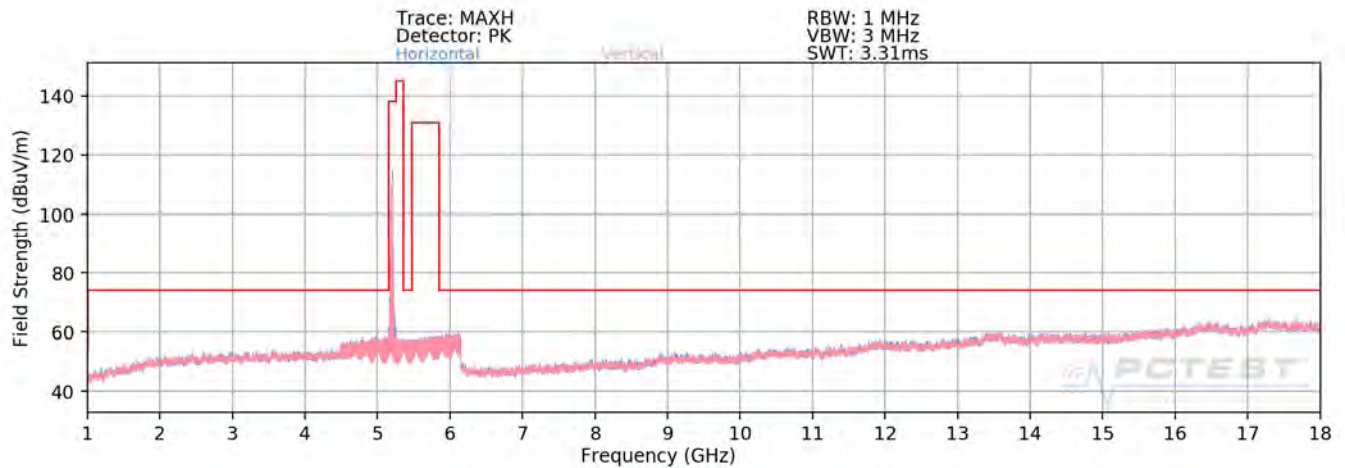
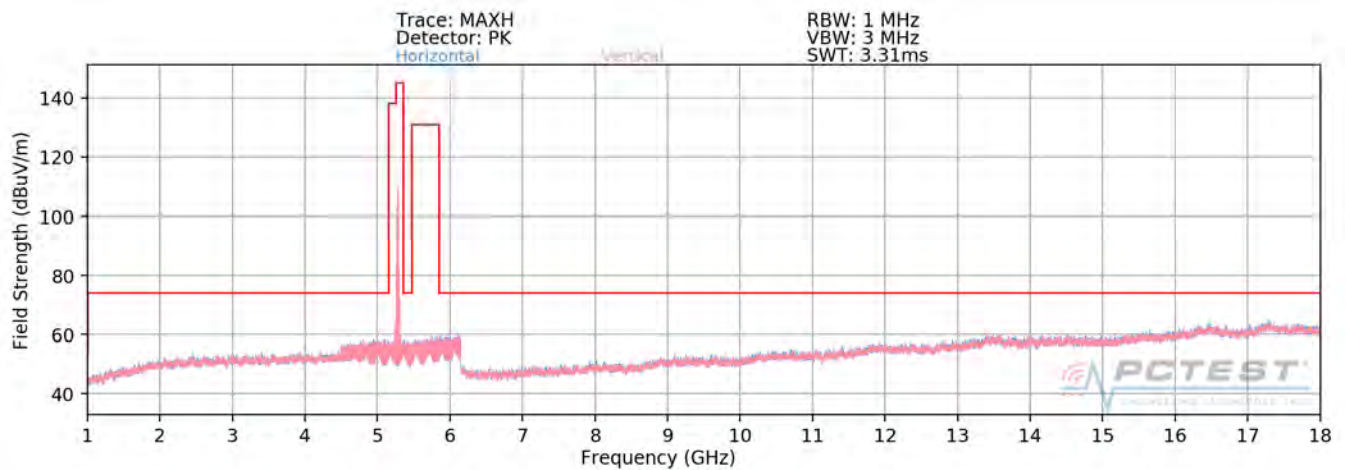


7.6.3 MIMO Radiated Spurious Emission Measurements

106 Tones

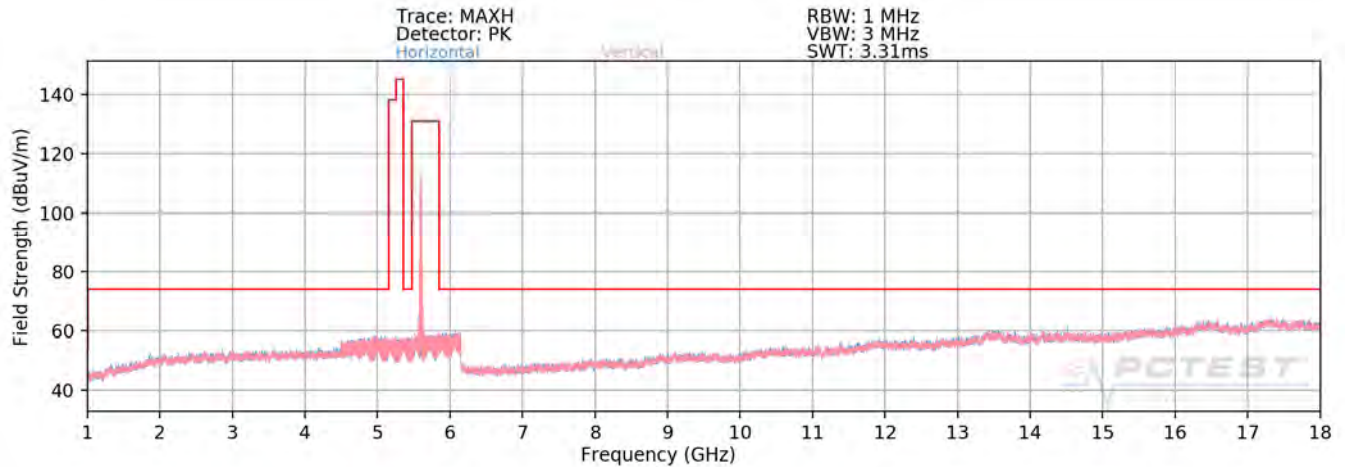


Plot 7-649. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U1 Ch. 40 – 106 Tones)

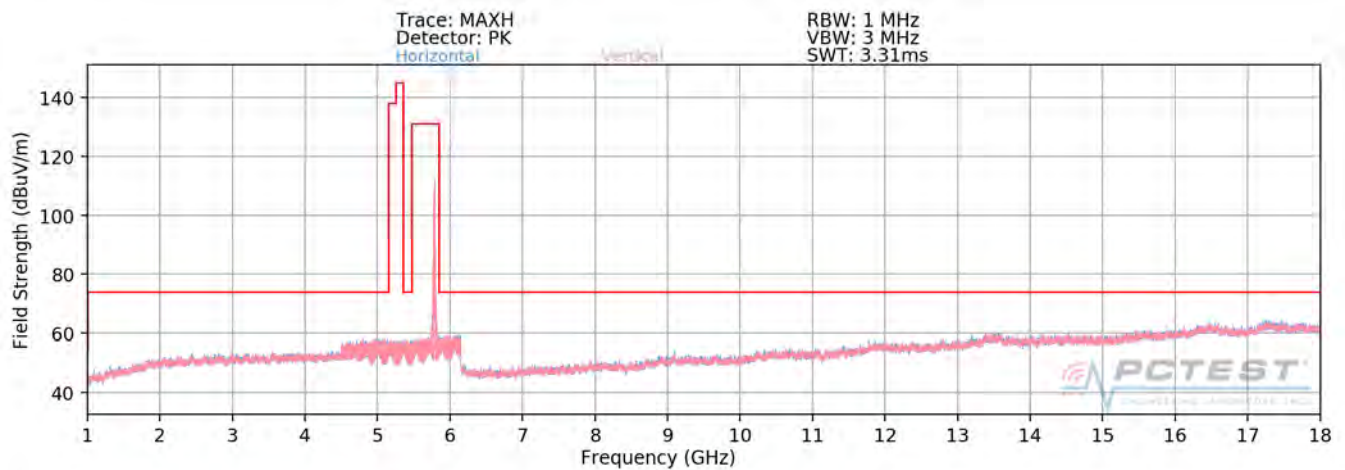


Plot 7-650. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U2A Ch. 56 – 106 Tones)

FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 445 of 514



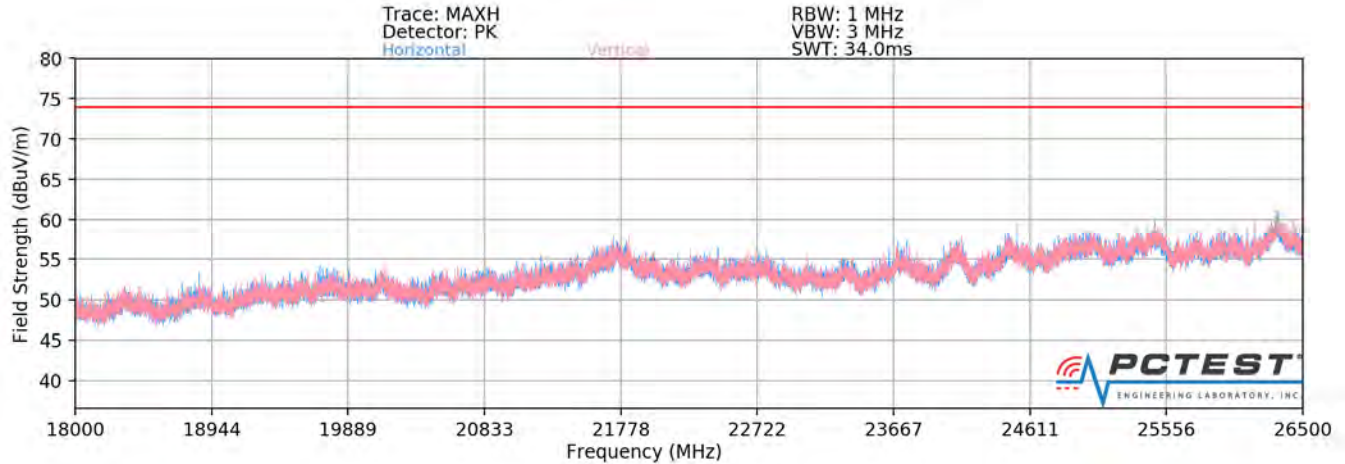
Plot 7-651. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U2C Ch. 120 – 106 Tones)



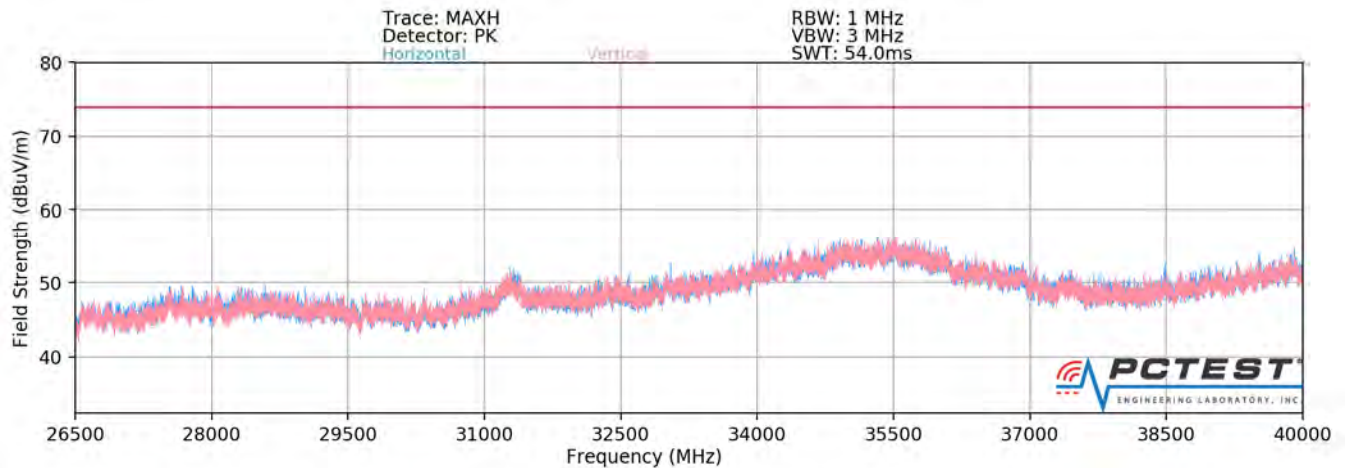
Plot 7-652. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U3 Ch. 157 – 106 Tones)

FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 446 of 514

MIMO Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-653. Radiated Spurious Plot 18GHz - 26.5GHz MIMO (802.11ax – 106 Tones)



Plot 7-654. Radiated Spurious Plot 26.5GHz - 40GHz MIMO (802.11ax – 106 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 447 of 514

MIMO Radiated Spurious Emission Measurements (106 Tones)

§15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	53
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5180MHz
Channel:	36

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	H	-	-	-69.14	12.74	50.60	68.20	-17.60
* 15540.00	Average	H	-	-	-82.75	15.28	39.53	53.98	-14.45
* 15540.00	Peak	H	-	-	-71.06	15.28	51.22	73.98	-22.76
* 20720.00	Average	H	-	-	-78.13	7.38	26.71	53.98	-27.27
* 20720.00	Peak	H	-	-	-67.86	7.38	36.98	73.98	-37.00
25900.00	Peak	H	-	-	-65.54	9.85	41.77	68.20	-26.43

Table 7-174. Radiated Measurements MIMO (106 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	53
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5200MHz
Channel:	40

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	Peak	H	-	-	-69.95	12.24	49.29	68.20	-18.91
* 15600.00	Average	H	-	-	-83.00	15.40	39.40	53.98	-14.57
* 15600.00	Peak	H	-	-	-71.00	15.40	51.40	73.98	-22.57
* 20800.00	Average	H	-	-	-78.20	7.85	27.10	53.98	-26.87
* 20800.00	Peak	H	-	-	-67.42	7.85	37.88	73.98	-36.09
26000.00	Peak	H	-	-	-66.62	10.44	41.27	68.20	-26.93

Table 7-175. Radiated Measurements MIMO (106 Tones)

FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 448 of 514

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5240MHz
 Channel: 48

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	Peak	H	-	-	-68.77	12.41	50.64	68.20	-17.56
* 15720.00	Average	H	-	-	-83.20	16.70	40.50	53.98	-13.48
* 15720.00	Peak	H	-	-	-71.25	16.70	52.45	73.98	-21.53
* 20960.00	Average	H	-	-	-77.99	7.75	27.22	53.98	-26.76
* 20960.00	Peak	H	-	-	-67.05	7.75	38.16	73.98	-35.82
26200.00	Peak	H	-	-	-65.81	10.26	41.91	68.20	-26.29

Table 7-176. Radiated Measurements MIMO (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5180MHz
 Channel: 36

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	H	-	-	-68.95	12.74	50.79	68.20	-17.41
* 15540.00	Average	H	-	-	-82.04	15.28	40.24	53.98	-13.74
* 15540.00	Peak	H	-	-	-69.92	15.28	52.36	73.98	-21.62
* 20720.00	Average	H	-	-	-78.26	7.38	26.58	53.98	-27.40
* 20720.00	Peak	H	-	-	-67.89	7.38	36.95	73.98	-37.03
25900.00	Peak	H	-	-	-65.84	9.85	41.47	68.20	-26.73

Table 7-177. Radiated Measurements MIMO (106 Tones)with WCP

FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07_A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 449 of 514

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5260MHz
 Channel: 52

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10520.00	Peak	H	270	20	-67.70	13.16	52.46	68.20	-15.74
* 15780.00	Average	H	203	335	-80.75	16.21	42.46	53.98	-11.52
* 15780.00	Peak	H	203	335	-59.87	16.21	63.34	73.98	-10.64
* 21040.00	Average	H	-	-	-78.46	7.78	26.78	53.98	-27.20
* 21040.00	Peak	H	-	-	-68.11	7.78	37.13	73.98	-36.85
26300.00	Peak	H	-	-	-67.33	10.58	40.71	68.20	-27.49

Table 7-178. Radiated Measurements MIMO (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5280MHz
 Channel: 56

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	Peak	H	-	-	-69.76	13.66	50.90	68.20	-17.30
* 15840.00	Average	H	-	-	-81.92	15.64	40.72	53.98	-13.26
* 15840.00	Peak	H	-	-	-69.90	15.64	52.74	73.98	-21.24
* 21120.00	Average	H	-	-	-78.15	17.26	36.57	53.98	-17.41
* 21120.00	Peak	H	-	-	-67.46	17.26	47.26	73.98	-26.72
26400.00	Peak	H	-	-	-65.72	19.67	51.41	68.20	-16.79

Table 7-179. Radiated Measurements MIMO (106 Tones)

FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 450 of 514

Worst Case Mode: 802.11ax (20MHz BW)
Worst Case Transfer Rate: MCS0
RU Index: 53
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5320MHz
Channel: 64

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	Average	H	-	-	-82.33	14.15	38.82	53.98	-15.16
* 10640.00	Peak	H	-	-	-69.52	14.15	51.63	73.98	-22.35
* 15960.00	Average	H	-	-	-82.05	15.01	39.96	53.98	-14.02
* 15960.00	Peak	H	-	-	-69.87	15.01	52.14	73.98	-21.84
* 21280.00	Average	H	-	-	-78.05	17.51	36.92	53.98	-17.06
* 21280.00	Peak	H	-	-	-67.41	17.51	47.56	73.98	-26.42
26600.00	Peak	H	-	-	-51.33	1.44	47.57	68.20	-20.63

Table 7-180. Radiated Measurements MIMO (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
Worst Case Transfer Rate: MCS0
RU Index: 53
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5260MHz
Channel: 52

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10520.00	Peak	H	-	-	-69.80	13.16	50.36	68.20	-17.84
* 15780.00	Average	H	-	-	-82.69	16.21	40.52	53.98	-13.46
* 15780.00	Peak	H	-	-	-71.19	16.21	52.02	73.98	-21.96
* 21040.00	Average	H	-	-	-78.84	7.78	26.40	53.98	-27.58
* 21040.00	Peak	H	-	-	-67.23	7.78	38.01	73.98	-35.97
26300.00	Peak	H	-	-	-66.14	10.58	41.90	68.20	-26.30

Table 7-181. Radiated Measurements MIMO (106 Tones)with WCP

FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 451 of 514

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5500MHz
 Channel: 100

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	11000.00	Average	H	-	-	-81.72	13.55	38.83	53.98	-15.15
*	11000.00	Peak	H	-	-	-70.04	13.55	50.51	73.98	-23.47
	16500.00	Peak	H	-	-	-71.13	16.10	51.97	68.20	-16.23
	22000.00	Peak	H	-	-	-66.56	8.71	39.61	68.20	-28.59
	27500.00	Peak	H	-	-	-50.88	-9.42	37.16	68.20	-31.04

