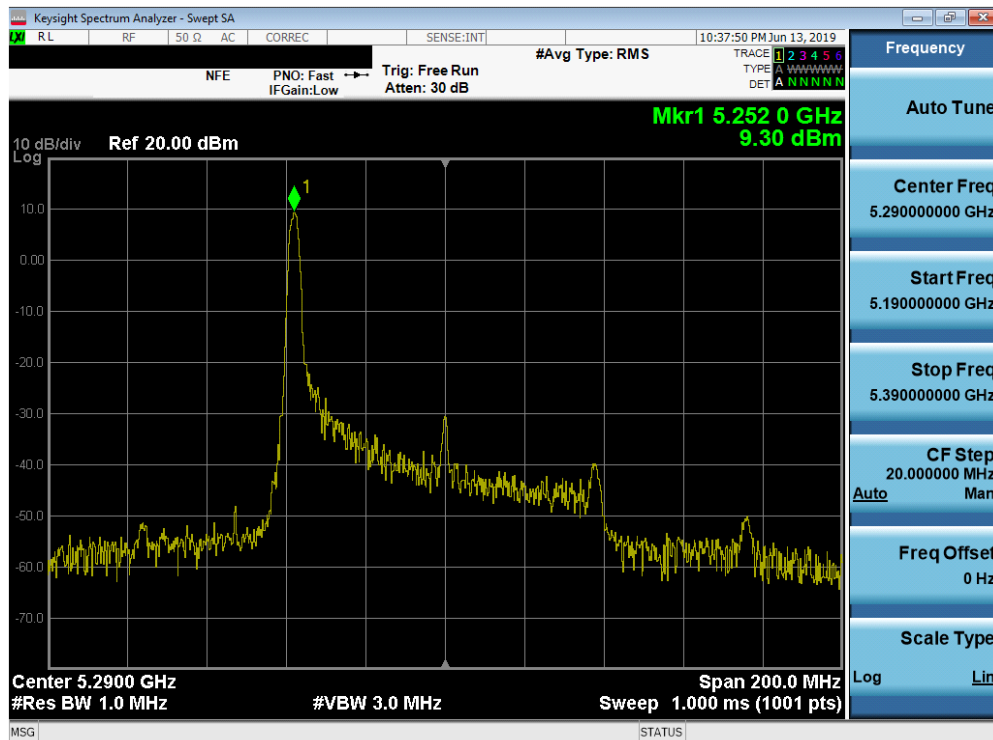
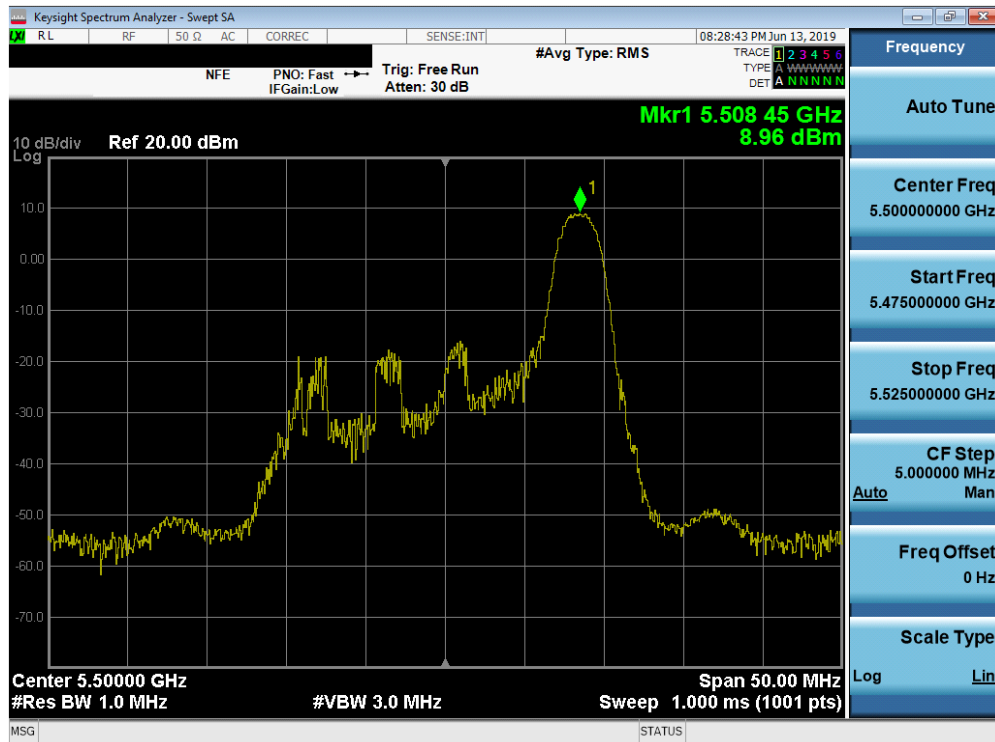


Plot 7-119. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 62)

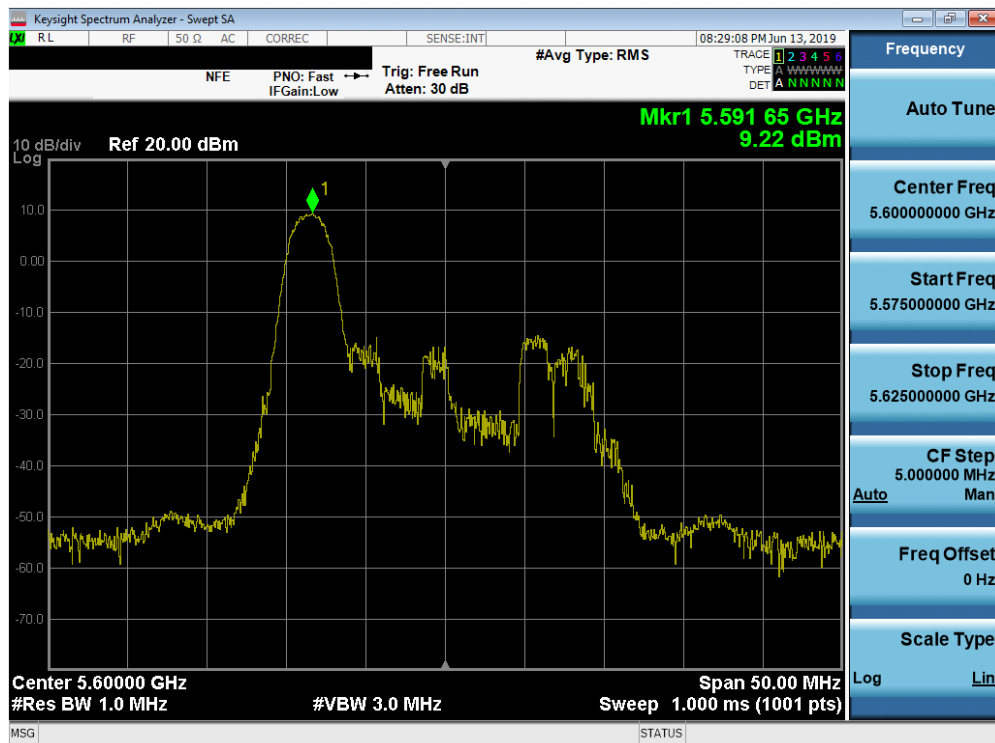


Plot 7-120. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 108 of 302

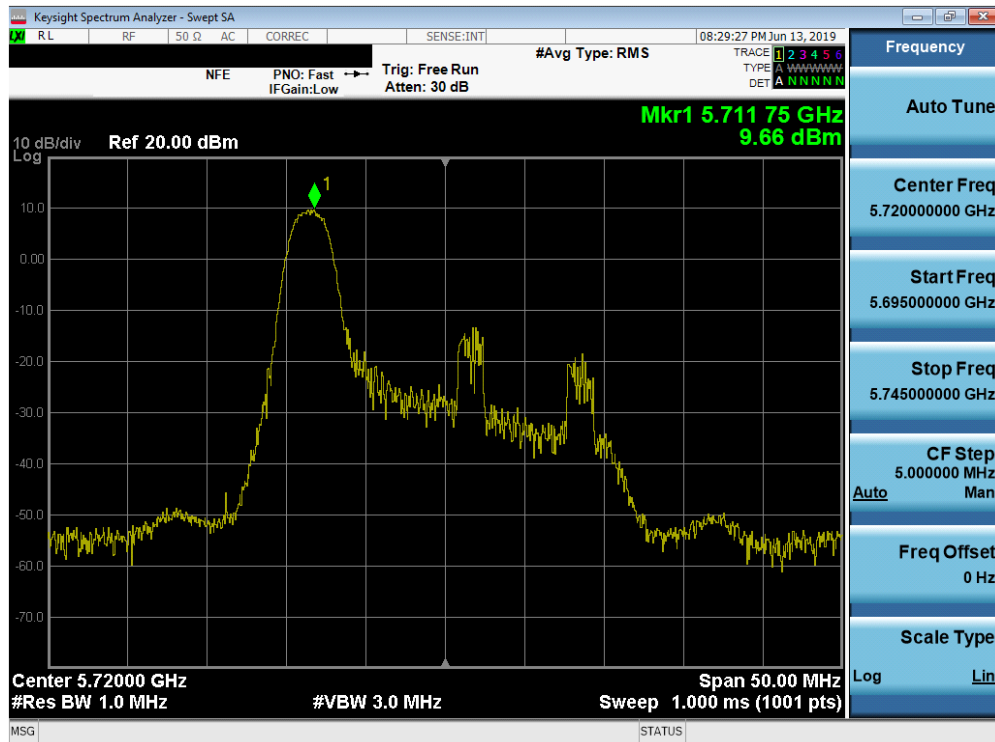


Plot 7-121. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 100)

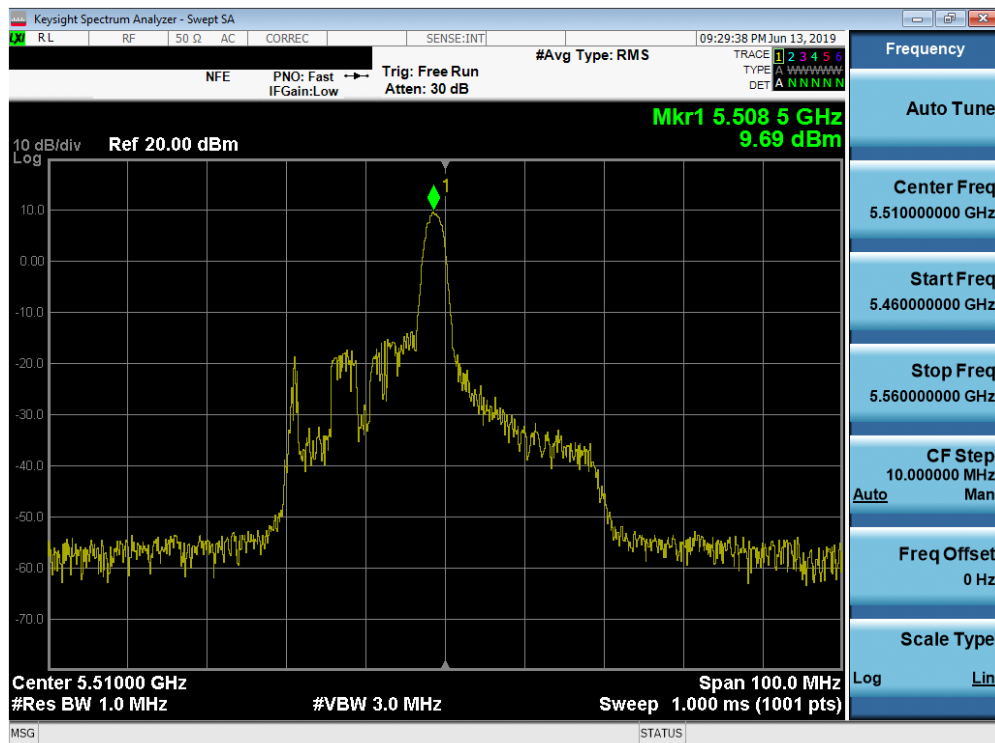


Plot 7-122. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 120)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 109 of 302

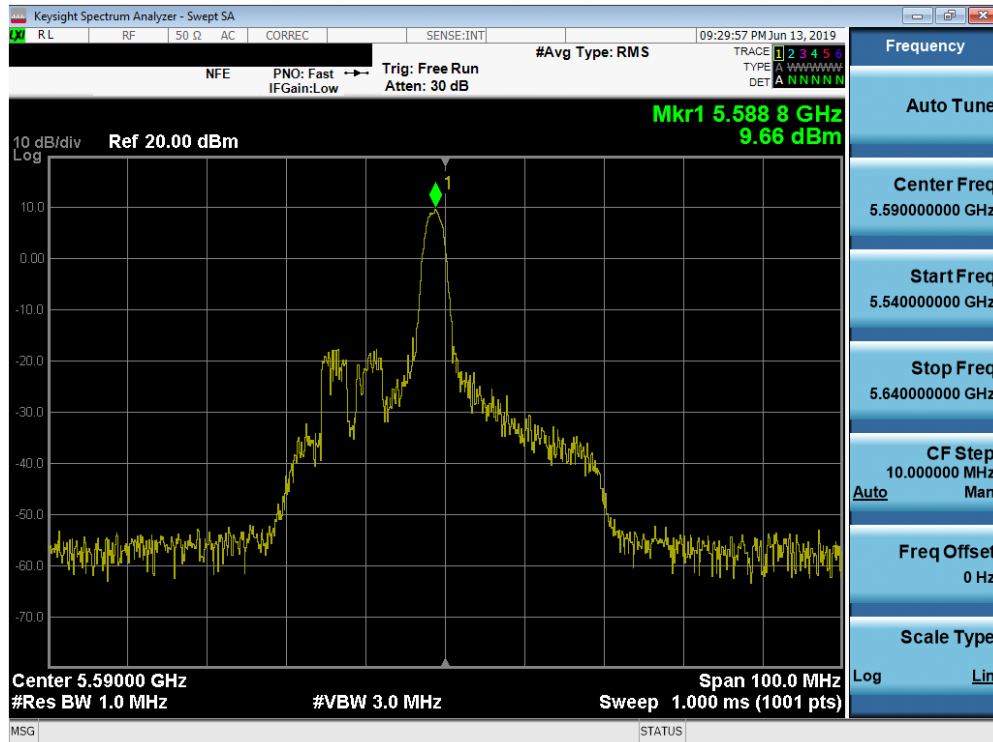


Plot 7-123. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 144)

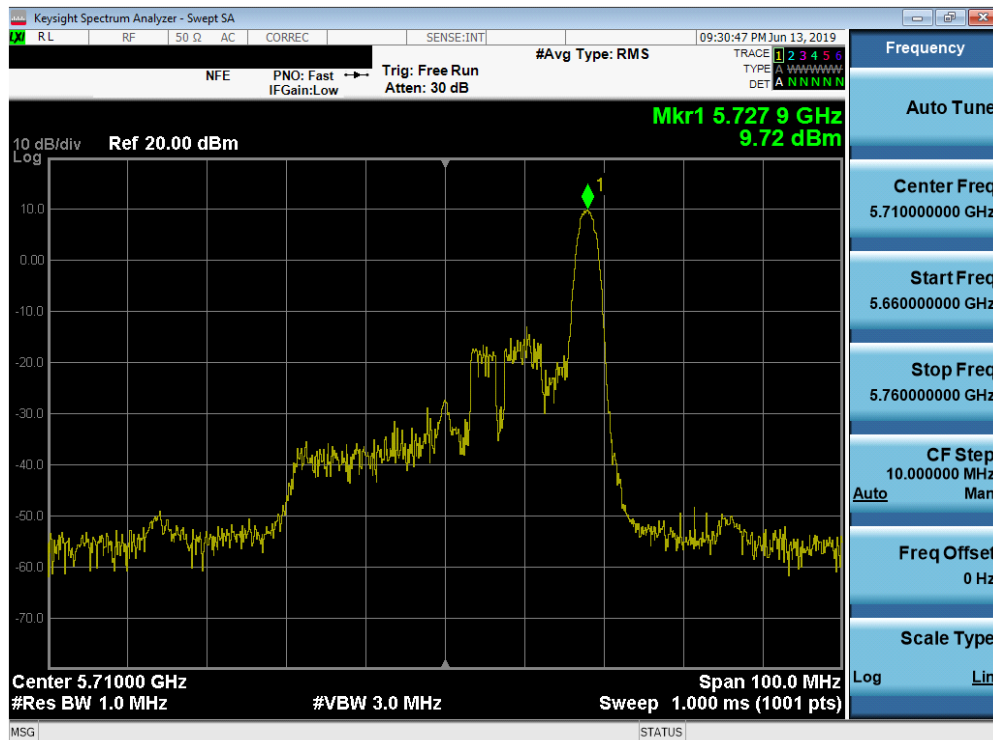


Plot 7-124. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 102)

FCC ID: A3LSMN976V	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 110 of 302

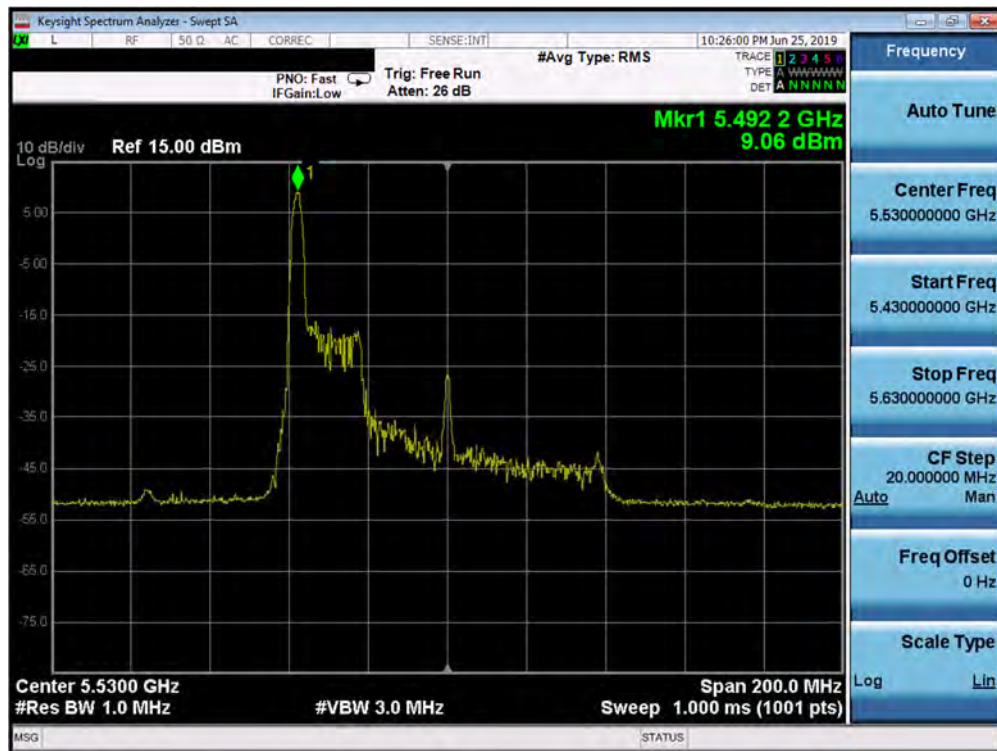


Plot 7-125. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 118)

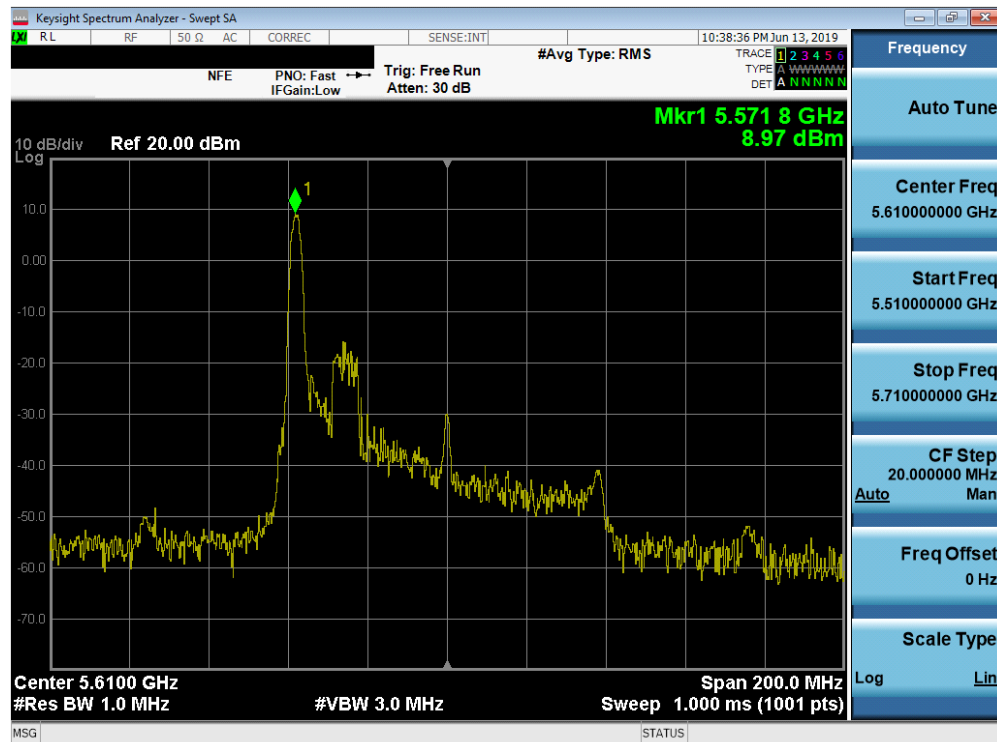


Plot 7-126. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 142)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 111 of 302

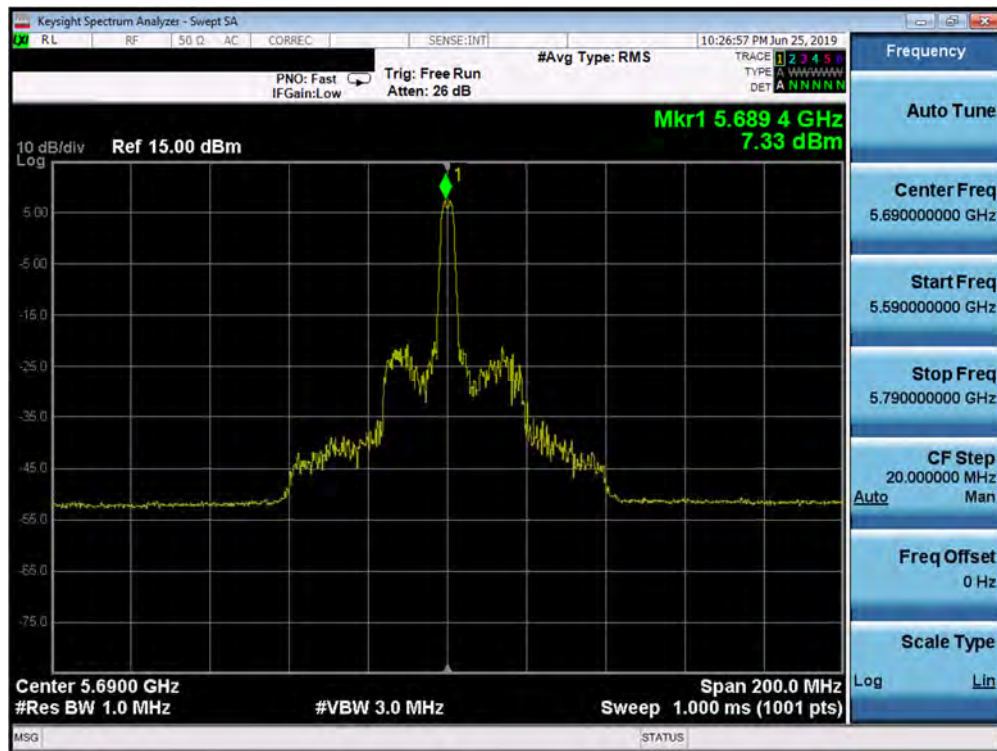


Plot 7-127. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 106)



Plot 7-128. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 122)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 112 of 302



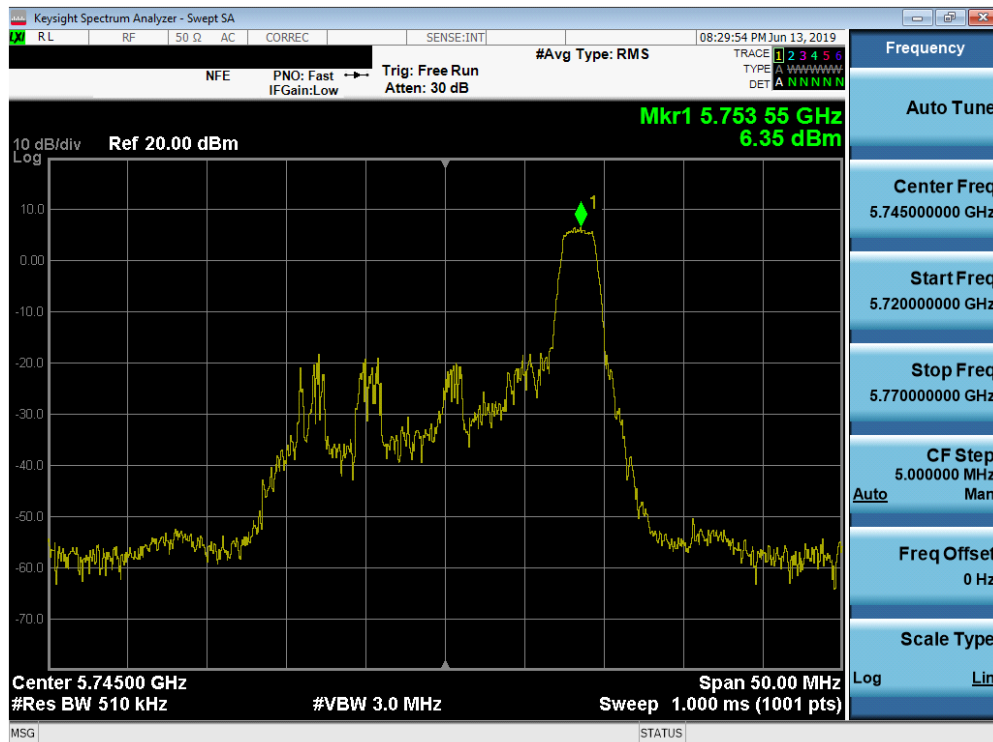
Plot 7-129. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 138)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 113 of 302

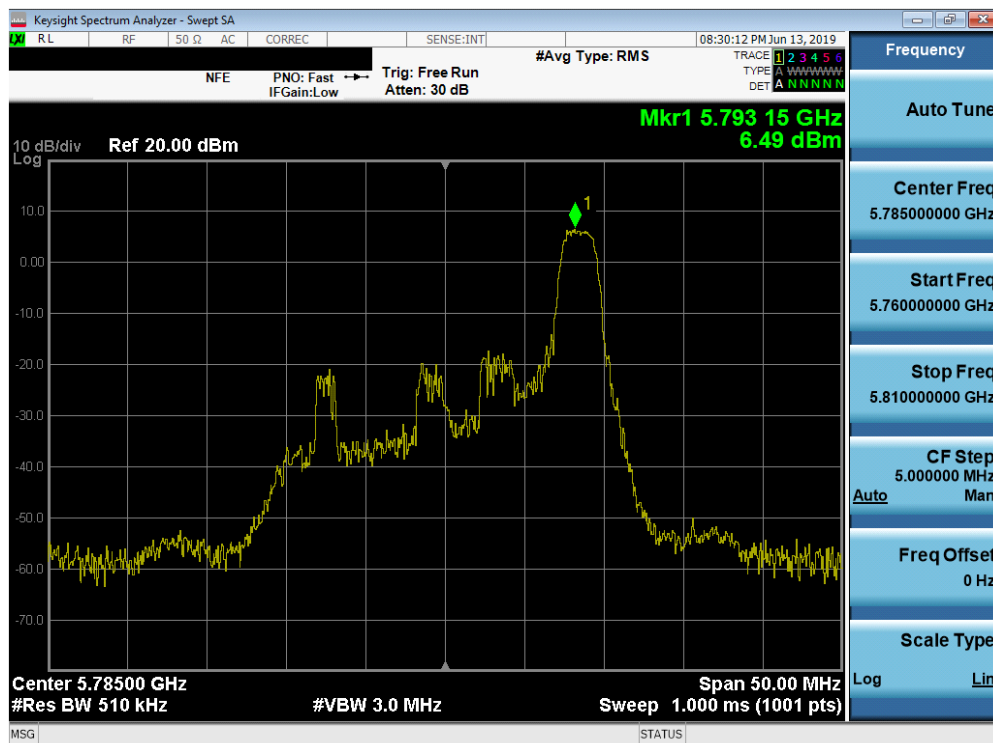
	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density	Margin [dB]
Band 3	5745	149	ax (20MHz)	26T	MCS0	6.35	30.00	-23.65
	5785	157	ax (20MHz)	26T	MCS0	6.49	30.00	-23.51
	5825	165	ax (20MHz)	26T	MCS0	7.30	30.00	-22.70
	5755	151	ax (40MHz)	26T	MCS0	7.70	30.00	-22.30
	5795	159	ax (40MHz)	26T	MCS0	6.95	30.00	-23.05
	5775	155	ax (80MHz)	26T	MCS0	8.78	30.00	-21.22

Table 7-56. Band 3 Conducted Power Spectral Density Measurements SISO ANT1 (26 Tones)

FCC ID: A3LSMN976V	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset	Page 114 of 302



Plot 7-130. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 149)

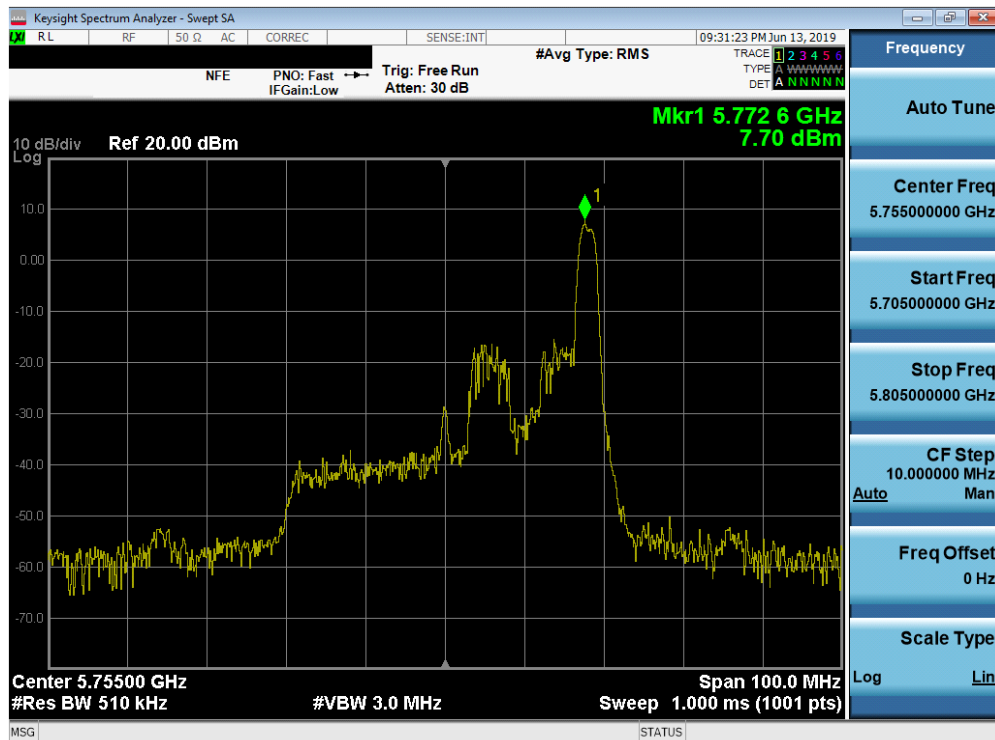


Plot 7-131. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 157)

FCC ID: A3LSMN976V	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 115 of 302

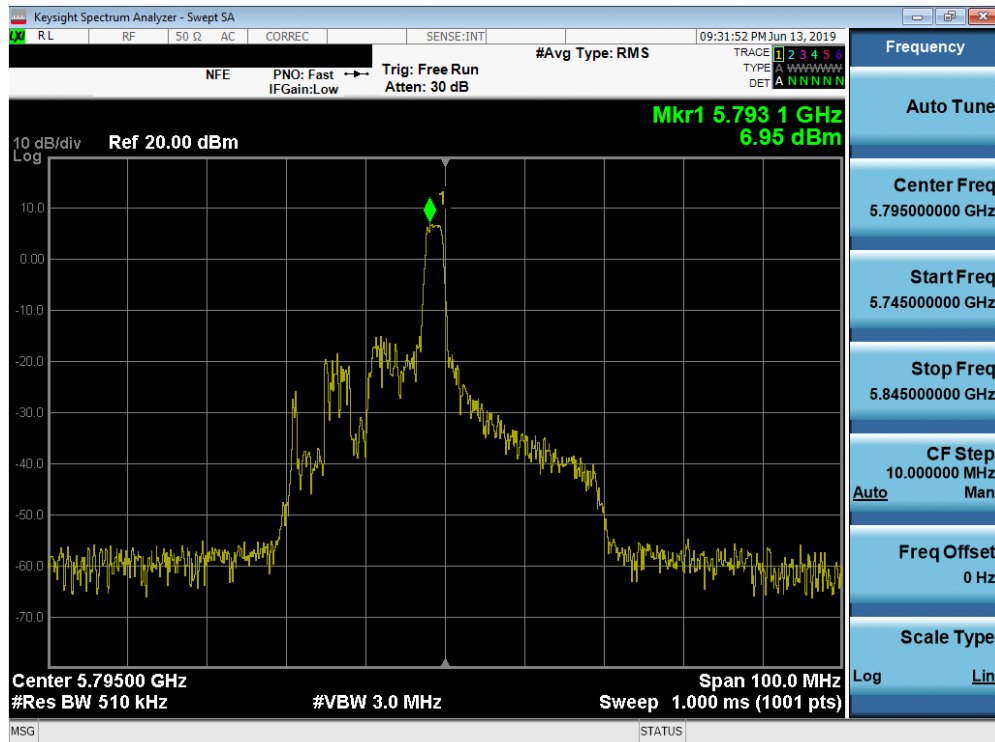


Plot 7-132. Power Spectral Density Plot SISO ANT1 (20 MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 165)

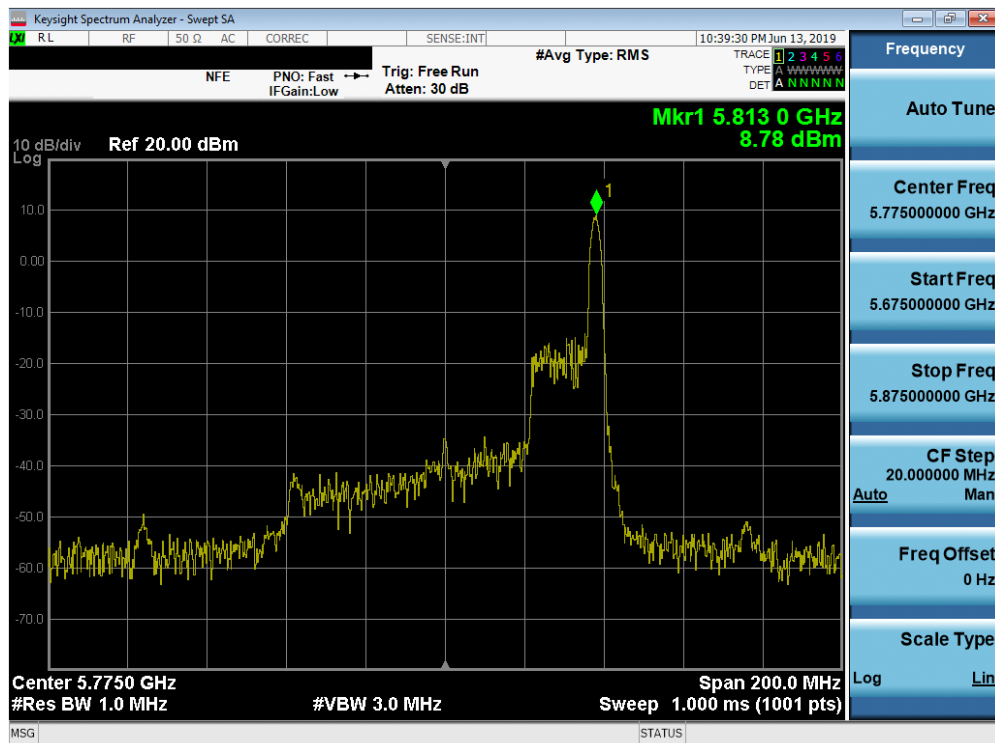


Plot 7-133. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 151)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 116 of 302



