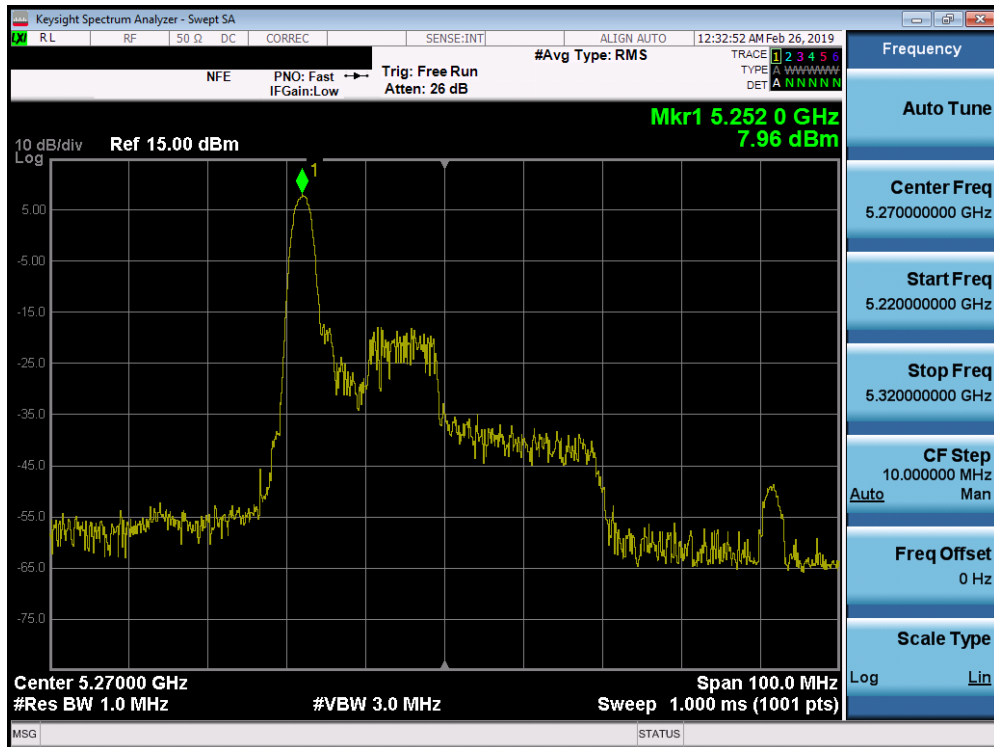
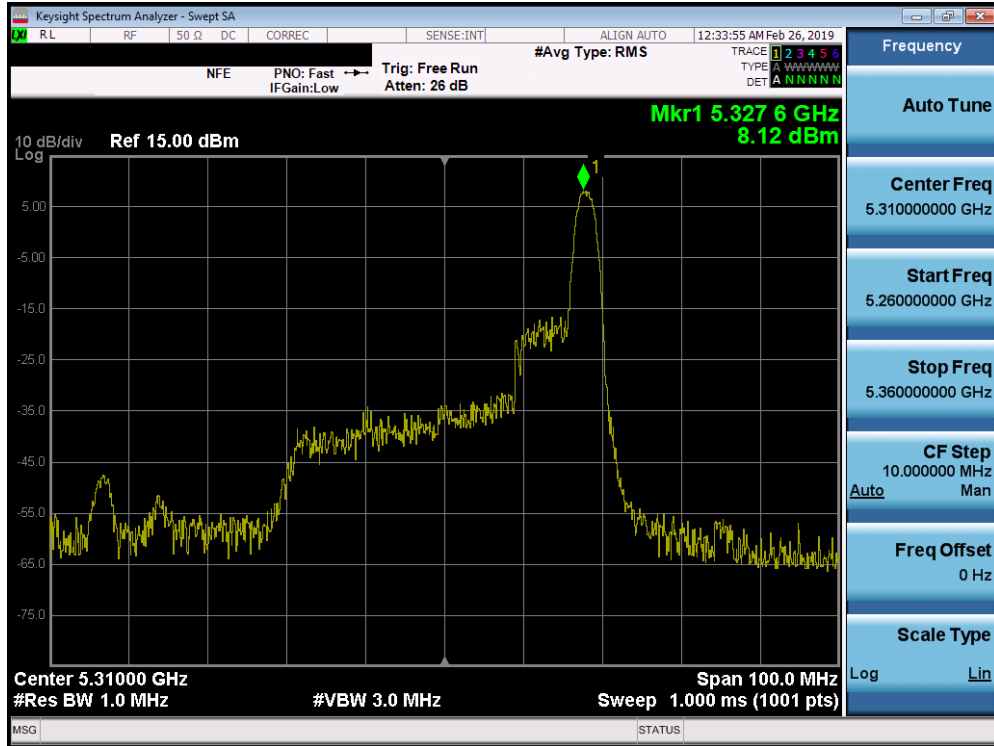


Plot 7-171. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 64)

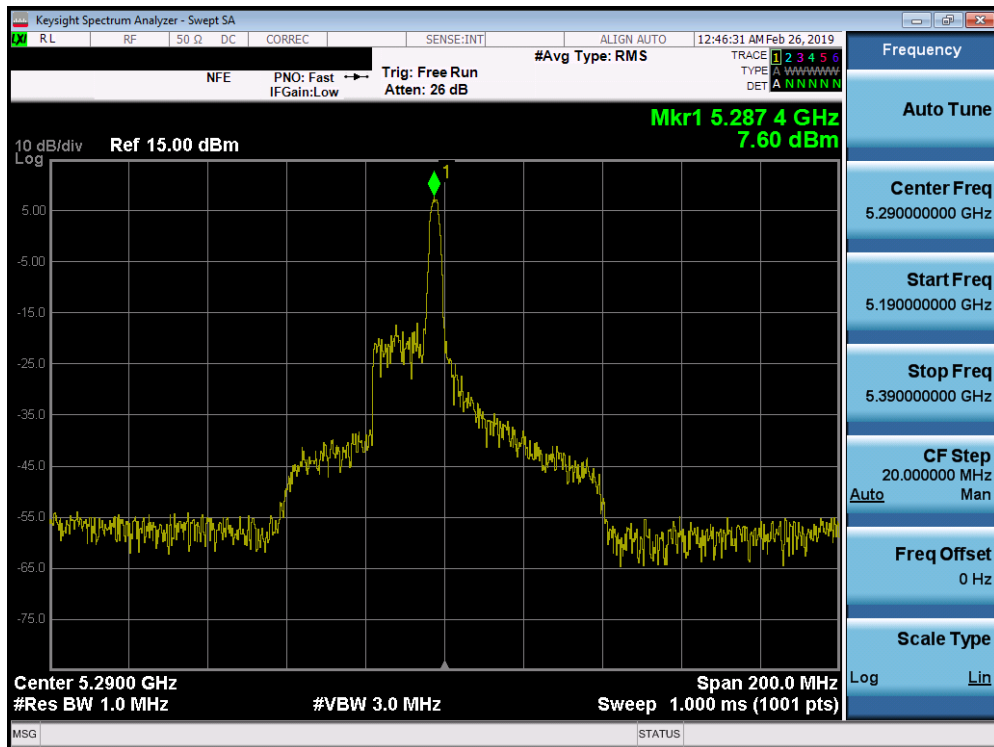


Plot 7-172. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 139 of 330

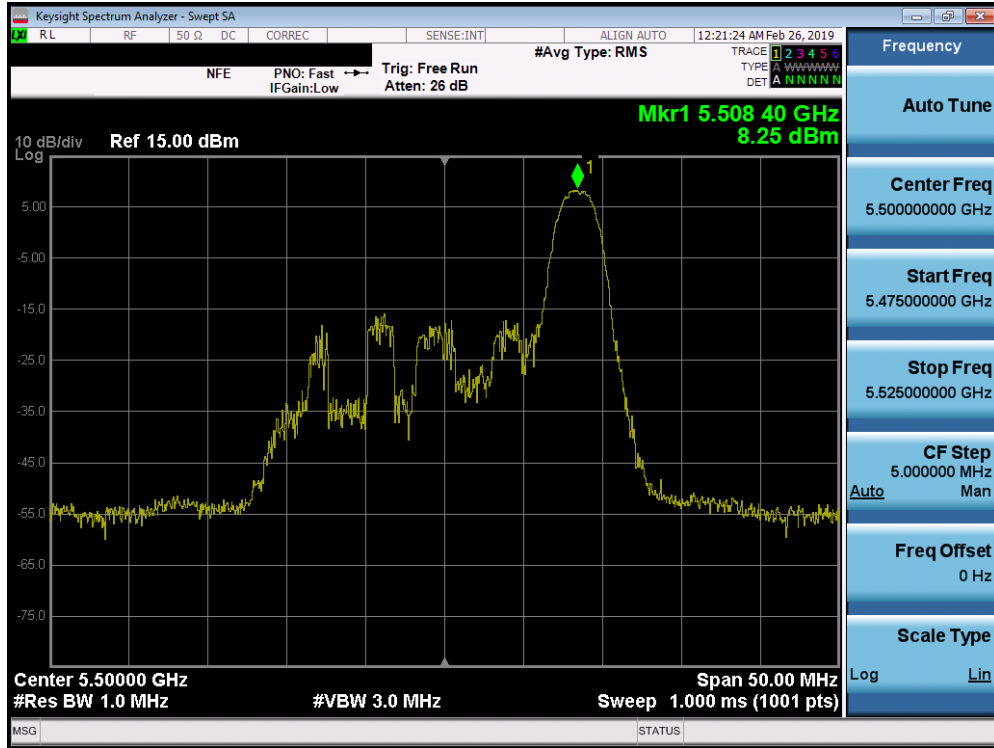


Plot 7-173. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 62)

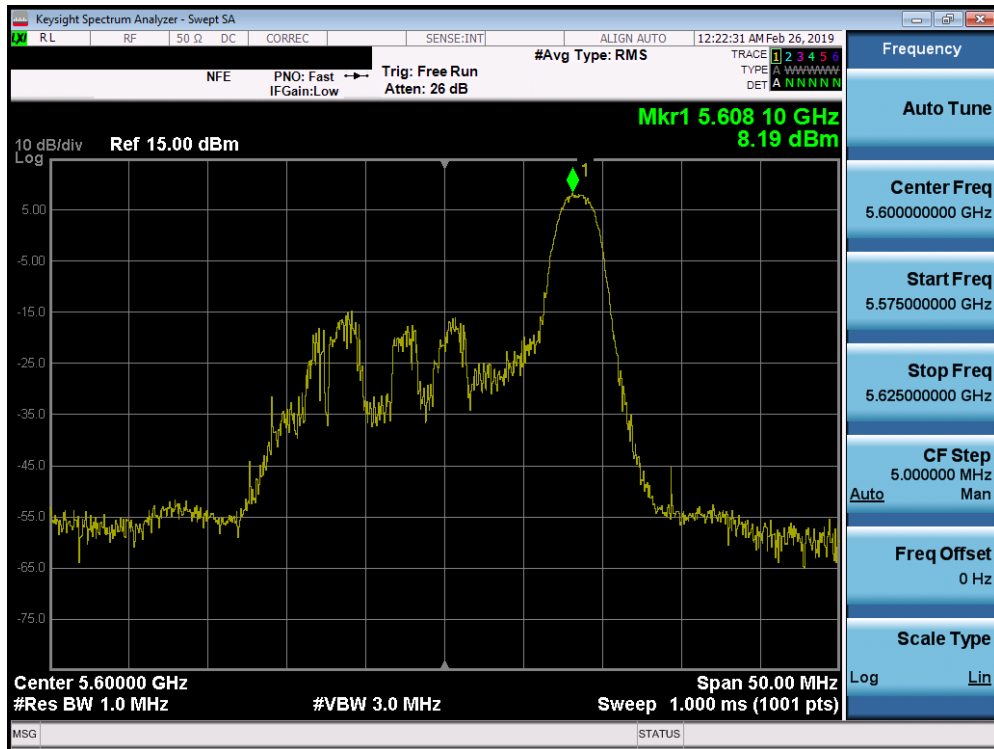


Plot 7-174. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMF907B	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset	Page 140 of 330

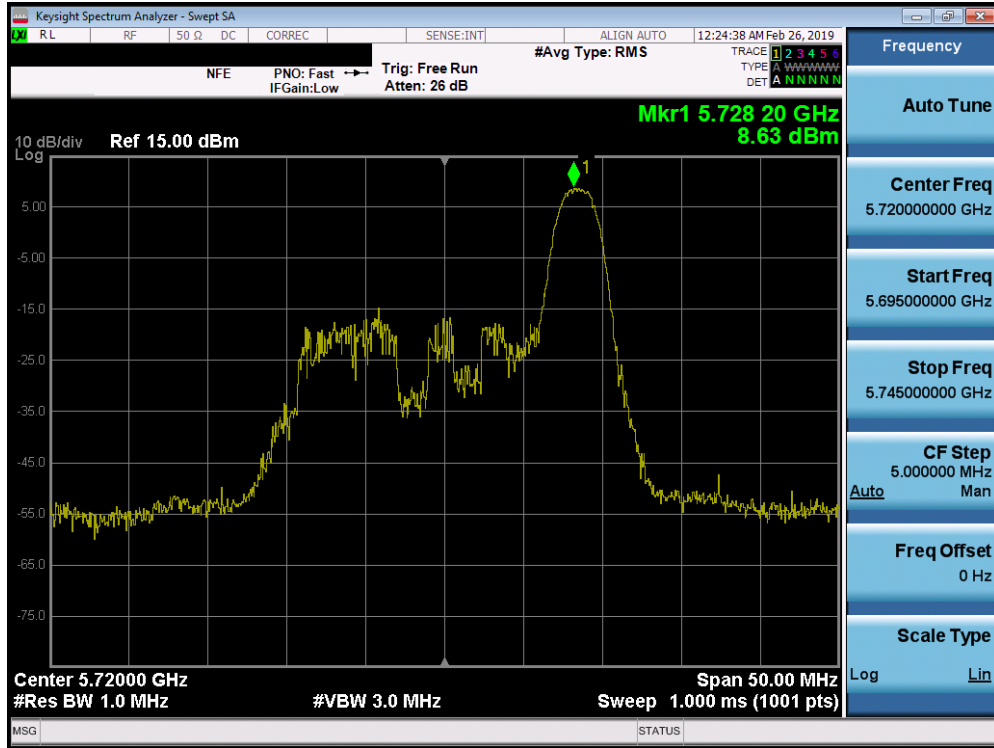


Plot 7-175. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 100)

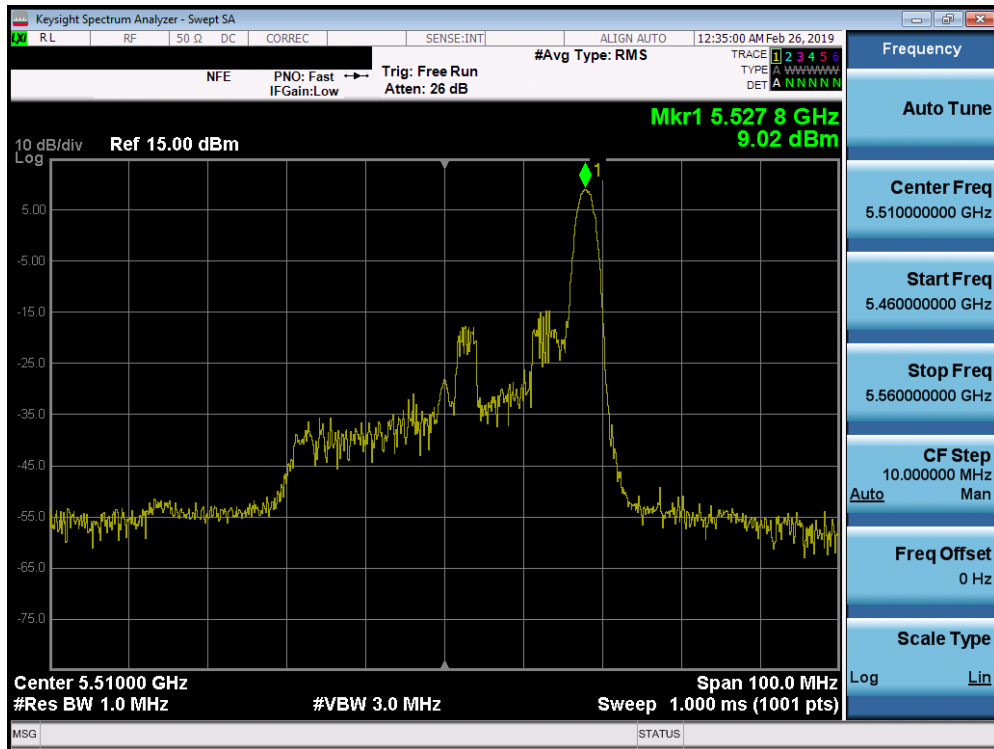


Plot 7-176. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 120)

FCC ID: A3LSMF907B	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 141 of 330

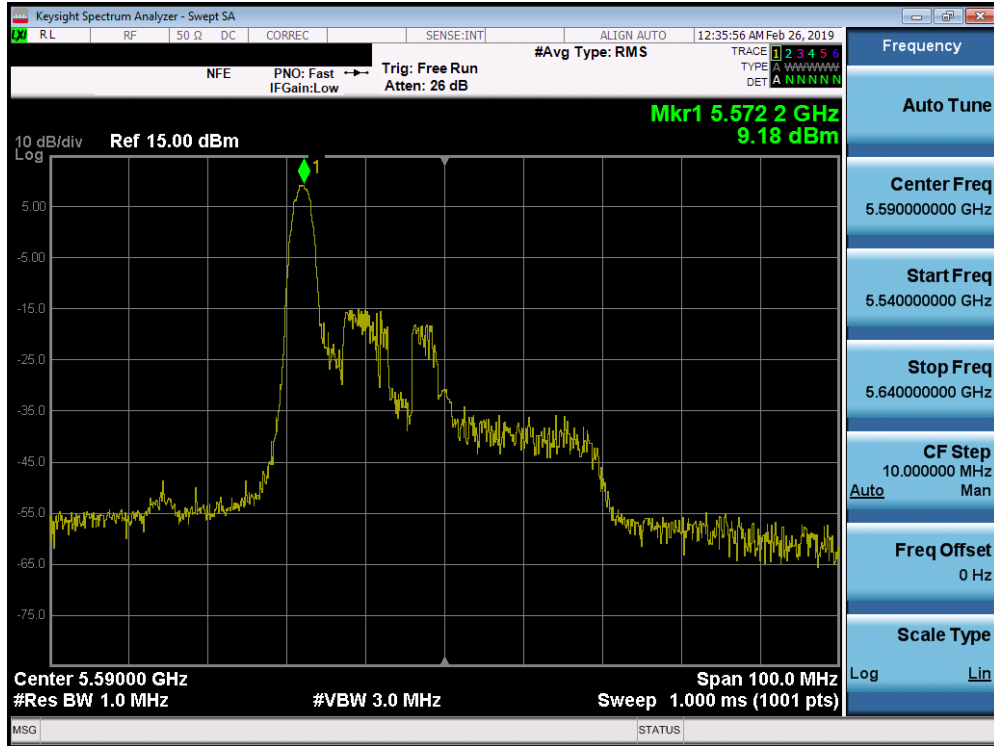


Plot 7-177. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 144)

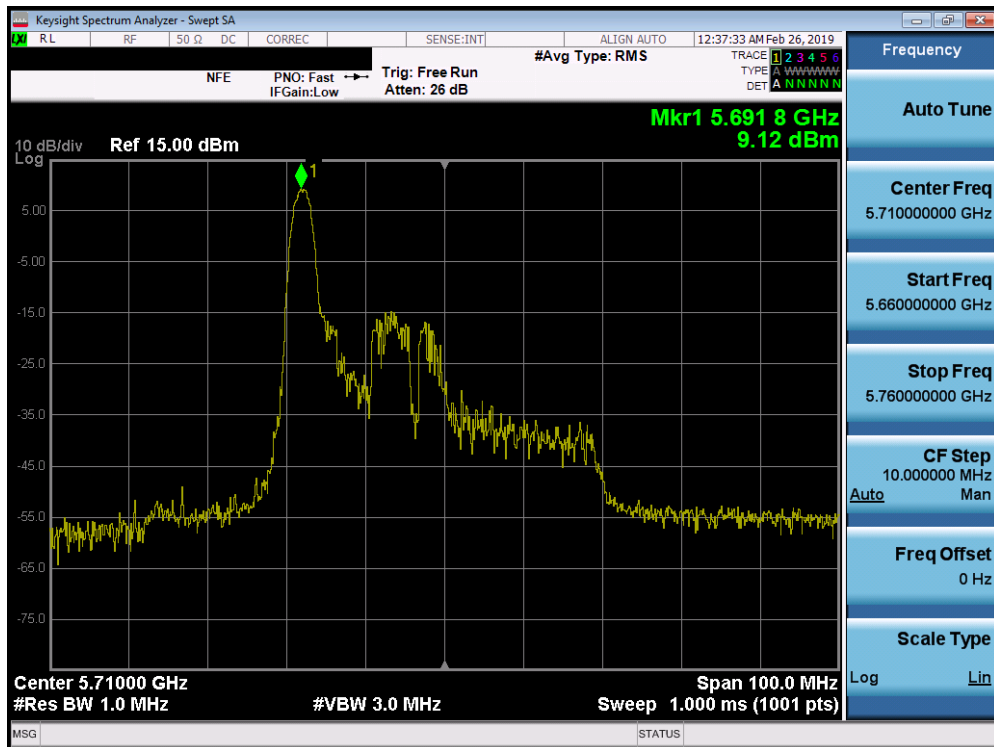


Plot 7-178. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 102)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 142 of 330

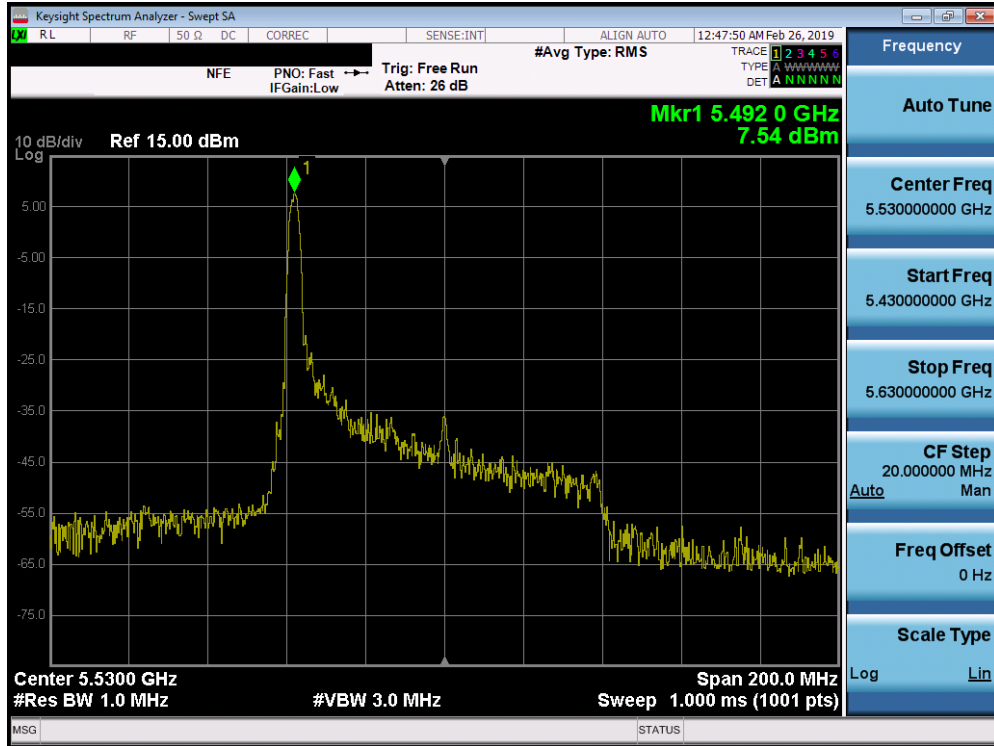


Plot 7-179. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 118)

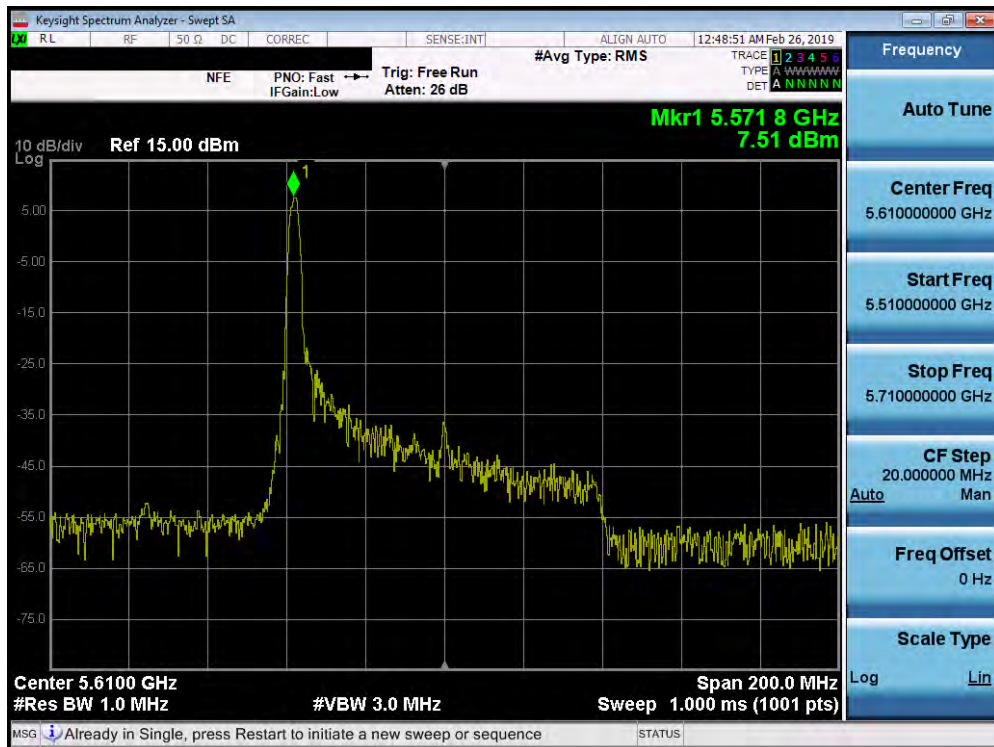


Plot 7-180. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 142)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 143 of 330

