

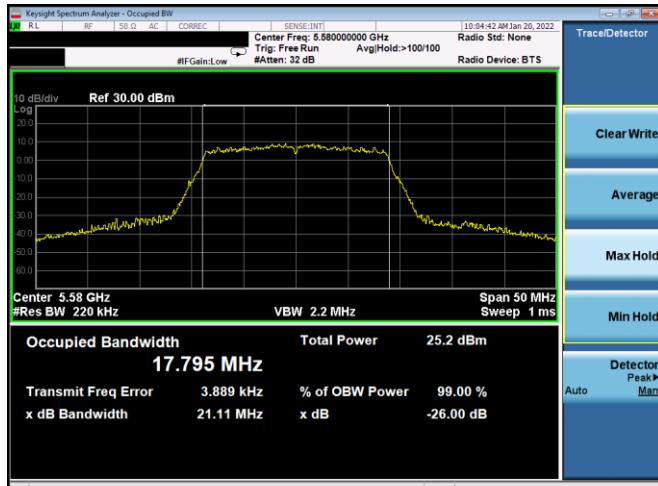
FCC ID: BCGA2589 IC: 579C-A2589	 PCTEST [®] Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2111150079-14.BCG	Test Dates: 12/02/2021 - 02/10/2022	EUT Type: Tablet Device	Page 53 of 564



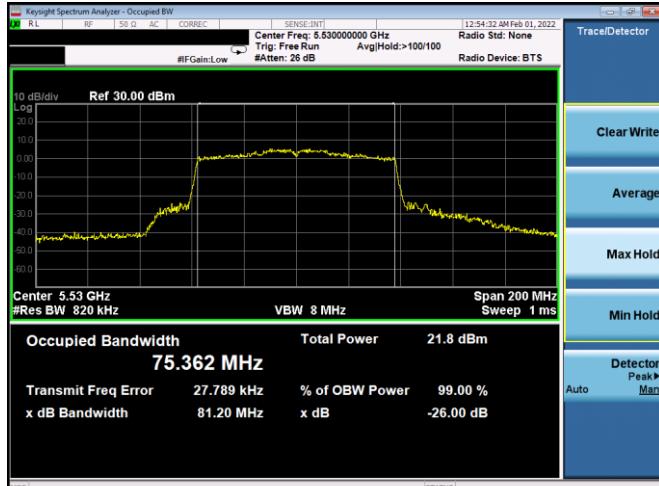
Plot 7-139. 26dB BW & 99% OBW Antenna 3A (20MHz BW 802.11n – Ch. 116, MCS3)



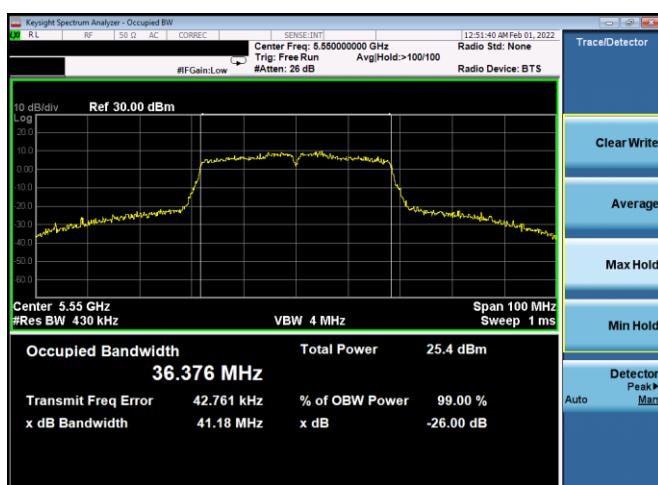
Plot 7-142. 26dB BW & 99% OBW Antenna 3A (40MHz BW 802.11ax(SU) – Ch. 110, MCS3)



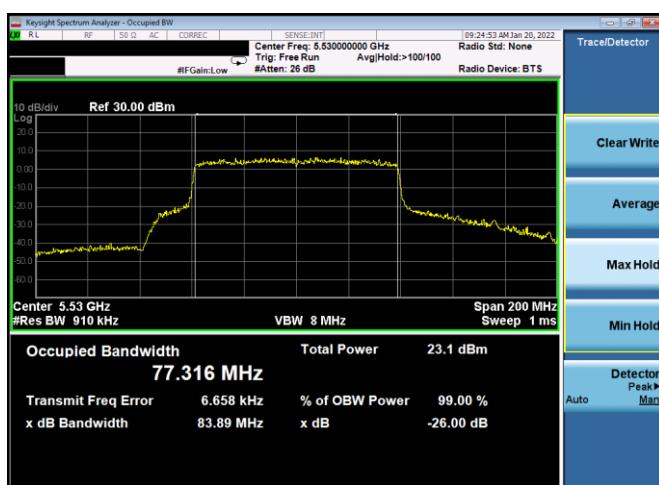
Plot 7-140. 26dB BW & 99% OBW Antenna 3A (20MHz BW 802.11ax(SU) – Ch. 116, MCS3)



Plot 7-143. 26dB BW & 99% OBW Antenna 3A (80MHz BW 802.11ac – Ch. 106, MCS3)



Plot 7-141. 26dB BW & 99% OBW Antenna 3A (40MHz BW 802.11n – Ch. 110, MCS3)



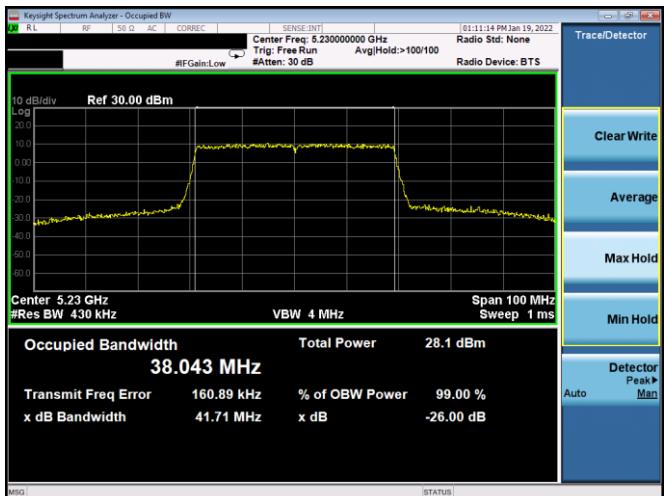
Plot 7-144. 26dB BW & 99% OBW Antenna 3A (80MHz BW 802.11ax(SU) – Ch. 106, MCS3)

