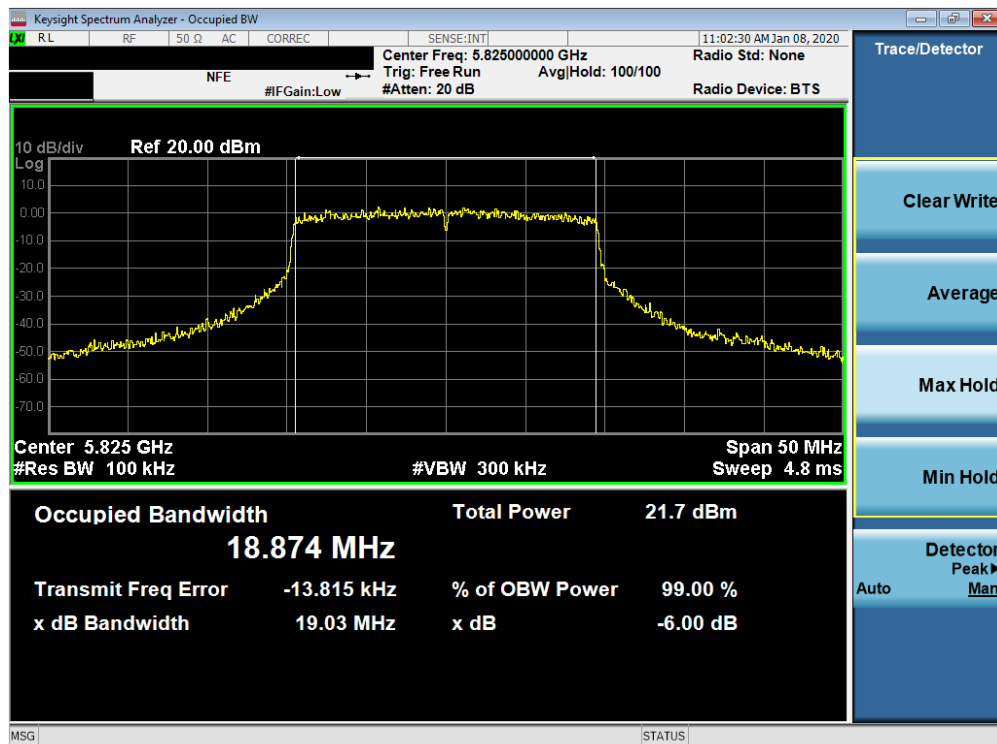


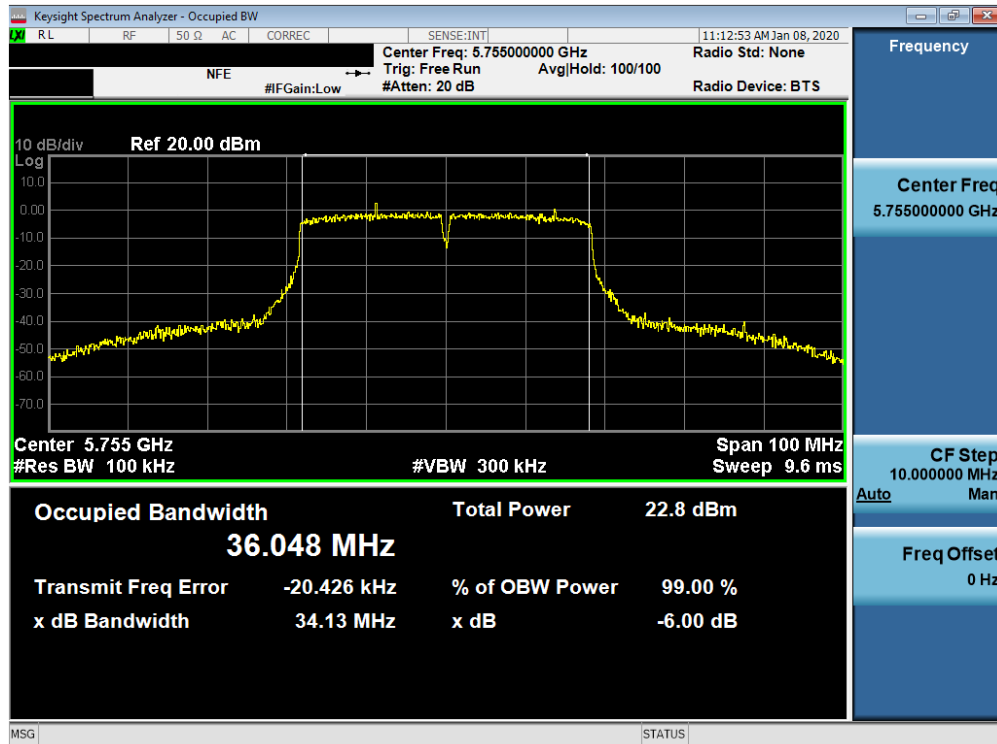


Plot 7-121. 6dB Bandwidth Plot SISO ANT2 (20MHz BW 802.11ax (UNII Band 3) – Ch. 157)

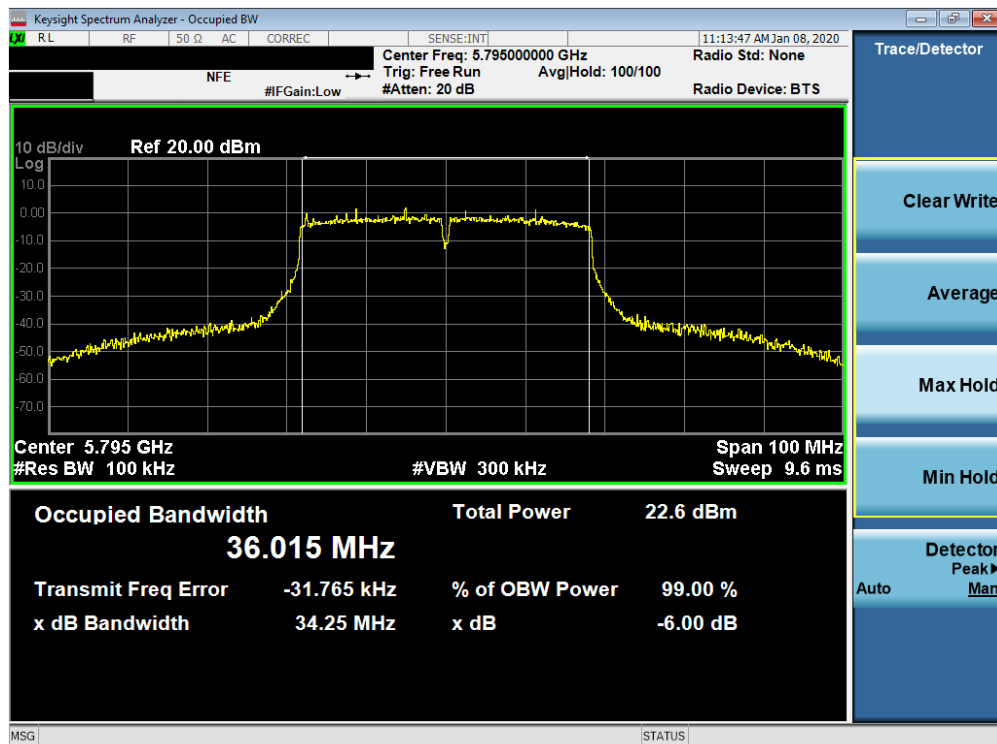


Plot 7-122. 6dB Bandwidth Plot SISO ANT2 (20MHz BW 802.11ax (UNII Band 3) – Ch. 165)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 81 of 234



Plot 7-123. 6dB Bandwidth Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

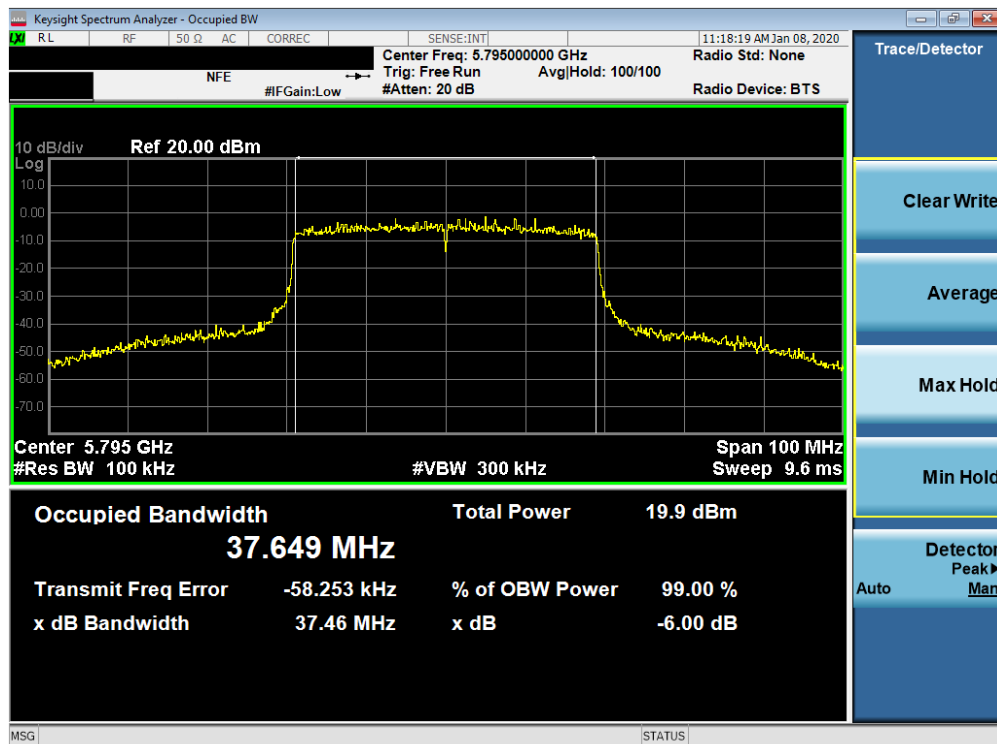


Plot 7-124. 6dB Bandwidth Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 3) – Ch. 159)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 82 of 234

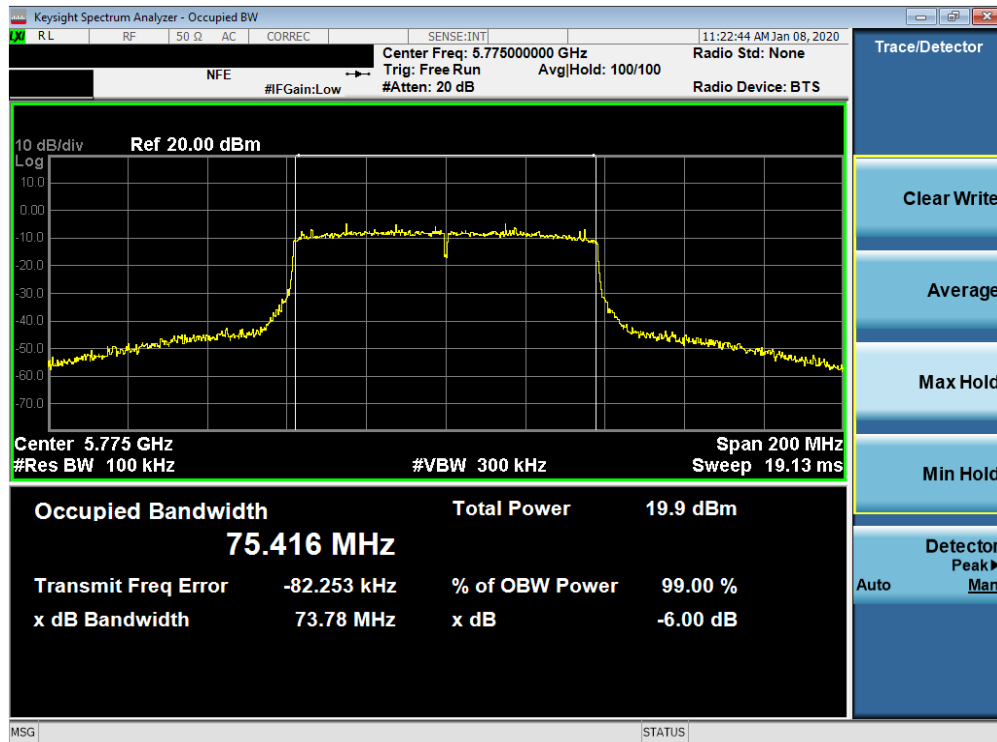


Plot 7-125. 6dB Bandwidth Plot SISO ANT2 (40MHz BW 802.11ax (UNII Band 3) – Ch. 151)

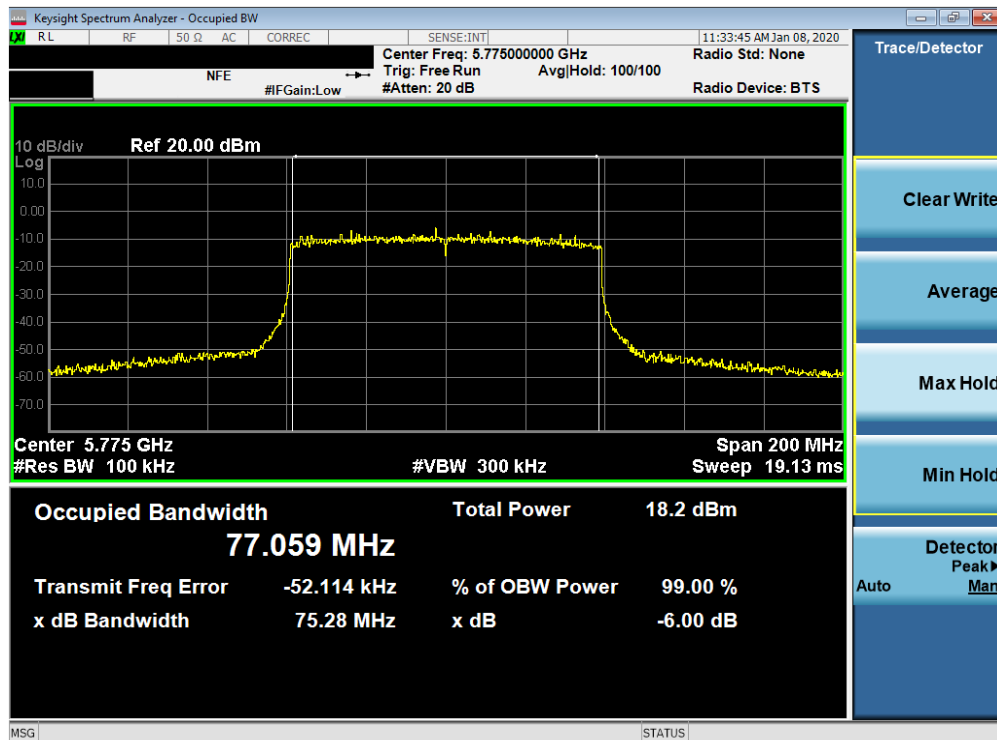


Plot 7-126. 6dB Bandwidth Plot SISO ANT2 (40MHz BW 802.11ax (UNII Band 3) – Ch. 159)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 83 of 234



Plot 7-127. 6dB Bandwidth Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)



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

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 84 of 234

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 v02r01, and at the appropriate frequencies.

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

In the 5.25 – 5.35GHz band, the maximum permissible conducted output power is the lesser of 250mW (23.98dBm) or $11 \text{ dBm} + 10\log_{10}(26\text{dB BW}) = 11 \text{ dBm} + 10\log_{10}(19.30) = 23.86\text{dBm}$. The maximum e.i.r.p. shall not exceed the lesser of 1.0 W or $17 + 10 \log_{10}B$, dBm.

In the 5.47 – 5.725GHz band, the maximum permissible conducted output power is the lesser of 250mW (23.98dBm) or $11 \text{ dBm} + 10\log_{10}(26\text{dB BW}) = 11 \text{ dBm} + 10\log_{10}(19.62) = 23.93\text{dBm}$. The maximum e.i.r.p. shall not exceed the lesser of 1.0 W or $17 + 10 \log_{10}B$, dBm.

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

Test Procedure Used

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

KDB 789033 D02 v02r01 – Section E3)b) Method PM-G

ANSI C63.10-2013 – Section 14.2 Measure-and-Sum Technique

KDB 662911 v02r01 – Section E1) Measure-and-Sum Technique

Test Settings

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

Test Setup

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



Figure 7-3. Test Instrument & Measurement Setup

Test Notes

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

FCC ID: ZNFV600AM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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SISO Antenna-1 Conducted Output Power Measurements

5GHz (20MHz Bandwidth)	Freq [MHz]	Channel	Detector	IEEE Transmission Mode				Conducted Power Limit [dBm]	Conducted Power Margin [dB]
				802.11a	802.11n	802.11ac	802.11ax		
	5180	36	AVG	16.65	16.91	16.92	14.36	23.98	-7.06
	5200	40	AVG	17.53	17.80	17.81	14.48	23.98	-6.17
	5220	44	AVG	16.59	16.81	16.82	14.26	23.98	-7.16
	5240	48	AVG	16.53	16.73	16.69	14.22	23.98	-7.25
	5260	52	AVG	16.04	16.38	16.39	14.11	23.98	-7.59
	5280	56	AVG	17.30	17.49	17.44	14.13	23.98	-6.49
	5300	60	AVG	16.38	16.70	16.71	14.17	23.98	-7.27
	5320	64	AVG	16.48	16.65	16.66	14.09	23.98	-7.32
	5500	100	AVG	16.55	16.87	16.89	14.33	23.98	-7.09
	5600	120	AVG	16.66	16.91	16.92	14.52	23.98	-7.06
	5720	144	AVG	16.31	16.53	16.47	14.26	23.98	-7.45
	5745	149	AVG	16.29	16.47	16.47	14.29	30.00	-13.53
	5785	157	AVG	17.53	17.77	17.75	14.60	30.00	-12.23
	5825	165	AVG	17.42	17.70	17.72	14.41	30.00	-12.28

Table 7-6. SISO ANT1 20MHz BW (UNII) Maximum Conducted Output Power

5GHz (40MHz Bandwidth)	Freq [MHz]	Channel	Detector	IEEE Transmission Mode			Conducted Power Limit [dBm]	Conducted Power Margin [dB]
				802.11n	802.11ac	802.11ax		
	5190	38	AVG	10.57	10.54	8.14	23.98	-13.41
	5230	46	AVG	15.25	15.29	11.63	23.98	-8.69
	5270	54	AVG	15.03	15.05	11.73	23.98	-8.93
	5310	62	AVG	10.31	10.31	7.87	23.98	-13.67
	5510	102	AVG	10.38	10.44	8.05	23.98	-13.54
	5590	118	AVG	15.39	15.41	11.97	23.98	-8.57
	5630	126	AVG	15.29	15.26	11.78	23.98	-8.69
	5710	142	AVG	15.22	15.26	11.75	23.98	-8.72
	5755	151	AVG	15.18	15.24	11.80	30.00	-14.76
	5795	159	AVG	15.46	15.53	11.92	30.00	-14.47

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

FCC ID: ZNFV600AM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 86 of 234

5GHz (80MHz Bandwidth)	Freq [MHz]	Channel	Detector	IEEE Transmission Mode		Conducted Power Limit [dBm]	Conducted Power Margin [dB]
				802.11ac	802.11ax		
	5210	42	AVG	10.22	7.85	23.98	-13.76
	5290	58	AVG	10.09	7.67	23.98	-13.89
	5530	106	AVG	12.03	9.74	23.98	-11.95
	5610	122	AVG	12.33	9.93	23.98	-11.65
	5690	138	AVG	12.16	9.77	23.98	-11.82
	5775	155	AVG	12.23	10.12	30.00	-17.77

Table 7-8. SISO ANT1 80MHz BW (UNII) Maximum Conducted Output Power

FCC ID: ZNFV600AM			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset			Page 87 of 234

SISO Antenna-2 Conducted Output Power Measurements

5GHz (20MHz Bandwidth)	Freq [MHz]	Channel	Detector	IEEE Transmission Mode				Conducted Power Limit [dBm]	Conducted Power Margin [dB]
				802.11a	802.11n	802.11ac	802.11ax		
	5180	36	AVG	16.33	16.61	16.53	14.22	23.98	-7.37
	5200	40	AVG	17.37	17.59	17.59	14.32	23.98	-6.39
	5220	44	AVG	16.34	16.65	16.55	14.13	23.98	-7.33
	5240	48	AVG	16.46	16.60	16.57	14.25	23.98	-7.38
	5260	52	AVG	16.48	16.81	16.67	14.31	23.98	-7.17
	5280	56	AVG	17.43	17.67	17.66	14.38	23.98	-6.31
	5300	60	AVG	16.33	16.65	16.53	14.22	23.98	-7.33
	5320	64	AVG	16.39	16.64	16.58	14.28	23.98	-7.34
	5500	100	AVG	16.47	16.74	16.71	14.35	23.98	-7.24
	5600	120	AVG	16.54	16.80	16.74	14.46	23.98	-7.18
	5720	144	AVG	16.38	16.58	16.54	14.25	23.98	-7.40
	5745	149	AVG	16.41	16.63	16.59	14.35	30.00	-13.37
	5785	157	AVG	17.08	17.36	17.37	14.08	30.00	-12.63
	5825	165	AVG	17.32	17.58	17.56	14.37	30.00	-12.42

Table 7-9. SISO ANT2 20MHz BW (UNII) Maximum Conducted Output Power

5GHz (40MHz Bandwidth)	Freq [MHz]	Channel	Detector	IEEE Transmission Mode			Conducted Power Limit [dBm]	Conducted Power Margin [dB]
				802.11n	802.11ac	802.11ax		
	5190	38	AVG	10.80	10.88	8.43	23.98	-13.10
	5230	46	AVG	15.61	15.67	12.12	23.98	-8.31
	5270	54	AVG	15.77	15.74	12.00	23.98	-8.21
	5310	62	AVG	11.00	10.91	8.28	23.98	-12.98
	5510	102	AVG	11.10	11.14	8.63	23.98	-12.84
	5590	118	AVG	15.97	15.92	12.45	23.98	-8.01
	5630	126	AVG	15.95	15.99	12.50	23.98	-7.99
	5710	142	AVG	15.84	15.98	12.38	23.98	-8.00
	5755	151	AVG	15.99	15.95	12.16	30.00	-14.01
	5795	159	AVG	15.81	15.81	12.38	30.00	-14.19

Table 7-10. SISO ANT2 40MHz BW (UNII) Maximum Conducted Output Power

FCC ID: ZNFV600AM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 88 of 234

5GHz (80MHz Bandwidth)	Freq [MHz]	Channel	Detector	IEEE Transmission Mode		Conducted Power Limit [dBm]	Conducted Power Margin [dB]
				802.11ac	802.11ax		
	5210	42	AVG	10.56	8.24	23.98	-13.42
	5290	58	AVG	10.55	8.12	23.98	-13.43
	5530	106	AVG	12.83	10.67	23.98	-11.15
	5610	122	AVG	12.63	10.57	23.98	-11.35
	5690	138	AVG	12.78	10.45	23.98	-11.20
	5775	155	AVG	12.58	10.41	30.00	-17.42

Table 7-11. SISO ANT2 80MHz BW (UNII) Maximum Conducted Output Power

FCC ID: ZNFV600AM			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset			Page 89 of 234

MIMO Maximum Conducted Output Power Measurements

5GHz (20MHz Bandwidth)	Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]
				ANT1	ANT2	MIMO		
	5180	36	AVG	16.91	16.61	19.77	23.98	-4.21
	5200	40	AVG	17.80	17.59	20.71	23.98	-3.27
	5220	44	AVG	16.81	16.65	19.74	23.98	-4.24
	5240	48	AVG	16.73	16.60	19.68	23.98	-4.30
	5260	52	AVG	16.38	16.81	19.61	23.98	-4.37
	5280	56	AVG	17.49	17.67	20.59	23.98	-3.39
	5300	60	AVG	16.70	16.65	19.69	23.98	-4.29
	5320	64	AVG	16.65	16.64	19.66	23.98	-4.32
	5500	100	AVG	16.87	16.74	19.82	23.98	-4.16
	5600	120	AVG	16.91	16.80	19.87	23.98	-4.11
	5720	144	AVG	16.53	16.58	19.57	23.98	-4.41
	5745	149	AVG	16.47	16.63	19.56	30.00	-10.44
	5785	157	AVG	17.77	17.36	20.58	30.00	-9.42
	5825	165	AVG	17.70	17.58	20.65	30.00	-9.35

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

5GHz (20MHz Bandwidth)	Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]
				ANT1	ANT2	MIMO		
	5180	36	AVG	16.92	16.53	19.74	23.98	-4.24
	5200	40	AVG	17.81	17.59	20.71	23.98	-3.27
	5220	44	AVG	16.82	16.55	19.70	23.98	-4.28
	5240	48	AVG	16.69	16.57	19.64	23.98	-4.34
	5260	52	AVG	16.39	16.67	19.54	23.98	-4.44
	5280	56	AVG	17.44	17.66	20.56	23.98	-3.42
	5300	60	AVG	16.71	16.53	19.63	23.98	-4.35
	5320	64	AVG	16.66	16.58	19.63	23.98	-4.35
	5500	100	AVG	16.89	16.71	19.81	23.98	-4.17
	5600	120	AVG	16.92	16.74	19.84	23.98	-4.14
	5720	144	AVG	16.47	16.54	19.52	23.98	-4.46
	5745	149	AVG	16.47	16.59	19.54	30.00	-10.46
	5785	157	AVG	17.75	17.37	20.57	30.00	-9.43
	5825	165	AVG	17.72	17.56	20.65	30.00	-9.35

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

FCC ID: ZNFV600AM			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset	Page 90 of 234		

5GHz (20MHz Bandwidth)	Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]
				ANT1	ANT2	MIMO		
	5180	36	AVG	14.36	14.22	17.30	23.98	-6.68
	5200	40	AVG	14.48	14.32	17.41	23.98	-6.57
	5220	44	AVG	14.26	14.13	17.21	23.98	-6.77
	5240	48	AVG	14.22	14.25	17.25	23.98	-6.73
	5260	52	AVG	14.11	14.31	17.22	23.98	-6.76
	5280	56	AVG	14.13	14.38	17.27	23.98	-6.71
	5300	60	AVG	14.17	14.22	17.21	23.98	-6.77
	5320	64	AVG	14.09	14.28	17.20	23.98	-6.78
	5500	100	AVG	14.33	14.35	17.35	23.98	-6.63
	5600	120	AVG	14.52	14.46	17.50	23.98	-6.48
	5720	144	AVG	14.26	14.25	17.27	23.98	-6.71
	5745	149	AVG	14.29	14.35	17.33	30.00	-12.67
	5785	157	AVG	14.60	14.08	17.36	30.00	-12.64
	5825	165	AVG	14.41	14.37	17.40	30.00	-12.60

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

FCC ID: ZNFV600AM			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset			Page 91 of 234

5GHz (40MHz Bandwidth)	Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]
				ANT1	ANT2	MIMO		
	5190	38	AVG	10.57	10.80	13.70	23.98	-10.28
	5230	46	AVG	15.25	15.61	18.44	23.98	-5.54
	5270	54	AVG	15.03	15.77	18.43	23.98	-5.55
	5310	62	AVG	10.31	11.00	13.68	23.98	-10.30
	5510	102	AVG	10.38	11.10	13.77	23.98	-10.21
	5590	118	AVG	15.39	15.97	18.70	23.98	-5.28
	5630	126	AVG	15.29	15.95	18.64	23.98	-5.34
	5710	142	AVG	15.22	15.84	18.55	23.98	-5.43
	5755	151	AVG	15.18	15.99	18.61	30.00	-11.39
	5795	159	AVG	15.46	15.81	18.65	30.00	-11.35

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

5GHz (40MHz Bandwidth)	Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]
				ANT1	ANT2	MIMO		
	5190	38	AVG	10.54	10.88	13.72	23.98	-10.26
	5230	46	AVG	15.29	15.67	18.49	23.98	-5.49
	5270	54	AVG	15.05	15.74	18.42	23.98	-5.56
	5310	62	AVG	10.31	10.91	13.63	23.98	-10.35
	5510	102	AVG	10.44	11.14	13.81	23.98	-10.17
	5590	118	AVG	15.41	15.92	18.68	23.98	-5.30
	5630	126	AVG	15.26	15.99	18.65	23.98	-5.33
	5710	142	AVG	15.26	15.98	18.65	23.98	-5.33
	5755	151	AVG	15.24	15.95	18.62	30.00	-11.38
	5795	159	AVG	15.53	15.81	18.68	30.00	-11.32

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

FCC ID: ZNFV600AM			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset	Page 92 of 234		

5GHz (40MHz Bandwidth)	Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]
				ANT1	ANT2	MIMO		
	5190	38	AVG	8.14	8.43	11.30	23.98	-12.68
	5230	46	AVG	11.63	12.12	14.89	23.98	-9.09
	5270	54	AVG	11.73	12.00	14.88	23.98	-9.10
	5310	62	AVG	7.87	8.28	11.09	23.98	-12.89
	5510	102	AVG	8.05	8.63	11.36	23.98	-12.62
	5590	118	AVG	11.97	12.45	15.23	23.98	-8.75
	5630	126	AVG	11.78	12.50	15.17	23.98	-8.81
	5710	142	AVG	11.75	12.38	15.09	23.98	-8.89
	5755	151	AVG	11.80	12.16	14.99	30.00	-15.01
	5795	159	AVG	11.92	12.38	15.17	30.00	-14.83

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

5GHz (80MHz Bandwidth)	Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]
				ANT1	ANT2	MIMO		
	5210	42	AVG	10.22	10.56	13.40	23.98	-10.58
	5290	58	AVG	10.09	10.55	13.34	23.98	-10.64
	5530	106	AVG	12.03	12.83	15.46	23.98	-8.52
	5610	122	AVG	12.33	12.63	15.49	23.98	-8.49
	5690	138	AVG	12.16	12.78	15.49	23.98	-8.49
	5775	155	AVG	12.23	12.58	15.42	30.00	-14.58

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

5GHz (80MHz Bandwidth)	Freq [MHz]	Channel	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]
				ANT1	ANT2	MIMO	
	5210	42	AVG	7.85	8.24	11.06	23.98
	5290	58	AVG	7.67	8.12	10.91	23.98
	5530	106	AVG	9.74	10.67	13.24	23.98
	5610	122	AVG	9.93	10.57	13.27	23.98
	5690	138	AVG	9.77	10.45	13.13	23.98
	5775	155	AVG	10.12	10.41	13.28	30.00

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

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 in 802.11n (20MHz BW) mode, the average conducted output power was measured to be 16.91 dBm for Antenna-1 and 16.61 dBm for Antenna-2.

Antenna 1 + Antenna 2 = MIMO

$$(16.91 \text{ dBm} + 16.61 \text{ dBm}) = (49.09 \text{ mW} + 45.81 \text{ mW}) = 94.90 \text{ mW} = 19.77 \text{ dBm}$$

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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 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.

Test Procedure Used

ANSI C63.10-2013 – Section 12.3.2.2

KDB 789033 D02 v02r01 – Section F

ANSI C63.10-2013 – Section 14.3.2.2 Measure-and-Sum Technique

KDB 662911 v02r01 – Section E)2) Measure-and-Sum Technique

Test Settings

1. Analyzer was set to the center frequency of the UNII channel under investigation
2. Span was set to encompass the entire emission bandwidth of the signal
3. RBW = 1MHz
4. VBW = 3MHz
5. Number of sweep points $\geq 2 \times (\text{span}/\text{RBW})$
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.

Test Setup

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



Figure 7-4. Test Instrument & Measurement Setup

Test Notes

None

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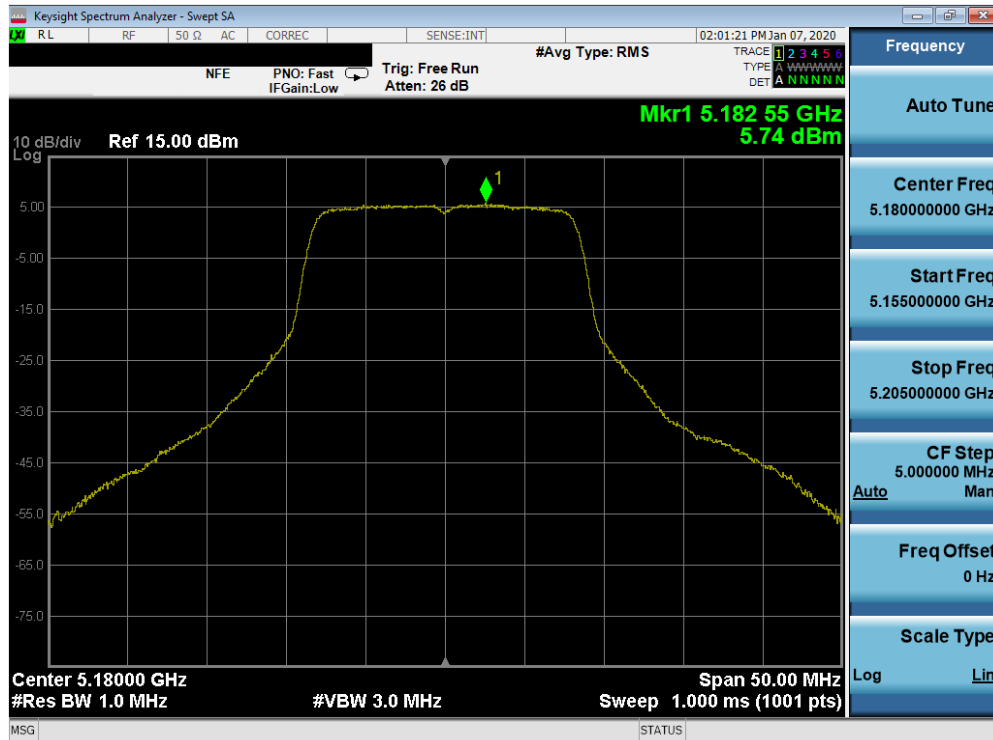
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SISO Antenna-1 Power Spectral Density Measurements

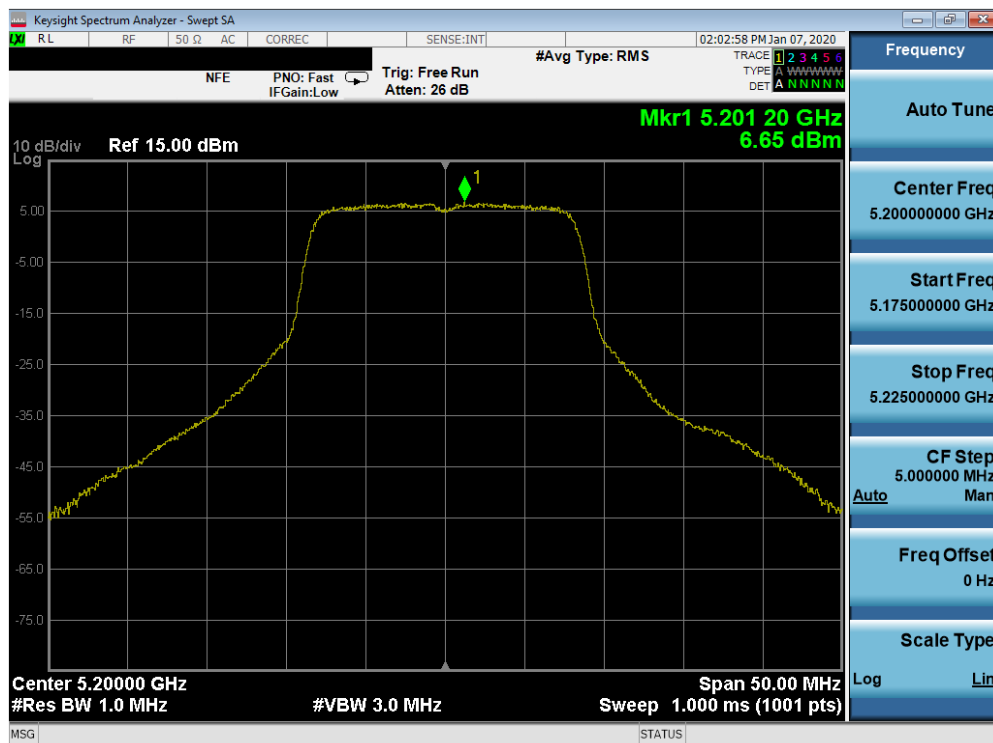
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	a	6	5.74	11.0	-5.26
	5200	40	a	6	6.65	11.0	-4.35
	5240	48	a	6	5.97	11.0	-5.03
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	5.59	11.0	-5.41
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.52	11.0	-4.48
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	5.89	11.0	-5.11
	5180	36	ax (20MHz)	6.5/7.2 (MCS0)	2.96	11.0	-8.04
	5200	40	ax (20MHz)	6.5/7.2 (MCS0)	3.05	11.0	-7.95
	5240	48	ax (20MHz)	6.5/7.2 (MCS0)	3.12	11.0	-7.88
	5190	38	n (40MHz)	13.5/15 (MCS0)	-3.67	11.0	-14.67
	5230	46	n (40MHz)	13.5/15 (MCS0)	1.00	11.0	-10.00
	5190	38	ax (40MHz)	13.5/15 (MCS0)	-6.32	11.0	-17.32
	5230	46	ax (40MHz)	13.5/15 (MCS0)	-2.43	11.0	-13.43
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-7.54	11.0	-18.54
	5210	42	ax (80MHz)	29.3/32.5 (MCS0)	-9.51	11.0	-20.51
Band 2A	5260	52	a	6	5.21	11.0	-5.79
	5280	56	a	6	6.42	11.0	-4.58
	5320	64	a	6	5.62	11.0	-5.38
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	5.25	11.0	-5.75
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	6.42	11.0	-4.58
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	5.61	11.0	-5.39
	5260	52	ax (20MHz)	6.5/7.2 (MCS0)	2.83	11.0	-8.17
	5280	56	ax (20MHz)	6.5/7.2 (MCS0)	2.54	11.0	-8.46
	5320	64	ax (20MHz)	6.5/7.2 (MCS0)	2.65	11.0	-8.35
	5270	54	n (40MHz)	13.5/15 (MCS0)	0.75	11.0	-10.25
	5310	62	n (40MHz)	13.5/15 (MCS0)	-3.67	11.0	-14.67
	5270	54	ax (40MHz)	13.5/15 (MCS0)	-2.59	11.0	-13.59
	5310	62	ax (40MHz)	13.5/15 (MCS0)	-6.50	11.0	-17.50
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-7.46	11.0	-18.46
	5290	58	ax (80MHz)	29.3/32.5 (MCS0)	-9.90	11.0	-20.90
Band 2C	5500	100	a	6	5.49	11.0	-5.51
	5600	120	a	6	5.56	11.0	-5.44
	5720	144	a	6	5.62	11.0	-5.38
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	5.36	11.0	-5.64
	5600	120	n (20MHz)	6.5/7.2 (MCS0)	5.93	11.0	-5.07
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	5.76	11.0	-5.24
	5500	100	ax (20MHz)	6.5/7.2 (MCS0)	2.66	11.0	-8.34
	5600	120	ax (20MHz)	6.5/7.2 (MCS0)	3.28	11.0	-7.72
	5720	144	ax (20MHz)	6.5/7.2 (MCS0)	3.08	11.0	-7.92
	5510	102	n (40MHz)	13.5/15 (MCS0)	-4.15	11.0	-15.15
	5590	118	n (40MHz)	13.5/15 (MCS0)	0.87	11.0	-10.13
	5710	142	n (40MHz)	13.5/15 (MCS0)	1.15	11.0	-9.85
	5510	102	ax (40MHz)	13.5/15 (MCS0)	-6.72	11.0	-17.72
	5590	118	ax (40MHz)	13.5/15 (MCS0)	-2.36	11.0	-13.36
	5710	142	ax (40MHz)	13.5/15 (MCS0)	-2.23	11.0	-13.23
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-5.71	11.0	-16.71
	5610	122	ac (80MHz)	29.3/32.5 (MCS0)	-5.85	11.0	-16.85
	5530	106	ax (80MHz)	29.3/32.5 (MCS0)	-7.96	11.0	-18.96
	5610	122	ax (80MHz)	29.3/32.5 (MCS0)	-10.45	11.0	-21.45

