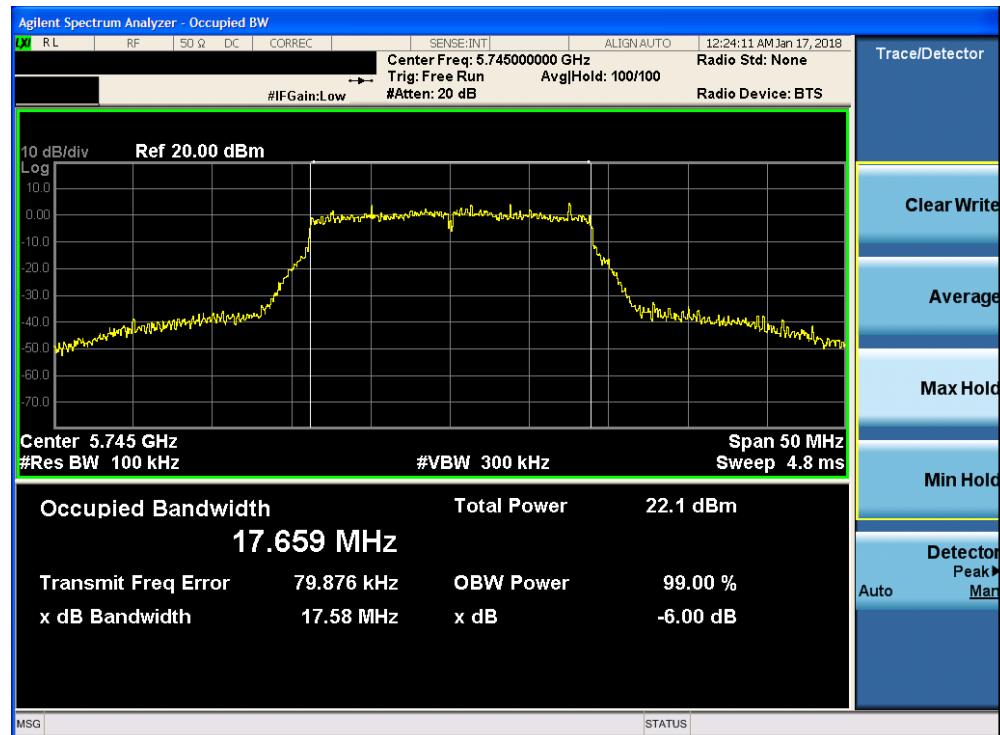
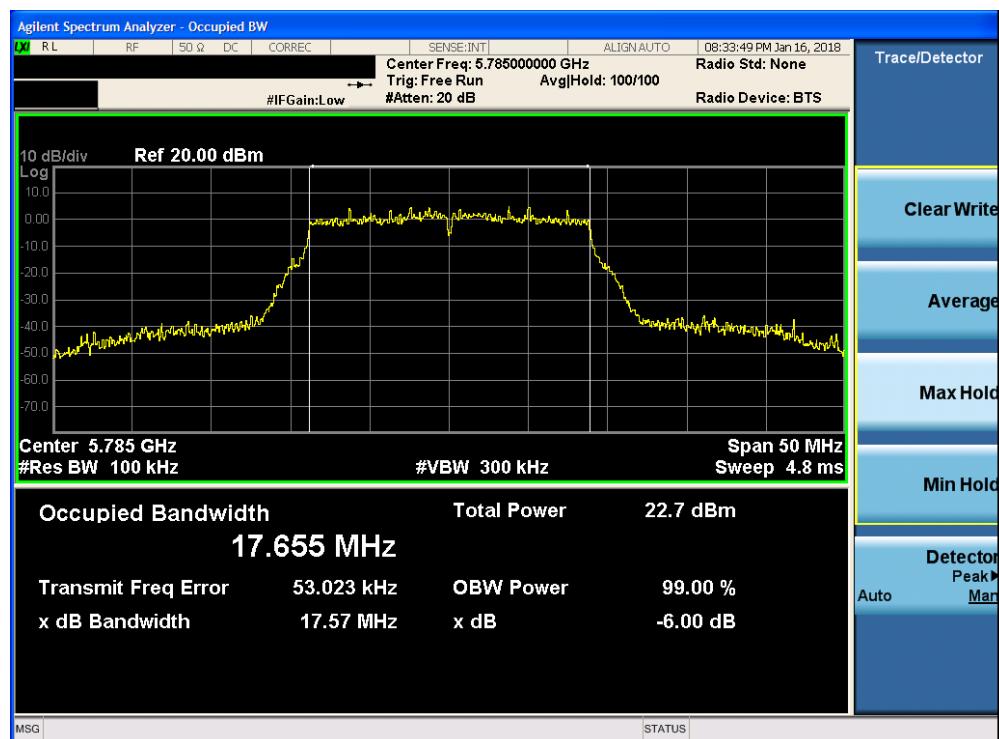


Plot 7-117. 6dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 3) – Ch. 149)



Plot 7-118. 6dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 81 of 298

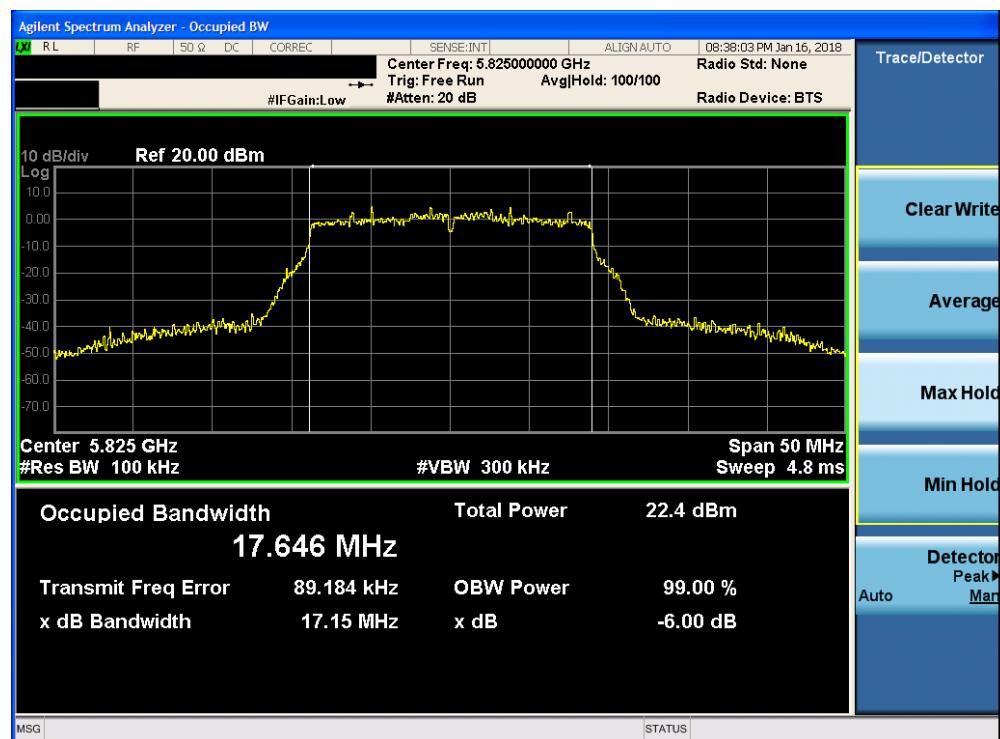


Plot 7-119. 6dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 3) – Ch. 157)



Plot 7-120. 6dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 82 of 298

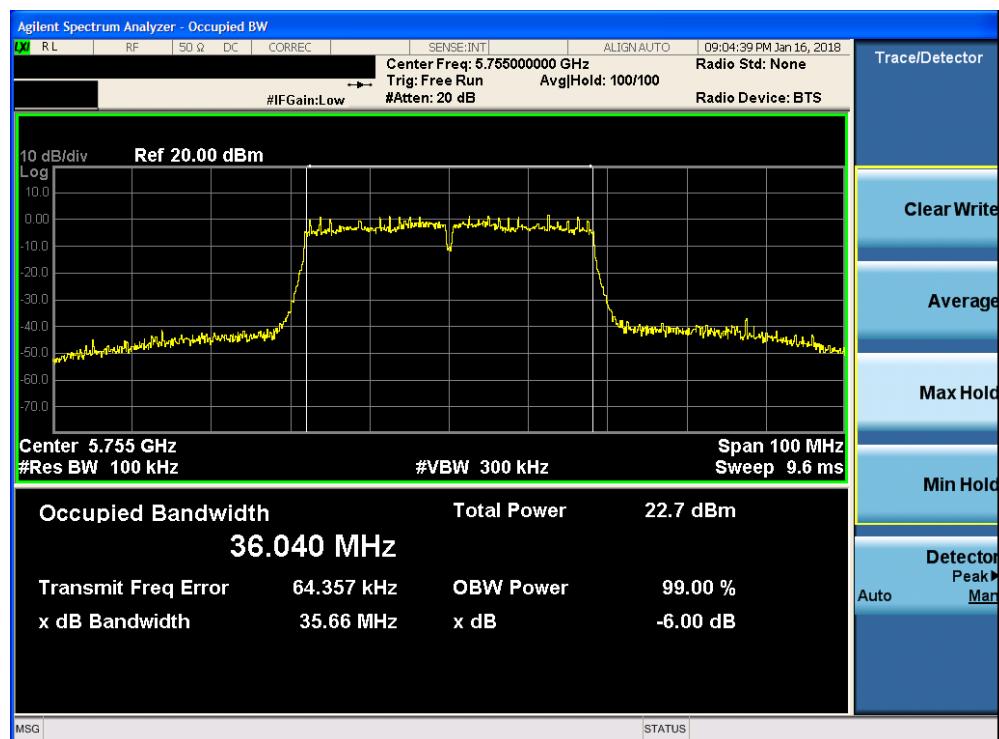


Plot 7-121. 6dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

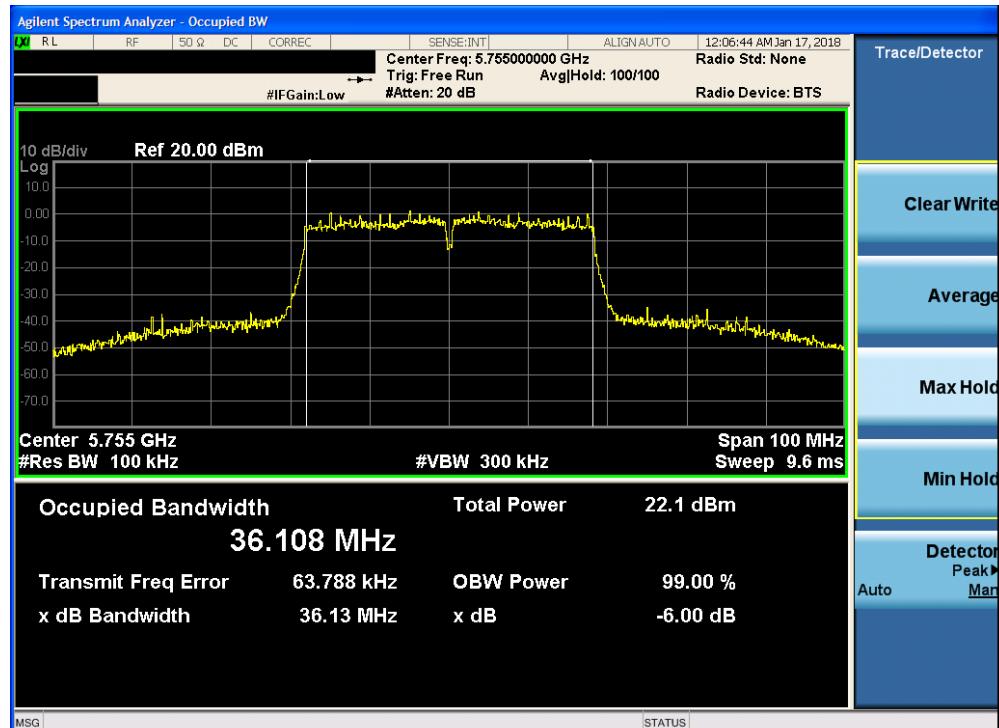


Plot 7-122. 6dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 83 of 298

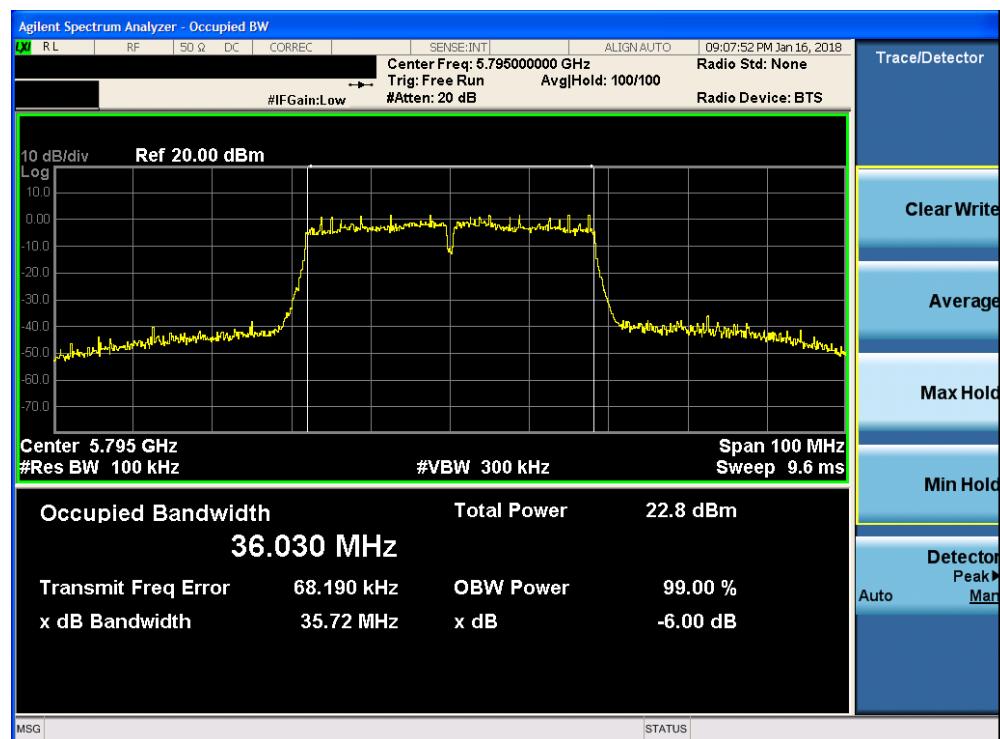


Plot 7-123. 6dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

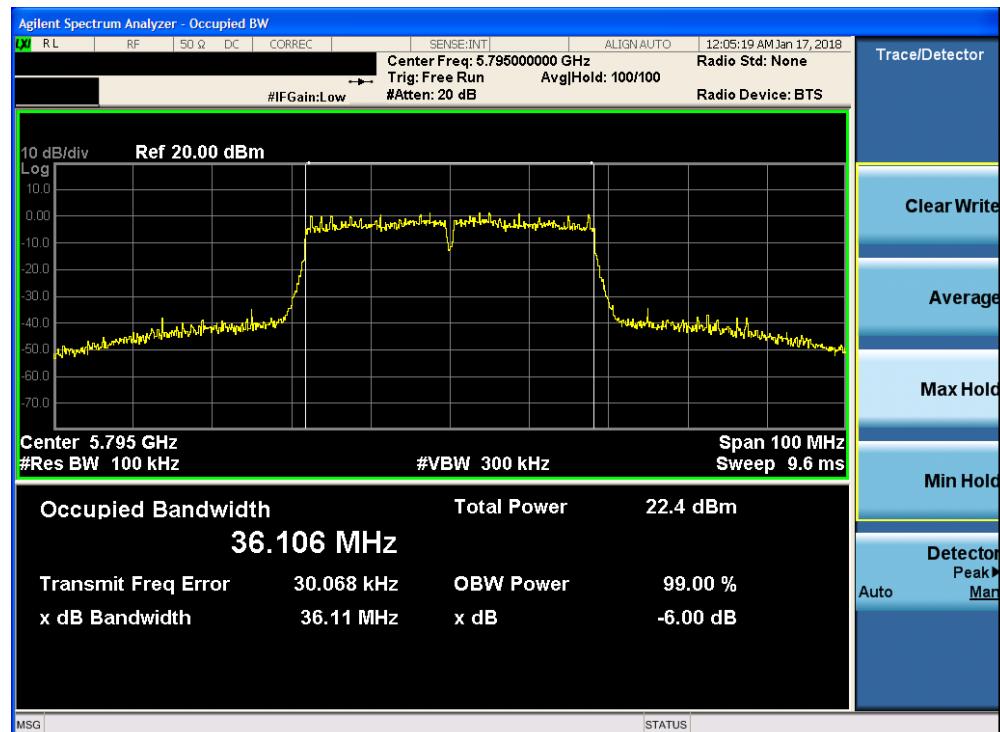


Plot 7-124. 6dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 84 of 298

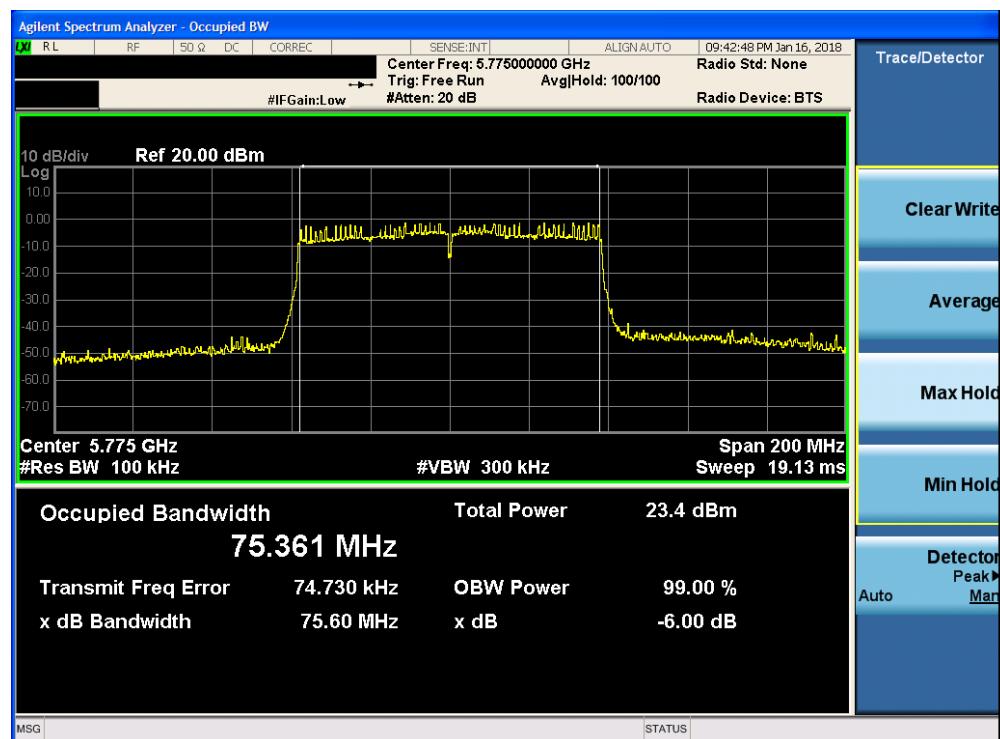


Plot 7-125. 6dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11n (UNII Band 3) – Ch. 159)

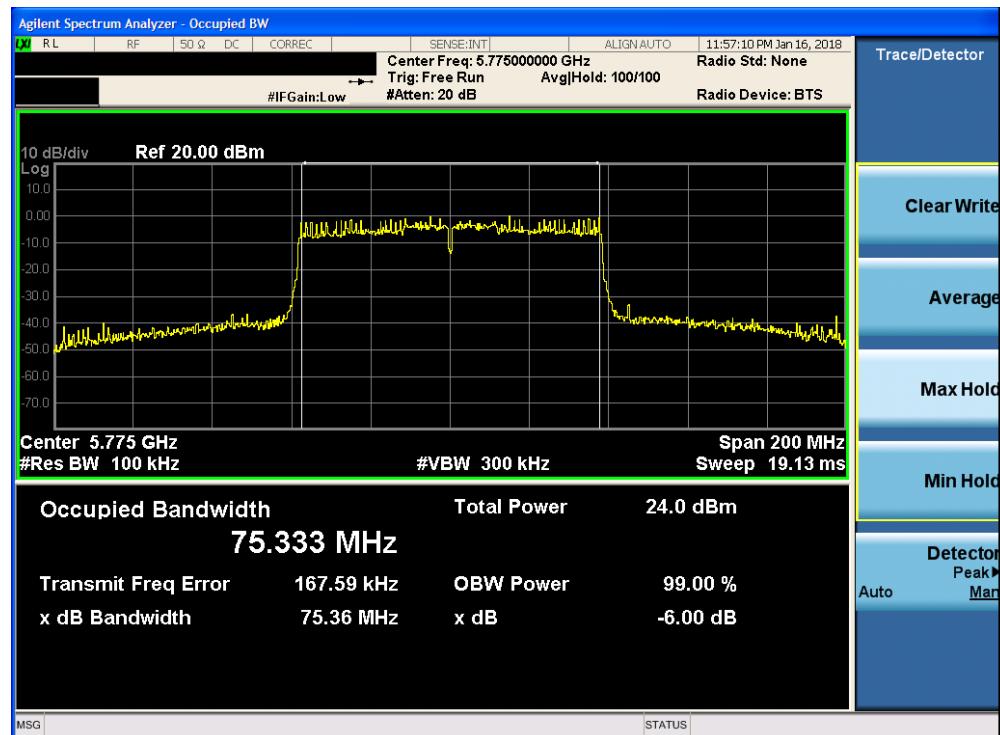


Plot 7-126. 6dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11n (UNII Band 3) – Ch. 159)

FCC ID: BCGA1893	 PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 85 of 298



Plot 7-127. 6dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)



Plot 7-128. 6dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)

FCC ID: BCGA1893	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 86 of 298

7.4 UNII Output Power Measurement – 802.11a/n/ac

§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 v01r04, and at the appropriate frequencies. If transmitting antennas of directional gain greater than 6dBi are used the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

In the 5.15 – 5.25GHz band, the maximum permissible conducted output power is 250mW (23.98dBm).

In the 5.25 – 5.35GHz band, the maximum permissible conducted output power is the lesser of 250mW (23.98dBm) and $11 \text{ dBm} + 10\log_{10}(26 \text{ dB BW}) = 11 \text{ dBm} + 10\log_{10}(20.88) = 24.20 \text{ dBm}$.

In the 5.47 – 5.725GHz band, the maximum permissible conducted output power is the lesser of 250mW (23.98dBm) and $11 \text{ dBm} + 10\log_{10}(26 \text{ dB BW}) = 11 \text{ dBm} + 10\log_{10}(20.94) = 24.21 \text{ dBm}$.

In the 5.725 – 5.850GHz band, the maximum permissible conducted output power is 1W (30dBm).

RSS-247 – In 5.15 – 5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10}B$, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz.

Test Procedure Used

ANSI C63.10-2013 – Section 12.3.3.2 Method PM-G

KDB 789033 D02 v01r04 – 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

Refer to Section 2.5.

FCC ID: BCGA1893	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 87 of 298

FCC-SISO Antenna-1 Conducted Output Power Measurements

Freq [MHz]	Channel	Detector	Ant. Gain [dBi]	5GHz (20MHz) Conducted Power [dBm]		Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]		
				IEEE Transmission Mode					
				802.11a	802.11n				
5180	36	AVG	0.30	15.88	15.98	23.98	-8.00		
5200	40	AVG	0.69	16.49	16.40	23.98	-7.49		
5220	44	AVG	1.27	16.50	16.42	23.98	-7.48		
5240	48	AVG	1.17	16.39	16.47	23.98	-7.51		
5260	52	AVG	1.36	16.80	17.00	23.98	-6.98		
5280	56	AVG	1.54	16.92	16.91	23.98	-7.06		
5300	60	AVG	1.70	17.00	16.95	23.98	-6.98		
5320	64	AVG	2.24	15.92	15.98	23.98	-8.00		
5500	100	AVG	3.20	15.27	15.30	23.98	-8.68		
5580	116	AVG	3.02	16.99	16.83	23.98	-6.99		
5600	120	AVG	3.10	16.89	16.85	23.98	-7.09		
5620	124	AVG	3.07	17.00	16.99	23.98	-6.98		
5700	140	AVG	3.25	14.98	14.85	23.98	-9.00		
5720	144	AVG	3.25	16.96	16.89	23.98	-7.02		
5745	149	AVG	3.18	16.44	16.35	30.00	-13.56		
5785	157	AVG	3.35	16.28	16.32	30.00	-13.68		
5825	165	AVG	3.54	16.40	16.37	30.00	-13.60		

Table 7-8. FCC-SISO ANT1 20MHz BW (UNII) Maximum Conducted Output Power

Freq [MHz]	Channel	Detector	Ant. Gain [dBi]	5GHz (40MHz) Conducted Power [dBm]		Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]		
				IEEE Transmission Mode					
				802.11n					
5190	38	AVG	0.69	13.35		23.98	-10.63		
5230	46	AVG	1.27	16.48		23.98	-7.50		
5270	54	AVG	1.54	17.00		23.98	-6.98		
5310	62	AVG	2.24	14.95		23.98	-9.03		
5510	102	AVG	3.39	14.37		23.98	-9.61		
5550	110	AVG	3.39	17.00		23.98	-6.98		
5590	118	AVG	3.10	16.95		23.98	-7.03		
5630	126	AVG	3.07	16.99		23.98	-6.99		
5670	134	AVG	3.07	16.00		23.98	-7.98		
5710	142	AVG	3.07	16.99		23.98	-6.99		
5755	151	AVG	3.25	16.35		30.00	-13.65		
5795	159	AVG	3.35	16.50		30.00	-13.50		

Table 7-9. FCC-SISO ANT1 40MHz BW (UNII) Maximum Conducted Output Power

Freq [MHz]	Channel	Detector	Ant. Gain [dBi]	5GHz (80MHz) Conducted Power [dBm]		Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]		
				IEEE Transmission Mode					
				802.11ac					
5210	42	AVG	1.27	12.87		23.98	-22.71		
5290	58	AVG	1.70	12.84		23.98	-22.28		
5530	106	AVG	3.39	14.00		23.98	-20.59		
5610	122	AVG	3.10	16.98		23.98	-20.88		
5690	138	AVG	3.25	16.99		23.98	-20.73		
5775	155	AVG	3.37	16.50		30.00	-26.63		

Table 7-10. FCC-SISO ANT1 80MHz BW (UNII) Maximum Conducted Output Power

FCC ID: BCGA1893		MEASUREMENT REPORT (CERTIFICATION)				Approved by:
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device				

ISED-SISO Antenna-1 Conducted Output Power Measurements

Freq [MHz]	Channel	Detector	Ant. Gain [dBi]	5GHz (20MHz) Conducted Power		Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. [dBm]	Max e.i.r.p Limit [dBm]	e.i.r.p. Margin					
				IEEE Transmission Mode											
				802.11a	802.11n										
5180	36	AVG	0.30	14.89	14.81	23.98	-9.09	15.19	23.01	-7.82					
5200	40	AVG	0.69	15.00	14.94	23.98	-8.98	15.69	23.01	-7.32					
5220	44	AVG	1.27	15.00	14.94	23.98	-8.98	16.27	23.01	-6.74					
5240	48	AVG	1.17	14.90	14.89	23.98	-9.08	16.07	23.01	-6.94					
5260	52	AVG	1.36	16.80	17.00	23.98	-6.98	18.36	30.00	-11.64					
5280	56	AVG	1.54	16.92	16.91	23.98	-7.06	18.46	30.00	-11.54					
5300	60	AVG	1.70	17.00	16.95	23.98	-6.98	18.70	30.00	-11.30					
5320	64	AVG	2.24	15.92	15.98	23.98	-8.00	18.22	30.00	-11.78					
5500	100	AVG	3.20	15.27	15.30	23.98	-8.68	18.50	30.00	-11.50					
5580	116	AVG	3.02	16.99	16.83	23.98	-6.99	20.01	30.00	-9.99					
5700	140	AVG	3.25	14.98	14.85	23.98	-9.00	18.23	30.00	-11.77					
5720	144	AVG	3.25	16.96	16.89	23.98	-7.02	20.21	30.00	-9.79					
5745	149	AVG	3.18	16.44	16.35	30.00	-13.56	19.62	36.00	-16.38					
5785	157	AVG	3.35	16.28	16.32	30.00	-13.68	19.67	36.00	-16.33					
5825	165	AVG	3.54	16.40	16.37	30.00	-13.60	19.94	36.00	-16.06					

Table 7-11. ISED-SISO ANT1 20MHz BW (UNII) Maximum Conducted Output Power

Freq [MHz]	Channel	Detector	Ant. Gain [dBi]	5GHz (40MHz) Conducted Power [dBm]	Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. [dBm]	Max e.i.r.p Limit [dBm]	e.i.r.p. Margin
				IEEE Transmission					
				802.11n					
5190	38	AVG	0.69	13.35	23.98	-10.63	14.04	23.01	-8.97
5230	46	AVG	1.27	16.48	23.98	-7.50	17.75	23.01	-5.26
5270	54	AVG	1.54	17.00	23.98	-6.98	18.54	30.00	-11.46
5310	62	AVG	2.24	14.95	23.98	-9.03	17.19	30.00	-12.81
5510	102	AVG	3.39	14.37	23.98	-9.61	17.76	30.00	-12.24
5550	110	AVG	3.39	17.00	23.98	-6.98	20.39	30.00	-9.61
5670	134	AVG	3.07	16.00	23.98	-7.98	19.07	30.00	-10.93
5710	142	AVG	3.07	16.99	23.98	-6.99	20.06	30.00	-9.94
5755	151	AVG	3.25	16.35	30.00	-13.65	19.60	36.00	-16.40
5795	159	AVG	3.35	16.50	30.00	-13.50	19.85	36.00	-16.15

Table 7-12. ISED-SISO ANT1 40MHz BW (UNII) Maximum Conducted Output Power

Freq [MHz]	Channel	Detector	Ant. Gain [dBi]	5GHz (80MHz) Conducted Power [dBm]	Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. [dBm]	Max e.i.r.p Limit [dBm]	e.i.r.p. Margin
				IEEE Transmission					
				802.11ac					
5210	42	AVG	1.27	12.87	23.98	-22.71	14.14	23.01	-8.87
5290	58	AVG	1.70	12.84	23.98	-22.28	14.54	30.00	-15.46
5530	106	AVG	3.39	14.00	23.98	-20.59	17.39	30.00	-12.61
5690	138	AVG	3.25	16.99	23.98	-20.73	20.24	30.00	-9.76
5775	155	AVG	3.37	16.50	30.00	-26.63	19.87	36.00	-16.13

Table 7-13. ISED-SISO ANT1 80MHz BW (UNII) Maximum Conducted Output Power

FCC ID: BCGA1893	 PCTEST	MEASUREMENT REPORT (CERTIFICATION)				Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device				Page 89 of 298

FCC-SISO Antenna-2 Conducted Output Power Measurements

Freq [MHz]	Channel	Detector	Ant. Gain [dBi]	5GHz (20MHz) Conducted Power [dBm]		Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]		
				IEEE Transmission Mode					
				802.11a	802.11n				
5180	36	AVG	2.19	15.86	15.95	23.98	-8.03		
5200	40	AVG	2.22	16.36	16.45	23.98	-7.53		
5220	44	AVG	2.64	16.44	16.35	23.98	-7.54		
5240	48	AVG	2.62	16.49	16.50	23.98	-7.48		
5260	52	AVG	2.77	16.80	16.99	23.98	-6.99		
5280	56	AVG	2.50	16.85	16.80	23.98	-7.13		
5300	60	AVG	2.31	17.00	16.93	23.98	-6.98		
5320	64	AVG	2.19	15.96	15.86	23.98	-8.02		
5500	100	AVG	2.10	15.46	15.48	23.98	-8.50		
5580	116	AVG	3.02	16.90	17.00	23.98	-6.98		
5600	120	AVG	2.94	16.93	16.90	23.98	-7.05		
5620	124	AVG	3.09	16.85	16.99	23.98	-6.99		
5700	140	AVG	3.25	15.00	15.00	23.98	-8.98		
5720	144	AVG	3.17	17.00	16.82	23.98	-6.98		
5745	149	AVG	3.12	16.42	16.50	30.00	-13.50		
5785	157	AVG	3.14	16.30	16.48	30.00	-13.52		
5825	165	AVG	2.92	16.50	16.50	30.00	-13.50		

Table 7-14. FCC-SISO ANT2 20MHz BW (UNII) Maximum Conducted Output Power

Freq [MHz]	Channel	Detector	Ant. Gain [dBi]	5GHz (40MHz) Conducted Power [dBm]		Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]		
				IEEE Transmission Mode					
				802.11n					
5190	38	AVG	2.22	13.33		23.98	-10.65		
5230	46	AVG	2.64	16.36		23.98	-7.62		
5270	54	AVG	2.77	16.93		23.98	-7.05		
5310	62	AVG	2.31	14.92		23.98	-9.06		
5510	102	AVG	2.25	14.50		23.98	-9.48		
5550	110	AVG	2.75	16.99		23.98	-6.99		
5630	126	AVG	3.09	17.00		23.98	-6.98		
5670	134	AVG	2.97	15.90		23.98	-8.08		
5710	142	AVG	3.17	16.97		23.98	-7.01		
5755	151	AVG	3.17	16.50		30.00	-13.50		
5795	159	AVG	3.14	16.50		30.00	-13.50		

Table 7-15. FCC SISO ANT2 40MHz BW (UNII) Maximum Conducted Output Power

Freq [MHz]	Channel	Detector	Ant. Gain [dBi]	5GHz (80MHz) Conducted Power [dBm]		Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]		
				IEEE Transmission Mode					
				802.11ac					
5210	42	AVG	2.40	12.93		23.98	-21.58		
5290	58	AVG	2.50	12.88		23.98	-21.48		
5530	106	AVG	2.48	14.00		23.98	-21.50		
5610	122	AVG	3.09	17.00		23.98	-20.89		
5690	138	AVG	3.17	17.00		23.98	-20.81		
5775	155	AVG	3.17	16.32		30.00	-26.83		

Table 7-16. FCC SISO ANT2 80MHz BW (UNII) Maximum Conducted Output Power

FCC ID: BCGA1893	 PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device			

ISED SISO Antenna-2 Conducted Output Power Measurements

Freq [MHz]	Channel	Detector	Ant. Gain [dBi]	5GHz (20MHz) Conducted Power [dBm]		Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. [dBm]	Max e.i.r.p Limit [dBm]	e.i.r.p. Margin					
				IEEE Transmission Mode											
				802.11a	802.11n										
5180	36	AVG	2.19	14.99	14.93	23.98	-8.99	17.18	23.01	-5.83					
5200	40	AVG	2.22	15.00	14.88	23.98	-8.98	17.22	23.01	-5.79					
5220	44	AVG	2.64	14.98	14.92	23.98	-9.00	17.62	23.01	-5.39					
5240	48	AVG	2.62	14.95	14.92	23.98	-9.03	17.57	23.01	-5.44					
5260	52	AVG	2.77	16.80	16.99	23.98	-6.99	19.76	30.00	-10.24					
5280	56	AVG	2.50	16.85	16.80	23.98	-7.13	19.35	30.00	-10.65					
5300	60	AVG	2.31	17.00	16.93	23.98	-6.98	19.31	30.00	-10.69					
5320	64	AVG	2.19	15.96	15.86	23.98	-8.02	18.15	30.00	-11.85					
5500	100	AVG	2.10	15.46	15.48	23.98	-8.50	17.58	30.00	-12.42					
5580	116	AVG	3.02	16.90	17.00	23.98	-6.98	20.02	30.00	-9.98					
5700	140	AVG	3.25	15.00	15.00	23.98	-8.98	18.25	30.00	-11.75					
5720	144	AVG	3.17	17.00	16.82	23.98	-6.98	20.17	30.00	-9.83					
5745	149	AVG	3.12	16.42	16.50	30.00	-13.50	19.62	36.00	-16.38					
5785	157	AVG	3.14	16.30	16.48	30.00	-13.52	19.62	36.00	-16.38					
5825	165	AVG	2.92	16.50	16.50	30.00	-13.50	19.42	36.00	-16.58					

Table 7-17. ISED-SISO ANT2 20MHz BW (UNII) Maximum Conducted Output Power

Freq [MHz]	Channel	Detector	Ant. Gain [dBi]	5GHz (40MHz) Conducted Power [dBm]	Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. [dBm]	Max e.i.r.p Limit [dBm]	e.i.r.p. Margin
				IEEE Transmission					
				802.11n					
5190	38	AVG	2.22	13.33	23.98	-10.65	15.55	23.01	-7.46
5230	46	AVG	2.64	16.36	23.98	-7.62	19.00	23.01	-4.01
5270	54	AVG	2.77	16.93	23.98	-7.05	19.70	30.00	-10.30
5310	62	AVG	2.31	14.92	23.98	-9.06	17.23	30.00	-12.77
5510	102	AVG	2.25	14.50	23.98	-9.48	16.75	30.00	-13.25
5550	110	AVG	2.75	16.99	23.98	-6.99	19.74	30.00	-10.26
5670	134	AVG	2.97	15.90	23.98	-8.08	18.87	30.00	-11.13
5710	142	AVG	3.17	16.97	23.98	-7.01	20.14	30.00	-9.86
5755	151	AVG	3.17	16.50	30.00	-13.50	19.67	36.00	-16.33
5795	159	AVG	3.14	16.50	30.00	-13.50	19.64	36.00	-16.36

Table 7-18. ISED-SISO ANT2 40MHz BW (UNII) Maximum Conducted Output Power

Freq [MHz]	Channel	Detector	Ant. Gain [dBi]	5GHz (80MHz) Conducted Power [dBm]	Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. [dBm]	Max e.i.r.p Limit [dBm]	e.i.r.p. Margin
				IEEE Transmission					
				802.11ac					
5210	42	AVG	2.40	12.93	23.98	-21.58	15.33	23.01	-10.08
5290	58	AVG	2.50	12.88	23.98	-21.48	15.38	30.00	-17.12
5530	106	AVG	2.48	14.00	23.98	-21.50	16.48	30.00	-16.00
5690	138	AVG	3.17	17.00	23.98	-20.81	20.17	30.00	-13.00
5775	155	AVG	3.17	16.32	30.00	-26.83	19.49	36.00	-16.51

