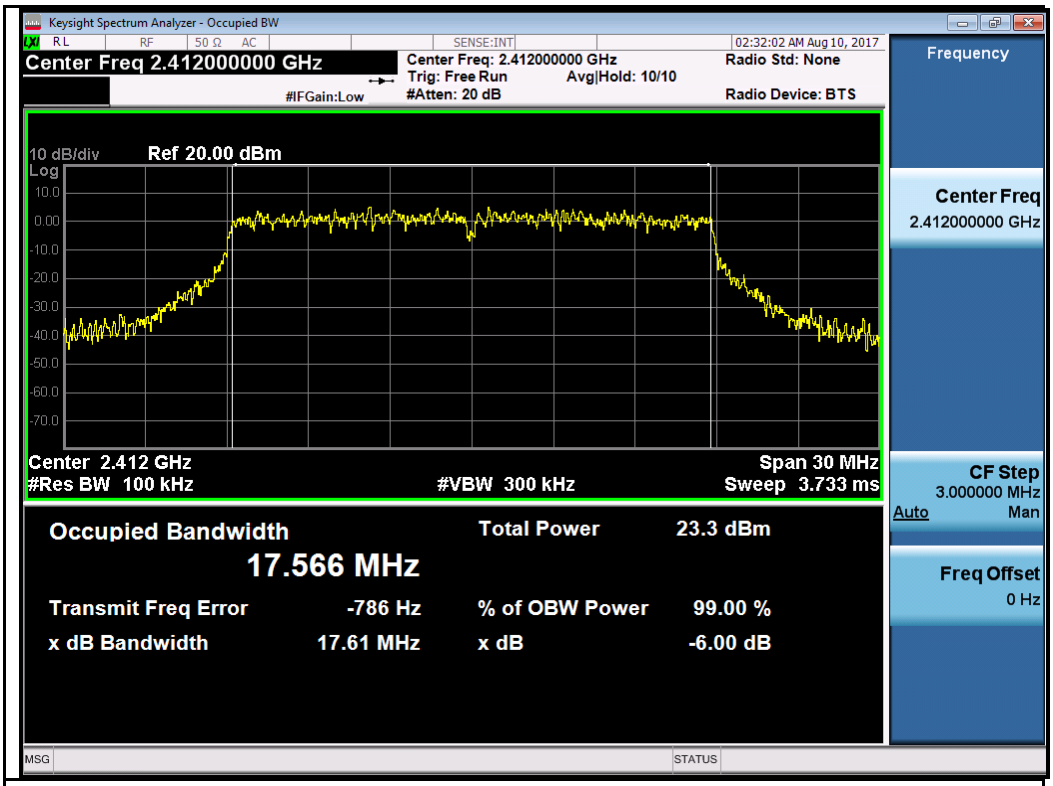
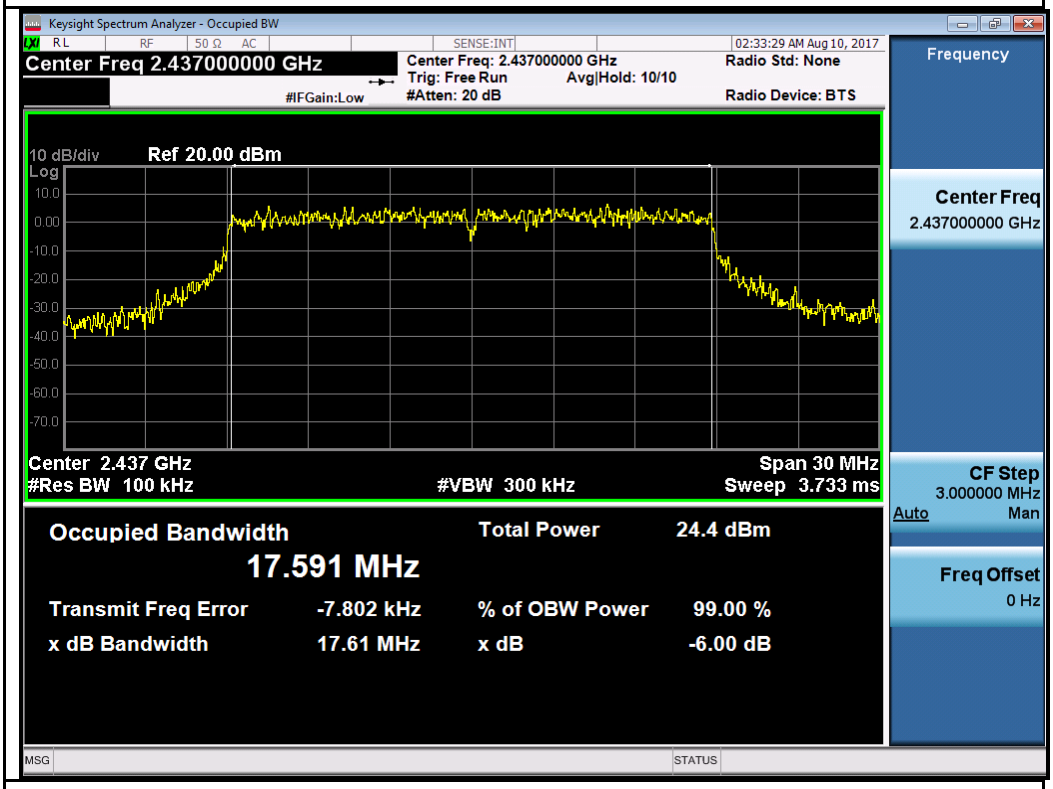
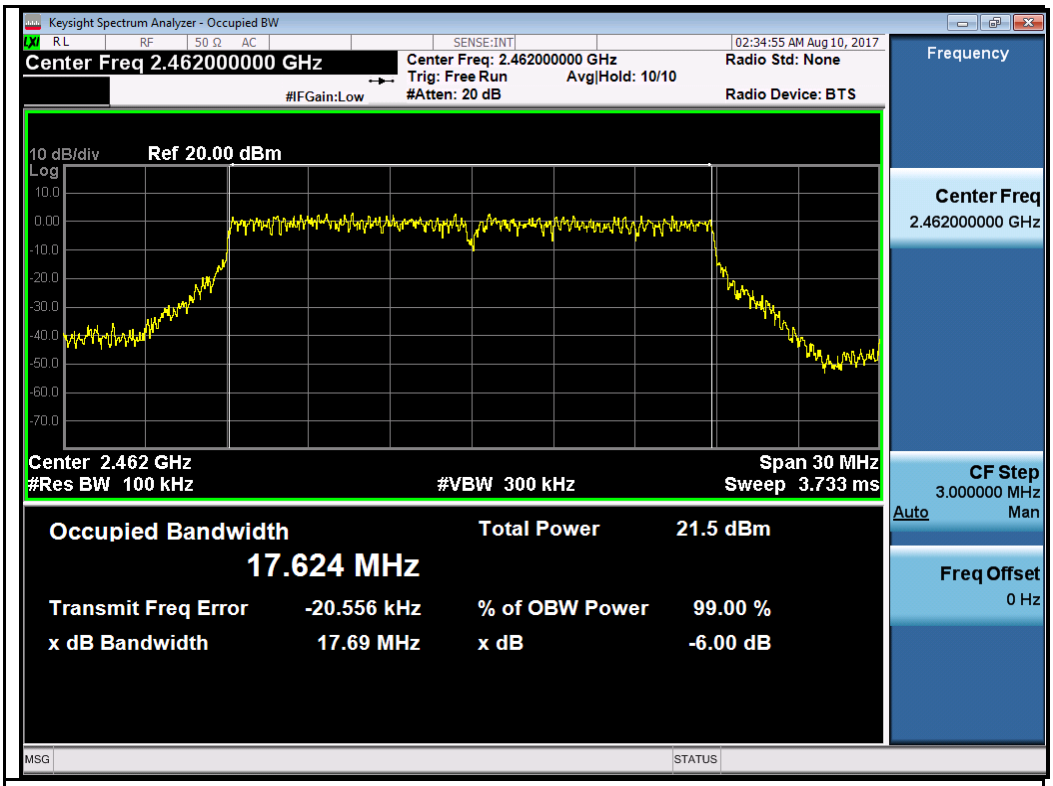


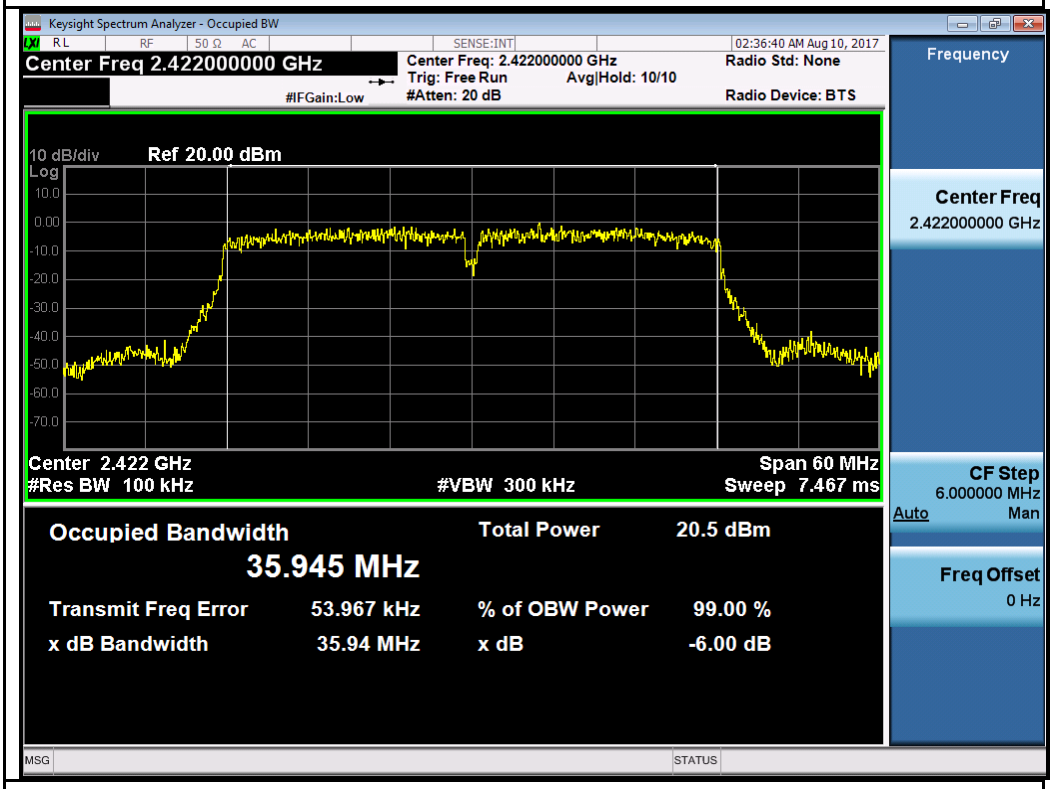
802.11n-HT20-2412MHz



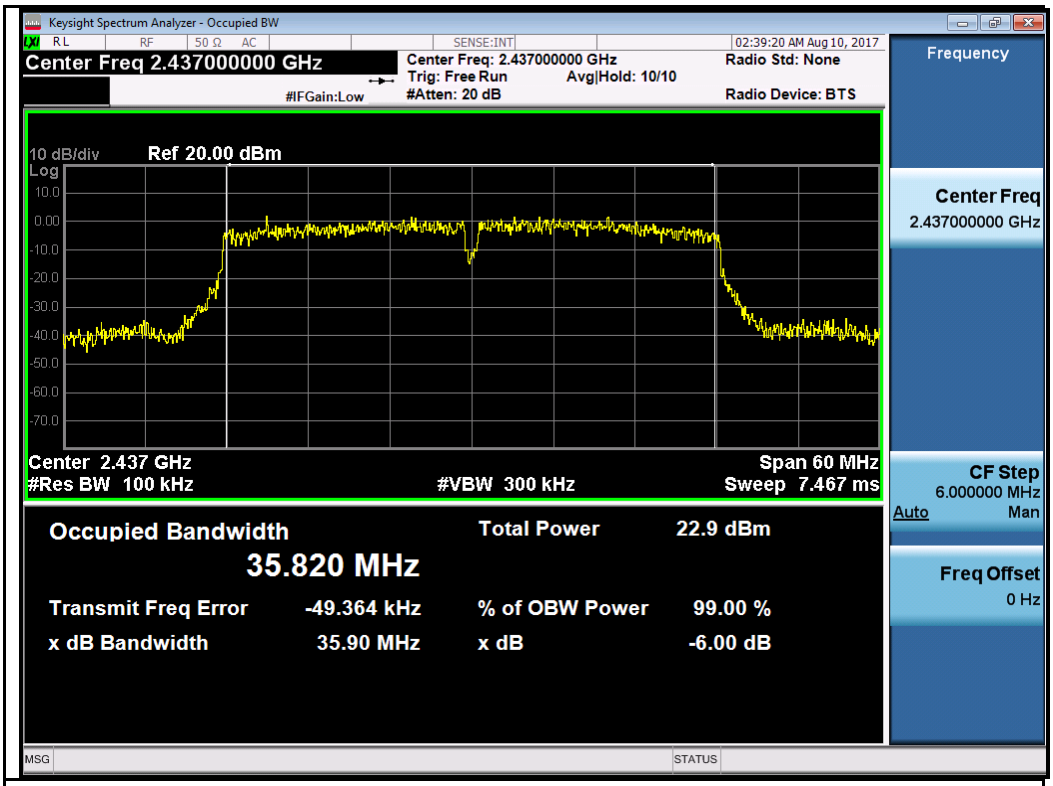
802.11n-HT20-2437MHz



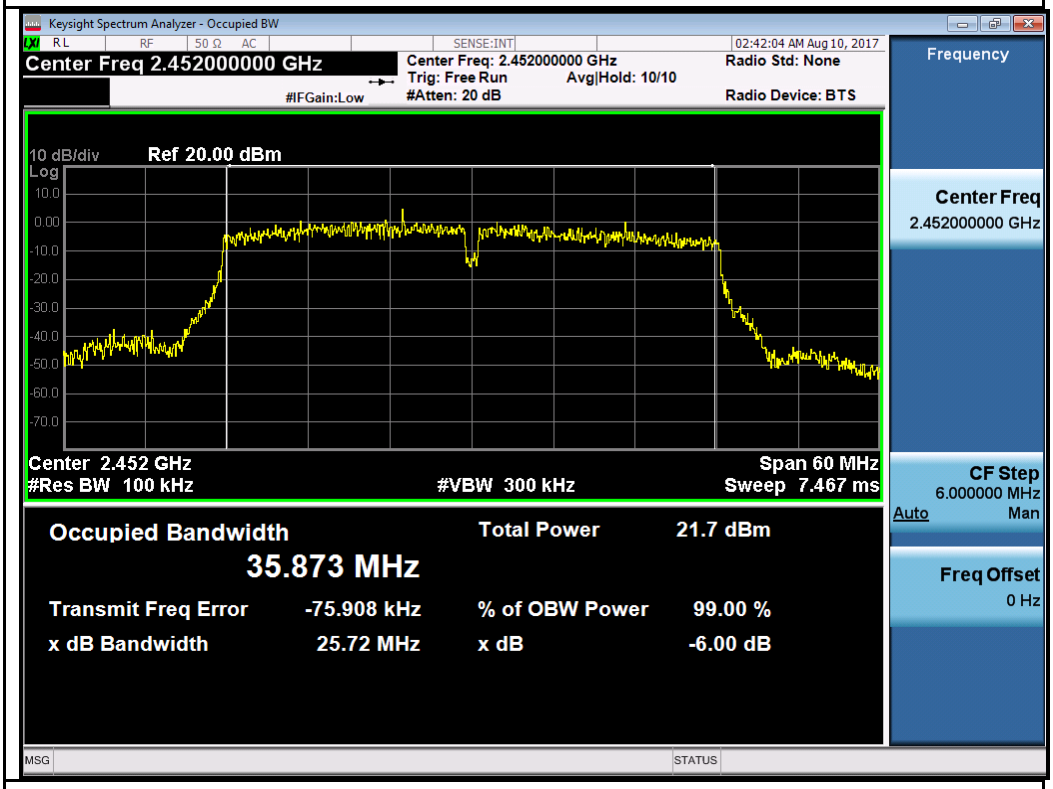
802.11n-HT20-2462MHz



802.11n-HT40-2422MHz



802.11n-HT40-2437MHz

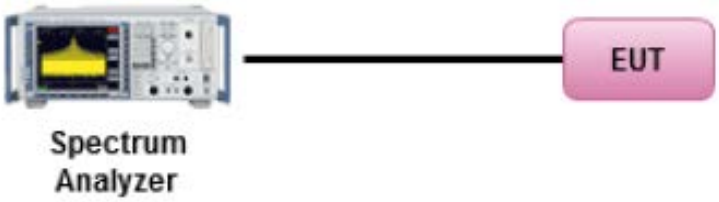


802.11n-HT40-2452MHz

10.3 Output Power

Requirement(s):

Spec	Item	Requirement	Applicable
§ 15.247 RSS247 (5.4.4)	f)	DSSS in 902-928MHz, 2400-2483.5MHz, 5725-5850MHz: ≤1 Watt	☒

Test Setup			
Test Procedure	558074 D01 DTS Meas Guidance v04, 9.2.2.2 Measurement using a Spectrum Analyzer (SA) (a) Set span to at least 1.5 times the OBW (b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz. (c) Set VBW ≥ 3 x RBW. (d) Number of points in sweep ≥ 2 × span / RBW. (This gives bin-to-bin spacing ≤ RBW/2, so that narrowband signals are not lost between frequency bins.) (e) Sweep time = auto. (f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode. (g) If transmit duty cycle < 98 %, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 %, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run". (h) Trace average at least 100 traces in power averaging (i.e., RMS) mode (i) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.		
Test Date	08/10/2017	Environmental condition	Temperature 23ºC Relative Humidity 44% Atmospheric Pressure 1021mbar
Remark	Per KDB 662911 D01 Multiple Transmitter Output v02r01, the direction gain for horizontal polarization and vertical polarization is calculated separately. For 2.4GHz band, peak antenna gain = 3 dBi, directional gain = 6 dBi. Highest of total directional gain is 6dBi. The power limit and PSD limit will be reduced by amount of 0 dB.		
Result	☒ Pass ☐ Fail		

Test Data ☒ Yes ☐ N/A

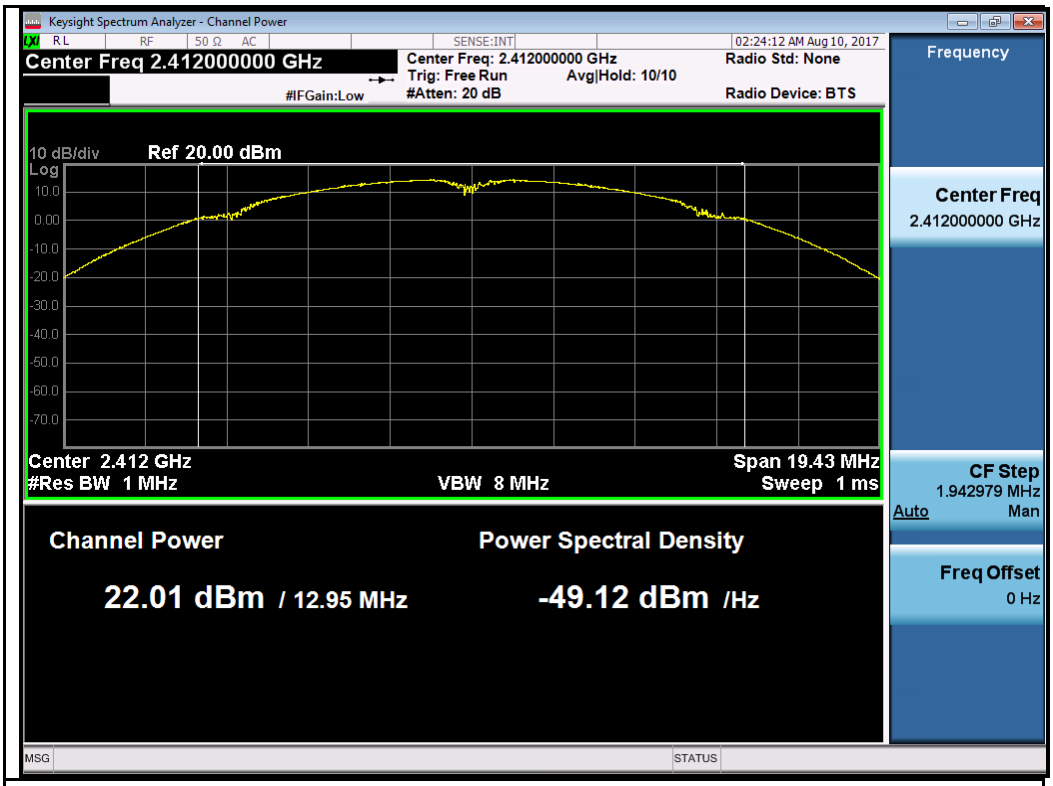
Test Plot ☐ Yes (See below) ☒ N/A

Test was done by Rachana Khanduri at RF test site.

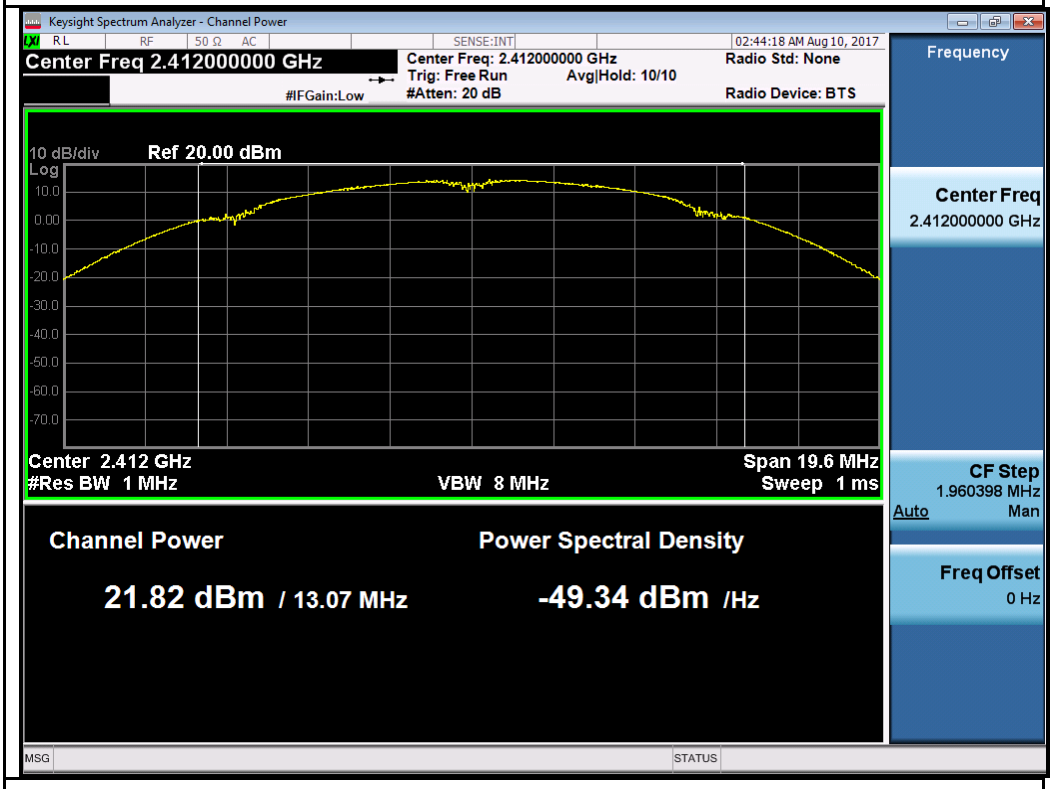
Output Power measurement result

Type	Test mode	Freq (MHz)	CH	Conducted Power (dBm)					Limit (dBm)	Result
				Chain 0	Chain 1	Chain 2	Chain 3	Combined Power		
Output Power	802.11b	2412	Low	22.01	21.82	21.77	21.89	27.90	30	Pass
		2437	Mid	21.68	21.48	21.97	21.76	27.75	30	Pass
		2462	High	22.13	22.00	22.29	22.07	28.14	30	Pass
	802.11g	2412	Low	19.58	19.22	19.36	19.57	25.45	30	Pass
		2437	Mid	20.68	20.54	20.87	20.73	26.73	30	Pass
		2462	High	17.93	17.77	18.01	18.11	23.98	30	Pass
	802.11n-20M	2412	Low	19.39	19.41	19.86	19.91	25.67	30	Pass
		2437	Mid	20.64	20.22	20.70	20.79	26.61	30	Pass
		2462	High	17.60	17.60	17.36	18.02	23.67	30	Pass
	802.11n-40M	2422	Low	17.16	16.97	16.38	16.84	22.87	30	Pass
		2437	Mid	18.98	18.69	19.44	19.82	25.28	30	Pass
		2452	High	18.43	18.34	17.68	18.17	24.19	30	Pass
Note	Directional gain of the EUT is 6dBi. No limit adjustment is needed.									