Table 7-20. Bands 1, 2A, 2C Conducted Power Spectral Density Measurements SISO ANT1

FCC ID: ZNFV600AM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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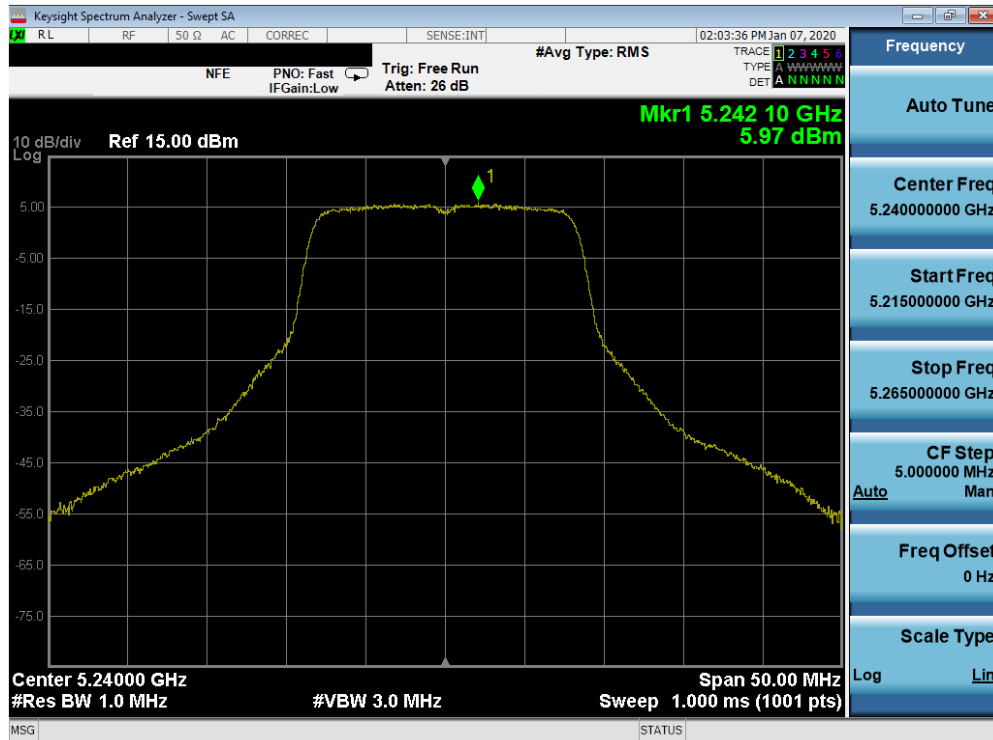


Plot 7-129. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 1) – Ch. 36)

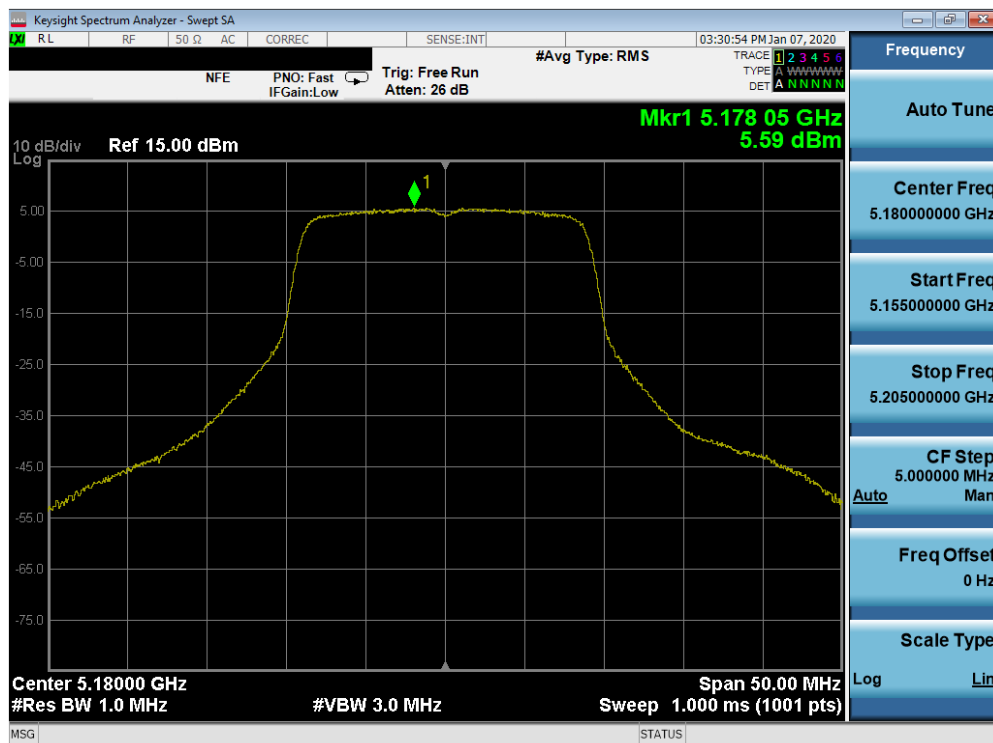


Plot 7-130. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 1) – Ch. 40)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07-ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 97 of 234

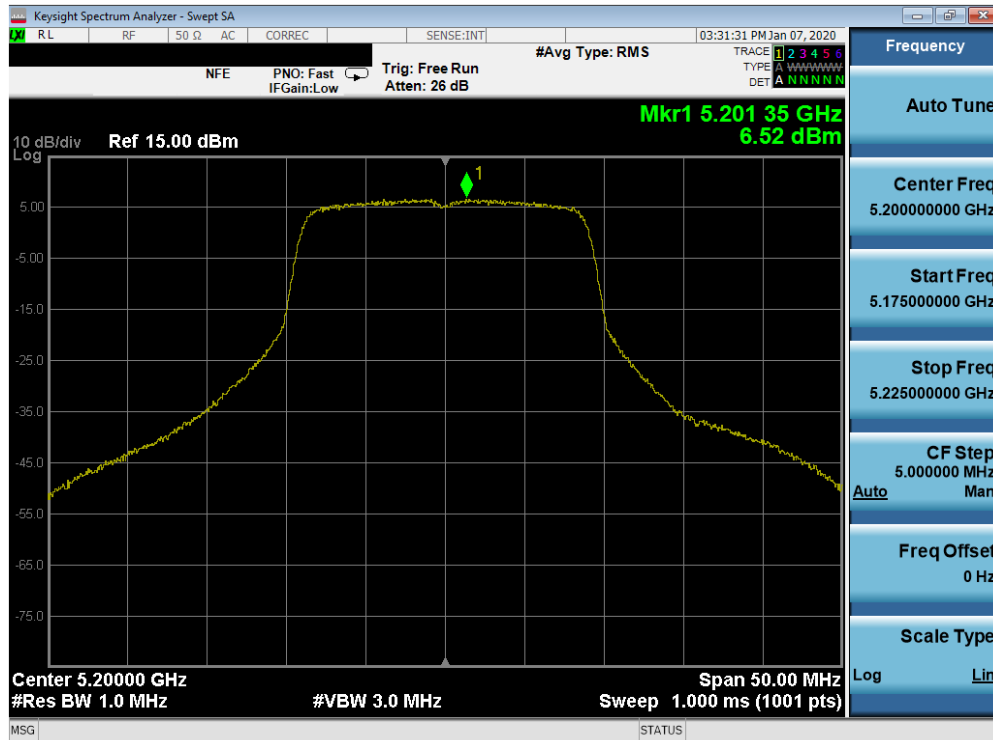


Plot 7-131. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 1) – Ch. 48)

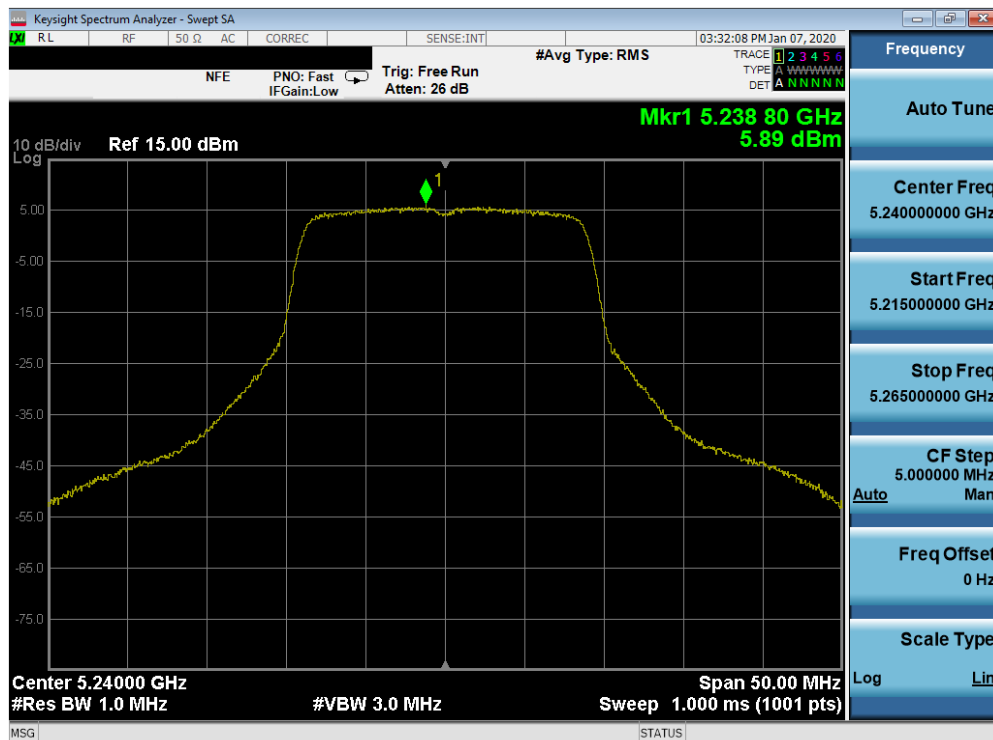


Plot 7-132. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 98 of 234

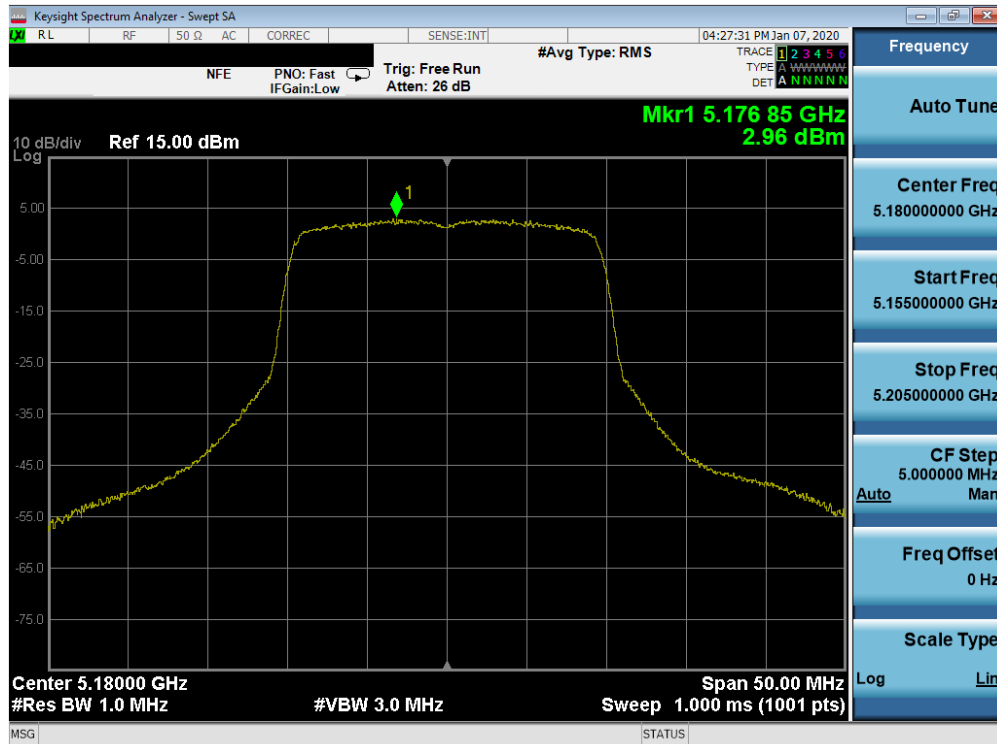


Plot 7-133. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

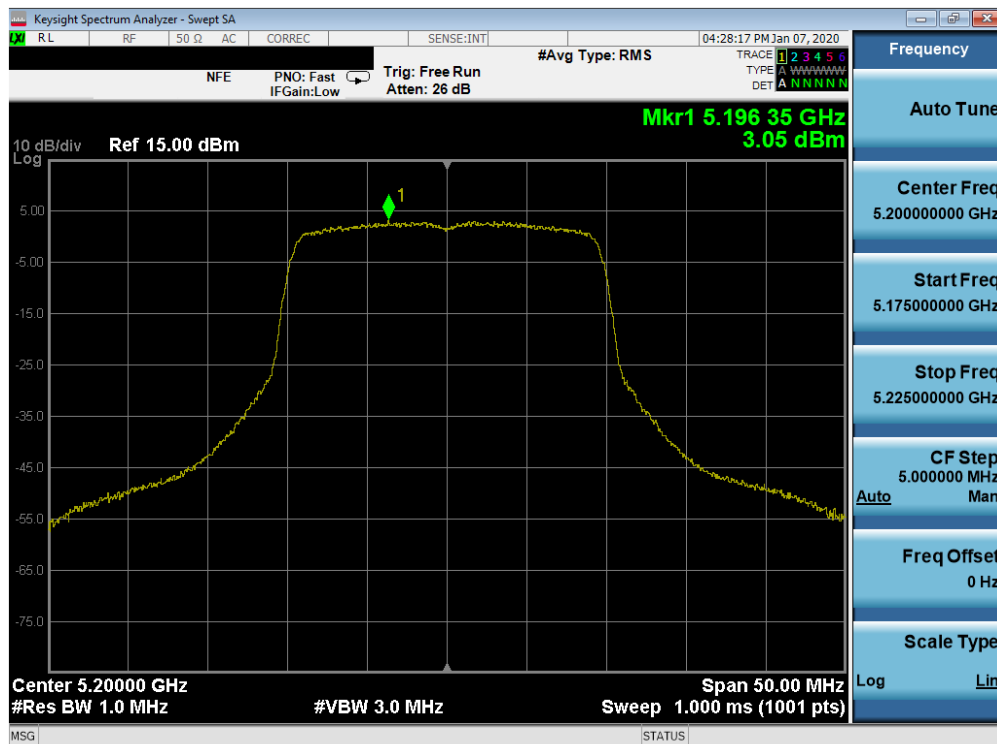


Plot 7-134. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 99 of 234

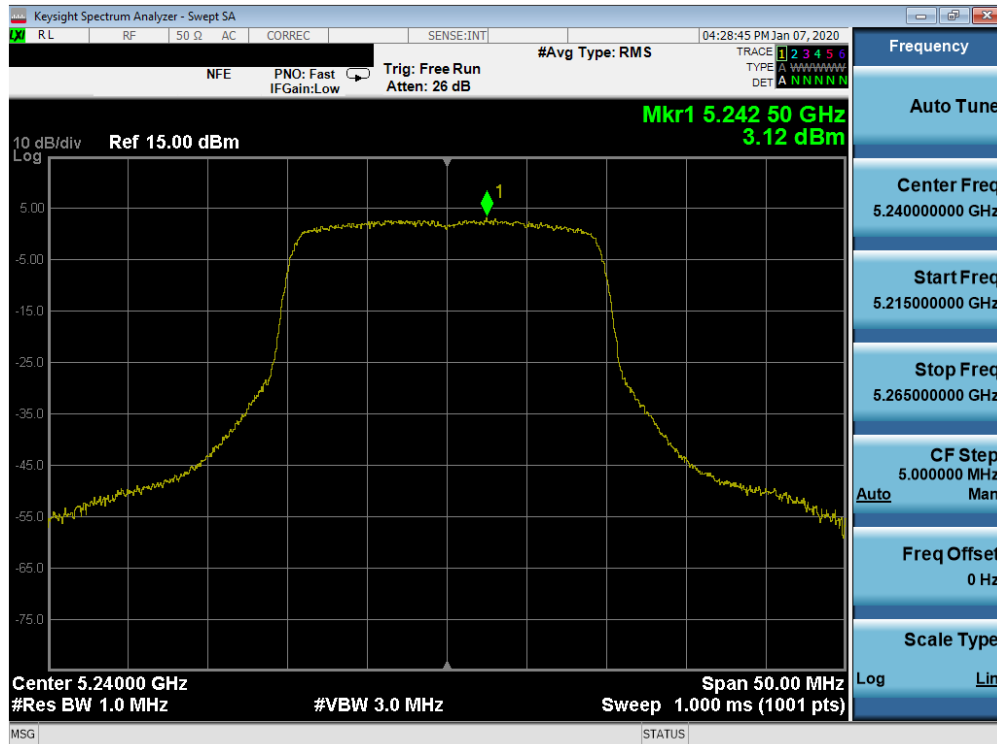


Plot 7-135. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax (UNII Band 1) – Ch. 36)

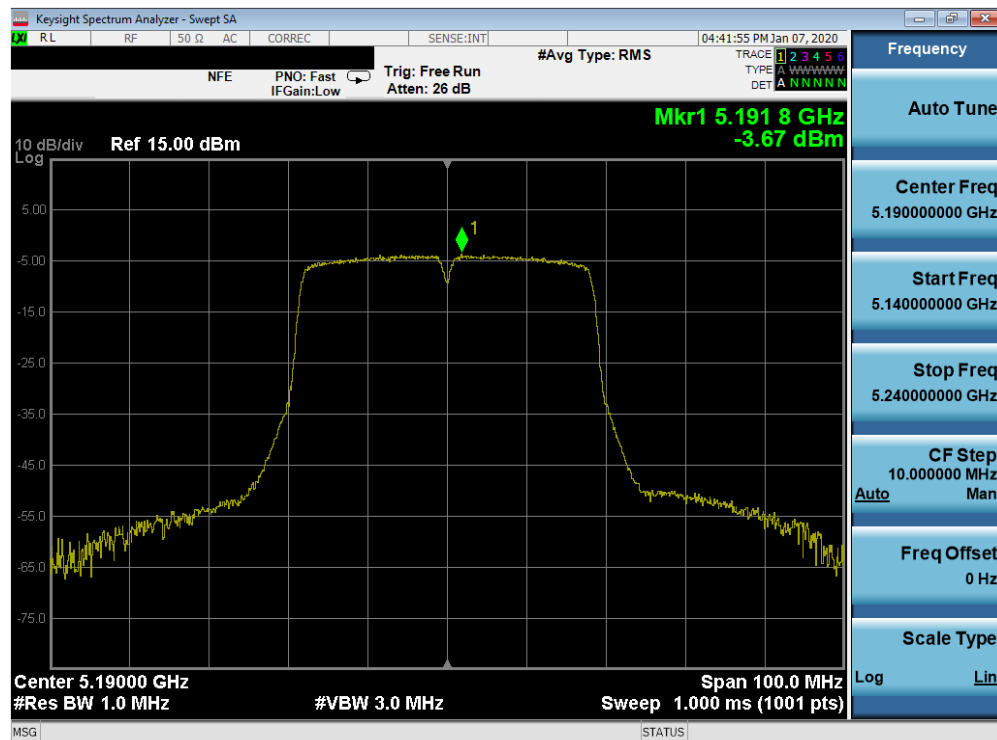


Plot 7-136. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax (UNII Band 1) – Ch. 40)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 100 of 234

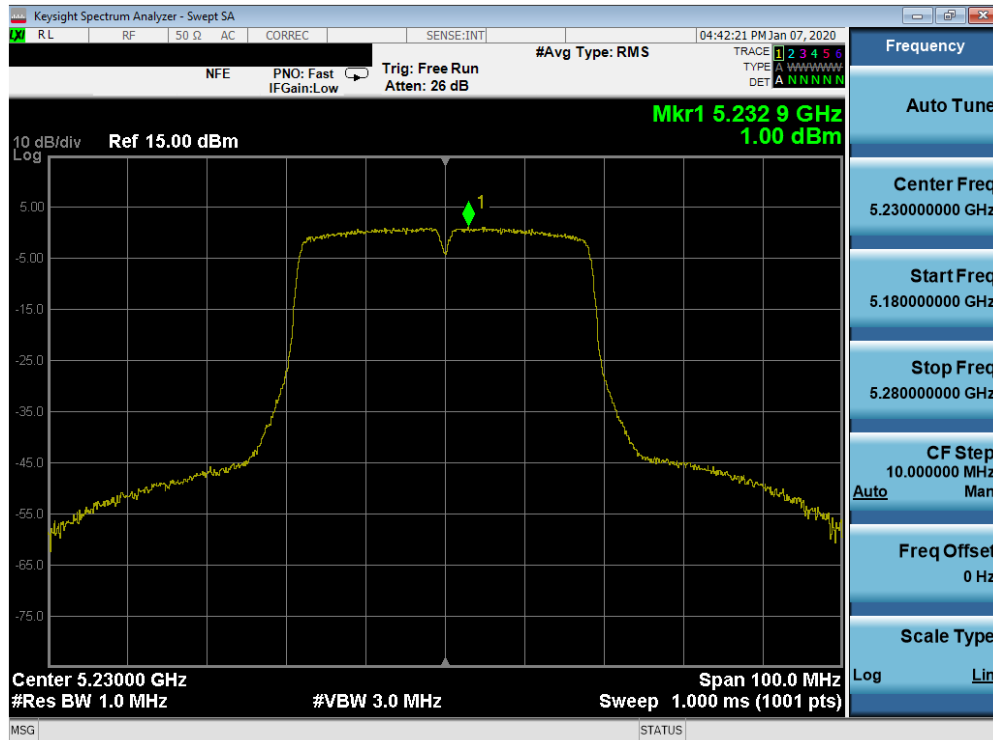


Plot 7-137. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax (UNII Band 1) – Ch. 48)

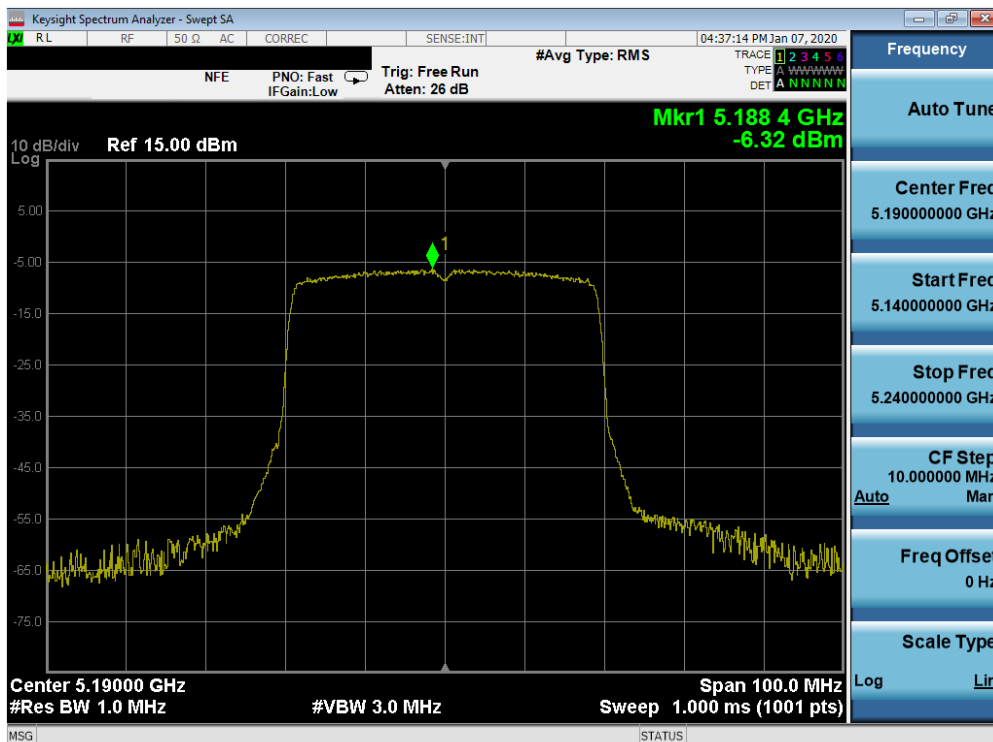


Plot 7-138. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 101 of 234

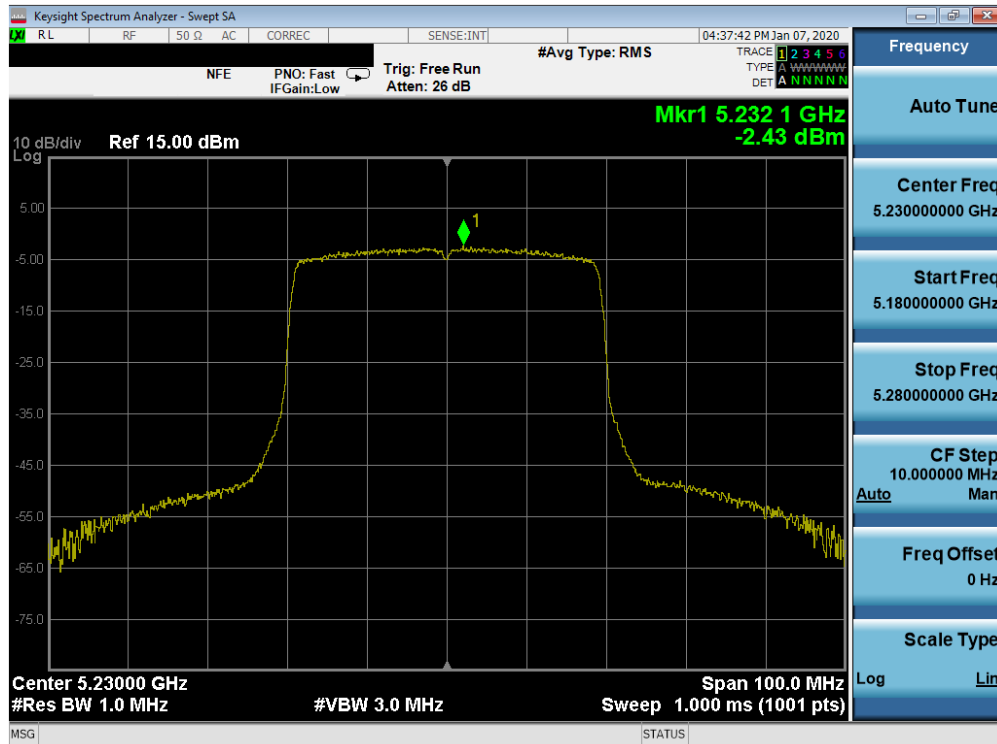


Plot 7-139. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

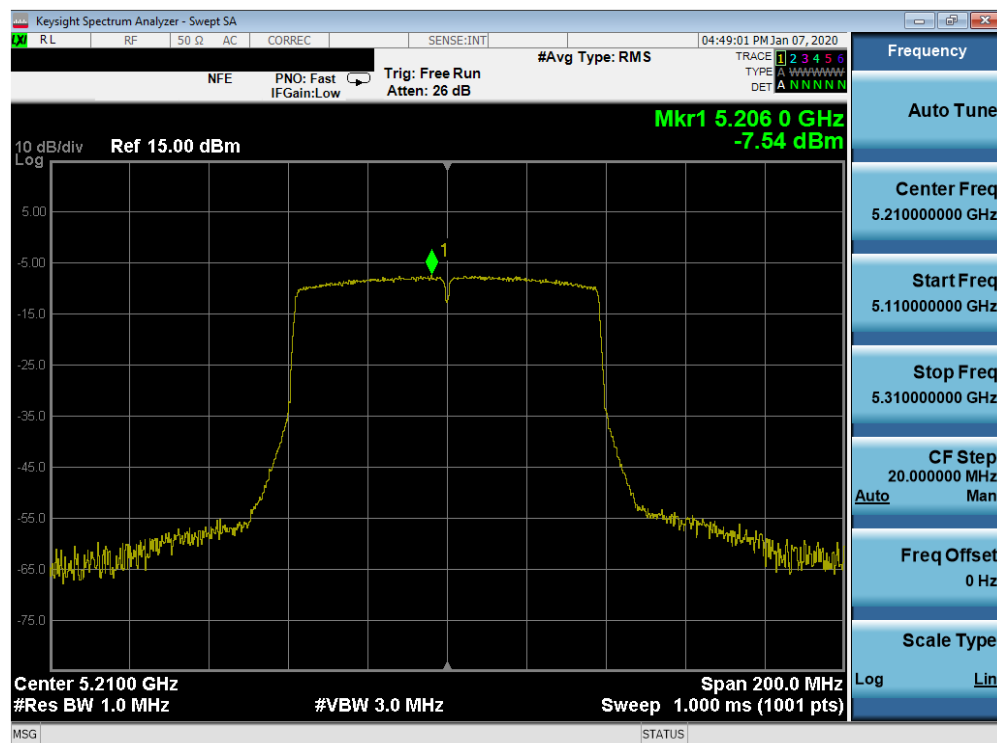


Plot 7-140. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax (UNII Band 1) – Ch. 38)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 102 of 234

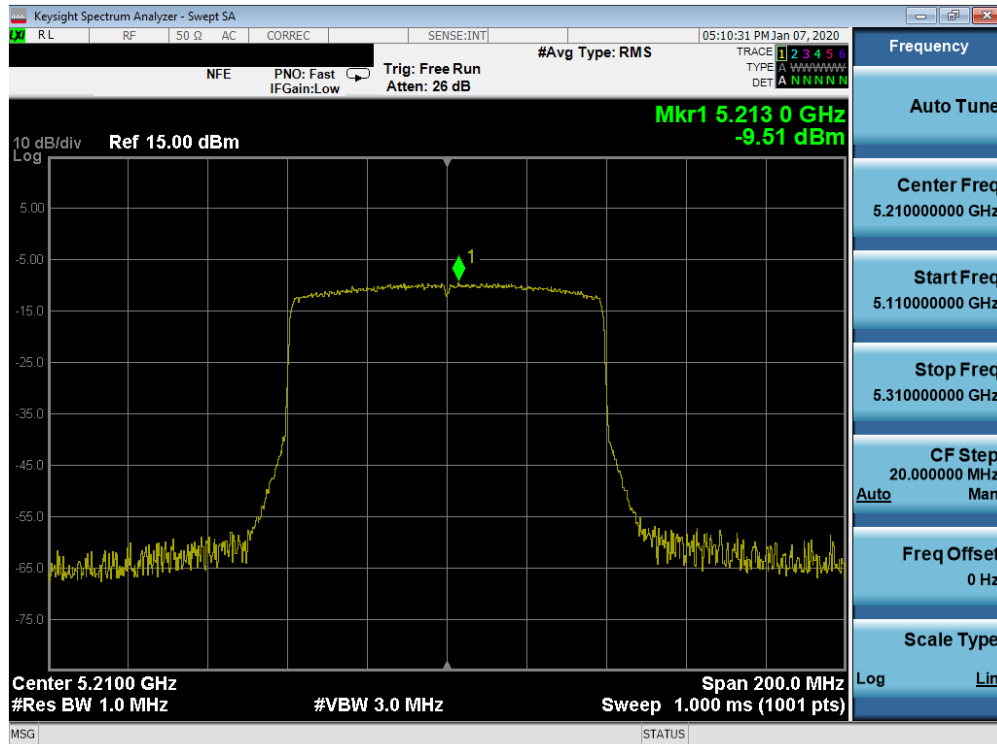


Plot 7-141. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax (UNII Band 1) – Ch. 46)

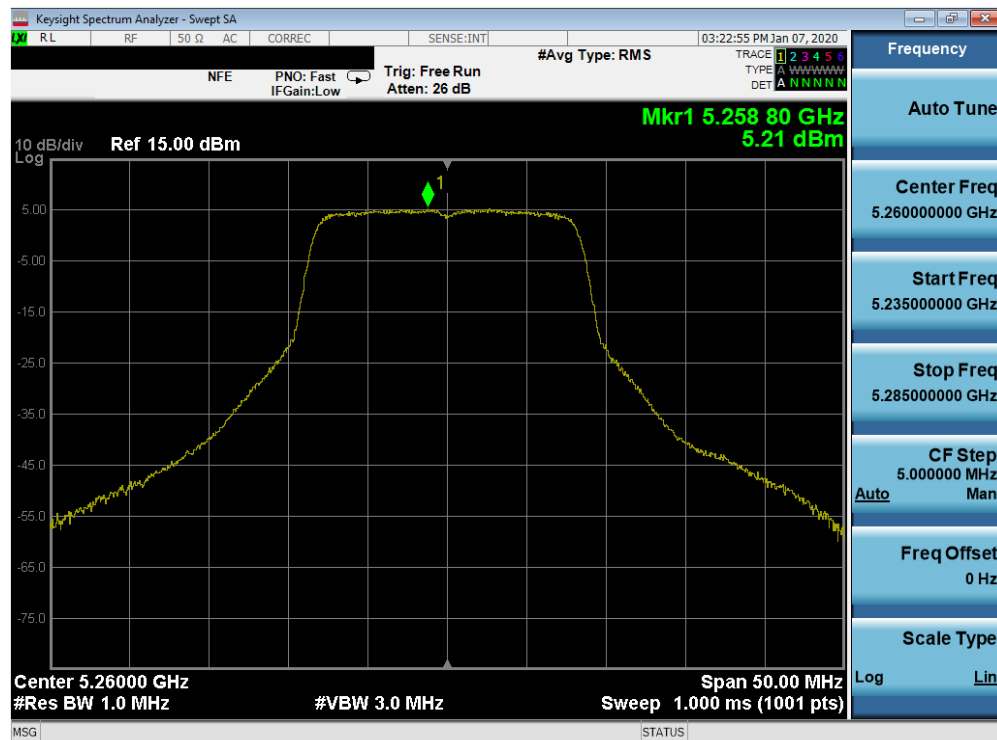


Plot 7-142. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 103 of 234

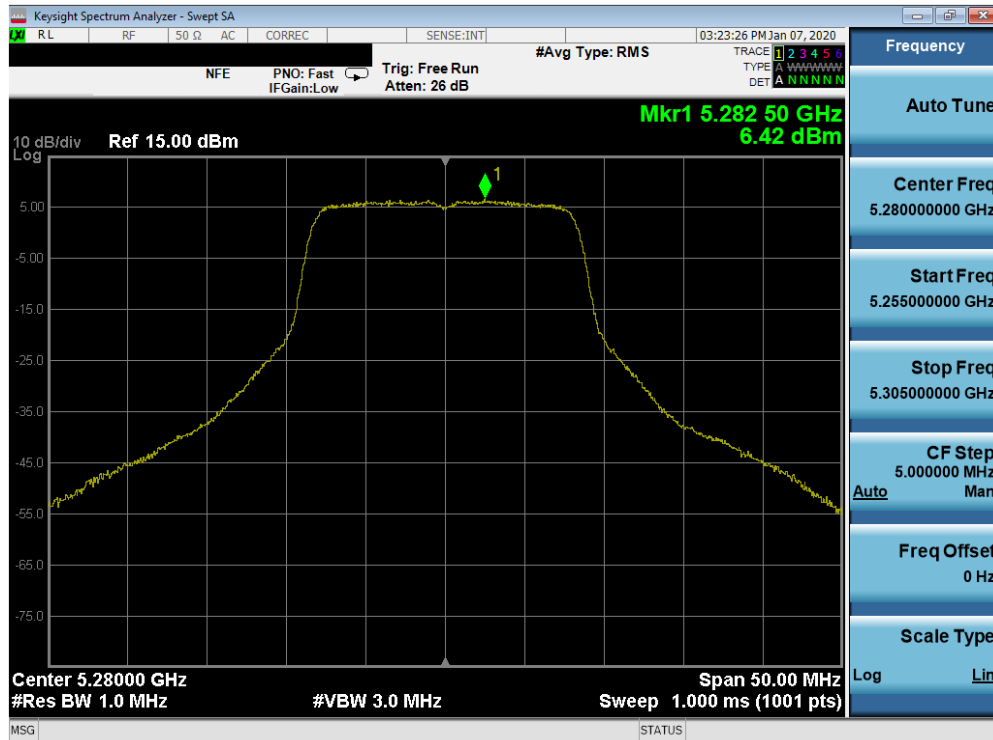


Plot 7-143. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax (UNII Band 1) – Ch. 42)

