

6 Maximum Conducted Output Power Measurement

6.1. Limit

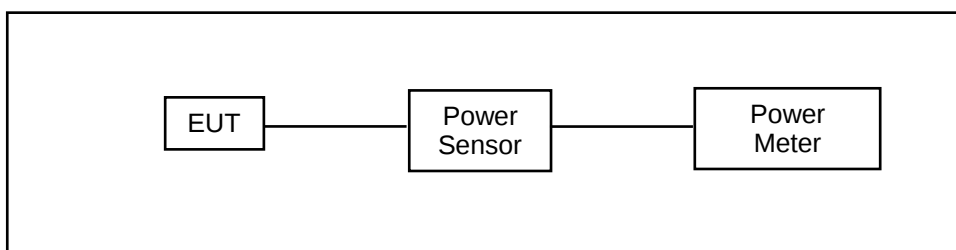
For systems using digital modulation in the 2400-2483.5MHz, the limit for maximum output power is 30dBm.

And According to 15.247 (b), 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.

* SISO mode : Directional Gain = Max. Gain = 2.48 dBi < 6 dBi.

* CDD/BF mode : Directional Gain = $10 \cdot \log\{[10^{(G1/20)} + 10^{(G2/20)} + \dots + 10^{(Gn/20)}]^2 / NANT\}$ = 5.5 dBi < 6dBi

6.2. Test Setup



6.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Power Sensor	Anritsu	MA2411B	1126022	08/29/2016	1 year
Power Meter	Anritsu	ML2495A	1135009	08/29/2016	1 year
Microwave Cable	EMCI	EMC104-SM-SM-1500	140303	02/22/2017	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

6.4. Test Procedure

The testing follows the Measurement Procedure of ANSI C63.10-2013 section 11.9.2.3 Method AVGPM.

The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to power sensor.

6.5. Test Result

Test Item	Maximum Conducted Output Power				
ANT-0					
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		
			Measurement Results		Limit
			dBm	W	dBm
Mode 2	2412	1M	14.22	0.026	< 30
	2437		14.95	0.031	< 30
	2462		14.32	0.027	< 30
	2437	2M	14.92	0.031	< 30
	2437	5.5M	14.87	0.031	< 30
	2437	11M	14.90	0.031	< 30
Mode 3	2412	6M	12.76	0.019	< 30
	2437		16.32	0.043	< 30
	2462		16.61	0.046	< 30
	2437	9M	16.27	0.042	< 30
	2437	12M	16.22	0.042	< 30
	2437	18M	16.30	0.043	< 30
	2437	24M	16.12	0.041	< 30
	2437	36M	16.19	0.042	< 30
	2437	48M	16.12	0.041	< 30
	2437	54M	16.05	0.040	< 30

Note: The relevant measured result has the offset with cable loss already.

Test Item	Maximum Conducted Output Power				
ANT-0					
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		
			Measurement Results		Limit
			dBm	W	dBm
Mode 4	2412	13M	12.43	0.017	< 30
	2437		12.31	0.017	< 30
	2462		12.08	0.016	< 30
	2437	28.8M	12.22	0.017	< 30
	2437	43.4M	12.16	0.016	< 30
	2437	57.8M	12.13	0.016	< 30
	2437	86.6M	12.07	0.016	< 30
	2437	115.6M	12.10	0.016	< 30
	2437	130M	12.00	0.016	< 30
	2437	144.4M	12.03	0.016	< 30
	2437	173.4M	11.97	0.016	< 30
Mode 5	2422	27M	12.05	0.016	< 30
	2437		12.08	0.016	< 30
	2452		12.21	0.017	< 30
	2437	60M	12.06	0.016	< 30
	2437	90M	11.96	0.016	< 30
	2437	120M	11.94	0.016	< 30
	2437	180M	11.90	0.015	< 30
	2437	240M	12.02	0.016	< 30
	2437	270M	11.81	0.015	< 30
	2437	300M	11.84	0.015	< 30
	2437	360M	11.76	0.015	< 30
	2437	400M	11.72	0.015	< 30

Note: The relevant measured result has the offset with cable loss already.

Test Item	Maximum Conducted Output Power				
ANT-1					
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		
			Measurement Results		Limit
			dBm	W	dBm
Mode 4	2412	13M	12.34	0.017	< 30
	2437		17.77	0.060	< 30
	2462		18.10	0.065	< 30
	2437	28.8M	17.75	0.060	< 30
	2437	43.4M	17.71	0.059	< 30
	2437	57.8M	17.68	0.059	< 30
	2437	86.6M	17.65	0.058	< 30
	2437	115.6M	17.51	0.056	< 30
	2437	130M	17.58	0.057	< 30
	2437	144.4M	17.63	0.058	< 30
	2437	173.4M	17.57	0.057	< 30
Mode 5	2422	27M	15.08	0.032	< 30
	2437		15.92	0.039	< 30
	2452		13.97	0.025	< 30
	2437	60M	15.87	0.039	< 30
	2437	90M	15.82	0.038	< 30
	2437	120M	15.88	0.039	< 30
	2437	180M	15.77	0.038	< 30
	2437	240M	15.74	0.037	< 30
	2437	270M	15.68	0.037	< 30
	2437	300M	15.90	0.039	< 30
	2437	360M	15.81	0.038	< 30
	2437	400M	15.75	0.038	< 30

Note: The relevant measured result has the offset with cable loss already.

Test Item	Maximum Conducted Output Power				
ANT-0+1					
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		
			Measurement Results		Limit
			dBm	W	dBm
Mode 4	2412	13M	15.40	0.035	< 30
	2437		18.86	0.077	< 30
	2462		19.07	0.081	< 30
	2437	28.8M	18.82	0.076	< 30
	2437	43.4M	18.78	0.075	< 30
	2437	57.8M	18.75	0.075	< 30
	2437	86.6M	18.71	0.074	< 30
	2437	115.6M	18.61	0.073	< 30
	2437	130M	18.64	0.073	< 30
	2437	144.4M	18.69	0.074	< 30
	2437	173.4M	18.63	0.073	< 30
Mode 5	2422	27M	16.83	0.048	< 30
	2437		17.42	0.055	< 30
	2452		16.19	0.042	< 30
	2437	60M	17.38	0.055	< 30
	2437	90M	17.32	0.054	< 30
	2437	120M	17.35	0.054	< 30
	2437	180M	17.26	0.053	< 30
	2437	240M	17.28	0.053	< 30
	2437	270M	17.17	0.052	< 30
	2437	300M	17.34	0.054	< 30
	2437	360M	17.25	0.053	< 30
	2437	400M	17.20	0.052	< 30

Note: The relevant measured result has the offset with cable loss already.

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Test Item	Maximum Conducted Output Power				
ANT-0					
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		
			Measurement Results		Limit
			dBm	W	dBm
Mode 4	2412	13M	10.37	0.011	< 30
	2437		9.94	0.010	< 30
	2462		9.85	0.010	< 30
	2437	28.8M	9.88	0.010	< 30
	2437	43.4M	9.92	0.010	< 30
	2437	57.8M	9.79	0.010	< 30
	2437	86.6M	9.84	0.010	< 30
	2437	115.6M	9.87	0.010	< 30
	2437	130M	9.74	0.009	< 30
	2437	144.4M	9.78	0.010	< 30
	2437	173.4M	9.66	0.009	< 30
Mode 5	2422	27M	9.90	0.010	< 30
	2437		10.03	0.010	< 30
	2452		10.16	0.010	< 30
	2437	60M	9.97	0.010	< 30
	2437	90M	9.87	0.010	< 30
	2437	120M	9.89	0.010	< 30
	2437	180M	9.82	0.010	< 30
	2437	240M	9.76	0.009	< 30
	2437	270M	9.84	0.010	< 30
	2437	300M	9.75	0.009	< 30
	2437	360M	9.67	0.009	< 30
	2437	400M	9.71	0.009	< 30

Note: The relevant measured result has the offset with cable loss already.

Test Item	Maximum Conducted Output Power				
ANT-1					
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		
			Measurement Results		Limit
			dBm	W	dBm
Mode 4	2412	13M	10.07	0.010	< 30
	2437		15.43	0.035	< 30
	2462		16.01	0.040	< 30
	2437	28.8M	15.39	0.035	< 30
	2437	43.4M	15.31	0.034	< 30
	2437	57.8M	15.30	0.034	< 30
	2437	86.6M	15.27	0.034	< 30
	2437	115.6M	15.24	0.033	< 30
	2437	130M	15.19	0.033	< 30
	2437	144.4M	15.13	0.033	< 30
	2437	173.4M	15.17	0.033	< 30
Mode 5	2422	27M	13.02	0.020	< 30
	2437		13.87	0.024	< 30
	2452		11.85	0.015	< 30
	2437	60M	13.83	0.024	< 30
	2437	90M	13.79	0.024	< 30
	2437	120M	13.73	0.024	< 30
	2437	180M	13.64	0.023	< 30
	2437	240M	13.60	0.023	< 30
	2437	270M	13.57	0.023	< 30
	2437	300M	13.69	0.023	< 30
	2437	360M	13.50	0.022	< 30
	2437	400M	13.55	0.023	< 30

Note: The relevant measured result has the offset with cable loss already.

Test Item	Maximum Conducted Output Power				
ANT-0+1					
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		
			Measurement Results		Limit
			dBm	W	dBm
Mode 4	2412	13M	13.23	0.021	< 30
	2437		16.51	0.045	< 30
	2462		16.95	0.050	< 30
	2437	28.8M	16.47	0.044	< 30
	2437	43.4M	16.41	0.044	< 30
	2437	57.8M	16.38	0.043	< 30
	2437	86.6M	16.36	0.043	< 30
	2437	115.6M	16.35	0.043	< 30
	2437	130M	16.28	0.042	< 30
	2437	144.4M	16.24	0.042	< 30
	2437	173.4M	16.25	0.042	< 30
Mode 5	2422	27M	14.74	0.030	< 30
	2437		15.37	0.034	< 30
	2452		14.10	0.026	< 30
	2437	60M	15.33	0.034	< 30
	2437	90M	15.27	0.034	< 30
	2437	120M	15.23	0.033	< 30
	2437	180M	15.15	0.033	< 30
	2437	240M	15.10	0.032	< 30
	2437	270M	15.10	0.032	< 30
	2437	300M	15.16	0.033	< 30
	2437	360M	15.00	0.032	< 30
	2437	400M	15.05	0.032	< 30

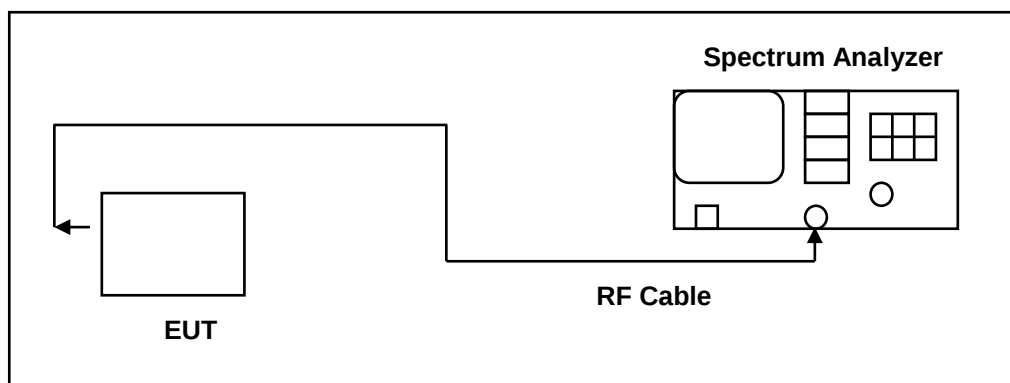
Note: The relevant measured result has the offset with cable loss already.

7 6dB RF Bandwidth Measurement

7.1. Limit

6dB RF Bandwidth: Systems using digital modulation techniques may operate in the 2400–2483.5 MHz bands. The minimum 6 dB band-width shall be at least 500 kHz.

7.2. Test Setup



7.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/19/2016	1 year
Microwave Cable	EMCI	EMC104-SM-SM-1500	140303	02/22/2017	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

7.4. Test Procedure

The EUT tested to DTS test procedure of KDB558074D01 for compliance to FCC 47CFR 15.247 requirements.

6dB RF Bandwidth: The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RBW 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 (Channel low, middle, high)



7.5. Test Result

Test Item	6dB RF Bandwidth			
Test Mode	Frequency (MHz)	Measurement (kHz)		Limit (kHz)
		ANT-0	ANT-1	
Mode 2	2412	9124	---	> 500
	2437	9997	---	> 500
	2462	9125	---	> 500
Mode 3	2412	16550	---	> 500
	2437	16540	---	> 500
	2462	16540	---	> 500
Mode 4	2412	17680	17680	> 500
	2437	17690	17680	> 500
	2462	17690	17680	> 500
Mode 5	2422	36500	36470	> 500
	2437	36470	36470	> 500
	2452	36510	36490	> 500

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Test Item	6dB RF Bandwidth			
Test Mode	Frequency (MHz)	Measurement (kHz)		Limit (kHz)
		ANT-0	ANT-1	
Mode 4	2412	17660	17670	> 500
	2437	17640	17690	> 500
	2462	17690	17690	> 500
Mode 5	2422	36490	36470	> 500
	2437	36490	36460	> 500
	2452	36500	36500	> 500