Plot 7-134. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 159)



Plot 7-135. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 155)

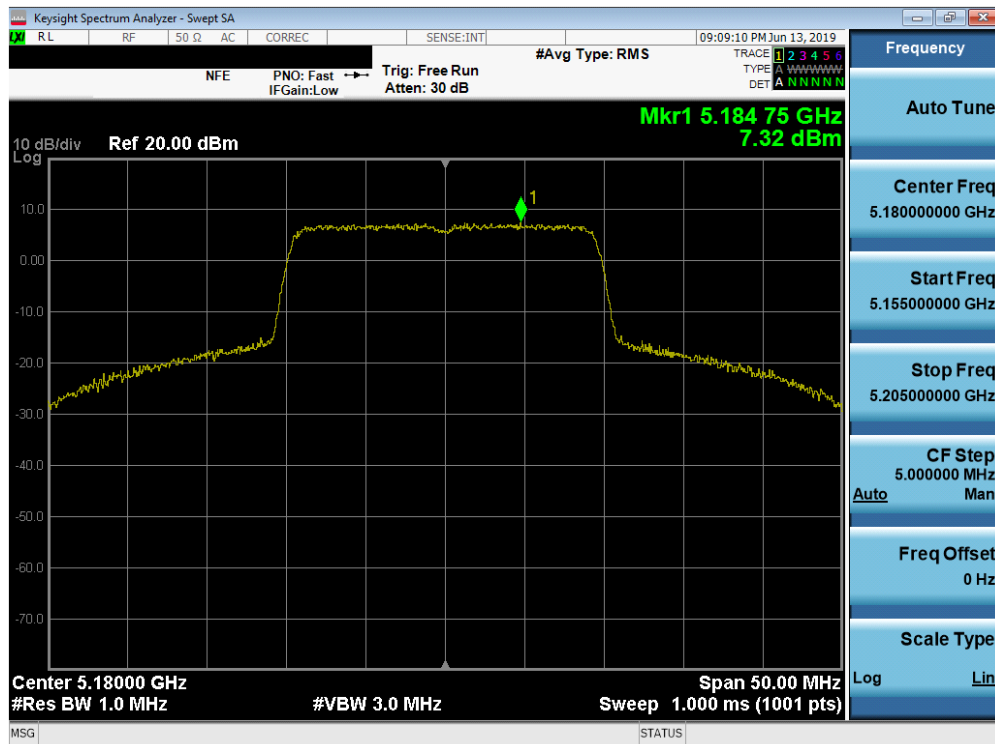
FCC ID: A3LSMN976V	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 117 of 302

SISO Antenna-1 Power Spectral Density Measurements (Full Tones)

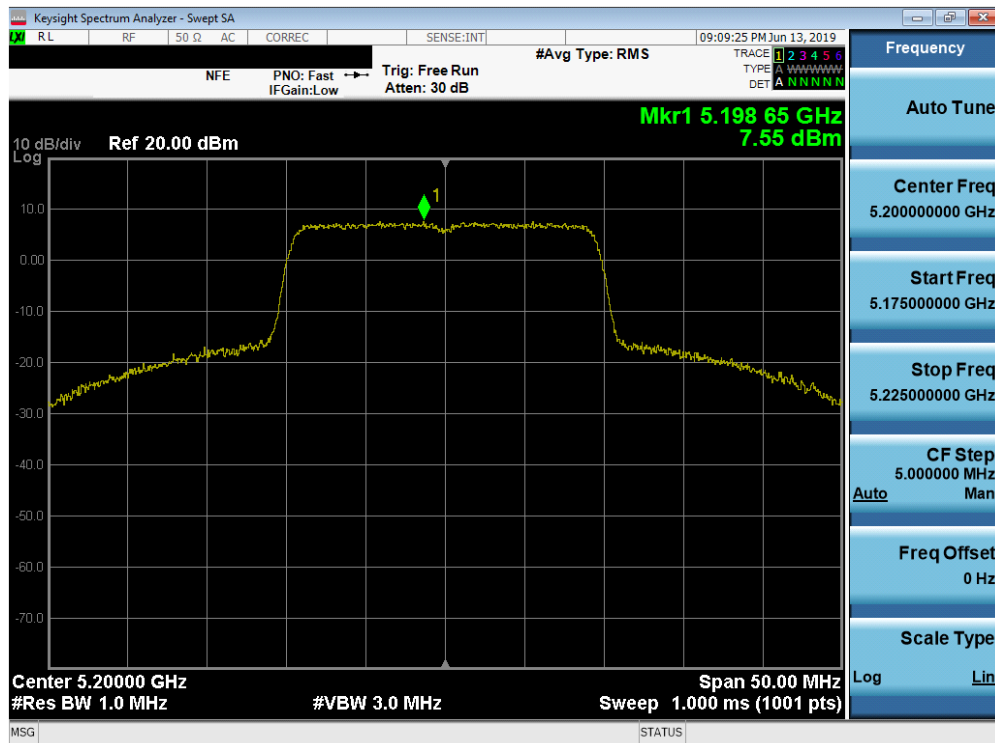
	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured Power Density [dBm]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	ax (20MHz)	242T	MCS0	7.32	11.0	-3.68
	5200	40	ax (20MHz)	242T	MCS0	7.55	11.0	-3.45
	5240	48	ax (20MHz)	242T	MCS0	7.73	11.0	-3.27
	5190	38	ax (40MHz)	484T	MCS0	3.59	11.0	-7.41
	5230	46	ax (40MHz)	484T	MCS0	3.97	11.0	-7.03
	5210	42	ax (80MHz)	996T	MCS0	-1.39	11.0	-12.39
Band 2A	5260	52	ax (20MHz)	242T	MCS0	7.42	11.0	-3.58
	5280	56	ax (20MHz)	242T	MCS0	7.28	11.0	-3.72
	5320	64	ax (20MHz)	242T	MCS0	7.46	11.0	-3.54
	5270	54	ax (40MHz)	484T	MCS0	3.70	11.0	-7.30
	5310	62	ax (40MHz)	484T	MCS0	3.65	11.0	-7.35
	5290	58	ax (80MHz)	996T	MCS0	-5.11	11.0	-16.11
Band 2C	5500	100	ax (20MHz)	242T	MCS0	7.21	11.0	-3.79
	5600	120	ax (20MHz)	242T	MCS0	7.21	11.0	-3.79
	5720	144	ax (20MHz)	242T	MCS0	7.38	11.0	-3.62
	5510	102	ax (40MHz)	484T	MCS0	2.88	11.0	-8.12
	5590	118	ax (40MHz)	484T	MCS0	3.60	11.0	-7.40
	5710	142	ax (40MHz)	484T	MCS0	2.98	11.0	-8.02
	5530	106	ax (80MHz)	996T	MCS0	-6.56	11.0	-17.56
	5610	122	ax (80MHz)	996T	MCS0	-3.10	11.0	-14.10
	5690	138	ax (80MHz)	996T	MCS0	-3.02	11.0	-14.02

Table 7-57. Bands 1, 2A, 2C Conducted Power Spectral Density Measurements SISO ANT1 (Full Tones)

FCC ID: A3LSMN976V	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset	Page 118 of 302

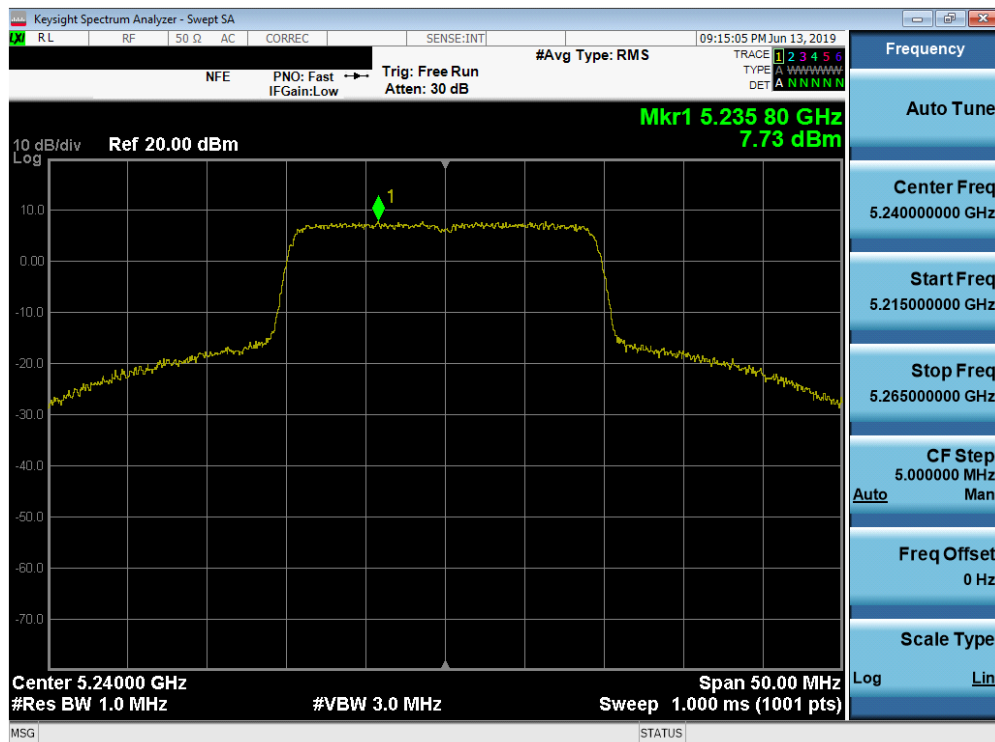


Plot 7-136. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 36)

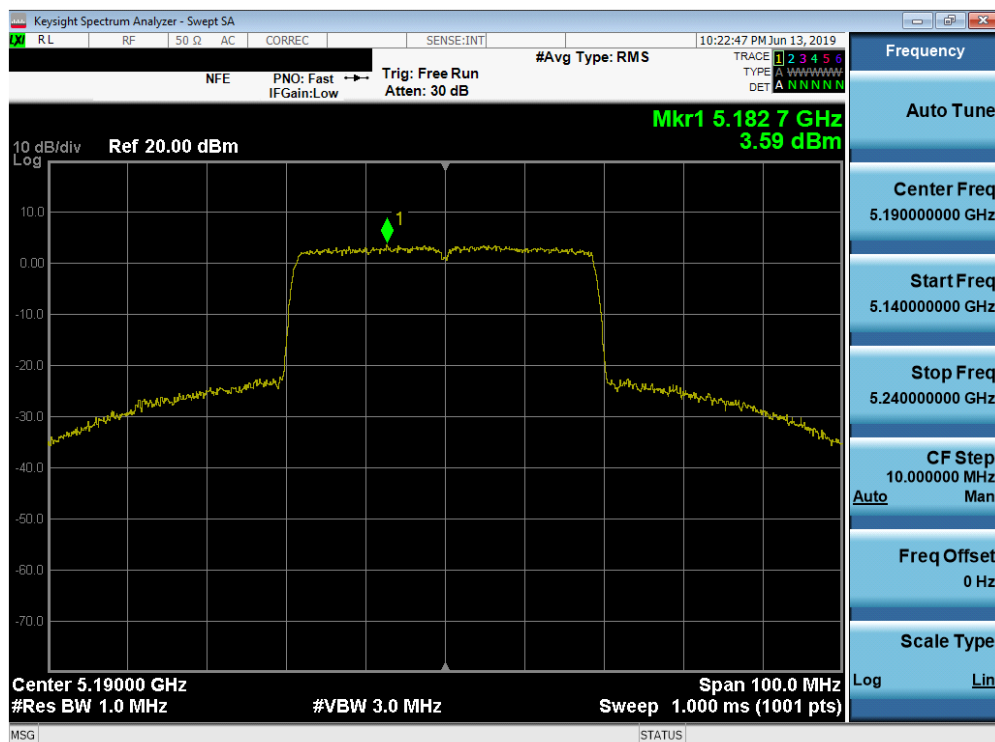


Plot 7-137. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 40)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 119 of 302

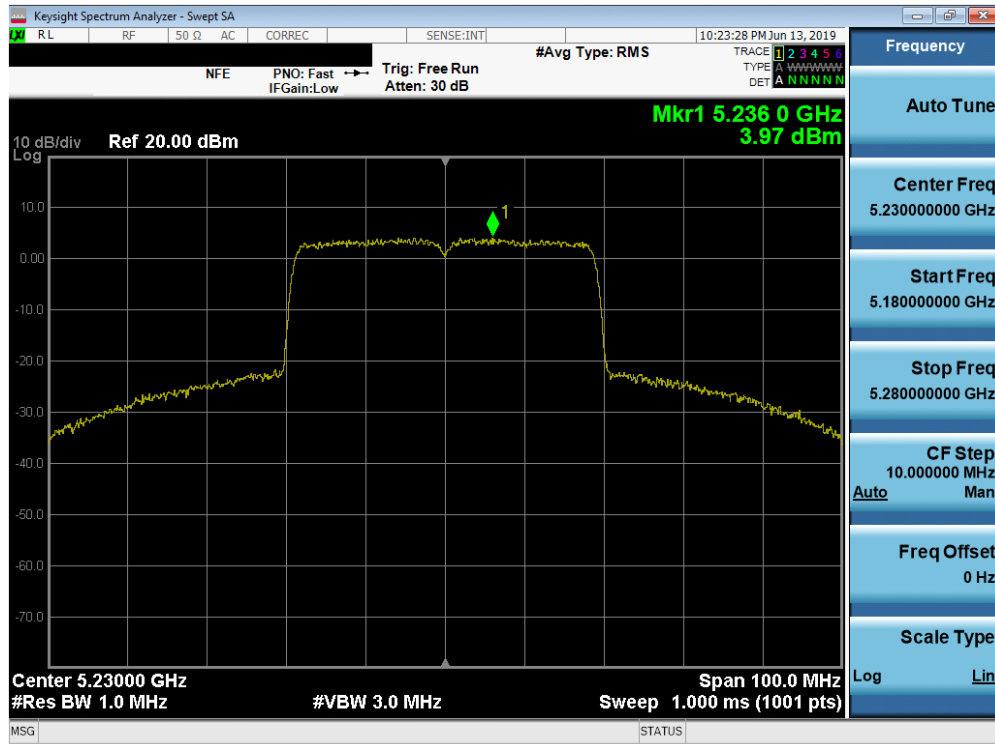


Plot 7-138. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 48)

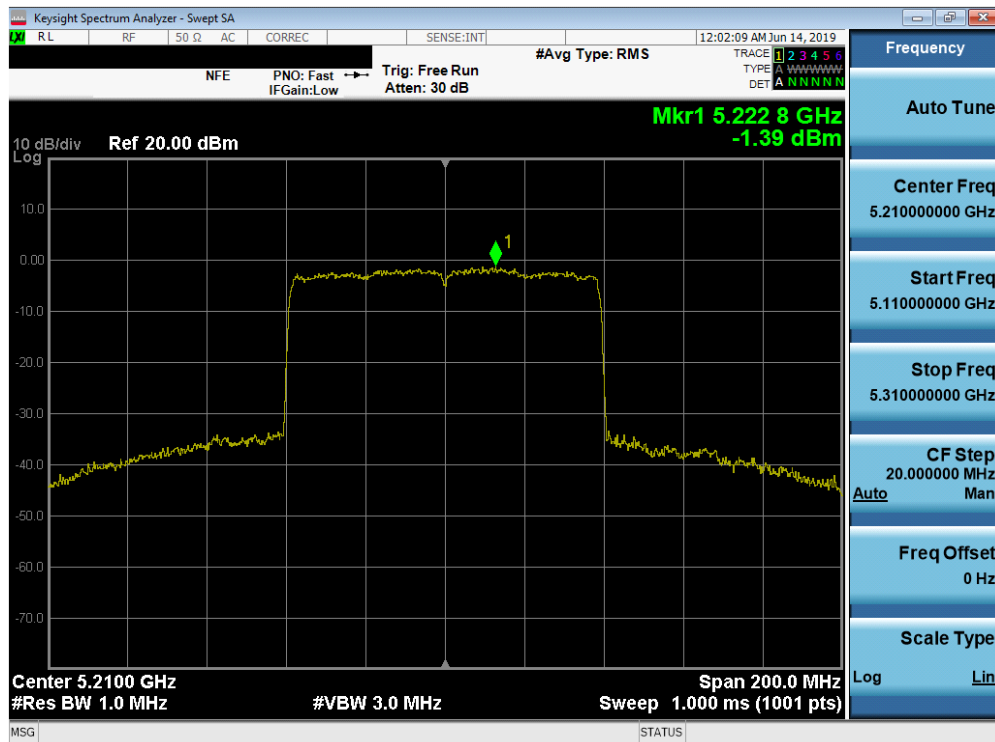


Plot 7-139. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 38)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 120 of 302

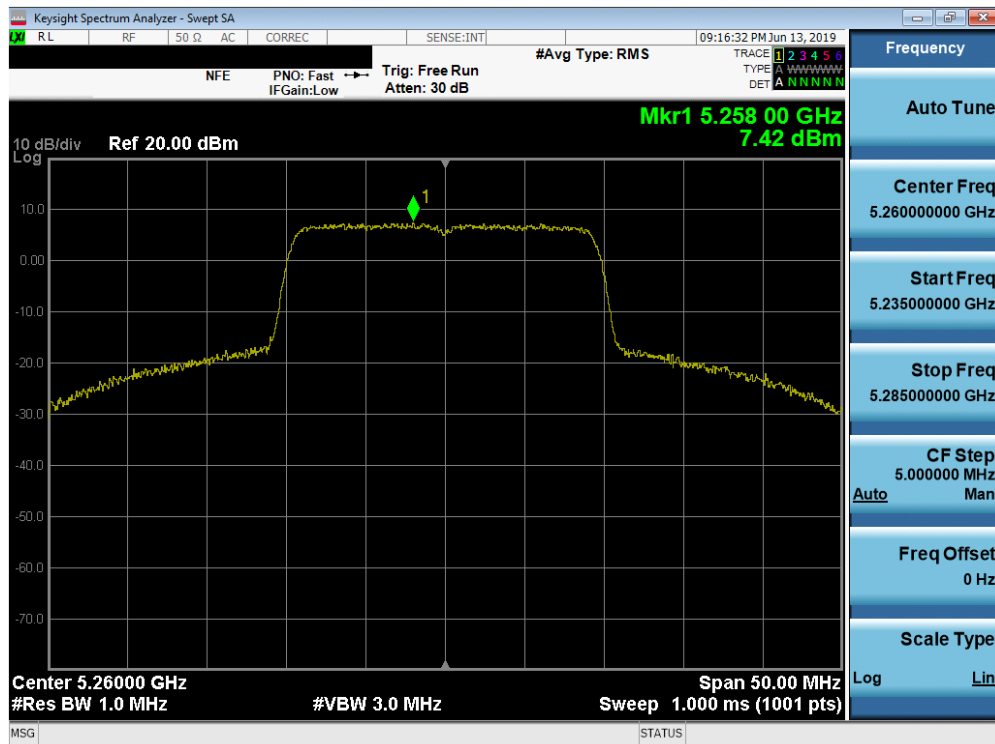


Plot 7-140. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 46)

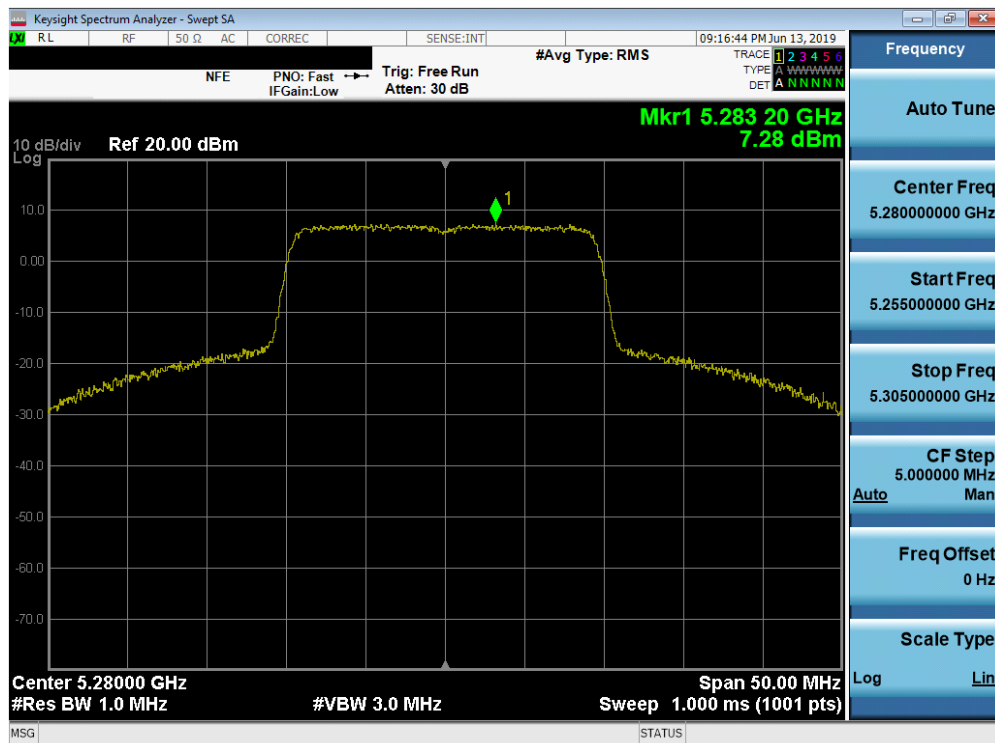


Plot 7-141. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 42)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 121 of 302

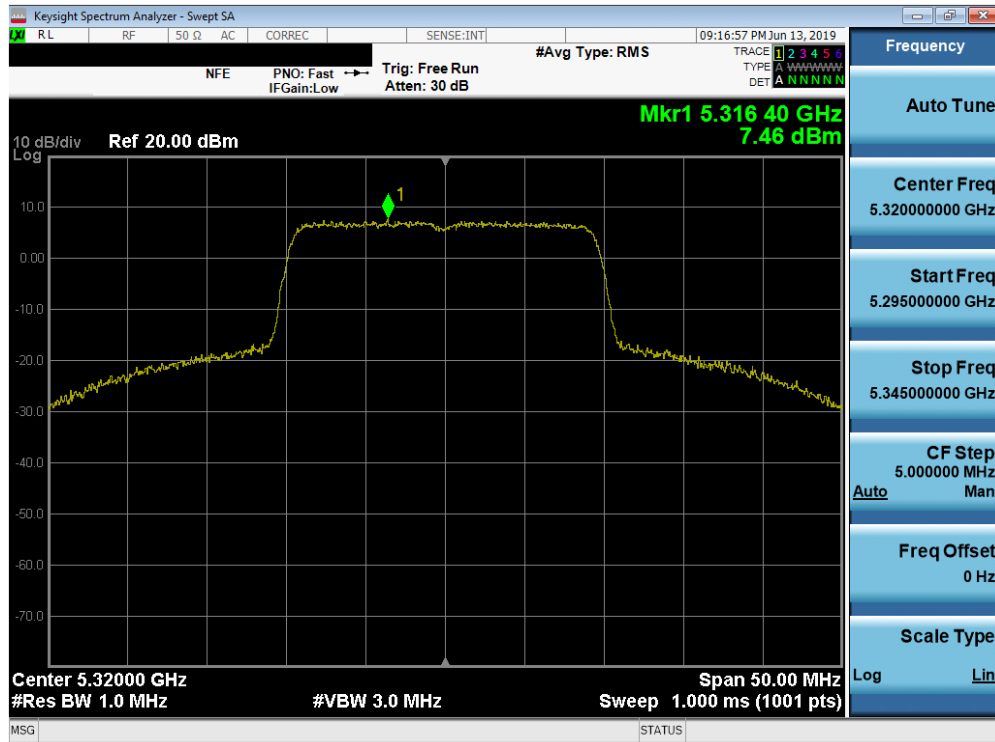


Plot 7-142. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 52)

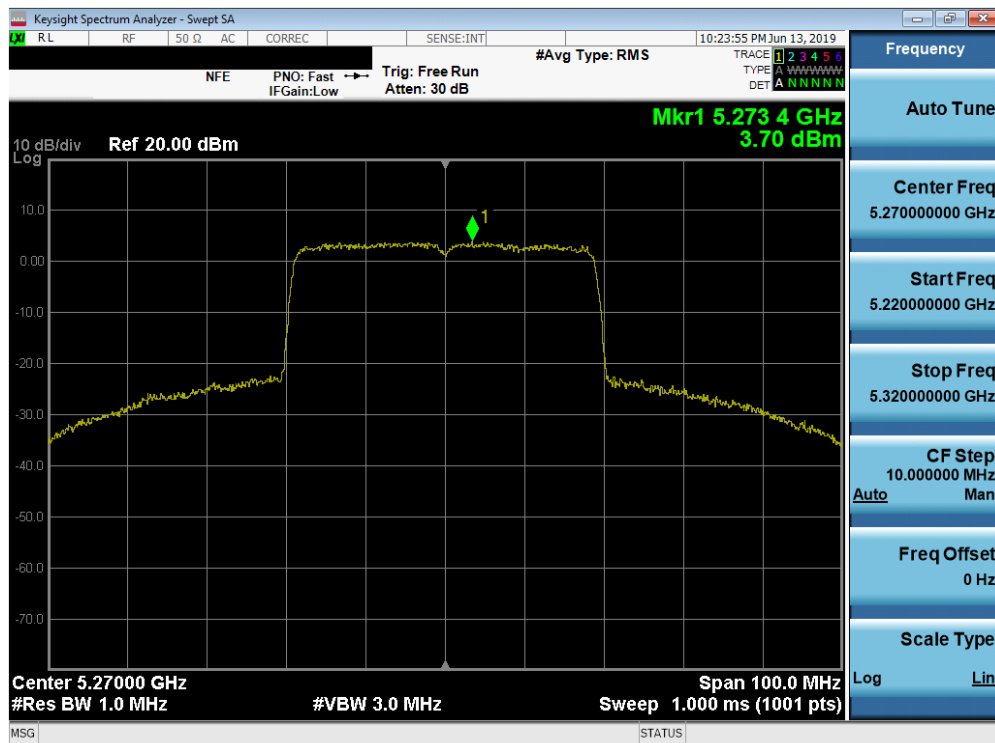


Plot 7-143. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 122 of 302

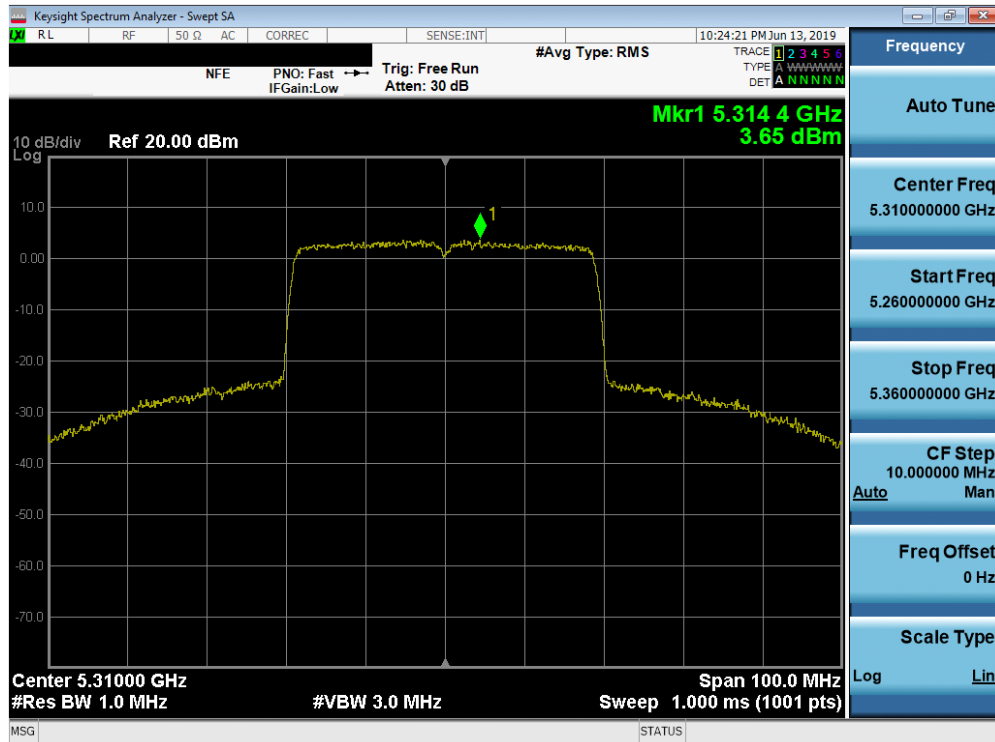


Plot 7-144. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 64)

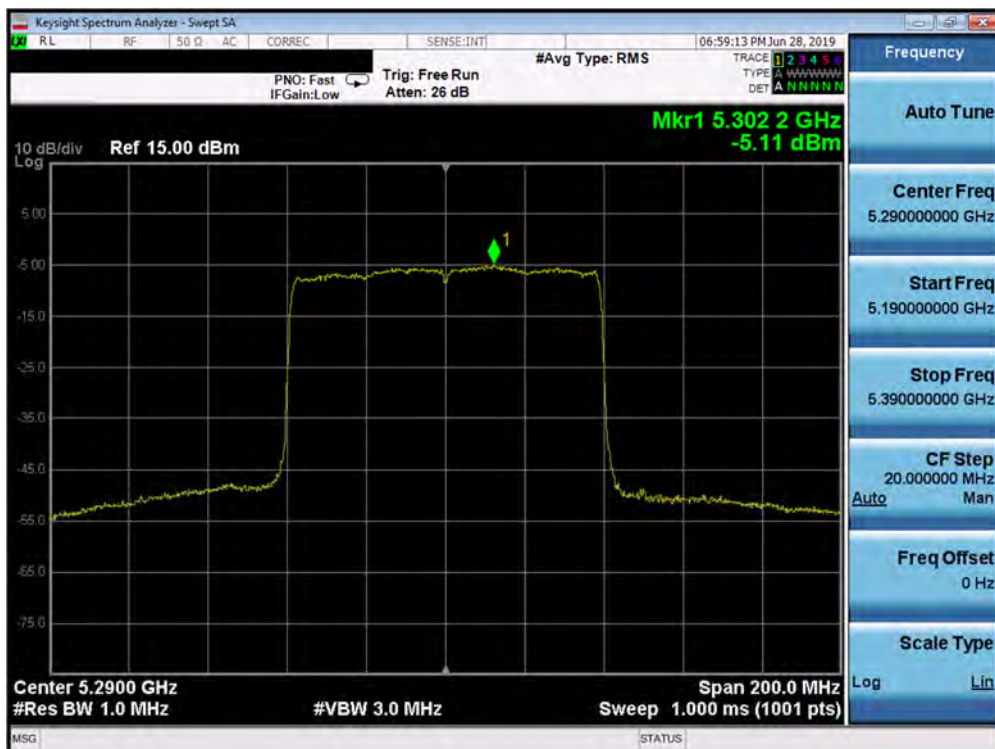


Plot 7-145. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMN976V	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 123 of 302

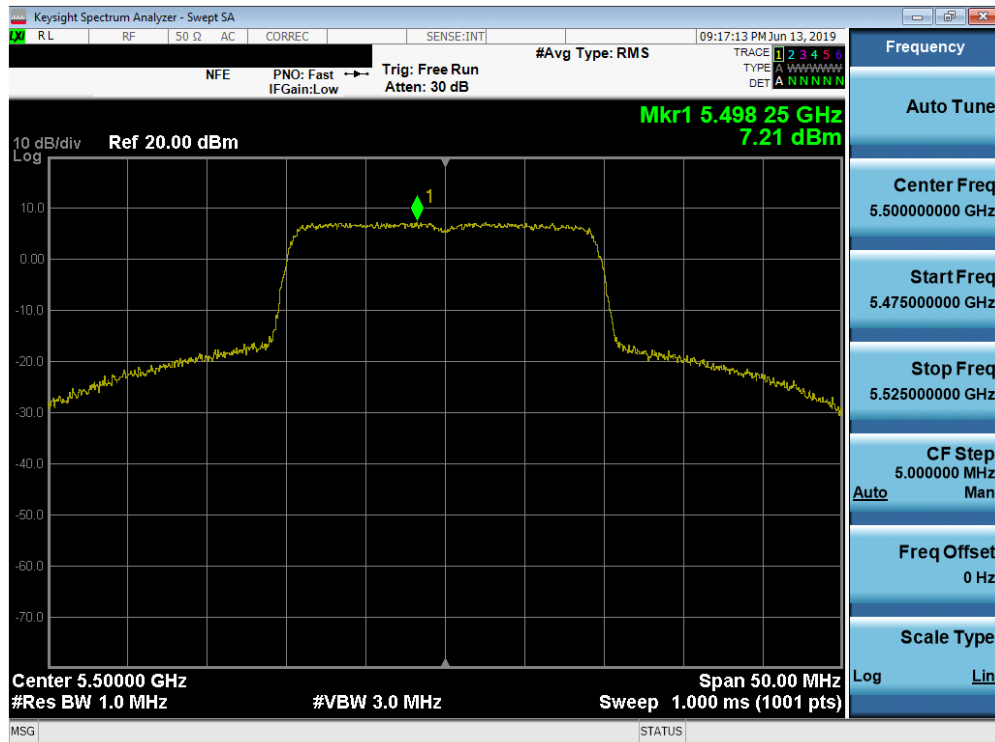


Plot 7-146. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 62)

