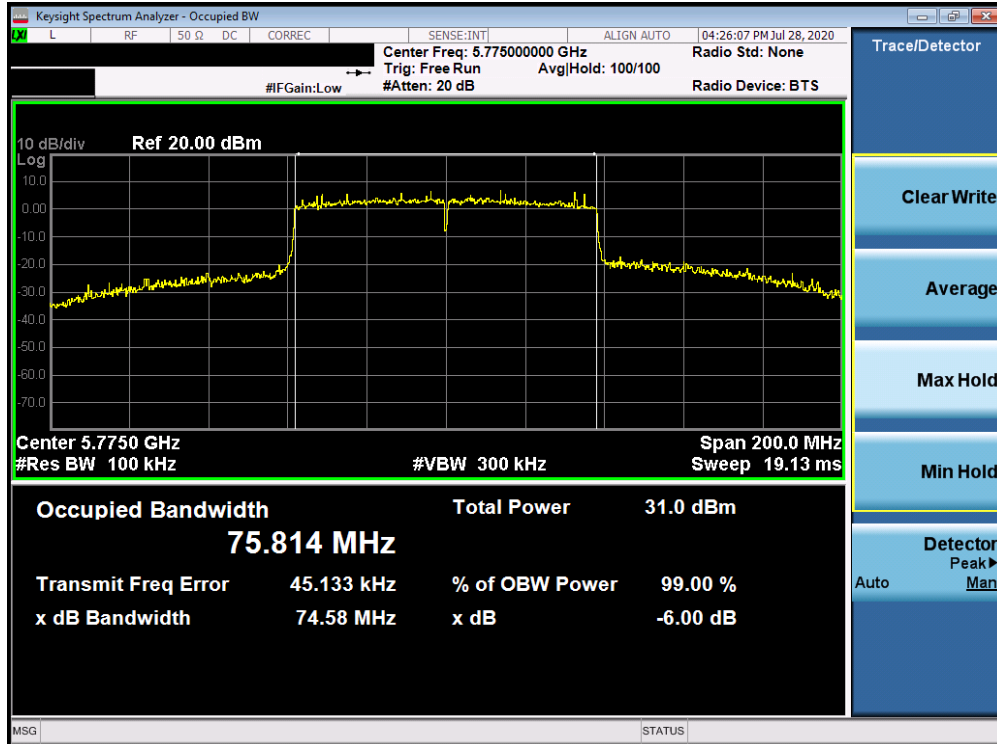


Plot 7-220. 6dB Bandwidth Plot ANT3 (40MHz BW 802.11ax (UNII Band 3) – Ch. 151)

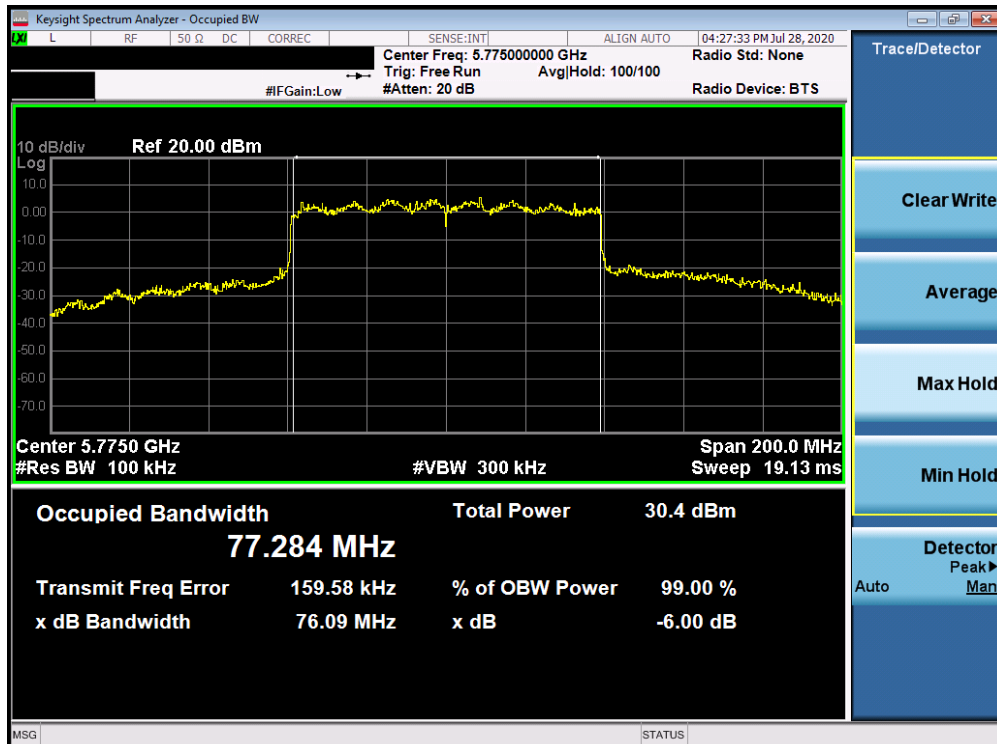


Plot 7-221. 6dB Bandwidth Plot ANT3 (40MHz BW 802.11ax (UNII Band 3) – Ch. 159)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)	Page 134 of 344	



Plot 7-222. 6dB Bandwidth Plot ANT3 (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)



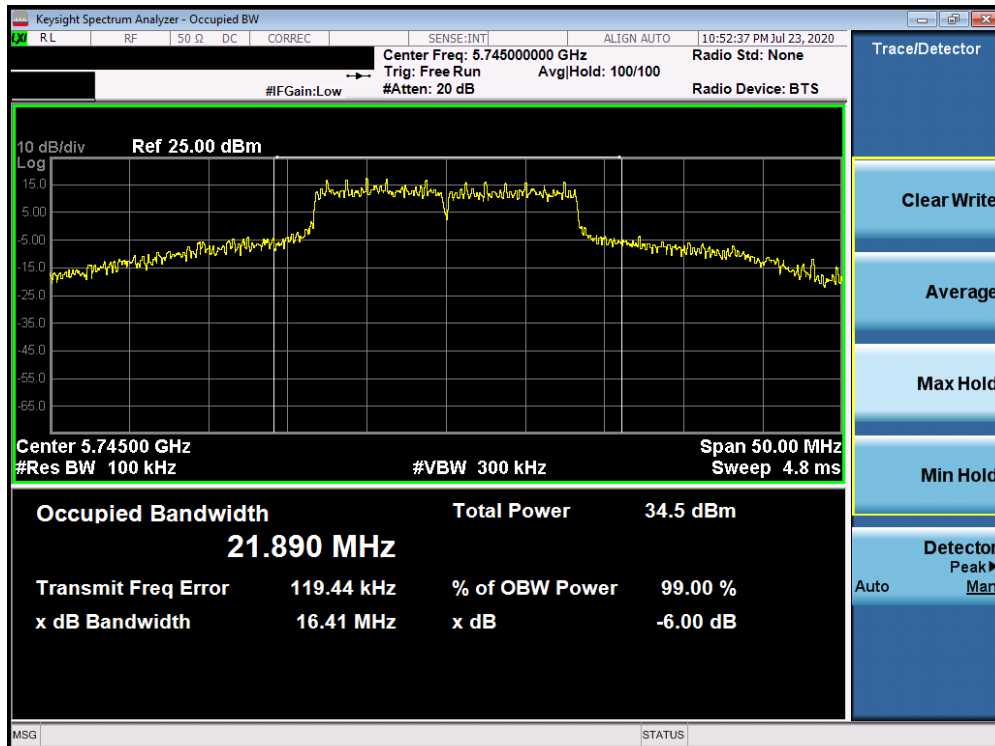
Plot 7-223. 6dB Bandwidth Plot ANT3 (80MHz BW 802.11ax (UNII Band 3) – Ch. 155)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)	Page 135 of 344	

Antenna-4 6dB Bandwidth Measurements

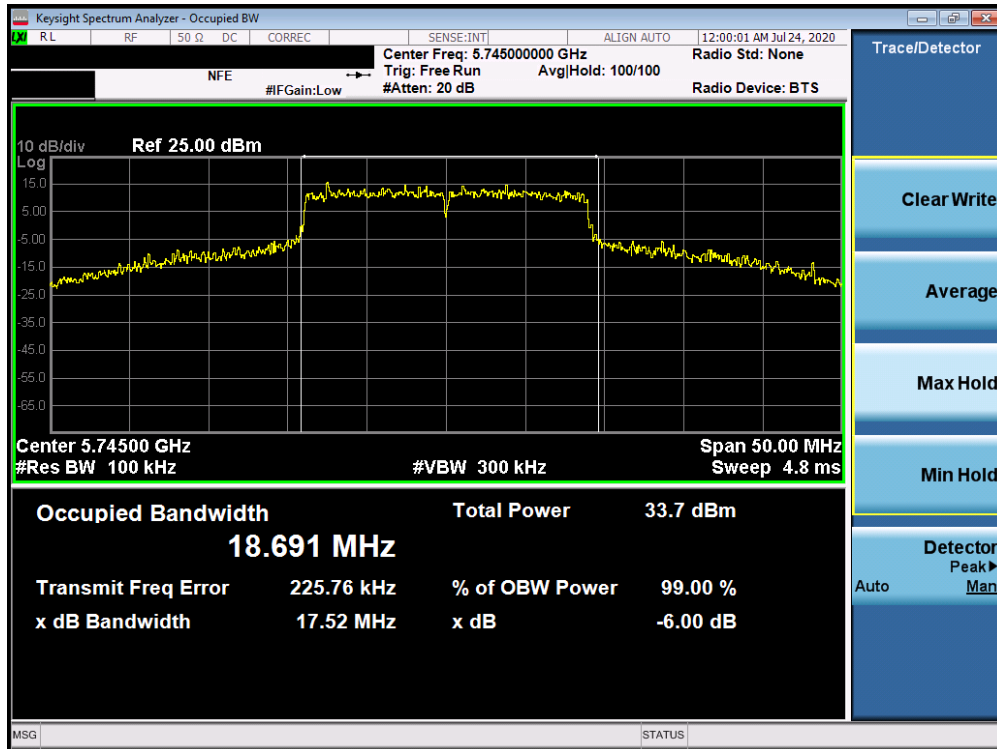
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 6dB Bandwidth [MHz]
Band 3	5745	149	a	6	16.41
	5785	157	a	6	16.36
	5825	165	a	6	16.42
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	17.52
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	17.59
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	17.20
	5745	149	ax (20MHz)	6.5/7.2 (MCS0)	17.57
	5785	157	ax (20MHz)	6.5/7.2 (MCS0)	17.57
	5825	165	ax (20MHz)	6.5/7.2 (MCS0)	17.28
	5755	151	n (40MHz)	13.5/15 (MCS0)	36.18
	5795	159	n (40MHz)	13.5/15 (MCS0)	36.01
	5755	151	ax (40MHz)	13.5/15 (MCS0)	37.66
	5795	159	ax (40MHz)	13.5/15 (MCS0)	38.12
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	77.19
5775	155	ax (80MHz)	29.3/32.5 (MCS0)	75.56	

Table 7-8. Conducted Bandwidth Measurements

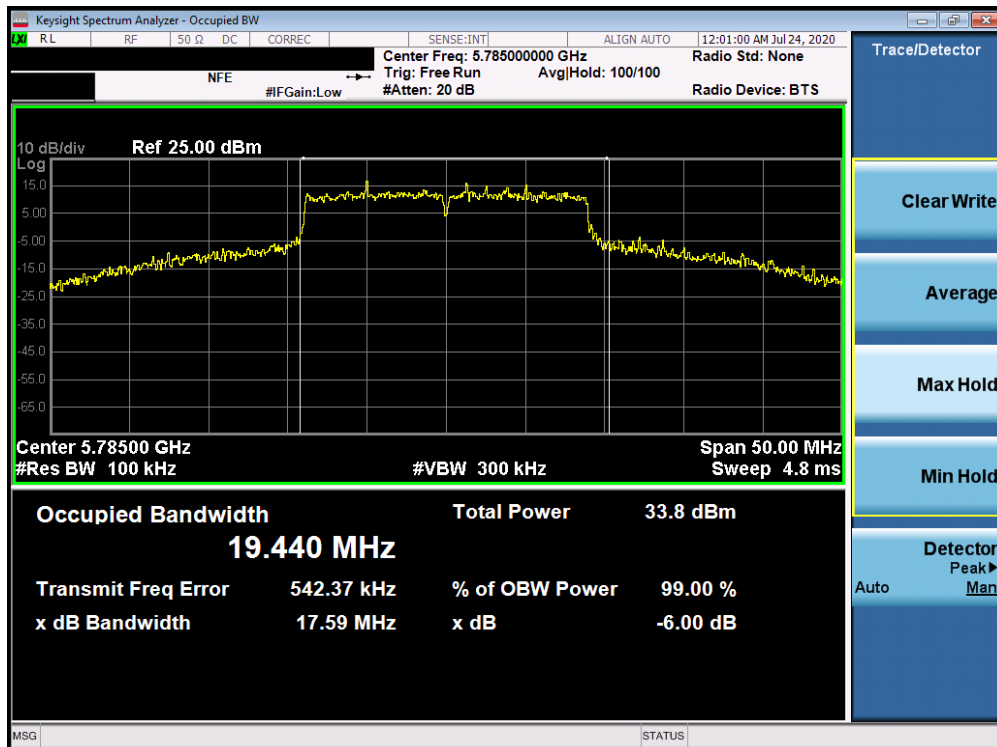


Plot 7-224. 6dB Bandwidth Plot ANT4 (802.11a) (UNII Band 3) – Ch. 149

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 136 of 344

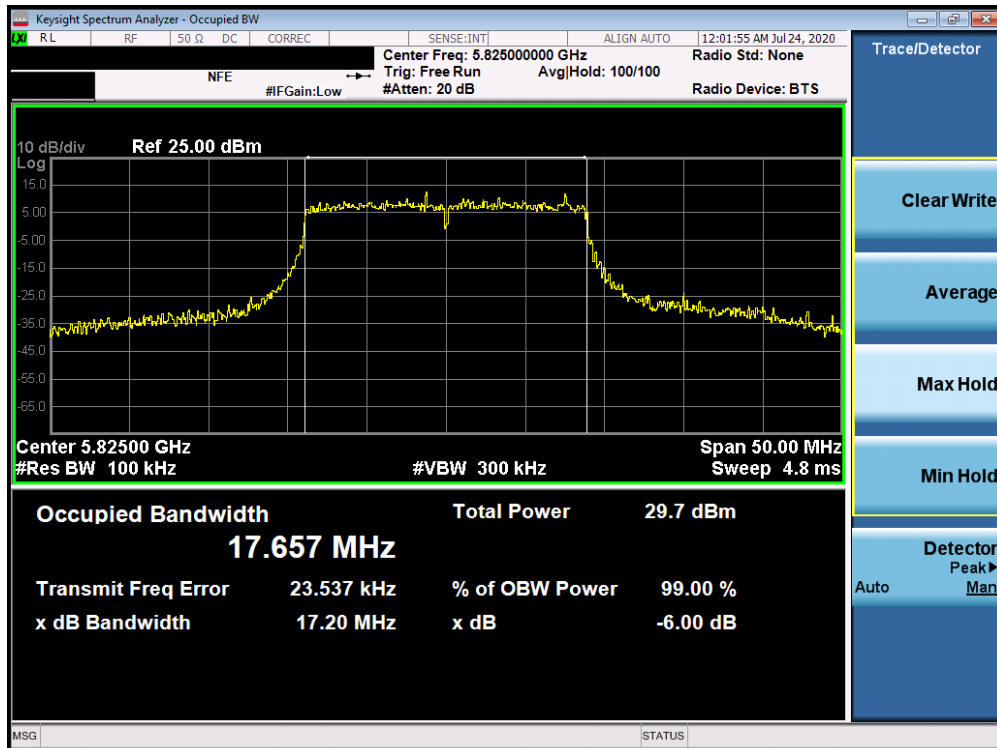


Plot 7-227. 6dB Bandwidth Plot ANT4 (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

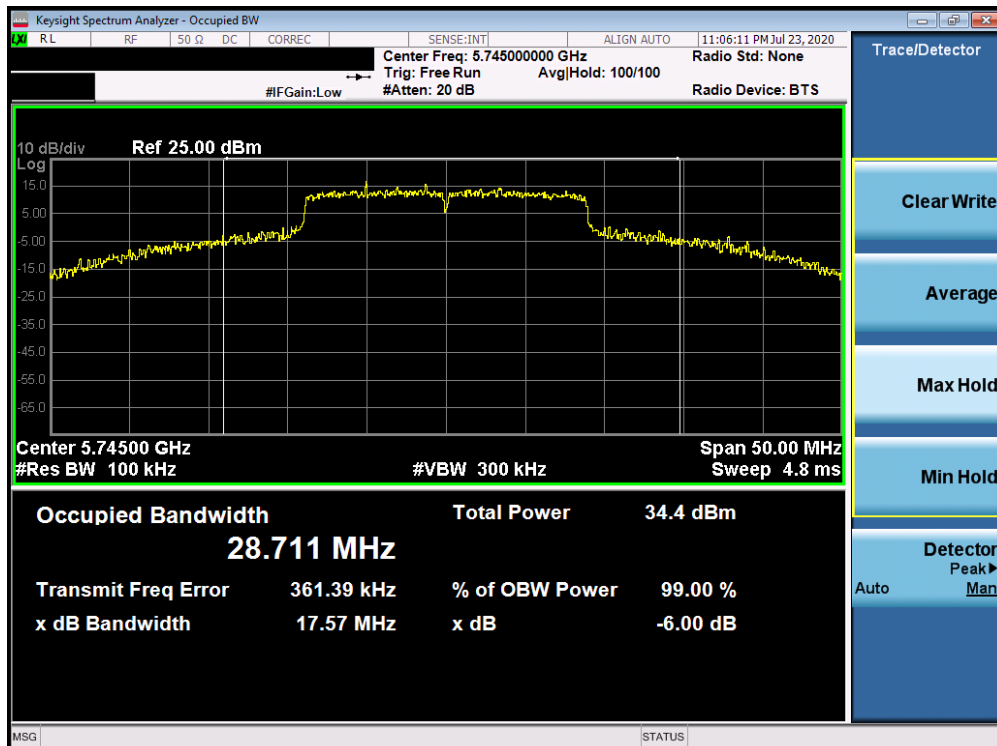


Plot 7-228. 6dB Bandwidth Plot ANT4 (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 138 of 344

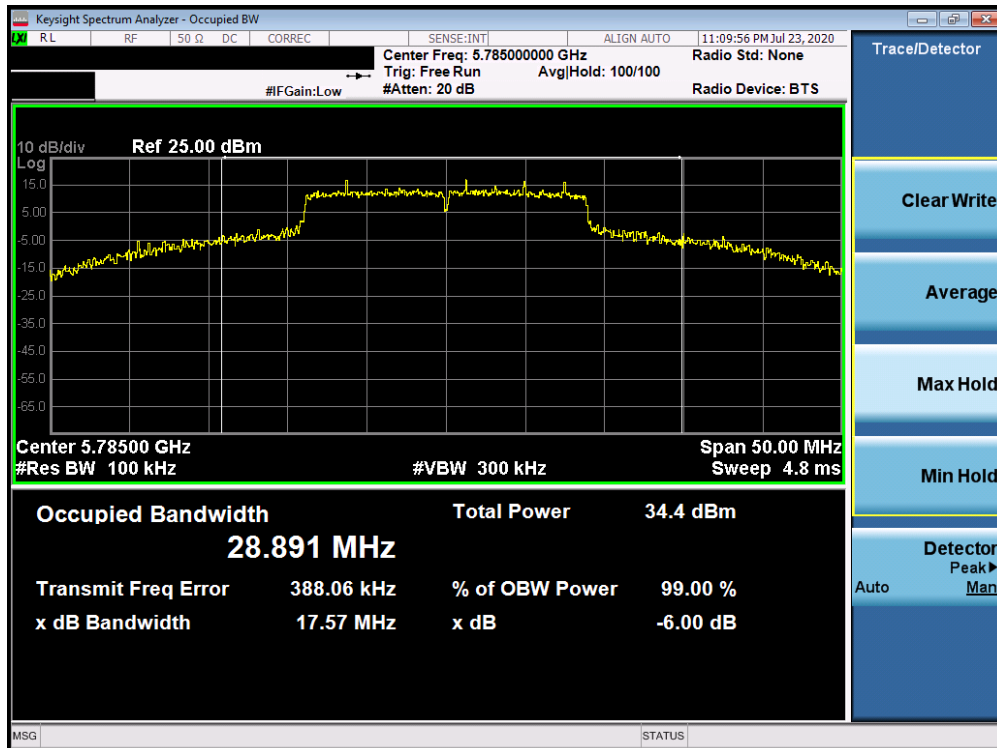


Plot 7-229. 6dB Bandwidth Plot ANT4 (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

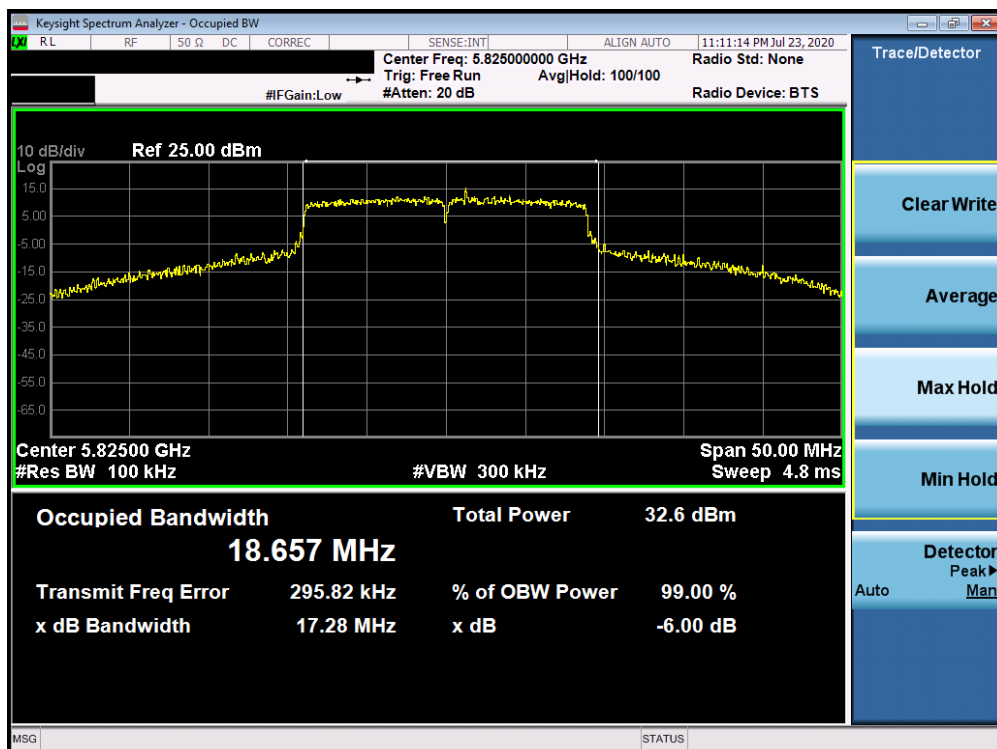


Plot 7-230. 6dB Bandwidth Plot ANT4 (20MHz BW 802.11ax (UNII Band 3) – Ch. 149)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 139 of 344

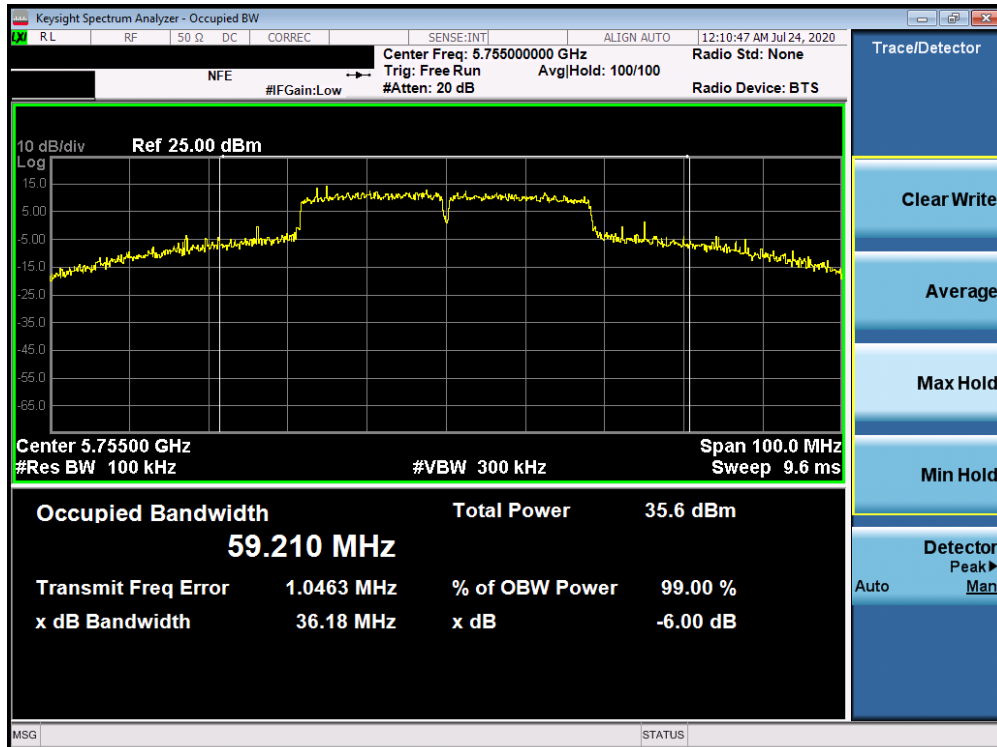


Plot 7-231. 6dB Bandwidth Plot ANT4 (20MHz BW 802.11ax (UNII Band 3) – Ch. 157)

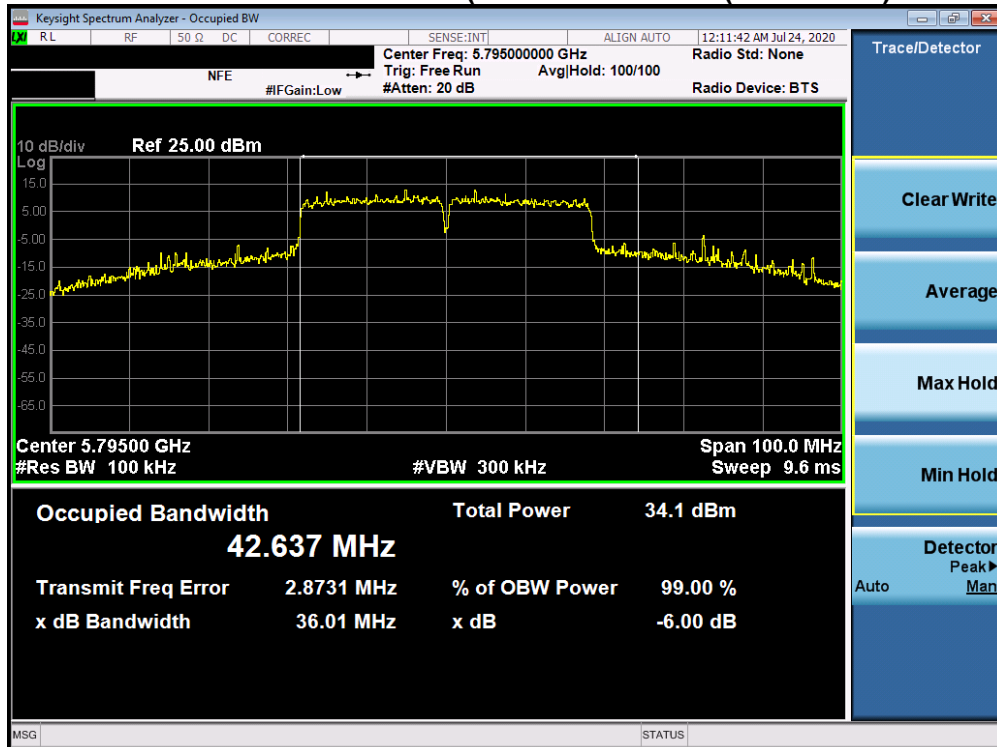


Plot 7-232. 6dB Bandwidth Plot ANT4 (20MHz BW 802.11ax (UNII Band 3) – Ch. 165)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 140 of 344

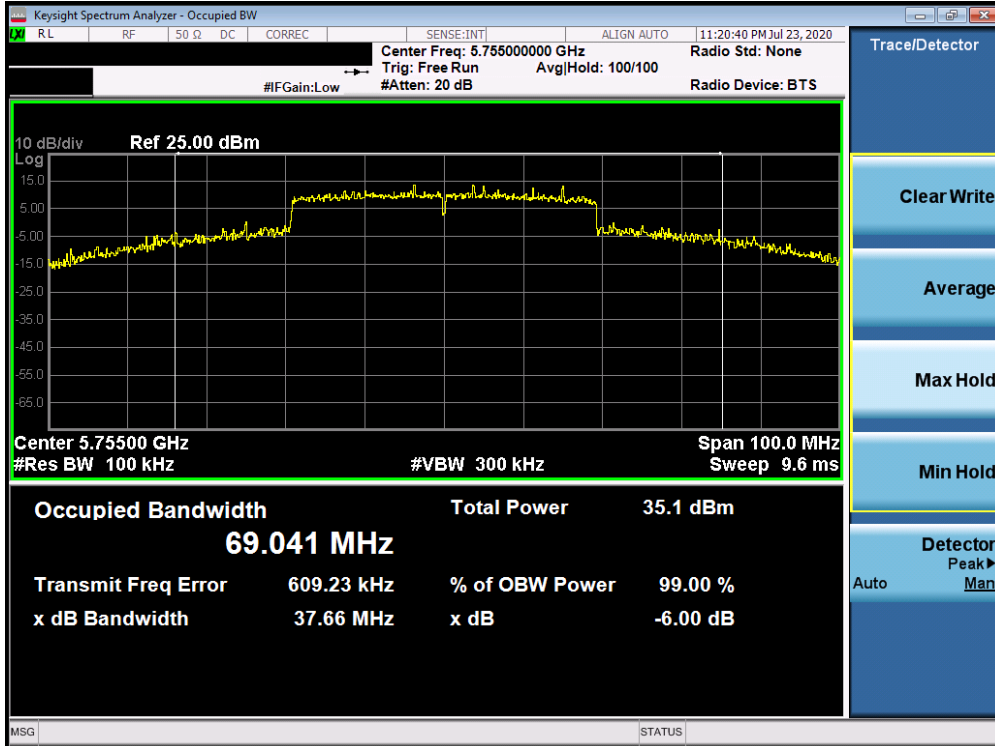


Plot 7-233. 6dB Bandwidth Plot ANT4 (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

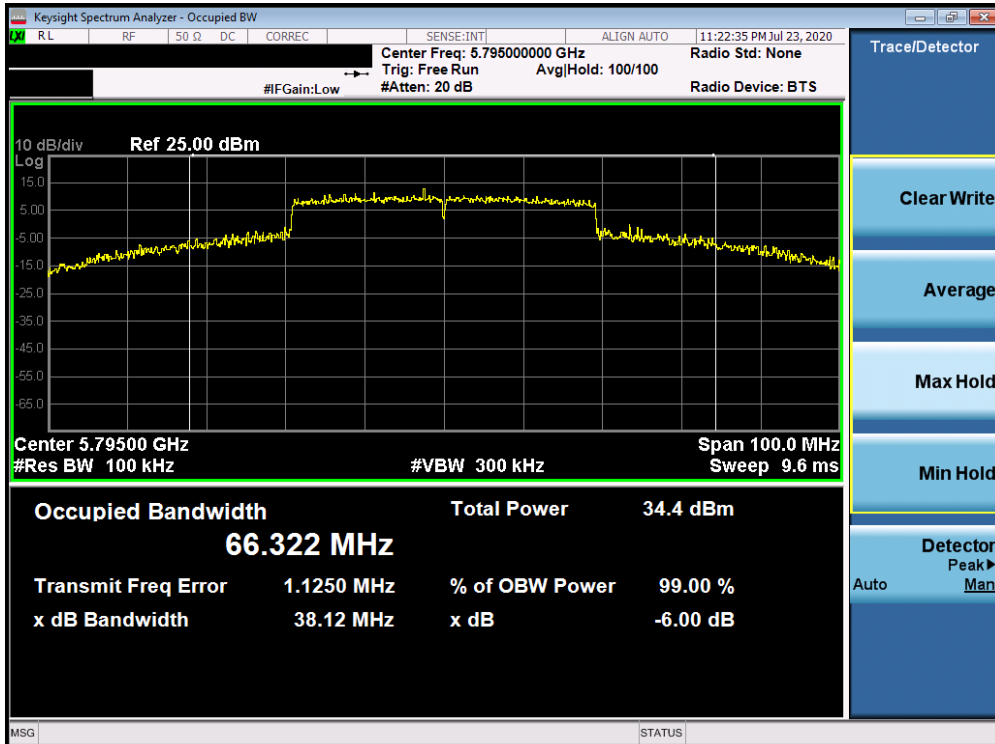


Plot 7-234. 6dB Bandwidth Plot ANT4 (40MHz BW 802.11n (UNII Band 3) – Ch. 159)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 141 of 344

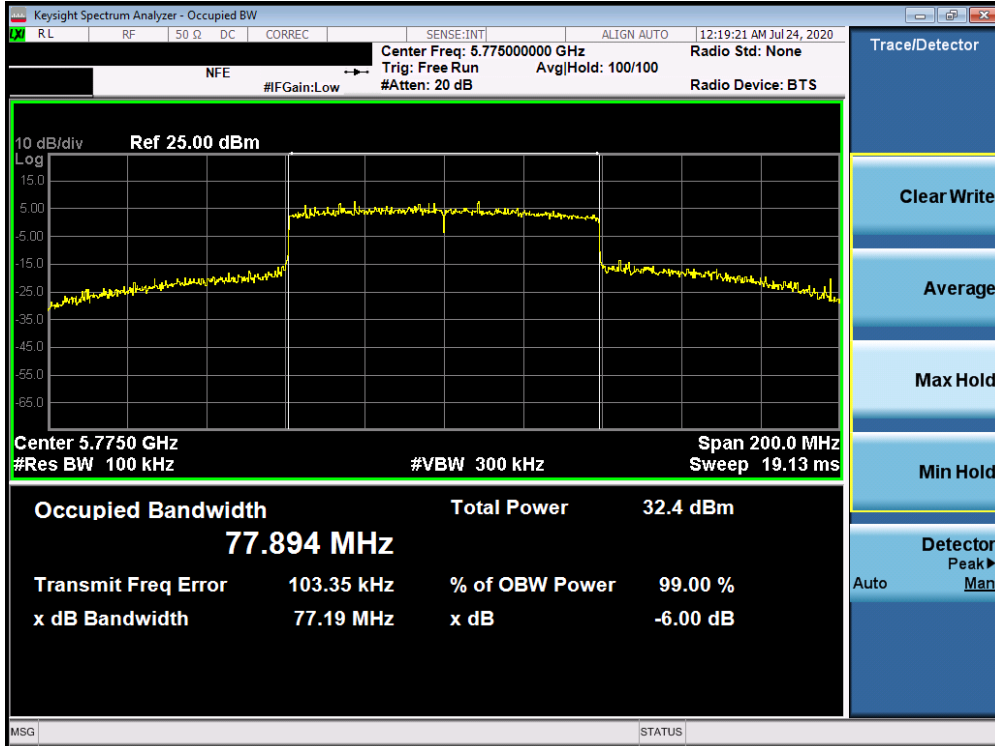


Plot 7-235. 6dB Bandwidth Plot ANT4 (40MHz BW 802.11ax (UNII Band 3) – Ch. 151)