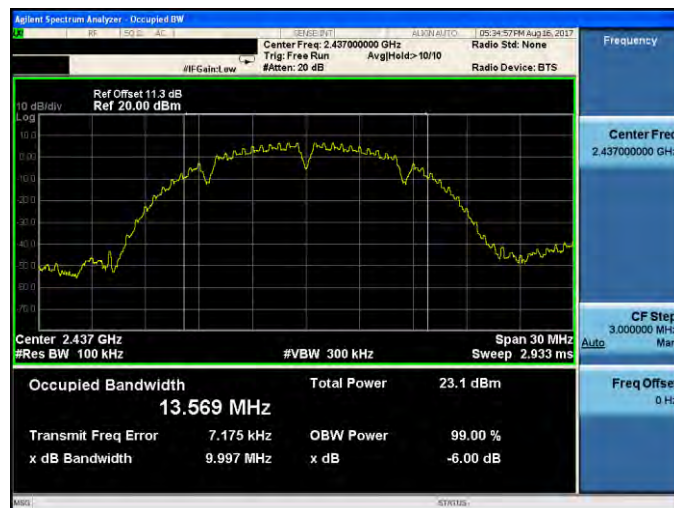
7.6. Test Graphs

Mode 2: IEEE 802.11b Continuous TX mode_ANT-0

2412 MHz



2437 MHz



2462 MHz



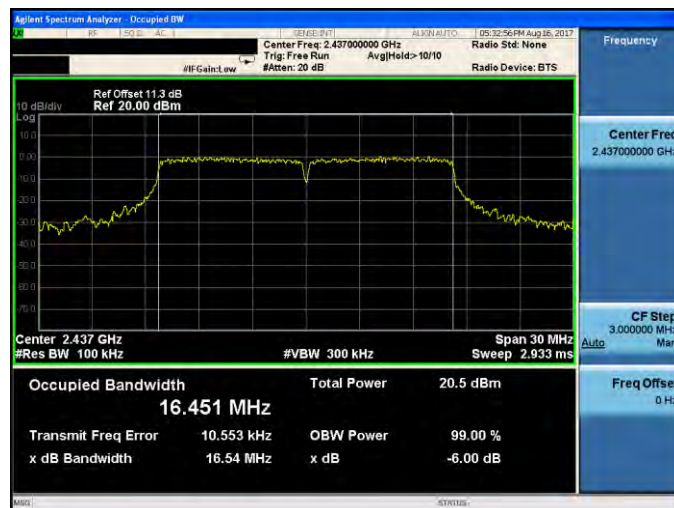


Mode 3: IEEE 802.11g Continuous TX mode_ANT-0

2412 MHz



2437 MHz



2462 MHz



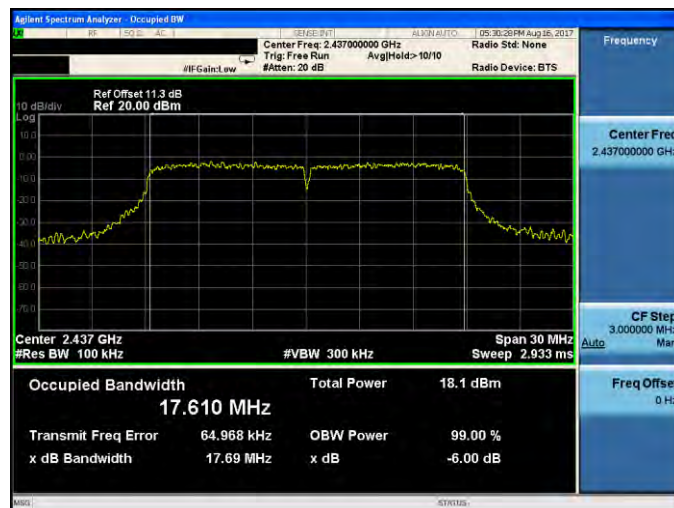


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

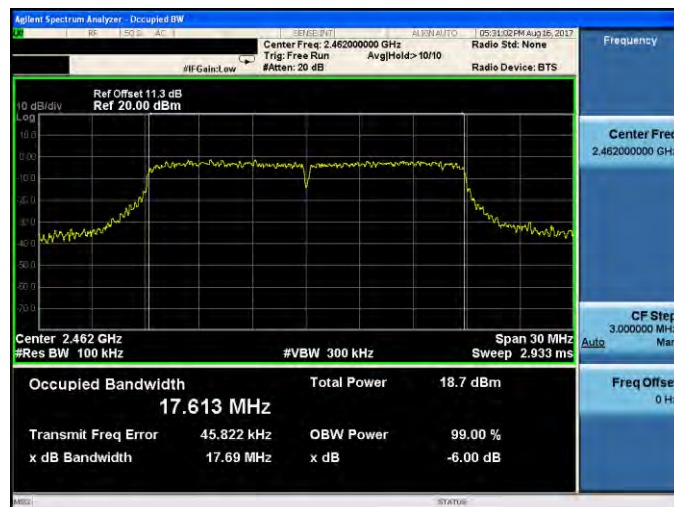
2412 MHz



2437 MHz



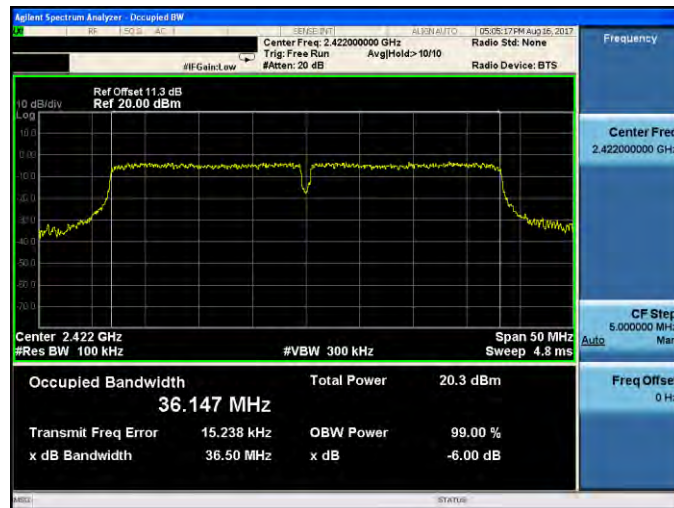
2462 MHz





Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

2422 MHz



2437 MHz



2452 MHz





Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

2412 MHz



2437 MHz



2462 MHz



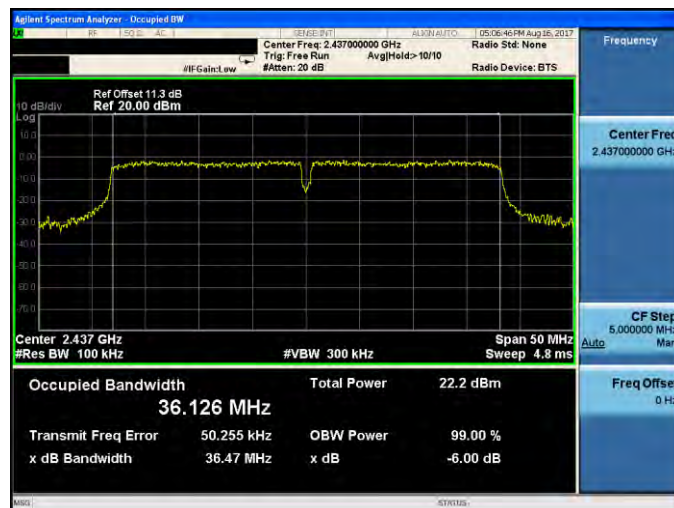


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

2422 MHz



2437 MHz



2452 MHz





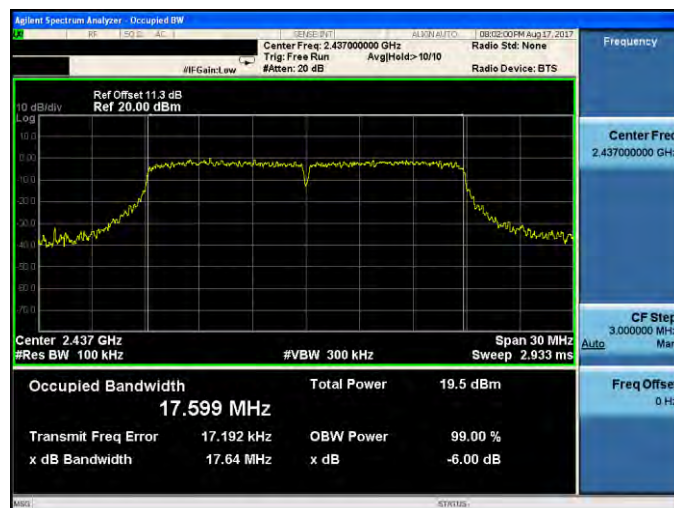
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Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

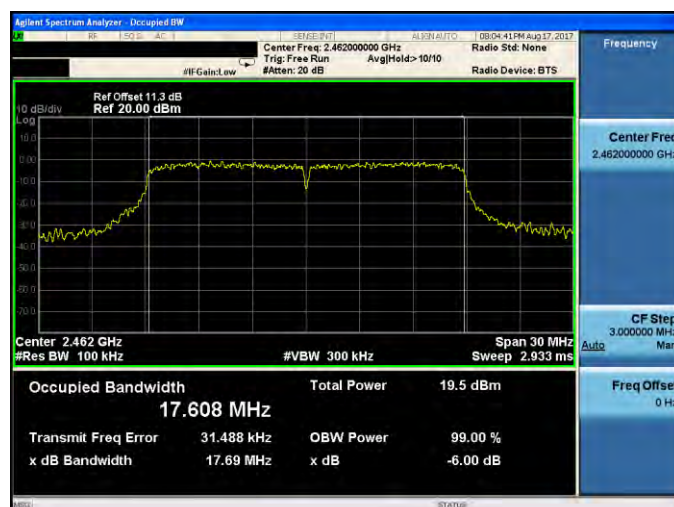
2412 MHz



2437 MHz



2462 MHz



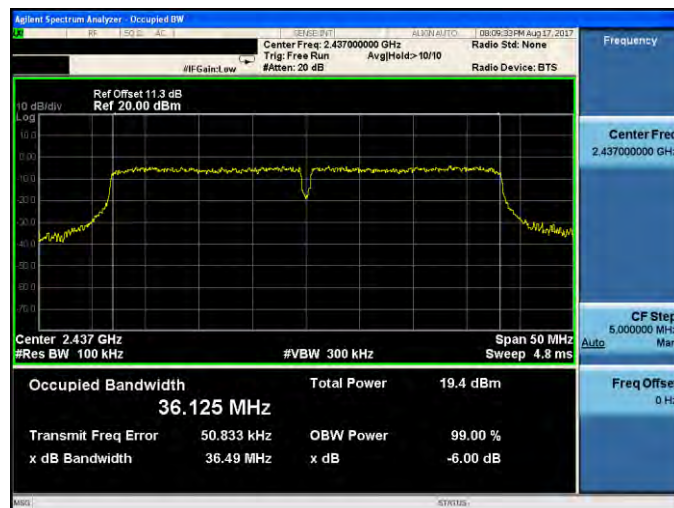


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

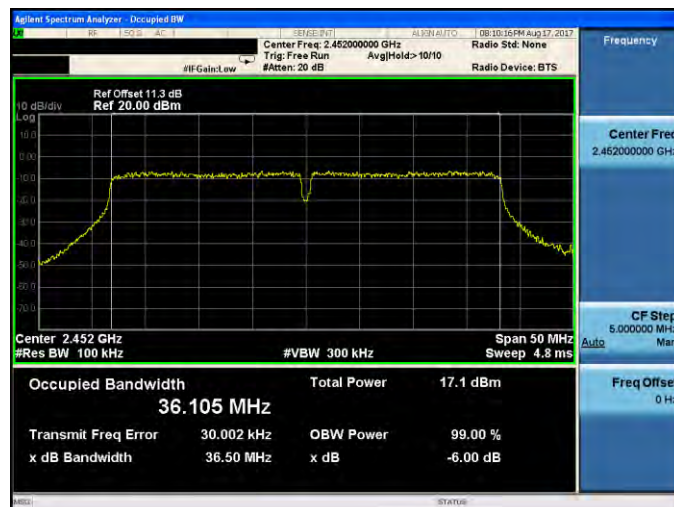
2422 MHz



2437 MHz



2452 MHz





Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

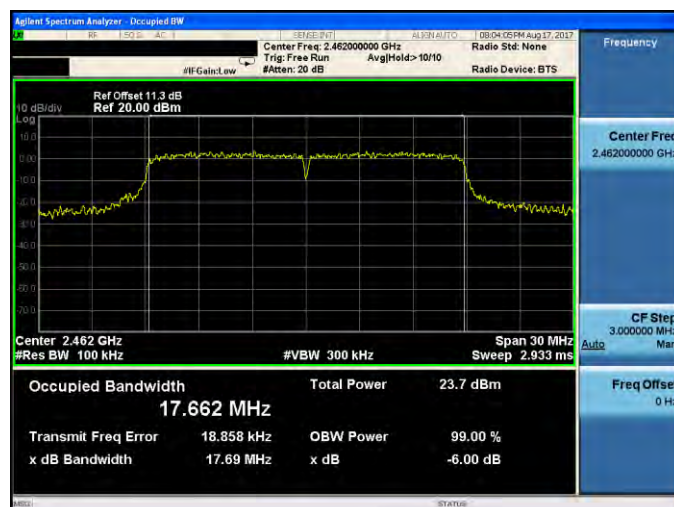
2412 MHz



2437 MHz



2462 MHz





Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

2422 MHz



2437 MHz



2452 MHz



8 Maximum Power Density Measurement

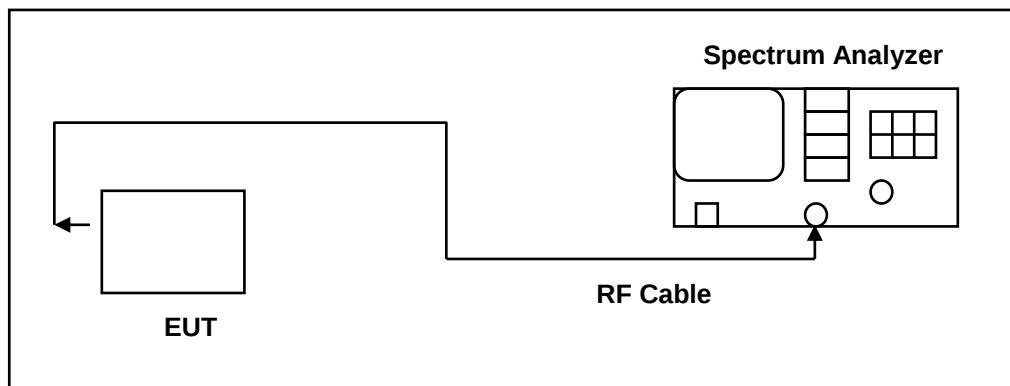
8.1. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

* SISO mode : Directional Gain = Max. Gain = 2.48 dBi < 6 dBi.

* CDD/BF mode : $10 \cdot \log\{[10^{(G1/20)} + 10^{(G2/20)} + \dots + 10^{(Gn/20)}]^2 / NANT\} = 5.5 \text{ dBi} < 6 \text{ dBi}$

8.2. Test Setup



8.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/19/2016	1 year
Microwave Cable	EMCI	EMC104-SM-SM-1500	140303	02/22/2017	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

8.4. Test Procedure

The EUT tested to DTS test procedure of KDB558074D01 section 10.2 Method PKPSD for compliance to FCC 47CFR 15.247 requirements.

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

8.5. Test Result

Test Item	Maximum Power Density				
Test Mode	Frequency (MHz)	Measurement (dBm/3KHz)			Limit (dBm/3KHz)
		ANT-0	ANT-1	ANT-0+1	
Mode 2	2412	-14.508	---	---	< 8
	2437	-13.135	---	---	< 8
	2462	-14.860	---	---	< 8
Mode 3	2412	-16.100	---	---	< 8
	2437	-12.249	---	---	< 8
	2462	-12.184	---	---	< 8
Mode 4	2412	-15.642	-15.455	-12.537	< 8
	2437	-15.706	-10.082	-9.031	< 8
	2462	-15.825	-10.325	-9.247	< 8
Mode 5	2422	-18.012	-14.756	-13.075	< 8
	2437	-17.695	-14.364	-12.707	< 8
	2452	-17.950	-17.212	-14.555	< 8

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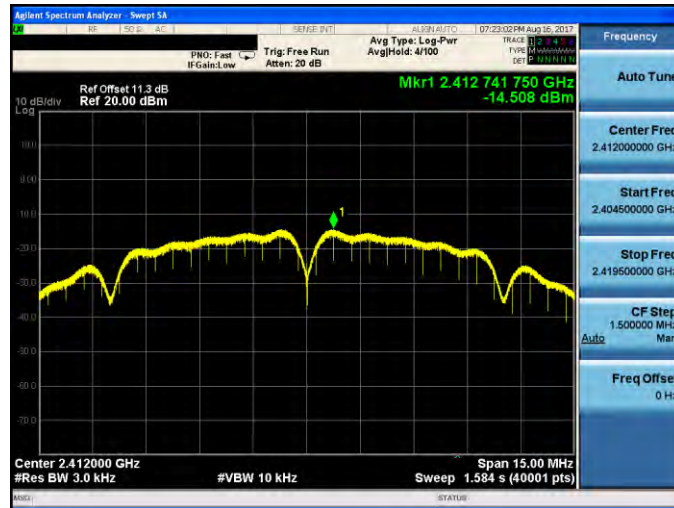
Test Item	Maximum Power Density				
Test Mode	Frequency (MHz)	Measurement (dBm/3KHz)			Limit (dBm/3KHz)
		ANT-0	ANT-1	ANT-0+1	
Mode 4	2412	-17.422	-17.165	-14.281	< 8
	2437	-17.312	-11.786	-10.713	< 8
	2462	-17.632	-11.228	-10.333	< 8
Mode 5	2422	-18.907	-16.584	-14.582	< 8
	2437	-18.153	-16.160	-14.033	< 8
	2452	-19.932	-18.525	-16.162	< 8



