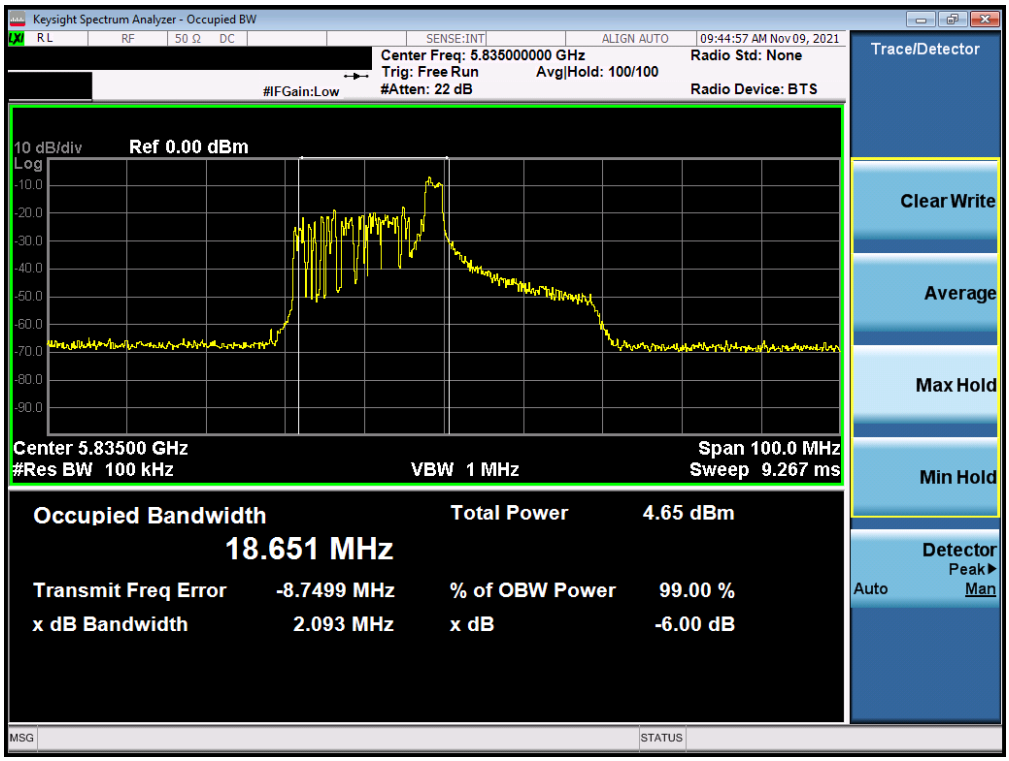
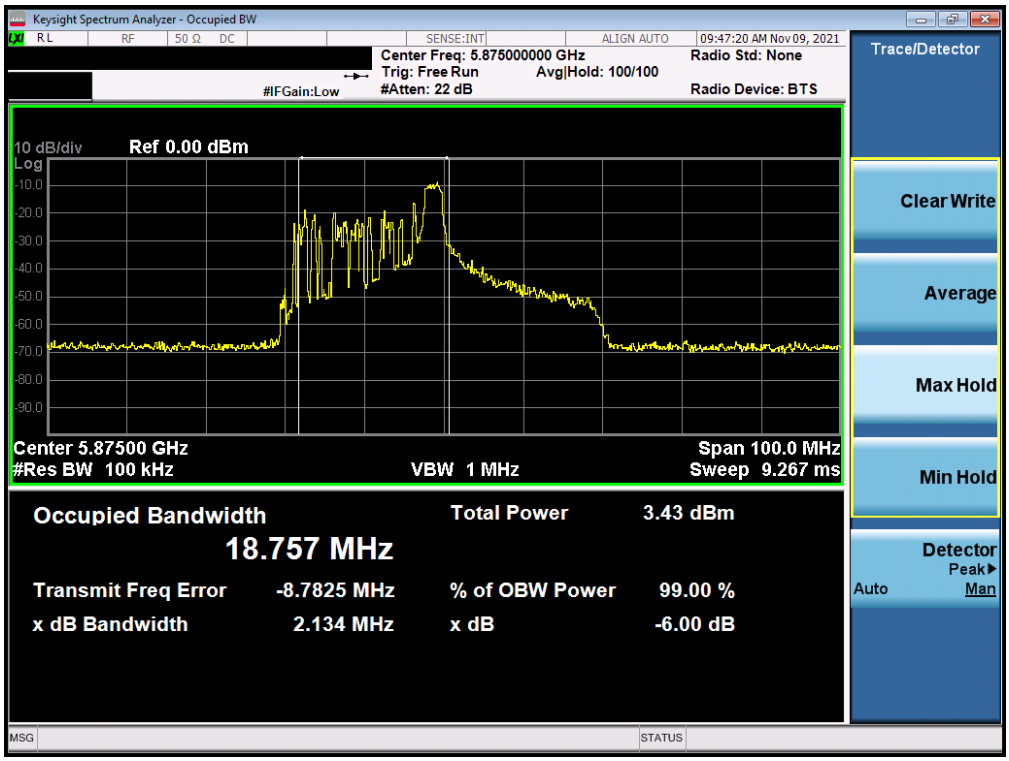
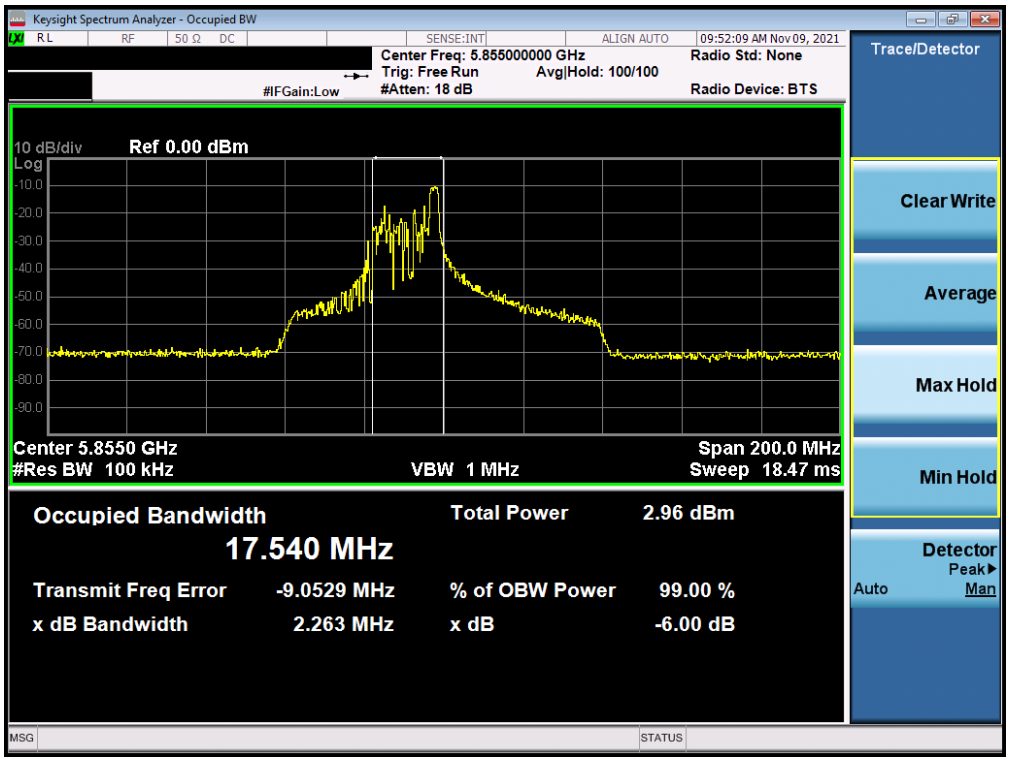


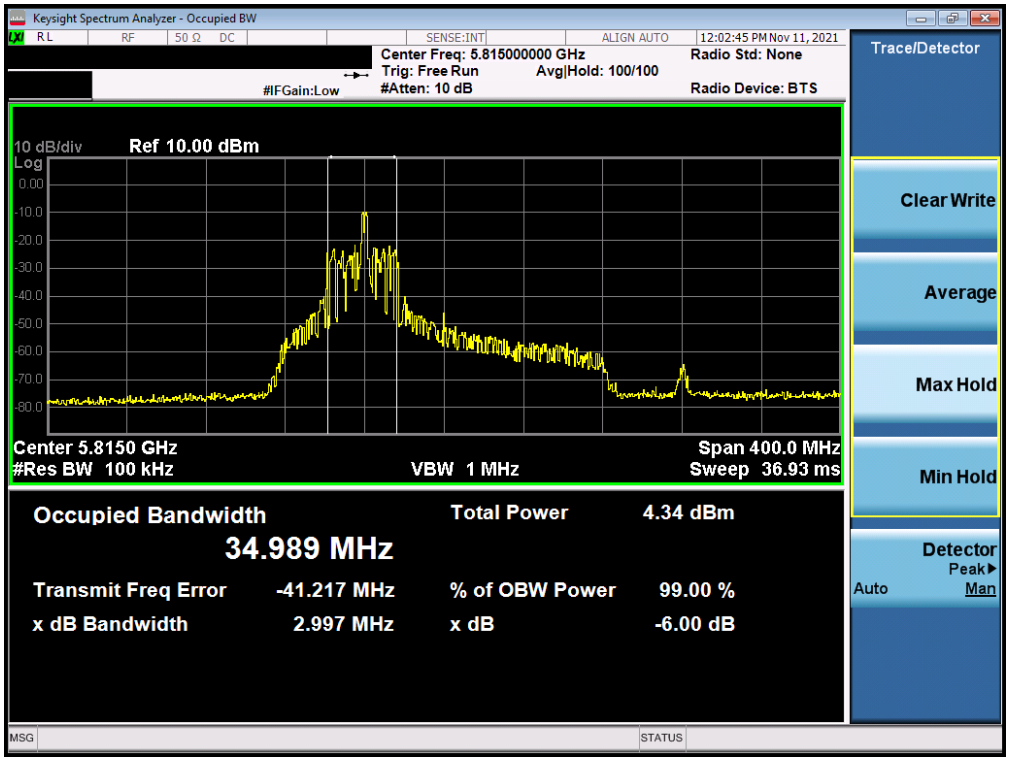
Plot 7-110. 6dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3/4) – Ch. 167)



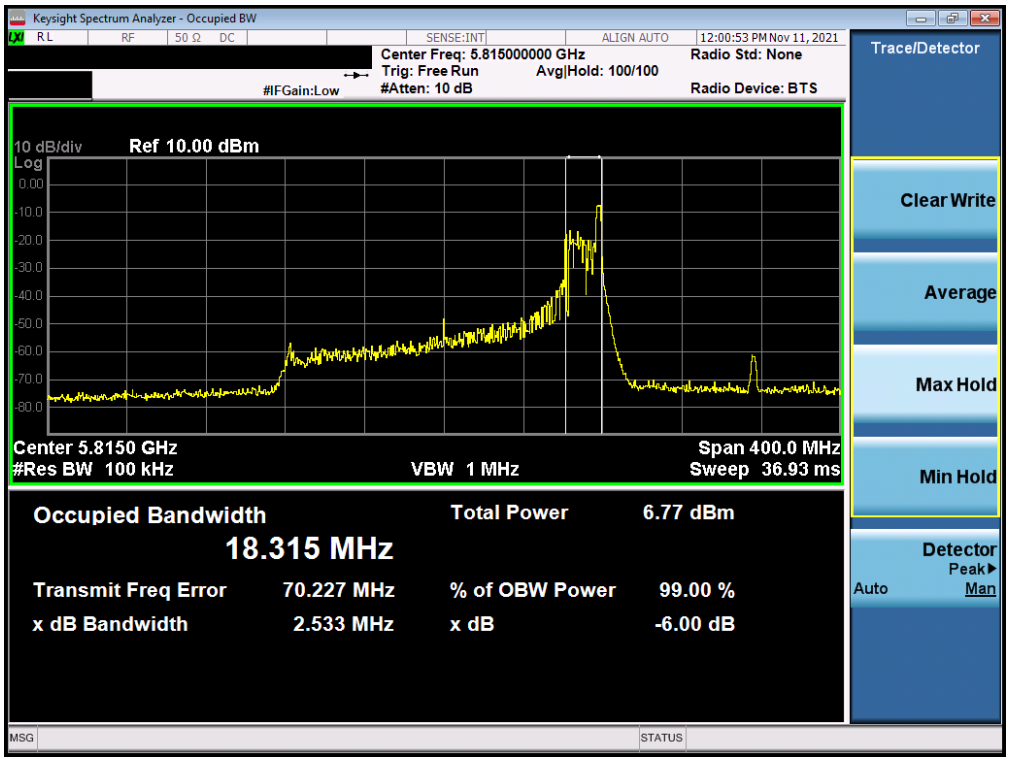
Plot 7-111. 6dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 4) – Ch. 175)



Plot 7-112. 6dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 3/4) – Ch. 171)



Plot 7-113. 6dB Bandwidth Plot MIMO ANT1 (160MHz BW (L) 802.11ax – 996 Tones (UNII Band 3/4) – Ch. 163)

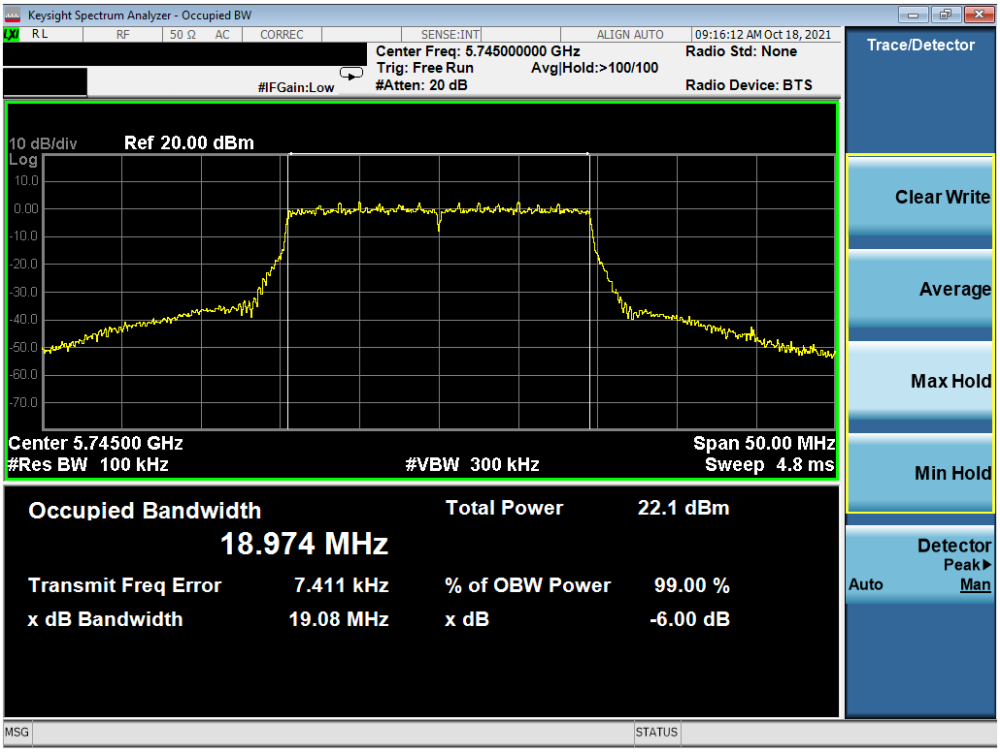


Plot 7-114. 6dB Bandwidth Plot MIMO ANT1 (160MHz BW (U) 802.11ax – 996 Tones (UNII Band 3/4) – Ch. 163)

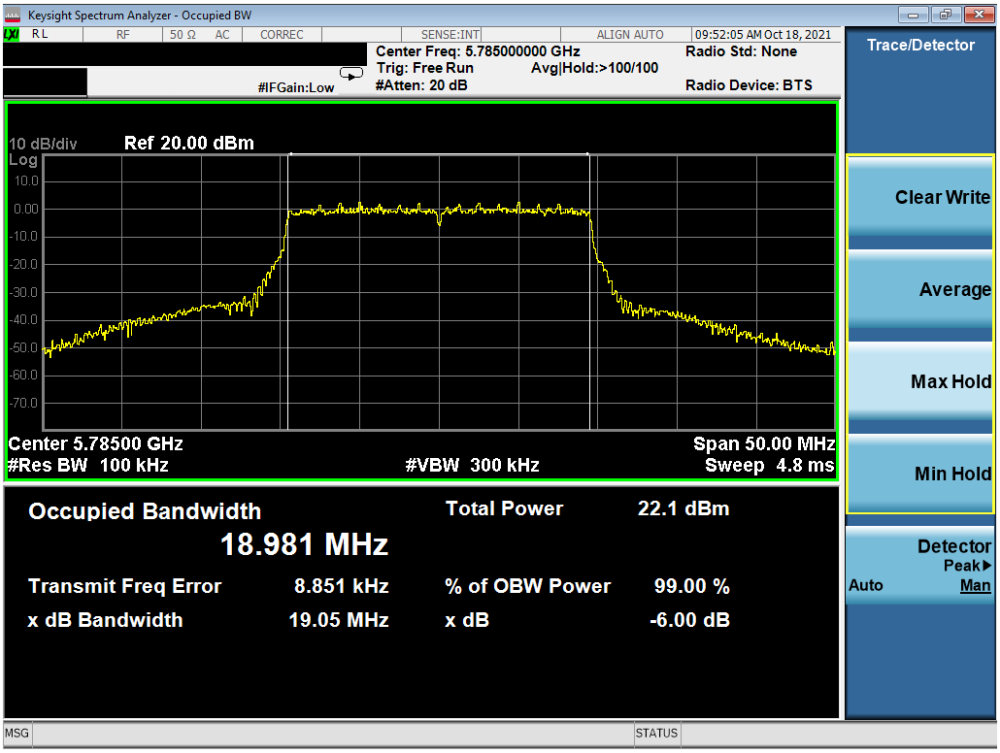
MIMO Antenna-1 6 dB Bandwidth Measurements (Full Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured 6dB Bandwidth [MHz]
Band 3	5745	149	ax (20MHz)	242T	MCS0	19.08
	5785	157	ax (20MHz)	242T	MCS0	19.05
	5825	165	ax (20MHz)	242T	MCS0	18.98
	5755	151	ax (40MHz)	484T	MCS0	37.64
	5795	159	ax (40MHz)	484T	MCS0	37.73
	5775	155	ax (80MHz)	996T	MCS0	77.37

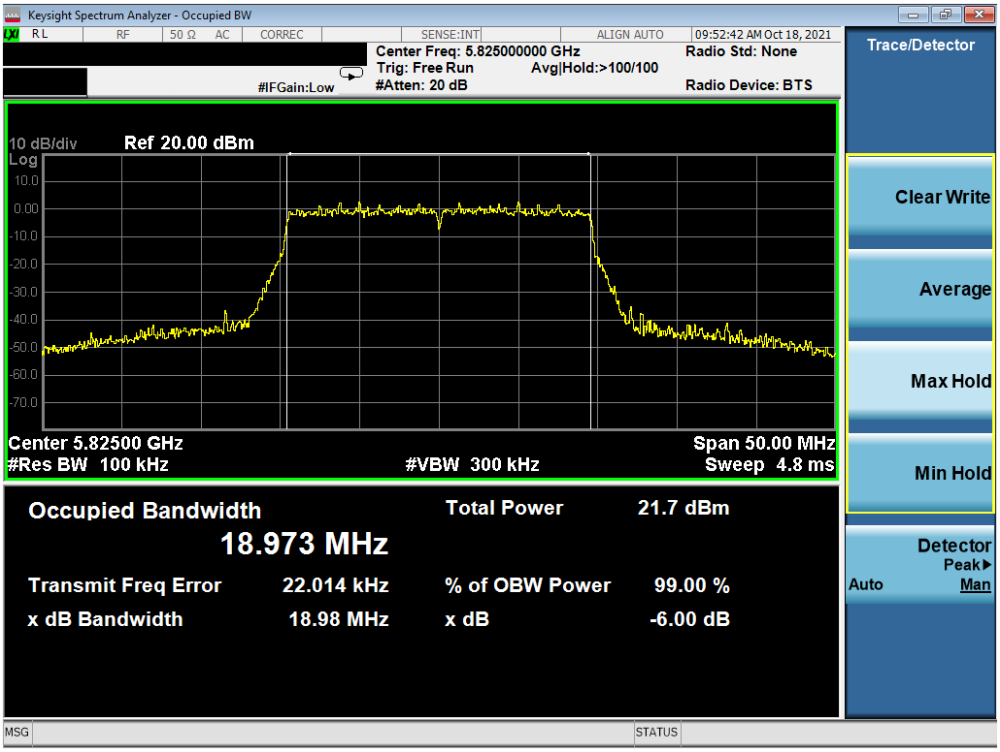
Table 7-8. Conducted Bandwidth Measurements MIMO ANT1 (Full Tones)



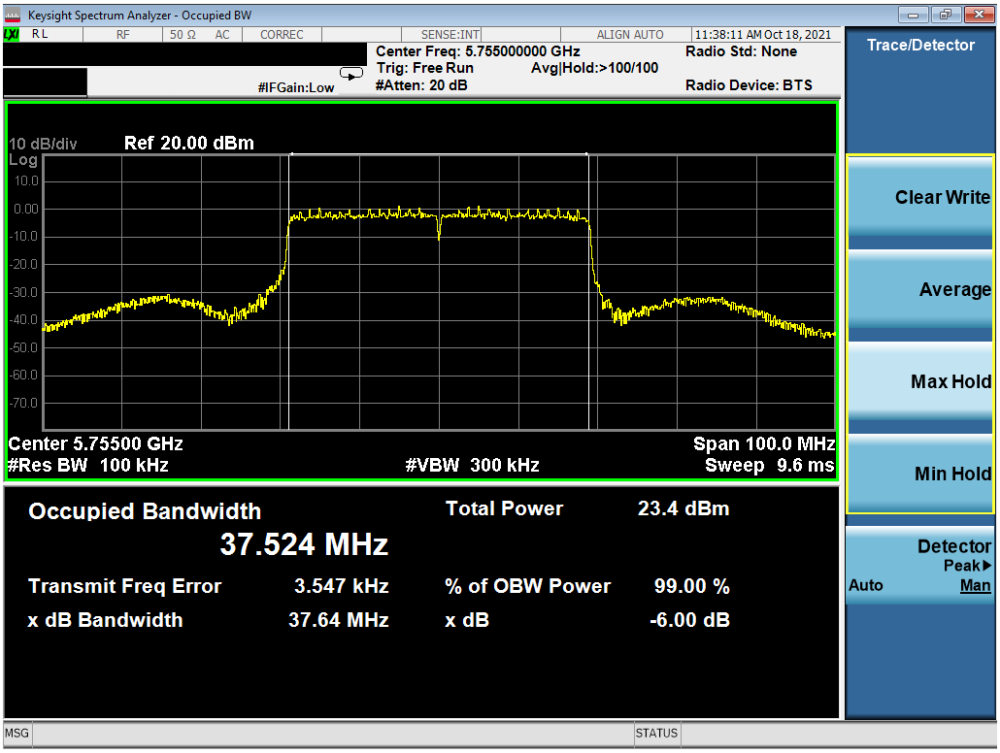
Plot 7-115. 6dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 242 Tones (UNII Band 3) – Ch. 149)



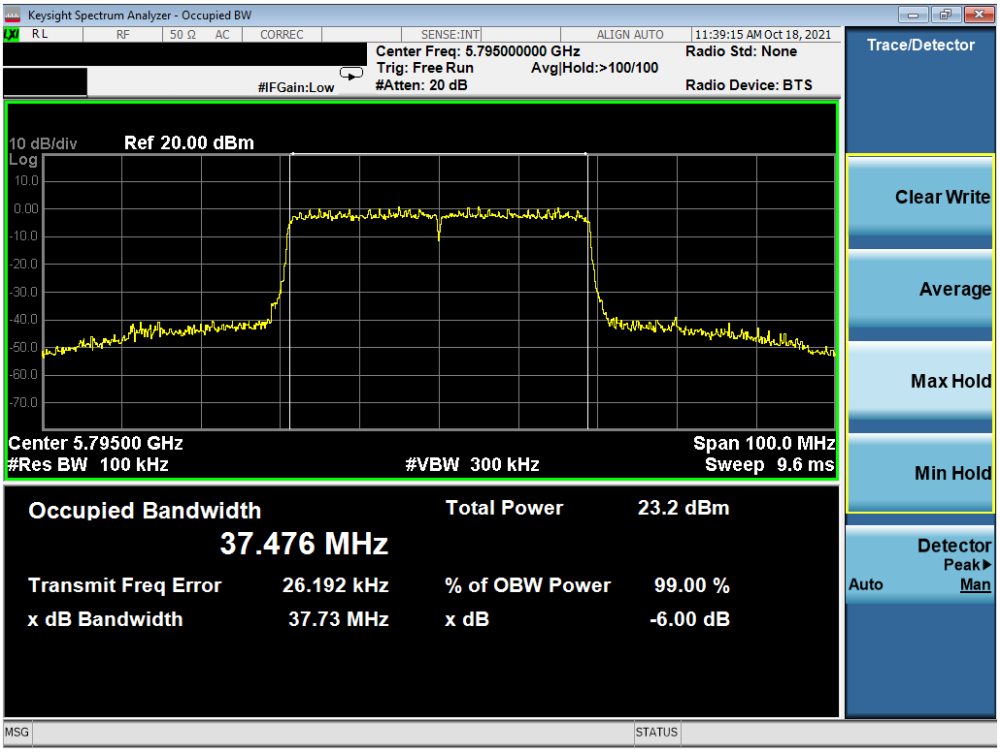
Plot 7-116. 6dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 242 Tones (UNII Band 3) – Ch. 157)



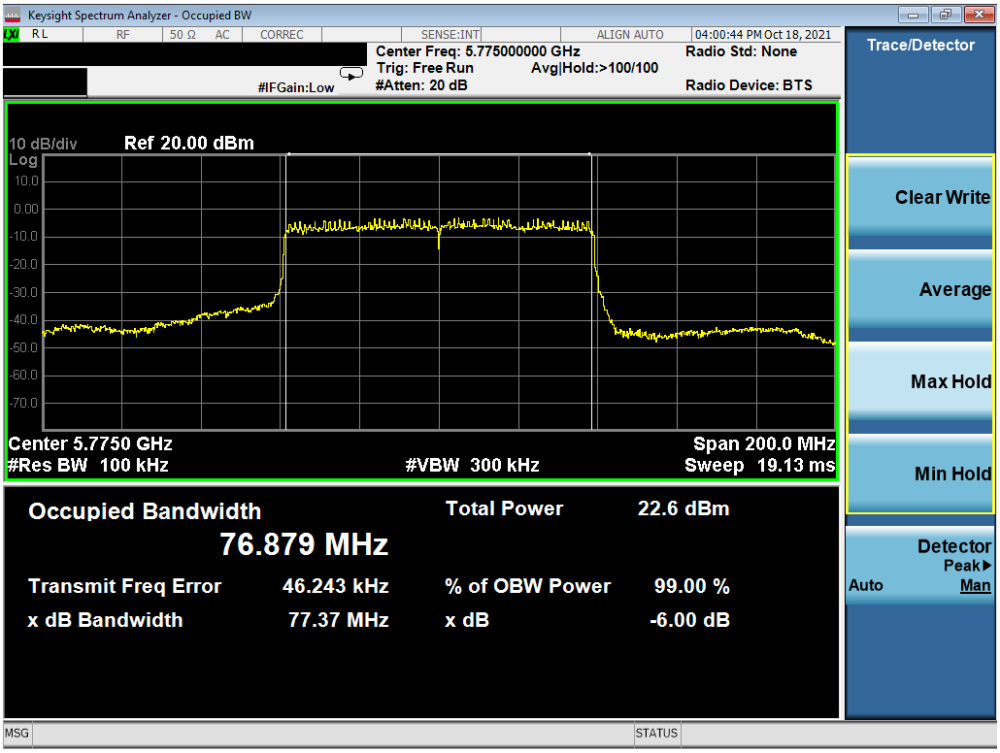
Plot 7-117. 6dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 242 Tones (UNII Band 3) – Ch. 165)



Plot 7-118. 6dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 484 Tones (UNII Band 3) – Ch. 151)



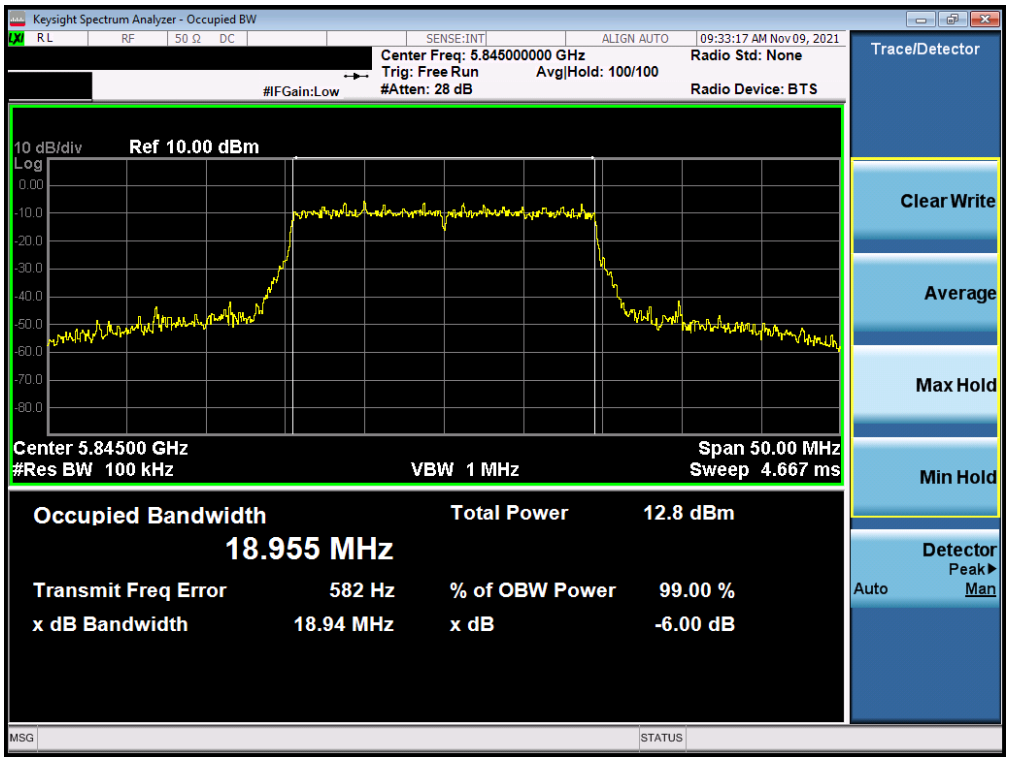
Plot 7-119. 6dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 484 Tones (UNII Band 3) – Ch. 159)



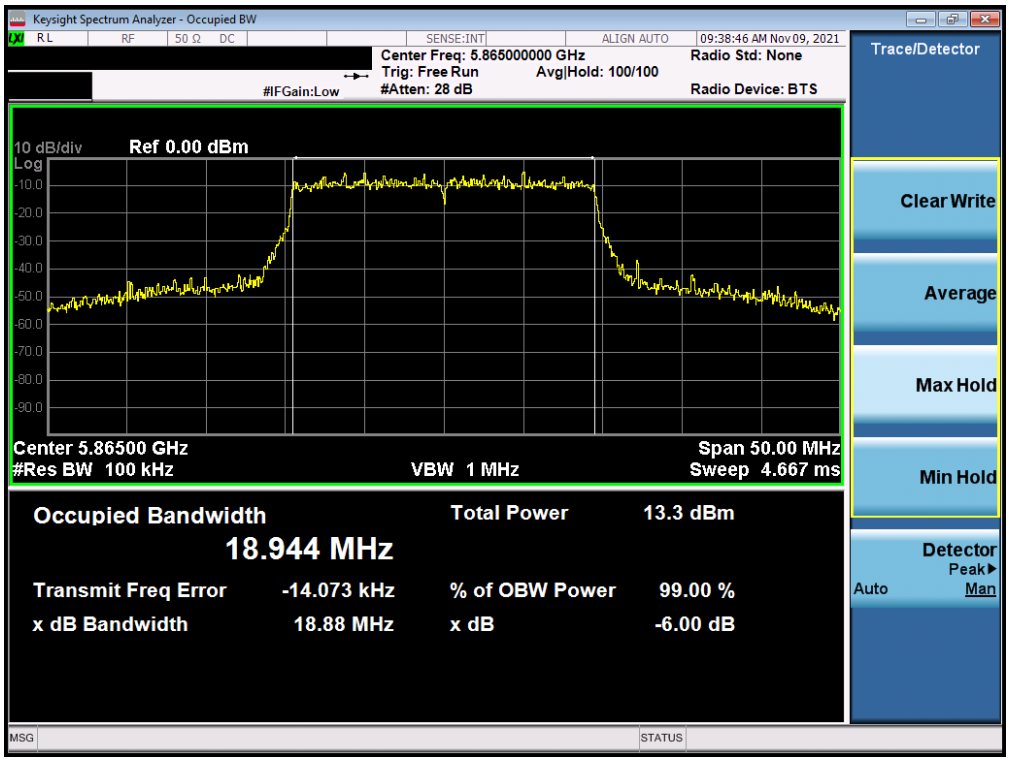
Plot 7-120. 6dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax – 996 Tones (UNII Band 3) – Ch. 155)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured 6dB Bandwidth [MHz]
Band 3/4	5845	169	ax (20MHz)	242T	MCS0	18.94
Band 4	5865	173	ax (20MHz)	242T	MCS0	18.88
	5885	177	ax (20MHz)	242T	MCS0	18.97
Band 3/4	5835	167	ax (40MHz)	484T	MCS0	37.20
Band 4	5875	175	ax (40MHz)	484T	MCS0	37.56
Band 3/4	5855	171	ax (80MHz)	996T	MCS0	76.88
	5815	163	ax (160MHz L)	996T	MCS0	77.30
	5815	163	ax (160MHz U)	996T	MCS0	78.02

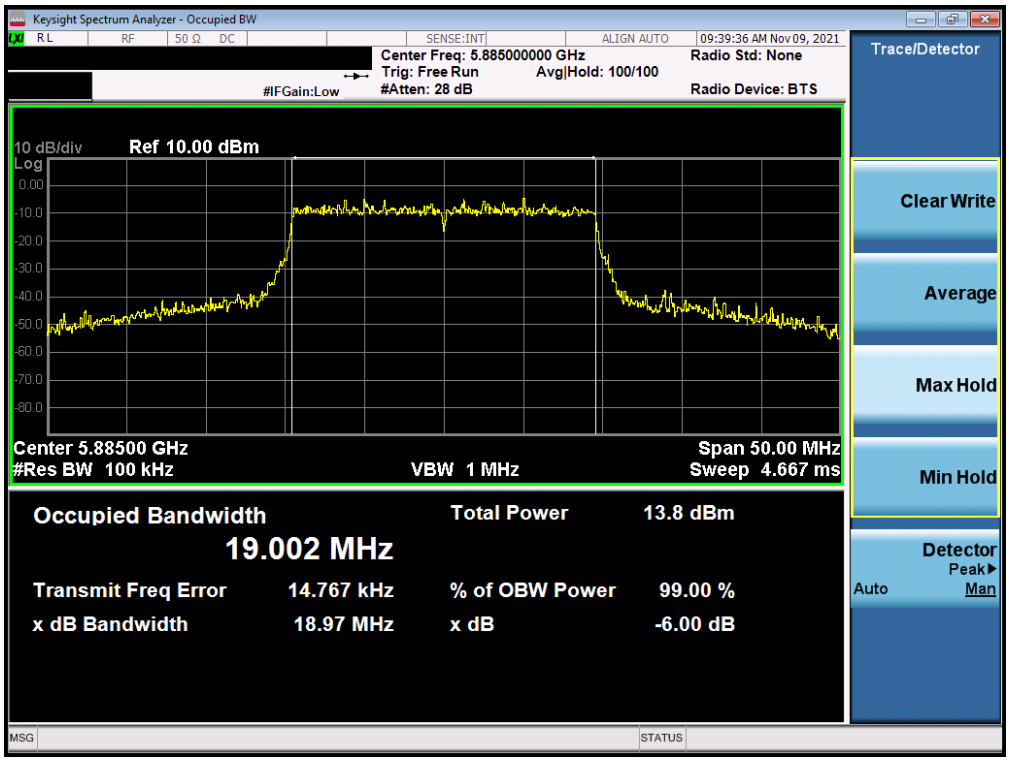
Table 7-9. Conducted Bandwidth Measurements MIMO ANT1 (Full Tones)