Table 7-19. ISED-SISO ANT2 80MHz BW (UNII) Maximum Conducted Output Power

FCC ID: BCGA1893	 PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 91 of 298

FCC-MIMO Conducted Output Power Measurements

Freq [MHz]	Channel	Mode	Detector	Ant. Gain [dBi]	5GHz (20MHz) Conducted Power [dBm]			Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]		
					IEEE Transmission Mode						
					ANT1	ANT2	MIMO				
5180	36	CDD	AVG	4.31	14.99	15.00	18.00	23.98	-5.98		
5200	40	CDD	AVG	4.50	16.46	16.50	19.49	23.98	-4.49		
5220	44	CDD	AVG	4.99	16.49	16.48	19.50	23.98	-4.48		
5240	48	CDD	AVG	4.94	16.50	16.40	19.46	23.98	-4.52		
5260	52	SDM	AVG	5.10	16.89	17.00	19.96	23.98	-4.02		
5280	56	SDM	AVG	5.04	16.87	17.00	19.95	23.98	-4.03		
5300	60	SDM	AVG	5.02	17.00	17.00	20.00	23.98	-3.98		
5320	64	CDD	AVG	5.23	14.36	14.41	17.40	23.98	-6.58		
5500	100	CDD	AVG	5.68	14.94	15.00	17.98	23.98	-6.00		
5580	116	SDM	AVG	6.03	16.95	16.80	19.89	23.98	-4.09		
5600	120	SDM	AVG	6.03	16.89	16.85	19.88	23.95	-4.07		
5620	124	SDM	AVG	6.09	16.89	16.88	19.90	23.89	-3.99		
5700	140	CDD	AVG	6.26	13.86	13.95	16.92	23.72	-6.80		
5720	144	CDD	AVG	6.22	17.00	16.90	19.96	23.76	-3.80		
5745	149	CDD	AVG	6.16	16.43	16.50	19.48	29.84	-10.36		
5785	157	CDD	AVG	6.26	16.25	16.30	19.29	29.74	-10.46		
5825	165	CDD	AVG	6.25	16.45	16.32	19.40	29.75	-10.36		

Table 7-20. FCC-MIMO 20MHz BW (UNII) Maximum Conducted Output Power

Freq [MHz]	Channel	Mode	Detector	Ant. Gain [dBi]	5GHz (40MHz) Conducted Power [dBm]			Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]		
					IEEE Transmission Mode						
					ANT1	ANT2	MIMO				
5190	38	CDD	AVG	4.50	12.50	12.50	15.50	23.98	-8.48		
5230	46	CDD	AVG	4.99	16.50	16.36	19.44	23.98	-4.54		
5270	54	CDD	AVG	5.19	16.85	16.98	19.93	23.98	-4.05		
5310	62	CDD	AVG	5.29	13.36	13.32	16.35	23.98	-7.63		
5510	102	CDD	AVG	5.85	13.00	12.95	15.99	23.98	-7.99		
5550	110	CDD	AVG	6.09	16.91	16.93	19.93	23.89	-3.96		
5630	126	CDD	AVG	6.09	16.86	16.94	19.91	23.89	-3.98		
5670	134	CDD	AVG	6.03	15.00	15.00	18.00	23.95	-5.95		
5710	142	CDD	AVG	6.13	16.80	17.00	19.91	23.85	-3.94		
5755	151	CDD	AVG	6.22	16.26	16.45	19.37	29.78	-10.41		
5795	159	CDD	AVG	6.26	16.31	16.39	19.36	29.74	-10.38		

Table 7-21. FCC-MIMO 40MHz BW (UNII) Maximum Conducted Output Power

Freq [MHz]	Channel	Mode	Detector	Ant. Gain [dBi]	5GHz (80MHz) Conducted Power [dBm]			Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]		
					IEEE Transmission Mode						
					ANT1	ANT2	MIMO				
5210	42	CDD	AVG	4.86	11.98	11.89	14.95	23.98	-9.03		
5290	58	CDD	AVG	5.12	12.00	12.00	15.00	23.98	-8.98		
5530	106	CDD	AVG	5.96	13.00	12.92	15.97	23.98	-8.01		
5610	122	CDD	AVG	6.11	16.91	16.72	19.83	23.87	-4.05		
5690	138	CDD	AVG	6.22	17.00	17.00	20.00	23.76	-3.76		
5775	155	CDD	AVG	6.28	16.00	16.00	19.00	29.72	-10.72		

Table 7-22. FCC-MIMO 80MHz BW 802.11ac (UNII) Maximum Conducted Output Power

FCC ID: BCGA1893	 PCTEST	MEASUREMENT REPORT (CERTIFICATION)					Approved by:
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device					Quality Manager Page 92 of 298

ISED-MIMO Conducted Output Power Measurements

Freq [MHz]	Channel	Mode	Detector	Directional Ant. Gain [dBi]	5GHz (20MHz) Conducted Power [dBm]			Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. [dBm]	Max e.i.r.p Limit [dBm]	e.i.r.p. Margin					
					IEEE Transmission Mode												
					ANT1	ANT2	MIMO										
5180	36	CDD	AVG	4.31	11.96	11.95	14.97	23.98	-9.01	19.27	23.01	-3.74					
5200	40	CDD	AVG	4.50	11.98	11.86	14.93	23.98	-9.05	19.43	23.01	-3.58					
5220	44	CDD	AVG	4.99	12.00	12.00	15.00	23.98	-8.98	19.99	23.01	-3.02					
5240	48	CDD	AVG	4.94	11.88	11.82	14.86	23.98	-9.12	19.80	23.01	-3.21					
5260	52	SDM	AVG	5.10	16.89	17.00	19.96	23.98	-4.02	25.06	30.00	-4.94					
5280	56	SDM	AVG	5.04	16.87	17.00	19.95	23.98	-4.03	24.99	30.00	-5.01					
5300	60	SDM	AVG	5.02	17.00	17.00	20.00	23.98	-3.98	25.02	30.00	-4.98					
5320	64	CDD	AVG	5.23	14.36	14.41	17.40	23.98	-6.58	22.62	30.00	-7.38					
5500	100	CDD	AVG	5.68	14.94	15.00	17.98	23.98	-6.00	23.66	30.00	-6.34					
5580	116	SDM	AVG	6.03	16.95	16.80	19.89	23.98	-4.09	25.92	30.00	-4.08					
5700	140	CDD	AVG	6.26	13.86	13.95	16.92	23.72	-6.80	23.18	30.00	-6.82					
5720	144	CDD	AVG	6.22	17.00	16.90	19.96	23.76	-3.80	26.18	30.00	-3.82					
5745	149	CDD	AVG	6.16	16.43	16.50	19.48	29.84	-10.36	25.64	36.00	-10.36					
5785	157	CDD	AVG	6.26	16.25	16.30	19.29	29.74	-10.46	25.54	36.00	-10.46					
5825	165	CDD	AVG	6.25	16.45	16.32	19.40	29.75	-10.36	25.64	36.00	-10.36					

Table 7-23. ISED-MIMO 20MHz BW (UNII) Maximum Conducted Output Power

Freq [MHz]	Channel	Mode	Detector	Directional Ant. Gain [dBi]	5GHz (40MHz) Conducted Power [dBm]			Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. [dBm]	Max e.i.r.p Limit [dBm]	e.i.r.p. Margin					
					IEEE Transmission Mode												
					ANT1	ANT2	MIMO										
5190	38	CDD	AVG	4.50	12.50	12.50	15.50	23.98	-8.48	20.00	23.01	-3.01					
5230	46	CDD	AVG	4.99	13.99	14.00	17.00	23.98	-6.98	21.99	23.01	-1.02					
5270	54	CDD	AVG	5.19	16.85	16.98	19.93	23.98	-4.05	25.11	30.00	-4.89					
5310	62	CDD	AVG	5.29	13.36	13.32	16.35	23.98	-7.63	21.64	30.00	-8.36					
5510	102	CDD	AVG	5.85	13.00	12.95	15.99	23.98	-7.99	21.83	30.00	-8.17					
5550	110	CDD	AVG	6.09	16.91	16.93	19.93	23.89	-3.96	26.02	30.00	-3.98					
5670	134	CDD	AVG	6.03	15.00	15.00	18.00	23.95	-5.95	24.03	30.00	-5.97					
5710	142	CDD	AVG	6.13	16.80	17.00	19.91	23.85	-3.94	26.04	30.00	-3.96					
5755	151	CDD	AVG	6.22	16.26	16.45	19.37	29.78	-10.41	25.59	36.00	-10.41					
5795	159	CDD	AVG	6.26	16.31	16.39	19.36	29.74	-10.38	25.62	36.00	-10.38					

Table 7-24. ISED-MIMO 40MHz BW (UNII) Maximum Conducted Output Power

Freq [MHz]	Channel	Mode	Detector	Directional Ant. Gain [dBi]	5GHz (80MHz) Conducted Power [dBm]			Max Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. [dBm]	Max e.i.r.p Limit [dBm]	e.i.r.p. Margin					
					IEEE Transmission Mode												
					ANT1	ANT2	MIMO										
5210	42	CDD	AVG	4.86	11.98	11.89	14.95	23.98	-9.03	19.81	23.01	-3.20					
5290	58	CDD	AVG	5.12	12.00	12.00	15.00	23.98	-8.98	20.12	30.00	-9.88					
5530	106	CDD	AVG	5.96	13.00	12.92	15.97	23.98	-8.01	21.93	30.00	-8.07					
5690	138	CDD	AVG	6.22	17.00	17.00	20.00	23.76	-3.76	26.22	30.00	-3.78					
5775	155	CDD	AVG	6.28	16.00	16.00	19.00	29.72	-10.72	25.28	36.00	-10.72					

Table 7-25. ISED-MIMO 80MHz BW 802.11ac (UNII) Maximum Conducted Output Power

FCC ID: BCGA1893	 PCTEST [®] ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)					Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device					Page 93 of 298

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.

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

Sample MIMO Calculation:

At 5180MHz the average conducted output power was measured to be 14.99 dBm for Antenna-1 and 15.00 dBm for Antenna-2.

Antenna 1 + Antenna 2 = MIMO

$$(14.99 \text{ dBm} + 15.00 \text{ dBm}) = (31.55 \text{ mW} + 31.62 \text{ mW}) = 63.17 \text{ mW} = 18.00 \text{ dBm}$$

FCC ID: BCGA1893	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 94 of 298

7.5 Maximum Power Spectral Density – 802.11a/n/ac

§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 v01r04, and at the appropriate frequencies. Method SA-1, as defined in ANSI C63.10-2013 and KDB 789033 D02 v01r04, was used to measure the power spectral density. If transmitting antennas of directional gain greater than 6dBi are used the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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.

RSS-247 – In 5.15 – 5.25 GHz band, the e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

Test Procedure Used

ANSI C63.10-2013 – Section 12.3.2.2

KDB 789033 D02 v01r04 – 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 $\geq 2 \times (\text{span}/\text{RBW})$
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.

FCC ID: BCGA1893	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 95 of 298

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

FCC ID: BCGA1893	 PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 96 of 298

SISO Antenna-1 Power Spectral Density Measurements

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Antenna Gain [dBi]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	a	6	5.59	1.3	11.0	-5.41
	5200	40	a	6	6.15	1.3	11.0	-4.85
	5240	48	a	6	6.72	1.3	11.0	-4.28
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	6.07	1.3	11.0	-4.93
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.75	1.3	11.0	-4.25
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	7.18	1.3	11.0	-3.82
	5190	38	n (40MHz)	13.5/15 (MCS0)	0.99	1.3	11.0	-10.01
	5230	46	n (40MHz)	13.5/15 (MCS0)	2.24	1.3	11.0	-8.76
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-2.12	1.3	11.0	-13.12
Band 2A	5260	52	a	6	6.46	2.2	11.0	-4.54
	5280	56	a	6	6.41	2.2	11.0	-4.59
	5320	64	a	6	6.25	2.2	11.0	-4.75
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	6.34	2.2	11.0	-4.66
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	6.23	2.2	11.0	-4.77
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	5.99	2.2	11.0	-5.01
	5270	54	n (40MHz)	13.5/15 (MCS0)	2.12	2.2	11.0	-8.88
	5310	62	n (40MHz)	13.5/15 (MCS0)	0.79	2.2	11.0	-10.22
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-3.80	2.2	11.0	-14.80
Band 2C	5500	100	a	6	5.68	3.4	11.0	-5.32
	5580	116	a	6	7.57	3.4	11.0	-3.43
	5720	144	a	6	7.31	3.4	11.0	-3.69
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	5.94	3.4	11.0	-5.07
	5520	104	n (20MHz)	6.5/7.2 (MCS0)	6.59	3.4	11.0	-4.42
	5540	108	n (20MHz)	6.5/7.2 (MCS0)	6.44	3.4	11.0	-4.56
	5580	116	n (20MHz)	6.5/7.2 (MCS0)	6.35	3.4	11.0	-4.65
	5660	132	n (20MHz)	6.5/7.2 (MCS0)	5.17	3.4	11.0	-5.83
	5680	136	n (20MHz)	6.5/7.2 (MCS0)	5.00	3.4	11.0	-6.00
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	7.08	3.4	11.0	-3.92
	5510	102	n (40MHz)	13.5/15 (MCS0)	0.18	3.4	11.0	-10.82
	5550	110	n (40MHz)	13.5/15 (MCS0)	4.01	3.4	11.0	-6.99
	5710	142	n (40MHz)	13.5/15 (MCS0)	3.47	3.4	11.0	-7.53
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-2.53	3.4	11.0	-13.53
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-2.55	3.4	11.0	-13.55

Table 7-26. Bands 1, 2A, 2C Conducted Power Spectral Density Measurements SISO ANT1

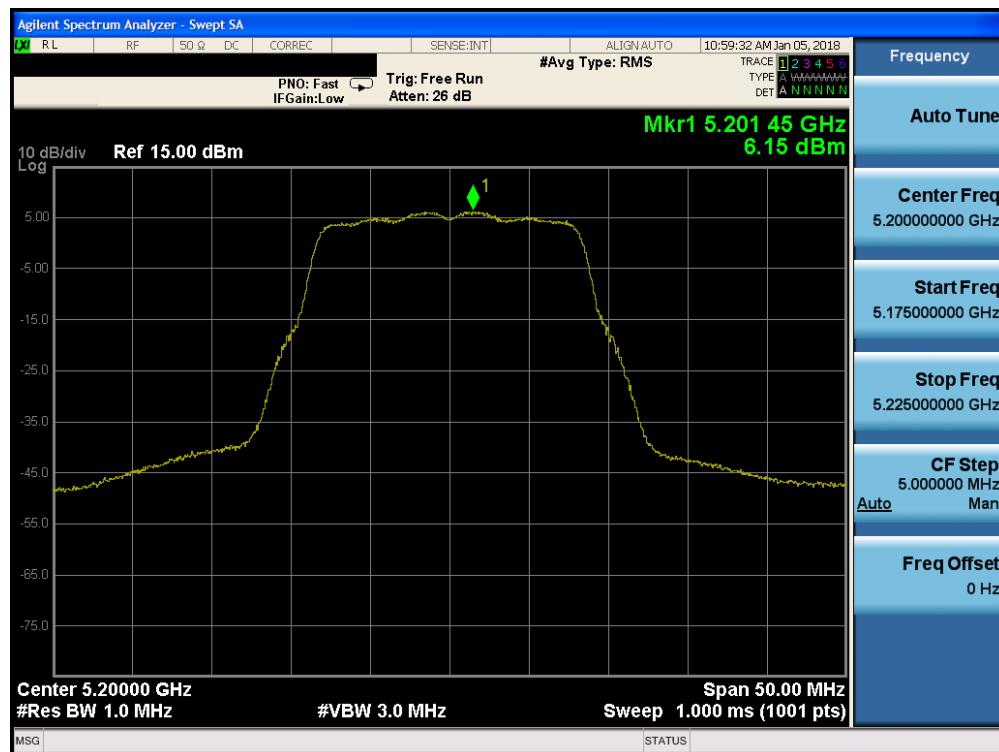
FCC ID: BCGA1893	 PCTEST [®] ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 97 of 298

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Antenna Gain [dBi]	e.i.r.p. Power Density [dBm/MHz]	Max e.i.r.p. Power Density Limit [dBm/MHz]	e.i.r.p. Power Density Margin [dB]
Band 1	5180	36	a	6	5.59	1.3	6.86	10.0	-3.14
	5200	40	a	6	6.15	1.3	7.42	10.0	-2.58
	5240	48	a	6	6.72	1.3	7.99	10.0	-2.01
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	6.07	1.3	7.34	10.0	-2.66
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.75	1.3	8.02	10.0	-1.98
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	7.18	1.3	8.45	10.0	-1.55
	5190	38	n (40MHz)	13.5/15 (MCS0)	0.99	1.3	2.26	10.0	-7.74
	5230	46	n (40MHz)	13.5/15 (MCS0)	2.24	1.3	3.51	10.0	-6.49
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-2.12	1.3	-0.85	10.0	-10.85

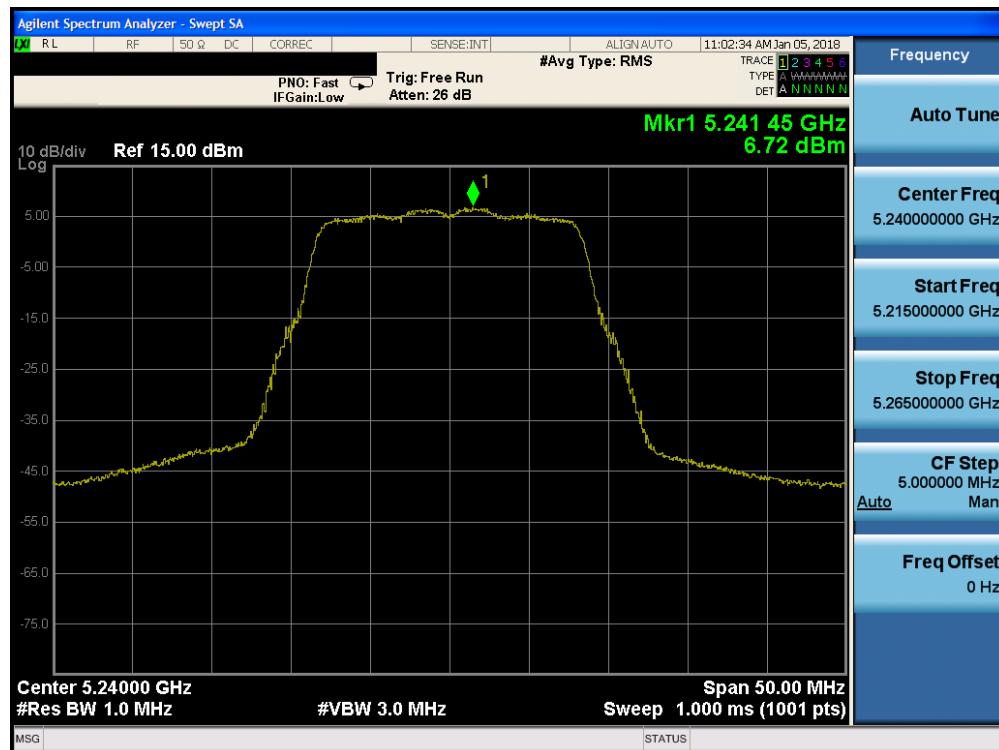
Table 7-27. Band 1 e.i.r.p. Power Spectral Density Measurements SISO ANT1 (RSS-247)

Plot 7-129. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 1) – Ch. 36)

FCC ID: BCGA1893	 PCTEST® <small>ENGINEERING LABORATORY, INC.</small>	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device		Page 98 of 298

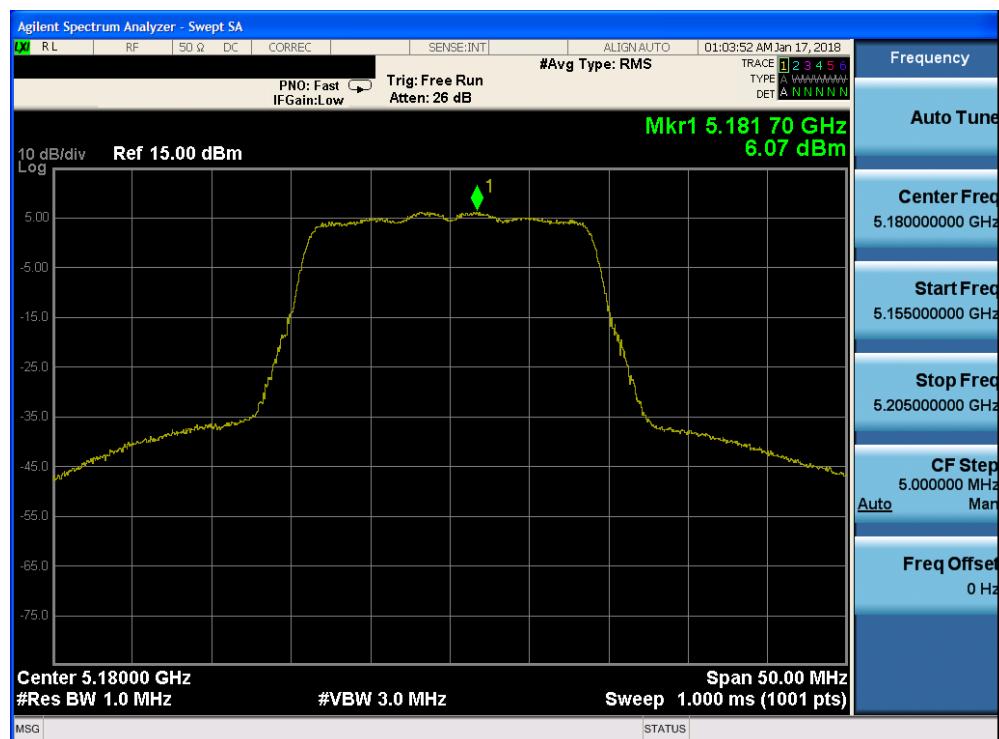


Plot 7-130. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 1) – Ch. 40)

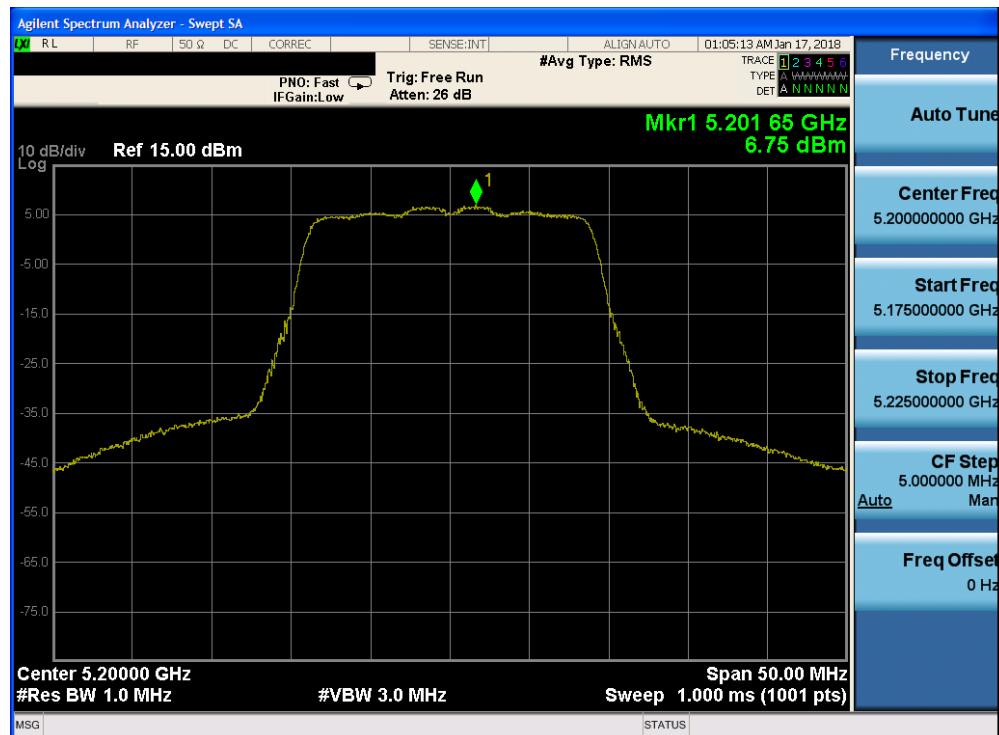


Plot 7-131. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 1) – Ch. 48)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 99 of 298

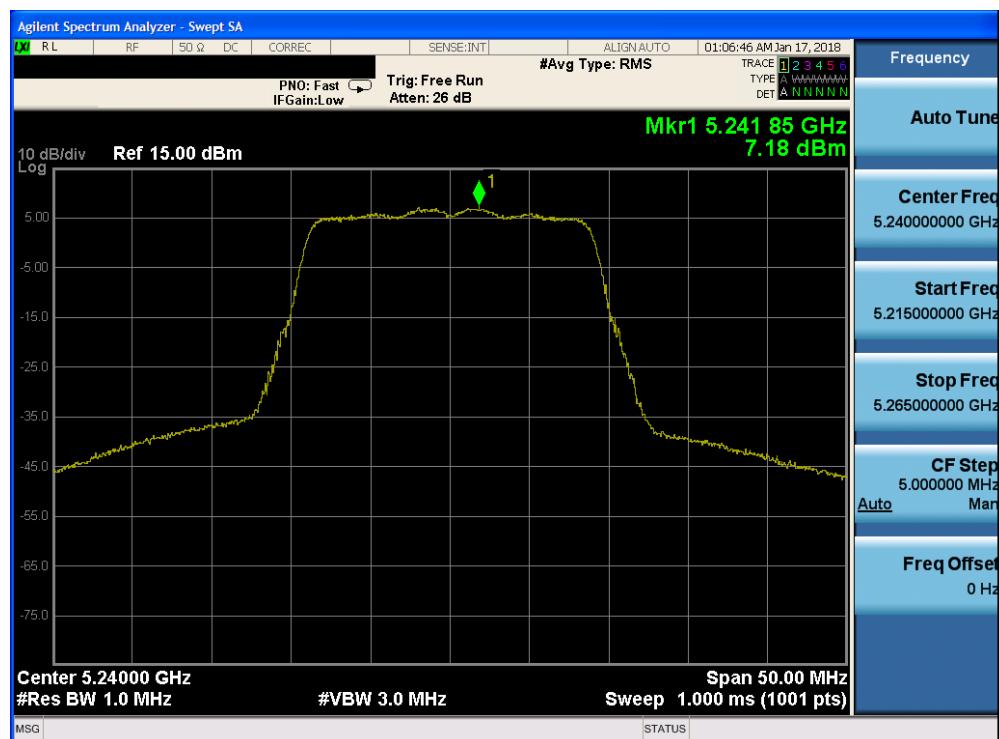


Plot 7-132. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

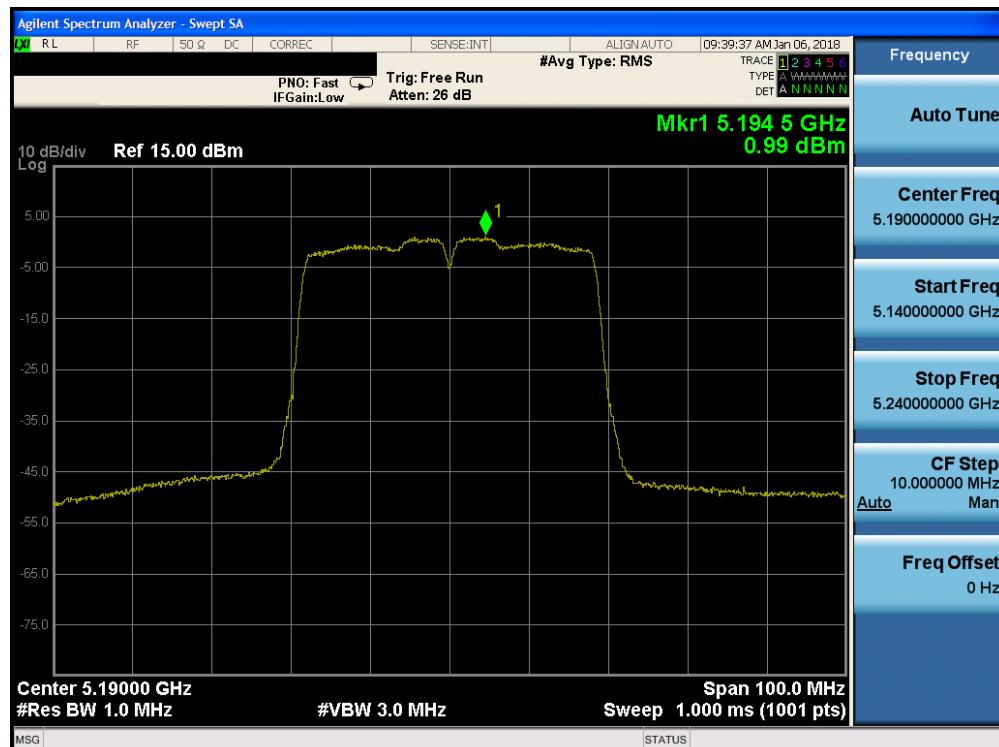


Plot 7-133. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

FCC ID: BCGA1893		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 100 of 298

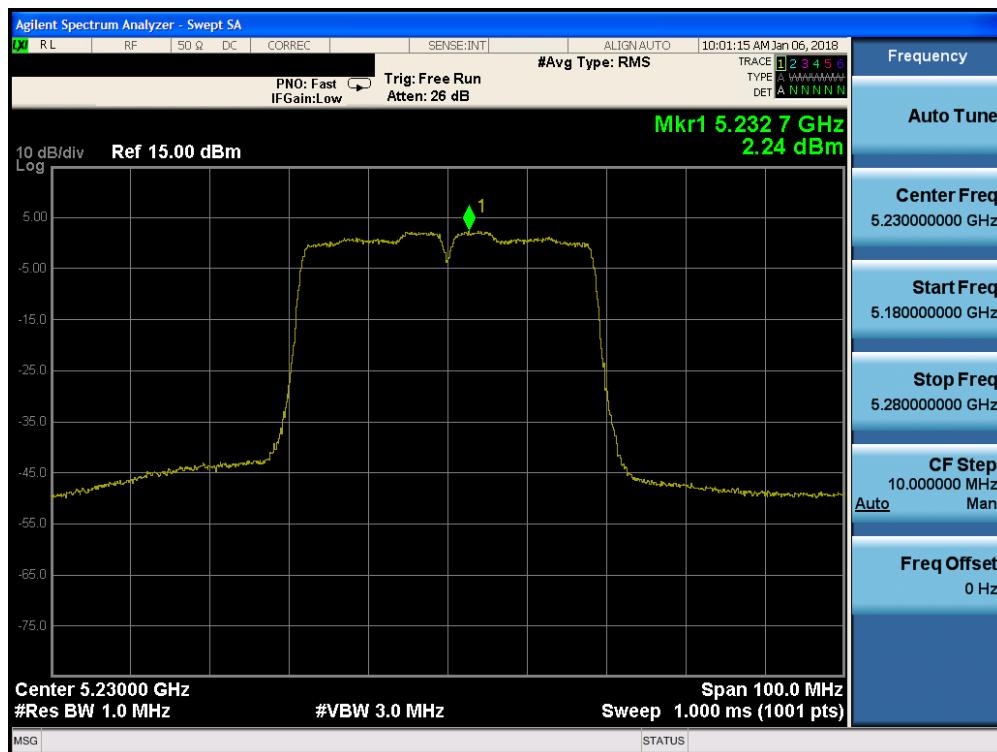


Plot 7-134. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

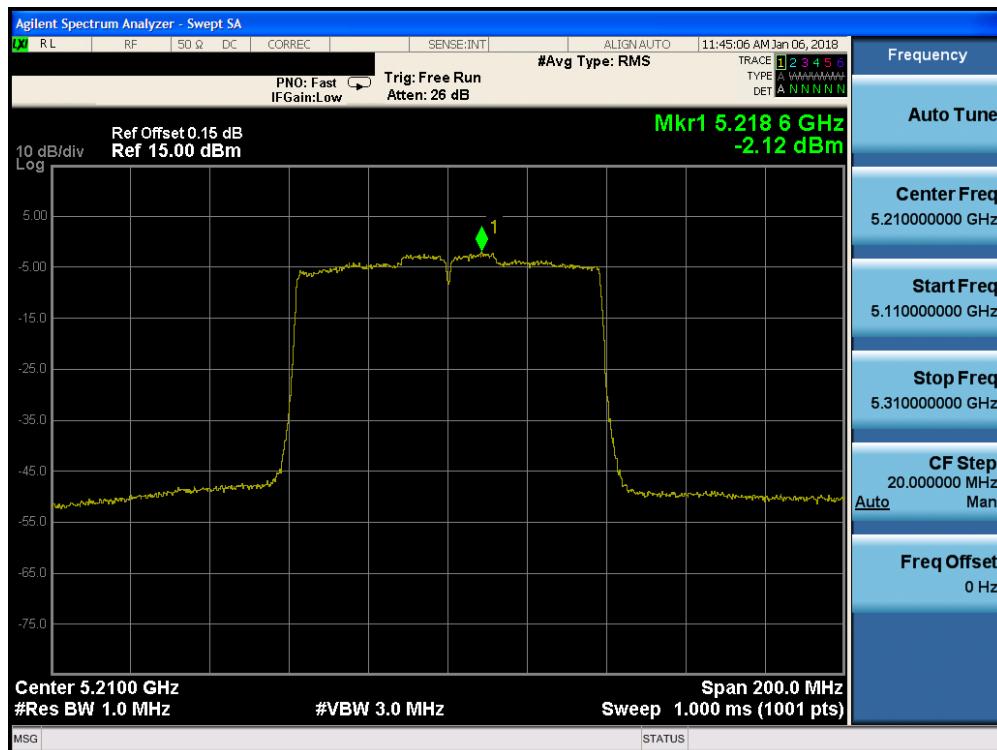


Plot 7-135. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

FCC ID: BCGA1893	 PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 101 of 298

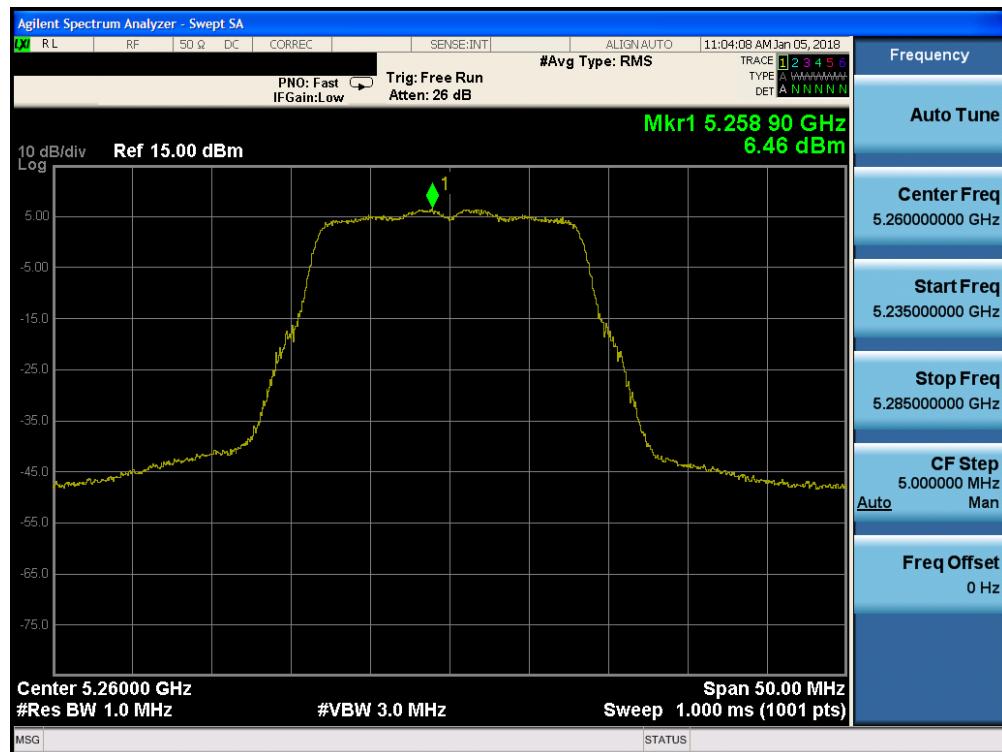


Plot 7-136. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 1) – Ch. 46)



Plot 7-137. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

FCC ID: BCGA1893		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 102 of 298

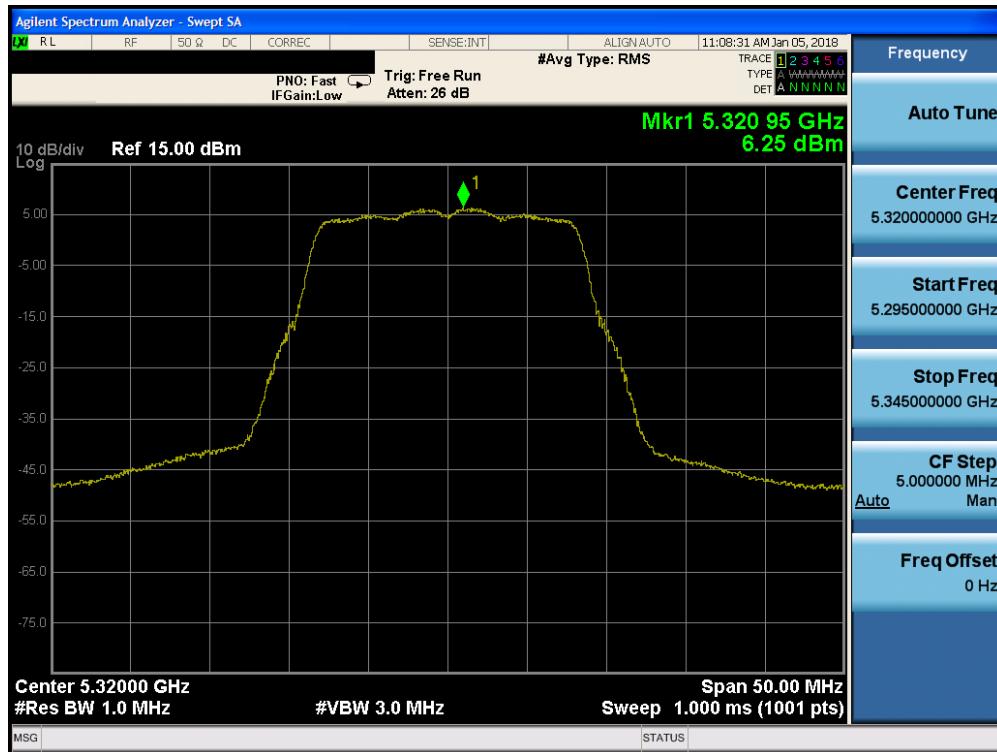


Plot 7-138. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 2A) – Ch. 52)