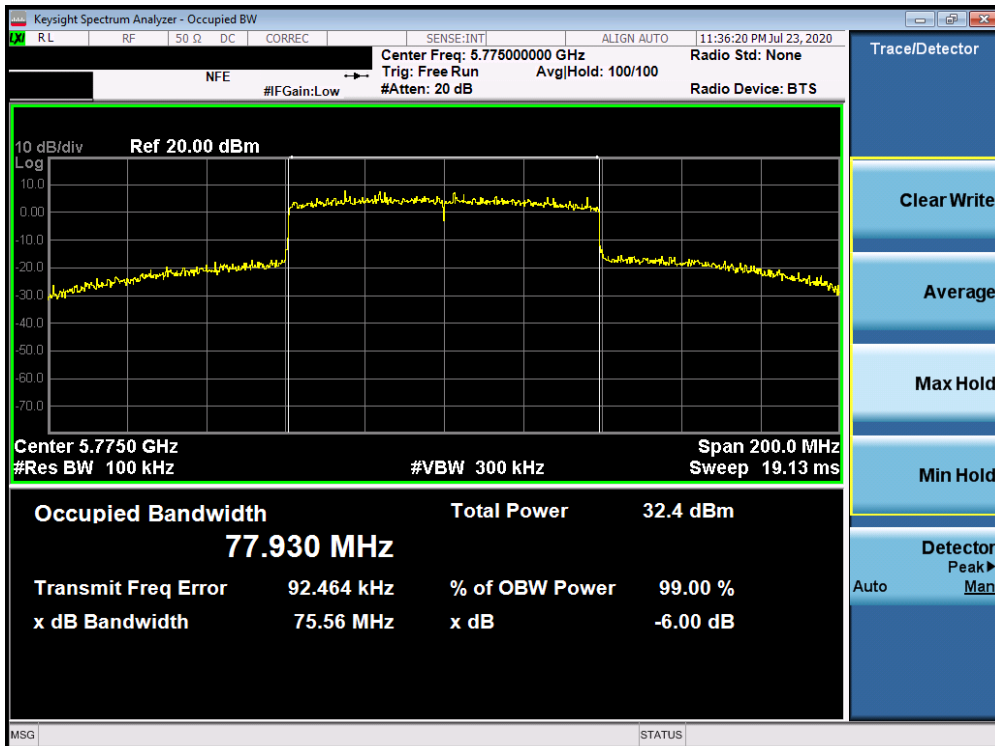


Plot 7-236. 6dB Bandwidth Plot ANT4 (40MHz BW 802.11ax (UNII Band 3) – Ch. 159)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 142 of 344



Plot 7-237. 6dB Bandwidth Plot ANT4 (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)



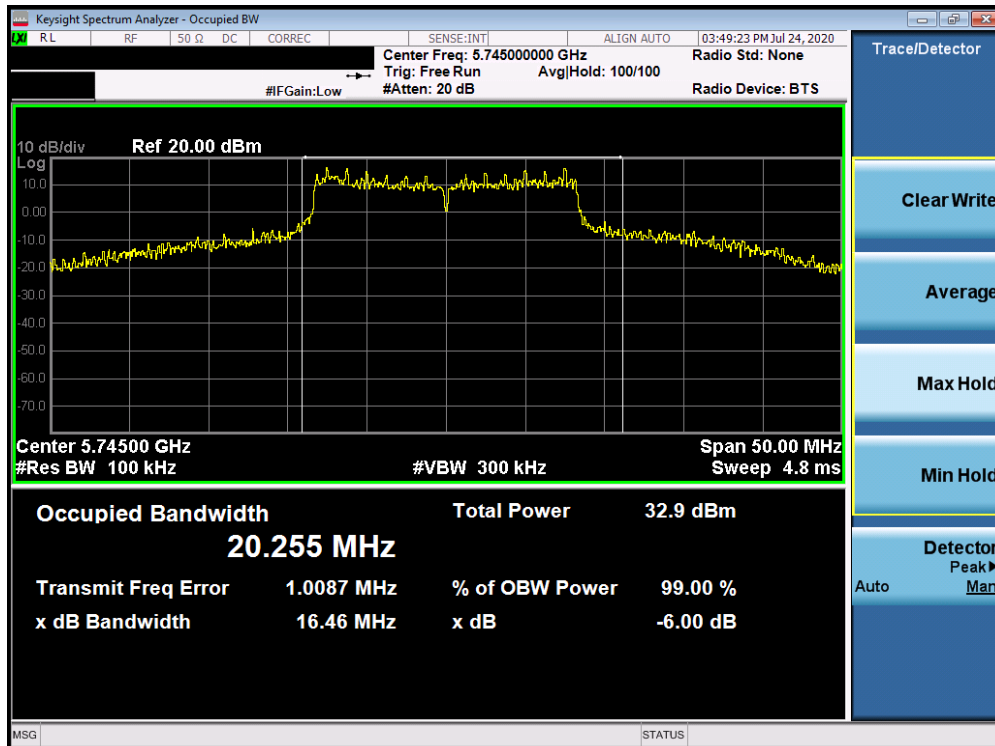
Plot 7-238. 6dB Bandwidth Plot ANT4 (80MHz BW 802.11ax (UNII Band 3) – Ch. 155)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 143 of 344

Antenna-5 6dB Bandwidth Measurements

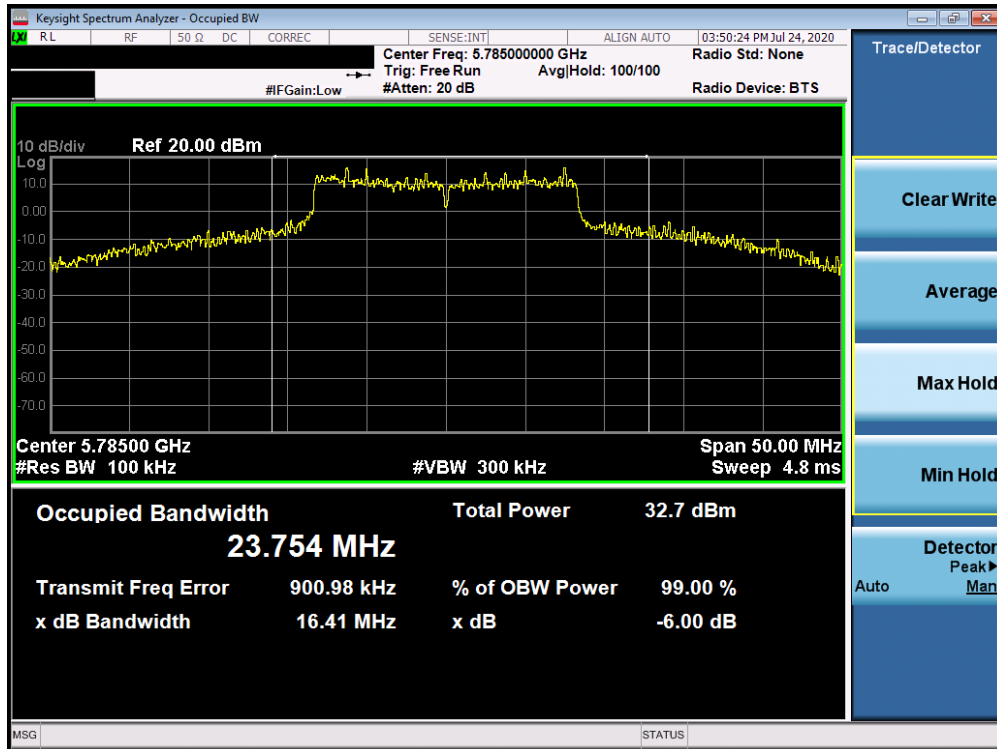
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 6dB Bandwidth [MHz]
Band 3	5745	149	a	6	16.46
	5785	157	a	6	16.41
	5825	165	a	6	16.46
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	17.60
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	17.63
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	17.65
	5745	149	ax (20MHz)	6.5/7.2 (MCS0)	18.38
	5785	157	ax (20MHz)	6.5/7.2 (MCS0)	18.93
	5825	165	ax (20MHz)	6.5/7.2 (MCS0)	19.09
	5755	151	n (40MHz)	13.5/15 (MCS0)	35.71
	5795	159	n (40MHz)	13.5/15 (MCS0)	36.00
	5755	151	ax (40MHz)	13.5/15 (MCS0)	38.19
	5795	159	ax (40MHz)	13.5/15 (MCS0)	38.01
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	76.21
	5775	155	ax (80MHz)	29.3/32.5 (MCS0)	76.77

Table 7-9. Conducted Bandwidth Measurements

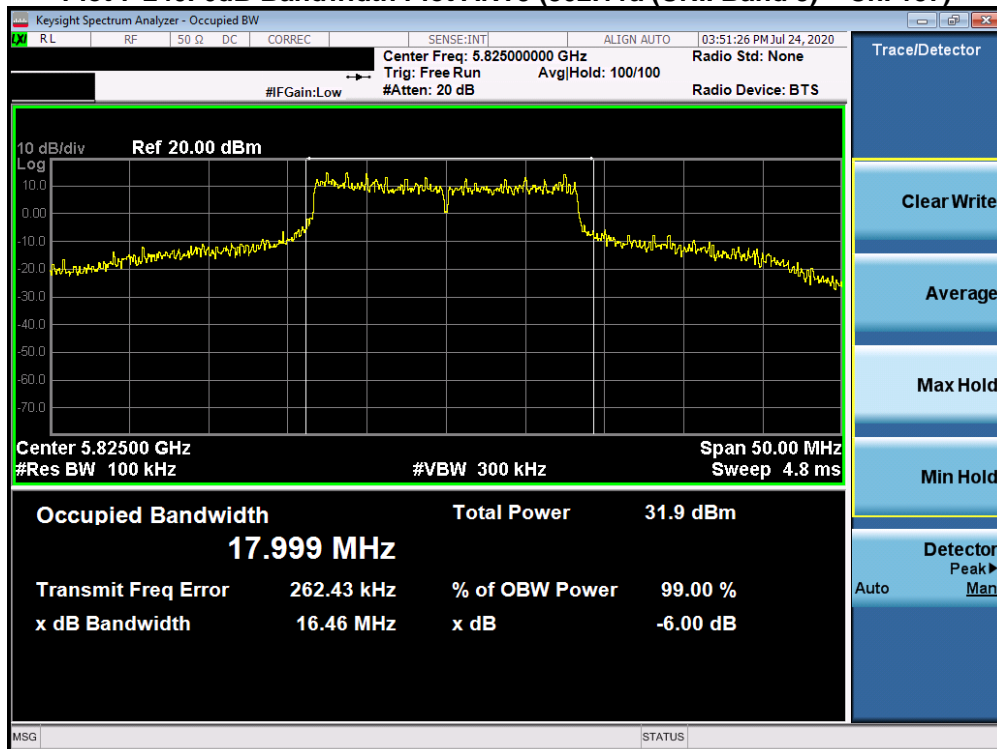


Plot 7-239. 6dB Bandwidth Plot ANT5 (802.11a (UNII Band 3) – Ch. 149)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 144 of 344

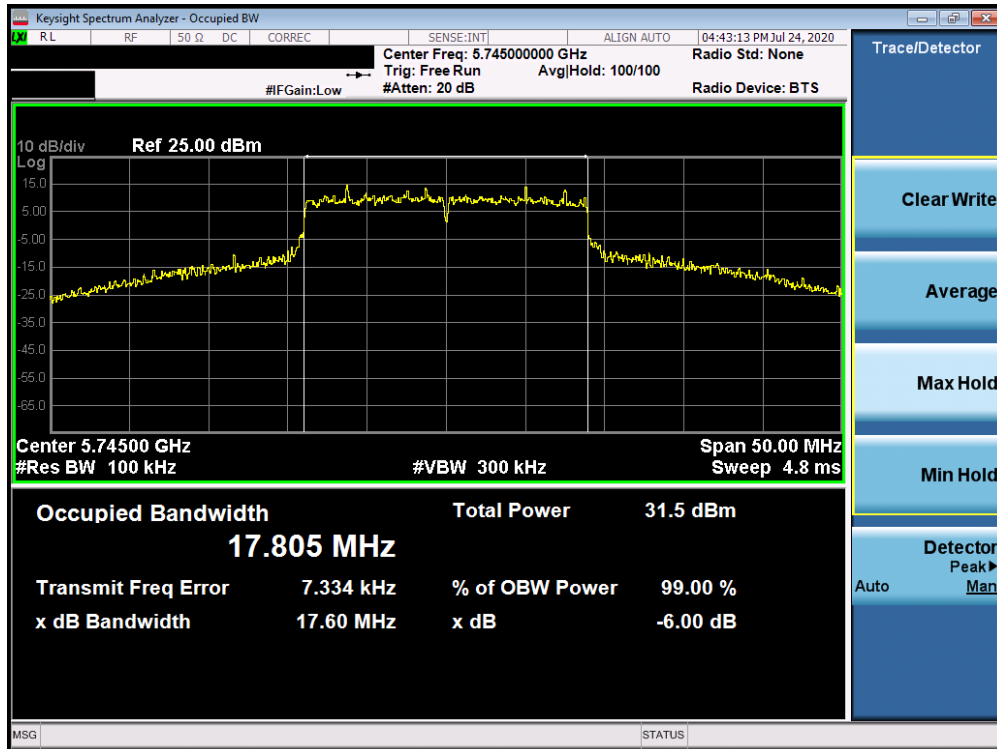


Plot 7-240. 6dB Bandwidth Plot ANT5 (802.11a (UNII Band 3) – Ch. 157)

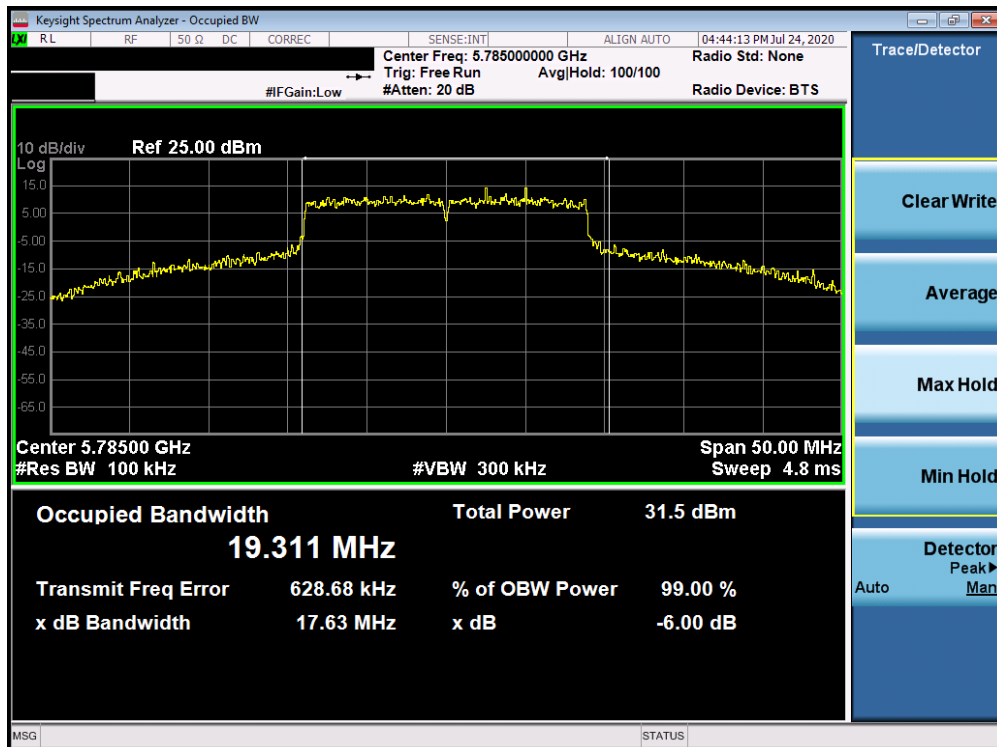


Plot 7-241. 6dB Bandwidth Plot ANT5 (802.11a (UNII Band 3) – Ch. 165)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 145 of 344

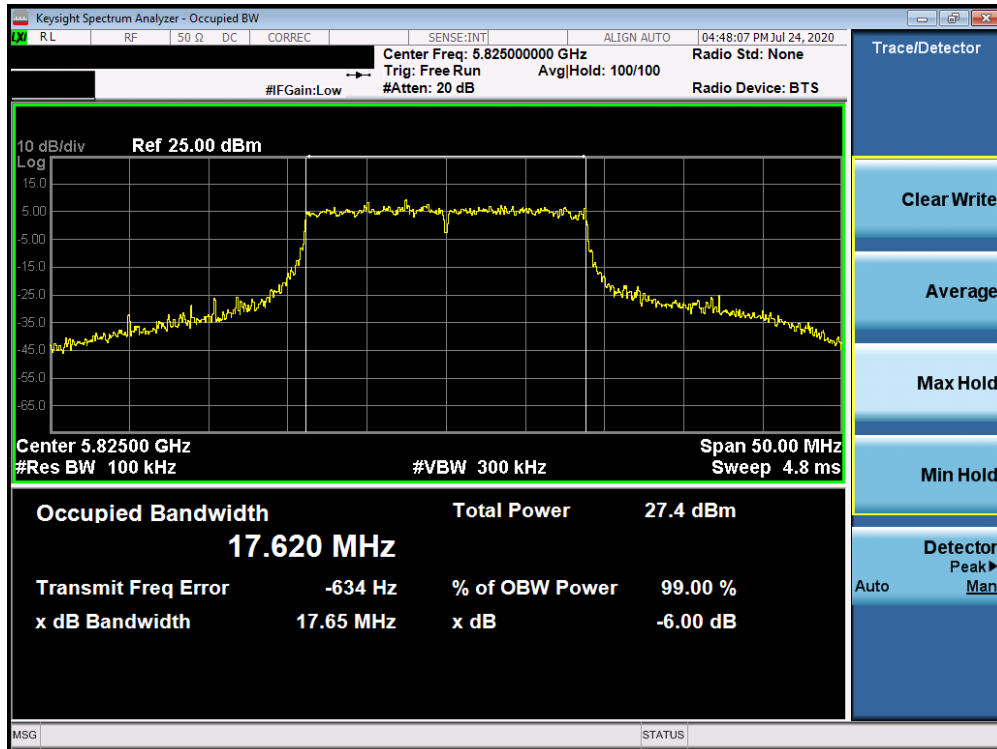


Plot 7-242. 6dB Bandwidth Plot ANT5 (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

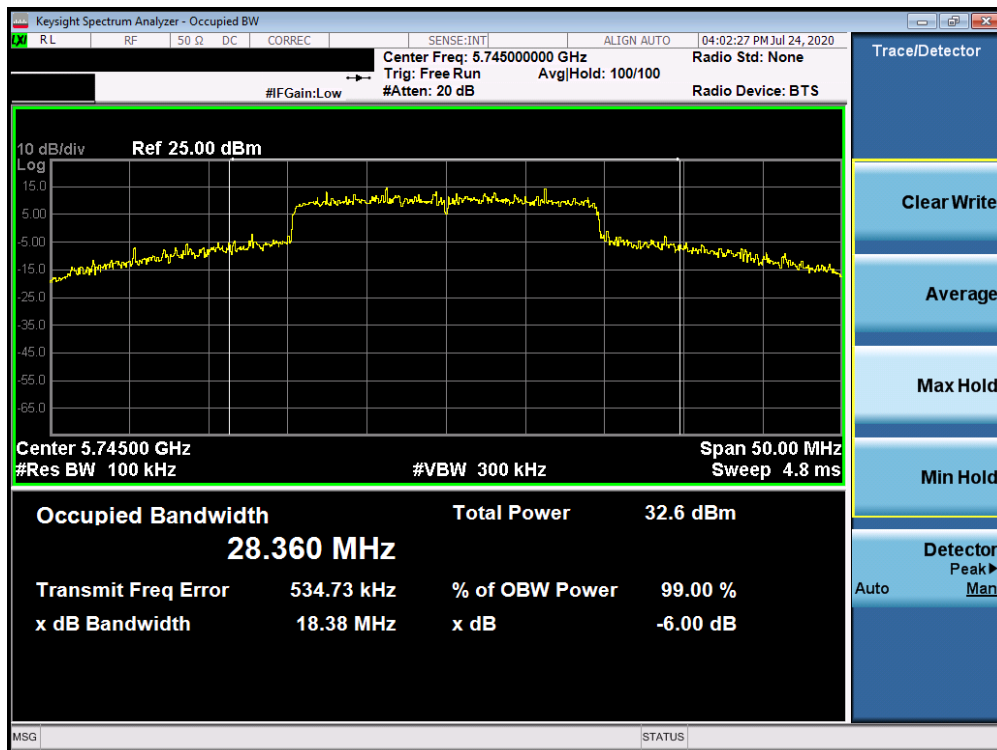


Plot 7-243. 6dB Bandwidth Plot ANT5 (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 146 of 344

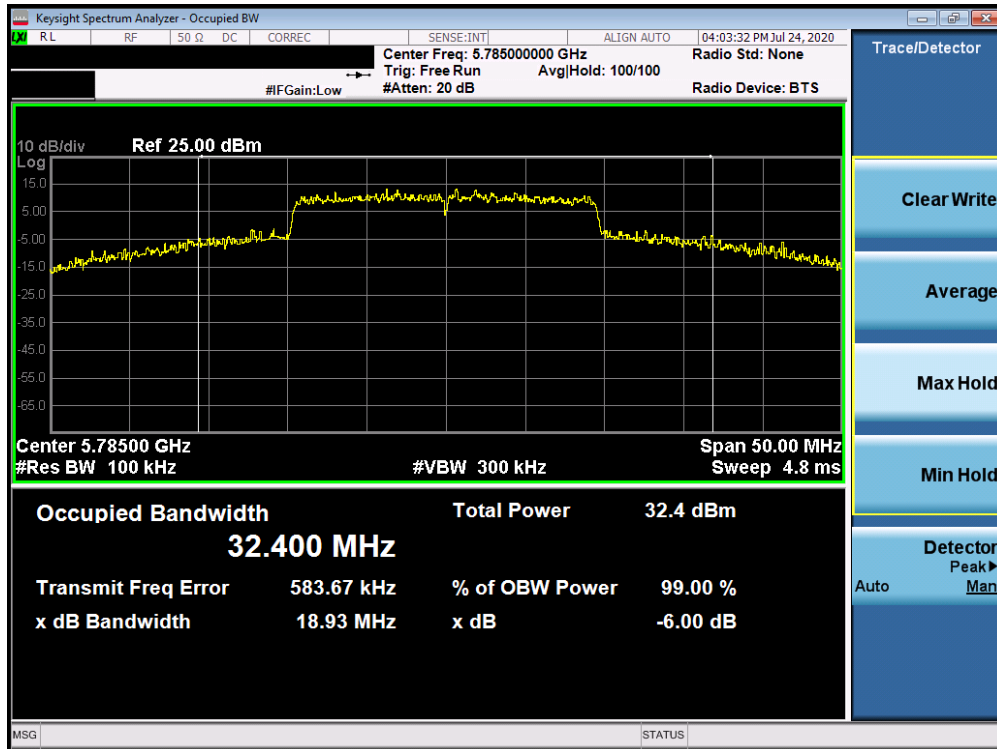


Plot 7-244. 6dB Bandwidth Plot ANT5 (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

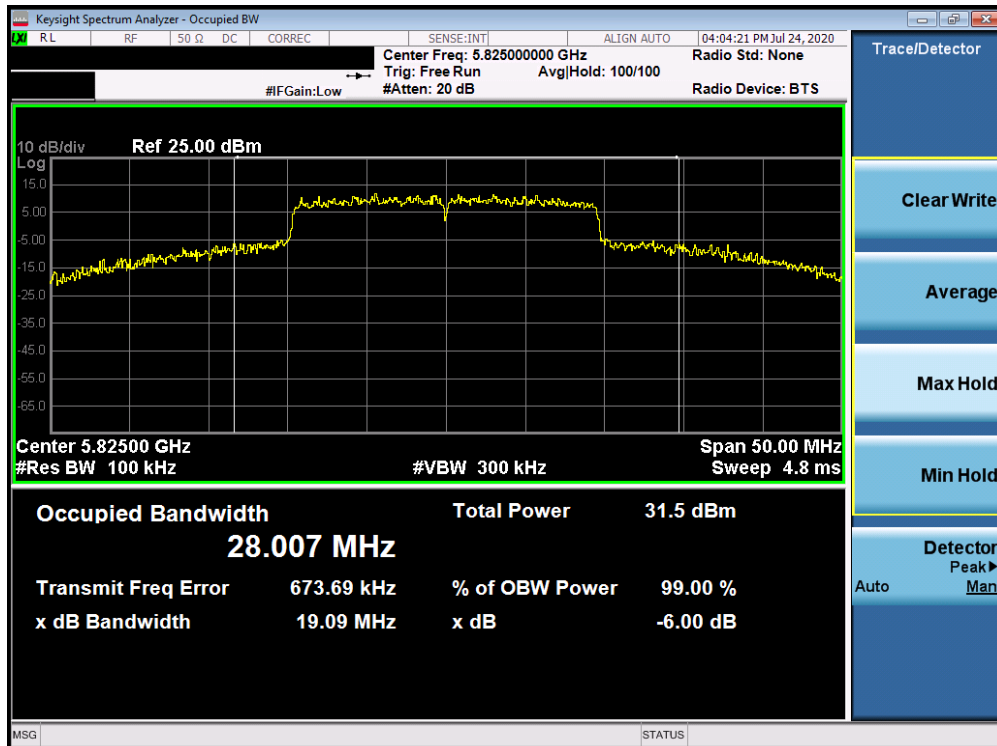


Plot 7-245. 6dB Bandwidth Plot ANT5 (20MHz BW 802.11ax (UNII Band 3) – Ch. 149)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 147 of 344

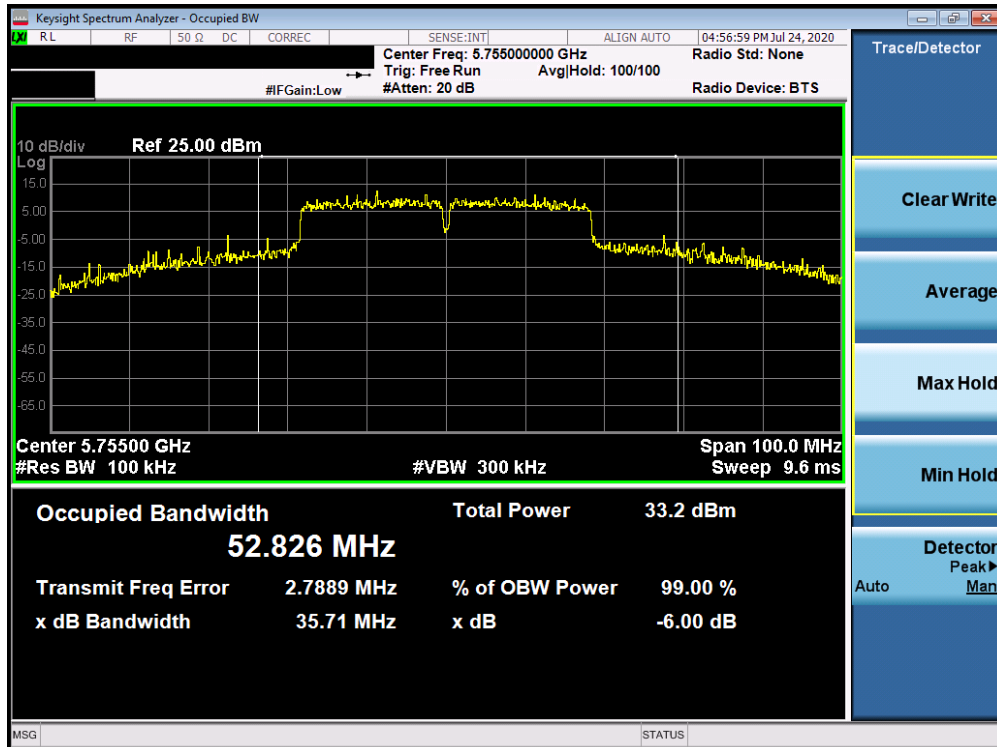


Plot 7-246. 6dB Bandwidth Plot ANT5 (20MHz BW 802.11ax (UNII Band 3) – Ch. 157)

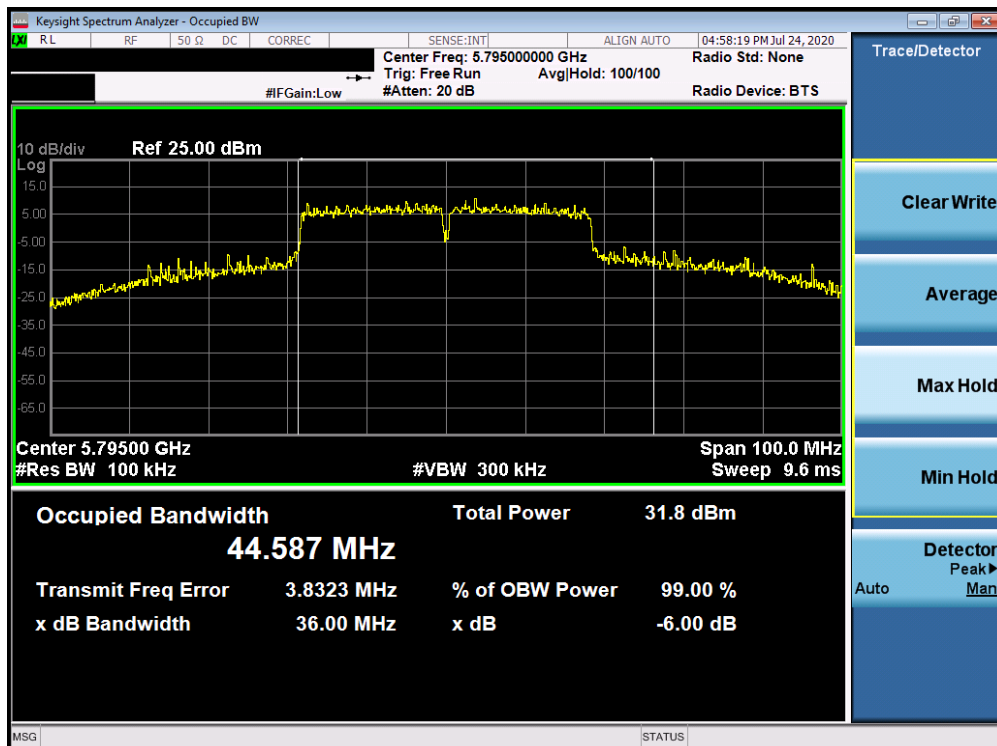


Plot 7-247. 6dB Bandwidth Plot ANT5 (20MHz BW 802.11ax (UNII Band 3) – Ch. 165)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 148 of 344

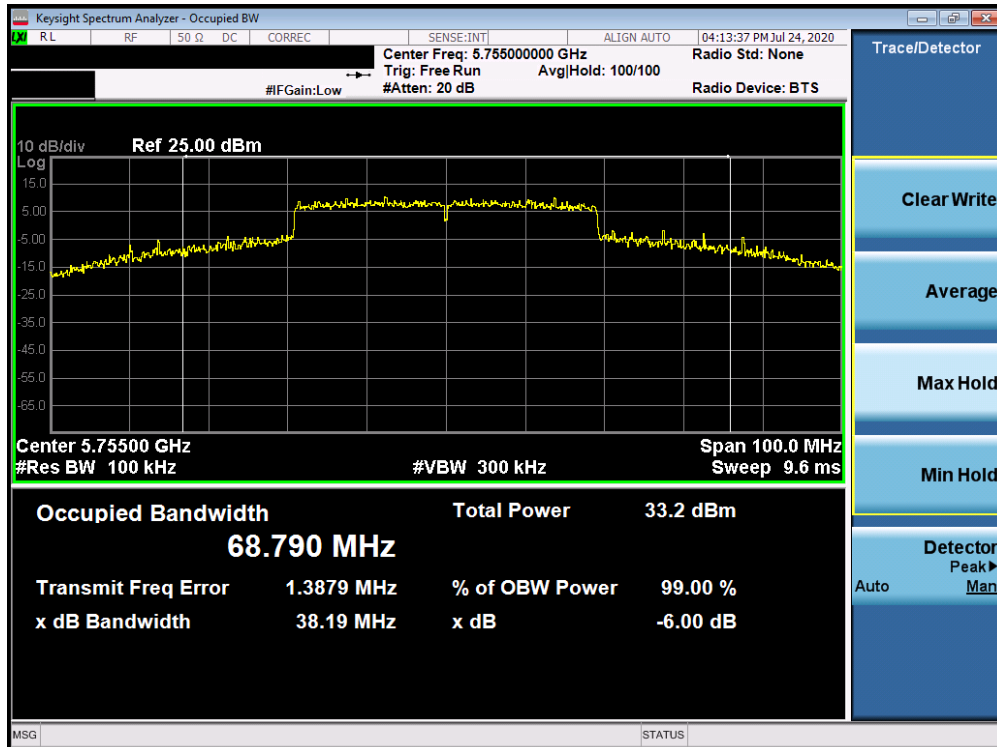


Plot 7-248. 6dB Bandwidth Plot ANT5 (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

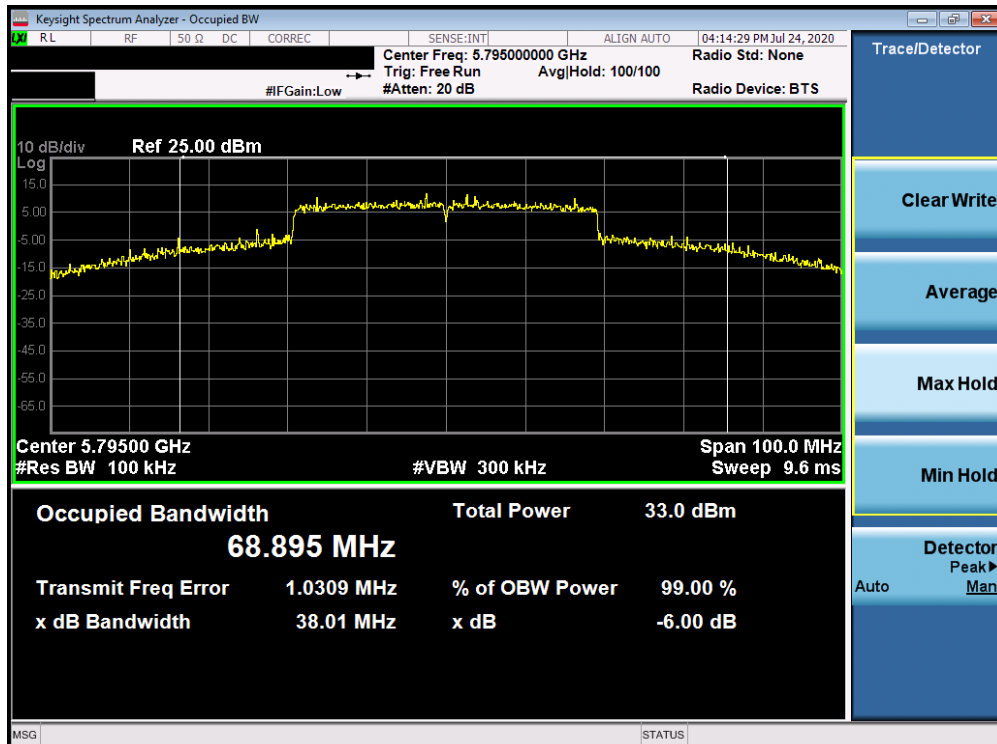


Plot 7-249. 6dB Bandwidth Plot ANT5 (40MHz BW 802.11n (UNII Band 3) – Ch. 159)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)	Page 149 of 344	

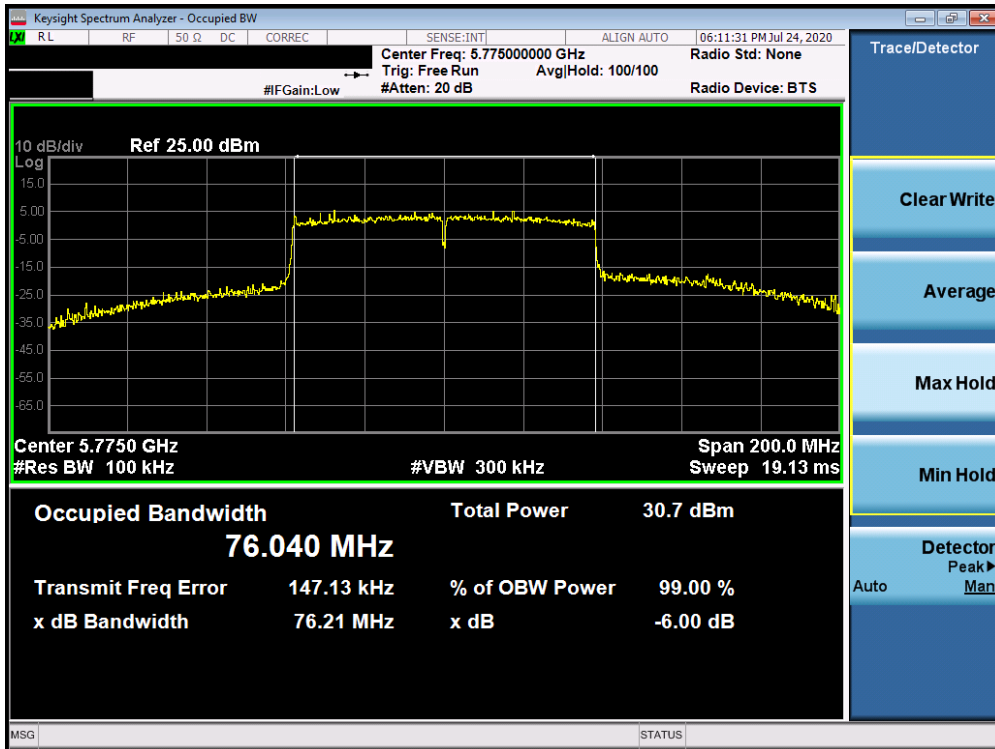


Plot 7-250. 6dB Bandwidth Plot ANT5 (40MHz BW 802.11ax (UNII Band 3) – Ch. 151)

