9.3 99% Occupied Bandwidth

9.3.1 Test Requirement:

Industry Canada RSS-247 [6.2]

9.3.2 Test Method:

Measurements were performed according to the procedures defined in KDB 789033- General UNII Test Procedures New Rules v01 and ANSI C63.10 (2013) American National Standard of Procedure for Compliance Testing of Unlicensed Wireless Devices.

Spectrum Analyzer settings:
Set the center frequency to the nominal EUT channel center frequency
Span = 1.5 to 5.0 time the 99% Occupied Bandwidth
RBW = 1% to 5% of the 99% Occupied Bandwidth
VBW ≥ 3xRBW
Trace Mode= Peak Detector (Max Hold)
Sweep time= Auto
The built-in functionality of the Spectrum Analyzer is used to measure the 99% Occupied Bandwidth.

9.3.3 Limits:

The 99% Occupied Bandwidth measurements are required for power limits/ other measurements and reporting purposes only.

9.3.4 Test Results:

Pass.

9.3.5 Test Data:

9.3.5.1 802.11a 99% Occupied Bandwidth

802.11a 99% Occupied Bandwidth		
Channel No.	**Frequency (MHz)**	**99% Occupied Bandwidth (MHz)**
36	5180	16.774
40	5220	16.903
48	5240	16.735
52	5260	16.815
60	5300	16.677
64	5320	16.785
100	5500	16.759
116	5580	16.748
140	5700	17.323
149	5745	16.848
157	5785	17.034
165	5825	16.873

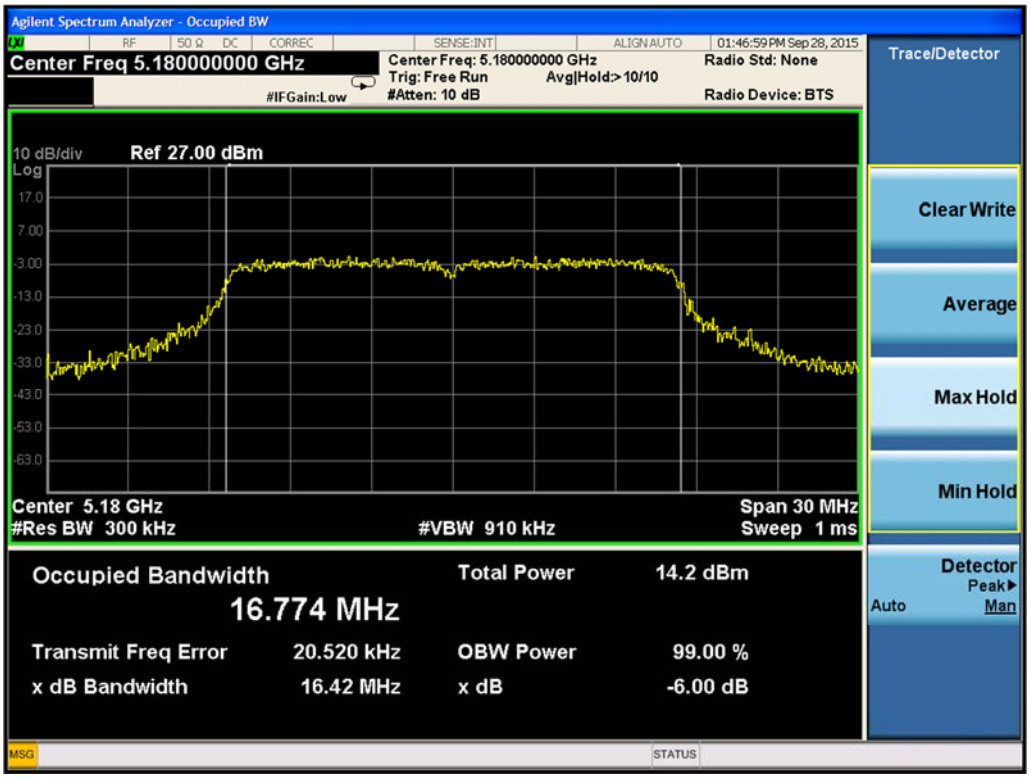

Figure 9-29. 99% Occupied Bandwidth 802.11a (Ch. 36)

Figure 9-30. 99% Occupied Bandwidth 802.11a (Ch. 40)