Table 7-182. Radiated Measurements MIMO (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5600MHz
 Channel: 120

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	11200.00	Average	H	-	-	-82.19	13.31	38.12	53.98	-15.86
*	11200.00	Peak	H	-	-	-70.57	13.31	49.74	73.98	-24.24
	16800.00	Peak	H	-	-	-71.21	17.53	53.32	68.20	-14.88
*	22400.00	Average	H	-	-	-77.24	9.30	29.52	53.98	-24.46
*	22400.00	Peak	H	-	-	-67.29	9.30	39.47	73.98	-34.51
	28000.00	Peak	H	-	-	-49.23	-9.24	38.99	68.20	-29.21

Table 7-183. Radiated Measurements MIMO (106 Tones)

FCC ID: A3LSC03L	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07-A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset	
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Worst Case Mode: 802.11ax (20MHz BW)
Worst Case Transfer Rate: MCS0
RU Index: 53
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5720MHz
Channel: 144

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	11440.00	Average	H	-	-	-82.69	15.10	39.41	53.98	-14.57
*	11440.00	Peak	H	-	-	-70.42	15.10	51.68	73.98	-22.30
	17160.00	Peak	H	-	-	-70.30	18.83	55.53	68.20	-12.67
*	22880.00	Average	H	-	-	-78.95	8.86	27.37	53.98	-26.61
*	22880.00	Peak	H	-	-	-68.72	8.86	37.60	73.98	-36.38
	28600.00	Peak	H	-	-	-52.63	-9.13	35.70	68.20	-32.50

Table 7-184. Radiated Measurements MIMO (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
Worst Case Transfer Rate: MCS0
RU Index: 53
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5500MHz
Channel: 100

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	11000.00	Average	H	-	-	-81.43	13.55	39.12	53.98	-14.86
*	11000.00	Peak	H	-	-	-69.53	13.55	51.02	73.98	-22.96
	16500.00	Peak	H	-	-	-70.74	16.10	52.36	68.20	-15.84
	22000.00	Peak	H	-	-	-65.36	8.71	40.81	68.20	-27.39
	27500.00	Peak	H	-	-	-50.54	-9.42	37.50	68.20	-30.70

Table 7-185. Radiated Measurements MIMO (106 Tones)with WCP

FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 453 of 514

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5745MHz
 Channel: 149

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	H	397	18	-81.10	15.22	41.12	53.98	-12.86
* 11490.00	Peak	H	397	18	-67.51	15.22	54.71	73.98	-19.27
17235.00	Peak	H	-	-	-70.76	19.54	55.78	68.20	-12.42
* 22980.00	Average	H	-	-	-78.22	8.38	27.62	53.98	-26.36
* 22980.00	Peak	H	-	-	-67.24	8.38	38.60	73.98	-35.38
28725.00	Peak	H	-	-	-51.65	-8.87	36.94	69.20	-32.26

Table 7-186. Radiated Measurements MIMO (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5785MHz
 Channel: 157

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	H	-	-	-81.66	15.02	40.36	53.98	-13.62
* 11570.00	Peak	H	-	-	-70.39	15.02	51.63	73.98	-22.35
17355.00	Peak	H	-	-	-70.78	23.41	59.63	68.20	-8.57
23140.00	Peak	H	-	-	-67.33	8.78	38.91	68.20	-29.29
28925.00	Peak	H	-	-	-52.46	-8.79	36.21	68.20	-31.99

Table 7-187. Radiated Measurements MIMO (106 Tones)

FCC ID: A3LSC03L	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset	Page 454 of 514

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	H	400	17	-77.57	14.92	44.35	53.98	-9.63
* 11650.00	Peak	H	400	17	-67.14	14.92	54.78	73.98	-19.20
17475.00	Peak	H	-	-	-71.03	21.86	57.83	68.20	-10.37
23300.00	Peak	H	-	-	-65.72	9.23	40.97	68.20	-27.23
29125.00	Peak	H	-	-	-49.61	-9.66	38.19	68.20	-30.01

Table 7-188. Radiated Measurements MIMO (106 Tones)

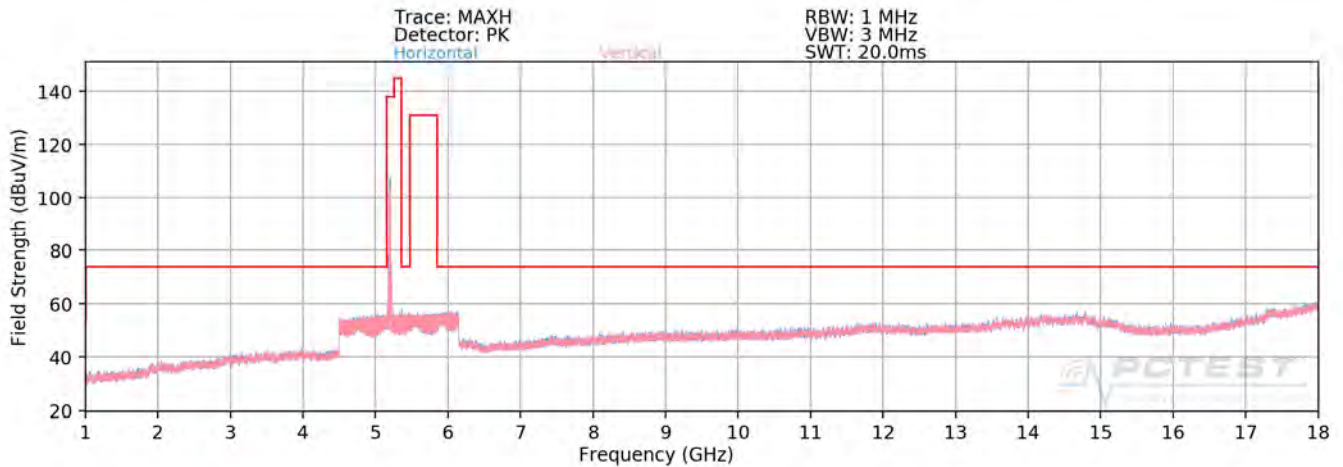
Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5745MHz
 Channel: 149

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	H	-	-	-81.65	15.22	40.57	53.98	-13.41
* 11490.00	Peak	H	-	-	-70.63	15.22	51.59	73.98	-22.39
17235.00	Peak	H	-	-	-71.33	19.54	55.21	68.20	-12.99
* 22980.00	Average	H	-	-	-78.14	8.38	27.70	53.98	-26.28
* 22980.00	Peak	H	-	-	-68.14	8.38	37.70	73.98	-36.28
28725.00	Peak	H	-	-	-52.36	-8.87	36.23	69.20	-32.97

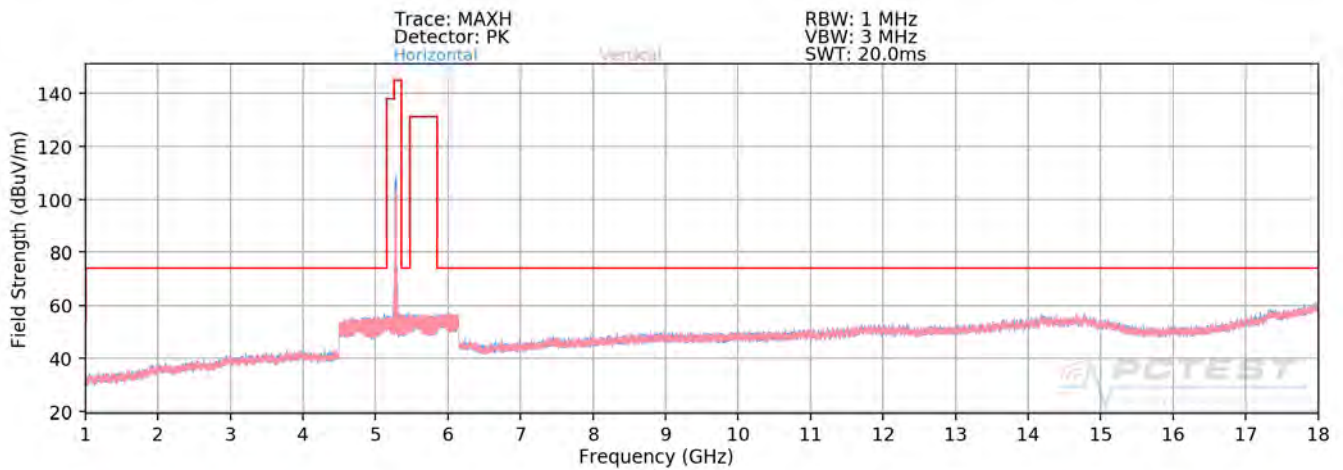
Table 7-189. Radiated Measurements MIMO (106 Tones)with WCP

FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07_A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 455 of 514

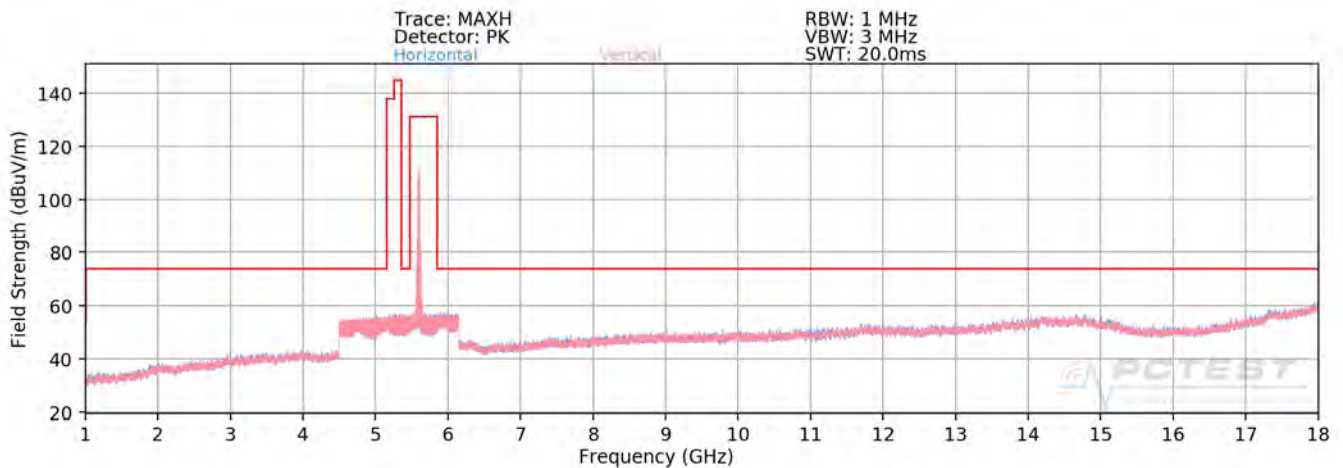
242 Tones



Plot 7-655. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U1 Ch. 40 – 242 Tones)

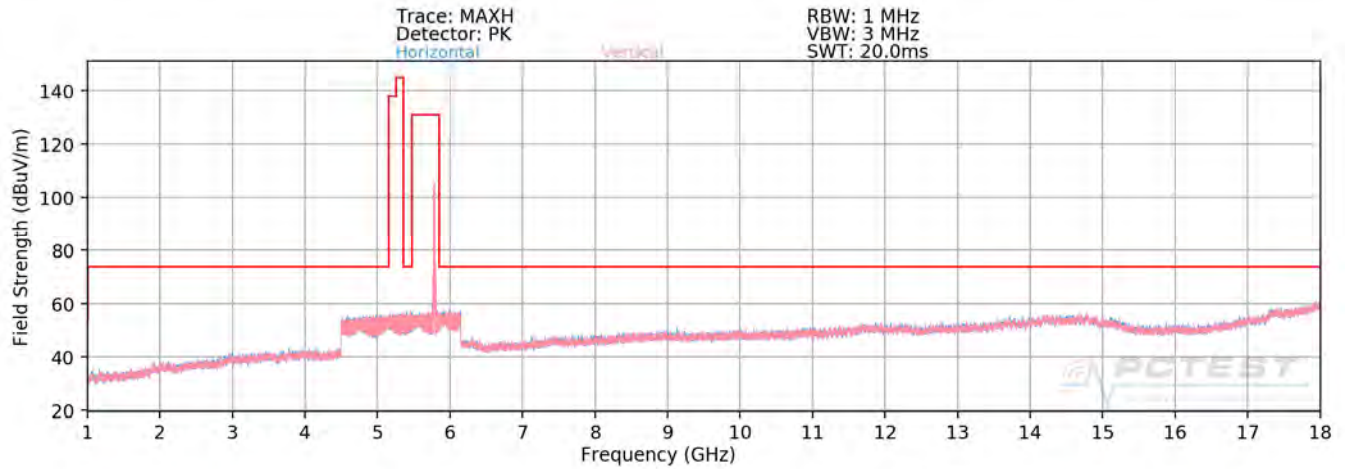


Plot 7-656. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U2A Ch. 56 – 242 Tones)



Plot 7-657. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U2C Ch. 120 – 242 Tones)

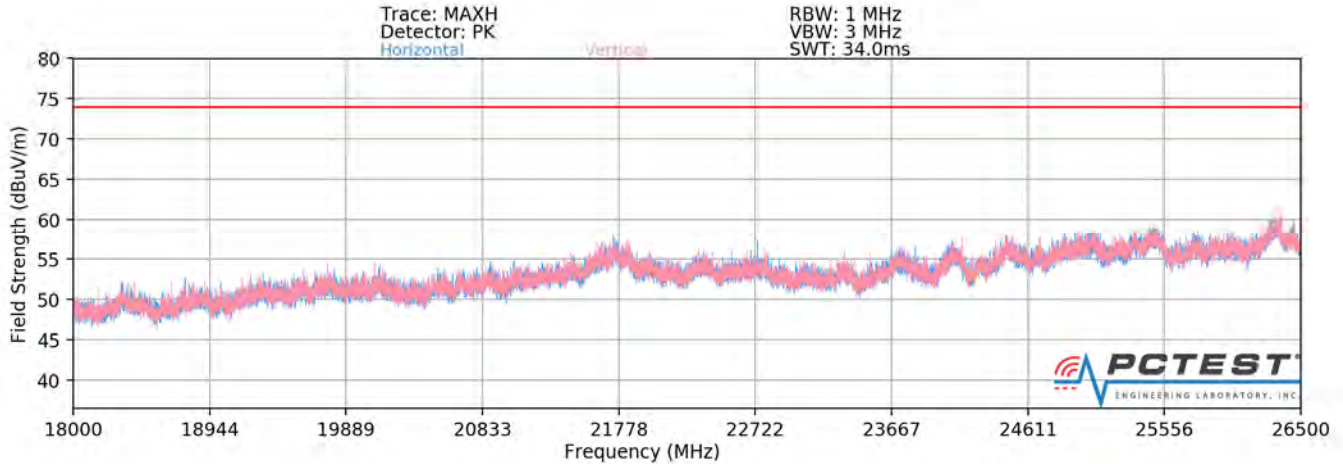
FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 456 of 514



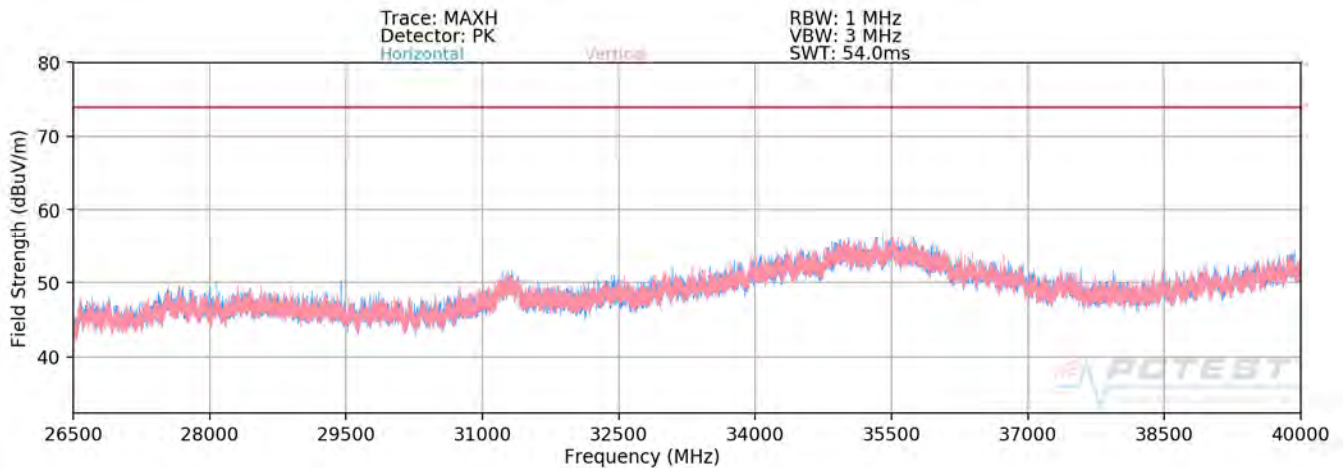
Plot 7-658. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U3 Ch. 157 – 242 Tones)

FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 457 of 514

MIMO Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-659. Radiated Spurious Plot 18GHz - 26.5GHz MIMO (802.11ax – 242 Tones)



Plot 7-660. Radiated Spurious Plot 26.5GHz - 40GHz MIMO (802.11ax – 242 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 458 of 514

MIMO Radiated Spurious Emission Measurements (242 Tones)

§15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5180MHz
Channel:	36

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	H	-	-	-69.69	12.74	50.05	68.20	-18.15
* 15540.00	Average	H	-	-	-82.70	15.28	39.58	53.98	-14.40
* 15540.00	Peak	H	-	-	-70.64	15.28	51.64	73.98	-22.34
* 20720.00	Average	H	-	-	-77.27	7.38	27.57	53.98	-26.40
* 20720.00	Peak	H	-	-	-67.75	7.38	37.09	73.98	-36.89
25900.00	Peak	H	-	-	-66.20	9.85	41.11	68.20	-27.09

Table 7-190. Radiated Measurements MIMO (242 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5200MHz
Channel:	40

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	Peak	H	-	-	-69.59	12.24	49.65	68.20	-18.55
* 15600.00	Average	H	-	-	-82.86	15.40	39.54	53.98	-14.43
* 15600.00	Peak	H	-	-	-71.48	15.40	50.92	73.98	-23.05
* 20800.00	Average	H	-	-	-78.32	7.85	26.98	53.98	-27.00
* 20800.00	Peak	H	-	-	-67.79	7.85	37.52	73.98	-36.46
26000.00	Peak	H	-	-	-66.37	10.44	41.52	68.20	-26.68

