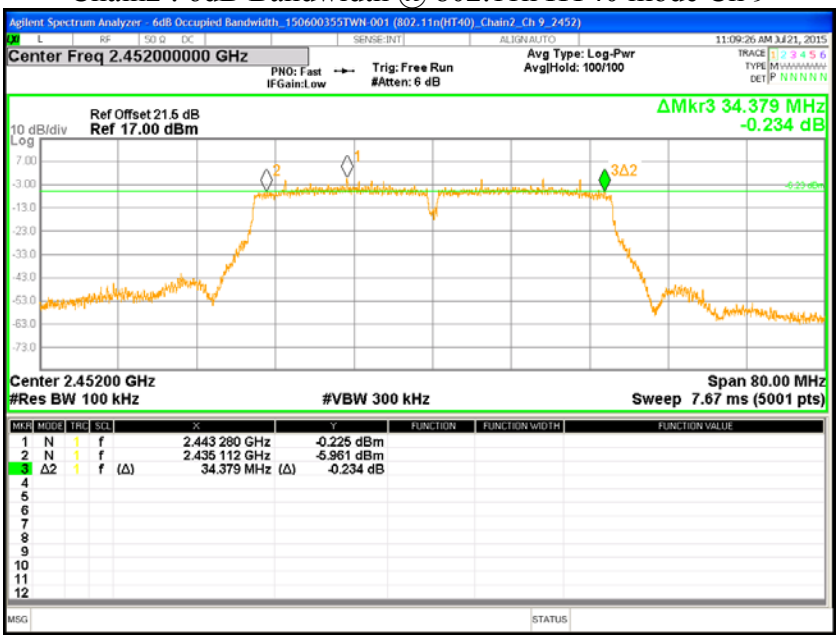
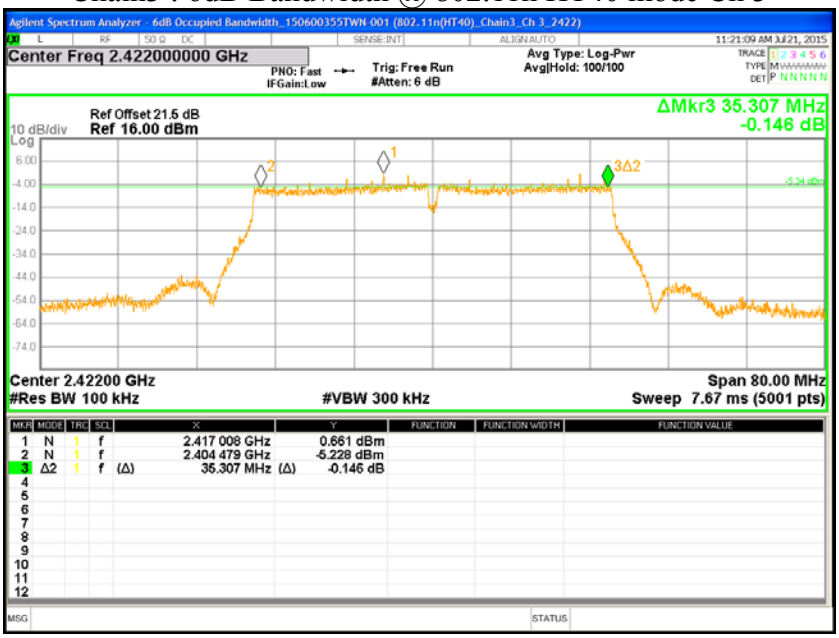
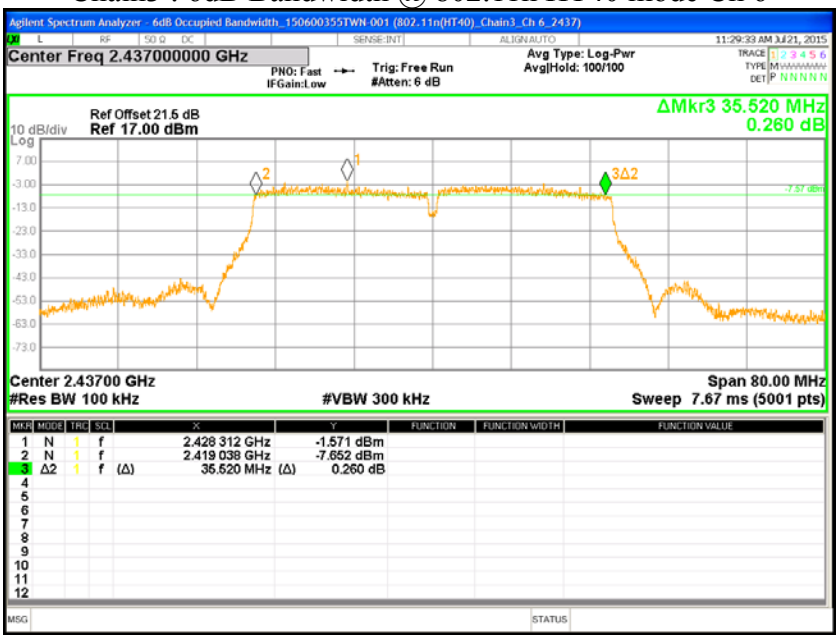
Chain2 : 6dB Bandwidth @ 802.11n HT40 mode Ch 9



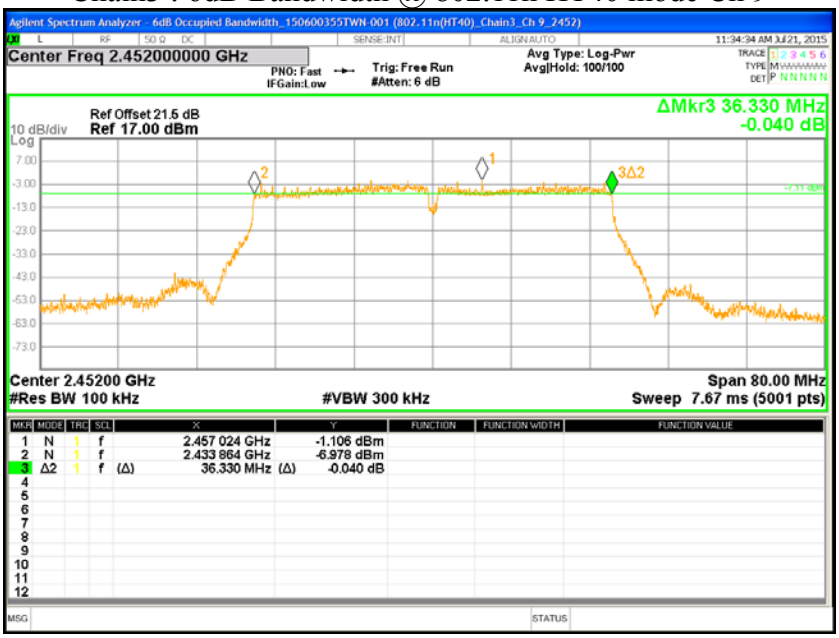
Chain3 : 6dB Bandwidth @ 802.11n HT40 mode Ch 3



Chain3 : 6dB Bandwidth @ 802.11n HT40 mode Ch 6



Chain3 : 6dB Bandwidth @ 802.11n HT40 mode Ch 9



4. Maximum Peak Conducted Output Power

4.1 Operating environment

Temperature:	25	℃
Relative Humidity:	50	%
Atmospheric Pressure	1008	hPa
Requirement & Test method	15.247(b)(3) KDB 558074 D01 v03r03	

4.2 Limit for maximum peak conducted output power

For systems using digital modulation in the 2400-2483.5 MHz: 1 Watt (30dBm)

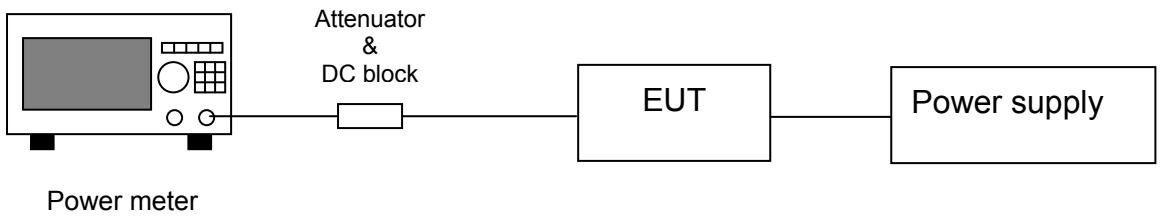
4.3 Measuring instrument setting

Power meter	
Power meter	**Setting**
Bandwidth	65MHz bandwidth is greater than the EUT emission bandwidth
Detector	Average

4.4 Test procedure

Test procedures refer to clause 9.1.2 peak power meter method and clause 9.2.3.2 measurement using a gated RF average power meter of KDB 558074 D01.

4.5 Test diagram



4.6 Test result

Single TX

Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Output Power (AV) (dBm)	Total Power (AV) (mW)	Limit (dBm)	Margin (dB)
802.11b (chain0)	1	2412	1	21.8	151.36	30	-8.20
	6	2437		24.2	263.03	30	-5.80
	11	2462		22	158.49	30	-8.00
802.11b 11b(chain1)	1	2412	1	21.9	154.88	30	-8.10
	6	2437		24.2	263.03	30	-5.80
	11	2462		22.1	162.18	30	-7.90
802.11b (chain2)	1	2412	1	21.8	151.36	30	-8.20
	6	2437		24.1	257.04	30	-5.90
	11	2462		22.1	162.18	30	-7.90
802.11b (chain3)	1	2412	1	22.1	162.18	30	-7.90
	6	2437		24.5	281.84	30	-5.50
	11	2462		22.4	173.78	30	-7.60
802.11g (chain0)	1	2412	6	18.3	67.61	30	-11.70
	6	2437		21.4	138.04	30	-8.60
	11	2462		18.4	69.18	30	-11.60
802.11g (chain1)	1	2412	6	18.2	66.07	30	-11.80
	6	2437		21.5	141.25	30	-8.50
	11	2462		18.4	69.18	30	-11.60
802.11g (chain2)	1	2412	6	18.1	64.57	30	-11.90
	6	2437		21.4	138.04	30	-8.60
	11	2462		18.2	66.07	30	-11.80
802.11g (chain3)	1	2412	6	18.2	66.07	30	-11.80
	6	2437		21.2	131.83	30	-8.80
	11	2462		18.4	69.18	30	-11.60

4TX

Mode	Ch	Freq. (MHz)	Data Rate (Mbps)	Output Power (dBm)				Output Power (mW)				Total Power (dBm)		Limit (dBm)	Margin (dB)
				Chian 0	Chain 1	Chain 2	Chain 3	Chain 0	Chian 1	Chian 2	Chain 3	AV			
				AV	AV	AV	AV	AV	AV	AV	AV	0+1+2+3 (mW)	0+1+2+3 (dBm)		
802.11n HT20	1	2412	6.5	16.57	16.16	16.75	16.63	45.39	41.30	47.32	46.03	180.04	22.55	30	-7.45
	6	2437		21.4	21.2	21.4	21.3	138.04	131.83	138.04	134.90	542.80	27.35	30	-2.65
	11	2462		16.53	16.53	16.44	16.54	44.98	44.98	44.06	45.08	179.09	22.53	30	-7.47
802.11n HT40	3	2422	13.5	12.91	12.95	13.47	13.91	19.54	19.72	22.23	24.60	86.10	19.35	30	-10.65
	6	2437		21.4	21.2	21.3	21.4	138.04	131.83	134.90	138.04	542.80	27.35	30	-2.65
	9	2452		13.25	12.96	13.35	13.28	21.13	19.77	21.63	21.28	83.81	19.23	30	-10.77

5. Power Spectral Density

5.1 Operating environment

Temperature:	25	℃
Relative Humidity:	50	%
Atmospheric Pressure	1008	hPa
Requirement & Test method	15.247(e) KDB 558074 D01 v03r03	

5.2 Limit for power spectrum density

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

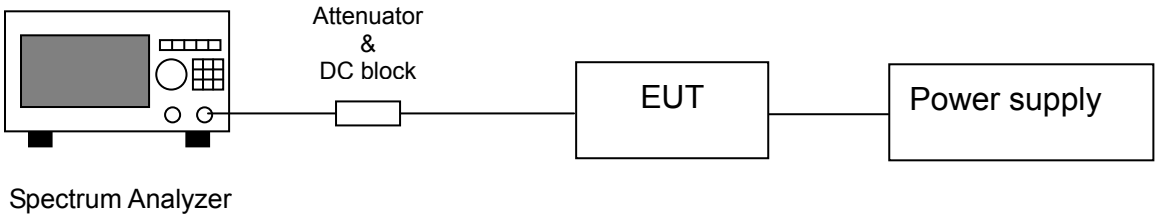
5.3 Measuring instrument setting

Spectrum analyzer settings	
Spectrum Analyzer function	**Setting**
Detector	Average
RBW	≧3 kHz
VBW	≧3 x RBW
Sweep	Auto couple
Trace	Max hold
Span	1.5 times x 6dB bandwidth
Attenuation	Auto

5.4 Test procedure

1. Test procedure refer to clause 10.3 method AVPSD (average PSD) of KDB 558074 D01 and clause E) 2) c) “Measure and add 10 log (n ANT) dB, where n is the number of outputs” of KDB 662911 D01.
2. Using the maximum conducted output power in the fundamental emission demonstrates compliance. The EUT must be configured to transmit continuously at full power over the measurement duration.
3. Use the peak marker function to determine the maximum amplitude level within the RBW.