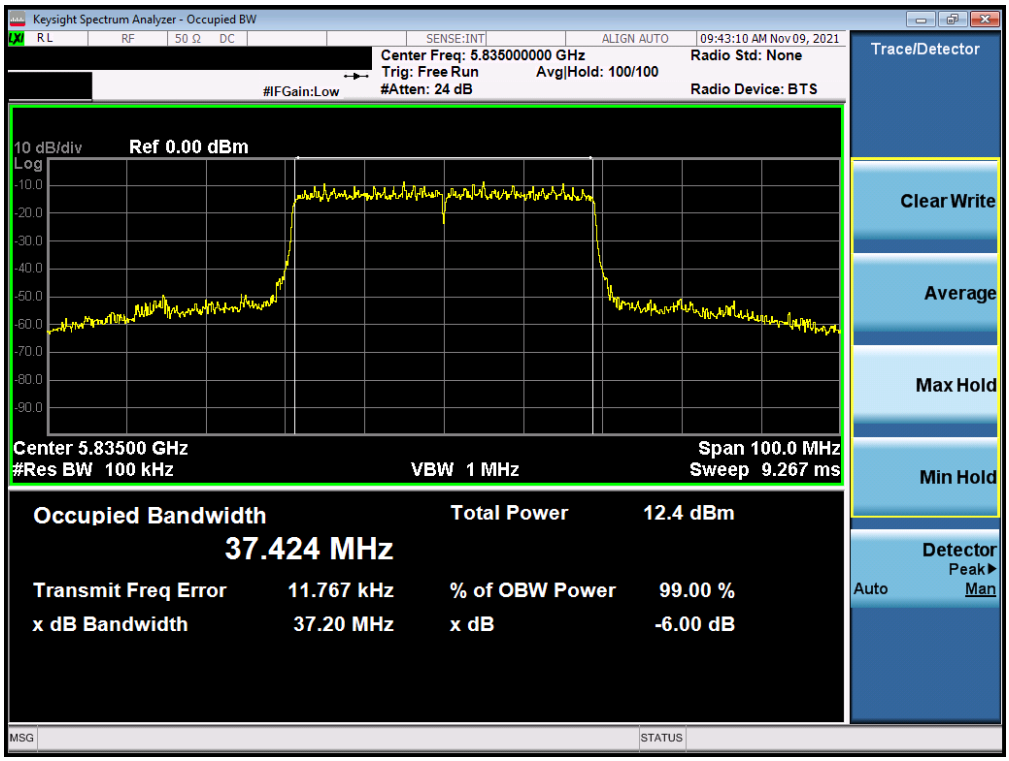
Plot 7-121. 6dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 242 Tones (UNII Band 3/4) – Ch. 169)



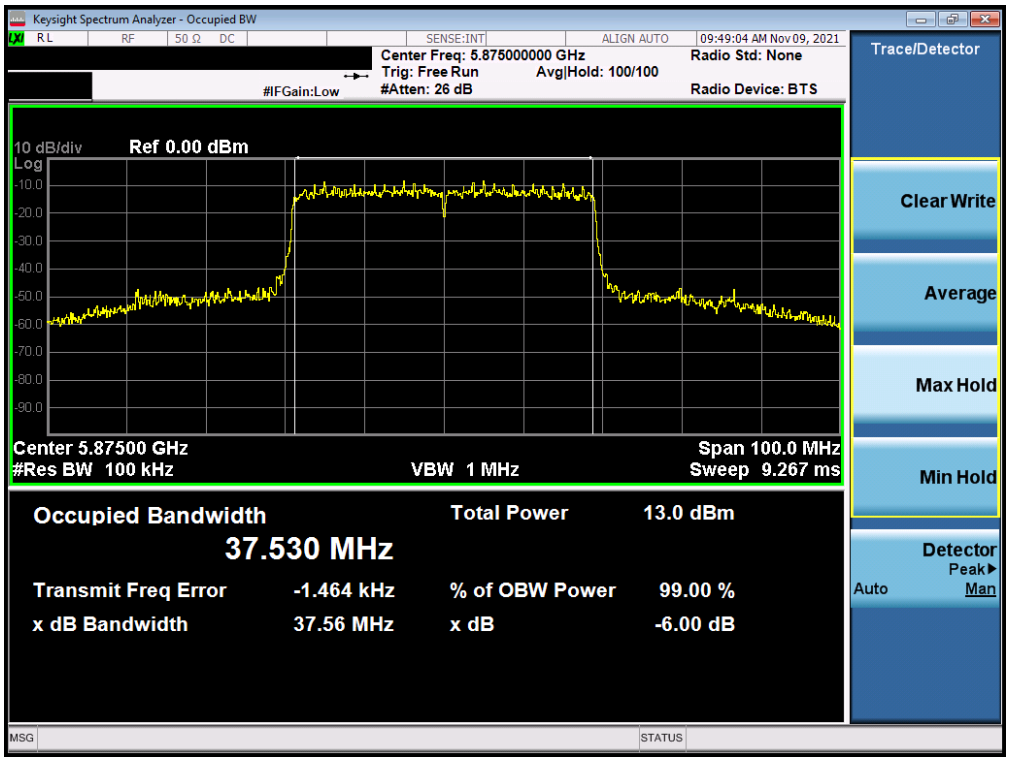
Plot 7-122. 6dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 242 Tones (UNII Band 4) – Ch. 173)



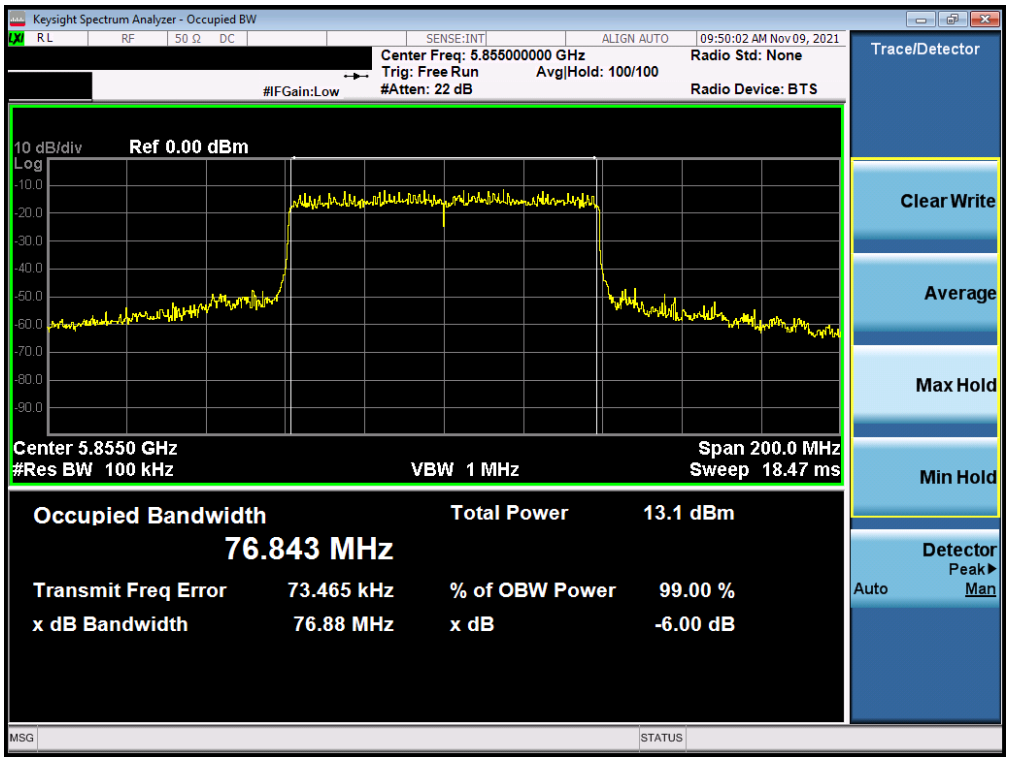
Plot 7-123. 6dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 242 Tones (UNII Band 4) – Ch. 177)



Plot 7-124. 6dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 484 Tones (UNII Band 3/4) – Ch. 167)

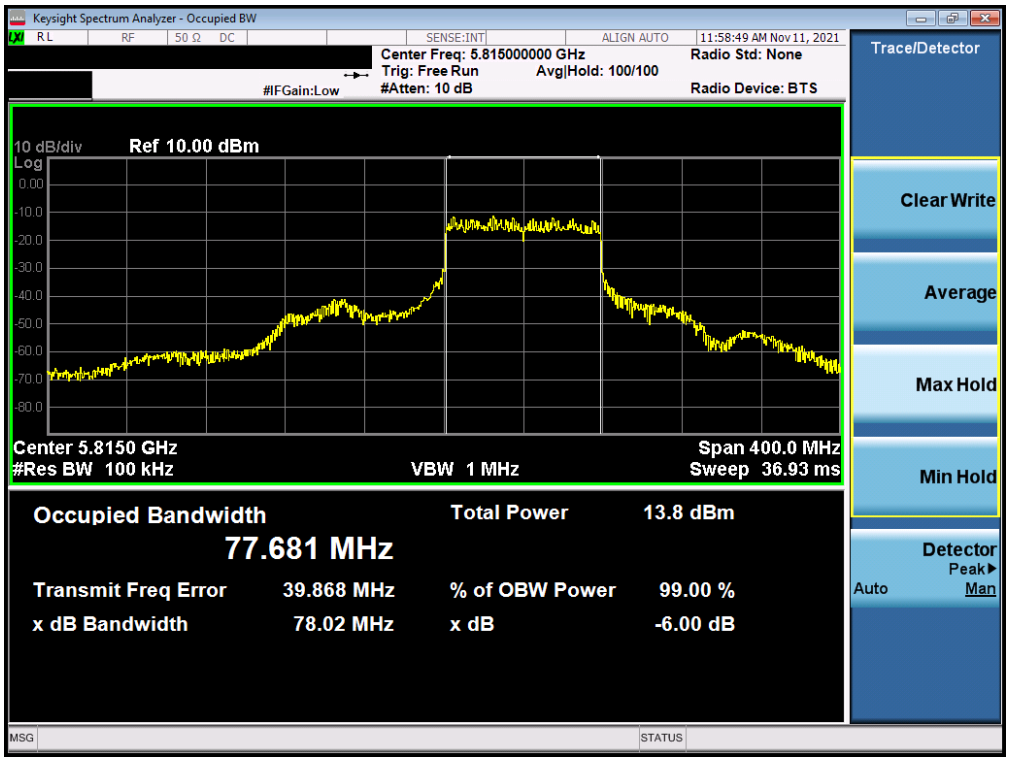


Plot 7-125. 6dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 484 Tones (UNII Band 4) – Ch. 175)



Plot 7-126. 6dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax – 996 Tones (UNII Band 3/4) – Ch. 171)

Plot 7-127. 6dB Bandwidth Plot MIMO ANT1 (160MHz BW (L) 802.11ax – 996 Tones (UNII Band 3/4) – Ch. 163)

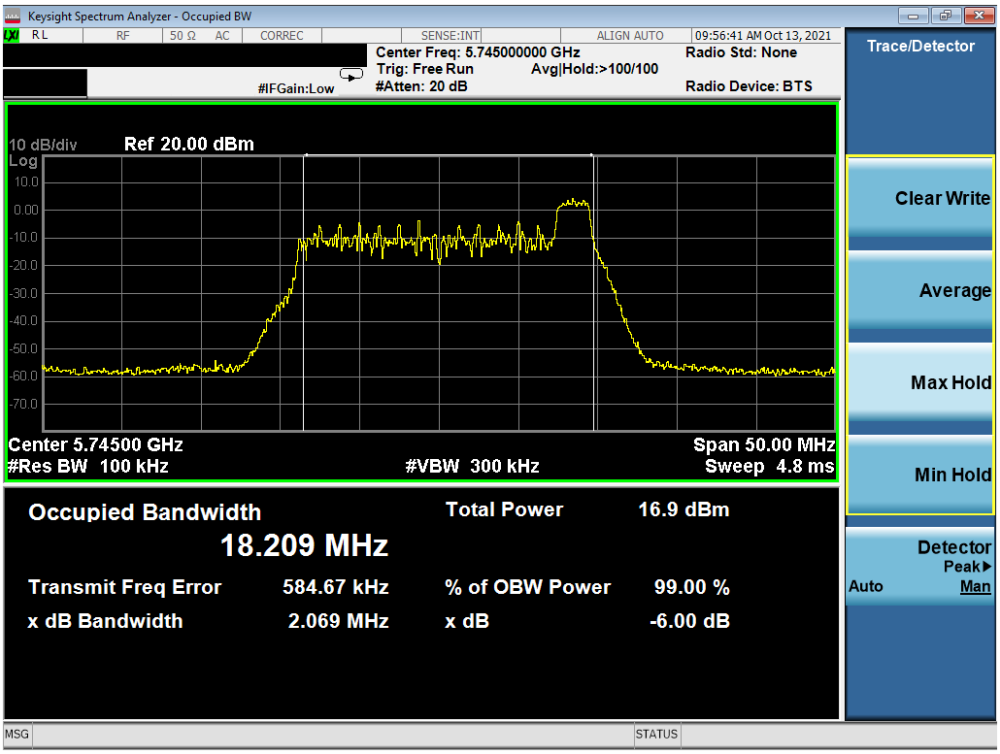


Plot 7-128. 6dB Bandwidth Plot MIMO ANT1 (160MHz BW (U) 802.11ax – 996 Tones (UNII Band 3/4) – Ch. 163)

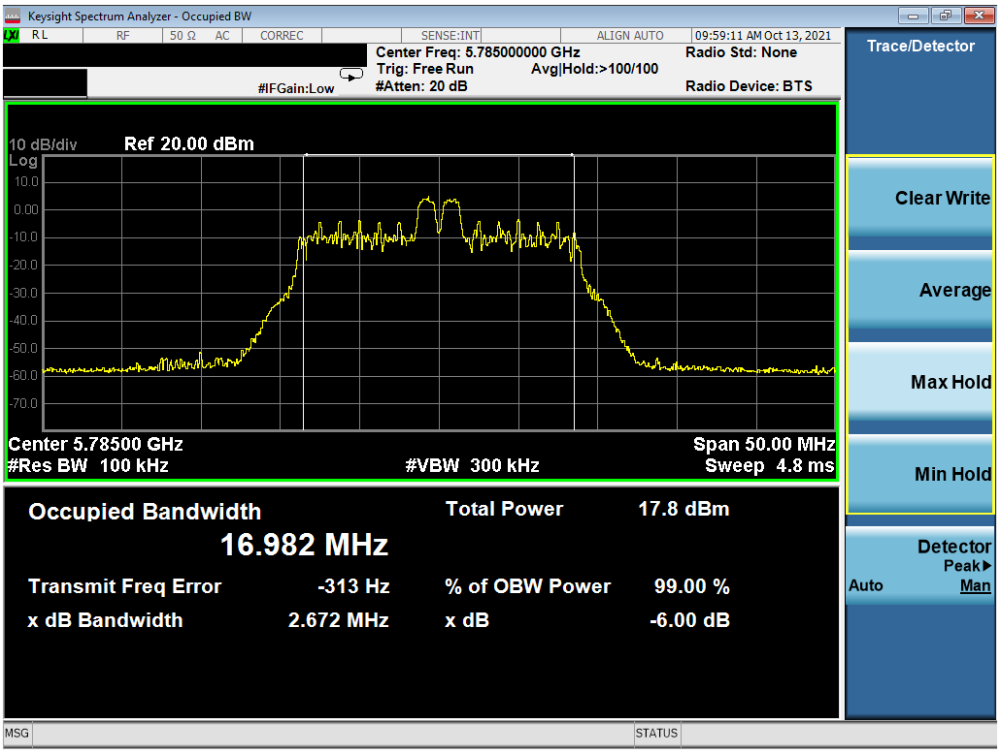
MIMO Antenna-2 6dB Bandwidth Measurements (26 Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured 6dB Bandwidth [MHz]
Band 3	5745	149	ax (20MHz)	26T	MCS0	2.07
	5785	157	ax (20MHz)	26T	MCS0	2.67
	5825	165	ax (20MHz)	26T	MCS0	2.68
	5755	151	ax (40MHz)	26T	MCS0	2.13
	5795	159	ax (40MHz)	26T	MCS0	2.13
	5775	155	ax (80MHz)	26T	MCS0	2.85

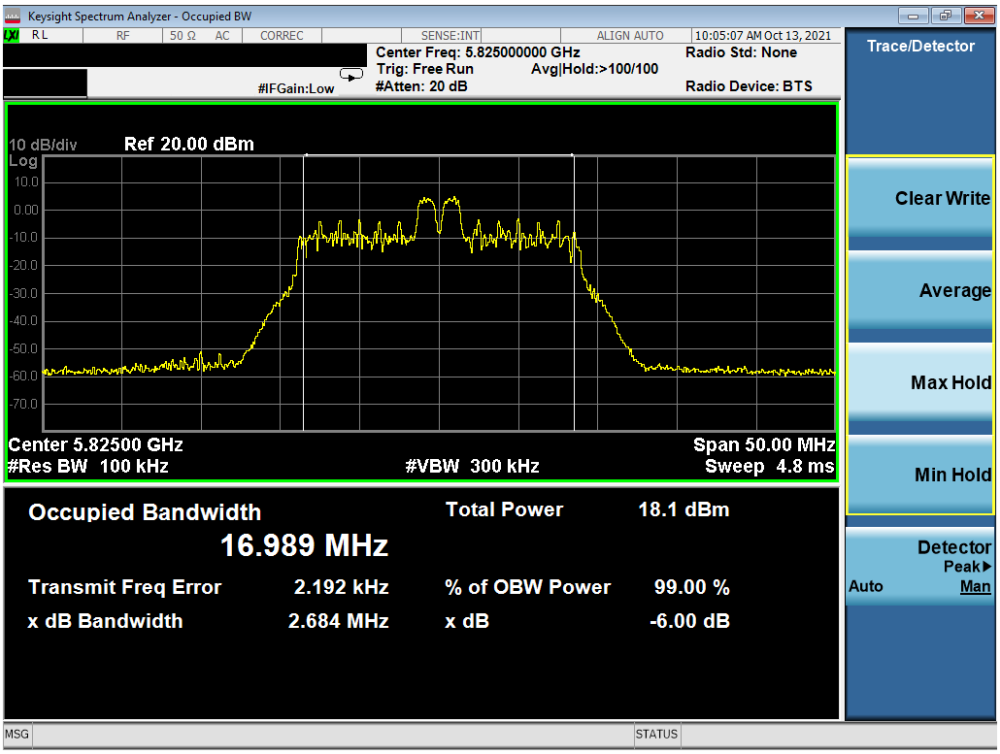
Table 7-10. Conducted Bandwidth Measurements MIMO ANT2 (26 Tones)



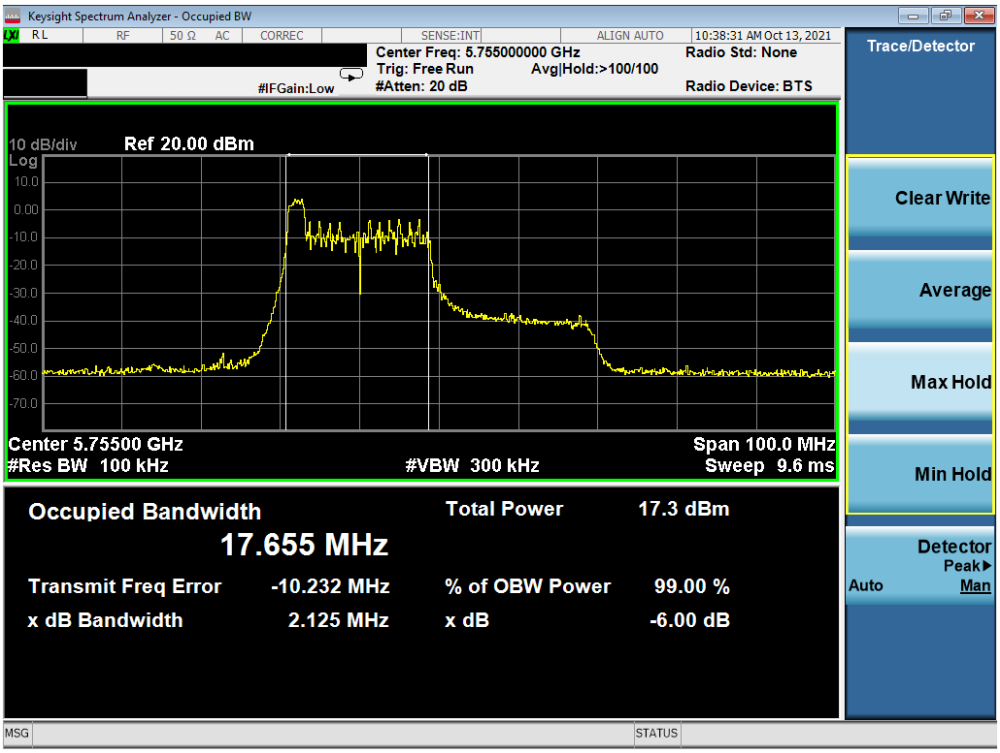
Plot 7-129. 6dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 149)



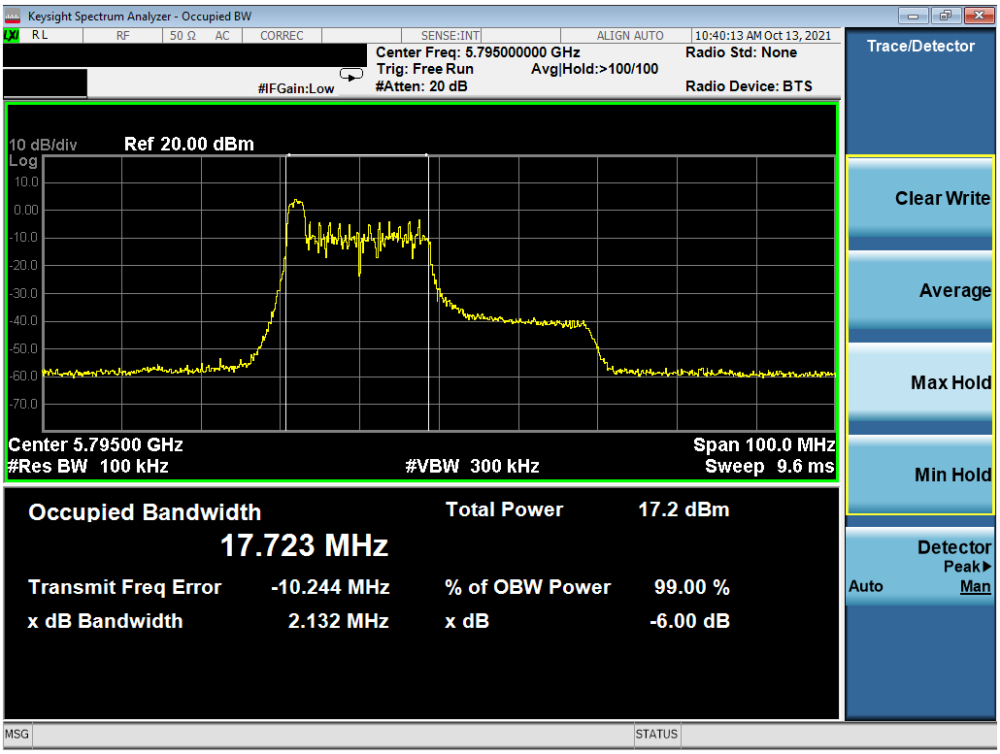
Plot 7-130. 6dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 157)



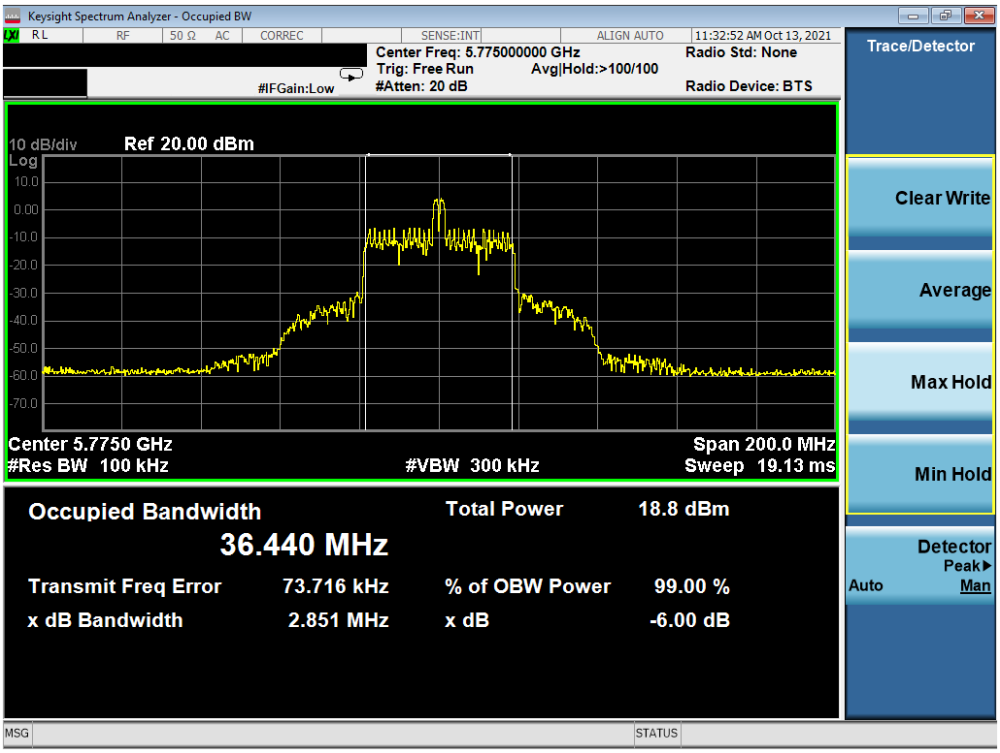
Plot 7-131. 6dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 165)



Plot 7-132. 6dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 151)



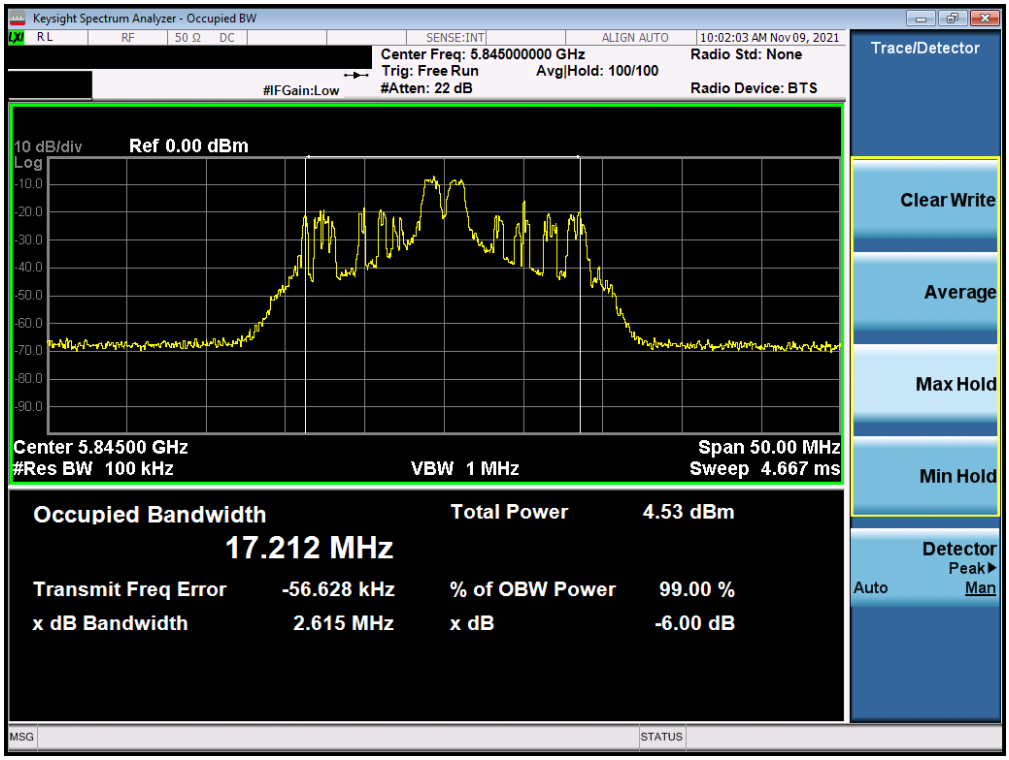
Plot 7-133. 6dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 159)



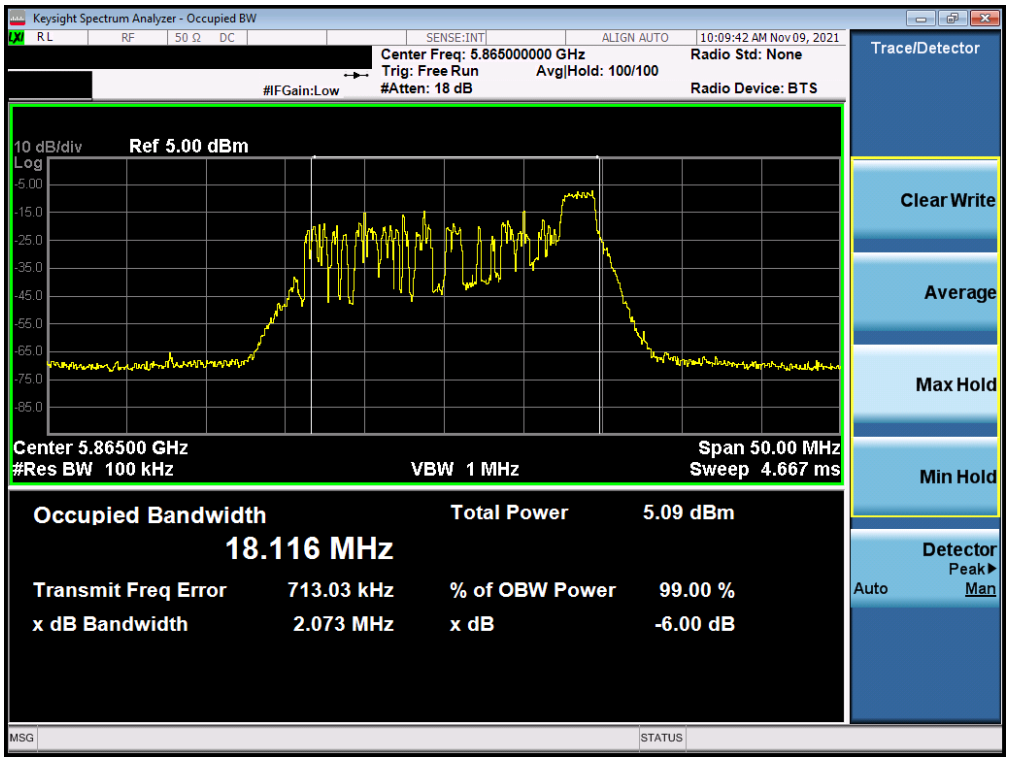
Plot 7-134. 6dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 155)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured 6dB Bandwidth [MHz]
Band 3/4	5845	169	ax (20MHz)	26T	MCS0	2.62
Band 4	5865	173	ax (20MHz)	26T	MCS0	2.07
	5885	177	ax (20MHz)	26T	MCS0	2.58
Band 3/4	5835	167	ax (40MHz)	26T	MCS0	2.20
Band 4	5875	175	ax (40MHz)	26T	MCS0	2.12
Band 3/4	5855	171	ax (80MHz)	26T	MCS0	2.31
	5815	163	ax (160MHz L)	26T	MCS0	3.00
	5815	163	ax (160MHz U)	26T	MCS0	3.00

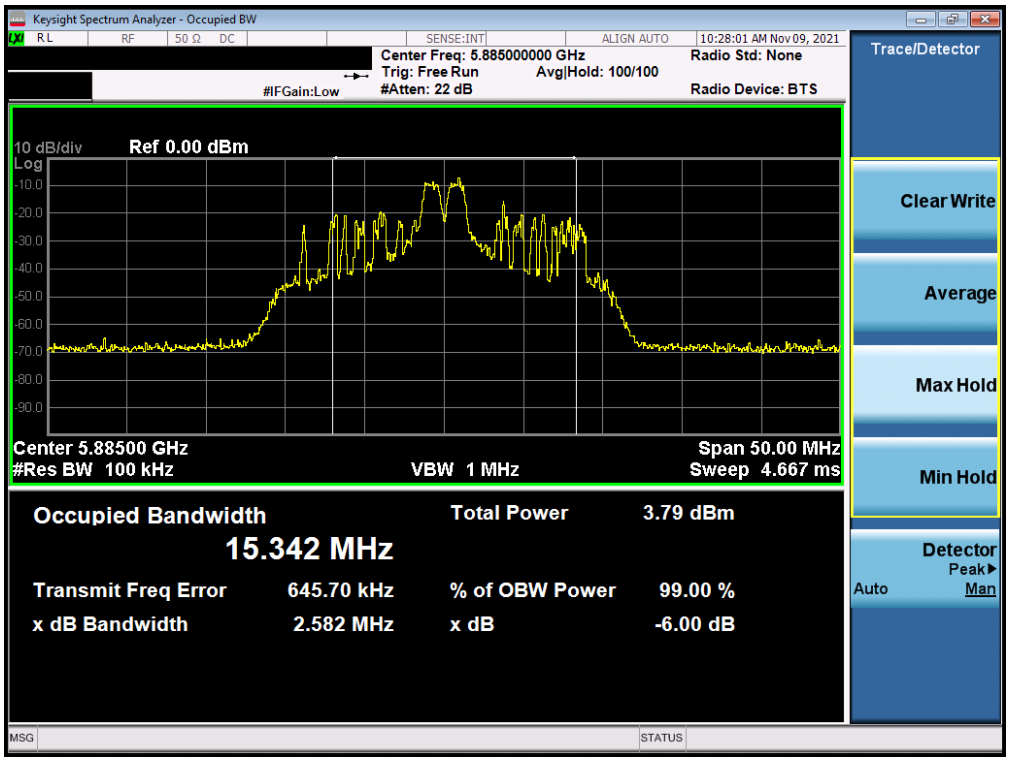
Table 7-11. Conducted Bandwidth Measurements MIMO ANT2 (26 Tones)



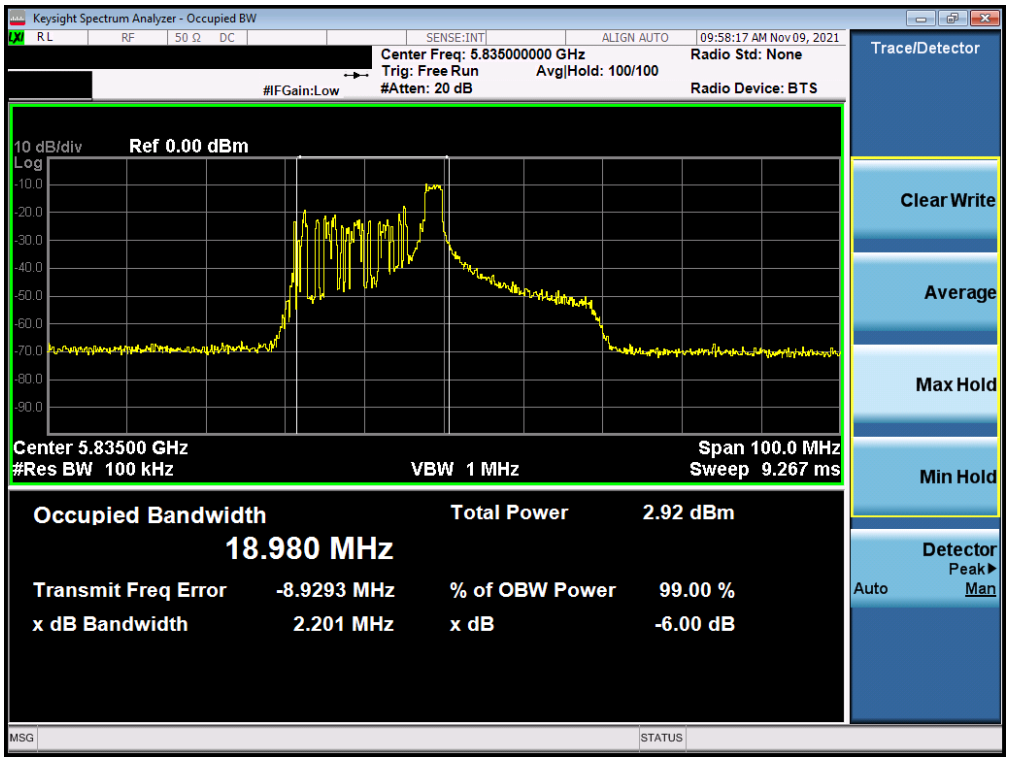
Plot 7-135. 6dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 3/4) – Ch. 169)