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Test Report S/N: 1C2111150079-14.BCG	Test Dates: 12/02/2021 - 02/10/2022	EUT Type: Tablet Device	Page 54 of 564

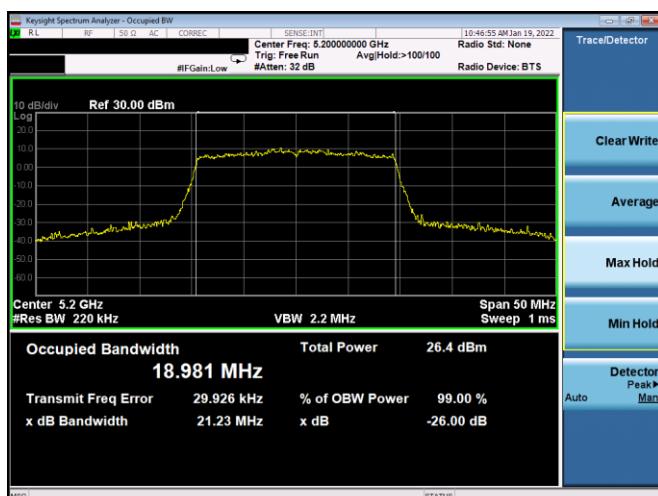
High Data Rate



Plot 7-145. 26dB BW & 99% OBW Antenna 3A (20MHz BW 802.11n – Ch. 40, MCS5)



Plot 7-148. 26dB BW & 99% OBW Antenna 3A (40MHz BW 802.11ax(SU) – Ch. 46, MCS5)



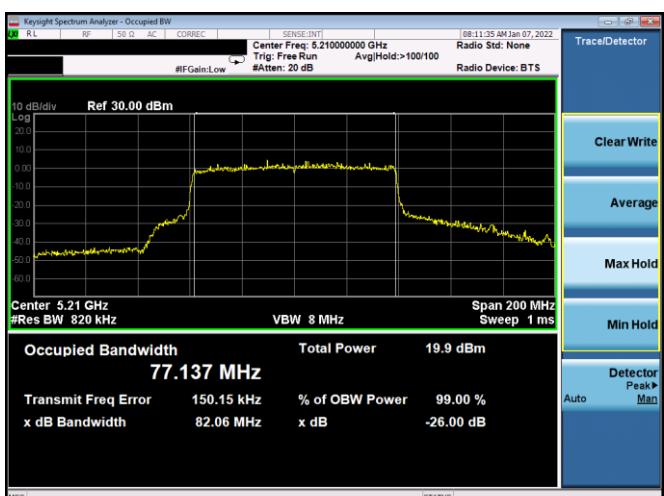
Plot 7-146. 26dB BW & 99% OBW Antenna 3A (20MHz BW 802.11ax(SU) – Ch. 40, MCS5)



Plot 7-149. 26dB BW & 99% OBW Antenna 3A (80MHz BW 802.11ac – Ch. 42, MCS5)

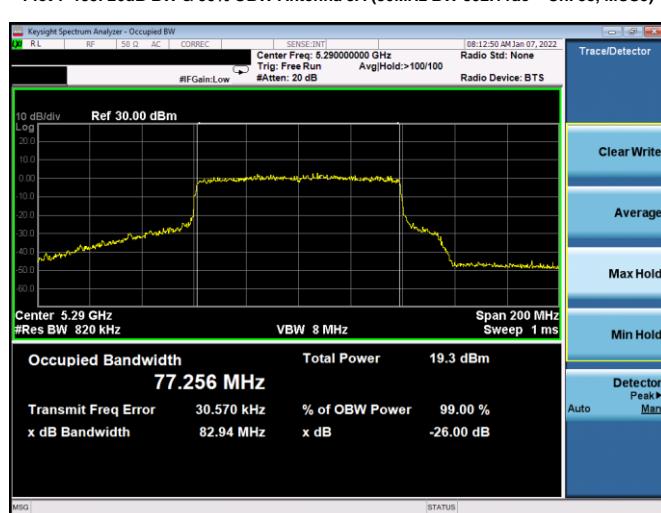
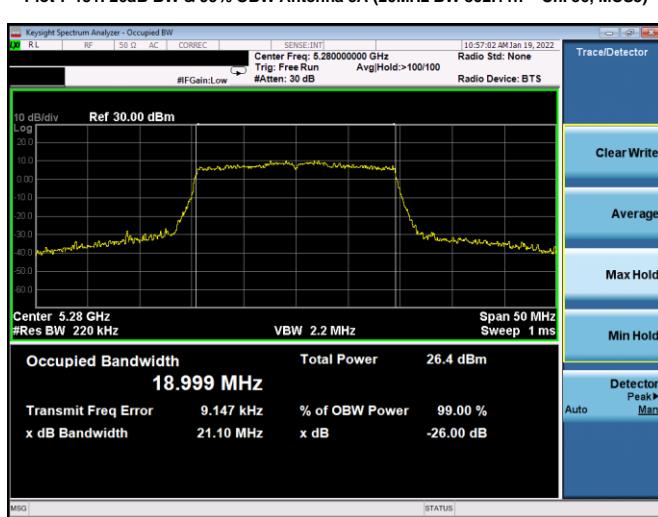


Plot 7-147. 26dB BW & 99% OBW Antenna 3A (40MHz BW 802.11n – Ch. 46, MCS5)