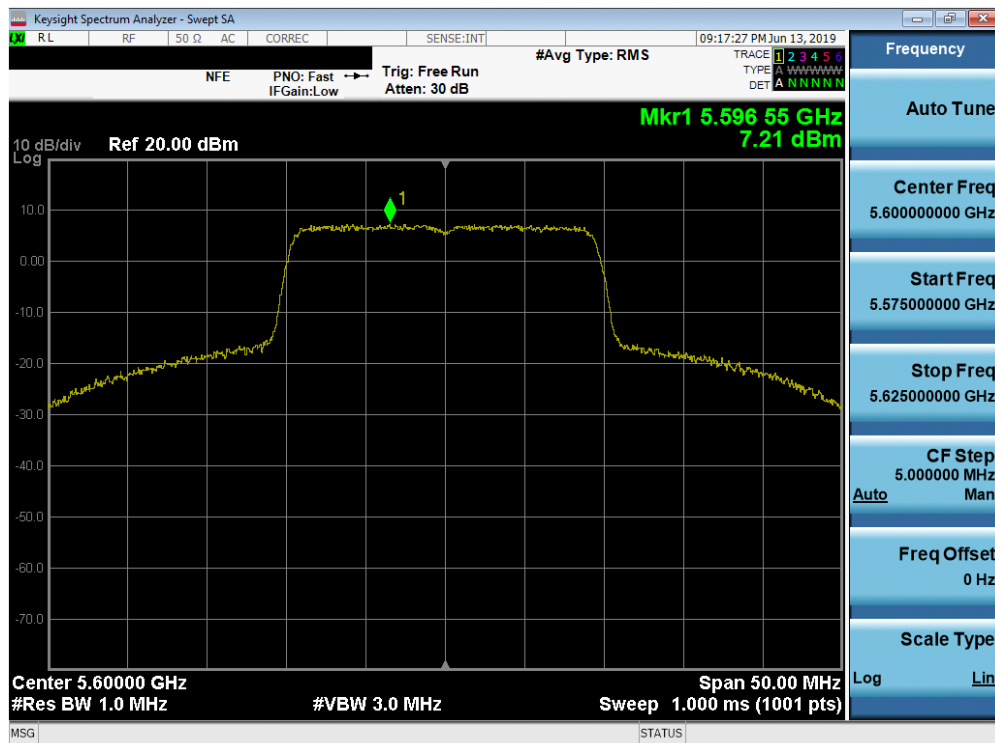


Plot 7-147. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 124 of 302

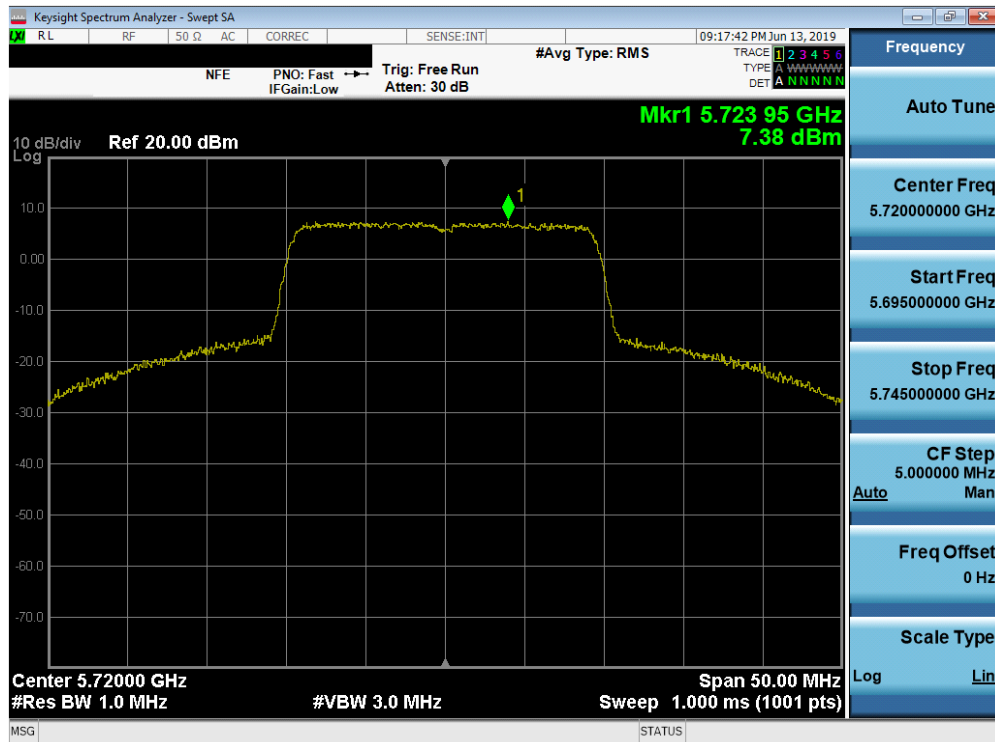


Plot 7-148. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 100)

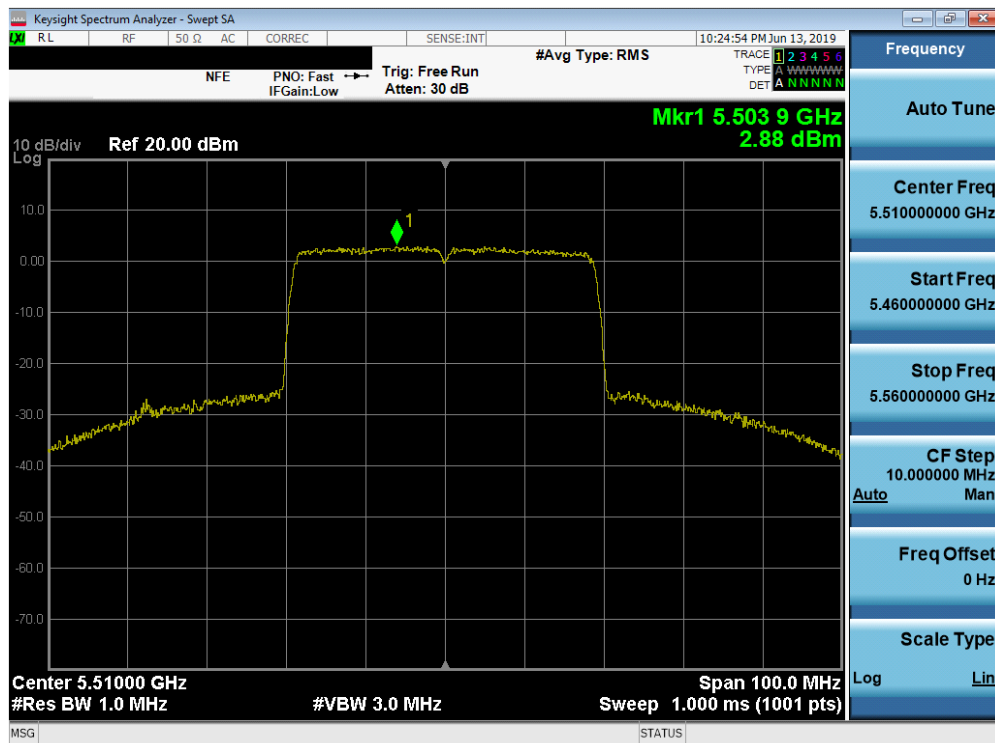


Plot 7-149. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 120)

FCC ID: A3LSMN976V	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 125 of 302

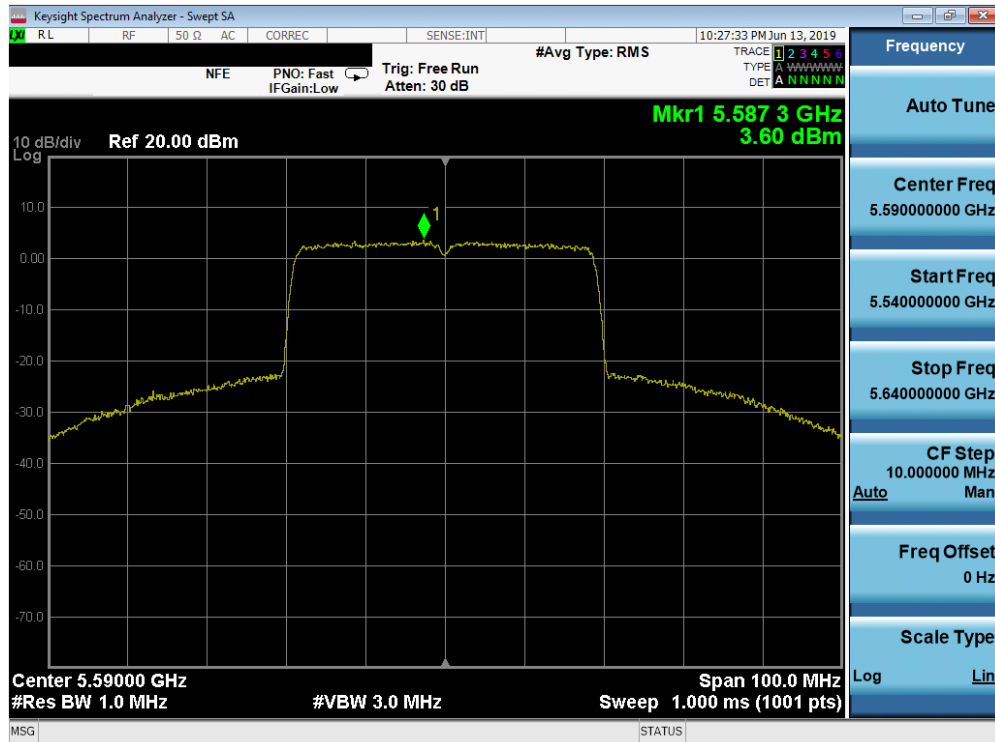


Plot 7-150. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 144)

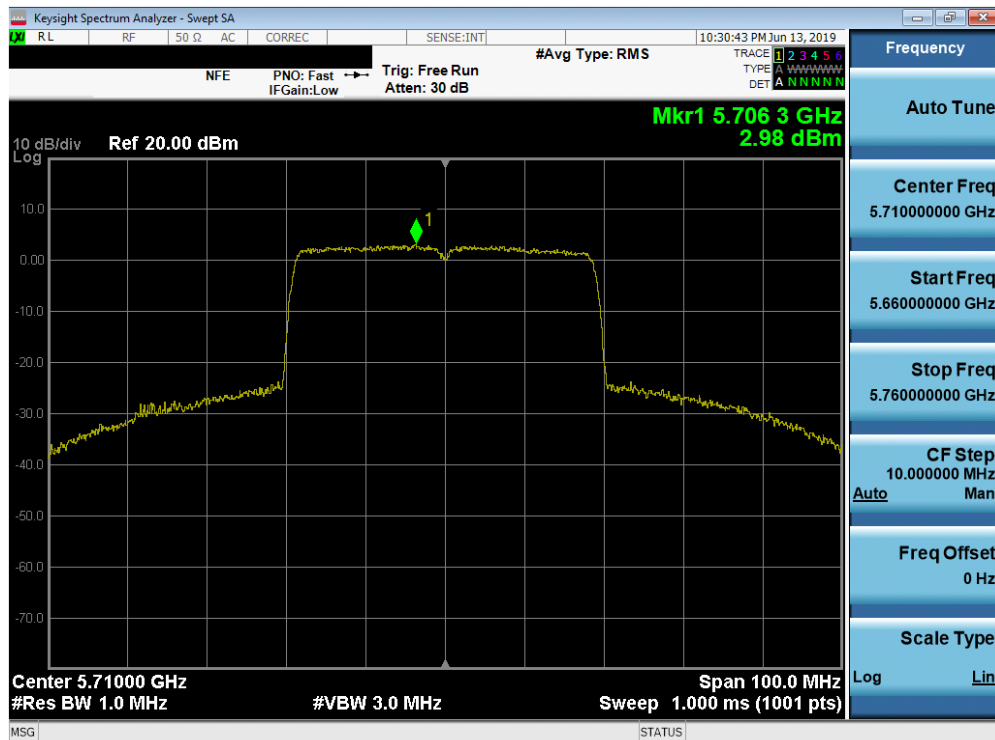


Plot 7-151. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 102)

FCC ID: A3LSMN976V	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 126 of 302

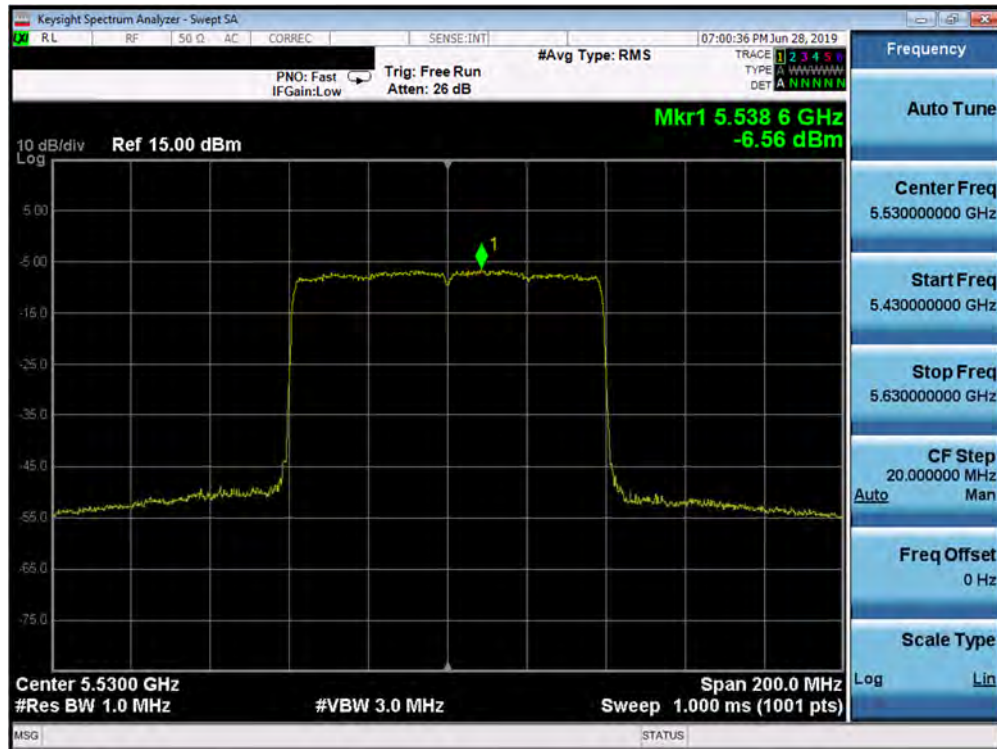


Plot 7-152. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 118)

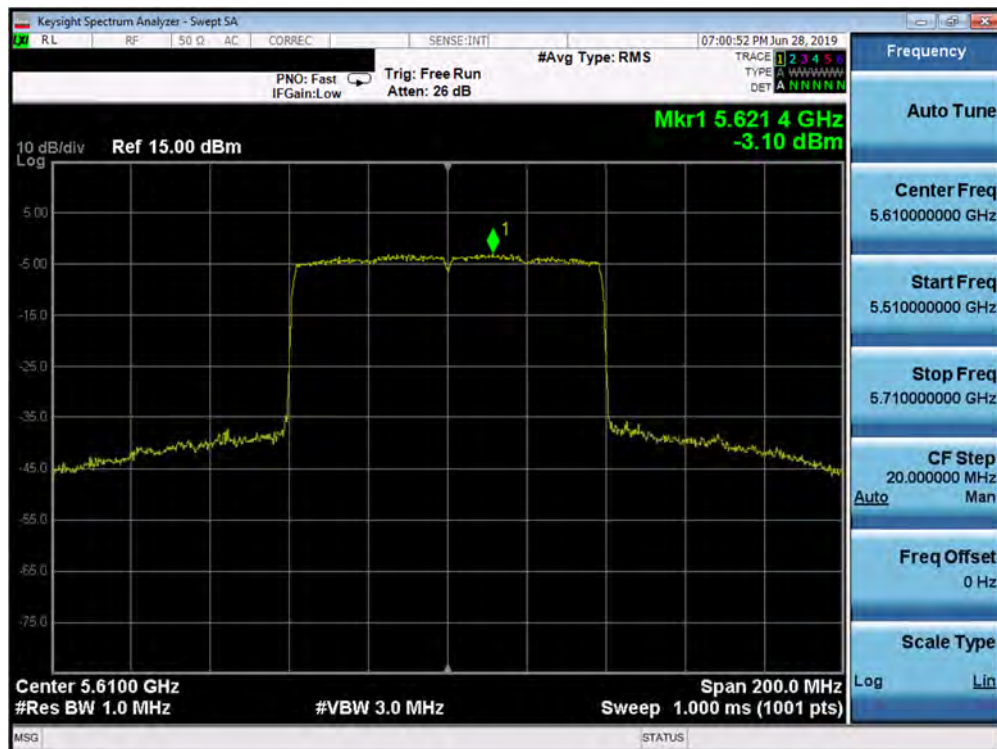


Plot 7-153. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 142)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 127 of 302

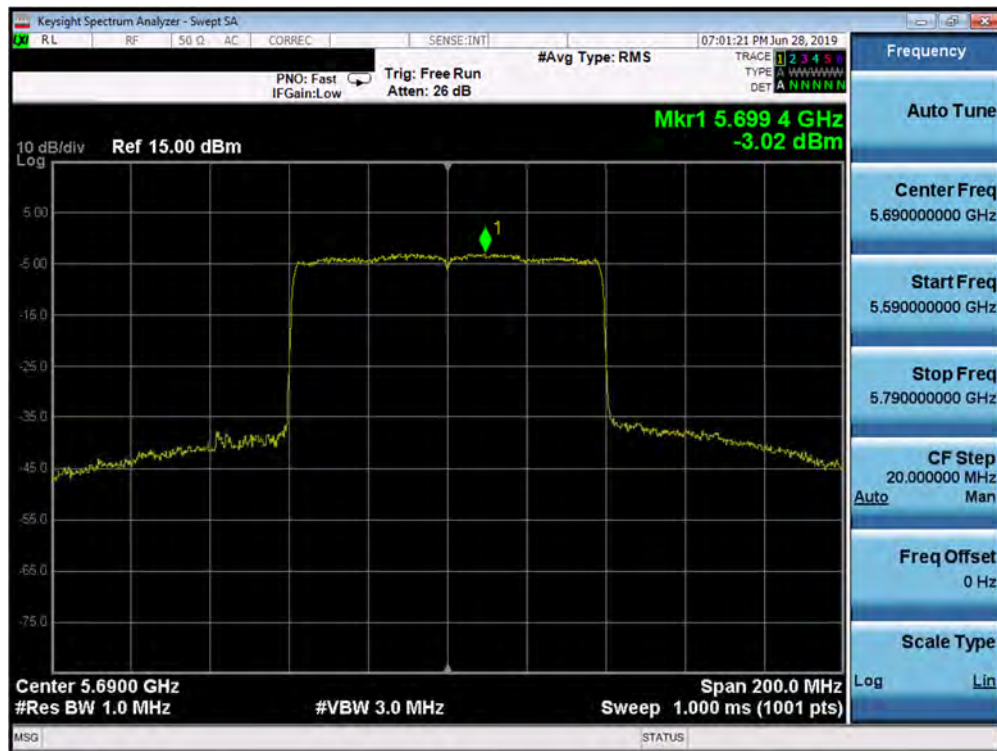


Plot 7-154. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 106)



Plot 7-155. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 122)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 128 of 302



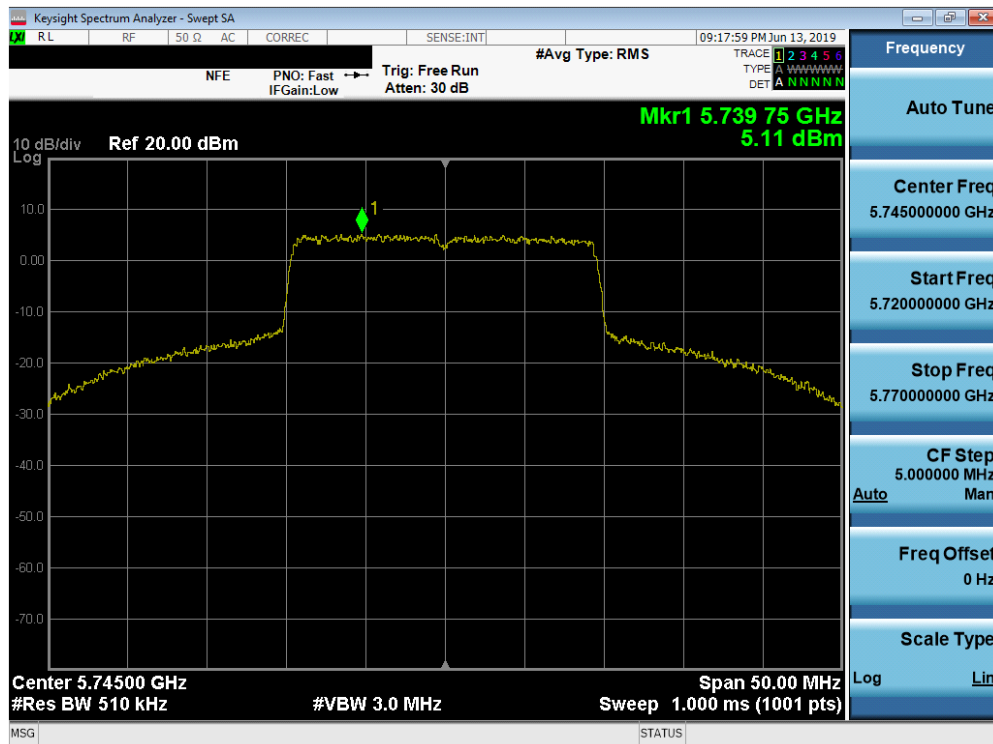
Plot 7-156. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 138)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 129 of 302

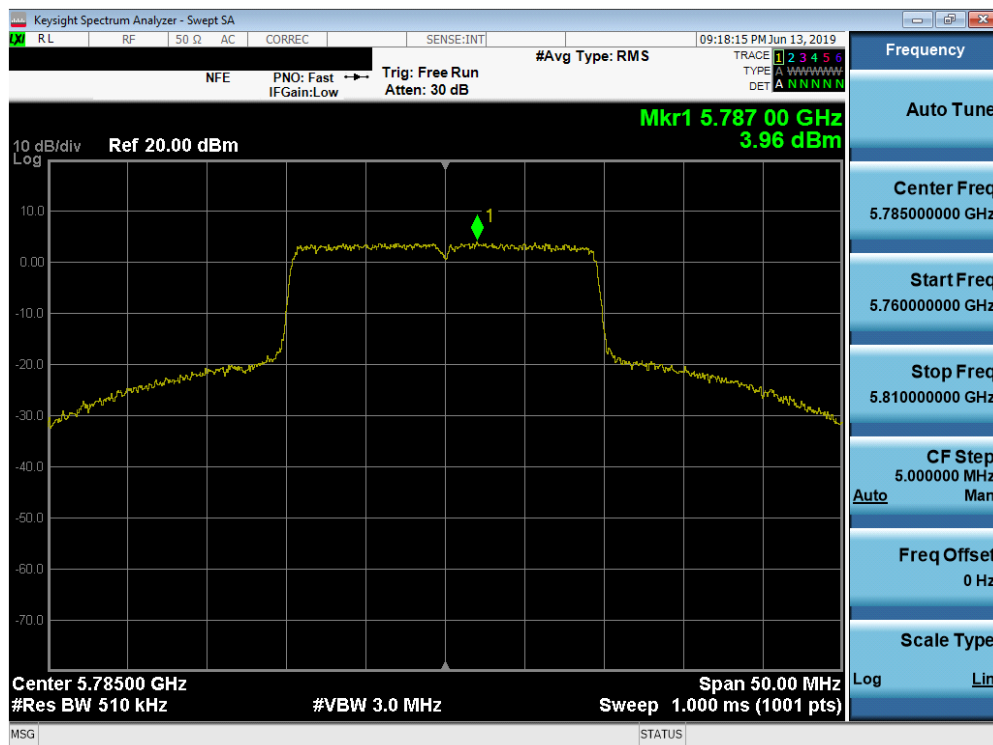
	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density	Margin [dB]
Band 3	5745	149	ax (20MHz)	242T	MCS0	5.11	30.00	-24.89
	5785	157	ax (20MHz)	242T	MCS0	3.96	30.00	-26.04
	5825	165	ax (20MHz)	242T	MCS0	5.20	30.00	-24.80
	5755	151	ax (40MHz)	484T	MCS0	0.67	30.00	-29.33
	5795	159	ax (40MHz)	484T	MCS0	1.54	30.00	-28.46
	5775	155	ax (80MHz)	996T	MCS0	-0.89	30.00	-30.89

Table 7-58. Band 3 Conducted Power Spectral Density Measurements SISO ANT1 (Full Tones)

FCC ID: A3LSMN976V	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset	
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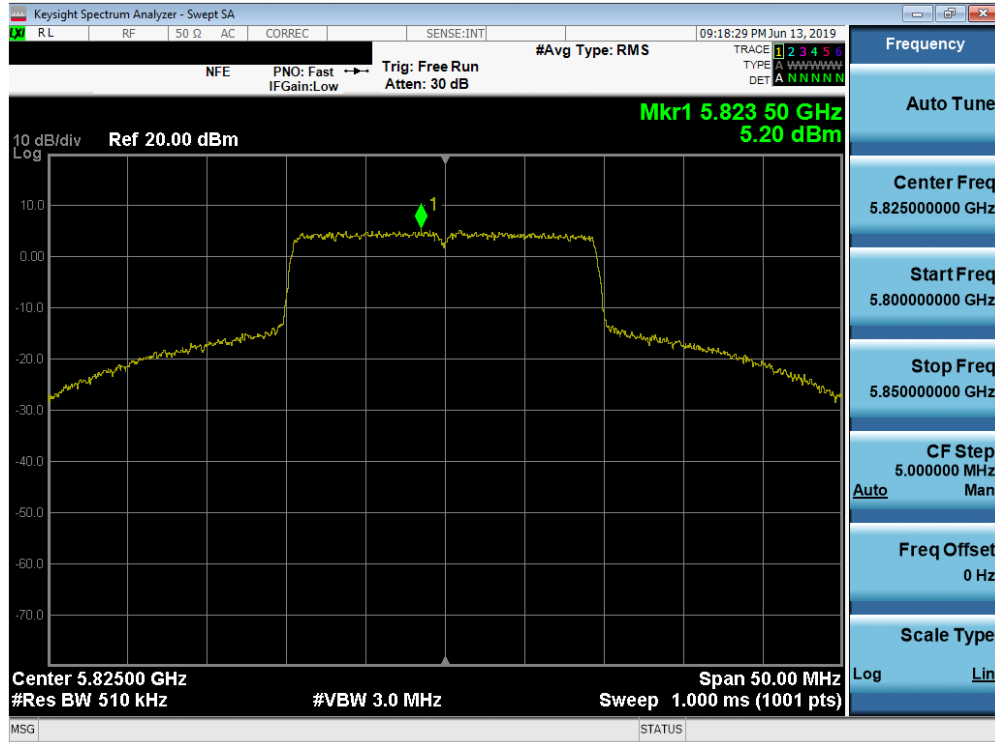


Plot 7-157. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 149)

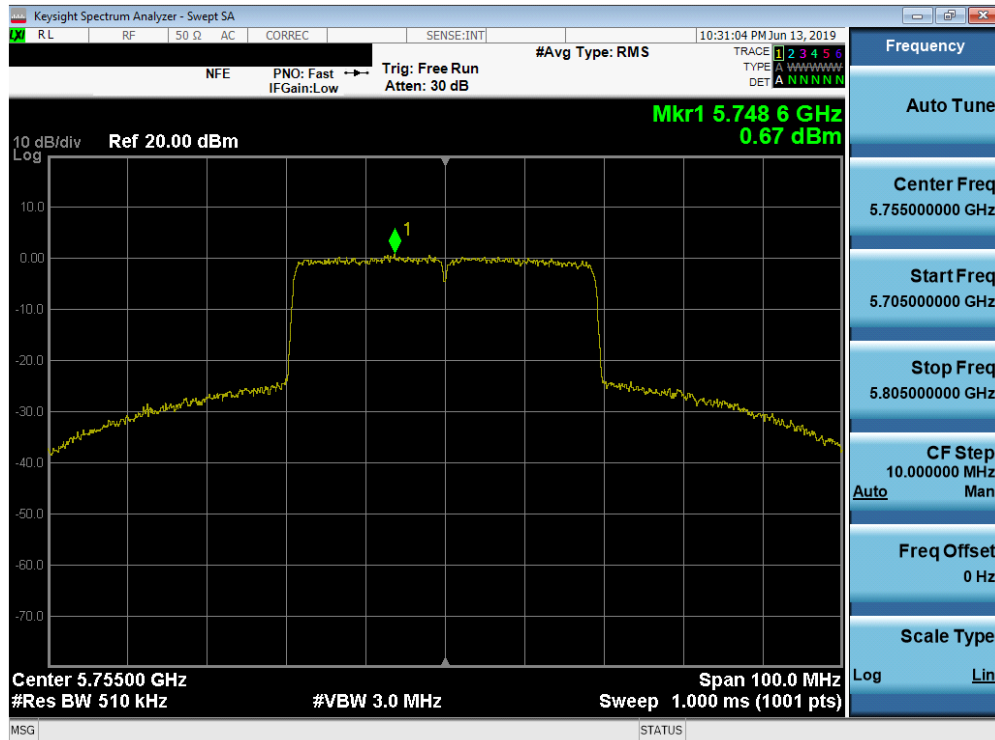


Plot 7-158. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 157)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 131 of 302

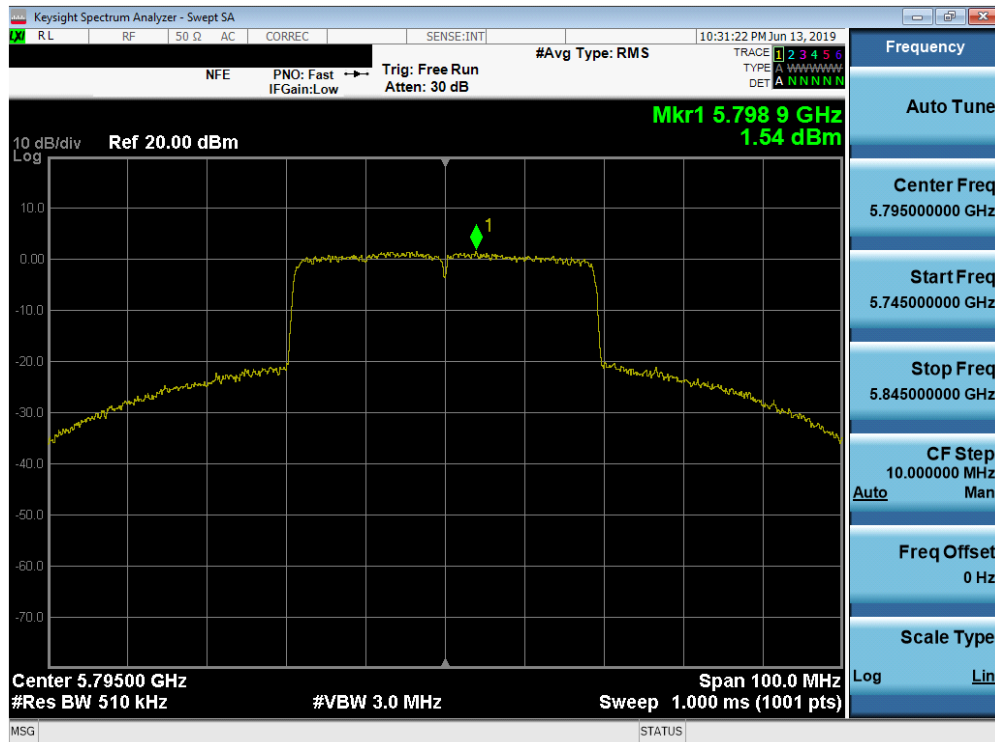


Plot 7-159. Power Spectral Density Plot SISO ANT1 (20 MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 165)

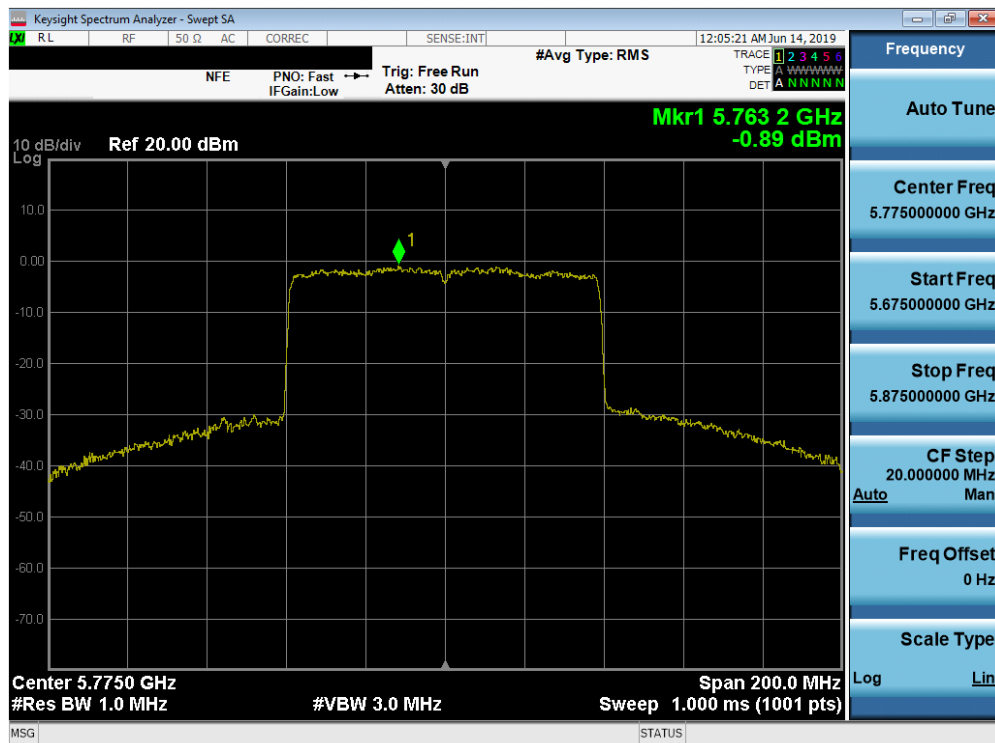


Plot 7-160. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 151)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 132 of 302



Plot 7-161. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 159)



Plot 7-162. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 155)

FCC ID: A3LSMN976V	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset	Page 133 of 302

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

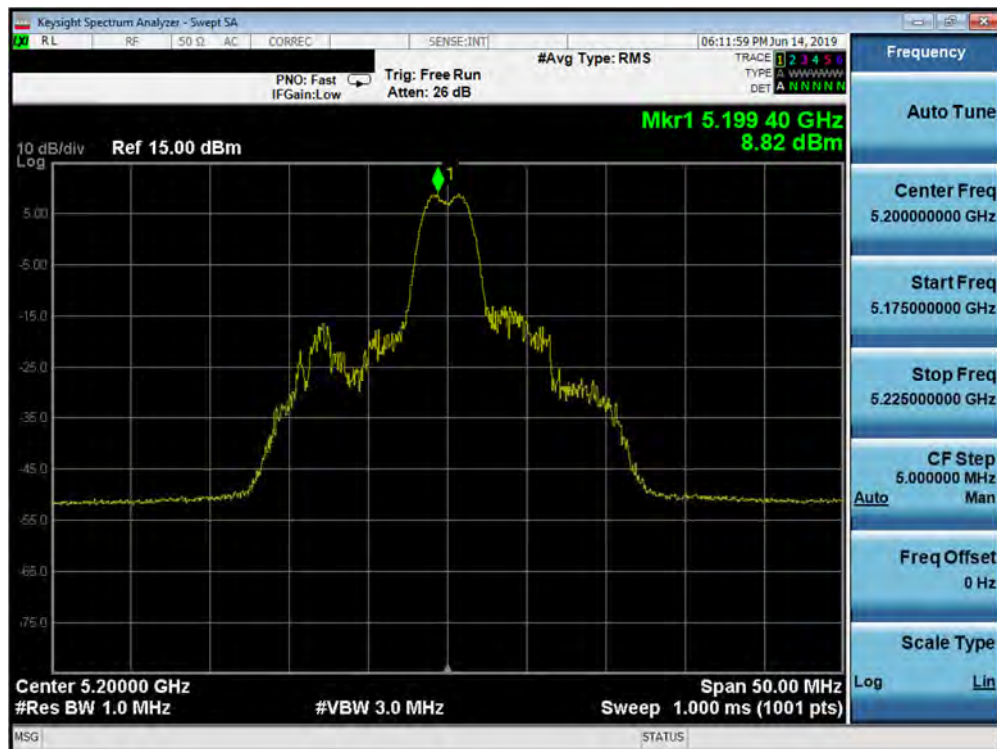
	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured Power Density [dBm]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	ax (20MHz)	26T	MCS0	7.35	11.0	-3.65
	5200	40	ax (20MHz)	26T	MCS0	8.82	11.0	-2.18
	5240	48	ax (20MHz)	26T	MCS0	9.84	11.0	-1.16
	5190	38	ax (40MHz)	26T	MCS0	9.98	11.0	-1.02
	5230	46	ax (40MHz)	26T	MCS0	9.99	11.0	-1.01
	5210	42	ax (80MHz)	26T	MCS0	9.44	11.0	-1.56
Band 2A	5260	52	ax (20MHz)	26T	MCS0	9.67	11.0	-1.33
	5280	56	ax (20MHz)	26T	MCS0	8.57	11.0	-2.43
	5320	64	ax (20MHz)	26T	MCS0	9.33	11.0	-1.67
	5270	54	ax (40MHz)	26T	MCS0	9.98	11.0	-1.02
	5310	62	ax (40MHz)	26T	MCS0	9.42	11.0	-1.58
	5290	58	ax (80MHz)	26T	MCS0	8.88	11.0	-2.12
Band 2C	5500	100	ax (20MHz)	26T	MCS0	9.91	11.0	-1.09
	5600	120	ax (20MHz)	26T	MCS0	8.81	11.0	-2.19
	5720	144	ax (20MHz)	26T	MCS0	9.68	11.0	-1.32
	5510	102	ax (40MHz)	26T	MCS0	8.28	11.0	-2.72
	5590	118	ax (40MHz)	26T	MCS0	9.16	11.0	-1.84
	5710	142	ax (40MHz)	26T	MCS0	9.86	11.0	-1.14
	5530	106	ax (80MHz)	26T	MCS0	6.95	11.0	-4.05
	5610	122	ax (80MHz)	26T	MCS0	9.09	11.0	-1.91
	5690	138	ax (80MHz)	26T	MCS0	8.73	11.0	-2.27