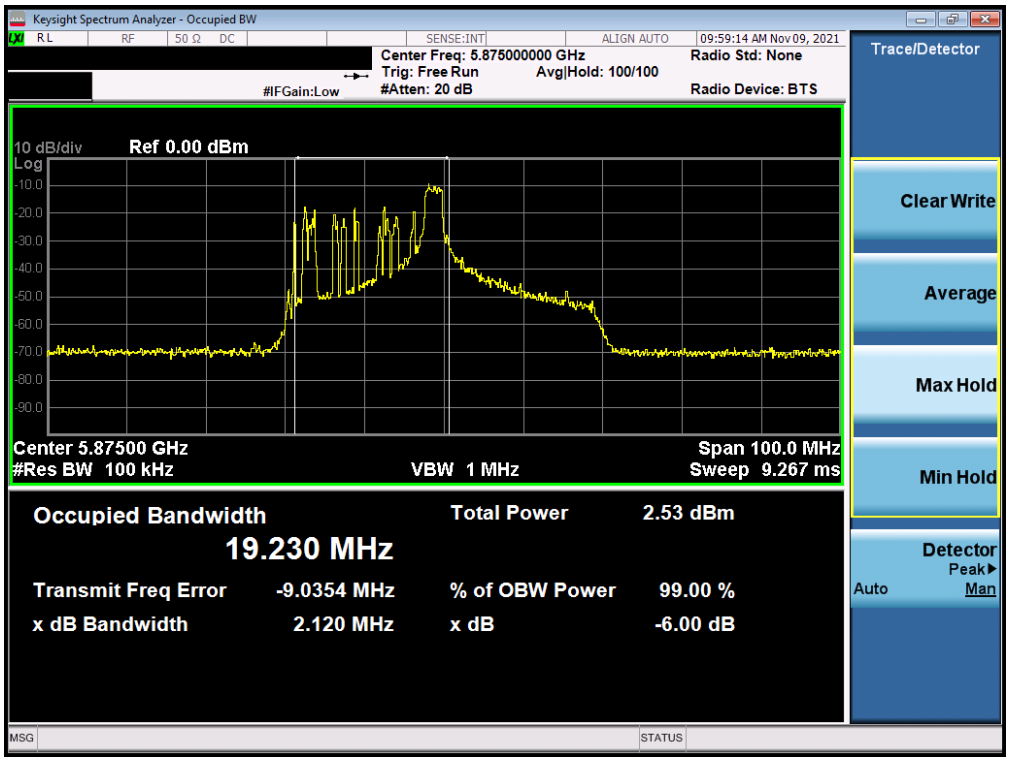
Plot 7-136. 6dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 4) – Ch. 173)



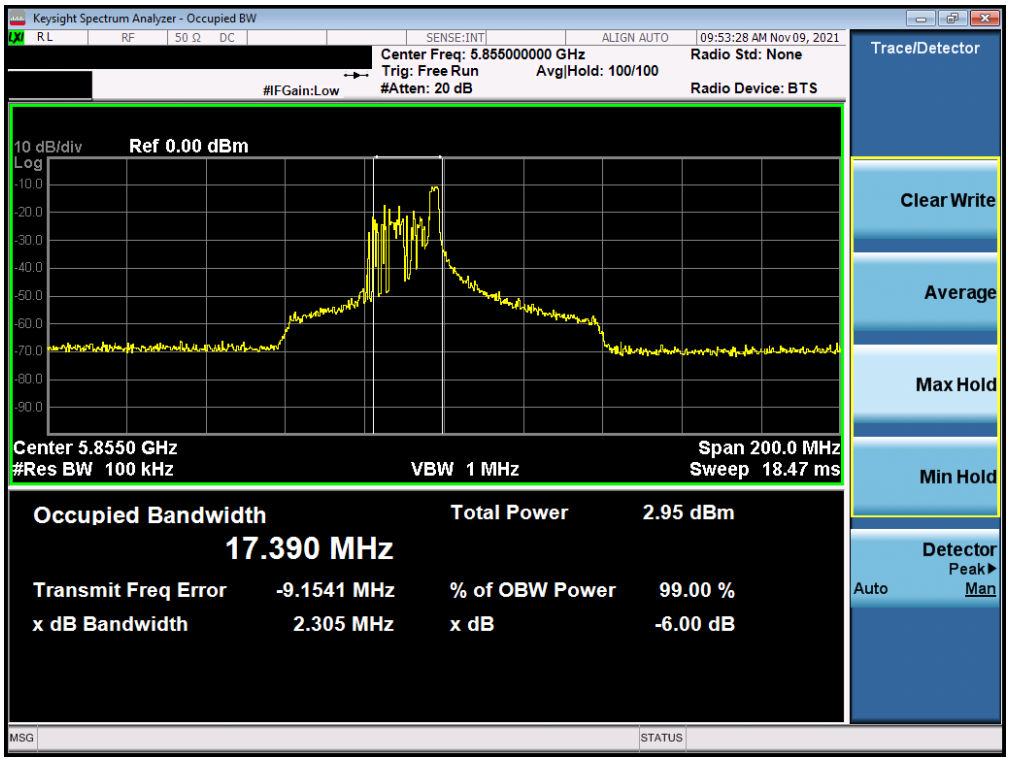
Plot 7-137. 6dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 4) – Ch. 177)



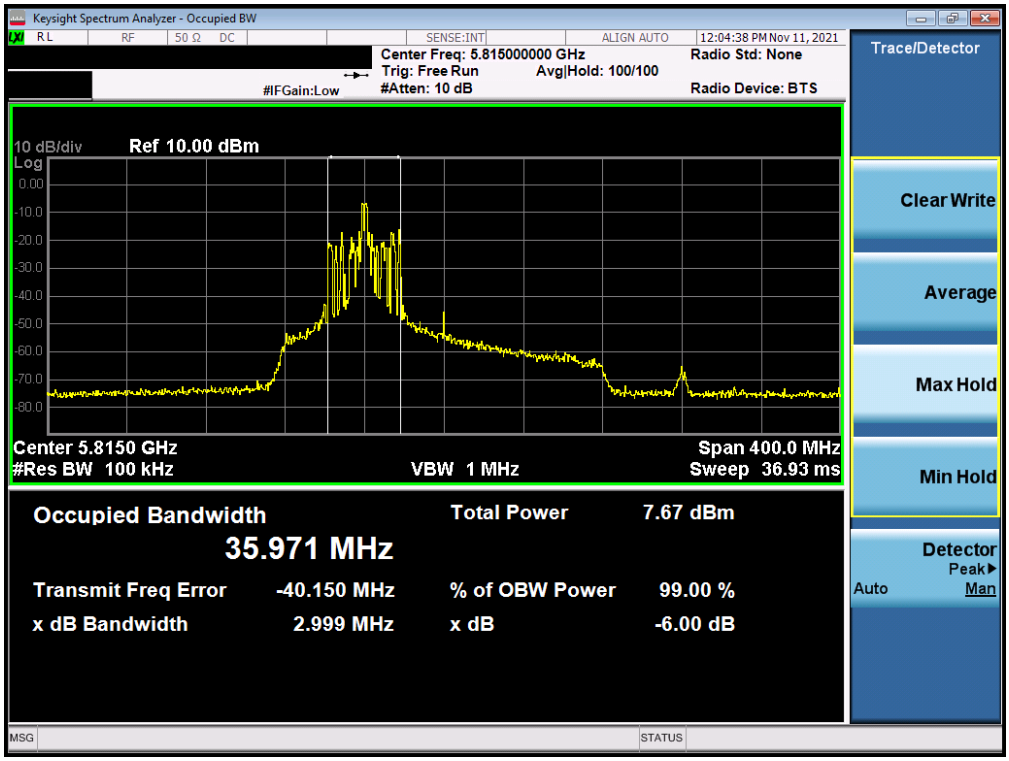
Plot 7-138. 6dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 3/4) – Ch. 167)



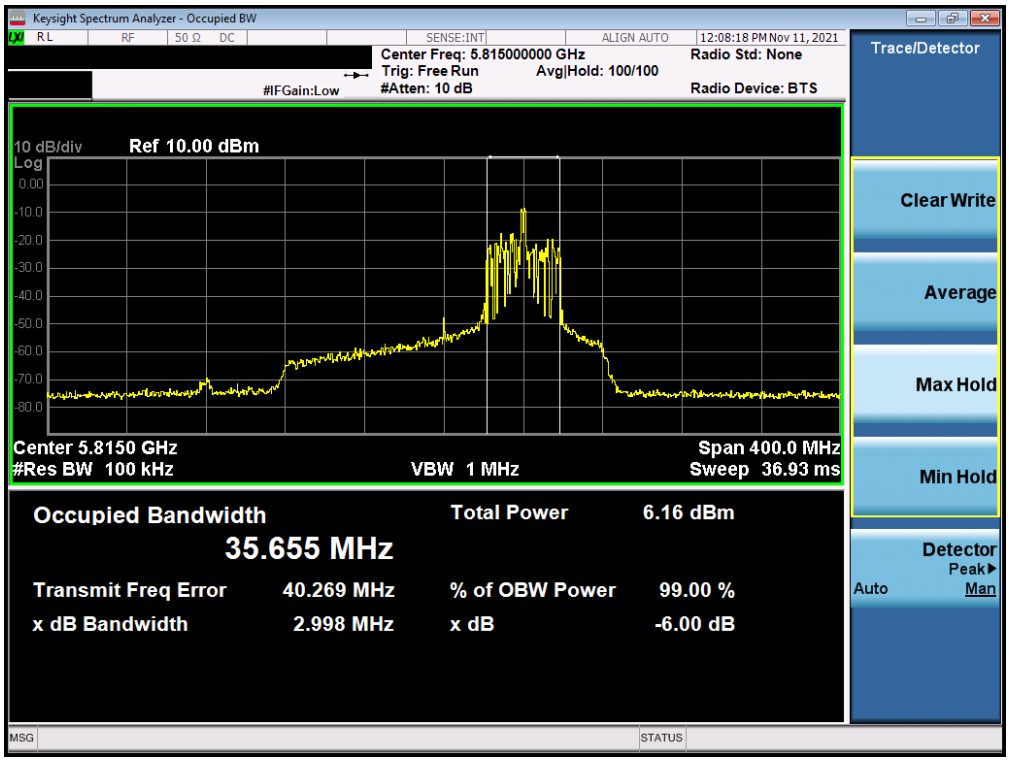
Plot 7-139. 6dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 4) – Ch. 175)



Plot 7-140. 6dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 3/4) – Ch. 171)



Plot 7-141. 6dB Bandwidth Plot MIMO ANT2 (160MHz BW (L) 802.11ax – 26 Tones (UNII Band 3/4) – Ch. 163)

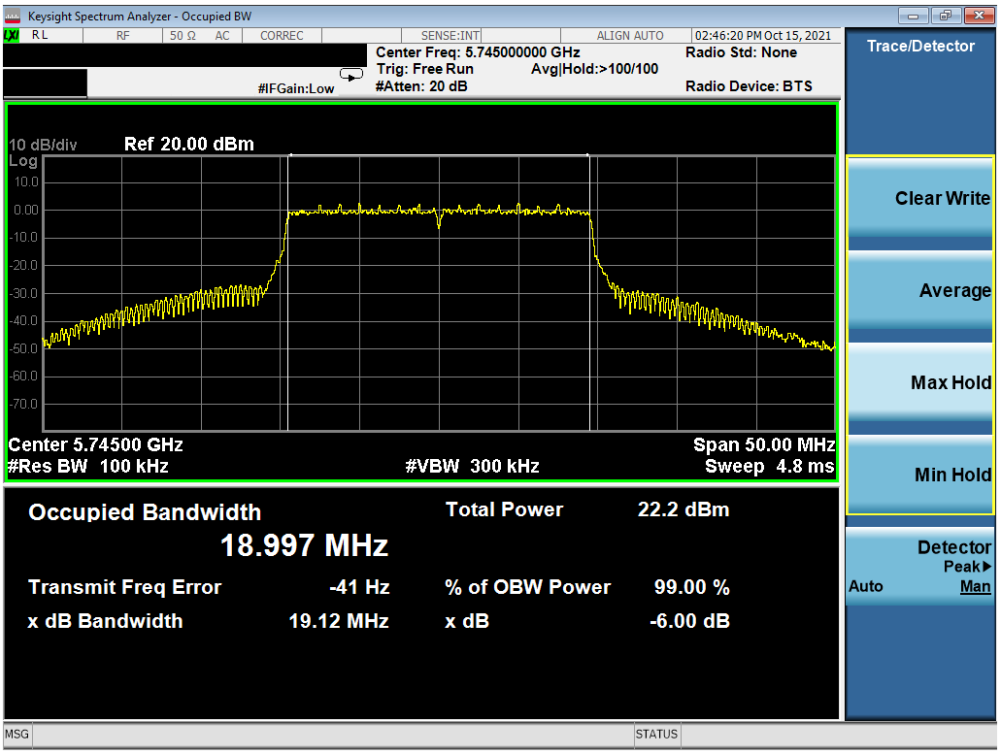


Plot 7-142. 6dB Bandwidth Plot MIMO ANT2 (160MHz BW (U) 802.11ax – 26 Tones (UNII Band 3/4) – Ch. 163)

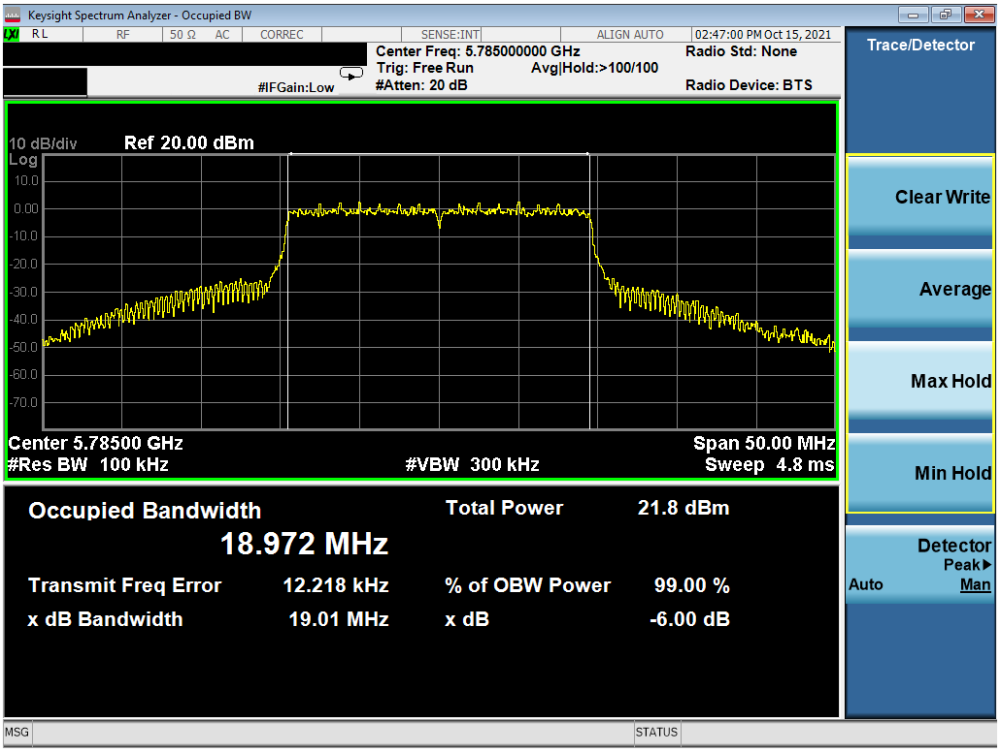
MIMO Antenna-2 6dB Bandwidth Measurements (Full Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured 6dB Bandwidth [MHz]
Band 3	5745	149	ax (20MHz)	242T	MCS0	19.12
	5785	157	ax (20MHz)	242T	MCS0	19.01
	5825	165	ax (20MHz)	242T	MCS0	18.99
	5755	151	ax (40MHz)	484T	MCS0	37.67
	5795	159	ax (40MHz)	484T	MCS0	37.62
	5775	155	ax (80MHz)	996T	MCS0	77.37

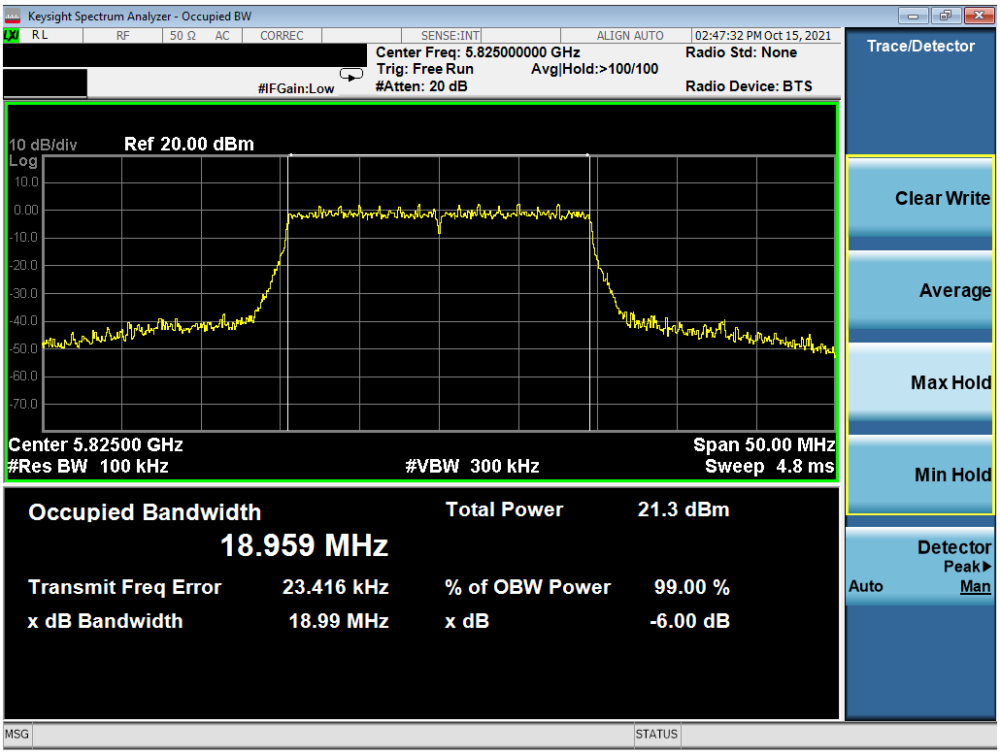
Table 7-12. Conducted Bandwidth Measurements MIMO ANT2 (Full Tones)



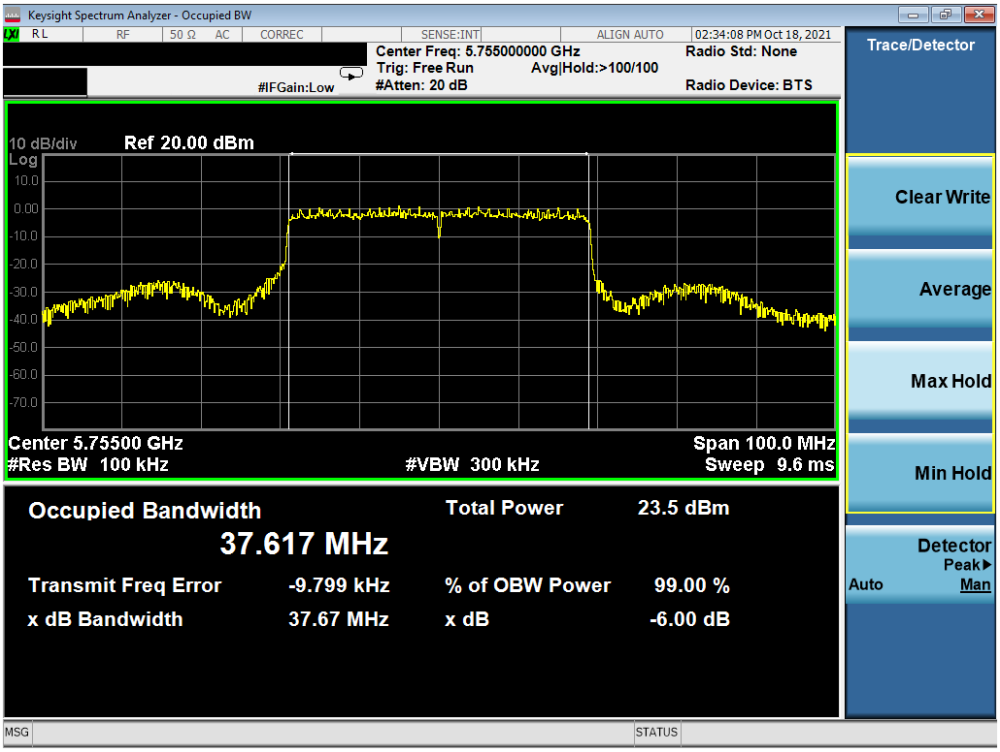
Plot 7-143. 6dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 3) – Ch. 149)



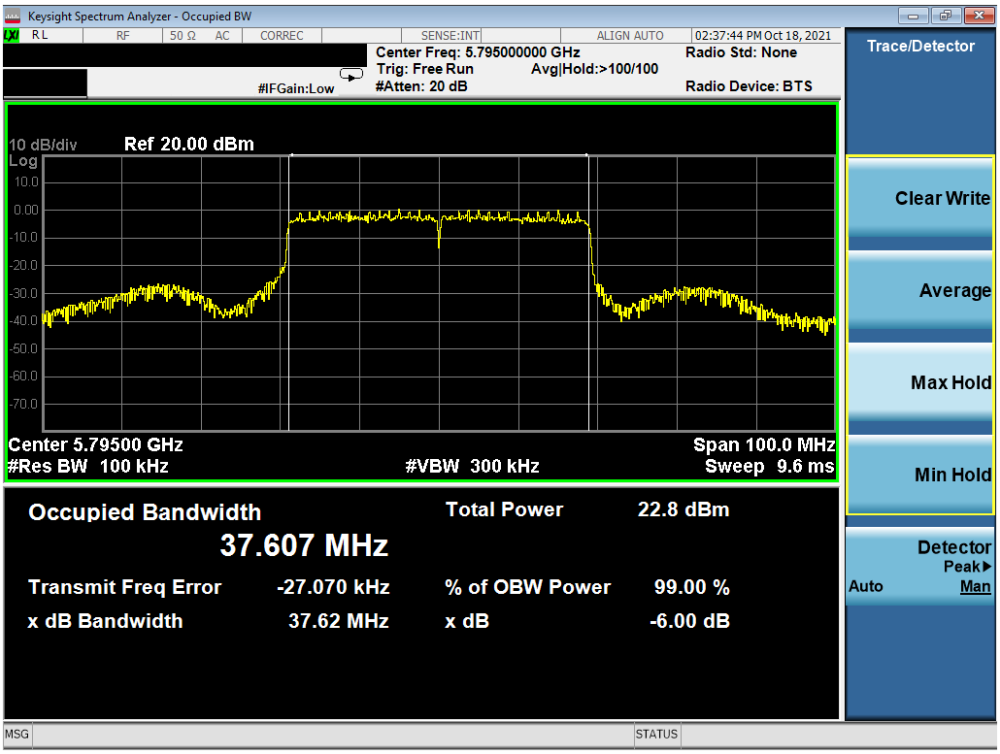
Plot 7-144. 6dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 3) – Ch. 157)



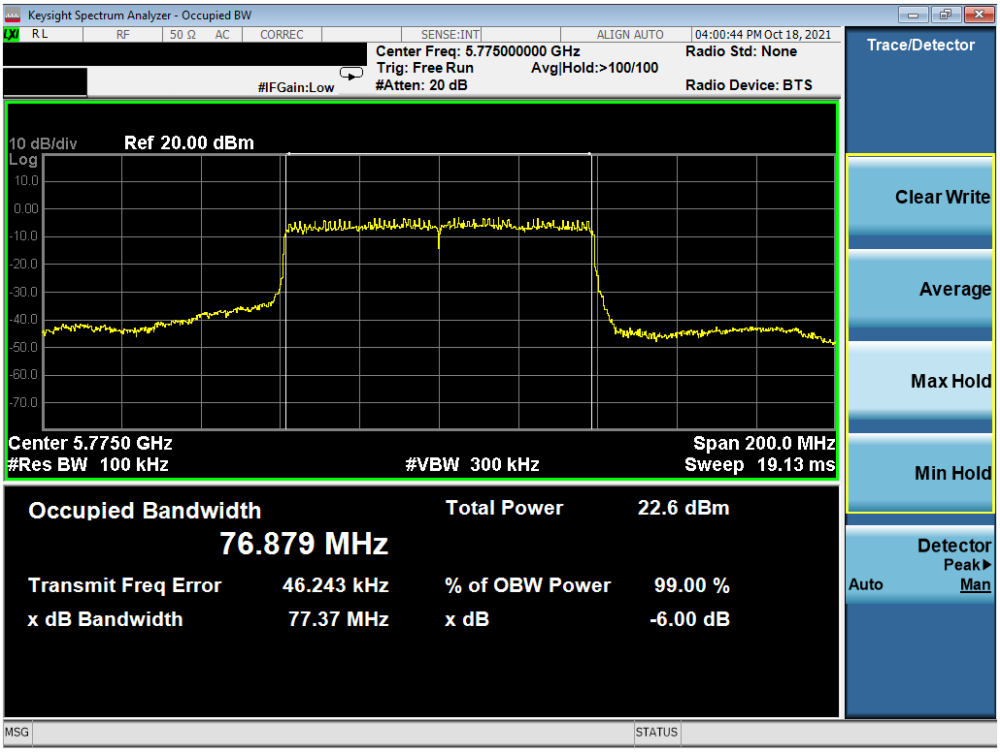
Plot 7-145. 6dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 3) – Ch. 165)



Plot 7-146. 6dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 3) – Ch. 151)



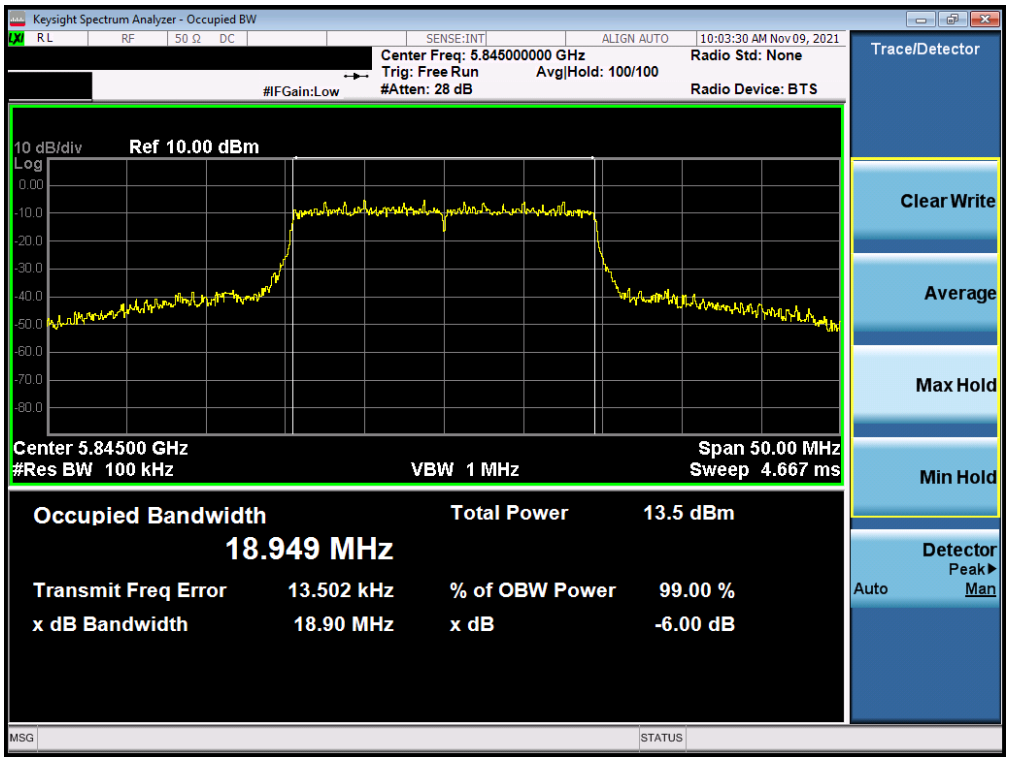
Plot 7-147. 6dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 3) – Ch. 159)



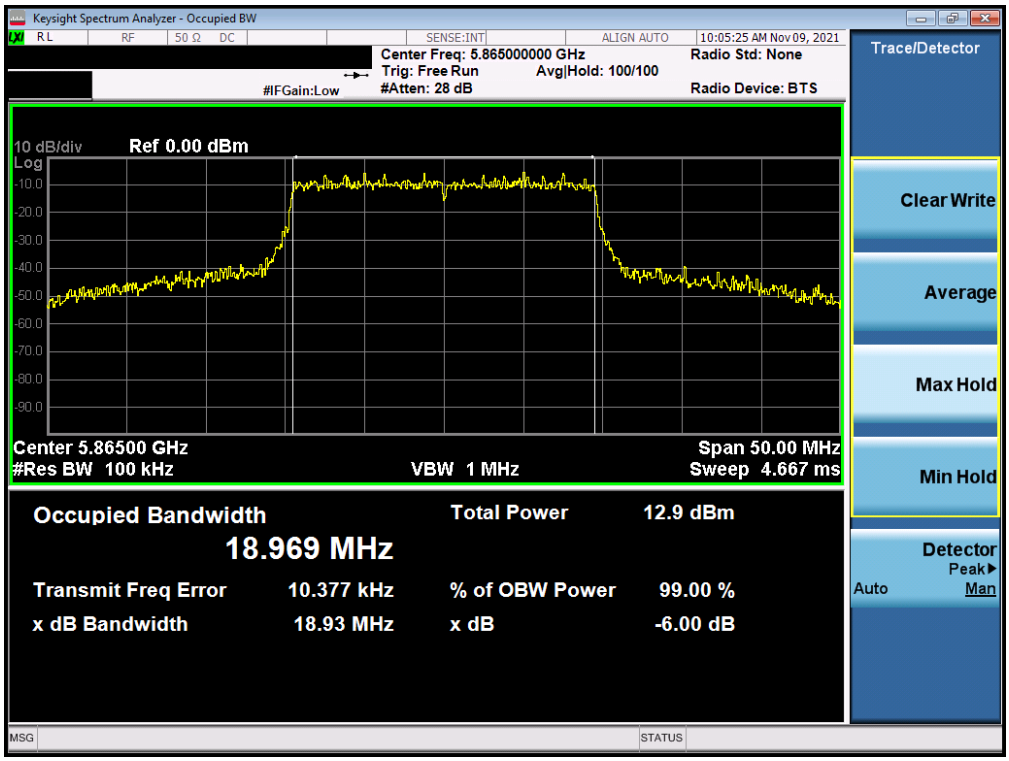
Plot 7-148. 6dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax – 996 Tones (UNII Band 3) – Ch. 155)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured 6dB Bandwidth [MHz]
Band 3/4	5845	169	ax (20MHz)	242T	MCS0	18.90
Band 4	5865	173	ax (20MHz)	242T	MCS0	18.93
	5885	177	ax (20MHz)	242T	MCS0	18.99
Band 3/4	5835	167	ax (40MHz)	484T	MCS0	37.65
Band 4	5875	175	ax (40MHz)	484T	MCS0	37.66
Band 3/4	5855	171	ax (80MHz)	996T	MCS0	77.40
	5815	163	ax (160MHz L)	996T	MCS0	77.82
	5815	163	ax (160MHz U)	996T	MCS0	77.19

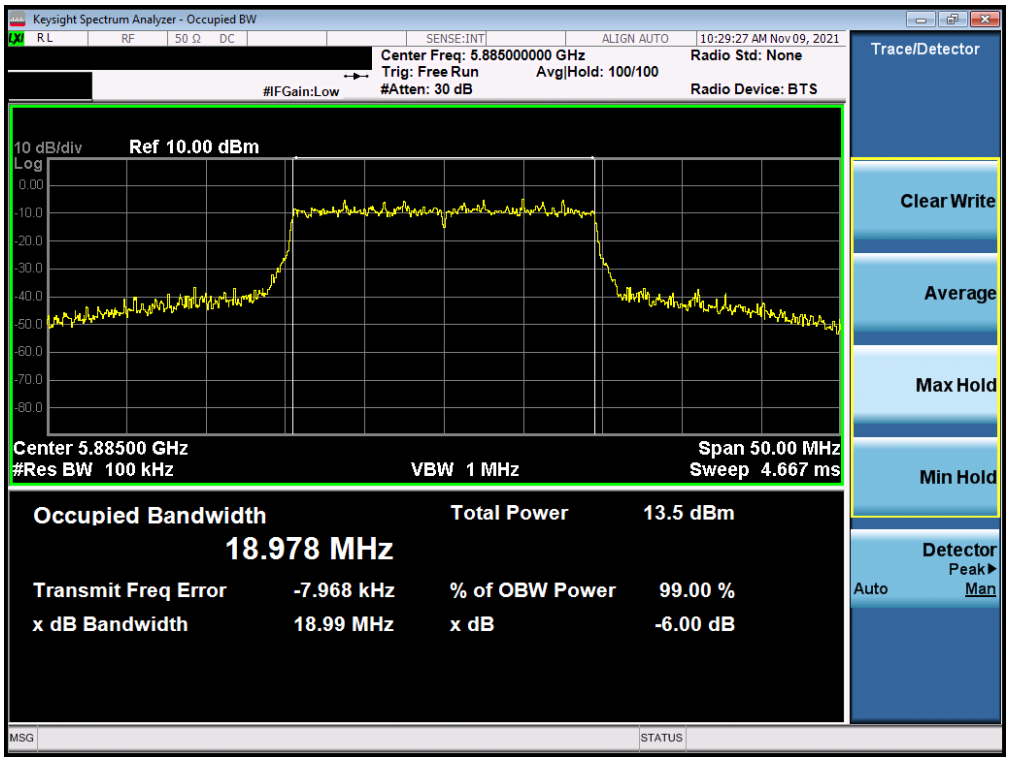
Table 7-13. Conducted Bandwidth Measurements MIMO ANT2 (Full Tones)



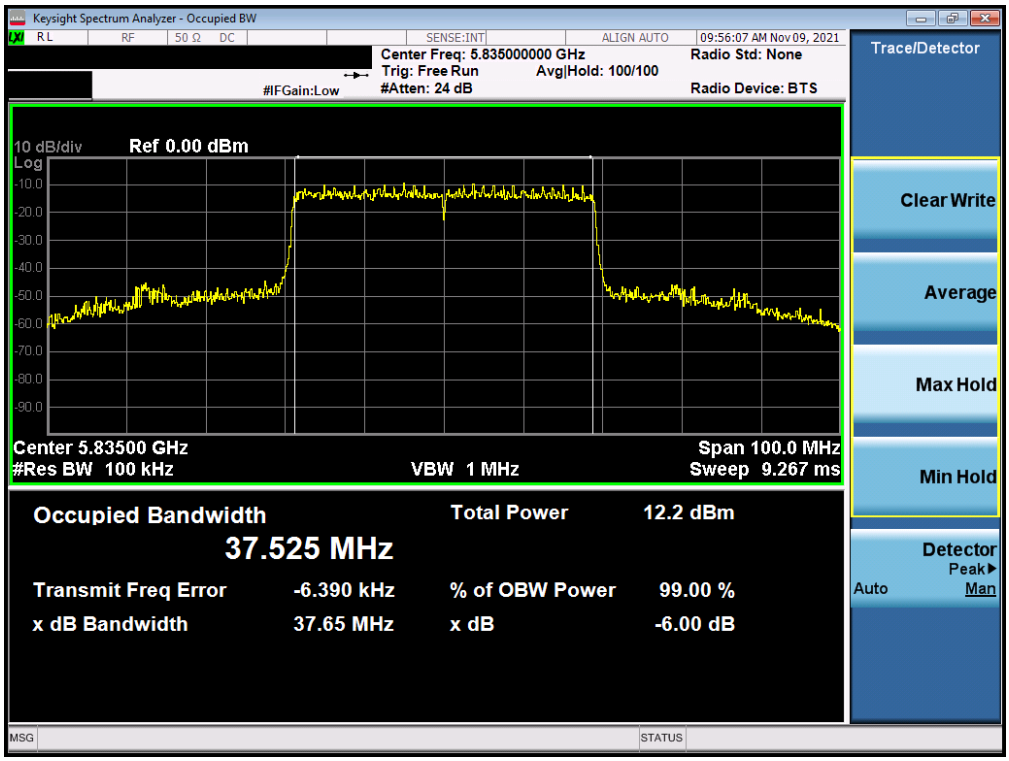
Plot 7-149. 6dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 3/4) – Ch. 169)



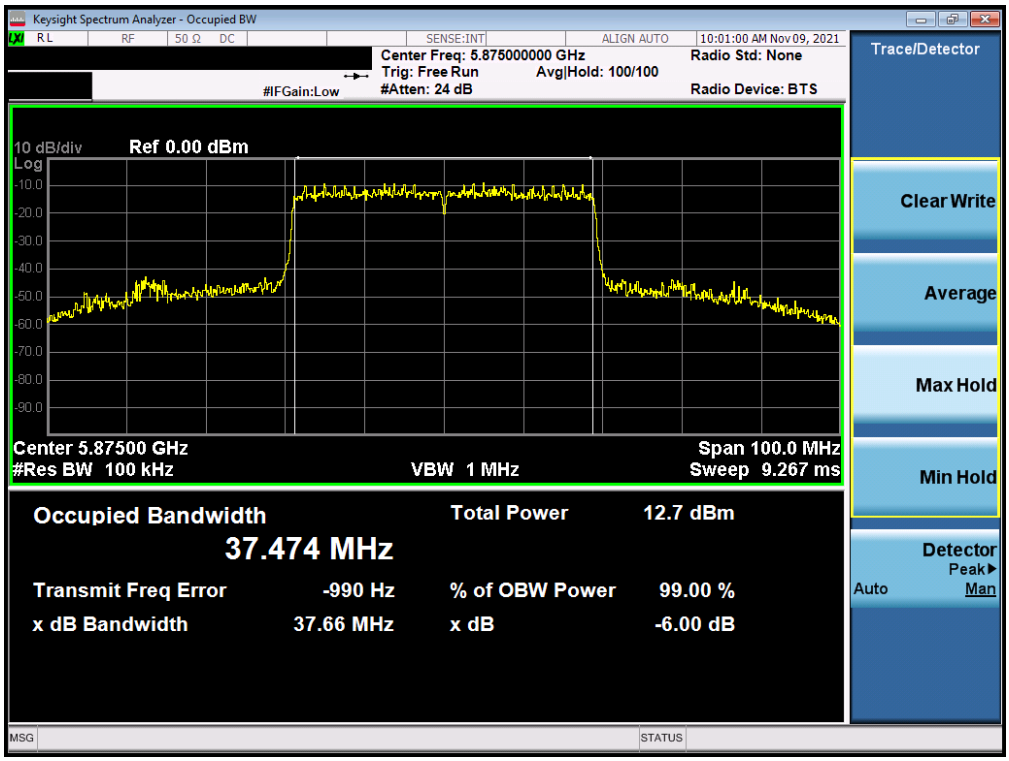
Plot 7-150. 6dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 4) – Ch. 173)