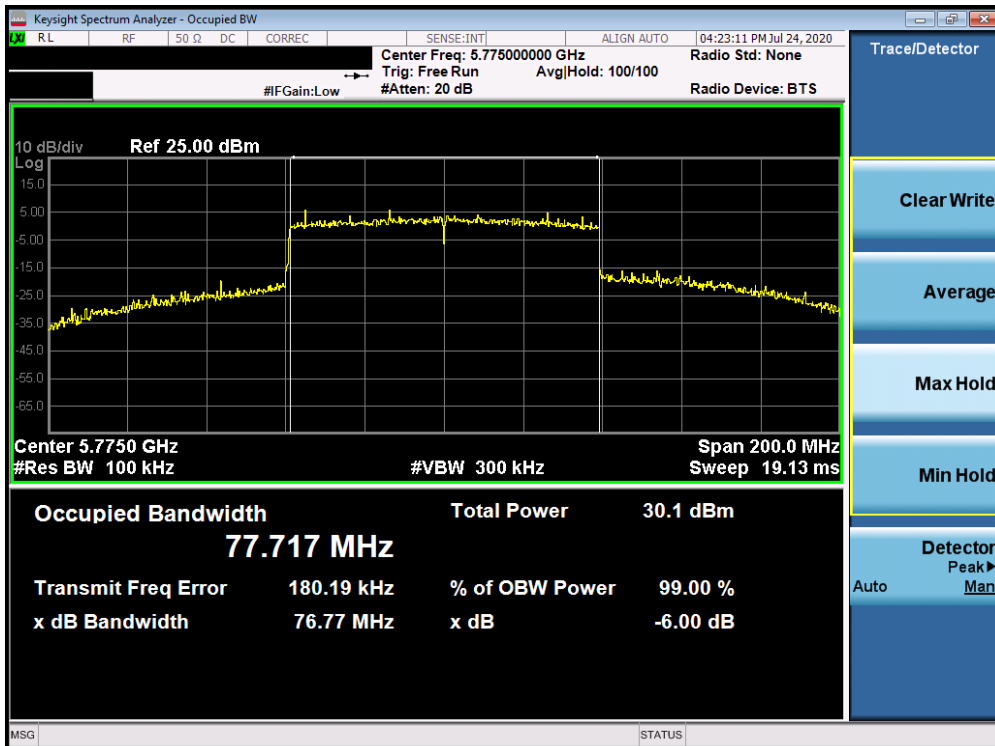


Plot 7-251. 6dB Bandwidth Plot ANT5 (40MHz BW 802.11ax (UNII Band 3) – Ch. 159)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 150 of 344



Plot 7-252. 6dB Bandwidth Plot ANT5 (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)



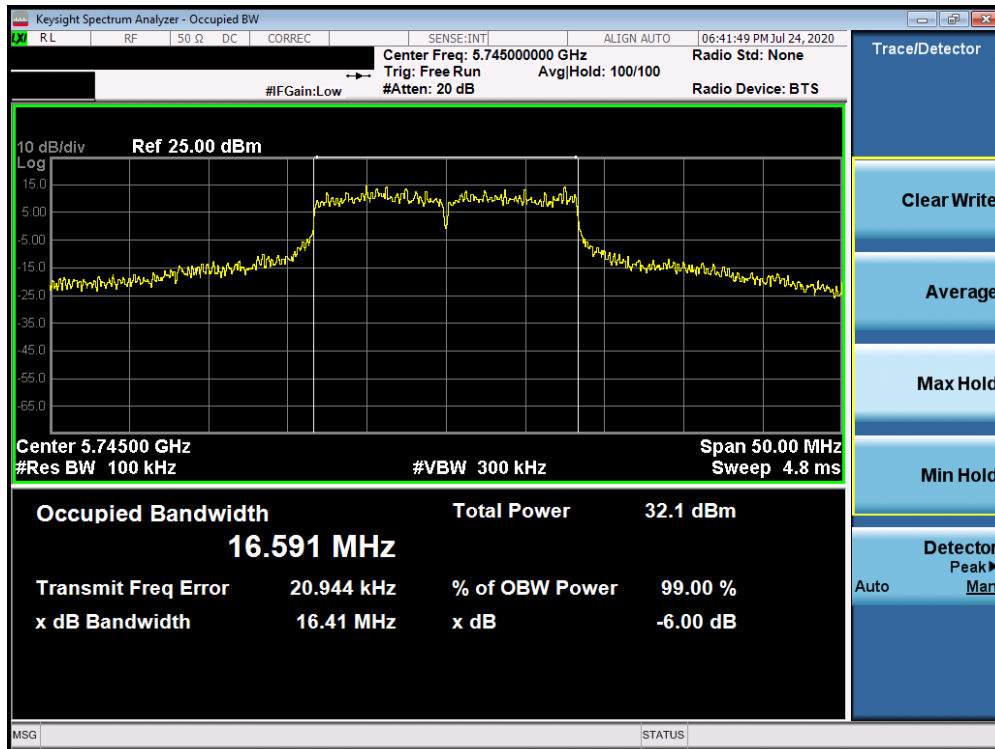
Plot 7-253. 6dB Bandwidth Plot ANT5 (80MHz BW 802.11ax (UNII Band 3) – Ch. 155)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 151 of 344

Antenna-6 6dB Bandwidth Measurements

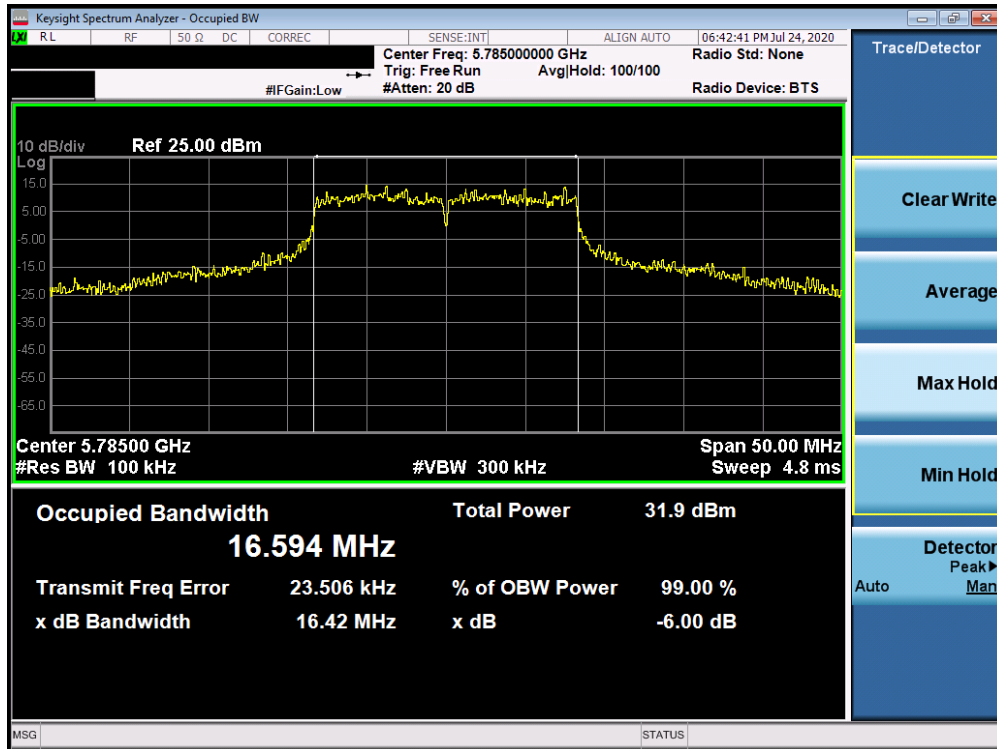
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 6dB Bandwidth [MHz]
Band 3	5745	149	a	6	16.41
	5785	157	a	6	16.42
	5825	165	a	6	16.42
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	17.64
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	17.60
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	17.63
	5745	149	ax (20MHz)	6.5/7.2 (MCS0)	18.81
	5785	157	ax (20MHz)	6.5/7.2 (MCS0)	18.10
	5825	165	ax (20MHz)	6.5/7.2 (MCS0)	19.03
	5755	151	n (40MHz)	13.5/15 (MCS0)	35.81
	5795	159	n (40MHz)	13.5/15 (MCS0)	36.02
	5755	151	ax (40MHz)	13.5/15 (MCS0)	37.71
	5795	159	ax (40MHz)	13.5/15 (MCS0)	37.94
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	75.89
5775	155	ax (80MHz)	29.3/32.5 (MCS0)	77.90	

Table 7-10. Conducted Bandwidth Measurements

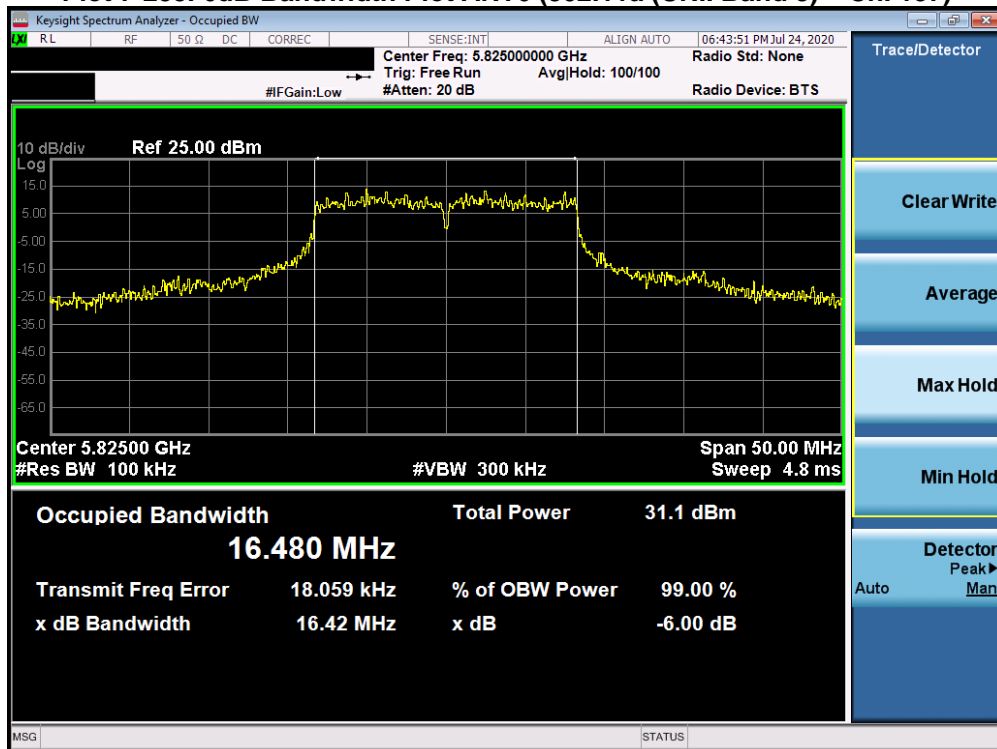


Plot 7-254. 6dB Bandwidth Plot ANT6 (802.11a) (UNII Band 3) – Ch. 149

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 152 of 344

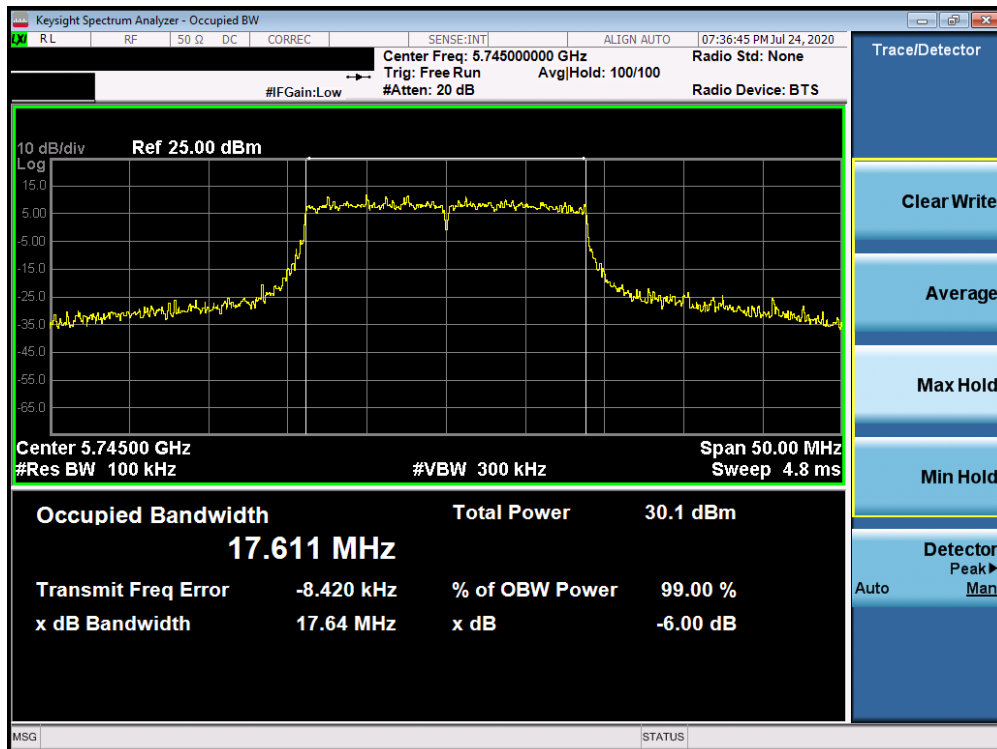


Plot 7-255. 6dB Bandwidth Plot ANT6 (802.11a (UNII Band 3) – Ch. 157)

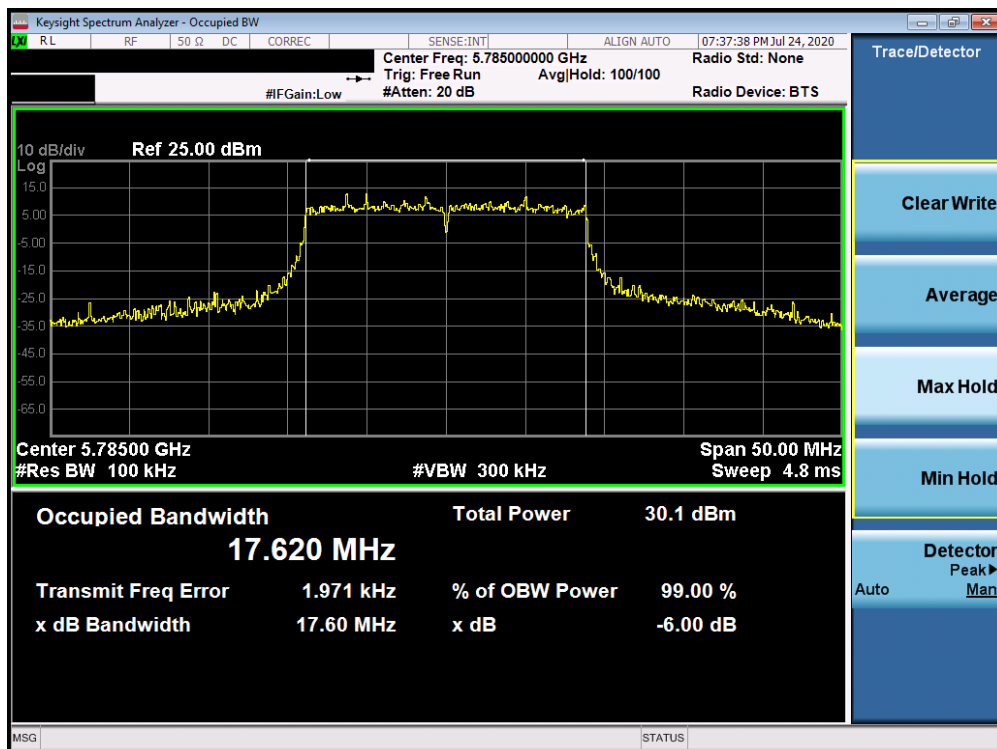


Plot 7-256. 6dB Bandwidth Plot ANT6 (802.11a (UNII Band 3) – Ch. 165)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 153 of 344

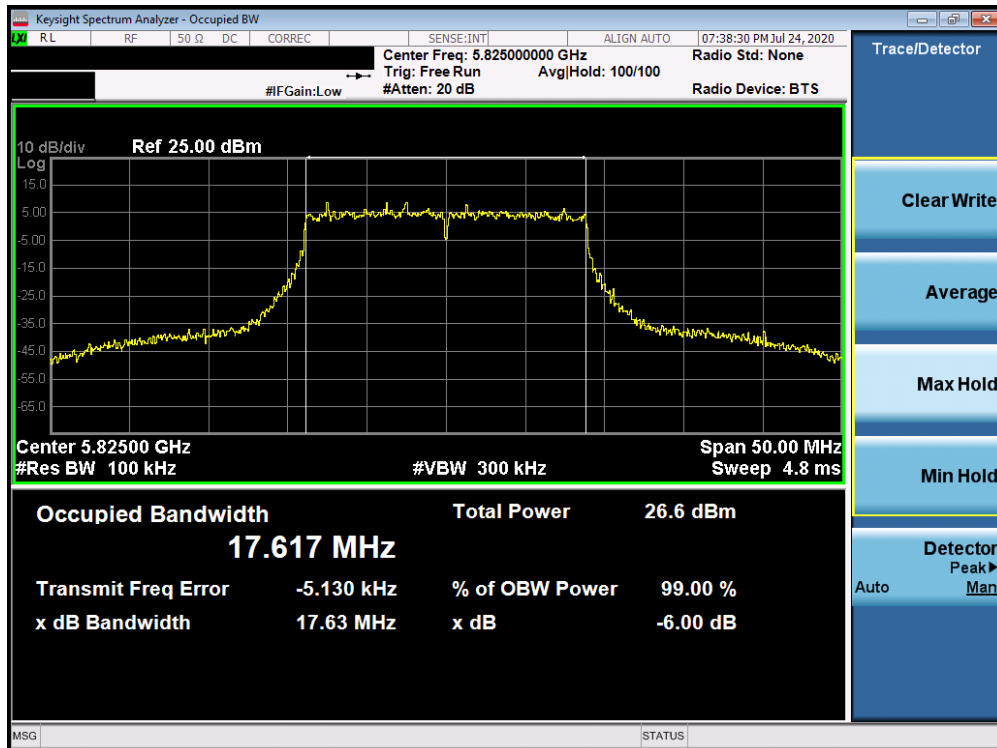


Plot 7-257. 6dB Bandwidth Plot ANT6 (20MHz BW 802.11n (UNII Band 3) – Ch. 149)



Plot 7-258. 6dB Bandwidth Plot ANT6 (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)	Page 154 of 344	

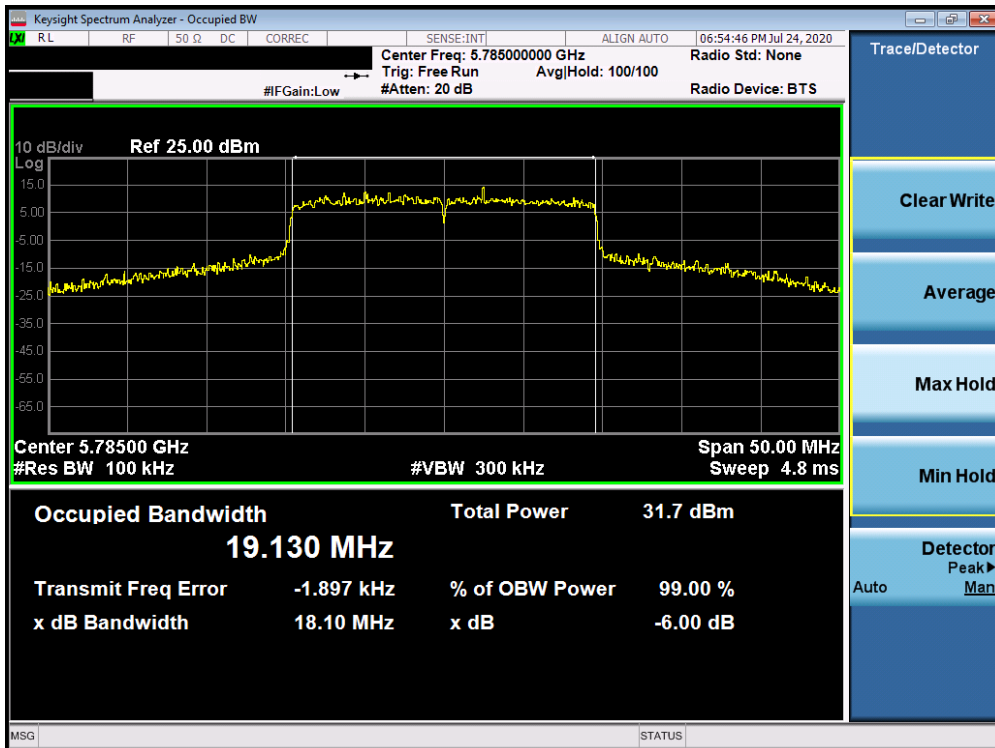


Plot 7-259. 6dB Bandwidth Plot ANT6 (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

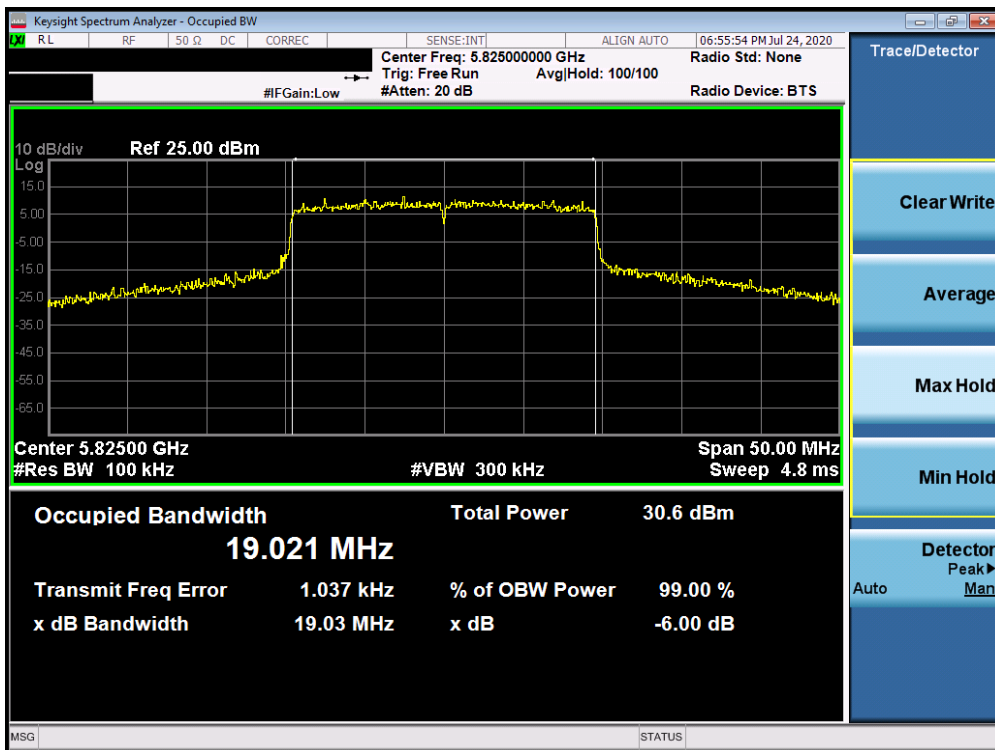


Plot 7-260. 6dB Bandwidth Plot ANT6 (20MHz BW 802.11ax (UNII Band 3) – Ch. 149)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 155 of 344

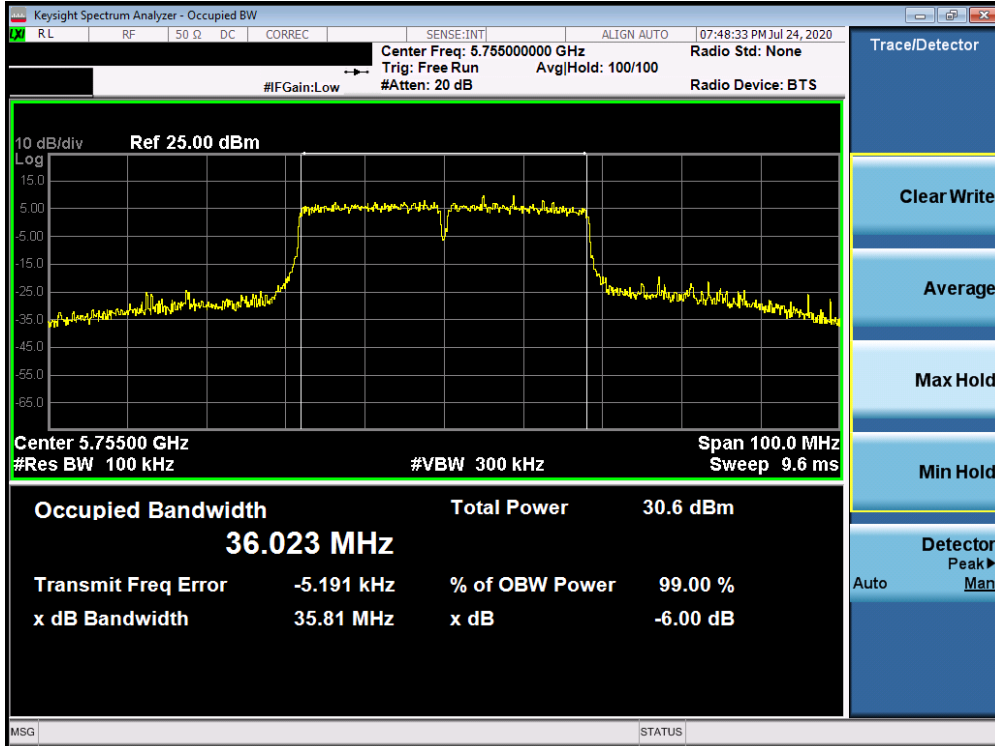


Plot 7-261. 6dB Bandwidth Plot ANT6 (20MHz BW 802.11ax (UNII Band 3) – Ch. 157)

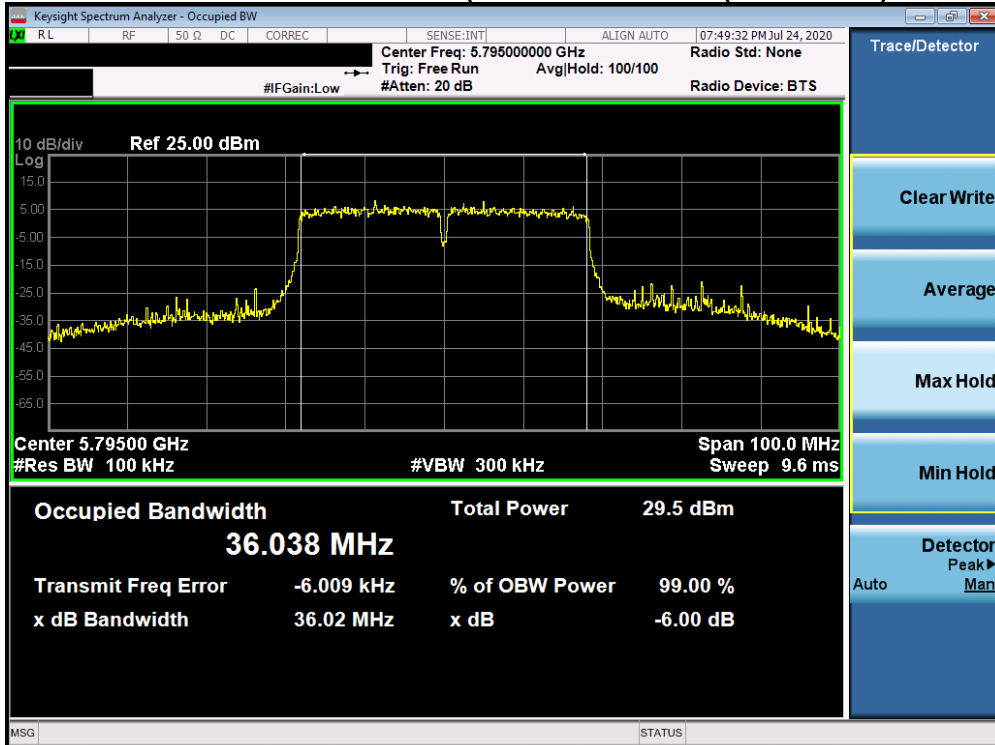


Plot 7-262. 6dB Bandwidth Plot ANT6 (20MHz BW 802.11ax (UNII Band 3) – Ch. 165)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 156 of 344

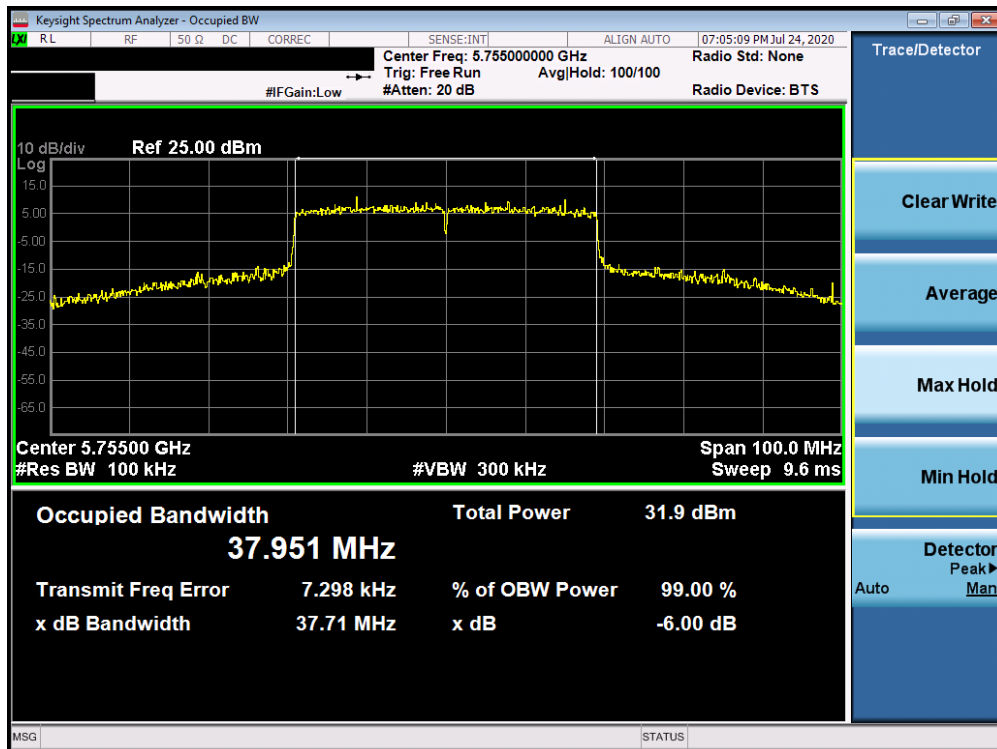


Plot 7-263. 6dB Bandwidth Plot ANT6 (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

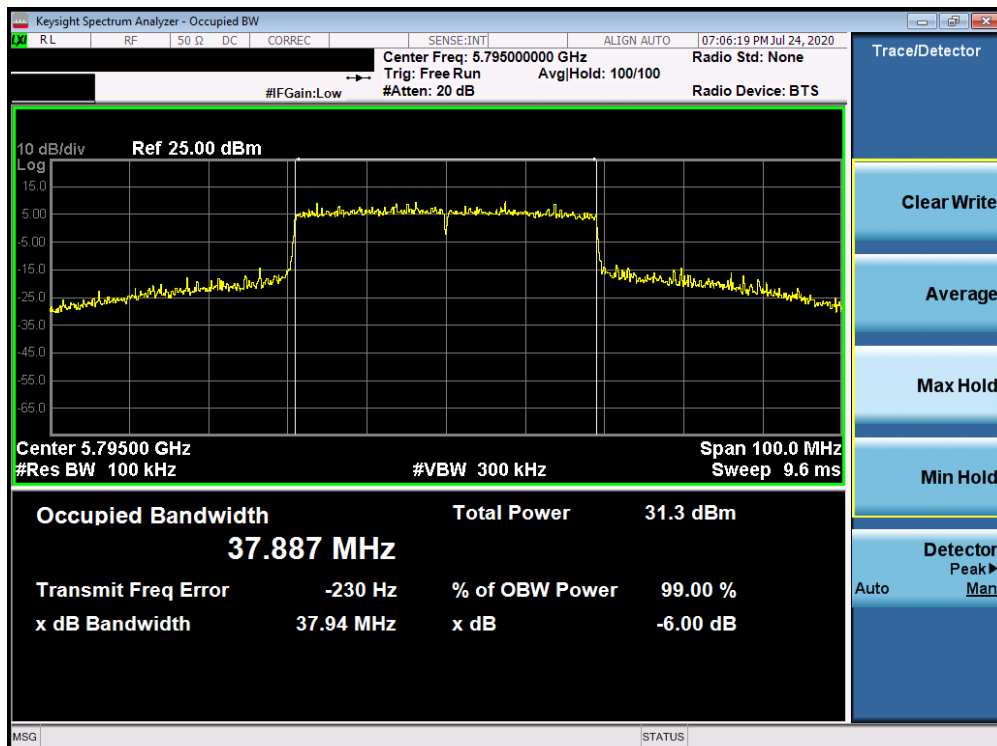


Plot 7-264. 6dB Bandwidth Plot ANT6 (40MHz BW 802.11n (UNII Band 3) – Ch. 159)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 157 of 344

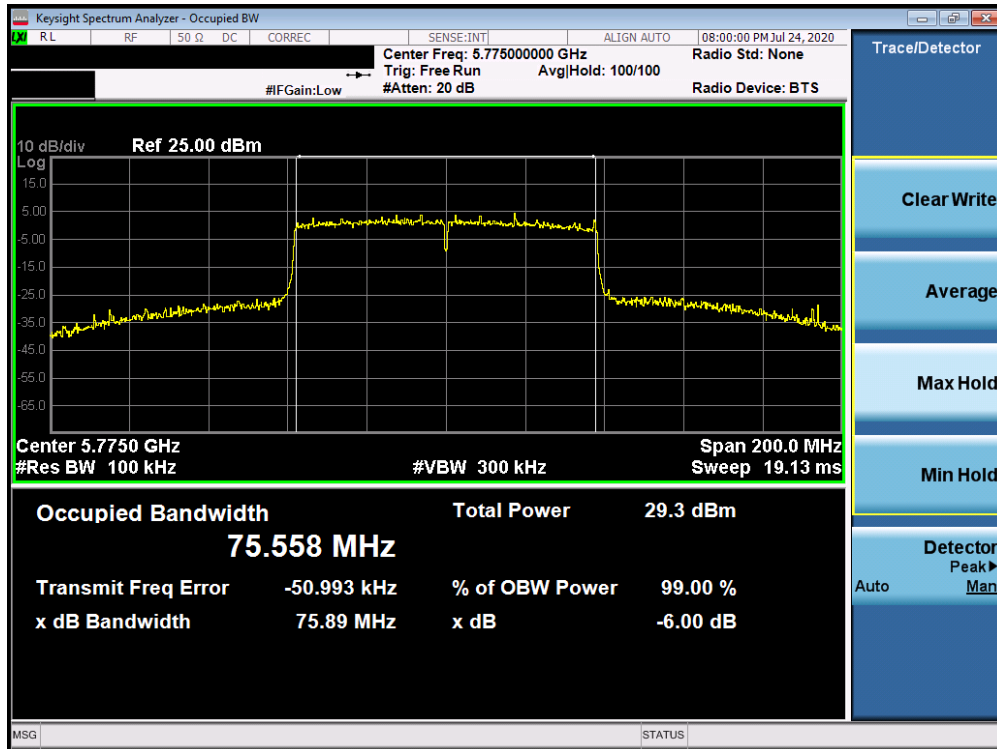


Plot 7-265. 6dB Bandwidth Plot ANT6 (40MHz BW 802.11ax (UNII Band 3) – Ch. 151)

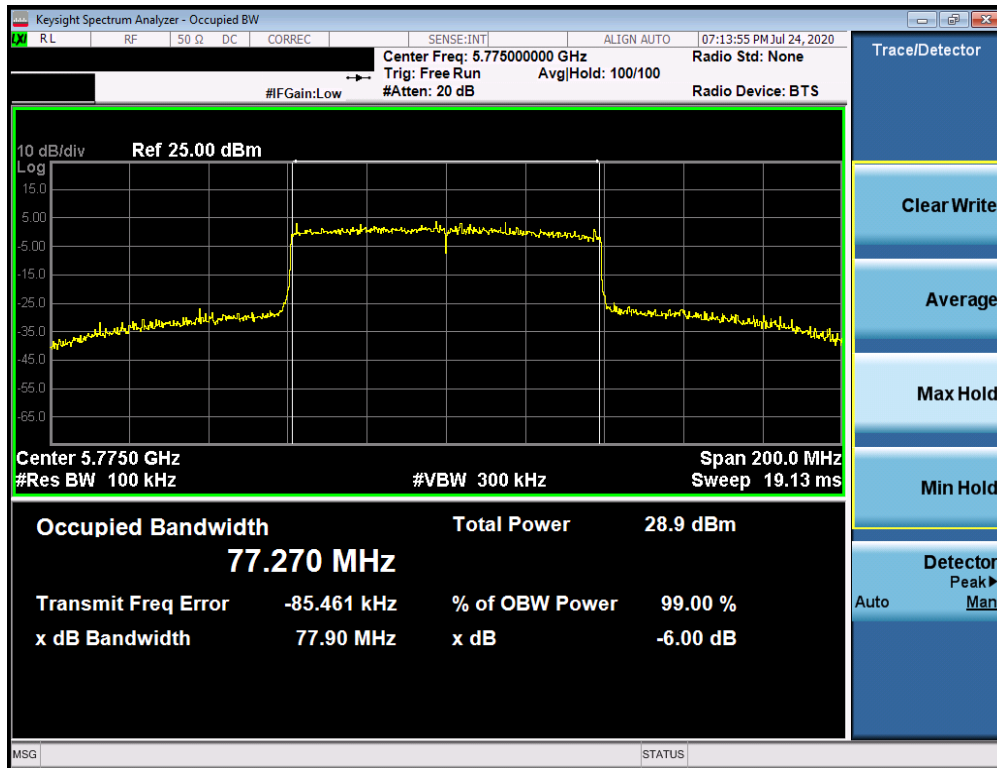


Plot 7-266. 6dB Bandwidth Plot ANT6 (40MHz BW 802.11ax (UNII Band 3) – Ch. 159)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Plot 7-267. 6dB Bandwidth Plot ANT6 (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)



Plot 7-268. 6dB Bandwidth Plot ANT6 (80MHz BW 802.11ax (UNII Band 3) – Ch. 155)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 159 of 344

7.4 UNII Output Power Measurement – 802.11a

§15.407(a.1.iv) §15.407(a.2) §15.407(a.3); RSS-247 [6.2]

Test Overview and Limits

A transmitter antenna terminal of the EUT is connected to the input of an RF pulse power sensor. Measurement is made using a broadband average power meter 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.

