

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	Peak	V	-	-	-71.80	15.56	0.00	50.76	68.20	-17.44
* 15840.00	Average	V	-	-	-81.16	21.58	0.00	47.42	53.98	-6.56
* 15840.00	Peak	V	-	-	-70.16	21.58	0.00	58.42	73.98	-15.56
* 21120.00	Average	V	-	-	-77.73	17.83	-9.54	37.56	53.98	-16.42
* 21120.00	Peak	V	-	-	-66.72	17.83	-9.54	48.57	73.98	-25.41
26400.00	Peak	V	-	-	-64.42	20.07	-9.54	53.11	68.20	-15.09

Table 7-74. Radiated Measurements SISO ANT1 (26 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 08
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	Average	V	-	-	-78.90	15.21	0.00	43.31	53.98	-10.67
* 10640.00	Peak	V	-	-	-66.51	15.21	0.00	55.70	73.98	-18.28
* 15960.00	Average	V	-	-	-81.59	22.44	0.00	47.85	53.98	-6.13
* 15960.00	Peak	V	-	-	-70.54	22.44	0.00	58.90	73.98	-15.08
* 21280.00	Average	V	-	-	-77.71	17.98	-9.54	37.73	53.98	-16.25
* 21280.00	Peak	V	-	-	-66.23	17.98	-9.54	49.21	73.98	-24.77
26600.00	Peak	V	150	330	-53.10	4.42	-9.54	48.78	68.20	-19.42

Table 7-75. Radiated Measurements SISO ANT1 (26 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11000.00	Average	V	-	-	-81.63	16.02	0.00	41.39	53.98	-12.58
* 11000.00	Peak	V	-	-	-72.65	16.02	0.00	50.37	73.98	-23.60
16500.00	Peak	V	-	-	-70.23	22.58	0.00	59.35	68.20	-8.85
22000.00	Peak	V	-	-	-65.93	18.43	-9.54	49.96	68.20	-18.24
27500.00	Peak	V	-	-	-50.84	3.16	-9.54	49.78	68.20	-18.42

Table 7-76. Radiated Measurements SISO ANT1 (26 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11200.00	Average	V	-	-	-81.13	16.54	0.00	42.41	53.98	-11.57
* 11200.00	Peak	V	-	-	-70.70	16.54	0.00	52.84	73.98	-21.14
16800.00	Peak	V	-	-	-70.58	22.37	0.00	58.79	68.20	-9.41
* 22400.00	Average	V	-	-	-77.93	18.58	-9.54	38.11	53.98	-15.87
* 22400.00	Peak	V	-	-	-66.72	18.58	-9.54	49.32	73.98	-24.66
28000.00	Peak	V	-	-	-51.45	4.79	-9.54	50.80	68.20	-17.40

Table 7-77. Radiated Measurements SISO ANT1 (26 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11440.00	Average	V	-	-	-80.53	17.34	0.00	43.81	53.98	-10.17
* 11440.00	Peak	V	-	-	-70.41	17.34	0.00	53.93	73.98	-20.05
17160.00	Peak	V	-	-	-68.90	22.25	0.00	60.35	68.20	-7.85
* 22880.00	Average	V	-	-	-78.34	18.88	-9.54	38.00	53.98	-15.98
* 22880.00	Peak	V	-	-	-67.17	18.88	-9.54	49.17	73.98	-24.81
28600.00	Peak	V	-	-	-51.82	3.32	-9.54	48.96	68.20	-19.24

Table 7-78. Radiated Measurements SISO ANT1 (26 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 08
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	V	-	-	-80.60	17.27	0.00	43.67	53.98	-10.31
* 11490.00	Peak	V	-	-	-69.97	17.27	0.00	54.30	73.98	-19.68
17235.00	Peak	V	-	-	-67.79	22.40	0.00	61.61	68.20	-6.59
* 22980.00	Average	V	-	-	-78.30	19.03	-9.54	38.19	53.98	-15.79
* 22980.00	Peak	V	-	-	-67.04	19.03	-9.54	49.45	73.98	-24.53
28725.00	Peak	V	-	-	-51.65	3.65	-9.54	49.46	68.20	-18.74

Table 7-79. Radiated Measurements SISO ANT1 (26 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 00
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	V	-	-	-80.57	17.03	0.00	43.46	53.98	-10.52
* 11570.00	Peak	V	-	-	-70.42	17.03	0.00	53.61	73.98	-20.37
17355.00	Peak	V	-	-	-68.48	23.13	0.00	61.65	68.20	-6.55
23140.00	Peak	V	-	-	-67.41	18.82	-9.54	48.87	68.20	-19.33
28925.00	Peak	V	-	-	-51.45	4.50	-9.54	50.51	68.20	-17.69

Table 7-80. Radiated Measurements SISO ANT1 (26 Tones)

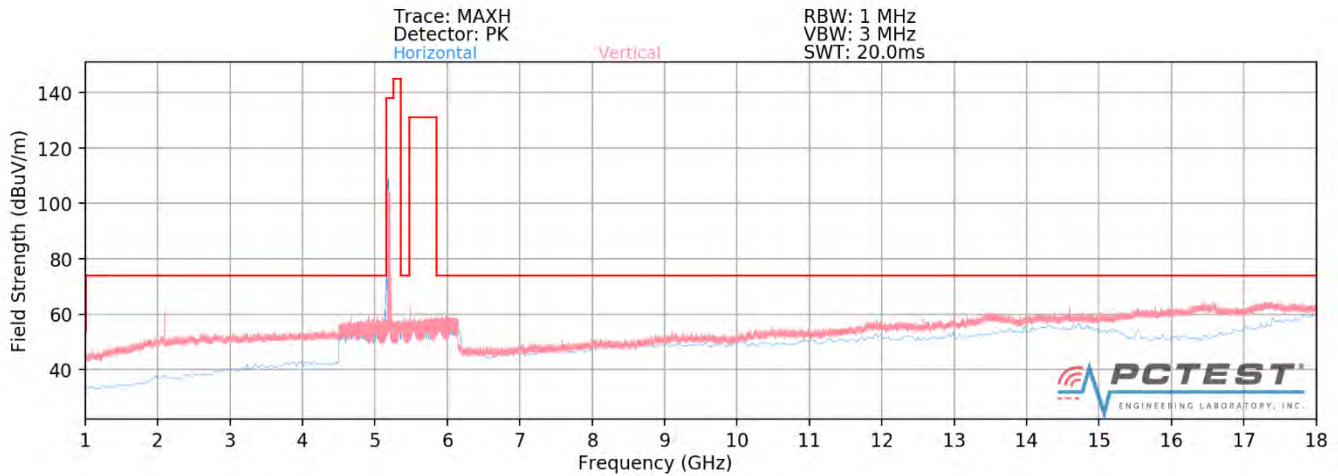
Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 00
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	V	-	-	-79.98	17.68	0.00	44.70	53.98	-9.28
* 11650.00	Peak	V	-	-	-70.84	17.68	0.00	53.84	73.98	-20.14
17475.00	Peak	V	-	-	-69.15	22.70	0.00	60.55	68.20	-7.65
23300.00	Peak	V	-	-	-67.34	18.40	-9.54	48.52	68.20	-19.68
29125.00	Peak	V	-	-	-50.73	2.23	-9.54	48.96	68.20	-19.24

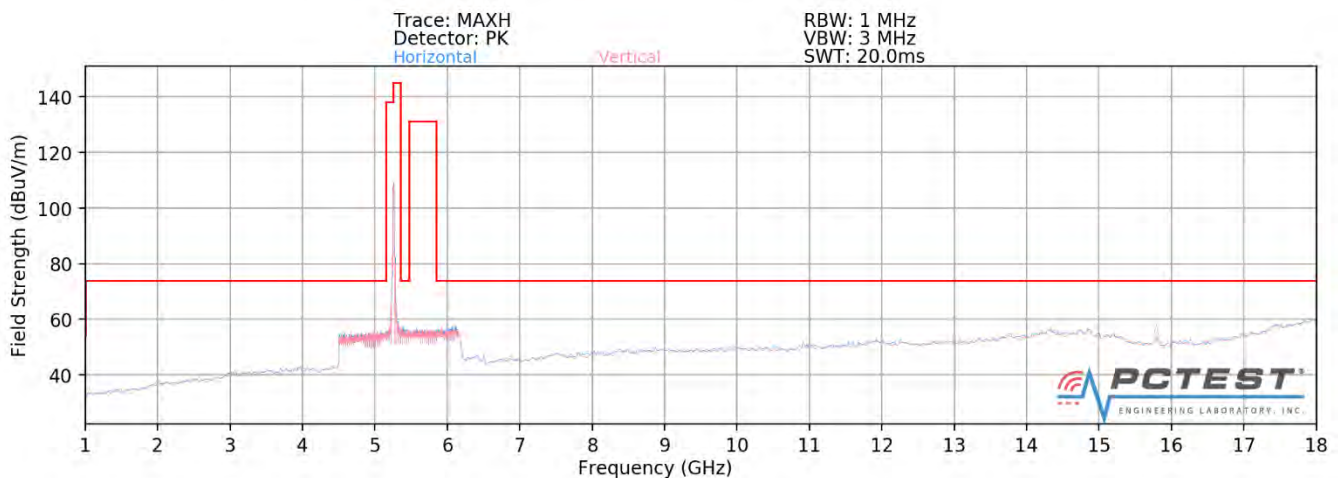
Table 7-81. Radiated Measurements SISO ANT1 (26 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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242 Tones

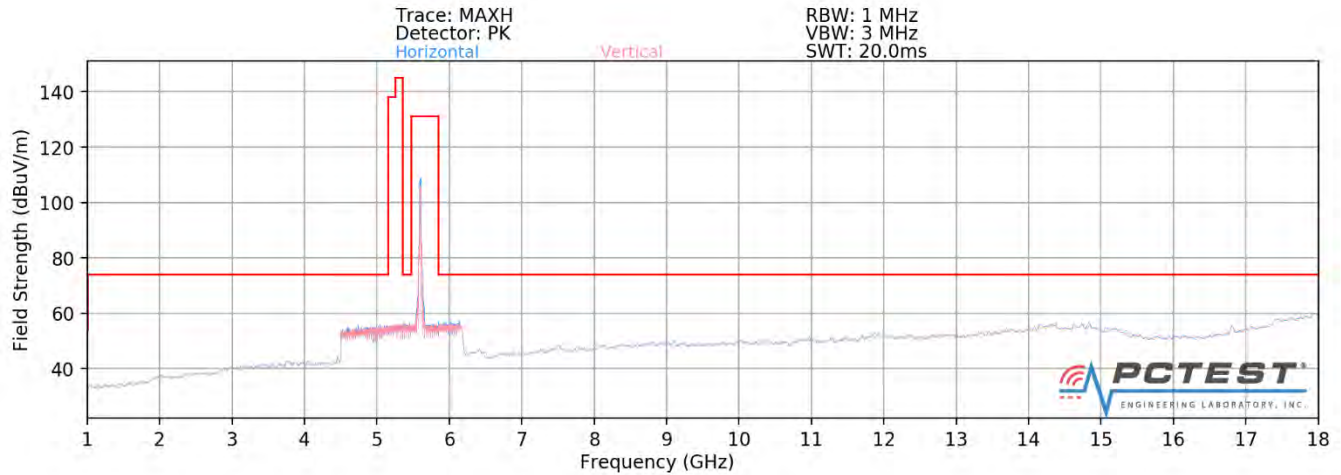


Plot 7-277. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U1 Ch. 40 – 242 Tones)

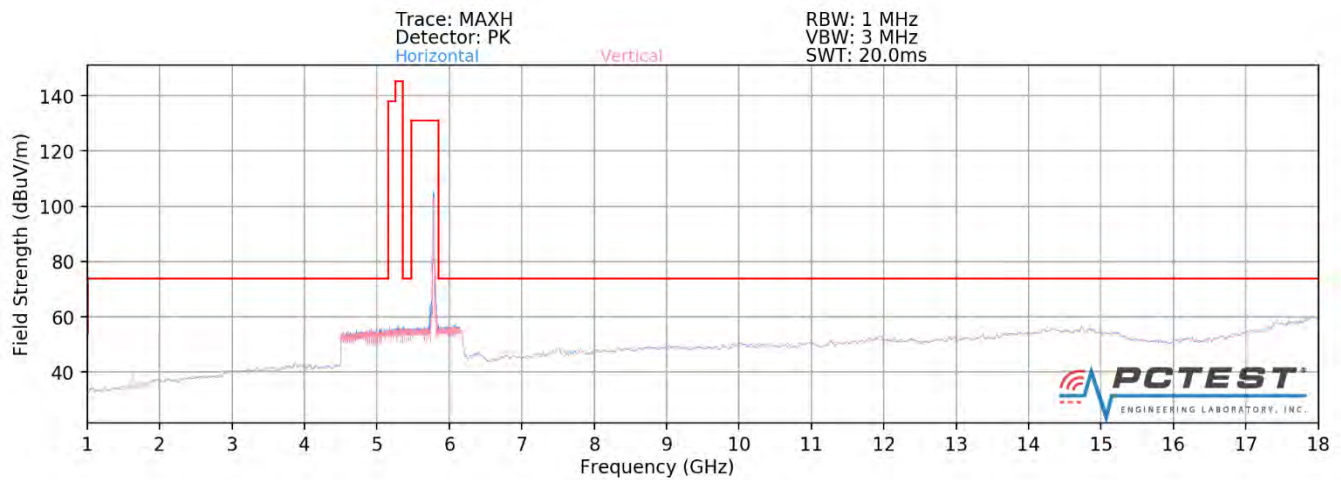


Plot 7-278. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U2A Ch. 56 – 242 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 202 of 269



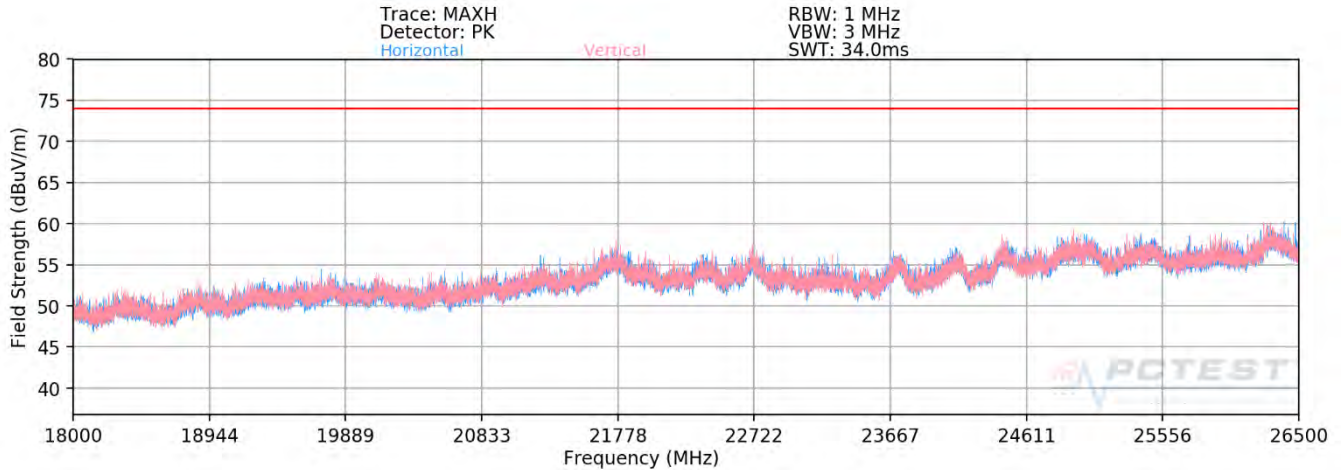
Plot 7-279. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U2C Ch. 120 – 242 Tones)



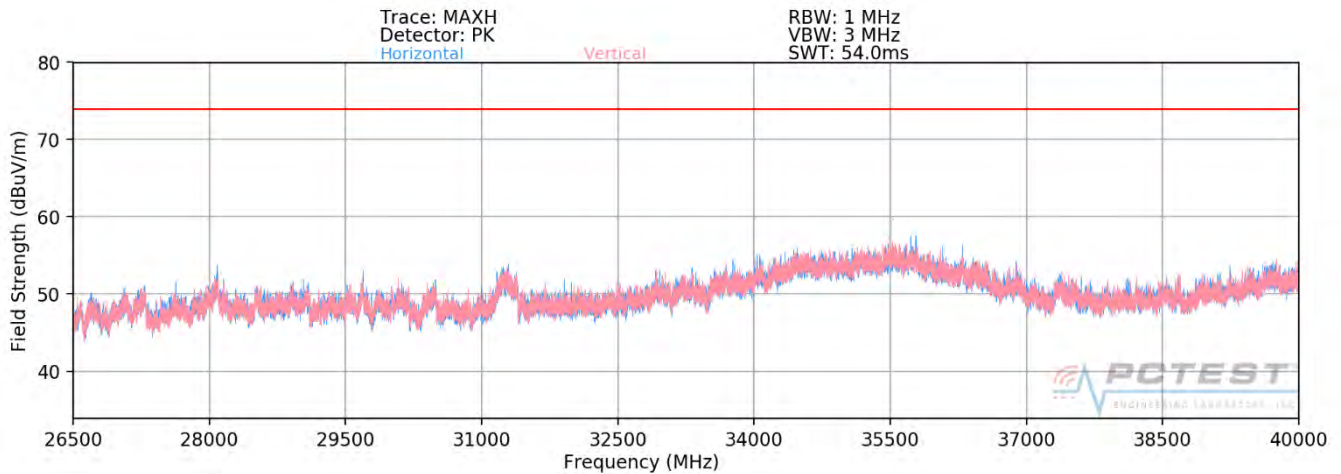
Plot 7-280. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U3 Ch. 157 – 242 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 203 of 269

SISO Antenna-1 Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-281. Radiated Spurious Plot 18GHz - 26.5GHz SISO ANT1 (802.11ax – 242 Tones)



Plot 7-282. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT1 (802.11ax – 242 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 204 of 269

SISO Antenna-1 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	V	-	-	-70.25	14.91	0.00	51.66	68.20	-16.54
* 15540.00	Average	V	-	-	-81.83	21.22	0.00	46.39	53.98	-7.59
* 15540.00	Peak	V	-	-	-71.08	21.22	0.00	57.14	73.98	-16.84
* 20720.00	Average	V	-	-	-77.85	17.17	-9.54	36.78	53.98	-17.20
* 20720.00	Peak	V	-	-	-66.75	17.17	-9.54	47.88	73.98	-26.10
25900.00	Peak	V	-	-	-64.51	19.34	-9.54	52.29	68.20	-15.91

Table 7-82. Radiated Measurements SISO ANT1 (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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	Peak	V	-	-	-71.97	14.85	0.00	49.88	68.20	-18.32
* 15600.00	Average	V	-	-	-81.54	21.50	0.00	46.96	53.98	-7.02
* 15600.00	Peak	V	-	-	-70.80	21.50	0.00	57.70	73.98	-16.28
* 20800.00	Average	V	-	-	-77.75	17.31	-9.54	37.02	53.98	-16.96
* 20800.00	Peak	V	-	-	-66.61	17.31	-9.54	48.16	73.98	-25.82
26000.00	Peak	V	-	-	-66.10	19.60	-9.54	50.96	68.20	-17.24

Table 7-83. Radiated Measurements SISO ANT1 (242 Tones)

FCC ID: A3LSMN970U	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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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: 5240MHz
 Channel: 48

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	Peak	V	-	-	-71.84	15.33	0.00	50.49	68.20	-17.71
* 15720.00	Average	V	-	-	-81.56	22.19	0.00	47.63	53.98	-6.35
* 15720.00	Peak	V	-	-	-69.83	22.19	0.00	59.36	73.98	-14.62
* 20960.00	Average	V	-	-	-77.87	17.60	-9.54	37.19	53.98	-16.79
* 20960.00	Peak	V	-	-	-66.55	17.60	-9.54	48.51	73.98	-25.47
26200.00	Peak	V	-	-	-65.08	19.73	-9.54	52.11	68.20	-16.09

Table 7-84. Radiated Measurements SISO ANT1 (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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10520.00	Peak	V	-	-	-71.88	15.61	0.00	50.73	68.20	-17.47
* 15780.00	Average	V	-	-	-81.31	21.75	0.00	47.44	53.98	-6.54
* 15780.00	Peak	V	-	-	-70.51	21.75	0.00	58.24	73.98	-15.74
* 21040.00	Average	V	-	-	-77.79	17.67	-9.54	37.34	53.98	-16.64
* 21040.00	Peak	V	-	-	-66.44	17.67	-9.54	48.69	73.98	-25.29
26300.00	Peak	V	-	-	-64.65	20.29	-9.54	53.10	68.20	-15.10

Table 7-85. Radiated Measurements SISO ANT1 (242 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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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: 5280MHz
 Channel: 56

