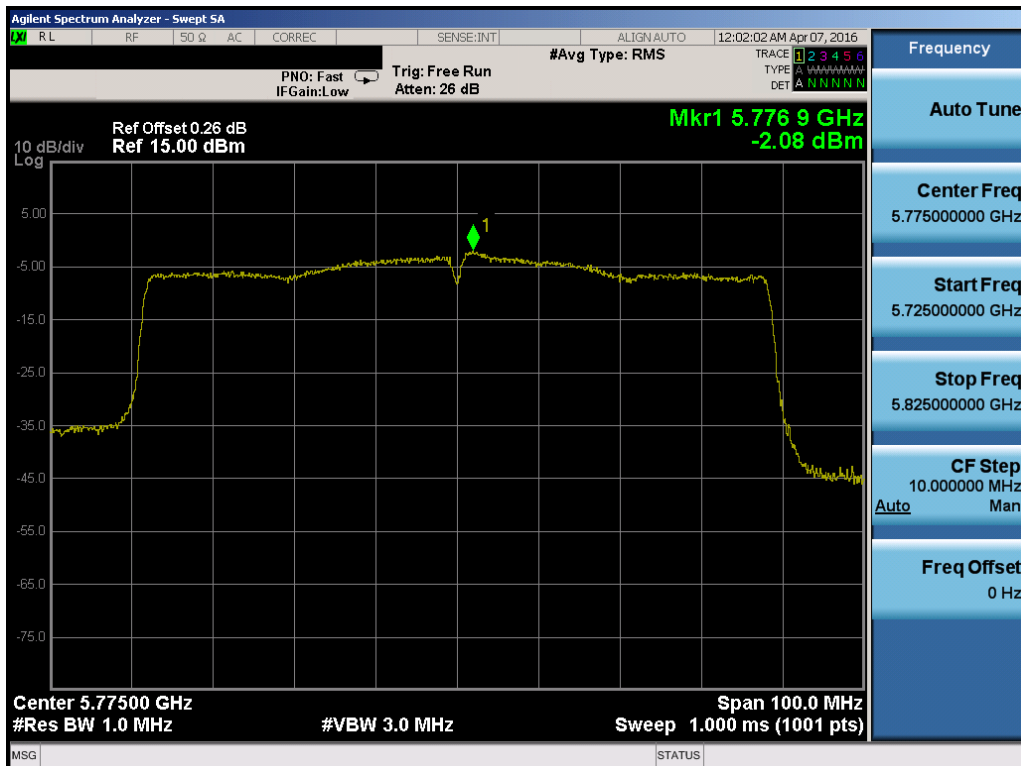


Plot 7-116. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 159)





Plot 7-117. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)

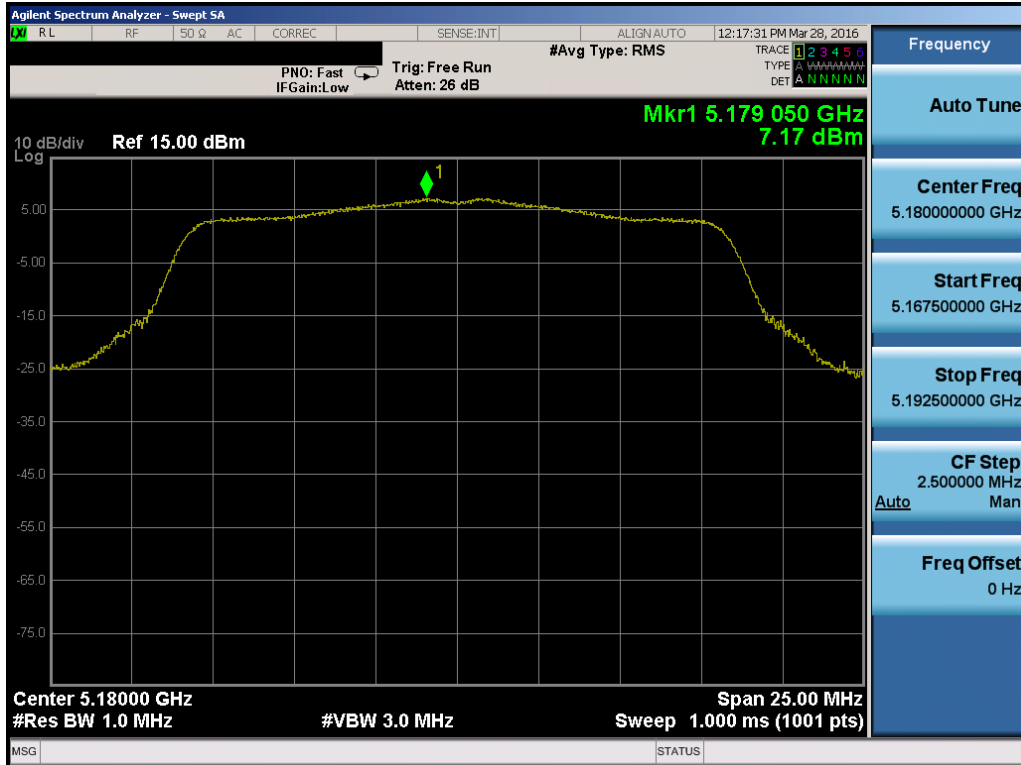
FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 87 of 246