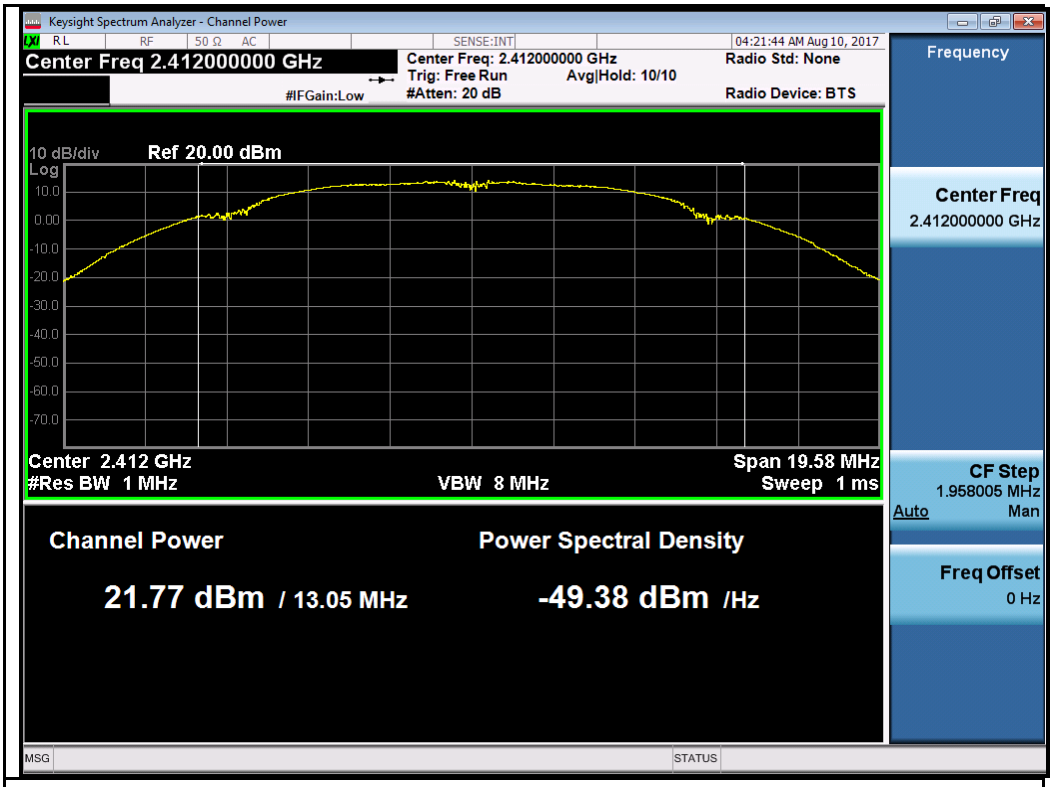
Test Plots:



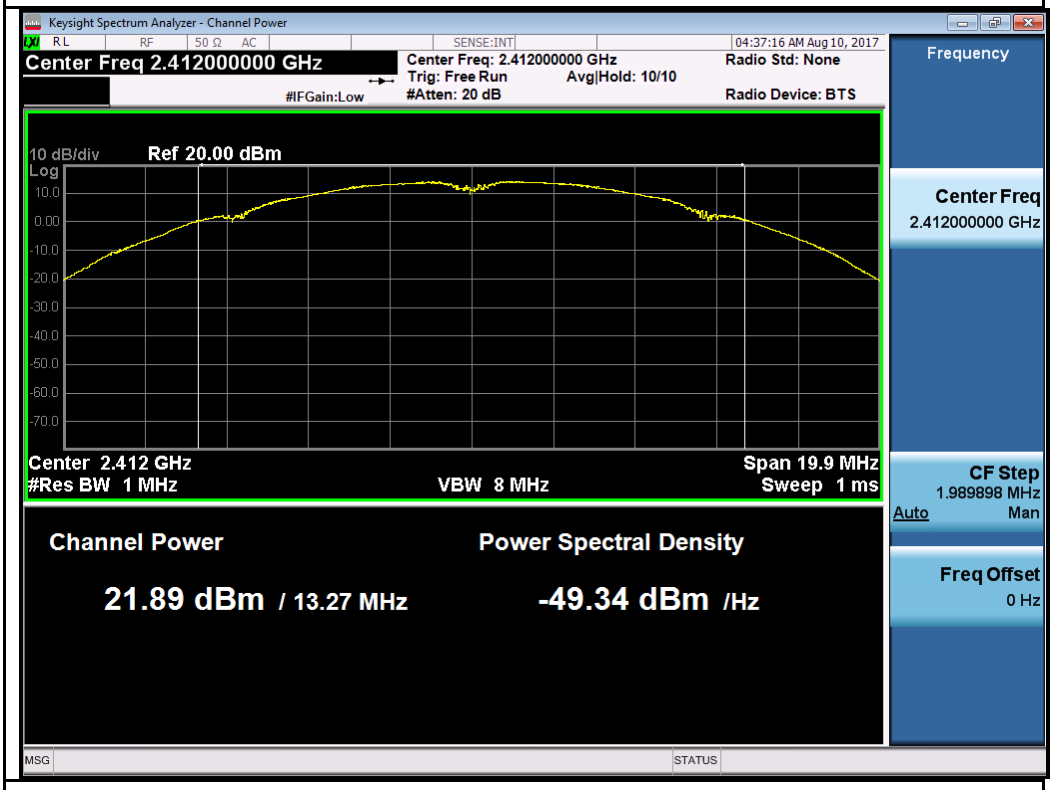
802.11b-2412MHz Chain 0



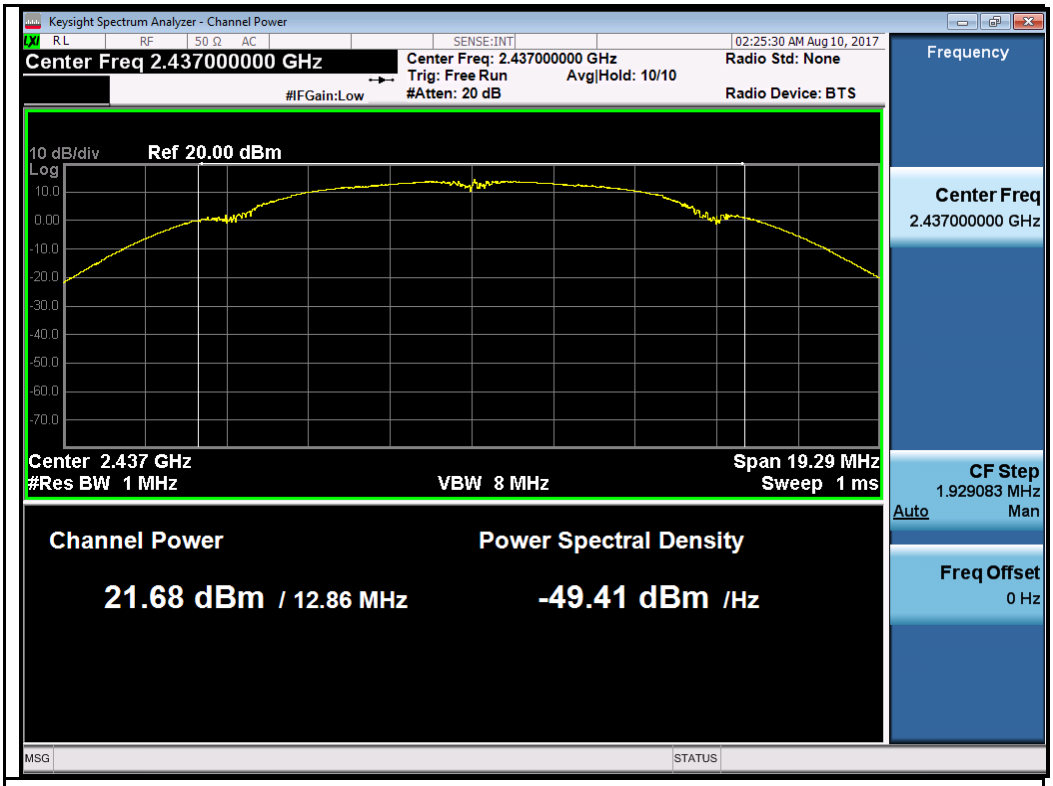
802.11b-2412MHz Chain 1



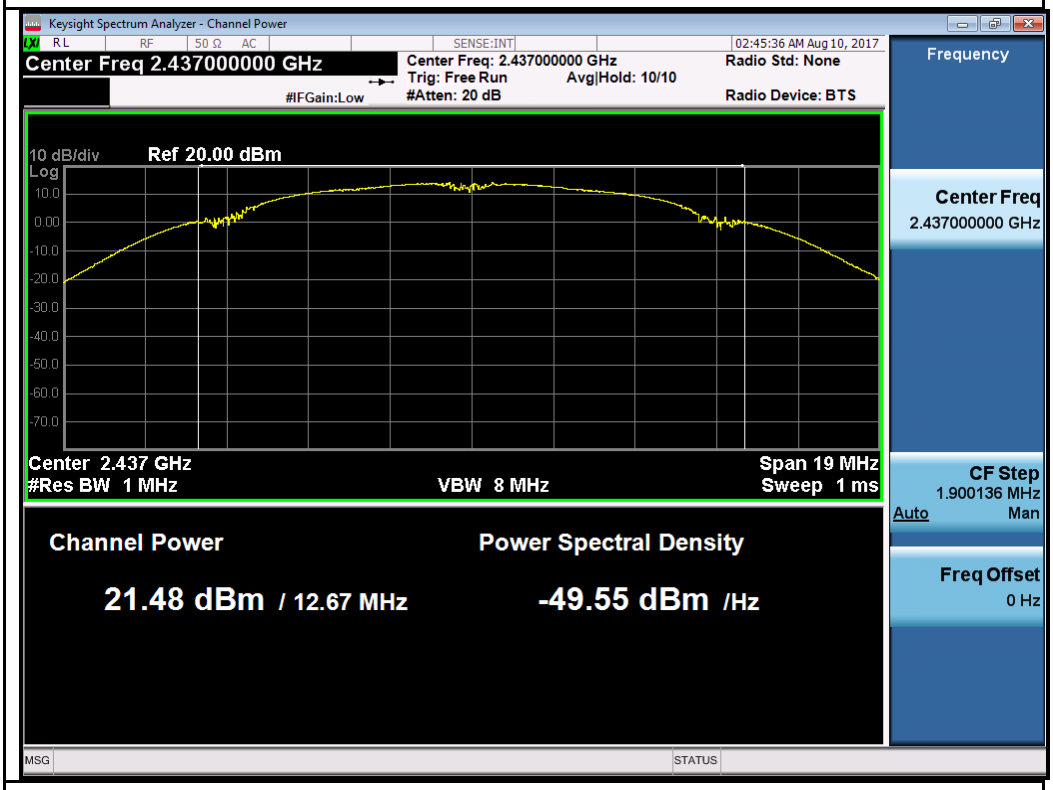
802.11b-2412MHz Chain 2



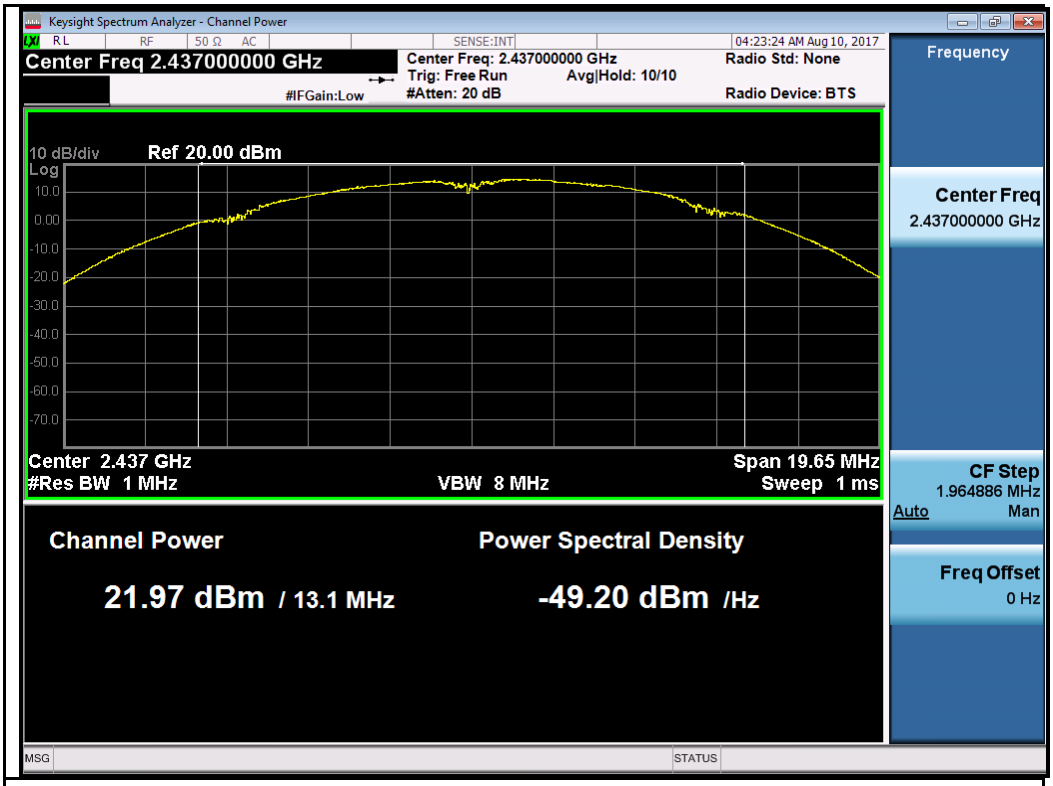
802.11b-2412MHz Chain 3



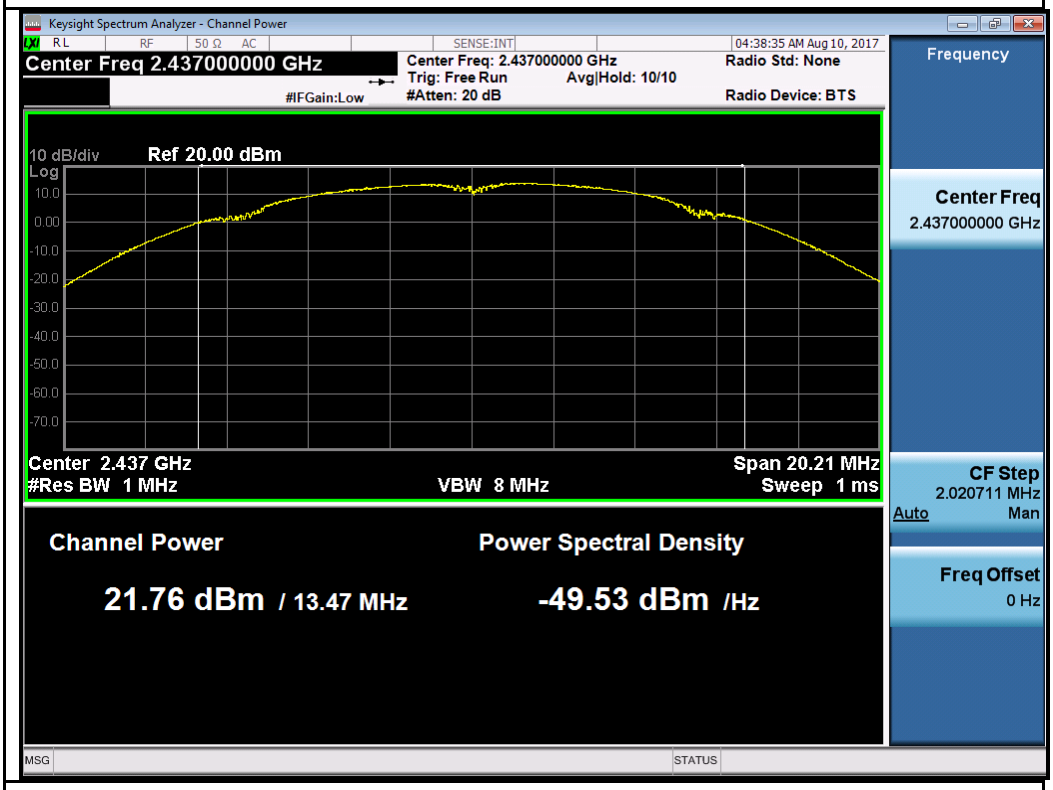
802.11b-2437MHz Chain 0



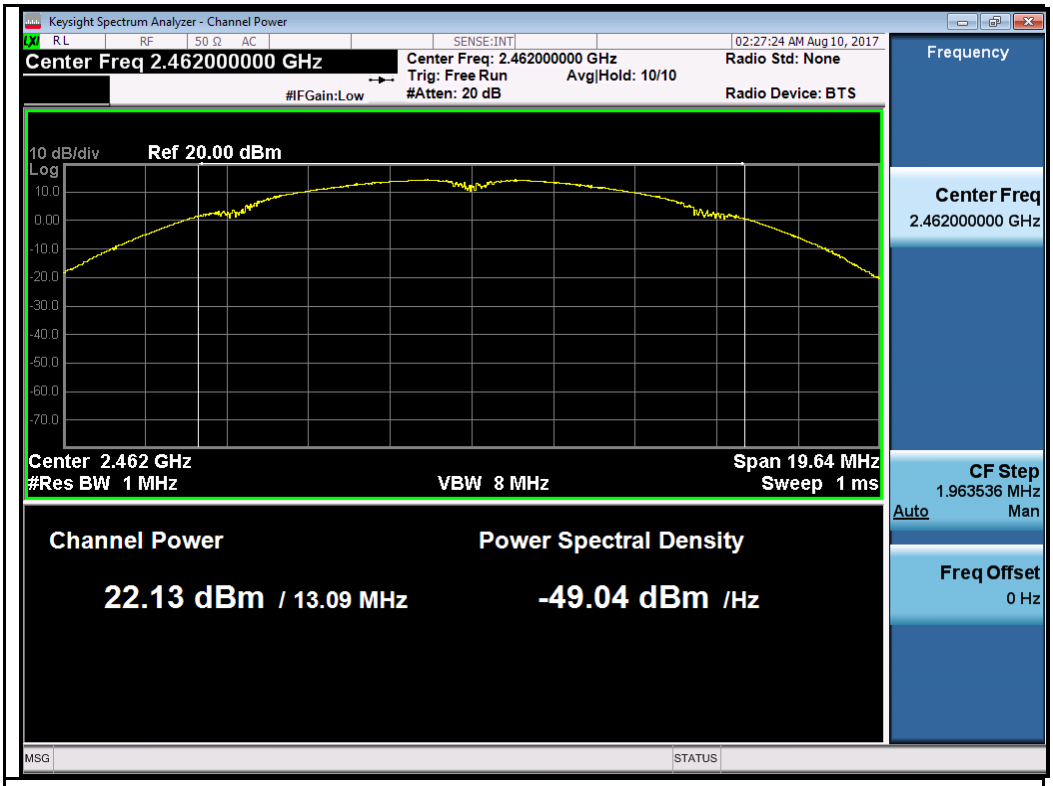
802.11b-2437MHz Chain 1



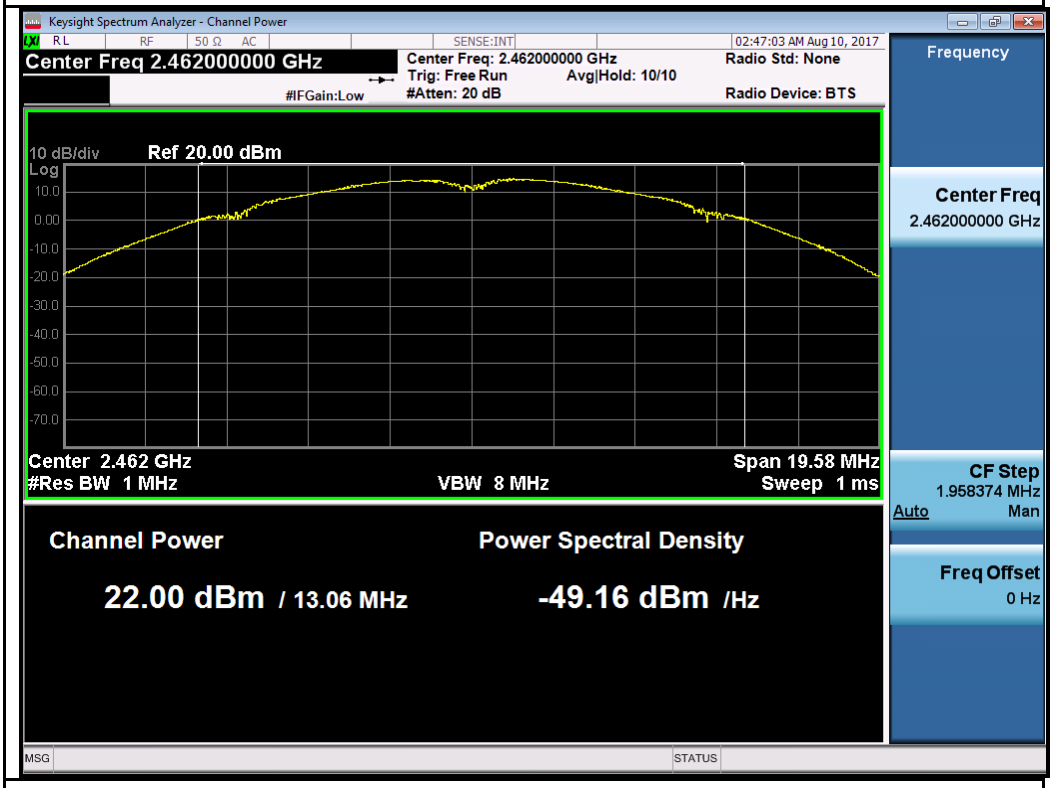
802.11b-2437MHz Chain 2



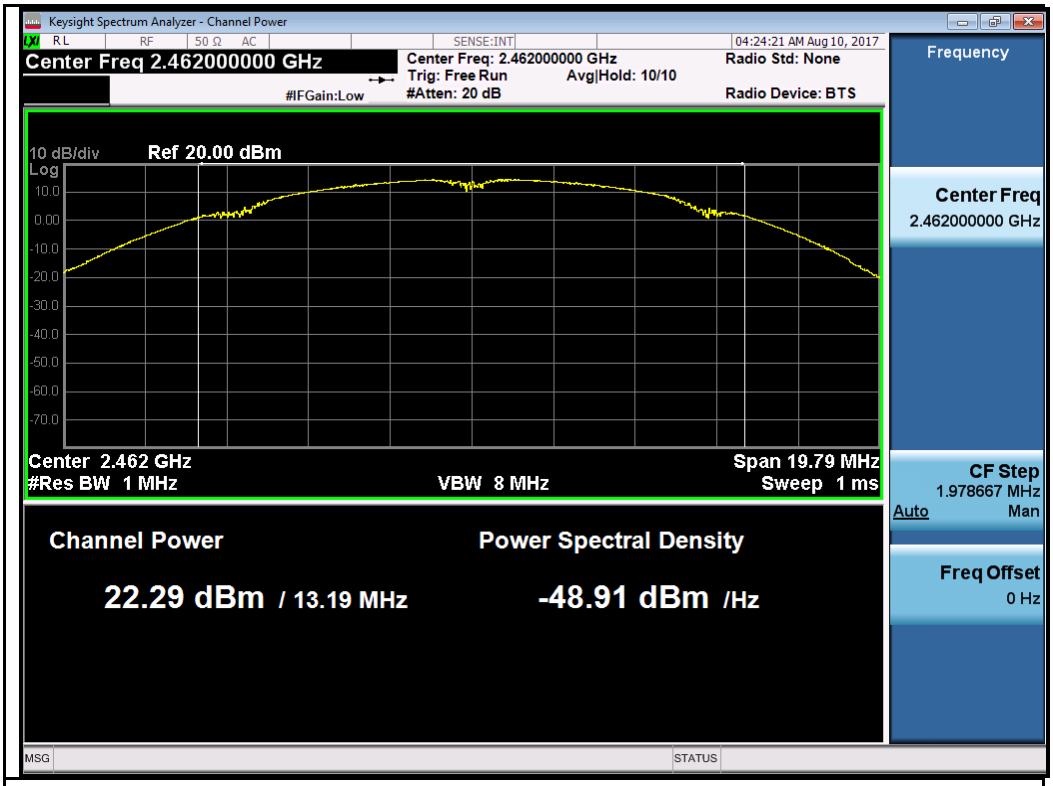
802.11b-2437MHz Chain 3



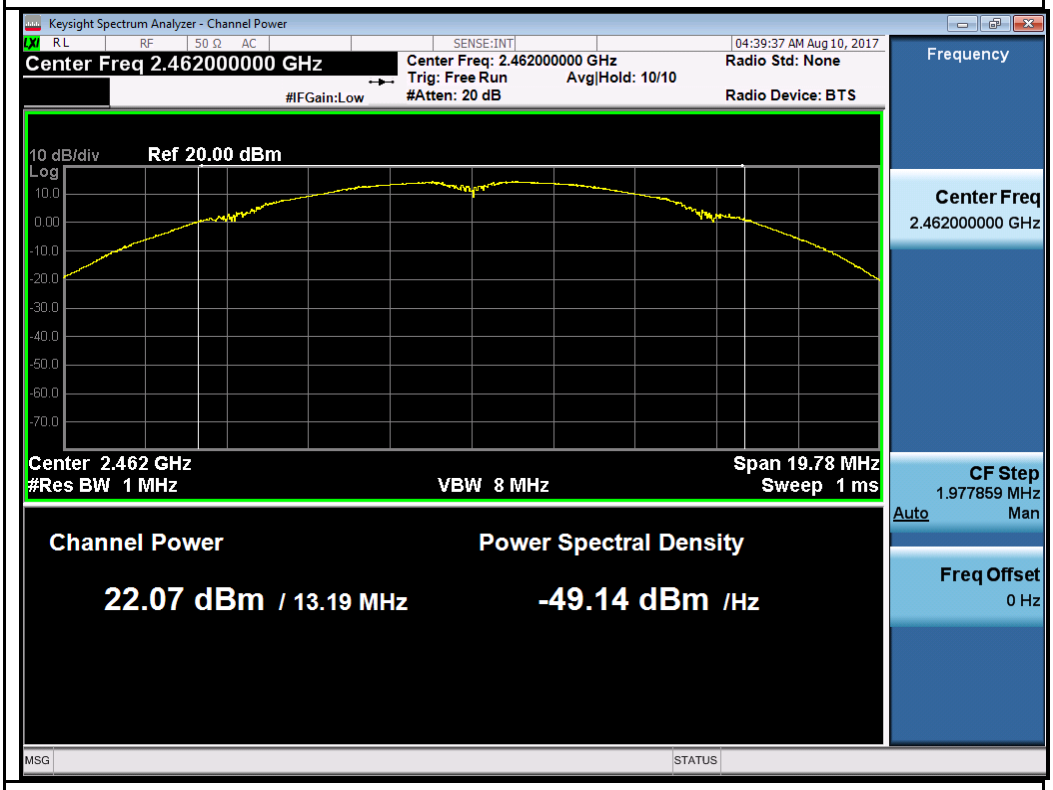
802.11b-2462MHz Chain 0



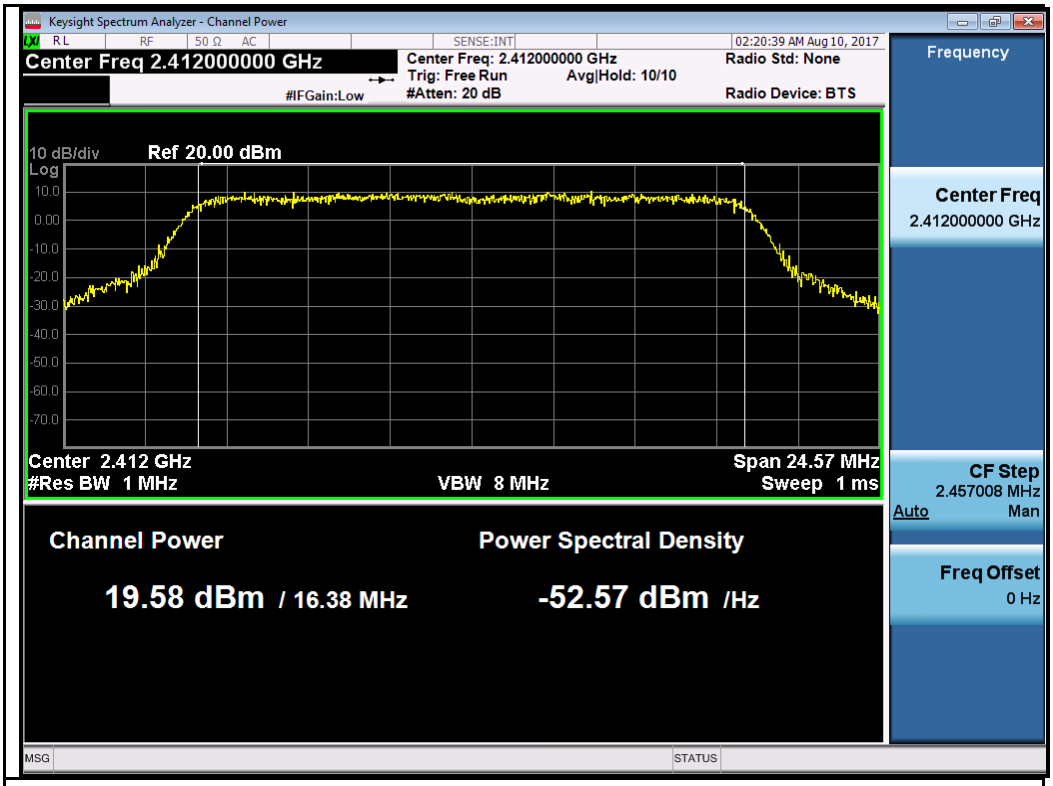
802.11b-2462MHz Chain 1



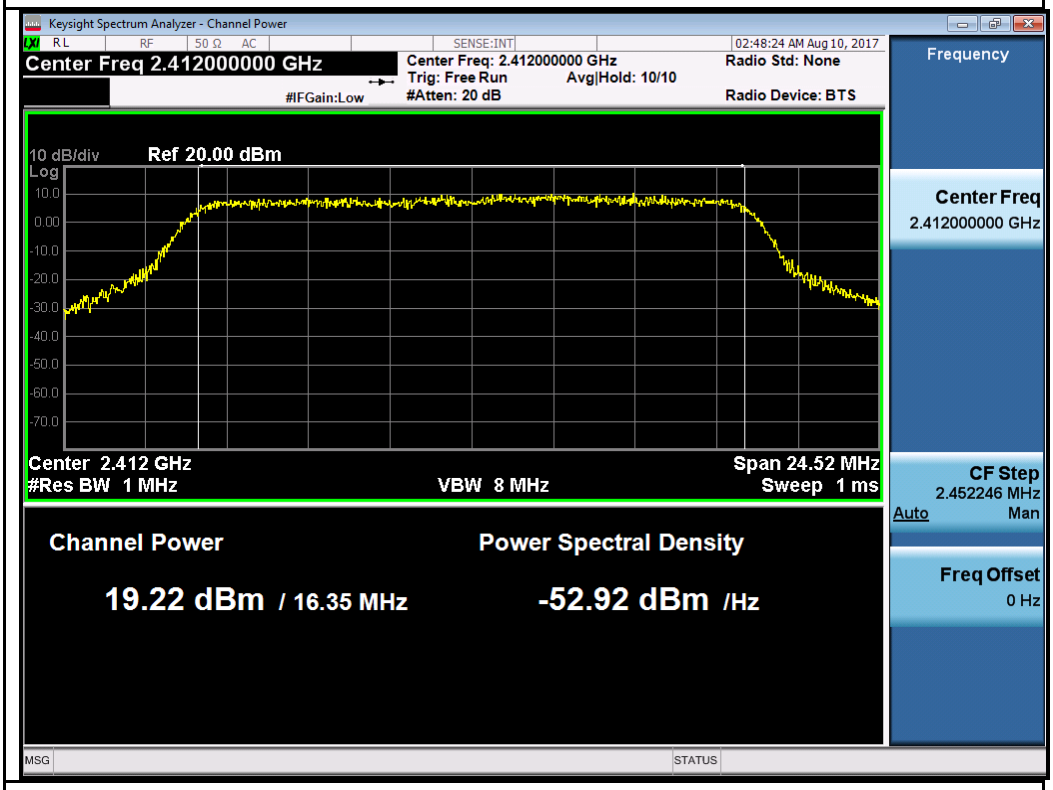
802.11b-2462MHz Chain 2



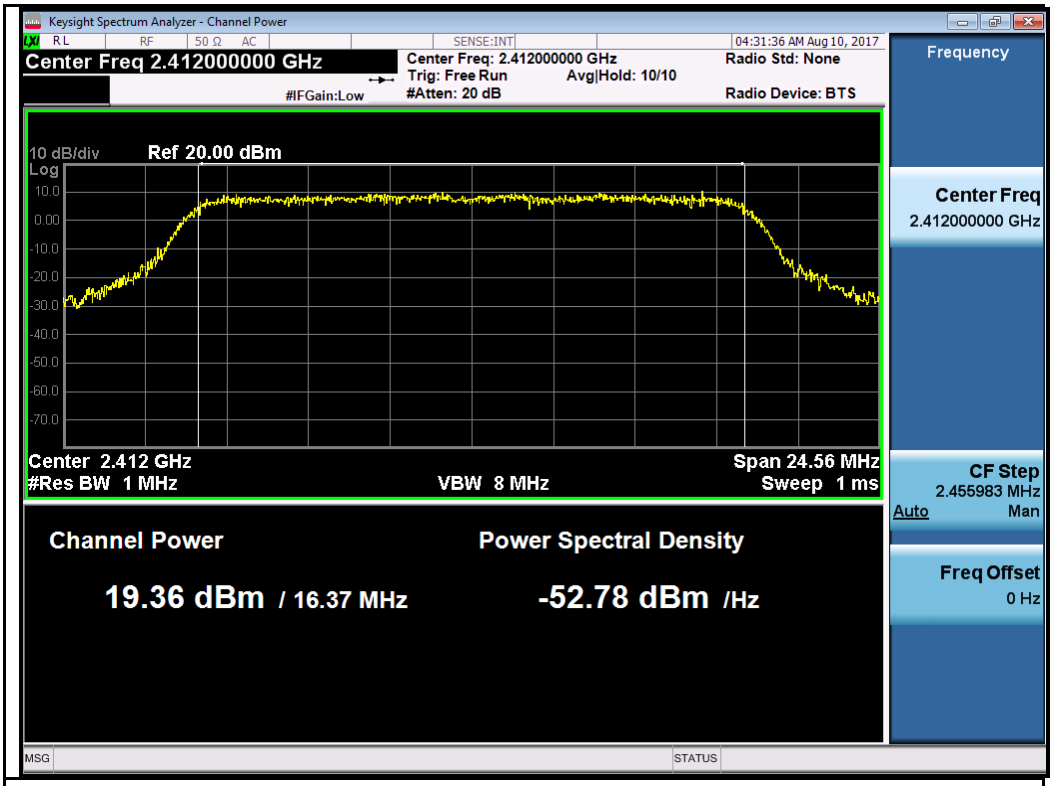
802.11b-2462MHz Chain 3



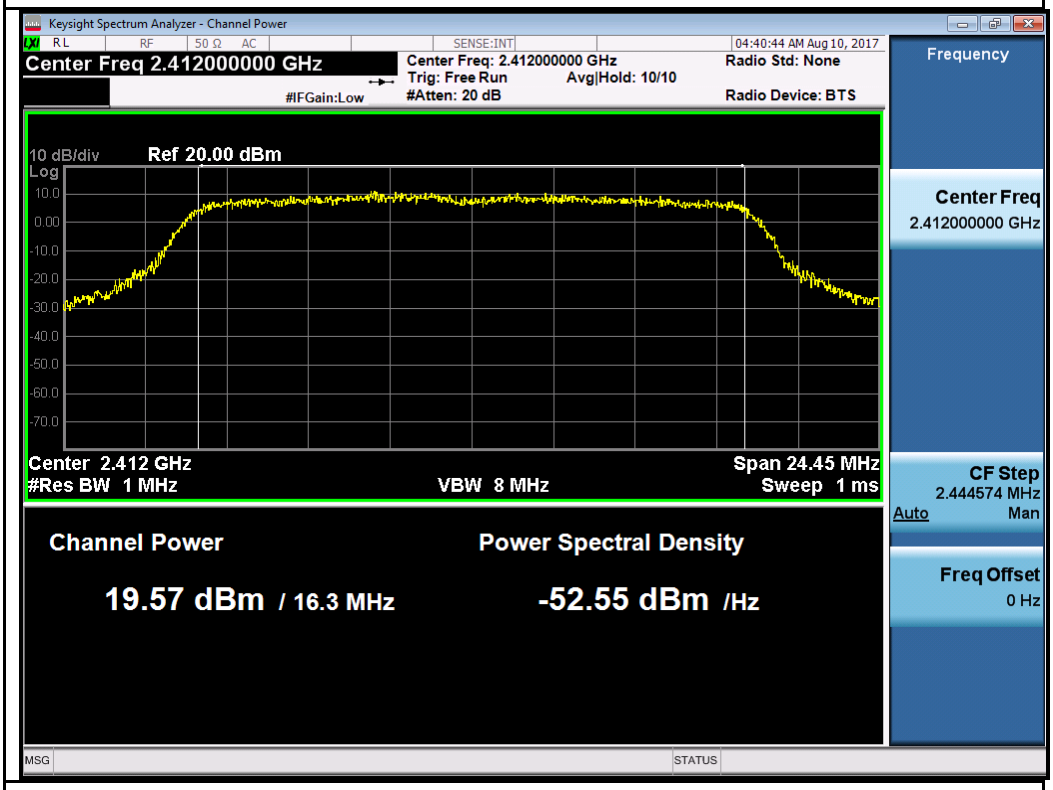
802.11g-2412MHz Chain 0



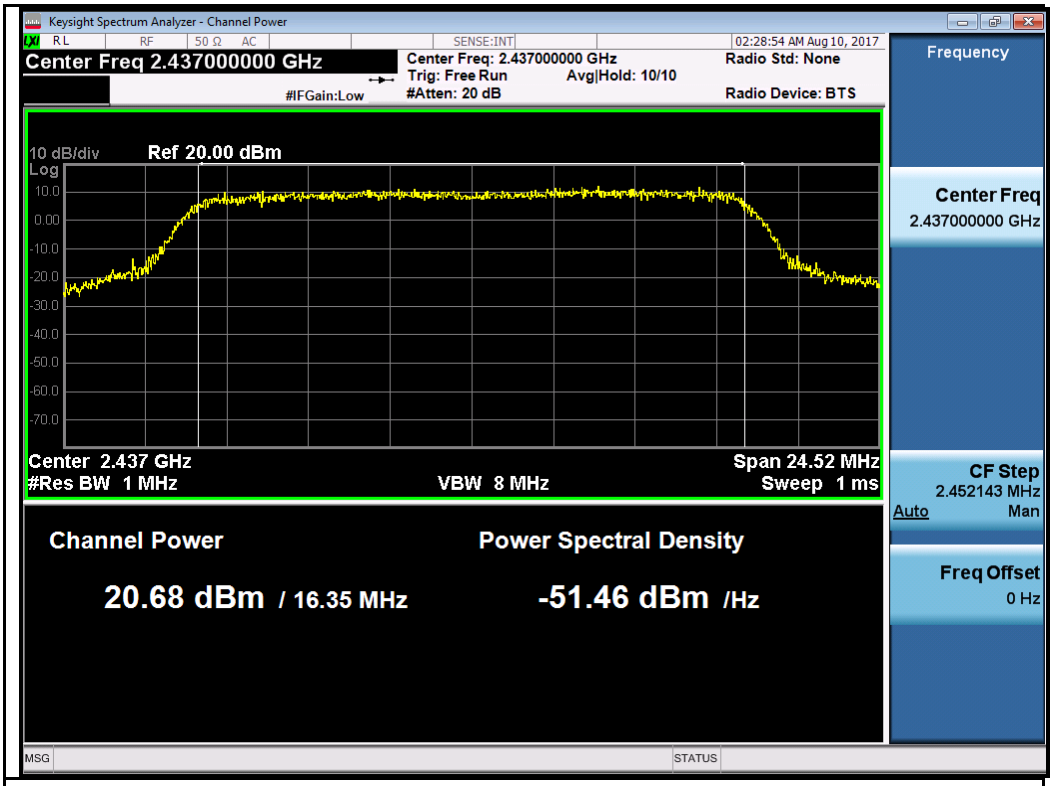
802.11g-2412MHz Chain 1



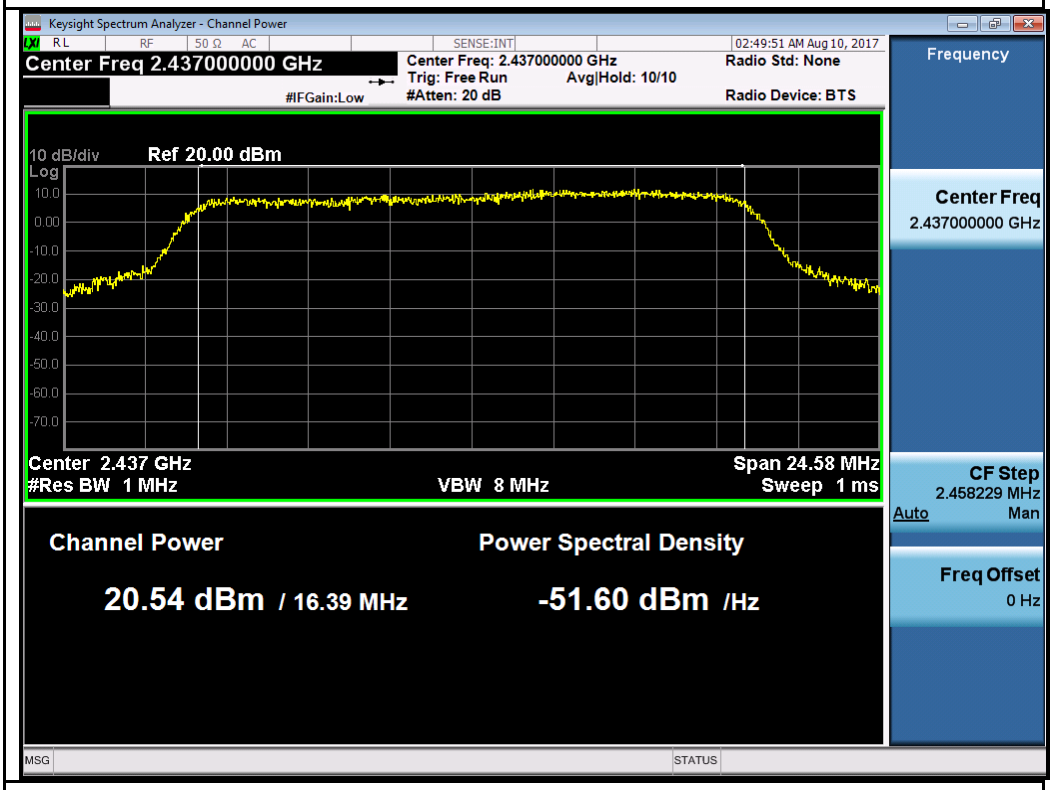
802.11g-2412MHz Chain 2



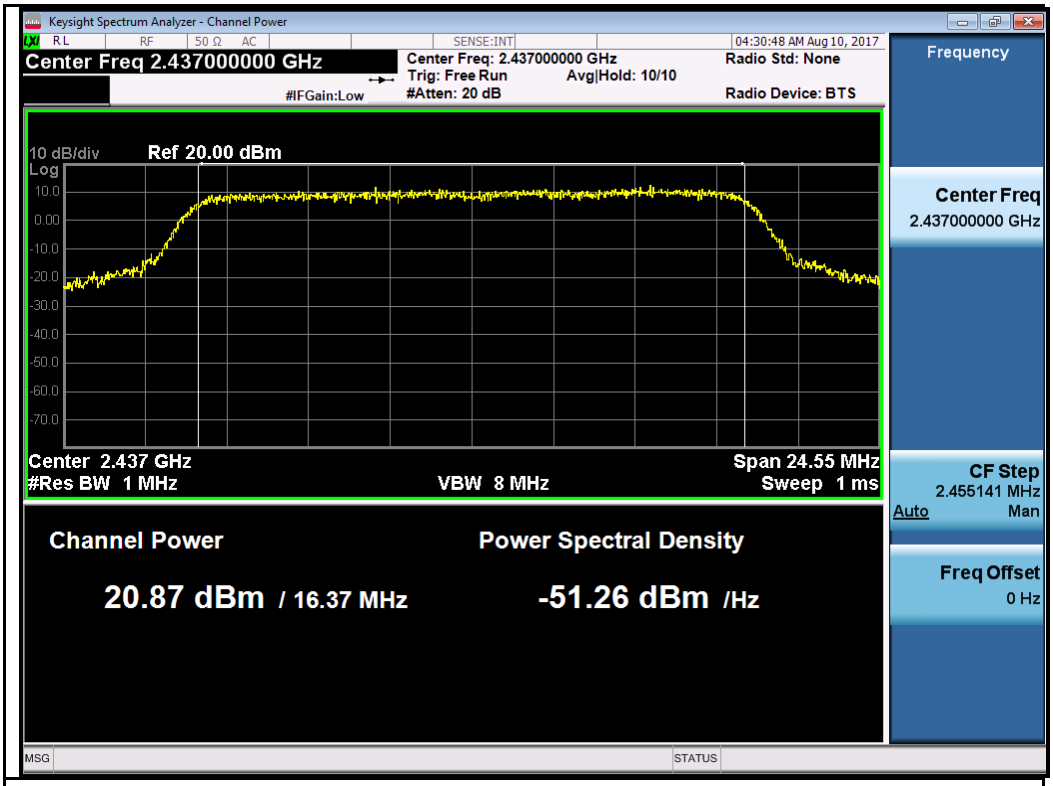
802.11g-2412MHz Chain 3



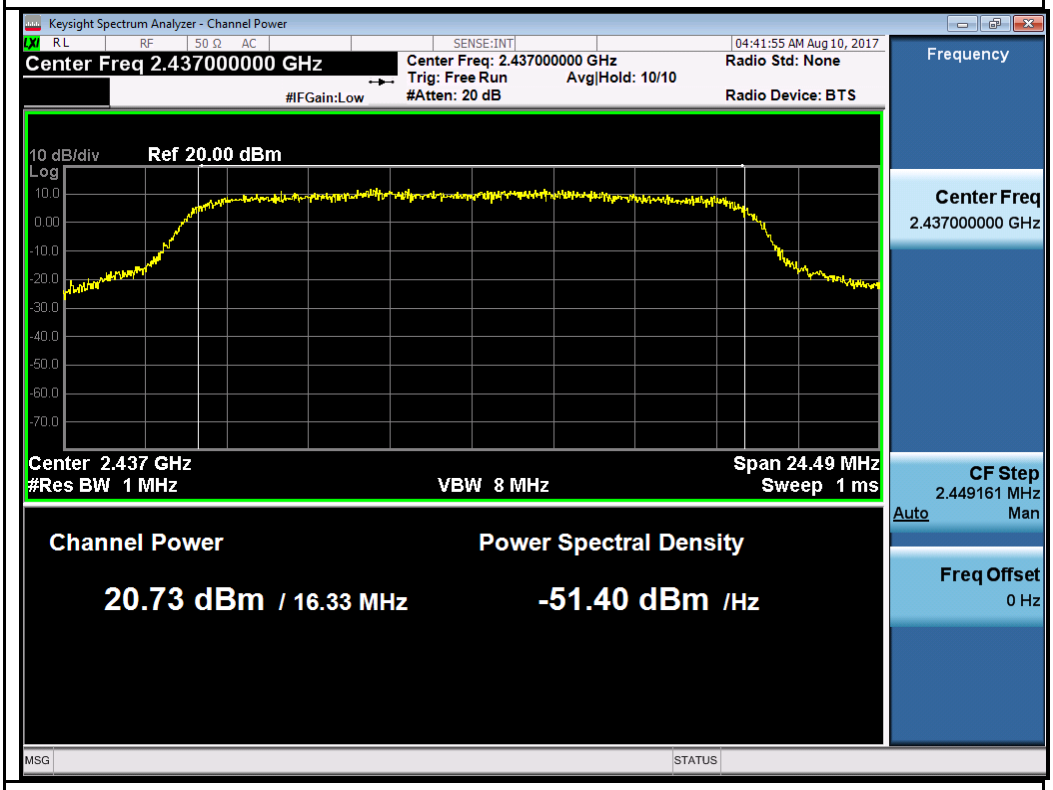
802.11g-2437MHz Chain 0