5.5 Test diagram



5.6 Test results

Single TX

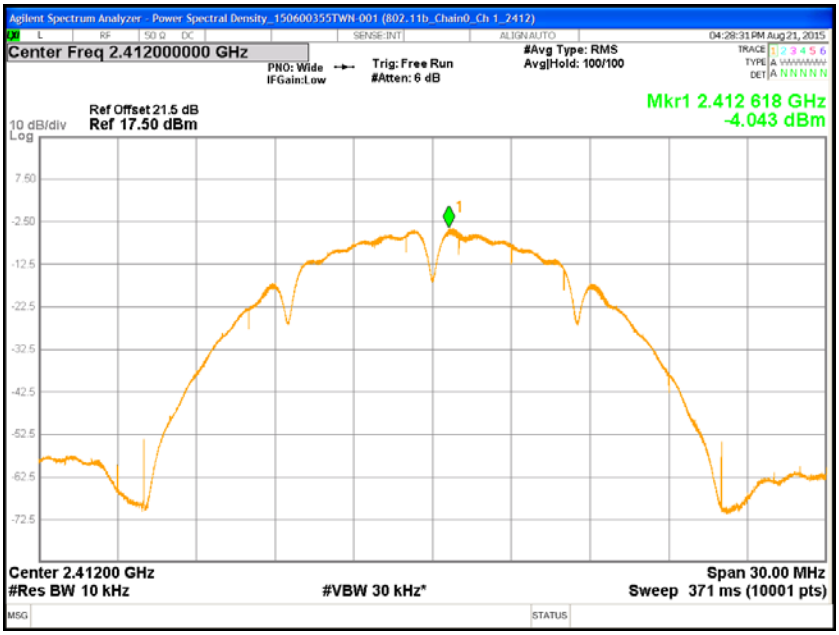
Mode	Channel	Frequency (MHz)	PSD		Limit (dBm)	Margin (dB)
			(dBm)	(mw)		
802.11b (chain0)	1	2412	-4.043	0.39	8	-12.04
	6	2437	-1.918	0.64	8	-9.92
	11	2462	-4.079	0.39	8	-12.08
802.11b (chain1)	1	2412	-4.655	0.34	8	-12.66
	6	2437	-2.128	0.61	8	-10.13
	11	2462	-4.168	0.38	8	-12.17
802.11b (chain2)	1	2487	-4.037	0.39	8	-12.04
	6	2512	-2.225	0.60	8	-10.23
	11	2537	-4.213	0.38	8	-12.21
802.11b (chain3)	1	2487	-4.161	0.38	8	-12.16
	6	2512	-1.334	0.74	8	-9.33
	11	2537	-3.676	0.43	8	-11.68
802.11g (chain0)	1	2412	-10.245	0.09	8	-18.25
	6	2437	-5.309	0.29	8	-13.31
	11	2462	-9.897	0.10	8	-17.90
802.11g (chain1)	1	2412	-10.456	0.09	8	-18.46
	6	2437	-5.196	0.30	8	-13.20
	11	2462	-10.134	0.10	8	-18.13
802.11g (chain2)	1	2412	-10.108	0.10	8	-18.11
	6	2437	-4.79	0.33	8	-12.79
	11	2462	-10.301	0.09	8	-18.30
802.11g (chain3)	1	2412	-10.069	0.10	8	-18.07
	6	2437	-5.224	0.30	8	-13.22
	11	2462	-9.911	0.10	8	-17.91

4TX

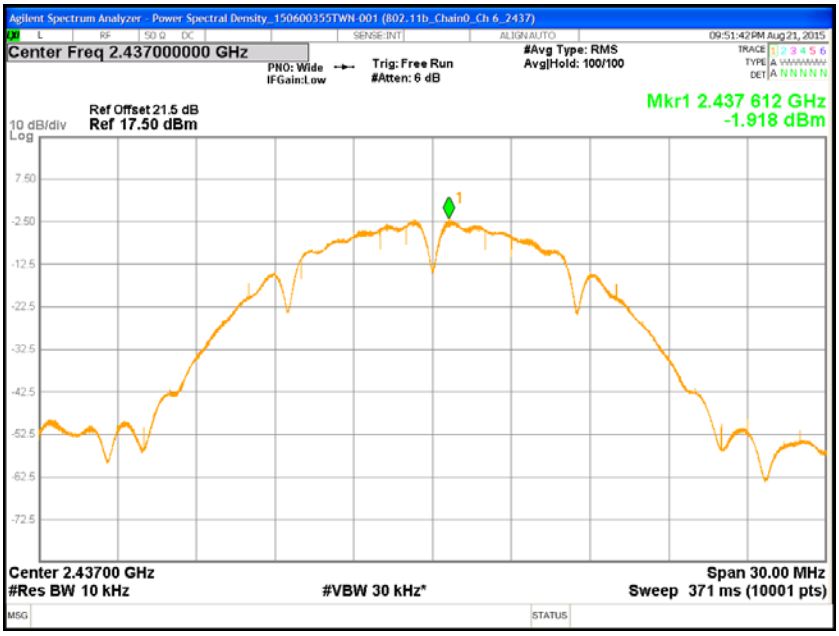
Mode	Ch	Freq. (MHz)	PSD (dBm/3kHz)				Total PSD		Correct PSD	Limit (dBm/3kHz)	Margin (dB)
			chain0	chain1	chain2	chain3	mW	dBm/3kHz	dBm/3kHz		
802.11n (HT20)	1	2412	-13.2	-13.4	-13.45	-13.49	0.18	-7.36	-1.36	8	-9.36
	6	2437	-12.81	-13.12	-13.76	-13.69	0.19	-7.30	-1.30	8	-9.30
	11	2462	-13.45	-12.68	-13.61	-12.72	0.20	-7.07	-1.07	8	-9.07
802.11n (HT40)	3	2422	-19.25	-19.2	-18.84	-18.61	0.05	-12.95	-6.95	8	-14.95
	6	2437	-18.6	-19.25	-19	-18.93	0.05	-12.92	-6.92	8	-14.92
	9	2452	-18.46	-18.57	-19.26	-18.05	0.06	-12.54	-6.54	8	-14.54