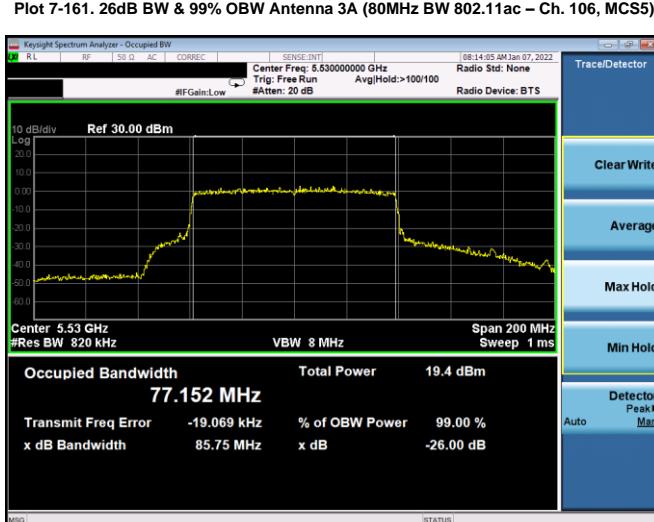
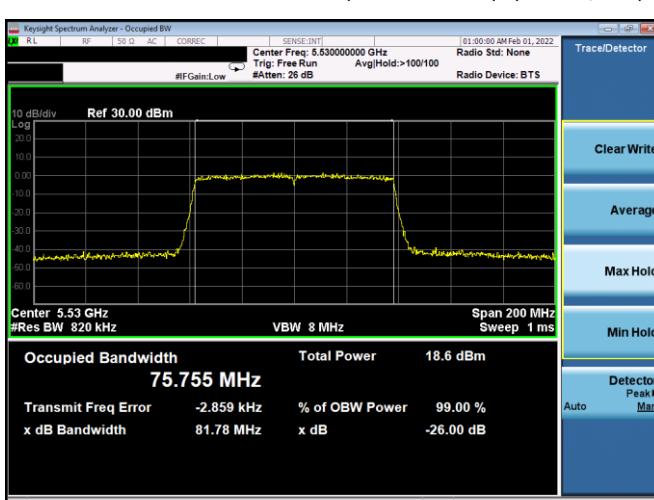
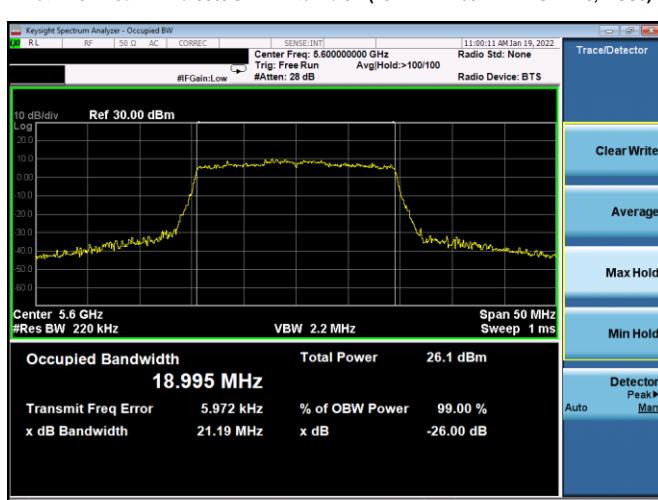


Plot 7-150. 26dB BW & 99% OBW Antenna 3A (80MHz BW 802.11ax(SU) – Ch. 42, MCS5)

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Test Report S/N: 1C2111150079-14.BCG	Test Dates: 12/02/2021 - 02/10/2022	EUT Type: Tablet Device	Page 55 of 564



FCC ID: BCGA2589 IC: 579C-A2589	 PCTEST [®] Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2111150079-14.BCG	Test Dates: 12/02/2021 - 02/10/2022	EUT Type: Tablet Device	Page 56 of 564



FCC ID: BCGA2589 IC: 579C-A2589	 PCTEST [®] Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2111150079-14.BCG	Test Dates: 12/02/2021 - 02/10/2022	EUT Type: Tablet Device	Page 57 of 564

7.3 6dB & 99% Bandwidth Measurement – 802.11a/n/ac/ax(SU) §2.1049; §15.407 (e); RSS-Gen [6.7]

Test Overview and Limit

The bandwidth at 6dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating at its maximum duty cycle, at its maximum power control level, as defined in ANSI C63.10-2013 and KDB 789033 D02 v02r01, and at the appropriate frequencies. The spectrum analyzer's bandwidth measurement function is configured to measure the 6dB bandwidth.

In the 5.725 – 5.850GHz band, the 6dB bandwidth must be \geq 500 kHz.

Test Procedure Used

ANSI C63.10-2013 – Section 6.9.2
KDB 789033 D02 v02r01 – Section C

Test Settings

1. The signal analyzers' automatic bandwidth measurement capability was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 6. The automatic bandwidth measurement function also has the capability of simultaneously measuring the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 100 kHz
3. VBW \geq 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-2. Test Instrument & Measurement Setup

Test Notes

1. All antenna configurations and data rates were investigated and only the worst case are reported.
2. The data rates have been classified into three different groups; low data rate, middle data rate, and high data rate. All three data rate groups of data rate have been investigated and only the worst case data rate per group is reported.
3. Low, mid, and high channels were tested and tabular data has been reported. Only mid channel bandwidth plots have been reported.

FCC ID: BCGA2589 IC: 579C-A2589	 PCTEST [®] Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2111150079-14.BCG	Test Dates: 12/02/2021 - 02/10/2022	EUT Type: Tablet Device	Page 58 of 564

Antenna 2B 6dB & 99% Bandwidth Measurements

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass / Fail
Band 3	5745	149	n (20MHz)	6.5/7.2 (MCS0)	17.63	17.03	0.50	Pass
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	17.63	17.32	0.50	Pass
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	17.64	17.31	0.50	Pass
	5745	149	ax (SU) (20MHz)	8/8.6 (MCS0)	18.89	18.86	0.50	Pass
	5785	157	ax (SU) (20MHz)	8/8.6 (MCS0)	18.88	18.58	0.50	Pass
	5825	165	ax (SU) (20MHz)	8/8.6 (MCS0)	18.88	18.89	0.50	Pass
	5755	151	n (40MHz)	13.5/15 (MCS0)	36.08	35.75	0.50	Pass
	5795	159	n (40MHz)	13.5/15 (MCS0)	36.07	35.62	0.50	Pass
	5755	151	ax (SU) (40MHz)	16/17.2 (MCS0)	37.89	38.23	0.50	Pass
	5795	159	ax (SU) (40MHz)	16/17.2 (MCS0)	37.89	38.22	0.50	Pass
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	77.01	77.85	0.50	Pass
	5775	155	ax (SU) (80MHz)	34/36 (MCS0)	76.97	77.80	0.50	Pass

Table 7-11. Conducted Bandwidth Measurements Antenna 2B (Low Data Rate)

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass / Fail
Band 3	5745	149	n (20MHz)	26/28.9 (MCS3)	17.64	16.95	0.50	Pass
	5785	157	n (20MHz)	26/28.9 (MCS3)	17.64	17.34	0.50	Pass
	5825	165	n (20MHz)	26/28.9 (MCS3)	17.63	17.33	0.50	Pass
	5745	149	ax (SU) (20MHz)	33/34.4 (MCS3)	18.90	18.79	0.50	Pass
	5785	157	ax (SU) (20MHz)	33/34.4 (MCS3)	18.88	18.82	0.50	Pass
	5825	165	ax (SU) (20MHz)	33/34.4 (MCS3)	18.89	18.86	0.50	Pass
	5755	151	n (40MHz)	54/60 (MCS3)	36.08	35.44	0.50	Pass
	5795	159	n (40MHz)	54/60 (MCS3)	36.11	35.81	0.50	Pass
	5755	151	ax (SU) (40MHz)	65/68.8 (MCS3)	37.86	38.23	0.50	Pass
	5795	159	ax (SU) (40MHz)	65/68.8 (MCS3)	37.87	38.23	0.50	Pass
	5775	155	ac (80MHz)	117/130 (MCS3)	76.94	77.74	0.50	Pass
	5775	155	ax (SU) (80MHz)	136/144.1 (MCS3)	76.95	77.88	0.50	Pass