Antenna-2 Power Spectral Density Measurements

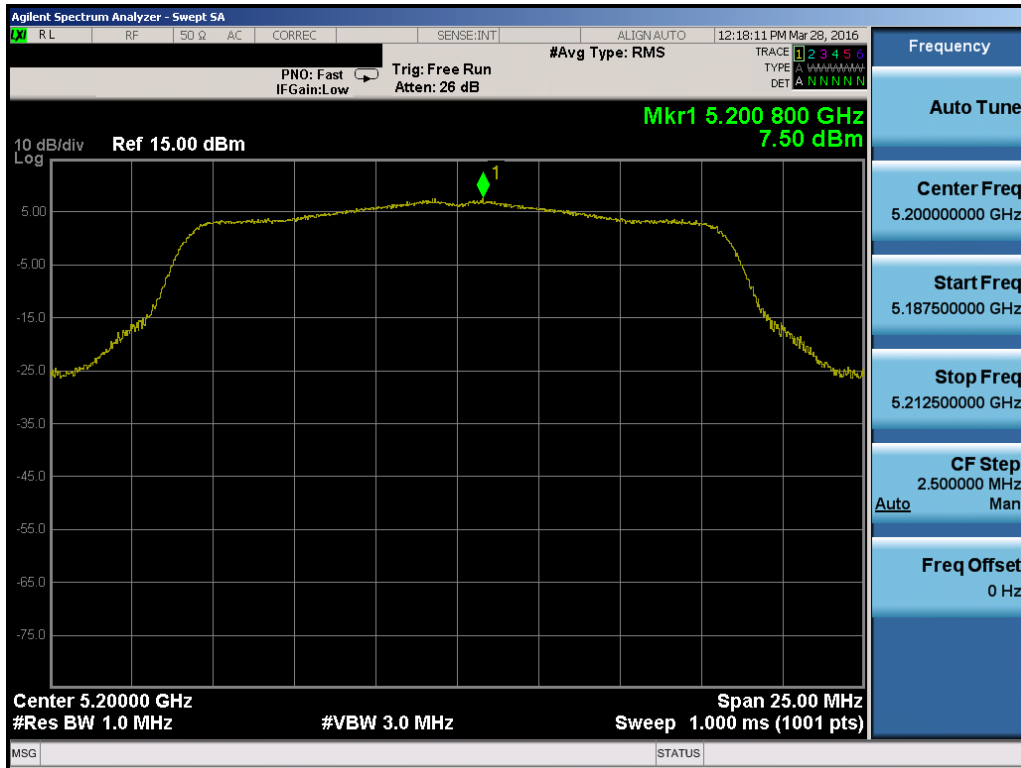
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/MHz]	Margin [dB]	Pass / Fail
Band 1	5180	36	a	6	7.17	11.0	-3.83	Pass
	5200	40	a	6	7.50	11.0	-3.50	Pass
	5240	48	a	6	7.06	11.0	-3.94	Pass
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	6.72	11.0	-4.28	Pass
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	7.03	11.0	-3.97	Pass
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	6.87	11.0	-4.13	Pass
	5190	38	n (40MHz)	13.5/15 (MCS0)	2.39	11.0	-8.61	Pass
	5230	46	n (40MHz)	13.5/15 (MCS0)	2.36	11.0	-8.65	Pass
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-1.39	11.0	-12.39	Pass
Band 2A	5260	52	a	6	8.03	11.0	-2.97	Pass
	5280	56	a	6	8.09	11.0	-2.91	Pass
	5320	64	a	6	7.88	11.0	-3.12	Pass
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	6.00	11.0	-5.00	Pass
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	5.79	11.0	-5.21	Pass
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	6.06	11.0	-4.94	Pass
	5270	54	n (40MHz)	13.5/15 (MCS0)	2.08	11.0	-8.92	Pass
	5310	62	n (40MHz)	13.5/15 (MCS0)	1.93	11.0	-9.07	Pass
Band 2C	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-1.81	11.0	-12.81	Pass
	5500	100	a	6	8.16	11.0	-2.84	Pass
	5600	120	a	6	8.46	11.0	-2.54	Pass
	5720	144	a	6	8.47	11.0	-2.53	Pass
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	5.98	11.0	-5.03	Pass
	5600	120	n (20MHz)	6.5/7.2 (MCS0)	5.83	11.0	-5.17	Pass
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	6.19	11.0	-4.81	Pass
	5510	102	n (40MHz)	13.5/15 (MCS0)	2.33	11.0	-8.67	Pass
	5590	118	n (40MHz)	13.5/15 (MCS0)	2.03	11.0	-8.97	Pass
	5710	142	n (40MHz)	13.5/15 (MCS0)	2.90	11.0	-8.10	Pass
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-2.04	11.0	-13.04	Pass
5610	122	ac (80MHz)	29.3/32.5 (MCS0)	-1.33	11.0	-12.33	Pass	
5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-4.47	11.0	-15.47	Pass	

Table 7-19. Conducted Power Spectral Density Measurements

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 88 of 246	

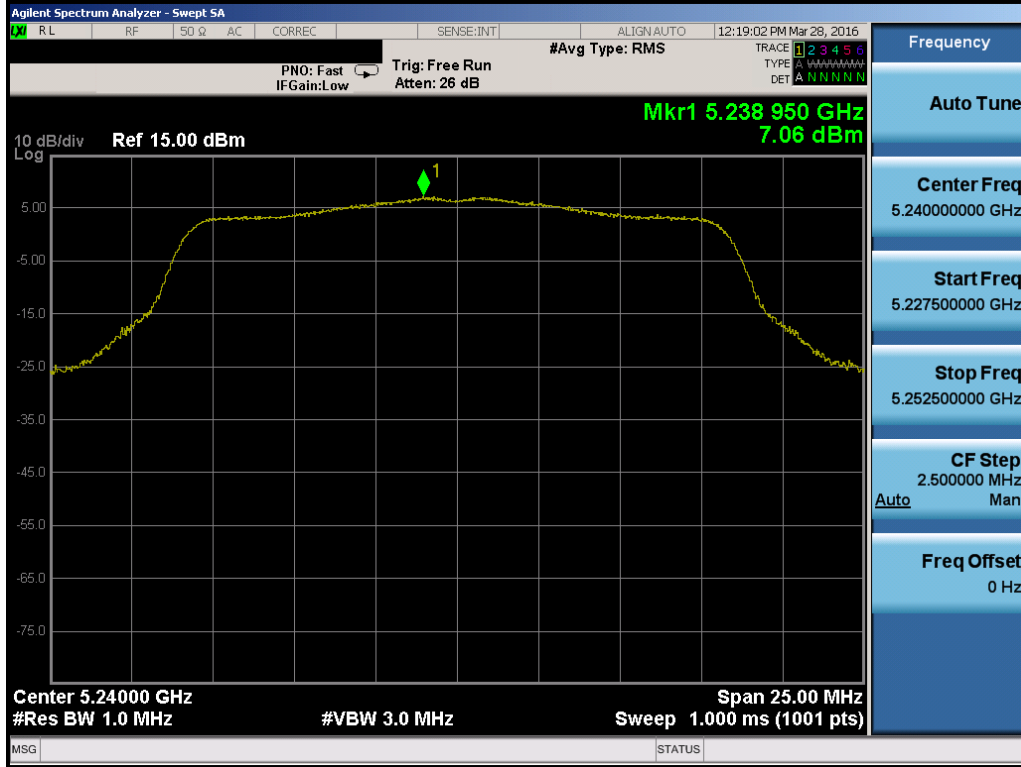


Plot 7-118. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 36)

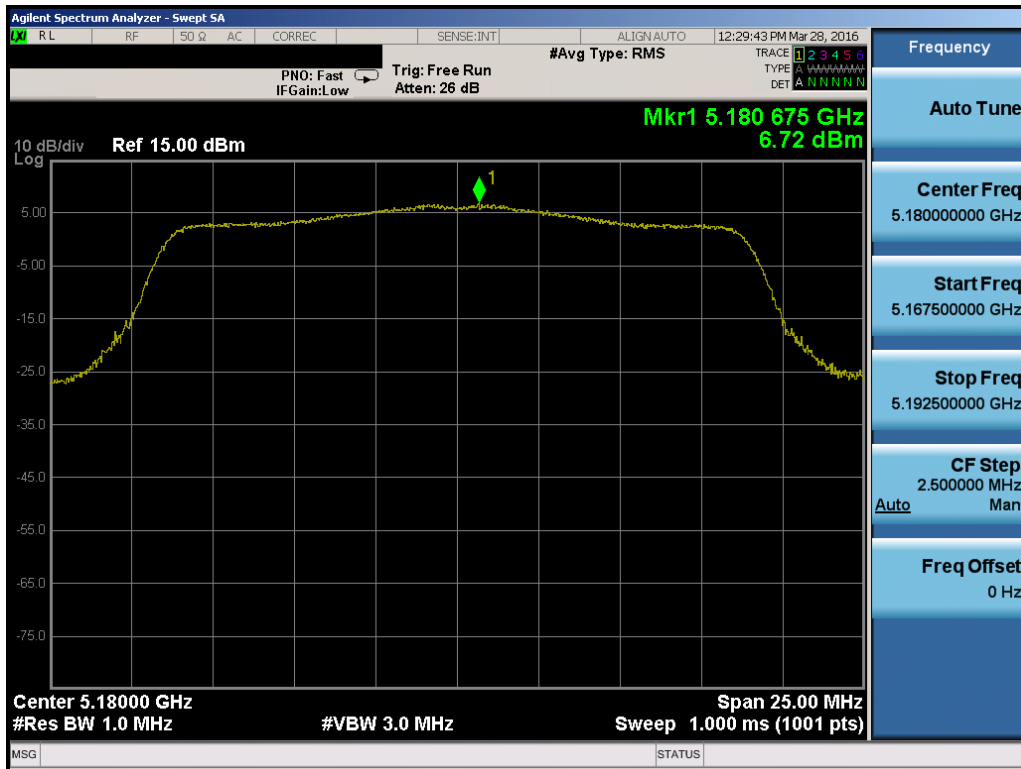


Plot 7-119. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 40)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 89 of 246