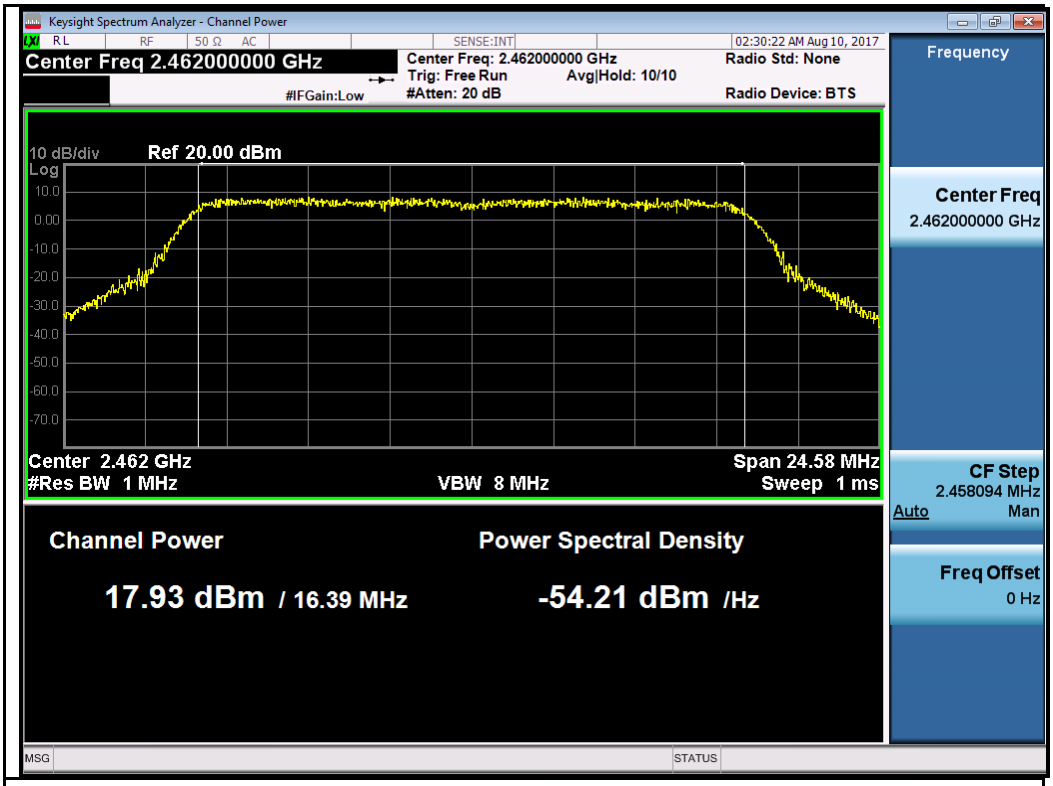
802.11g-2437MHz Chain 1



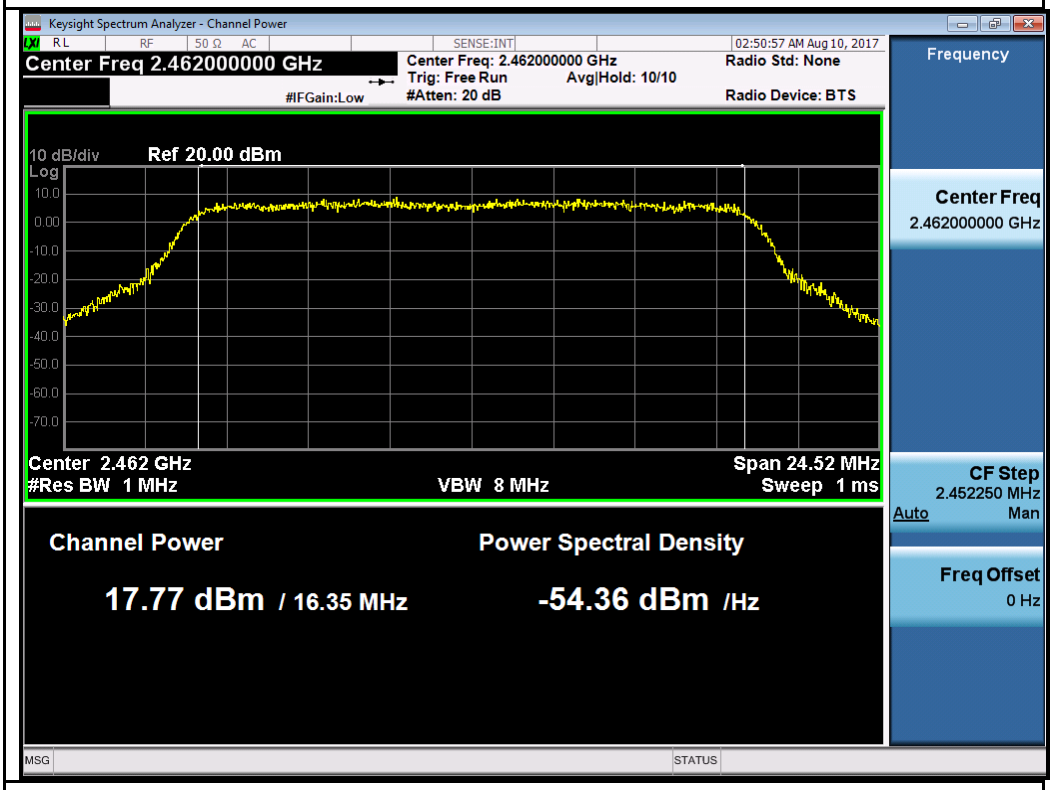
802.11g-2437MHz Chain 2



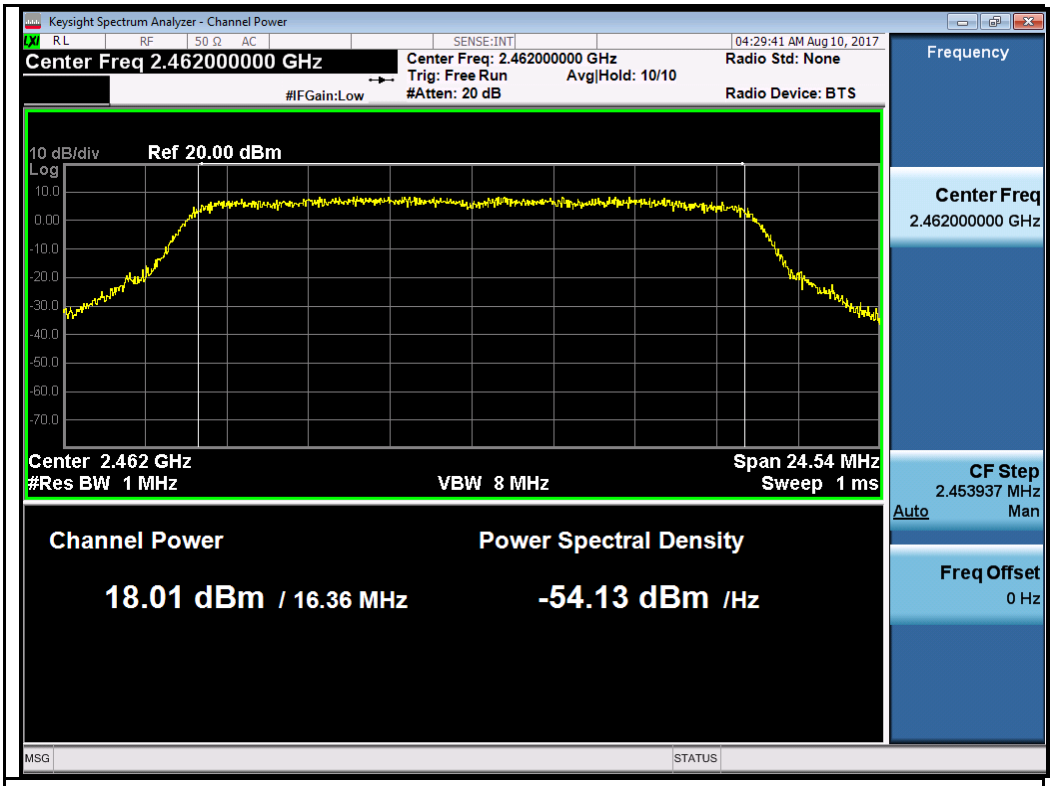
802.11g-2437MHz Chain 3



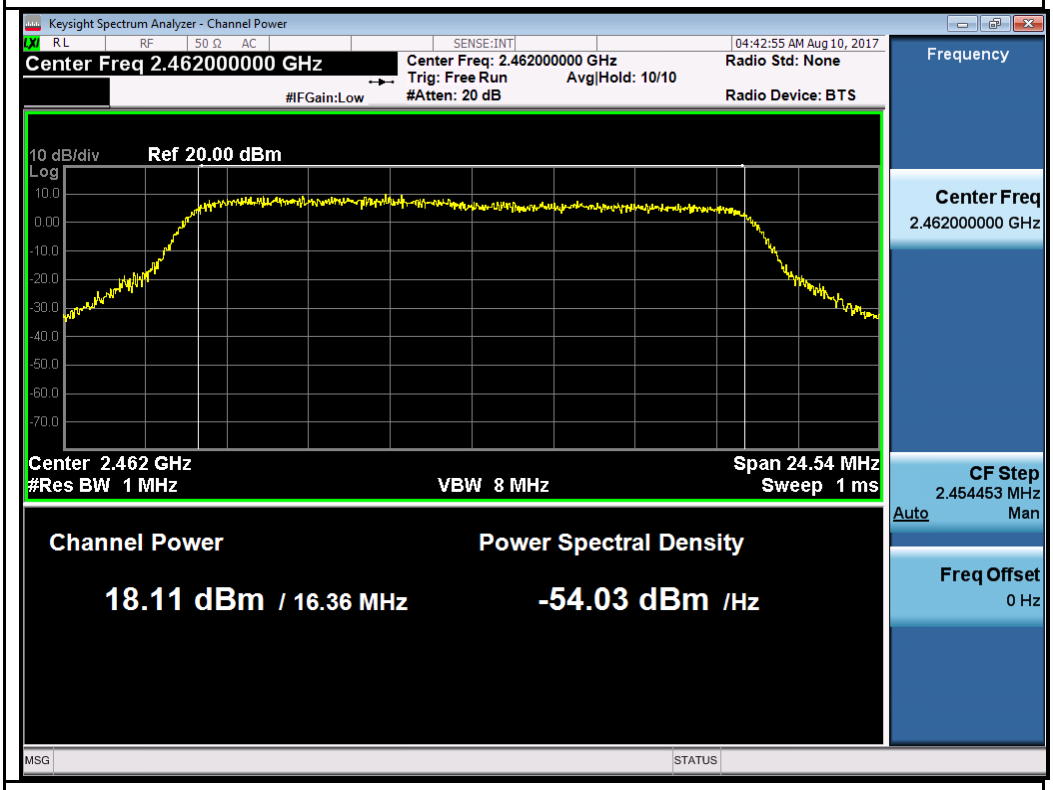
802.11g-2462MHz Chain 0



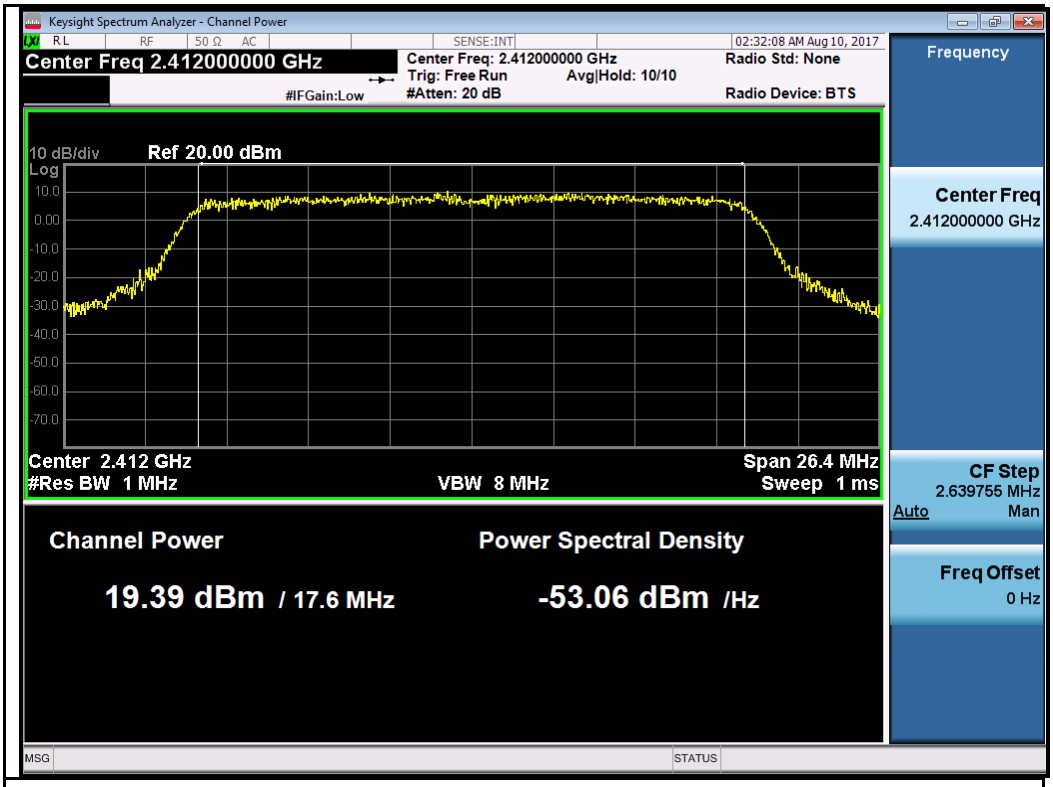
802.11g-2462MHz Chain 1



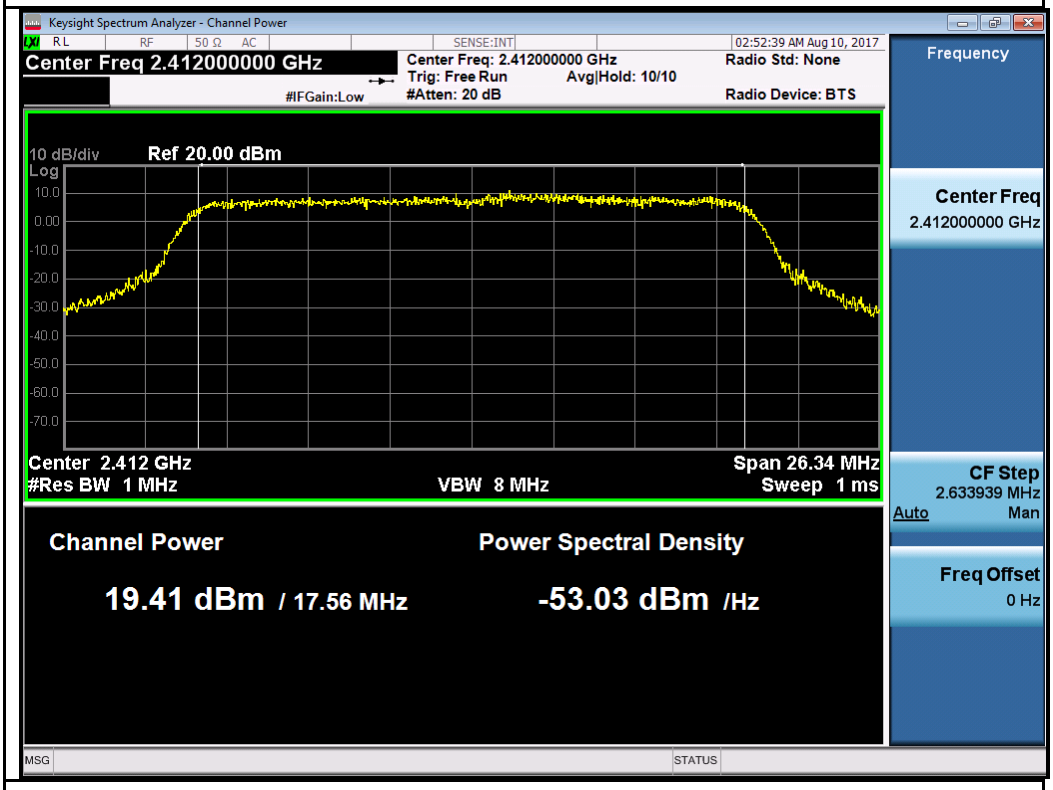
802.11g-2462MHz Chain 2



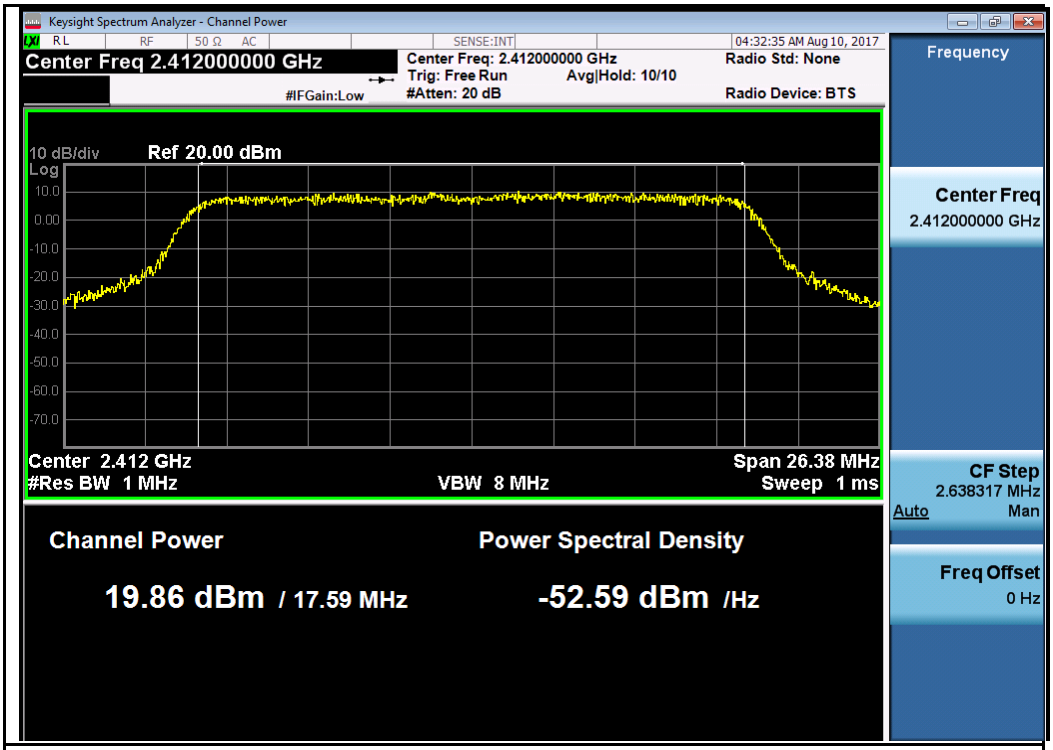
802.11g-2462MHz Chain 3



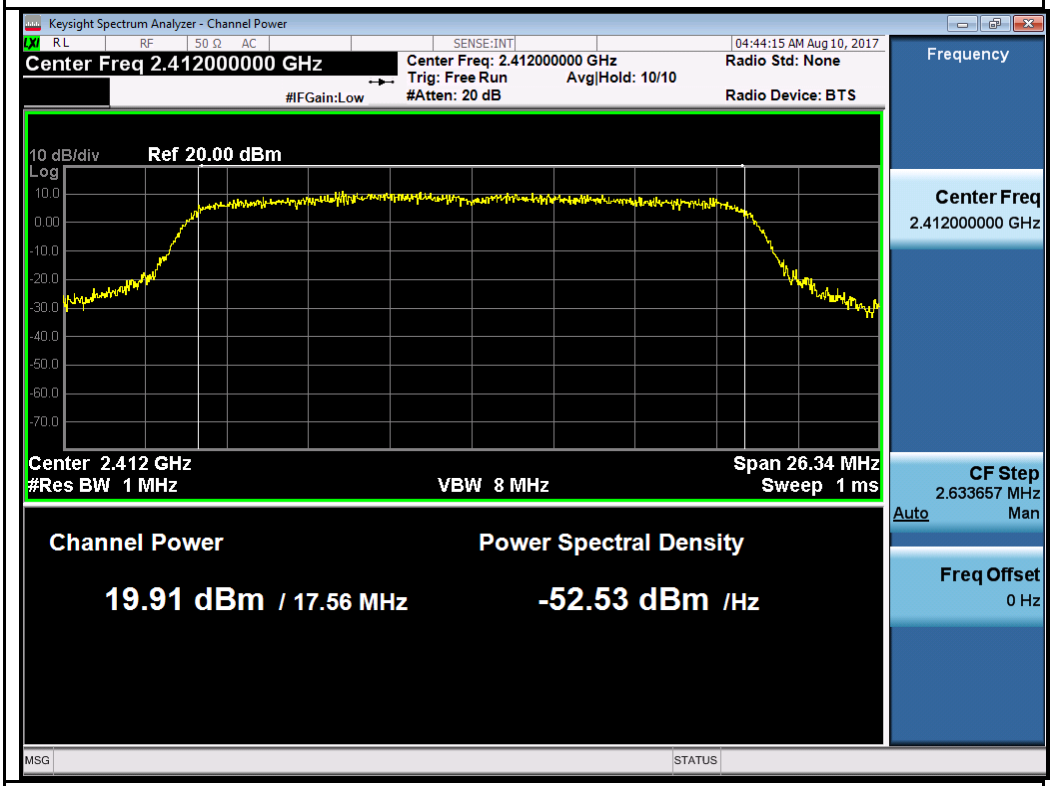
802.11n-HT20 2412MHz Chain 0



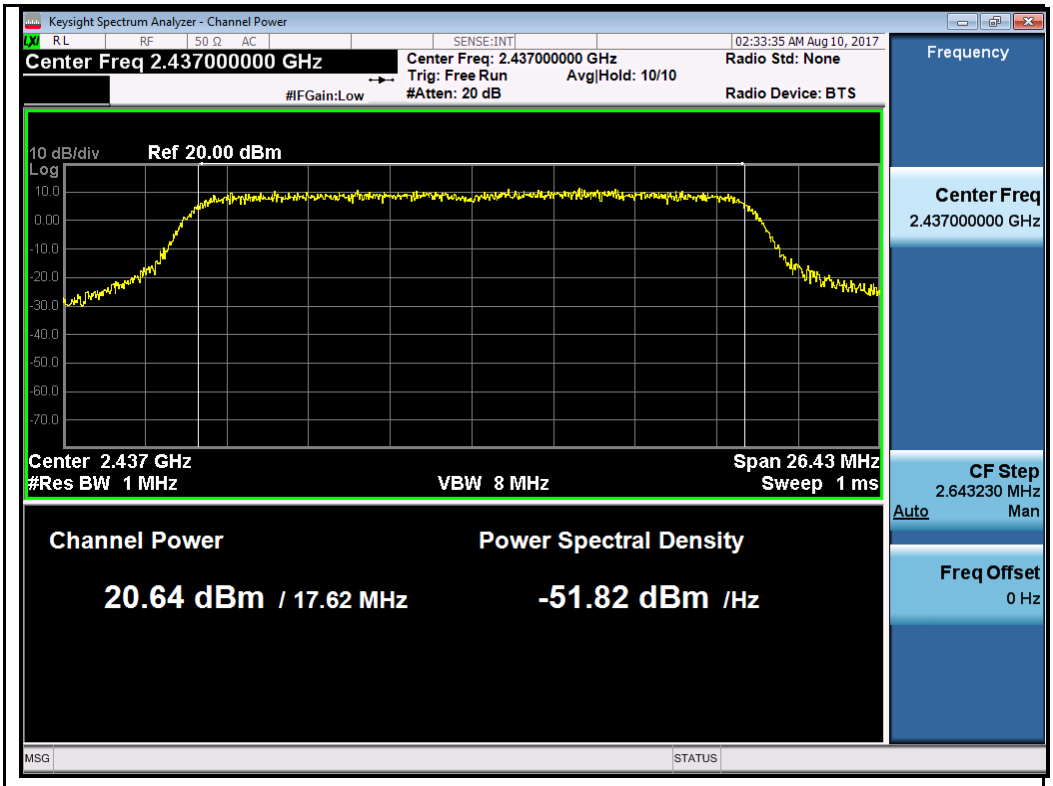
802.11n-HT20 2412MHz Chain 1



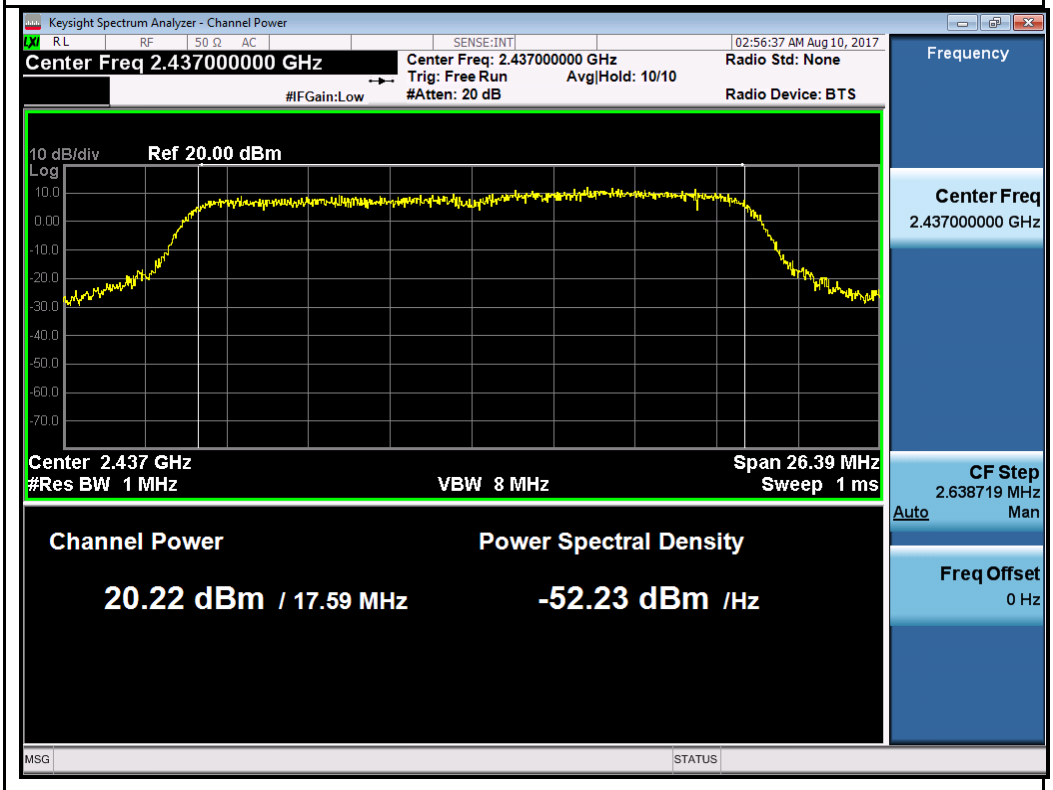
802.11n-HT20 2412MHz Chain 2



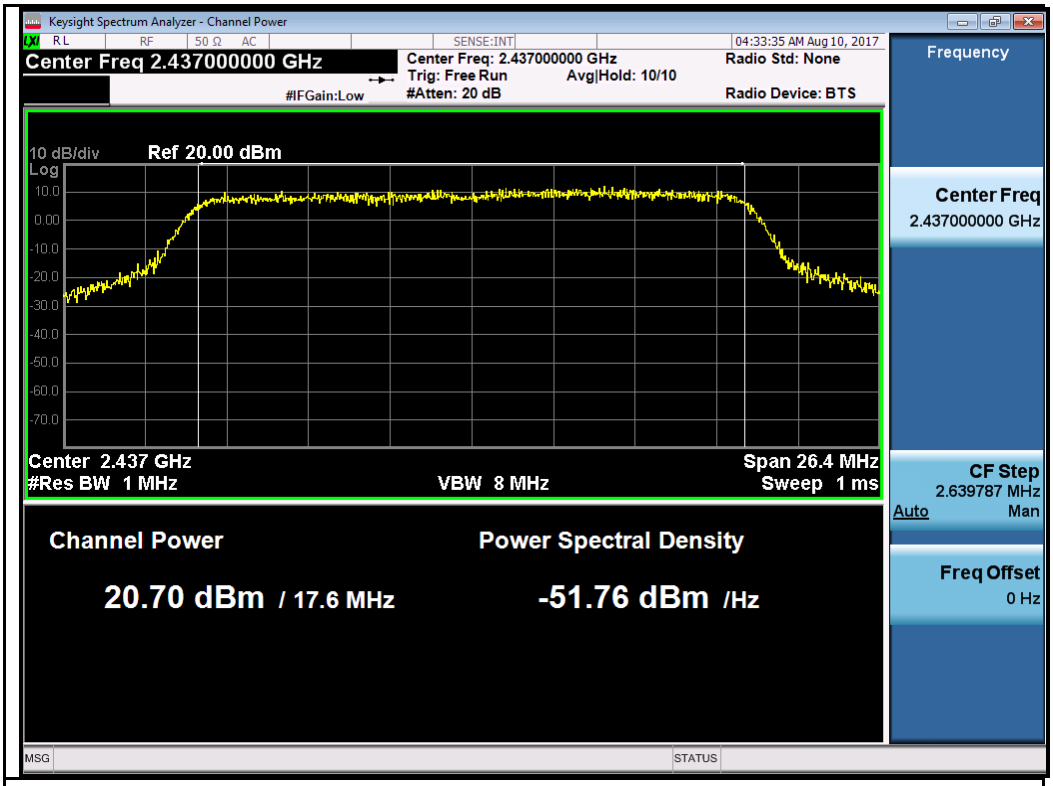
802.11n-HT20 2412MHz Chain 3



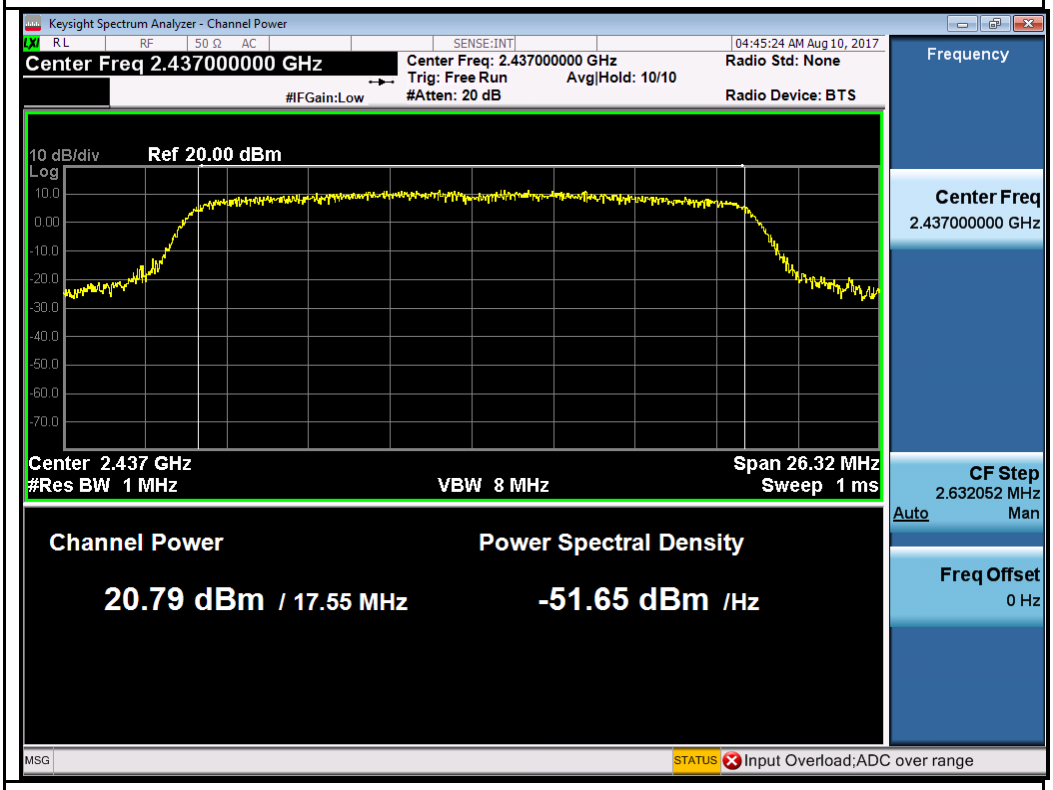
802.11n-HT20 2437MHz Chain 0



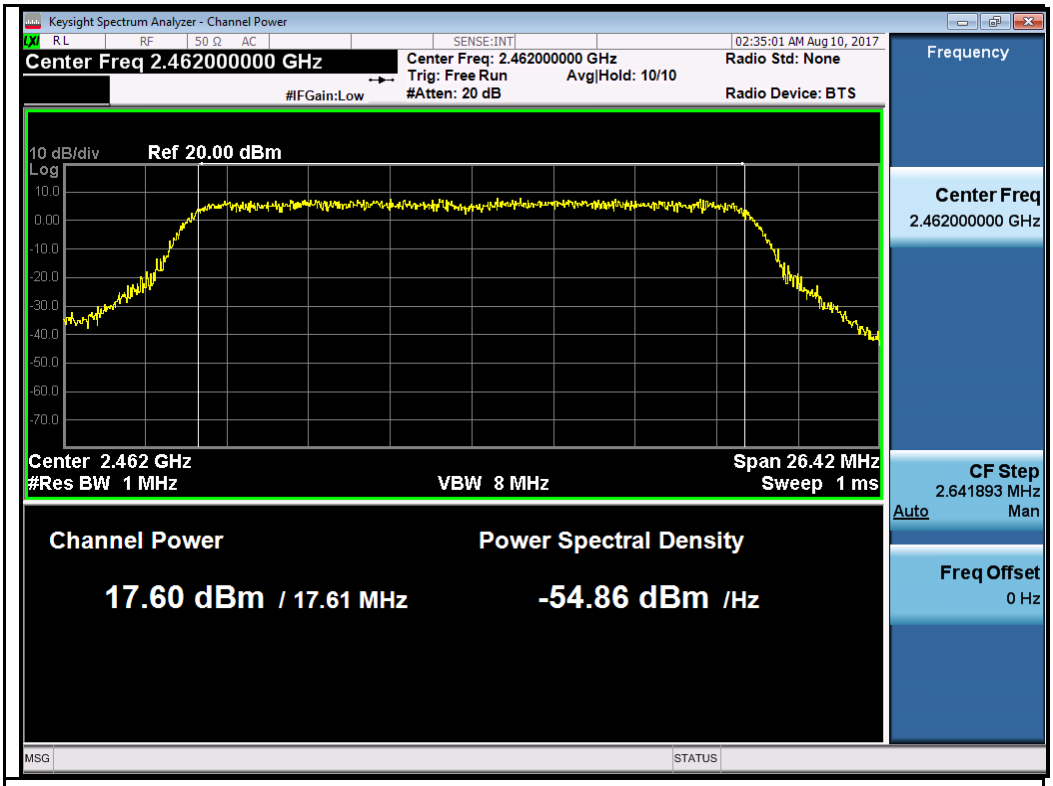
802.11n-HT20 2437MHz Chain 1



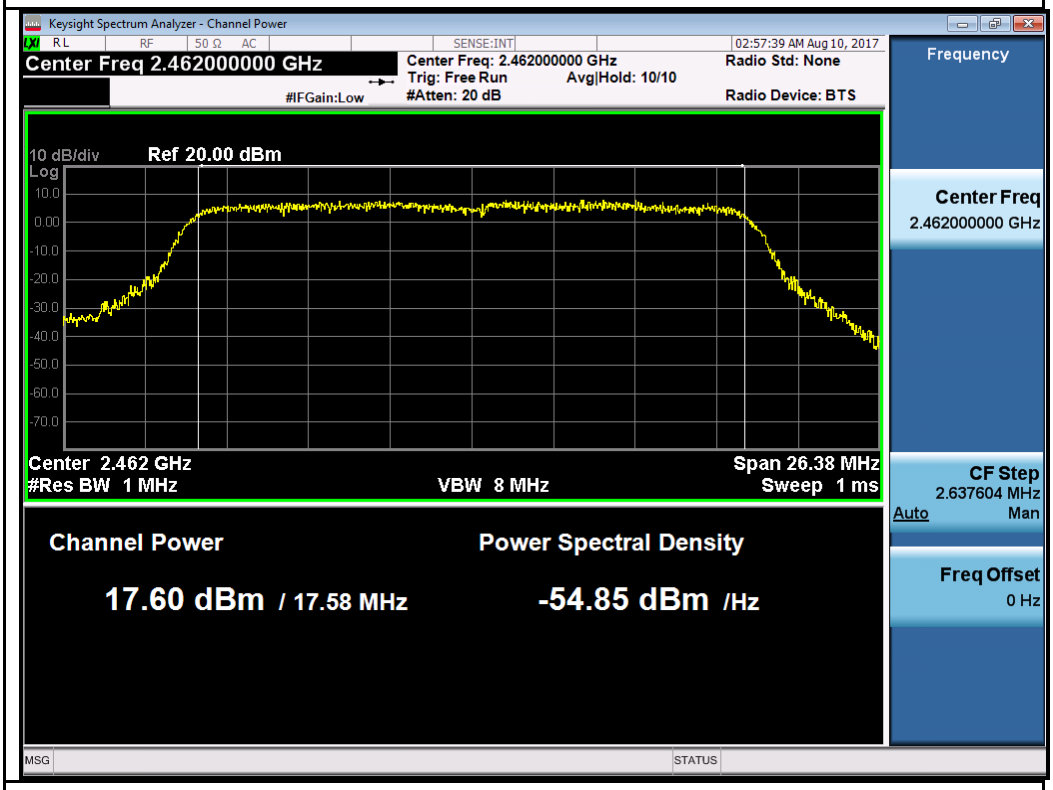
802.11n-HT20 2437MHz Chain 2



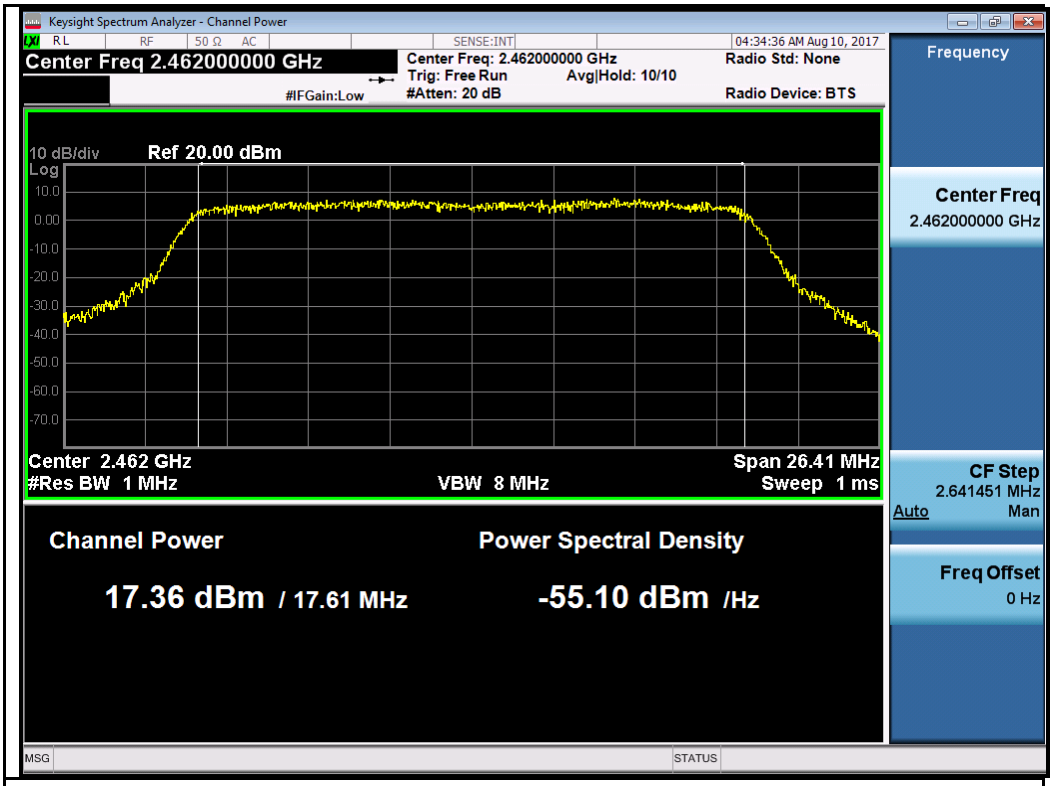
802.11n-HT20 2437MHz Chain 3



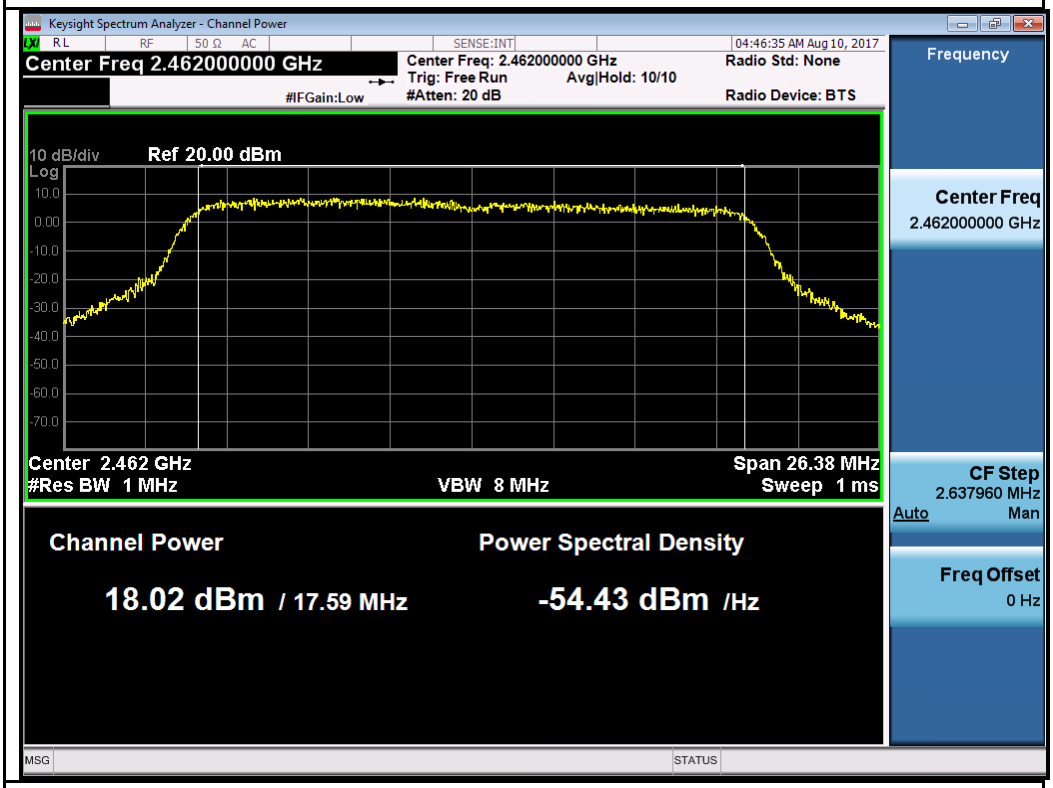
802.11n-HT20 2462MHz Chain 0



