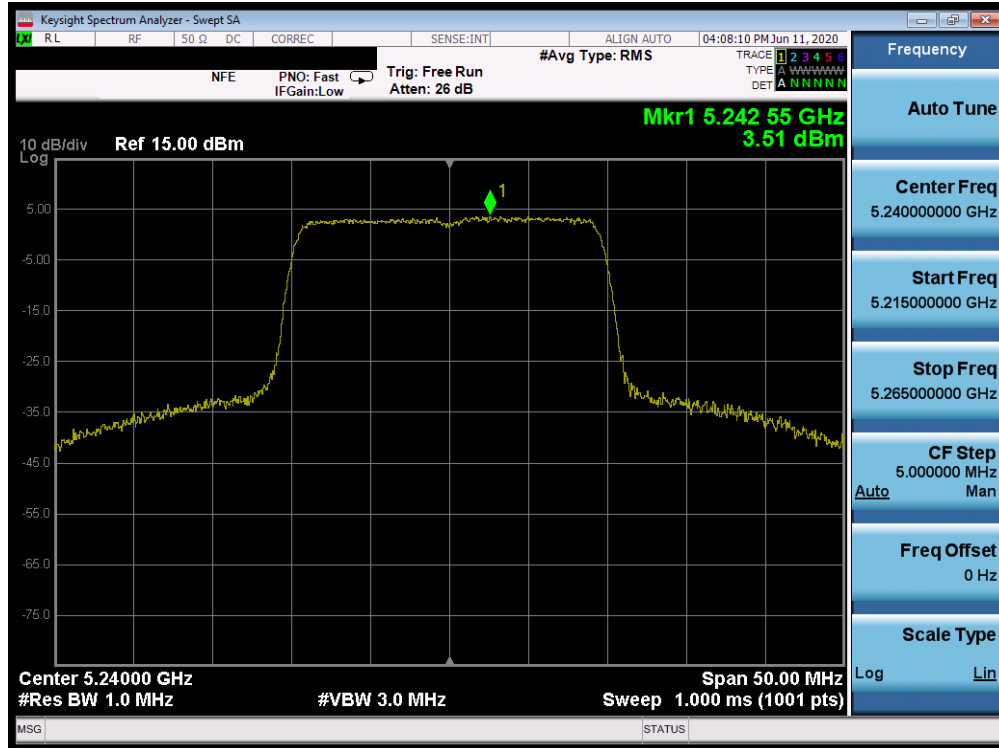
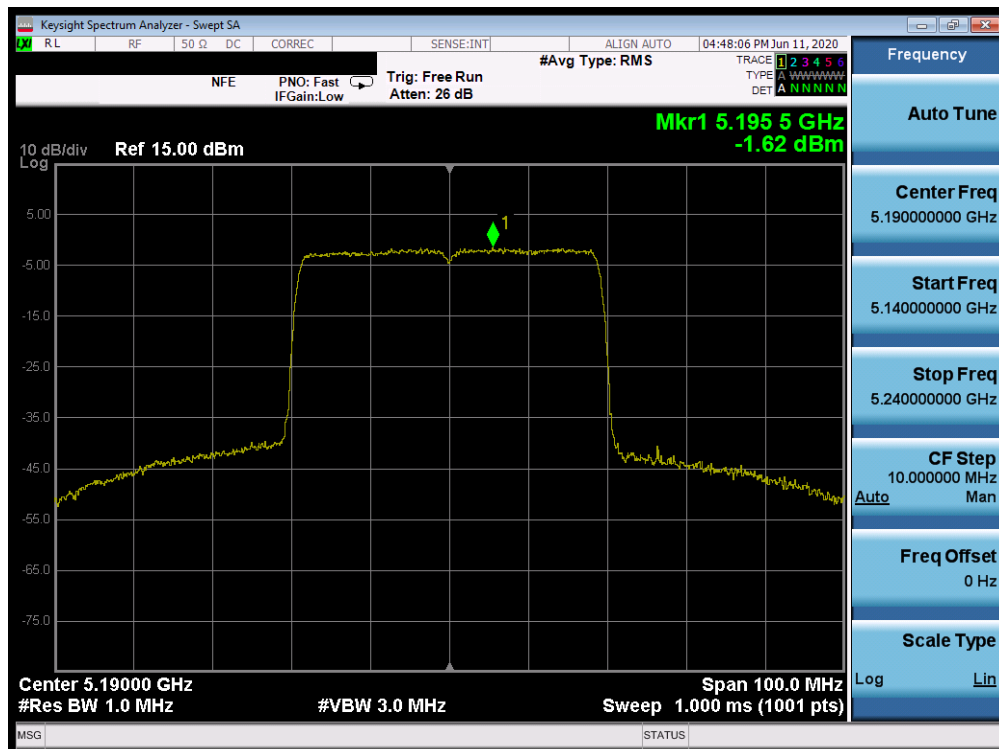


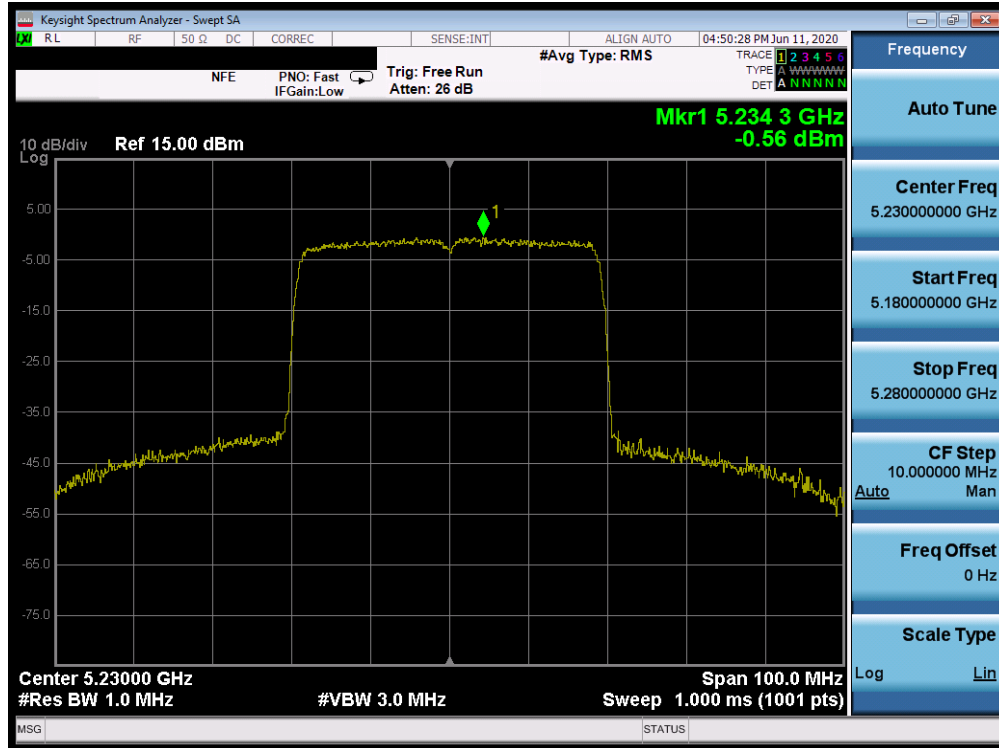


Plot 7-192. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 48)

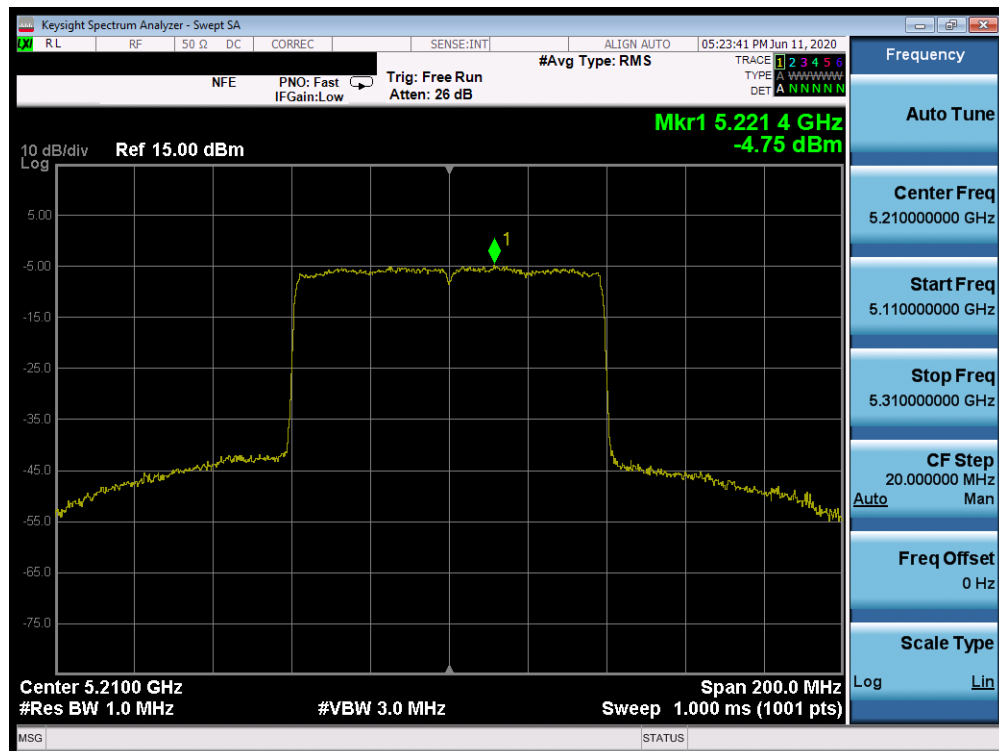


Plot 7-193. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 38)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1-A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 150 of 296

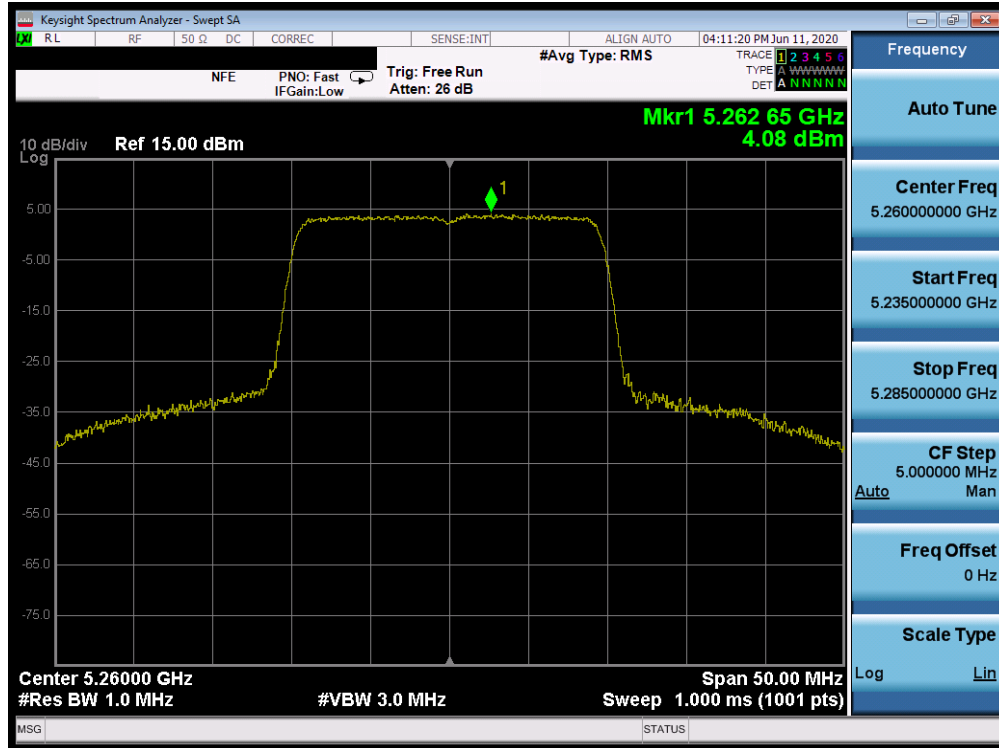


Plot 7-194. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 46)

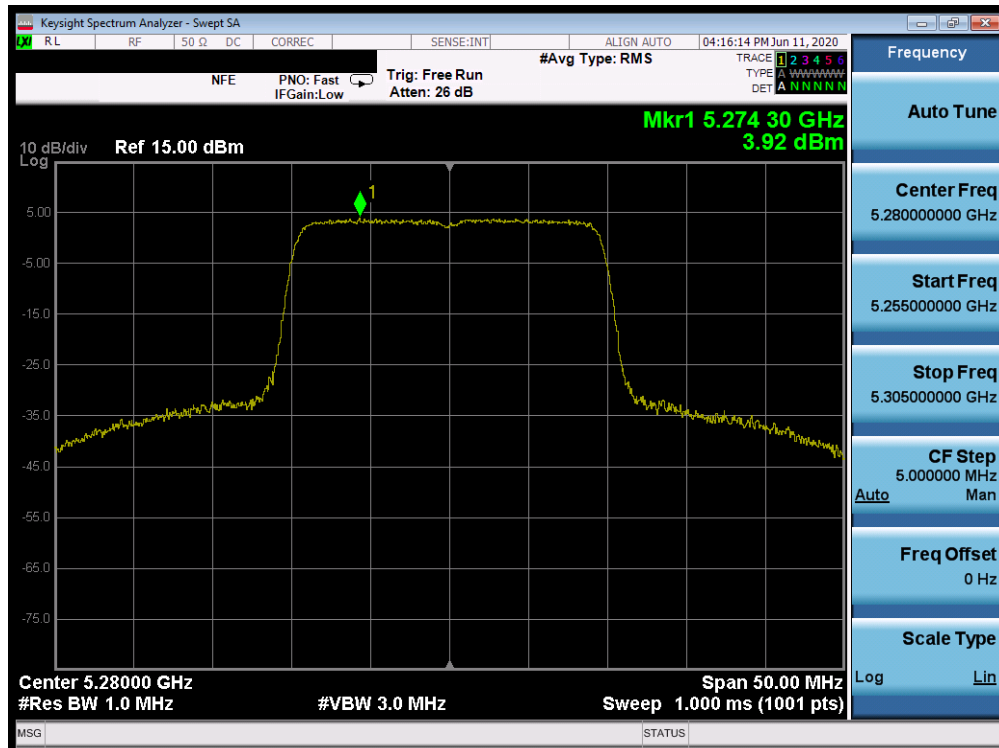


Plot 7-195. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 42)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 151 of 296

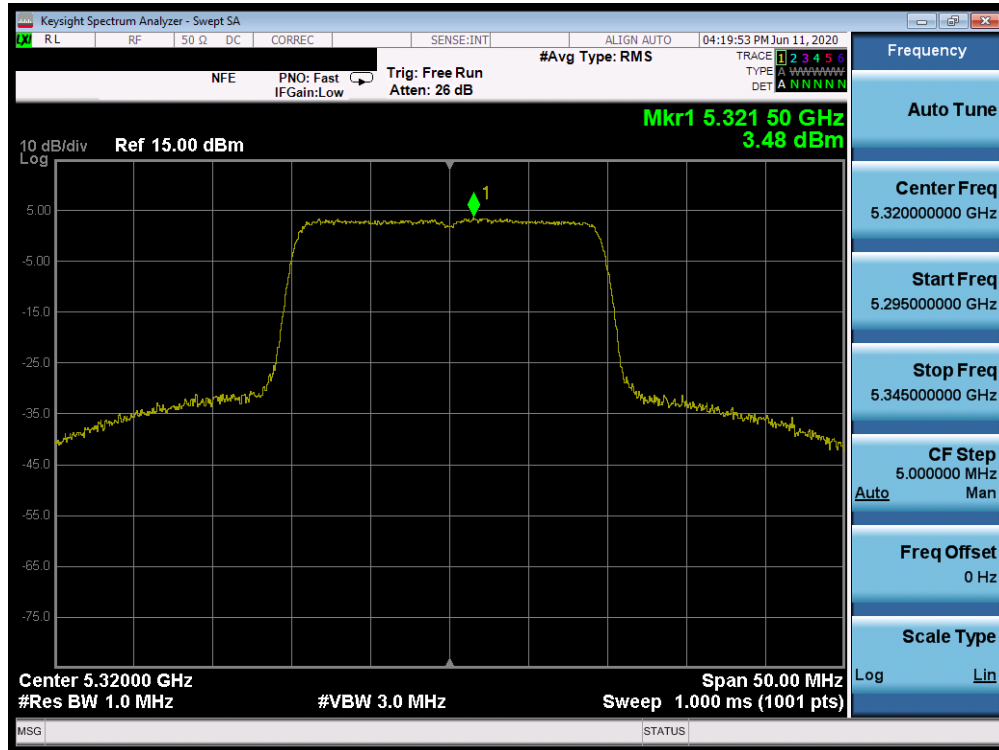


Plot 7-196. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 52)

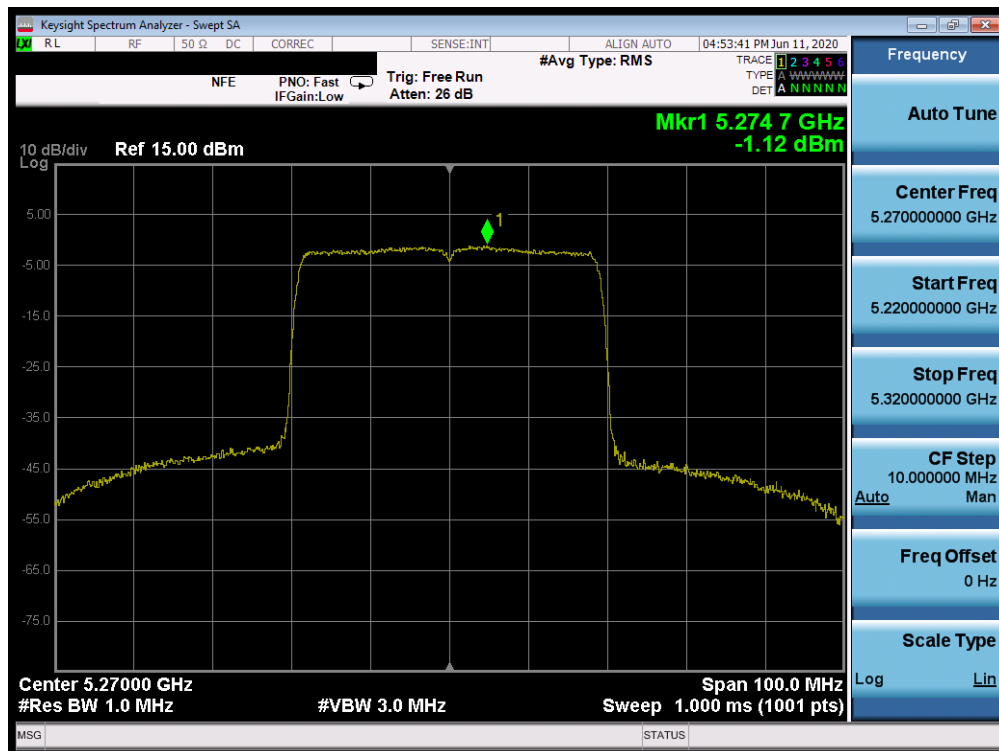


Plot 7-197. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 152 of 296

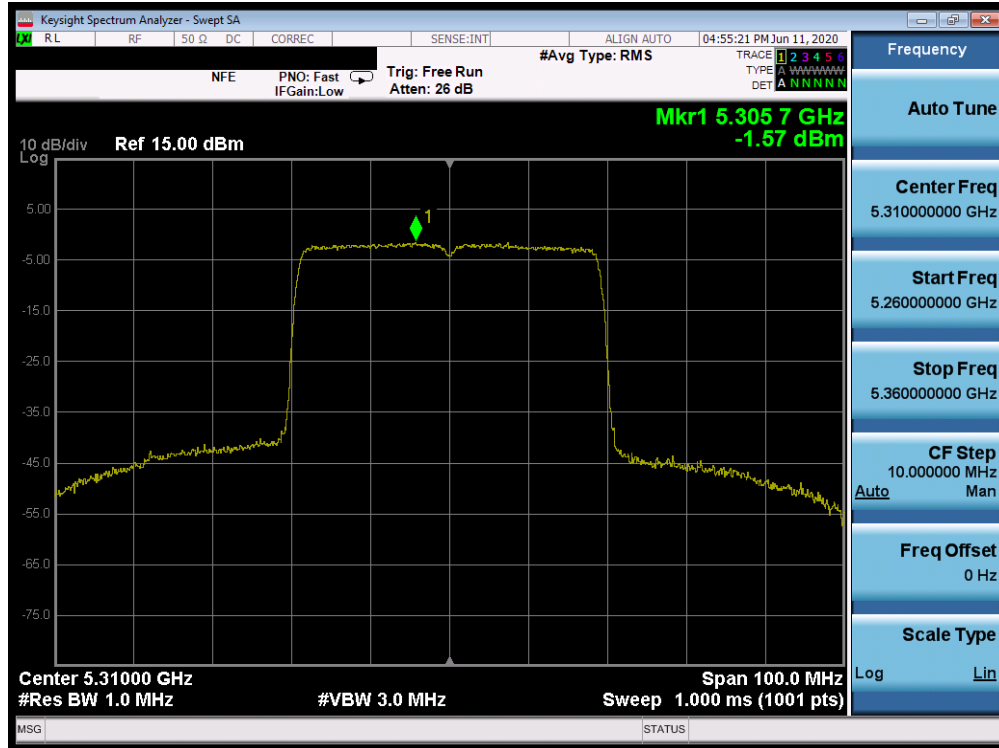


Plot 7-198. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 64)

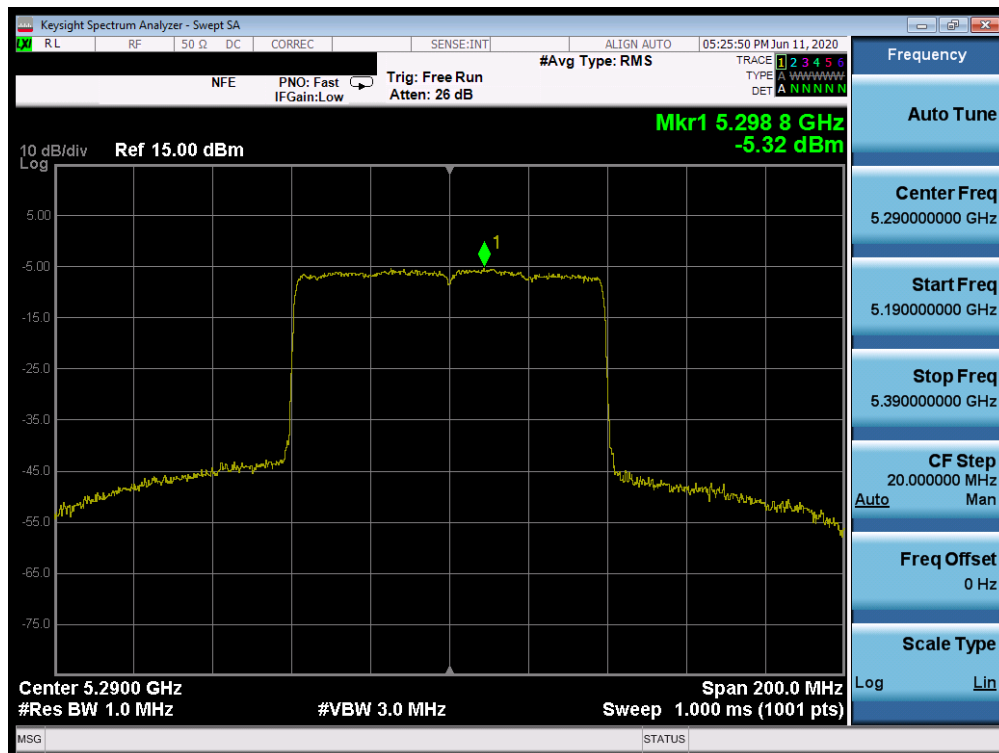


Plot 7-199. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 153 of 296

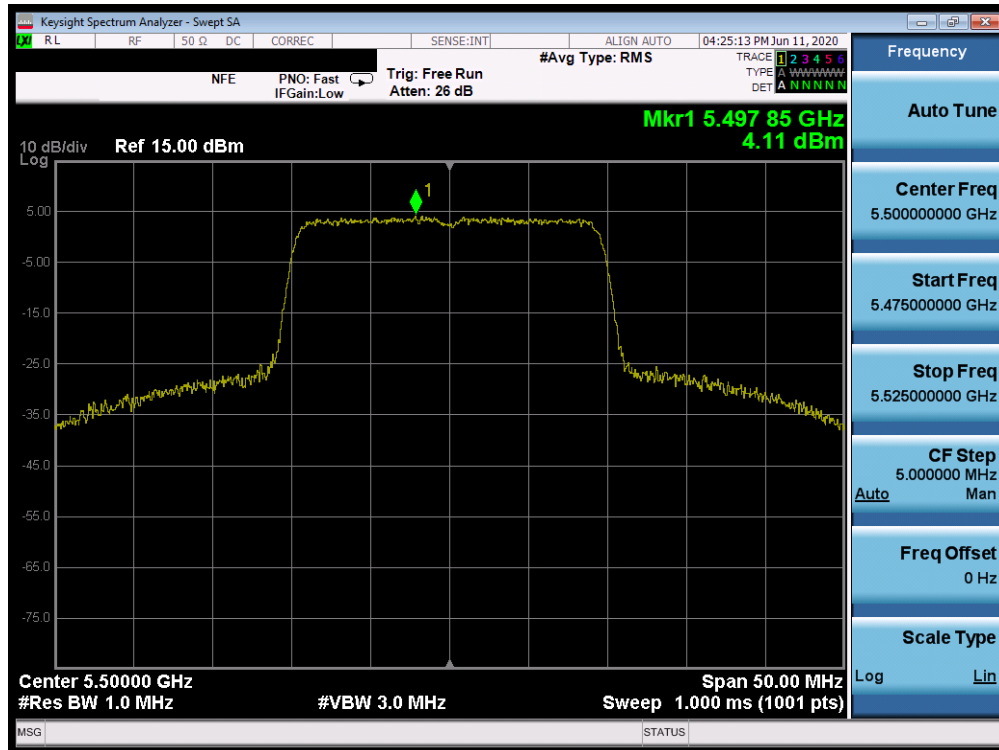


Plot 7-200. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 62)