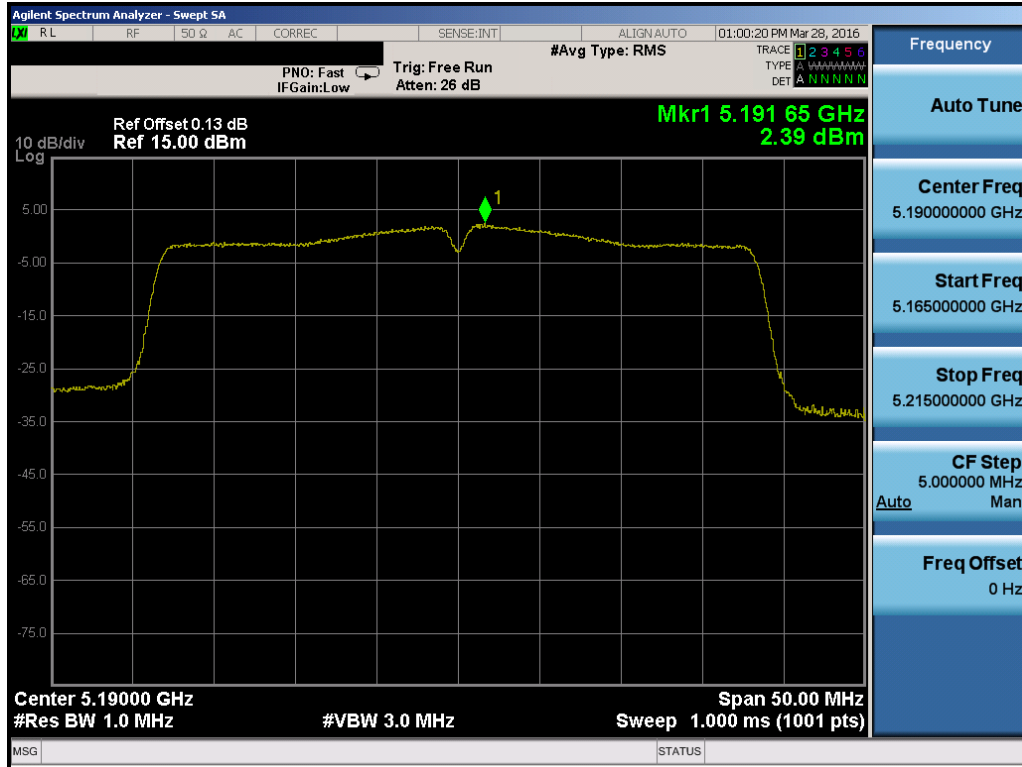


Plot 7-120. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 48)

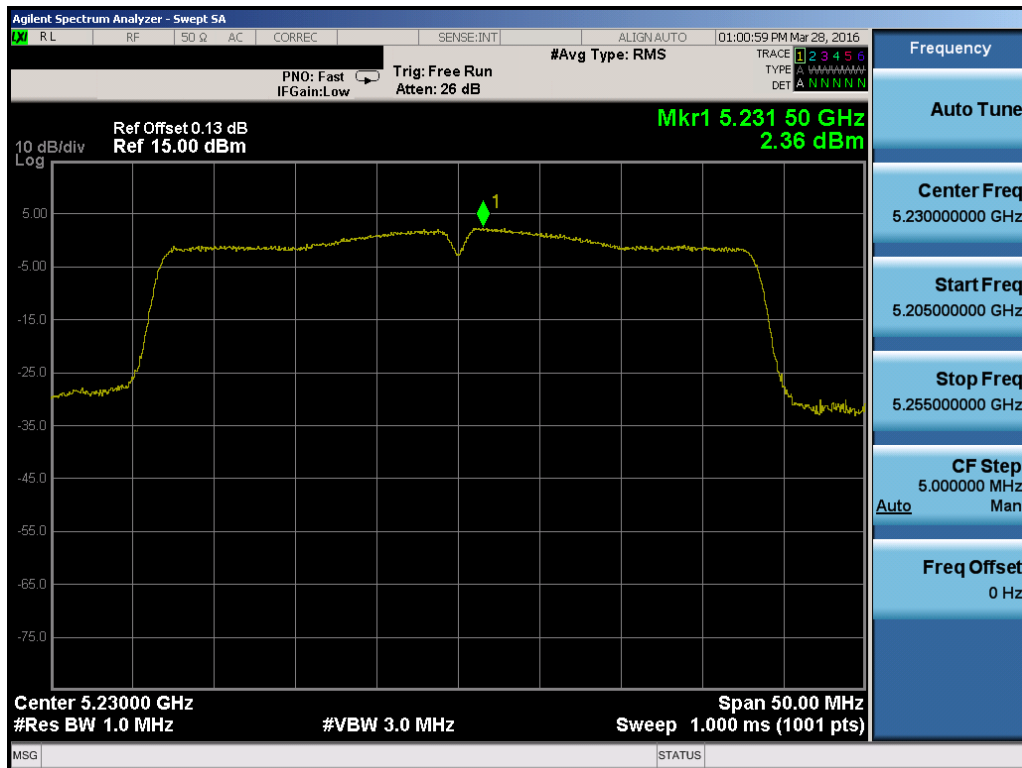


Plot 7-121. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset		Page 90 of 246

