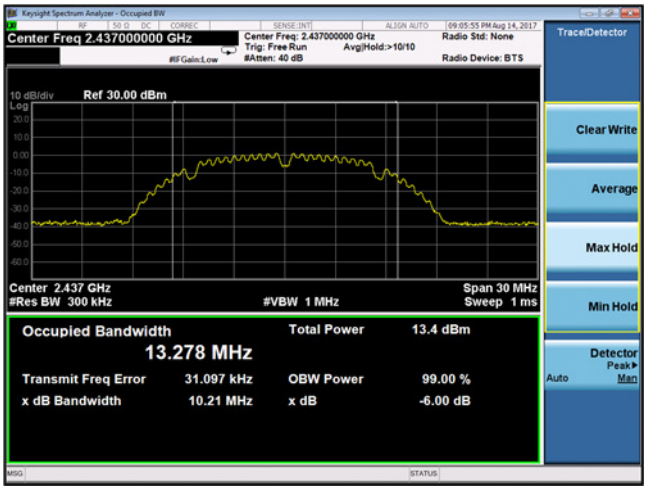
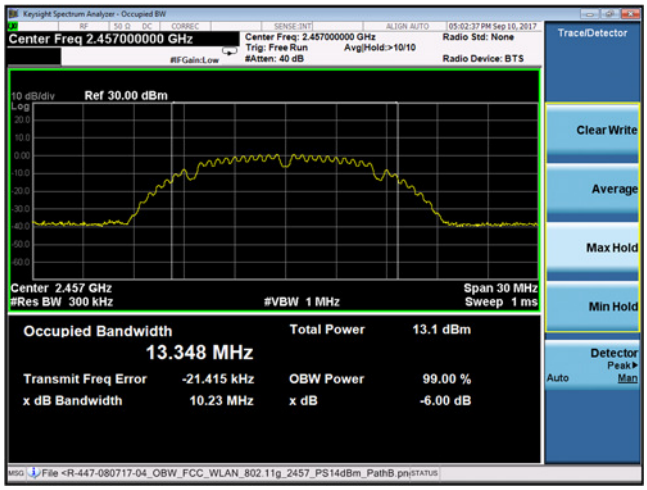
Plot 9-61 Chain B 99% Bandwidth 802.11b - Ch.1 (2412 MHz)

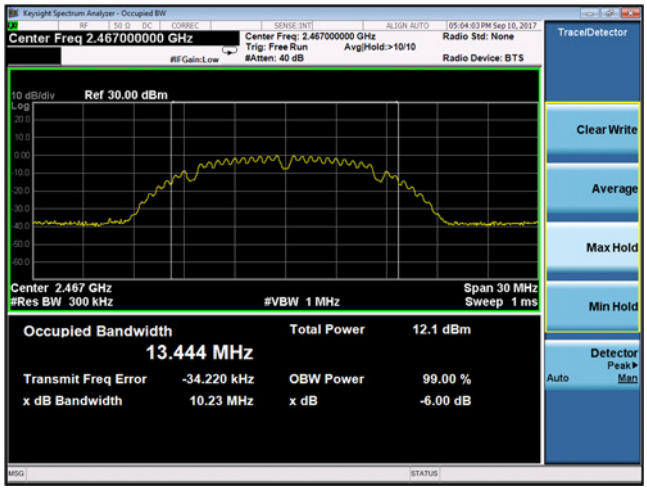


Plot 9-62 Chain B 99% Bandwidth 802.11b - Ch.6 (2437 MHz)

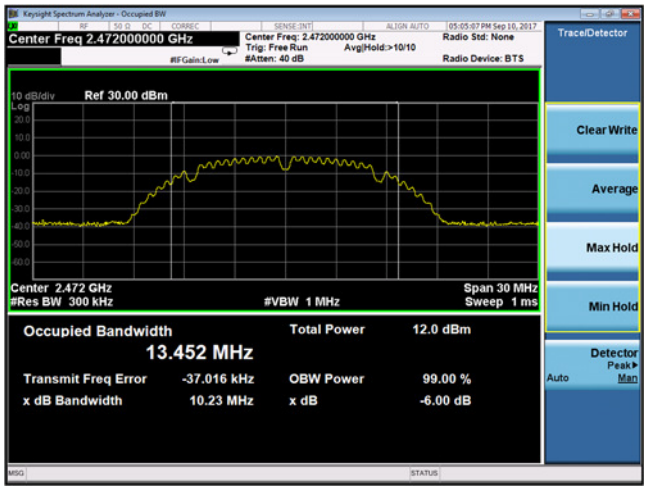


Plot 9-63 Chain B 99% Bandwidth 802.11b - Ch.10 (2457 MHz)

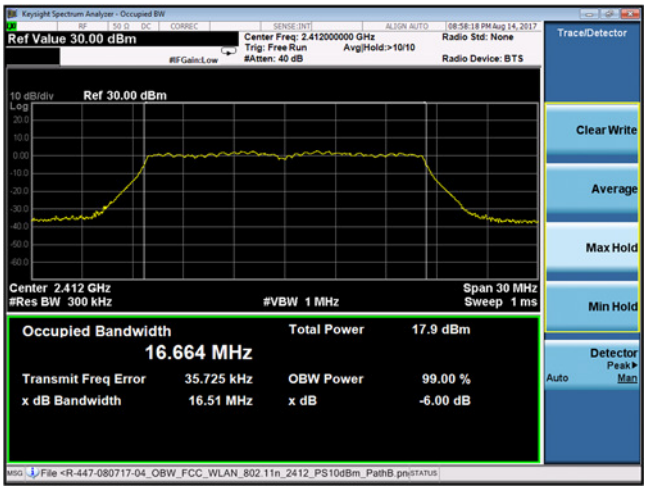
Plot 9-64 Chain B 99% Bandwidth 802.11b - Ch.11 (2462 MHz)



Plot 9-65 Chain B 99% Bandwidth 802.11b - Ch.12 (2467 MHz)

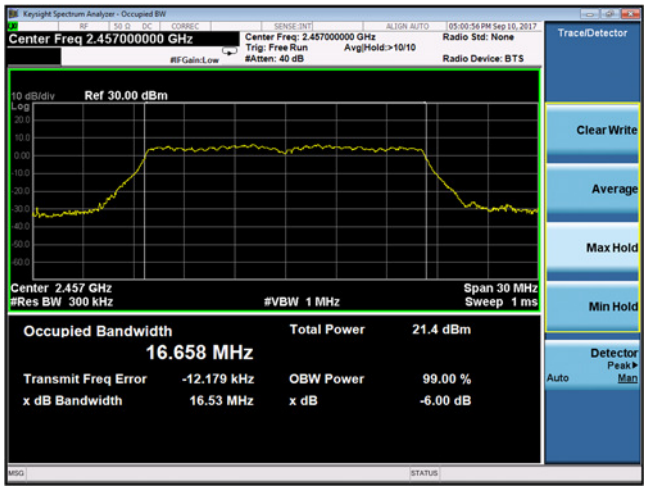


Plot 9-66 Chain B 99% Bandwidth 802.11b - Ch.13 (2472 MHz)

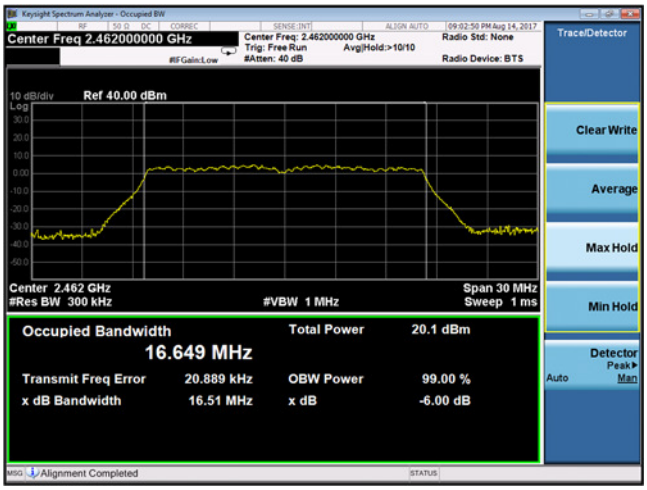


Plot 9-67 Chain B 99% Bandwidth 802.11g - Ch.1 (2412 MHz)

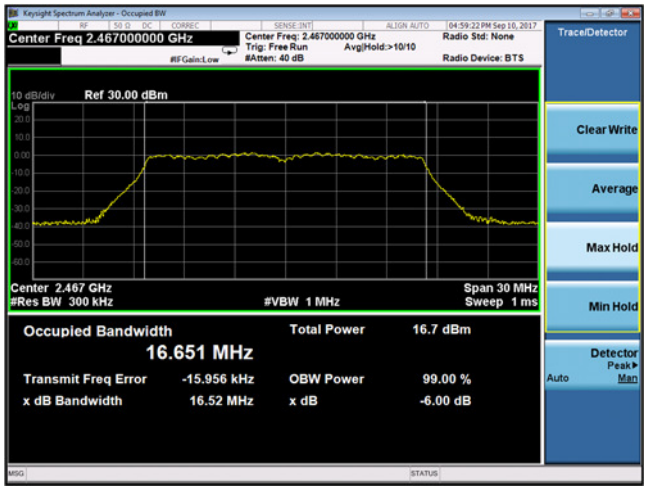
Plot 9-68 Chain B 99% Bandwidth 802.11g - Ch.6 (2437 MHz)



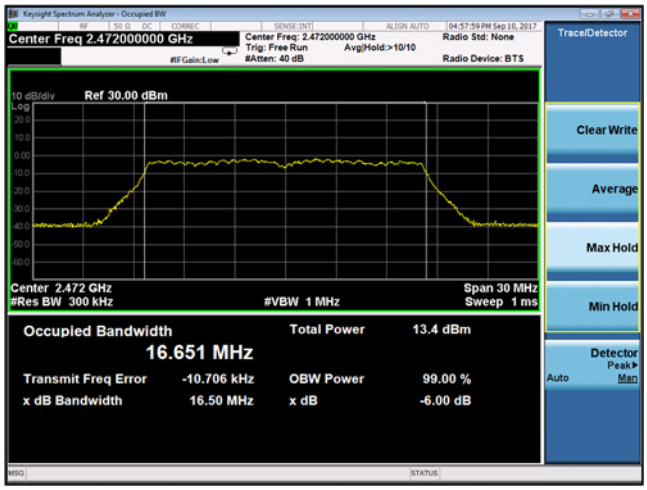
Plot 9-69 Chain B 99% Bandwidth 802.11g - Ch.10 (2457 MHz)



Plot 9-70 Chain B 99% Bandwidth 802.11g - Ch.11 (2462 MHz)

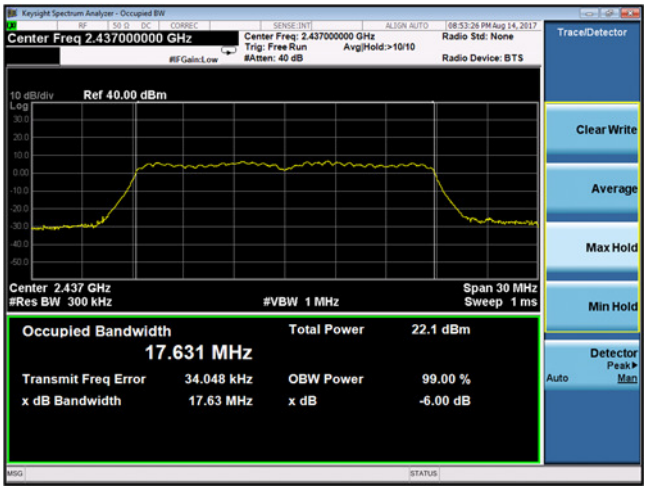


Plot 9-71 Chain B 99% Bandwidth 802.11g - Ch.12 (2467 MHz)

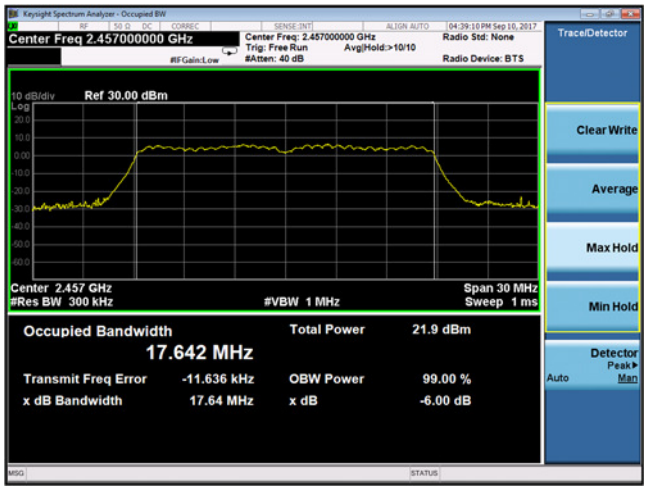


Plot 9-72 Chain B 99% Bandwidth 802.11g - Ch.13 (2472 MHz)

Plot 9-73 Chain B 99% Bandwidth 802.11n - Ch.1 (2412 MHz)

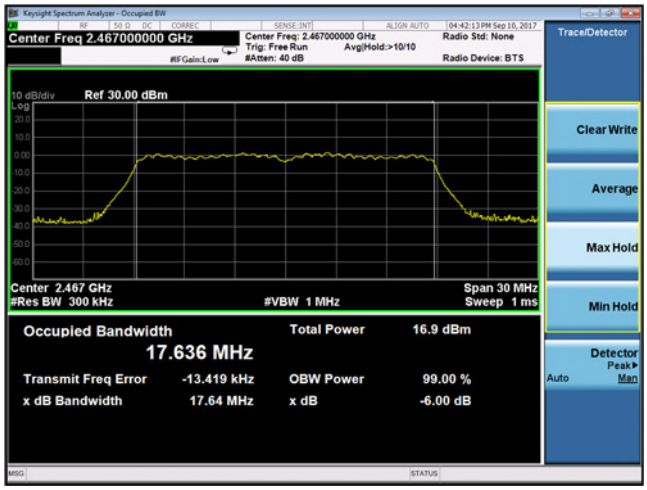


Plot 9-74Chain B 99% Bandwidth 802.11n - Ch.6 (2437 MHz)

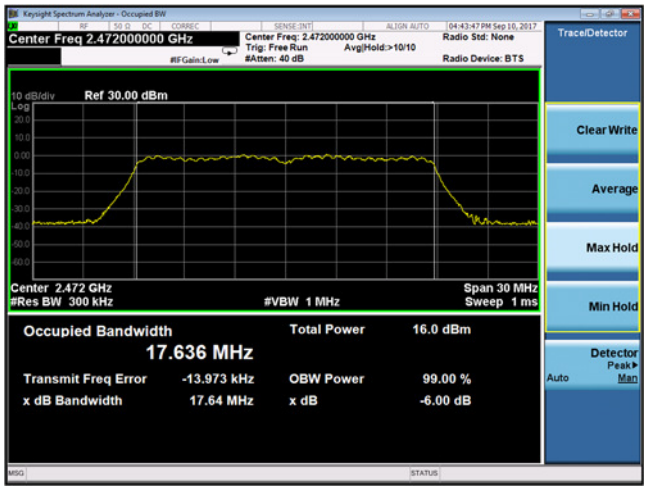


Plot 9-75 Chain B 99% Bandwidth 802.11n - Ch.10 (2457 MHz)

Plot 9-76 Chain B 99% Bandwidth 802.11n - Ch.11 (2462 MHz)



Plot 9-77 Chain B 99% Bandwidth 802.11n - Ch.12 (2467 MHz)



Plot 9-78 Chain B 99% Bandwidth 802.11n - Ch.13 (2472 MHz)

9.4 Output Power

9.4.1 Test Requirement:

FCC CFR 47 Rule Part 15.247 (b)(3)

ISED RSS-247 [5.4]

9.4.2 Test Method:

Measurements were performed according to the procedure defined in KDB 558074- Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 V04 and ANSI C63.10: 2013.