Table 7-191. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 459 of 514

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 61
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5240MHz
 Channel: 48

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	Peak	H	-	-	-69.47	12.41	49.94	68.20	-18.26
* 15720.00	Average	H	-	-	-83.32	16.70	40.38	53.98	-13.60
* 15720.00	Peak	H	-	-	-71.12	16.70	52.58	73.98	-21.40
* 20960.00	Average	H	-	-	-77.99	7.75	27.21	53.98	-26.77
* 20960.00	Peak	H	-	-	-68.28	7.75	36.93	73.98	-37.05
26200.00	Peak	H	-	-	-65.92	10.26	41.80	68.20	-26.40

Table 7-192. Radiated Measurements MIMO (242 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 61
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5260MHz
 Channel: 52

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10520.00	Peak	H	-	-	-69.48	13.16	50.68	68.20	-17.52
* 15780.00	Average	H	205	346	-81.83	16.21	41.38	53.98	-12.60
* 15780.00	Peak	H	205	346	-66.70	16.21	56.51	73.98	-17.47
* 21040.00	Average	H	-	-	-77.86	7.78	27.37	53.98	-26.61
* 21040.00	Peak	H	-	-	-67.48	7.78	37.76	73.98	-36.22
26300.00	Peak	H	-	-	-66.99	10.58	41.05	68.20	-27.15

Table 7-193. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 460 of 514

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 61
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5280MHz
 Channel: 56

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	Peak	H	-	-	-69.55	13.66	51.11	68.20	-17.09
* 15840.00	Average	H	-	-	-82.01	15.64	40.63	53.98	-13.35
* 15840.00	Peak	H	-	-	-70.11	15.64	52.53	73.98	-21.45
* 21120.00	Average	H	-	-	-77.70	17.26	37.02	53.98	-16.96
* 21120.00	Peak	H	-	-	-67.09	17.26	47.63	73.98	-26.35
26400.00	Peak	H	-	-	-65.33	19.67	51.80	68.20	-16.40

Table 7-194. Radiated Measurements MIMO (242 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 61
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	Average	H	-	-	-82.11	14.15	39.04	53.98	-14.94
* 10640.00	Peak	H	-	-	-69.89	14.15	51.26	73.98	-22.72
* 15960.00	Average	H	-	-	-81.99	15.01	40.02	53.98	-13.96
* 15960.00	Peak	H	-	-	-70.13	15.01	51.88	73.98	-22.10
* 21280.00	Average	H	-	-	-77.27	17.51	37.70	53.98	-16.28
* 21280.00	Peak	H	-	-	-67.62	17.51	47.34	73.98	-26.64
26600.00	Peak	H	-	-	-51.56	1.44	47.34	68.20	-20.86

Table 7-195. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSC03L	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset	
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Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 61
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5500MHz
 Channel: 100

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11000.00	Average	H	-	-	-81.63	13.55	38.92	53.98	-15.06
* 11000.00	Peak	H	-	-	-69.44	13.55	51.11	73.98	-22.87
16500.00	Peak	H	-	-	-70.46	16.10	52.64	68.20	-15.56
22000.00	Peak	H	-	-	-67.53	8.71	38.63	68.20	-29.57
27500.00	Peak	H	-	-	-51.62	-9.42	36.42	68.20	-31.78

Table 7-196. Radiated Measurements MIMO (242 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 61
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5600MHz
 Channel: 120

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11200.00	Average	H	-	-	-82.01	13.31	38.30	53.98	-15.68
* 11200.00	Peak	H	-	-	-70.04	13.31	50.27	73.98	-23.71
16800.00	Peak	H	-	-	-70.99	17.53	53.54	68.20	-14.66
* 22400.00	Average	H	-	-	-77.90	9.30	28.86	53.98	-25.12
* 22400.00	Peak	H	-	-	-67.14	9.30	39.62	73.98	-34.36
28000.00	Peak	H	-	-	-49.43	-9.24	38.79	68.20	-29.41

Table 7-197. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSC03L	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset	
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Worst Case Mode: 802.11ax (20MHz BW)
Worst Case Transfer Rate: MCS0
RU Index: 61
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5720MHz
Channel: 144

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11440.00	Average	H	-	-	-82.69	15.10	39.41	53.98	-14.57
* 11440.00	Peak	H	-	-	-70.42	15.10	51.68	73.98	-22.30
17160.00	Peak	H	-	-	-70.30	18.83	55.53	68.20	-12.67
* 22880.00	Average	H	-	-	-78.50	8.86	27.81	53.98	-26.17
* 22880.00	Peak	H	-	-	-67.80	8.86	38.52	73.98	-35.46
28600.00	Peak	H	-	-	-52.79	-9.13	35.54	68.20	-32.66

Table 7-198. Radiated Measurements MIMO (242 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
Worst Case Transfer Rate: MCS0
RU Index: 61
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5745MHz
Channel: 149

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	H	-	-	-82.11	15.22	40.11	53.98	-13.87
* 11490.00	Peak	H	-	-	-69.39	15.22	52.83	73.98	-21.15
17235.00	Peak	H	-	-	-69.99	19.54	56.55	68.20	-11.65
* 22980.00	Average	H	-	-	-77.90	8.38	27.94	53.98	-26.04
* 22980.00	Peak	H	-	-	-67.78	8.38	38.06	73.98	-35.92
28725.00	Peak	H	-	-	-51.95	-8.87	36.64	69.20	-32.56

Table 7-199. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 463 of 514

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 61
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5785MHz
 Channel: 157

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	H	-	-	-81.36	15.02	40.66	53.98	-13.32
* 11570.00	Peak	H	-	-	-70.21	15.02	51.81	73.98	-22.17
17355.00	Peak	H	-	-	-71.01	23.41	59.40	68.20	-8.80
23140.00	Peak	H	-	-	-67.33	8.78	38.90	68.20	-29.30
28925.00	Peak	H	-	-	-51.98	-8.79	36.68	68.20	-31.52

Table 7-200. Radiated Measurements MIMO (242 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 61
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	H	-	-	-80.21	14.92	41.71	53.98	-12.27
* 11650.00	Peak	H	-	-	-71.12	14.92	50.80	73.98	-23.18
17475.00	Peak	H	-	-	-70.85	21.86	58.01	68.20	-10.19
23300.00	Peak	H	-	-	-65.13	9.23	41.56	68.20	-26.64
29125.00	Peak	H	-	-	-47.74	-9.66	40.06	68.20	-28.14

Table 7-201. Radiated Measurements MIMO (242 Tones)

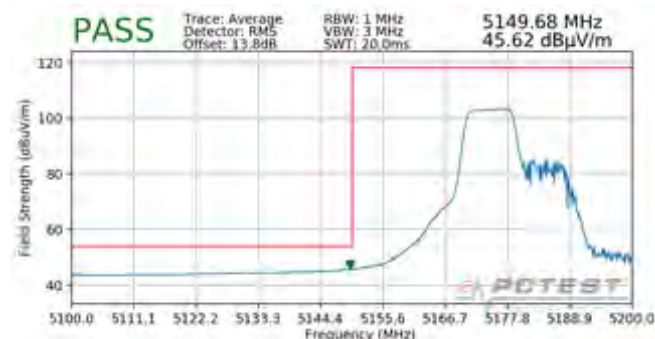
FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 464 of 514

7.6.4 SISO Antenna-1 Radiated Band Edge Measurements (20MHz BW)

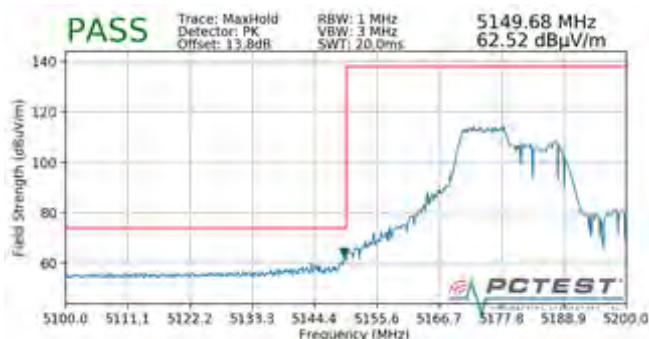
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]; RSS-Gen [8.9]

106 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	53
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36



Plot 7-661. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 106 Tones)



Plot 7-662. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1 – 106 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	54
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



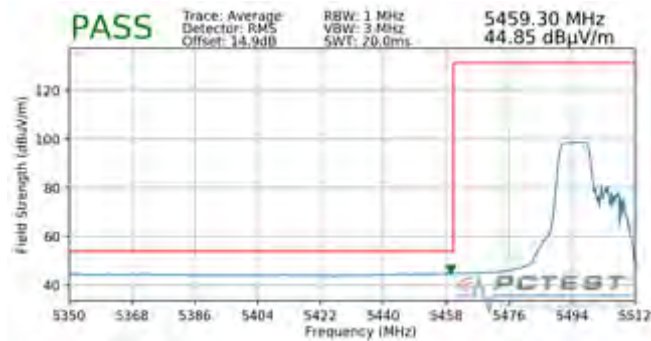
Plot 7-663. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A – 106 Tones)



Plot 7-664. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 106 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 465 of 514

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	53
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100

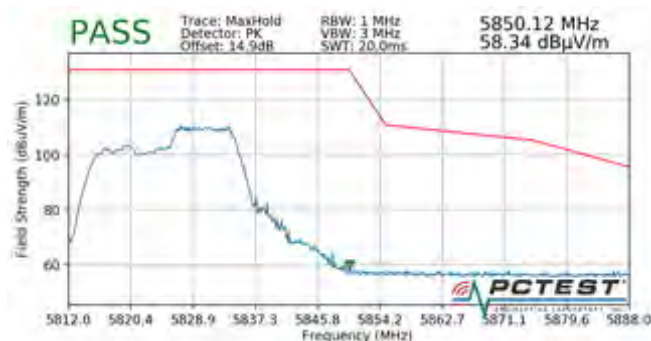


Plot 7-665. Radiated Lower Band Edge Plot SISO ANT1 (Average - UNII Band 2C - 106 Tones)



Plot 7-666. Radiated Lower Band Edge Plot SISO ANT1 (Peak - UNII Band 2C - 106 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	54
Distance of Measurements:	3 Meters
Operating Frequency:	5825MHz
Channel:	165

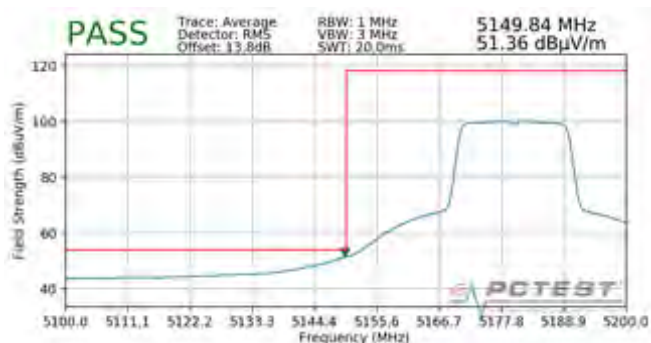


Plot 7-667. Radiated Upper Band Edge Plot SISO ANT1 (Peak - UNII Band 3 - 106 Tones)

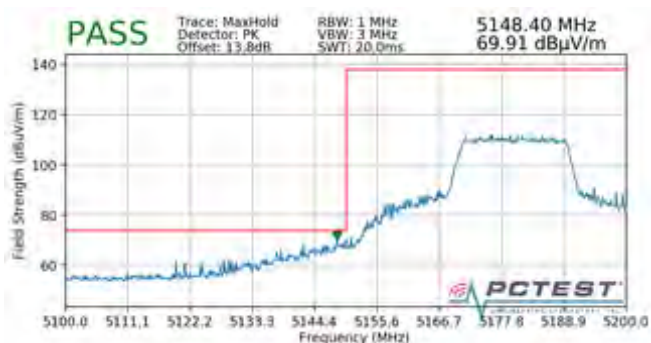
FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 466 of 514

242 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36



Plot 7-668. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 242 Tones)



Plot 7-669. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1 – 242 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



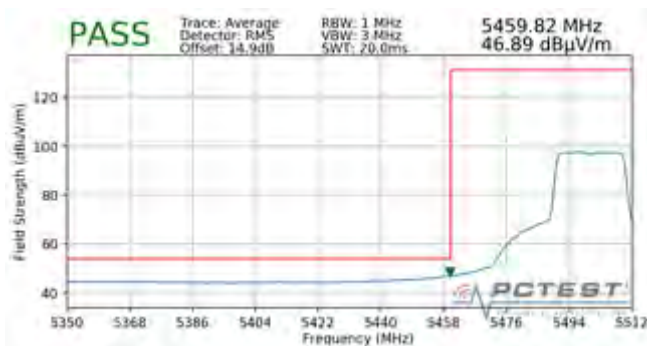
Plot 7-670. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A – 242 Tones)



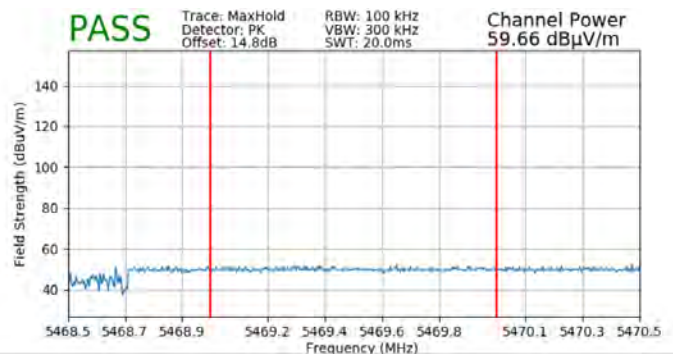
Plot 7-671. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 242 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 467 of 514

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100

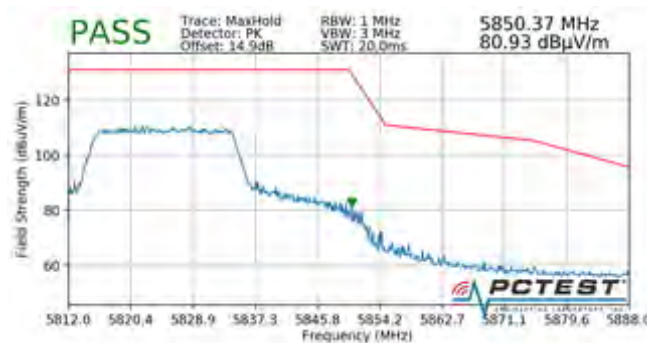


Plot 7-672. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C – 242 Tones)



Plot 7-673. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C – 242 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5825MHz
Channel:	165



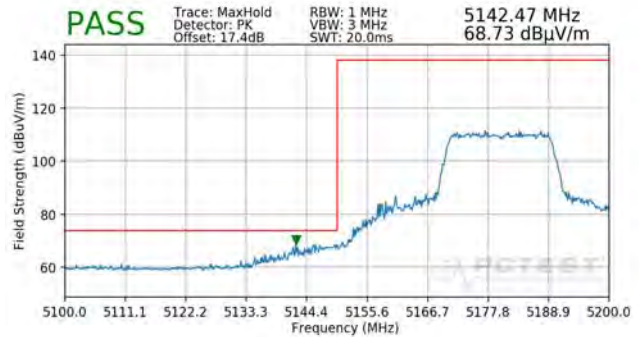
Plot 7-674. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3 – 242 Tones)

FCC ID: A3LSC03L	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 468 of 514

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
RU Index: 61
Distance of Measurements: 3 Meters
Operating Frequency: 5320MHz
Channel: 64



**Plot 7-675. Radiated Band Edge Plot SISO ANT1
(Average – WCP – 242 Tones)**



**Plot 7-676. Radiated Band Edge Plot SISO ANT1
(Peak – WCP – 242 Tones)**

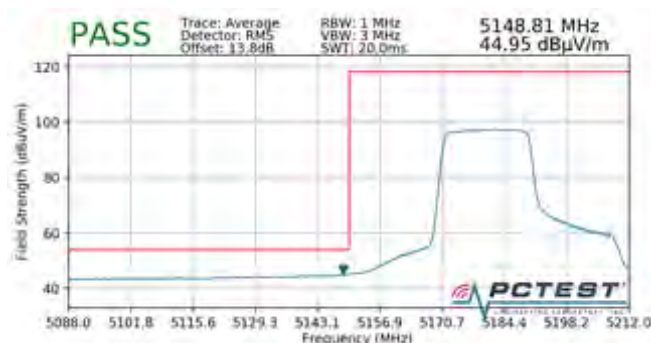
FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 469 of 514

7.6.5 SISO Antenna-1 Radiated Band Edge Measurements (40MHz BW)

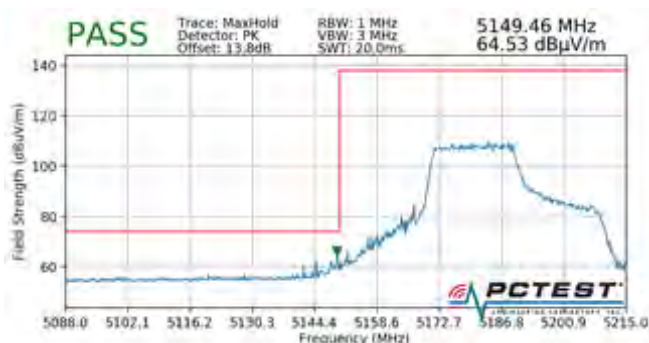
\$15.407(b.1)(b.2) \$15.205 \$15.209; RSS-Gen [8.9]

242 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

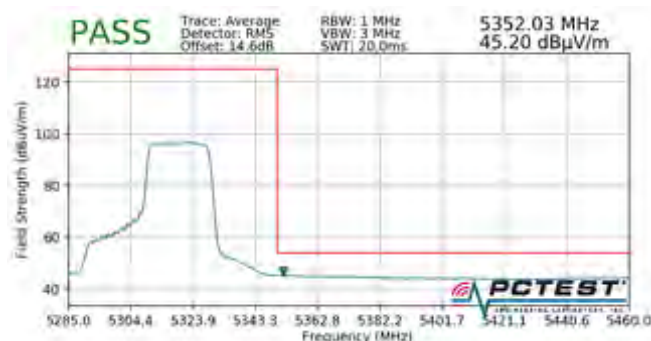


Plot 7-677. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 242 Tones)



Plot 7-678. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1 – 242 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	62
Distance of Measurements:	3 Meters
Operating Frequency:	5310MHz
Channel:	62



Plot 7-679. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A – 242 Tones)



