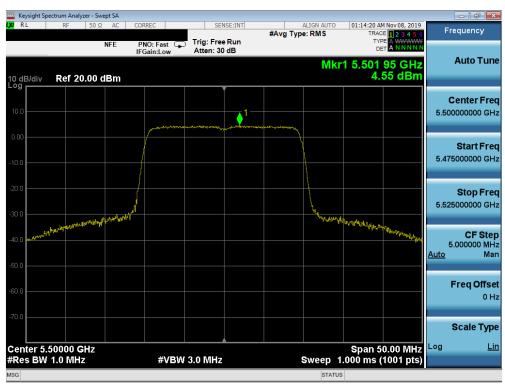


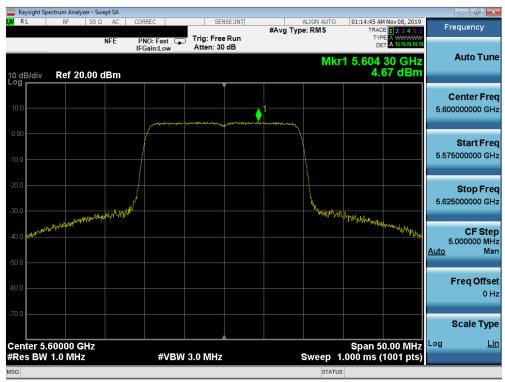
Plot 7-234. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2C) - Ch. 144)



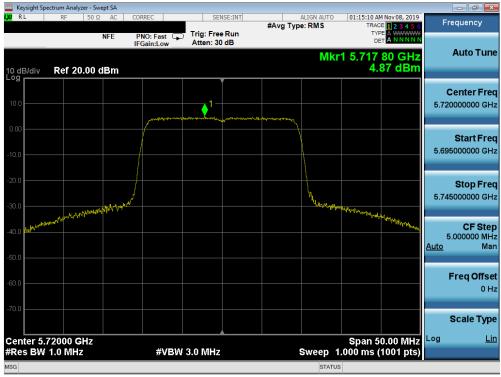
Plot 7-235. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax (UNII Band 2C) - Ch. 100)

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	MSUNG	Approved by: Quality Manager
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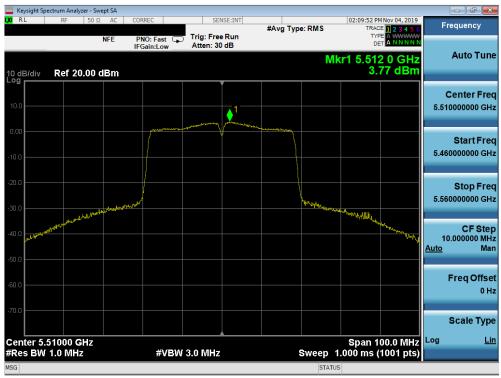
Plot 7-236. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax (UNII Band 2C) - Ch. 120)



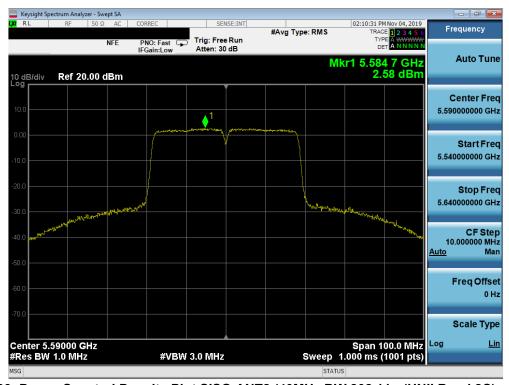
Plot 7-237. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax (UNII Band 2C) - Ch. 144)

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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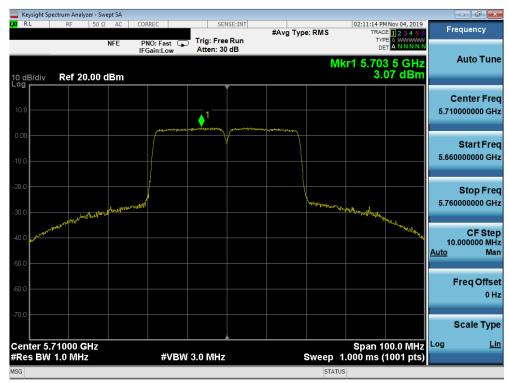
Plot 7-238. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2C) - Ch. 102)



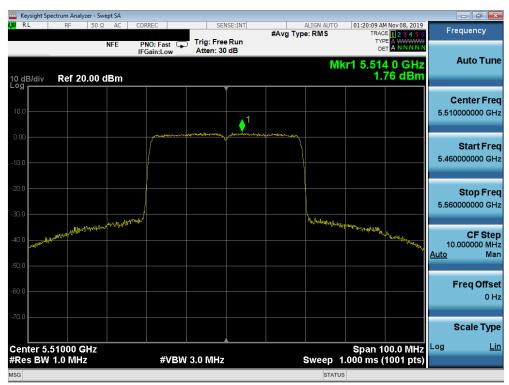
Plot 7-239. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2C) - Ch. 118)

FCC ID: A3LSMG981U	PETEST* ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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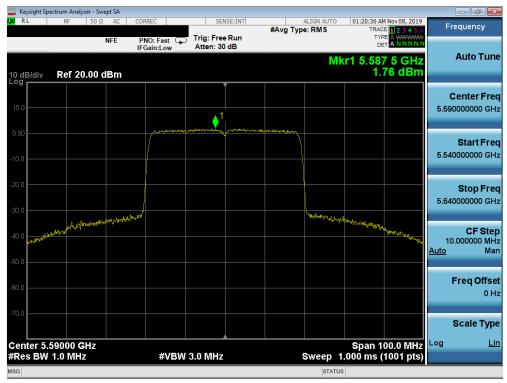
Plot 7-240. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2C) - Ch. 142)



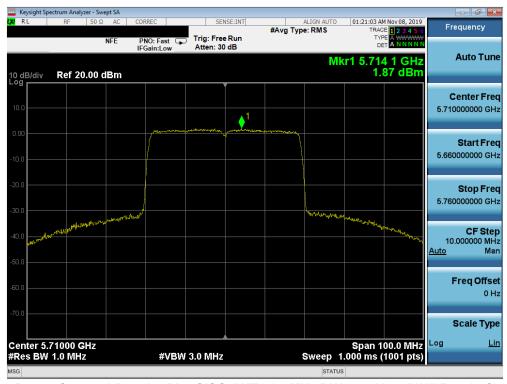
Plot 7-241. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax (UNII Band 2C) - Ch. 102)

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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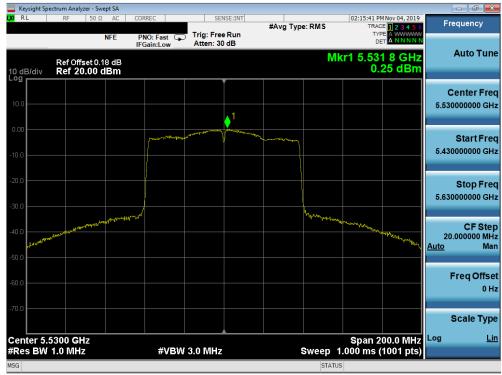
Plot 7-242. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax (UNII Band 2C) - Ch. 118)



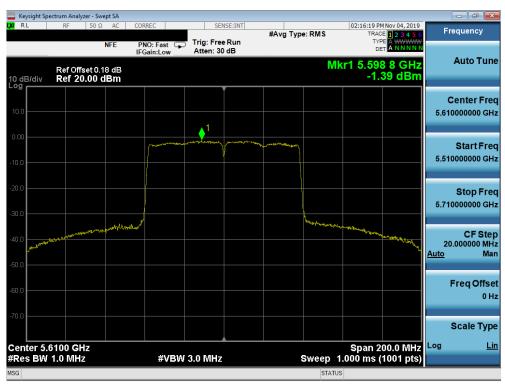
Plot 7-243. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax (UNII Band 2C) - Ch. 142)

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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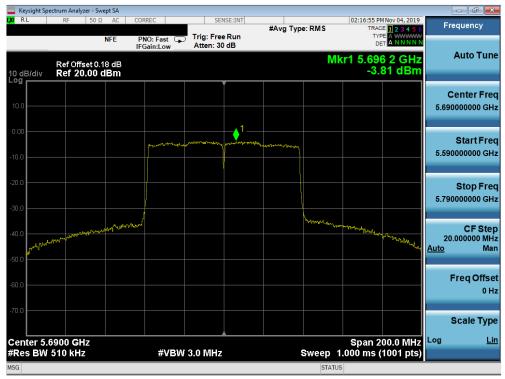
Plot 7-244. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 2C) - Ch. 106)



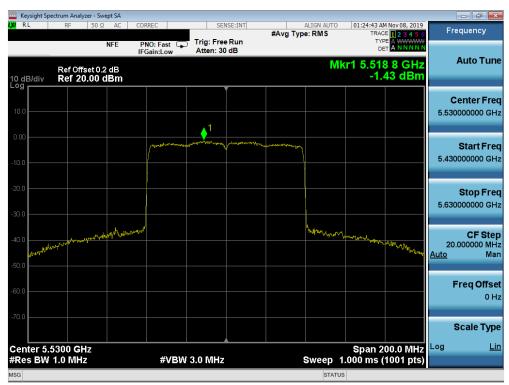
Plot 7-245. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 2C) - Ch. 122)

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	SUNG	Approved by: Quality Manager
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Plot 7-246. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 2C) - Ch. 138)



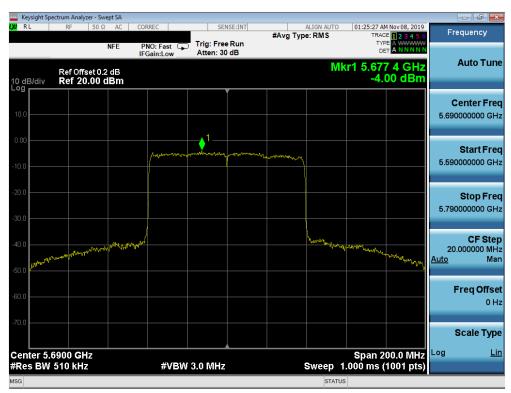
Plot 7-247. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax (UNII Band 2C) - Ch. 106)

FCC ID: A3LSMG981U	PCTEST INGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-248. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax (UNII Band 2C) - Ch. 122)



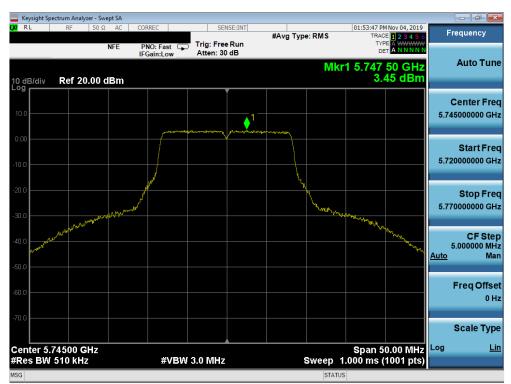
Plot 7-249. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax (UNII Band 2C) - Ch. 138)