Power Meter Settings:

Peak Power:

The maximum peak conducted output power was measured using a broadband peak RF power meter. The power meter had a video bandwidth that is greater than or equal to the DTS bandwidth and utilized a fast-responding diode detector.

9.4.3 Limits:

15.247: The maximum permissible peak output power is 30 dBm (1 W)

RSS-247: The maximum peak conducted output power shall not exceed 30dBm (1 W) and the maximum radiated output power shall not exceed 36dBm (4 W) EIRP.

9.4.4 Test Results:

802.11 mode	Freq (MHz)	Path A Conducted Output power (dBm)	Path B Conducted Output Power (dBm)	Total Peak Cond Power (dBm)	Conducted Limit (dBm)	Margin (dB)	Result
b	2412	11.66	11.71	14.70	30.00	-15.30	Pass
b	2437	12.38	11.38	14.92	30.00	-15.08	Pass
b	2457	13.77	13.32	16.56	30.00	-13.44	Pass
b	2462	11.37	10.61	14.02	30.00	-15.99	Pass
b	2467	12.84	12.28	15.58	30.00	-14.42	Pass
b	2472	12.80	12.27	15.55	30.00	-14.45	Pass
g	2412	21.09	20.69	23.90	30.00	-6.10	Pass
g	2437	24.20	23.56	26.90	30.00	-3.10	Pass
g	2457	26.17	25.44	28.83	30.00	-1.17	Pass
g	2462	24.33	22.35	26.46	30.00	-3.54	Pass
g	2467	21.74	21.50	24.63	30.00	-5.37	Pass
g	2472	18.34	17.84	21.11	30.00	-8.89	Pass
n	2412	20.65	20.94	23.80	30.00	-6.20	Pass
n	2417	24.57	23.50	27.08	30.00	-2.93	Pass
n	2457	25.92	24.99	28.49	30.00	-1.51	Pass
n	2462	24.12	23.32	26.75	30.00	-3.25	Pass
n	2467	21.46	21.39	24.43	30.00	-5.57	Pass
n	2472	18.61	17.84	21.25	30.00	-8.75	Pass

802.11 mode	Frequency (MHz)	Total Peak Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Margin (dB)	Result
b	2412	14.70	2.98	17.68	36.00	-18.33	Pass
b	2437	14.92	2.98	17.90	36.00	-18.10	Pass
b	2457	16.56	2.98	19.54	36.00	-16.46	Pass
b	2462	14.02	2.98	16.99	36.00	-19.01	Pass
b	2467	15.58	2.98	18.56	36.00	-17.44	Pass
b	2472	15.55	2.98	18.53	36.00	-17.47	Pass
g	2412	23.90	2.98	26.88	36.00	-9.12	Pass
g	2437	26.90	2.98	29.88	36.00	-6.12	Pass
g	2457	28.83	2.98	31.81	36.00	-4.19	Pass
g	2462	26.46	2.98	29.44	36.00	-6.56	Pass
g	2467	24.63	2.98	27.61	36.00	-8.39	Pass
g	2472	21.11	2.98	24.09	36.00	-11.91	Pass
n	2412	23.80	2.98	26.78	36.00	-9.22	Pass
n	2417	27.08	2.98	30.05	36.00	-5.95	Pass
n	2457	28.49	2.98	31.47	36.00	-4.53	Pass
n	2462	26.75	2.98	29.73	36.00	-6.27	Pass
n	2467	24.43	2.98	27.41	36.00	-8.59	Pass
n	2472	21.25	2.98	24.23	36.00	-11.77	Pass

9.5 Power Spectral Density

9.5.1 Test Requirement:

FCC CFR 47 Rule Part 15.247 (e)
ISED RSS-247 Issue 1 [5.2]

9.5.2 Test Method:

Measurements were performed according to the procedure defined in KDB 558074- Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 V04 and ANSI C63.10: 2013.

Spectrum Analyzer settings:
Set analyzer center frequency to DTS channel center frequency.
Span to 1.5 times the DTS bandwidth
RBW to: 3 kHz ≤ RBW ≤ 100 kHz
VBW ≥ 3 RBW
Detector = Peak
Sweep time = auto couple
Trace mode = max hold
Use the peak marker function to determine the maximum amplitude level within the RBW
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

9.5.3 Limits:

The maximum permissible power density is 8 dBm/3kHz, however if the antenna gain is >6 dBi, the limit is reduced by the total Directional Antenna Gain –6 dBi.

In this case:

Correlated Directional gain = 5.99 dBi.

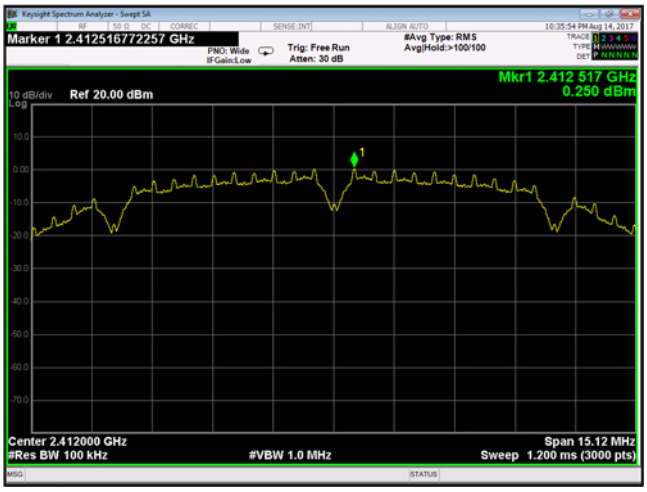
No adjustments to test limits is required here.

9.5.4 Test Results:

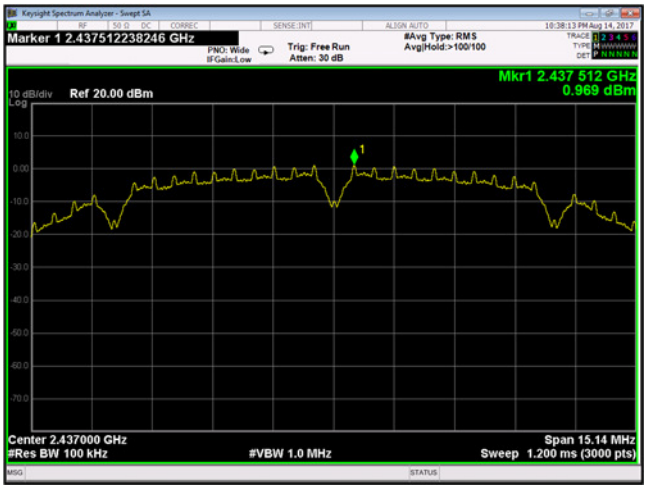
802.11 mode	Frequency (MHz)	Path A Power Spectral Density (dBm/100kHz)	Path B Power Spectral Density (dBm/100kHz)	Total Power Spectral Density Limit (dBm/100kHz)	Limit (dBm/3kHz)	Pass/Fail
b	2412	0.25	0.44	3.36	8.0	Pass
b	2437	0.97	0.43	3.72	8.0	Pass
b	2457	1.18	0.20	3.73	8.0	Pass
b	2462	-0.11	-0.88	2.53	8.0	Pass
b	2467	-0.37	-0.78	2.44	8.0	Pass
b	2472	-0.19	-0.85	2.50	8.0	Pass
g	2412	-0.29	-0.50	2.62	8.0	Pass
g	2437	4.12	2.90	6.56	8.0	Pass
g	2457	3.87	2.55	6.27	8.0	Pass
g	2462	3.09	1.49	5.37	8.0	Pass
g	2467	-0.92	-2.03	1.57	8.0	Pass
g	2472	-3.58	-4.93	-1.19	8.0	Pass
n	2412	-0.37	-0.44	2.60	8.0	Pass
n	2437	3.78	2.73	6.29	8.0	Pass
n	2457	3.65	2.73	6.22	8.0	Pass
n	2462	2.97	1.72	5.40	8.0	Pass
n	2467	-1.64	-2.42	1.00	8.0	Pass
n	2472	-3.84	-5.13	-1.46	8.0	Pass

The test data shows that the EUT passes the requirement using 100kHz RBW setting and hence will meet the requirement for 3kHz BW.

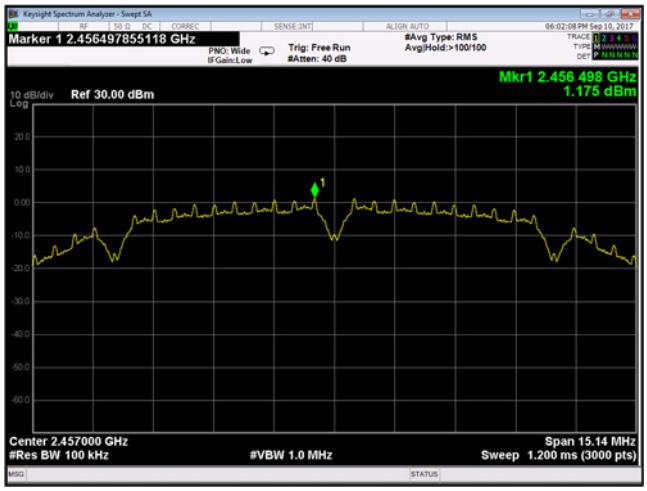
9.5.5 Test Data:



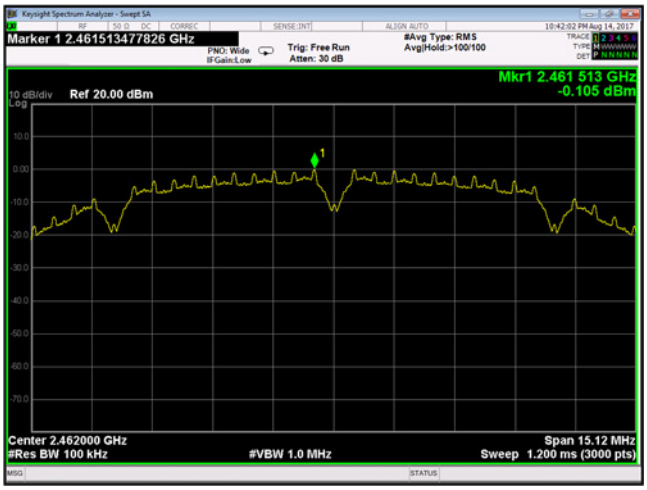
Plot 9-79 Chain A Peak Power Spectral Density 802.11b - Ch.1 (2412 MHz)



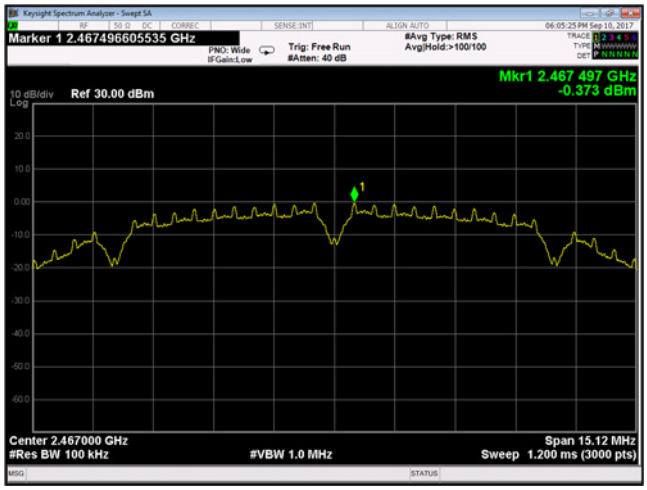
Plot 9-80 Chain A Peak Power Spectral Density 802.11b - Ch.6 (2437 MHz)