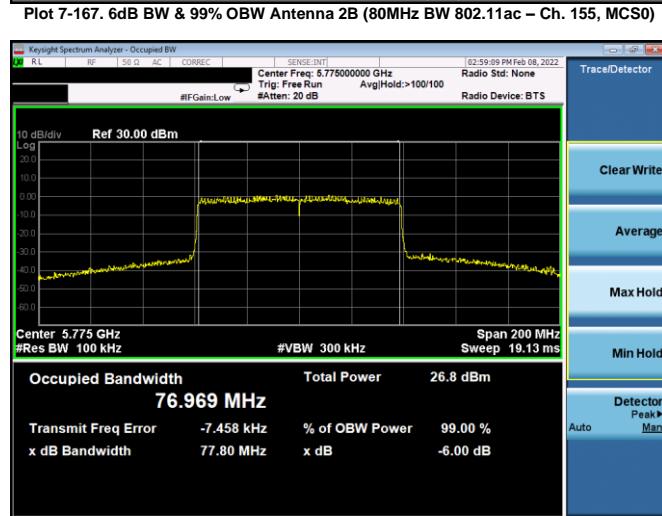
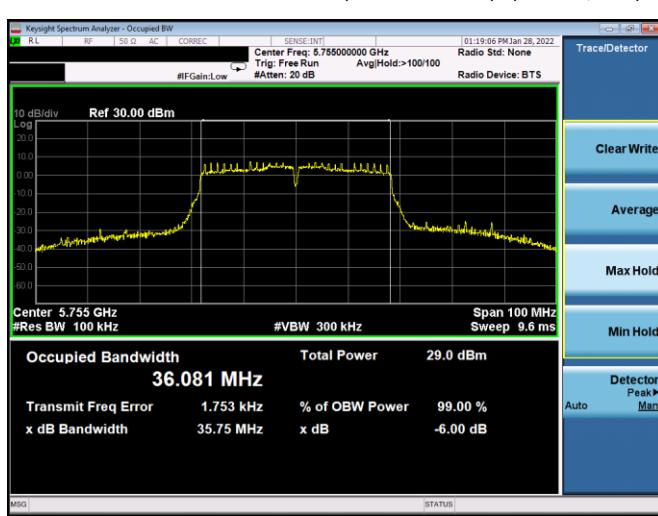
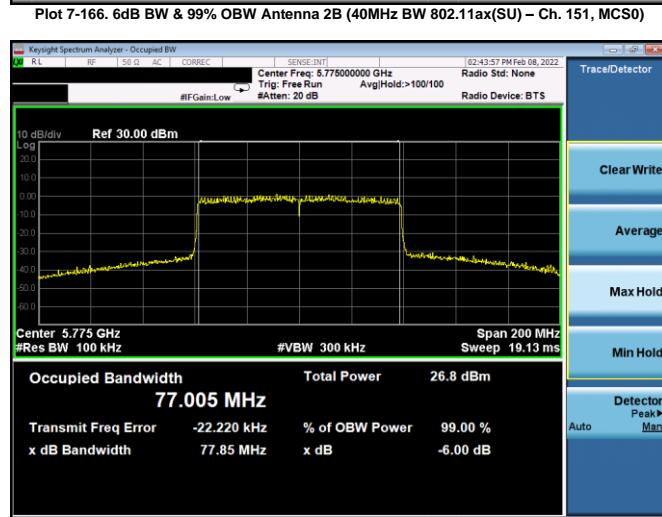
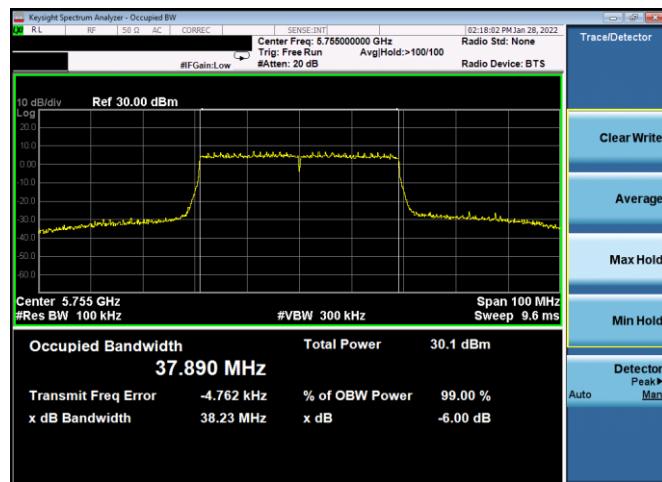
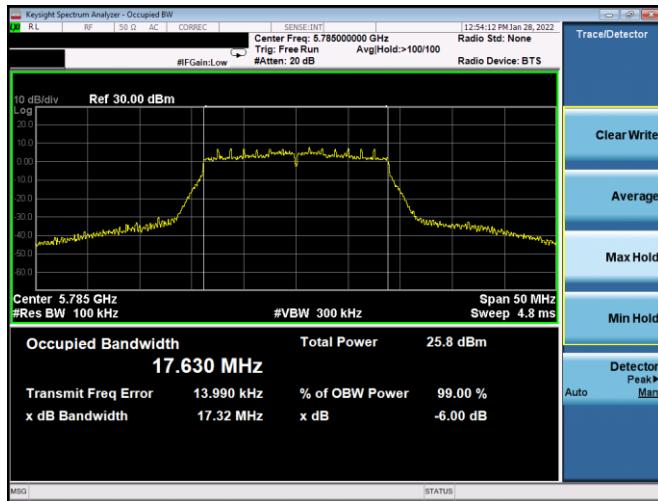
Table 7-12. Conducted Bandwidth Measurements Antenna 2B (Mid Data Rate)