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	Peak	V	-	-	-72.16	15.56	0.00	50.40	68.20	-17.80
* 15840.00	Average	V	-	-	-81.14	21.58	0.00	47.44	53.98	-6.54
* 15840.00	Peak	V	-	-	-70.20	21.58	0.00	58.38	73.98	-15.60
* 21120.00	Average	V	-	-	-77.74	17.83	-9.54	37.55	53.98	-16.43
* 21120.00	Peak	V	-	-	-66.37	17.83	-9.54	48.92	73.98	-25.06
26400.00	Peak	V	-	-	-65.52	20.07	-9.54	52.01	68.20	-16.19

Table 7-86. Radiated Measurements SISO ANT1 (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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	Average	V	-	-	-81.87	15.21	0.00	40.34	53.98	-13.64
* 10640.00	Peak	V	-	-	-71.36	15.21	0.00	50.85	73.98	-23.13
* 15960.00	Average	V	-	-	-81.48	22.44	0.00	47.96	53.98	-6.02
* 15960.00	Peak	V	-	-	-70.71	22.44	0.00	58.73	73.98	-15.25
* 21280.00	Average	V	-	-	-77.61	17.98	-9.54	37.83	53.98	-16.15
* 21280.00	Peak	V	-	-	-66.42	17.98	-9.54	49.02	73.98	-24.96
26600.00	Peak	V	150	237	-51.90	4.42	-9.54	49.98	68.20	-18.22

Table 7-87. Radiated Measurements SISO ANT1 (242 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11000.00	Average	V	-	-	-81.85	16.02	0.00	41.17	53.98	-12.80
* 11000.00	Peak	V	-	-	-70.97	16.02	0.00	52.05	73.98	-21.92
16500.00	Peak	V	-	-	-70.55	22.58	0.00	59.03	68.20	-9.17
22000.00	Peak	V	-	-	-66.89	18.43	-9.54	49.00	68.20	-19.20
27500.00	Peak	V	-	-	-51.20	3.16	-9.54	49.42	68.20	-18.78

Table 7-88. Radiated Measurements SISO ANT1 (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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11200.00	Average	V	-	-	-80.51	16.54	0.00	43.03	53.98	-10.95
* 11200.00	Peak	V	-	-	-70.45	16.54	0.00	53.09	73.98	-20.89
16800.00	Peak	V	-	-	-70.67	22.37	0.00	58.70	68.20	-9.50
* 22400.00	Average	V	-	-	-78.49	18.58	-9.54	37.55	53.98	-16.43
* 22400.00	Peak	V	-	-	-67.03	18.58	-9.54	49.01	73.98	-24.97
28000.00	Peak	V	-	-	-51.58	4.79	-9.54	50.67	68.20	-17.53

Table 7-89. Radiated Measurements SISO ANT1 (242 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 208 of 269

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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11440.00	Average	V	-	-	-81.57	17.34	0.00	42.77	53.98	-11.21
* 11440.00	Peak	V	-	-	-70.77	17.34	0.00	53.57	73.98	-20.41
17160.00	Peak	V	-	-	-71.15	22.25	0.00	58.10	68.20	-10.10
* 22880.00	Average	V	-	-	-78.27	18.88	-9.54	38.07	53.98	-15.91
* 22880.00	Peak	V	-	-	-67.64	18.88	-9.54	48.70	73.98	-25.28
28600.00	Peak	V	-	-	-51.70	3.32	-9.54	49.08	68.20	-19.12

Table 7-90. Radiated Measurements SISO ANT1 (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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	V	-	-	-81.54	17.27	0.00	42.73	53.98	-11.25
* 11490.00	Peak	V	-	-	-70.37	17.27	0.00	53.90	73.98	-20.08
17235.00	Peak	V	-	-	-71.33	22.40	0.00	58.07	68.20	-10.13
* 22980.00	Average	V	-	-	-78.07	19.03	-9.54	38.42	53.98	-15.56
* 22980.00	Peak	V	-	-	-66.03	19.03	-9.54	50.46	73.98	-23.52
28725.00	Peak	V	-	-	-51.78	3.65	-9.54	49.33	68.20	-18.87

Table 7-91. Radiated Measurements SISO ANT1 (242 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 209 of 269

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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	V	-	-	-81.69	17.03	0.00	42.34	53.98	-11.64
* 11570.00	Peak	V	-	-	-70.60	17.03	0.00	53.43	73.98	-20.55
17355.00	Peak	V	-	-	-71.41	23.13	0.00	58.72	68.20	-9.48
23140.00	Peak	V	-	-	-67.78	18.82	-9.54	48.50	68.20	-19.70
28925.00	Peak	V	-	-	-51.90	4.50	-9.54	50.06	68.20	-18.14

Table 7-92. Radiated Measurements SISO ANT1 (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

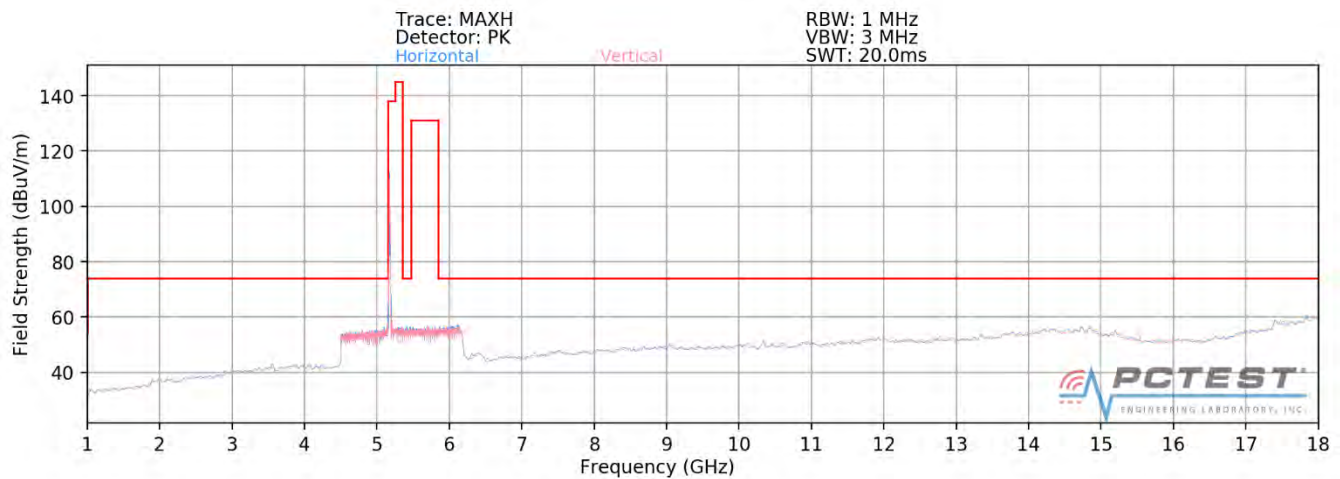
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	V	-	-	-83.71	17.68	0.00	40.97	53.98	-13.01
* 11650.00	Peak	V	-	-	-72.71	17.68	0.00	51.97	73.98	-22.01
17475.00	Peak	V	-	-	-71.34	22.70	0.00	58.36	68.20	-9.84
23300.00	Peak	V	-	-	-66.64	18.40	-9.54	49.22	68.20	-18.98
29125.00	Peak	V	-	-	-49.69	2.23	-9.54	50.00	68.20	-18.20

Table 7-93. Radiated Measurements SISO ANT1 (242 Tones)

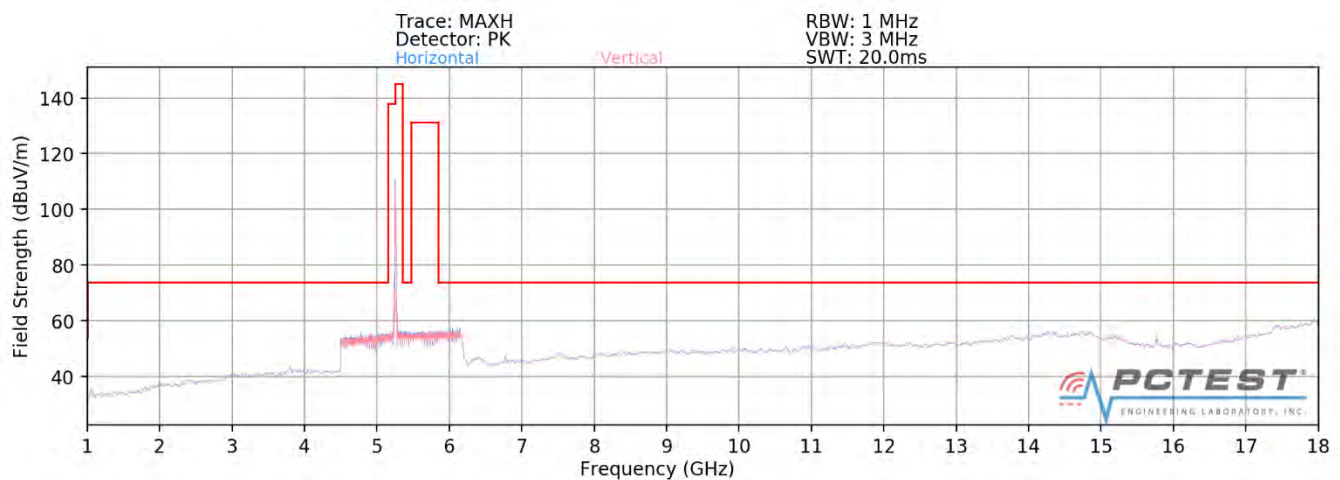
FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 210 of 269

6.6.2 SISO Antenna-2 Radiated Spurious Emission Measurements

26 Tones

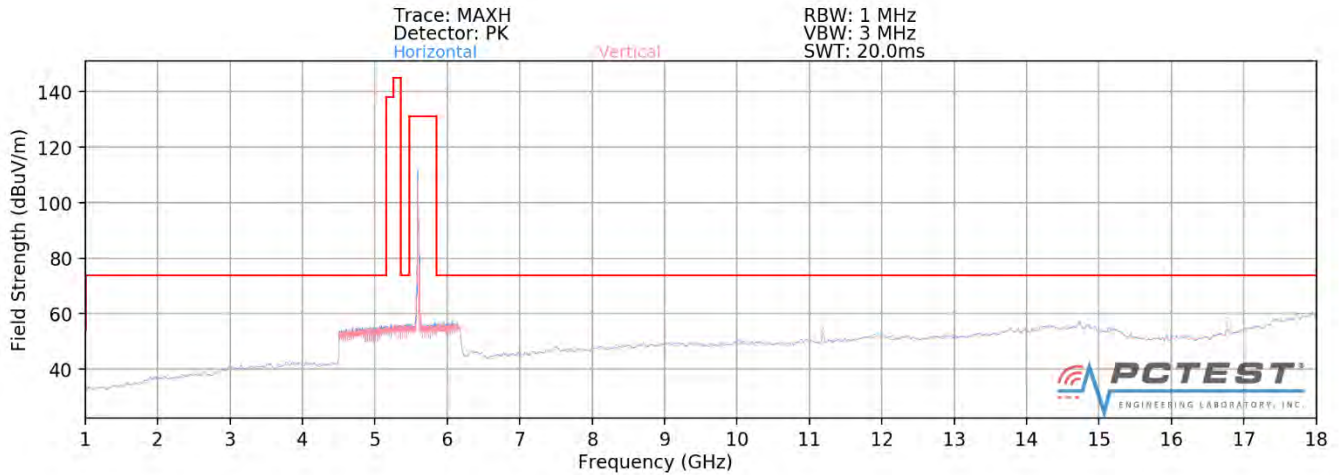


Plot 7-283. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U1 Ch. 40 – 26 Tones)

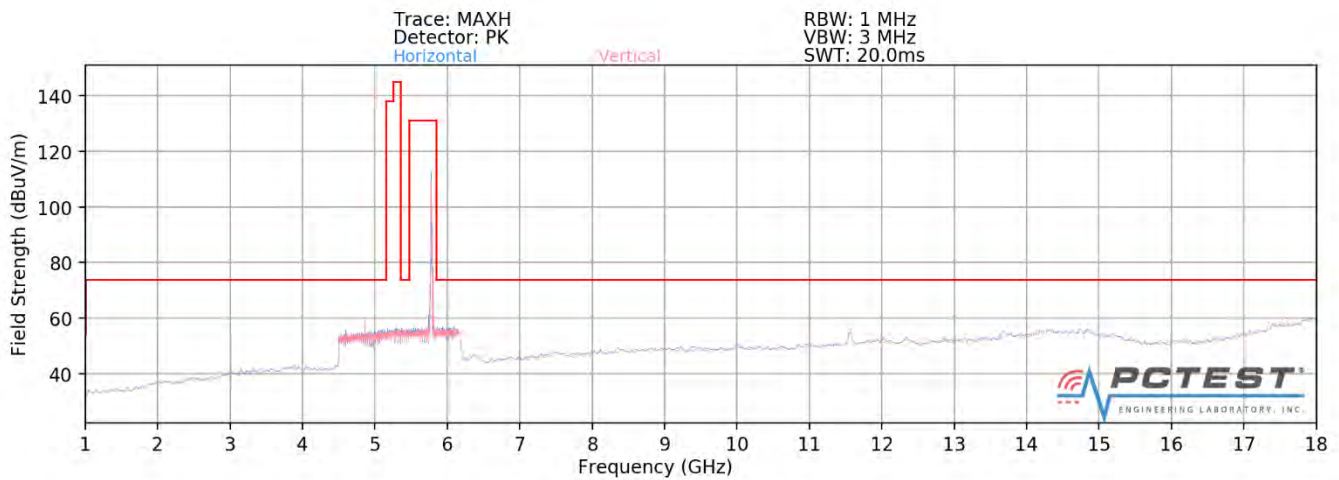


Plot 7-284. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U2A Ch. 56 – 26 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 211 of 269



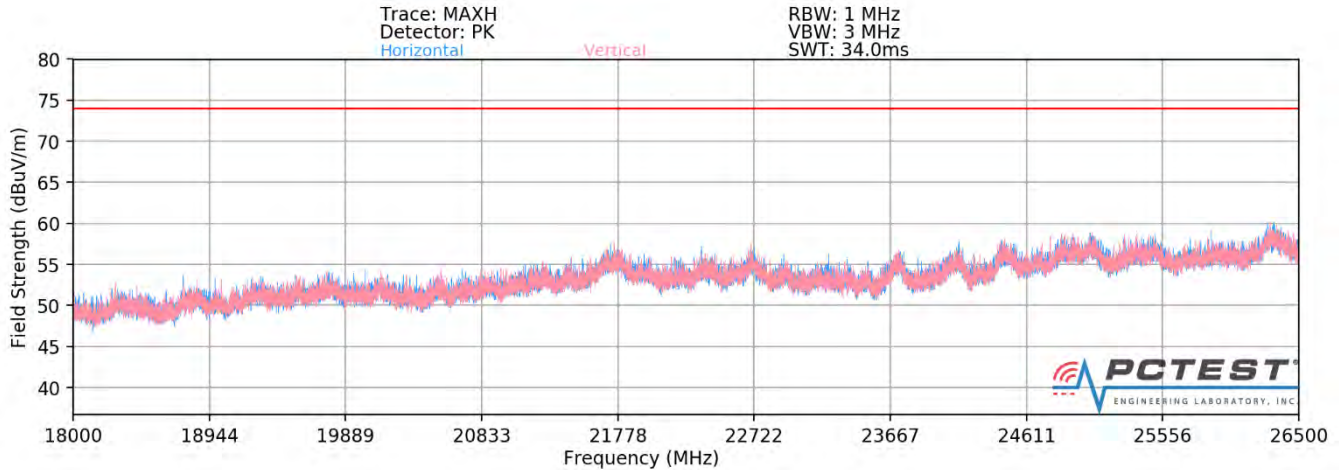
Plot 7-285. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U2C Ch. 120 – 26 Tones)



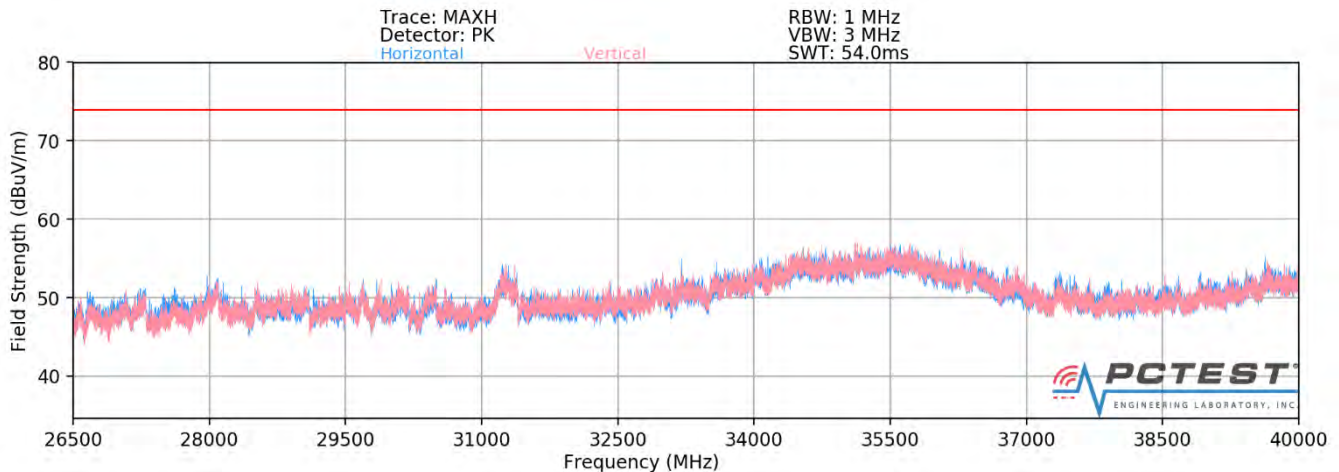
Plot 7-286. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U3 Ch. 157 – 26 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 212 of 269

SISO Antenna-2 Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-287. Radiated Spurious Plot 18GHz - 26.5GHz SISO ANT2 (802.11ax - 26 Tones)



Plot 7-288. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT2 (802.11ax - 26 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 213 of 269

SISO Antenna-2 Radiated Spurious Emission Measurements

§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:	04
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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	V	-	-	-71.68	14.91	0.00	50.23	68.20	-17.97
* 15540.00	Average	V	-	-	-81.92	21.22	0.00	46.30	53.98	-7.68
* 15540.00	Peak	V	-	-	-70.39	21.22	0.00	57.83	73.98	-16.15
* 20720.00	Average	V	-	-	-77.90	17.17	-9.54	36.73	53.98	-17.25
* 20720.00	Peak	V	-	-	-66.97	17.17	-9.54	47.66	73.98	-26.32
25900.00	Peak	V	-	-	-65.16	19.34	-9.54	51.64	68.20	-16.56

Table 7-94. Radiated Measurements SISO ANT2 (26 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	04
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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	Peak	V	-	-	-71.65	14.85	0.00	50.20	68.20	-18.00
* 15600.00	Average	V	-	-	-81.79	21.50	0.00	46.71	53.98	-7.27
* 15600.00	Peak	V	-	-	-70.55	21.50	0.00	57.95	73.98	-16.03
* 20800.00	Average	V	-	-	-77.95	17.31	-9.54	36.82	53.98	-17.16
* 20800.00	Peak	V	-	-	-66.62	17.31	-9.54	48.15	73.98	-25.83
26000.00	Peak	V	-	-	-66.28	19.60	-9.54	50.78	68.20	-17.42

Table 7-95. Radiated Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMN970U	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset	Page 214 of 269

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 00
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	Peak	V	-	-	-72.06	15.33	0.00	50.27	68.20	-17.93
* 15720.00	Average	V	-	-	-81.73	22.19	0.00	47.46	53.98	-6.52
* 15720.00	Peak	V	-	-	-70.21	22.19	0.00	58.98	73.98	-15.00
* 20960.00	Average	V	-	-	-77.78	17.60	-9.54	37.28	53.98	-16.70
* 20960.00	Peak	V	-	-	-66.41	17.60	-9.54	48.65	73.98	-25.33
26200.00	Peak	V	-	-	-65.89	19.73	-9.54	51.30	68.20	-16.90

Table 7-96. Radiated Measurements SISO ANT2 (26 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10520.00	Peak	V	-	-	-72.36	15.61	0.00	50.25	68.20	-17.95
* 15780.00	Average	V	-	-	-81.47	21.75	0.00	47.28	53.98	-6.70
* 15780.00	Peak	V	-	-	-70.70	21.75	0.00	58.05	73.98	-15.93
* 21040.00	Average	V	-	-	-77.42	17.67	-9.54	37.71	53.98	-16.27
* 21040.00	Peak	V	-	-	-66.27	17.67	-9.54	48.86	73.98	-25.12
26300.00	Peak	V	-	-	-64.63	20.29	-9.54	53.12	68.20	-15.08

Table 7-97. Radiated Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 215 of 269

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	Peak	V	-	-	-71.15	15.56	0.00	51.41	68.20	-16.79
* 15840.00	Average	V	-	-	-81.36	21.58	0.00	47.22	53.98	-6.76
* 15840.00	Peak	V	-	-	-70.90	21.58	0.00	57.68	73.98	-16.30
* 21120.00	Average	V	-	-	-77.15	17.83	-9.54	38.14	53.98	-15.84
* 21120.00	Peak	V	-	-	-66.17	17.83	-9.54	49.12	73.98	-24.86
26400.00	Peak	V	-	-	-64.74	20.07	-9.54	52.79	68.20	-15.41

