

9 Peak Power Spectral Density Measurement

9.1. Limit

Conducted power spectral density

Frequency Range (MHz)	FCC Limit
5.150 ~ 5.250 GHz	17 dBm/MHz
5.250 ~ 5.350 GHz	11 dBm/MHz
5.470 ~ 5.725 GHz	11 dBm/MHz
5.725 ~ 5.850 GHz	30 dBm/500KHz

Note: Beamforming on Limit

5150~5250MHz : Directional gain = $G_{ANT} + 10 \cdot \log(N_{ANT}/N_{SS}) = 10.26\text{dBi} > 6\text{dBi}$

EIRP Limit = $17 - (10.28 - 6) = 12.74\text{dBm/MHz}$

5725~5850MHz : Directional gain = $G_{ANT} + 10 \cdot \log(N_{ANT}/N_{SS}) = 10.15\text{dBi} > 6\text{dBi}$

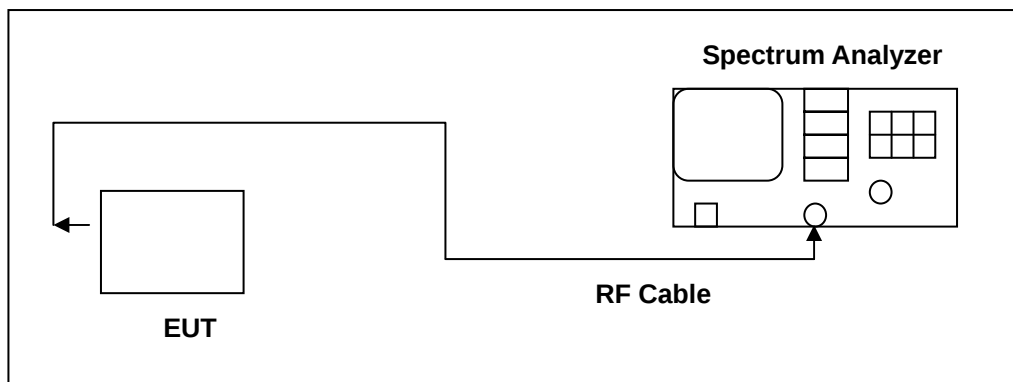
EIRP Limit = $30 - (10.17 - 6) = 25.85\text{dBm/500kHz}$

Beamforming off Limit

5150~5250MHz: Directional gain = $G_{ANT} = 4.26\text{dBi}$

5725~5850MHz: Directional gain = $G_{ANT} = 4.15\text{dBi}$

9.2. Test Setup



9.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/16/2014	(1)
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

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

9.4. Test Procedure

The test is performed in accordance with KDB789033: D02 General UNII Test Procedures New Rules v01, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E.

9.5. Test Result

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming on_Antenna 0				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5180	6.442			< 12.74
5200	6.004			
5220	5.822			
5240	5.971			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	-3.955	3.035	6.045	< 25.85
5785	-4.470	2.520	5.530	
5825	-4.242	2.748	5.758	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11n 20MHz Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming on_Antenna 0				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5180	5.442			< 12.74
5200	6.061			
5220	6.078			
5240	6.232			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	-3.625	3.365	6.375	< 25.85
5785	-3.867	3.123	6.133	
5825	-4.532	2.458	5.468	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11n 40MHz Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming on_Antenna 0				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5190	5.275			< 12.74
5230	6.536			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5755	-3.702	3.288	6.298	< 25.85
5795	-3.997	2.993	6.003	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz Link Mode			
Date of Test	01/27/2015	Test Site		TE02
Beamforming on_Antenna 0				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5210	1.667			< 12.74
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5775	-7.602	-0.612	2.398	< 25.85

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming on_Antenna 1				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5180	5.050			< 12.74
5200	4.110			
5220	4.068			
5240	4.858			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	-3.708	3.282	6.292	< 25.85
5785	-4.228	2.762	5.772	
5825	-3.851	3.139	6.149	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11n 20MHz Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming on_Antenna 1				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5180	4.247			< 12.74
5200	4.642			
5220	4.325			
5240	4.206			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	-3.892	3.098	6.108	< 25.85
5785	-3.840	3.150	6.160	
5825	-4.389	2.601	5.611	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11n 40MHz Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming on_Antenna 1				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5190	3.121			< 12.74
5230	4.240			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5755	-3.708	3.282	6.292	< 25.85
5795	-3.978	3.012	6.022	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz Link Mode			
Date of Test	01/27/2015	Test Site		TE02
Beamforming on_Antenna 1				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5210	0.144			< 12.74
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5775	-6.723	0.267	3.277	< 25.85

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming on_Antenna 2				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5180	7.667			< 12.74
5200	6.918			
5220	7.514			
5240	7.067			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	-3.848	3.142	6.152	< 25.85
5785	-4.466	2.524	5.534	
5825	-4.337	2.653	5.663	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11n 20MHz Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming on_Antenna 2				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5180	7.031			< 12.74
5200	7.099			
5220	6.897			
5240	6.945			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	-3.925	3.065	6.075	< 25.85
5785	-3.776	3.214	6.224	
5825	-4.423	2.567	5.577	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11n 40MHz Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming on_Antenna 2				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5190	5.844			< 12.74
5230	7.185			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5755	-3.800	3.190	6.200	< 25.85
5795	-3.820	3.170	6.180	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz Link Mode			
Date of Test	01/27/2015	Test Site		TE02
Beamforming on_Antenna 2				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5210	2.099			< 12.74
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5775	-6.639	0.351	3.361	< 25.85

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming on_Antenna 3				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5180	5.777			< 12.74
5200	4.817			
5220	5.342			
5240	5.291			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	-3.216	3.774	6.784	< 25.85
5785	-3.624	3.366	6.376	
5825	-3.850	3.140	6.150	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11n 20MHz Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming on_Antenna 3				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5180	6.213			< 12.74
5200	5.195			
5220	5.703			
5240	6.100			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	-3.220	3.770	6.780	< 25.85
5785	-3.388	3.602	6.612	
5825	-3.613	3.377	6.387	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11n 40MHz Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming on_Antenna 3				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5190	4.183			< 12.74
5230	5.172			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5755	-3.683	3.307	6.317	< 25.85
5795	-3.363	3.627	6.637	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz Link Mode			
Date of Test	01/27/2015	Test Site		TE02
Beamforming on_Antenna 3				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5210	0.792			< 12.74
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5775	-7.148	-0.158	2.852	< 25.85

Model Number	NBG6816		
Test Item	Conducted power spectral density		
Test Mode	Mode 2: IEEE 802.11a Link Mode		
Date of Test	01/27/2015	Test Site	TE02
Beamforming on_Antenna 0+1+2+3			
Frequency (MHz)	Measurement (dBm/MHz)		FCC Limit (dBm/MHz)
5180	12.363		< 12.74
5200	11.617		
5220	11.885		
5240	11.899		
Frequency (MHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	9.338	12.348	< 25.85
5785	8.827	11.838	
5825	8.946	11.956	

Model Number	NBG6816		
Test Item	Conducted power spectral density		
Test Mode	Mode 3: IEEE 802.11n 20MHz Link Mode		
Date of Test	01/27/2015	Test Site	TE02
Beamforming on_Antenna 0+1+2+3			
Frequency (MHz)	Measurement (dBm/MHz)		FCC Limit (dBm/MHz)
5180	11.872		< 12.74
5200	11.871		
5220	11.867		
5240	12.002		
Frequency (MHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	9.354	12.364	< 25.85
5785	9.297	12.307	
5825	8.787	11.797	

Model Number	NBG6816		
Test Item	Conducted power spectral density		
Test Mode	Mode 4: IEEE 802.11n 40MHz Link Mode		
Date of Test	01/27/2015	Test Site	TE02
Beamforming on_Antenna 0+1+2+3			
Frequency (MHz)	Measurement (dBm/MHz)		FCC Limit (dBm/MHz)
5190	10.749		< 12.74
5230	11.953		
Frequency (MHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5755	9.287	12.298	< 25.85
5795	9.228	12.239	

Model Number	NBG6816		
Test Item	Conducted power spectral density		
Test Mode	Mode 5: IEEE 802.11ac 80MHz Link Mode		
Date of Test	01/27/2015	Test Site	TE02
Beamforming on_Antenna 0+1+2+3			
Frequency (MHz)	Measurement (dBm/MHz)		FCC Limit (dBm/MHz)
5210	7.262		< 12.74
Frequency (MHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5775	5.999	9.009	< 25.85

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming off_Antenna 0				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5180	9.541			< 17
5200	9.048			
5220	9.031			
5240	9.500			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	0.553	7.543	10.553	< 30
5785	-0.296	6.694	9.704	
5825	0.266	7.256	10.266	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11n 20MHz Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming off_Antenna 0				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5180	9.353			< 17
5200	9.453			
5220	9.151			
5240	9.490			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	0.346	7.336	10.346	< 30
5785	0.241	7.231	10.241	
5825	0.276	7.266	10.276	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11n 40MHz Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming off_Antenna 0				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5190	7.329			< 17
5230	6.805			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5755	-2.550	4.440	7.450	< 30
5795	-2.747	4.243	7.253	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz Link Mode			
Date of Test	01/27/2015	Test Site		TE02
Beamforming off_Antenna 0				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5210	2.842			< 17
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5775	-3.426	3.564	6.574	< 30

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming off_Antenna 1				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5180	7.615			< 17
5200	7.625			
5220	7.535			
5240	6.911			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	0.747	7.737	10.747	< 30
5785	0.469	7.459	10.469	
5825	-0.313	6.677	9.687	

Model Number	NBG6816				
Test Item	Conducted power spectral density				
Test Mode	Mode 3: IEEE 802.11n 20MHz Link Mode				
Date of Test	01/27/2015		Test Site	TE02	
Beamforming off_Antenna 1					
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)	
5180	6.960			< 17	
5200	7.488				
5220	7.438				
5240	6.916				
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)	
5745	0.116	7.106	10.116	< 30	
5785	0.837	7.827	10.837		
5825	0.259	7.249	10.259		