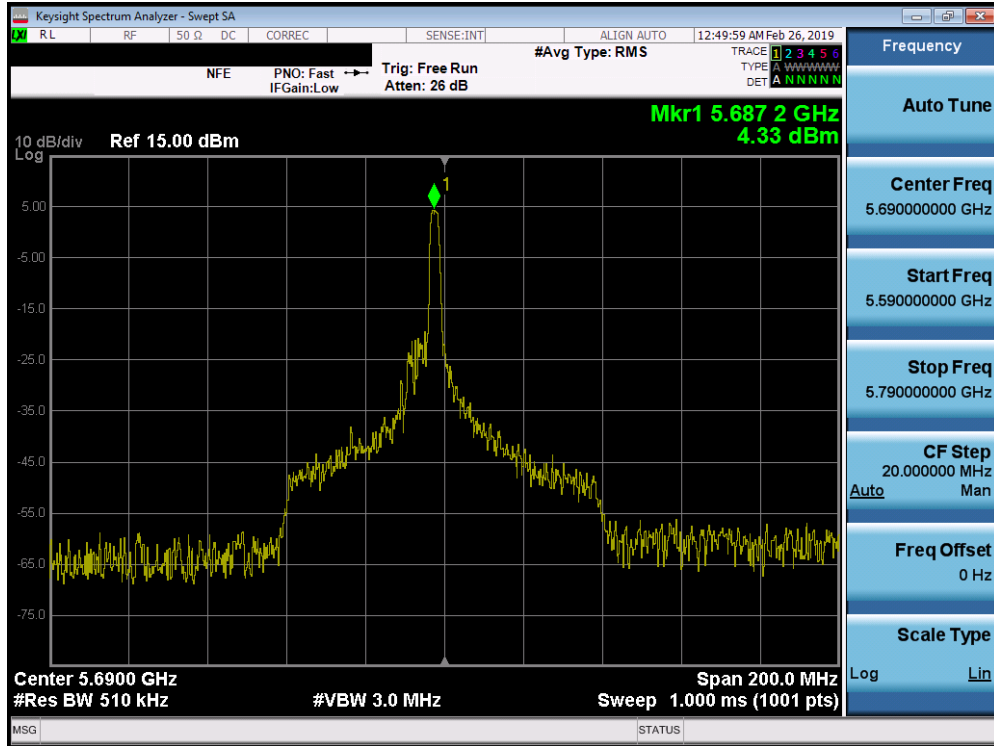


Plot 7-181. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 106)



Plot 7-182. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 122)

FCC ID: A3LSMF907B		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 144 of 330



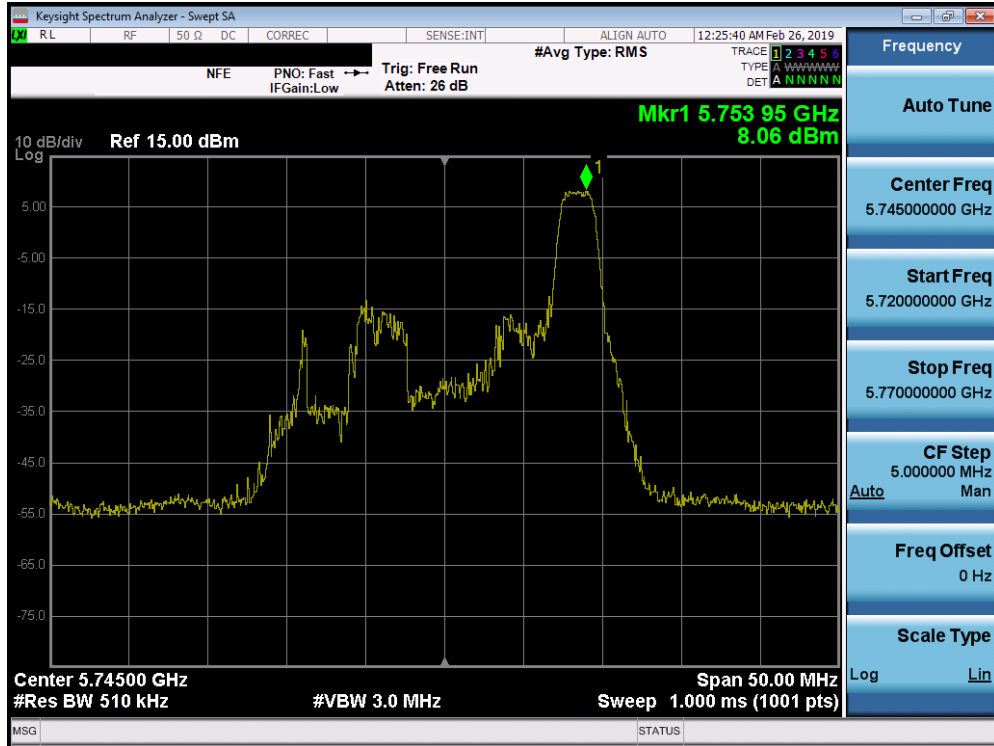
Plot 7-183. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 138)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset	Page 145 of 330	

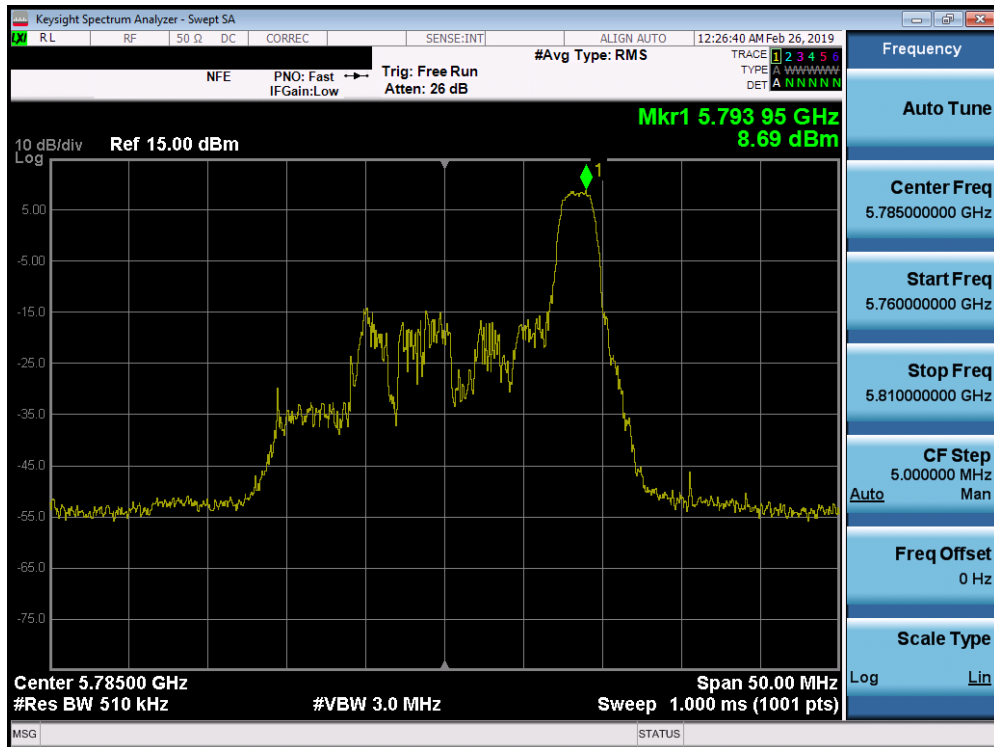
	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
Band 3	5745	149	ax (20MHz)	26T	MCS0	8.06	30.00	-21.94
	5785	157	ax (20MHz)	26T	MCS0	8.69	30.00	-21.31
	5825	165	ax (20MHz)	26T	MCS0	6.99	30.00	-23.01
	5755	151	ax (40MHz)	26T	MCS0	6.24	30.00	-23.76
	5795	159	ax (40MHz)	26T	MCS0	5.97	30.00	-24.03
	5775	155	ax (80MHz)	26T	MCS0	7.87	30.00	-22.13

Table 7-63. Band 3 Conducted Power Spectral Density Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 146 of 330

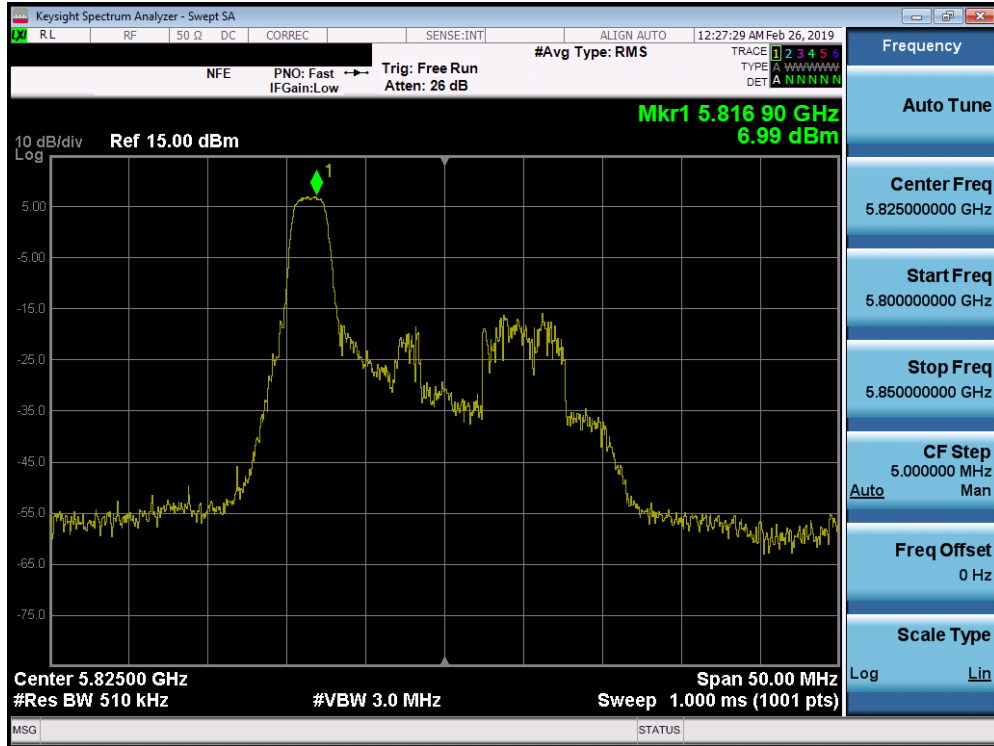


Plot 7-184. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 149)

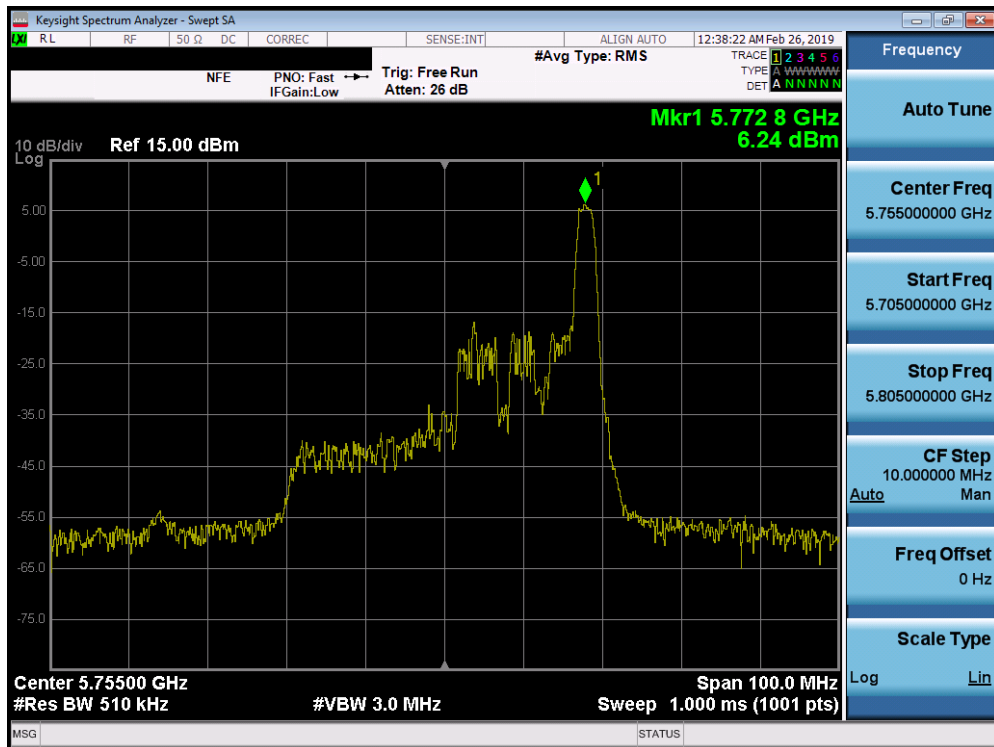


Plot 7-185. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 157)

FCC ID: A3LSMF907B		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 147 of 330



Plot 7-186. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 165)



Plot 7-187. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 151)

FCC ID: A3LSMF907B	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset	Page 148 of 330

SISO Antenna-2 Power Spectral Density Measurements (Full Tones)

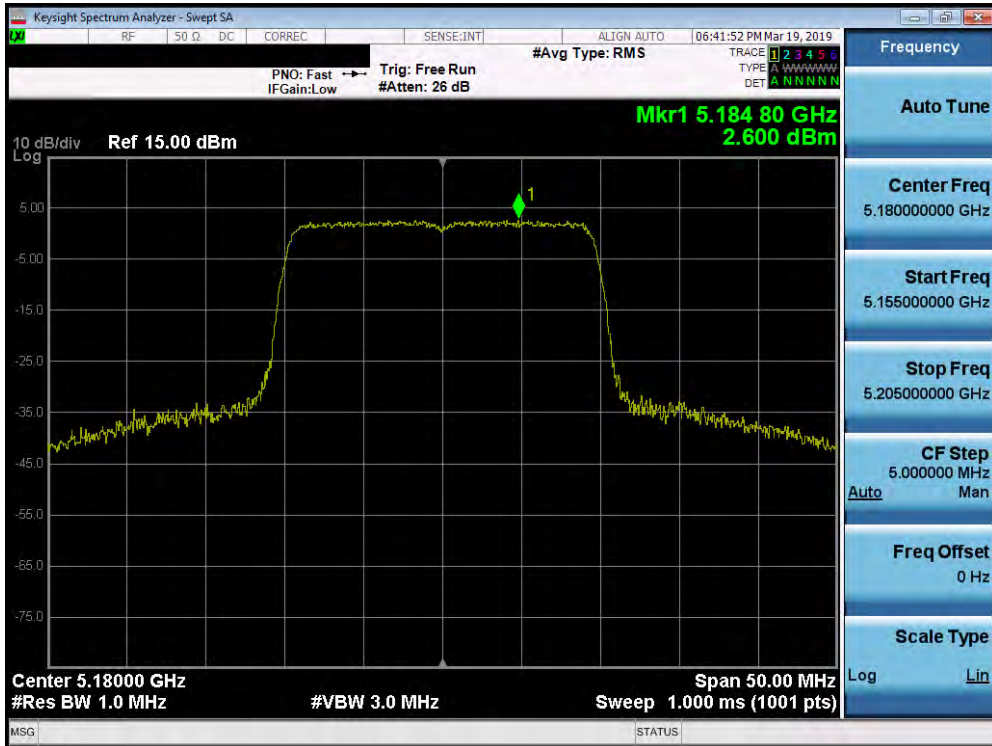
	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured Power Density [dBm]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	ax (20MHz)	242T	MCS0	2.60	11.0	-8.40
	5200	40	ax (20MHz)	242T	MCS0	3.09	11.0	-7.91
	5240	48	ax (20MHz)	242T	MCS0	4.06	11.0	-6.94
	5190	38	ax (40MHz)	484T	MCS0	-1.36	11.0	-12.36
	5230	46	ax (40MHz)	484T	MCS0	-0.91	11.0	-11.91
	5210	42	ax (80MHz)	996T	MCS0	-5.31	11.0	-16.31
Band 2A	5260	52	ax (20MHz)	242T	MCS0	3.81	11.0	-7.19
	5280	56	ax (20MHz)	242T	MCS0	3.86	11.0	-7.14
	5320	64	ax (20MHz)	242T	MCS0	3.93	11.0	-7.07
	5270	54	ax (40MHz)	484T	MCS0	-1.08	11.0	-12.08
	5310	62	ax (40MHz)	484T	MCS0	-1.45	11.0	-12.45
	5290	58	ax (80MHz)	996T	MCS0	-5.20	11.0	-16.20
Band 2C	5500	100	ax (20MHz)	242T	MCS0	4.21	11.0	-6.79
	5600	120	ax (20MHz)	242T	MCS0	3.27	11.0	-7.73
	5720	144	ax (20MHz)	242T	MCS0	3.69	11.0	-7.31
	5510	102	ax (40MHz)	484T	MCS0	-0.58	11.0	-11.58
	5590	118	ax (40MHz)	484T	MCS0	-1.39	11.0	-12.39
	5710	142	ax (40MHz)	484T	MCS0	-0.95	11.0	-11.95
	5530	106	ax (80MHz)	996T	MCS0	-4.82	11.0	-15.82
	5610	122	ax (80MHz)	996T	MCS0	-5.68	11.0	-16.68
	5690	138	ax (80MHz)	996T	MCS0	-5.24	11.0	-16.24

Table 7-64. Conducted Power Spectral Density Measurements SISO ANT2 (Full Tones)

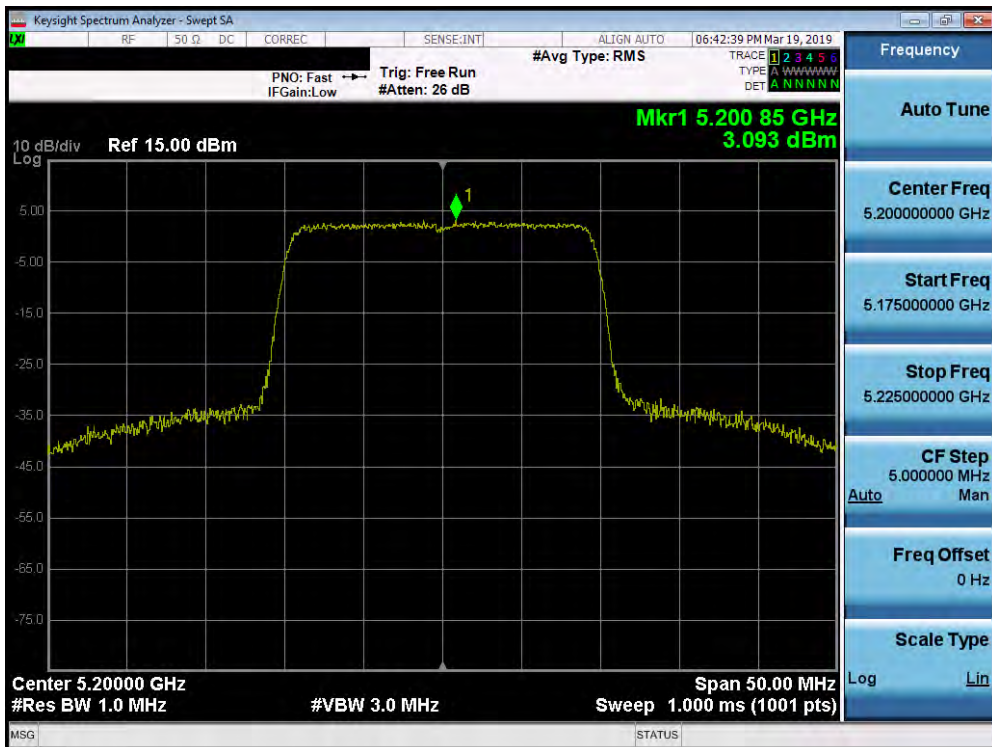
	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured Power Density [dBm]	Antenna Gain [dBi]	e.i.r.p. Power Density [dBm/MHz]	ISED Max e.i.r.p. Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	ax (20MHz)	242T	MCS0	2.60	-6.05	-3.45	10.0	-13.45
	5200	40	ax (20MHz)	242T	MCS0	3.09	-6.05	-2.96	10.0	-12.96
	5240	48	ax (20MHz)	242T	MCS0	4.06	-6.05	-1.99	10.0	-11.99
	5190	38	ax (40MHz)	484T	MCS0	-1.36	-6.05	-7.41	10.0	-17.41
	5230	46	ax (40MHz)	484T	MCS0	-0.91	-6.05	-6.96	10.0	-16.96
	5210	42	ax (80MHz)	996T	MCS0	-5.31	-6.05	-11.36	10.0	-21.36

Table 7-65. Band 1 e.i.r.p. Conducted Power Spectral Density Measurements (ISED Full Tones)

FCC ID: A3LSMF907B			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 150 of 330	

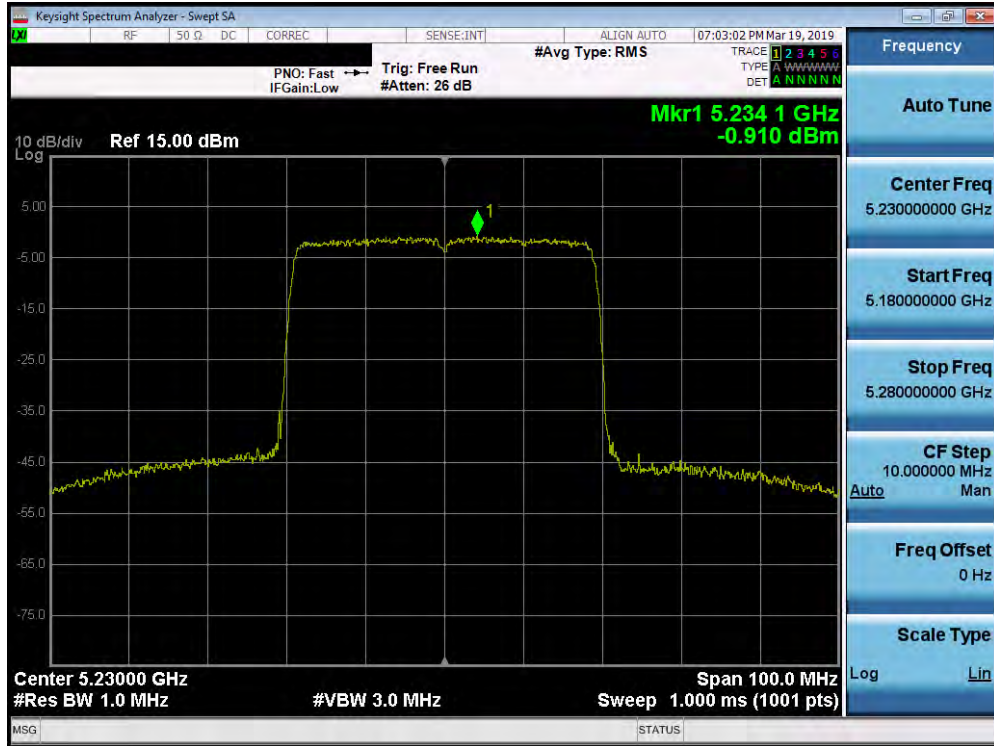


Plot 7-190. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 1) – Ch. 36)

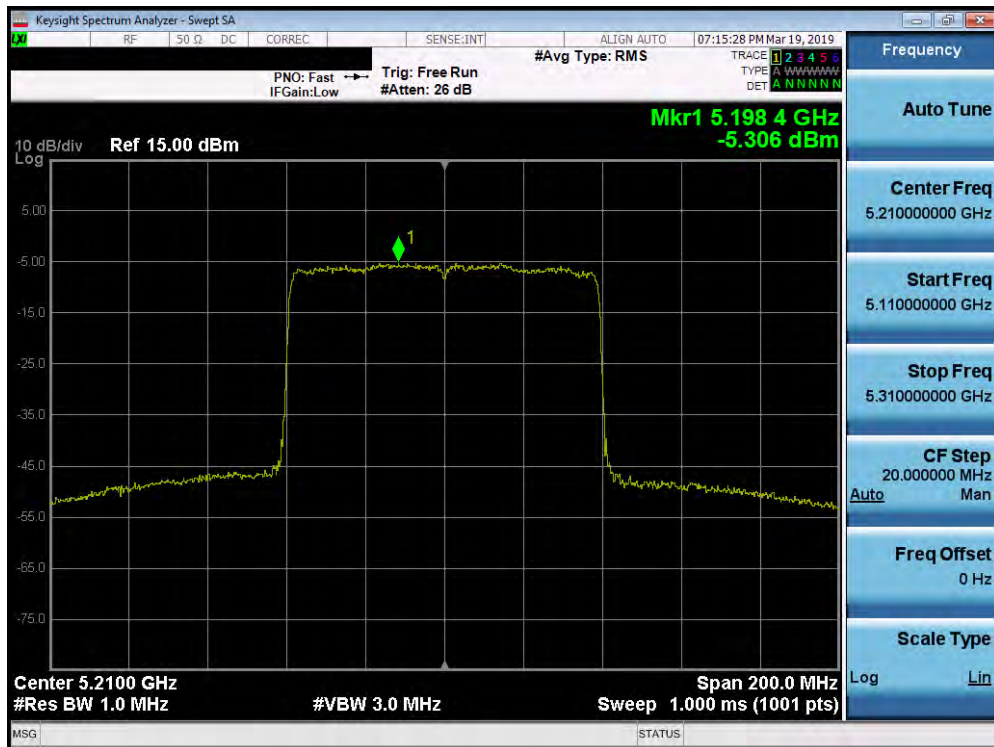


Plot 7-191. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 1) – Ch. 40)

FCC ID: A3LSMF907B	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 151 of 330

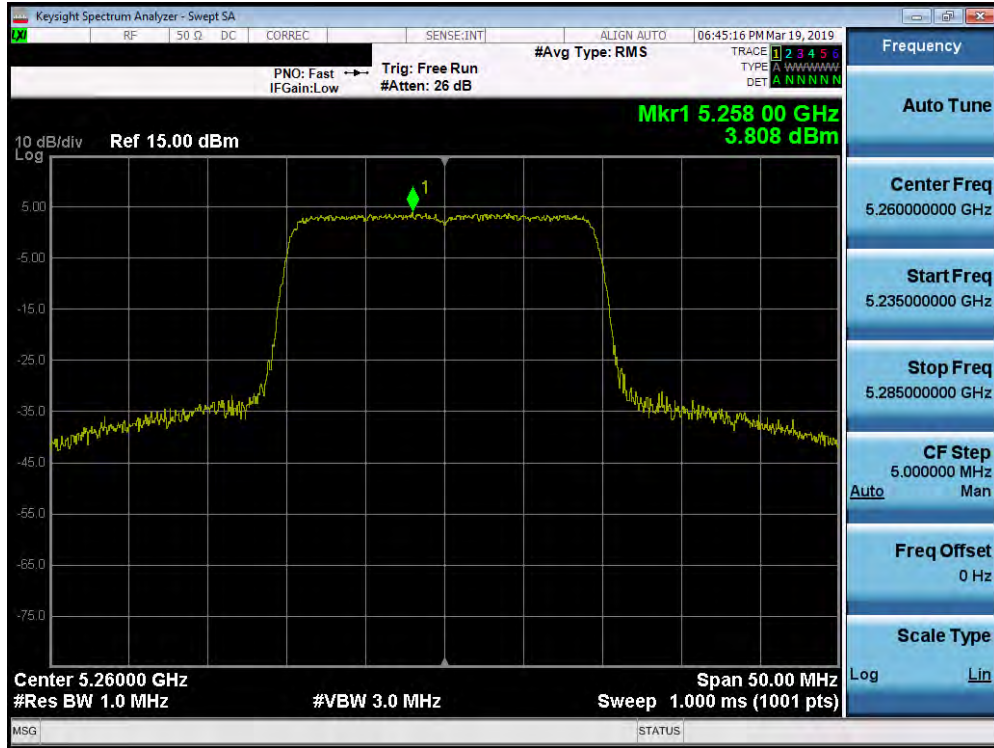


Plot 7-194. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 1) – Ch. 46)