Table 7-98. Radiated Measurements SISO ANT2 (26 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	Average	V	-	-	-81.01	15.21	0.00	41.20	53.98	-12.78
* 10640.00	Peak	V	-	-	-70.01	15.21	0.00	52.20	73.98	-21.78
* 15960.00	Average	V	-	-	-81.54	22.44	0.00	47.90	53.98	-6.08
* 15960.00	Peak	V	-	-	-70.26	22.44	0.00	59.18	73.98	-14.80
* 21280.00	Average	V	-	-	-77.41	17.98	-9.54	38.03	53.98	-15.95
* 21280.00	Peak	V	-	-	-66.49	17.98	-9.54	48.95	73.98	-25.03
26600.00	Peak	V	150	309	-52.10	4.42	-9.54	49.78	68.20	-18.42

Table 7-99. Radiated Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 216 of 269

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11000.00	Average	V	-	-	-80.56	16.02	0.00	42.46	53.98	-11.51
* 11000.00	Peak	V	-	-	-70.50	16.02	0.00	52.52	73.98	-21.45
16500.00	Peak	V	-	-	-70.68	22.58	0.00	58.90	68.20	-9.30
22000.00	Peak	V	-	-	-66.38	18.43	-9.54	49.51	68.20	-18.69
27500.00	Peak	V	150	334	-50.94	3.16	-9.54	49.68	68.20	-18.52

Table 7-100. Radiated Measurements SISO ANT2 (26 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 00
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11200.00	Average	V	-	-	-81.39	16.54	0.00	42.15	53.98	-11.83
* 11200.00	Peak	V	-	-	-70.21	16.54	0.00	53.33	73.98	-20.65
16800.00	Peak	V	-	-	-70.64	22.37	0.00	58.73	68.20	-9.47
* 22400.00	Average	V	-	-	-73.54	18.58	-9.54	42.50	53.98	-11.48
* 22400.00	Peak	V	-	-	-66.83	18.58	-9.54	49.21	73.98	-24.77
28000.00	Peak	V	-	-	-51.94	4.79	-9.54	50.31	68.20	-17.89

Table 7-101. Radiated Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 217 of 269

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 08
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11440.00	Average	V	-	-	-80.14	17.34	0.00	44.20	53.98	-9.78
* 11440.00	Peak	V	-	-	-70.28	17.34	0.00	54.06	73.98	-19.92
17160.00	Peak	V	-	-	-70.22	22.25	0.00	59.03	68.20	-9.17
* 22880.00	Average	V	-	-	-78.27	18.88	-9.54	38.07	53.98	-15.91
* 22880.00	Peak	V	-	-	-66.59	18.88	-9.54	49.75	73.98	-24.23
28600.00	Peak	V	-	-	-51.24	3.32	-9.54	49.54	68.20	-18.66

Table 7-102. Radiated Measurements SISO ANT2 (26 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 00
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	V	-	-	-80.27	17.27	0.00	44.00	53.98	-9.98
* 11490.00	Peak	V	-	-	-70.32	17.27	0.00	53.95	73.98	-20.03
17235.00	Peak	V	-	-	-70.31	22.40	0.00	59.09	68.20	-9.11
* 22980.00	Average	V	-	-	-78.03	19.03	-9.54	38.46	53.98	-15.52
* 22980.00	Peak	V	-	-	-66.47	19.03	-9.54	50.02	73.98	-23.96
28725.00	Peak	V	-	-	-51.28	3.65	-9.54	49.83	68.20	-18.37

Table 7-103. Radiated Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 218 of 269

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	V	-	-	-80.57	17.03	0.00	43.46	53.98	-10.52
* 11570.00	Peak	V	-	-	-70.96	17.03	0.00	53.07	73.98	-20.91
17355.00	Peak	V	-	-	-70.04	23.13	0.00	60.09	68.20	-8.11
23140.00	Peak	V	-	-	-66.71	18.82	-9.54	49.57	68.20	-18.63
28925.00	Peak	V	-	-	-52.03	4.50	-9.54	49.93	68.20	-18.27

Table 7-104. Radiated Measurements SISO ANT2 (26 Tones)

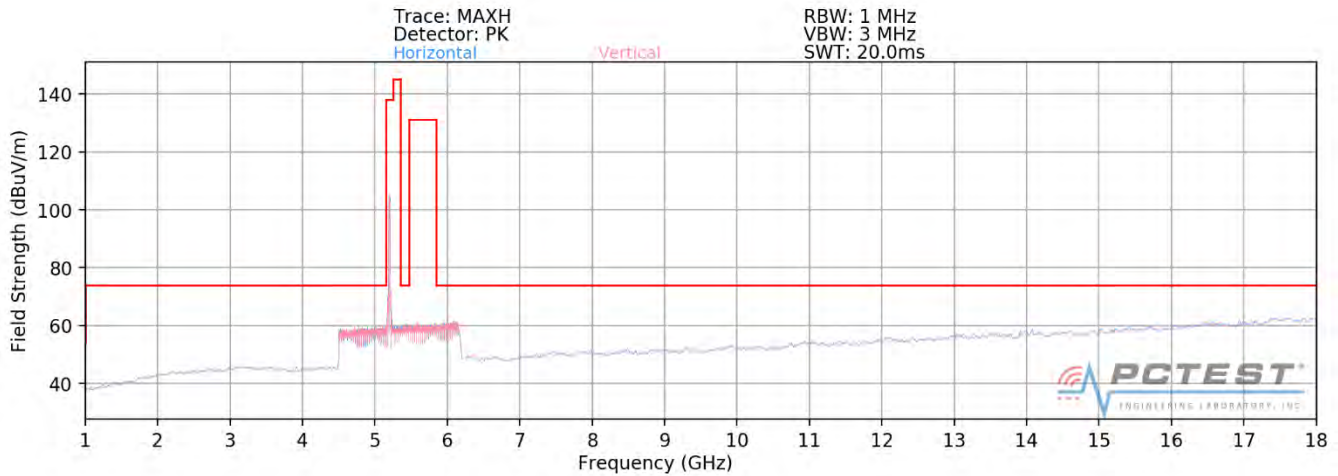
Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 00
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	V	-	-	-80.21	17.68	0.00	44.47	53.98	-9.51
* 11650.00	Peak	V	-	-	-70.71	17.68	0.00	53.97	73.98	-20.01
17475.00	Peak	V	-	-	-71.14	22.70	0.00	58.56	68.20	-9.64
23300.00	Peak	V	-	-	-66.37	18.40	-9.54	49.49	68.20	-18.71
29125.00	Peak	V	-	-	-49.75	2.23	-9.54	49.94	68.20	-18.26

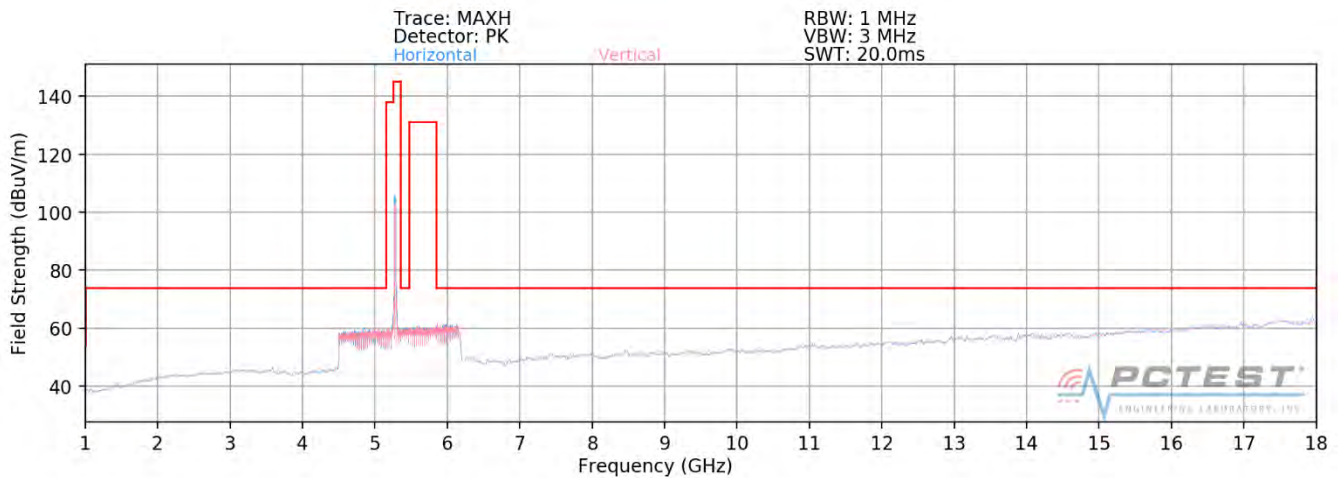
Table 7-105. Radiated Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 219 of 269

242 Tones

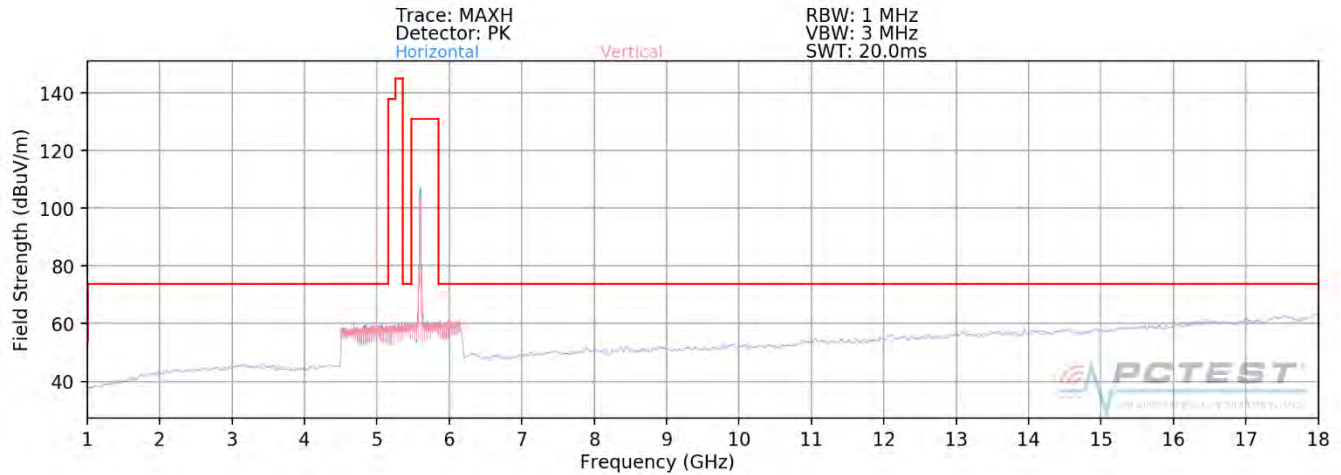


Plot 7-289. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U1 Ch. 40 – 242 Tones)

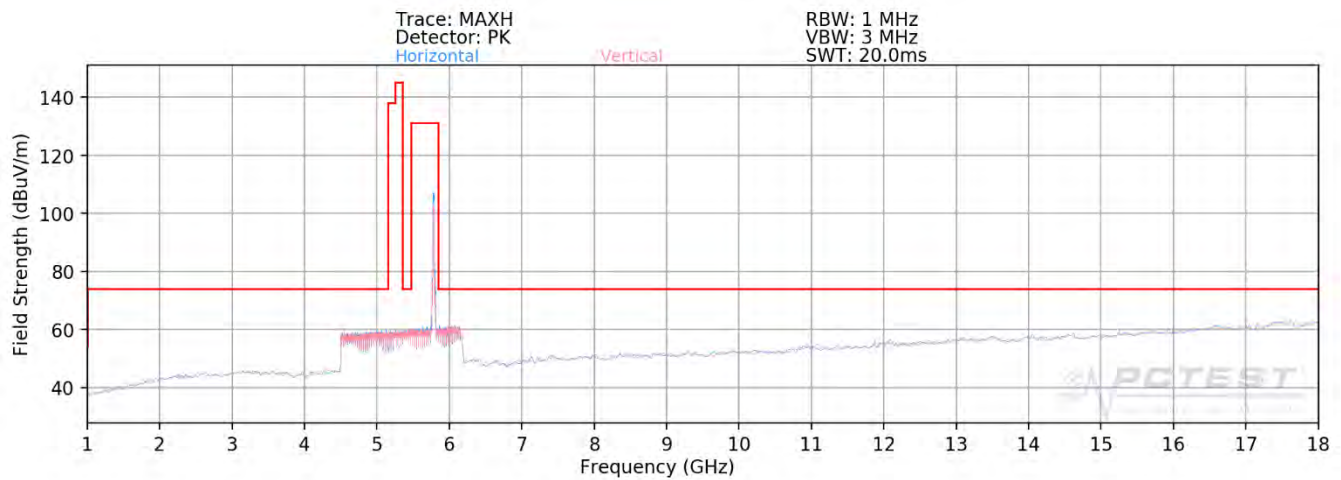


Plot 7-290. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U2A Ch. 56 – 242 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 220 of 269



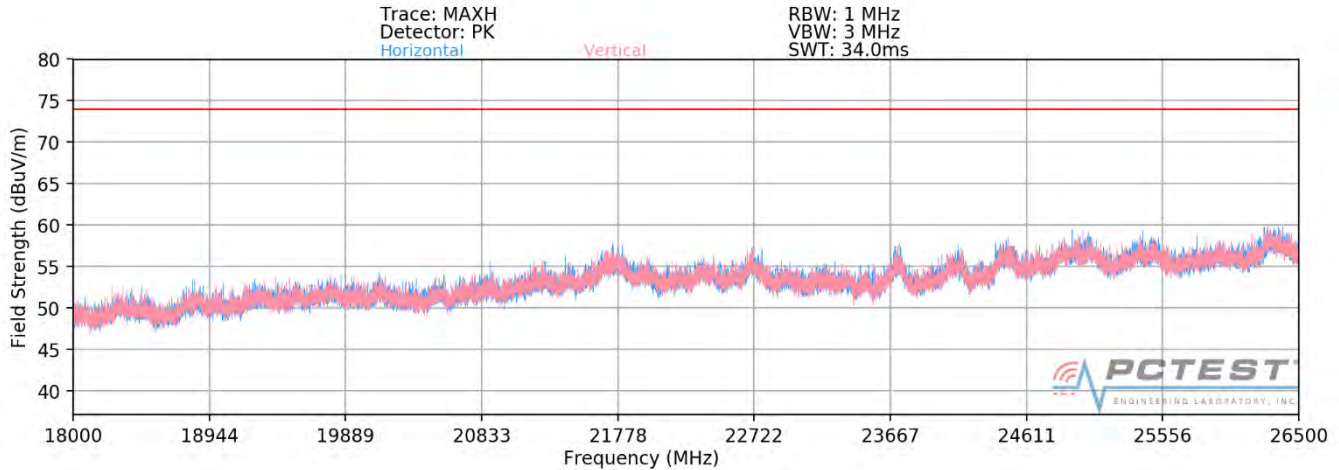
Plot 7-291. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U2C Ch. 120 – 242 Tones)



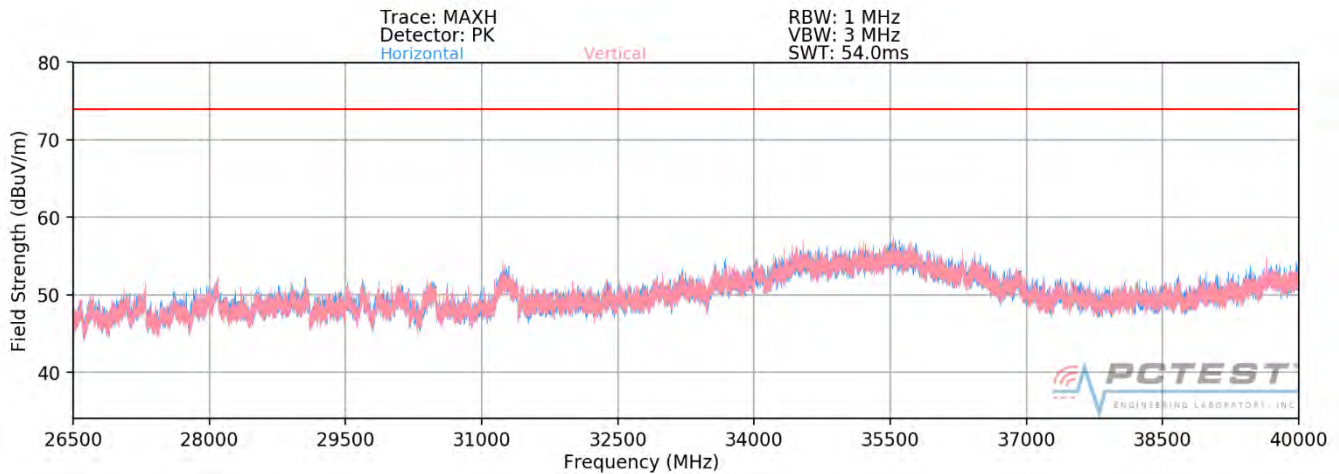
Plot 7-292. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U3 Ch. 157 – 242 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 221 of 269

SISO Antenna-2 Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-293. Radiated Spurious Plot 18GHz - 26.5GHz SISO ANT2 (802.11ax – 242 Tones)



Plot 7-294. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT2 (802.11ax – 242 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 222 of 269

SISO Antenna-2 Radiated Spurious Emission Measurements

§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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	V	-	-	-71.41	14.91	0.00	50.50	68.20	-17.70
* 15540.00	Average	V	-	-	-81.81	21.22	0.00	46.41	53.98	-7.57
* 15540.00	Peak	V	-	-	-70.93	21.22	0.00	57.29	73.98	-16.69
* 20720.00	Average	V	-	-	-77.78	17.17	-9.54	36.85	53.98	-17.13
* 20720.00	Peak	V	-	-	-66.52	17.17	-9.54	48.11	73.98	-25.87
25900.00	Peak	V	-	-	-64.78	19.34	-9.54	52.02	68.20	-16.18

Table 7-106. Radiated Measurements SISO ANT2 (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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	Peak	V	142	6	-69.61	14.85	0.00	52.24	68.20	-15.96
* 15600.00	Average	V	-	-	-81.55	21.50	0.00	46.95	53.98	-7.03
* 15600.00	Peak	V	-	-	-70.35	21.50	0.00	58.15	73.98	-15.83
* 20800.00	Average	V	-	-	-78.00	17.31	-9.54	36.77	53.98	-17.21
* 20800.00	Peak	V	-	-	-66.84	17.31	-9.54	47.93	73.98	-26.05
26000.00	Peak	V	-	-	-66.22	19.60	-9.54	50.84	68.20	-17.36

Table 7-107. Radiated Measurements SISO ANT2 (242 Tones)

FCC ID: A3LSMN970U	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset	Page 223 of 269

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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	Peak	V	-	-	-71.65	15.33	0.00	50.68	68.20	-17.52
* 15720.00	Average	V	-	-	-81.63	22.19	0.00	47.56	53.98	-6.42
* 15720.00	Peak	V	-	-	-70.03	22.19	0.00	59.16	73.98	-14.82
* 20960.00	Average	V	-	-	-77.68	17.60	-9.54	37.38	53.98	-16.60
* 20960.00	Peak	V	-	-	-67.08	17.60	-9.54	47.98	73.98	-26.00
26200.00	Peak	V	-	-	-65.35	19.73	-9.54	51.84	68.20	-16.36

Table 7-108. Radiated Measurements SISO ANT2 (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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10520.00	Peak	V	-	-	-71.23	15.61	0.00	51.38	68.20	-16.82
* 15780.00	Average	V	-	-	-82.01	21.75	0.00	46.74	53.98	-7.24
* 15780.00	Peak	V	-	-	-70.47	21.75	0.00	58.28	73.98	-15.70
* 21040.00	Average	V	-	-	-77.51	17.67	-9.54	37.62	53.98	-16.36
* 21040.00	Peak	V	-	-	-66.43	17.67	-9.54	48.70	73.98	-25.28
26300.00	Peak	V	-	-	-65.05	20.29	-9.54	52.70	68.20	-15.50

Table 7-109. Radiated Measurements SISO ANT2 (242 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 224 of 269

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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	Peak	V	-	-	-72.06	15.56	0.00	50.50	68.20	-17.70
* 15840.00	Average	V	-	-	-82.34	21.58	0.00	46.24	53.98	-7.74
* 15840.00	Peak	V	-	-	-71.01	21.58	0.00	57.57	73.98	-16.41
* 21120.00	Average	V	-	-	-77.73	17.83	-9.54	37.56	53.98	-16.42
* 21120.00	Peak	V	-	-	-66.27	17.83	-9.54	49.02	73.98	-24.96
26400.00	Peak	V	-	-	-65.57	20.07	-9.54	51.96	68.20	-16.24

