

Antenna-2 Power Spectral Density Measurements

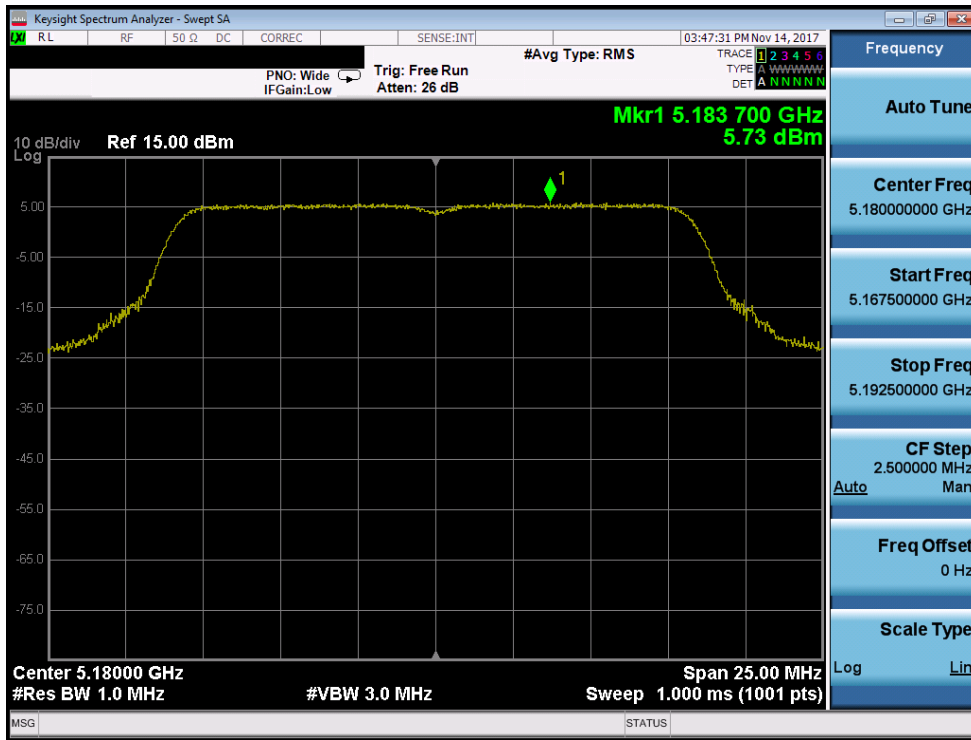
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Power Density Limit [dBm/MHz]	Power Density Margin [dB]
Band 1	5180	36	a	6	5.73	11.0	-5.27
	5200	40	a	6	5.73	11.0	-5.27
	5240	48	a	6	6.05	11.0	-4.95
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	4.66	11.0	-6.34
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	5.40	11.0	-5.60
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	5.65	11.0	-5.35
	5190	38	n (40MHz)	13.5/15 (MCS0)	-2.23	11.0	-13.23
	5230	46	n (40MHz)	13.5/15 (MCS0)	2.41	11.0	-8.59
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-1.10	11.0	-12.10
Band 2A	5260	52	a	6	6.29	11.0	-4.72
	5280	56	a	6	6.16	11.0	-4.84
	5320	64	a	6	6.39	11.0	-4.61
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	6.16	11.0	-4.84
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	5.76	11.0	-5.24
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	5.81	11.0	-5.19
	5270	54	n (40MHz)	13.5/15 (MCS0)	2.21	11.0	-8.79
	5310	62	n (40MHz)	13.5/15 (MCS0)	2.11	11.0	-8.89
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-1.08	11.0	-12.08
Band 2C	5500	100	a	6	6.41	11.0	-4.59
	5580	116	a	6	-5.71	11.0	-16.71
	5720	144	a	6	6.35	11.0	-4.66
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	5.75	11.0	-5.25
	5580	116	n (20MHz)	6.5/7.2 (MCS0)	-6.03	11.0	-17.03
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	6.04	11.0	-4.96
	5510	102	n (40MHz)	13.5/15 (MCS0)	2.31	11.0	-8.69
	5550	110	n (40MHz)	13.5/15 (MCS0)	-8.93	11.0	-19.93
	5710	142	n (40MHz)	13.5/15 (MCS0)	2.24	11.0	-8.76
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-0.60	11.0	-11.60
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-3.93	11.0	-14.93

Table 7-21. Bands 1, 2A, 2C Conducted Power Spectral Density Measurements

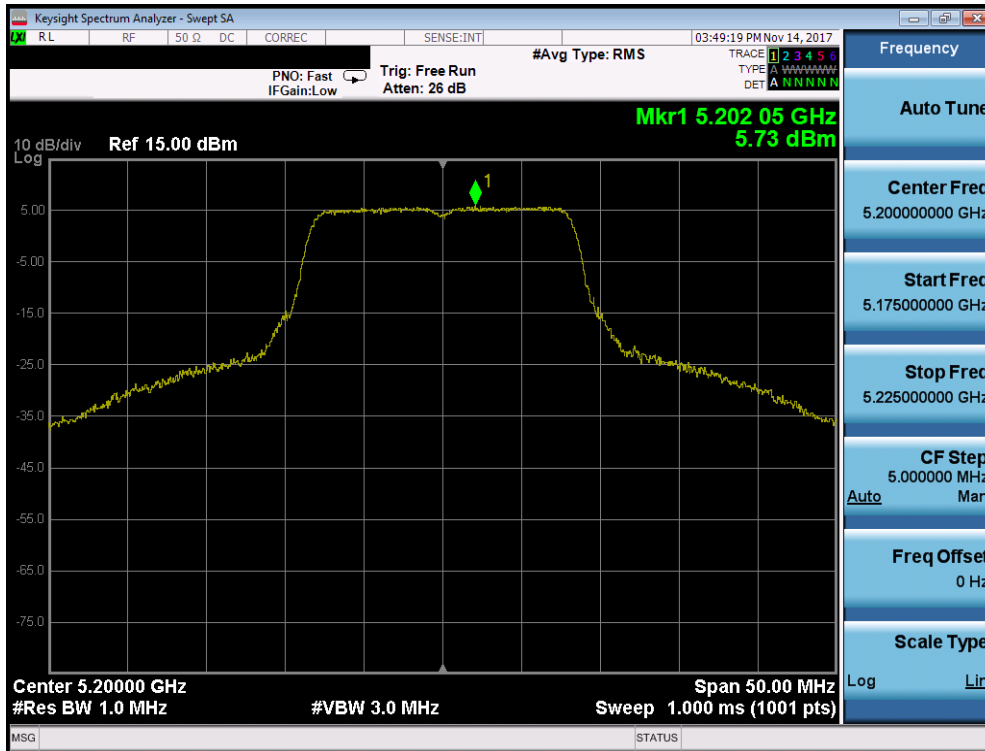
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Antenna Gain [dBi]	e.i.r.p. Power Density [dBm/MHz]	Max e.i.r.p. Power Density Limit [dBm/MHz]	e.i.r.p. Power Density Margin [dB]
Band 1	5180	36	a	6	5.73	-7.95	-2.22	10.0	-12.22
	5200	40	a	6	5.73	-7.95	-2.22	10.0	-12.22
	5240	48	a	6	6.05	-7.95	-1.90	10.0	-11.90
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	4.66	-7.95	-3.29	10.0	-13.29
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	5.40	-7.95	-2.55	10.0	-12.55
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	5.65	-7.95	-2.30	10.0	-12.30
	5190	38	n (40MHz)	13.5/15 (MCS0)	-2.23	-7.95	-10.18	10.0	-20.18
	5230	46	n (40MHz)	13.5/15 (MCS0)	2.41	-7.95	-5.54	10.0	-15.54
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-1.10	-7.95	-9.05	10.0	-19.05

Table 7-22. Band 1 e.i.r.p. Power Spectral Density Measurements

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 86 of 200	

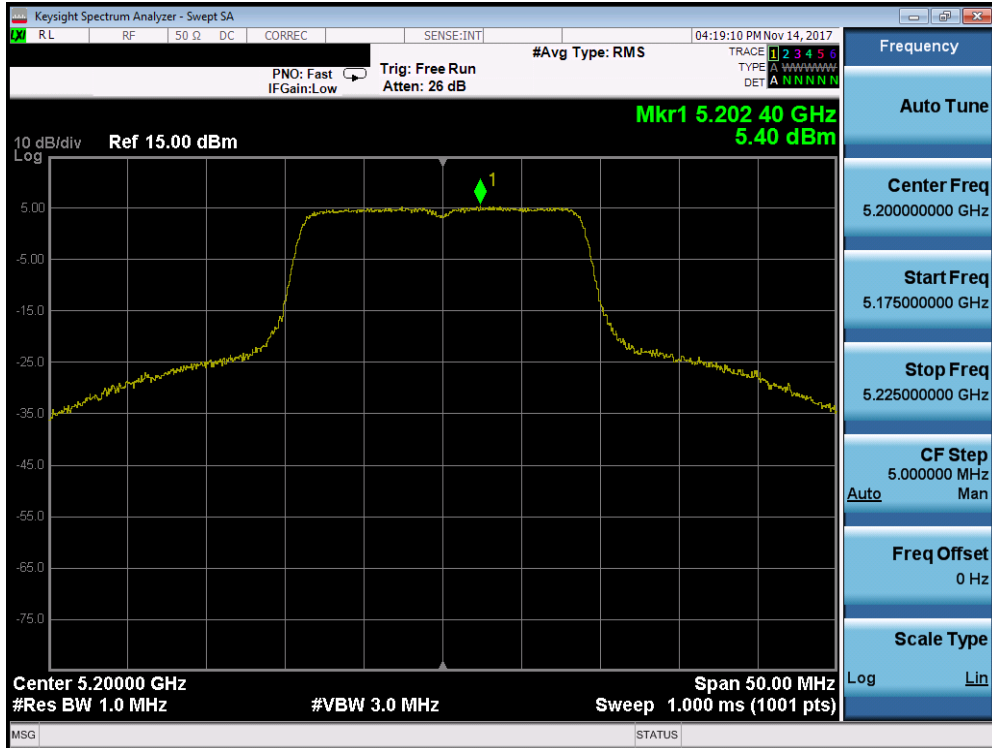


Plot 7-115. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 36)

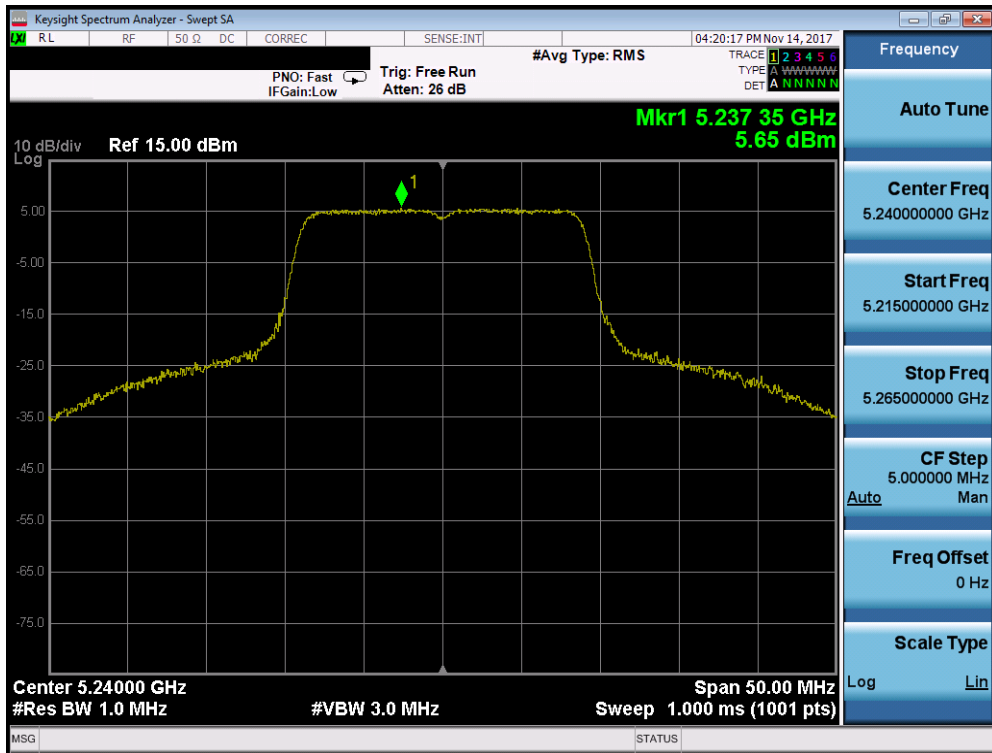


Plot 7-116. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 40)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2-A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 87 of 200

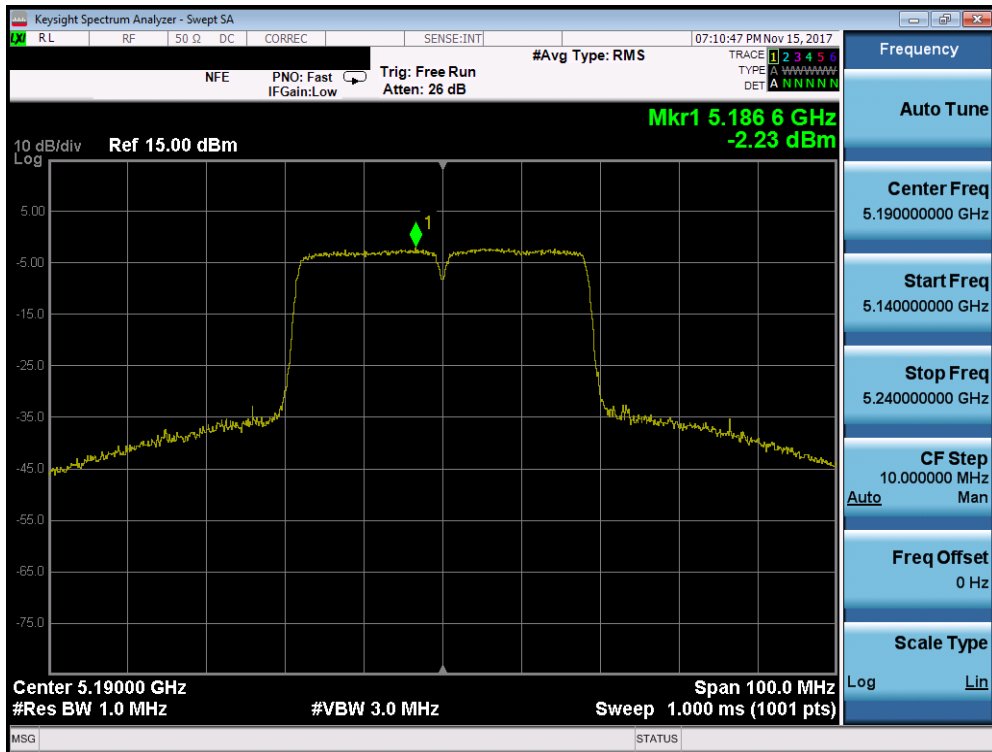


Plot 7-119. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

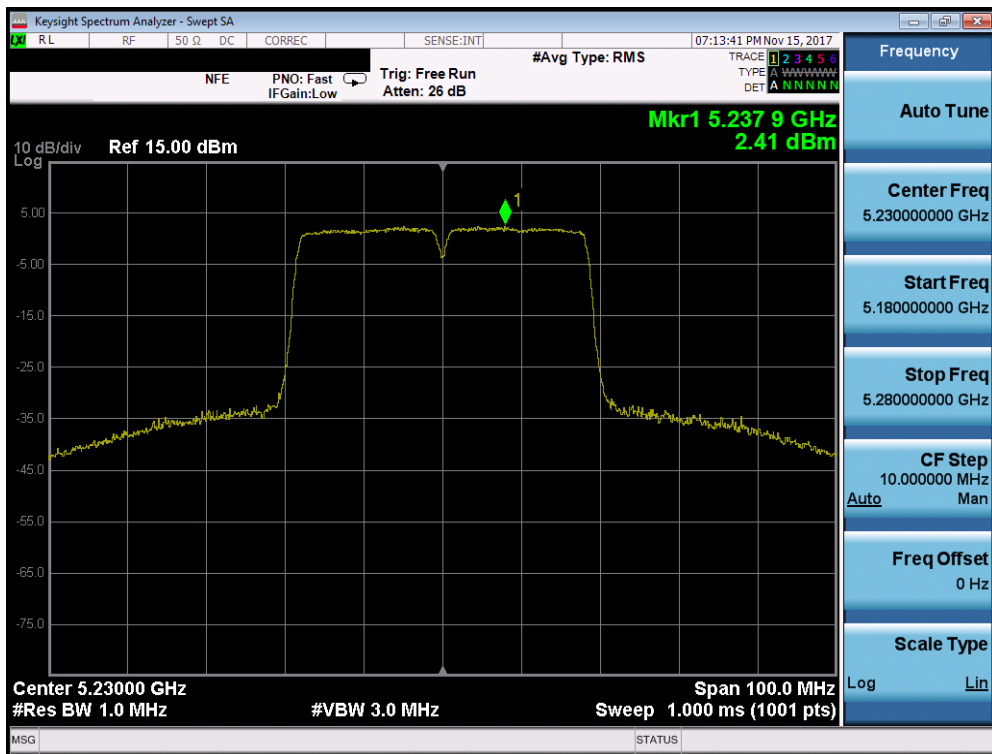


Plot 7-120. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 89 of 200

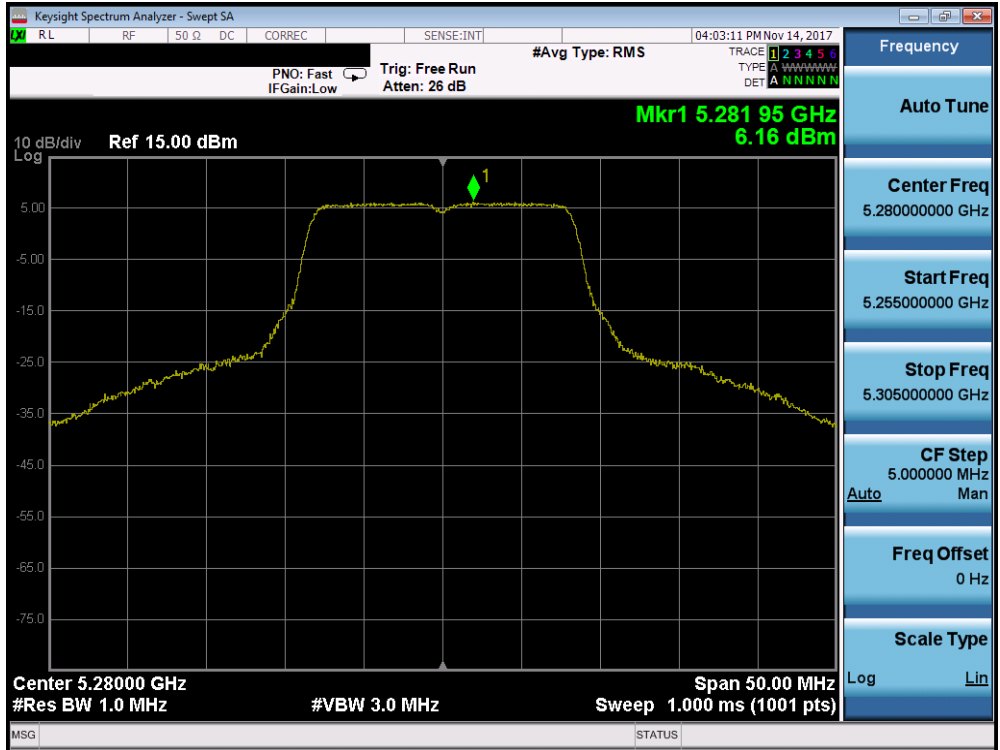


Plot 7-121. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

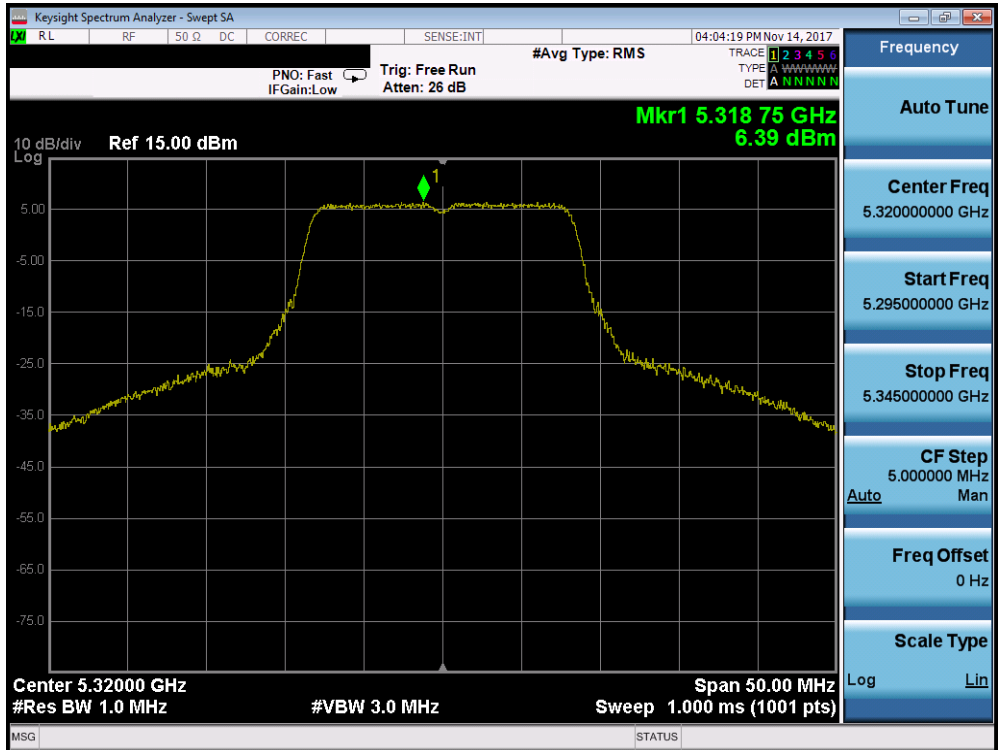


Plot 7-122. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 90 of 200

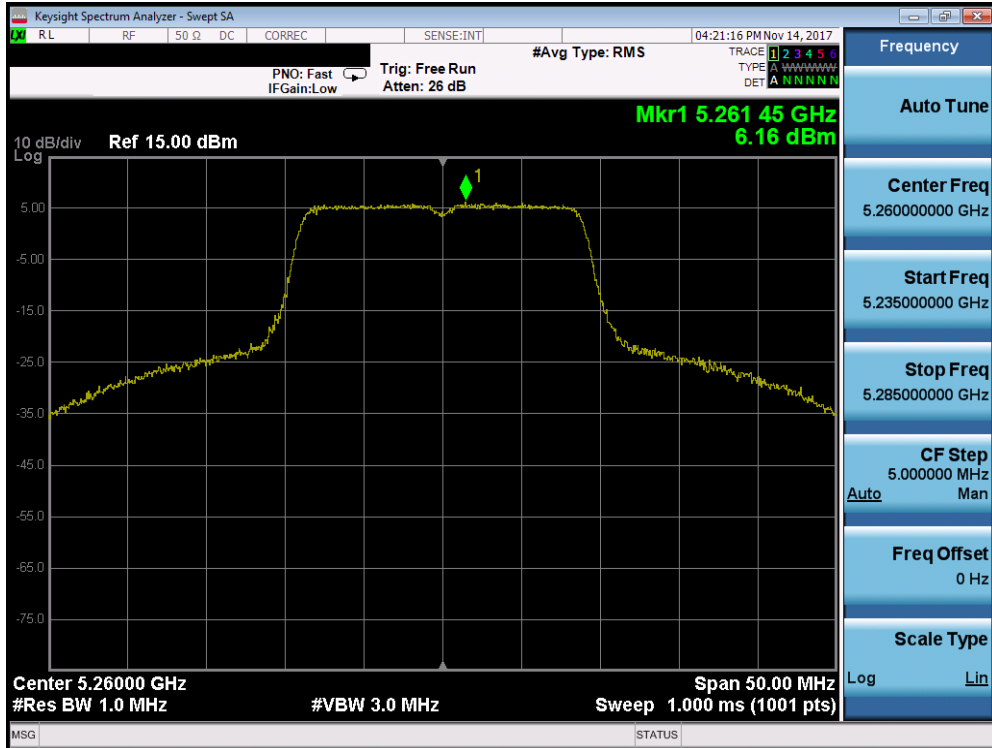


Plot 7-125. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 56)

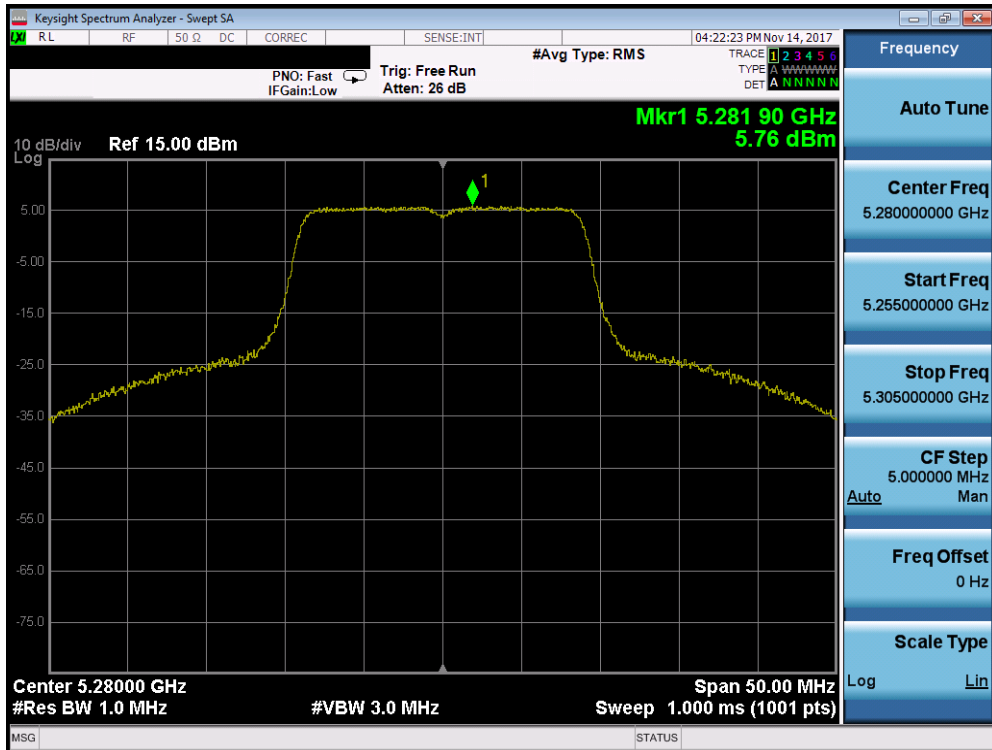


Plot 7-126. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 64)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 92 of 200

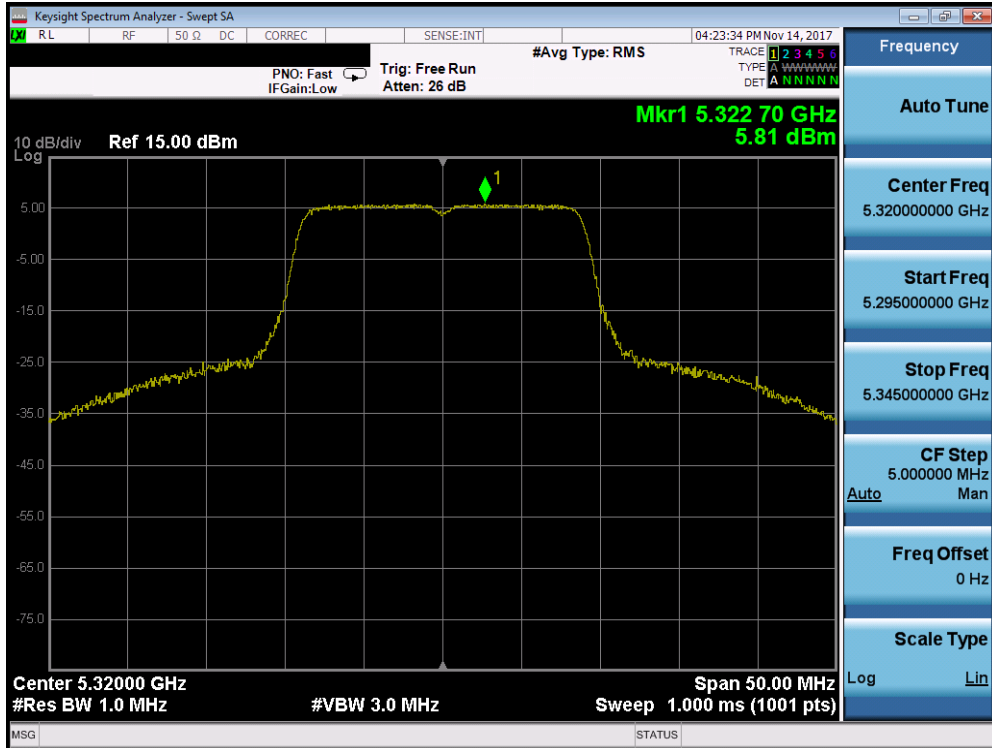


Plot 7-127. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

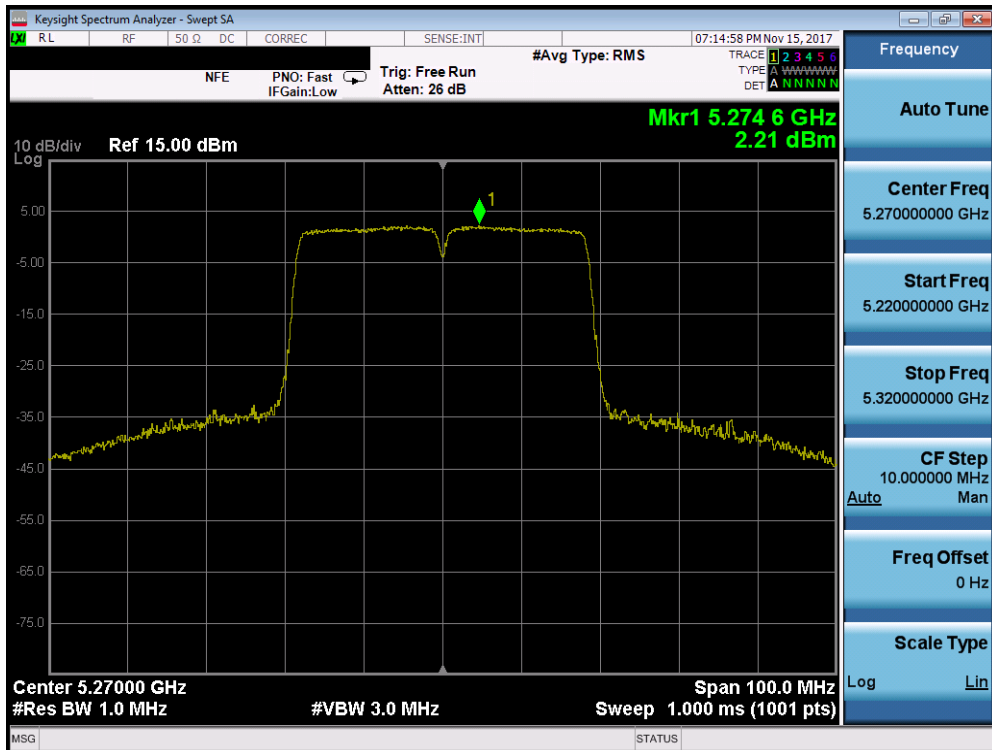


Plot 7-128. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 93 of 200

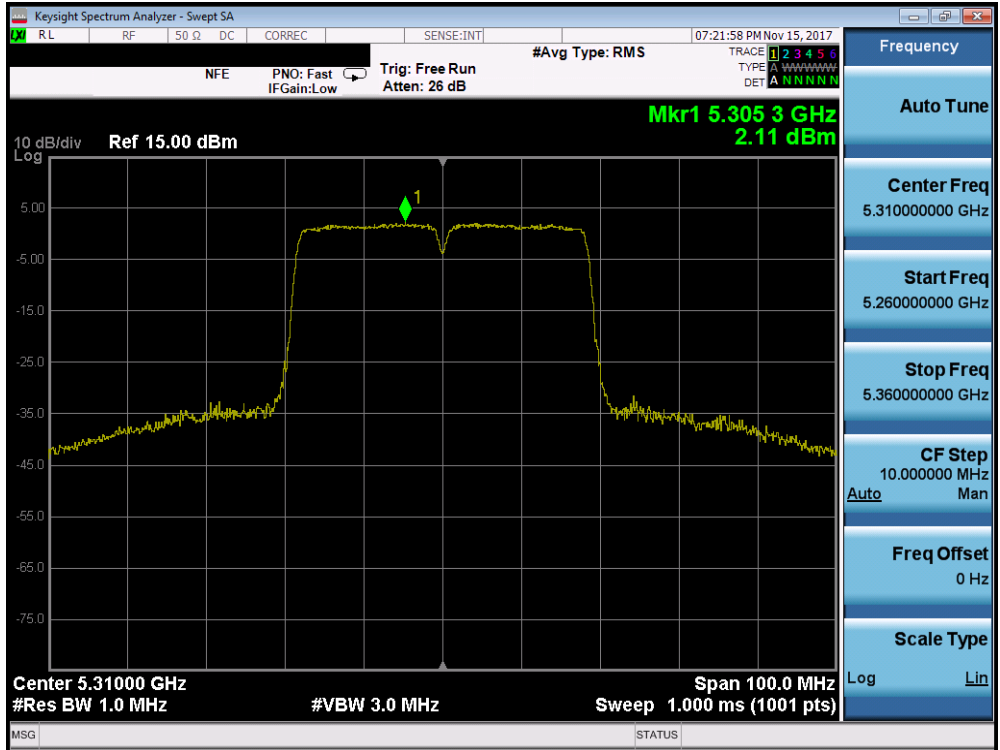


Plot 7-129. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

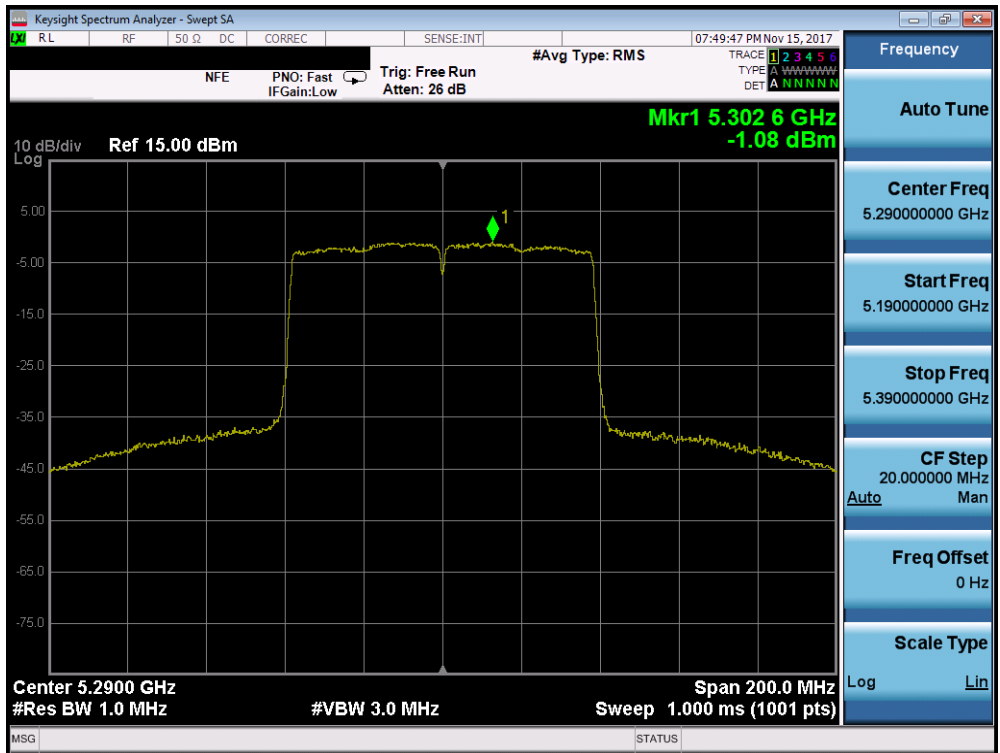


Plot 7-130. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 94 of 200

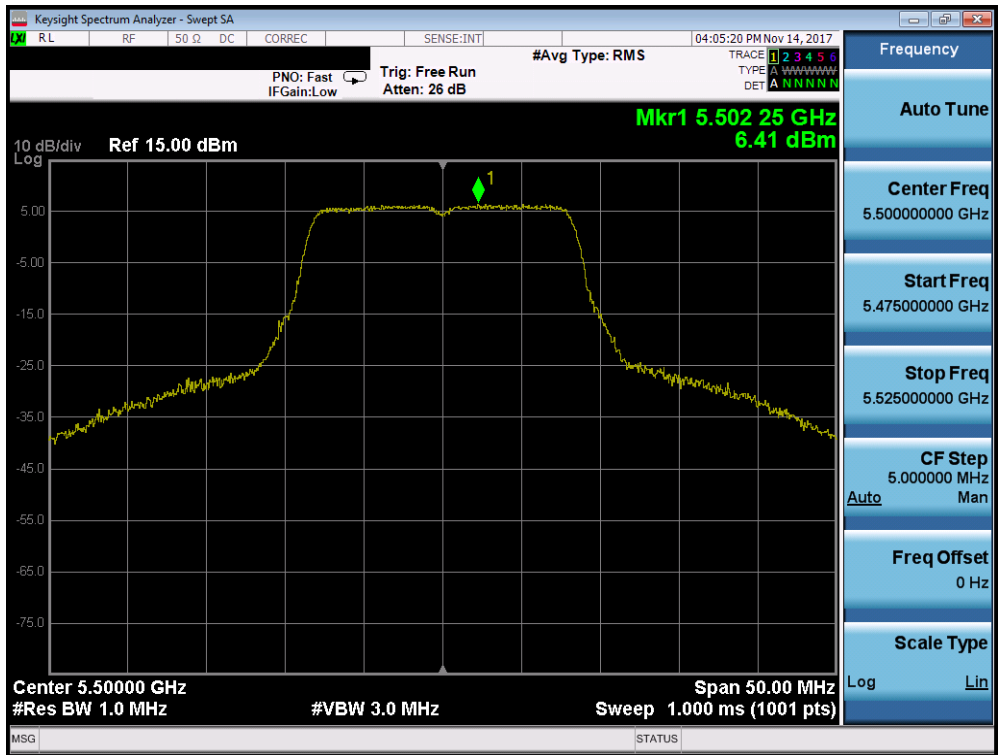


Plot 7-131. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

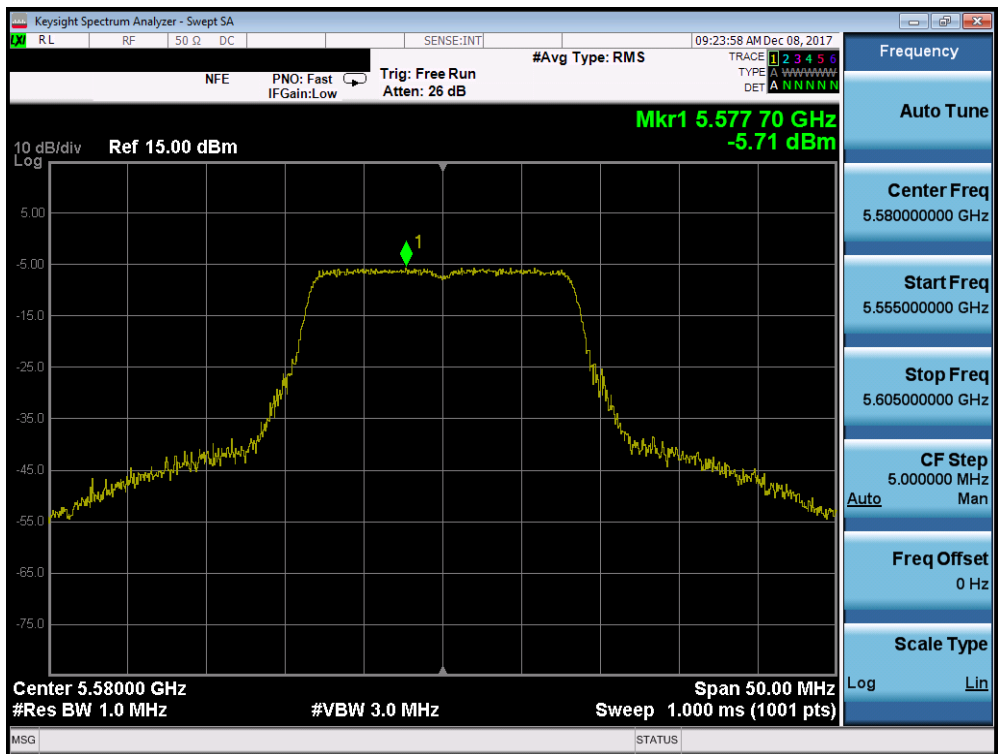


Plot 7-132. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 95 of 200

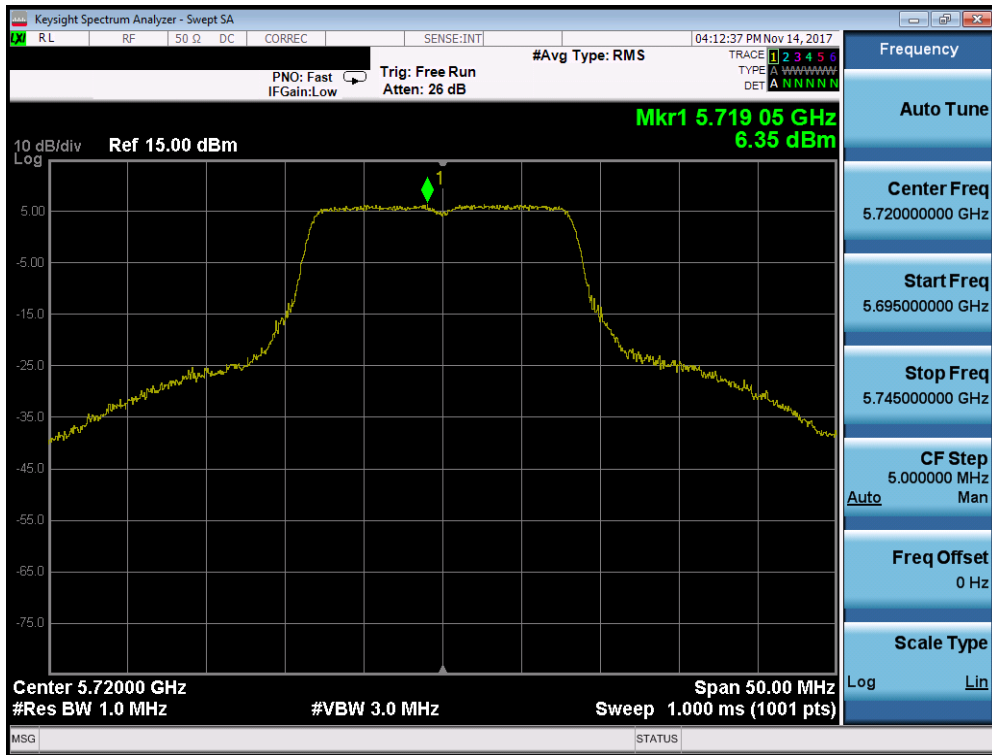


Plot 7-133. Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 100)