In the 5.15 – 5.25GHz band, the maximum permissible conducted output power is 250mW (23.98dBm). The maximum e.i.r.p. shall not exceed the lesser of 200 mW or $10 + 10 \log_{10}B$, dBm.

In the 5.25 – 5.35GHz band, the maximum permissible conducted output power is the lesser of 250mW (23.98dBm) or $11 \text{ dBm} + 10\log_{10}(26\text{dB BW}) = 11 \text{ dBm} + 10\log_{10}(19.76) = 23.96\text{dBm}$. The maximum e.i.r.p. shall not exceed the lesser of 1.0 W or $17 + 10 \log_{10}B$, dBm.

In the 5.47 – 5.725GHz band, the maximum permissible conducted output power is the lesser of 250mW (23.98dBm) or $11 \text{ dBm} + 10\log_{10}(26\text{dB BW}) = 11 \text{ dBm} + 10\log_{10}(36.55) = 26.63\text{dBm}$. The maximum e.i.r.p. shall not exceed the lesser of 1.0 W or $17 + 10 \log_{10}B$, dBm.

In the 5.725 – 5.850GHz band, the maximum permissible conducted output power is 1W (30dBm). The maximum e.i.r.p. is 36 dBm.

Test Procedure Used

ANSI C63.10-2013 – Section 12.3.3.2 Method PM-G
 KDB 789033 D02 v02r01 – Section E)3)b) Method PM-G
 ANSI C63.10-2013 – Section 14.2 Measure-and-Sum Technique
 KDB 662911 v02r01 – Section E)1) Measure-and-Sum Technique

Test Settings

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

Test Setup

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



Figure 7-3. Test Instrument & Measurement Setup

Test Notes

Per RSS-247 Section 6.2.3, transmission on channels which overlap the 5600-5650 MHz is prohibited. This device operates under these frequencies only under the control of a certified master device and does not support active scanning on these channels. This device does not transmit any beacons or initiate any transmissions in UNII Bands 2A or 2C.

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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MIMO Maximum Conducted Output Power Measurements

20MHz Bandwidth

5GHz (20MHz Bandwidth)	5GHz (20MHz) 802.11a Conducted Power [dBm]						
	Freq [MHz]	Channel	ANT3	ANT4	ANT5	ANT6	MIMO
	5180	36	16.99	16.96	16.57	16.96	22.89
	5200	40	22.49	22.30	22.35	22.17	28.35
	5240	48	22.23	22.43	21.06	20.86	27.72
	5260	52	15.86	15.40	15.43	14.96	21.44
	5280	56	15.89	15.98	15.43	15.62	21.76
	5320	64	14.54	14.85	14.63	14.29	20.60
	5500	100	14.41	14.57	15.07	15.47	20.92
	5600	120	15.97	16.00	15.23	13.10	21.24
	5720	144	15.75	15.43	15.27	14.03	21.19
	5745	149	20.27	23.11	19.61	18.35	26.73
	5785	157	20.55	23.38	20.70	19.38	27.29
5825	165	21.19	23.11	22.74	21.86	28.31	

Table 7-11. MIMO/CDD 20MHz BW 802.11a (UNII) Maximum Conducted Output Power

5GHz (20MHz Bandwidth)	5GHz (20MHz) 802.11n Conducted Power [dBm]						
	Freq [MHz]	Channel	ANT3	ANT4	ANT5	ANT6	MIMO
	5180	36	16.86	16.40	16.76	16.32	22.61
	5200	40	22.50	21.02	21.45	22.42	27.91
	5240	48	22.35	22.21	22.34	21.79	28.20
	5260	52	15.48	15.69	15.35	15.47	21.52
	5280	56	15.61	15.77	15.44	15.45	21.59
	5320	64	14.36	14.35	14.15	13.94	20.22
	5500	100	14.98	14.20	14.90	15.49	20.94
	5600	120	14.99	15.26	15.67	14.99	21.26
	5720	144	15.13	14.72	15.82	15.82	21.42
	5745	149	21.92	22.26	22.31	20.77	27.88
	5785	157	22.46	23.10	22.21	20.50	28.19
5825	165	22.05	22.44	22.29	21.41	28.09	

Table 7-12. MIMO 20MHz BW 802.11n (UNII) Maximum Conducted Output Power

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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5GHz (20MHz Bandwidth)	5GHz (20MHz) 802.11ac Conducted Power [dBm]						
	Freq [MHz]	Channel	ANT3	ANT4	ANT5	ANT6	MIMO
	5180	36	16.79	16.34	16.74	16.29	22.57
	5200	40	22.45	21.48	22.09	21.59	27.94
	5240	48	22.41	22.26	22.11	22.44	28.33
	5260	52	16.89	16.81	16.69	16.27	22.69
	5280	56	16.90	16.95	16.62	16.21	22.70
	5320	64	14.92	14.65	14.16	14.08	20.49
	5500	100	13.96	14.84	15.07	15.46	20.89
	5600	120	15.97	15.66	15.23	14.53	21.40
	5720	144	15.80	15.96	15.09	13.84	21.27
	5745	149	22.92	23.27	22.18	20.70	28.39
	5785	157	22.55	23.10	22.25	20.47	28.22
5825	165	22.59	23.47	22.74	21.42	28.64	

Table 7-13. MIMO 20MHz BW 802.11ac (UNII) Maximum Conducted Output Power

5GHz (20MHz Bandwidth)	5GHz (20MHz) 802.11ax Conducted Power [dBm]						
	Freq [MHz]	Channel	ANT3	ANT4	ANT5	ANT6	MIMO
	5180	36	16.83	16.95	16.90	16.65	22.85
	5200	40	22.43	21.92	21.86	21.82	28.04
	5240	48	22.16	22.18	22.27	22.30	28.25
	5260	52	16.22	16.36	16.23	15.72	22.16
	5280	56	16.38	16.40	16.20	15.79	22.22
	5320	64	14.97	14.99	14.33	14.23	20.66
	5500	100	15.50	14.96	14.33	13.71	20.70
	5600	120	15.78	15.62	15.73	15.92	21.78
	5720	144	15.82	15.47	15.85	15.99	21.81
	5745	149	21.76	21.83	21.57	20.55	27.94
	5785	157	21.81	21.92	21.68	20.22	27.81
5825	165	21.87	21.98	21.58	20.69	27.99	

Table 7-14. MIMO 20MHz BW 802.11ax (UNII) Maximum Conducted Output Power

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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40MHz Bandwidth

5GHz (40MHz Bandwidth)	5GHz (40MHz) 802.11n Conducted Power [dBm]						
	Freq [MHz]	Channel	ANT3	ANT4	ANT5	ANT6	MIMO
	5190	38	12.87	12.99	12.30	12.94	18.80
	5230	46	22.49	22.10	22.01	21.64	28.09
	5270	54	16.81	16.65	16.61	16.11	22.57
	5310	62	12.18	12.50	12.49	12.49	18.44
	5510	102	10.91	11.02	11.45	11.47	17.24
	5590	118	16.45	16.23	15.59	14.43	21.76
	5710	142	16.49	16.49	15.66	14.25	21.83
	5755	151	22.24	23.41	21.76	20.57	28.13
5795	159	22.14	23.24	21.77	20.17	27.99	

Table 7-15. MIMO 40MHz BW 802.11n (UNII) Maximum Conducted Output Power

5GHz (40MHz Bandwidth)	5GHz (40MHz) 802.11ac Conducted Power [dBm]						
	Freq [MHz]	Channel	ANT3	ANT4	ANT5	ANT6	MIMO
	5190	38	11.30	11.52	10.75	11.22	17.23
	5230	46	22.43	22.15	21.94	21.59	28.06
	5270	54	16.64	16.81	16.55	16.43	22.63
	5310	62	12.17	12.45	12.49	11.48	18.19
	5510	102	10.91	10.94	11.41	11.44	17.20
	5590	118	16.24	15.83	15.60	16.01	21.95
	5710	142	16.35	15.02	15.95	16.45	22.00
	5755	151	22.41	23.47	21.41	20.65	28.14
5795	159	22.13	23.22	21.85	20.24	28.01	

Table 7-16. MIMO 40MHz BW 802.11ac (UNII) Maximum Conducted Output Power

5GHz (40MHz Bandwidth)	5GHz (40MHz) 802.11ax Conducted Power [dBm]						
	Freq [MHz]	Channel	ANT3	ANT4	ANT5	ANT6	MIMO
	5190	38	12.91	12.97	12.38	12.96	18.83
	5230	46	22.49	22.20	22.03	21.73	28.14
	5270	54	16.95	16.61	16.23	15.83	22.45
	5310	62	12.32	12.50	12.34	11.74	18.25
	5510	102	10.75	11.01	11.47	11.40	17.19
	5590	118	16.45	16.34	15.84	14.72	21.91
	5710	142	16.41	16.88	15.83	14.39	21.99
	5755	151	22.41	23.41	21.78	20.39	28.15
5795	159	22.41	23.32	21.99	20.41	28.18	

Table 7-17. MIMO 40MHz BW 802.11ax (UNII) Maximum Conducted Output Power

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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80MHz Bandwidth

5GHz (80MHz Bandwidth)	5GHz (80MHz) 802.11ac Conducted Power [dBm]						
	Freq [MHz]	Channel	ANT3	ANT4	ANT5	ANT6	MIMO
	5210	42	8.29	8.31	8.28	7.62	14.16
	5290	58	8.90	9.40	9.41	9.29	15.28
	5530	106	7.64	8.24	8.38	9.33	14.46
	5610	122	16.29	16.48	15.98	14.34	21.87
	5690	138	16.20	16.42	15.59	14.21	21.71
5775	155	20.90	20.66	20.64	20.87	26.79	

Table 7-18. MIMO 80MHz BW 802.11ac (UNII) Maximum Conducted Output Power

5GHz (80MHz Bandwidth)	5GHz (80MHz) 802.11ax Conducted Power [dBm]						
	Freq [MHz]	Channel	ANT3	ANT4	ANT5	ANT6	MIMO
	5210	42	8.33	8.47	7.82	8.02	14.19
	5290	58	9.44	9.48	9.04	9.17	15.31
	5530	106	8.85	9.34	9.49	9.42	15.30
	5610	122	16.45	15.60	15.93	16.21	22.08
	5690	138	16.29	15.26	15.87	16.45	22.01
5775	155	20.59	19.91	20.69	20.92	26.56	

Table 7-19. MIMO 80MHz BW 802.11ax (UNII) Maximum Conducted Output Power

80+80MHz Bandwidth

5GHz (160MHz Bandwidth)	5GHz (160MHz) 802.11ac Conducted Power [dBm]						
	Freq [MHz]	Channel	ANT3	ANT4	ANT5	ANT6	MIMO
	5210	42	6.04	6.29			9.18
	5290	58			6.10	5.97	9.05
	5530	106	9.35	9.70			12.54
5610	122			9.22	9.48	12.36	

Table 7-20. MIMO 80+80MHz BW 802.11ac (UNII) Maximum Conducted Output Power

5GHz (160MHz Bandwidth)	5GHz (160MHz) 802.11ax Conducted Power [dBm]						
	Freq [MHz]	Channel	ANT3	ANT4	ANT5	ANT6	MIMO
	5210	42	10.38	9.75			13.09
	5290	58			10.19	9.46	12.85
	5530	106	7.66	9.62			11.76
5610	122			8.41	8.58	11.51	

Table 7-21. MIMO 80+80MHz BW 802.11ax (UNII) Maximum Conducted Output Power

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Note:

Per ANSI C63.10-2013 and KDB 662911 v02r01 Section E)1), the conducted powers at Antenna 3, Antenna 4, Antenna 5 and Antenna 6 were first measured separately during MIMO transmission as shown in the section above. The measured values were then summed in linear power units then converted back to dBm.

Per ANSI C63.10-2013 Section 14.4.3, the directional gain is calculated using the following formula, where G_N is the gain of the nth antenna and N_{ANT} , the total number of antennas used.

$$\text{Directional gain} = 10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}] \text{ dBi}$$

Sample MIMO Calculation:

At 5745MHz in 802.11n (20MHz BW) mode, the average conducted output power was measured to be 22.92 dBm for Antenna-3, 23.26 dBm for Antenna-4, 22.31 dBm for Antenna-5 and 20.77 dBm for Antenna-6.

$$\begin{aligned} \text{Antenna 3} + \text{Antenna 4} + \text{Antenna 5} + \text{Antenna 6} &= \text{MIMO} \\ (22.92 \text{ dBm} + 23.26 \text{ dBm} + 22.31 \text{ dBm} + 20.77 \text{ dBm}) &= \\ (195.884 \text{ mW} + 211.836 \text{ mW} + 170.216 \text{ mW} + 119.399 \text{ mW}) &= \\ 697.335 \text{ mW} &= 28.43 \text{ dBm} \end{aligned}$$

Sample e.i.r.p. Calculation:

At 5180MHz in 802.11n (20MHz BW) mode, the average MIMO conducted power was calculated to be 28.43 dBm with directional gain of 4.28 dBi.

$$\begin{aligned} \text{e.i.r.p. (dBm)} &= \text{Conducted Power (dBm)} + \text{Ant gain (dBi)} \\ 28.43 \text{ dBm} + 4.28 \text{ dBi} &= 32.71 \text{ dBm} \end{aligned}$$

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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7.5 Maximum Power Spectral Density – 802.11a

§15.407(a.1.iv) §15.407(a.2) §15.407(a.3); RSS-247 [6.2]

Test Overview and Limit

The spectrum analyzer was connected to the antenna terminal while the EUT was 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. Method SA-1, as defined in ANSI C63.10-2013 and KDB 789033 D02 v02r01, was used to measure the power spectral density.

In the 5.15 – 5.25GHz bands, the maximum permissible power spectral density is 17dBm/MHz.

In the 5.25 – 5.35GHz, 5.47 – 5.725GHz bands, the maximum permissible power spectral density is 11dBm/MHz.

In the 5.725 – 5.850GHz band, the maximum permissible power spectral density is 30dBm/500kHz.

Test Procedure Used

ANSI C63.10-2013 – Section 12.3.2.2
 KDB 789033 D02 v02r01 – Section F
 ANSI C63.10-2013 – Section 14.3.2.2 Measure-and-Sum Technique
 KDB 662911 v02r01 – Section E)2) Measure-and-Sum Technique

Test Settings

1. Analyzer was set to the center frequency of the UNII channel under investigation
2. Span was set to encompass the entire emission bandwidth of the signal
3. RBW = 1MHz
4. VBW = 3MHz
5. Number of sweep points $\geq 2 \times$ (span/RBW)
6. Sweep time = auto
7. Detector = power averaging (RMS)
8. Trigger was set to free run for all modes
9. Trace was averaged over 100 sweeps
10. The peak search function of the spectrum analyzer was used to find the peak of the spectrum.

Test Setup

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



Figure 7-4. Test Instrument & Measurement Setup

Test Notes

None

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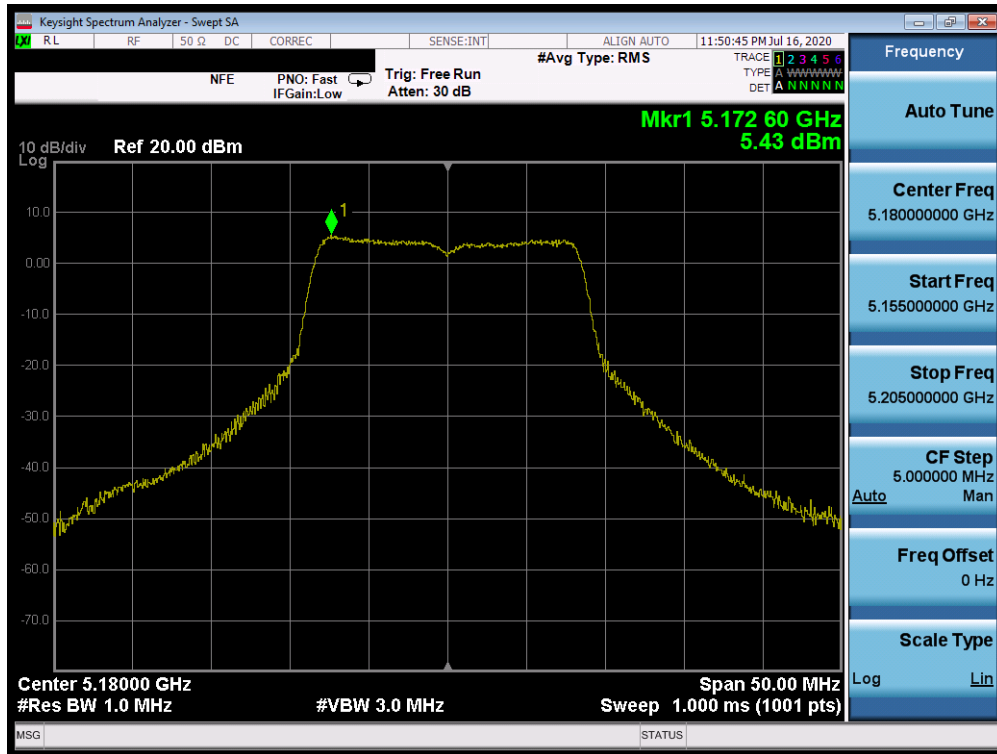
MIMO Power Spectral Density Measurements

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Antenna-3 Power Density [dBm]	Antenna-4 Power Density [dBm]	Antenna-5 Power Density [dBm]	Antenna-6 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	a	6	5.43	6.07	5.32	5.18	11.53	17.0	-5.47
	5200	40	a	6	11.12	10.64	10.86	10.11	16.72	17.0	-0.28
	5240	48	a	6	10.26	10.51	10.76	10.89	16.63	17.0	-0.37
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	2.94	2.82	2.31	2.30	8.62	17.0	-8.38
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	10.37	10.20	10.10	9.92	16.17	17.0	-0.83
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	10.85	10.55	10.36	10.68	16.63	17.0	-0.37
	5180	36	ax (20MHz)	6.5/7.2 (MCS0)	6.74	6.69	6.07	6.35	12.49	17.0	-4.51
	5200	40	ax (20MHz)	6.5/7.2 (MCS0)	10.69	10.87	10.49	10.80	16.74	17.0	-0.26
	5240	48	ax (20MHz)	6.5/7.2 (MCS0)	10.43	10.59	10.57	10.56	16.56	17.0	-0.44
	5190	38	n (40MHz)	13.5/15 (MCS0)	-2.66	-2.45	-2.90	-2.71	3.34	17.0	-13.66
	5230	46	n (40MHz)	13.5/15 (MCS0)	9.27	8.61	8.53	8.83	14.84	17.0	-2.16
	5190	38	ax (40MHz)	13.5/15 (MCS0)	-0.07	0.26	-0.43	-0.13	5.94	17.0	-11.06
	5230	46	ax (40MHz)	13.5/15 (MCS0)	9.73	9.65	10.09	9.57	15.79	17.0	-1.21
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-7.85	-7.50	-7.96	-8.08	-1.82	17.0	-18.82
5210	42	ax (80MHz)	29.3/32.5 (MCS0)	-7.51	-7.72	-8.02	-8.24	-1.84	17.0	-18.84	
Band 2A	5260	52	a	6	4.94	4.97	4.23	4.82	10.77	11.0	-0.23
	5280	56	a	6	4.44	4.42	4.75	5.02	10.68	11.0	-0.32
	5320	64	a	6	2.93	2.27	2.77	2.09	8.55	11.0	-2.45
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	4.85	4.77	4.46	5.12	10.83	11.0	-0.17
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	4.88	5.24	4.51	4.76	10.88	11.0	-0.12
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	2.95	3.65	2.91	3.30	9.23	11.0	-1.77
	5260	52	ax (20MHz)	6.5/7.2 (MCS0)	4.52	4.61	4.29	4.36	10.47	11.0	-0.53
	5280	56	ax (20MHz)	6.5/7.2 (MCS0)	4.57	4.88	4.28	4.66	10.62	11.0	-0.38
	5320	64	ax (20MHz)	6.5/7.2 (MCS0)	4.47	4.87	4.84	5.03	10.83	11.0	-0.17
	5270	54	n (40MHz)	13.5/15 (MCS0)	4.38	4.50	3.93	4.33	10.31	11.0	-0.69
	5310	62	n (40MHz)	13.5/15 (MCS0)	-2.71	-2.74	-3.03	-2.72	3.22	11.0	-7.78
	5270	54	ax (40MHz)	13.5/15 (MCS0)	4.45	4.73	4.42	4.47	10.54	11.0	-0.46
	5310	62	ax (40MHz)	13.5/15 (MCS0)	-1.11	-0.72	-0.85	-1.20	5.05	11.0	-5.95
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-7.10	-6.80	-7.00	-6.94	-0.94	11.0	-11.94
5290	58	ax (80MHz)	29.3/32.5 (MCS0)	-6.64	-6.26	-6.89	-6.70	-0.60	11.0	-11.60	
Band 2C	5500	100	a	6	2.49	2.88	3.14	3.64	9.08	11.0	-1.92
	5600	120	a	6	5.35	4.72	4.46	4.41	10.77	11.0	-0.23
	5720	144	a	6	5.31	3.41	4.25	5.59	10.74	11.0	-0.26
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	1.29	1.73	2.26	2.89	8.10	11.0	-2.90
	5600	120	n (20MHz)	6.5/7.2 (MCS0)	4.84	4.78	4.62	5.20	10.89	11.0	-0.11
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	4.85	3.54	4.58	5.32	10.64	11.0	-0.36
	5500	100	ax (20MHz)	6.5/7.2 (MCS0)	4.08	4.57	4.88	5.00	10.67	11.0	-0.33
	5600	120	ax (20MHz)	6.5/7.2 (MCS0)	5.33	5.15	4.02	4.19	10.73	11.0	-0.27
	5720	144	ax (20MHz)	6.5/7.2 (MCS0)	4.53	3.90	4.42	5.53	10.66	11.0	-0.34
	5510	102	n (40MHz)	13.5/15 (MCS0)	-4.38	-4.24	-3.39	-2.79	2.37	11.0	-8.63
	5590	118	n (40MHz)	13.5/15 (MCS0)	4.84	4.88	4.90	5.22	10.98	11.0	-0.02
	5710	142	n (40MHz)	13.5/15 (MCS0)	4.81	3.53	4.57	5.25	10.61	11.0	-0.39
	5510	102	ax (40MHz)	13.5/15 (MCS0)	-2.12	-2.19	-2.51	-1.85	3.86	11.0	-7.14
	5590	118	ax (40MHz)	13.5/15 (MCS0)	4.94	5.00	4.50	4.66	10.80	11.0	-0.20
	5710	142	ax (40MHz)	13.5/15 (MCS0)	5.25	4.07	4.48	5.73	10.95	11.0	-0.05
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-8.52	-7.76	-7.23	-7.16	-1.61	11.0	-12.61
	5610	122	ac (80MHz)	29.3/32.5 (MCS0)	5.03	4.61	4.58	4.65	10.74	11.0	-0.26
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	4.80	4.35	4.83	5.48	10.90	11.0	-0.10
5530	106	ax (80MHz)	29.3/32.5 (MCS0)	-7.63	-7.11	-6.60	-6.83	-1.01	11.0	-12.01	
5610	122	ax (80MHz)	29.3/32.5 (MCS0)	4.51	4.11	4.66	4.70	10.52	11.0	-0.48	
5690	138	ax (80MHz)	29.3/32.5 (MCS0)	5.50	5.83	4.15	3.32	10.84	11.0	-0.16	

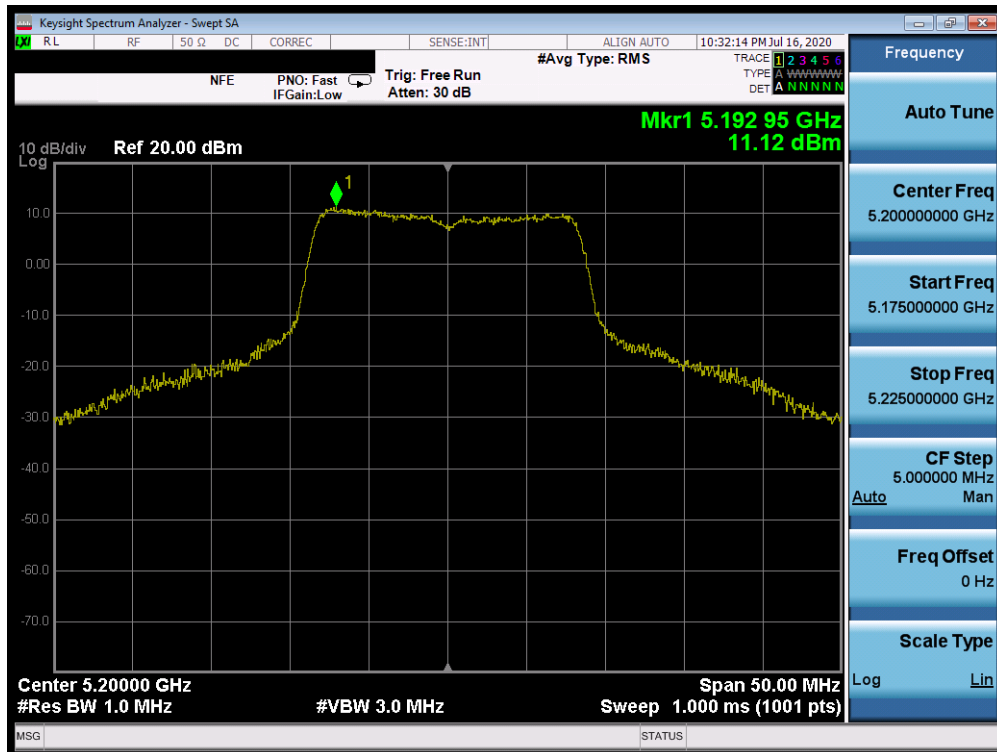
Table 7-22. Bands 1, 2A, 2C MIMO Conducted Power Spectral Density Measurements

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 167 of 344

Antenna-3 Power Spectral Density Measurements

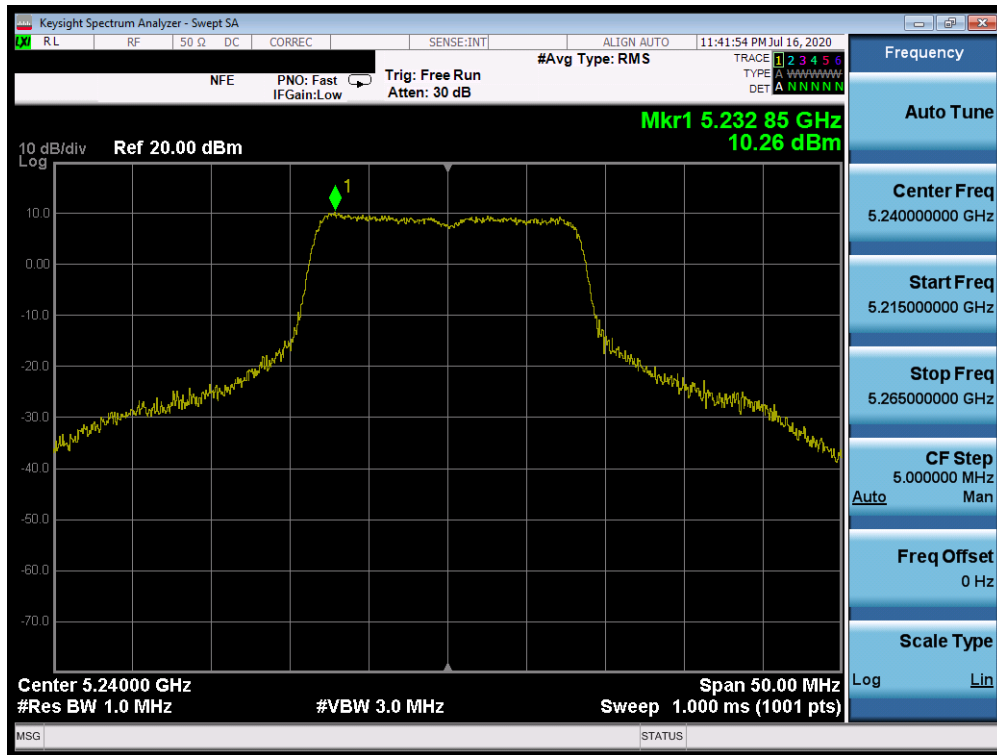


Plot 7-269. Power Spectral Density Plot ANT3 (802.11a (UNII Band 1) – Ch. 36)

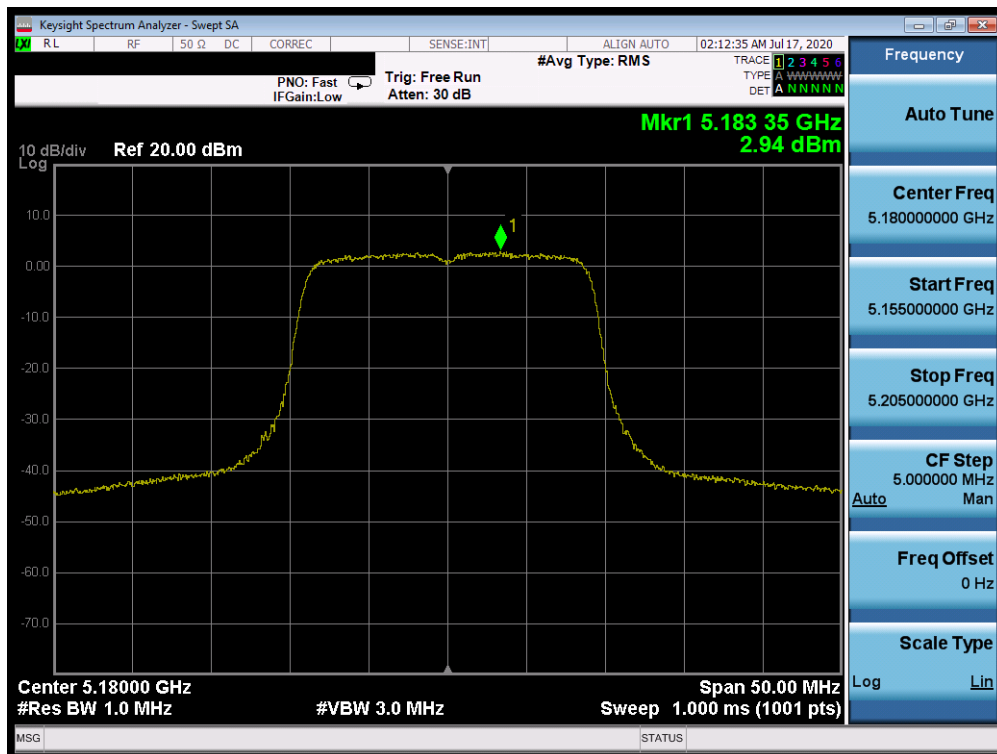


Plot 7-270. Power Spectral Density Plot ANT3 (802.11a (UNII Band 1) – Ch. 40)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 168 of 344

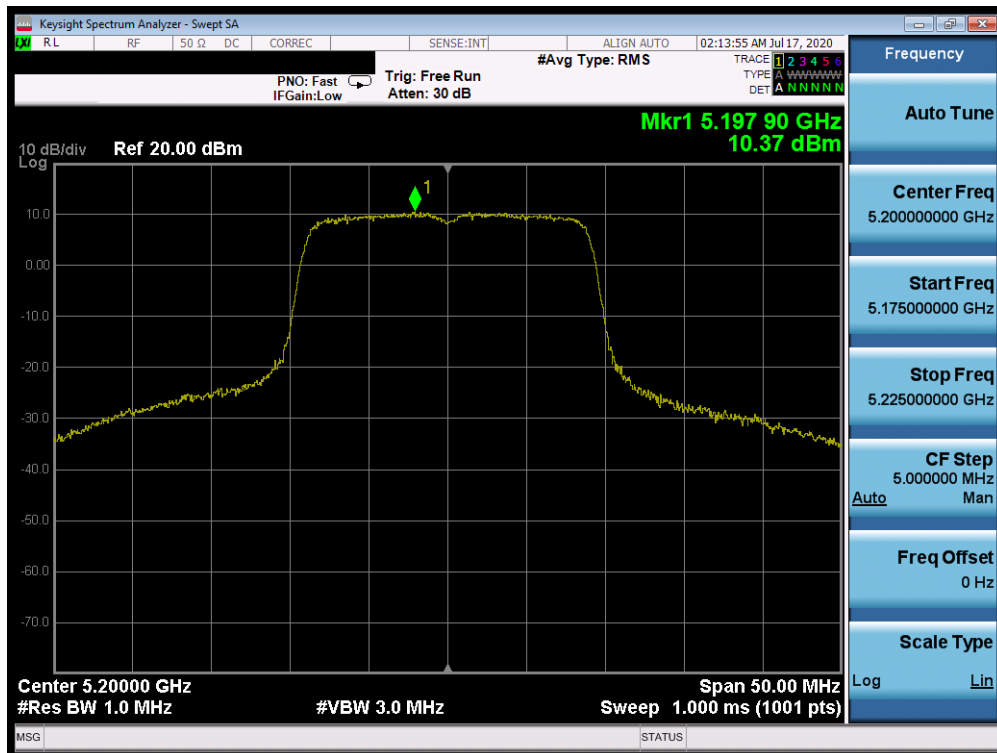


Plot 7-271. Power Spectral Density Plot ANT3 (802.11a (UNII Band 1) – Ch. 48)

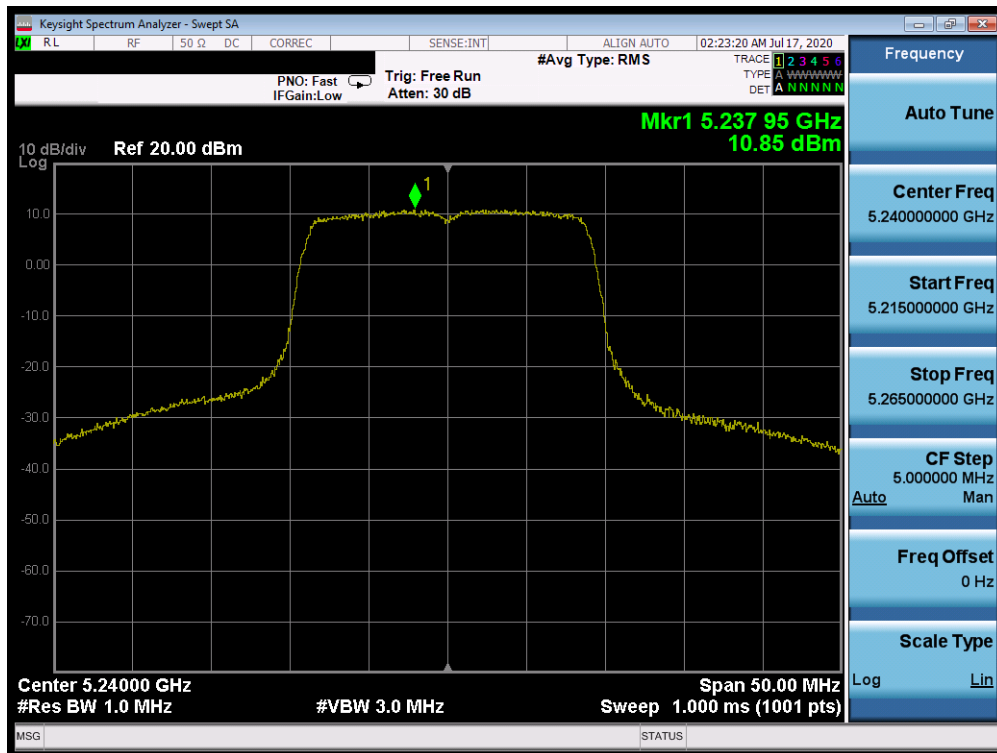


Plot 7-272. Power Spectral Density Plot ANT3 (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 169 of 344