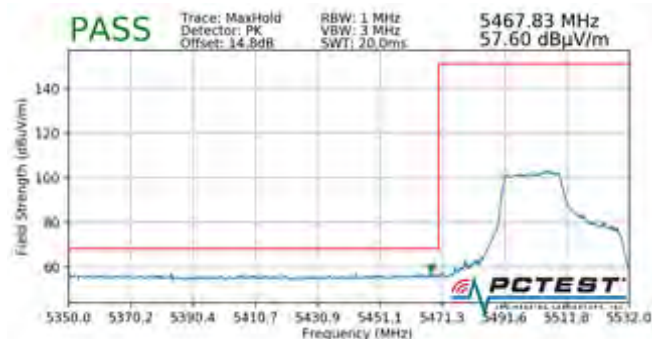
Plot 7-680. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 242 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 470 of 514

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5510MHz
Channel:	102

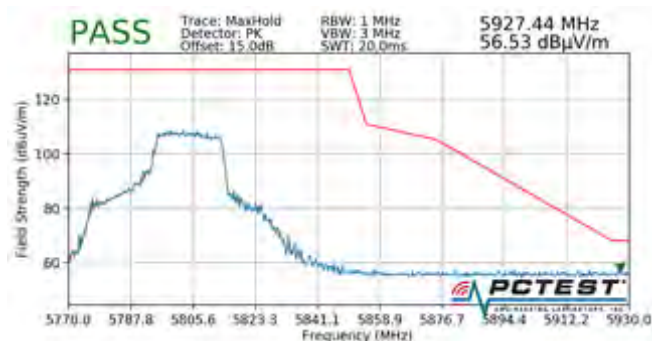


Plot 7-681. Radiated Lower Band Edge Plot SISO ANT1 (Average - UNII Band 2C - 242 Tones)



Plot 7-682. Radiated Lower Band Edge Plot SISO ANT1 (Peak - UNII Band 2C - 242 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	62
Distance of Measurements:	3 Meters
Operating Frequency:	5795MHz
Channel:	159

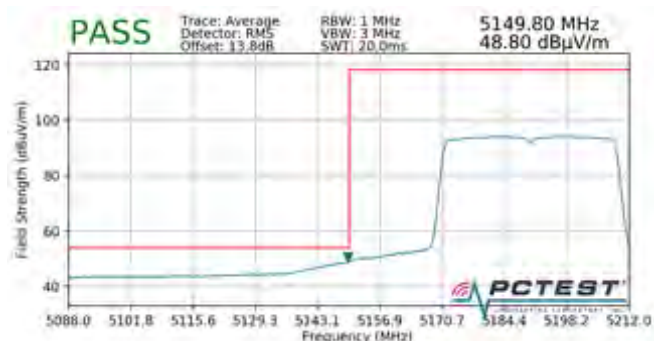


Plot 7-683. Radiated Upper Band Edge Plot SISO ANT1 (Peak - UNII Band 3 - 242 Tones)

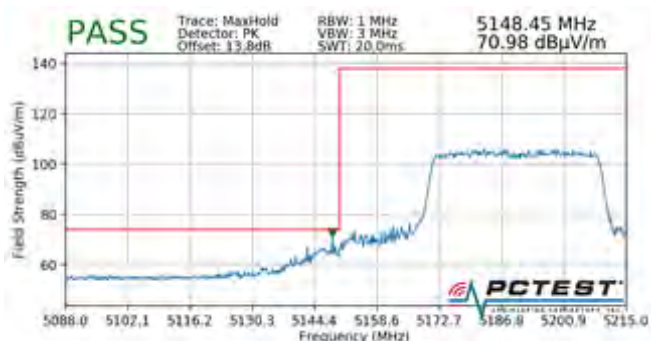
FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 471 of 514

484 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38



Plot 7-684. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 484 Tones)



Plot 7-685. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1 – 484 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5310MHz
Channel:	62



Plot 7-686. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A – 484 Tones)



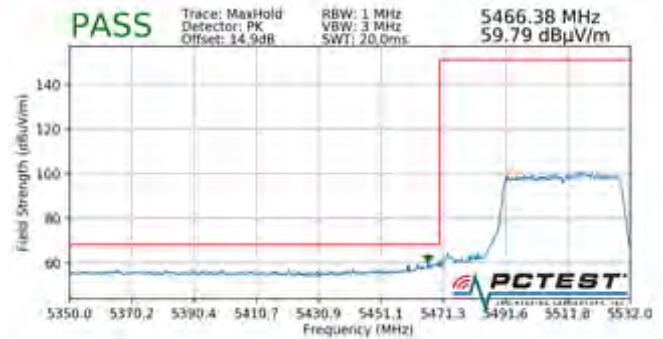
Plot 7-687. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 484 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 472 of 514

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
RU Index: 65
Distance of Measurements: 3 Meters
Operating Frequency: 5510MHz
Channel: 102

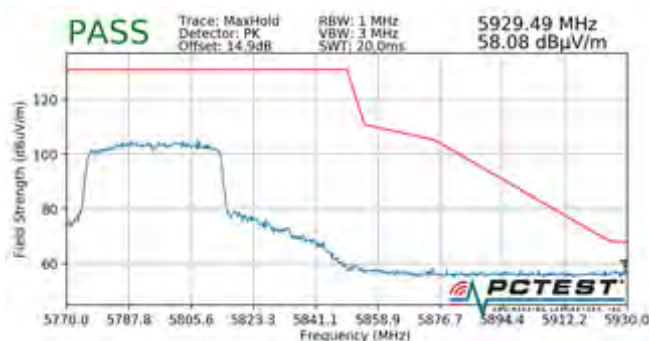


Plot 7-688. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C – 484 Tones)



Plot 7-689. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C – 484 Tones)

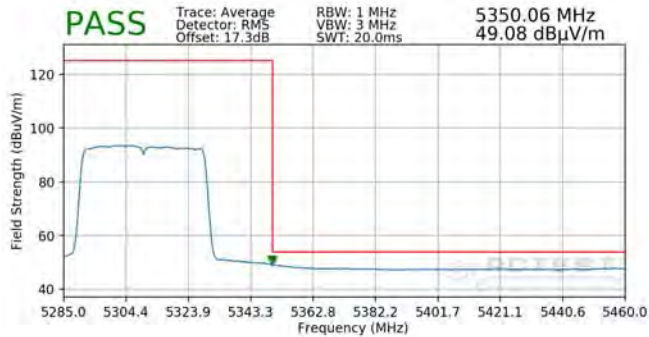
Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
RU Index: 65
Distance of Measurements: 3 Meters
Operating Frequency: 5795MHz
Channel: 159



Plot 7-690. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3 – 484 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 473 of 514

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
RU Index: 65
Distance of Measurements: 3 Meters
Operating Frequency: 5310MHz
Channel: 62



**Plot 7-691. Radiated Band Edge Plot SISO ANT1
(Average – WCP – 484 Tones)**



**Plot 7-692. Radiated Band Edge Plot SISO ANT1
(Peak – WCP – 484 Tones)**

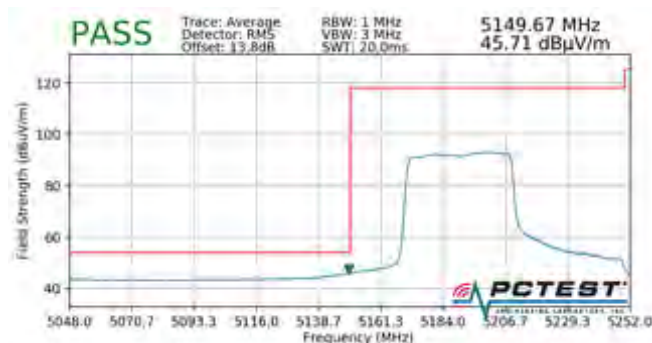
FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 474 of 514

7.6.6 SISO Antenna-1 Radiated Band Edge Measurements (80MHz BW)

\$15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

484 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

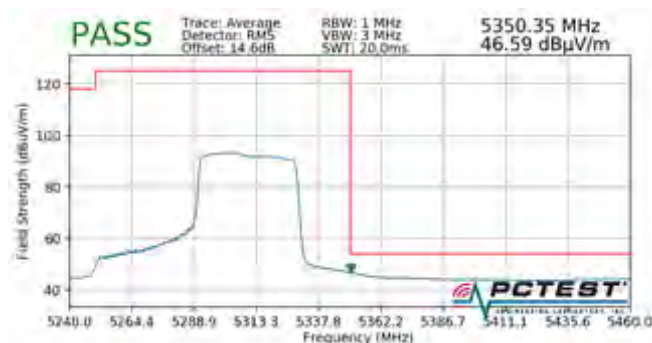


Plot 7-693. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 484 Tones)



Plot 7-694. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1 – 484 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	66
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



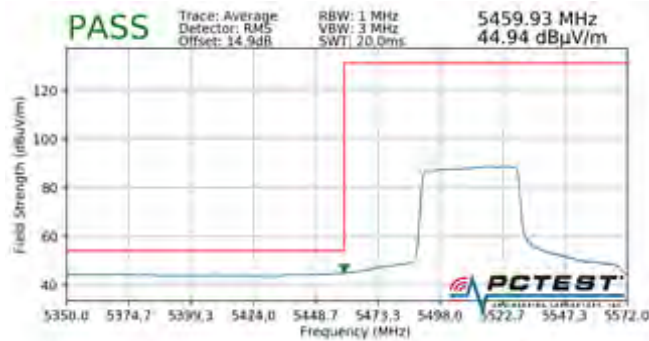
Plot 7-695. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A – 484 Tones)



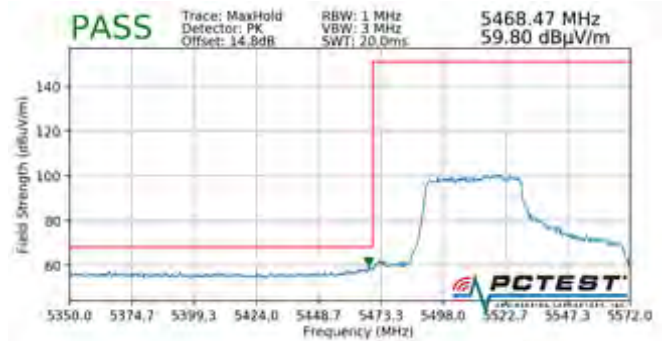
Plot 7-696. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 484 Tones)

FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 475 of 514

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5530MHz
Channel:	106

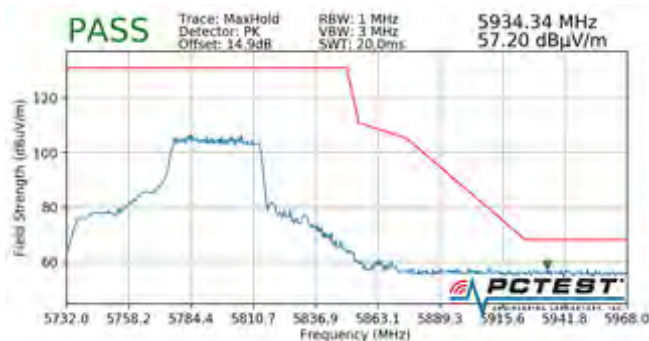


Plot 7-697. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C – 484 Tones)



Plot 7-698. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C – 484 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	66
Distance of Measurements:	3 Meters
Operating Frequency:	5775MHz
Channel:	155

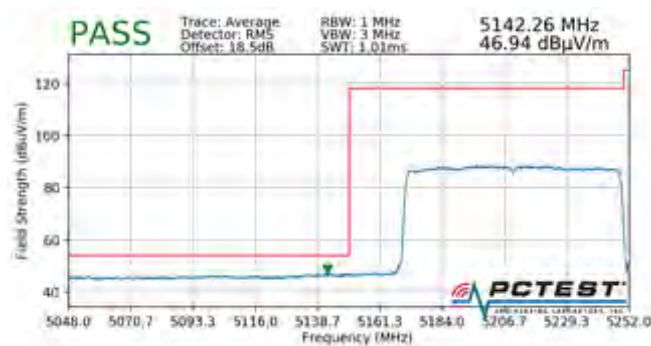


Plot 7-699. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3 – 484 Tones)

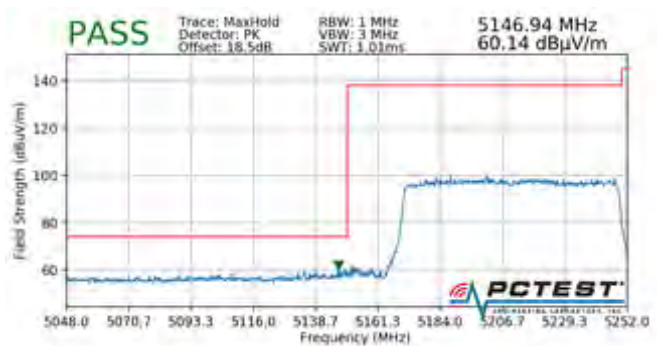
FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901240017-07.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 476 of 514

996 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	67
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42



Plot 7-700. Radiated Lower Band Edge Plot SISO ANT1 (Average - UNII Band 1 - 996 Tones)



Plot 7-701. Radiated Lower Band Edge Plot SISO ANT1 (Peak - UNII Band 1 - 996 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	67
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



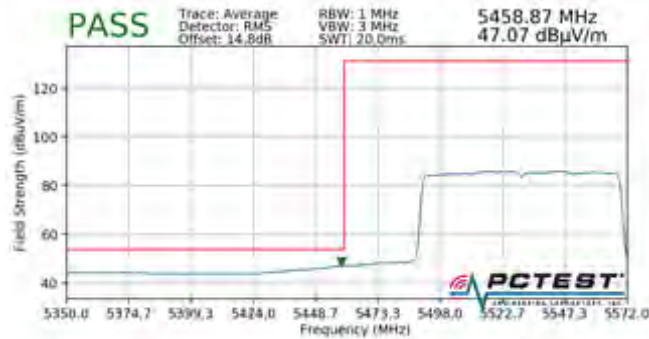
Plot 7-702. Radiated Upper Band Edge Plot SISO ANT1 (Average - UNII Band 2A - 996 Tones)



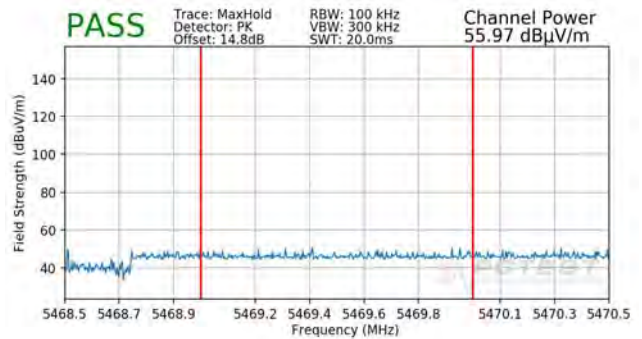
Plot 7-703. Radiated Upper Band Edge Plot SISO ANT1 (Peak - UNII Band 2A - 996 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 477 of 514

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	67
Distance of Measurements:	3 Meters
Operating Frequency:	5530MHz
Channel:	106

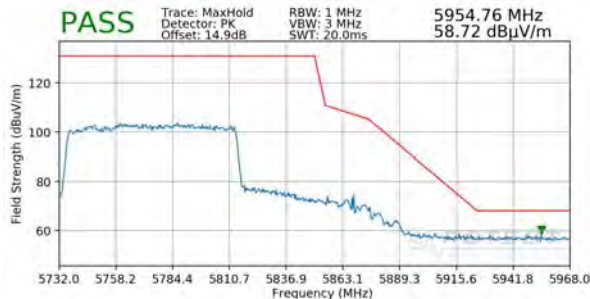


Plot 7-704. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C – 996 Tones)



Plot 7-705. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C – 996 Tones)

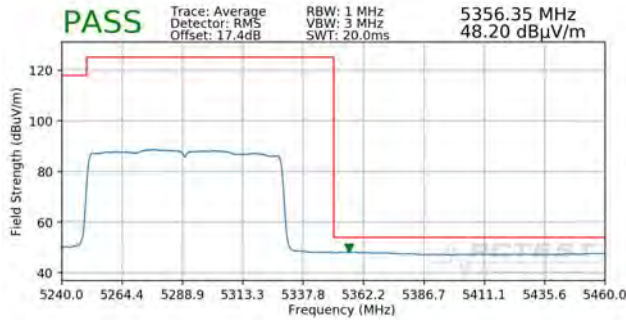
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	67
Distance of Measurements:	3 Meters
Operating Frequency:	5775MHz
Channel:	155



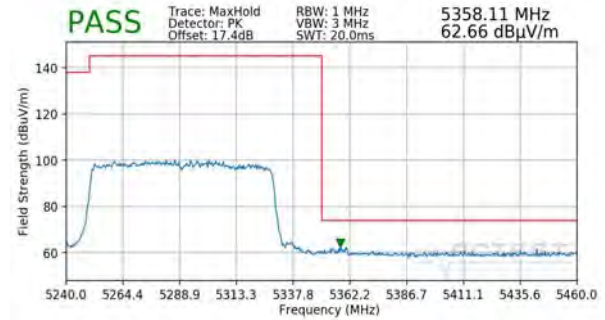
Plot 7-706. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3 – 996 Tones)

FCC ID: A3LSC03L	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset	Page 478 of 514

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	67
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



**Plot 7-707. Radiated Band Edge Plot SISO ANT1
(Average – WCP – 996 Tones)**



**Plot 7-708. Radiated Band Edge Plot SISO ANT1
(Peak – WCP – 996 Tones)**

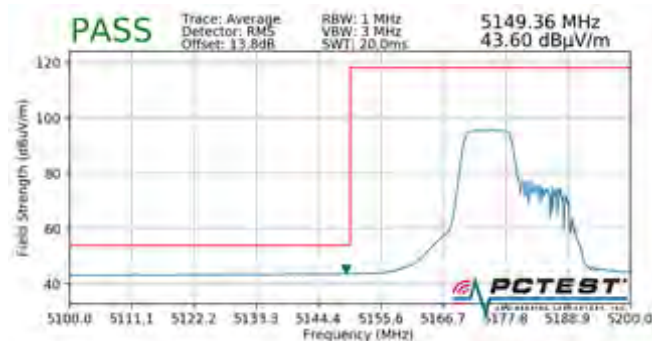
FCC ID: A3LSC03L	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset	Page 479 of 514

7.6.7 SISO Antenna-2 Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]; RSS-Gen [8.9]

106 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	53
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

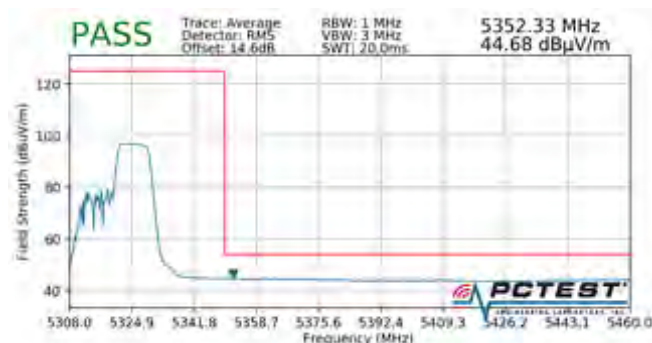


Plot 7-709. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1 – 106 Tones)