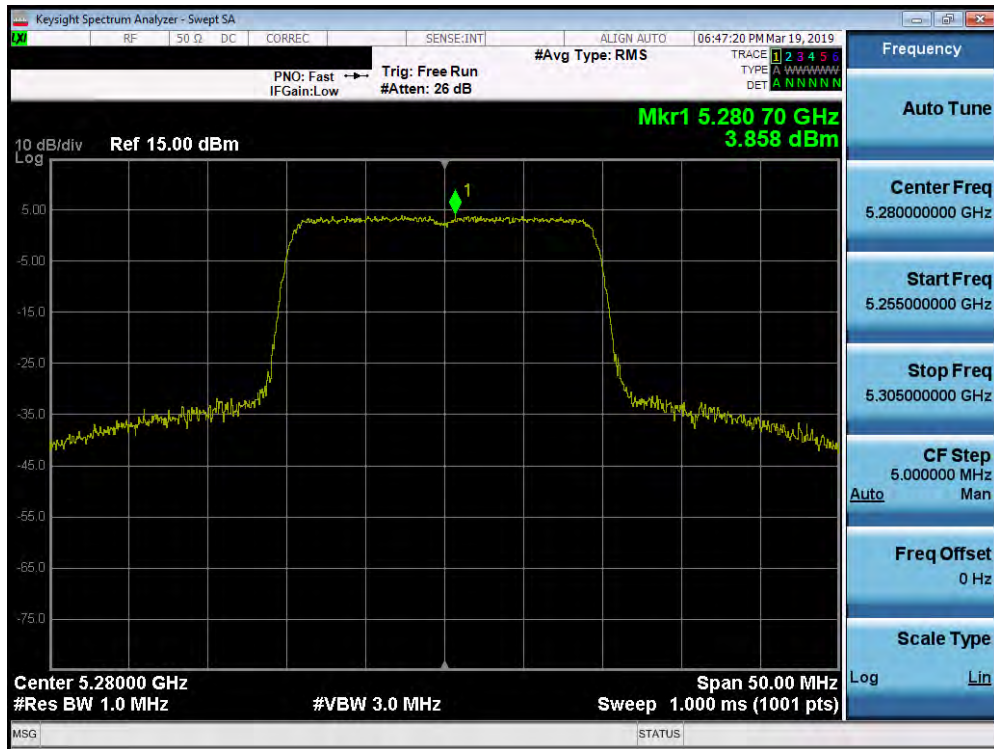


Plot 7-195. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 996 Tones (UNII Band 1) – Ch. 42)

FCC ID: A3LSMF907B	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 153 of 330

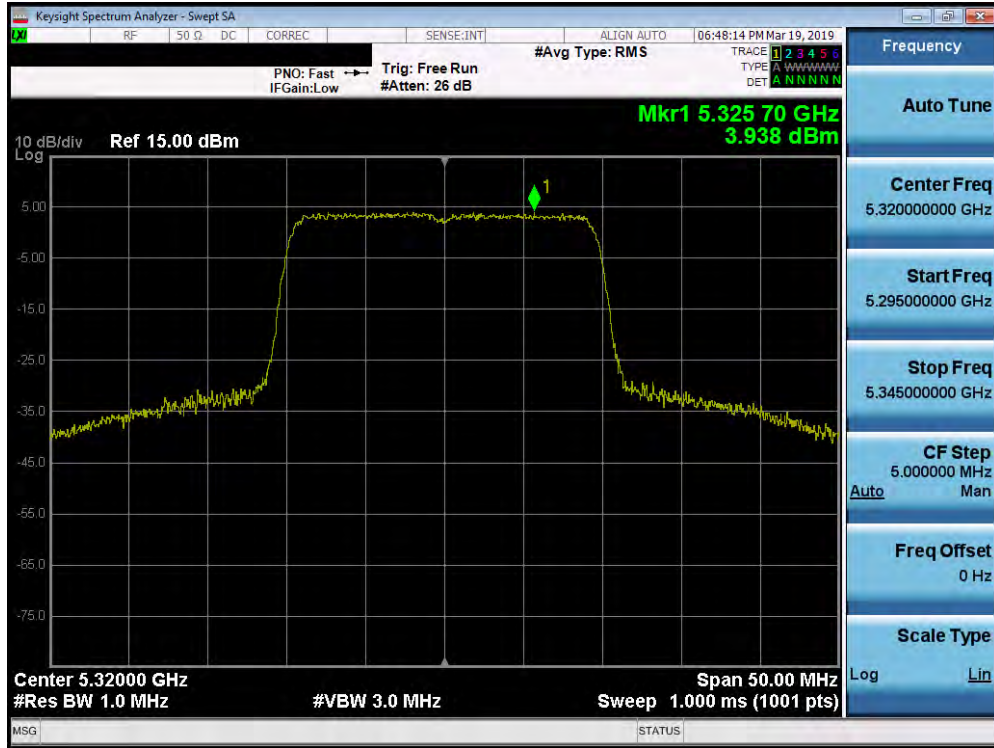


Plot 7-196. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 2A) – Ch. 52)

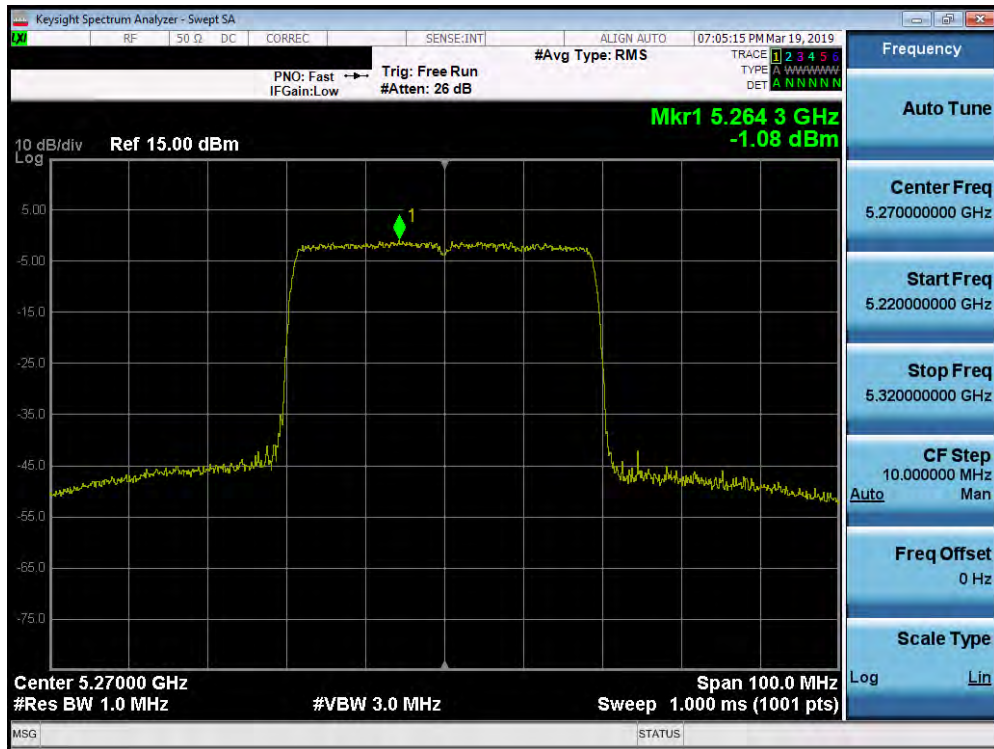


Plot 7-197. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 154 of 330

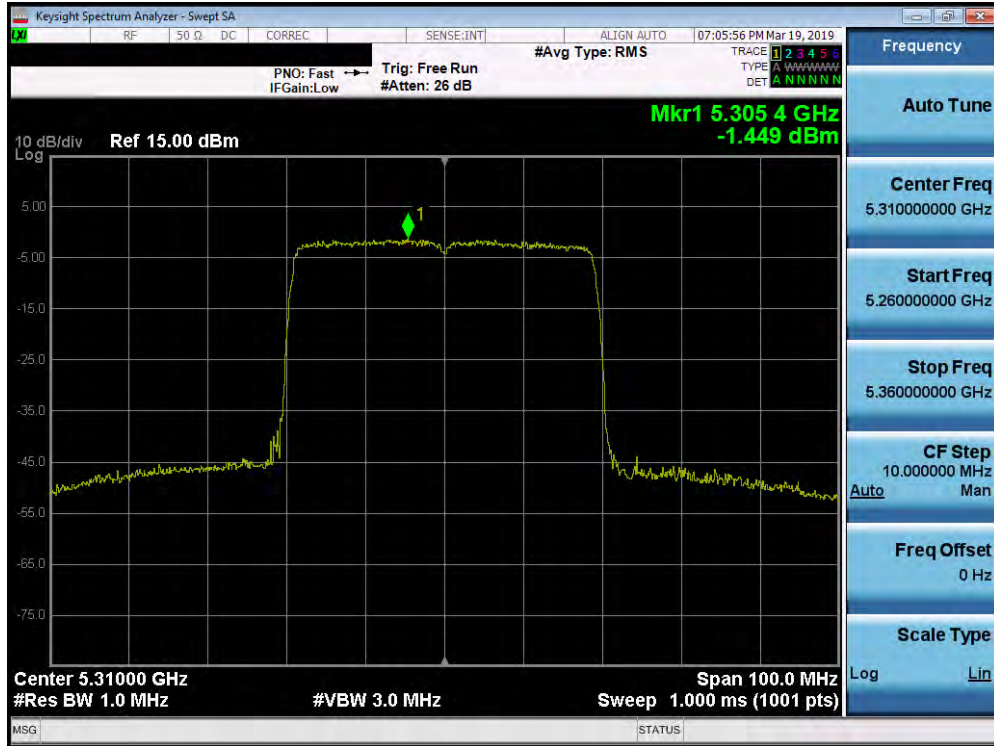


Plot 7-198. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 2A) – Ch. 64)

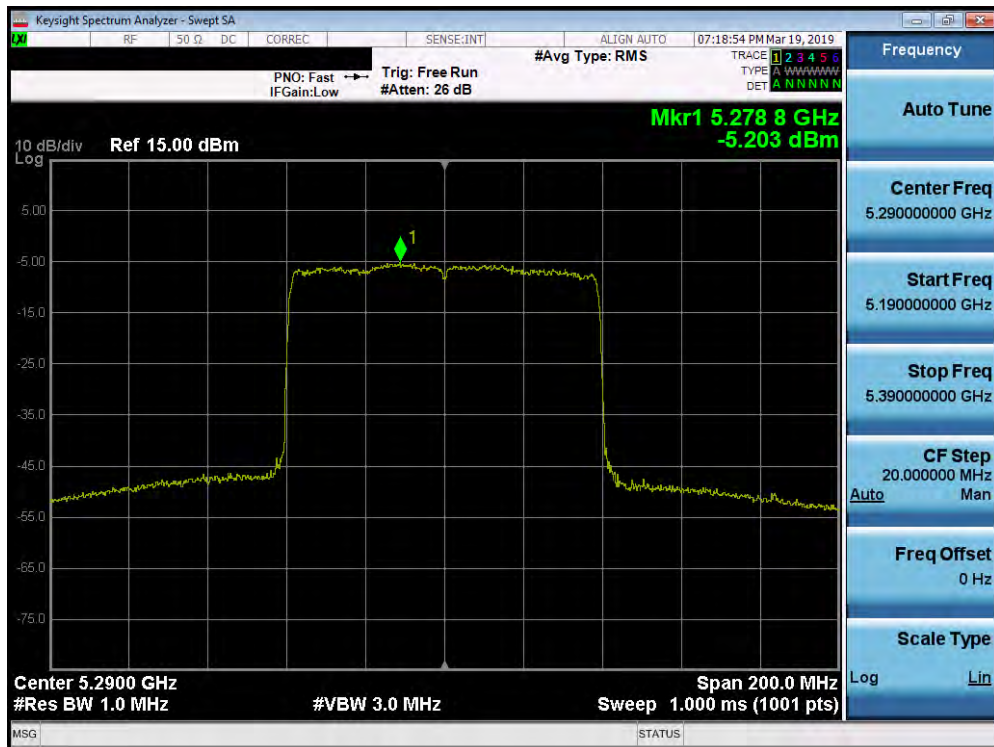


Plot 7-199. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 155 of 330

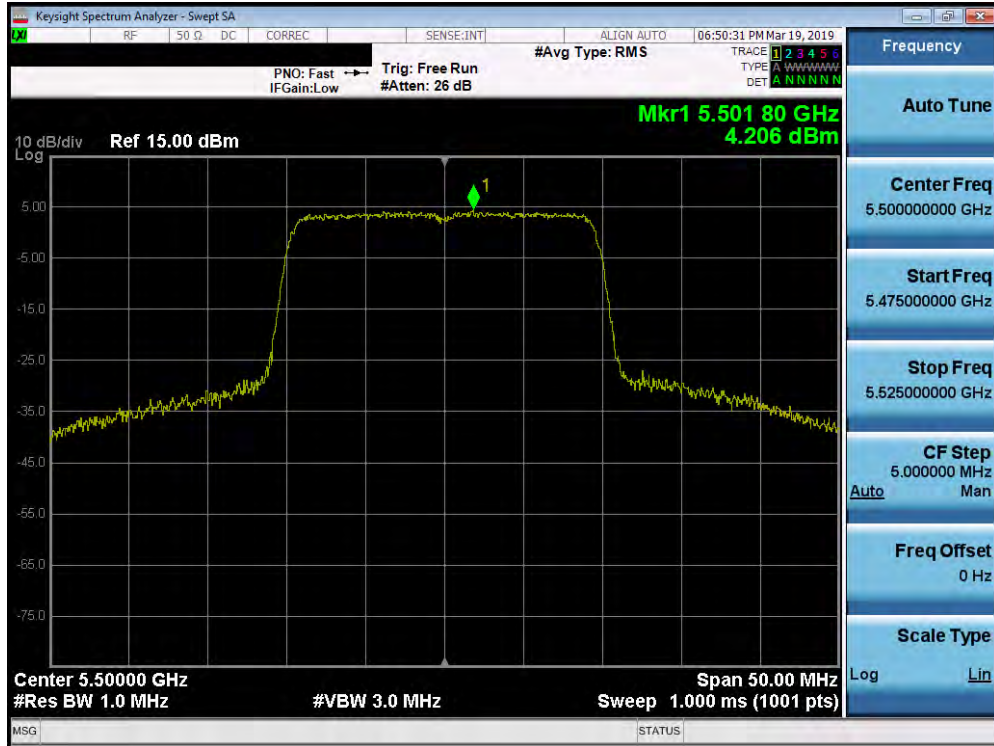


Plot 7-200. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 2A) – Ch. 62)

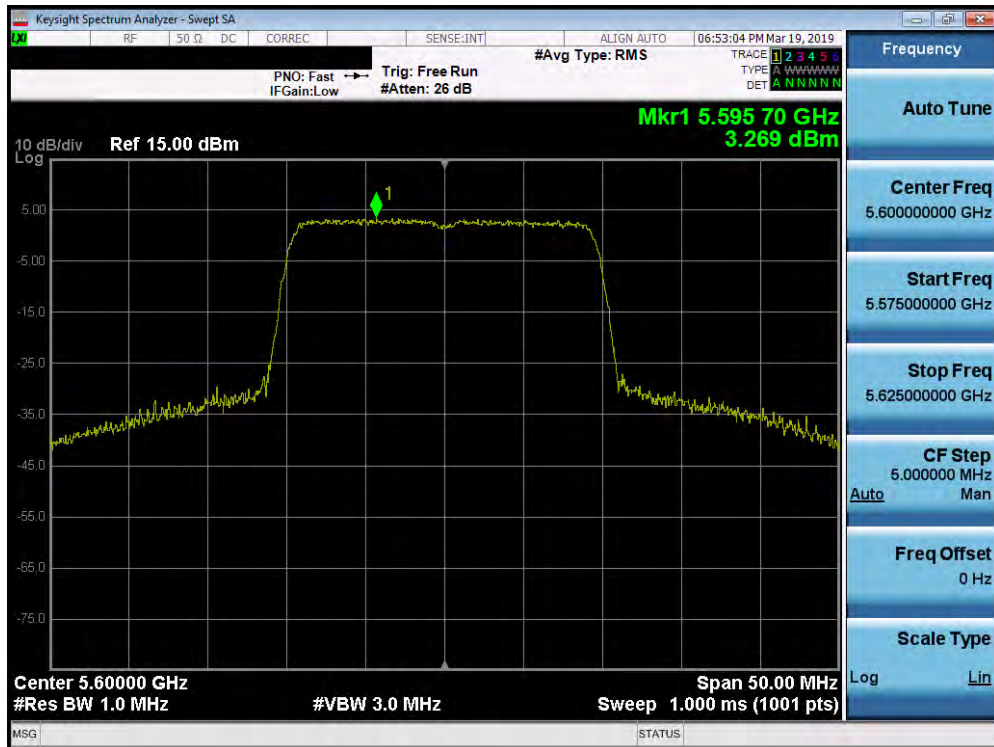


Plot 7-201. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 996 Tones (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMF907B		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 156 of 330

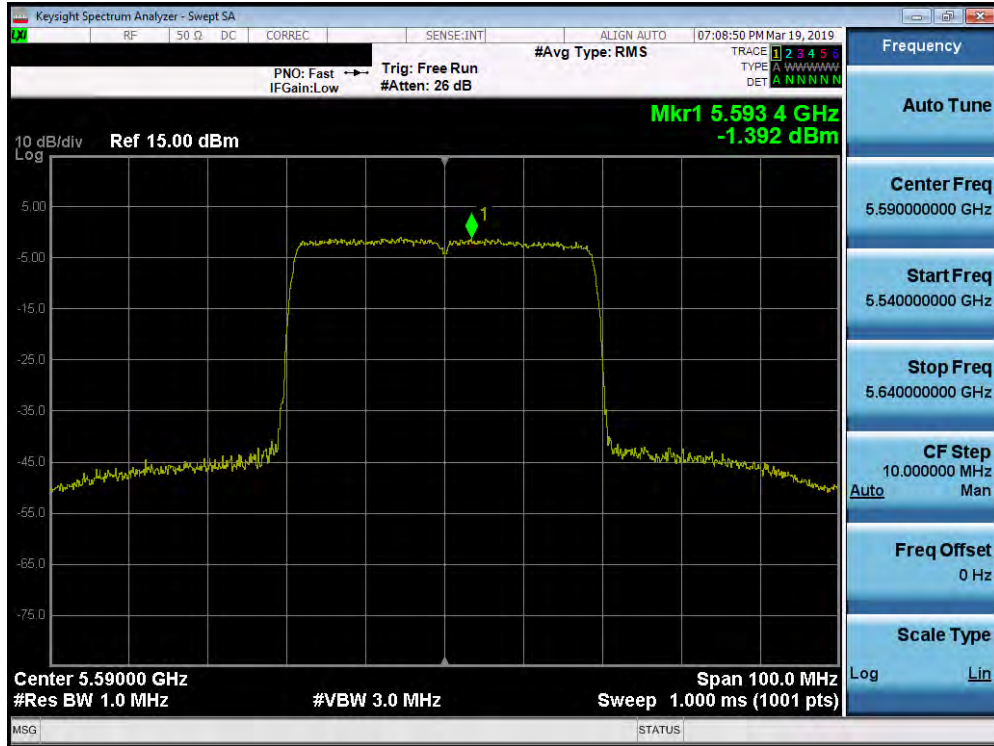


Plot 7-202. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 2C) – Ch. 100)

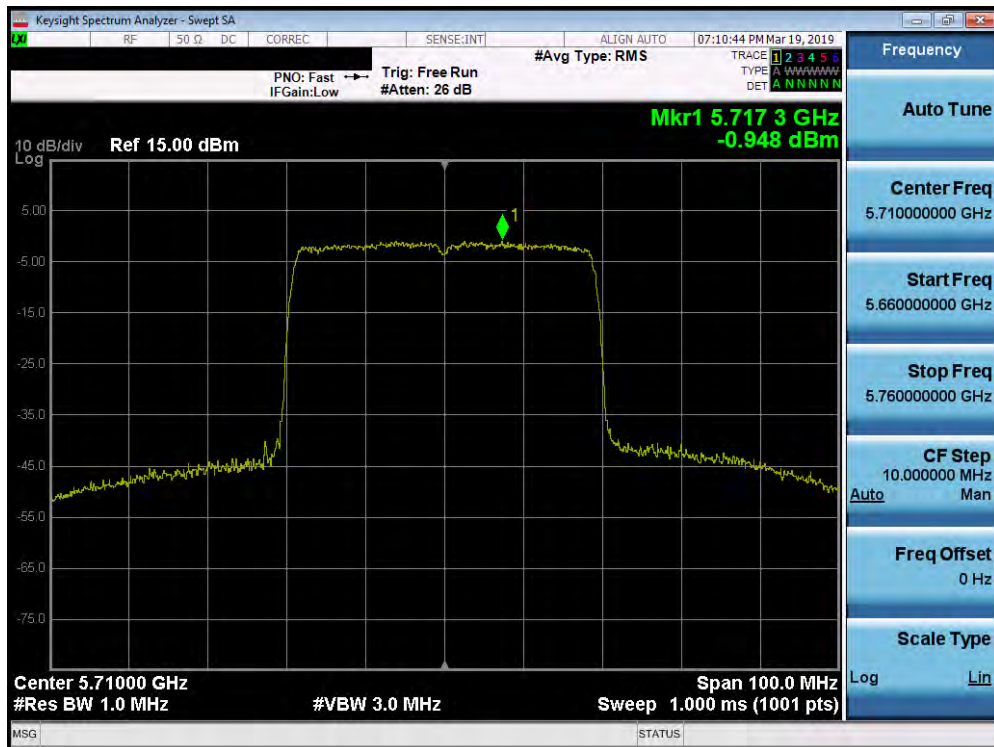


Plot 7-203. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 2C) – Ch. 120)

FCC ID: A3LSMF907B		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 157 of 330

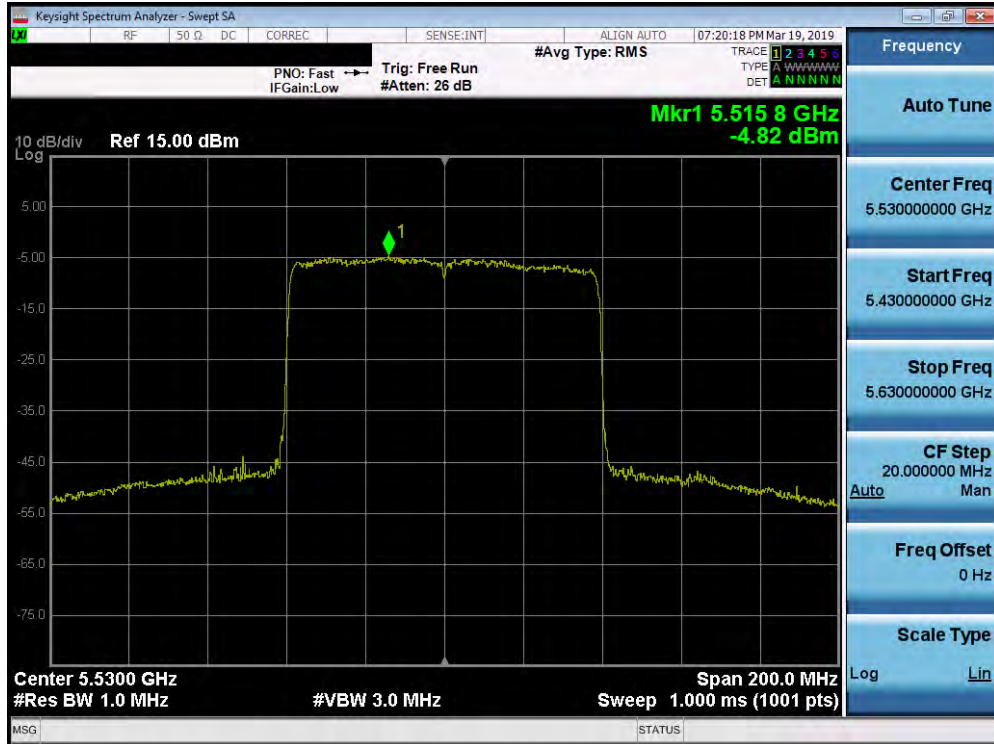


Plot 7-206. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 2C) – Ch. 118)

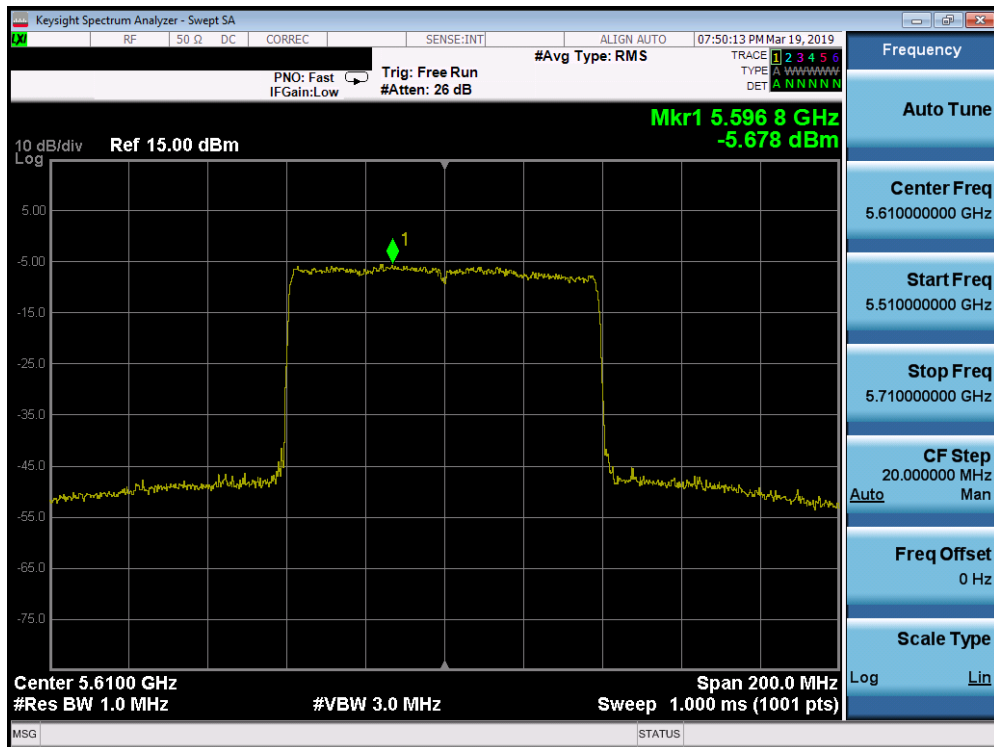


Plot 7-207. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 2C) – Ch. 142)