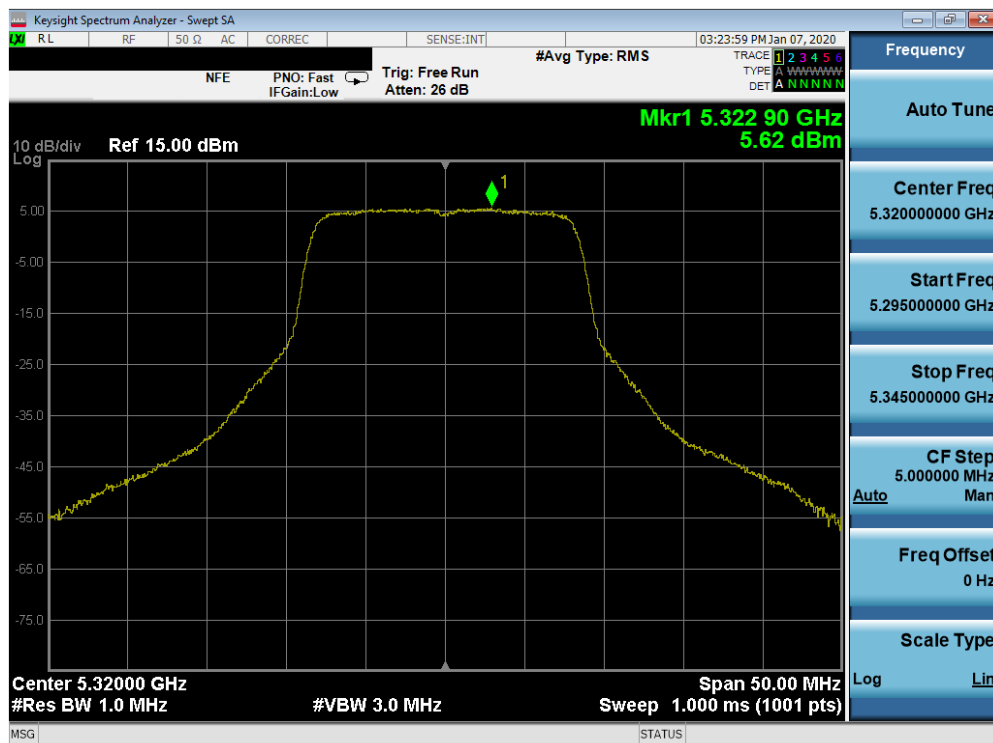


Plot 7-144. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 2A) – Ch. 52)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 104 of 234

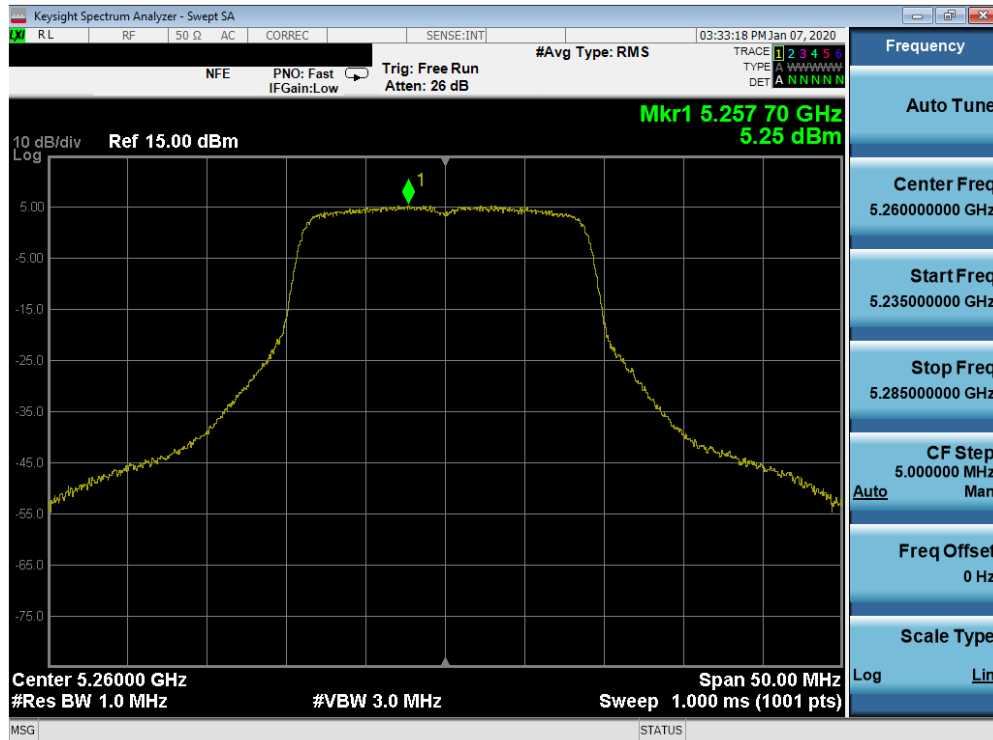


Plot 7-145. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 2A) – Ch. 56)

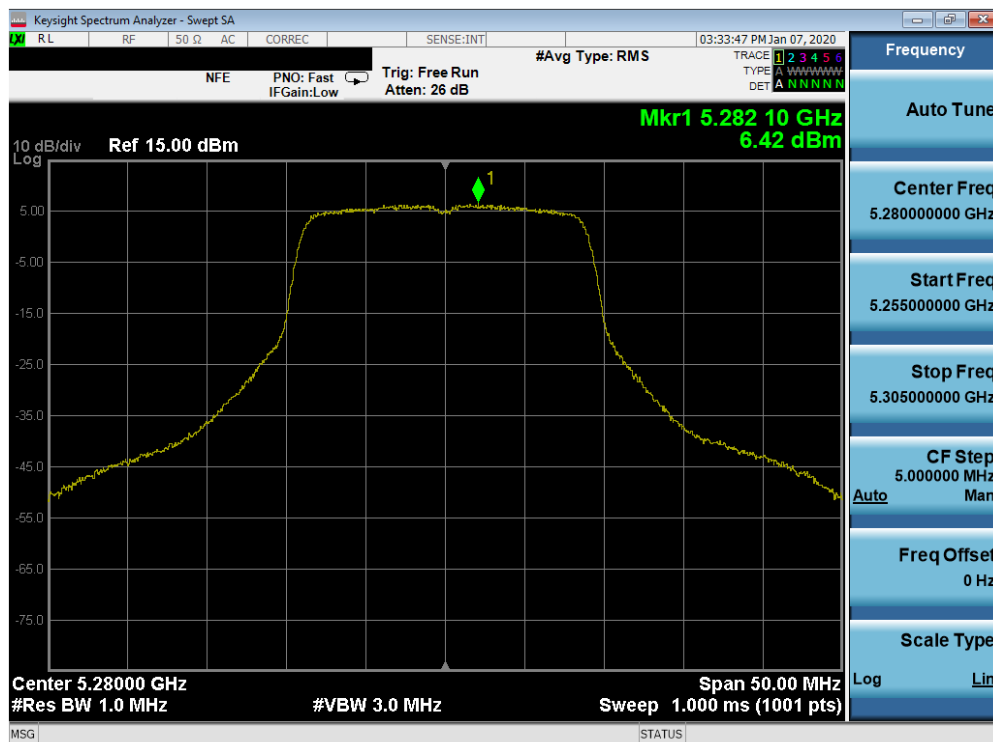


Plot 7-146. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 2A) – Ch. 64)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 105 of 234

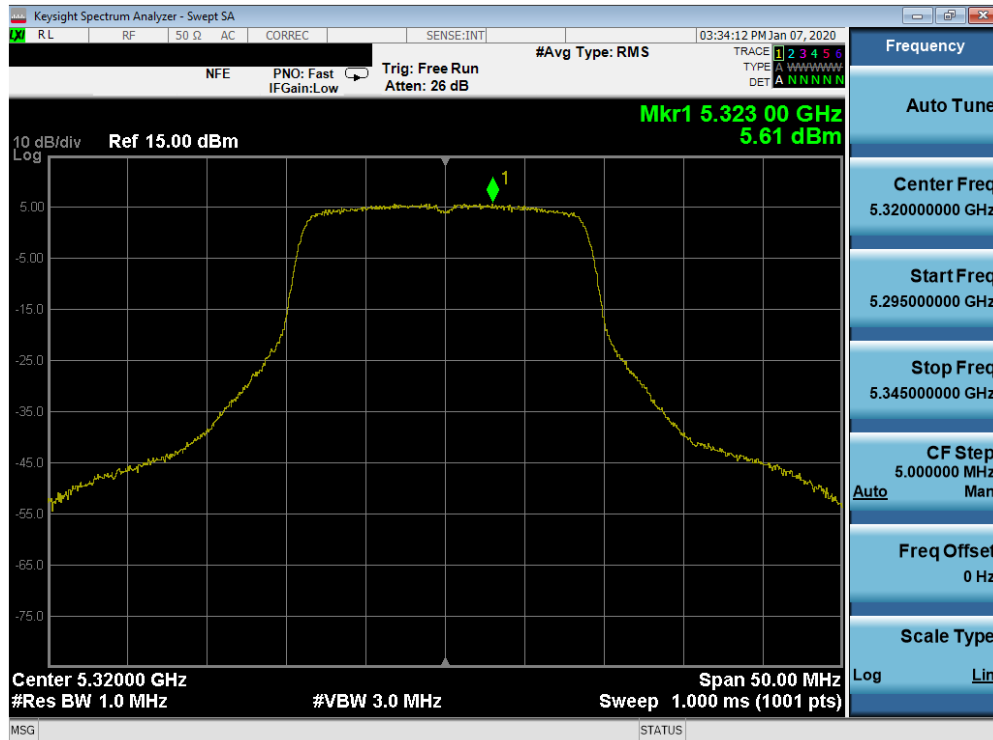


Plot 7-147. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

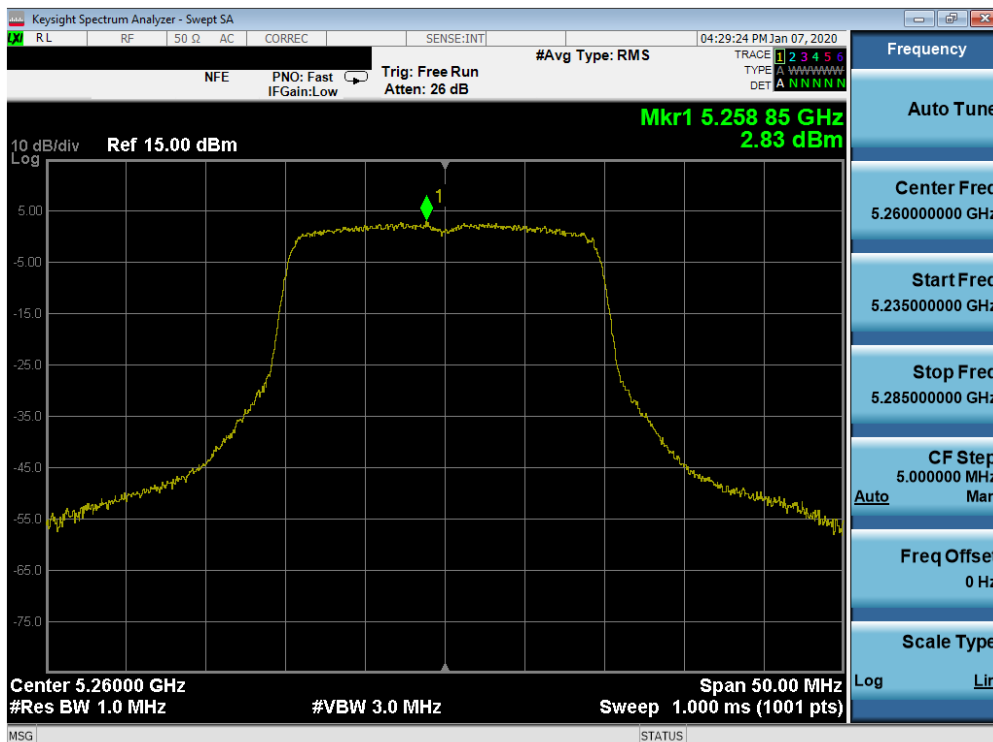


Plot 7-148. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 106 of 234

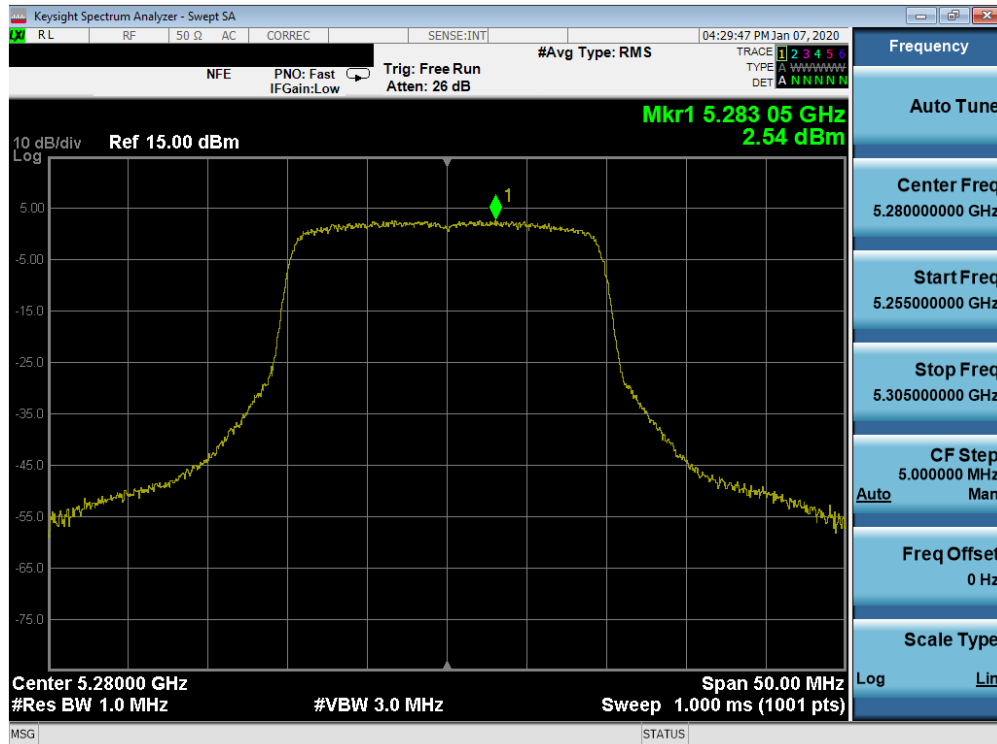


Plot 7-149. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

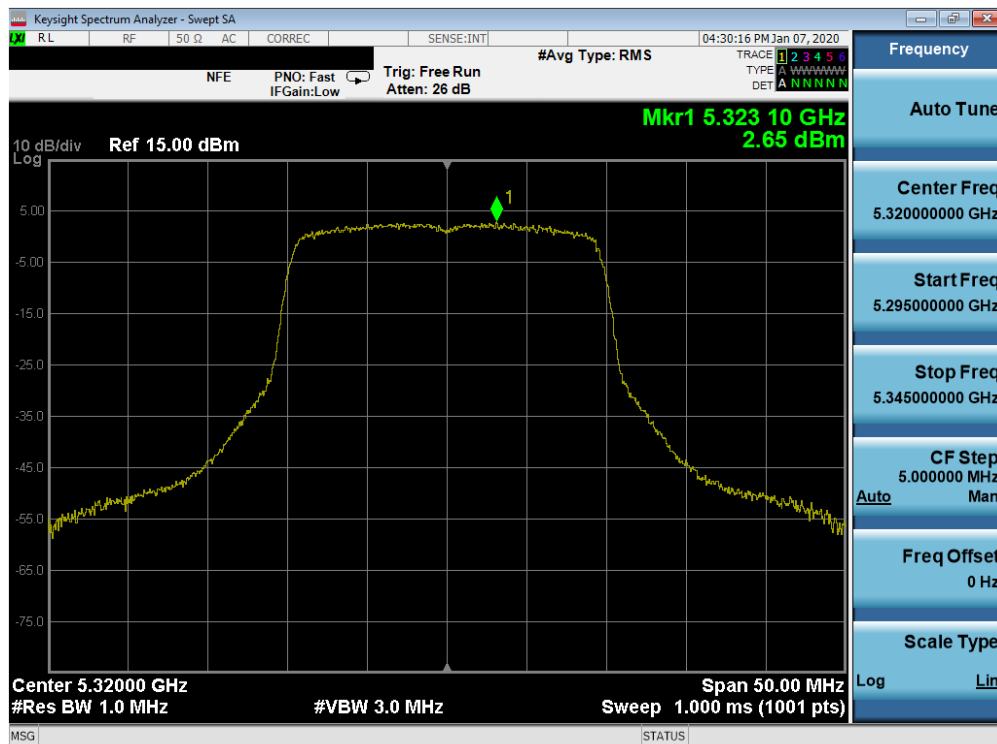


Plot 7-150. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax (UNII Band 2A) – Ch. 52)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 107 of 234

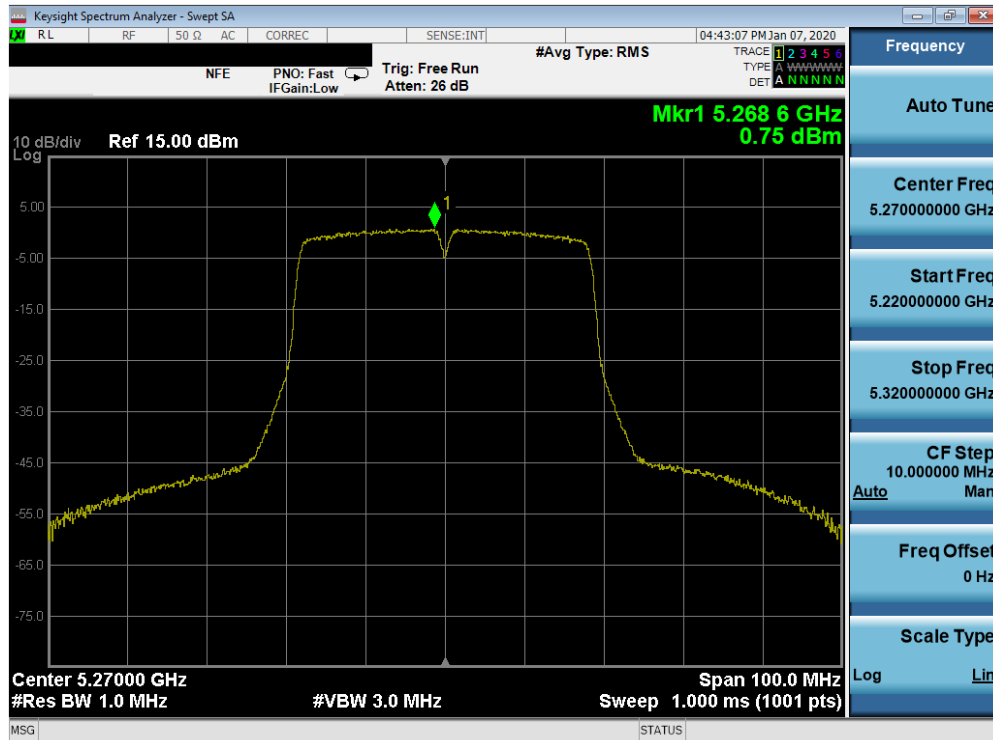


Plot 7-151. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax (UNII Band 2A) – Ch. 56)

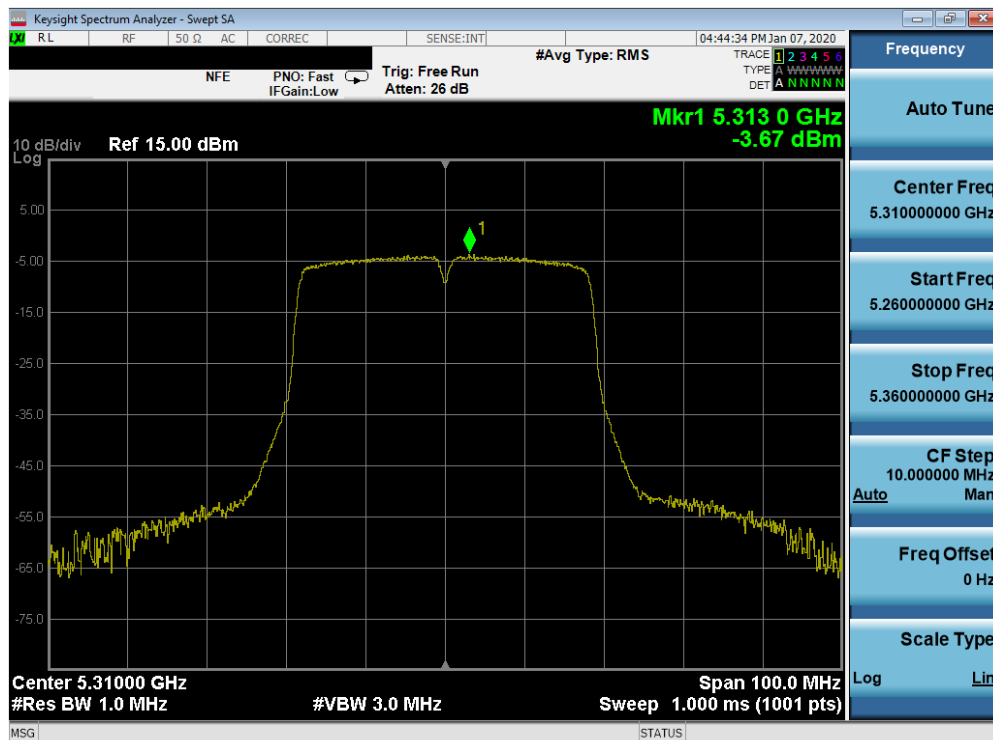


Plot 7-152. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax (UNII Band 2A) – Ch. 64)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 108 of 234

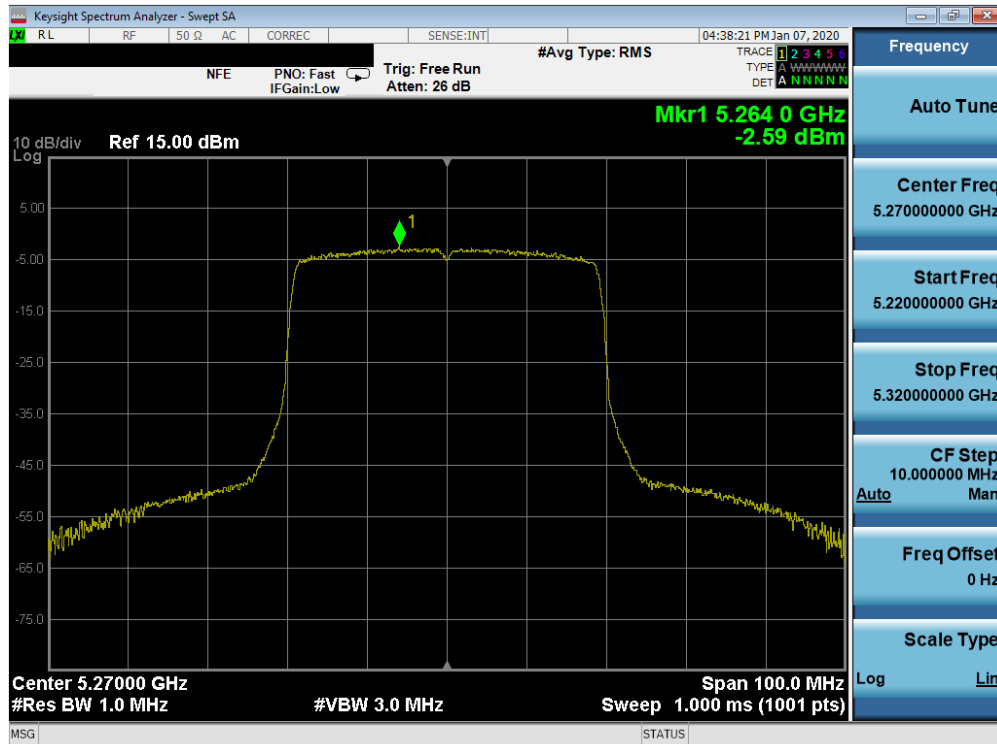


Plot 7-153. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

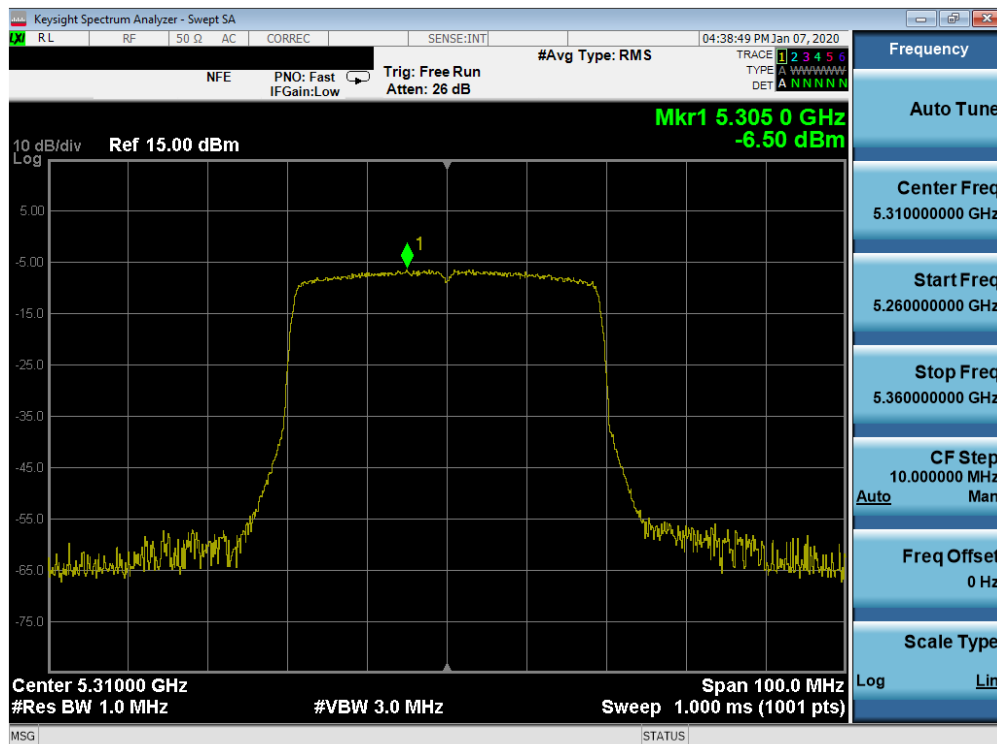


Plot 7-154. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 109 of 234

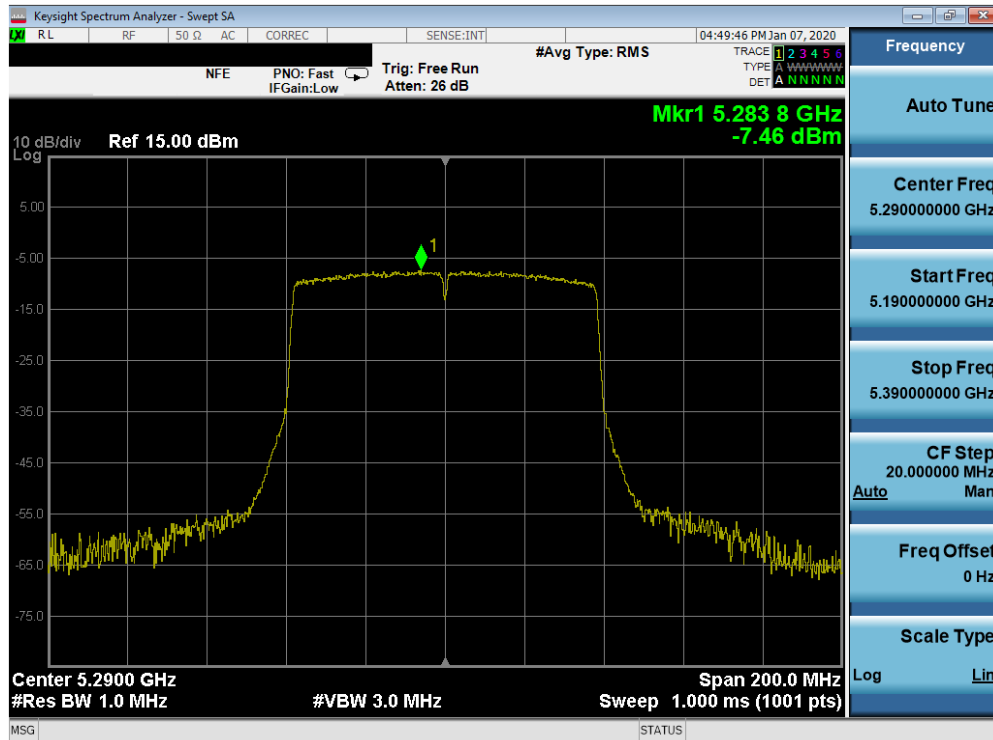


Plot 7-155. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax (UNII Band 2A) – Ch. 54)

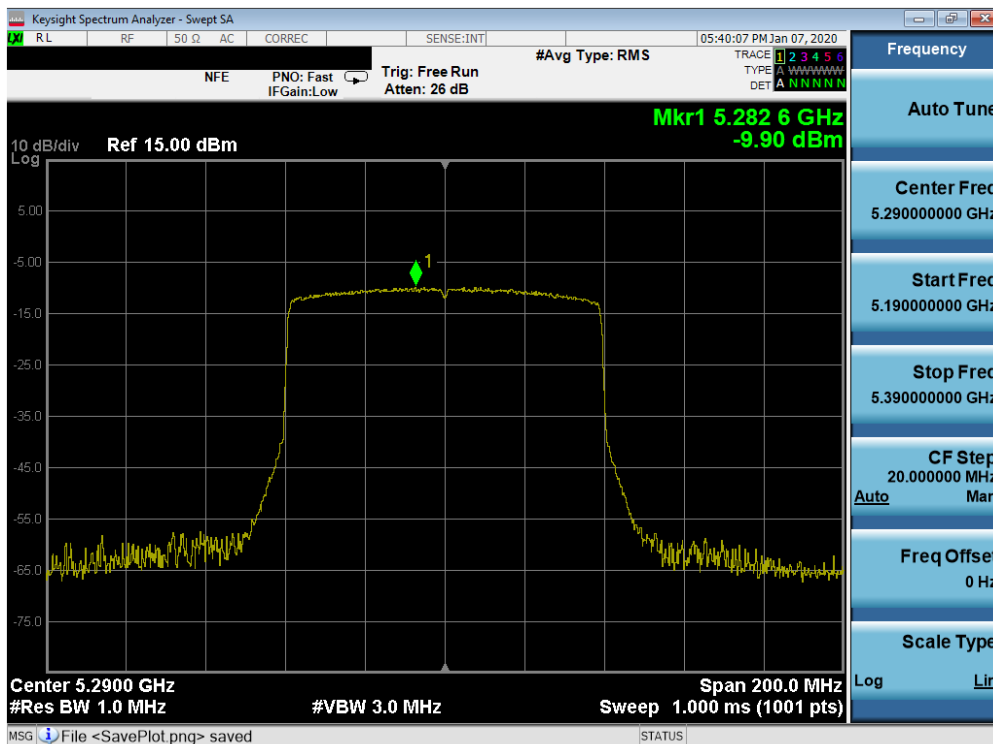


Plot 7-156. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax (UNII Band 2A) – Ch. 62)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 110 of 234

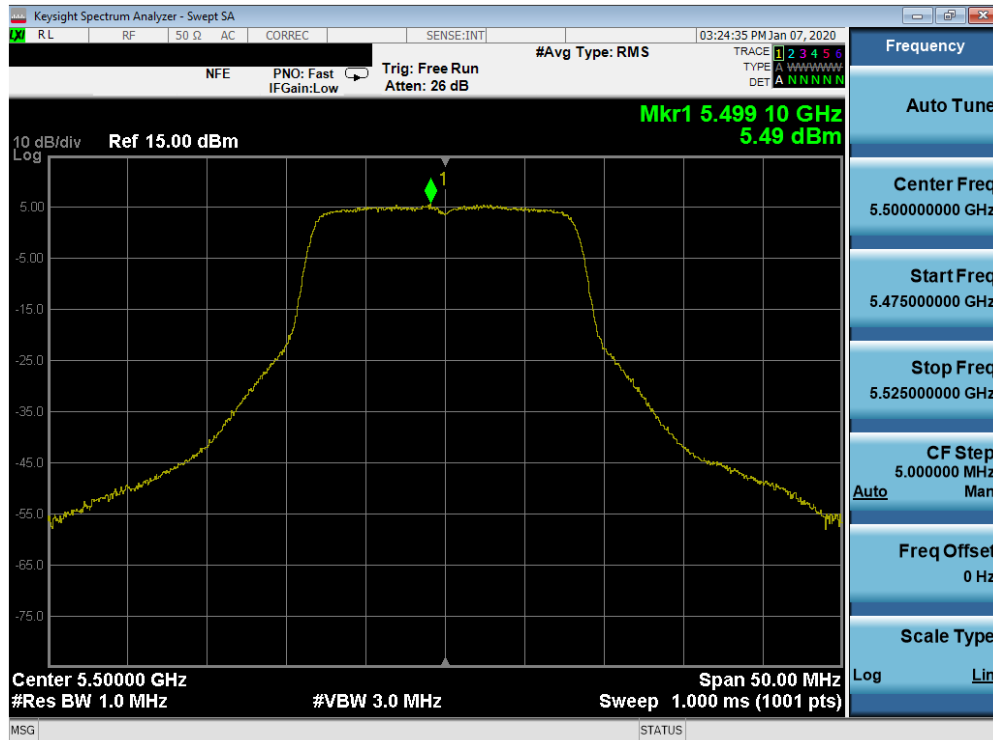


Plot 7-157. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

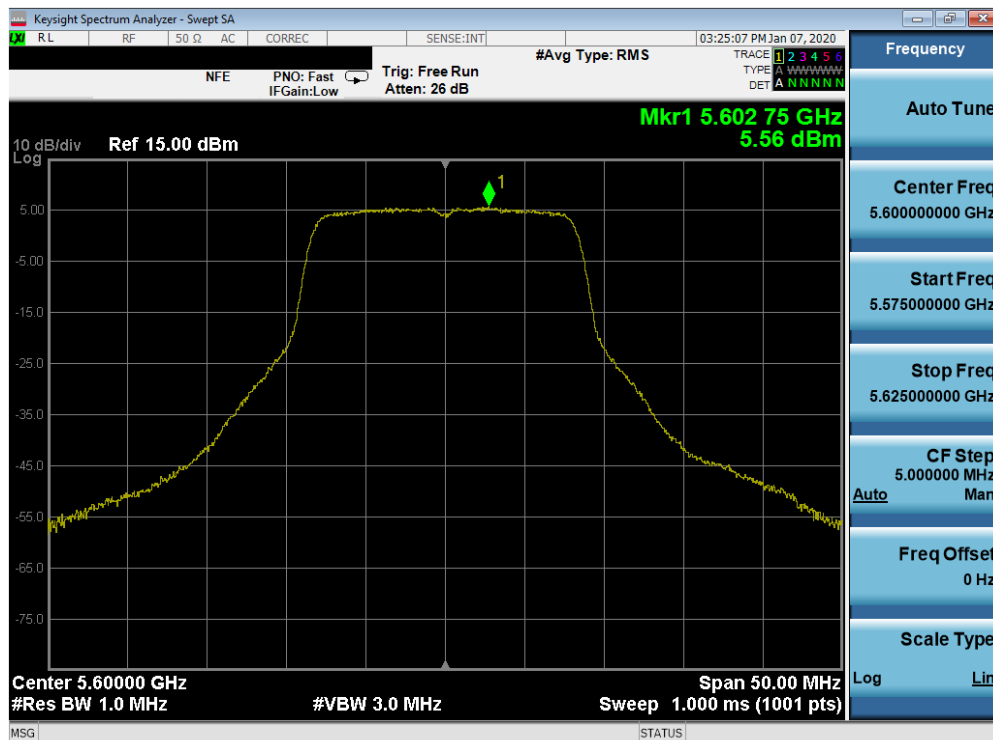


Plot 7-158. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax (UNII Band 2A) – Ch. 58)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 111 of 234

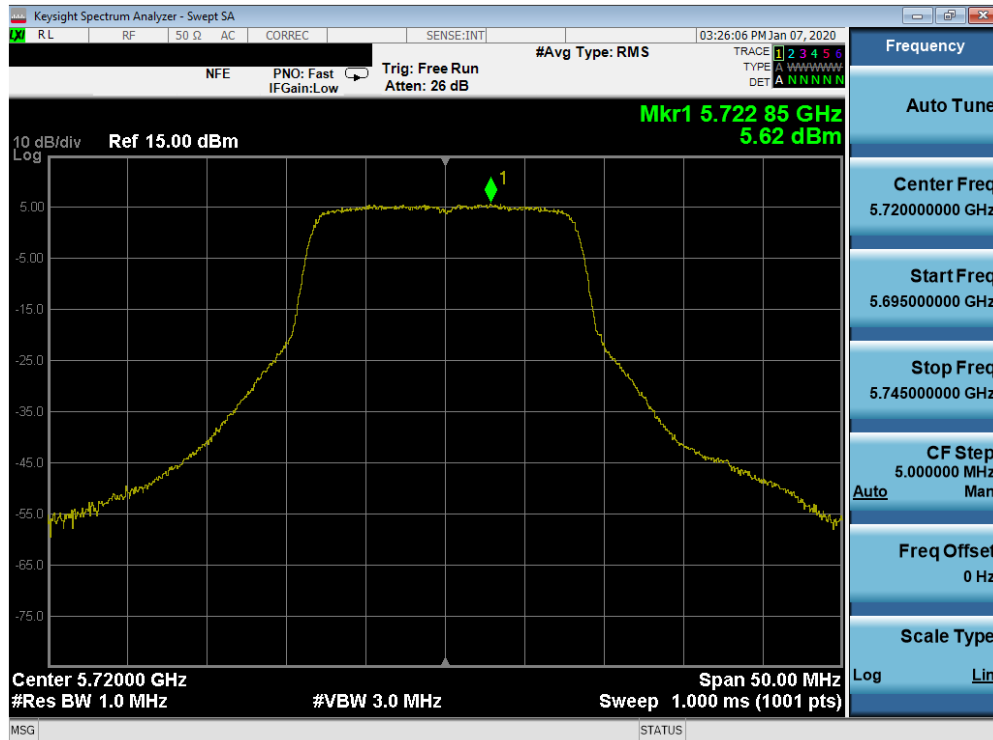


Plot 7-159. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 2C) – Ch. 100)

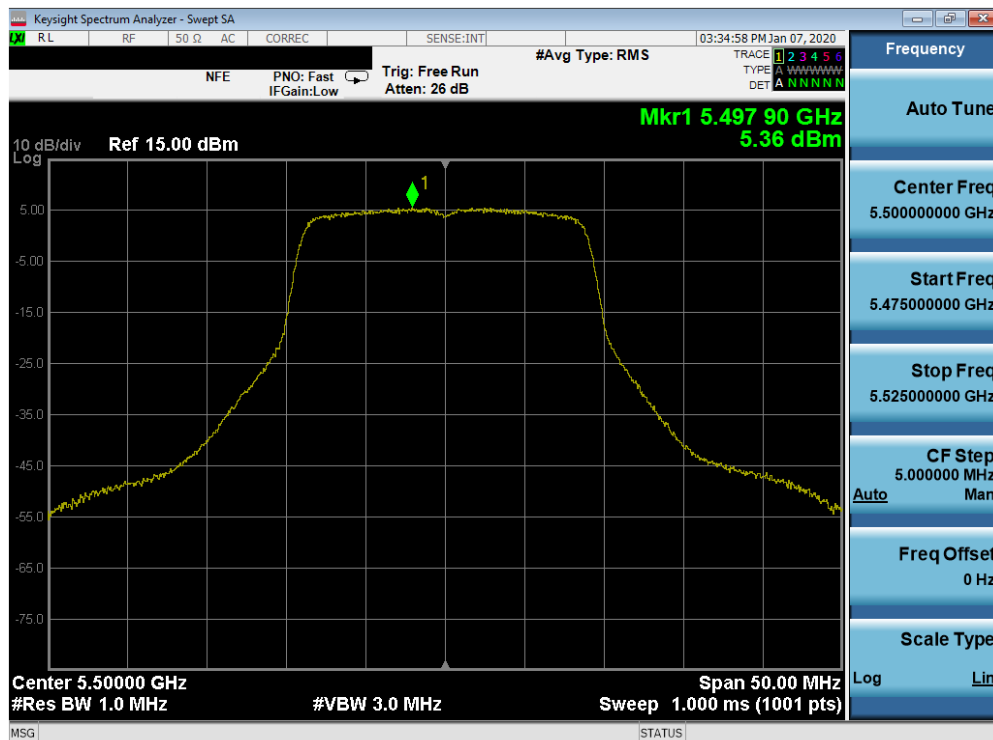


Plot 7-160. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 2C) – Ch. 120)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 112 of 234