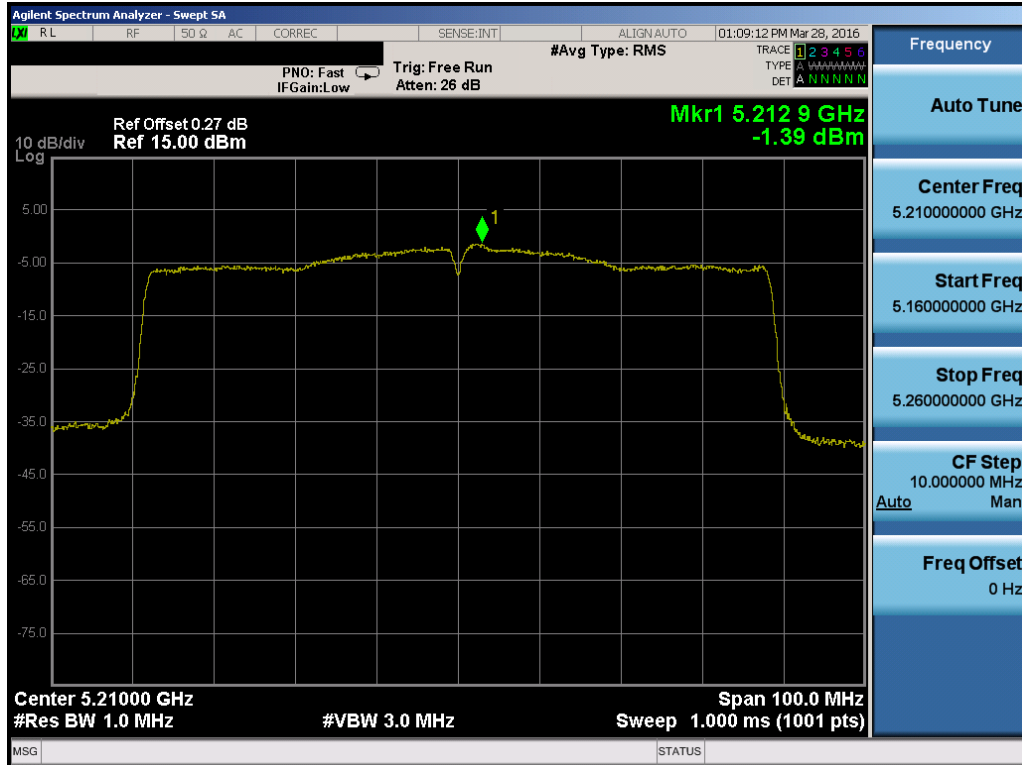


Plot 7-124. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

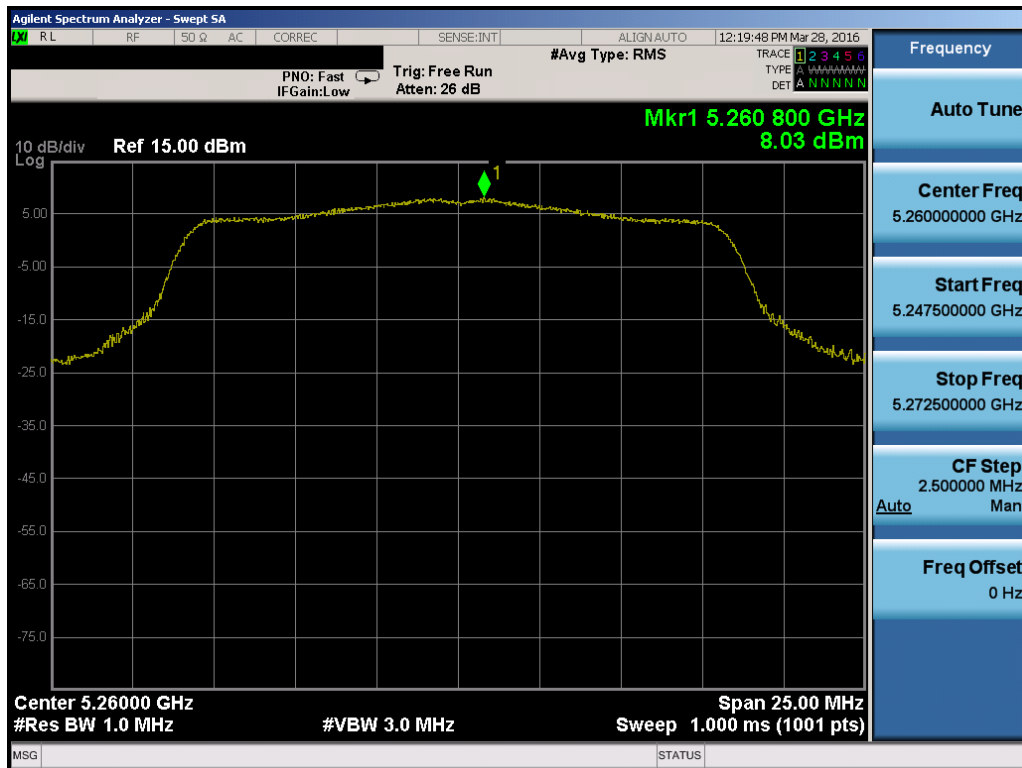


Plot 7-125. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 92 of 246

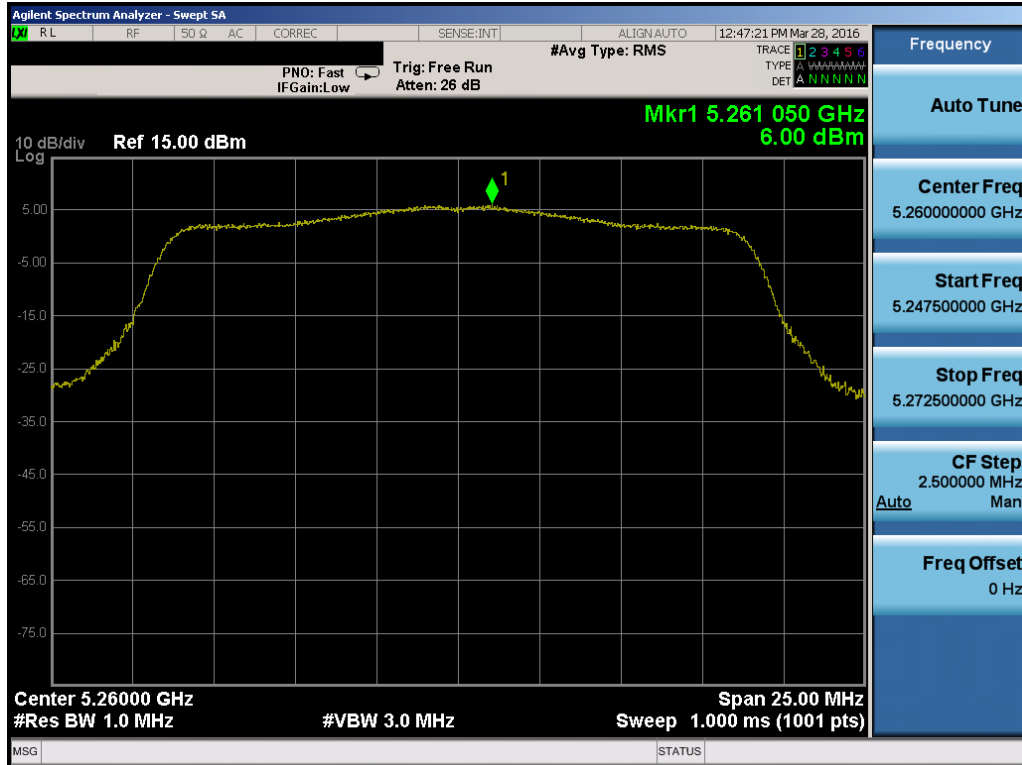


Plot 7-126. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

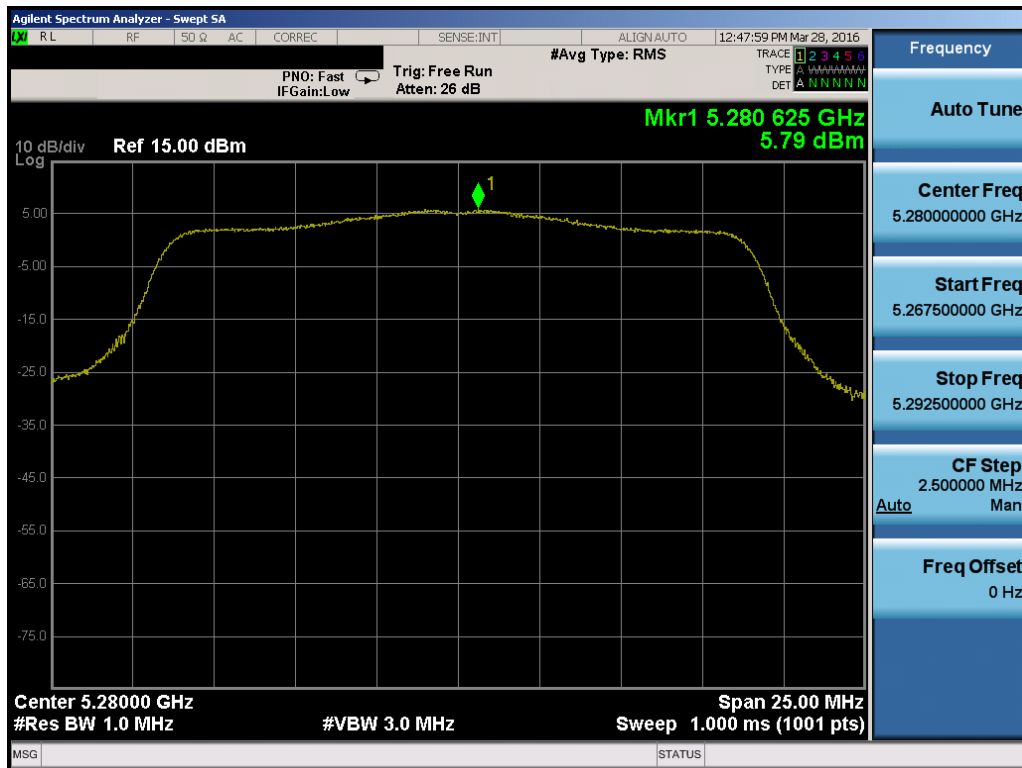


Plot 7-127. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 52)



FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 93 of 246

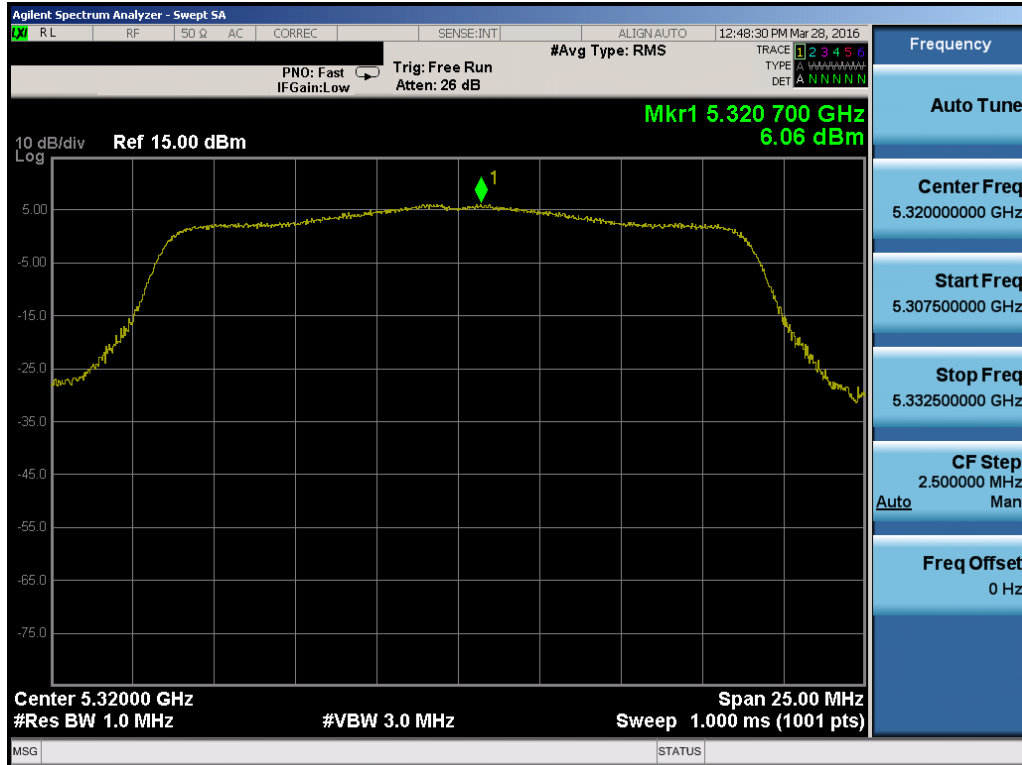


Plot 7-130. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

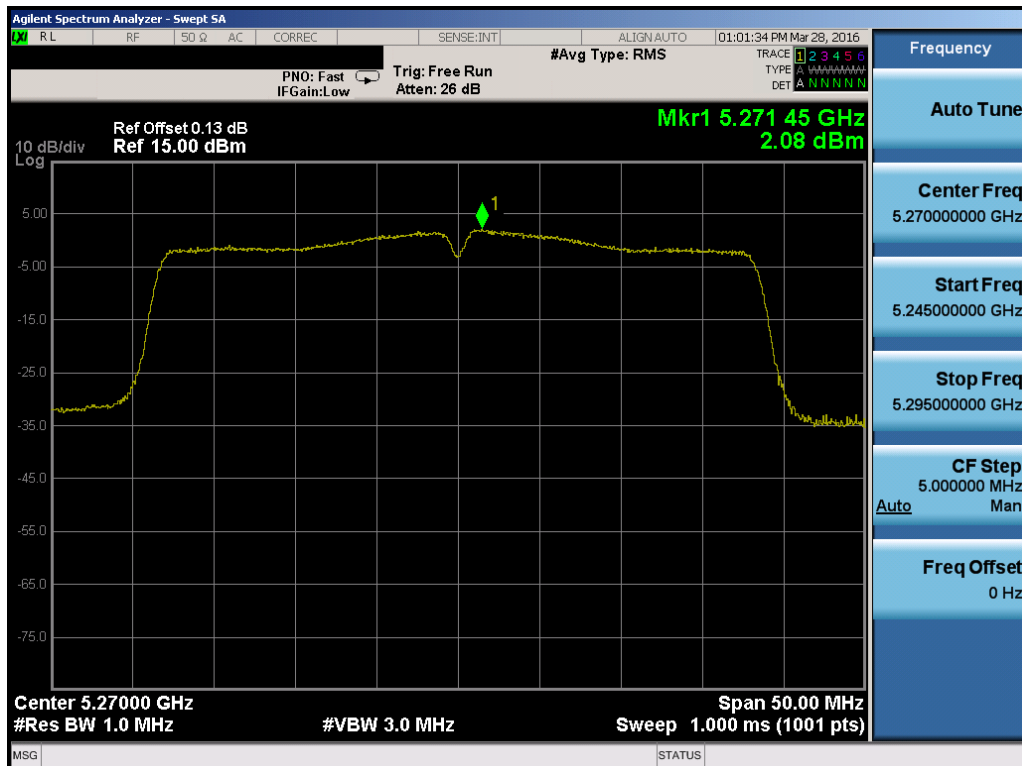


Plot 7-131. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 95 of 246