FCC ID: A3LSMF907B	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 159 of 330

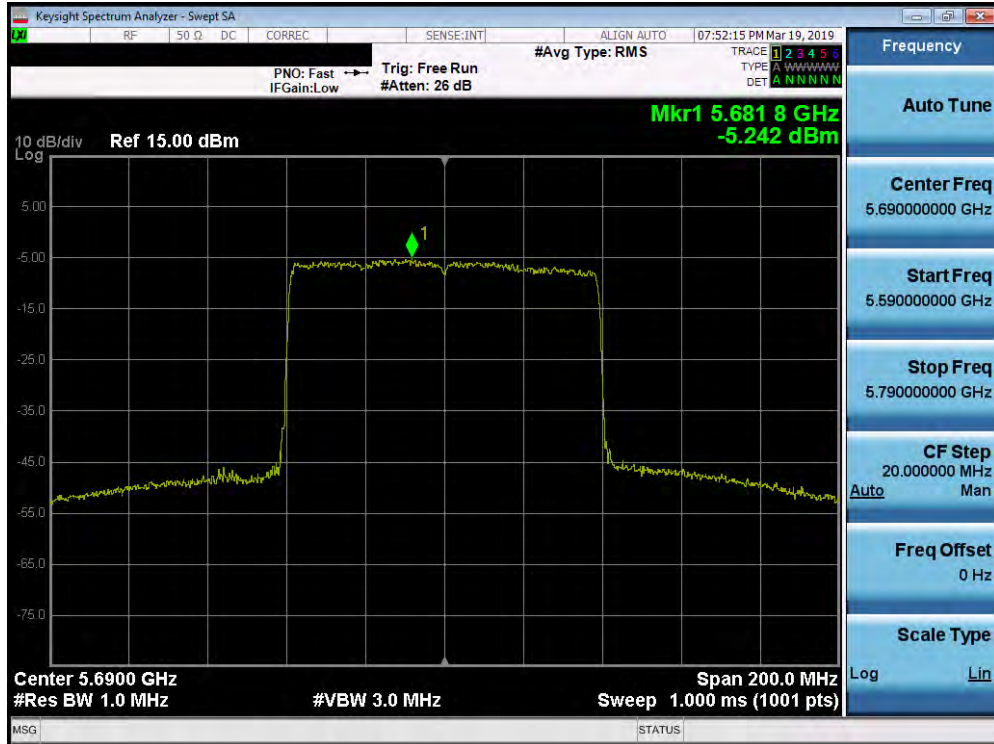


Plot 7-208. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 996 Tones (UNII Band 2C) – Ch. 106)



Plot 7-209. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 996 Tones (UNII Band 2C) – Ch. 122)

FCC ID: A3LSMF907B		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 160 of 330



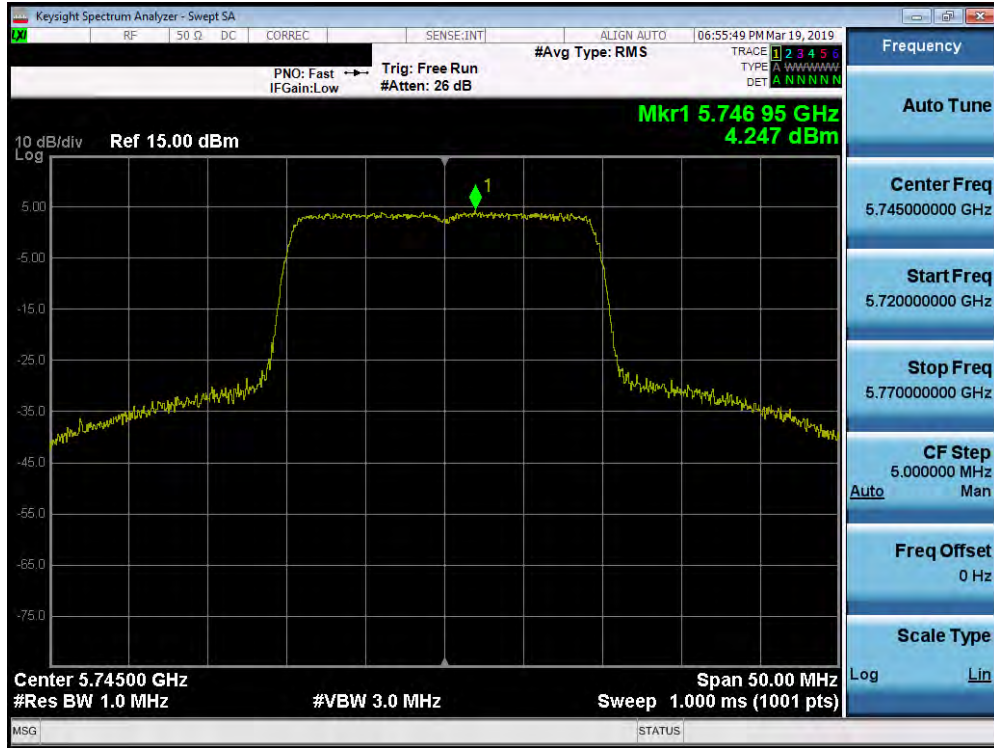
Plot 7-210. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 996 Tones (UNII Band 2C) – Ch. 138)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset	Page 161 of 330	

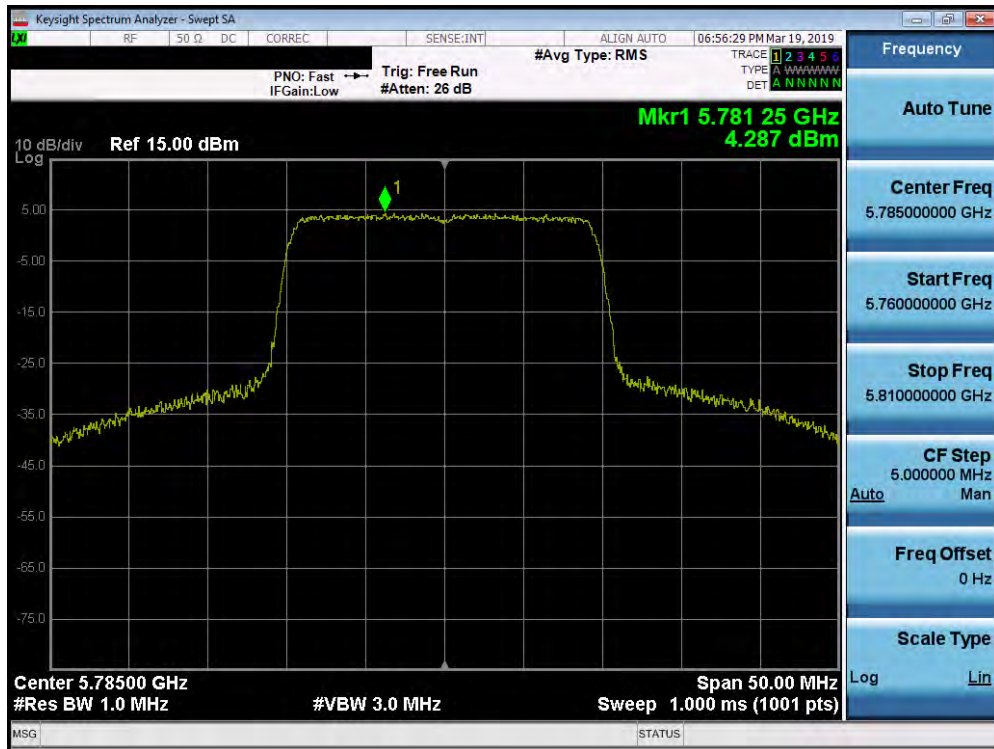
	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density	Margin [dB]
Band 3	5745	149	ax (20MHz)	242T	MCS0	4.25	30.00	-25.75
	5785	157	ax (20MHz)	242T	MCS0	4.29	30.00	-25.71
	5825	165	ax (20MHz)	242T	MCS0	3.92	30.00	-26.08
	5755	151	ax (40MHz)	484T	MCS0	-0.70	30.00	-30.70
	5795	159	ax (40MHz)	484T	MCS0	-0.77	30.00	-30.77
	5775	155	ax (80MHz)	996T	MCS0	-5.13	30.00	-35.13

Table 7-66. Band 3 Conducted Power Spectral Density Measurements SISO ANT2 (Full Tones)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 162 of 330

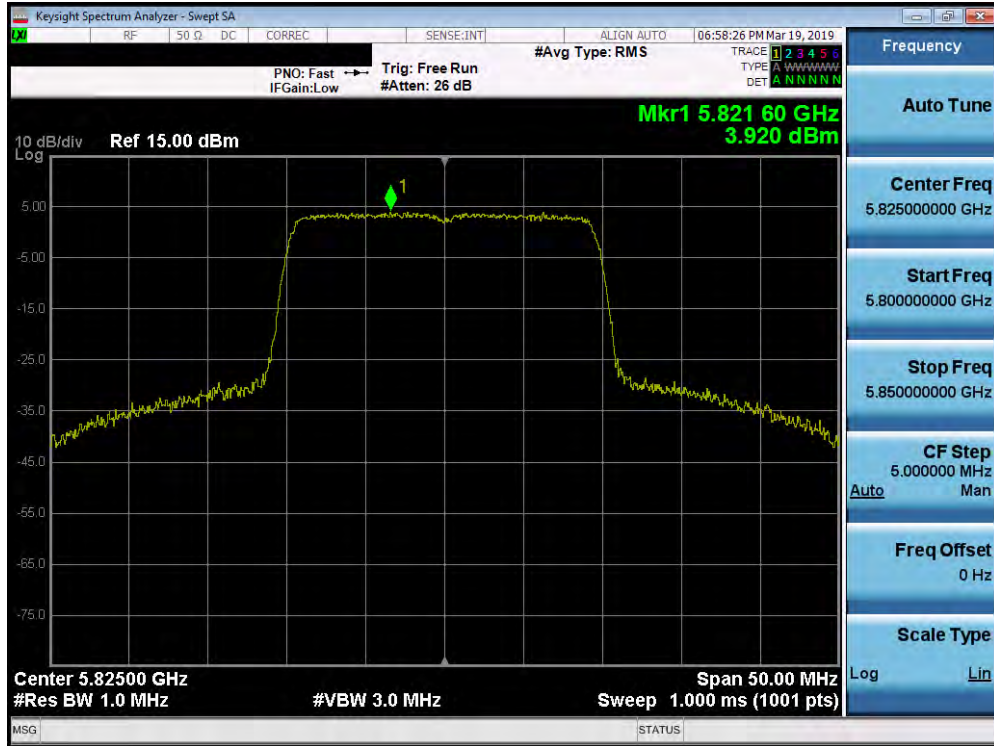


Plot 7-211. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 3) – Ch. 149)

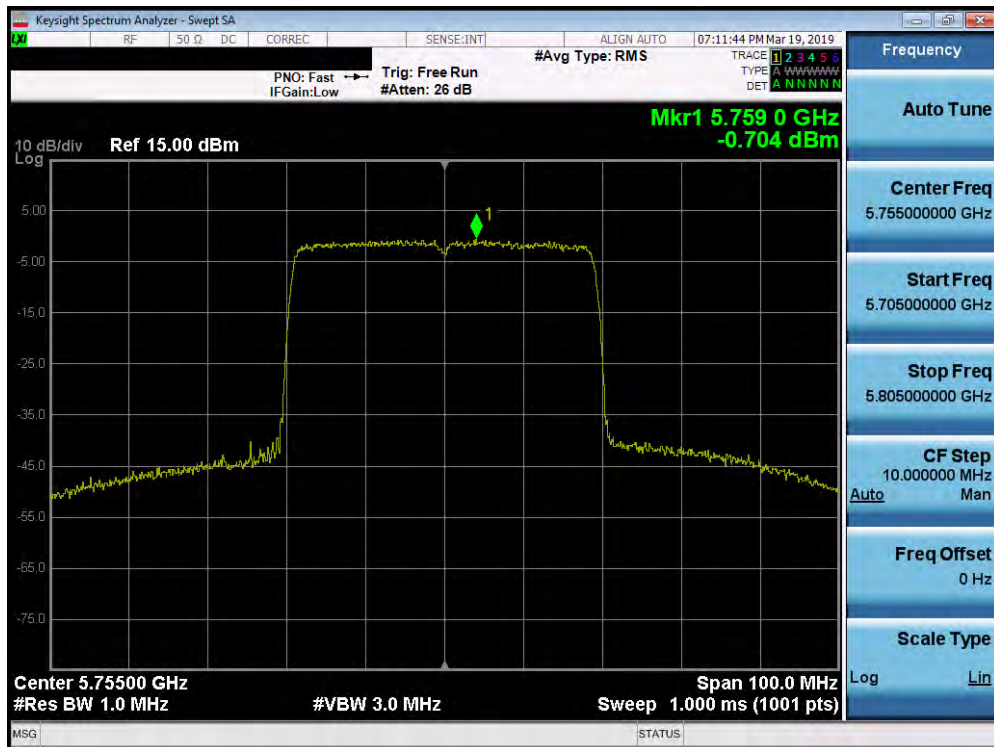


Plot 7-212. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 3) – Ch. 157)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 163 of 330

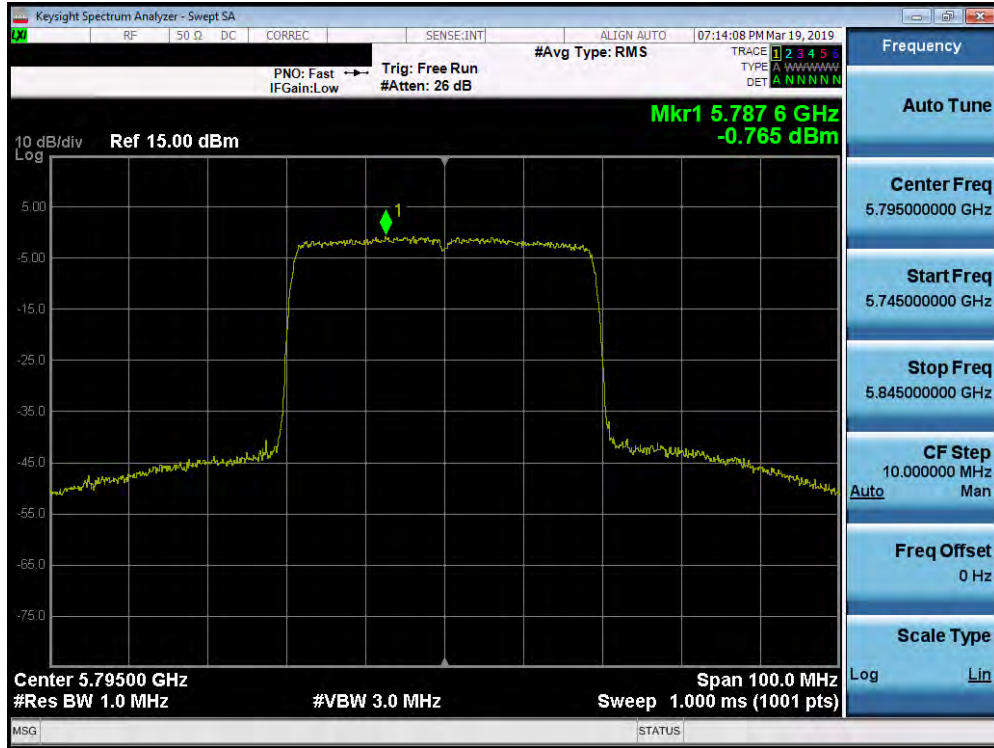


Plot 7-213. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 3) – Ch. 165)

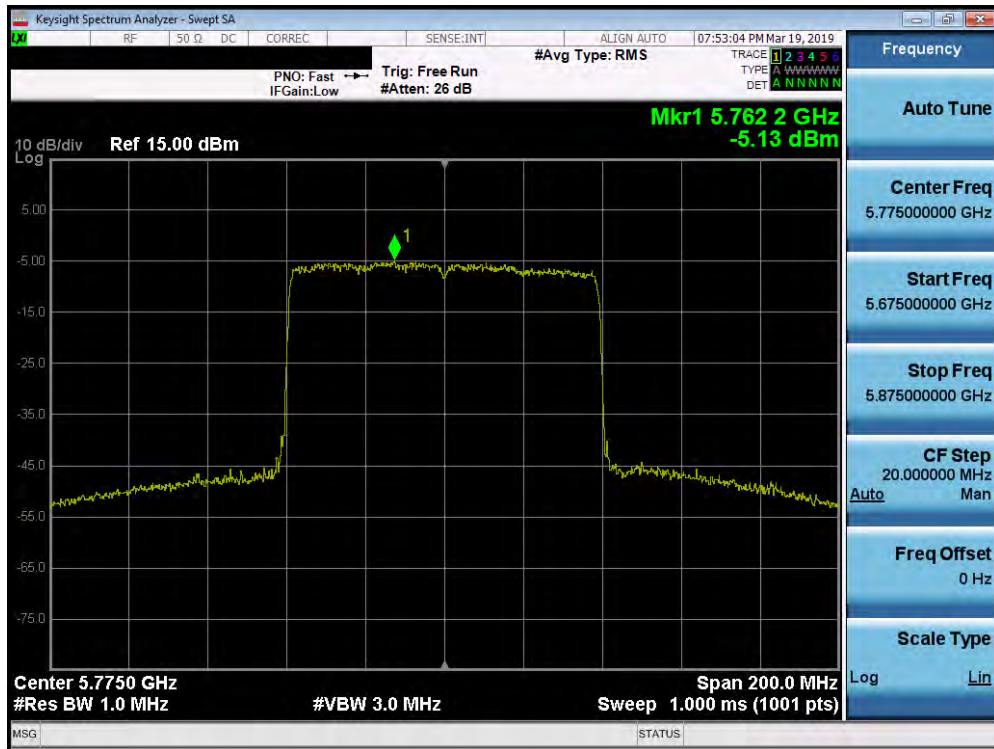


Plot 7-214. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 3) – Ch. 151)

FCC ID: A3LSMF907B		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 164 of 330



Plot 7-215. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 3) – Ch. 159)



Plot 7-216. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 996 Tones (UNII Band 3) – Ch. 155)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 165 of 330

Summed MIMO Power Spectral Density Measurements (26 Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	ax (20MHz)	26T	MCS0	5.41	4.95	8.20	11.00	-2.80
	5200	40	ax (20MHz)	26T	MCS0	3.99	3.91	6.96	11.00	-4.04
	5240	48	ax (20MHz)	26T	MCS0	3.80	4.00	6.91	11.00	-4.09
	5190	38	ax (40MHz)	26T	MCS0	5.42	5.18	8.31	11.00	-2.69
	5230	46	ax (40MHz)	26T	MCS0	5.35	6.09	8.75	11.00	-2.25
	5210	42	ax (80MHz)	26T	MCS0	5.76	4.85	8.34	11.00	-2.66
Band 2A	5260	52	ax (20MHz)	26T	MCS0	5.28	5.20	8.25	11.00	-2.75
	5280	56	ax (20MHz)	26T	MCS0	5.28	5.07	8.19	11.00	-2.81
	5320	64	ax (20MHz)	26T	MCS0	5.36	4.71	8.06	11.00	-2.94
	5270	54	ax (40MHz)	26T	MCS0	5.69	5.42	8.57	11.00	-2.43
	5310	62	ax (40MHz)	26T	MCS0	5.42	5.54	8.49	11.00	-2.51
	5290	58	ax (80MHz)	26T	MCS0	3.62	3.66	6.65	11.00	-4.35
Band 2C	5500	100	ax (20MHz)	26T	MCS0	5.30	5.61	8.47	11.00	-2.53
	5600	120	ax (20MHz)	26T	MCS0	5.90	5.78	8.85	11.00	-2.15
	5720	144	ax (20MHz)	26T	MCS0	5.84	5.73	8.80	11.00	-2.20
	5510	102	ax (40MHz)	26T	MCS0	5.31	5.77	8.56	11.00	-2.44
	5590	118	ax (40MHz)	26T	MCS0	5.60	5.71	8.67	11.00	-2.33
	5710	142	ax (40MHz)	26T	MCS0	5.79	6.33	9.08	11.00	-1.92
	5530	106	ax (80MHz)	26T	MCS0	4.86	5.50	8.20	11.00	-2.80
	5610	122	ax (80MHz)	26T	MCS0	3.34	3.60	6.48	11.00	-4.52
5690	138	ax (80MHz)	26T	MCS0	1.77	2.33	5.07	11.00	-5.93	

Table 7-67. Bands 1, 2A, 2C MIMO Conducted Power Spectral Density Measurements MIMO (26 Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Directional Antenna Gain [dBi]	e.i.r.p. Power Density [dBm/MHz]	ISED Max e.i.r.p. Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	ax (20MHz)	26T	MCS0	5.41	4.95	8.20	-2.89	5.31	10.0	-4.69
	5200	40	ax (20MHz)	26T	MCS0	3.99	3.91	6.96	-2.89	4.07	10.0	-5.93
	5240	48	ax (20MHz)	26T	MCS0	3.80	4.00	6.91	-2.89	4.02	10.0	-5.98
	5190	38	ax (40MHz)	26T	MCS0	5.42	5.18	8.31	-2.89	5.42	10.0	-4.58
	5230	46	ax (40MHz)	26T	MCS0	5.35	6.09	8.75	-2.89	5.86	10.0	-4.14
	5210	42	ax (80MHz)	26T	MCS0	5.76	4.85	8.34	-2.89	5.45	10.0	-4.55

Table 7-68. Band 1 MIMO e.i.r.p. Conducted Power Spectral Density Measurements (ISED 26 Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
Band 3	5745	149	ax (20MHz)	26T	MCS0	2.57	3.08	5.84	30.00	-24.16
	5785	157	ax (20MHz)	26T	MCS0	2.47	3.13	5.82	30.00	-24.18
	5825	165	ax (20MHz)	26T	MCS0	2.31	2.89	5.62	30.00	-24.38
	5755	151	ax (40MHz)	26T	MCS0	3.12	3.26	6.20	30.00	-23.80
	5795	159	ax (40MHz)	26T	MCS0	2.46	3.93	6.27	30.00	-23.73
	5775	155	ax (80MHz)	26T	MCS0	4.03	5.14	7.63	30.00	-22.37

Table 7-69. Band 3 MIMO Conducted Power Spectral Density Measurements MIMO (26 Tones)

FCC ID: A3LSMF907B			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset	Page 166 of 330		

Note:

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

Sample Directional Gain Calculation:

Assuming the antenna gain is -5.50 dBi for Antenna-1 and -6.05 dBi for Antenna-2.

$$\begin{aligned} \text{Directional gain} &= 10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{\text{ANT}}] \text{ dBi} \\ &= 10 \log[(10^{-5.50/20} + 10^{-6.05/20} / 2] \text{ dBi} \\ &= (-2.89) \text{ dBi} \end{aligned}$$

Sample MIMO Calculation:

Assuming the average conducted power spectral density was measured to be 5.41 dBm for Antenna-1 and 4.95 dBm for Antenna-2.