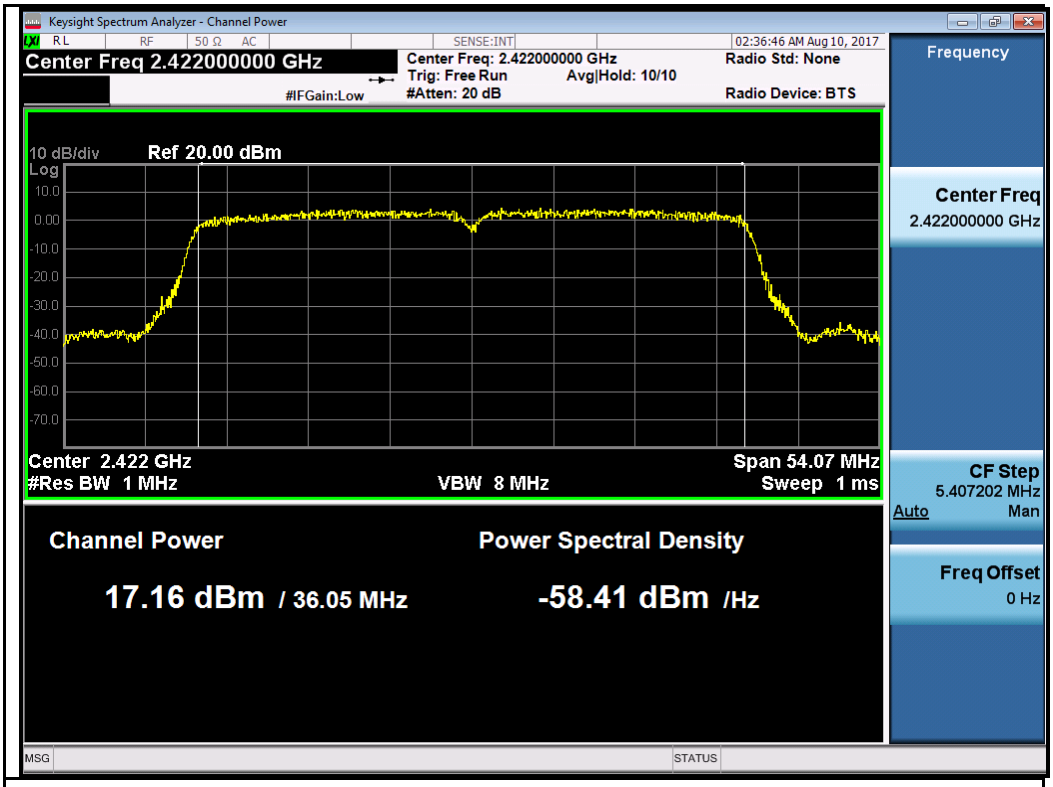
802.11n-HT20 2462MHz Chain 1



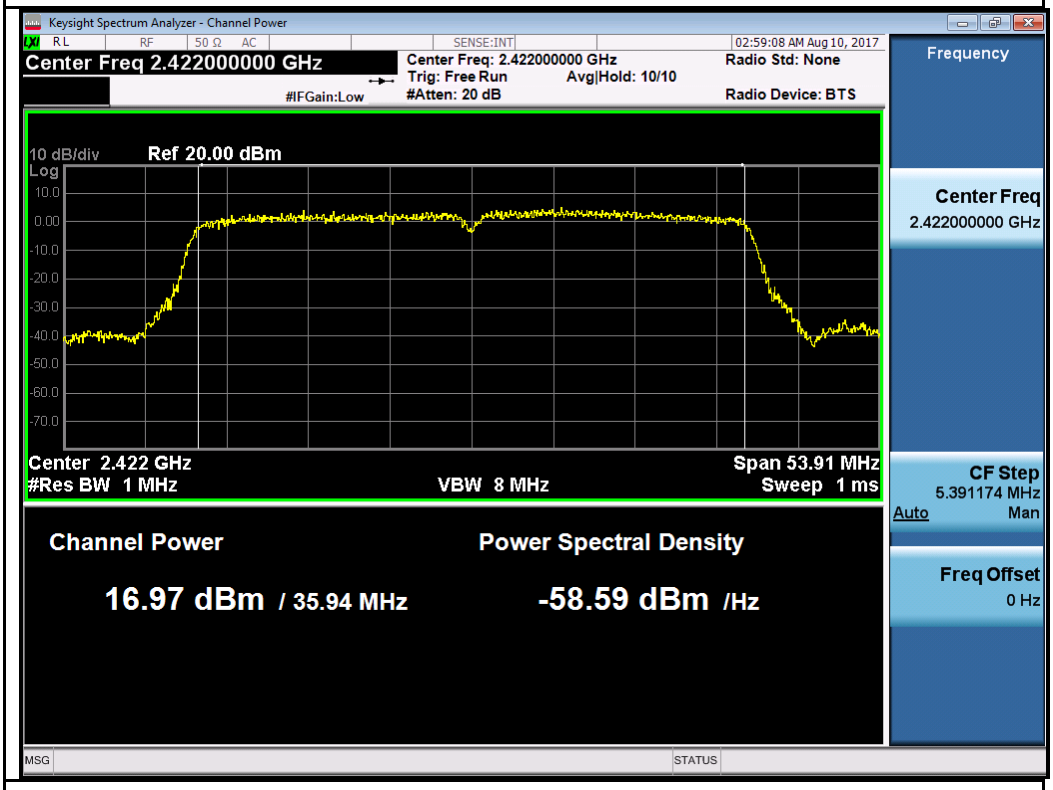
802.11n-HT20 2462MHz Chain 2



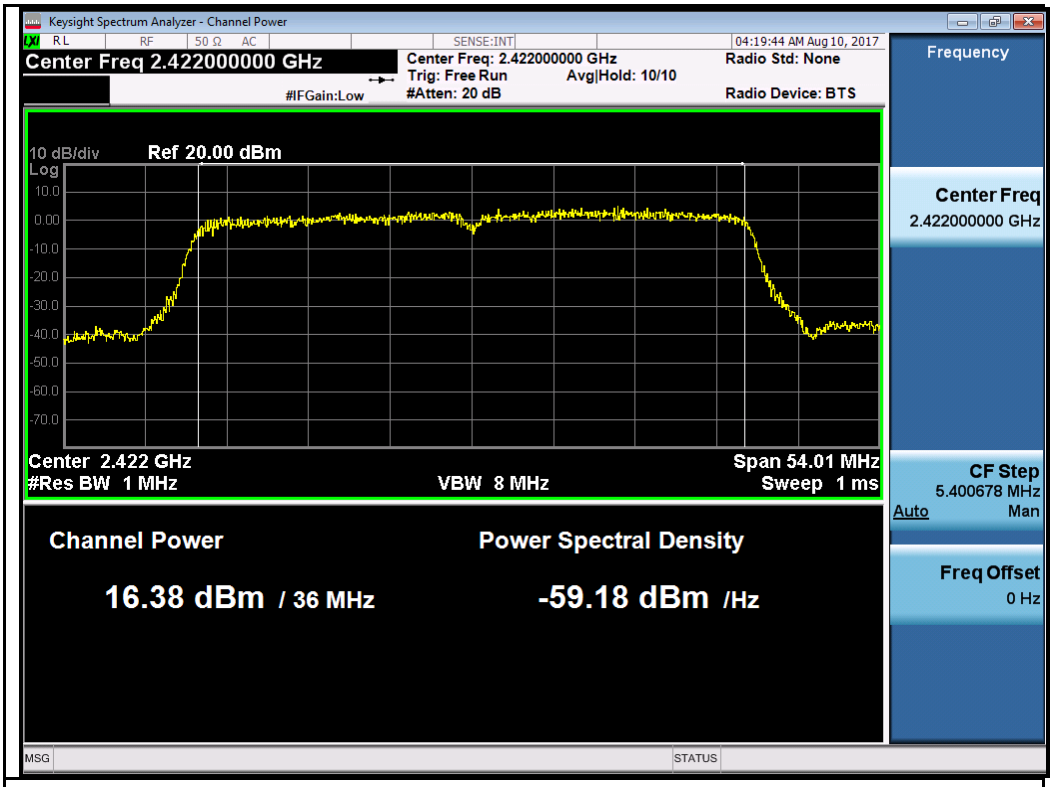
802.11n-HT20 2462MHz Chain 3



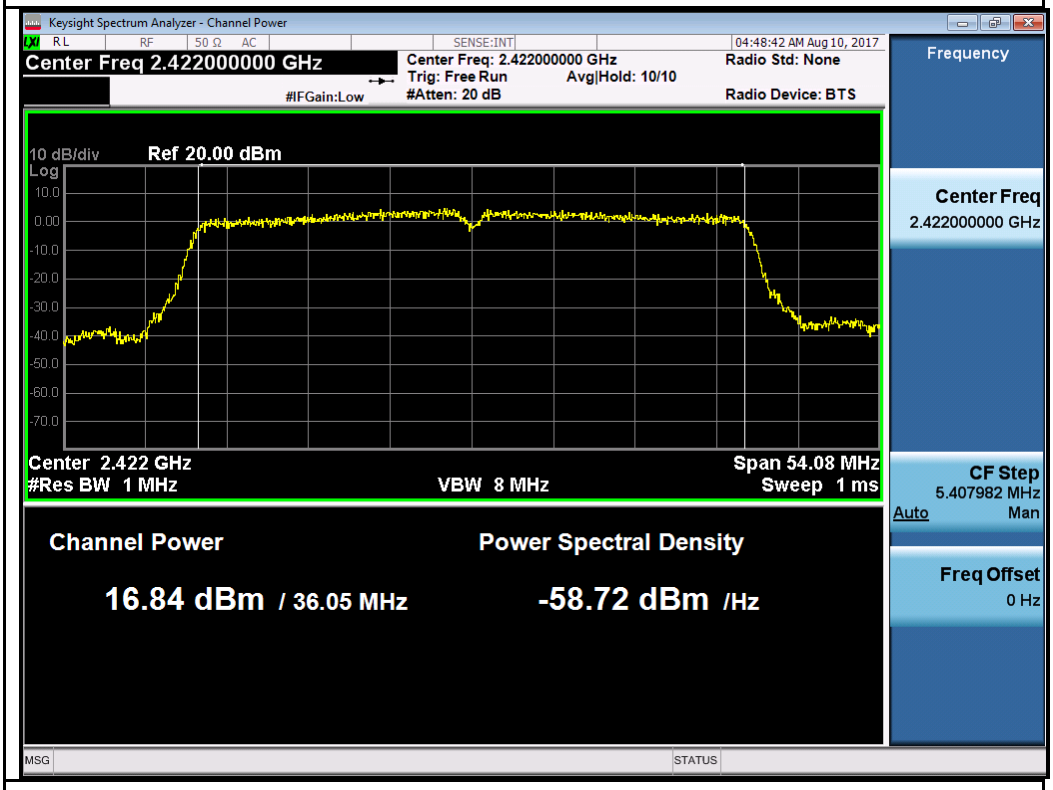
802.11n-HT40 2422MHz Chain 0



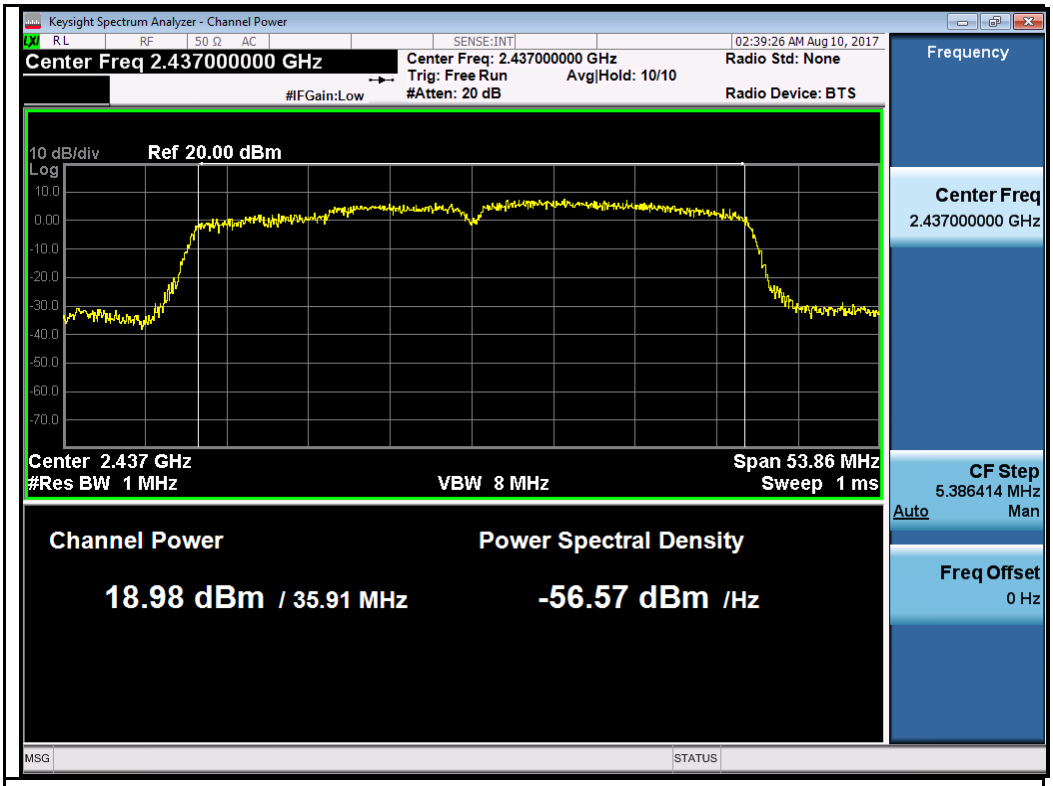
802.11n-HT40 2422MHz Chain 1



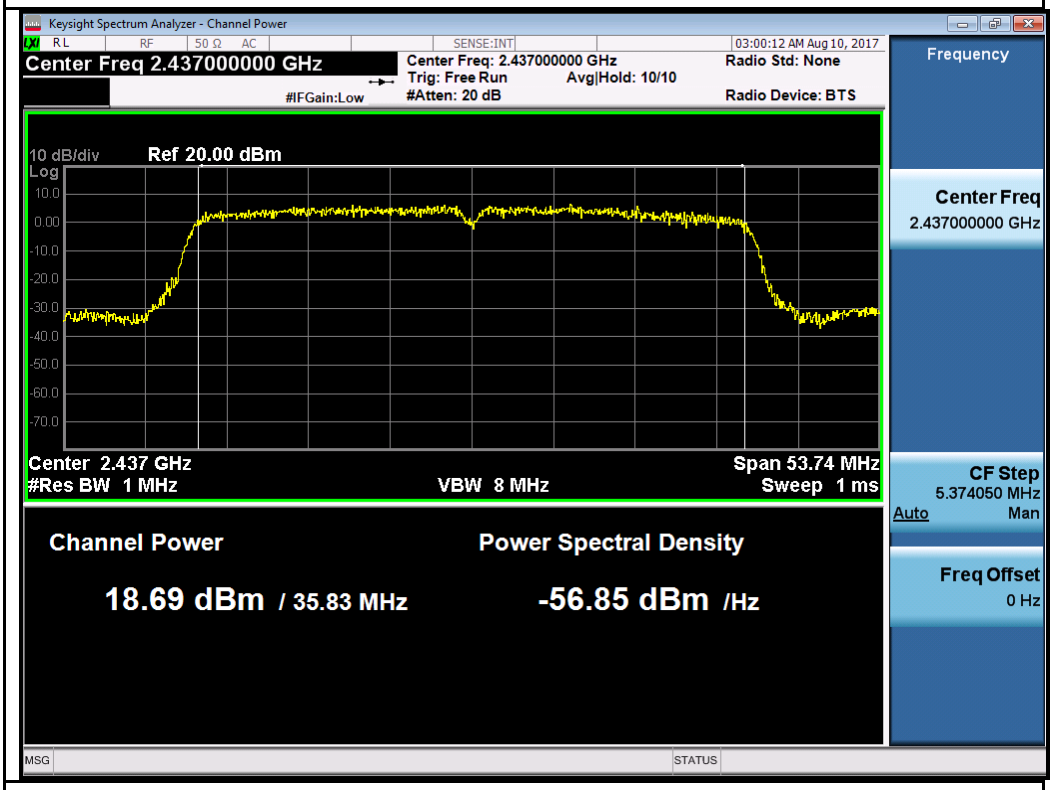
802.11n-HT40 2422MHz Chain 2



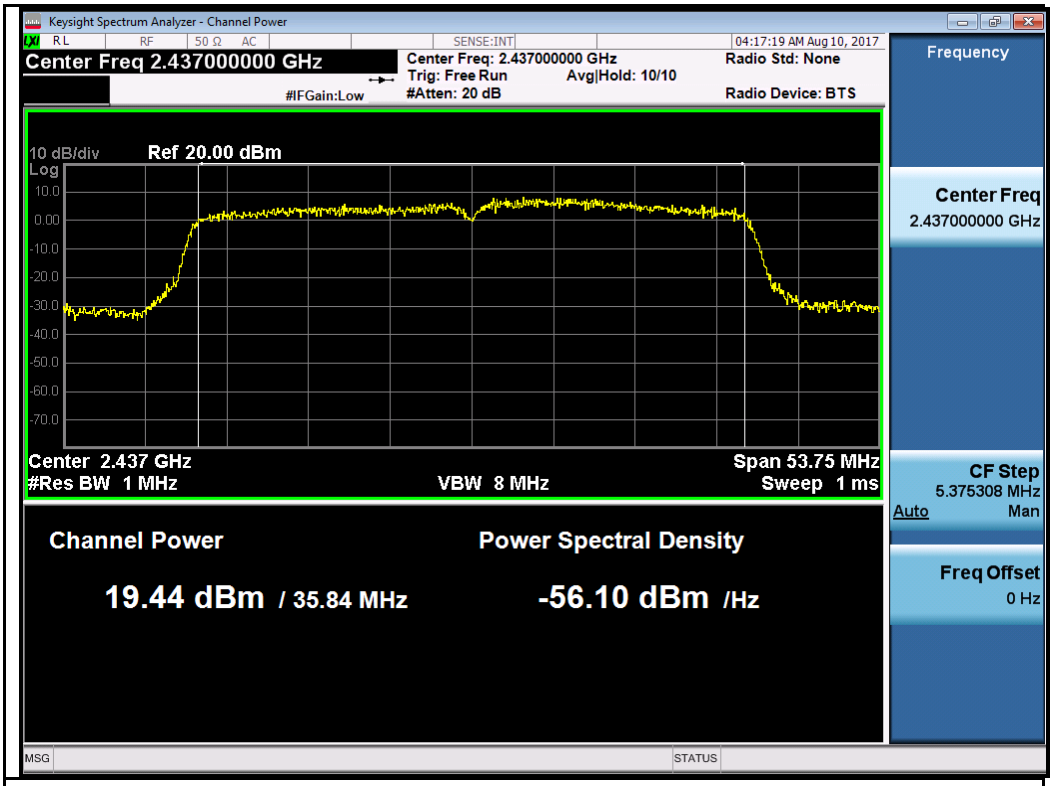
802.11n-HT40 2422MHz Chain 3



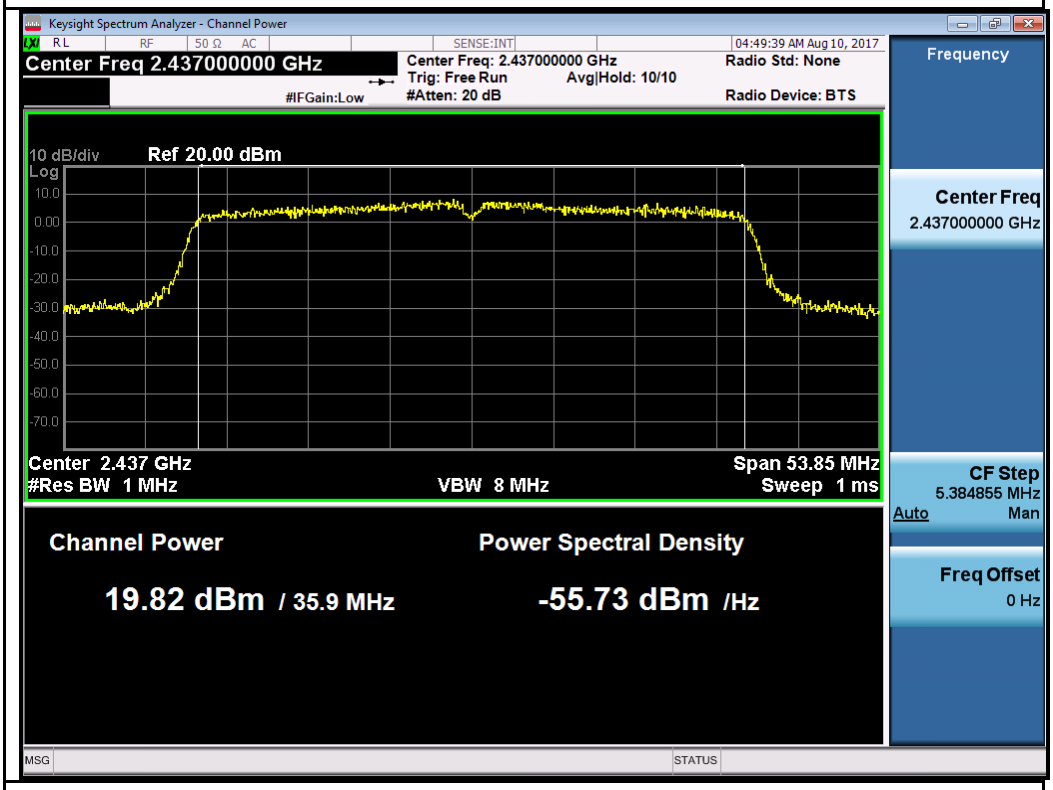
802.11n-HT40 2437MHz Chain 0



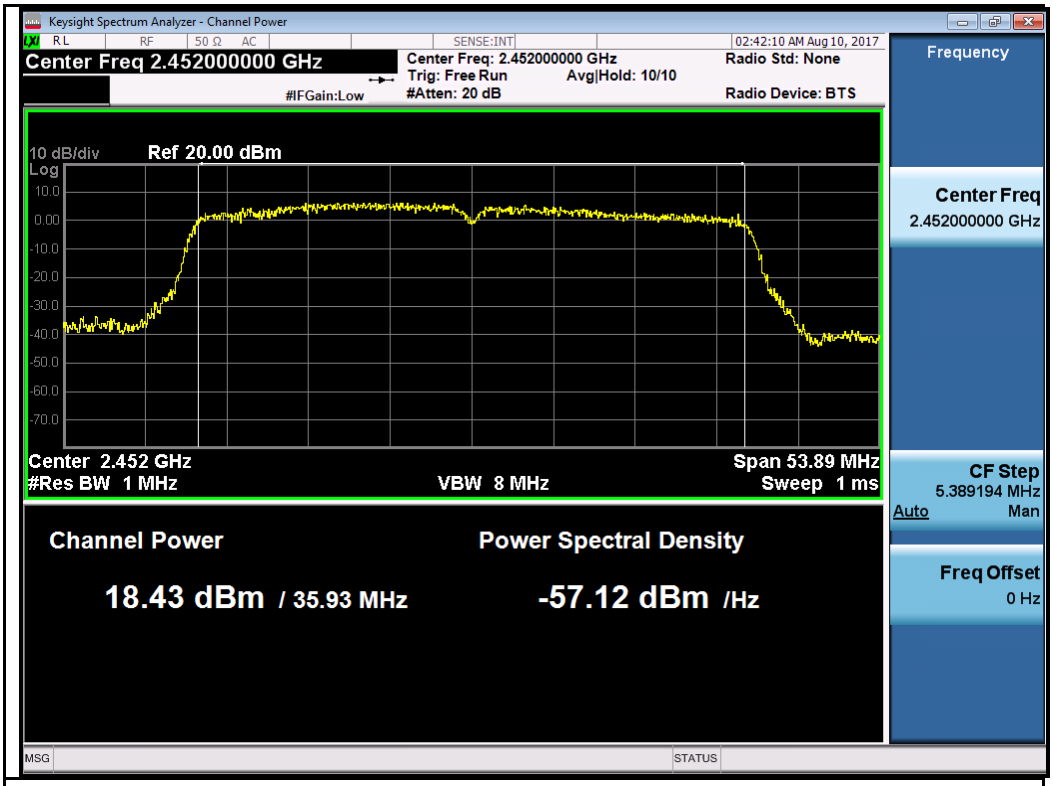
802.11n-HT40 2437MHz Chain 1



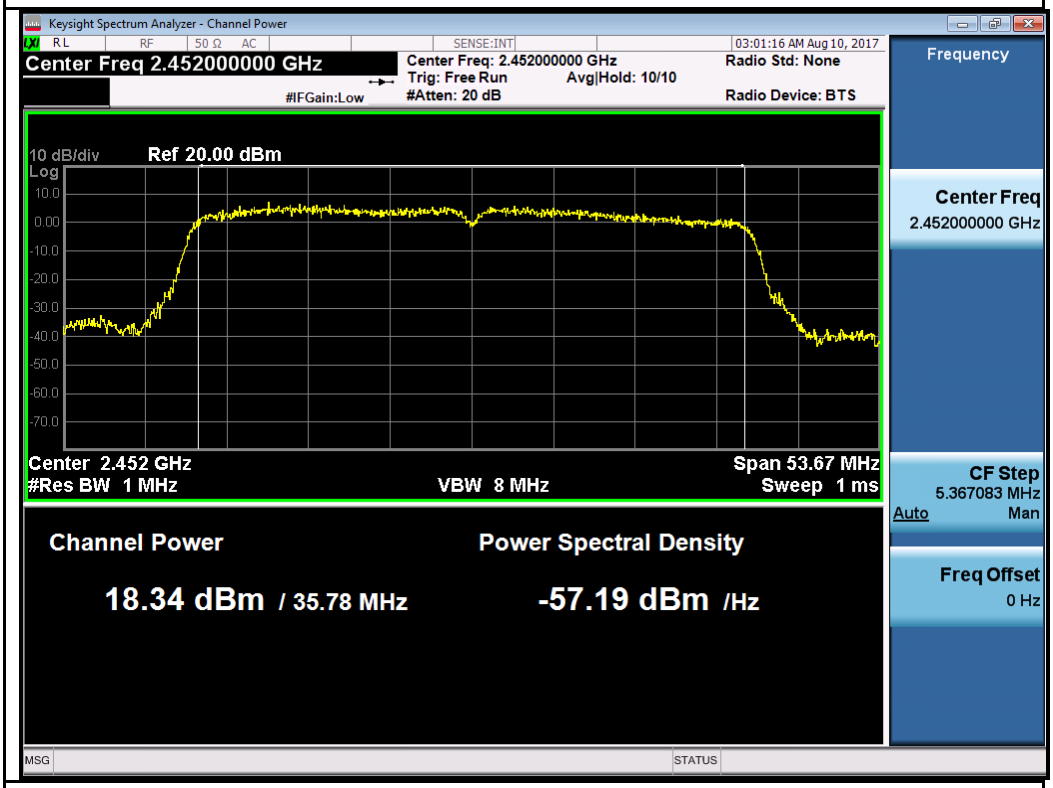
802.11n-HT40 2437MHz Chain 2



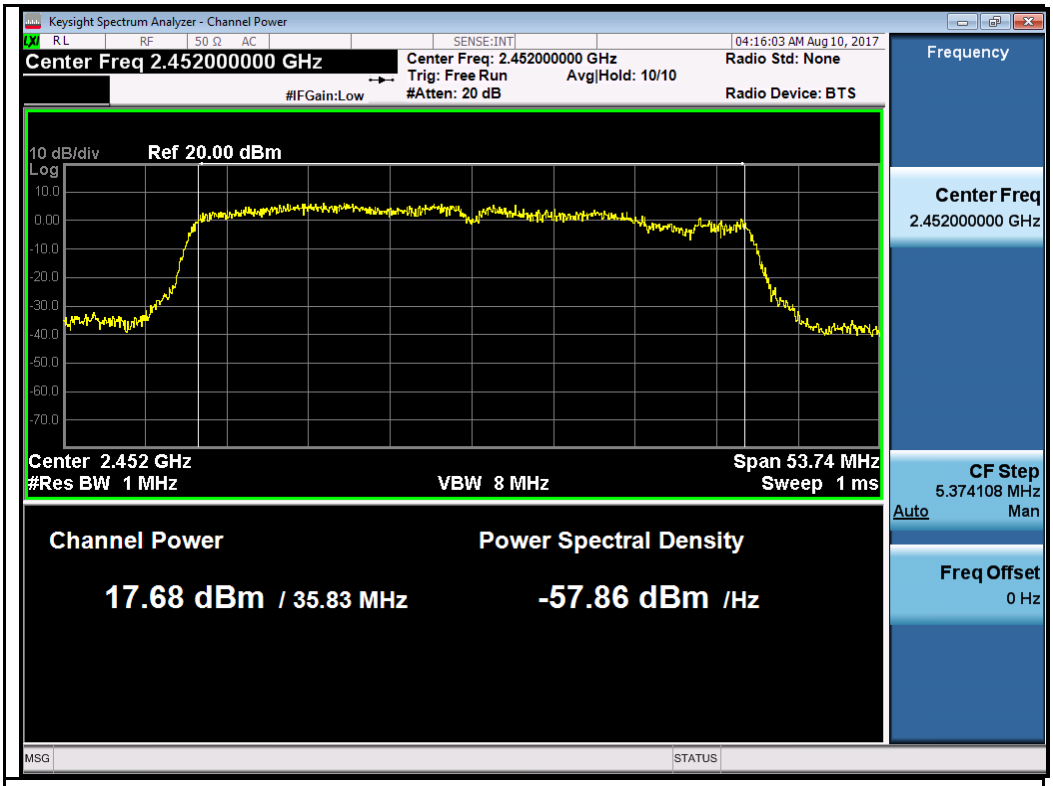
802.11n-HT40 2437MHz Chain 3



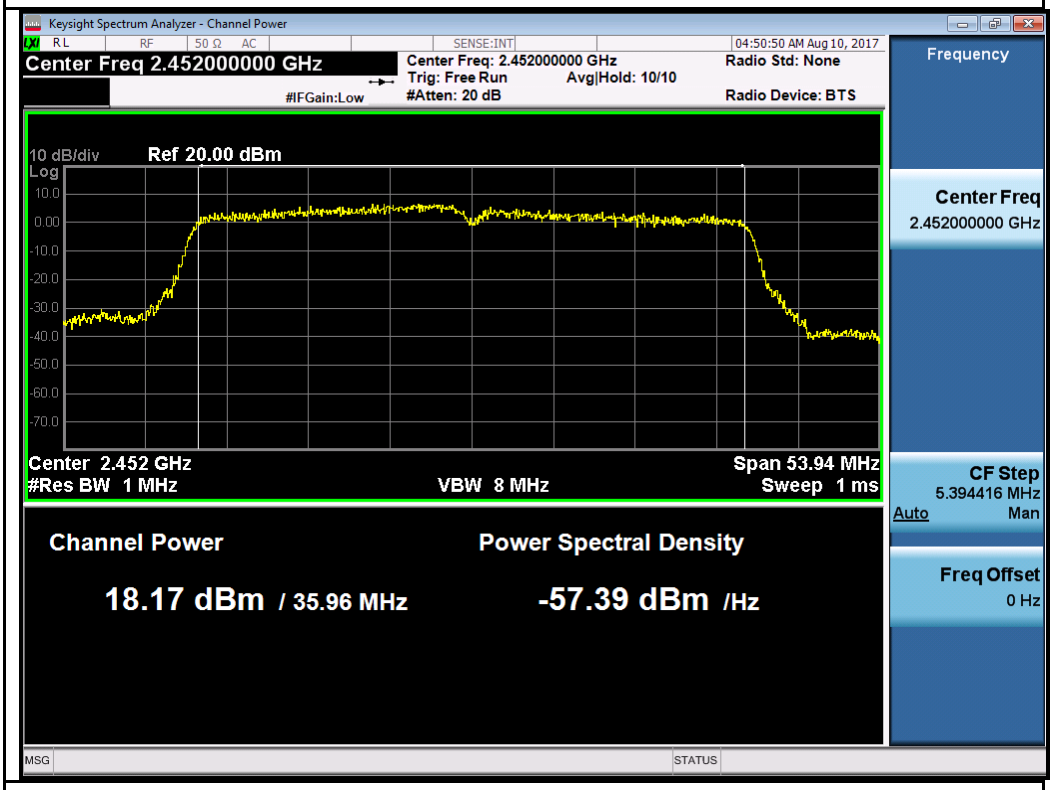
802.11n-HT40 2452MHz Chain 0



802.11n-HT40 2452MHz Chain 1



802.11n-HT40 2452MHz Chain 2

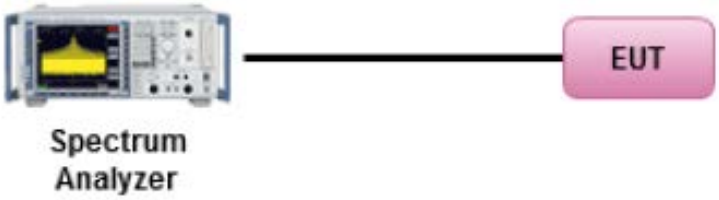


802.11n-HT40 2452MHz Chain 3

10.4 Band Edge

Requirement(s):

Spec	Item	Requirement	Applicable