Table 7-110. Radiated Measurements SISO ANT2 (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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	Average	V	-	-	-79.78	15.21	0.00	42.43	53.98	-11.55
* 10640.00	Peak	V	-	-	-71.49	15.21	0.00	50.72	73.98	-23.26
* 15960.00	Average	V	-	-	-81.69	22.44	0.00	47.75	53.98	-6.23
* 15960.00	Peak	V	-	-	-70.05	22.44	0.00	59.39	73.98	-14.59
* 21280.00	Average	V	-	-	-77.21	17.98	-9.54	38.23	53.98	-15.75
* 21280.00	Peak	V	-	-	-66.27	17.98	-9.54	49.17	73.98	-24.81
26600.00	Peak	V	150	178	-52.21	4.42	-9.54	49.67	68.20	-18.53

Table 7-111. Radiated Measurements SISO ANT2 (242 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 225 of 269

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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11000.00	Average	V	-	-	-80.89	16.02	0.00	42.13	53.98	-11.84
* 11000.00	Peak	V	-	-	-70.05	16.02	0.00	52.97	73.98	-21.00
16500.00	Peak	V	-	-	-71.04	22.58	0.00	58.54	68.20	-9.66
22000.00	Peak	V	-	-	-66.70	18.43	-9.54	49.19	68.20	-19.01
27500.00	Peak	V	-	-	-51.02	3.16	-9.54	49.60	68.20	-18.60

Table 7-112. Radiated Measurements SISO ANT2 (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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11200.00	Average	V	-	-	-80.41	16.54	0.00	43.13	53.98	-10.85
* 11200.00	Peak	V	-	-	-69.86	16.54	0.00	53.68	73.98	-20.30
16800.00	Peak	V	-	-	-70.52	22.37	0.00	58.85	68.20	-9.35
* 22400.00	Average	V	-	-	-74.15	18.58	-9.54	41.89	53.98	-12.09
* 22400.00	Peak	V	-	-	-66.88	18.58	-9.54	49.16	73.98	-24.82
28000.00	Peak	V	150	1	-47.80	4.79	-9.54	54.45	68.20	-13.75

Table 7-113. Radiated Measurements SISO ANT2 (242 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 226 of 269

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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11440.00	Average	V	-	-	-80.04	17.34	0.00	44.30	53.98	-9.68
* 11440.00	Peak	V	-	-	-70.53	17.34	0.00	53.81	73.98	-20.17
17160.00	Peak	V	-	-	-70.48	22.25	0.00	58.77	68.20	-9.43
* 22880.00	Average	V	-	-	-78.32	18.88	-9.54	38.02	53.98	-15.96
* 22880.00	Peak	V	-	-	-66.64	18.88	-9.54	49.70	73.98	-24.28
28600.00	Peak	V	150	342	-44.47	3.32	-9.54	56.31	68.20	-11.89

Table 7-114. Radiated Measurements SISO ANT2 (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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	V	-	-	-80.27	17.27	0.00	44.00	53.98	-9.98
* 11490.00	Peak	V	-	-	-69.79	17.27	0.00	54.48	73.98	-19.50
17235.00	Peak	V	-	-	-71.22	22.40	0.00	58.18	68.20	-10.02
* 22980.00	Average	V	-	-	-78.11	19.03	-9.54	38.38	53.98	-15.60
* 22980.00	Peak	V	-	-	-67.14	19.03	-9.54	49.35	73.98	-24.63
28725.00	Peak	V	150	7	-41.76	3.65	-9.54	59.35	68.20	-8.85

Table 7-115. Radiated Measurements SISO ANT2 (242 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 227 of 269

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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	V	-	-	-81.39	17.03	0.00	42.64	53.98	-11.34
* 11570.00	Peak	V	-	-	-69.85	17.03	0.00	54.18	73.98	-19.80
17355.00	Peak	V	-	-	-70.87	23.13	0.00	59.26	68.20	-8.94
23140.00	Peak	V	-	-	-67.22	18.82	-9.54	49.06	68.20	-19.14
28925.00	Peak	V	150	359	-42.73	4.50	-9.54	59.23	68.20	-8.97

Table 7-116. Radiated Measurements SISO ANT2 (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

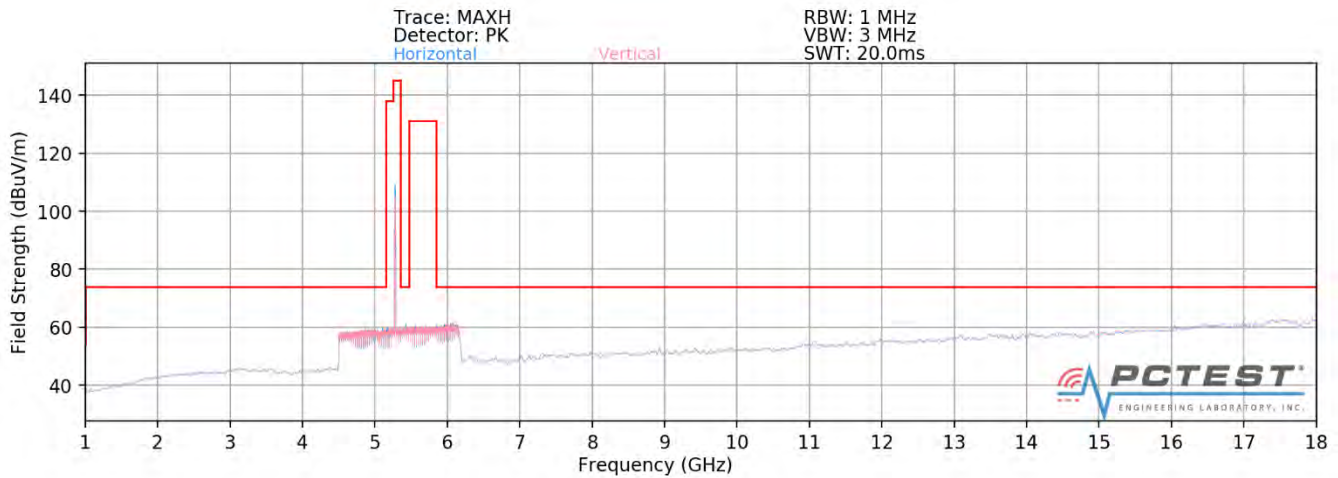
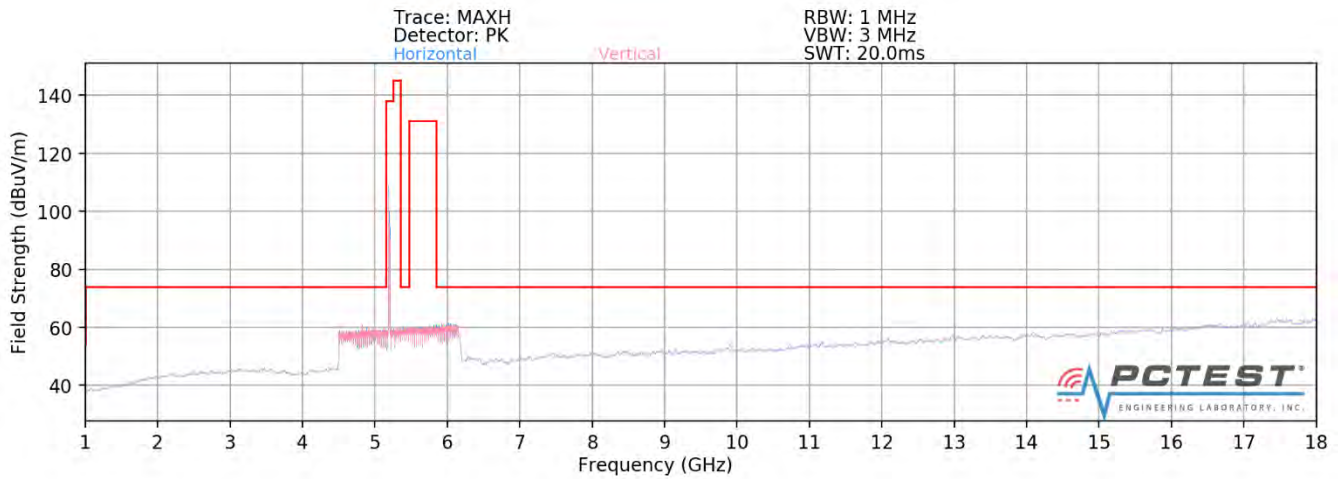
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	V	-	-	-81.01	17.68	0.00	43.67	53.98	-10.31
* 11650.00	Peak	V	-	-	-69.98	17.68	0.00	54.70	73.98	-19.28
17475.00	Peak	V	-	-	-71.14	22.70	0.00	58.56	68.20	-9.64
23300.00	Peak	V	-	-	-67.13	18.40	-9.54	48.73	68.20	-19.47
29125.00	Peak	V	150	13	-39.93	2.23	-9.54	59.76	68.20	-8.44

Table 7-117. Radiated Measurements SISO ANT2 (242 Tones)

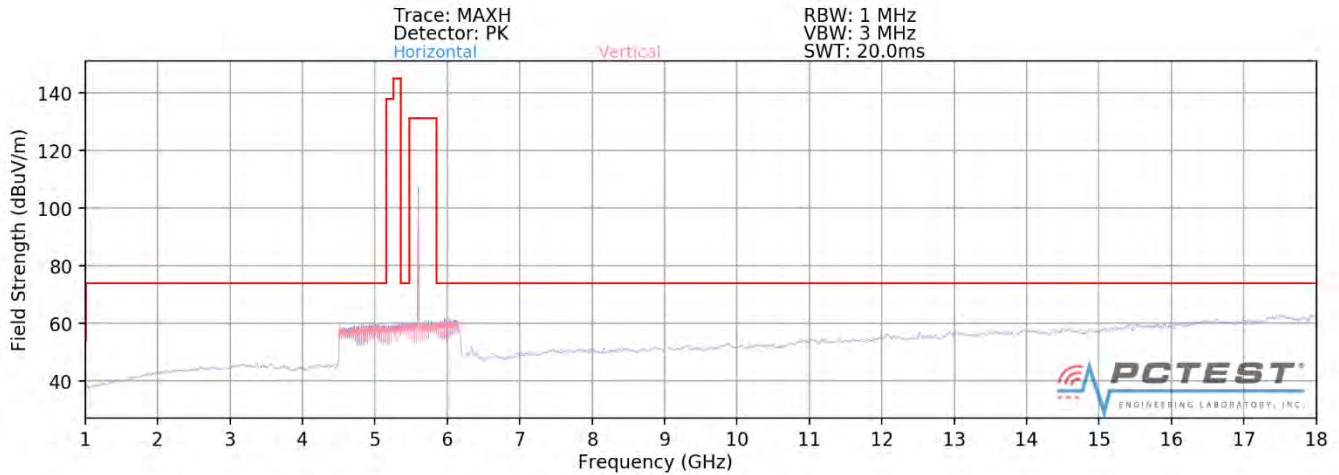
FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 228 of 269

6.6.3 MIMO Radiated Spurious Emission Measurements

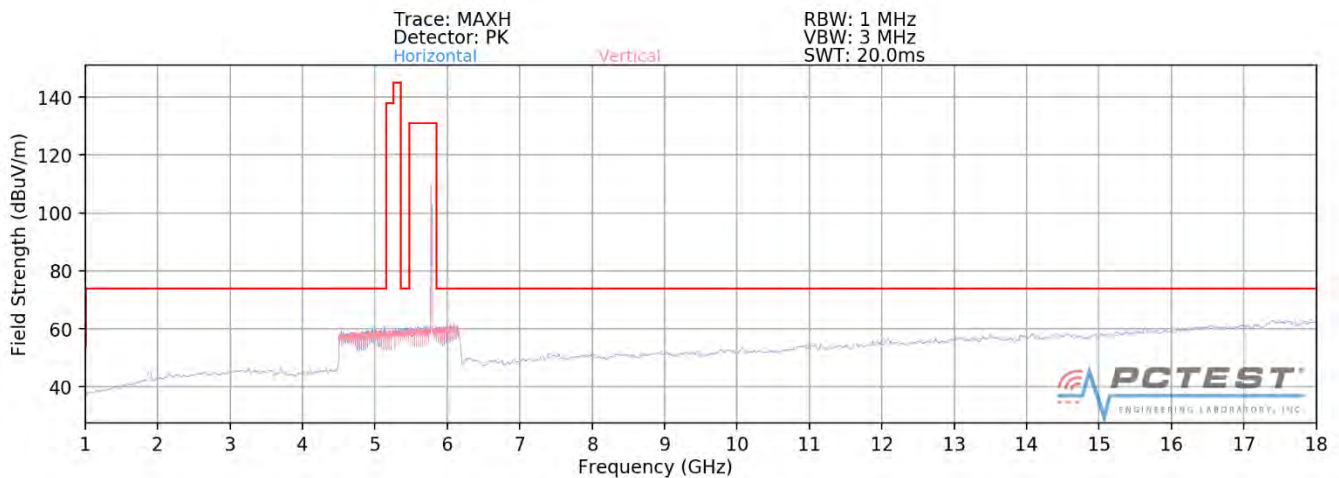
26 Tones



FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 229 of 269



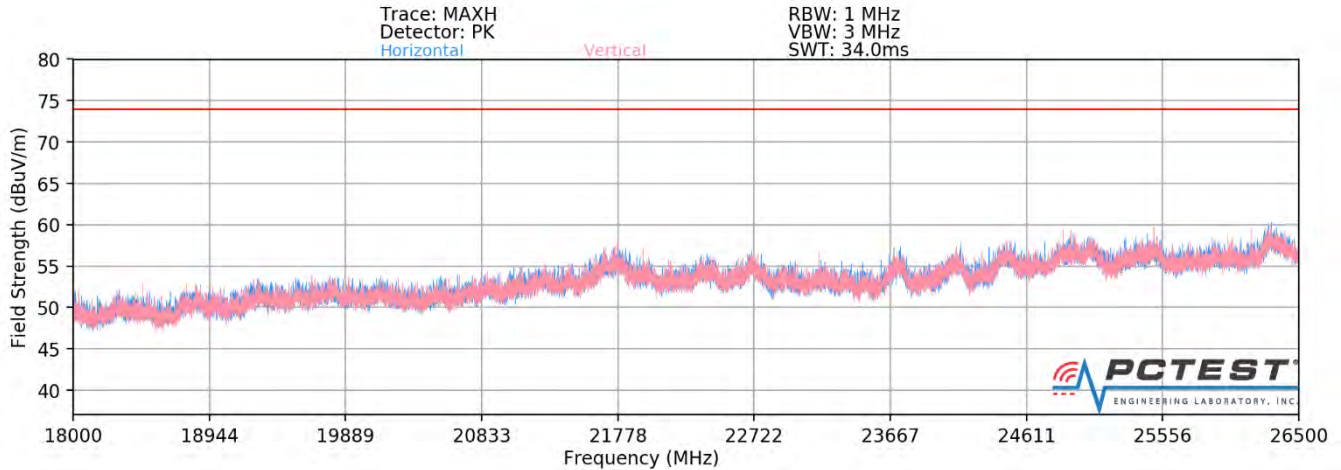
Plot 7-297. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U2C Ch. 120 – 26 Tones)



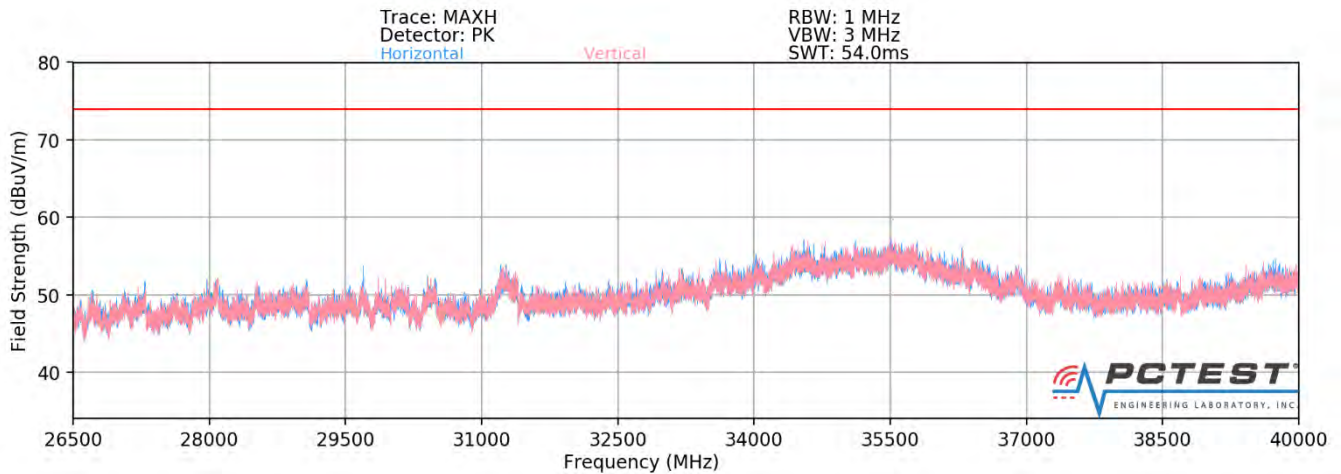
Plot 7-298. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U3 Ch. 157 – 26 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 230 of 269

MIMO Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-299. Radiated Spurious Plot 18GHz - 26.5GHz MIMO (802.11ax - 26 Tones)



Plot 7-300. Radiated Spurious Plot 26.5GHz - 40GHz MIMO (802.11ax - 26 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 231 of 269

MIMO Radiated Spurious Emission Measurements (26 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: 04
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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	V	-	-	-71.00	14.91	0.00	50.91	68.20	-17.29
* 15540.00	Average	V	-	-	-82.99	21.22	0.00	45.23	53.98	-8.75
* 15540.00	Peak	V	-	-	-70.96	21.22	0.00	57.26	73.98	-16.72
* 20720.00	Average	V	-	-	-77.77	17.17	-9.54	36.86	53.98	-17.12
* 20720.00	Peak	V	-	-	-67.02	17.17	-9.54	47.61	73.98	-26.37
25900.00	Peak	V	-	-	-64.75	19.34	-9.54	52.05	68.20	-16.15

Table 7-118. Radiated Measurements MIMO (26 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
Worst Case Transfer Rate: MCS0
RU Index: 04
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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	Peak	V	-	-	-71.14	14.85	0.00	50.71	68.20	-17.49
* 15600.00	Average	V	-	-	-81.45	21.50	0.00	47.05	53.98	-6.93
* 15600.00	Peak	V	-	-	-70.41	21.50	0.00	58.09	73.98	-15.89
* 20800.00	Average	V	-	-	-77.87	17.31	-9.54	36.90	53.98	-17.08
* 20800.00	Peak	V	-	-	-66.64	17.31	-9.54	48.13	73.98	-25.85
26000.00	Peak	V	-	-	-65.45	19.60	-9.54	51.61	68.20	-16.59

Table 7-119. Radiated Measurements MIMO (26 Tones)

FCC ID: A3LSMN970U	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	Peak	V	-	-	-70.32	15.33	0.00	52.01	68.20	-16.19
* 15720.00	Average	V	-	-	-82.16	22.19	0.00	47.03	53.98	-6.95
* 15720.00	Peak	V	-	-	-70.33	22.19	0.00	58.86	73.98	-15.12
* 20960.00	Average	V	-	-	-77.89	17.60	-9.54	37.17	53.98	-16.81
* 20960.00	Peak	V	-	-	-66.76	17.60	-9.54	48.30	73.98	-25.68
26200.00	Peak	V	-	-	-65.56	19.73	-9.54	51.63	68.20	-16.57

Table 7-120. Radiated Measurements MIMO (26 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10520.00	Peak	V	-	-	-70.66	15.61	0.00	51.95	68.20	-16.25
* 15780.00	Average	V	-	-	-82.84	21.75	0.00	45.91	53.98	-8.07
* 15780.00	Peak	V	-	-	-71.15	21.75	0.00	57.60	73.98	-16.38
* 21040.00	Average	V	-	-	-77.14	17.67	-9.54	37.99	53.98	-15.99
* 21040.00	Peak	V	-	-	-65.70	17.67	-9.54	49.43	73.98	-24.55
26300.00	Peak	V	-	-	-64.75	20.29	-9.54	53.00	68.20	-15.20

Table 7-121. Radiated Measurements MIMO (26 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 233 of 269

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	Peak	V	-	-	-70.46	15.56	0.00	52.10	68.20	-16.10
* 15840.00	Average	V	-	-	-82.41	21.58	0.00	46.17	53.98	-7.81
* 15840.00	Peak	V	-	-	-71.52	21.58	0.00	57.06	73.98	-16.92
* 21120.00	Average	V	-	-	-77.71	17.83	-9.54	37.58	53.98	-16.40
* 21120.00	Peak	V	-	-	-66.66	17.83	-9.54	48.63	73.98	-25.35
* 26400.00	Peak	V	-	-	-65.22	20.07	-9.54	52.31	68.20	-15.89