FCC ID: A3LSMG981U	PCTEST INGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
	5745	149	а	6	3.45	30.0	-26.55
	5785	157	а	6	3.45	30.0	-26.55
	5825	165	а	6	3.26	30.0	-26.74
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	3.24	30.0	-26.76
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	3.13	30.0	-26.87
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	3.10	30.0	-26.90
က	5745	149	ax (20MHz)	6.5/7.2 (MCS0)	2.09	30.0	-27.91
Band	5785	157	ax (20MHz)	6.5/7.2 (MCS0)	2.20	30.0	-27.80
m	5825	165	ax (20MHz)	6.5/7.2 (MCS0)	2.09	30.0	-27.91
	5755	151	n (40MHz)	13.5/15 (MCS0)	0.37	30.0	-29.63
	5795	159	n (40MHz)	13.5/15 (MCS0)	0.43	30.0	-29.57
	5755	151	ax (40MHz)	13.5/15 (MCS0)	-0.86	30.0	-30.86
	5795	159	ax (40MHz)	13.5/15 (MCS0)	-0.88	30.0	-30.88
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-0.57	30.0	-30.57
	5775	155	ax (80MHz)	29.3/32.5 (MCS0)	-2.83	30.0	-32.83

Table 7-26. Band 3 Conducted Power Spectral Density Measurements SISO ANT2



Plot 7-250. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 3) - Ch. 149)

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	BUNG	Approved by: Quality Manager
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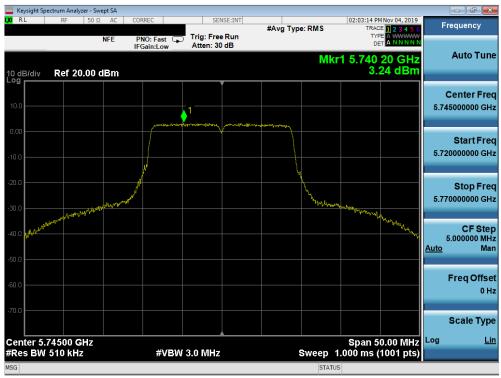
Plot 7-251. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 3) - Ch. 157)



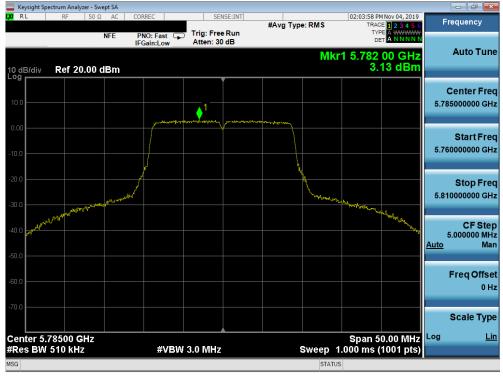
Plot 7-252. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 3) - Ch. 165)

FCC ID: A3LSMG981U	PETEST* ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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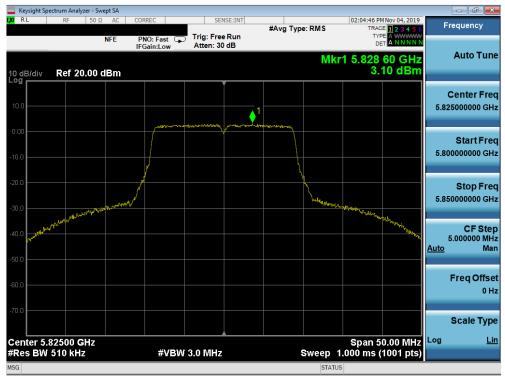
Plot 7-253. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 3) - Ch. 149)



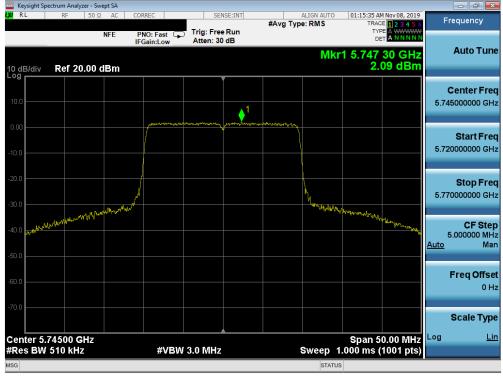
Plot 7-254. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 3) - Ch. 157)

FCC ID: A3LSMG981U	PETEST* ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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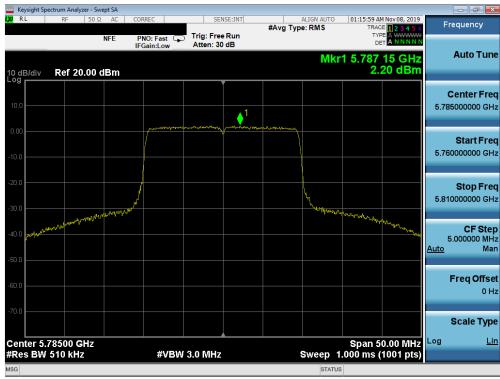
Plot 7-255. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 3) - Ch. 165)



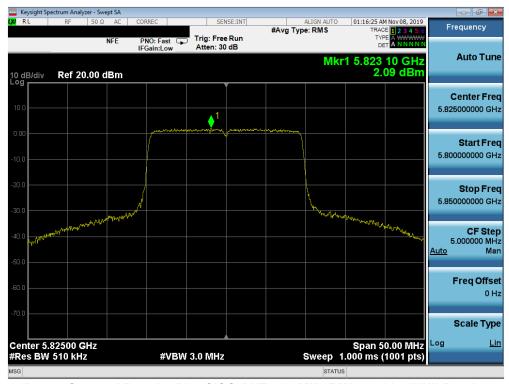
Plot 7-256. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 3) - Ch. 149)

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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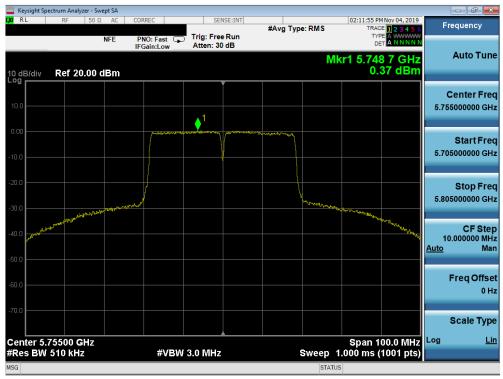
Plot 7-257. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 3) - Ch. 157)



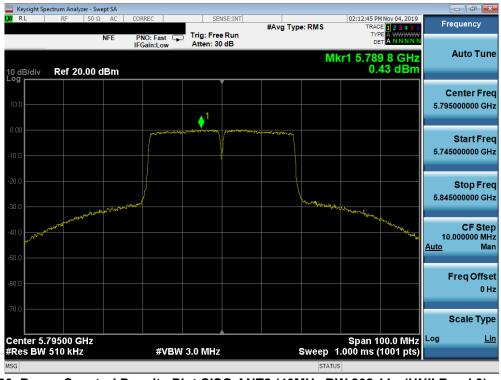
Plot 7-258. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 3) - Ch. 165)

FCC ID: A3LSMG981U	PETEST* ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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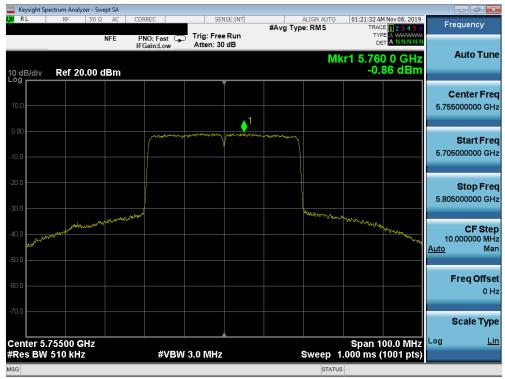
Plot 7-259. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 3) - Ch. 151)



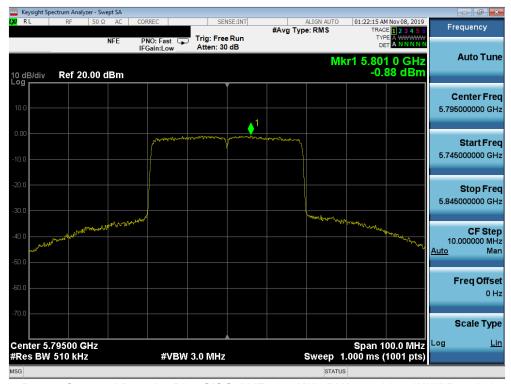
Plot 7-260. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 3) - Ch. 159)

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Plot 7-261. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ac (UNII Band 3) - Ch. 151)



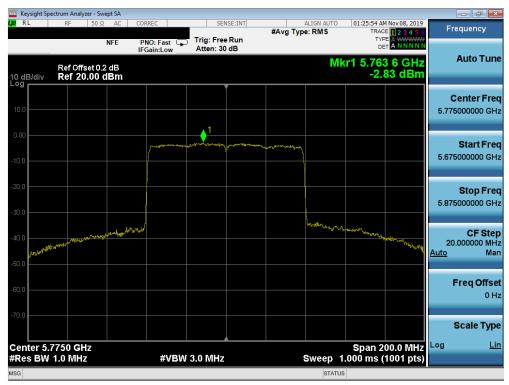
Plot 7-262. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ac (UNII Band 3) - Ch. 159)

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Plot 7-263. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 3) - Ch. 155)



Plot 7-264. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax (UNII Band 3) - Ch. 155)

FCC ID: A3LSMG981U	PETEST* ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Summed MIMO Power Spectral Density Measurements