§ 15.247 RSS 247(5.5)	d)	For non-restricted band, 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 20 dB or 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, determined by the measurement method on output power to be used. Attenuation below the general limits specified in § 15.209 (a) is not required ☐ 20 dB down ☒ 30 dB down	☒

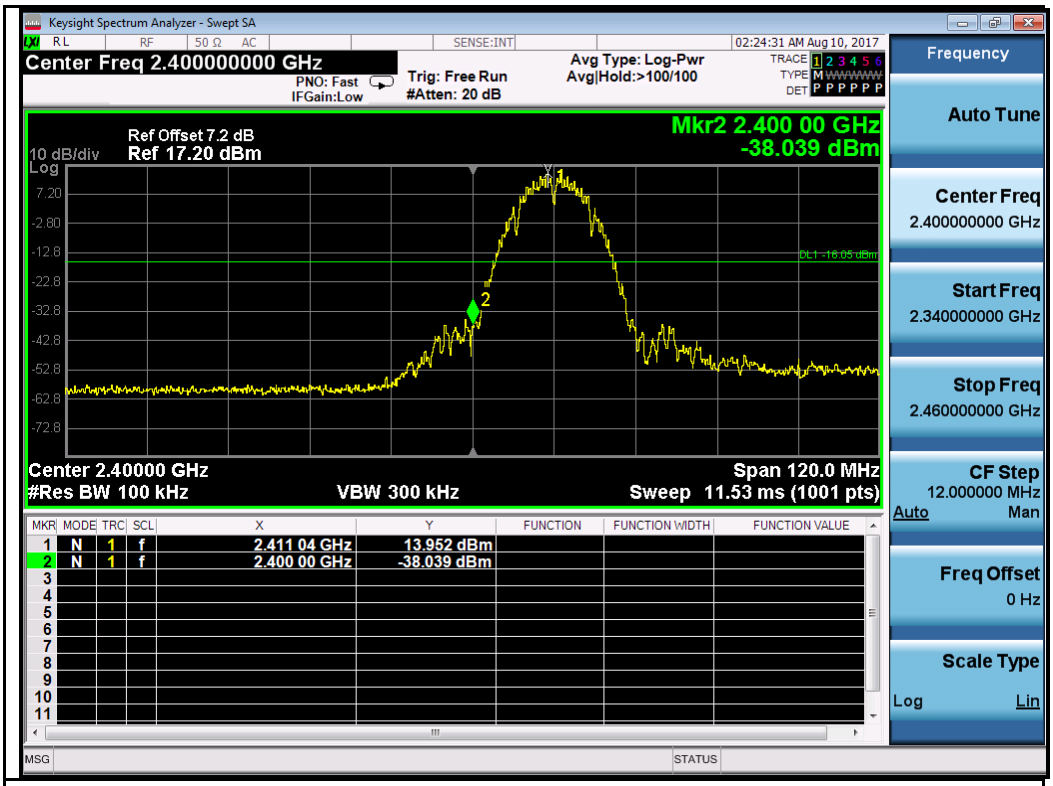
Test Setup				
Test Procedure	558074 D01 DTS Meas Guidance v04 Band Edge measurement procedure 1. Set the EUT to maximum power setting and enable the EUT transmit continuously. 2. Band edge emissions must be at least 30 dB down from the highest emission level within the authorized band as a measured. The attunation shall be be 30 dB instead of 20 dB when Peak conducted output power procedure is used. 3. Change modulation and channel bandwidth then repeat step 1 to 2. 4. Measured and record the results in the test report.			
Test Date	08/10/2017	Environmental condition	Temperature Relative Humidity Atmospheric Pressure	22ºC 46% 1020mbar
Remark	-			
Result	☒ Pass ☐ Fail			

Test Data ☐ Yes ☒ N/A

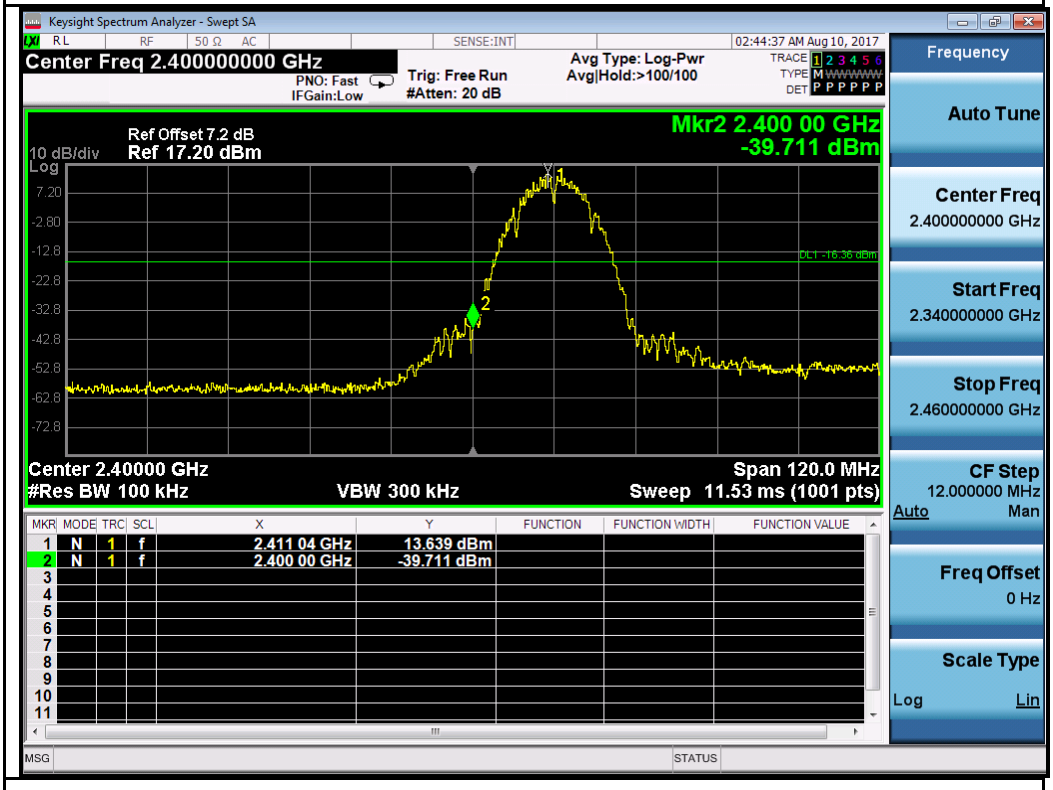
Test Plot ☒ Yes (See below) ☐ N/A

Test was done by Rachana Khanduri at RF test site.