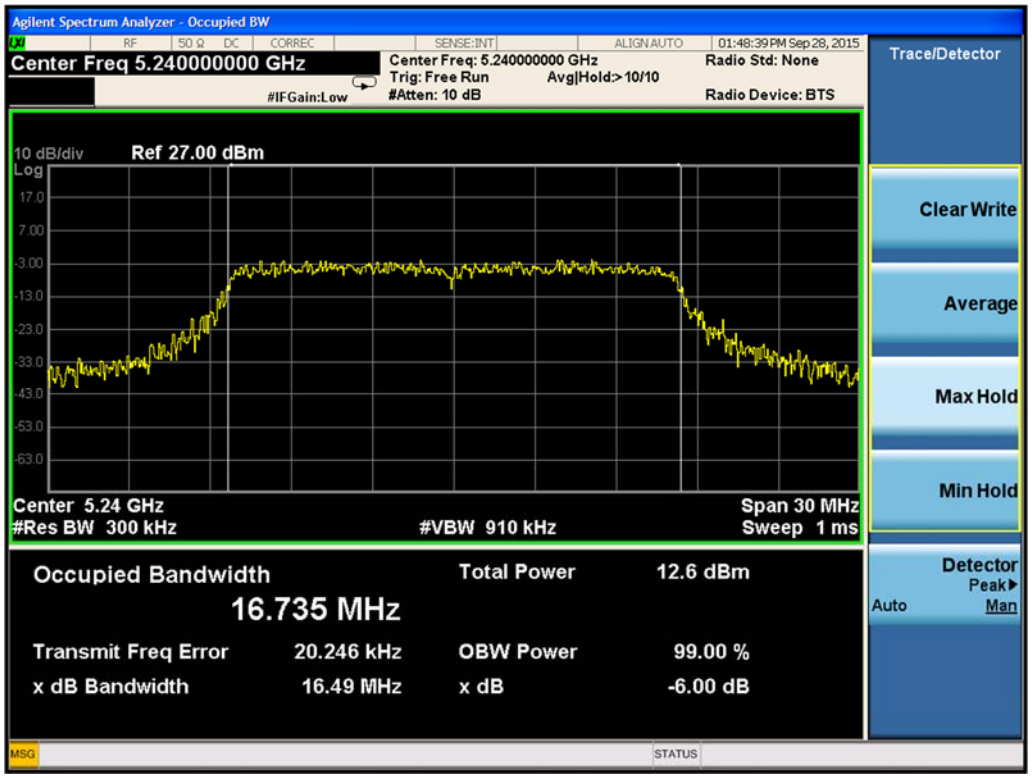

Figure 9-31. 99% Occupied Bandwidth 802.11a (Ch. 48)

Figure 9-32. 99% Occupied Bandwidth 802.11a (Ch. 52)

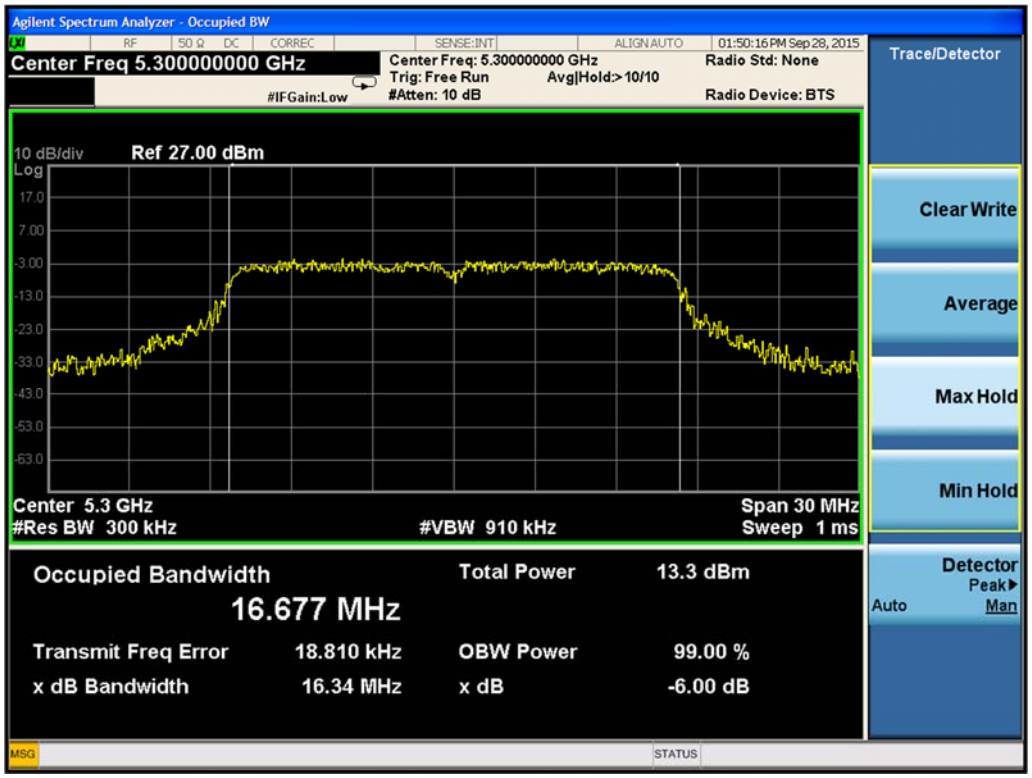

Figure 9-33. 99% Occupied Bandwidth 802.11a (Ch. 60)

Figure 9-34. 99% Occupied Bandwidth 802.11a (Ch. 64)

Figure 9-35. 99% Occupied Bandwidth 802.11a (Ch. 100)

Figure 9-36. 99% Occupied Bandwidth 802.11a (Ch. 116)