Table 7-59. Conducted Power Spectral Density Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMN976V	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset	Page 134 of 302

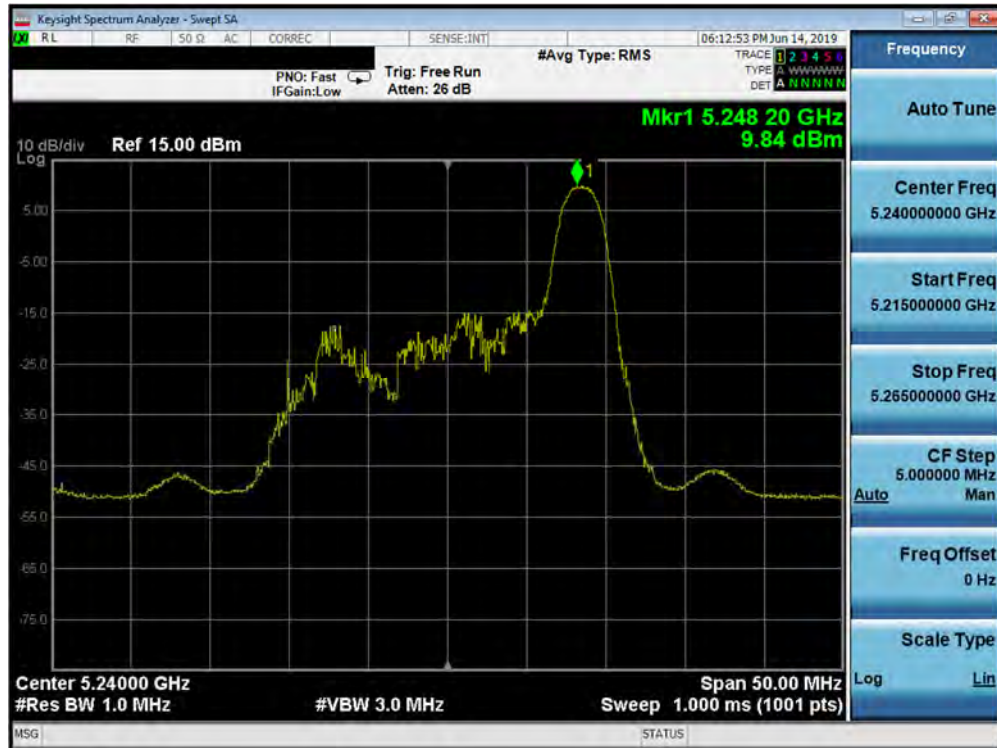


Plot 7-163. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 36)



Plot 7-164. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 40)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 135 of 302



Plot 7-165. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 48)

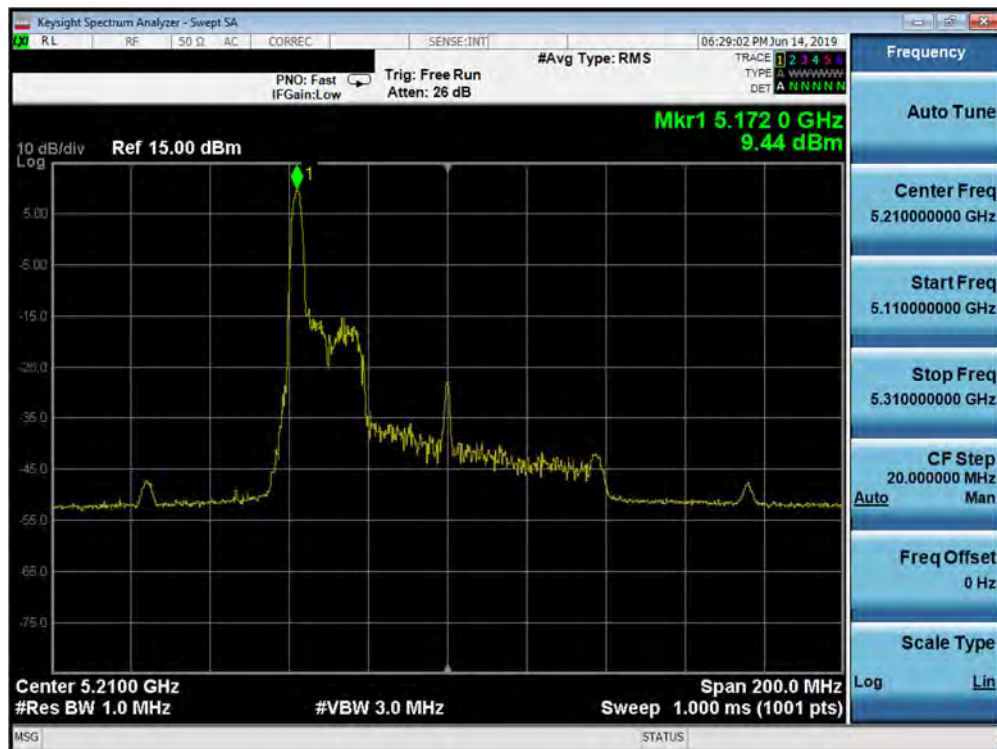


Plot 7-166. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 38)

FCC ID: A3LSMN976V	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 136 of 302



Plot 7-167. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 46)



Plot 7-168. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 42)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 137 of 302



Plot 7-169. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 52)

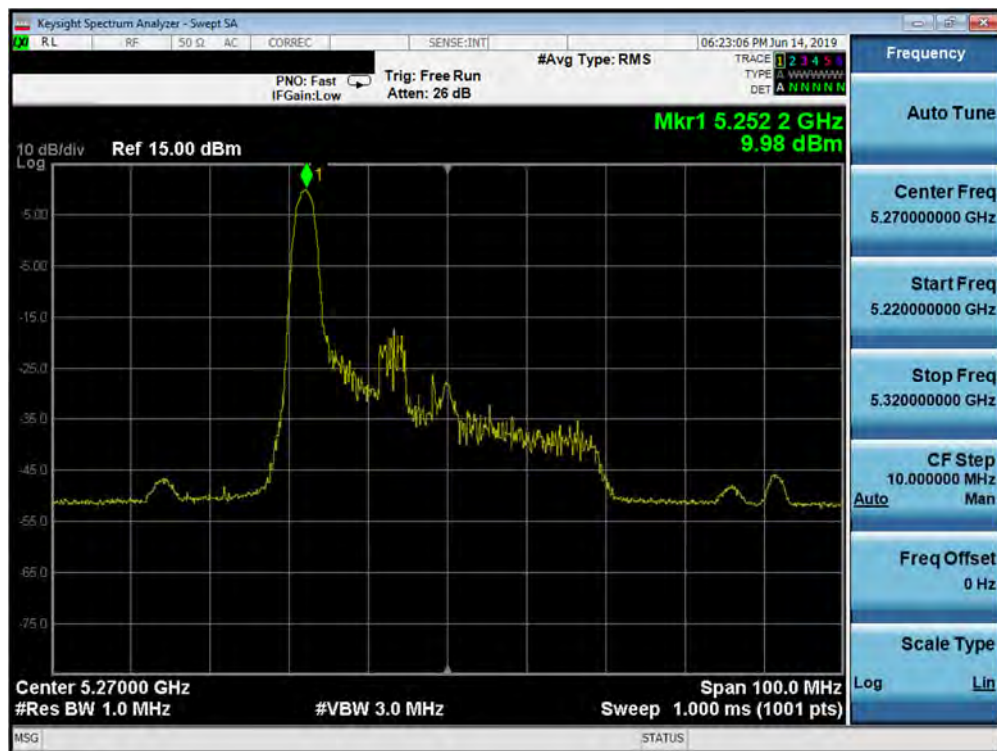


Plot 7-170. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 138 of 302

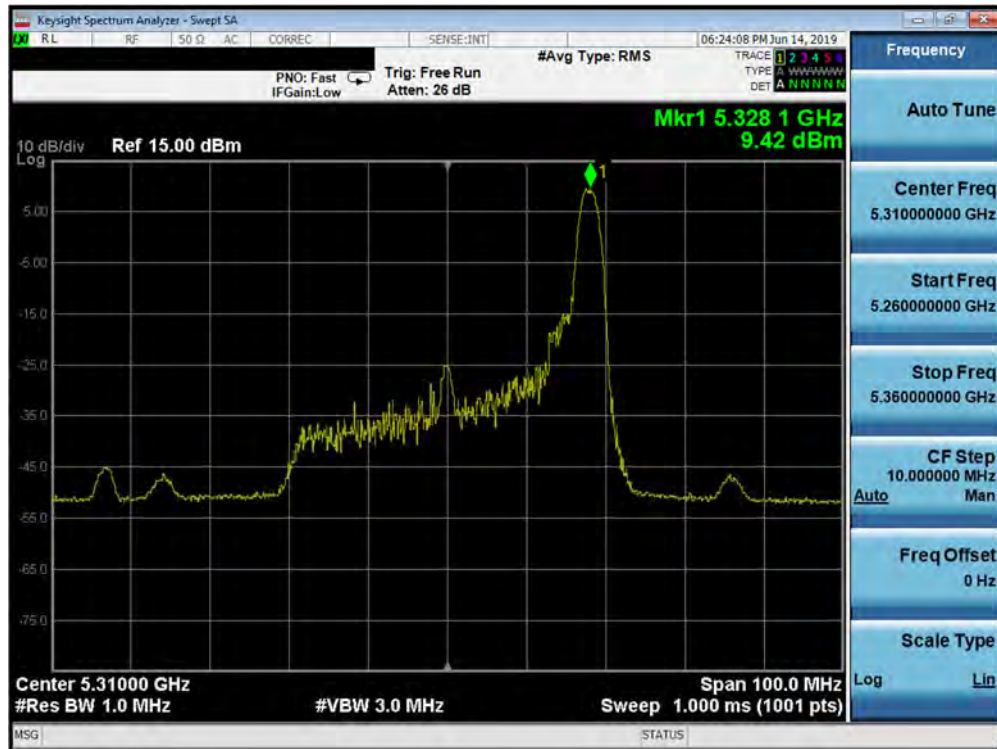


Plot 7-171. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 64)

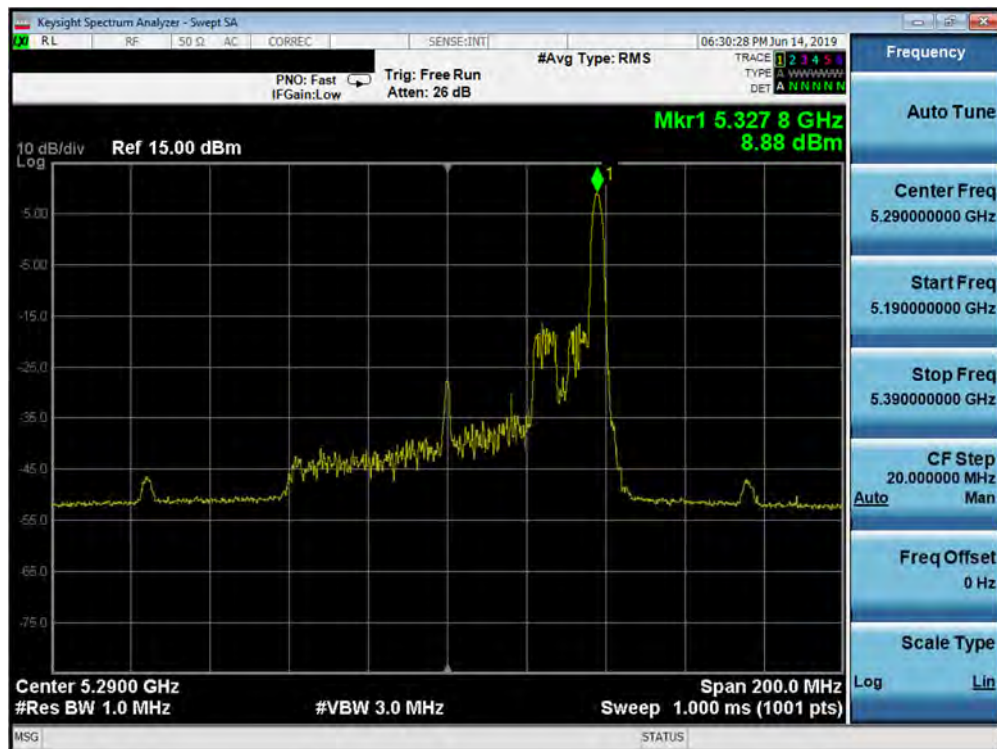


Plot 7-172. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMN976V	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 139 of 302



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: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 140 of 302

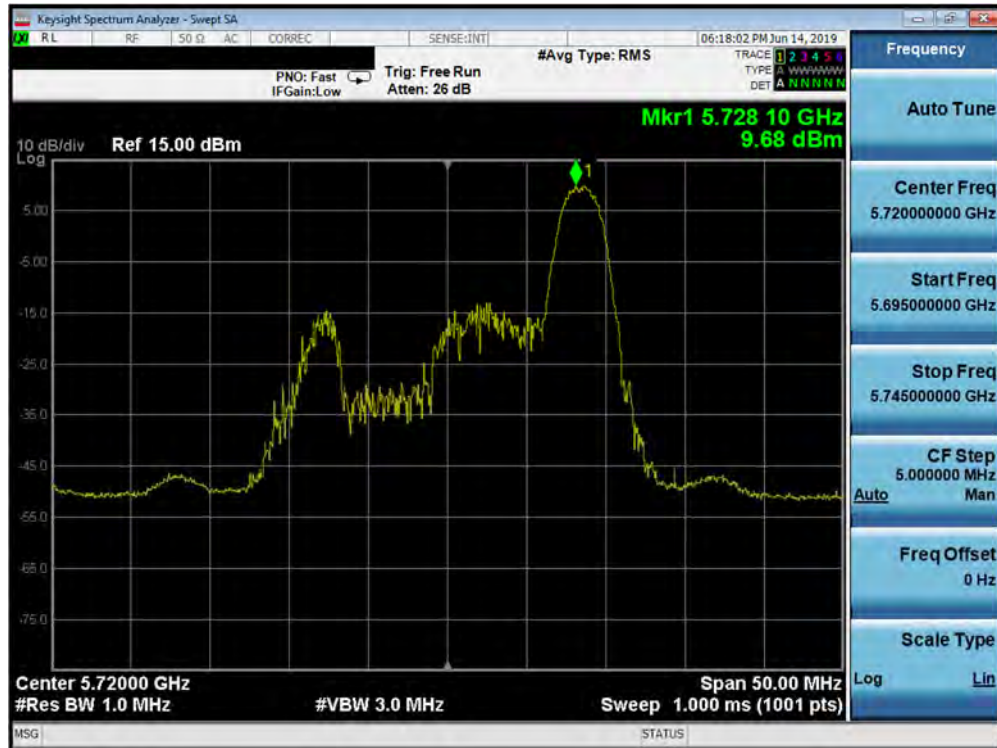


Plot 7-175. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 100)

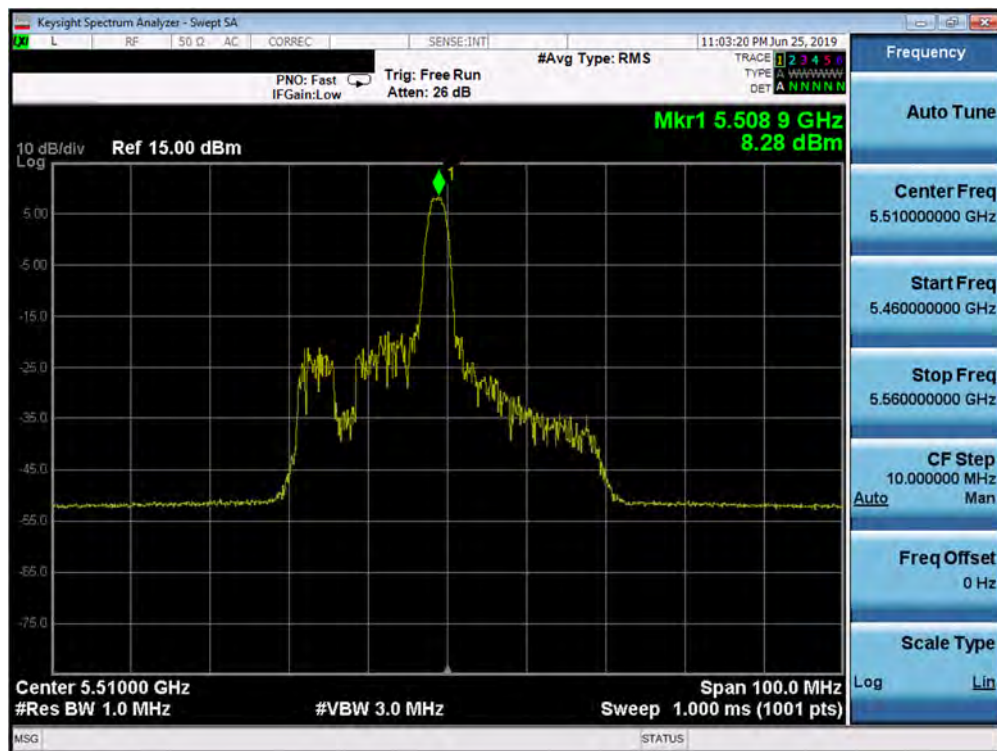


Plot 7-176. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 120)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 141 of 302

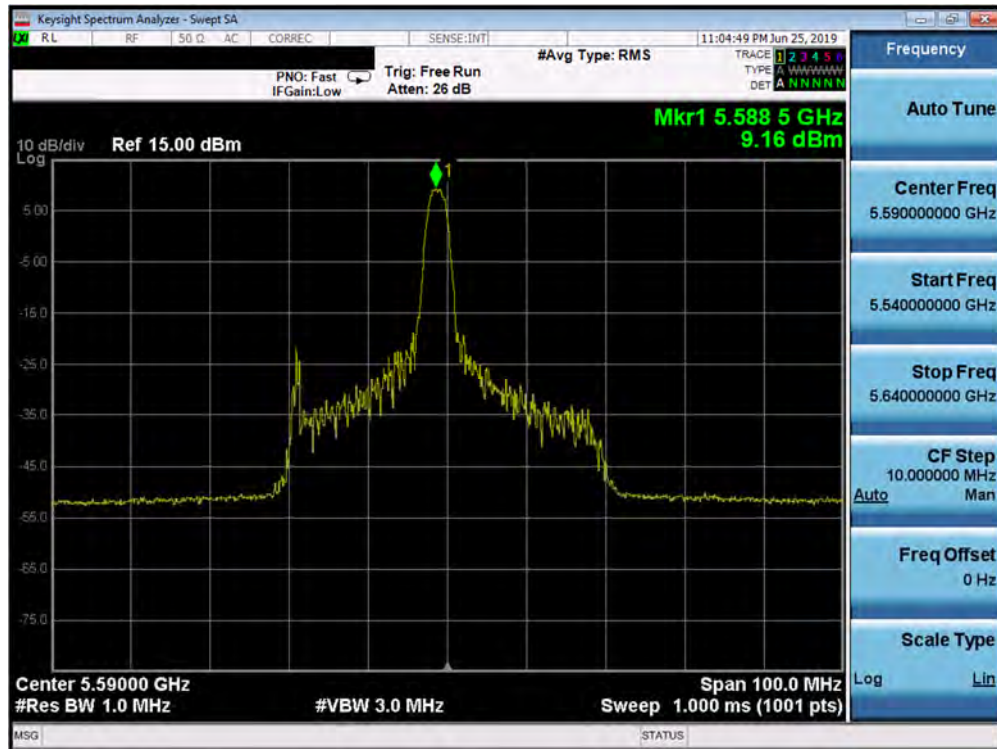


Plot 7-177. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 144)



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

FCC ID: A3LSMN976V	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 142 of 302

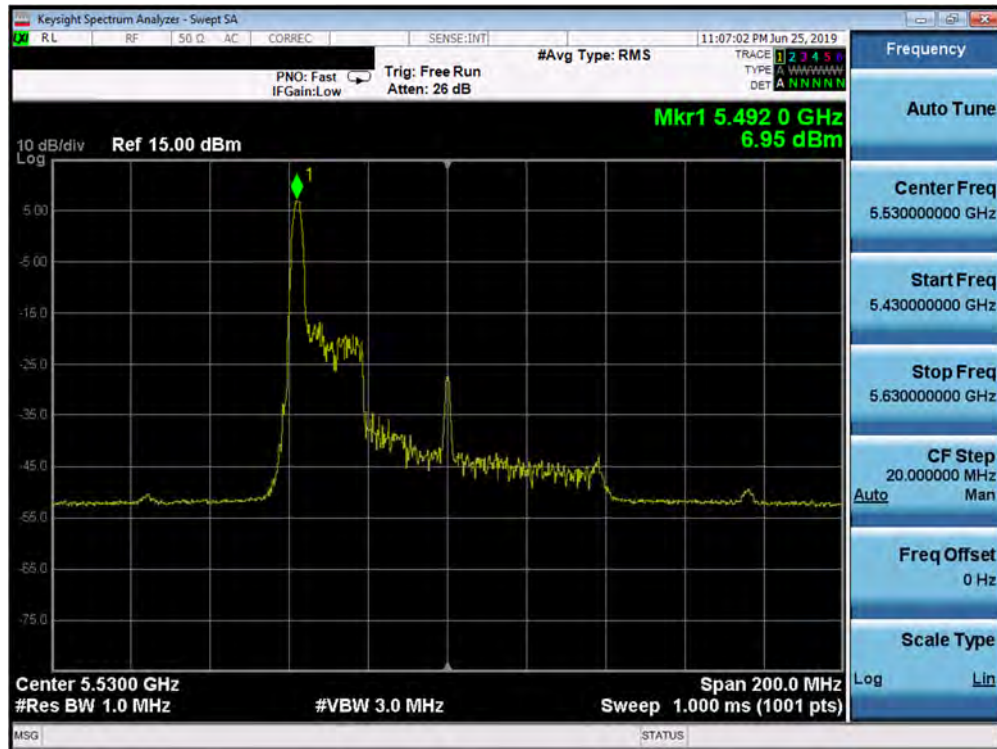


Plot 7-179. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 118)



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

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 143 of 302

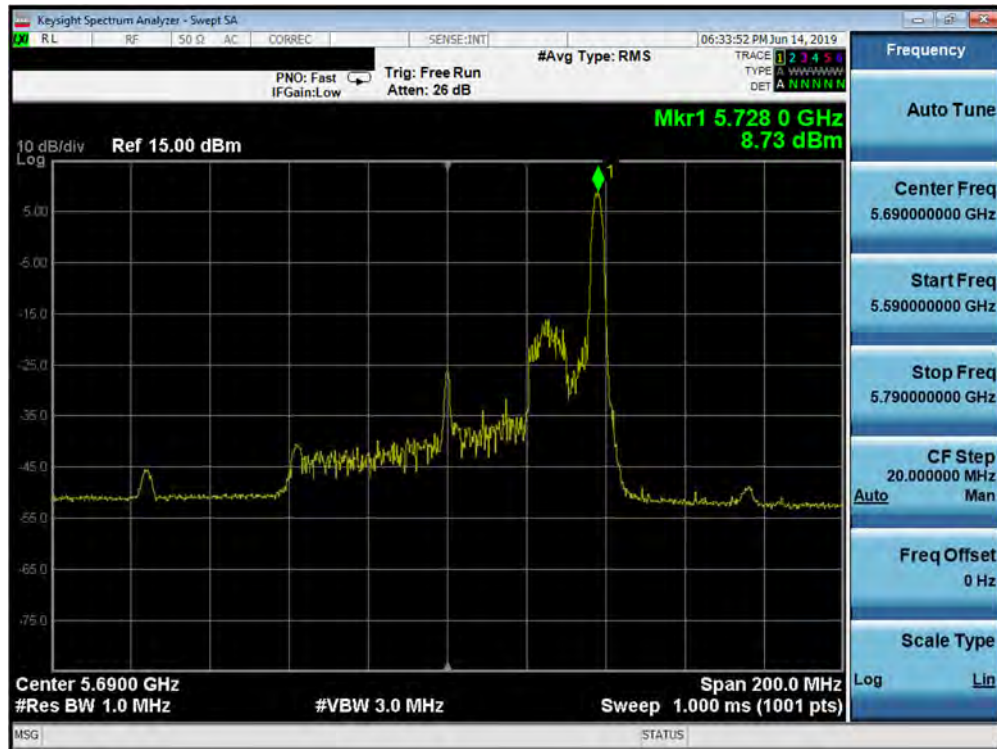


Plot 7-181. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 106)



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

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 144 of 302



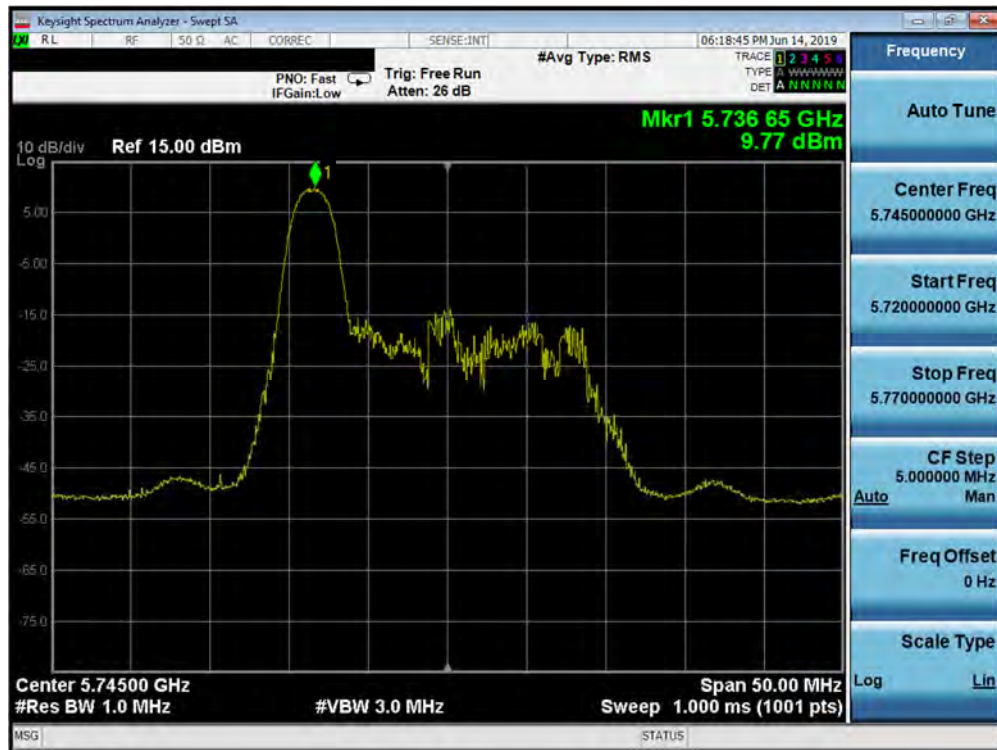
Plot 7-183. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 138)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 145 of 302

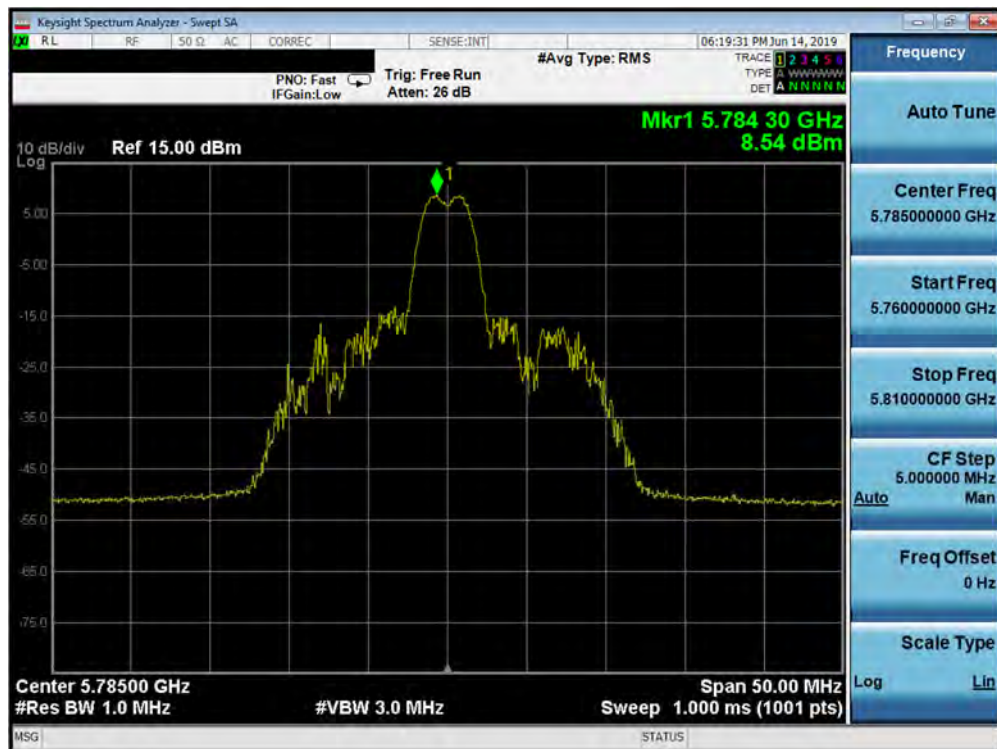
	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density	Margin [dB]
Band 3	5745	149	ax (20MHz)	26T	MCS0	9.77	30.00	-20.23
	5785	157	ax (20MHz)	26T	MCS0	8.54	30.00	-21.46
	5825	165	ax (20MHz)	26T	MCS0	8.89	30.00	-21.11
	5755	151	ax (40MHz)	26T	MCS0	9.32	30.00	-20.68
	5795	159	ax (40MHz)	26T	MCS0	9.48	30.00	-20.52
	5775	155	ax (80MHz)	26T	MCS0	8.44	30.00	-21.56

Table 7-60. Band 3 Conducted Power Spectral Density Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMN976V	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset	
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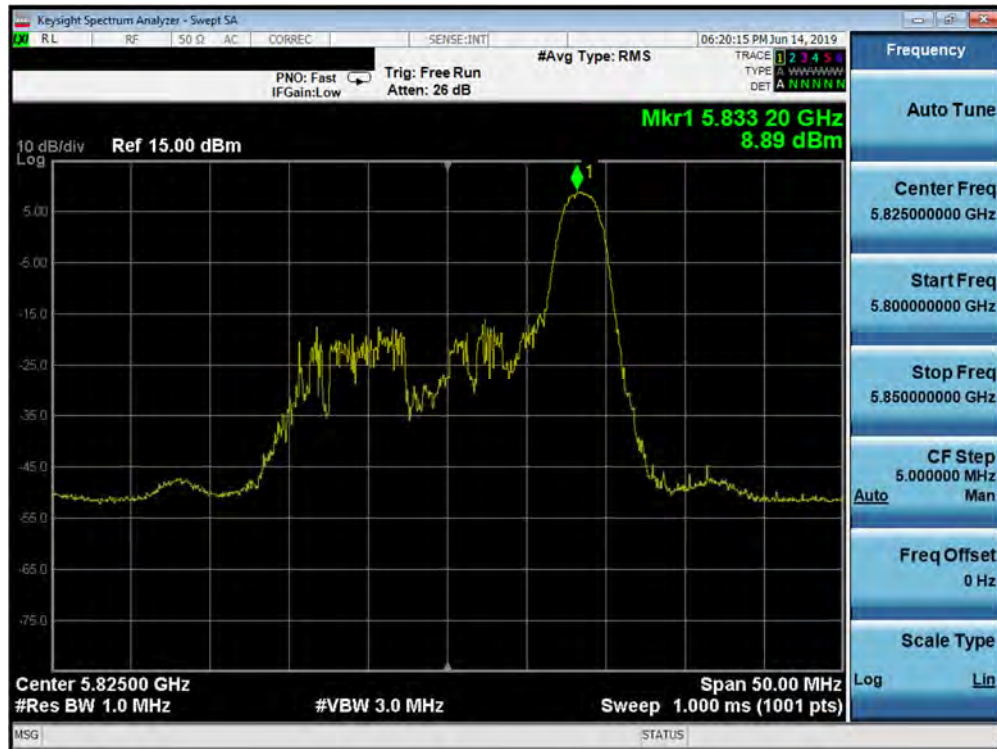


Plot 7-184. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 149)

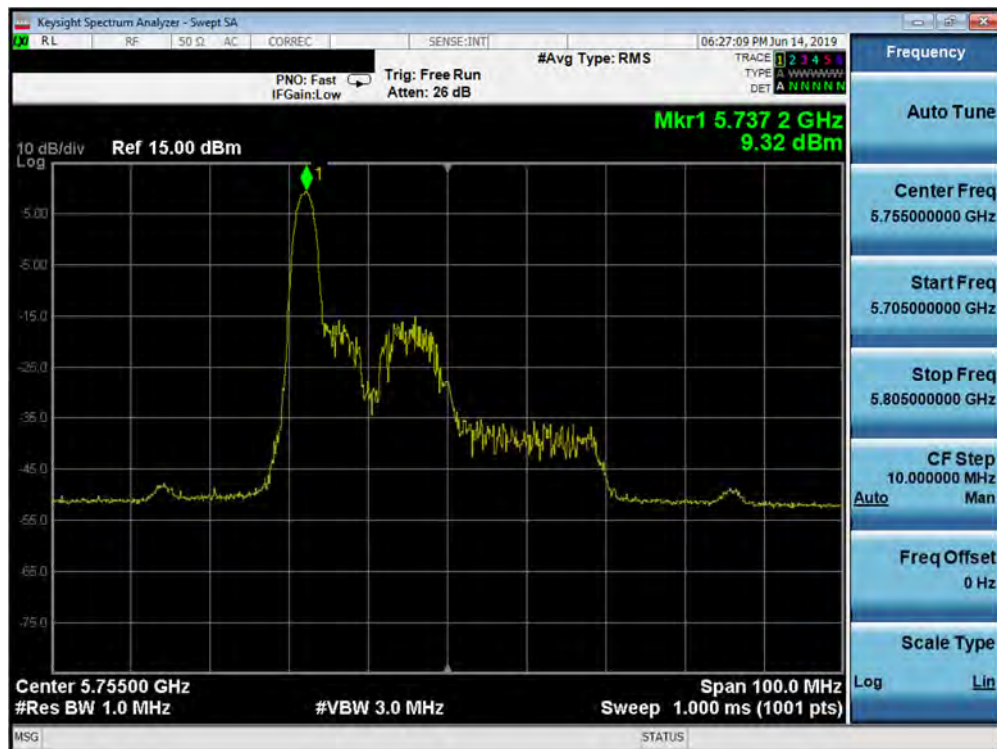


Plot 7-185. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 157)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 147 of 302