Plot 7-710. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1 – 106 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	54
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



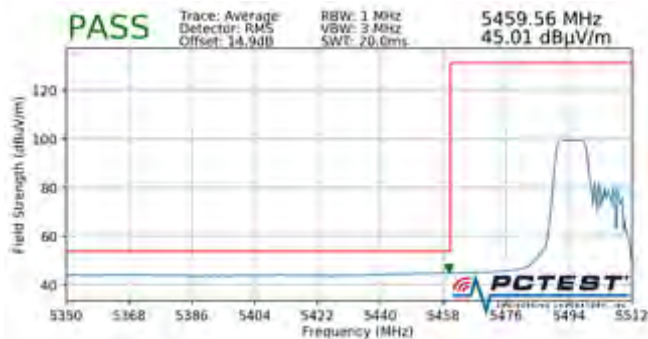
Plot 7-711. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A – 106 Tones)



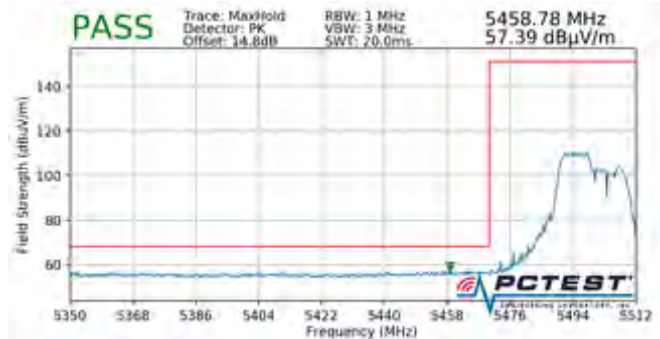
Plot 7-712. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A – 106 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 480 of 514

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	53
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100

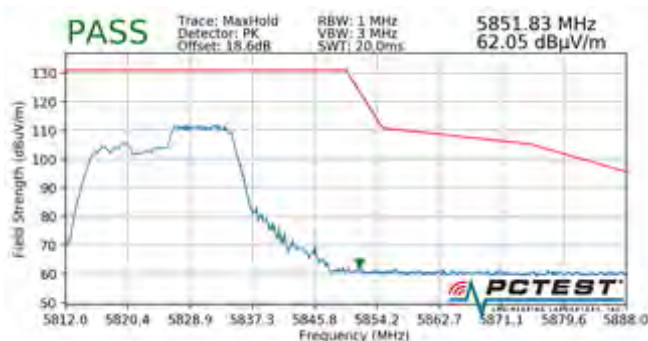


Plot 7-713. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 106 Tones)



Plot 7-714. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C – 106 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	54
Distance of Measurements:	3 Meters
Operating Frequency:	5825MHz
Channel:	165

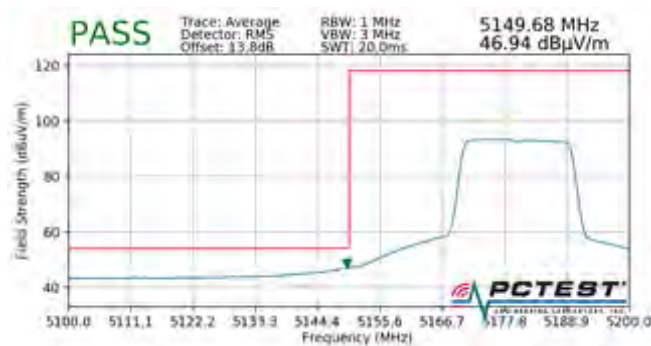


Plot 7-715. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 106 Tones)

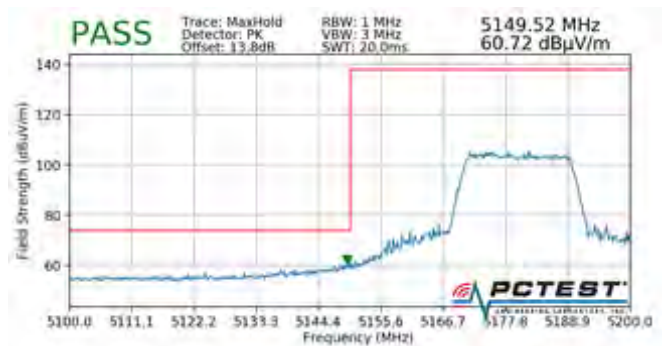
FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 481 of 514

242 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36



Plot 7-716. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1 – 242 Tones)



Plot 7-717. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1 – 242 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



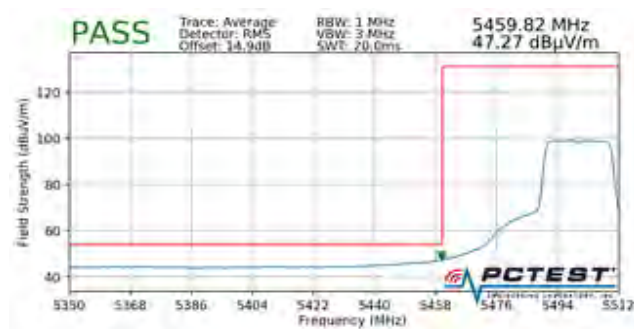
Plot 7-718. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A – 242 Tones)



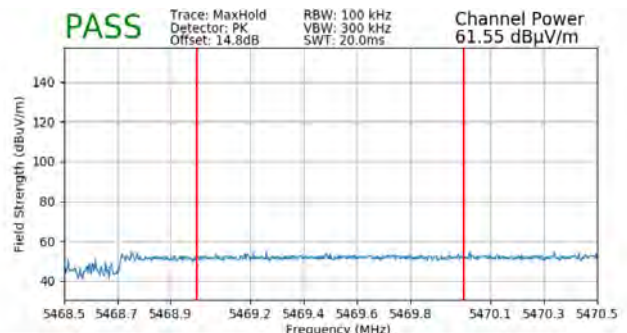
Plot 7-719. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A – 242 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 482 of 514

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100

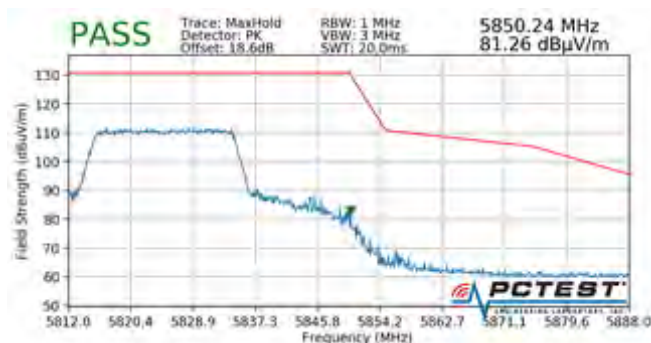


Plot 7-720. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 242 Tones)



Plot 7-721. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C – 242 Tones)

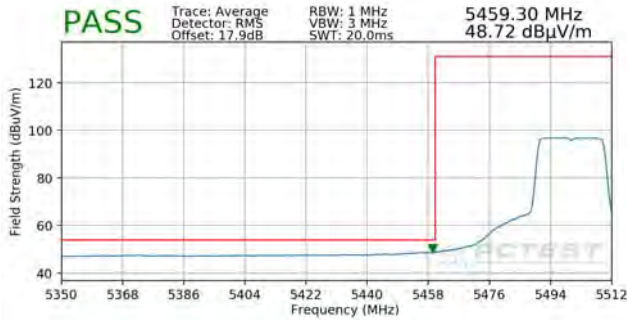
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5825MHz
Channel:	165



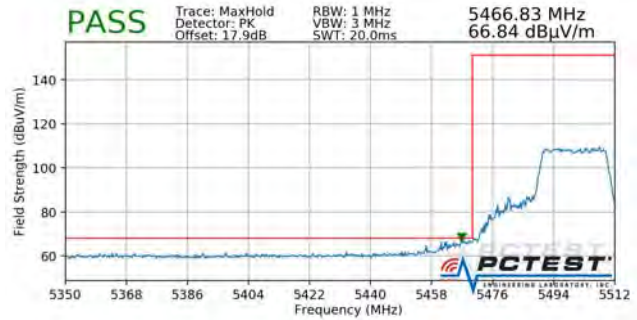
Plot 7-722. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 242 Tones)

FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 483 of 514

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100



**Plot 7-723. Radiated Band Edge Plot SISO ANT2
(Average – WCP – 242 Tones)**



**Plot 7-724. Radiated Band Edge Plot SISO ANT2
(Peak – WCP – 242 Tones)**

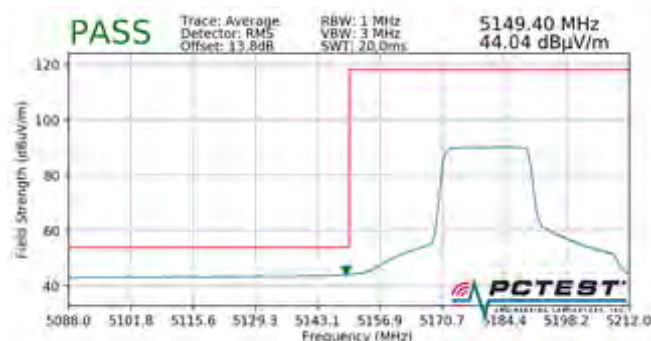
FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 484 of 514

7.6.8 SISO Antenna-2 Radiated Band Edge Measurements (40MHz BW)

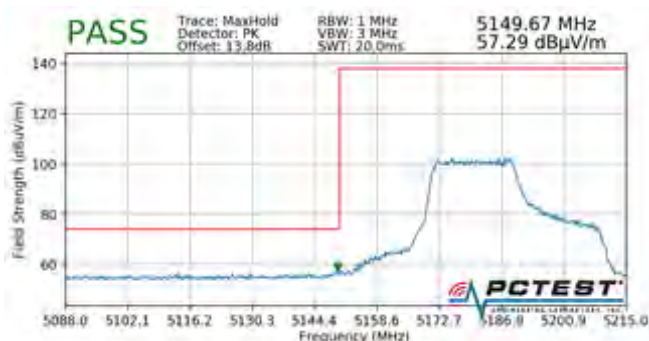
\$15.407(b.1)(b.2) \$15.205 \$15.209; RSS-Gen [8.9]

242 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

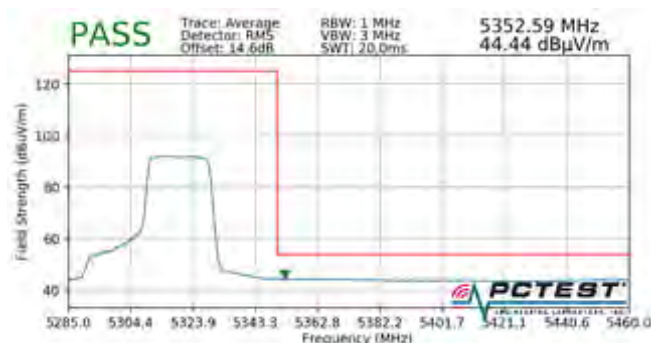


Plot 7-725. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1 – 242 Tones)



Plot 7-726. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1 – 242 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	62
Distance of Measurements:	3 Meters
Operating Frequency:	5310MHz
Channel:	62



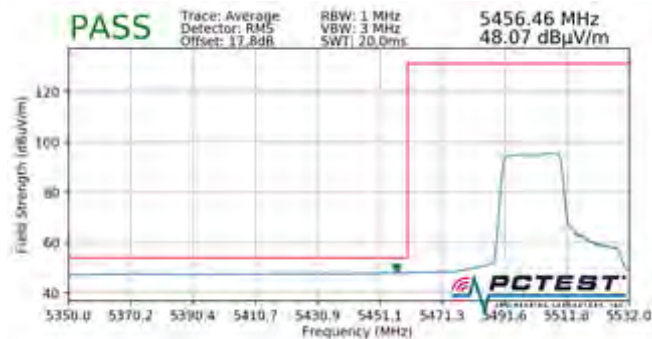
Plot 7-727. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A – 242 Tones)



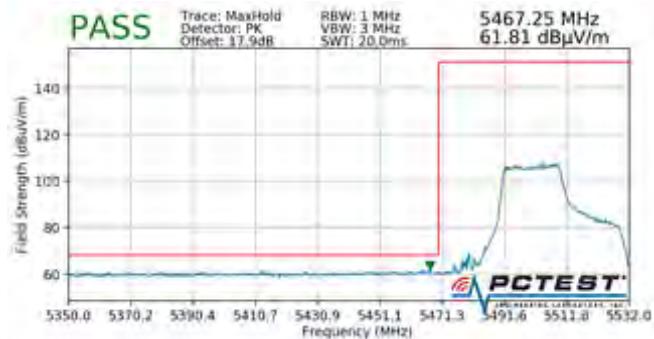
Plot 7-728. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A – 242 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1810250195-18-A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 485 of 514

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
RU Index: 61
Distance of Measurements: 3 Meters
Operating Frequency: 5510MHz
Channel: 102

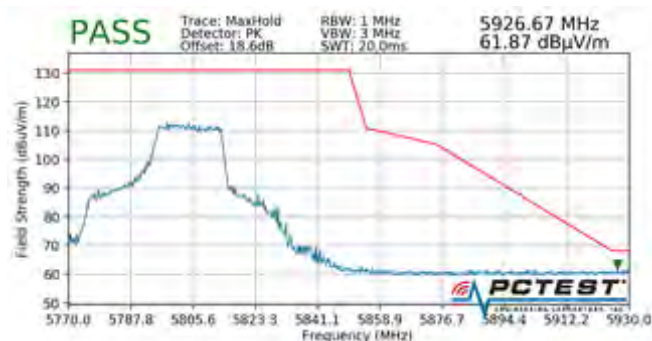


Plot 7-729. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 242 Tones)



Plot 7-730. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C – 242 Tones)

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
RU Index: 62
Distance of Measurements: 3 Meters
Operating Frequency: 5795MHz
Channel: 159

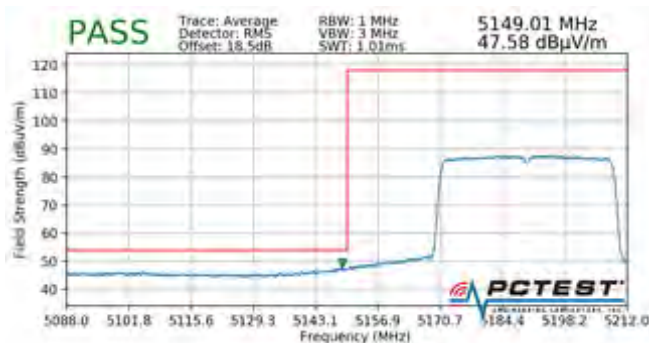


Plot 7-731. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 242 Tones)

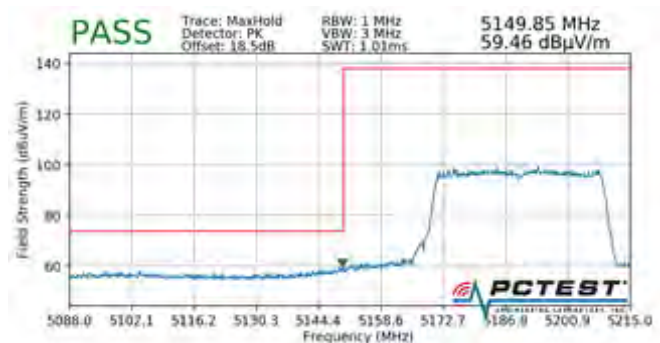
FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 486 of 514

484 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

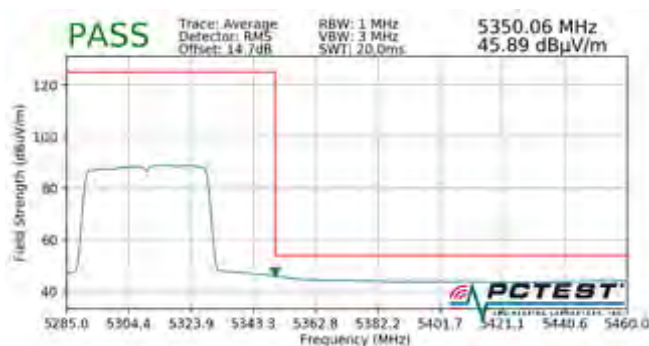


Plot 7-732. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1 – 484 Tones)



Plot 7-733. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1 – 484 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5310MHz
Channel:	62



Plot 7-734. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A – 484 Tones)



Plot 7-735. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A – 484 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 487 of 514

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5510MHz
Channel:	102

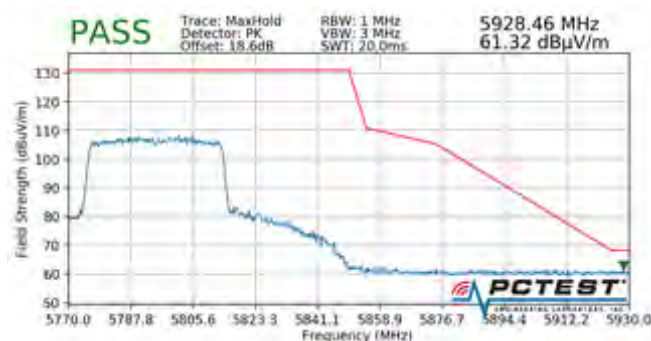


Plot 7-736. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 484 Tones)



Plot 7-737. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C – 484 Tones)

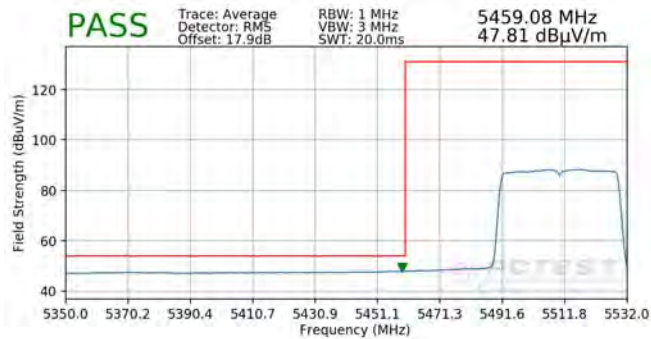
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5795MHz
Channel:	159



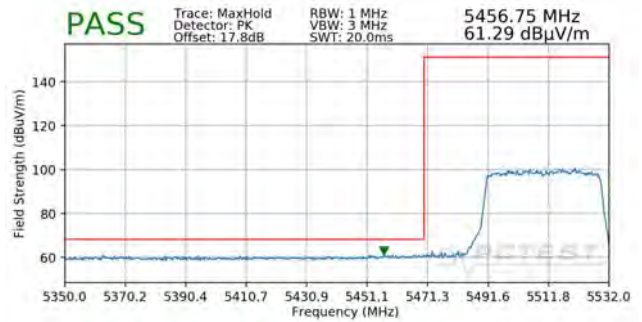
Plot 7-738. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 484 Tones)

FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 488 of 514

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5510MHz
Channel:	102



**Plot 7-739. Radiated Band Edge Plot SISO ANT2
(Average - WCP - 484 Tones)**



**Plot 7-740. Radiated Band Edge Plot SISO ANT2
(Peak - WCP - 484 Tones)**

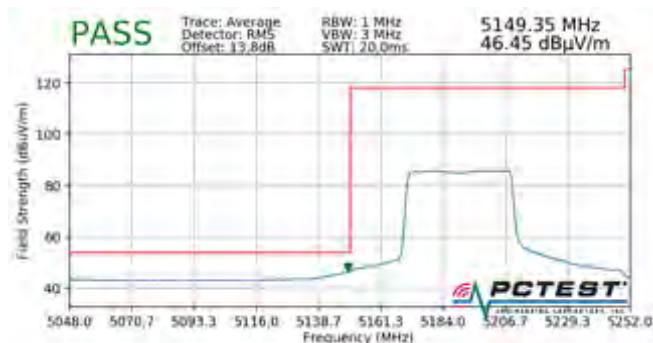
FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 489 of 514

7.6.9 SISO Antenna-2 Radiated Band Edge Measurements (80MHz BW)

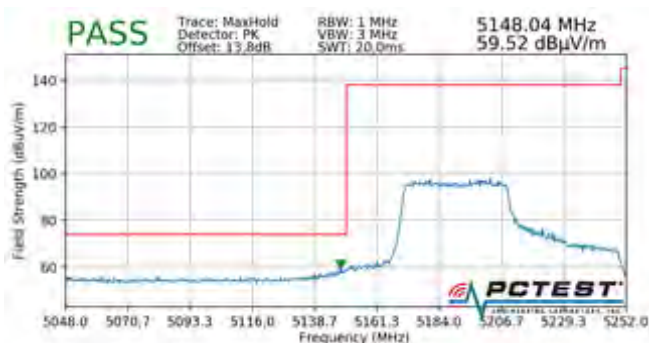
\$15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

484 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

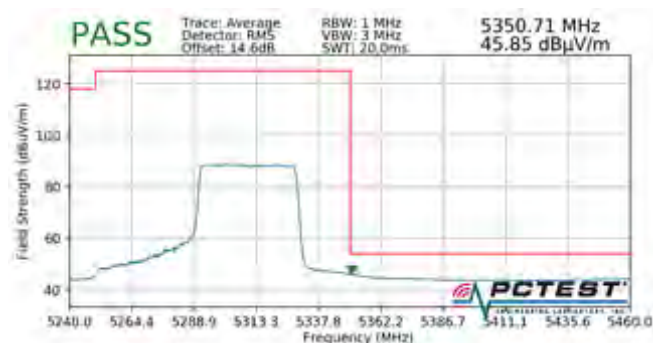


Plot 7-741. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1 – 484 Tones)



Plot 7-742. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1 – 484 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	66
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



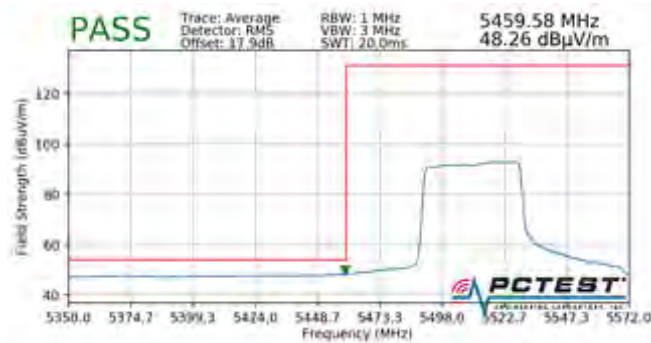
Plot 7-743. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A – 484 Tones)



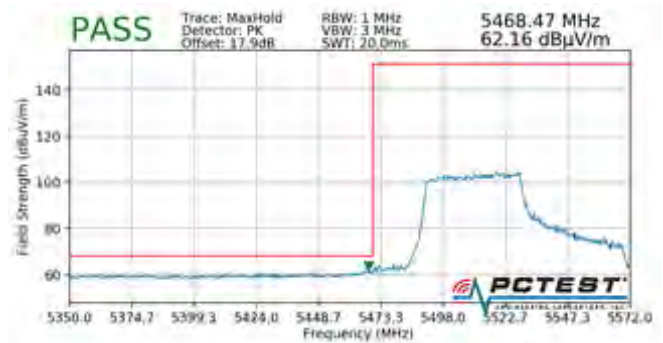
Plot 7-744. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A – 484 Tones)

FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-18-A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 490 of 514

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5530MHz
Channel:	106

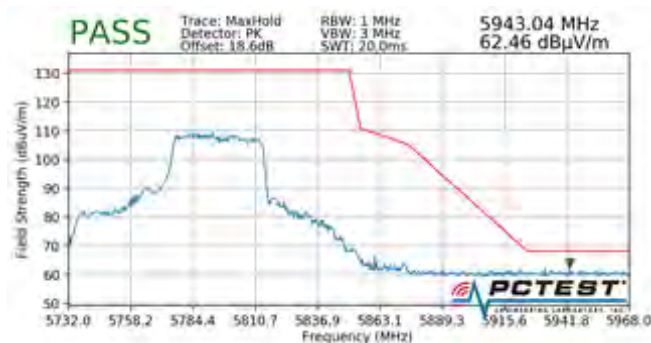


Plot 7-745. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 484 Tones)



Plot 7-746. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C – 484 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	66
Distance of Measurements:	3 Meters
Operating Frequency:	5775MHz
Channel:	155

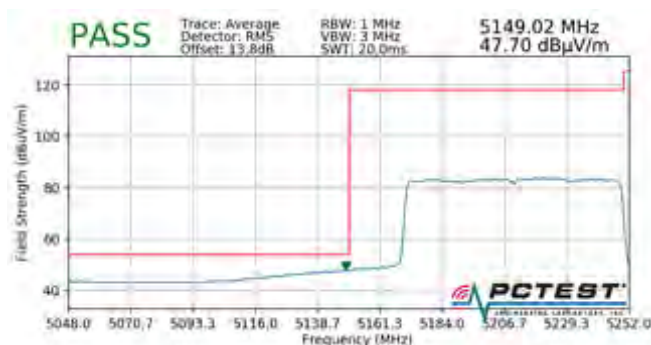


Plot 7-747. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 484 Tones)

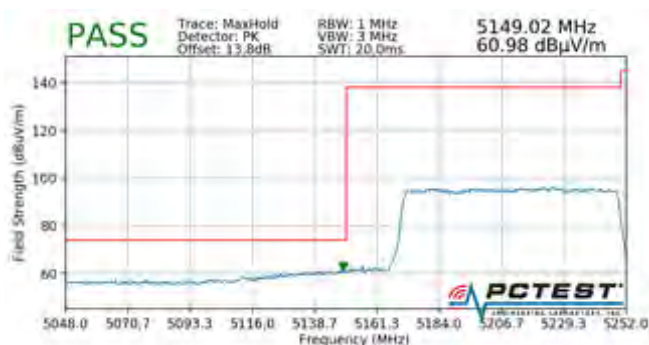
FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 491 of 514

996 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	67
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42



Plot 7-748. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1 – 996 Tones)



Plot 7-749. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1 – 996 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	67
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



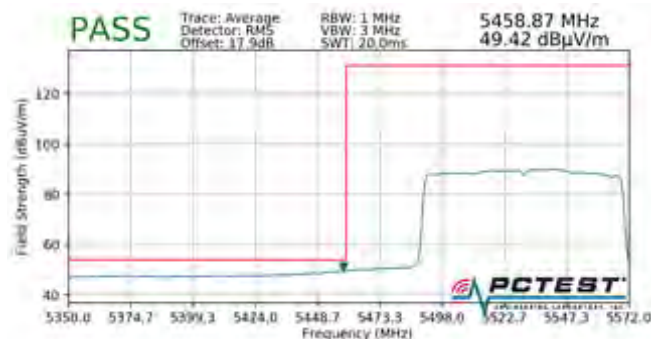
Plot 7-750. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A – 996 Tones)



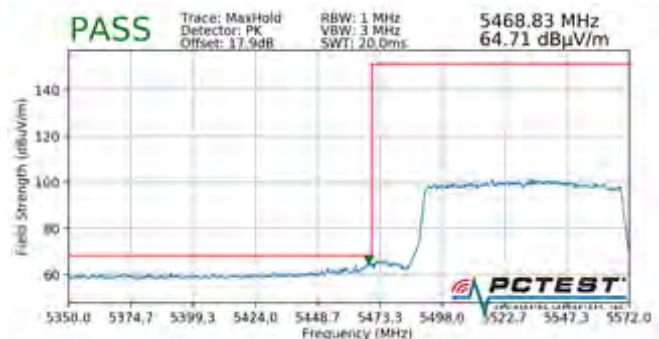
Plot 7-751. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A – 996 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 492 of 514

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	67
Distance of Measurements:	3 Meters
Operating Frequency:	5530MHz
Channel:	106

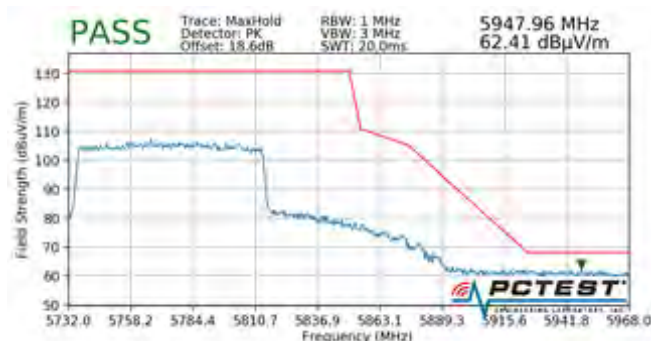


Plot 7-752. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 996 Tones)



Plot 7-753. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C – 996 Tones)

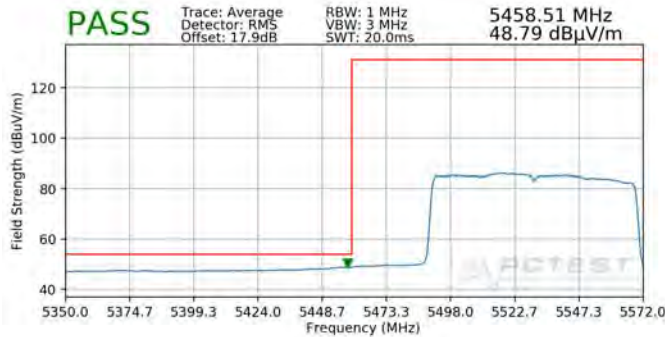
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	67
Distance of Measurements:	3 Meters
Operating Frequency:	5775MHz
Channel:	155



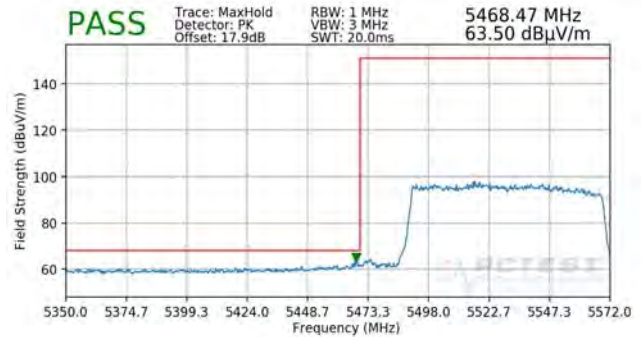
Plot 7-754. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 996 Tones)

FCC ID: A3LSC03L	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 493 of 514

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
RU Index: 67
Distance of Measurements: 3 Meters
Operating Frequency: 5530MHz
Channel: 106



**Plot 7-755. Radiated Band Edge Plot SISO ANT2
(Average – WCP – 996 Tones)**



**Plot 7-756. Radiated Band Edge Plot SISO ANT2
(Peak – WCP – 996 Tones)**

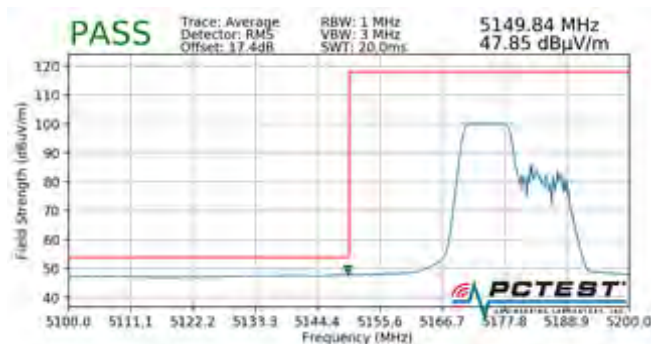
FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 494 of 514

7.6.10 MIMO Radiated Band Edge Measurements (20MHz BW)

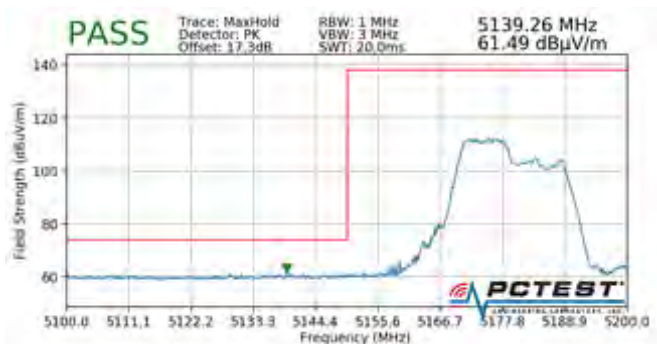
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]; RSS-Gen [8.9]

106 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	53
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

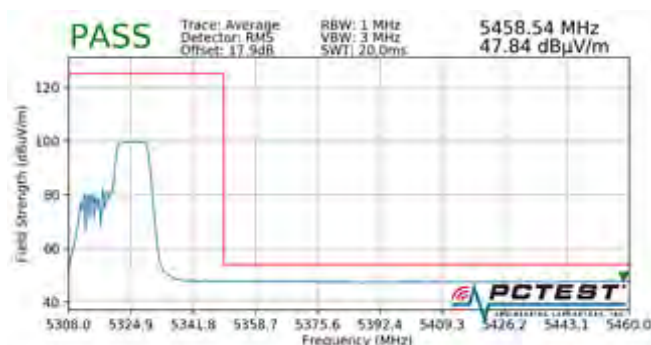


Plot 7-757. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1 – 106 Tones)



Plot 7-758. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1 – 106 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	54
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



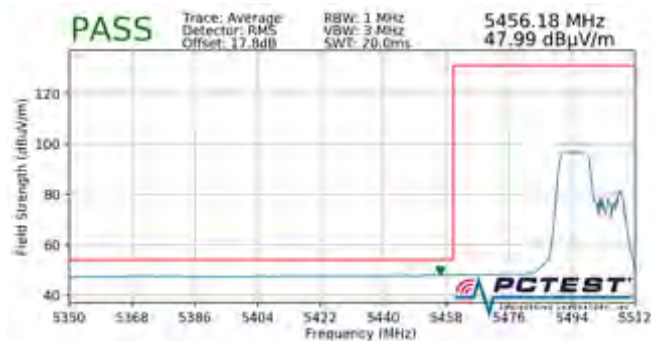
Plot 7-759. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A – 106 Tones)



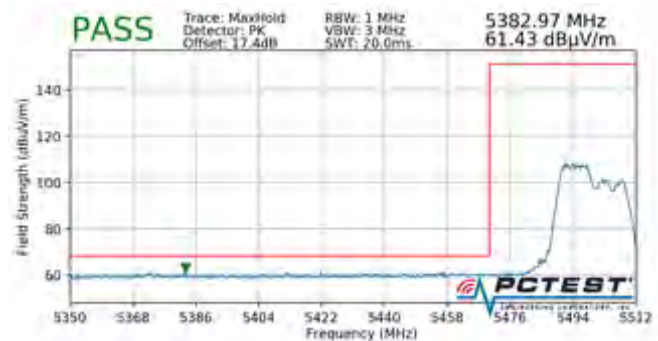
Plot 7-760. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A – 106 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1810250195-18-A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 495 of 514

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	53
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100

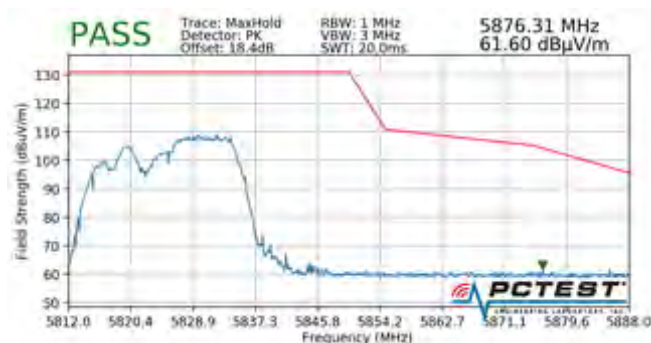


**Plot 7-761. Radiated Lower Band Edge Plot MIMO
(Average – UNII Band 2C – 106 Tones)**



**Plot 7-762. Radiated Lower Band Edge Plot MIMO
(Peak – UNII Band 2C – 106 Tones)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	54
Distance of Measurements:	3 Meters
Operating Frequency:	5825MHz
Channel:	165

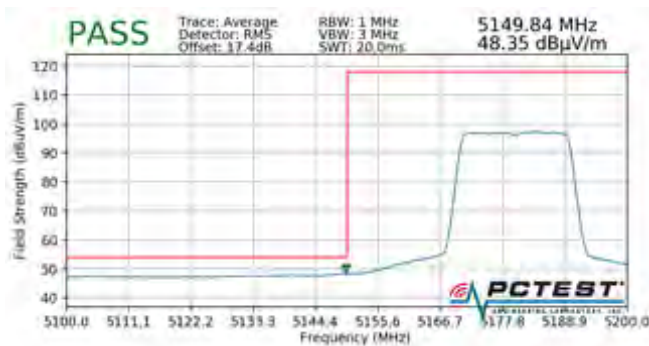


**Plot 7-763. Radiated Upper Band Edge Plot MIMO
(Peak – UNII Band 3 – 106 Tones)**

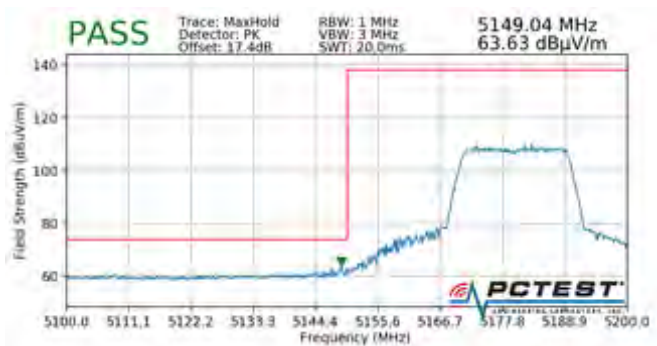
FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 496 of 514