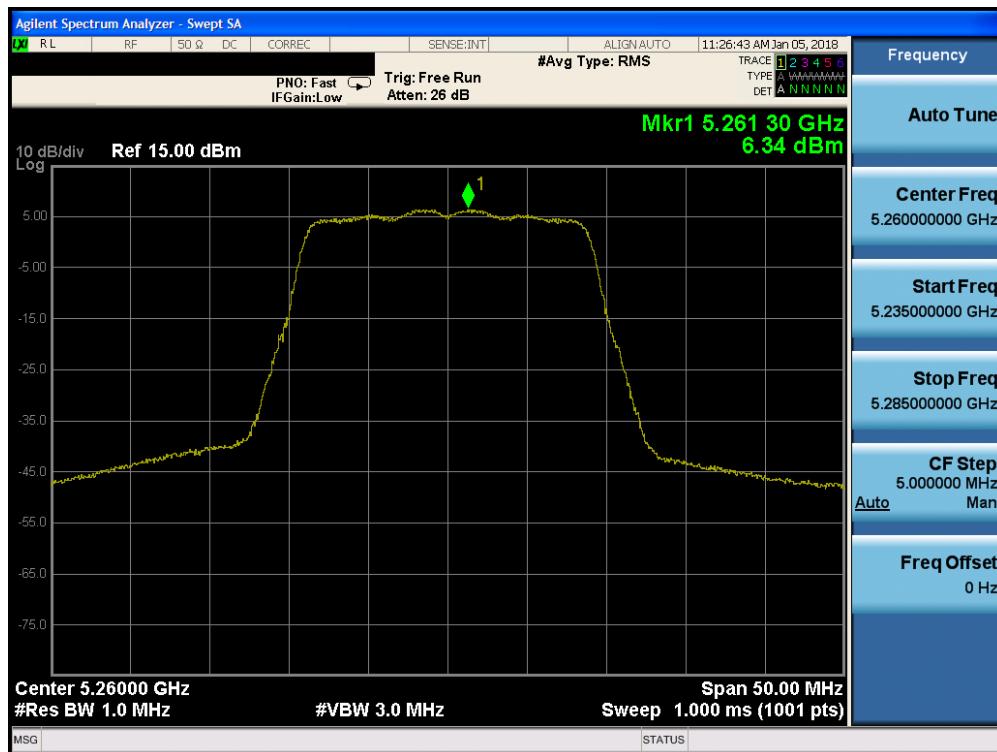


Plot 7-139. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 2A) – Ch. 56)

FCC ID: BCGA1893	 PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 103 of 298

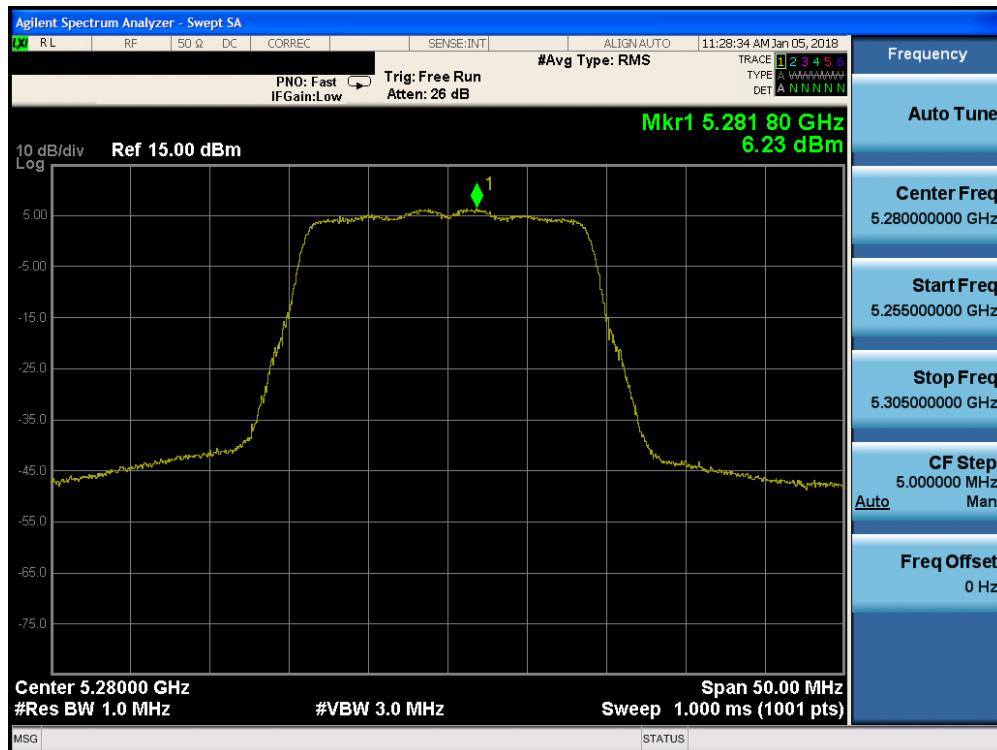


Plot 7-140. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 2A) – Ch. 64)

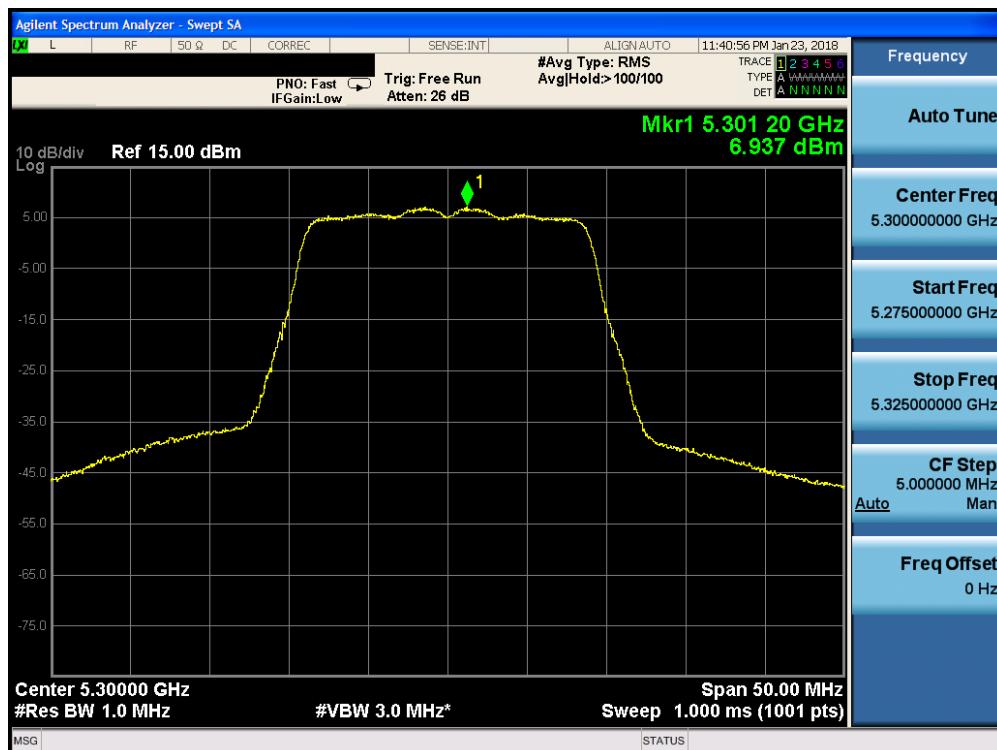


Plot 7-141. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

FCC ID: BCGA1893	 PCTEST [®] ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 104 of 298

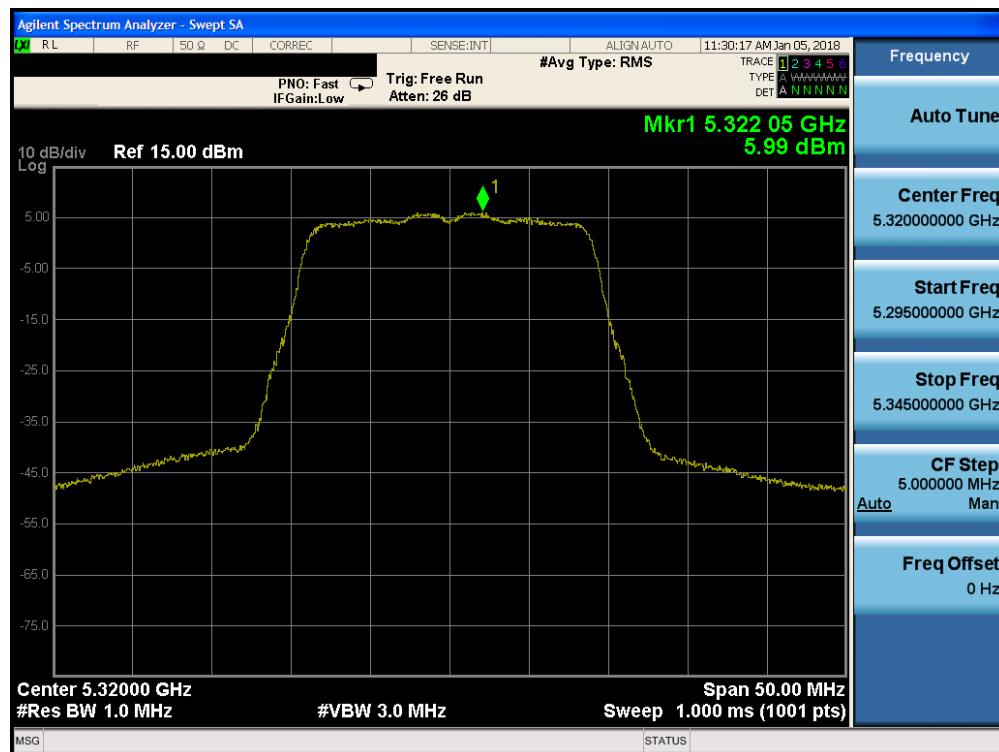


Plot 7-142. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

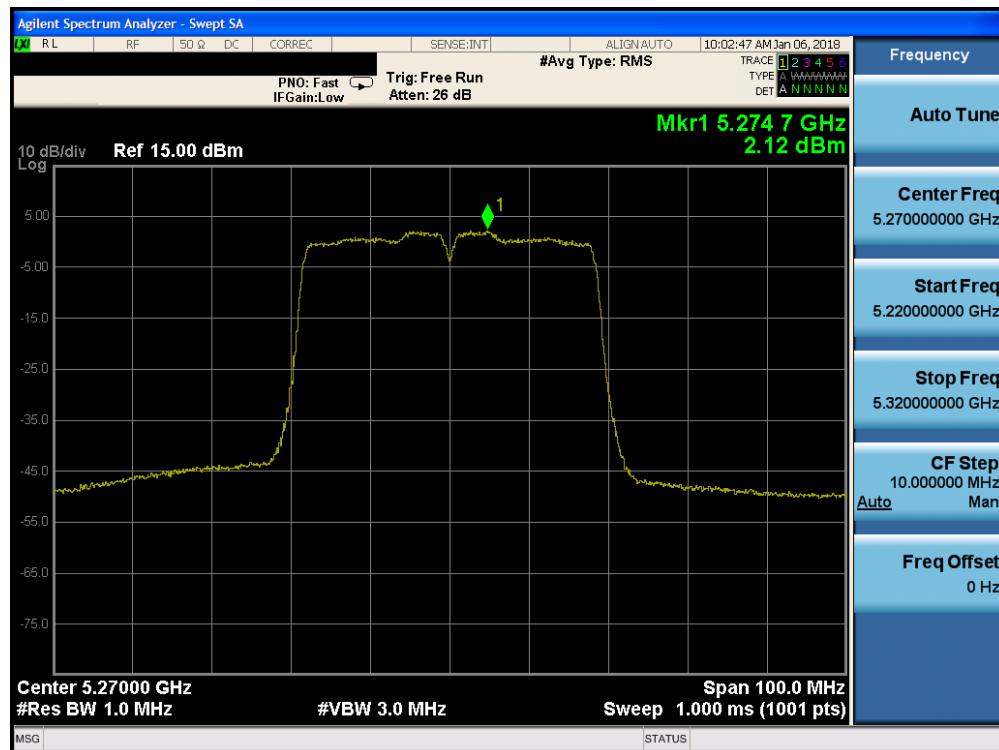


Plot 7-143. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2A) – Ch. 60)

FCC ID: BCGA1893	 PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device		Page 105 of 298

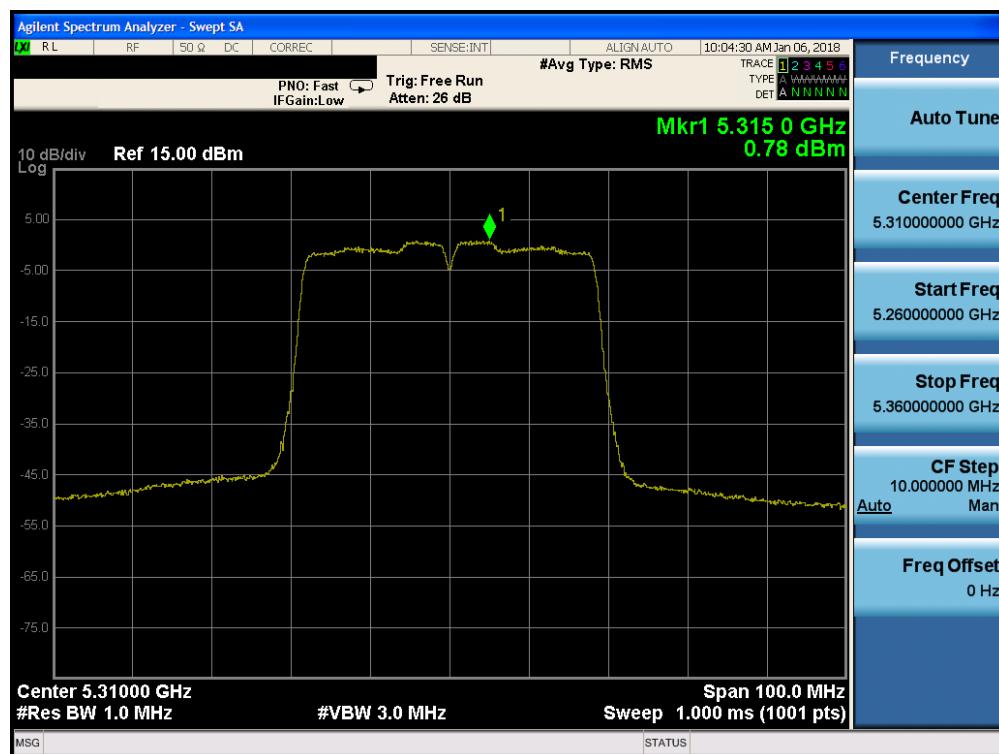


Plot 7-144. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

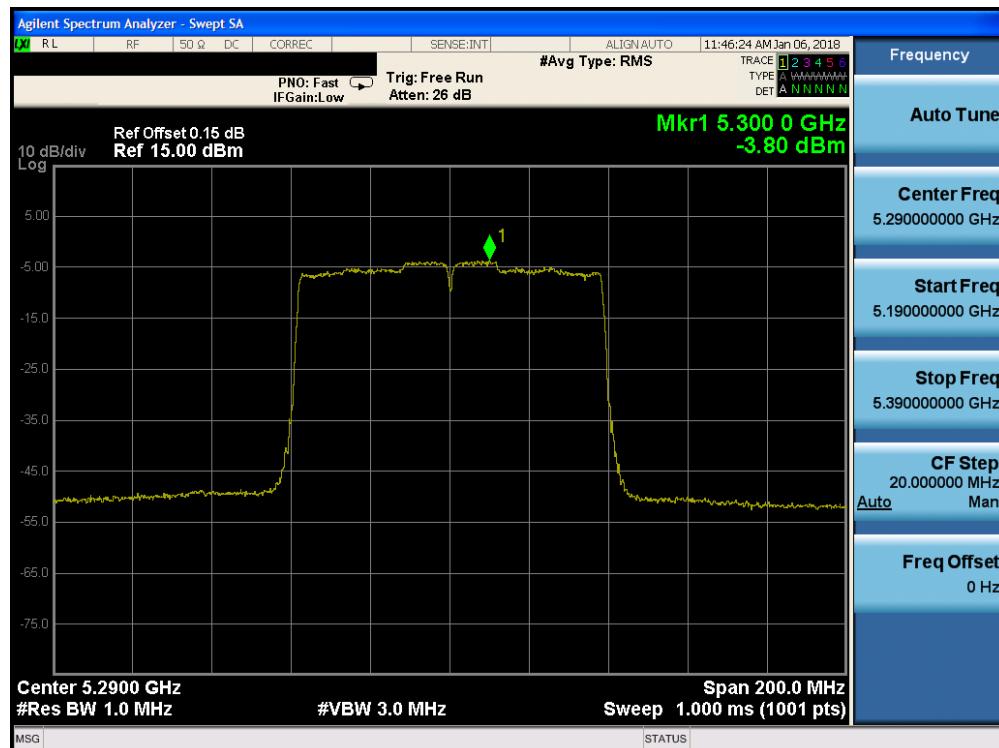


Plot 7-145. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 106 of 298

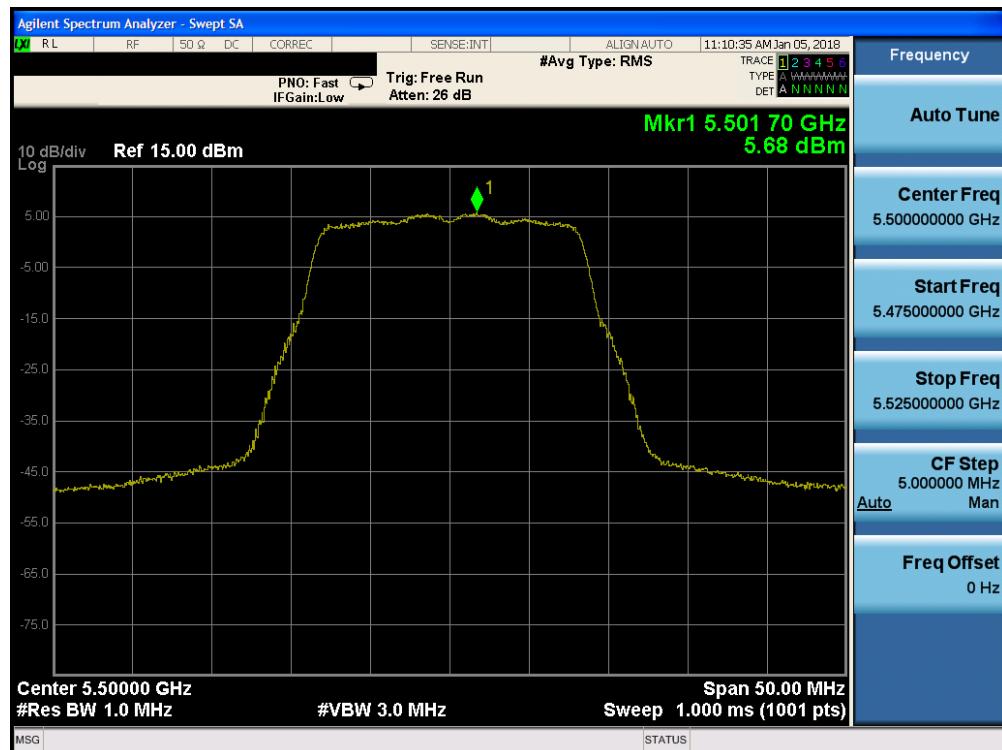


Plot 7-146. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

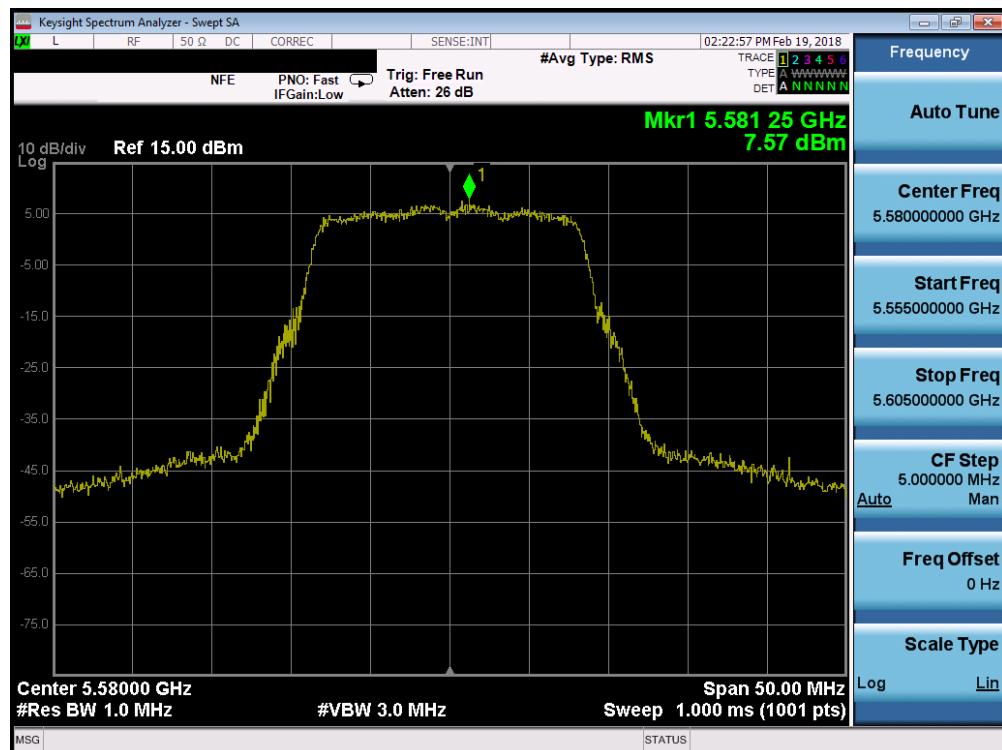


Plot 7-147. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 107 of 298

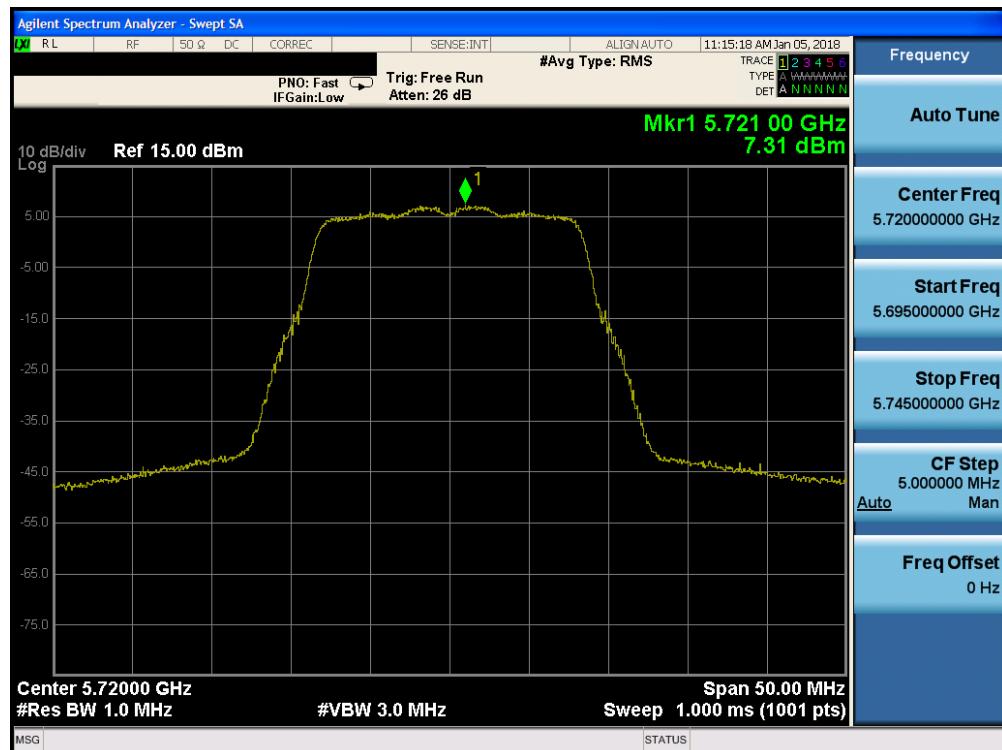


Plot 7-148. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 2C) – Ch. 100)

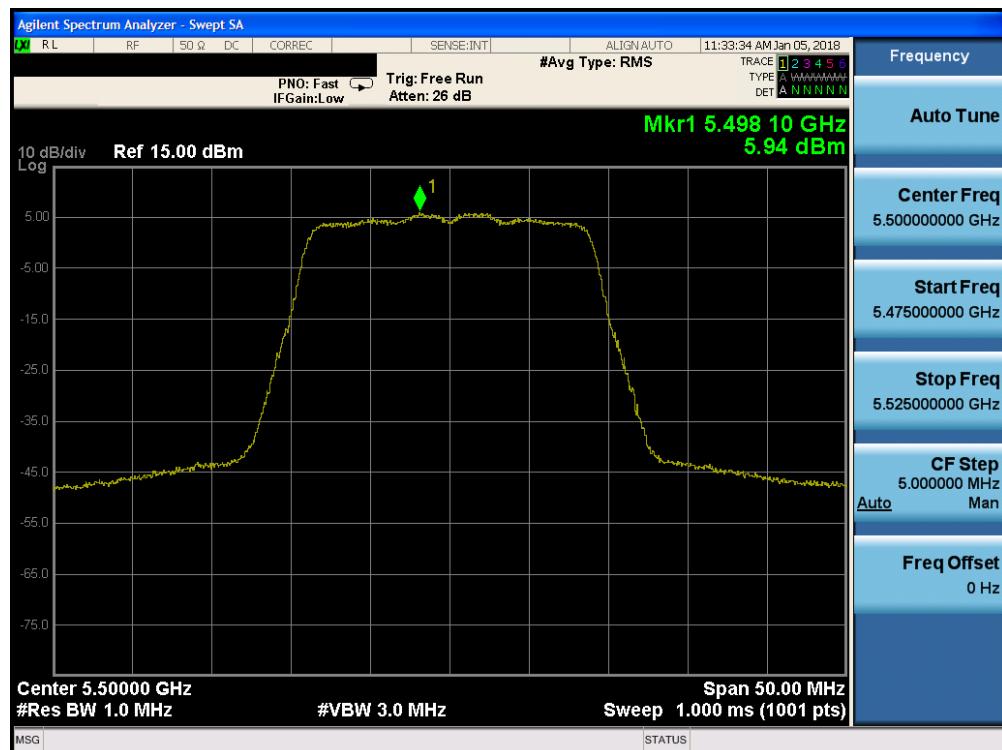


Plot 7-149. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 2C) – Ch. 116)

FCC ID: BCGA1893	 PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 108 of 298

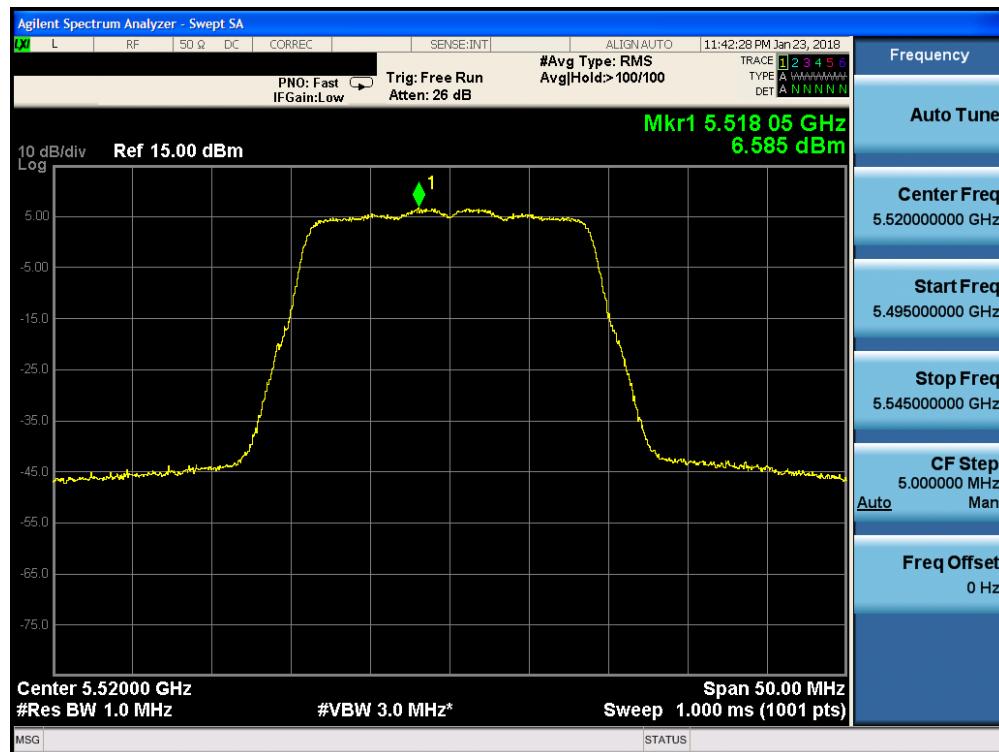


Plot 7-150. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 2C) – Ch. 144)

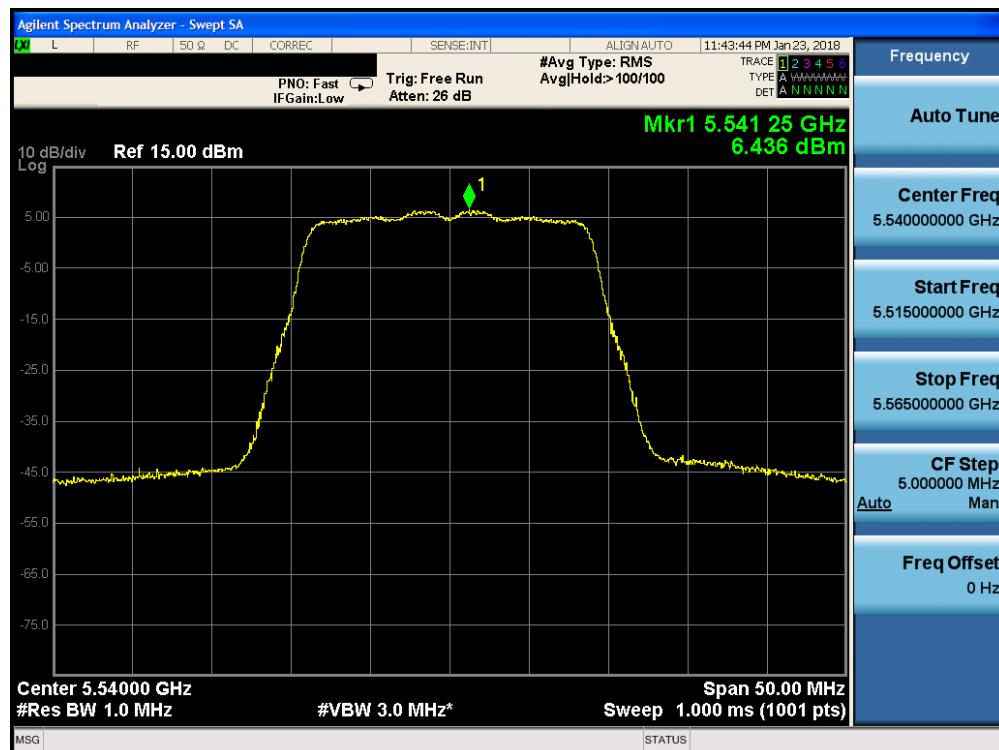


Plot 7-151. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

FCC ID: BCGA1893	 PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 109 of 298

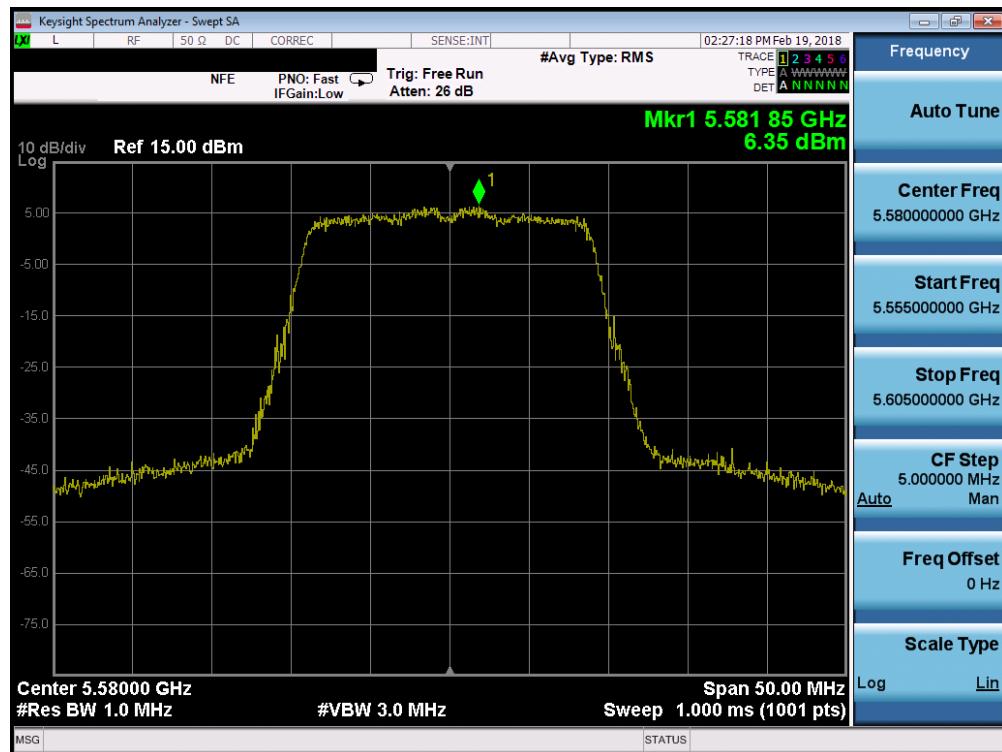


Plot 7-152. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2C) – Ch. 104)

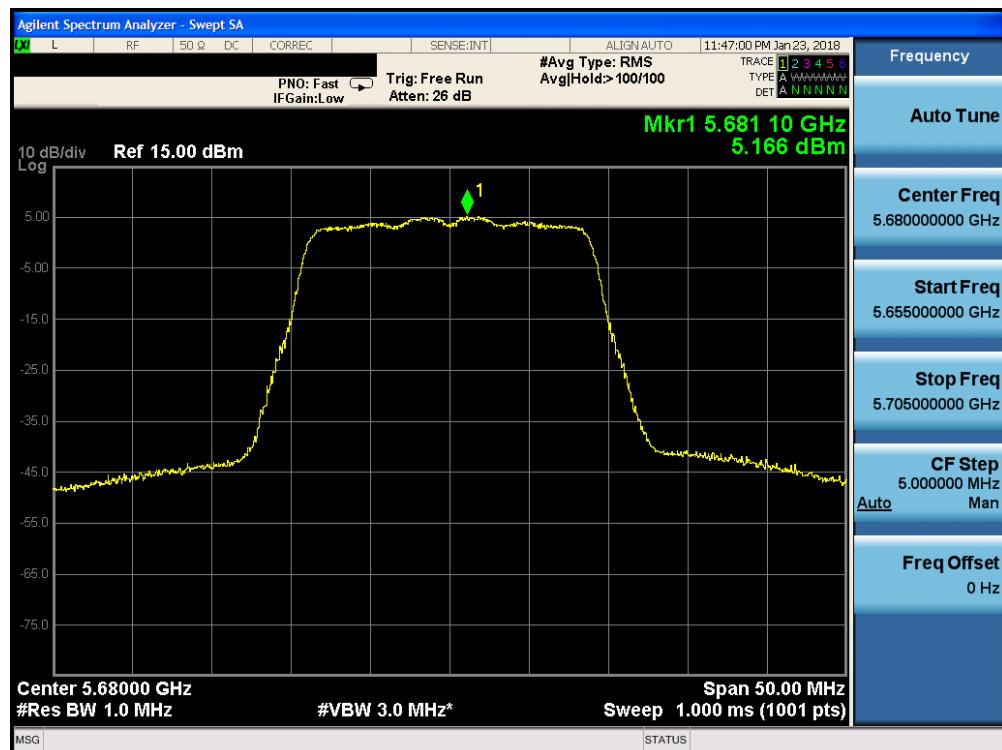


Plot 7-153. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2C) – Ch. 108)

FCC ID: BCGA1893	 PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 110 of 298