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

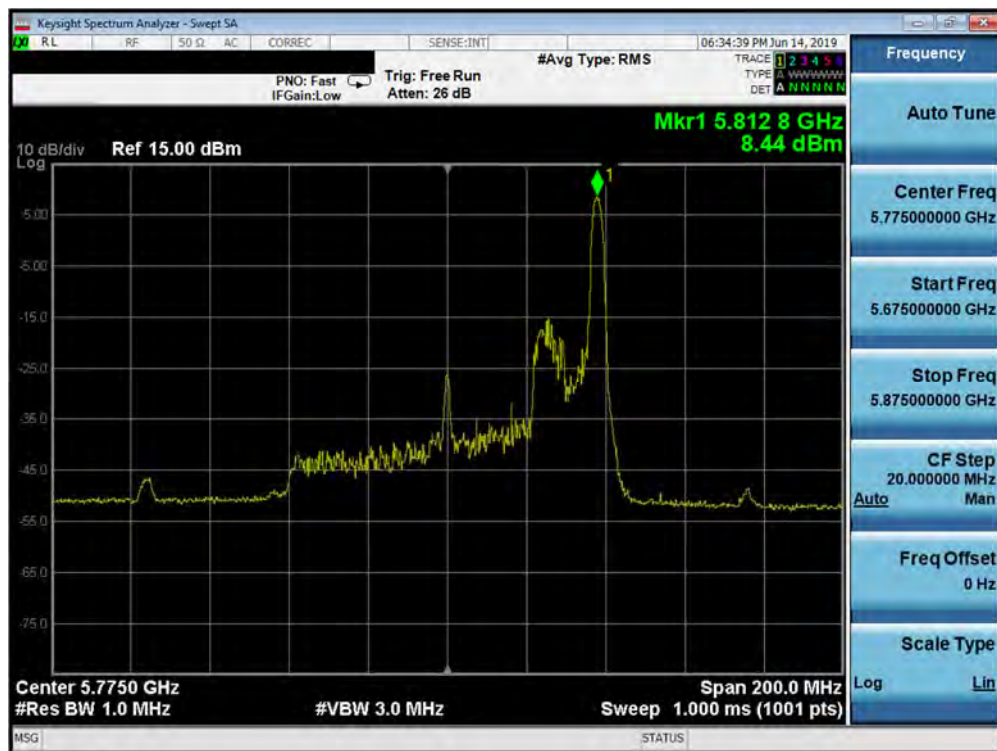


Plot 7-187. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 151)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 148 of 302



Plot 7-188. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 159)



Plot 7-189. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 155)

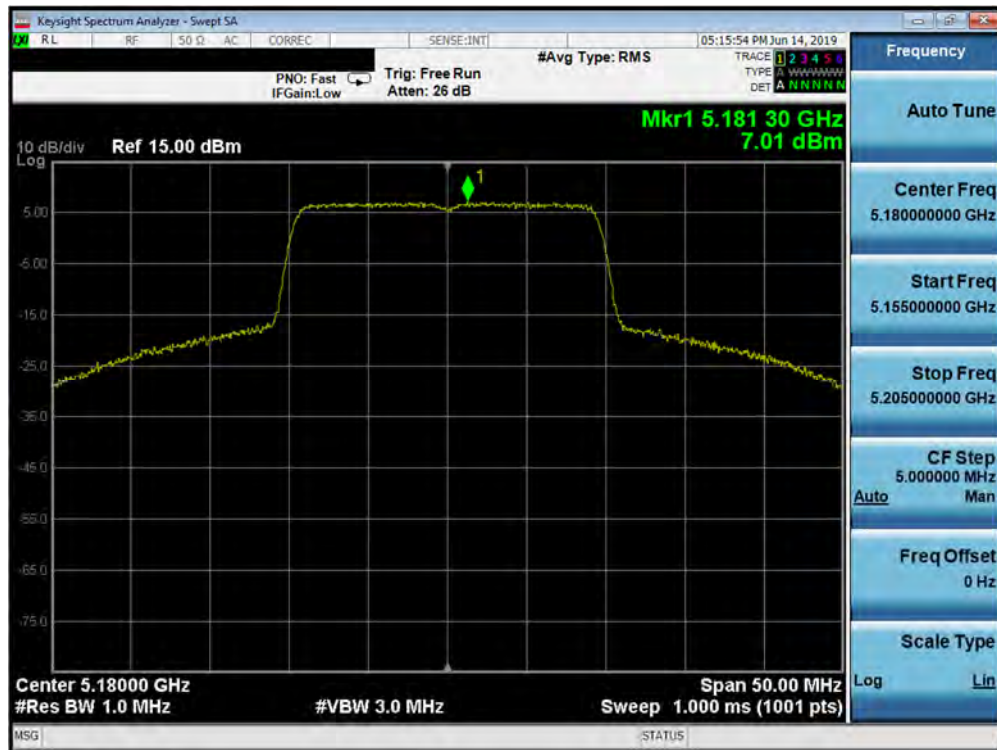
FCC ID: A3LSMN976V	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 149 of 302

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

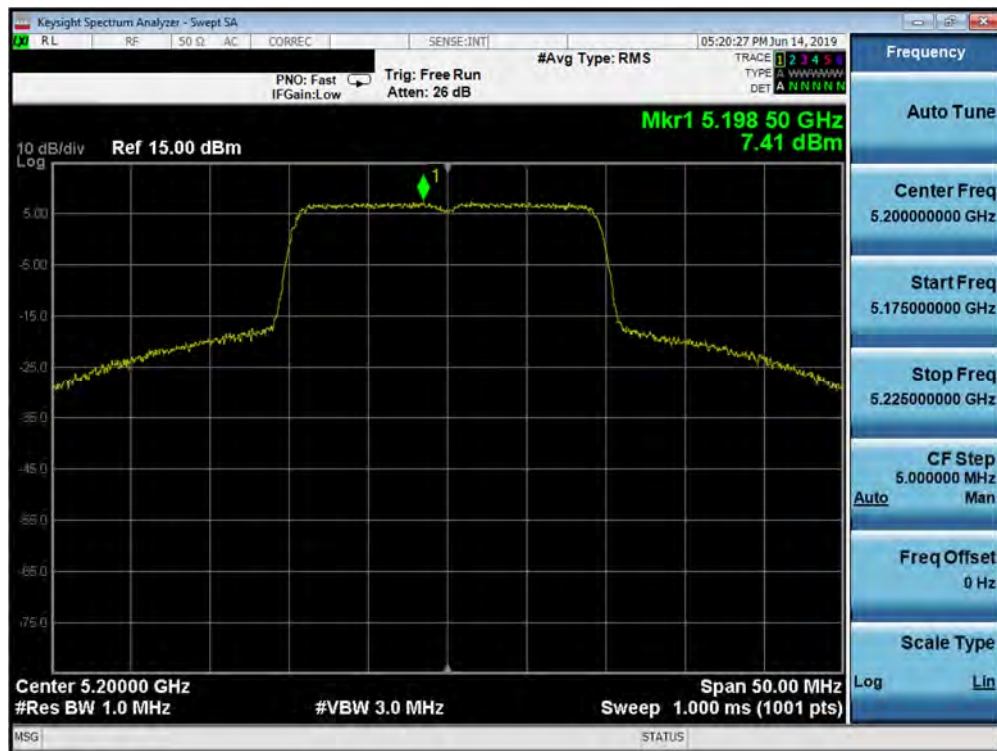
	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured Power Density [dBm]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	ax (20MHz)	242T	MCS0	7.01	11.0	-3.99
	5200	40	ax (20MHz)	242T	MCS0	7.41	11.0	-3.59
	5240	48	ax (20MHz)	242T	MCS0	7.30	11.0	-3.70
	5190	38	ax (40MHz)	484T	MCS0	3.46	11.0	-7.54
	5230	46	ax (40MHz)	484T	MCS0	3.81	11.0	-7.19
	5210	42	ax (80MHz)	996T	MCS0	0.18	11.0	-10.82
Band 2A	5260	52	ax (20MHz)	242T	MCS0	6.72	11.0	-4.28
	5280	56	ax (20MHz)	242T	MCS0	6.81	11.0	-4.19
	5320	64	ax (20MHz)	242T	MCS0	6.67	11.0	-4.33
	5270	54	ax (40MHz)	484T	MCS0	3.13	11.0	-7.87
	5310	62	ax (40MHz)	484T	MCS0	3.09	11.0	-7.91
	5290	58	ax (80MHz)	996T	MCS0	-0.40	11.0	-11.40
Band 2C	5500	100	ax (20MHz)	242T	MCS0	7.16	11.0	-3.84
	5600	120	ax (20MHz)	242T	MCS0	6.90	11.0	-4.10
	5720	144	ax (20MHz)	242T	MCS0	7.03	11.0	-3.97
	5510	102	ax (40MHz)	484T	MCS0	3.58	11.0	-7.42
	5590	118	ax (40MHz)	484T	MCS0	3.12	11.0	-7.88
	5710	142	ax (40MHz)	484T	MCS0	4.03	11.0	-6.97
	5530	106	ax (80MHz)	996T	MCS0	-0.26	11.0	-11.26
	5610	122	ax (80MHz)	996T	MCS0	-0.71	11.0	-11.71
	5690	138	ax (80MHz)	996T	MCS0	-0.37	11.0	-11.37

Table 7-61. Conducted Power Spectral Density Measurements SISO ANT2 (Full Tones)

FCC ID: A3LSMN976V	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset	Page 150 of 302

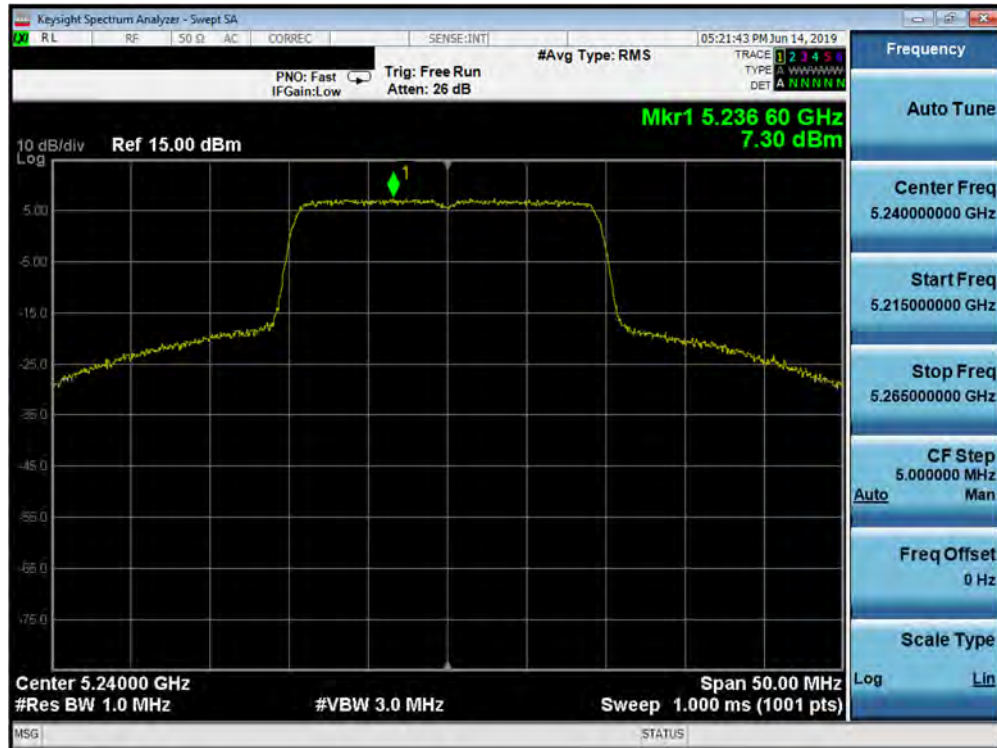


Plot 7-190. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 36)

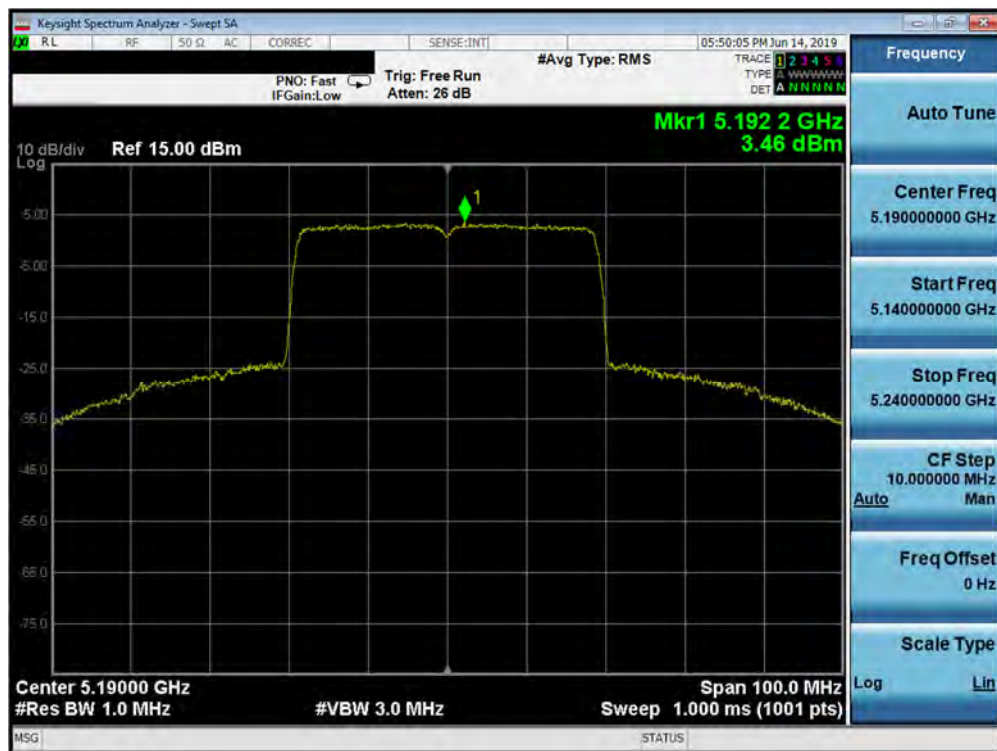


Plot 7-191. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 40)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 151 of 302

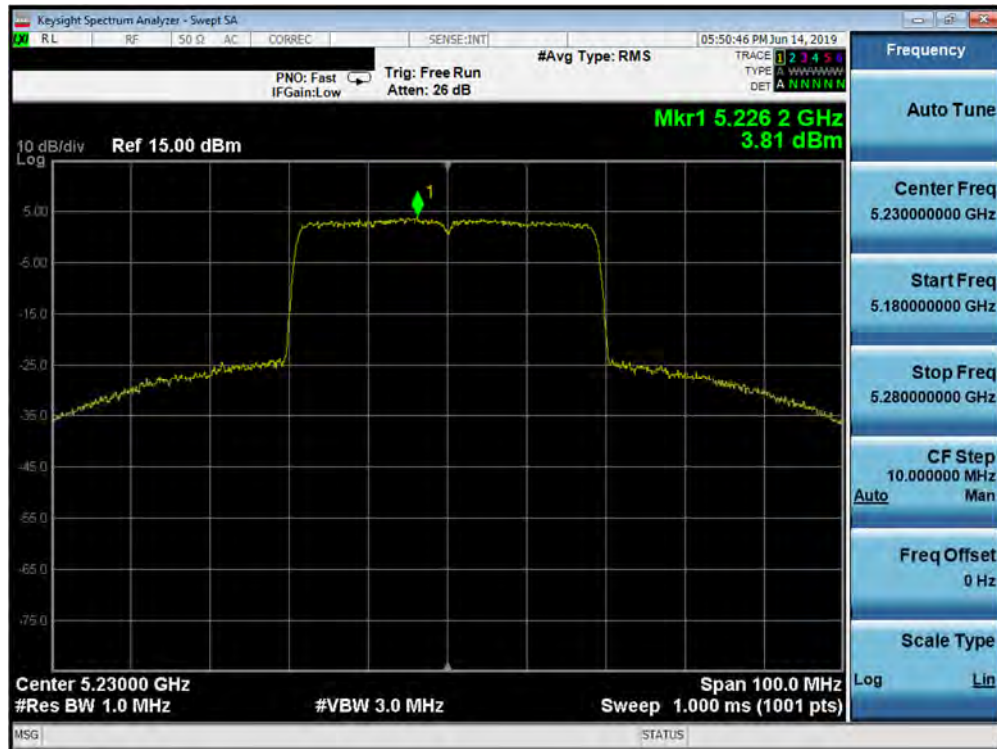


Plot 7-192. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 48)

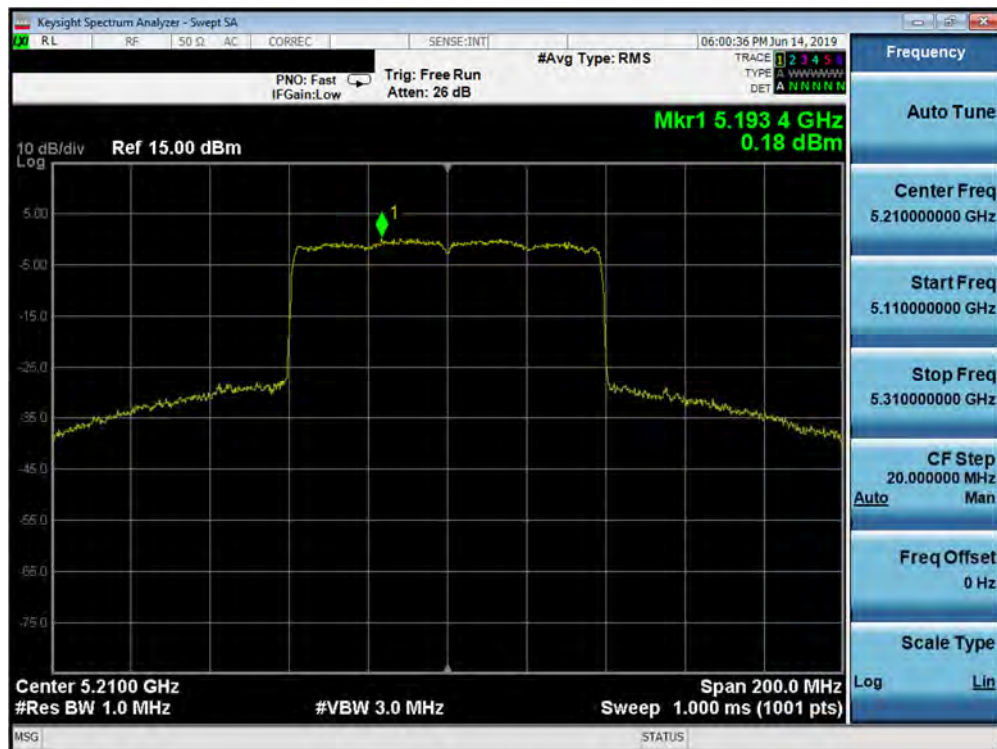


Plot 7-193. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 38)

FCC ID: A3LSMN976V	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 152 of 302

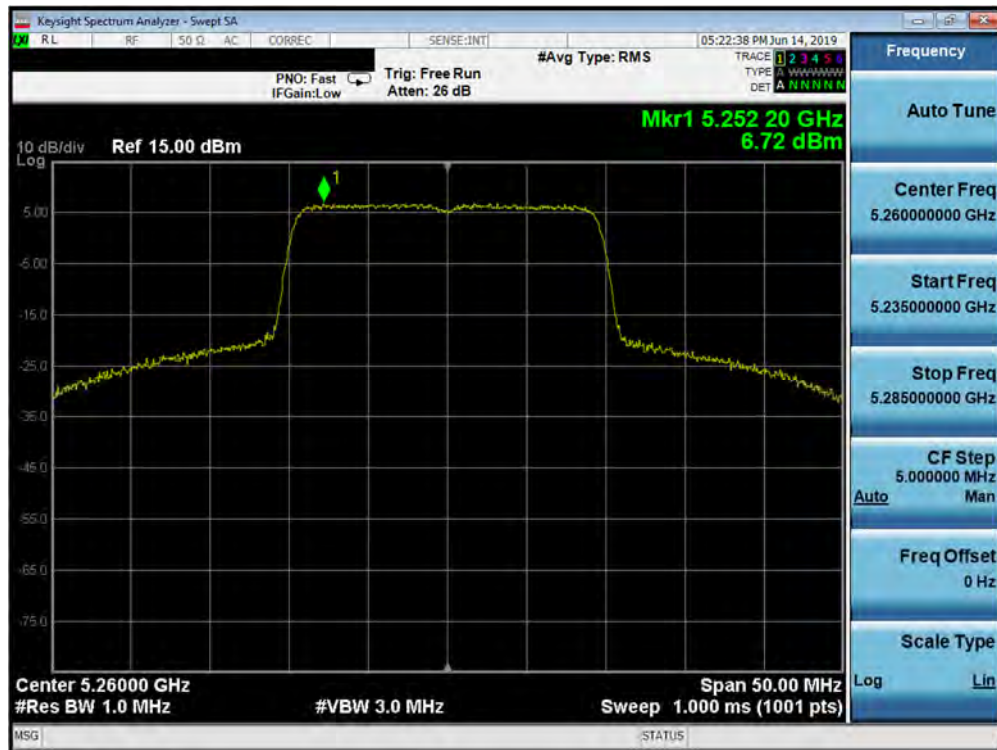


Plot 7-194. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 46)

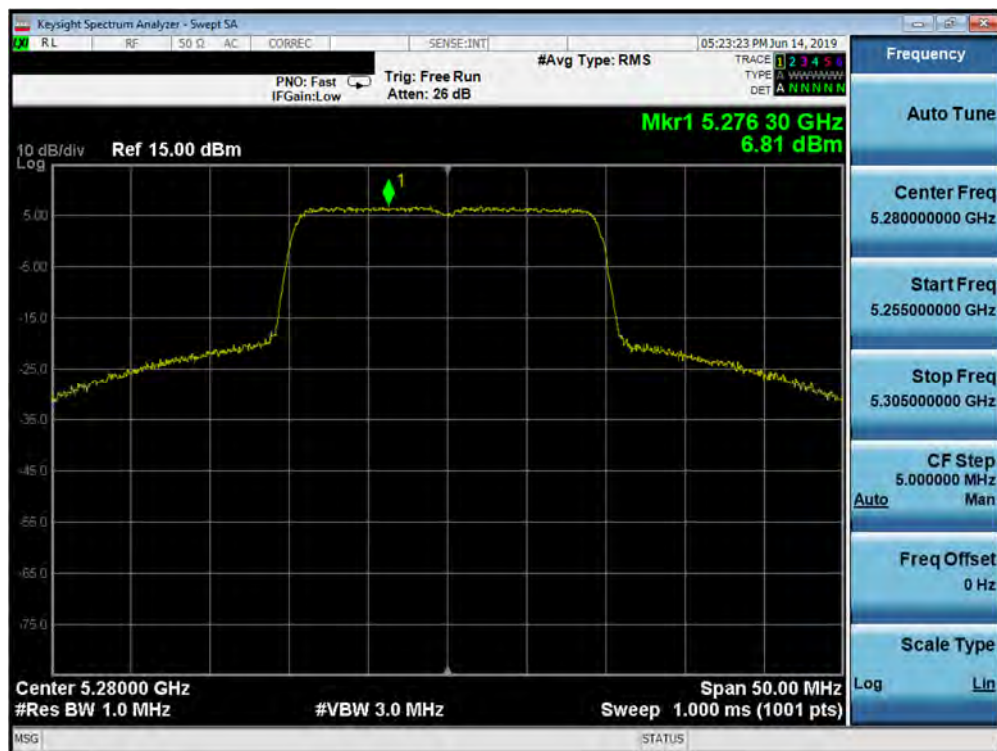


Plot 7-195. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 42)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 153 of 302

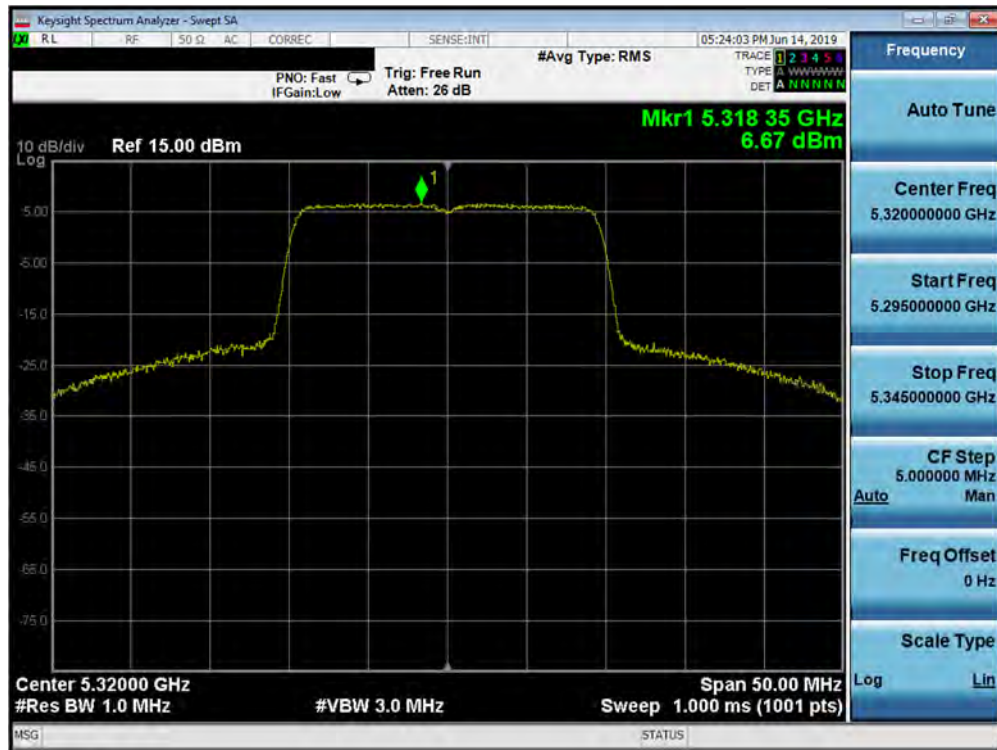


Plot 7-196. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 52)

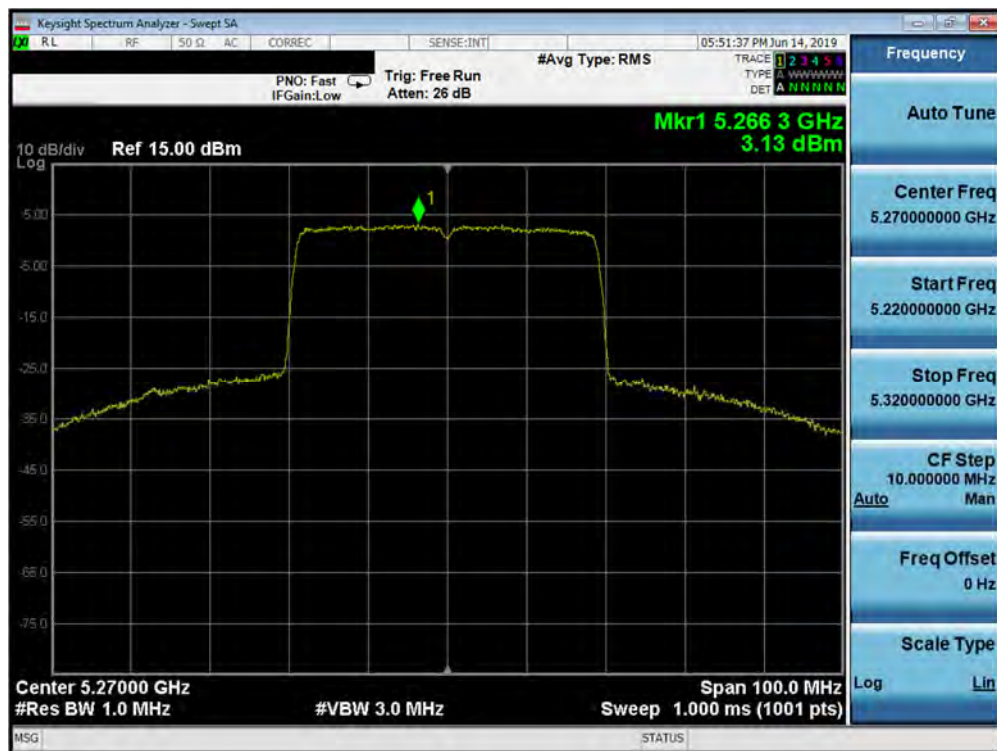


Plot 7-197. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 154 of 302

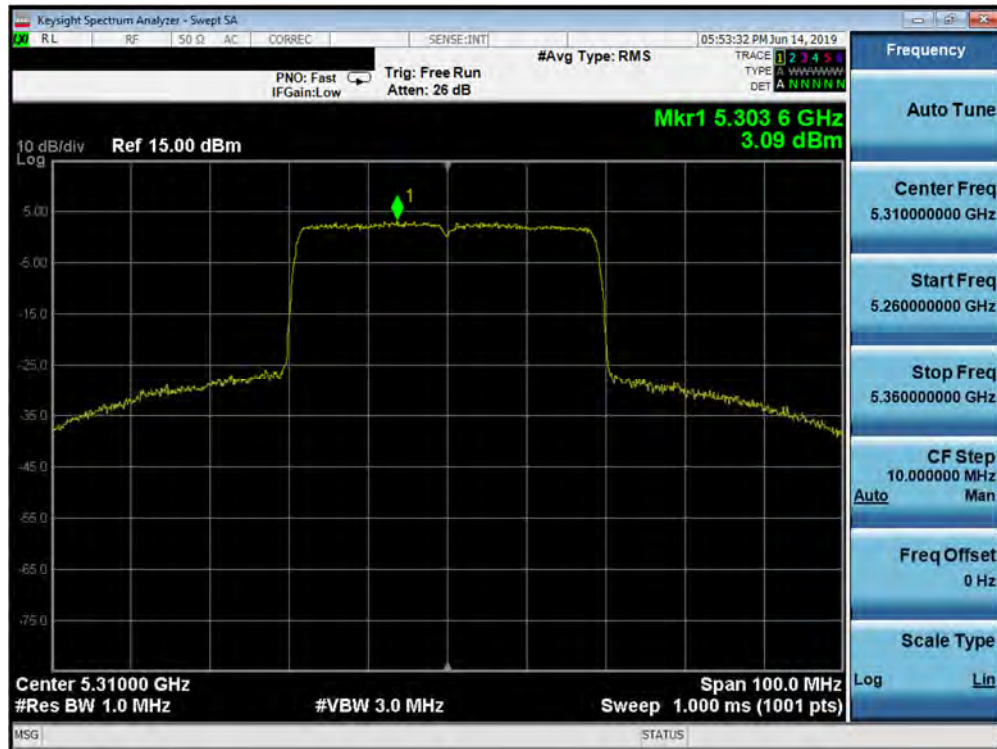


Plot 7-198. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 64)



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

FCC ID: A3LSMN976V	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 155 of 302

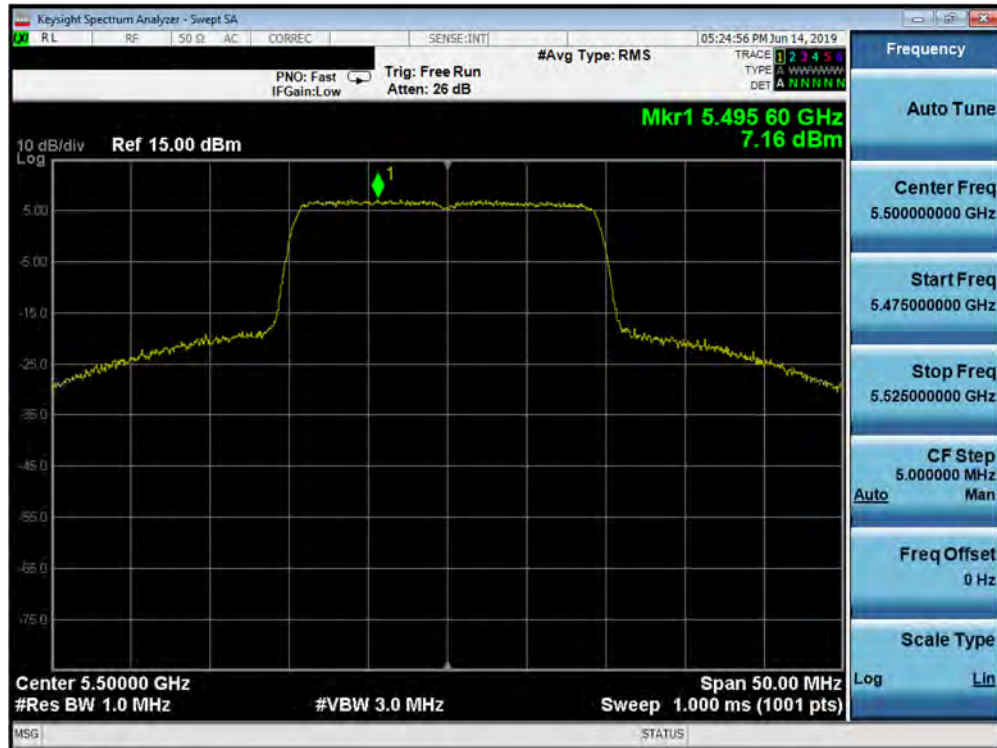


Plot 7-200. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 62)

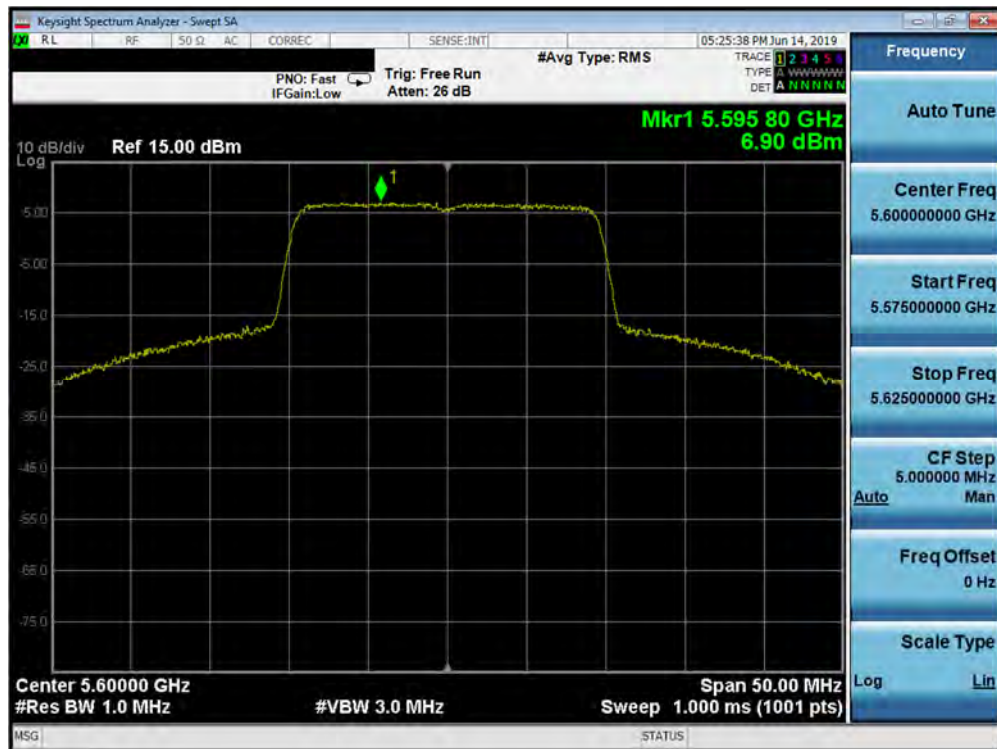


Plot 7-201. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 156 of 302

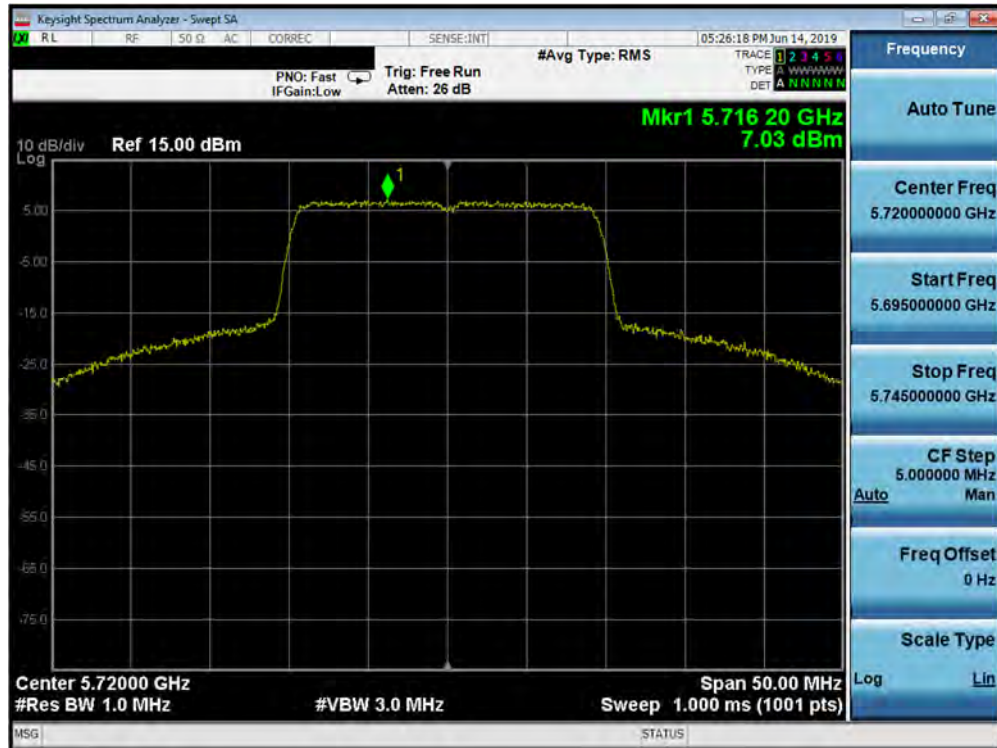


Plot 7-202. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 100)