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

$$(5.41 \text{ dBm} + 4.95 \text{ dBm}) = (3.48 \text{ mW} + 3.13 \text{ mW}) = 6.61 \text{ mW} = 8.20 \text{ dBm}$$

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

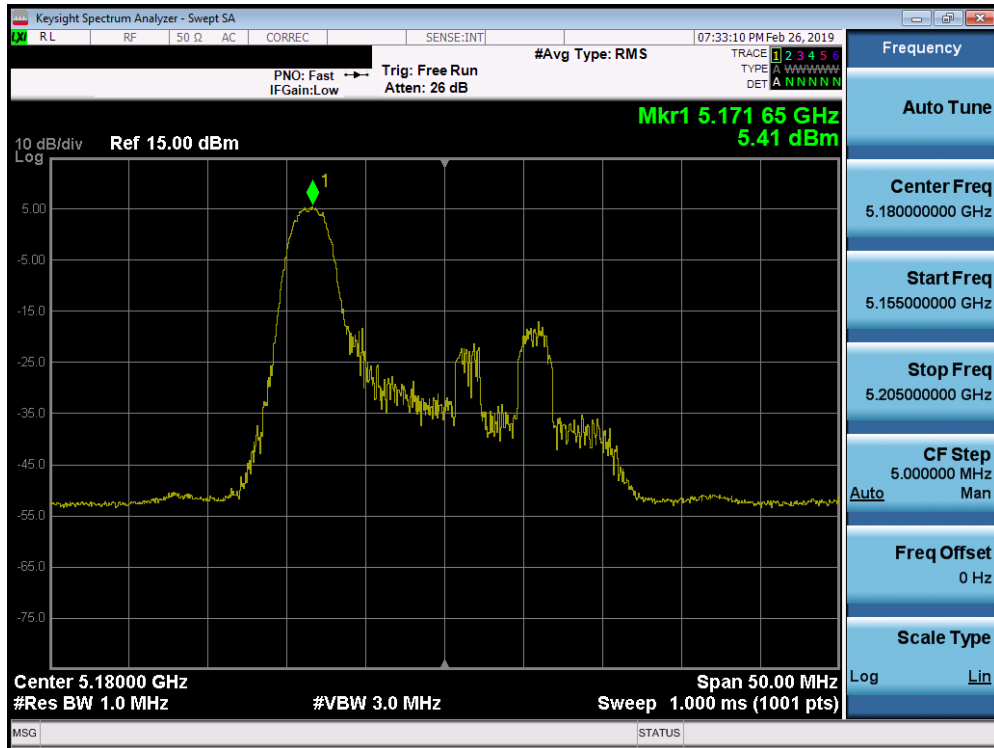
Assuming the average MIMO power density was calculated to be 8.20 dBm with directional gain of -2.89 dBi.

$$\text{e.i.r.p. Power Spectral Density(dBm)} = \text{Power Spectral Density (dBm)} + \text{directional gain (dBi)}$$

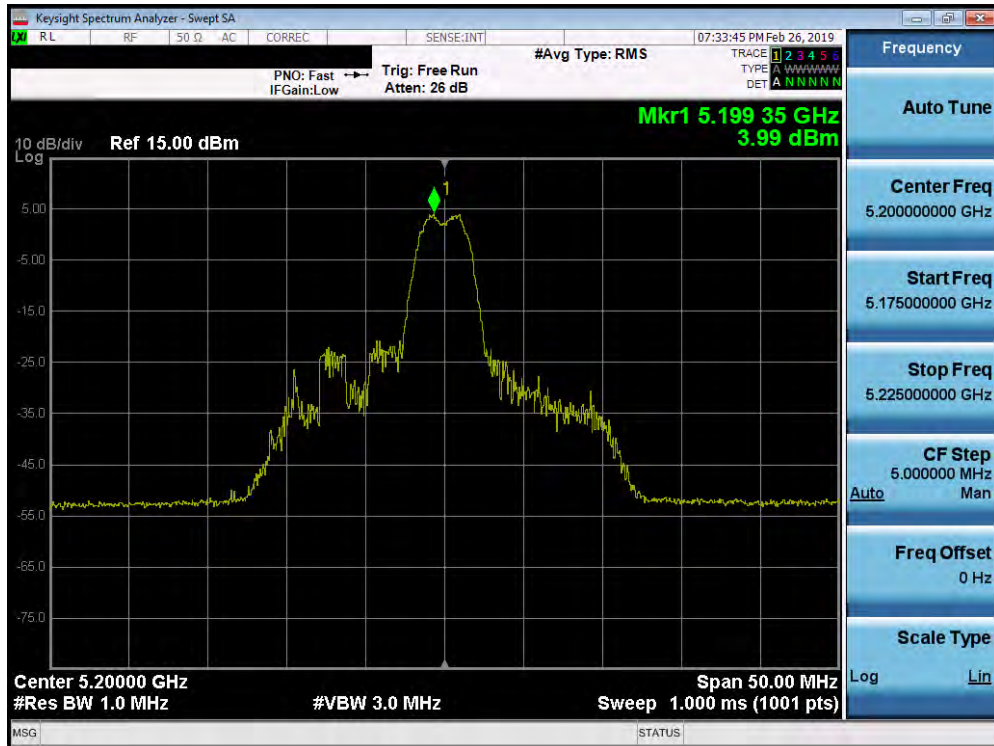
$$8.20 \text{ dBm} + (-2.89) \text{ dBi} = 5.31 \text{ dBm}$$

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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MIMO Antenna-1 Power Spectral Density Measurements (26 Tones)

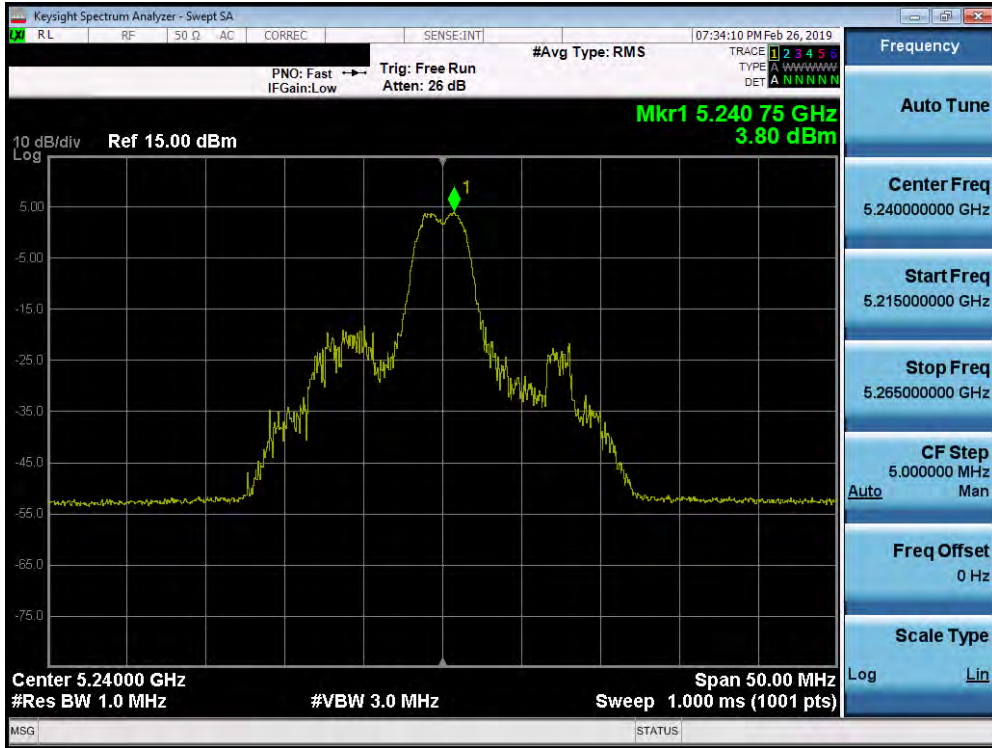


Plot 7-217. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 36)

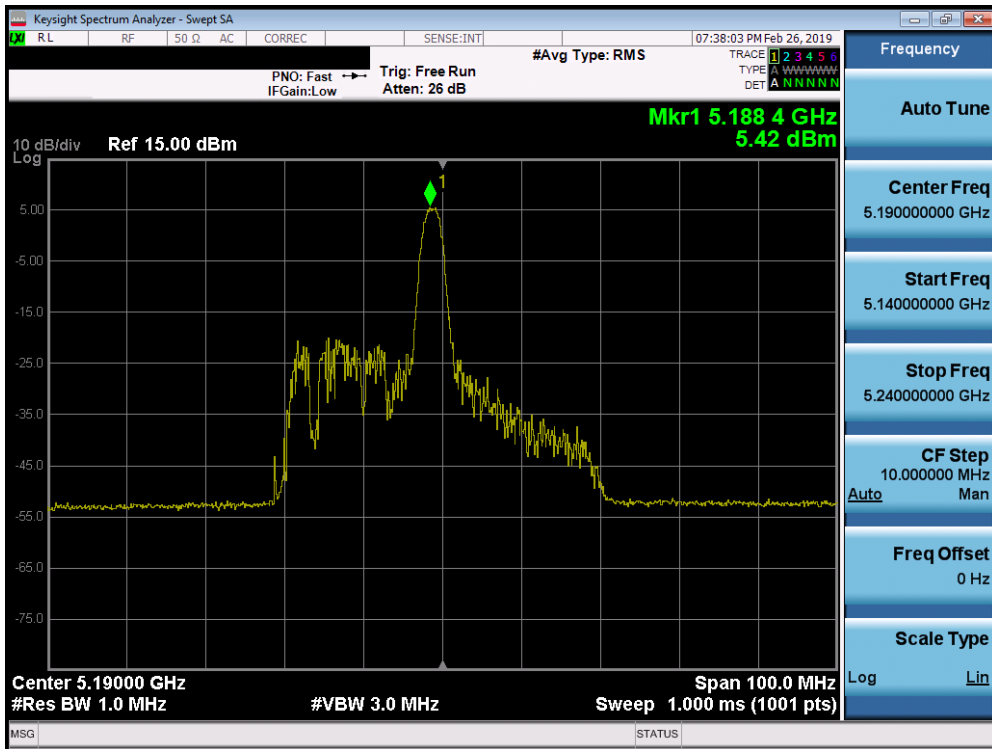


Plot 7-218. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 40)

FCC ID: A3LSMF907B	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 168 of 330

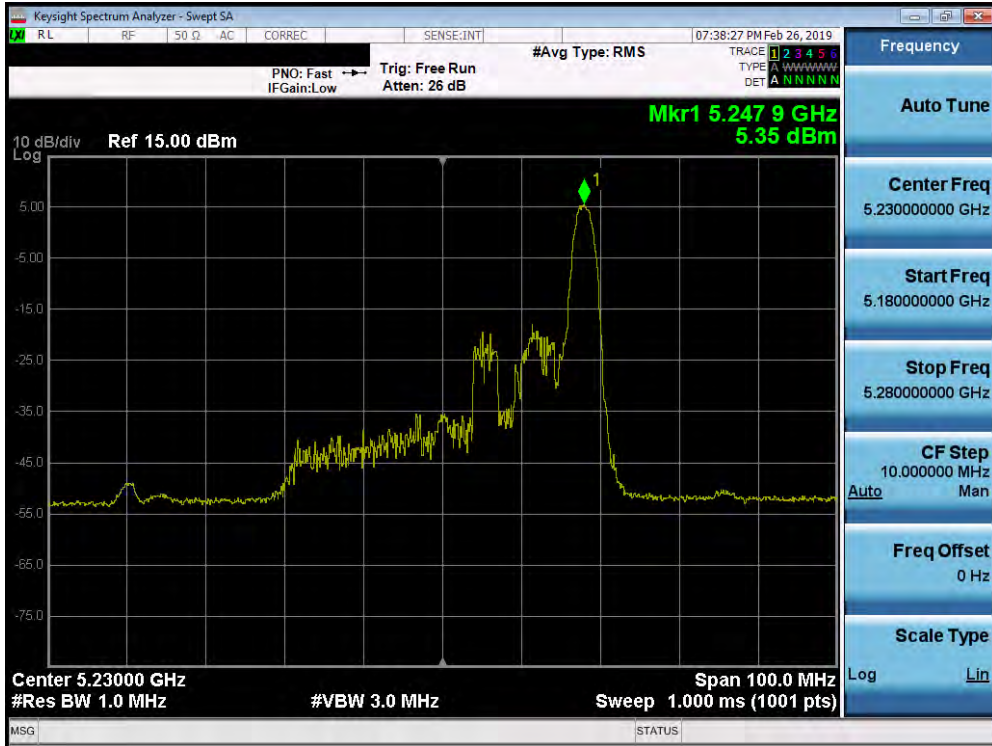


Plot 7-219. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 48)

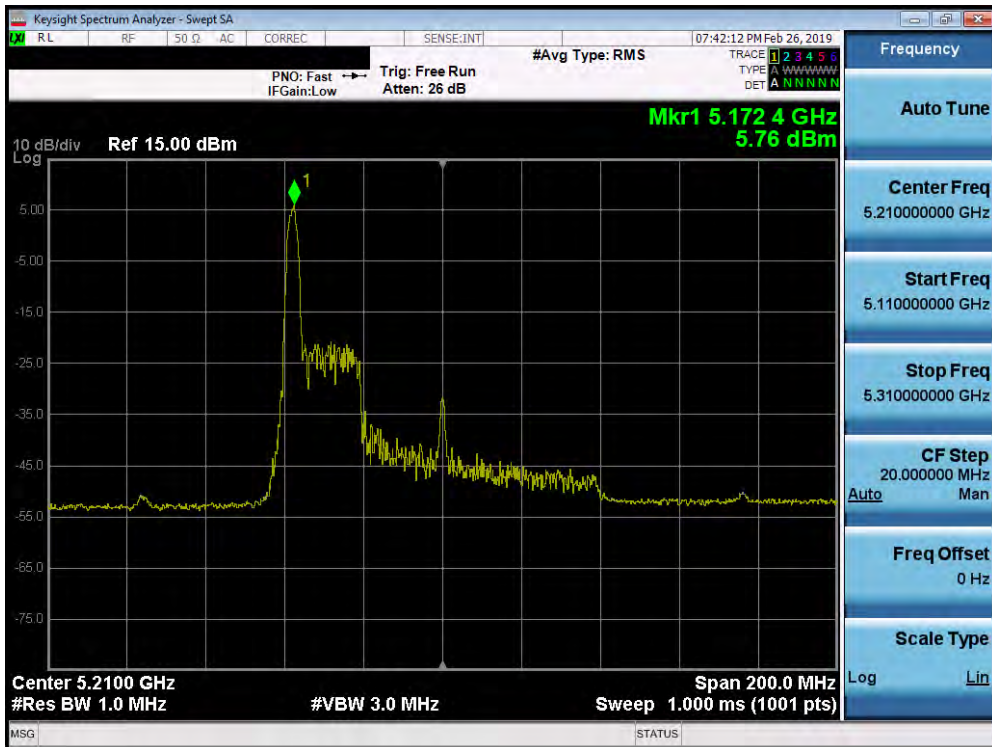


Plot 7-220. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 38)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 169 of 330

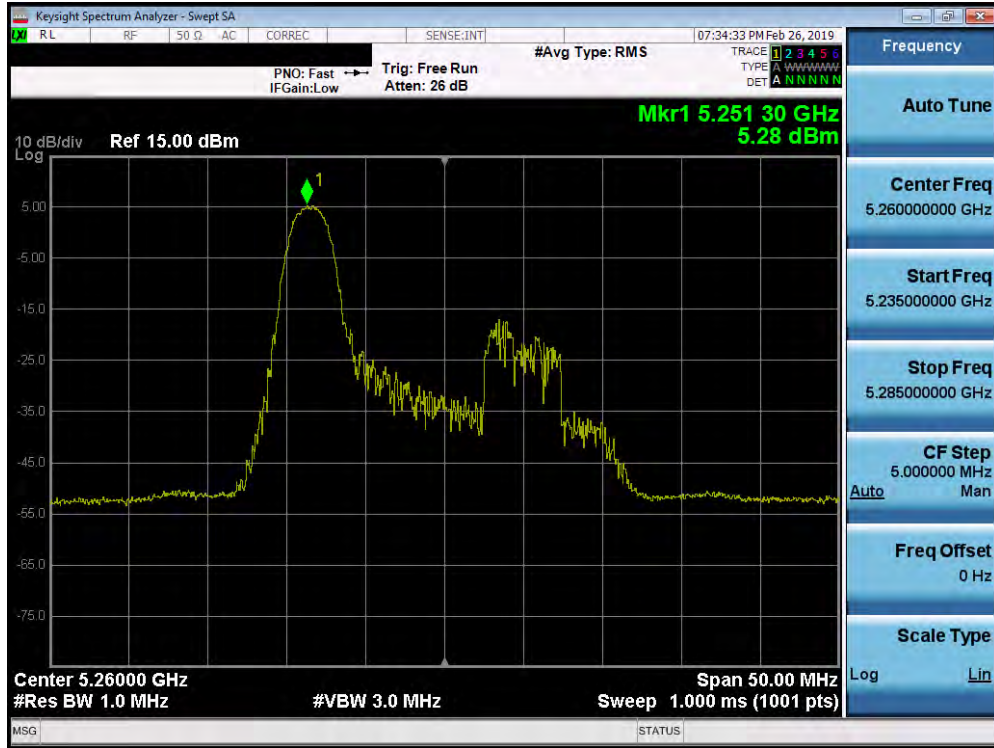


Plot 7-221. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 46)



Plot 7-222. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 42)

FCC ID: A3LSMF907B	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 170 of 330

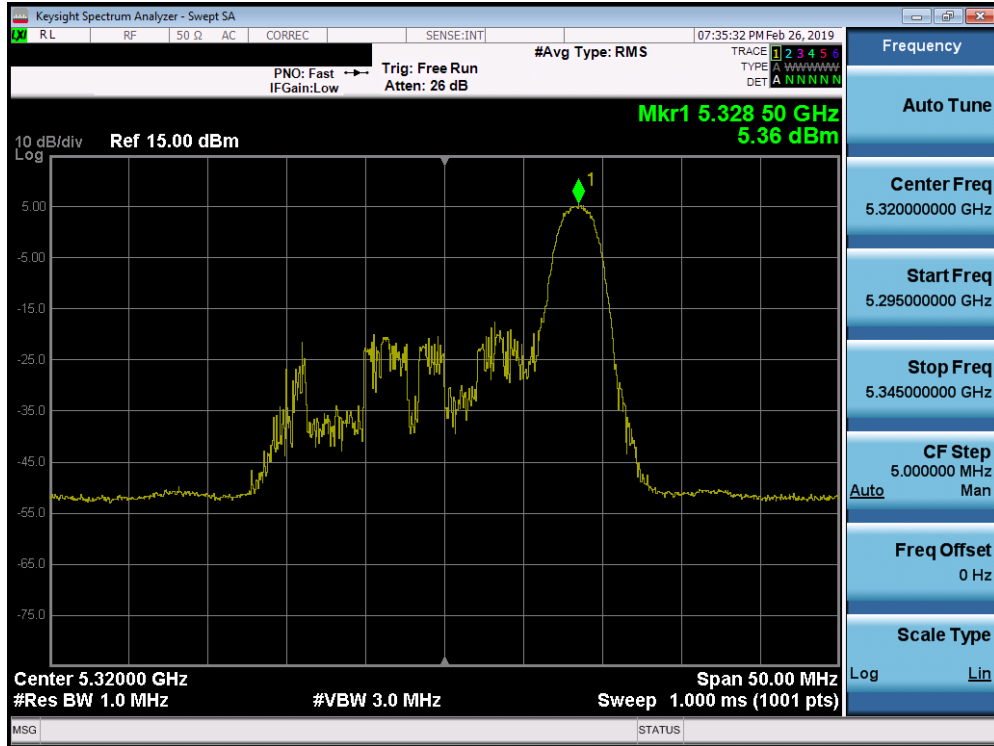


Plot 7-223. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 52)

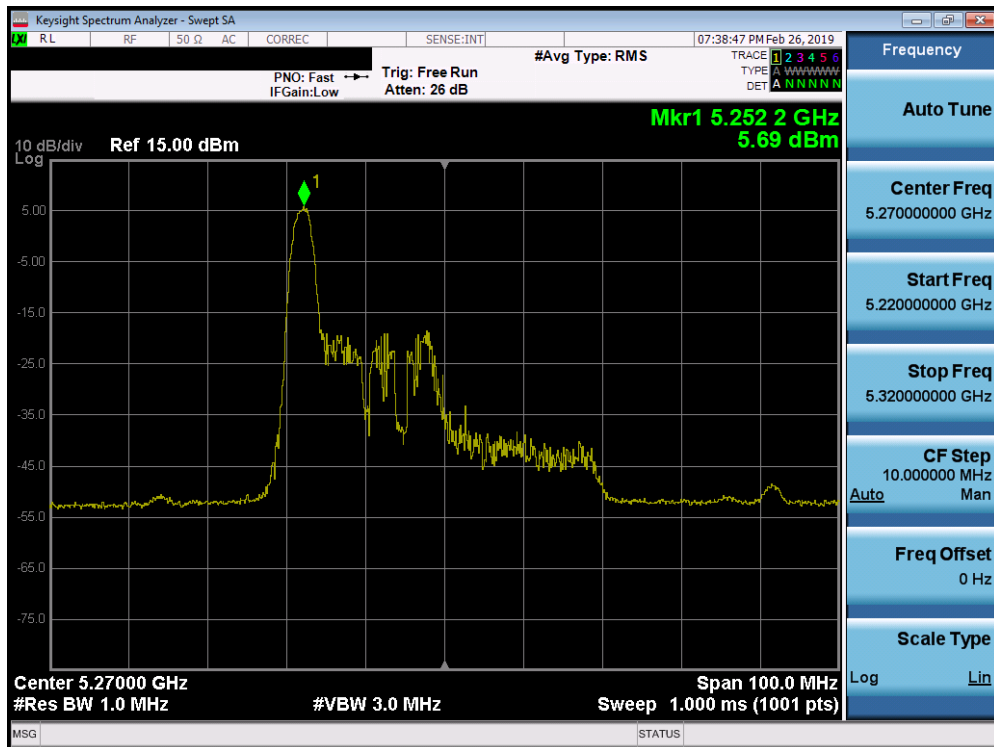


Plot 7-224. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 171 of 330

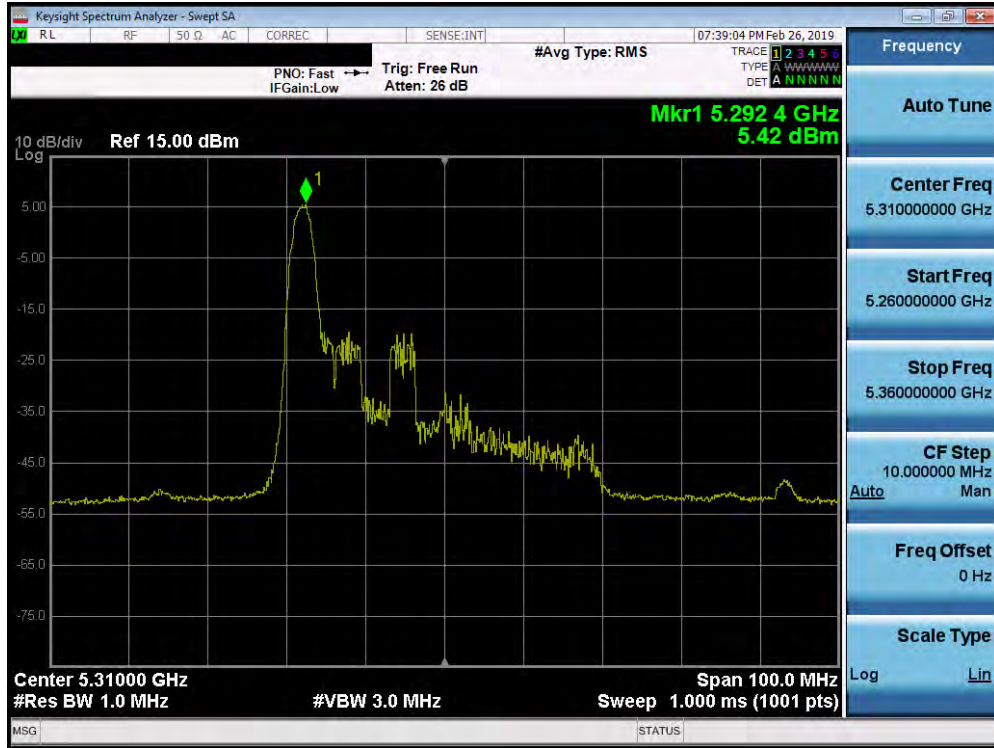


Plot 7-225. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 64)

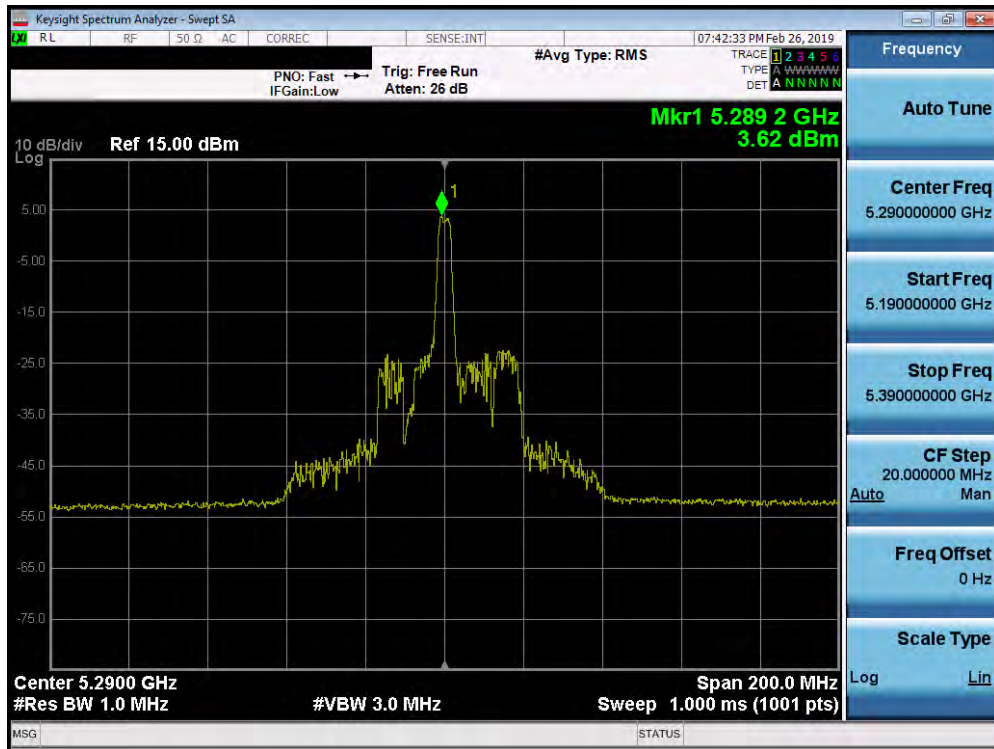


Plot 7-226. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMF907B		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 172 of 330

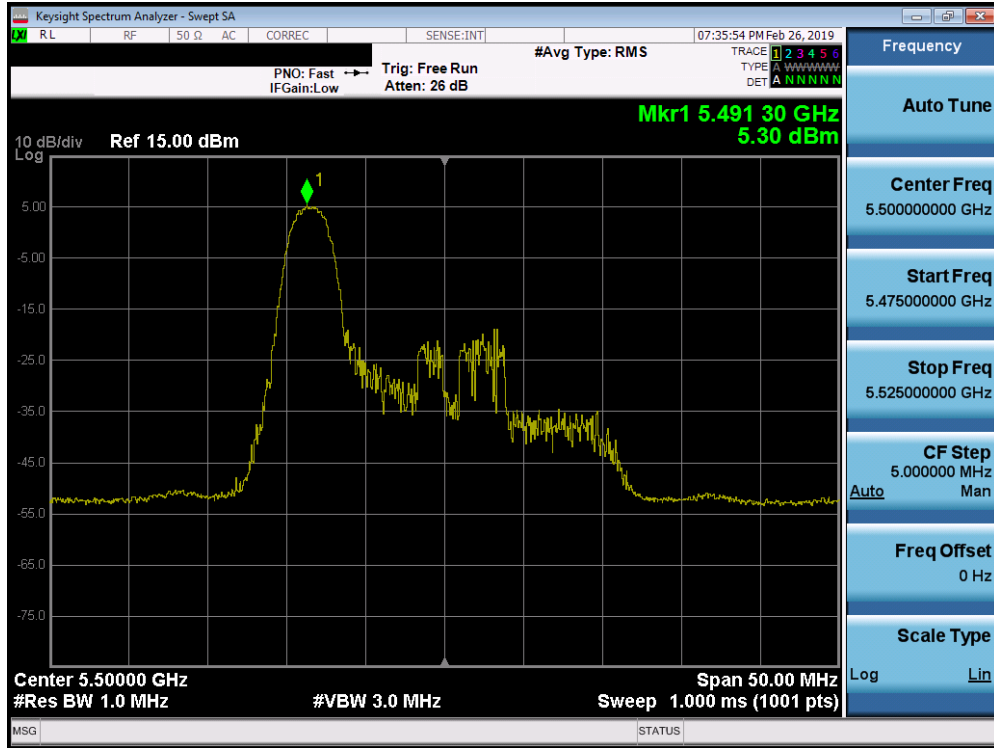


Plot 7-227. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 62)

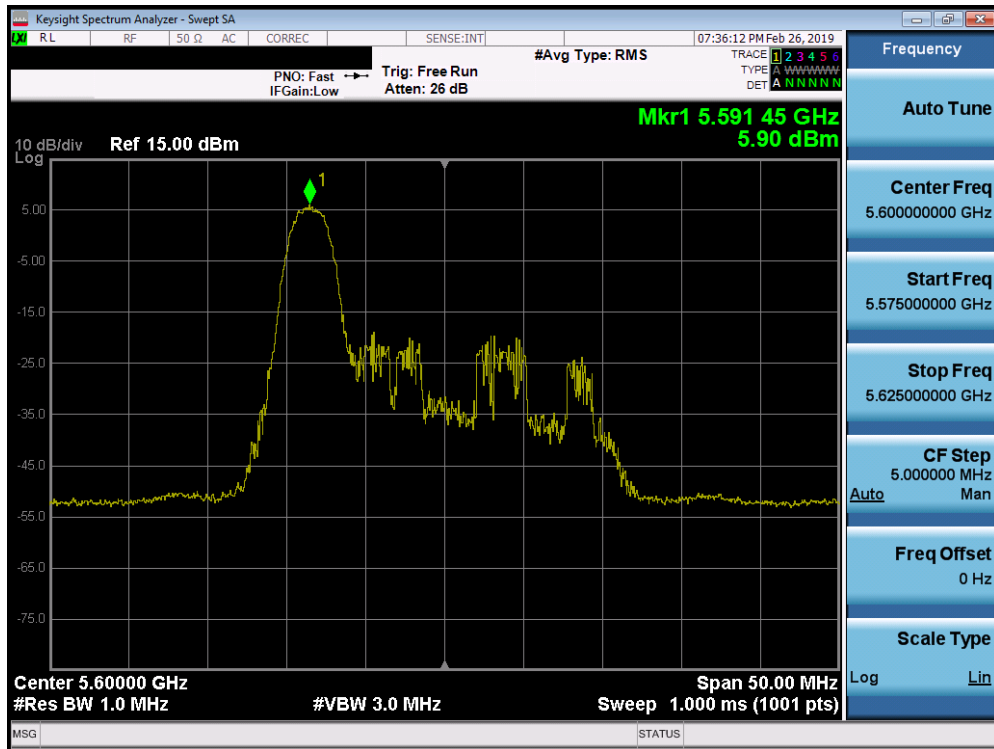


Plot 7-228. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMF907B		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 173 of 330