Figure 9-37. 99% Occupied Bandwidth 802.11a (Ch. 140)

Figure 9-38. 99% Occupied Bandwidth 802.11a (Ch. 149)

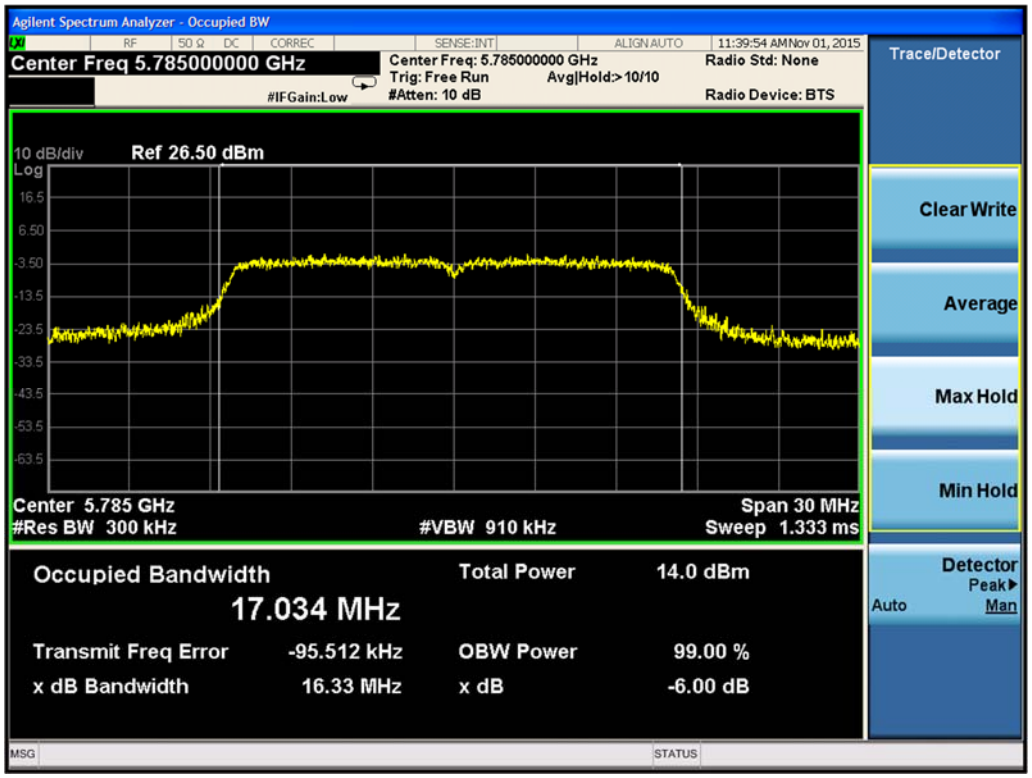

Figure 9-39. 99% Occupied Bandwidth 802.11a (Ch. 157)

Figure 9-40. 99% Occupied Bandwidth 802.11a (Ch. 165)

9.3.5.2 802.11n HT20 99% Occupied Bandwidth

802.11n HT20 99% Occupied Bandwidth		
Channel No.	**Frequency (MHz)**	**99% Occupied Bandwidth (MHz)**
36	5180	17.827
40	5220	17.900
48	5240	17.900
52	5260	17.846
60	5300	17.821
64	5320	17.822
100	5500	17.897
116	5580	17.952
140	5700	18.000
149	5745	18.044
157	5785	17.980
165	5825	17.948

Figure 9-41. 99% Occupied Bandwidth 802.11n HT20 (Ch. 36)

Figure 9-42. 99% Occupied Bandwidth 802.11n HT20 (Ch. 40)

Figure 9-43. 99% Occupied Bandwidth 802.11n HT20 (Ch. 48)

Figure 9-44. 99% Occupied Bandwidth 802.11n HT20 (Ch. 52)