8.6. Test Graphs

Mode 2: IEEE 802.11b Continuous TX mode_ANT-0

2412 MHz



2437 MHz



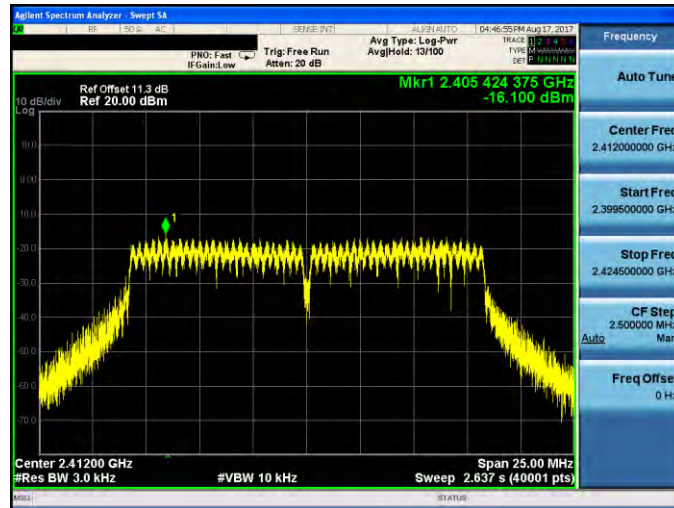
2462 MHz



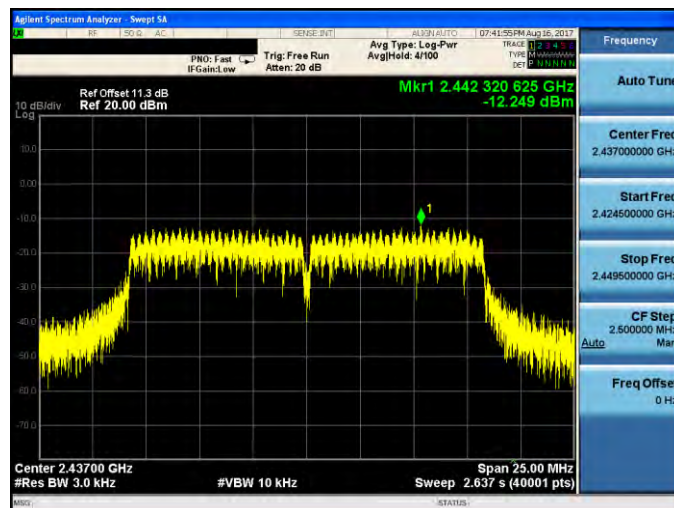


Mode 3: IEEE 802.11g Continuous TX mode_ANT-0

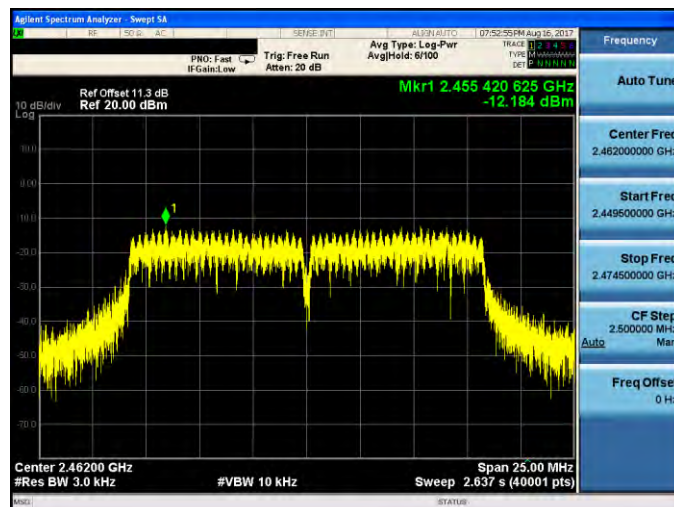
2412 MHz



2437 MHz



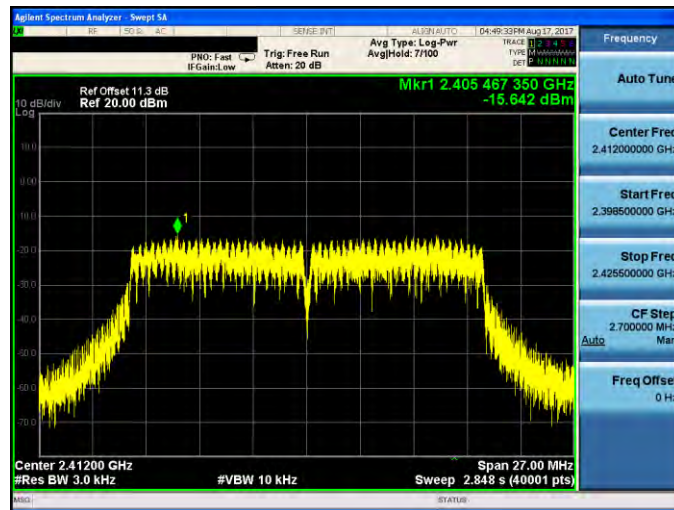
2462 MHz



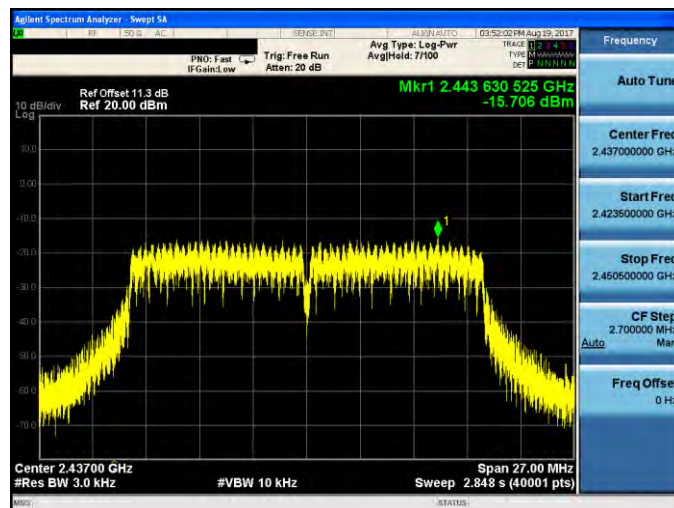


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

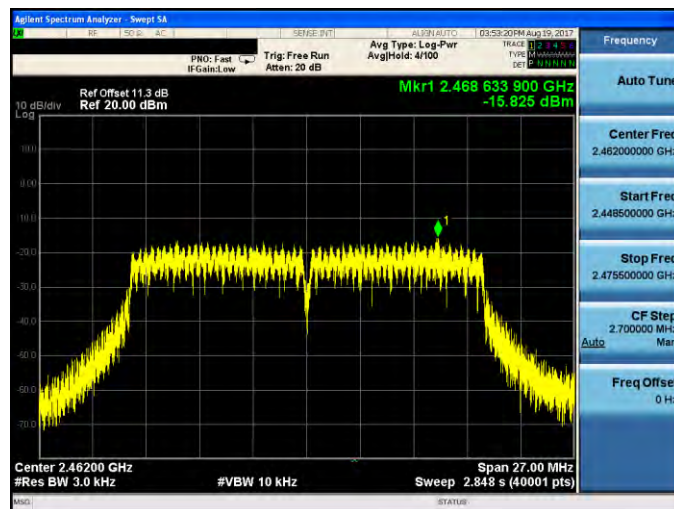
2412 MHz



2437 MHz



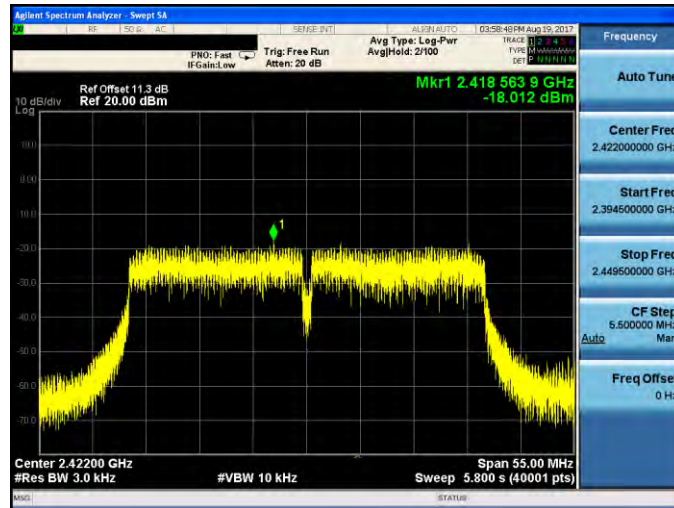
2462 MHz



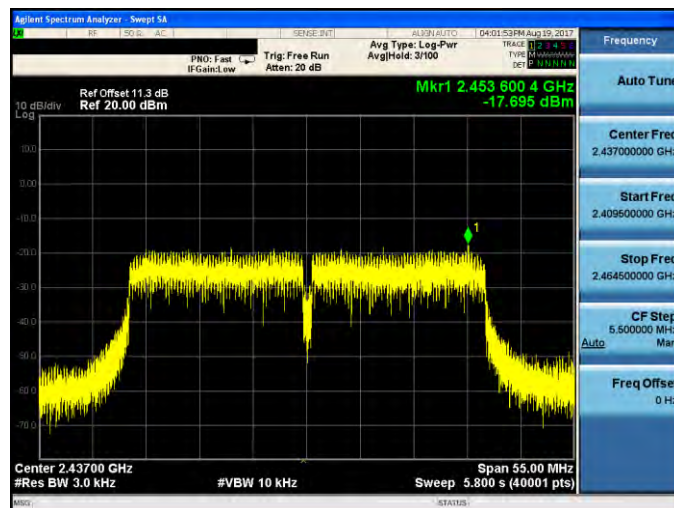


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

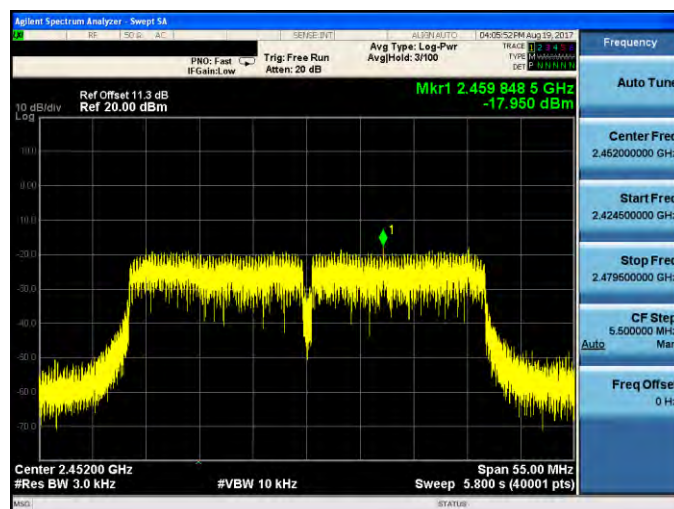
2422 MHz



2437 MHz



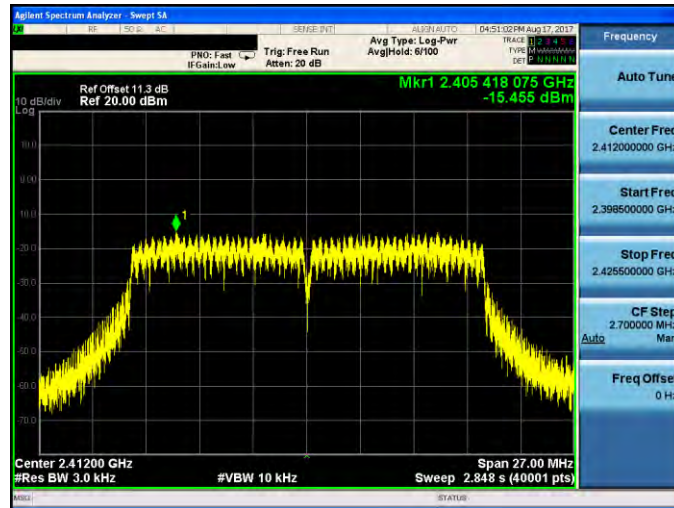
2452 MHz



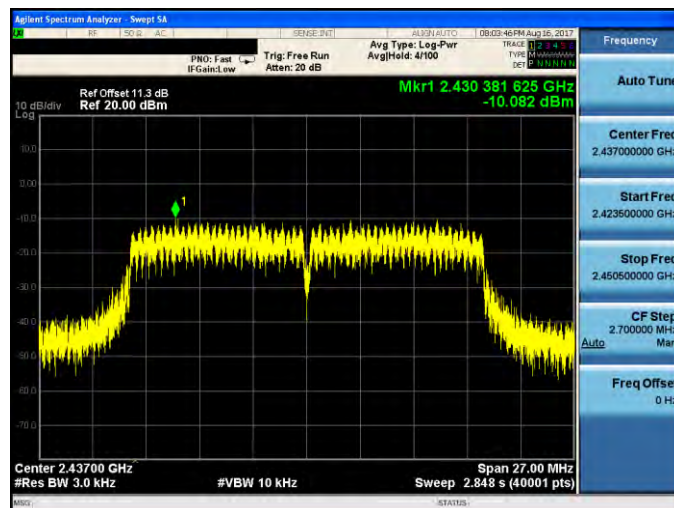


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

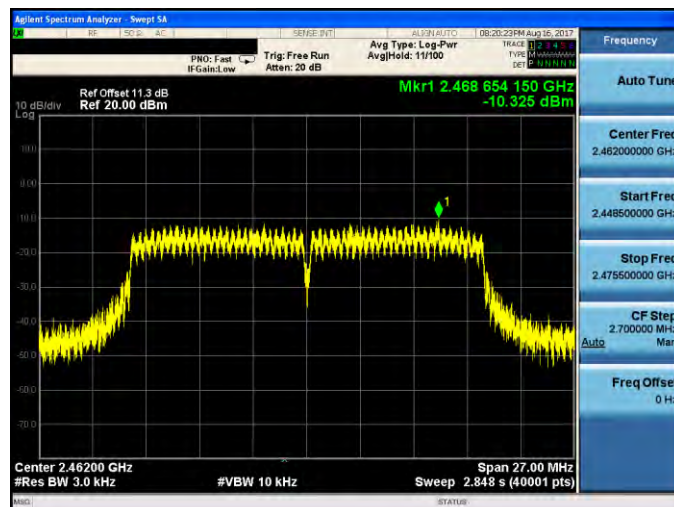
2412 MHz



2437 MHz



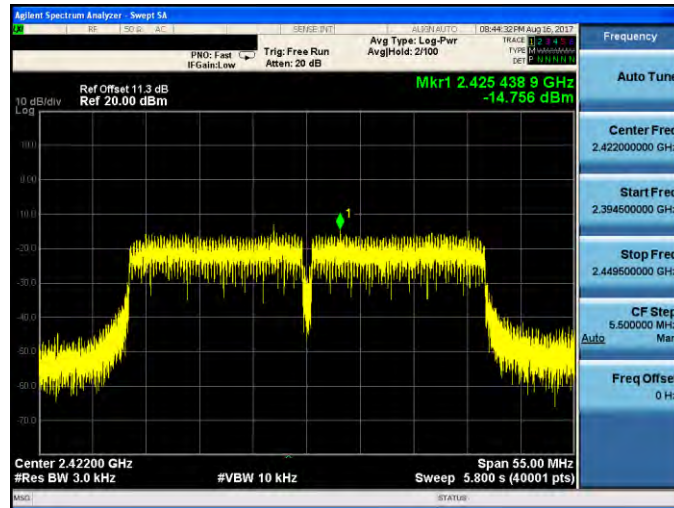
2462 MHz



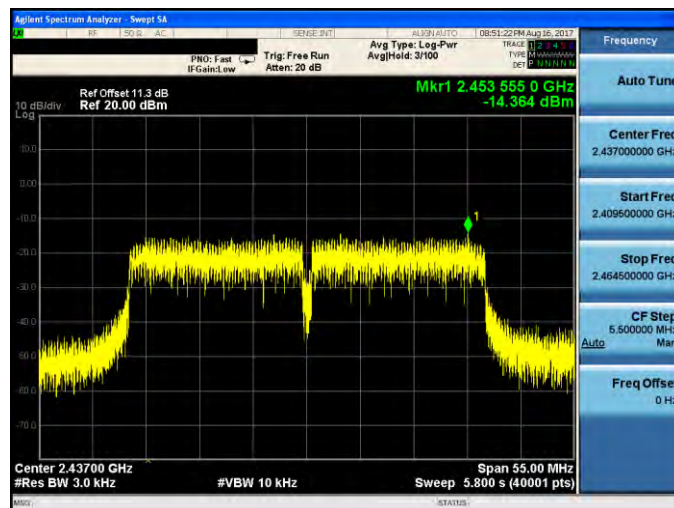


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

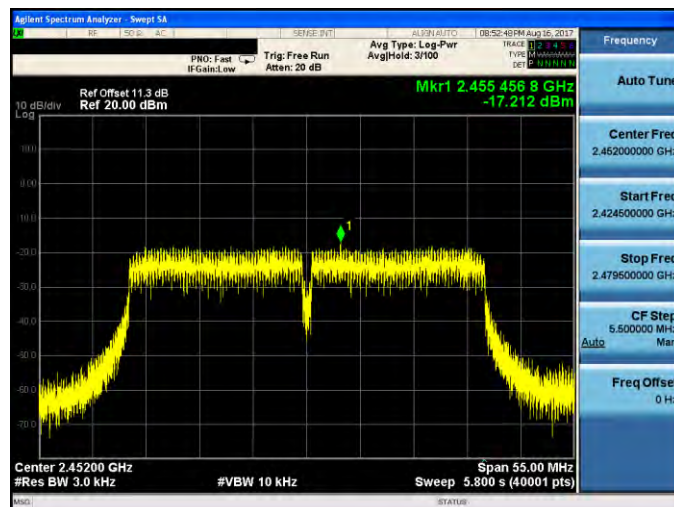
2422 MHz



2437 MHz



2452 MHz

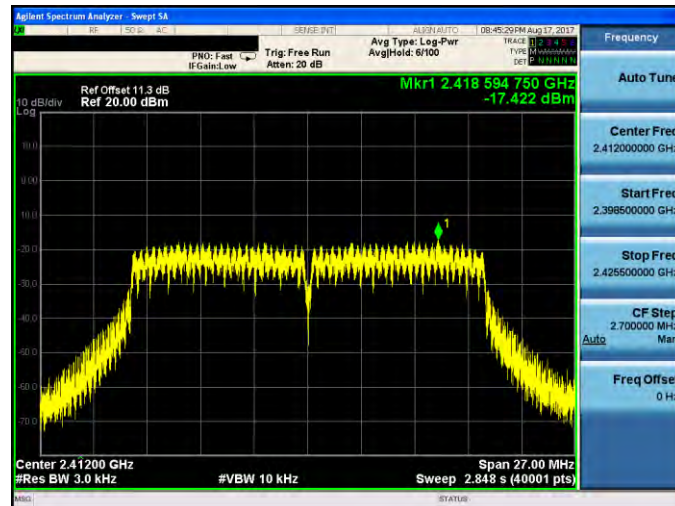




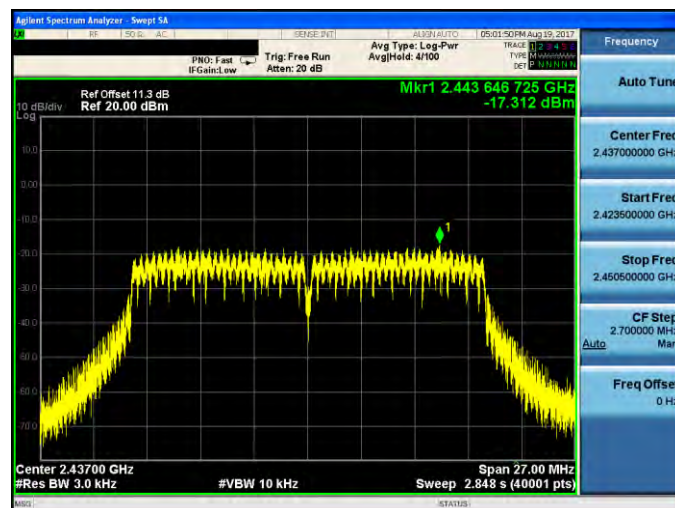
Beamforming on

Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

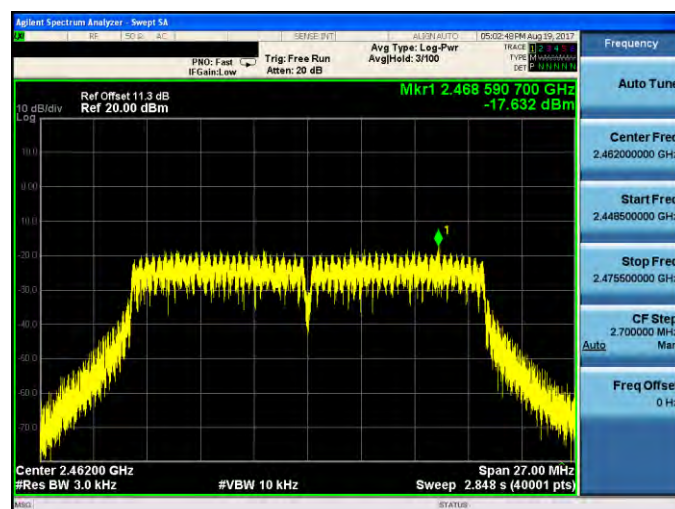
2412 MHz