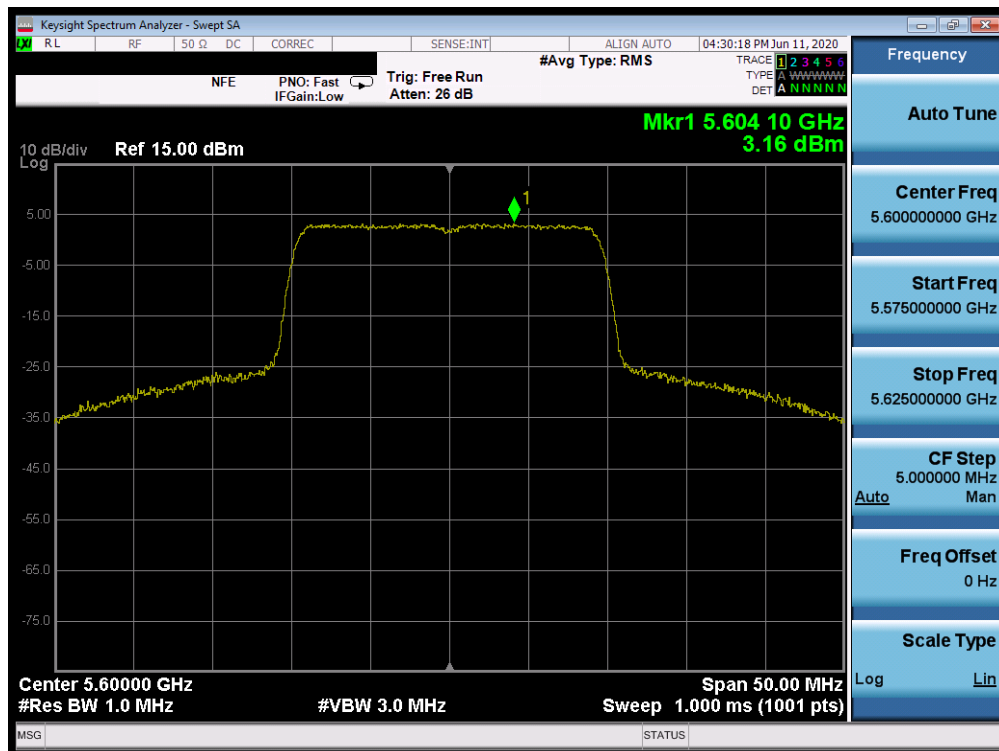


Plot 7-201. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 154 of 296

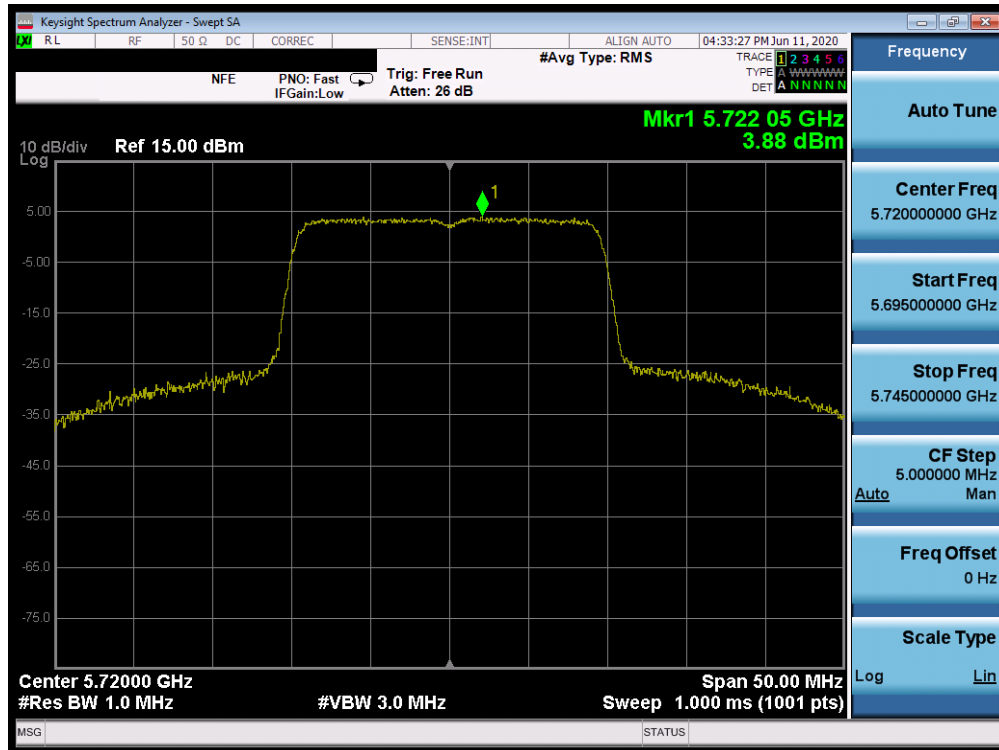


Plot 7-202. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 100)

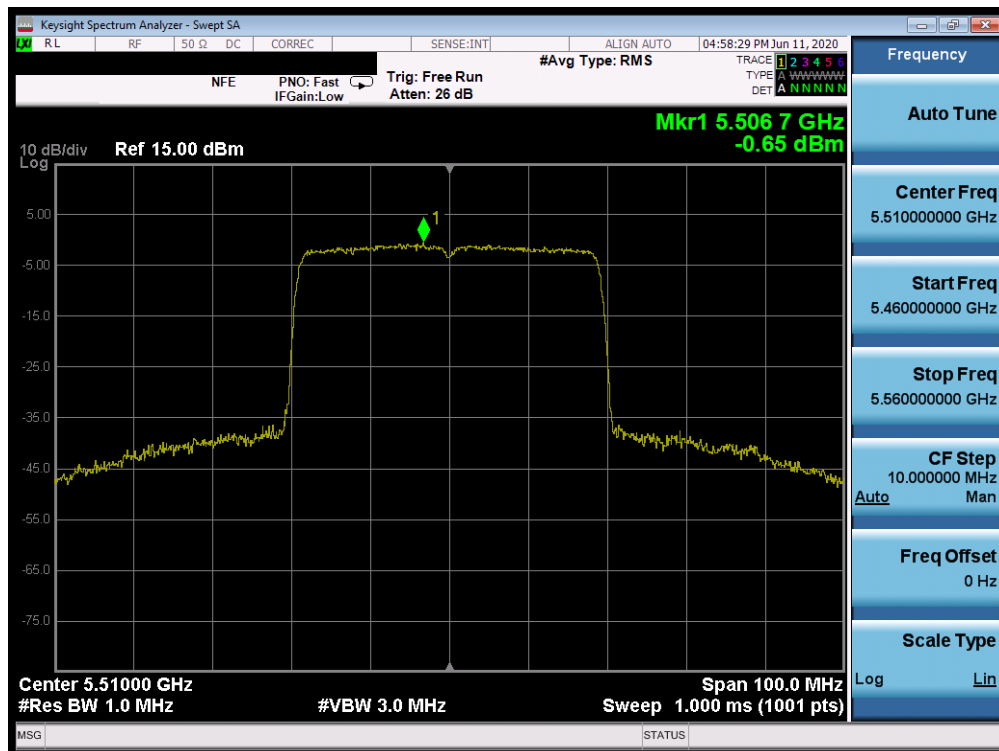


Plot 7-203. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 120)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 155 of 296

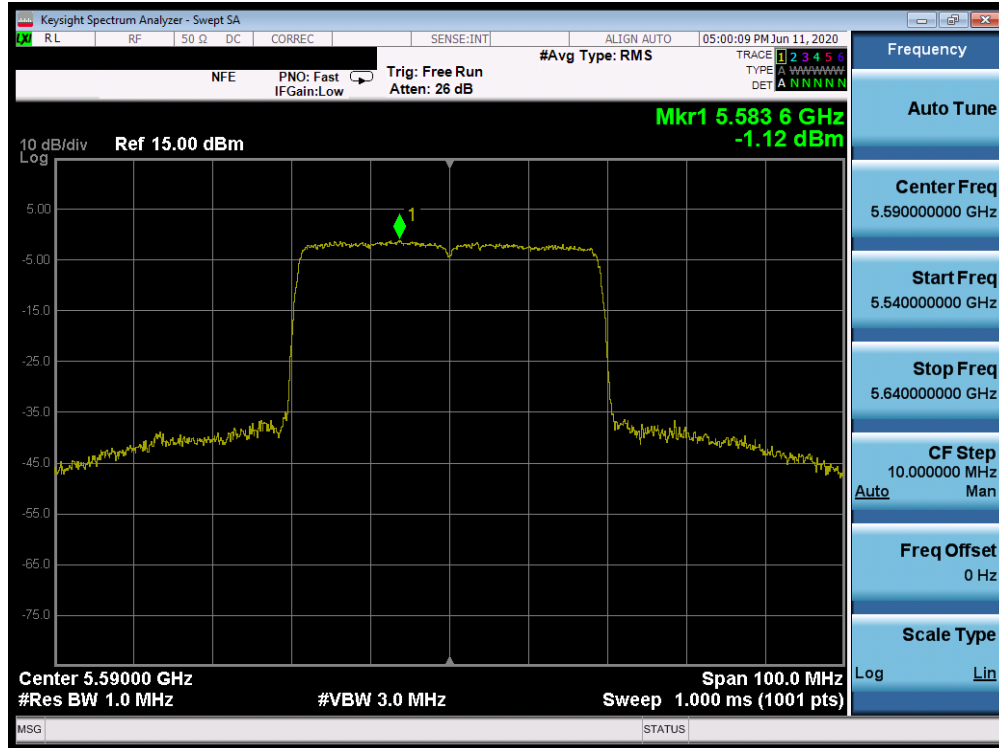


Plot 7-204. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 144)

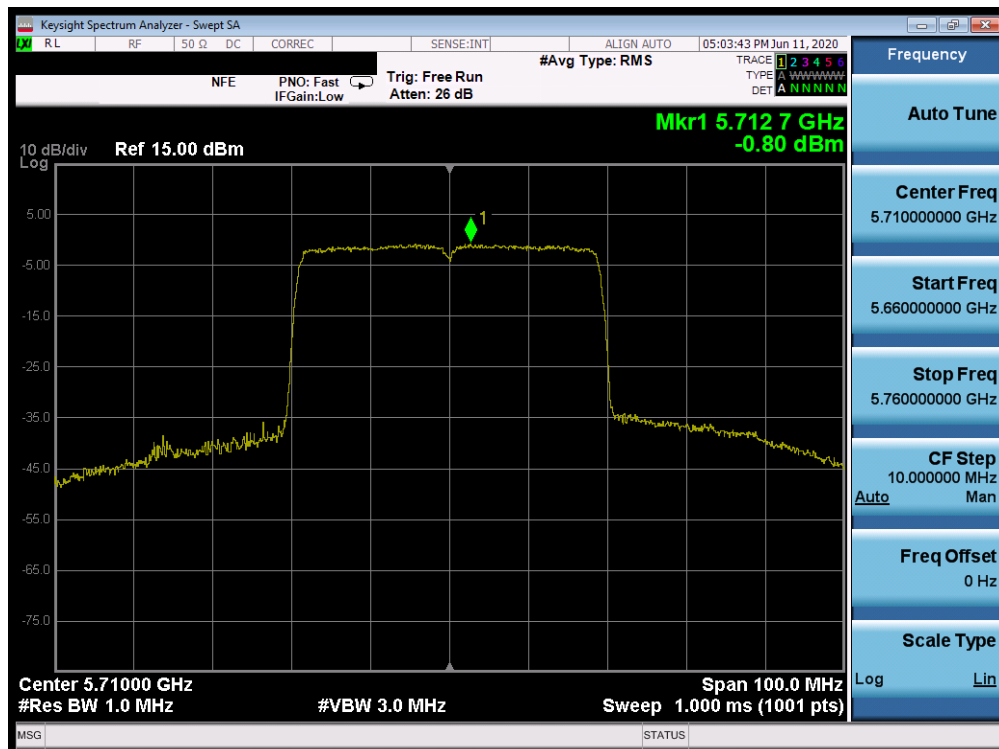


Plot 7-205. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 102)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 156 of 296



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

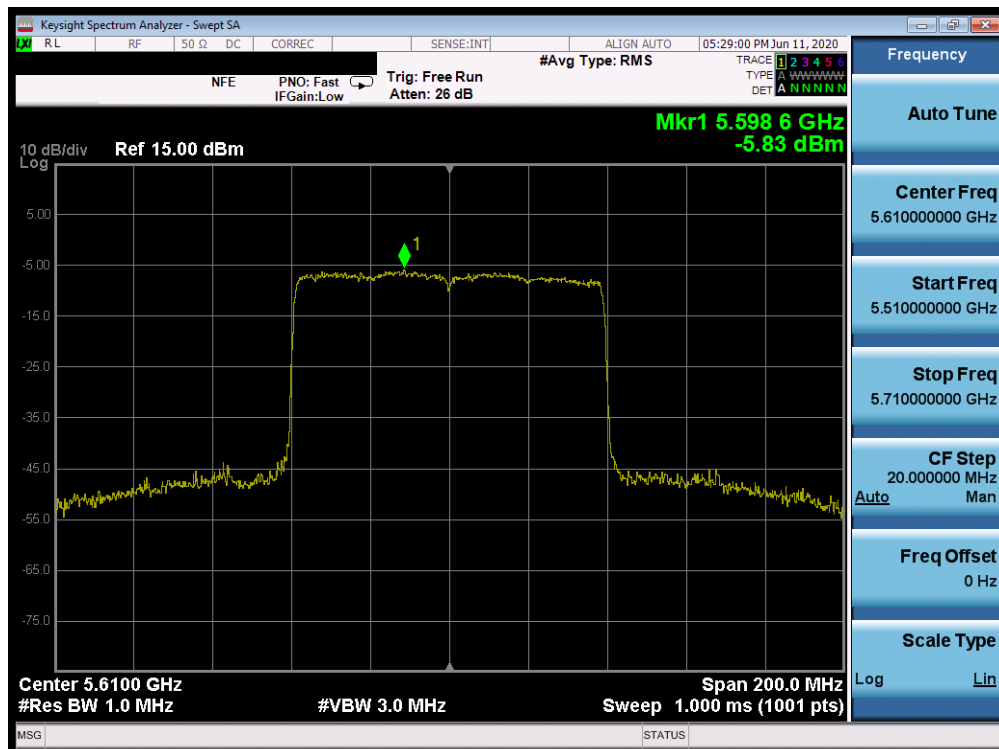


Plot 7-207. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 142)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 157 of 296



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



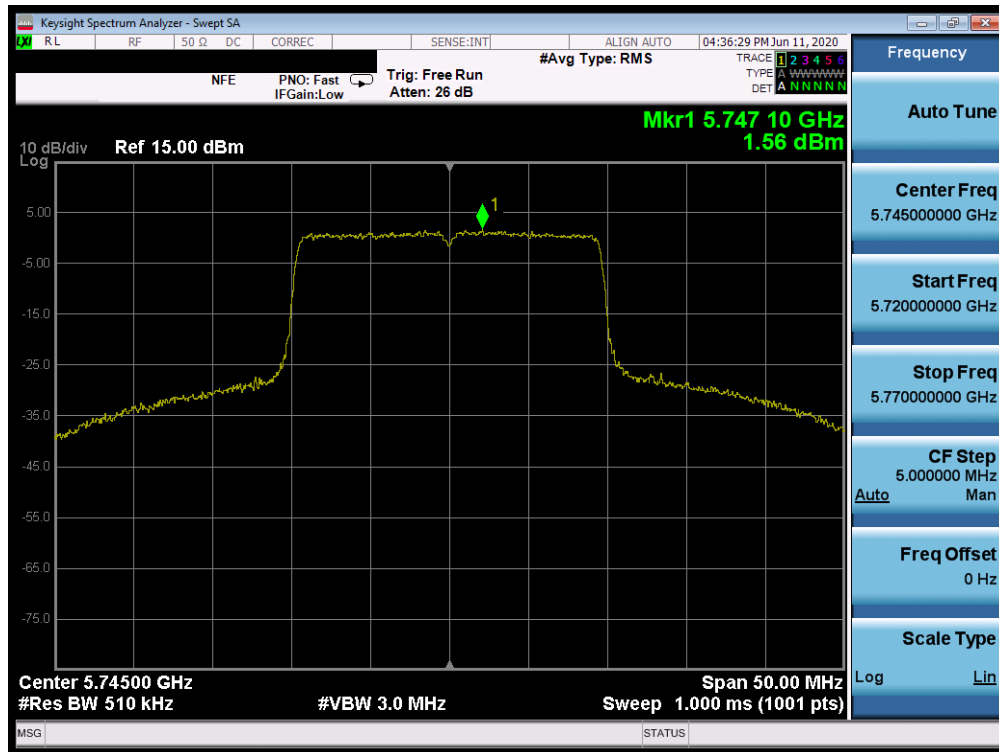
Plot 7-209. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 122)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1-A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 158 of 296

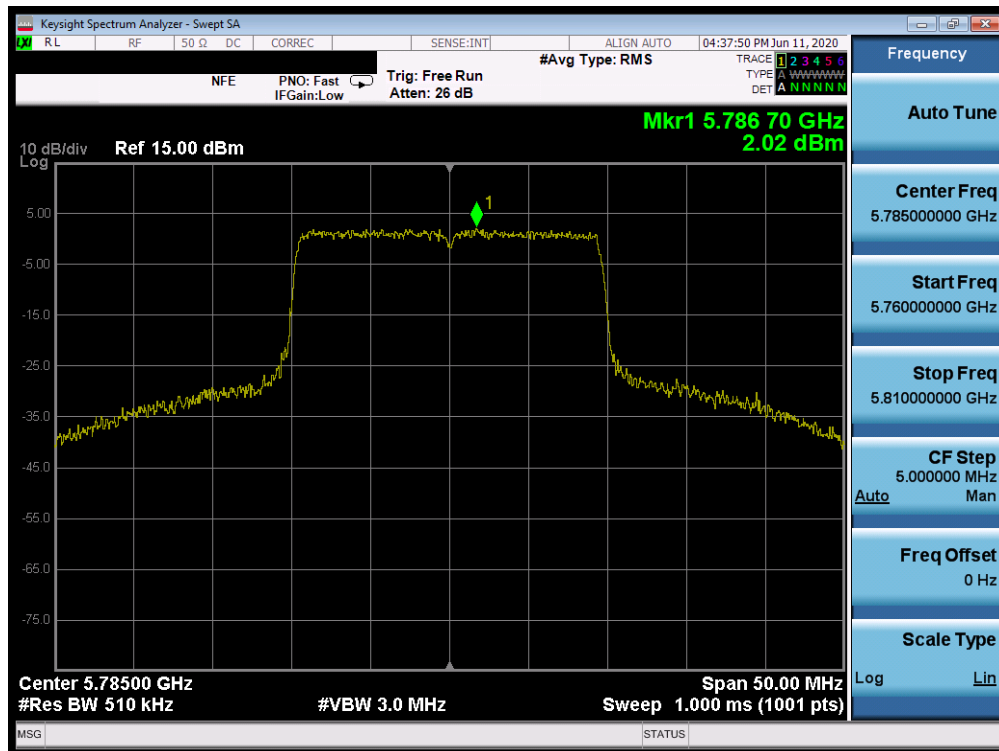
	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density	Margin [dB]
Band 3	5745	149	ax (20MHz)	242T	MCS0	1.56	30.00	-28.44
	5785	157	ax (20MHz)	242T	MCS0	2.02	30.00	-27.98
	5825	165	ax (20MHz)	242T	MCS0	1.24	30.00	-28.76
	5755	151	ax (40MHz)	484T	MCS0	-3.88	30.00	-33.88
	5795	159	ax (40MHz)	484T	MCS0	-2.92	30.00	-32.92
	5775	155	ax (80MHz)	996T	MCS0	-5.05	30.00	-35.05

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

FCC ID: A3LSMN981W		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 160 of 296

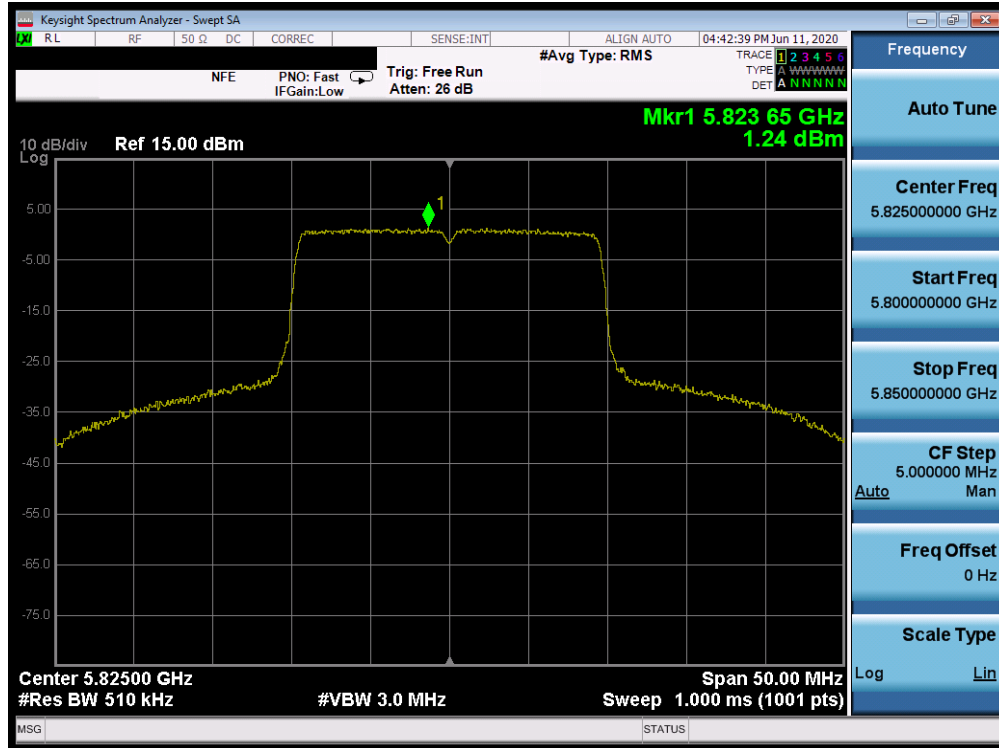


Plot 7-211. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 149)

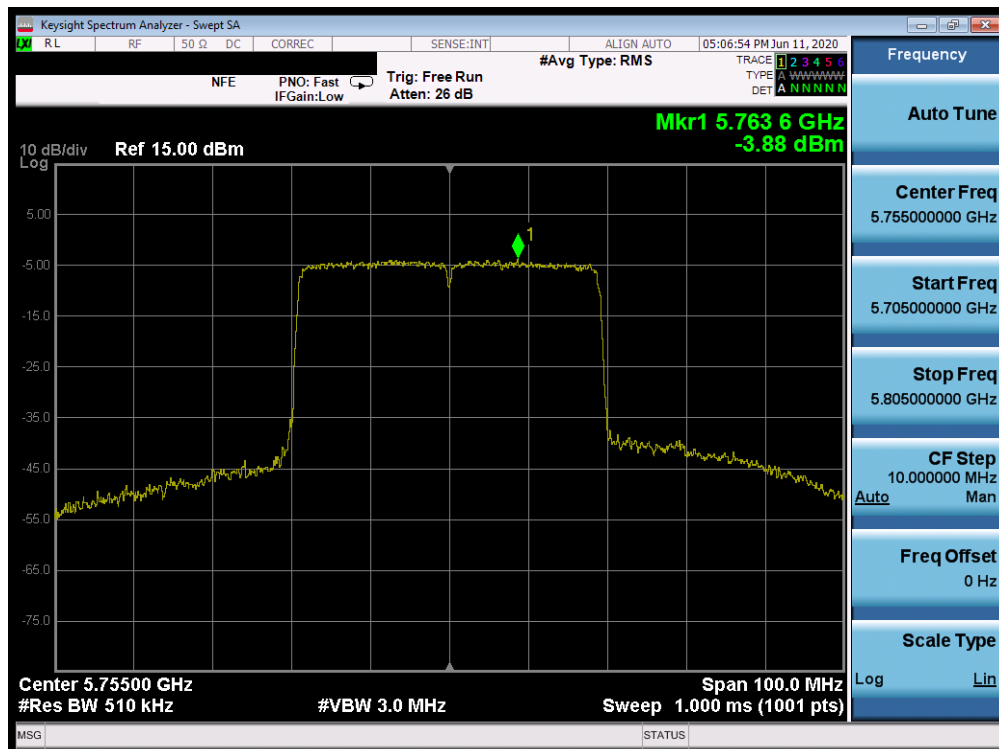


Plot 7-212. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 157)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 161 of 296

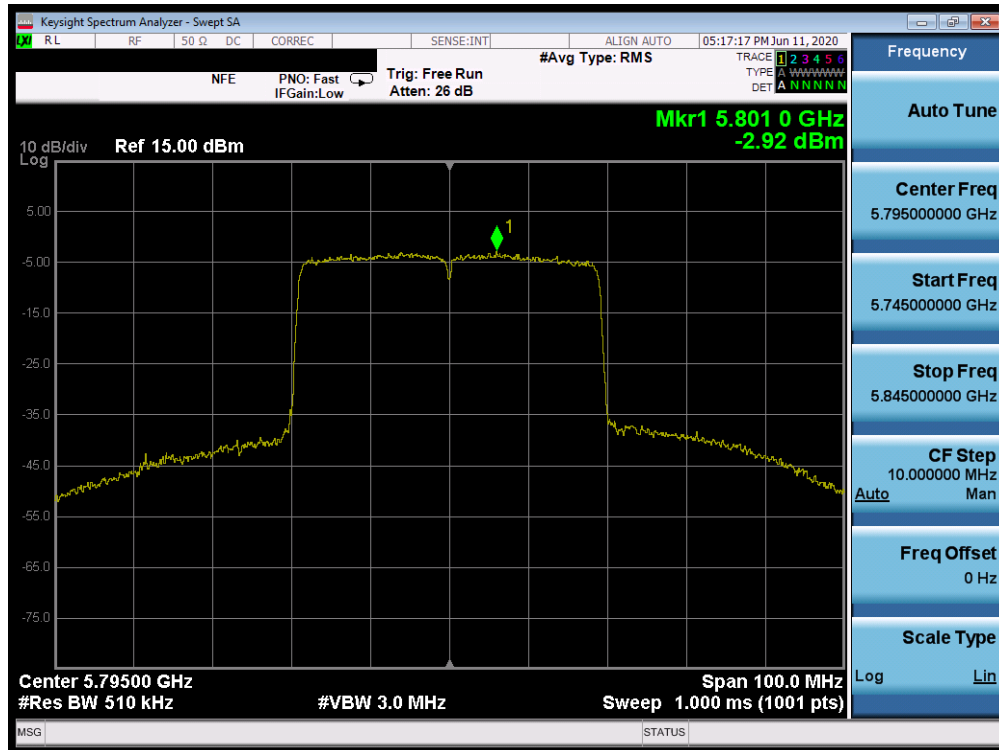


Plot 7-213. Power Spectral Density Plot SISO ANT2 (20 MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 165)