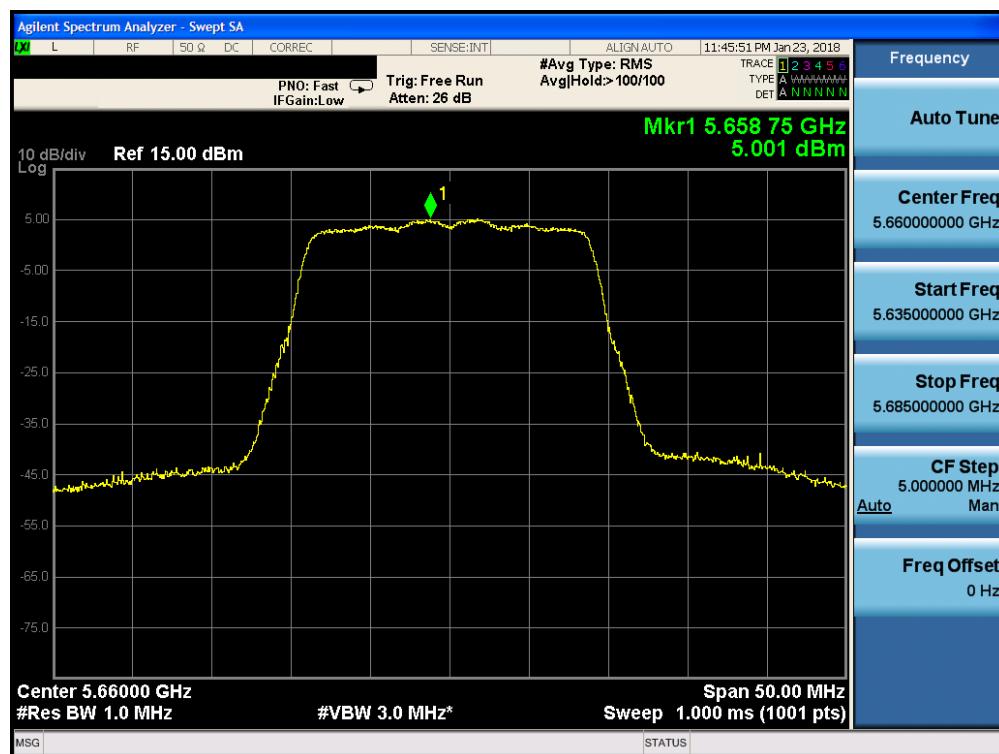


Plot 7-154. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2C) – Ch. 116)

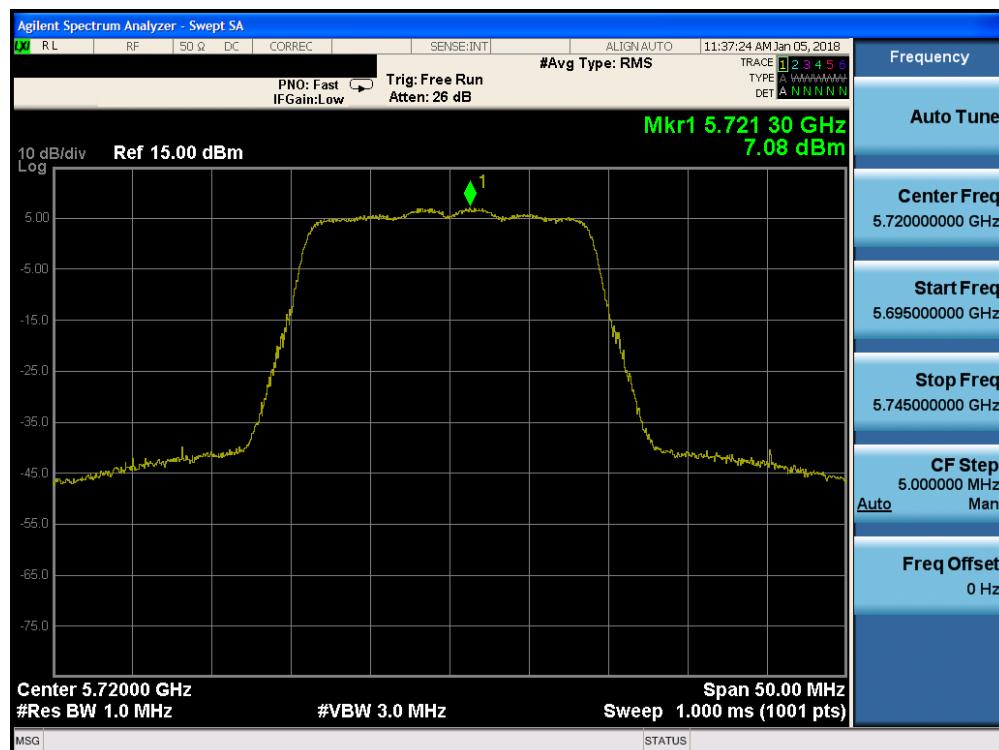


Plot 7-155. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2C) – Ch. 132)

FCC ID: BCGA1893	 PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 111 of 298

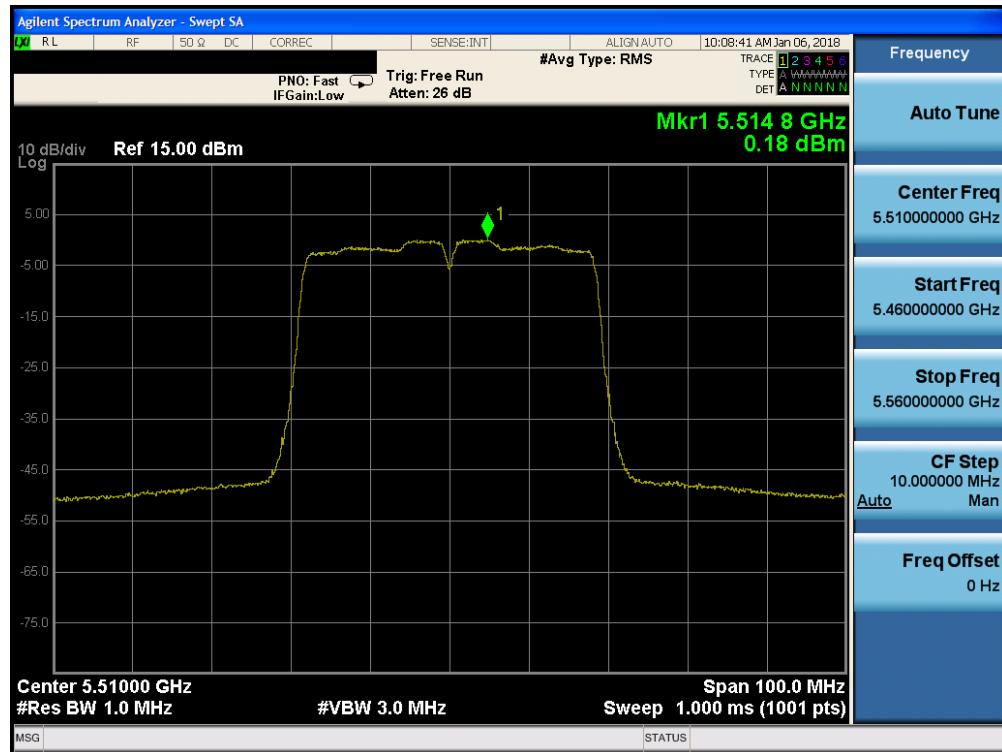


Plot 7-156. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2C) – Ch. 136)

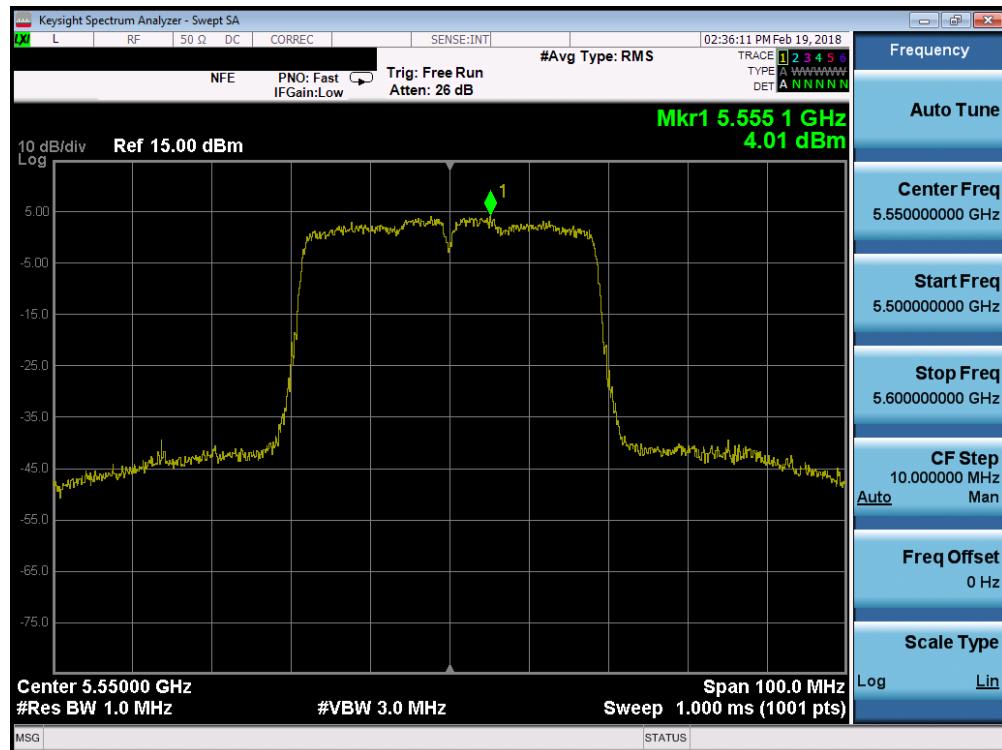


Plot 7-157. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2C) – Ch. 144)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 112 of 298

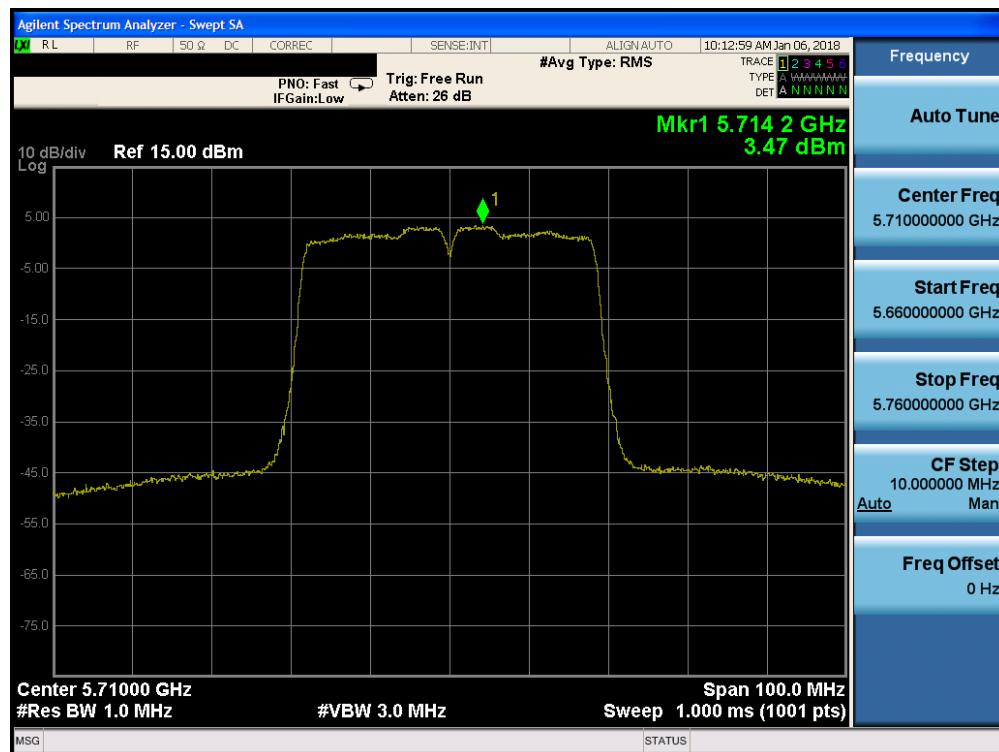


Plot 7-158. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

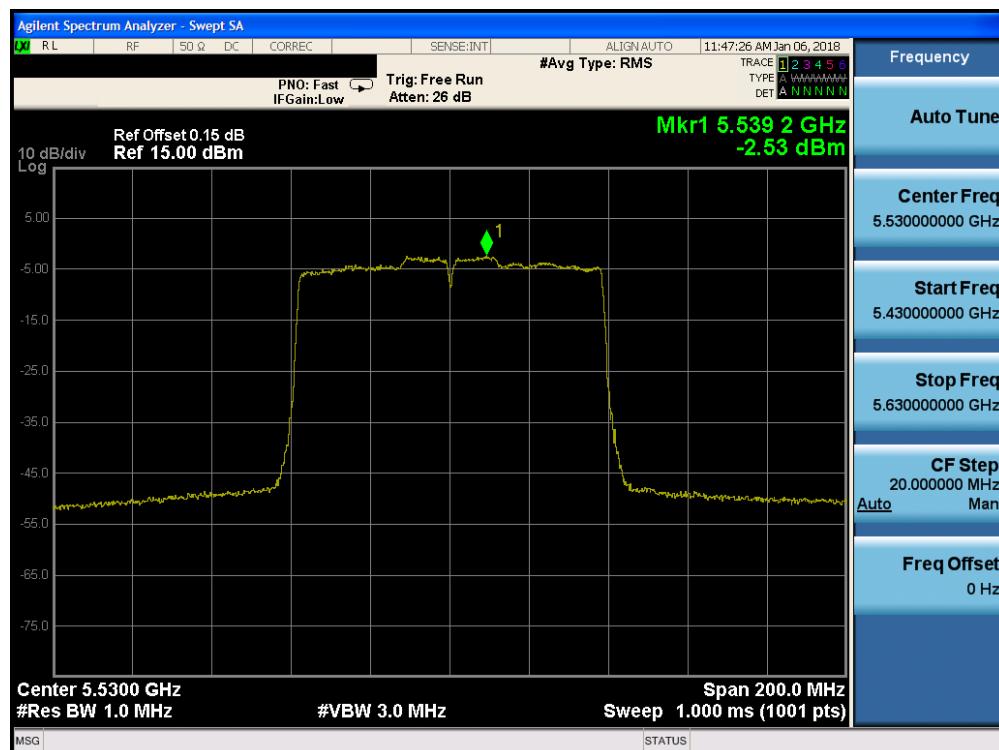


Plot 7-159. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 2C) – Ch. 110)

FCC ID: BCGA1893	 PCTEST ENGINEERING LABORATORY, INC.		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device		Page 113 of 298

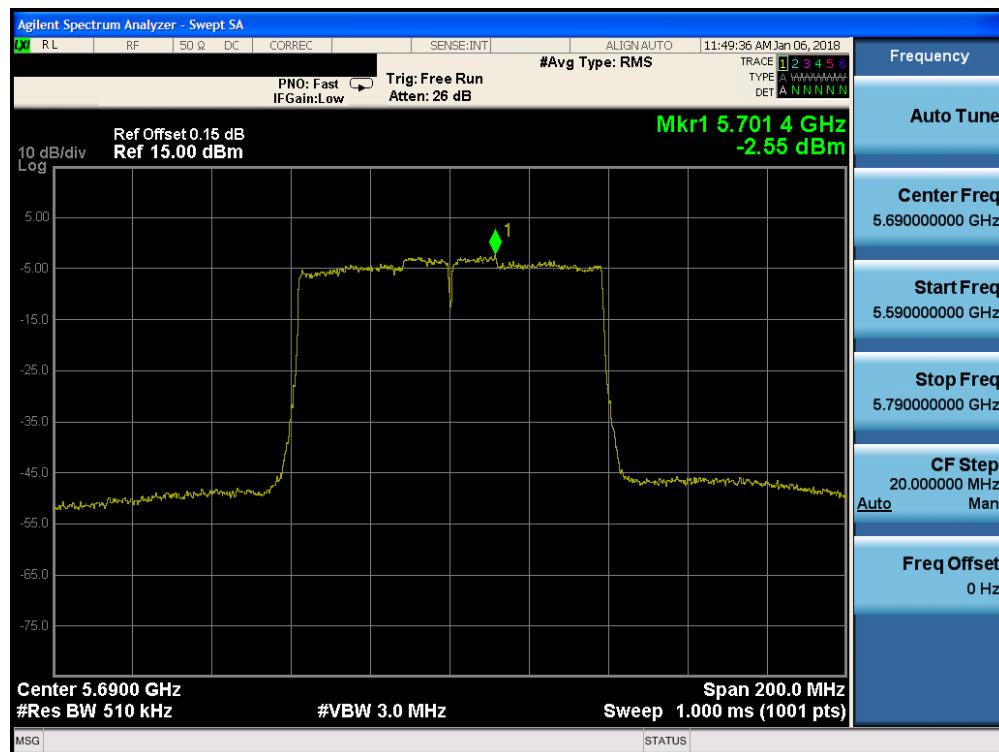


Plot 7-160. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)



Plot 7-161. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

FCC ID: BCGA1893		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 114 of 298



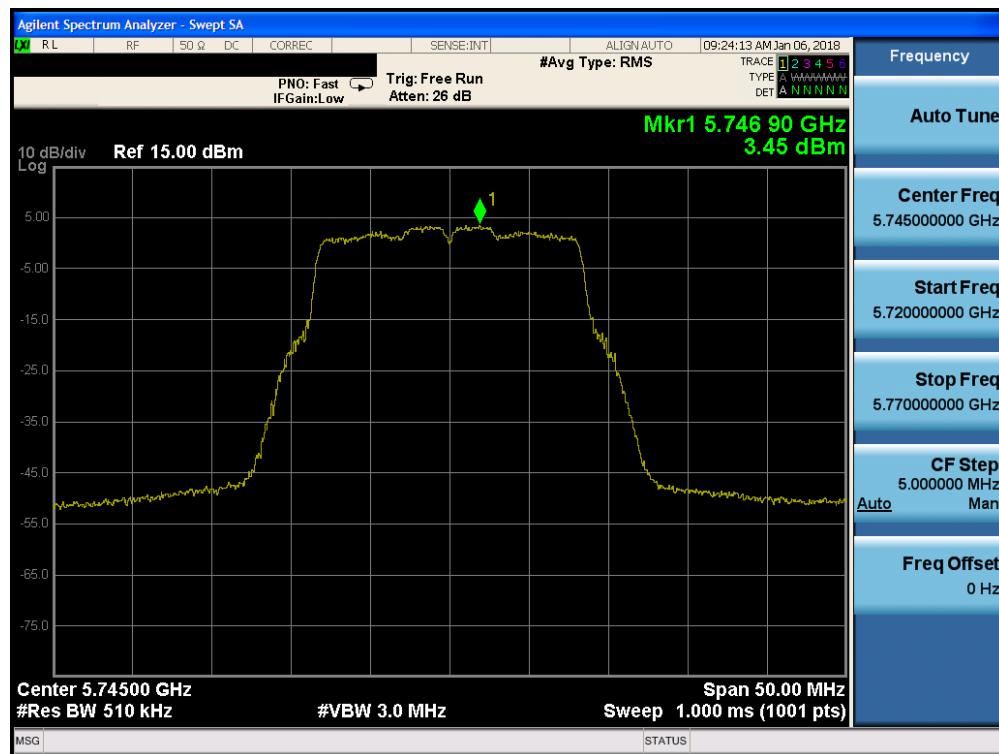
Plot 7-162. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 138)

FCC ID: BCGA1893	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 115 of 298

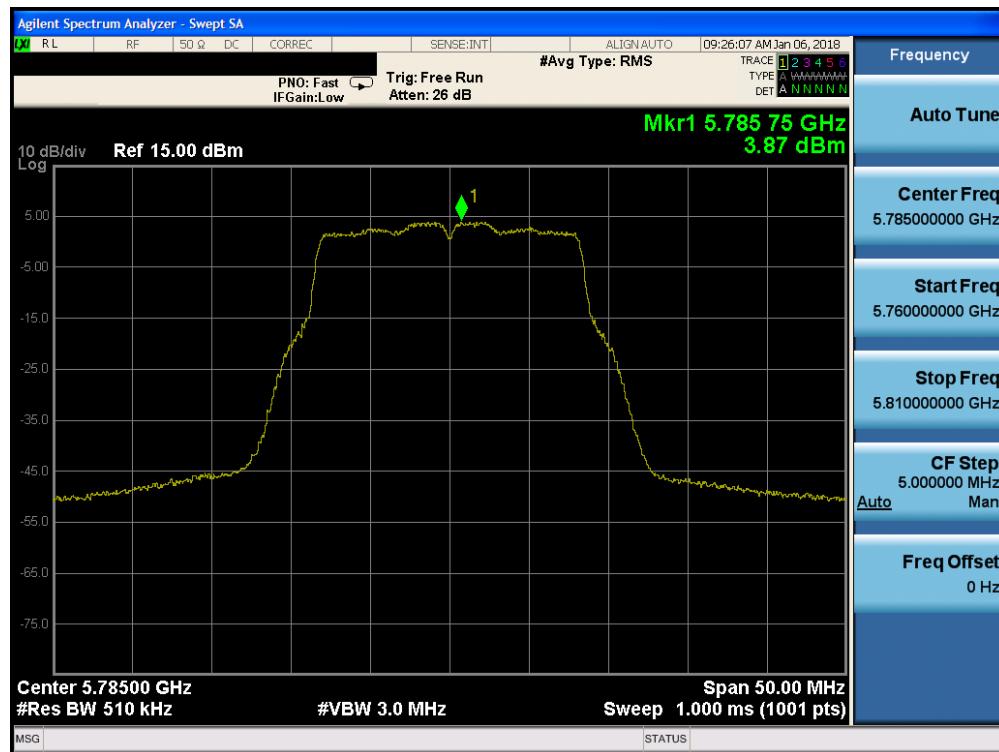
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
Band 3	5745	149	a	6	3.45	30.0	-26.55
	5785	157	a	6	3.87	30.0	-26.13
	5825	165	a	6	3.40	30.0	-26.60
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	4.07	30.0	-25.93
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	3.62	30.0	-26.38
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	3.29	30.0	-26.71
	5755	151	n (40MHz)	13.5/15 (MCS0)	-0.54	30.0	-30.54
	5795	159	n (40MHz)	13.5/15 (MCS0)	-0.97	30.0	-30.97
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	0.24	30.0	-29.76

Table 7-28. Band 3 Conducted Power Spectral Density Measurements SISO ANT1

FCC ID: BCGA1893	 PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 116 of 298	

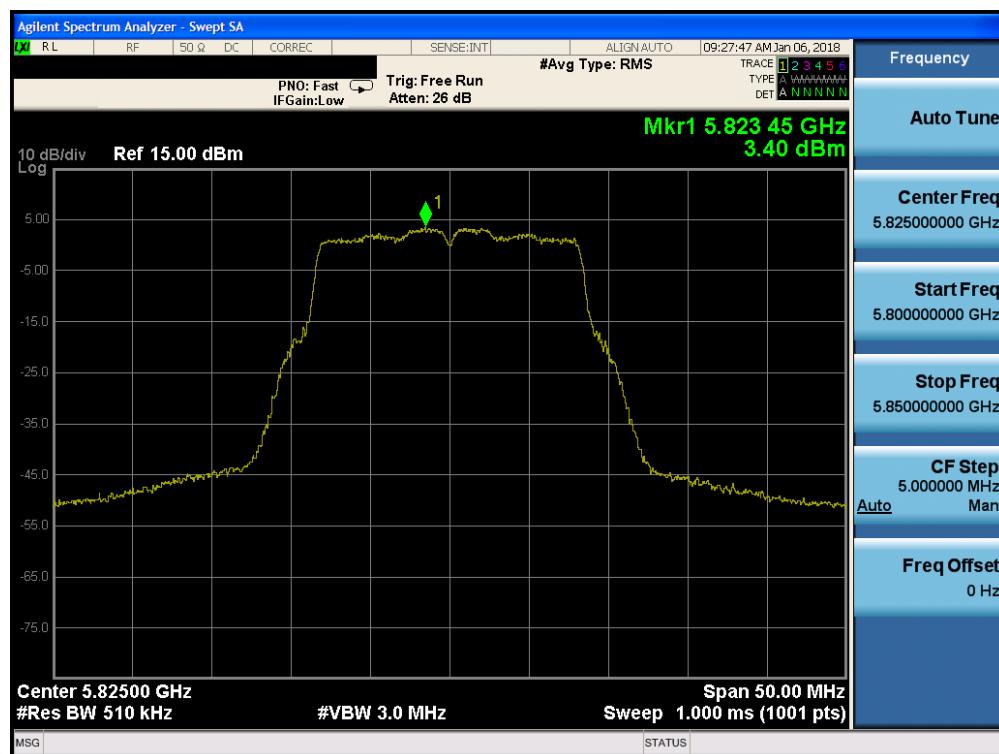


Plot 7-163. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 3) – Ch. 149)

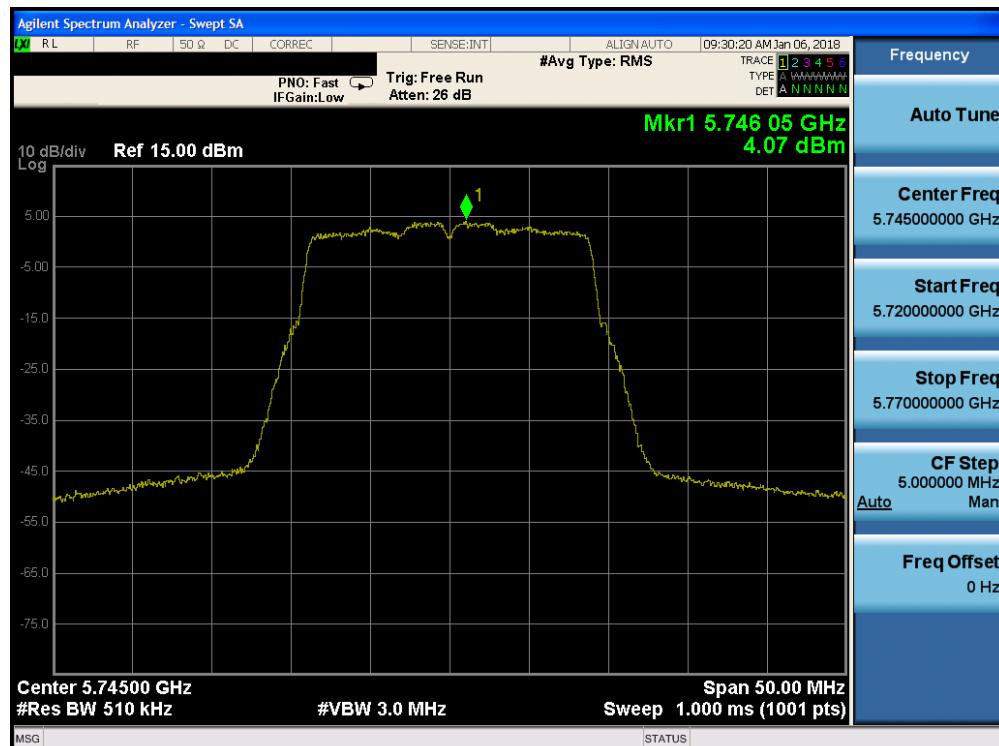


Plot 7-164. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 3) – Ch. 157)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 117 of 298

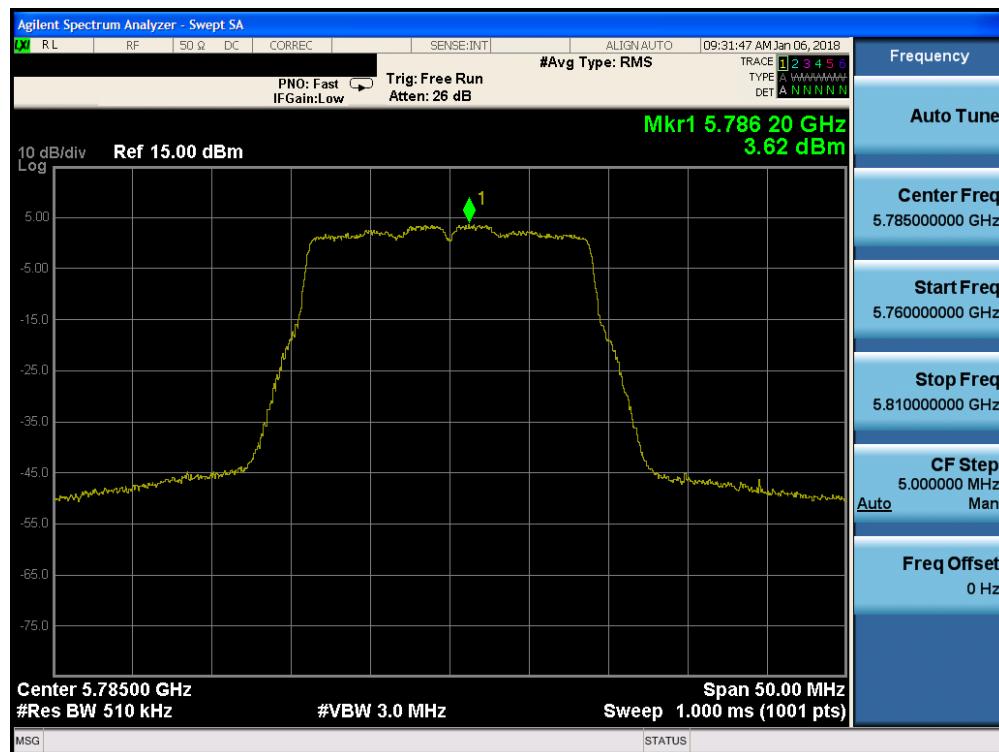


Plot 7-165. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 3) – Ch. 165)

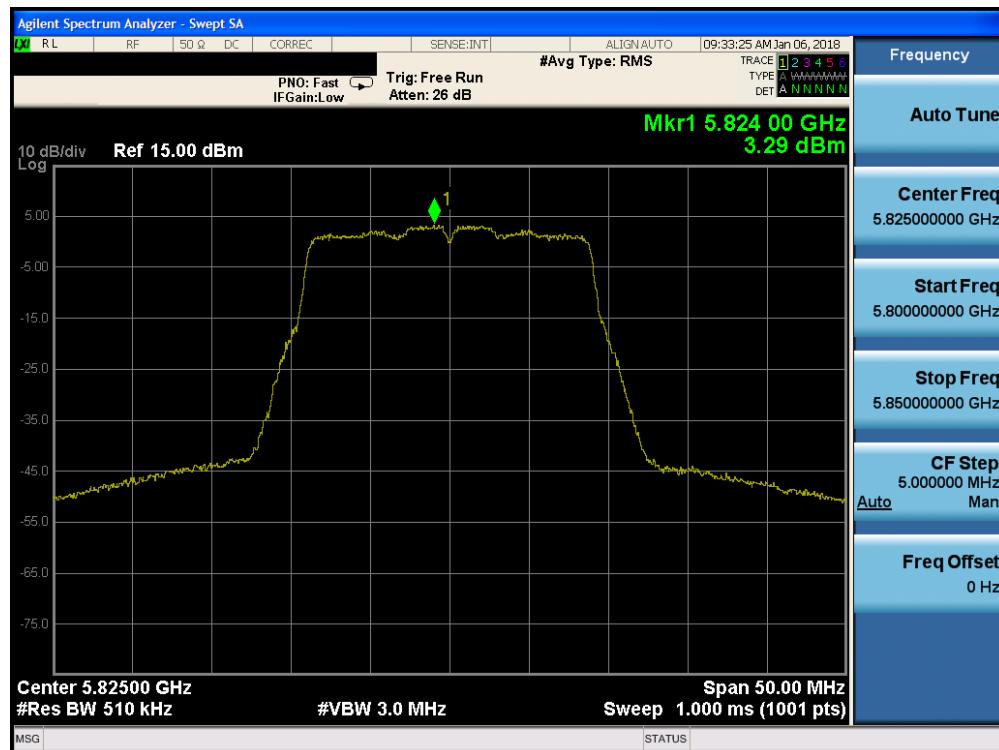


Plot 7-166. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 118 of 298

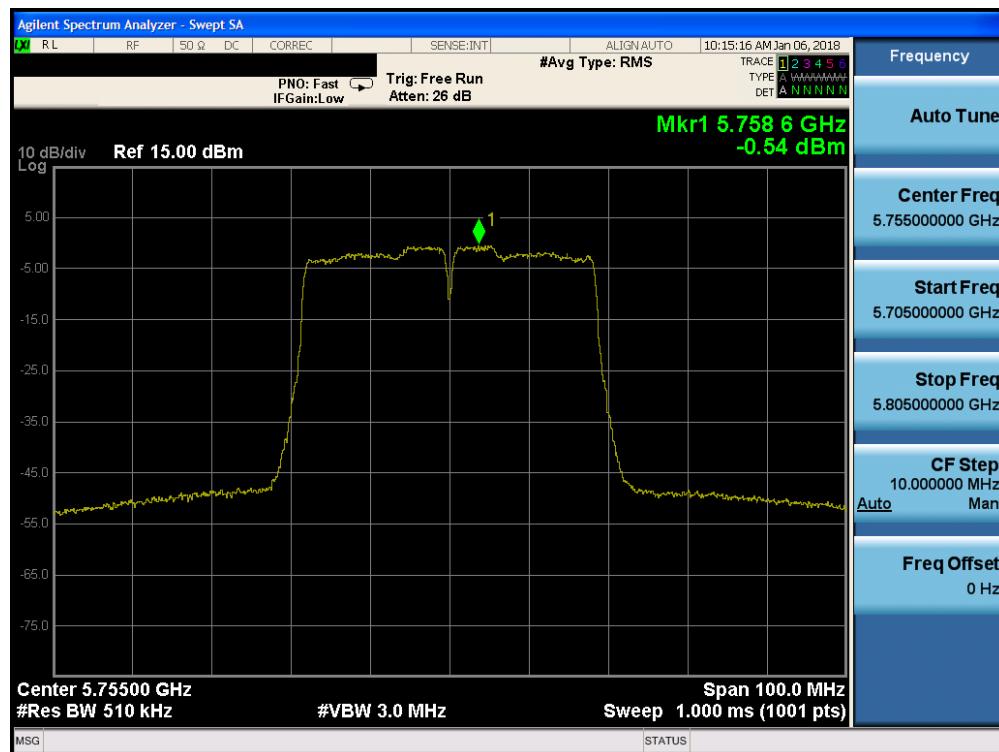


Plot 7-167. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

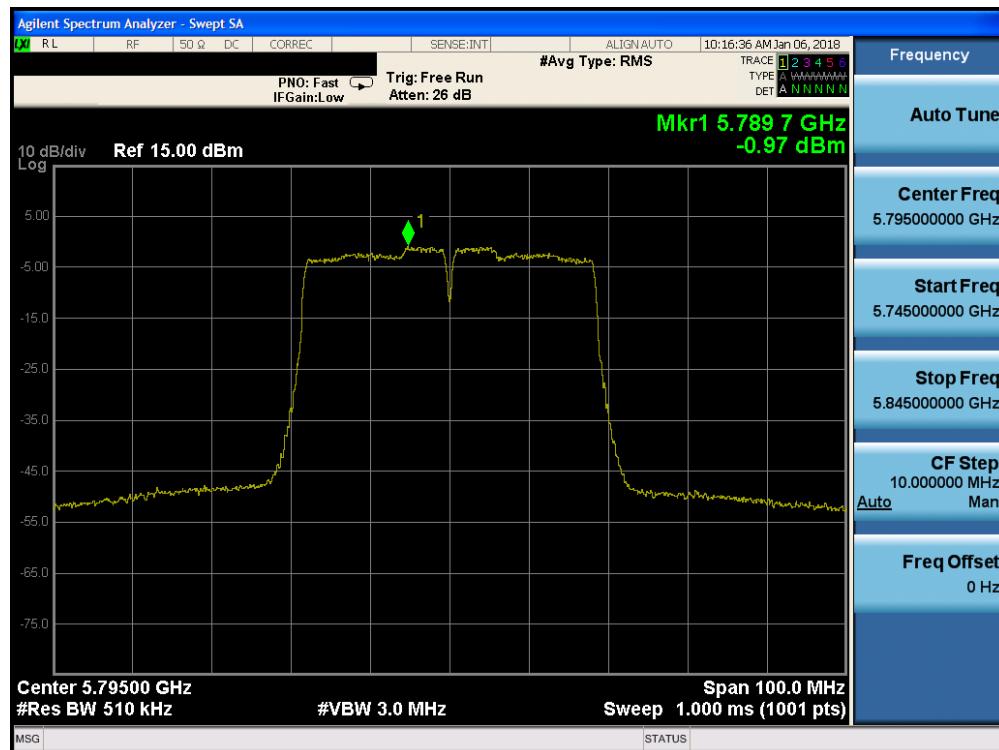


Plot 7-168. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 119 of 298

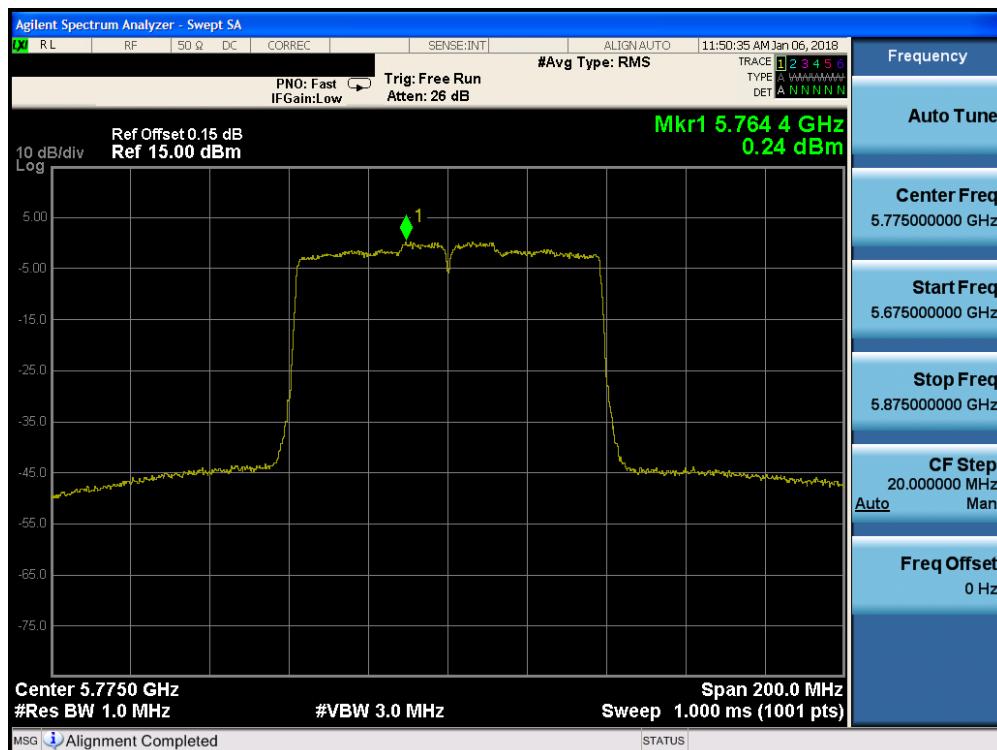


Plot 7-169. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 3) – Ch. 151)