2437 MHz



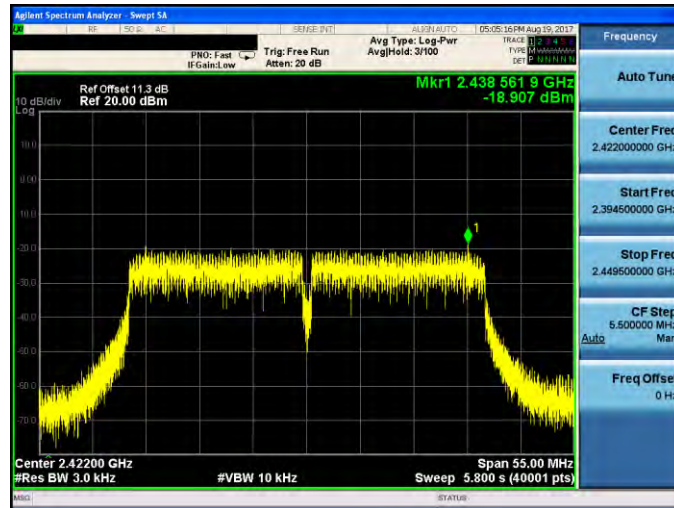
2462 MHz



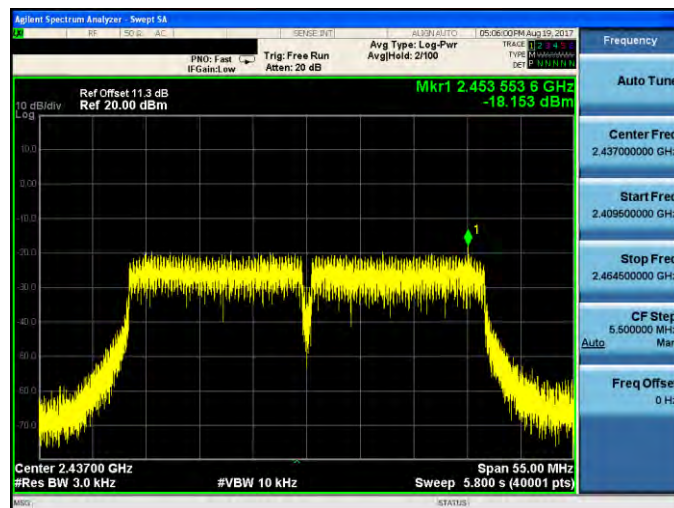


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

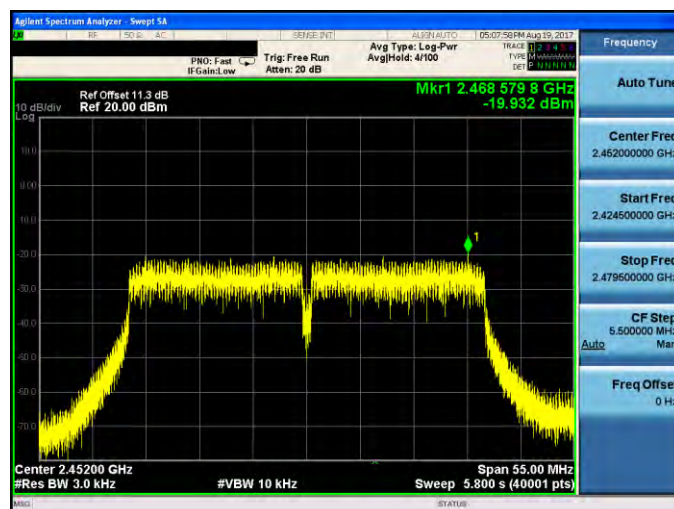
2422 MHz



2437 MHz



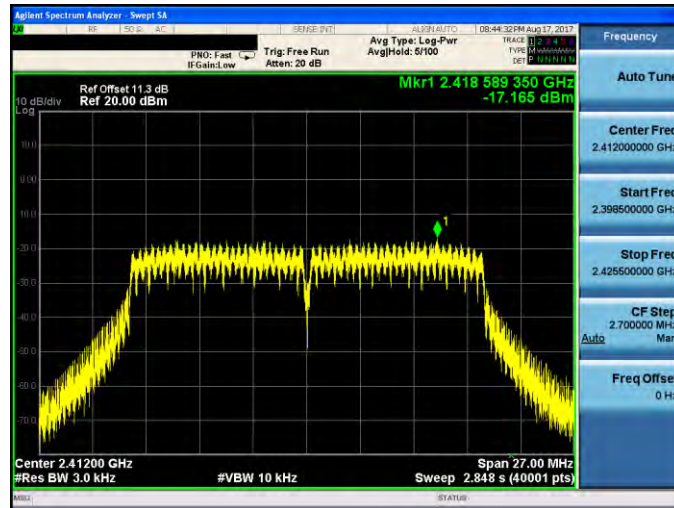
2452 MHz



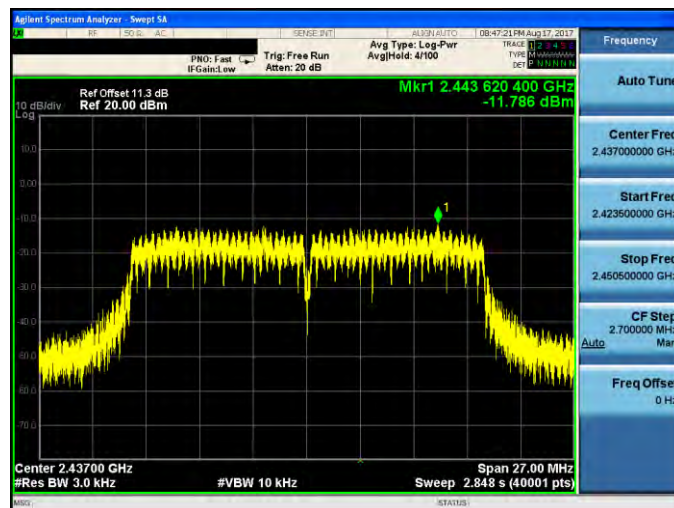


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

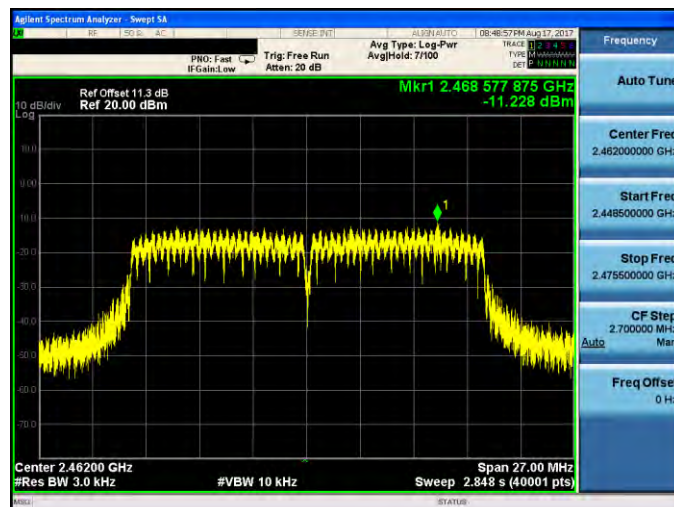
2412 MHz



2437 MHz



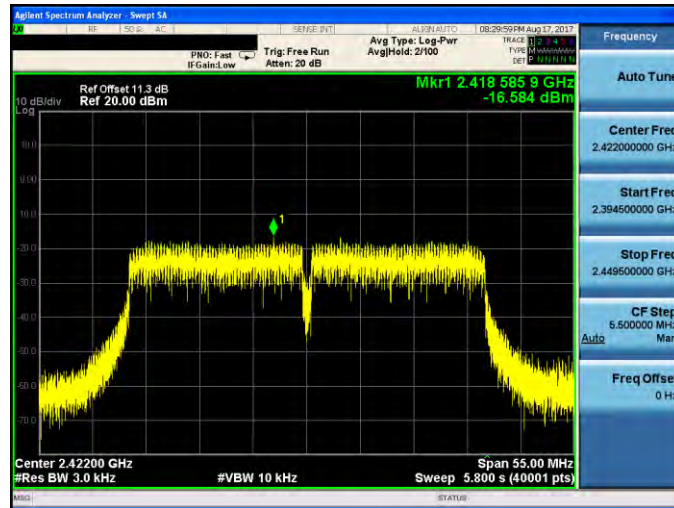
2462 MHz



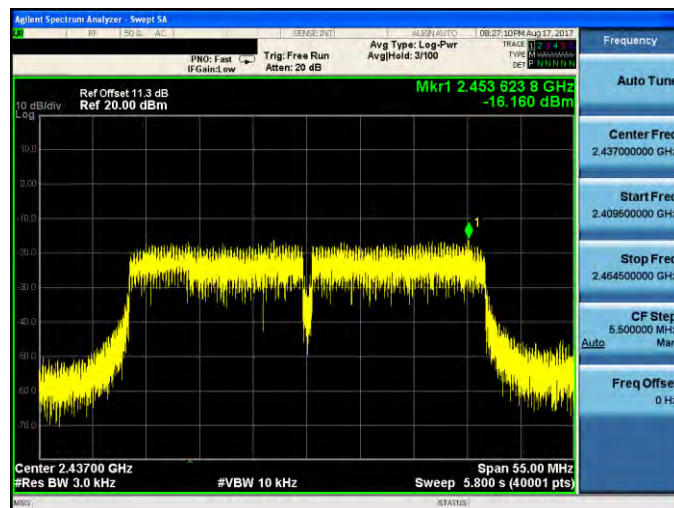


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

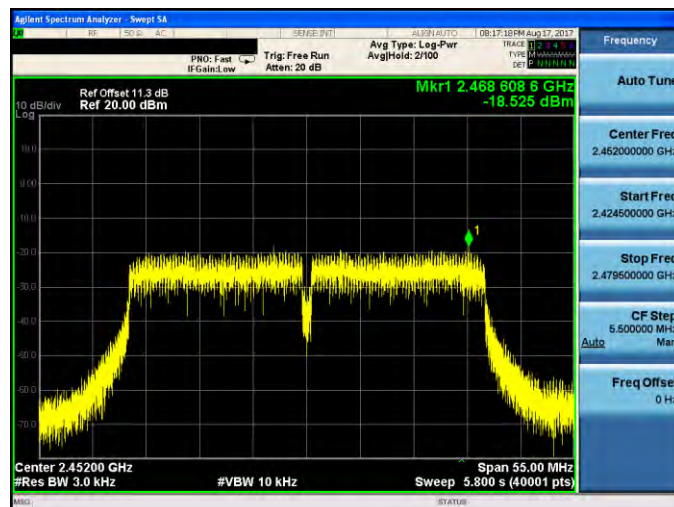
2422 MHz



2437 MHz



2452 MHz

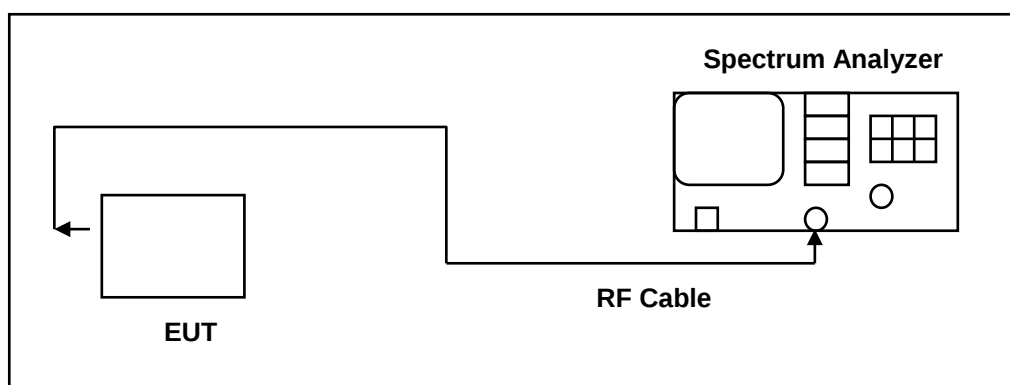


9 Out of Band Conducted Emissions Measurement

9.1. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

9.2. Test Setup



9.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/19/2016	1 year
Spectrum Analyzer	Agilent	E4408B	MY45107753	08/08/2017	1 year
Microwave Cable	EMCI	EMC104-SM-SM-1500	140303	02/22/2017	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

9.4. Test Procedure

In any 100 kHz bandwidth outside the EUT pass band, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 30 dB below that of the maximum in-band 100 kHz emission, antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the pass band. The test was performed at 3 channels.