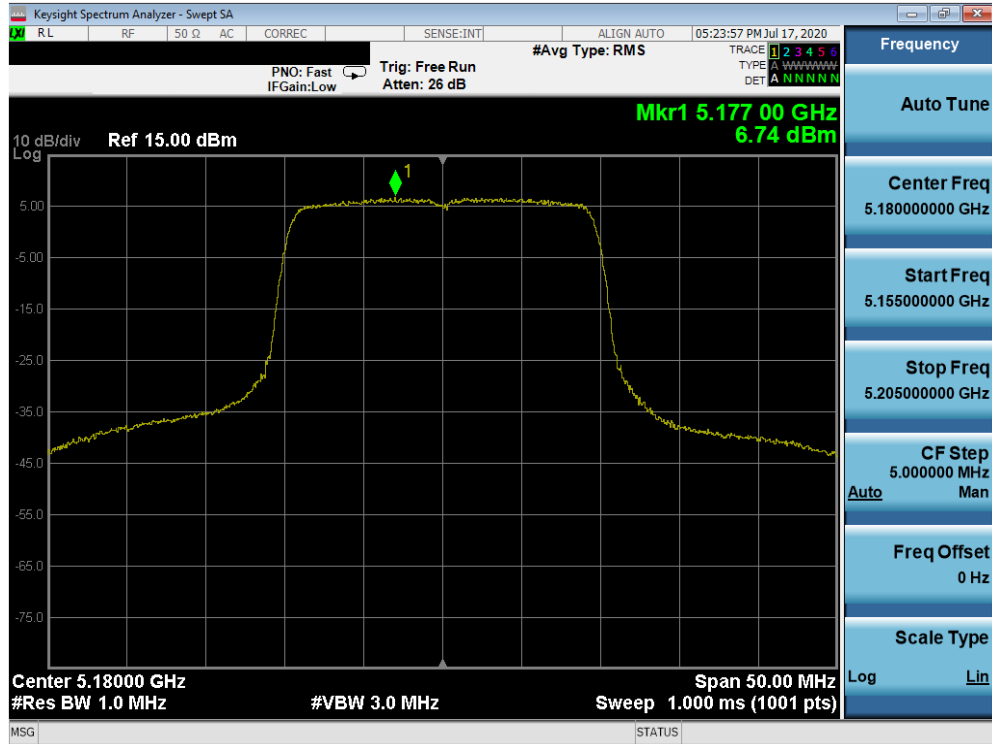


Plot 7-273. Power Spectral Density Plot ANT3 (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

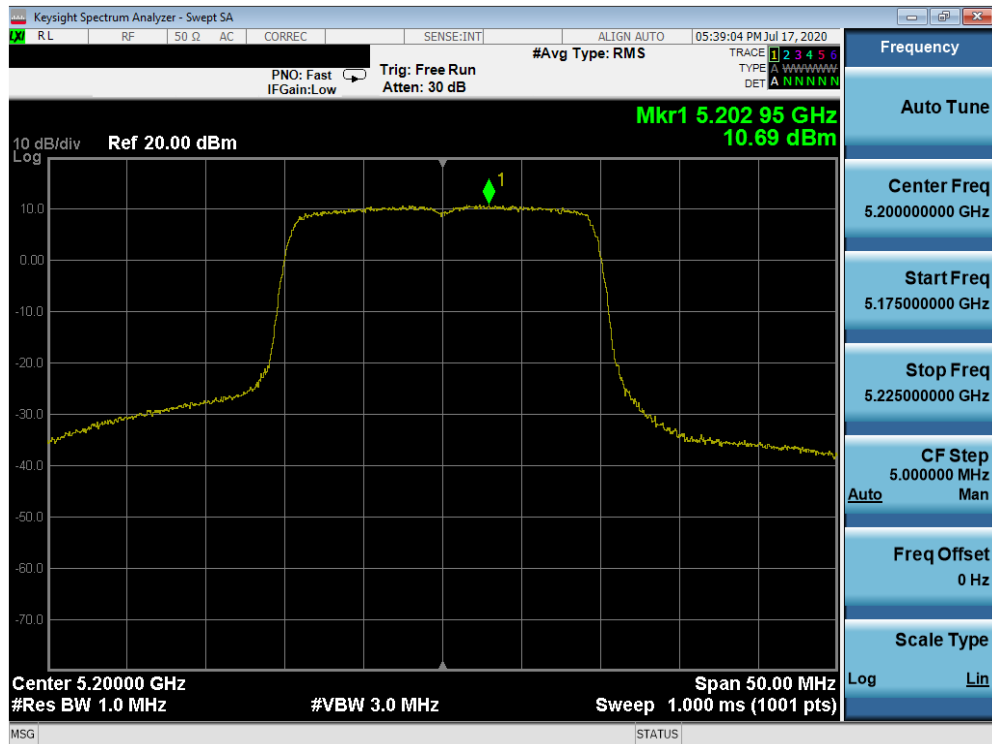


Plot 7-274. Power Spectral Density Plot ANT3 (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 170 of 344

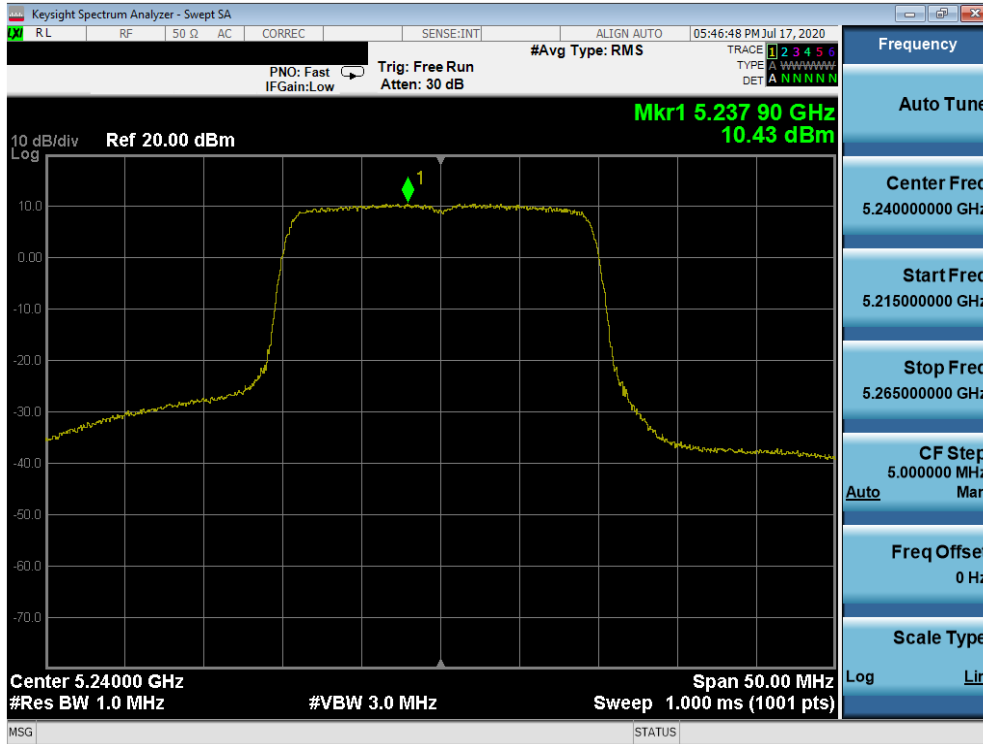


Plot 7-275. Power Spectral Density Plot ANT3 (20MHz BW 802.11ax (UNII Band 1) – Ch. 36)

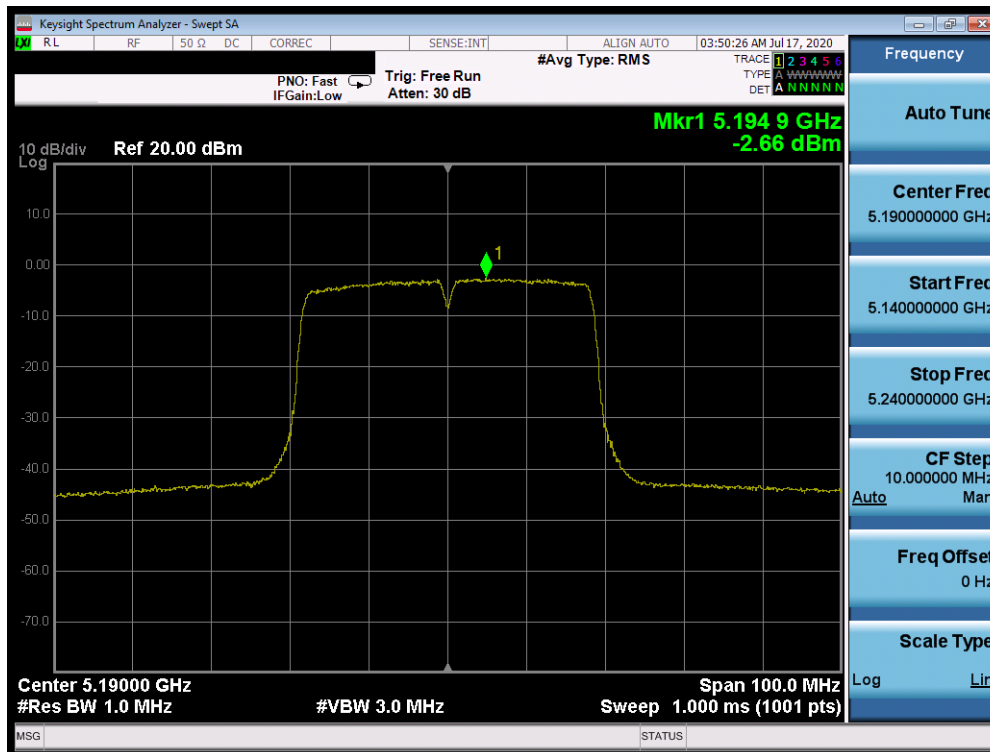


Plot 7-276. Power Spectral Density Plot ANT3 (20MHz BW 802.11ax (UNII Band 1) – Ch. 40)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 171 of 344

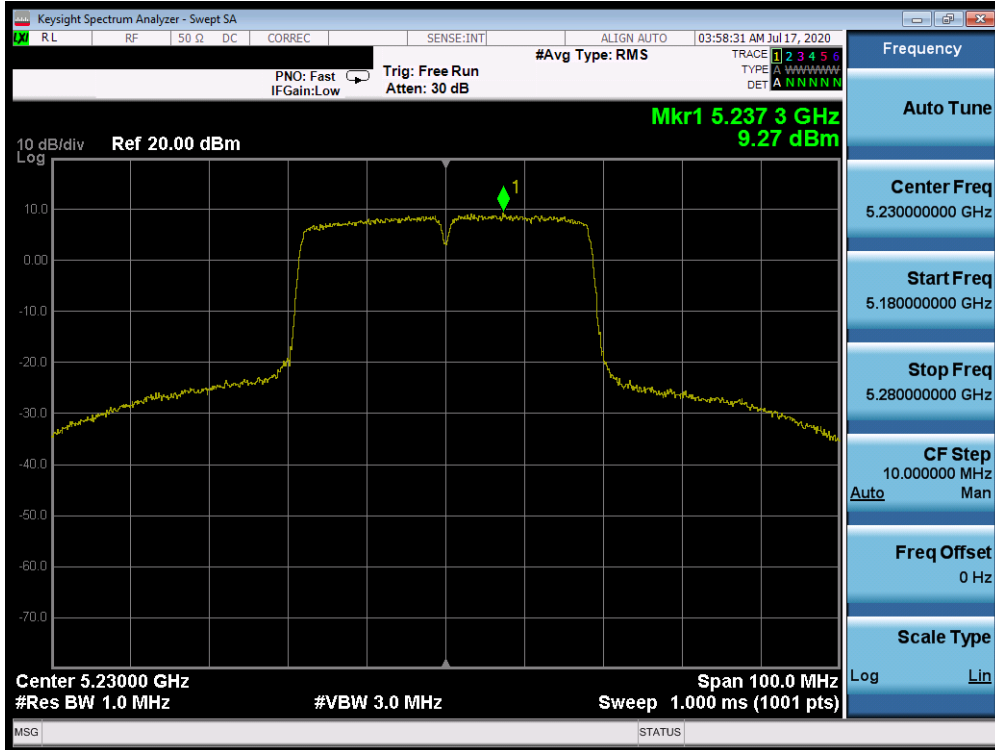


Plot 7-277. Power Spectral Density Plot ANT3 (20MHz BW 802.11ax (UNII Band 1) – Ch. 48)

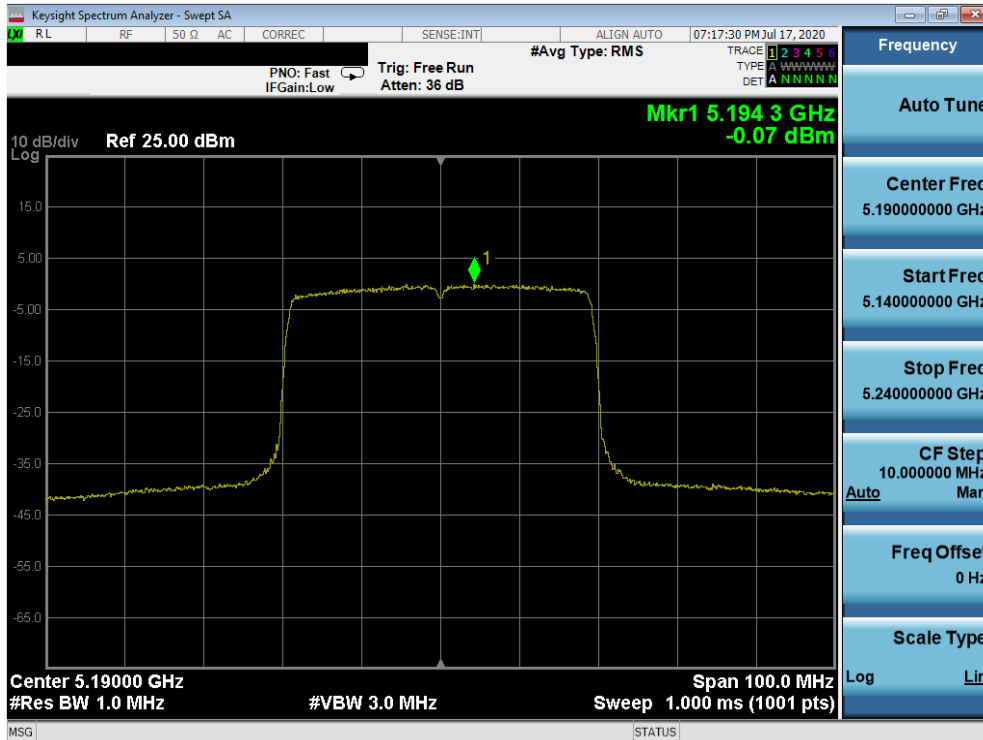


Plot 7-278. Power Spectral Density Plot ANT3 (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 172 of 344

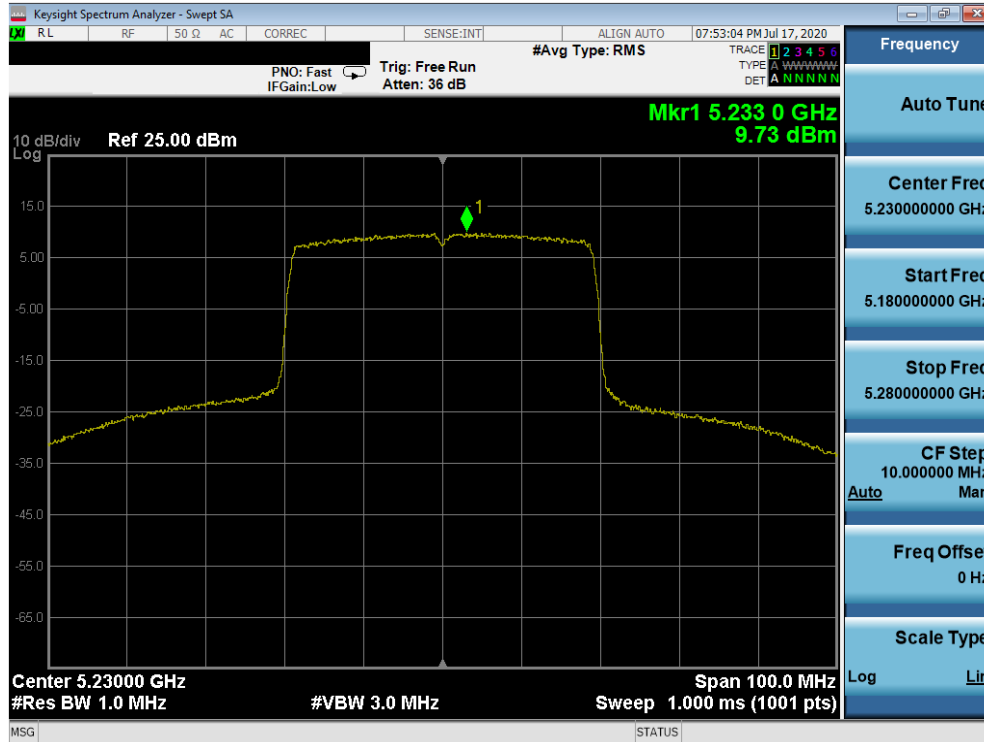


Plot 7-279. Power Spectral Density Plot ANT3 (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

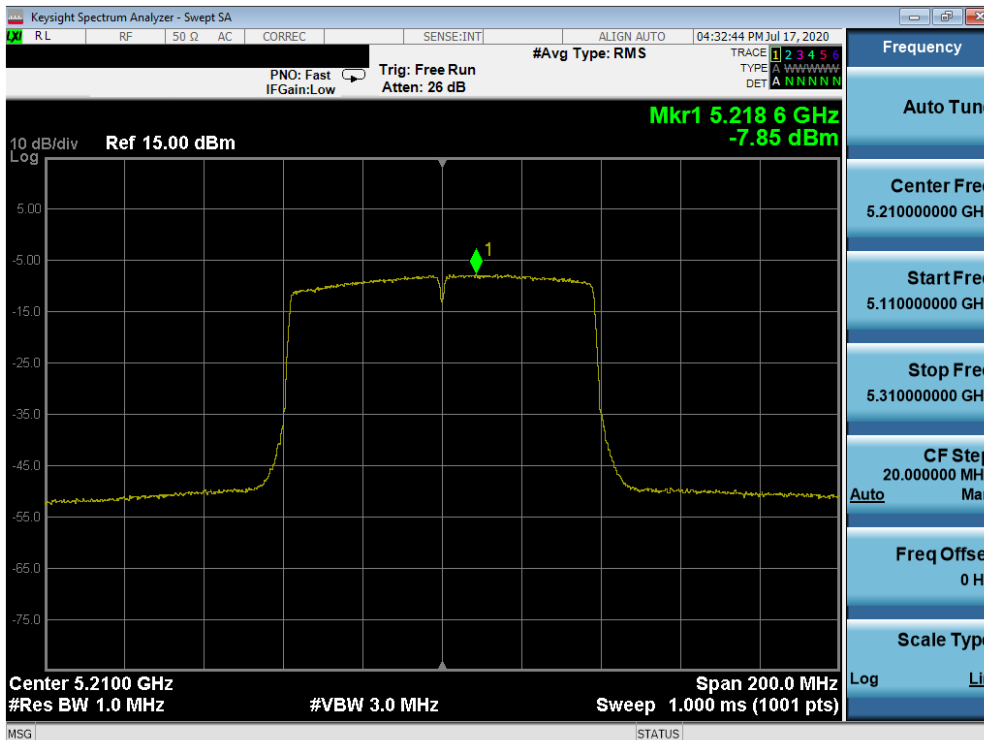


Plot 7-280. Power Spectral Density Plot ANT3 (40MHz BW 802.11ax (UNII Band 1) – Ch. 38)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 173 of 344

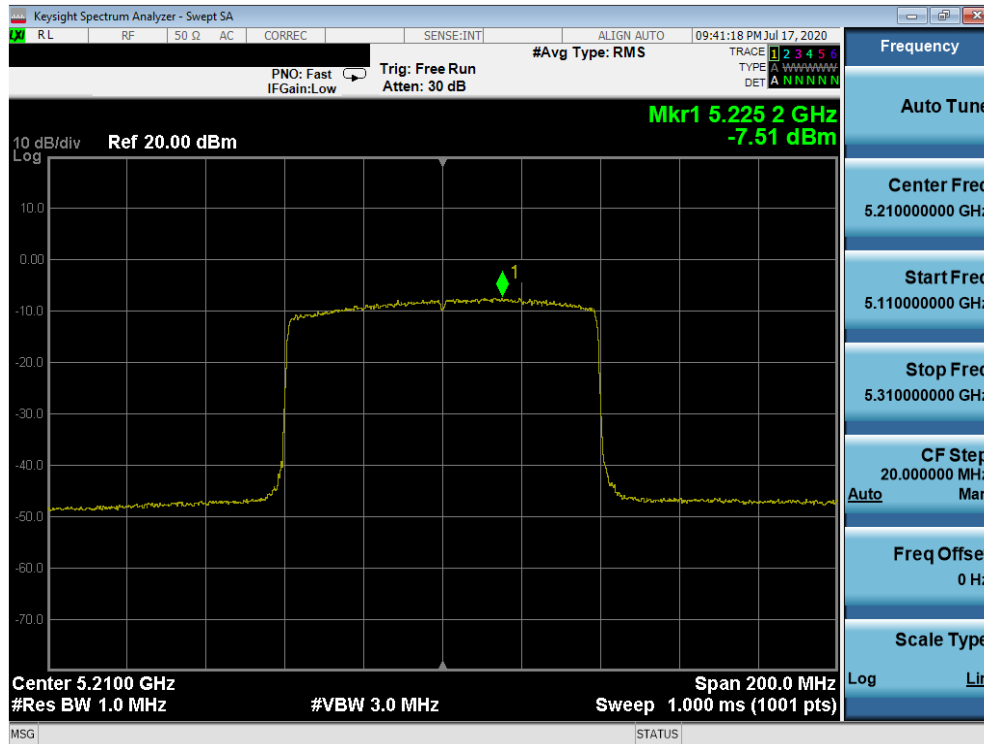


Plot 7-281. Power Spectral Density Plot ANT3 (40MHz BW 802.11ax (UNII Band 1) – Ch. 42)

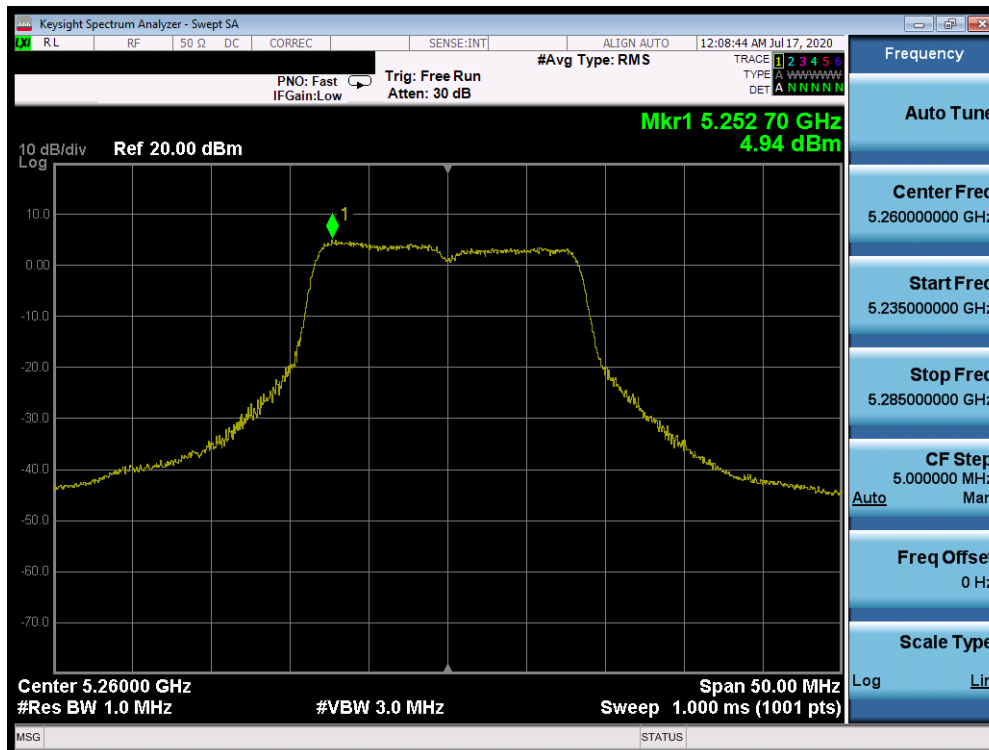


Plot 7-282. Power Spectral Density Plot ANT3 (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 174 of 344

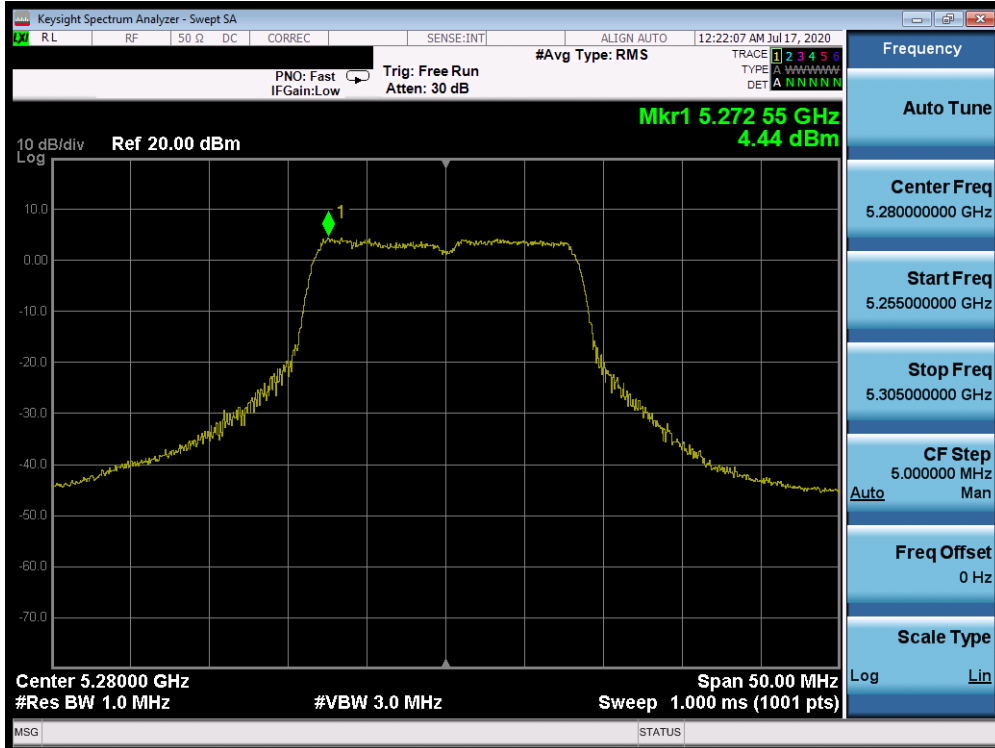


Plot 7-283. Power Spectral Density Plot ANT3 (80MHz BW 802.11ax (UNII Band 1) – Ch. 42)

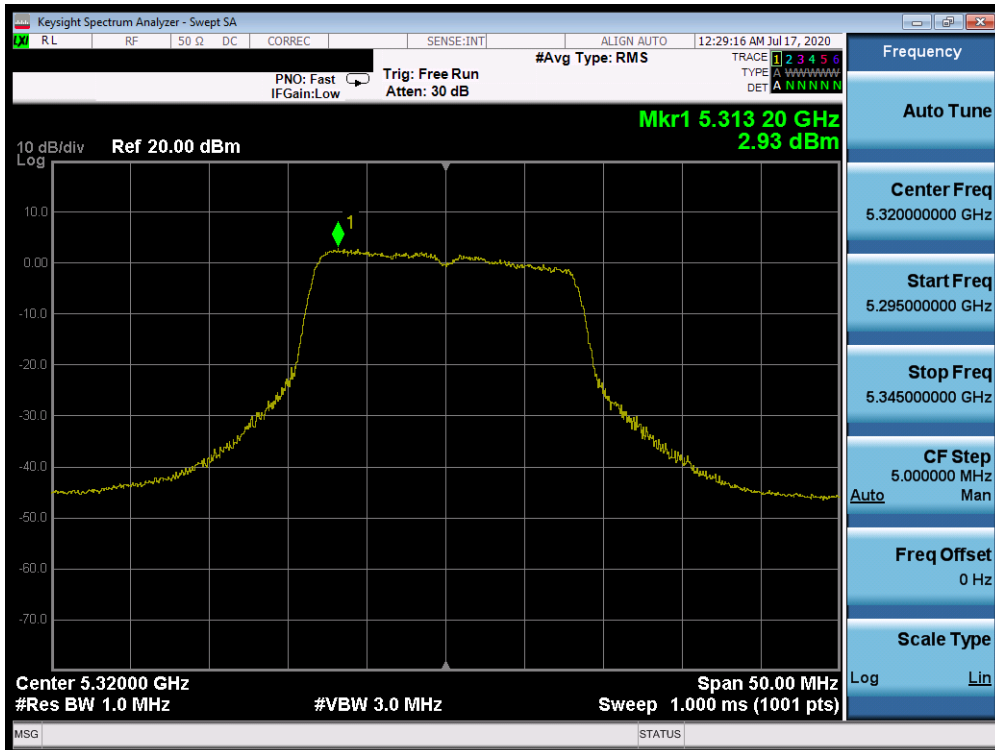


Plot 7-284. Power Spectral Density Plot ANT3 (802.11a (UNII Band 2A) – Ch. 52)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 175 of 344

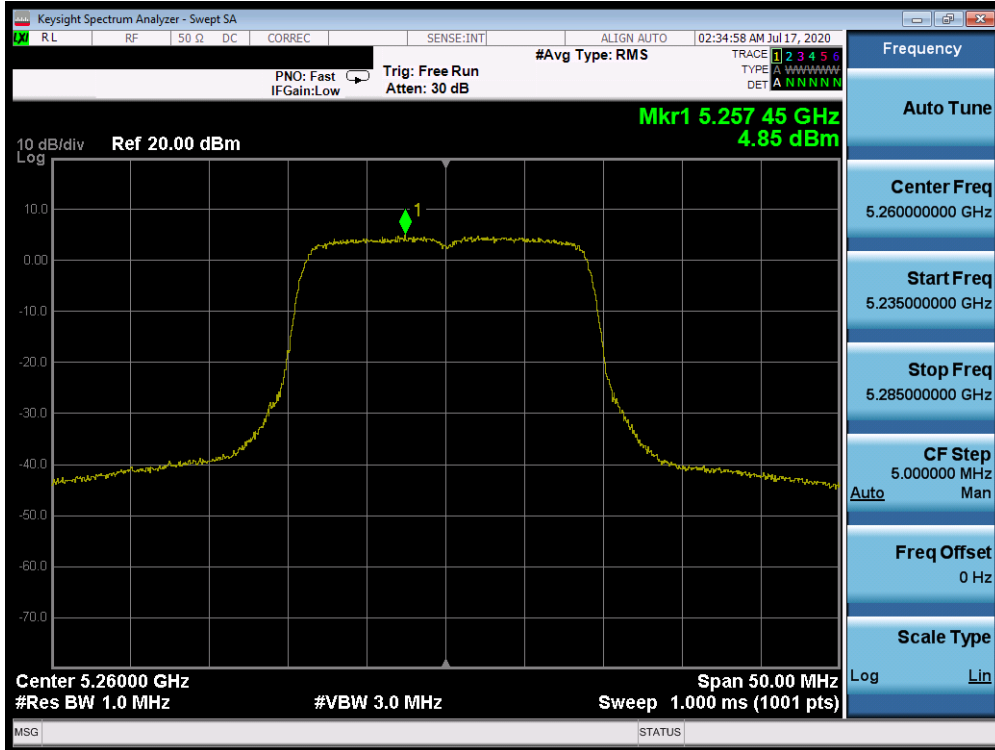


Plot 7-285. Power Spectral Density Plot ANT3 (802.11a (UNII Band 2A) – Ch. 56)

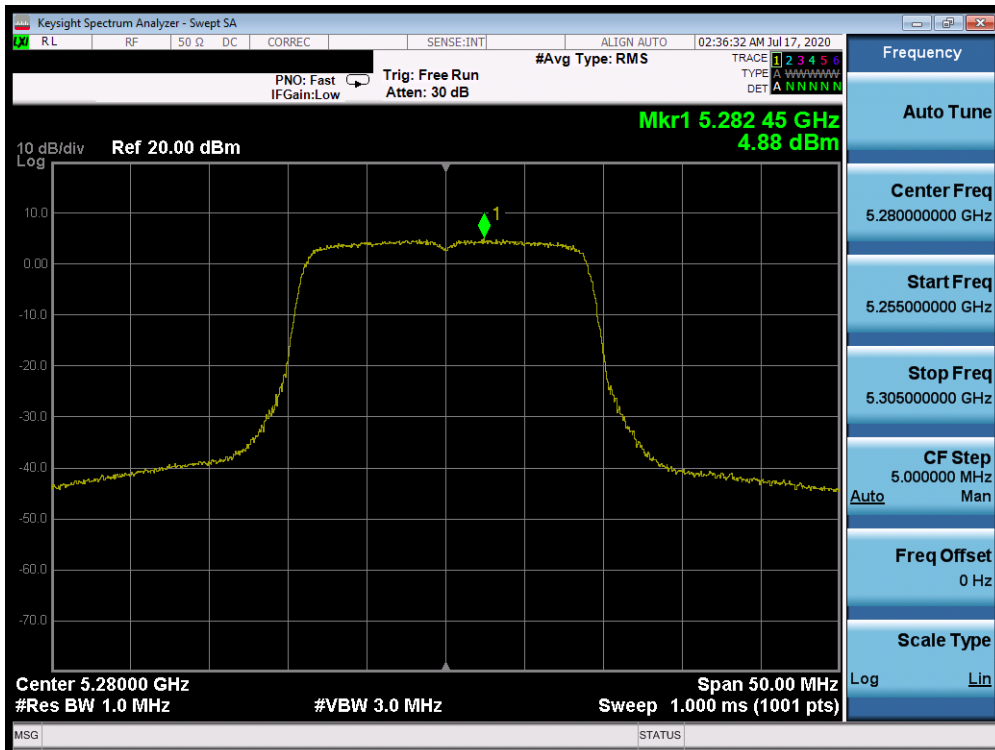


Plot 7-286. Power Spectral Density Plot ANT3 (802.11a (UNII Band 2A) – Ch. 64)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 176 of 344