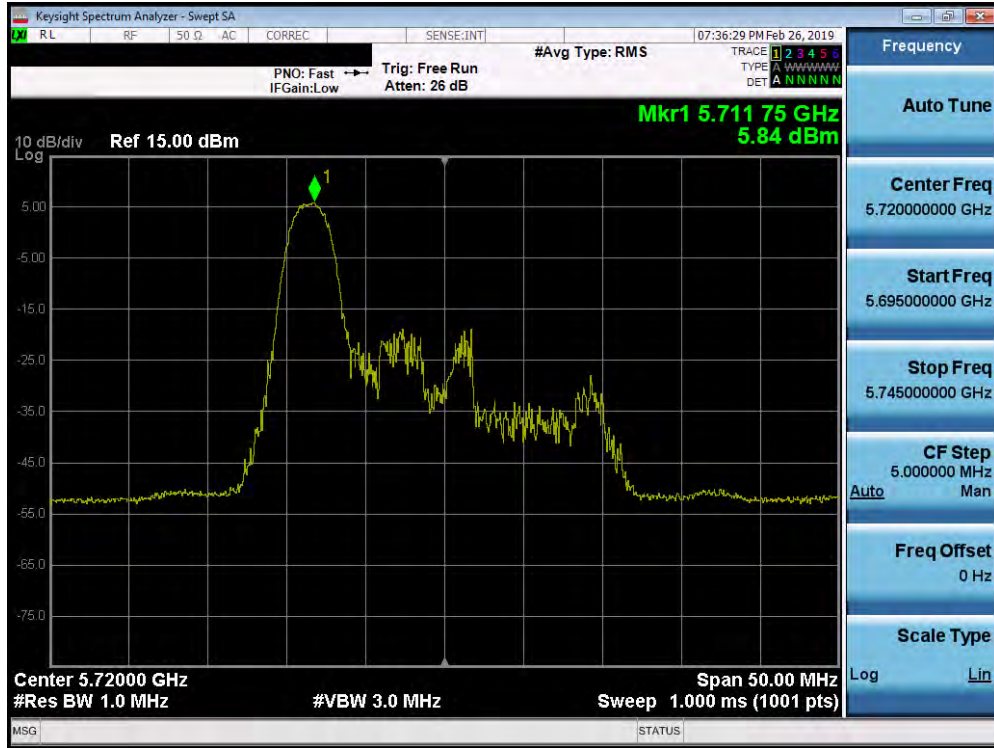


Plot 7-229. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 100)

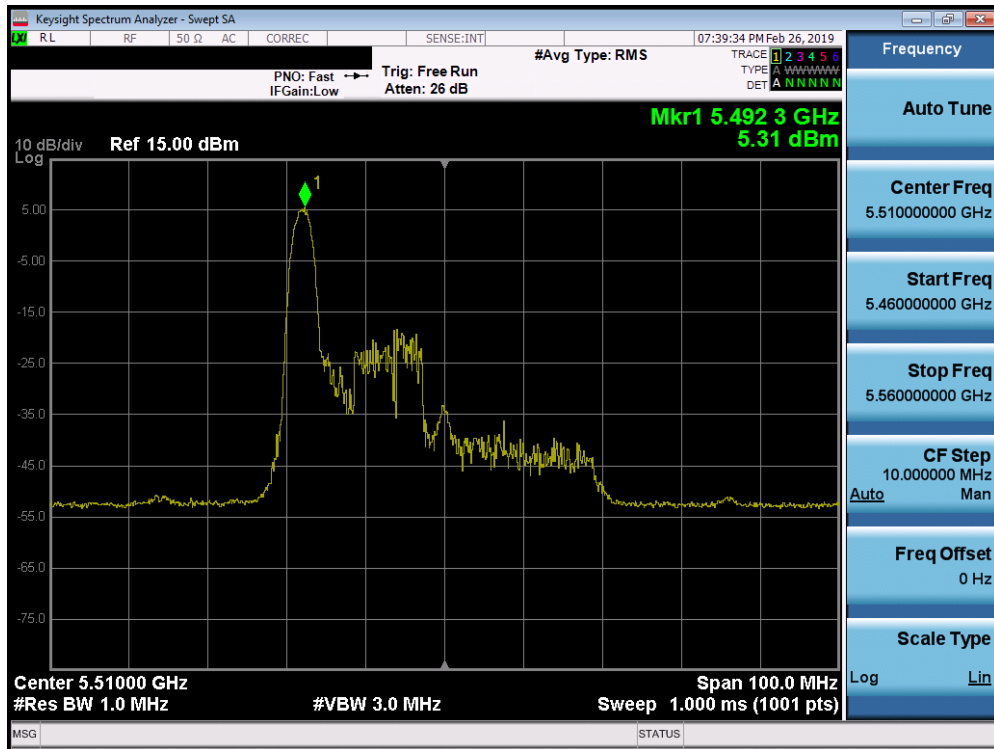


Plot 7-230. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 120)

FCC ID: A3LSMF907B		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 174 of 330

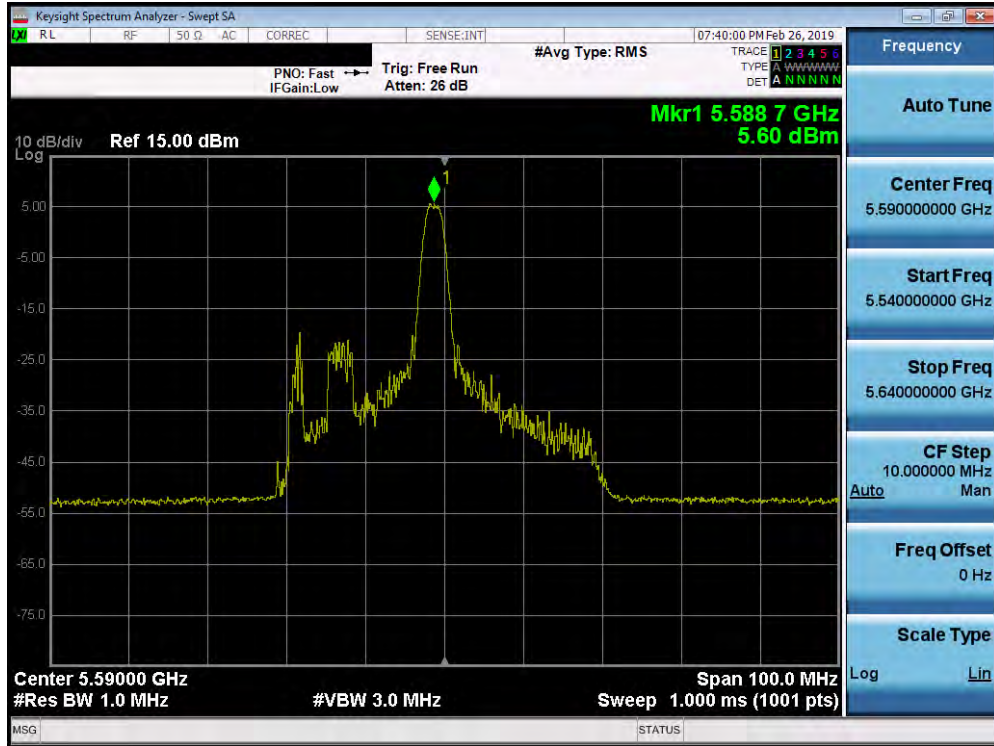


Plot 7-231. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 144)

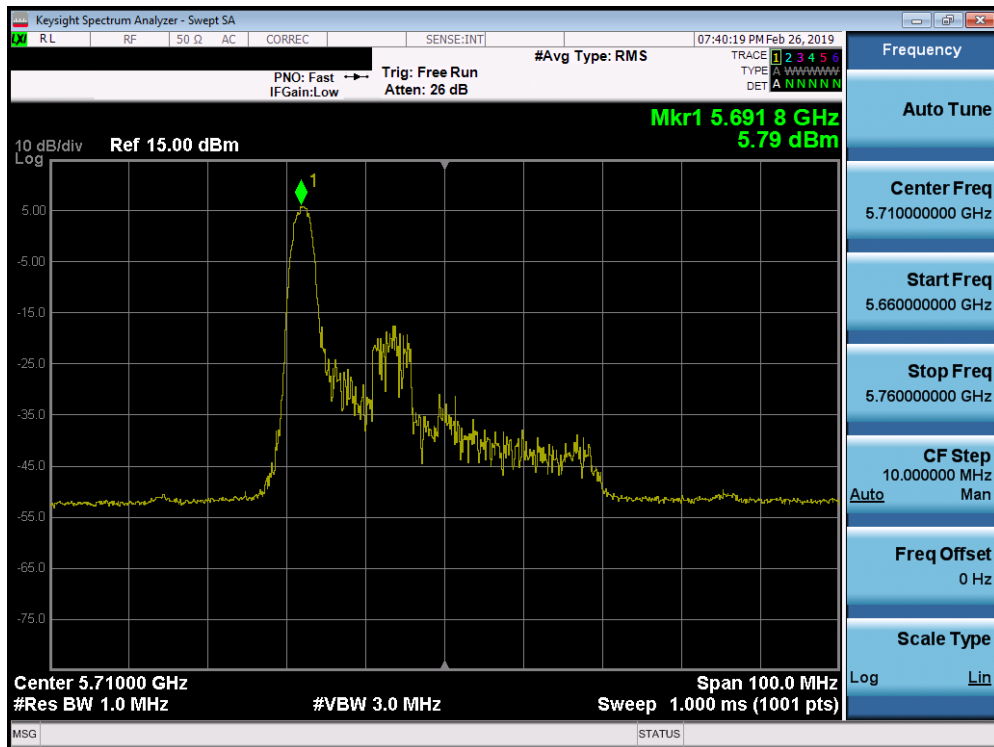


Plot 7-232. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 102)

FCC ID: A3LSMF907B		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 175 of 330

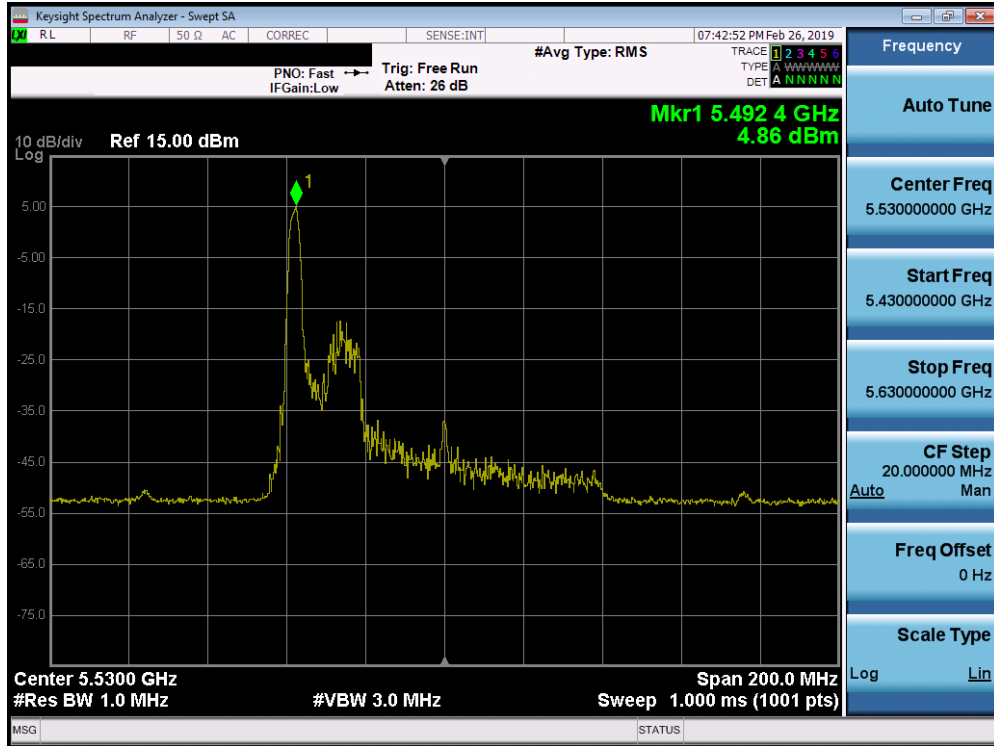


Plot 7-233. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 118)

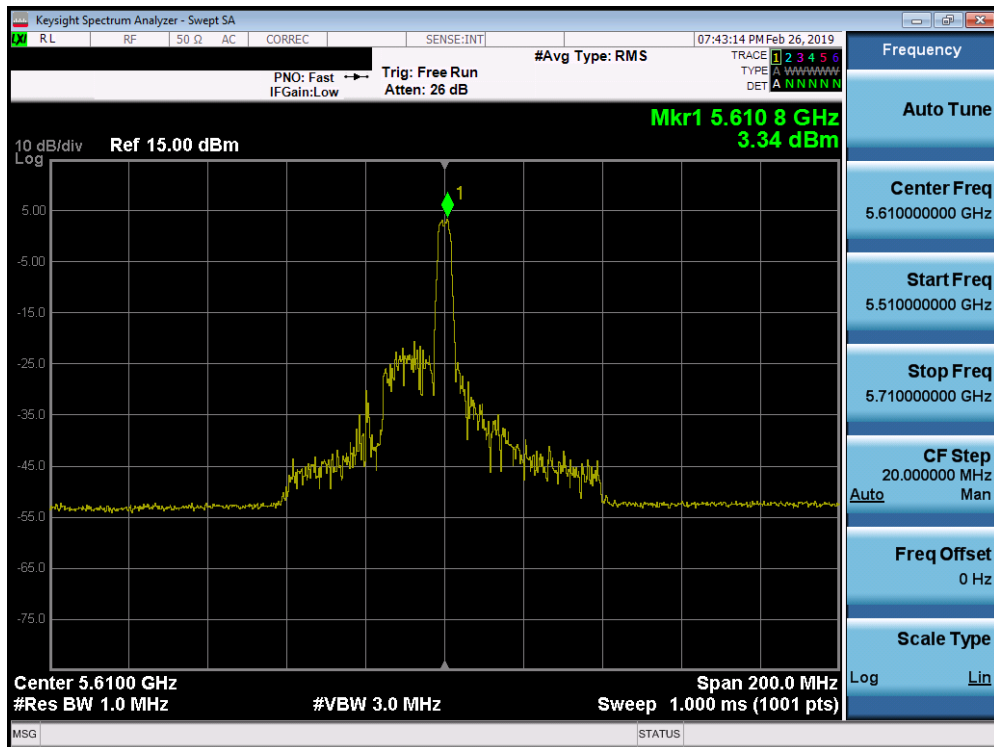


Plot 7-234. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 142)

FCC ID: A3LSMF907B	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 176 of 330

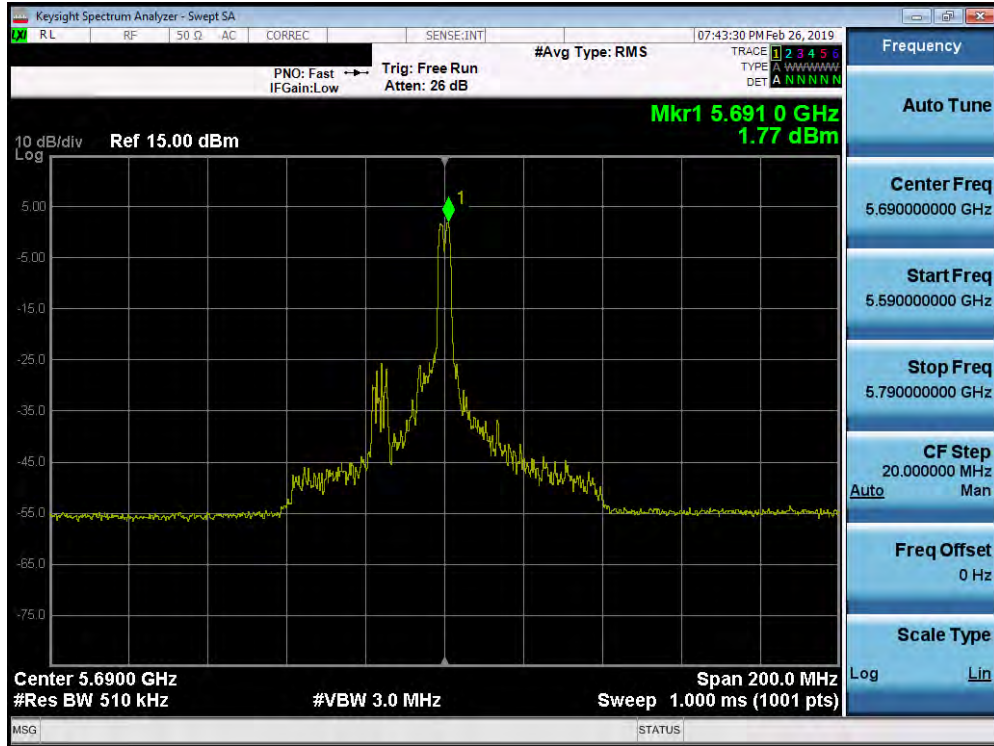


Plot 7-235. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 106)

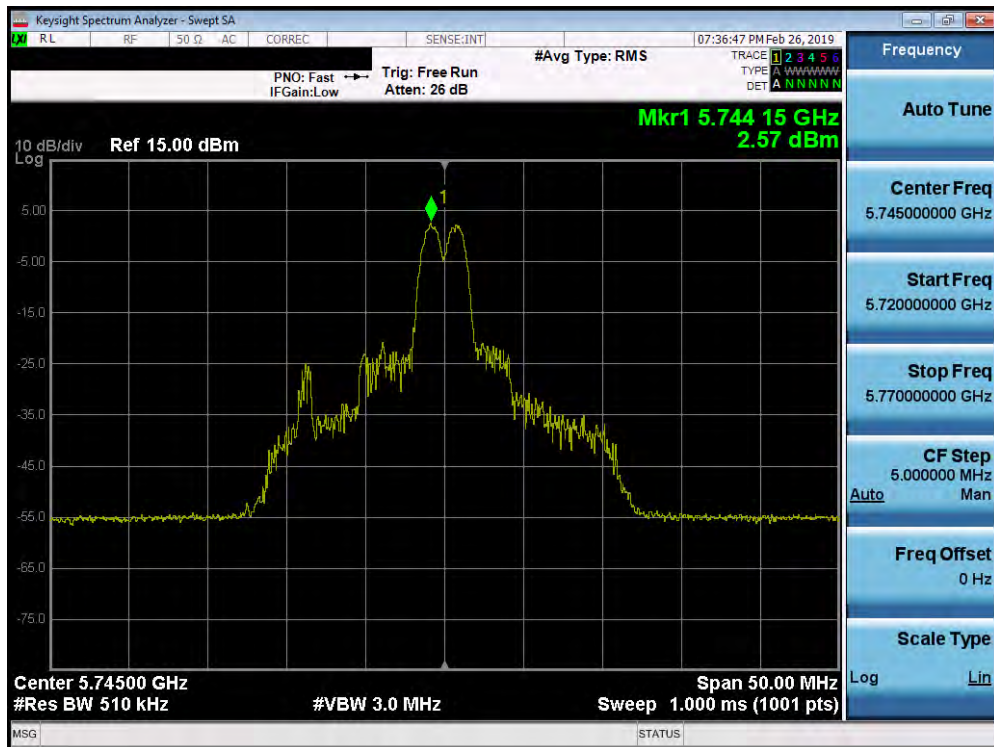


Plot 7-236. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 122)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 177 of 330

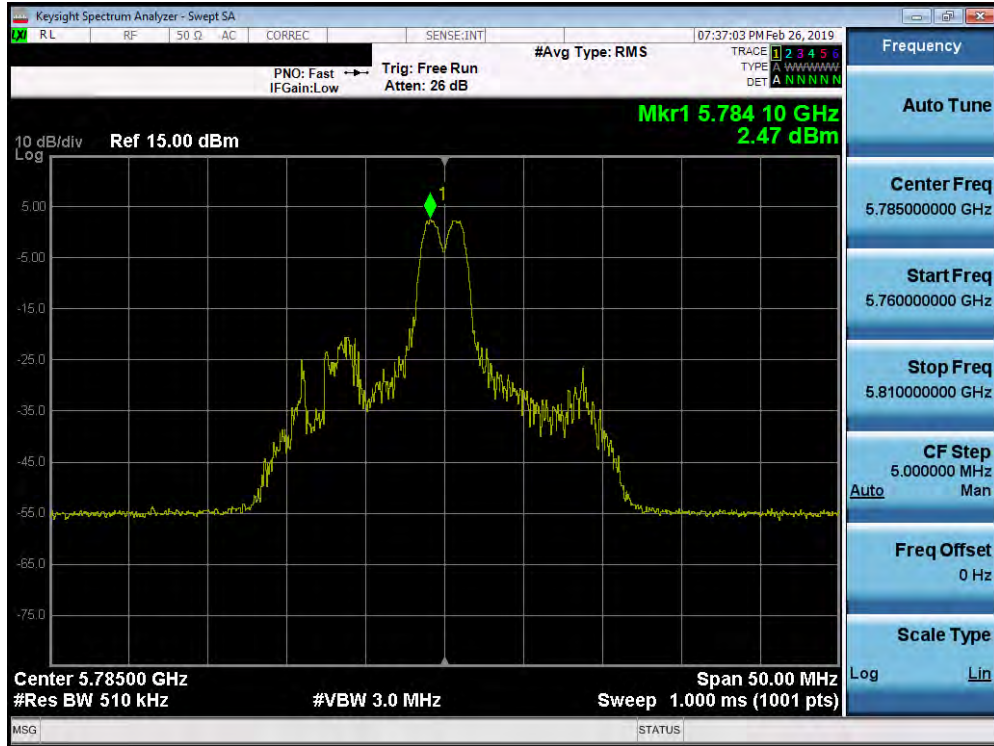


Plot 7-237. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 138)

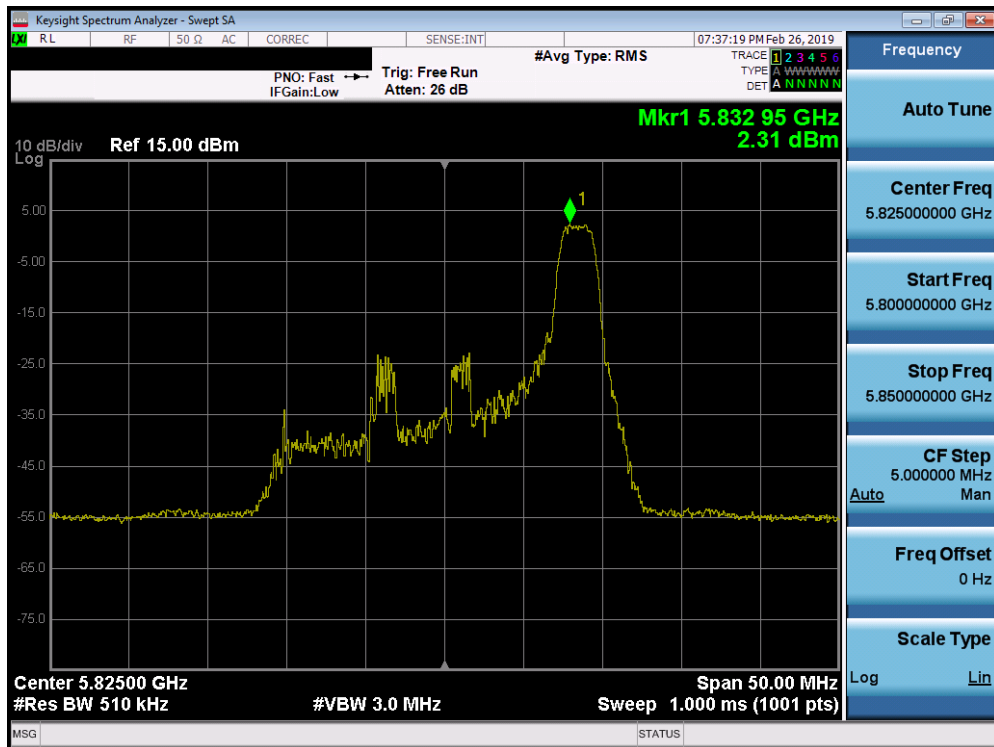


Plot 7-238. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 149)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 178 of 330

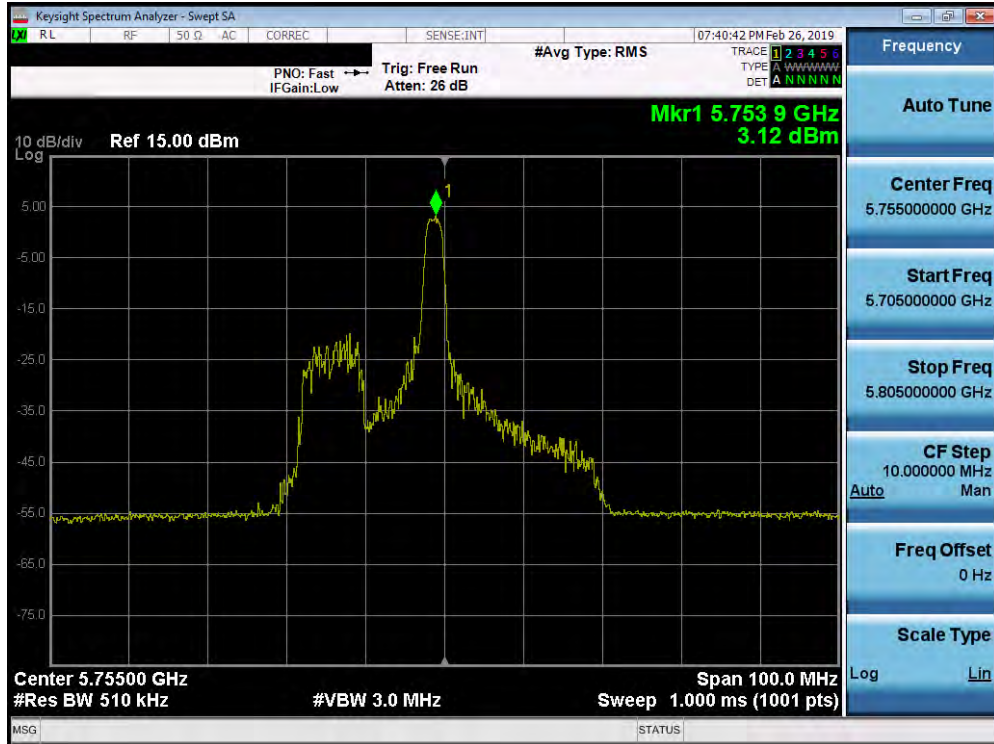


Plot 7-239. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 157)