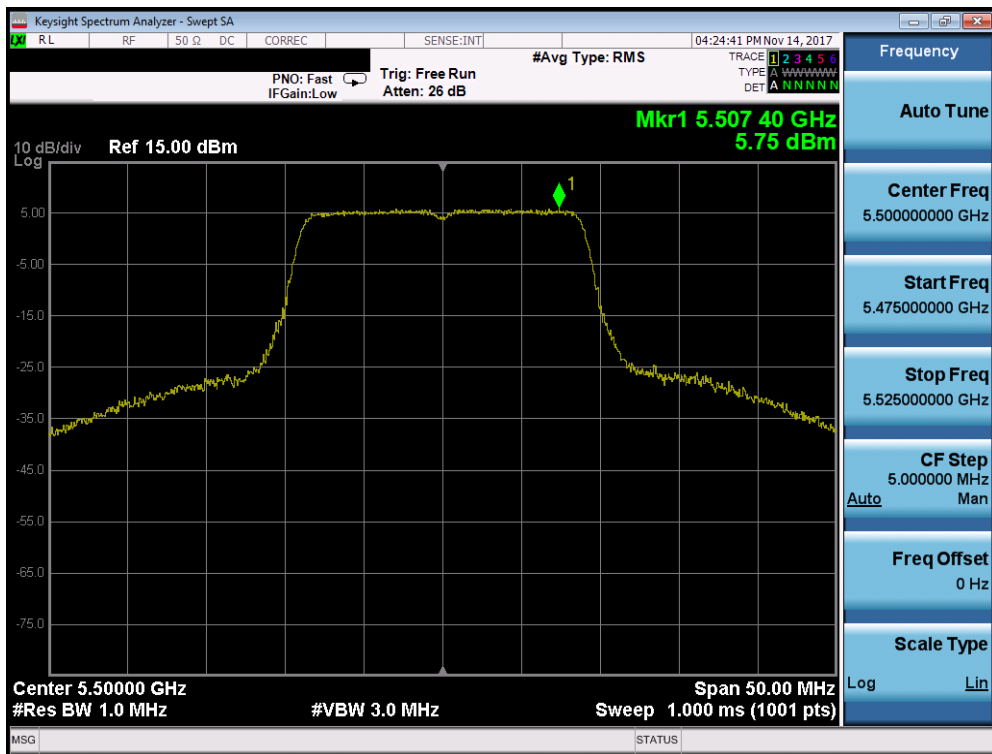


Plot 7-134. Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 116)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2-A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 96 of 200

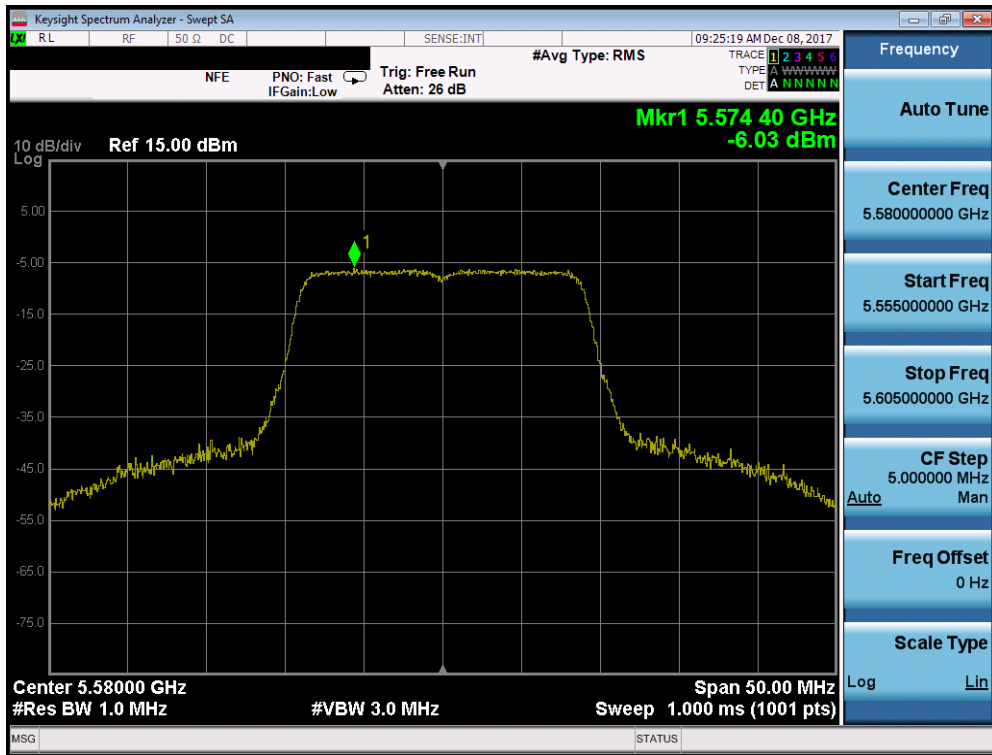


Plot 7-135. Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 144)

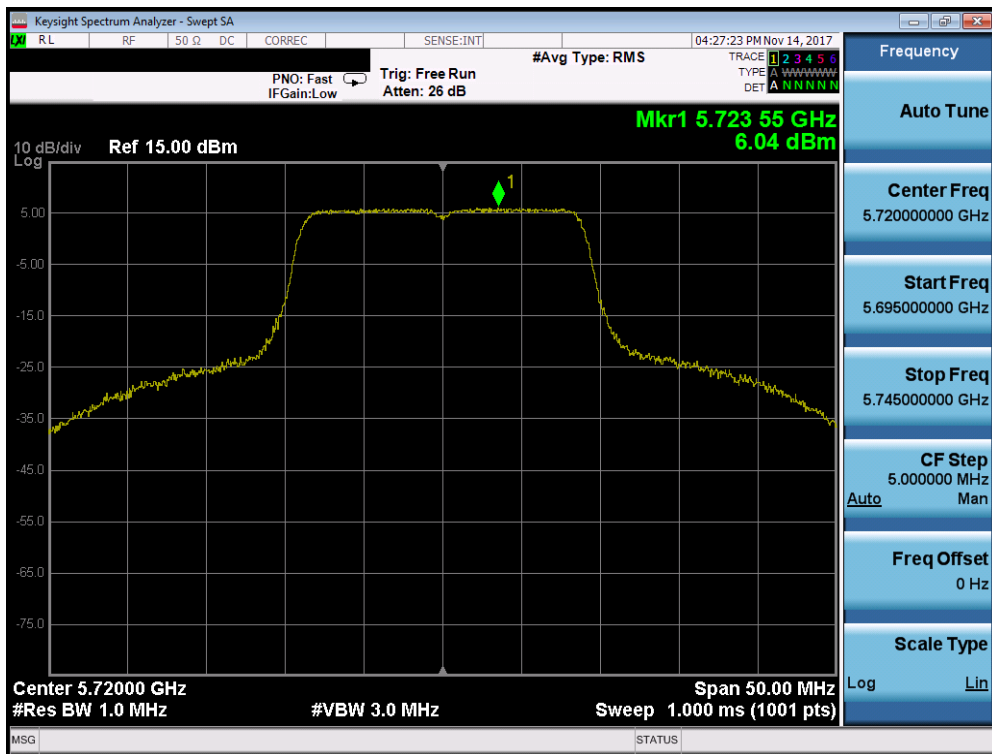


Plot 7-136. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 97 of 200

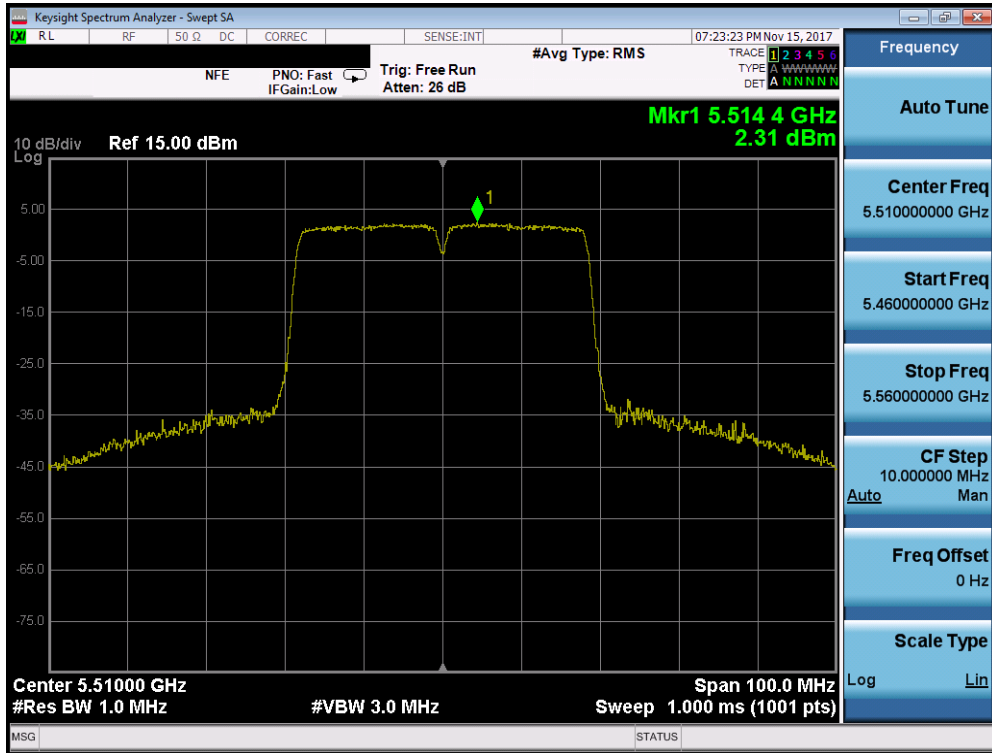


Plot 7-137. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 116)

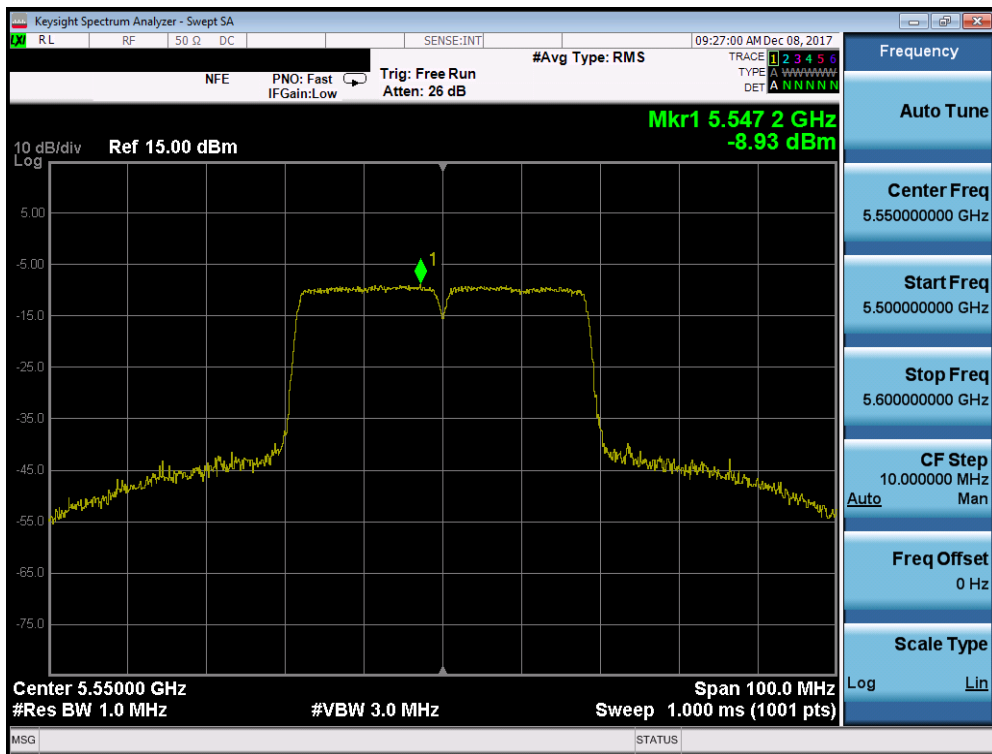


Plot 7-138. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 144)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 98 of 200

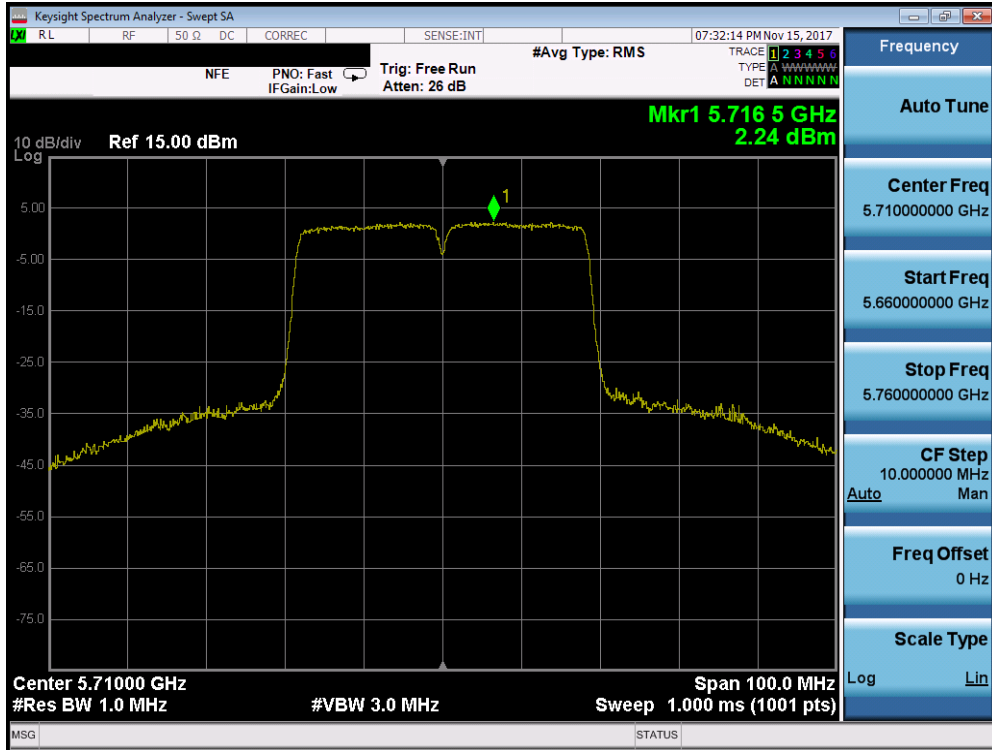


Plot 7-139. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

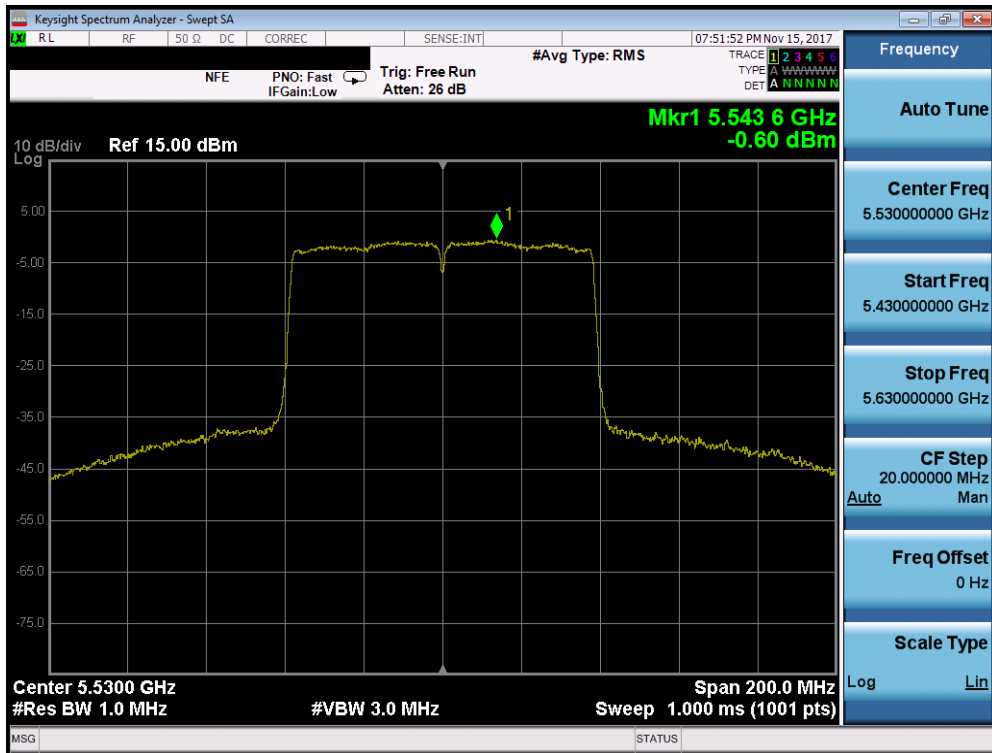


Plot 7-140. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 110)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2-A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 99 of 200

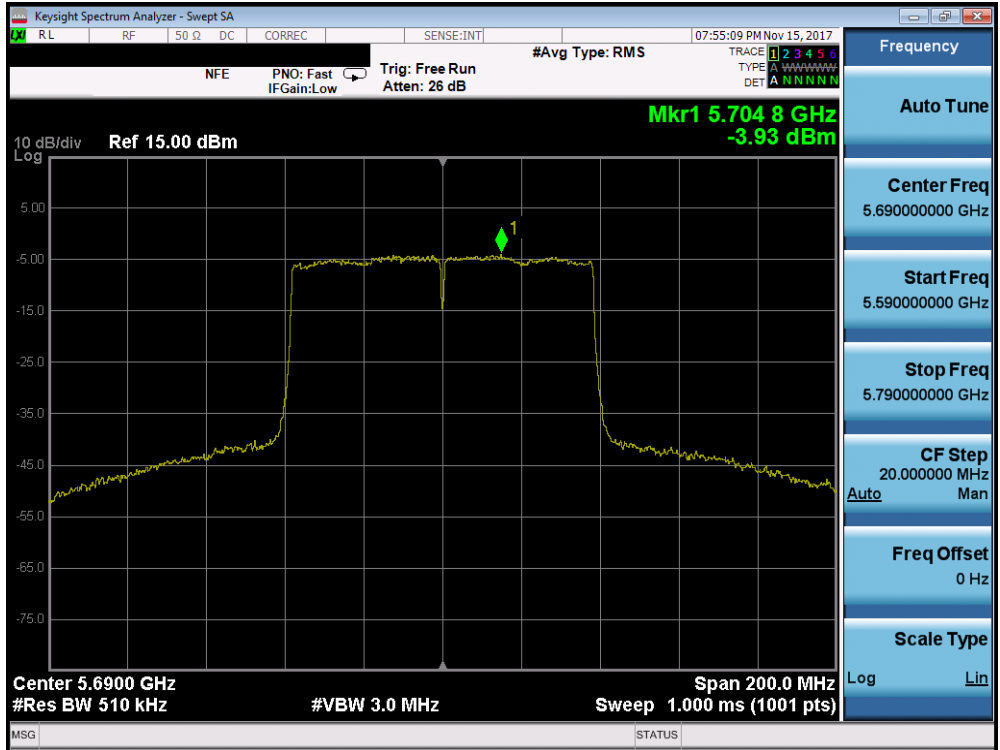


Plot 7-141. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)



Plot 7-142. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 100 of 200

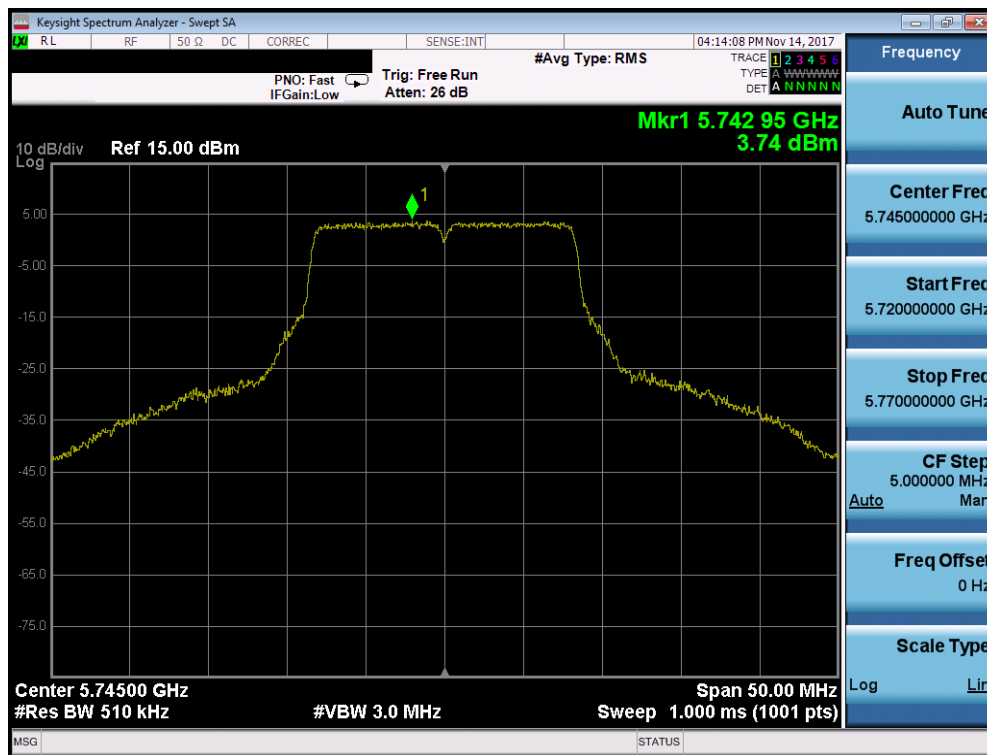


Plot 7-143. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 138)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 101 of 200

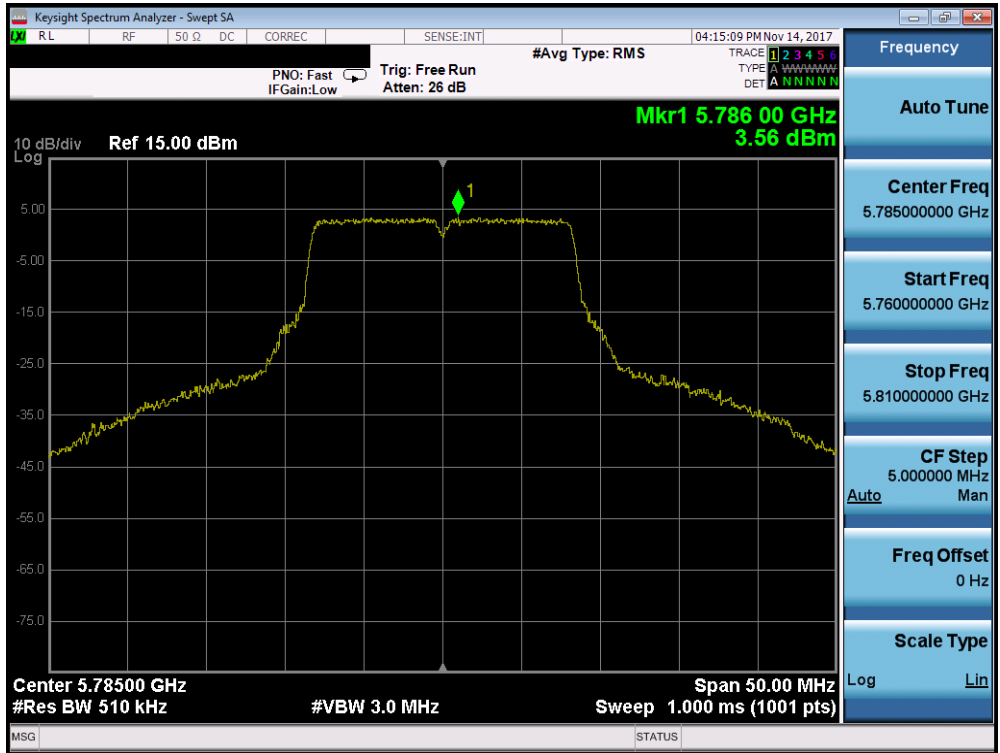
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
Band 3	5745	149	a	6	3.74	30.0	-26.26
	5785	157	a	6	3.56	30.0	-26.44
	5825	165	a	6	3.14	30.0	-26.86
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	3.79	30.0	-26.21
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	3.03	30.0	-26.97
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	2.64	30.0	-27.36
	5755	151	n (40MHz)	13.5/15 (MCS0)	-0.27	30.0	-30.27
	5795	159	n (40MHz)	13.5/15 (MCS0)	-0.68	30.0	-30.68
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-0.61	30.0	-30.61

Table 7-23. Band 3 Conducted Power Spectral Density Measurements

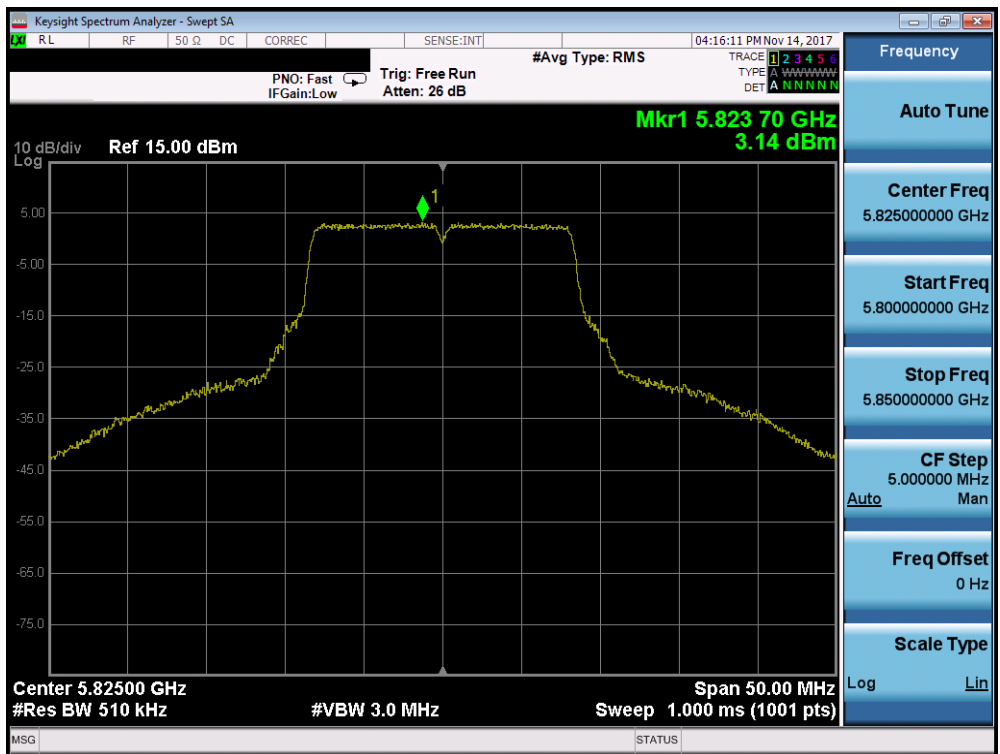


Plot 7-144. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 149)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2-A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 102 of 200

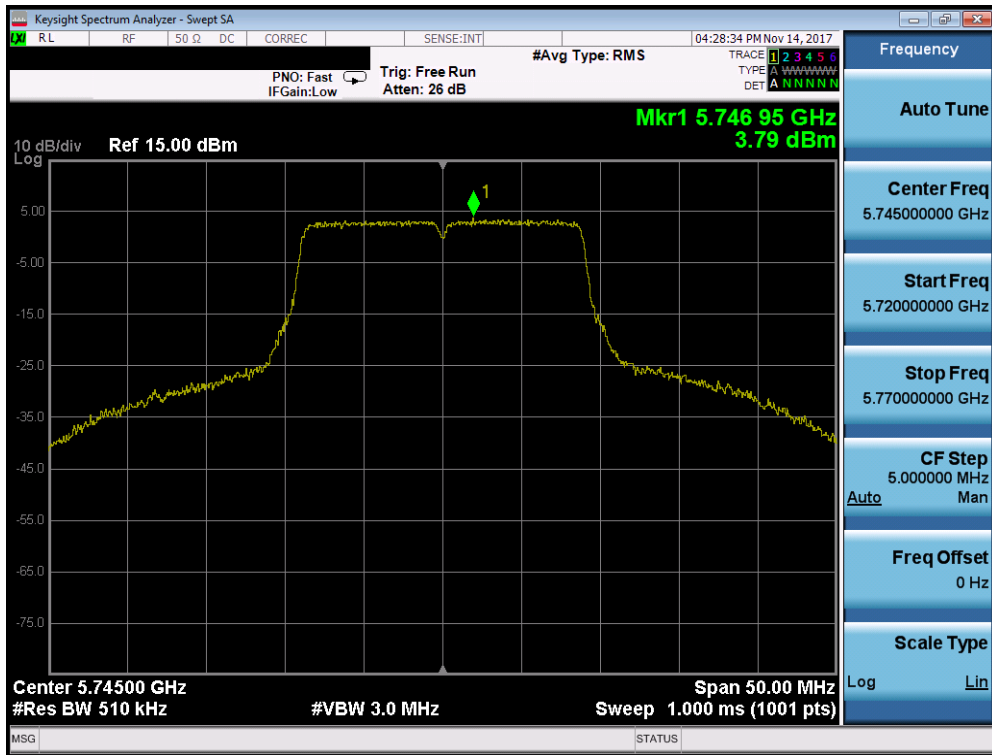


Plot 7-145. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 157)

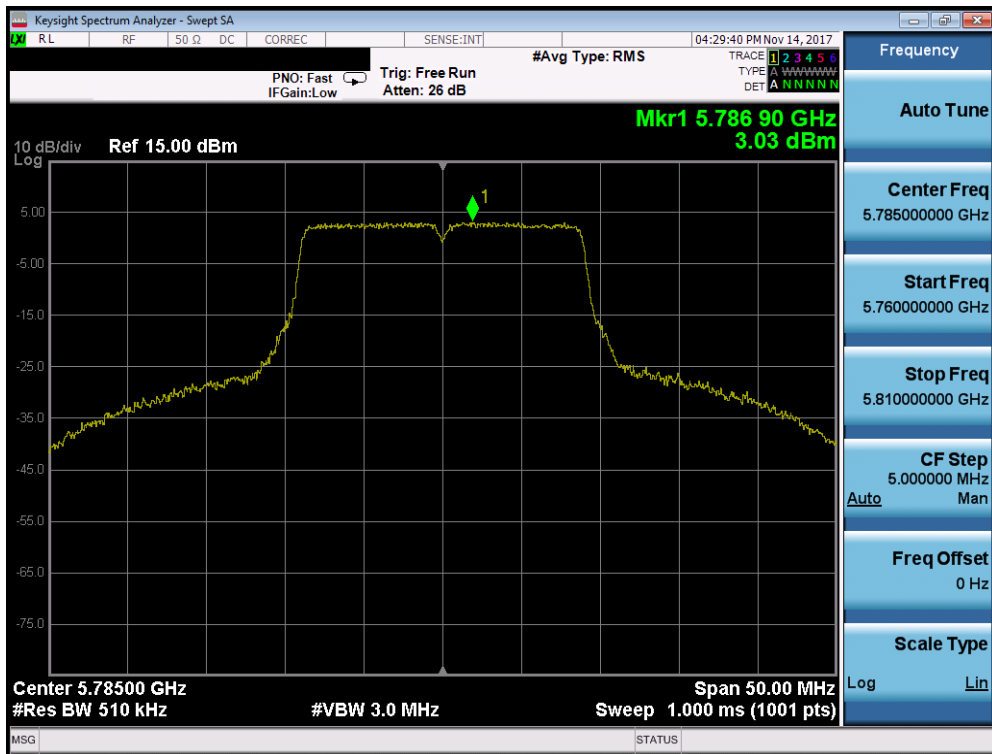


Plot 7-146. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 165)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 103 of 200

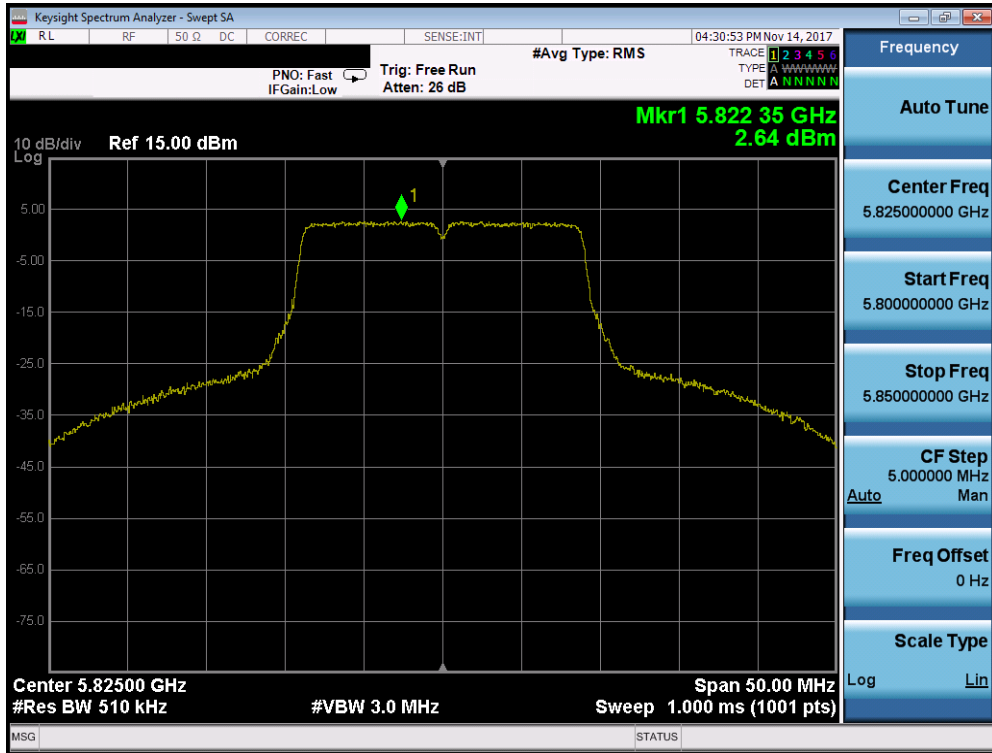


Plot 7-147. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

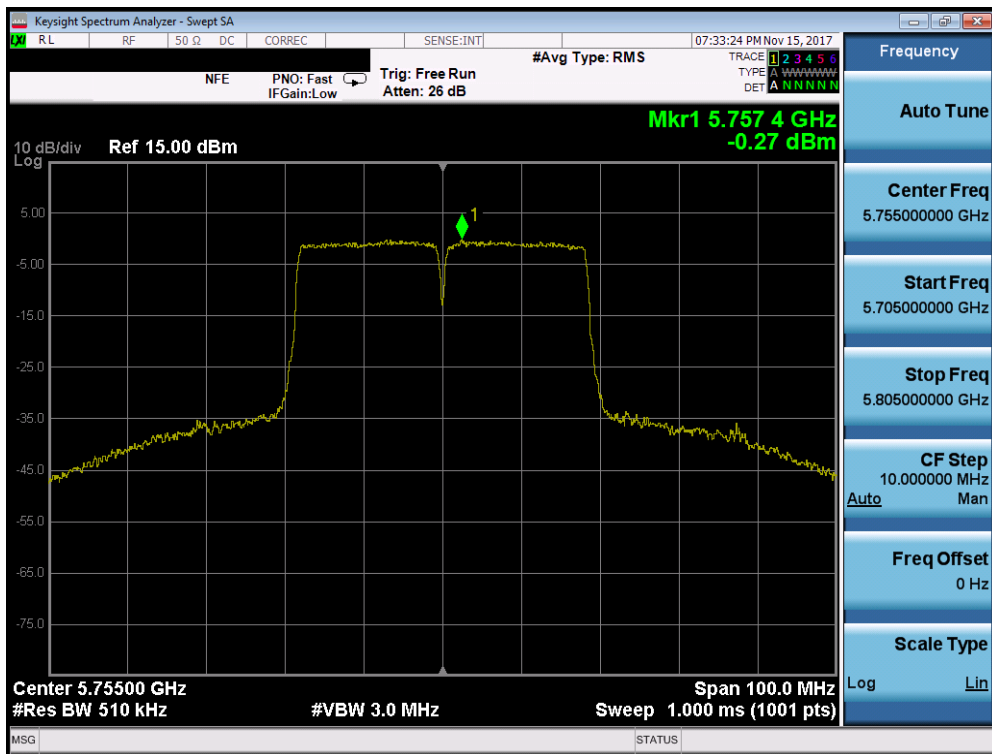


Plot 7-148. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 104 of 200

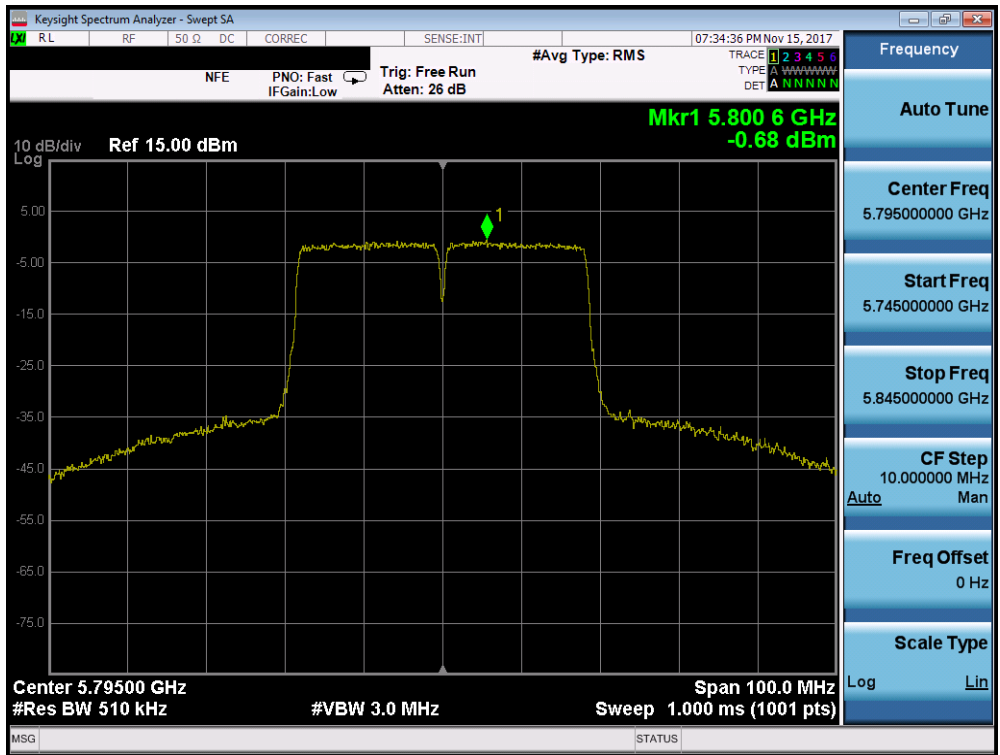


Plot 7-149. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

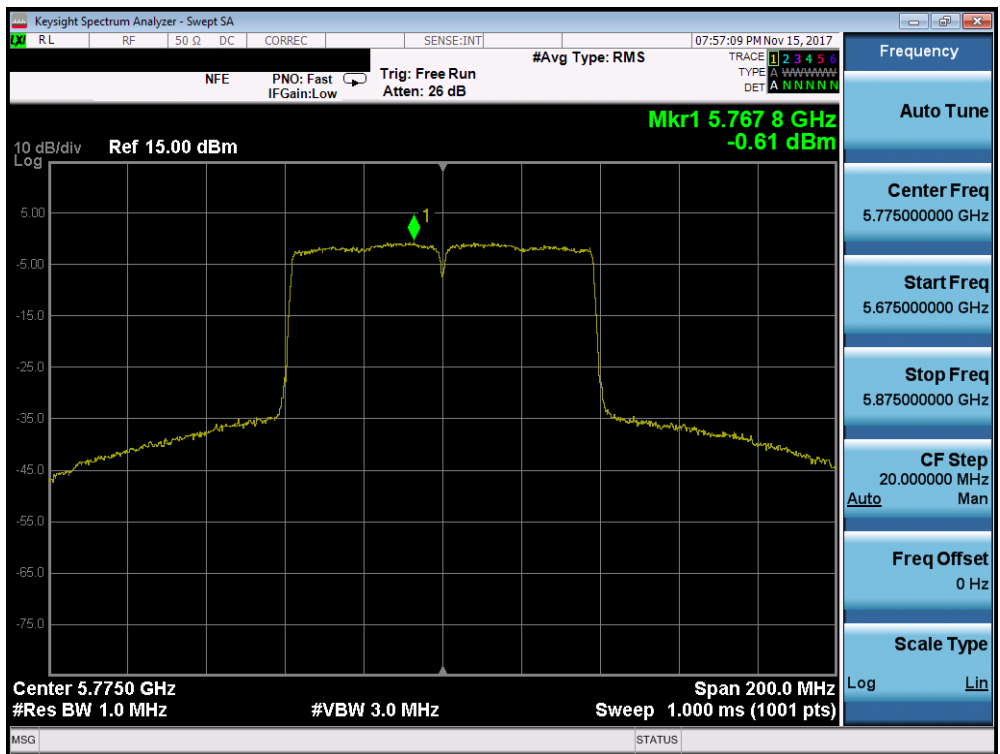


Plot 7-150. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2-A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 105 of 200