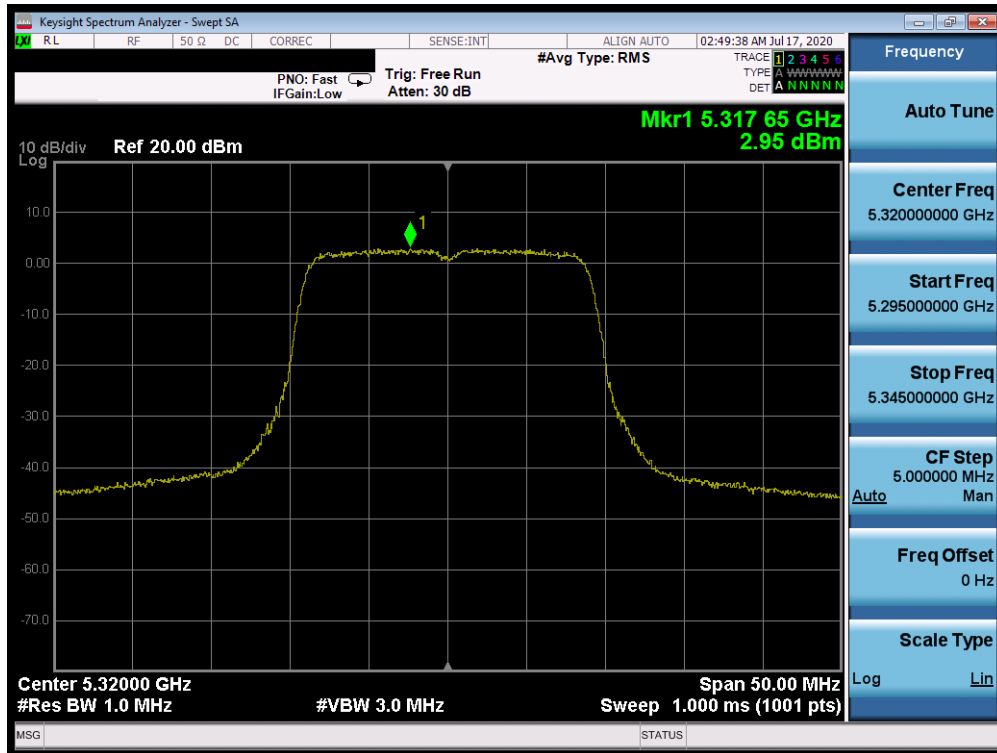


Plot 7-287. Power Spectral Density Plot ANT3 (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

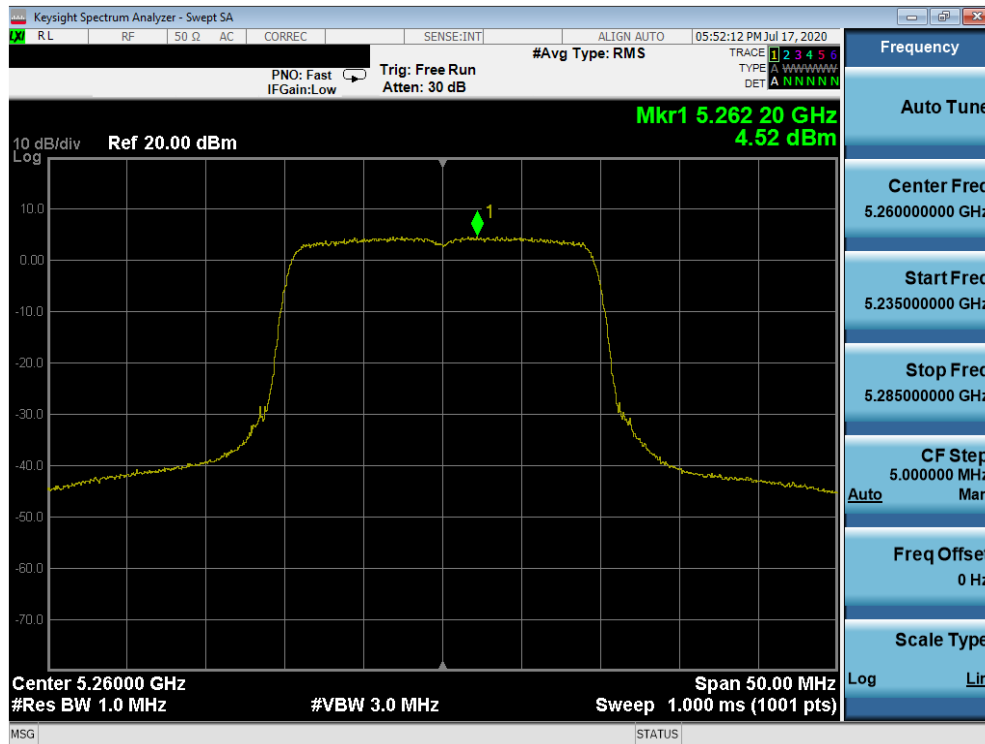


Plot 7-288. Power Spectral Density Plot ANT3 (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 177 of 344

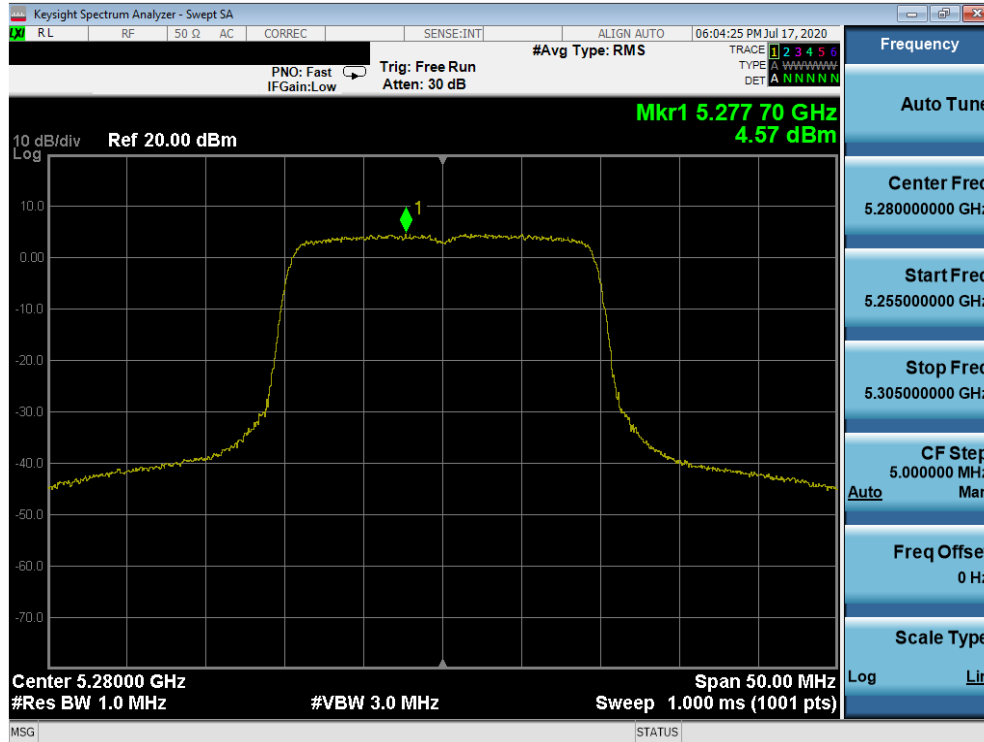


Plot 7-289. Power Spectral Density Plot ANT3 (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

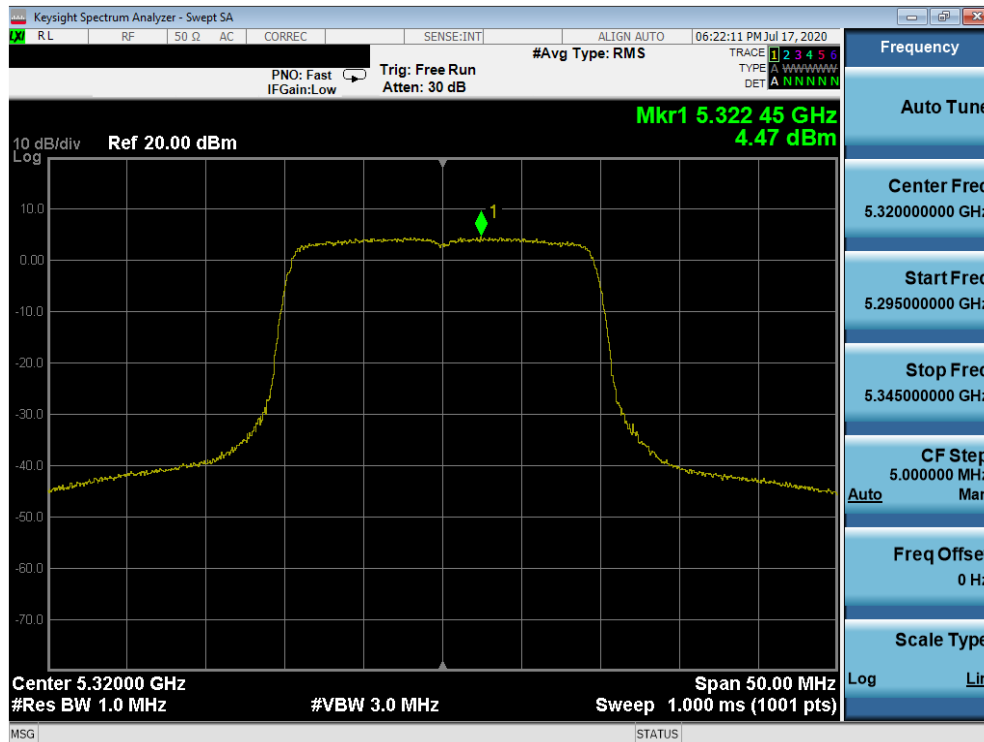


Plot 7-290. Power Spectral Density Plot ANT3 (20MHz BW 802.11ax (UNII Band 2A) – Ch. 52)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 178 of 344

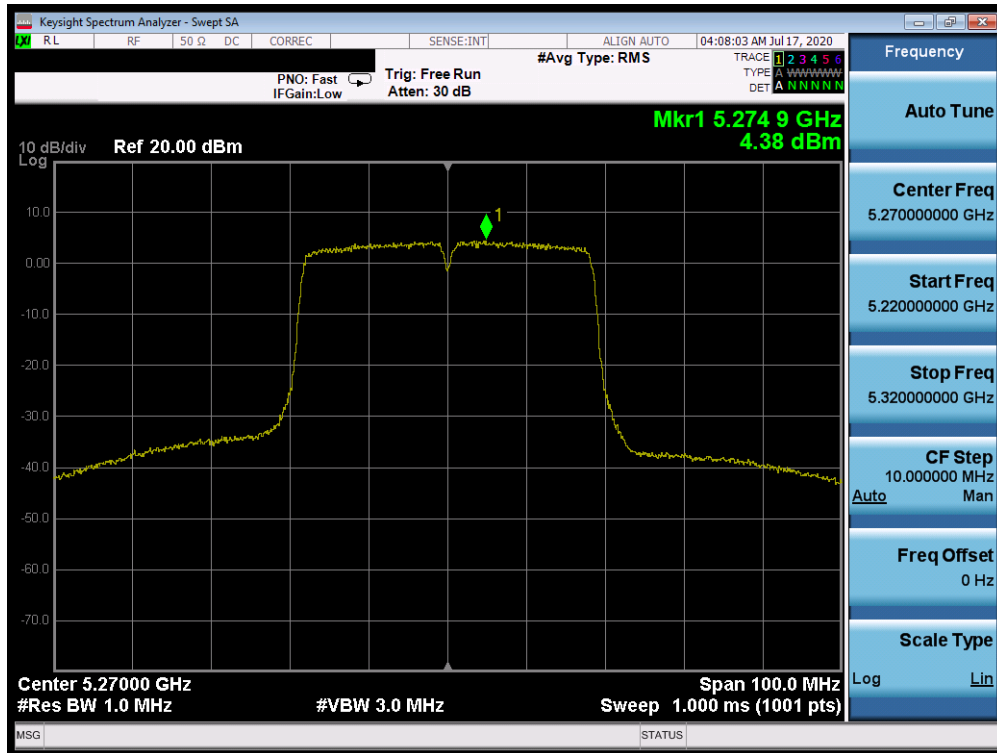


Plot 7-291. Power Spectral Density Plot ANT3 (20MHz BW 802.11ax (UNII Band 2A) – Ch. 56)

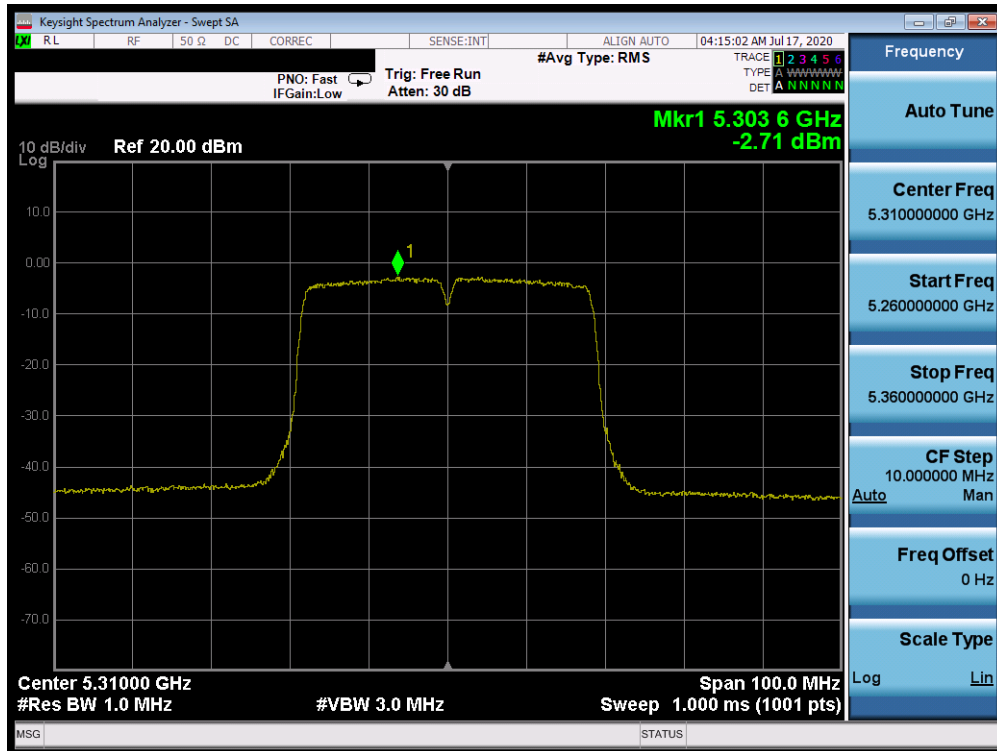


Plot 7-292. Power Spectral Density Plot ANT3 (20MHz BW 802.11ax (UNII Band 2A) – Ch. 64)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 179 of 344

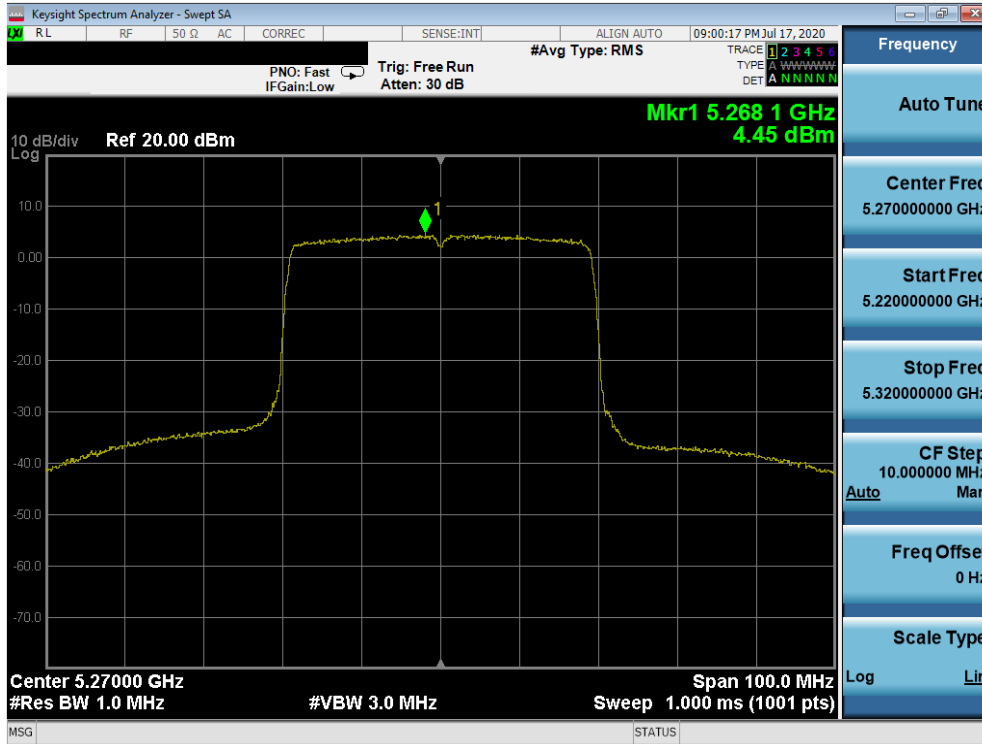


Plot 7-293. Power Spectral Density Plot ANT3 (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

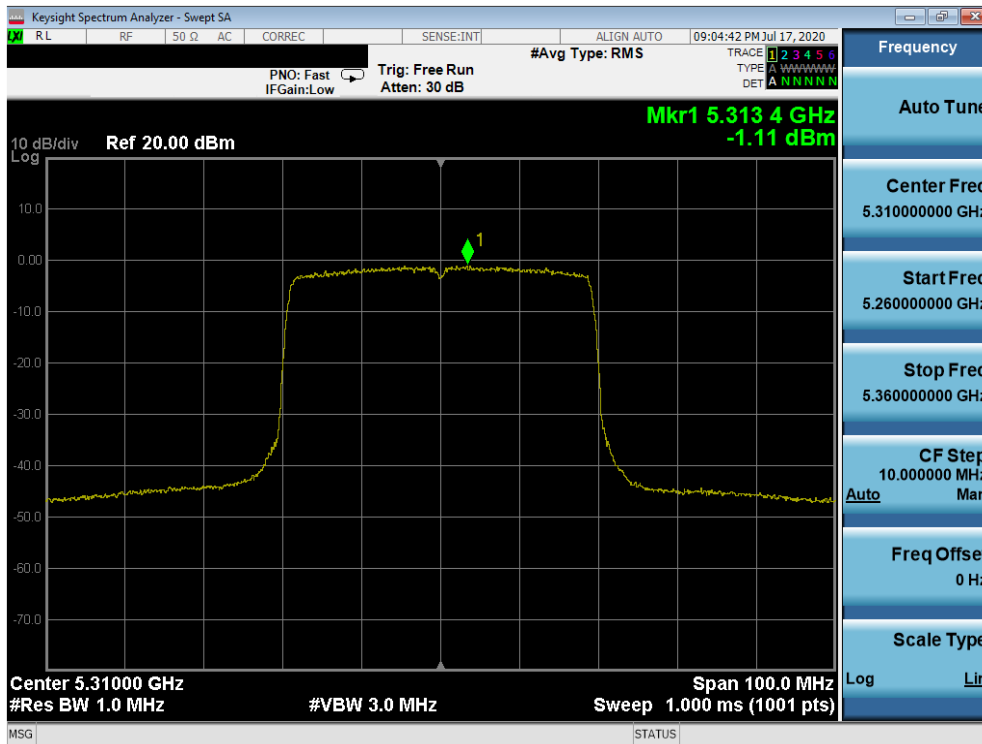


Plot 7-294. Power Spectral Density Plot ANT3 (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 180 of 344

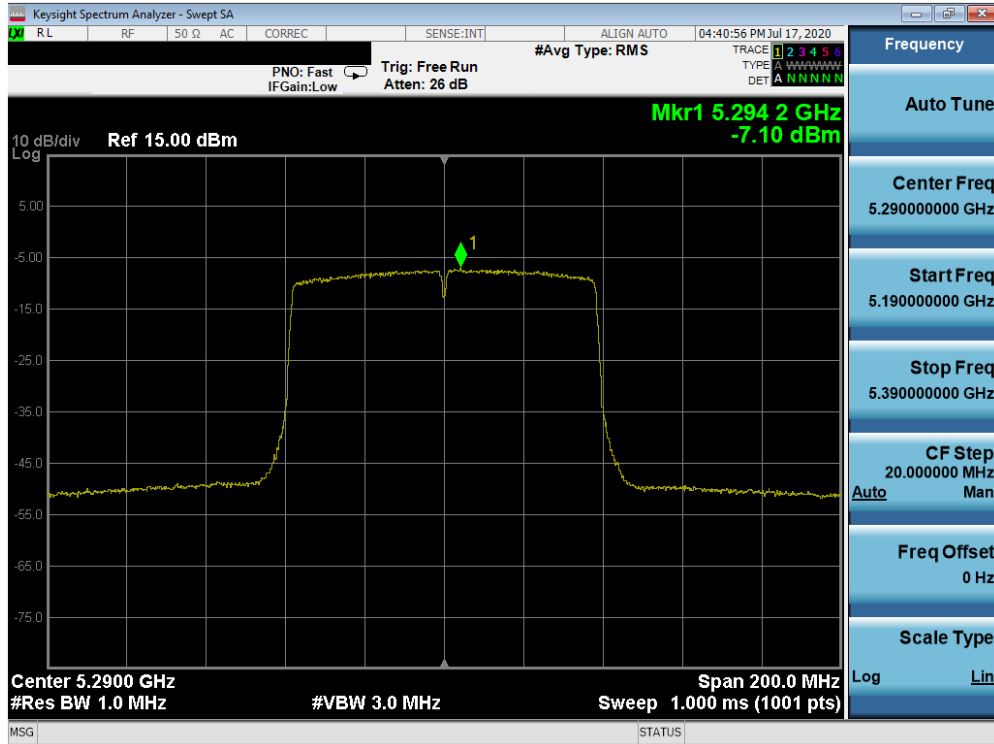


Plot 7-295. Power Spectral Density Plot ANT3 (40MHz BW 802.11ax (UNII Band 2A) – Ch. 54)

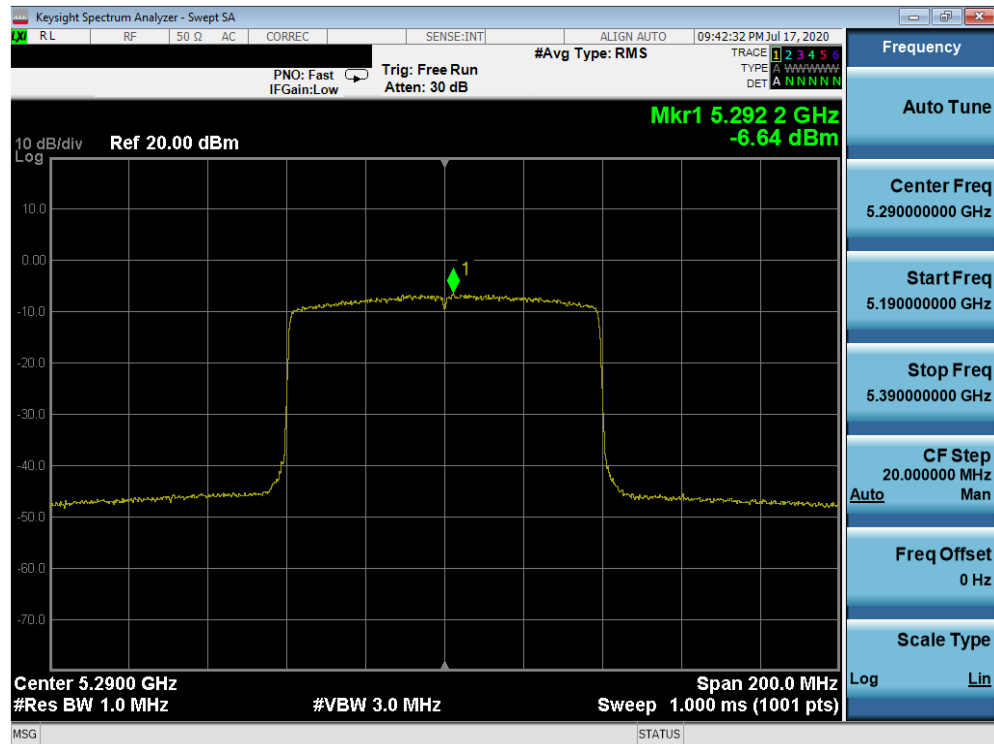


Plot 7-296. Power Spectral Density Plot ANT3 (40MHz BW 802.11ax (UNII Band 2A) – Ch. 62)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 181 of 344

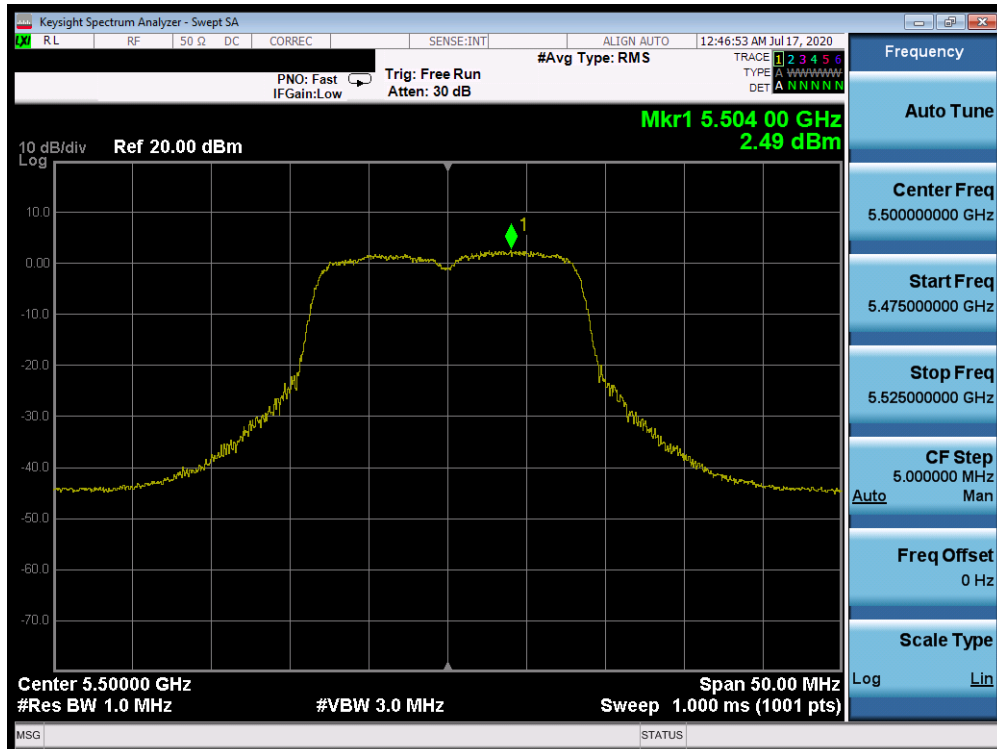


Plot 7-297. Power Spectral Density Plot ANT3 (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

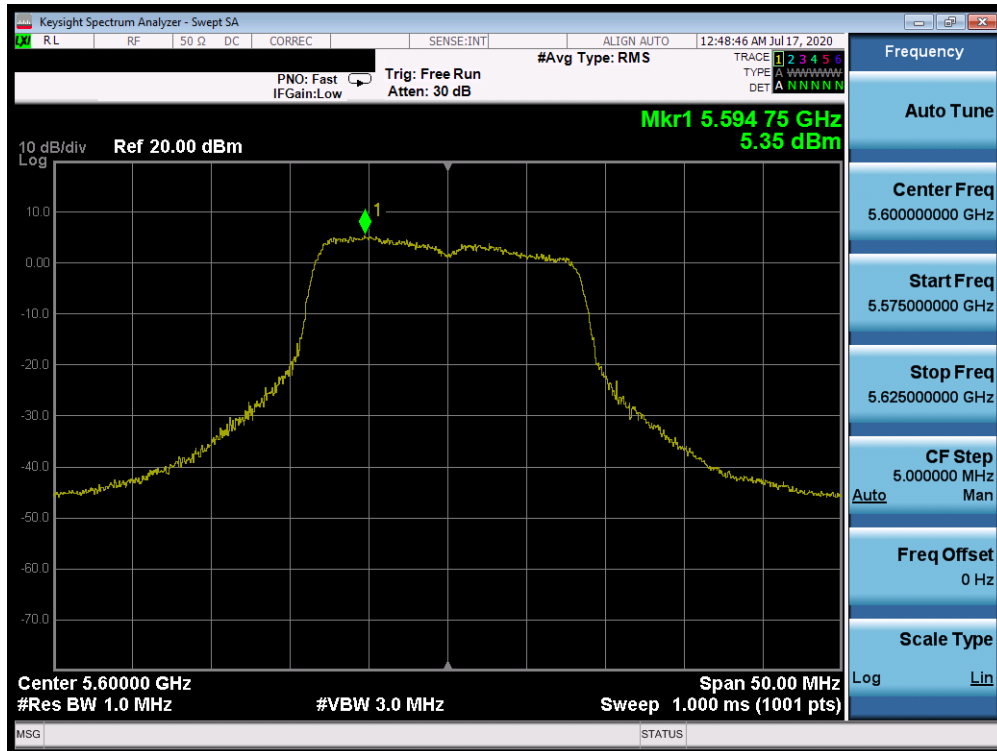


Plot 7-298. Power Spectral Density Plot ANT3 (80MHz BW 802.11ax (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 182 of 344

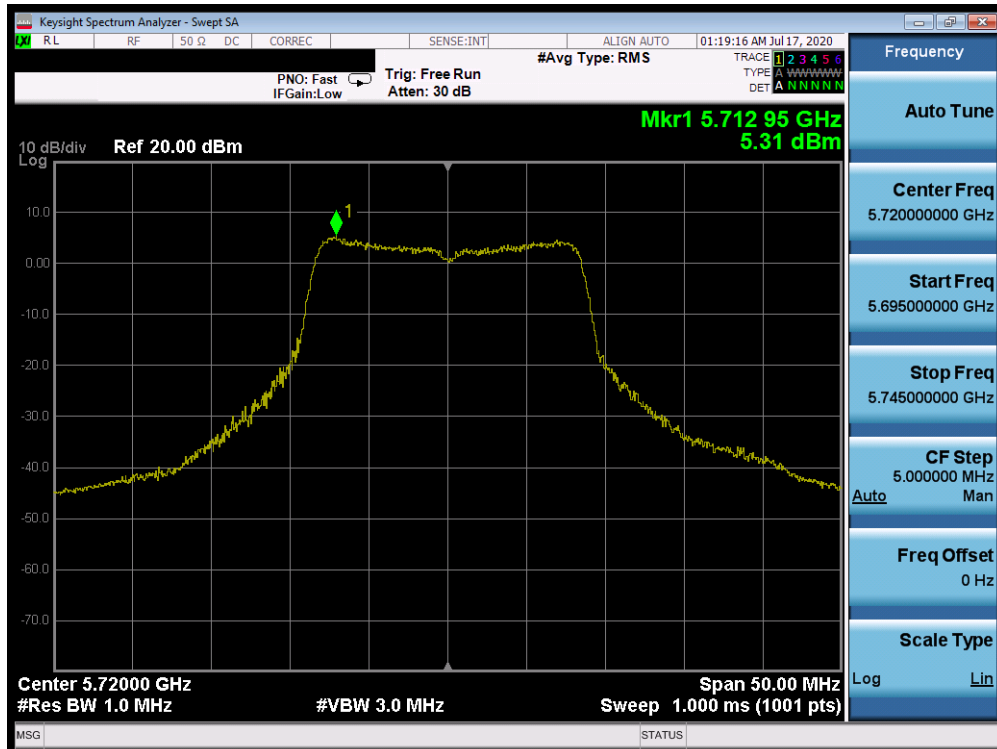


Plot 7-299. Power Spectral Density Plot ANT3 (802.11a (UNII Band 2C) – Ch. 100)

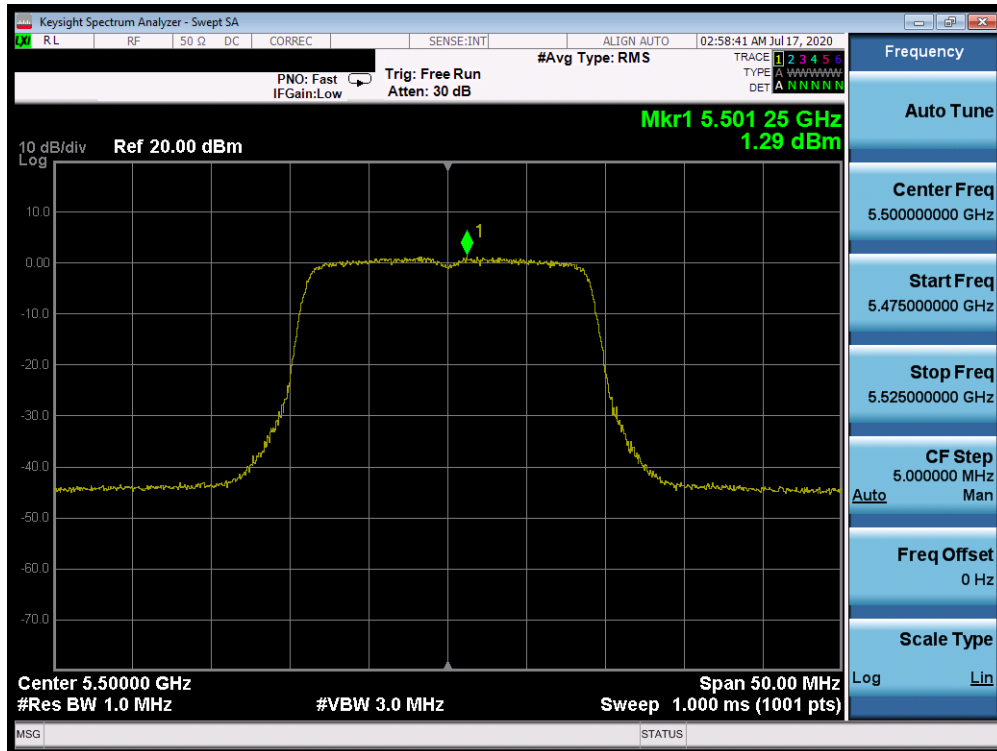


Plot 7-300. Power Spectral Density Plot ANT3 (802.11a (UNII Band 2C) – Ch. 120)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 183 of 344

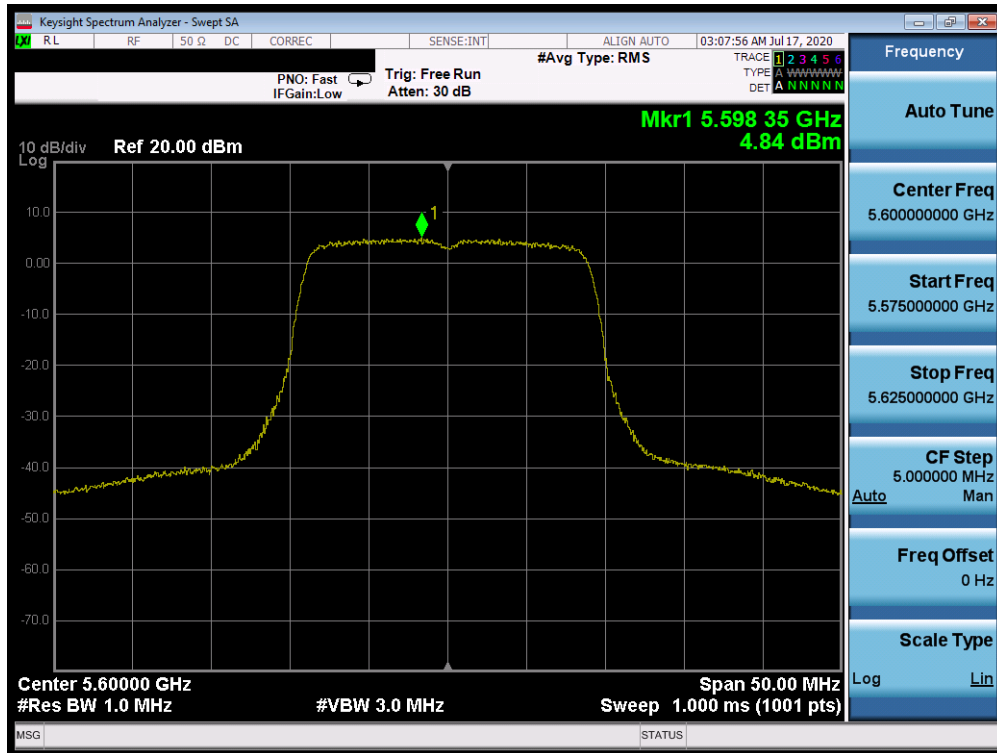


Plot 7-301. Power Spectral Density Plot ANT3 (802.11a (UNII Band 2C) – Ch. 144)