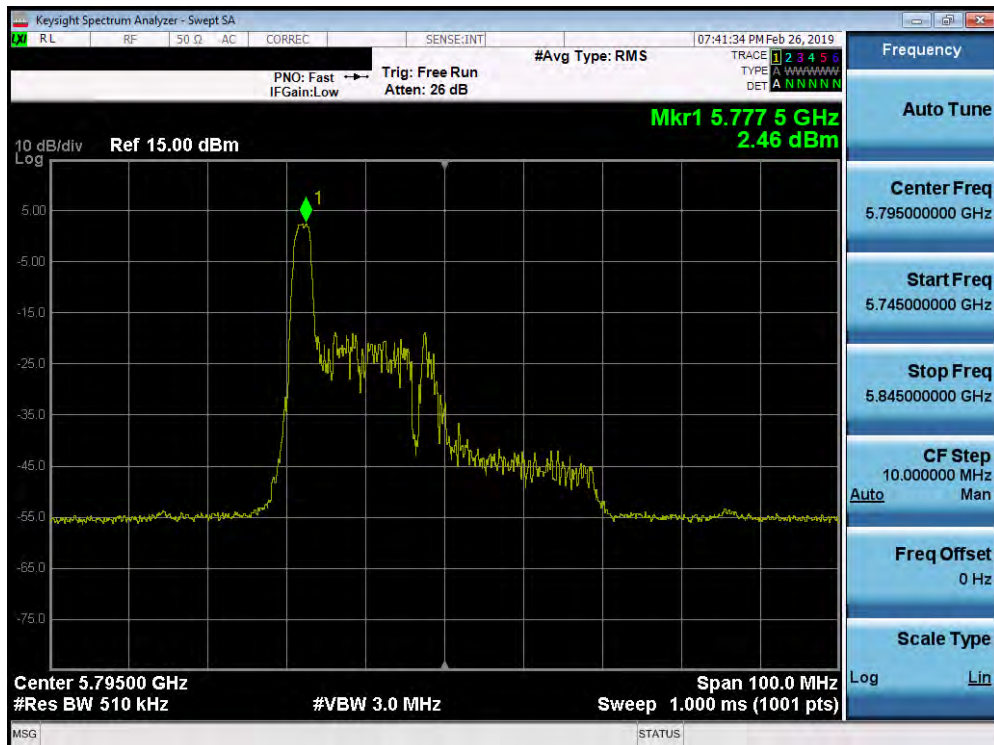


Plot 7-240. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 165)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset	Page 179 of 330	

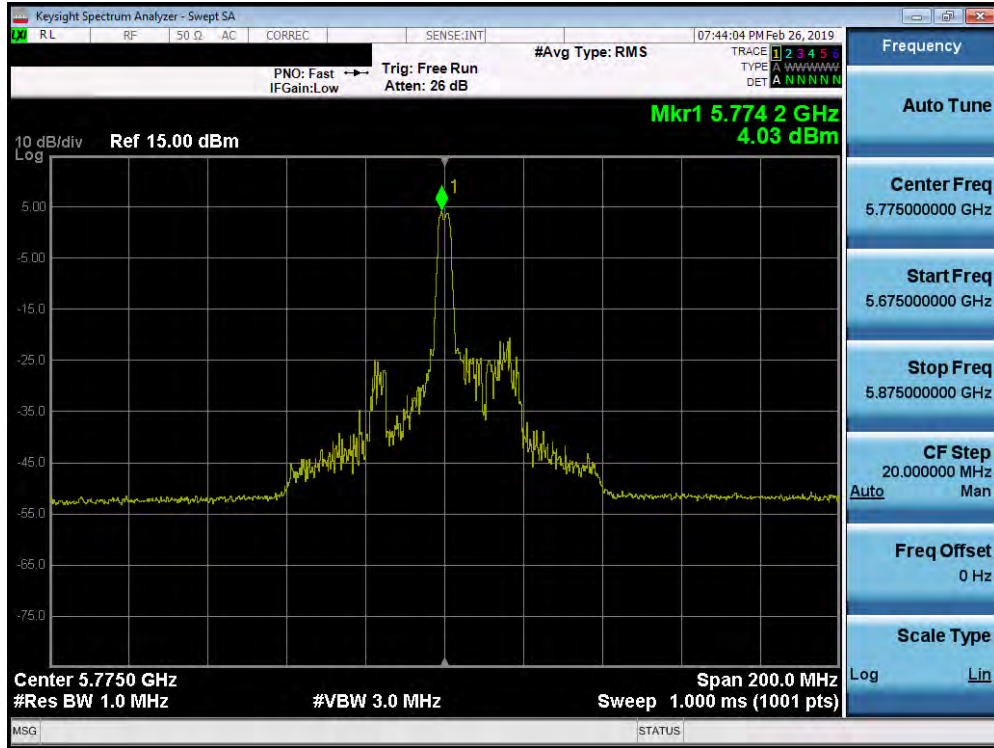


Plot 7-241. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 151)



Plot 7-242. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 159)

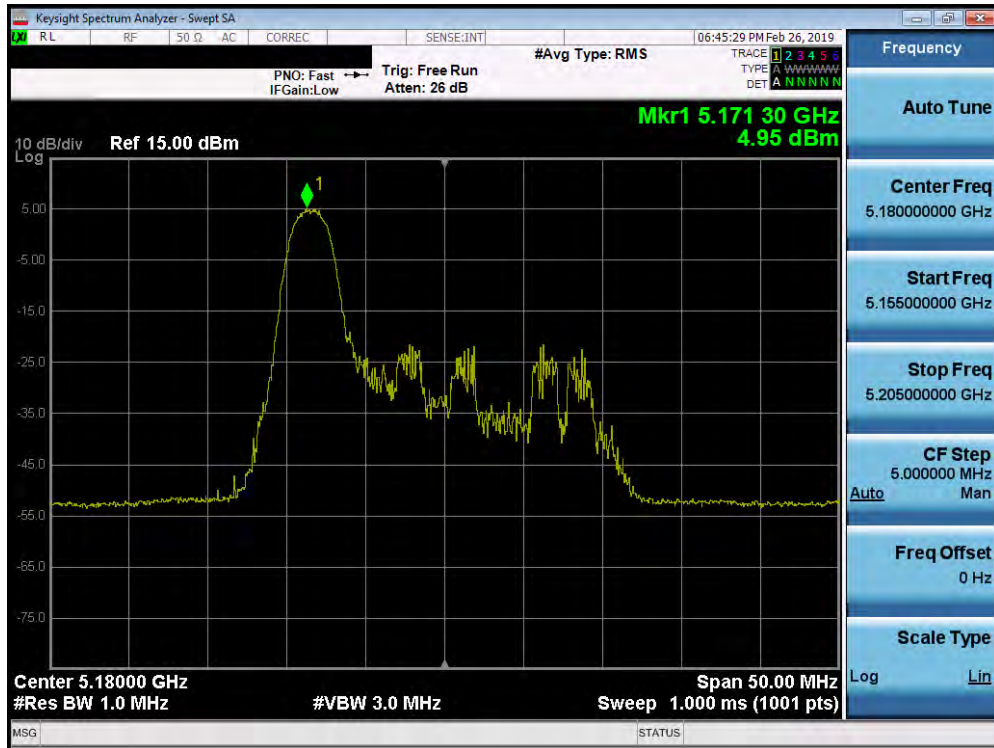
FCC ID: A3LSMF907B	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset	Page 180 of 330



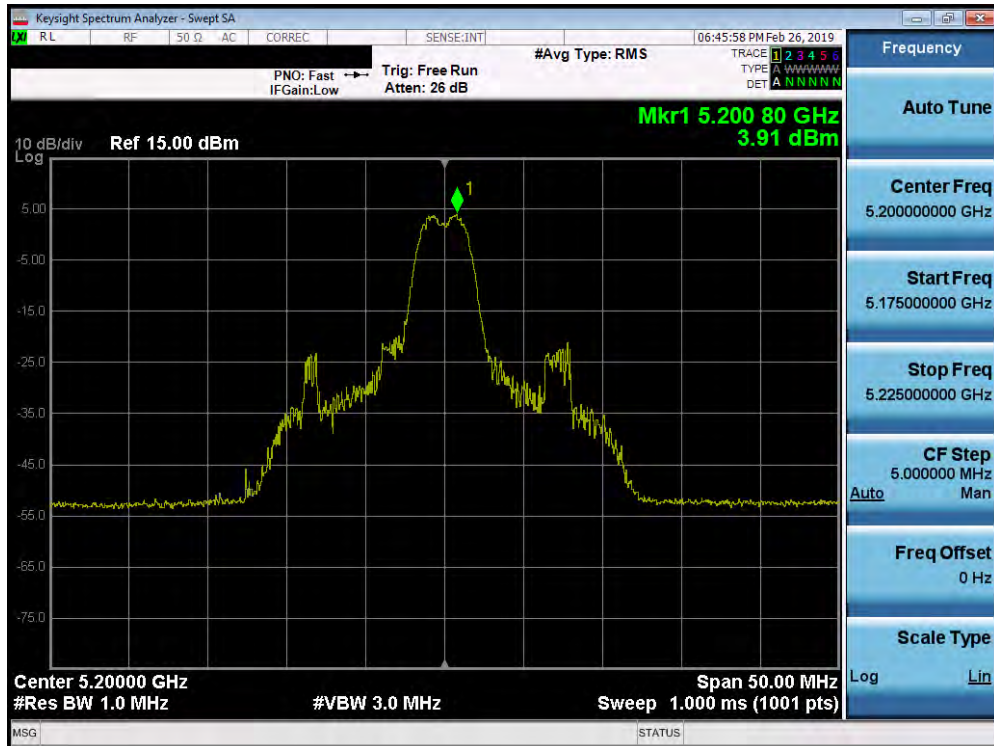
Plot 7-243. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 155)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset	Page 181 of 330

MIMO Antenna-2 Power Spectral Density Measurements (26 Tones)

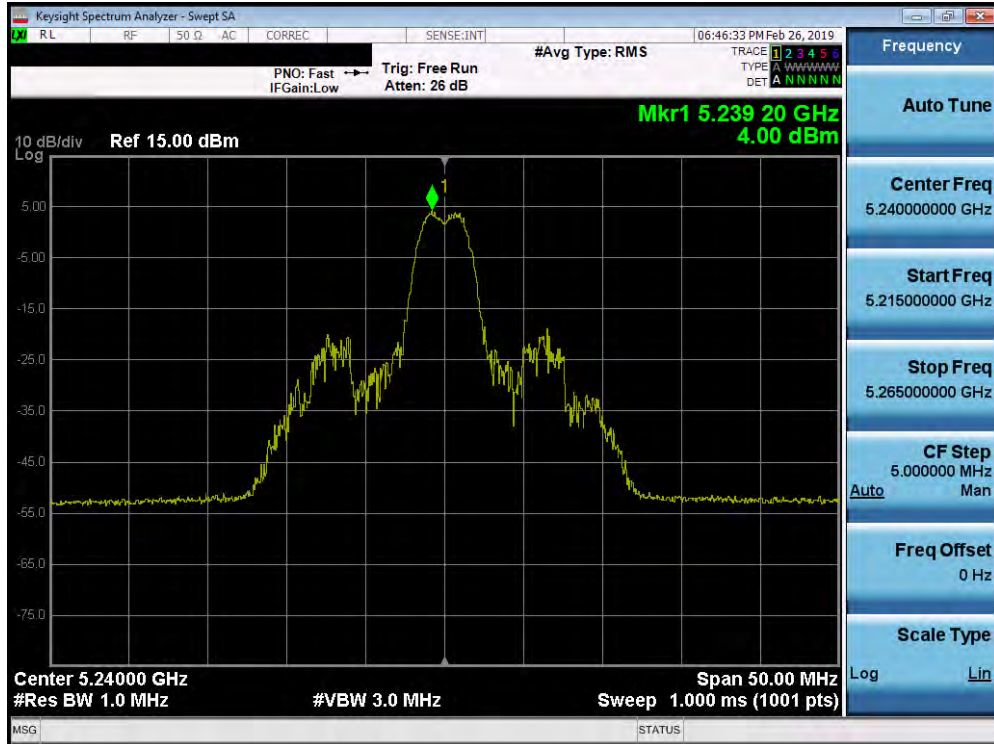


Plot 7-244. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 36)

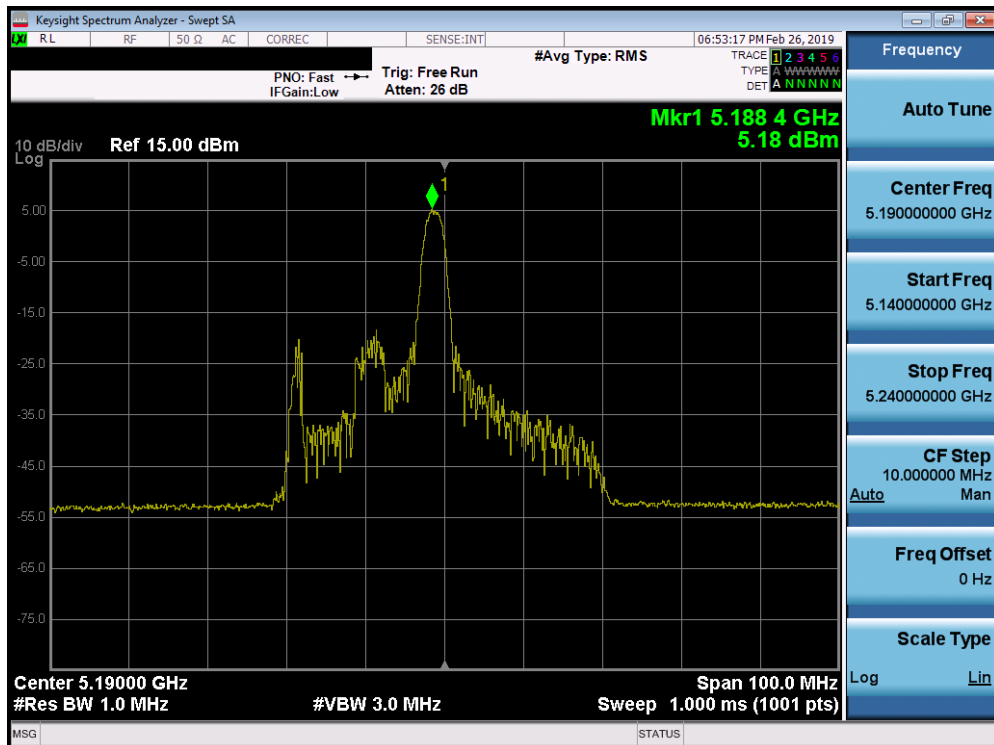


Plot 7-245. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 40)

FCC ID: A3LSMF907B	PCTEST ENGINEERING LABORATORY, INC.		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset			Page 182 of 330

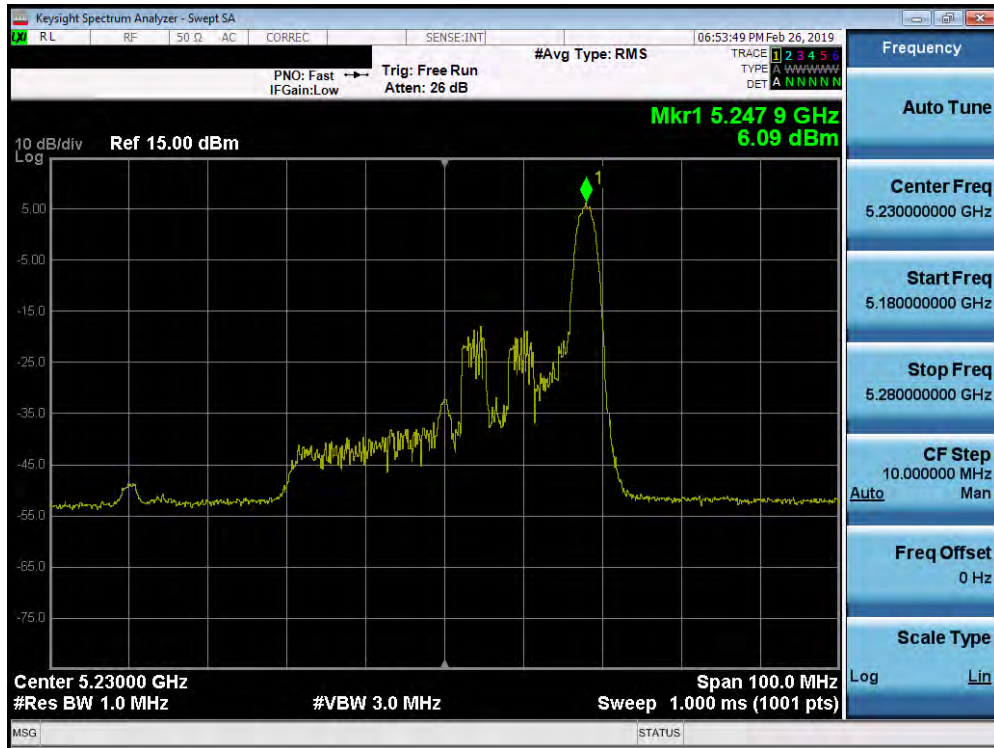


Plot 7-246. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 48)

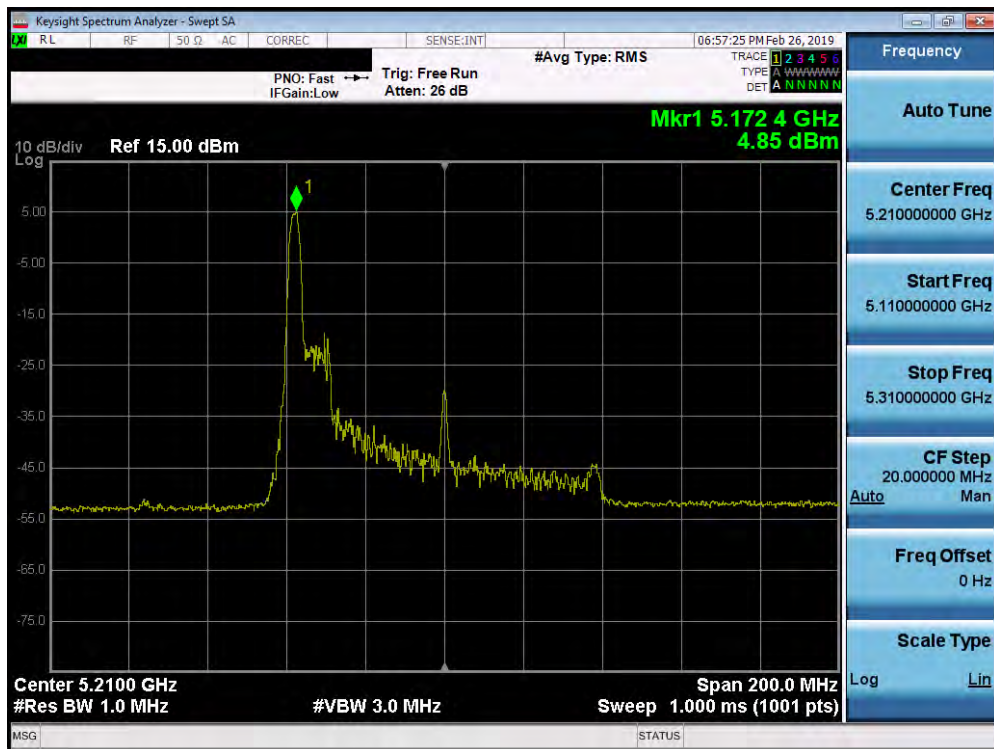


Plot 7-247. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 38)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 183 of 330

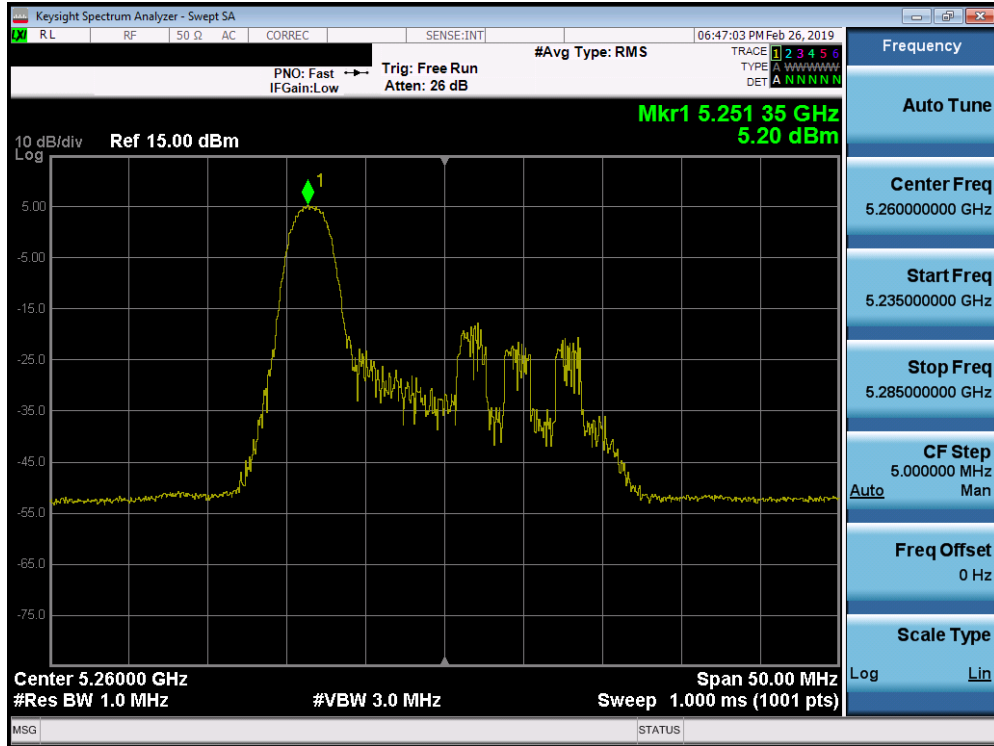


Plot 7-248. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 46)

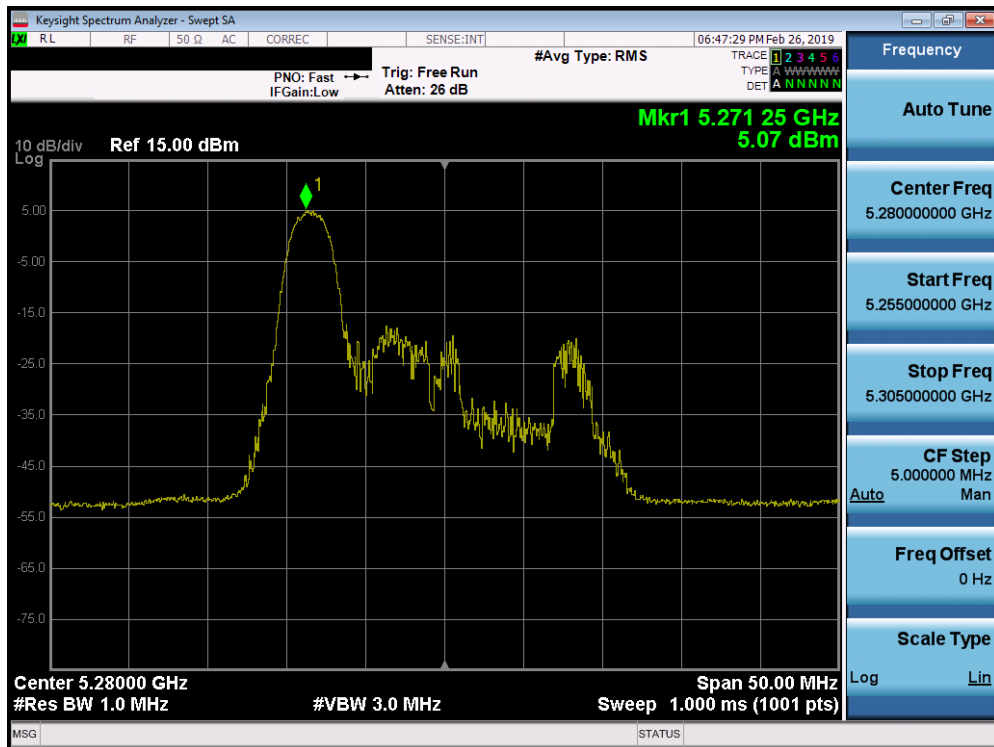


Plot 7-249. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 42)

FCC ID: A3LSMF907B		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 184 of 330

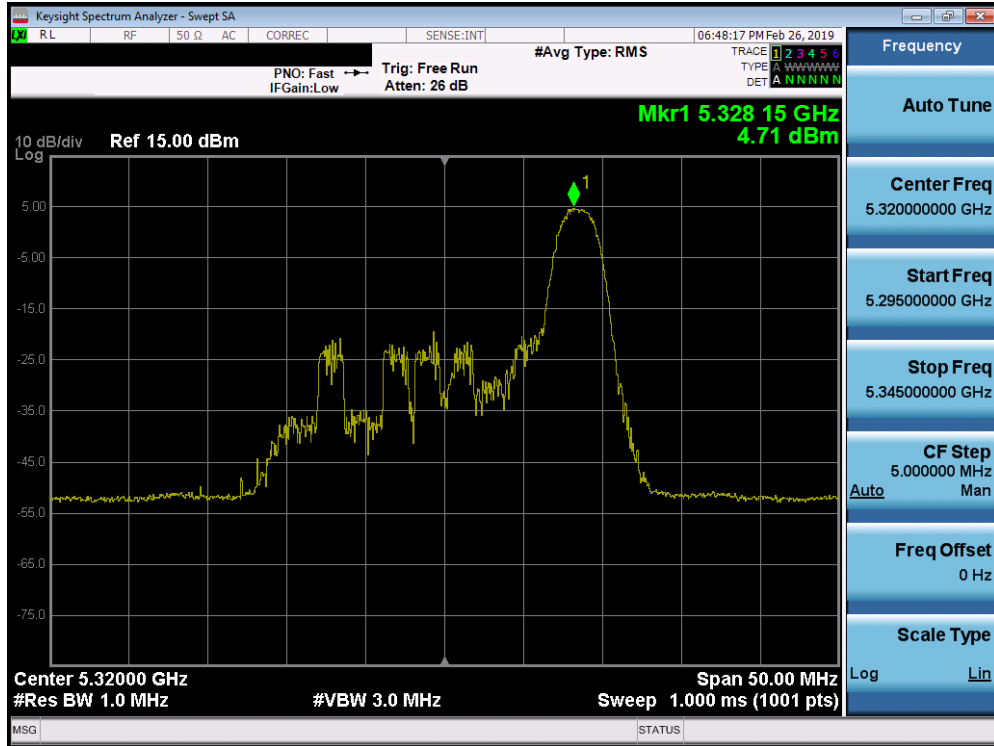


Plot 7-250. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 52)