	Frequency	Channel	000 44 88 1	D / D / PW 1	Antenna-1	Antenna-2	Summed MIMO	Max Power	Margin
	[MHz]	No.	802.11 Mode	Data Rate [Mbps]	Power Density [dBm]	Power Density [dBm]	Power Density [dBm]	Density [dBm/MHz]	[dB]
	5180	36	а	6	7.89	6.75	10.37	11.0	-0.63
	5200	40	а	6	6.55	5.94	9.26	11.0	-1.74
	5240	48	а	6	7.28	5.96	9.68	11.0	-1.32
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	7.53	6.66	10.13	11.0	-0.87
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.53	5.63	9.11	11.0	-1.89
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	6.89	5.82	9.40	11.0	-1.60
_	5180	36	ax (20MHz)	6.5/7.2 (MCS0)	3.83	4.89	7.40	11.0	-3.60
Band 1	5200	40	ax (20MHz)	6.5/7.2 (MCS0)	3.93	4.79	7.39	11.0	-3.61
ä	5240	48	ax (20MHz)	6.5/7.2 (MCS0)	4.60	4.76	7.69	11.0	-3.31
	5190	38	n (40MHz)	13.5/15 (MCS0)	3.68	3.72	6.71	11.0	-4.29
	5230	46	n (40MHz)	13.5/15 (MCS0)	3.01	3.13	6.08	11.0	-4.92
	5190	38	ax (40MHz)	13.5/15 (MCS0)	1.87	1.75	4.82	11.0	-6.18
	5230	46	ax (40MHz)	13.5/15 (MCS0)	2.09	1.79	4.95	11.0	-6.05
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-0.27	-0.08	2.84	11.0	-8.16
	5210	42	ax (80MHz)	29.3/32.5 (MCS0)	-1.82	-2.33	0.94	11.0	-10.06
	5260	52	а	6	7.09	5.84	9.52	11.0	-1.48
	5280	56	а	6	6.89	5.89	9.43	11.0	-1.57
	5320	64	а	6	7.96	7.02	10.53	11.0	-0.47
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	6.45	5.67	9.09	11.0	-1.91
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	6.34	5.59	8.99	11.0	-2.01
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	7.62	6.97	10.32	11.0	-0.68
2A	5260	52	ax (20MHz)	6.5/7.2 (MCS0)	4.61	4.63	7.63	11.0	-3.37
Band 2A	5280	56	ax (20MHz)	6.5/7.2 (MCS0)	4.55	4.53	7.55	11.0	-3.45
Ba	5320	64	ax (20MHz)	6.5/7.2 (MCS0)	4.57	4.71	7.65	11.0	-3.35
	5270	54	n (40MHz)	13.5/15 (MCS0)	2.60	2.80	5.71	11.0	-5.29
	5310	62	n (40MHz)	13.5/15 (MCS0)	3.56	4.00	6.80	11.0	-4.20
	5270	54	ax (40MHz)	13.5/15 (MCS0)	2.07	1.60	4.85	11.0	-6.15
	5310	62	ax (40MHz)	13.5/15 (MCS0)	1.67	1.80	4.75	11.0	-6.25
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-0.55	-0.75	2.36	11.0	-8.64
	5290	58	ax (80MHz)	29.3/32.5 (MCS0)	-2.00	-2.34	0.84	11.0	-10.16
	5500	100	а	6	7.74	7.01	10.40	11.0	-0.60
	5580	116	а	6	6.80	5.91	9.39	11.0	-1.61
	5720	144	а	6	7.17	6.22	9.73	11.0	-1.27
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	7.73	6.66	10.24	11.0	-0.76
	5580	116	n (20MHz)	6.5/7.2 (MCS0)	6.40	5.74	9.09	11.0	-1.91
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	6.85	5.93	9.42	11.0	-1.58
	5500	100	ax (20MHz)	6.5/7.2 (MCS0)	4.66	4.55	7.62	11.0	-3.38
	5580	116	ax (20MHz)	6.5/7.2 (MCS0)	4.52	4.67	7.61	11.0	-3.39
	5720	144	ax (20MHz)	6.5/7.2 (MCS0)	4.93	4.87	7.91	11.0	-3.09
20	5510	102	n (40MHz)	13.5/15 (MCS0)	3.88	3.77	6.84	11.0	-4.16
Band 2C	5550	110	n (40MHz)	13.5/15 (MCS0)	2.36	2.58	5.48	11.0	-5.52
ă	5710	142	n (40MHz)	13.5/15 (MCS0)	2.65	3.07	5.88	11.0	-5.12
	5510	102	ax (40MHz)	13.5/15 (MCS0)	2.95	1.76	5.41	11.0	-5.59
	5550	110	ax (40MHz)	13.5/15 (MCS0)	1.29	1.76	4.54	11.0	-6.46
	5710	142	ax (40MHz)	13.5/15 (MCS0)	1.82	1.87	4.86	11.0	-6.14
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-0.38	0.25	2.96	11.0	-8.04
	5610	122	ac (80MHz)	29.3/32.5 (MCS0)	-2.01	-1.39	1.32	11.0	-9.68
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-4.22	-3.81	-1.00	11.0	-12.00
	5530	106	ax (80MHz)	29.3/32.5 (MCS0)	-1.73	-1.43	1.43	11.0	-9.57
	5610	122	ax (80MHz)	29.3/32.5 (MCS0)	-2.25	-1.34	1.24	11.0	-9.76
	5690	138	ax (80MHz)	29.3/32.5 (MCS0)	-4.98	-4.00	-1.45	11.0	-12.45

Table 7-27. Bands 1, 2A, 2C MIMO Conducted Power Spectral Density Measurements

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Directional Antenna Gain [dBi]	e.i.r.p. Power Density [dBm/MHz]	ISED Max e.i.r.p. Power Density [dBm/MHz]	Margin [dB]
	5180	36	а	6.5/7.2 (MCS0)	7.89	6.75	10.37	-3.59	6.78	10.0	-3.22
	5200	40	а	6.5/7.2 (MCS0)	6.55	5.94	9.26	-3.59	5.68	10.0	-4.32
	5240	48	а	6.5/7.2 (MCS0)	7.28	5.96	9.68	-3.59	6.09	10.0	-3.91
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	7.53	6.66	10.13	-3.59	6.54	10.0	-3.46
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.53	5.63	9.11	-3.59	5.53	10.0	-4.47
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	6.89	5.82	9.40	-3.59	5.81	10.0	-4.19
_	5180	36	ax (20MHz)	6.5/7.2 (MCS0)	-1.78	-1.59	1.33	-3.59	-2.26	10.0	-12.26
Band	5200	40	ax (20MHz)	6.5/7.2 (MCS0)	-0.18	2.01	4.06	-3.59	0.47	10.0	-9.53
m	5240	48	ax (20MHz)	6.5/7.2 (MCS0)	0.26	2.35	4.44	-3.59	0.85	10.0	-9.15
	5190	38	n (40MHz)	13.5/15 (MCS0)	3.68	3.72	6.71	-3.59	3.12	10.0	-6.88
	5230	46	n (40MHz)	13.5/15 (MCS0)	3.01	3.13	6.08	-3.59	2.49	10.0	-7.51
	5190	38	ax (40MHz)	13.5/15 (MCS0)	-7.47	-5.63	-3.44	-3.59	-7.03	10.0	-17.03
	5230	46	ax (40MHz)	13.5/15 (MCS0)	-1.96	-5.21	-0.28	-3.59	-3.87	10.0	-13.87
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-0.27	-0.08	2.84	-3.59	-0.75	10.0	-10.75
	5210	42	ax (80MHz)	29.3/32.5 (MCS0)	-8.14	-7.84	-4.98	-3.59	-8.57	10.0	-18.57

Table 7-28. Band 1 MIMO e.i.r.p. Conducted Power Spectral Density Measurements (ISED)

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Antenn-1 Power Density [dBm]	Antenn-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
	5745	149	а	6	4.31	3.45	6.91	30.0	-23.09
	5785	157	а	6	4.18	3.45	6.84	30.0	-23.16
	5825	165	а	6	4.40	3.26	6.88	30.0	-23.12
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	3.91	3.24	6.60	30.0	-23.40
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	3.70	3.13	6.43	30.0	-23.57
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	3.72	3.10	6.43	30.0	-23.57
က	5745	149	ax (20MHz)	6.5/7.2 (MCS0)	2.55	2.09	5.34	30.0	-24.66
Band	5785	157	ax (20MHz)	6.5/7.2 (MCS0)	2.55	2.20	5.39	30.0	-24.61
ă	5825	165	ax (20MHz)	6.5/7.2 (MCS0)	-0.65	2.09	3.94	30.0	-26.06
	5755	151	n (40MHz)	13.5/15 (MCS0)	0.04	0.37	3.22	30.0	-26.78
	5795	159	n (40MHz)	13.5/15 (MCS0)	-0.40	0.43	3.05	30.0	-26.95
	5755	151	ax (40MHz)	13.5/15 (MCS0)	-0.59	-0.86	2.29	30.0	-27.71
	5795	159	ax (40MHz)	13.5/15 (MCS0)	0.34	-0.88	2.78	30.0	-27.22
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-1.43	-0.57	2.03	30.0	-27.97
	5775	155	ax (80MHz)	29.3/32.5 (MCS0)	-2.24	-2.83	0.49	30.0	-29.51

Table 7-29. Band 3 MIMO Conducted Power Spectral Density Measurements

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Note:

Per ANSI C63.10-2013 Section 14.3.2.2 and KDB 662911 v02r01 Section E)2), the power spectral density at Antenna 1 and Antenna 2 were first measured separately as shown in the section above. The measured values were then summed in linear power units then converted back to dBm.

Per ANSI C63.10-2013 Section 14.4.3, the directional gain is calculated using the following formula, where G_N is the gain of the nth antenna and N_{ANT}, the total number of antennas used.

Directional gain =
$$10 \log[(10^{G_1/20} + 10^{G_2/20} + ... + 10^{G_N/20})^2 / N_{ANT}] dBi$$

Sample Directional Gain Calculation:

Assuming the antenna gain is -8.61 dBi for Antenna-1 and -7.68 dBi for Antenna-2.

Directional gain =
$$10 \log[(10^{G_1/20} + 10^{G_2/20} + ... + 10^{G_N/20})^2 / N_{ANT}] dBi$$

= $10 \log[(10^{-8.61/20} + 10^{-7.68/20} / 2] dBi$
= $(-5.12) dBi$

Sample MIMO Calculation:

At 5180MHz in 802.11n (20MHz BW) mode, the average conducted power spectral density was measured to be 7.53 dBm for Antenna-1 and 6.66 dBm for Antenna-2.

$$(7.53 \text{ dBm} + 6.66 \text{ dBm}) = (5.66 \text{ mW} + 4.63 \text{ mW}) = 10.29 \text{ mW} = 10.13 \text{ dBm}$$

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

At 5180MHz in 802.11n (20MHz BW) mode, the average MIMO power density was calculated to be 10.13 dBm with directional gain of -6.50 dBi.

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7.6 Radiated Spurious Emission Measurements – Above 1GHz §15.407(b) §15.205 §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 its maximum power control level, as defined in ANSI C63.10-2013 and KDB 789033 D02 v02r01, and at the appropriate frequencies. All channels, modes (e.g. 802.11a, 802.11n (20MHz BW), 802.11n (40MHz BW), and 802.11ac (80MHz)), and modulations/data rates were investigated among all UNII bands. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

For transmitters operating in the 5.15-5.25 GHz and 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of −27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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 7-30 per Section 15.209 and RSS-Gen (8.9).