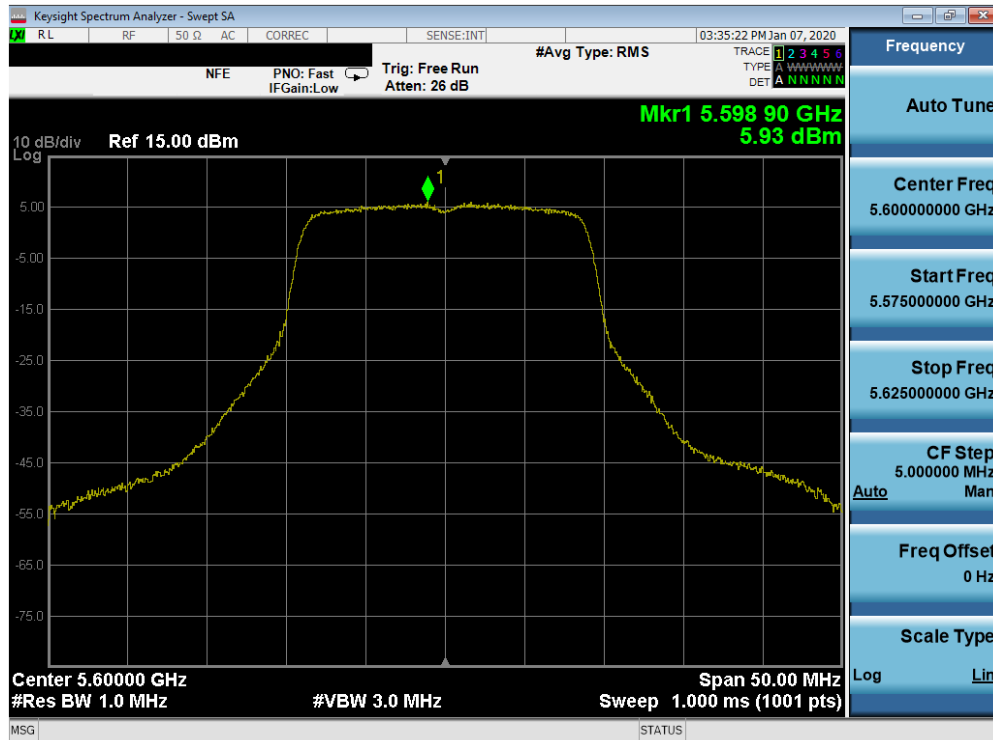


Plot 7-161. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 2C) – Ch. 144)

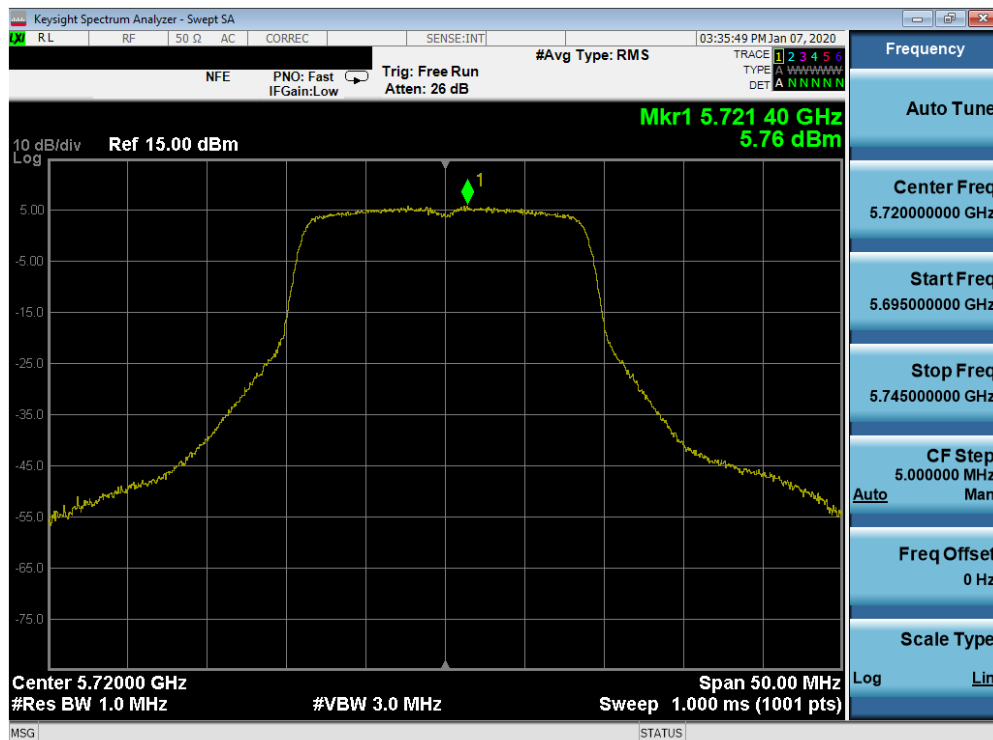


Plot 7-162. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 113 of 234

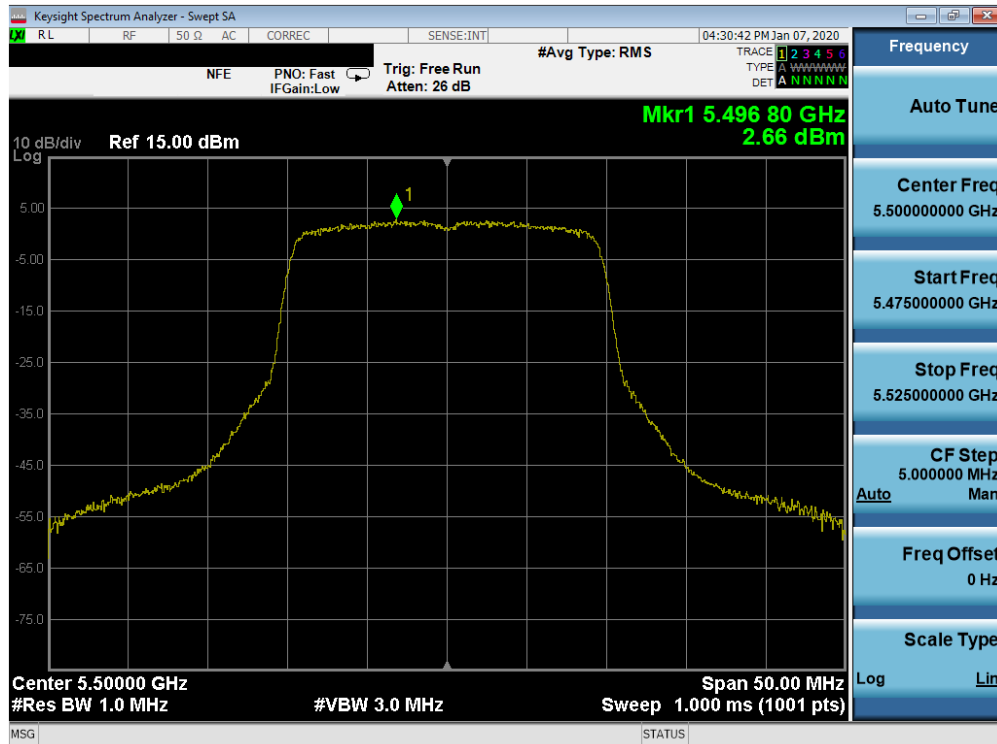


Plot 7-163. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2C) – Ch. 120)

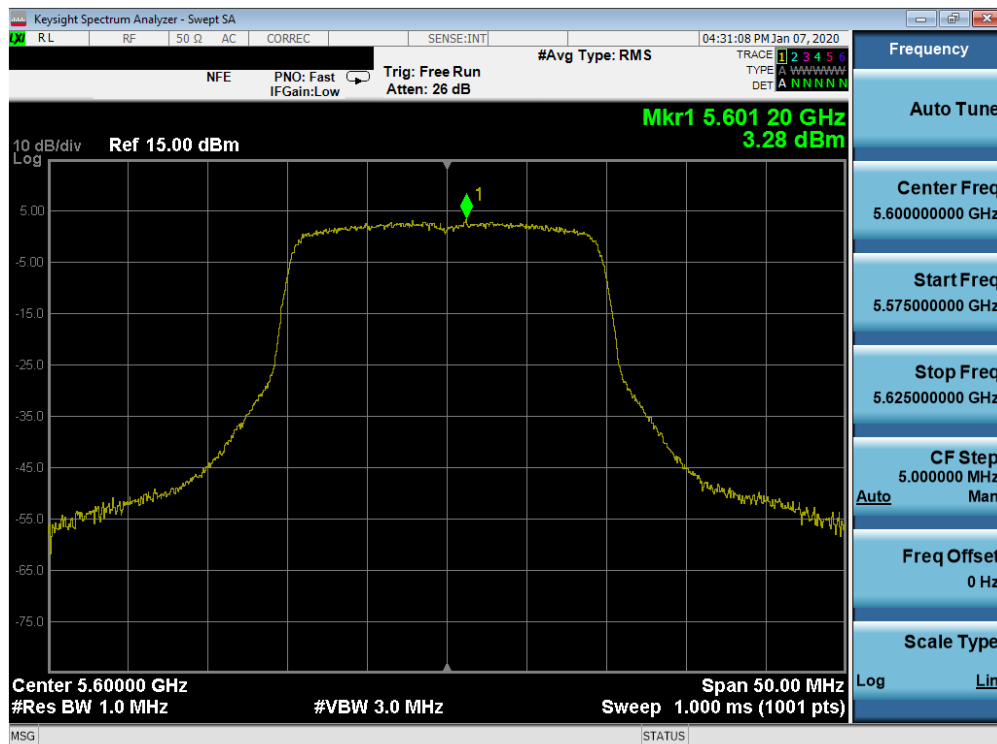


Plot 7-164. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 2C) – Ch. 144)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 114 of 234

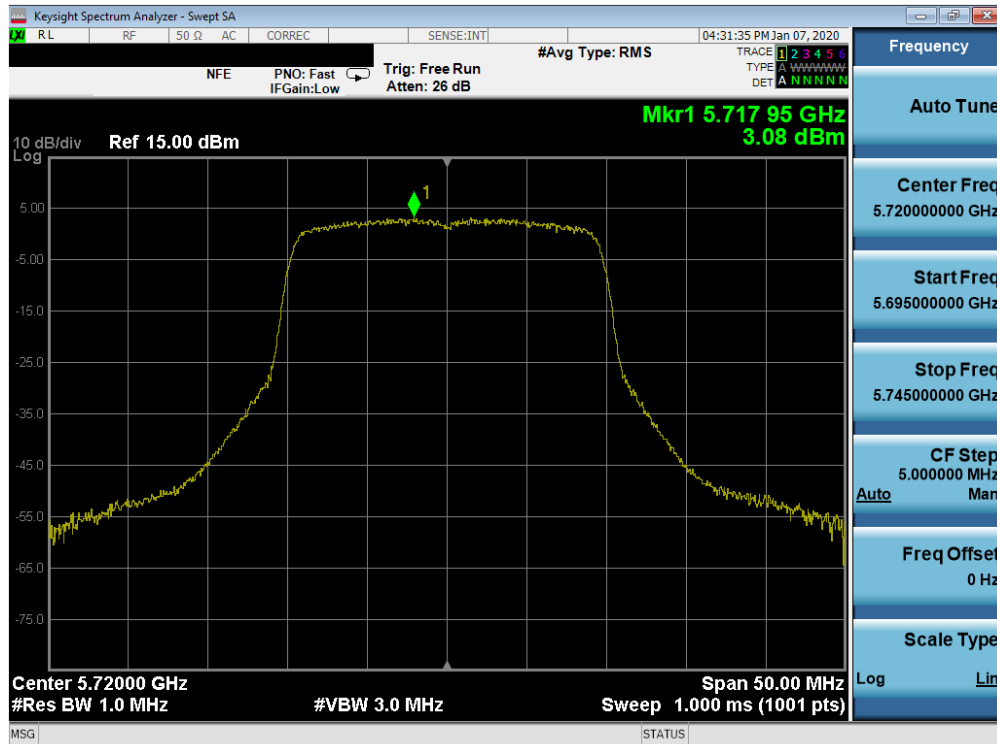


Plot 7-165. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax (UNII Band 2C) – Ch. 100)

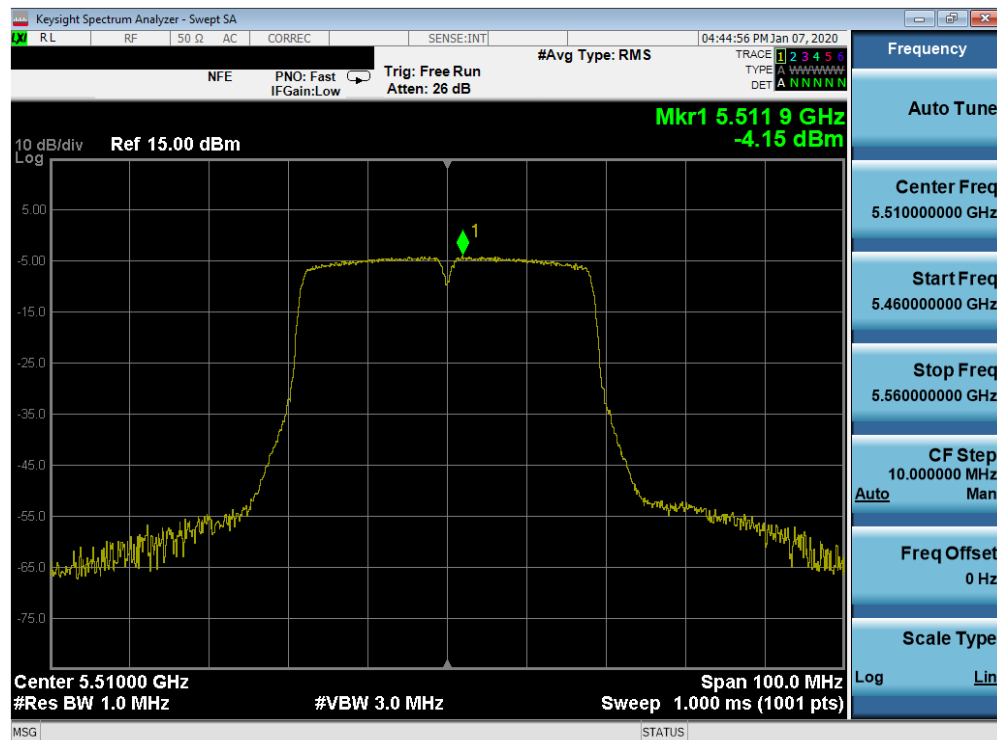


Plot 7-166. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax (UNII Band 2C) – Ch. 120)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 115 of 234

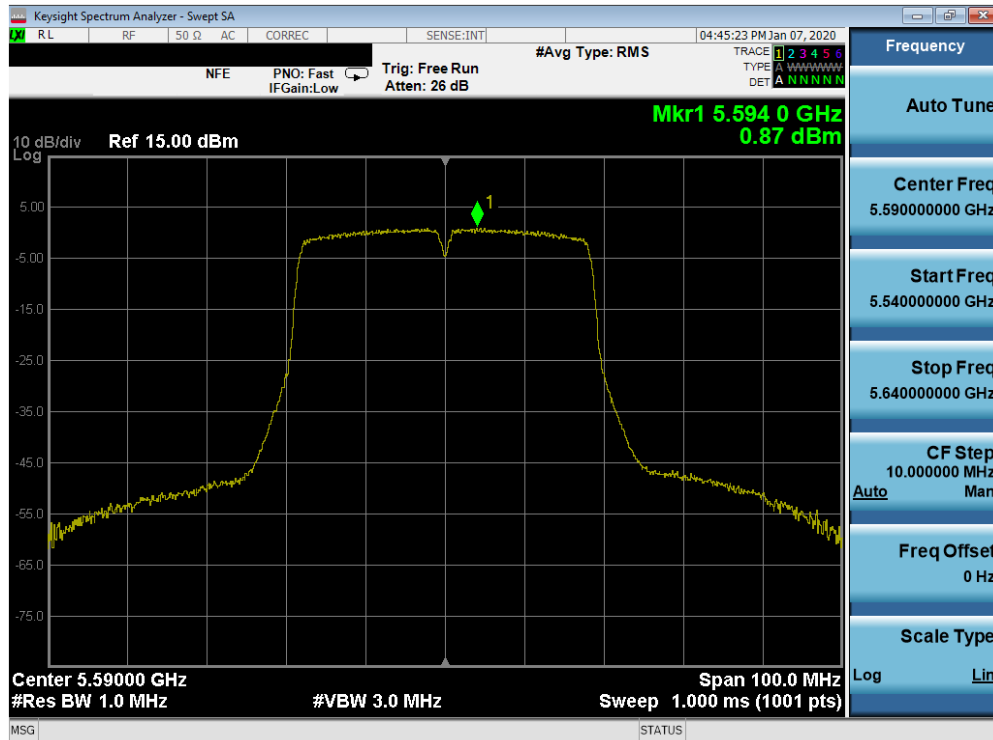


Plot 7-167. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax (UNII Band 2C) – Ch. 144)

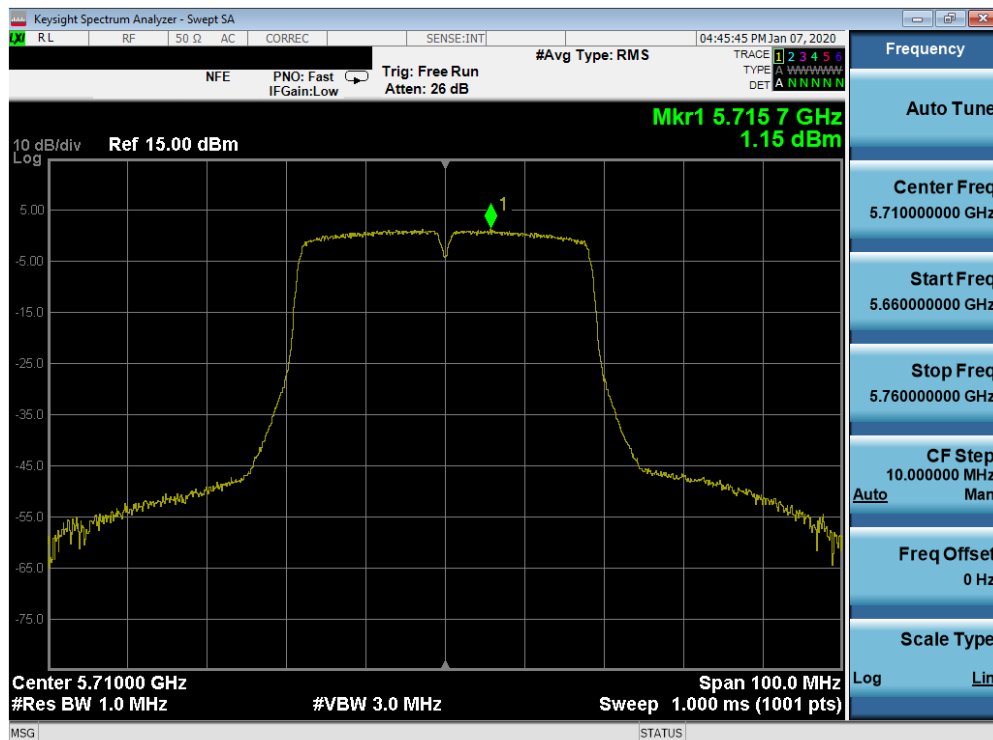


Plot 7-168. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 116 of 234

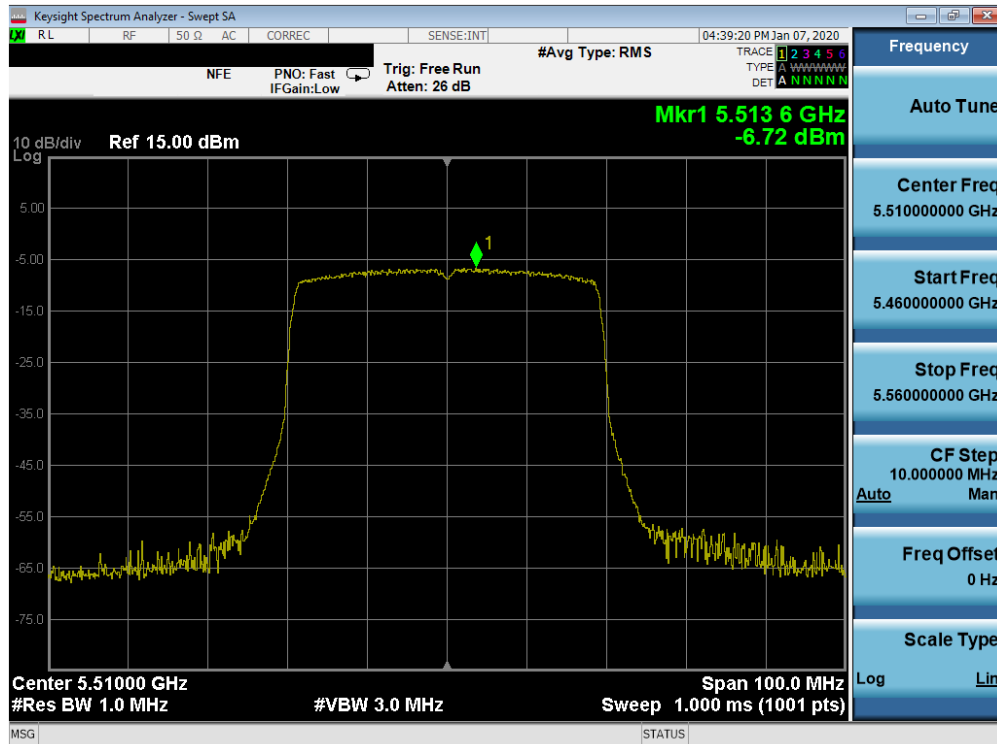


Plot 7-169. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 2C) – Ch. 118)

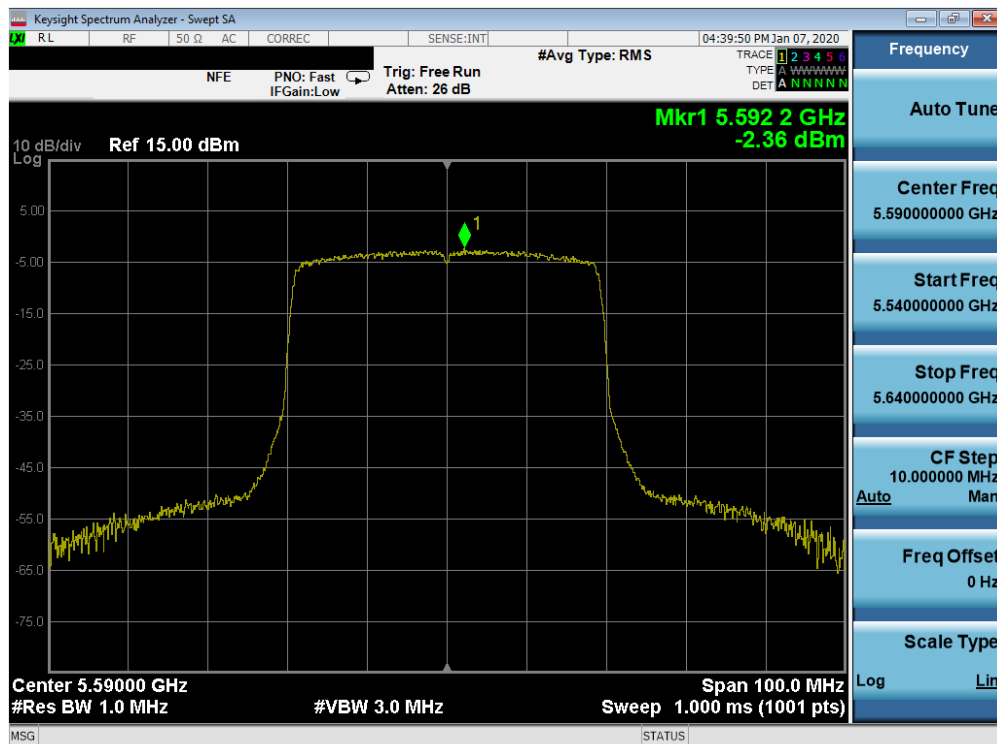


Plot 7-170. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 117 of 234

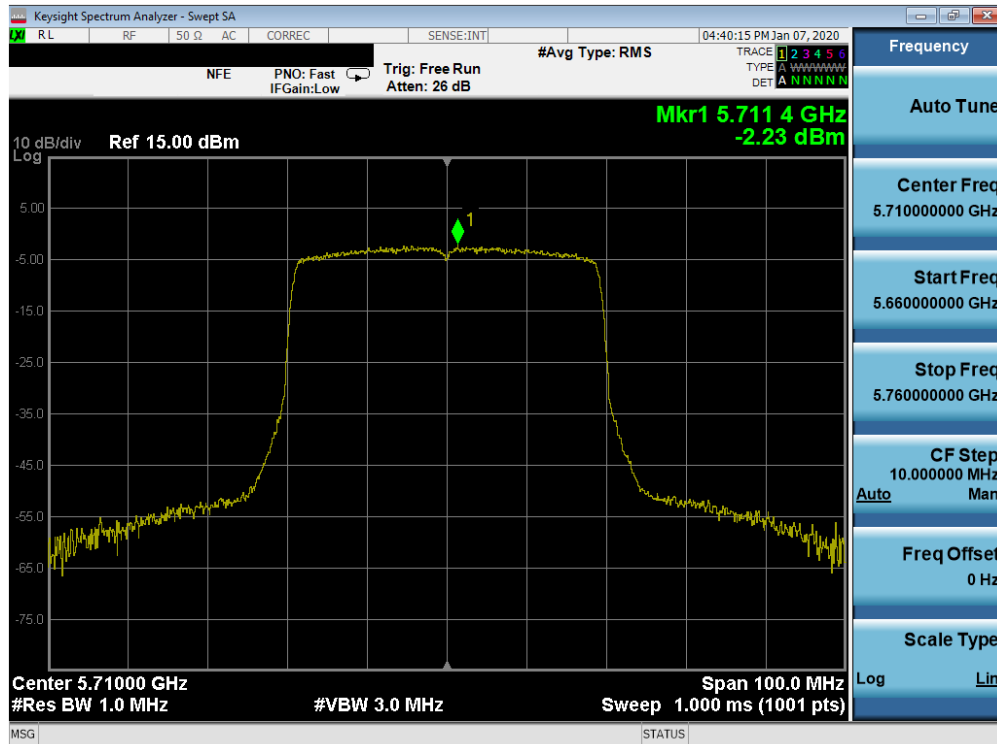


Plot 7-171. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax (UNII Band 2C) – Ch. 102)

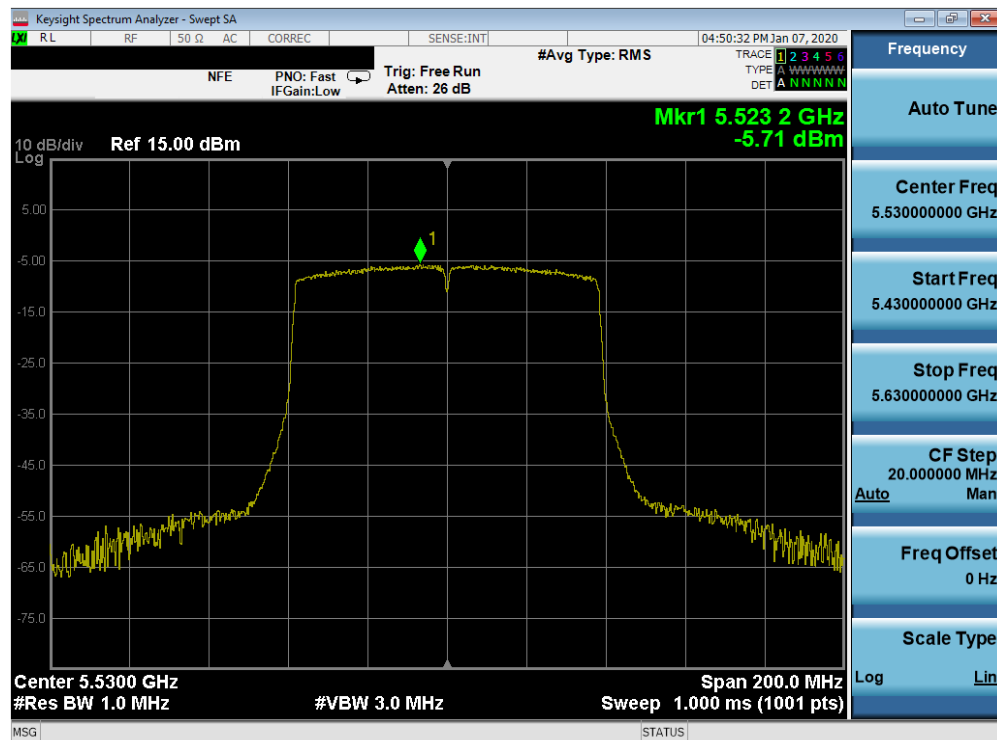


Plot 7-172. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax (UNII Band 2C) – Ch. 118)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 118 of 234

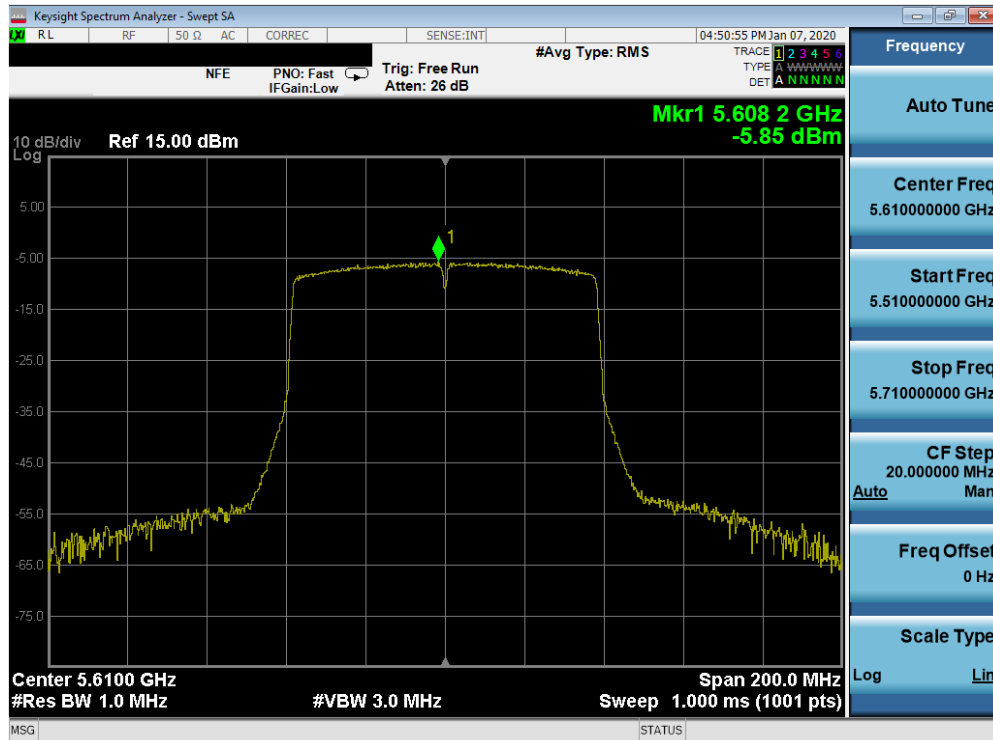


Plot 7-173. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax (UNII Band 2C) – Ch. 142)

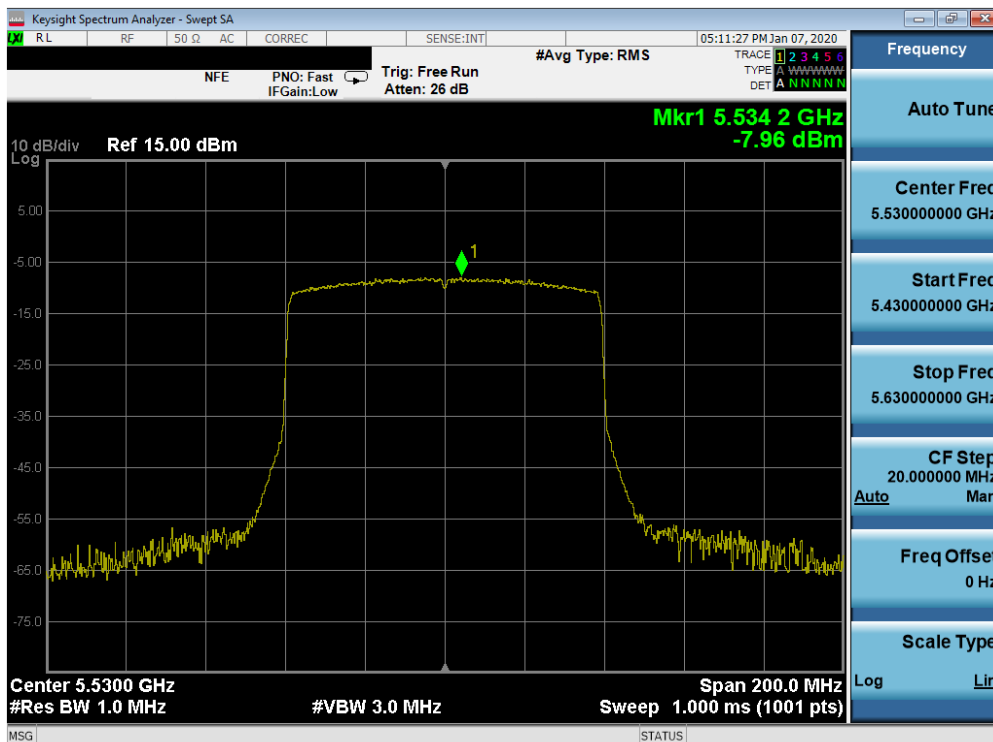


Plot 7-174. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 119 of 234

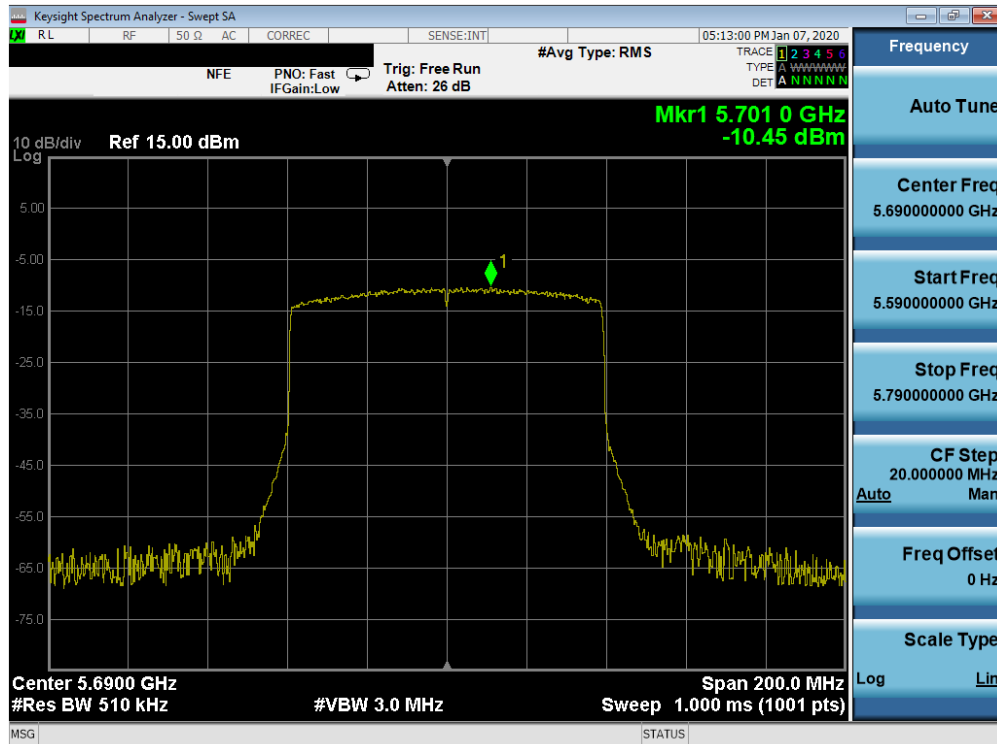


Plot 7-175. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 122)



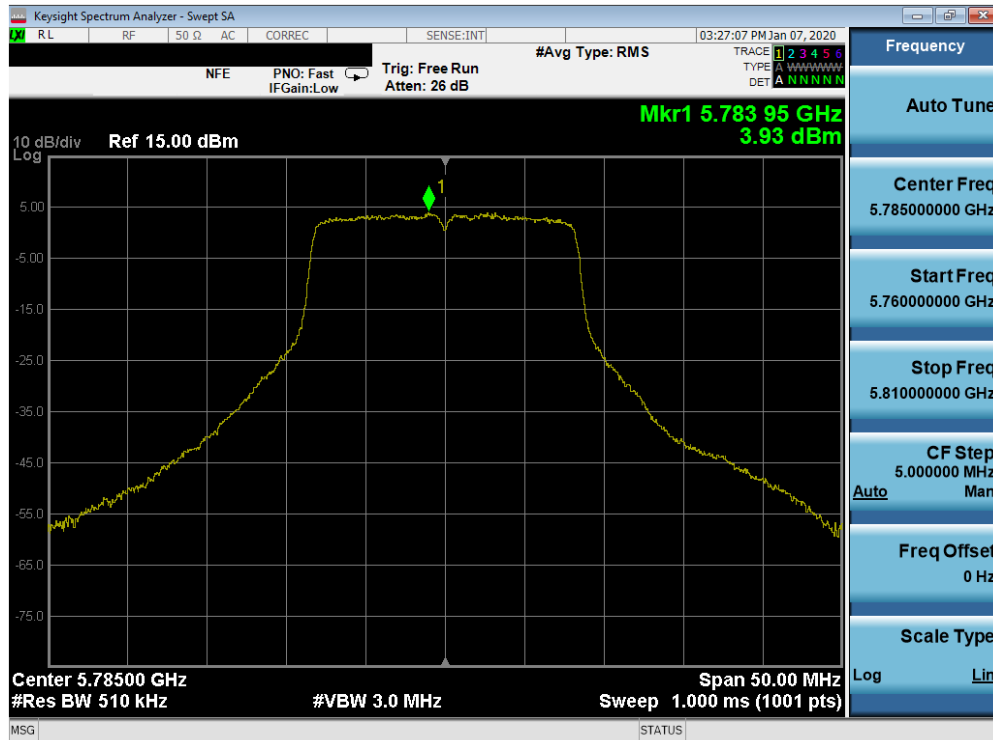
Plot 7-176. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax (UNII Band 2C) – Ch. 106)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 120 of 234