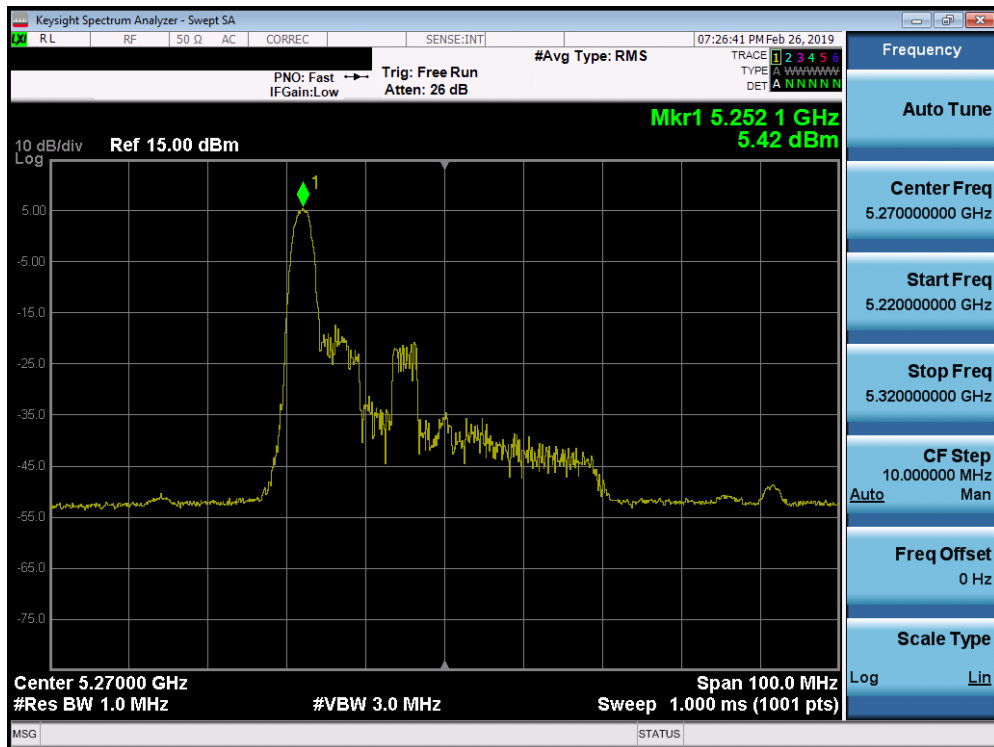


Plot 7-251. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMF907B	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 185 of 330

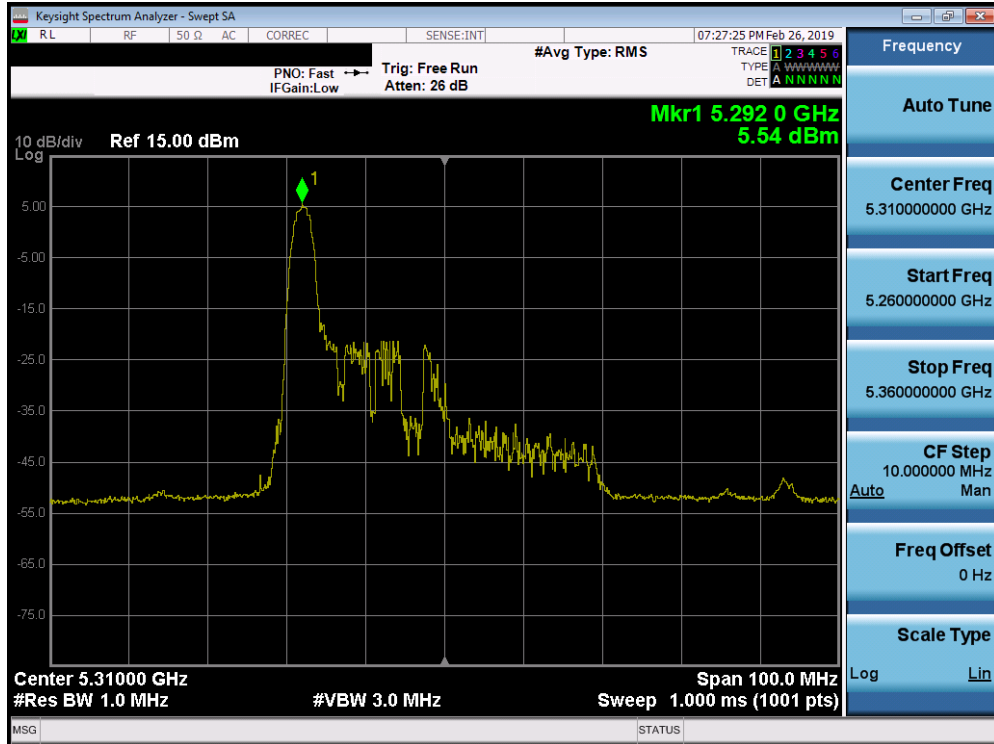


Plot 7-252. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 64)

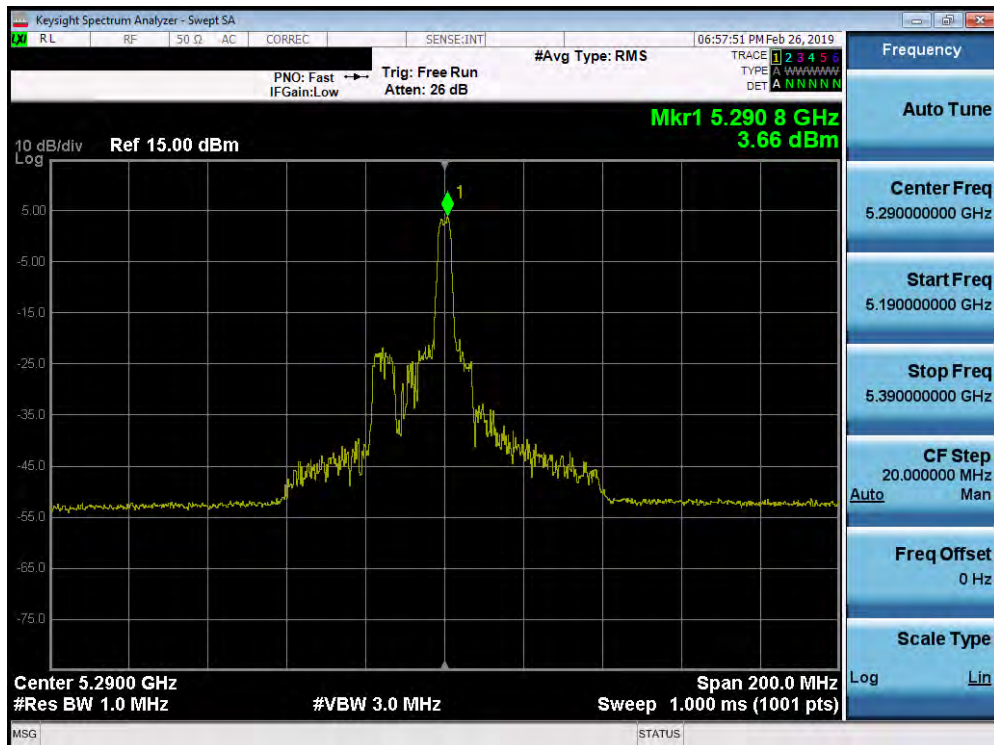


Plot 7-253. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMF907B		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 186 of 330

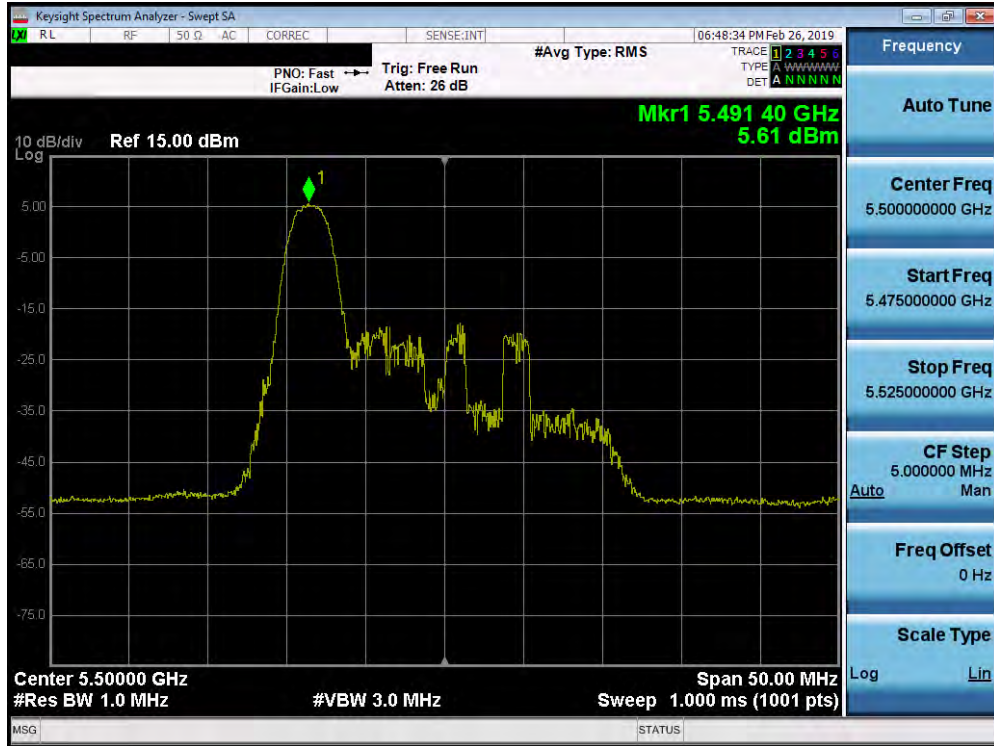


Plot 7-254. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 62)

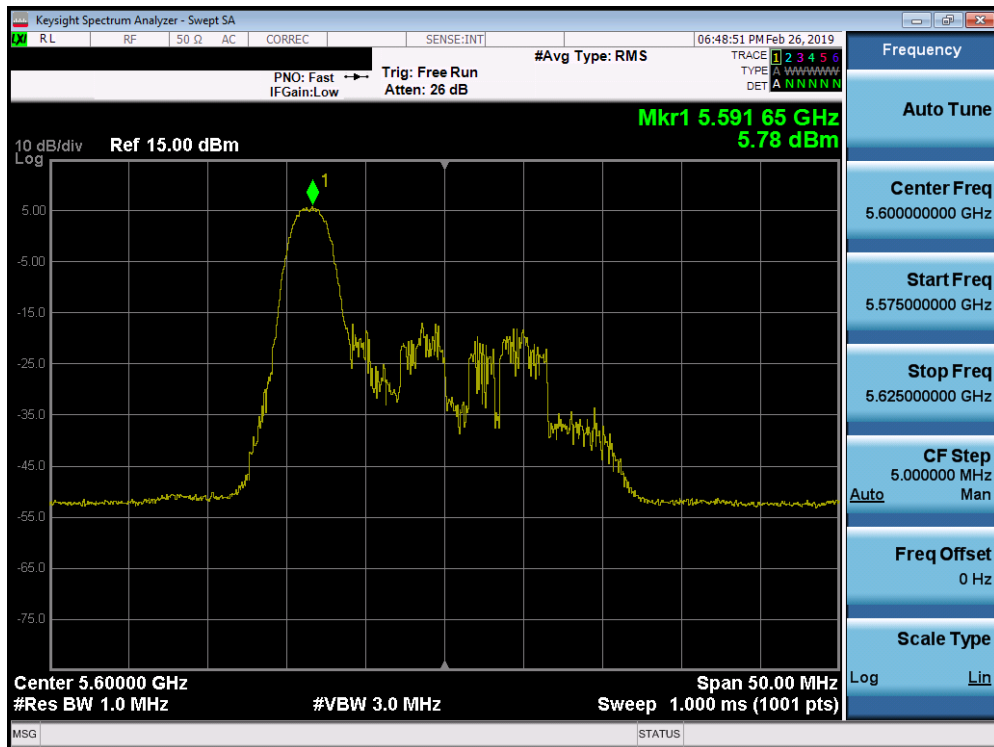


Plot 7-255. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMF907B	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 187 of 330

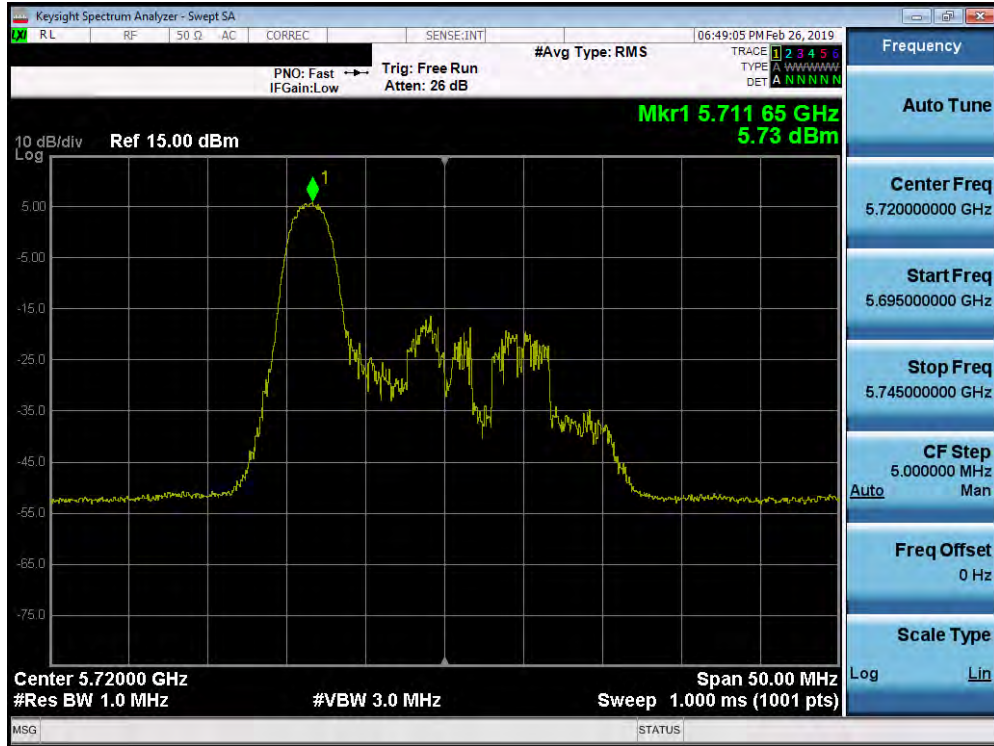


Plot 7-256. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 100)

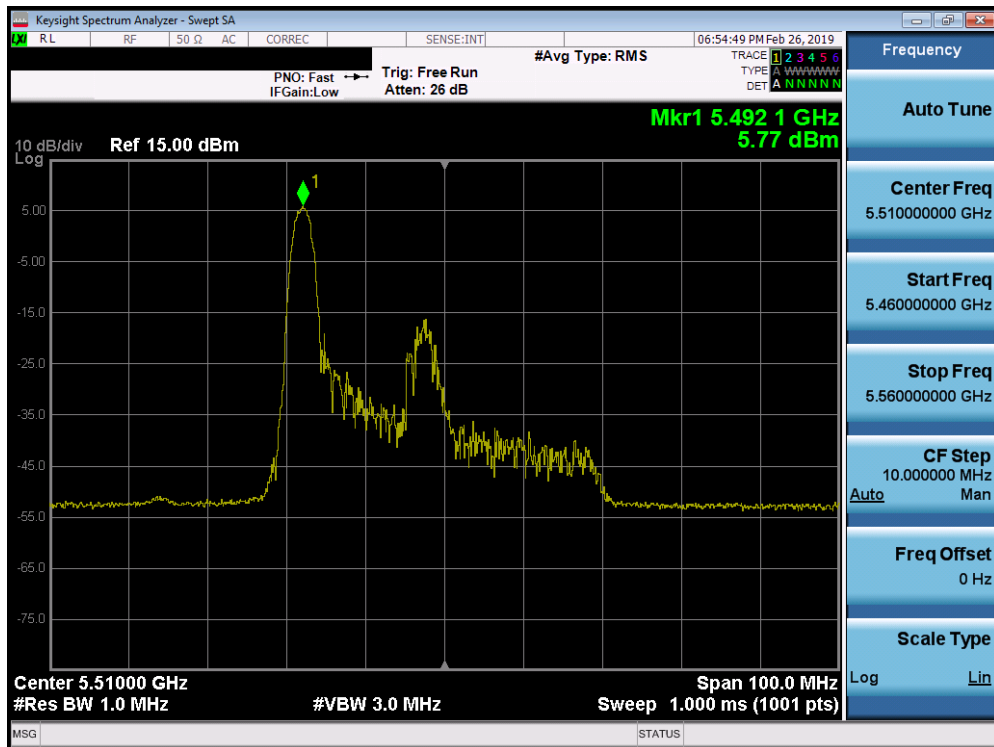


Plot 7-257. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 120)

FCC ID: A3LSMF907B		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 188 of 330

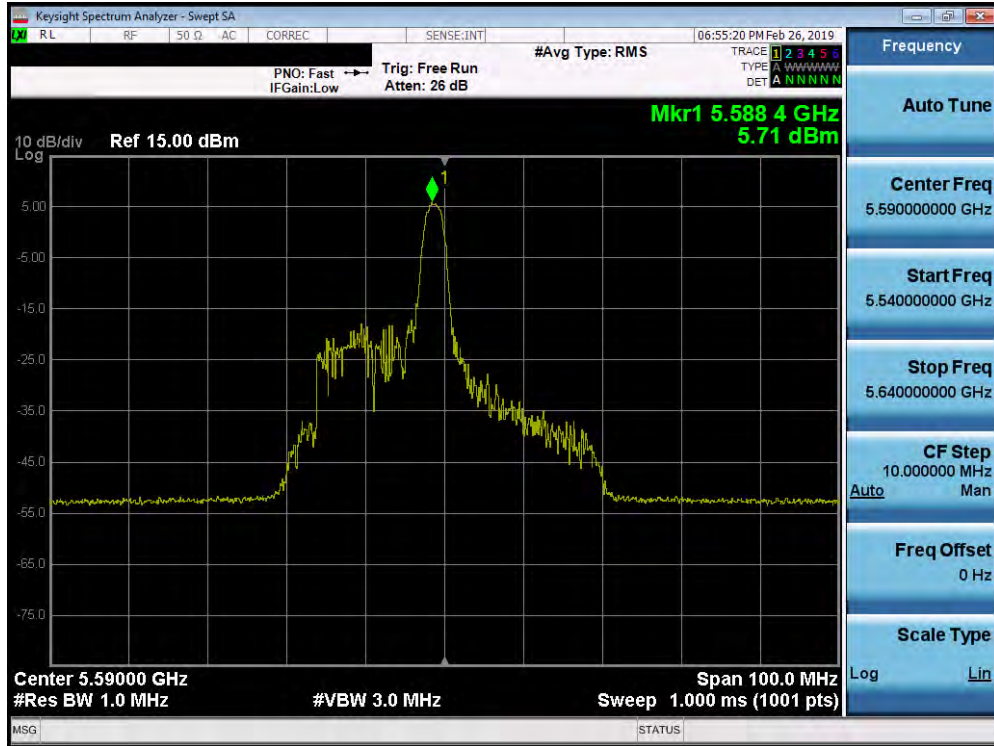


Plot 7-258. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 144)

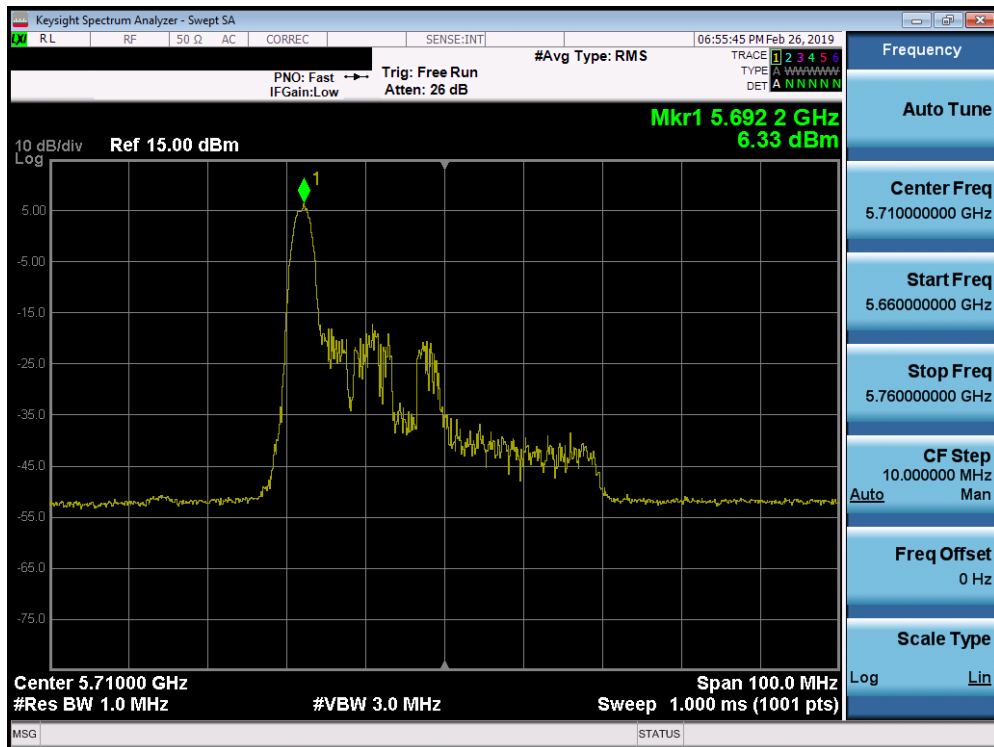


Plot 7-259. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 102)

FCC ID: A3LSMF907B		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 189 of 330

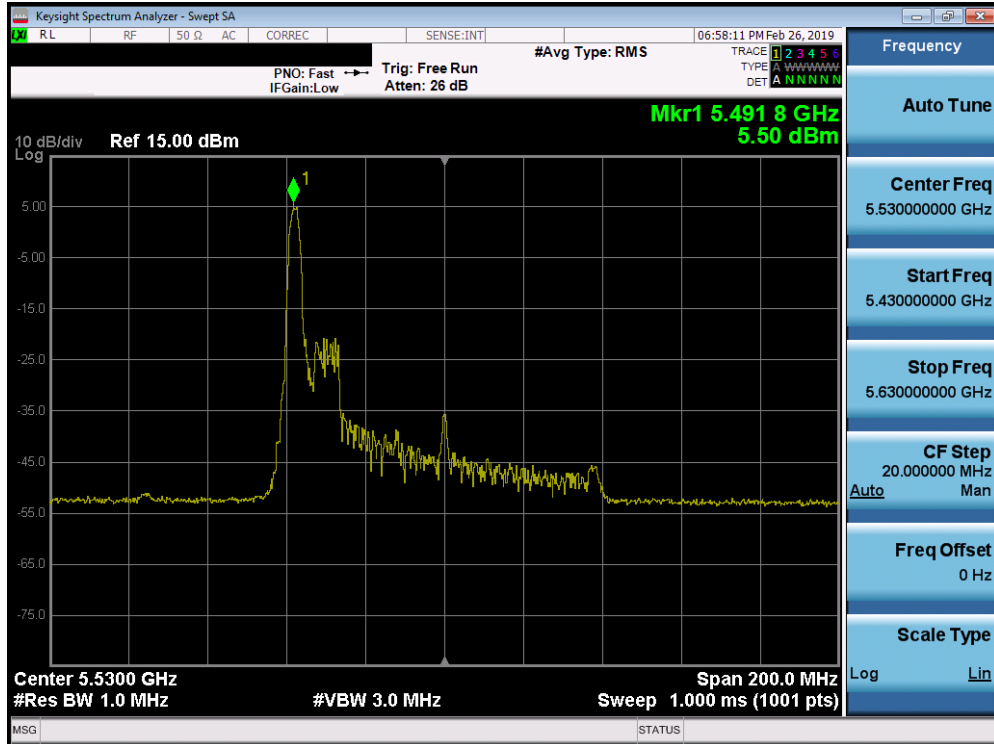


Plot 7-260. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 118)

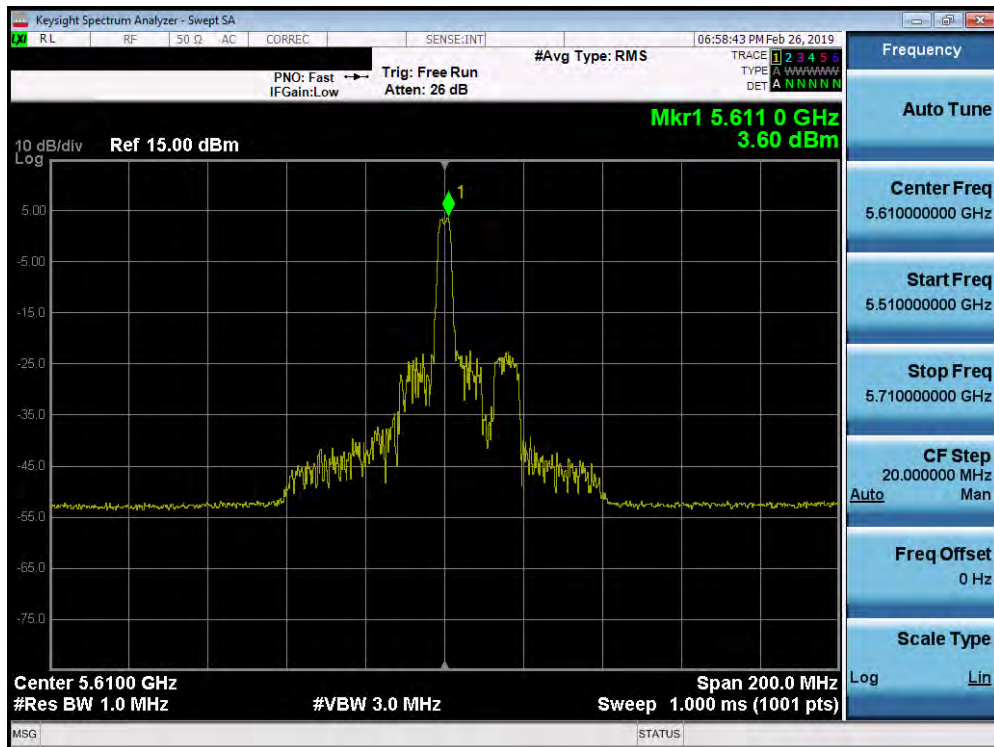


Plot 7-261. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 142)

FCC ID: A3LSMF907B	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset		Page 190 of 330



Plot 7-262. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 106)



Plot 7-263. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 122)

FCC ID: A3LSMF907B	PCTEST ENGINEERING LABORATORY, INC.		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904220064-07.A3L	Test Dates: 01/22 - 05/17/2019	EUT Type: Portable Handset			Page 191 of 330