9.5. Test Graphs

Reference level

Mode 2: IEEE 802.11b Continuous TX mode_ANT-0

2412 MHz



2437 MHz



2462 MHz



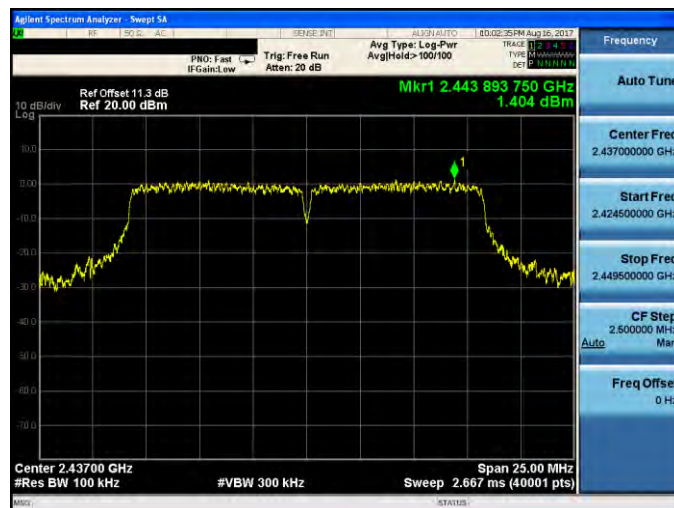


Mode 3: IEEE 802.11g Continuous TX mode_ANT-0

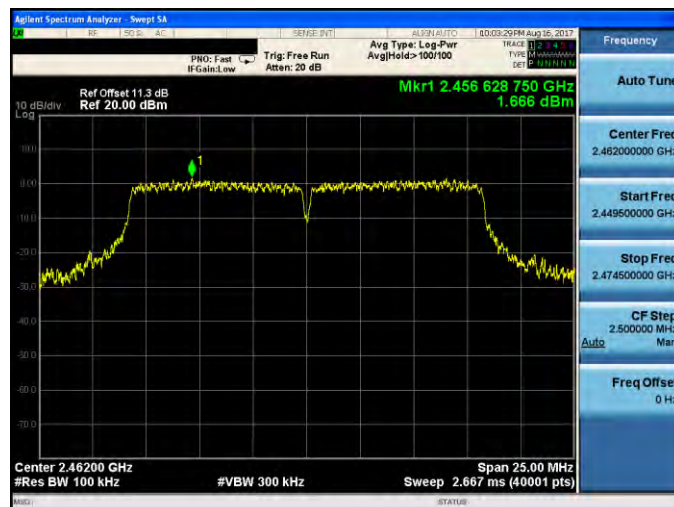
2412 MHz



2437 MHz



2462 MHz



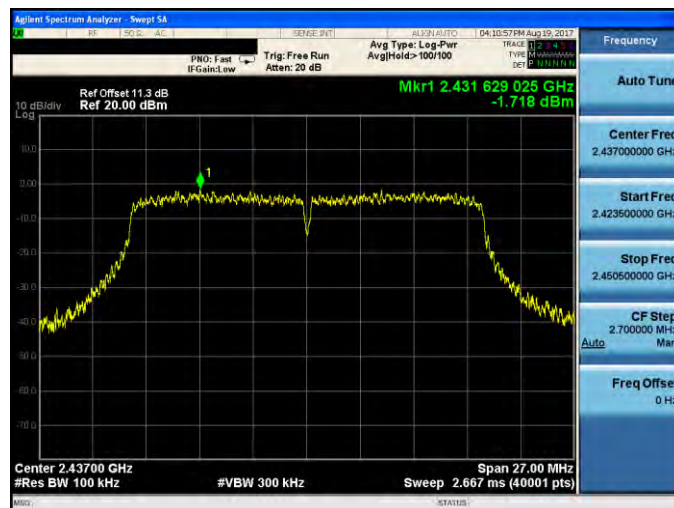


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

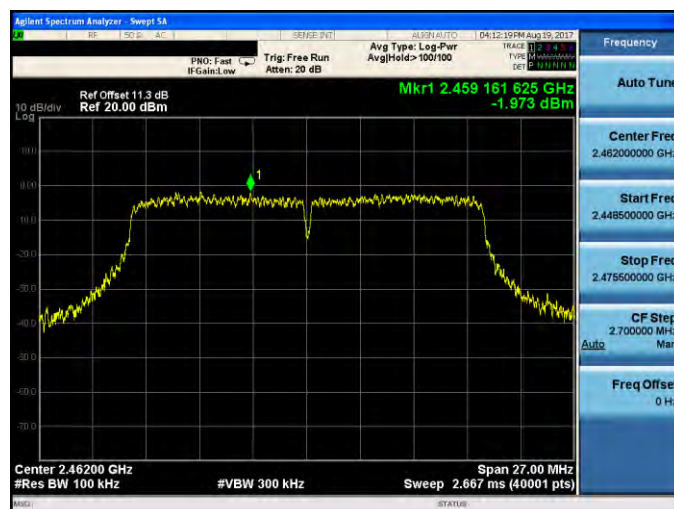
2412 MHz



2437 MHz



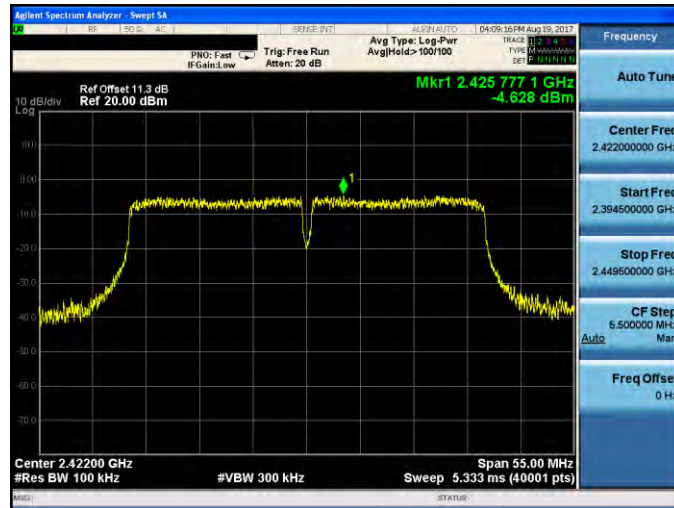
2462 MHz



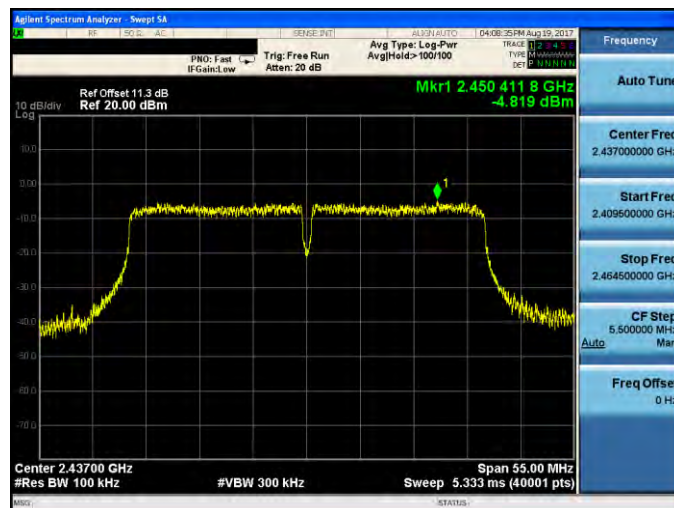


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

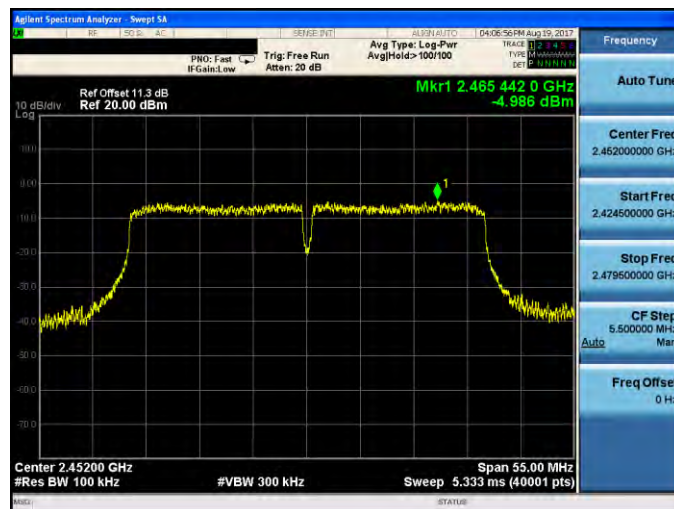
2422 MHz



2437 MHz



2452 MHz



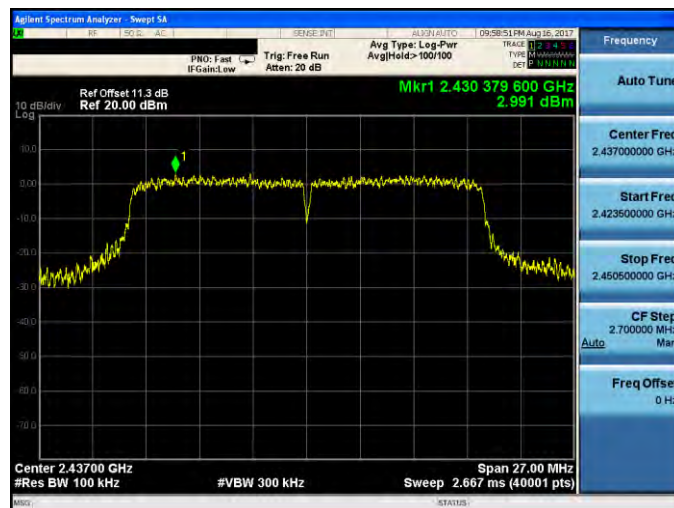


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

2412 MHz



2437 MHz



2462 MHz



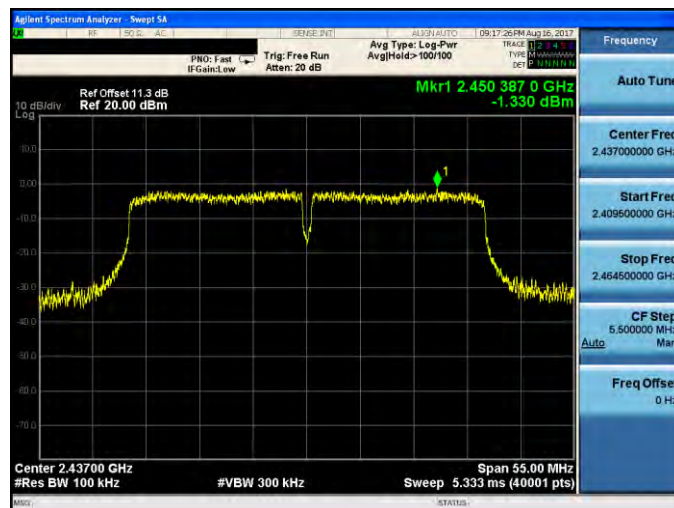


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

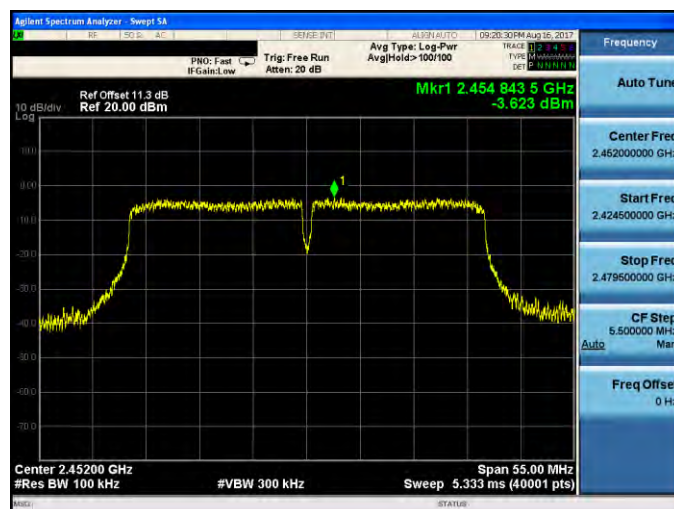
2422 MHz



2437 MHz



2452 MHz

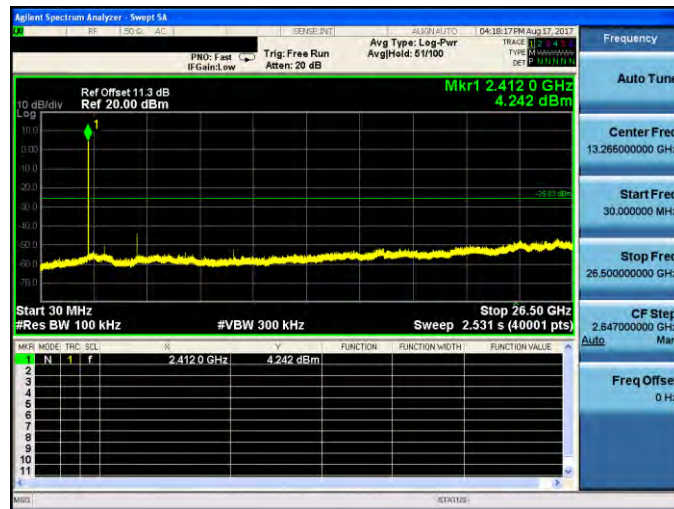




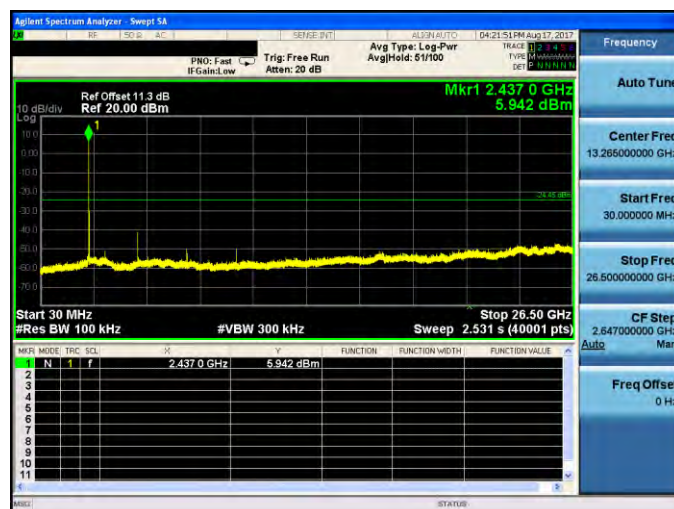
Out of Band Conducted Emissions

Mode 2: IEEE 802.11b Continuous TX mode_ANT-0

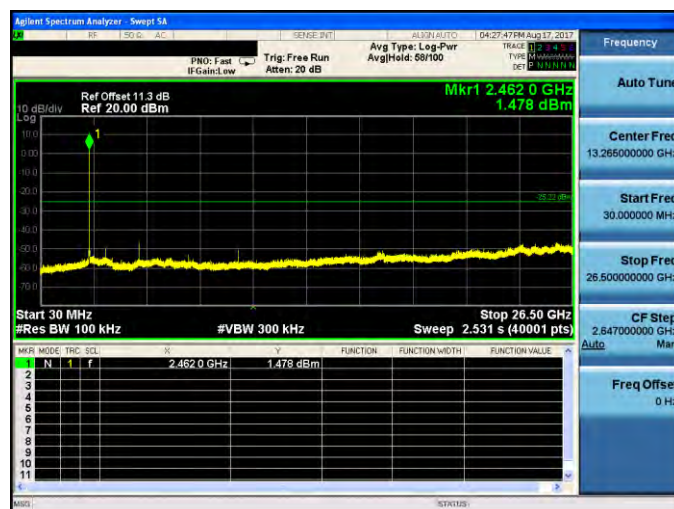
2412 MHz



2437 MHz



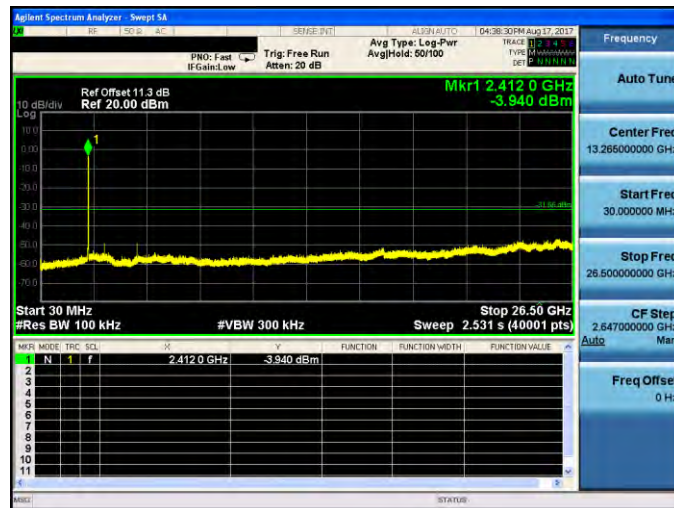
2462 MHz



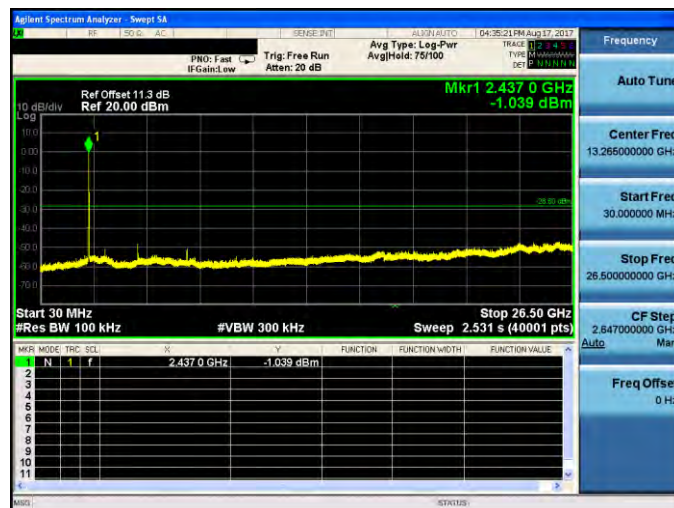


Mode 3: IEEE 802.11g Continuous TX mode_ANT-0

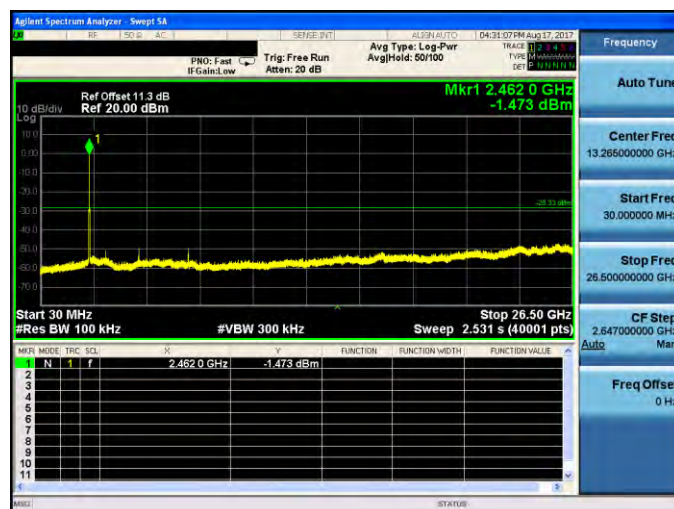
2412 MHz



2437 MHz



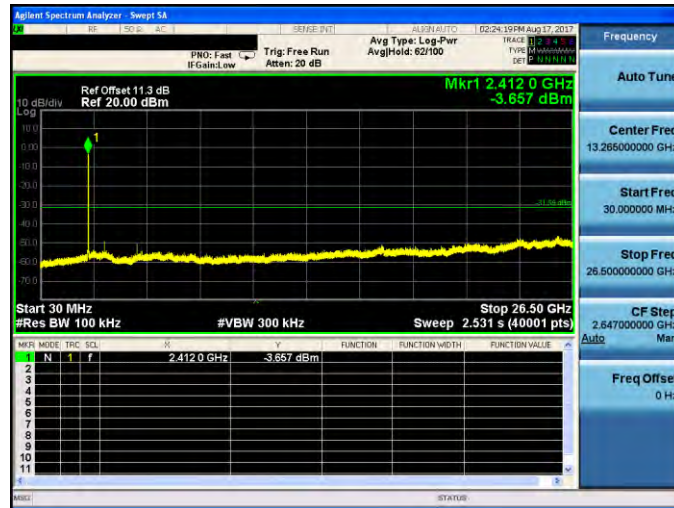