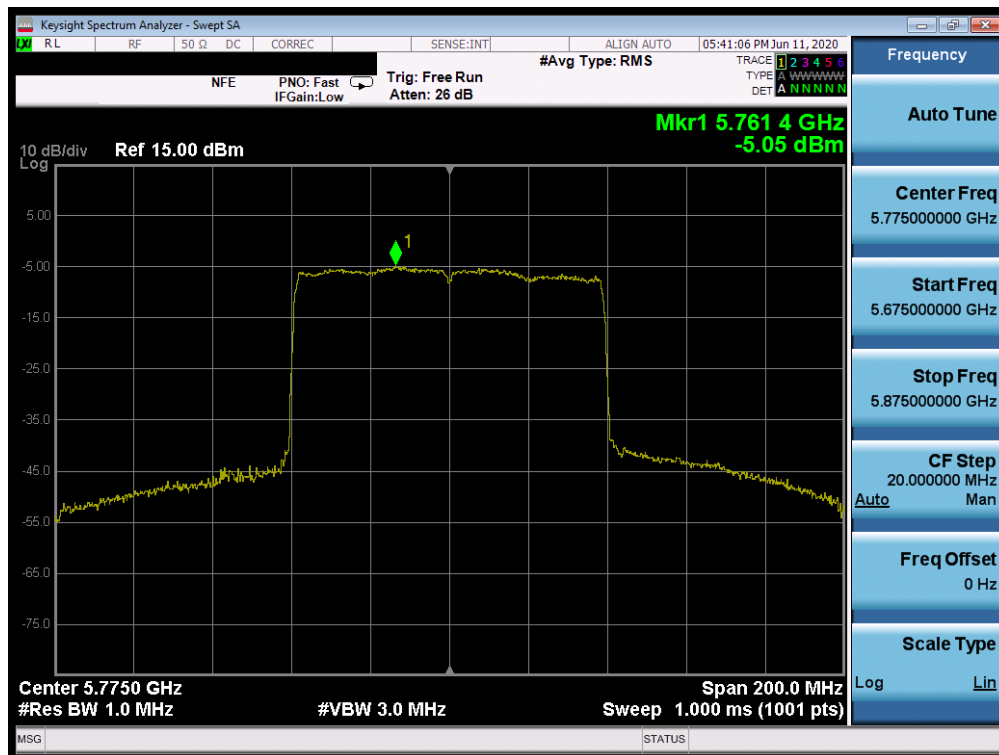


Plot 7-214. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 151)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 162 of 296



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: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 163 of 296

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	6.06	4.46	8.34	11.00	-2.66
	5200	40	ax (20MHz)	26T	MCS0	5.54	4.60	8.11	11.00	-2.89
	5240	48	ax (20MHz)	26T	MCS0	5.56	4.86	8.23	11.00	-2.77
	5190	38	ax (40MHz)	26T	MCS0	5.50	4.95	8.24	11.00	-2.76
	5230	46	ax (40MHz)	26T	MCS0	6.17	5.76	8.98	11.00	-2.02
	5210	42	ax (80MHz)	26T	MCS0	6.49	-8.07	6.64	11.00	-4.36
Band 2A	5260	52	ax (20MHz)	26T	MCS0	4.46	4.79	7.64	11.00	-3.36
	5280	56	ax (20MHz)	26T	MCS0	4.62	4.61	7.63	11.00	-3.37
	5320	64	ax (20MHz)	26T	MCS0	4.91	4.18	7.57	11.00	-3.43
	5270	54	ax (40MHz)	26T	MCS0	6.65	6.10	9.39	11.00	-1.61
	5310	62	ax (40MHz)	26T	MCS0	5.62	4.62	8.16	11.00	-2.84
	5290	58	ax (80MHz)	26T	MCS0	6.49	-8.96	6.61	11.00	-4.39
Band 2C	5500	100	ax (20MHz)	26T	MCS0	4.56	4.05	7.32	11.00	-3.68
	5600	120	ax (20MHz)	26T	MCS0	4.42	3.84	7.15	11.00	-3.85
	5720	144	ax (20MHz)	26T	MCS0	3.58	3.71	6.66	11.00	-4.34
	5510	102	ax (40MHz)	26T	MCS0	6.39	6.13	9.27	11.00	-1.73
	5590	118	ax (40MHz)	26T	MCS0	5.89	5.65	8.78	11.00	-2.22
	5710	142	ax (40MHz)	26T	MCS0	6.17	5.52	8.87	11.00	-2.13
	5530	106	ax (80MHz)	26T	MCS0	5.25	5.56	8.42	11.00	-2.58
	5610	122	ax (80MHz)	26T	MCS0	4.62	4.91	7.78	11.00	-3.22
	5690	138	ax (80MHz)	26T	MCS0	4.45	4.37	7.42	11.00	-3.58

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	6.06	4.46	8.34	-1.94	6.40	10.0	-3.60
	5200	40	ax (20MHz)	26T	MCS0	5.54	4.60	8.11	-1.94	6.17	10.0	-3.83
	5240	48	ax (20MHz)	26T	MCS0	5.56	4.86	8.23	-1.94	6.29	10.0	-3.71
	5190	38	ax (40MHz)	26T	MCS0	5.50	4.95	8.24	-1.94	6.30	10.0	-3.70
	5230	46	ax (40MHz)	26T	MCS0	6.17	5.76	8.98	-1.94	7.04	10.0	-2.96
	5210	42	ax (80MHz)	26T	MCS0	6.49	-8.07	6.64	-1.94	4.70	10.0	-5.30

Table 7-68. Band 1 e.i.r.p Conducted Power Spectral Density Measurements MIMO (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	Margin [dB]
Band 3	5745	149	ax (20MHz)	26T	MCS0	2.21	1.79	5.02	30.00	-24.98
	5785	157	ax (20MHz)	26T	MCS0	2.72	2.26	5.51	30.00	-24.49
	5825	165	ax (20MHz)	26T	MCS0	2.16	1.81	5.00	30.00	-25.00
	5755	151	ax (40MHz)	26T	MCS0	6.26	5.31	8.82	30.00	-21.18
	5795	159	ax (40MHz)	26T	MCS0	6.26	5.44	8.88	30.00	-21.12
	5775	155	ax (80MHz)	26T	MCS0	6.40	4.99	8.76	30.00	-21.24

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

FCC ID: A3LSMN981W		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 164 of 296

	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	0.64	1.33	4.01	11.00	-6.99
	5200	40	ax (20MHz)	242T	MCS0	0.58	0.49	3.55	11.00	-7.45
	5240	48	ax (20MHz)	242T	MCS0	0.52	0.96	3.76	11.00	-7.24
	5190	38	ax (40MHz)	242T	MCS0	-5.71	-4.35	-1.97	11.00	-12.97
	5230	46	ax (40MHz)	242T	MCS0	-3.72	-3.57	-0.63	11.00	-11.63
	5210	42	ax (80MHz)	242T	MCS0	-8.63	-8.07	-5.33	11.00	-16.33
Band 2A	5260	52	ax (20MHz)	242T	MCS0	1.08	1.36	4.23	11.00	-6.77
	5280	56	ax (20MHz)	242T	MCS0	0.91	1.29	4.11	11.00	-6.89
	5320	64	ax (20MHz)	242T	MCS0	1.04	1.17	4.12	11.00	-6.88
	5270	54	ax (40MHz)	242T	MCS0	-3.85	-3.99	-0.91	11.00	-11.91
	5310	62	ax (40MHz)	242T	MCS0	-4.22	-3.81	-1.00	11.00	-12.00
	5290	58	ax (80MHz)	242T	MCS0	-9.72	-8.96	-6.31	11.00	-17.31
Band 2C	5500	100	ax (20MHz)	242T	MCS0	-0.16	0.45	3.17	11.00	-7.83
	5600	120	ax (20MHz)	242T	MCS0	-0.65	-0.01	2.69	11.00	-8.31
	5720	144	ax (20MHz)	242T	MCS0	-0.29	0.58	3.18	11.00	-7.82
	5510	102	ax (40MHz)	242T	MCS0	-4.86	-4.75	-1.79	11.00	-12.79
	5590	118	ax (40MHz)	242T	MCS0	-5.42	-5.22	-2.31	11.00	-13.31
	5710	142	ax (40MHz)	242T	MCS0	-4.97	-4.55	-1.74	11.00	-12.74
	5530	106	ax (80MHz)	242T	MCS0	-8.37	-8.19	-5.27	11.00	-16.27
	5610	122	ax (80MHz)	242T	MCS0	-10.17	-9.22	-6.66	11.00	-17.66
	5690	138	ax (80MHz)	242T	MCS0	-11.23	-11.60	-8.40	11.00	-19.40

Table 7-70. 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]	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)	242T	MCS0	0.64	1.33	4.01	-1.94	2.07	10.0	-7.93
	5200	40	ax (20MHz)	242T	MCS0	0.58	0.49	3.55	-1.94	1.61	10.0	-8.39
	5240	48	ax (20MHz)	242T	MCS0	0.52	0.96	3.76	-1.94	1.82	10.0	-8.18
	5190	38	ax (40MHz)	242T	MCS0	-5.71	-4.35	-1.97	-1.94	-3.91	10.0	-13.91
	5230	46	ax (40MHz)	242T	MCS0	-3.72	-3.57	-0.63	-1.94	-2.57	10.0	-12.57
	5210	42	ax (80MHz)	242T	MCS0	-8.63	-8.07	-5.33	-1.94	-7.27	10.0	-17.27

Table 7-71. Band 1 e.i.r.p MIMO Conducted Power Spectral Density Measurements MIMO (ISED 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	-2.18	-2.31	0.77	30.00	-29.23
	5785	157	ax (20MHz)	242T	MCS0	-2.29	-2.17	0.78	30.00	-29.22
	5825	165	ax (20MHz)	242T	MCS0	-2.72	-2.43	0.44	30.00	-29.56
	5755	151	ax (40MHz)	242T	MCS0	-7.52	-6.56	-4.00	30.00	-34.00
	5795	159	ax (40MHz)	242T	MCS0	-7.14	-7.27	-4.19	30.00	-34.19
	5775	155	ax (80MHz)	242T	MCS0	-9.20	-7.78	-5.42	30.00	-35.42

Table 7-72. Band 3 MIMO Conducted Power Spectral Density Measurements MIMO (Full Tones)

FCC ID: A3LSMN981W		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 165 of 296

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.

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

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

Sample e.i.r.p. Calculation:

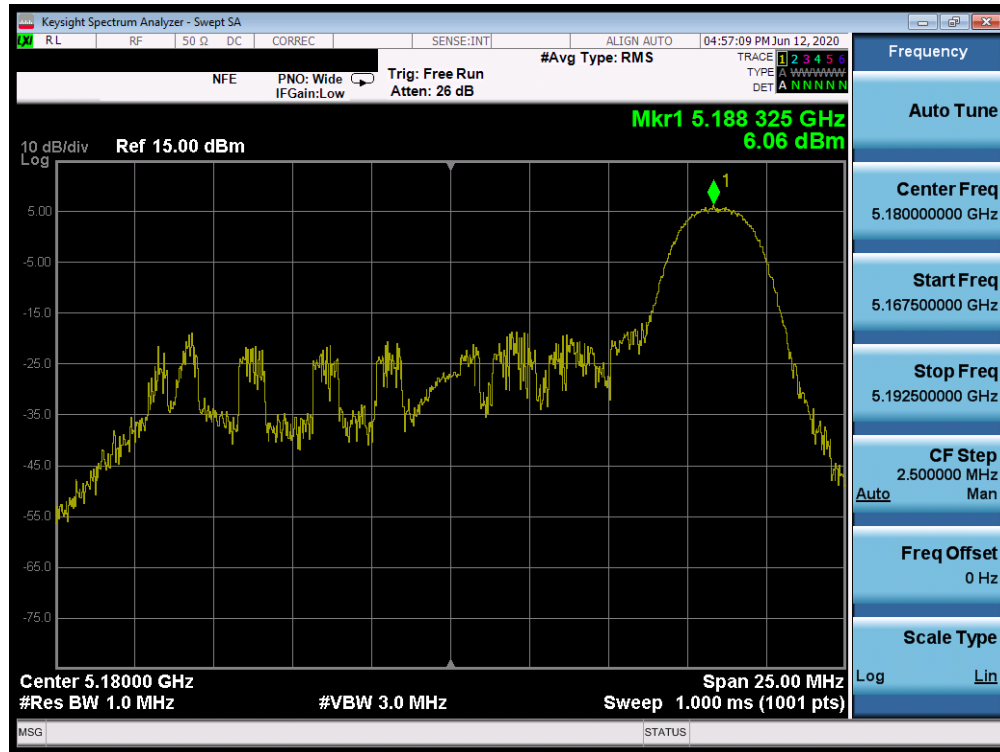
At 5180MHz in 802.11n (20MHz BW) mode, the average MIMO conducted power was calculated to be 20.41dBm with directional gain of -2.52 dBi.

$$\text{e.i.r.p. (dBm)} = \text{Conducted Power (dBm)} + \text{Ant gain (dBi)}$$

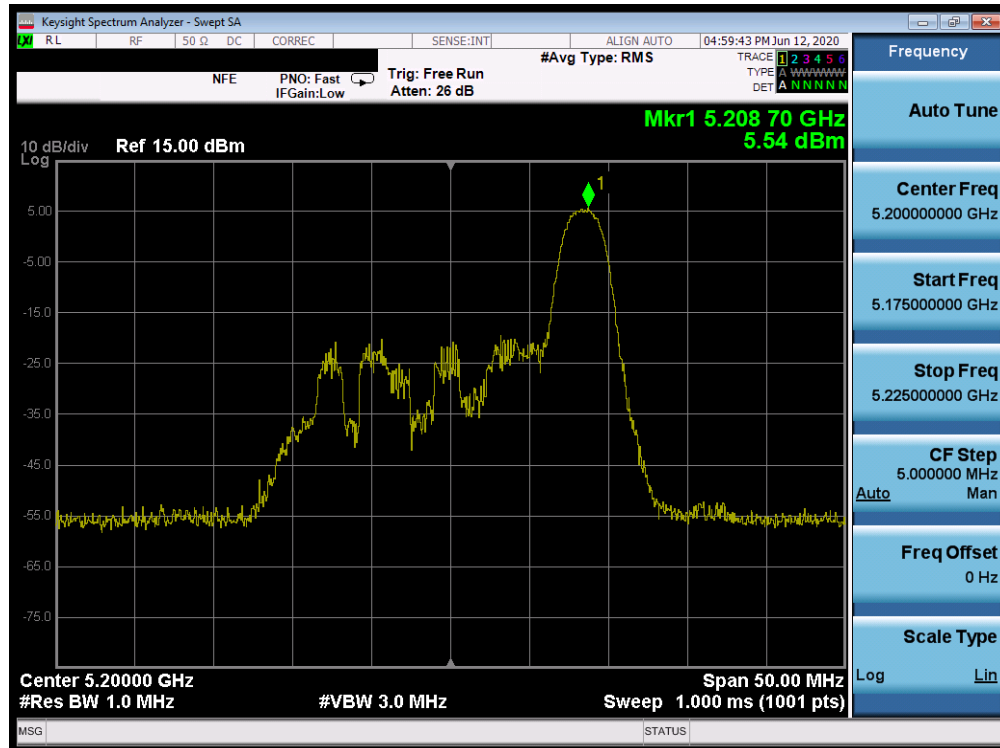
$$20.41 \text{ dBm} + -2.52 \text{ dBi} = 17.89 \text{ dBm}$$

FCC ID: A3LSMN981W		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 166 of 296

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

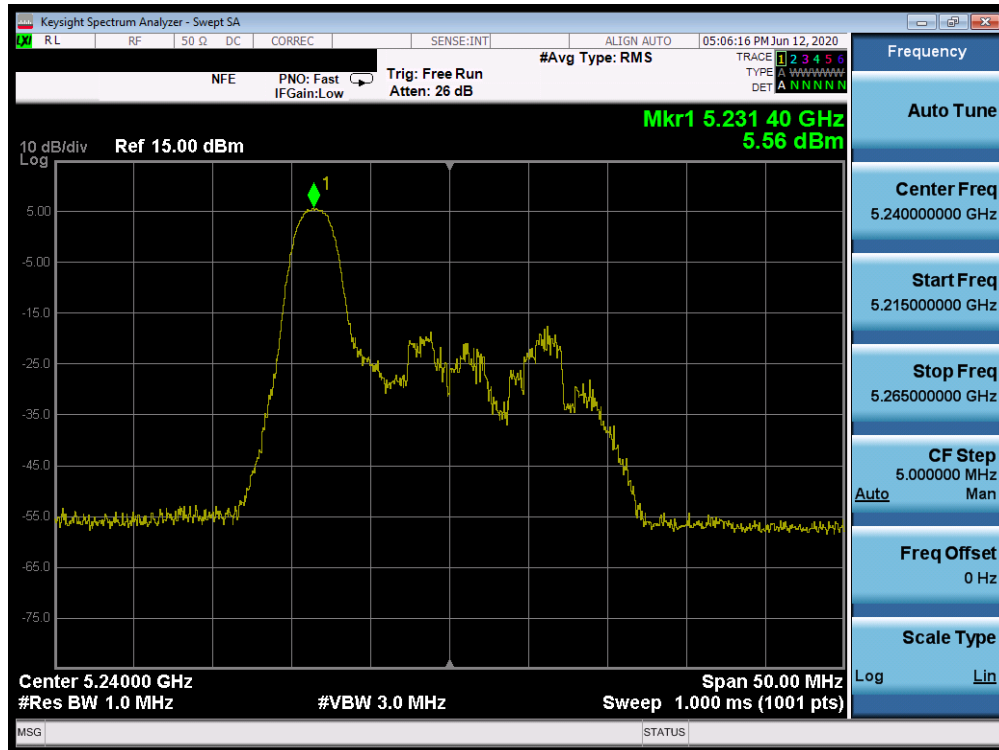


Plot 7-217. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 36)

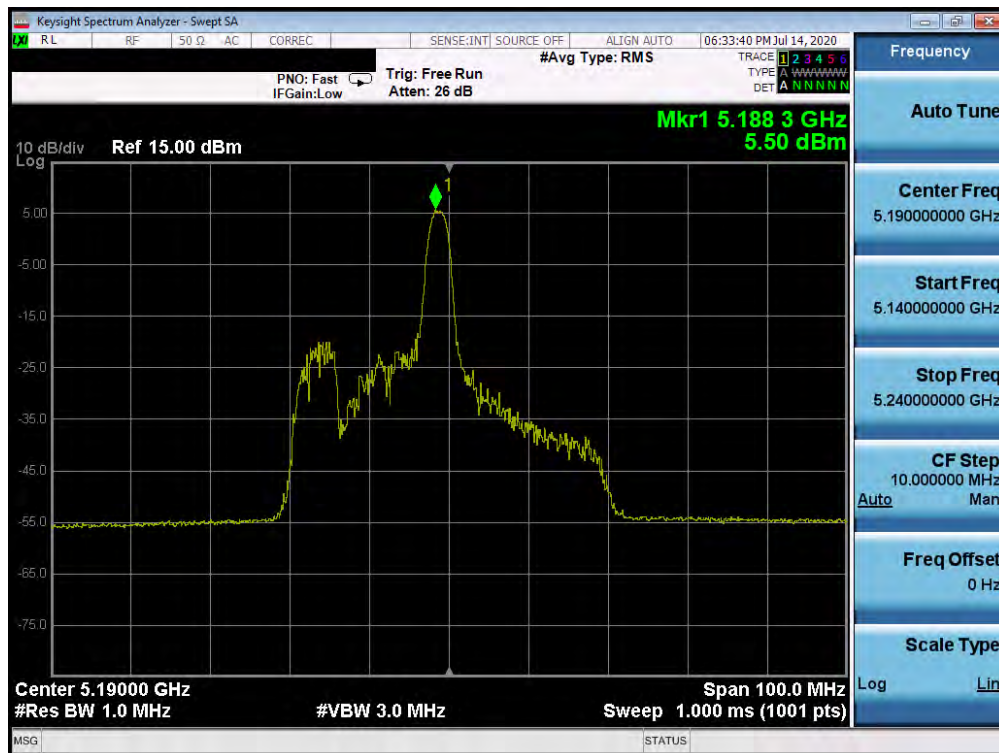


Plot 7-218. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 40)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 167 of 296

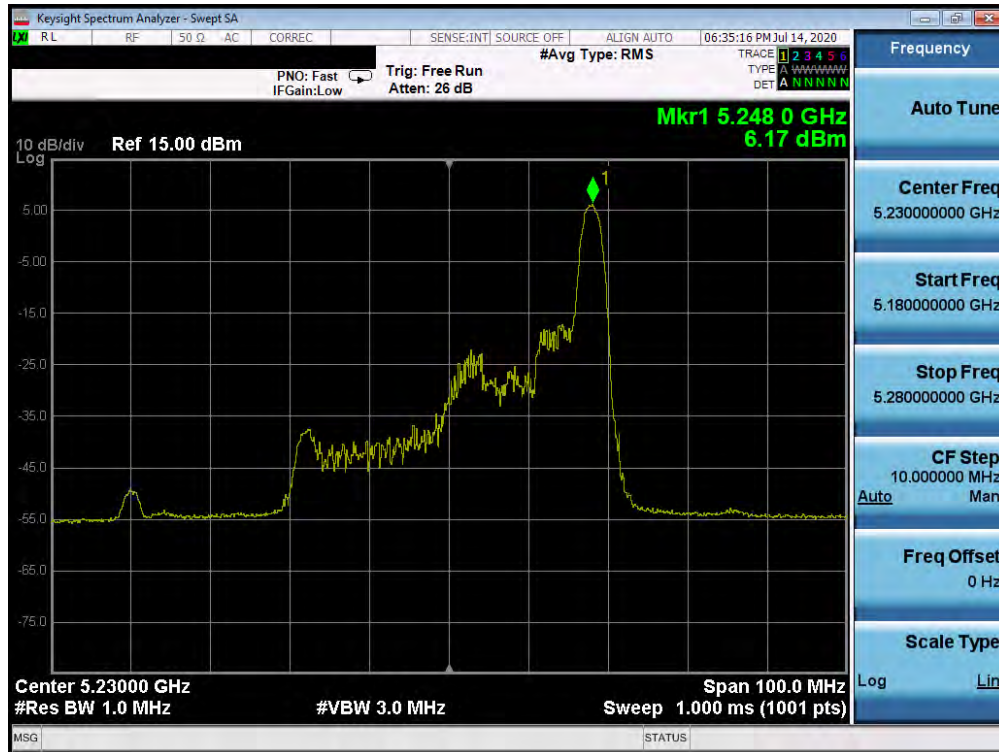


Plot 7-219. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 48)

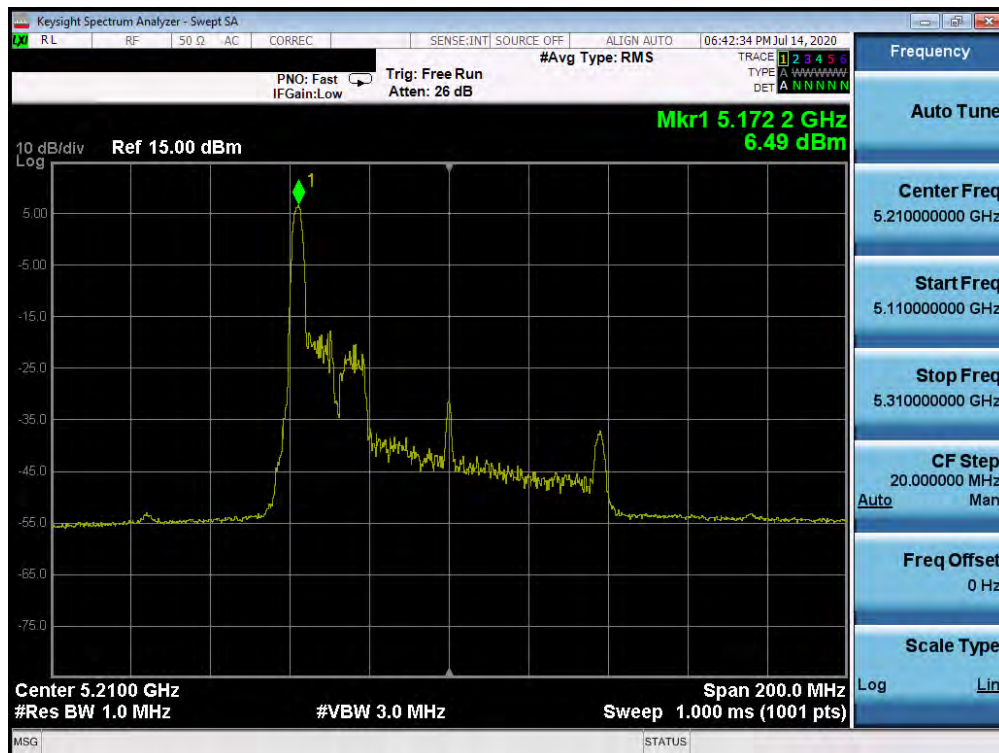


Plot 7-220. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 38)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 168 of 296