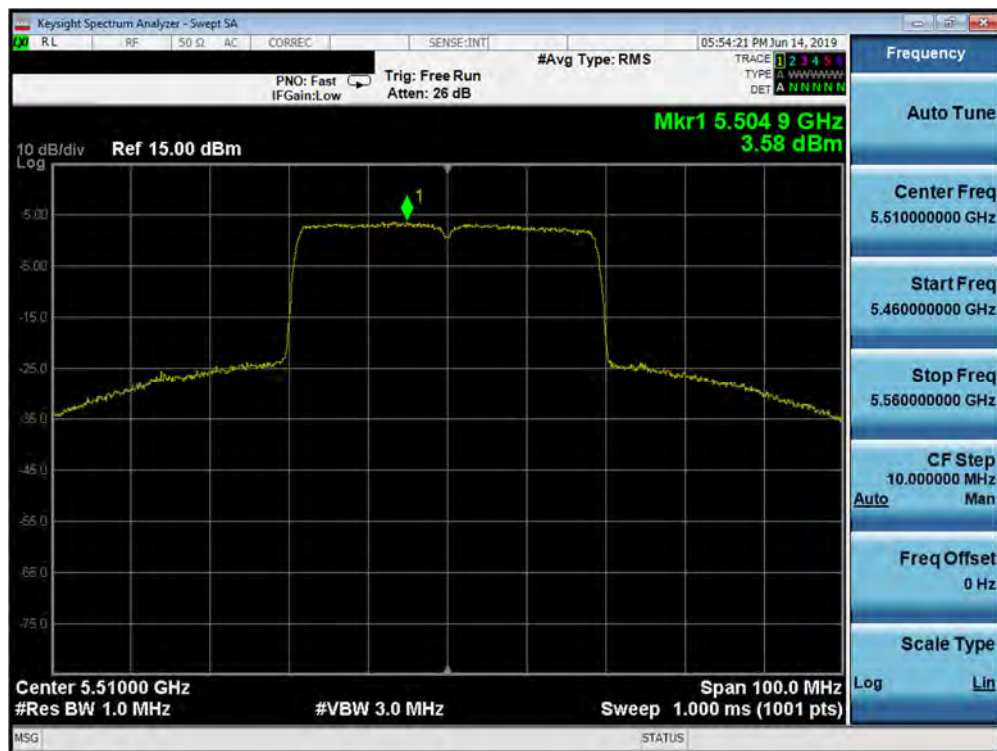


Plot 7-203. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 120)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 157 of 302

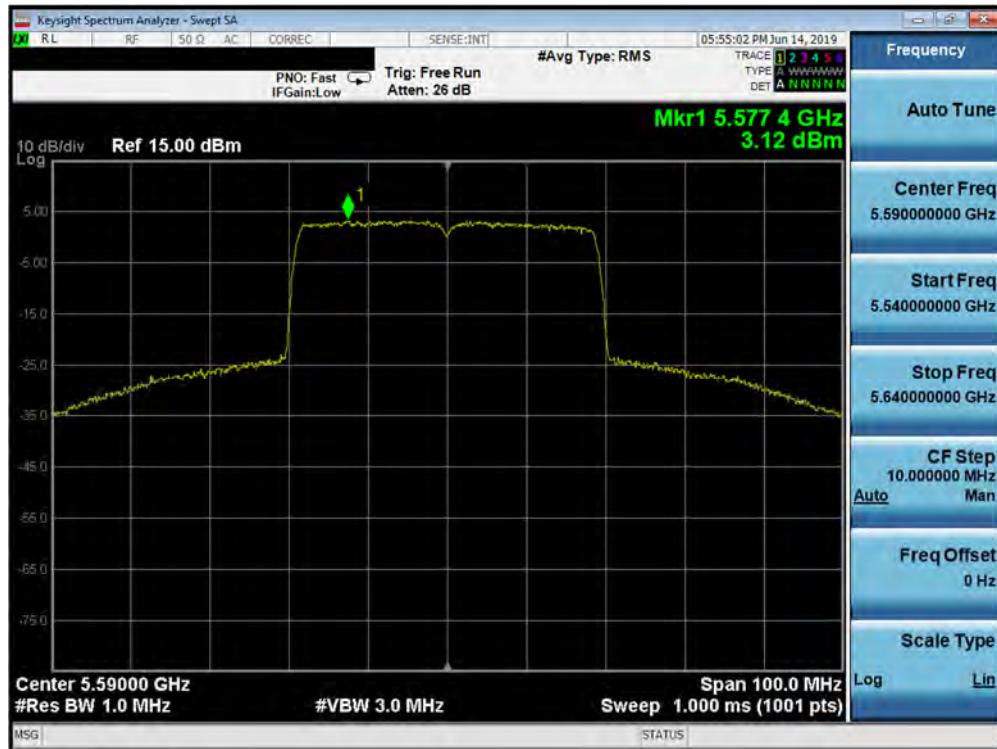


Plot 7-204. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 144)

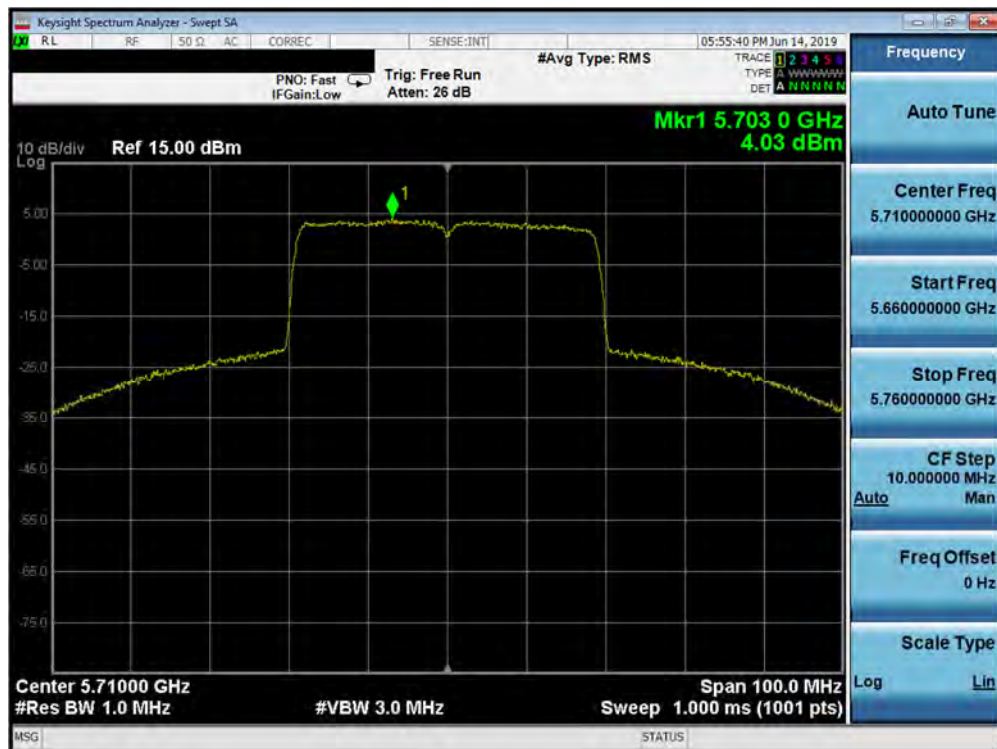


Plot 7-205. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 102)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 158 of 302

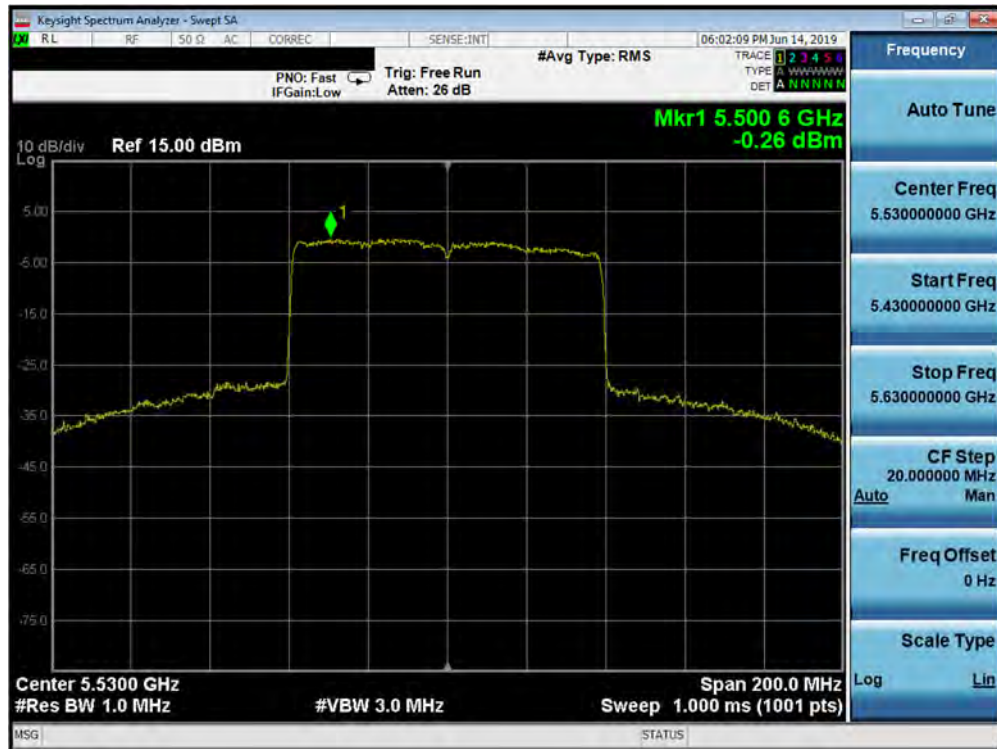


Plot 7-206. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 118)

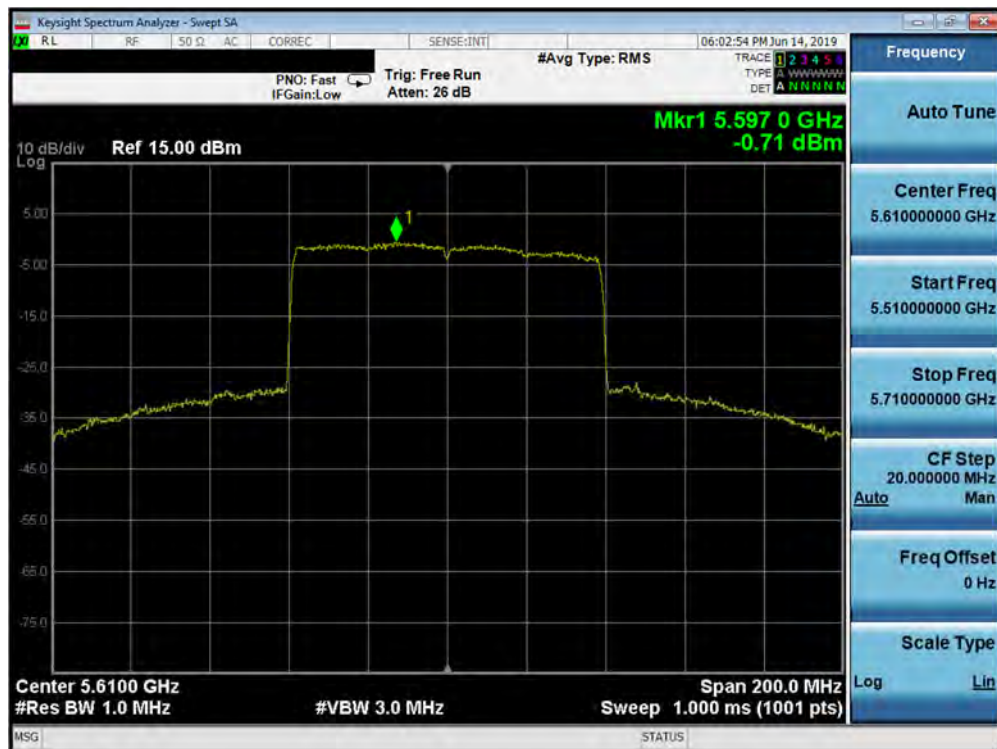


Plot 7-207. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 142)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 159 of 302



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



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

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 160 of 302



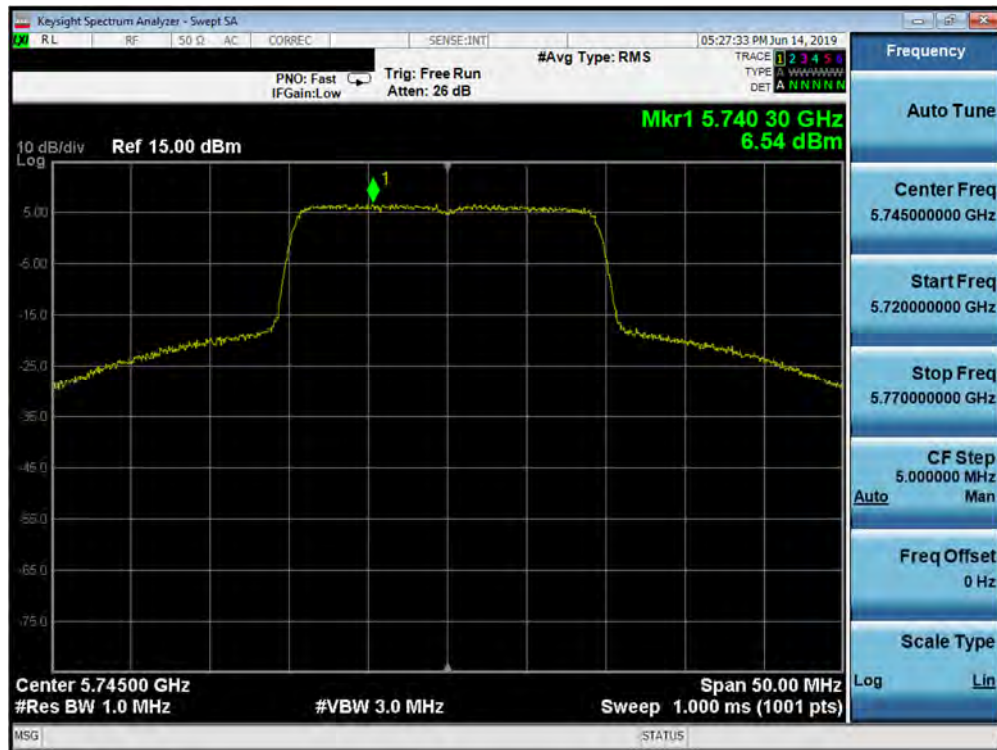
Plot 7-210. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 138)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 161 of 302

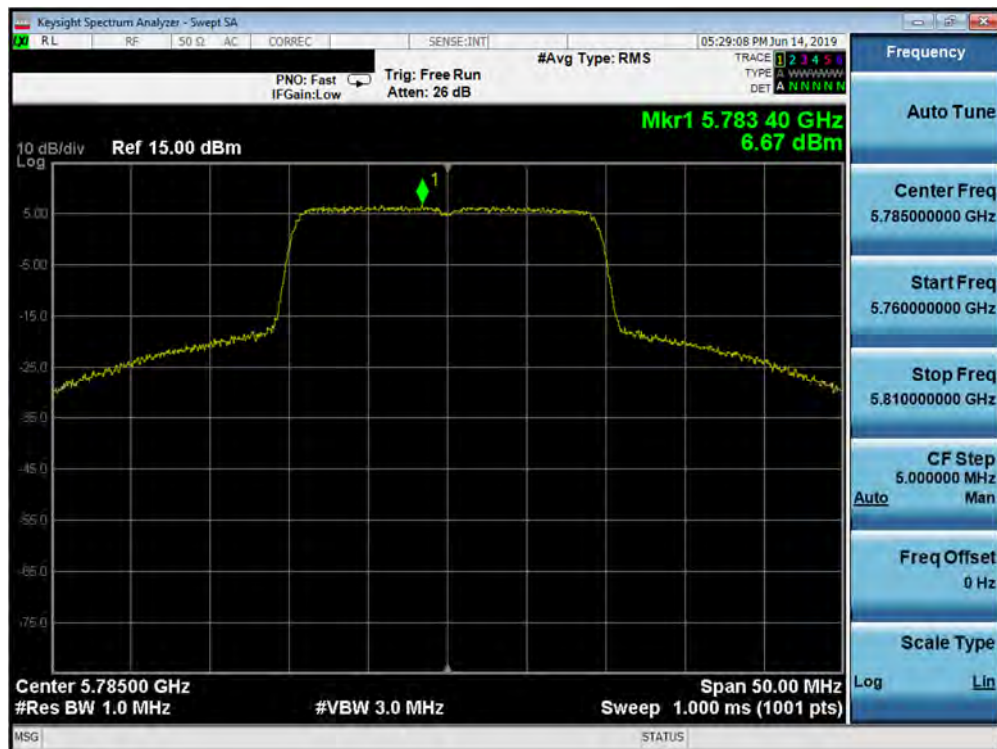
	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density	Margin [dB]
Band 3	5745	149	ax (20MHz)	242T	MCS0	6.54	30.00	-23.46
	5785	157	ax (20MHz)	242T	MCS0	6.67	30.00	-23.33
	5825	165	ax (20MHz)	242T	MCS0	6.16	30.00	-23.84
	5755	151	ax (40MHz)	484T	MCS0	3.28	30.00	-26.72
	5795	159	ax (40MHz)	484T	MCS0	3.14	30.00	-26.86
	5775	155	ax (80MHz)	996T	MCS0	-0.42	30.00	-30.42

Table 7-62. Band 3 Conducted Power Spectral Density Measurements SISO ANT2 (Full Tones)

FCC ID: A3LSMN976V	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset	
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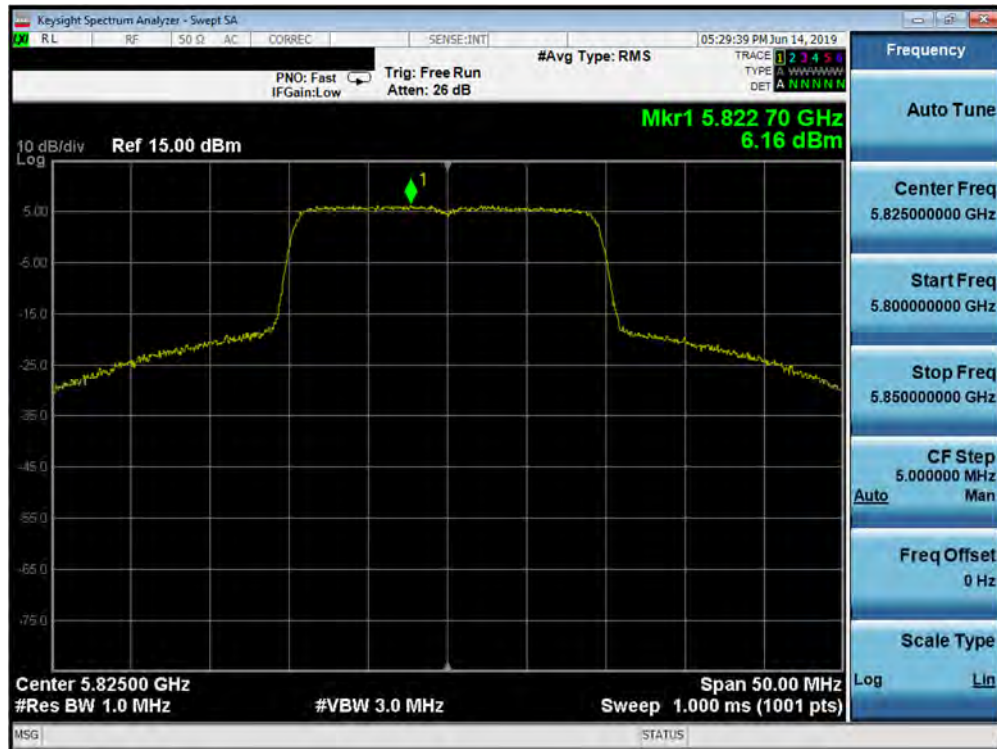


Plot 7-211. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 149)

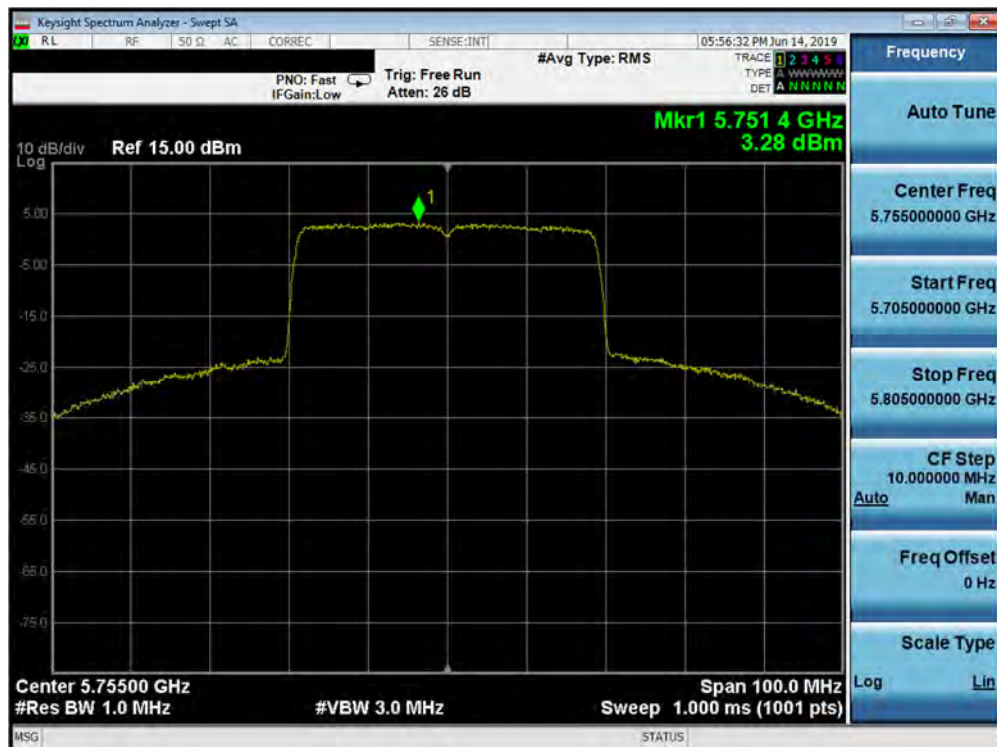


Plot 7-212. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 157)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 163 of 302

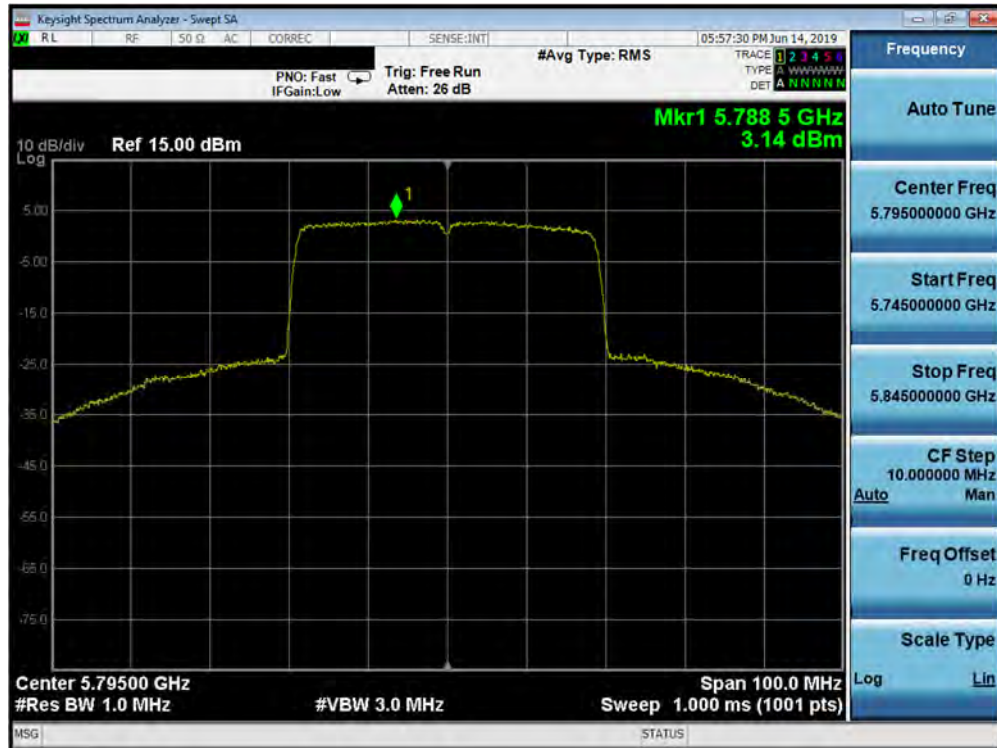


Plot 7-213. Power Spectral Density Plot SISO ANT2 (20 MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 165)

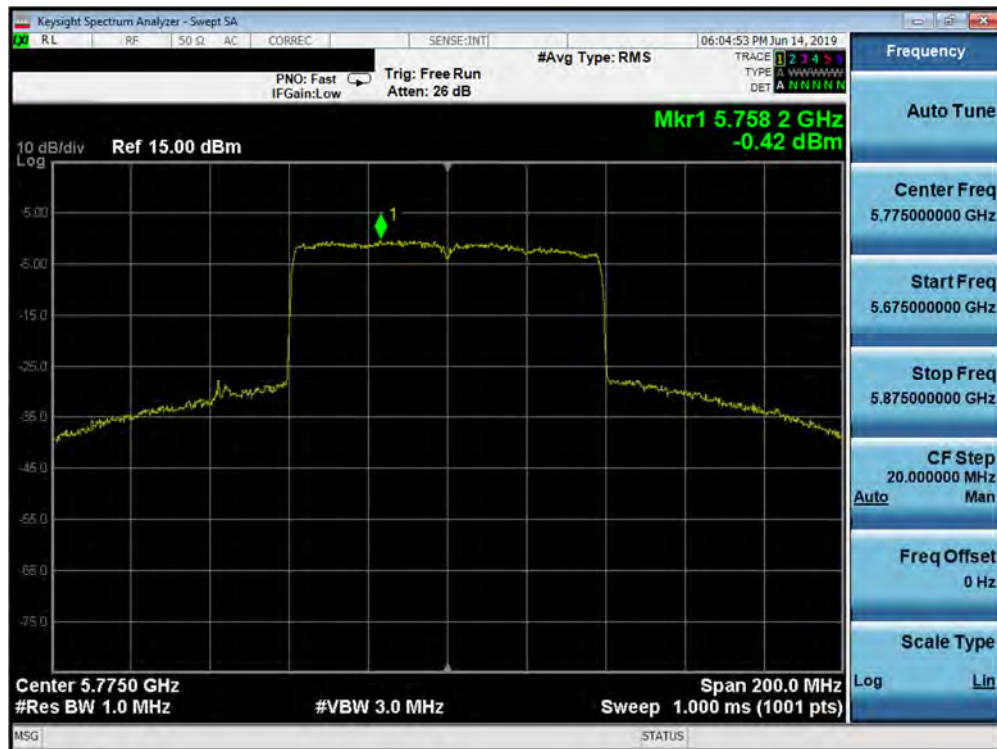


Plot 7-214. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 151)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 164 of 302



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



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

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 165 of 302

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	7.05	5.51	9.36	11.00	-1.64
	5200	40	ax (20MHz)	26T	MCS0	6.03	4.79	8.46	11.00	-2.54
	5240	48	ax (20MHz)	26T	MCS0	6.95	5.76	9.41	11.00	-1.59
	5190	38	ax (40MHz)	26T	MCS0	4.92	4.60	7.77	11.00	-3.23
	5230	46	ax (40MHz)	26T	MCS0	5.17	4.50	7.86	11.00	-3.14
	5210	42	ax (80MHz)	26T	MCS0	4.75	4.38	7.58	11.00	-3.42
Band 2A	5260	52	ax (20MHz)	26T	MCS0	6.49	5.75	9.15	11.00	-1.85
	5280	56	ax (20MHz)	26T	MCS0	5.77	4.87	8.35	11.00	-2.65
	5320	64	ax (20MHz)	26T	MCS0	6.95	5.68	9.37	11.00	-1.63
	5270	54	ax (40MHz)	26T	MCS0	5.71	4.27	8.06	11.00	-2.94
	5310	62	ax (40MHz)	26T	MCS0	5.17	4.28	7.76	11.00	-3.24
	5290	58	ax (80MHz)	26T	MCS0	5.05	4.26	7.68	11.00	-3.32
Band 2C	5500	100	ax (20MHz)	26T	MCS0	6.61	5.00	8.89	11.00	-2.11
	5600	120	ax (20MHz)	26T	MCS0	5.87	3.94	8.02	11.00	-2.98
	5720	144	ax (20MHz)	26T	MCS0	6.74	4.19	8.66	11.00	-2.34
	5510	102	ax (40MHz)	26T	MCS0	6.13	4.40	8.36	11.00	-2.64
	5590	118	ax (40MHz)	26T	MCS0	6.79	4.84	8.93	11.00	-2.07
	5710	142	ax (40MHz)	26T	MCS0	6.43	4.05	8.41	11.00	-2.59
	5530	106	ax (80MHz)	26T	MCS0	5.90	3.98	8.06	11.00	-2.94
	5610	122	ax (80MHz)	26T	MCS0	4.94	3.59	7.33	11.00	-3.67
	5690	138	ax (80MHz)	26T	MCS0	5.97	4.11	8.15	11.00	-2.85

Table 7-63. Bands 1, 2A, 2C MIMO Conducted Power Spectral Density Measurements MIMO (26 Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density	Margin [dB]
Band 3	5745	149	ax (20MHz)	26T	MCS0	6.39	5.07	8.79	30.00	-21.21
	5785	157	ax (20MHz)	26T	MCS0	5.79	3.90	7.96	30.00	-22.04
	5825	165	ax (20MHz)	26T	MCS0	6.14	4.85	8.55	30.00	-21.45
	5755	151	ax (40MHz)	26T	MCS0	6.25	4.43	8.44	30.00	-21.56
	5795	159	ax (40MHz)	26T	MCS0	6.81	3.95	8.62	30.00	-21.38
	5775	155	ax (80MHz)	26T	MCS0	5.80	4.74	8.31	30.00	-21.69

Table 7-64. Band 3 MIMO Conducted Power Spectral Density Measurements MIMO (26 Tones)

FCC ID: A3LSMN976V	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset	Page 166 of 302

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	ax (20MHz)	242T	MCS0	3.54	2.29	5.97	11.00	-5.03
	5200	40	ax (20MHz)	242T	MCS0	3.65	2.48	6.11	11.00	-4.89
	5240	48	ax (20MHz)	242T	MCS0	3.97	2.58	6.34	11.00	-4.66
	5190	38	ax (40MHz)	484T	MCS0	0.90	-1.02	3.06	11.00	-7.94
	5230	46	ax (40MHz)	484T	MCS0	1.07	-0.89	3.21	11.00	-7.79
	5210	42	ax (80MHz)	996T	MCS0	-2.00	-5.31	-0.34	11.00	-11.34
Band 2A	5260	52	ax (20MHz)	242T	MCS0	3.47	2.65	6.09	11.00	-4.91
	5280	56	ax (20MHz)	242T	MCS0	3.70	2.57	6.18	11.00	-4.82
	5320	64	ax (20MHz)	242T	MCS0	3.87	2.28	6.16	11.00	-4.84
	5270	54	ax (40MHz)	484T	MCS0	0.48	-1.35	2.67	11.00	-8.33
	5310	62	ax (40MHz)	484T	MCS0	0.94	-1.23	3.00	11.00	-8.00
	5290	58	ax (80MHz)	996T	MCS0	-2.16	-5.39	-0.47	11.00	-11.47
Band 2C	5500	100	ax (20MHz)	242T	MCS0	4.16	2.86	6.57	11.00	-4.43
	5600	120	ax (20MHz)	242T	MCS0	4.62	2.61	6.74	11.00	-4.26
	5720	144	ax (20MHz)	242T	MCS0	4.11	2.32	6.32	11.00	-4.68
	5510	102	ax (40MHz)	484T	MCS0	1.34	-1.22	3.26	11.00	-7.74
	5590	118	ax (40MHz)	484T	MCS0	1.30	-0.98	3.32	11.00	-7.68
	5710	142	ax (40MHz)	484T	MCS0	1.22	-1.57	3.06	11.00	-7.94
	5530	106	ax (80MHz)	996T	MCS0	-4.31	-4.88	-1.58	11.00	-12.58
	5610	122	ax (80MHz)	996T	MCS0	-4.22	-5.28	-1.71	11.00	-12.71
	5690	138	ax (80MHz)	996T	MCS0	-4.02	-5.49	-1.68	11.00	-12.68

Table 7-65. Bands 1, 2A, 2C MIMO Conducted Power Spectral Density Measurements MIMO (Full Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density	Margin [dB]
Band 3	5745	149	ax (20MHz)	242T	MCS0	4.12	2.32	6.32	30.00	-23.68
	5785	157	ax (20MHz)	242T	MCS0	4.30	2.23	6.40	30.00	-23.60
	5825	165	ax (20MHz)	242T	MCS0	4.25	2.44	6.45	30.00	-23.55
	5755	151	ax (40MHz)	484T	MCS0	1.32	-1.33	3.20	30.00	-26.80
	5795	159	ax (40MHz)	484T	MCS0	1.34	-1.06	3.31	30.00	-26.69
	5775	155	ax (80MHz)	996T	MCS0	-3.47	-4.98	-1.15	30.00	-31.15

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

FCC ID: A3LSMN976V	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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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 MIMO Calculation:

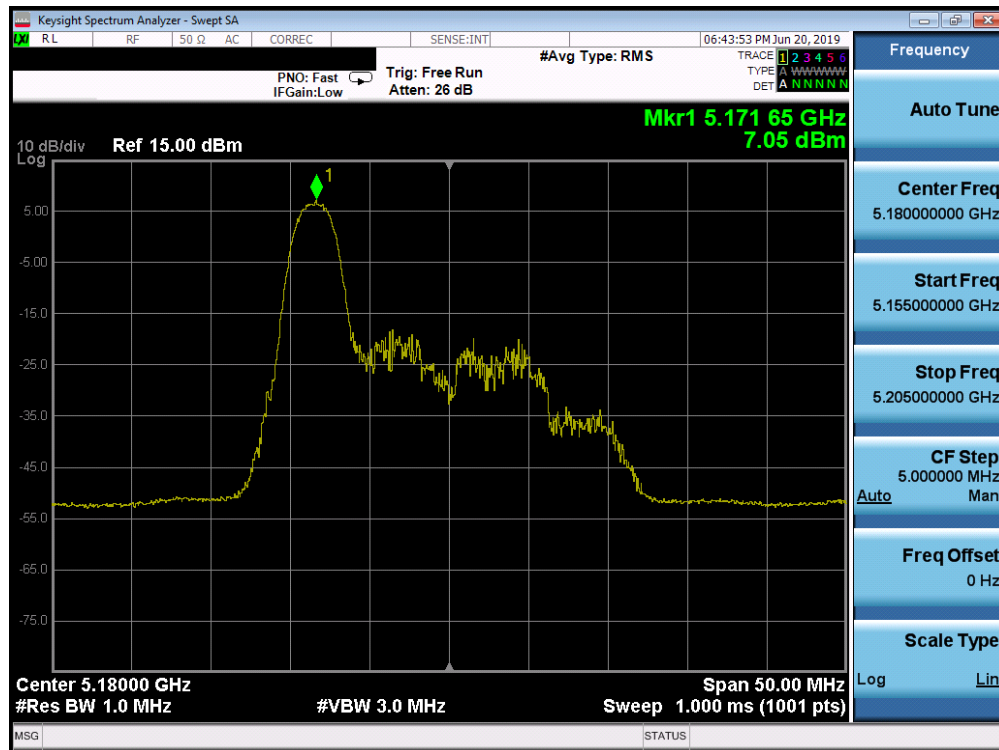
Assuming the average conducted power spectral density was measured to be 5.88 dBm for Antenna-1 and 6.27 dBm for Antenna-2.