242 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36



Plot 7-764. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1 – 242 Tones)



Plot 7-765. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1 – 242 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



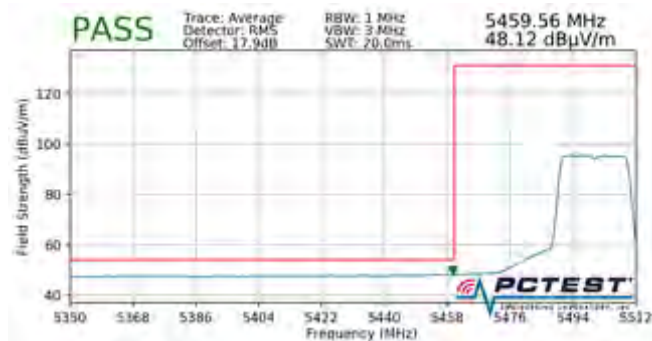
Plot 7-766. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A – 242 Tones)



Plot 7-767. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A – 242 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 497 of 514

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100

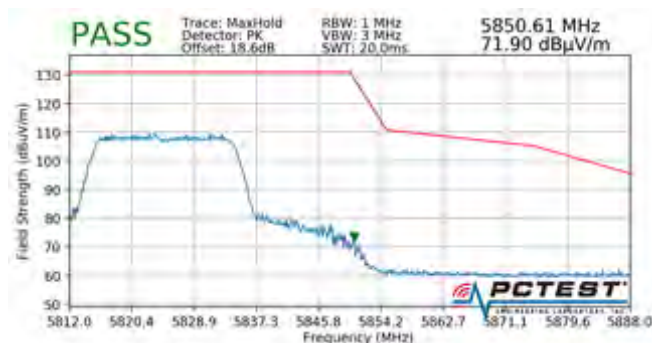


Plot 7-768. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 2C – 242 Tones)



Plot 7-769. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 2C – 242 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5825MHz
Channel:	165



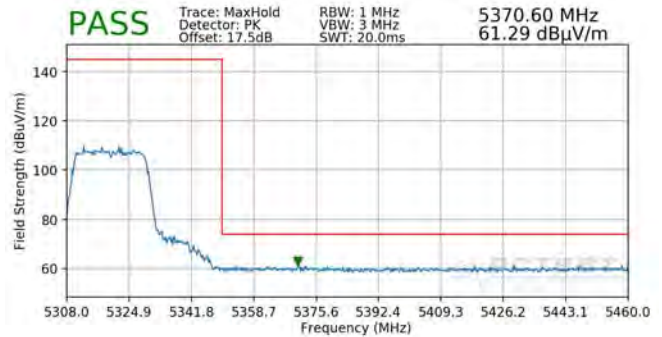
Plot 7-770. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 3 – 242 Tones)

FCC ID: A3LSC03L	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset	Page 498 of 514

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
RU Index: 61
Distance of Measurements: 3 Meters
Operating Frequency: 5320MHz
Channel: 64



**Plot 7-771. Radiated Band Edge Plot MIMO
(Average – WCP – 242 Tones)**



**Plot 7-772. Radiated Band Edge Plot MIMO (Peak –
WCP – 242 Tones)**

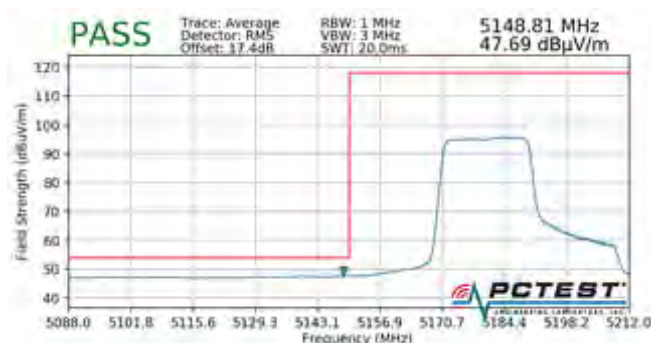
FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 499 of 514

7.6.11 MIMO Radiated Band Edge Measurements (40MHz BW)

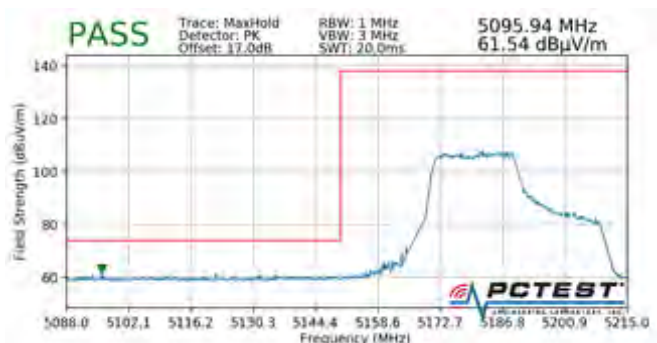
\$15.407(b.1)(b.2) \$15.205 \$15.209; RSS-Gen [8.9]

242 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

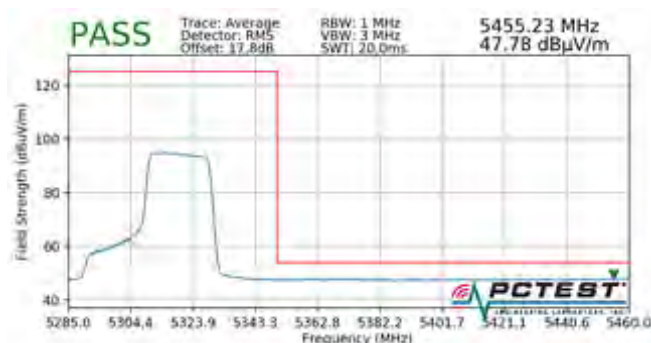


Plot 7-773. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1 – 242 Tones)



Plot 7-774. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1 – 242 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	62
Distance of Measurements:	3 Meters
Operating Frequency:	5310MHz
Channel:	62



Plot 7-775. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A – 242 Tones)



Plot 7-776. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A – 242 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 500 of 514

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
RU Index: 61
Distance of Measurements: 3 Meters
Operating Frequency: 5510MHz
Channel: 102

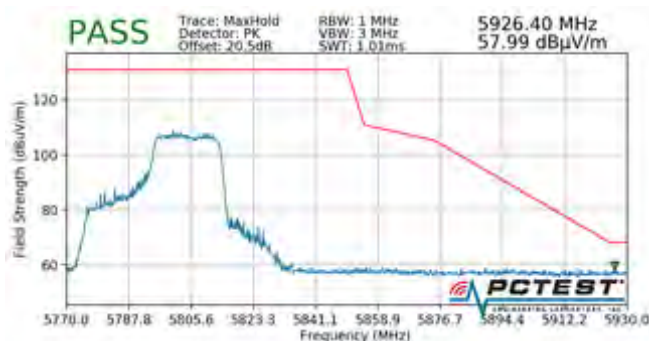


Plot 7-777. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 2C – 242 Tones)



Plot 7-778. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 2C – 242 Tones)

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
RU Index: 62
Distance of Measurements: 3 Meters
Operating Frequency: 5795MHz
Channel: 159

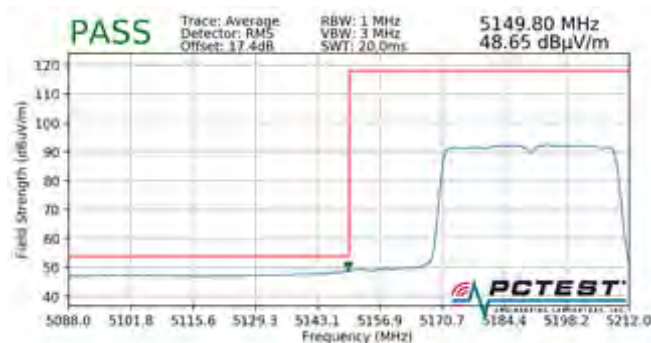


Plot 7-779. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 3 – 242 Tones)

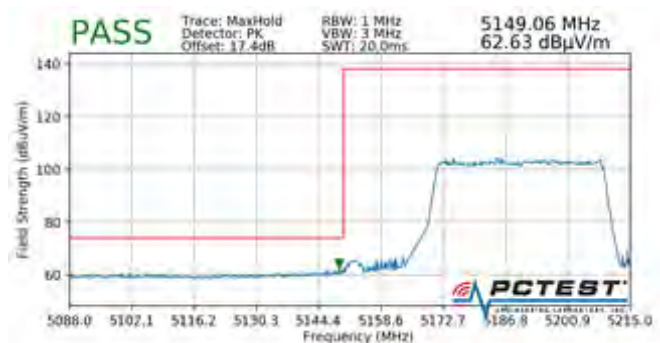
FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 501 of 514

484 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

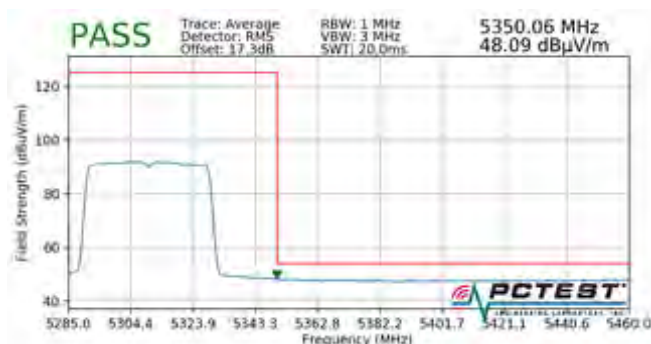


Plot 7-780. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1 – 484 Tones)

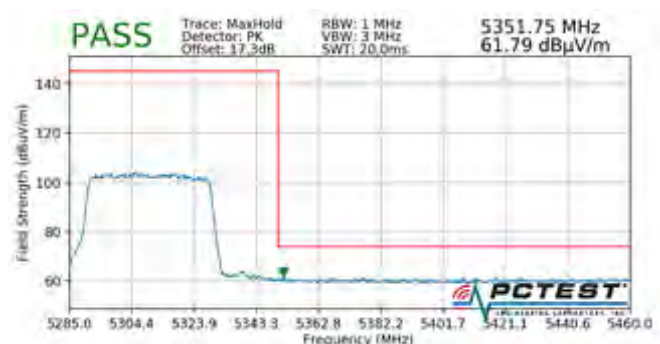


Plot 7-781. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1 – 484 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5310MHz
Channel:	62



Plot 7-782. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A – 484 Tones)



Plot 7-783. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A – 484 Tones)

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Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5510MHz
Channel:	102

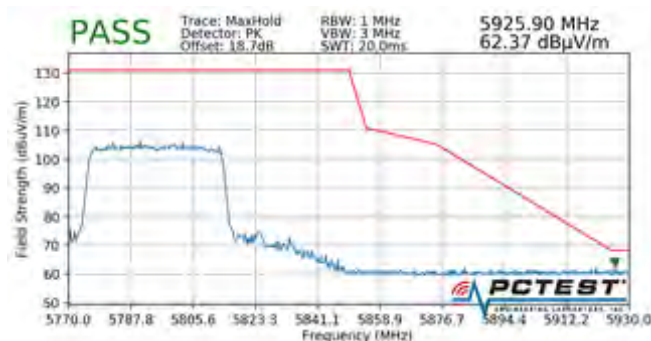


**Plot 7-784. Radiated Lower Band Edge Plot MIMO
(Average – UNII Band 2C – 484 Tones)**



**Plot 7-785. Radiated Lower Band Edge Plot MIMO
(Peak – UNII Band 2C – 484 Tones)**

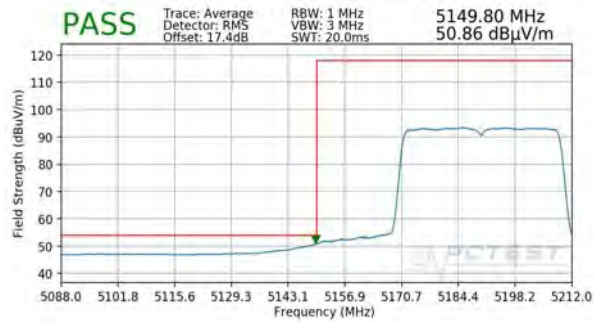
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5795MHz
Channel:	159



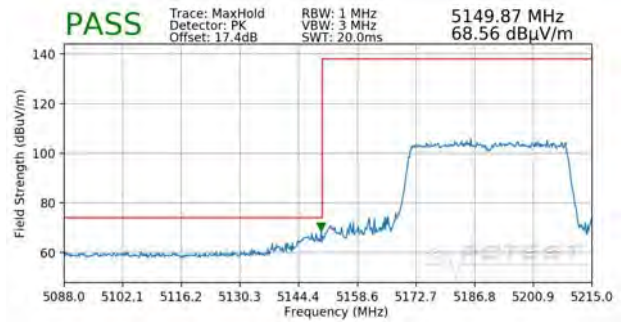
**Plot 7-786. Radiated Upper Band Edge Plot MIMO
(Peak – UNII Band 3 – 484 Tones)**

FCC ID: A3LSC03L	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38



**Plot 7-787. Radiated Band Edge Plot MIMO
(Average – WCP – 484 Tones)**



**Plot 7-788. Radiated Band Edge Plot MIMO (Peak –
WCP – 484 Tones)**

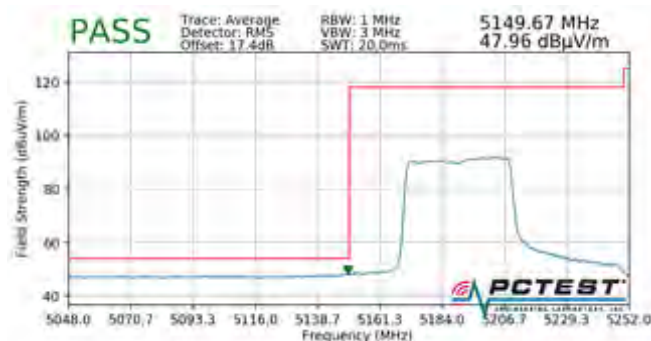
FCC ID: A3LSC03L		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-18.A3L	Test Dates: 10/23/2018 - 1/18/2019	EUT Type: Portable Handset		Page 504 of 514

7.6.12 MIMO Radiated Band Edge Measurements (80MHz BW)

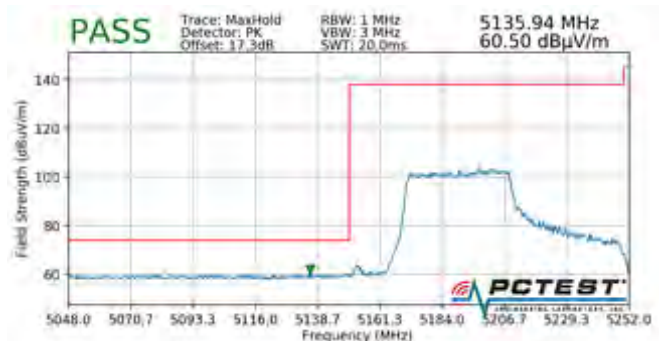
\$15.407(b.1)(b.2) \$15.205 \$15.209; RSS-Gen [8.9]

484 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

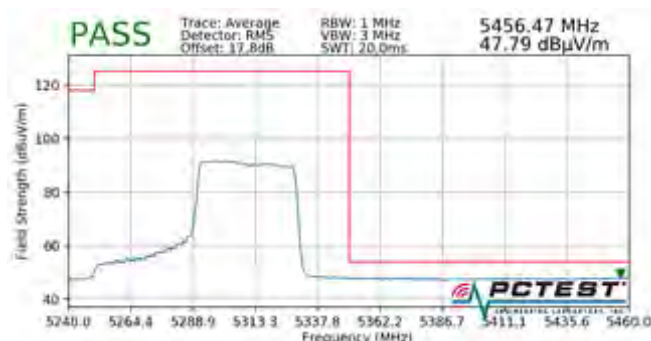


Plot 7-789. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1 – 484 Tones)

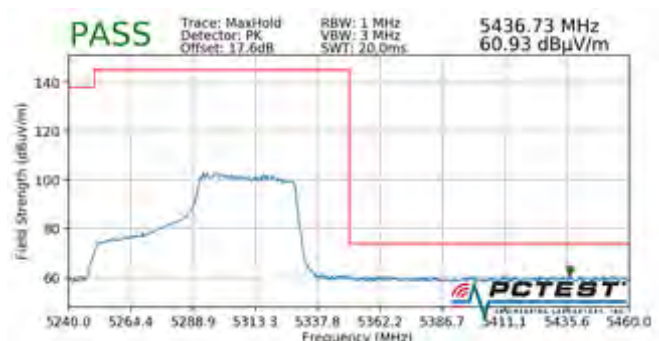


Plot 7-790. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1 – 484 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	66
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



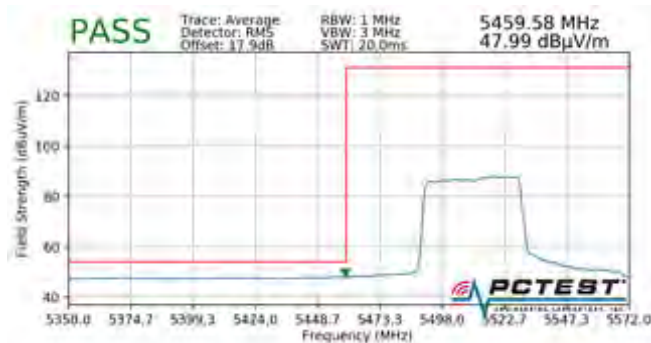
Plot 7-791. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A – 484 Tones)



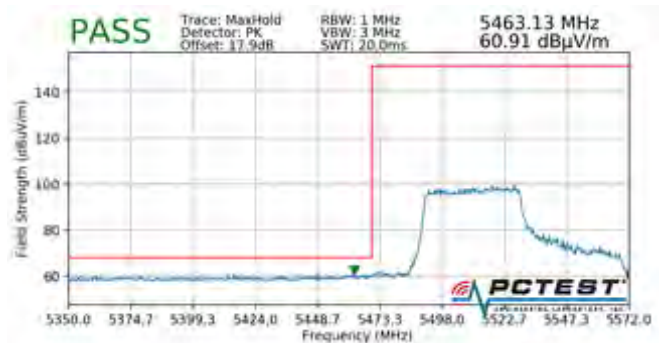
Plot 7-792. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A – 484 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5530MHz
Channel:	106