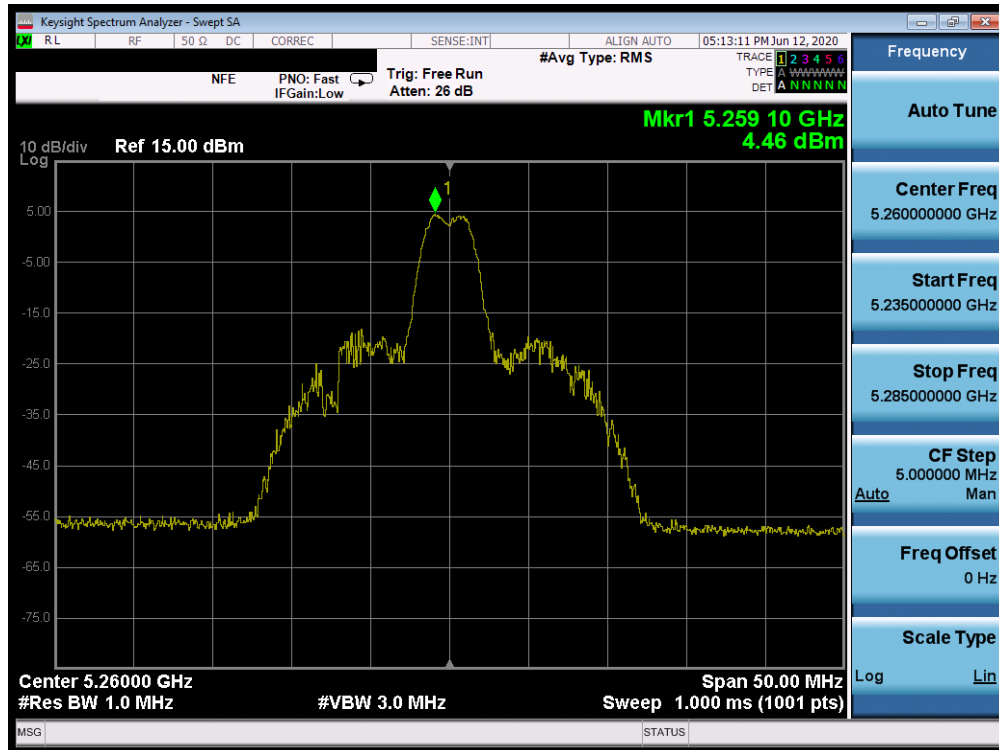


Plot 7-221. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 46)

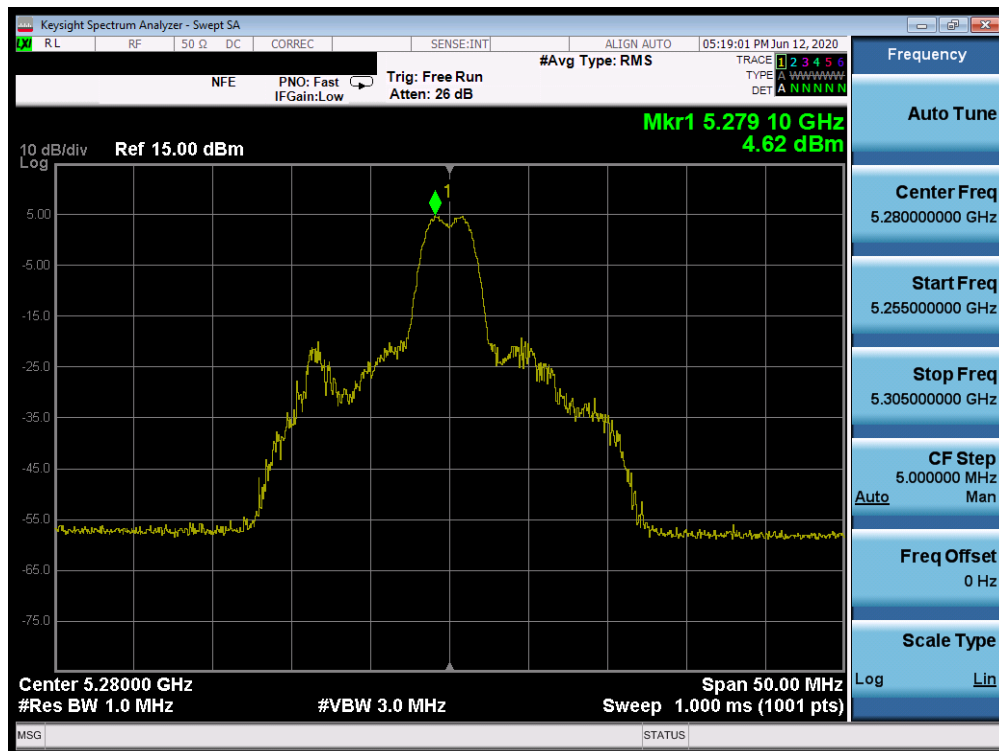


Plot 7-222. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 42)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 169 of 296

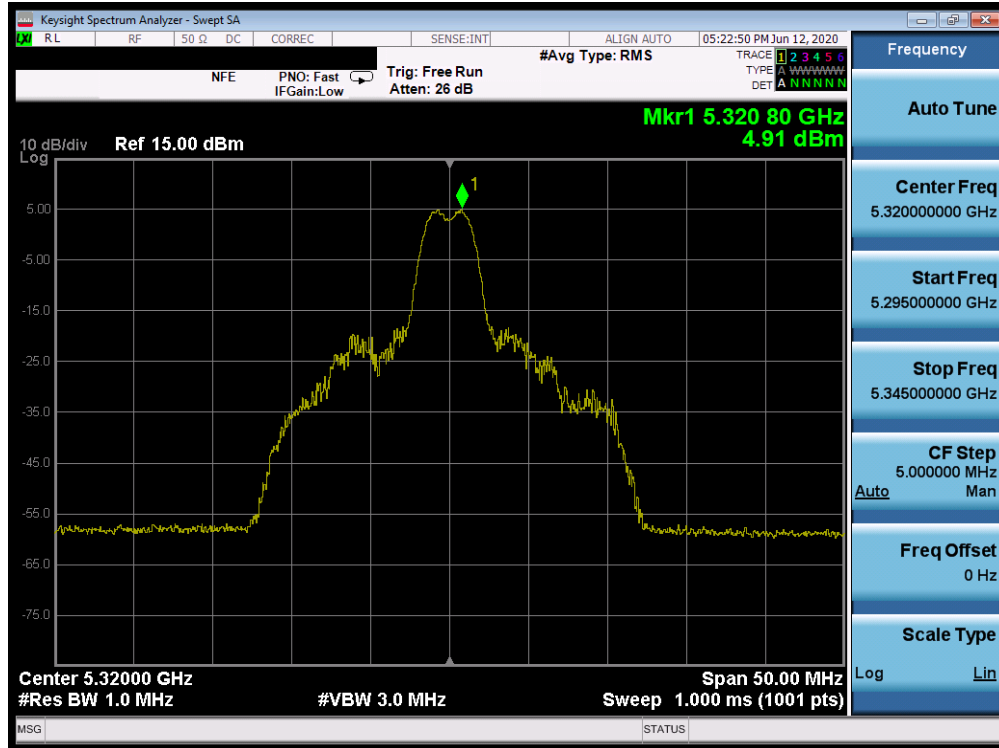


Plot 7-223. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 52)

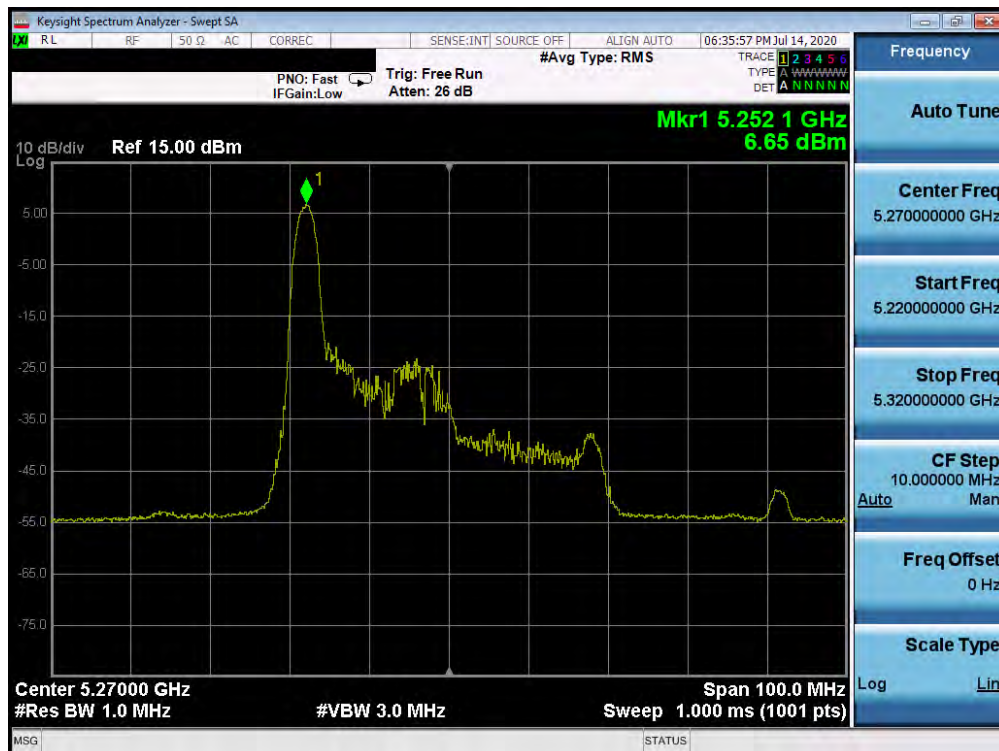


Plot 7-224. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 170 of 296

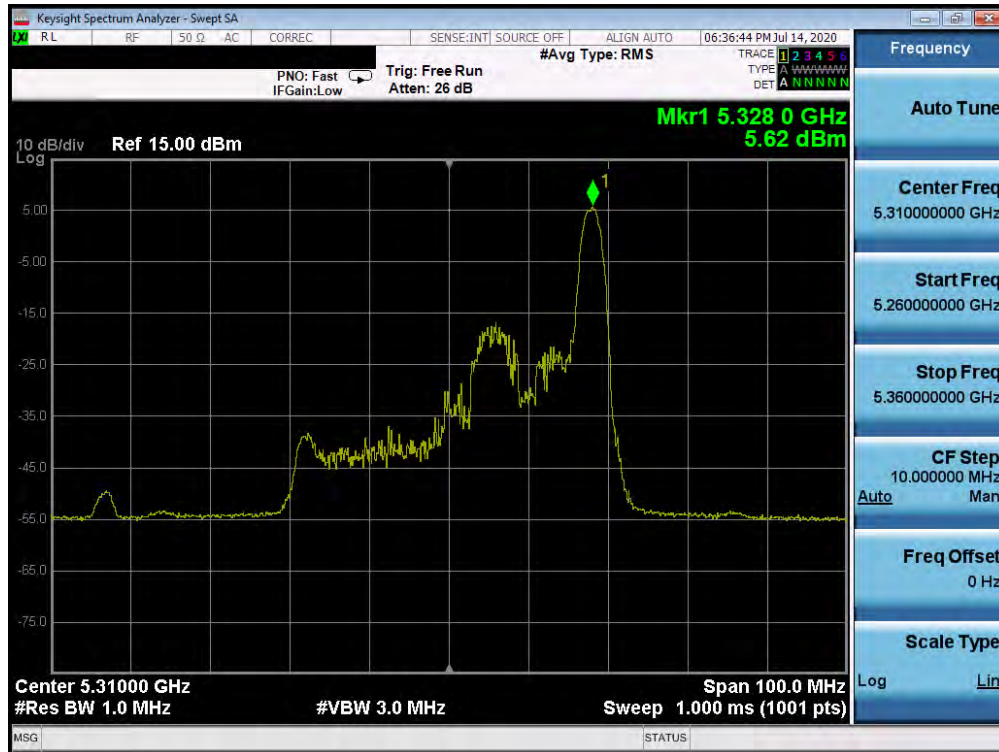


Plot 7-225. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 64)

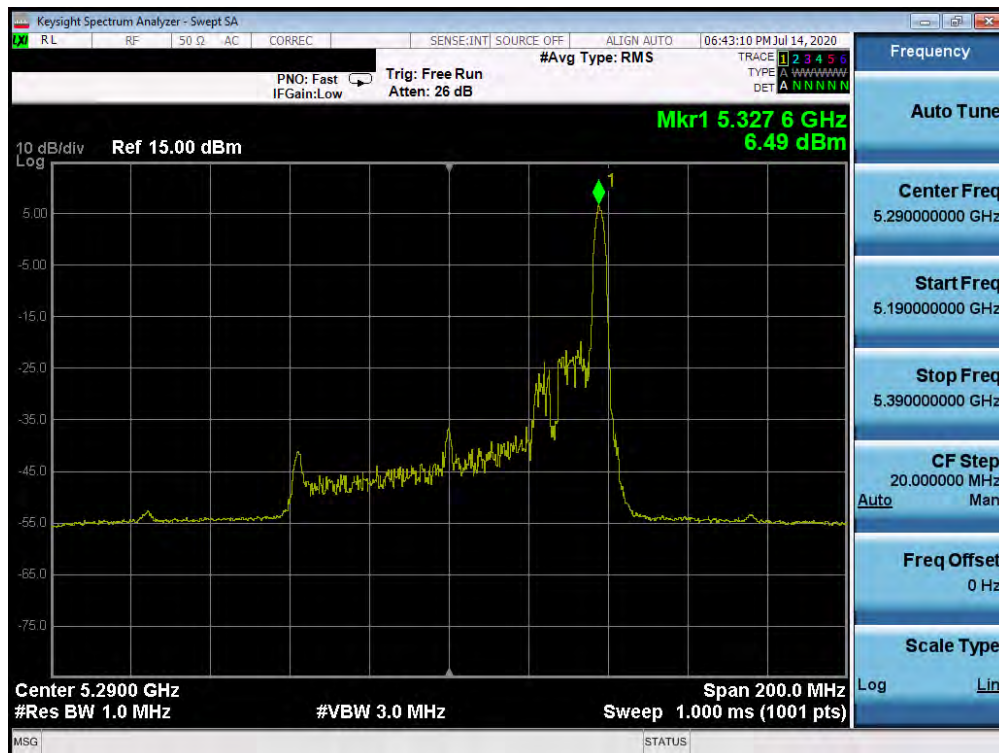


Plot 7-226. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 171 of 296

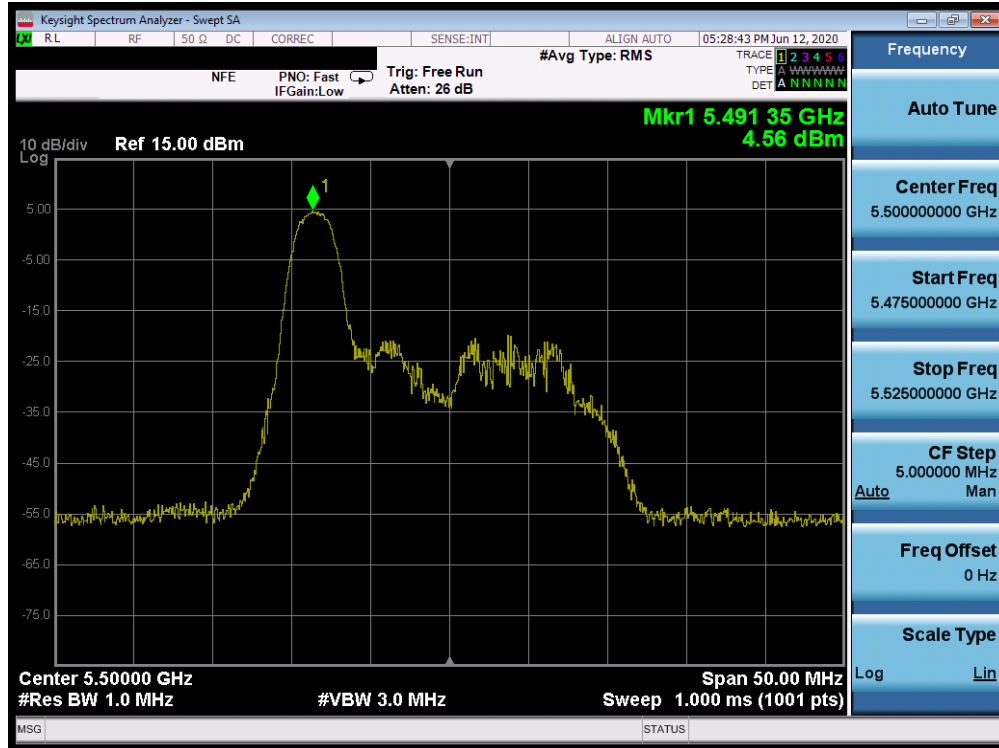


Plot 7-227. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 62)

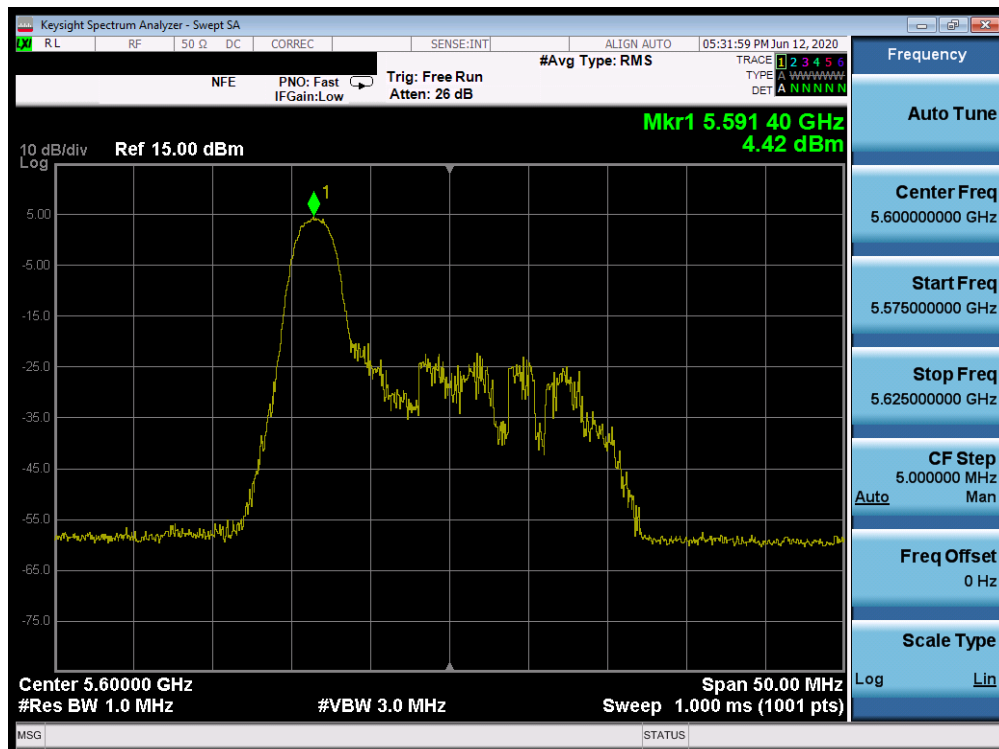


Plot 7-228. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 172 of 296

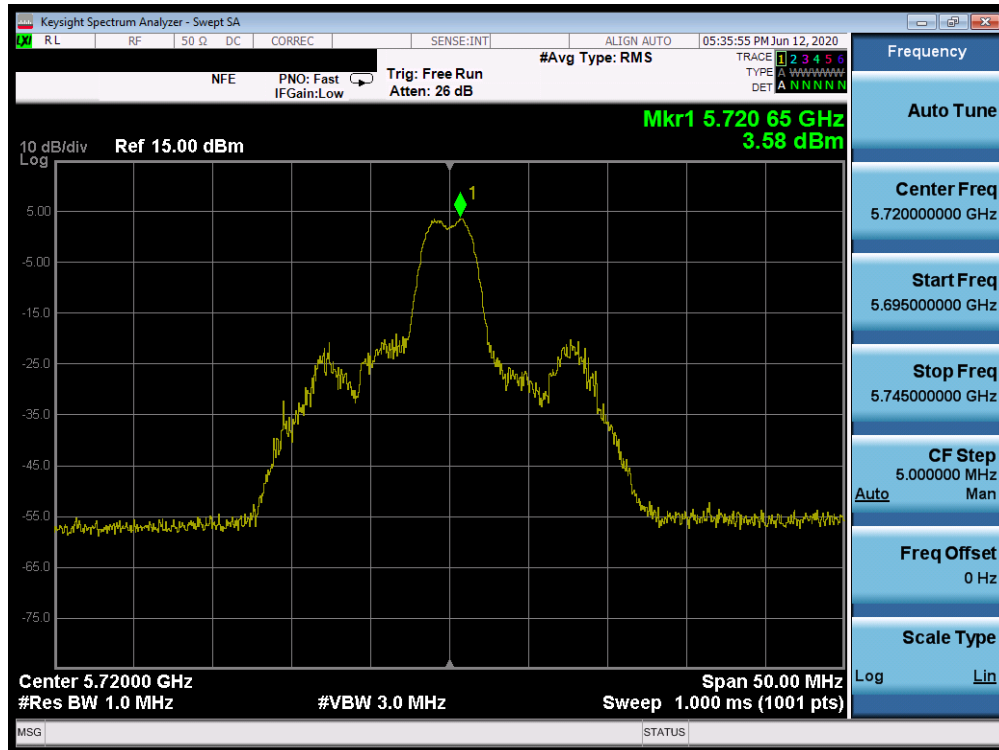


Plot 7-229. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 100)

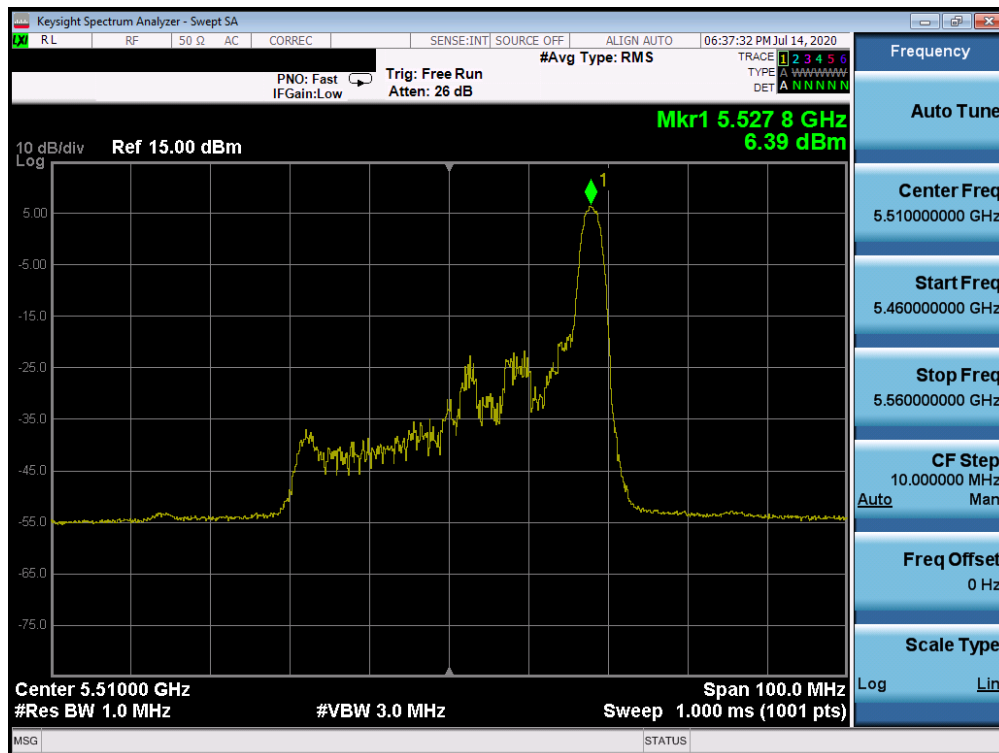


Plot 7-230. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 120)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 173 of 296

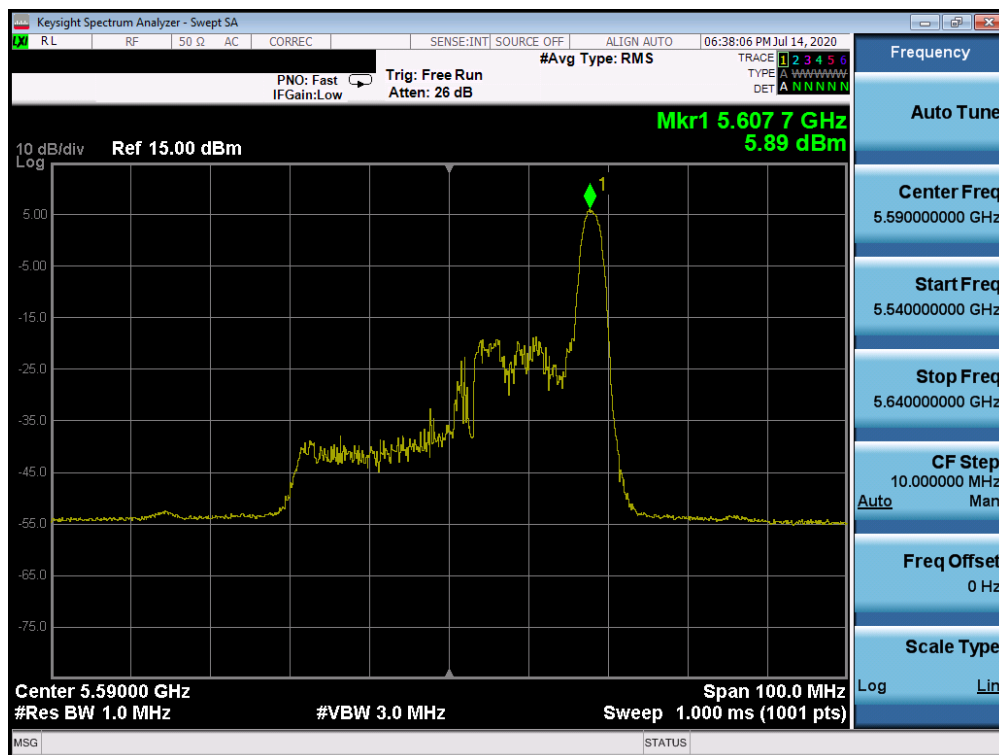


Plot 7-231. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 144)