Plot 7-170. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 3) – Ch. 159)

FCC ID: BCGA1893		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 120 of 298



Plot 7-171. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)

FCC ID: BCGA1893		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 121 of 298

Antenna-2 Power Spectral Density Measurements

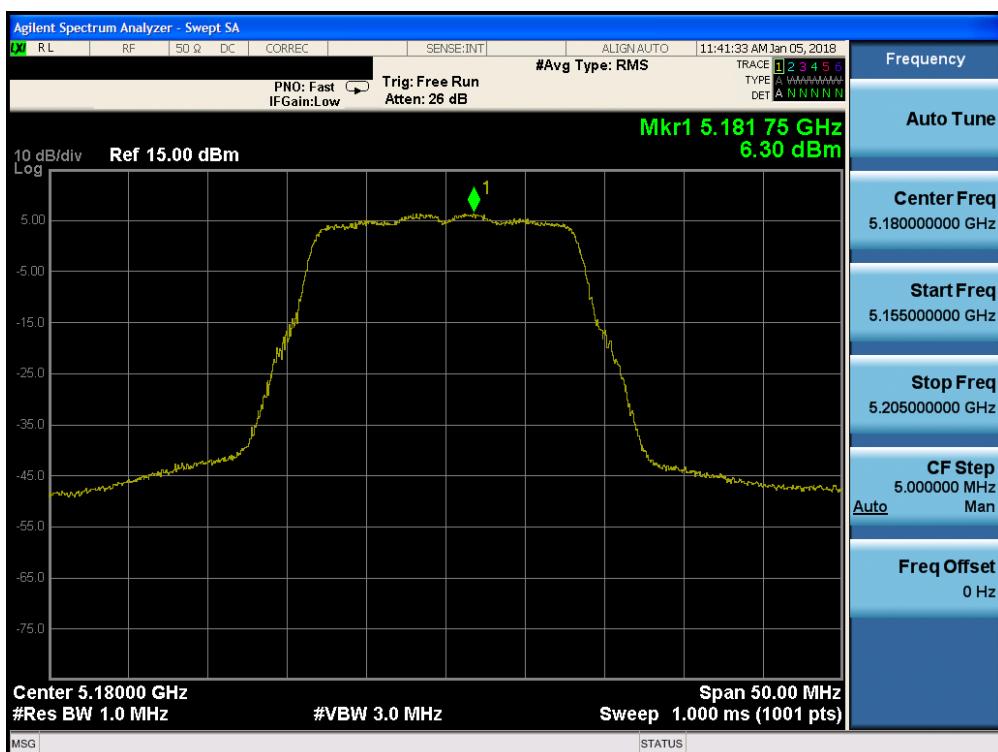
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Antenna Gain [dBi]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	a	6	6.30	2.6	11.0	-4.70
	5200	40	a	6	7.10	2.6	11.0	-3.91
	5240	48	a	6	7.17	2.6	11.0	-3.84
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	6.07	2.6	11.0	-4.93
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.56	2.6	11.0	-4.44
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	7.09	2.6	11.0	-3.91
	5190	38	n (40MHz)	13.5/15 (MCS0)	0.42	2.6	11.0	-10.58
	5230	46	n (40MHz)	13.5/15 (MCS0)	2.62	2.6	11.0	-8.38
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-2.86	2.6	11.0	-13.86
Band 2A	5260	52	a	6	7.45	2.8	11.0	-3.55
	5280	56	a	6	7.30	2.8	11.0	-3.70
	5320	64	a	6	6.39	2.8	11.0	-4.61
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	7.21	2.8	11.0	-3.79
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	7.30	2.8	11.0	-3.70
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	6.18	2.8	11.0	-4.82
	5270	54	n (40MHz)	13.5/15 (MCS0)	3.13	2.8	11.0	-7.87
	5310	62	n (40MHz)	13.5/15 (MCS0)	0.83	2.8	11.0	-10.17
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-3.76	2.8	11.0	-14.76
Band 2C	5500	100	a	6	5.53	3.2	11.0	-5.47
	5580	116	a	6	5.73	3.2	11.0	-5.27
	5720	144	a	6	6.13	3.2	11.0	-4.87
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	5.55	3.2	11.0	-5.46
	5580	116	n (20MHz)	6.5/7.2 (MCS0)	5.75	3.2	11.0	-5.25
	5680	136	n (20MHz)	6.5/7.2 (MCS0)	5.10	3.2	11.0	-5.90
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	5.78	3.2	11.0	-5.22
	5510	102	n (40MHz)	13.5/15 (MCS0)	0.01	3.2	11.0	-10.99
	5550	110	n (40MHz)	13.5/15 (MCS0)	3.89	3.2	11.0	-7.11
	5710	142	n (40MHz)	13.5/15 (MCS0)	2.22	3.2	11.0	-8.78
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-2.68	3.2	11.0	-13.68
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-3.70	3.2	11.0	-14.70

Table 7-29. Conducted Power Spectral Density Measurements SISO ANT2

FCC ID: BCGA1893	 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device

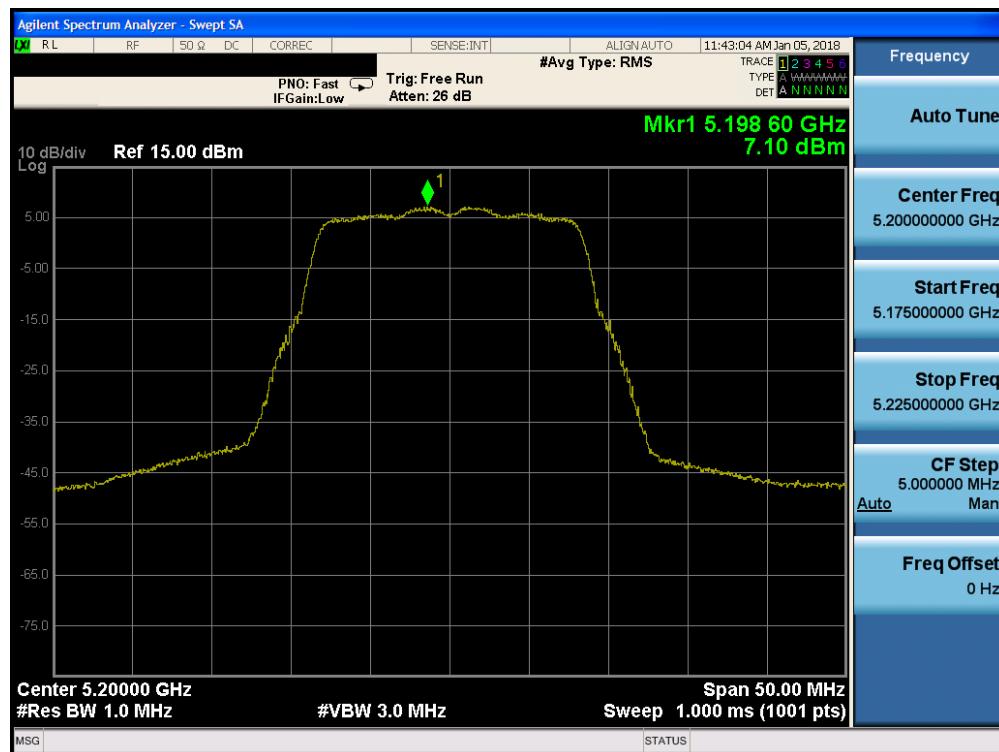
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Antenna Gain [dBi]	e.i.r.p. Power Density [dBm/MHz]	Max e.i.r.p. Power Density Limit [dBm/MHz]	e.i.r.p. Power Density Margin
Band 1	5180	36	a	6	6.30	1.3	7.57	10.0	-2.43
	5200	40	a	6	7.10	1.3	8.37	10.0	-1.64
	5240	48	a	6	7.17	1.3	8.44	10.0	-1.57
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	6.07	1.3	7.34	10.0	-2.66
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.56	1.3	7.83	10.0	-2.17
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	7.09	1.3	8.36	10.0	-1.64
	5190	38	n (40MHz)	13.5/15 (MCS0)	0.42	1.3	1.69	10.0	-8.31
	5230	46	n (40MHz)	13.5/15 (MCS0)	2.62	1.3	3.89	10.0	-6.11
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-2.86	1.3	-1.59	10.0	-11.59

Table 7-30. Band 1 e.i.r.p. Power Spectral Density Measurements SISO ANT2 (RSS-247)

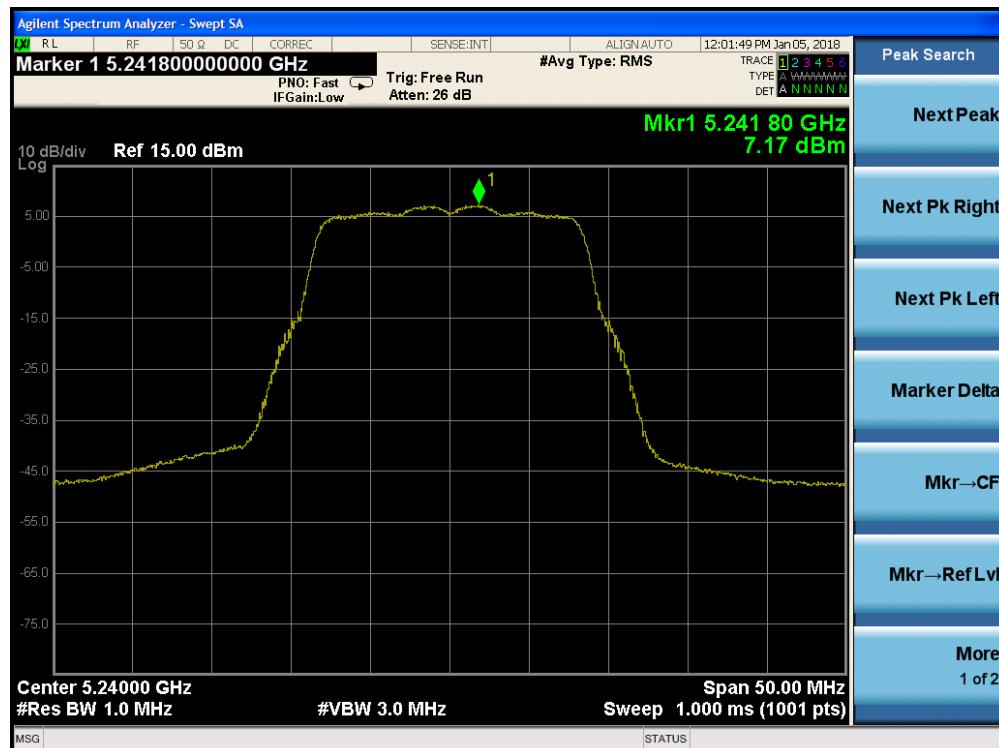


Plot 7-172. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 1) – Ch. 36)

FCC ID: BCGA1893	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 123 of 298

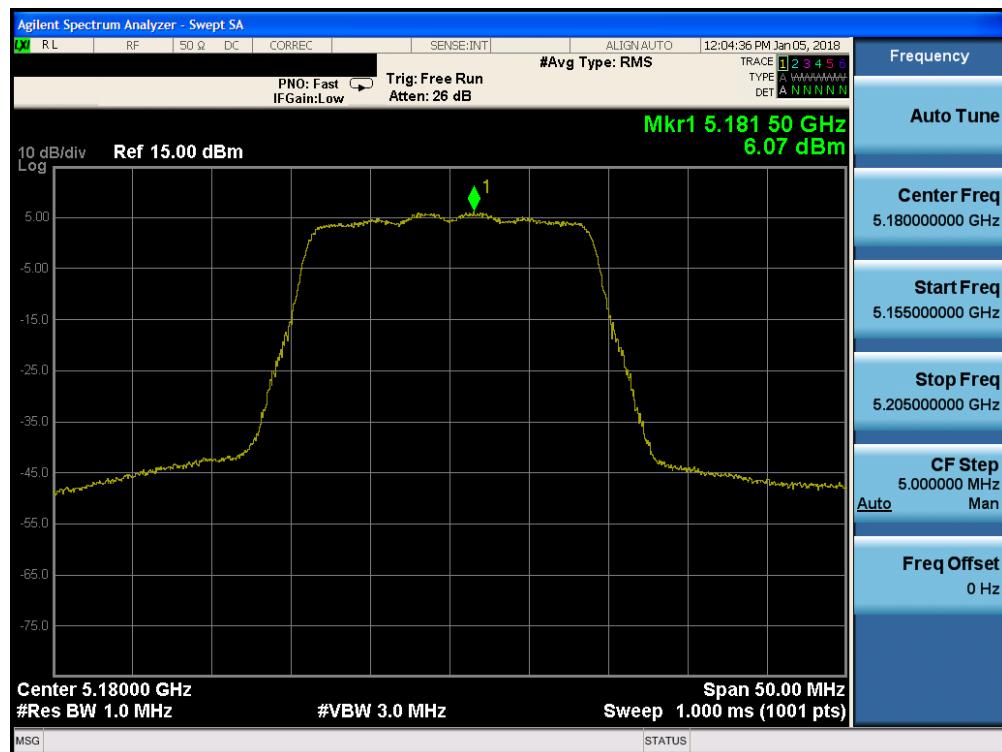


Plot 7-173. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 1) – Ch. 40)

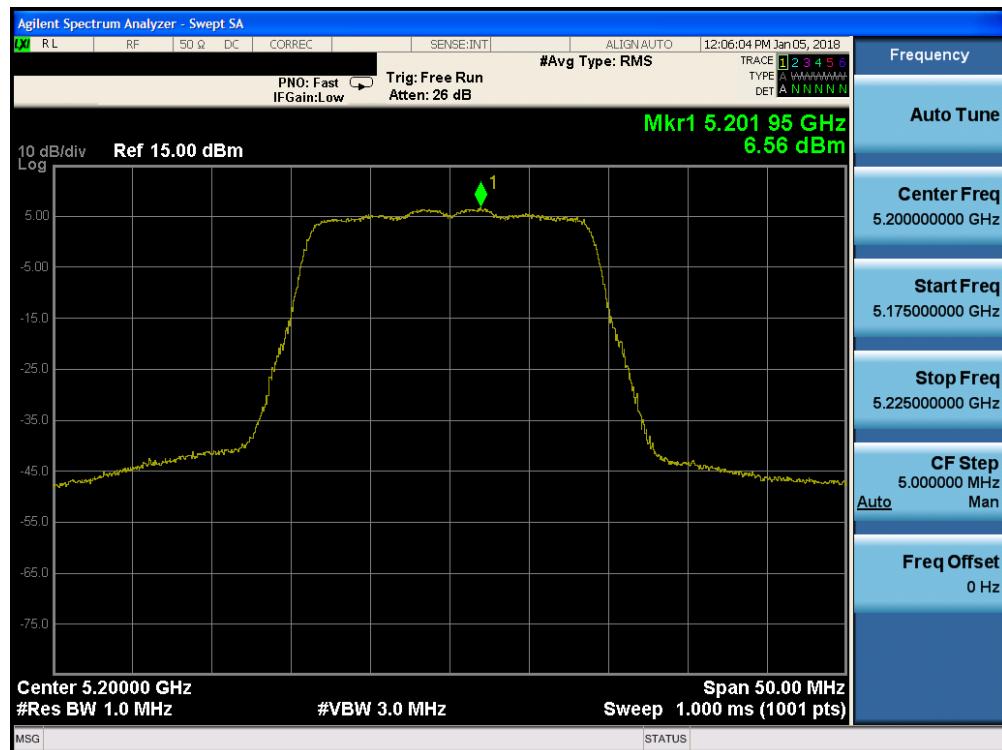


Plot 7-174. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 1) – Ch. 48)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 124 of 298

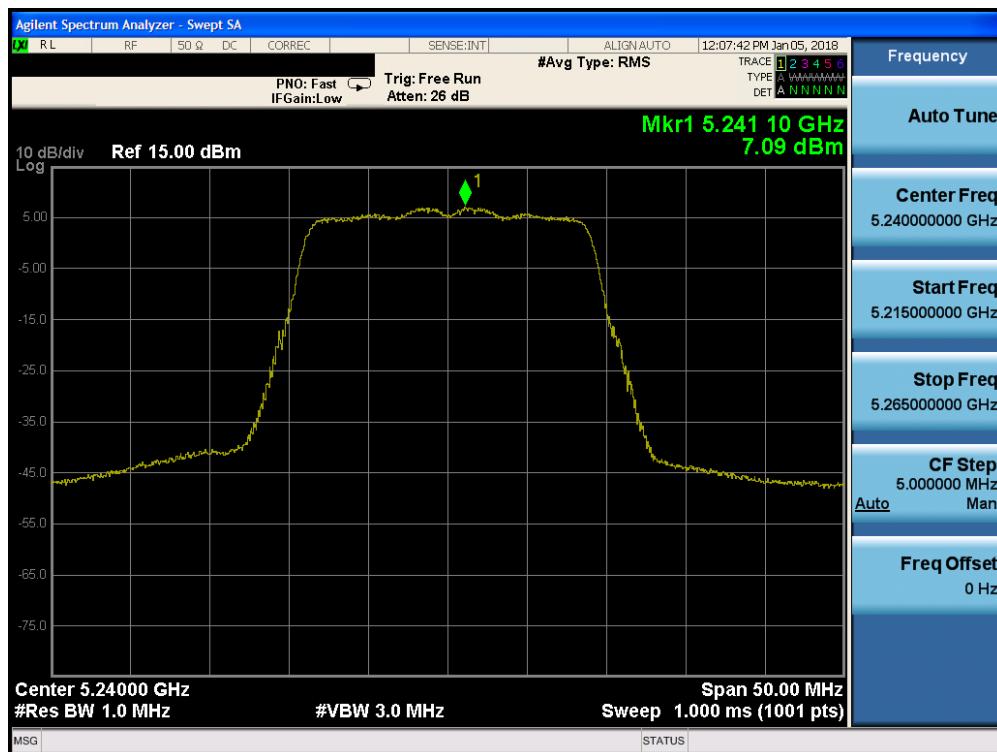


Plot 7-175. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

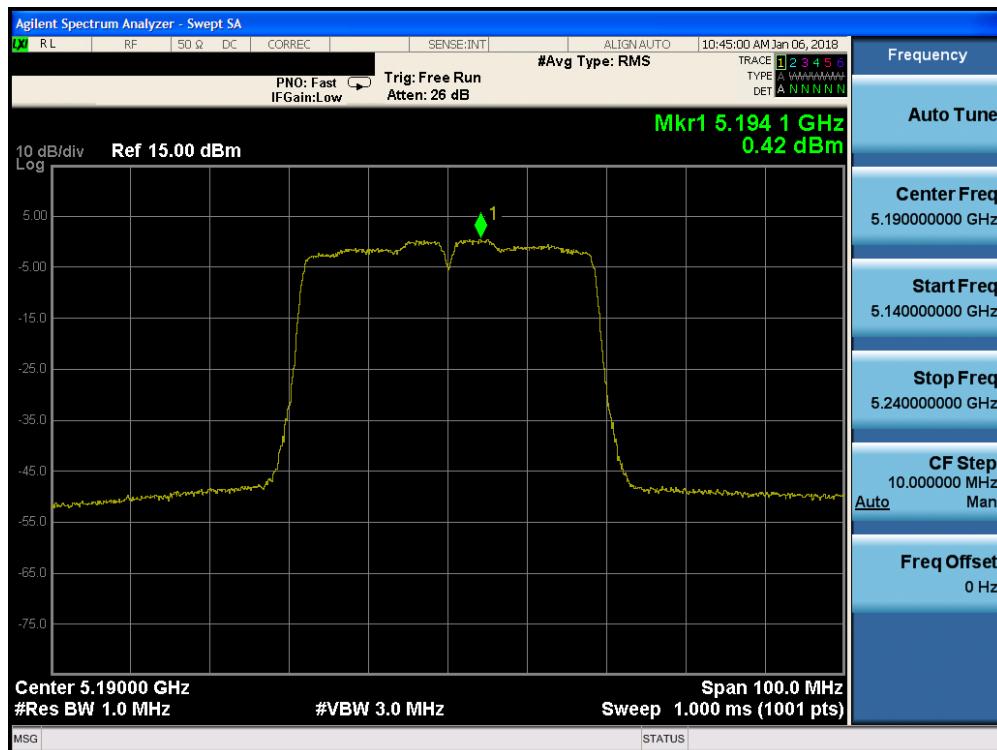


Plot 7-176. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

FCC ID: BCGA1893		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device		Page 125 of 298

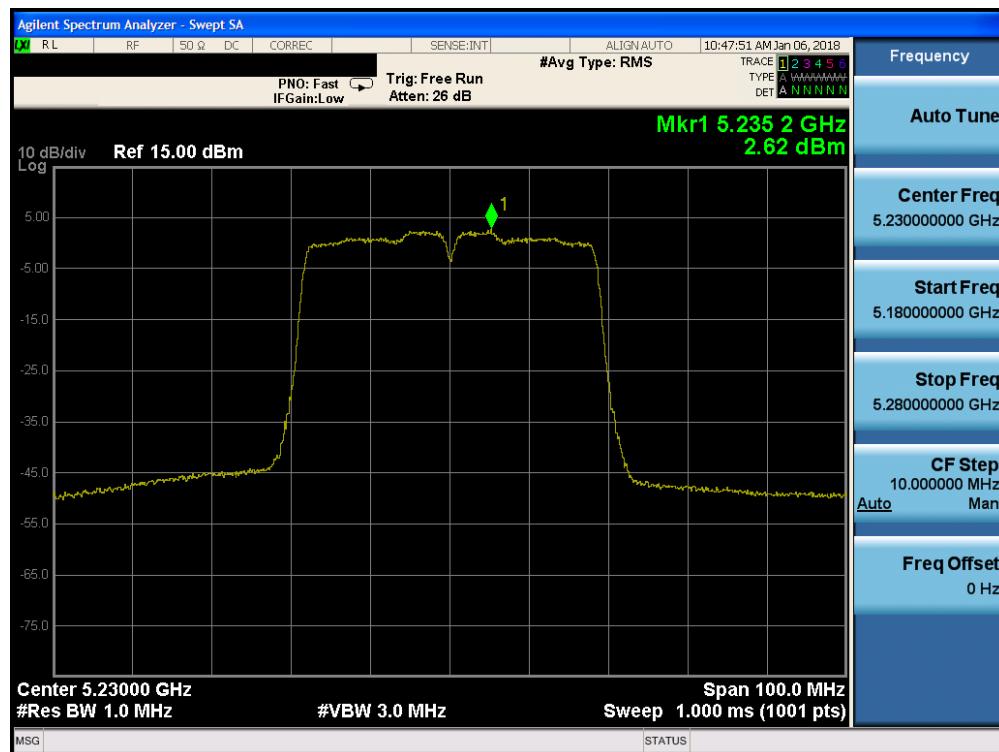


Plot 7-177. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

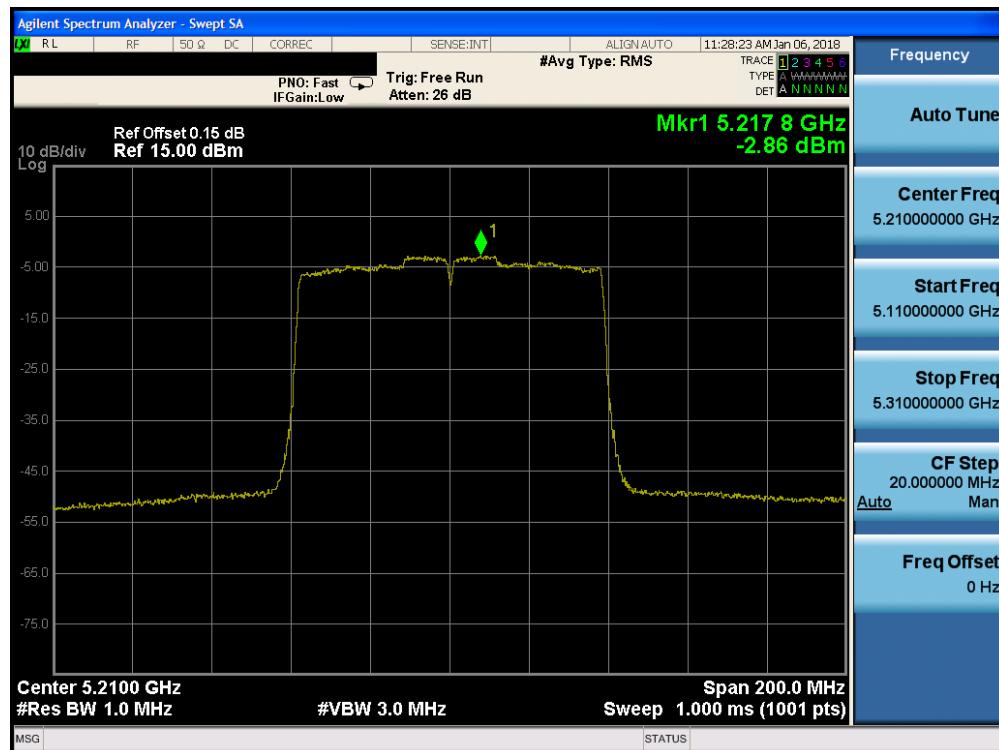


Plot 7-178. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

FCC ID: BCGA1893		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 126 of 298

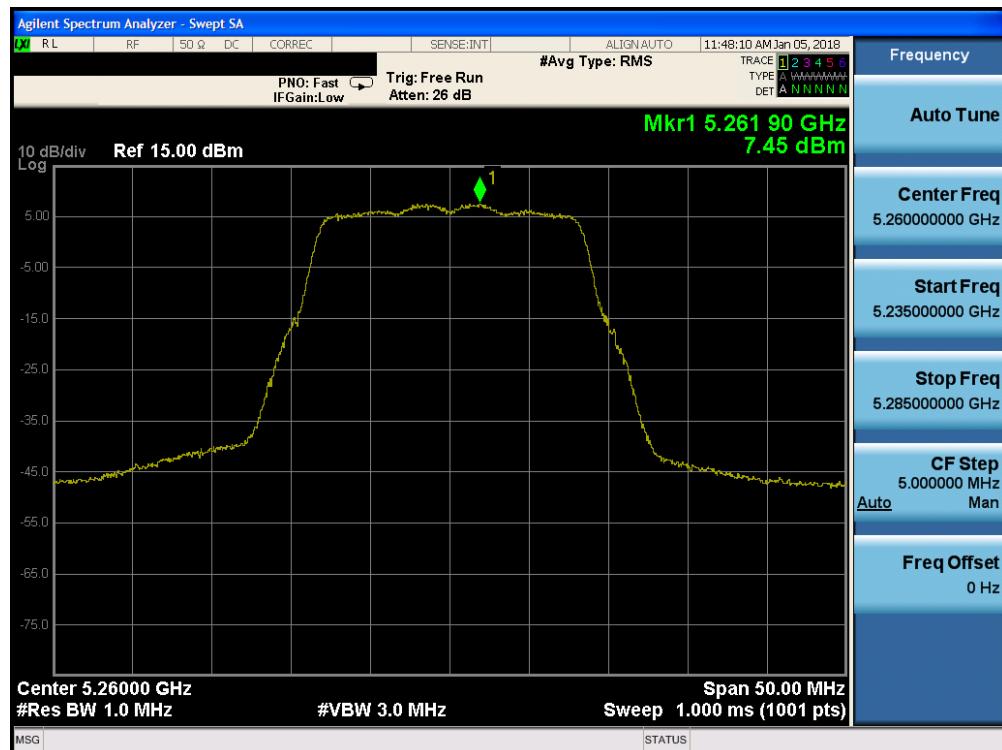


Plot 7-179. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 1) – Ch. 46)



Plot 7-180. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 127 of 298

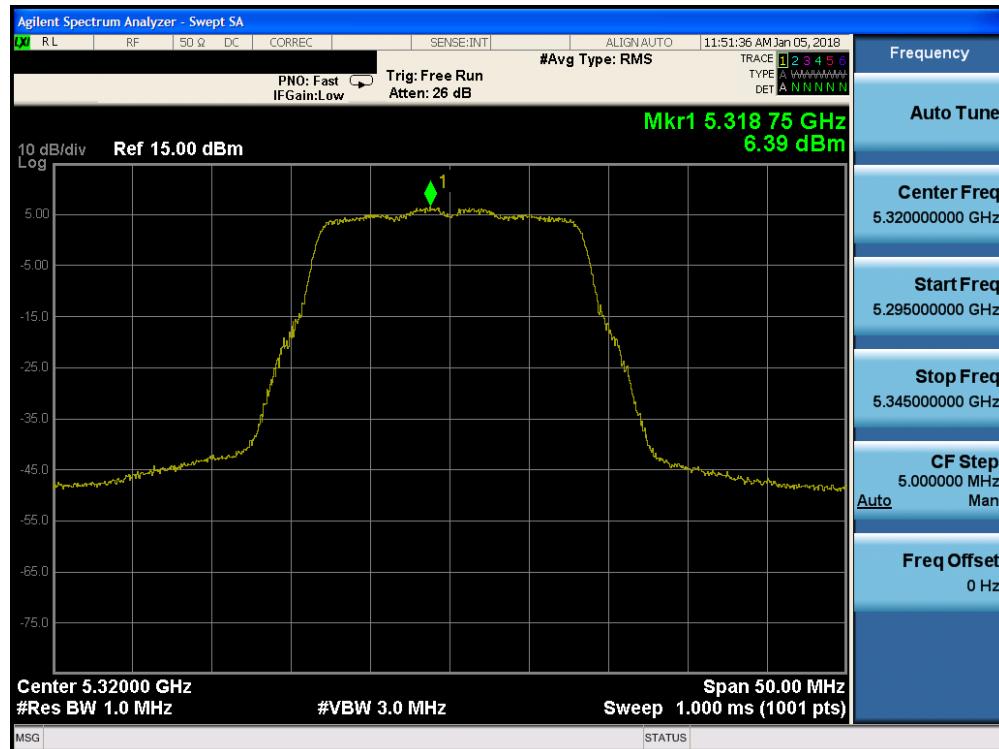


Plot 7-181. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2A) – Ch. 52)

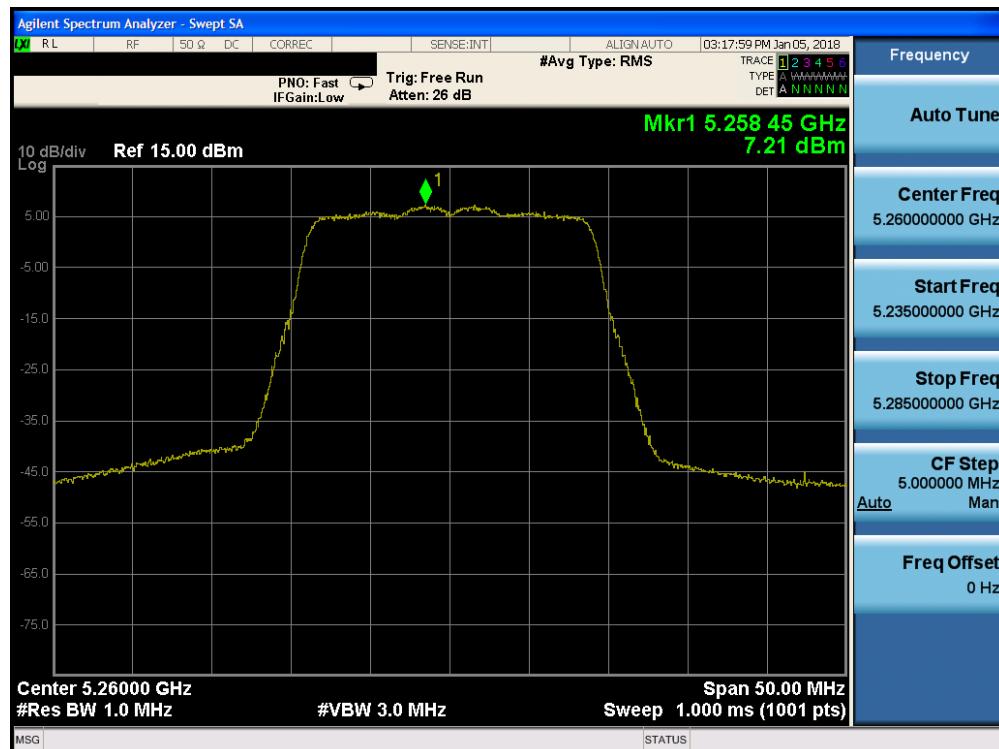


Plot 7-182. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2A) – Ch. 56)

FCC ID: BCGA1893	 PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 128 of 298

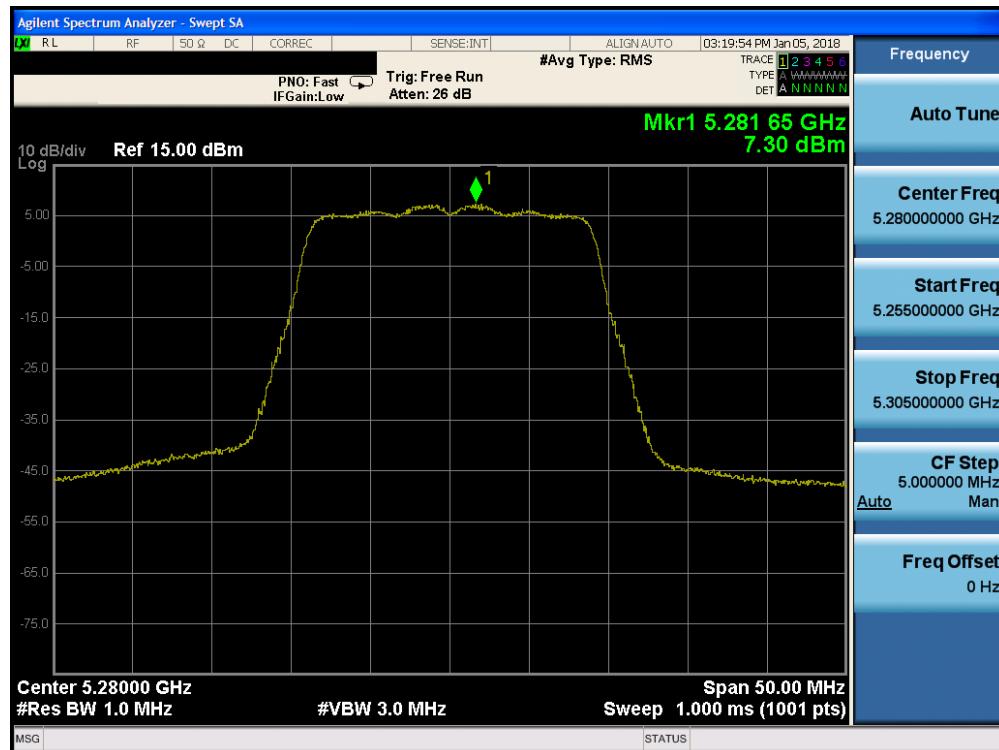


Plot 7-183. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2A) – Ch. 64)

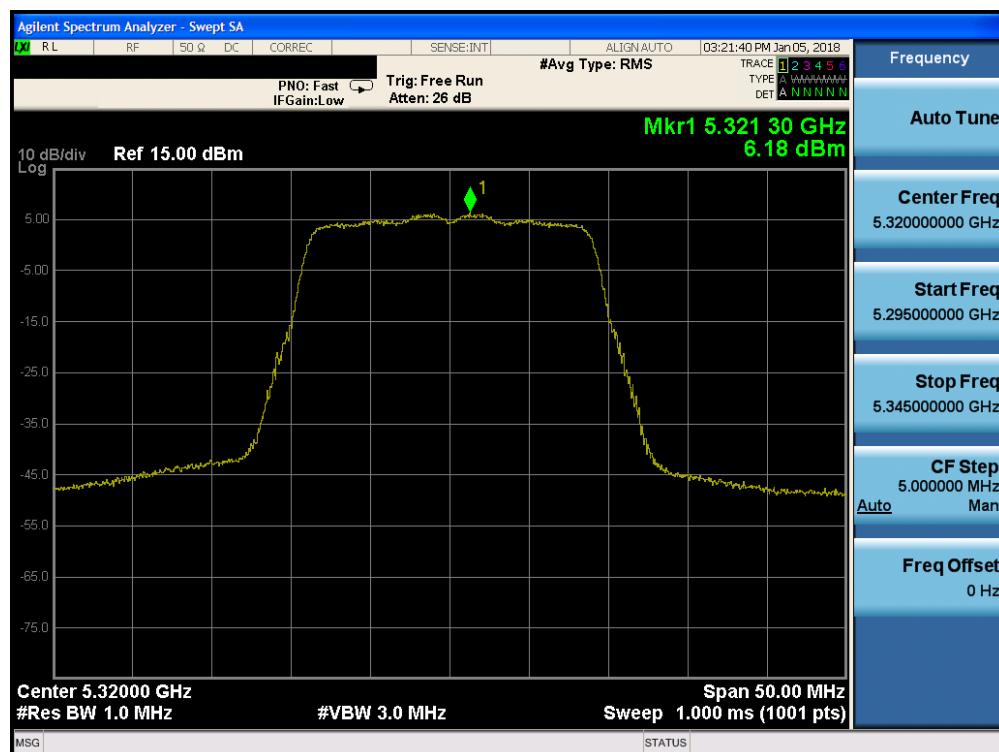


Plot 7-184. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

FCC ID: BCGA1893	 PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 129 of 298	