Table 7-122. Radiated Measurements MIMO (26 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	Average	V	-	-	-82.33	15.21	0.00	39.88	53.98	-14.10
* 10640.00	Peak	V	-	-	-70.56	15.21	0.00	51.65	73.98	-22.33
* 15960.00	Average	V	-	-	-83.15	22.44	0.00	46.29	53.98	-7.69
* 15960.00	Peak	V	-	-	-70.76	22.44	0.00	58.68	73.98	-15.30
* 21280.00	Average	V	-	-	-77.40	17.98	-9.54	38.04	53.98	-15.94
* 21280.00	Peak	V	-	-	-65.99	17.98	-9.54	49.45	73.98	-24.53
* 26600.00	Peak	V	150	351	-52.35	4.42	-9.54	49.53	68.20	-18.67

Table 7-123. Radiated Measurements MIMO (26 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11000.00	Average	V	-	-	-81.47	16.02	0.00	41.55	53.98	-12.42
* 11000.00	Peak	V	-	-	-69.42	16.02	0.00	53.60	73.98	-20.37
16500.00	Peak	V	-	-	-71.28	22.58	0.00	58.30	68.20	-9.90
22000.00	Peak	V	-	-	-66.44	18.43	-9.54	49.45	68.20	-18.75
27500.00	Peak	V	100	193	-49.38	3.16	-9.54	51.24	68.20	-16.96

Table 7-124. Radiated Measurements MIMO (26 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11200.00	Average	V	-	-	-81.56	16.54	0.00	41.98	53.98	-12.00
* 11200.00	Peak	V	-	-	-69.91	16.54	0.00	53.63	73.98	-20.35
16800.00	Peak	V	-	-	-71.38	22.37	0.00	57.99	68.20	-10.21
* 22400.00	Average	V	-	-	-77.55	18.58	-9.54	38.49	53.98	-15.49
* 22400.00	Peak	V	-	-	-66.57	18.58	-9.54	49.47	73.98	-24.51
28000.00	Peak	V	-	-	-51.52	4.79	-9.54	50.73	68.20	-17.47

Table 7-125. Radiated Measurements MIMO (26 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 235 of 269

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	11440.00	Average	V	-	-	-82.82	17.34	0.00	41.52	53.98	-12.46
*	11440.00	Peak	V	-	-	-71.19	17.34	0.00	53.15	73.98	-20.83
	17160.00	Peak	V	-	-	-70.33	22.25	0.00	58.92	68.20	-9.28
*	22880.00	Average	V	-	-	-78.33	18.88	-9.54	38.01	53.98	-15.97
*	22880.00	Peak	V	-	-	-66.90	18.88	-9.54	49.44	73.98	-24.54
	28600.00	Peak	V	-	-	-51.30	3.32	-9.54	49.48	68.20	-18.72

Table 7-126. Radiated Measurements MIMO (26 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	11490.00	Average	V	-	-	-82.57	17.27	0.00	41.70	53.98	-12.28
*	11490.00	Peak	V	-	-	-70.20	17.27	0.00	54.07	73.98	-19.91
	17235.00	Peak	V	-	-	-71.06	22.40	0.00	58.34	68.20	-9.86
*	22980.00	Average	V	-	-	-78.53	19.03	-9.54	37.96	53.98	-16.02
*	22980.00	Peak	V	-	-	-66.97	19.03	-9.54	49.52	73.98	-24.46
	28725.00	Peak	V	150	69	-51.37	3.65	-9.54	49.74	68.20	-18.46

Table 7-127. Radiated Measurements MIMO (26 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	V	-	-	-82.14	17.03	0.00	41.89	53.98	-12.09
* 11570.00	Peak	V	-	-	-70.16	17.03	0.00	53.87	73.98	-20.11
17355.00	Peak	V	-	-	-71.66	23.13	0.00	58.47	68.20	-9.73
23140.00	Peak	V	-	-	-67.48	18.82	-9.54	48.80	68.20	-19.40
28925.00	Peak	V	150	235	-52.32	4.50	-9.54	49.64	68.20	-18.56

Table 7-128. Radiated Measurements MIMO (26 Tones)

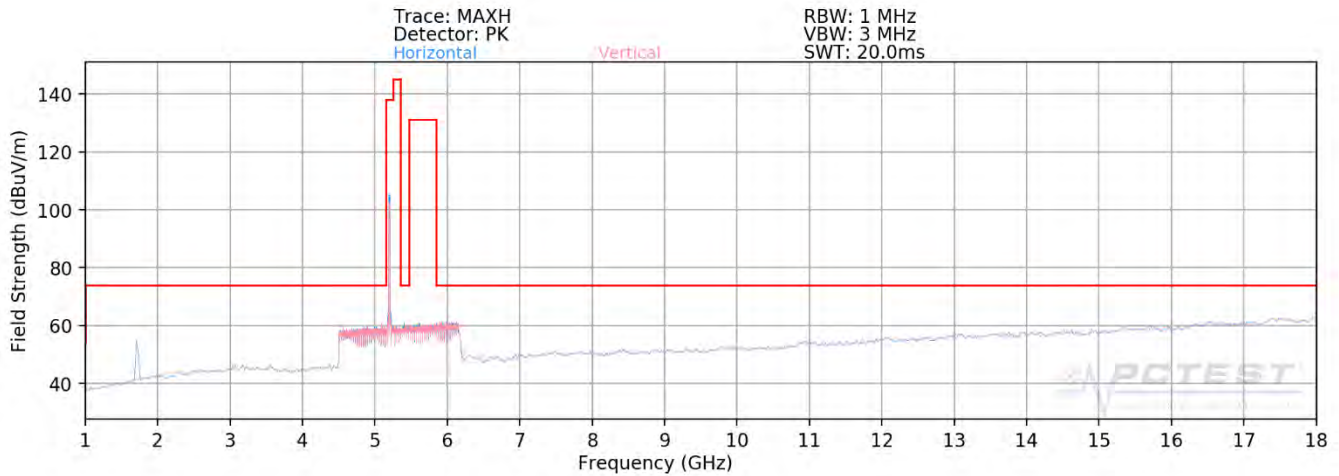
Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 04
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	V	-	-	-82.08	17.68	0.00	42.60	53.98	-11.38
* 11650.00	Peak	V	-	-	-70.41	17.68	0.00	54.27	73.98	-19.71
17475.00	Peak	V	-	-	-71.24	22.70	0.00	58.46	68.20	-9.74
23300.00	Peak	V	-	-	-67.44	18.40	-9.54	48.42	68.20	-19.78
29125.00	Peak	V	150	211	-52.10	2.23	-9.54	47.59	68.20	-20.61

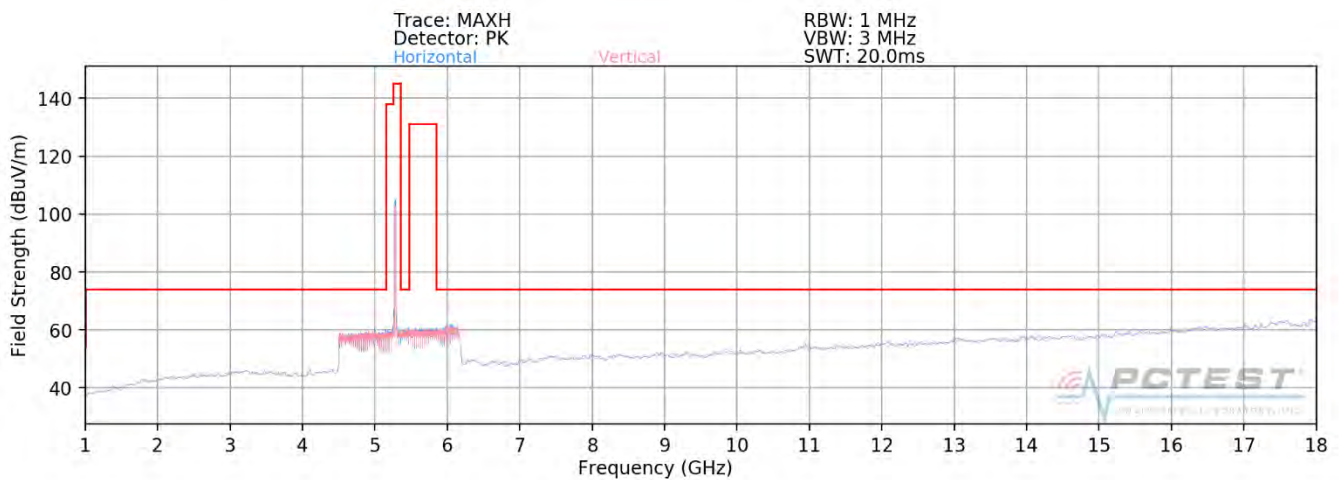
Table 7-129. Radiated Measurements MIMO (26 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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242 Tones

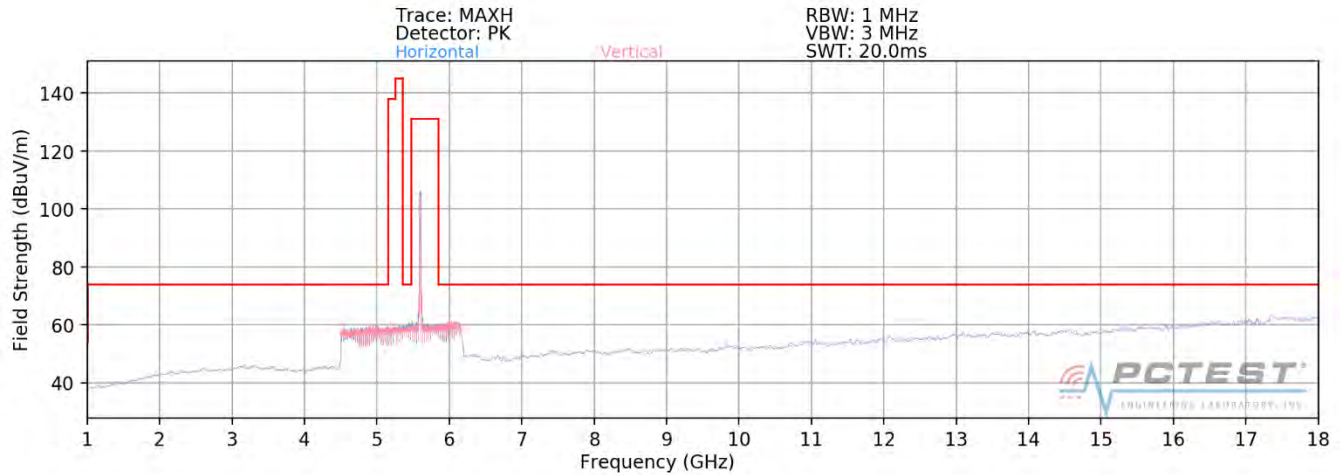


Plot 7-301. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U1 Ch. 40 – 242 Tones)

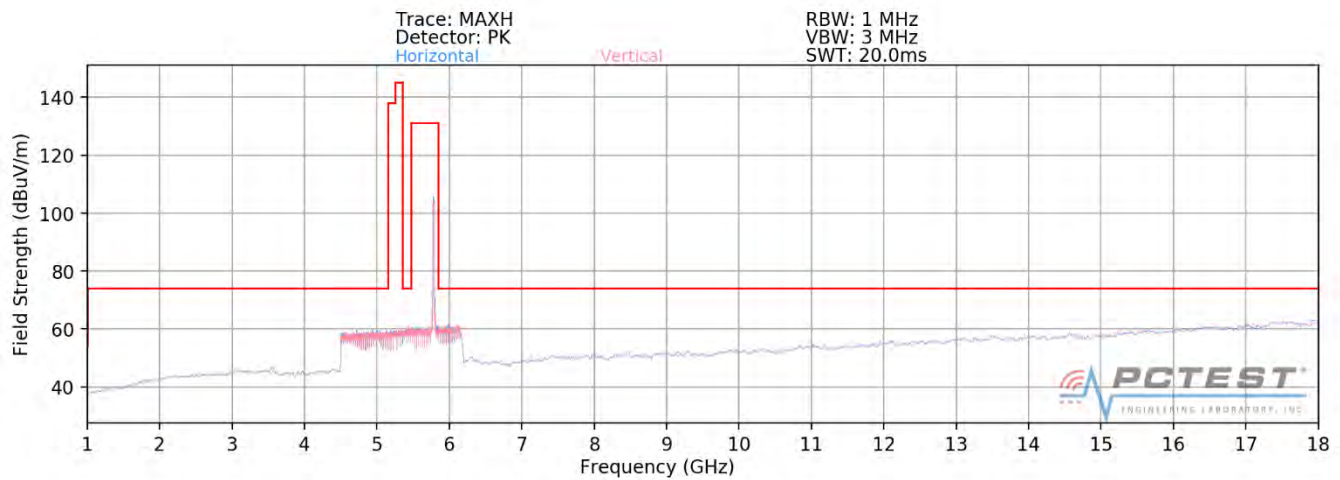


Plot 7-302. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U2A Ch. 56 – 242 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 238 of 269



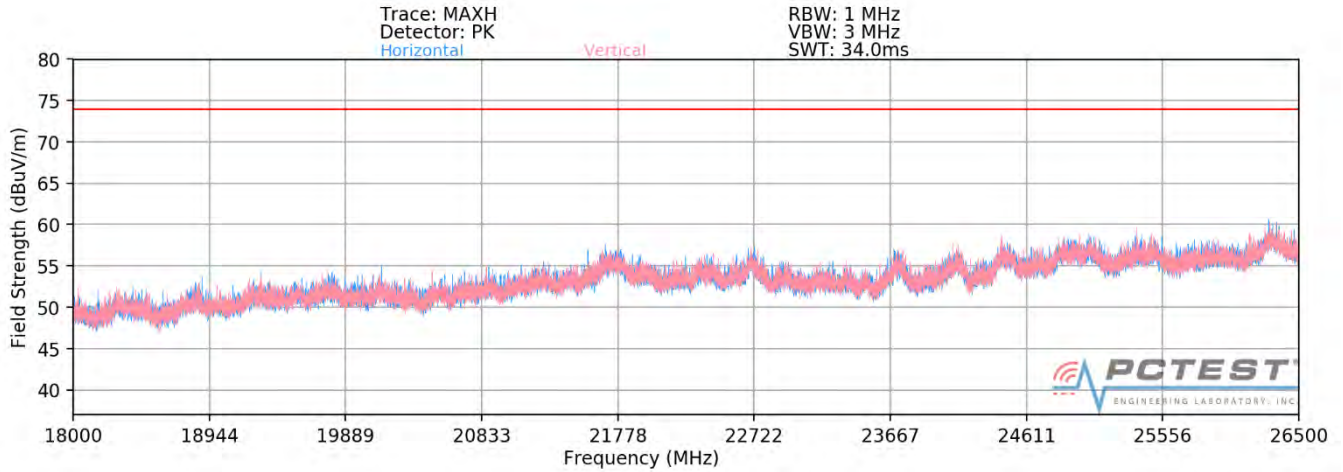
Plot 7-303. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U2C Ch. 120 – 242 Tones)



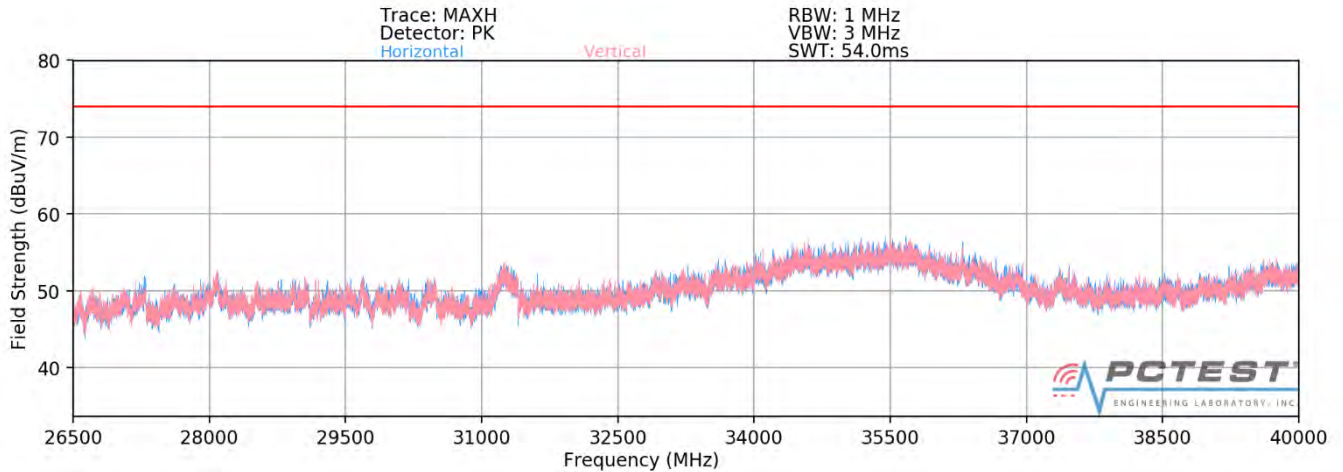
Plot 7-304. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U3 Ch. 157 – 242 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 239 of 269

MIMO Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-305. Radiated Spurious Plot 18GHz - 26.5GHz MIMO (802.11ax – 242 Tones)



Plot 7-306. Radiated Spurious Plot 26.5GHz - 40GHz MIMO (802.11ax – 242 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 240 of 269

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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	V	-	-	-72.36	14.91	0.00	49.55	68.20	-18.65
* 15540.00	Average	V	-	-	-81.97	21.22	0.00	46.25	53.98	-7.73
* 15540.00	Peak	V	-	-	-70.55	21.22	0.00	57.67	73.98	-16.31
* 20720.00	Average	V	-	-	-77.93	17.17	-9.54	36.70	53.98	-17.28
* 20720.00	Peak	V	-	-	-66.66	17.17	-9.54	47.97	73.98	-26.01
25900.00	Peak	V	-	-	-65.19	19.34	-9.54	51.61	68.20	-16.59

Table 7-130. 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	Peak	V	-	-	-72.22	14.85	0.00	49.63	68.20	-18.57
* 15600.00	Average	V	-	-	-81.56	21.50	0.00	46.94	53.98	-7.04
* 15600.00	Peak	V	-	-	-70.29	21.50	0.00	58.21	73.98	-15.77
* 20800.00	Average	V	-	-	-77.71	17.31	-9.54	37.06	53.98	-16.92
* 20800.00	Peak	V	-	-	-66.65	17.31	-9.54	48.12	73.98	-25.86
26000.00	Peak	V	-	-	-66.12	19.60	-9.54	50.94	68.20	-17.26

Table 7-131. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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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: 5240MHz
 Channel: 48

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	Peak	V	-	-	-71.87	15.33	0.00	50.46	68.20	-17.74
* 15720.00	Average	V	-	-	-81.65	22.19	0.00	47.54	53.98	-6.44
* 15720.00	Peak	V	-	-	-70.48	22.19	0.00	58.71	73.98	-15.27
* 20960.00	Average	V	-	-	-78.01	17.60	-9.54	37.05	53.98	-16.93
* 20960.00	Peak	V	-	-	-66.80	17.60	-9.54	48.26	73.98	-25.72
* 26200.00	Peak	V	-	-	-64.35	19.73	-9.54	52.84	68.20	-15.36

Table 7-132. 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10520.00	Peak	V	-	-	-70.20	15.61	0.00	52.41	68.20	-15.79
* 15780.00	Average	V	-	-	-81.22	21.75	0.00	47.53	53.98	-6.45
* 15780.00	Peak	V	-	-	-70.84	21.75	0.00	57.91	73.98	-16.07
* 21040.00	Average	V	-	-	-77.54	17.67	-9.54	37.59	53.98	-16.39
* 21040.00	Peak	V	-	-	-66.82	17.67	-9.54	48.31	73.98	-25.67
* 26300.00	Peak	V	-	-	-64.36	20.29	-9.54	53.39	68.20	-14.81

Table 7-133. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 242 of 269

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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	Peak	V	-	-	-71.92	15.56	0.00	50.64	68.20	-17.56
* 15840.00	Average	V	-	-	-82.01	21.58	0.00	46.57	53.98	-7.41
* 15840.00	Peak	V	-	-	-71.73	21.58	0.00	56.85	73.98	-17.13
* 21120.00	Average	V	-	-	-77.41	17.83	-9.54	37.88	53.98	-16.10
* 21120.00	Peak	V	-	-	-66.71	17.83	-9.54	48.58	73.98	-25.40
* 26400.00	Peak	V	-	-	-64.88	20.07	-9.54	52.65	68.20	-15.55

Table 7-134. 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	Average	V	-	-	-80.87	15.21	0.00	41.34	53.98	-12.64
* 10640.00	Peak	V	-	-	-69.51	15.21	0.00	52.70	73.98	-21.28
* 15960.00	Average	V	-	-	-81.89	22.44	0.00	47.55	53.98	-6.43
* 15960.00	Peak	V	-	-	-70.57	22.44	0.00	58.87	73.98	-15.11
* 21280.00	Average	V	-	-	-77.51	17.98	-9.54	37.93	53.98	-16.05
* 21280.00	Peak	V	-	-	-66.81	17.98	-9.54	48.63	73.98	-25.35
* 26600.00	Peak	V	150	74	-52.64	4.42	-9.54	49.24	68.20	-18.96