2462 MHz



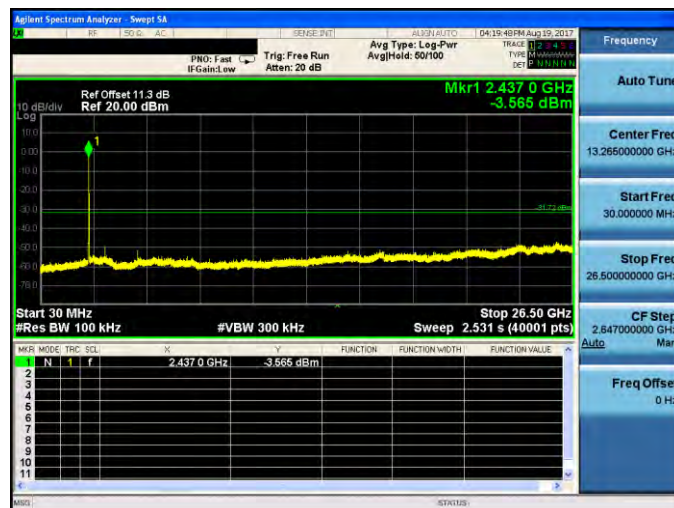


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

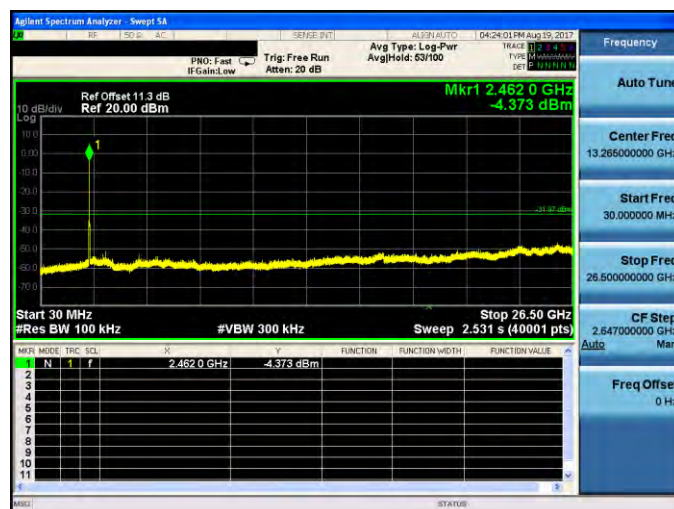
2412 MHz



2437 MHz



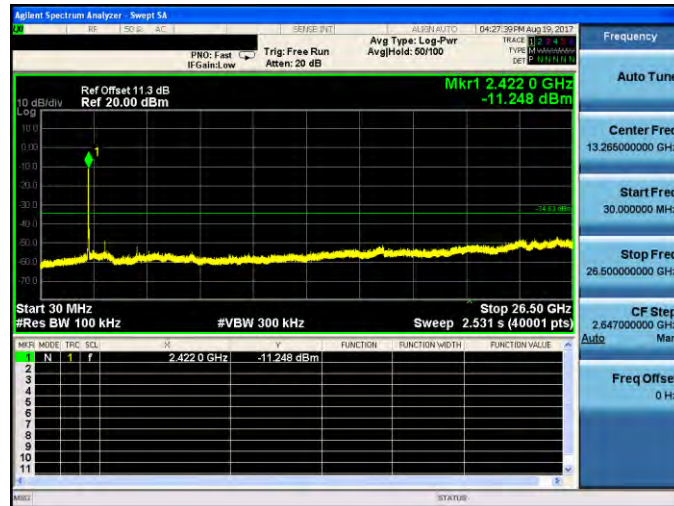
2462 MHz



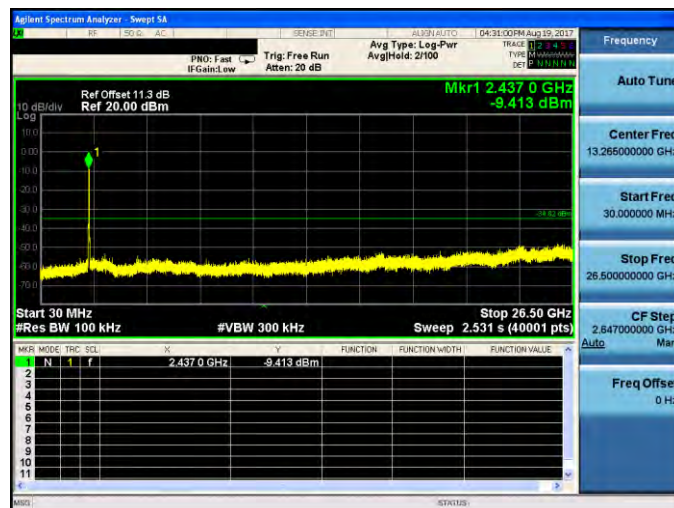


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

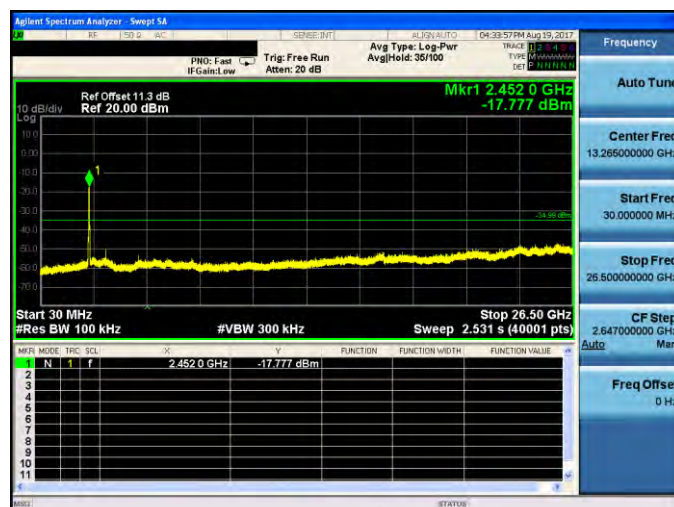
2422 MHz



2437 MHz



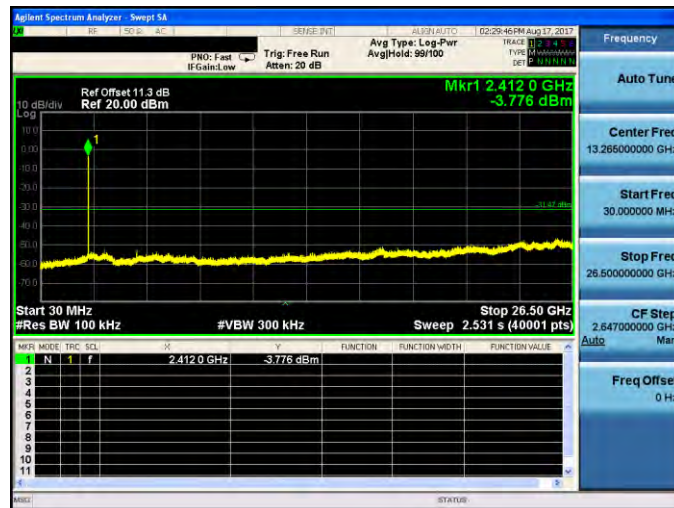
2452 MHz



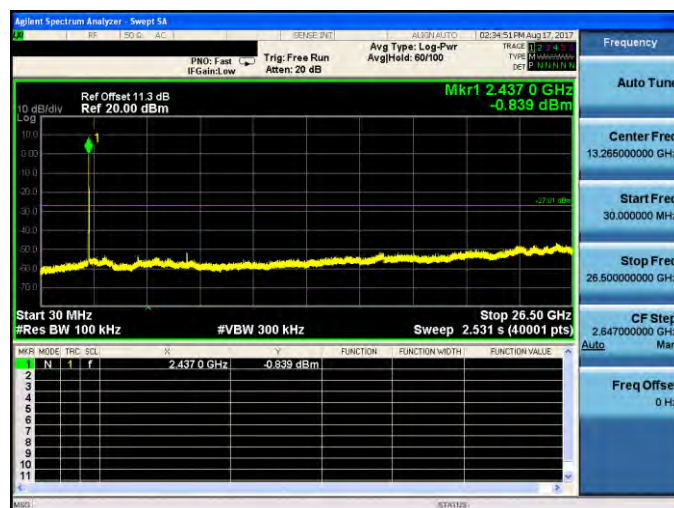


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

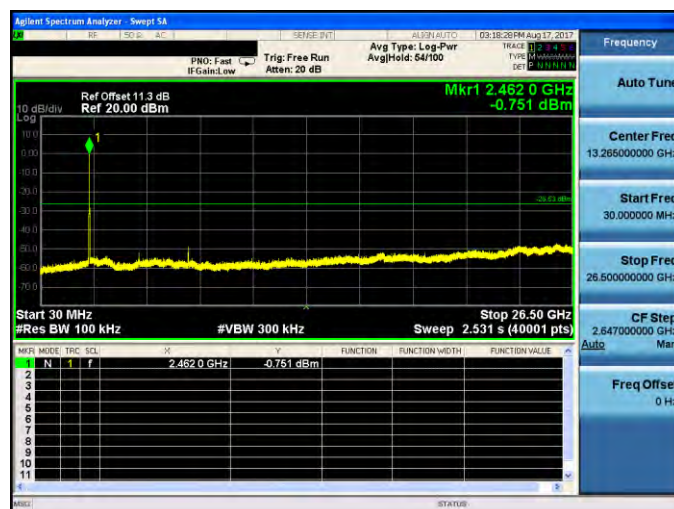
2412 MHz



2437 MHz



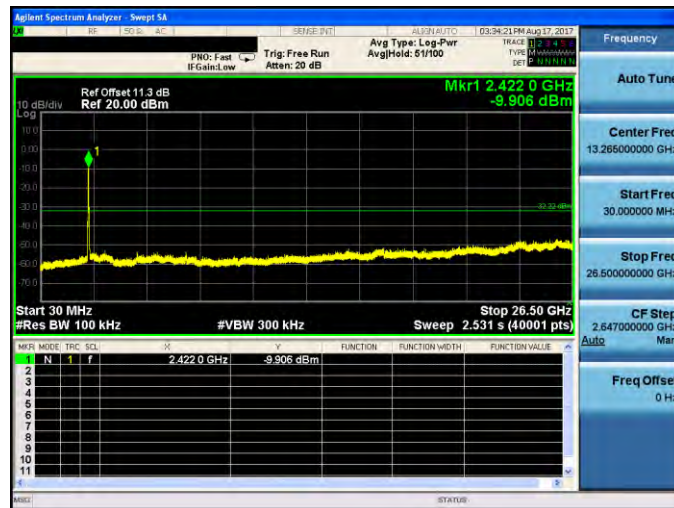
2462 MHz



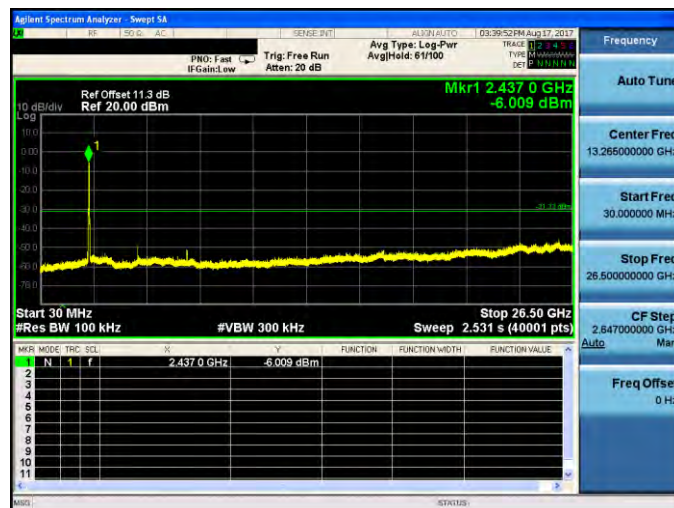


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

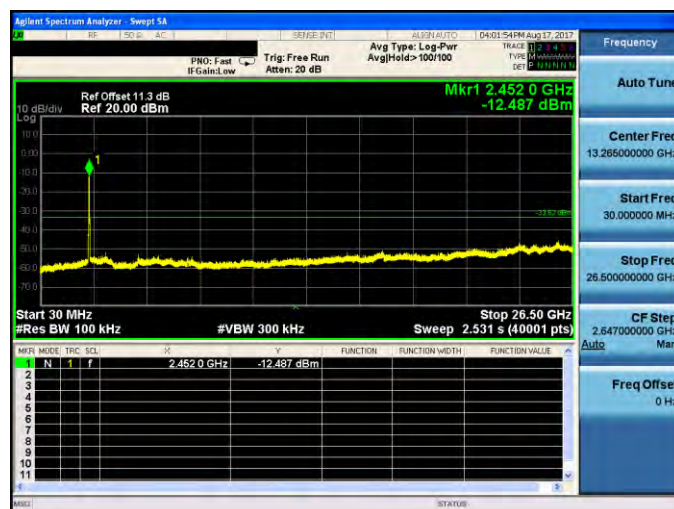
2422 MHz



2437 MHz



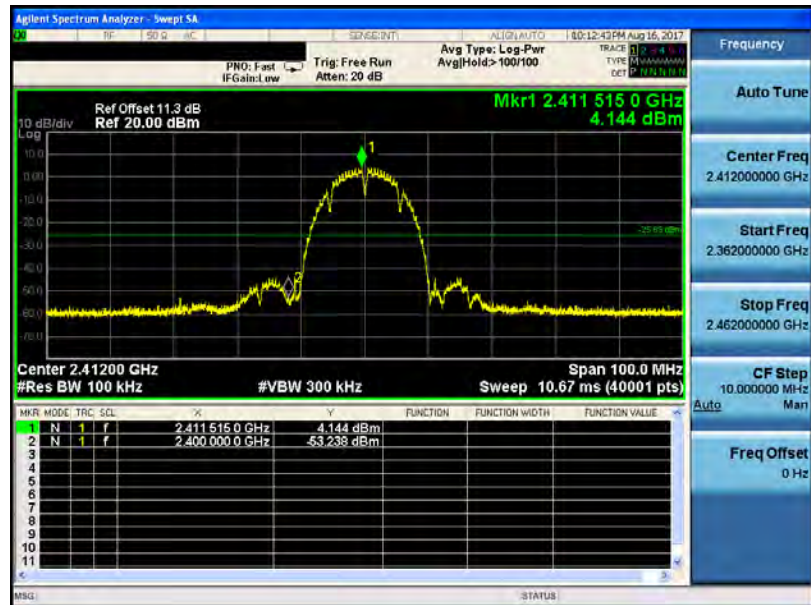
2452 MHz



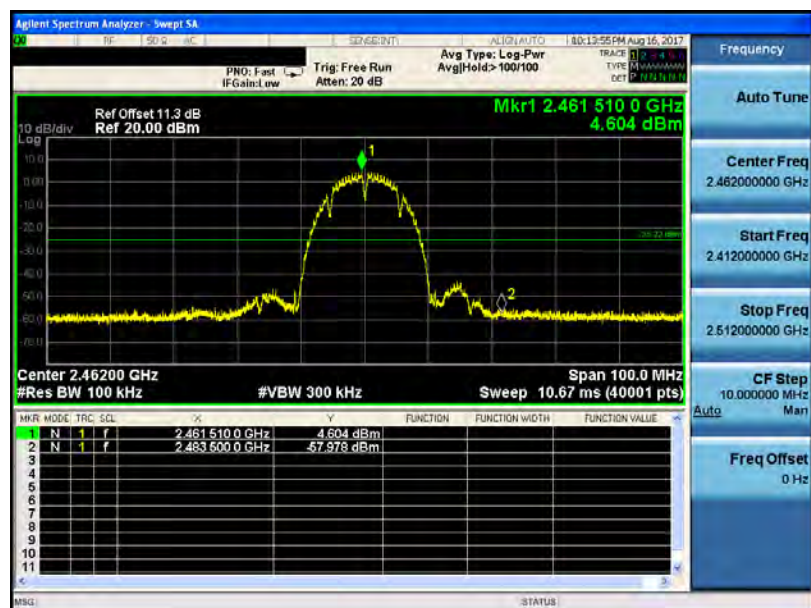
**Conducted Band Edge**

Mode 2: IEEE 802.11b Continuous TX mode_ANT-0

2412 MHz



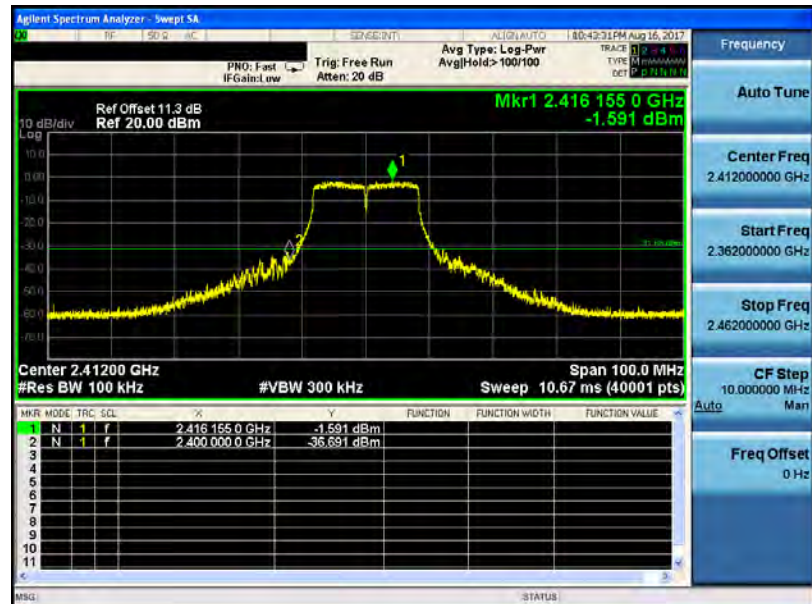
2462 MHz



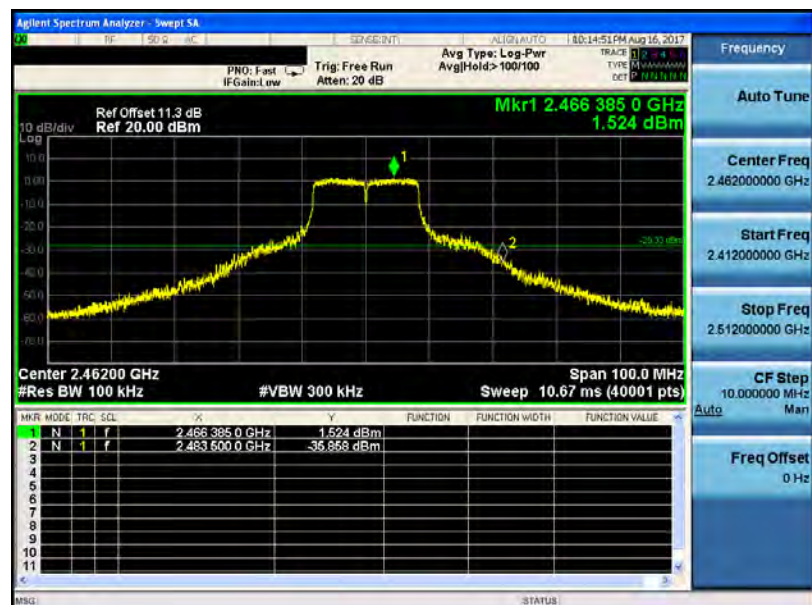


Mode 3: IEEE 802.11g Continuous TX mode_ANT-0

2412 MHz



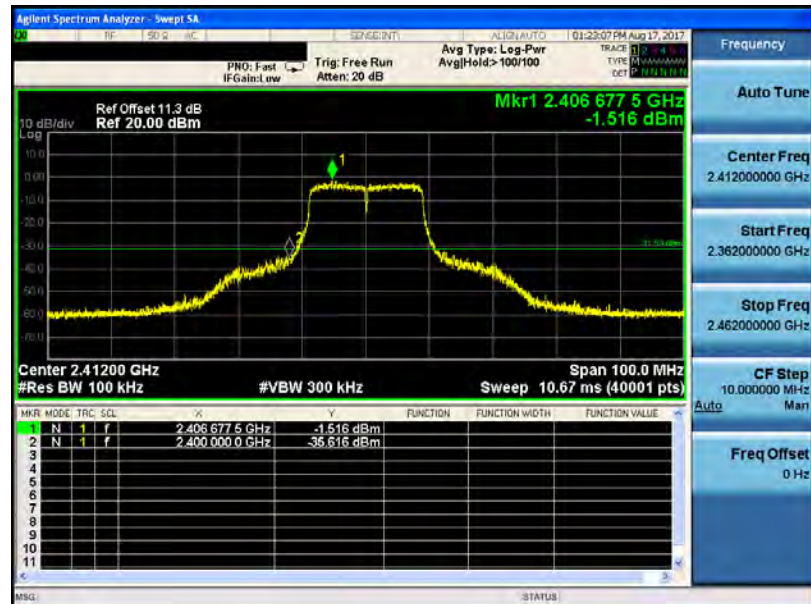
2462 MHz



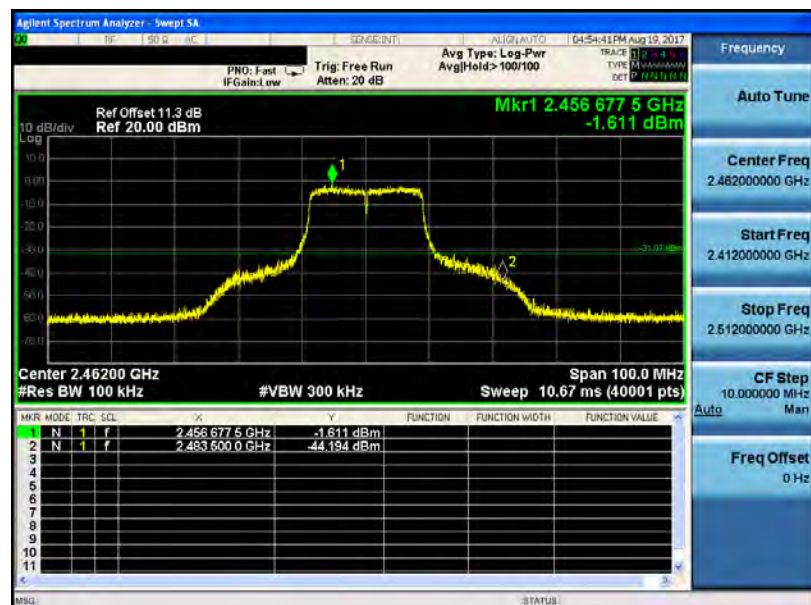


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

2412 MHz



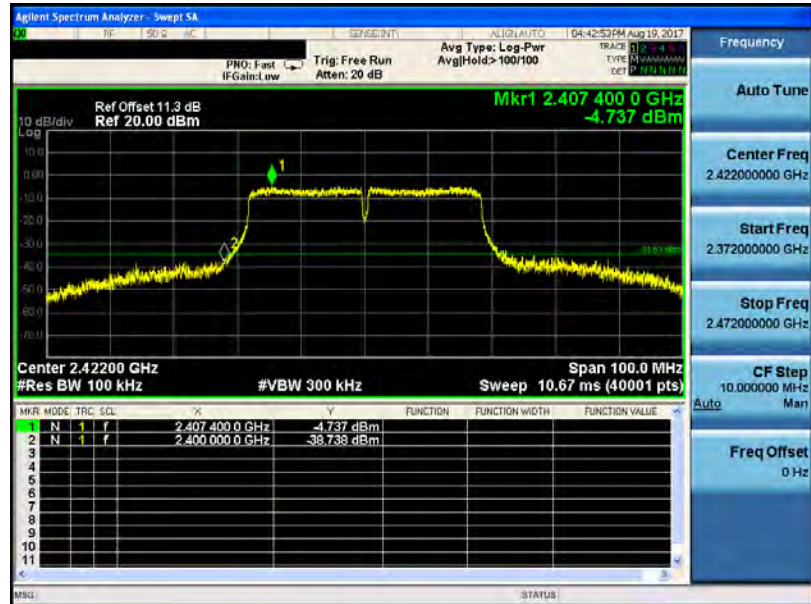
2462 MHz



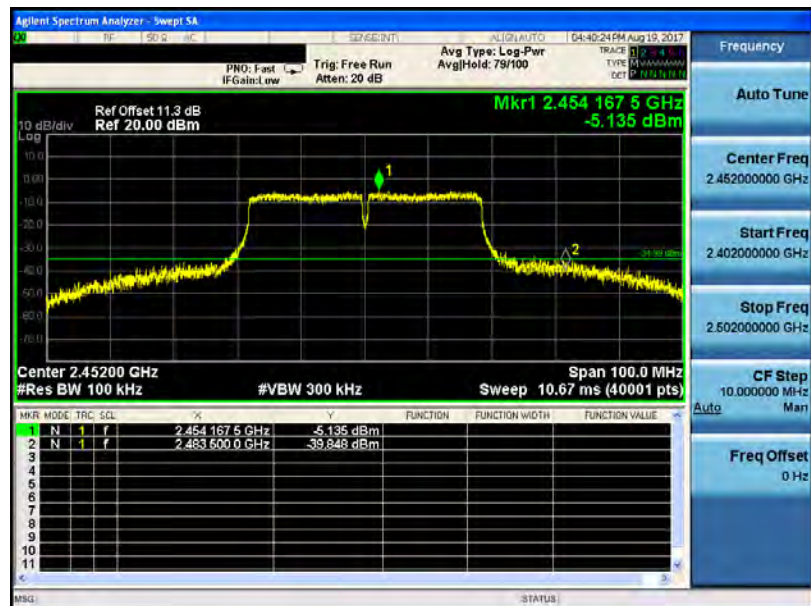


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