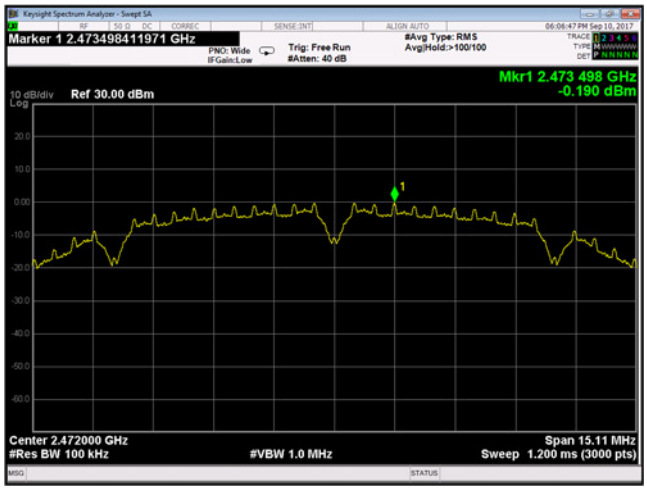
Plot 9-81 Chain A Peak Power Spectral Density 802.11b - Ch.10 (2457 MHz)



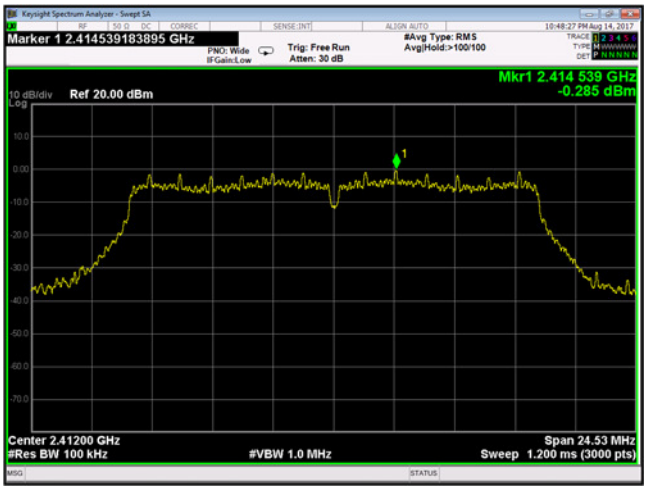
Plot 9-82 Chain A Peak Power Spectral Density 802.11b - Ch.11 (2462 MHz)



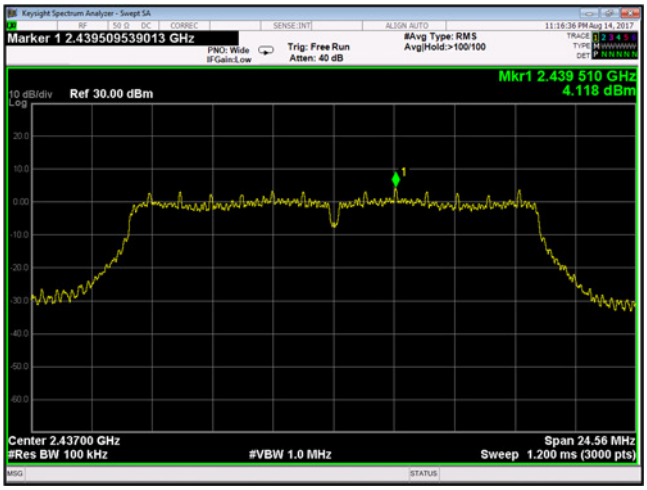
Plot 9-83 Chain A Peak Power Spectral Density 802.11b - Ch.12 (2467 MHz)



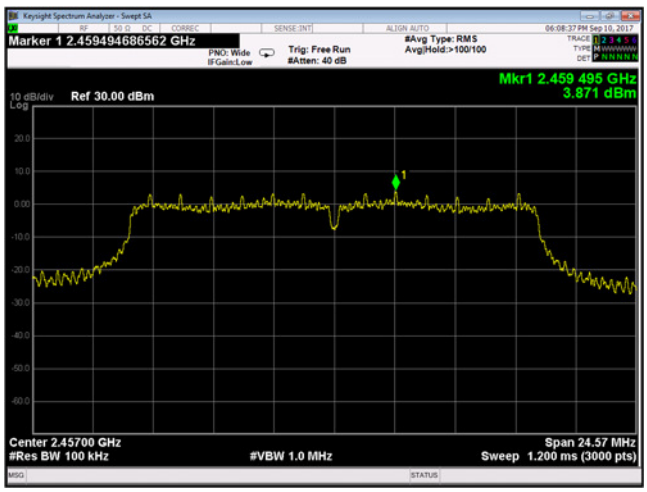
Plot 9-84 Chain A Peak Power Spectral Density 802.11b - Ch.13 (2472 MHz)



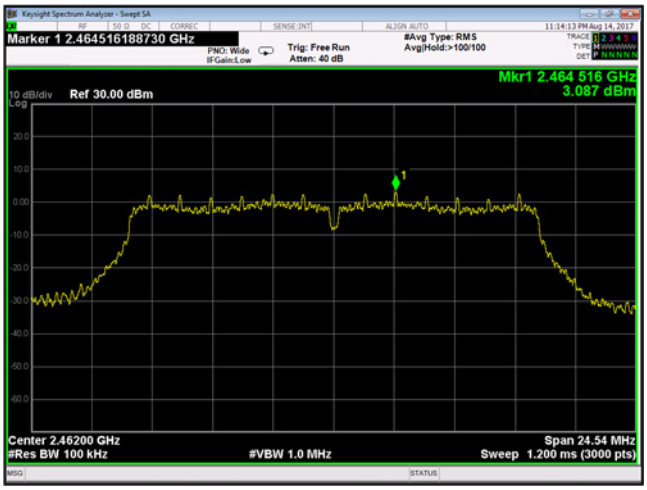
Plot 9-85 Chain A Peak Power Spectral Density 802.11g - Ch.1 (2412 MHz)



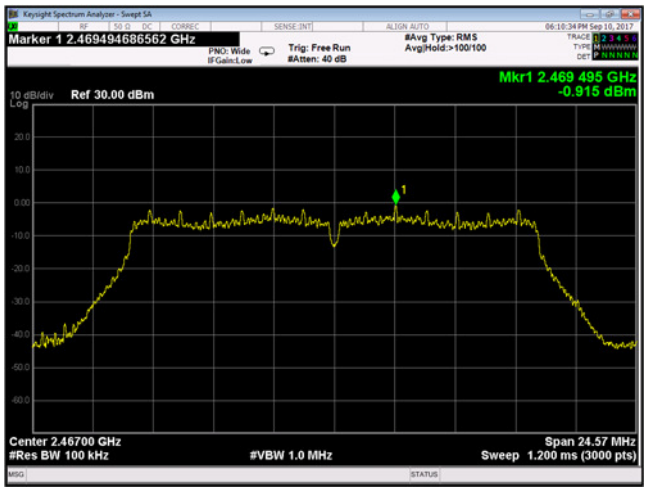
Plot 9-86 Chain A Peak Power Spectral Density 802.11g - Ch.6 (2437 MHz)



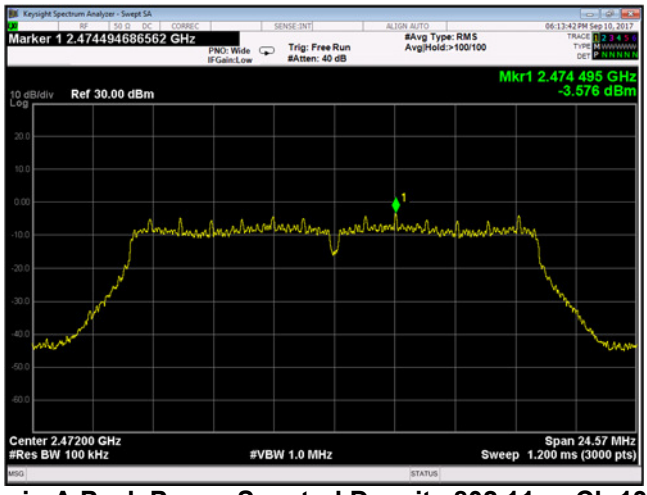
Plot 9-87 Chain A Peak Power Spectral Density 802.11g - Ch.10 (2457 MHz)



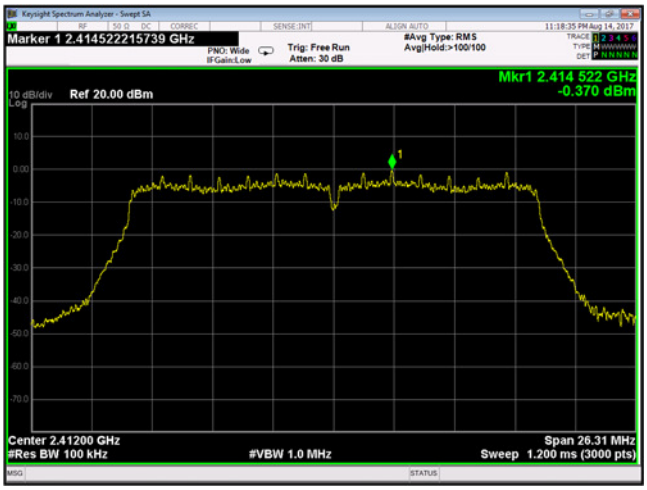
Plot 9-88 Chain A Peak Power Spectral Density 802.11g - Ch.11 (2462 MHz)



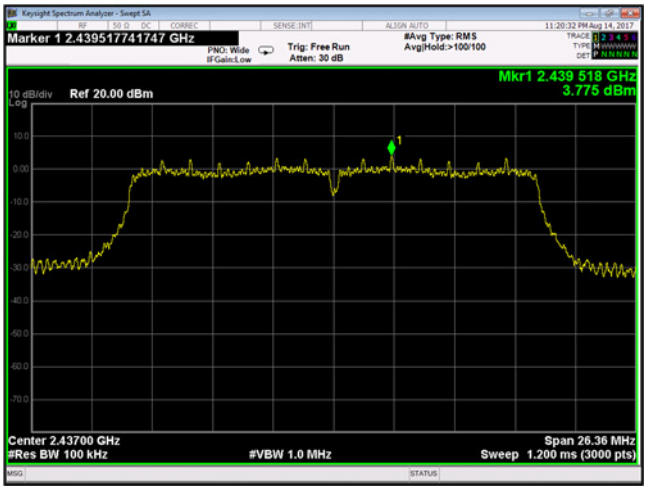
Plot 9-89 Chain A Peak Power Spectral Density 802.11g - Ch.12 (2467 MHz)



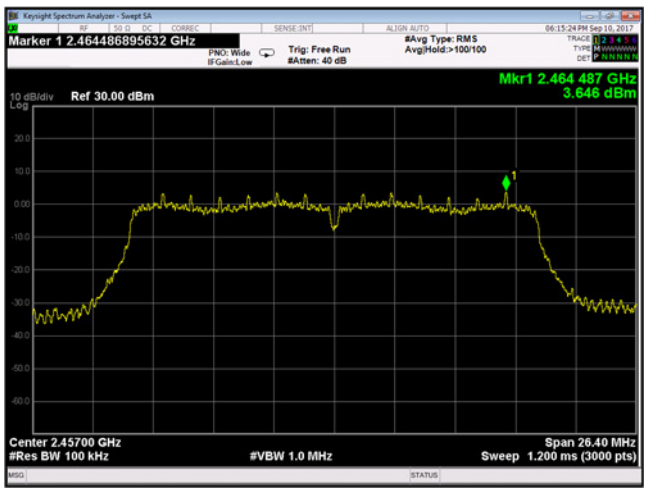
Plot 9-90 Chain A Peak Power Spectral Density 802.11g - Ch.13 (2472 MHz)



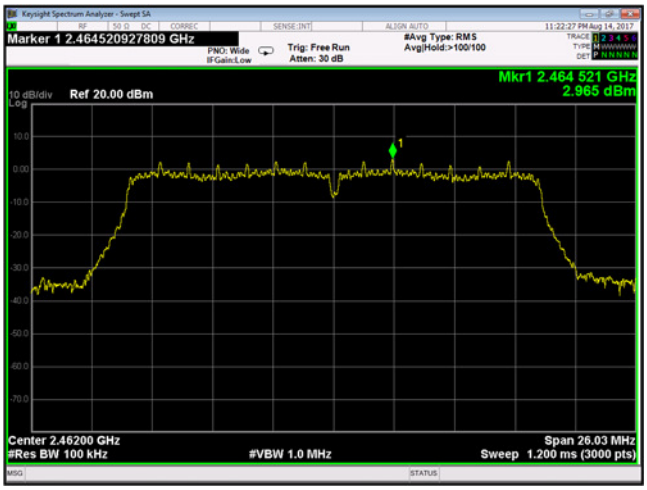
Plot 9-91 Chain A Peak Power Spectral Density 802.11n - Ch.1 (2412 MHz)



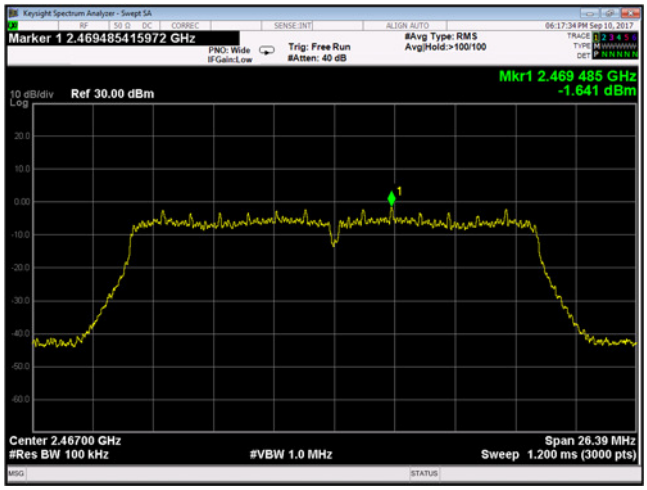
Plot 9-92 Chain A Peak Power Spectral Density 802.11n - Ch.6 (2437 MHz)