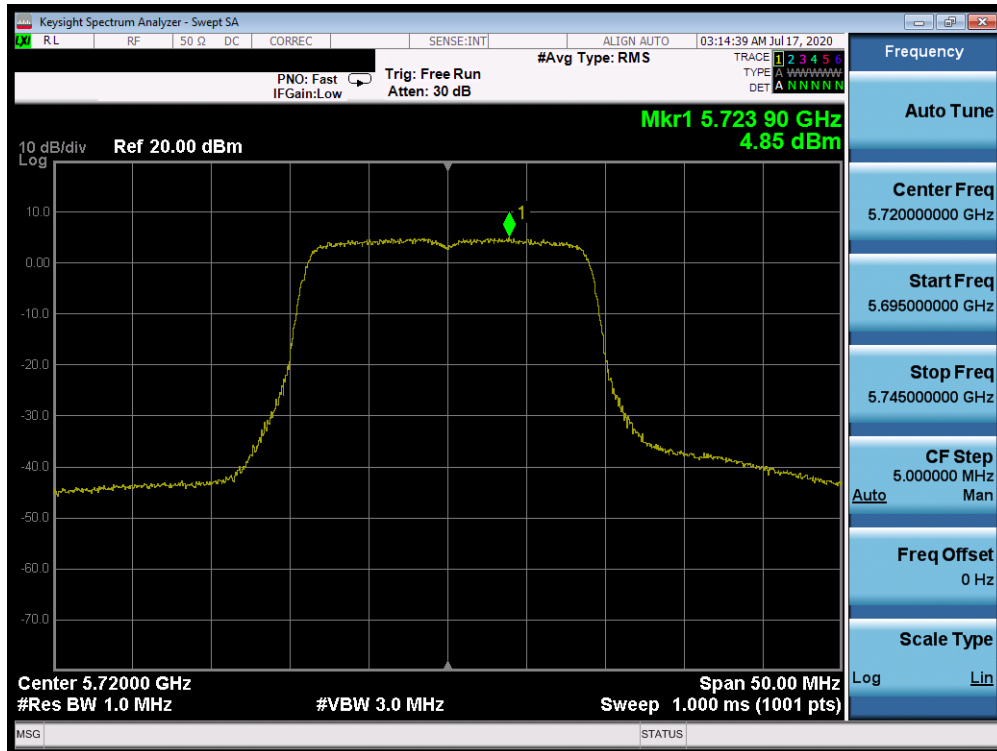


Plot 7-302. Power Spectral Density Plot ANT3 (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 184 of 344

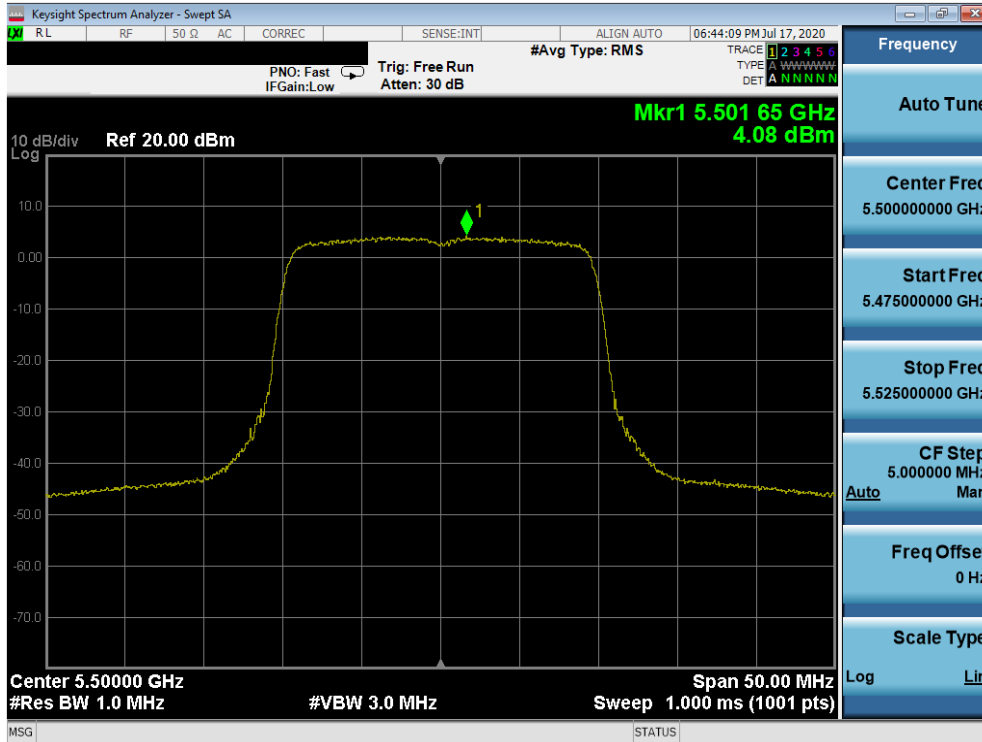


Plot 7-303. Power Spectral Density Plot ANT3 (20MHz BW 802.11n (UNII Band 2C) – Ch. 120)

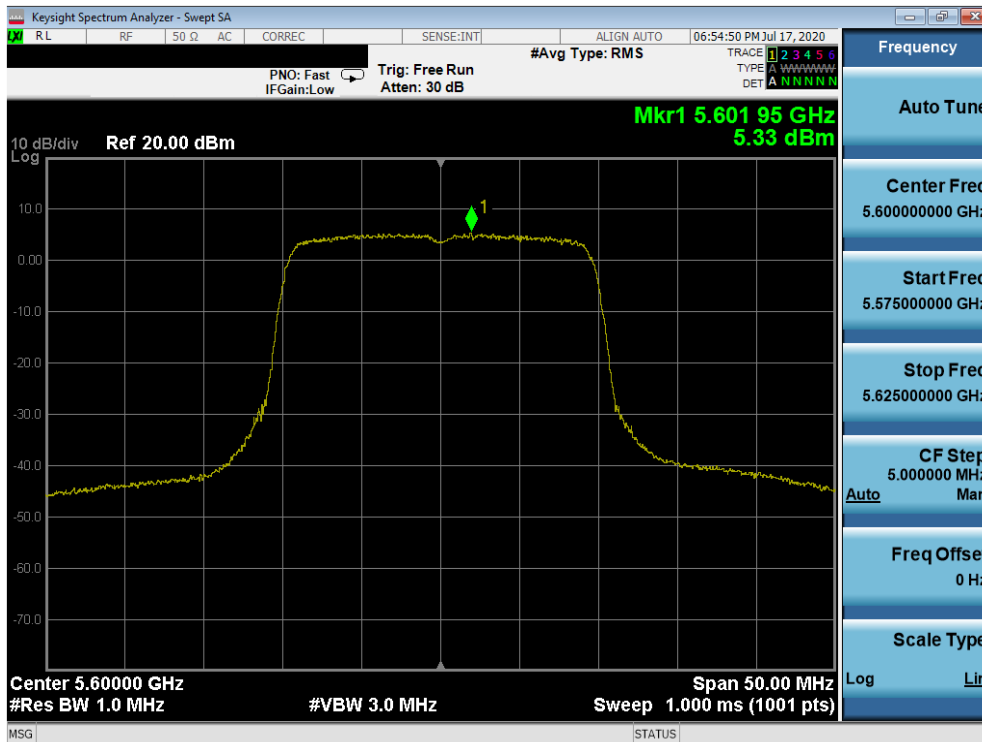


Plot 7-304. Power Spectral Density Plot ANT3 (20MHz BW 802.11n (UNII Band 2C) – Ch. 144)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 185 of 344

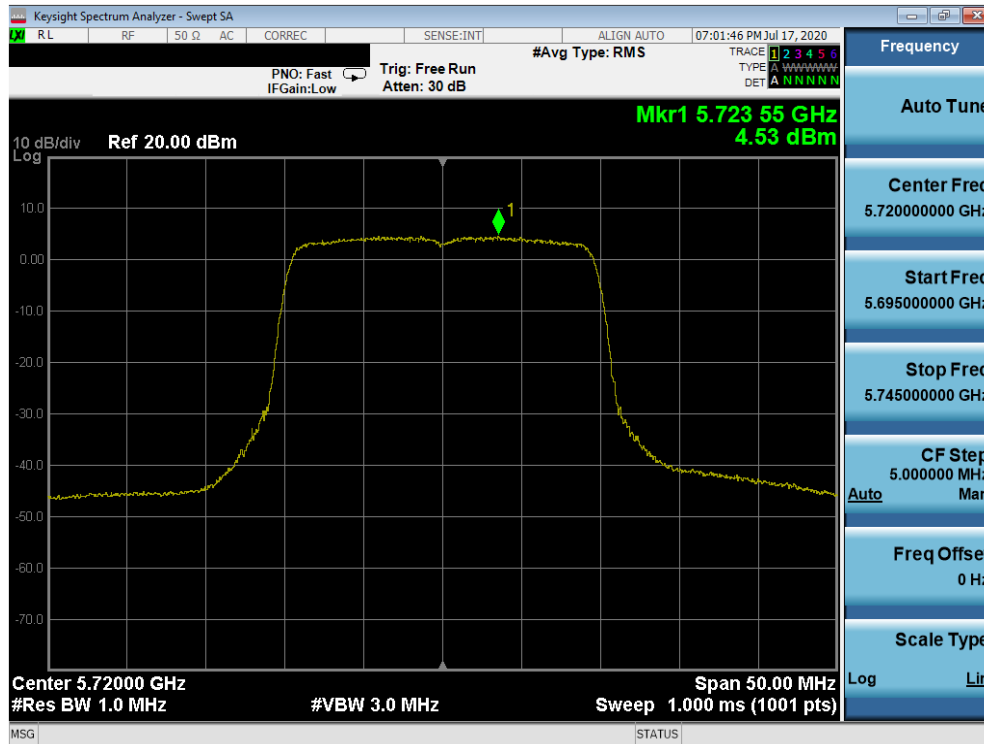


Plot 7-305. Power Spectral Density Plot ANT3 (20MHz BW 802.11ax (UNII Band 2C) – Ch. 100)

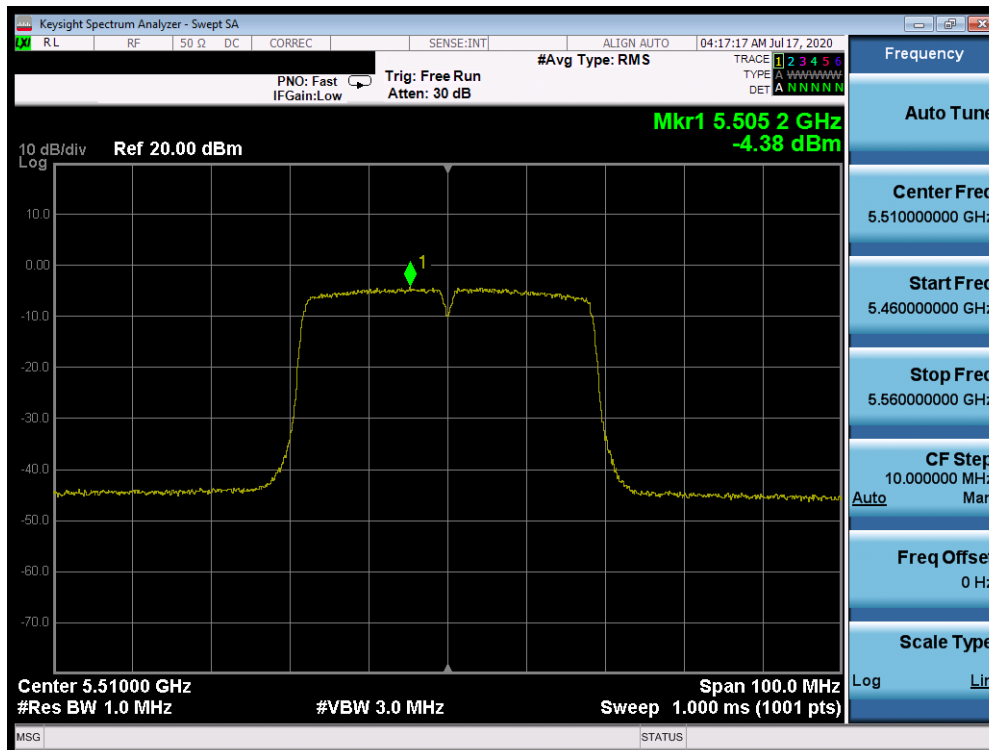


Plot 7-306. Power Spectral Density Plot ANT3 (20MHz BW 802.11ax (UNII Band 2C) – Ch. 120)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 186 of 344

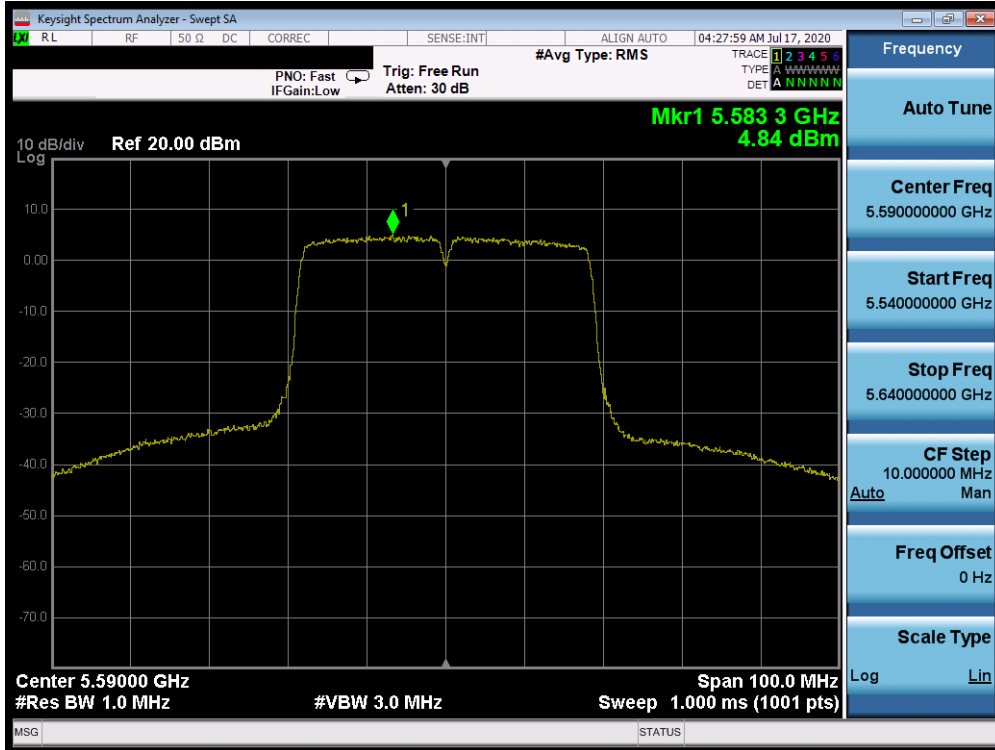


Plot 7-307. Power Spectral Density Plot ANT3 (20MHz BW 802.11ax (UNII Band 2C) – Ch. 120)

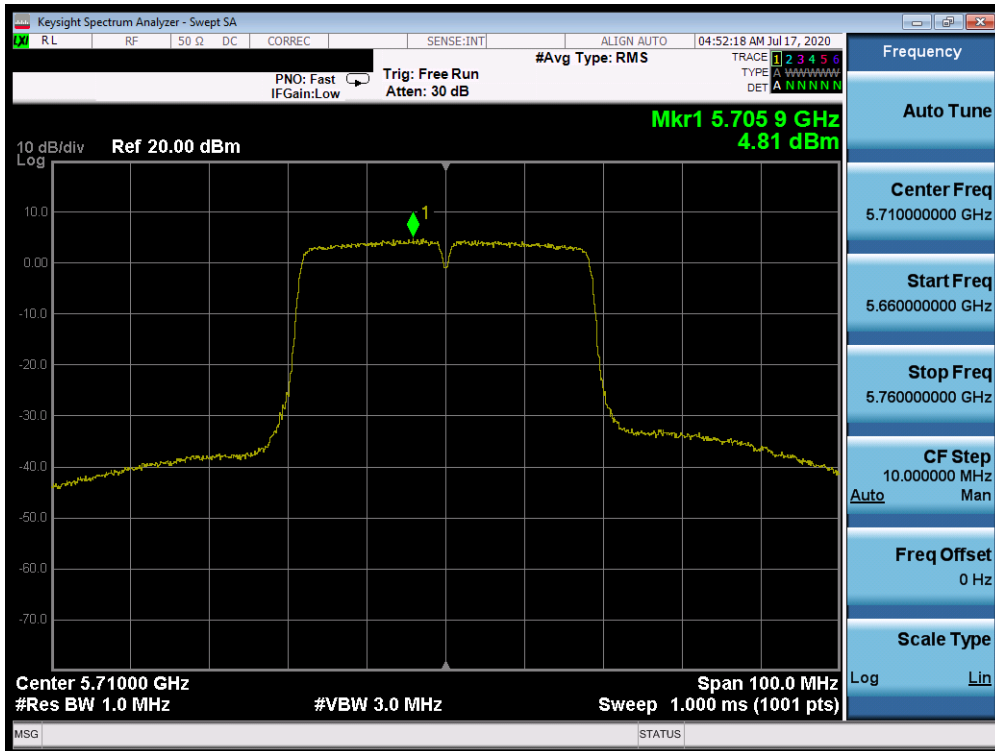


Plot 7-308. Power Spectral Density Plot ANT3 (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 187 of 344

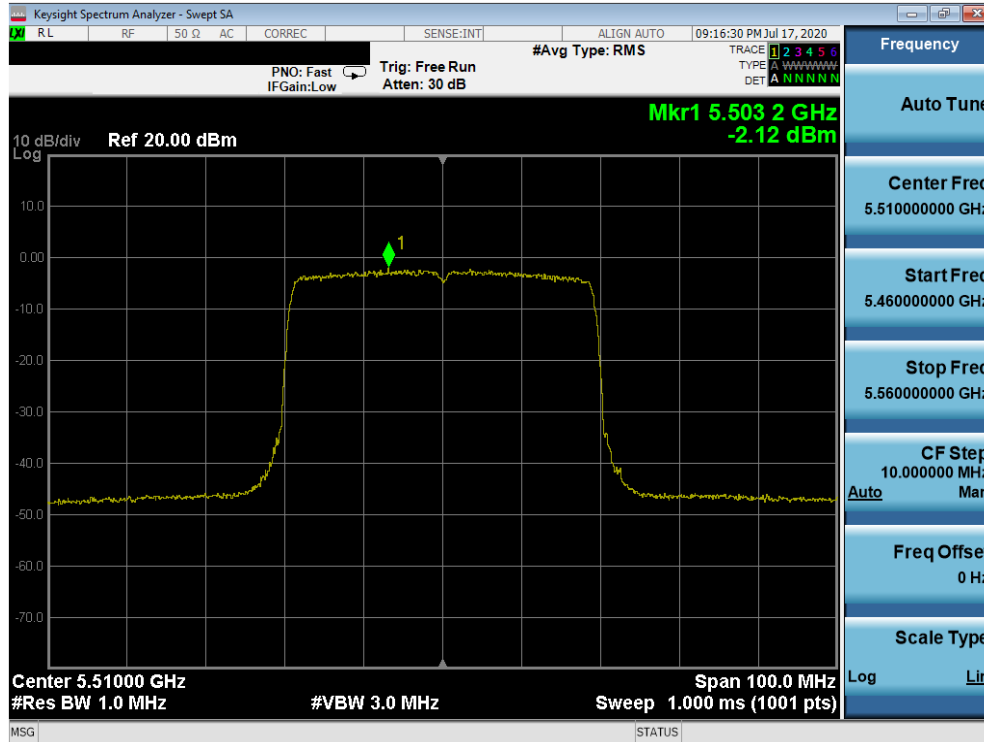


Plot 7-309. Power Spectral Density Plot ANT3 (40MHz BW 802.11n (UNII Band 2C) – Ch. 118)

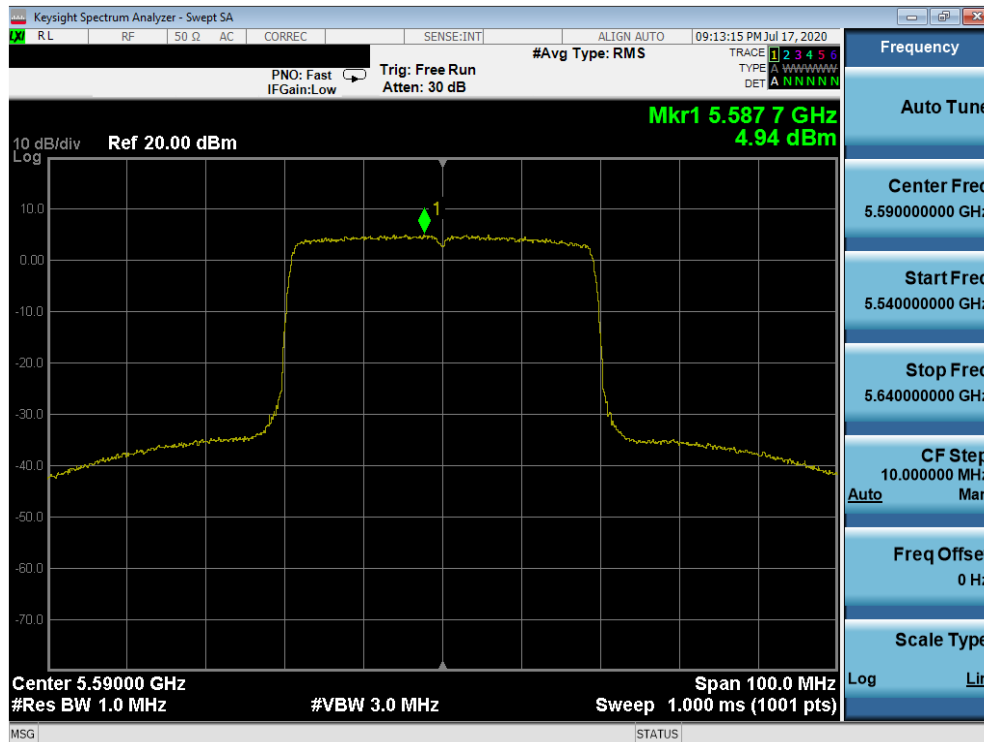


Plot 7-310. Power Spectral Density Plot ANT3 (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 188 of 344

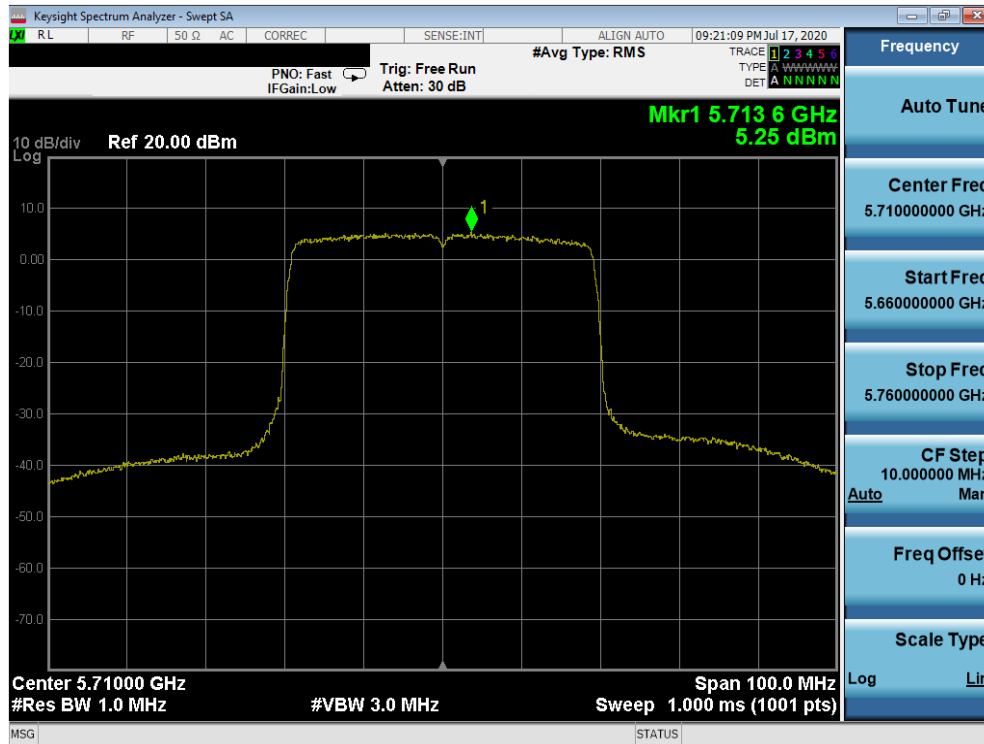


Plot 7-311. Power Spectral Density Plot ANT3 (40MHz BW 802.11ax (UNII Band 2C) – Ch. 102)

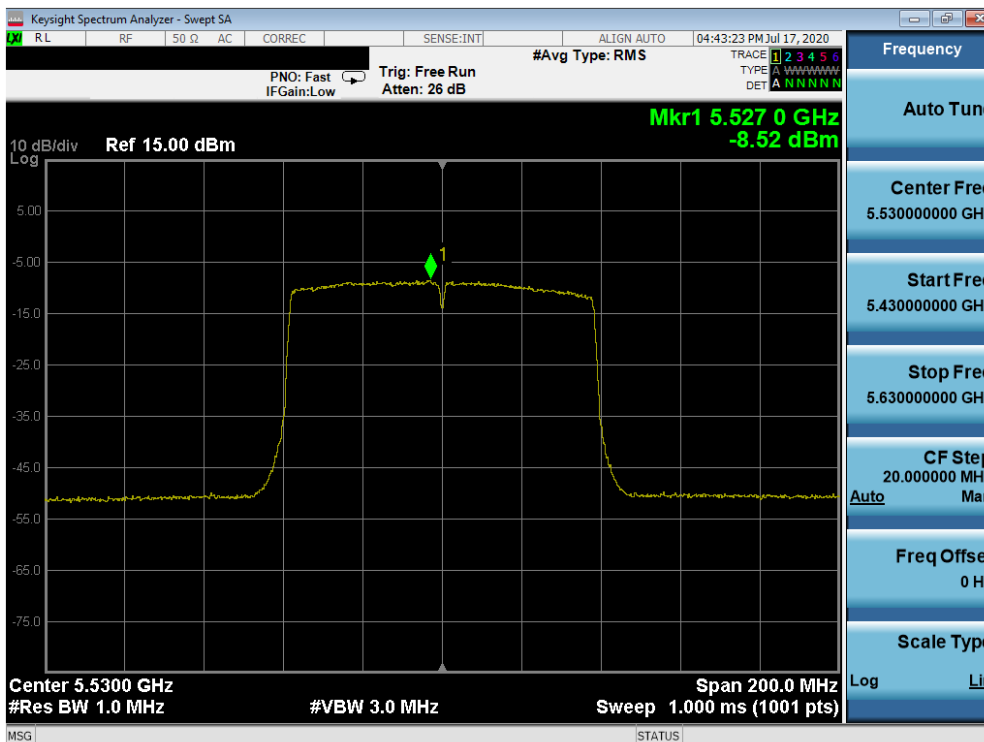


Plot 7-312. Power Spectral Density Plot ANT3 (40MHz BW 802.11ax (UNII Band 2C) – Ch. 118)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 189 of 344

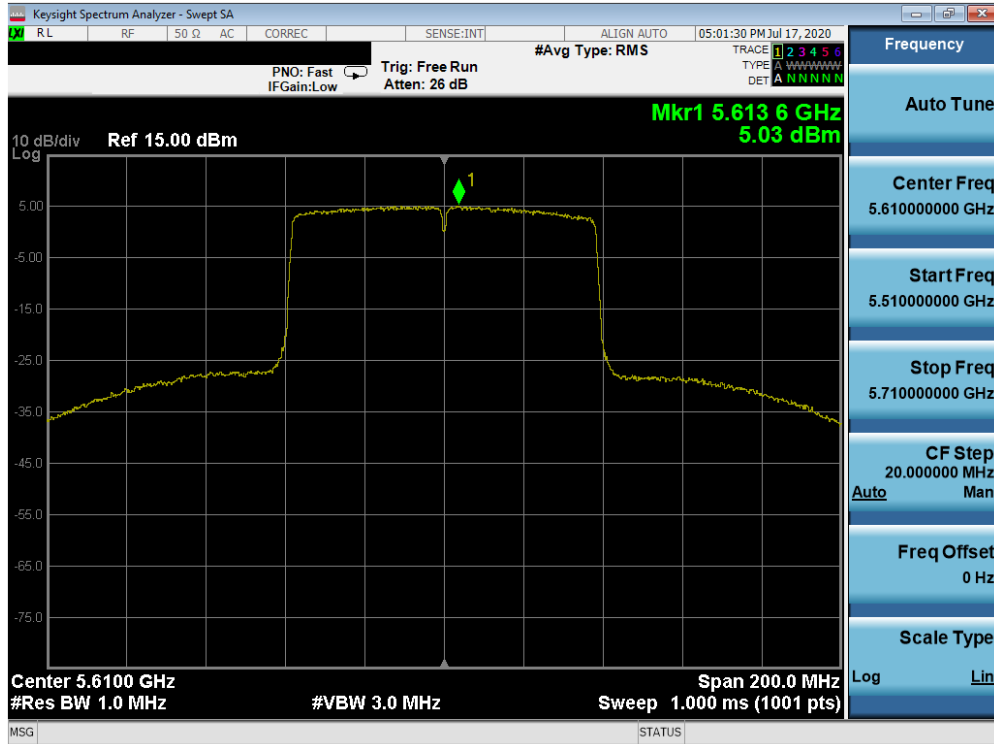


Plot 7-313. Power Spectral Density Plot ANT3 (40MHz BW 802.11ax (UNII Band 2C) – Ch. 142)

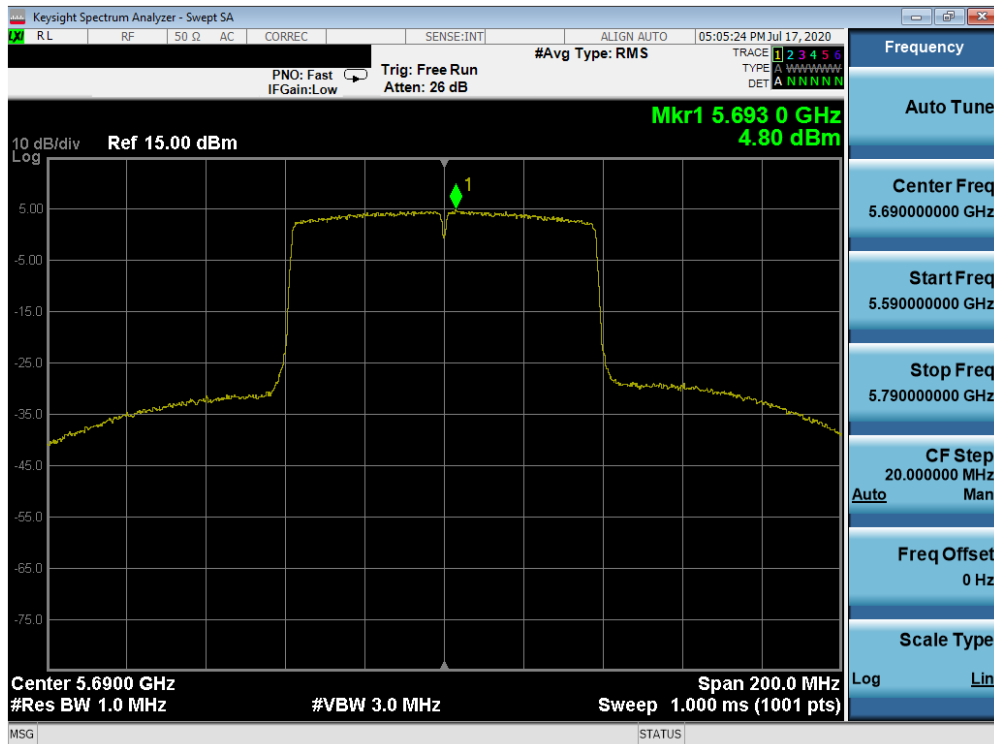


Plot 7-314. Power Spectral Density Plot ANT3 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 190 of 344

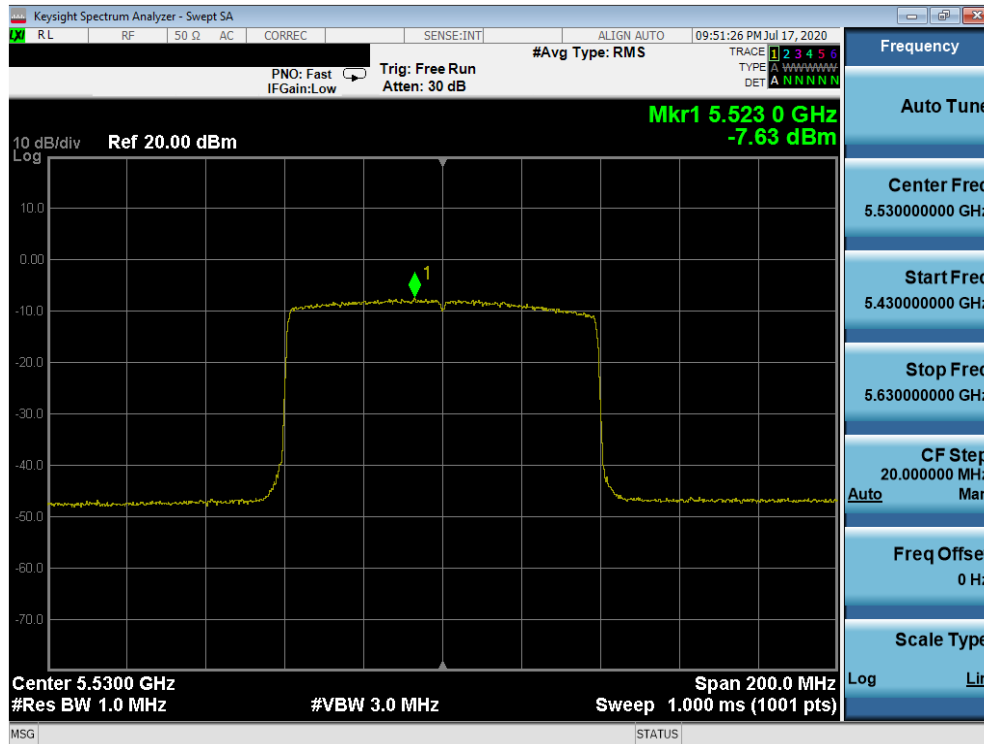


Plot 7-315. Power Spectral Density Plot ANT3 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 122)

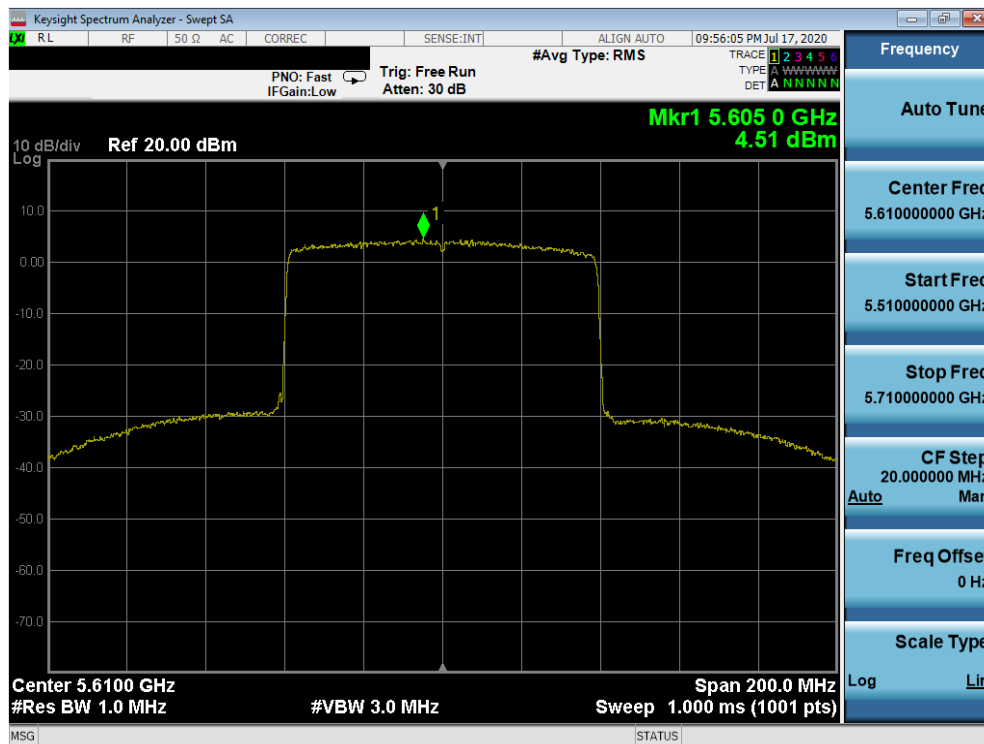


Plot 7-316. Power Spectral Density Plot ANT3 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 138)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 191 of 344