Plot 7-151. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 161)



Plot 7-152. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2-A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 106 of 200

Summed MIMO/CDD Power Spectral Density Measurements

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO/CDD Power Density [dBm]	Max Power Density Limit [dBm/MHz]	Power Density Margin [dB]
Band 1	5180	36	a	6.5/7.2 (MCS0)	6.75	5.73	9.28	11.0	-1.72
	5200	40	a	6.5/7.2 (MCS0)	6.12	5.73	8.94	11.0	-2.06
	5240	48	a	6.5/7.2 (MCS0)	6.44	6.05	9.26	11.0	-1.74
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	5.61	4.66	8.17	11.0	-2.83
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	5.72	5.40	8.57	11.0	-2.43
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	5.98	5.65	8.82	11.0	-2.18
	5190	38	n (40MHz)	13.5/15 (MCS0)	2.15	-2.23	3.50	11.0	-7.50
	5230	46	n (40MHz)	13.5/15 (MCS0)	2.06	2.41	5.25	11.0	-5.75
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-0.91	-1.10	2.01	11.0	-8.99
Band 2A	5260	52	a	6.5/7.2 (MCS0)	6.57	6.29	9.44	11.0	-1.56
	5280	56	a	6.5/7.2 (MCS0)	6.58	6.16	9.39	11.0	-1.61
	5320	64	a	6.5/7.2 (MCS0)	6.50	6.39	9.46	11.0	-1.54
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	6.06	6.16	9.12	11.0	-1.88
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	6.07	5.76	8.93	11.0	-2.07
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	6.05	5.81	8.94	11.0	-2.06
	5270	54	n (40MHz)	13.5/15 (MCS0)	1.90	2.21	5.07	11.0	-5.93
	5310	62	n (40MHz)	13.5/15 (MCS0)	1.99	2.11	5.06	11.0	-5.94
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-0.99	-1.08	1.98	11.0	-9.02
Band 2C	5500	100	a	6.5/7.2 (MCS0)	6.37	6.41	9.40	11.0	-1.60
	5580	116	a	6.5/7.2 (MCS0)	-6.12	-5.71	-2.90	11.0	-13.90
	5720	144	a	6.5/7.2 (MCS0)	5.90	6.35	9.14	11.0	-1.86
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	6.03	5.75	8.90	11.0	-2.10
	5580	116	n (20MHz)	6.5/7.2 (MCS0)	-6.48	-6.03	-3.24	11.0	-14.24
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	5.58	6.04	8.83	11.0	-2.17
	5510	102	n (40MHz)	13.5/15 (MCS0)	-9.18	2.31	2.61	11.0	-8.39
	5550	110	n (40MHz)	13.5/15 (MCS0)	-9.10	-8.93	-6.00	11.0	-17.00
	5710	142	n (40MHz)	13.5/15 (MCS0)	1.79	2.24	5.03	11.0	-5.97
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-0.47	-0.60	2.48	11.0	-8.52
5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-3.92	-3.93	-0.91	11.0	-11.91	

Table 7-24. Bands 1, 2A, 2C MIMO/CDD Conducted Power Spectral Density Measurements

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO/CDD Power Density [dBm]	Directional Gain [dBi]	e.i.r.p. Power Density [dBm/MHz]	Max e.i.r.p. Power Density Limit [dBm/MHz]	e.i.r.p. Power Density Margin [dB]
Band 1	5180	36	a	6.5/7.2 (MCS0)	6.75	5.73	9.28	-4.50	4.78	10.0	-5.22
	5200	40	a	6.5/7.2 (MCS0)	6.12	5.73	8.94	-4.50	4.44	10.0	-5.56
	5240	48	a	6.5/7.2 (MCS0)	6.44	6.05	9.26	-4.50	4.76	10.0	-5.24
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	5.61	4.66	8.17	-4.50	3.67	10.0	-6.33
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	5.72	5.40	8.57	-4.50	4.07	10.0	-5.93
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	5.98	5.65	8.82	-4.50	4.32	10.0	-5.68
	5190	38	n (40MHz)	13.5/15 (MCS0)	2.15	-2.23	3.50	-4.50	-1.00	10.0	-11.00
	5230	46	n (40MHz)	13.5/15 (MCS0)	2.06	2.41	5.25	-4.50	0.75	10.0	-9.25
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-0.91	-1.10	2.01	-4.50	-2.49	10.0	-12.49

Table 7-25. Band 1 MIMO/CDD e.i.r.p Power Spectral Density Measurements

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	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Antenn-1 Power Density [dBm]	Antenn-2 Power Density [dBm]	Summed MIMO/CDD Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
Band 3	5745	149	a	6.5/7.2 (MCS0)	3.37	3.74	6.57	30.0	-23.43
	5785	157	a	6.5/7.2 (MCS0)	3.69	3.56	6.64	30.0	-23.36
	5825	165	a	6.5/7.2 (MCS0)	2.95	3.14	6.06	30.0	-23.94
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	3.11	3.79	6.47	30.0	-23.53
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	3.15	3.03	6.10	30.0	-23.90
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	2.87	2.64	5.77	30.0	-24.23
	5755	151	n (40MHz)	13.5/15 (MCS0)	-0.57	-0.27	2.59	30.0	-27.41
	5795	159	n (40MHz)	13.5/15 (MCS0)	-0.89	-0.68	2.23	30.0	-27.77
5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-0.74	-0.61	2.33	30.0	-27.67	

Table 7-26. Band 3 MIMO/CDD Conducted Power Spectral Density Measurements

Note:

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 n th antenna and N_{ANT} , the total number of antennas used.

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

Sample MIMO Calculation:

At 5180MHz in 802.11n (20MHz BW) mode, the average conducted power spectral density was measured to be 5.61 dBm for Antenna-1 and 4.66 dBm for Antenna-2.

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

$$(5.61 \text{ dBm} + 4.66 \text{ dBm}) = (3.64 \text{ mW} + 2.92 \text{ mW}) = 6.57 \text{ mW} = 8.17 \text{ dBm}$$

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

At 5180MHz in 802.11n (20MHz BW) mode, the average MIMO power density was calculated to be 8.17 dBm with directional gain of -4.5 dBi.

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

$$= 8.17 \text{ dBm} + -4.5 \text{ dBi}$$

$$= 3.67 \text{ dBm}$$

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7.6 Frequency Stability

§15.407(g); RSS-Gen [6.11]

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30°C and +50°C. The temperature was incremented by 10° intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded. Data for the worst case channel is shown below.

OPERATING FREQUENCY: 5,180,000,000 Hz
 CHANNEL: 36
 REFERENCE VOLTAGE: 4.30 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.30	+ 20 (Ref)	5,179,999,558	-442	-0.0000085
100 %		- 30	5,180,000,144	144	0.0000028
100 %		- 20	5,179,999,920	-80	-0.0000015
100 %		- 10	5,179,999,968	-32	-0.0000006
100 %		0	5,179,999,778	-222	-0.0000043
100 %		+ 10	5,180,000,239	239	0.0000046
100 %		+ 20	5,180,000,081	81	0.0000016
100 %		+ 30	5,179,999,978	-22	-0.0000004
100 %		+ 40	5,180,000,049	49	0.0000009
100 %		+ 50	5,180,000,331	331	0.0000064
BATT. ENDPOINT	3.70	+ 20	5,179,999,998	-2	0.0000000

Table 7-27. Frequency Stability Measurements for UNII Band 1 (Ch. 36)

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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Frequency Stability
§15.407(g); RSS-Gen [6.11]

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30°C and +50°C. The temperature was incremented by 10° intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded. Data for the worst case channel is shown below.

OPERATING FREQUENCY: 5,260,000,000 Hz
 CHANNEL: 52
 REFERENCE VOLTAGE: 4.30 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.30	+ 20 (Ref)	5,260,000,083	83	0.0000016
100 %		- 30	5,260,000,079	79	0.0000015
100 %		- 20	5,259,999,733	-267	-0.0000051
100 %		- 10	5,260,000,161	161	0.0000031
100 %		0	5,260,000,110	110	0.0000021
100 %		+ 10	5,259,999,814	-186	-0.0000035
100 %		+ 20	5,259,999,998	-2	0.0000000
100 %		+ 30	5,260,000,012	12	0.0000002
100 %		+ 40	5,259,999,846	-154	-0.0000029
100 %		+ 50	5,260,000,281	281	0.0000053
BATT. ENDPOINT	3.70	+ 20	5,260,000,010	10	0.0000002

Table 7-28. Frequency Stability Measurements for UNII Band 2A (Ch. 52)

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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Frequency Stability
§15.407(g); RSS-Gen [6.11]

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30°C and +50°C. The temperature was incremented by 10° intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded. Data for the worst case channel is shown below.

OPERATING FREQUENCY: 5,500,000,000 Hz
 CHANNEL: 100
 REFERENCE VOLTAGE: 4.30 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.30	+ 20 (Ref)	5,499,999,939	-61	-0.0000011
100 %		- 30	5,499,999,972	-28	-0.0000005
100 %		- 20	5,499,999,818	-182	-0.0000033
100 %		- 10	5,500,000,001	1	0.0000000
100 %		0	5,499,999,949	-51	-0.0000009
100 %		+ 10	5,499,999,994	-6	-0.0000001
100 %		+ 20	5,500,000,039	39	0.0000007
100 %		+ 30	5,500,000,166	166	0.0000030
100 %		+ 40	5,500,000,420	420	0.0000076
100 %		+ 50	5,500,000,027	27	0.0000005
BATT. ENDPOINT	3.70	+ 20	5,500,000,028	28	0.0000005

Table 7-29. Frequency Stability Measurements for UNII Band 2C (Ch. 100)

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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Frequency Stability
§15.407(g); RSS-Gen [6.11]

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30°C and +50°C. The temperature was incremented by 10° intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded. Data for the worst case channel is shown below.

OPERATING FREQUENCY: 5,745,000,000 Hz
 CHANNEL: 149
 REFERENCE VOLTAGE: 4.30 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.30	+ 20 (Ref)	5,745,000,036	36	0.0000006
100 %		- 30	5,744,999,859	-141	-0.0000025
100 %		- 20	5,744,999,967	-33	-0.0000006
100 %		- 10	5,744,999,795	-205	-0.0000036
100 %		0	5,745,000,121	121	0.0000021
100 %		+ 10	5,744,999,924	-76	-0.0000013
100 %		+ 20	5,745,000,043	43	0.0000007
100 %		+ 30	5,744,999,863	-137	-0.0000024
100 %		+ 40	5,744,999,955	-45	-0.0000008
100 %		+ 50	5,745,000,066	66	0.0000011
BATT. ENDPOINT	3.70	+ 20	5,744,999,852	-148	-0.0000026

Table 7-30. Frequency Stability Measurements for UNII Band 3 (Ch. 149)

Note:

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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7.7 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 v02, 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 7-31 per Section 15.209 and RSS-Gen (8.9).

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

Table 7-31. Radiated Limits

Test Procedures Used

ANSI C63.10-2013 – Sections 12.7.7.2, 12.7.6, 12.7.5
KDB 789033 D02 v02 – 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 $\geq 2 \times$ 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.

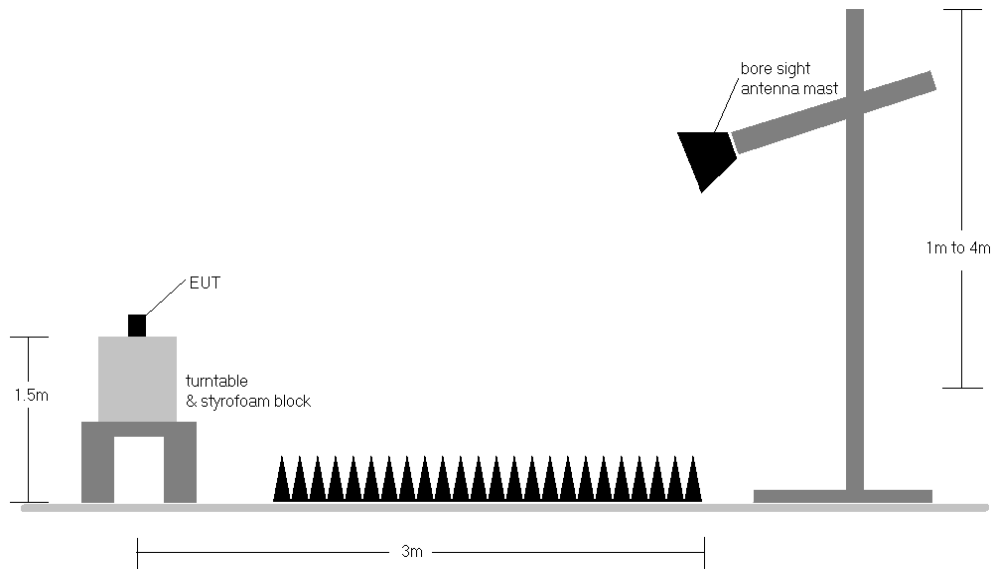


Figure 7-5. Test Instrument & Measurement Setup

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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 7-31.
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 7-31. 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 dBµV/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 68.2dBµV/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

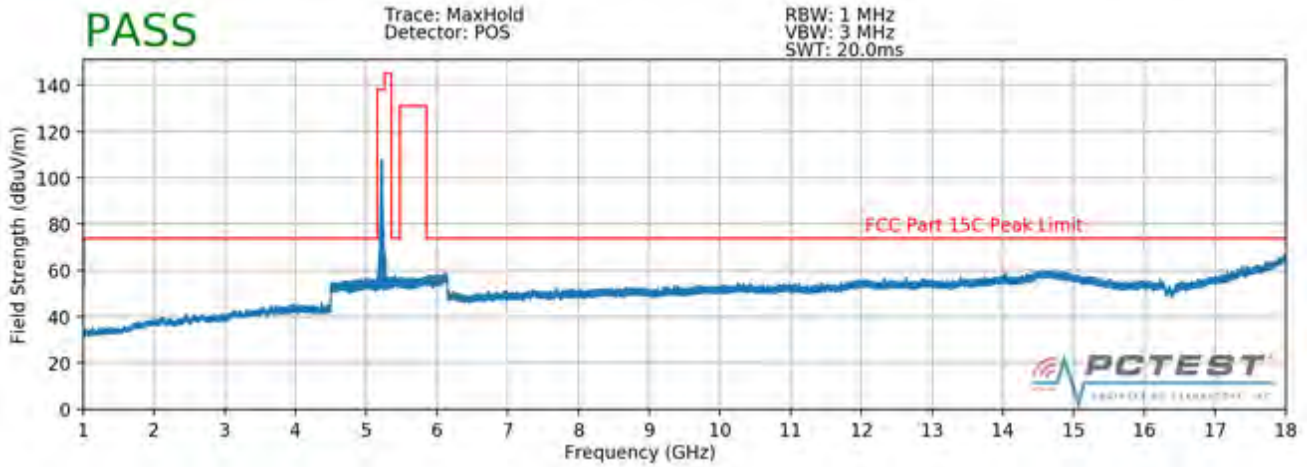
- Field Strength Level [dBµV/m] = Analyzer Level [dBm] + 107 + AFCL [dB/m]
- AFCL [dB/m] = Antenna Factor [dB/m] + Cable Loss [dB]
- Margin [dB] = Field Strength Level [dBµV/m] – Limit [dBµV/m]

Radiated Band Edge Measurement Offset

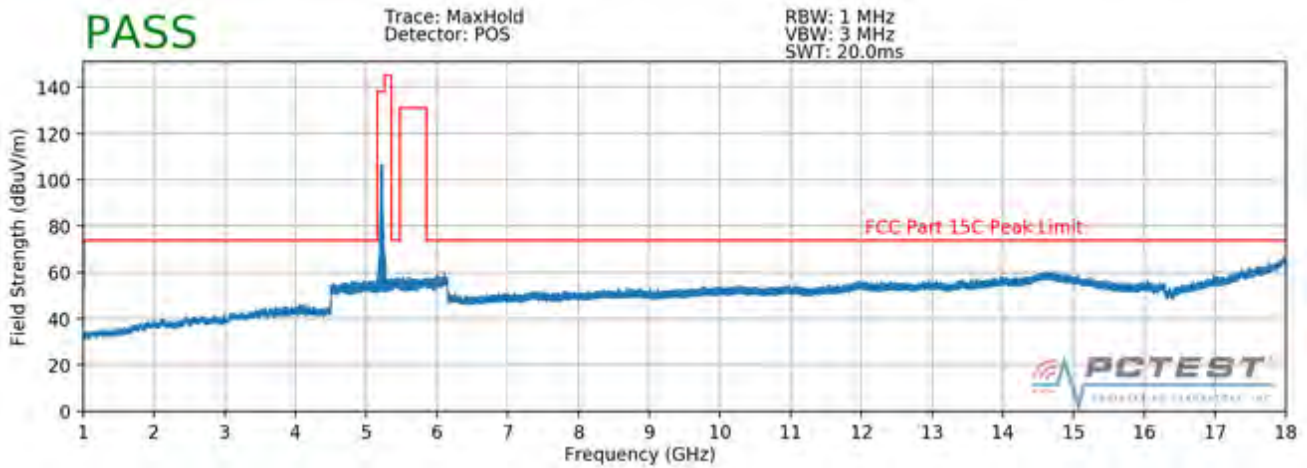
- The amplitude offset shown in the radiated restricted band edge plots in Section 7.7 was calculated using the formula:
Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Pre-amplifier Gain

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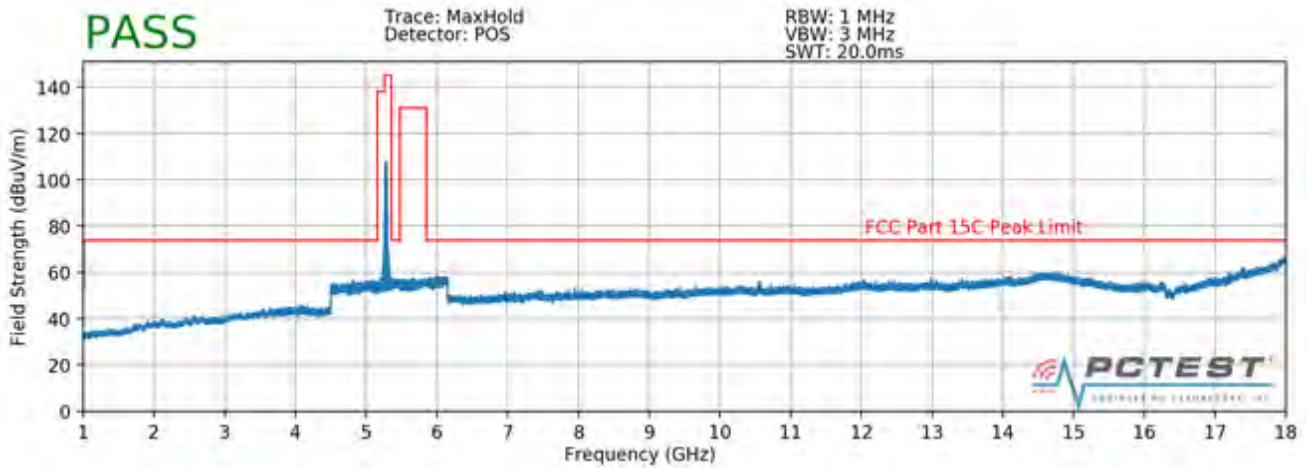
7.7.1 Antenna-1 Radiated Spurious Emission Measurements



Plot 7-153. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. H)

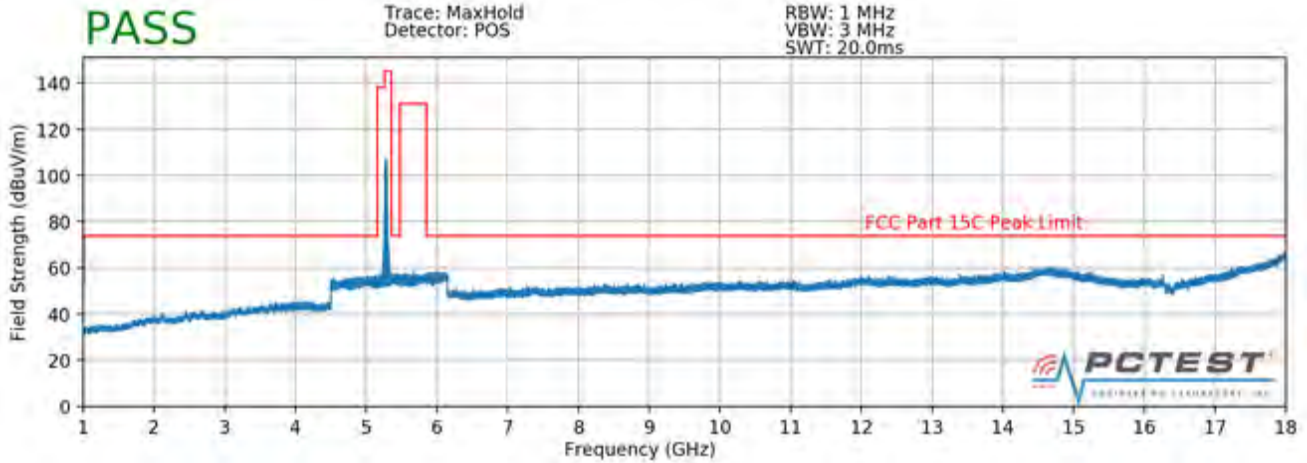


Plot 7-154. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. V)

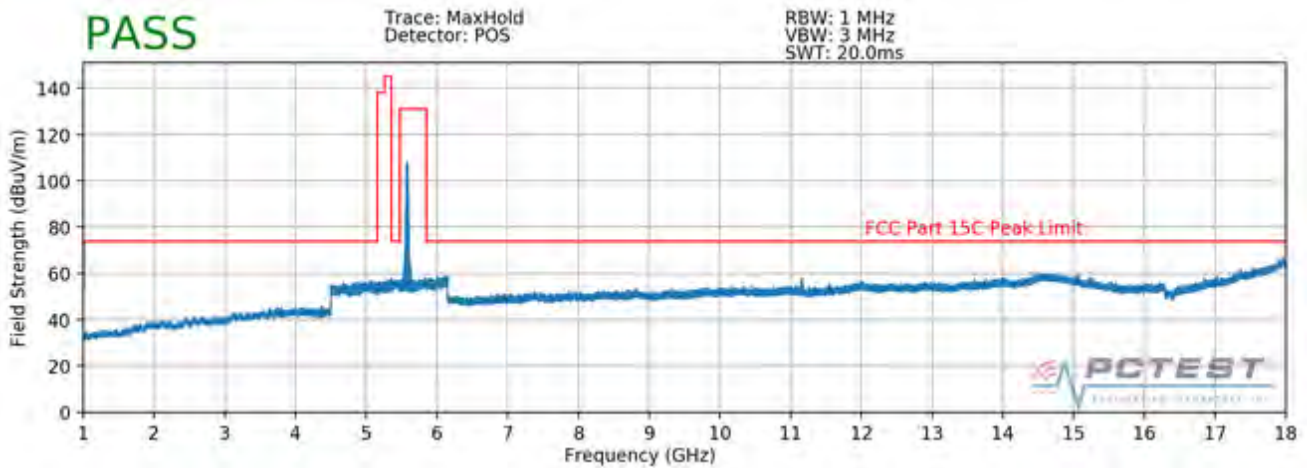


Plot 7-155. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56, Ant. Pol. H)

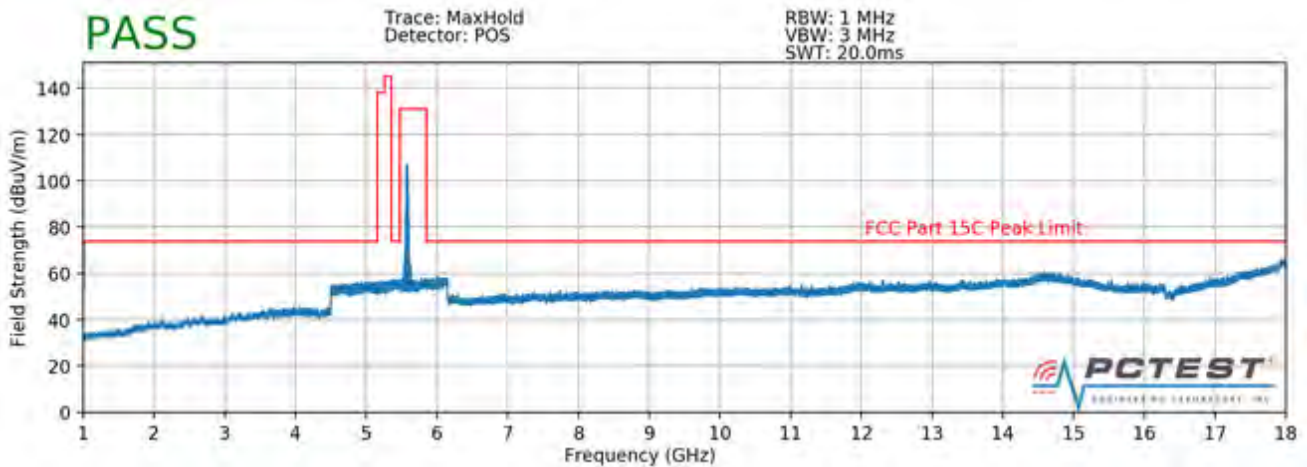
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Plot 7-156. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56, Ant. Pol. V)

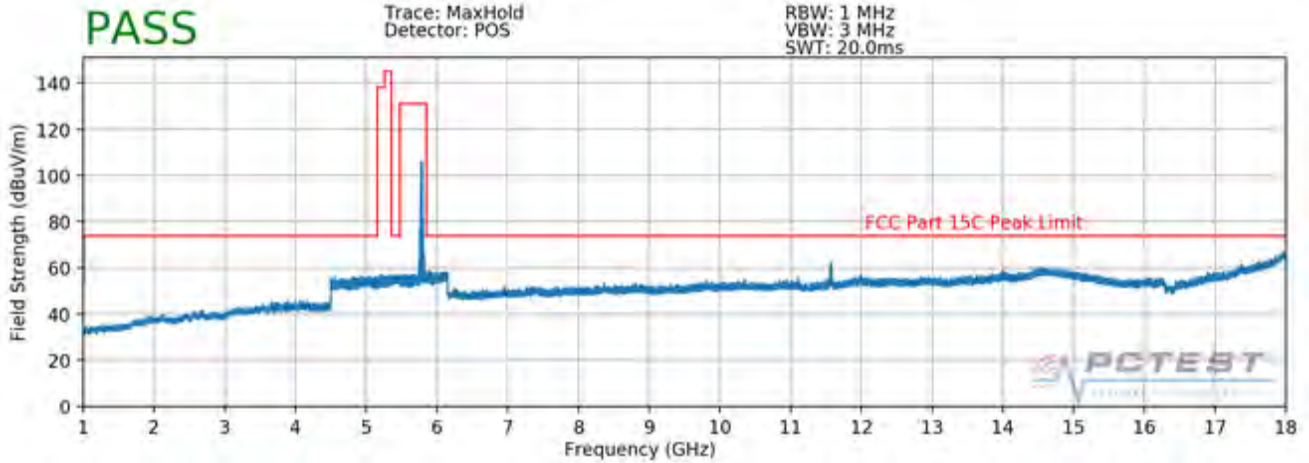


Plot 7-157. Radiated Spurious Plot above 1GHz (802.11a – U2C Ch. 116, Ant. Pol. H)

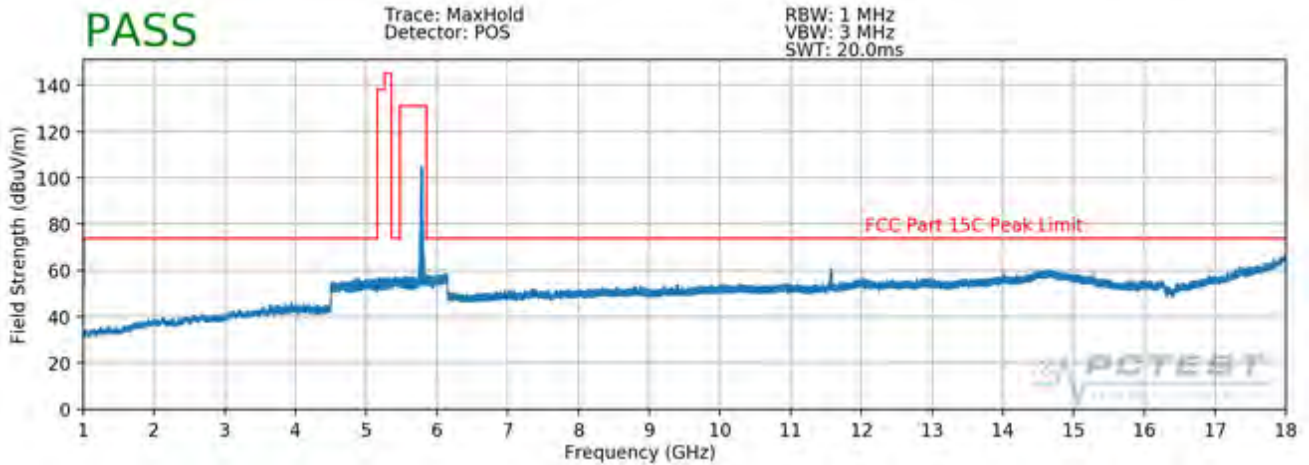


Plot 7-158. Radiated Spurious Plot above 1GHz (802.11a – U2C Ch. 116, Ant. Pol. V)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2-A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 117 of 200



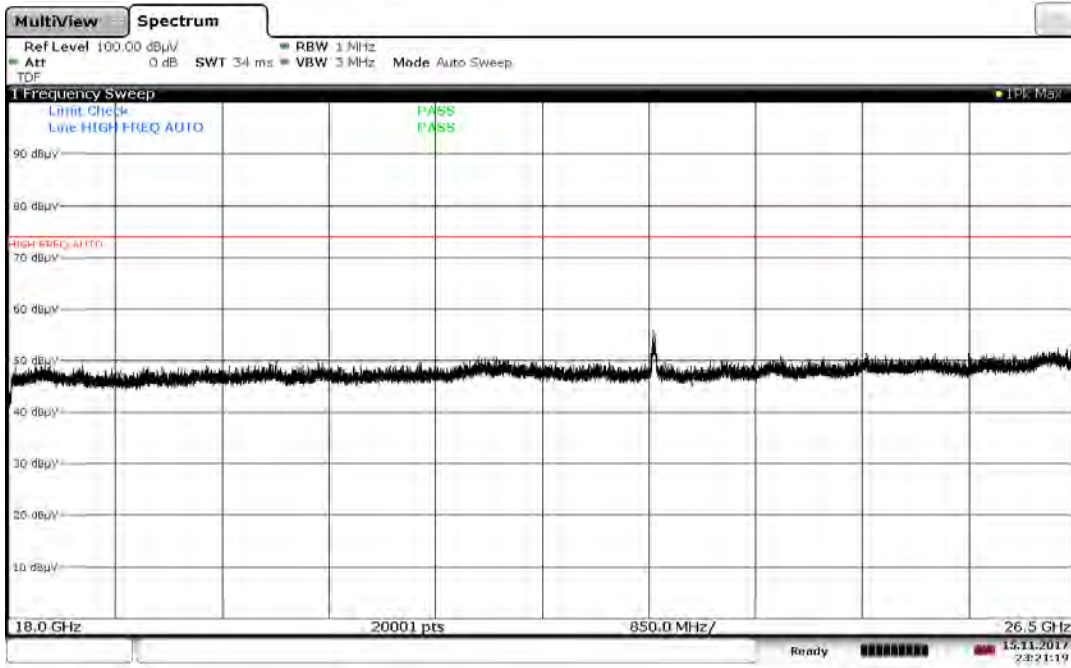
Plot 7-159. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)



Plot 7-160. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

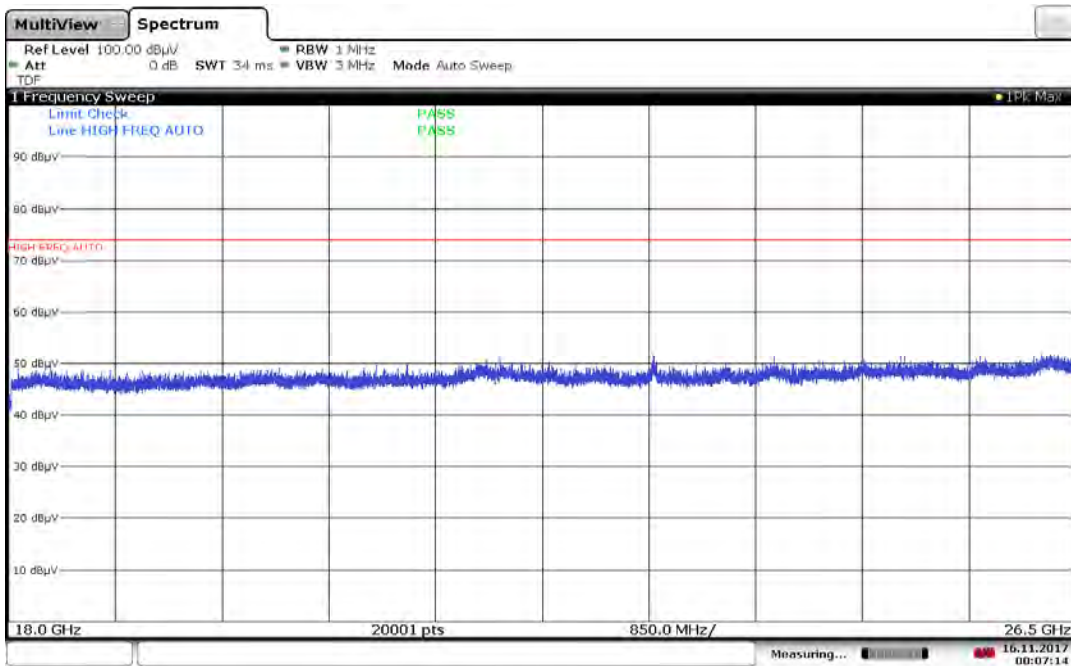
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 118 of 200

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



23:21:19 15.11.2017

Plot 7-161. Radiated Spurious Plot 18GHz - 26.5GHz (802.11a – Ant. Pol. H)

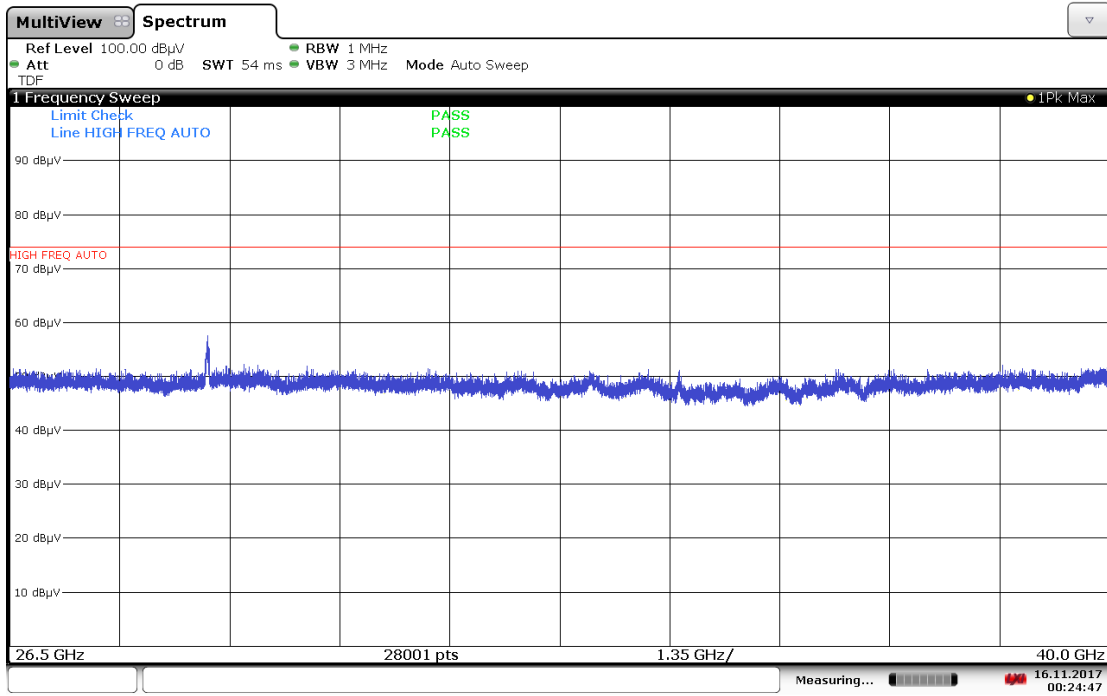


00:07:15 16.11.2017

Plot 7-162. Radiated Spurious Plot above 18GHz - 26.5GHz (802.11a – Ant. Pol. V)

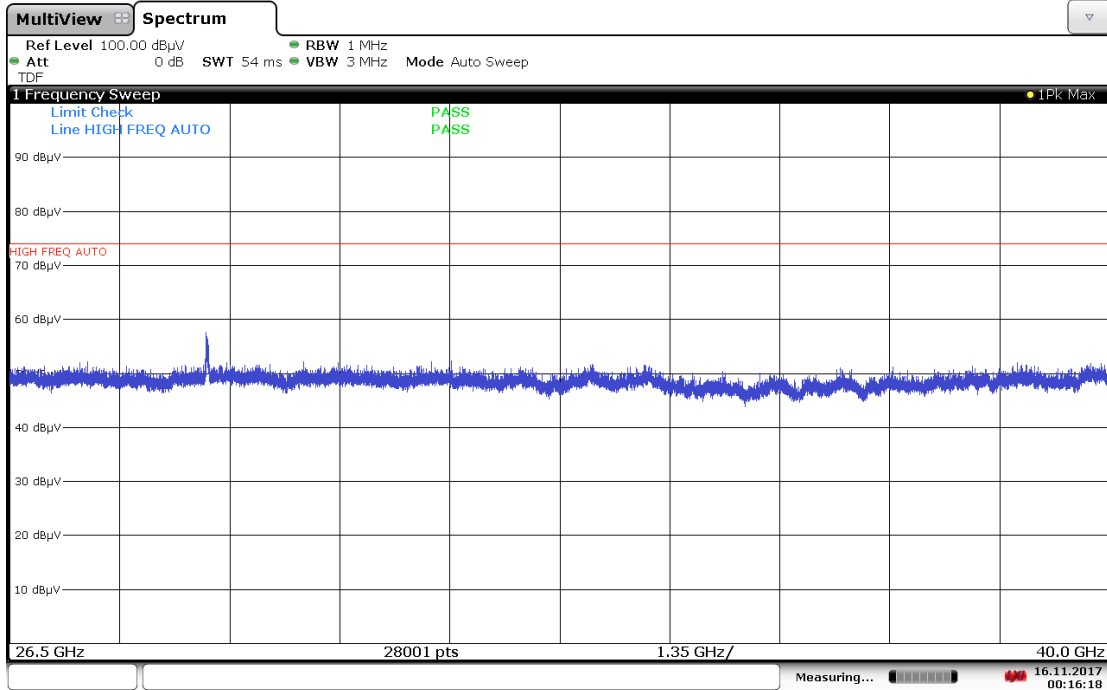
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 119 of 200

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



00:24:47 16.11.2017

Plot 7-163. Radiated Spurious Plot 26.5GHz - 40GHz (802.11a – Ant. Pol. H)



00:16:18 16.11.2017

Plot 7-164. Radiated Spurious Plot above 26.5GHz - 40GHz (802.11a – Ant. Pol. V)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 120 of 200	

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 Meter
 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	H	100	329	-49.92	12.13	-9.54	59.67	68.20	-8.53
* 15540.00	Average	H	100	3	-71.16	14.49	-9.54	40.79	53.98	-13.19
* 15540.00	Peak	H	100	3	-57.93	14.49	-9.54	54.02	73.98	-19.96
* 20720.00	Average	H	100	3	-69.79	7.94	-9.54	35.61	53.98	-18.37
* 20720.00	Peak	H	100	3	-59.30	7.94	-9.54	46.10	73.98	-27.88
25900.00	Peak	H	100	265	-55.54	8.46	-9.54	50.38	68.20	-17.82

Table 7-32. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	322	-50.91	12.12	-9.54	58.67	68.20	-9.53
* 15600.00	Average	H	100	357	-69.68	14.31	-9.54	42.09	53.98	-11.89
* 15600.00	Peak	H	100	357	-57.44	14.31	-9.54	54.33	73.98	-19.65
* 20800.00	Average	H	100	275	-69.94	7.95	-9.54	35.47	53.98	-18.51
* 20800.00	Peak	H	100	275	-59.50	7.95	-9.54	45.91	73.98	-28.07
26000.00	Peak	H	100	274	-57.13	8.60	-9.54	48.93	68.20	-19.27