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11n 40MHz Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming off_Antenna 1				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5190	4.632			< 17
5230	4.240			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5755	-2.346	4.644	7.654	< 30
5795	-2.423	4.567	7.577	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz Link Mode			
Date of Test	01/27/2015	Test Site	TE02	
Beamforming off_Antenna 1				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5210	0.355			< 17
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5775	-3.490	3.500	6.510	< 30

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming off_Antenna 2				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5180	10.078			< 17
5200	9.943			
5220	10.365			
5240	9.870			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	0.575	7.565	10.575	< 30
5785	0.115	7.105	10.115	
5825	0.351	7.341	10.351	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11n 20MHz Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming off_Antenna 2				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5180	9.900			< 17
5200	10.074			
5220	10.309			
5240	9.762			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	0.850	7.840	10.850	< 30
5785	0.129	7.119	10.129	
5825	0.339	7.329	10.339	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11n 40MHz Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming off_Antenna 2				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5190	7.639			< 17
5230	7.087			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5755	-2.734	4.256	7.266	< 30
5795	-2.690	4.300	7.310	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz Link Mode			
Date of Test	01/27/2015	Test Site	TE02	
Beamforming off_Antenna 2				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5210	2.574			< 17
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5775	-4.012	2.978	5.988	< 30

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming off_Antenna 3				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5180	8.481			< 17
5200	8.571			
5220	8.572			
5240	9.215			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	0.899	7.889	10.899	< 30
5785	0.004	6.994	10.004	
5825	-0.042	6.948	9.958	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11n 20MHz Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming off_Antenna 3				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5180	7.096			< 17
5200	8.356			
5220	8.469			
5240	8.733			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	0.371	7.361	10.371	< 30
5785	-0.048	6.942	9.952	
5825	-0.142	6.848	9.858	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11n 40MHz Link Mode			
Date of Test	01/27/2015		Test Site	TE02
Beamforming off_Antenna 3				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5190	5.705			< 17
5230	5.978			
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5755	-2.747	4.243	7.253	< 30
5795	-2.565	4.425	7.435	

Model Number	NBG6816			
Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz Link Mode			
Date of Test	01/27/2015	Test Site	TE02	
Beamforming off_Antenna 3				
Frequency (MHz)	Measurement (dBm/MHz)			FCC Limit (dBm/MHz)
5210	1.154			< 17
Frequency (MHz)	Measurement (dBm/100KHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5775	-3.029	3.961	6.971	< 30

Model Number	NBG6816		
Test Item	Conducted power spectral density		
Test Mode	Mode 2: IEEE 802.11a Link Mode		
Date of Test	01/27/2015	Test Site	TE02
Beamforming off_Antenna 0+1+2+3			
Frequency (MHz)	Measurement (dBm/MHz)		FCC Limit (dBm/MHz)
5180	15.052		< 17
5200	14.897		
5220	15.017		
5240	15.034		
Frequency (MHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	13.706	16.716	< 30
5785	13.092	16.102	
5825	13.084	16.094	

Model Number	NBG6816		
Test Item	Conducted power spectral density		
Test Mode	Mode 3: IEEE 802.11n 20MHz Link Mode		
Date of Test	01/27/2015	Test Site	TE02
Beamforming off_Antenna 0+1+2+3			
Frequency (MHz)	Measurement (dBm/MHz)		FCC Limit (dBm/MHz)
5180	14.545		< 17
5200	15.202		
5220	14.988		
5240	14.878		
Frequency (MHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5745	13.439	16.450	< 30
5785	13.313	16.323	
5825	13.197	16.208	

Model Number	NBG6816		
Test Item	Conducted power spectral density		
Test Mode	Mode 4: IEEE 802.11n 40MHz Link Mode		
Date of Test	01/27/2015	Test Site	TE02
Beamforming off_Antenna 0+1+2+3			
Frequency (MHz)	Measurement (dBm/MHz)		FCC Limit (dBm/MHz)
5190	12.513		< 17
5230	12.180		
Frequency (MHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5755	10.419	13.429	< 30
5795	10.406	13.416	

Model Number	NBG6816		
Test Item	Conducted power spectral density		
Test Mode	Mode 5: IEEE 802.11ac 80MHz Link Mode		
Date of Test	01/27/2015	Test Site	TE02
Beamforming off_Antenna 0+1+2+3			
Frequency (MHz)	Measurement (dBm/MHz)		FCC Limit (dBm/MHz)
5210	7.869		< 17
Frequency (MHz)	Measurement (dBm/500KHz)	Measurement (dBm/MHz)	FCC Limit (dBm/500KHz)
5775	9.535	12.545	< 30

9.6. Test Graphs

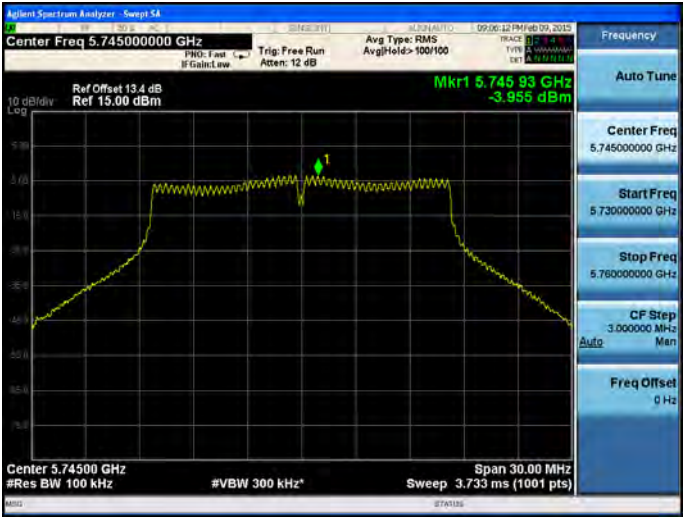
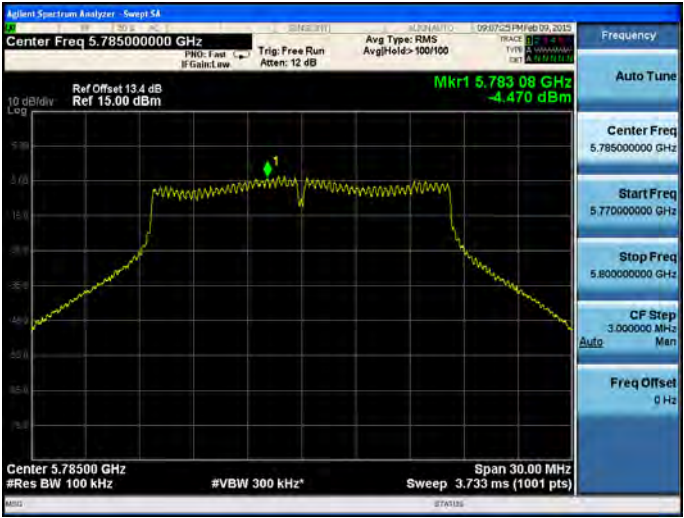
Beamforming on

Mode 2: IEEE 802.11a Link Mode_ Antenna 0	
5180	
5200	
5220	

Mode 2: IEEE 802.11a Link Mode_ Antenna 0

5240



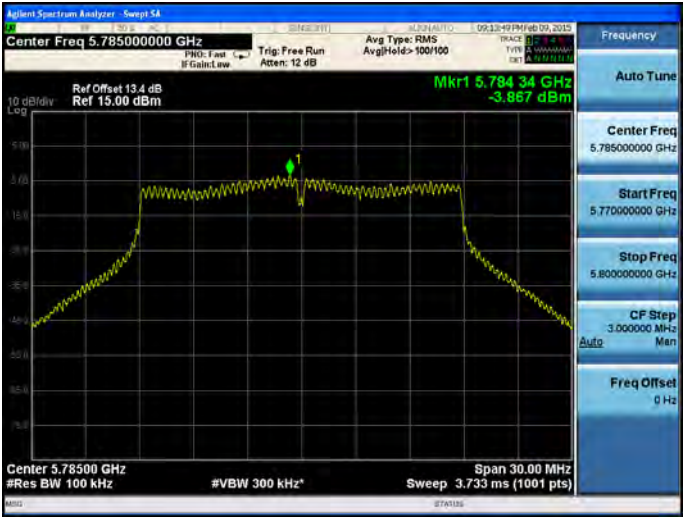
Mode 2: IEEE 802.11a Link Mode_ Antenna 0	
5745	 Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.74500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.745 83 GHz -3.955 dBm Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 3.733 ms (1001 pts) Span 30.00 MHz Frequency Auto Tune Center Freq 5.745000000 GHz Start Freq 5.730000000 GHz Stop Freq 5.760000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz
5785	 Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.78500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.785 08 GHz -4.470 dBm Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 3.733 ms (1001 pts) Span 30.00 MHz Frequency Auto Tune Center Freq 5.785000000 GHz Start Freq 5.770000000 GHz Stop Freq 5.800000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz
5825	 Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.82500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.824 01 GHz -4.242 dBm Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 3.733 ms (1001 pts) Span 30.00 MHz Frequency Auto Tune Center Freq 5.825000000 GHz Start Freq 5.810000000 GHz Stop Freq 5.840000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz

Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 0	
5180	
5200	
5220	

Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 0

5240



Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 0	
5745	 Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.74500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.746 23 GHz -3.625 dBm Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 3.733 ms (1001 pts) Span 30.00 MHz Frequency Auto Tune Center Freq 5.74500000 GHz Start Freq 5.73000000 GHz Stop Freq 5.76000000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz
5785	 Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.78500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.784 34 GHz -3.867 dBm Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 3.733 ms (1001 pts) Span 30.00 MHz Frequency Auto Tune Center Freq 5.78500000 GHz Start Freq 5.77000000 GHz Stop Freq 5.80000000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz
5825	 Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.82500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.824 31 GHz -4.532 dBm Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 3.733 ms (1001 pts) Span 30.00 MHz Frequency Auto Tune Center Freq 5.82500000 GHz Start Freq 5.81000000 GHz Stop Freq 5.84000000 GHz CF Step 3.000000 MHz Auto Man Freq Offset 0 Hz