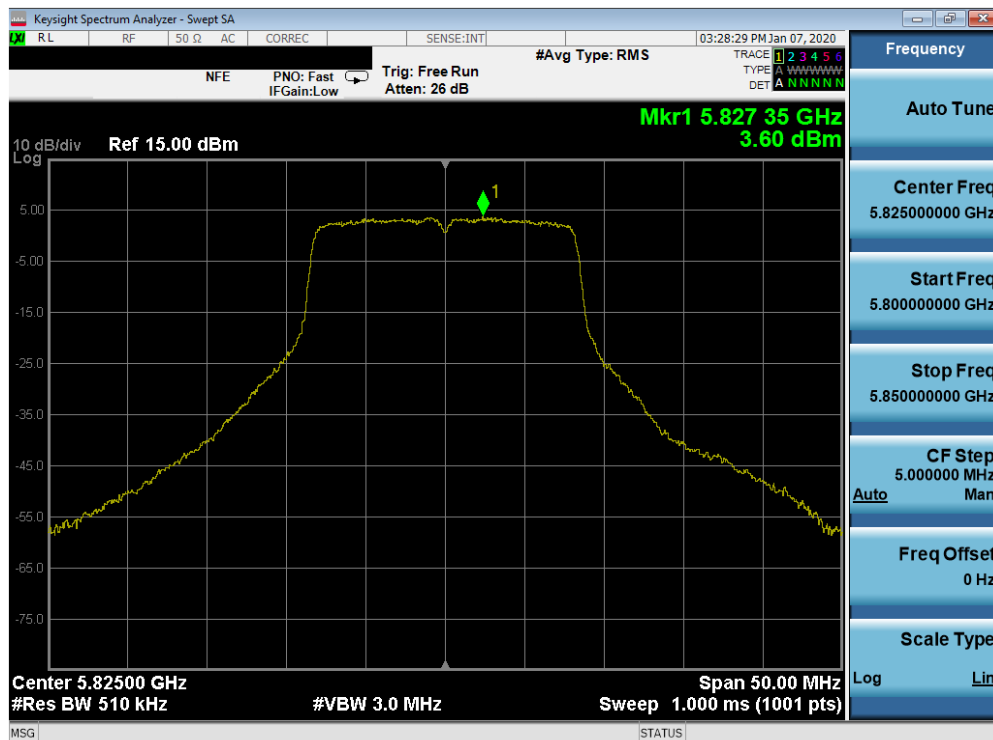


Plot 7-177. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax (UNII Band 2C) – Ch. 122)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07-ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 121 of 234

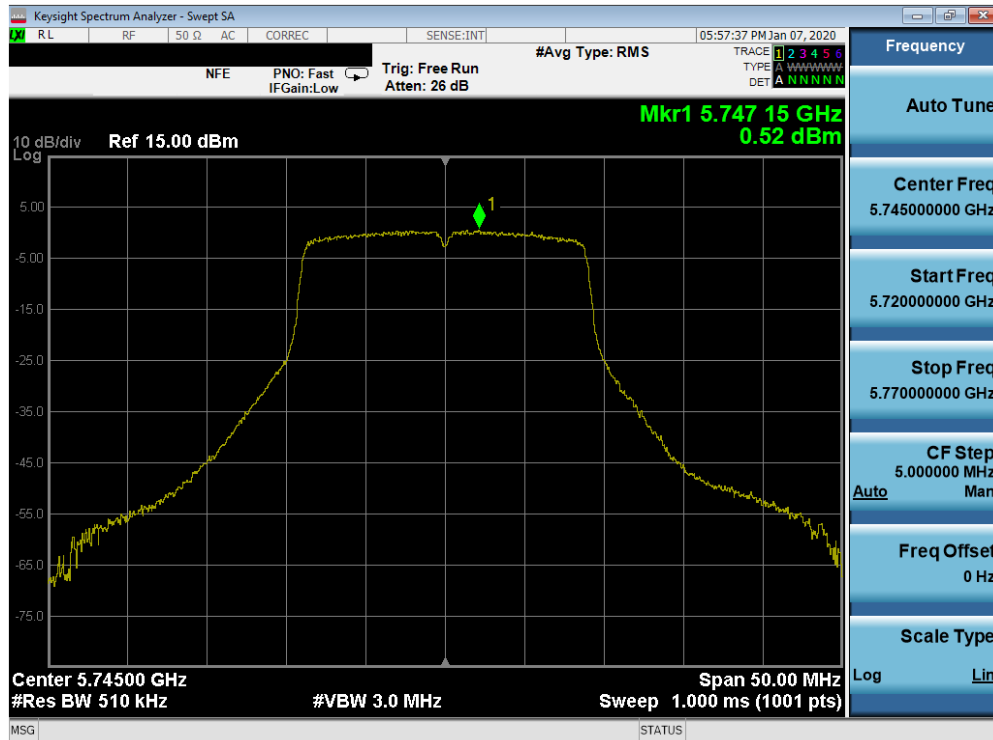


Plot 7-179. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 3) – Ch. 157)

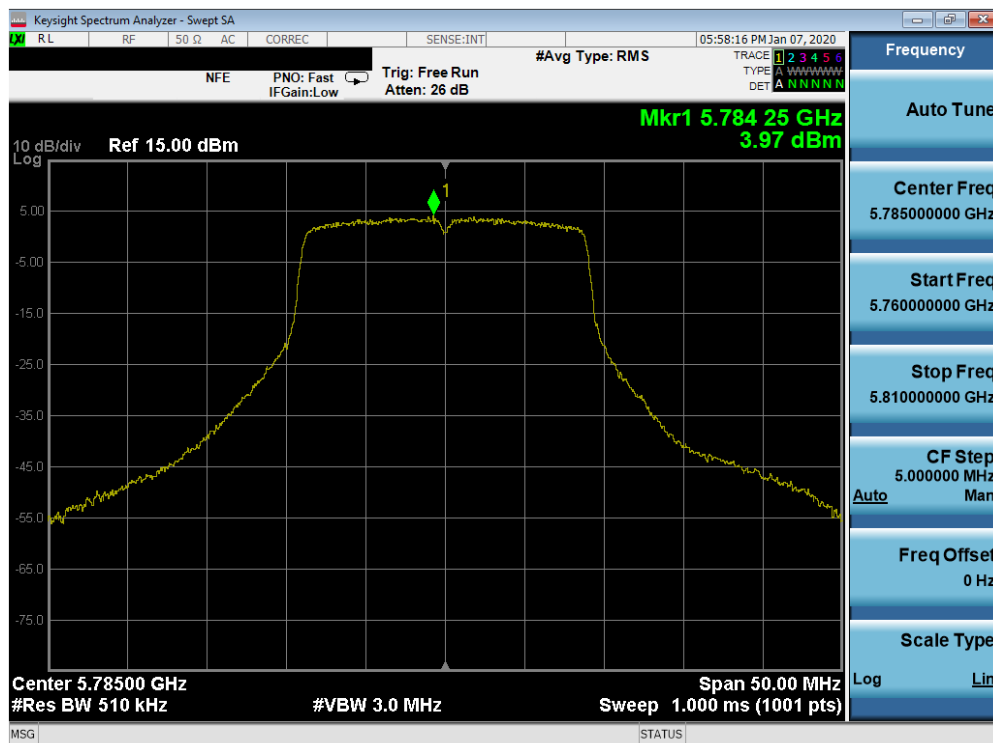


Plot 7-180. Power Spectral Density Plot SISO ANT1 (802.11a (UNII Band 3) – Ch. 165)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 123 of 234

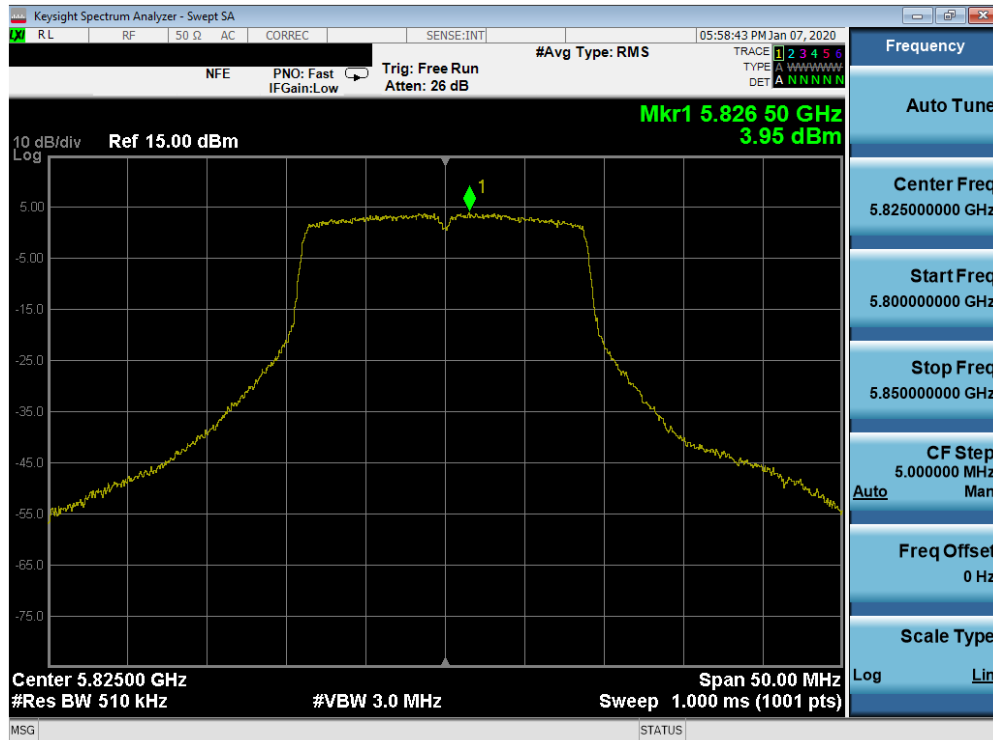


Plot 7-181. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

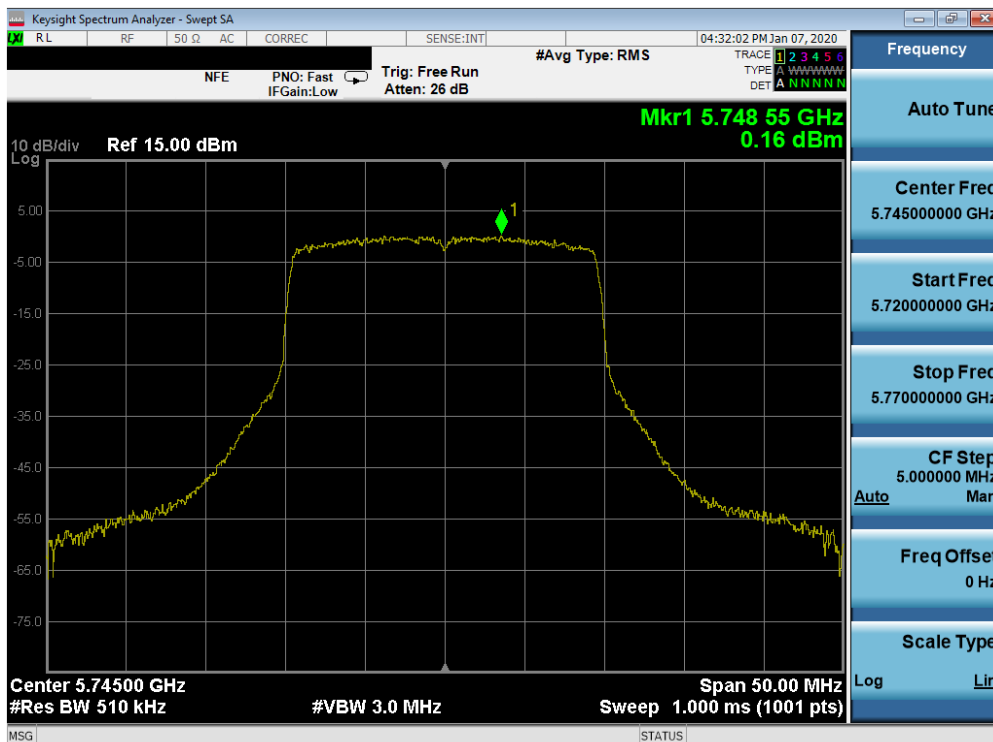


Plot 7-182. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 124 of 234

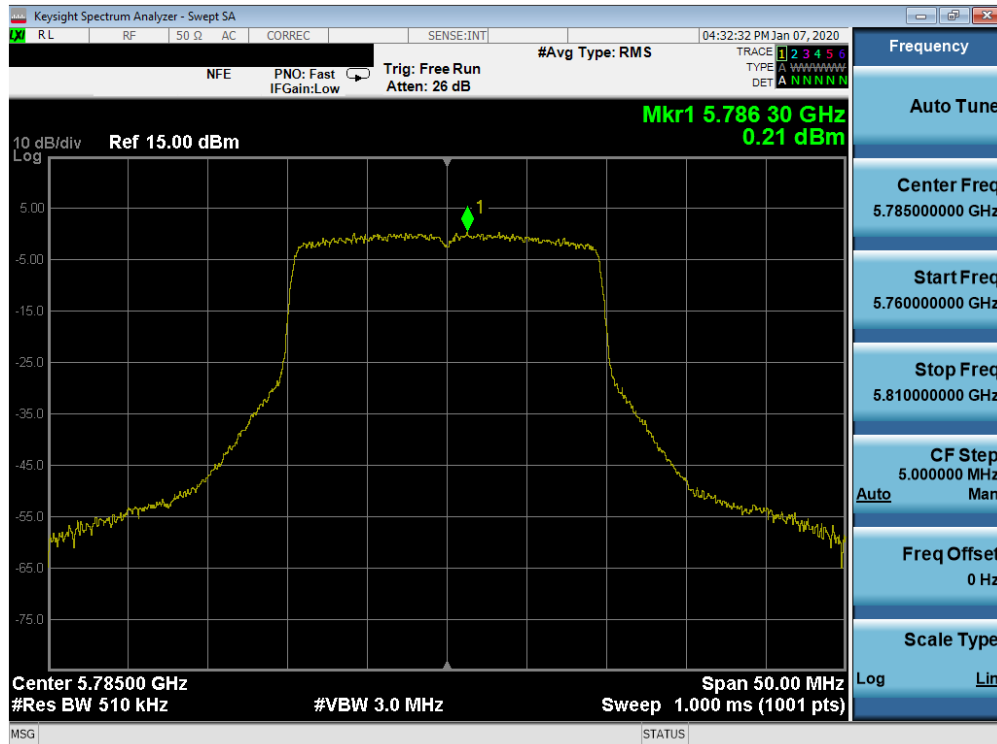


Plot 7-183. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

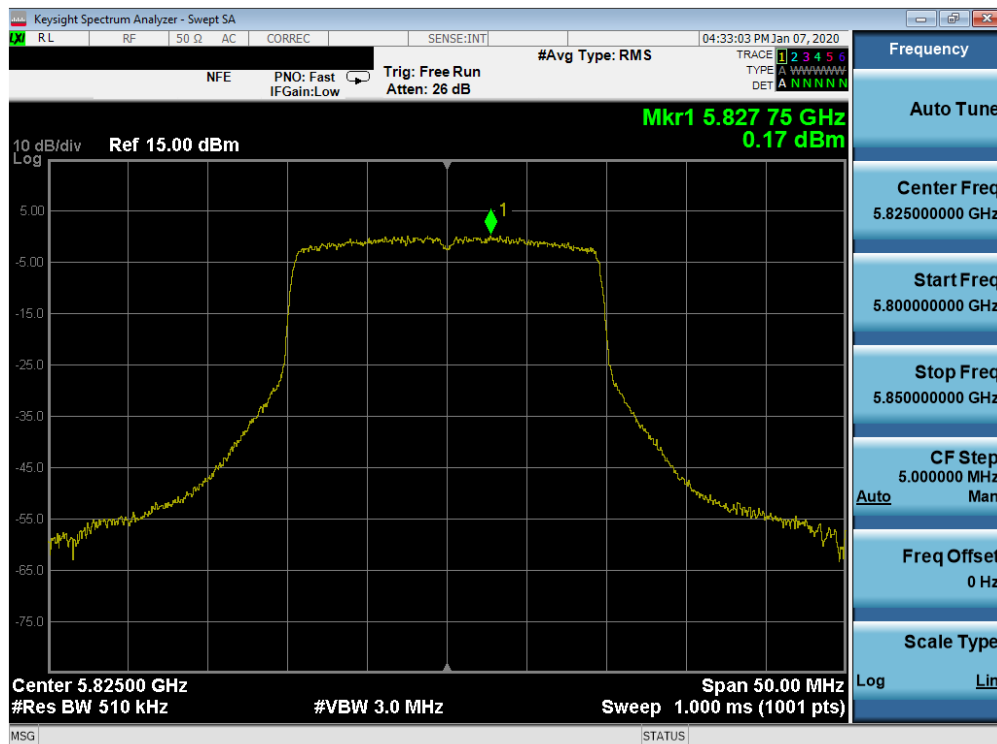


Plot 7-184. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax (UNII Band 3) – Ch. 149)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 125 of 234

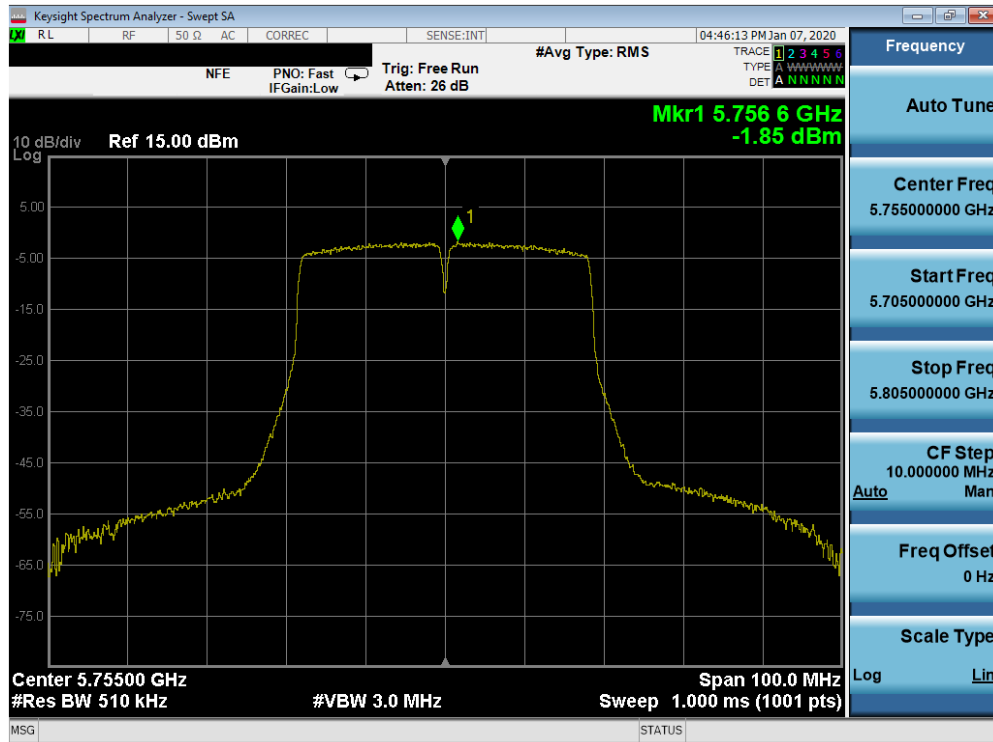


Plot 7-185. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax (UNII Band 3) – Ch. 157)

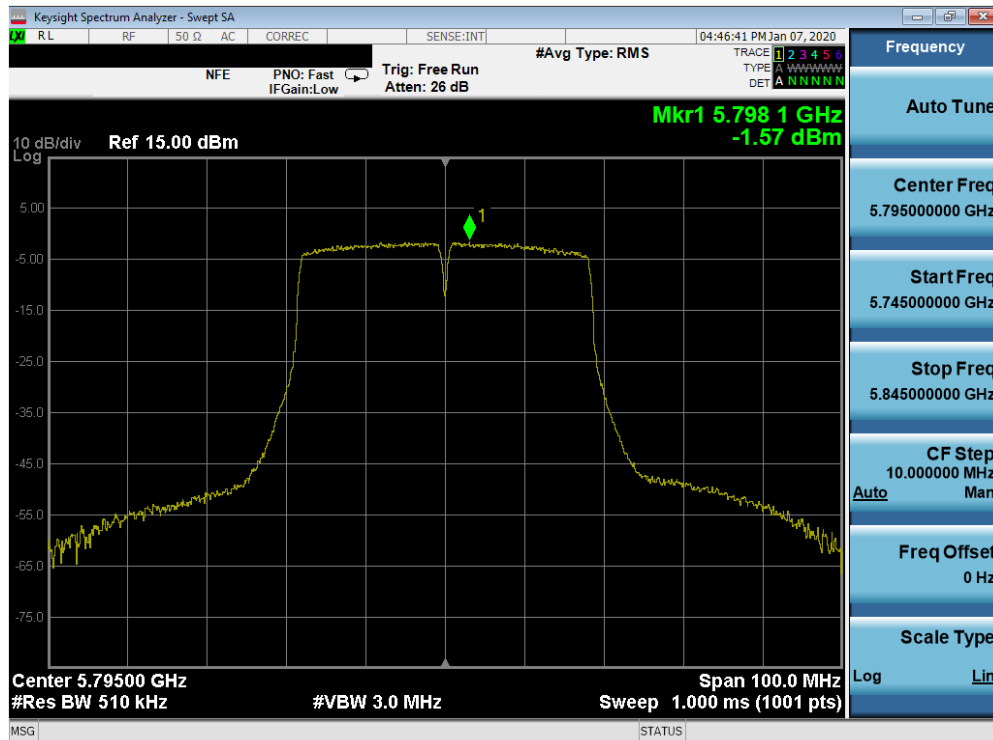


Plot 7-186. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax (UNII Band 3) – Ch. 165)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 126 of 234

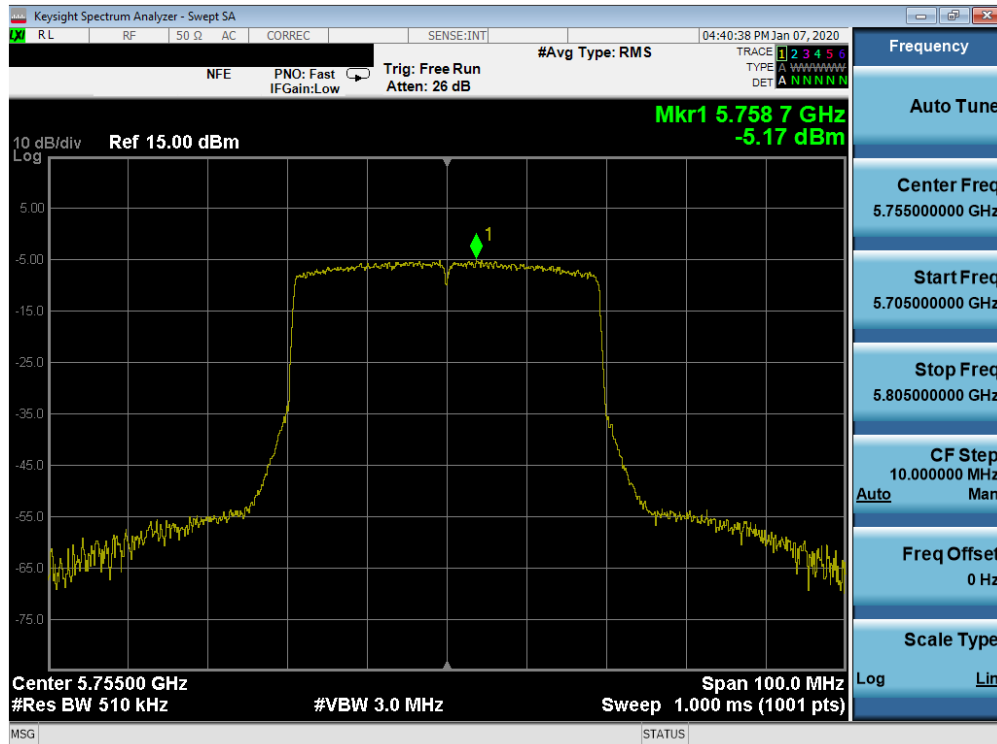


Plot 7-187. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

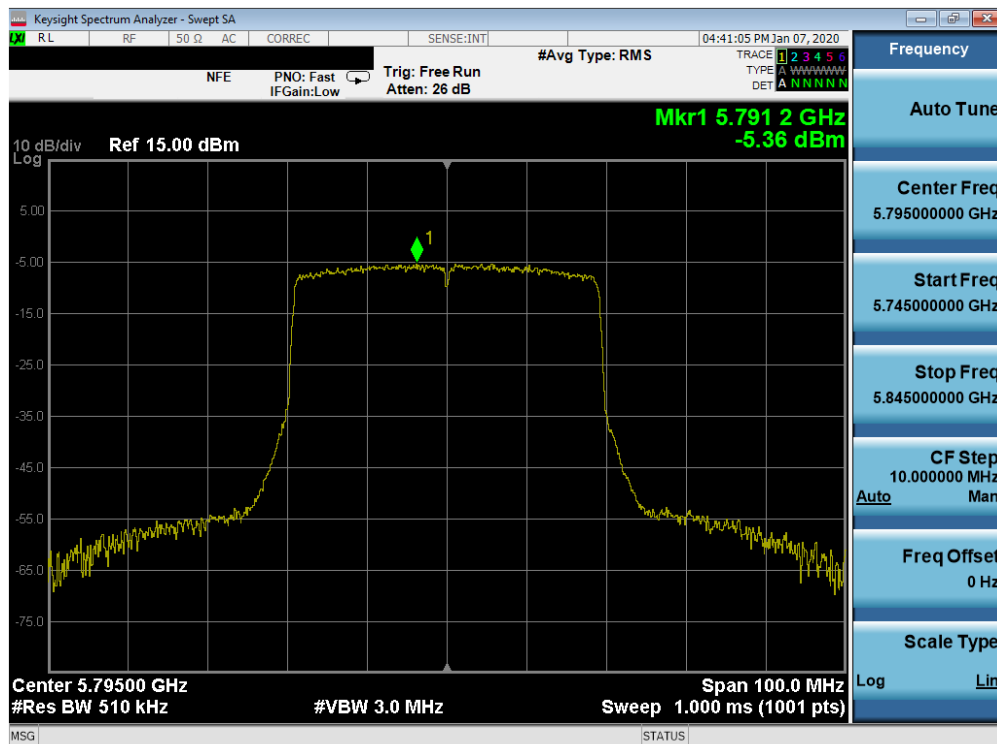


Plot 7-188. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 3) – Ch. 159)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 127 of 234

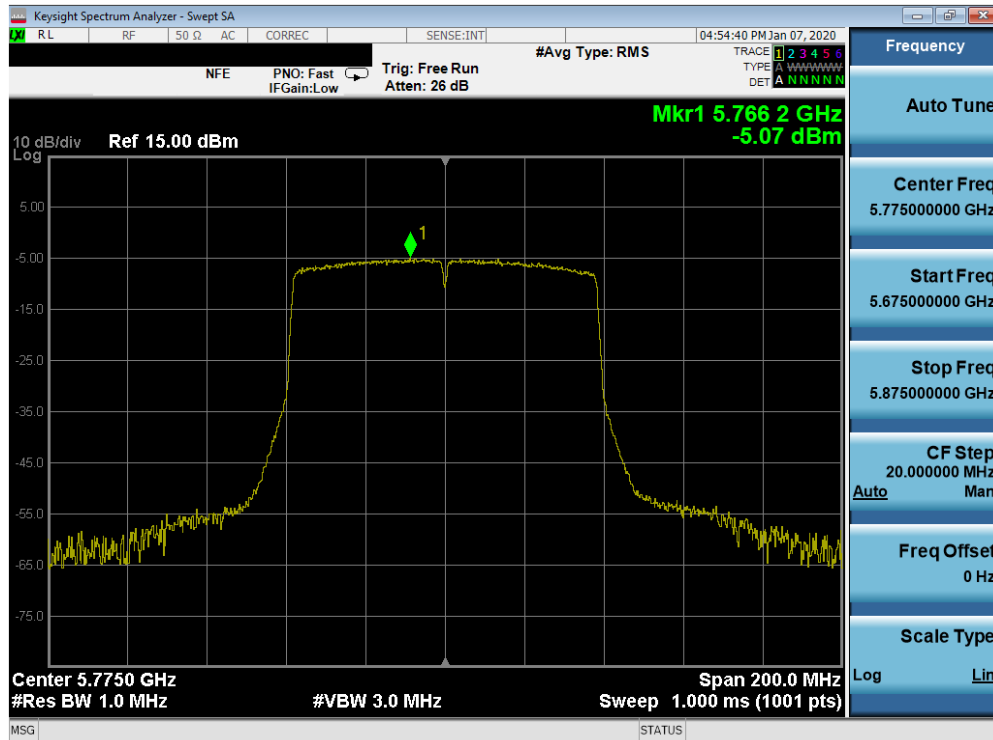


Plot 7-189. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax (UNII Band 3) – Ch. 151)

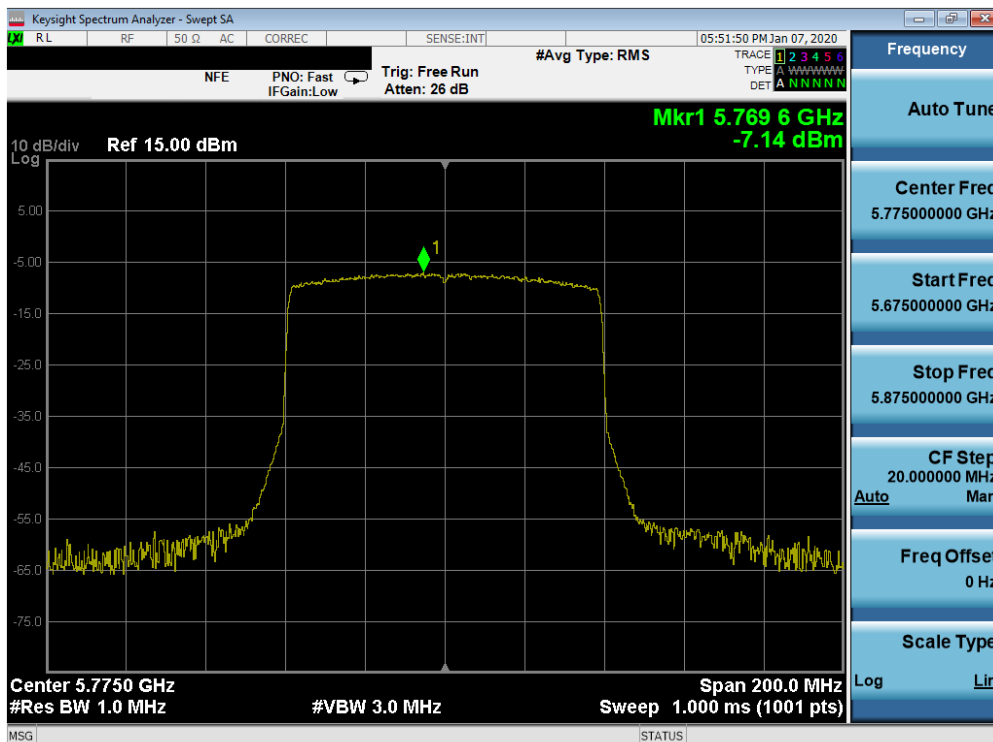


Plot 7-190. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax (UNII Band 3) – Ch. 159)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 128 of 234



Plot 7-191. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)



Plot 7-192. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax (UNII Band 3) – Ch. 155)

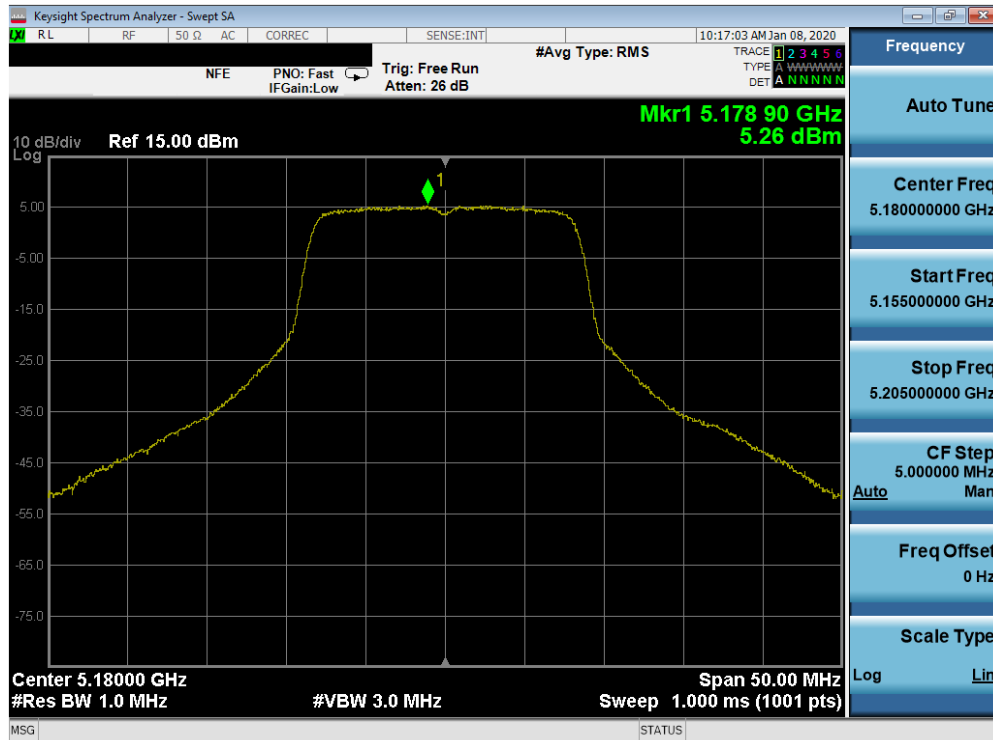
FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 129 of 234

SISO Antenna-2 Power Spectral Density Measurements

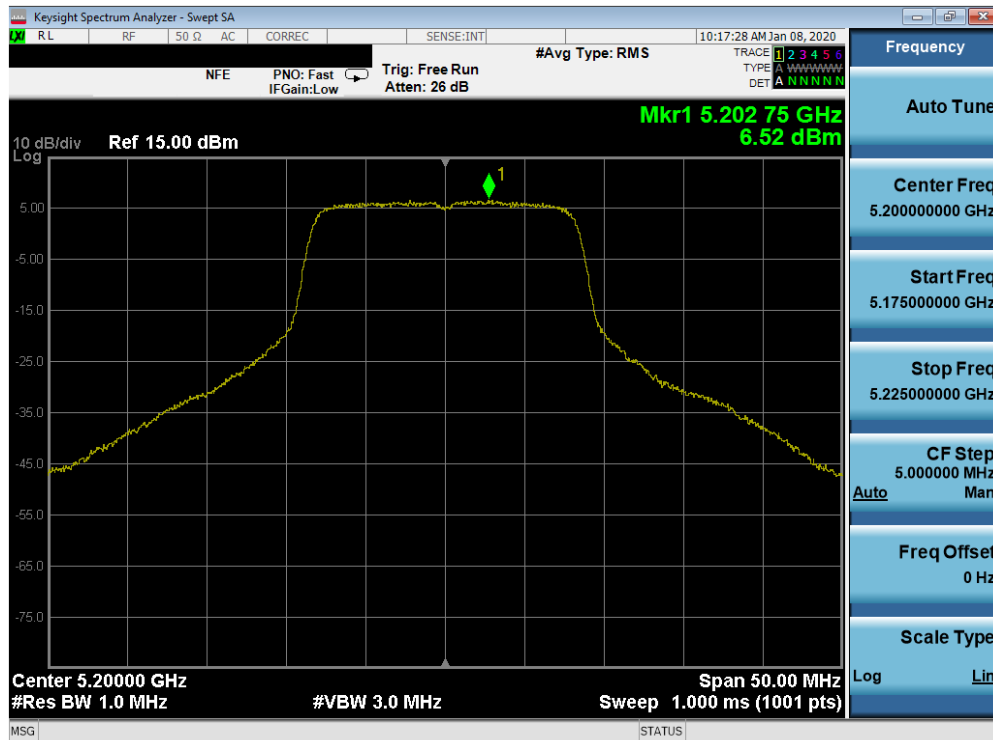
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	a	6	5.26	11.0	-5.74
	5200	40	a	6	6.52	11.0	-4.48
	5240	48	a	6	5.64	11.0	-5.36
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	5.66	11.0	-5.34
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.87	11.0	-4.13
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	6.00	11.0	-5.00
	5180	36	ax (20MHz)	6.5/7.2 (MCS0)	3.30	11.0	-7.70
	5200	40	ax (20MHz)	6.5/7.2 (MCS0)	3.37	11.0	-7.63
	5240	48	ax (20MHz)	6.5/7.2 (MCS0)	3.56	11.0	-7.44
	5190	38	n (40MHz)	13.5/15 (MCS0)	-3.25	11.0	-14.25
	5230	46	n (40MHz)	13.5/15 (MCS0)	1.78	11.0	-9.22
	5190	38	ax (40MHz)	13.5/15 (MCS0)	-5.56	11.0	-16.56
	5230	46	ax (40MHz)	13.5/15 (MCS0)	-2.04	11.0	-13.04
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-7.05	11.0	-18.05
	5210	42	ax (80MHz)	29.3/32.5 (MCS0)	-9.12	11.0	-20.12
Band 2A	5260	52	a	6	5.62	11.0	-5.38
	5280	56	a	6	6.62	11.0	-4.38
	5320	64	a	6	5.87	11.0	-5.13
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	6.35	11.0	-4.65
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	7.37	11.0	-3.63
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	6.39	11.0	-4.61
	5260	52	ax (20MHz)	6.5/7.2 (MCS0)	3.71	11.0	-7.29
	5280	56	ax (20MHz)	6.5/7.2 (MCS0)	3.67	11.0	-7.33
	5320	64	ax (20MHz)	6.5/7.2 (MCS0)	3.54	11.0	-7.46
	5270	54	n (40MHz)	13.5/15 (MCS0)	1.67	11.0	-9.33
	5310	62	n (40MHz)	13.5/15 (MCS0)	-3.01	11.0	-14.01
	5270	54	ax (40MHz)	13.5/15 (MCS0)	-2.11	11.0	-13.11
	5310	62	ax (40MHz)	13.5/15 (MCS0)	-5.81	11.0	-16.81
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-6.59	11.0	-17.59
	5290	58	ax (80MHz)	29.3/32.5 (MCS0)	-9.90	11.0	-20.90
Band 2C	5500	100	a	6	5.57	11.0	-5.43
	5600	120	a	6	5.70	11.0	-5.30
	5700	140	a	6	5.66	11.0	-5.34
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	6.04	11.0	-4.96
	5600	120	n (20MHz)	6.5/7.2 (MCS0)	5.95	11.0	-5.05
	5700	140	n (20MHz)	6.5/7.2 (MCS0)	6.19	11.0	-4.81
	5500	100	ax (20MHz)	6.5/7.2 (MCS0)	3.42	11.0	-7.58
	5600	120	ax (20MHz)	6.5/7.2 (MCS0)	3.63	11.0	-7.37
	5700	140	ax (20MHz)	6.5/7.2 (MCS0)	3.80	11.0	-7.20
	5510	102	n (40MHz)	13.5/15 (MCS0)	-3.23	11.0	-14.23
	5590	118	n (40MHz)	13.5/15 (MCS0)	1.53	11.0	-9.47
	5670	134	n (40MHz)	13.5/15 (MCS0)	2.26	11.0	-8.74
	5510	102	ax (40MHz)	13.5/15 (MCS0)	-5.70	11.0	-16.70
	5590	118	ax (40MHz)	13.5/15 (MCS0)	-2.11	11.0	-13.11
	5670	134	ax (40MHz)	13.5/15 (MCS0)	-1.45	11.0	-12.45
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-4.87	11.0	-15.87
	5610	122	ac (80MHz)	29.3/32.5 (MCS0)	-5.22	11.0	-16.22
	5530	106	ax (80MHz)	29.3/32.5 (MCS0)	-6.81	11.0	-17.81
	5610	122	ax (80MHz)	29.3/32.5 (MCS0)	-7.41	11.0	-18.41