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass / Fail
Band 3	5745	149	n (20MHz)	52/57.8 (MCS5)	17.65	17.32	0.50	Pass
	5785	157	n (20MHz)	52/57.8 (MCS5)	17.65	16.94	0.50	Pass
	5825	165	n (20MHz)	52/57.8 (MCS5)	17.64	17.19	0.50	Pass
	5745	149	ax (SU) (20MHz)	65/68.8 (MCS5)	18.90	18.96	0.50	Pass
	5785	157	ax (SU) (20MHz)	65/68.8 (MCS5)	18.90	18.93	0.50	Pass
	5825	165	ax (SU) (20MHz)	65/68.8 (MCS5)	18.90	18.78	0.50	Pass
	5755	151	n (40MHz)	108/120 (MCS5)	36.08	35.77	0.50	Pass
	5795	159	n (40MHz)	108/120 (MCS5)	36.11	35.87	0.50	Pass
	5755	151	ax (SU) (40MHz)	130/137.6 (MCS5)	37.86	38.18	0.50	Pass
	5795	159	ax (SU) (40MHz)	130/137.6 (MCS5)	37.91	38.26	0.50	Pass
	5775	155	ac (80MHz)	234/260 (MCS5)	76.96	77.74	0.50	Pass
	5775	155	ax (SU) (80MHz)	272/288.2 (MCS5)	76.97	77.79	0.50	Pass

Table 7-13. Conducted Bandwidth Measurements Antenna 2B (High Data Rate)

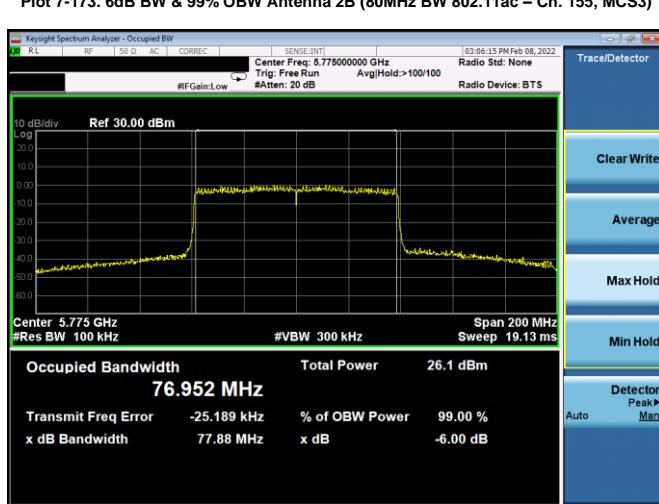
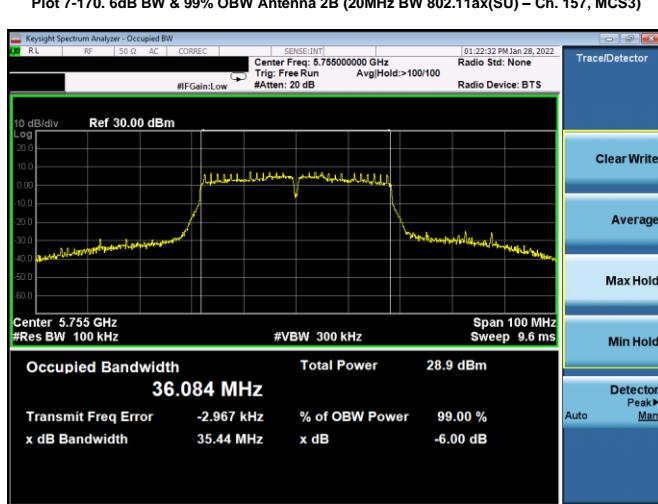
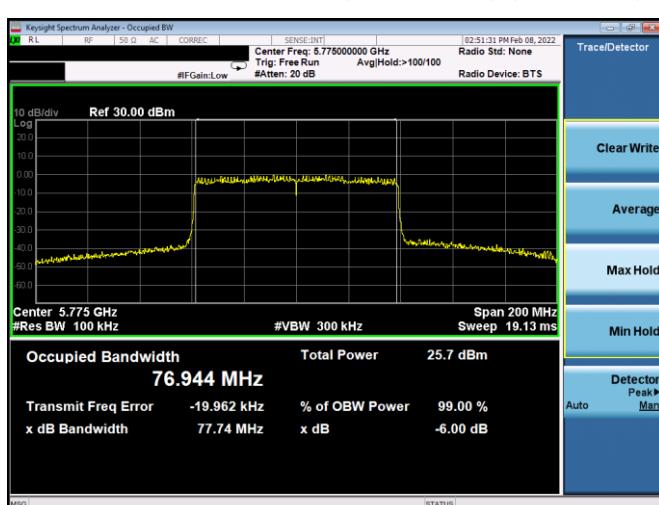
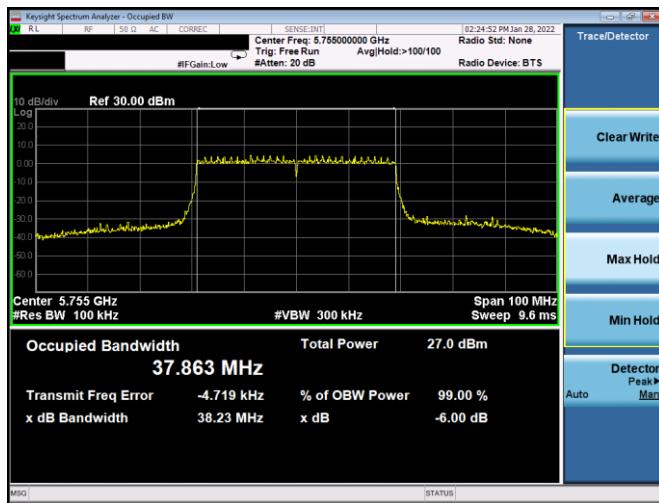
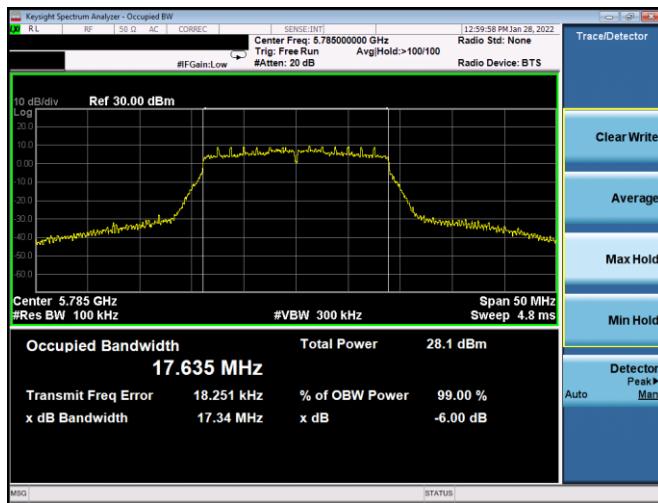
FCC ID: BCGA2589 IC: 579C-A2589	 PCTEST [®] Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2111150079-14.BCG	Test Dates: 12/02/2021 - 02/10/2022	EUT Type: Tablet Device	Page 59 of 564