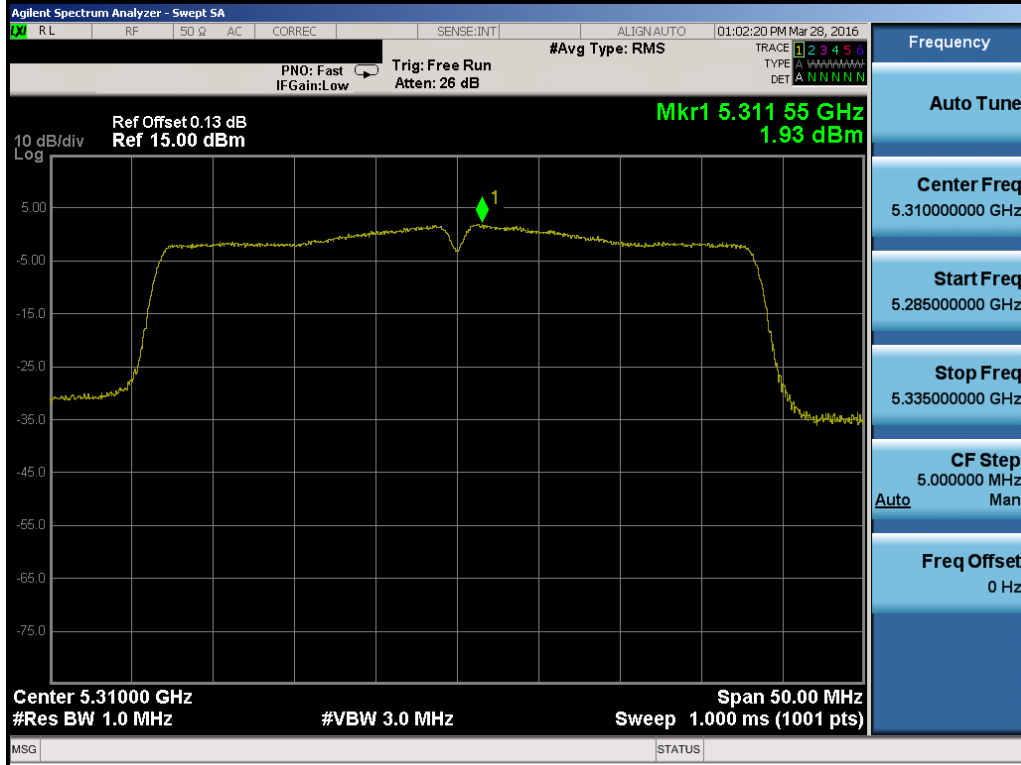


Plot 7-132. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

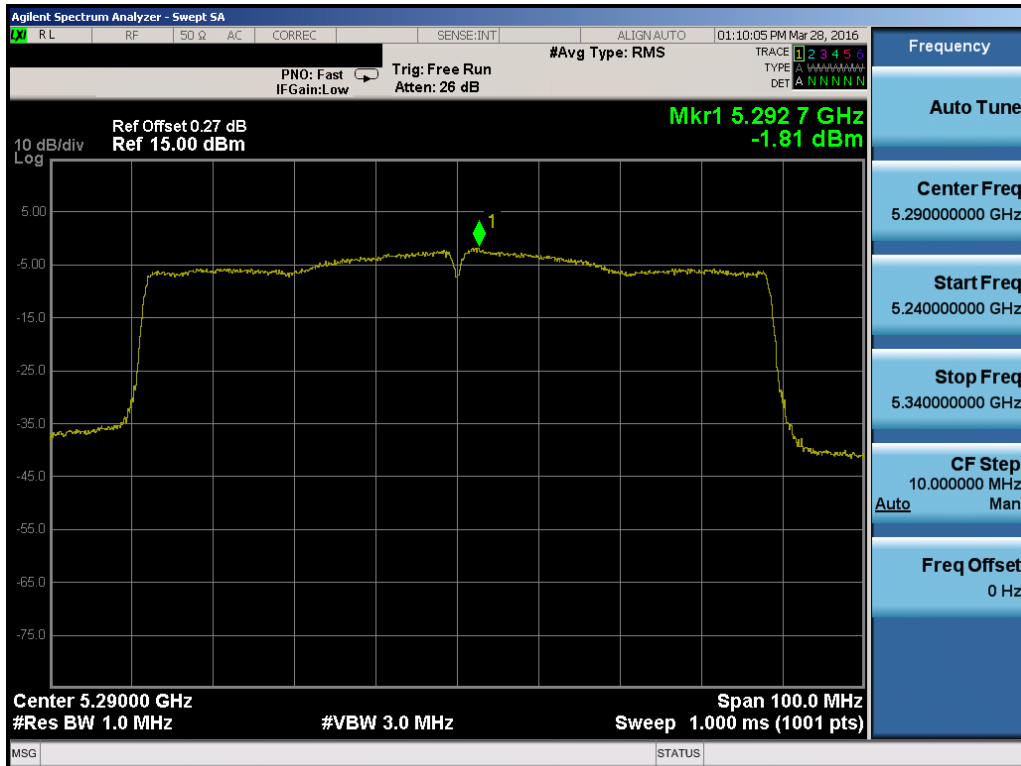


Plot 7-133. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 96 of 246

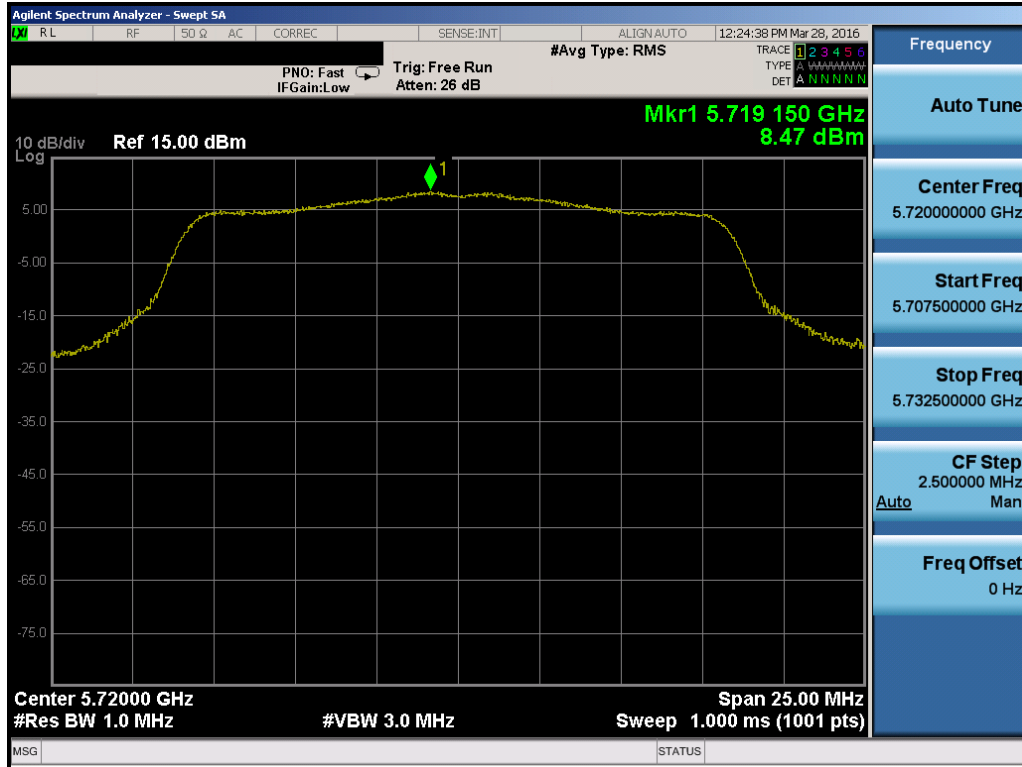