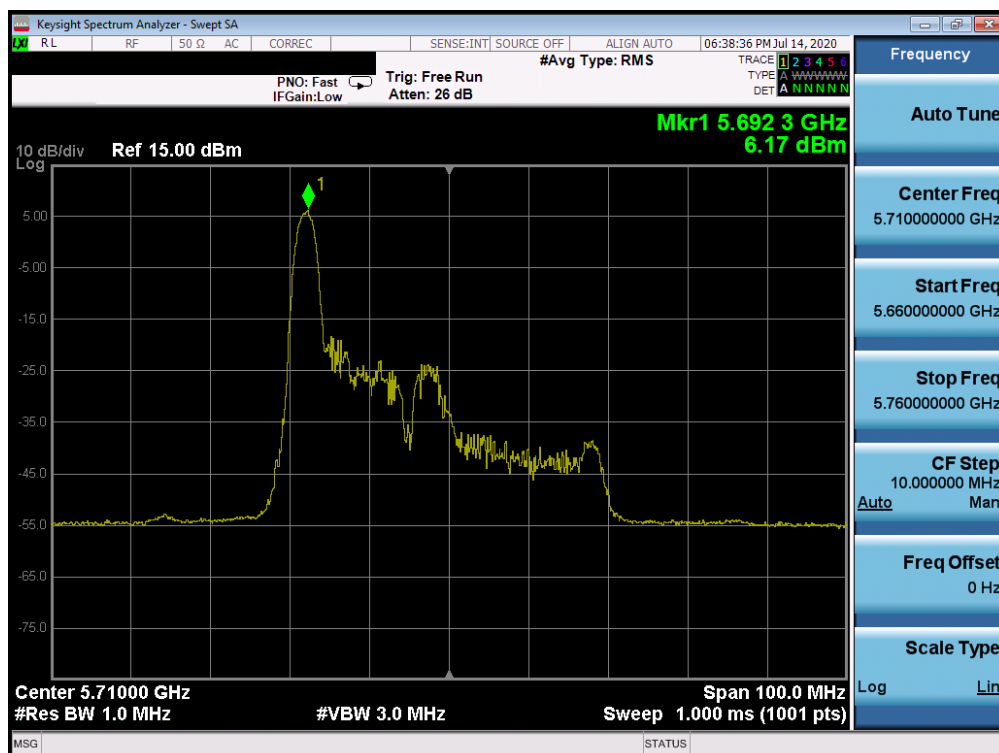


Plot 7-232. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 102)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 174 of 296



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: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 175 of 296



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

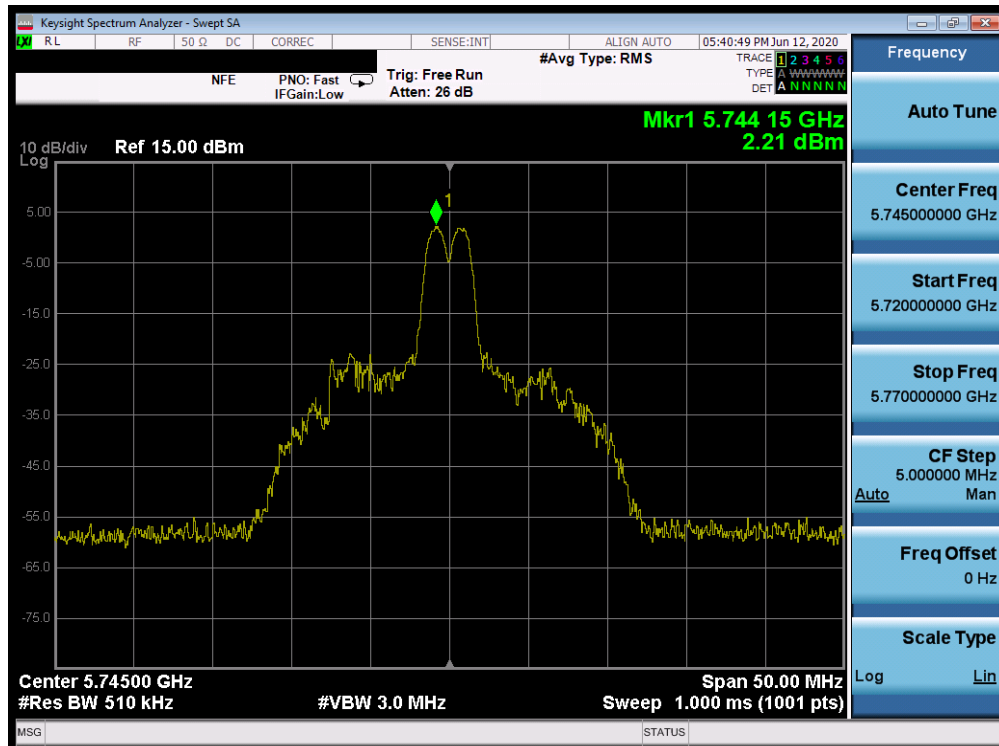


Plot 7-236. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 122)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 176 of 296

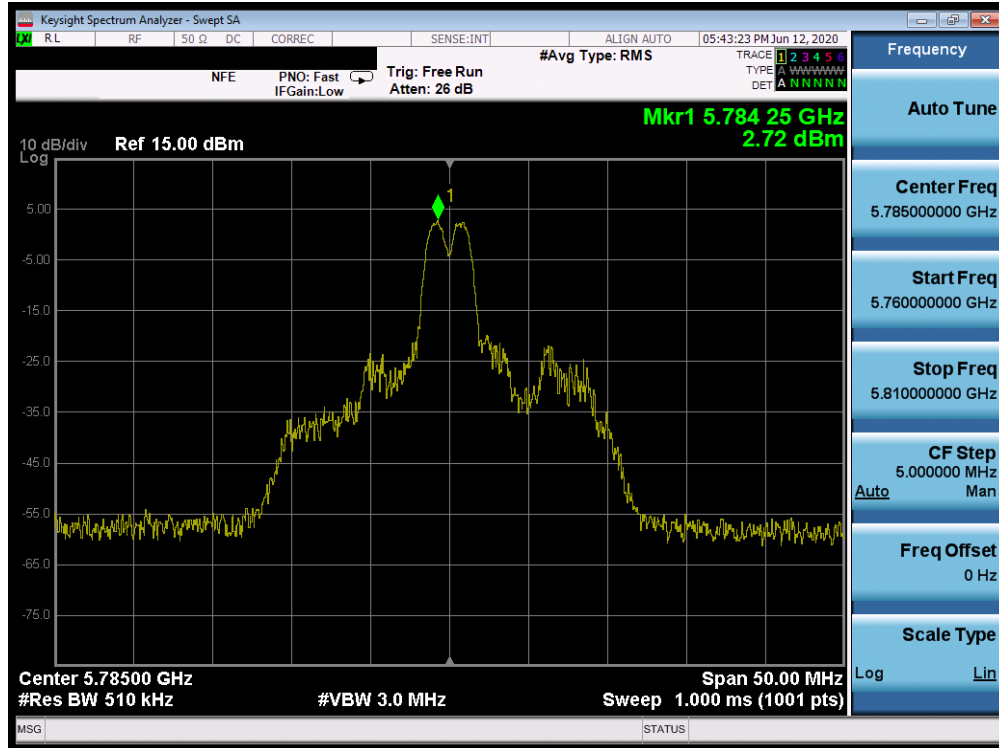


Plot 7-237. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 138)

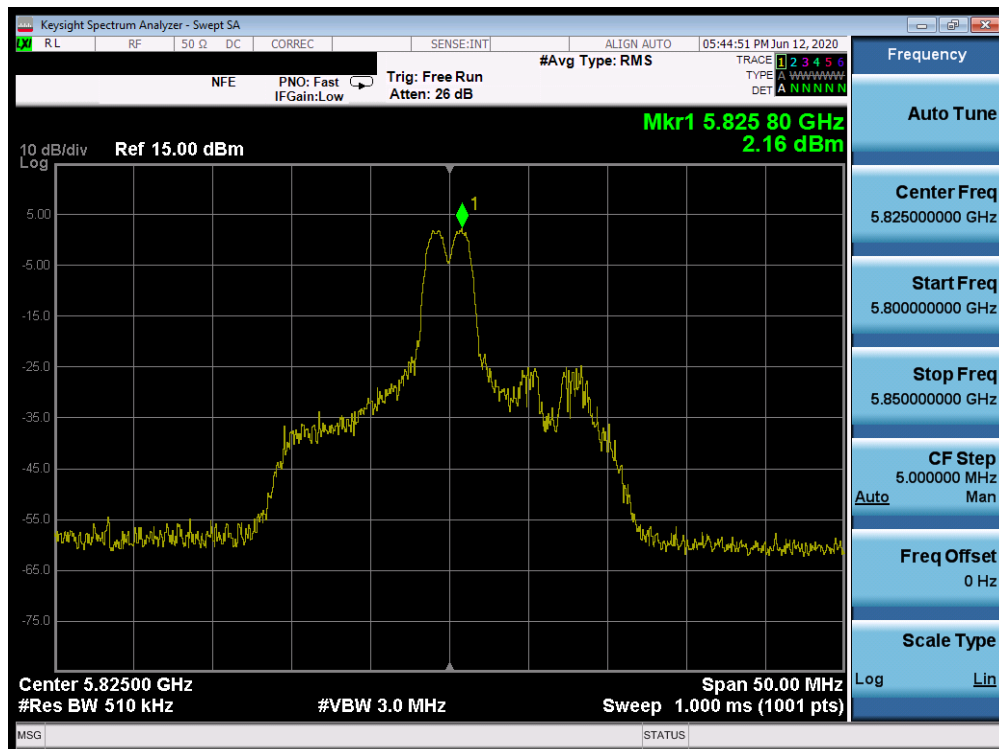


Plot 7-238. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 149)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 177 of 296

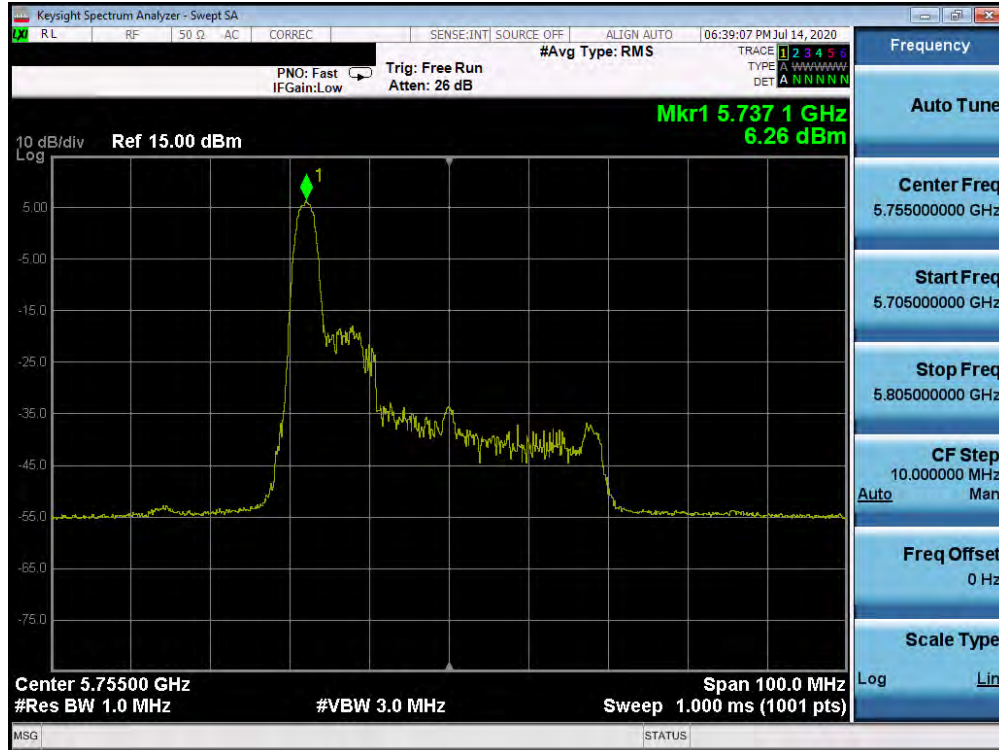


Plot 7-239. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 157)

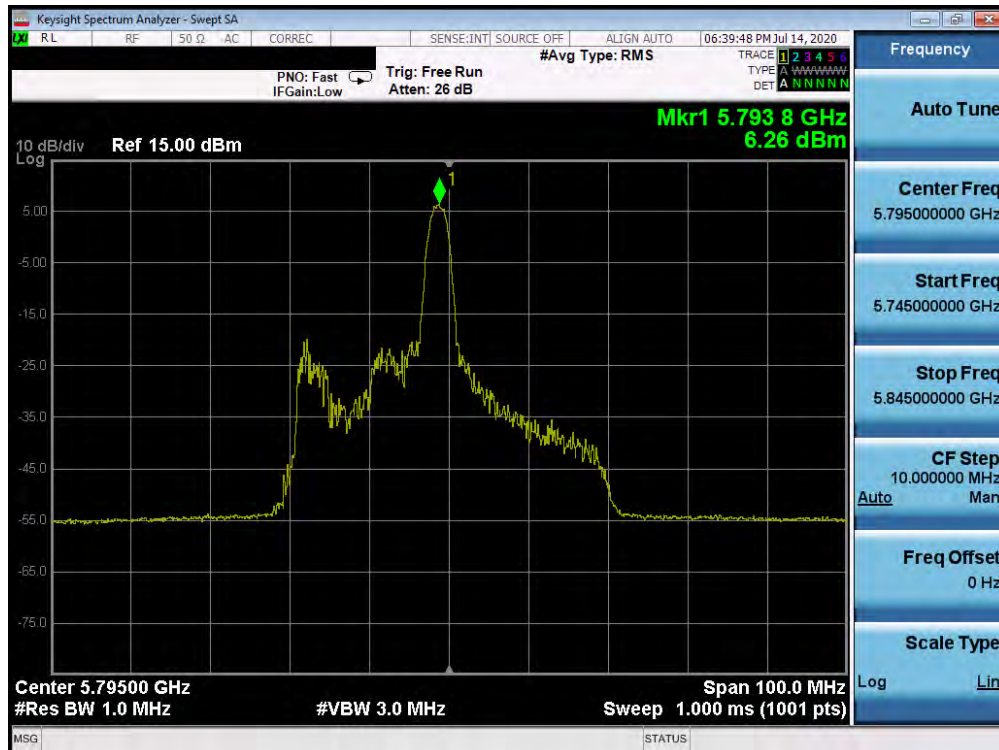


Plot 7-240. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 165)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 178 of 296

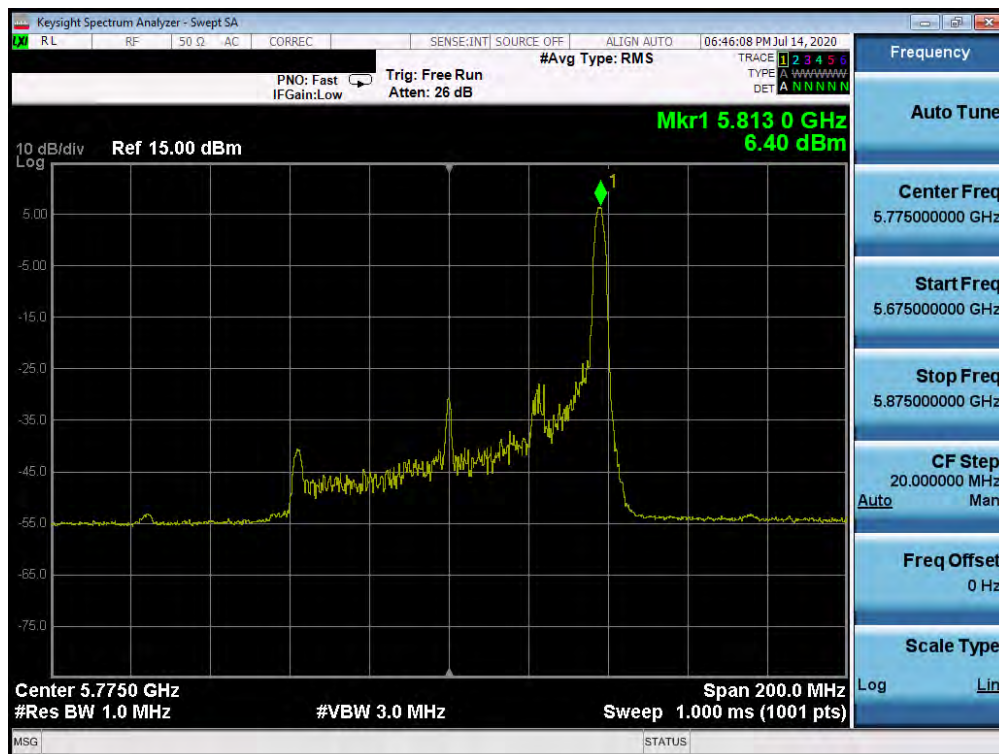


Plot 7-241. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 151)

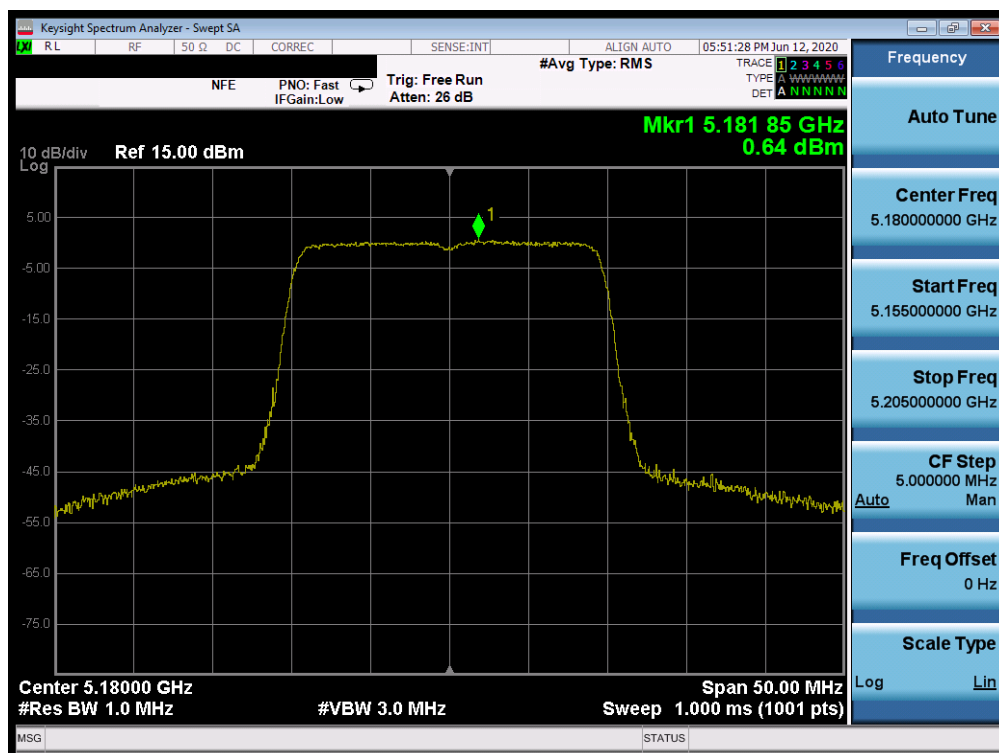


Plot 7-242. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 159)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 179 of 296

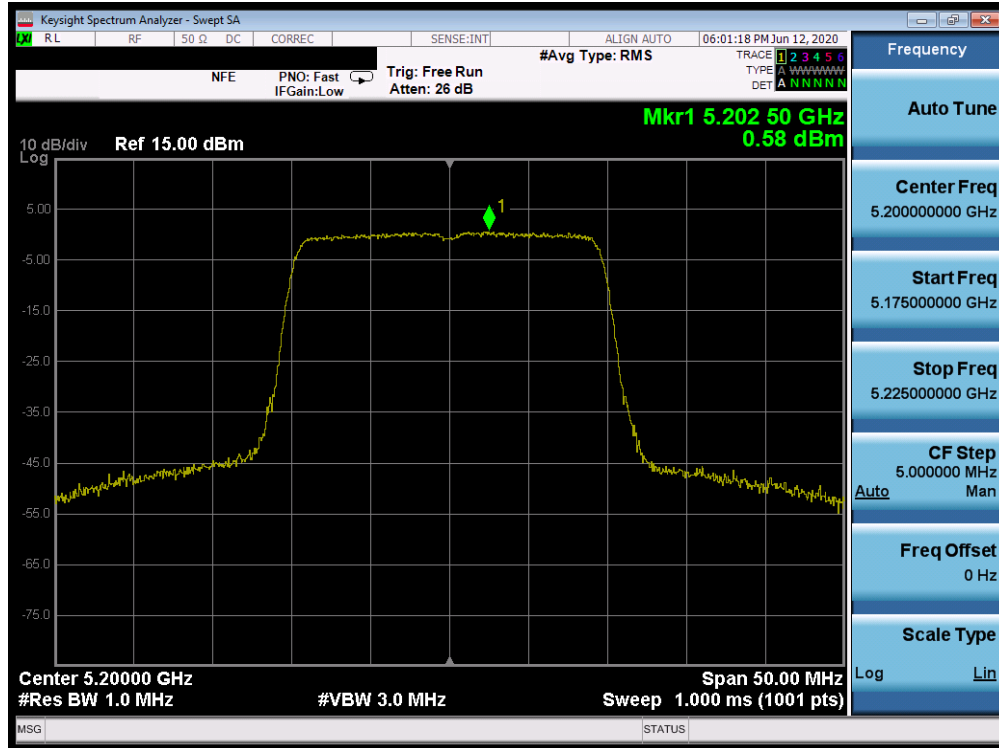


Plot 7-243. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 155)

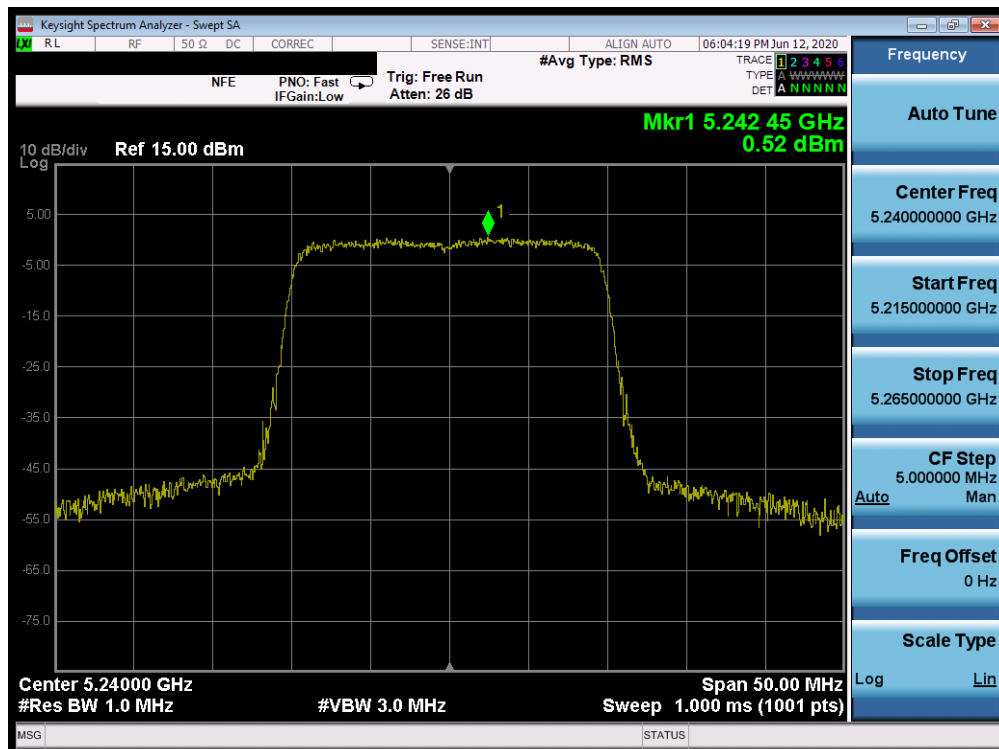


Plot 7-244. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 36)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 180 of 296

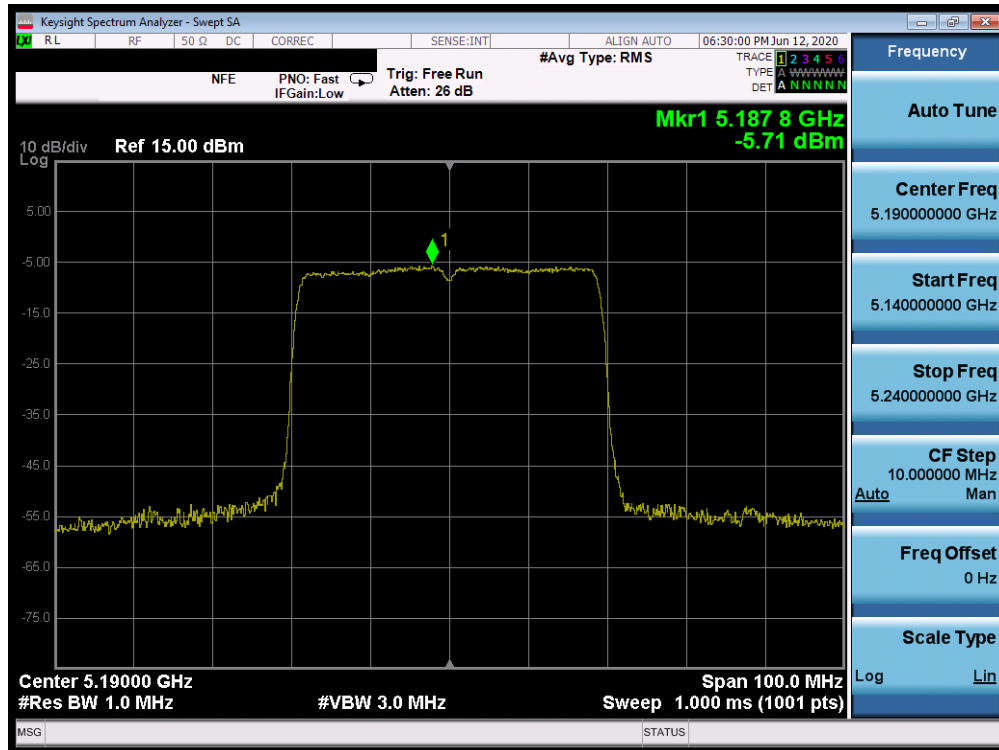


Plot 7-245. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 40)