Low Data Rate



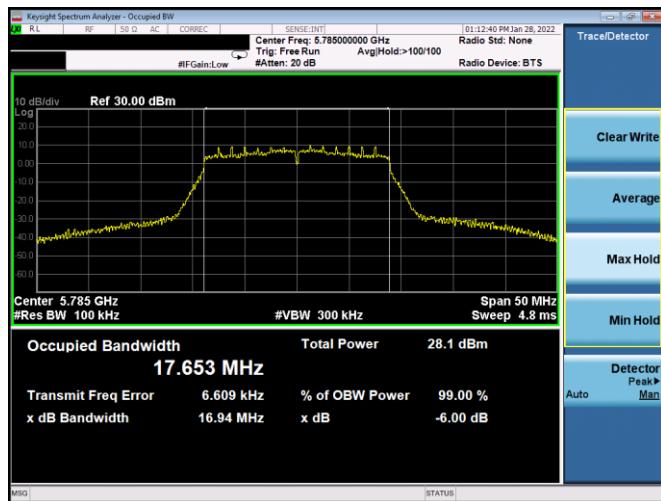
FCC ID: BCGA2589 IC: 579C-A2589	 PCTEST [®] Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2111150079-14.BCG	Test Dates: 12/02/2021 - 02/10/2022	EUT Type: Tablet Device	Page 60 of 564

Mid Data Rate



FCC ID: BCGA2589 IC: 579C-A2589	 PCTEST [®] Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2111150079-14.BCG	Test Dates: 12/02/2021 - 02/10/2022	EUT Type: Tablet Device	Page 61 of 564

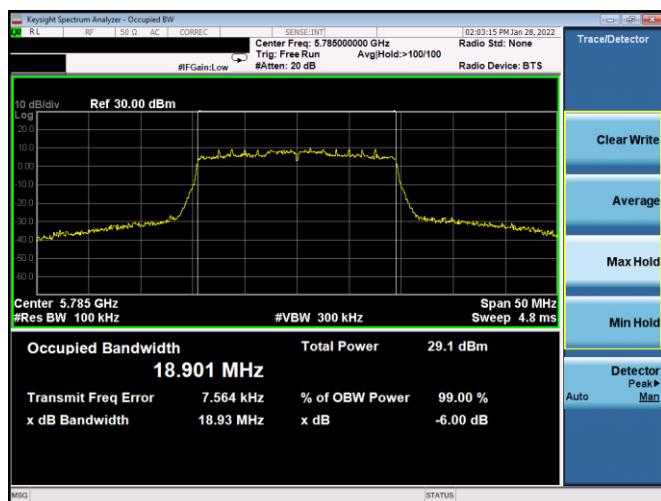
High Data Rate



Plot 7-175. 6dB BW & 99% OBW Antenna 2B (20MHz BW 802.11n – Ch. 157, MCS5)



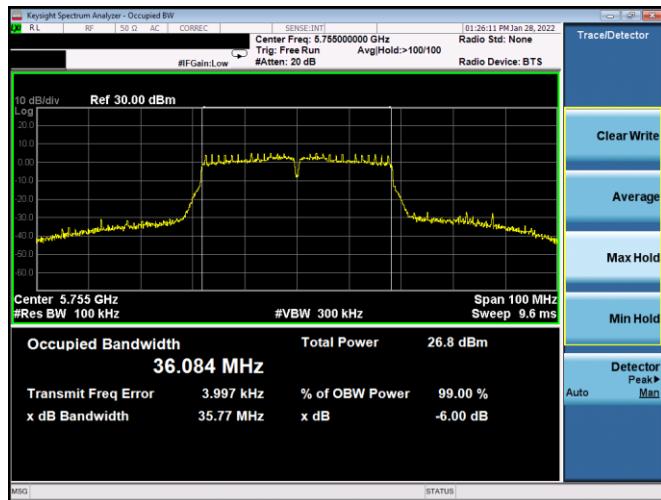
Plot 7-178. 6dB BW & 99% OBW Antenna 2B (40MHz BW 802.11ax(SU) – Ch. 151, MCS5)



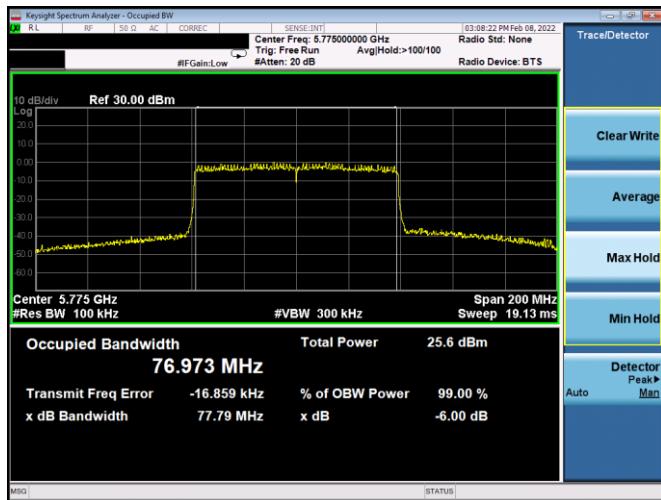
Plot 7-176. 6dB BW & 99% OBW Antenna 2B (20MHz BW 802.11ax(SU) – Ch. 157, MCS5)



Plot 7-179. 6dB BW & 99% OBW Antenna 2B (80MHz BW 802.11ac – Ch. 155, MCS5)



Plot 7-177. 6dB BW & 99% OBW Antenna 2B (40MHz BW 802.11n – Ch. 151, MCS5)



Plot 7-180. 6dB BW & 99% OBW Antenna 2B (80MHz BW 802.11ax(SU) – Ch. 155, MCS5)

FCC ID: BCGA2589 IC: 579C-A2589		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2111150079-14.BCG	Test Dates: 12/02/2021 - 02/10/2022	EUT Type: Tablet Device	Page 62 of 564