Frequency	Field Strength [µV/m]	Measured Distance [Meters]	
Above 960.0 MHz	500	3	

Table 7-30. Radiated Limits

Test Procedures Used

ANSI C63.10-2013 – Sections 12.7.7.2, 12.7.6, 12.7.5 KDB 789033 D02 v02r01 – Section G

Test Settings

Average Measurements above 1GHz (Method AD)

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW = 3MHz
- 4. Detector = power average (RMS)
- 5. Number of measurement points = 1001 (Number of points must be \geq 2 x span/RBW)
- 6. Averaging type = power (RMS)
- 7. Sweep time = auto couple
- 8. Trace was averaged over 100 sweeps

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Peak Measurements above 1GHz

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW = 3MHz
- 4. Detector = peak
- 5. Sweep time = auto couple
- 6. Trace mode = max hold
- 7. Trace was allowed to stabilize

Peak Measurements below 1GHz

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. Span was set greater than 1MHz
- 3. RBW = 120kHz
- 4. Detector = CISPR quasi-peak
- 5. Sweep time = auto couple
- 6. Trace was allowed to stabilize

Test Setup

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

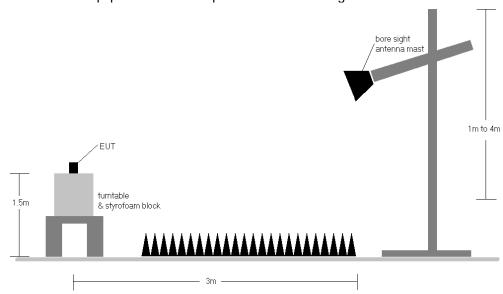


Figure 7-5. Test Instrument & Measurement Setup

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Test Notes

- 1. All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 and Section 8.10 of RSS-Gen are below the limit shown in Table 7-30.
- 2. All spurious emissions lying in restricted bands specified in §15.205 and Section 8.10 of RSS-Gen are below the limit shown in Table 7-30. All spurious emissions that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dB μ V/m.
- 3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- 4. This unit was tested with its standard battery.
- 5. The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. Above 1 GHz, average and peak measurements were taken using linearly polarized horn antennas. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
- 6. Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 7. Radiated spurious emissions were investigated while operating in MIMO mode, however, it was determined that single antenna operation produced the worst case emissions. Since the emissions produced from MIMO operation were found to be more than 20dB below the limit, the MIMO emissions are not reported.
- 8. The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. Any emissions found to be within 20dB of the limit are fully investigated and the results are shown in this section.
- 9. The "-" shown in the following RSE tables are used to denote a noise floor measurement.

Sample Calculations

Determining Spurious Emissions Levels

- Field Strength Level [dBuV/m] = Analyzer Level [dBm] + 107 + AFCL [dB/m]
- AFCL [dB/m] = Antenna Factor [dB/m] + Cable Loss [dB]
- o Margin [dB] = Field Strength Level [dB μ V/m] Limit [dB μ V/m]

Radiated Band Edge Measurement Offset

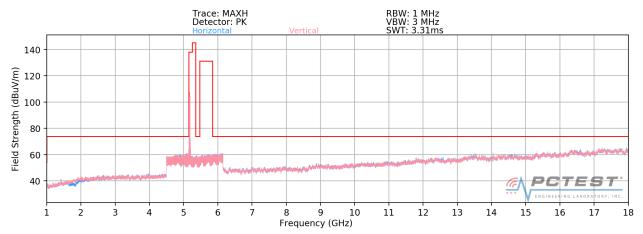
The amplitude offset shown in the radiated restricted band edge plots was calculated using the formula:

Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

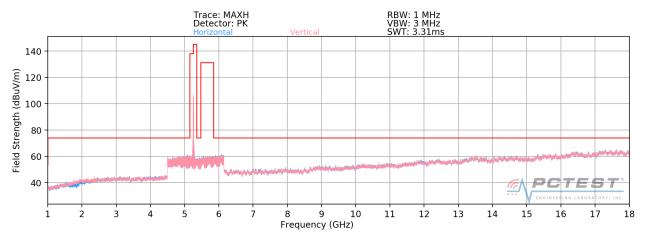
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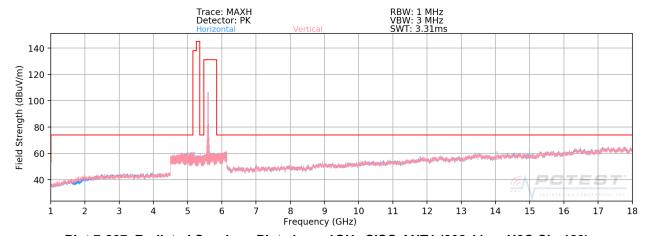
7.5.1 SISO Antenna-1 Radiated Spurious Emission Measurements



Plot 7-265. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11a - U1 Ch. 40)



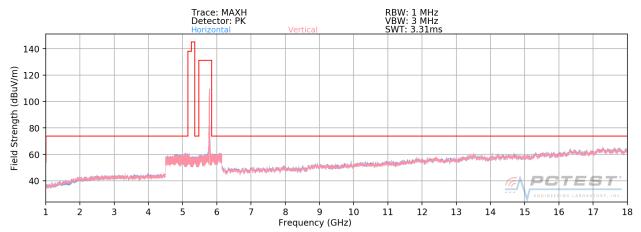
Plot 7-266. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11a - U2A Ch. 56)



Plot 7-267. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11a - U2C Ch. 120)

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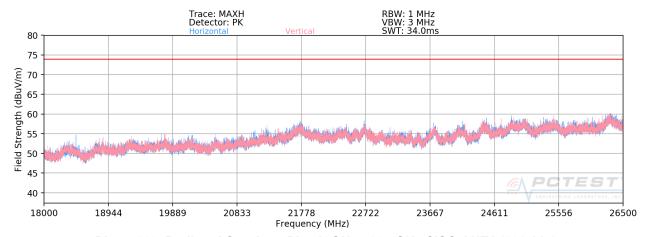


Plot 7-268. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11a - U3 Ch. 157)

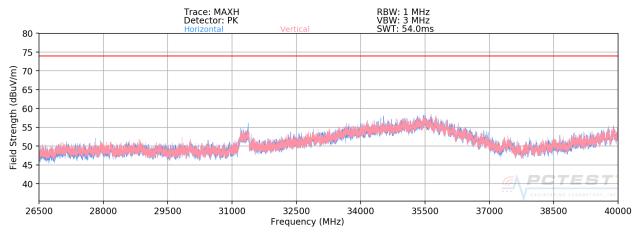
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SISO Antenna-1 Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-269. Radiated Spurious Plot 18GHz - 26.5GHz SISO ANT1 (802.11a)



Plot 7-270. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT1 (802.11a)

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SISO Antenna-1 Radiated Spurious Emission Measurements §15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

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	Н	122	48	-67.33	11.41	0.00	51.08	68.20	-17.12
*	15540.00	Average	Н	123	270	-78.15	13.23	0.00	42.08	53.98	-11.90
*	15540.00	Peak	Н	123	270	-65.93	13.23	0.00	54.30	73.98	-19.68
*	20720.00	Average	Н	-	-	-78.35	17.51	-9.54	36.62	53.98	-17.36
*	20720.00	Peak	Н	-	-	-67.16	17.51	-9.54	47.81	73.98	-26.17
	25900.00	Peak	Н	-	-	-65.02	19.88	-9.54	52.32	68.20	-15.88

Table 7-31. Radiated Measurements SISO ANT1

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 5200MHz

Channel: 40

Distance Turntable Ant. **Antenna** Analyzer **Field** Frequency **AFCL** Limit Margin Correction Detector **Azimuth** Pol. Height Level Strength [MHz] [dB/m] [dBµV/m] [dB] **Factor** [H/V] [cm] [degree] [dBm] [dBµV/m] [dB] 10400.00 Peak Н 115 53 -66.62 11.17 0.00 51.55 68.20 -16.65 12.81 53.98 15600.00 Average Н 111 270 -77.67 0.00 42.14 -11.84 15600.00 Н 270 -64.99 12.81 0.00 54.82 73.98 Peak 111 -19.16 37.06 20800.00 Average Η -78.2617.87 -9.54 53.98 -16.92-9.54 73.98 20800.00 Peak Н -66.90 17.87 48.42 -25.56 26000.00 Peak Η -64.34 20.15 -9.54 53.26 68.20 -14.94

Table 7-32. Radiated Measurements SISO ANT1

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Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps 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	Ι	293	54	-66.16	11.37	0.00	52.21	68.20	-15.99
*	15720.00	Average	Н	112	271	-78.24	15.18	0.00	43.94	53.98	-10.04
*	15720.00	Peak	Н	112	271	-66.21	15.18	0.00	55.97	73.98	-18.01
*	20960.00	Average	Н	-	-	-78.23	18.06	-9.54	37.28	53.98	-16.69
*	20960.00	Peak	Н	-	-	-67.04	18.06	-9.54	48.47	73.98	-25.50
	26200.00	Peak	Н	-	-	-66.05	20.23	-9.54	51.64	68.20	-16.56

Table 7-33. Radiated Measurements SISO ANT1

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Worst Case Mode:

Worst Case Transfer Rate:

Distance of Measurements:

Operating Frequency:

Channel:

802.11a

6Mbps

1 & 3 Meters

5260MHz

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	Н	286	41	-65.76	11.86	0.00	53.10	68.20	-15.10
*	15780.00	Average	Н	115	270	-78.82	13.75	0.00	41.93	53.98	-12.05
*	15780.00	Peak	Н	115	270	-66.46	13.75	0.00	54.29	73.98	-19.69
*	21040.00	Average	Н	-	-	-77.85	18.36	-9.54	37.96	53.98	-16.02
*	21040.00	Peak	Н	-	-	-66.86	18.36	-9.54	48.95	73.98	-25.03
	26300.00	Peak	Н	-	-	-63.45	20.96	-9.54	54.96	68.20	-13.24

Table 7-34. Radiated Measurements SISO ANT1

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

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	Н	282	51	-66.30	12.47	0.00	53.17	68.20	-15.03
*	15840.00	Average	Н	117	285	-78.31	15.16	0.00	43.85	53.98	-10.13
*	15840.00	Peak	Н	117	285	-65.95	15.16	0.00	56.21	73.98	-17.77
*	21120.00	Average	Н	-	-	-77.70	18.17	-9.54	37.92	53.98	-16.05
*	21120.00	Peak	Н	-	-	-66.07	18.17	-9.54	49.55	73.98	-24.42
	26400.00	Peak	Н	-	-	-62.43	20.65	-9.54	55.68	68.20	-12.52

Table 7-35. Radiated Measurements SISO ANT1

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Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps 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	Н	271	31	-77.70	13.08	0.00	42.38	53.98	-11.60
*	10640.00	Peak	П	271	31	-66.23	13.08	0.00	53.85	73.98	-20.13
*	15960.00	Average	н	145	77	-79.22	13.43	0.00	41.21	53.98	-12.77
*	15960.00	Peak	н	145	77	-68.41	13.43	0.00	52.02	73.98	-21.96
*	21280.00	Average	н	-	-	-77.67	18.57	-9.54	38.36	53.98	-15.62
*	21280.00	Peak	Н	-	-	-67.16	18.57	-9.54	48.87	73.98	-25.11
	26600.00	Peak	Н	-	-	-47.30	5.16	-9.54	55.32	68.20	-12.88

Table 7-36. Radiated Measurements SISO ANT1

FCC ID: A3LSMG981U	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps 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	Н	-79	1	-79.25	12.53	0.00	40.28	53.98	-13.70
*	11000.00	Peak	Н	-79	-	-67.77	12.53	0.00	51.76	73.98	-22.22
	16500.00	Peak	Н	261	67	-66.93	15.04	0.00	55.11	68.20	-13.09
	22000.00	Peak	Н	-	-	-64.78	19.12	-9.54	51.79	68.20	-16.41
	27500.00	Peak	Н	-	-	-44.91	3.98	-9.54	56.53	68.20	-11.67