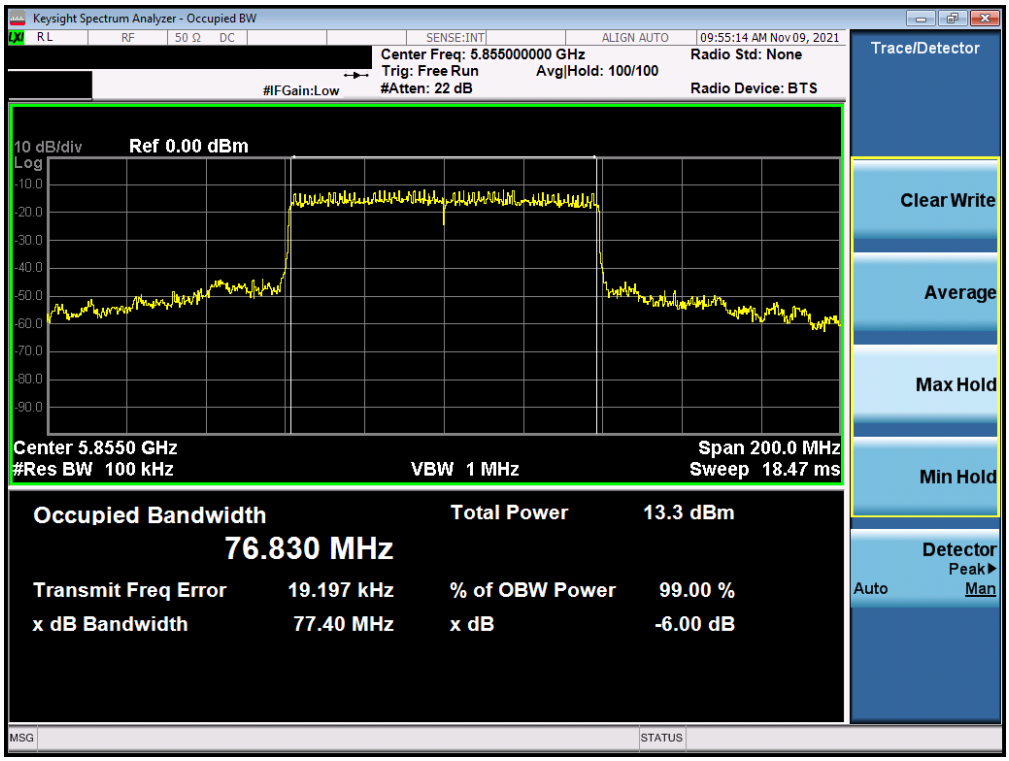
Plot 7-151. 6dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 4) – Ch. 177)



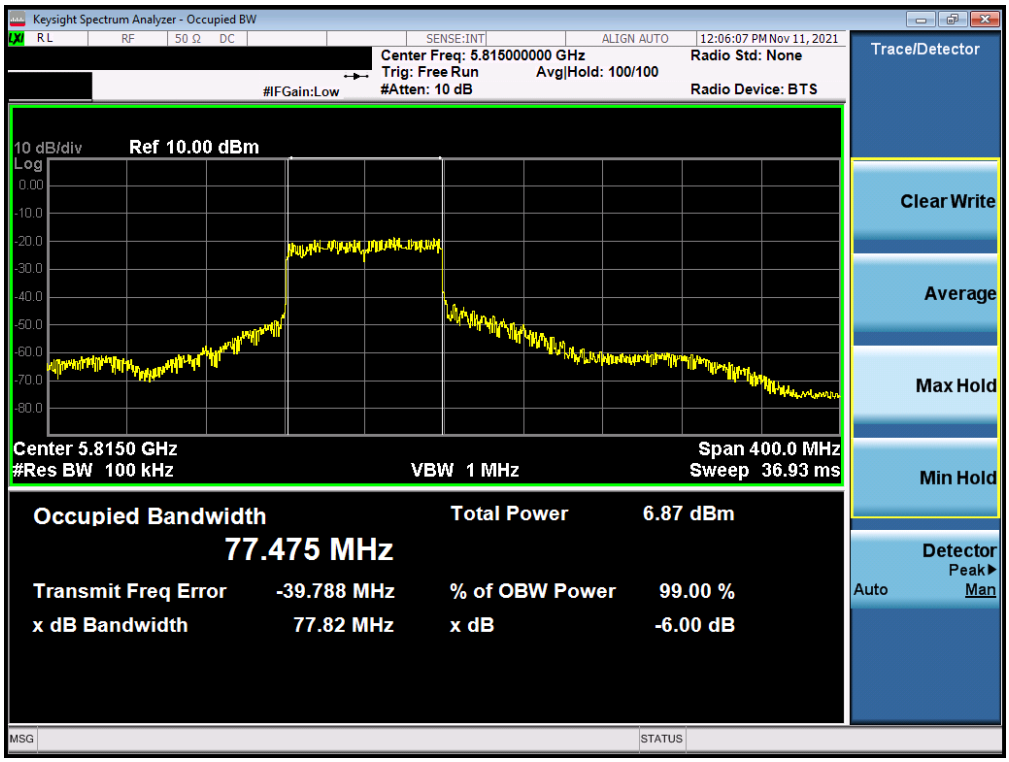
Plot 7-152. 6dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 3/4) – Ch. 167)



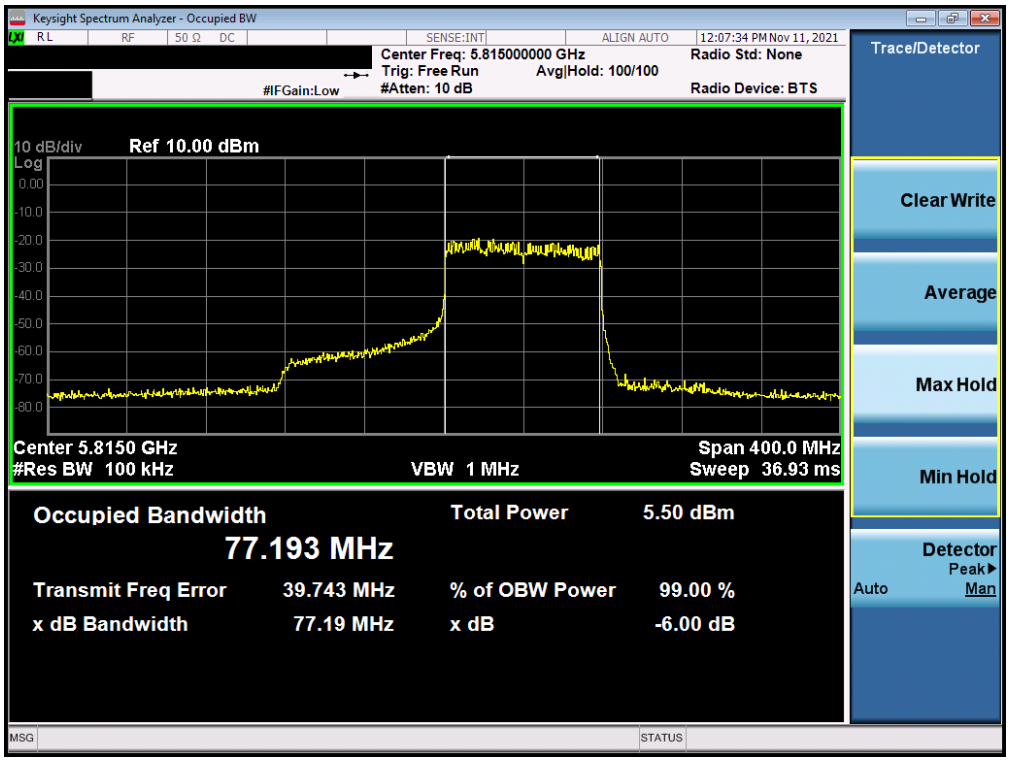
Plot 7-153. 6dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 4) – Ch. 175)



Plot 7-154. 6dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax – 996 Tones (UNII Band 3/4) – Ch. 171)



Plot 7-155. 6dB Bandwidth Plot MIMO ANT2 (160MHz BW (L) 802.11ax – 996 Tones (UNII Band 3/4) – Ch. 163)



Plot 7-156. 6dB Bandwidth Plot MIMO ANT2 (160MHz BW (U) 802.11ax – 996 Tones (UNII Band 3/4) – Ch. 163)

7.4 UNII Output Power Measurement – 802.11ax OFDMA

§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 log10B, dBm.

In the 5.25 – 5.35GHz band, the maximum permissible conducted output power is the lesser of 250mW (23.98dBm) or 11 dBm + 10log$_{10}$(26dB BW) = 11 dBm + 10log$_{10}$(21.13) = 24.25dBm. The maximum e.i.r.p. shall not exceed the lesser of 1.0 W or 17 + 10 log10B, dBm.

In the 5.47 – 5.725GHz band, the maximum permissible conducted output power is the lesser of 250mW (23.98dBm) or 11 dBm + 10log$_{10}$(26dB BW) = 11 dBm + 10log$_{10}$(21.03) = 24.23dBm. The maximum e.i.r.p. shall not exceed the lesser of 1.0 W or 17 + 10 log10B, 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

MIMO Maximum Conducted Output Power Measurements (26 Tones)

5GHz (20MHz Bandwidth)	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					0			4			8				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
	5180	36	AVG	26T	7.15	7.58	10.38	7.10	8.26	10.73	6.62	7.78	10.25	23.98	-13.25
	5200	40	AVG	26T	7.57	7.67	10.63	6.99	7.83	10.44	7.57	8.13	10.87	23.98	-13.11
	5240	48	AVG	26T	6.84	7.39	10.13	7.57	7.98	10.79	7.75	8.15	10.96	23.98	-13.01
	5260	52	AVG	26T	6.95	7.59	10.29	7.06	7.88	10.50	7.23	7.84	10.56	23.47	-12.91
	5280	56	AVG	26T	7.63	8.12	10.89	7.20	7.67	10.45	7.37	7.94	10.67	23.47	-12.58
	5320	64	AVG	26T	7.13	7.75	10.46	7.26	7.99	10.65	7.47	7.98	10.74	23.47	-12.73
	5500	100	AVG	26T	7.13	6.97	10.06	7.84	8.08	10.97	7.73	7.77	10.76	22.80	-11.83
	5600	120	AVG	26T	7.49	7.63	10.57	7.15	7.11	10.14	7.54	7.42	10.49	22.80	-12.23
	5720	144	AVG	26T	7.22	7.15	10.20	7.77	7.91	10.85	7.18	6.98	10.09	22.80	-11.95
	5745	149	AVG	26T	7.41	7.38	10.41	7.08	6.93	10.02	7.22	7.40	10.32	30.00	-19.59
	5785	157	AVG	26T	7.65	7.56	10.62	7.78	8.05	10.93	7.44	7.18	10.32	30.00	-19.07
	5825	165	AVG	26T	7.69	7.67	10.69	8.10	7.84	10.98	7.37	7.23	10.31	30.00	-19.02

Table 7-14. MIMO 20MHz BW (UNII) Maximum Conducted Output Power (26 Tones)

5GHz (40MHz Bandwidth)	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					0			8			17				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
	5190	38	AVG	26T	7.85	7.00	10.46	7.87	7.23	10.57	7.58	7.06	10.34	23.98	-13.41
	5230	46	AVG	26T	7.65	7.50	10.59	7.43	7.44	10.45	7.45	7.26	10.37	23.98	-13.39
	5270	54	AVG	26T	8.30	7.59	10.97	7.96	8.00	10.99	7.90	8.03	10.98	23.47	-12.48
	5310	62	AVG	26T	7.48	7.27	10.39	8.05	8.34	11.21	7.84	8.10	10.98	23.47	-12.26
	5510	102	AVG	26T	7.59	7.07	10.35	7.37	6.91	10.16	7.05	6.45	9.77	22.80	-12.45
	5590	118	AVG	26T	7.30	6.91	10.12	7.82	7.31	10.58	7.89	7.69	10.80	22.80	-12.00
	5710	142	AVG	26T	7.95	7.58	10.78	7.68	7.51	10.61	7.91	7.73	10.83	22.80	-11.97
	5755	151	AVG	26T	7.31	7.23	10.28	7.38	7.03	10.22	7.27	7.05	10.17	30.00	-19.72
	5795	159	AVG	26T	7.67	7.38	10.54	7.56	7.19	10.39	7.48	7.56	10.53	30.00	-19.46

Table 7-15. MIMO 40MHz BW (UNII) Maximum Conducted Output Power (26 Tones)

5GHz (80MHz Bandwidth)	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					0			18			36				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
	5210	42	AVG	26T	7.85	7.57	10.72	7.64	8.24	10.96	7.34	7.91	10.64	23.98	-13.02
	5290	58	AVG	26T	7.27	8.44	10.90	6.23	8.03	10.23	6.71	8.83	10.91	23.47	-12.56
	5530	106	AVG	26T	7.81	7.37	10.61	7.96	7.99	10.99	8.11	7.79	10.96	22.80	-11.81
	5610	122	AVG	26T	8.39	7.49	10.97	8.14	7.79	10.98	8.27	7.65	10.98	22.80	-11.82
	5690	138	AVG	26T	8.00	7.54	10.79	7.49	7.31	10.41	7.73	7.43	10.59	22.80	-12.01
	5775	155	AVG	26T	8.47	7.38	10.97	8.06	7.88	10.98	7.92	7.57	10.76	30.00	-19.02

Table 7-16. MIMO 80MHz BW (UNII) Maximum Conducted Output Power (26 Tones)

5GHz (160MHz BW L)	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					0			18			36				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
	5210	50	AVG	26T	7.32	7.42	10.38	7.55	7.56	10.57	7.36	7.30	10.34	23.98	-13.41
	5290	114	AVG	26T	7.48	7.52	10.51	6.99	7.01	10.01	7.68	7.98	10.84	23.47	-12.63

Table 7-17. MIMO 160MHz BW (L) (UNII) Maximum Conducted Output Power (26 Tones)

5GHz (160MHz BW U)	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					0			18			36				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
	5210	50	AVG	26T	7.13	8.21	10.72	6.68	8.32	10.59	6.90	8.54	10.81	23.98	-13.17
	5290	114	AVG	26T	6.55	8.34	10.55	6.90	7.10	10.01	7.25	7.26	10.27	23.47	-12.92

Table 7-18. MIMO 160MHz BW (U) (UNII) Maximum Conducted Output Power (26 Tones)

MIMO Conducted Output Power Measurements (52 Tones)

5GHz (20MHz Bandwidth)	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					37			39			40				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
	5180	36	AVG	52T	7.39	8.04	10.74	7.33	8.48	10.95	6.92	7.90	10.45	23.98	-13.03
	5200	40	AVG	52T	7.10	7.64	10.39	7.89	8.02	10.97	7.02	7.92	10.50	23.98	-13.01
	5240	48	AVG	52T	7.25	7.76	10.52	7.36	7.56	10.47	7.58	8.15	10.88	23.98	-13.09
	5260	52	AVG	52T	6.75	7.80	10.32	8.31	8.34	11.34	6.56	7.57	10.10	23.47	-12.13
	5280	56	AVG	52T	7.66	8.08	10.89	8.06	8.42	11.25	7.74	8.59	11.20	23.47	-12.22
	5320	64	AVG	52T	6.93	7.84	10.42	8.28	8.55	11.43	7.52	8.22	10.89	23.47	-12.04
	5500	100	AVG	52T	6.88	6.91	9.91	6.46	5.92	9.21	6.34	6.09	9.23	22.80	-12.89
	5600	120	AVG	52T	6.10	6.63	9.38	7.77	7.01	10.42	7.41	7.25	10.34	22.80	-12.38
	5720	144	AVG	52T	5.83	5.80	8.83	7.84	7.29	10.58	5.88	6.03	8.97	22.80	-12.22
	5745	149	AVG	52T	7.22	7.47	10.36	6.45	5.74	9.12	7.39	7.14	10.28	30.00	-19.64
	5785	157	AVG	52T	6.30	6.80	9.57	7.76	7.46	10.62	6.98	6.79	9.90	30.00	-19.38
	5825	165	AVG	52T	7.25	7.58	10.43	8.26	7.59	10.95	7.27	7.04	10.17	30.00	-19.05

Table 7-19. MIMO 20MHz BW (UNII) Maximum Conducted Output Power (52 Tones)

5GHz (40MHz Bandwidth)	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					37			40			44				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
	5190	38	AVG	52T	9.51	9.24	12.39	9.13	9.13	12.14	9.15	9.04	12.11	23.98	-11.59
	5230	46	AVG	52T	9.76	9.06	12.43	9.71	9.36	12.55	9.58	9.74	12.67	23.98	-11.31
	5270	54	AVG	52T	9.10	8.86	11.99	9.34	9.45	12.41	9.35	9.39	12.38	23.47	-11.06
	5310	62	AVG	52T	8.87	8.86	11.88	9.46	9.49	12.49	9.30	9.25	12.29	23.47	-10.98
	5510	102	AVG	52T	8.55	7.82	11.21	8.61	8.06	11.35	8.86	8.26	11.58	22.80	-11.22
	5590	118	AVG	52T	8.47	7.91	11.21	8.42	7.76	11.11	8.73	8.67	11.71	22.80	-11.09
	5710	142	AVG	52T	9.02	8.89	11.97	8.84	8.73	11.80	9.07	8.95	12.02	22.80	-10.78
	5755	151	AVG	52T	7.90	7.77	10.85	8.24	8.43	11.35	8.36	8.44	11.41	30.00	-18.59
	5795	159	AVG	52T	8.23	8.29	11.27	8.22	8.04	11.14	8.54	8.62	11.59	30.00	-18.41

Table 7-20. MIMO 40MHz BW (UNII) Maximum Conducted Output Power (52 Tones)

5GHz (80MHz Bandwidth)	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					37			44			52				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
	5210	42	AVG	52T	11.10	8.45	12.98	9.45	9.15	12.31	9.37	9.17	12.28	23.98	-11.00
	5290	58	AVG	52T	10.68	8.14	12.60	9.00	9.11	12.07	8.29	8.62	11.47	23.47	-10.87
	5530	106	AVG	52T	10.69	8.55	12.76	8.72	8.46	11.60	8.52	8.07	11.31	22.80	-10.04
	5610	122	AVG	52T	8.72	8.15	11.45	9.26	8.62	11.96	8.60	8.07	11.35	22.80	-10.84
	5690	138	AVG	52T	8.94	8.37	11.67	9.11	8.67	11.91	8.30	8.46	11.39	22.80	-10.89
	5775	155	AVG	52T	8.85	8.01	11.46	8.88	8.35	11.63	9.73	10.04	12.90	30.00	-17.10

Table 7-21. MIMO 80MHz BW (UNII) Maximum Conducted Output Power (52 Tones)

5GHz (160MHz BW L)	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					37			44			52				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
	5210	50	AVG	52T	10.70	9.90	13.33	10.37	9.64	13.03	10.60	10.10	13.37	23.98	-10.61
	5290	114	AVG	52T	11.04	9.80	13.47	10.96	9.77	13.42	10.82	9.50	13.22	23.47	-10.00

Table 7-22. MIMO 160MHz BW (L) (UNII) Maximum Conducted Output Power (52 Tones)

5GHz (160MHz BW U)	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					37			44			52				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
	5210	50	AVG	52T	10.41	9.69	13.07	10.45	9.76	13.13	9.61	10.58	13.13	23.98	-10.85
	5290	114	AVG	52T	10.13	9.89	13.02	10.44	9.86	13.17	9.71	10.33	13.04	23.47	-10.30

Table 7-23. MIMO 160MHz BW (U) (UNII) Maximum Conducted Output Power (52 Tones)

MIMO Conducted Output Power Measurements (106 Tones)

	Freq [MHz]	Channel	Detector	Tones	RU Index						Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					53			54				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
5GHz (20MHz Bandwidth)	5180	36	AVG	106T	8.56	9.22	11.91	7.42	7.83	10.64	23.98	-12.07
	5200	40	AVG	106T	8.44	8.82	11.64	7.46	7.89	10.69	23.98	-12.33
	5240	48	AVG	106T	8.01	8.82	11.44	8.11	8.52	11.33	23.98	-12.54
	5260	52	AVG	106T	11.33	12.32	14.86	11.27	9.24	13.38	23.47	-8.61
	5280	56	AVG	106T	10.77	11.81	14.33	10.99	9.08	13.15	23.47	-9.14
	5320	64	AVG	106T	11.14	12.24	14.74	11.14	9.21	13.29	23.47	-8.73
	5500	100	AVG	106T	11.86	11.91	14.90	11.80	9.73	13.90	22.80	-7.90
	5600	120	AVG	106T	10.14	9.74	12.95	9.61	8.56	12.13	22.80	-9.85
	5720	144	AVG	106T	10.03	9.81	12.93	9.92	9.15	12.56	22.80	-9.87
	5745	149	AVG	106T	10.03	9.14	12.62	10.27	9.40	12.87	30.00	-17.13
	5785	157	AVG	106T	9.92	9.69	12.82	10.08	8.95	12.56	30.00	-17.18
	5825	165	AVG	106T	9.88	9.23	12.58	10.12	9.37	12.77	30.00	-17.23

Table 7-24. MIMO 20MHz BW (UNII) Maximum Conducted Output Power (106 Tones)

	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					53			54			56				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
5GHz (40MHz Bandwidth)	5190	38	AVG	106T	11.50	11.90	14.71	10.47	10.22	13.36	10.14	10.13	13.15	23.98	-9.26
	5230	46	AVG	106T	11.64	12.06	14.87	11.04	10.73	13.90	10.53	10.39	13.47	23.98	-9.11
	5270	54	AVG	106T	11.09	11.36	14.24	10.55	10.51	13.54	9.76	9.99	12.89	23.47	-9.23
	5310	62	AVG	106T	11.18	11.40	14.30	10.39	10.34	13.38	10.00	9.93	12.98	23.47	-9.17
	5510	102	AVG	106T	11.68	12.24	14.98	12.01	11.93	14.98	11.62	12.03	14.84	22.80	-7.82
	5590	118	AVG	106T	11.13	11.11	14.13	10.13	9.64	12.90	9.63	9.25	12.45	22.80	-8.67
	5710	142	AVG	106T	10.97	11.01	14.00	10.14	9.89	13.03	10.05	9.90	12.99	22.80	-8.80
	5755	151	AVG	106T	10.80	11.16	13.99	9.60	9.36	12.49	9.21	9.39	12.31	30.00	-16.01
	5795	159	AVG	106T	10.85	11.24	14.06	10.02	9.61	12.83	9.60	9.61	12.62	30.00	-15.94

Table 7-25. MIMO 40MHz BW (UNII) Maximum Conducted Output Power (106 Tones)

	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					53			56			60				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
5GHz (80MHz Bandwidth)	5210	42	AVG	106T	11.80	12.01	14.92	11.68	12.13	14.92	11.89	12.05	14.98	23.98	-9.00
	5290	58	AVG	106T	11.72	11.66	14.70	11.33	11.81	14.59	11.53	11.88	14.72	23.47	-8.75
	5530	106	AVG	106T	11.44	11.59	14.53	11.34	11.62	14.49	11.47	11.45	14.47	22.80	-8.27
	5610	122	AVG	106T	11.69	11.62	14.67	11.62	11.42	14.53	11.87	11.36	14.63	22.80	-8.13
	5690	138	AVG	106T	11.75	11.69	14.73	11.88	11.75	14.83	11.90	11.54	14.73	22.80	-7.97
	5775	155	AVG	106T	11.45	11.52	14.50	11.25	11.60	14.44	11.35	11.42	14.40	30.00	-15.50

Table 7-26. MIMO 80MHz BW (UNII) Maximum Conducted Output Power (106 Tones)

	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					53			56			60				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
5GHz (160MHz BW L)	5210	50	AVG	106T	11.24	11.52	14.39	10.98	11.75	14.39	11.10	11.38	14.25	23.98	-9.59
	5290	114	AVG	106T	11.08	11.54	14.33	11.16	11.54	14.36	11.19	11.21	14.21	23.47	-9.11

Table 7-27. MIMO 160MHz BW (L) (UNII) Maximum Conducted Output Power (106 Tones)

	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					53			56			60				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
5GHz (160MHz BW U)	5210	50	AVG	106T	9.90	12.21	14.22	9.88	12.50	14.39	9.78	12.97	14.67	23.98	-9.31
	5290	114	AVG	106T	11.10	12.60	14.92	9.51	12.28	14.12	9.78	12.80	14.56	23.47	-8.55

Table 7-28. MIMO 160MHz BW (U) (UNII) Maximum Conducted Output Power (106 Tones)

MIMO Conducted Output Power Measurements (242 Tones)

	Freq [MHz]	Channel	Detector	Tones	RU Index			Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					61				
					ANT1	ANT2	MIMO		
5GHz (20MHz Bandwidth)	5180	36	AVG	242T	16.72	16.52	19.63	23.98	-4.35
	5200	40	AVG	242T	16.86	16.60	19.74	23.98	-4.24
	5240	48	AVG	242T	17.08	16.87	19.99	23.98	-3.99
	5260	52	AVG	242T	16.55	16.36	19.47	23.47	-4.00
	5280	56	AVG	242T	16.50	16.37	19.45	23.47	-4.02
	5320	64	AVG	242T	16.80	16.68	19.75	23.47	-3.72
	5500	100	AVG	242T	16.27	15.90	19.10	22.80	-3.70
	5600	120	AVG	242T	16.62	16.00	19.33	22.80	-3.47
	5720	144	AVG	242T	16.87	16.19	19.55	22.80	-3.25
	5745	149	AVG	242T	16.48	15.85	19.19	30.00	-10.81
	5785	157	AVG	242T	16.57	15.95	19.28	30.00	-10.72
	5825	165	AVG	242T	16.61	15.79	19.23	30.00	-10.77

Table 7-29. MIMO 20MHz BW (UNII) Maximum Conducted Output Power (242 Tones)

	Freq [MHz]	Channel	Detector	Tones	RU Index						Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					61			62				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
5GHz (40MHz Bandwidth)	5190	38	AVG	242T	15.10	15.00	18.06	14.70	15.23	17.98	23.98	-5.92
	5230	46	AVG	242T	14.83	14.78	17.82	14.58	15.21	17.92	23.98	-6.06
	5270	54	AVG	242T	15.60	15.65	18.64	15.63	15.59	18.62	23.47	-4.83
	5310	62	AVG	242T	15.68	15.82	18.76	15.45	16.12	18.81	23.47	-4.66
	5510	102	AVG	242T	15.19	15.34	18.28	15.12	15.65	18.40	22.80	-4.40
	5590	118	AVG	242T	15.55	15.33	18.45	15.30	15.65	18.49	22.80	-4.31
	5710	142	AVG	242T	15.72	15.59	18.67	15.74	15.55	18.66	22.80	-4.13
	5755	151	AVG	242T	15.55	15.27	18.42	15.15	15.48	18.33	30.00	-11.58
	5795	159	AVG	242T	15.57	15.14	18.37	15.25	15.48	18.38	30.00	-11.62

Table 7-30. MIMO 40MHz BW (UNII) Maximum Conducted Output Power (242 Tones)

	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					61			62			64				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
5GHz (80MHz Bandwidth)	5210	42	AVG	242T	14.69	14.56	17.64	14.45	14.71	17.59	14.55	14.63	17.60	23.98	-6.34
	5290	58	AVG	242T	14.32	14.23	17.29	14.14	14.70	17.44	13.87	14.30	17.10	23.47	-6.03
	5530	106	AVG	242T	14.07	13.82	16.96	14.81	14.78	17.81	14.91	14.83	17.88	22.80	-4.92
	5610	122	AVG	242T	14.37	13.81	17.11	14.32	13.82	17.09	14.34	13.91	17.14	22.80	-5.66
	5690	138	AVG	242T	14.80	14.18	17.51	14.44	14.23	17.35	14.37	14.17	17.28	22.80	-5.29
	5775	155	AVG	242T	14.88	14.50	17.70	14.76	14.65	17.72	14.76	14.66	17.72	30.00	-12.28

Table 7-31. MIMO 80MHz BW (UNII) Maximum Conducted Output Power (242 Tones)

	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					61			62			64				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
5GHz (160MHz BW L)	5210	50	AVG	242T	14.30	14.90	17.62	14.30	14.86	17.60	14.51	14.60	17.57	23.98	-6.36
	5290	114	AVG	242T	14.09	14.64	17.38	13.93	14.25	17.10	14.29	14.20	17.26	23.47	-6.09

Table 7-32. MIMO 160MHz BW (L) (UNII) Maximum Conducted Output Power (242 Tones)

	Freq [MHz]	Channel	Detector	Tones	RU Index									Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					61			62			64				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
5GHz (160MHz BW U)	5210	50	AVG	242T	12.53	15.23	17.10	12.65	15.52	17.33	12.54	15.95	17.58	23.98	-6.40
	5290	114	AVG	242T	13.65	15.28	17.55	12.85	15.14	17.15	12.98	15.75	17.59	23.47	-5.88

Table 7-33. MIMO 160MHz BW (U) (UNII) Maximum Conducted Output Power (242 Tones)

MIMO Conducted Output Power Measurements (484 Tones)

5GHz (40MHz Bandwidth)	Freq [MHz]	Channel	Detector	Tones	RU Index			Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					65				
					ANT1	ANT2	MIMO		
	5190	38	AVG	484T	15.31	15.55	18.44	23.98	-5.54
	5230	46	AVG	484T	15.47	15.66	18.58	23.98	-5.40
	5270	54	AVG	484T	15.70	15.60	18.66	23.47	-4.81
	5310	62	AVG	484T	15.58	15.37	18.49	23.47	-4.98
	5510	102	AVG	484T	16.12	15.70	18.93	22.80	-3.87
	5590	118	AVG	484T	15.94	15.65	18.81	22.80	-3.99
	5710	142	AVG	484T	15.20	15.20	18.21	22.80	-4.59
	5755	151	AVG	484T	15.97	16.01	19.00	30.00	-11.00
	5795	159	AVG	484T	16.05	15.91	18.99	30.00	-11.01

Table 7-34. MIMO 40MHz BW (UNII) Maximum Conducted Output Power (484 Tones)

5GHz (80MHz Bandwidth)	Freq [MHz]	Channel	Detector	Tones	RU Index						Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					65			66				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
	5210	42	AVG	484T	14.20	14.14	17.18	13.89	14.29	17.10	23.98	-6.80
	5290	58	AVG	484T	14.53	14.81	17.68	14.22	15.04	17.66	23.47	-5.79
	5530	106	AVG	484T	14.73	14.59	17.67	14.44	14.59	17.53	22.80	-5.13
	5610	122	AVG	484T	15.15	14.68	17.93	14.92	14.57	17.76	22.80	-4.87
	5690	138	AVG	484T	14.72	14.43	17.59	14.76	14.65	17.72	22.80	-5.08
	5775	155	AVG	484T	14.70	14.64	17.68	14.35	14.59	17.48	30.00	-12.32

Table 7-35. MIMO 80MHz BW (UNII) Maximum Conducted Output Power (484 Tones)

5GHz (160MHz BW L)	Freq [MHz]	Channel	Detector	Tones	RU Index						Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					65			66				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
	5210	50	AVG	484T	13.72	14.90	17.36	14.20	14.68	17.46	23.98	-6.52
	5290	114	AVG	484T	13.50	14.56	17.07	14.05	14.36	17.22	23.47	-6.25

Table 7-36. MIMO 160MHz BW (L) (UNII) Maximum Conducted Output Power (484 Tones)

5GHz (160MHz BW U)	Freq [MHz]	Channel	Detector	Tones	RU Index						Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					65			66				
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO		
	5210	50	AVG	484T	13.13	15.28	17.35	12.52	16.50	17.96	23.98	-6.02
	5290	114	AVG	484T	13.25	15.64	17.62	13.10	16.28	17.99	23.47	-5.48

Table 7-37. MIMO 160MHz BW (U) (UNII) Maximum Conducted Output Power (484 Tones)

MIMO Conducted Output Power Measurements (996 Tones)

	Freq [MHz]	Channel	Detector	Tones	RU Index			Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					67				
5GHz (80MHz Bandwidth)					ANT1	ANT2	MIMO		
	5210	42	AVG	996T	14.68	14.93	17.82	23.98	-6.16
	5290	58	AVG	996T	14.69	15.00	17.86	23.47	-5.61
	5530	106	AVG	996T	14.52	14.54	17.54	22.80	-5.26
	5610	122	AVG	996T	14.91	14.45	17.70	22.80	-5.10
	5690	138	AVG	996T	14.94	14.48	17.73	22.80	-5.07
	5775	155	AVG	996T	14.86	14.67	17.78	30.00	-12.22

Table 7-38. MIMO 80MHz BW (UNII) Maximum Conducted Output Power (996 Tones)

	Freq [MHz]	Channel	Detector	Tones	RU Index			Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					67				
5GHz (160MHz BW L)					ANT1	ANT2	MIMO		
	5210	50	AVG	996T	14.81	14.95	17.89	23.98	-6.09
	5290	114	AVG	996T	14.90	14.86	17.89	23.47	-5.58

Table 7-39. MIMO 160MHz BW (L) (UNII) Maximum Conducted Output Power (996 Tones)

	Freq [MHz]	Channel	Detector	Tones	RU Index			Conducted Power Limit [dBm]	Conducted Power Margin [dB]
					67				
5GHz (160MHz BW U)					ANT1	ANT2	MIMO		
	5210	50	AVG	996T	13.28	15.83	17.75	23.98	-6.23
	5290	114	AVG	996T	13.32	15.63	17.64	23.47	-5.83

Table 7-40. MIMO 160MHz BW (U) (UNII) Maximum Conducted Output Power (996 Tones)