Table 7-33. Radiated Measurements

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 121 of 200	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	322	-49.50	12.09	-9.54	60.05	68.20	-8.15
* 15720.00	Average	H	100	359	-68.58	14.02	-9.54	42.90	53.98	-11.08
* 15720.00	Peak	H	100	359	-54.48	14.02	-9.54	57.00	73.98	-16.98
* 20960.00	Average	H	100	276	-70.15	7.91	-9.54	35.22	53.98	-18.76
* 20960.00	Peak	H	100	276	-58.96	7.91	-9.54	46.41	73.98	-27.57
26200.00	Peak	H	100	262	-54.49	8.62	-9.54	51.59	68.20	-16.61

Table 7-34. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	234	-58.36	12.09	-9.54	51.19	68.20	-17.01
* 15720.00	Average	H	100	307	-71.66	14.02	-9.54	39.82	53.98	-14.16
* 15720.00	Peak	H	100	307	-59.66	14.02	-9.54	51.82	73.98	-22.16
* 20960.00	Average	H	100	271	-71.19	7.91	-9.54	34.18	53.98	-19.80
* 20960.00	Peak	H	100	271	-59.79	7.91	-9.54	45.58	73.98	-28.40
26200.00	Peak	H	100	266	-55.89	8.62	-9.54	50.19	68.20	-18.01

Table 7-35. Radiated Measurements with WCP

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 122 of 200	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	232	-48.73	12.16	-9.54	60.89	68.20	-7.31
* 15780.00	Average	H	100	359	-68.31	14.03	-9.54	43.18	53.98	-10.80
* 15780.00	Peak	H	100	359	-53.94	14.03	-9.54	57.55	73.98	-16.43
* 21040.00	Average	H	100	281	-70.11	7.92	-9.54	35.27	53.98	-18.71
* 21040.00	Peak	H	100	281	-59.43	7.92	-9.54	45.95	73.98	-28.03
26300.00	Peak	H	100	264	-54.62	8.73	-9.54	51.57	68.20	-16.63

Table 7-36. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	326	-48.13	12.04	-9.54	61.37	68.20	-6.83
* 15840.00	Average	H	100	358	-68.92	14.25	-9.54	42.78	53.98	-11.20
* 15840.00	Peak	H	100	358	-53.86	14.25	-9.54	57.84	73.98	-16.14
* 21120.00	Average	H	100	276	-69.83	7.96	-9.54	35.59	53.98	-18.39
* 21120.00	Peak	H	100	276	-59.42	7.96	-9.54	46.00	73.98	-27.98
26400.00	Peak	H	100	265	-55.36	8.94	-9.54	51.04	68.20	-17.16

Table 7-37. Radiated Measurements

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 123 of 200	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	329	-61.35	12.06	-9.54	48.17	53.98	-5.81
* 10640.00	Peak	H	100	329	-50.03	12.06	-9.54	59.49	73.98	-14.49
* 15960.00	Average	H	100	3	-67.28	14.55	-9.54	44.73	53.98	-9.25
* 15960.00	Peak	H	100	3	-53.11	14.55	-9.54	58.90	73.98	-15.08
* 21280.00	Average	H	100	257	-69.57	8.04	-9.54	35.93	53.98	-18.05
* 21280.00	Peak	H	100	257	-57.96	8.04	-9.54	47.54	73.98	-26.44
26600.00	Peak	H	100	256	-42.02	-8.30	-9.54	47.13	68.20	-21.07

Table 7-38. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	238	-64.97	12.06	-9.54	44.55	53.98	-9.43
* 10640.00	Peak	H	100	238	-54.89	12.06	-9.54	54.63	73.98	-19.35
* 15960.00	Average	H	100	301	-71.78	14.55	-9.54	40.23	53.98	-13.75
* 15960.00	Peak	H	100	301	-59.31	14.55	-9.54	52.70	73.98	-21.28
* 21280.00	Average	H	100	272	-69.98	8.04	-9.54	35.52	53.98	-18.46
* 21280.00	Peak	H	100	272	-59.30	8.04	-9.54	46.20	73.98	-27.78
26600.00	Peak	H	100	276	-39.51	-8.30	-9.54	49.64	68.20	-18.56

Table 7-39. Radiated Measurements with WCP

FCC ID: A3LSMG960U IC: 649E-SMG960U		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 Meter
 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	H	100	312	-71.56	12.87	-9.54	38.77	53.98	-15.21
* 11000.00	Peak	H	100	312	-58.06	12.87	-9.54	52.27	73.98	-21.71
16500.00	Peak	H	100	5	-53.71	16.61	-9.54	60.36	68.20	-7.84
22000.00	Peak	H	100	302	-57.18	8.43	-9.54	48.70	68.20	-19.50
27500.00	Peak	H	100	311	-44.74	-8.80	-9.54	43.92	68.20	-24.28

Table -40. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 Operating Frequency: 5580MHz
 Channel: 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	H	100	317	-67.08	12.76	-9.54	43.14	53.98	-10.84
* 11160.00	Peak	H	100	317	-51.81	12.76	-9.54	58.41	73.98	-15.57
16740.00	Peak	H	100	55	-56.75	16.64	-9.54	57.35	68.20	-10.85
* 22320.00	Average	H	100	280	-69.29	8.11	-9.54	36.28	53.98	-17.70
* 22320.00	Peak	H	100	280	-58.73	8.11	-9.54	46.84	73.98	-27.14
27900.00	Peak	H	100	301	-40.44	-9.26	-9.54	47.76	68.20	-20.44

Table -41. Radiated Measurements

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 125 of 200	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	222	-64.91	12.57	-9.54	45.12	53.98	-8.86
* 11440.00	Peak	H	100	222	-50.71	12.57	-9.54	59.32	73.98	-14.66
17160.00	Peak	H	100	5	-54.96	18.31	-9.54	60.81	68.20	-7.39
* 22880.00	Average	H	100	222	-67.79	8.28	-9.54	37.95	53.98	-16.03
* 22880.00	Peak	H	100	222	-56.17	8.28	-9.54	49.57	73.98	-24.41
28600.00	Peak	H	100	256	-39.13	-9.08	-9.54	49.25	68.20	-18.95

Table -42. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	225	-68.67	12.57	-9.54	41.36	53.98	-12.62
* 11440.00	Peak	H	100	225	-58.03	12.57	-9.54	52.00	73.98	-21.98
17160.00	Peak	H	100	287	-55.00	18.31	-9.54	60.77	68.20	-7.43
* 22880.00	Average	H	100	225	-68.77	8.28	-9.54	36.97	53.98	-17.01
* 22880.00	Peak	H	100	225	-57.67	8.28	-9.54	48.07	73.98	-25.91
28600.00	Peak	H	100	259	-43.42	-9.08	-9.54	44.96	68.20	-23.24

Table 7-43. Radiated Measurements with WCP

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 126 of 200	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	218	-62.11	12.43	-9.54	47.78	53.98	-6.20
* 11490.00	Peak	H	100	218	-49.93	12.43	-9.54	59.96	73.98	-14.02
17235.00	Peak	H	100	54	-54.17	18.61	-9.54	61.90	68.20	-6.30
* 22980.00	Average	H	100	221	-67.65	8.16	-9.54	37.97	53.98	-16.01
* 22980.00	Peak	H	100	221	-55.35	8.16	-9.54	50.27	73.98	-23.71
28725.00	Peak	H	100	257	-40.03	-9.24	-9.54	48.19	68.20	-20.01

Table -44. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	225	-61.93	12.54	-9.54	48.07	53.98	-5.91
* 11570.00	Peak	H	100	225	-51.20	12.54	-9.54	58.80	73.98	-15.18
17355.00	Peak	H	100	262	-56.11	18.73	-9.54	60.08	68.20	-8.12
23140.00	Peak	H	100	247	-55.60	8.37	-9.54	50.23	68.20	-17.97
28925.00	Peak	H	100	256	-37.72	-9.65	-9.54	50.09	68.20	-18.11

Table -45. Radiated Measurements

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 127 of 200	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	46	-62.47	12.99	-9.54	47.97	53.98	-6.01
* 11650.00	Peak	H	100	46	-51.57	12.99	-9.54	58.87	73.98	-15.11
17475.00	Peak	H	100	263	-56.63	19.25	-9.54	60.07	68.20	-8.13
23300.00	Peak	H	100	247	-56.57	8.50	-9.54	49.38	68.20	-18.82
29125.00	Peak	H	100	254	-35.52	-9.87	-9.54	52.07	68.20	-16.13

Table -46. Radiated Measurements

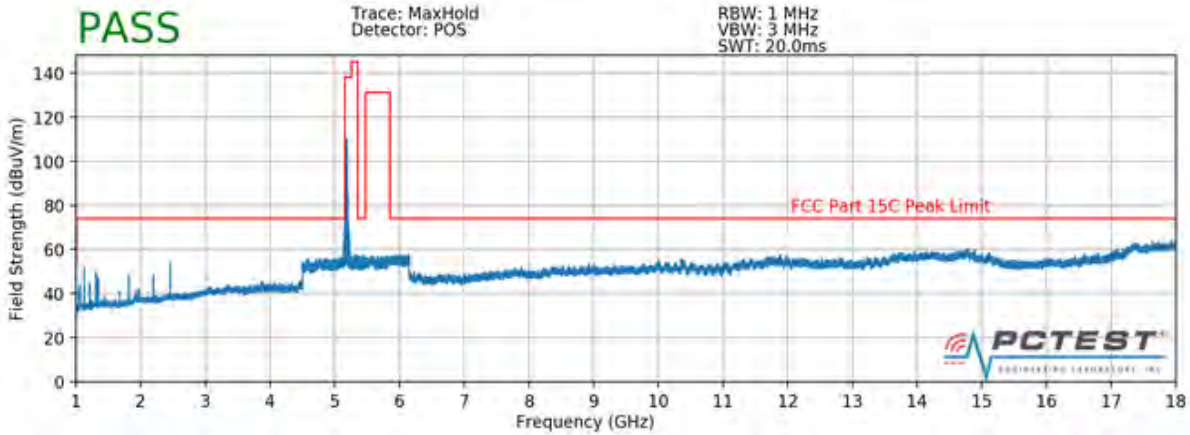
Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 Operating Frequency: 5785MHz
 Channel: 157

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	H	100	234	-69.53	12.54	-9.54	40.47	53.98	-13.51
* 11570.00	Peak	H	100	234	-58.37	12.54	-9.54	51.63	73.98	-22.35
17355.00	Peak	H	100	295	-57.57	18.73	-9.54	58.62	68.20	-9.58
23140.00	Peak	H	100	265	-59.05	8.37	-9.54	46.78	68.20	-21.42
28925.00	Peak	H	100	256	-45.32	-9.65	-9.54	42.49	68.20	-25.71

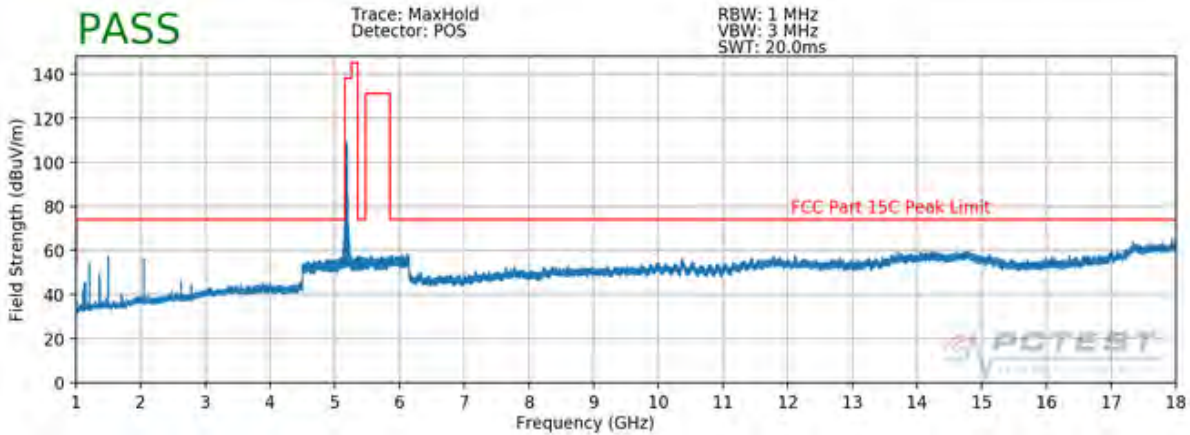
Table 7-47. Radiated Measurements with WCP

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 128 of 200	

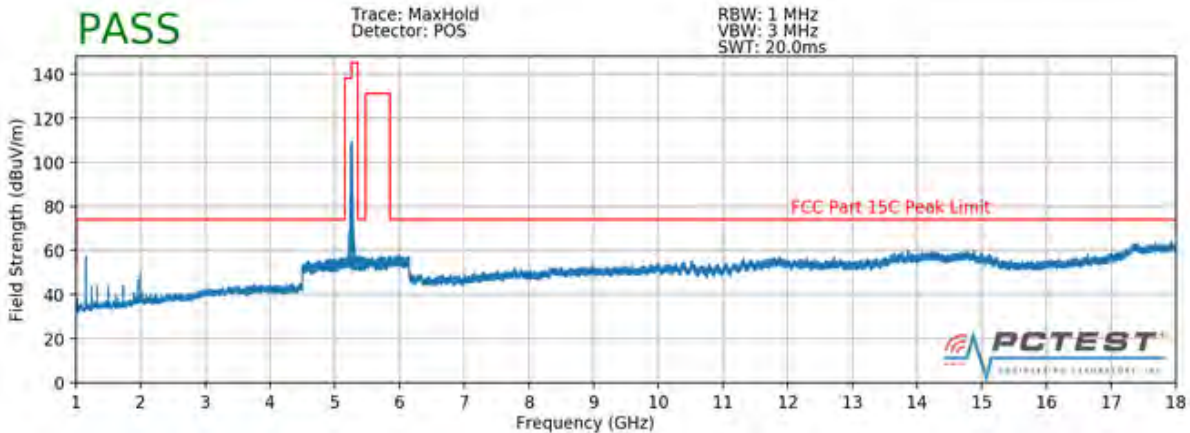
7.7.2 Antenna-2 Radiated Spurious Emission Measurements



Plot 7-165. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. H)

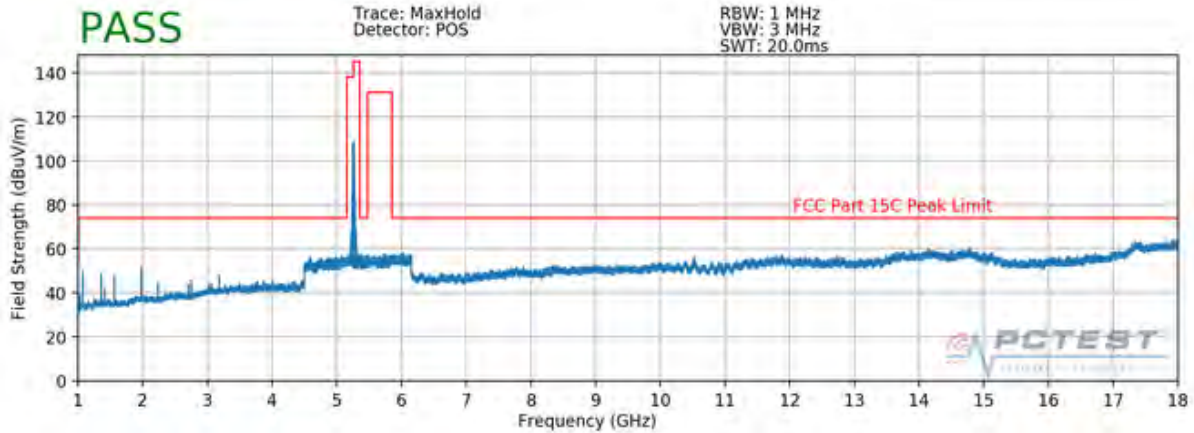


Plot 7-166. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. V)

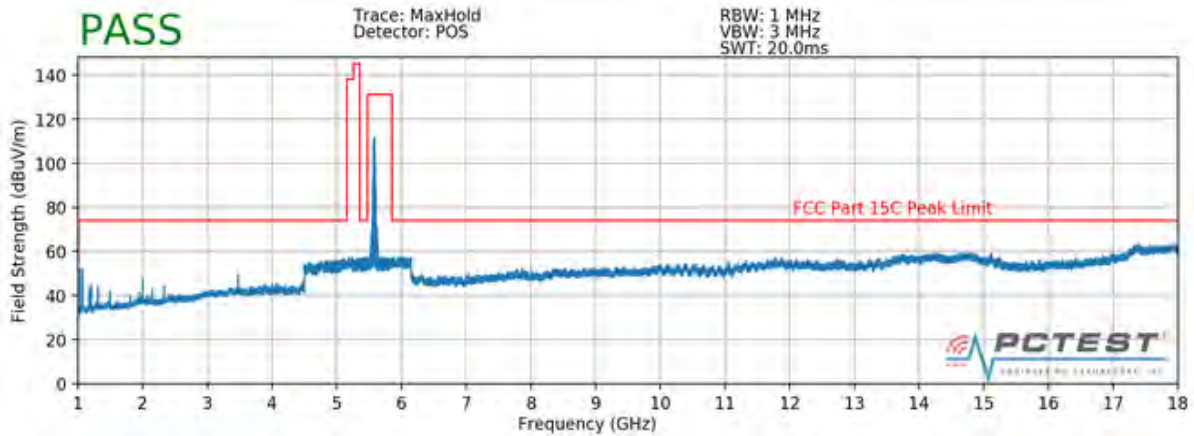


Plot 7-167. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56, Ant. Pol. H)

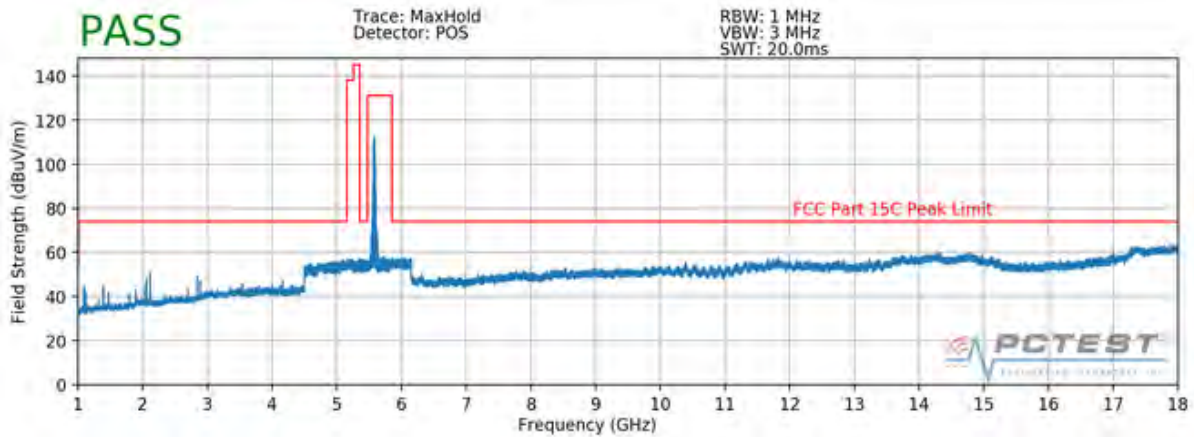
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 129 of 200



Plot 7-168. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56, Ant. Pol. V)

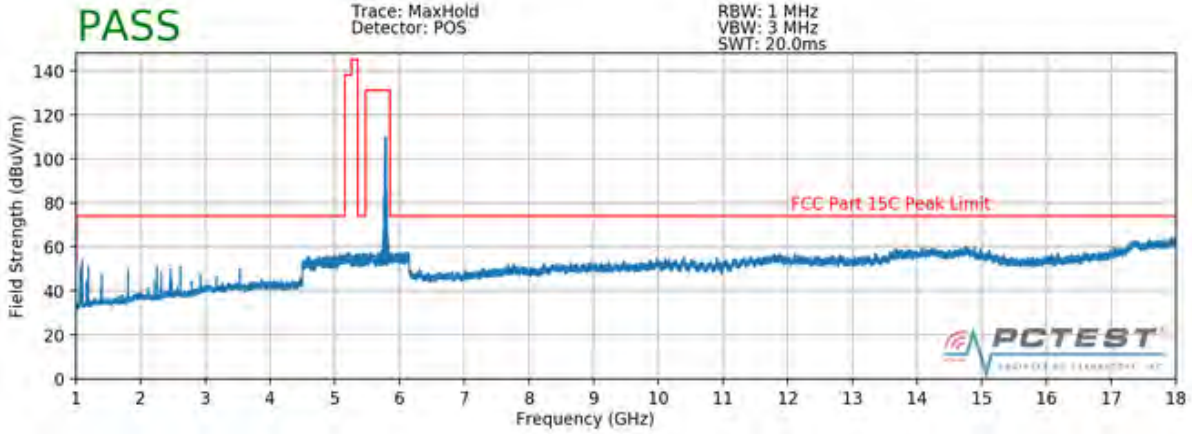


Plot 7-169. Radiated Spurious Plot above 1GHz (802.11a – U2C Ch. 116, Ant. Pol. H)

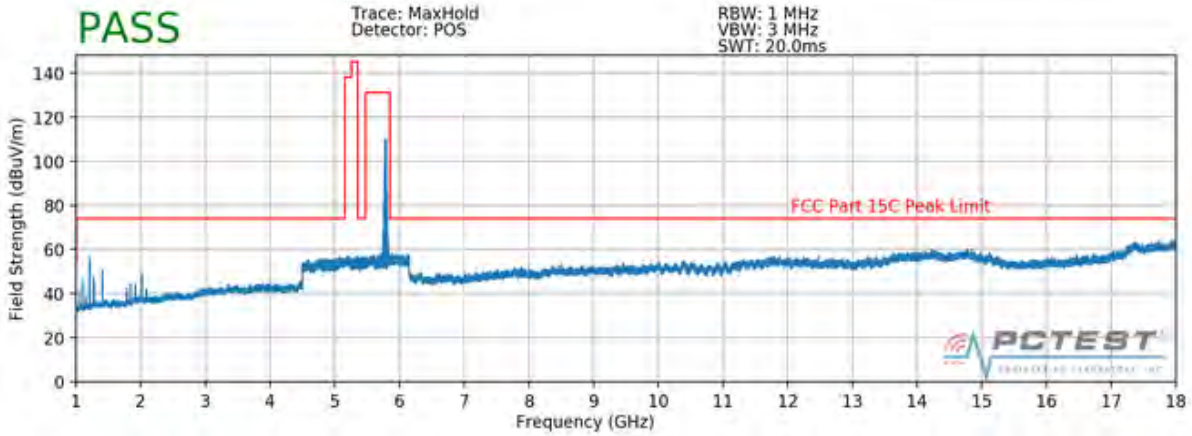


Plot 7-170. Radiated Spurious Plot above 1GHz (802.11a – U2C Ch. 116, Ant. Pol. V)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 130 of 200



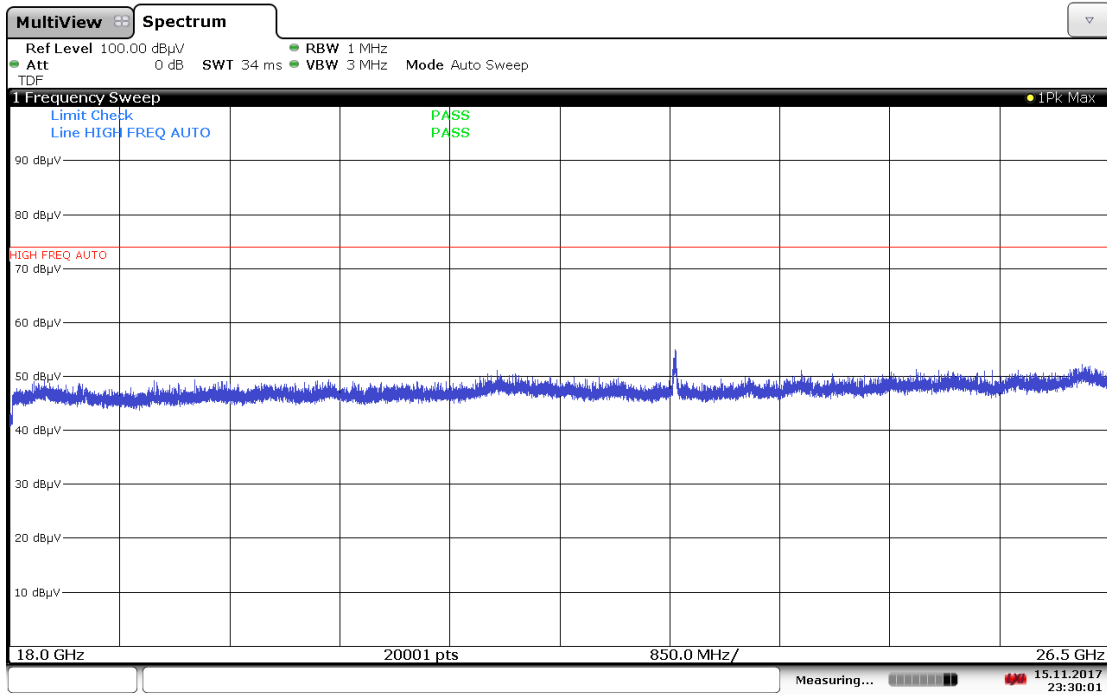
Plot 7-171. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)



Plot 7-172. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

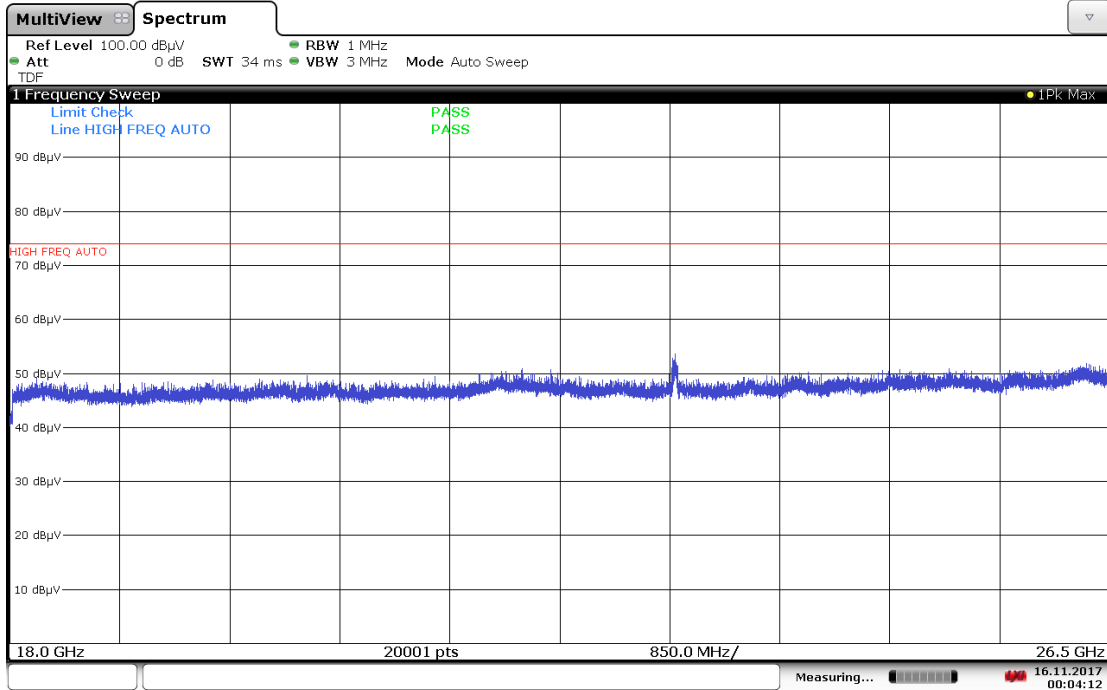
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 131 of 200

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



23:30:02 15.11.2017

Plot 7-173. Radiated Spurious Plot above 18GHz - 26.5GHz (802.11a – Ant. Pol. H)

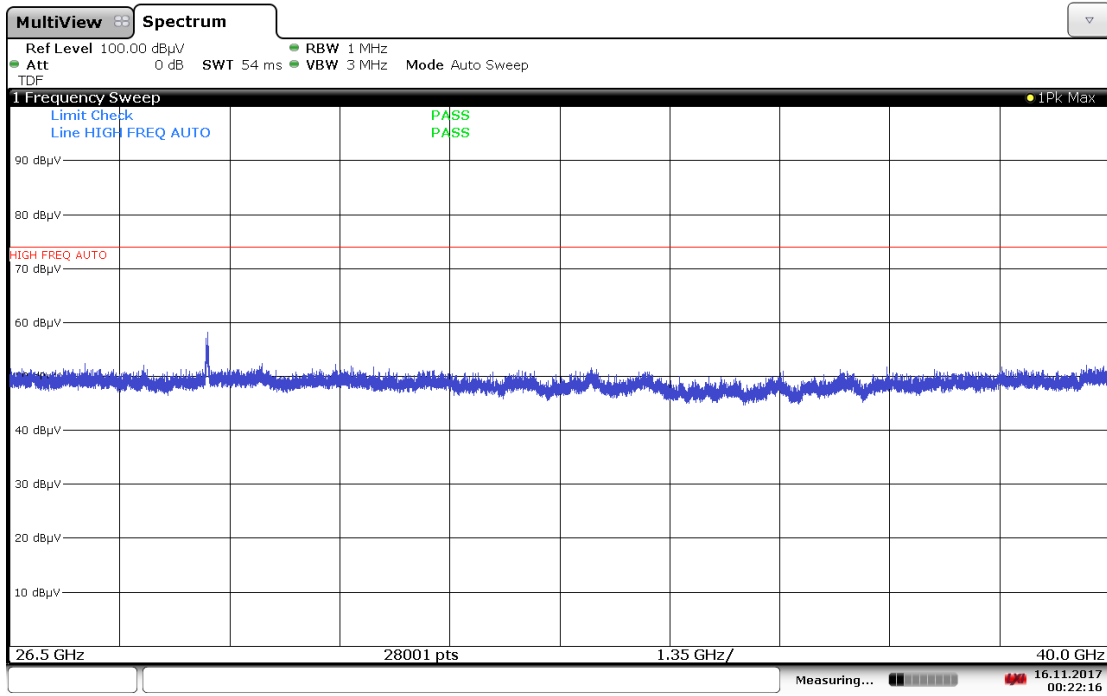


00:04:12 16.11.2017

Plot 7-174. Radiated Spurious Plot above 18GHz - 26.5GHz (802.11a – Ant. Pol. V)

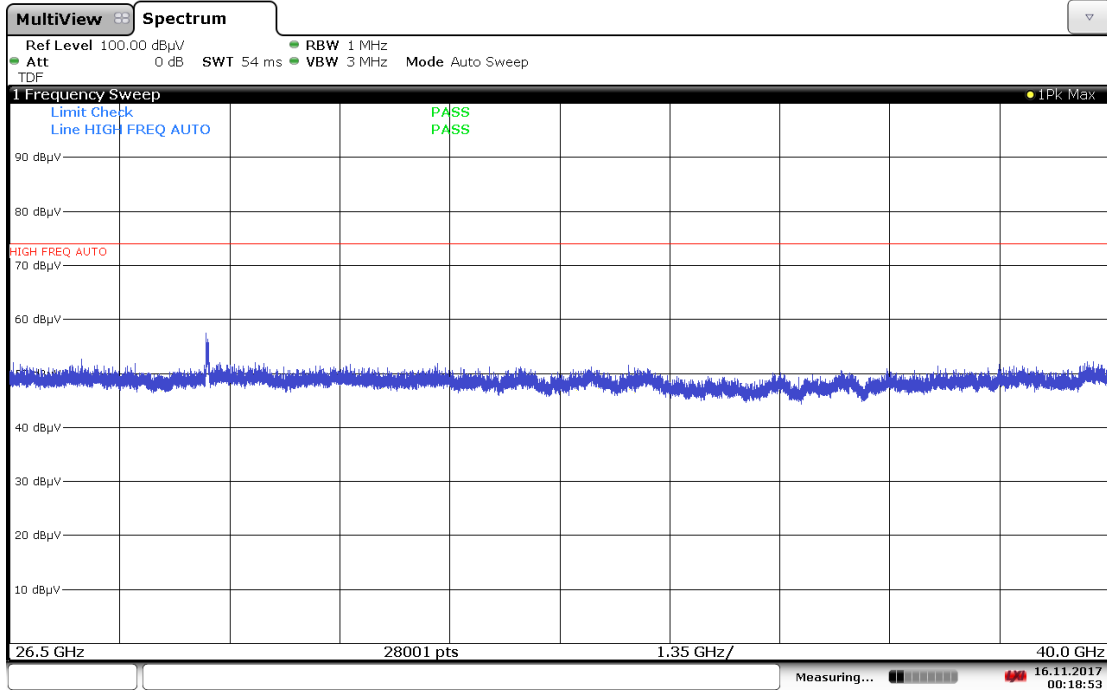
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 132 of 200	

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



00:22:16 16.11.2017

Plot 7-175. Radiated Spurious Plot 26.5GHz - 40GHz (802.11a – Ant. Pol. H)



00:18:53 16.11.2017

Plot 7-176. Radiated Spurious Plot above 26.5GHz - 40GHz (802.11a – Ant. Pol. V)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 133 of 200	

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 Meter
 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	H	100	224	-50.00	12.13	-9.54	59.59	68.20	-8.61
* 15540.00	Average	H	100	357	-66.31	14.49	-9.54	45.64	53.98	-8.34
* 15540.00	Peak	H	100	357	-53.37	14.49	-9.54	58.58	73.98	-15.40
* 20720.00	Average	H	100	257	-68.84	7.94	-9.54	36.56	53.98	-17.42
* 20720.00	Peak	H	100	257	-57.59	7.94	-9.54	47.81	73.98	-26.17
25900.00	Peak	H	100	247	-52.04	8.46	-9.54	53.88	68.20	-14.32

Table -48. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	225	-51.38	12.12	-9.54	58.20	68.20	-10.00
* 15600.00	Average	H	100	268	-66.37	14.31	-9.54	45.40	53.98	-8.58
* 15600.00	Peak	H	100	268	-55.83	14.31	-9.54	55.94	73.98	-18.04
* 20800.00	Average	H	100	259	-69.07	7.95	-9.54	36.34	53.98	-17.64
* 20800.00	Peak	H	100	259	-58.97	7.95	-9.54	46.44	73.98	-27.54
26000.00	Peak	H	100	264	-51.77	8.60	-9.54	54.29	68.20	-13.91

Table -49. Radiated Measurements

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 134 of 200	

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6Mbps
Distance of Measurements: 1 Meter
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	H	100	226	-52.76	12.09	-9.54	56.79	68.20	-11.41
* 15720.00	Average	H	100	271	-67.66	14.02	-9.54	43.82	53.98	-10.16
* 15720.00	Peak	H	100	271	-54.08	14.02	-9.54	57.40	73.98	-16.58
* 20960.00	Average	H	100	281	-69.10	7.91	-9.54	36.27	53.98	-17.71
* 20960.00	Peak	H	100	281	-57.25	7.91	-9.54	48.12	73.98	-25.86
26200.00	Peak	H	100	267	-55.58	8.62	-9.54	50.50	68.20	-17.70

Table -50. Radiated Measurements

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6Mbps
Distance of Measurements: 1 Meter
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	H	100	240	-52.58	12.13	-9.54	57.01	68.20	-11.19
* 15540.00	Average	H	100	292	-67.89	14.49	-9.54	44.06	53.98	-9.92
* 15540.00	Peak	H	100	292	-56.14	14.49	-9.54	55.81	73.98	-18.17
* 20720.00	Average	H	100	278	-68.99	7.94	-9.54	36.41	53.98	-17.57
* 20720.00	Peak	H	100	278	-57.95	7.94	-9.54	47.45	73.98	-26.53
25900.00	Peak	H	100	265	-54.88	8.46	-9.54	51.04	68.20	-17.16

Table 7-51. Radiated Measurements with WCP

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 135 of 200	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	321	-53.56	12.16	-9.54	56.06	68.20	-12.14
15780.00	Average	H	100	356	-66.10	14.03	-9.54	45.39	53.98	-8.59
15780.00	Peak	H	100	356	-53.33	14.03	-9.54	58.16	73.98	-15.82
21040.00	Average	H	100	261	-67.93	7.92	-9.54	37.45	53.98	-16.53
21040.00	Peak	H	100	261	-56.45	7.92	-9.54	48.93	73.98	-25.05
26300.00	Peak	H	100	265	-55.27	8.73	-9.54	50.92	68.20	-17.28

Table -52. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	256	-54.72	12.04	-9.54	54.78	68.20	-13.42
* 15840.00	Average	H	100	354	-65.68	14.25	-9.54	46.02	53.98	-7.96
* 15840.00	Peak	H	100	354	-53.10	14.25	-9.54	58.60	73.98	-15.38
* 21120.00	Average	H	100	282	-67.08	7.96	-9.54	38.34	53.98	-15.64
* 21120.00	Peak	H	100	282	-55.54	7.96	-9.54	49.88	73.98	-24.10
26400.00	Peak	H	100	214	-56.98	8.94	-9.54	49.42	68.20	-18.78

Table -53. Radiated Measurements

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 136 of 200	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	257	-69.60	12.06	-9.54	39.92	53.98	-14.06
* 10640.00	Peak	H	100	257	-57.67	12.06	-9.54	51.85	73.98	-22.13
* 15960.00	Average	H	100	357	-66.67	14.55	-9.54	45.34	53.98	-8.64
* 15960.00	Peak	H	100	357	-54.57	14.55	-9.54	57.44	73.98	-16.54
* 21280.00	Average	H	100	280	-66.80	8.04	-9.54	38.70	53.98	-15.28
* 21280.00	Peak	H	100	280	-56.19	8.04	-9.54	49.31	73.98	-24.67
26600.00	Peak	H	100	263	-43.44	-8.30	-9.54	45.71	68.20	-22.49

Table -54. Radiated Measurements4

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	243	-52.77	12.04	-9.54	56.73	68.20	-11.47
* 15840.00	Average	H	100	295	-65.55	14.25	-9.54	46.15	53.98	-7.83
* 15840.00	Peak	H	100	295	-54.84	14.25	-9.54	56.86	73.98	-17.12
* 21120.00	Average	H	100	255	-69.31	7.96	-9.54	36.11	53.98	-17.87
* 21120.00	Peak	H	100	255	-58.81	7.96	-9.54	46.61	73.98	-27.37
26400.00	Peak	H	100	287	-56.52	8.94	-9.54	49.88	68.20	-18.32

Table 7-55. Radiated Measurements with WCP

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 137 of 200	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	209	-75.62	12.87	-9.54	34.71	53.98	-19.27
* 11000.00	Peak	H	100	209	-63.75	12.87	-9.54	46.58	73.98	-27.40
16500.00	Peak	H	100	277	-53.91	16.61	-9.54	60.16	68.20	-8.04
22000.00	Peak	H	100	282	-56.07	8.43	-9.54	49.81	68.20	-18.39
27500.00	Peak	H	100	270	-44.32	-8.80	-9.54	44.34	68.20	-23.86

Table -56. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 Operating Frequency: 5820MHz
 Channel: 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]
* 11640.00	Average	H	100	140	-72.92	12.76	-9.54	37.30	53.98	-16.68
* 11640.00	Peak	H	100	140	-61.37	12.76	-9.54	48.85	73.98	-25.13
16740.00	Peak	H	100	50	-54.42	16.64	-9.54	59.68	68.20	-8.52
* 22320.00	Average	H	100	266	-69.21	8.11	-9.54	36.36	53.98	-17.62
* 22320.00	Peak	H	100	266	-56.50	8.11	-9.54	49.07	73.98	-24.91
27900.00	Peak	H	100	245	-43.23	-9.26	-9.54	44.97	68.20	-23.23

Table -57. Radiated Measurements

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 138 of 200	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	266	-70.67	12.57	-9.54	39.36	53.98	-14.62
* 11440.00	Peak	H	100	266	-63.95	12.57	-9.54	46.08	73.98	-27.90
17160.00	Peak	H	100	357	-62.37	18.31	-9.54	53.40	68.20	-14.80
* 22880.00	Average	H	100	304	-69.42	8.28	-9.54	36.32	53.98	-17.66
* 22880.00	Peak	H	100	304	-58.67	8.28	-9.54	47.07	73.98	-26.91
28600.00	Peak	H	100	257	-37.58	-9.08	-9.54	50.80	68.20	-17.40

Table -58. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	244	-70.63	12.87	-9.54	39.70	53.98	-14.28
* 11000.00	Peak	H	100	244	-59.89	12.87	-9.54	50.44	73.98	-23.54
16500.00	Peak	H	100	285	-56.86	16.61	-9.54	57.21	68.20	-10.99
22000.00	Peak	H	100	273	-57.52	8.43	-9.54	48.36	68.20	-19.84
27500.00	Peak	H	100	257	-44.79	-8.80	-9.54	43.87	68.20	-24.33

Table 7-59. Radiated Measurements with WCP

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 139 of 200	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	268	-69.05	12.43	-9.54	40.84	53.98	-13.14
*	11490.00	Peak	H	100	268	-58.98	12.43	-9.54	50.91	73.98	-23.07
	17235.00	Peak	H	100	272	-51.11	18.61	-9.54	64.96	68.20	-3.24
*	22980.00	Average	H	100	302	-68.77	8.16	-9.54	36.85	53.98	-17.13
*	22980.00	Peak	H	100	302	-57.65	8.16	-9.54	47.97	73.98	-26.01
	28725.00	Peak	H	100	254	-34.97	-9.24	-9.54	53.25	68.20	-14.95

Table -60. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	266	-70.85	12.54	-9.54	39.15	53.98	-14.83
*	11570.00	Peak	H	100	266	-60.27	12.54	-9.54	49.73	73.98	-24.25
	17355.00	Peak	H	100	269	-52.71	18.73	-9.54	63.48	68.20	-4.72
	23140.00	Peak	H	100	303	-56.52	8.37	-9.54	49.31	68.20	-18.89
	28925.00	Peak	H	100	256	-35.10	-9.65	-9.54	52.71	68.20	-15.49