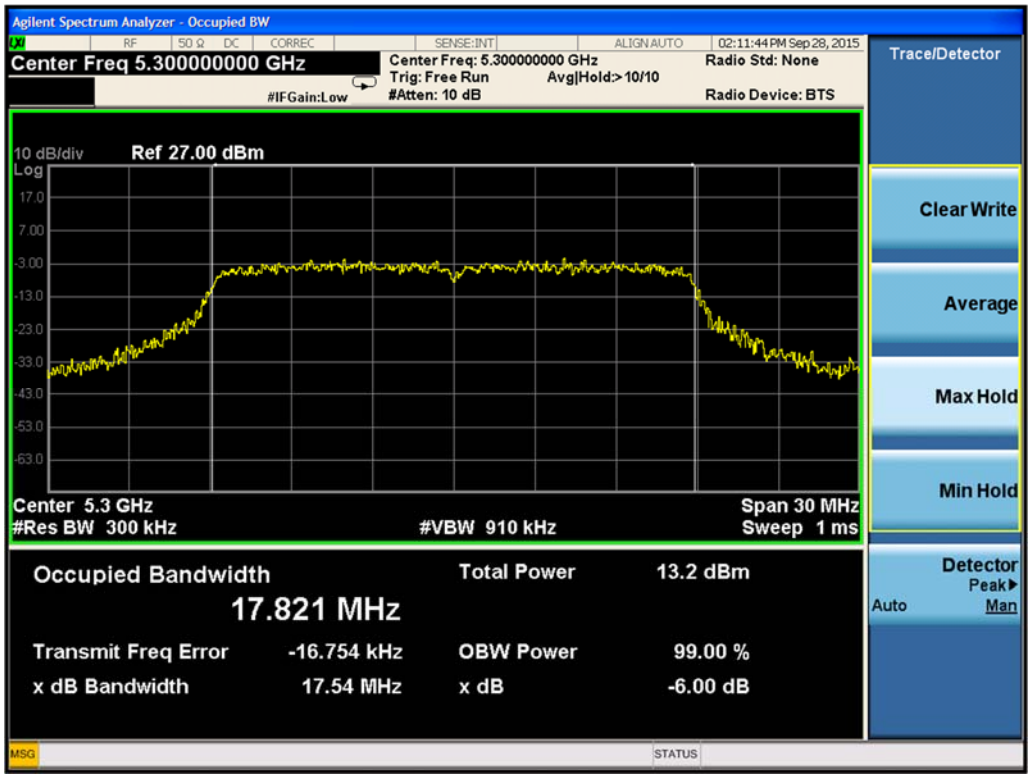

Figure 9-45. 99% Occupied Bandwidth 802.11n HT20 (Ch. 60)

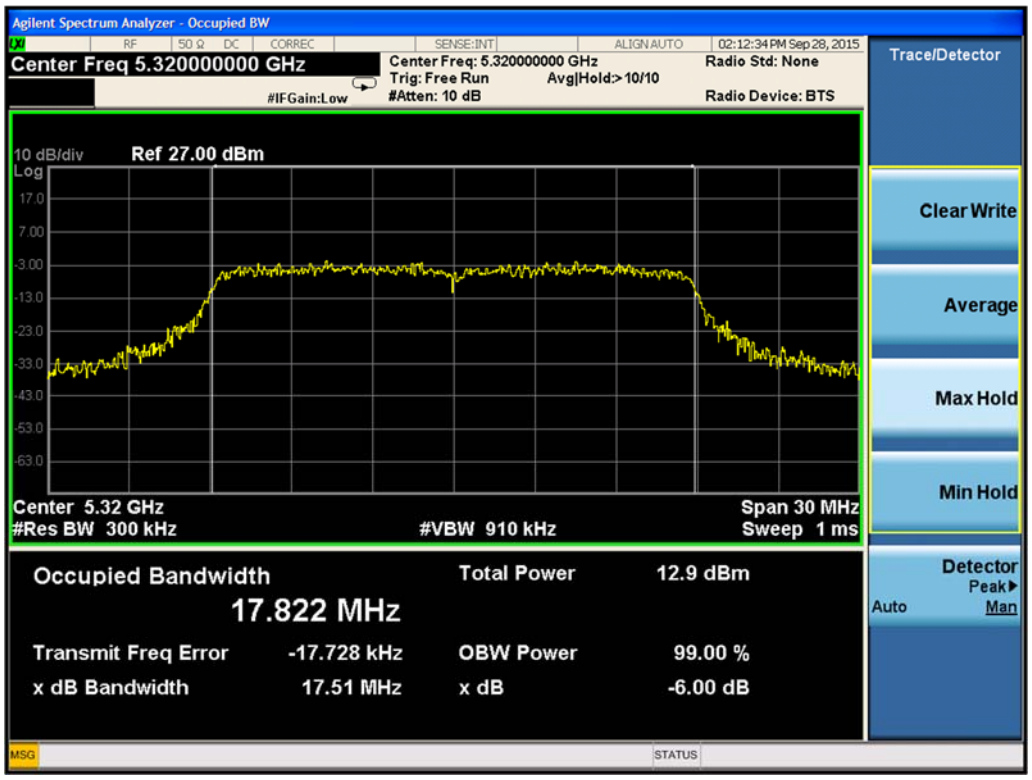

Figure 9-46. 99% Occupied Bandwidth 802.11n HT20 (Ch. 64)

Figure 9-47. 99% Occupied Bandwidth 802.11n HT20 (Ch. 100)

Figure 9-48. 99% Occupied Bandwidth 802.11n HT20 (Ch. 116)

Figure 9-49. 99% Occupied Bandwidth 802.11n HT20 (Ch. 140)