Note: Correct PSD means Total PSD add MIMO correction *(10 log (4)=6 dB).*

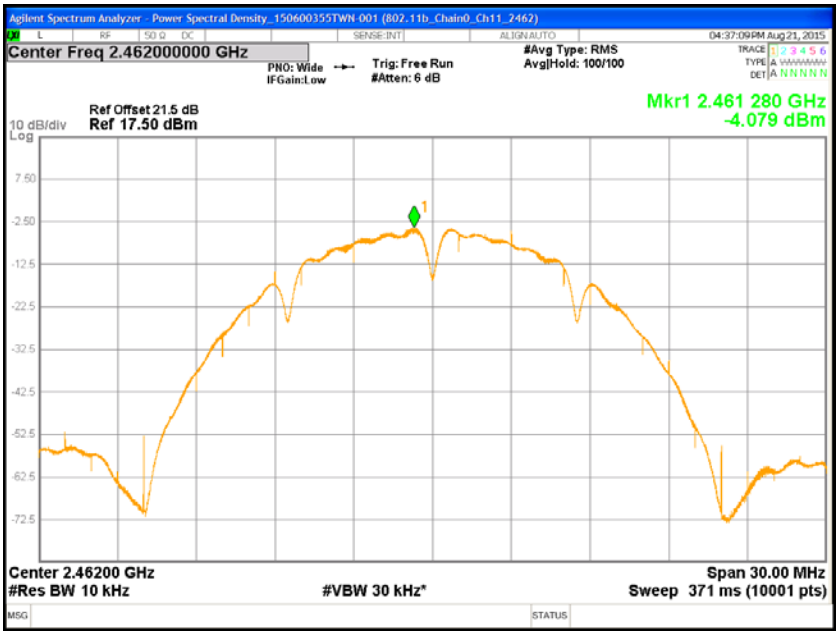
Chain 0_ 802.11b mode Ch 1



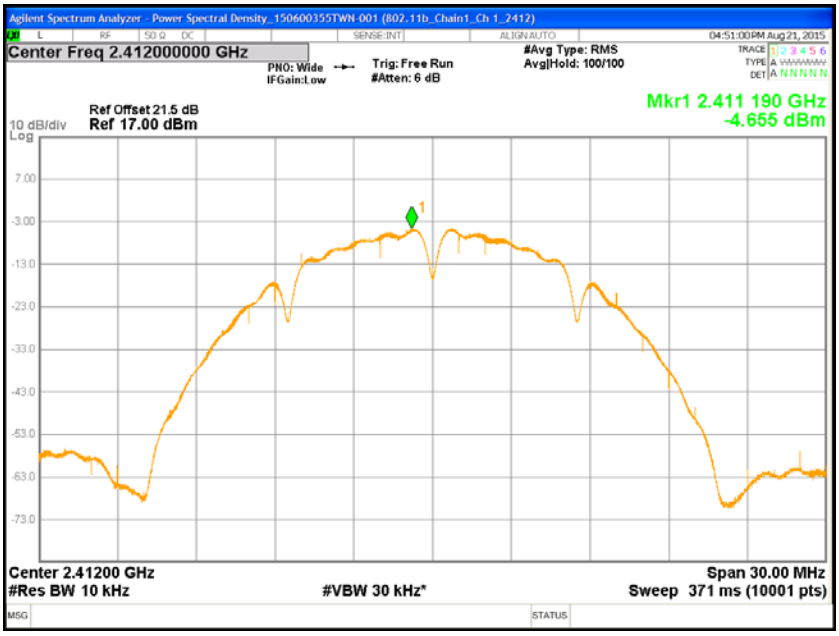
Chain 0_ 802.11b mode Ch 6



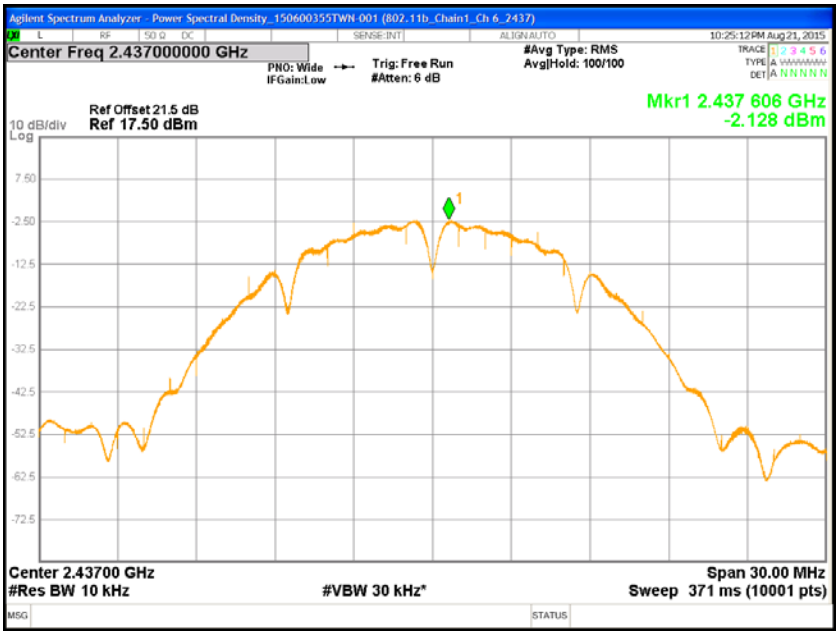
Chain 0_ 802.11b mode Ch 11



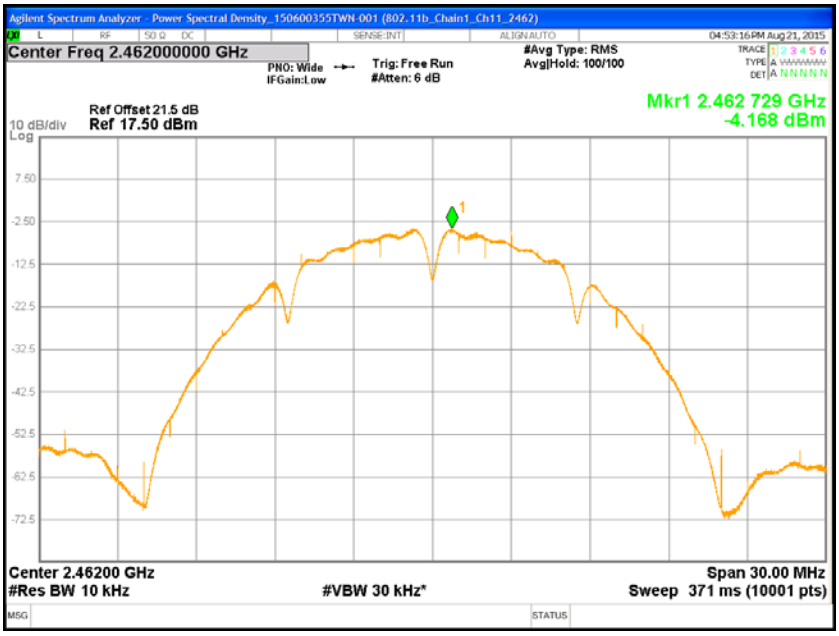
Chain 1_ 802.11b mode Ch 1



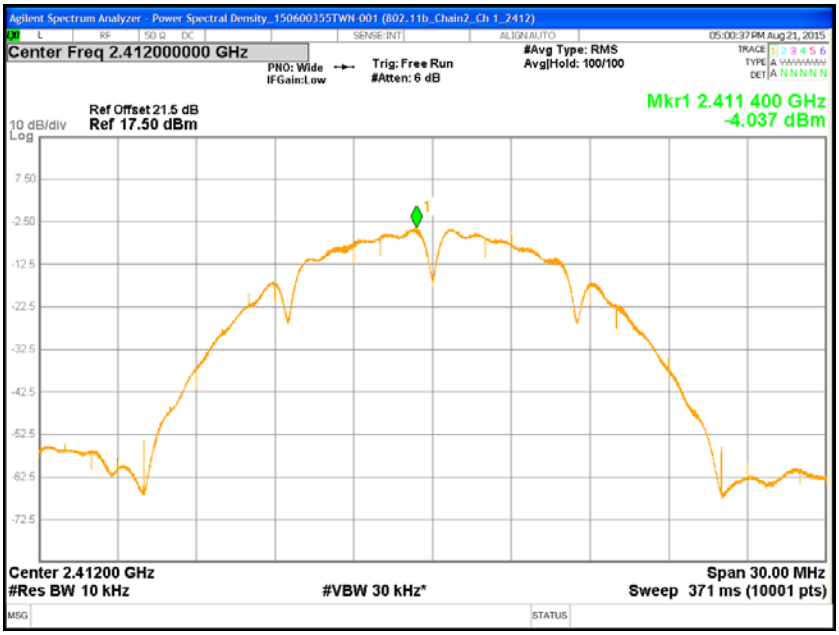
Chain 1_ 802.11b mode Ch 6



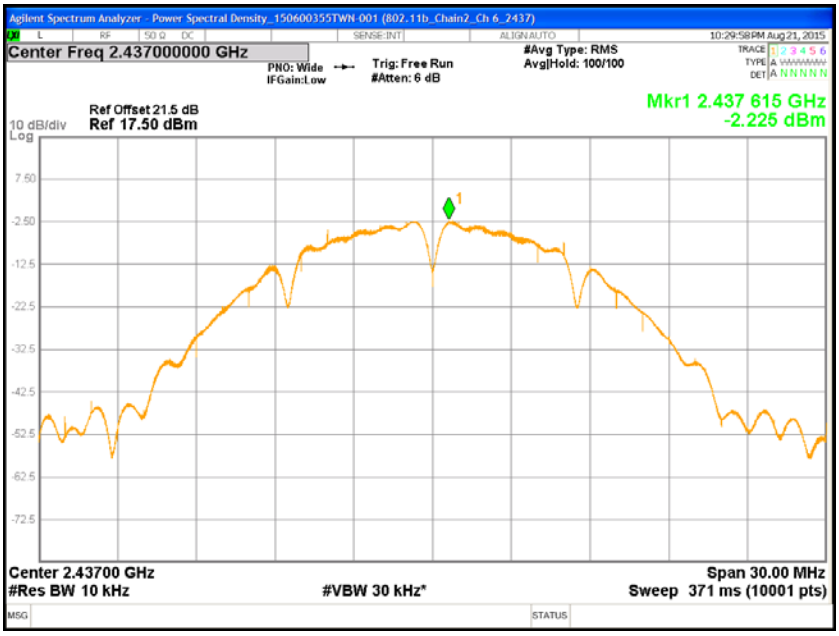
Chain 1_ 802.11b mode Ch 11



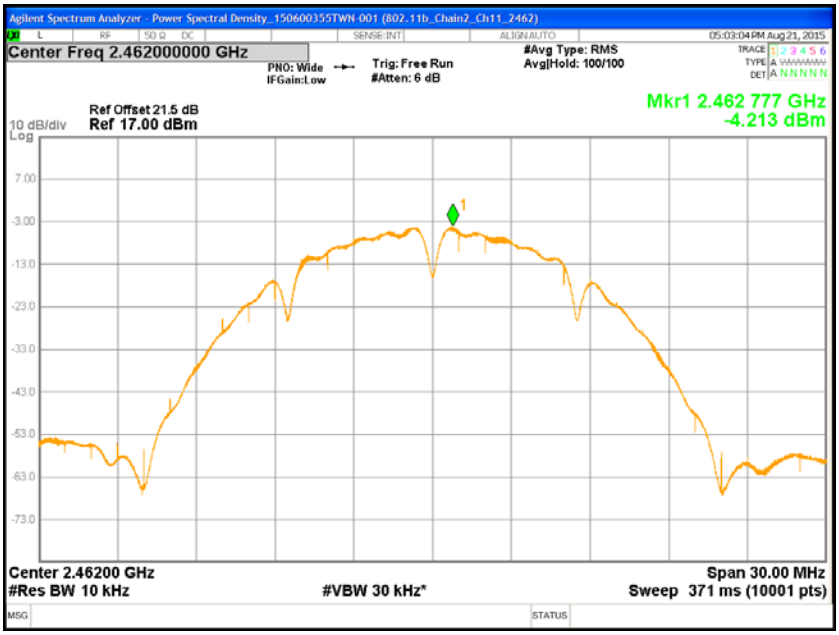
Chain 2_ 802.11b mode Ch 1



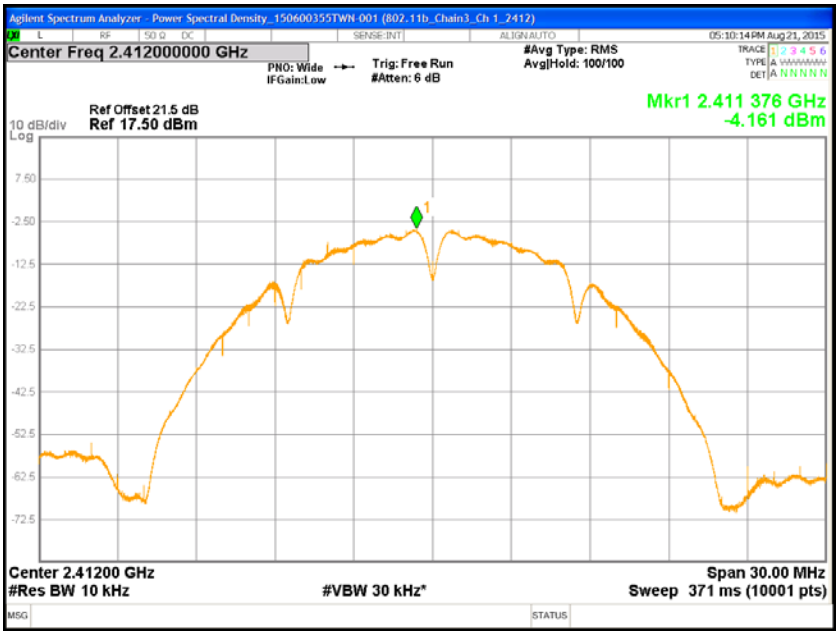
Chain 2_ 802.11b mode Ch 6