Table 7-135. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 243 of 269

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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11000.00	Average	V	-	-	-80.61	16.02	0.00	42.41	53.98	-11.56
* 11000.00	Peak	V	-	-	-70.90	16.02	0.00	52.12	73.98	-21.85
16500.00	Peak	V	-	-	-70.72	22.58	0.00	58.86	68.20	-9.34
22000.00	Peak	V	-	-	-66.41	18.43	-9.54	49.48	68.20	-18.72
27500.00	Peak	V	-	-	-51.16	3.16	-9.54	49.46	68.20	-18.74

Table 7-136. 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11200.00	Average	V	-	-	-81.14	16.54	0.00	42.40	53.98	-11.58
* 11200.00	Peak	V	-	-	-70.31	16.54	0.00	53.23	73.98	-20.75
16800.00	Peak	V	-	-	-70.50	22.37	0.00	58.87	68.20	-9.33
* 22400.00	Average	V	-	-	-78.01	18.58	-9.54	38.03	53.98	-15.95
* 22400.00	Peak	V	-	-	-66.40	18.58	-9.54	49.64	73.98	-24.34
28000.00	Peak	V	-	-	-51.92	4.79	-9.54	50.33	68.20	-17.87

Table 7-137. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 244 of 269

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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	11440.00	Average	V	-	-	-81.42	17.34	0.00	42.92	53.98	-11.06
*	11440.00	Peak	V	-	-	-70.31	17.34	0.00	54.03	73.98	-19.95
	17160.00	Peak	V	-	-	-71.35	22.25	0.00	57.90	68.20	-10.30
*	22880.00	Average	V	-	-	-78.37	18.88	-9.54	37.97	53.98	-16.01
*	22880.00	Peak	V	-	-	-67.05	18.88	-9.54	49.29	73.98	-24.69
	28600.00	Peak	V	-	-	-50.72	3.32	-9.54	50.06	68.20	-18.14

Table 7-138. 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	11490.00	Average	V	-	-	-81.39	17.27	0.00	42.88	53.98	-11.10
*	11490.00	Peak	V	-	-	-70.83	17.27	0.00	53.44	73.98	-20.54
	17235.00	Peak	V	-	-	-70.88	22.40	0.00	58.52	68.20	-9.68
*	22980.00	Average	V	-	-	-78.04	19.03	-9.54	38.45	53.98	-15.53
*	22980.00	Peak	V	-	-	-67.35	19.03	-9.54	49.14	73.98	-24.84
	28725.00	Peak	V	-	-	-51.14	3.65	-9.54	49.97	68.20	-18.23

Table 7-139. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 245 of 269

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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	V	-	-	-80.98	17.03	0.00	43.05	53.98	-10.93
* 11570.00	Peak	V	-	-	-70.15	17.03	0.00	53.88	73.98	-20.10
17355.00	Peak	V	-	-	-70.82	23.13	0.00	59.31	68.20	-8.89
23140.00	Peak	V	-	-	-67.48	18.82	-9.54	48.80	68.20	-19.40
28925.00	Peak	V	-	-	-51.81	4.50	-9.54	50.15	68.20	-18.05

Table 7-140. 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]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	V	-	-	-81.45	17.68	0.00	43.23	53.98	-10.75
* 11650.00	Peak	V	-	-	-70.44	17.68	0.00	54.24	73.98	-19.74
17475.00	Peak	V	-	-	-70.84	22.70	0.00	58.86	68.20	-9.34
23300.00	Peak	V	-	-	-67.74	18.40	-9.54	48.12	68.20	-20.08
29125.00	Peak	V	-	-	-50.27	2.23	-9.54	49.42	68.20	-18.78

Table 7-141. Radiated Measurements MIMO (242 Tones)

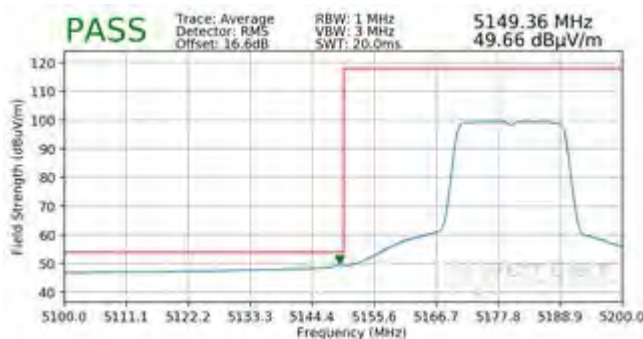
FCC ID: A3LSMN970U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 246 of 269

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

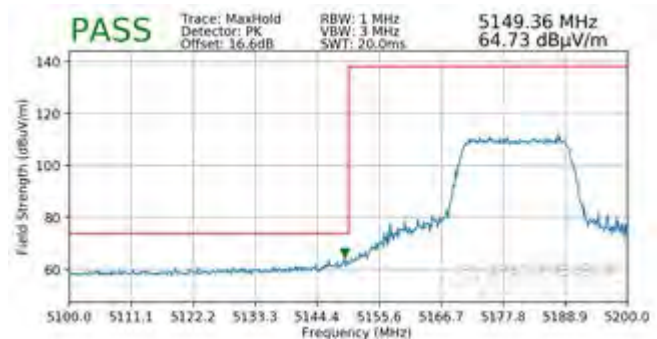
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]; RSS-Gen [8.9]

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

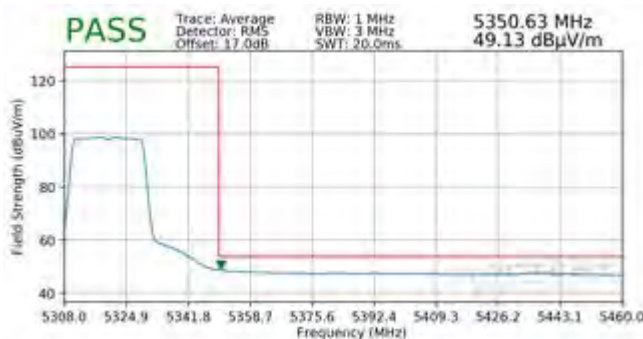


Plot 7-307. Radiated Lower Band Edge Plot SISO ANT1 (Average - UNII Band 1 - 242 Tones)

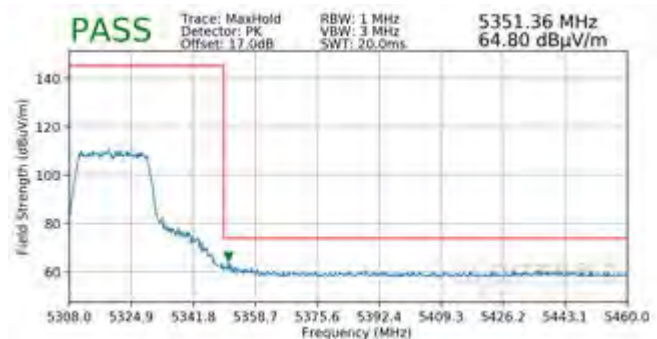


Plot 7-308. Radiated Lower Band Edge Plot SISO ANT1 (Peak - UNII Band 1 - 242 Tones)

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



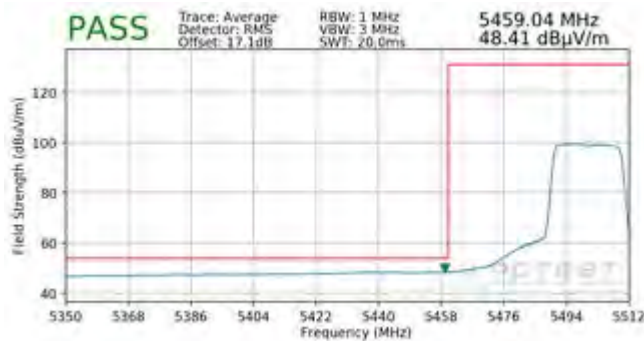
Plot 7-309. Radiated Upper Band Edge Plot SISO ANT1 (Average - UNII Band 2A - 242 Tones)



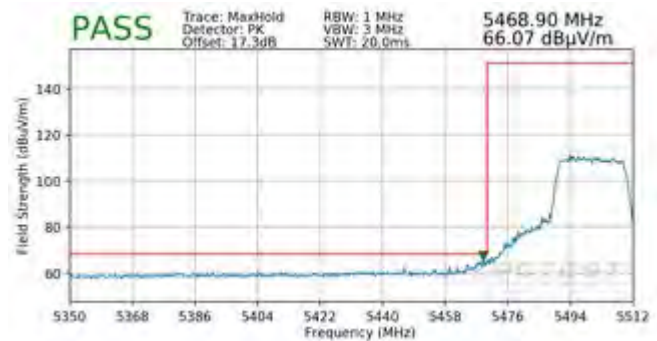
Plot 7-310. Radiated Upper Band Edge Plot SISO ANT1 (Peak - UNII Band 2A - 242 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 247 of 269

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

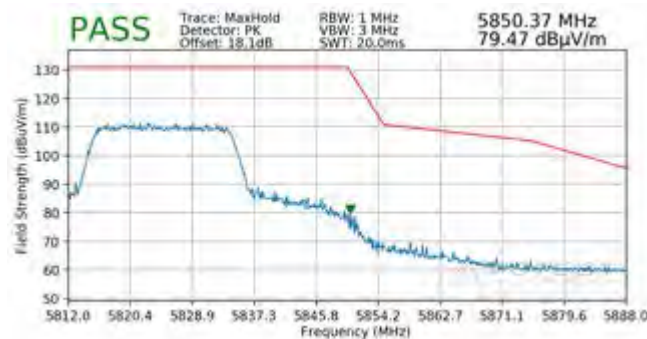


Plot 7-311. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C – 242 Tones)



Plot 7-312. 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 7-313. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3 – 242 Tones)

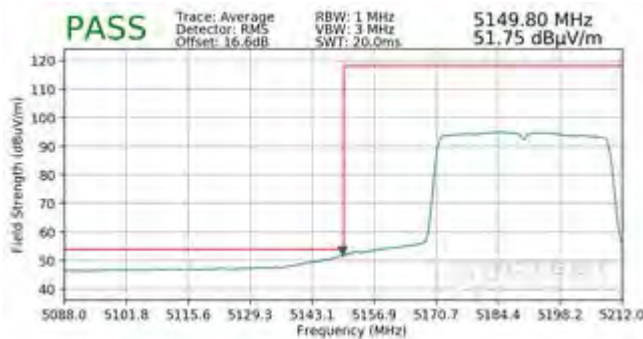
FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 248 of 269

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

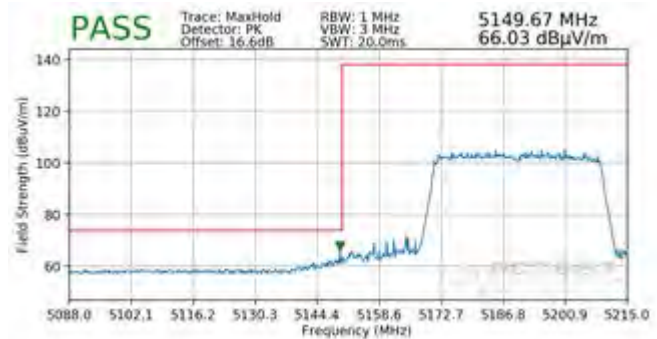
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

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

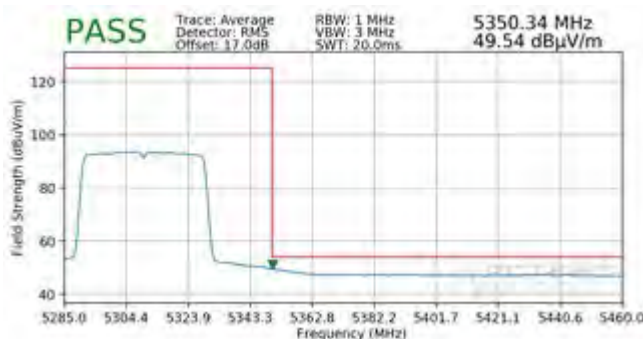


Plot 7-314. Radiated Lower Band Edge Plot SISO ANT1 (Average - UNII Band 1 - 484 Tones)

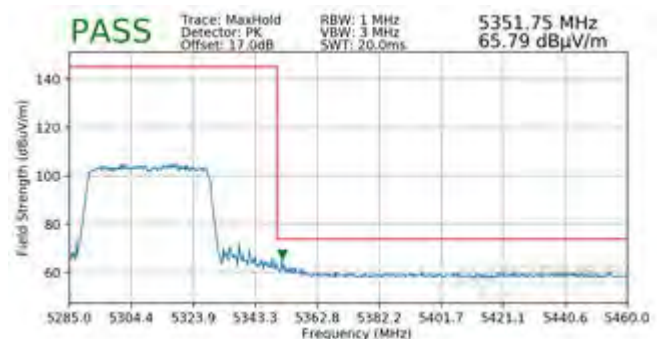


Plot 7-315. Radiated Lower Band Edge Plot SISO ANT1 (Peak - UNII Band 1 - 484 Tones)

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



Plot 7-316. Radiated Upper Band Edge Plot SISO ANT1 (Average - UNII Band 2A - 484 Tones)



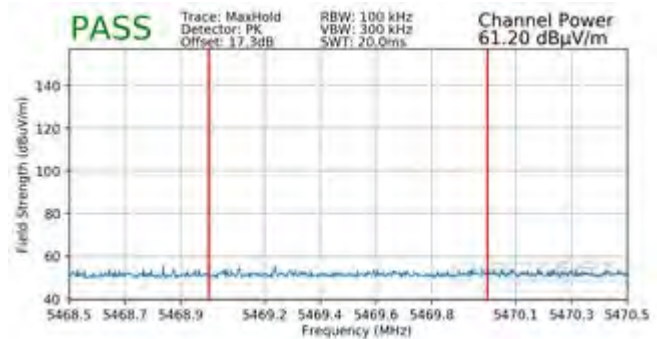
Plot 7-317. Radiated Upper Band Edge Plot SISO ANT1 (Peak - UNII Band 2A - 484 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 249 of 269

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

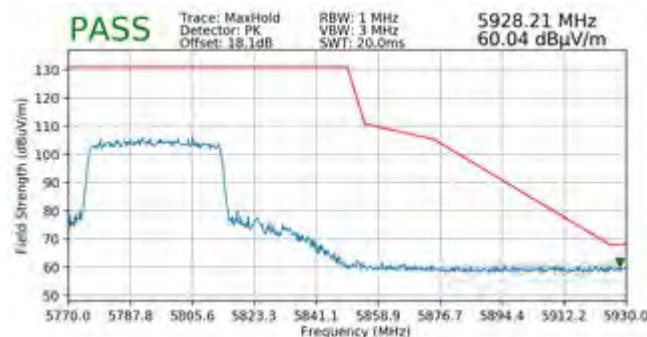


Plot 7-318. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C – 484 Tones)



Plot 7-319. 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



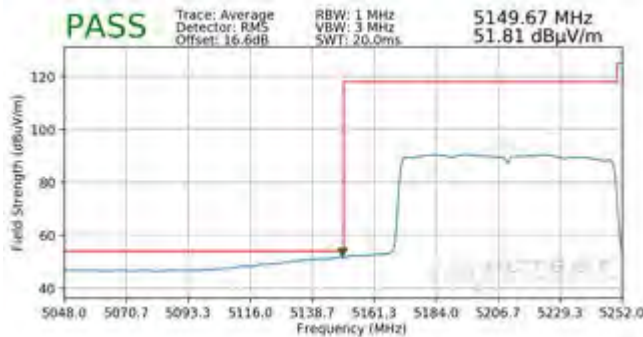
Plot 7-320. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3 – 484 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 250 of 269

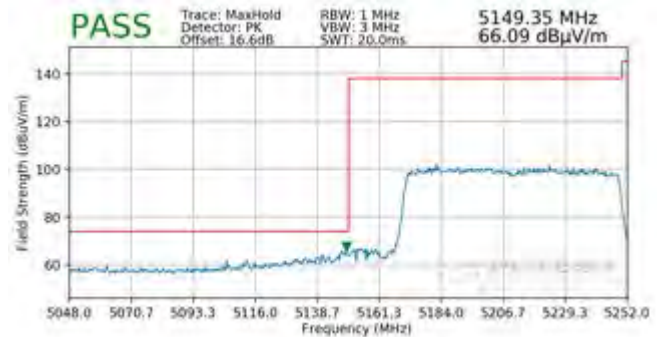
6.6.6 SISO Antenna-1 Radiated Band Edge Measurements (80MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

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

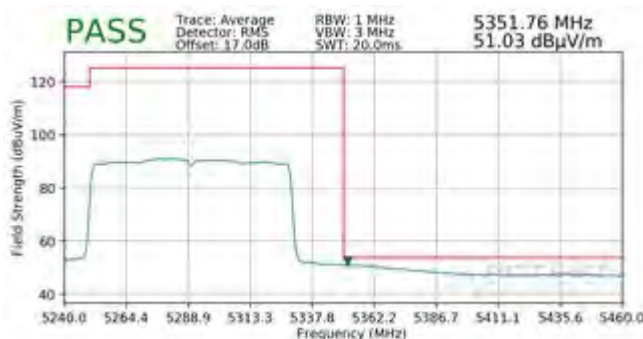


Plot 7-321. Radiated Lower Band Edge Plot SISO ANT1 (Average - UNII Band 1 - 996 Tones)

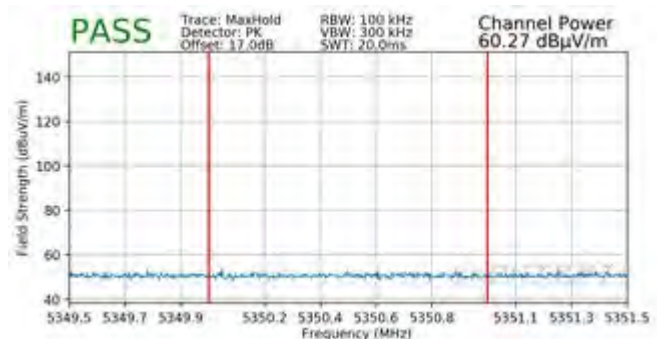


Plot 7-322. Radiated Lower Band Edge Plot SISO ANT1 (Peak - UNII Band 1 - 996 Tones)

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



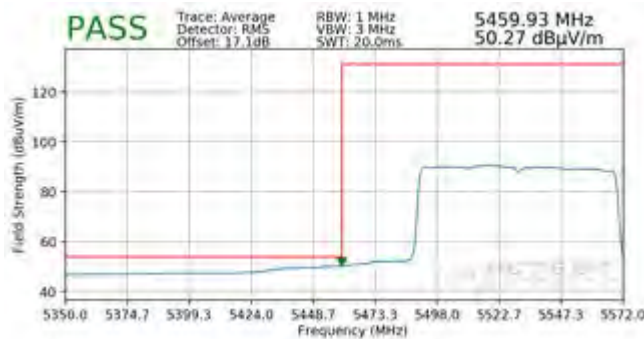
Plot 7-323. Radiated Upper Band Edge Plot SISO ANT1 (Average - UNII Band 2A - 996 Tones)



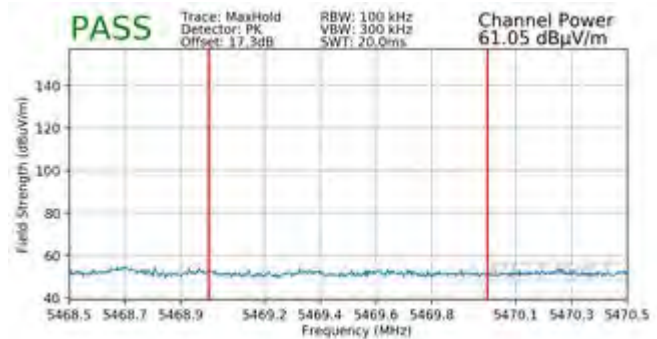
Plot 7-324. Radiated Upper Band Edge Plot SISO ANT1 (Peak - UNII Band 2A - 996 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 251 of 269

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

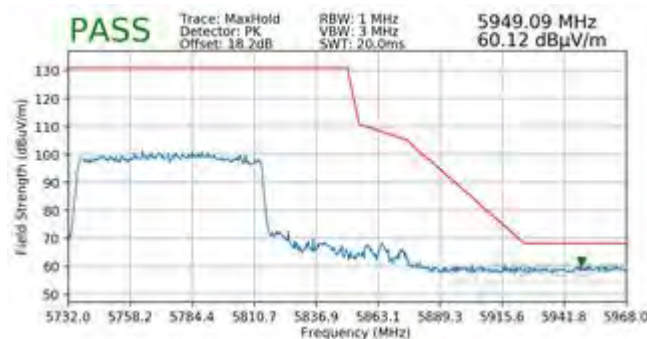


Plot 7-325. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C – 996 Tones)



Plot 7-326. 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 7-327. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3 – 996 Tones)