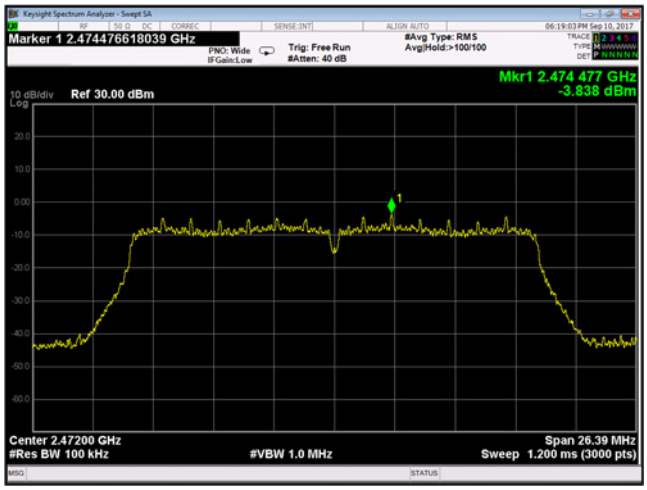
Plot 9-93 Chain A Peak Power Spectral Density 802.11n - Ch.10 (2457 MHz)



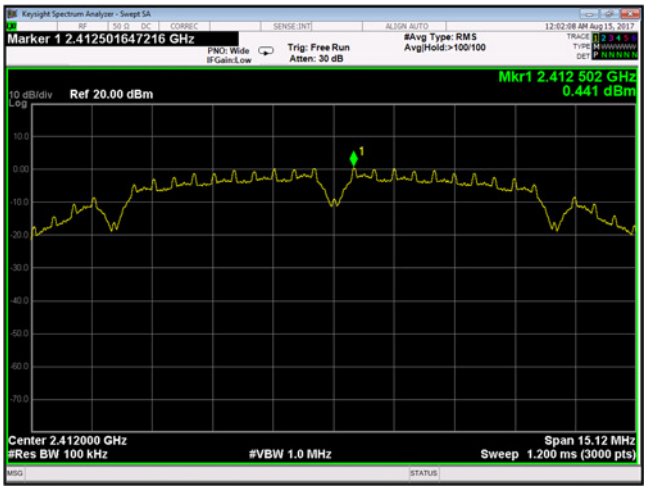
Plot 9-94 Chain A Peak Power Spectral Density 802.11n - Ch.11 (2462 MHz)



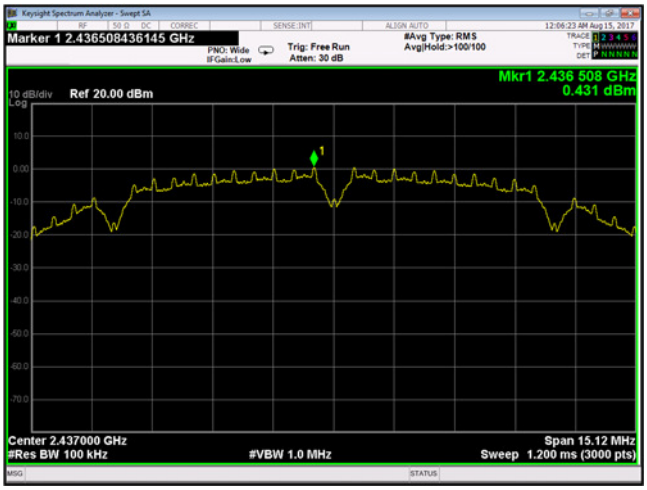
Plot 9-95 Chain A Peak Power Spectral Density 802.11n - Ch.12 (2467 MHz)



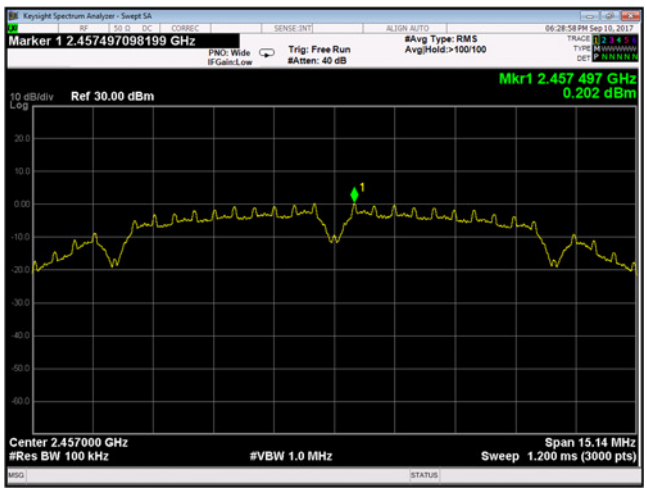
Plot 9-96 Chain A Peak Power Spectral Density 802.11n - Ch.13 (2472 MHz)



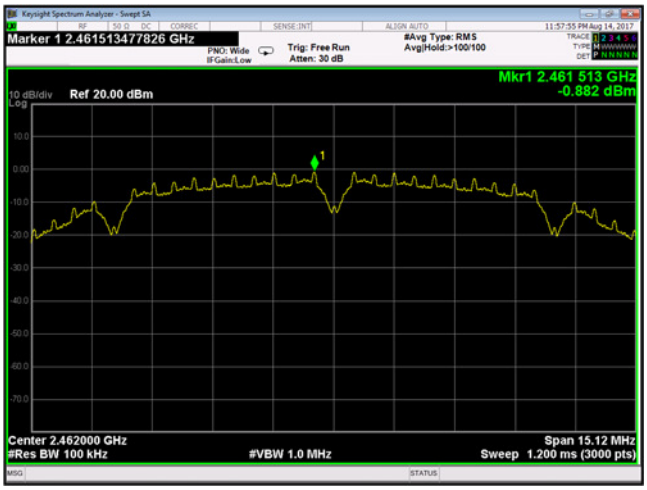
Plot 9-97 Chain B Peak Power Spectral Density 802.11b - Ch.1 (2412 MHz)



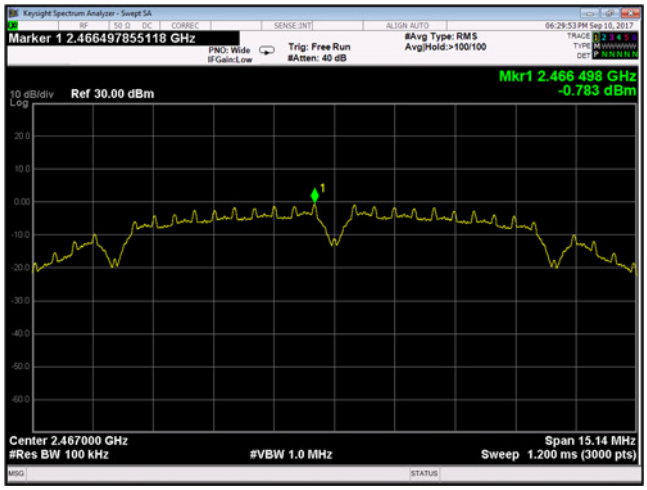
Plot 9-98 Chain B Peak Power Spectral Density 802.11b - Ch.6 (2437 MHz)



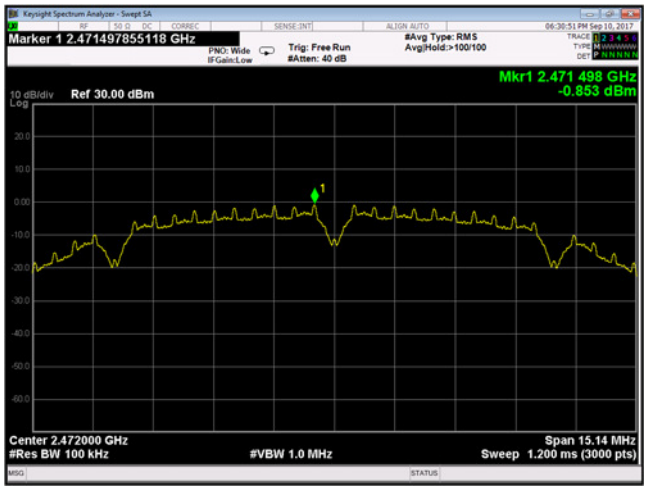
Plot 9-99 Chain B Peak Power Spectral Density 802.11b - Ch.10 (2457 MHz)



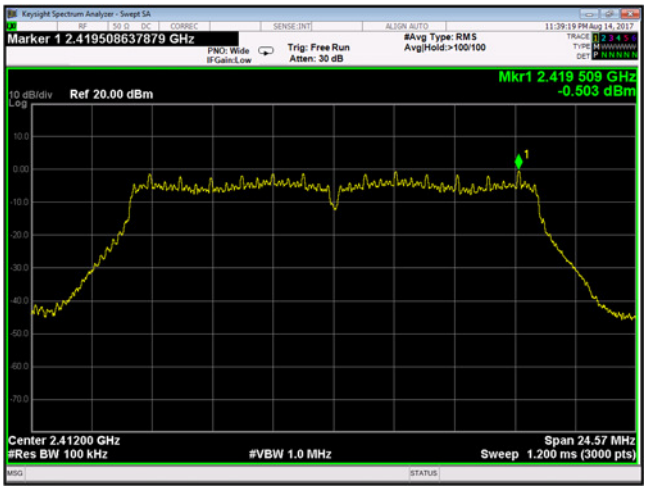
Plot 9-100 Chain B Peak Power Spectral Density 802.11b - Ch.11 (2462 MHz)



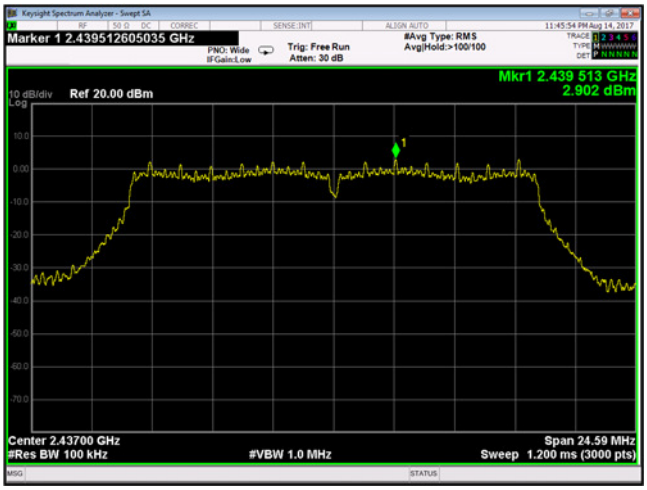
Plot 9-101 Chain B Peak Power Spectral Density 802.11b - Ch.12 (2467 MHz)



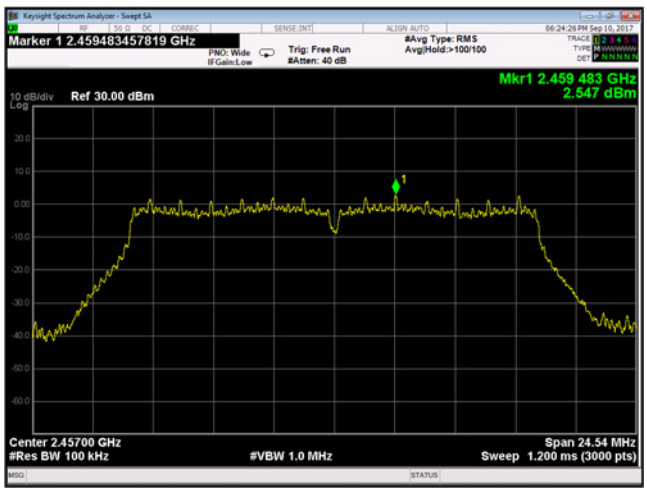
Plot 9-102 Chain B Peak Power Spectral Density 802.11b - Ch.13 (2472 MHz)



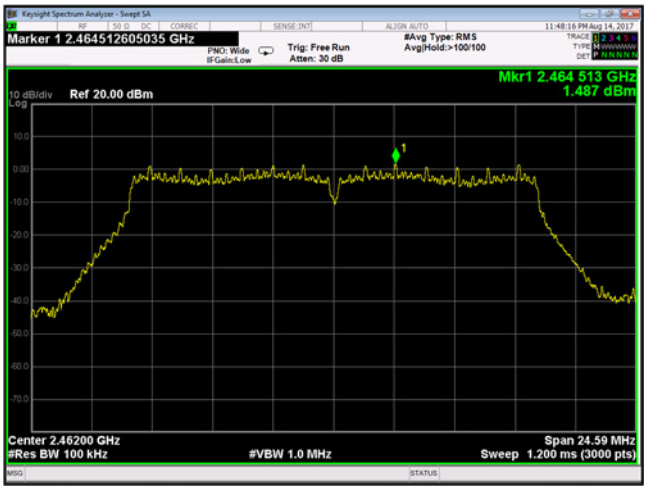
Plot 9-103 Chain B Peak Power Spectral Density 802.11g - Ch.1 (2412 MHz)



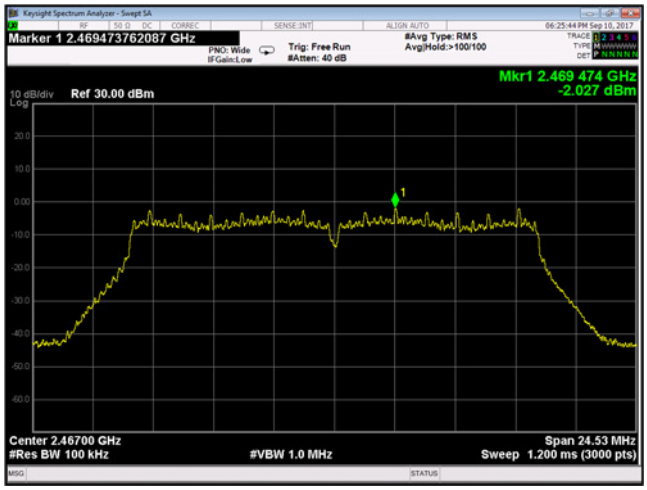
Plot 9-104 Chain B Peak Power Spectral Density 802.11g - Ch.6 (2437 MHz)