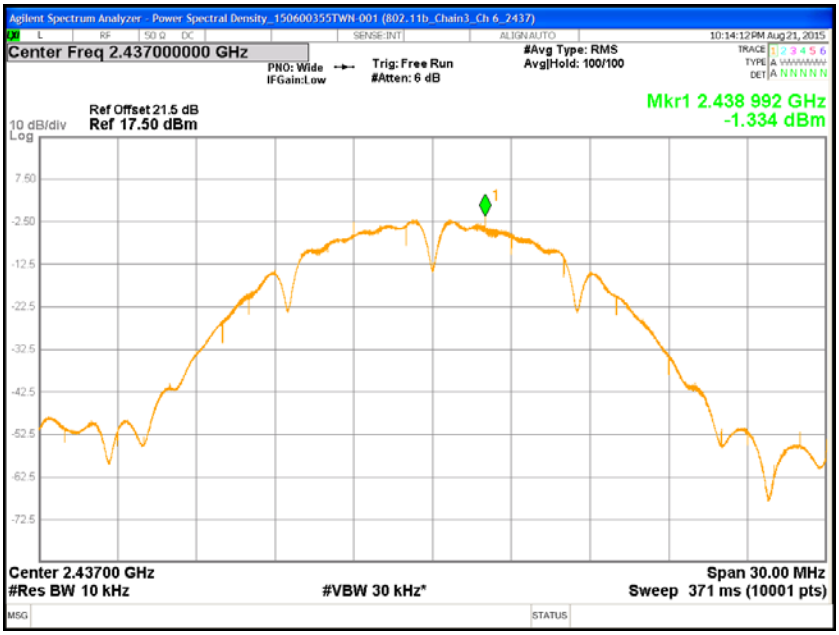
Chain 2_ 802.11b mode Ch 11



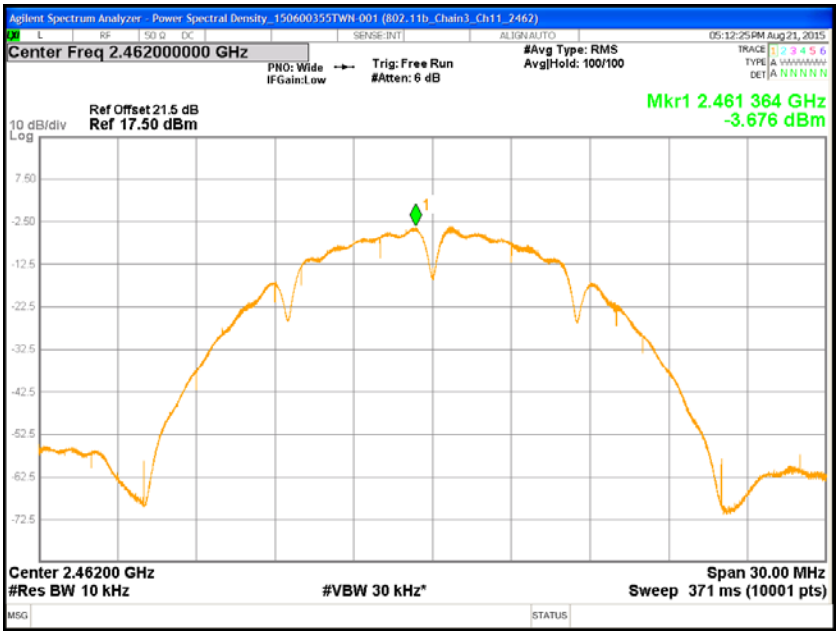
Chain 3_ 802.11b mode Ch 1



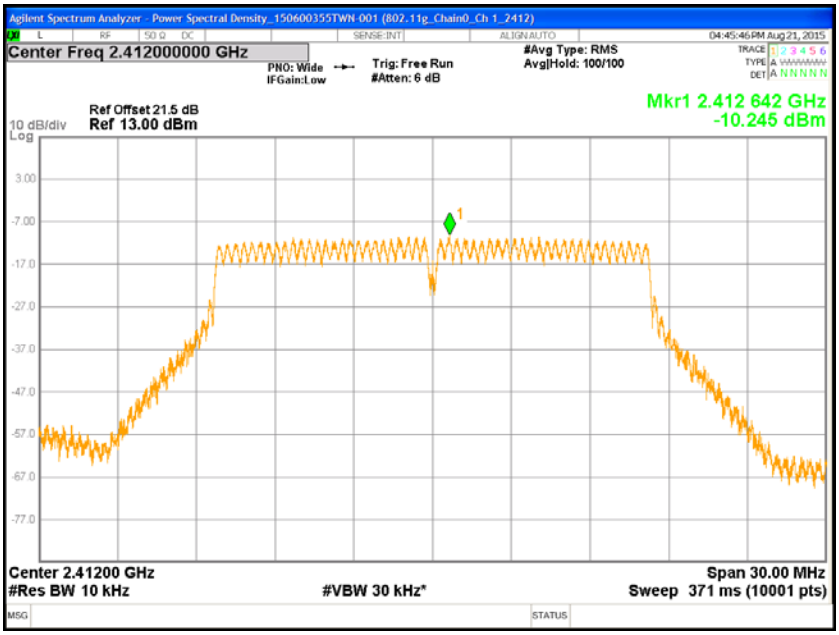
Chain 3_ 802.11b mode Ch 6



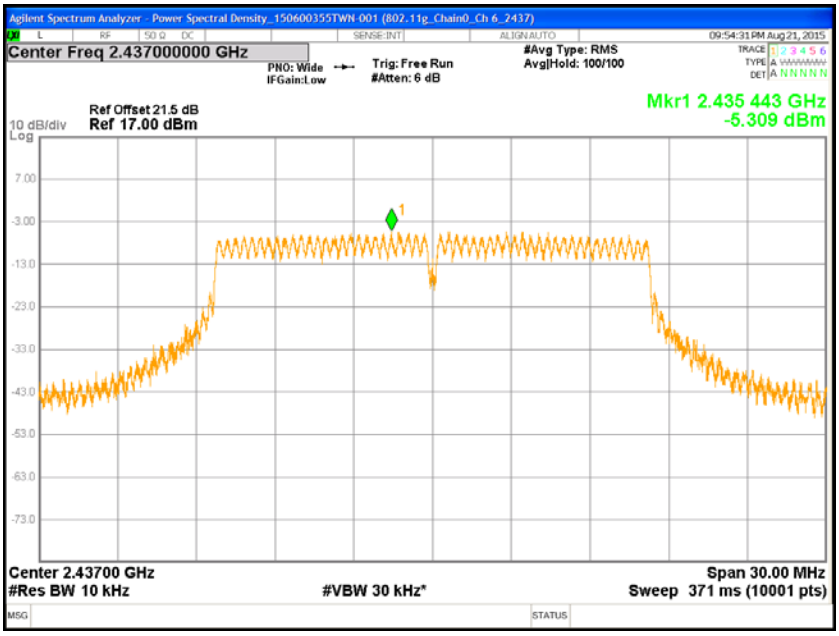
Chain 3_ 802.11b mode Ch 11



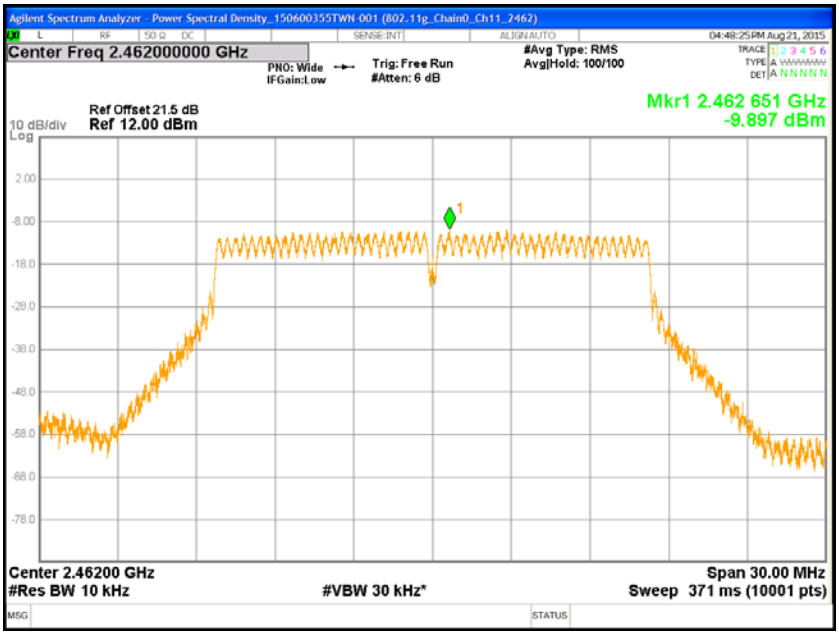
Chain 0_ 802.11g mode Ch 1



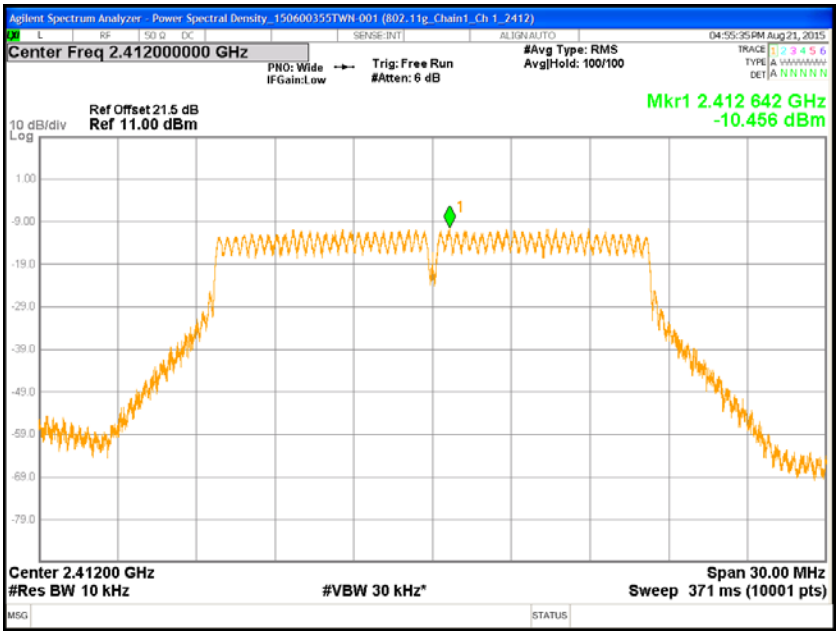
Chain 0_ 802.11g mode Ch 6



Chain 0_ 802.11g mode Ch 11



Chain 1_ 802.11g mode Ch 1



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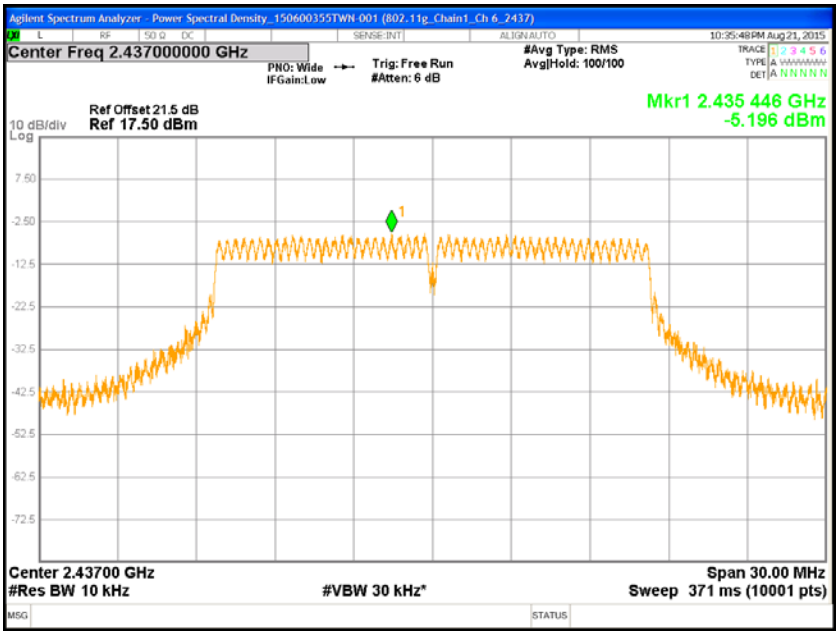
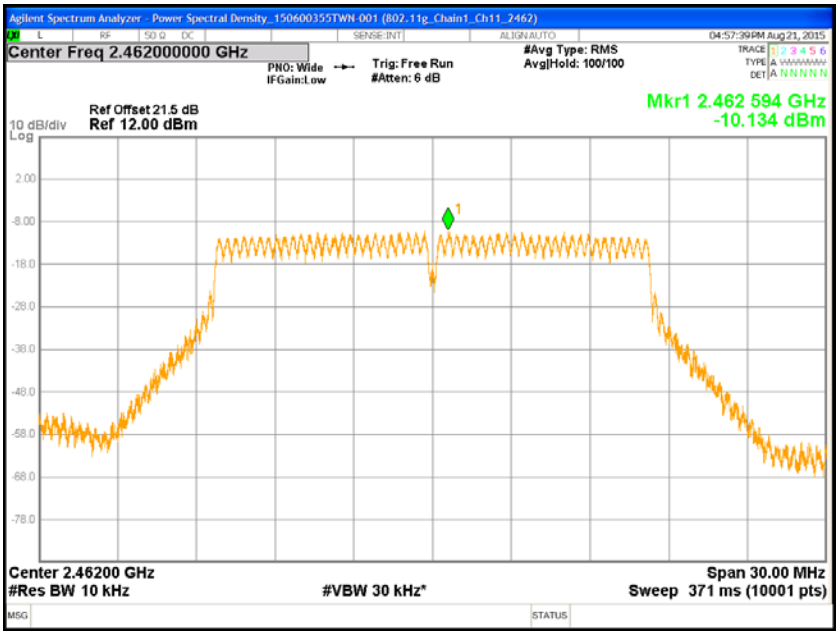
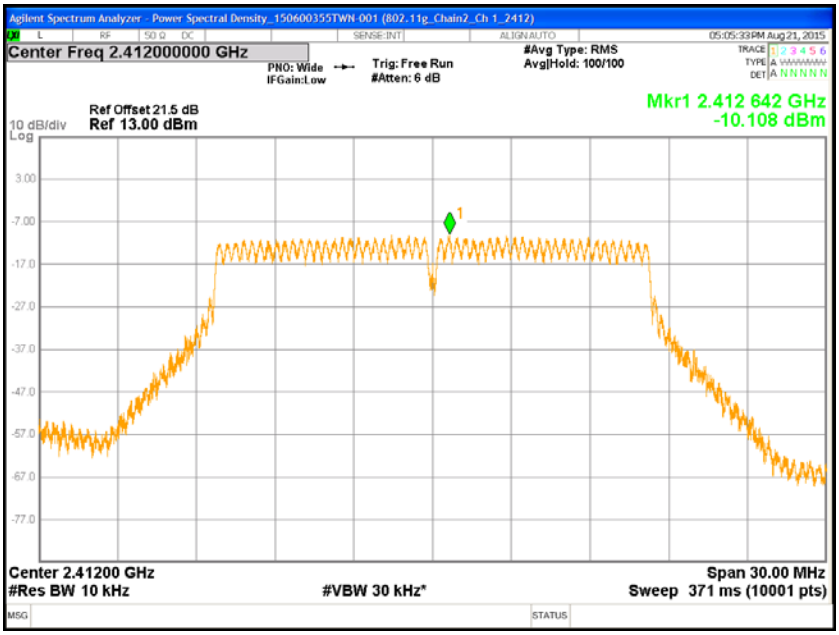