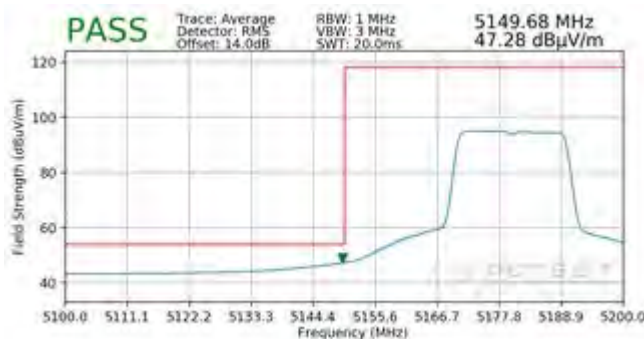
FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 252 of 269

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

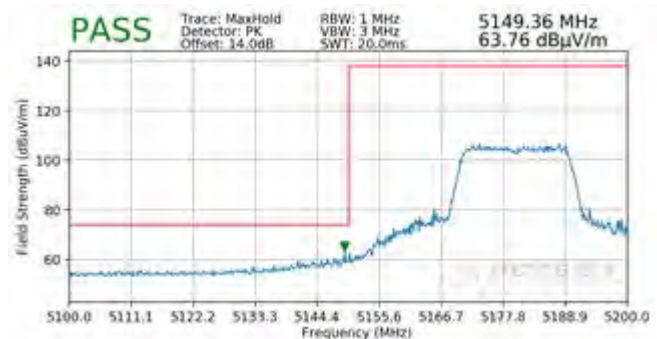
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

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

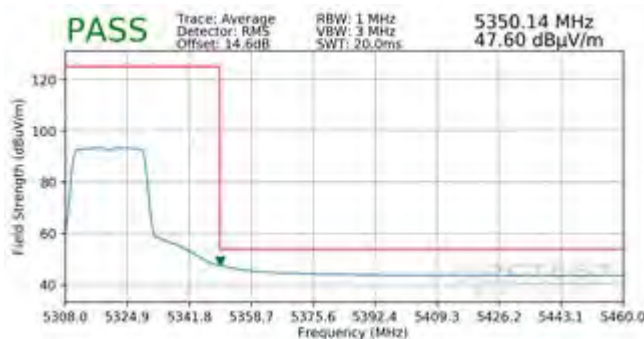


Plot 7-328. Radiated Lower Band Edge Plot SISO ANT2 (Average - UNII Band 1 - 242 Tones)

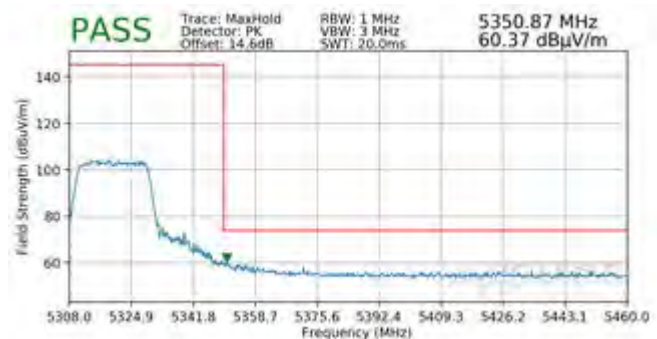


Plot 7-329. Radiated Lower Band Edge Plot SISO ANT2 (Peak - UNII Band 1 - 242 Tones)

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



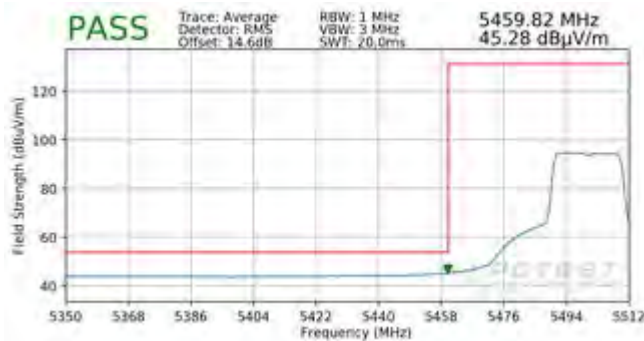
Plot 7-330. Radiated Upper Band Edge Plot SISO ANT2 (Average - UNII Band 2A - 242 Tones)



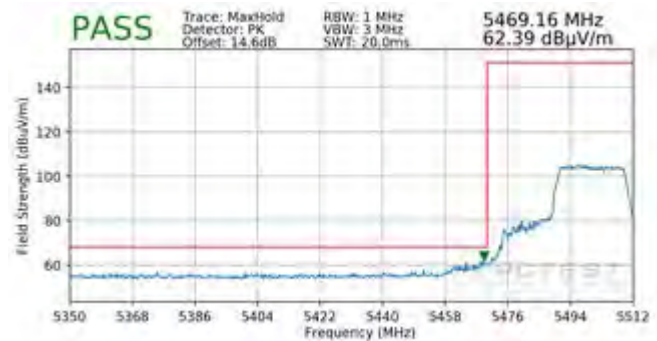
Plot 7-331. Radiated Upper Band Edge Plot SISO ANT2 (Peak - UNII Band 2A - 242 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
RU Index: 61
Distance of Measurements: 3 Meters
Operating Frequency: 5500MHz
Channel: 100

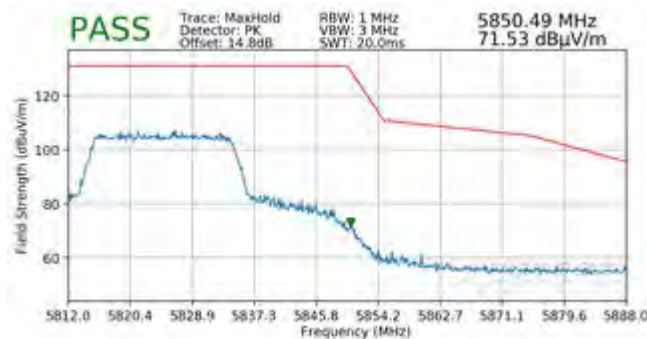


Plot 7-332. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 242 Tones)



Plot 7-333. 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 7-334. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 242 Tones)

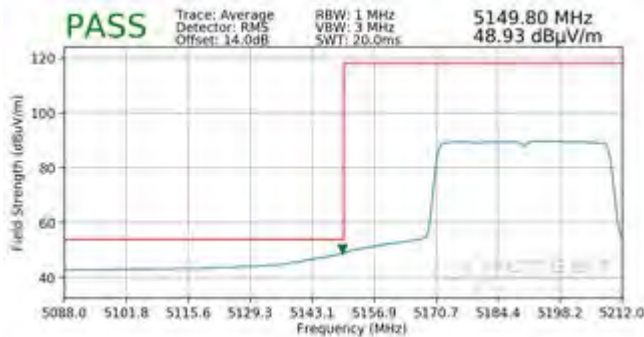
FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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6.6.8 SISO Antenna-2 Radiated Band Edge Measurements (40MHz BW)

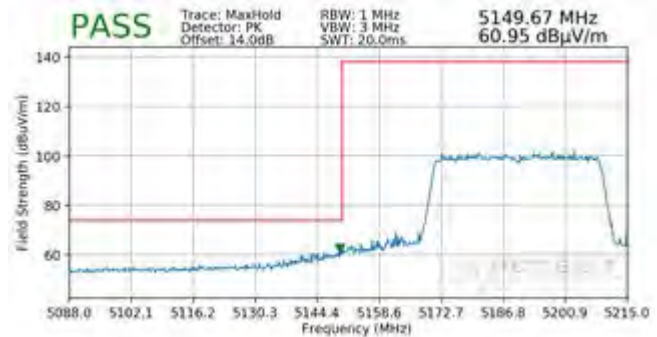
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

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

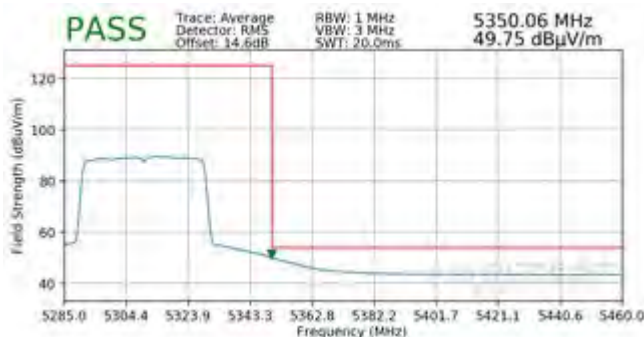


Plot 7-335. Radiated Lower Band Edge Plot SISO ANT2 (Average - UNII Band 1 - 484 Tones)

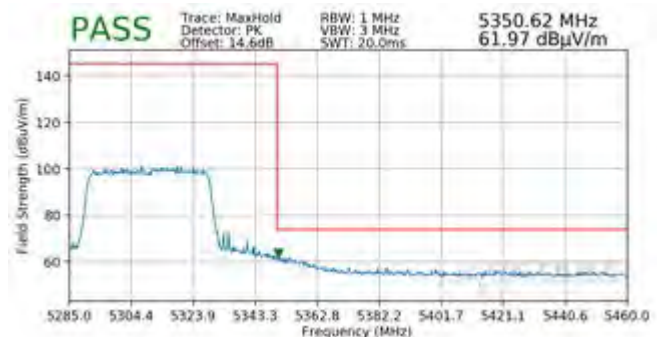


Plot 7-336. Radiated Lower Band Edge Plot SISO ANT2 (Peak - UNII Band 1 - 484 Tones)

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



Plot 7-337. Radiated Upper Band Edge Plot SISO ANT2 (Average - UNII Band 2A - 484 Tones)



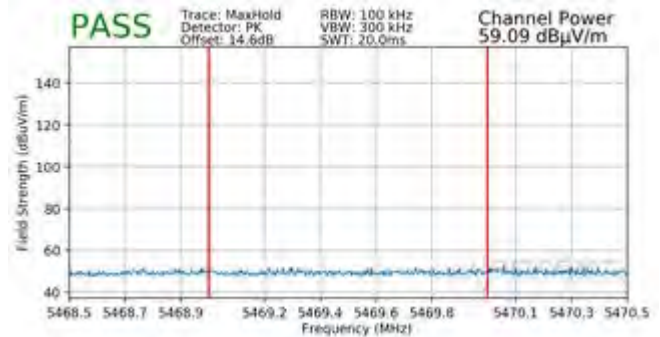
Plot 7-338. Radiated Upper Band Edge Plot SISO ANT2 (Peak - UNII Band 2A - 484 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	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: 5510MHz
Channel: 102

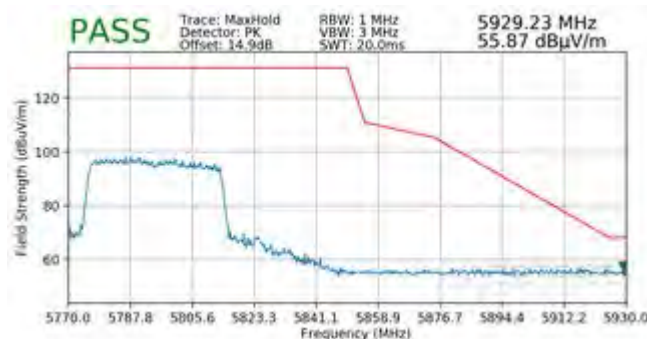


Plot 7-339. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 484 Tones)



Plot 7-340. 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 7-341. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 484 Tones)

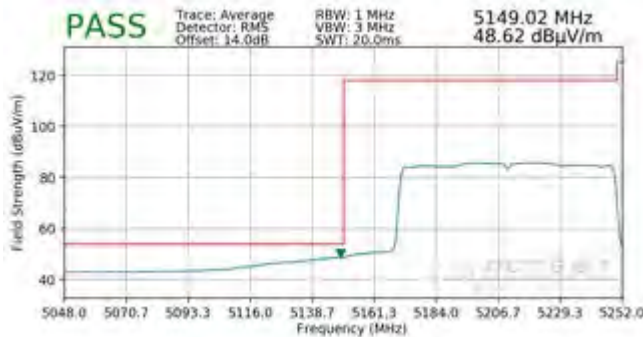
FCC ID: A3LSMN970U	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset	Page 256 of 269

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

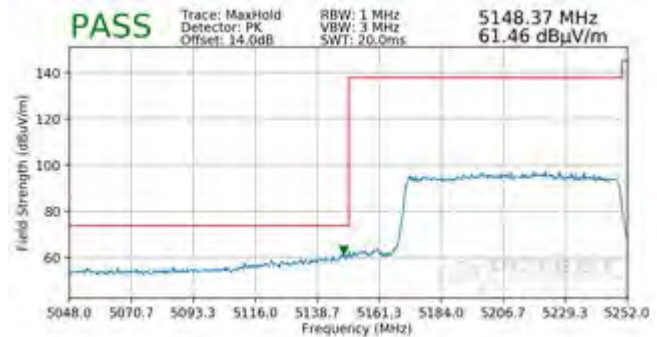
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

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

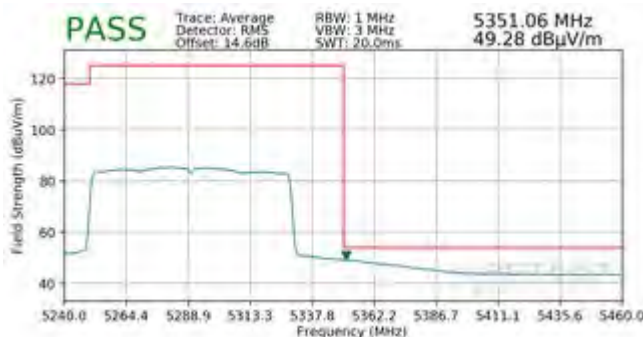


Plot 7-342. Radiated Lower Band Edge Plot SISO ANT2 (Average - UNII Band 1 - 996 Tones)

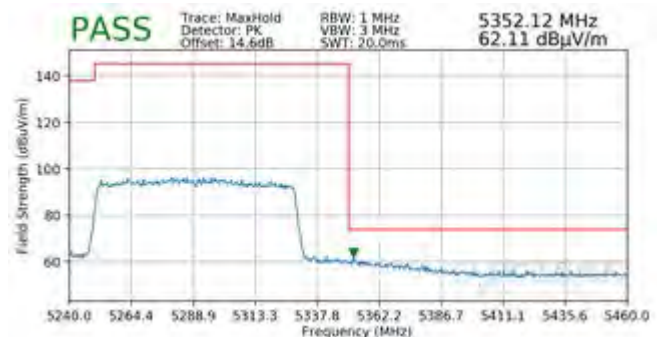


Plot 7-343. Radiated Lower Band Edge Plot SISO ANT2 (Peak - UNII Band 1 - 996 Tones)

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



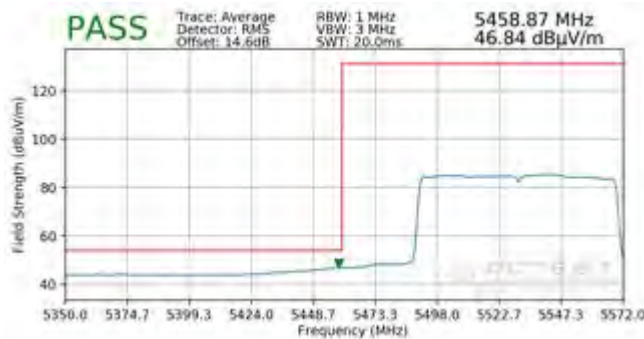
Plot 7-344. Radiated Upper Band Edge Plot SISO ANT2 (Average - UNII Band 2A - 996 Tones)



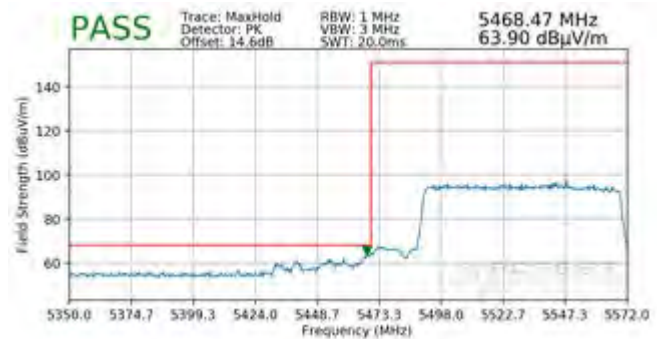
Plot 7-345. Radiated Upper Band Edge Plot SISO ANT2 (Peak - UNII Band 2A - 996 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	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: 5530MHz
Channel: 106

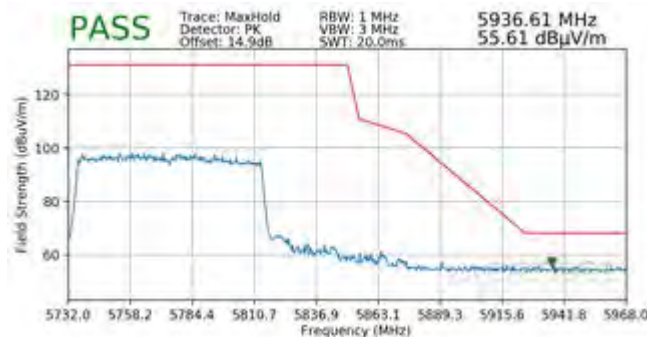


Plot 7-346. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 996 Tones)



Plot 7-347. 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 7-348. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 996 Tones)

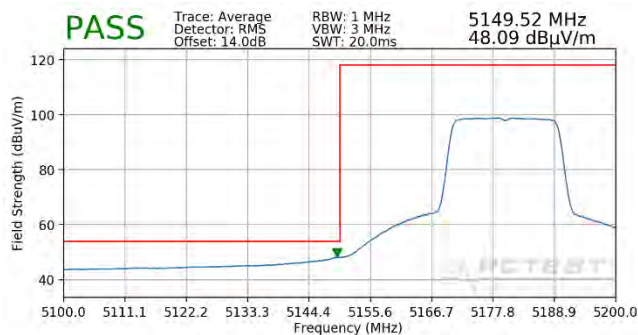
FCC ID: A3LSMN970U	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset	Page 258 of 269

6.6.10 MIMO Radiated Band Edge Measurements (20MHz BW)

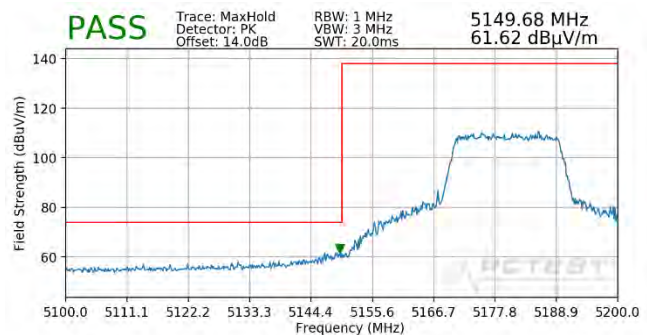
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

242 Tones

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



Plot 7-349. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1 – 242 Tones)

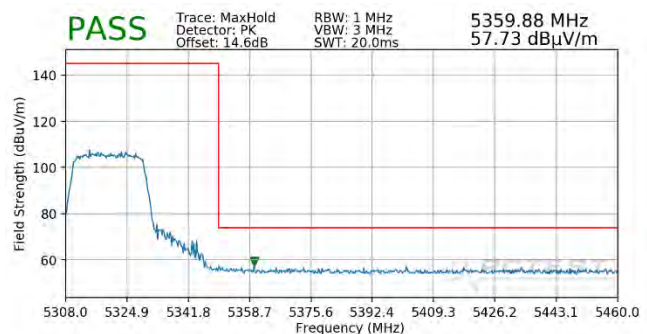


Plot 7-350. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1 – 242 Tones)

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



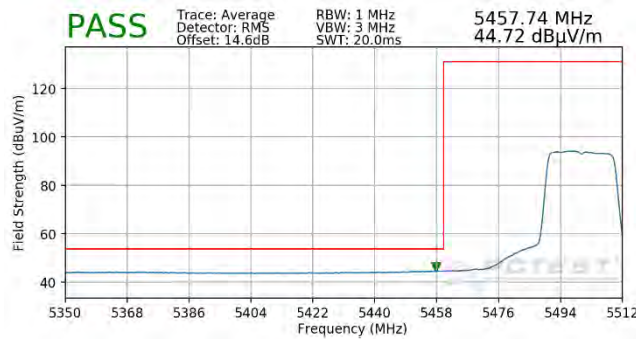
Plot 7-351. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A – 242 Tones)



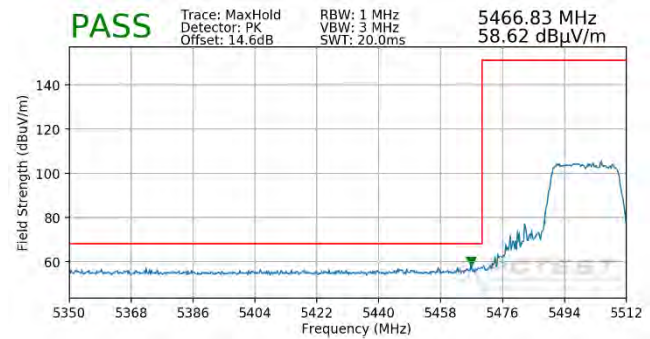
Plot 7-352. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A – 242 Tones)