Table 7-37. Radiated Measurements SISO ANT1

Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps 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]
*	11160.00	Average	Н	280	45	-78.66	12.71	0.00	41.05	53.98	-12.93
*	11160.00	Peak	Н	280	45	-67.58	12.71	0.00	52.13	73.98	-21.85
	16740.00	Peak	Н	223	40	-65.65	15.84	0.00	57.19	68.20	-11.01
*	22320.00	Average	Н	-	-	-77.41	20.03	-9.54	40.08	53.98	-13.90
*	22320.00	Peak	Н	-	-	-66.74	20.03	-9.54	50.75	73.98	-23.23
	27900.00	Peak	Н	-	-	-44.52	4.70	-9.54	57.64	68.20	-10.56

Table 7-38. Radiated Measurements SISO ANT1

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps Distance of Measurements: 1 & 3 Meters 5720MHz Operating Frequency: 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	Н	301	53	-78.48	12.70	0.00	41.22	53.98	-12.76
*	11440.00	Peak	Н	301	53	-67.63	12.70	0.00	52.07	73.98	-21.91
	17160.00	Peak	Н	234	37	-67.24	17.71	0.00	57.47	68.20	-10.73
*	22880.00	Average	Н	-	-	-78.00	19.50	-9.54	38.96	53.98	-15.02
*	22880.00	Peak	Н	-	-	-66.87	19.50	-9.54	50.09	73.98	-23.89
	28600.00	Peak	Н	100	59	-47.26	5.14	-9.54	55.34	68.20	-12.86

Table 7-39. Radiated Measurements SISO ANT1

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

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	Н	305	55	-78.86	13.38	0.00	41.52	53.98	-12.46
*	11490.00	Peak	Н	305	55	-67.08	13.38	0.00	53.30	73.98	-20.68
	17235.00	Peak	Н	242	23	-67.37	17.44	0.00	57.07	68.20	-11.13
*	22980.00	Average	Н	-	-	-77.87	19.89	-9.54	39.47	53.98	-14.51
*	22980.00	Peak	Н	-	-	-67.39	19.89	-9.54	49.95	73.98	-24.03
	28725.00	Peak	Н	100	67	-48.07	4.66	-9.54	54.05	68.20	-14.15

Table 7-40. Radiated Measurements SISO ANT1

FCC ID: A3LSMG981U	PCTEST INGINEERING LARGEATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps 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	Н	-	-	-79.21	12.70	0.00	40.49	53.98	-13.49
*	11570.00	Peak	Н	-	-	-68.13	12.70	0.00	51.57	73.98	-22.41
	17355.00	Peak	Н	-	-	-68.71	19.46	0.00	57.75	68.20	-10.45
	23140.00	Peak	Н	-	-	-67.55	19.59	-9.54	49.50	68.20	-18.70
	28925.00	Peak	Н	100	52	-47.66	4.43	-9.54	54.23	68.20	-13.97

Table 7-41. Radiated Measurements SISO ANT1

Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps Distance of Measurements: 1 & 3 Meters Operating Frequency: 5825MHz Channel: 165

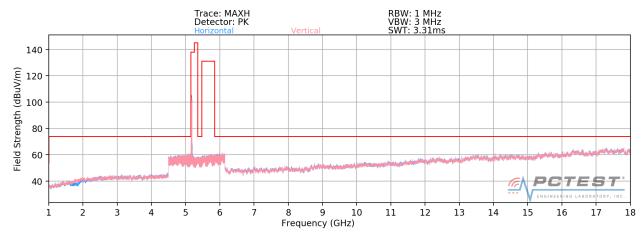
	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11650.00	Average	Н	-	-	-79.45	13.24	0.00	40.79	53.98	-13.19
*	11650.00	Peak	Н	-	-	-68.82	13.24	0.00	51.42	73.98	-22.56
	17475.00	Peak	Н	-	-	-67.62	20.06	0.00	59.44	68.20	-8.76
	23300.00	Peak	Н	-	-	-67.52	18.93	-9.54	48.87	68.20	-19.33
	29125.00	Peak	Н	100	56	-47.25	3.48	-9.54	53.69	68.20	-14.51

Table 7-42. Radiated Measurements SISO ANT1

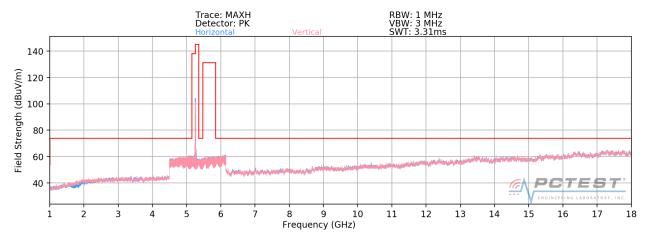
FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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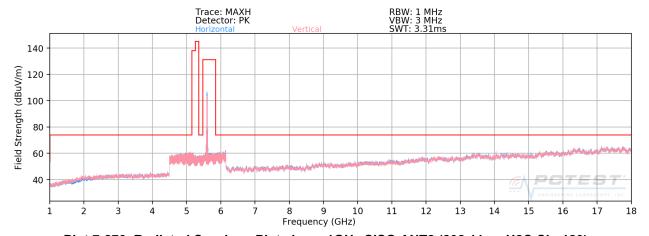
7.5.2 SISO Antenna-2 Radiated Spurious Emission Measurements



Plot 7-271. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11a - U1 Ch. 40)



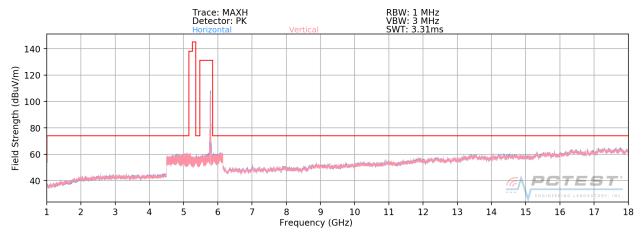
Plot 7-272. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11a - U2A Ch. 56)



Plot 7-273. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11a - U2C Ch. 120)

FCC ID: A3LSMG981U	PETEST* ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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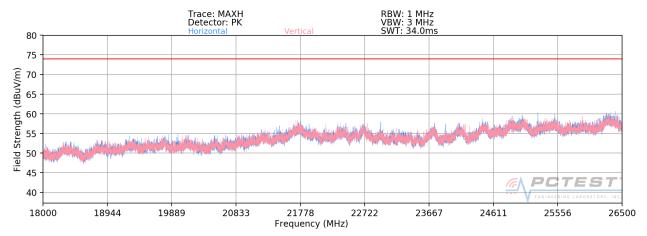


Plot 7-274. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11a - U3 Ch. 157)

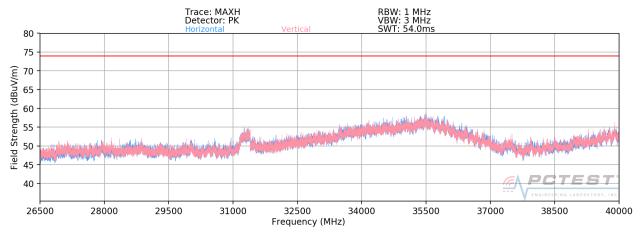
FCC ID: A3LSMG981U	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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SISO Antenna-2 Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-275. Radiated Spurious Plot above 18GHz - 26.5GHz SISO ANT2 (802.11a)



Plot 7-276. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT2 (802.11a)

FCC ID: A3LSMG981U	PETEST* ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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SISO Antenna-2 Radiated Spurious Emission Measurements §15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

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	Н	354	352	-70.25	11.41	0.00	48.16	68.20	-20.04
*	15540.00	Average	Н	-	-	-84.04	13.23	0.00	36.19	53.98	-17.79
*	15540.00	Peak	Н	-	-	-71.41	13.23	0.00	48.82	73.98	-25.16
*	20720.00	Average	Н	-	-	-69.46	17.51	-9.54	45.51	53.98	-8.47
*	20720.00	Peak	Н	-	-	-61.00	17.51	-9.54	53.97	73.98	-20.01
	25900.00	Peak	Н	-	-	-59.08	19.88	-9.54	58.26	68.20	-9.94

Table 7-43. Radiated Measurements SISO ANT2

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps
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	Н	371	53	-70.03	11.17	0.00	48.14	68.20	-20.06
*	15600.00	Average	Н	-	-	-83.63	12.81	0.00	36.18	53.98	-17.80
*	15600.00	Peak	Н	-	-	-70.36	12.81	0.00	49.45	73.98	-24.53
*	20800.00	Average	Н	-	-	-68.24	17.87	-9.54	47.08	53.98	-6.90
*	20800.00	Peak	Н	-	-	-61.46	17.87	-9.54	53.86	73.98	-20.12
	26000.00	Peak	Н	-	-	-59.33	20.15	-9.54	58.27	68.20	-9.93

Table 7-44. Radiated Measurements SISO ANT2

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

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	Н	257	341	-69.73	11.37	0.00	48.64	68.20	-19.56
*	15720.00	Average	Н	-	-	-83.52	15.18	0.00	38.66	53.98	-15.32
*	15720.00	Peak	Н	-	-	-71.02	15.18	0.00	51.16	73.98	-22.82
*	20960.00	Average	Н	-	-	-68.59	18.06	-9.54	46.92	53.98	-7.05
*	20960.00	Peak	Н	-	-	-60.86	18.06	-9.54	54.65	73.98	-19.32
	26200.00	Peak	Н	-	-	-58.93	20.23	-9.54	58.76	68.20	-9.44

Table 7-45. Radiated Measurements SISO ANT2

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

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	Н	100	348	-69.30	11.86	0.00	49.56	68.20	-18.64
*	15780.00	Average	Н	-	-	-83.97	13.75	0.00	36.78	53.98	-17.20
*	15780.00	Peak	Н	-	-	-70.57	13.75	0.00	50.18	73.98	-23.80
*	21040.00	Average	Н	-	-	-68.82	18.36	-9.54	46.99	53.98	-6.99
*	21040.00	Peak	Н	-	-	-60.94	18.36	-9.54	54.87	73.98	-19.11
	26300.00	Peak	Н	-	-	-57.82	20.96	-9.54	60.59	68.20	-7.61

Table 7-46. Radiated Measurements SISO ANT2

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps 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	Н	308	47	-69.38	12.47	0.00	50.09	68.20	-18.11
*	15840.00	Average	Н	-	-	-83.81	15.16	0.00	38.35	53.98	-15.63
*	15840.00	Peak	Н	-	-	-71.52	15.16	0.00	50.64	73.98	-23.34
*	21120.00	Average	Н	-	-	-67.96	18.17	-9.54	47.66	53.98	-6.31
*	21120.00	Peak	Н	-	-	-60.66	18.17	-9.54	54.96	73.98	-19.01
	26400.00	Peak	Н	-	-	-57.97	20.65	-9.54	60.14	68.20	-8.06