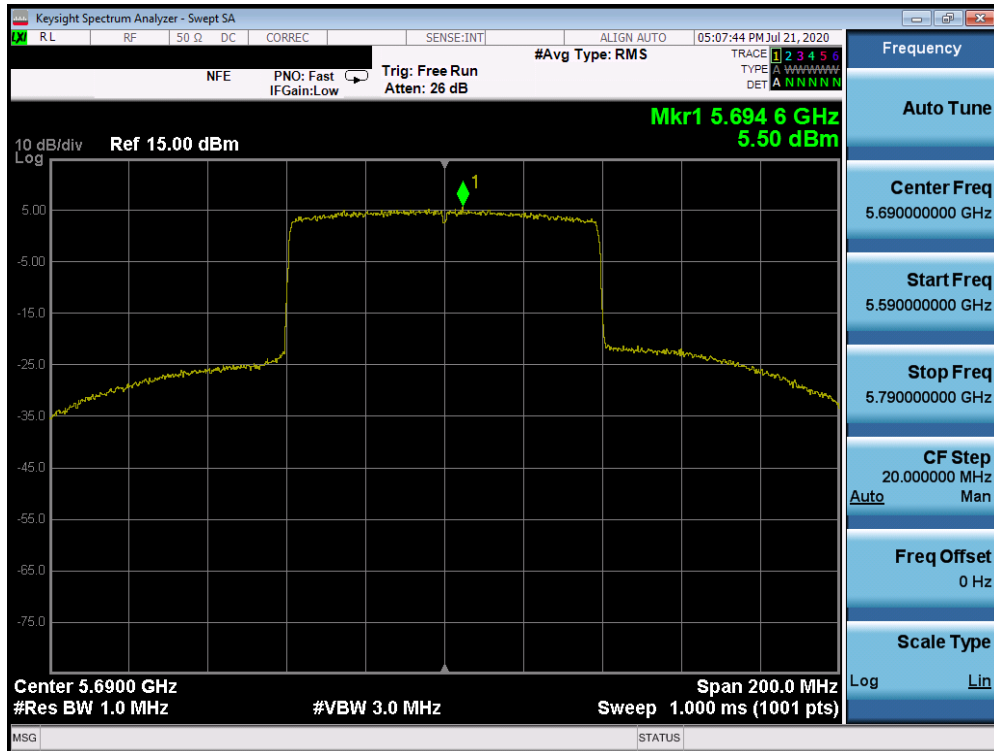


Plot 7-317. Power Spectral Density Plot ANT3 (80MHz BW 802.11ax (UNII Band 2C) – Ch. 106)



Plot 7-318. Power Spectral Density Plot ANT3 (80MHz BW 802.11ax (UNII Band 2C) – Ch. 122)

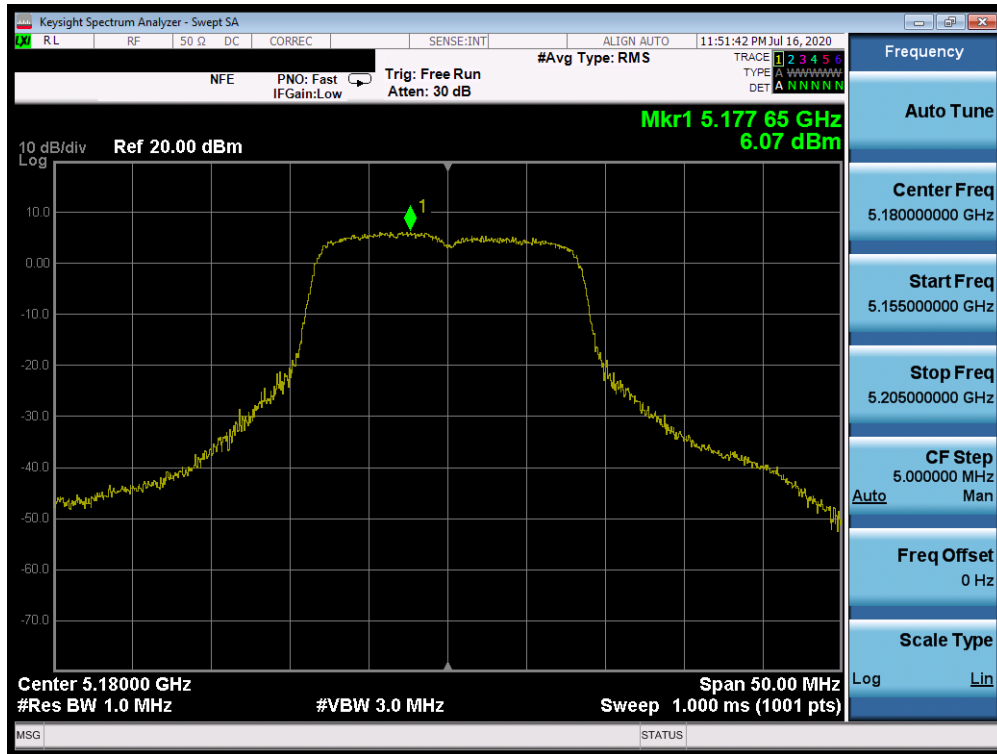
FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 192 of 344



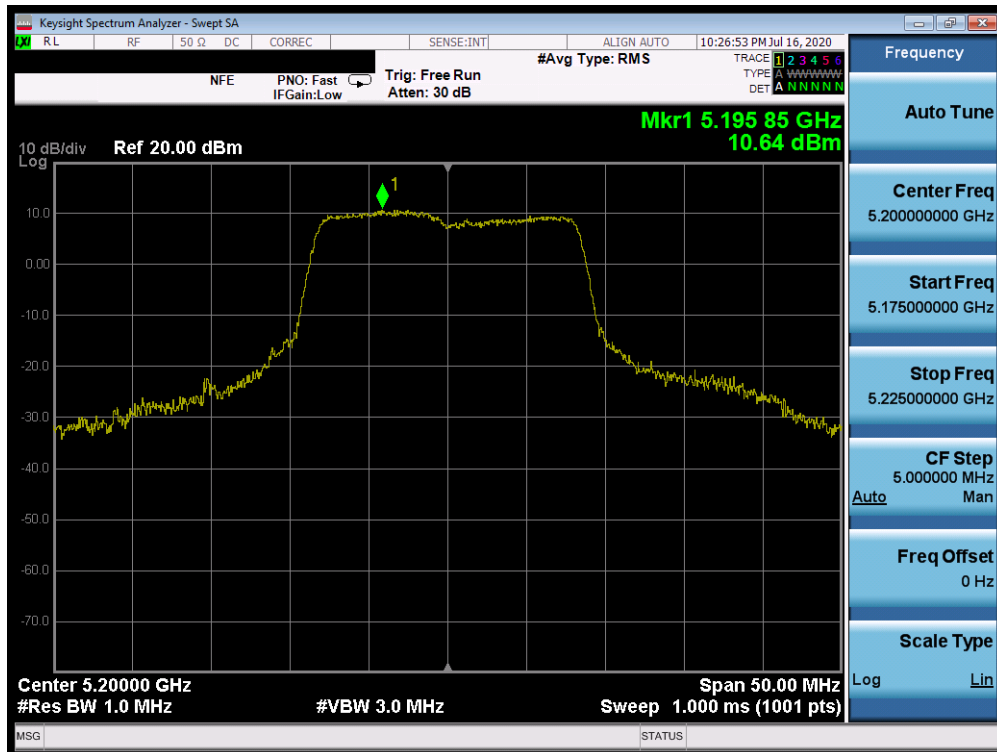
Plot 7-319. Power Spectral Density Plot ANT3 (80MHz BW 802.11ax (UNII Band 2C) – Ch. 138)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 193 of 344

Antenna-4 Power Spectral Density Measurements

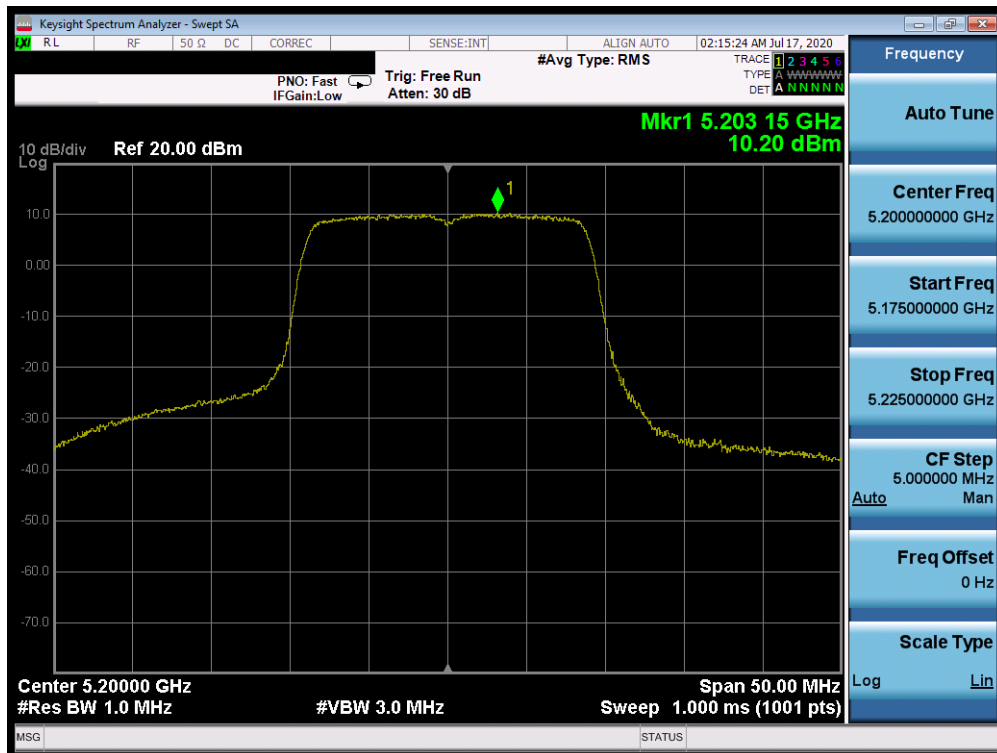


Plot 7-320. Power Spectral Density Plot ANT4 (802.11a (UNII Band 1) – Ch. 36)

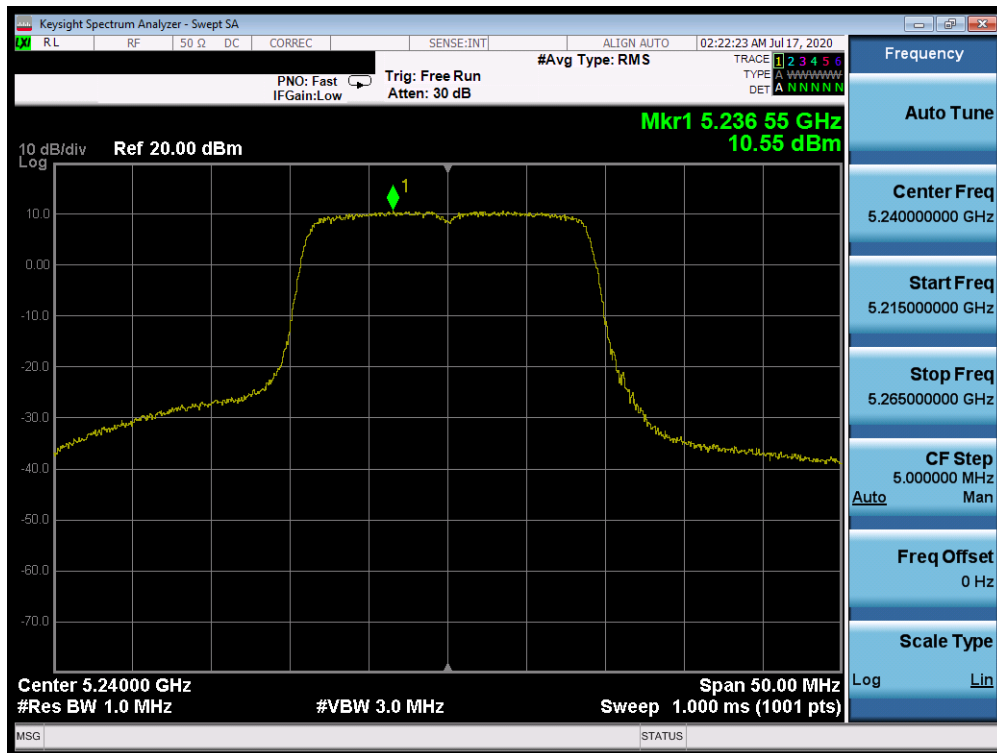


Plot 7-321. Power Spectral Density Plot ANT4 (802.11a (UNII Band 1) – Ch. 40)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 194 of 344

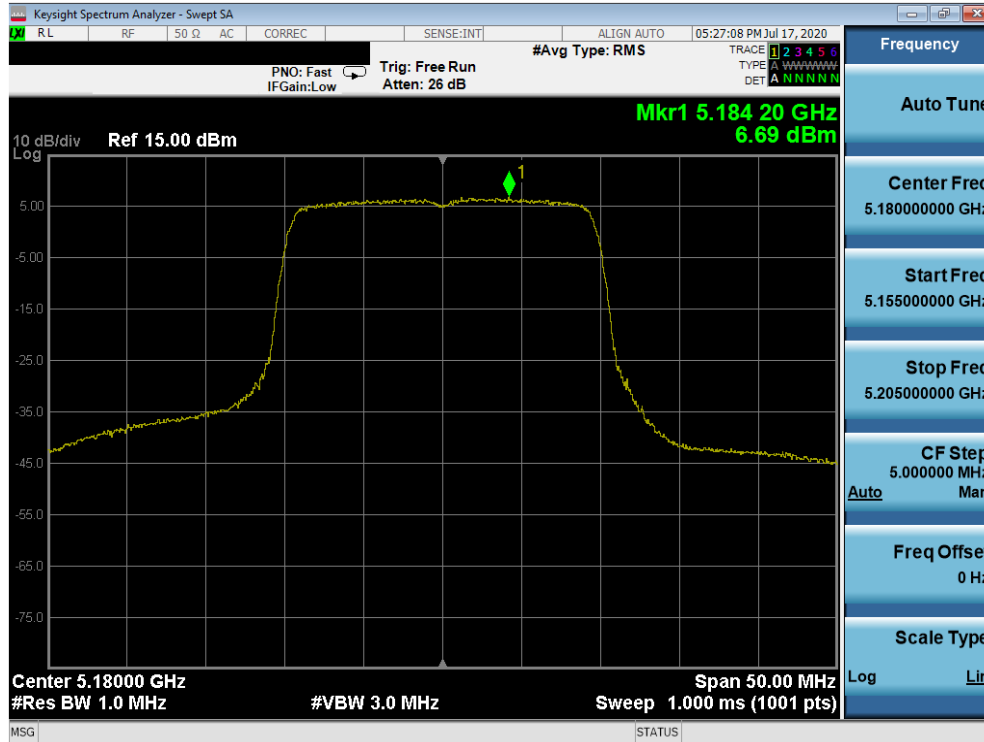


Plot 7-324. Power Spectral Density Plot ANT4 (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

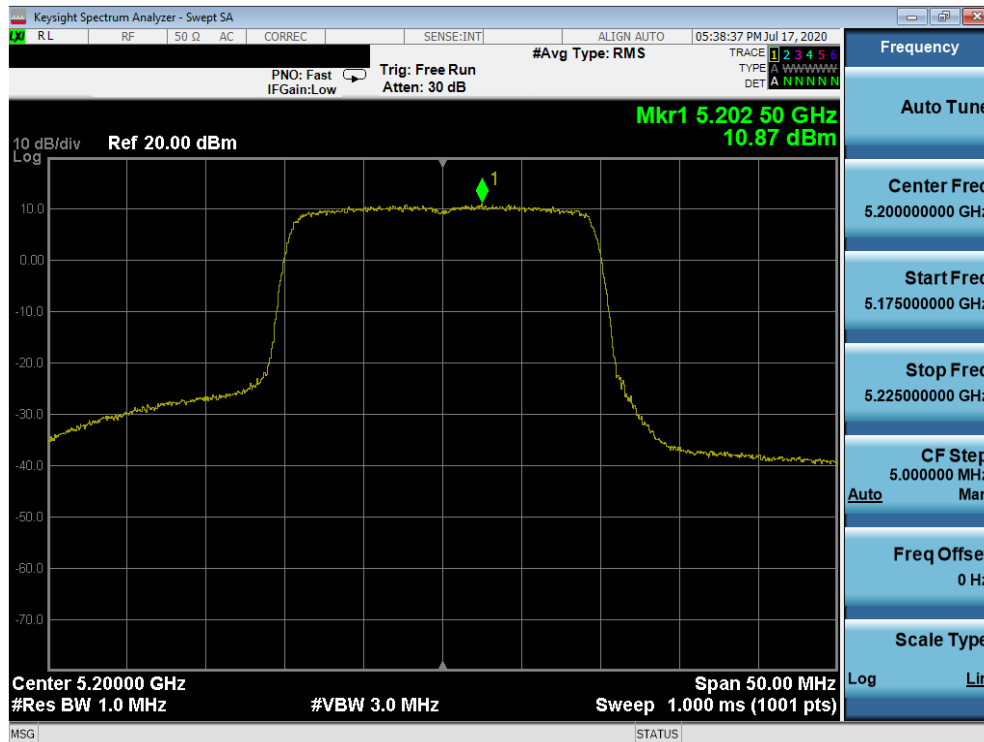


Plot 7-325. Power Spectral Density Plot ANT4 (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

FCC ID: A3LSMH204V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 196 of 344

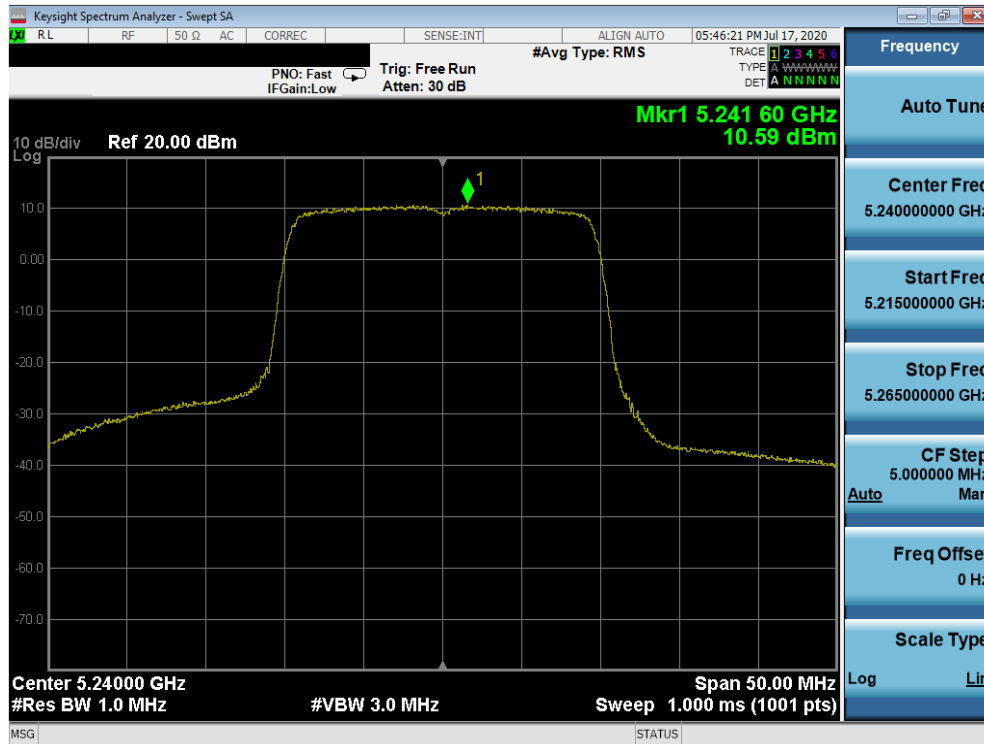


Plot 7-326. Power Spectral Density Plot ANT4 (20MHz BW 802.11ax (UNII Band 1) – Ch. 36)

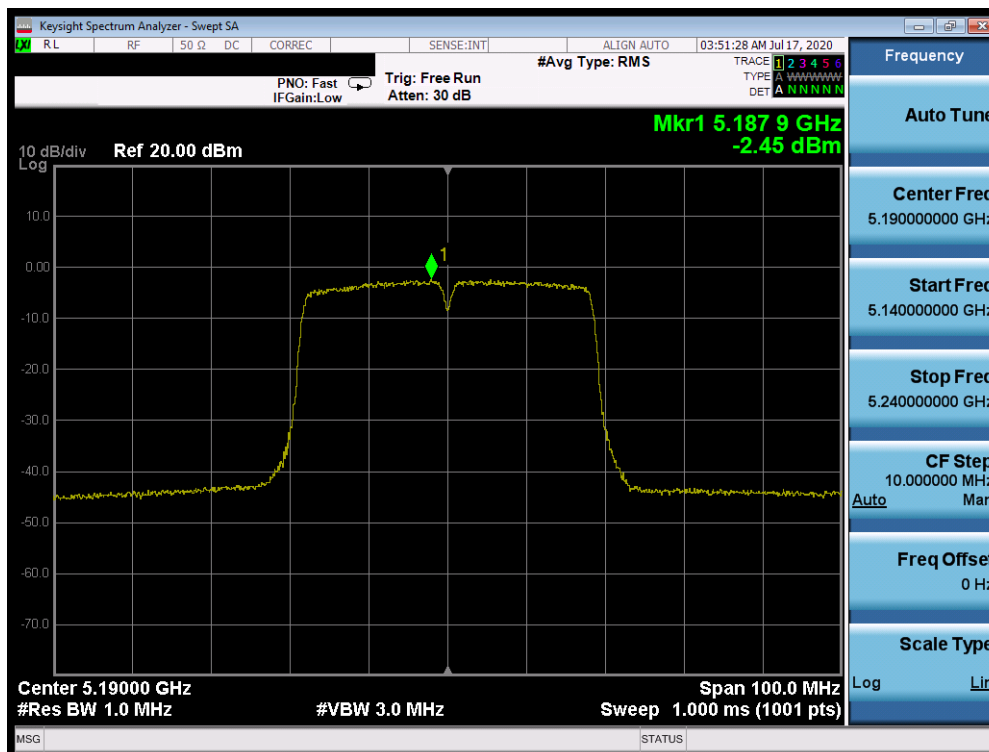


Plot 7-327. Power Spectral Density Plot ANT4 (20MHz BW 802.11ax (UNII Band 1) – Ch. 40)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 197 of 344

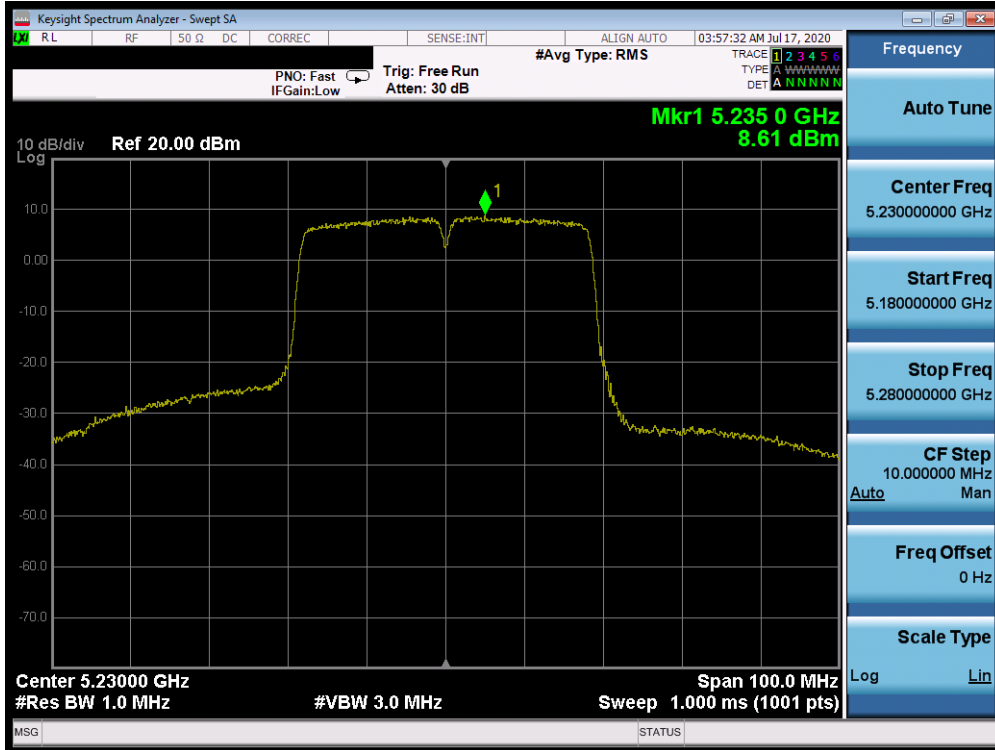


Plot 7-328. Power Spectral Density Plot ANT4 (20MHz BW 802.11ax (UNII Band 1) – Ch. 48)

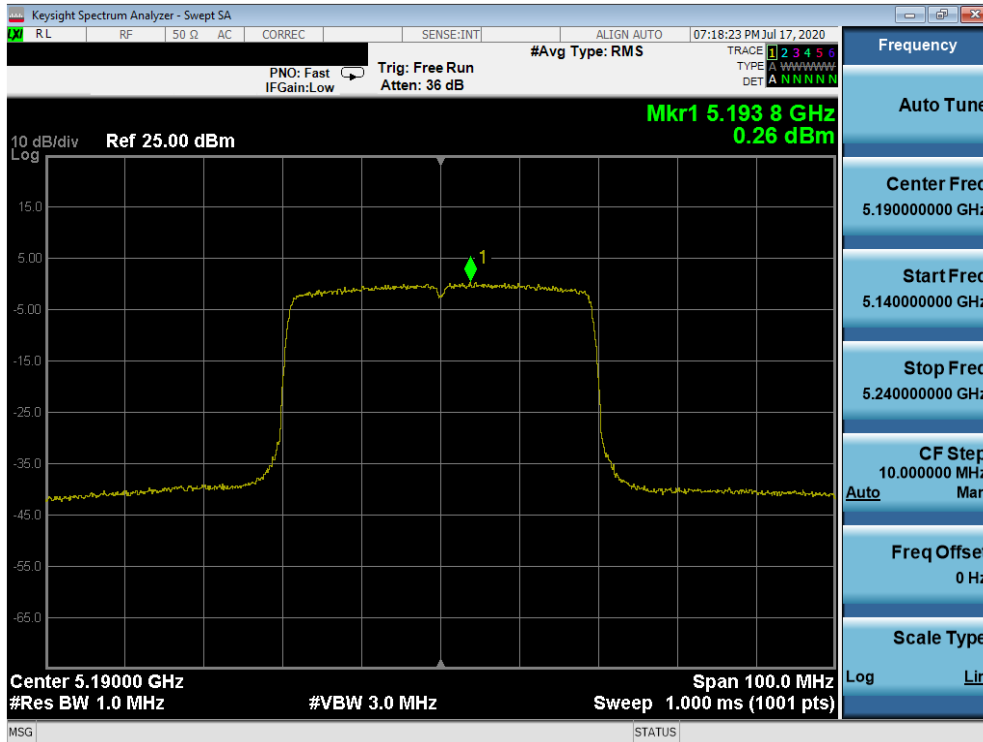


Plot 7-329. Power Spectral Density Plot ANT4 (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 198 of 344

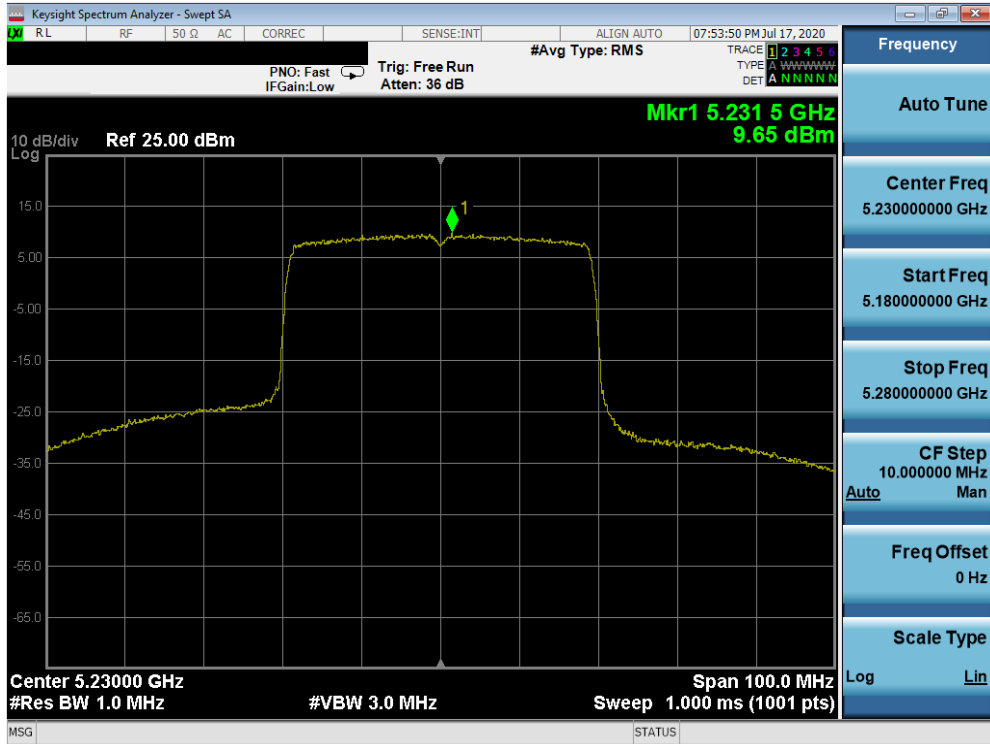


Plot 7-330. Power Spectral Density Plot ANT4 (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

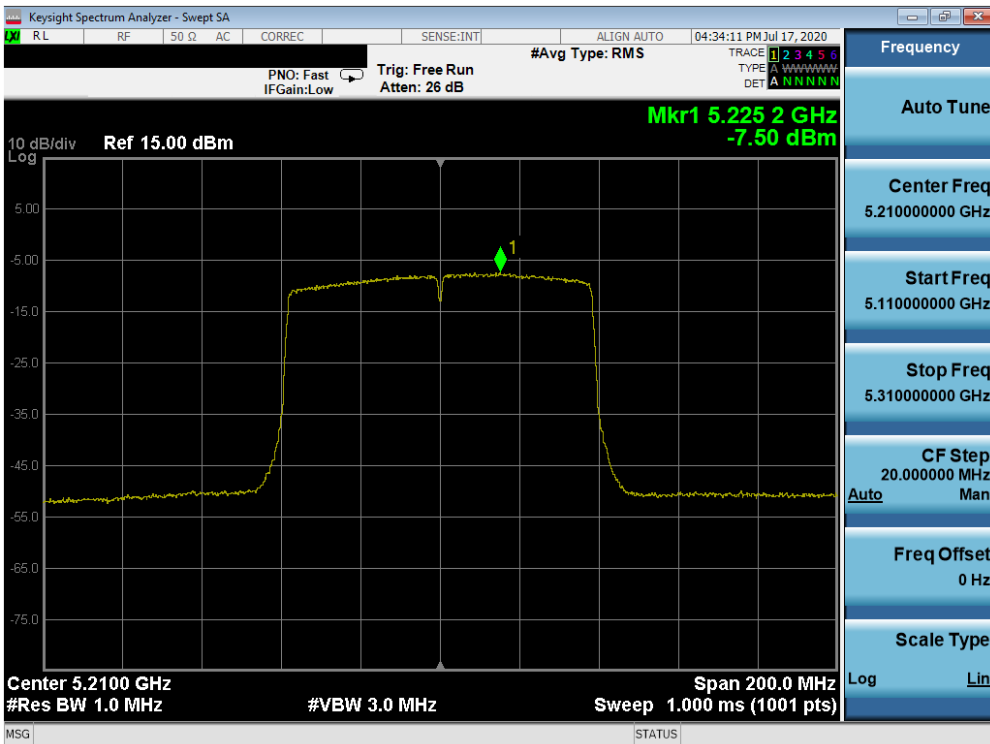


Plot 7-331. Power Spectral Density Plot ANT4 (40MHz BW 802.11ax (UNII Band 1) – Ch. 38)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 199 of 344

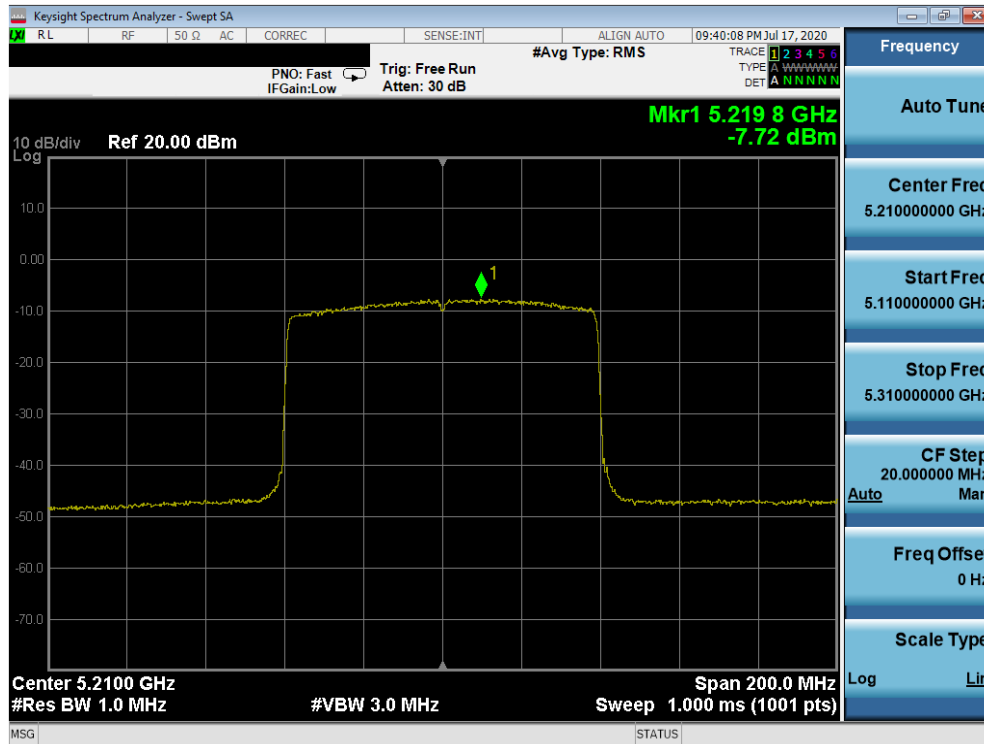


Plot 7-332. Power Spectral Density Plot ANT4 (40MHz BW 802.11ax (UNII Band 1) – Ch. 46)

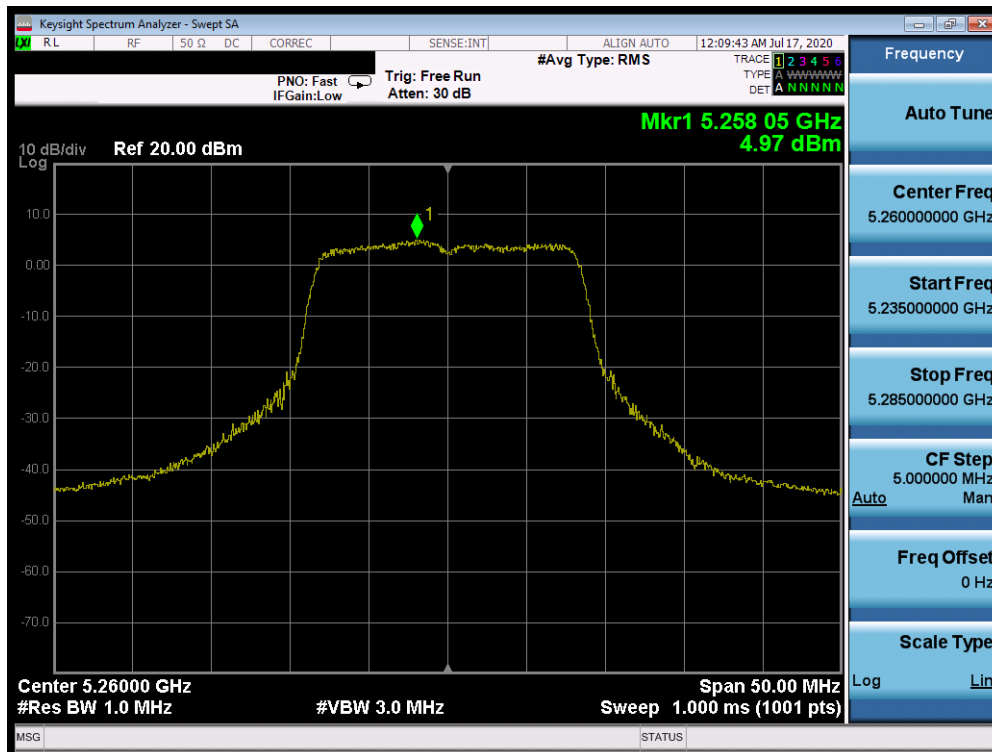


Plot 7-333. Power Spectral Density Plot ANT4 (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 200 of 344



Plot 7-334. Power Spectral Density Plot ANT4 (80MHz BW 802.11ax (UNII Band 1) – Ch. 42)



Plot 7-335. Power Spectral Density Plot ANT4 (802.11a (UNII Band 2A) – Ch. 52)

FCC ID: A3LSMH204V	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2004140062-08.A3L	Test Dates: 4/29 - 8/12/2020	EUT Type: Indoor Customer Premises Equipment (CPE)		Page 201 of 344