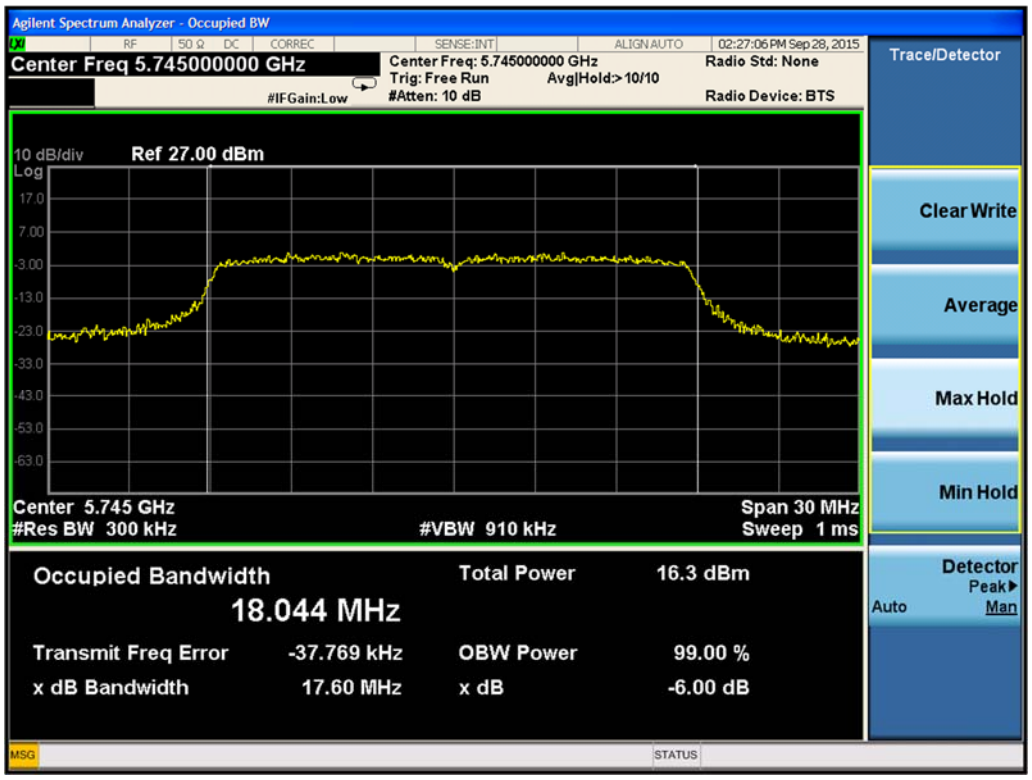

Figure 9-50. 99% Occupied Bandwidth 802.11n HT20 (Ch. 149)

Figure 9-51. 99% Occupied Bandwidth 802.11n HT20 (Ch. 157)

Figure 9-52. 99% Occupied Bandwidth 802.11n HT20 (Ch. 165)

9.4 6-dB Bandwidth

9.4.1 Test Requirement:

FCC CFR 47 Rule Part 15.407 (e)

Industry Canada RSS-247 [6.2.4]

9.4.2 Test Method:

Measurements were performed according to the procedures defined in KDB 789033 D02-General UNII Test Procedures New Rules v01 and ANSI C63.10 (2013) American National Standard of Procedure for Compliance Testing of Unlicensed Wireless Devices.

Spectrum Analyzer settings:
RBW = 100 kHz
VBW ≥ 3xRBW
Trace Mode= Peak Detector (Max Hold)
Sweep time= Auto
The in-built functionality of the Spectrum Analyzer is used to measure the 6-dB bandwidth.

9.4.3 Limits:

The 6-dB Bandwidth shall be ≥ 500 kHz.

9.4.4 Test Results:

Pass

9.4.5 Test Data:

9.4.5.1 802.11a 6-dB Bandwidth

Channel No.	Frequency (MHz)	6-dB Bandwidth (MHz)	Limit (MHz)	Result
149	5745	16.28	≥0.5	Pass
157	5785	16.06	≥0.5	Pass
165	5825	16.30	≥0.5	Pass