Table 7-22. Conducted Power Spectral Density Measurements SISO ANT2

FCC ID: ZNFV600AM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1912300229-07_ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset	Page 130 of 234	

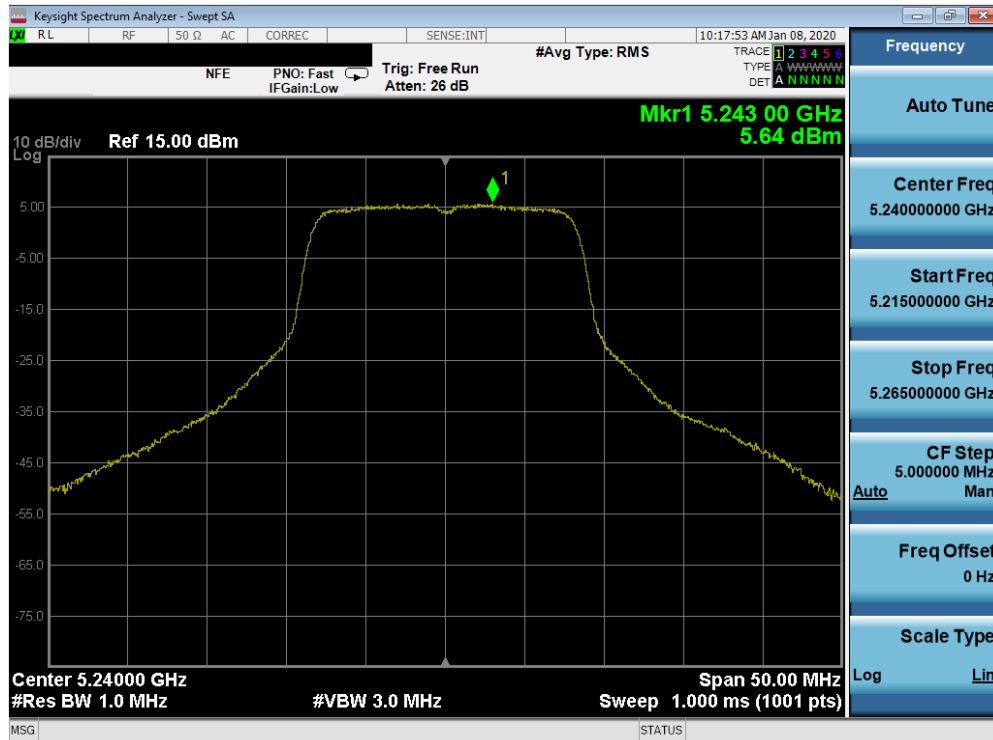


Plot 7-193. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 1) – Ch. 36)

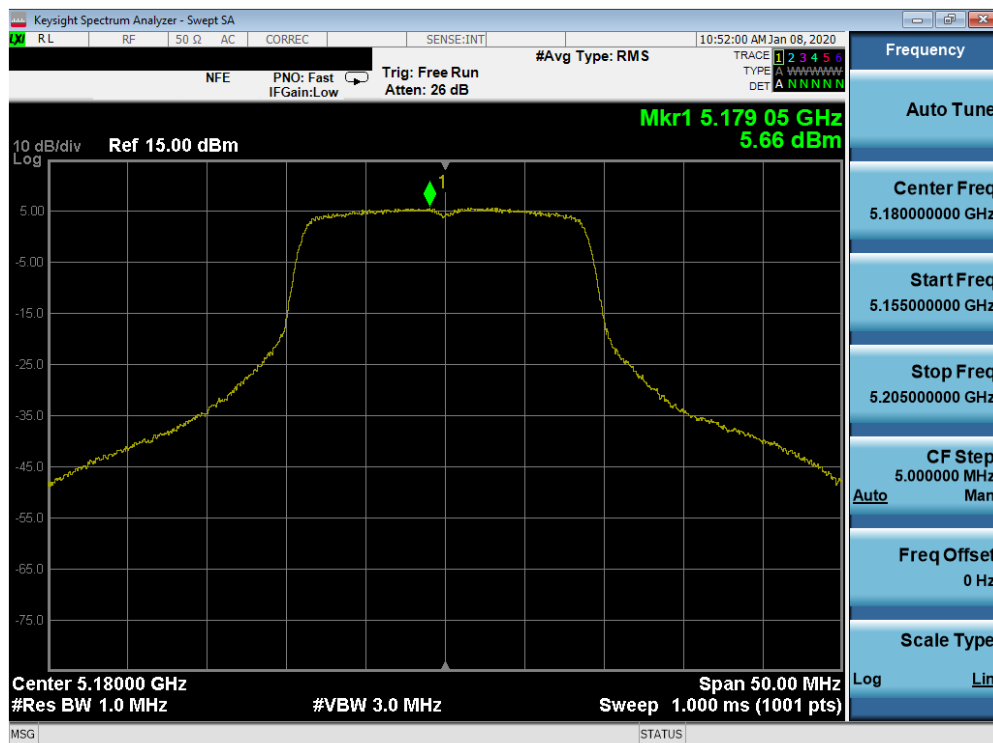


Plot 7-194. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 1) – Ch. 40)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 131 of 234

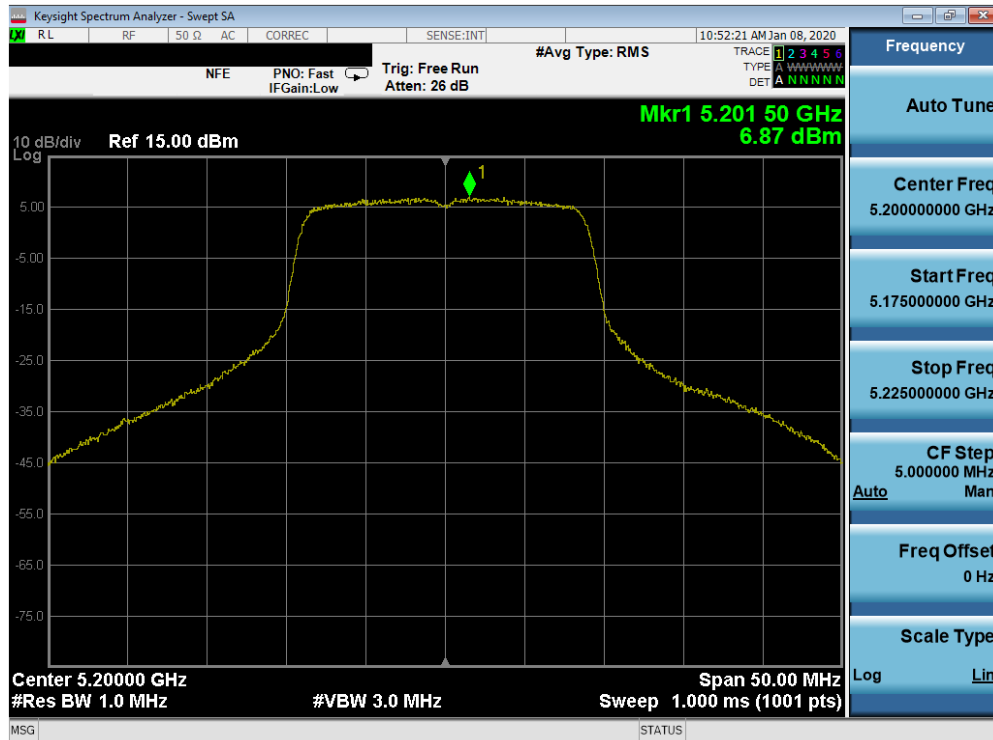


Plot 7-195. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 1) – Ch. 48)

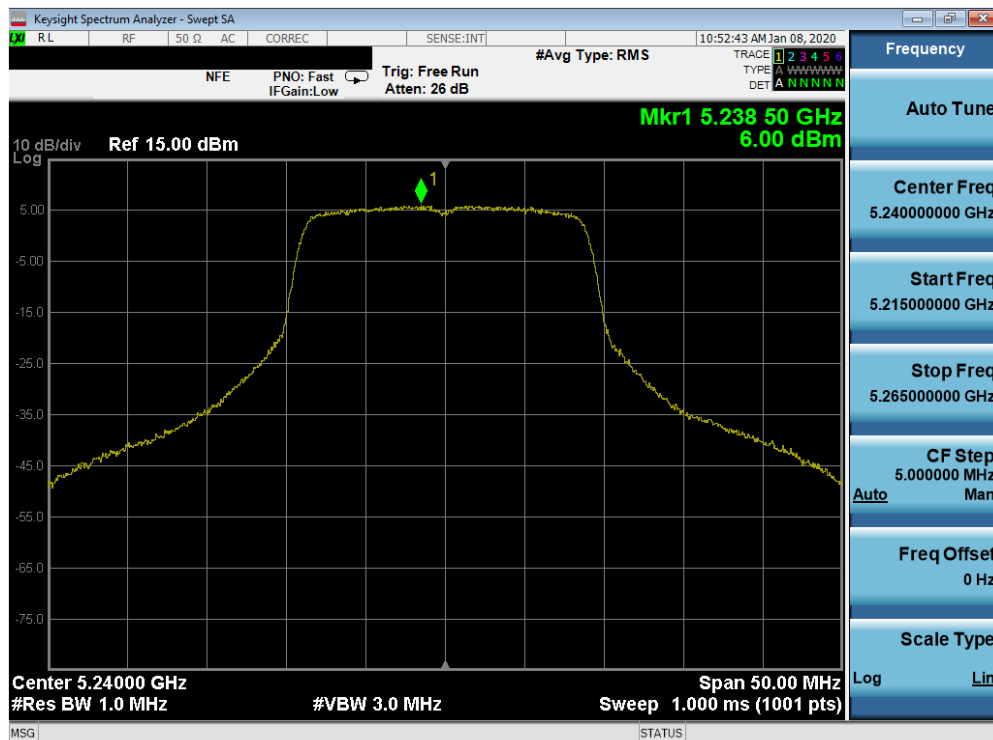


Plot 7-196. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 132 of 234

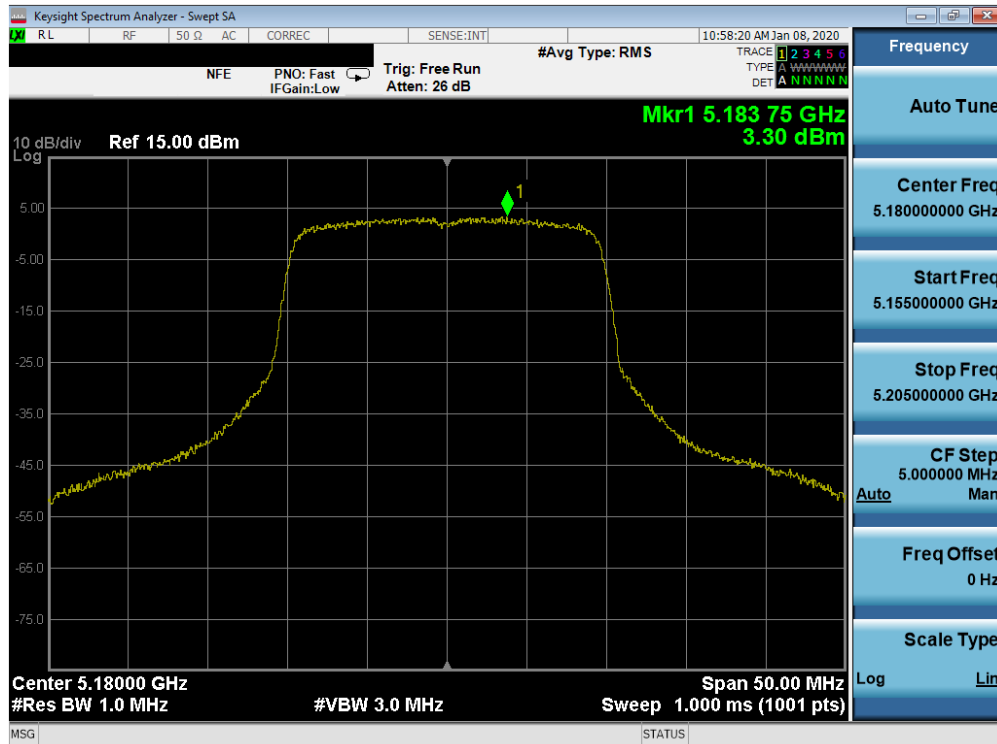


Plot 7-197. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

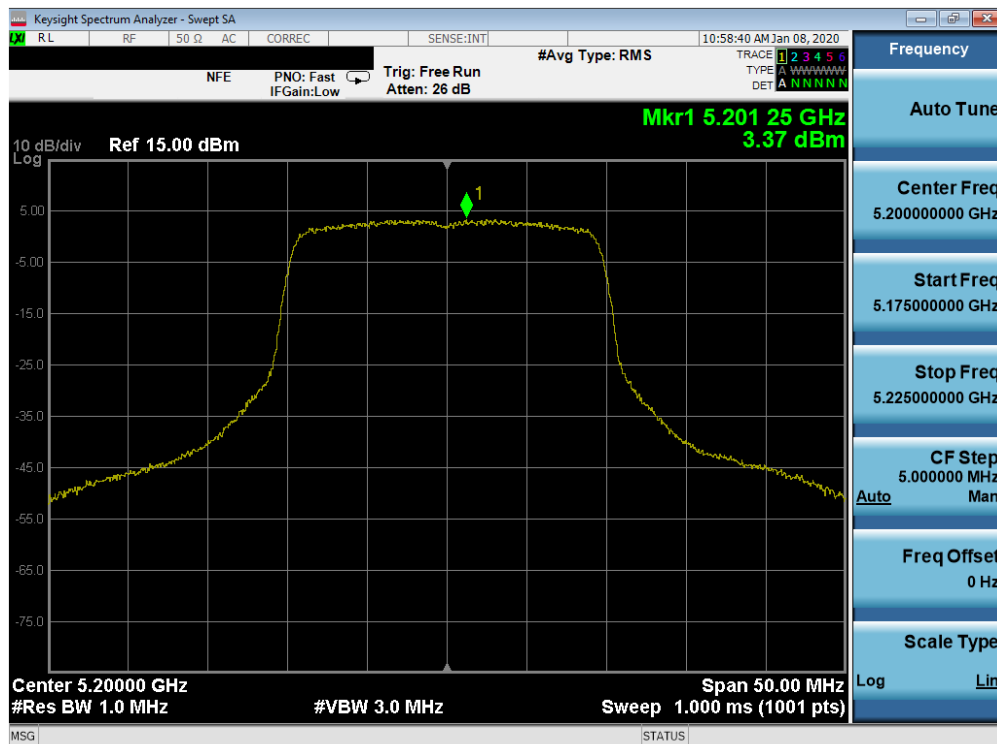


Plot 7-198. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 133 of 234

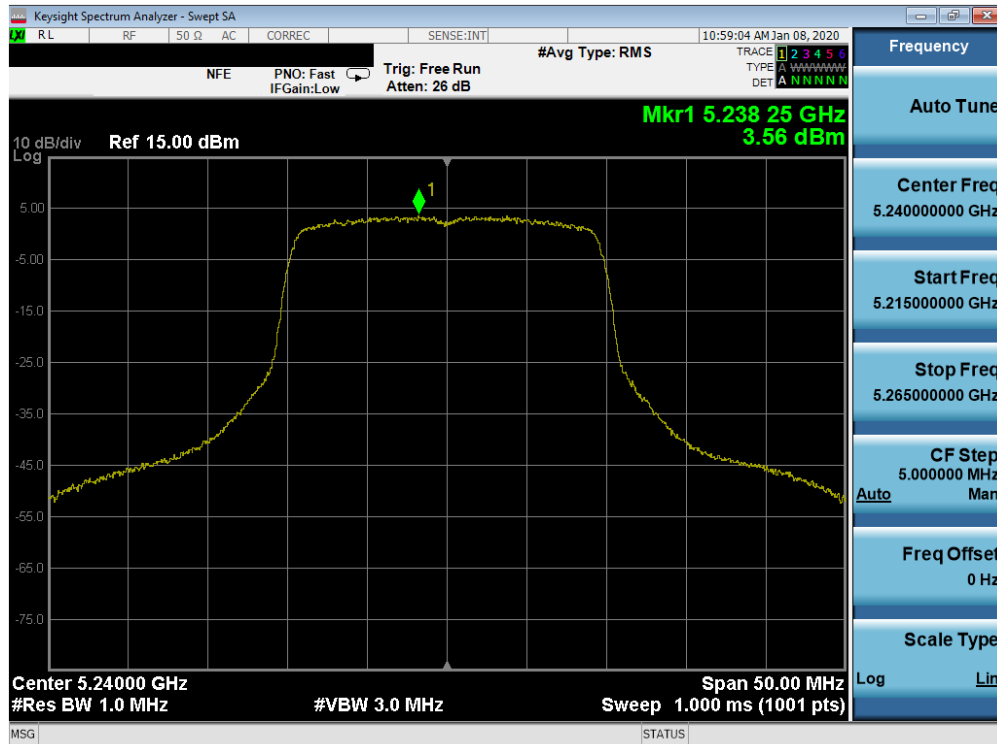


Plot 7-199. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax (UNII Band 1) – Ch. 36)

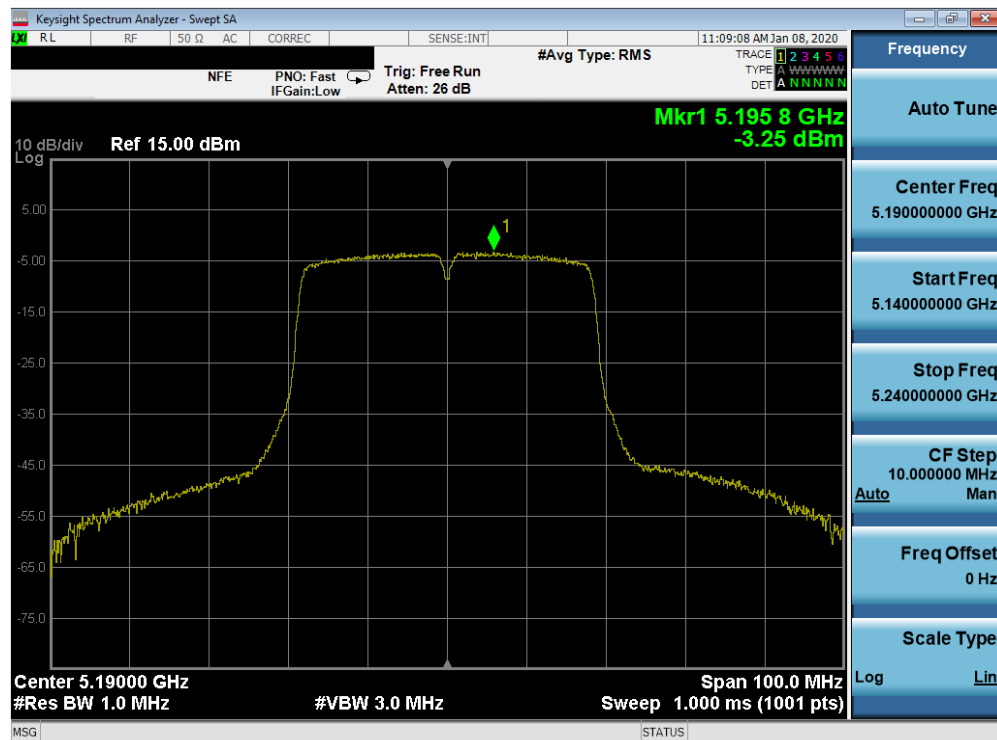


Plot 7-200. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax (UNII Band 1) – Ch. 40)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 134 of 234

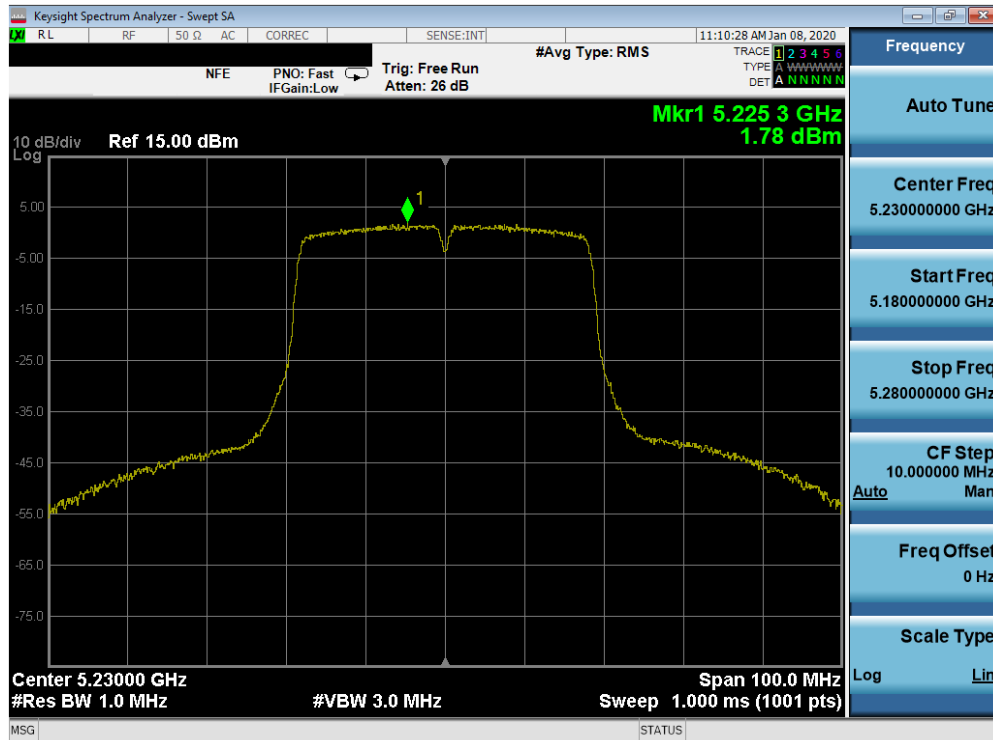


Plot 7-201. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax (UNII Band 1) – Ch. 48)

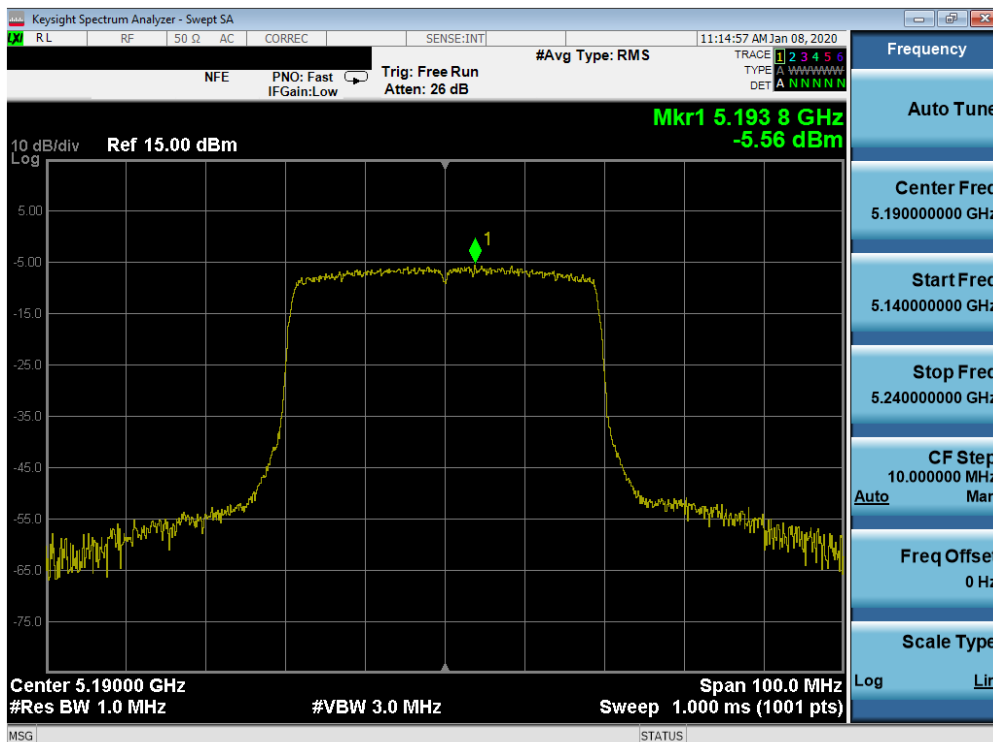


Plot 7-202. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 135 of 234

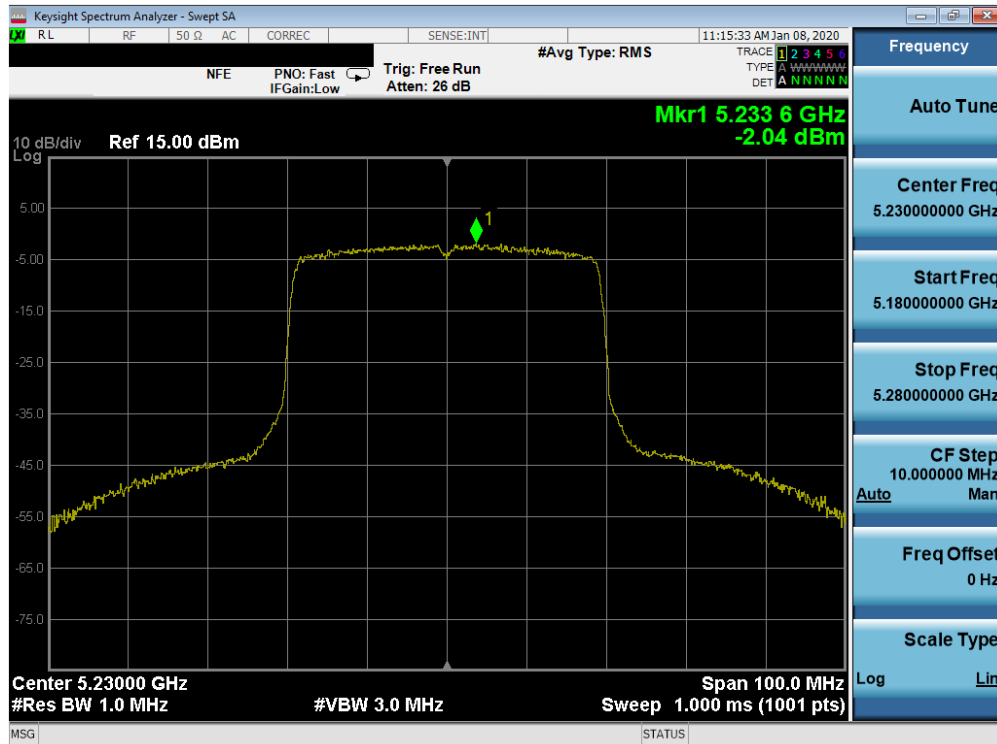


Plot 7-203. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

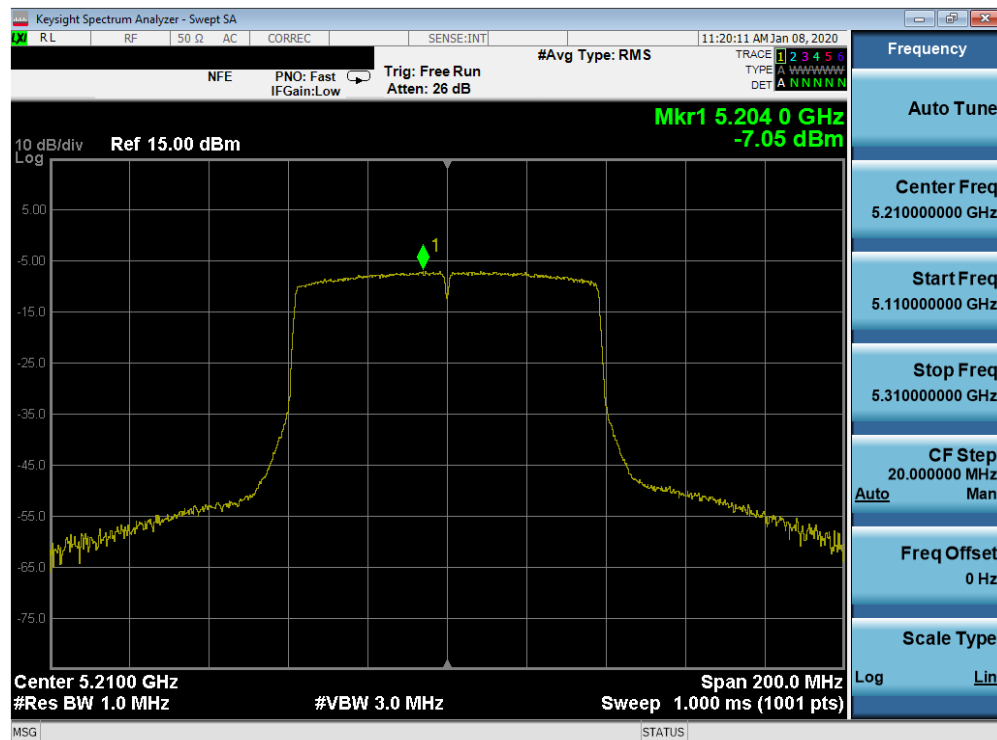


Plot 7-204. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax (UNII Band 1) – Ch. 38)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 136 of 234

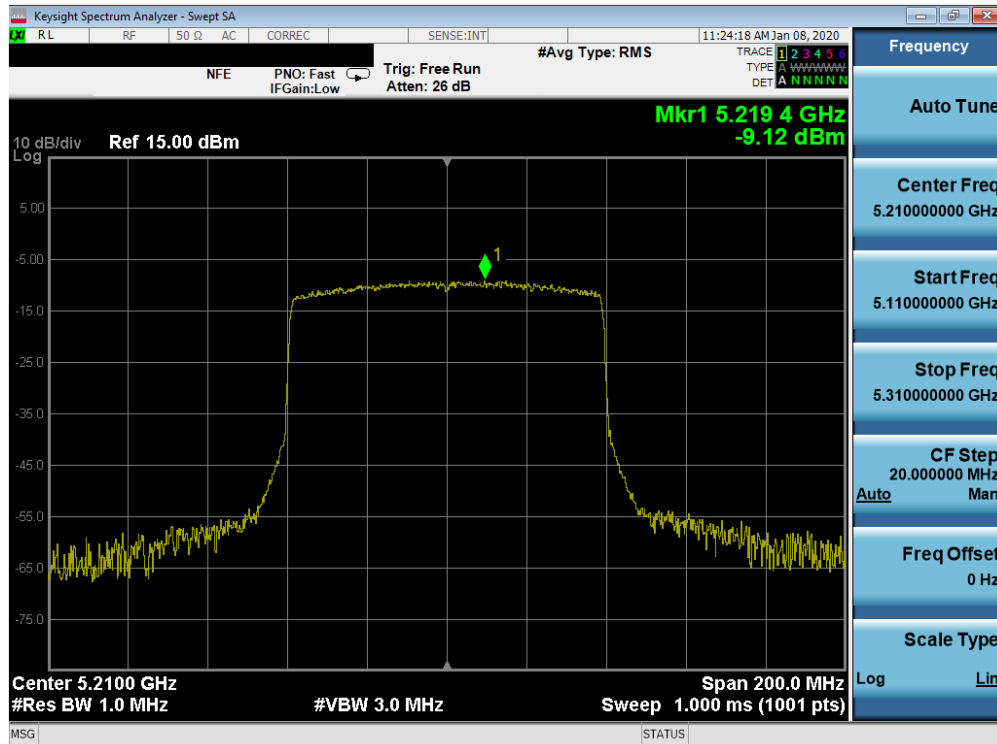


Plot 7-205. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax (UNII Band 1) – Ch. 46)

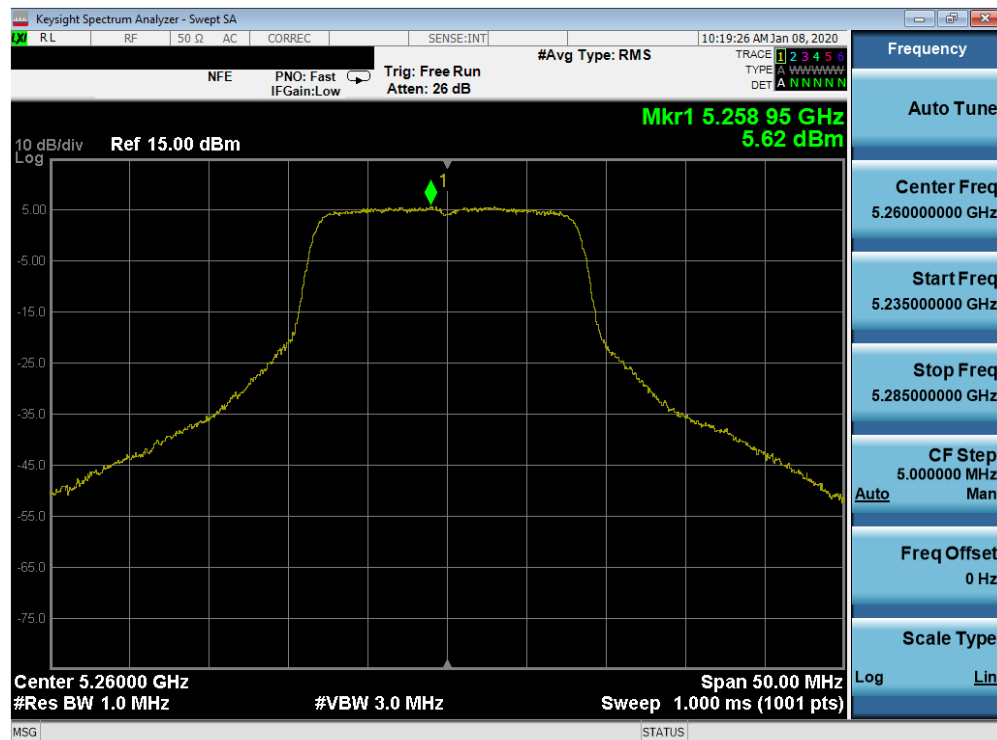


Plot 7-206. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 137 of 234

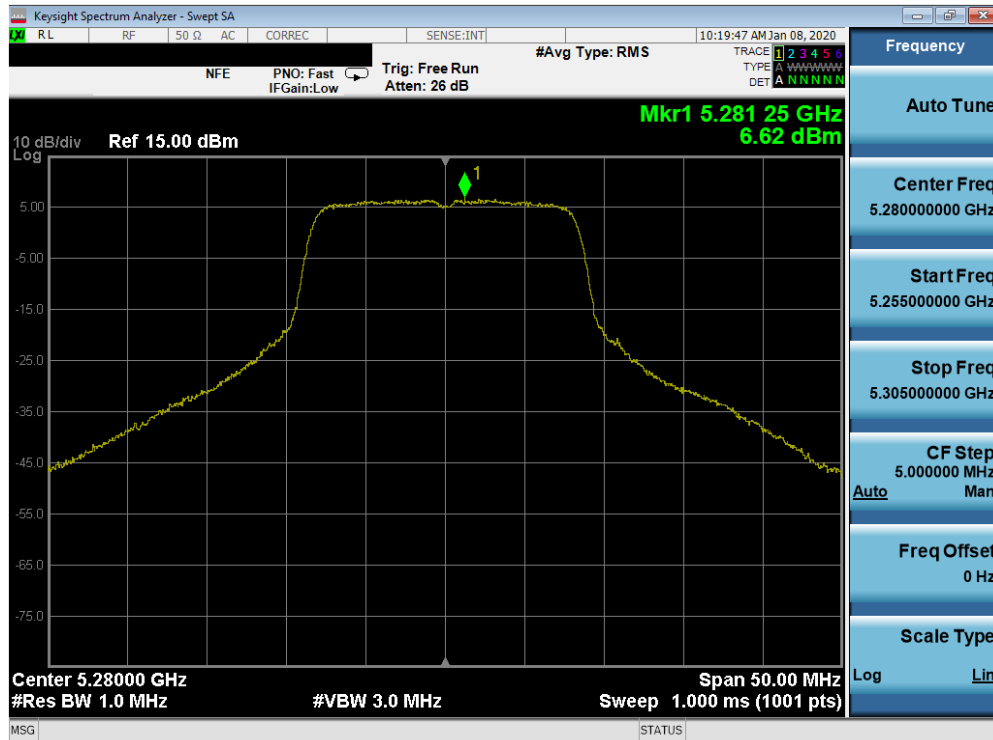


Plot 7-207. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax (UNII Band 1) – Ch. 42)