Mode 4: IEEE 802.11n 40MHz Link Mode_ Antenna 0

5190



5230



Mode 4: IEEE 802.11n 40MHz Link Mode_ Antenna 0	
5755	
5795	

Mode 5: IEEE 802.11ac 80MHz Link Mode_ Antenna 0	
5210	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.210000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.243 5 GHz 1.667 dBm Center 5.21000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 100.0 MHz Sweep 1.000 ms (1001 pts)
5775	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.775000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.809 9 GHz -7.620 dBm Center 5.77500 GHz #Res BW 100 kHz #VBW 300 kHz Span 100.0 MHz Sweep 12.40 ms (1001 pts)

Mode 2: IEEE 802.11a Link Mode_ Antenna 1	
5180	
5200	
5220	

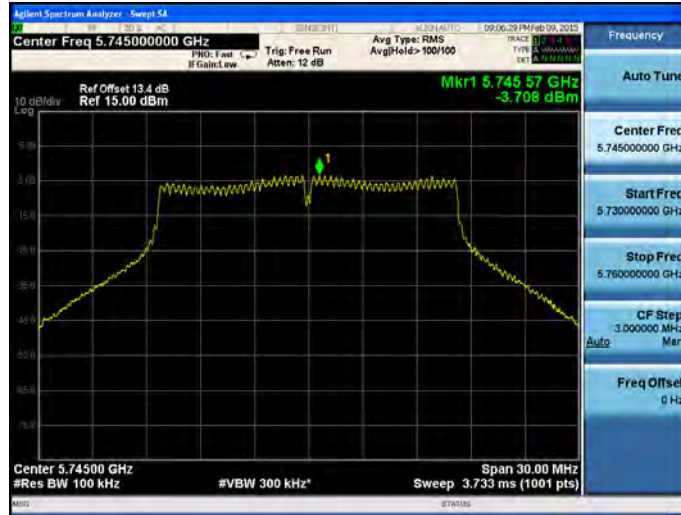
Mode 2: IEEE 802.11a Link Mode_ Antenna 1

5240



Mode 2: IEEE 802.11a Link Mode_ Antenna 1

5745



5785



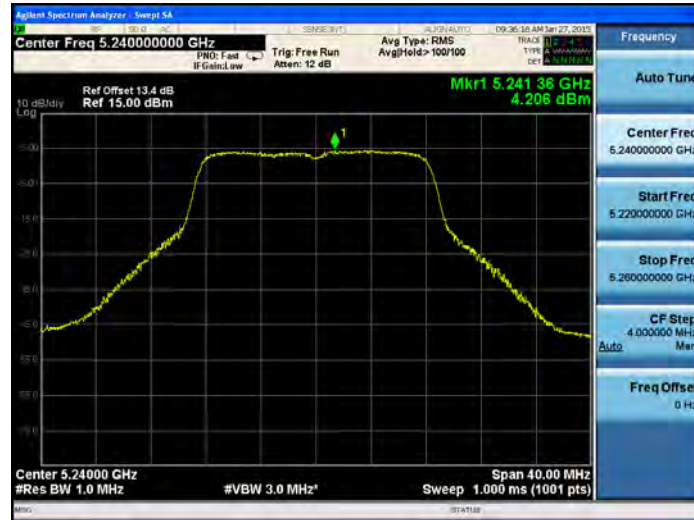
5825

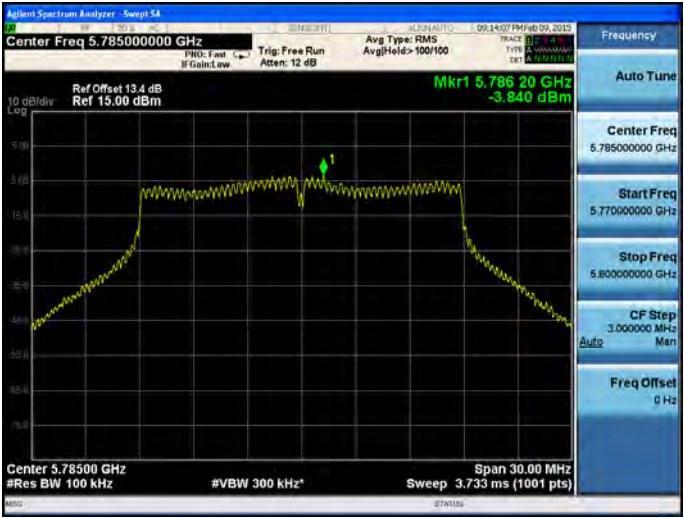


Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 1	
5180	
5200	
5220	

Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 1

5240



Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 1	
5745	
5785	
5825	

Mode 4: IEEE 802.11n 40MHz Link Mode_ Antenna 1

5190



5230



Mode 4: IEEE 802.11n 40MHz Link Mode_ Antenna 1

5755



5795



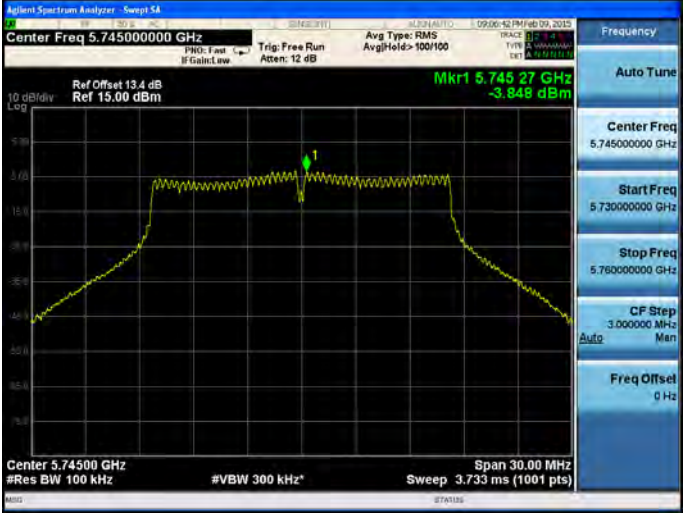
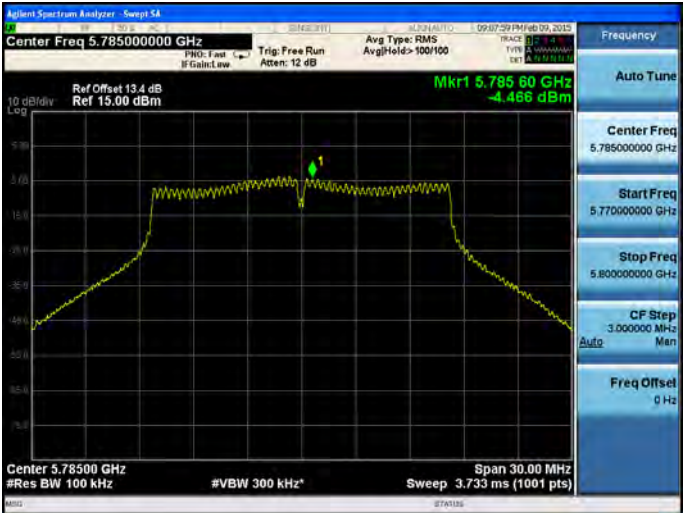
Mode 5: IEEE 802.11ac 80MHz Link Mode_ Antenna 1	
5210	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.210000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.2430 GHz 0.144 dBm Center 5.21000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 100.0 MHz Sweep 1.000 ms (1001 pts)
5775	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.775000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.7924 GHz -0.723 dBm Center 5.77500 GHz #Res BW 100 kHz #VBW 300 kHz Span 100.0 MHz Sweep 12.40 ms (1001 pts)

Mode 2: IEEE 802.11a Link Mode_ Antenna 2	
5180	
5200	
5220	

Mode 2: IEEE 802.11a Link Mode_ Antenna 2

5240



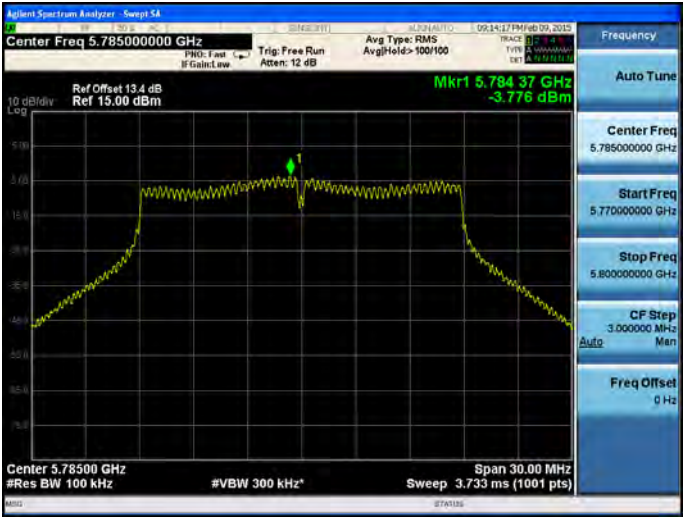
Mode 2: IEEE 802.11a Link Mode_ Antenna 2	
5745	
5785	
5825	

Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 2	
5180	
5200	
5220	

Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 2

5240



Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 2	
5745	
5785	
5825	

Mode 4: IEEE 802.11n 40MHz Link Mode_ Antenna 2

5190



5230



Mode 4: IEEE 802.11n 40MHz Link Mode_ Antenna 2

5755



5795



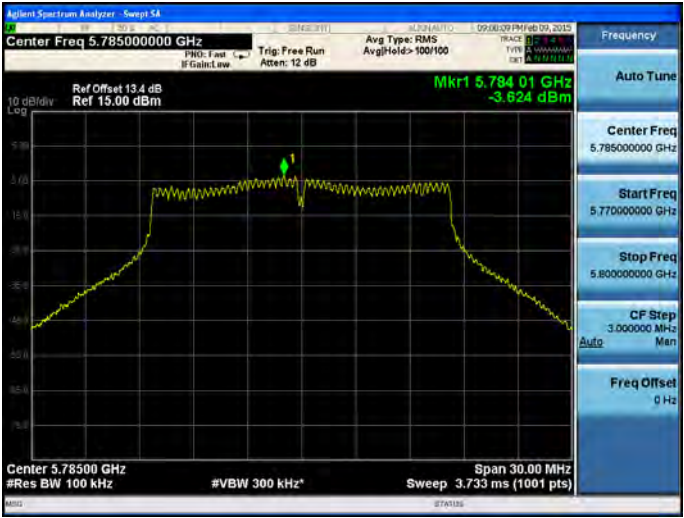
Mode 5: IEEE 802.11ac 80MHz Link Mode_ Antenna 2	
5210	
5775	