Band	Frequency	Bandwidth	Channel	Mode	Tone	RU index	Detector	Ant1 Power [dBm]	Ant2 Power [dBm]	Sum [dBm]	Ant. Gain. dBi	Max e.i.r.p [dBm]	Max e.i.r.p Limit [dBm]	Max e.i.r.p Margin
UNII4	5845	20MHz	169	ax RU	26T	0	Average	7.69	7.35	10.53	-4.29	6.24	30	23.76
UNII4	5845	20MHz	169	ax RU	26T	4	Average	7.59	7.40	10.51	-4.29	6.22	30	23.78
UNII4	5845	20MHz	169	ax RU	26T	8	Average	7.49	7.01	10.27	-4.29	5.98	30	24.02
UNII4	5845	20MHz	169	ax RU	52T	37	Average	7.14	7.21	10.19	-4.29	8.00	30	22.00
UNII4	5845	20MHz	169	ax RU	52T	39	Average	7.24	7.33	10.30	-4.29	8.67	30	21.33
UNII4	5845	20MHz	169	ax RU	52T	40	Average	7.36	7.45	10.42	-4.29	7.88	30	22.12
UNII4	5845	20MHz	169	ax RU	106T	53	Average	11.16	11.12	14.15	-4.29	9.86	30	20.14
UNII4	5845	20MHz	169	ax RU	106T	54	Average	12.10	11.60	14.87	-4.29	10.58	30	19.42
UNII4	5845	20MHz	169	ax RU	242T	61	Average	17.22	16.70	19.98	-4.29	15.69	30	14.31
UNII4	5865	20MHz	173	ax RU	26T	0	Average	7.62	7.40	10.52	-4.29	6.23	30	23.77
UNII4	5865	20MHz	173	ax RU	26T	4	Average	7.78	7.40	10.60	-4.29	6.31	30	23.69
UNII4	5865	20MHz	173	ax RU	26T	8	Average	7.58	7.20	10.40	-4.29	6.11	30	23.89
UNII4	5865	20MHz	173	ax RU	52T	37	Average	7.52	7.63	10.59	-4.29	7.80	30	22.20
UNII4	5865	20MHz	173	ax RU	52T	39	Average	7.49	7.32	10.42	-4.29	7.93	30	22.07
UNII4	5865	20MHz	173	ax RU	52T	40	Average	7.56	7.44	10.51	-4.29	7.73	30	22.27
UNII4	5865	20MHz	173	ax RU	106T	53	Average	11.02	11.03	14.04	-4.29	9.75	30	20.25
UNII4	5865	20MHz	173	ax RU	106T	54	Average	11.89	11.56	14.74	-4.29	10.45	30	19.55
UNII4	5865	20MHz	173	ax RU	242T	61	Average	17.22	16.70	19.98	-4.29	15.69	30	14.31
UNII4	5885	20MHz	177	ax RU	26T	0	Average	7.89	7.96	10.94	-4.29	6.65	30	23.35
UNII4	5885	20MHz	177	ax RU	26T	4	Average	7.88	7.57	10.74	-4.29	6.45	30	23.55
UNII4	5885	20MHz	177	ax RU	26T	8	Average	7.87	7.42	10.66	-4.29	6.37	30	23.63
UNII4	5885	20MHz	177	ax RU	52T	37	Average	7.64	7.82	10.74	-4.29	7.75	30	22.25
UNII4	5885	20MHz	177	ax RU	52T	39	Average	7.63	7.42	10.54	-4.29	7.78	30	22.22
UNII4	5885	20MHz	177	ax RU	52T	40	Average	7.24	7.66	10.47	-4.29	7.72	30	22.28
UNII4	5885	20MHz	177	ax RU	106T	53	Average	11.32	11.40	14.37	-4.29	10.08	30	19.92
UNII4	5885	20MHz	177	ax RU	106T	54	Average	12.19	11.65	14.94	-4.29	10.65	30	19.35
UNII4	5885	20MHz	177	ax RU	242T	61	Average	16.34	16.00	19.18	-4.29	14.89	30	15.11
UNII4	5835	40MHz	167	ax RU	26T	0	Average	8.22	7.67	10.96	-4.29	6.67	30	23.33
UNII4	5835	40MHz	167	ax RU	26T	8	Average	7.58	7.85	10.73	-4.29	6.44	30	23.56
UNII4	5835	40MHz	167	ax RU	26T	17	Average	7.79	7.43	10.62	-4.29	6.33	30	23.67
UNII4	5835	40MHz	167	ax RU	52T	37	Average	9.12	8.87	12.01	-4.29	7.72	30	22.28
UNII4	5835	40MHz	167	ax RU	52T	40	Average	9.35	9.13	12.25	-4.29	7.96	30	22.04
UNII4	5835	40MHz	167	ax RU	52T	44	Average	9.23	9.11	12.18	-4.29	7.89	30	22.11
UNII4	5835	40MHz	167	ax RU	106T	53	Average	12.05	11.91	14.99	-4.29	10.70	30	19.30
UNII4	5835	40MHz	167	ax RU	106T	54	Average	12.20	11.50	14.87	-4.29	10.58	30	19.42
UNII4	5835	40MHz	167	ax RU	106T	56	Average	11.77	11.57	14.68	-4.29	10.39	30	19.61
UNII4	5835	40MHz	167	ax RU	242T	61	Average	15.77	15.32	18.56	-4.29	14.27	30	15.73
UNII4	5835	40MHz	167	ax RU	242T	62	Average	15.27	15.22	18.26	-4.29	13.97	30	16.03
UNII4	5835	40MHz	167	ax RU	484T	65	Average	16.02	15.67	18.86	-4.29	14.57	30	15.43
UNII4	5875	40MHz	175	ax RU	26T	0	Average	8.04	7.73	10.90	-4.29	6.61	30	23.39
UNII4	5875	40MHz	175	ax RU	26T	8	Average	7.45	7.52	10.50	-4.29	6.21	30	23.79
UNII4	5875	40MHz	175	ax RU	26T	17	Average	7.86	7.34	10.62	-4.29	6.33	30	23.67
UNII4	5875	40MHz	175	ax RU	52T	37	Average	9.30	8.76	12.05	-4.29	7.76	30	22.24
UNII4	5875	40MHz	175	ax RU	52T	40	Average	9.47	9.32	12.41	-4.29	8.12	30	21.88
UNII4	5875	40MHz	175	ax RU	52T	44	Average	9.23	8.85	12.05	-4.29	7.76	30	22.24
UNII4	5875	40MHz	175	ax RU	106T	53	Average	11.12	11.09	14.12	-4.29	9.83	30	20.17
UNII4	5875	40MHz	175	ax RU	106T	54	Average	12.02	11.78	14.91	-4.29	10.62	30	19.38
UNII4	5875	40MHz	175	ax RU	106T	56	Average	11.99	11.56	14.79	-4.29	10.50	30	19.50
UNII4	5875	40MHz	175	ax RU	242T	61	Average	15.60	15.03	18.33	-4.29	14.04	30	15.96
UNII4	5875	40MHz	175	ax RU	242T	62	Average	15.41	15.05	18.24	-4.29	13.95	30	16.05
UNII4	5875	40MHz	175	ax RU	484T	65	Average	16.04	15.60	18.84	-4.29	14.55	30	15.45
UNII4	5855	80MHz	171	ax RU	26T	0	Average	8.16	7.76	10.97	-4.29	6.68	30	23.32
UNII4	5855	80MHz	171	ax RU	26T	18	Average	7.75	7.45	10.61	-4.29	6.32	30	23.68
UNII4	5855	80MHz	171	ax RU	26T	36	Average	8.11	7.34	10.75	-4.29	6.46	30	23.54
UNII4	5855	80MHz	171	ax RU	52T	37	Average	9.13	8.96	12.06	-4.29	7.77	30	22.23
UNII4	5855	80MHz	171	ax RU	52T	44	Average	9.42	8.91	12.18	-4.29	7.89	30	22.11
UNII4	5855	80MHz	171	ax RU	52T	52	Average	9.21	9.12	12.18	-4.29	7.89	30	22.11
UNII4	5855	80MHz	171	ax RU	106T	53	Average	11.87	11.67	14.78	-4.29	10.49	30	19.51
UNII4	5855	80MHz	171	ax RU	106T	56	Average	11.73	11.43	14.59	-4.29	10.30	30	19.70
UNII4	5855	80MHz	171	ax RU	106T	60	Average	11.99	11.23	14.64	-4.29	10.35	30	19.65
UNII4	5855	80MHz	171	ax RU	242T	61	Average	15.33	14.58	17.98	-4.29	13.69	30	16.31
UNII4	5855	80MHz	171	ax RU	242T	62	Average	15.10	14.65	17.89	-4.29	13.60	30	16.40
UNII4	5855	80MHz	171	ax RU	242T	64	Average	15.07	14.33	17.73	-4.29	13.44	30	16.56
UNII4	5855	80MHz	171	ax RU	484T	65	Average	14.80	14.65	17.74	-4.29	13.45	30	16.55
UNII4	5855	80MHz	171	ax RU	484T	66	Average	14.37	14.03	17.21	-4.29	12.92	30	17.08
UNII4	5855	80MHz	171	ax RU	996T	67	Average	14.71	14.22	17.48	-4.29	13.19	30	16.81
UNII3&4	5775	L160MHz	155	ax RU	26T	0	Average	8.11	7.82	10.98	-4.29	6.69	36	29.31
UNII3&4	5775	L160MHz	155	ax RU	26T	18	Average	7.82	7.52	10.68	-4.29	6.39	36	29.61
UNII3&4	5775	L160MHz	155	ax RU	26T	36	Average	8.21	7.24	10.76	-4.29	6.47	36	29.53
UNII3&4	5775	L160MHz	155	ax RU	52T	37	Average	10.15	9.87	13.02	-4.29	8.73	36	27.27
UNII3&4	5775	L160MHz	155	ax RU	52T	44	Average	10.38	9.70	13.06	-4.29	8.77	36	27.23
UNII3&4	5775	L160MHz	155	ax RU	52T	52	Average	10.32	9.72	13.04	-4.29	8.75	36	27.25
UNII3&4	5775	L160MHz	155	ax RU	106T	53	Average	11.97	11.58	14.79	-4.29	10.50	36	25.50
UNII3&4	5775	L160MHz	155	ax RU	106T	56	Average	11.68	11.46	14.58	-4.29	10.29	36	25.71
UNII3&4	5775	L160MHz	155	ax RU	106T	60	Average	11.78	11.32	14.57	-4.29	10.28	36	25.72
UNII3&4	5775	L160MHz	155	ax RU	242T	61	Average	15.32	14.48	17.93	-4.29	13.64	36	22.36
UNII3&4	5775	L160MHz	155	ax RU	242T	62	Average	15.11	14.82	17.98	-4.29	13.69	36	22.31
UNII3&4	5775	L160MHz	155	ax RU	242T	64	Average	15.20	14.27	17.77	-4.29	13.48	36	22.52
UNII3&4	5775	L160MHz	155	ax RU	484T	65	Average	15.01	14.56	17.80	-4.29	13.51	36	22.49
UNII3&4	5775	L160MHz	155	ax RU	484T	66	Average	14.56	14.11	17.35	-4.29	13.06	36	22.94
UNII3&4	5775	L160MHz	155	ax RU	996T	67	Average	14.77	14.27	17.54	-4.29	13.25	36	22.75
UNII3&4	5855	H160MHz	171	ax RU	26T	0	Average	7.98	7.76	10.88	-4.29	6.59	36	29.41
UNII3&4	5855	H160MHz	171	ax RU	26T	18	Average	7.77	7.32	10.56	-4.29	6.27	36	29.73
UNII3&4	5855	H160MHz	171	ax RU	26T	36	Average	7.99	7.41	10.72	-4.29	6.43	36	29.57
UNII3&4	5855	H160MHz	171	ax RU	52T	37	Average	10.31	10.00	13.17	-4.29	8.88	36	27.12
UNII3&4	5855	H160MHz	171	ax RU	52T	44	Average	10.35	10.13	13.25	-4.29	8.96	36	27.04
UNII3&4	5855	H160MHz	171	ax RU	52T	52	Average	10.10	9.97	13.05	-4.29	8.76	36	27.24
UNII3&4	5855	H160MHz	171	ax RU	106T	53	Average	11.76	11.65	14.72	-4.29	10.43	36	25.57
UNII3&4	5855	H160MHz	171	ax RU	106T	56	Average	11.58	11.70	14.65	-4.29	10.36	36	25.64
UNII3&4	5855	H160MHz	171	ax RU	106T	60	Average	11.69	11.19	14.46	-4.29	10.17	36	25.83
UNII3&4	5855	H160MHz	171	ax RU	242T	61	Average	15.36	14.36	17.90	-4.29	13.61	36	22.39
UNII3&4	5855	H160MHz	171	ax RU	242T	62	Average	15.21	14.44	17.85	-4.29	13.56	36	22.44
UNII3&4	5855	H160MHz	171	ax RU	242T	64	Average	15.11	14.53	17.84	-4.29	13.55	36	22.45
UNII3&4	5855	H160MHz	171	ax RU	484T	65	Average	15.01	14.72	17.88	-4.29	13.59	36	22.41
UNII3&4	5855	H160MHz	171	ax RU	484T	66	Average	14.46	14.21	17.35	-4.29	13.06	36	22.94
UNII3&4	5855	H160MHz	171	ax RU	996T	67	Average	14.47	14.19	17.34	-4.29	13.05	36	22.95

Table 7-41. MIMO UNII-4 Maximum Conducted Output Power (All Tones)

Note:

Per ANSI C63.10-2013 and KDB 662911 v02r01 Section E)1), the conducted powers at Antenna-1 and Antenna-2 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.

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

Sample MIMO Calculation:

At 5180MHz in 802.11n (20MHz BW) mode, the average conducted output power was measured to be 16.47 dBm for Antenna-1 and 16.51 dBm for Antenna-2.

Antenna 1 + Antenna 2 = MIMO

(16.47 dBm + 16.51 dBm) = (44.36 mW + 44.77 mW) = 89.13 mW = 19.50 dBm

Sample e.i.r.p. Calculation:

At 5180MHz in 802.11n (20MHz BW) mode, the average MIMO conducted power was calculated to be 19.50 dBm with directional gain of -3.54 dBi.

e.i.r.p. (dBm) = Conducted Power (dBm) + Ant gain (dBi)

19.50 dBm + -3.54 dBi = 15.96 dBm

7.5 Maximum Power Spectral Density – 802.11ax OFDMA

§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, 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.

In the 5.850 – 5.855, the maximum power spectral density must not exceed 14dBm/MHz e.i.r.p.

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 ≥ 2 x (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

The power spectral density for each channel was measured with the RU index showing the highest conducted power

Summed MIMO Power Spectral Density Measurements (26 Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	ax (20MHz)	26T	MCS0	3.48	3.97	6.74	11.00	-4.26
	5200	40	ax (20MHz)	26T	MCS0	4.61	4.66	7.64	11.00	-3.36
	5240	48	ax (20MHz)	26T	MCS0	5.30	5.59	8.46	11.00	-2.54
	5190	38	ax (40MHz)	26T	MCS0	4.54	4.36	7.46	11.00	-3.54
	5230	46	ax (40MHz)	26T	MCS0	4.68	4.98	7.84	11.00	-3.16
	5210	42	ax (80MHz)	26T	MCS0	4.23	5.40	7.87	11.00	-3.13
Band 1/2A	5250	50	ax (160MHz L)	26T	MCS0	2.27	1.96	5.13	11.00	-5.87
	5250	50	ax (160MHz U)	26T	MCS0	5.87	4.59	8.28	11.00	-2.72
Band 2A	5260	52	ax (20MHz)	26T	MCS0	3.93	3.26	6.62	11.00	-4.38
	5280	56	ax (20MHz)	26T	MCS0	5.62	6.31	8.99	11.00	-2.01
	5320	64	ax (20MHz)	26T	MCS0	5.31	6.64	9.04	11.00	-1.96
	5270	54	ax (40MHz)	26T	MCS0	4.19	5.00	7.62	11.00	-3.38
	5310	62	ax (40MHz)	26T	MCS0	3.97	5.53	7.83	11.00	-3.17
	5290	58	ax (80MHz)	26T	MCS0	4.56	4.26	7.42	11.00	-3.58
Band 2C	5500	100	ax (20MHz)	26T	MCS0	4.04	4.68	7.39	11.00	-3.61
	5600	120	ax (20MHz)	26T	MCS0	4.97	5.80	8.42	11.00	-2.58
	5720	144	ax (20MHz)	26T	MCS0	4.32	5.45	7.93	11.00	-3.07
	5510	102	ax (40MHz)	26T	MCS0	4.95	4.85	7.91	11.00	-3.09
	5590	118	ax (40MHz)	26T	MCS0	4.15	5.16	7.69	11.00	-3.31
	5710	142	ax (40MHz)	26T	MCS0	4.75	5.71	8.27	11.00	-2.73
	5530	106	ax (80MHz)	26T	MCS0	2.98	2.60	5.80	11.00	-5.20
	5610	122	ax (80MHz)	26T	MCS0	3.31	3.57	6.45	11.00	-4.55
	5690	138	ax (80MHz)	26T	MCS0	4.12	3.55	6.85	11.00	-4.15
	5570	114	ax (160MHz L)	26T	MCS0	3.26	0.83	5.22	11.00	-5.78
	5570	114	ax (160MHz U)	26T	MCS0	2.46	5.61	7.32	11.00	-3.68

Table 7-42. Bands 1, 2A, 2C MIMO Conducted Power Spectral Density Measurements MIMO (26 Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density	Margin [dB]
Band 3	5745	149	ax (20MHz)	26T	MCS0	2.17	1.45	4.83	30.00	-25.17
	5785	157	ax (20MHz)	26T	MCS0	2.04	2.92	5.51	30.00	-24.49
	5825	165	ax (20MHz)	26T	MCS0	2.06	3.27	5.72	30.00	-24.28
	5755	151	ax (40MHz)	26T	MCS0	1.97	2.38	5.19	30.00	-24.81
	5795	159	ax (40MHz)	26T	MCS0	1.90	2.56	5.25	30.00	-24.75
	5775	155	ax (80MHz)	26T	MCS0	1.76	2.96	5.41	30.00	-24.59

Table 7-43. Band 3 MIMO Conducted Power Spectral Density Measurements MIMO (26 Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Antenna-1 Power Density [dBm/MHz]	Antenna-2 Power Density [dBm/MHz]	MIMO Summed Power Density [dBm/MHz]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]	Directional Antenna Gain [dBi]	EIRP Power Density [dBm/MHz]	Max EIRP Power Density [dBm/MHz]	Margin [dB]
Band 3/4	5845	169	ax (20MHz)	26T	MCS0	-7.99	-6.50	-4.17	30.00	-34.17	-4.29	-8.46	14.00	-22.46
Band 4	5865	173	ax (20MHz)	26T	MCS0	-5.99	-4.94	-2.42			-4.29	-6.71	14.00	-20.71
	5885	177	ax (20MHz)	26T	MCS0	-6.24	-7.09	-3.63			-4.29	-7.92	14.00	-21.92
Band 3/4	5835	167	ax (40MHz)	26T	MCS0	-6.53	-7.30	-3.89	30.00	-33.89	-4.29	-8.17	14.00	-22.17
Band 4	5875	175	ax (40MHz)	26T	MCS0	-8.01	-8.58	-5.28			-4.29	-9.56	14.00	-23.56
Band 3/4	5855	171	ax (80MHz)	26T	MCS0	-7.93	-8.47	-5.18	30.00	-35.18	-4.29	-9.47	14.00	-23.47
	5815	163	ax (160MHz L)	26T	MCS0	-0.85	2.30	4.01	30.00	-25.99	-4.29	-0.28	14.00	-14.28
	5815	163	ax (160MHz U)	26T	MCS0	2.69	3.80	6.29	30.00	-23.71	-4.29	2.01	14.00	-11.99

Table 7-44. Band 4 MIMO Conducted Power Spectral Density Measurements MIMO (26 Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	ax (20MHz)	242T	MCS0	2.21	3.11	5.69	11.00	-5.31
	5200	40	ax (20MHz)	242T	MCS0	2.39	2.97	5.70	11.00	-5.30
	5240	48	ax (20MHz)	242T	MCS0	2.55	3.27	5.94	11.00	-5.06
	5190	38	ax (40MHz)	484T	MCS0	-0.78	-0.34	2.46	11.00	-8.54
	5230	46	ax (40MHz)	484T	MCS0	-0.10	0.14	3.04	11.00	-7.96
	5210	42	ax (80MHz)	996T	MCS0	-4.13	-2.73	-0.37	11.00	-11.37
Band 1/2A	5250	50	ax (160MHz L)	996T	MCS0	-3.79	-2.49	-0.08	11.00	-11.08
	5250	50	ax (160MHz U)	996T	MCS0	-1.97	-3.33	0.41	11.00	-10.59
Band 2A	5260	52	ax (20MHz)	242T	MCS0	2.10	2.77	5.46	11.00	-5.54
	5280	56	ax (20MHz)	242T	MCS0	2.26	2.59	5.44	11.00	-5.56
	5320	64	ax (20MHz)	242T	MCS0	2.16	2.79	5.50	11.00	-5.50
	5270	54	ax (40MHz)	484T	MCS0	-0.73	-0.59	2.35	11.00	-8.65
	5310	62	ax (40MHz)	484T	MCS0	-1.11	-0.39	2.28	11.00	-8.72
	5290	58	ax (80MHz)	996T	MCS0	-4.32	-3.89	-1.09	11.00	-12.09
Band 2C	5500	100	ax (20MHz)	242T	MCS0	2.19	2.56	5.39	11.00	-5.61
	5600	120	ax (20MHz)	242T	MCS0	1.77	2.34	5.07	11.00	-5.93
	5720	144	ax (20MHz)	242T	MCS0	2.42	3.17	5.82	11.00	-5.18
	5510	102	ax (40MHz)	484T	MCS0	0.35	-0.05	3.17	11.00	-7.83
	5590	118	ax (40MHz)	484T	MCS0	0.54	0.11	3.34	11.00	-7.66
	5710	142	ax (40MHz)	484T	MCS0	-0.15	-0.23	2.82	11.00	-8.18
	5530	106	ax (80MHz)	996T	MCS0	-4.61	-4.45	-1.52	11.00	-12.52
	5610	122	ax (80MHz)	996T	MCS0	-4.19	-4.81	-1.48	11.00	-12.48
	5690	138	ax (80MHz)	996T	MCS0	-3.80	-4.23	-1.00	11.00	-12.00
	5570	114	ax (160MHz L)	996T	MCS0	-11.35	-3.09	-2.49	11.00	-13.49
	5570	114	ax (160MHz U)	996T	MCS0	-3.59	-3.23	-0.40	11.00	-11.40

Table 7-45. Bands 1, 2A, 2C MIMO Conducted Power Spectral Density Measurements MIMO (Full Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density	Margin [dB]
Band 3	5745	149	ax (20MHz)	242T	MCS0	-0.49	-0.52	2.51	30.00	-27.49
	5785	157	ax (20MHz)	242T	MCS0	-0.17	-0.12	2.87	30.00	-27.13
	5825	165	ax (20MHz)	242T	MCS0	-0.52	-0.37	2.56	30.00	-27.44
	5755	151	ax (40MHz)	484T	MCS0	-2.15	-2.50	0.69	30.00	-29.31
	5795	159	ax (40MHz)	484T	MCS0	-2.44	-2.60	0.49	30.00	-29.51
	5775	155	ax (80MHz)	996T	MCS0	-6.51	-6.24	-3.36	30.00	-33.36

Table 7-46. Band 3 MIMO Conducted Power Spectral Density Measurements MIMO (Full Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Antenna-1 Power Density [dBm/MHz]	Antenna-2 Power Density [dBm/MHz]	MIMO Summed Power Density [dBm/MHz]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]	Directional Antenna Gain [dBi]	EIRP Power Density [dBm/MHz]	Max EIRP Power Density [dBm/MHz]	Margin [dB]
Band 3/4	5845	169	ax (20MHz)	242T	MCS0	-6.41	-5.73	-3.05	30.00	-33.05	-4.29	-7.34	14.00	-21.34
Band 4	5865	173	ax (20MHz)	242T	MCS0	-5.93	-5.85	-2.88			-4.29	-7.17	14.00	-21.17
	5885	177	ax (20MHz)	242T	MCS0	-5.33	-5.84	-2.57			-4.29	-6.85	14.00	-20.85
Band 3/4	5835	167	ax (40MHz)	484T	MCS0	-10.04	-10.31	-7.16	30.00	-37.16	-4.29	-11.45	14.00	-25.45
Band 4	5875	175	ax (40MHz)	484T	MCS0	-9.12	-9.55	-6.32			-4.29	-10.61	14.00	-24.61
Band 3/4	5855	171	ax (80MHz)	996T	MCS0	-12.46	-12.81	-9.62	30.00	-39.62	-4.29	-13.91	14.00	-27.91
	5815	163	ax (160MHz L)	996T	MCS0	-1.24	-2.01	1.40	30.00	-28.60	-4.29	-2.88	14.00	-16.88
	5815	163	ax (160MHz U)	996T	MCS0	-1.06	-2.50	1.29	30.00	-28.71	-4.29	-3.00	14.00	-17.00

Table 7-47. Band 3 MIMO Conducted Power Spectral Density Measurements MIMO (Full Tones)

Note:

Per ANSI C63.10-2013 Section 14.3.2.2 and KDB 662911 v02r01 Section E)2), the power spectral density at Antenna-1 and Antenna-2 were first measured separately with reduced Antenna-1 and Antenna-2 powers per manufacture's tune-up document. The measured values were then summed in linear power units then converted back to dBm.

Sample Directional Gain Calculation:

Assuming the antenna gain is -8.61 dBi for Antenna-1 and -7.68 dBi for Antenna-2.

$$\text{Directional gain} = 10 \log[(10^{G_1/20} + 10^{G_2/20} + \ldots + 10^{G_N/20})^2 / N_{ANT}] \text{ dBi}$$
$$= 10 \log[(10^{-8.61/20} + 10^{-7.68/20} / 2] \text{ dBi}$$
$$= (-5.12) \text{ dBi}$$

Sample MIMO Calculation:

Assuming the average conducted power spectral density was measured to be 5.88 dBm for Antenna-1 and 6.27 dBm for Antenna-2.

Antenna-1 + Antenna-2 = MIMO

(5.88 dBm + 6.27 dBm) = (3.87 mW + 4.24 mW) = 8.11mW = 9.09 dBm

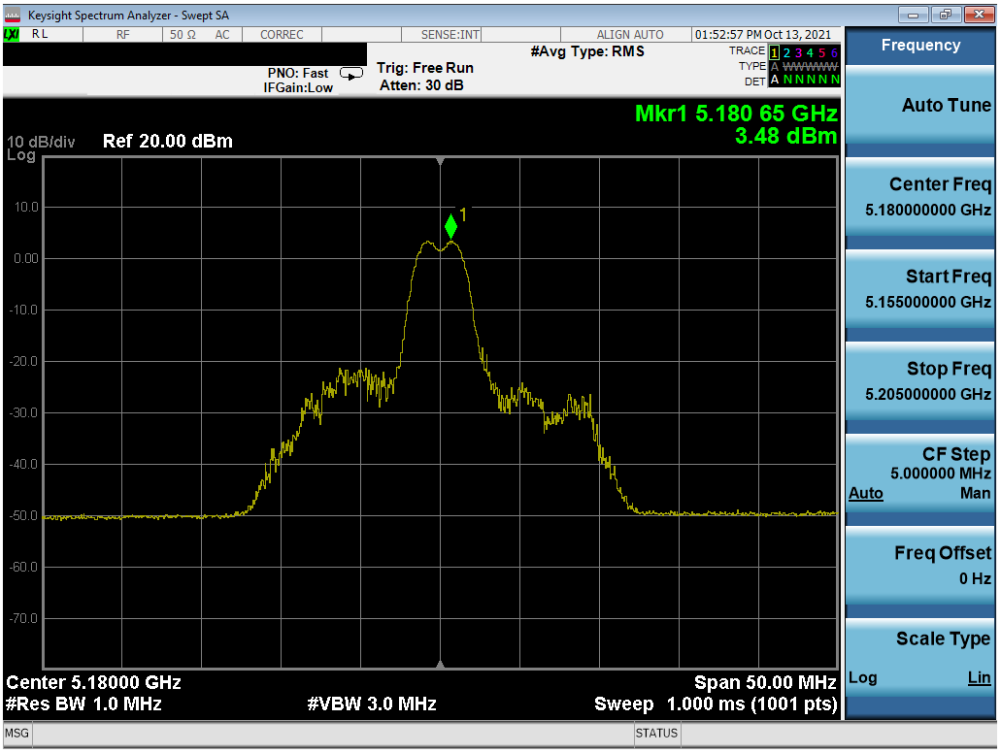
Sample e.i.r.p Power Spectral Density Calculation:

Assuming the average MIMO power density was calculated to be 9.09 dBm with directional gain of -5.12 dBi.

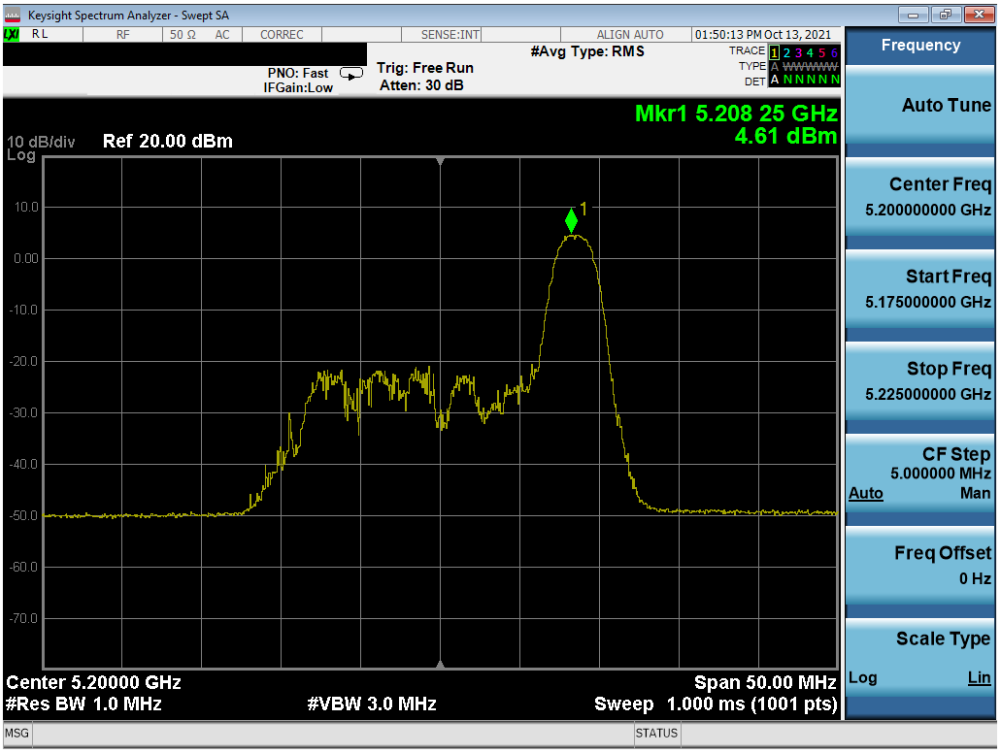
e.i.r.p. Power Spectral Density(dBm) = Power Spectral Density (dBm) + directional gain (dBi)

9.09 dBm + (-5.12) dBi = 3.97 dBm

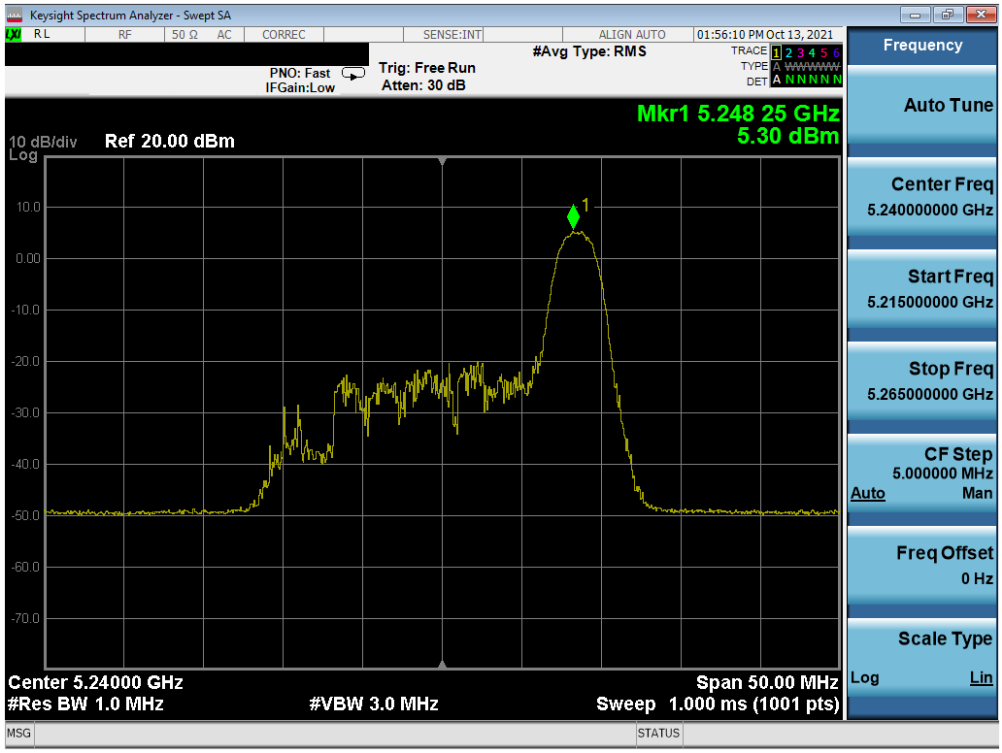
MIMO Antenna-1 Power Spectral Density Measurements (26 Tones)



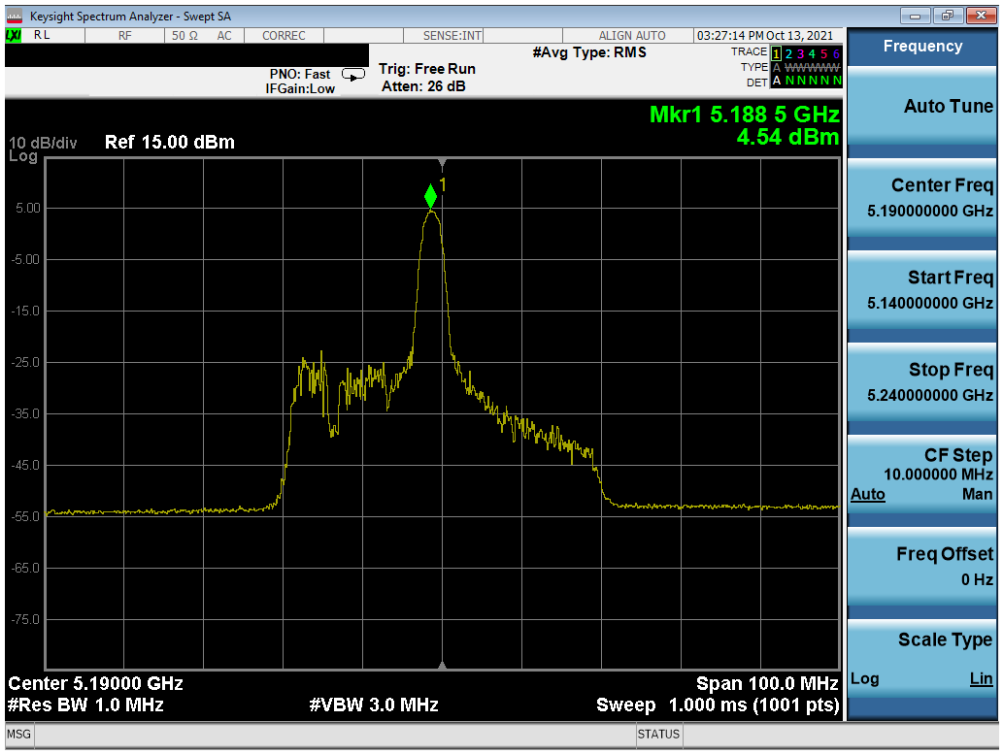
Plot 7-157. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 36)



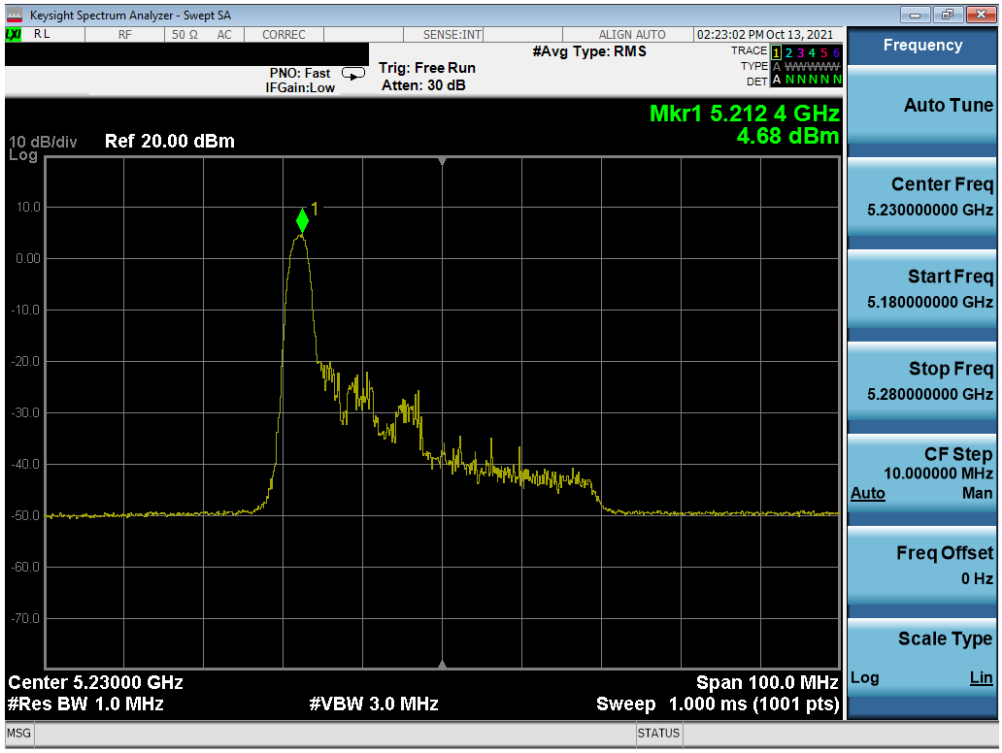
Plot 7-158. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 40)



Plot 7-159. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 48)