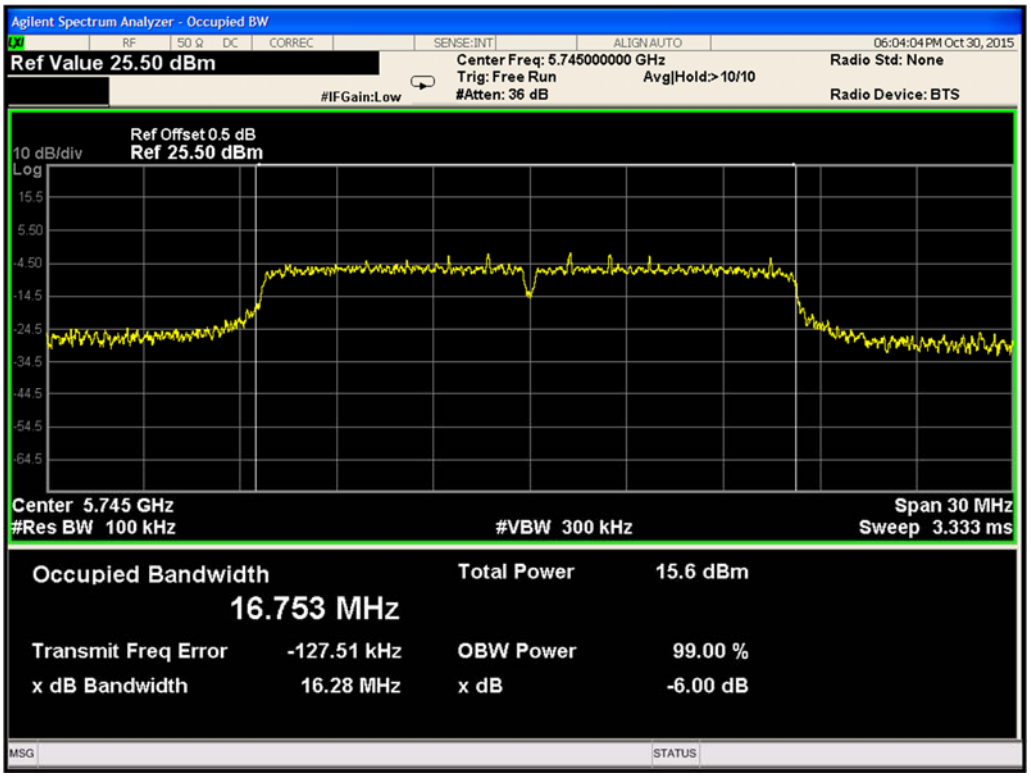

Figure 9-53. 6-dB Bandwidth 802.11a (Ch. 149)

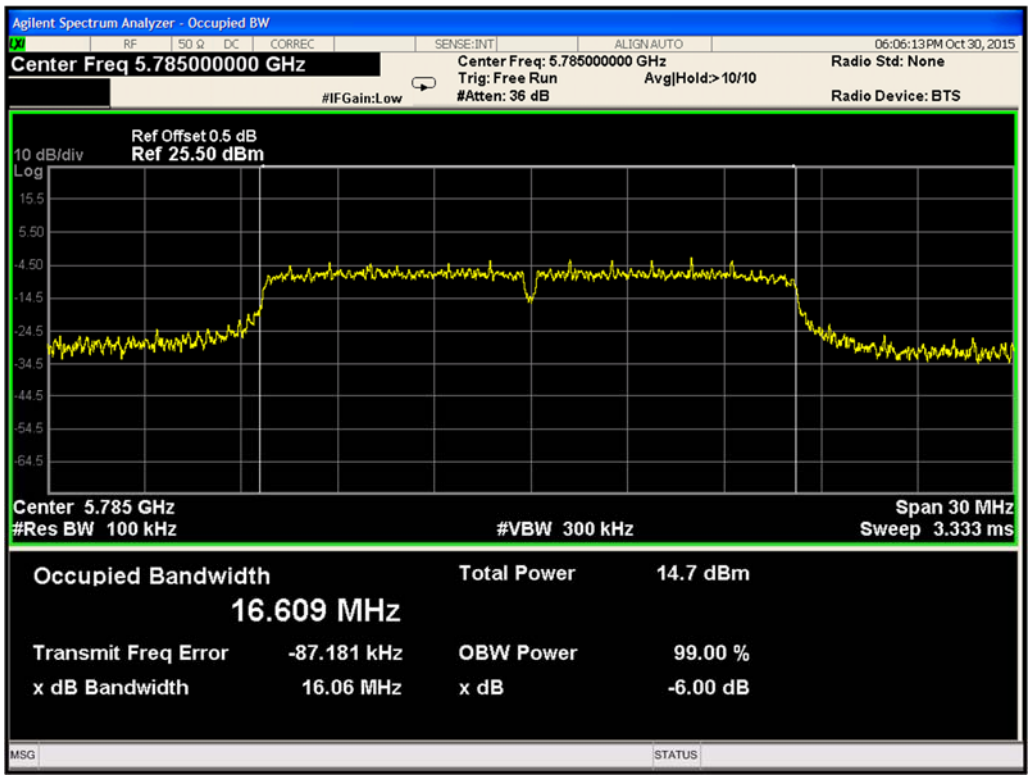

Figure 9-54. 6-dB Bandwidth 802.11a (Ch. 157)