Mode 2: IEEE 802.11a Link Mode_ Antenna 3	
5180	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.180000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.174 56 GHz 5.777 dBm Center 5.18000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)
5200	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.200000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.195 20 GHz 4.817 dBm Center 5.20000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)
5220	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.220000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.216 60 GHz 5.342 dBm Center 5.22000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)

Mode 2: IEEE 802.11a Link Mode_ Antenna 3

5240



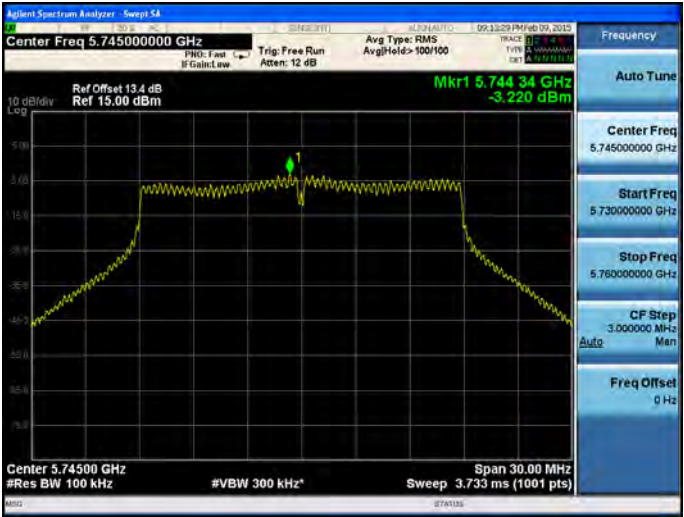
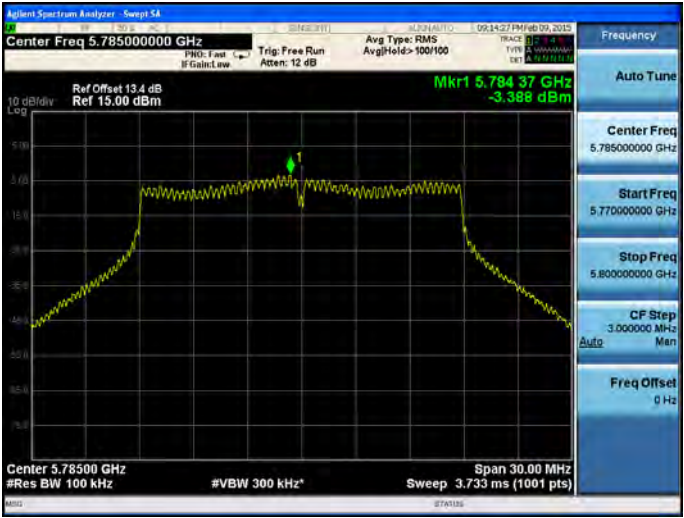
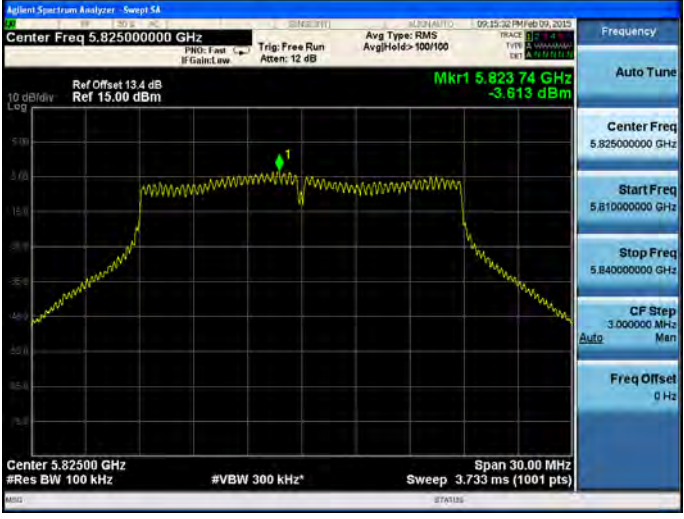
Mode 2: IEEE 802.11a Link Mode_ Antenna 3	
5745	 Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.74500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.745 57 GHz -3.216 dBm Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts) Frequency Auto Tune Center Freq 5.745000000 GHz Start Freq 5.730000000 GHz Stop Freq 5.760000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz
5785	 Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.78500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.784 01 GHz -3.624 dBm Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts) Frequency Auto Tune Center Freq 5.785000000 GHz Start Freq 5.770000000 GHz Stop Freq 5.800000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz
5825	 Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.82500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.822 45 GHz -3.850 dBm Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts) Frequency Auto Tune Center Freq 5.825000000 GHz Start Freq 5.810000000 GHz Stop Freq 5.840000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz

Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 3	
5180	Agilent Spectrum Analyzer - Sweep SA Center Freq 5.180000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.17540 GHz 6.213 dBm Center 5.18000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)
5200	Agilent Spectrum Analyzer - Sweep SA Center Freq 5.200000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.19456 GHz 6.195 dBm Center 5.20000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)
5220	Agilent Spectrum Analyzer - Sweep SA Center Freq 5.220000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.21472 GHz 6.703 dBm Center 5.22000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)

Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 3

5240



Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 3	
5745	
5785	
5825	

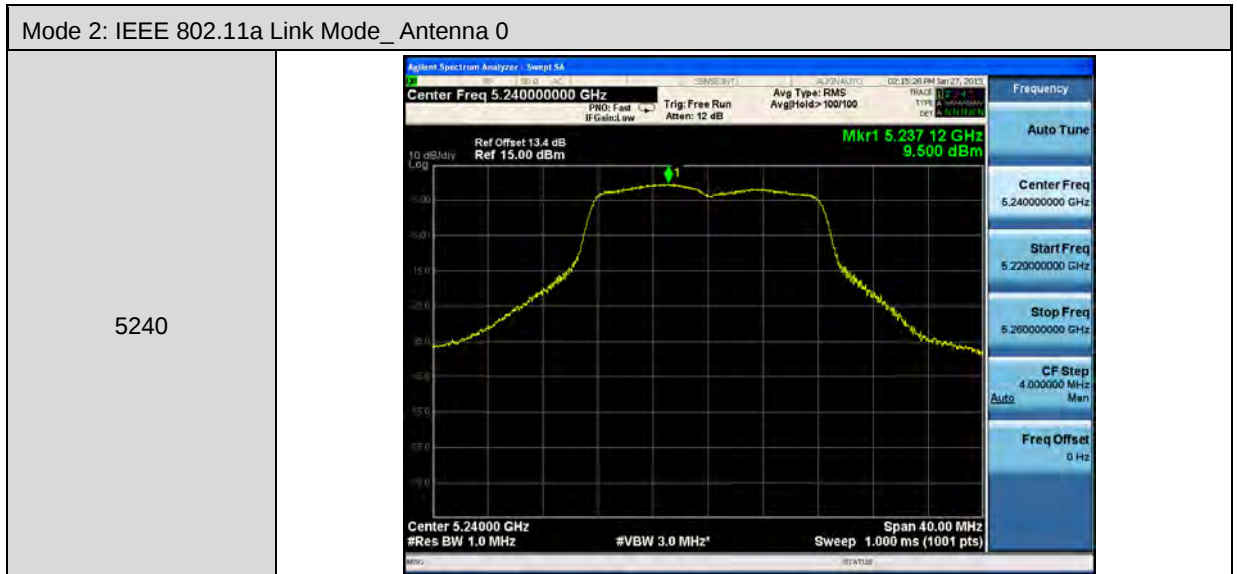
Mode 4: IEEE 802.11n 40MHz Link Mode_ Antenna 3	
5190	
5230	

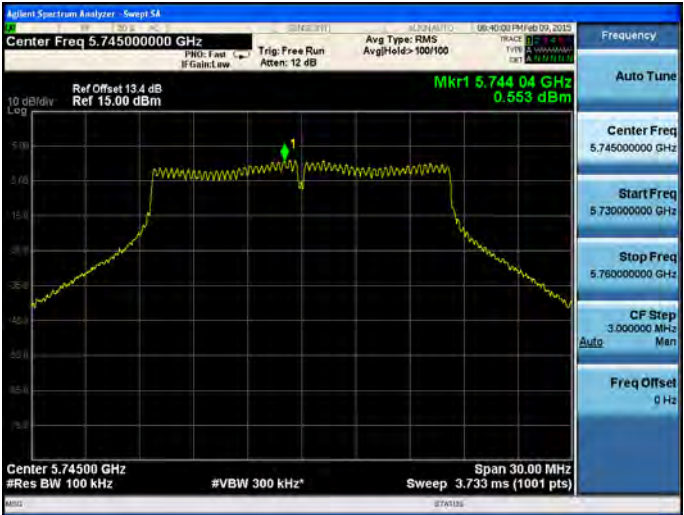
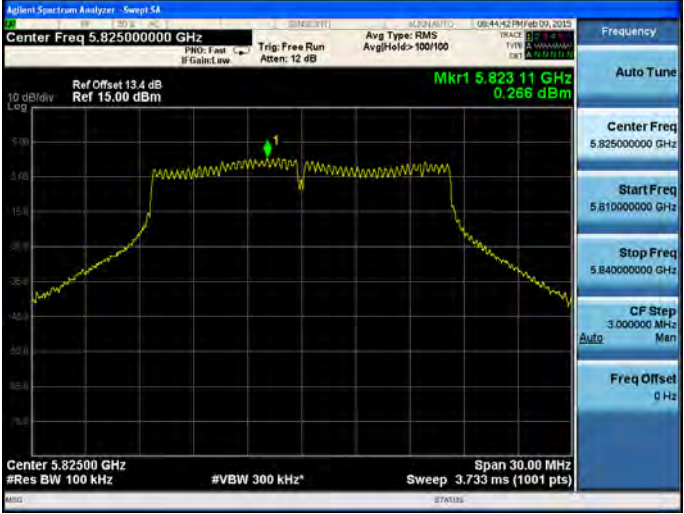
Mode 4: IEEE 802.11n 40MHz Link Mode_ Antenna 3	
5755	Agilent Spectrum Analyzer - Sweep 54 Center Freq 5.75500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.756 85 GHz -3.683 dBm Center 5.75500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 6.200 ms (1001 pts) Span 50.00 MHz Frequency Auto Tune Center Freq 5.755000000 GHz Start Freq 5.730000000 GHz Stop Freq 5.780000000 GHz CF Step 5.000000 MHz Auto Freq Offset 0 Hz
5795	Agilent Spectrum Analyzer - Sweep 54 Center Freq 5.79500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.793 10 GHz -3.363 dBm Center 5.79500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 6.200 ms (1001 pts) Span 50.00 MHz Frequency Auto Tune Center Freq 5.795000000 GHz Start Freq 5.770000000 GHz Stop Freq 5.820000000 GHz CF Step 5.000000 MHz Auto Freq Offset 0 Hz