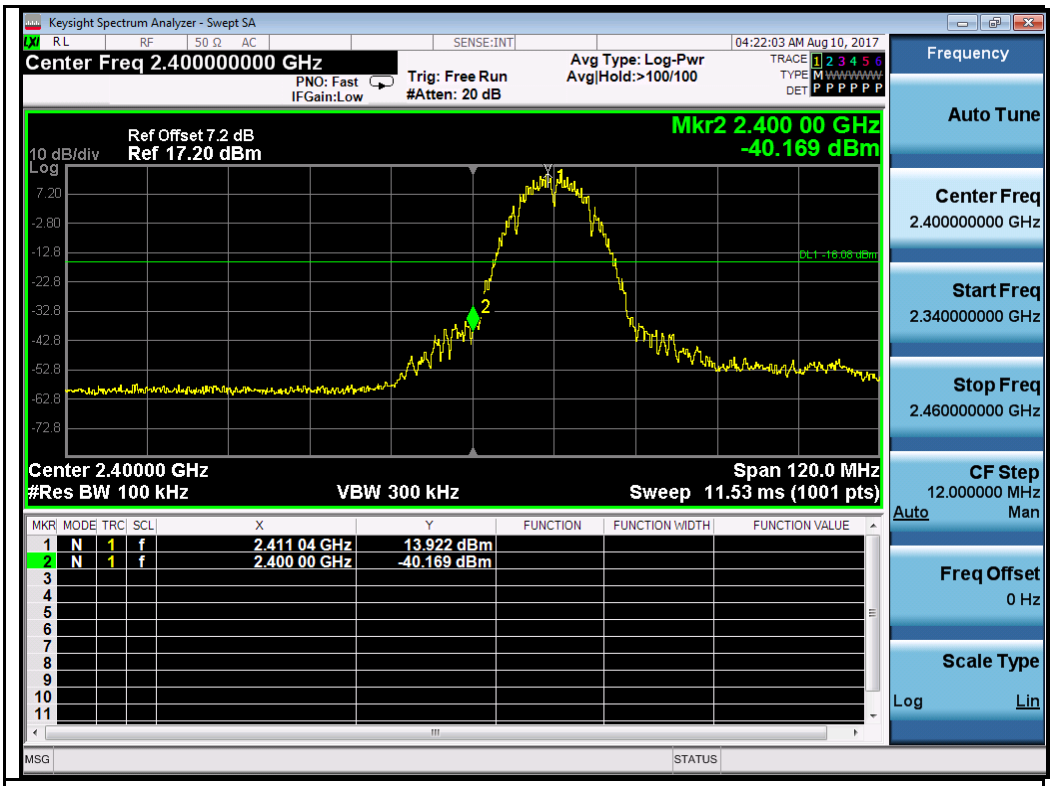
Test Plots



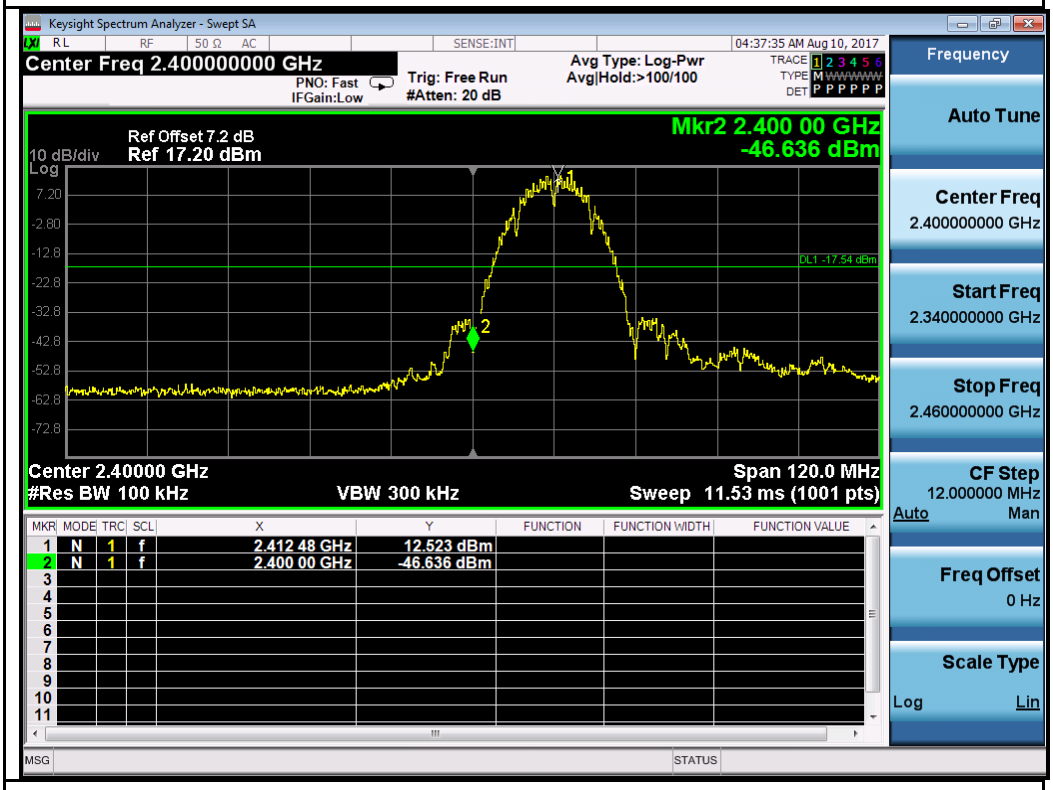
802.11b-2412MHz Chain 0



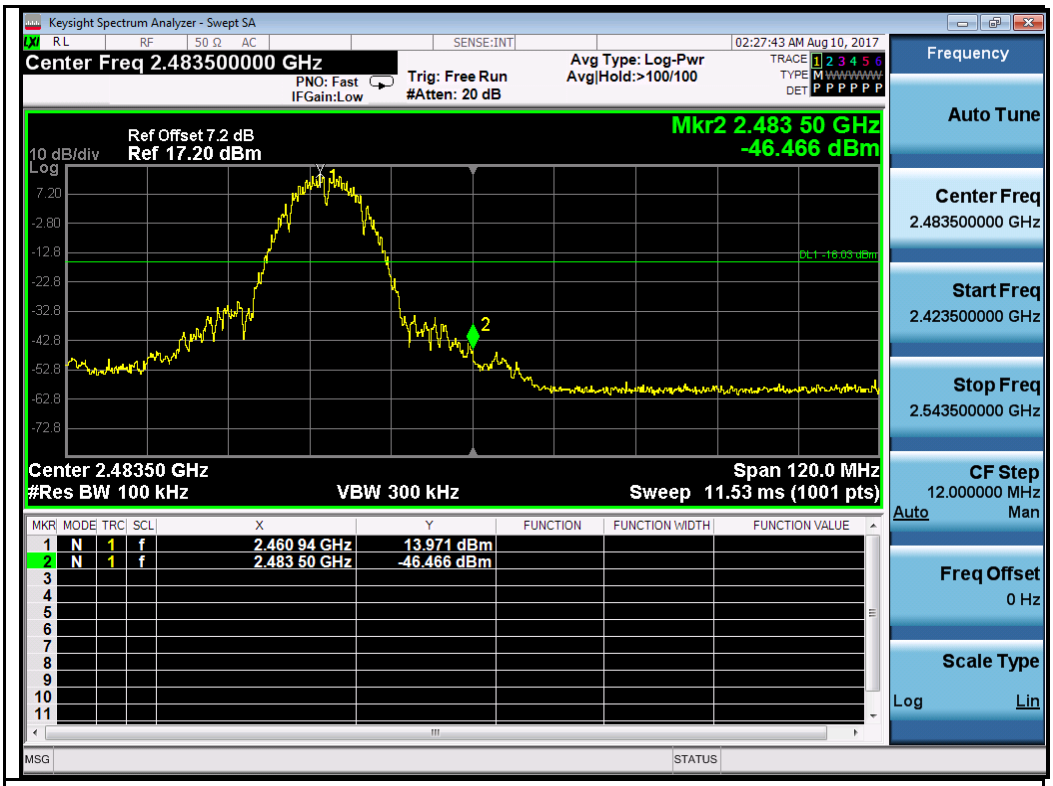
802.11b-2412MHz Chain 1



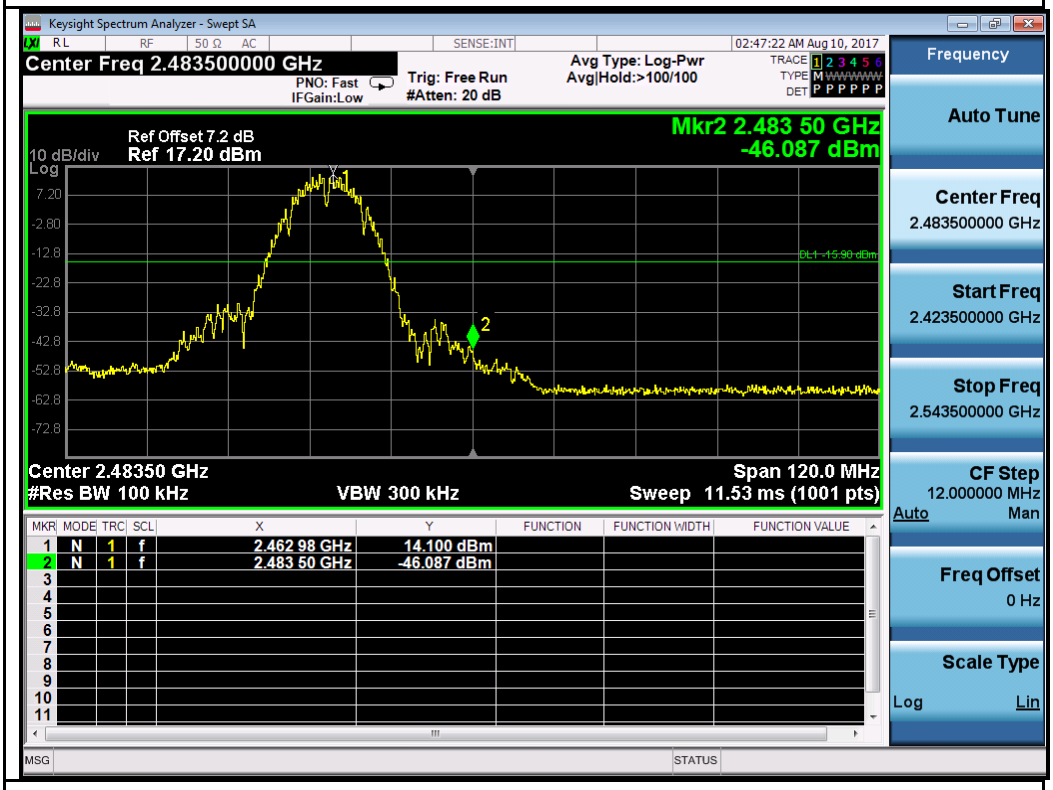
802.11b-2412MHz Chain 2



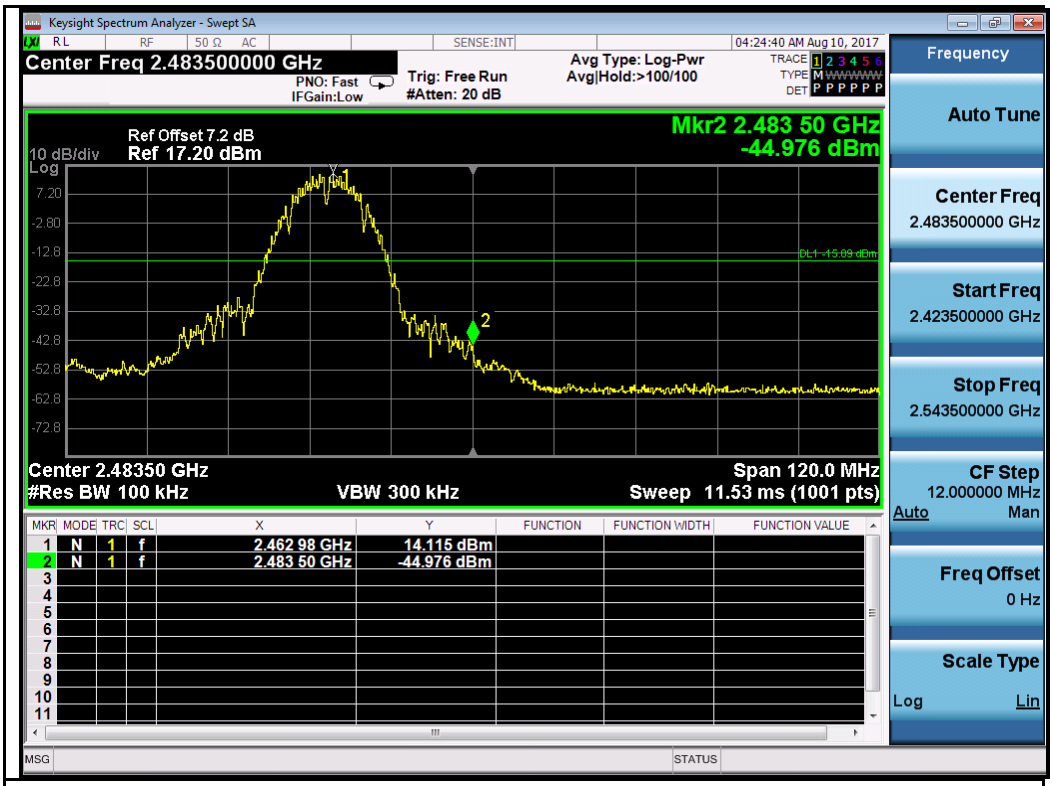
802.11b-2412MHz Chain 3



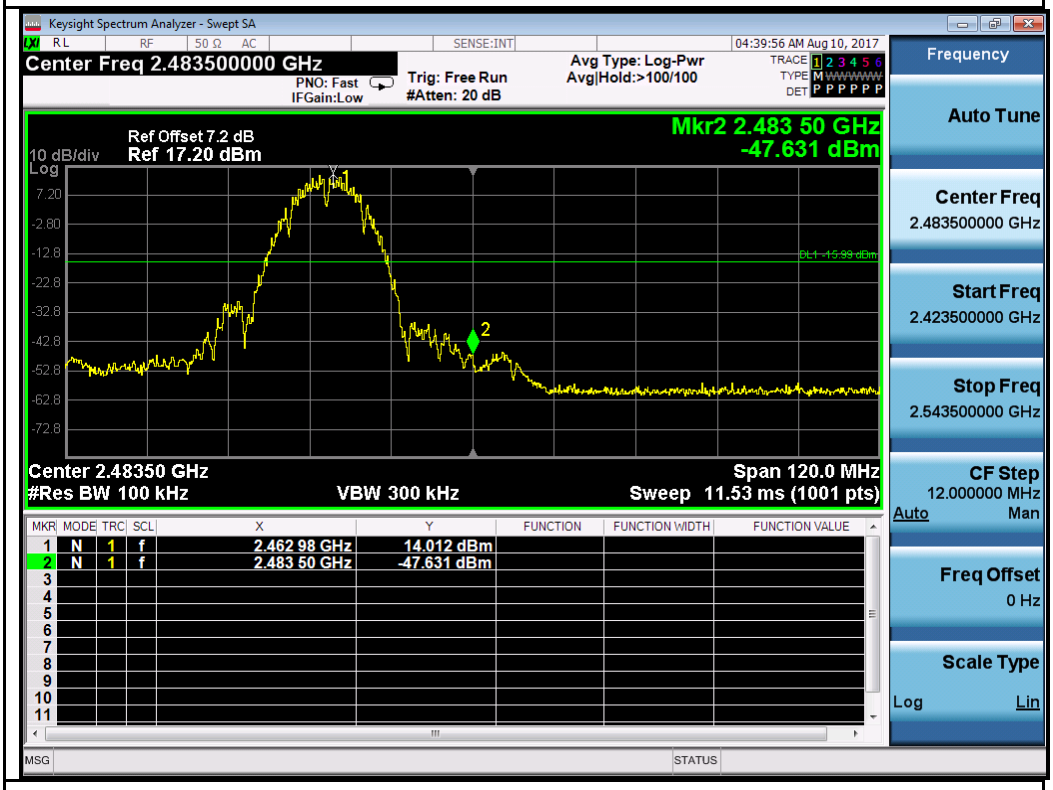
802.11b-2462MHz Chain 0



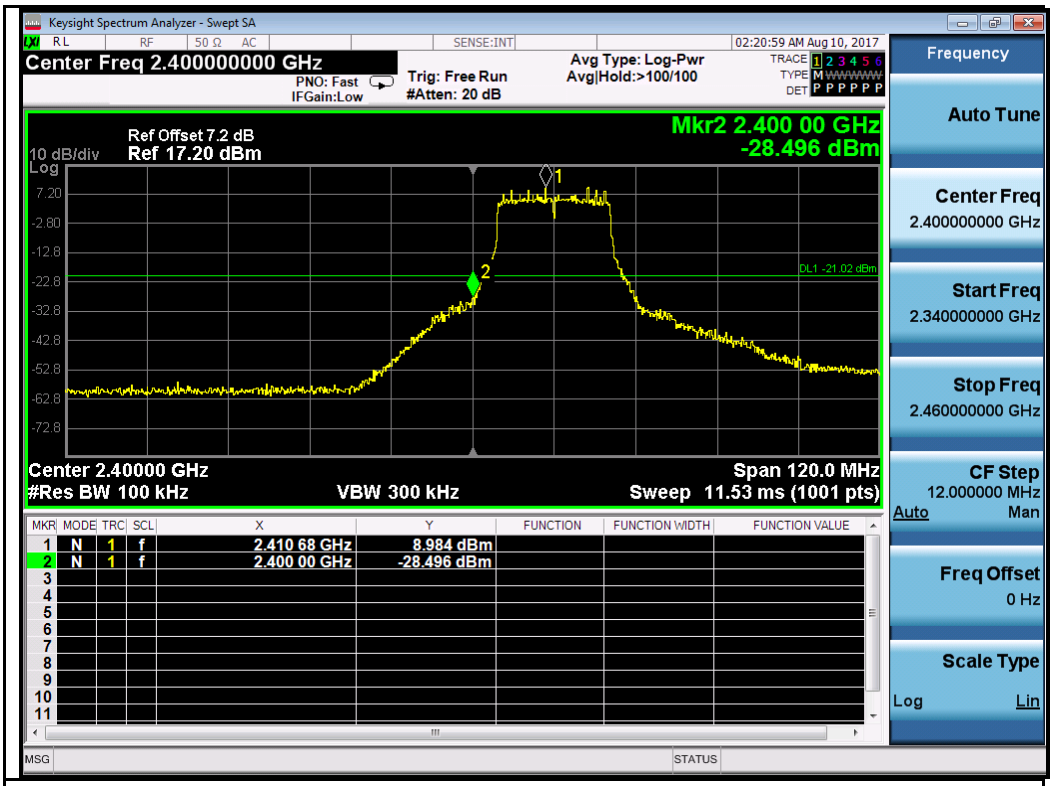
802.11b-2462MHz Chain 1



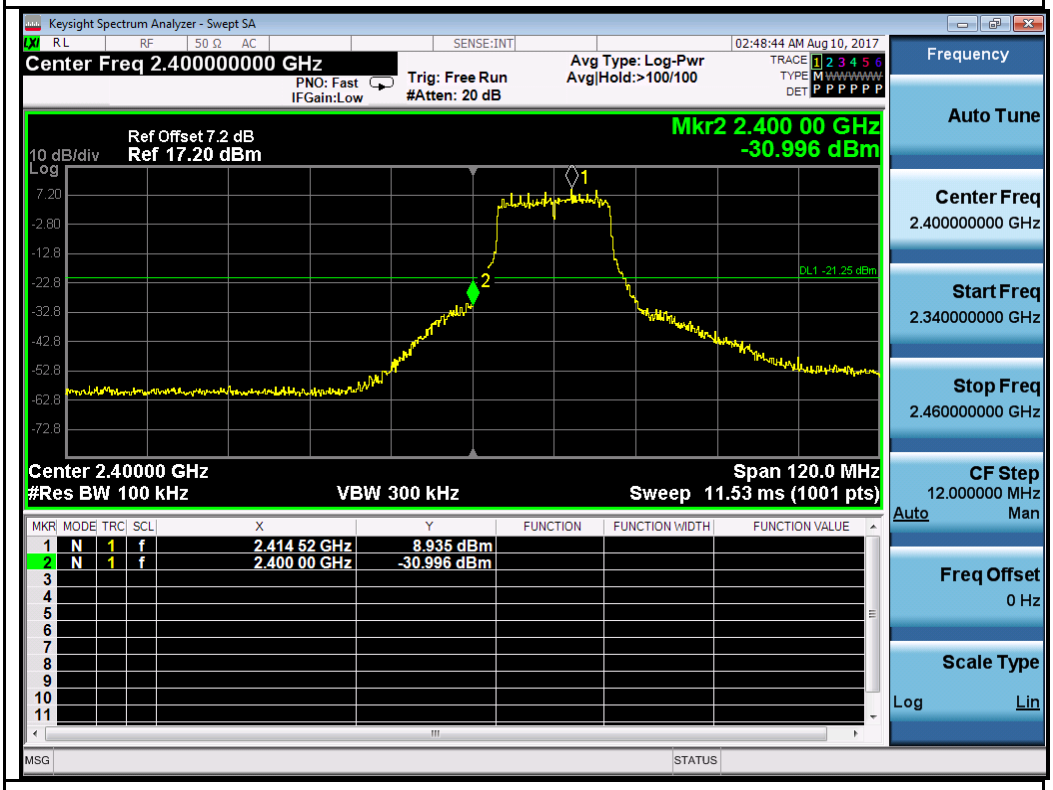
802.11b-2462MHz Chain 2



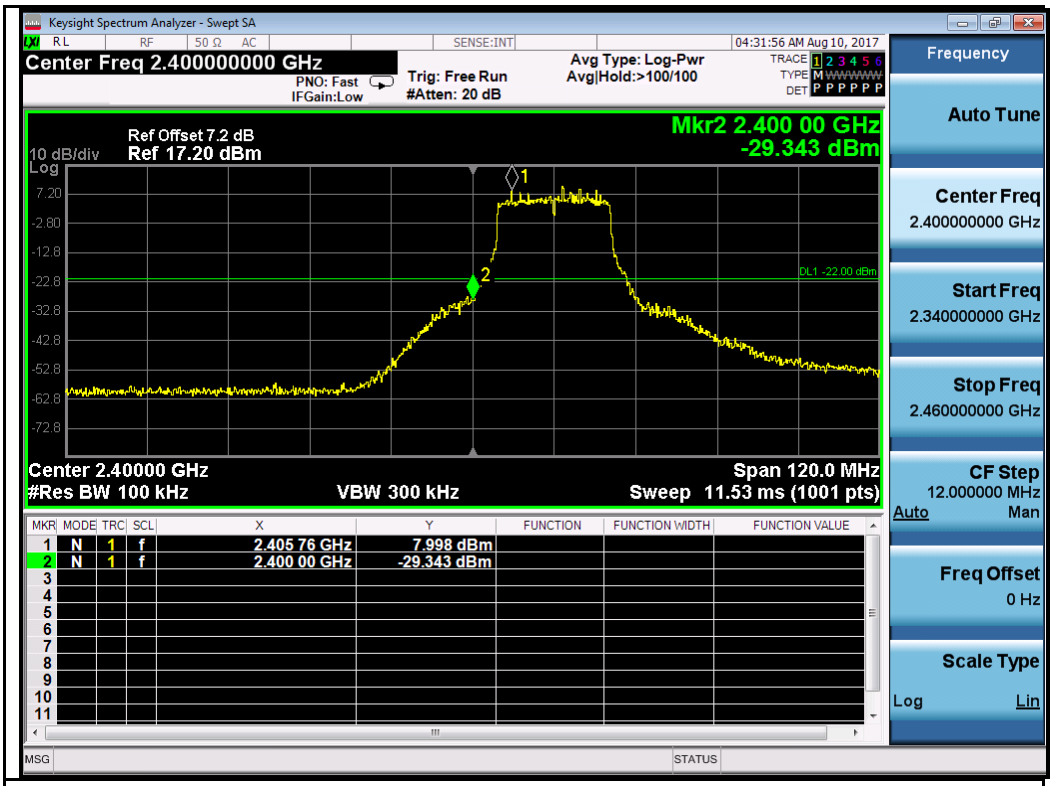
802.11b-2462MHz Chain 3



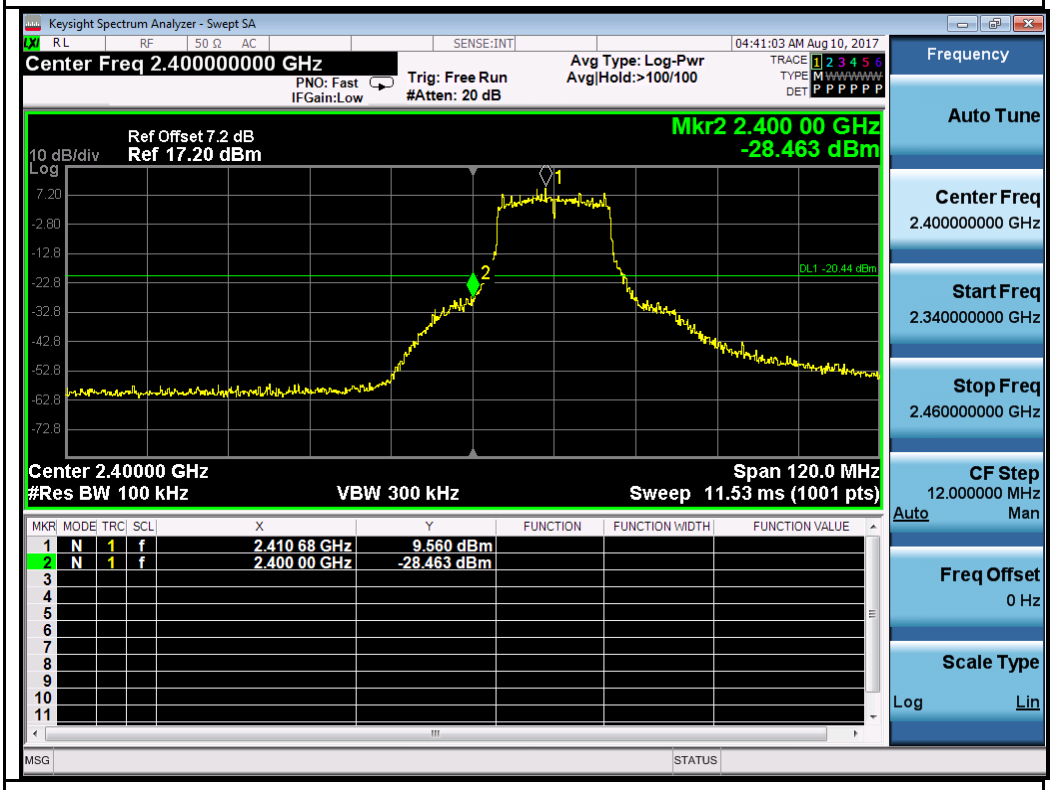
802.11g-2412MHz Chain 0



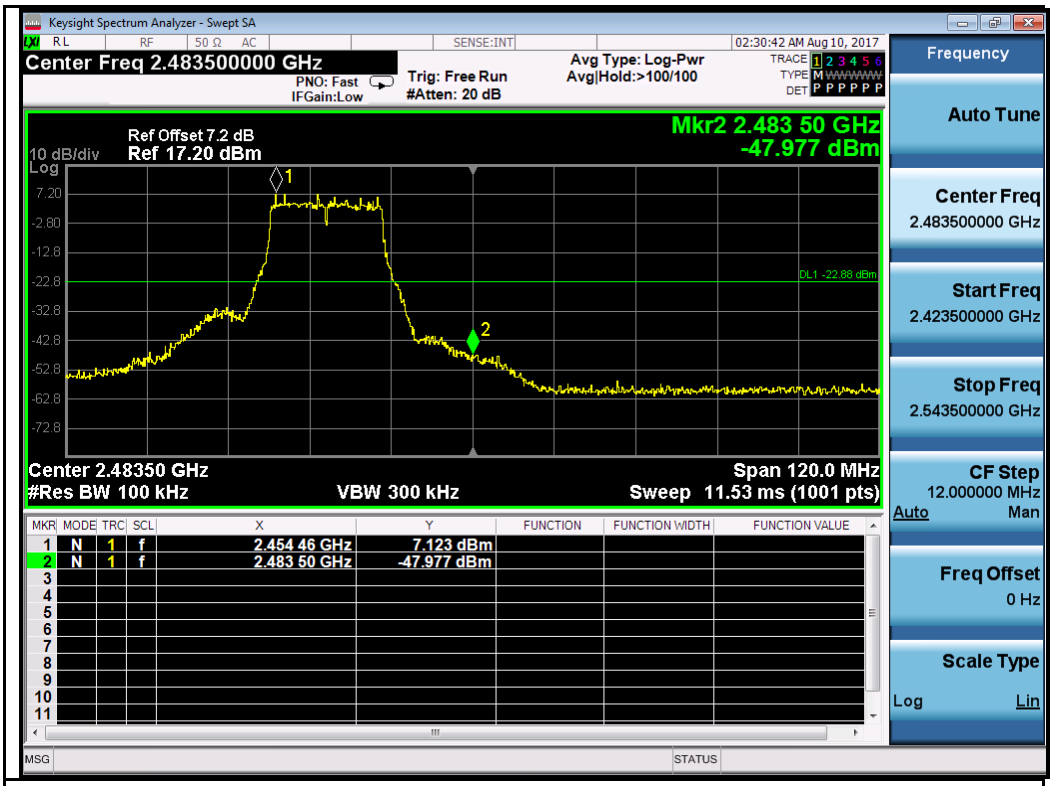
802.11g-2412MHz Chain 1