Antenna 1B 6dB & 99% Bandwidth Measurements

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass / Fail
Band 3	5745	149	n (20MHz)	6.5/7.2 (MCS0)	17.70	17.46	0.50	Pass
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	17.64	17.10	0.50	Pass
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	17.74	17.46	0.50	Pass
	5745	149	ax (SU) (20MHz)	8/8.6 (MCS0)	18.89	18.70	0.50	Pass
	5785	157	ax (SU) (20MHz)	8/8.6 (MCS0)	18.91	18.91	0.50	Pass
	5825	165	ax (SU) (20MHz)	8/8.6 (MCS0)	18.90	18.72	0.50	Pass
	5755	151	n (40MHz)	13.5/15 (MCS0)	36.08	35.63	0.50	Pass
	5795	159	n (40MHz)	13.5/15 (MCS0)	36.34	35.77	0.50	Pass
	5755	151	ax (SU) (40MHz)	16/17.2 (MCS0)	37.87	38.19	0.50	Pass
	5795	159	ax (SU) (40MHz)	16/17.2 (MCS0)	37.86	38.16	0.50	Pass
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	75.28	75.46	0.50	Pass
	5775	155	ax (SU) (80MHz)	34/36 (MCS0)	77.02	77.37	0.50	Pass

Table 7-14. Conducted Bandwidth Measurements Antenna 1B (Low Data Rate)

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass / Fail
Band 3	5745	149	n (20MHz)	26/28.9 (MCS3)	17.70	17.33	0.50	Pass
	5785	157	n (20MHz)	26/28.9 (MCS3)	17.63	17.33	0.50	Pass
	5825	165	n (20MHz)	26/28.9 (MCS3)	17.74	17.53	0.50	Pass
	5745	149	ax (SU) (20MHz)	33/34.4 (MCS3)	18.90	18.93	0.50	Pass
	5785	157	ax (SU) (20MHz)	33/34.4 (MCS3)	18.90	18.74	0.50	Pass
	5825	165	ax (SU) (20MHz)	33/34.4 (MCS3)	18.90	18.78	0.50	Pass
	5755	151	n (40MHz)	54/60 (MCS3)	36.12	36.42	0.50	Pass
	5795	159	n (40MHz)	54/60 (MCS3)	36.29	36.15	0.50	Pass
	5755	151	ax (SU) (40MHz)	65/68.8 (MCS3)	37.88	38.18	0.50	Pass
	5795	159	ax (SU) (40MHz)	65/68.8 (MCS3)	37.85	38.16	0.50	Pass
	5775	155	ac (80MHz)	117/130 (MCS3)	75.23	75.46	0.50	Pass
	5775	155	ax (SU) (80MHz)	136/144.1 (MCS3)	76.95	77.31	0.50	Pass

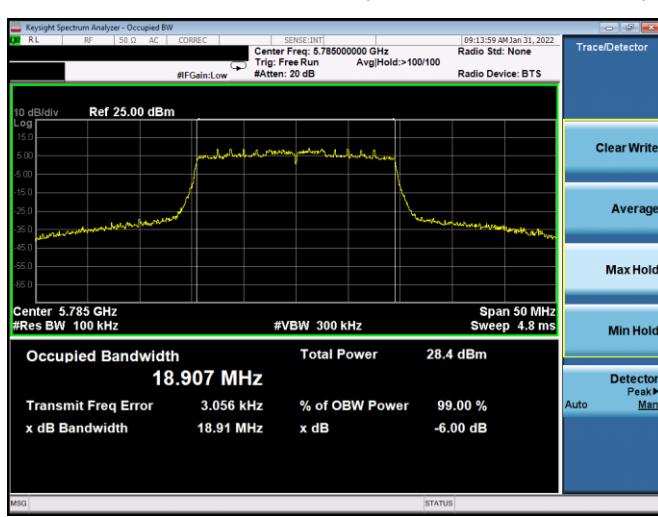
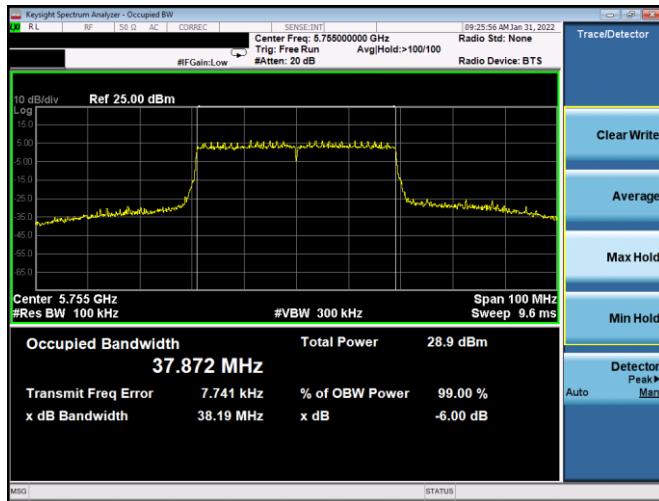
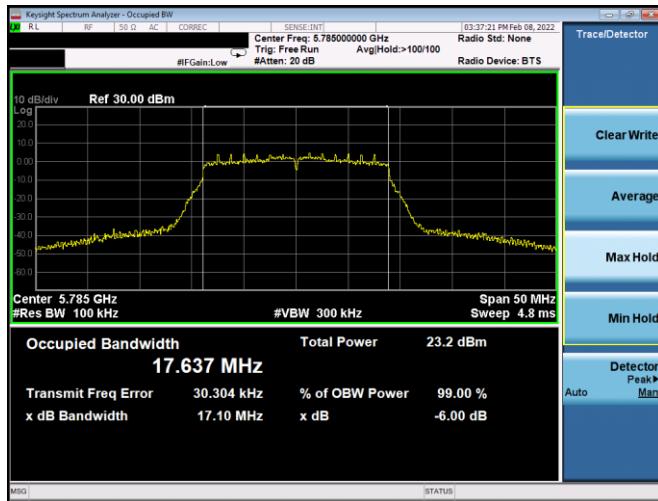
Table 7-15. Conducted Bandwidth Measurements Antenna 1B (Mid Data Rate)

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass / Fail
Band 3	5745	149	n (20MHz)	52/57.8 (MCS5)	17.63	17.37	0.50	Pass
	5785	157	n (20MHz)	52/57.8 (MCS5)	17.64	17.07	0.50	Pass
	5825	165	n (20MHz)	52/57.8 (MCS5)	17.70	17.44	0.50	Pass
	5745	149	ax (SU) (20MHz)	65/68.8 (MCS5)	18.87	18.79	0.50	Pass
	5785	157	ax (SU) (20MHz)	65/68.8 (MCS5)	18.88	18.76	0.50	Pass
	5825	165	ax (SU) (20MHz)	65/68.8 (MCS5)	18.90	18.53	0.50	Pass
	5755	151	n (40MHz)	108/120 (MCS5)	36.29	36.51	0.50	Pass
	5795	159	n (40MHz)	108/120 (MCS5)	36.07	35.60	0.50	Pass
	5755	151	ax (SU) (40MHz)	130/137.6 (MCS5)	37.86	38.17	0.50	Pass
	5795	159	ax (SU) (40MHz)	130/137.6 (MCS5)	37.83	38.11	0.50	Pass
	5775	155	ac (80MHz)	234/260 (MCS5)	75.27	75.48	0.50	Pass
	5775	155	ax (SU) (80MHz)	272/288.2 (MCS5)	76.90	77.07	0.50	Pass