Table 7-47. Radiated Measurements SISO ANT2

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 1 & 3 Meters Operating Frequency: 5320MHz

	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	Н	102	364	-82.11	13.08	0.00	37.97	53.98	-16.01
*	10640.00	Peak	Н	102	364	-69.03	13.08	0.00	51.05	73.98	-22.93
*	15960.00	Average	Н	-	-	-84.21	13.43	0.00	36.22	53.98	-17.76
*	15960.00	Peak	Н	-	-	-70.79	13.43	0.00	49.64	73.98	-24.34
*	21280.00	Average	Н	-	-	-67.37	18.57	-9.54	48.66	53.98	-5.32
*	21280.00	Peak	Н	-	-	-60.05	18.57	-9.54	55.98	73.98	-18.00
	26600.00	Peak	Н	-	-	-52.40	5.16	-9.54	50.22	68.20	-17.98

Table 7-48. Radiated Measurements SISO ANT2

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6Mbps

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	Н	341	317	-81.84	12.53	0.00	37.69	53.98	-16.29
*	11000.00	Peak	Н	341	317	-68.72	12.53	0.00	50.81	73.98	-23.17
	16500.00	Peak	Н	-	-	-70.25	15.04	0.00	51.79	68.20	-16.41
	22000.00	Peak	Н	-	-	-60.17	19.12	-9.54	56.40	68.20	-11.80
	27500.00	Peak	Н	-	-	-50.98	3.98	-9.54	50.46	68.20	-17.74

Table 7-49. Radiated Measurements SISO ANT2

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 5600MHz

	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]
*	11160.00	Average	П	349	186	-82.49	12.71	0.00	37.22	53.98	-16.76
*	11160.00	Peak	н	349	186	-70.17	12.71	0.00	49.54	73.98	-24.44
	16740.00	Peak	н	-	-	-70.27	15.84	0.00	52.57	68.20	-15.63
*	22320.00	Average	н	-	-	-67.66	20.03	-9.54	49.83	53.98	-4.15
*	22320.00	Peak	Н	-	-	-59.47	20.03	-9.54	58.02	73.98	-15.96
	27900.00	Peak	Н	-	-	-50.36	4.70	-9.54	51.80	68.20	-16.40

Table 7-50. Radiated Measurements SISO ANT2

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

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	Н	306	369	-83.31	12.70	0.00	36.39	53.98	-17.59
*	11440.00	Peak	Н	306	369	-70.11	12.70	0.00	49.59	73.98	-24.39
	17160.00	Peak	Н	-	-	-70.79	17.71	0.00	53.92	68.20	-14.28
*	22880.00	Average	Н	-	-	-68.61	19.50	-9.54	48.35	53.98	-5.63
*	22880.00	Peak	Н	-	-	-60.94	19.50	-9.54	56.02	73.98	-17.96
	28600.00	Peak	Н	-	-	-50.91	5.14	-9.54	51.69	68.20	-16.51

Table 7-51. Radiated Measurements SISO ANT2

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 5745MHz

	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	Н	315	78	-84.03	13.38	0.00	36.35	53.98	-17.63
*	11490.00	Peak	Н	315	78	-71.47	13.38	0.00	48.91	73.98	-25.07
	17235.00	Peak	Н	-	-	-71.90	17.44	0.00	52.54	68.20	-15.66
*	22980.00	Average	Н	-	-	-68.51	19.89	-9.54	48.83	53.98	-5.15
*	22980.00	Peak	Н	-	-	-60.35	19.89	-9.54	56.99	73.98	-16.99
	28725.00	Peak	Н	-	-	-51.02	4.66	-9.54	51.10	68.20	-17.10

Table 7-52. Radiated Measurements SISO ANT2

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps 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	Н	368	119	-83.19	12.70	0.00	36.51	53.98	-17.47
*	11570.00	Peak	Н	368	119	-70.88	12.70	0.00	48.82	73.98	-25.16
	17355.00	Peak	Н	-	-	-71.65	19.46	0.00	54.81	68.20	-13.39
	23140.00	Peak	Н	-	-	-61.46	19.59	-9.54	55.59	68.20	-12.61
	28925.00	Peak	Н	-	-	-51.04	4.43	-9.54	50.85	68.20	-17.35

Table 7-53. Radiated Measurements SISO ANT2

Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps Distance of Measurements: 1 & 3 Meters Operating Frequency: 5825MHz Channel: 165

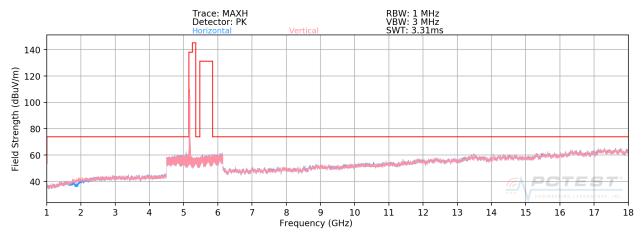
	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]		Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11650.00	Average	Н	114	218	-83.43	13.24	0.00	36.81	53.98	-17.17
*	11650.00	Peak	Н	114	218	-70.43	13.24	0.00	49.81	73.98	-24.17
	17475.00	Peak	Н	-	-	-71.51	20.06	0.00	55.55	68.20	-12.65
	23300.00	Peak	Н	-	-	-60.51	18.93	-9.54	55.88	68.20	-12.32
	29125.00	Peak	Н	-	-	-50.75	3.48	-9.54	50.19	68.20	-18.01

Table 7-54. Radiated Measurements SISO ANT2

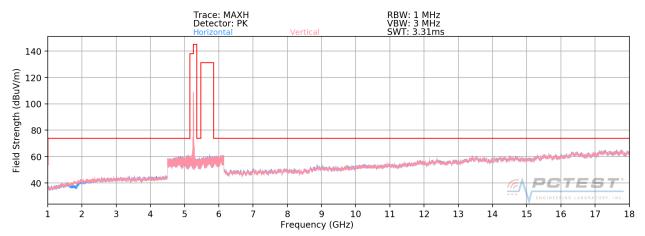
FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved Quality Ma	•
Test Report S/N:	Test Dates:	EUT Type:	Daga 100	of 040
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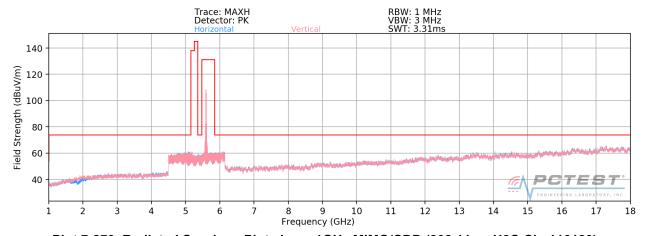
7.5.3 MIMO/CDD Radiated Spurious Emission Measurements



Plot 7-277. Radiated Spurious Plot above 1GHz MIMO/CDD (802.11a - U1 Ch. 40)



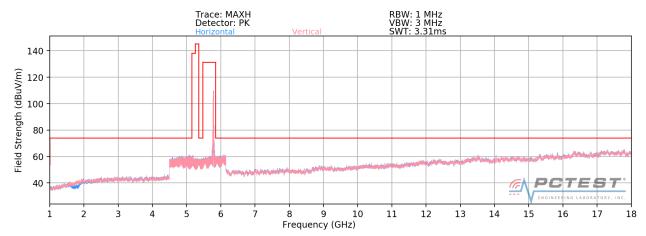
Plot 7-278. Radiated Spurious Plot above 1GHz MIMO/CDD (802.11a - U2A Ch. 56)



Plot 7-279. Radiated Spurious Plot above 1GHz MIMO/CDD (802.11a – U2C Ch. 116120)

FCC ID: A3LSMG981U	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Plot 7-280. Radiated Spurious Plot above 1GHz MIMO/CDD (802.11a - U3 Ch. 157)

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MIMO/CDD Radiated Spurious Emission Measurements

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

Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps 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 Correctio n Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10360.00	Peak	V	116	61	-68.40	11.41	0.00	50.01	68.20	-18.19
*	15540.00	Average	V	102	267	-83.07	13.23	0.00	37.16	53.98	-16.82
*	15540.00	Peak	٧	102	267	-71.42	13.23	0.00	48.81	73.98	-25.17
*	20720.00	Average	V	-	-	-68.25	7.97	-9.54	37.18	53.98	-16.80
*	20720.00	Peak	٧	-	-	-59.58	7.97	-9.54	45.85	73.98	-28.13
	25900.00	Peak	V	-	-	-58.74	10.34	-9.54	49.06	68.20	-19.14

Table 7-55. Radiated Measurements MIMO/CDD

Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps 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 Correctio n Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10400.00	Peak	V	100	172	-68.92	11.17	0.00	49.25	68.20	-18.95
*	15600.00	Average	V	-	-	-83.46	12.81	0.00	36.35	53.98	-17.63
*	15600.00	Peak	V	-	-	-71.18	12.81	0.00	48.63	73.98	-25.35
*	20800.00	Average	V	-	-	-68.49	8.33	-9.54	37.29	53.98	-16.69
*	20800.00	Peak	V	-	-	-61.17	8.33	-9.54	44.61	73.98	-29.37
	26000.00	Peak	V	-	-	-59.15	10.61	-9.54	48.91	68.20	-19.29

Table 7-56. Radiated Measurements MIMO/CDD

FCC ID: A3LSMG981U	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 5240MHz

Channel: 48

Ant. Antenna Turntable Analyzer

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correctio n Factor [dB]	Strenath	Limit [dBµV/m]	Margin [dB]
	10480.00	Peak	V	115	172	-69.08	11.37	0.00	49.29	68.20	-18.91
*	15720.00	Average	٧	100	360	-82.44	15.18	0.00	39.74	53.98	-14.24
*	15720.00	Peak	V	100	360	-68.20	15.18	0.00	53.98	73.98	-20.00
*	20960.00	Average	V	-	-	-68.63	8.52	-9.54	37.34	53.98	-16.63
*	20960.00	Peak	٧	-	-	-61.06	8.52	-9.54	44.91	73.98	-29.06
	26200.00	Peak	V	-	-	-59.35	10.69	-9.54	48.80	68.20	-19.40

Table 7-57. Radiated Measurements MIMO/CDD

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6Mbps
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 Correctio n Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10480.00	Peak	V	121	169	-70.13	11.37	0.00	48.24	68.20	-19.96
*	15720.00	Average	V	123	349	-81.36	15.18	0.00	40.82	53.98	-13.16
*	15720.00	Peak	V	123	349	-69.33	15.18	0.00	52.85	73.98	-21.13
*	20960.00	Average	V	-	-	-68.79	8.52	-9.54	37.18	53.98	-16.79
*	20960.00	Peak	V	-	-	-62.36	8.52	-9.54	43.61	73.98	-30.36
	26200.00	Peak	V	-	-	-60.49	10.69	-9.54	47.66	68.20	-20.54