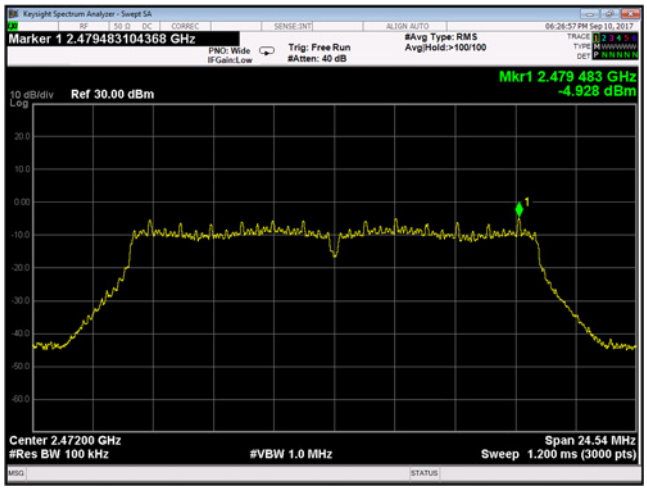
Plot 9-105 Chain B Peak Power Spectral Density 802.11g - Ch.10 (2457 MHz)



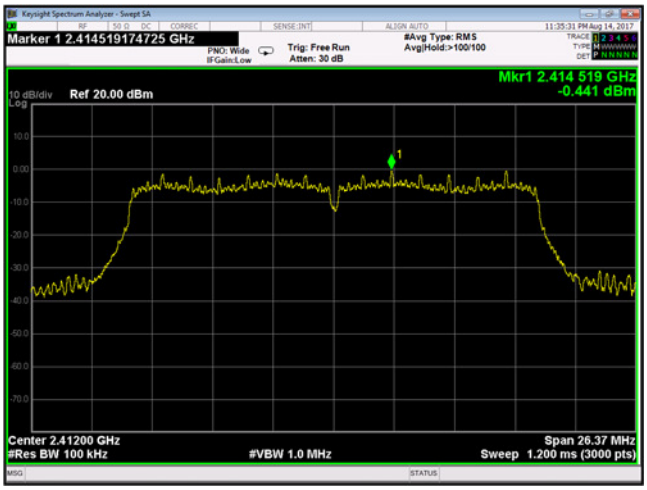
Plot 9-106 Chain B Peak Power Spectral Density 802.11g - Ch.11 (2462 MHz)



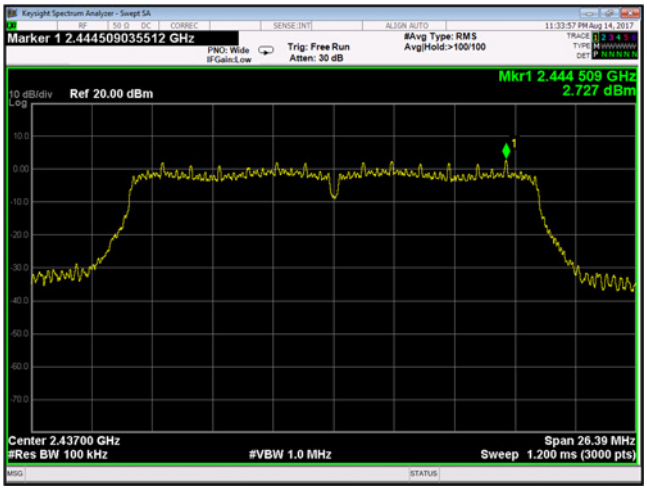
Plot 9-107 Chain B Peak Power Spectral Density 802.11g - Ch.12 (2467 MHz)



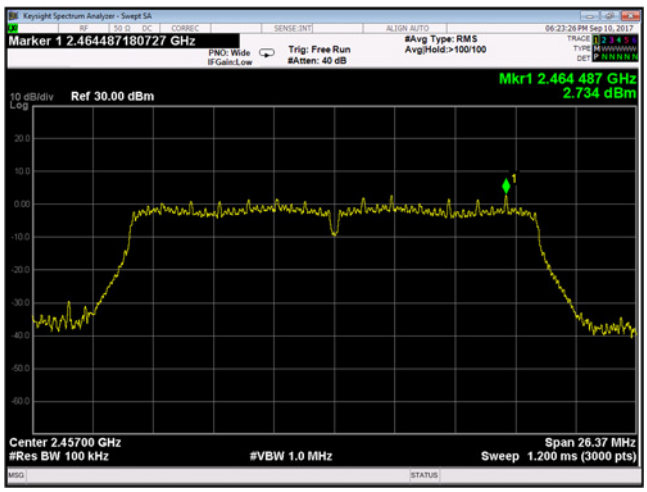
Plot 9-108 Chain B Peak Power Spectral Density 802.11g - Ch.13 (2472 MHz)



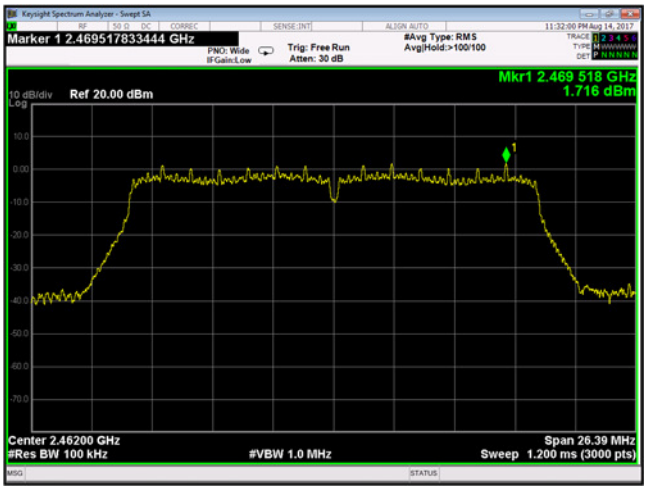
Plot 9-109 Chain B Peak Power Spectral Density 802.11n - Ch.1 (2412 MHz)



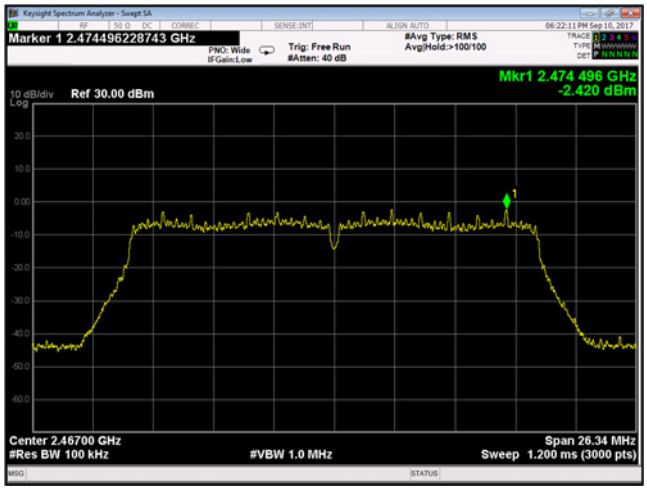
Plot 9-110 Chain B Peak Power Spectral Density 802.11n - Ch.6 (2437 MHz)



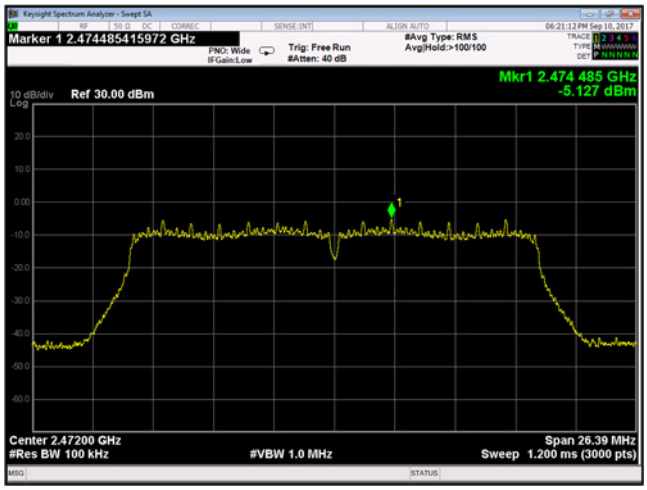
Plot 9-111 Chain B Peak Power Spectral Density 802.11n - Ch.10 (2457 MHz)



Plot 9-112 Chain B Peak Power Spectral Density 802.11n - Ch.11 (2462 MHz)



Plot 9-113 Chain B Peak Power Spectral Density 802.11n - Ch.12 (2467 MHz)



Plot 9-114 Chain B Peak Power Spectral Density 802.11n - Ch.13 (2472 MHz)

9.6 Conducted Spurious Emissions

9.6.1 Test Requirement:

FCC CFR 47 Rule Part 15.247 (d)
ISED RSS-247 [5.5]

9.6.2 Test Method:

Measurements were performed according to the procedure defined in KDB 558074 - Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 V04 and ANSI C63.10: 2013.

Spectrum Analyzer settings:
Identification of Reference Level:
RBW= 100 kHz
VBW ≥ 3 x RBW
Trace Mode= Peak Detector (Max Hold)
Sweep time= auto couple
Span ≥1.5 times DTS Bandwidth
Peak Marker function to determine the max PSD level.
Conducted Spurious Emissions:
RBW= 1 MHz
VBW≥ 3 x RBW = 3 MHz
Trace Mode= Peak Detector (Max Hold)
Sweep time= auto couple

Span= 30 MHz- 12 GHz; 12 GHz – 25 GHz
Sweep Points= 30000

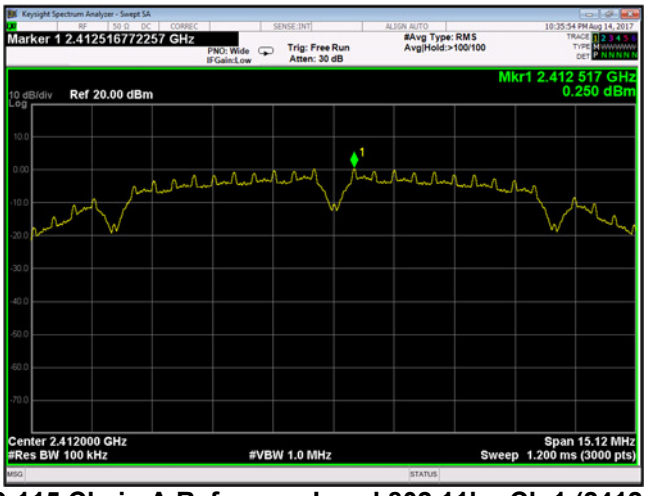
9.6.3 Limits:

All spurious emissions at least 20 dBc.

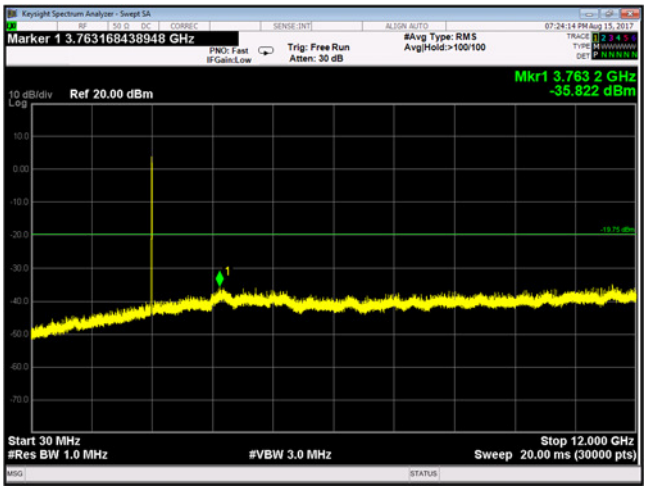
9.6.4 Test Result:

Pass.

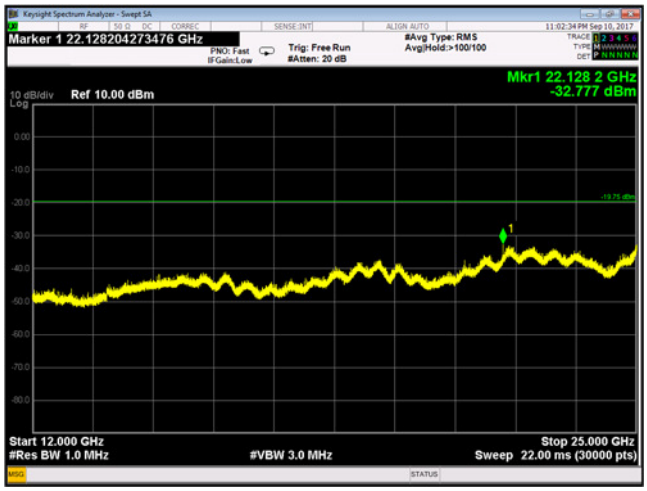
9.6.5 Test Data:



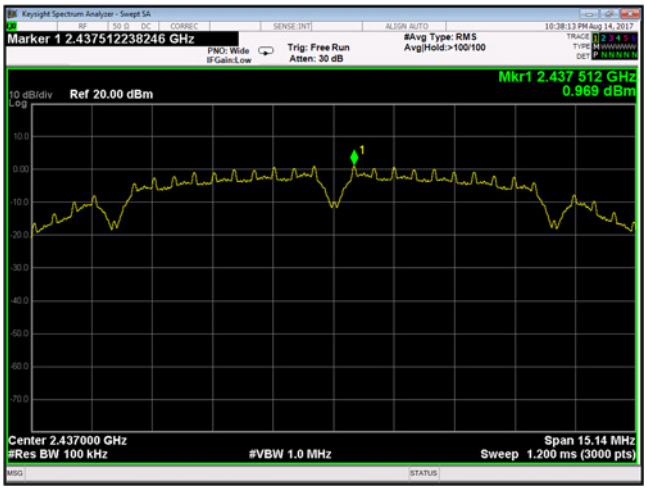
Plot 9-115 Chain A Reference Level 802.11b - Ch.1 (2412 MHz)