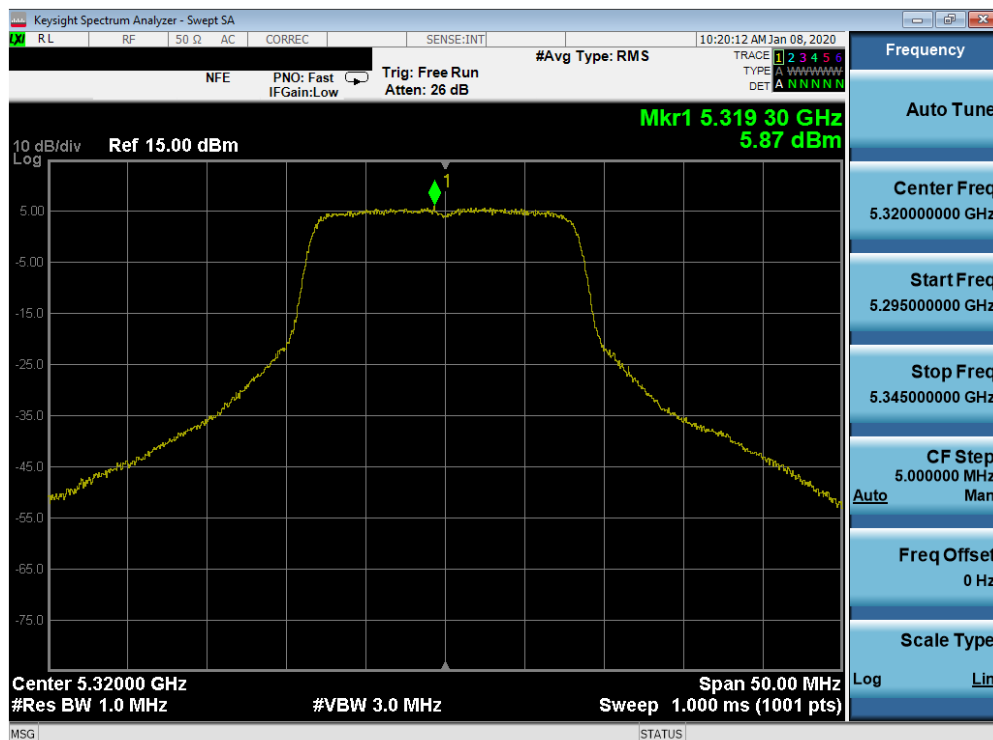


Plot 7-208. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2A) – Ch. 52)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 138 of 234

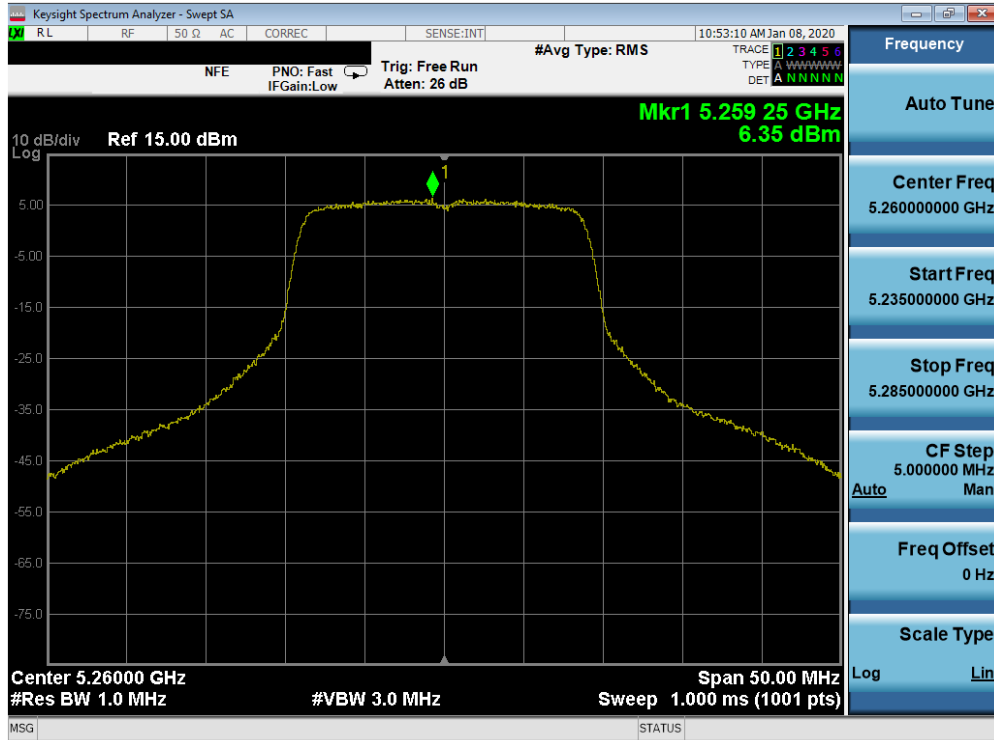


Plot 7-209. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2A) – Ch. 56)

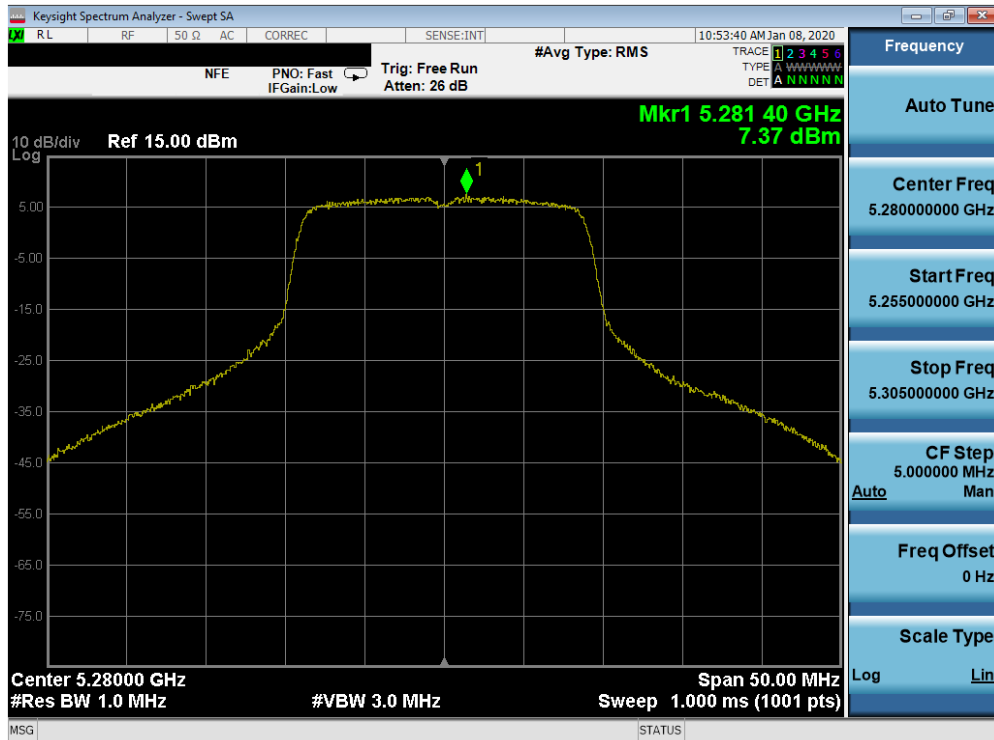


Plot 7-210. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2A) – Ch. 64)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 139 of 234

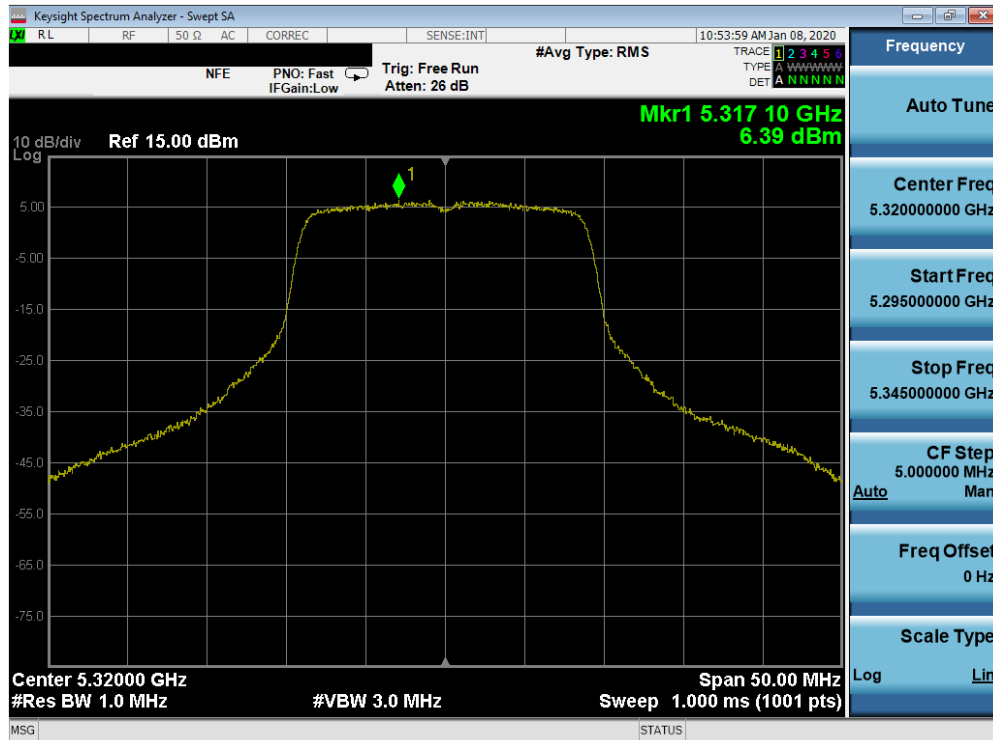


Plot 7-211. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

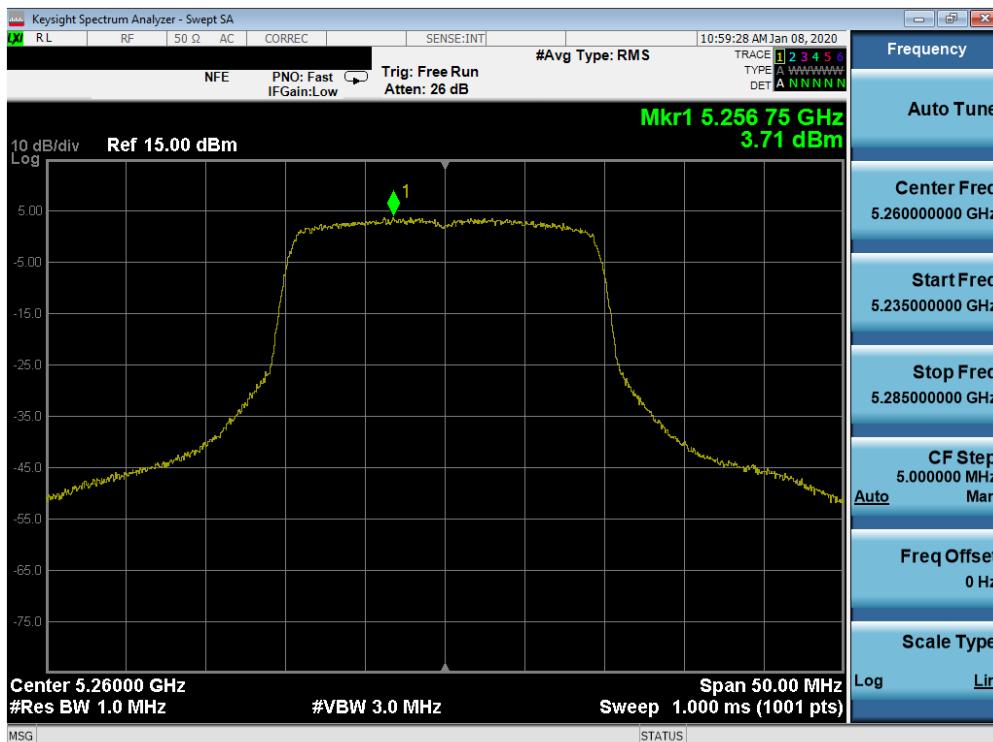


Plot 7-212. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 140 of 234

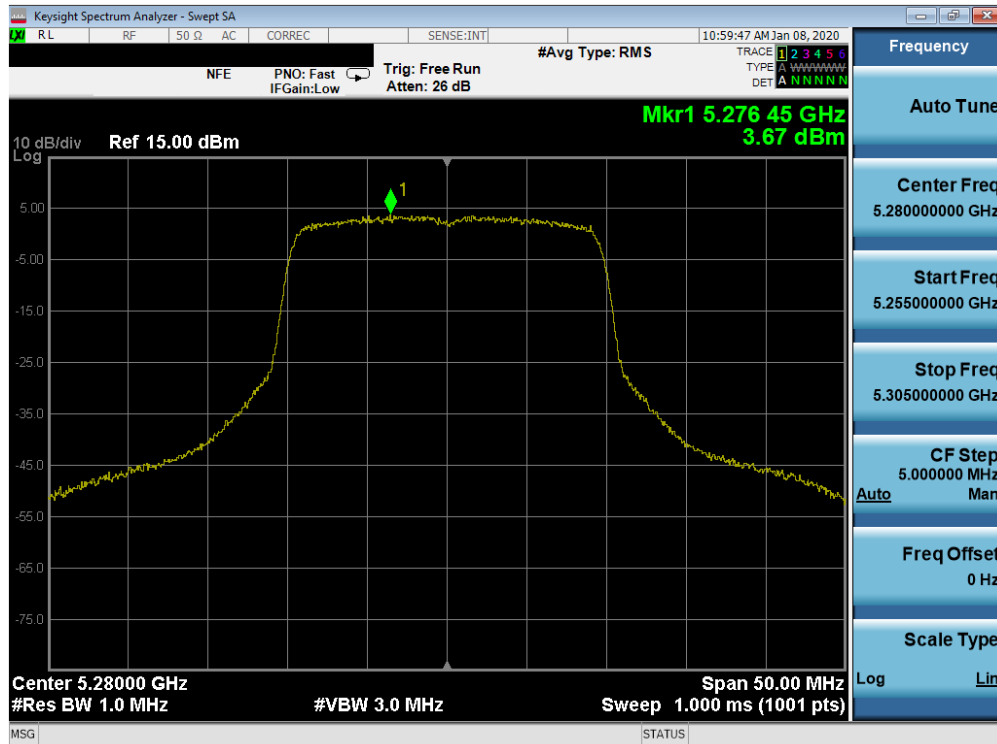


Plot 7-213. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

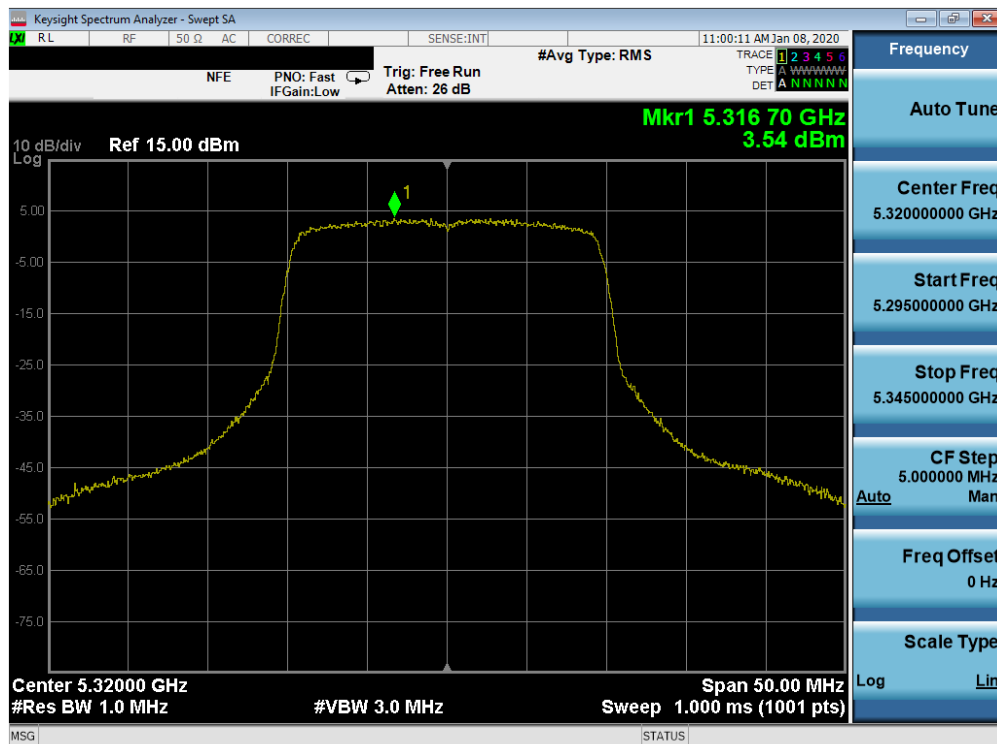


Plot 7-214. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax (UNII Band 2A) – Ch. 52)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 141 of 234

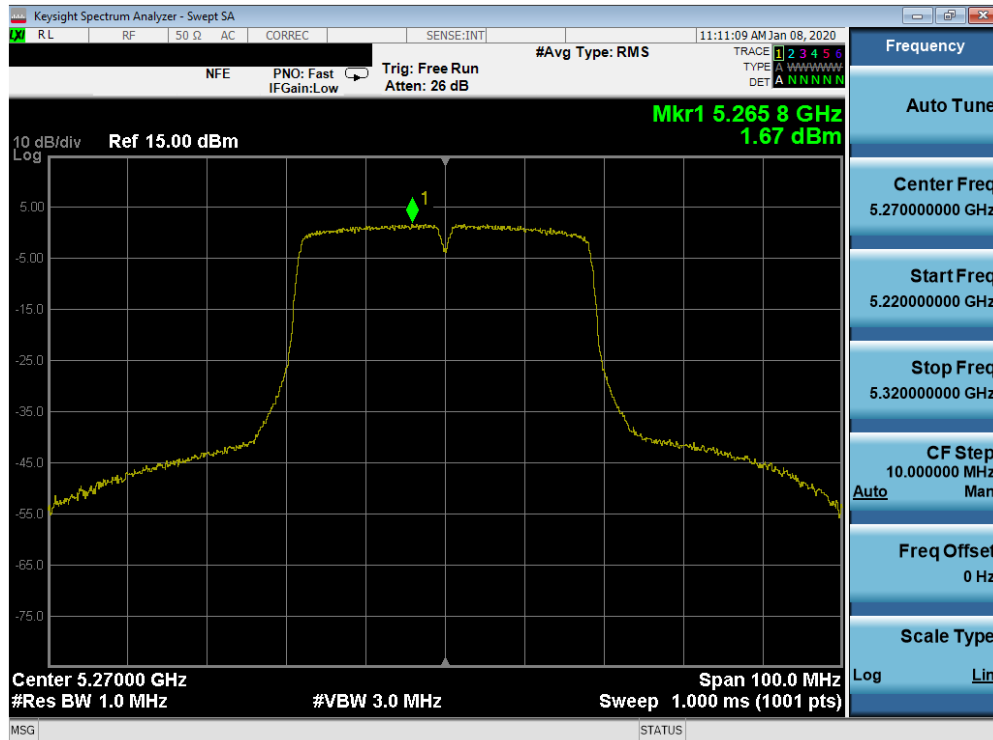


Plot 7-215. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax (UNII Band 2A) – Ch. 56)

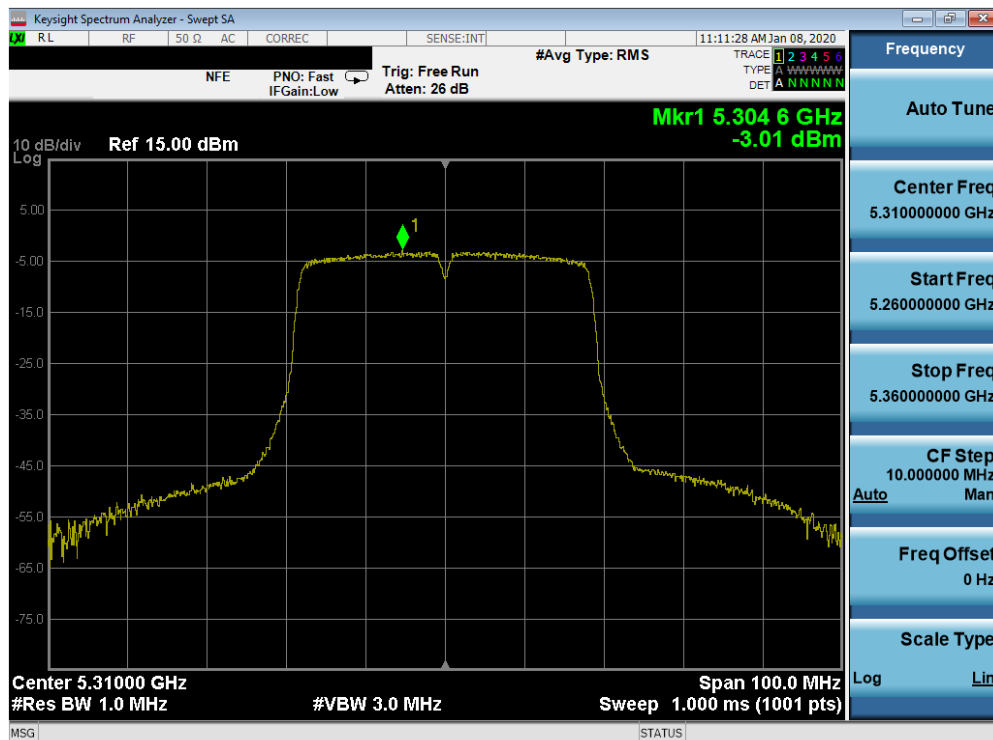


Plot 7-216. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax (UNII Band 2A) – Ch. 64)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 142 of 234

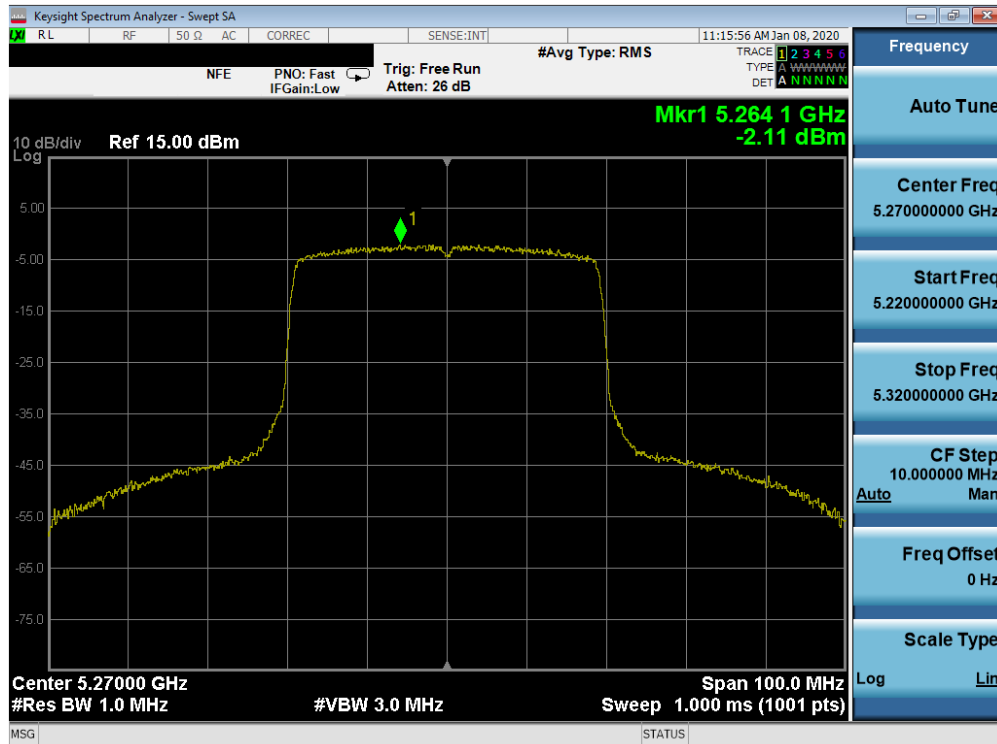


Plot 7-217. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

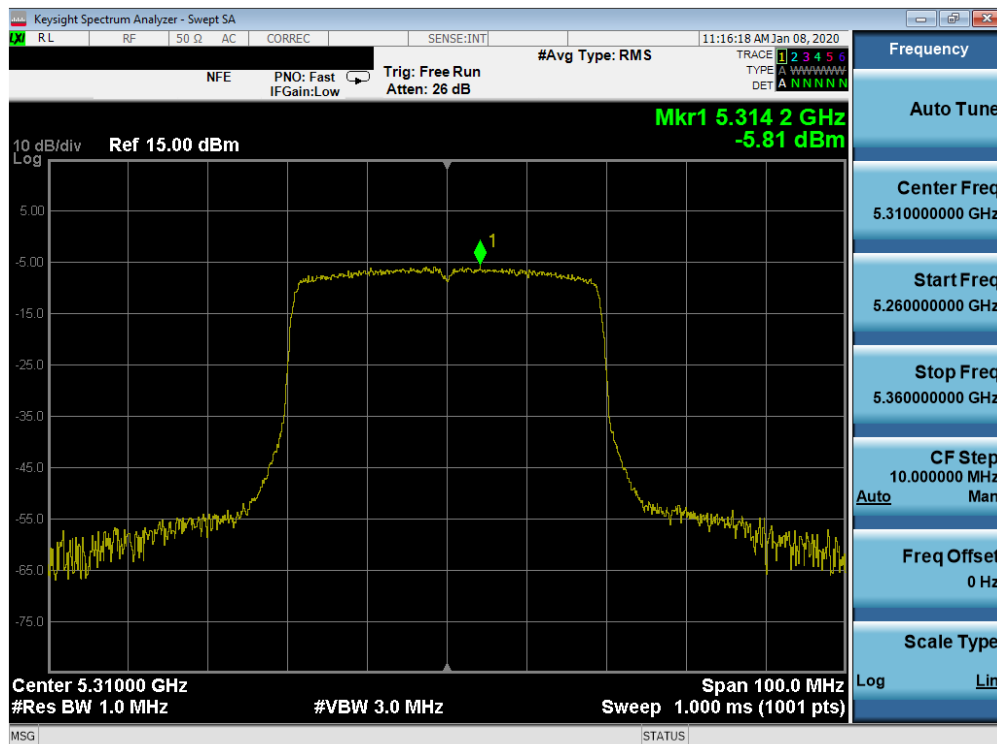


Plot 7-218. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 143 of 234

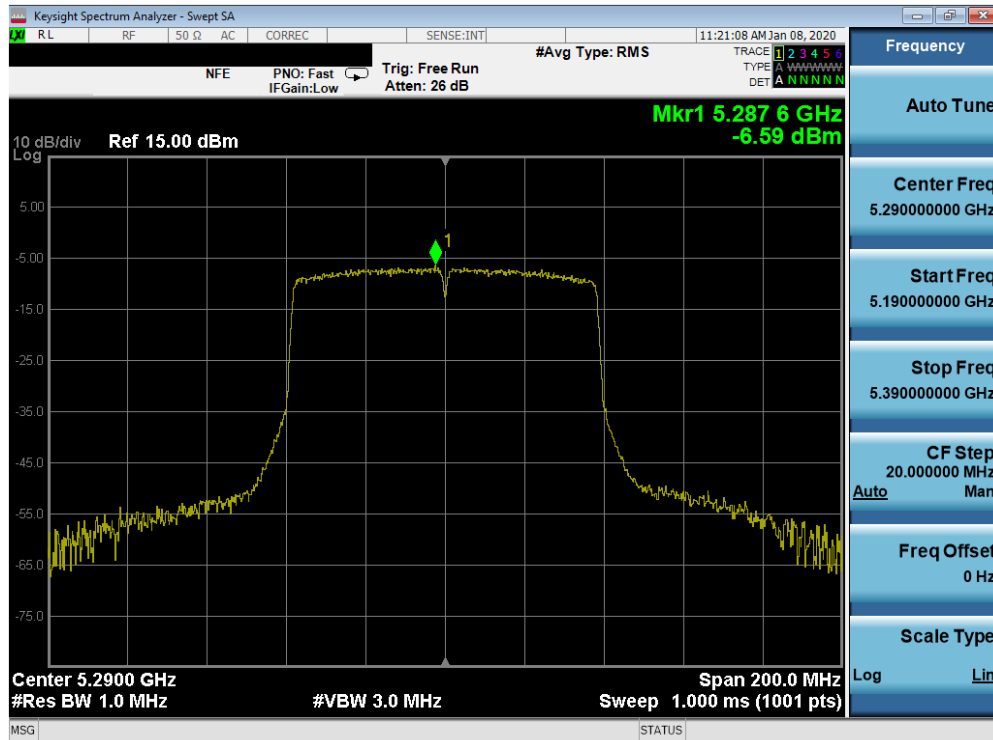


Plot 7-219. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax (UNII Band 2A) – Ch. 54)

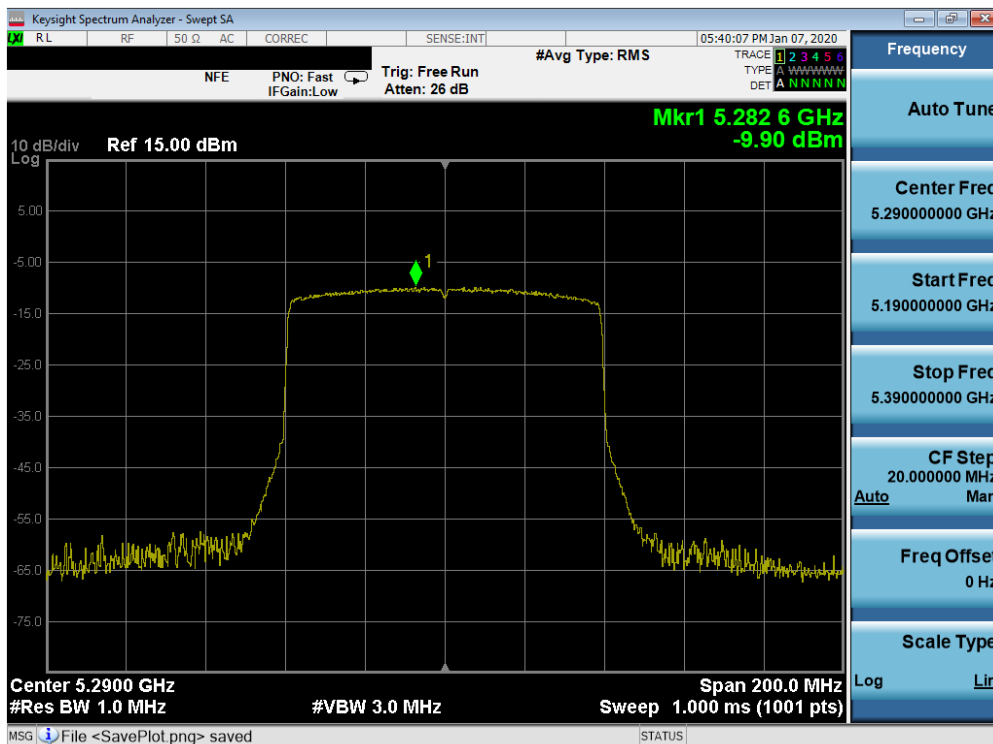


Plot 7-220. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax (UNII Band 2A) – Ch. 62)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 144 of 234

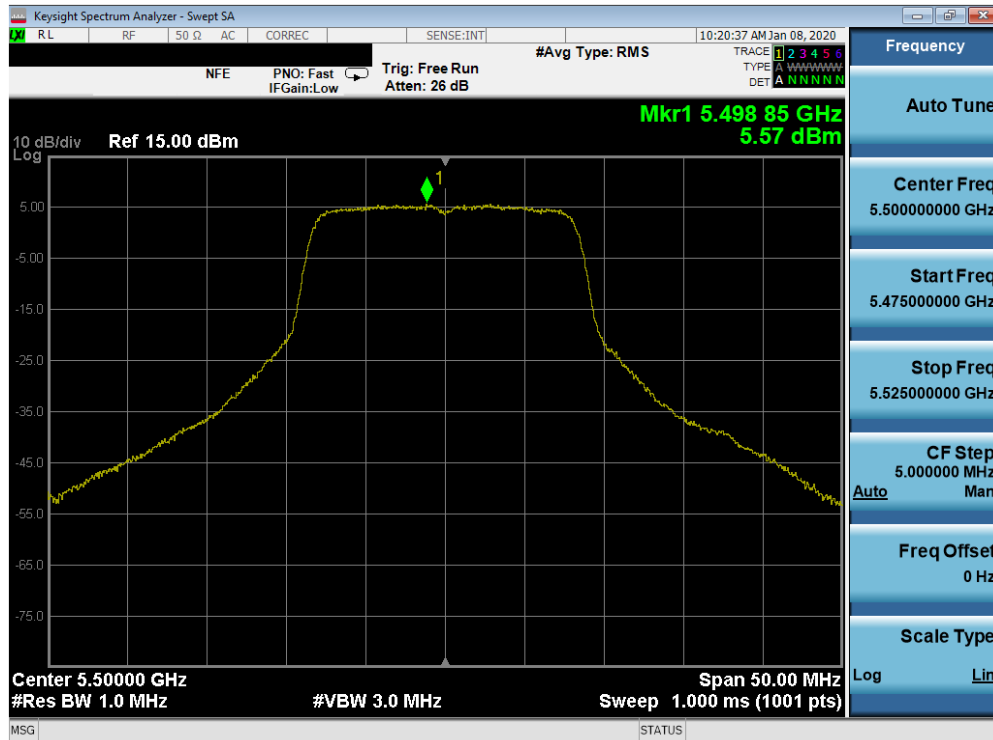


Plot 7-221. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

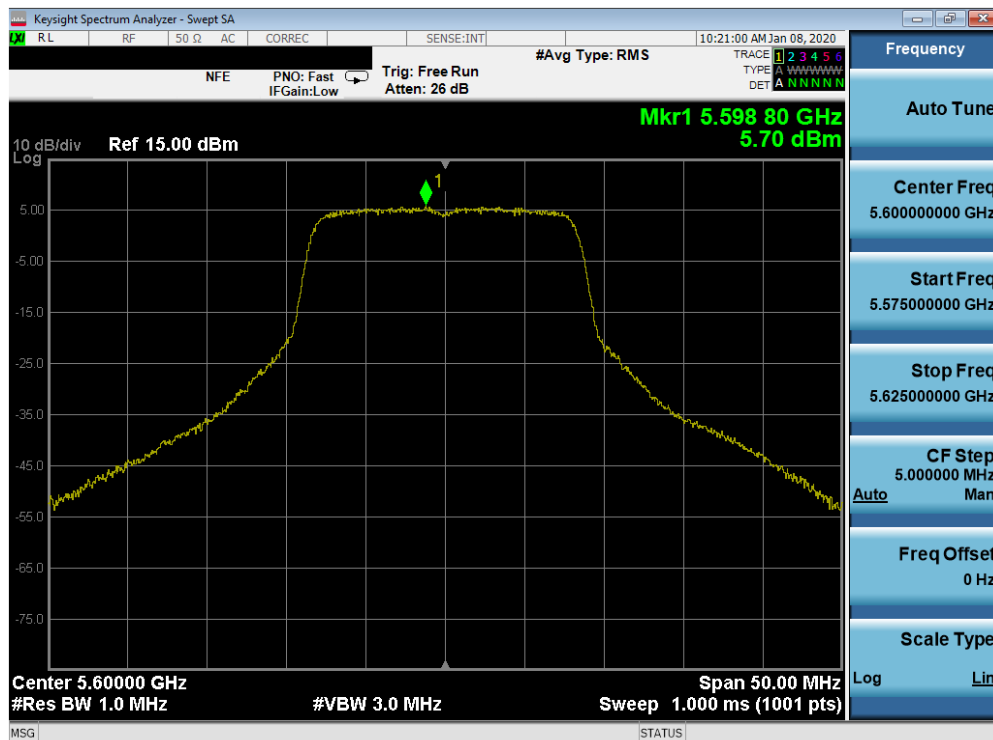


Plot 7-222. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax (UNII Band 2A) – Ch. 58)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 145 of 234

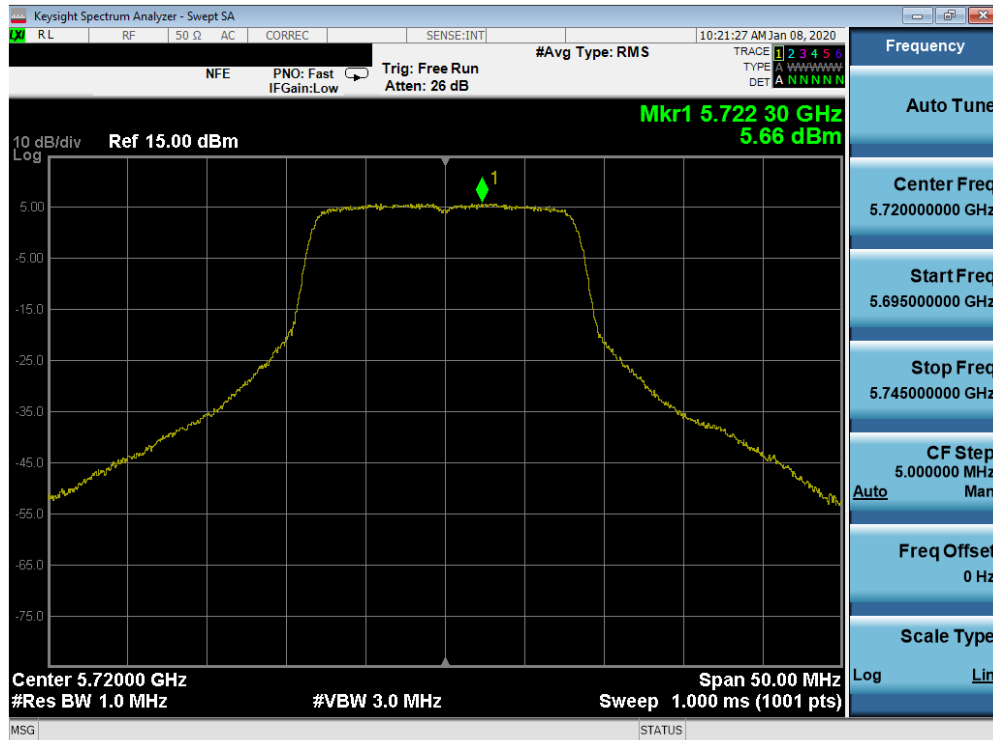


Plot 7-223. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2C) – Ch. 100)