FCC ID: A3LSMN970U	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
RU Index: 61
Distance of Measurements: 3 Meters
Operating Frequency: 5500MHz
Channel: 100

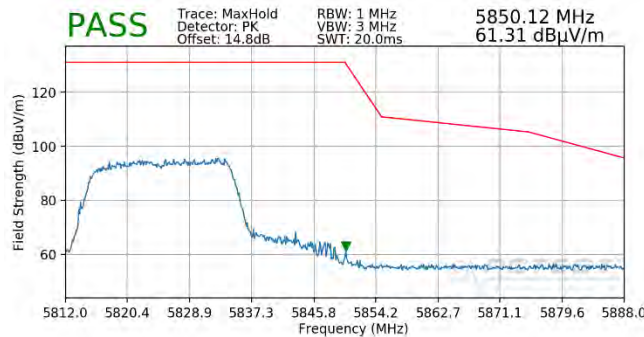


**Plot 7-353. Radiated Lower Band Edge Plot MIMO
(Average - UNII Band 2C - 242 Tones)**



**Plot 7-354. 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 7-355. Radiated Upper Band Edge Plot MIMO
(Peak - UNII Band 3 - 242 Tones)**

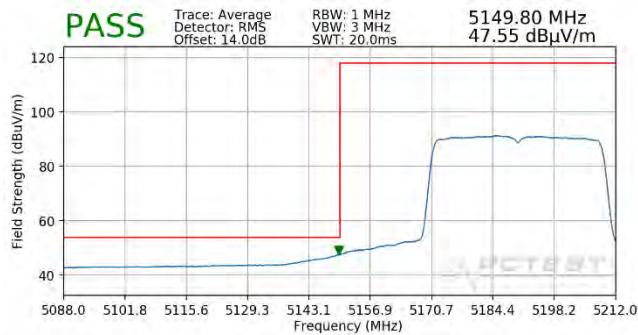
FCC ID: A3LSMN970U	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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6.6.11 MIMO Radiated Band Edge Measurements (40MHz BW)

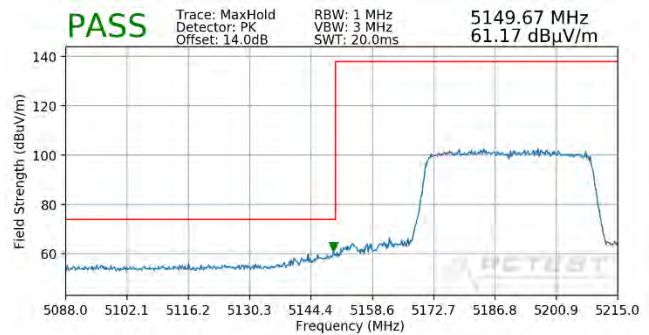
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

484 Tones

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

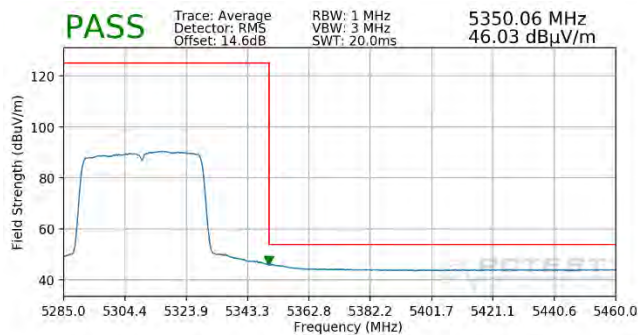


Plot 7-356. Radiated Lower Band Edge Plot MIMO (Average - UNII Band 1 - 484 Tones)

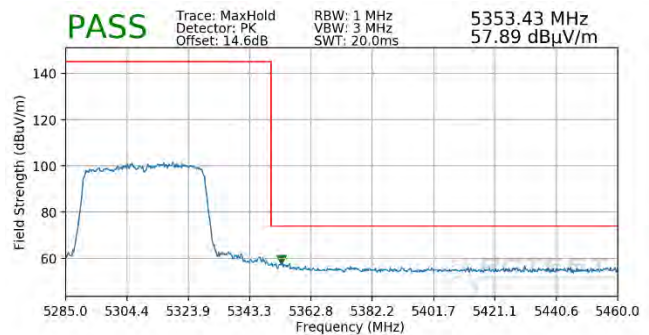


Plot 7-357. Radiated Lower Band Edge Plot MIMO (Peak - UNII Band 1 - 484 Tones)

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



Plot 7-358. Radiated Upper Band Edge Plot MIMO (Average - UNII Band 2A - 484 Tones)



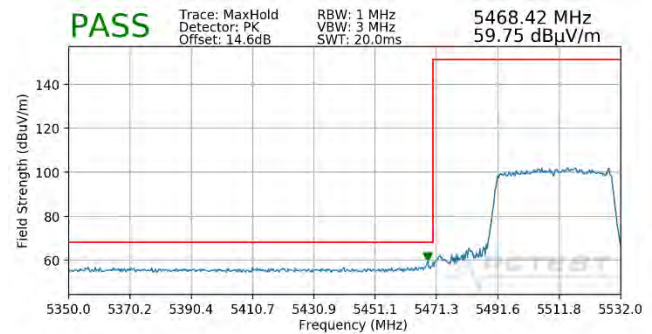
Plot 7-359. Radiated Upper Band Edge Plot MIMO (Peak - UNII Band 2A - 484 Tones)

FCC ID: A3LSMN970U	 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: 5510MHz
Channel: 102

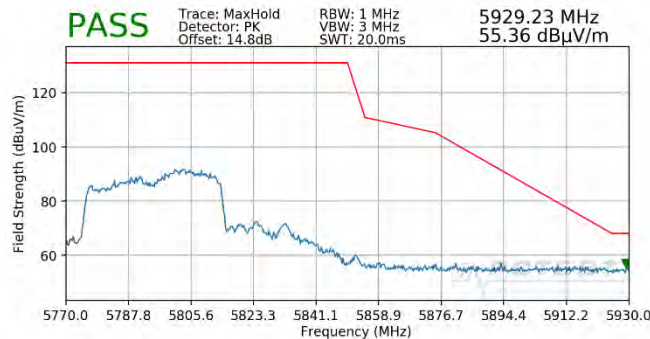


**Plot 7-360. Radiated Lower Band Edge Plot MIMO
(Average - UNII Band 2C - 484 Tones)**



**Plot 7-361. 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 7-362. Radiated Upper Band Edge Plot MIMO
(Peak - UNII Band 3 - 484 Tones)**

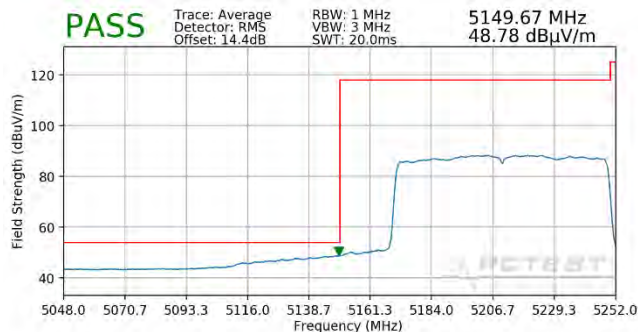
FCC ID: A3LSMN970U	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1905220084-08.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset	Page 262 of 269

6.6.12 MIMO Radiated Band Edge Measurements (80MHz BW)

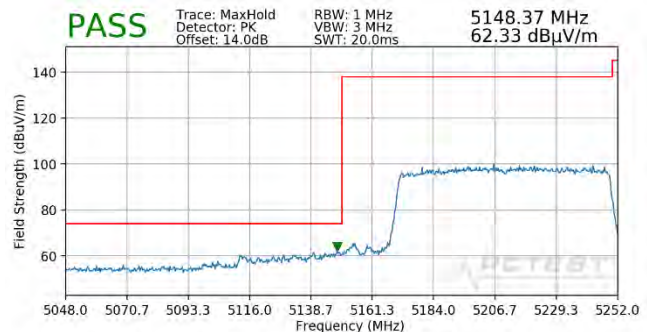
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

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

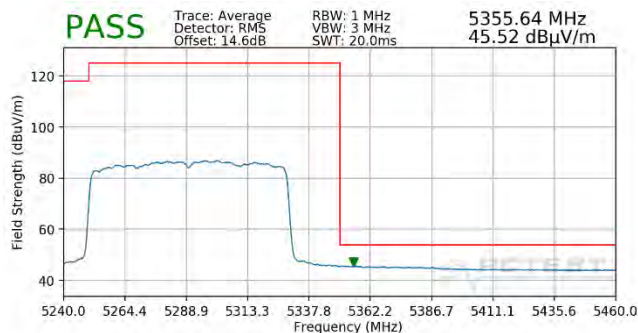


Plot 7-363. Radiated Lower Band Edge Plot MIMO (Average - UNII Band 1 - 996 Tones)

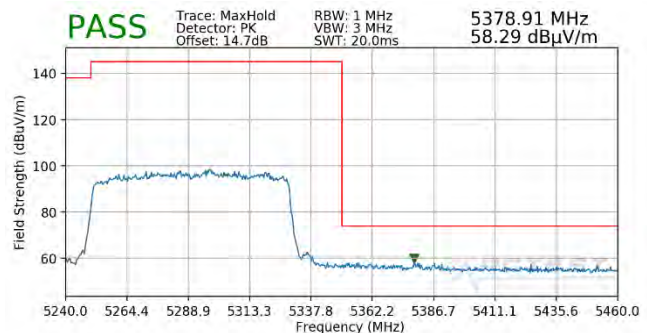


Plot 7-364. Radiated Lower Band Edge Plot MIMO (Peak - UNII Band 1 - 996 Tones)

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



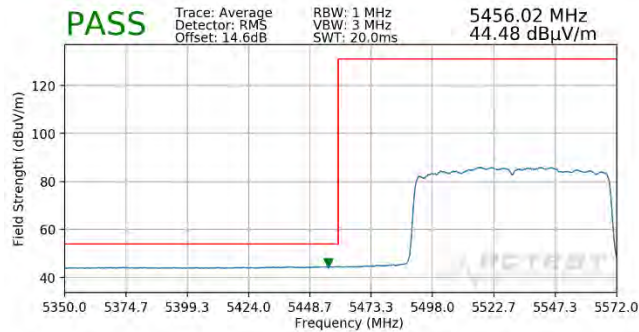
Plot 7-365. Radiated Upper Band Edge Plot MIMO (Average - UNII Band 2A - 996 Tones)



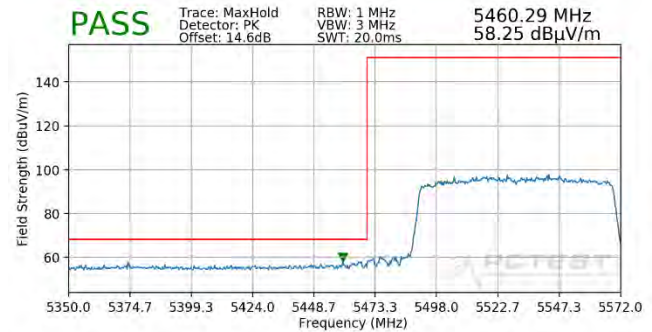
Plot 7-366. Radiated Upper Band Edge Plot MIMO (Peak - UNII Band 2A - 996 Tones)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	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: 5530MHz
Channel: 106

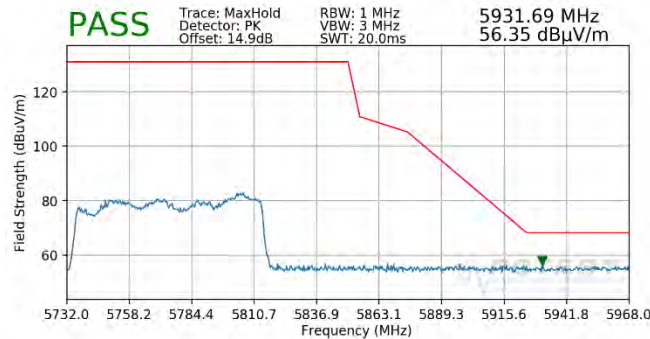


**Plot 7-367. Radiated Lower Band Edge Plot MIMO
(Average - UNII Band 2C - 996 Tones)**



**Plot 7-368. 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 7-369. Radiated Upper Band Edge Plot MIMO
(Peak - UNII Band 3 - 996 Tones)**

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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 7-65 per Section 15.209 and RSS-Gen (8.9).

Frequency	Field Strength [$\mu\text{V/m}$]	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 7-142. 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.

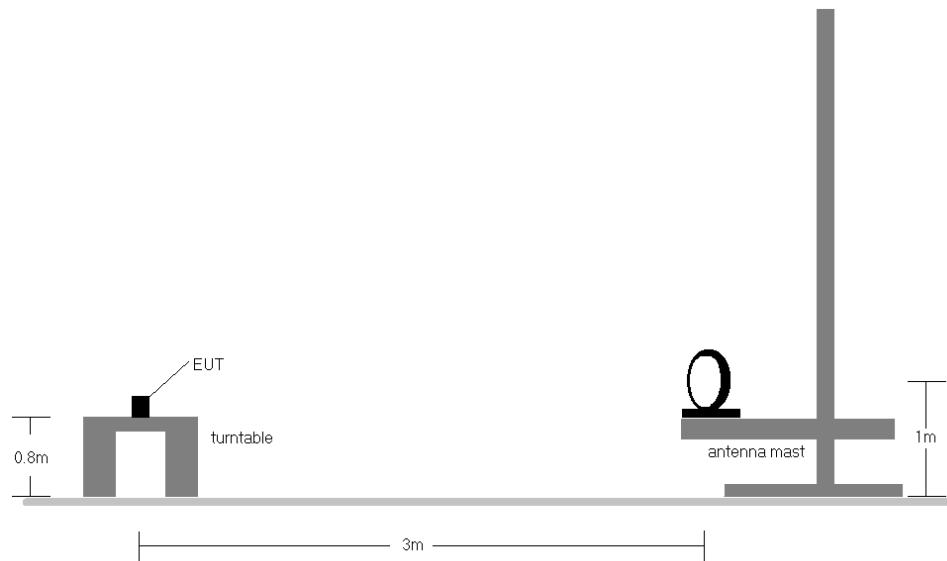


Figure 7-6. Radiated Test Setup < 30MHz

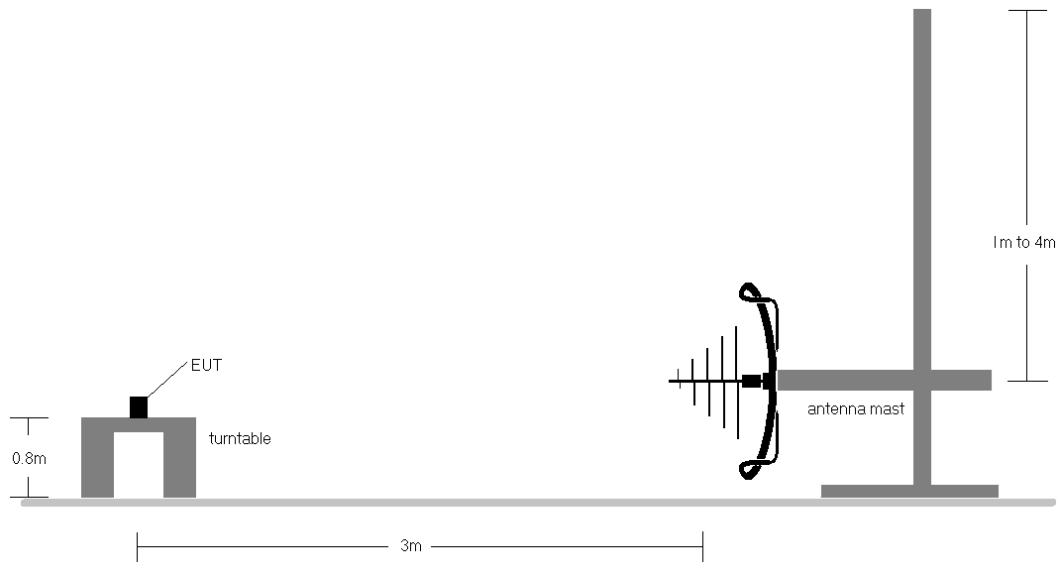


Figure 7-7. Radiated Test Setup < 1GHz

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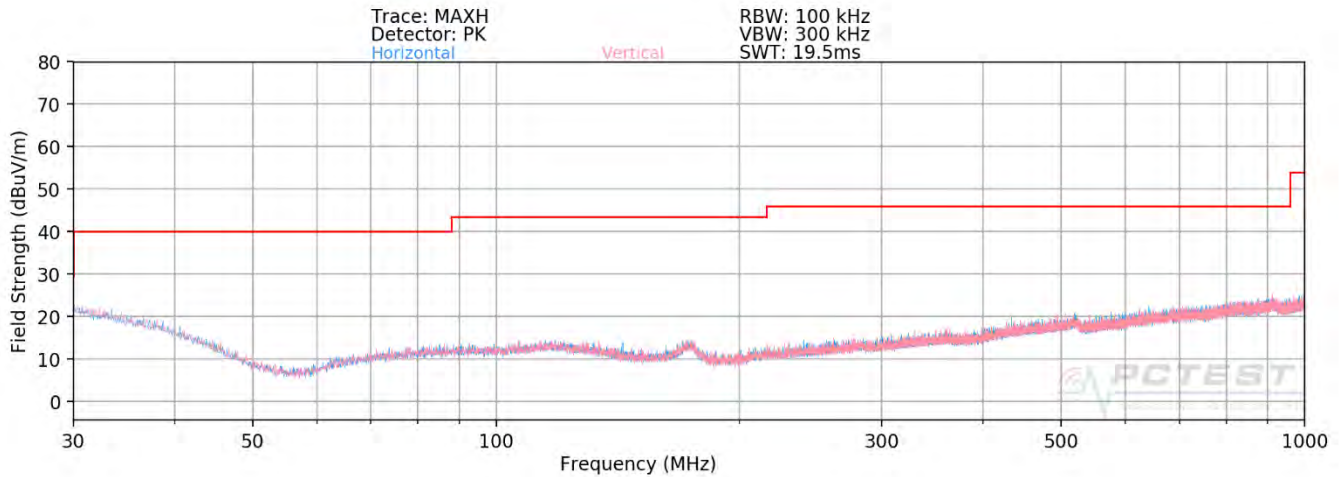
Test Notes

1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen (8.10) are below the limit shown in Table 7-65.
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.

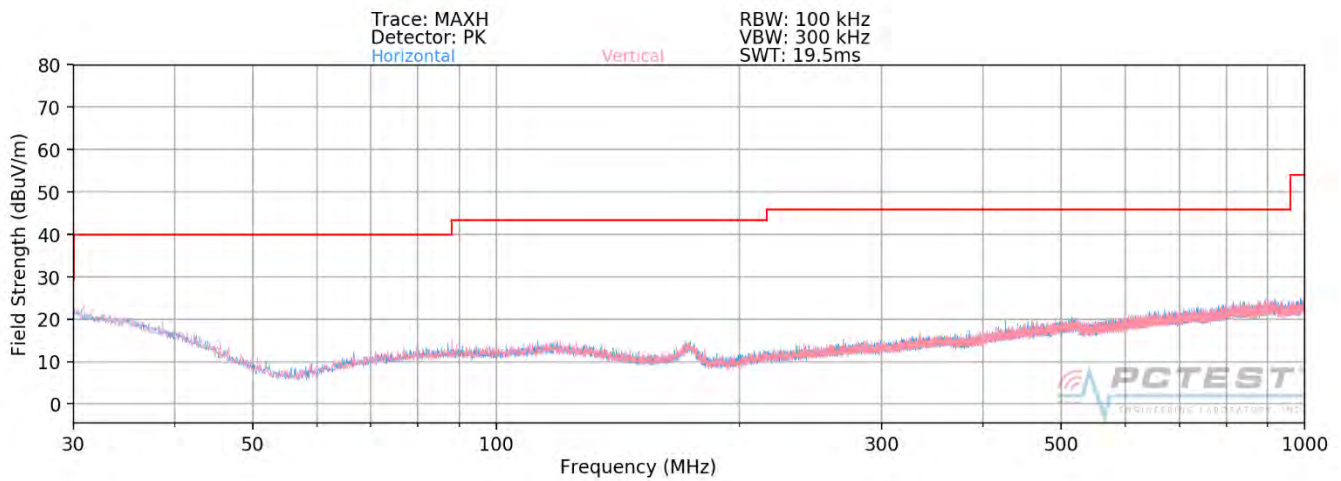
FCC ID: A3LSMN970U	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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MIMO Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209; RSS-Gen [8.9]



Plot 7-370. Radiated Spurious Plot below 1GHz MIMO (802.11ax – 26 Tones – U3 Ch. 120)



Plot 7-371. Radiated Spurious Plot below 1GHz MIMO (802.11ax – 242 Tones – U3 Ch. 120)

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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: A3LSMN970U** 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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