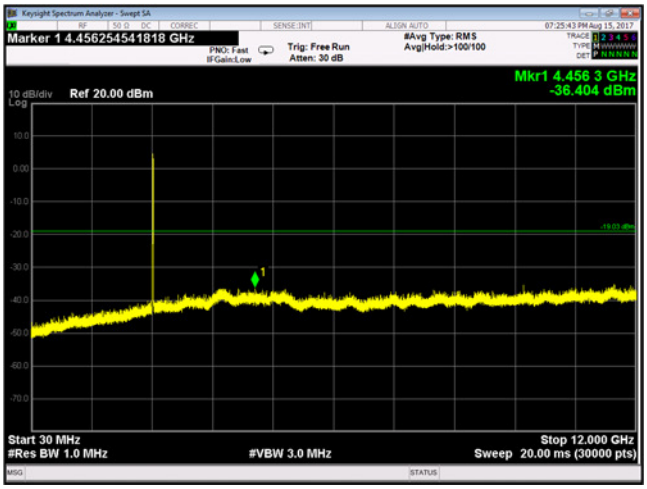
Plot 9-116 Chain A Conducted Spurious Emissions 30 MHz - 12 GHz 802.11b - Ch.1 (2412 MHz)



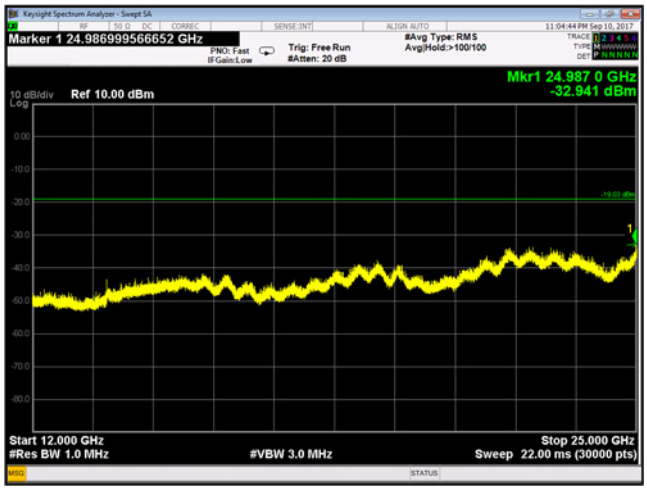
Plot 9-117 Chain A Conducted Spurious Emissions 12 - 25 GHz 802.11b - Ch.1 (2412 MHz)



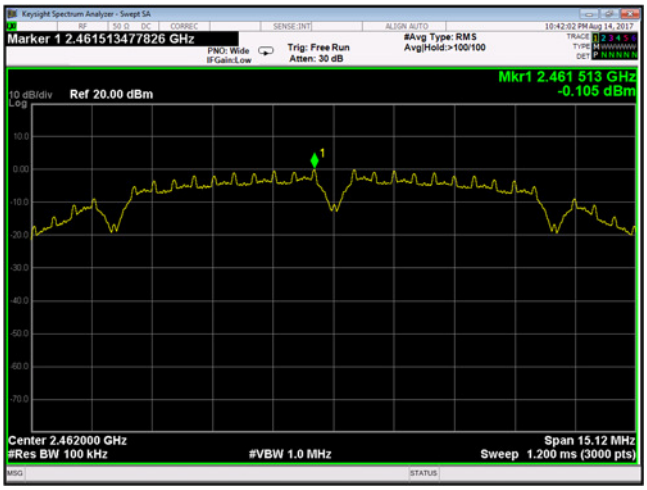
Plot 9-118 Chain A Reference Level 802.11b - Ch.6 (2437 MHz)



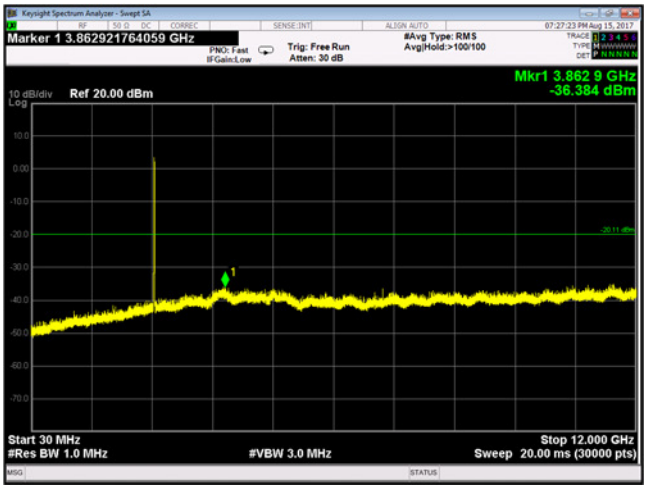
Plot 9-119 Chain A Conducted Spurious Emissions 30 MHz - 12 GHz 802.11b - Ch.6 (2437 MHz)



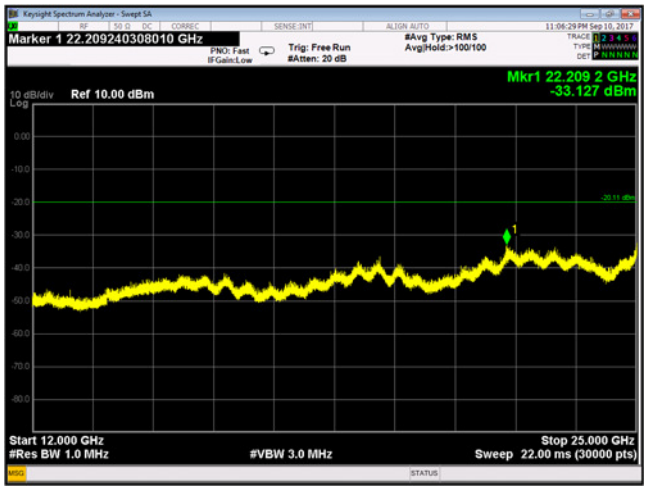
Plot 9-120 Chain A Conducted Spurious Emissions 12 - 25 GHz 802.11b - Ch.6 (2437 MHz)



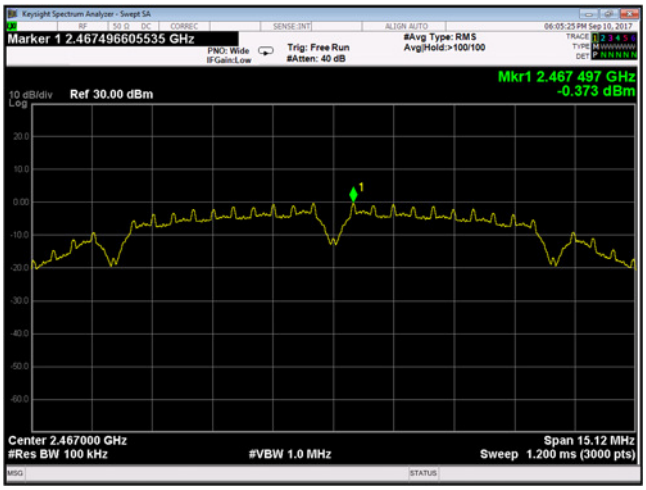
Plot 9-121 Chain A Reference Level 802.11b - Ch.11 (2462 MHz)



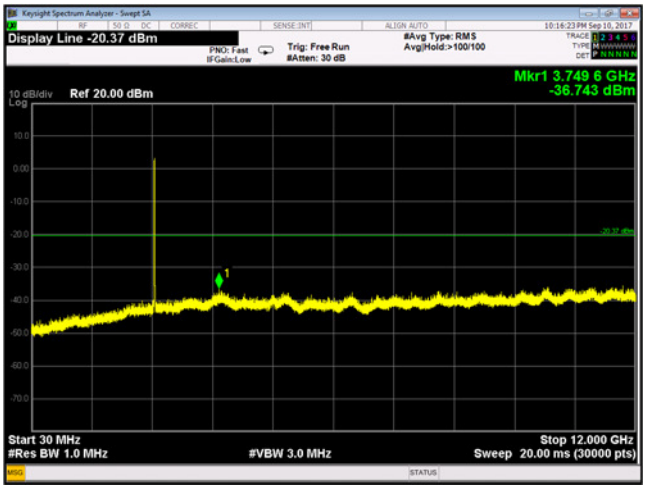
Plot 9-122 Chain A Conducted Spurious Emissions 30 MHz - 12 GHz 802.11b - Ch.11 (2462 MHz)



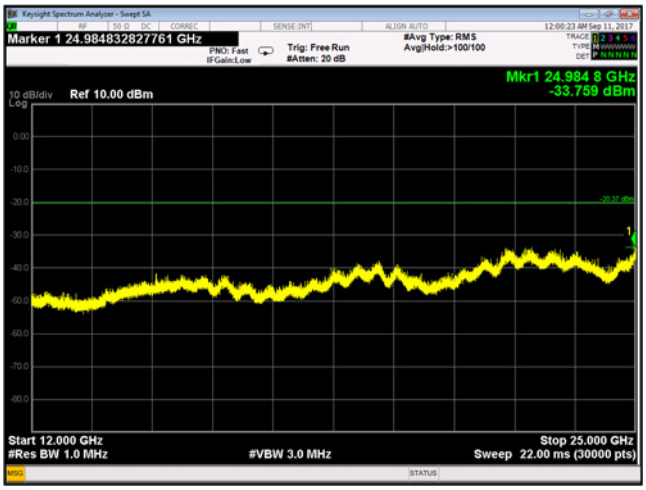
Plot 9-123 Chain A Conducted Spurious Emissions 12 - 25 GHz 802.11b - Ch.11 (2462 MHz)



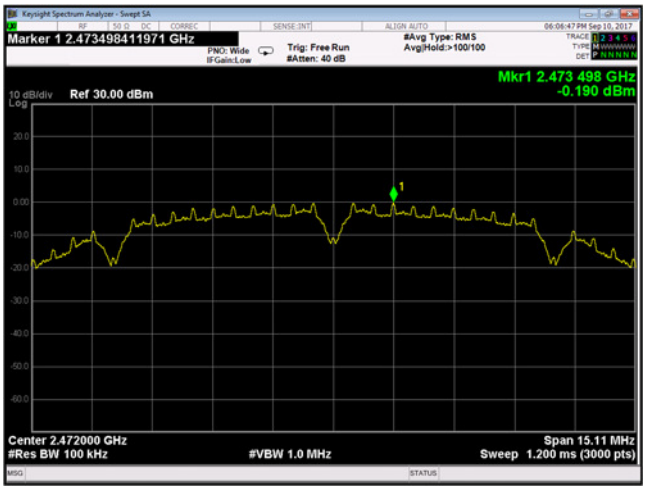
Plot 9-124 Chain A Reference Level 802.11b - Ch.12 (2467 MHz)



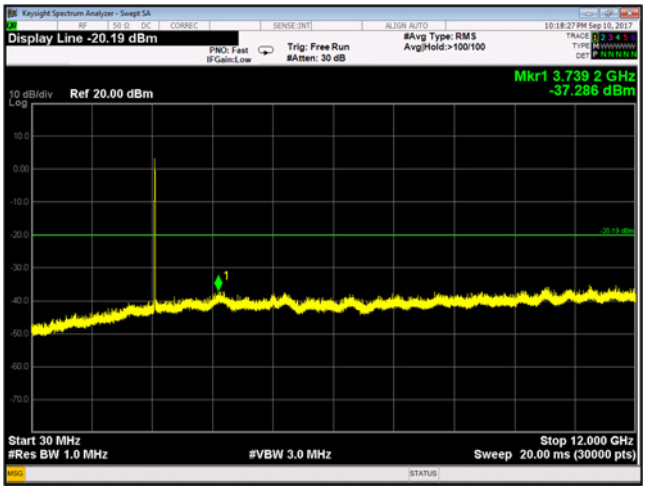
Plot 9-125 Chain A Conducted Spurious Emissions 30 MHz - 12 GHz 802.11b - Ch.12 (2467 MHz)



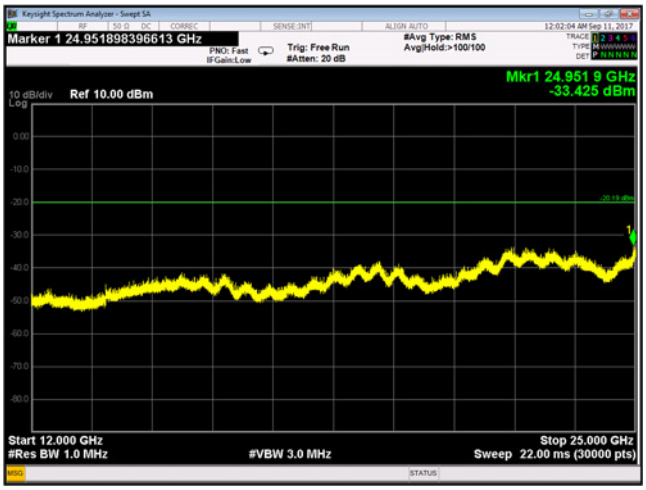
Plot 9-126 Chain A Conducted Spurious Emissions 12 - 25 GHz 802.11b - Ch.12 (2467 MHz)



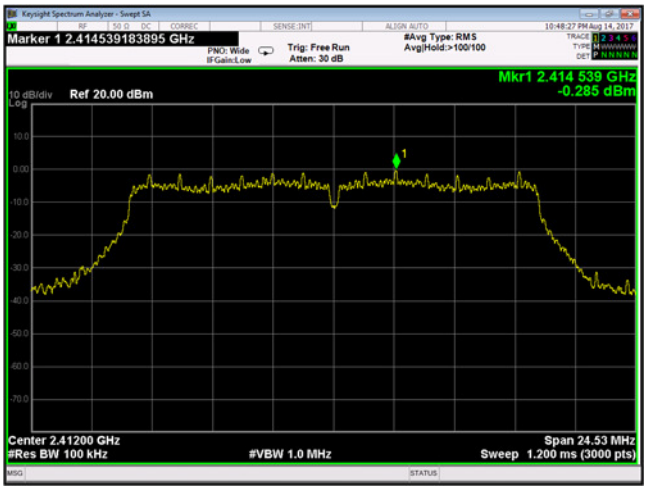
Plot 9-127 Chain A Reference Level 802.11b - Ch.13 (2472 MHz)