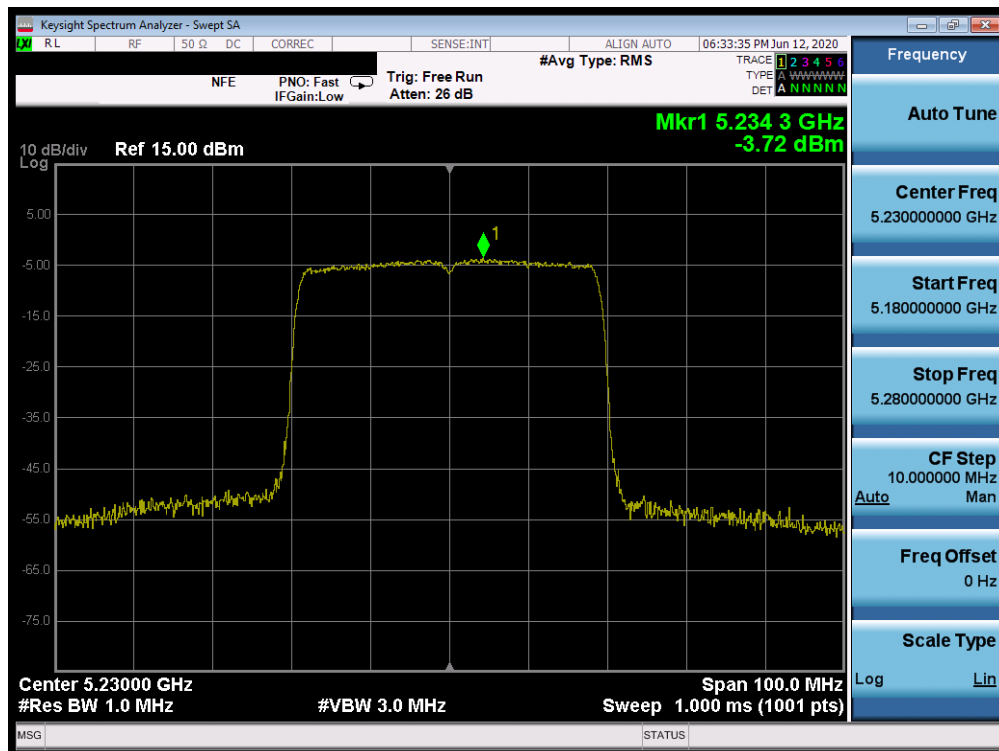


Plot 7-246. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 48)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 181 of 296

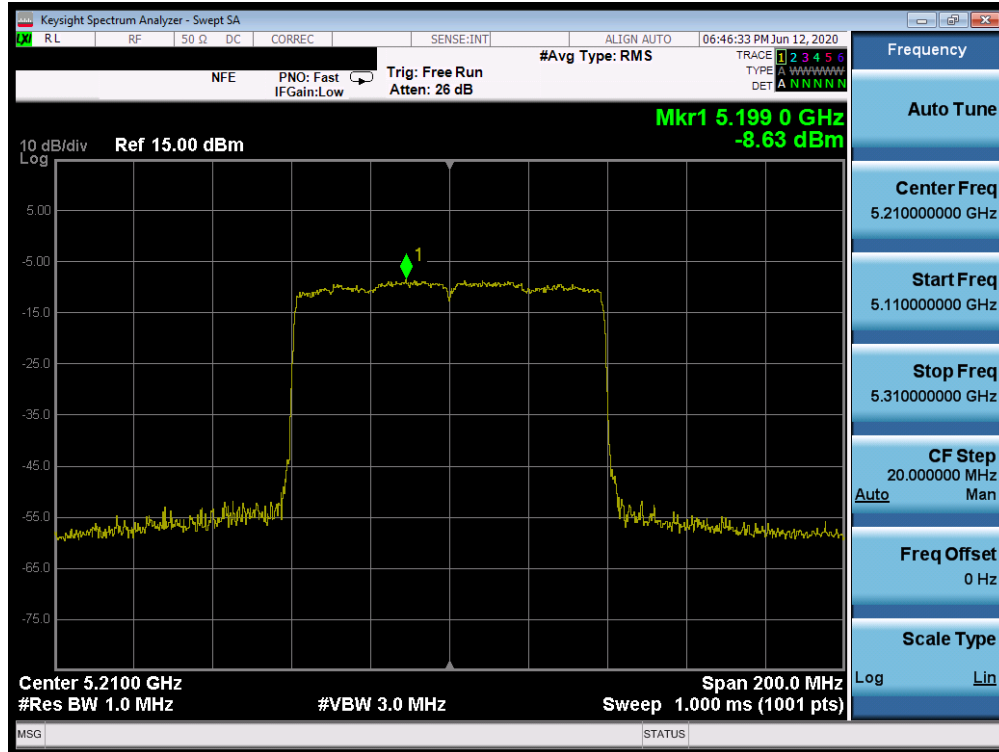


Plot 7-247. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 38)

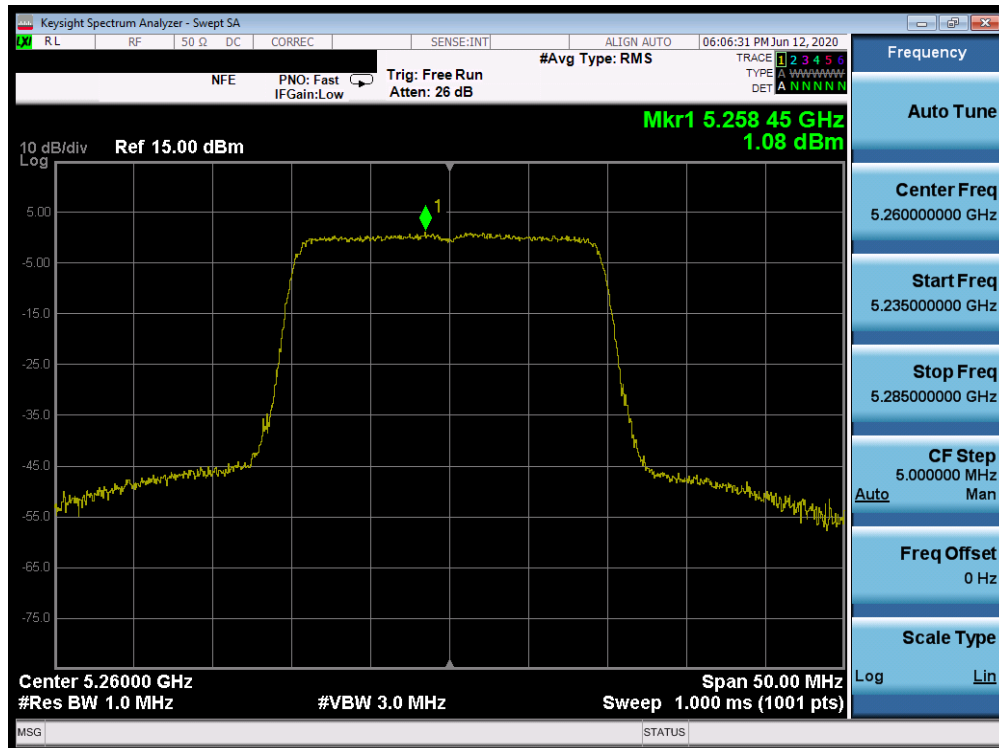


Plot 7-248. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 46)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 182 of 296

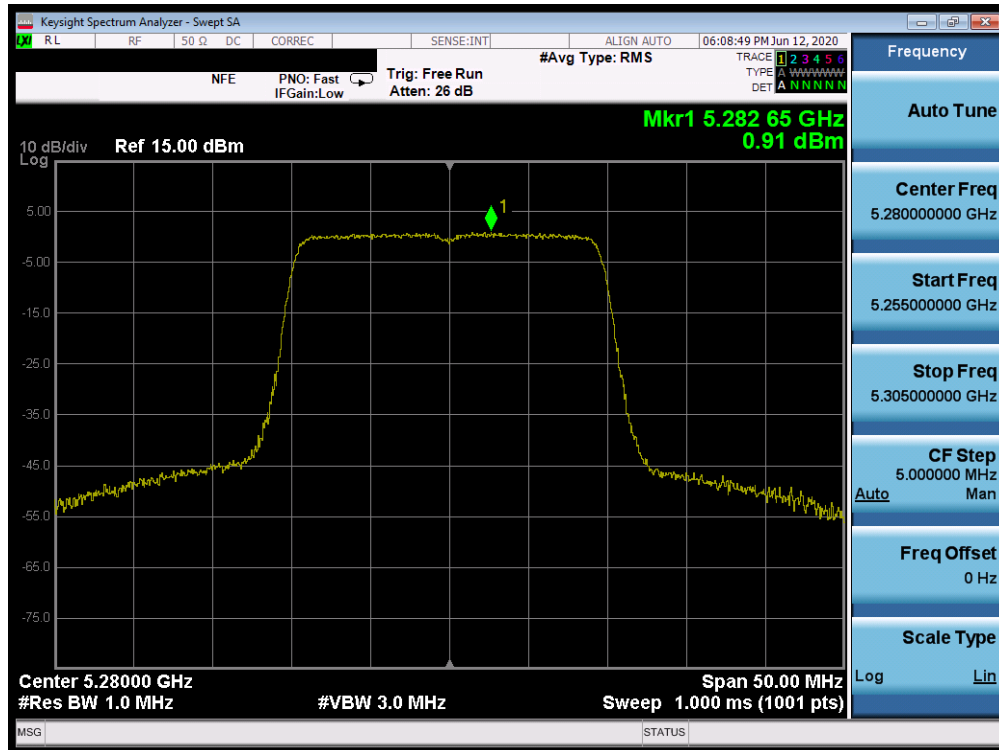


Plot 7-249. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 42)

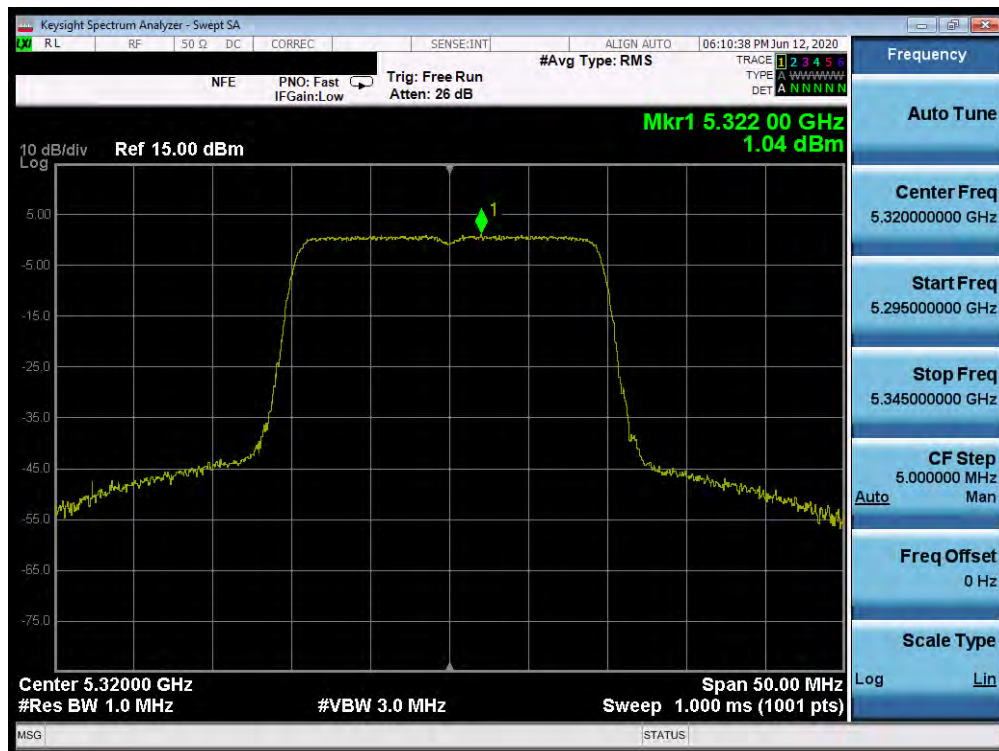


Plot 7-250. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 52)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1-A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 183 of 296

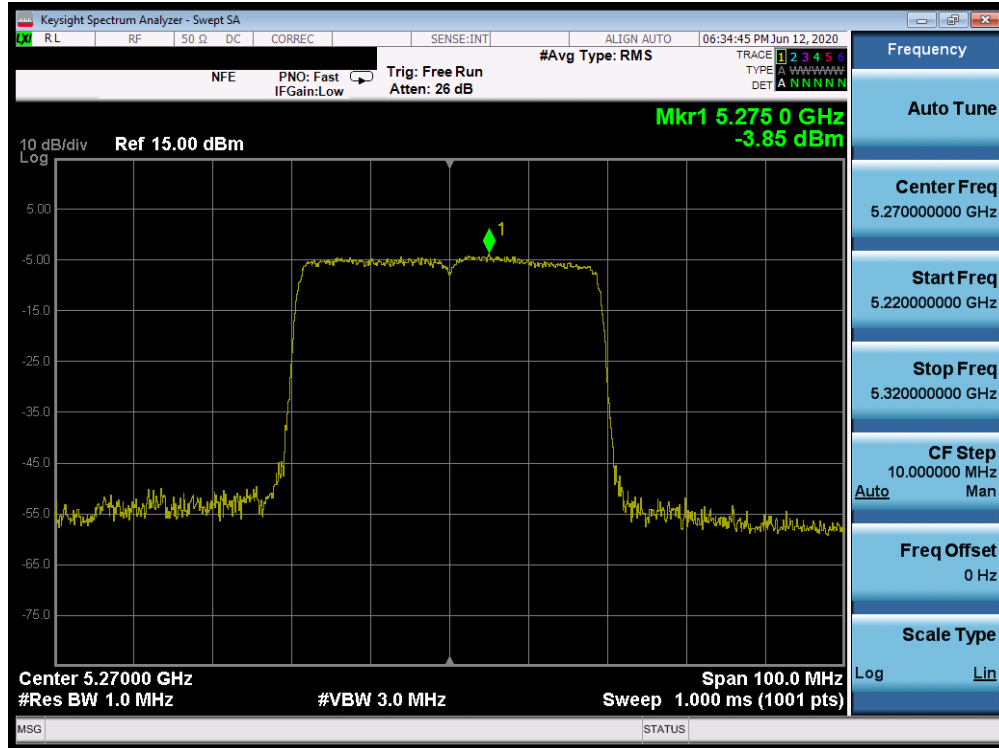


Plot 7-251. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 56)

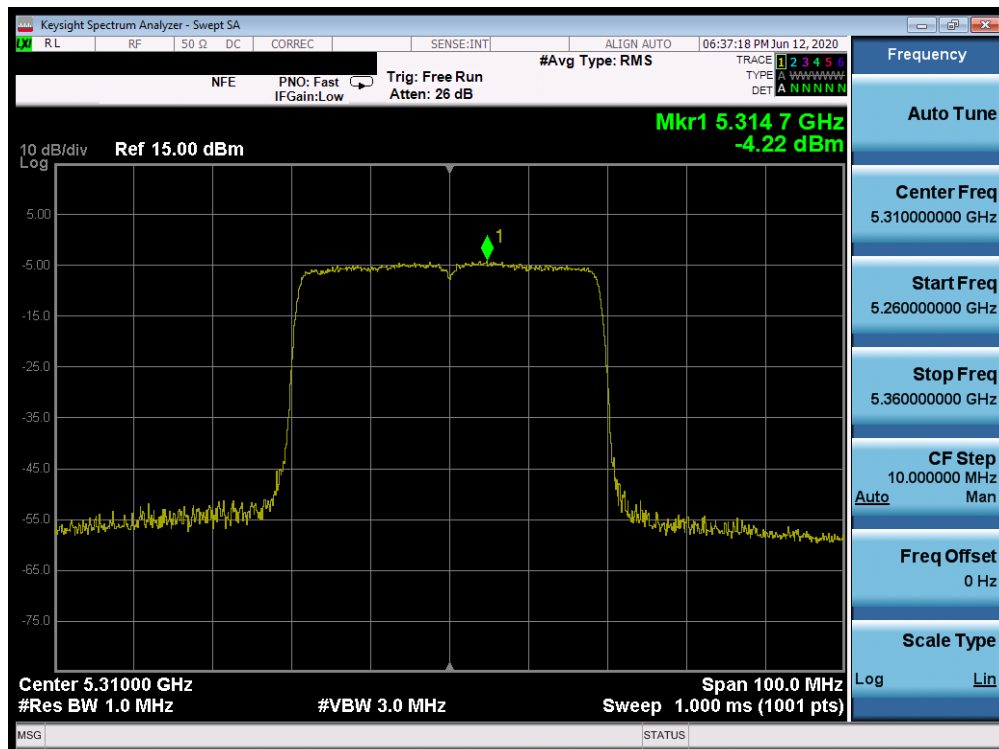


Plot 7-252. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 64)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 184 of 296

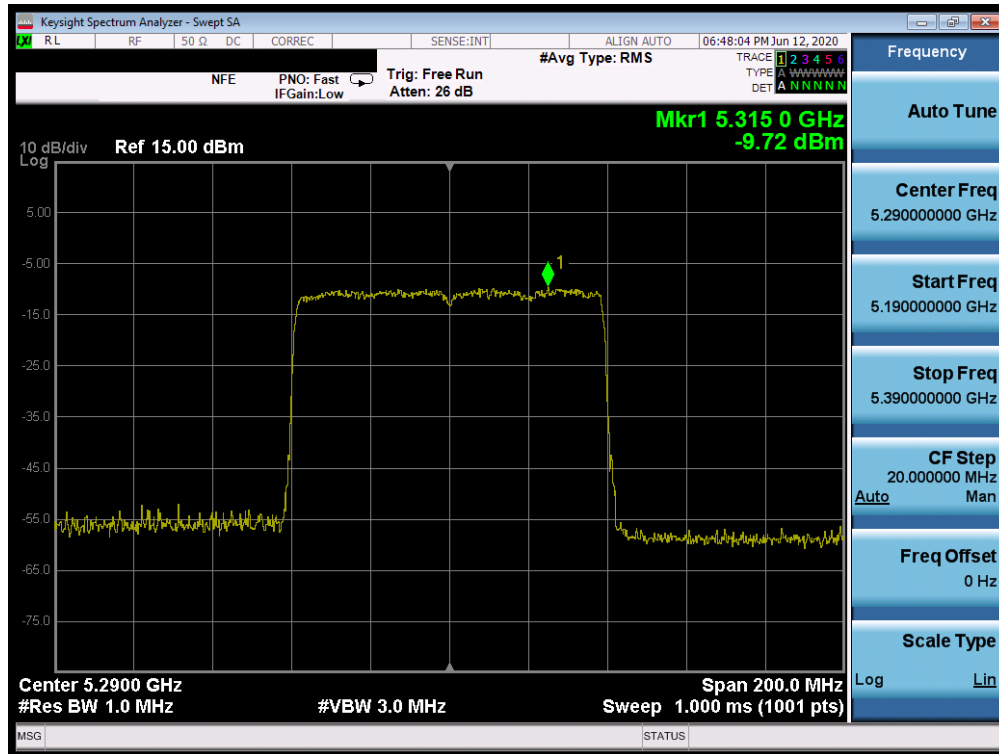


Plot 7-253. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 54)

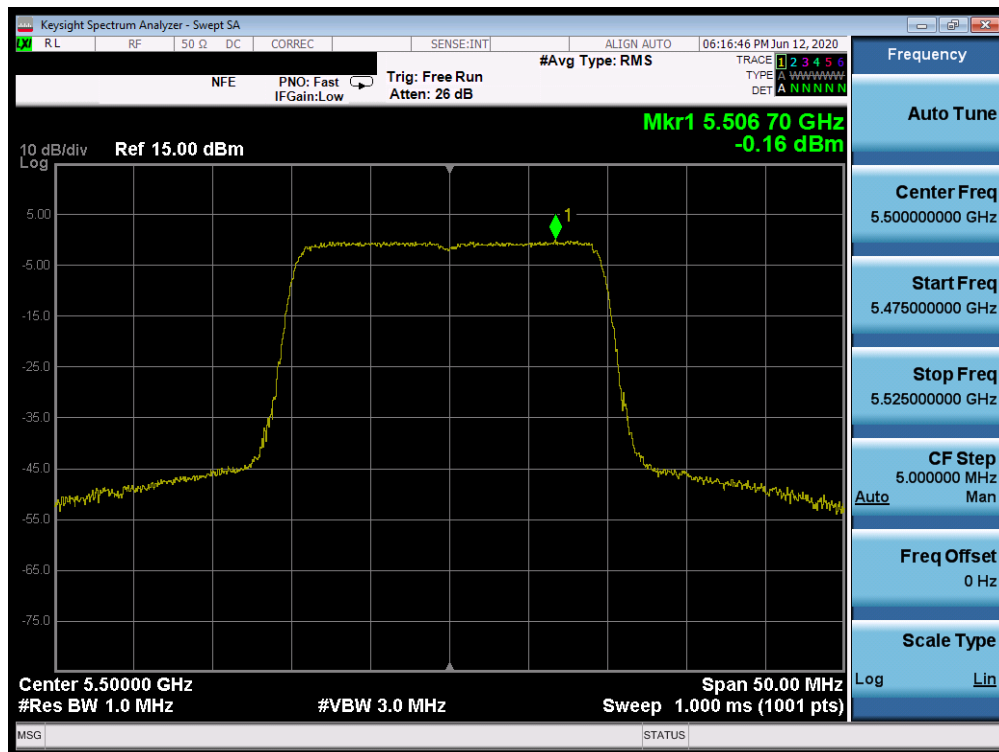


Plot 7-254. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 62)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 185 of 296

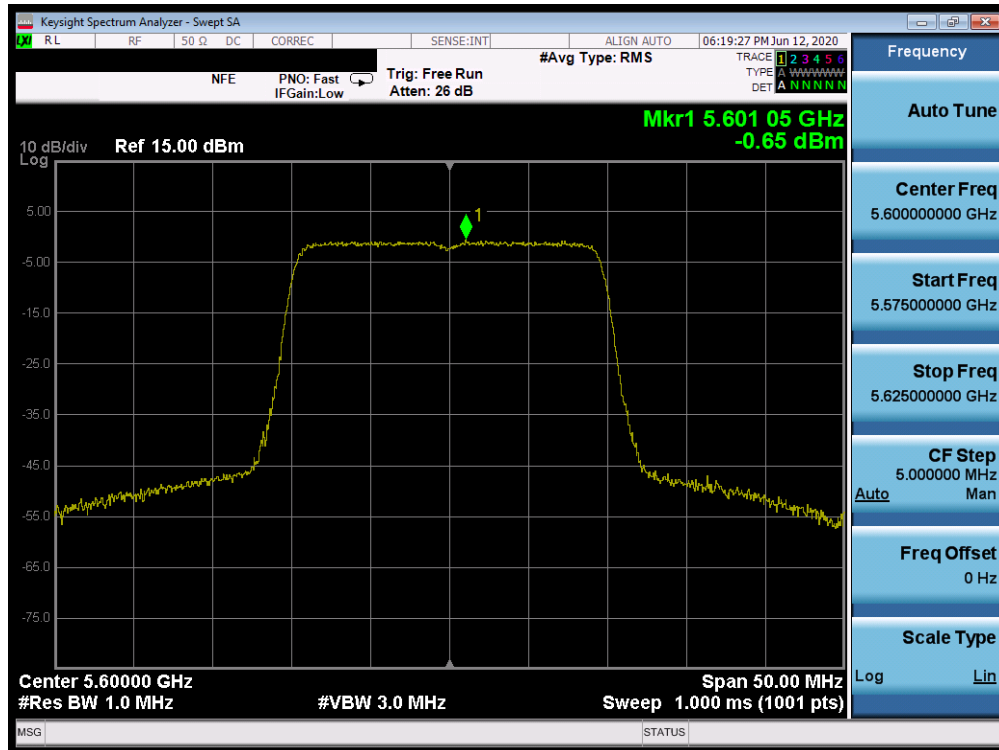


Plot 7-255. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 58)

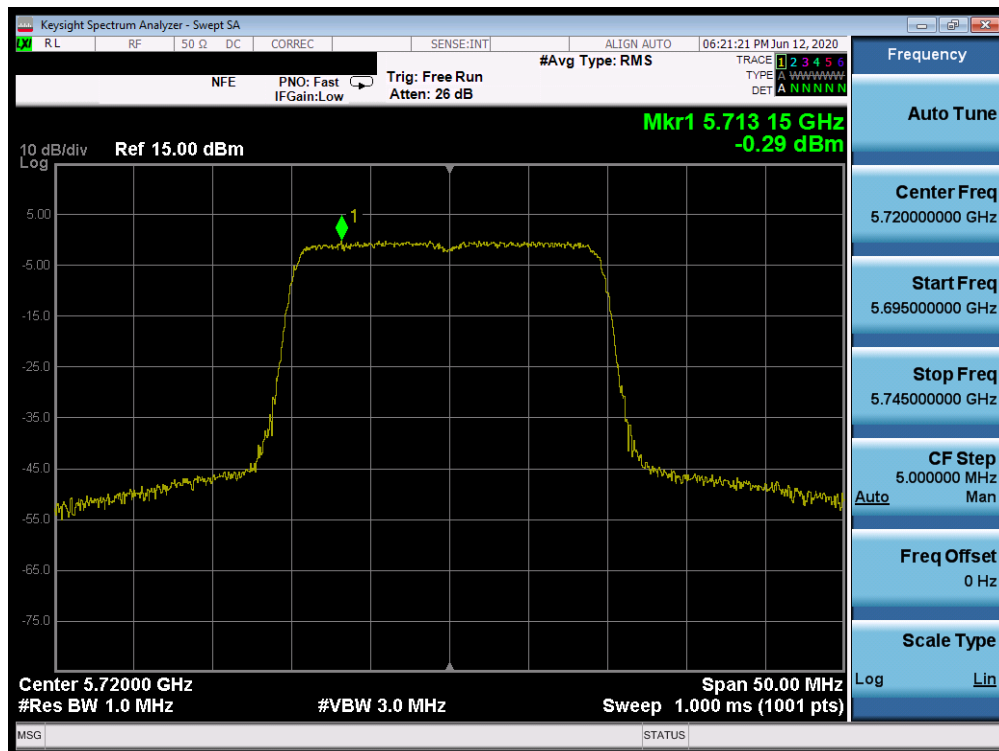


Plot 7-256. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 100)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 186 of 296