Antenna 1 + Antenna 2 = MIMO

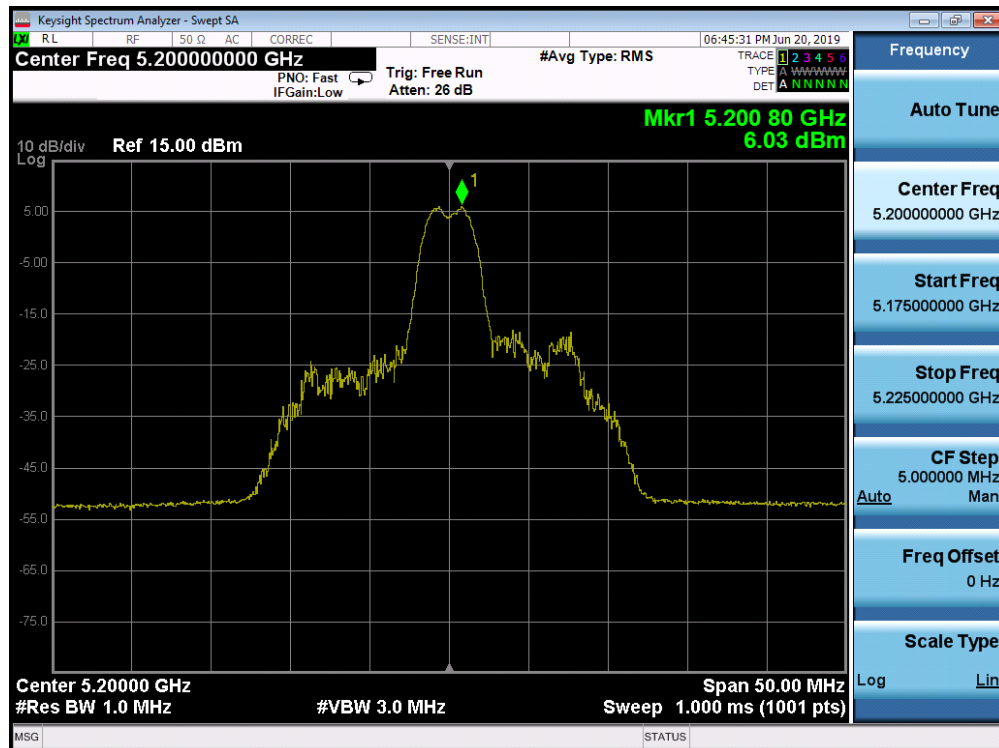
$$(5.88 \text{ dBm} + 6.27 \text{ dBm}) = (3.87 \text{ mW} + 4.24 \text{ mW}) = 8.11 \text{ mW} = 9.09 \text{ dBm}$$

FCC ID: A3LSMN976V		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 168 of 302

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

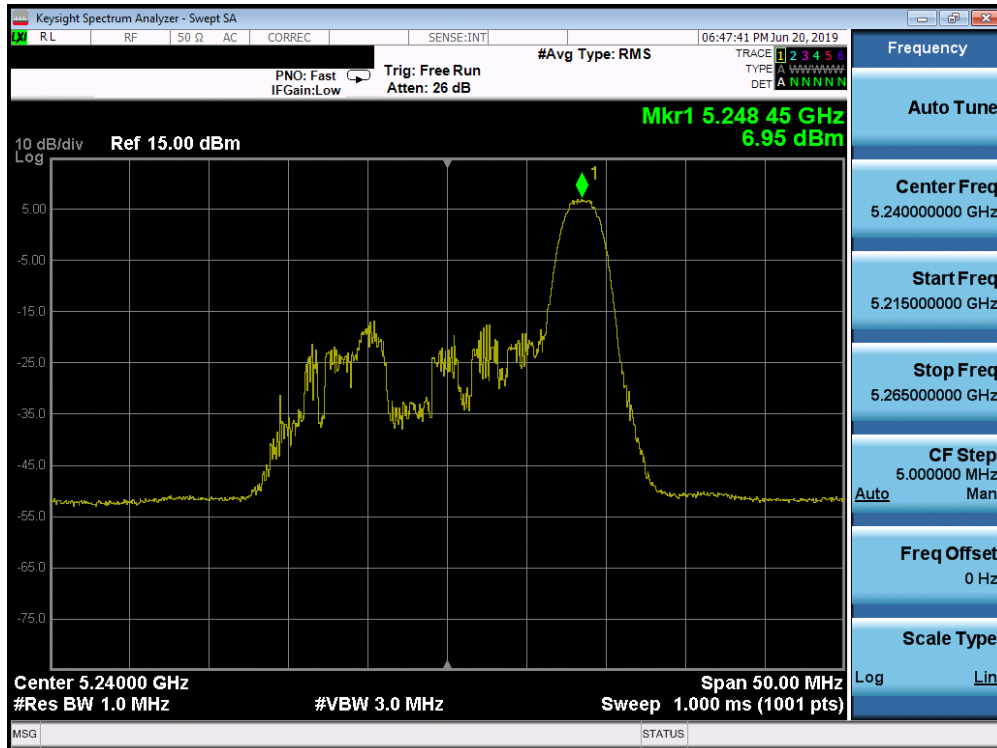


Plot 7-217. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 36)

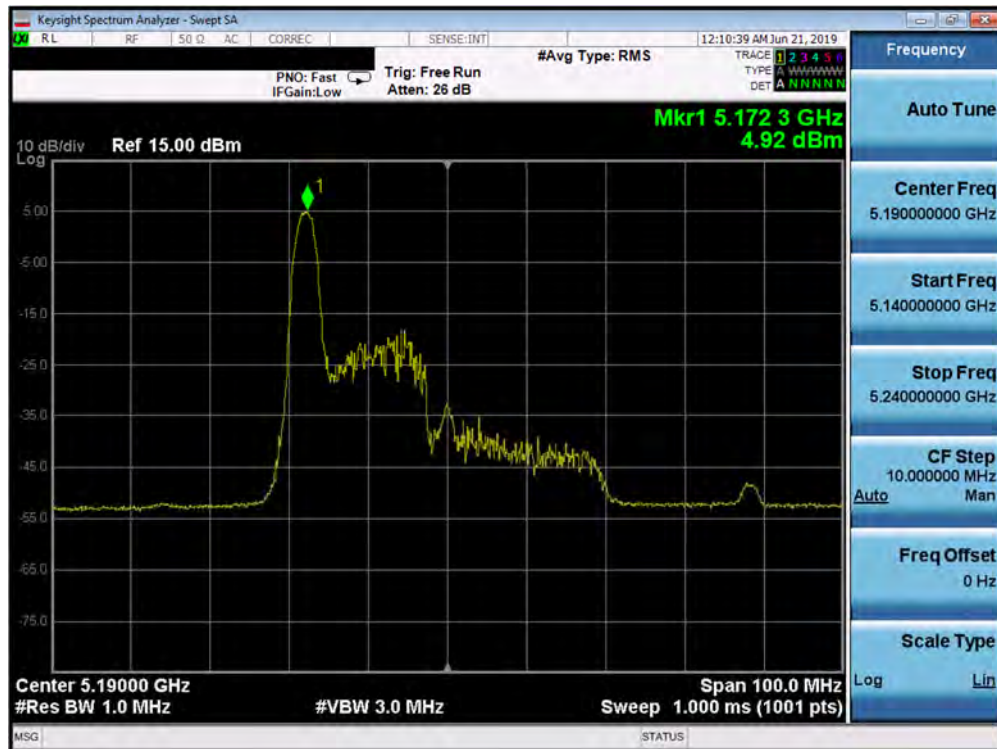


Plot 7-218. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 40)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 169 of 302

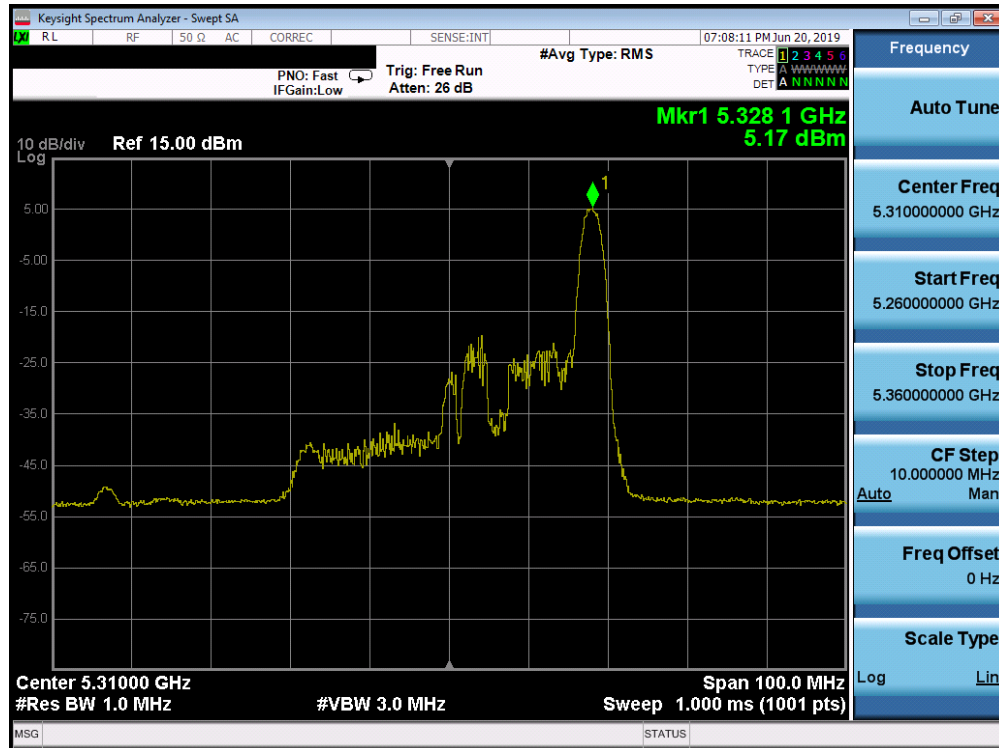


Plot 7-219. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 48)

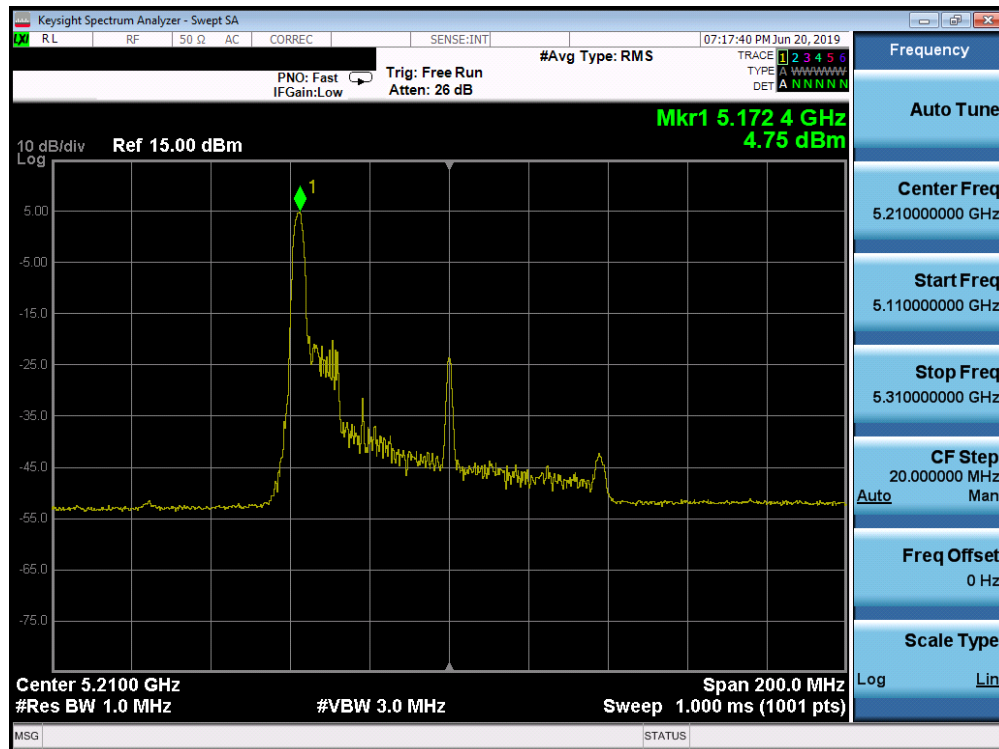


Plot 7-220. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 38)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 170 of 302

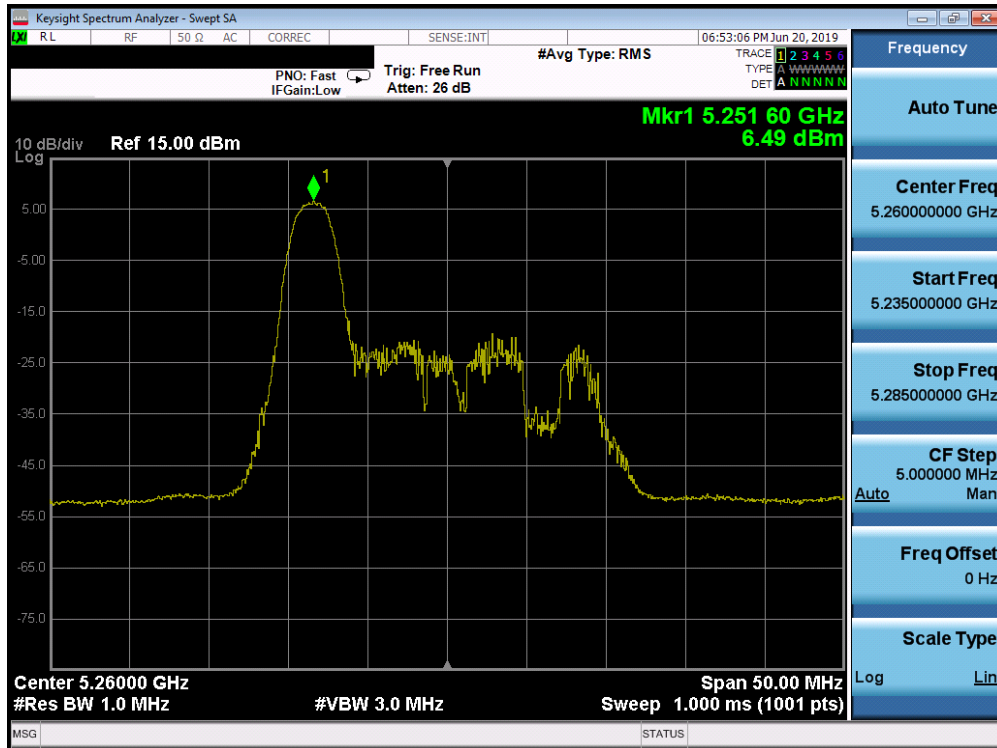


Plot 7-221. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 46)

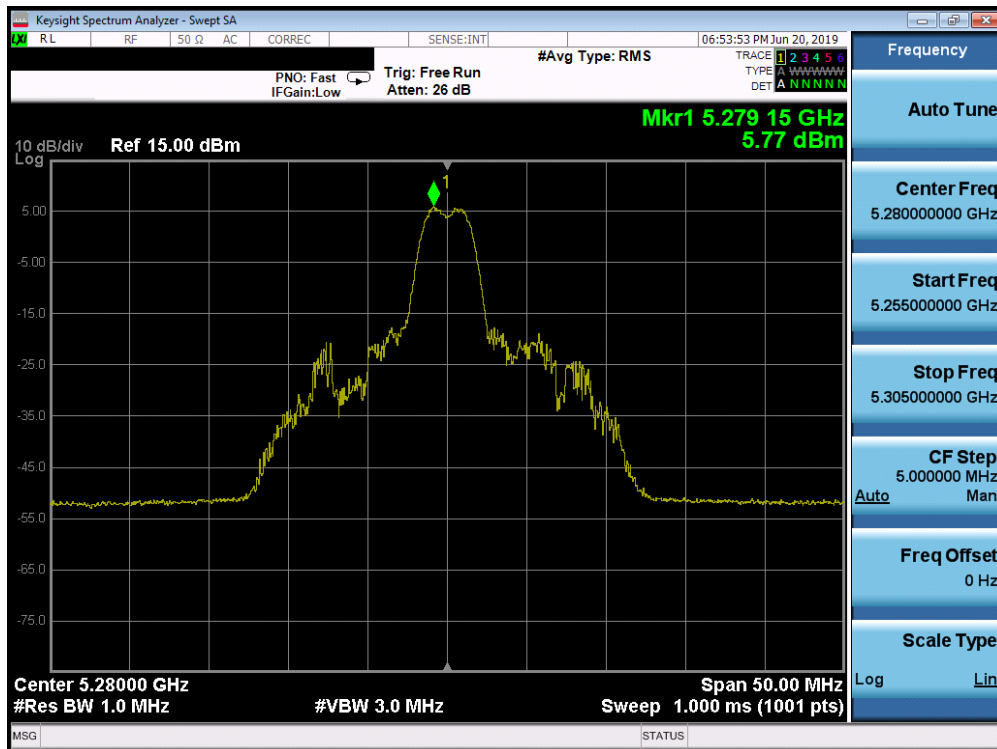


Plot 7-222. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 42)

FCC ID: A3LSMN976V	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 171 of 302

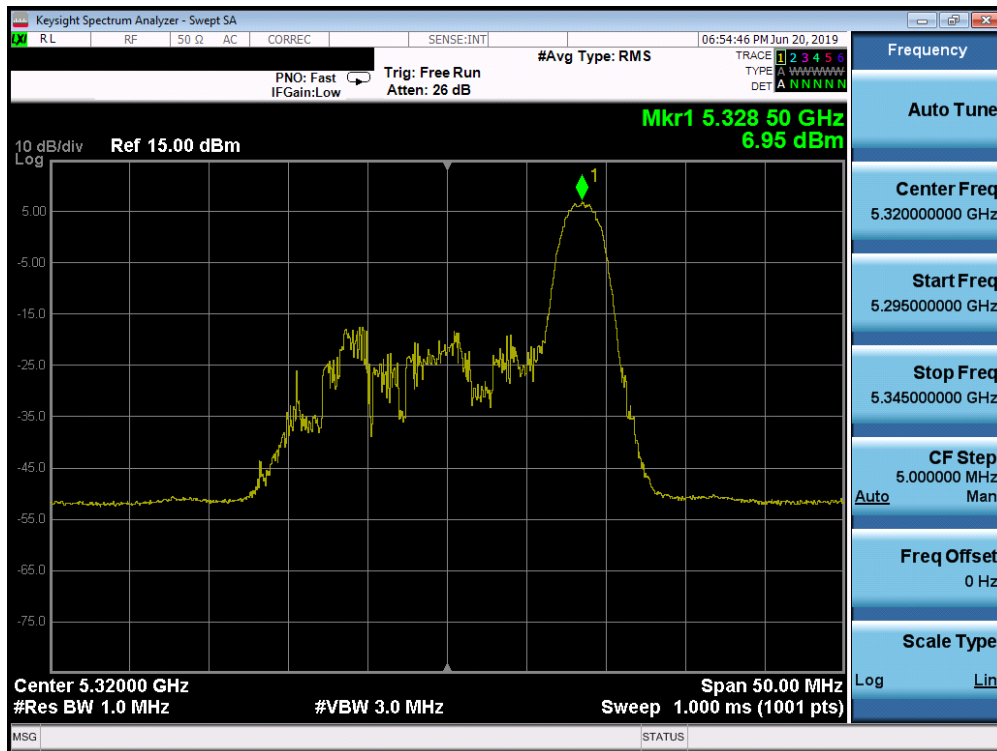


Plot 7-223. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 52)

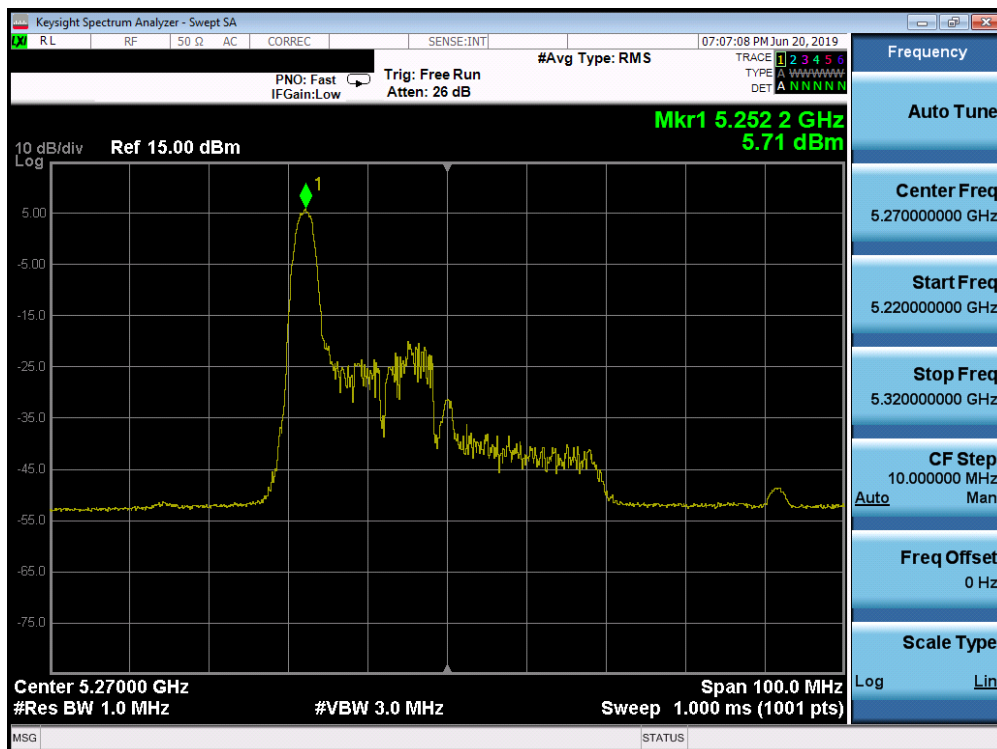


Plot 7-224. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMN976V	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 172 of 302

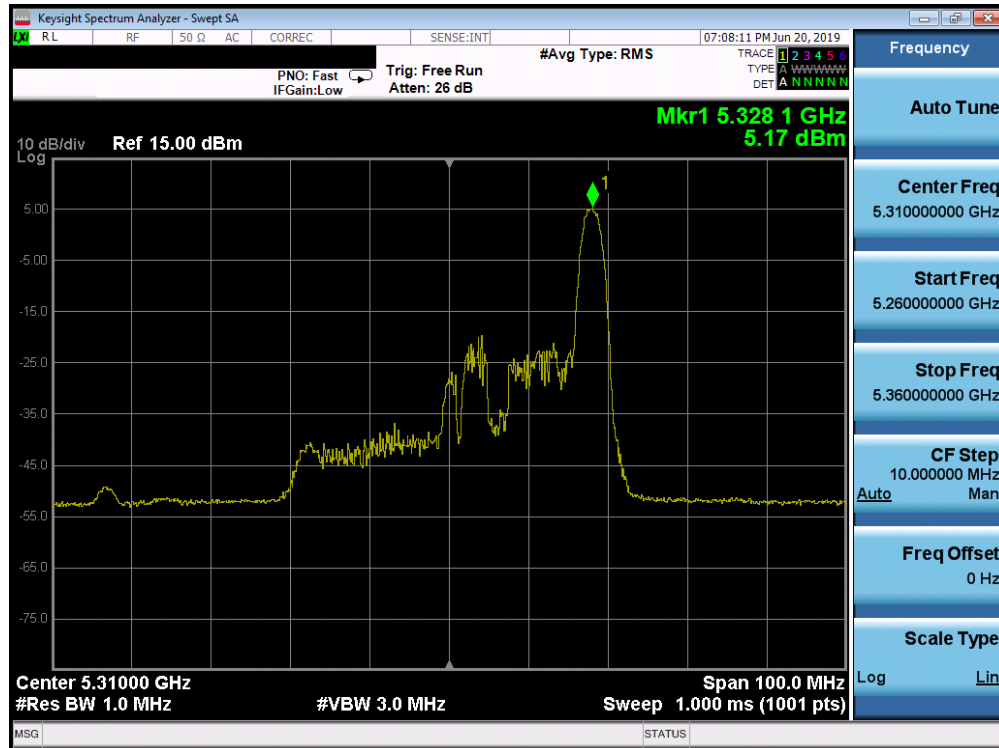


Plot 7-225. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 64)

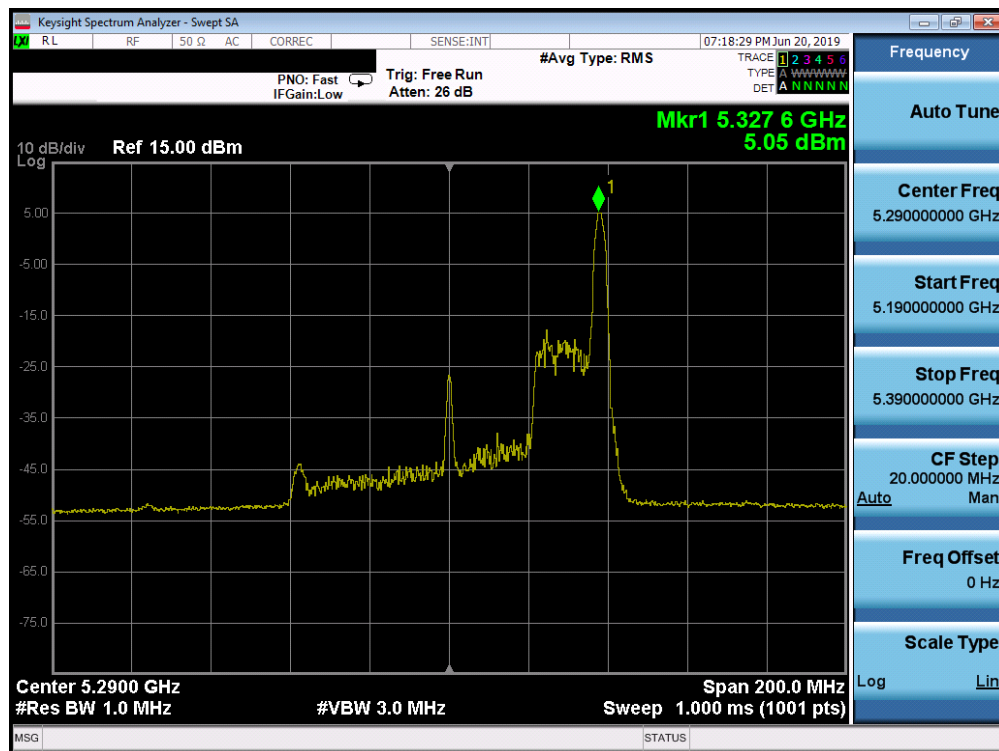


Plot 7-226. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 173 of 302

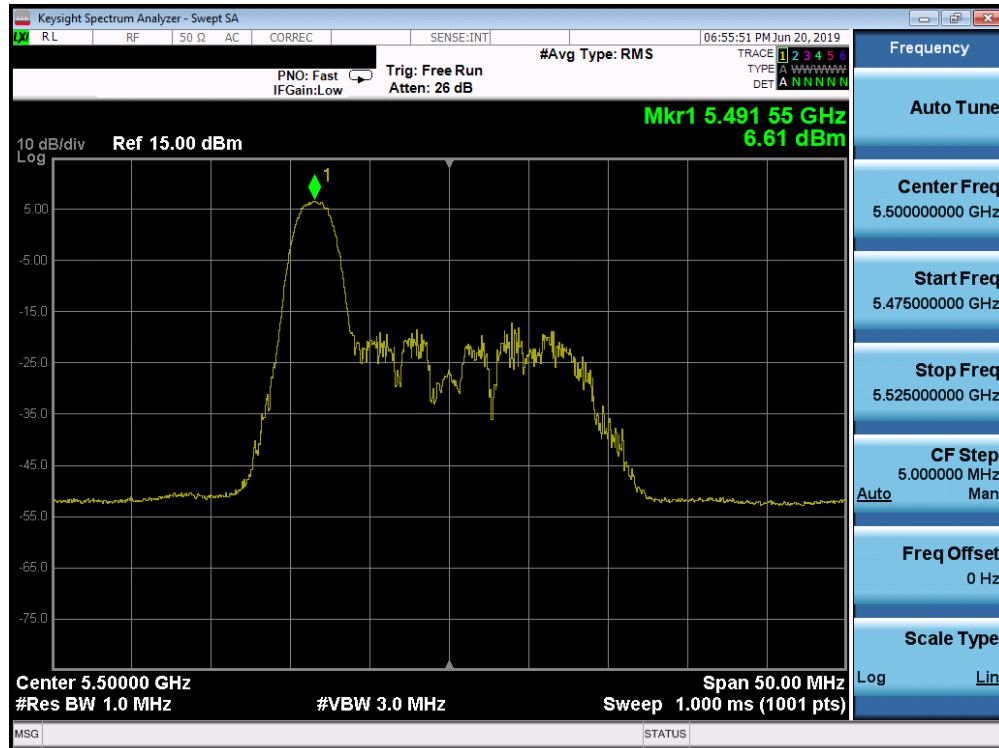


Plot 7-227. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 62)

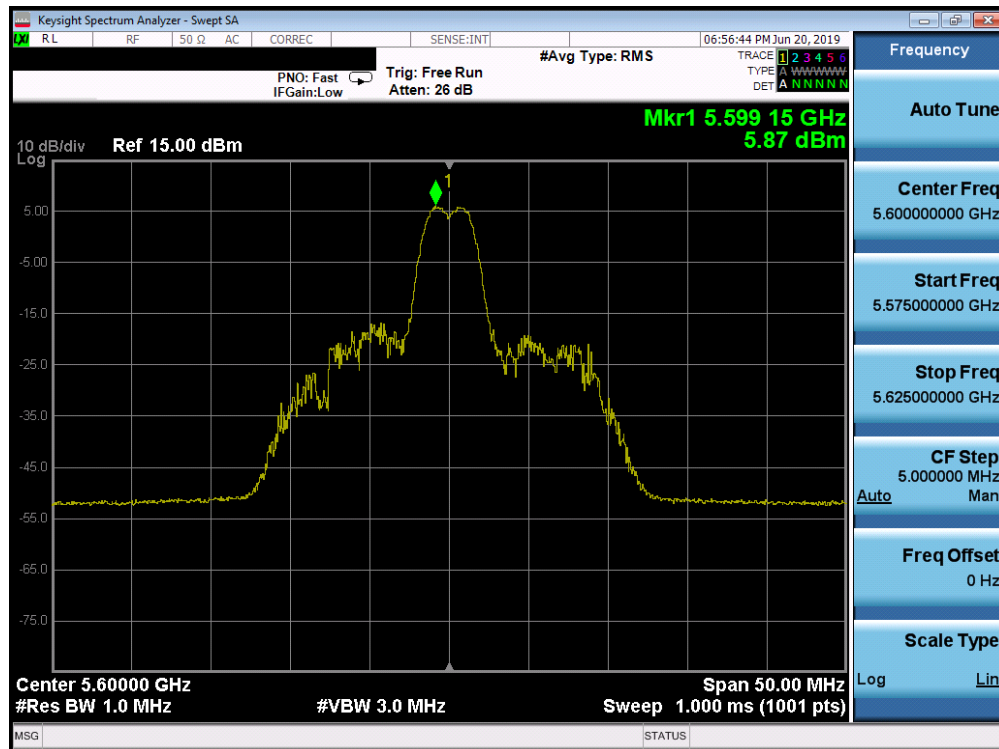


Plot 7-228. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 174 of 302

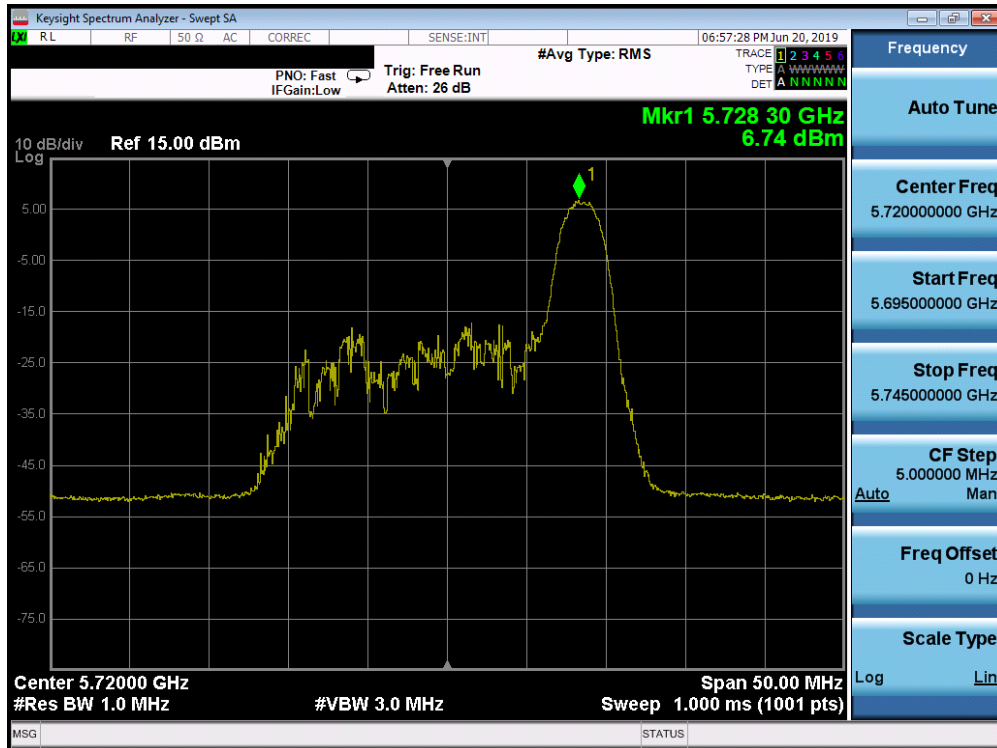


Plot 7-229. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 100)