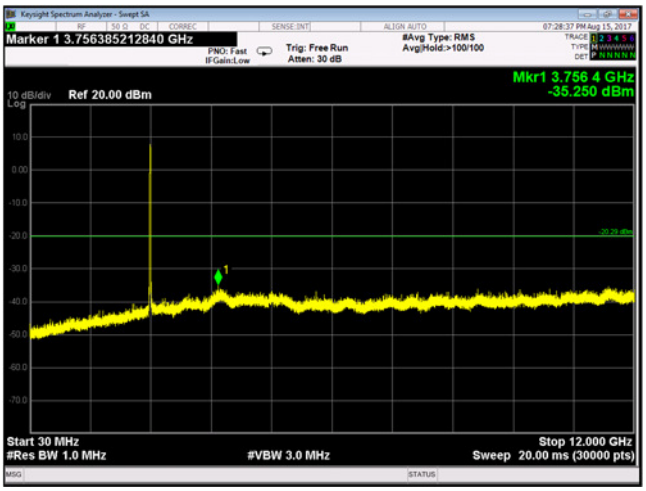
Plot 9-128 Chain A Conducted Spurious Emissions 30 MHz - 12 GHz 802.11b - Ch.13 (2472 MHz)



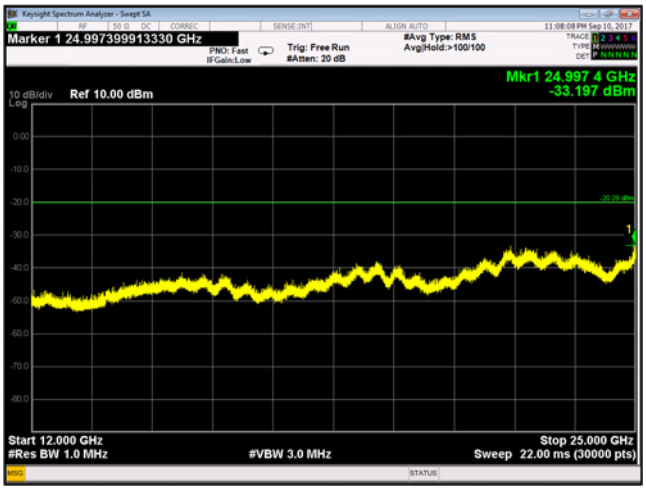
Plot 9-129 Chain A Conducted Spurious Emissions 12 - 25 GHz 802.11b - Ch.13 (2472 MHz)



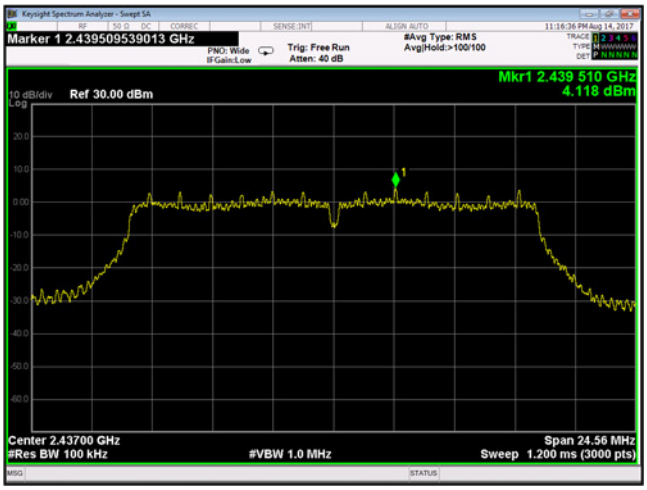
Plot 9-130 Chain A Reference Level 802.11g - Ch.1 (2412 MHz)



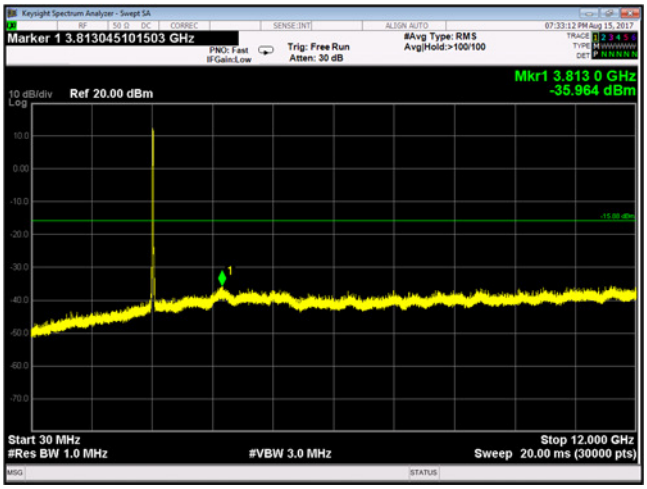
Plot 9-131 Chain A Conducted Spurious Emissions 30 MHz - 12 GHz 802.11g - Ch.1 (2412 MHz)



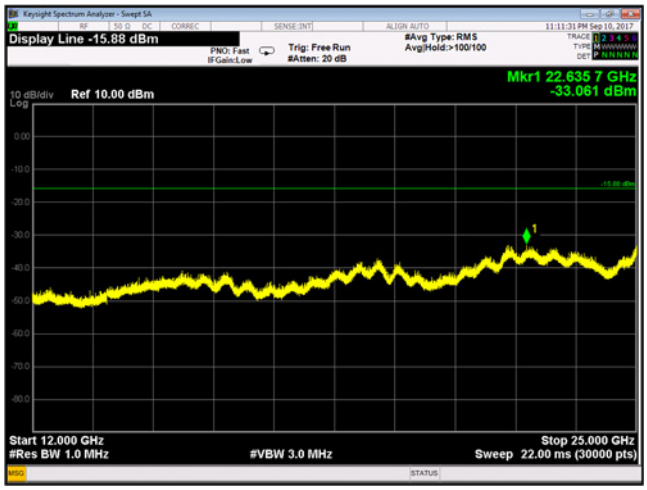
Plot 9-132 Chain A Conducted Spurious Emissions 12 - 25 GHz 802.11g - Ch.1 (2412 MHz)



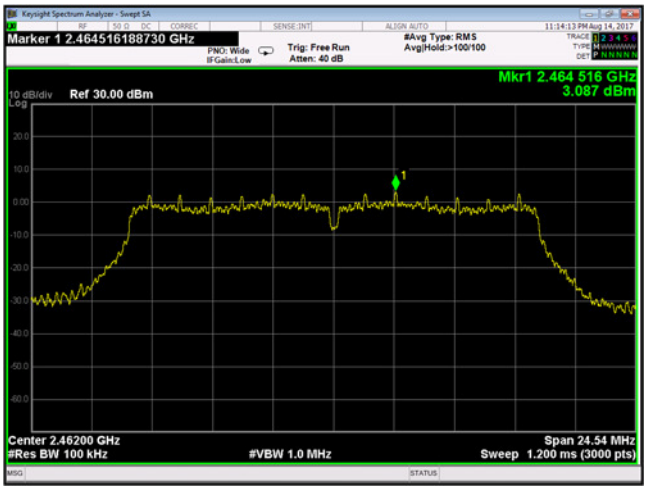
Plot 9-133 Chain A Reference Level 802.11g - Ch.6 (2437 MHz)



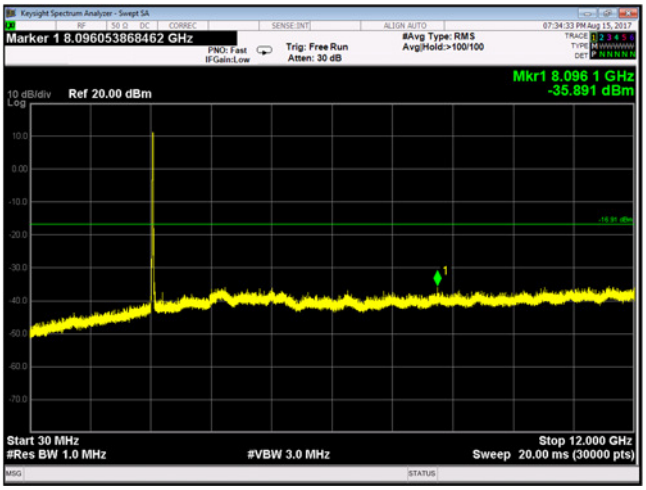
Plot 9-134 Chain A Conducted Spurious Emissions 30 MHz - 12 GHz 802.11g - Ch.6 (2437 MHz)



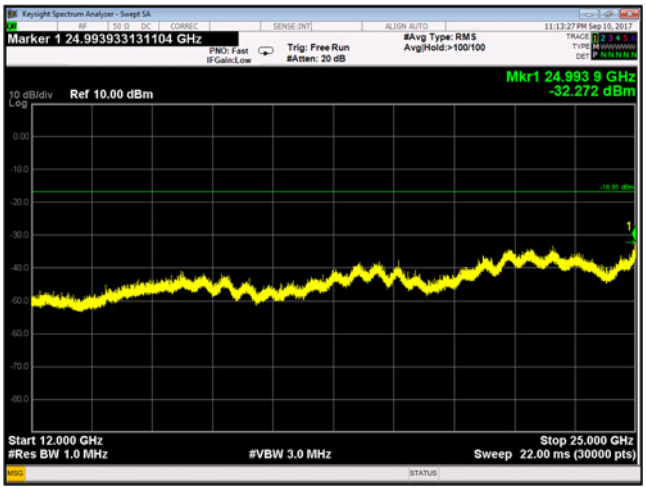
Plot 9-135 Chain A Conducted Spurious Emissions 12 - 25 GHz 802.11g - Ch.6 (2437 MHz)



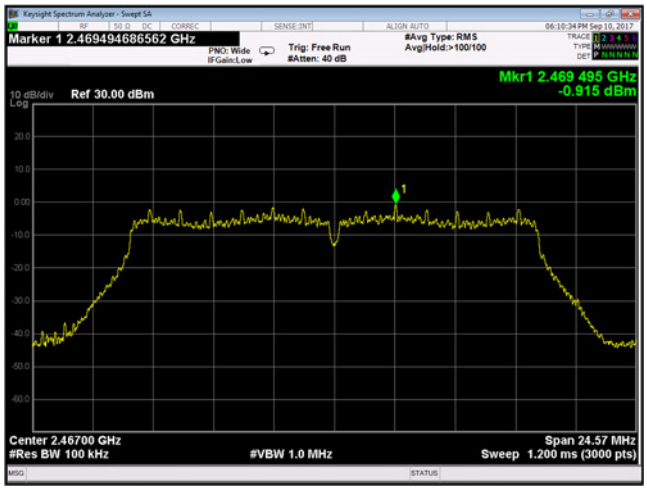
Plot 9-136 Chain A Reference Level 802.11g - Ch.11 (2462 MHz)



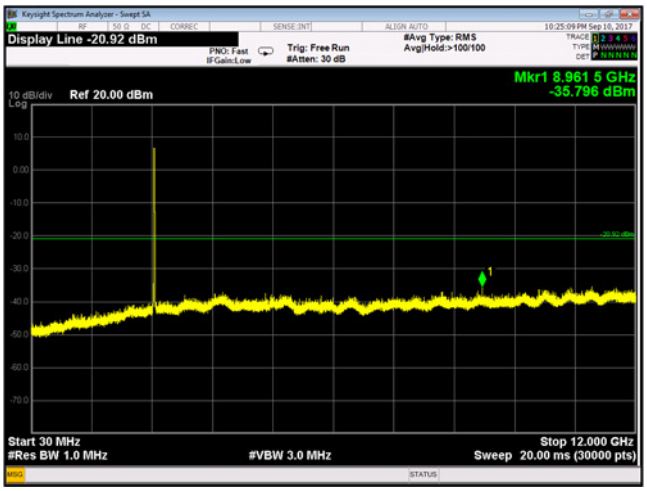
Plot 9-137 Chain A Conducted Spurious Emissions 30 MHz - 12 GHz 802.11g - Ch.11 (2462 MHz)



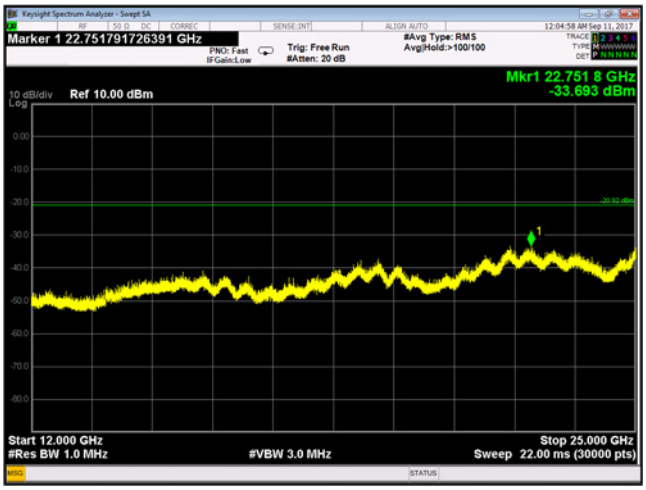
Plot 9-138 Chain A Conducted Spurious Emissions 12 - 25 GHz 802.11g - Ch.11 (2462 MHz)



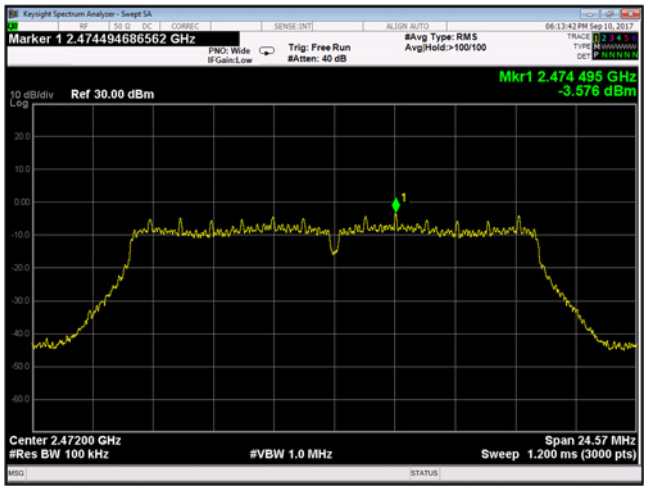
Plot 9-139 Chain A Reference Level 802.11g - Ch.12 (2467 MHz)