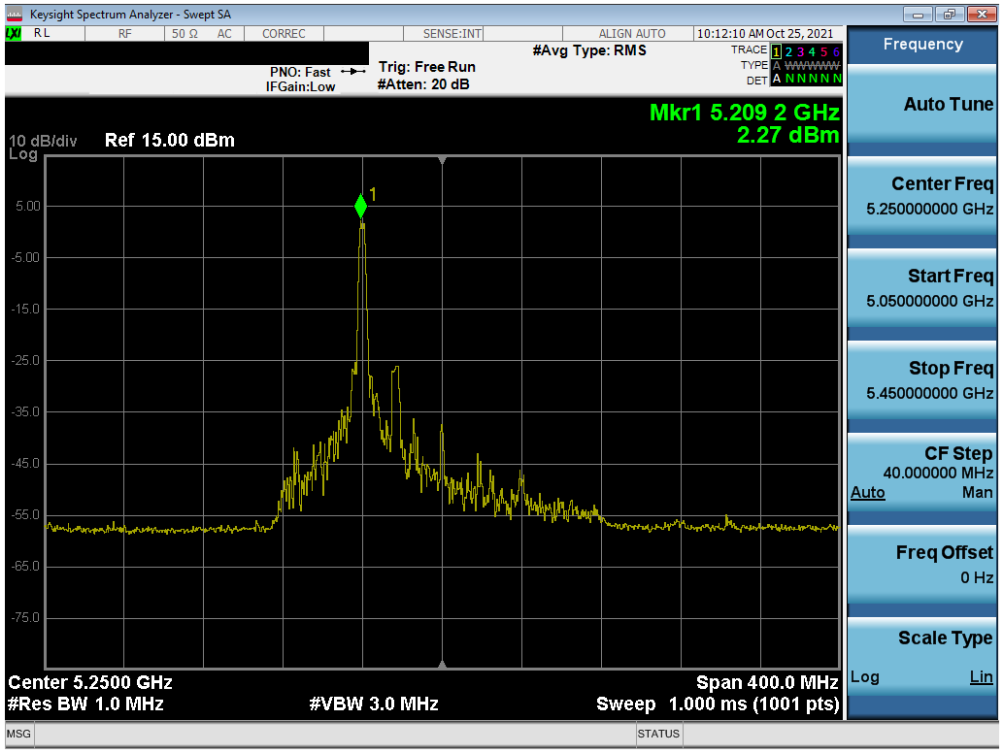


Plot 7-160. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 38)

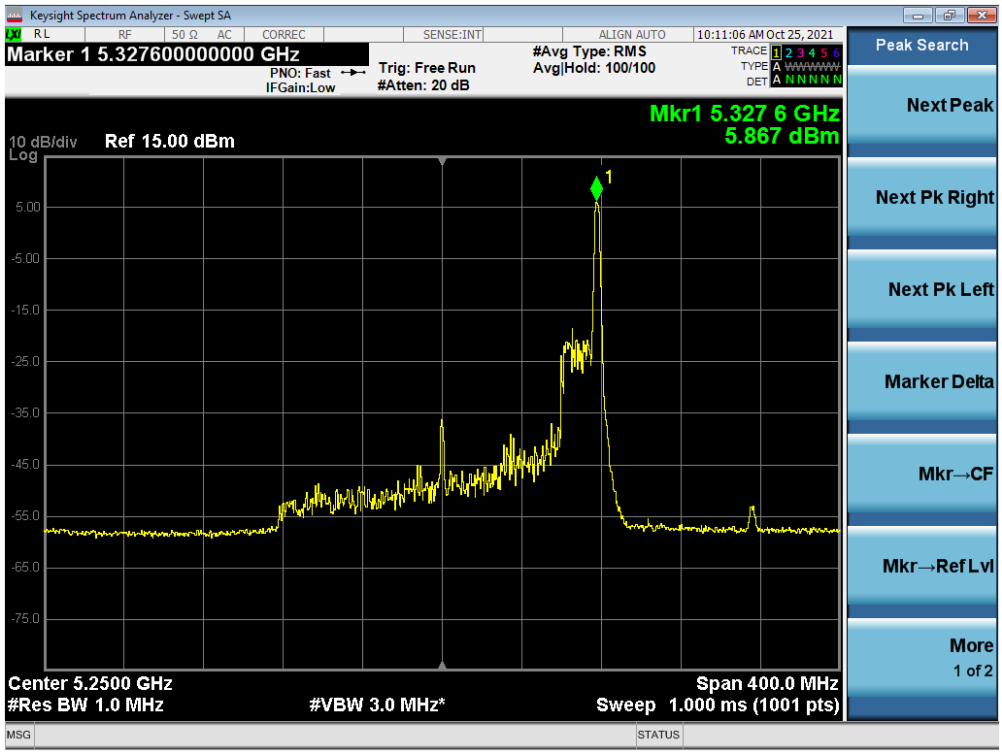


Plot 7-161. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 46)

Plot 7-162. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 42)



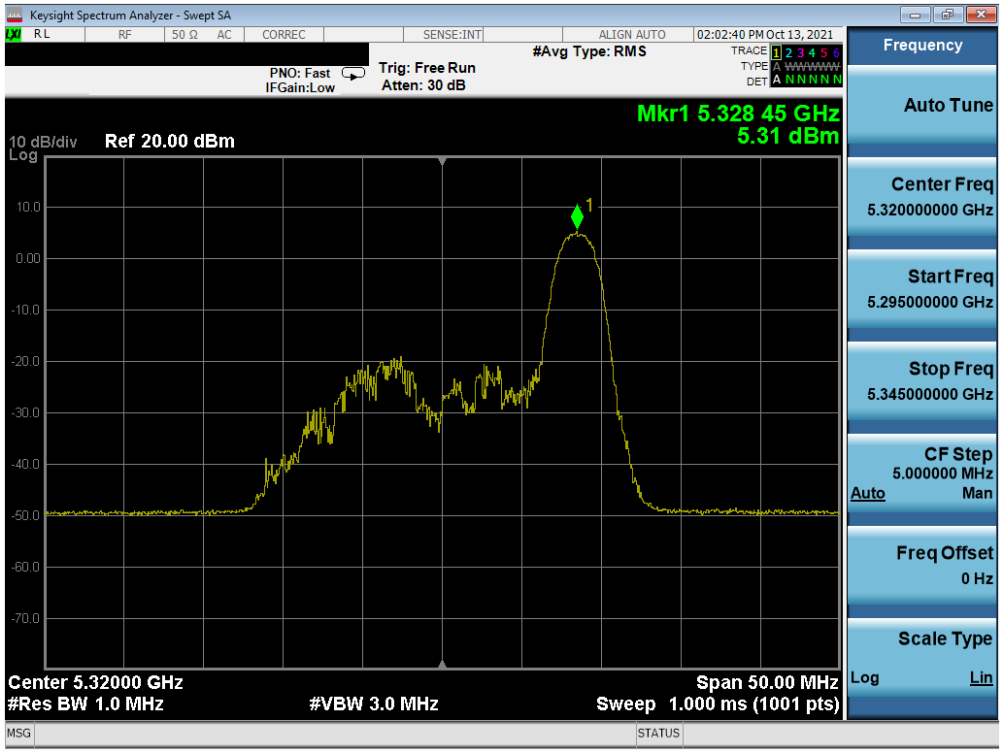
Plot 7-163. Power Spectral Density Plot MIMO ANT1 (160MHz BW (L) 802.11ax – 26 Tones (UNII Band 1/2A) – Ch. 50)



Plot 7-164. Power Spectral Density Plot MIMO ANT1 (160MHz BW (U) 802.11ax – 26 Tones (UNII Band 1/2A) – Ch. 50)

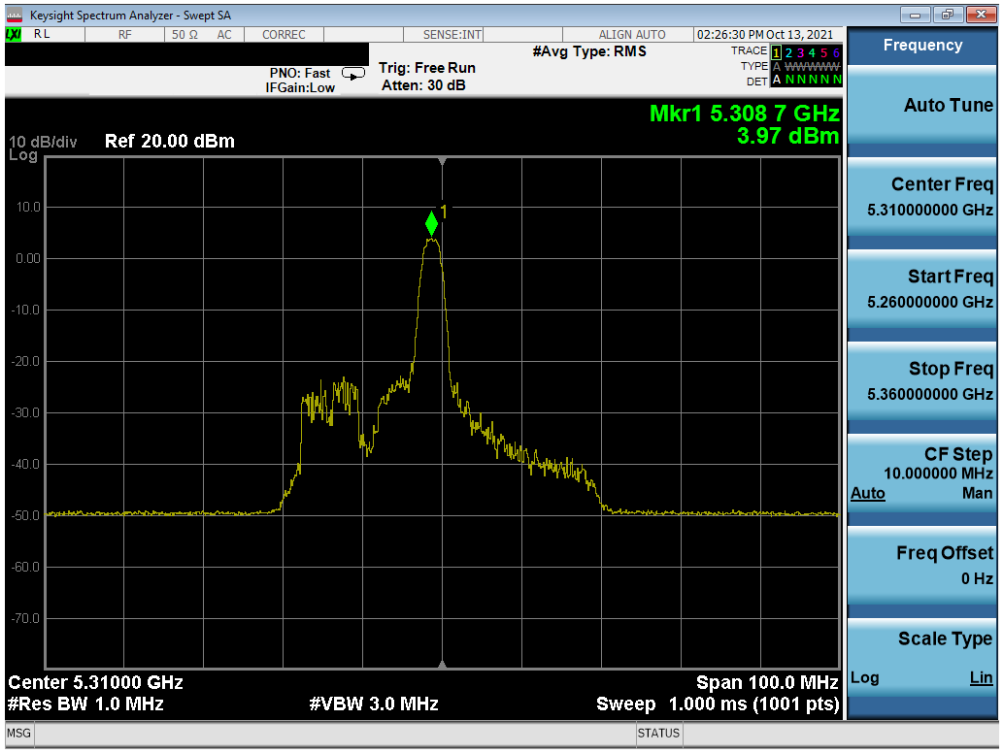
Plot 7-165. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 52)

Plot 7-166. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 56)

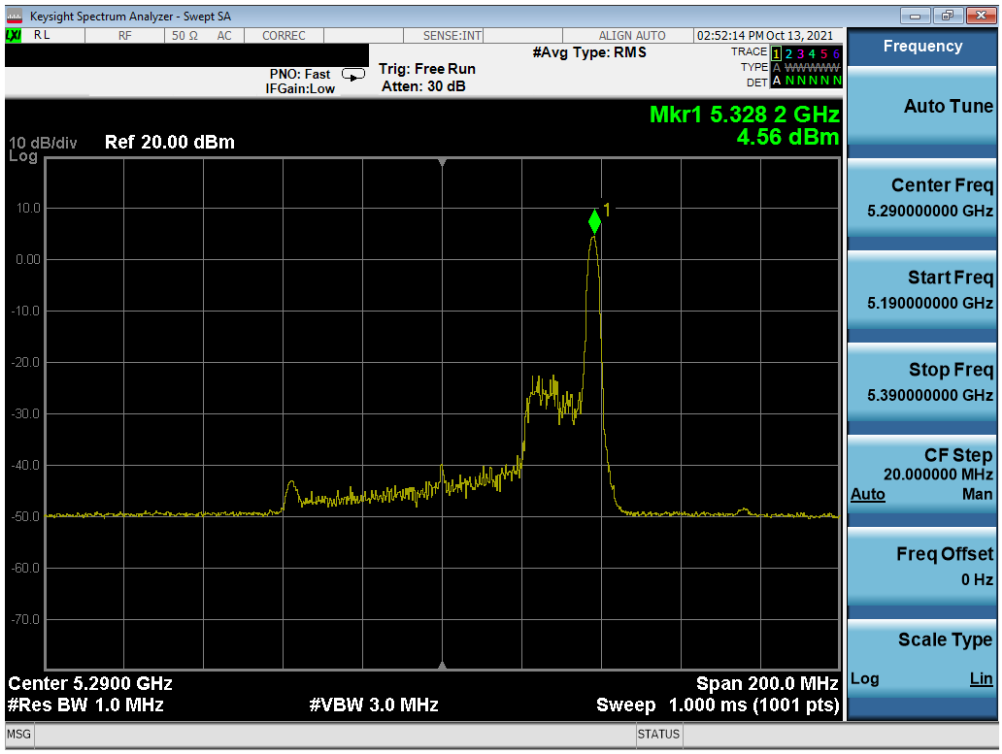


Plot 7-167. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 64)

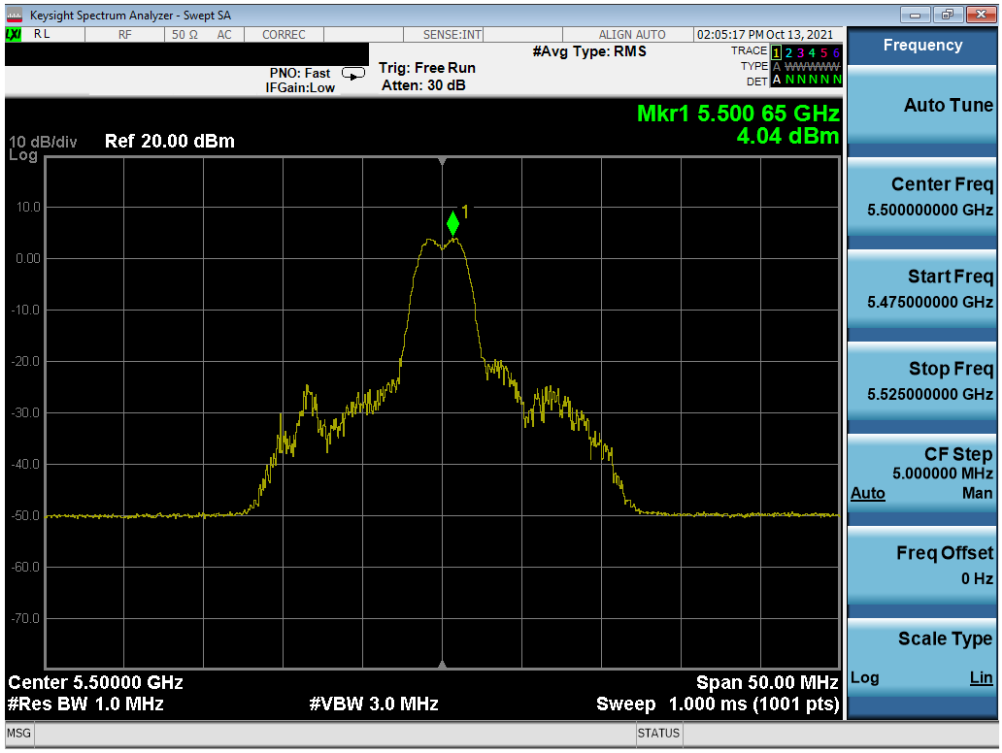
Plot 7-168. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 54)



Plot 7-169. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 62)

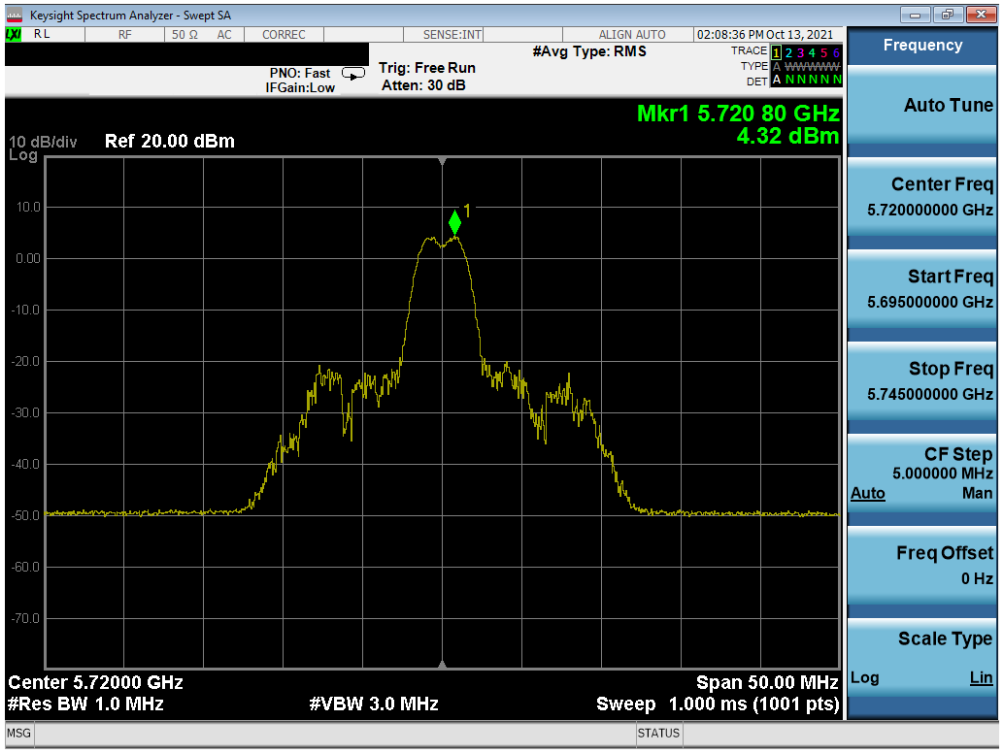


Plot 7-170. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 58)

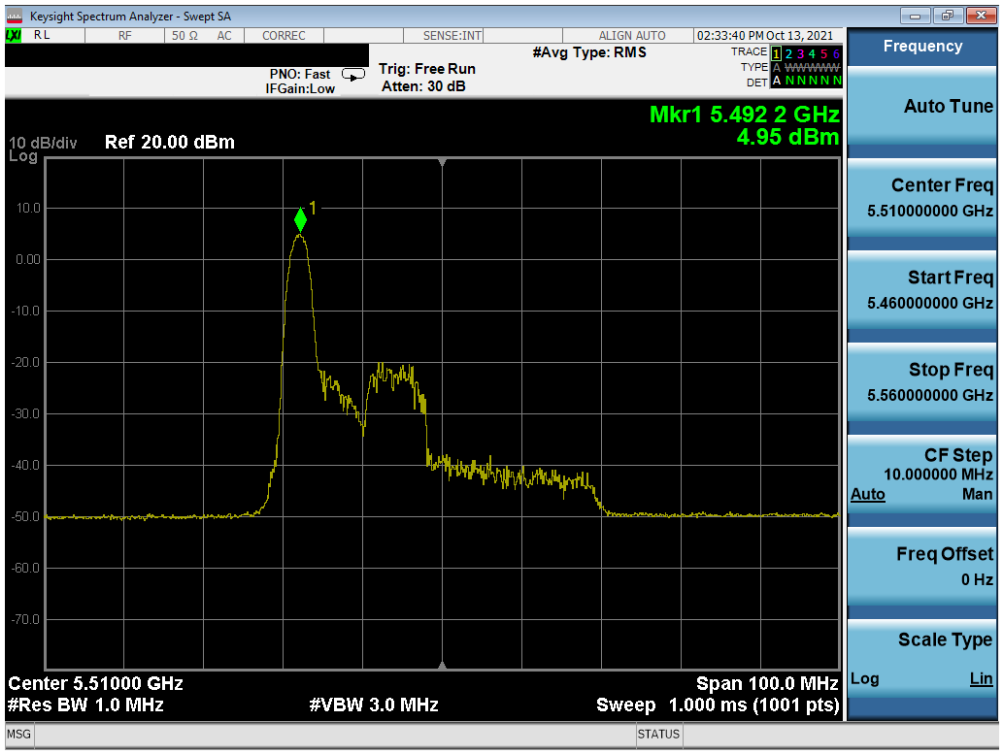


Plot 7-171. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 100)

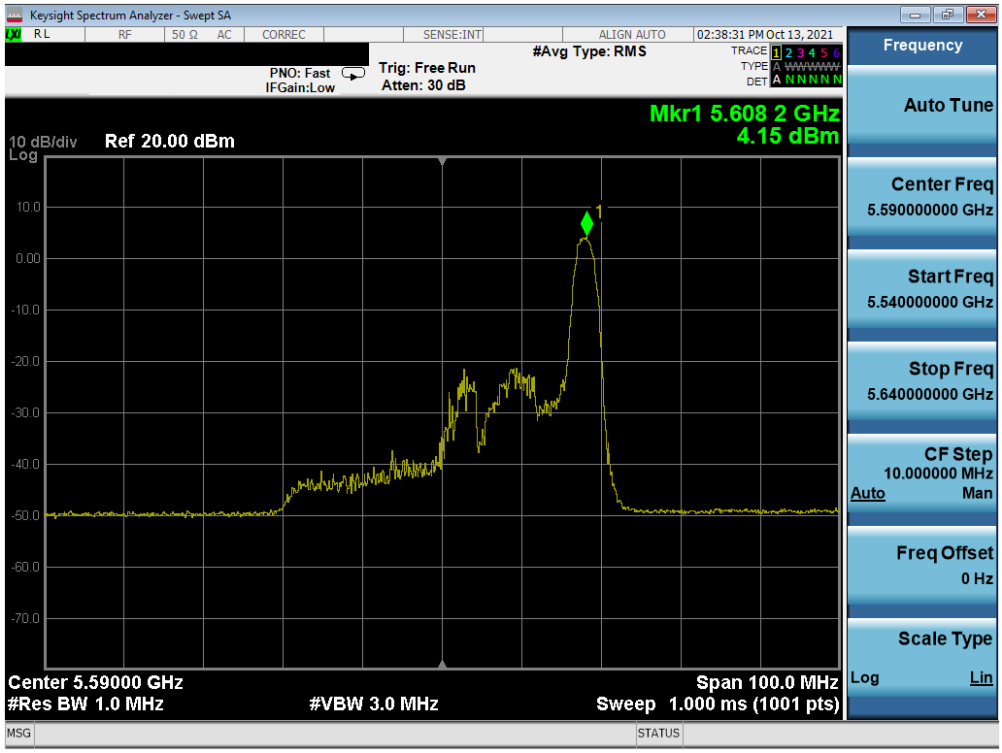
Plot 7-172. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 120)



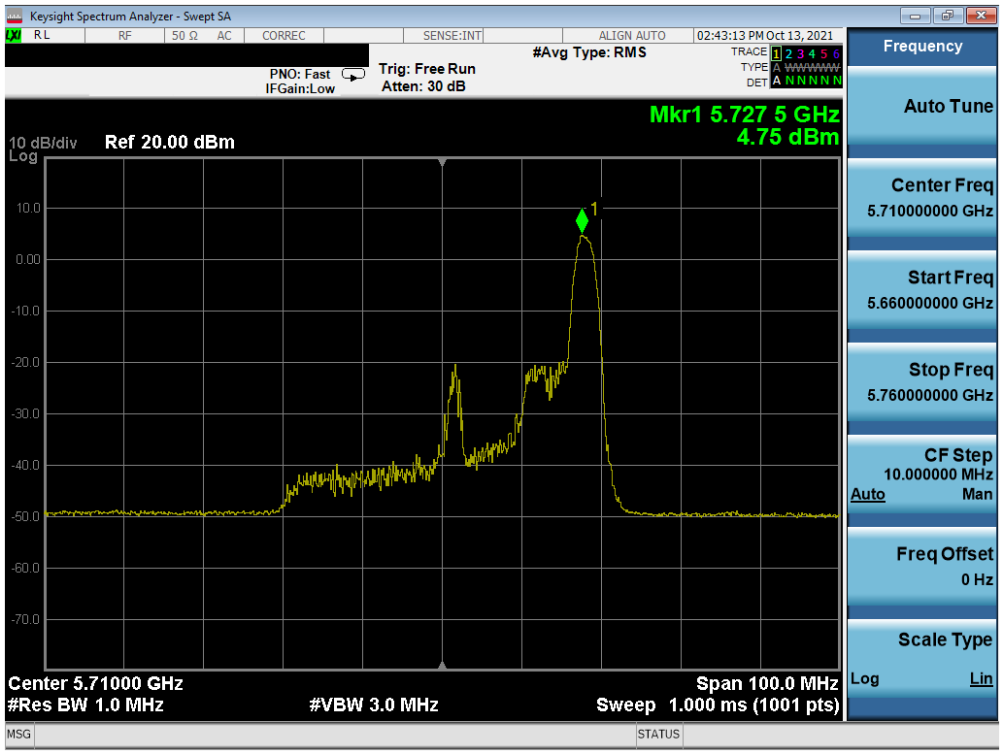
Plot 7-173. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 144)



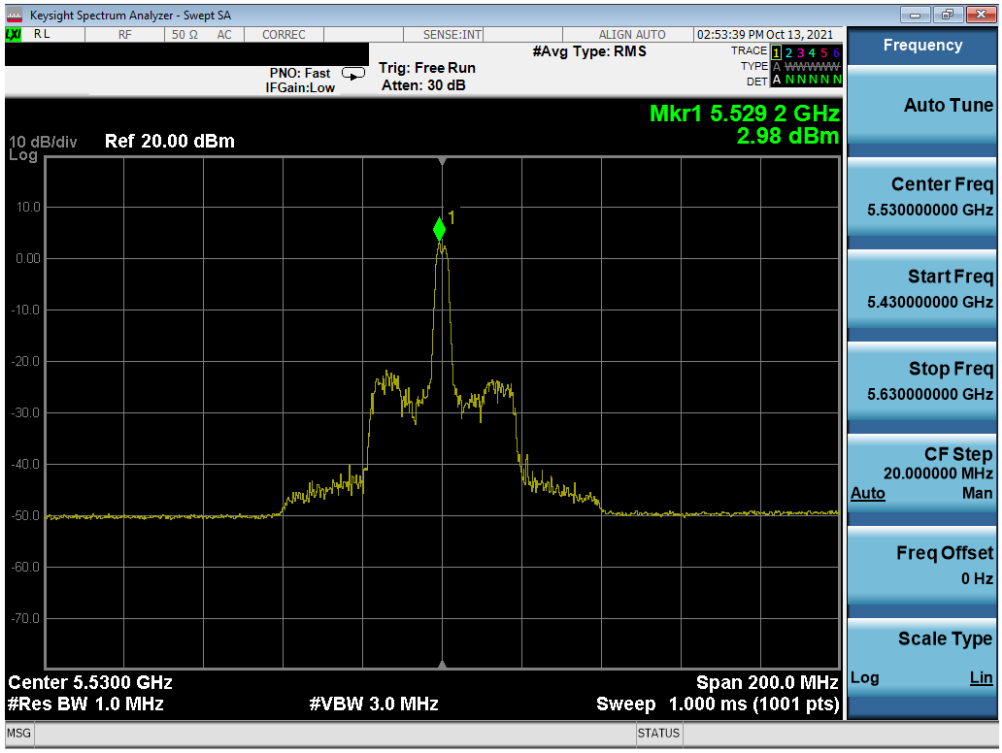
Plot 7-174. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 102)



Plot 7-175. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 118)

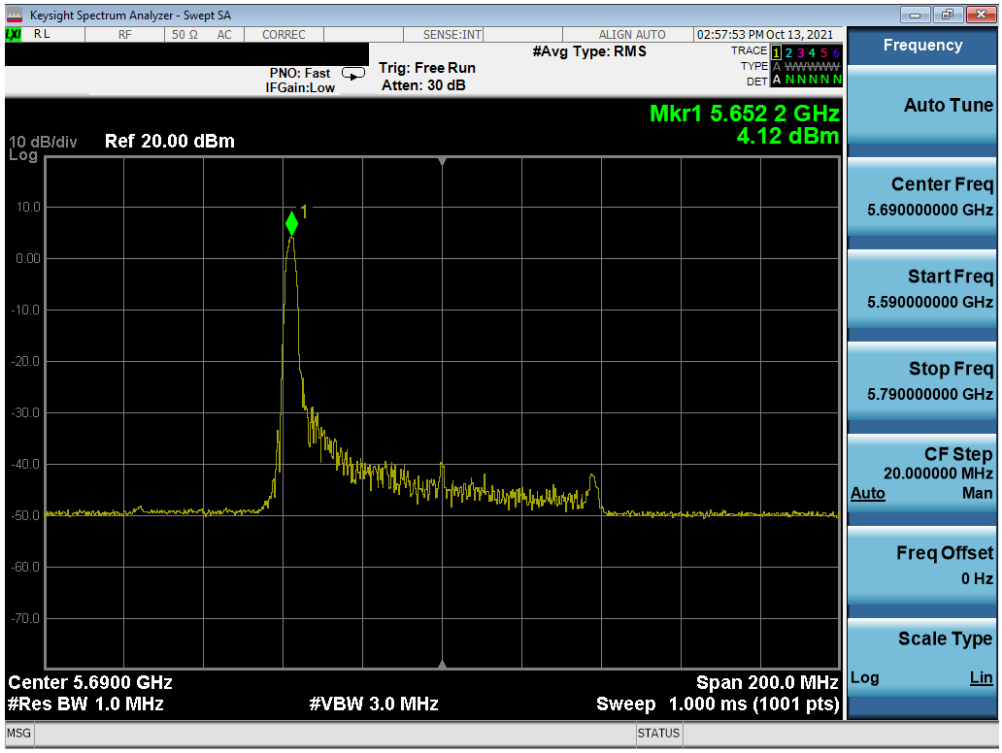


Plot 7-176. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 142)

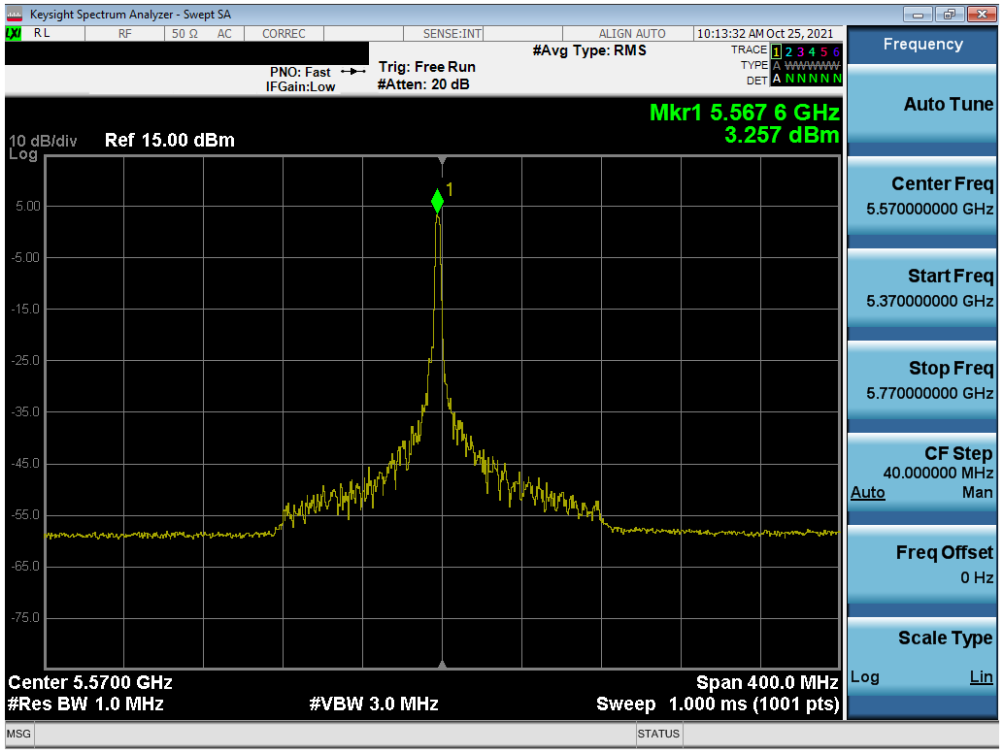


Plot 7-177. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 106)

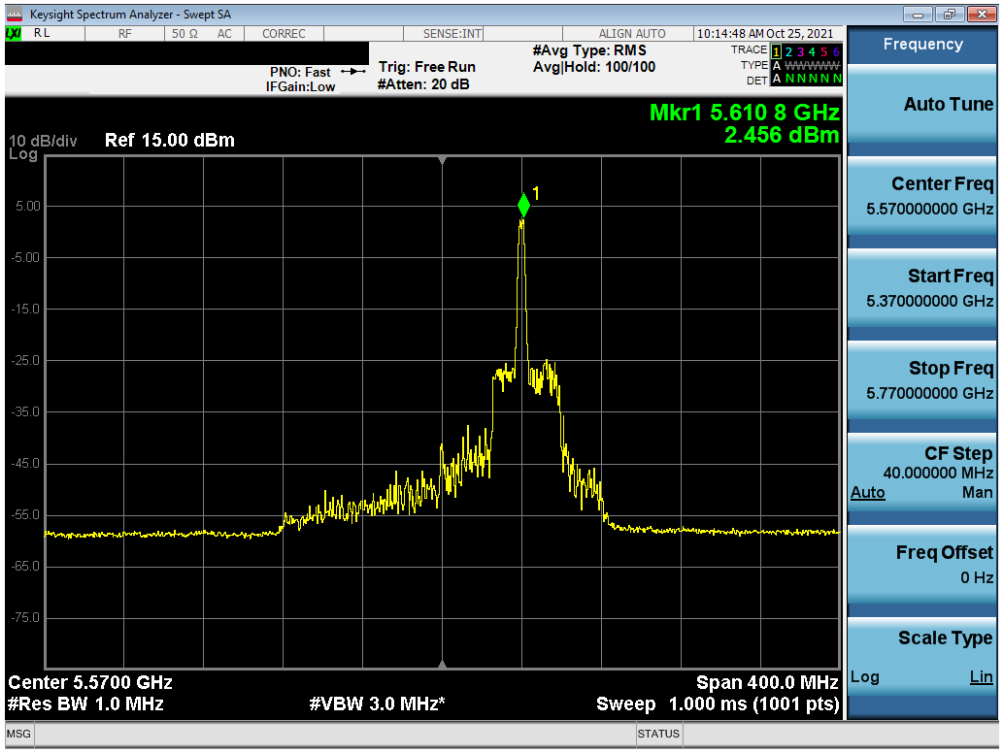
Plot 7-178. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 122)



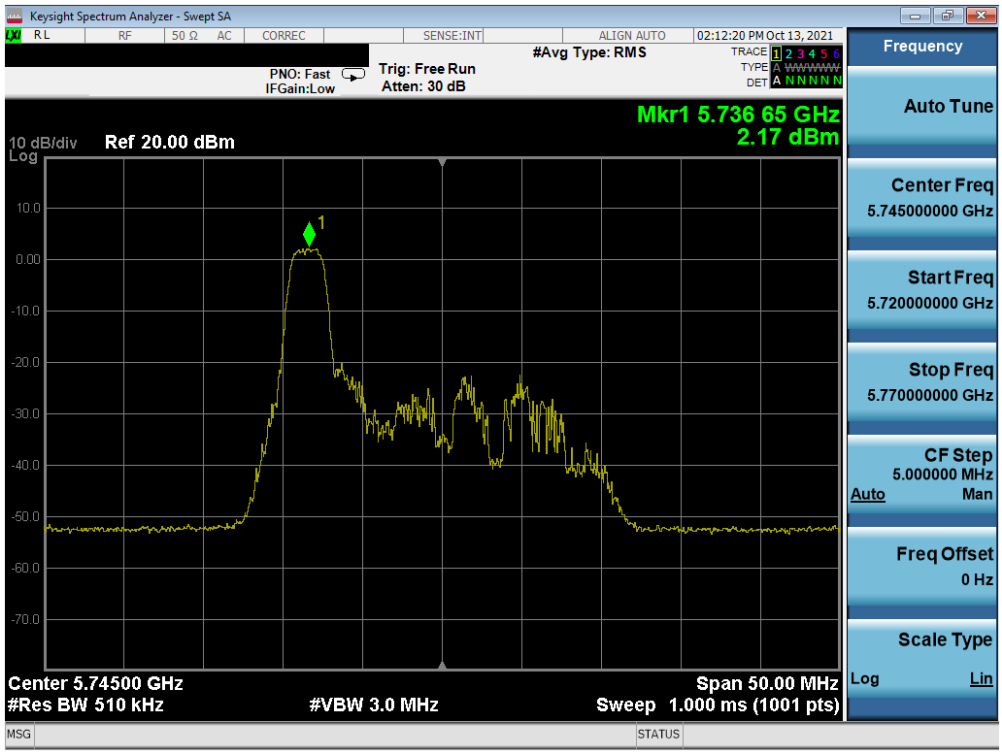
Plot 7-179. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 138)



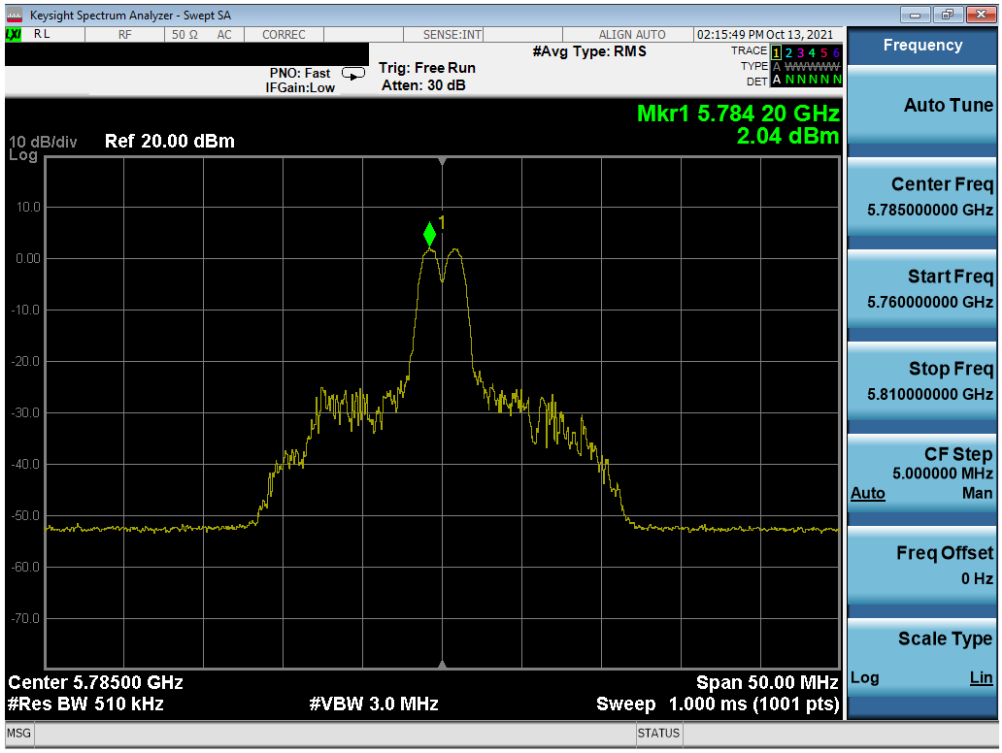
Plot 7-180. Power Spectral Density Plot MIMO ANT1 (160MHz BW (L) 802.11ax – 26 Tones (UNII Band 2C) – Ch. 114)