Plot 7-134. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

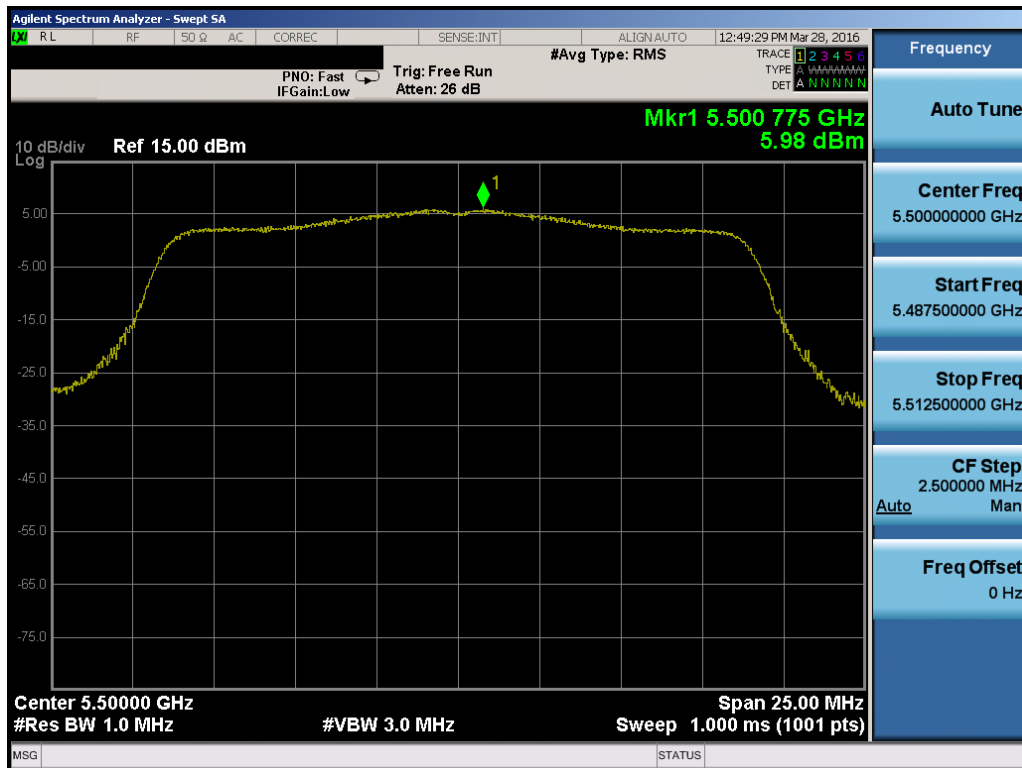


Plot 7-135. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 97 of 246

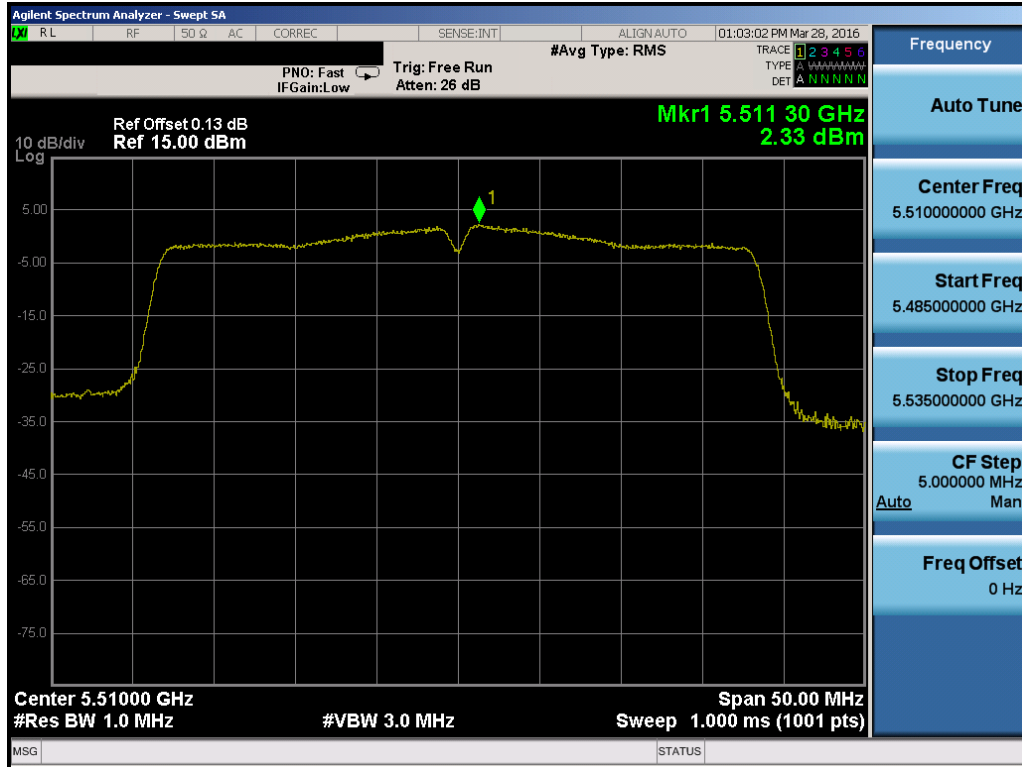


Plot 7-138. Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 144)

