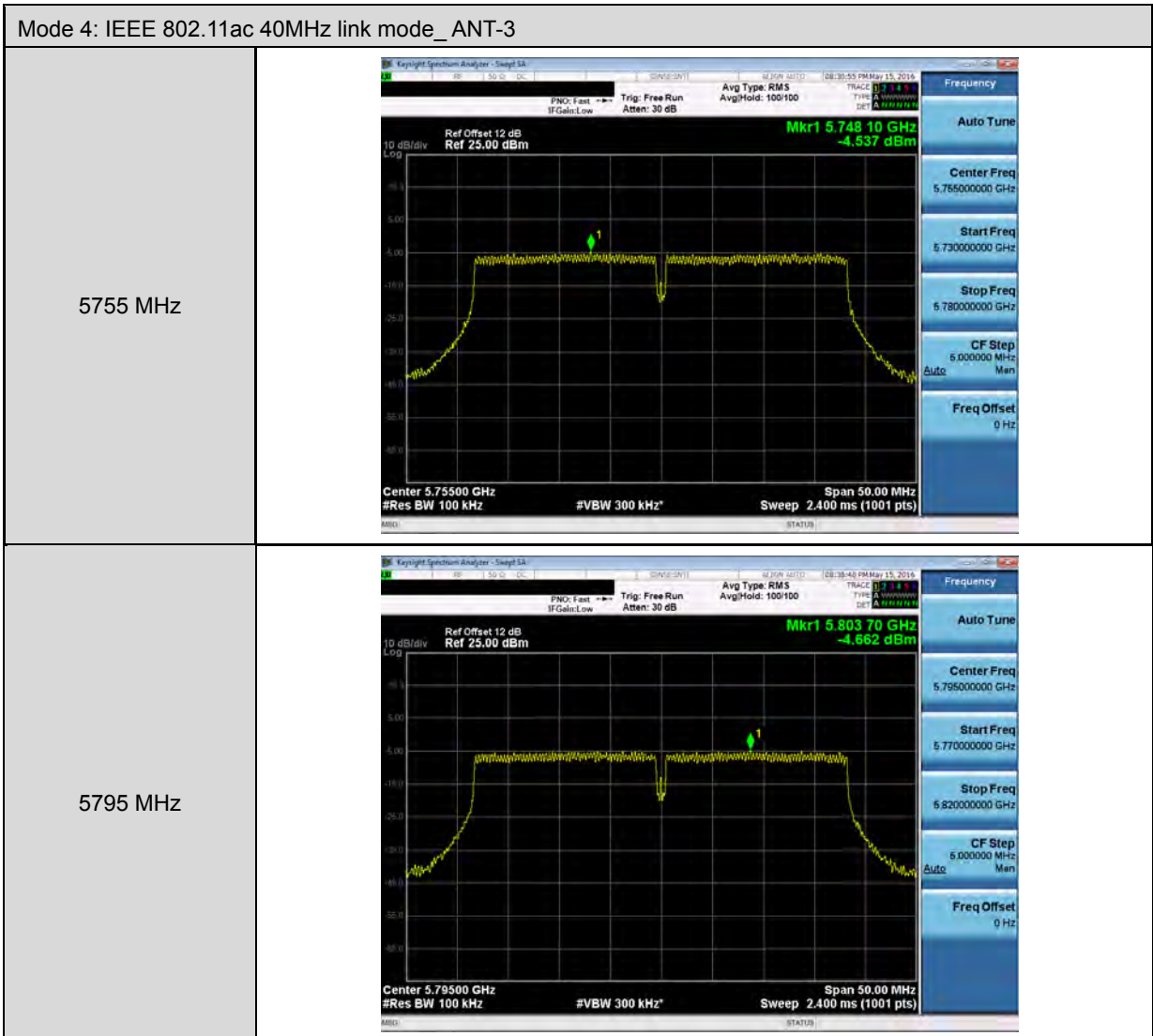
Mode 3: IEEE 802.11ac 20MHz link mode _ ANT-3	
5180 MHz	
5200 MHz	
5240 MHz	