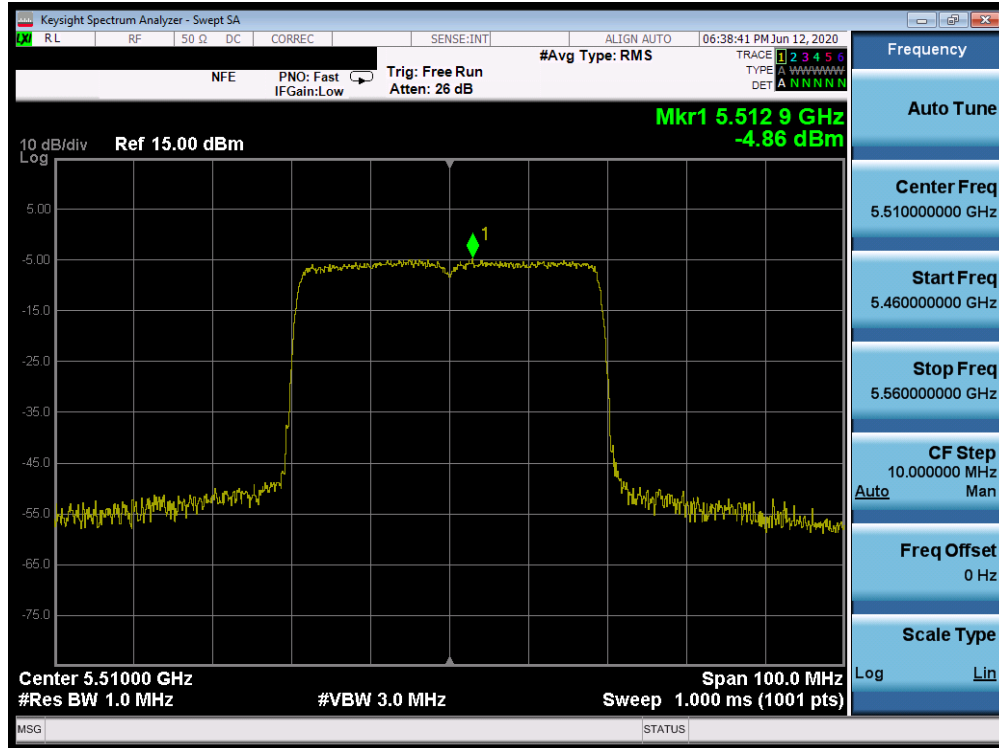


Plot 7-257. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 120)

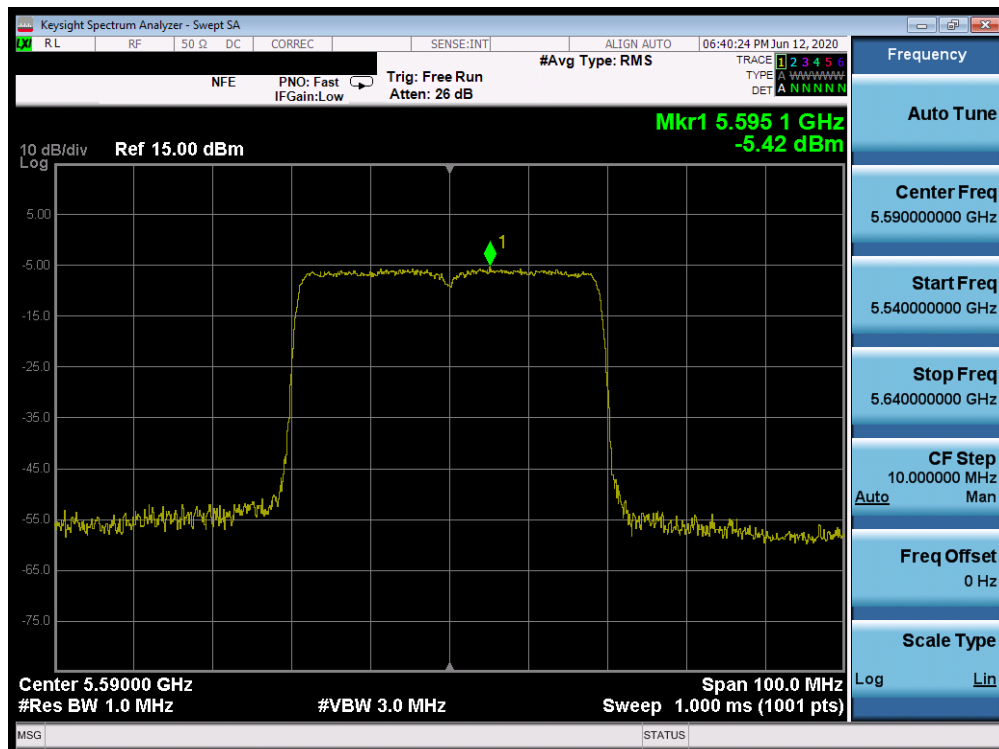


Plot 7-258. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 144)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 187 of 296

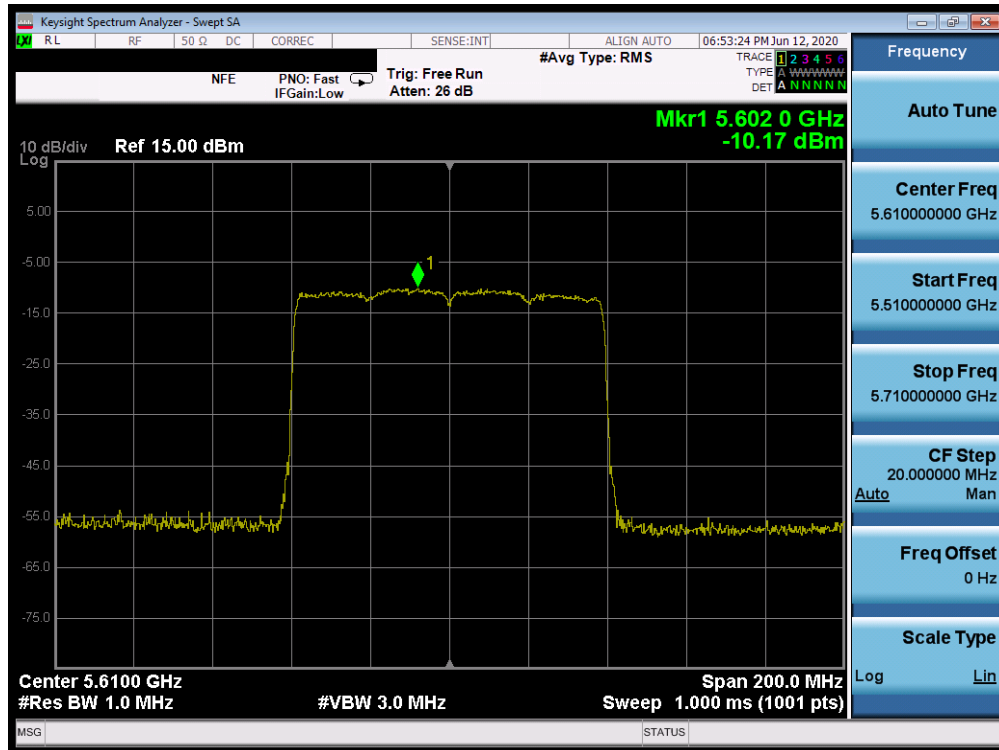


Plot 7-259. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 102)

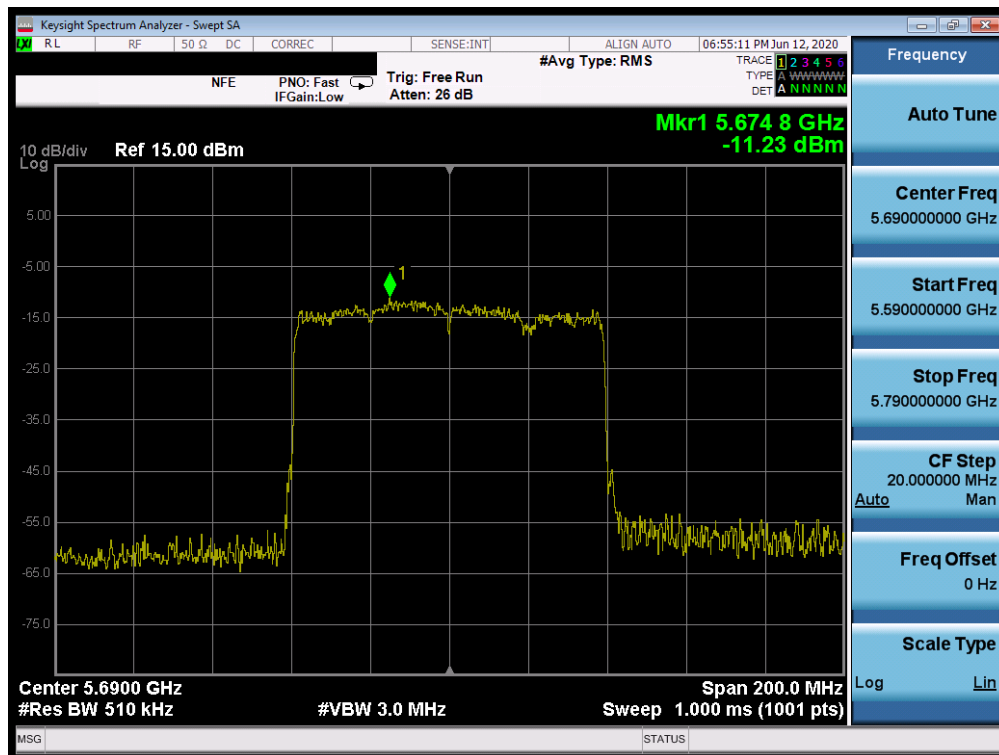


Plot 7-260. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 118)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 188 of 296

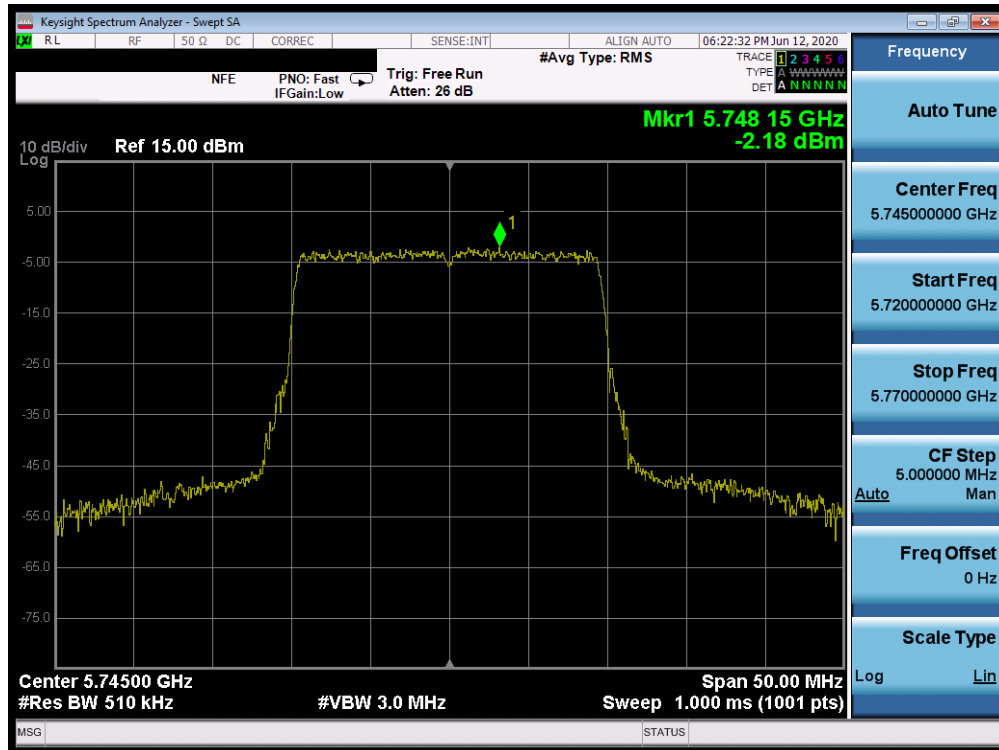


Plot 7-263. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 122)

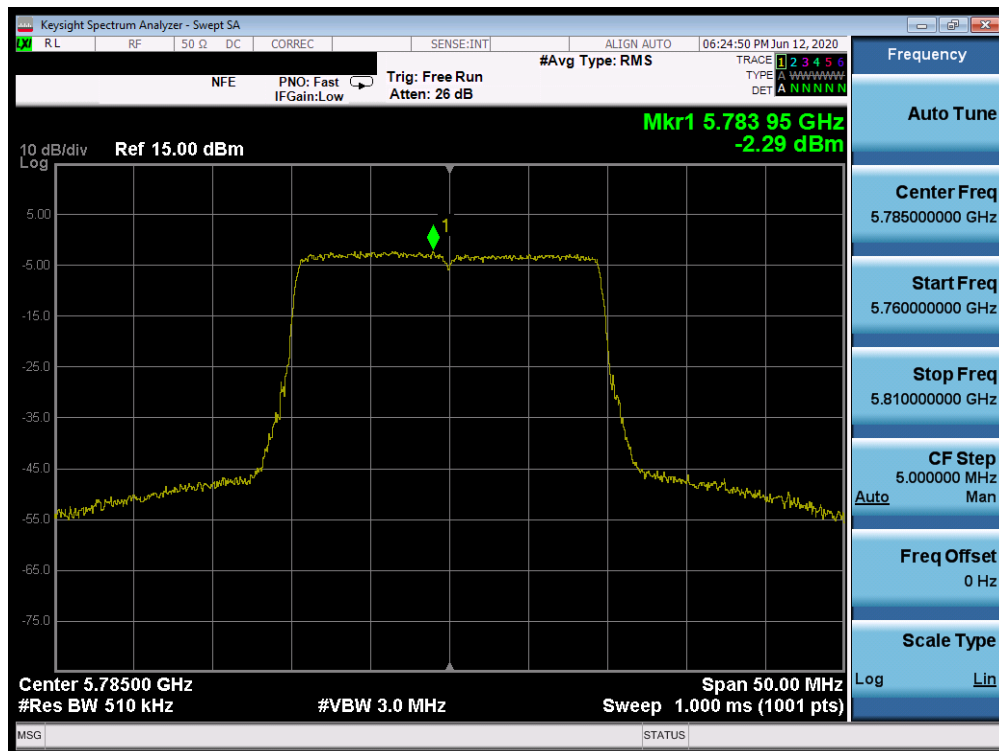


Plot 7-264. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 138)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 190 of 296

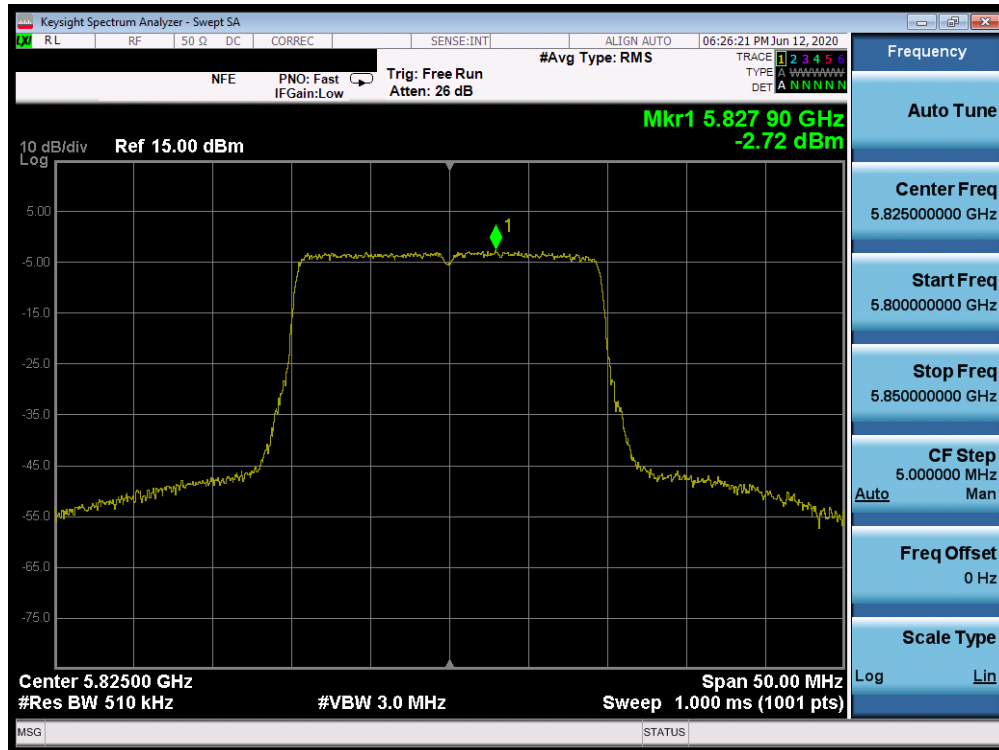


Plot 7-265. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 149)

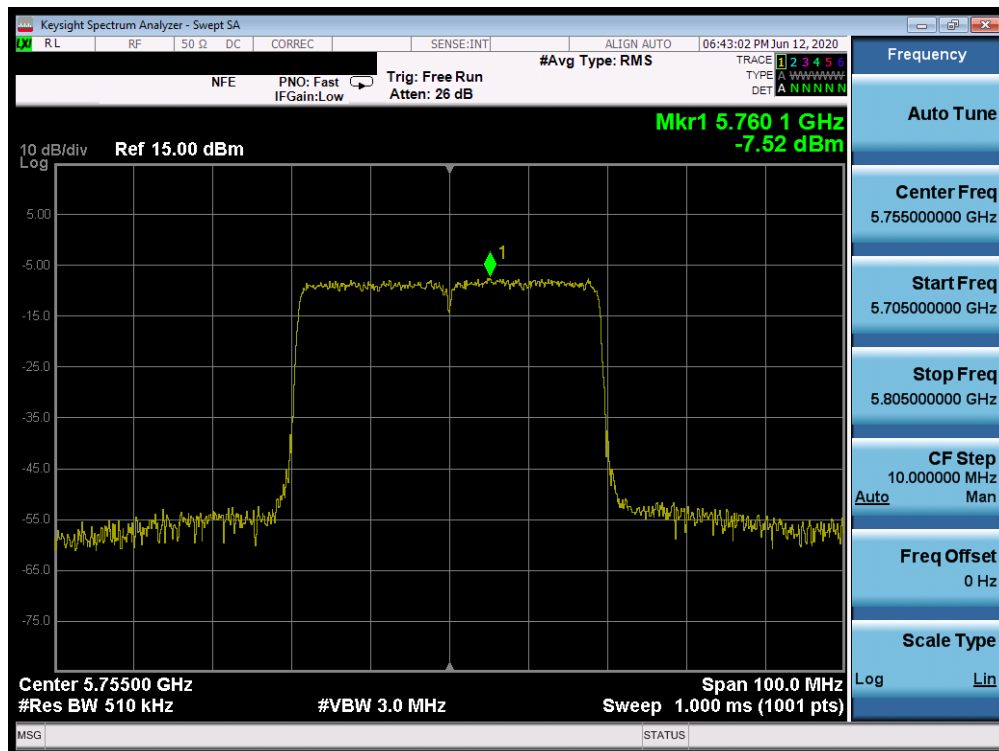


Plot 7-266. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 157)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 191 of 296

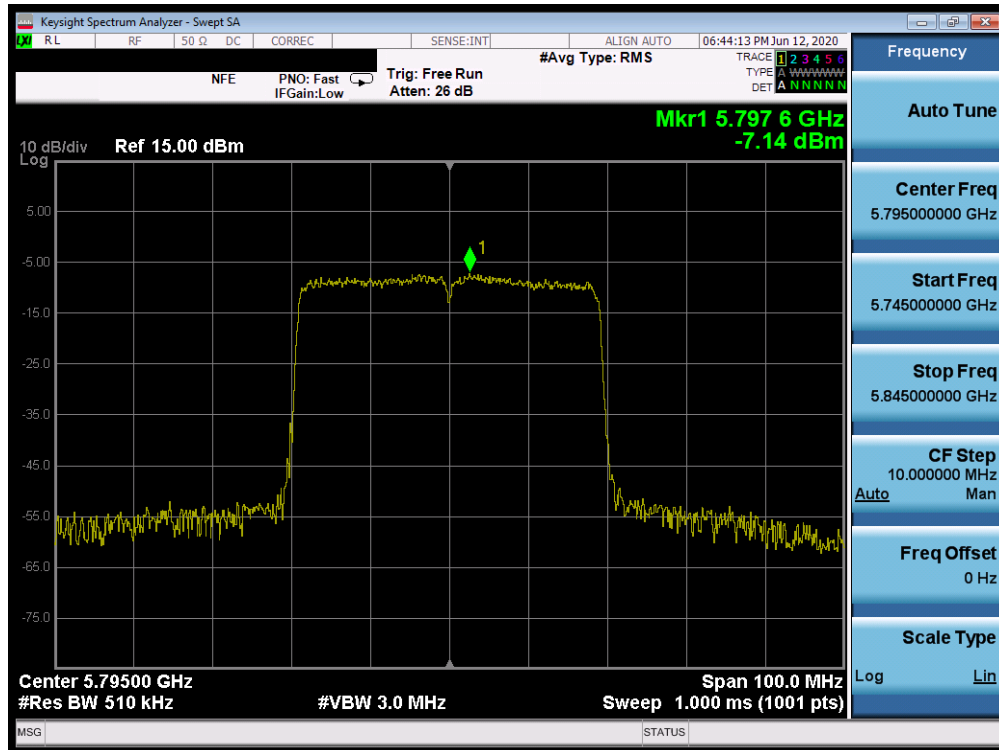


Plot 7-267. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 165)

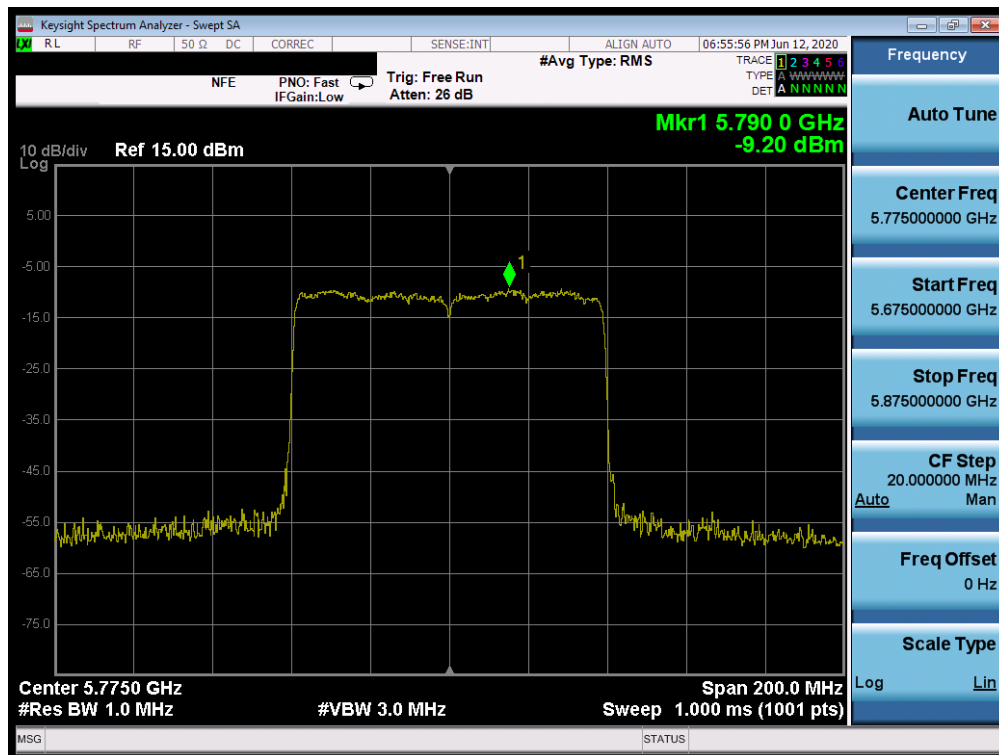


Plot 7-268. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 151)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 192 of 296



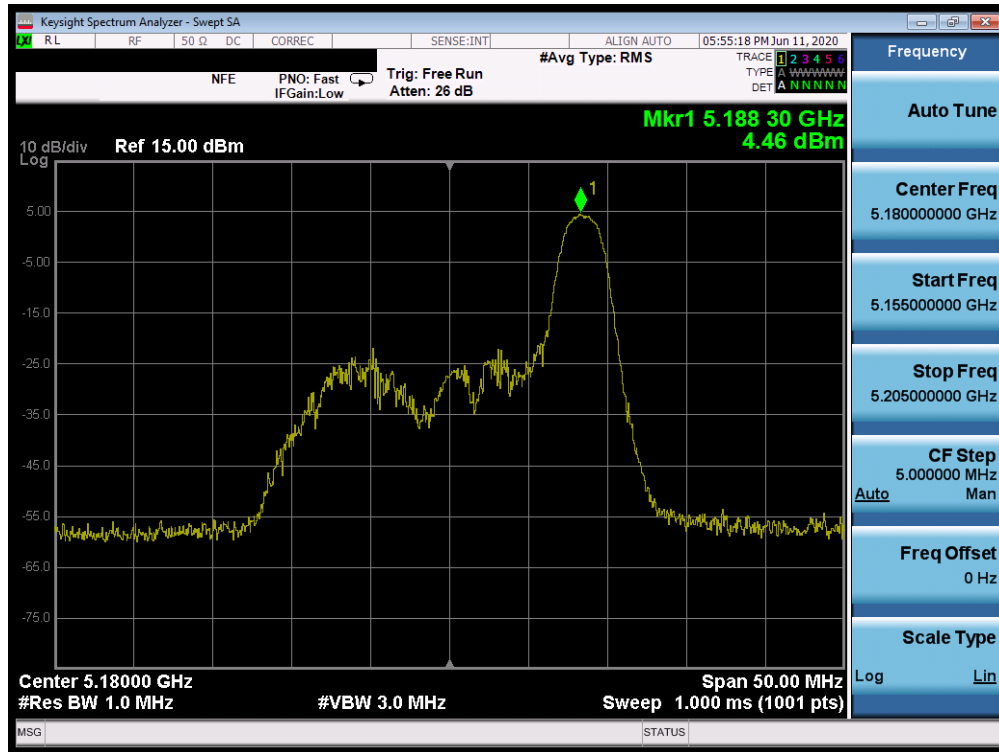
Plot 7-269. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 159)