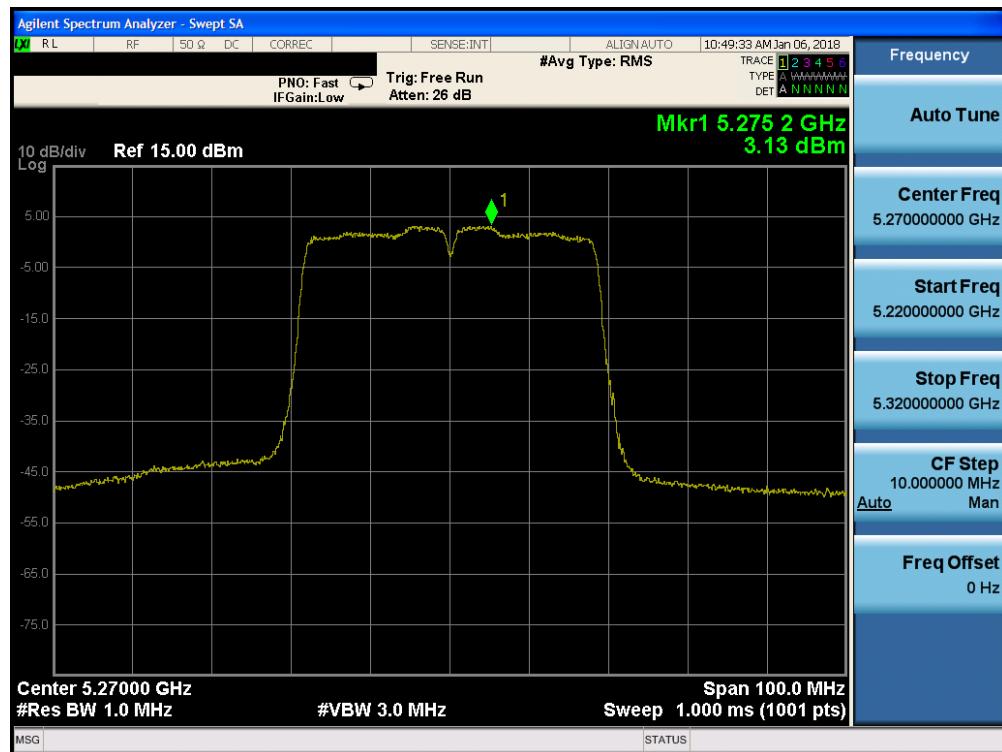


Plot 7-185. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

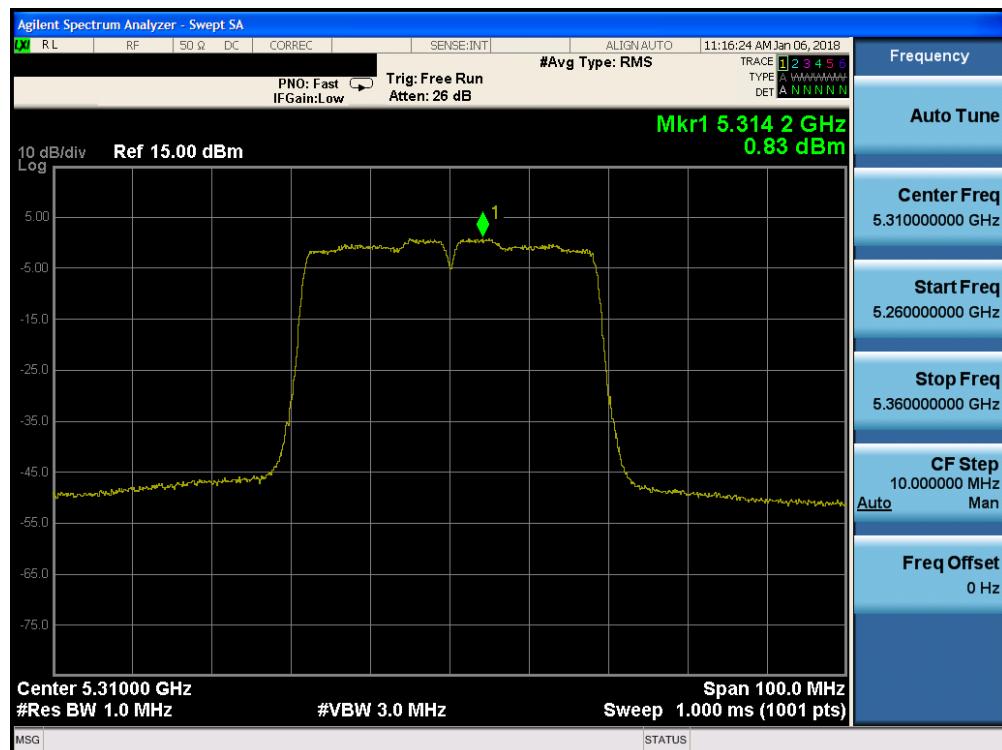


Plot 7-186. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

FCC ID: BCGA1893	 PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 130 of 298

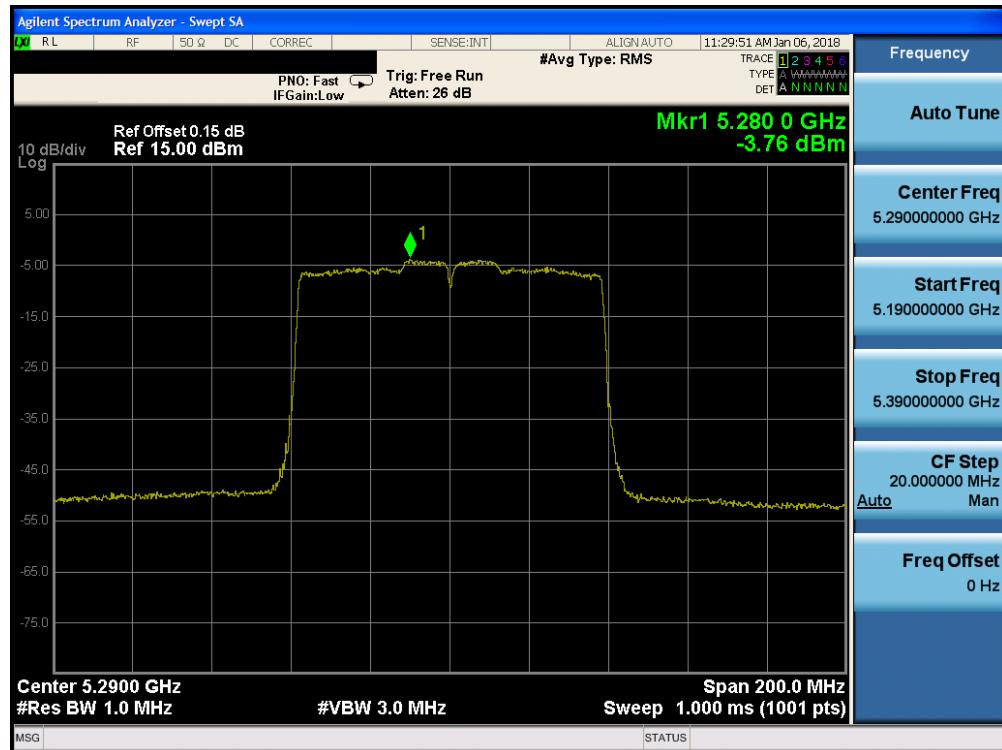


Plot 7-187. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

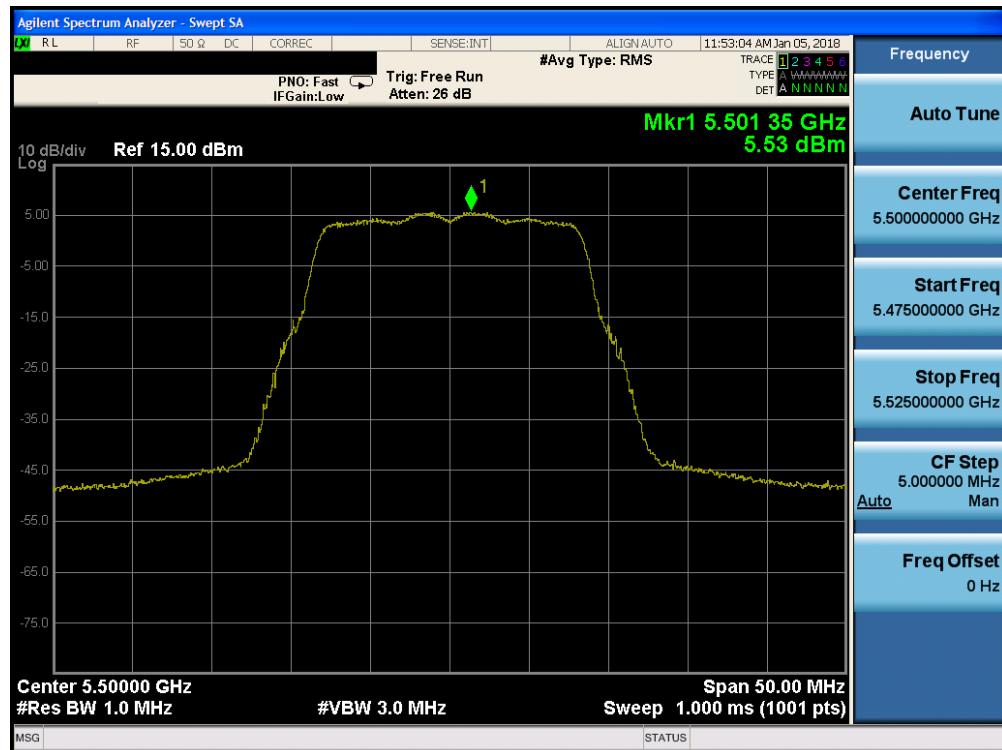


Plot 7-188. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

FCC ID: BCGA1893		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 131 of 298

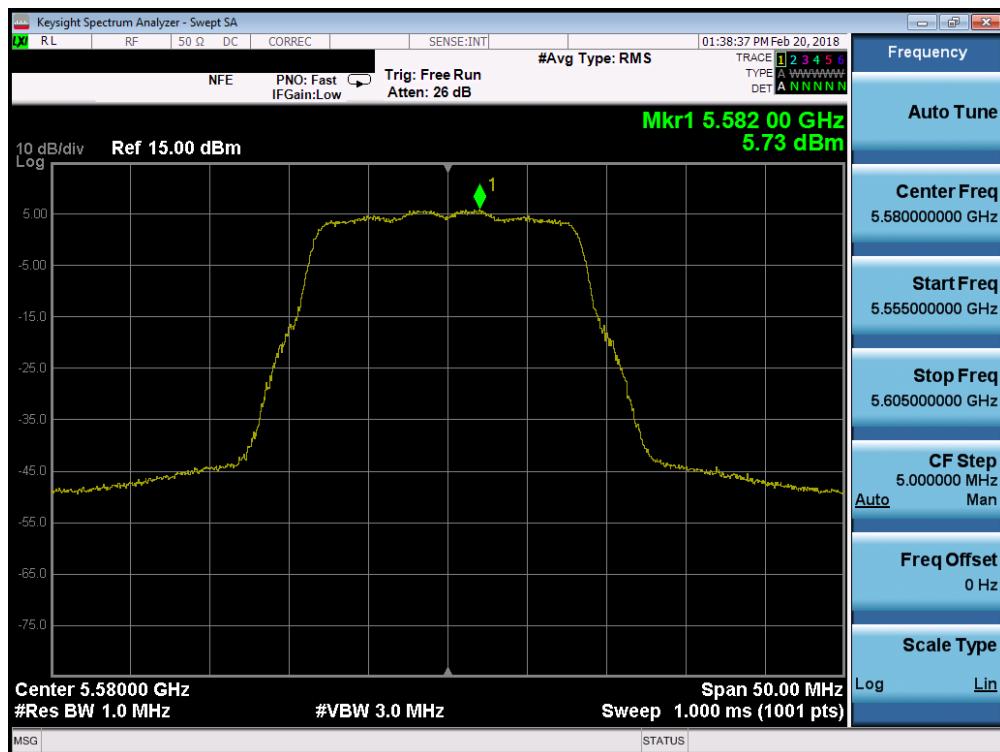


Plot 7-189. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

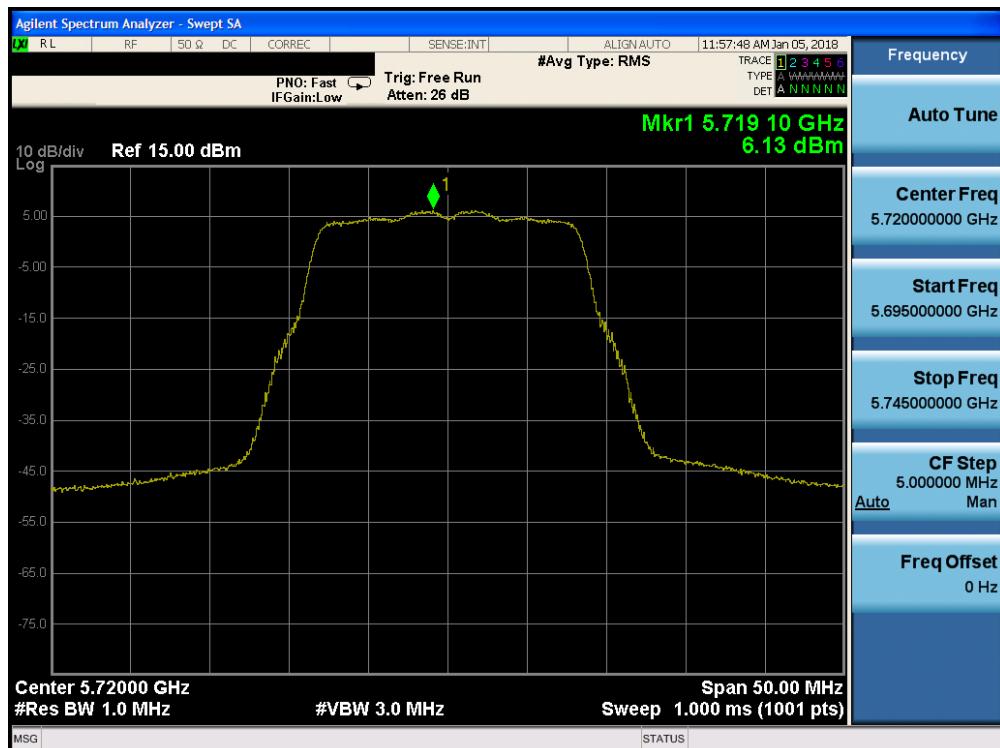


Plot 7-190. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2C) – Ch. 100)

FCC ID: BCGA1893	 PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 132 of 298

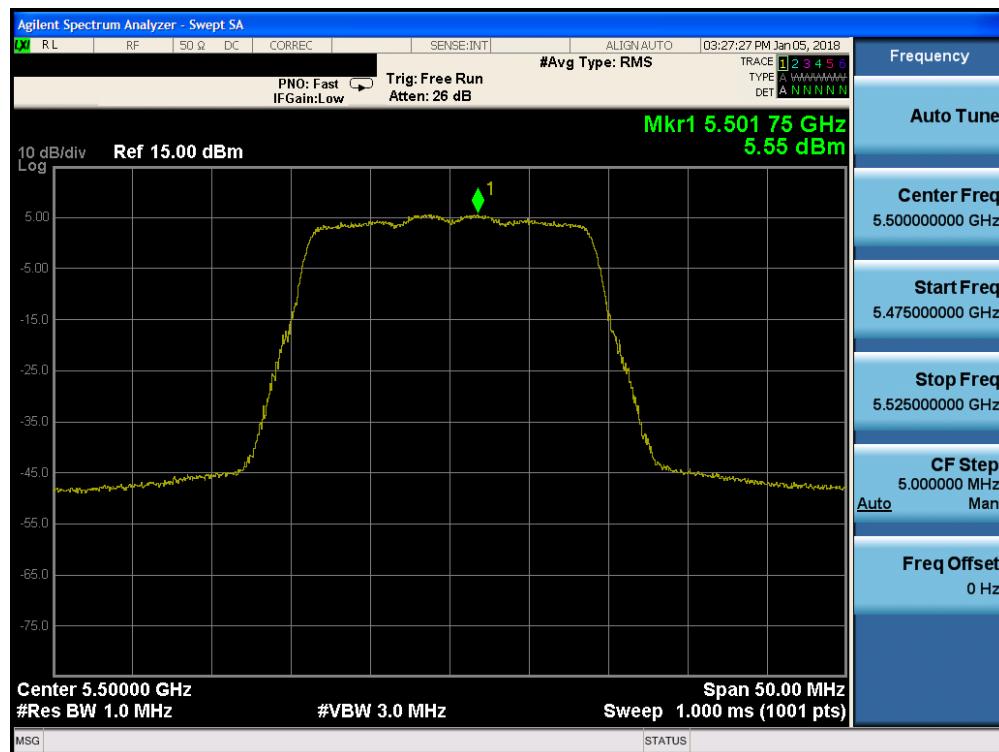


Plot 7-191. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2C) – Ch. 116)

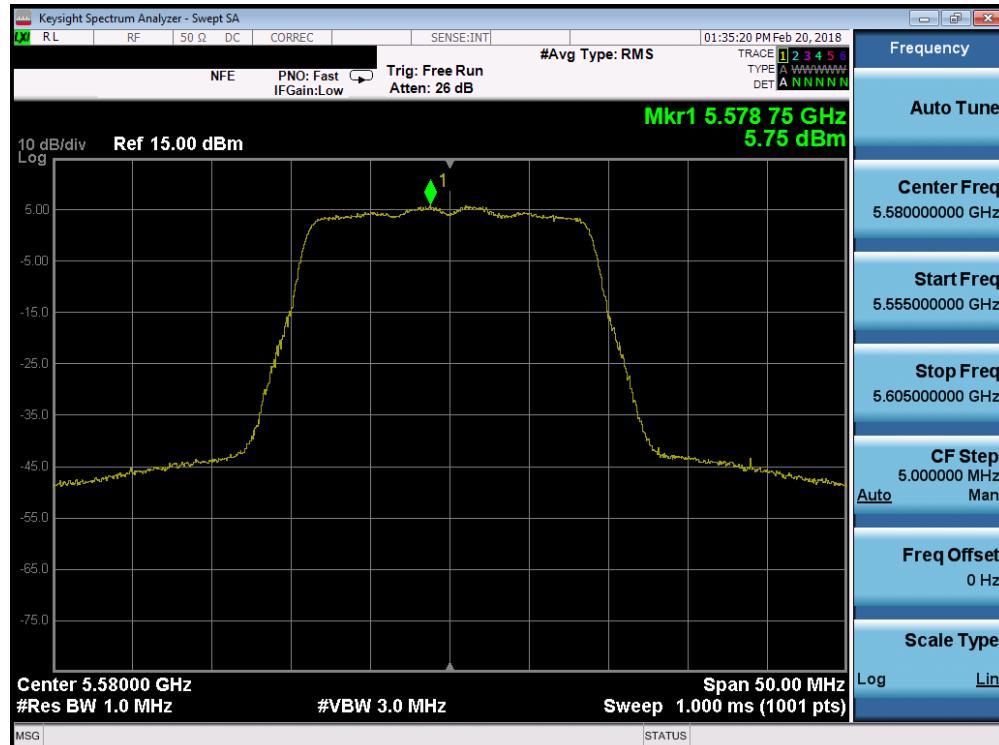


Plot 7-192. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2C) – Ch. 144)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 133 of 298

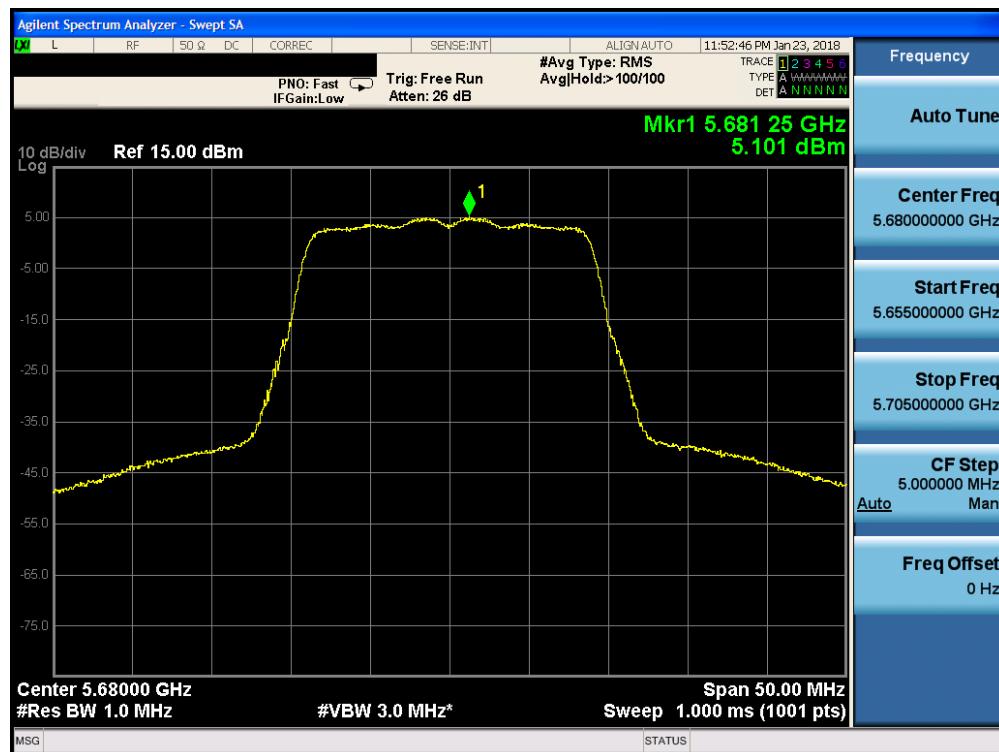


Plot 7-193. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

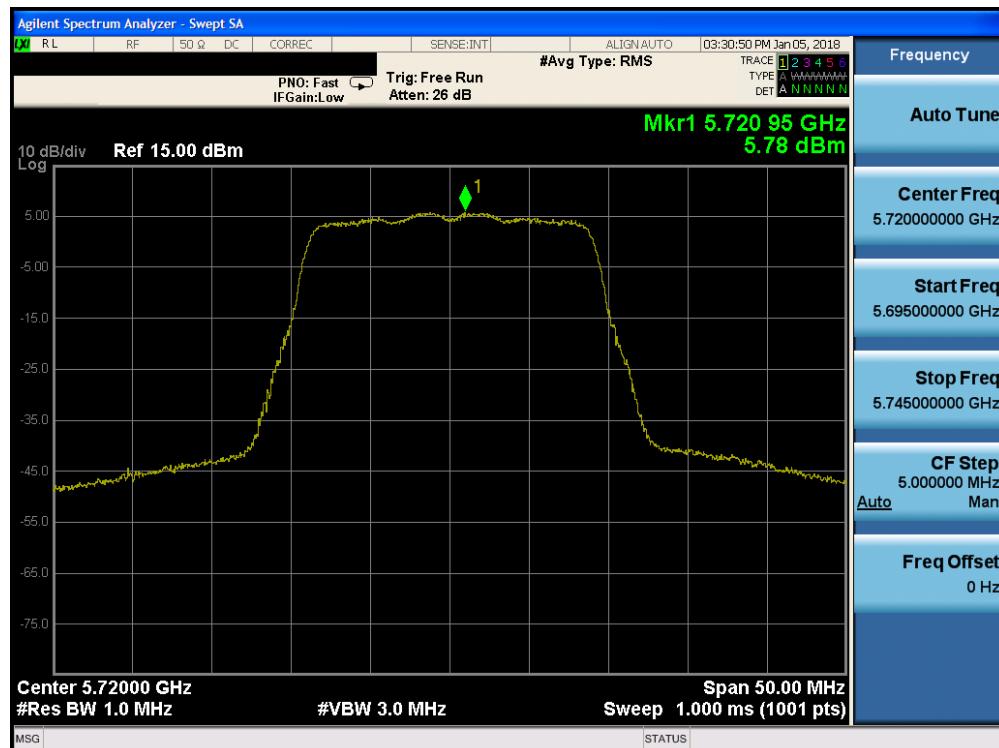


Plot 7-194. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2C) – Ch. 116)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 134 of 298

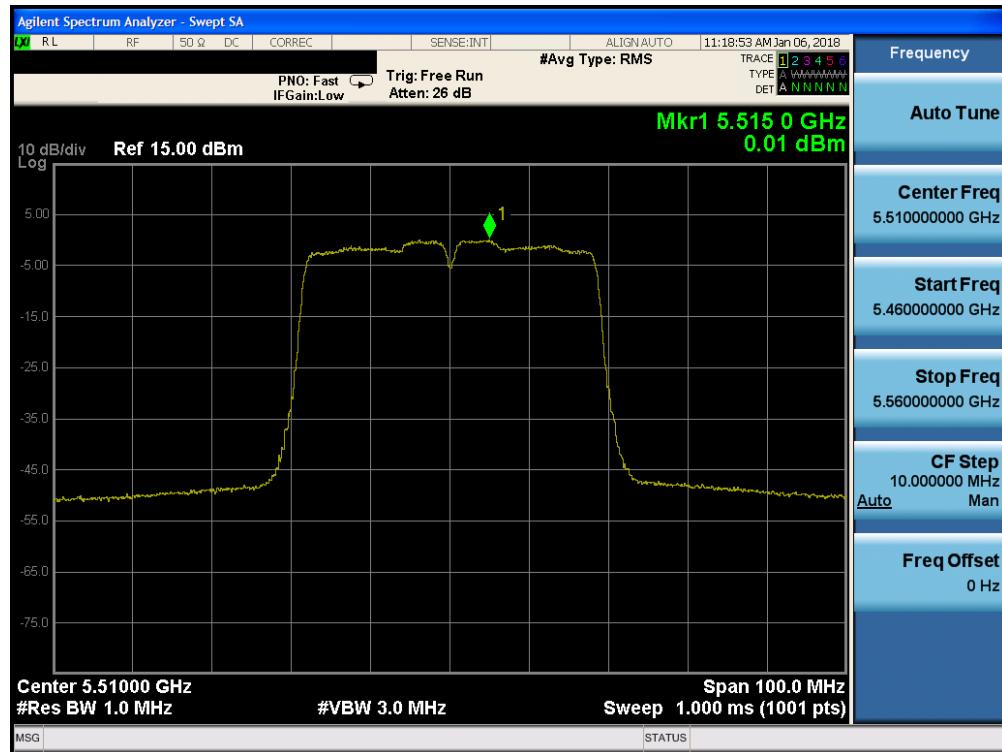


Plot 7-195. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2C) – Ch. 136)

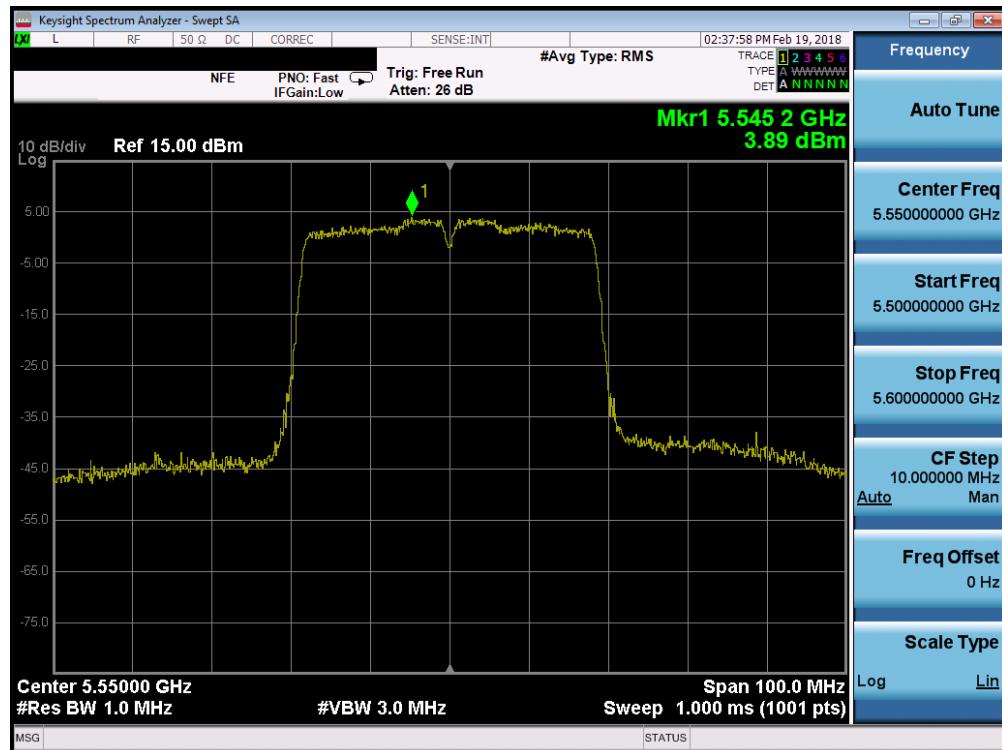


Plot 7-196. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2C) – Ch. 144)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 135 of 298

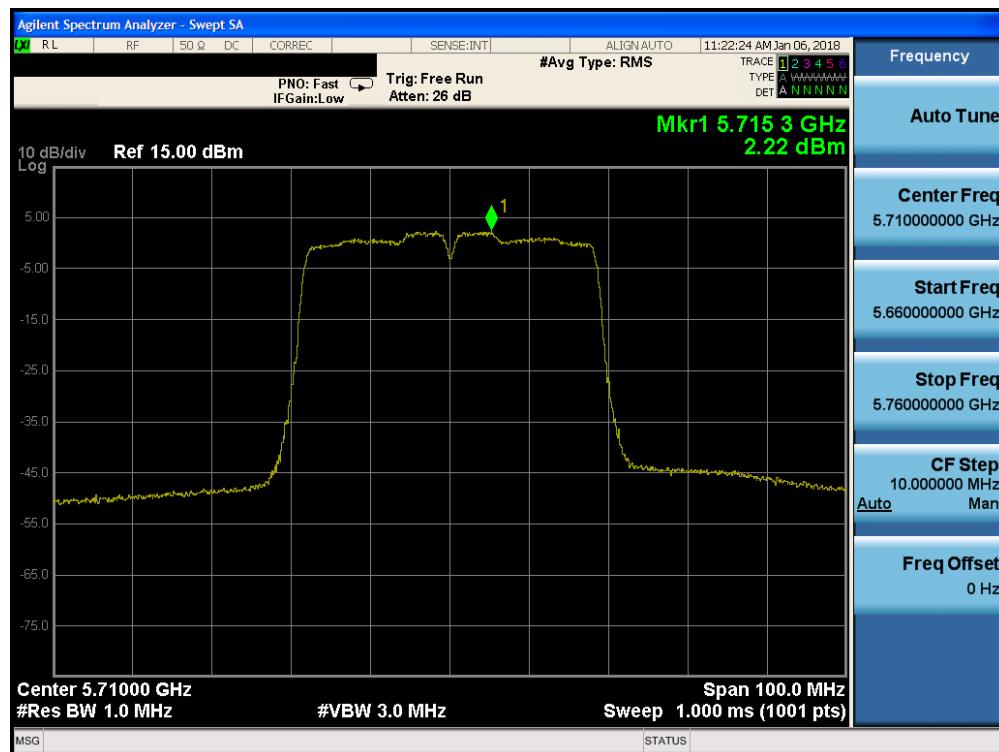


Plot 7-197. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

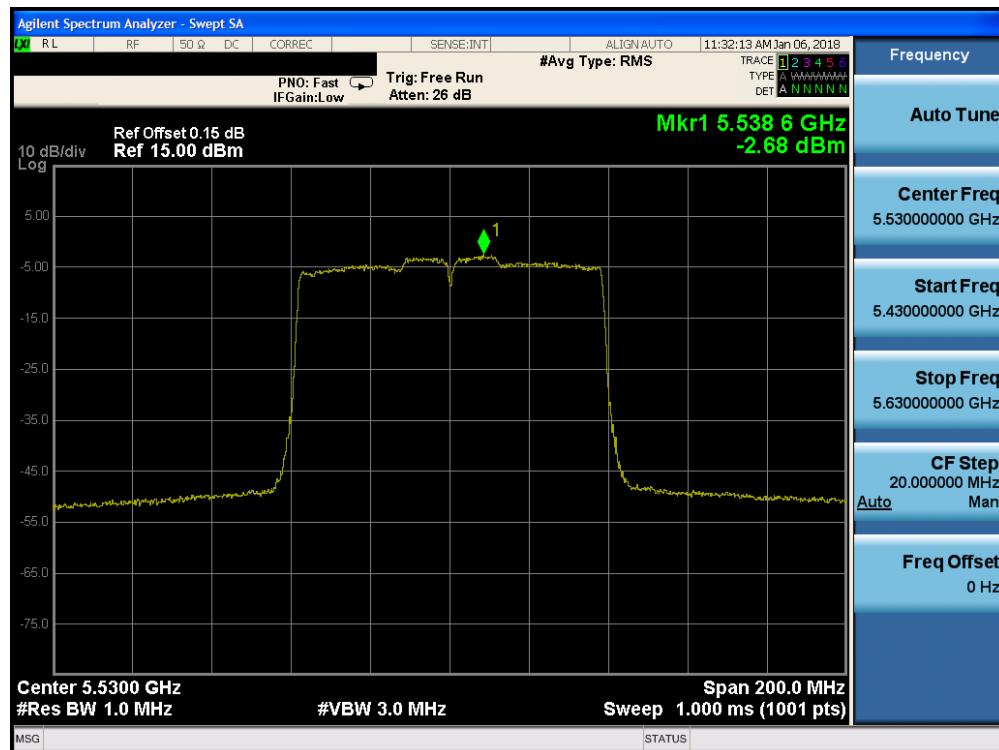


Plot 7-198. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2C) – Ch. 110)

FCC ID: BCGA1893	 PCTEST ENGINEERING LABORATORY, INC.		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device		Page 136 of 298

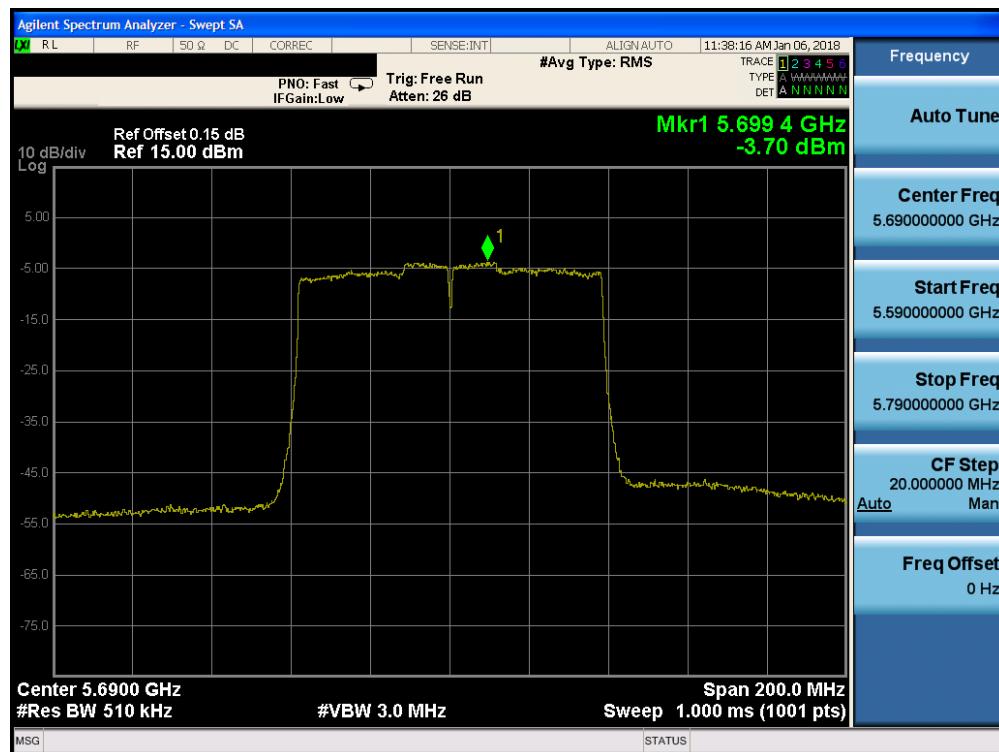


Plot 7-199. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)



Plot 7-200. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

FCC ID: BCGA1893		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 137 of 298

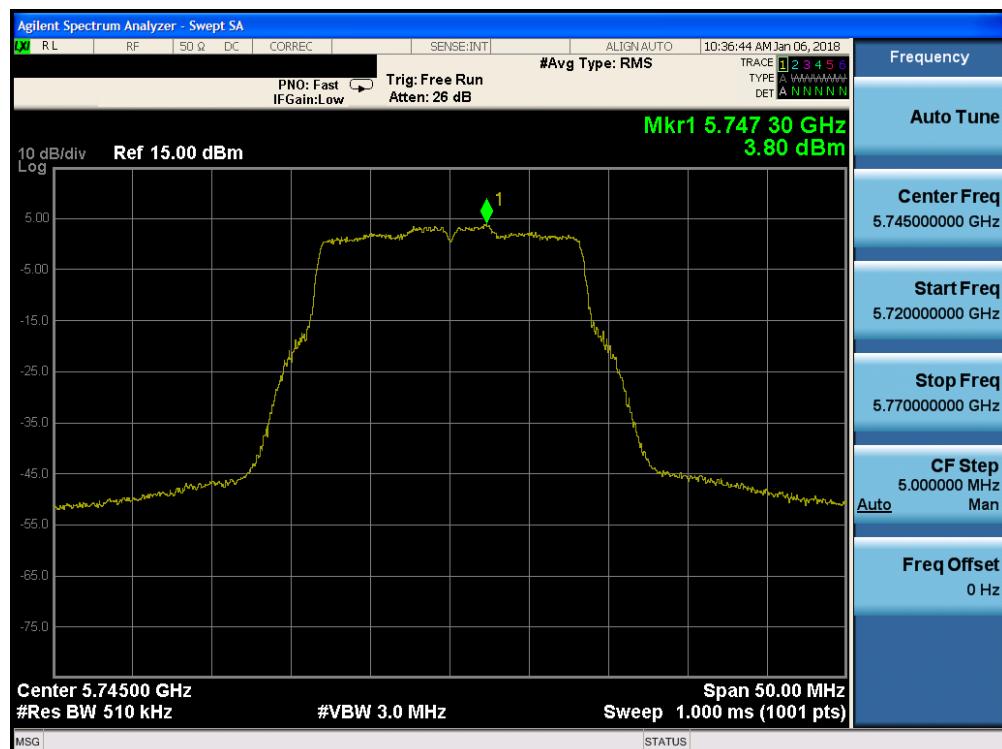


Plot 7-201. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 138)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 138 of 298