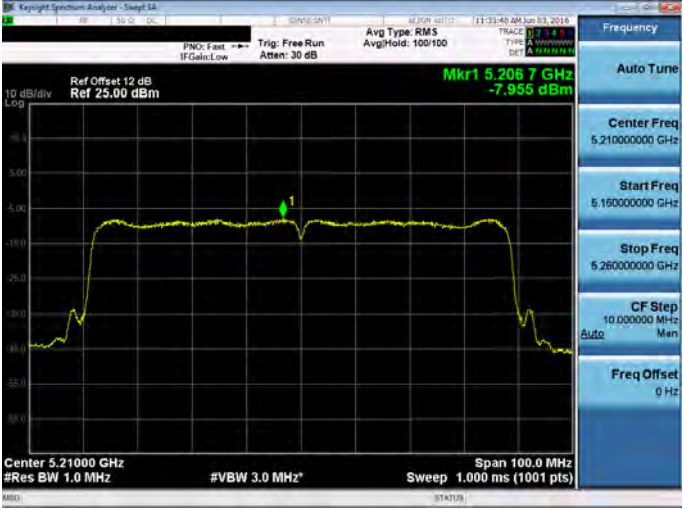



Mode 3: IEEE 802.11ac 20MHz link mode _ ANT-3	
5745 MHz	
5785 MHz	
5825 MHz	



Mode 4: IEEE 802.11ac 40MHz link mode_ANT-3	
5190 MHz	 <p>Key parameters from the screenshot:</p> <ul style="list-style-type: none">Center Freq: 5.19000000 GHzStart Freq: 5.16000000 GHzStop Freq: 5.22000000 GHzCF Step: 6.000000 MHzFreq Offset: 0 HzMkr1: 5.19378 GHz, -5.288 dBmCenter: 5.19000 GHzRes BW: 1.0 MHzVBW: 3.0 MHzSweep: 1.000 ms (1001 pts)
5230 MHz	 <p>Key parameters from the screenshot:</p> <ul style="list-style-type: none">Center Freq: 5.23000000 GHzStart Freq: 5.20000000 GHzStop Freq: 5.26000000 GHzCF Step: 6.000000 MHzFreq Offset: 0 HzMkr1: 5.22694 GHz, -5.274 dBmCenter: 5.23000 GHzRes BW: 1.0 MHzVBW: 3.0 MHzSweep: 1.000 ms (1001 pts)



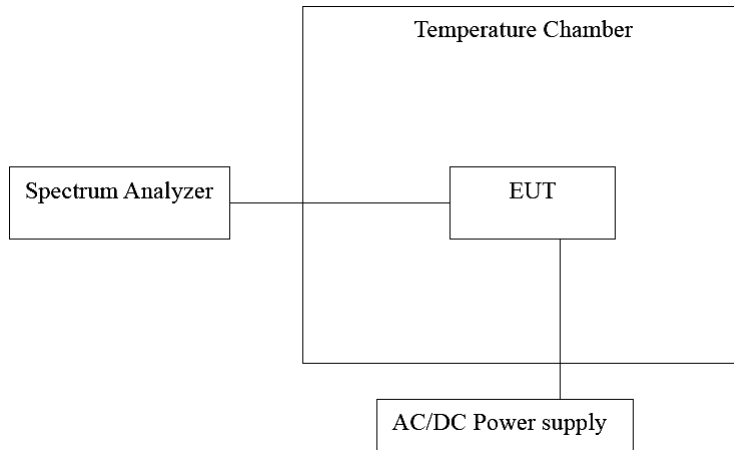
Mode 5: IEEE 802.11ac 80MHz link mode _ ANT-3	
5210 MHz	 <p>Key parameters from screenshot:</p> <ul style="list-style-type: none"> Center Freq: 5.21000000 GHz Start Freq: 5.16000000 GHz Stop Freq: 5.26000000 GHz CF Step: 10.000000 MHz Freq Offset: 0 Hz Mkr1: 5.2067 GHz, -7.955 dBm Center: 5.21000 GHz, #Res BW 1.0 MHz, #VBW 3.0 MHz, Sweep 1.000 ms (1001 pts)
5775 MHz	 <p>Key parameters from screenshot:</p> <ul style="list-style-type: none"> Center Freq: 5.77500000 GHz Start Freq: 5.72500000 GHz Stop Freq: 5.82500000 GHz CF Step: 10.000000 MHz Freq Offset: 0 Hz Mkr1: 5.7403 GHz, -9.840 dBm Center: 5.77500 GHz, #Res BW 100 kHz, #VBW 300 kHz, Sweep 4.800 ms (1001 pts)

4.7. 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
Microwave Cable	EMCI	EMCI 104-SM-SM-1500	140303	02/23/2016	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

Test Item	Frequency Stability					
Date of Test	06/01/2016					
Frequency	Temp. (°C)	Voltage (Vac)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	0	120	5199.9036	-96400	-18.538	Pass
	10		5199.9139	-86100	-16.558	Pass
	20		5199.9285	-71500	-13.750	Pass
	30		5199.9402	-59800	-11.500	Pass
	40		5199.9536	-46400	-8.923	Pass
5785 MHz	0	120	5785.0819	81900	14.157	Pass
	10		5785.0986	98600	17.044	Pass
	20		5785.1099	109900	18.997	Pass
	30		5785.1133	113300	19.585	Pass
	40		5785.1331	133100	23.008	Pass

Voltage Variations

Test Item	Frequency Stability					
Date of Test	06/01/2016					
Frequency	Temp. (°C)	Voltage (Vac)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	20	138.00	5199.9040	-96000	-18.462	Pass
		120.00	5199.9140	-86000	-16.538	Pass
		102.00	5199.9290	-71000	-13.654	Pass
5785 MHz	20	138.00	5785.0820	82000	14.175	Pass
		120.00	5785.0991	99100	17.131	Pass
		102.00	5785.1101	110100	19.032	Pass

Note: The manufacturer's frequency stability specification is better than 25ppm.



4.8. 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

Directional Gain = $10 \cdot \log\{[10^{(G1/20)} + 10^{(G2/20)} + \dots + 10^{(Gn/20)}]^2 / NANT\}$ = 9.04 dBi > 6dBi

Operate Freq. Band	Directional Gain (dBi)
IEEE 802.11a link mode	9.04
IEEE 802.11ac 20MHz link mode	9.04
IEEE 802.11ac 40MHz link mode	9.04
IEEE 802.11ac 80MHz link mode	9.04