2422 MHz



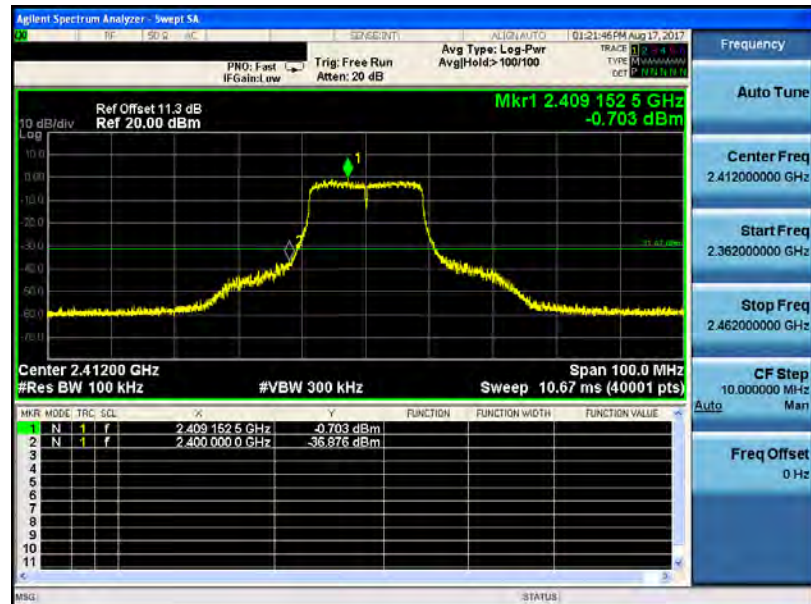
2452 MHz



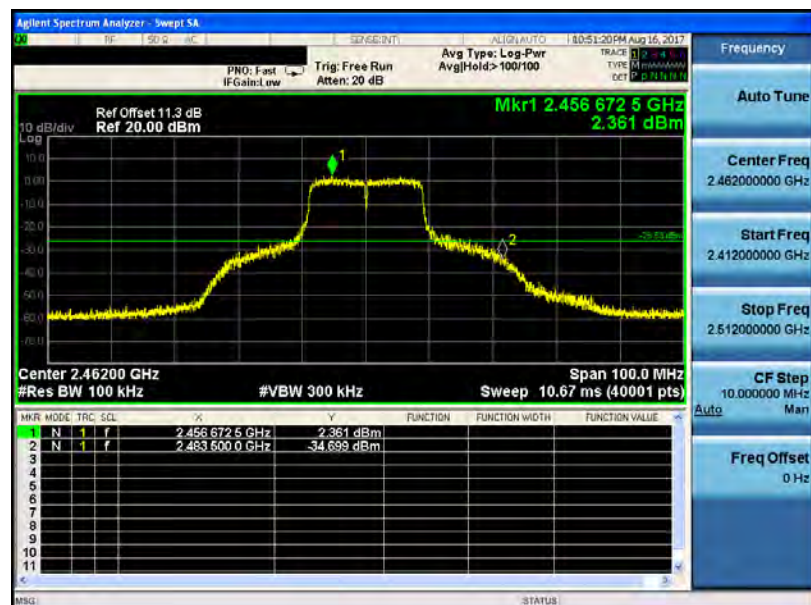


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

2412 MHz



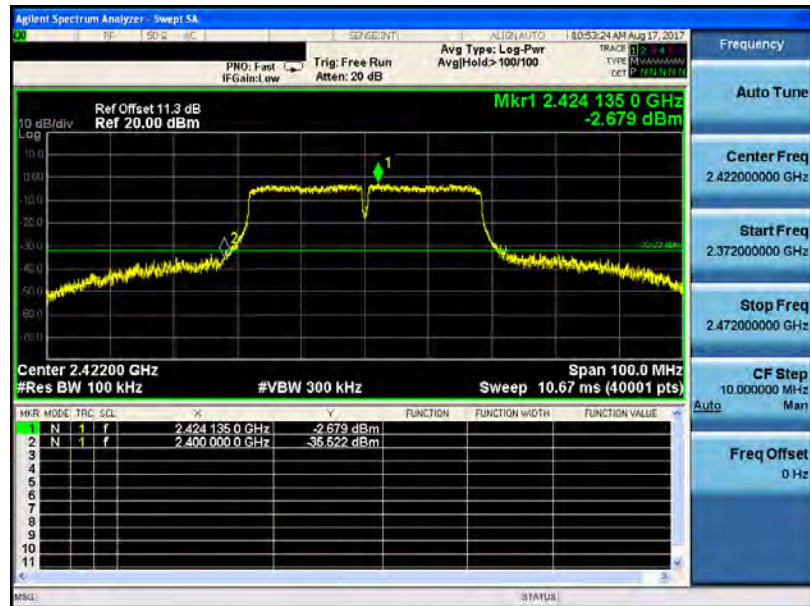
2462 MHz



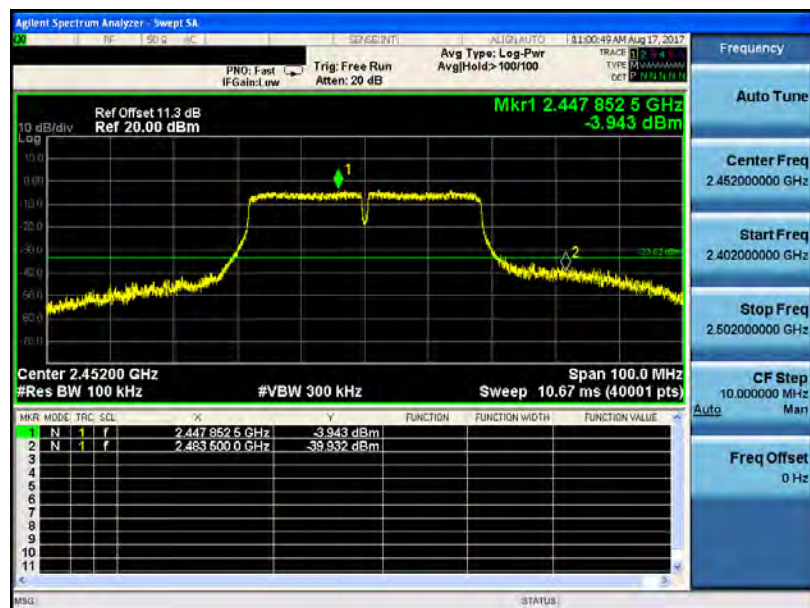


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

2422 MHz



2452 MHz





Beamforming on

Reference level

Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

2412 MHz



2437 MHz



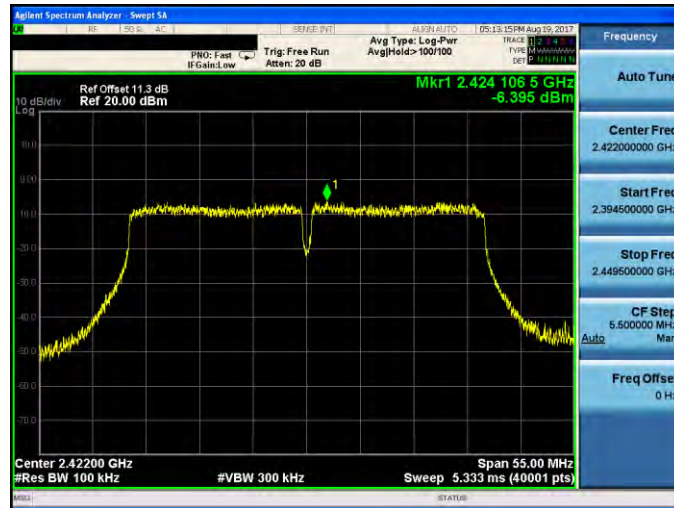
2462 MHz





Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

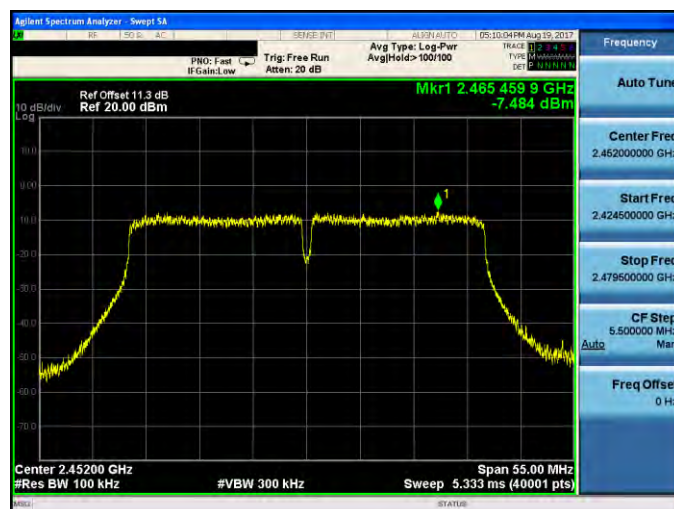
2422 MHz



2437 MHz



2452 MHz





Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

2412 MHz



2437 MHz



2462 MHz





Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

2422 MHz



2437 MHz



2452 MHz

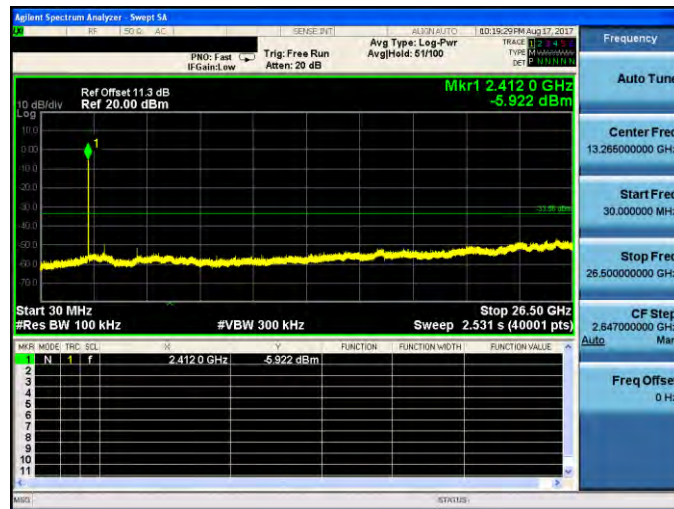




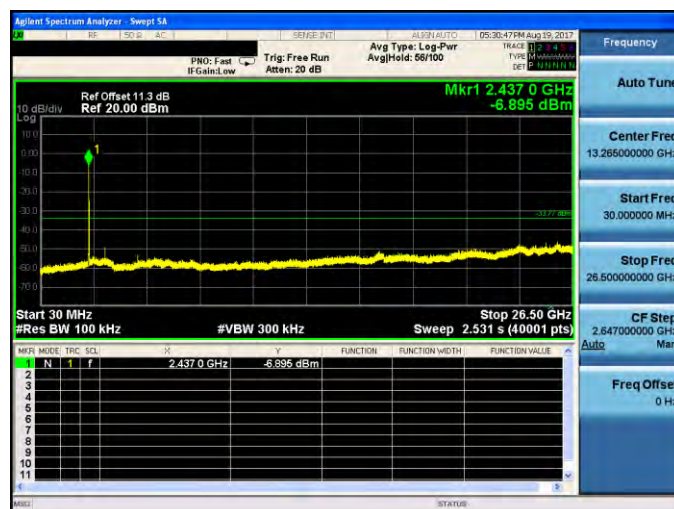
Out of Band Conducted Emissions

Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

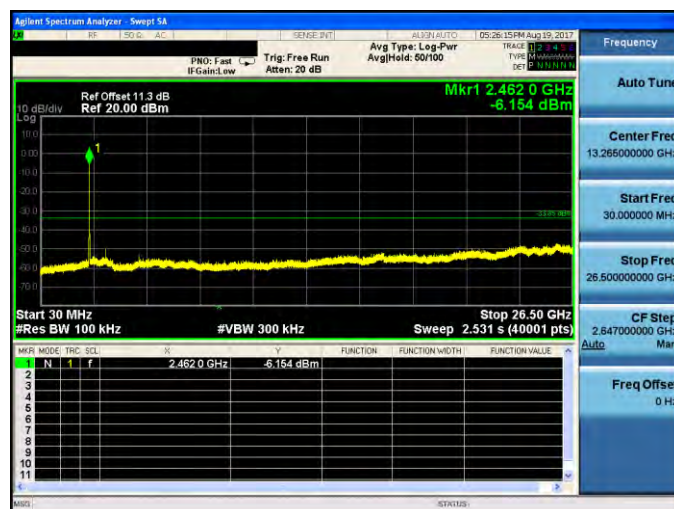
2412 MHz



2437 MHz



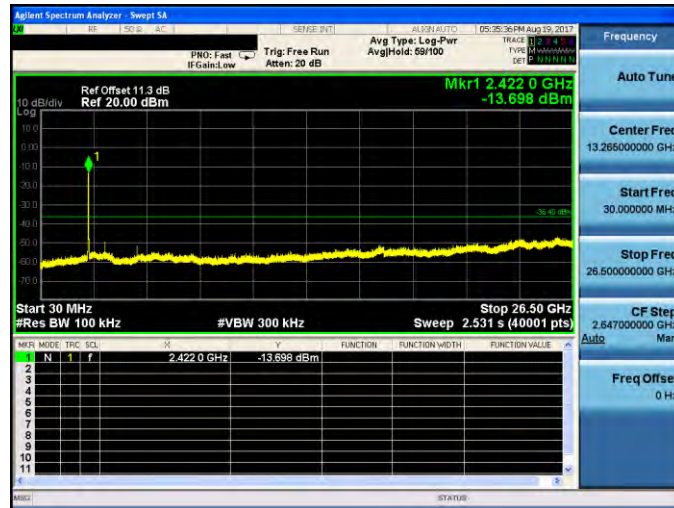
2462 MHz



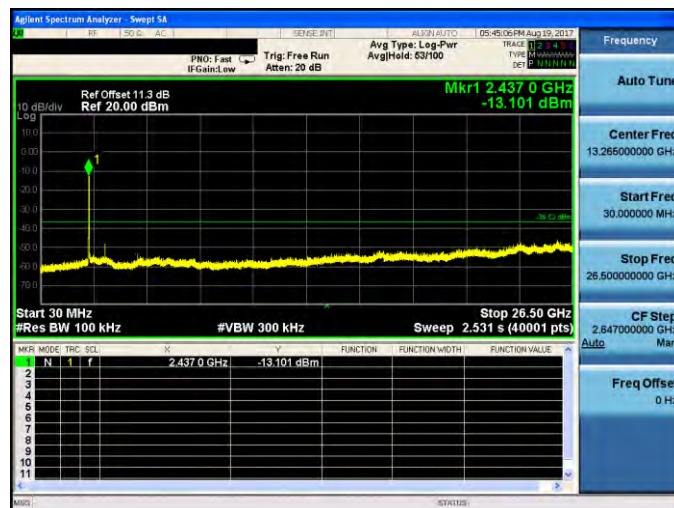


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

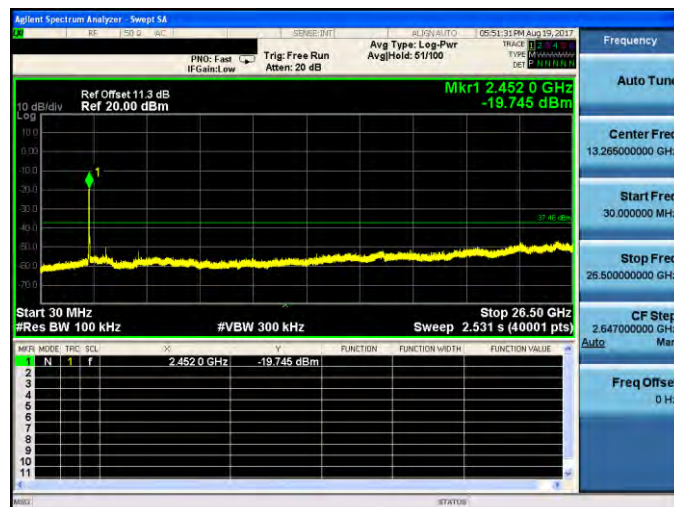
2422 MHz



2437 MHz



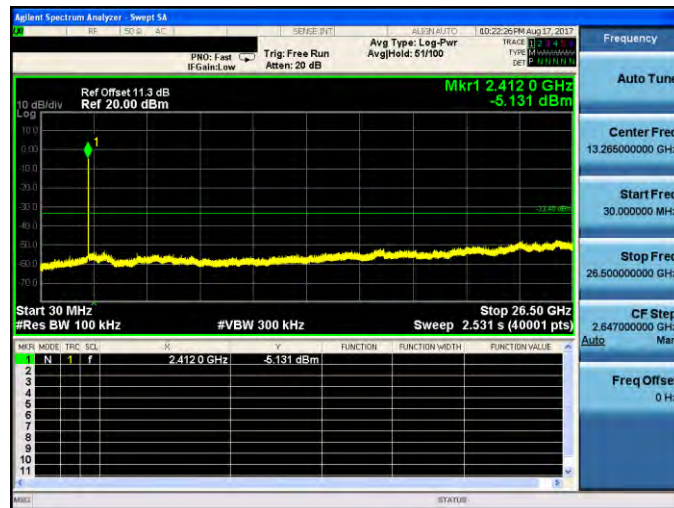
2452 MHz



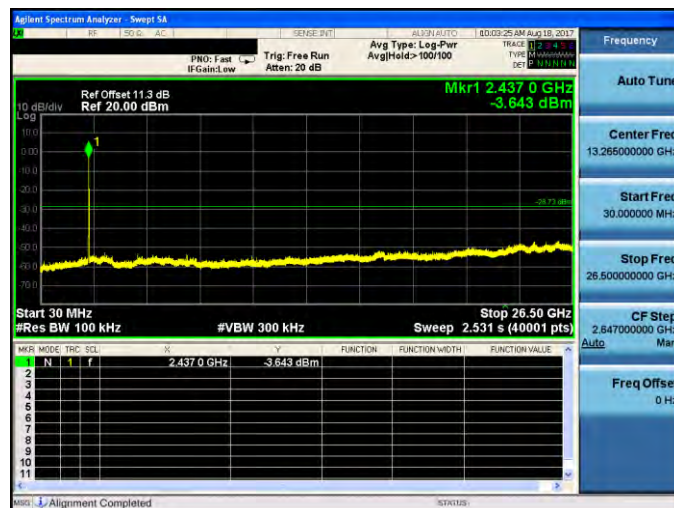


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