Table 7-16. Conducted Bandwidth Measurements Antenna 1B (High Data Rate)

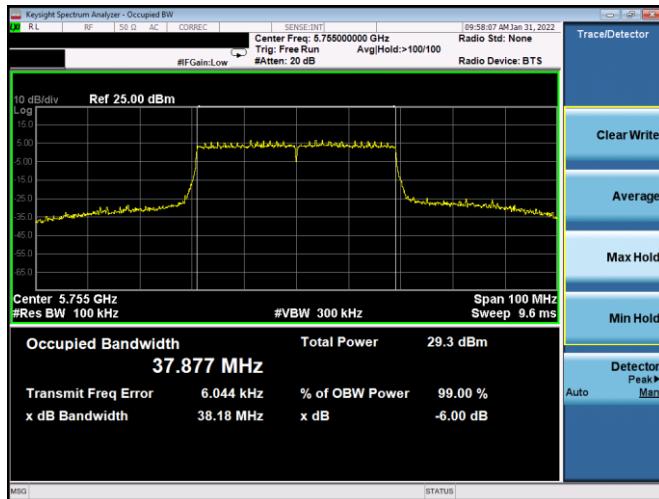
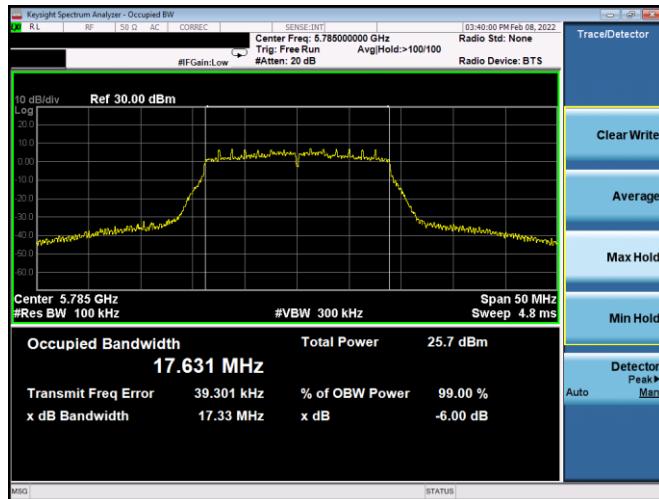
FCC ID: BCGA2589 IC: 579C-A2589	 PCTEST [®] Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2111150079-14.BCG	Test Dates: 12/02/2021 - 02/10/2022	EUT Type: Tablet Device	Page 63 of 564

Low Data Rate



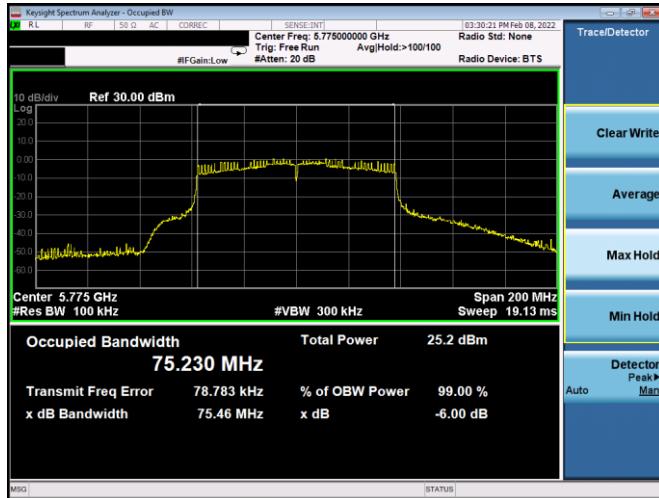
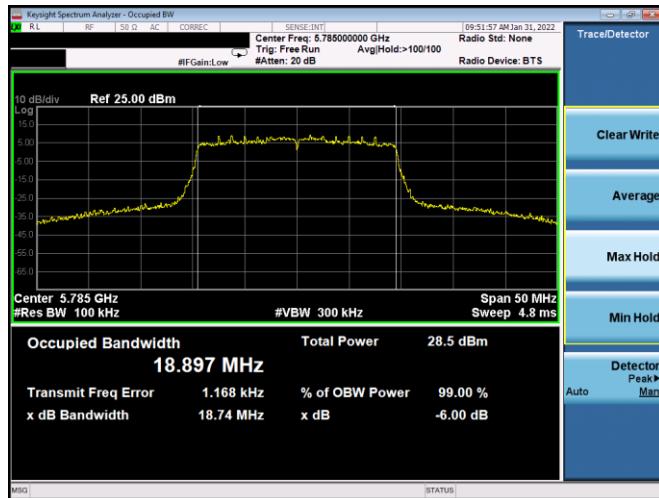
FCC ID: BCGA2589 IC: 579C-A2589	 PCTEST [®] Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2111150079-14.BCG	Test Dates: 12/02/2021 - 02/10/2022	EUT Type: Tablet Device	Page 64 of 564

Mid Data Rate



Plot 7-187. 6dB BW & 99% OBW Antenna 1B (20MHz BW 802.11n – Ch. 157, MCS3)

Plot 7-190. 6dB BW & 99% OBW Antenna 1B (40MHz BW 802.11ax (SU) – Ch. 151, MCS3)



Plot 7-188. 6dB BW & 99% OBW Antenna 1B (20MHz BW 802.11ax(SU) – Ch. 157, MCS3)

Plot 7-191. 6dB BW & 99% OBW Antenna 1B (80MHz BW 802.11ac – Ch. 155, MCS3)



Plot 7-189. 6dB BW & 99% OBW Antenna 1B (40MHz BW 802.11n – Ch. 151, MCS3)

Plot 7-192. 6dB BW & 99% OBW Antenna 1B (80MHz BW 802.11ax(SU) – Ch. 155, MCS3)

FCC ID: BCGA2589 IC: 579C-A2589	 PCTEST <small>Proud to be part of element</small>	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2111150079-14.BCG	Test Dates: 12/02/2021 - 02/10/2022	EUT Type: Tablet Device	Page 65 of 564