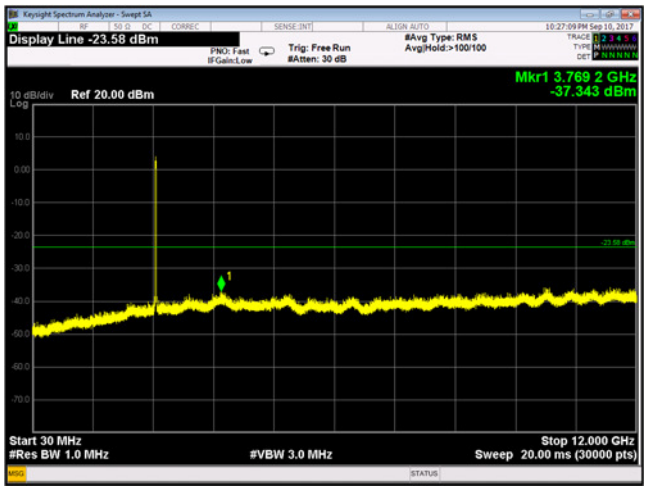
Plot 9-140 Chain A Conducted Spurious Emissions 30 MHz - 12 GHz 802.11g - Ch.12 (2467 MHz)



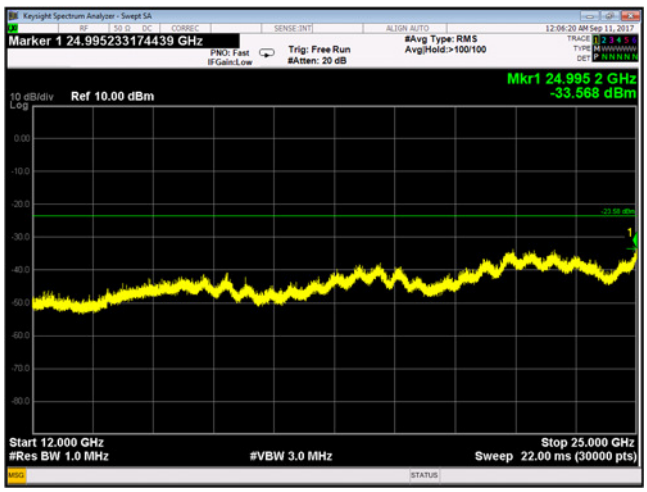
Plot 9-141 Chain A Conducted Spurious Emissions 12 - 25 GHz 802.11g - Ch.12 (2467 MHz)



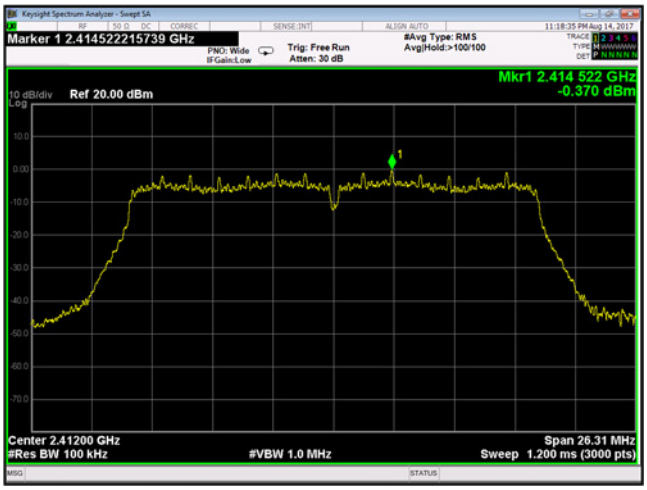
Plot 9-142 Chain A Reference Level 802.11g - Ch.13 (2472 MHz)



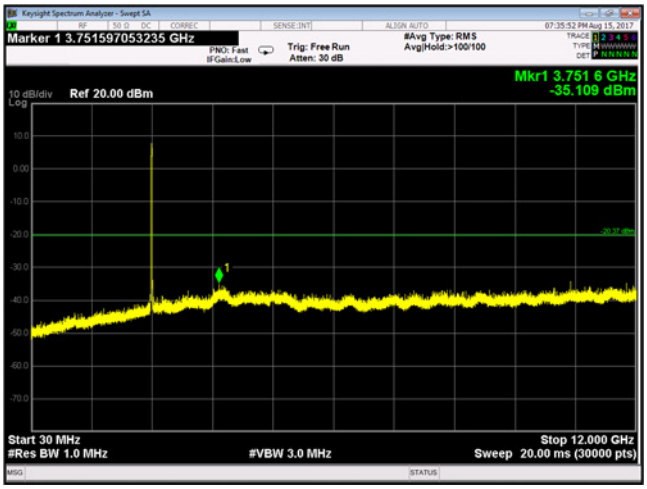
Plot 9-143 Chain A Conducted Spurious Emissions 30 MHz - 12 GHz 802.11g - Ch.13 (2472 MHz)



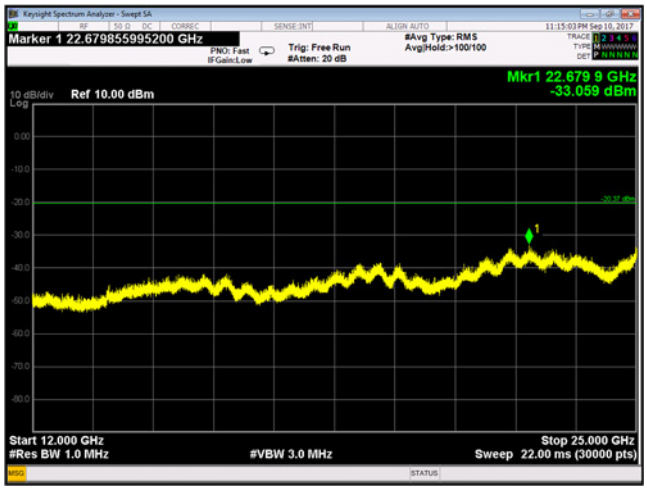
Plot 9-144 Chain A Conducted Spurious Emissions 12 - 25 GHz 802.11g - Ch.13 (2472 MHz)



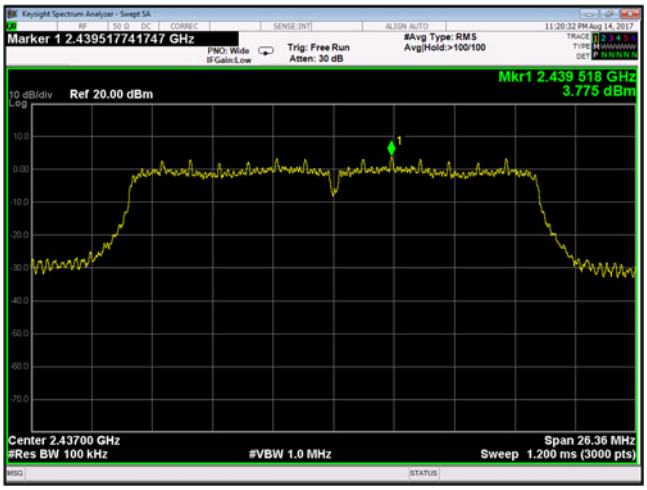
Plot 9-145 Chain A Reference Level 802.11n - Ch.1 (2412 MHz)



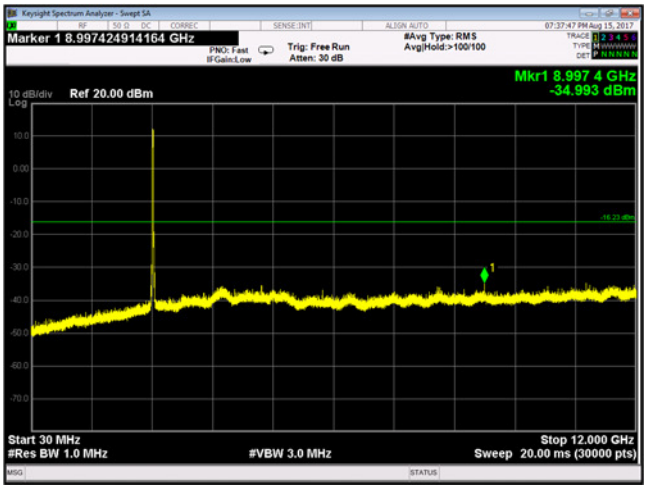
Plot 9-146 Chain A Conducted Spurious Emissions 30 MHz - 12 GHz 802.11n - Ch.1 (2412 MHz)



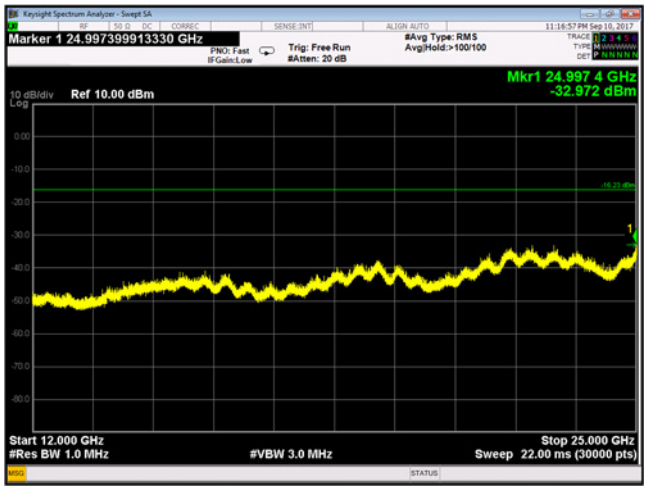
Plot 9-147 Chain A Conducted Spurious Emissions 12 - 25 GHz 802.11n - Ch.1 (2412 MHz)



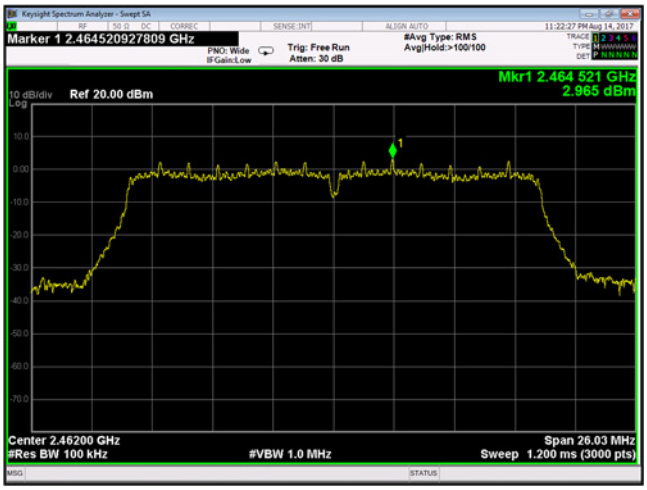
Plot 9-148 Chain A Reference Level 802.11n - Ch.6 (2437 MHz)



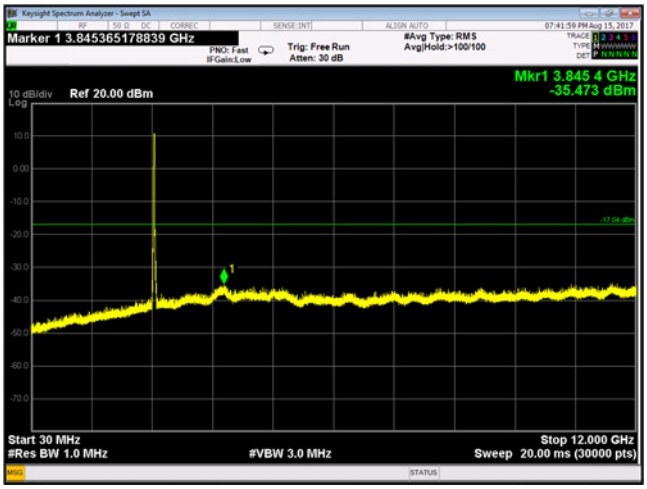
Plot 9-149 Chain A Conducted Spurious Emissions 30 MHz - 12 GHz 802.11n - Ch.6 (2437 MHz)



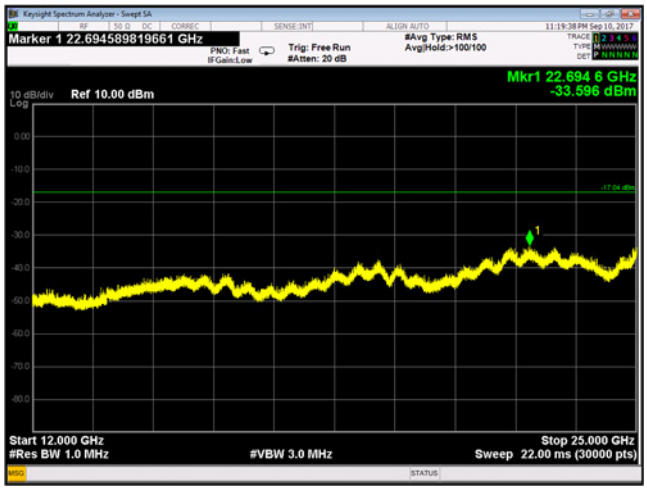
Plot 9-150 Chain A Conducted Spurious Emissions 12 - 25 GHz 802.11n - Ch.6 (2437 MHz)



Plot 9-151 Chain A Reference Level 802.11n - Ch.11 (2462 MHz)



Plot 9-152 Chain A Conducted Spurious Emissions 30 MHz - 12 GHz 802.11n - Ch.11 (2462 MHz)



Plot 9-153 Chain A Conducted Spurious Emissions 12 - 25 GHz 802.11n - Ch.11 (2462 MHz)