Mode 5: IEEE 802.11ac 80MHz Link Mode_ Antenna 3	
5210	Agilent Spectrum Analyzer - Sweep SA Center Freq 5.210000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.2436 GHz -0.792 dBm Center 5.21000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 100.0 MHz Sweep 1.000 ms (1001 pts)
5775	Agilent Spectrum Analyzer - Sweep SA Center Freq 5.775000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.8074 GHz -7.148 dBm Center 5.77500 GHz #Res BW 100 kHz #VBW 300 kHz Span 100.0 MHz Sweep 12.40 ms (1001 pts)

Beamforming off

Mode 2: IEEE 802.11a Link Mode_ Antenna 0	
5180	
5200	
5220	



Mode 2: IEEE 802.11a Link Mode_ Antenna 0	
5745	
5785	
5825	

Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 0	
5180	
5200	
5220	

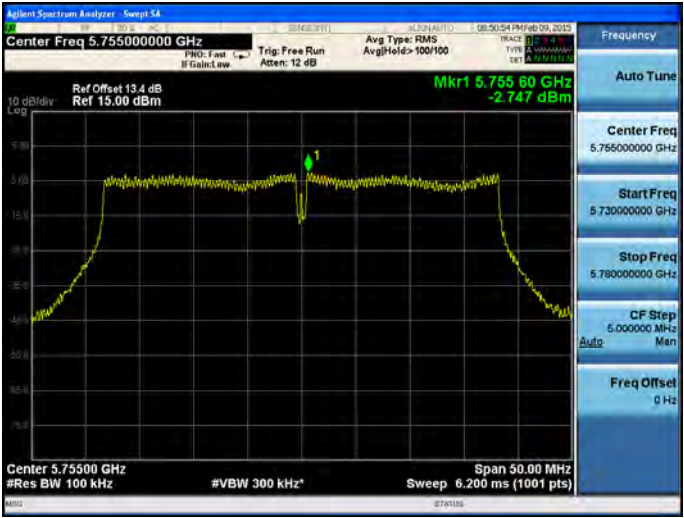
Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 0

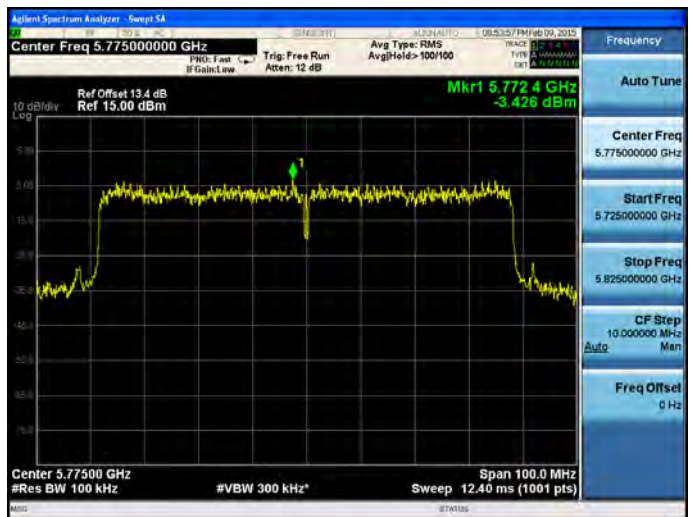
5240



Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 0	
5745	Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.74500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.744 67 GHz 0.346 dBm Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz Span 30.00 MHz Sweep 3.733 ms (1001 pts) Frequency Auto Tune Center Freq 5.745000000 GHz Start Freq 5.730000000 GHz Stop Freq 5.760000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz
5785	Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.78500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.784 04 GHz 0.241 dBm Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz Span 30.00 MHz Sweep 3.733 ms (1001 pts) Frequency Auto Tune Center Freq 5.785000000 GHz Start Freq 5.770000000 GHz Stop Freq 5.800000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz
5825	Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.82500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.823 71 GHz 0.276 dBm Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz Span 30.00 MHz Sweep 3.733 ms (1001 pts) Frequency Auto Tune Center Freq 5.825000000 GHz Start Freq 5.810000000 GHz Stop Freq 5.840000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz



Mode 4: IEEE 802.11n 40MHz Link Mode_ Antenna 0	
5755	
5795	

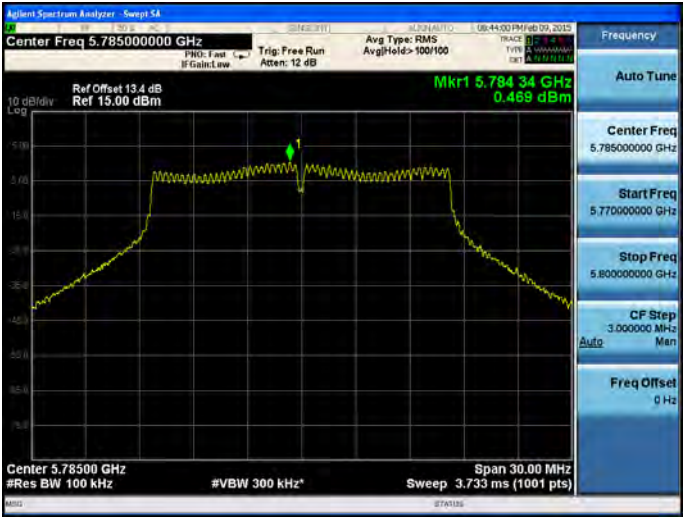
Mode 5: IEEE 802.11ac 80MHz Link Mode_ Antenna 0	
5210	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.210000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.2436 GHz -2.842 dBm Center 5.21000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 100.0 MHz Sweep 1.000 ms (1001 pts)
5775	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.775000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.7724 GHz -3.426 dBm Center 5.77500 GHz #Res BW 100 kHz #VBW 300 kHz Span 100.0 MHz Sweep 12.40 ms (1001 pts)

Mode 2: IEEE 802.11a Link Mode_ Antenna 1	
5180	
5200	
5220	

Mode 2: IEEE 802.11a Link Mode_ Antenna 1

5240



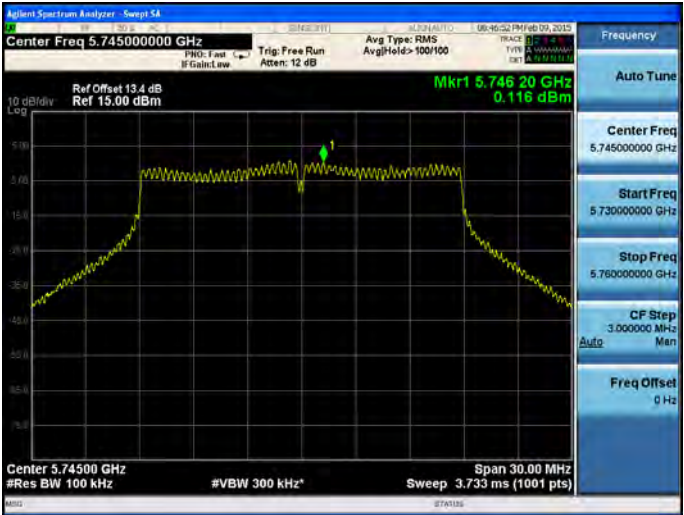
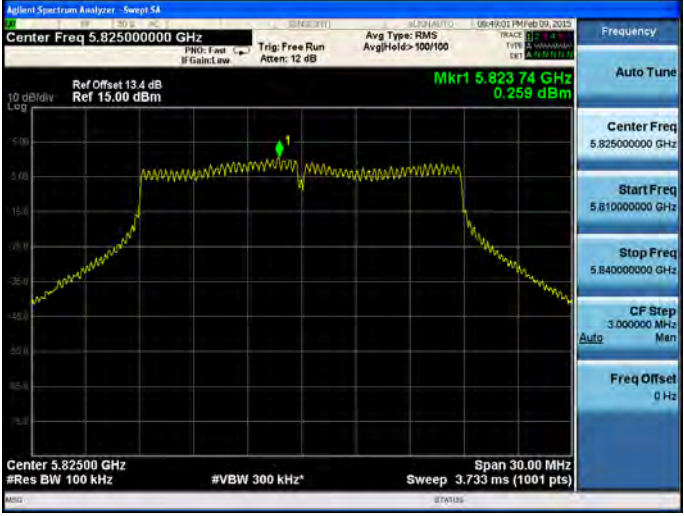
Mode 2: IEEE 802.11a Link Mode_ Antenna 1	
5745	 Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.745000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.744 64 GHz 0.747 dBm Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts) Frequency Auto Tune Center Freq 5.745000000 GHz Start Freq 5.730000000 GHz Stop Freq 5.760000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz
5785	 Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.785000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.784 34 GHz 0.469 dBm Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts) Frequency Auto Tune Center Freq 5.785000000 GHz Start Freq 5.770000000 GHz Stop Freq 5.800000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz
5825	 Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.825000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.822 12 GHz -0.313 dBm Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts) Frequency Auto Tune Center Freq 5.825000000 GHz Start Freq 5.810000000 GHz Stop Freq 5.840000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz

Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 1	
5180	
5200	
5220	

Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 1

5240

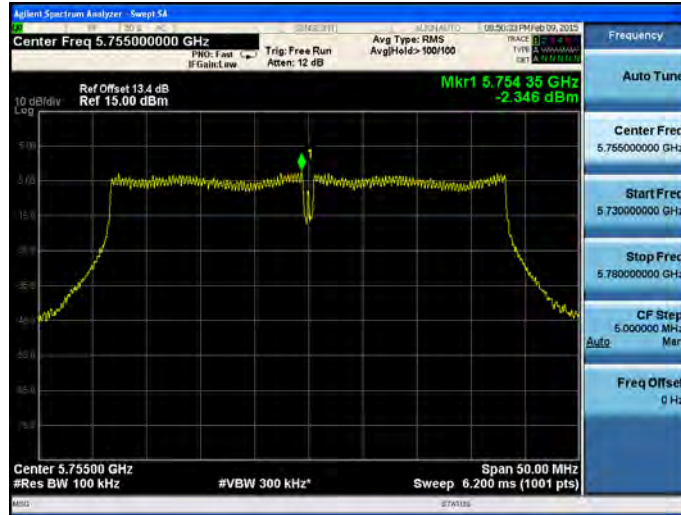


Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 1	
5745	
5785	
5825	

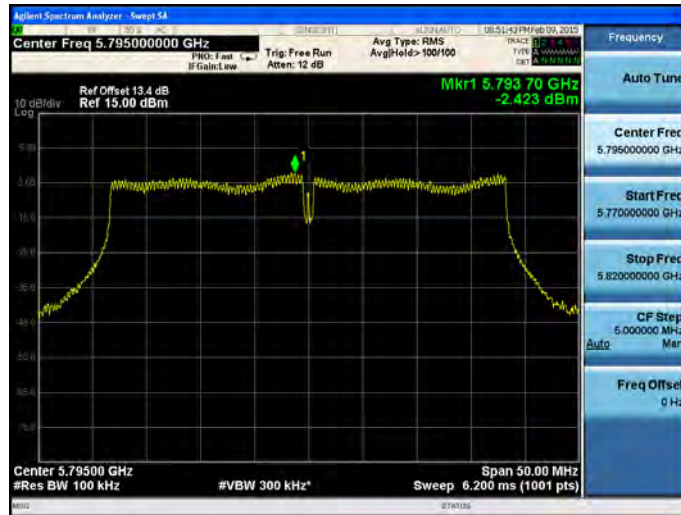
Mode 4: IEEE 802.11n 40MHz Link Mode_ Antenna 1	
5190	
5230	

Mode 4: IEEE 802.11n 40MHz Link Mode_ Antenna 1

5755



5795



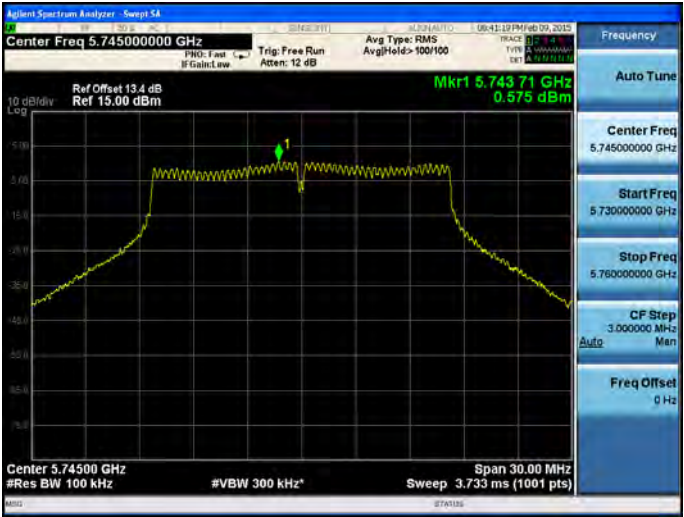
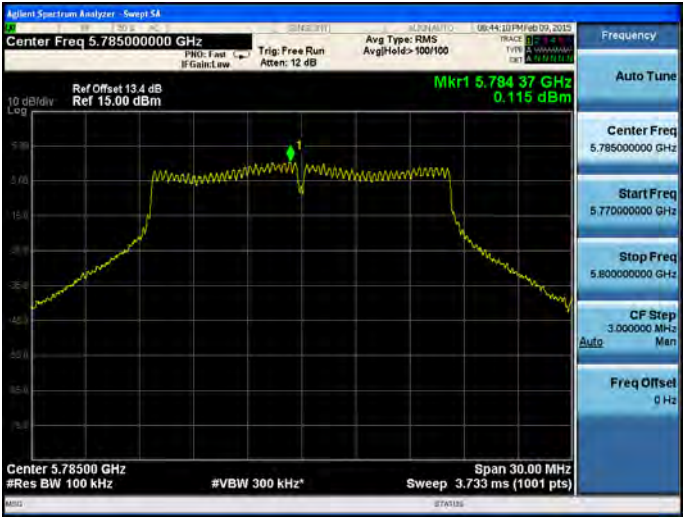
Mode 5: IEEE 802.11ac 80MHz Link Mode_ Antenna 1	
5210	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.210000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.2451 GHz 0.355 dBm Center 5.21000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 100.0 MHz Sweep 1.000 ms (1001 pts)
5775	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.775000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.7724 GHz -3.490 dBm Center 5.77500 GHz #Res BW 100 kHz #VBW 300 kHz Span 100.0 MHz Sweep 12.40 ms (1001 pts)

Mode 2: IEEE 802.11a Link Mode_ Antenna 2	
5180	
5200	
5220	

Mode 2: IEEE 802.11a Link Mode_ Antenna 2

5240



Mode 2: IEEE 802.11a Link Mode_ Antenna 2	
5745	 Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.74500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.743 71 GHz 0.575 dBm Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz Span 30.00 MHz Sweep 3.733 ms (1001 pts) Frequency Auto Tune Center Freq 5.745000000 GHz Start Freq 5.730000000 GHz Stop Freq 5.760000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz
5785	 Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.78500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.784 37 GHz 0.115 dBm Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz Span 30.00 MHz Sweep 3.733 ms (1001 pts) Frequency Auto Tune Center Freq 5.785000000 GHz Start Freq 5.770000000 GHz Stop Freq 5.800000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz
5825	 Agilent Spectrum Analyzer - Sweep S4 Center Freq 5.82500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.823 08 GHz 0.351 dBm Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz Span 30.00 MHz Sweep 3.733 ms (1001 pts) Frequency Auto Tune Center Freq 5.825000000 GHz Start Freq 5.810000000 GHz Stop Freq 5.840000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz

Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 2	
5180	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.180000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.175 96 GHz 9.900 dBm Center 5.18000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 40.00 MHz Sweep 1.000 ms (1001 pts) Frequency Auto Tune Center Freq 5.180000000 GHz Start Freq 5.160000000 GHz Stop Freq 5.200000000 GHz CF Step 4.000000 MHz Auto Freq Offset 0 Hz
5200	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.200000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.195 20 GHz 10.074 dBm Center 5.20000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 40.00 MHz Sweep 1.000 ms (1001 pts) Frequency Auto Tune Center Freq 5.200000000 GHz Start Freq 5.180000000 GHz Stop Freq 5.220000000 GHz CF Step 4.000000 MHz Auto Freq Offset 0 Hz
5220	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.200000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.196 08 GHz 10.309 dBm Center 5.20000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 40.00 MHz Sweep 1.000 ms (1001 pts) Frequency Auto Tune Center Freq 5.200000000 GHz Start Freq 5.180000000 GHz Stop Freq 5.220000000 GHz CF Step 4.000000 MHz Auto Freq Offset 0 Hz

Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 2

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Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 2	
5745	Agilent Spectrum Analyzer - Sweep 54 Center Freq 5.74500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.744 34 GHz 0.850 dBm Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 3.733 ms (1001 pts) Span 30.00 MHz Frequency Auto Tune Center Freq 5.745000000 GHz Start Freq 5.730000000 GHz Stop Freq 5.760000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz
5785	Agilent Spectrum Analyzer - Sweep 54 Center Freq 5.78500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.784 37 GHz 0.129 dBm Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 3.733 ms (1001 pts) Span 30.00 MHz Frequency Auto Tune Center Freq 5.785000000 GHz Start Freq 5.770000000 GHz Stop Freq 5.800000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz
5825	Agilent Spectrum Analyzer - Sweep 54 Center Freq 5.82500000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.823 11 GHz 0.339 dBm Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz* Sweep 3.733 ms (1001 pts) Span 30.00 MHz Frequency Auto Tune Center Freq 5.825000000 GHz Start Freq 5.810000000 GHz Stop Freq 5.840000000 GHz CF Step 3.000000 MHz Auto Freq Offset 0 Hz

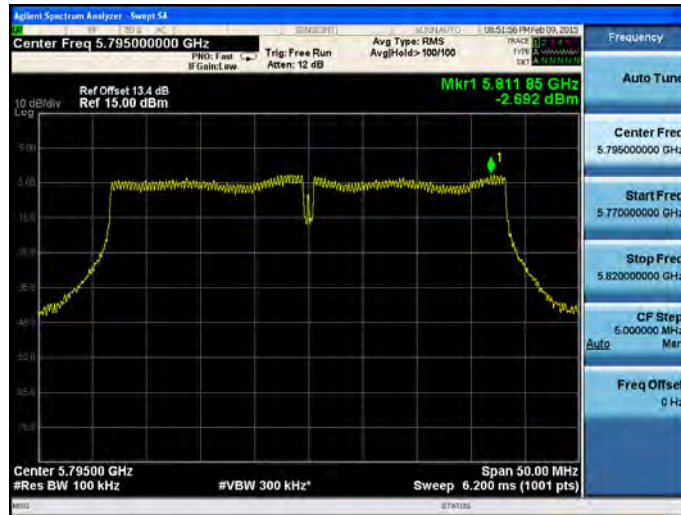
Mode 4: IEEE 802.11n 40MHz Link Mode_ Antenna 2	
5190	
5230	