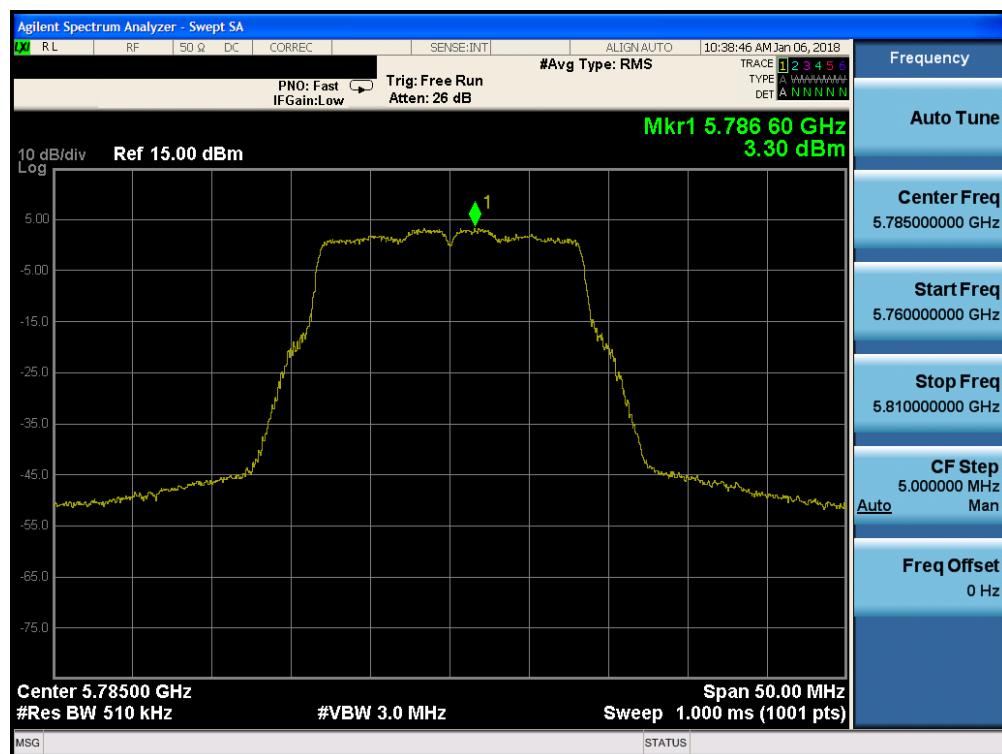
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
Band 3	5745	149	a	6	3.80	30.0	-26.20
	5785	157	a	6	3.30	30.0	-26.70
	5825	165	a	6	3.46	30.0	-26.54
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	3.16	30.0	-26.84
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	2.81	30.0	-27.19
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	3.01	30.0	-26.99
	5755	151	n (40MHz)	13.5/15 (MCS0)	-0.58	30.0	-30.58
	5795	159	n (40MHz)	13.5/15 (MCS0)	-0.35	30.0	-30.35
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-0.75	30.0	-30.75

Table 7-31. Band 3 Conducted Power Spectral Density Measurements SISO ANT2

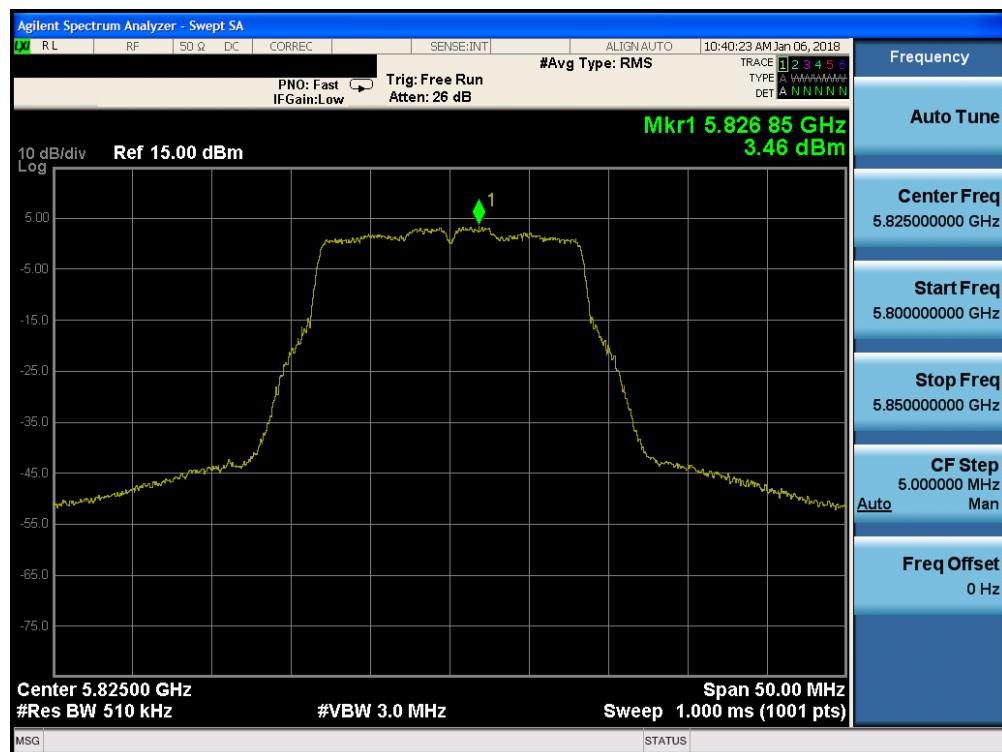


Plot 7-202. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 3) – Ch. 149)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 139 of 298

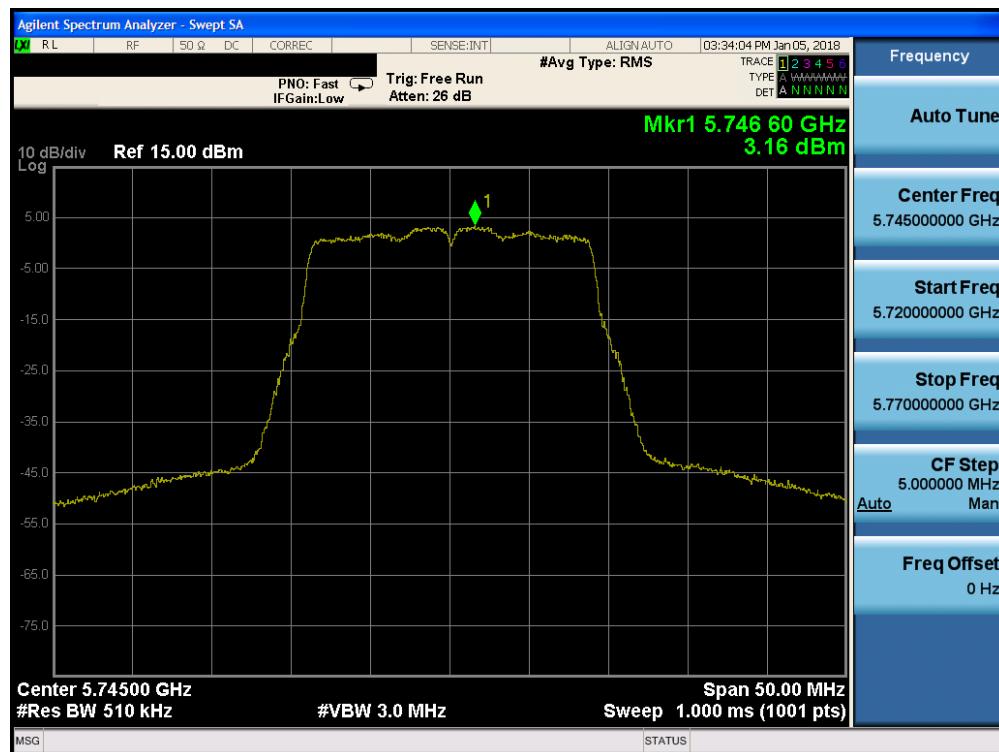


Plot 7-203. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 3) – Ch. 157)

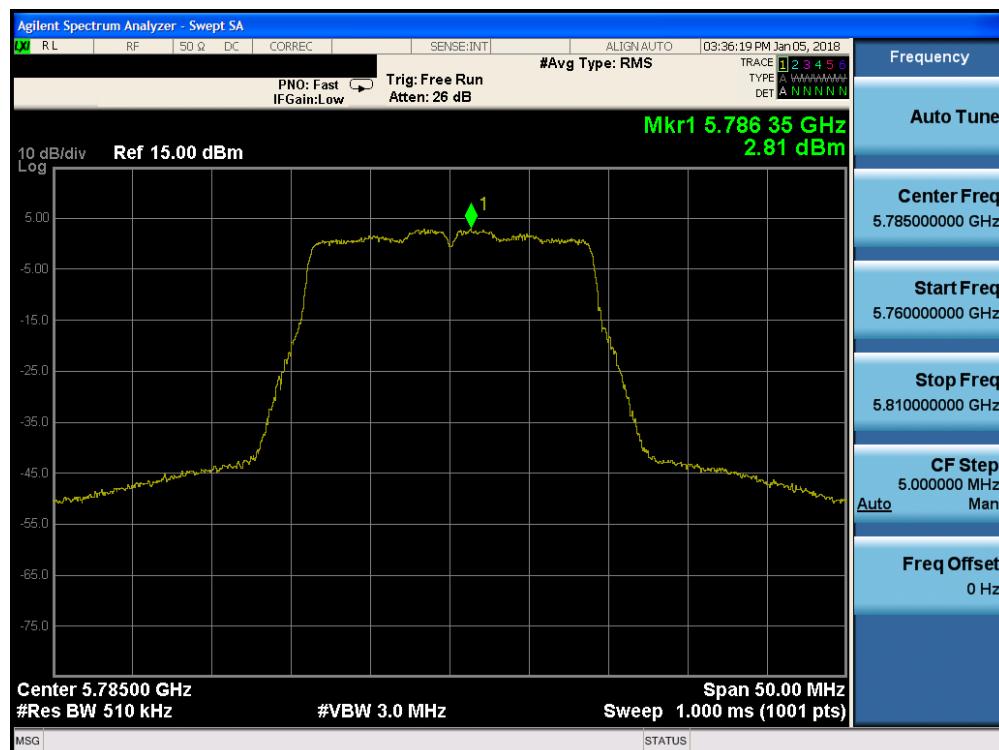


Plot 7-204. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 3) – Ch. 165)

FCC ID: BCGA1893		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device		Page 140 of 298

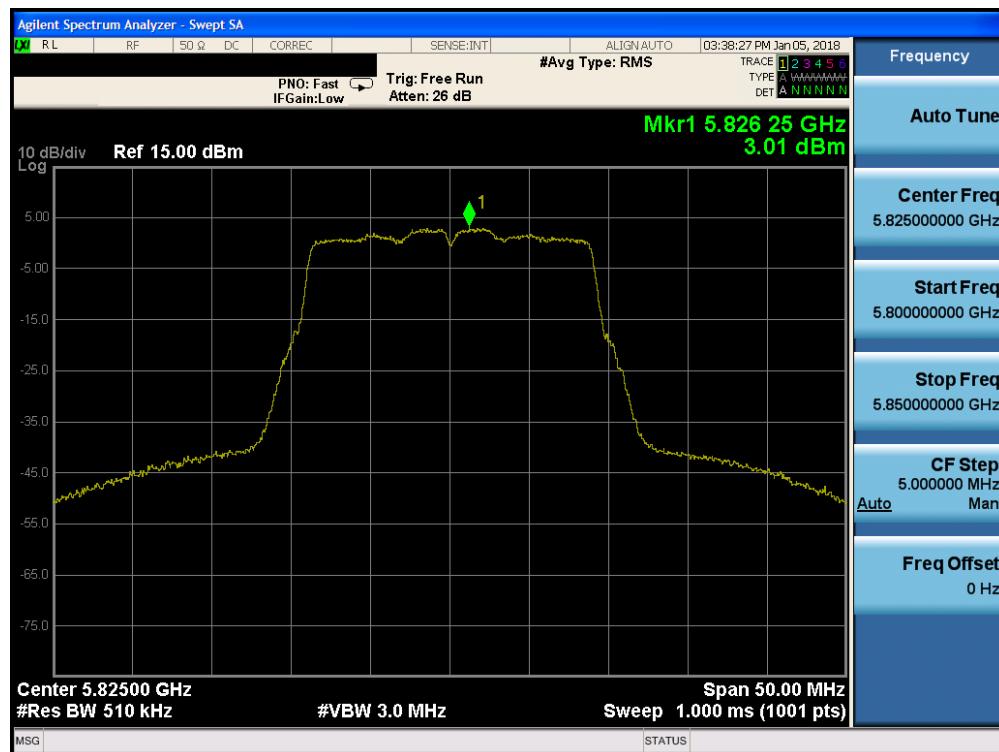


Plot 7-205. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

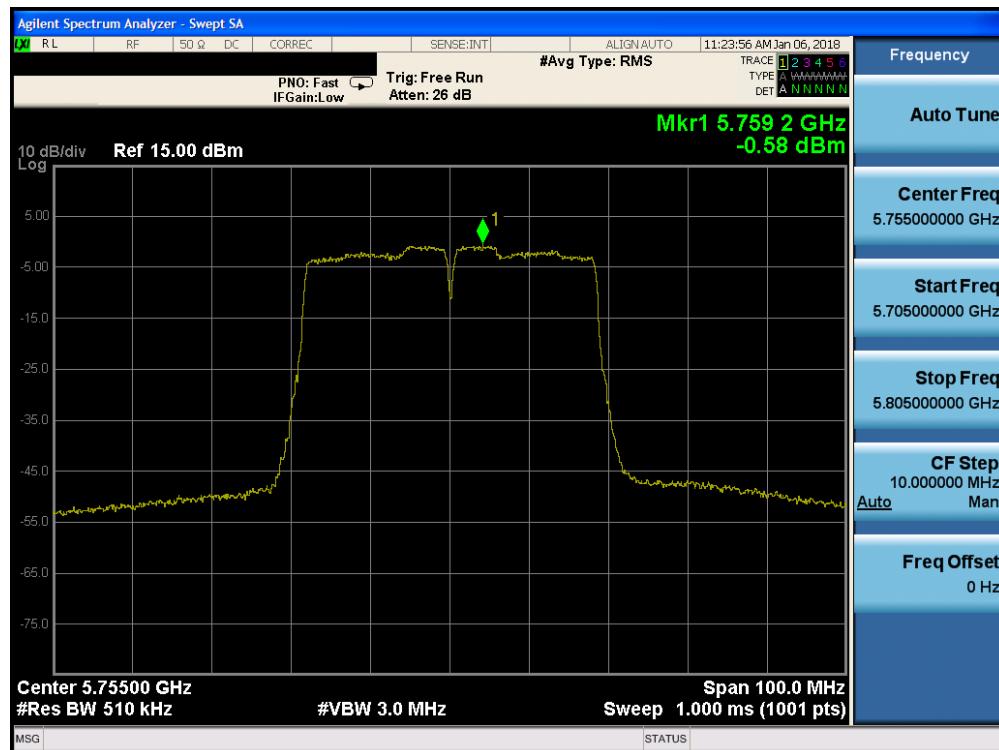


Plot 7-206. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 141 of 298

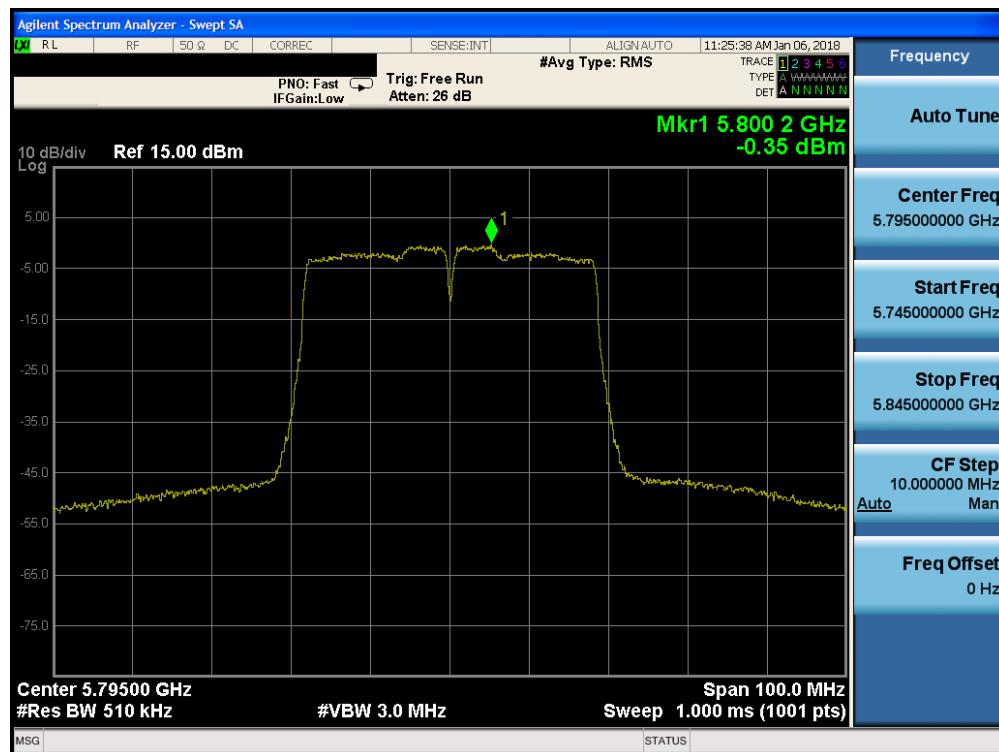


Plot 7-207. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

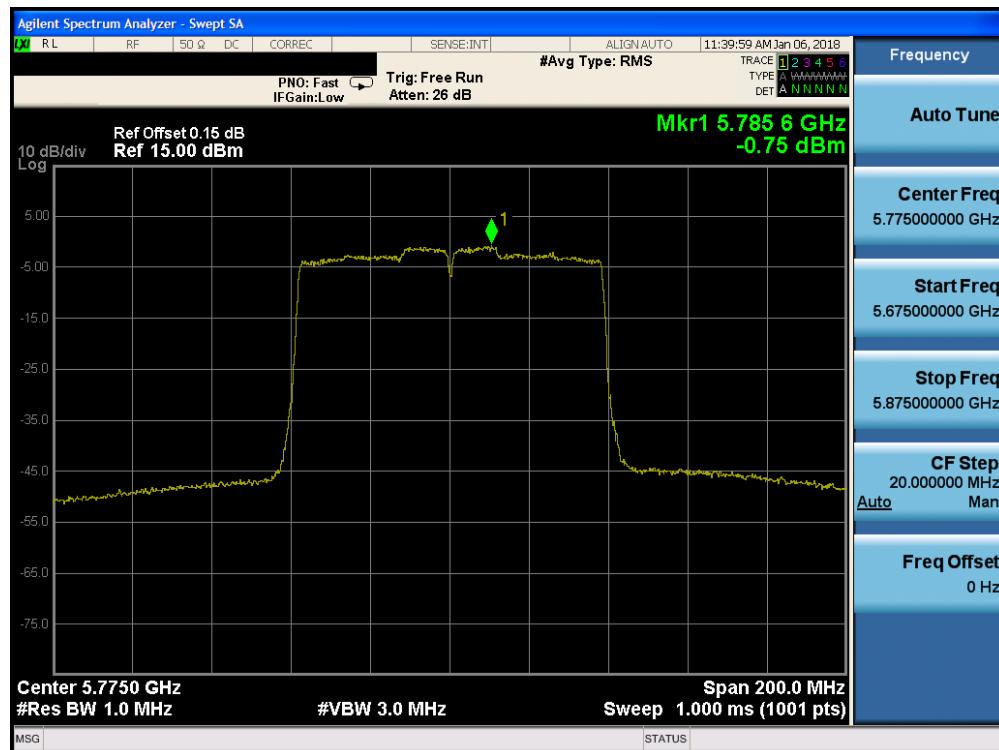


Plot 7-208. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 142 of 298



Plot 7-209. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 3) – Ch. 159)



Plot 7-210. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 143 of 298

Summed MIMO Power Spectral Density Measurements

Frequency [MHz]	Channel No.	802.11 Mode	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	n (20MHz)	6.5/7.2 (MCS0)	1.99	1.94	4.98	11.0	-6.02
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	1.93	1.78	4.87	11.0	-6.13
	5220	44	n (20MHz)	6.5/7.2 (MCS0)	1.25	1.82	4.55	11.0	-6.45
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	2.00	1.79	4.91	11.0	-6.09
	5190	38	n (40MHz)	13.5/15 (MCS0)	0.87	1.01	3.95	11.0	-7.05
	5230	46	n (40MHz)	13.5/15 (MCS0)	1.89	1.92	4.92	11.0	-6.08
Band 2A	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-3.14	-2.79	0.05	11.0	-10.95
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	5.88	7.75	9.92	11.0	-1.08
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	6.37	7.50	9.98	11.0	-1.02
	5300	60	n (20MHz)	6.5/7.2 (MCS0)	5.73	6.63	9.21	11.0	-1.79
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	4.45	5.51	8.03	11.0	-2.97
	5270	54	n (40MHz)	13.5/15 (MCS0)	2.28	4.40	6.48	11.0	-4.52
Band 2C	5310	62	n (40MHz)	13.5/15 (MCS0)	0.49	1.40	3.98	11.0	-7.02
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-5.10	-3.72	-1.35	11.0	-12.35
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	5.19	5.54	8.38	10.7	-2.31
	5520	104	n (20MHz)	6.5/7.2 (MCS0)	5.06	5.28	8.18	10.7	-2.51
	5540	108	n (20MHz)	6.5/7.2 (MCS0)	5.29	5.04	8.18	10.7	-2.51
	5580	116	n (20MHz)	6.5/7.2 (MCS0)	5.30	5.19	8.26	10.7	-2.43
	5660	132	n (20MHz)	6.5/7.2 (MCS0)	3.44	3.83	6.65	10.7	-4.04
	5680	136	n (20MHz)	6.5/7.2 (MCS0)	3.65	3.94	6.81	10.7	-3.88
	5700	140	n (20MHz)	6.5/7.2 (MCS0)	2.86	3.35	6.12	10.7	-4.57
	5510	102	n (40MHz)	13.5/15 (MCS0)	-0.09	0.45	3.20	10.7	-7.49
	5550	110	n (40MHz)	13.5/15 (MCS0)	3.76	3.64	6.71	10.7	-3.98
	5670	134	n (40MHz)	13.5/15 (MCS0)	1.62	1.93	4.79	10.7	-5.90
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-3.71	-3.18	-0.42	10.7	-11.11
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-0.30	-0.39	2.67	11.0	-8.33

Table 7-32. Bands 1, 2A, 2C MIMO Conducted Power Spectral Density Measurements

Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Antenna Gain [dBi]	e.i.r.p. Power Density [dBm/MHz]	Max e.i.r.p. Power Density Limit [dBm/MHz]	e.i.r.p. Power Density Margin [dB]	
Band 1	5180	36	n (20MHz)	6.5/7.2 (MCS0)	1.99	1.94	4.98	5.0	9.97	10.0	-0.03
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	1.93	1.78	4.87	5.0	9.86	10.0	-0.14
	5220	44	n (20MHz)	6.5/7.2 (MCS0)	1.25	1.82	4.55	5.0	9.55	11.0	-1.45
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	2.00	1.79	4.91	5.0	9.90	10.0	-0.10
	5190	38	n (40MHz)	13.5/15 (MCS0)	0.87	1.01	3.95	5.0	8.94	10.0	-1.06
	5230	46	n (40MHz)	13.5/15 (MCS0)	1.89	1.92	4.92	5.0	9.91	10.0	-0.09
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-3.14	-2.79	0.05	5.0	5.04	10.0	-4.96

Table 7-33. Band 1 MIMO e.i.r.p. Power Spectral Density Measurements (RSS-247)

FCC ID: BCGA1893	PCTEST [®] ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 144 of 298
1C1710060005-03-R1.BCG	10/31-2/20/2018	Tablet Device	

Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Antenn-1 Power Density [dBm]	Antenn-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]	
Band 3	5745	149	n (20MHz)	6.5/7.2 (MCS0)	3.22	3.05	6.15	30.0	-23.85
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	3.44	2.73	6.11	30.0	-23.89
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	2.36	2.62	5.50	30.0	-24.50
	5755	151	n (40MHz)	13.5/15 (MCS0)	0.07	-0.74	2.70	30.0	-27.30
	5795	159	n (40MHz)	13.5/15 (MCS0)	-0.62	-1.20	2.11	30.0	-27.89
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-0.90	-0.66	2.23	30.0	-27.77

Table 7-34. Band 3 MIMO Conducted Power Spectral Density Measurements

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 as shown in the section above. The measured values were then summed in linear power units then converted back to dBm.

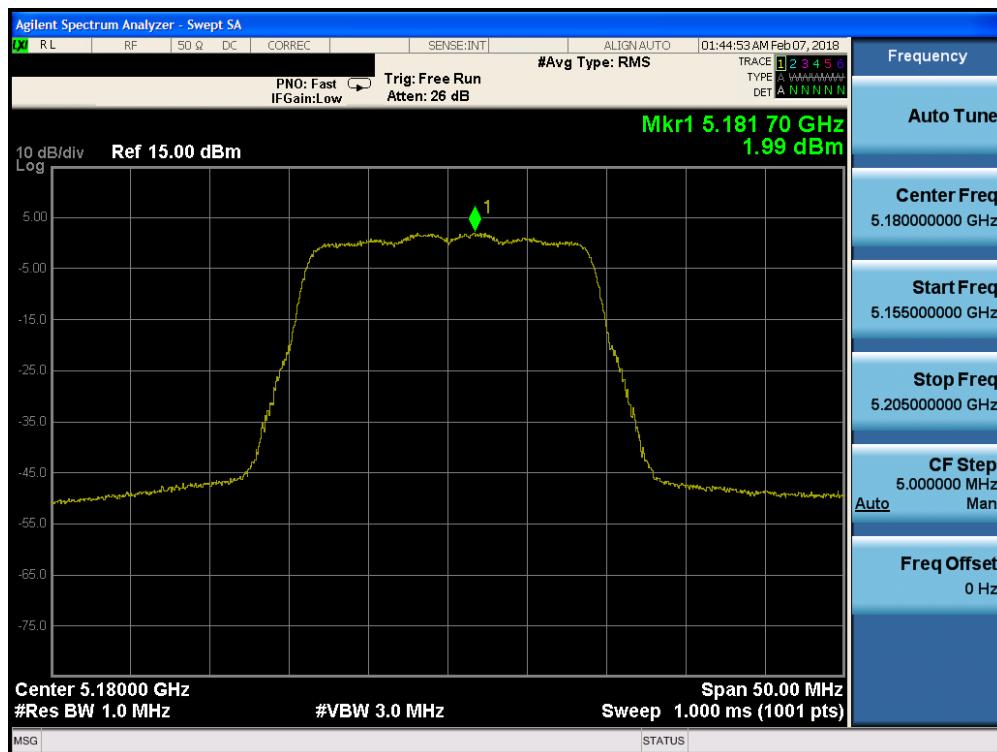
Sample MIMO Calculation:

At 5180MHz the average conducted power spectral density was measured to be 1.99 dBm for Antenna-1 and 1.94 dBm for Antenna-2.

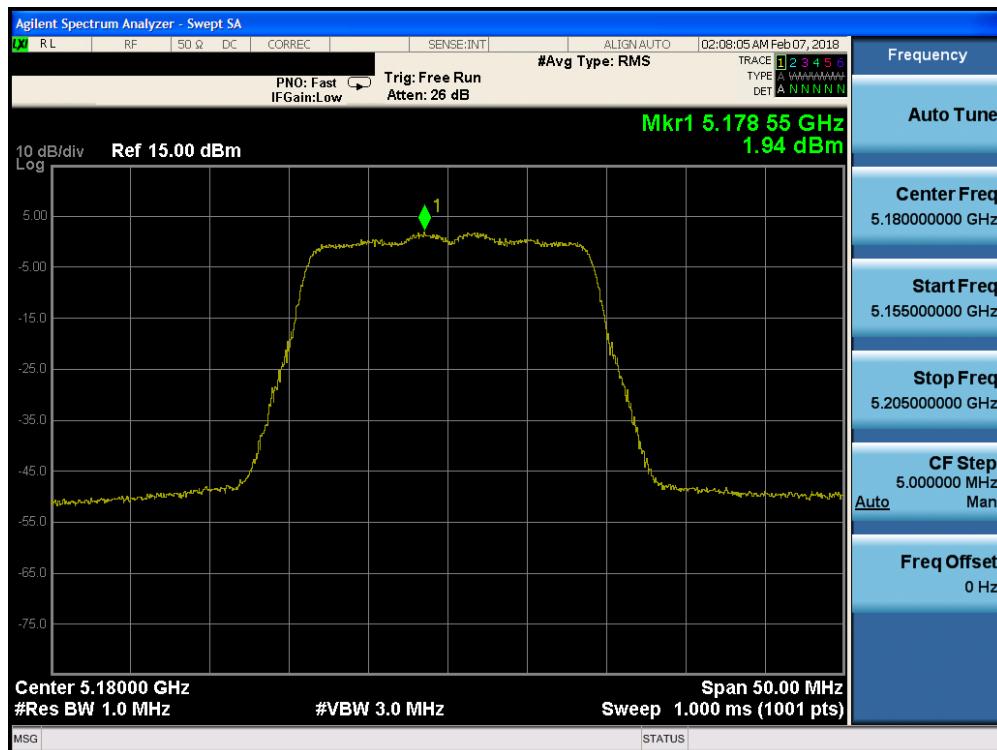
$$\text{Antenna 1} + \text{Antenna 2} = \text{MIMO}$$

$$(1.99 \text{ dBm} + 1.94 \text{ dBm}) = (1.58 \text{ mW} + 1.56 \text{ mW}) = 3.14 \text{ mW} = 4.98 \text{ dBm}$$

FCC ID: BCGA1893		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device			Page 145 of 298

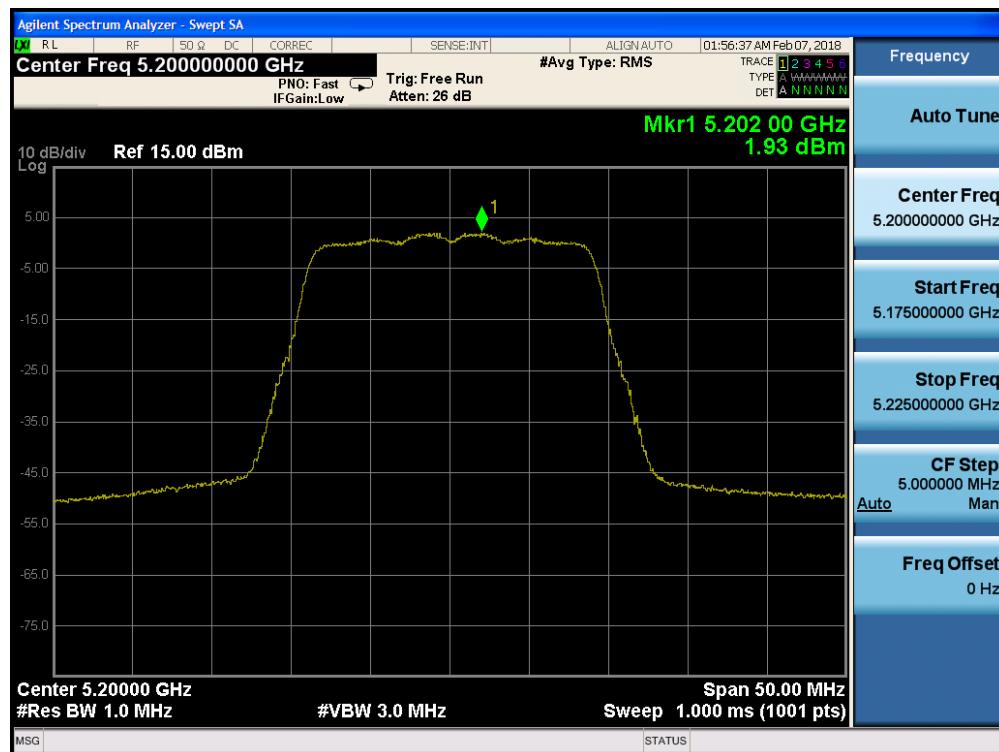


Plot 7-211. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

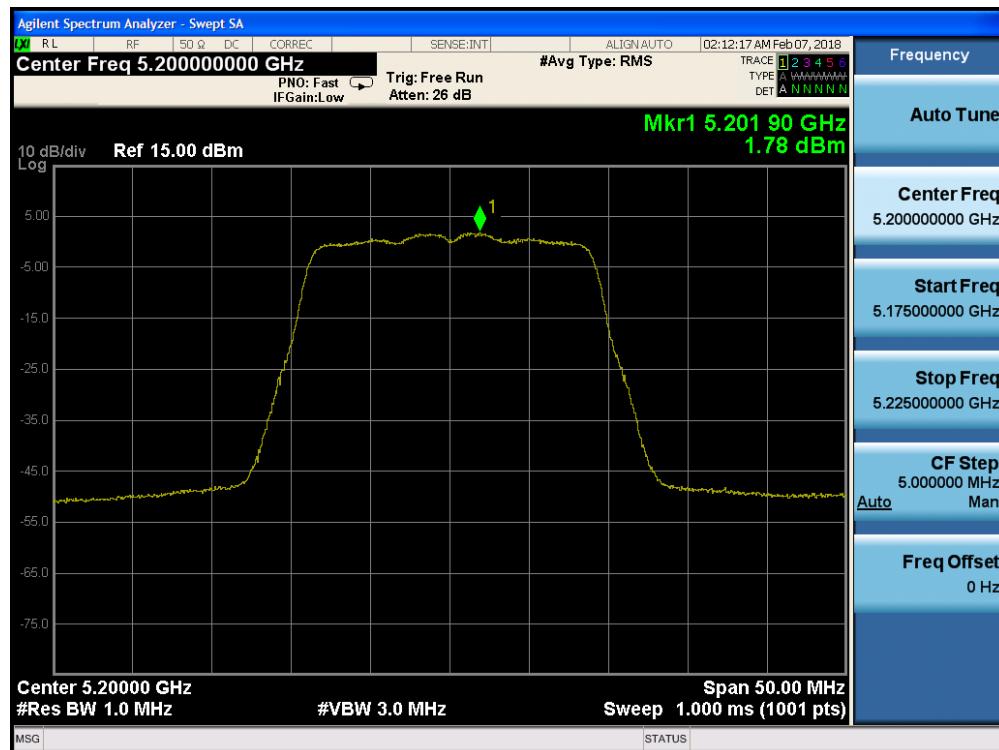


Plot 7-212. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

FCC ID: BCGA1893		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 146 of 298