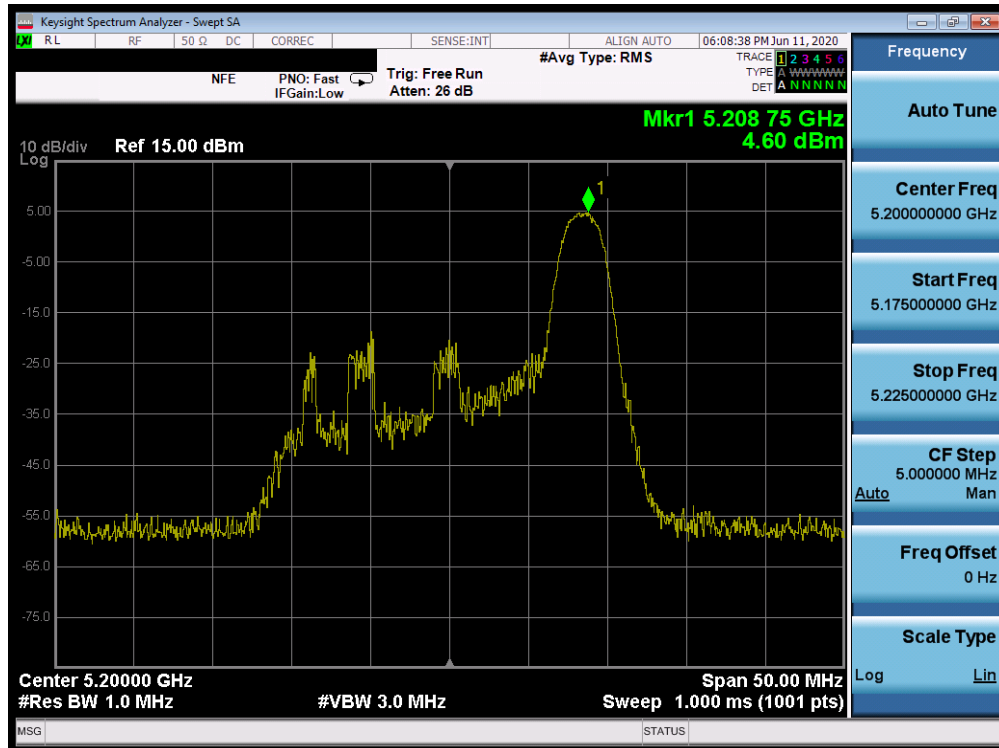
Plot 7-270. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 155)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 193 of 296

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

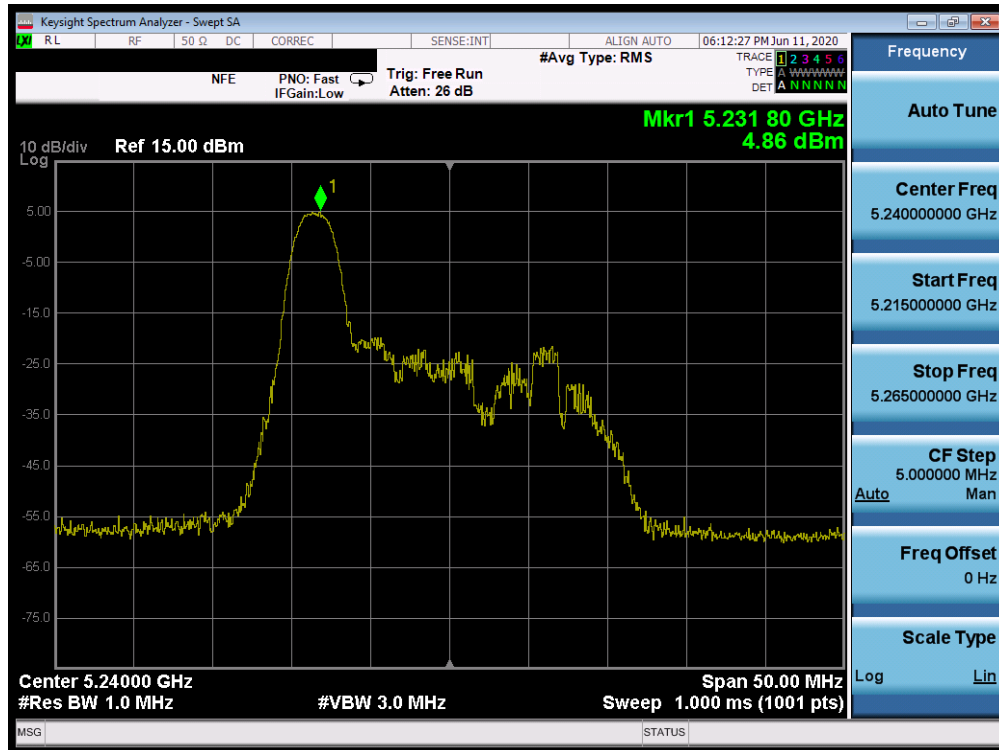


Plot 7-271. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 36)

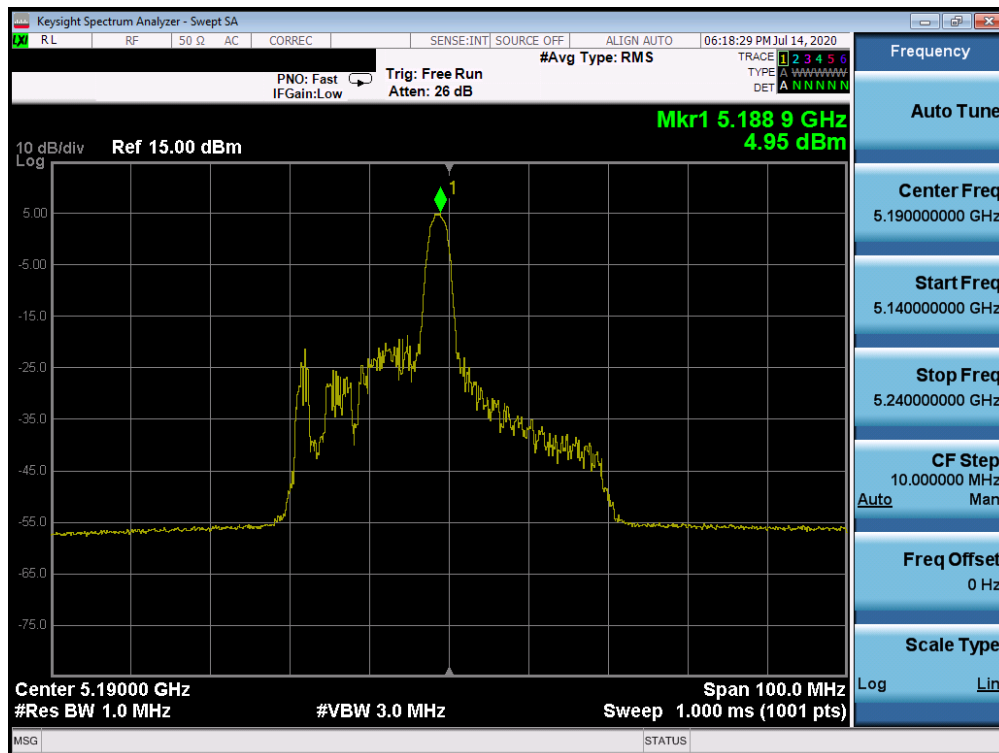


Plot 7-272. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 40)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 194 of 296

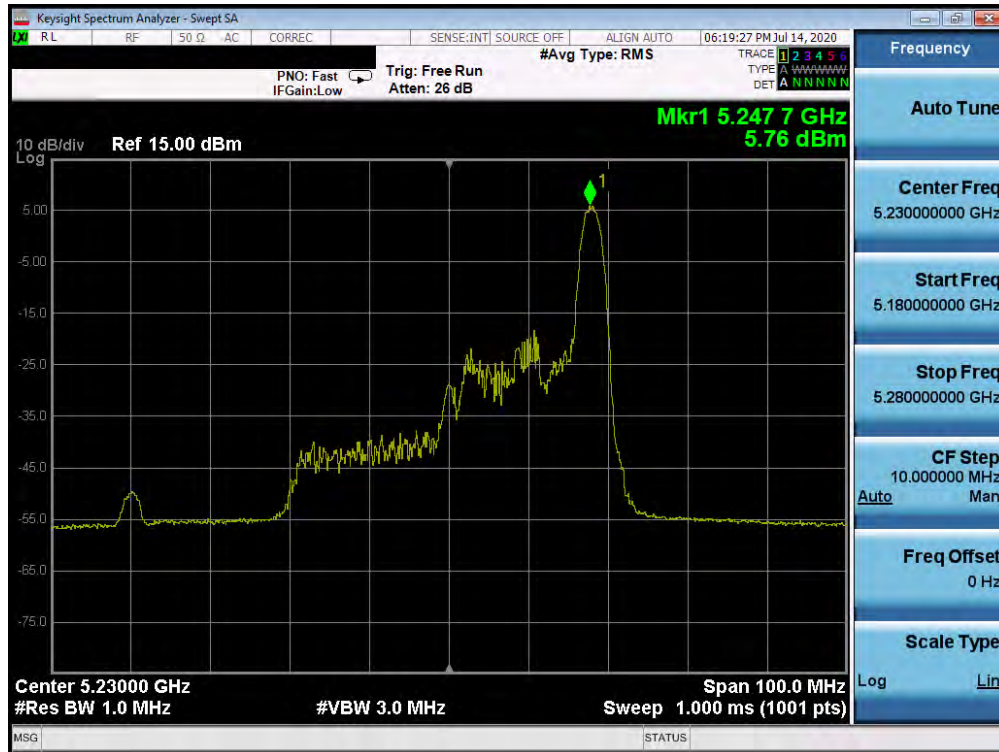


Plot 7-273. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 48)

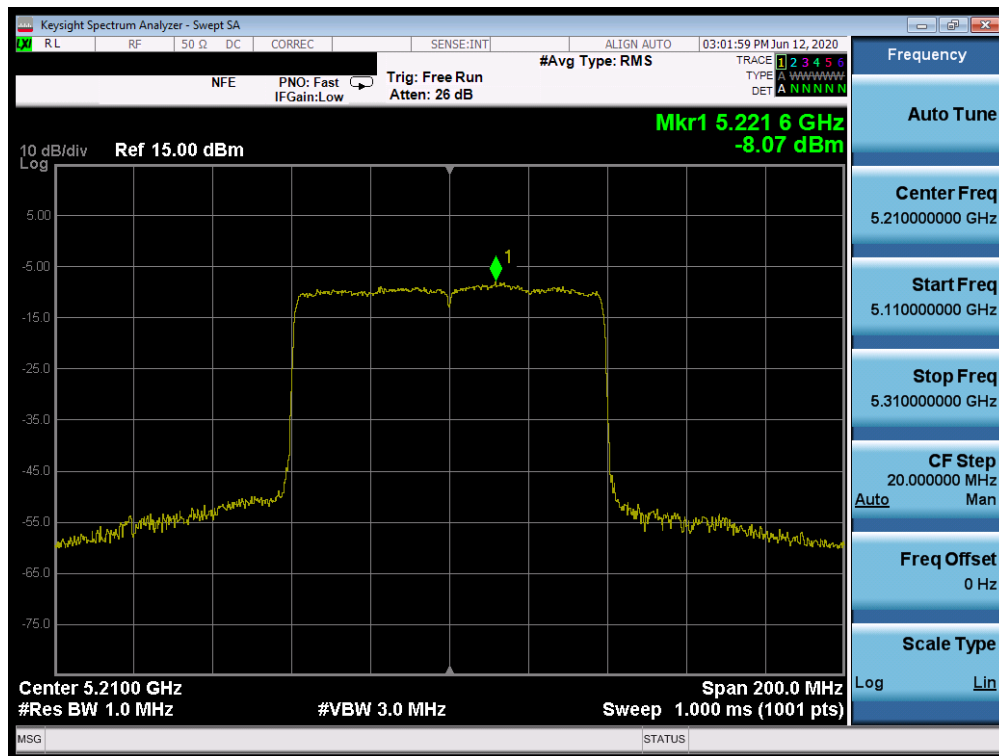


Plot 7-274. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 38)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 195 of 296

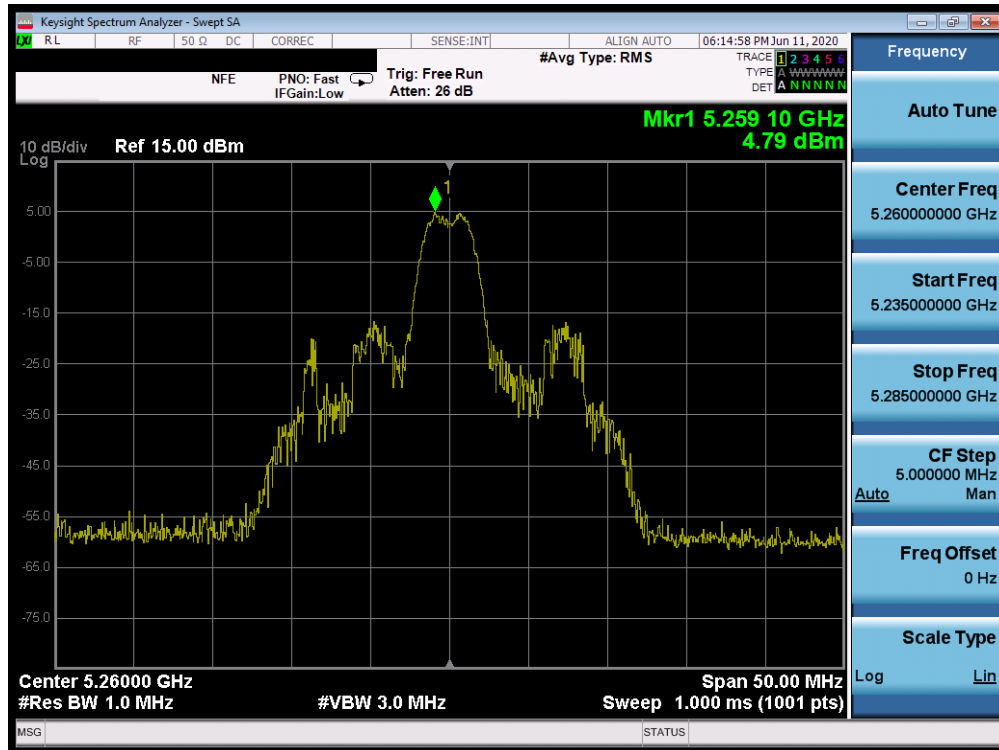


Plot 7-275. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 46)

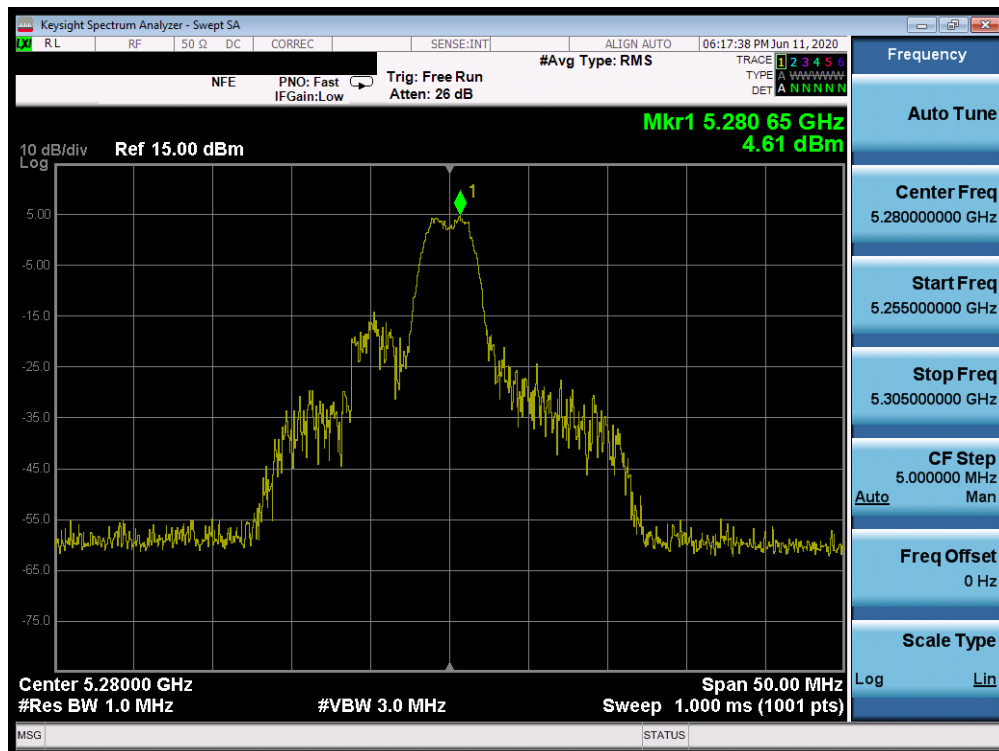


Plot 7-276. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 42)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 196 of 296

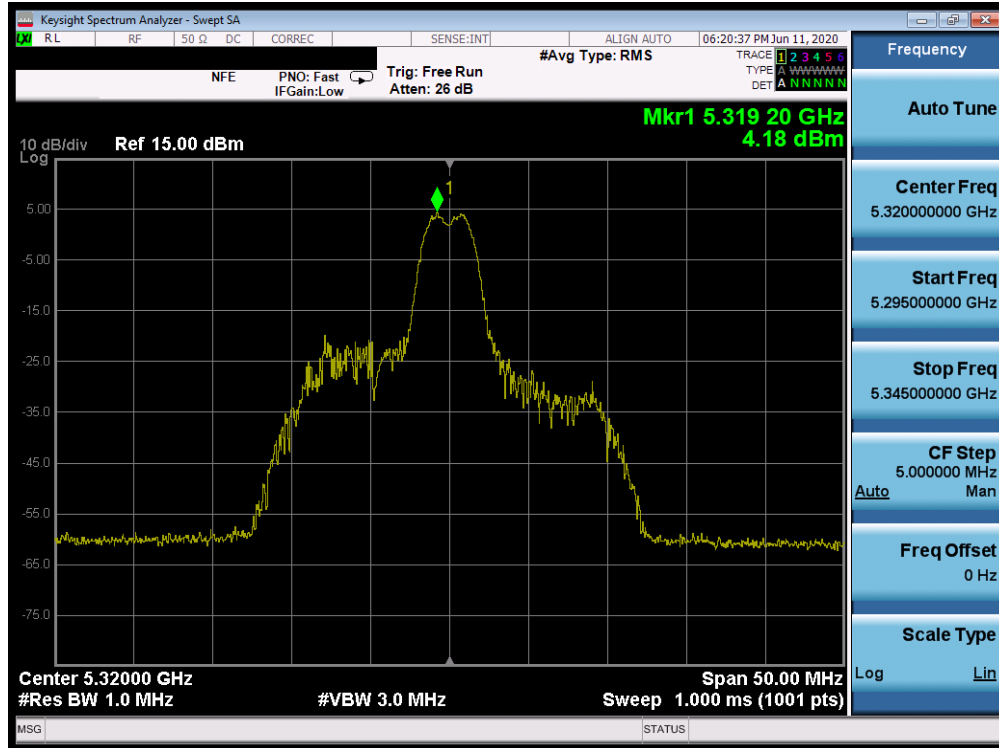


Plot 7-277. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 52)

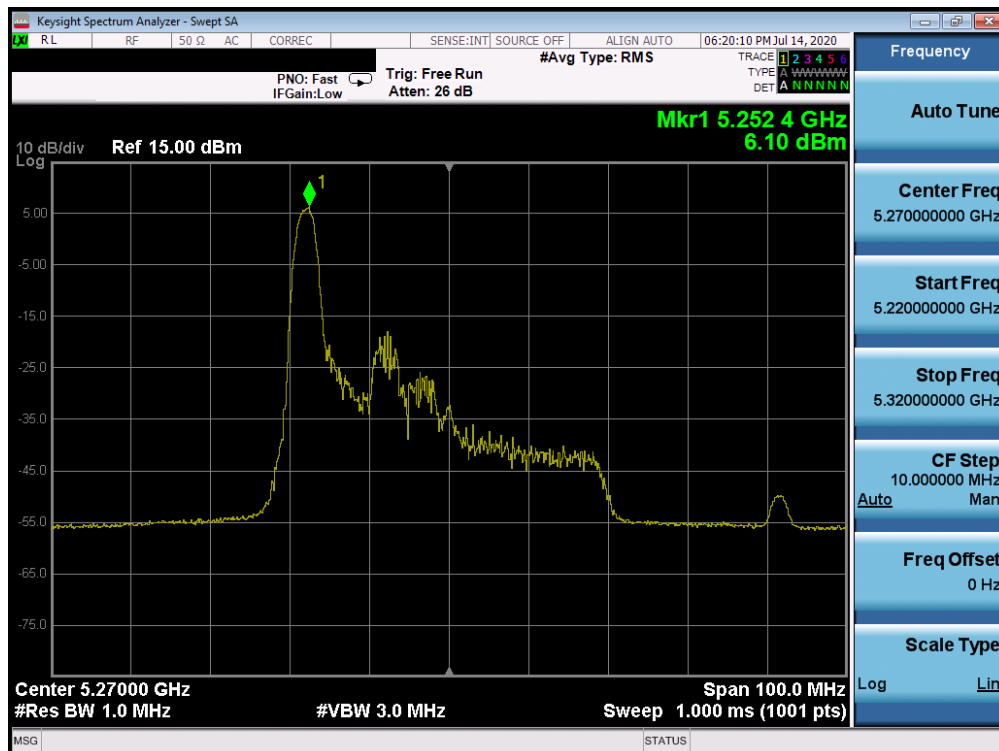


Plot 7-278. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 197 of 296

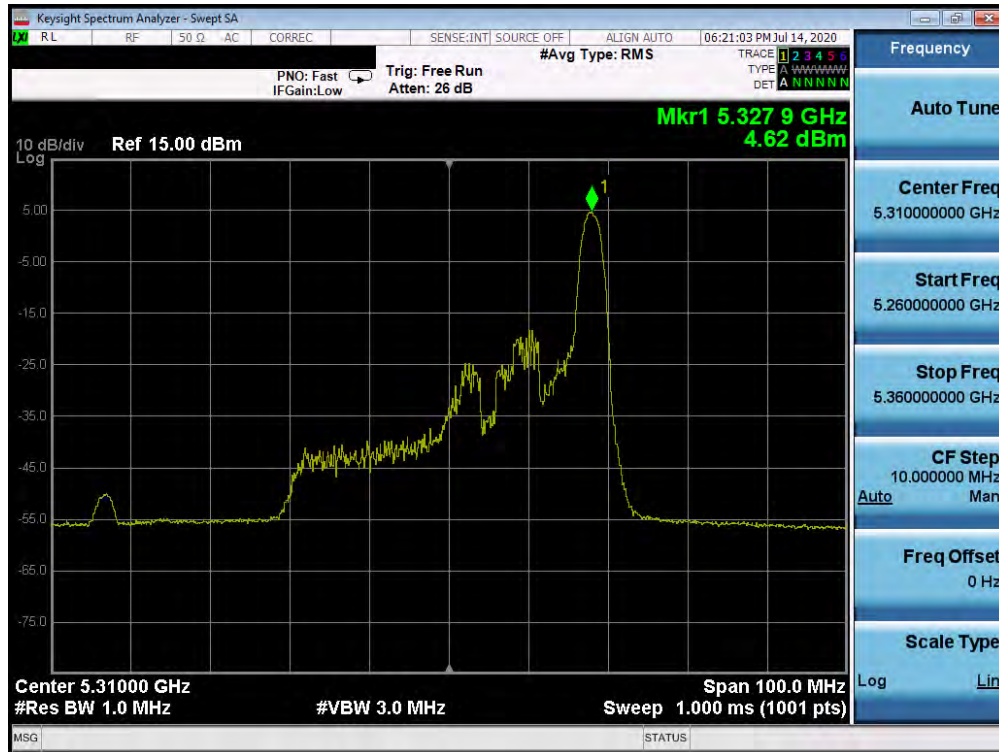


Plot 7-279. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 64)

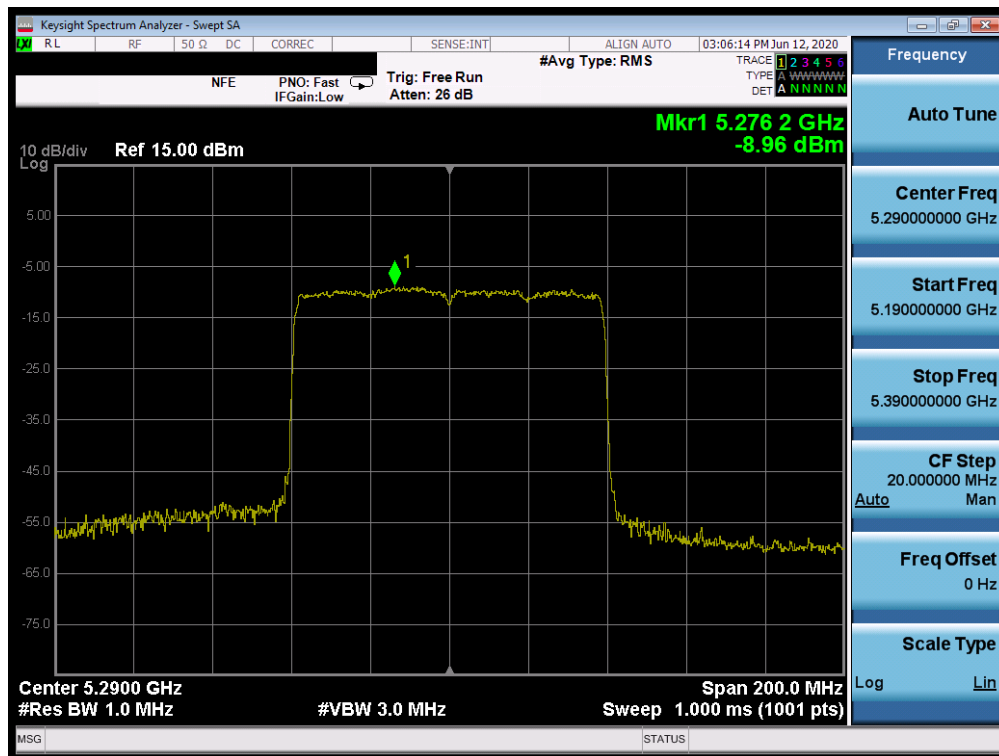


Plot 7-280. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 198 of 296



Plot 7-281. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 62)



Plot 7-282. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMN981W	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005050082-10-R1.A3L	Test Dates: 5/5 - 7/7/2020	EUT Type: Portable Handset		Page 199 of 296