Table -61. Radiated Measurements

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 140 of 200	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 1 Meter
 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	H	100	263	-72.41	12.99	-9.54	38.03	53.98	-15.95
* 11650.00	Peak	H	100	263	-61.16	12.99	-9.54	49.28	73.98	-24.70
17475.00	Peak	H	100	268	-57.92	19.25	-9.54	58.78	68.20	-9.42
23300.00	Peak	H	100	303	-56.96	8.50	-9.54	48.99	68.20	-19.21
29125.00	Peak	H	100	256	-34.78	-9.87	-9.54	52.81	68.20	-15.39

Table -62. Radiated Measurements

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	H	100	278	-73.15	12.43	-9.54	36.74	53.98	-17.24
* 11490.00	Peak	H	100	278	-63.20	12.43	-9.54	46.69	73.98	-27.29
17235.00	Peak	H	100	287	-52.57	18.61	-9.54	63.50	68.20	-4.70
* 22980.00	Average	H	100	279	-69.43	8.16	-9.54	36.19	53.98	-17.79
* 22980.00	Peak	H	100	279	-58.71	8.16	-9.54	46.91	73.98	-27.07
28725.00	Peak	H	100	254	-43.71	-9.24	-9.54	44.51	68.20	-23.69

Table 7-63. Radiated Measurements with WCP

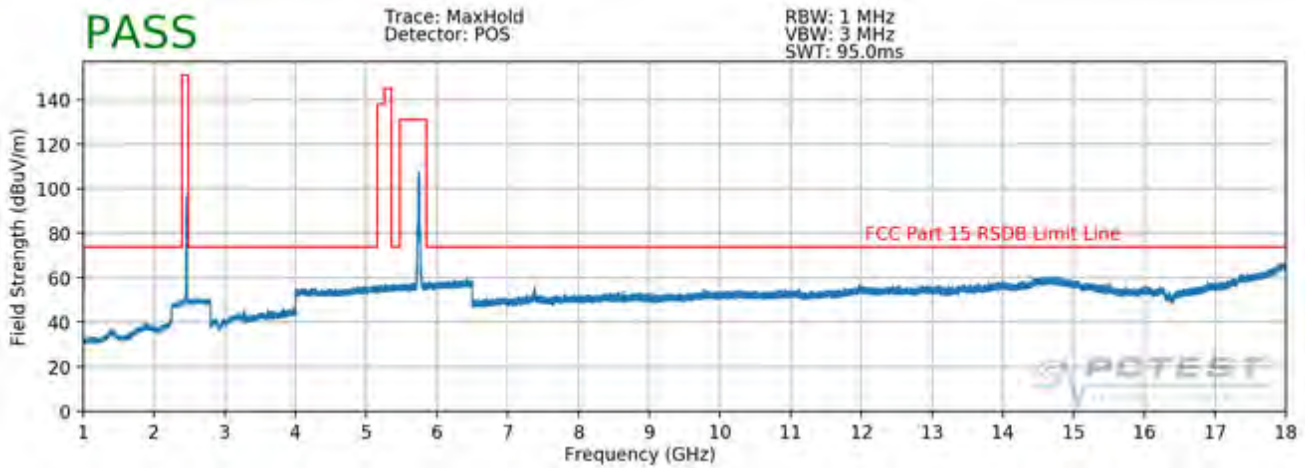
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 141 of 200	

7.7.3 Simultaneous Tx Radiated Spurious Emissions Measurements

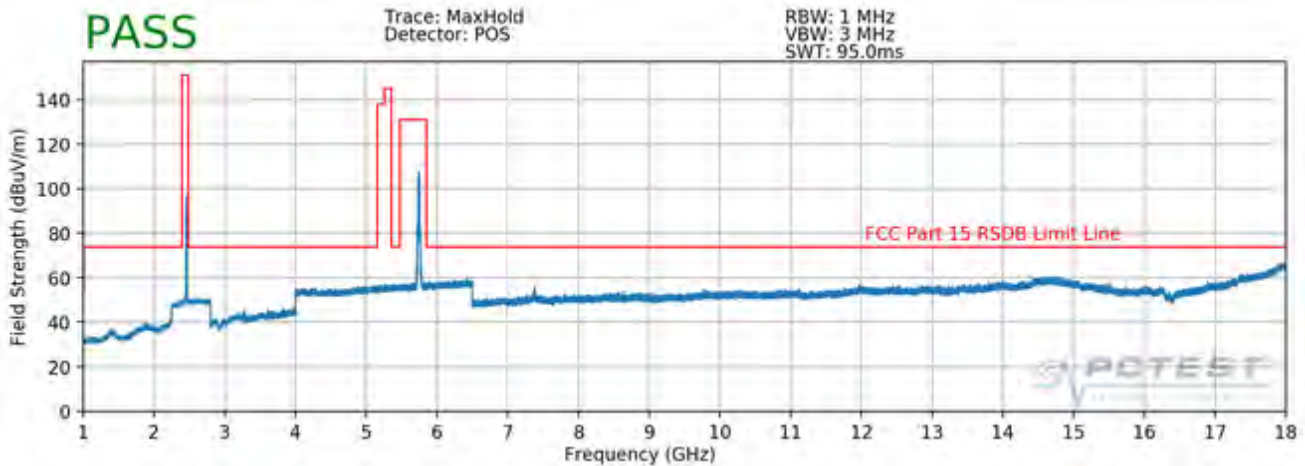
§15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Description	2.4 GHz Emission	5 GHz Emission
Antenna	1	2
Channel	11	144
Operating Frequency (MHz)	2462	5720
Data Rate (Mbps)	1	6
Mode	b	a

Table 7-64. Simultaneous Transmission Config-1

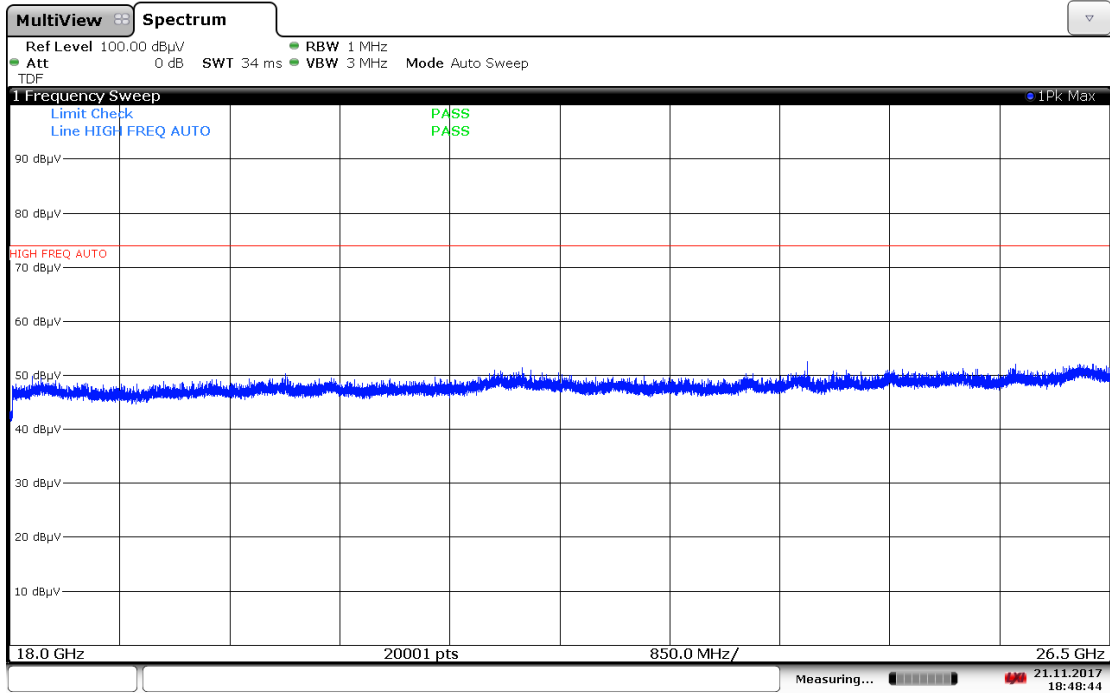


Plot 7-177. Radiated Spurious Plot above 1GHz (2.4GHz – 5GHz, Ant. Pol. H)



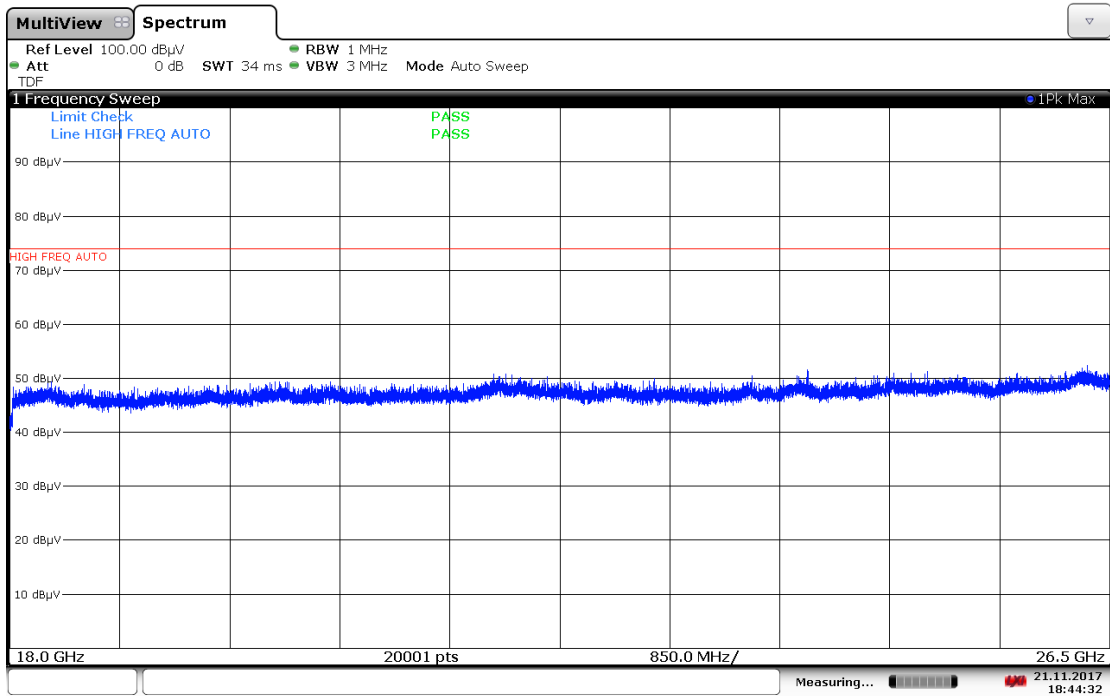
Plot 7-178. Radiated Spurious Plot above 1GHz (2.4GHz – 5GHz, Ant. Pol. V)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 142 of 200



18:48:45 21.11.2017

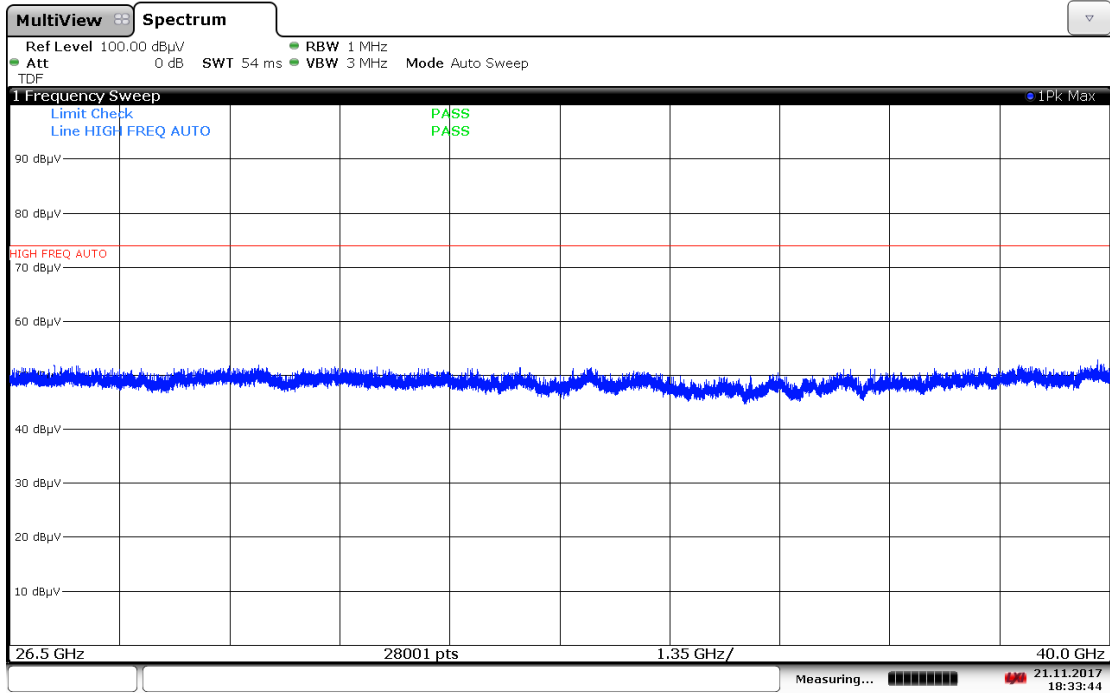
Plot 7-179. Radiated Spurious Plot 18GHz – 26.5GHz (2.4GHz – 5GHz, Ant. Pol. H)



18:44:32 21.11.2017

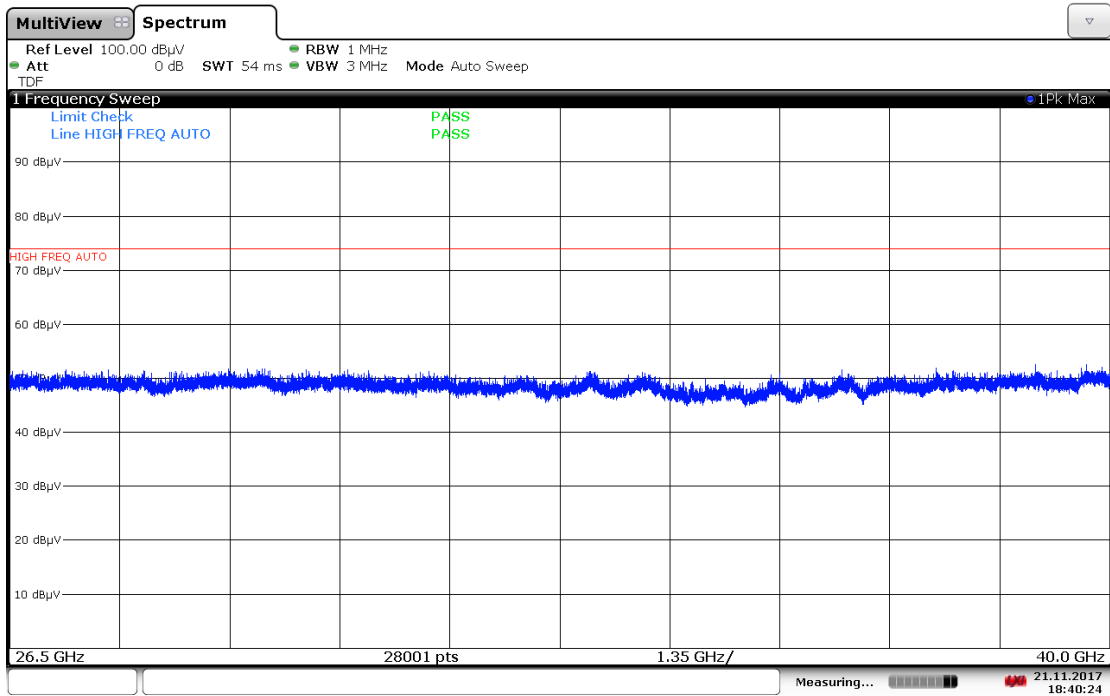
Plot 7-180. Radiated Spurious Plot 18GHz – 26.5GHz (2.4GHz – 5GHz, Ant. Pol. V)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2-A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 143 of 200



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Plot 7-181. Radiated Spurious Plot above 26.5GHz (2.4GHz – 5GHz, Ant. Pol. H)



18:40:25 21.11.2017

Plot 7-182. Radiated Spurious Plot above 26.5GHz (2.4GHz – 5GHz, Ant. Pol. V)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 144 of 200

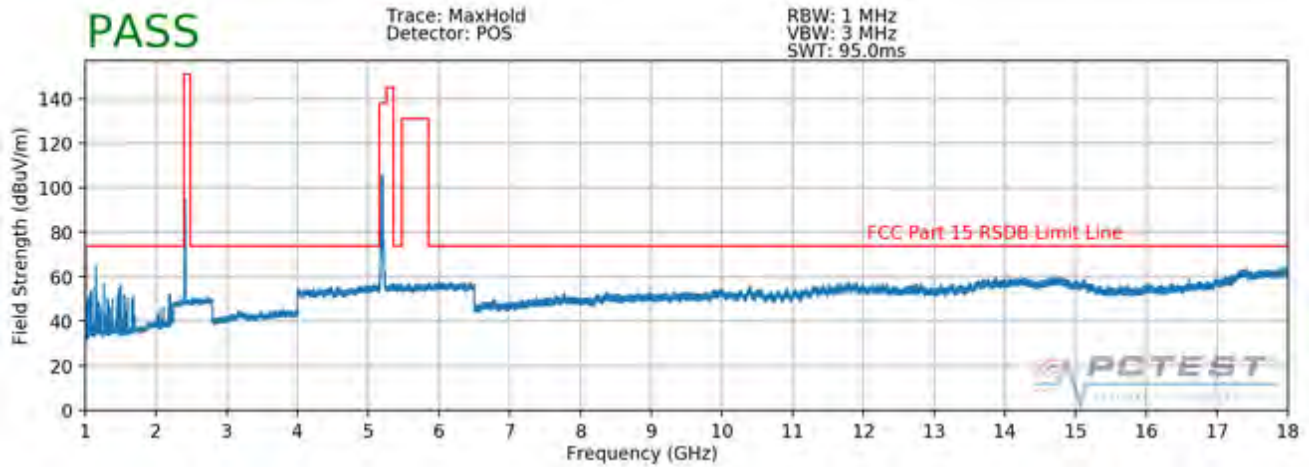
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 4054.00	Peak	V	-	-	-63.66	2.75	46.09	53.98	-7.89
* 7312.00	Average	V	-	-	-77.38	9.49	39.11	53.98	-14.87
* 7312.00	Peak	V	-	-	-65.16	9.49	51.33	73.98	-22.65
8978.00	Average	V	-	-	-77.20	9.82	39.62	53.98	-14.36
8978.00	Peak	V	-	-	-65.83	9.82	50.99	73.98	-22.99

Table 7-65. Radiated Measurements (ANT1 2.4GHz – ANT2 5GHz)

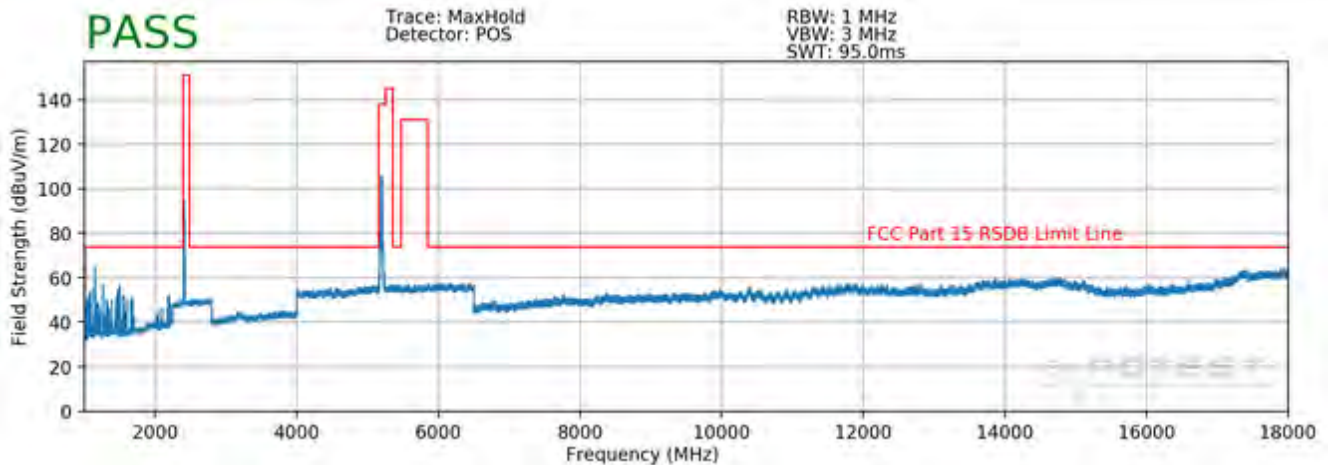
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 145 of 200	

Description	2.4 GHz Emission	5 GHz Emission
Antenna	2	1
Channel	1	40
Operating Frequency (MHz)	2412	5200
Data Rate (Mbps)	1	6
Mode	b	a

Table 7-66. Simultaneous Transmission Config-2



Plot 7-183. Radiated Spurious Plot above 1GHz (5GHz – 2.4 GHz, Ant. Pol. H)

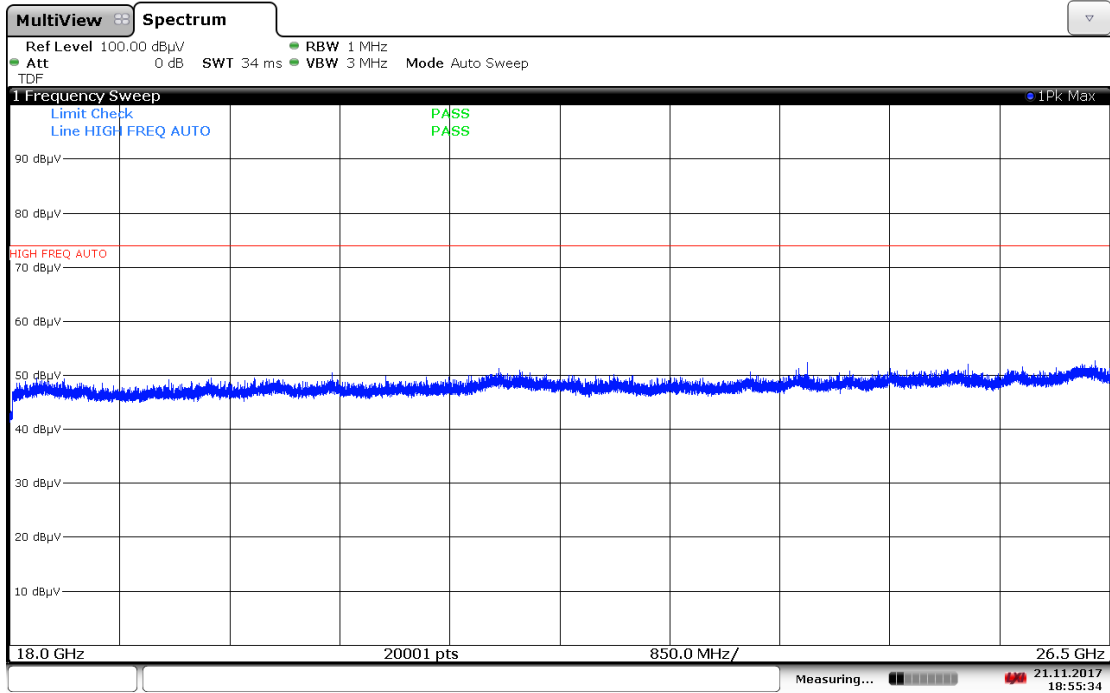


Plot 7-184. Radiated Spurious Plot above 1GHz (5GHz – 2.4 GHz, Ant. Pol. V)

Note:

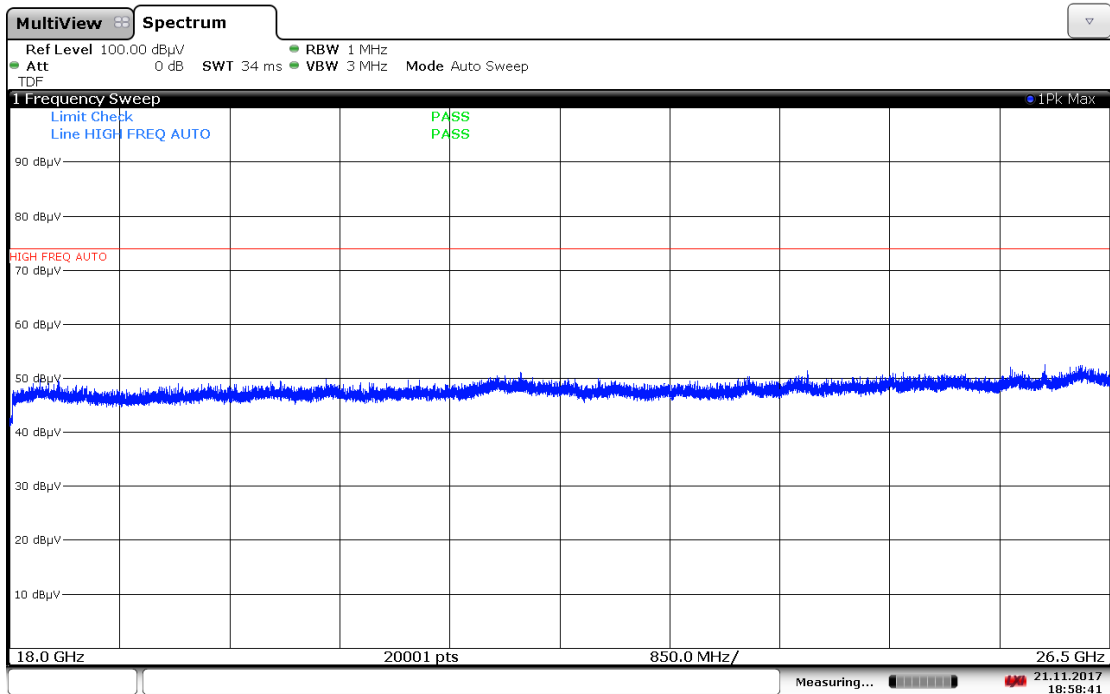
Emissions below 2GHz were investigated and determined to be ambient noise that does not originate from the EUT.

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 146 of 200	



18:55:34 21.11.2017

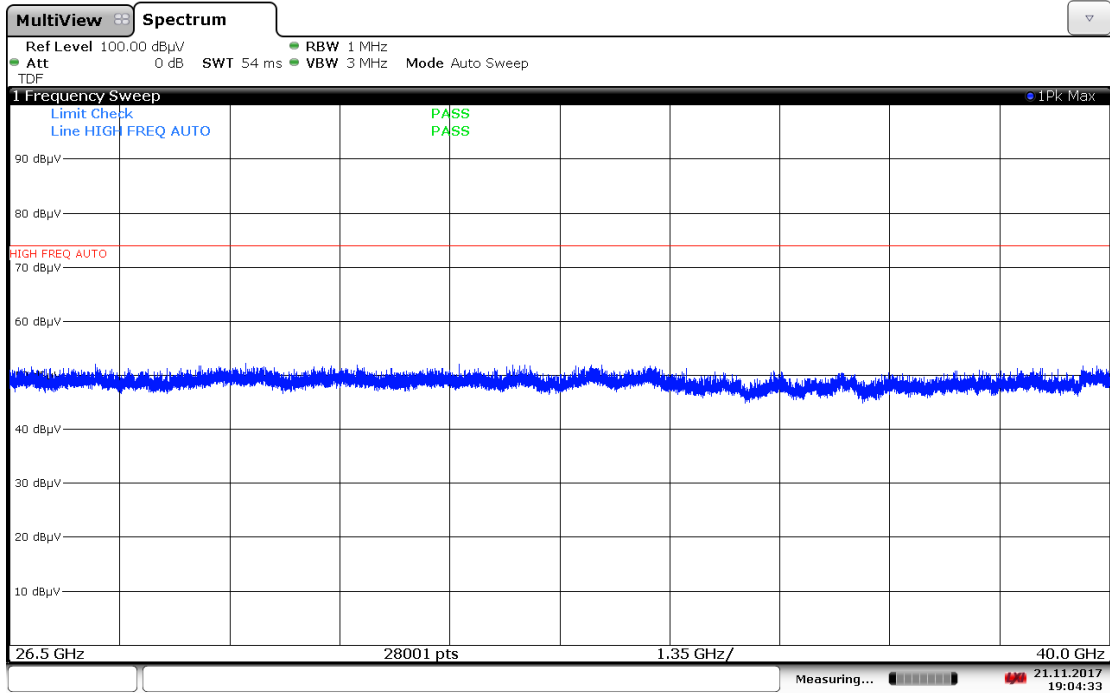
Plot 7-185. Radiated Spurious Plot 18GHz – 26.5GHz (5GHz – 2.4 GHz, Ant. Pol. H)



18:58:42 21.11.2017

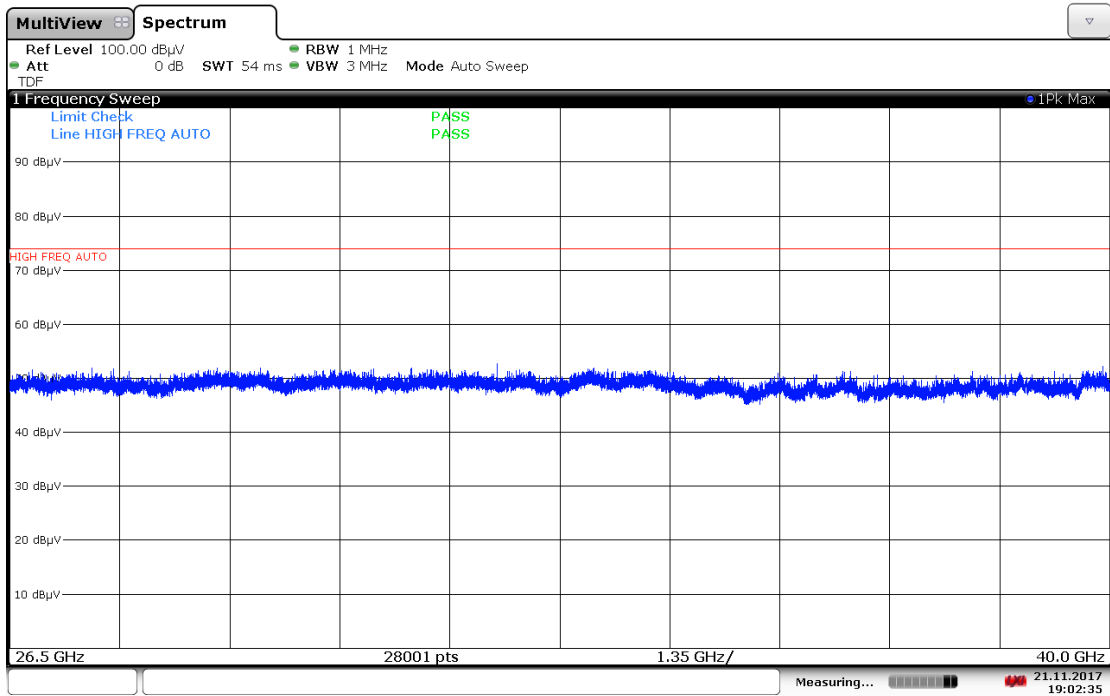
Plot 7-186. Radiated Spurious Plot 18GHz – 26.5GHz (5GHz – 2.4 GHz, Ant. Pol. V)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 147 of 200



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Plot 7-187. Radiated Spurious Plot above 26.5GHz (5GHz – 2.4 GHz, Ant. Pol. H)



19:02:35 21.11.2017

Plot 7-188. Radiated Spurious Plot above 26.5GHz (5GHz – 2.4 GHz, Ant. Pol. V)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2-A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 148 of 200	

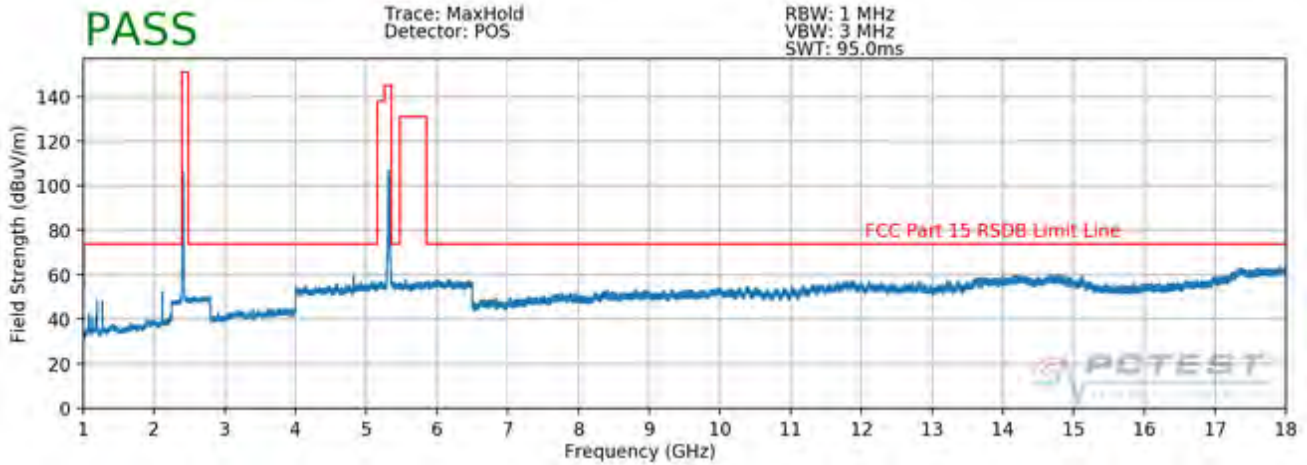
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
5952.00	Peak	H	-	-	-65.38	5.05	46.67	53.98	-7.31
7988.00	Peak	H	-	-	-66.48	10.08	50.60	53.98	-3.38
8740.00	Average	H	-	-	-77.92	10.15	39.23	53.98	-14.75
8740.00	Peak	H	-	-	-66.08	10.15	51.07	73.98	-22.91

Table 7-67. Radiated Measurements (ANT1 5GHz – ANT2 2.4GHz)

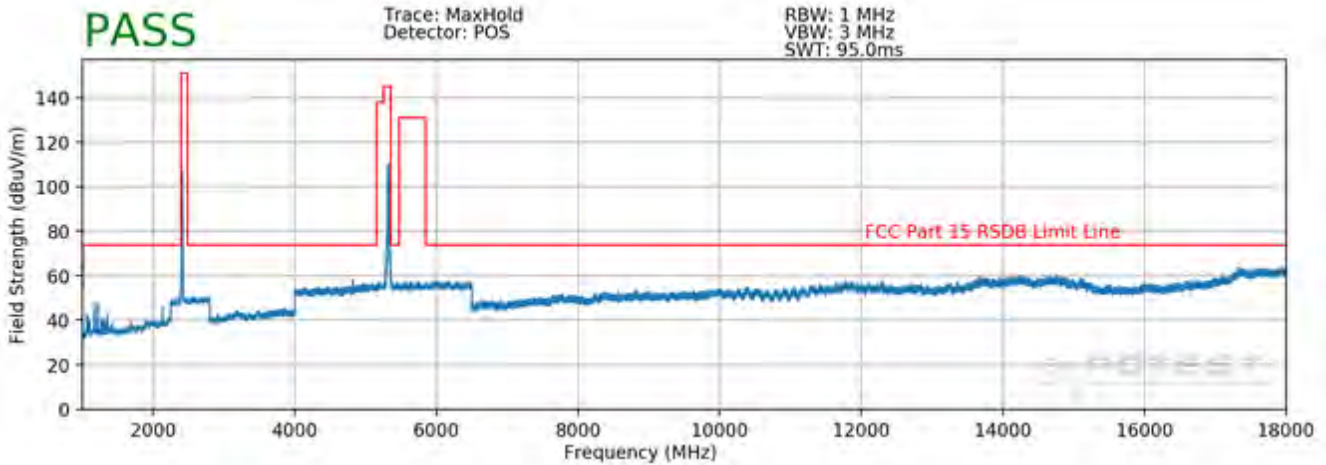
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 149 of 200	

Description	2.4 GHz Emission	5 GHz Emission
Antenna	1, 2	1, 2
Channel	6	56
Operating Frequency (MHz)	2437	5280
Data Rate (Mbps)	1	6
Mode	b	a

Table 7-68. Dual Band Simultaneous Transmission Config-3

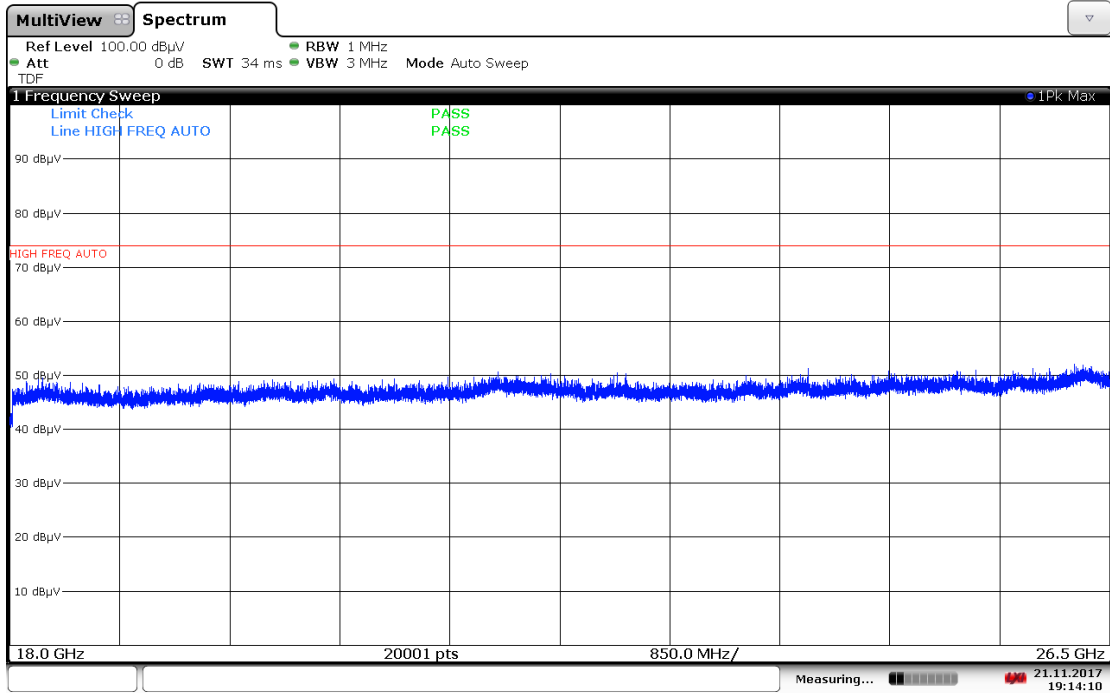


Plot 7-189. Radiated Spurious Plot above 1GHz (Dual Band Simult. Tx, Ant. Pol. H)



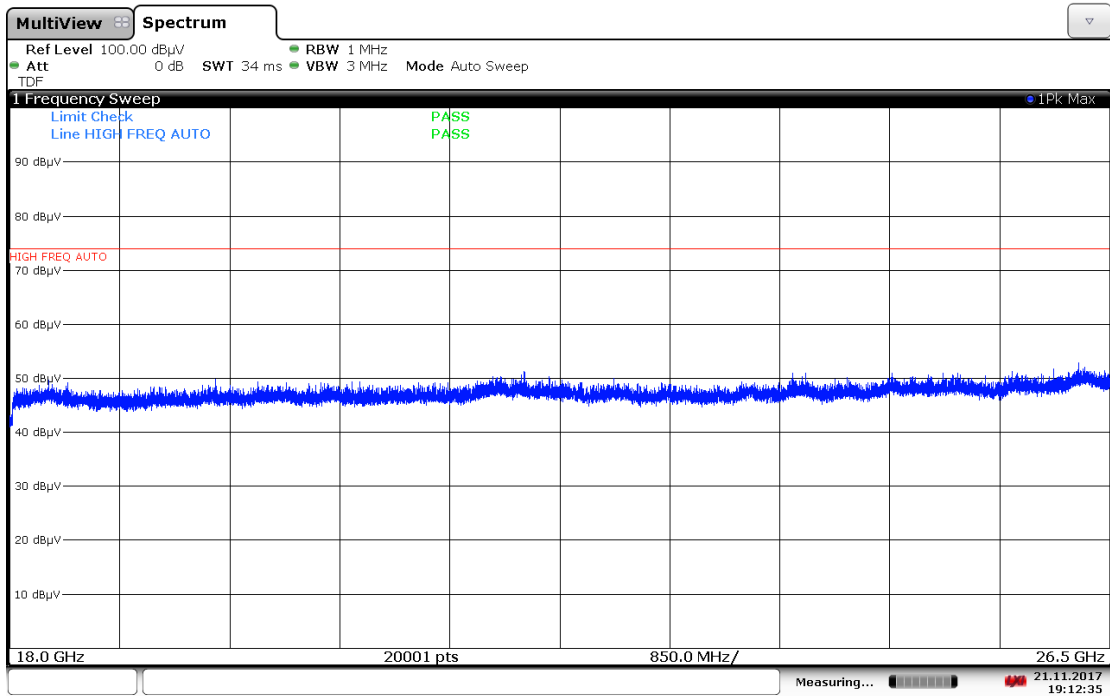
Plot 7-190. Radiated Spurious Plot above 1GHz (Dual Band Simult. Tx, Ant. Pol. V)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 150 of 200