Table 7-58. Radiated Measurements MIMO/CDD with WCP

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

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	>	100	167	-67.75	11.86	0.00	51.11	68.20	-17.09
*	15780.00	Average	٧	100	166	-82.72	13.75	0.00	38.03	53.98	-15.95
*	15780.00	Peak	٧	100	166	-70.17	13.75	0.00	50.58	73.98	-23.40
*	21040.00	Average	٧	-	-	-67.92	8.82	-9.54	38.35	53.98	-15.63
*	21040.00	Peak	V	-	-	-61.11	8.82	-9.54	45.16	73.98	-28.82
	26300.00	Peak	٧	-	-	-58.09	11.42	-9.54	50.78	68.20	-17.42

Table 7-59. Radiated Measurements MIMO/CDD

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6Mbps
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	112	187	-68.45	12.47	0.00	51.02	68.20	-17.18
*	15840.00	Average	٧	295	149	-83.49	15.16	0.00	38.67	53.98	-15.31
*	15840.00	Peak	V	295	149	-70.87	15.16	0.00	51.29	73.98	-22.69
*	21120.00	Average	V	-	-	-67.84	8.63	-9.54	38.24	53.98	-15.73
*	21120.00	Peak	٧	-	-	-60.12	8.63	-9.54	45.96	73.98	-28.01
	26400.00	Peak	V	-	-	-58.03	11.11	-9.54	50.54	68.20	-17.66

Table 7-60. Radiated Measurements MIMO/CDD

FCC ID: A3LSMG981U	PETEST* ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode:

Worst Case Transfer Rate:

Distance of Measurements:

Operating Frequency:

Channel:

802.11a

6Mbps

1 & 3 Meters

5320MHz

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	100	169	-80.93	13.08	0.00	39.15	53.98	-14.83
*	10640.00	Peak	٧	100	169	-68.46	13.08	0.00	51.62	73.98	-22.36
*	15960.00	Average	V	100	164	-82.44	13.43	0.00	37.99	53.98	-15.99
*	15960.00	Peak	٧	100	164	-69.88	13.43	0.00	50.55	73.98	-23.43
*	21280.00	Average	٧	-	-	-67.36	9.03	-9.54	39.13	53.98	-14.85
*	21280.00	Peak	٧	-	-	-59.90	9.03	-9.54	46.59	73.98	-27.39
	26600.00	Peak	V	-	-	-51.47	-4.38	-9.54	41.61	68.20	-26.59

Table 7-61. Radiated Measurements MIMO/CDD

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

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	٧	114	201	-81.01	13.08	0.00	39.07	53.98	-14.91
*	10640.00	Peak	٧	114	201	-69.51	13.08	0.00	50.57	73.98	-23.41
*	15960.00	Average	٧	105	178	-83.06	13.43	0.00	37.37	53.98	-16.61
*	15960.00	Peak	V	105	178	-70.08	13.43	0.00	50.35	73.98	-23.63
*	21280.00	Average	V	-	-	-68.24	9.03	-9.54	38.25	53.98	-15.73
	21280.00	Peak	V	-	-	-60.19	9.03	-9.54	46.30	73.98	-27.68
	26600.00	Peak	V	-	-	-52.10	-4.38	-9.54	40.98	68.20	-27.22

Table 7-62. Radiated Measurements MIMO/CDD with WCP

FCC ID: A3LSMG981U	PETEST* ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps 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]	-actor	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11000.00	Average	V	250	28	-81.99	12.53	0.00	37.54	53.98	-16.44
*	11000.00	Peak	٧	250	28	-69.65	12.53	0.00	49.88	73.98	-24.10
	16500.00	Peak	٧	101	160	-66.22	15.04	0.00	55.82	68.20	-12.38
	22000.00	Peak	V	-	-	-59.86	9.58	-9.54	47.17	68.20	-21.03
	27500.00	Peak	V	-	-	-51.36	-5.56	-9.54	40.54	68.20	-27.66

Table 7-63. Radiated Measurements MIMO/CDD

Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps Distance of Measurements: 1 & 3 Meters Operating Frequency: 5580MHz Channel: 116

Distance Ant. Antenna **Turntable** Analyzer Field **Frequency AFCL** Limit Margin Correction Detector Pol. Height **Azimuth** Strength Level [dBµV/m] [dB] [MHz] [dB/m] **Factor** [H/V] [cm] [degree] [dBm] [dBµV/m] [dB] 11160.00 ٧ 102 141 -81.67 12.71 0.00 38.04 53.98 -15.94 Average 11160.00 ٧ Peak 102 141 -68.23 12.71 0.00 51.48 73.98 -22.50 16740.00 ٧ -67.74 15.84 55.10 68.20 Peak 101 160 0.00 -13.10 22320.00 ٧ -67.62 10.36 -9.54 40.20 53.98 -13.78 Average Peak ٧ -60.39 10.36 -9.54 47.43 22320.00 73.98 -26.55 27900.00 Peak V -50.34 -5.17 -9.54 41.94 68.20 -26.26

Table 7-64. Radiated Measurements MIMO/CDD

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 5700MHz

Channel: 140

	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	115	99	-83.00	12.70	0.00	36.70	53.98	-17.28
*	11440.00	Peak	٧	115	99	-71.09	12.70	0.00	48.61	73.98	-25.37
	17160.00	Peak	٧	101	66	-70.64	17.71	0.00	54.07	68.20	-14.13
*	22880.00	Average	V	-	-	-68.59	9.96	-9.54	38.83	53.98	-15.15
*	22880.00	Peak	V	-	-	-60.71	9.96	-9.54	46.71	73.98	-27.27
	28600.00	Peak	V	-	-	-50.68	-4.40	-9.54	42.38	68.20	-25.82

Table 7-65. Radiated Measurements MIMO/CDD

Worst Case Mode:

Worst Case Transfer Rate:

Distance of Measurements:

Operating Frequency:

Channel:

802.11a

6Mbps

1 & 3 Meters

5580MHz

116

	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]
*	11160.00	Average	V	141	167	-81.74	12.71	0.00	37.97	53.98	-16.01
*	11160.00	Peak	٧	141	167	-69.04	12.71	0.00	50.67	73.98	-23.31
	16740.00	Peak	V	116	159	-68.49	15.84	0.00	54.35	68.20	-13.85
*	22320.00	Average	V	-	-	-66.34	10.36	-9.54	41.48	53.98	-12.50
*	22320.00	Peak	V	-	-	-61.04	10.36	-9.54	46.78	73.98	-27.20
	27900.00	Peak	V	-	-	-50.46	-5.17	-9.54	41.82	68.20	-26.38

Table 7-66. Radiated Measurements MIMO/CDD with WCP

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

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	102	156	-83.27	13.38	0.00	37.11	53.98	-16.87
*	11490.00	Peak	٧	102	156	-70.75	13.38	0.00	49.63	73.98	-24.35
	17235.00	Peak	V	101	161	-70.38	17.44	0.00	54.06	68.20	-14.14
*	22980.00	Average	V	-	-	-68.57	10.35	-9.54	39.23	53.98	-14.75
*	22980.00	Peak	V	-	-	-60.68	10.35	-9.54	47.12	73.98	-26.86
	28725.00	Peak	V	-	-	-49.62	-4.88	-9.54	42.96	69.20	-26.24

Table 7-67. Radiated Measurements MIMO/CDD

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5785MHz

	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	٧	388	198	-83.11	12.70	0.00	36.59	53.98	-17.39
*	11570.00	Peak	٧	388	198	-70.31	12.70	0.00	49.39	73.98	-24.59
	17355.00	Peak	٧	101	32	-70.49	19.46	0.00	55.97	68.20	-12.23
	23140.00	Peak	٧	-	-	-61.02	10.05	-9.54	46.49	68.20	-21.71
	28925.00	Peak	٧	-	-	-51.28	-5.11	-9.54	41.07	68.20	-27.13

Table 7-68. Radiated Measurements MIMO/CDD

FCC ID: A3LSMG981U	PCTEST INGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Worst Case Mode: 802.11a Worst Case Transfer Rate: 6Mbps 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	400	343	-83.25	13.24	0.00	36.99	53.98	-16.99
*	11650.00	Peak	٧	400	343	-70.66	13.24	0.00	49.58	73.98	-24.40
	17475.00	Peak	٧	102	22	-69.70	20.06	0.00	57.36	68.20	-10.84
	23300.00	Peak	٧	-	-	-61.19	9.39	-9.54	45.66	68.20	-22.54
	29125.00	Peak	V	-	-	-49.73	-6.06	-9.54	41.67	68.20	-26.53

Table 7-69. Radiated Measurements MIMO/CDD

802.11a Worst Case Mode:

6Mbps Worst Case Transfer Rate:

1 & 3 Meters Distance of Measurements: 5825MHz Operating Frequency:

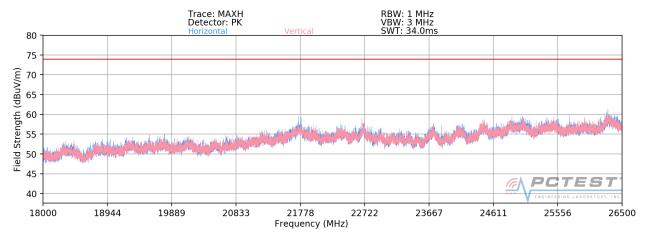
	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11650.00	Average	V	347	216	-83.31	13.24	0.00	36.93	53.98	-17.05
*	11650.00	Peak	٧	347	216	-71.24	13.24	0.00	49.00	73.98	-24.98
	17475.00	Peak	٧	-	-	-70.04	20.06	0.00	57.02	68.20	-11.18
	23300.00	Peak	٧	-	-	-62.04	9.39	-9.54	44.81	68.20	-23.39
	29125.00	Peak	٧	-	-	-50.22	-6.06	-9.54	41.18	68.20	-27.02

Table 7-70. Radiated Measurements MIMO/CDD with WCP

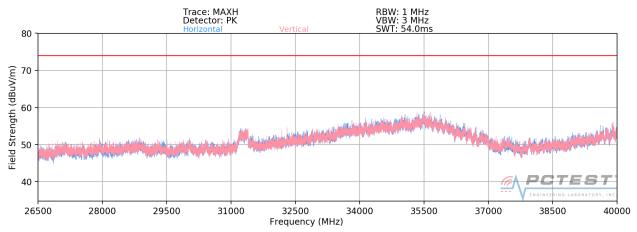
FCC ID: A3LSMG981U	PCTEST INGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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MIMO/CDD Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-281. Radiated Spurious Plot above 18GHz - 26.5GHz MIMO/CDD (802.11a)



Plot 7-282. Radiated Spurious Plot 26.5GHz - 40GHz MIMO/CDD (802.11a)