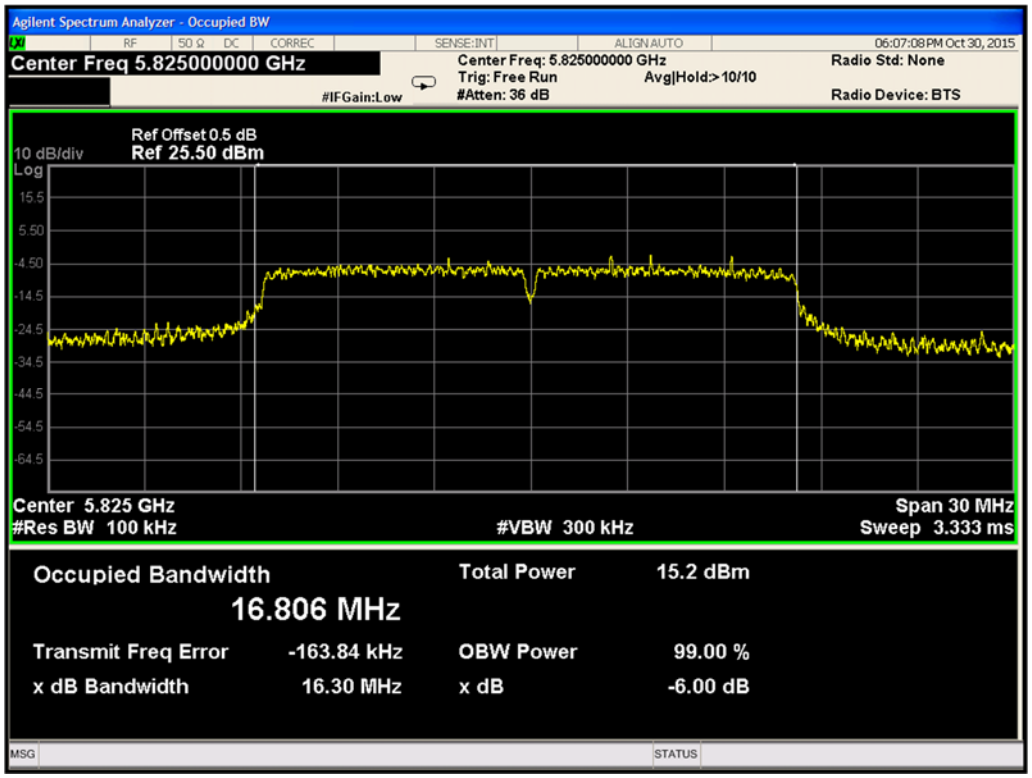

Figure 9-55. 6-dB Bandwidth 802.11a (Ch. 165)

9.4.5.2 802.11n HT20 6-dB Bandwidth

Channel No.	Frequency (MHz)	6-dB Bandwidth (MHz)	Limit (MHz)	Result
149	5745	16.65	≥0.5	Pass
157	5785	16.94	≥0.5	Pass
165	5825	16.00	≥0.5	Pass

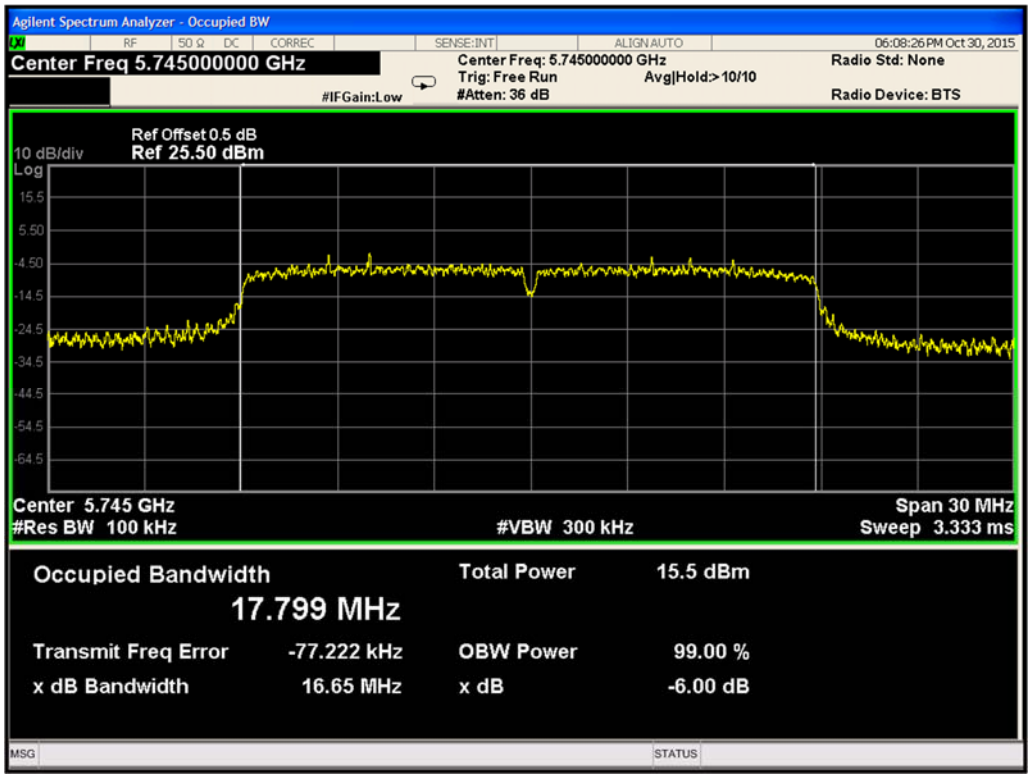

Figure 9-56. 6-dB Bandwidth 802.11n HT20 (Ch. 149)