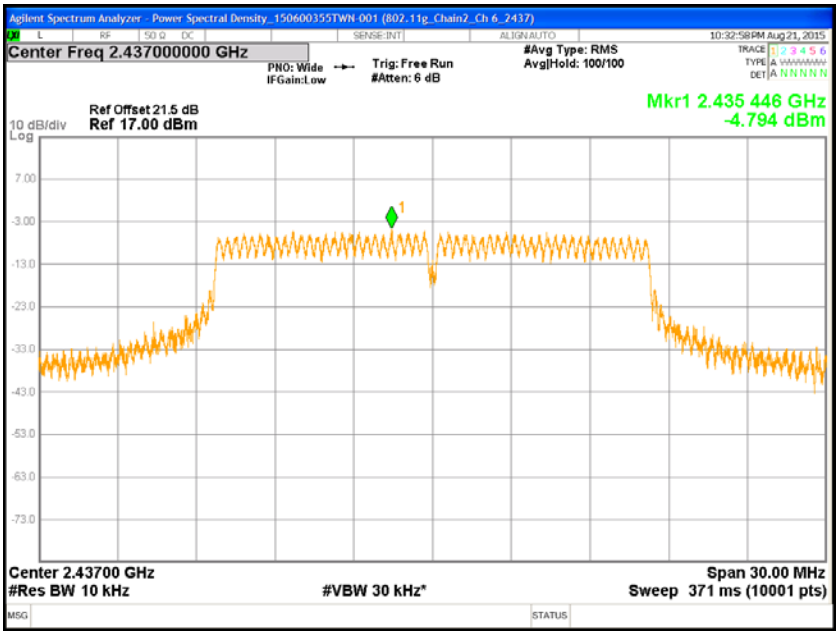
Chain 1_ 802.11g mode Ch 11



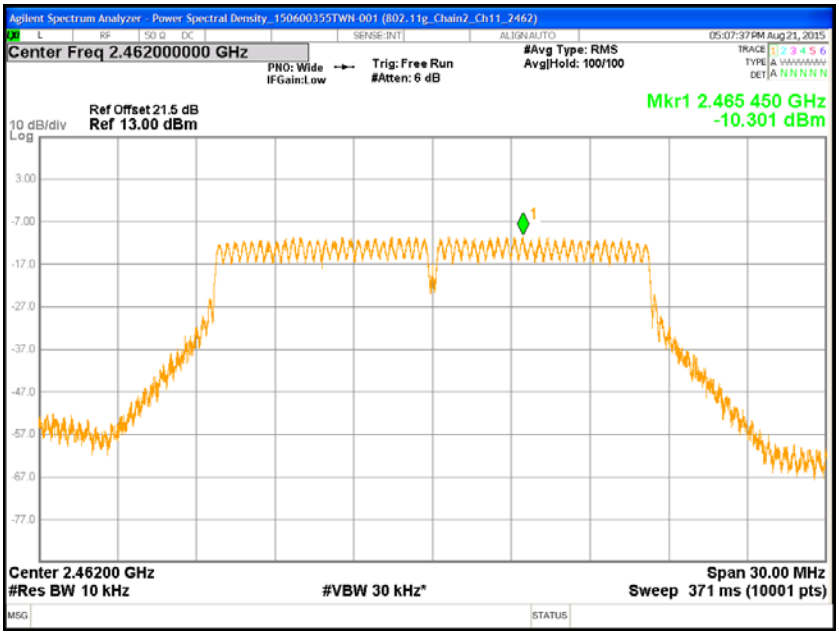
Chain 2_ 802.11g mode Ch 1



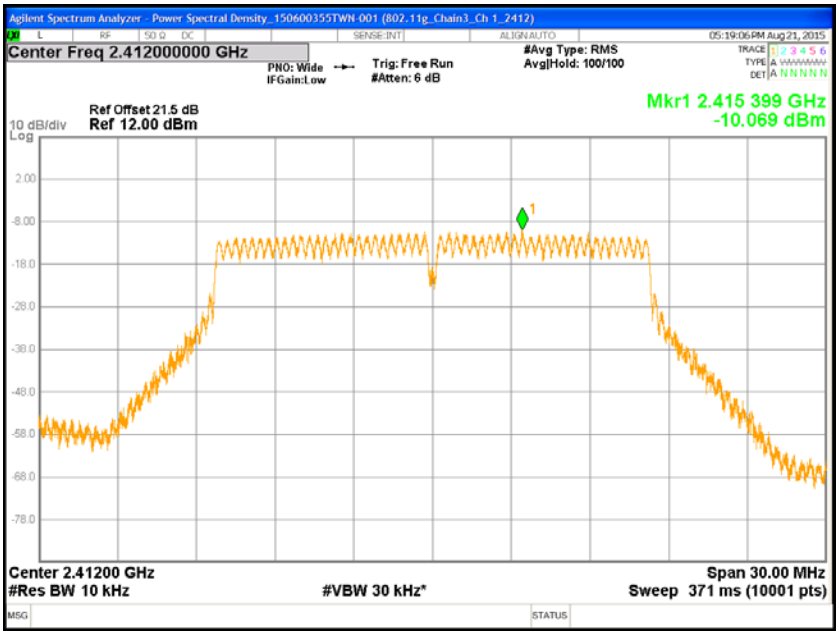
Chain 2_ 802.11g mode Ch 6



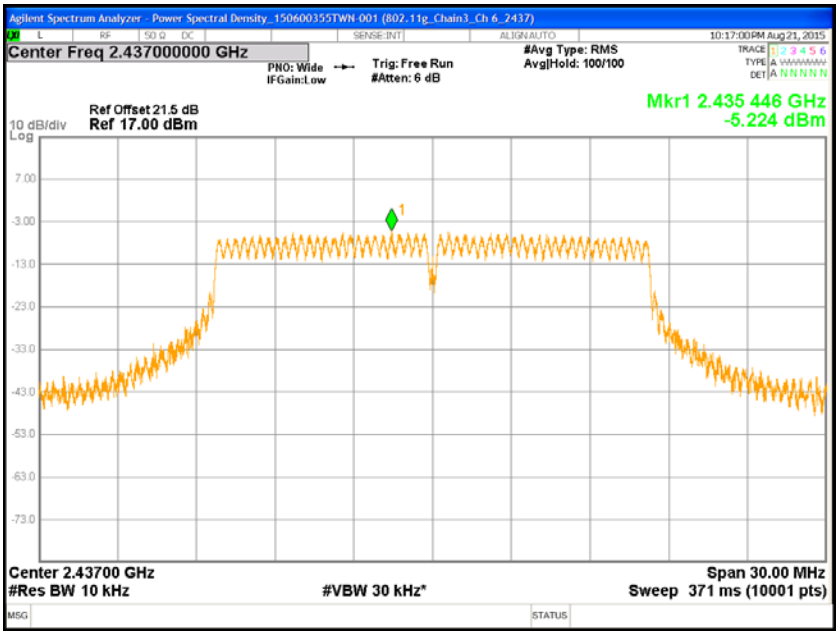
Chain 2_ 802.11g mode Ch 11



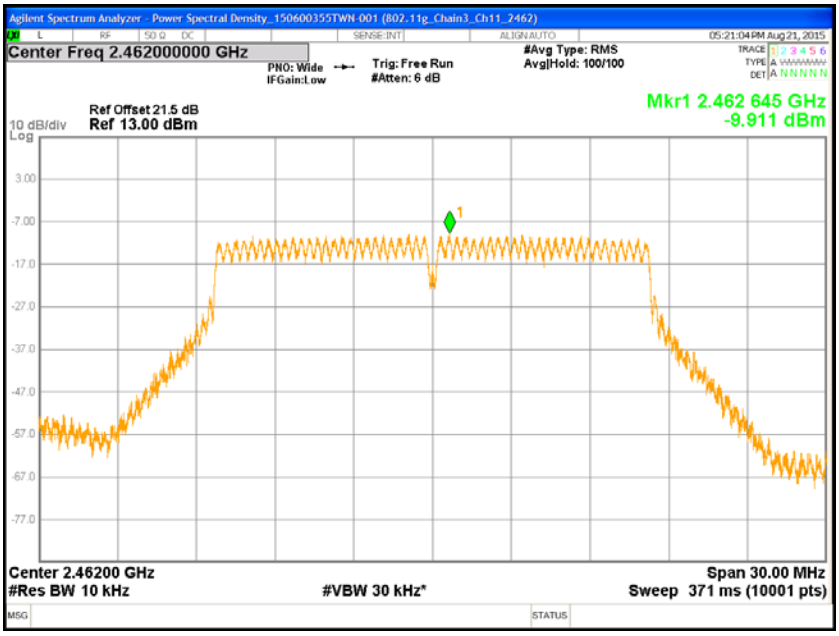
Chain 3_ 802.11g mode Ch 1



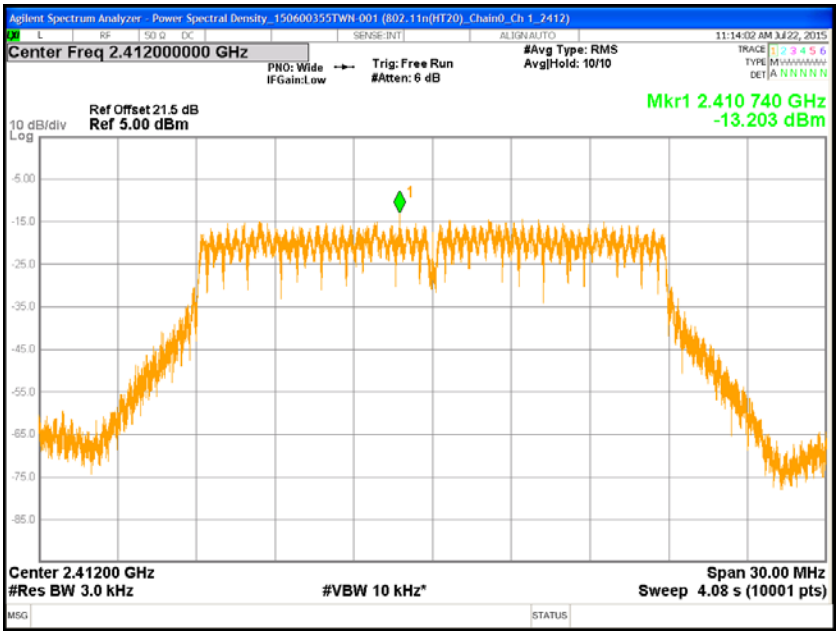
Chain 3_ 802.11g mode Ch 6



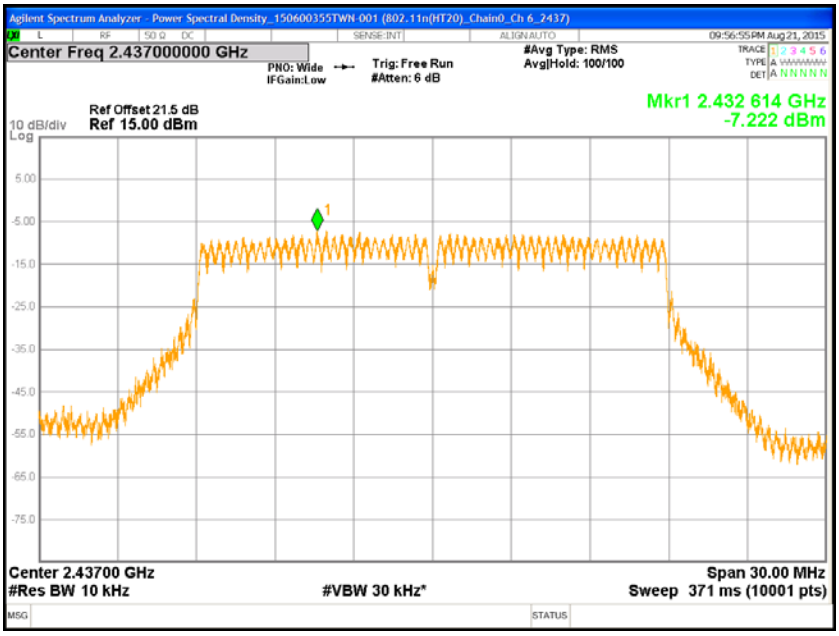
Chain 3_ 802.11g mode Ch 11



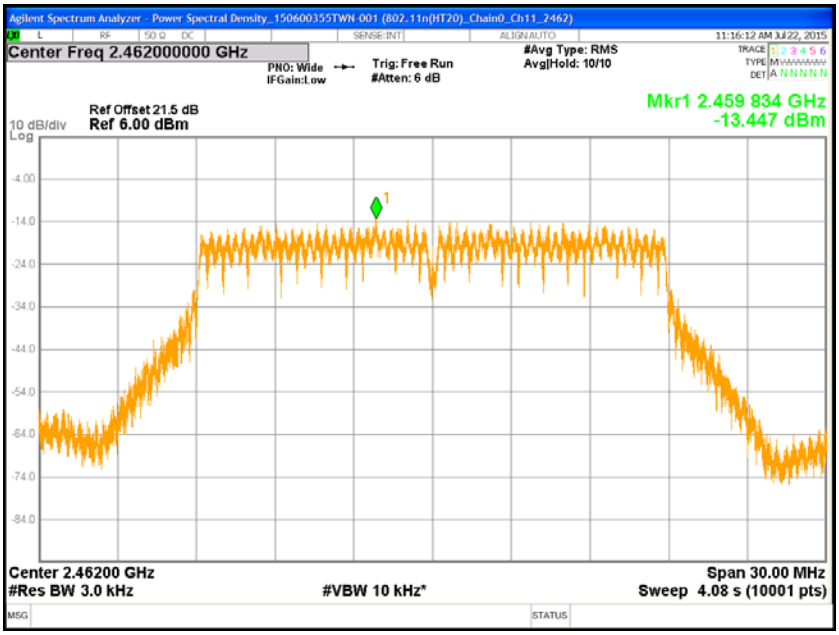
Chain 0_ 802.11 n(HT20) mode Ch 1



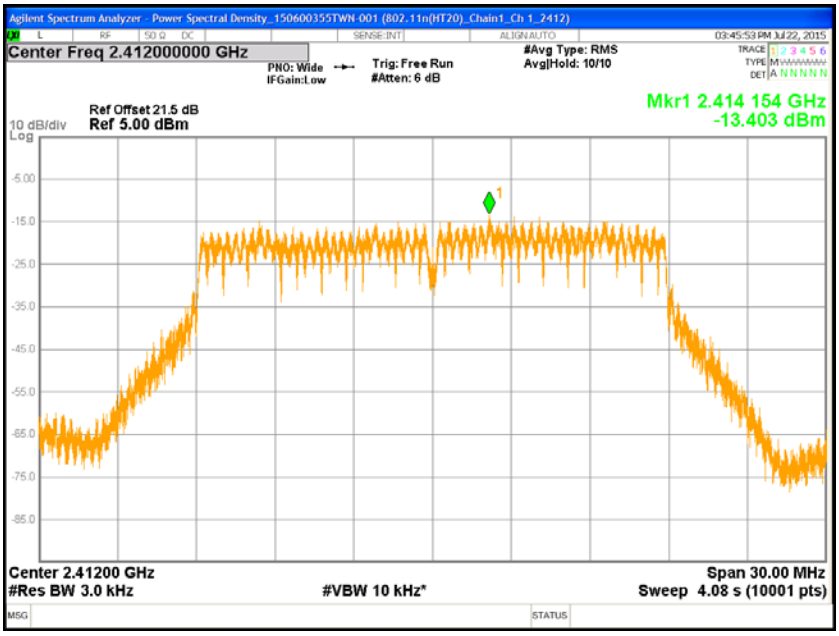
Chain 0_ 802.11 n(HT20) mode Ch 6



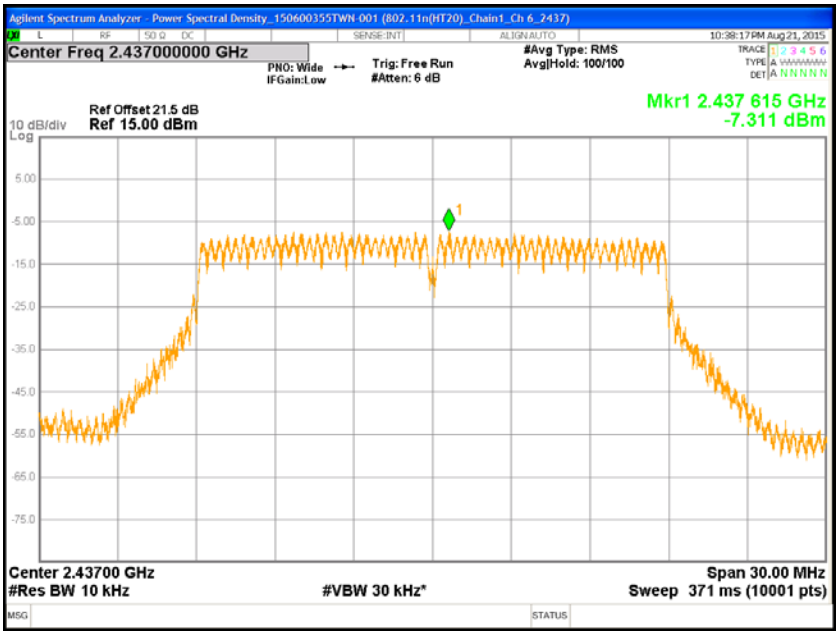
Chain 0_ 802.11n(HT20) mode Ch 11



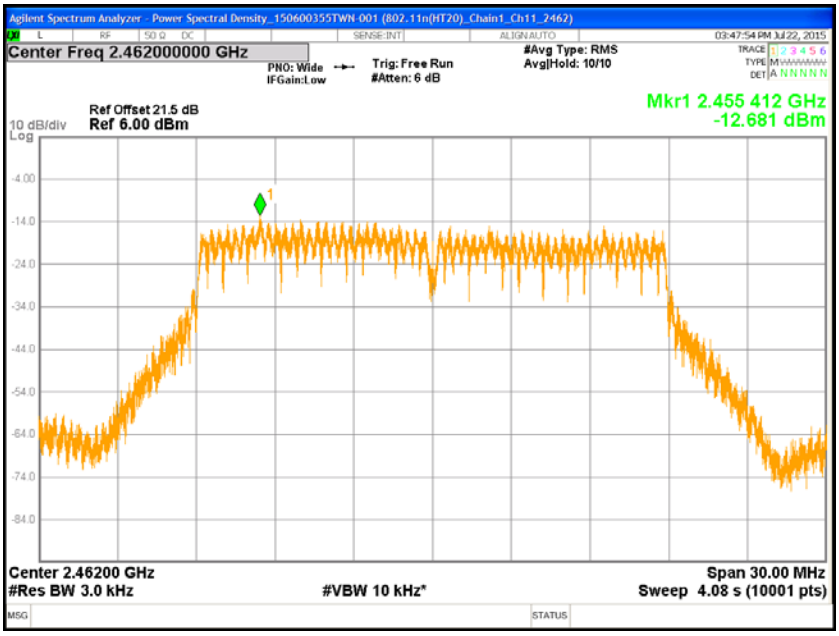
Chain 1_ 802.11n(HT20) mode Ch 1



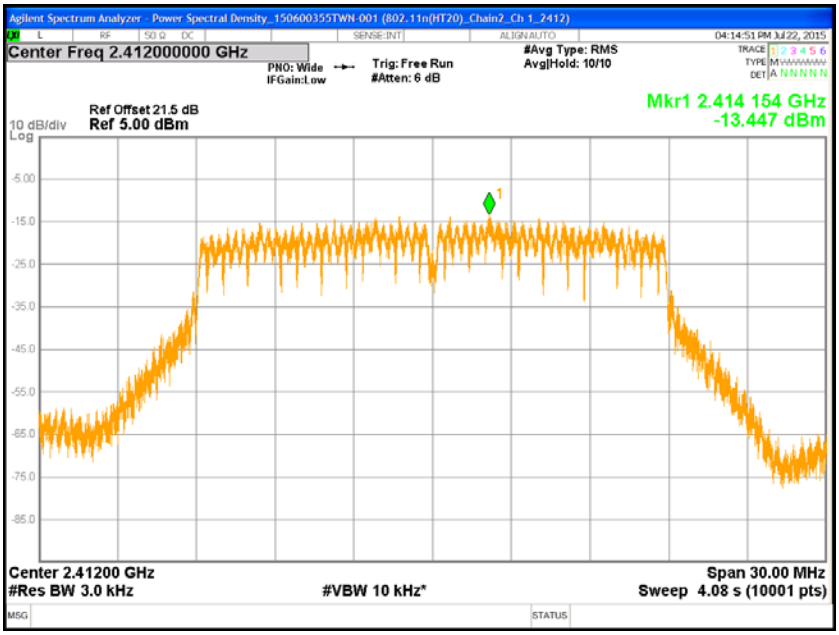
Chain 1_ 802.11n(HT20) mode Ch 6



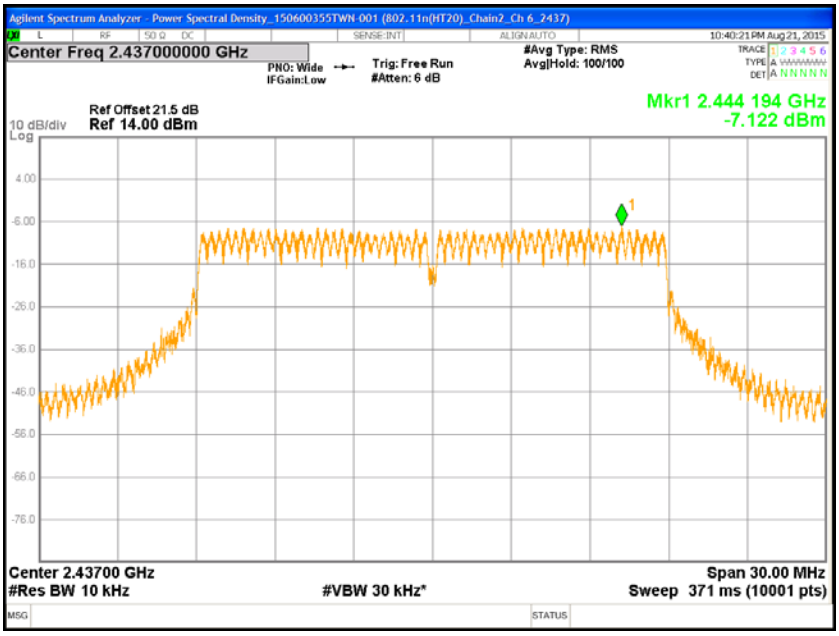
Chain 1_ 802.11n(HT20) mode Ch 11



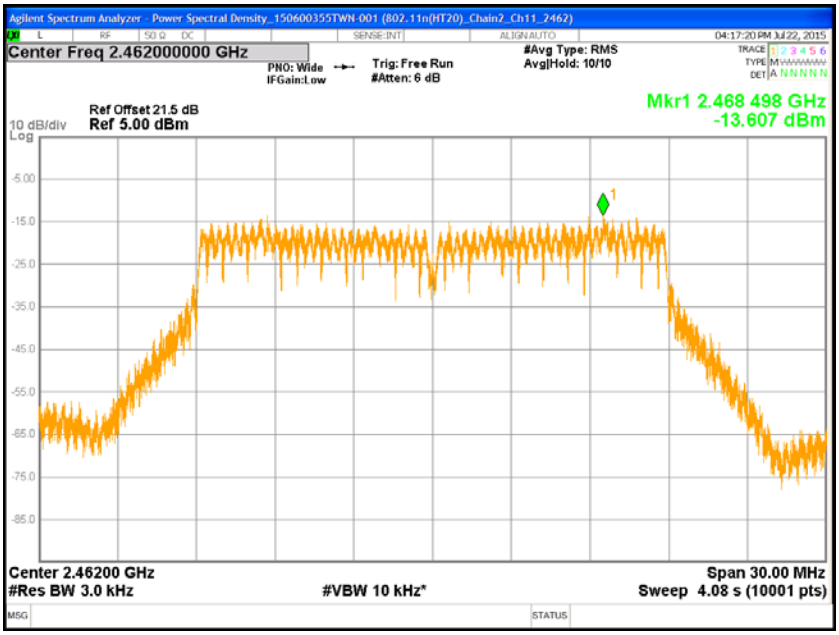
Chain 2_ 802.11n(HT20) mode Ch 1



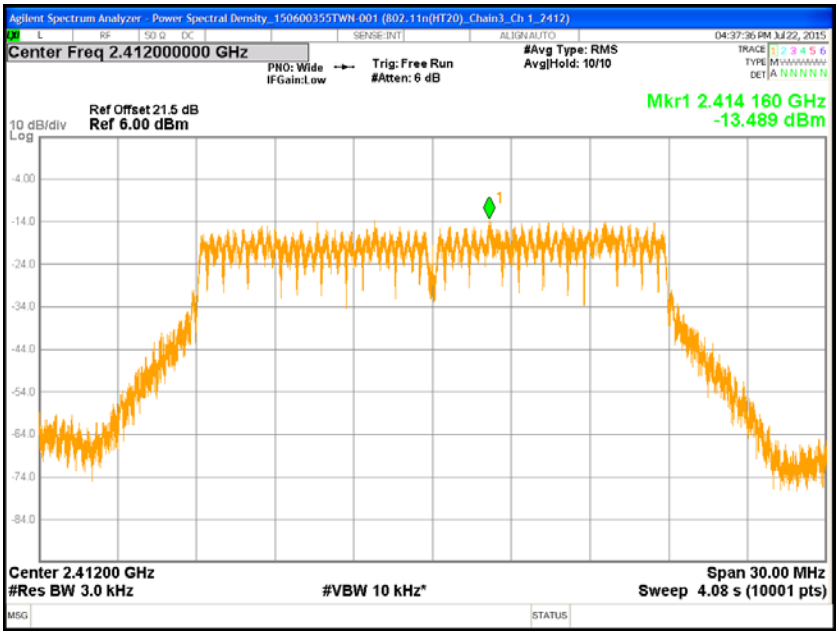
Chain 2_ 802.11n(HT20) mode Ch 6



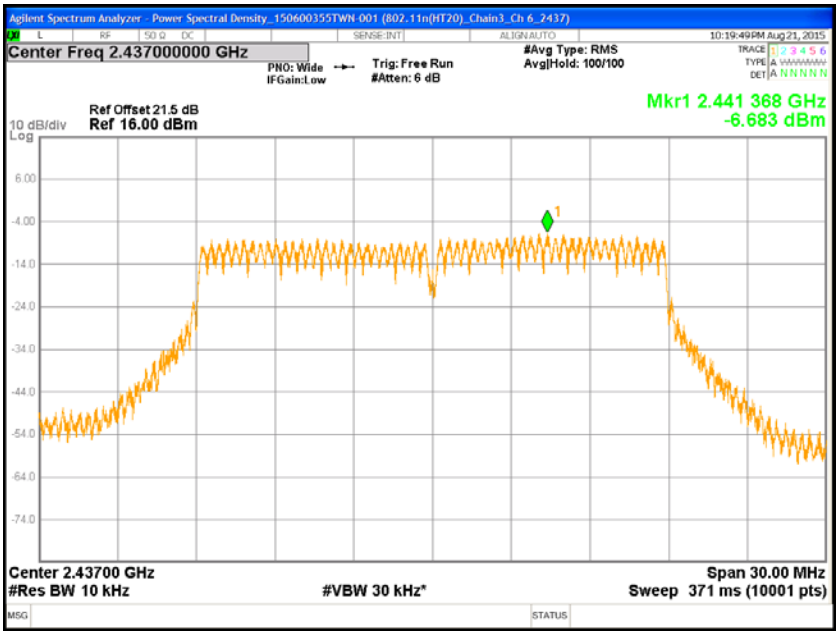