19:14:11 21.11.2017

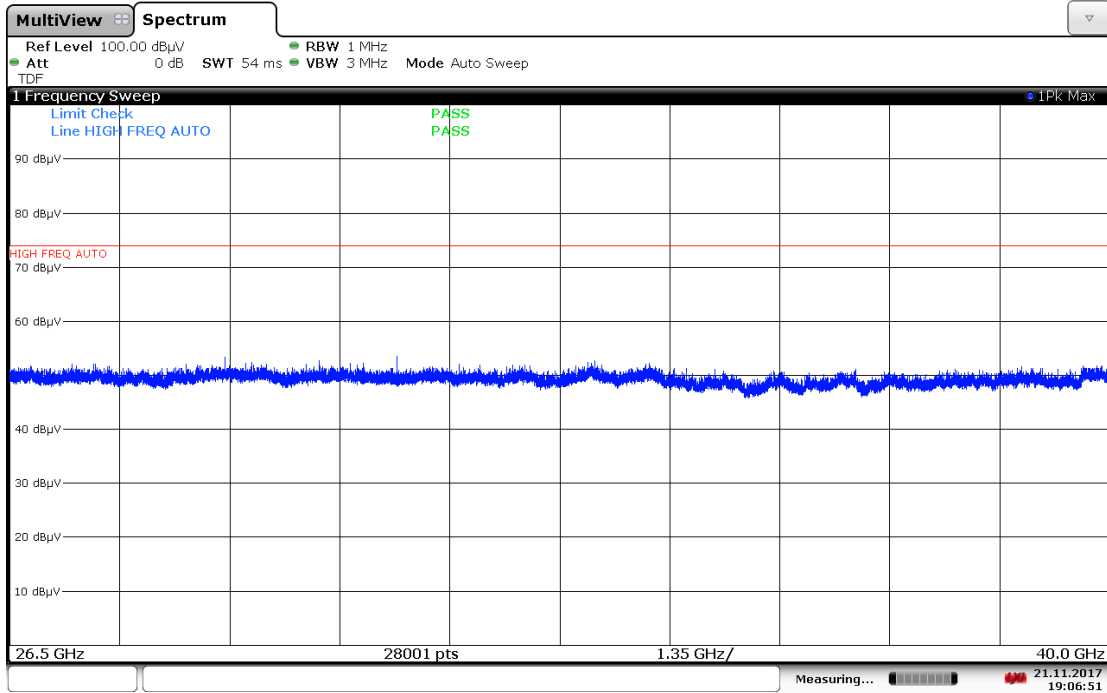
Plot 7-191. Radiated Spurious Plot 18GHz – 26.5GHz (Dual Band Simult. Tx, Ant. Pol. H)



19:12:35 21.11.2017

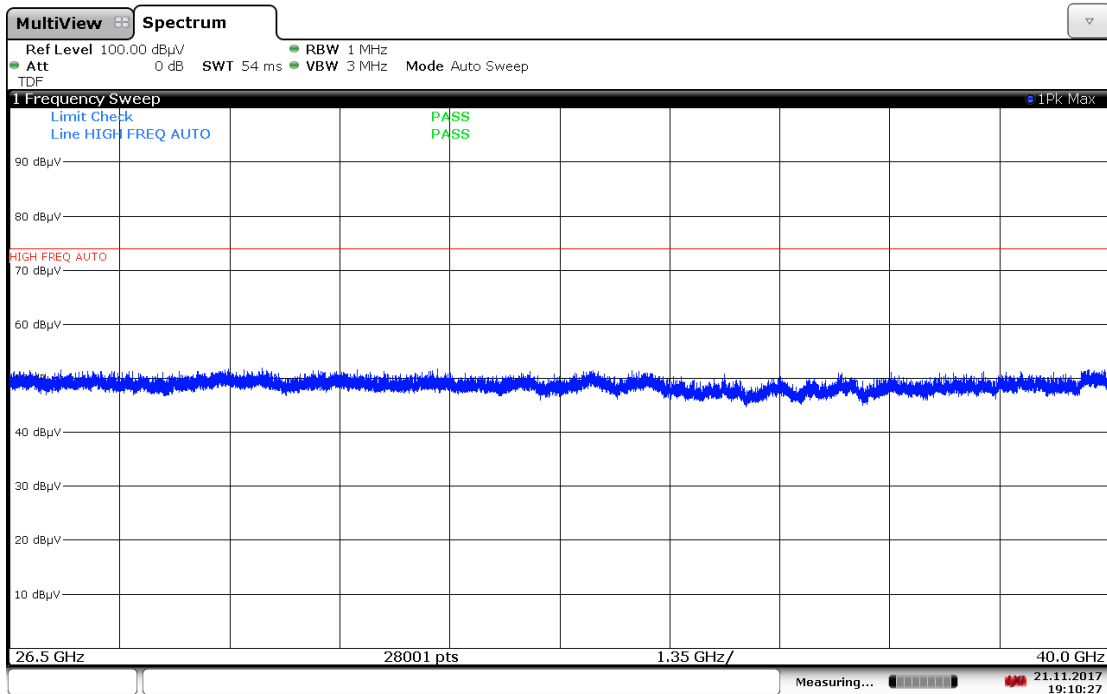
Plot 7-192. Radiated Spurious Plot 18GHz – 26.5GHz (Dual Band Simult. Tx, Ant. Pol. V)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 151 of 200	



19:06:52 21.11.2017

Plot 7-193. Radiated Spurious Plot above 26.5GHz (Dual Band Simult. Tx, Ant. Pol. H)



19:10:28 21.11.2017

Plot 7-194. Radiated Spurious Plot above 26.5GHz (Dual Band Simult. Tx, Ant. Pol. V)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2-A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 152 of 200	

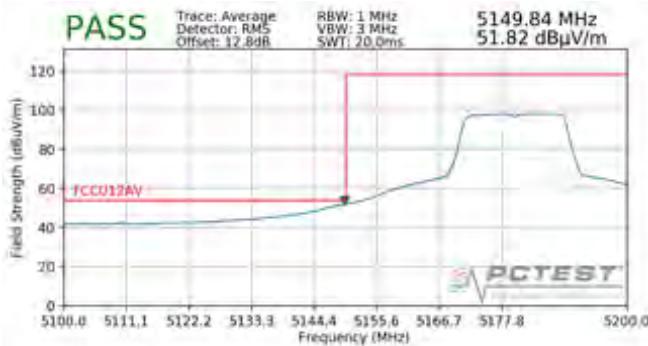
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
3249.00	Peak	H	-	-	-64.76	0.10	42.34	53.98	-11.64
6092.00	Peak	H	-	-	-64.23	6.28	49.05	53.98	-4.93
* 8123.00	Average	H	-	-	-76.77	9.23	39.46	53.98	-14.52
* 8123.00	Peak	H	-	-	-64.61	9.23	51.62	73.98	-22.36

Table 7-69. Radiated Measurements (Dual Band Simult. Tx)

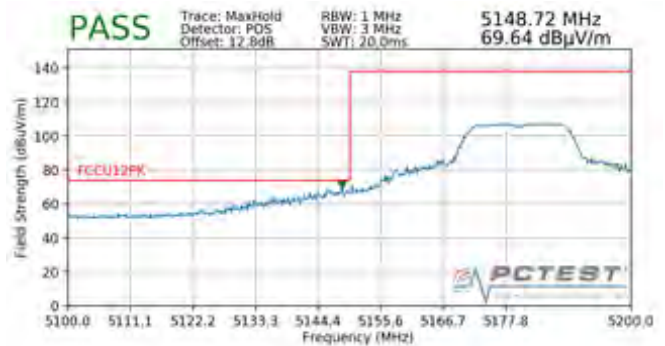
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 153 of 200	

7.7.4 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:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

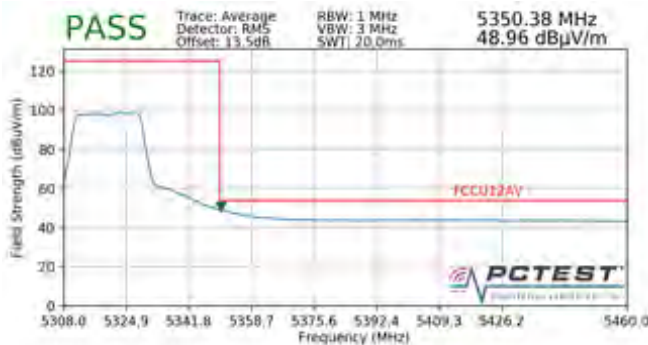


Plot 7-195. Radiated Lower Band Edge Plot (Average – UNII Band 1)

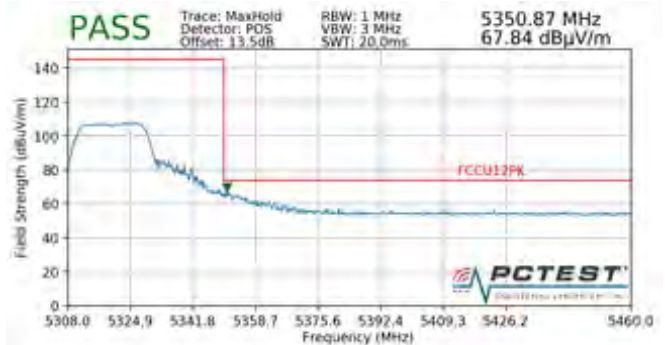


Plot 7-196. Radiated Lower Band Edge Plot (Peak – UNII Band 1)

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



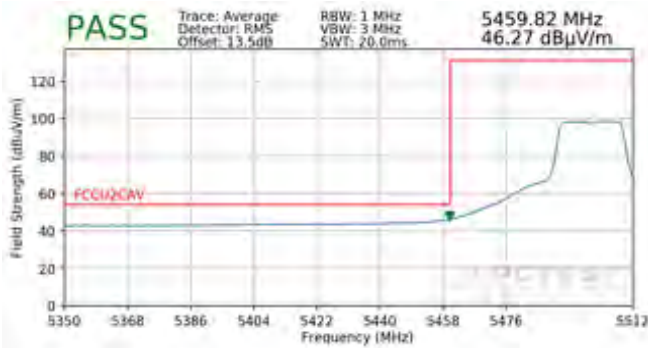
Plot 7-197. Radiated Upper Band Edge Plot (Average – UNII Band 2A)



Plot 7-198. Radiated Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 154 of 200

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5500MHz
 Channel: 100

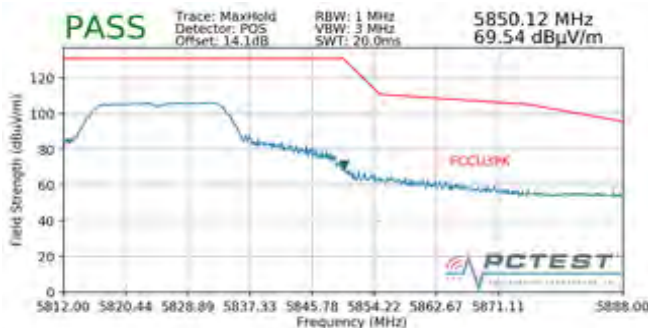


Plot 7-199. Radiated Lower Band Edge Plot (Average – UNII Band 2C)



Plot 7-200. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165



Plot 7-201. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

Note

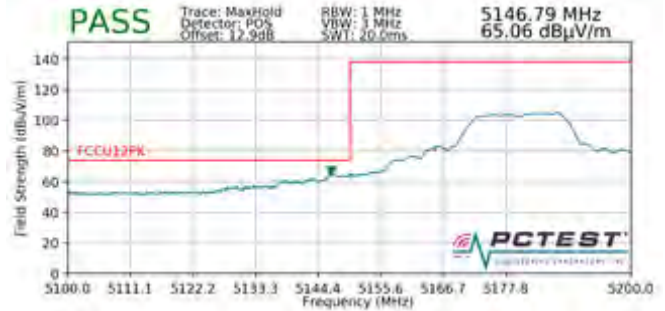
Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5180MHz
 Channel: 36



Plot 7-202. Radiated Band Edge Plot (Average – WCP)

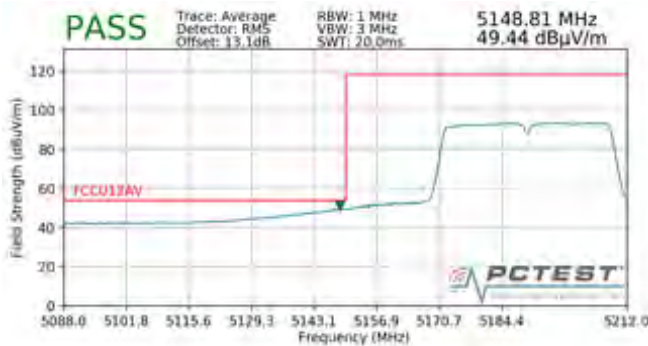


Plot 7-203. Radiated Band Edge Plot (Peak – WCP)

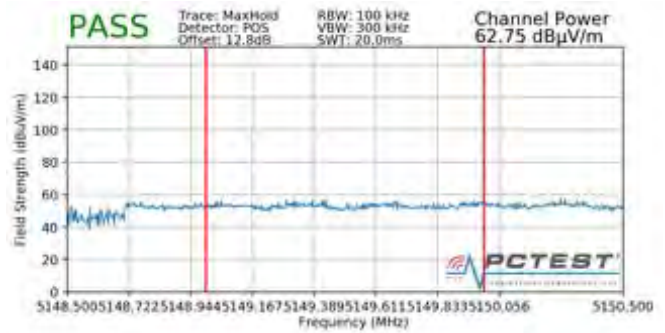
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 156 of 200	

7.7.5 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:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

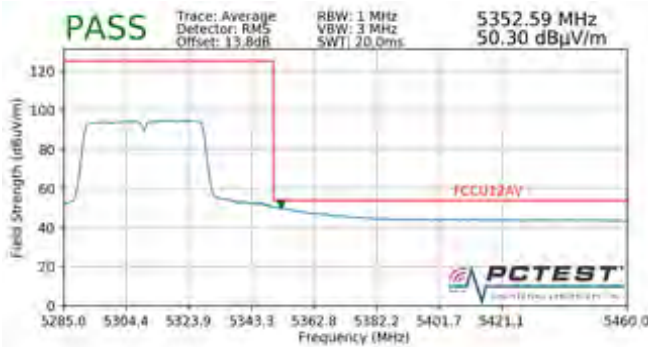


Plot 7-204. Radiated Lower Band Edge Plot (Average – UNII Band 1)

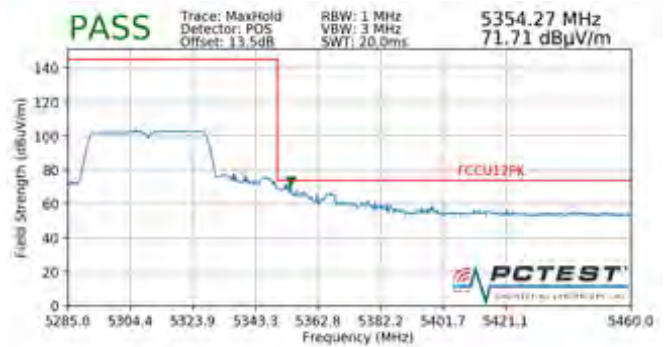


Plot 7-205. Radiated Lower Band Edge Plot (Peak – UNII Band 1)

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



Plot 7-206. Radiated Upper Band Edge Plot (Average – UNII Band 2A)



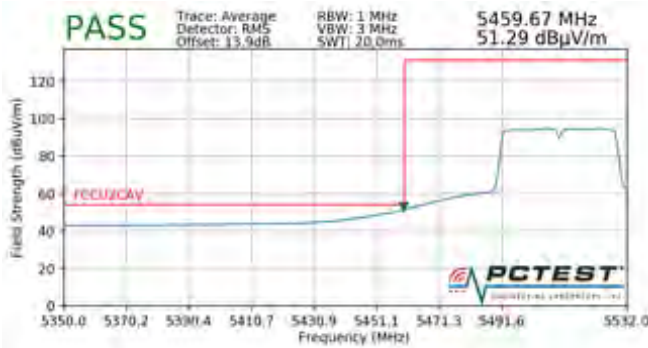
Plot 7-207. Radiated Upper Band Edge Plot (Peak – UNII Band 2A)

Note:

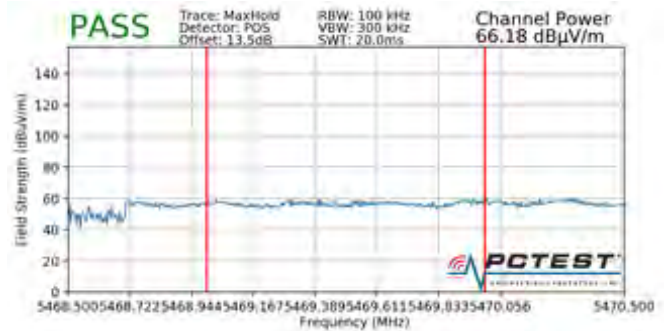
Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 157 of 200

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5510MHz
 Channel: 102



Plot 7-208. Radiated Lower Band Edge Plot (Average – UNII Band 2C)



Plot 7-209. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5795MHz
 Channel: 159



Plot 7-210. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

Note

Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5510MHz
 Channel: 102



Plot 7-211. Radiated Band Edge Plot (Average – WCP)

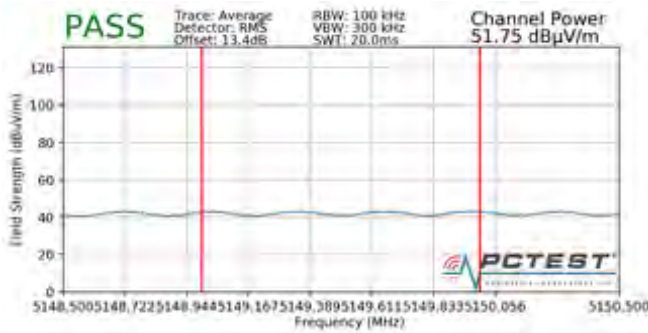


Plot 7-212. Radiated Band Edge Plot (Peak – WCP)

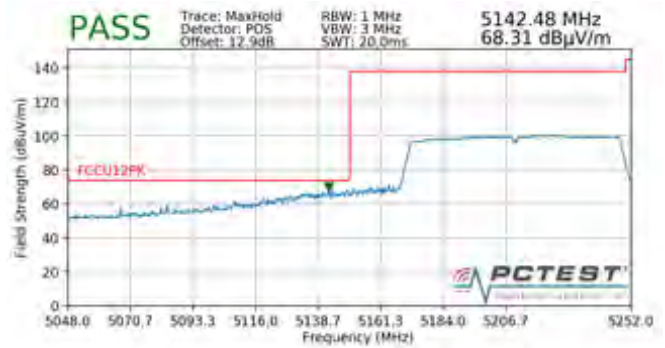
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 159 of 200	

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

Worst Case Mode:	802.11ac
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

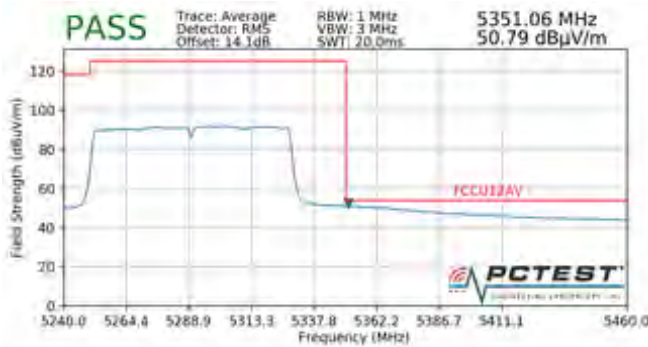


Plot 7-213. Radiated Lower Band Edge Plot (Average – UNII Band 1)

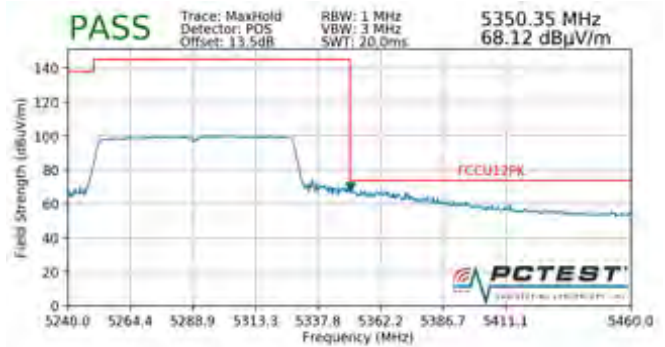


Plot 7-214. Radiated Lower Band Edge Plot (Peak – UNII Band 1)

Worst Case Mode:	802.11ac
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



Plot 7-215. Radiated Upper Band Edge Plot (Average – UNII Band 2A)



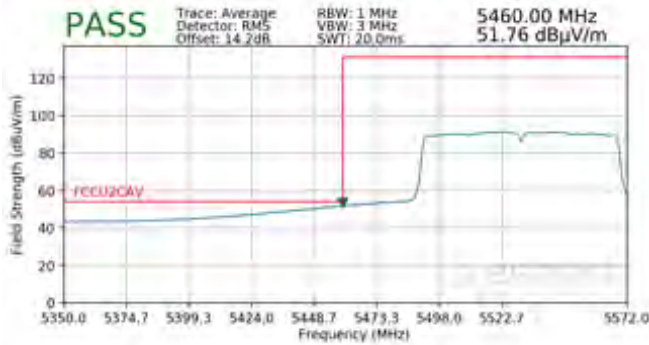
Plot 7-216. Radiated Upper Band Edge Plot (Peak – UNII Band 2A)

Note

Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11ac
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5530MHz
 Channel: 106

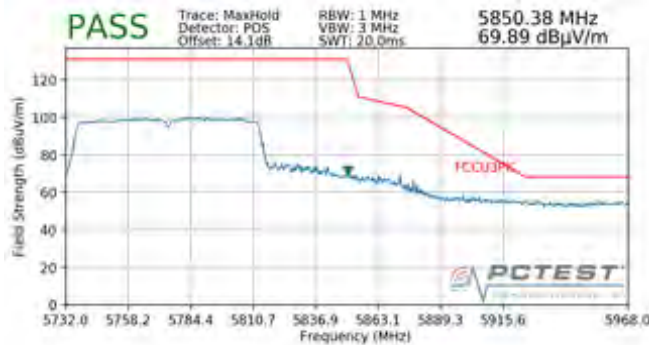


Plot 7-217. Radiated Lower Band Edge Plot (Average – UNII Band 2C)



Plot 7-218. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

Worst Case Mode: 802.11ac
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5775MHz
 Channel: 155



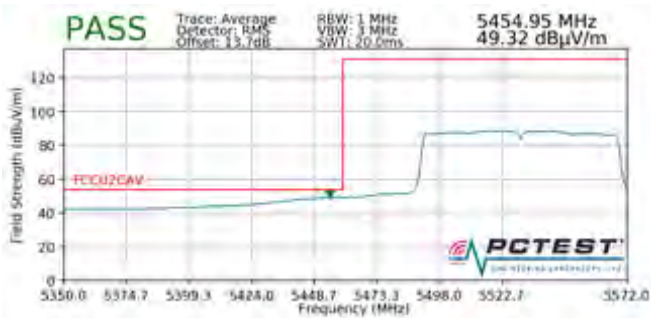
Plot 7-219. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

Note

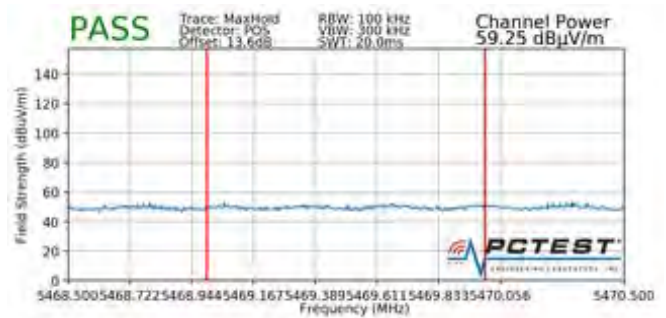
Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits.

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11ac
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5530MHz
 Channel: 106



Plot 7-220. Radiated Band Edge Plot (Average – WCP)



Plot 7-221. Radiated Band Edge Plot (Peak – WCP)

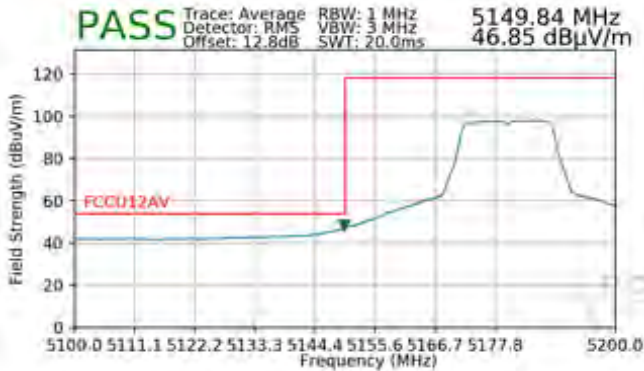
Note

Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

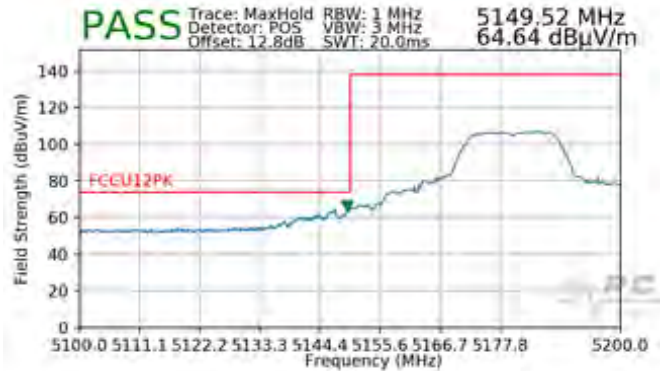
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)	 Approved by: Quality Manager
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7.7.7 Antenna-2 Radiated Band Edge Measurements (20MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

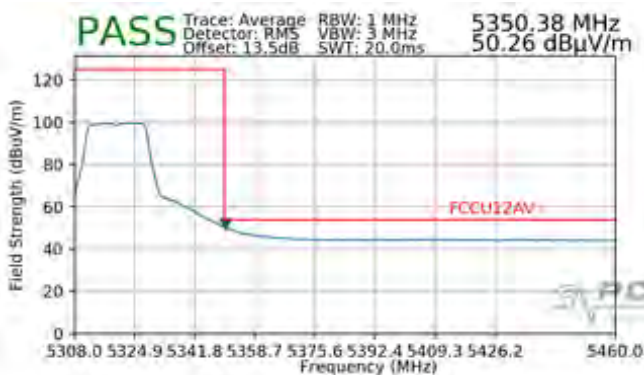


Plot 7-222. Radiated Lower Band Edge Plot (Average – UNII Band 1)

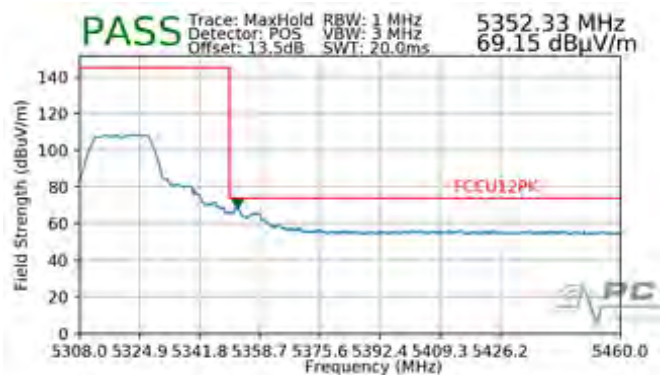


Plot 7-223. Radiated Lower Band Edge Plot (Peak – UNII Band 1)

Worst Case Mode:	802.11 n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



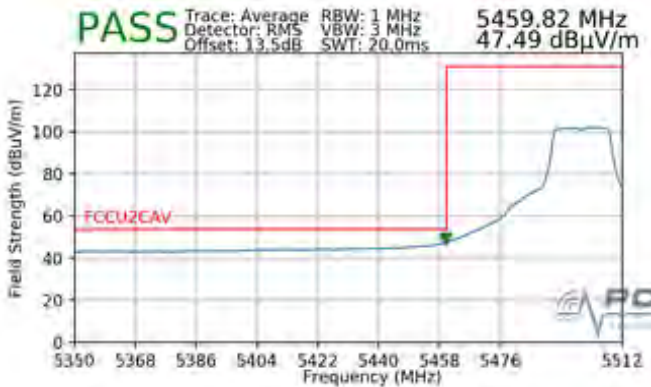
Plot 7-224. Radiated Upper Band Edge Plot (Average – UNII Band 2A)



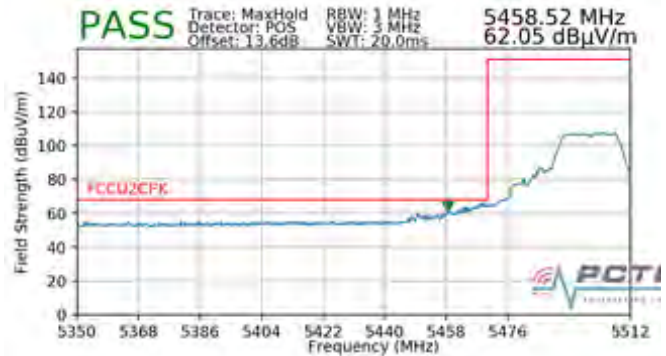
Plot 7-225. Radiated Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11 n
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5500MHz
 Channel: 100

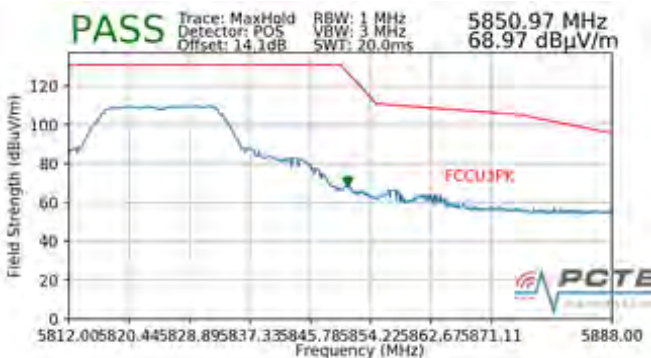


Plot 7-226. Radiated Lower Band Edge Plot (Average – UNII Band 2C)



Plot 7-227. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

Worst Case Mode: 802.11 n
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165



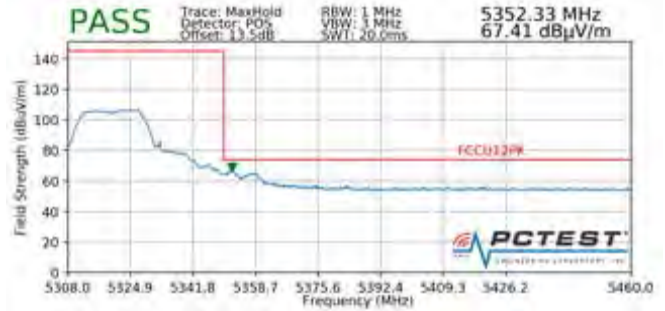
Plot 7-228. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2-A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 164 of 200

Worst Case Mode: 802.11 n
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64



Plot 7-229. Radiated Band Edge Plot (Average – WCP)

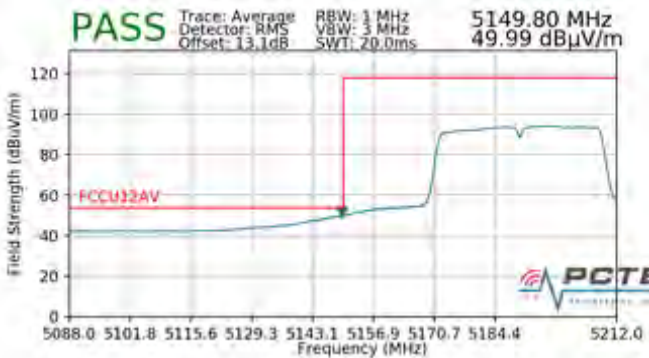


Plot 7-230. Radiated Band Edge Plot (Peak – WCP)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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7.7.8 Antenna-2 Radiated Band Edge Measurements (40MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

Worst Case Mode:	802.11 n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

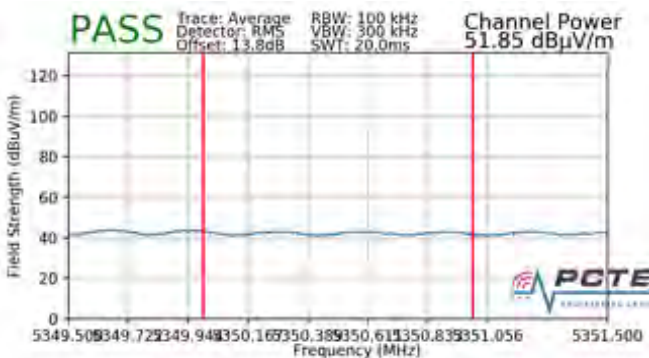


Plot 7-231. Radiated Lower Band Edge Plot (Average – UNII Band 1)



Plot 7-232. Radiated Lower Band Edge Plot (Peak – UNII Band 1)

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



Plot 7-233. Radiated Upper Band Edge Plot (Average – UNII Band 2A)



Plot 7-234. Radiated Upper Band Edge Plot (Peak – UNII Band 2A)

Note

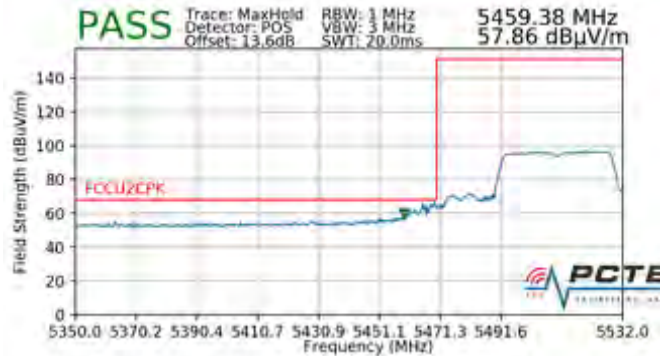
Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11 n
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5510MHz
 Channel: 102



Plot 7-235. Radiated Lower Band Edge Plot (Average – UNII Band 2C)



Plot 7-236. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

Worst Case Mode: 802.11 n
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5795MHz
 Channel: 159



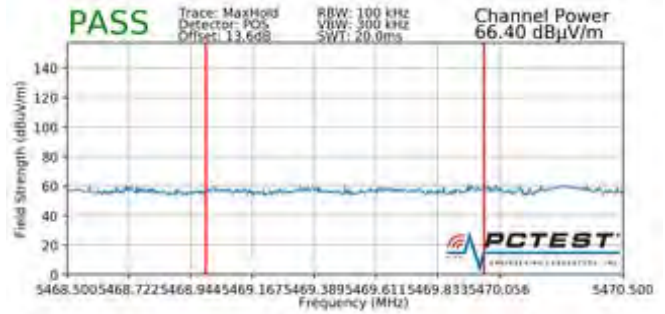
Plot 7-237. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11 n
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5310MHz
 Channel: 62



Plot 7-238. Radiated Band Edge Plot (Average – WCP)



Plot 7-239. Radiated Band Edge Plot (Peak – WCP)

Note

Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits.

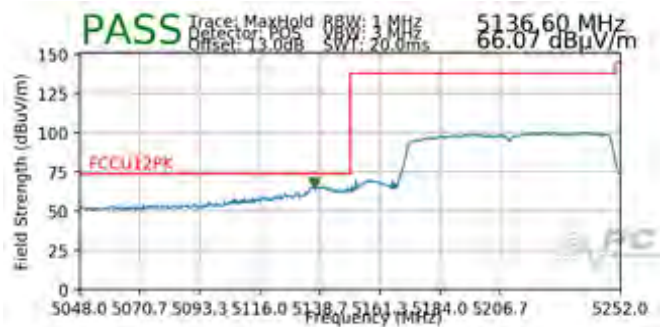
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)	 Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 168 of 200

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

Worst Case Mode:	802.11 ac
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

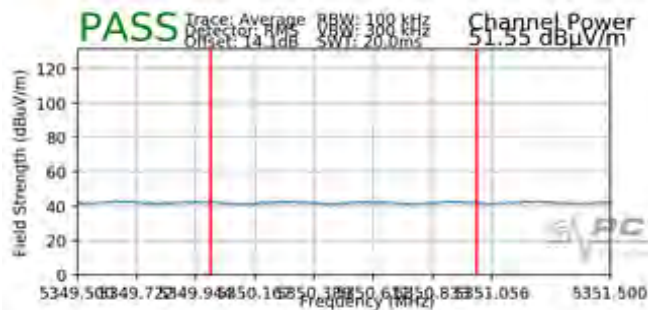


Plot 7-240. Radiated Lower Band Edge Plot (Average – UNII Band 1)

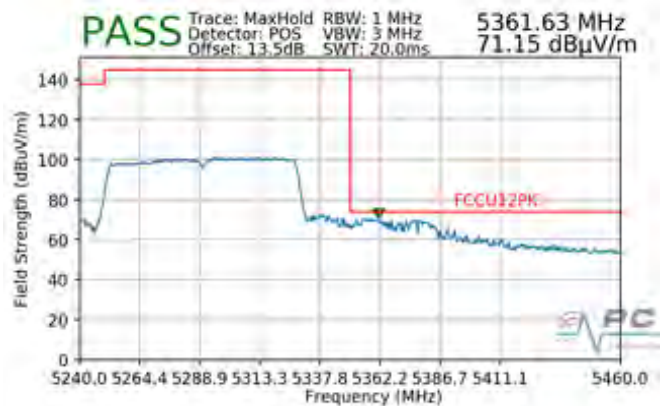


Plot 7-241. Radiated Lower Band Edge Plot (Peak – UNII Band 1)

Worst Case Mode:	802.11 ac
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



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



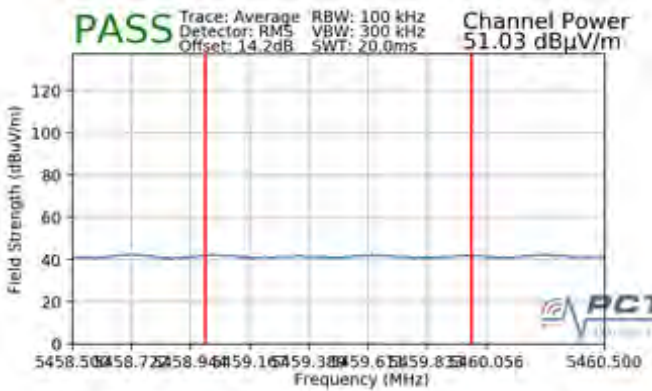
Plot 7-243. Radiated Upper Band Edge Plot (Peak – UNII Band 2A)

Note:

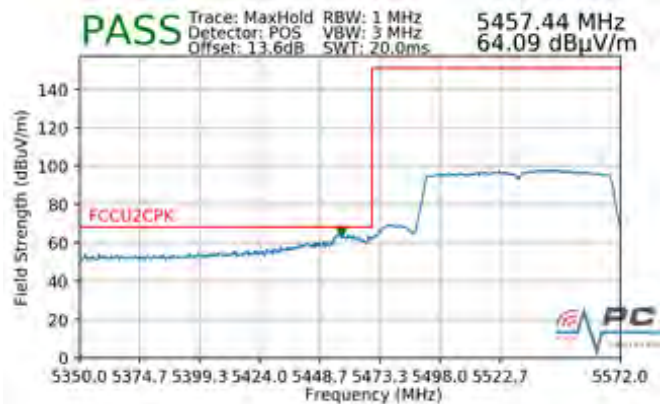
Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11 ac
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5530MHz
 Channel: 106

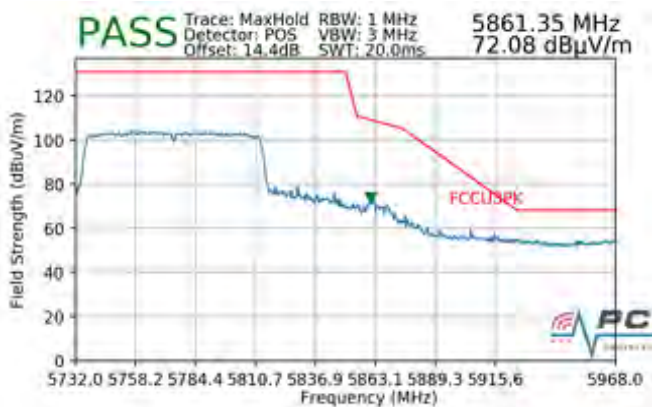


Plot 7-244. Radiated Lower Band Edge Plot (Average – UNII Band 2C)



Plot 7-245. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

Worst Case Mode: 802.11ac
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5775MHz
 Channel: 155



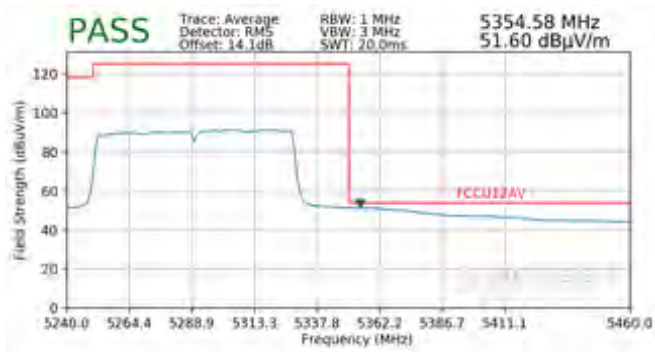
Plot 7-246. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

Note:

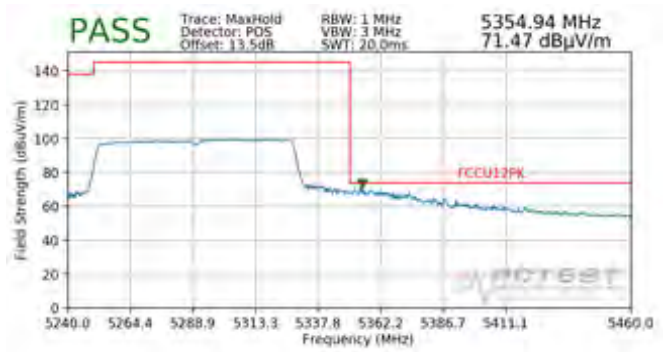
Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11 ac
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5290MHz
 Channel: 58