FCC ID: A3LSMG981U	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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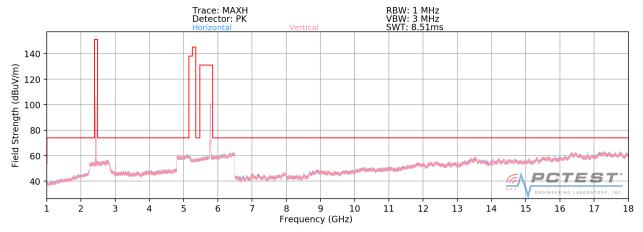
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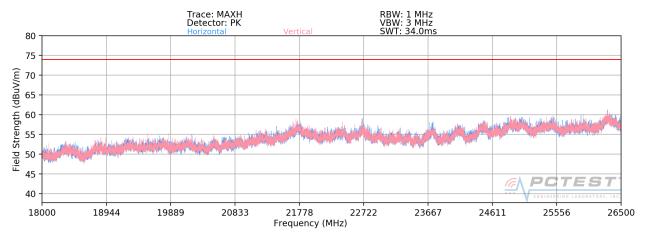
7.5.4 Simultaneous Tx Radiated Spurious Emissions Measurements §15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Description	2.4 GHz Emission	5 GHz Emission
Antenna	1	2
Channel	6	40
Operating Frequency (MHz)	2437	5200
Data Rate (Mbps)	1	MCS0
Mode	802.11b	802.11n

Table 7-71. Simultaneous Transmission Config-1



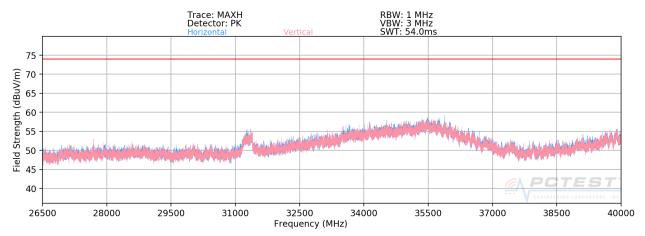
Plot 7-283. Radiated Spurious Plot above 1GHz (2.4GHz - 5GHz)



Plot 7-284. Radiated Spurious Plot 18GHz - 26.5GHz (2.4GHz - 5GHz)

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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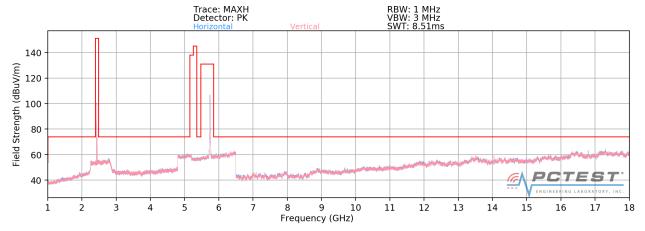
Plot 7-285. Radiated Spurious Plot above 26.5GHz (2.4GHz - 5GHz)

FCC ID: A3LSMG981U	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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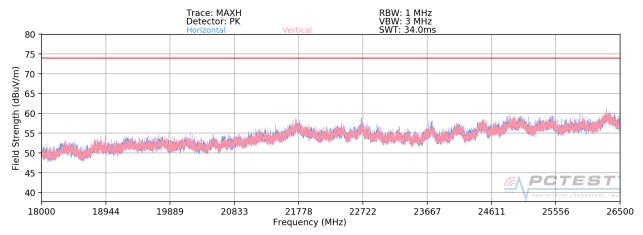


Description	2.4 GHz Emission	5 GHz Emission
Antenna	2	1
Channel	6	120
Operating Frequency (MHz)	2437	5600
Data Rate (Mbps)	1	MCS0
Mode	802.11b	802.11n

Table 7-72. Simultaneous Transmission Config-2



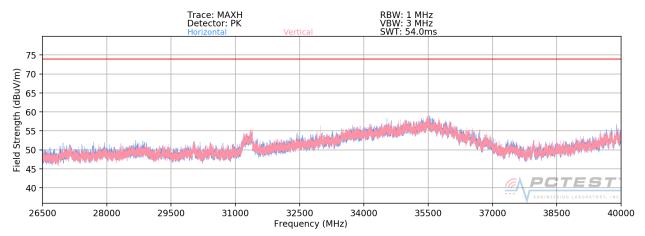
Plot 7-286. Radiated Spurious Plot above 1GHz (5GHz – 2.4 GHz)



Plot 7-287. Radiated Spurious Plot 18GHz - 26.5GHz (5GHz - 2.4 GHz)

FCC ID: A3LSMG981U	PCTEST INGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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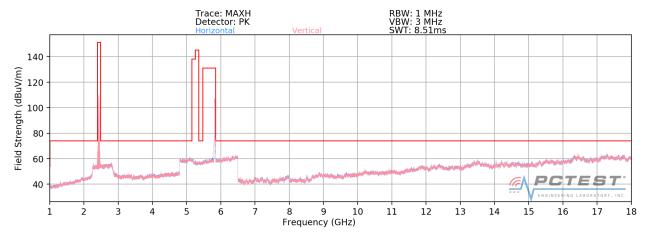
Plot 7-288. Radiated Spurious Plot above 26.5GHz (5GHz - 2.4 GHz)

FCC ID: A3LSMG981U	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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Description	2.4 GHz Emission	5 GHz Emission
Antenna	1, 2	1, 2
Channel	6	36
Operating Frequency (MHz)	2437	5180
Data Rate (Mbps)	MCS8	MCS8
Mode	802.11n	802.11n

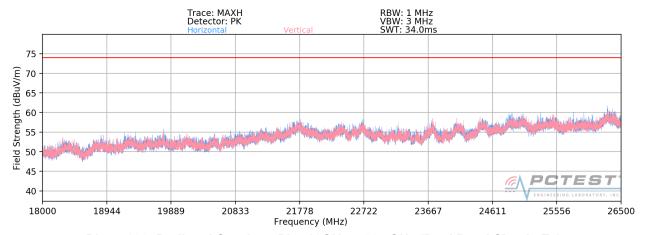
Table 7-73. Dual Band Simultaneous Transmission



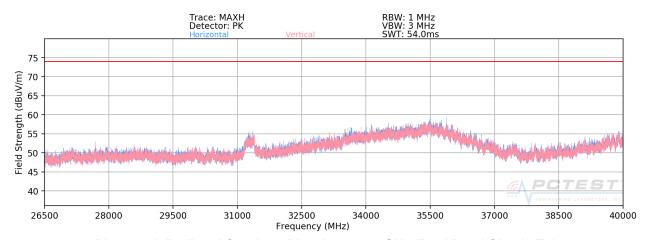
Plot 7-289. Radiated Spurious Plot above 1GHz (Dual Band Simult. Tx)

FCC ID: A3LSMG981U	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Plot 7-290. Radiated Spurious Plot 18GHz - 26.5GHz (Dual Band Simult. Tx)



Plot 7-291. Radiated Spurious Plot above 26.5GHz (Dual Band Simult. Tx)

FCC ID: A3LSMG981U	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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7.5.5 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]

Worst Case Mode:
Worst Case Transfer Rate:
Distance of Measurements:
Operating Frequency:
Channel:

802.11ax

MCS0

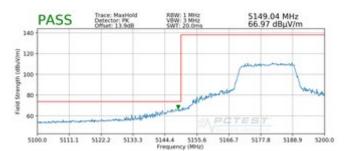
3 Meters

5180MHz

36



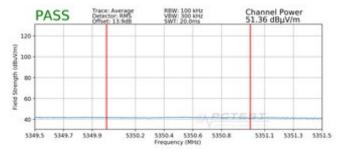
Plot 7-292. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1)



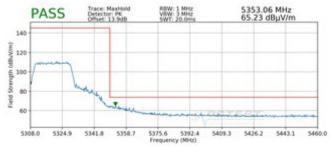
Plot 7-293. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1)

Worst Case Mode:
Worst Case Transfer Rate:
Distance of Measurements:
Operating Frequency:
Channel:

802.11ax
MCS0
3 Meters
5320MHz
64



Plot 7-294. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A)



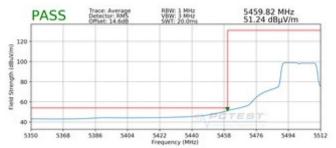
Plot 7-295. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A)

FCC ID: A3LSMG981U	PCTEST INGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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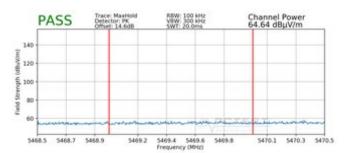


Worst Case Mode:
Worst Case Transfer Rate:
Distance of Measurements:
Operating Frequency:
Channel:

802.11ax
MCS0
3 Meters
5500MHz
100



Plot 7-296. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C)



Plot 7-297. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C)

Worst Case Mode:

Worst Case Transfer Rate:

Distance of Measurements:

Operating Frequency:

Channel:

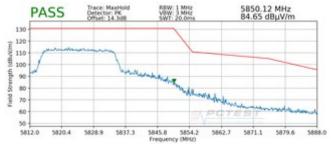
802.11ax

MCS0

3 Meters

5825MHz

165



Plot 7-298. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3)

FCC ID: A3LSMG981U	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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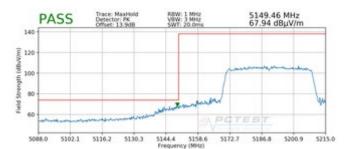
7.5.6 SISO Antenna-1 Radiated Band Edge Measurements (40MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

Worst Case Mode:
Worst Case Transfer Rate:
Distance of Measurements:
Operating Frequency:
Channel:

802.11ax
MCS0
3 Meters
5190MHz
38

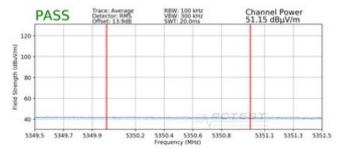


Plot 7-299. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1)

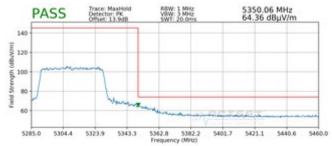


Plot 7-300. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1)

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



Plot 7-301. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A)



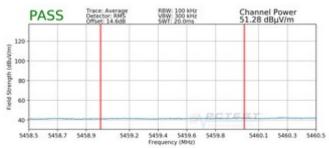
Plot 7-302. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A)

FCC ID: A3LSMG981U	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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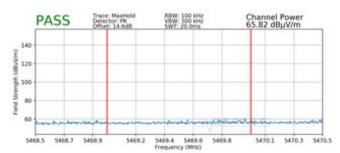


Worst Case Mode:
Worst Case Transfer Rate:
Distance of Measurements:
Operating Frequency:
Channel:

802.11ax
MCS0
3 Meters
5510MHz
102



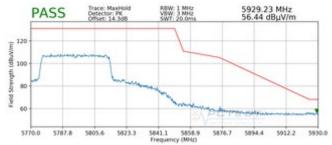
Plot 7-303. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C)



Plot 7-304. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C)

Worst Case Mode:
Worst Case Transfer Rate:
Distance of Measurements:
Operating Frequency:
Channel:

802.11ax
MCS0
3 Meters
5795MHz
159



Plot 7-305. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3)

FCC ID: A3LSMG981U	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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