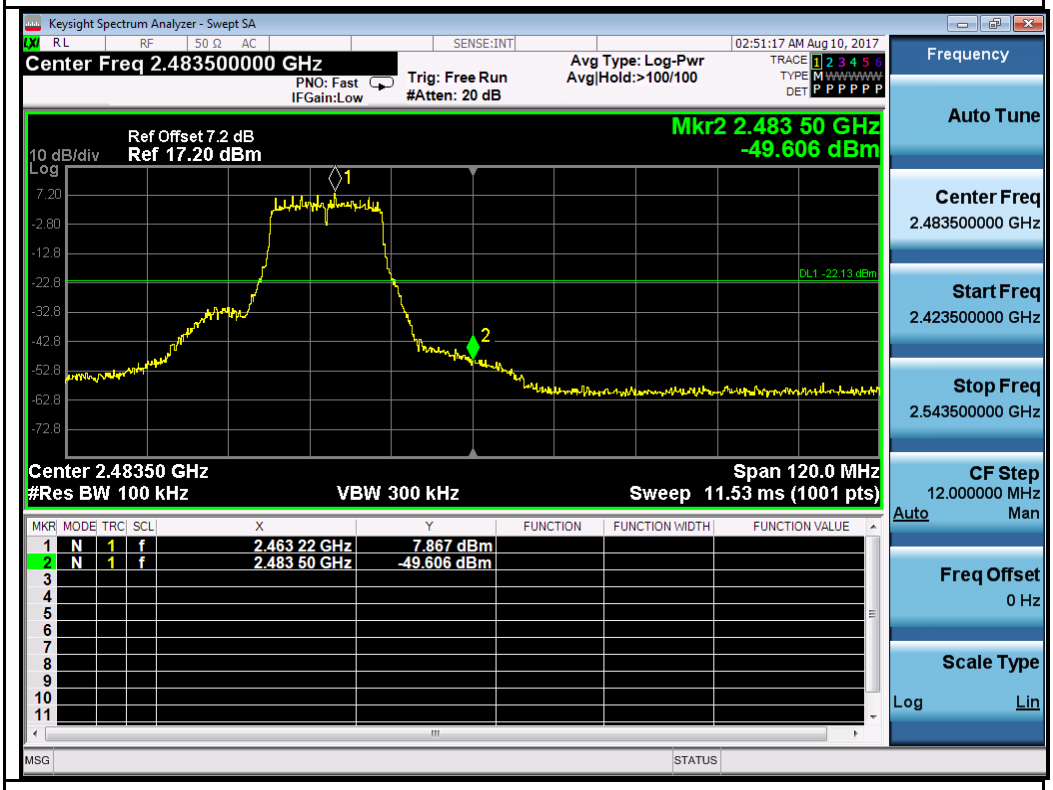
802.11g-2412MHz Chain 2



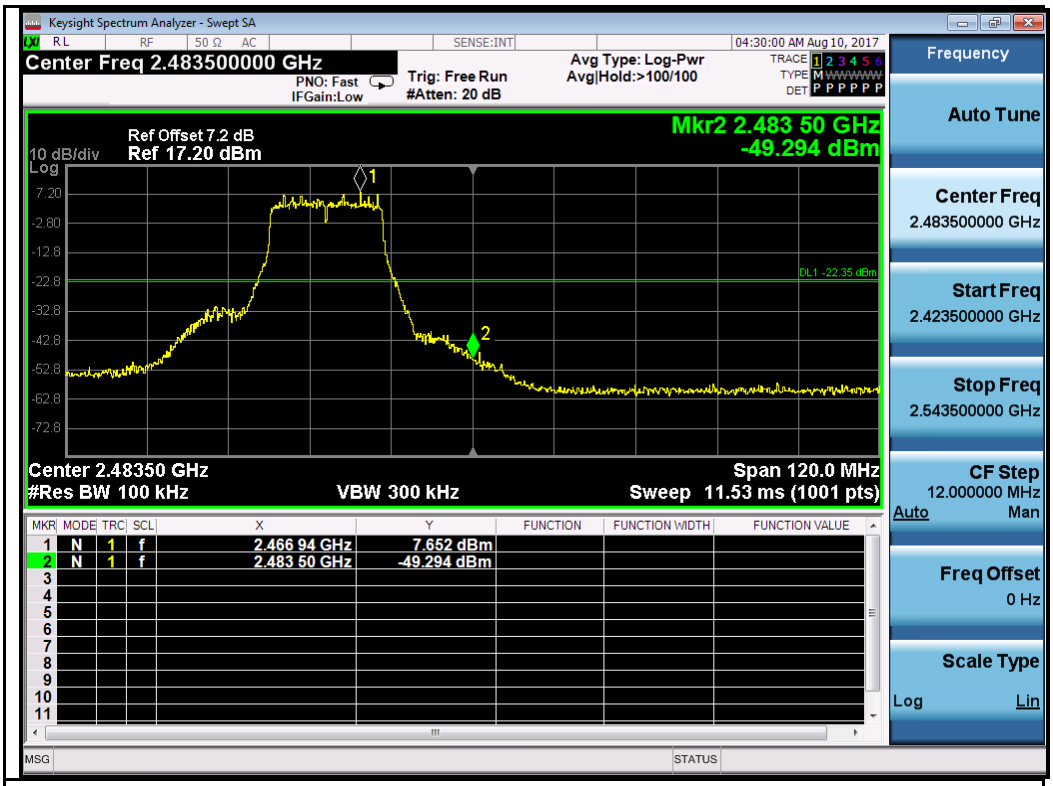
802.11g-2412MHz Chain 3



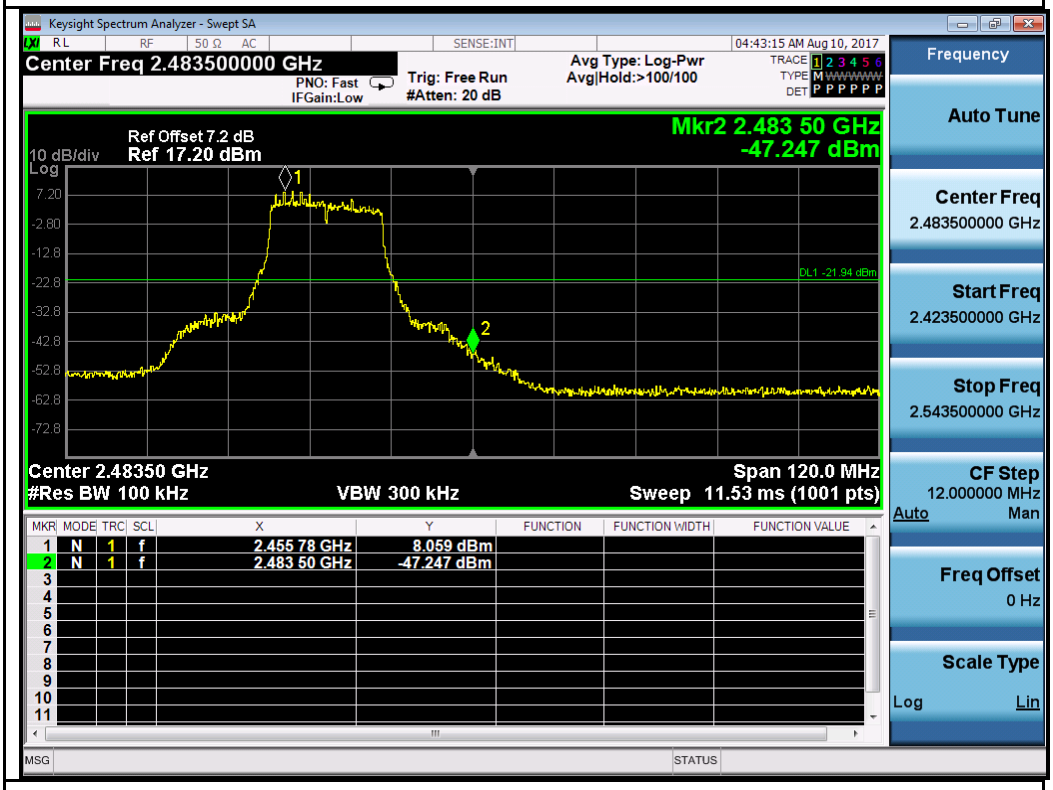
802.11g-2462MHz Chain 0



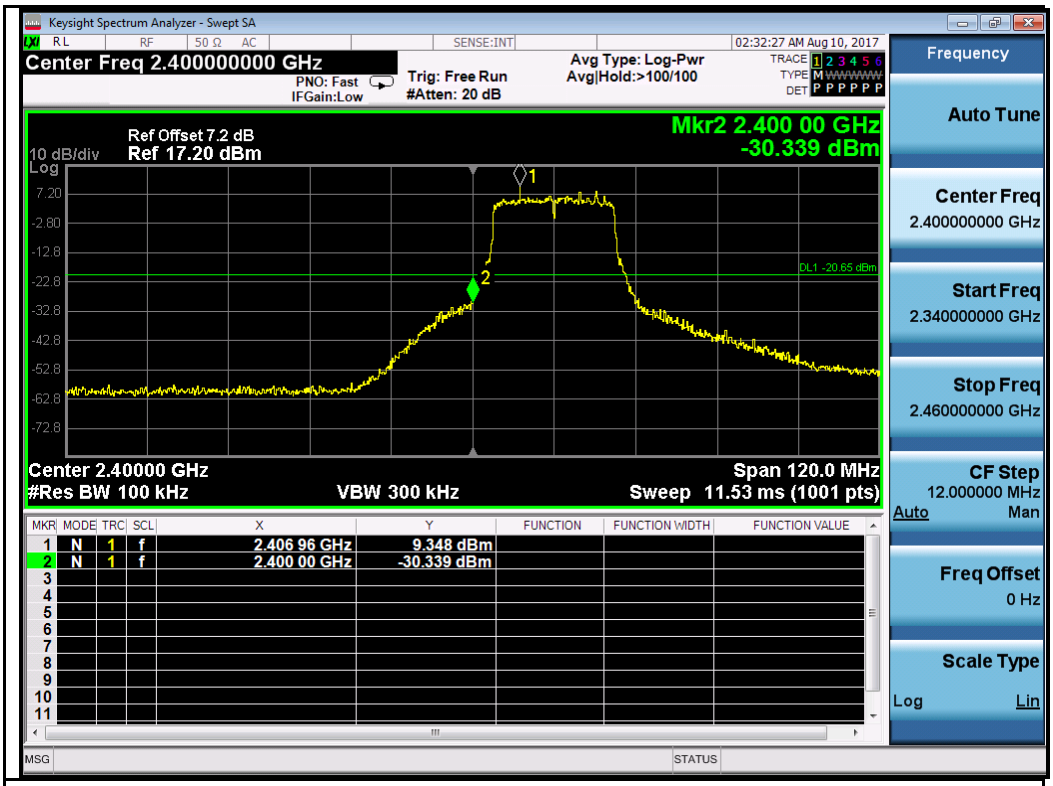
802.11g-2462MHz Chain 1



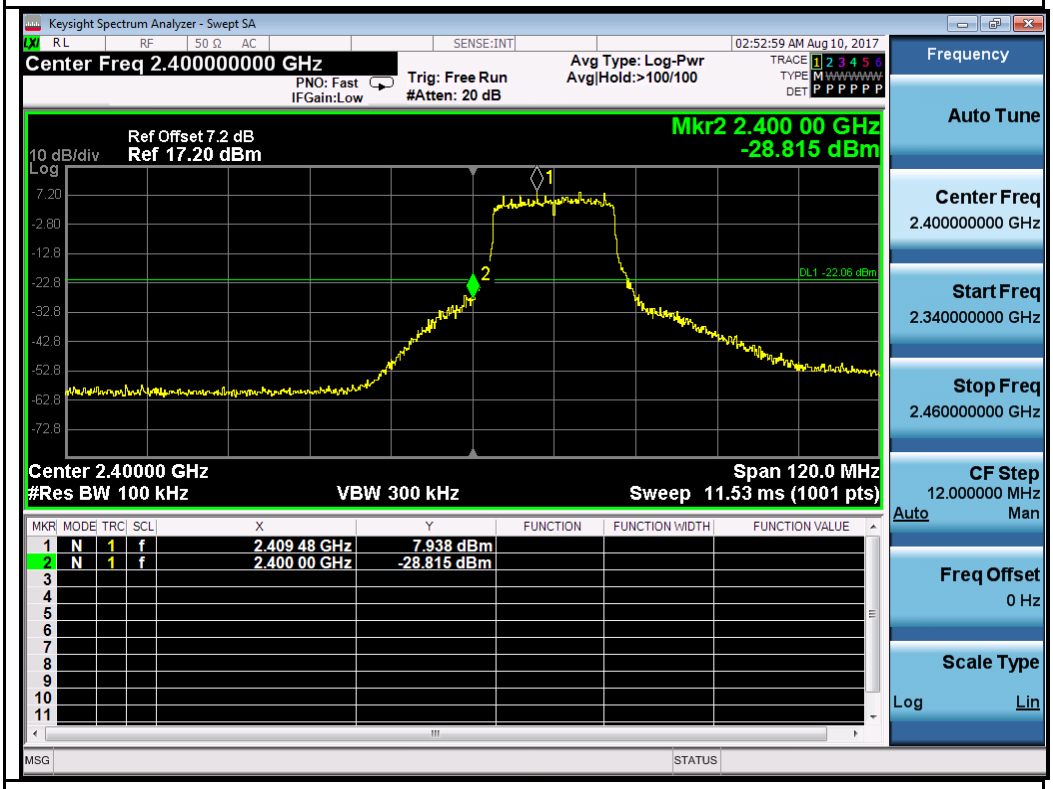
802.11g-2462MHz Chain 2



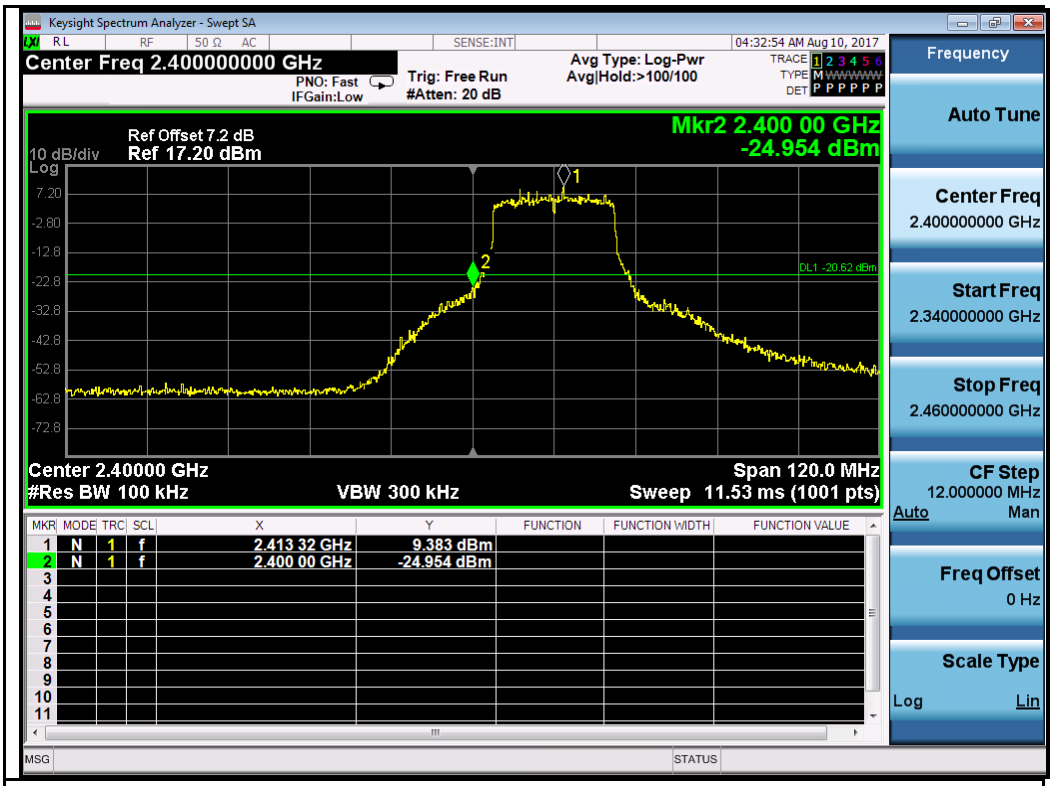
802.11g-2462MHz Chain 3



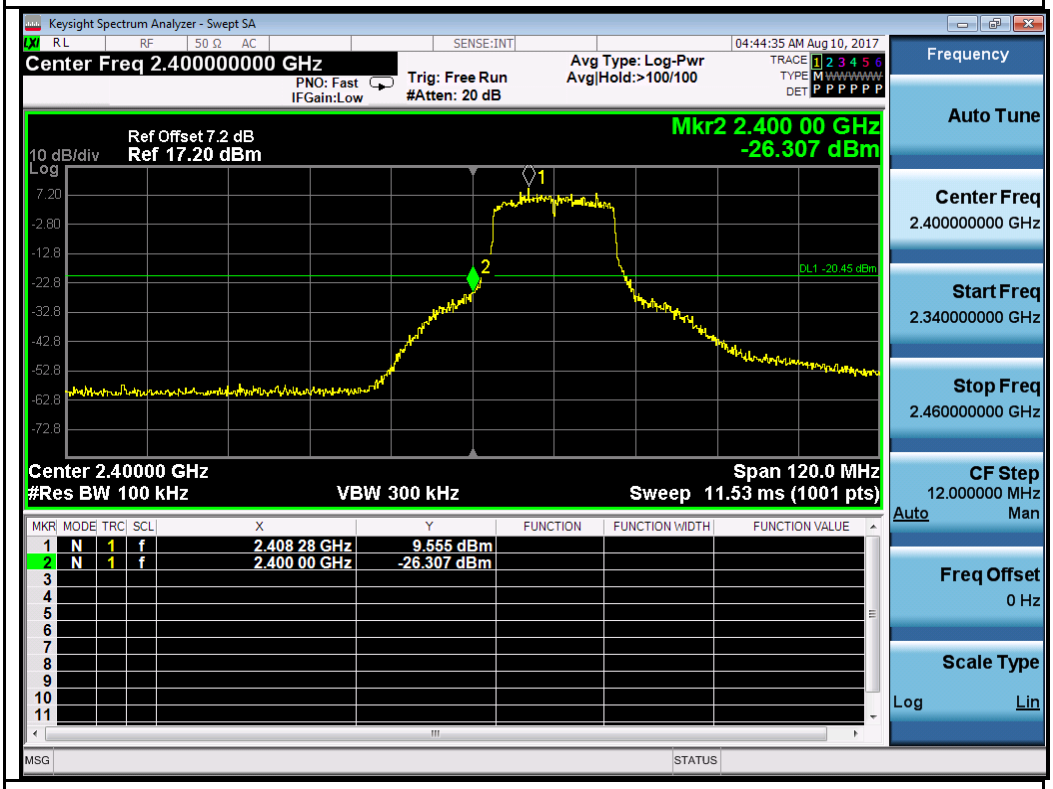
802.11n-HT20-2412MHz Chain 0



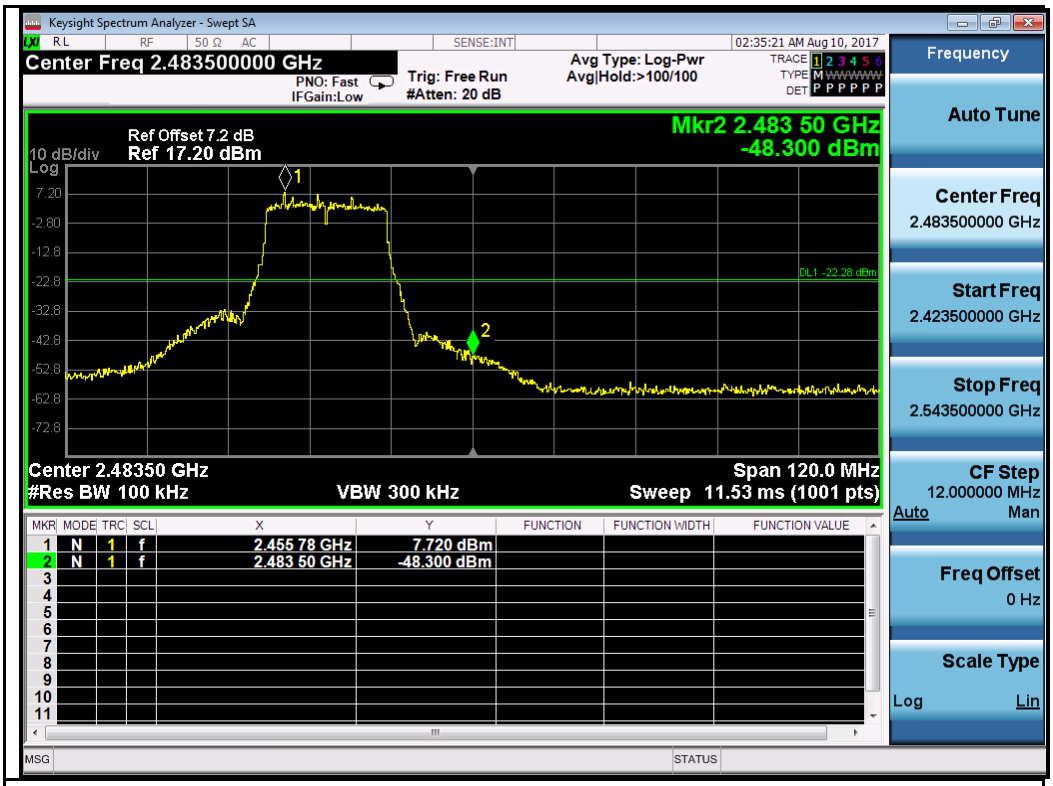
802.11n-HT20-2412MHz Chain 1



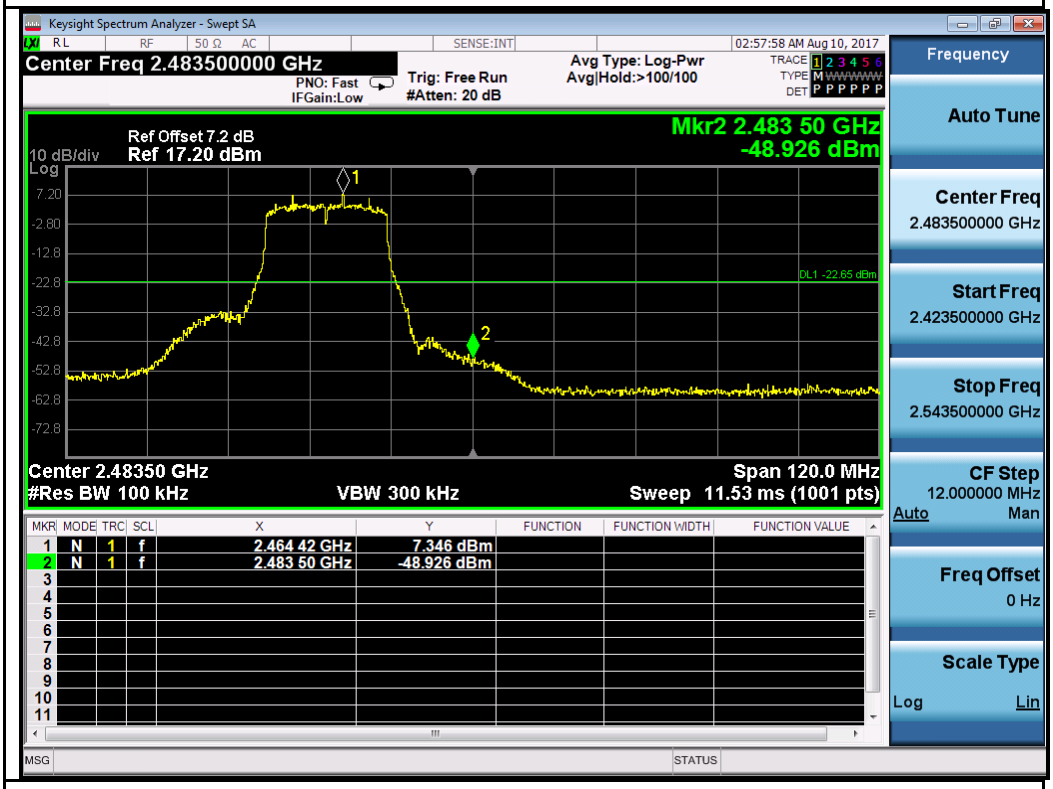
802.11n-HT20-2412MHz Chain 2



802.11n-HT20-2412MHz Chain 3



802.11n-HT20-2462MHz Chain 0



802.11n-HT20-2462MHz Chain 1