Plot 7-247. Radiated Band Edge Plot (Average – WCP)

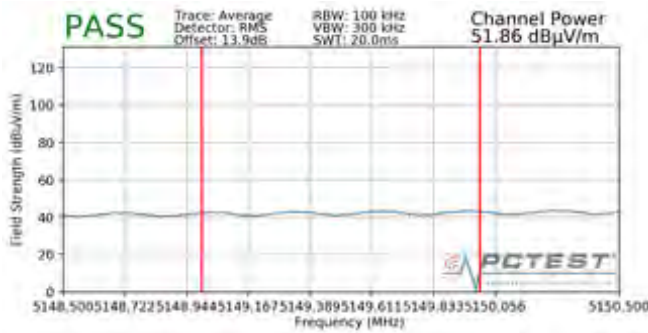


Plot 7-248. Radiated Band Edge Plot (Peak – WCP)

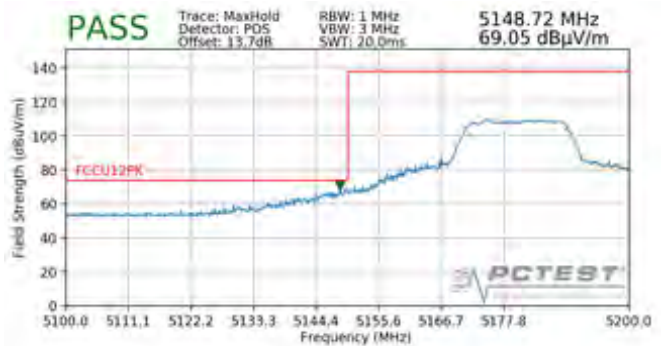
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 171 of 200	

7.7.10 MIMO Radiated Band Edge Measurements (20MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

Worst Case Mode:	802.11 n
Worst Case Transfer Rate:	MCS8
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

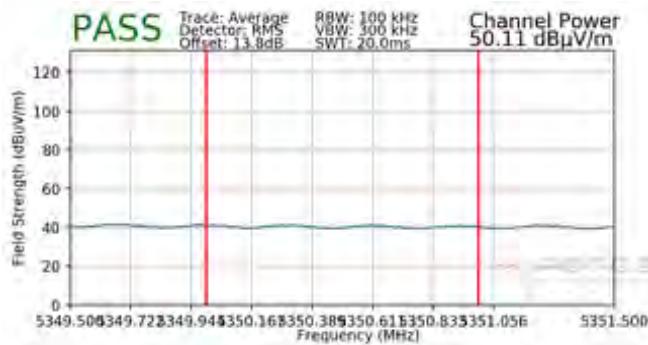


Plot 7-249. Radiated Lower Band Edge Plot (Average – UNII Band 1)



Plot 7-250. Radiated Lower Band Edge Plot (Peak – UNII Band 1)

Worst Case Mode:	802.11 n
Worst Case Transfer Rate:	MCS8
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



Plot 7-251. Radiated Upper Band Edge Plot (Average – UNII Band 2A)



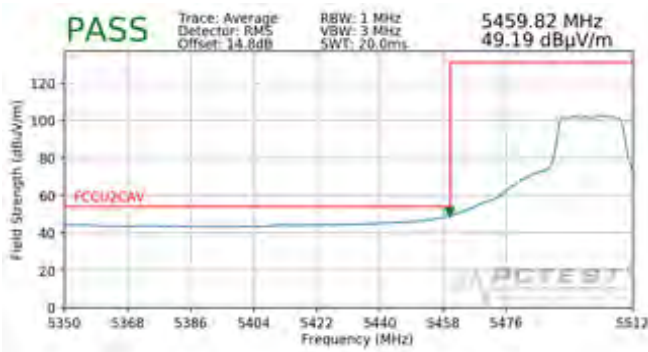
Plot 7-252. Radiated Upper Band Edge Plot (Peak – UNII Band 2A)

Note:

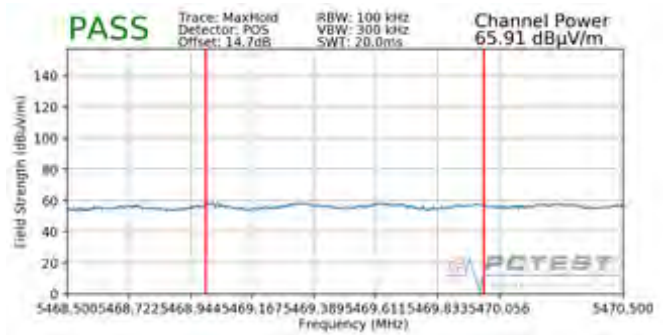
Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11 n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5500MHz
 Channel: 100

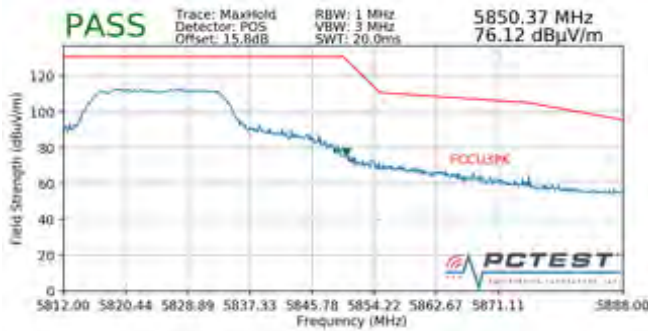


Plot 7-253. Radiated Upper Band Edge Plot (Average – UNII Band 2C)



Plot 7-254. Radiated Upper Band Edge Plot (Peak – UNII Band 2C)

Worst Case Mode: 802.11 n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165



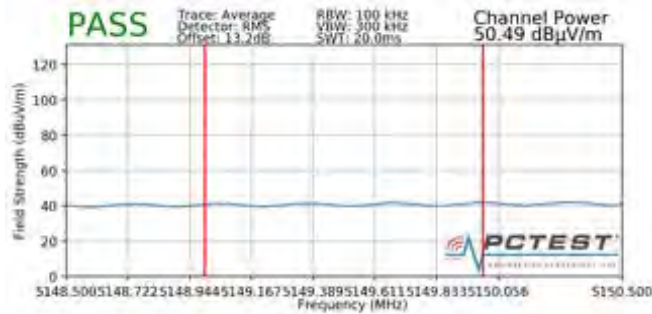
Plot 7-255. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

Note:

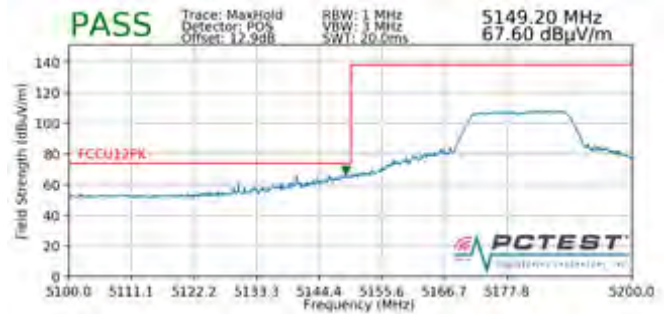
Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11 n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5180MHz
 Channel: 36



**Plot 7-256. Radiated Band Edge Plot
(Average – WCP)**



**Plot 7-257. Radiated Band Edge Plot
(Peak – WCP)**

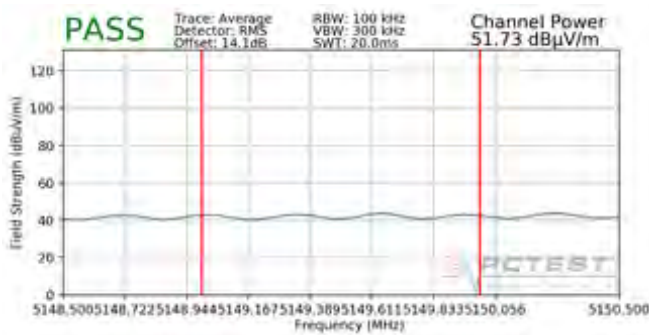
Note:

Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

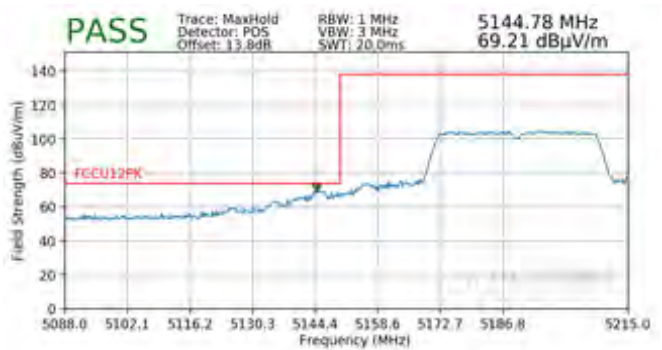
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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7.7.11 MIMO Radiated Band Edge Measurements (40MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

Worst Case Mode: 802.11 n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5190MHz
 Channel: 38

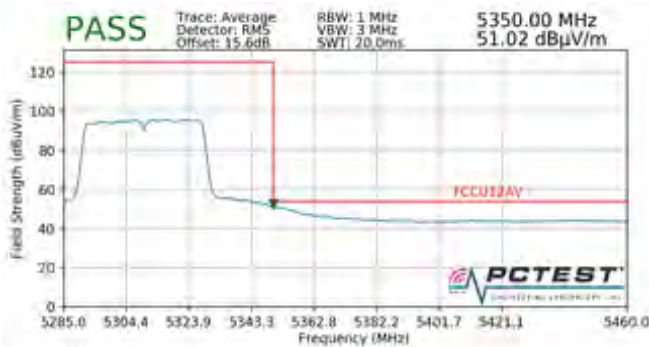


Plot 7-258. Radiated Lower Band Edge Plot (Average – UNII Band 1)

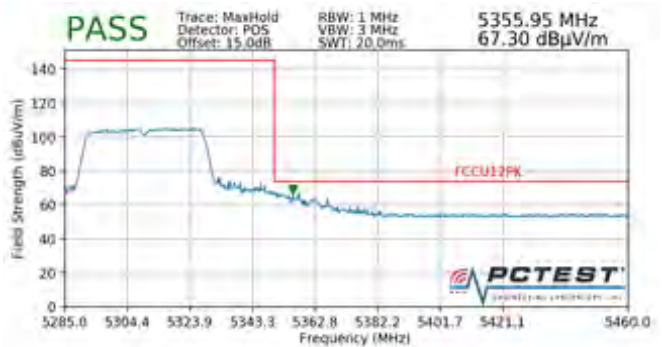


Plot 7-259. Radiated Lower Band Edge Plot (Peak – UNII Band 1)

Worst Case Mode: 802.11 n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5310MHz
 Channel: 62



Plot 7-260. Radiated Upper Band Edge Plot (Average – UNII Band 2A)



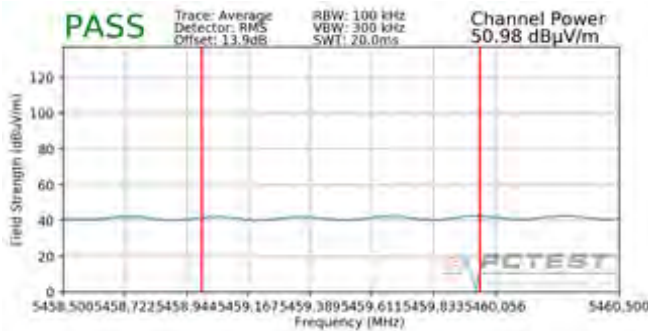
Plot 7-261. Radiated Upper Band Edge Plot (Peak – UNII Band 2A)

Note:

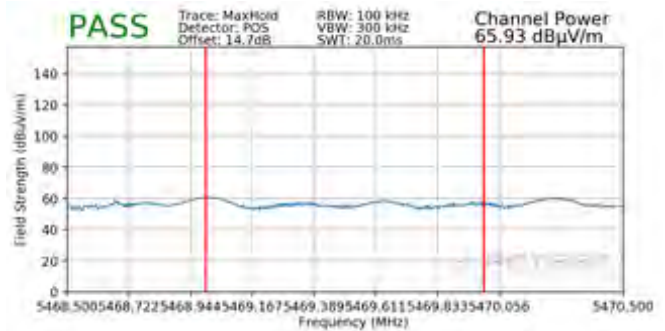
Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

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Worst Case Mode: 802.11 n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5510MHz
 Channel: 102

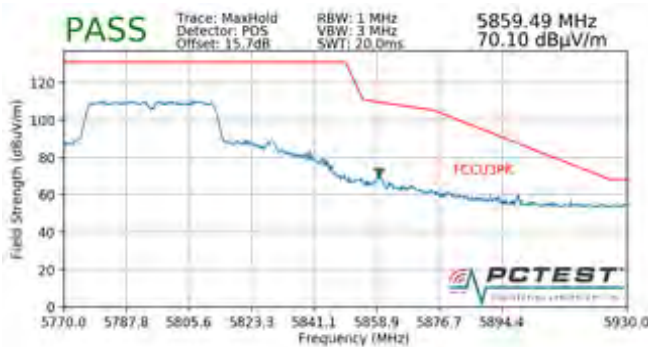


Plot 7-262. Radiated Lower Band Edge Plot (Average – UNII Band 2C)



Plot 7-263. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

Worst Case Mode: 802.11 n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5795MHz
 Channel: 159



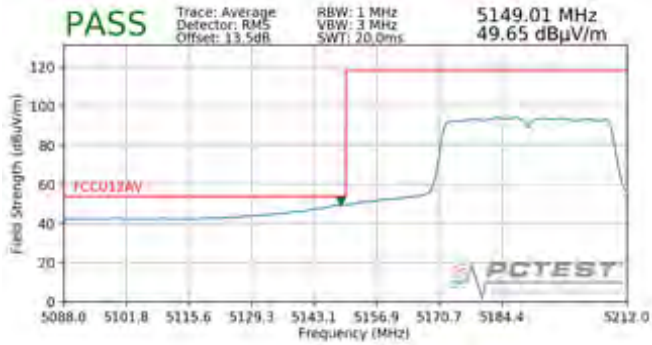
Plot 7-264. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

Note:

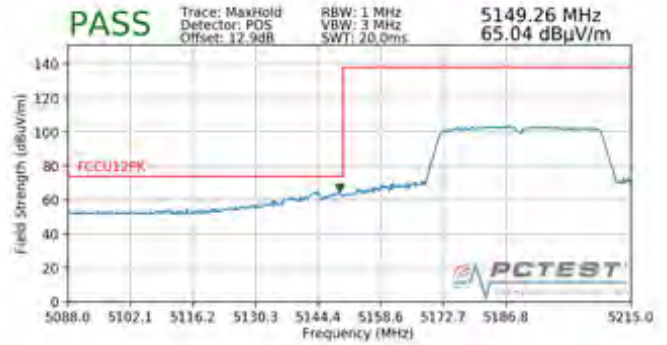
Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11 n
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5190MHz
 Channel: 38



Plot 7-265. Radiated Band Edge Plot (Average – WCP)

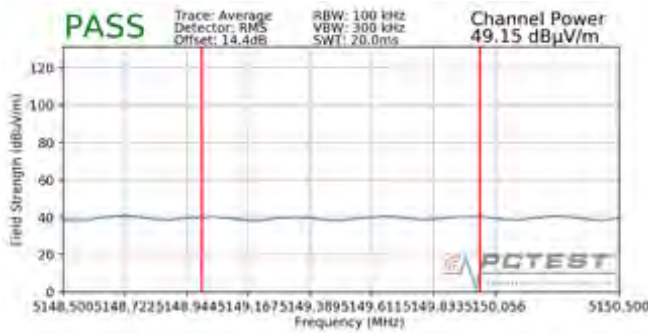


Plot 7-266. Radiated Band Edge Plot (Peak – WCP)

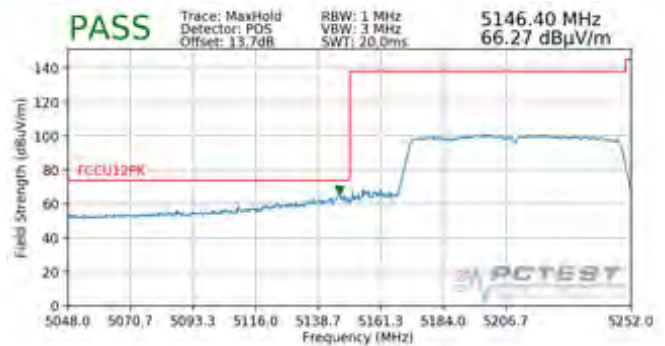
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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7.7.12 MIMO Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

Worst Case Mode: 802.11ac
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5210MHz
 Channel: 42

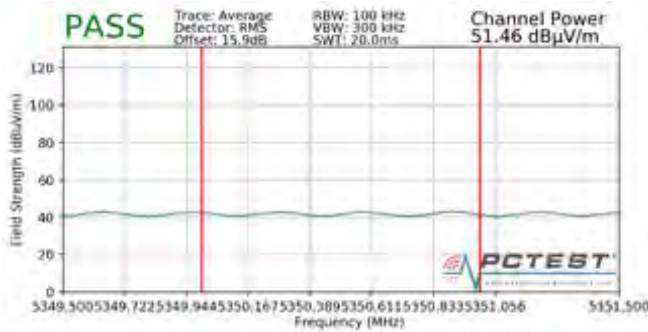


Plot 7-267. Radiated Lower Band Edge Plot (Average – UNII Band 1)

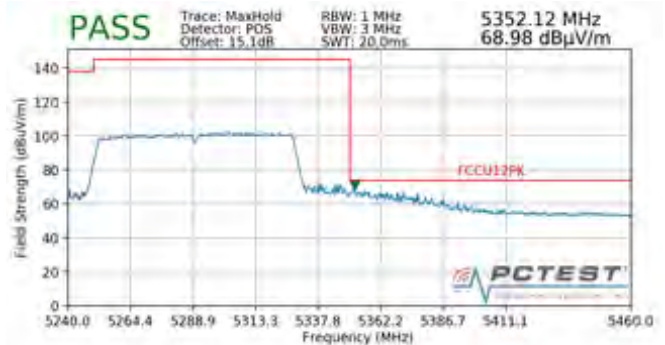


Plot 7-268. Radiated Lower Band Edge Plot (Peak – UNII Band 1)

Worst Case Mode: 802.11 ac
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5290MHz
 Channel: 58



Plot 7-269. Radiated Upper Band Edge Plot (Average – UNII Band 2A)



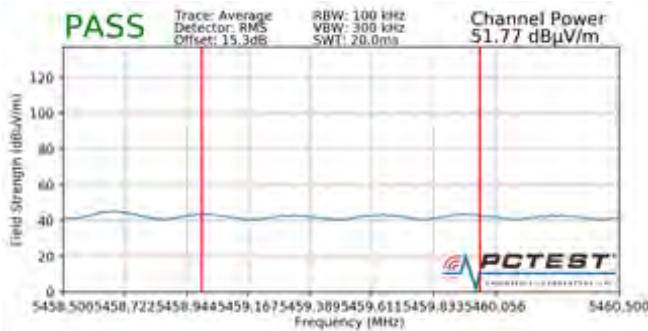
Plot 7-270. Radiated Upper Band Edge Plot (Peak – UNII Band 2A)

Note:

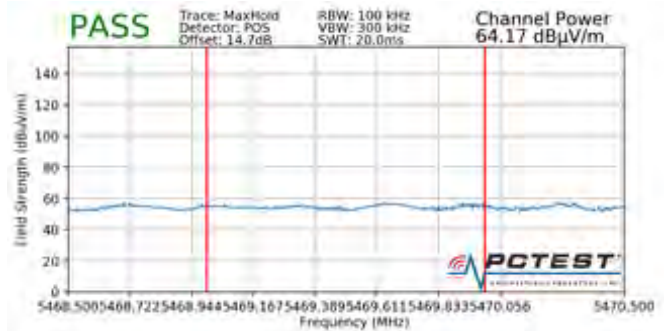
Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

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Worst Case Mode: 802.11 ac
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5530MHz
 Channel: 106

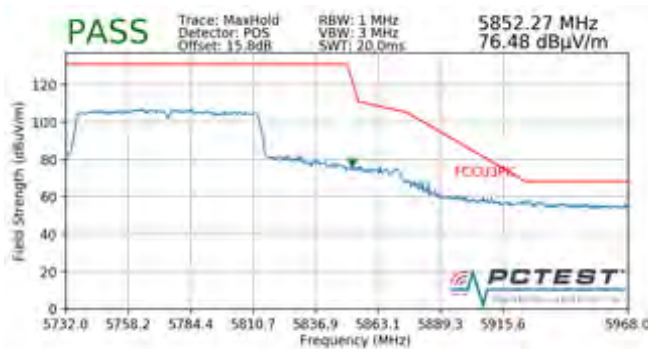


Plot 7-271. Radiated Lower Band Edge Plot (Average – UNII Band 2C)



Plot 7-272. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

Worst Case Mode: 802.11ac
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5775MHz
 Channel: 155



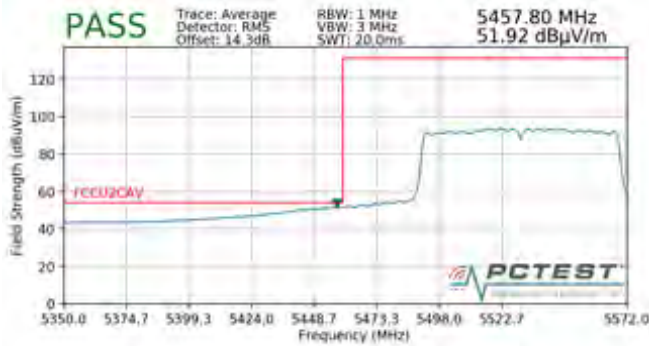
Plot 7-273. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

Note:

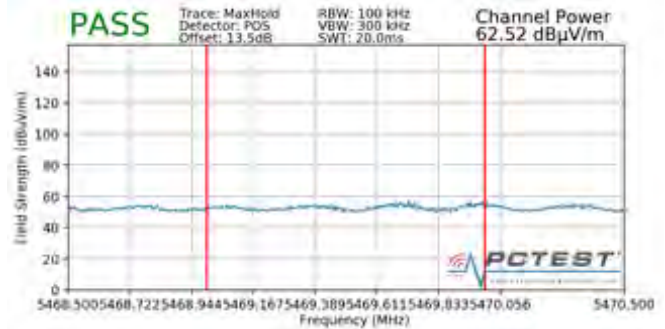
Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

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Worst Case Mode: 802.11 ac
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5530MHz
 Channel: 106



Plot 7-274. Radiated Band Edge Plot (Average – WCP)



Plot 7-275. Radiated Band Edge Plot (Peak – WCP)

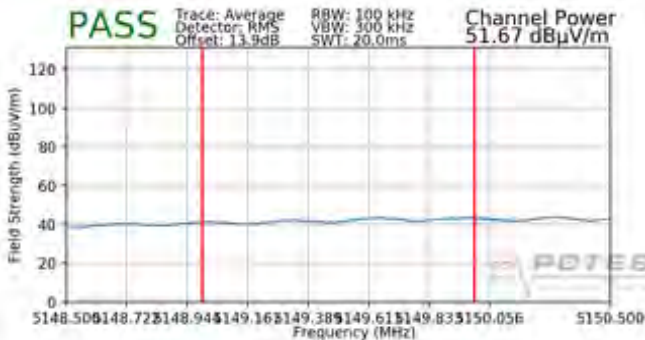
Note:

Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

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7.7.13 CDD Radiated Band Edge Measurements (20MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209; RSS-Gen [8.9]

Worst Case Mode: 802.11 a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 5180MHz
 Channel: 36

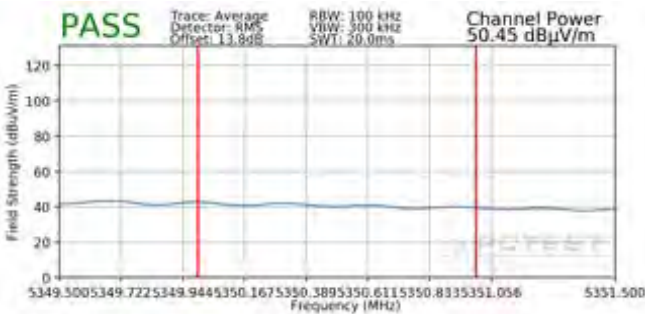


Plot 7-276. Radiated Lower Band Edge Plot (Average – UNII Band 1)

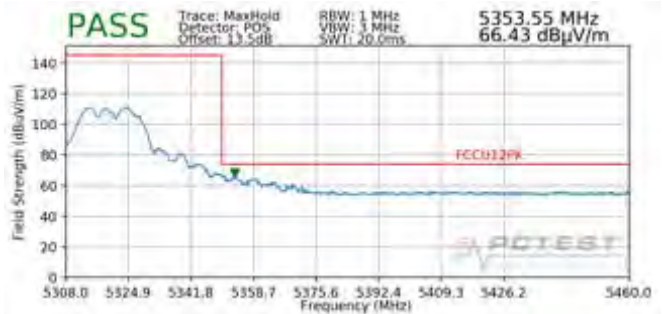


Plot 7-277. Radiated Lower Band Edge Plot (Peak – UNII Band 1)

Worst Case Mode: 802.11 a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64



Plot 7-278. Radiated Upper Band Edge Plot (Average – UNII Band 2A)



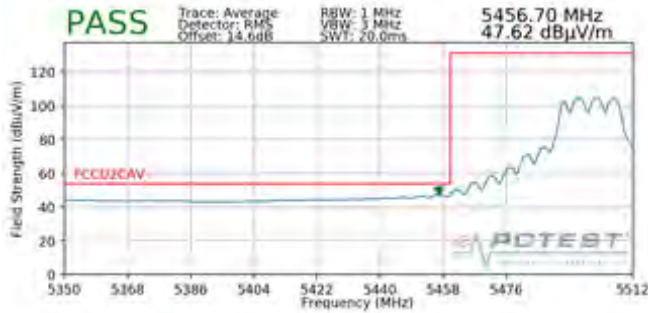
Plot 7-279. Radiated Upper Band Edge Plot (Peak – UNII Band 2A)

Note:

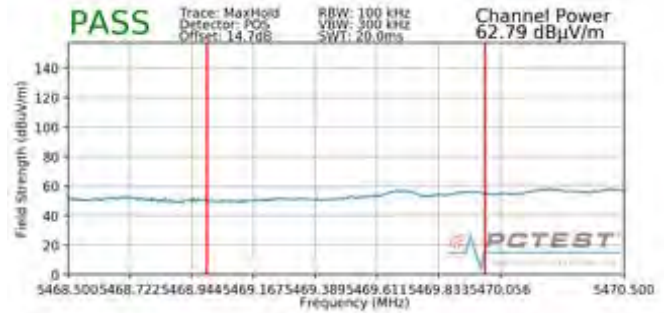
Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

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Worst Case Mode: 802.11 a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 5500MHz
 Channel: 100



Plot 7-280. Radiated Upper Band Edge Plot (Average – UNII Band 2C)



Plot 7-281. Radiated Upper Band Edge Plot (Peak – UNII Band 2C)

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



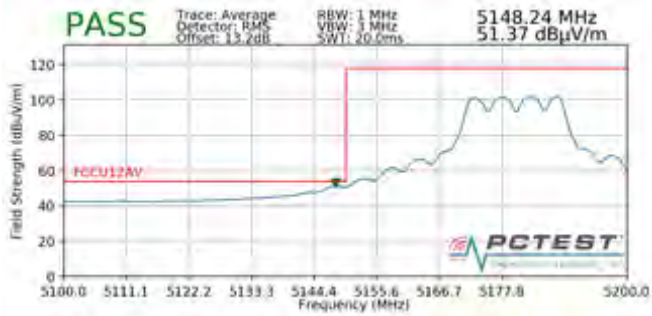
Plot 7-282. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

Note:

Per KDB 789033 Section II (G)(3)(d)(ii), integration was used to determine compliance with out-of band emission limits. Integration method was performed across the first 1 MHz band outside the authorized band of operation which was found to be the worst case emission at the band edge.

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Worst Case Mode: 802.11 a
 Worst Case Transfer Rate: 6Mbps
 Distance of Measurements: 3 Meters
 Operating Frequency: 5180MHz
 Channel: 36



Plot 7-283. Radiated Band Edge Plot (Average – WCP)



Plot 7-284. Radiated Band Edge Plot (Peak – WCP)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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7.8 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 7-70 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 7-70. 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.

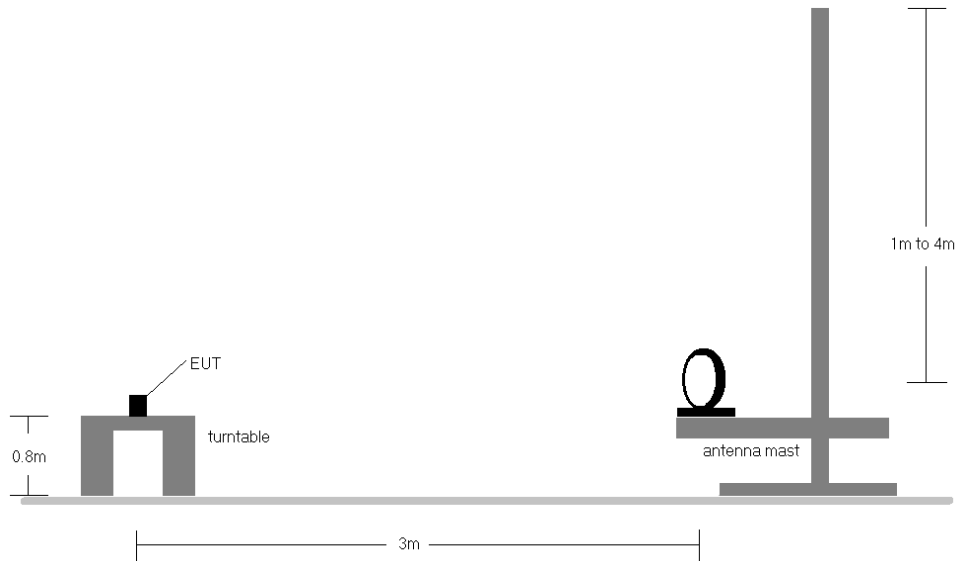


Figure 7-6. Radiated Test Setup < 30MHz

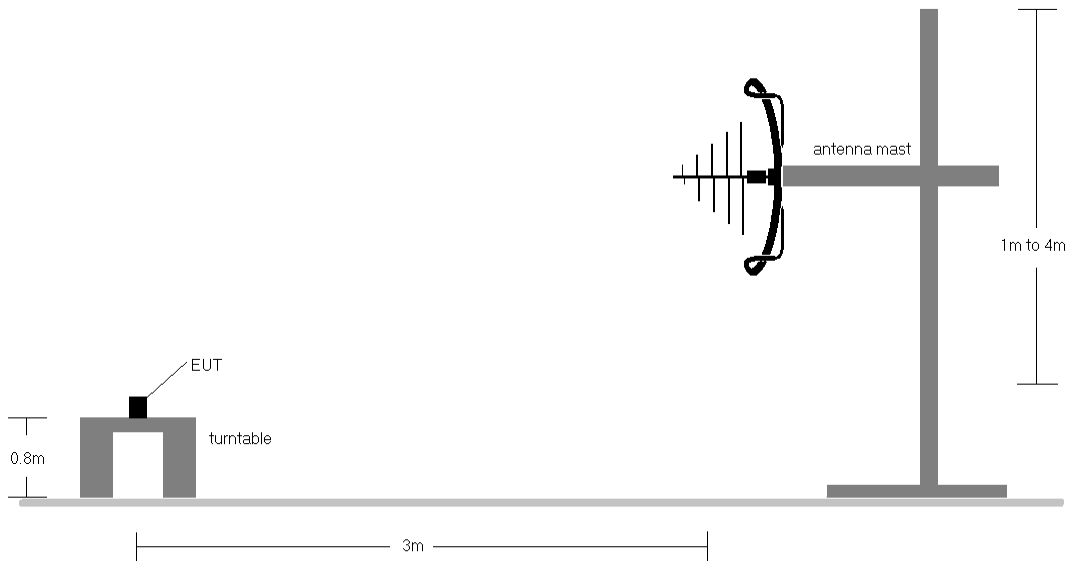


Figure 7-7. Radiated Test Setup < 1GHz

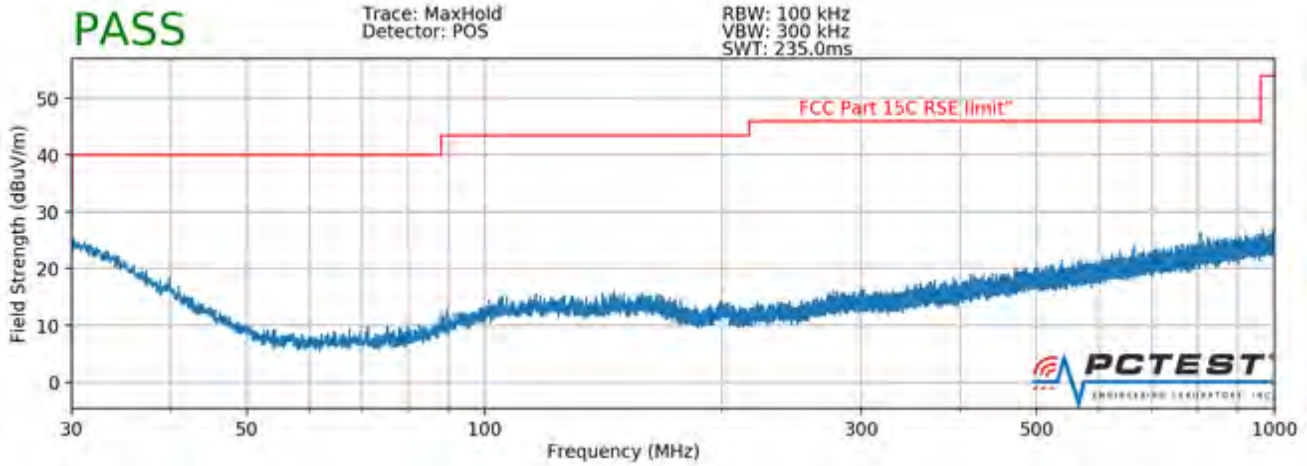
FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)	 Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2.A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset	Page 185 of 200

Test Notes

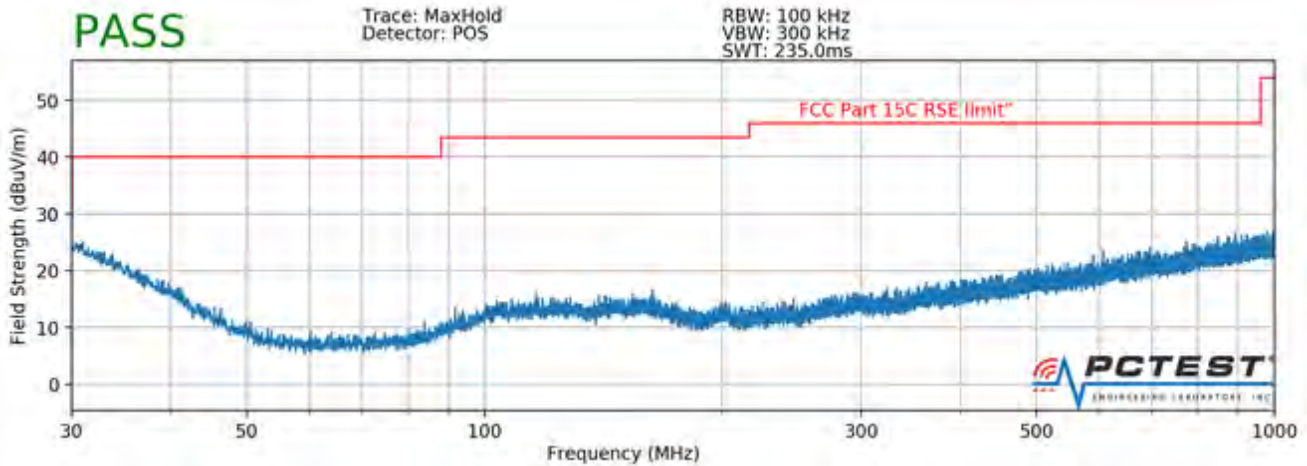
1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen (8.10) are below the limit shown in Table 7-70.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
3. This unit 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.

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Antenna-1 Radiated Spurious Emissions Measurements (Below 1GHz)
§15.209; RSS-Gen [8.9]



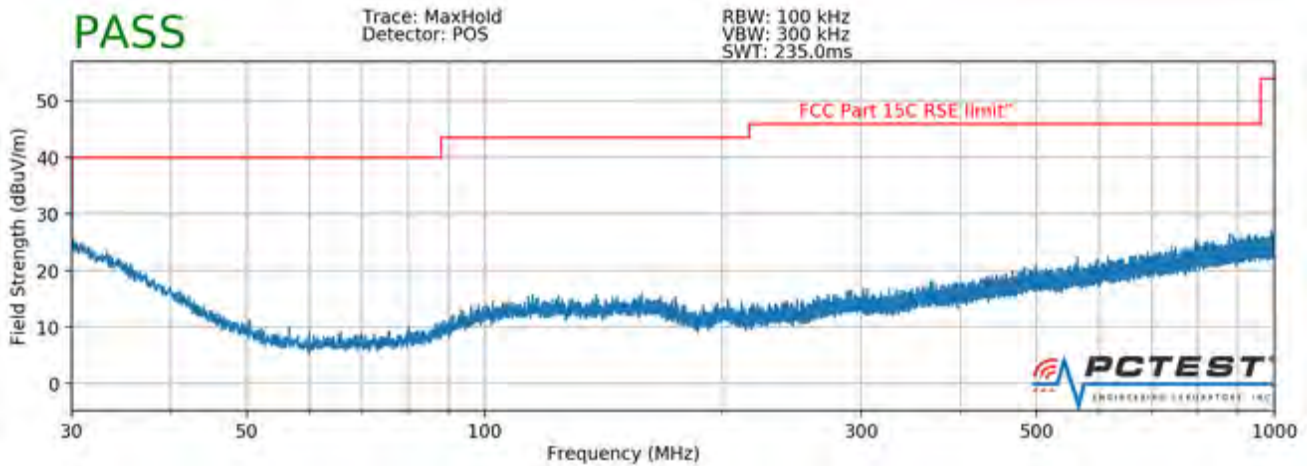
Plot 7-285. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)



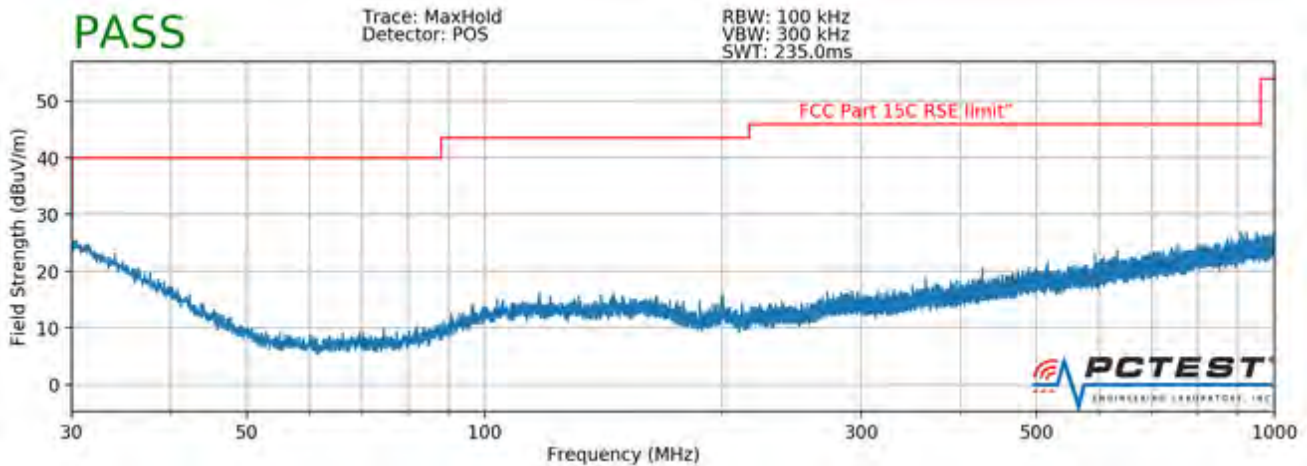
Plot 7-286. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Antenna-2 Radiated Spurious Emissions Measurements (Below 1GHz)
§15.209; RSS-Gen [8.9]



Plot 7-287. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)



Plot 7-288. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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7.9 Line-Conducted Test Data

§15.407; RSS-Gen [8.8]

Test Overview and Limit

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN 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 conducted spurious emissions. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section.

All conducted emissions must not exceed the limits shown in the table below, per Section 15.207 and RSS-Gen (8.8).

Frequency of emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

Table 7-71. Conducted Limits

*Decreases with the logarithm of the frequency.

Test Procedures Used

ANSI C63.10-2013, Section 6.2

Test Settings

Quasi-Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = RMS
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 diagram below.