Mode 4: IEEE 802.11n 40MHz Link Mode_ Antenna 2

5755

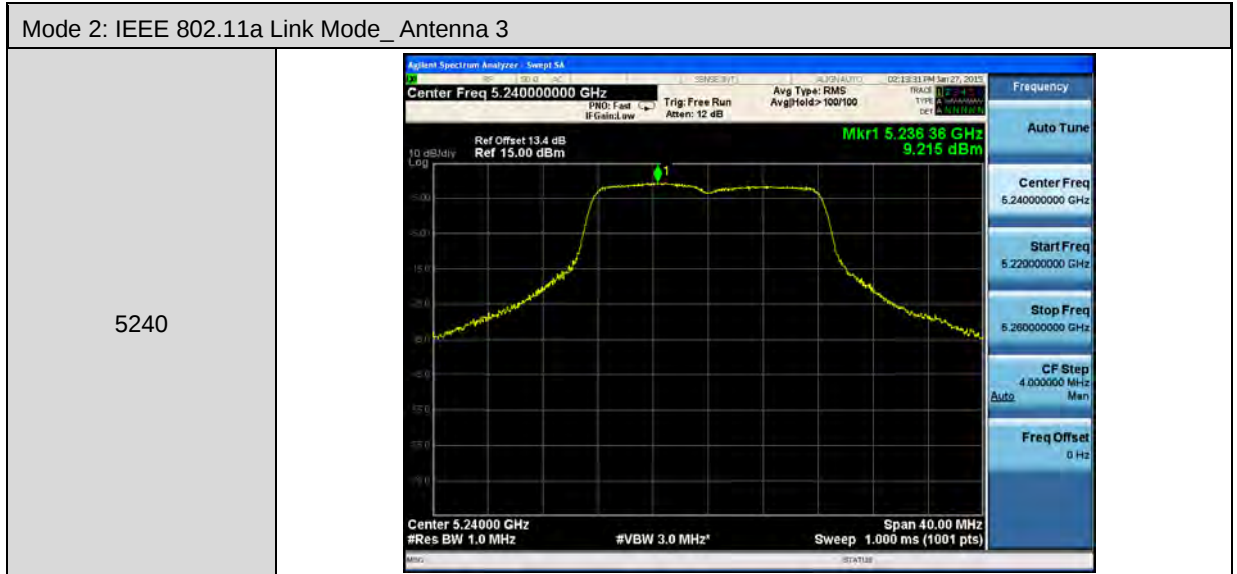


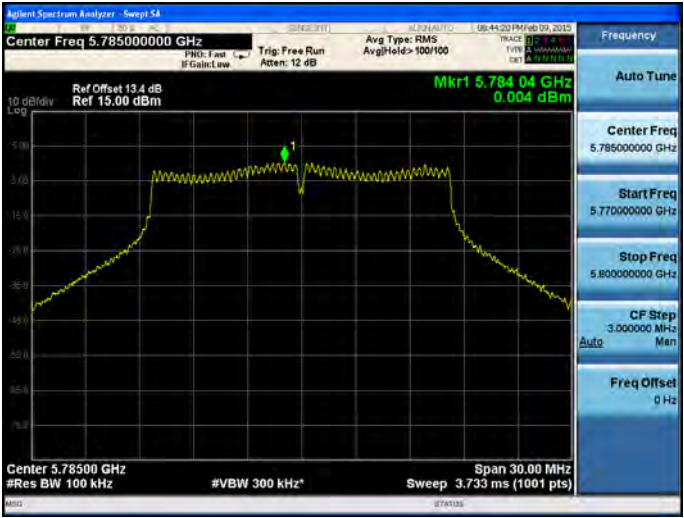
5795

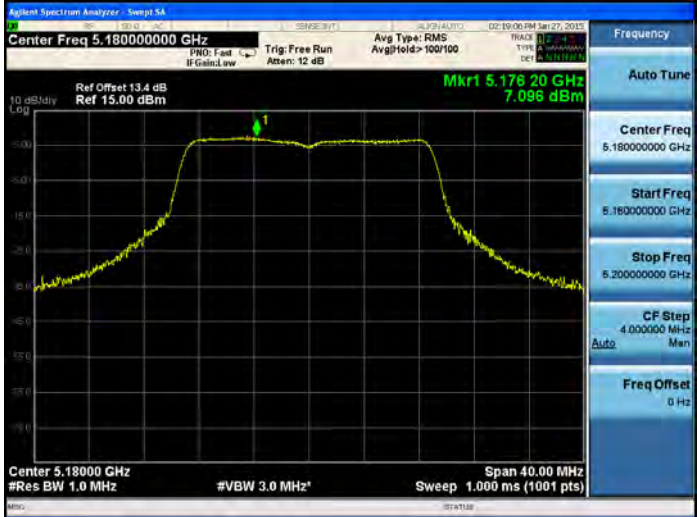


Mode 5: IEEE 802.11ac 80MHz Link Mode_ Antenna 2	
5210	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.210000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.2075 GHz -2.574 dBm Center 5.21000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 100.0 MHz Sweep 1.000 ms (1001 pts)
5775	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.775000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.8100 GHz -4.012 dBm Center 5.77500 GHz #Res BW 100 kHz #VBW 300 kHz Span 100.0 MHz Sweep 12.40 ms (1001 pts)

Mode 2: IEEE 802.11a Link Mode_ Antenna 3	
5180	
5200	
5220	



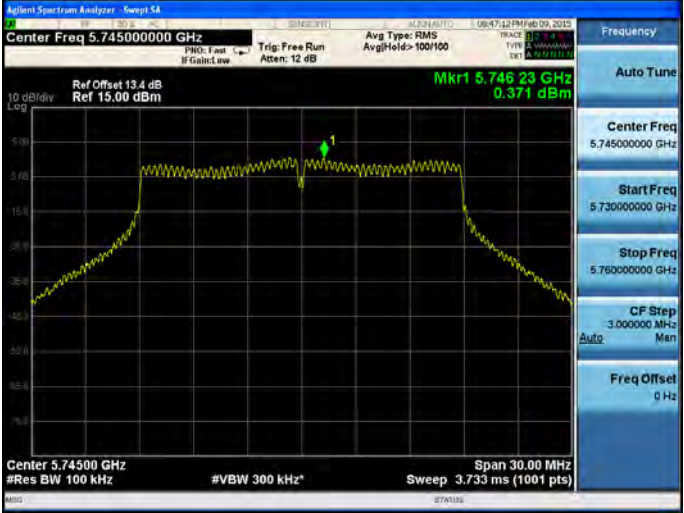
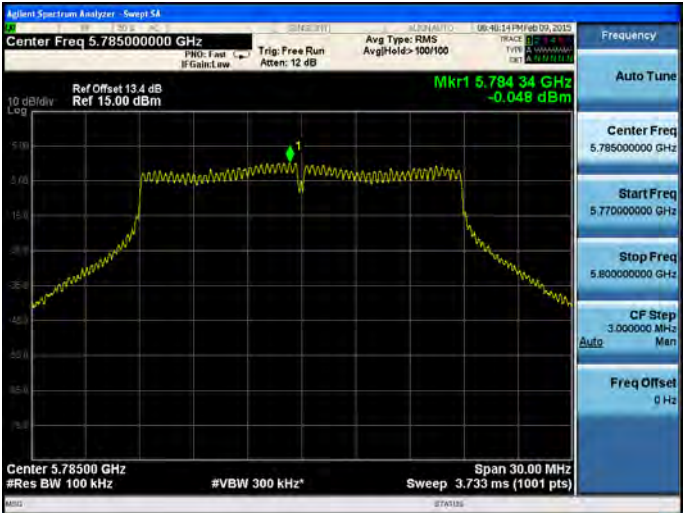
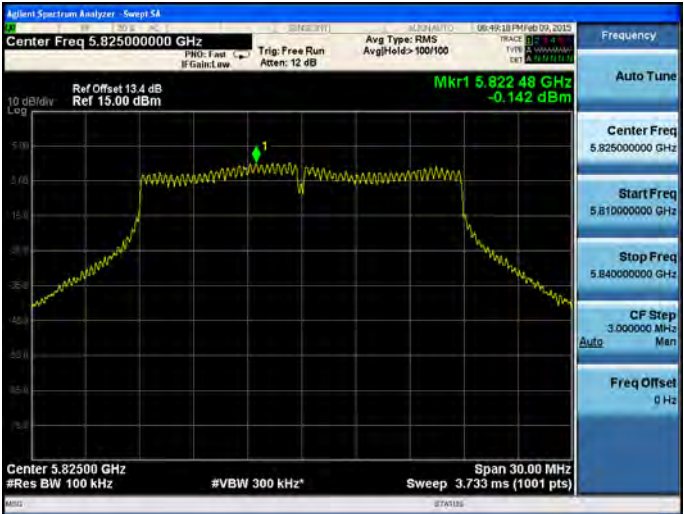
Mode 2: IEEE 802.11a Link Mode_ Antenna 3	
5745	
5785	
5825	

Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 3	
5180	
5200	
5220	

Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 3

5240



Mode 3: IEEE 802.11n 20MHz Link Mode _ Antenna 3	
5745	
5785	
5825	

Mode 4: IEEE 802.11n 40MHz Link Mode_ Antenna 3	
5190	
5230	

Mode 4: IEEE 802.11n 40MHz Link Mode_ Antenna 3	
5755	
5795	

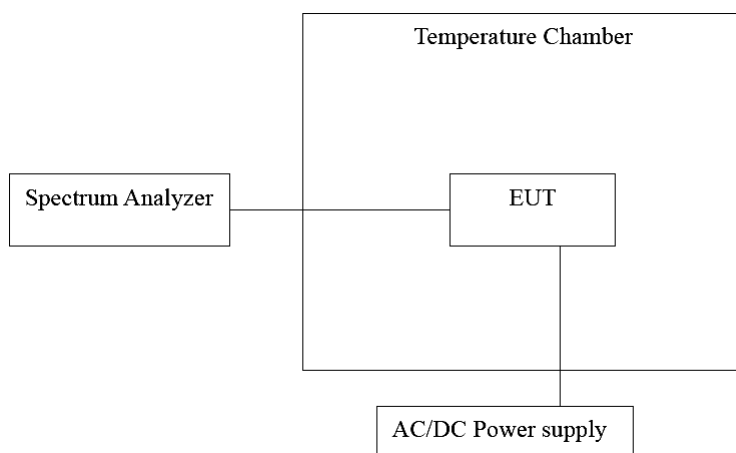
Mode 5: IEEE 802.11ac 80MHz Link Mode_ Antenna 3	
5210	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.210000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.205 3 GHz 1.154 dBm Center 5.21000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 100.0 MHz Sweep 1.000 ms (1001 pts)
5775	 Agilent Spectrum Analyzer - Sweep SA Center Freq 5.775000000 GHz Ref Offset 13.4 dB Ref 15.00 dBm Mkr1 5.772 4 GHz -3.029 dBm Center 5.77500 GHz #Res BW 100 kHz #VBW 300 kHz Span 100.0 MHz Sweep 12.40 ms (1001 pts)

10 Frequency Stability Measurement

10.1. 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.