Plot 7-181. Power Spectral Density Plot MIMO ANT1 (160MHz BW (U) 802.11ax – 26 Tones (UNII Band 2C) – Ch. 114)

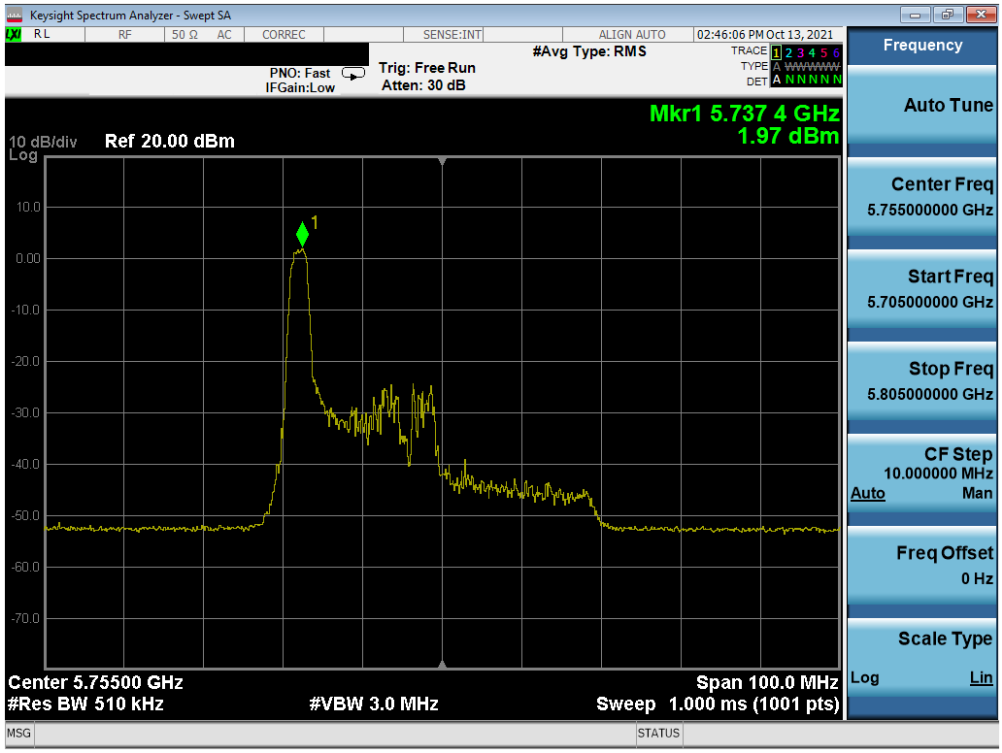


Plot 7-182. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 149)

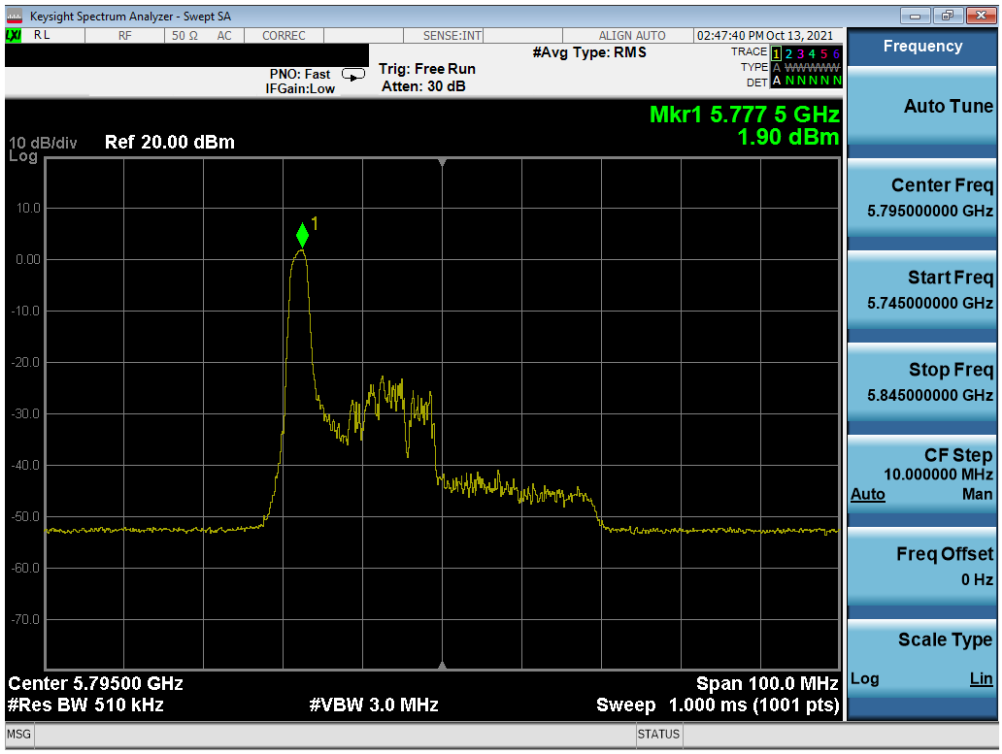


Plot 7-183. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 157)

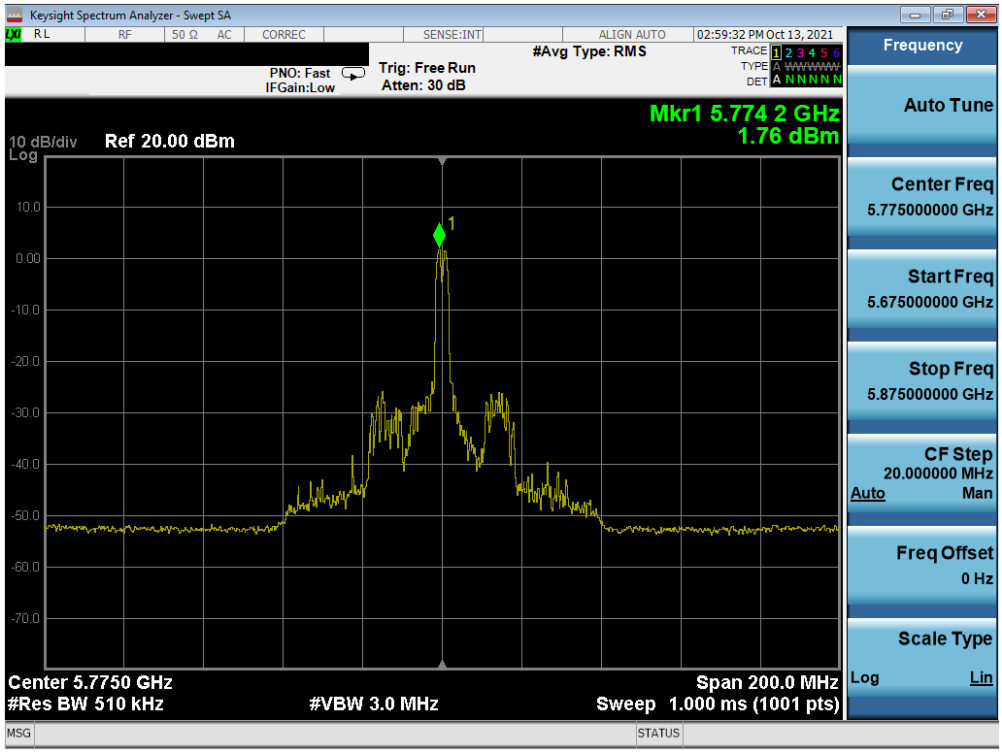
Plot 7-184. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 165)



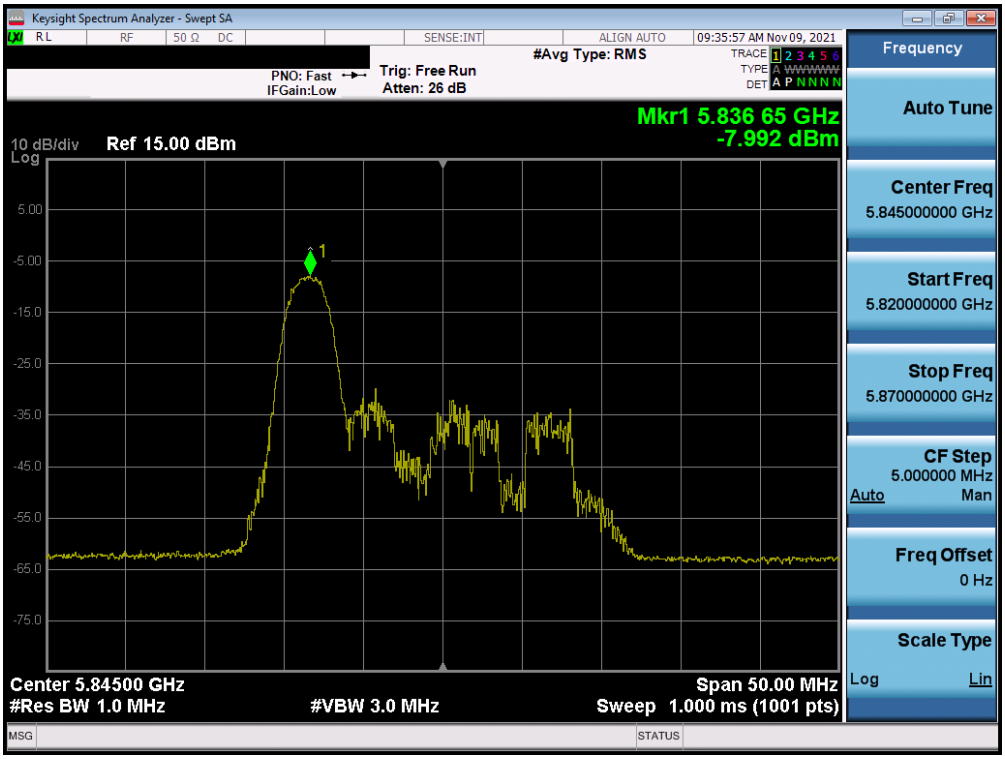
Plot 7-185. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 151)



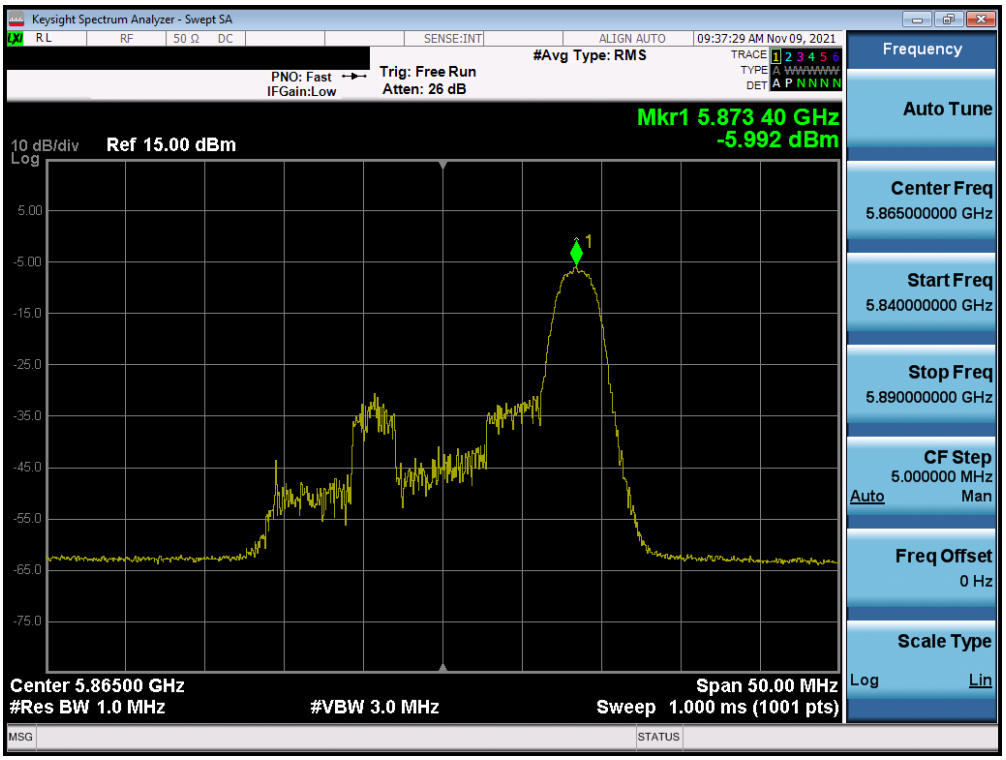
Plot 7-186. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 159)



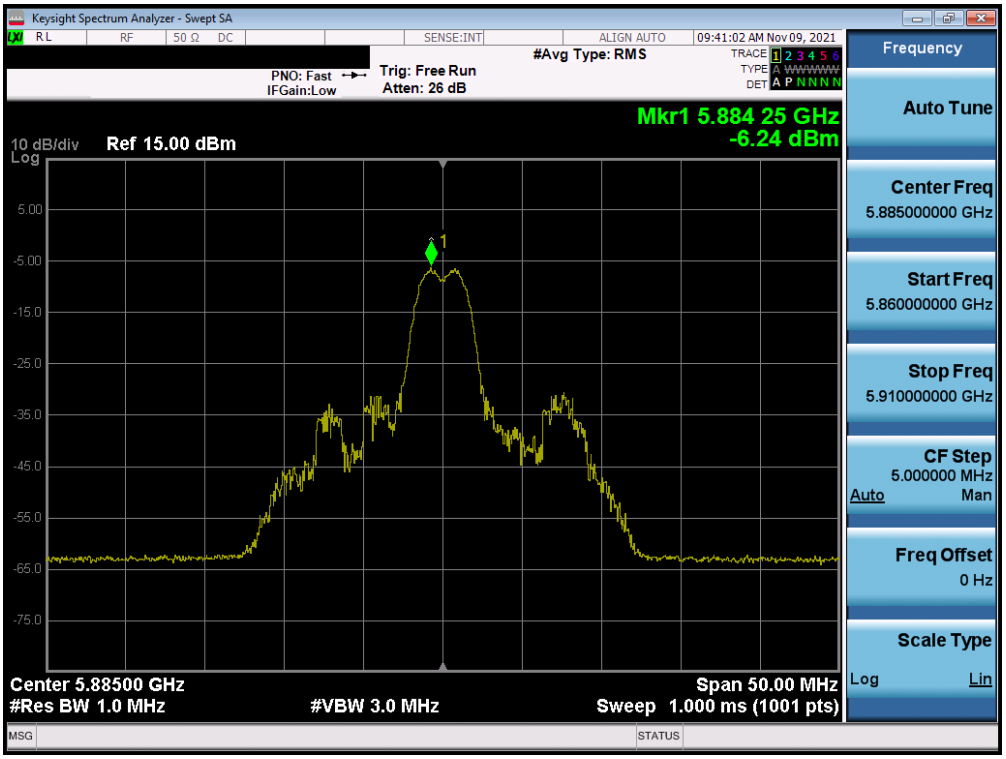
Plot 7-187. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 155)



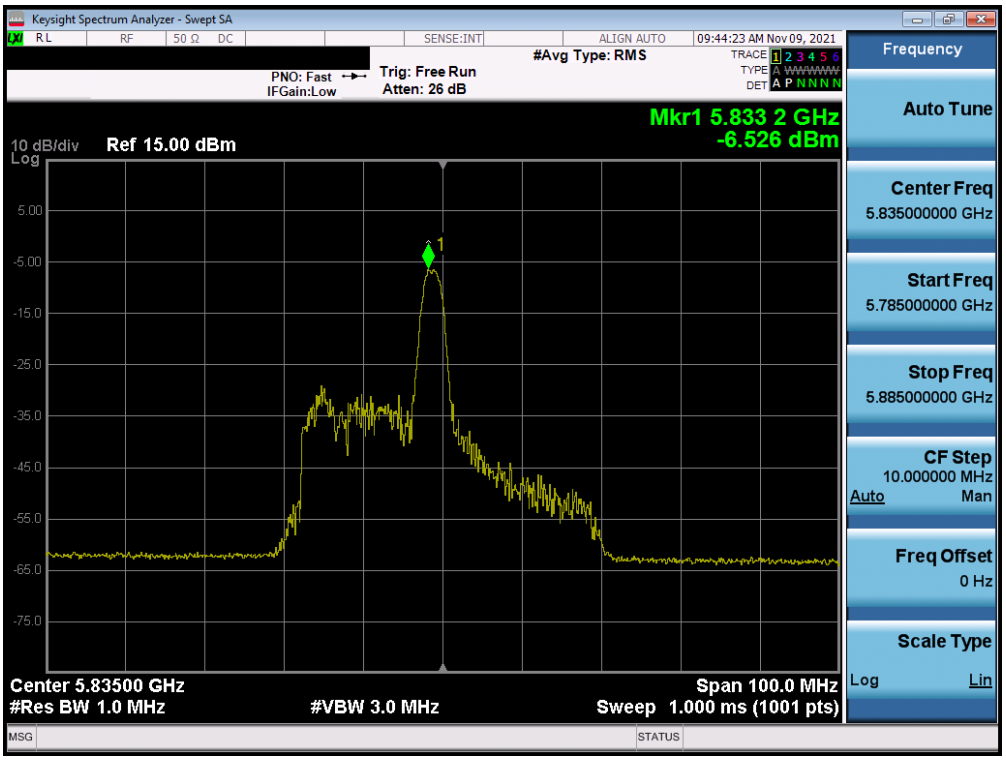
Plot 7-188. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3/4) – Ch. 169)



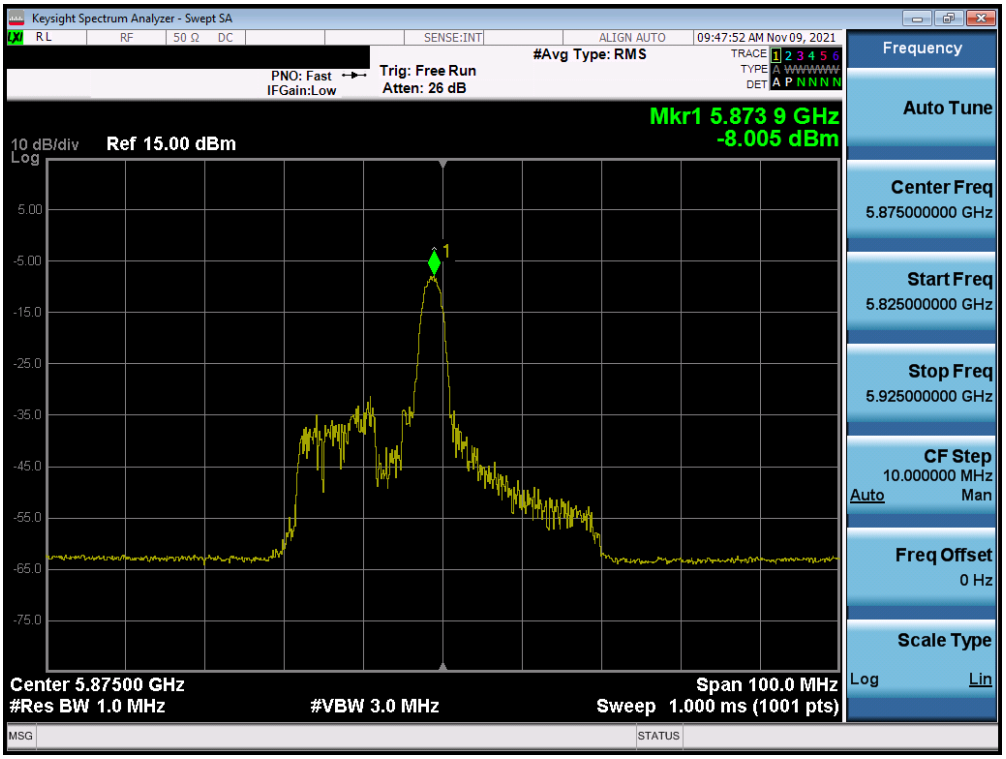
Plot 7-189. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 4) – Ch. 173)



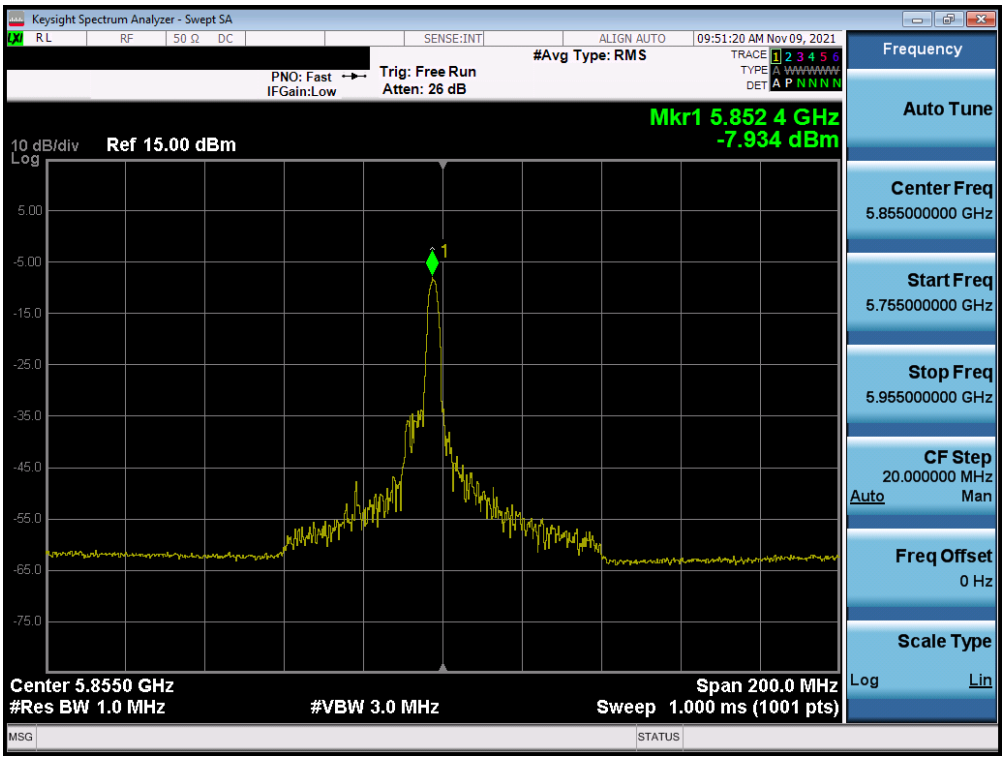
Plot 7-190. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3/4) – Ch. 177)



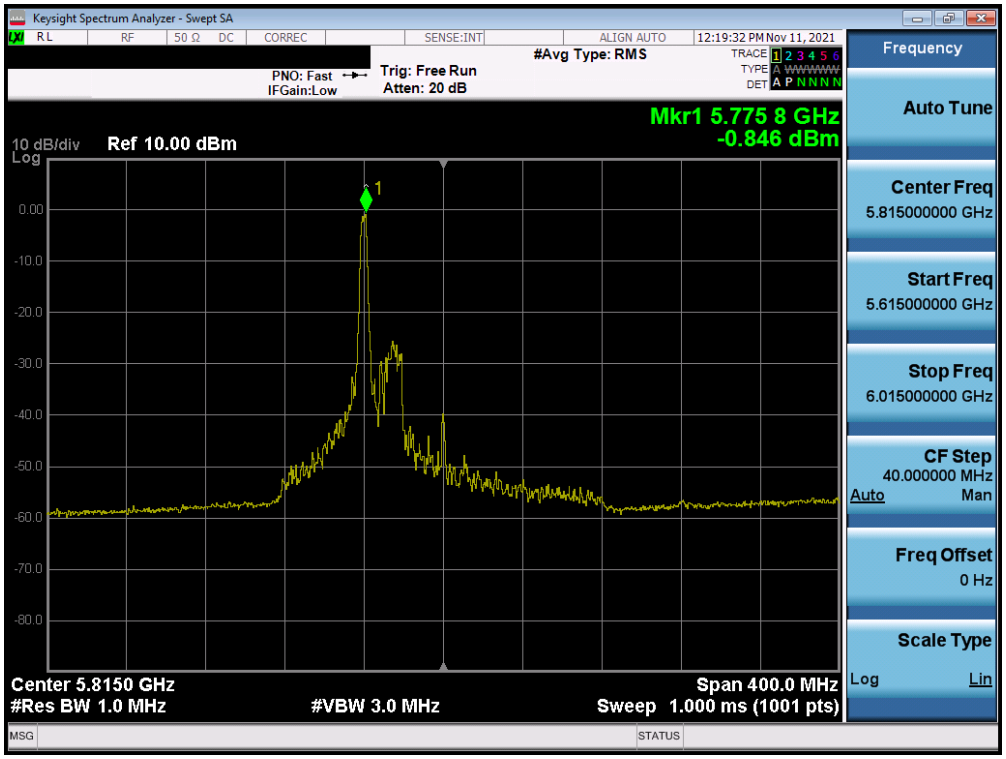
Plot 7-191. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3/4) – Ch. 167)



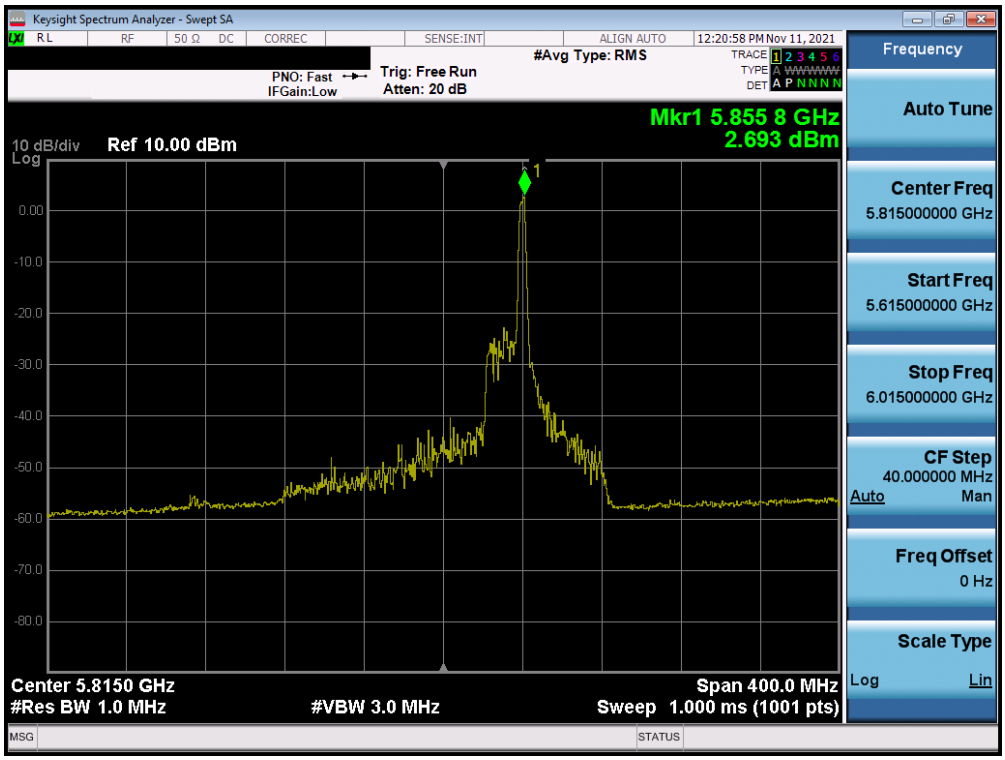
Plot 7-192. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 4) – Ch. 175)



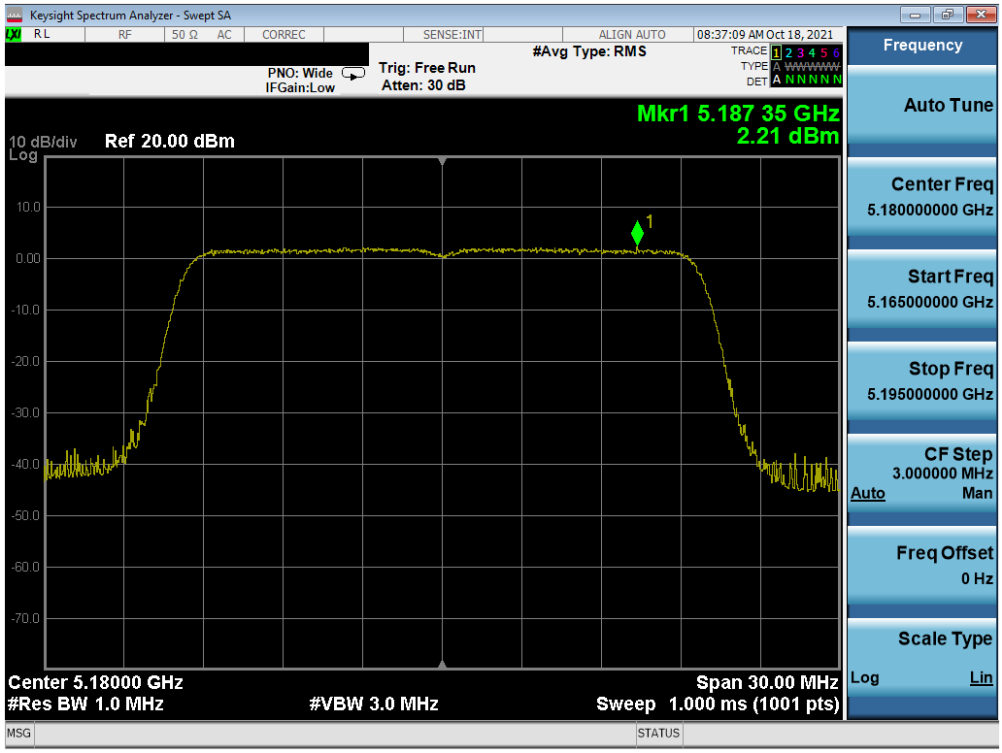
Plot 7-193. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 3/4) – Ch. 171)



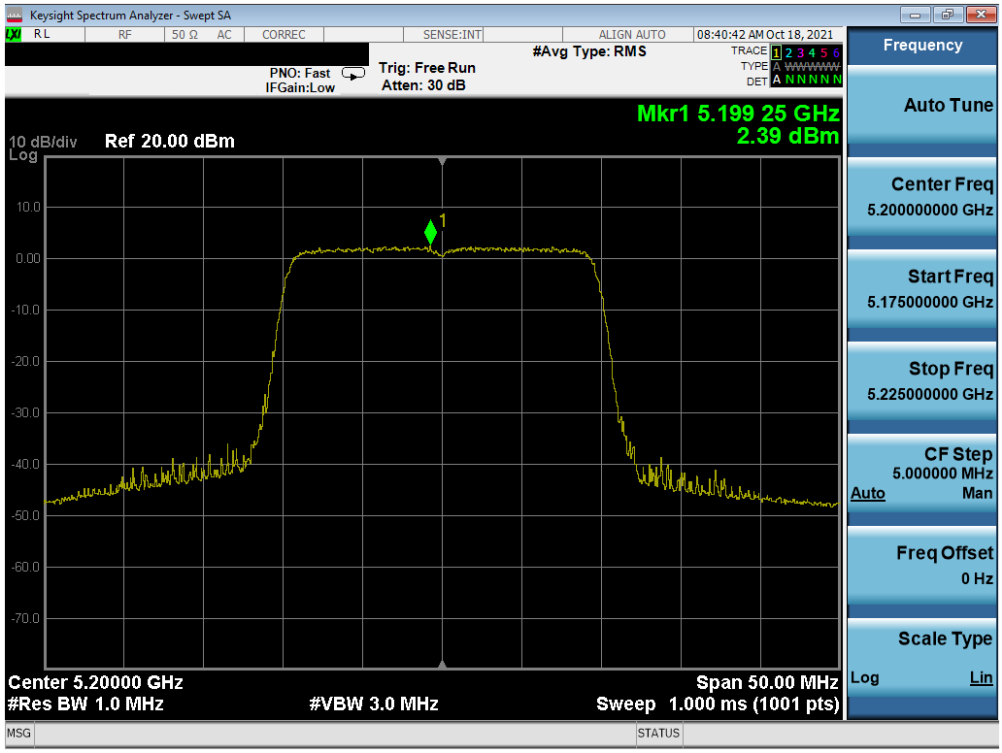
Plot 7-194. Power Spectral Density Plot MIMO ANT1 (160MHz BW (L) 802.11ax – 26 Tones (UNII Band 3/4) – Ch. 163)



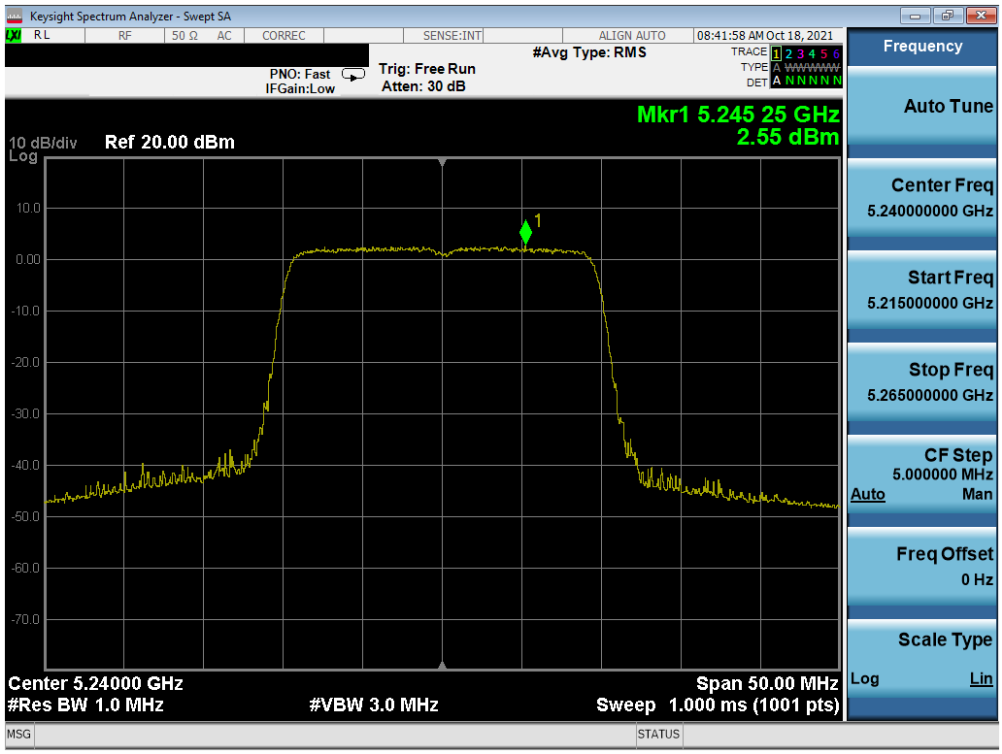
Plot 7-195. Power Spectral Density Plot MIMO ANT1 (160MHz BW (U) 802.11ax – 26 Tones (UNII Band 3/4) – Ch. 163)



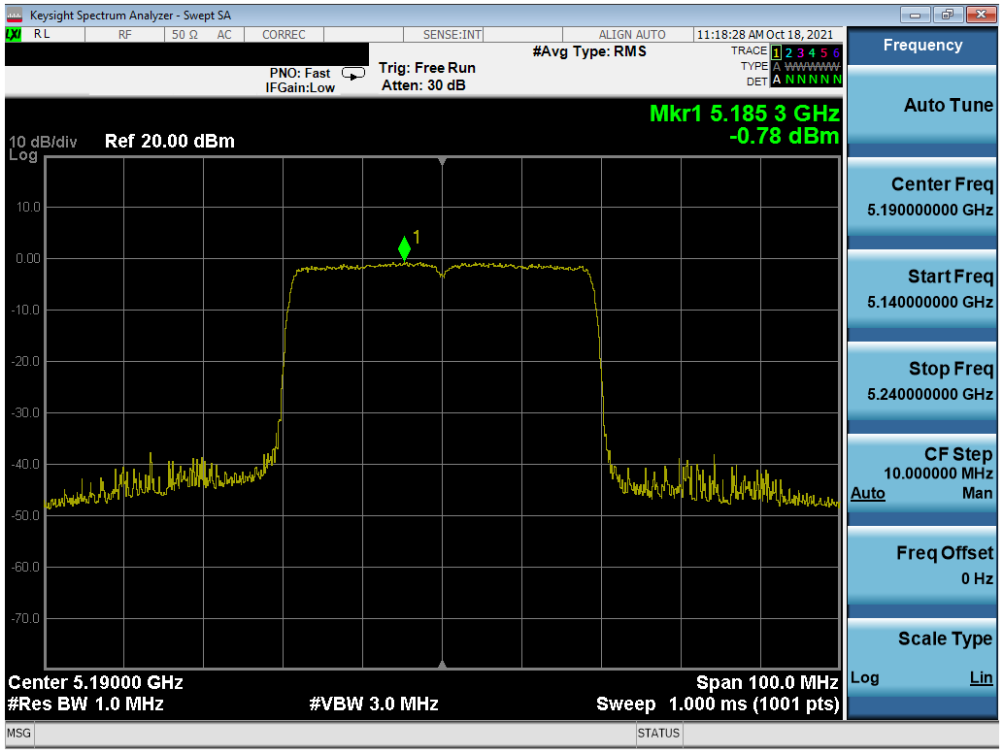
Plot 7-196. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 36)