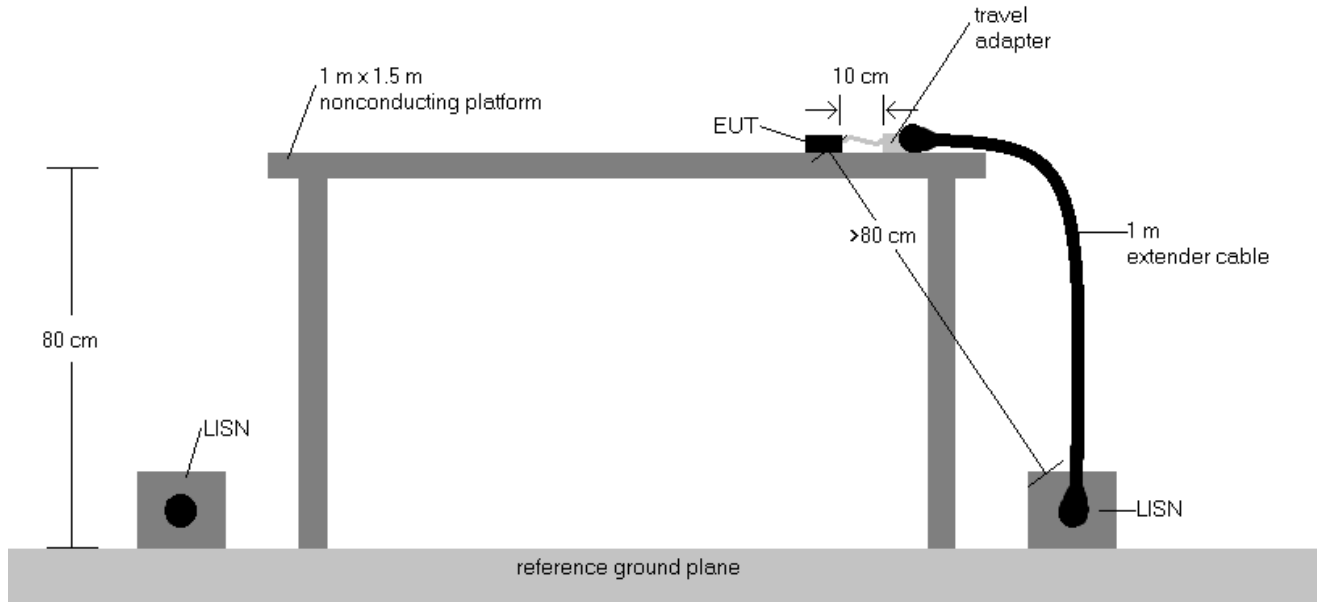
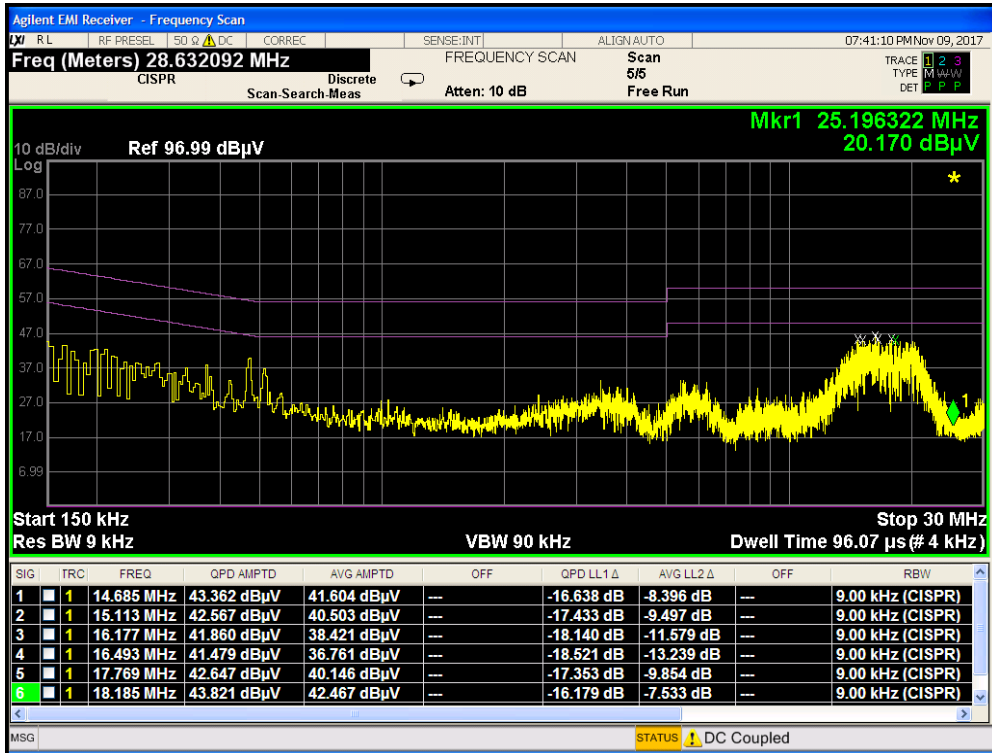


Figure 7-8. Test Instrument & Measurement Setup

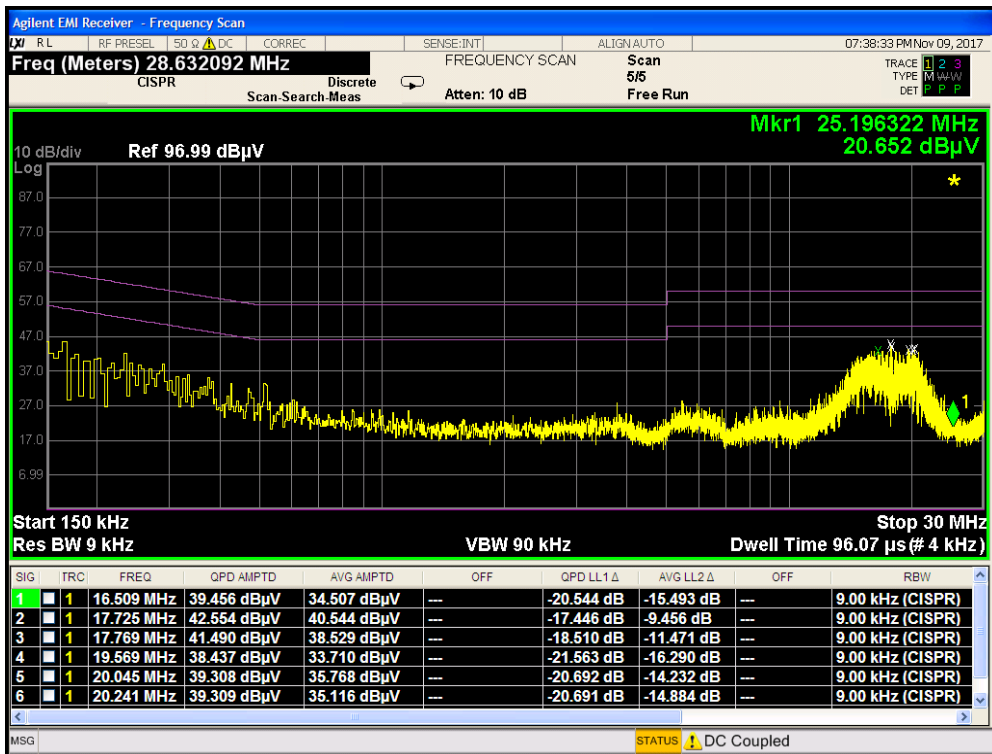
Test Notes

1. All modes of operation were investigated and the worst-case emissions are reported using mid channel. The emissions found were not affected by the choice of channel used during testing.
2. The limit for an intentional radiator from 150kHz to 30MHz are specified in 15.207 and RSS-Gen (8.8).
3. $\text{Corr. (dB)} = \text{Cable loss (dB)} + \text{LISN insertion factor (dB)}$
4. $\text{QP/AV Level (dB}\mu\text{V)} = \text{QP/AV Analyzer/Receiver Level (dB}\mu\text{V)} + \text{Corr. (dB)}$
5. $\text{Margin (dB)} = \text{QP/AV Limit (dB}\mu\text{V)} - \text{QP/AV Level (dB}\mu\text{V)}$
6. Traces shown in plot are made using a peak detector.
7. Deviations to the Specifications: None.

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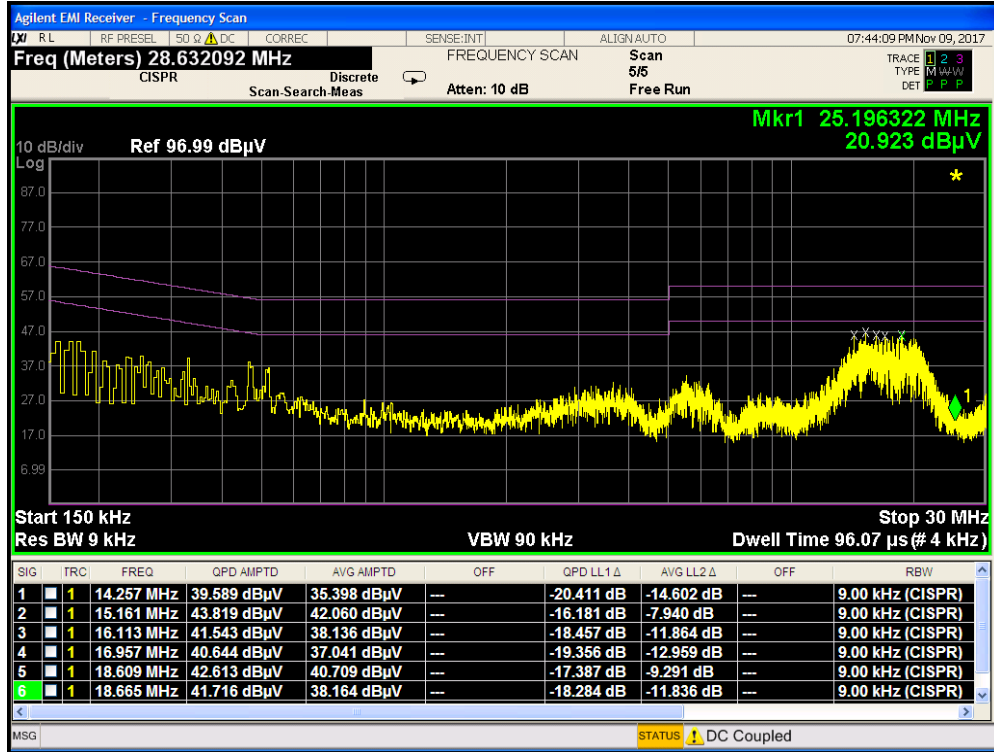


Plot 7-289. Line Conducted Plot with 802.11a UNII Band 1 (L1)

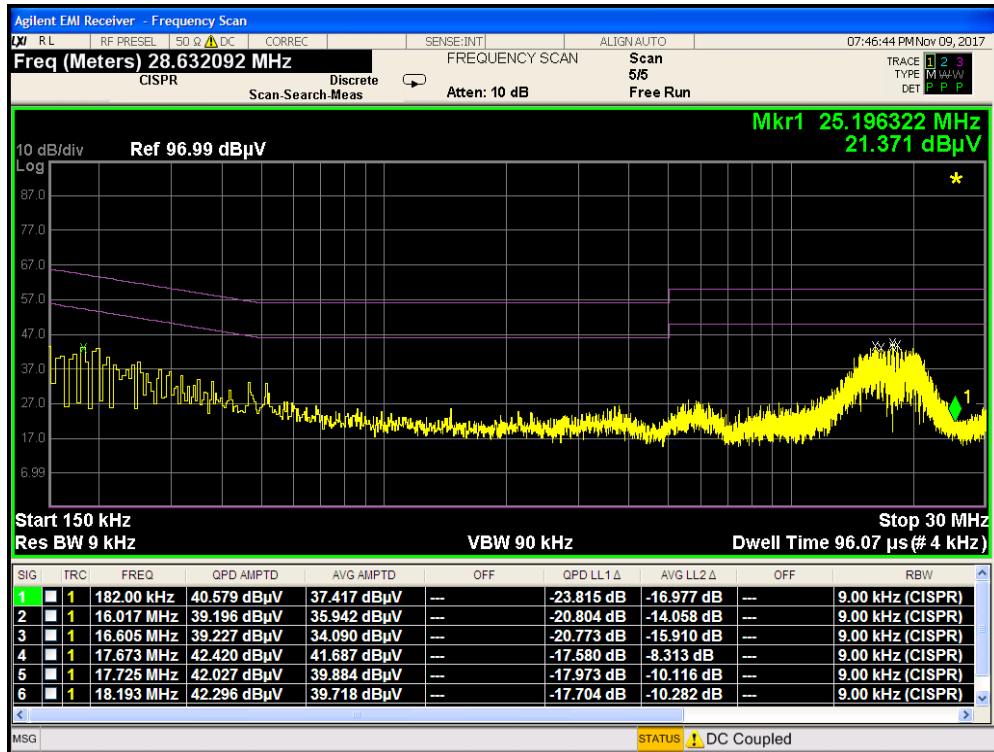


Plot 7-290. Line Conducted Plot with 802.11a UNII Band 1 (N)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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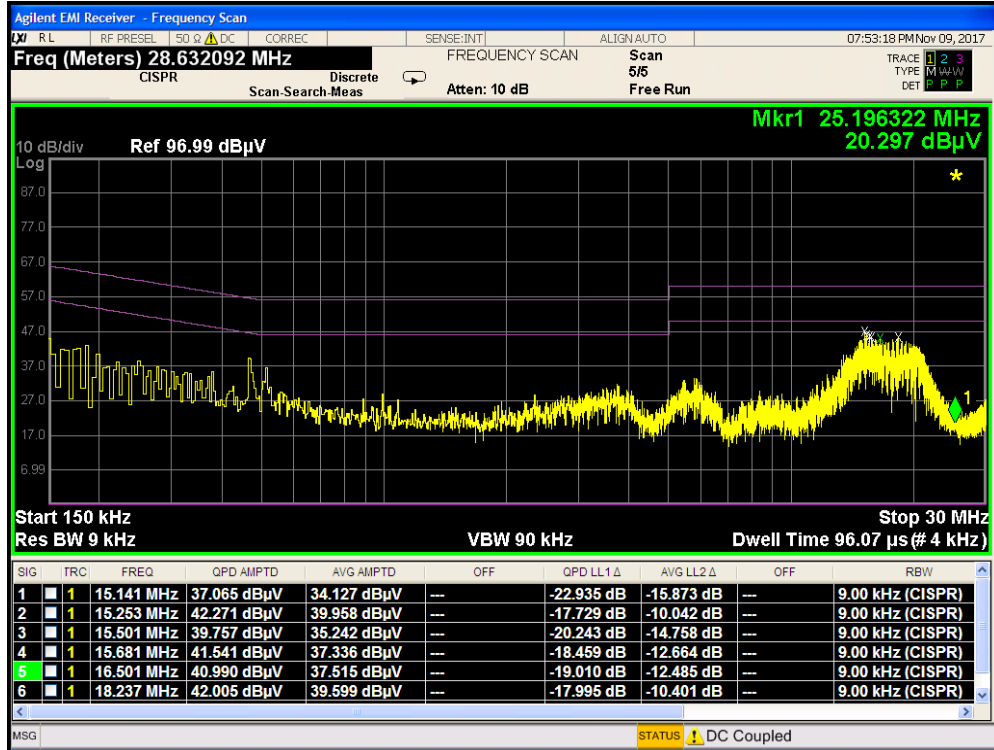


Plot 7-291. Line Conducted Plot with 802.11a UNII Band 2A (L1)

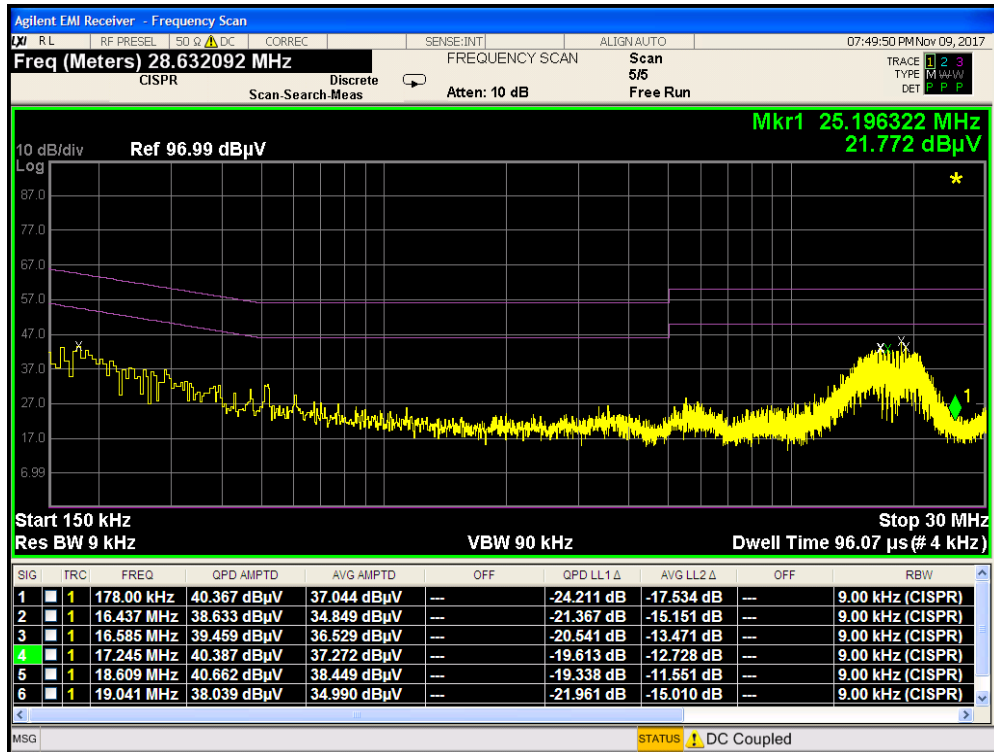


Plot 7-292. Line Conducted Plot with 802.11a UNII Band 2A (N)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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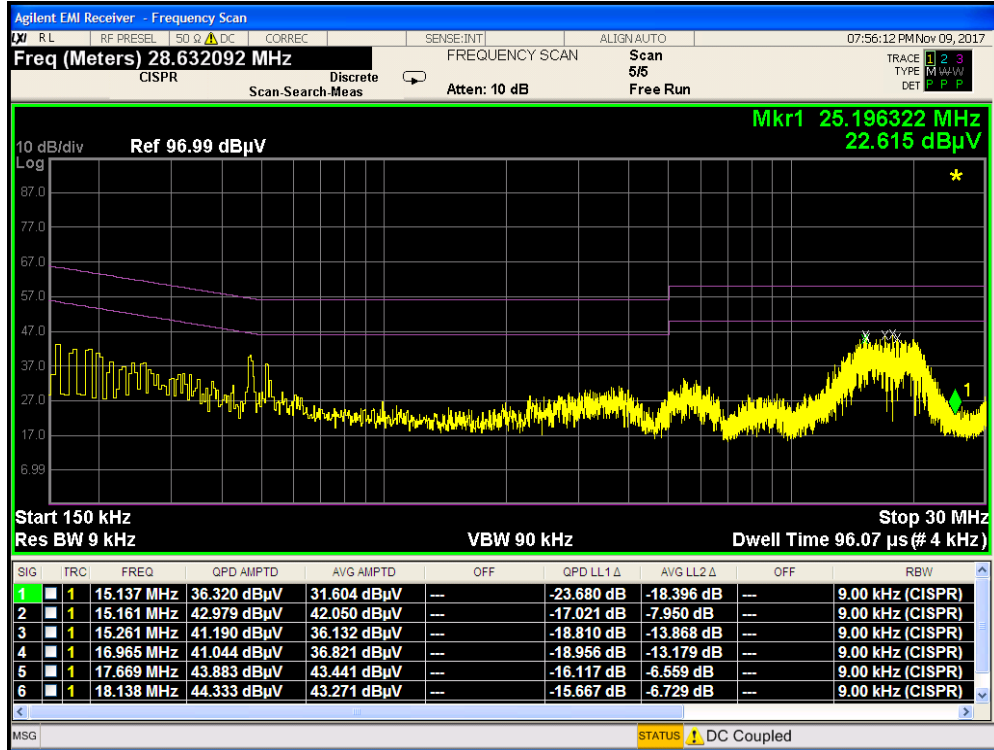


Plot 7-293. Line Conducted Plot with 802.11a UNII Band 2C (L1)

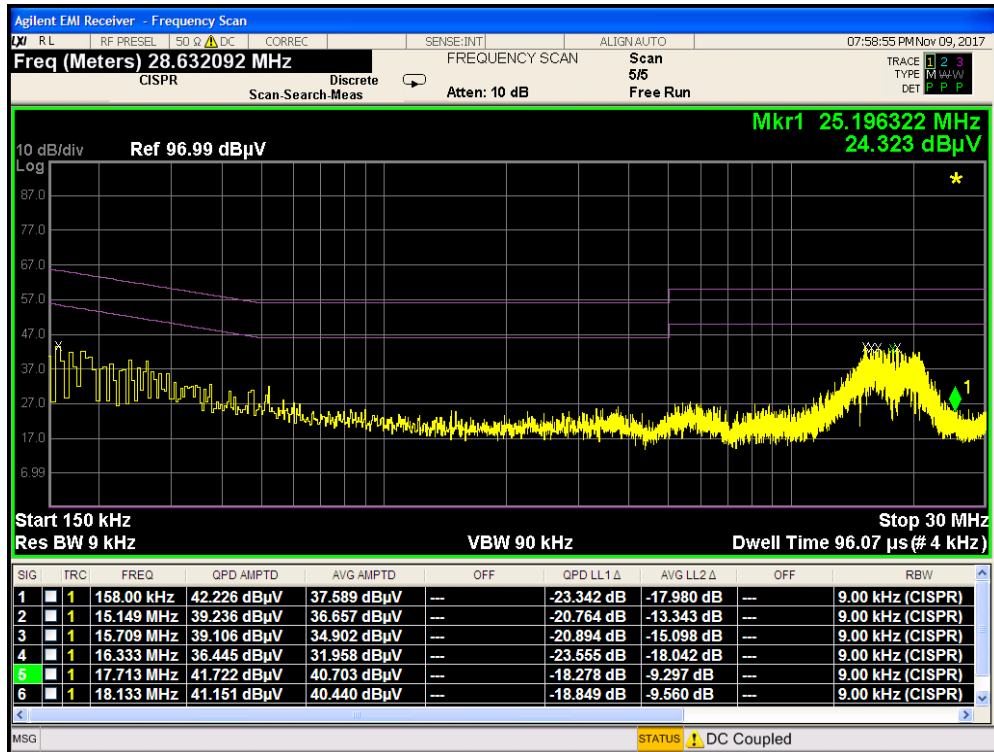


Plot 7-294. Line Conducted Plot with 802.11a UNII Band 2C (N)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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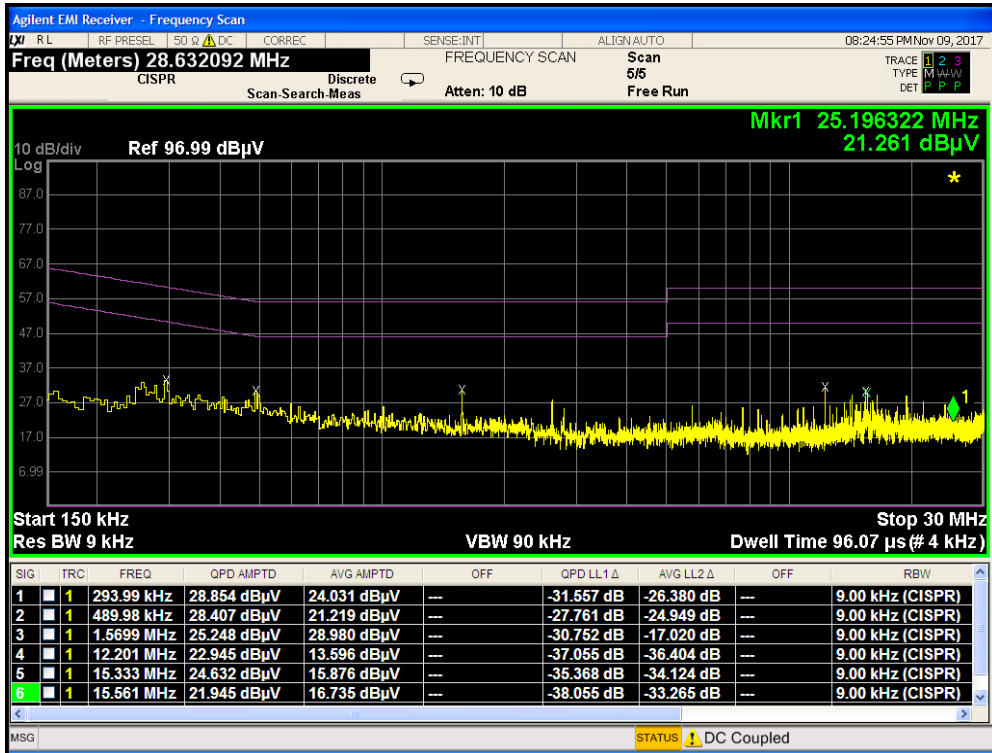
Plot 7-295. Line Conducted Plot with 802.11a UNII Band 3 (L1)



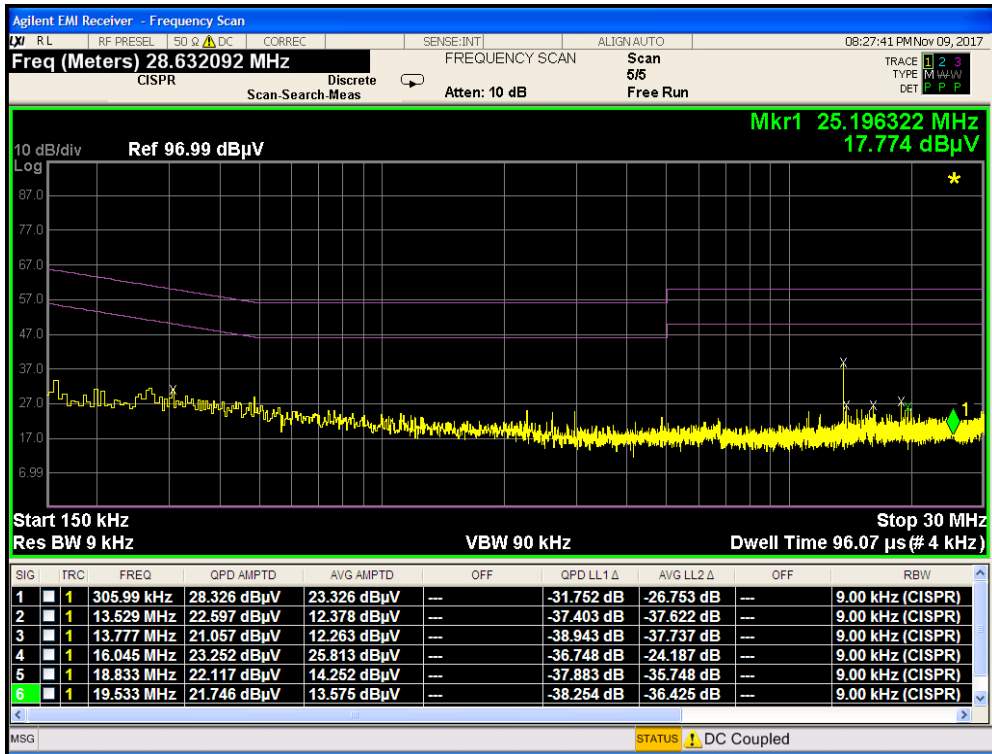
Plot 7-296. Line Conducted Plot with 802.11a UNII Band 3 (N)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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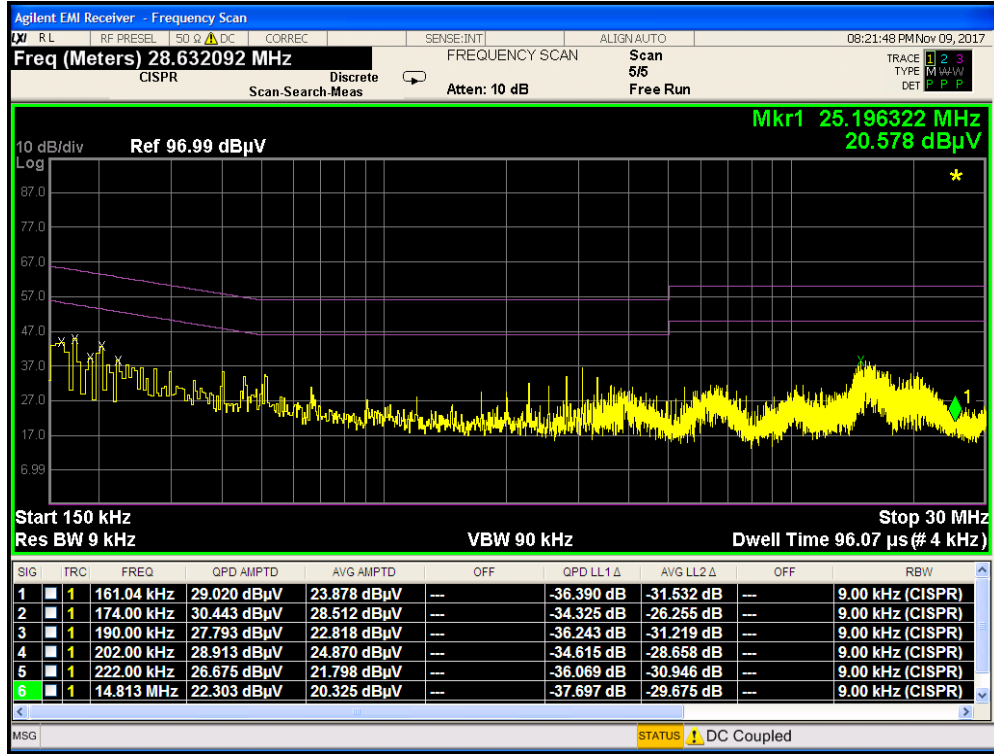


Plot 7-297. Line Conducted Plot with WCP - 802.11a UNII Band 1 (L1)

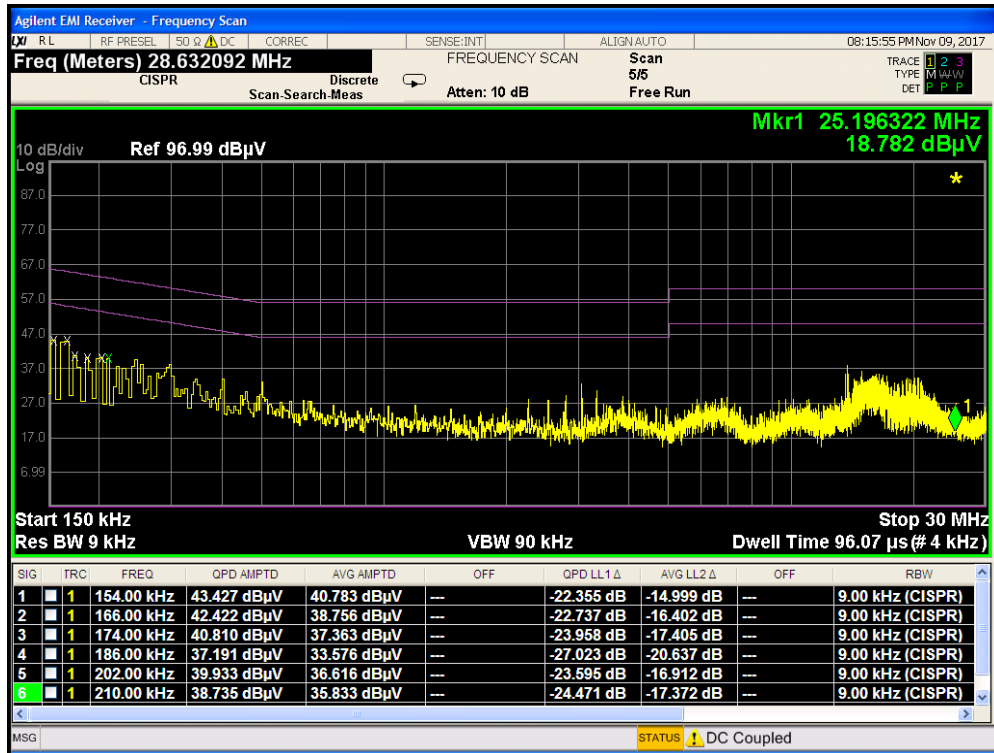


Plot 7-298. Line Conducted Plot with WCP - 802.11a UNII Band 1 (N)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711010281-06-R2-A3L	Test Dates: 11/1-12/7/2017	EUT Type: Portable Handset		Page 196 of 200

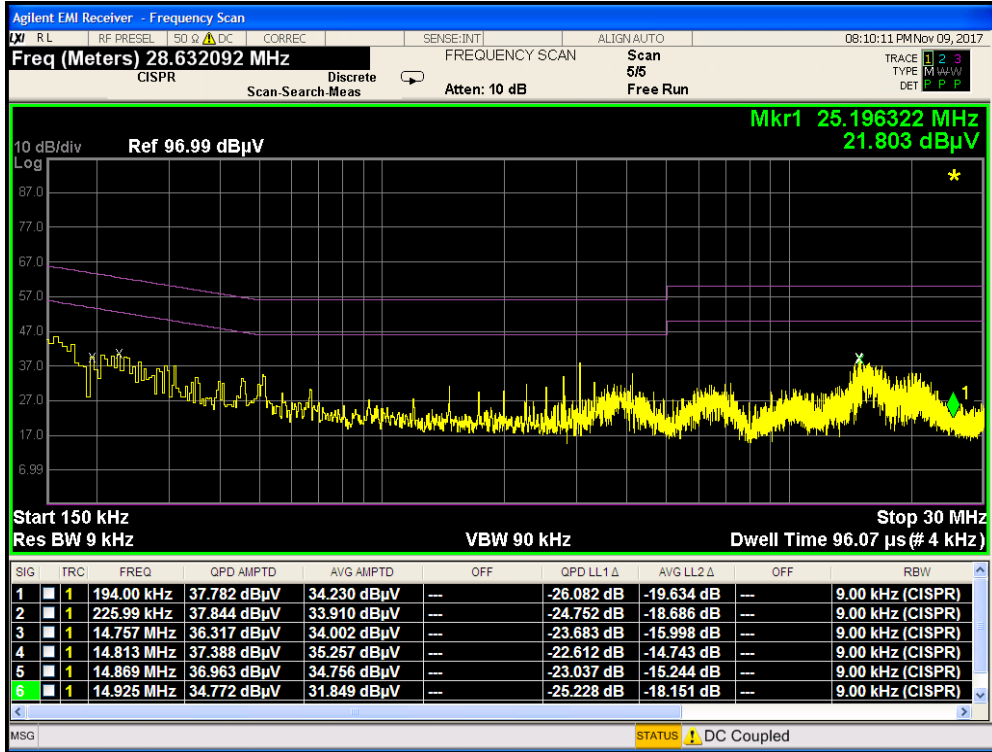


Plot 7-299. Line Conducted Plot with WCP - 802.11a UNII Band 2A (L1)

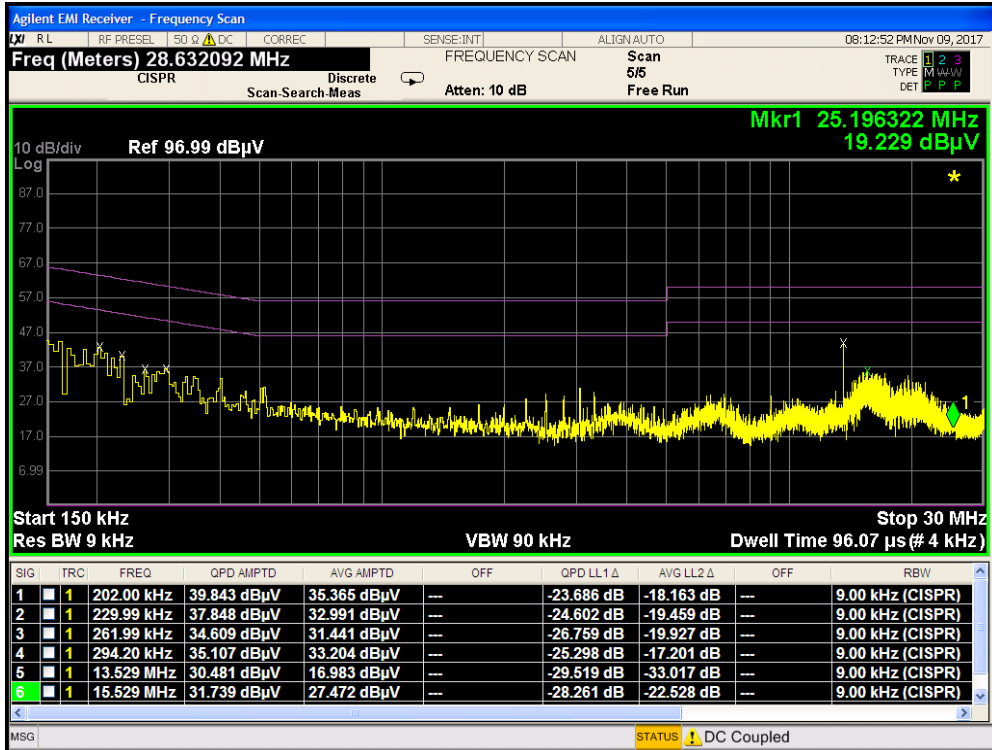


Plot 7-300. Line Conducted Plot with WCP - 802.11a UNII Band 2A (N)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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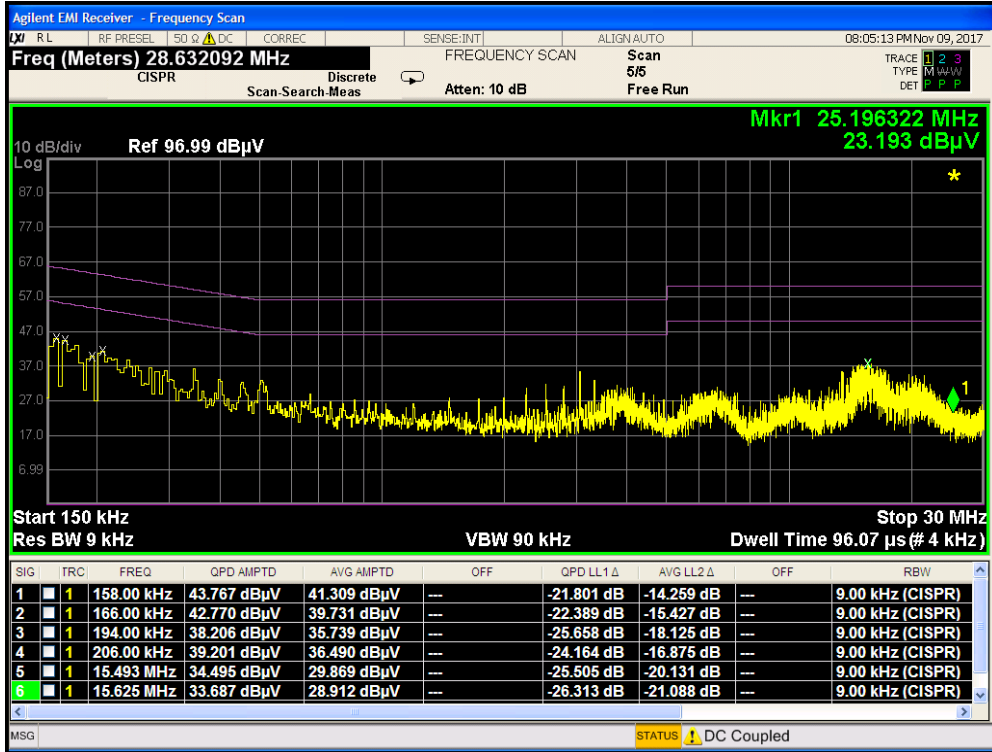


Plot 7-301. Line Conducted Plot with WCP - 802.11a UNII Band 2C (L1)

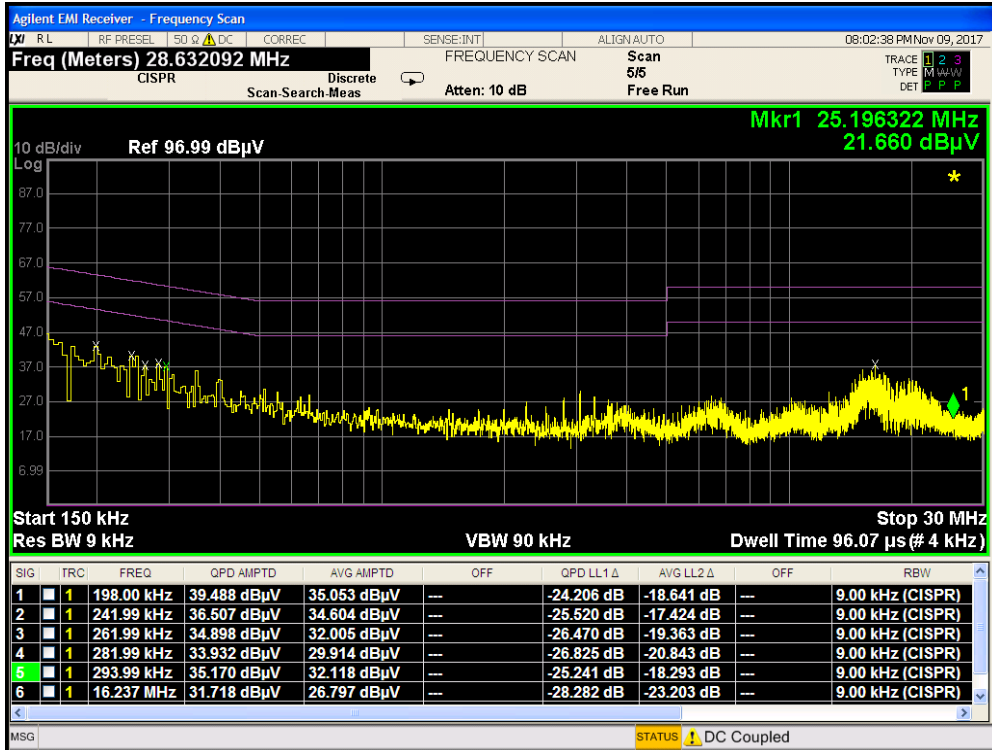


Plot 7-302. Line Conducted Plot with WCP - 802.11a UNII Band 2C (N)

FCC ID: A3LSMG960U IC: 649E-SMG960U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Plot 7-303. Line Conducted Plot with WCP - 802.11a UNII Band 3 (L1)



Plot 7-304. Line Conducted Plot with WCP - 802.11a UNII Band 3 (N)

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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: A3LSMG960U** 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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