10.2. Test Setup



10.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4408B	MY45107753	07/24/2014	(1)
Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	08/14/2014	(1)
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

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

10.4. 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.

10.5. Test Result

Beamforming on

Model Number	NBG6816				
Test Mode	Mode 2				
Frequency	5220 MHz				
Date of Test	01/23/2015			Test Site	TE02
Temp. (°C)	Voltage (VAC)	Measured Frequency (MHz)	Delta Frequency (Hz)	Tolerance (ppm)	Result (Pass/Fail)
0	120	5219.9632	-36800	-7.050	Pass
10		5220.0194	19400	3.716	Pass
20		5219.9909	-9100	-1.743	Pass
30		5219.9844	-15600	-2.989	Pass
40		5219.9862	-13800	-2.644	Pass

Model Number	NBG6816				
Test Mode	Mode 2				
Frequency	5200 MHz				
Date of Test	01/23/2015			Test Site	TE02
Temp. (°C)	Voltage (VAC)	Measured Frequency (MHz)	Delta Frequency (Hz)	Tolerance (ppm)	Result (Pass/Fail)
20	138.00	5219.9893	-10700	-2.050	Pass
	120.00	5219.9909	-9100	-1.743	Pass
	102.00	5220.0076	7600	1.456	Pass

Note:1.The manufacturer's frequency stability specification is better then 20ppm.

2.The manufacturer's temperature as specified in the users manual.

Model Number	NBG6816				
Test Mode	Mode 2				
Frequency	5785 MHz				
Date of Test	01/23/2015			Test Site	TE02
Temp. (°C)	Voltage (VAC)	Measured Frequency (MHz)	Delta Frequency (Hz)	Tolerance (ppm)	Result (Pass/Fail)
0	120	5784.9833	-16700	-2.887	Pass
10		5785.0054	5400	0.933	Pass
20		5784.9928	-7200	-1.245	Pass
30		5784.9954	-4600	-0.795	Pass
40		5784.9872	-12800	-2.213	Pass

Model Number	NBG6816				
Test Mode	Mode 2				
Frequency	5785 MHz				
Date of Test	01/23/2015			Test Site	TE02
Temp. (°C)	Voltage (VAC)	Measured Frequency (MHz)	Delta Frequency (Hz)	Tolerance (ppm)	Result (Pass/Fail)
20	138.00	5784.9862	-13800	-2.385	Pass
	120.00	5784.9928	-7200	-1.245	Pass
	102.00	5784.9887	-11300	-1.953	Pass

Note:1.The manufacturer's frequency stability specification is better then 20ppm.

2.The manufacturer's temperature as specified in the users manual.

Model Number	NBG6816				
Test Mode	Mode 3				
Frequency	5220 MHz				
Date of Test	01/23/2015			Test Site	TE02
Temp. (°C)	Voltage (VAC)	Measured Frequency (MHz)	Delta Frequency (Hz)	Tolerance (ppm)	Result (Pass/Fail)
0	120	5220.0301	30100	5.766	Pass
10		5220.0023	2300	0.441	Pass
20		5219.9951	-4900	-0.939	Pass
30		5219.9891	-10900	-2.088	Pass
40		5219.9833	-16700	-3.199	Pass

Model Number	NBG6816				
Test Mode	Mode 3				
Frequency	5220 MHz				
Date of Test	01/23/2015			Test Site	TE02
Temp. (°C)	Voltage (VAC)	Measured Frequency (MHz)	Delta Frequency (Hz)	Tolerance (ppm)	Result (Pass/Fail)
20	138.00	5219.9983	-1700	-0.326	Pass
	120.00	5219.9951	-4900	-0.939	Pass
	102.00	5220.0026	2600	0.498	Pass

Note:1.The manufacturer's frequency stability specification is better then 20ppm.

2.The manufacturer's temperature as specified in the users manual.

Model Number	NBG6816				
Test Mode	Mode 3				
Frequency	5785 MHz				
Date of Test	01/23/2015			Test Site	TE02
Temp. (°C)	Voltage (VAC)	Measured Frequency (MHz)	Delta Frequency (Hz)	Tolerance (ppm)	Result (Pass/Fail)
0	120	5785.0159	15900	2.748	Pass
10		5785.0109	10900	1.884	Pass
20		5784.9942	-5800	-1.003	Pass
30		5784.9893	-10700	-1.850	Pass
40		5784.9725	-27500	-4.754	Pass

Model Number	NBG6816				
Test Mode	Mode 3				
Frequency	5785 MHz				
Date of Test	01/23/2015			Test Site	TE02
Temp. (°C)	Voltage (VAC)	Measured Frequency (MHz)	Delta Frequency (Hz)	Tolerance (ppm)	Result (Pass/Fail)
20	138.00	5785.0063	6300	1.089	Pass
	120.00	5784.9942	-5800	-1.003	Pass
	102.00	5785.0011	1100	0.190	Pass

Note:1.The manufacturer's frequency stability specification is better then 20ppm.

2.The manufacturer's temperature as specified in the users manual.

Model Number	NBG6816				
Test Mode	Mode 4				
Frequency	5190 MHz				
Date of Test	01/23/2015			Test Site	TE02
Temp. (°C)	Voltage (VAC)	Measured Frequency (MHz)	Delta Frequency (Hz)	Tolerance (ppm)	Result (Pass/Fail)
0	120	5189.9857	-14300	-2.755	Pass
10		5189.9963	-3700	-0.713	Pass
20		5190.0053	5300	1.021	Pass
30		5190.0106	10600	2.042	Pass
40		5190.0220	22000	4.239	Pass

Model Number	NBG6816				
Test Mode	Mode 4				
Frequency	5190 MHz				
Date of Test	01/23/2015			Test Site	TE02
Temp. (°C)	Voltage (VAC)	Measured Frequency (MHz)	Delta Frequency (Hz)	Tolerance (ppm)	Result (Pass/Fail)
20	138.00	5190.0083	8300	1.599	Pass
	120.00	5190.0053	5300	1.021	Pass
	102.00	5190.0022	2200	0.424	Pass

Note:1.The manufacturer's frequency stability specification is better then 20ppm.

2.The manufacturer's temperature as specified in the users manual.

Model Number	NBG6816				
Test Mode	Mode 4				
Frequency	5795 MHz				
Date of Test	01/23/2015			Test Site	TE02
Temp. (°C)	Voltage (VAC)	Measured Frequency (MHz)	Delta Frequency (Hz)	Tolerance (ppm)	Result (Pass/Fail)
0	120	5794.9958	-4200	-0.725	Pass
10		5795.0033	3300	0.569	Pass
20		5795.0121	12100	2.088	Pass
30		5795.0052	5200	0.897	Pass
40		5795.0196	19600	3.382	Pass

Model Number	NBG6816				
Test Mode	Mode 4				
Frequency	5795 MHz				
Date of Test	01/23/2015			Test Site	TE02
Temp. (°C)	Voltage (VAC)	Measured Frequency (MHz)	Delta Frequency (Hz)	Tolerance (ppm)	Result (Pass/Fail)
20	138.00	5795.0150	15000	2.588	Pass
	120.00	5795.0121	12100	2.088	Pass
	102.00	5795.0087	8700	1.501	Pass

Note:1.The manufacturer's frequency stability specification is better then 20ppm.

2.The manufacturer's temperature as specified in the users manual.

Model Number	NBG6816				
Test Mode	Mode 5				
Frequency	5210 MHz				
Date of Test	01/23/2015			Test Site	TE02
Temp. (°C)	Voltage (VAC)	Measured Frequency (MHz)	Delta Frequency (Hz)	Tolerance (ppm)	Result (Pass/Fail)
0	120	5209.9811	-18900	-3.628	Pass
10		5209.9858	-14200	-2.726	Pass
20		5209.9953	-4700	-0.902	Pass
30		5210.0028	2800	0.537	Pass
40		5210.0137	13700	2.630	Pass

Model Number	NBG6816				
Test Mode	Mode 5				
Frequency	5210 MHz				
Date of Test	01/23/2015			Test Site	TE02
Temp. (°C)	Voltage (VAC)	Measured Frequency (MHz)	Delta Frequency (Hz)	Tolerance (ppm)	Result (Pass/Fail)
20	138.00	5209.9983	-1700	-0.326	Pass
	120.00	5209.9953	-4700	-0.902	Pass
	102.00	5210.0096	9600	1.843	Pass

Note:1.The manufacturer's frequency stability specification is better then 20ppm.

2.The manufacturer's temperature as specified in the users manual.

Model Number	NBG6816				
Test Mode	Mode 5				
Frequency	5775 MHz				
Date of Test	01/23/2015			Test Site	TE02
Temp. (°C)	Voltage (VAC)	Measured Frequency (MHz)	Delta Frequency (Hz)	Tolerance (ppm)	Result (Pass/Fail)
0	120	5774.9828	-17200	-2.978	Pass
10		5774.9912	-8800	-1.524	Pass
20		5775.0010	1000	0.173	Pass
30		5775.0071	7100	1.229	Pass
40		5775.0960	96000	16.623	Pass

Model Number	NBG6816				
Test Mode	Mode 5				
Frequency	5775 MHz				
Date of Test	01/23/2015			Test Site	TE02
Temp. (°C)	Voltage (VAC)	Measured Frequency (MHz)	Delta Frequency (Hz)	Tolerance (ppm)	Result (Pass/Fail)
20	138.00	5775.0063	6300	1.091	Pass
	120.00	5775.0010	1000	0.173	Pass
	102.00	5775.0019	1900	0.329	Pass

Note:1.The manufacturer's frequency stability specification is better then 20ppm.

2.The manufacturer's temperature as specified in the users manual.

11 Antenna Requirement

11.1. 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.

11.2. Antenna Connector Construction

The antenna used in this product is listed below.

Type	Band	Max. Gain
Dipole Antenna (Reversed-SMA Connector)	U-NII Band I	4.26 dBi
	U-NII Band III	4.15 dBi