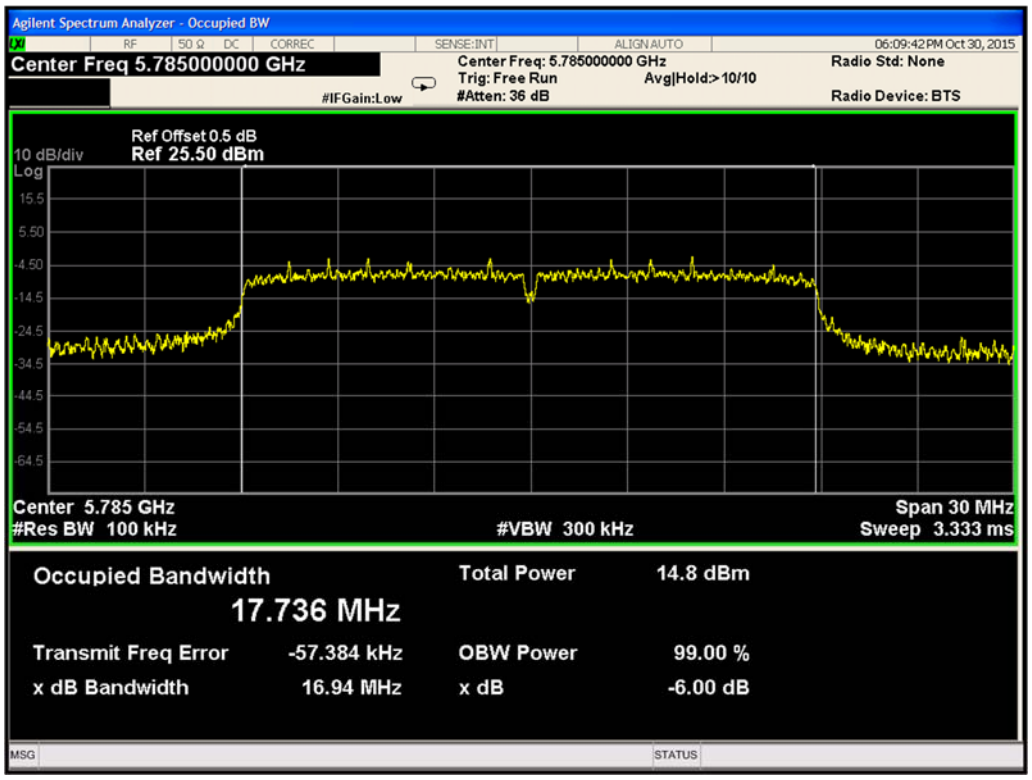

Figure 9-57. 6-dB Bandwidth 802.11n HT20 (Ch. 157)

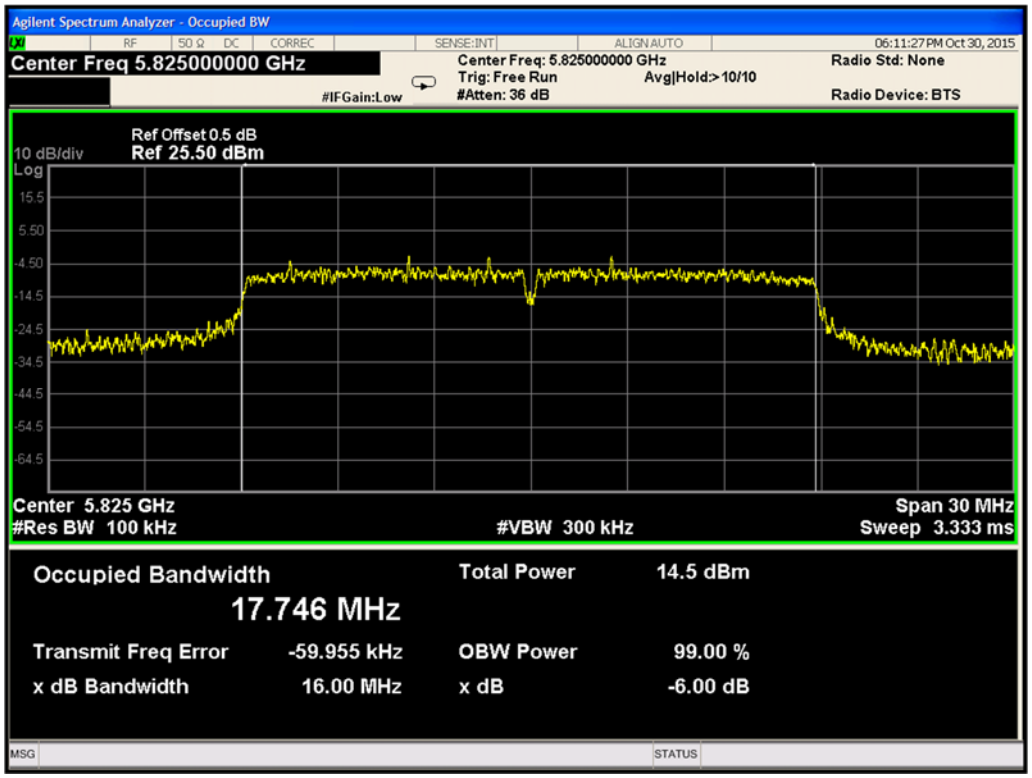

Figure 9-58. 6-dB Bandwidth 802.11n HT20 (Ch. 165)