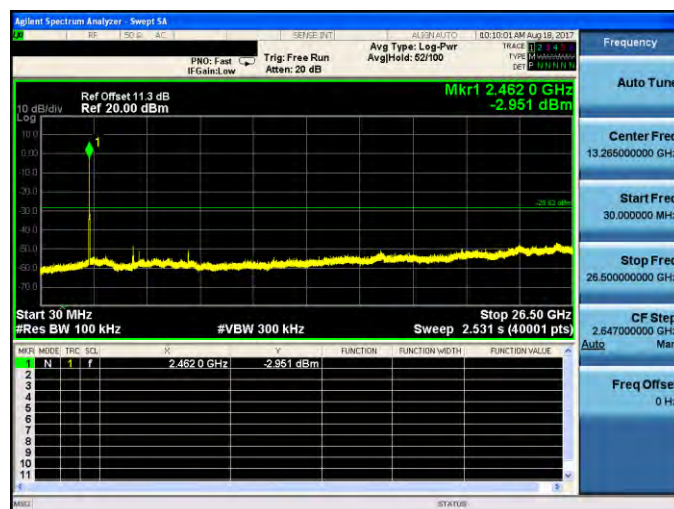
2412 MHz



2437 MHz



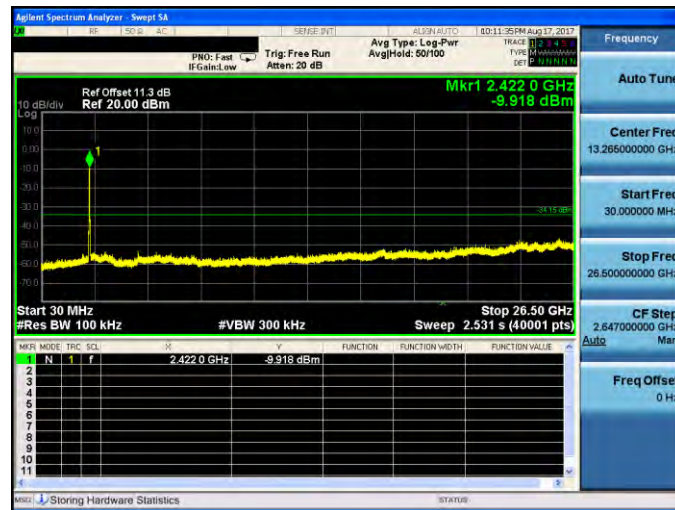
2462 MHz



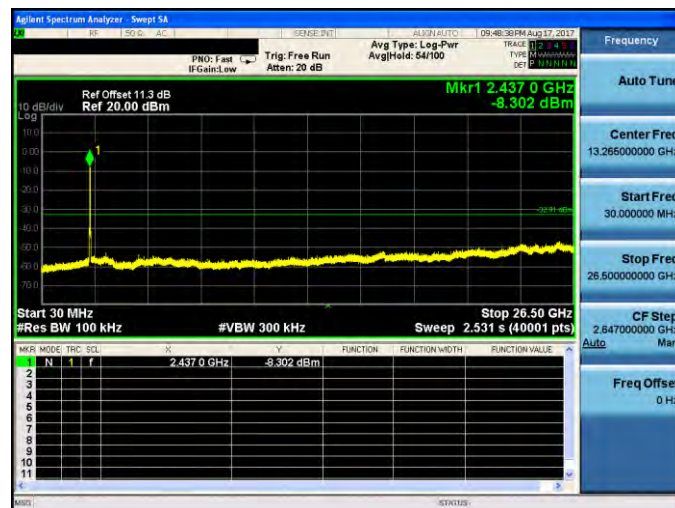


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

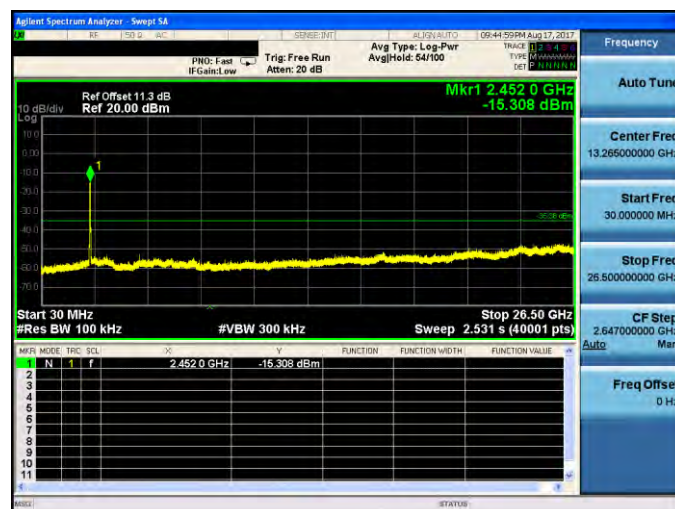
2422 MHz



2437 MHz



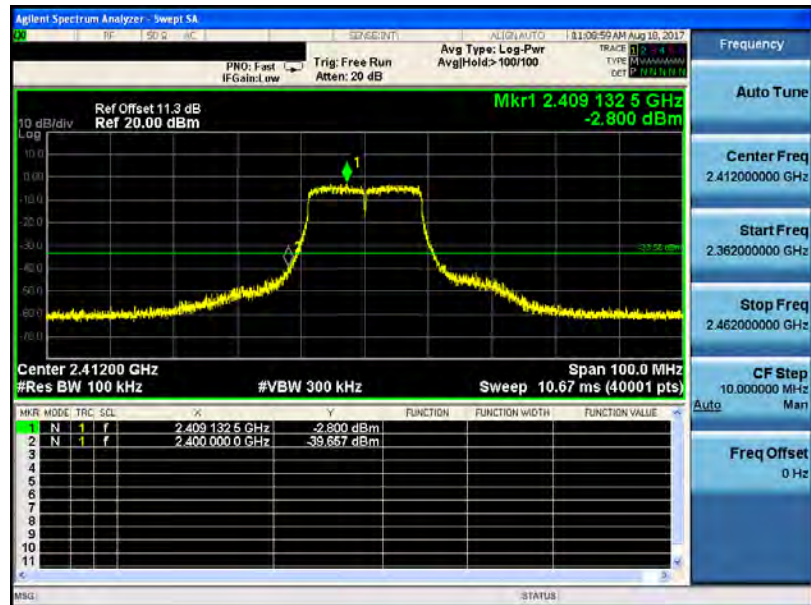
2452 MHz



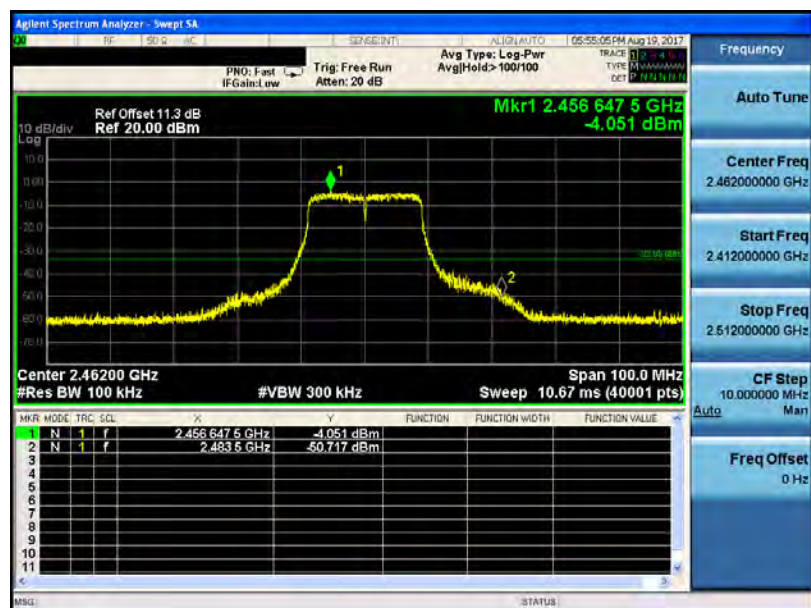
**Conducted Band Edge**

Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-0

2412 MHz



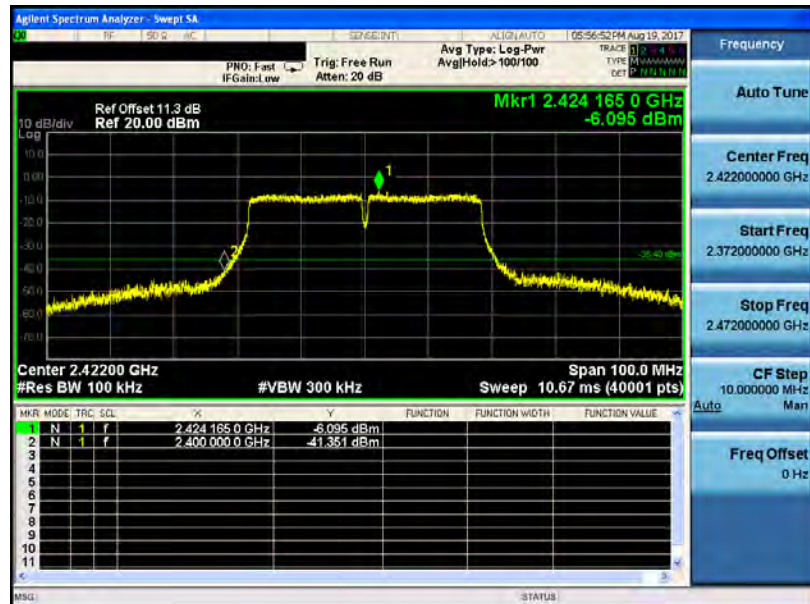
2462 MHz



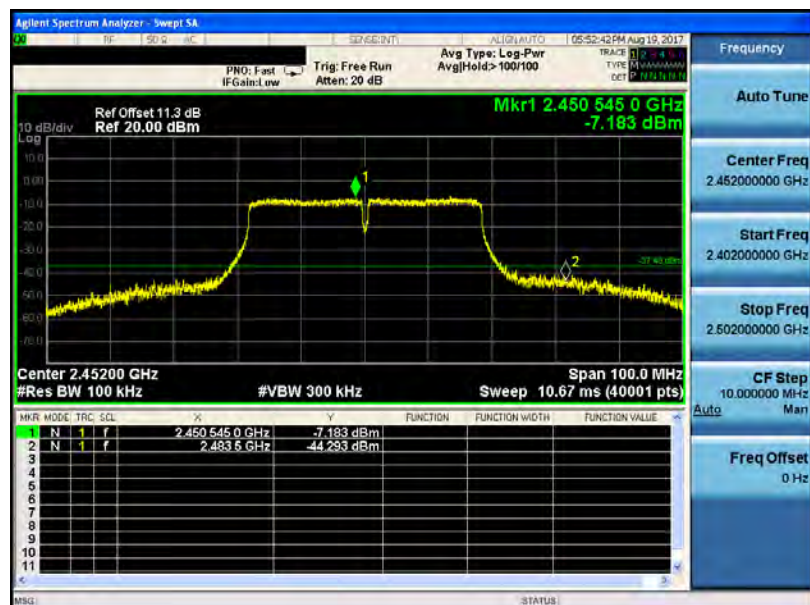


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-0

2422 MHz



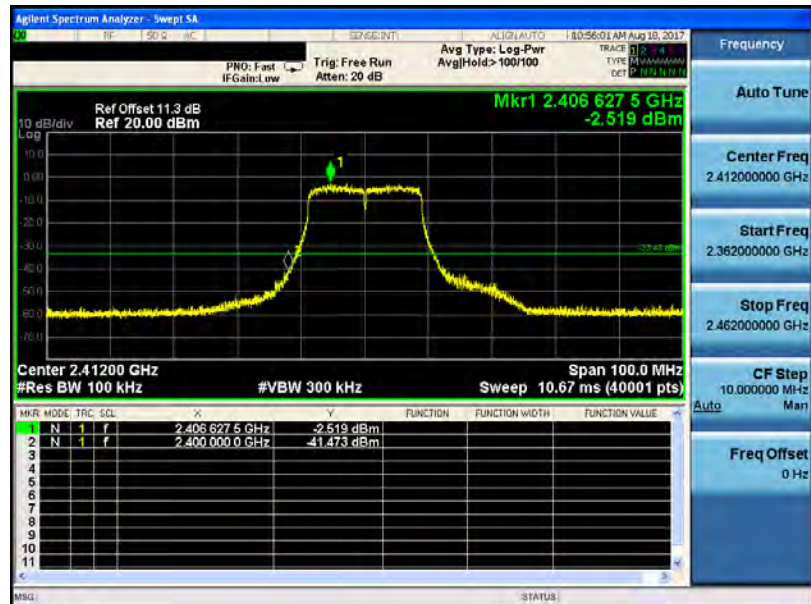
2452 MHz



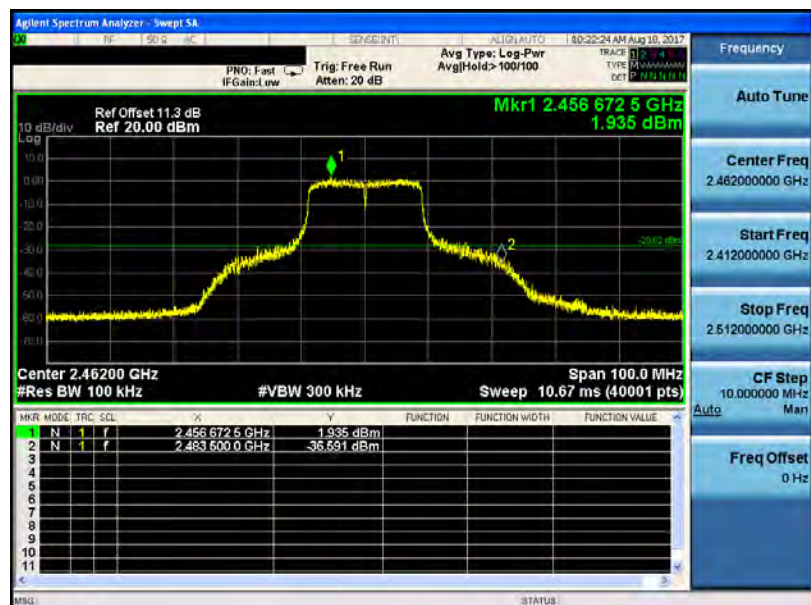


Mode 4: IEEE 802.11n 2.4GHz 20MHz Continuous TX mode_ANT-1

2412 MHz



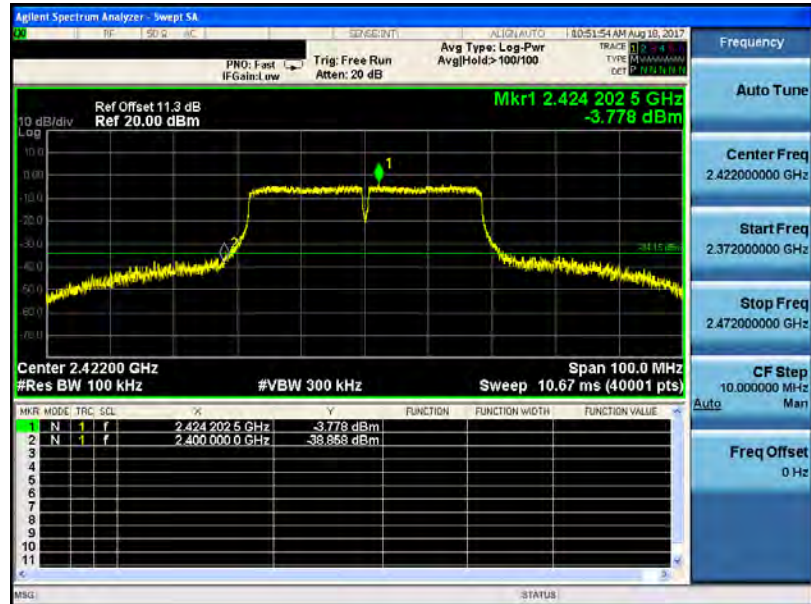
2462 MHz



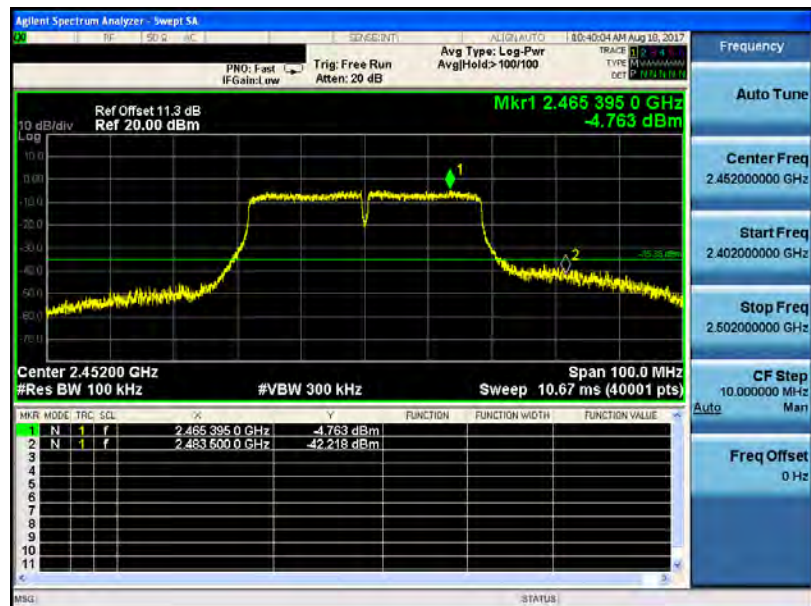


Mode 5: IEEE 802.11n 2.4GHz 40MHz Continuous TX mode_ANT-1

2422 MHz



2452 MHz





10 Antenna Measurement

10.1.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 15.247 (b), 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.

10.2.Antenna Description

See section 2 – antenna information.

10.3.Directiona Gain Calculated

Directional Gain = $10 \cdot \log\{[10^{(G1/20)} + 10^{(G2/20)} + \dots + 10^{(Gn/20)}]^2 / NANT\} = 5.5 \text{ dBi} < 6 \text{ dBi}$

Operate Freq. Band	Directional Gain (dBi)
IEEE 802.11n 2.4GHz 20MHz	5.5
IEEE 802.11n 2.4GHz 40MHz	5.5