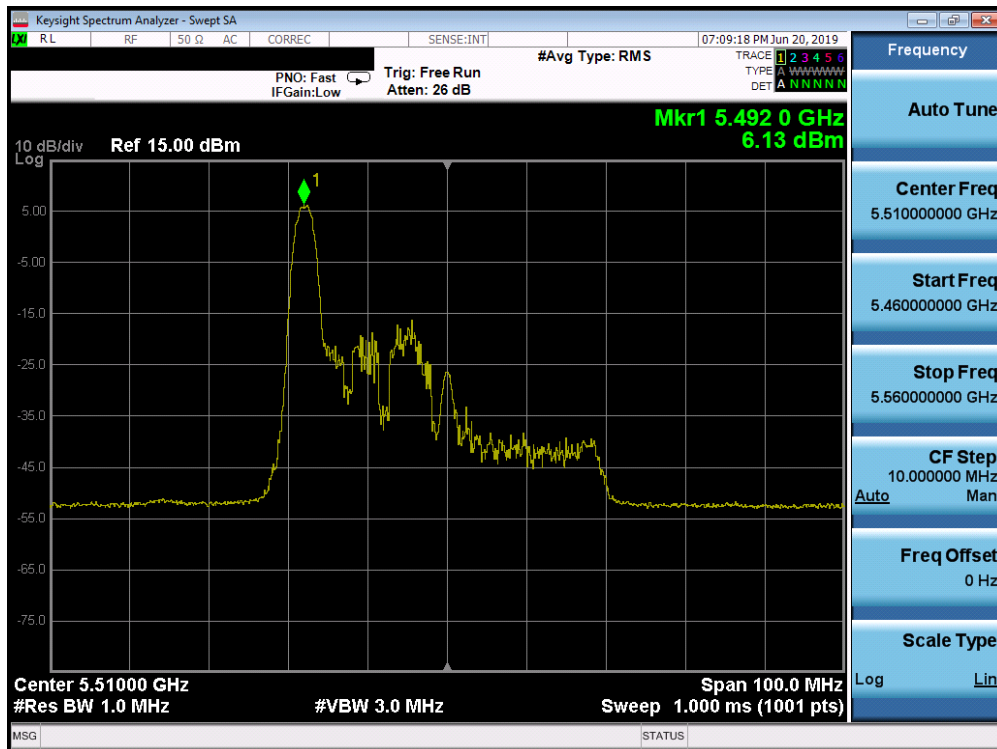


Plot 7-230. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 120)

FCC ID: A3LSMN976V	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 175 of 302

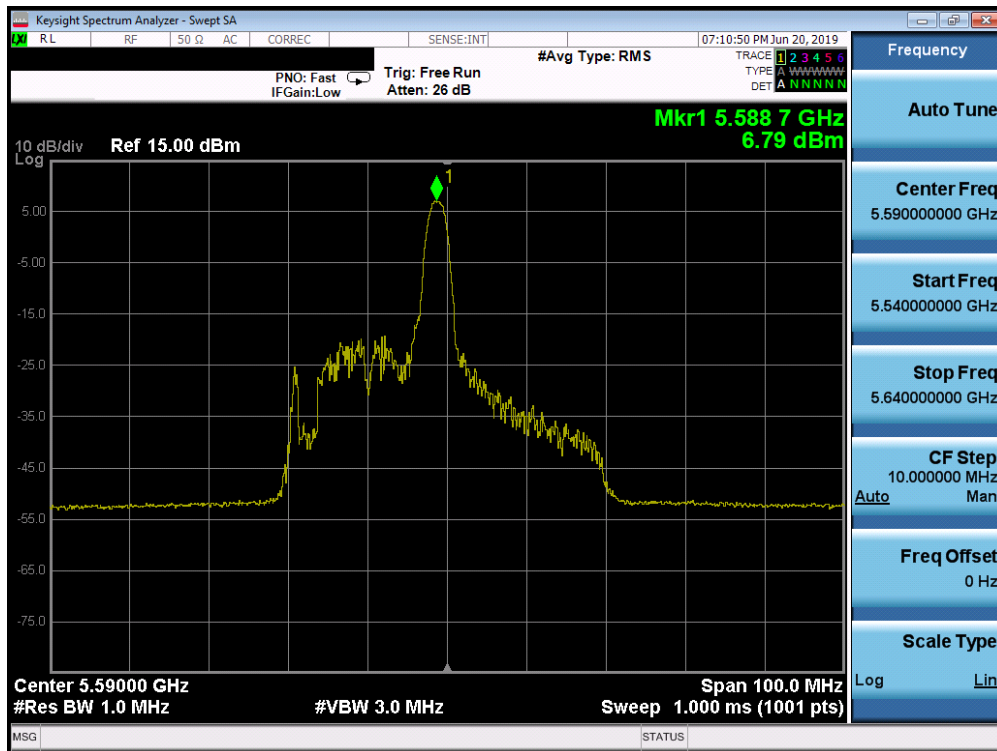


Plot 7-231. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 144)

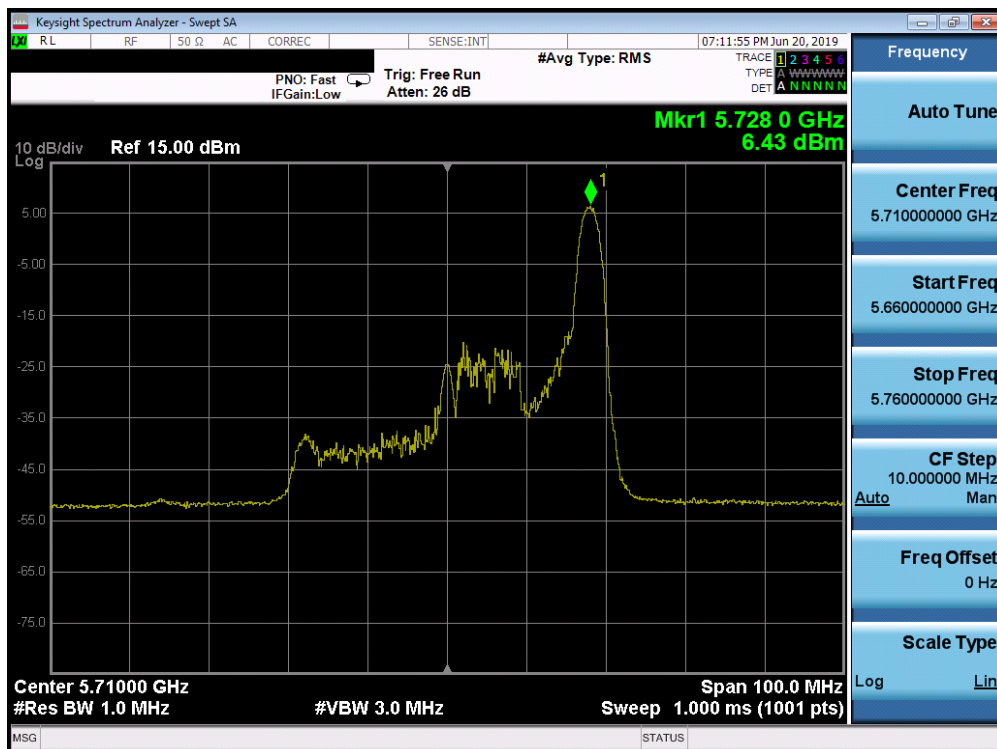


Plot 7-232. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 102)

FCC ID: A3LSMN976V	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 176 of 302

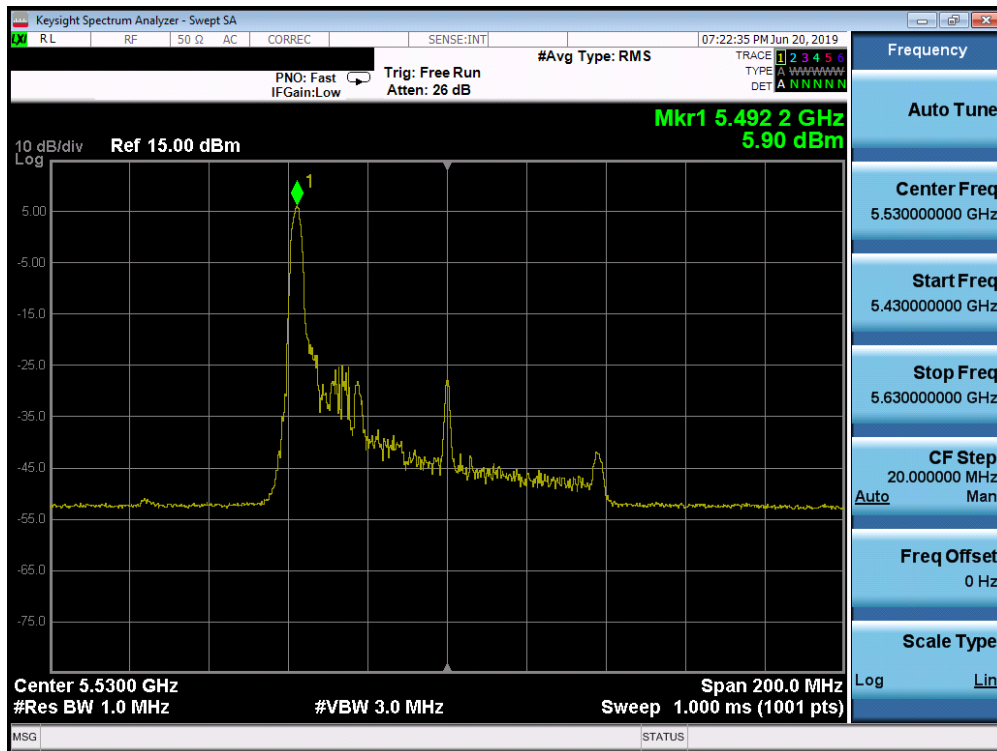


Plot 7-233. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 118)

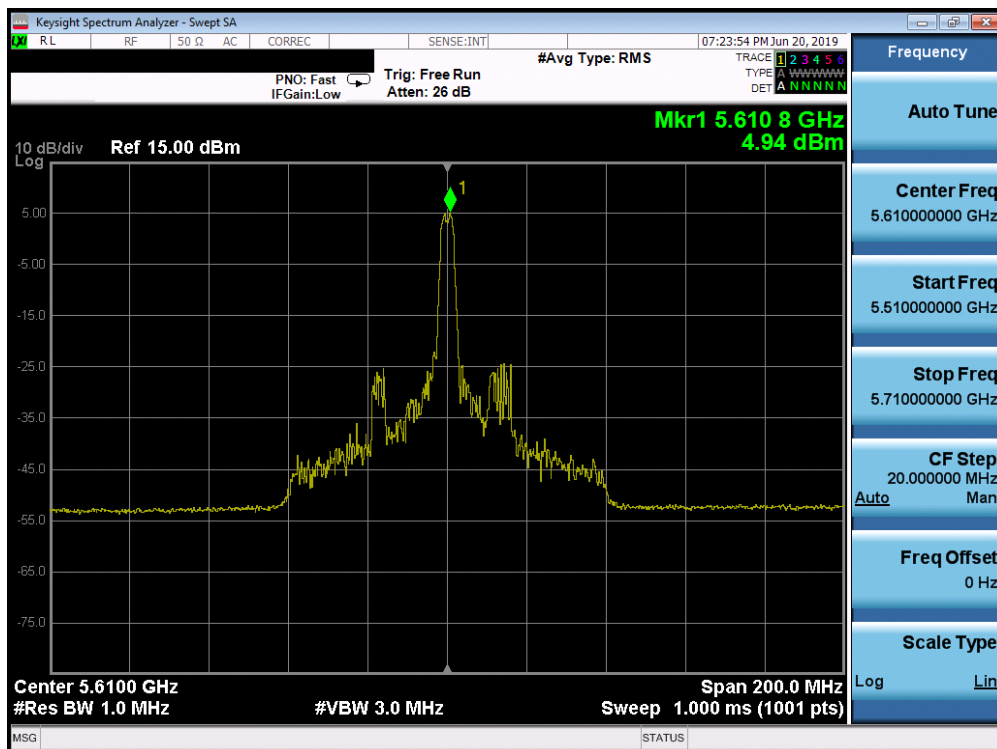


Plot 7-234. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 142)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 177 of 302

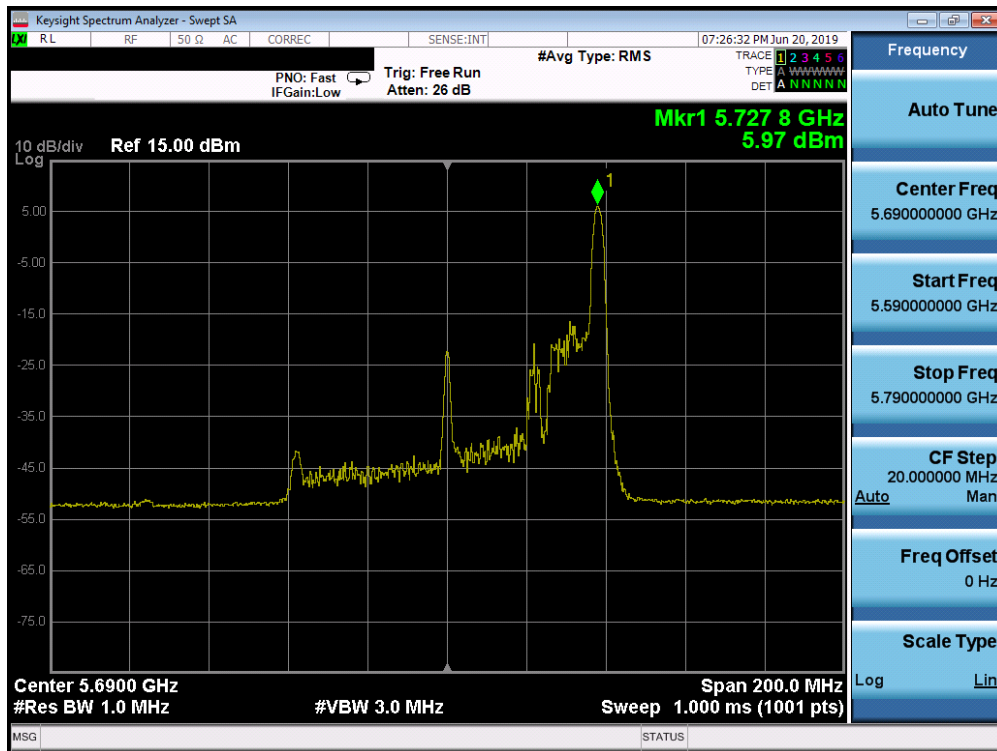


Plot 7-235. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 106)

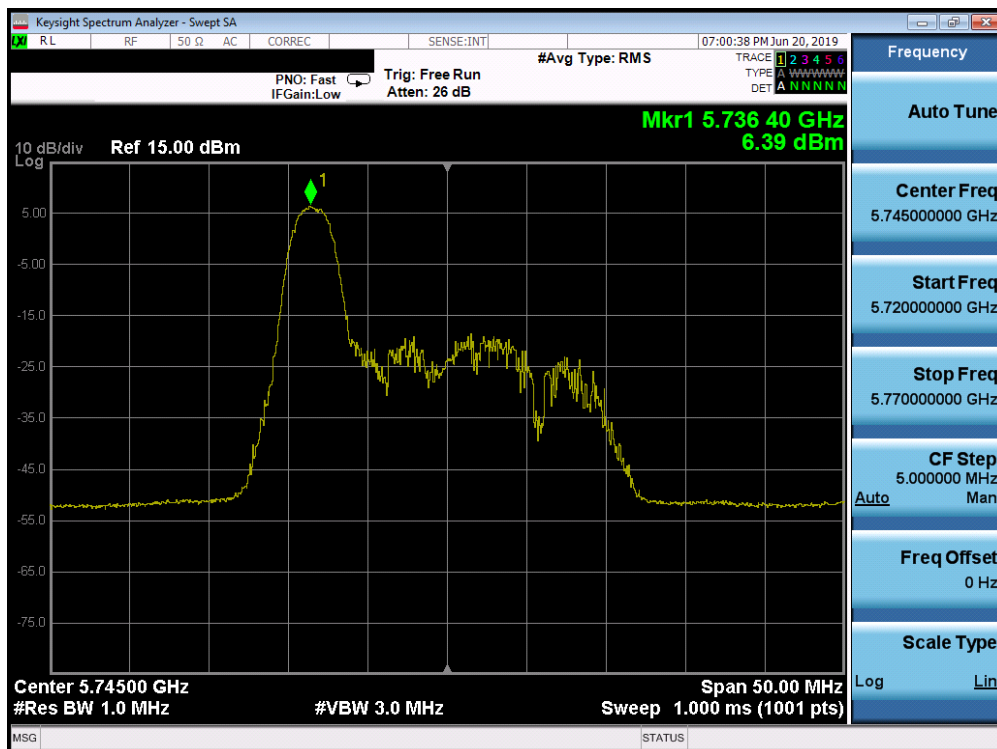


Plot 7-236. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 122)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 178 of 302

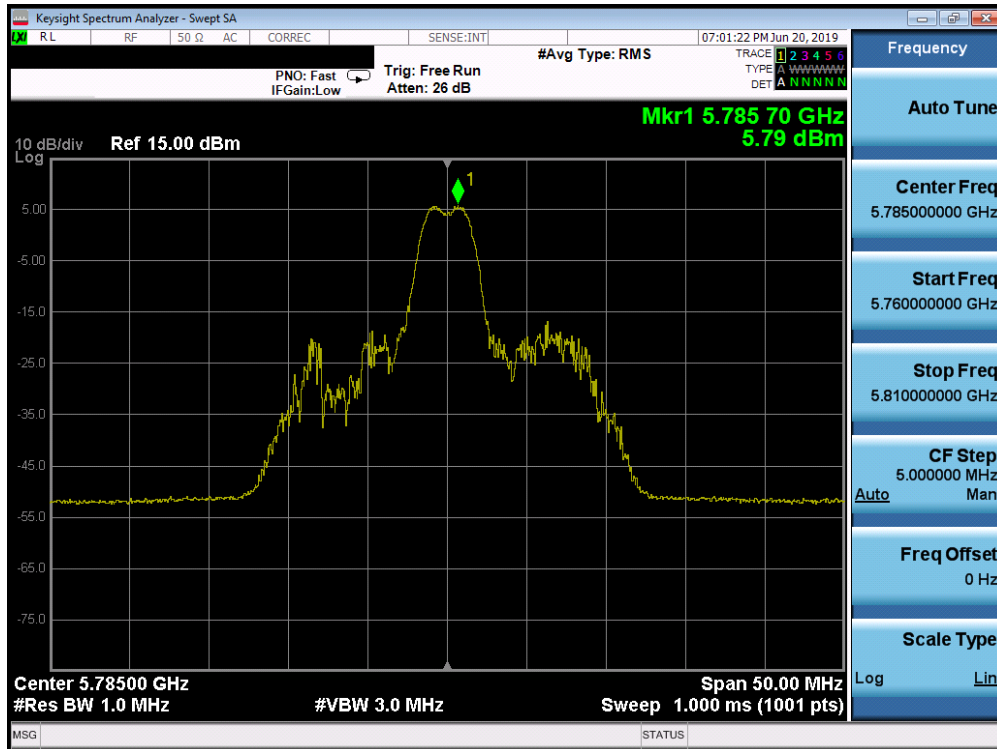


Plot 7-237. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 138)

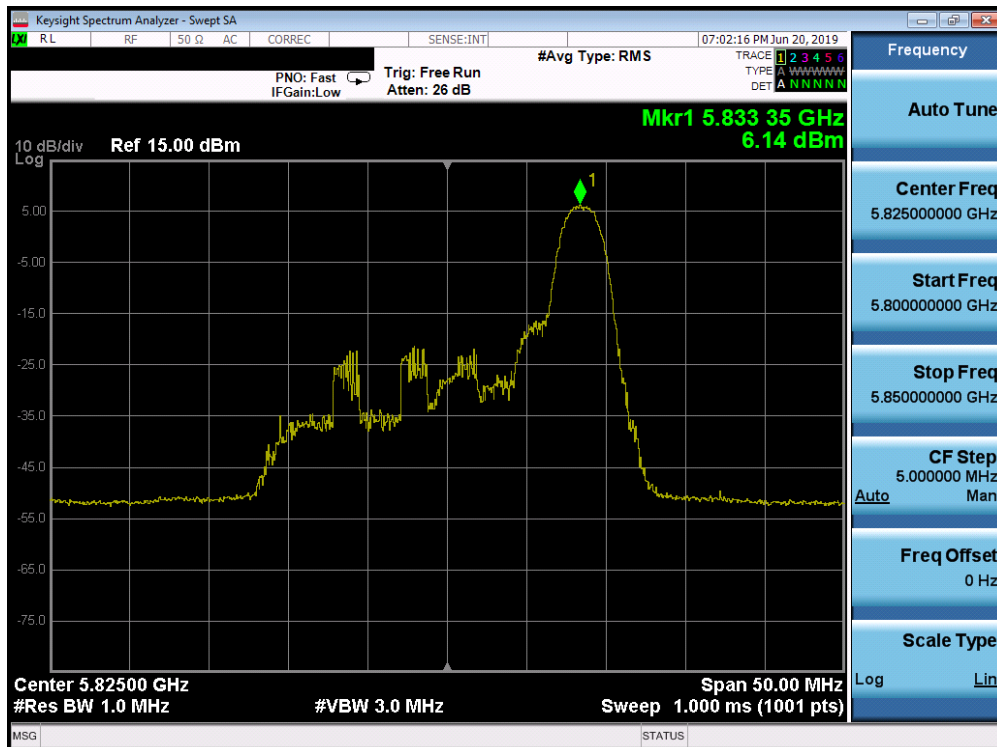


Plot 7-238. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 149)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 179 of 302

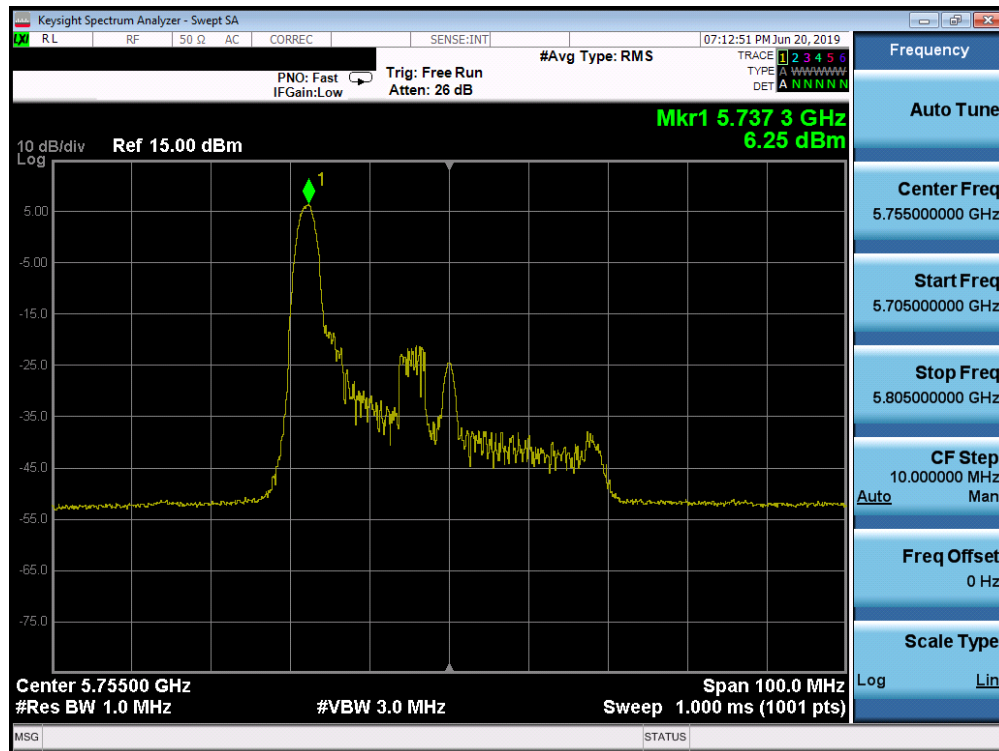


Plot 7-239. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 157)

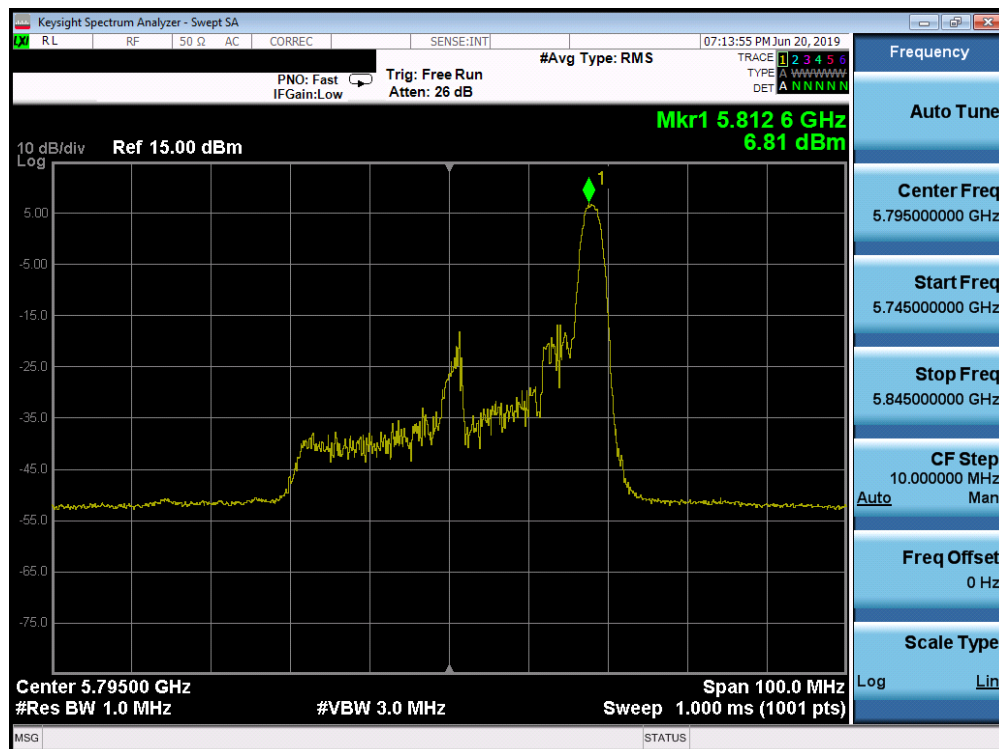


Plot 7-240. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 165)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 180 of 302

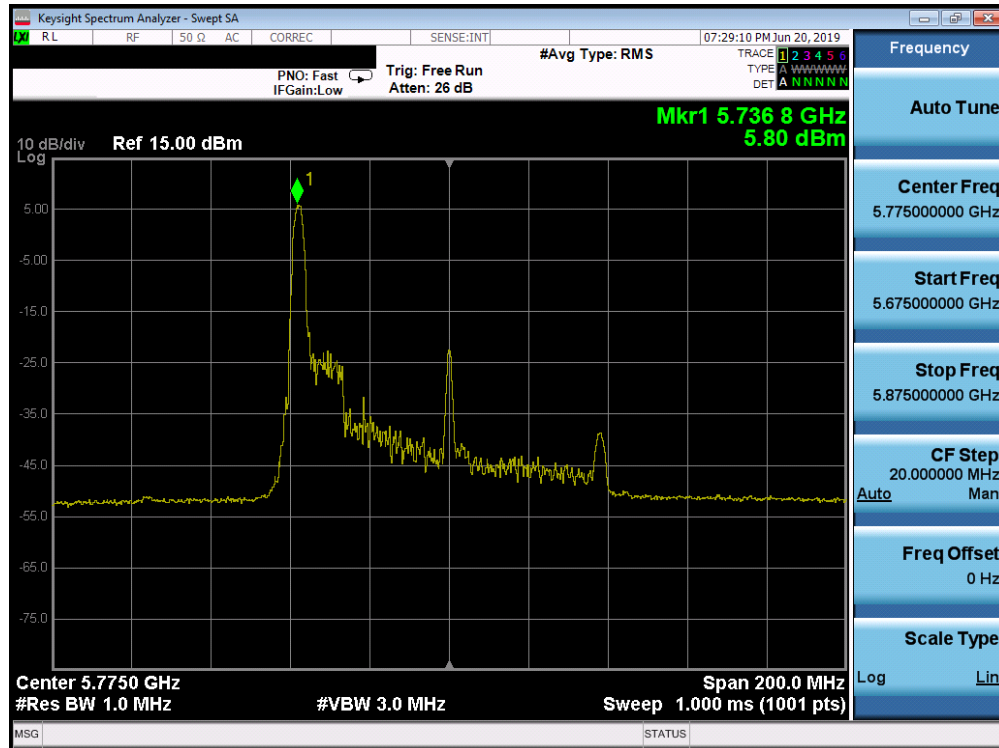


Plot 7-241. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 151)

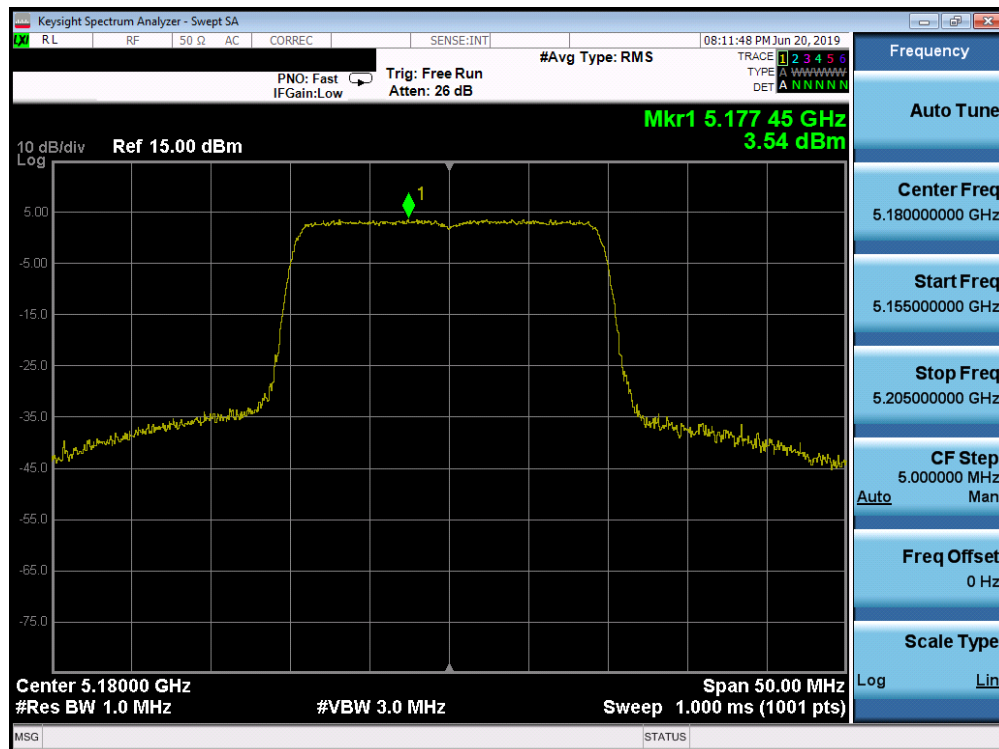


Plot 7-242. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 159)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 181 of 302

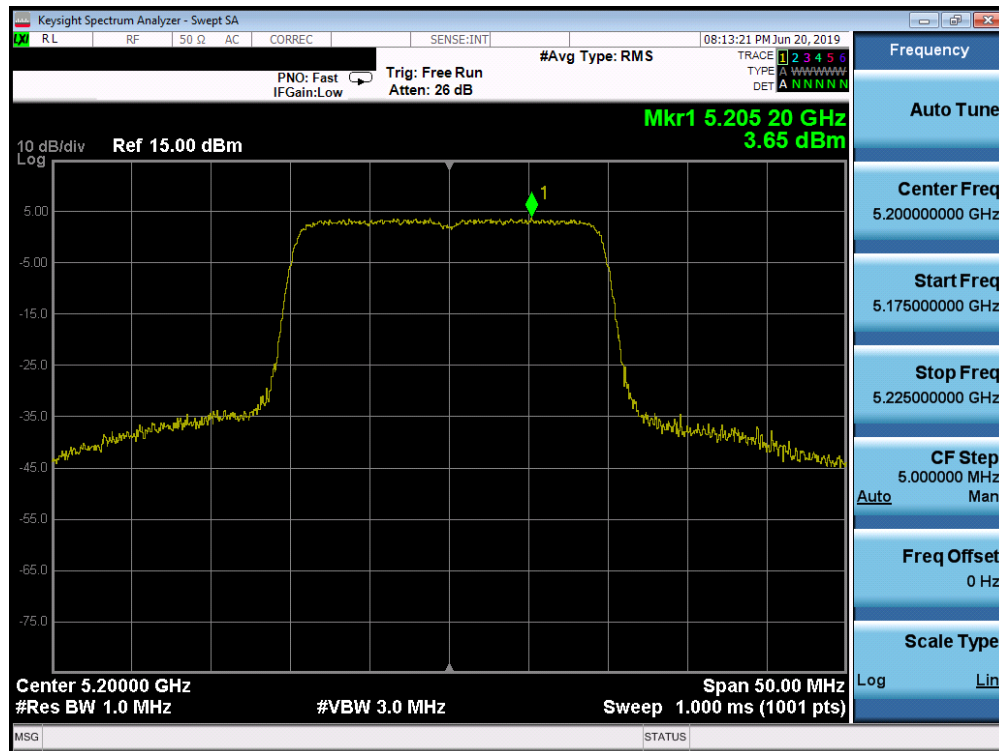


Plot 7-243. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 155)

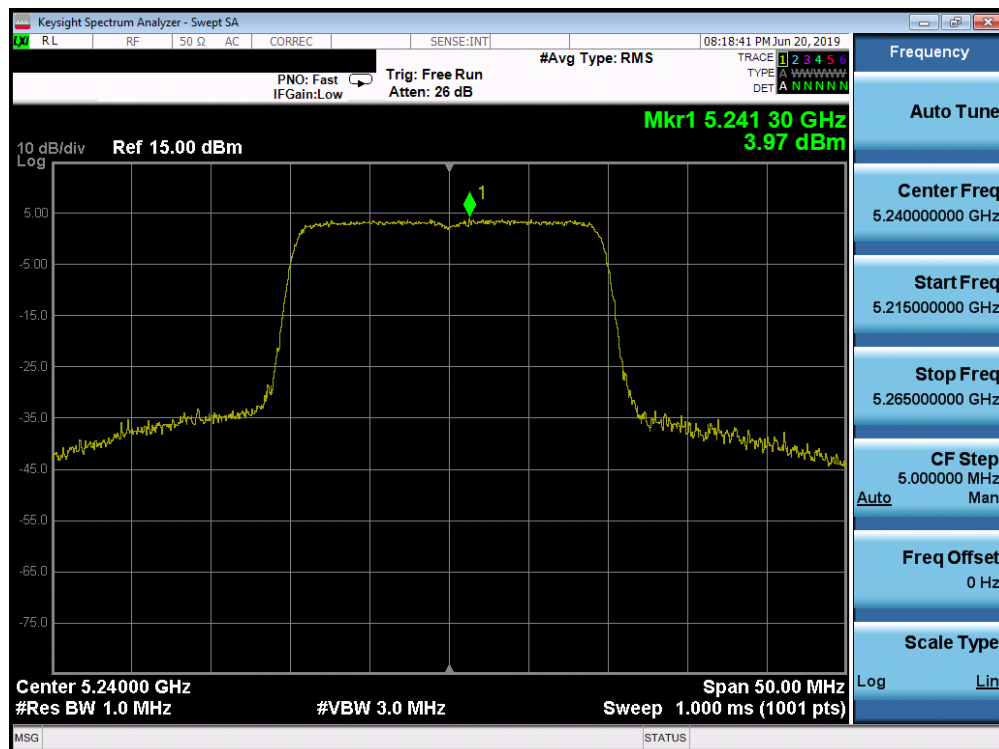


Plot 7-244. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 36)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 182 of 302



Plot 7-245. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 40)



Plot 7-246. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 48)

FCC ID: A3LSMN976V	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905130071-09.A3L	Test Dates: 05/14 - 07/02/2019	EUT Type: Portable Handset		Page 183 of 302