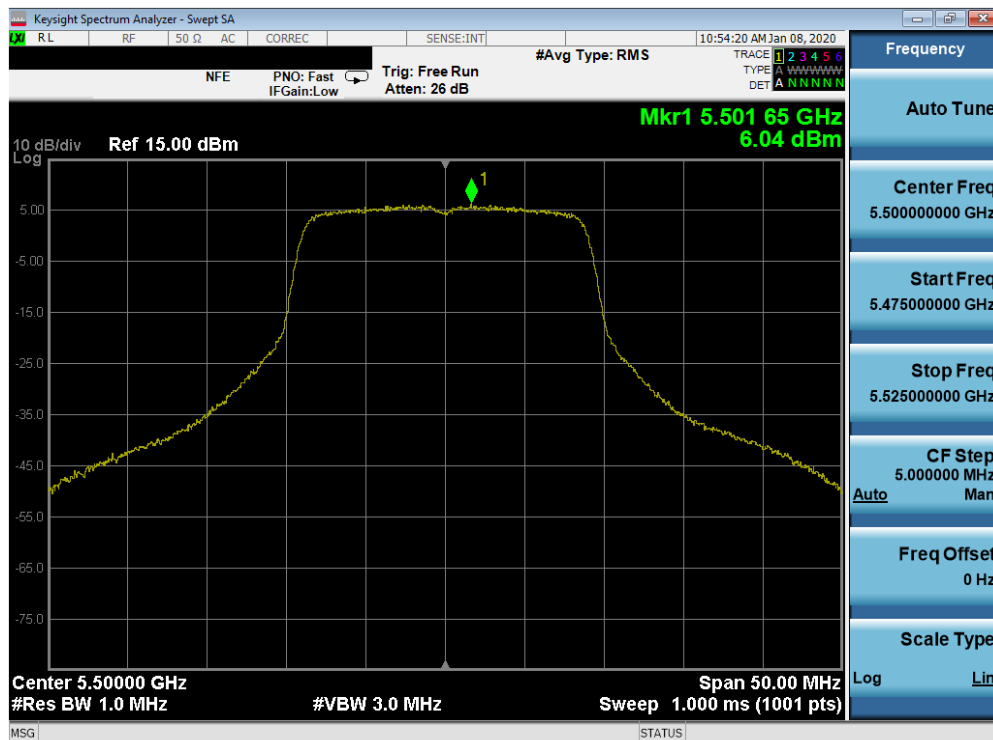


Plot 7-224. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2C) – Ch. 120)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 146 of 234

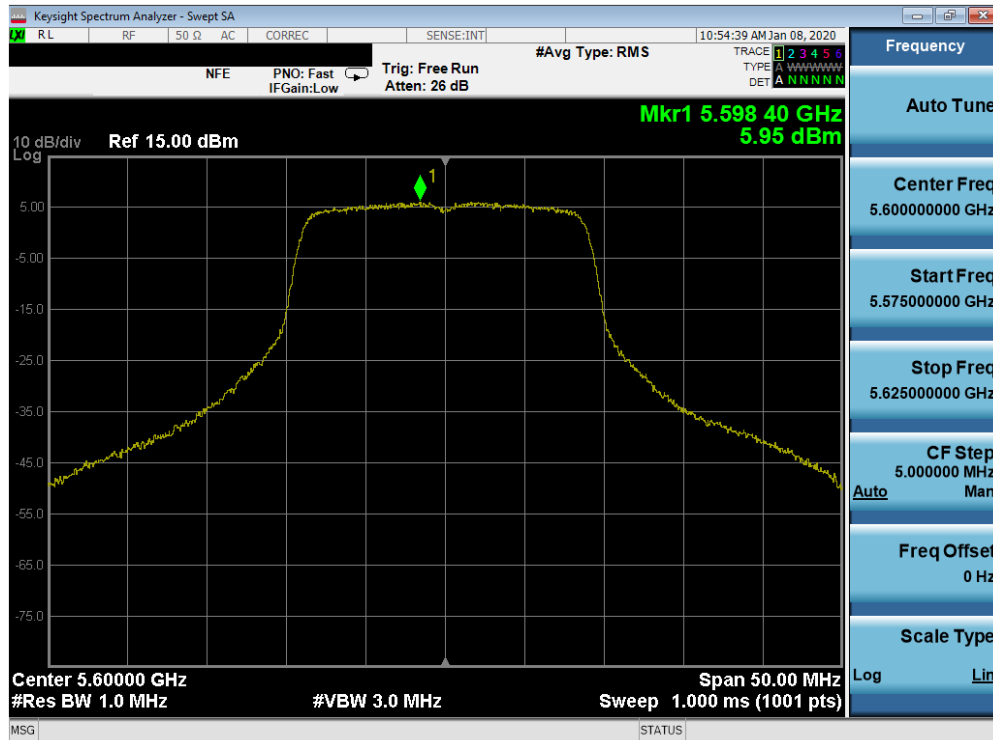


Plot 7-225. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2C) – Ch. 144)

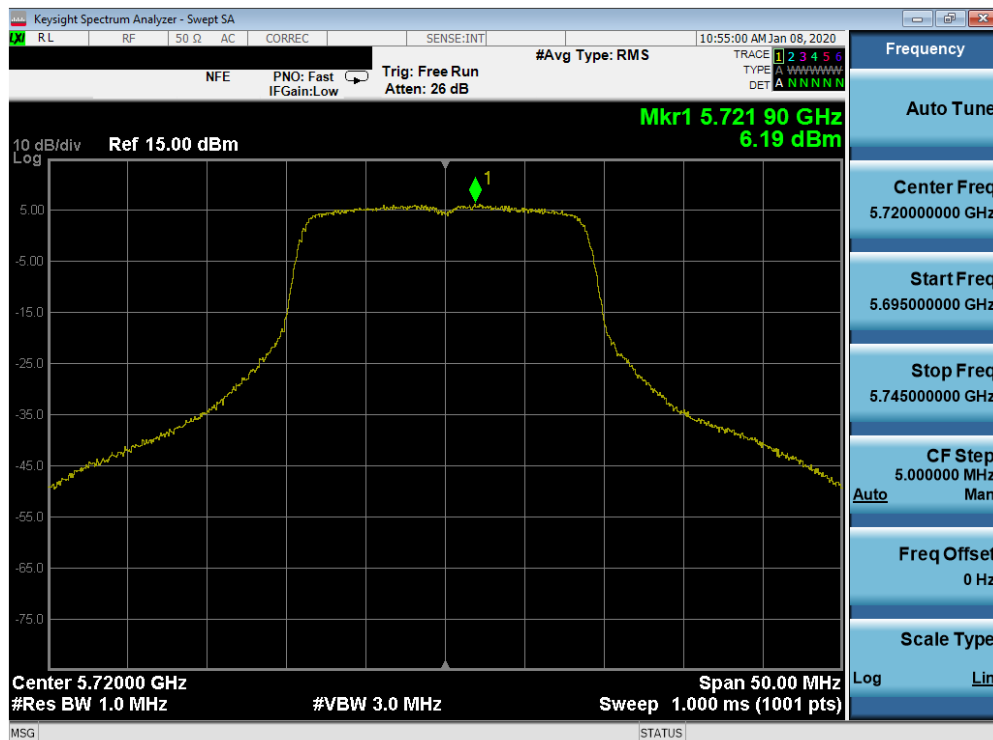


Plot 7-226. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 147 of 234

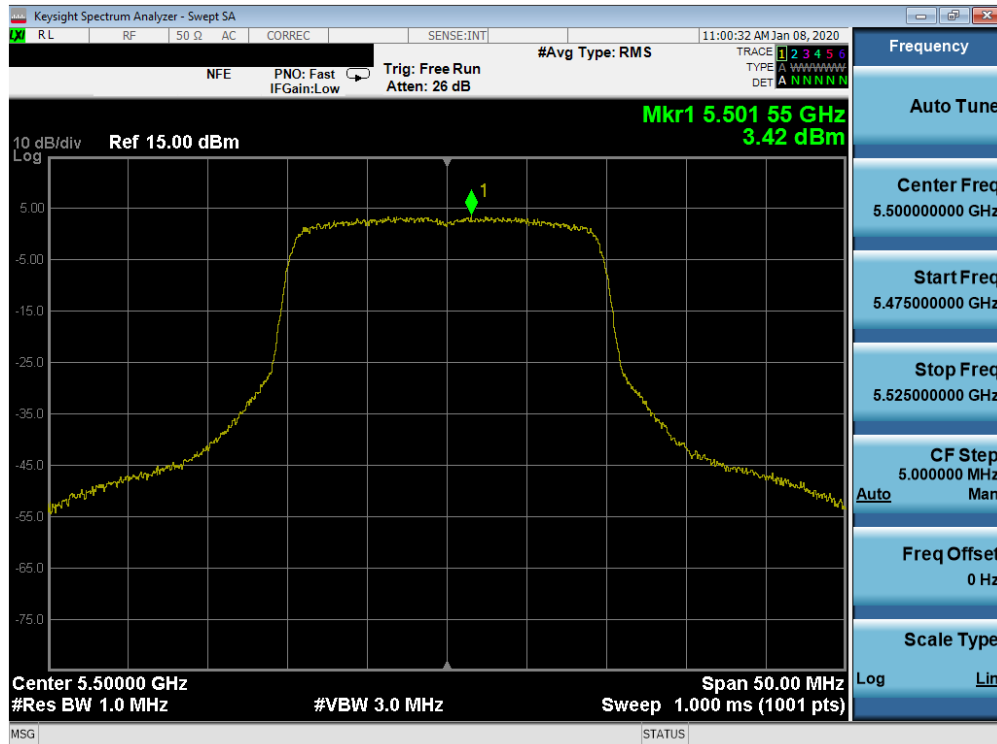


Plot 7-227. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2C) – Ch. 120)

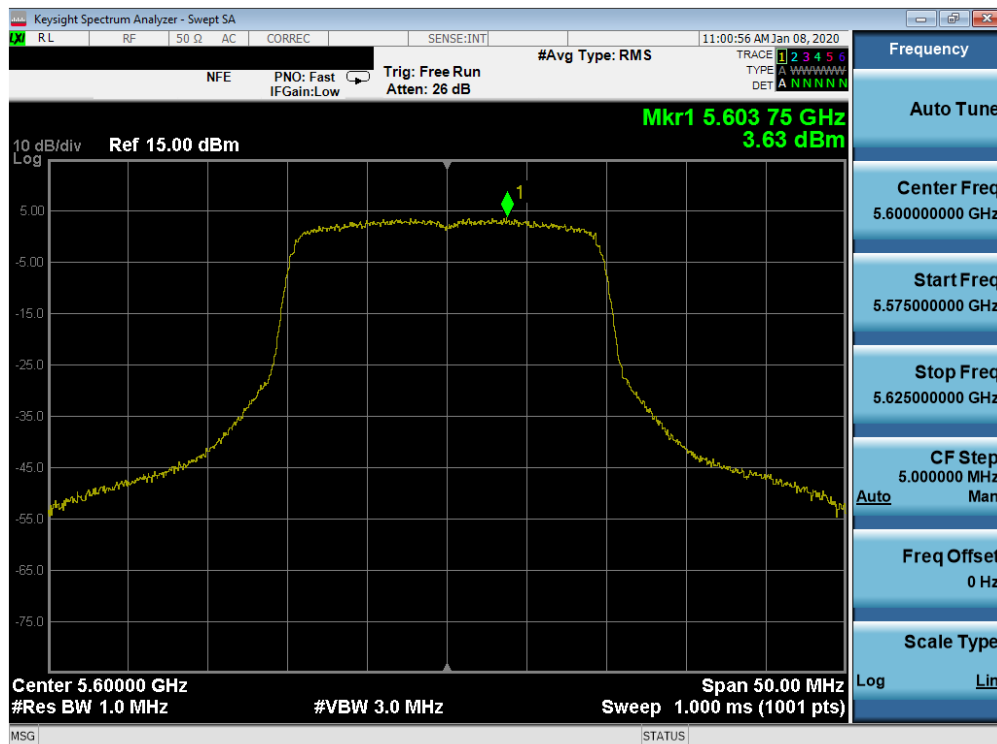


Plot 7-228. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2C) – Ch. 144)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 148 of 234

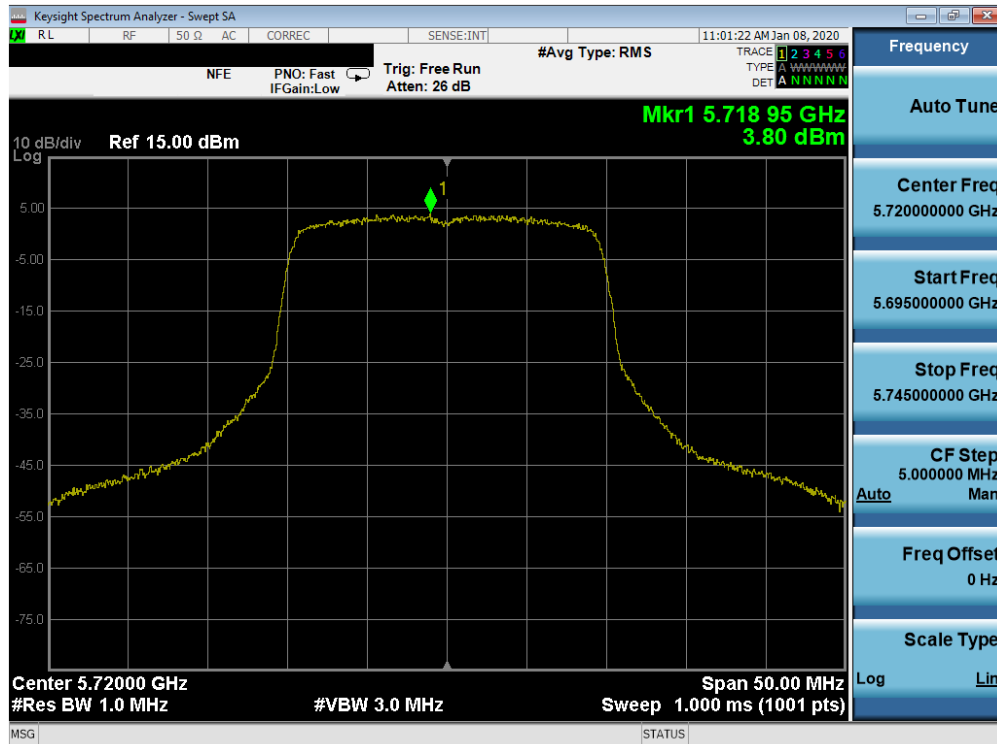


Plot 7-229. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax (UNII Band 2C) – Ch. 100)

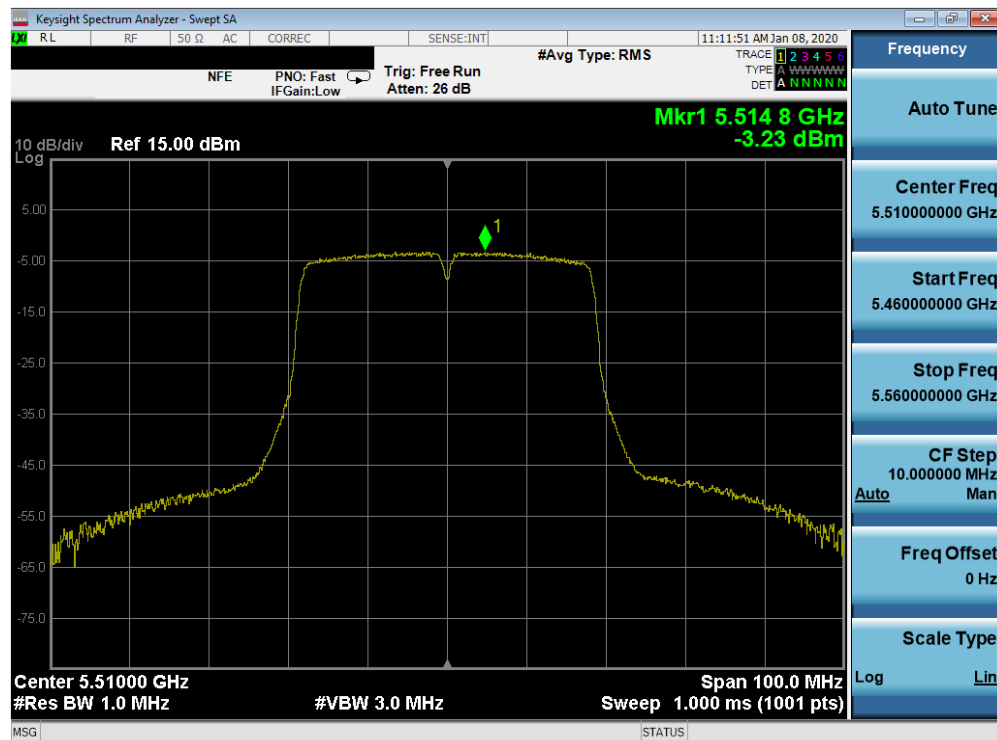


Plot 7-230. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax (UNII Band 2C) – Ch. 120)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 149 of 234

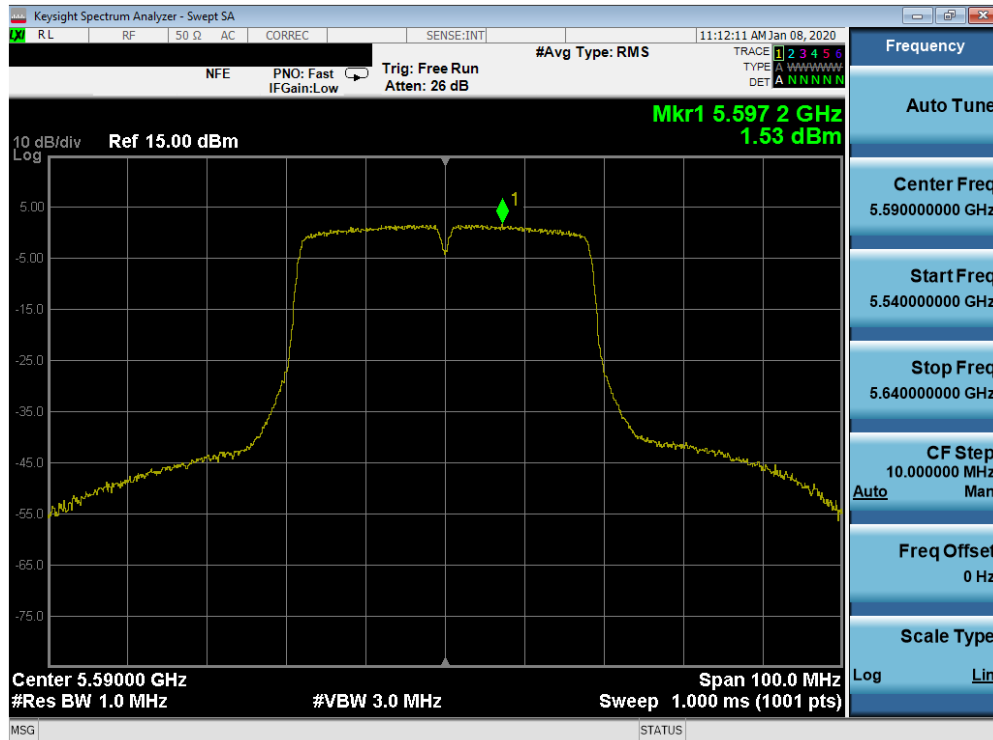


Plot 7-231. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax (UNII Band 2C) – Ch. 144)

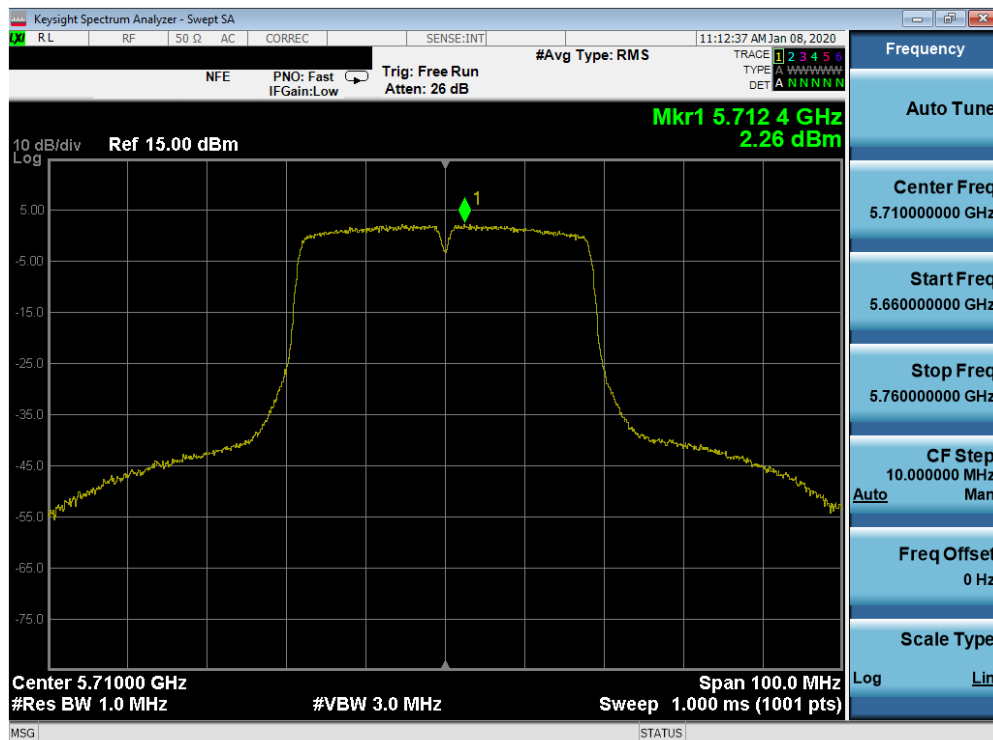


Plot 7-232. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 150 of 234

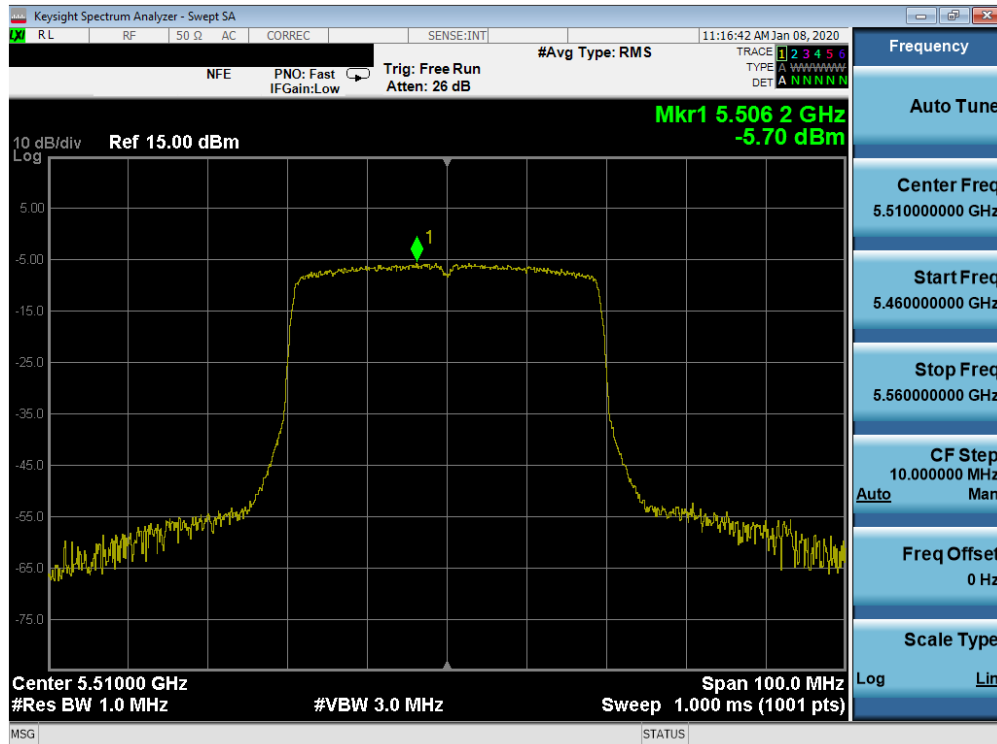


Plot 7-233. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2C) – Ch. 118)

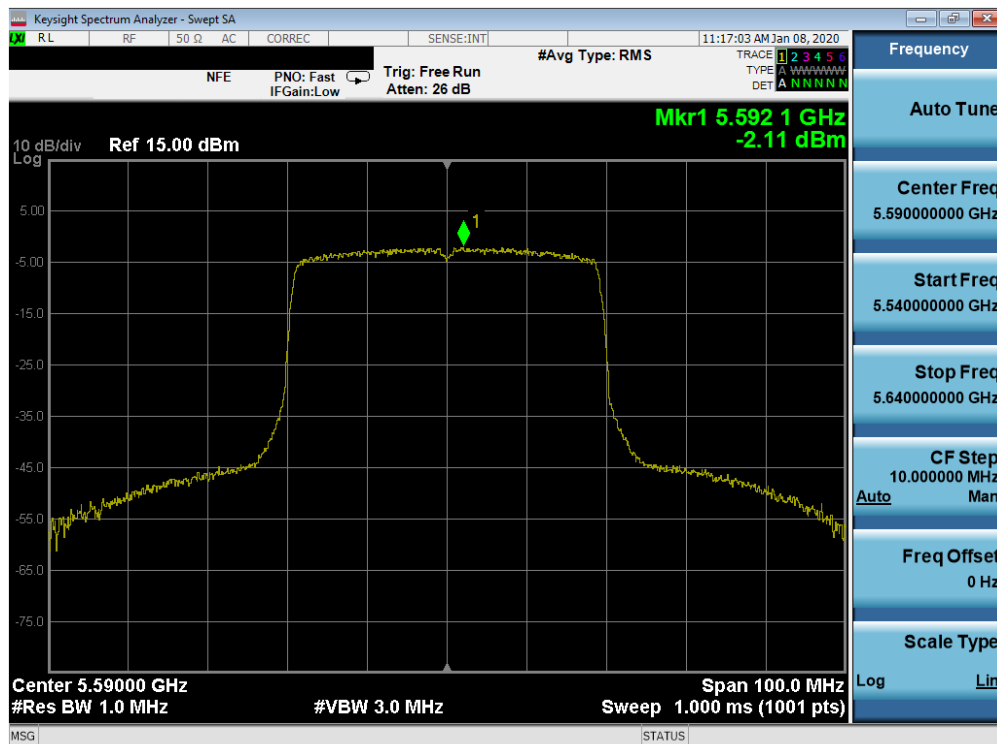


Plot 7-234. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 151 of 234

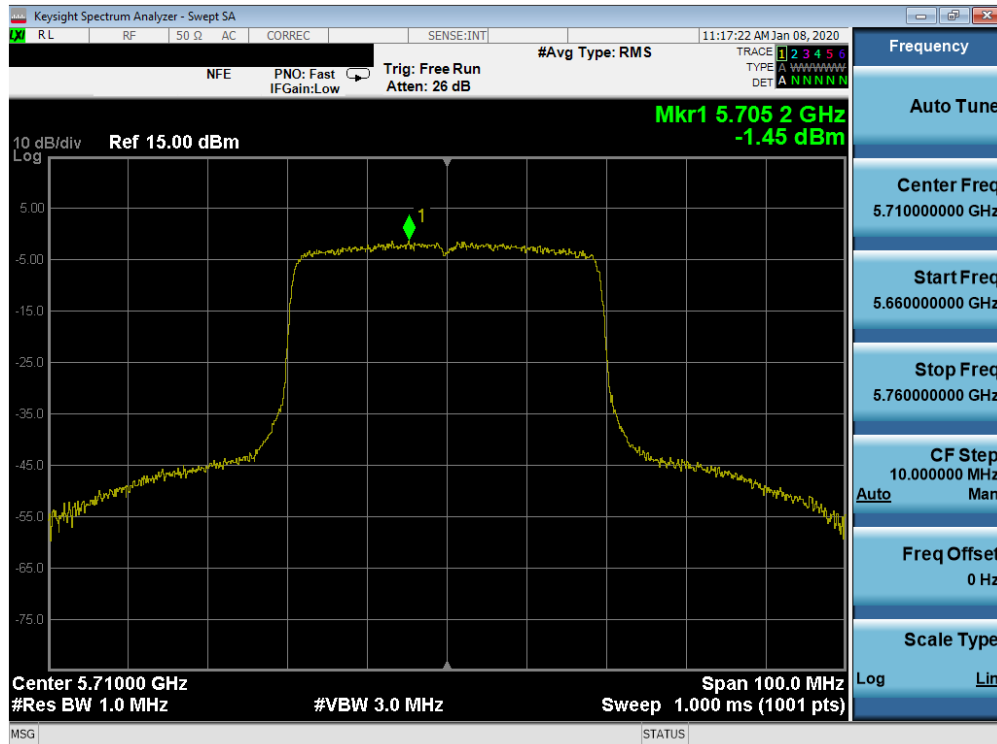


Plot 7-235. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax (UNII Band 2C) – Ch. 102)

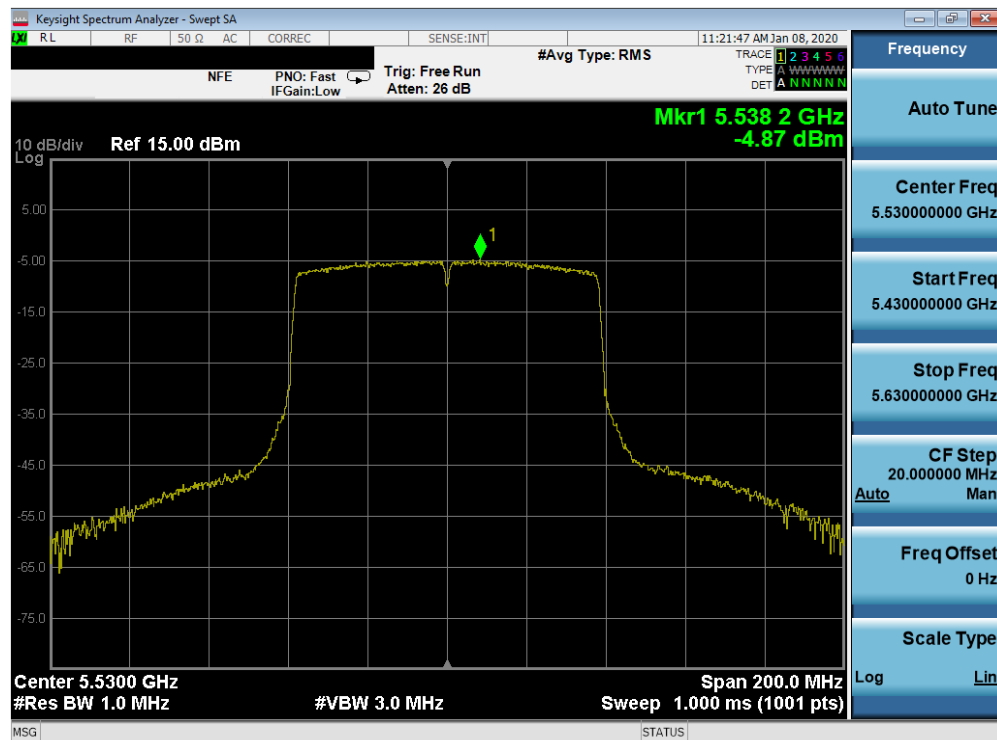


Plot 7-236. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax (UNII Band 2C) – Ch. 118)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 152 of 234

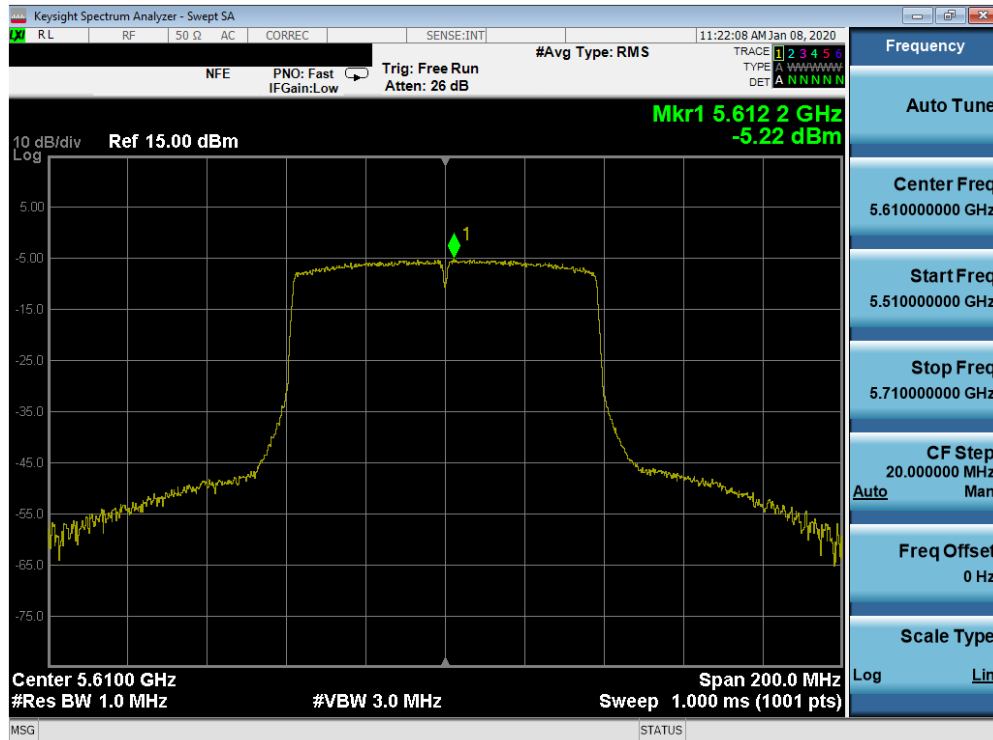


Plot 7-237. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax (UNII Band 2C) – Ch. 142)

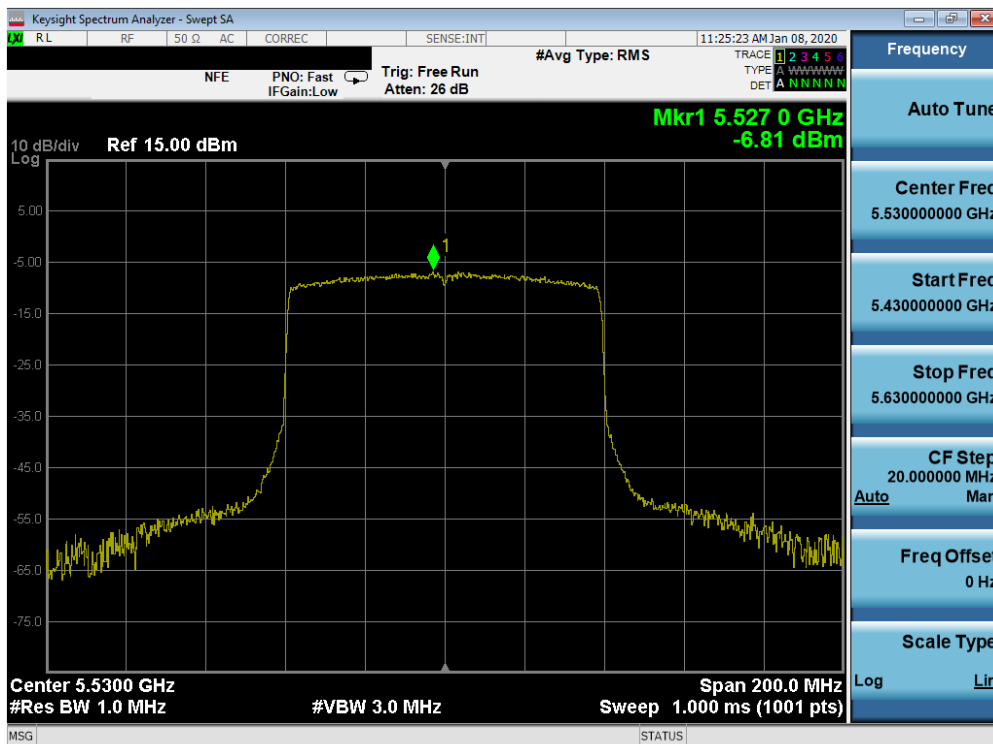


Plot 7-238. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 153 of 234

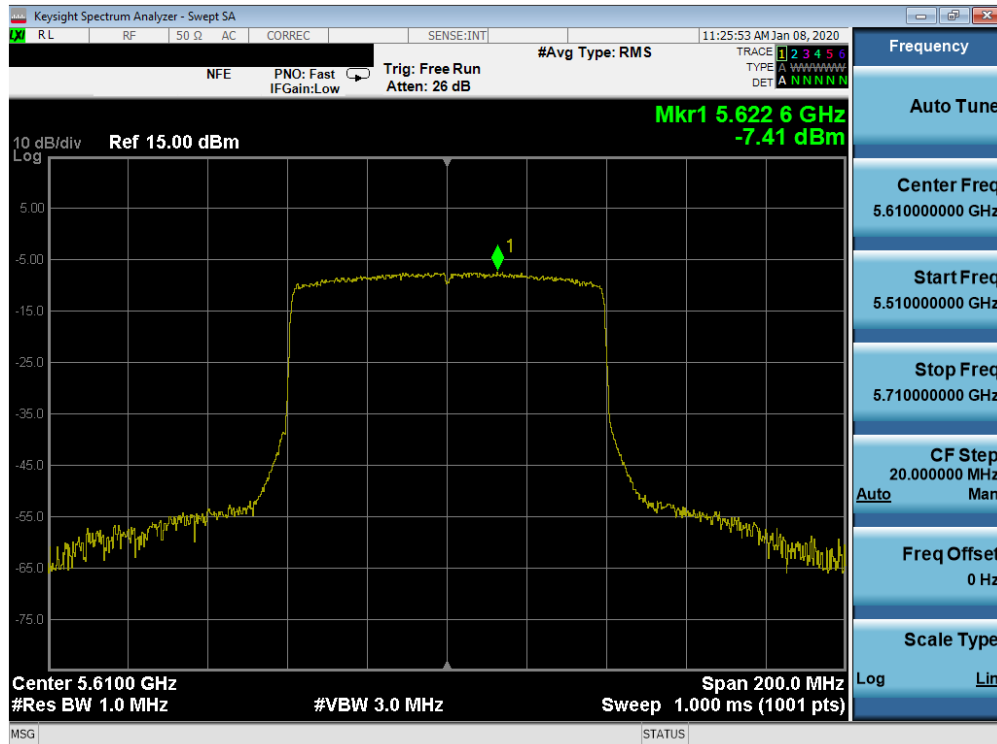


Plot 7-239. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 122)



Plot 7-240. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax (UNII Band 2C) – Ch. 106)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07.ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 154 of 234



Plot 7-241. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax (UNII Band 2C) – Ch. 122)

FCC ID: ZNFV600AM	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1912300229-07-ZNF	Test Dates: 12/30/2019 - 2/03/2020	EUT Type: Portable Handset		Page 155 of 234