Chain 2_ 802.11n(HT20) mode Ch 11



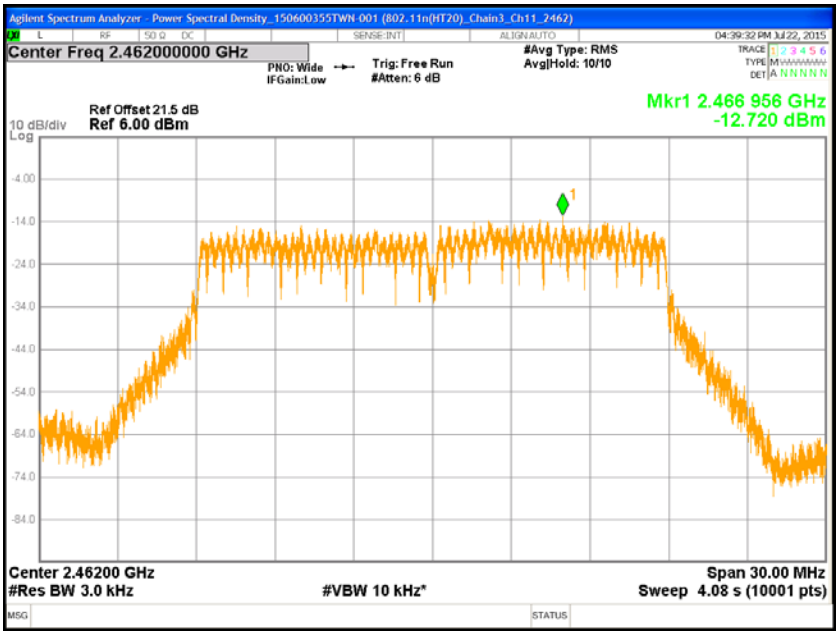
Chain 3_ 802.11n(HT20) mode Ch 1



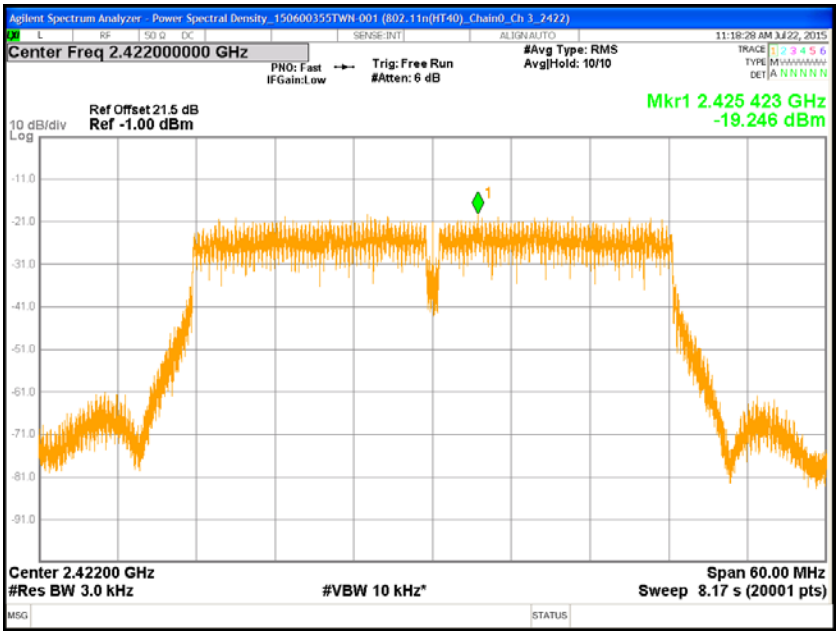
Chain 3_ 802.11n(HT20) mode Ch 6



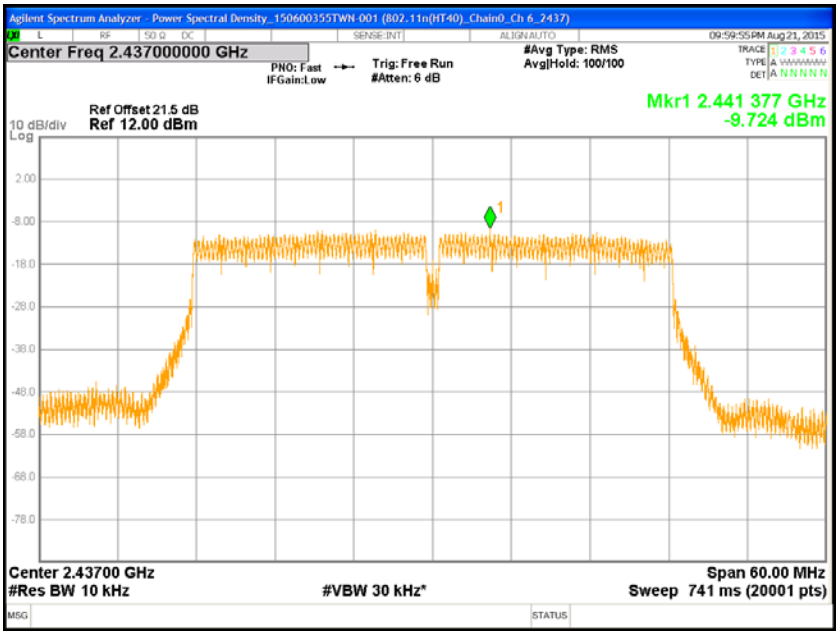
Chain 3_ 802.11n(HT20) mode Ch 11



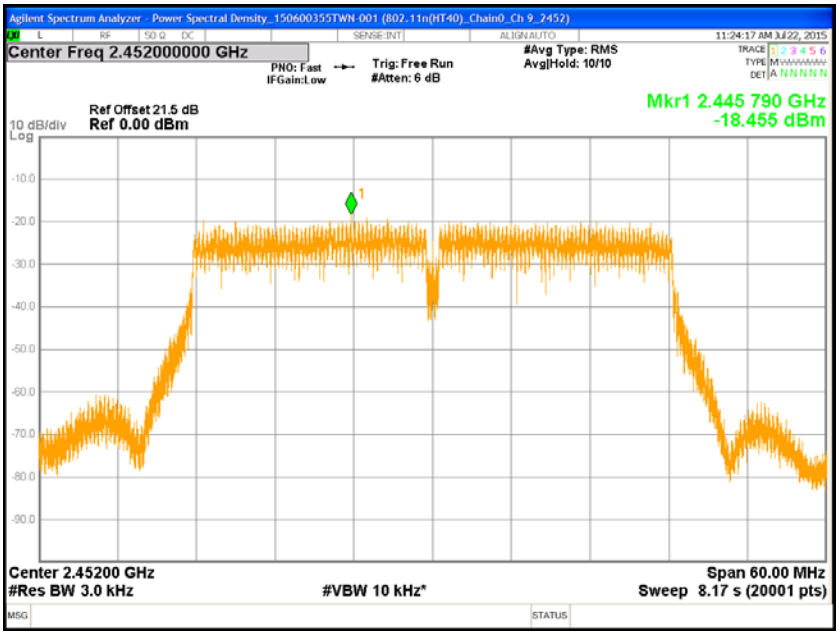
Chain 0_ 802.11n(HT40) mode Ch 3



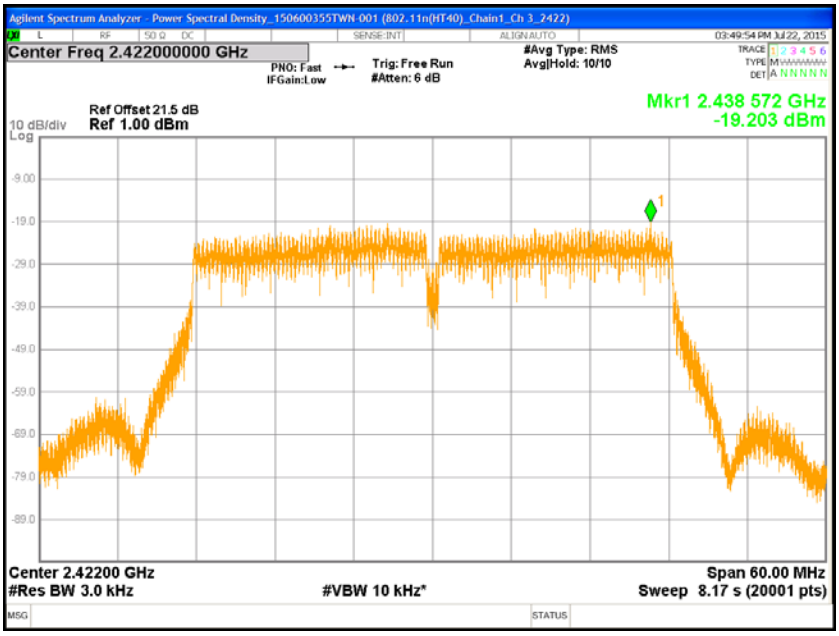
Chain 0_ 802.11n(HT40) mode Ch 6



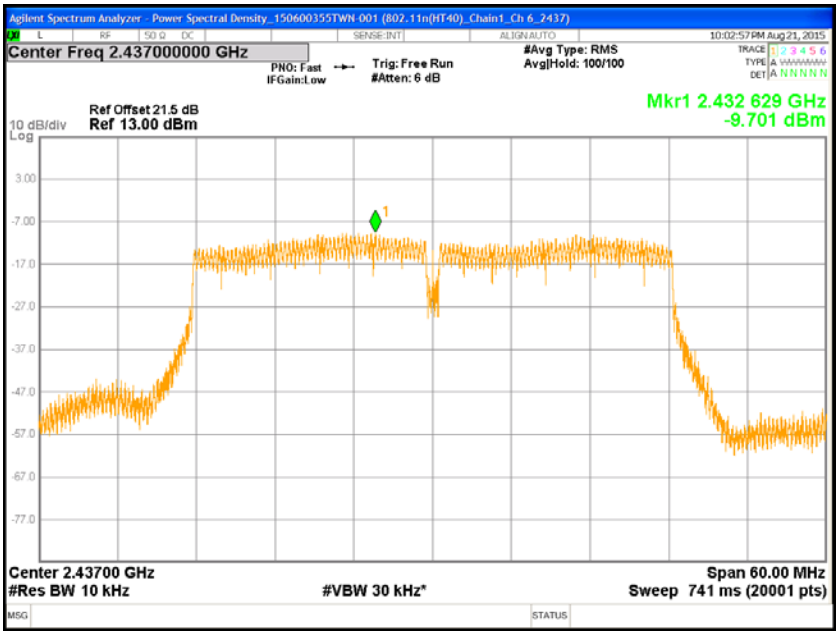
Chain 0_ 802.11n(HT40) mode Ch 9



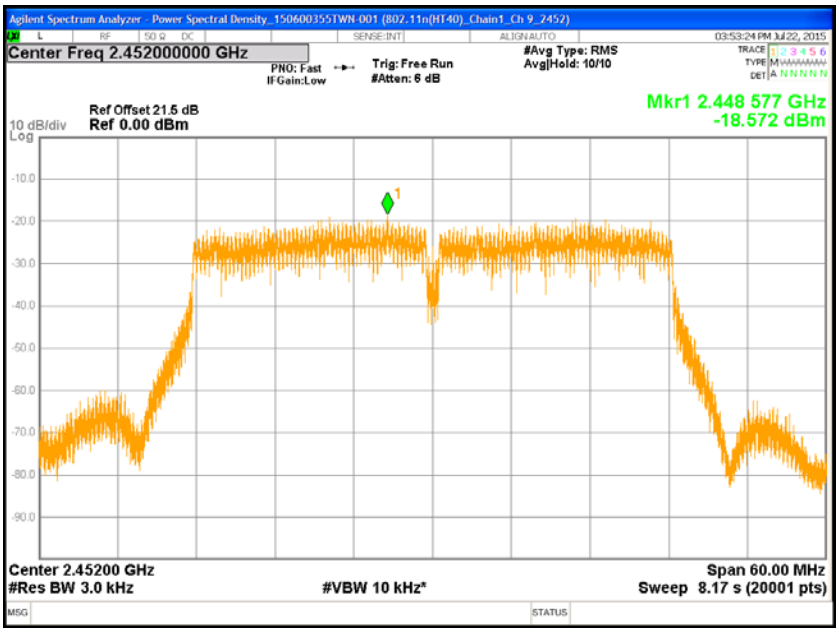
Chain 1_ 802.11n(HT40) mode Ch 3



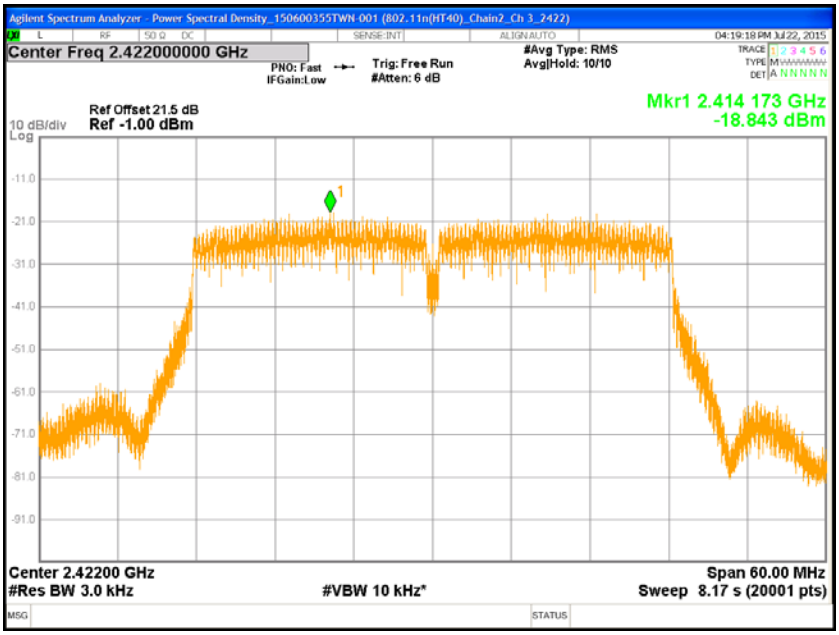
Chain 1_ 802.11n(HT40) mode Ch 6



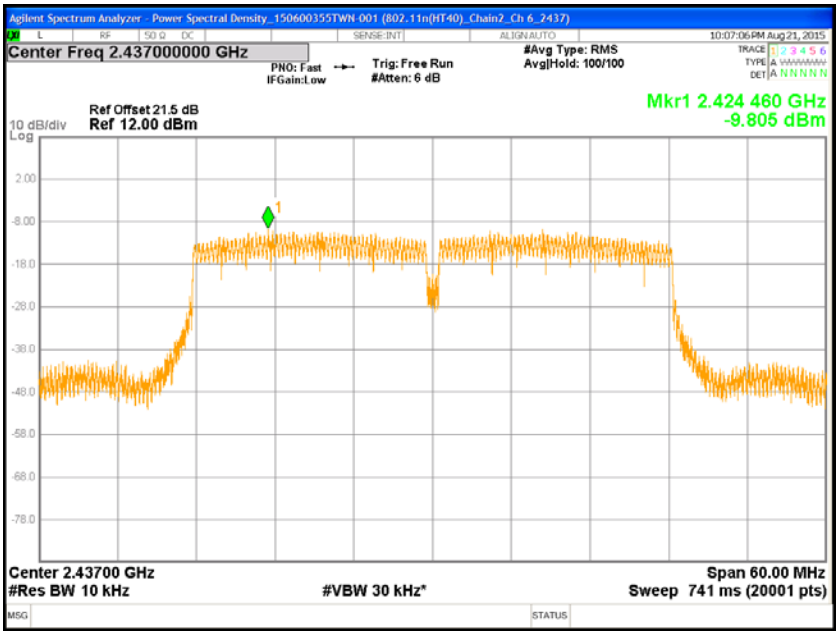
Chain 1_ 802.11n(HT40) mode Ch 9



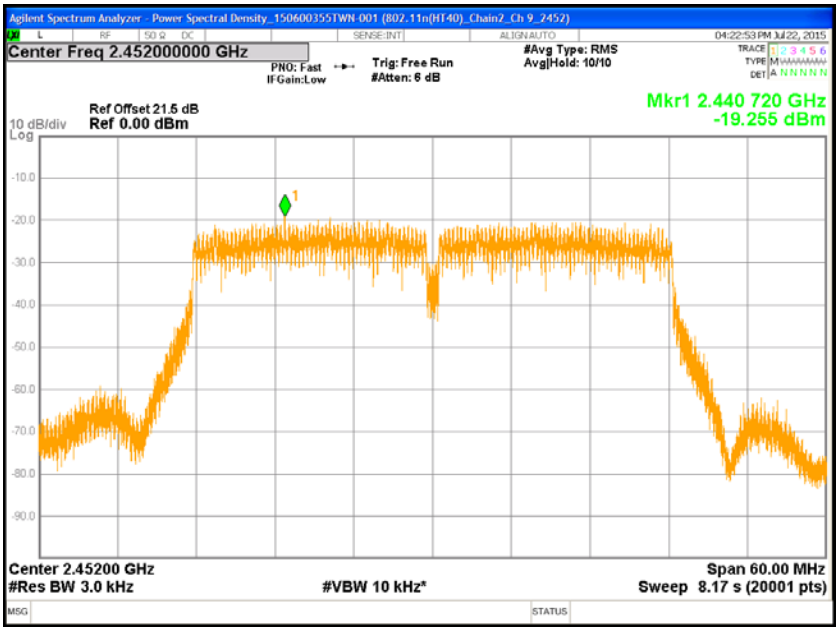
Chain 2_ 802.11n(HT40) mode Ch 3



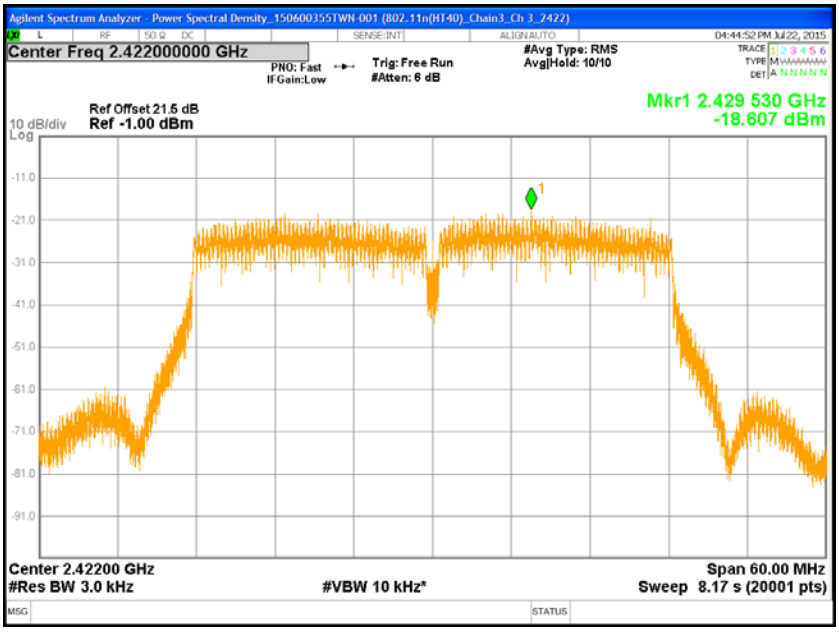
Chain 2_ 802.11n(HT40) mode Ch 6



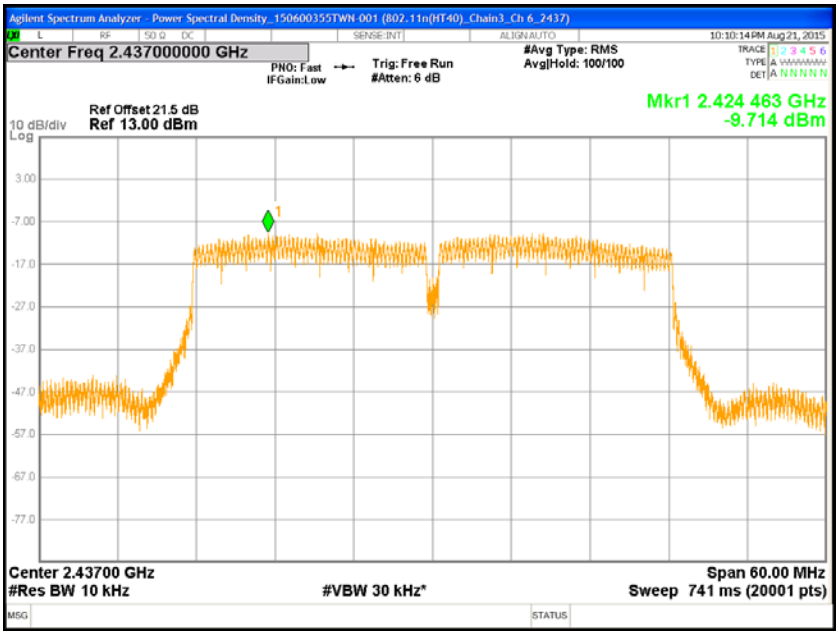
Chain 2_ 802.11n(HT40) mode Ch 9



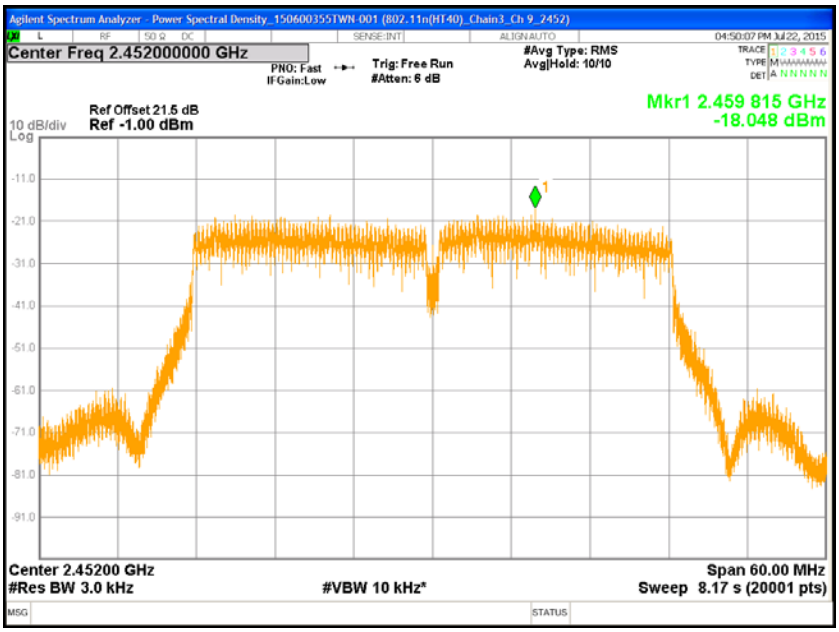
Chain 3_ 802.11n(HT40) mode Ch 3



Chain 3_ 802.11n(HT40) mode Ch 6



Chain 3_ 802.11n(HT40) mode Ch 9



6. Emissions In Non-Restricted Frequency Bands