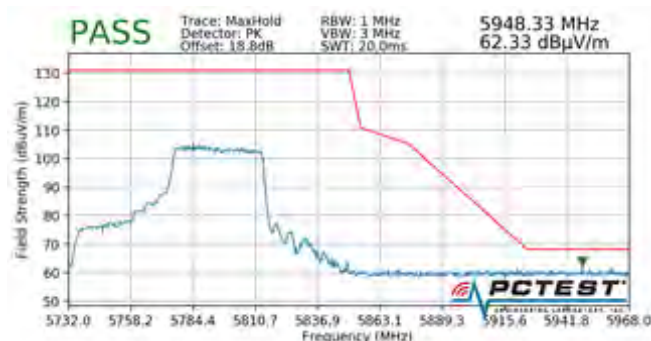


**Plot 7-793. Radiated Lower Band Edge Plot MIMO
(Average – UNII Band 2C – 484 Tones)**



**Plot 7-794. Radiated Lower Band Edge Plot MIMO
(Peak – UNII Band 2C – 484 Tones)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	66
Distance of Measurements:	3 Meters
Operating Frequency:	5775MHz
Channel:	155

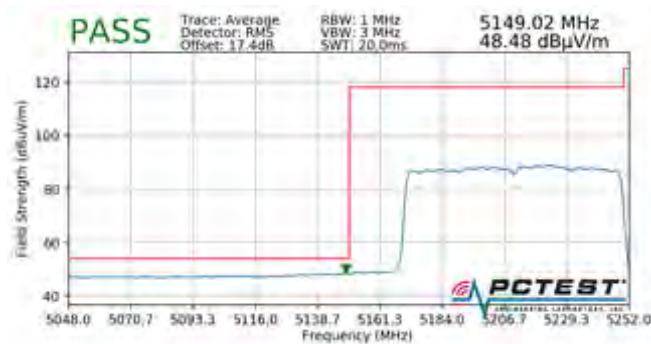


**Plot 7-795. Radiated Upper Band Edge Plot MIMO
(Peak – UNII Band 3 – 484 Tones)**

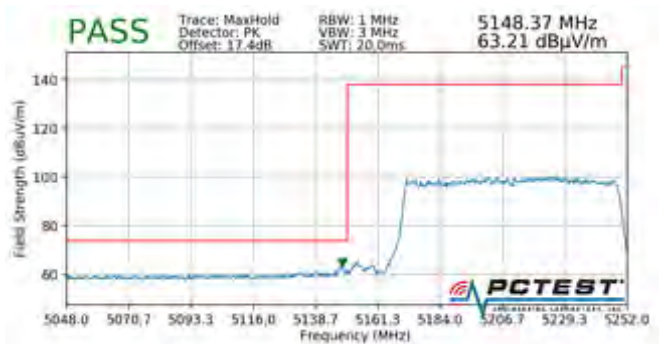
FCC ID: A3LSC03L			MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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996 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	67
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

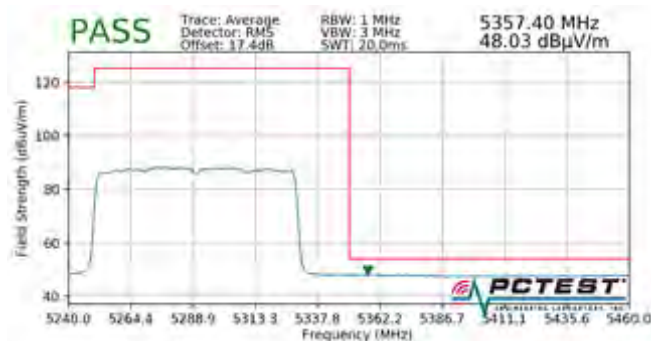


Plot 7-796. Radiated Lower Band Edge Plot MIMO (Average - UNII Band 1 - 996 Tones)

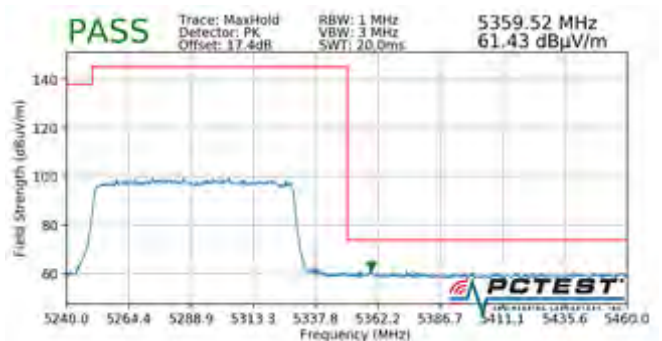


Plot 7-797. Radiated Lower Band Edge Plot MIMO (Peak - UNII Band 1 - 996 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	67
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



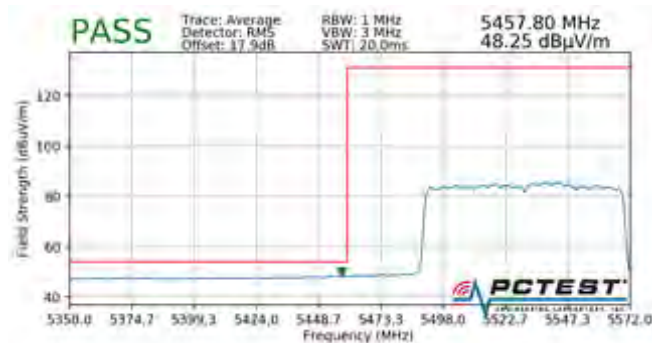
Plot 7-798. Radiated Upper Band Edge Plot MIMO (Average - UNII Band 2A - 996 Tones)



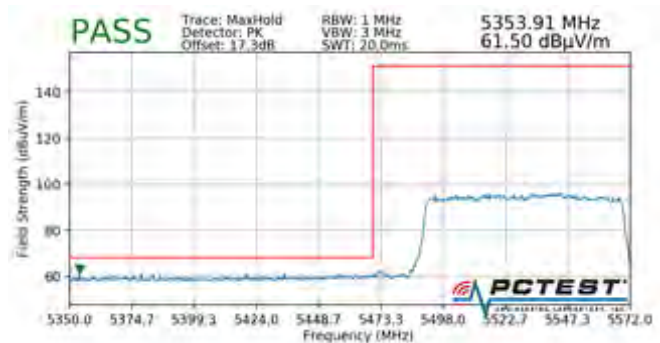
Plot 7-799. Radiated Upper Band Edge Plot MIMO (Peak - UNII Band 2A - 996 Tones)

FCC ID: A3LSC03L	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	67
Distance of Measurements:	3 Meters
Operating Frequency:	5530MHz
Channel:	106

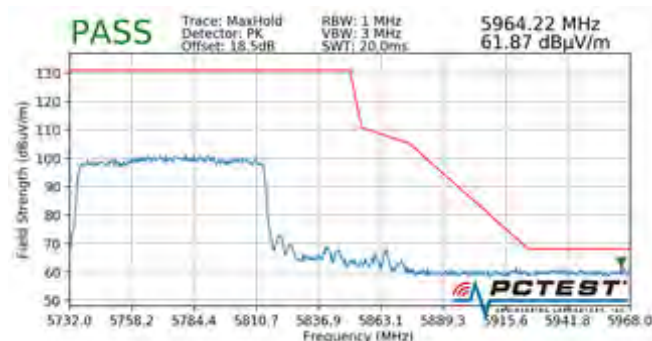


**Plot 7-800. Radiated Lower Band Edge Plot MIMO
(Average – UNII Band 2C – 996 Tones)**



**Plot 7-801. Radiated Lower Band Edge Plot MIMO
(Peak – UNII Band 2C – 996 Tones)**

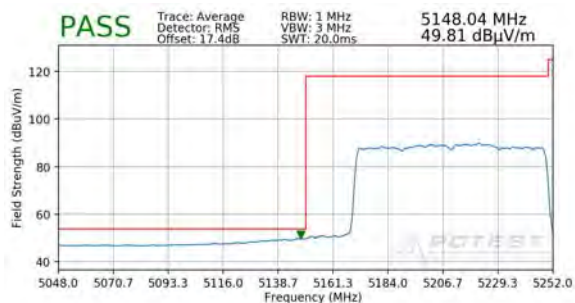
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	67
Distance of Measurements:	3 Meters
Operating Frequency:	5775MHz
Channel:	155



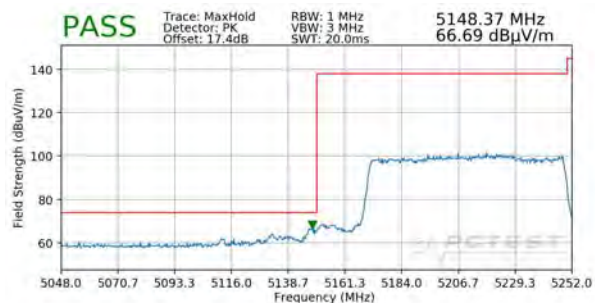
**Plot 7-802. Radiated Upper Band Edge Plot MIMO
(Peak – UNII Band 3 – 996 Tones)**

FCC ID: A3LSC03L			MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
RU Index: 67
Distance of Measurements: 3 Meters
Operating Frequency: 5210MHz
Channel: 42



**Plot 7-803. Radiated Band Edge Plot MIMO
(Average - WCP - 996 Tones)**



**Plot 7-804. Radiated Band Edge Plot MIMO (Peak -
WCP - 996 Tones)**

FCC ID: A3LSC03L	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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7.7 Radiated Spurious Emissions Measurements – Below 1GHz

§15.209; RSS-Gen [8.9]

Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR and Table 6 of RSS-Gen (8.10) must not exceed the limits shown in Table 7-202 per Section 15.209 and RSS-Gen (8.9).

Frequency	Field Strength [μV/m]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3

Table 7-202. Radiated Limits

Test Procedures Used

ANSI C63.10-2013

Test Settings

Quasi-Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 120kHz (for emissions from 30MHz – 1GHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

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Test Setup

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

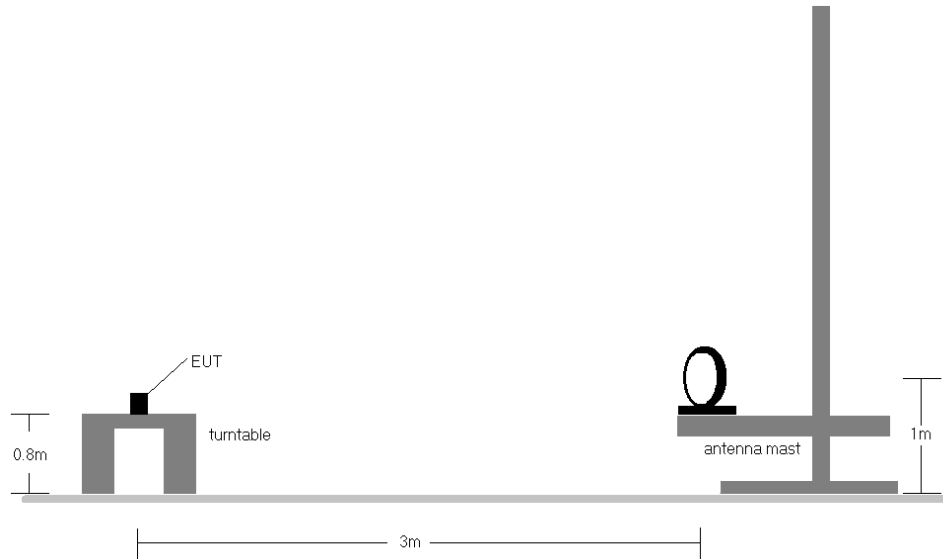


Figure 7-6. Radiated Test Setup < 30MHz

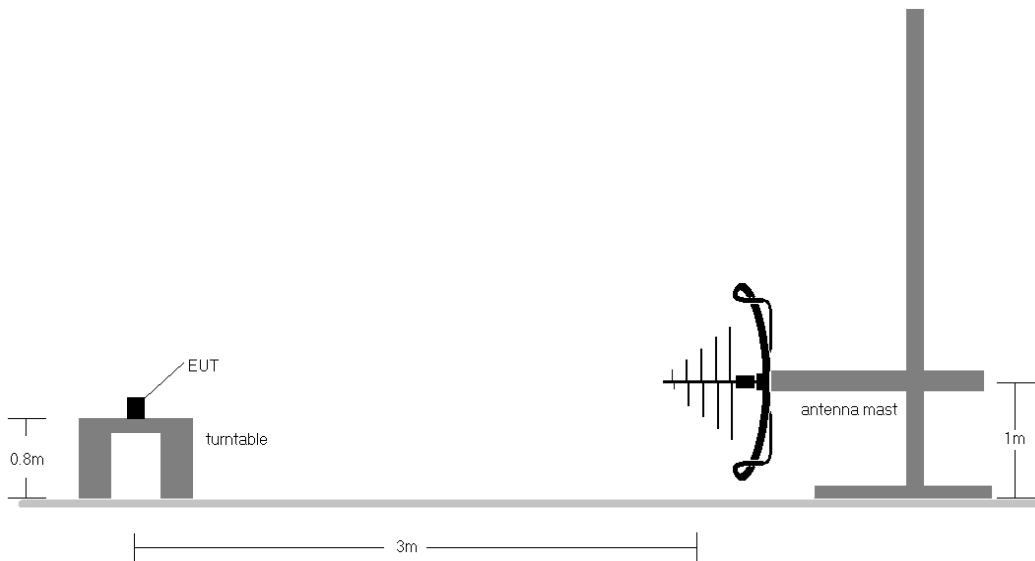


Figure 7-7. Radiated Test Setup < 1GHz

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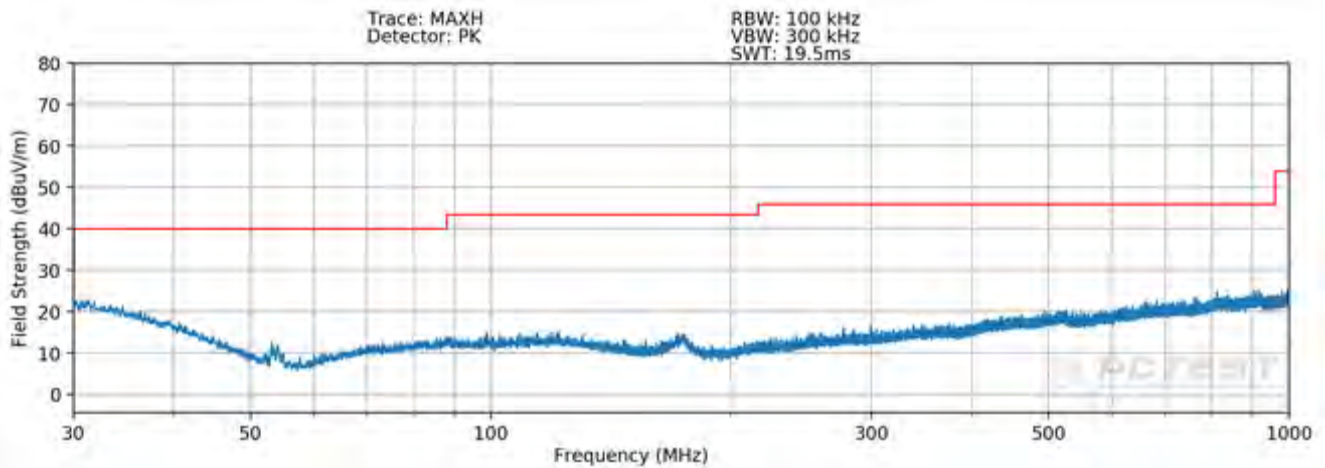
Test Notes

1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen (8.10) are below the limit shown in Table 7-202.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
3. This unit was tested with its standard battery.
4. The spectrum is investigated using a peak detector and final measurements are recorded using CISPR quasi peak detector. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
5. Emissions were measured at a 3 meter test distance.
6. Emissions are investigated while operating on the center channel of the mode, band, and modulation that produced the worst case results during the transmitter spurious emissions testing.
7. No spurious emissions were detected within 20dB of the limit below 30MHz.
8. The results recorded using the broadband antenna is known to correlate with the results obtained by using a tuned dipole with an acceptable degree of accuracy. The VSWR for the measurement antenna was found to be less than 2:1.
9. The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. There were no emissions detected in the 30MHz – 1GHz frequency range, as shown in the subsequent plots.

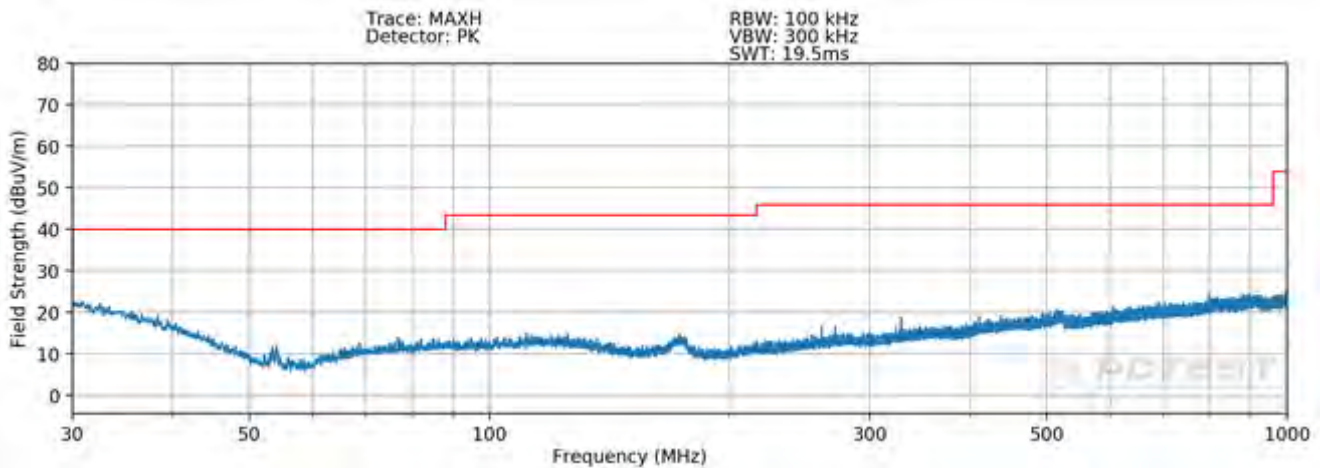
FCC ID: A3LSC03L	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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MIMO Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209; RSS-Gen [8.9]



Plot 7-805. Radiated Spurious Plot below 1GHz MIMO (802.11ax – 106 Tones – U3 Ch. 157)



Plot 7-806. Radiated Spurious Plot below 1GHz MIMO (802.11ax – 242 Tones – U3 Ch. 157)

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8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSC03L** is in compliance with Part 15 Subpart E (15.407) of the FCC Rules and RSS-247 of the Innovation, Science and Economic Development Canada Rules.

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