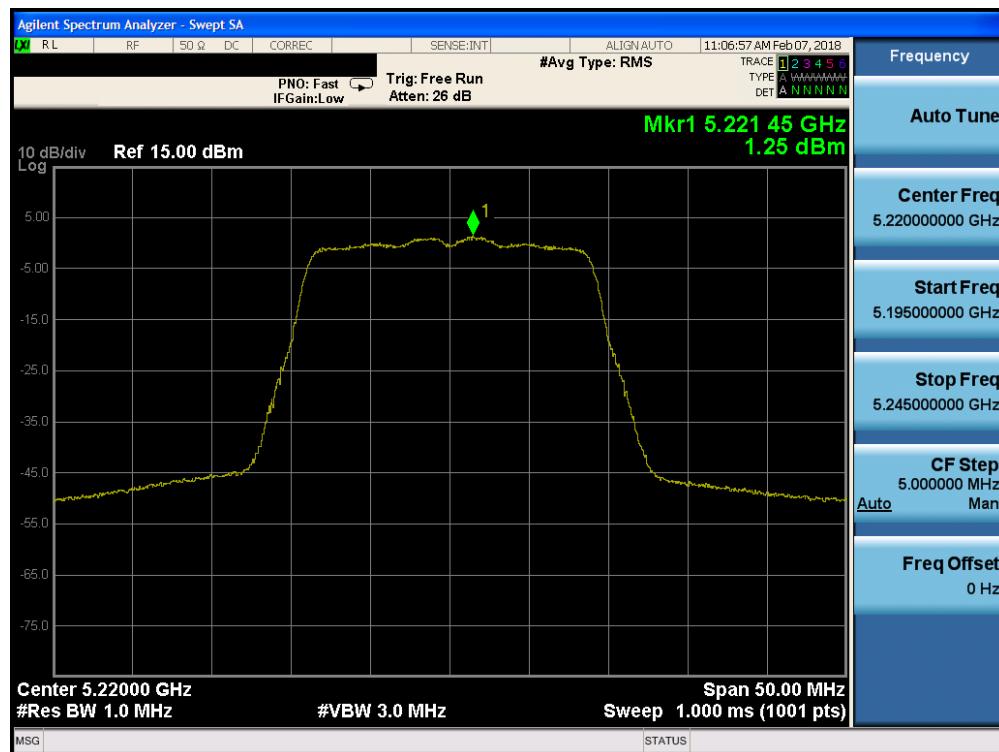


Plot 7-213. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

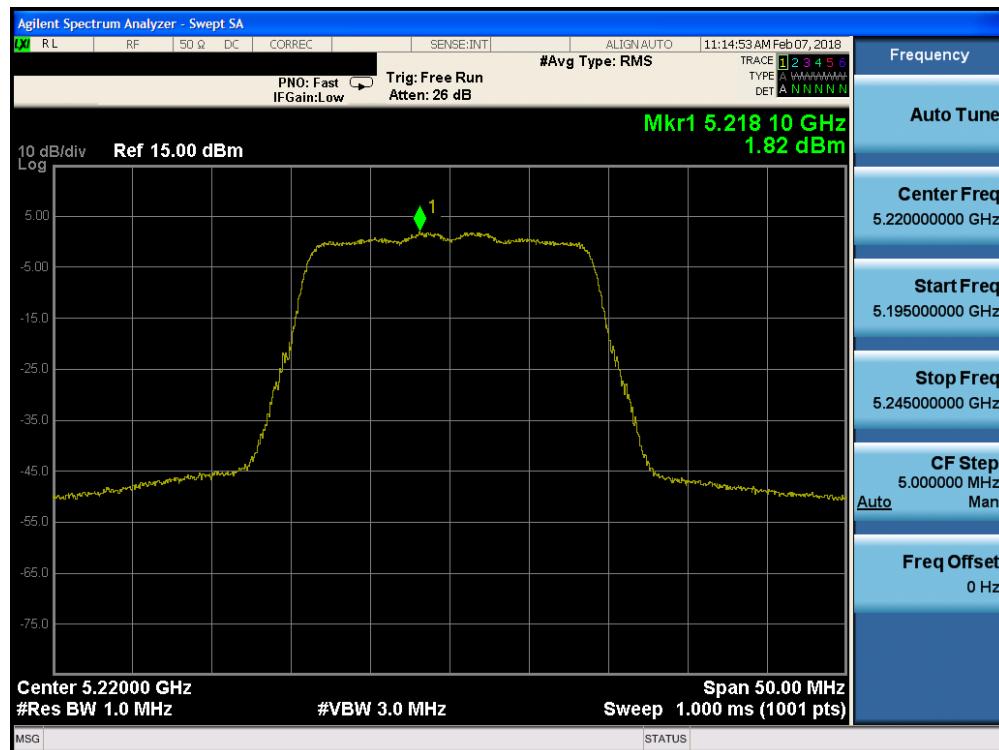


Plot 7-214. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 147 of 298

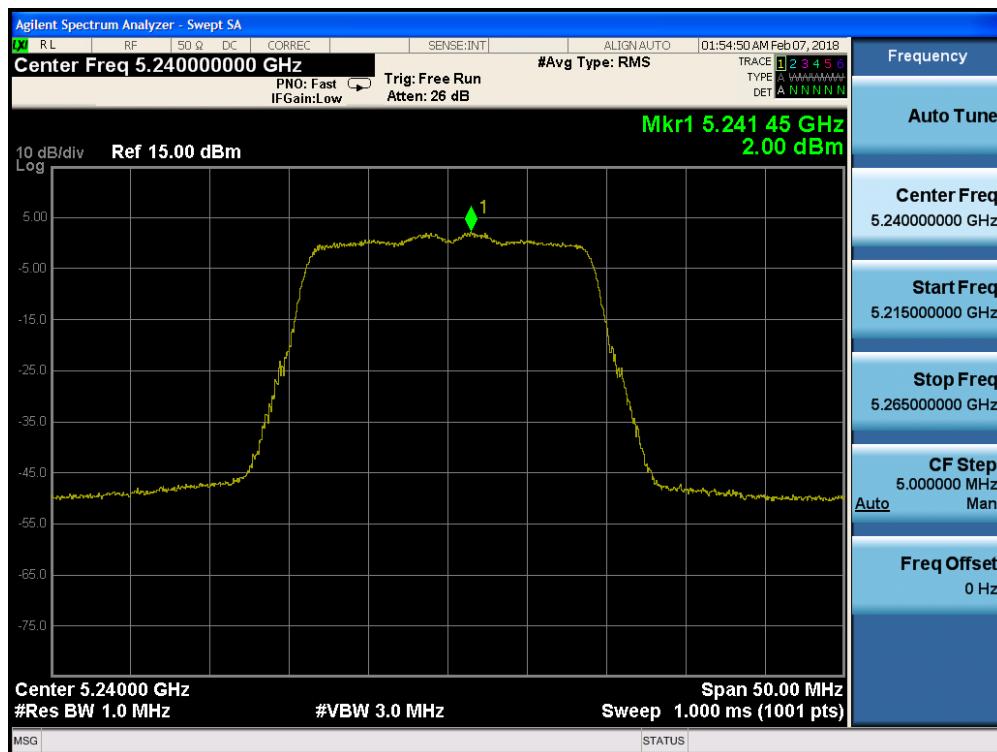


Plot 7-215. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 1) – Ch. 44)



Plot 7-216. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 1) – Ch. 44)

FCC ID: BCGA1893	 PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 148 of 298

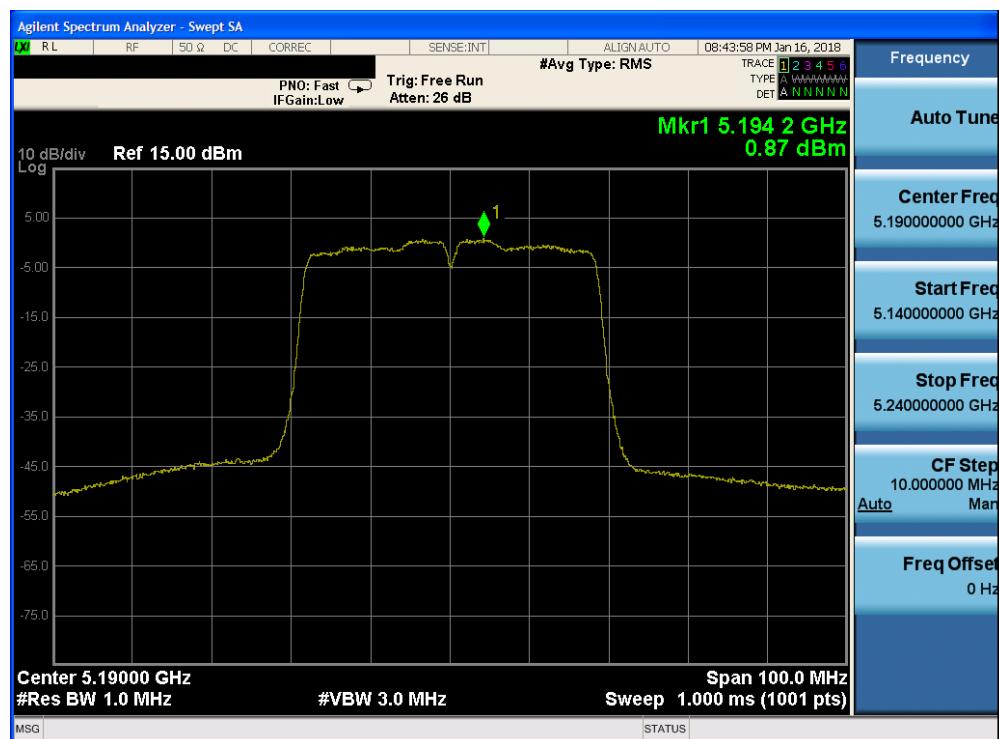


Plot 7-217. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

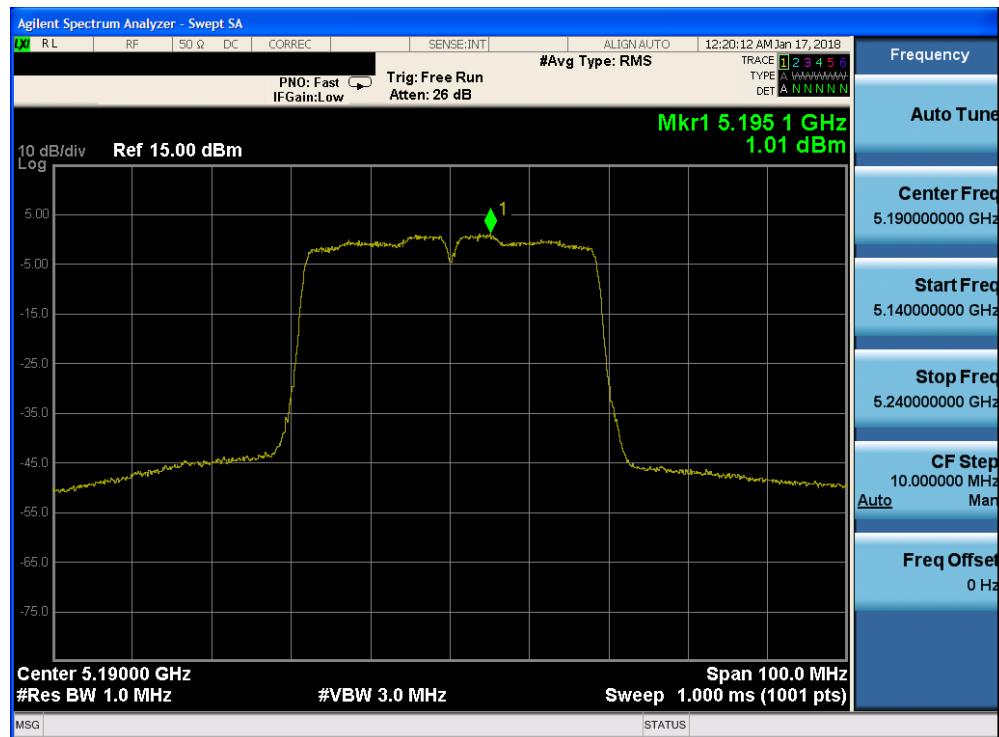


Plot 7-218. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

FCC ID: BCGA1893		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 149 of 298

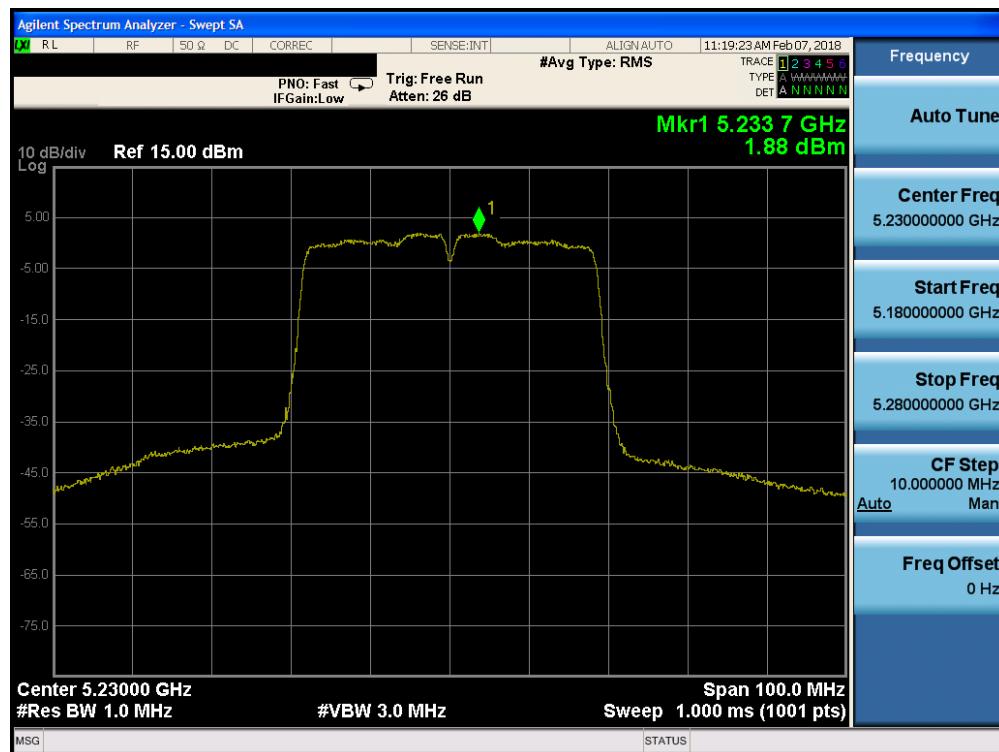


Plot 7-219. Power Spectral Density Plot A MIMO NT1 (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

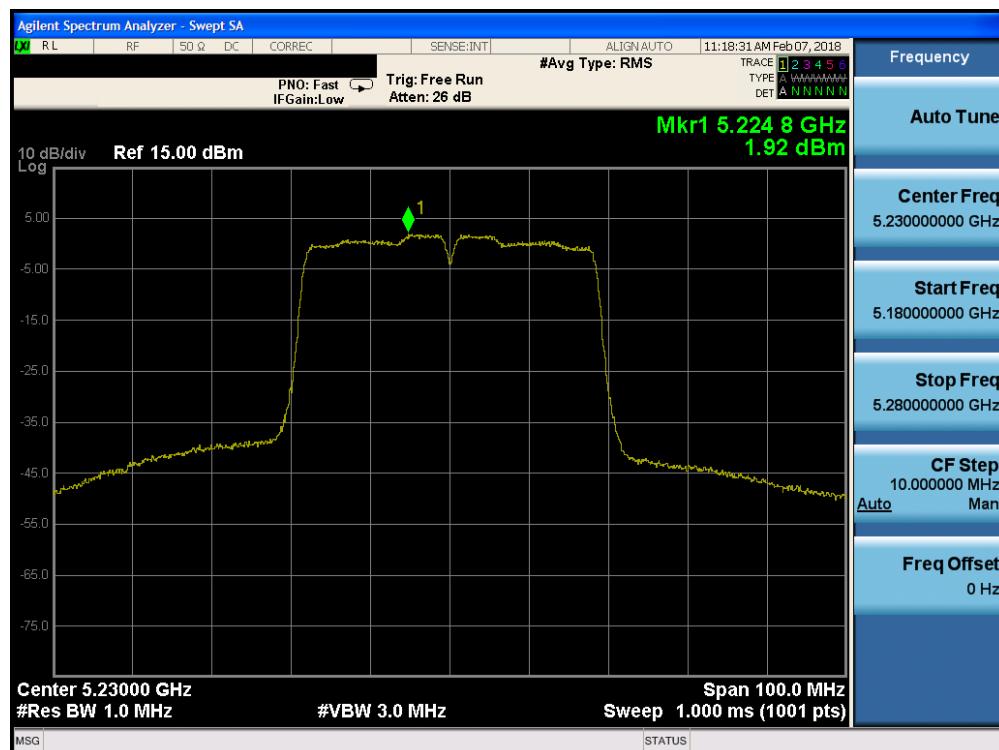


Plot 7-220. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 150 of 298

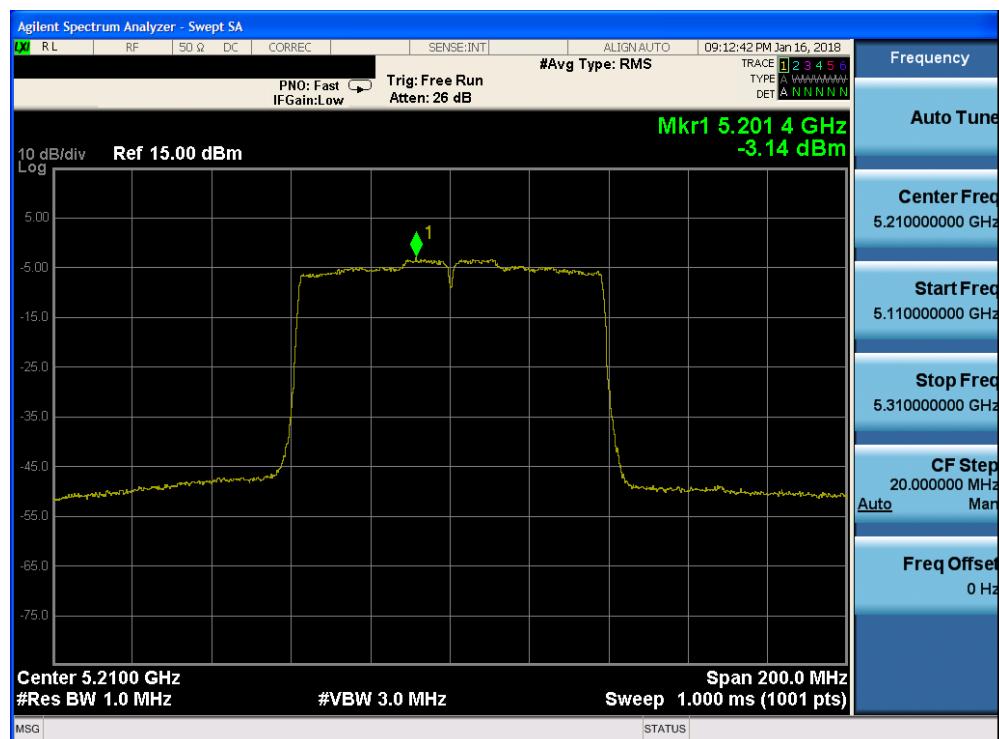


Plot 7-221. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

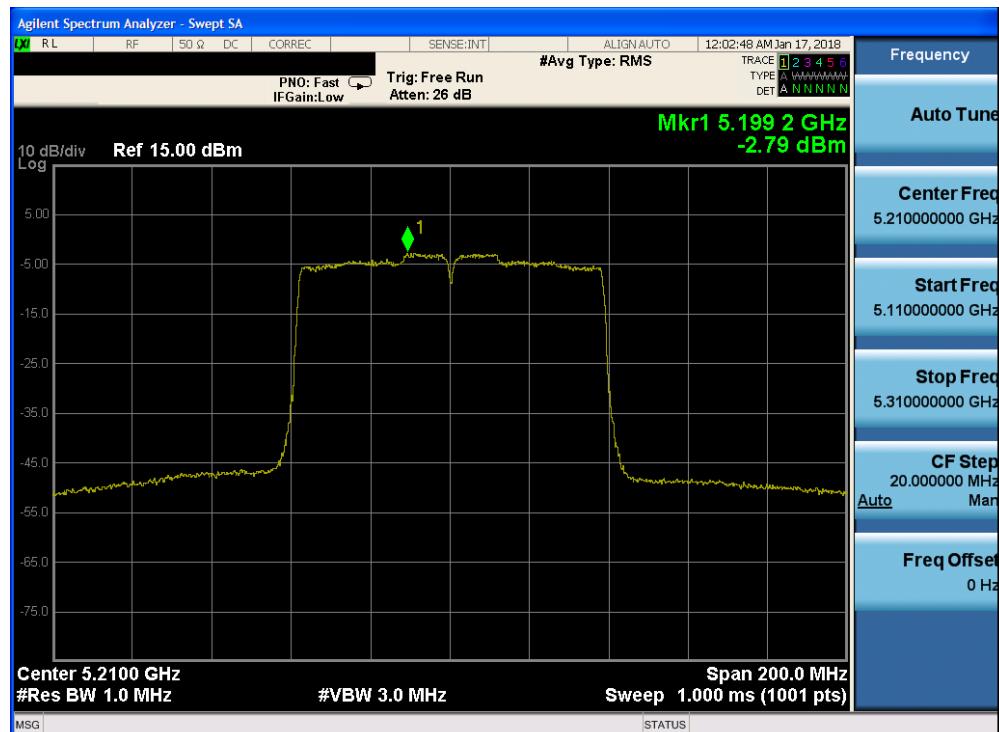


Plot 7-222. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

FCC ID: BCGA1893		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 151 of 298

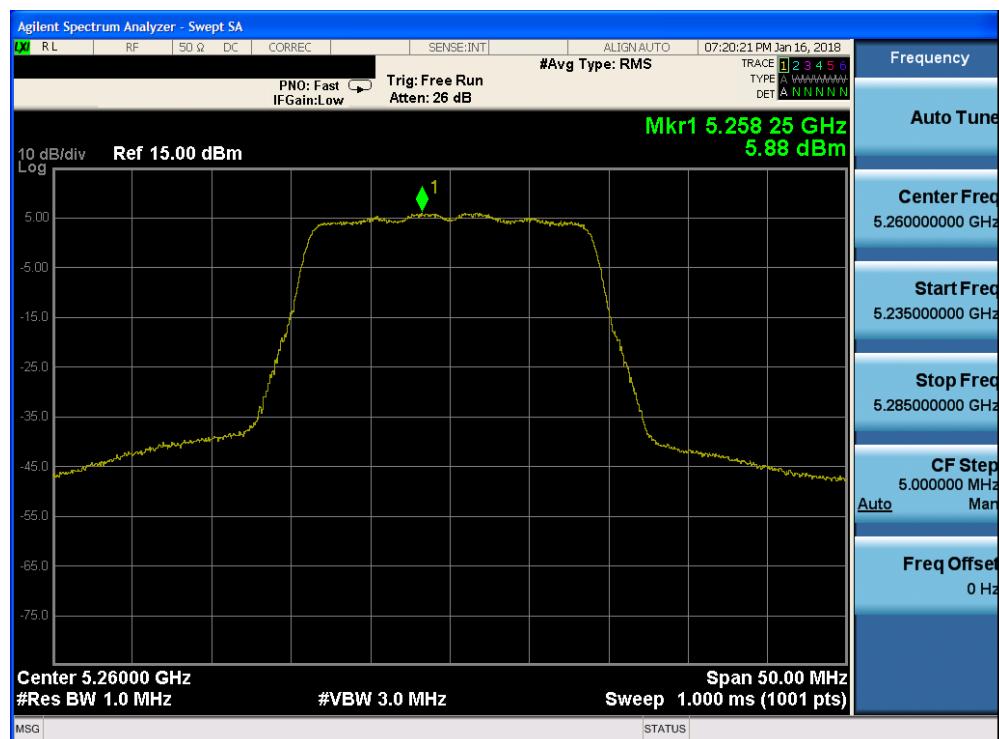


Plot 7-223. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

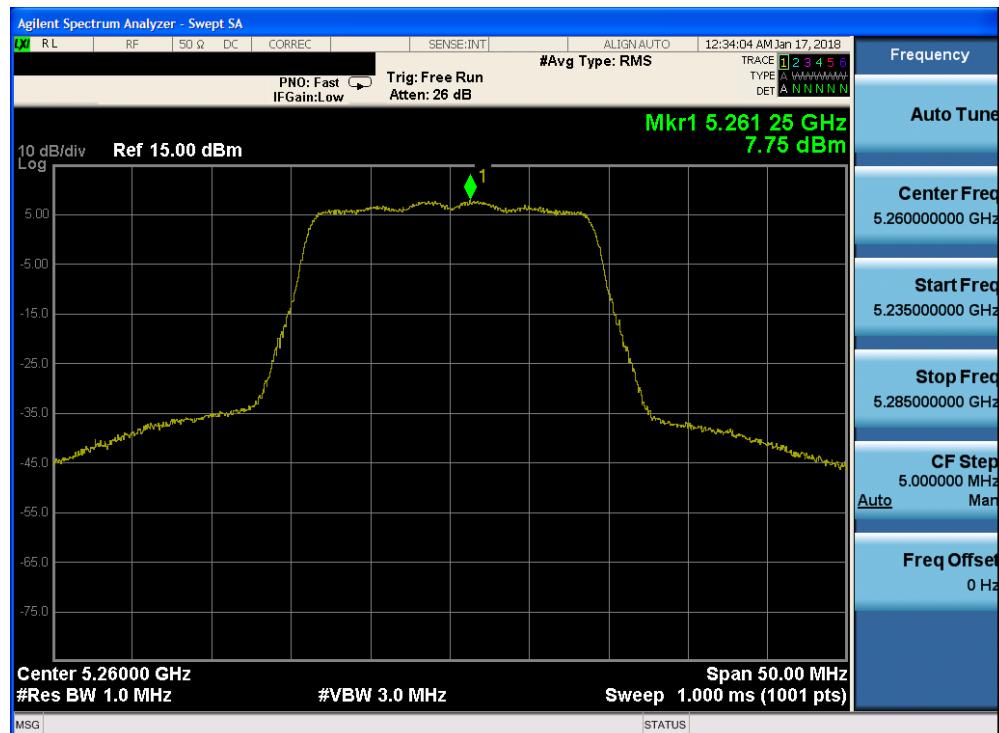


Plot 7-224. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 152 of 298

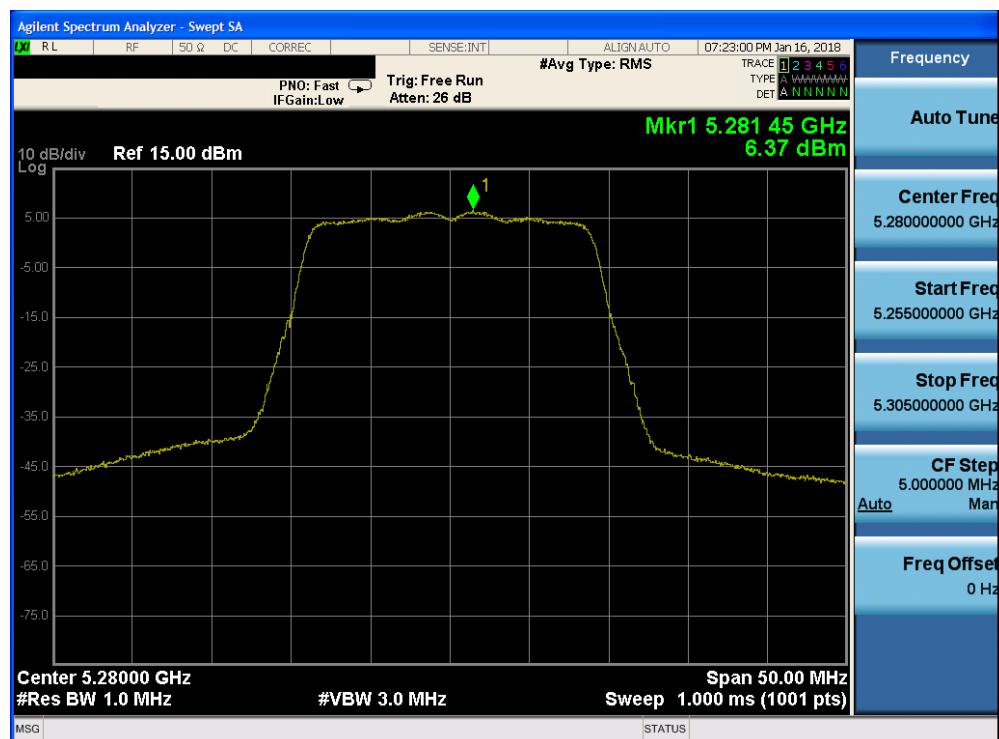


Plot 7-225. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

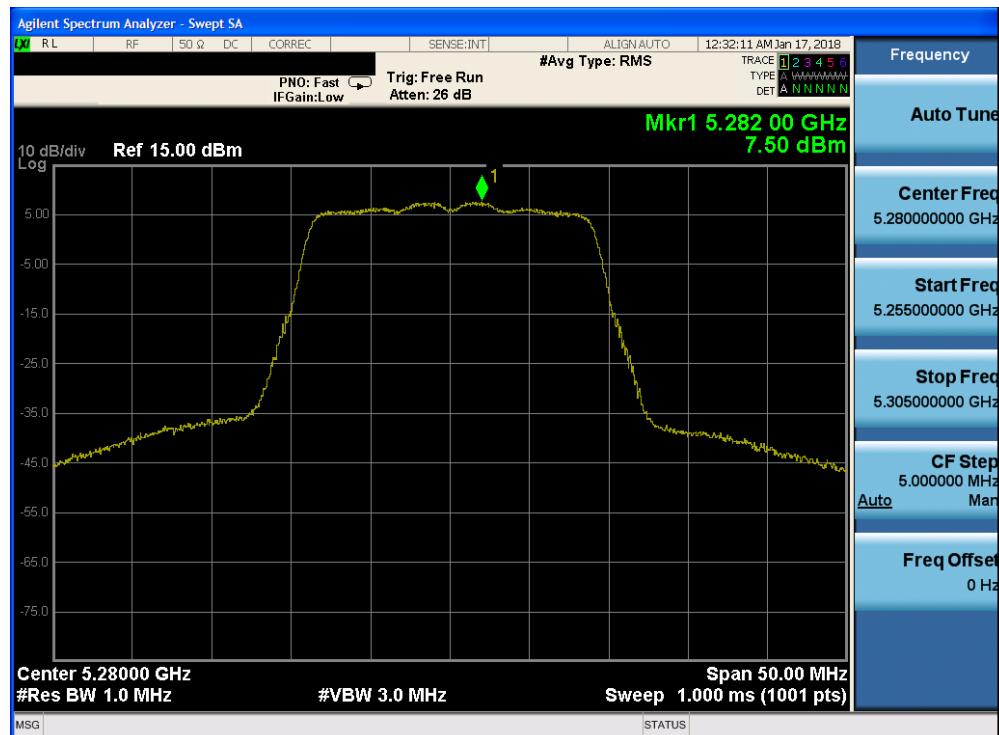


Plot 7-226. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 153 of 298

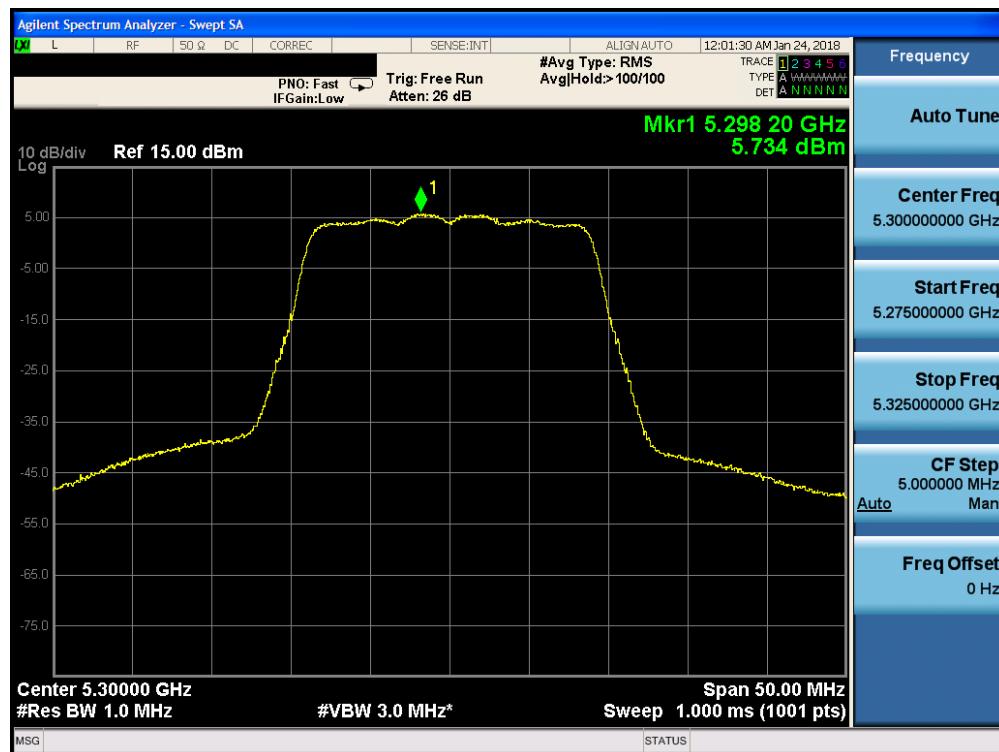


Plot 7-227. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

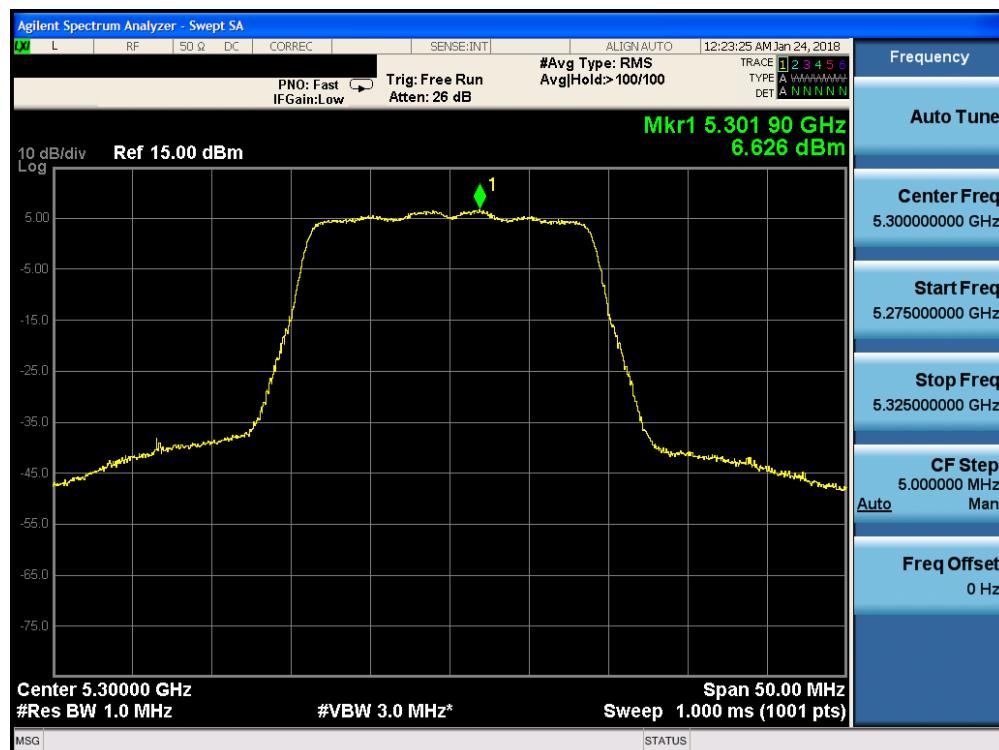


Plot 7-228. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 154 of 298

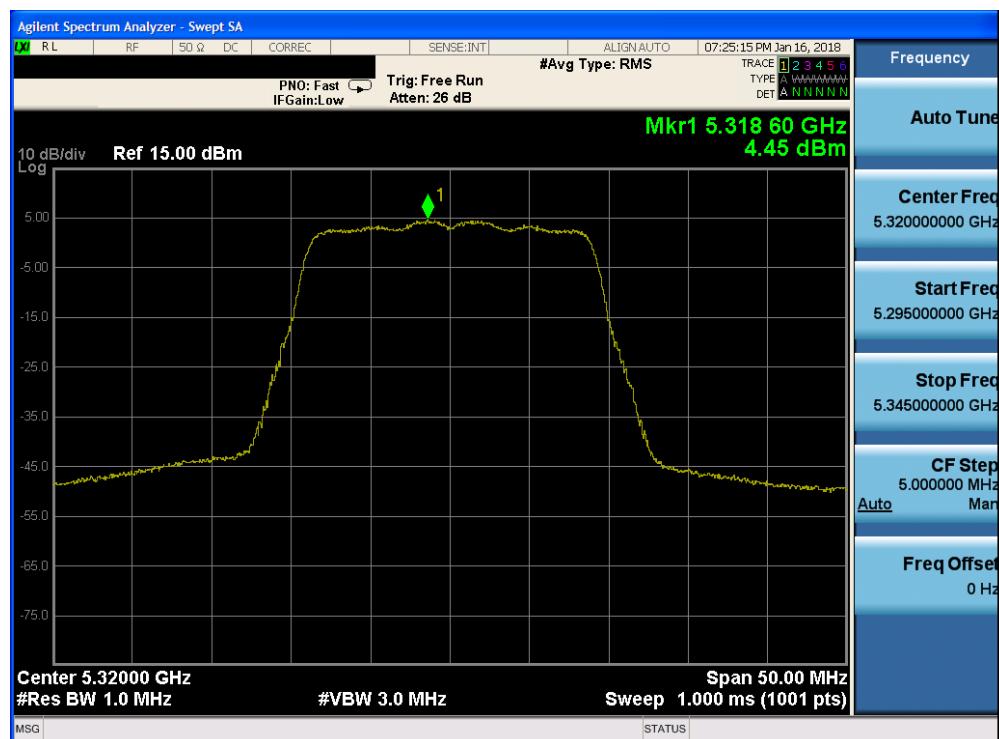


Plot 7-229. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 2A) – Ch. 60)

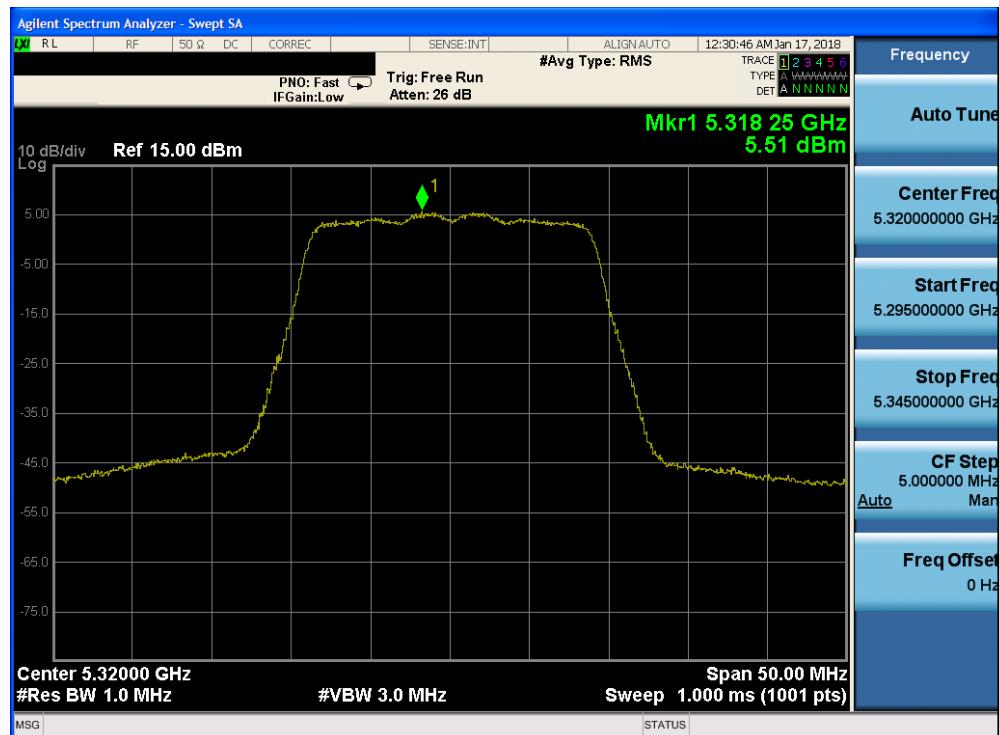


Plot 7-230. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 2A) – Ch. 60)

FCC ID: BCGA1893	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 155 of 298



Plot 7-231. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)



Plot 7-232. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

FCC ID: BCGA1893	PCTEST® ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1710060005-03-R1.BCG	Test Dates: 10/31-2/20/2018	EUT Type: Tablet Device	Page 156 of 298