6.1 Operating environment

Temperature:	25	℃
Relative Humidity:	50	%
Atmospheric Pressure	1008	hPa
Requirement	15.247(d)	
Channel number	1、6、11	

6.2 Limit for emissions in non-restricted frequency bands

The peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB or 30 dB relative to the maximum in-band peak PSD level in 100 kHz

6.3 Measuring instruments setting

Reference level measurement

Spectrum analyzer settings	
Spectrum Analyzer function	**Setting**
Detector	Peak
RBW	≧100 kHz
VBW	≧3 x RBW
Sweep	Auto couple
Trace	Max hold
Span	≧1.5 time 6dB bandwidth
Attenuation	Auto

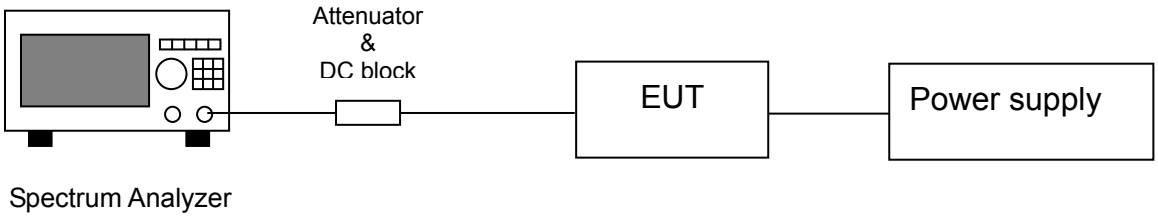
Emission level measurement

Spectrum analyzer settings	
Spectrum Analyzer function	**Setting**
Detector	Peak
RBW	≧100 kHz
VBW	≧3 x RBW
Sweep	Auto couple
Trace	Max hold
Attenuation	Auto

6.4 Test procedure

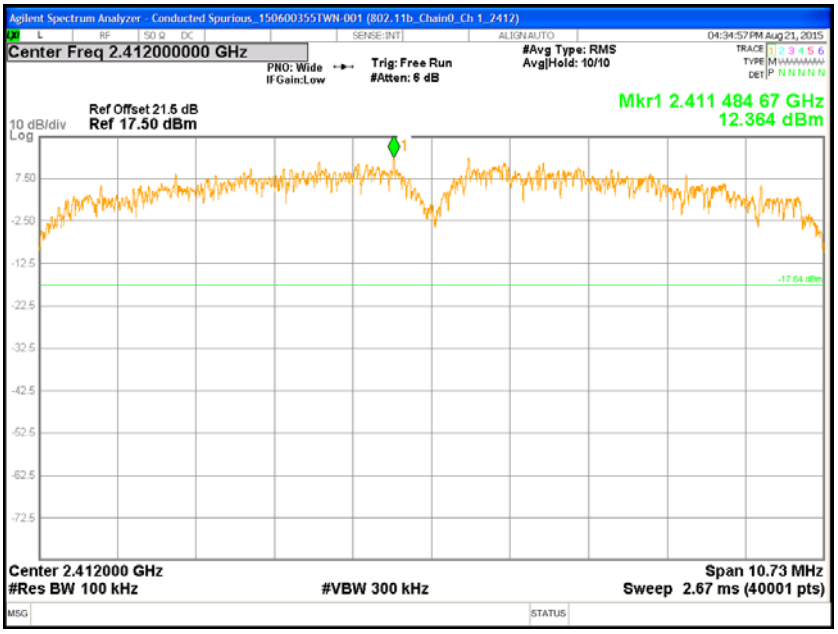
1. The procedure was used in antenna-port conducted and connected to the spectrum analyzer.
2. Set instrument center frequency to center frequency
3. Use the parameter configured in clause 6.3 to measure
4. Use the peak marker function to determine the maximum amplitude level.