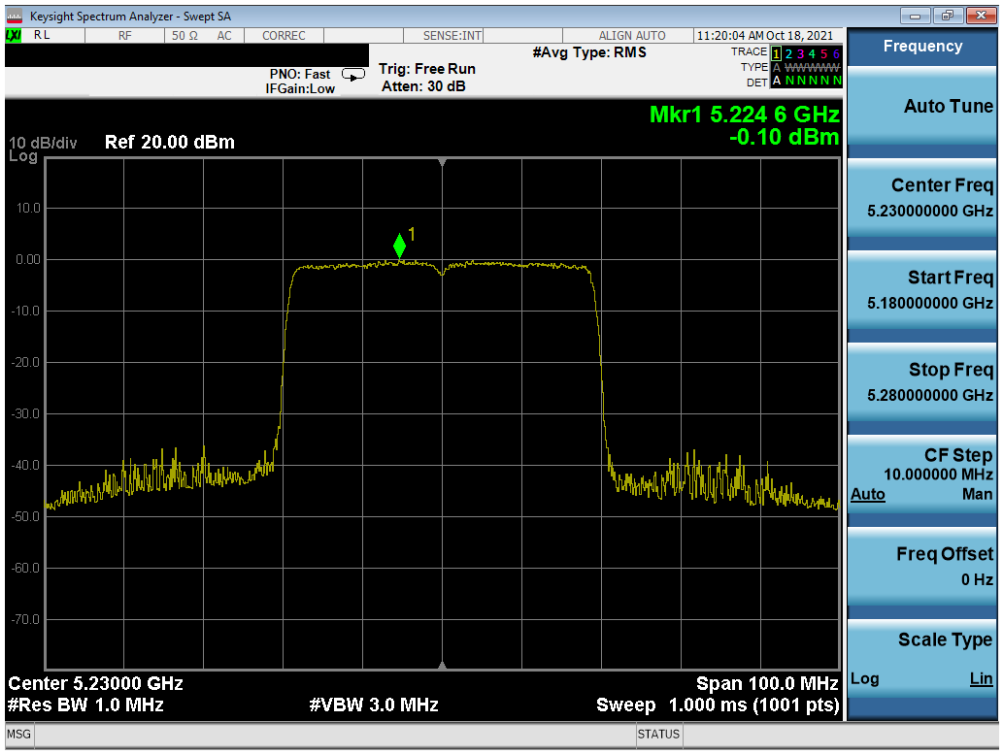
Plot 7-197. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 40)



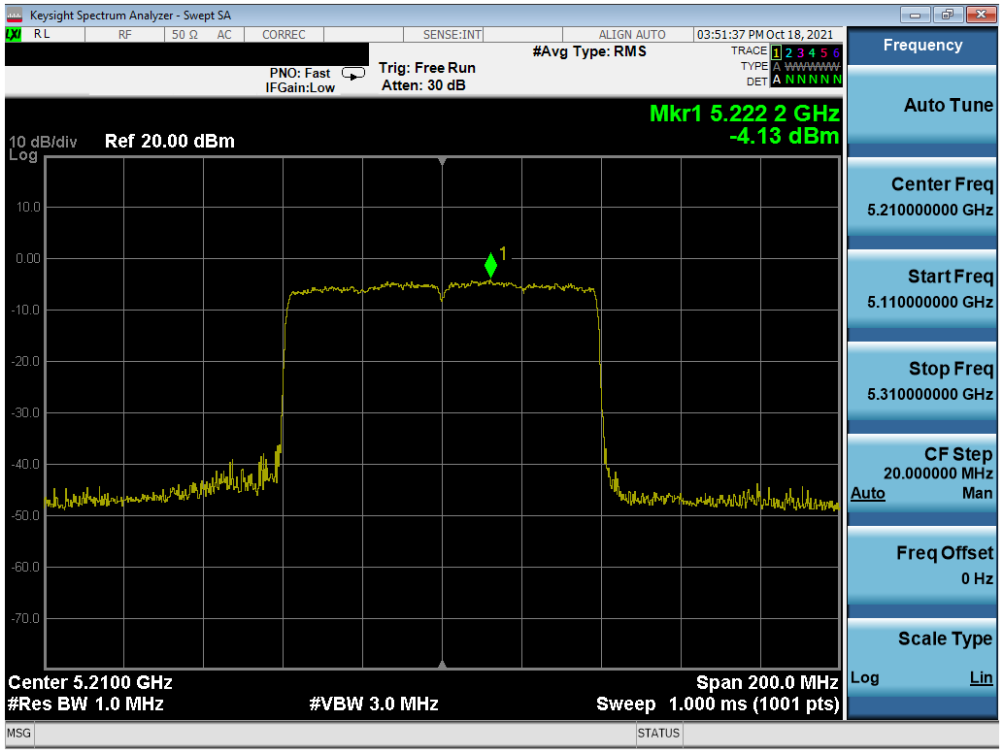
Plot 7-198. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 48)



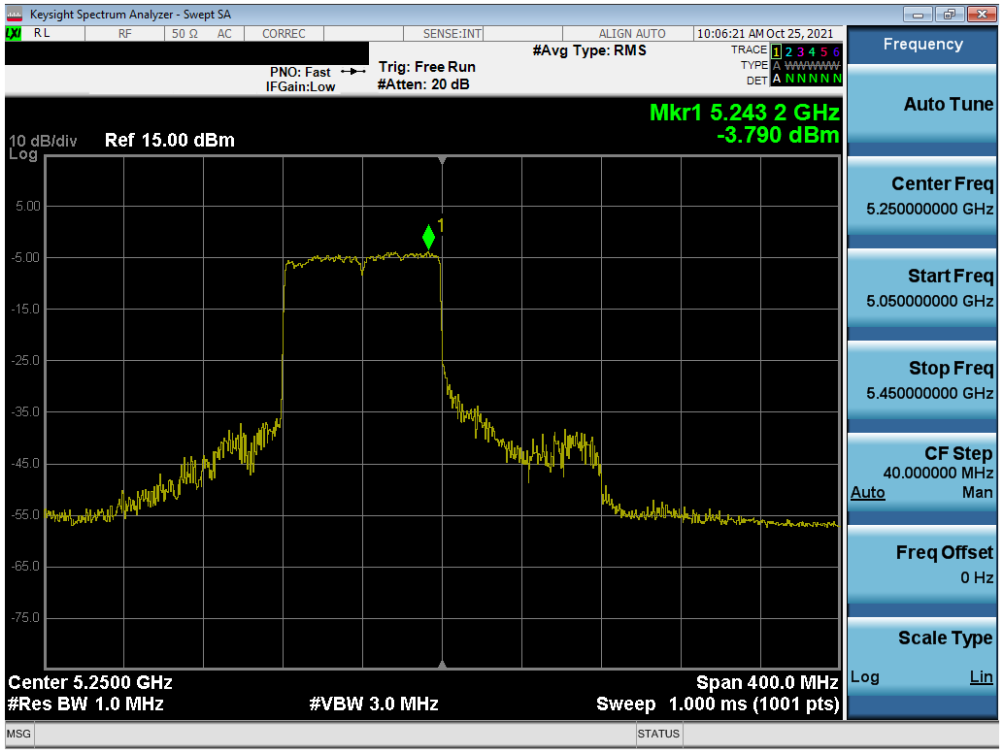
Plot 7-199. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 38)



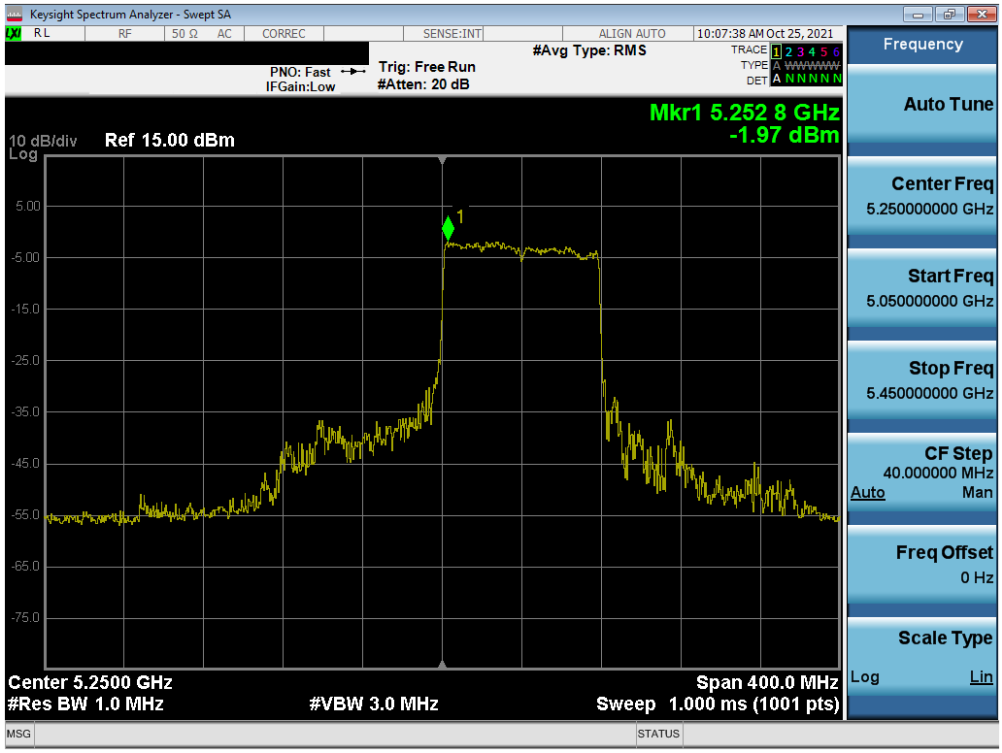
Plot 7-200. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 46)



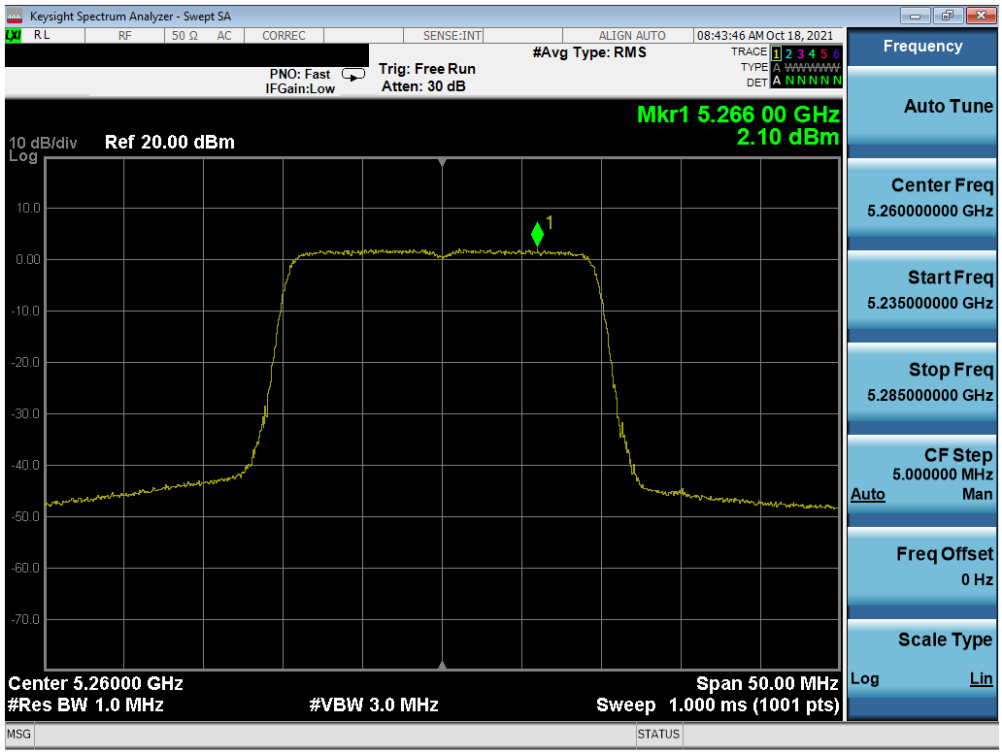
Plot 7-201. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 42)



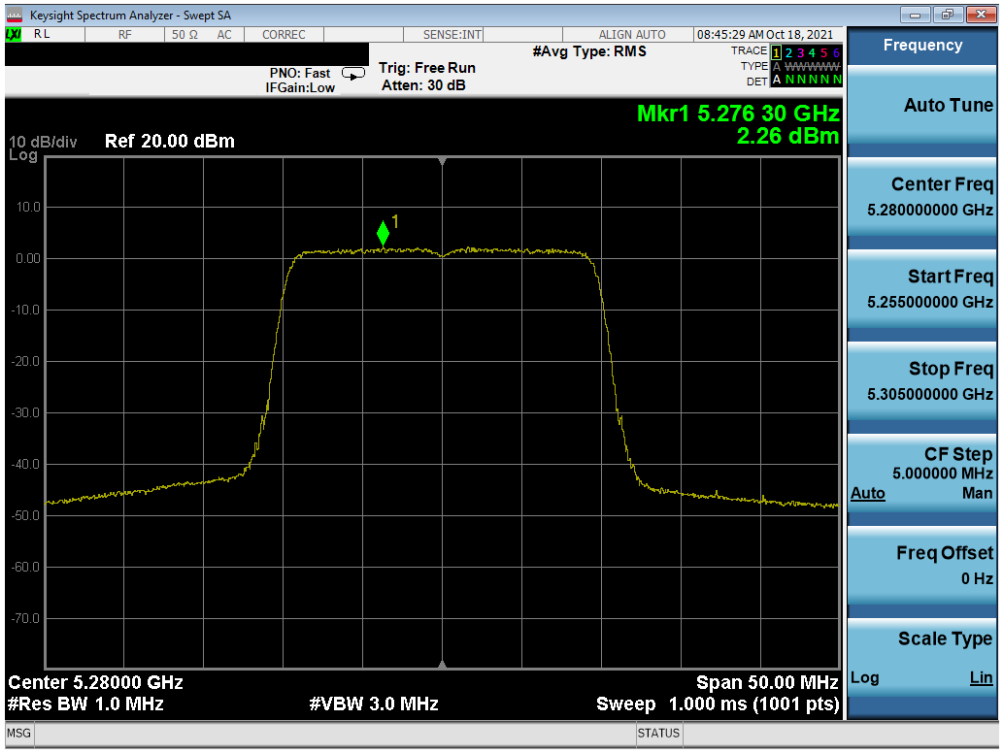
Plot 7-202. Power Spectral Density Plot MIMO ANT1 (160MHz BW (L) 802.11ax – Full Tones (UNII Band 1/2A) – Ch. 50)



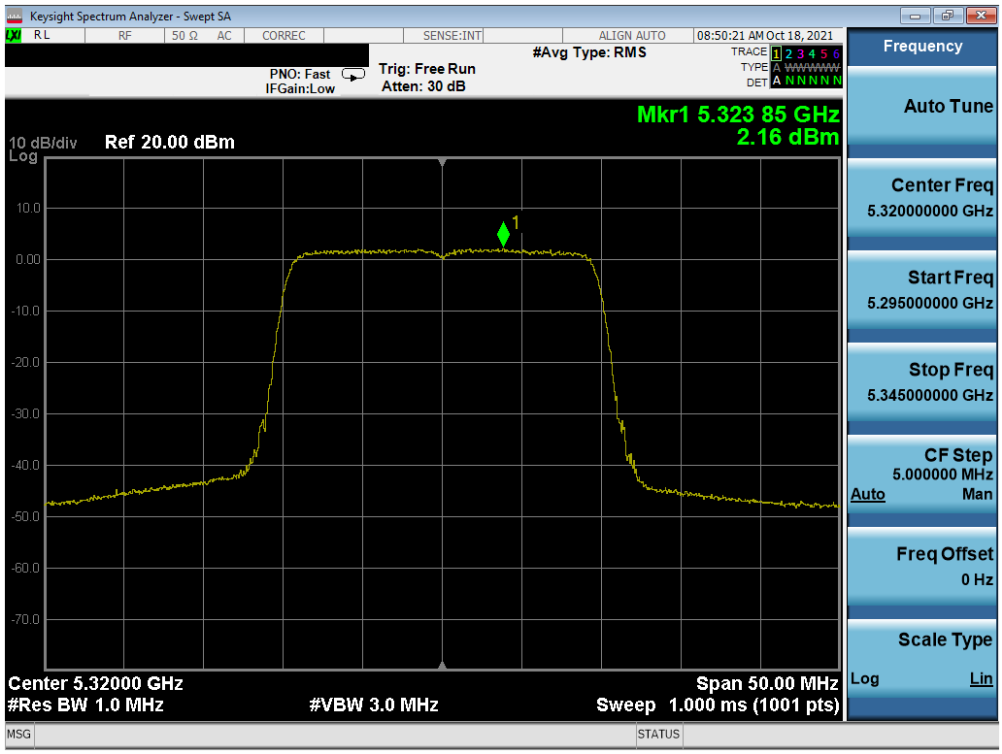
Plot 7-203. Power Spectral Density Plot MIMO ANT1 (160MHz BW (U) 802.11ax – Full Tones (UNII Band 1/2A) – Ch. 50)



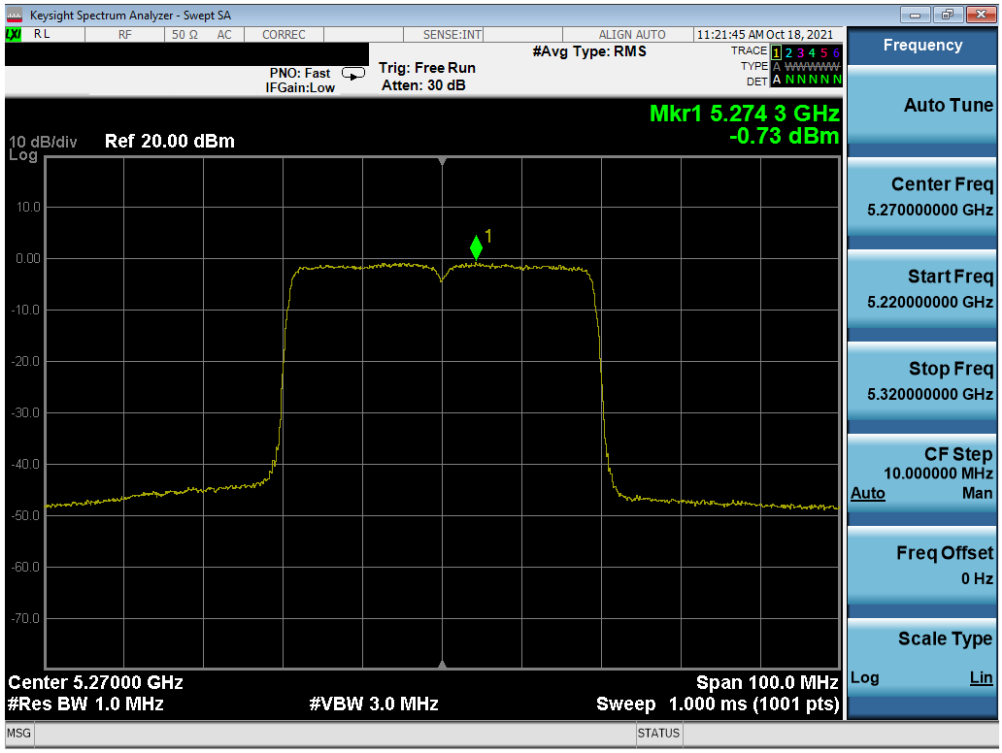
Plot 7-204. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 52)



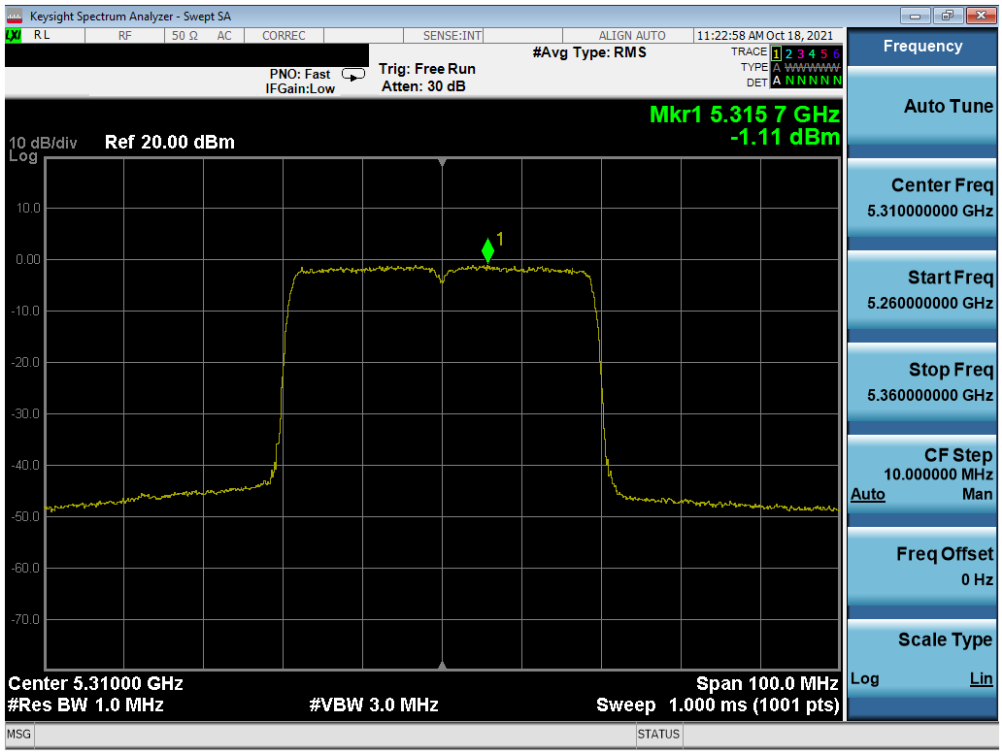
Plot 7-205. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 56)



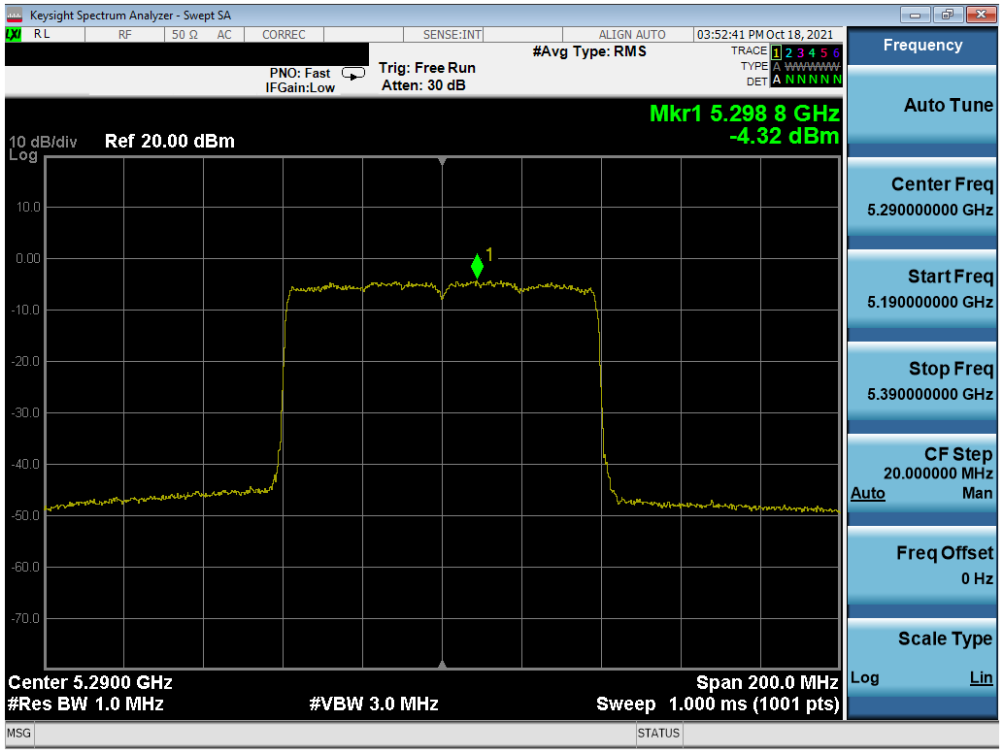
Plot 7-206. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 64)



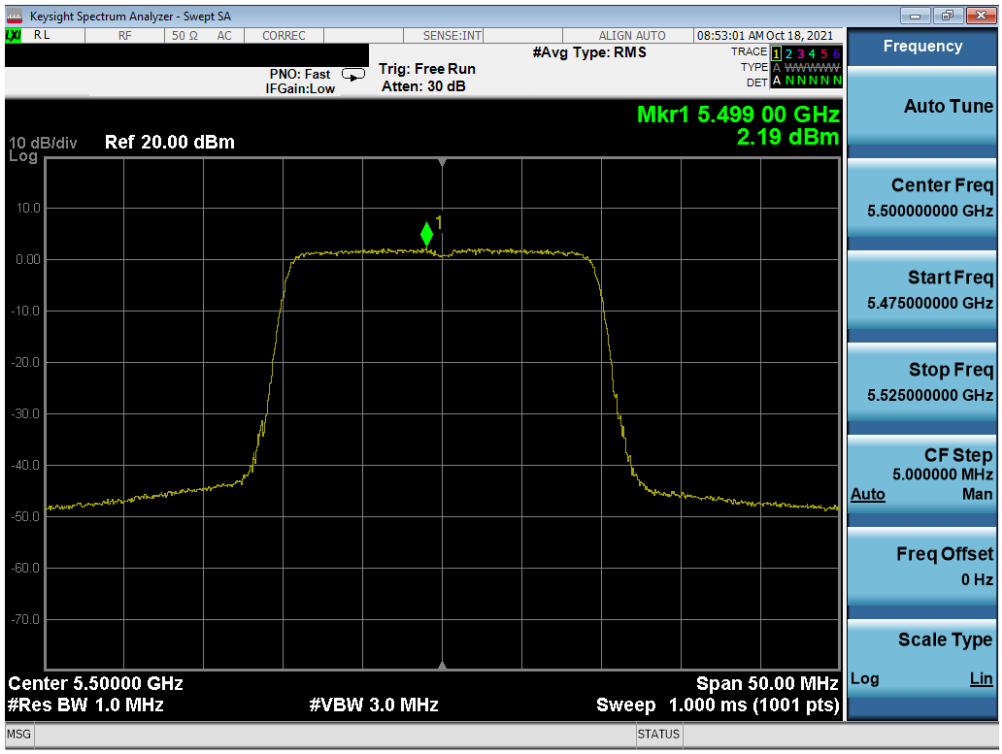
Plot 7-207. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 54)



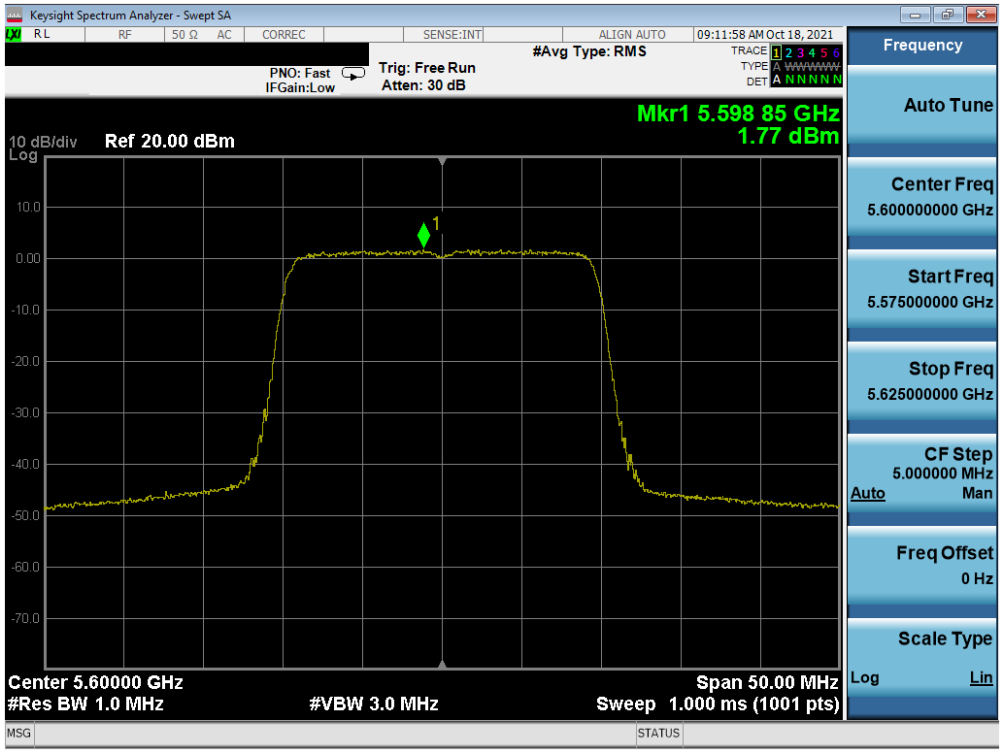
Plot 7-208. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 62)



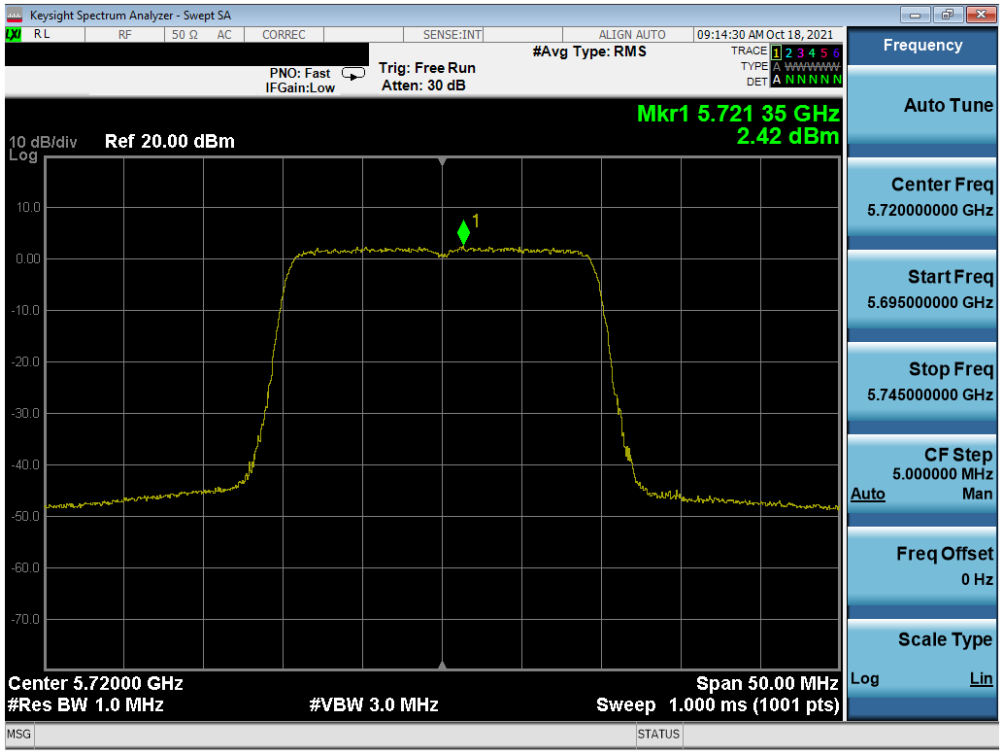
Plot 7-209. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 58)



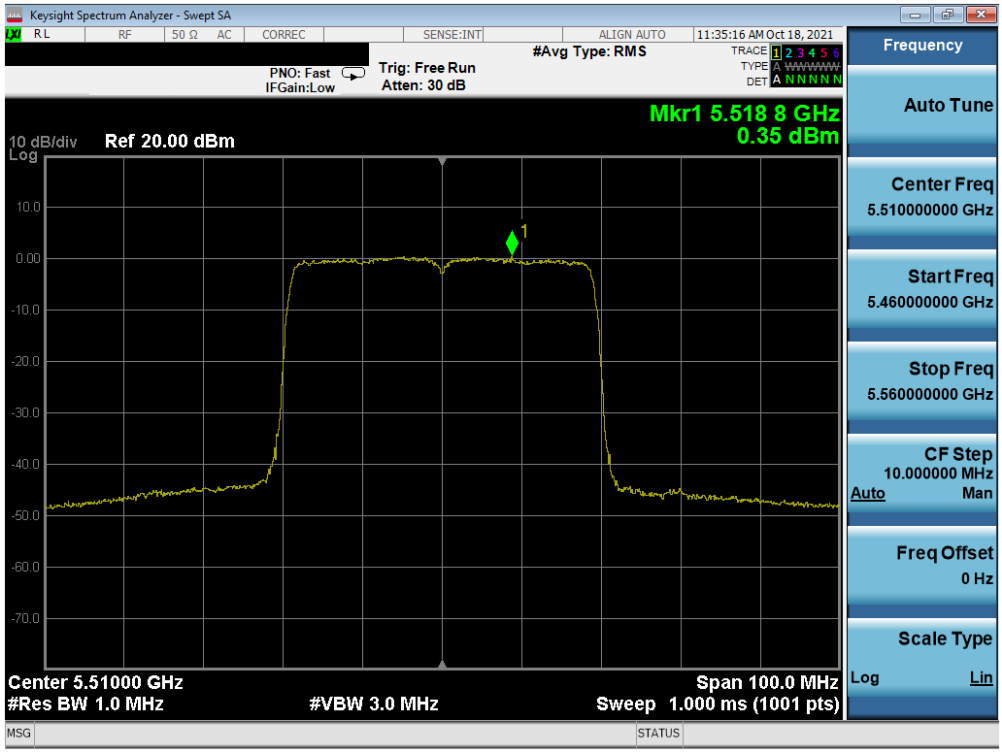
Plot 7-210. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 100)



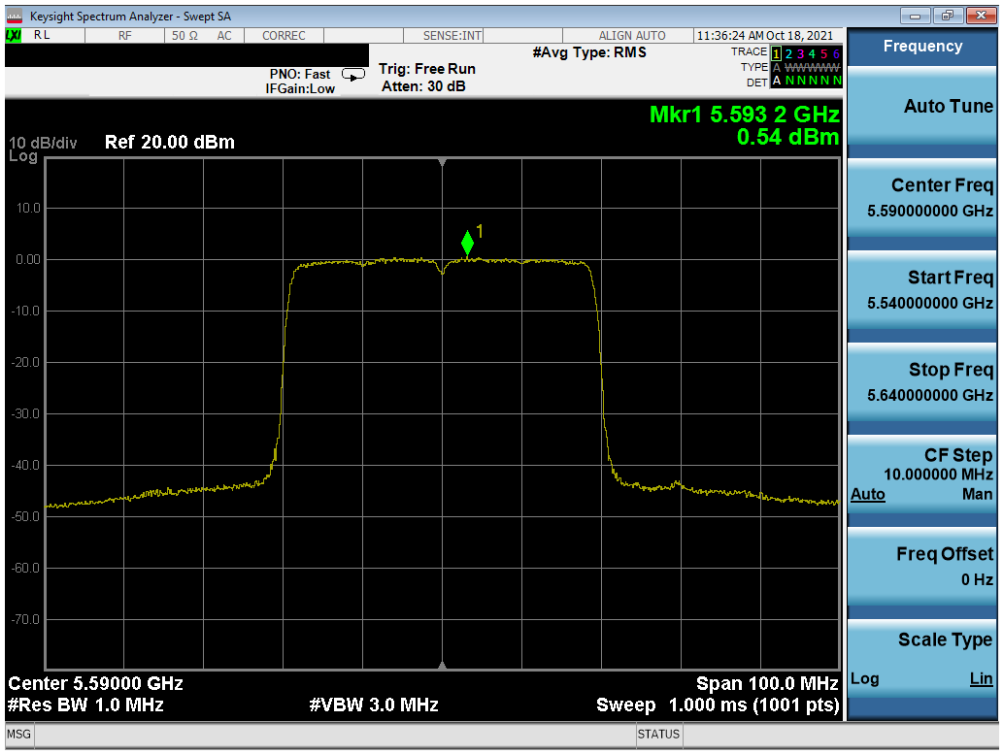
Plot 7-211. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 120)



Plot 7-212. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 144)



Plot 7-213. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 102)



Plot 7-214. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 118)