6.5 Test diagram

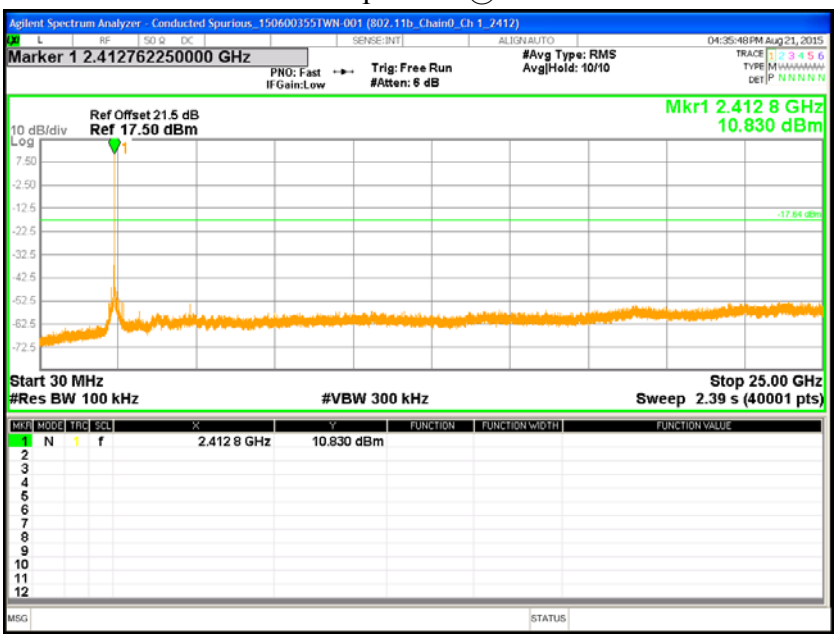


6.6 Test results

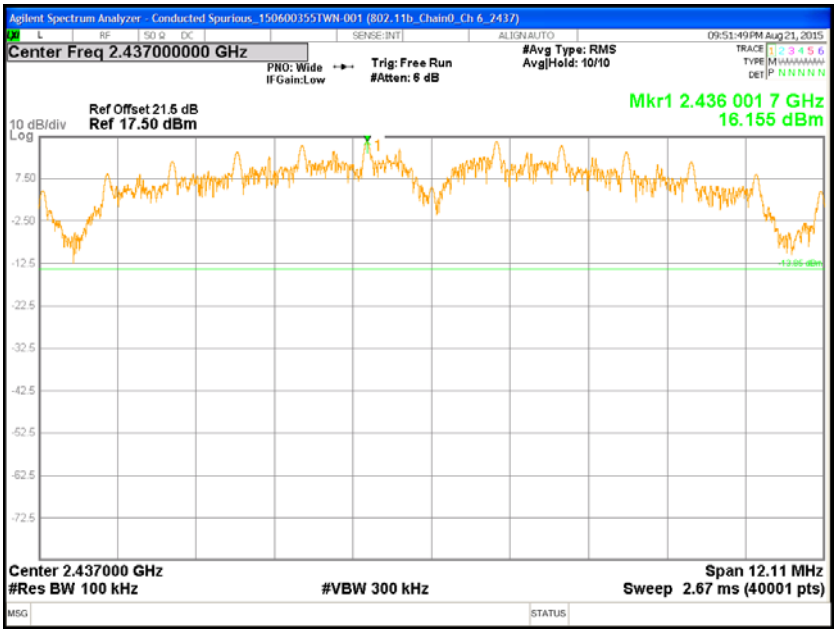
Chain0 : Conducted Spurious @ 802.11b mode Ch 1



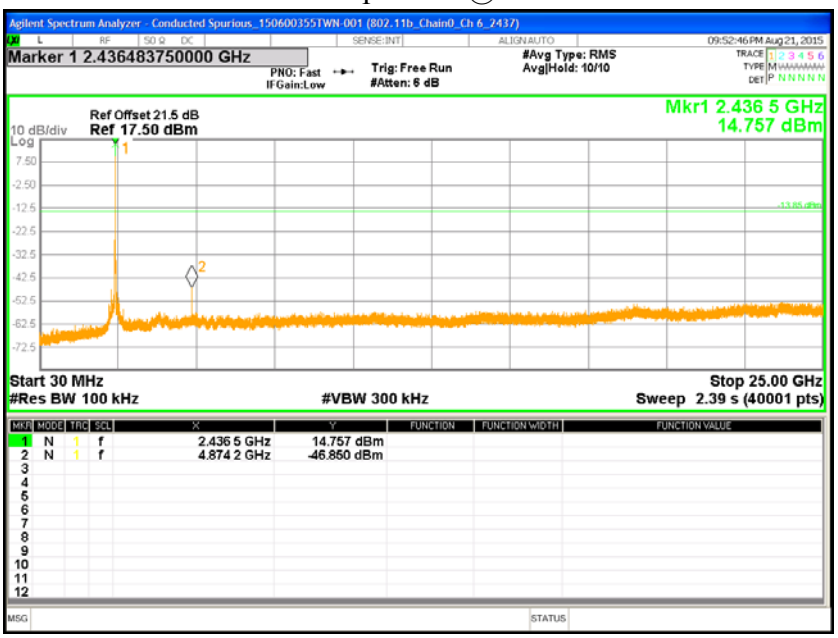
Chain0 : Conducted Spurious @ 802.11b mode Ch 1



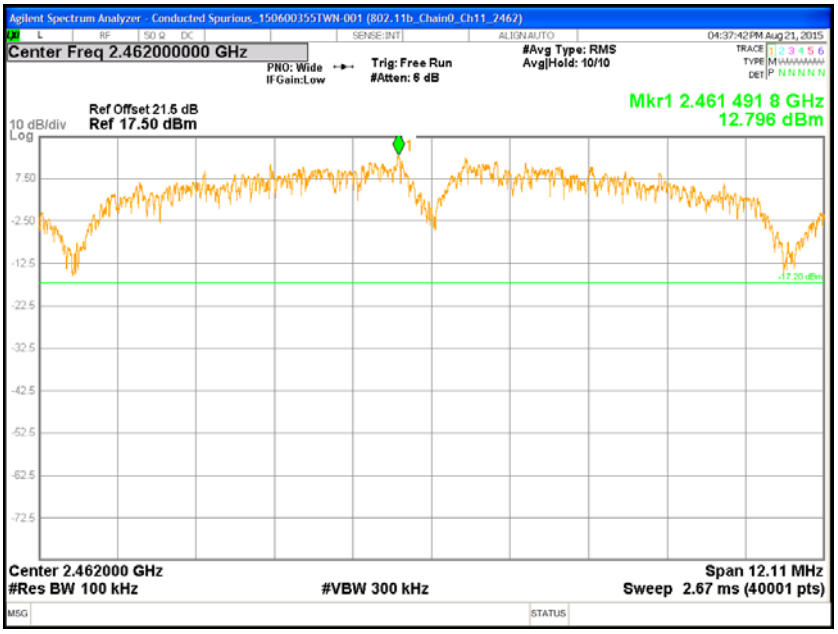
Chain0 : Conducted Spurious @ 802.11b mode Ch 6



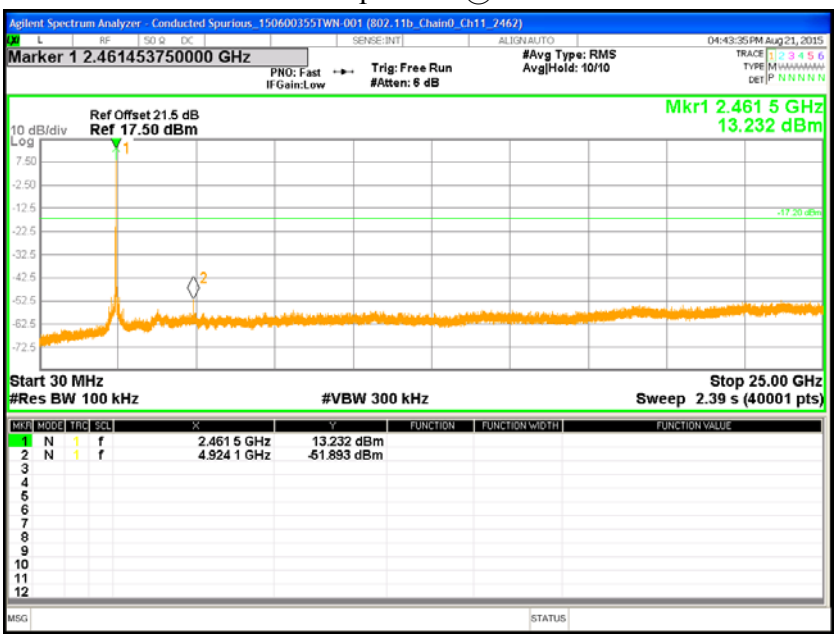
Chain0 : Conducted Spurious @ 802.11b mode Ch 6



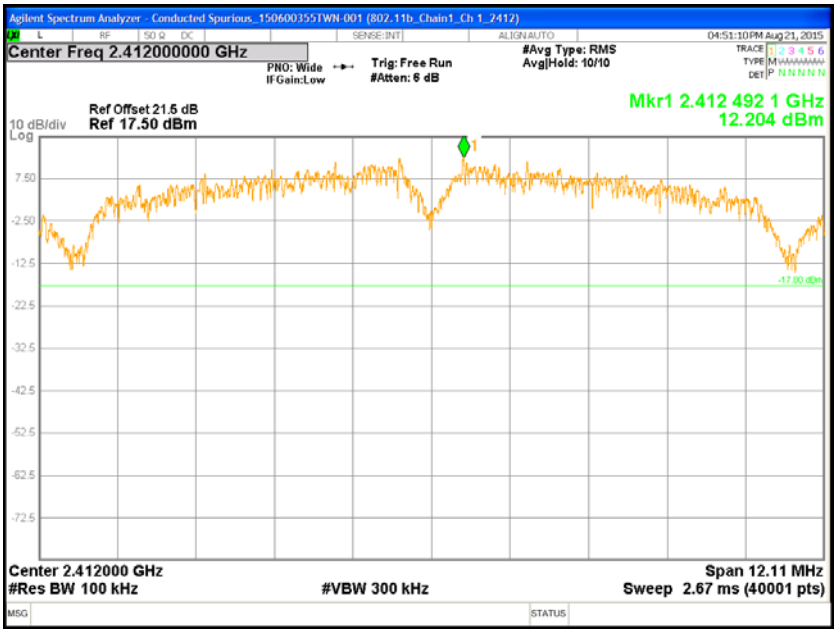
Chain0 : Conducted Spurious @ 802.11b mode Ch11



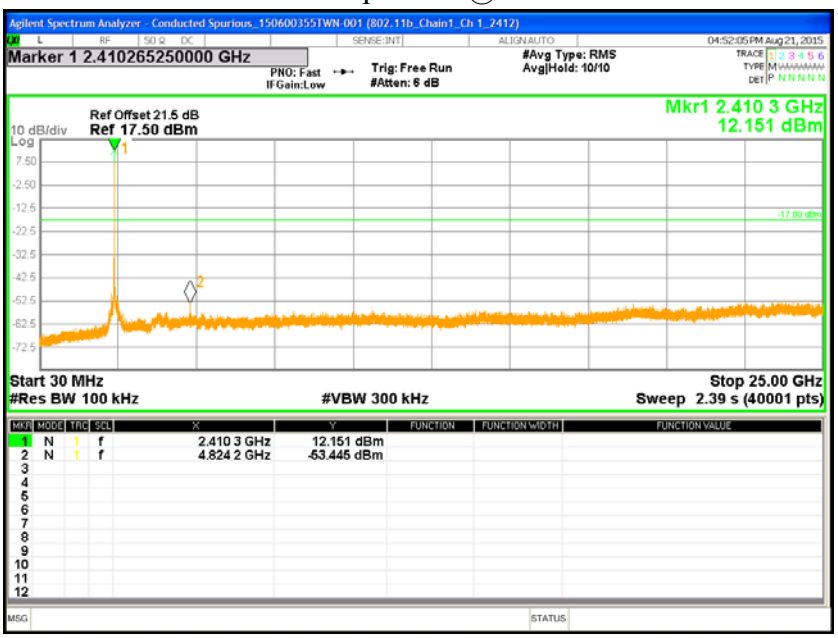
Chain0 : Conducted Spurious @ 802.11b mode Ch11



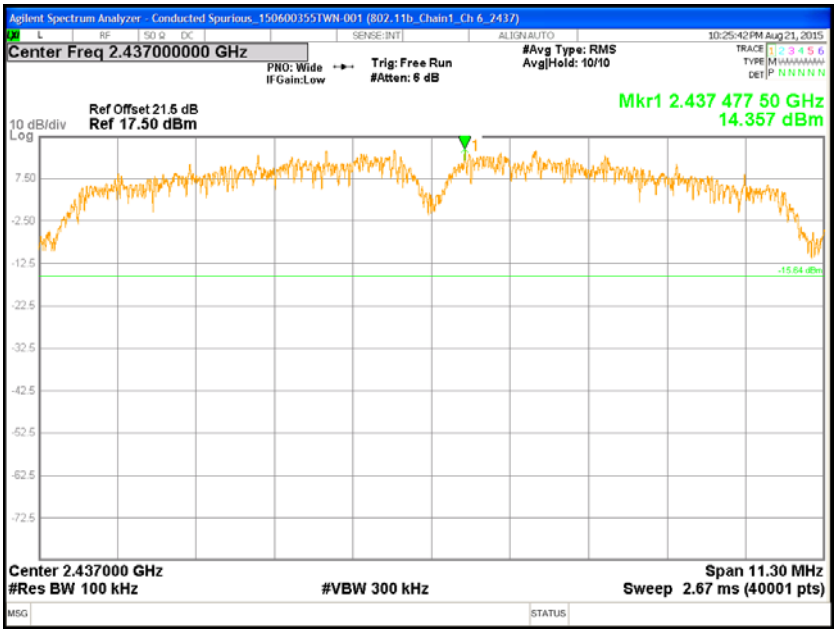
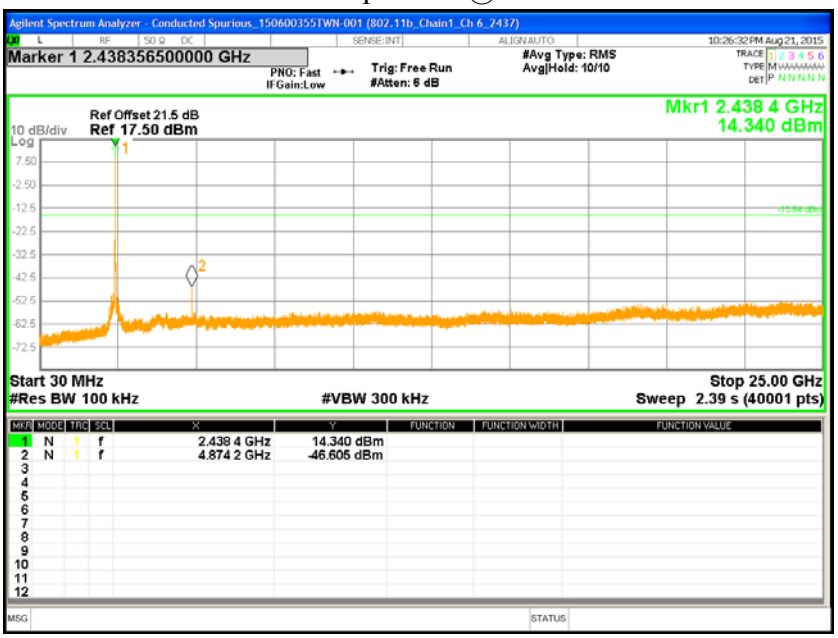
Chain1 : Conducted Spurious @ 802.11b mode Ch 1



Chain1 : Conducted Spurious @ 802.11b mode Ch 1



Chain1 : Conducted Spurious @ 802.11b mode Ch 6



Chain1 : Conducted Spurious @ 802.11b mode Ch 6