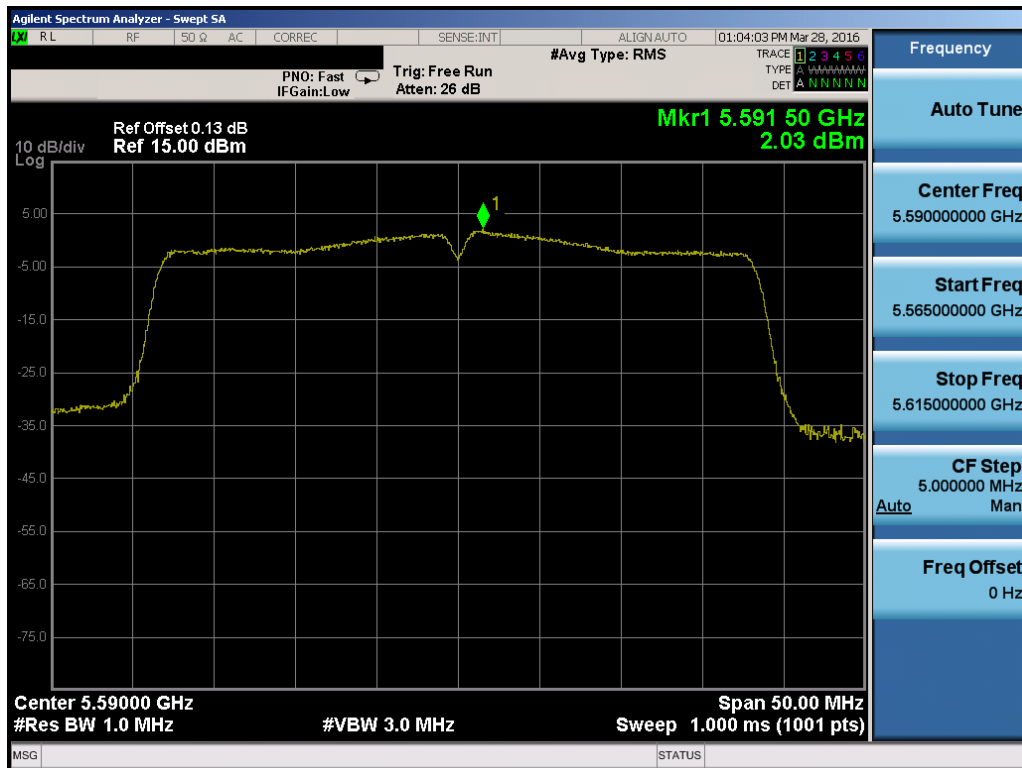


Plot 7-139. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 99 of 246

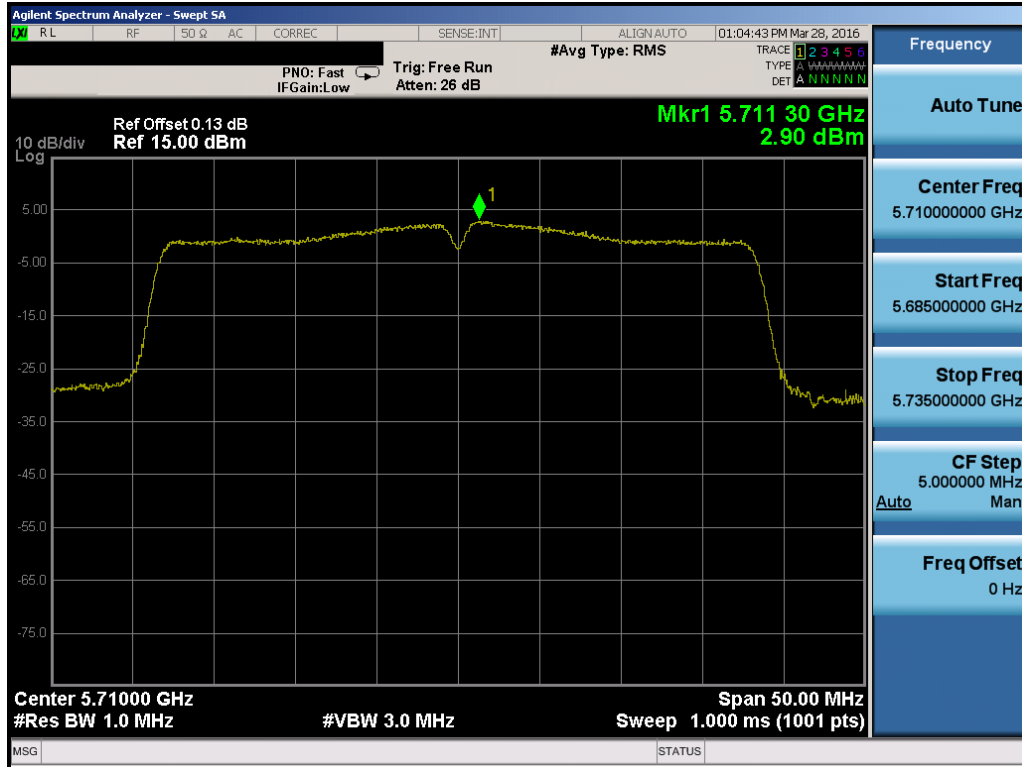


Plot 7-142. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

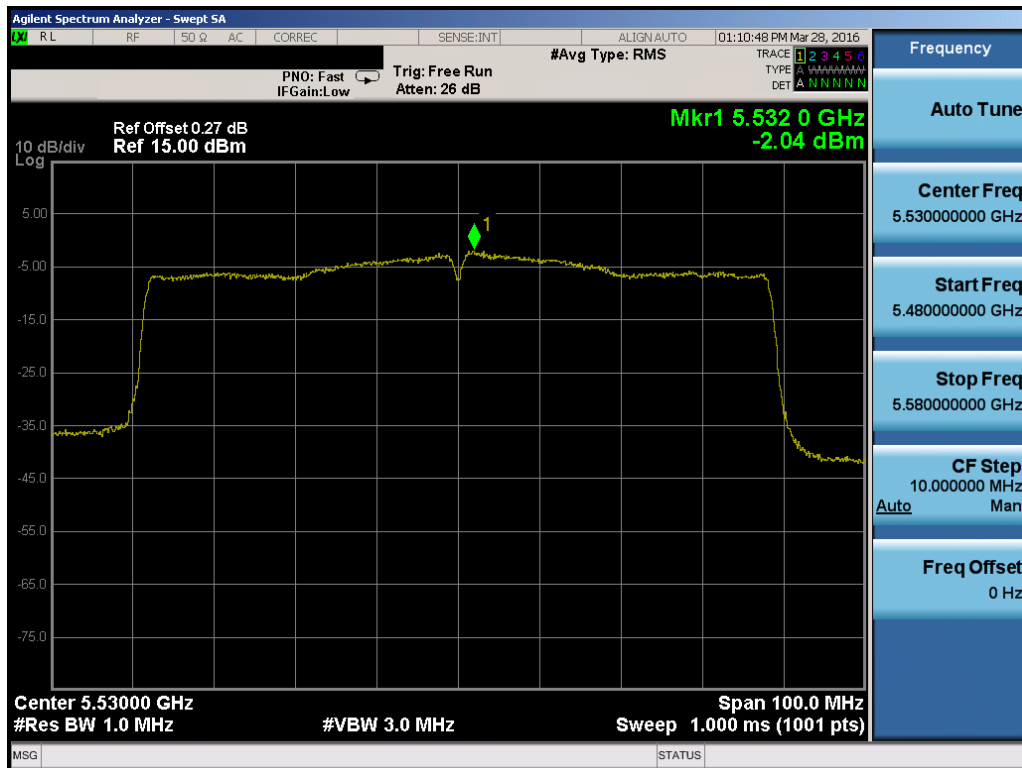


Plot 7-143. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 118)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 101 of 246

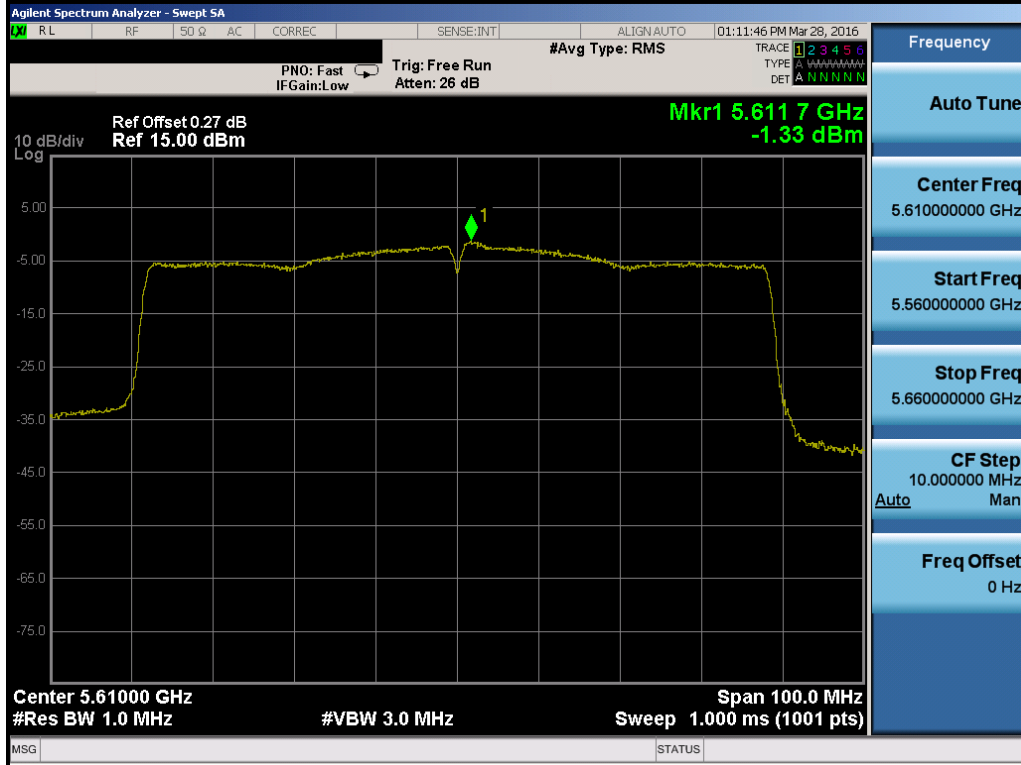


Plot 7-144. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)

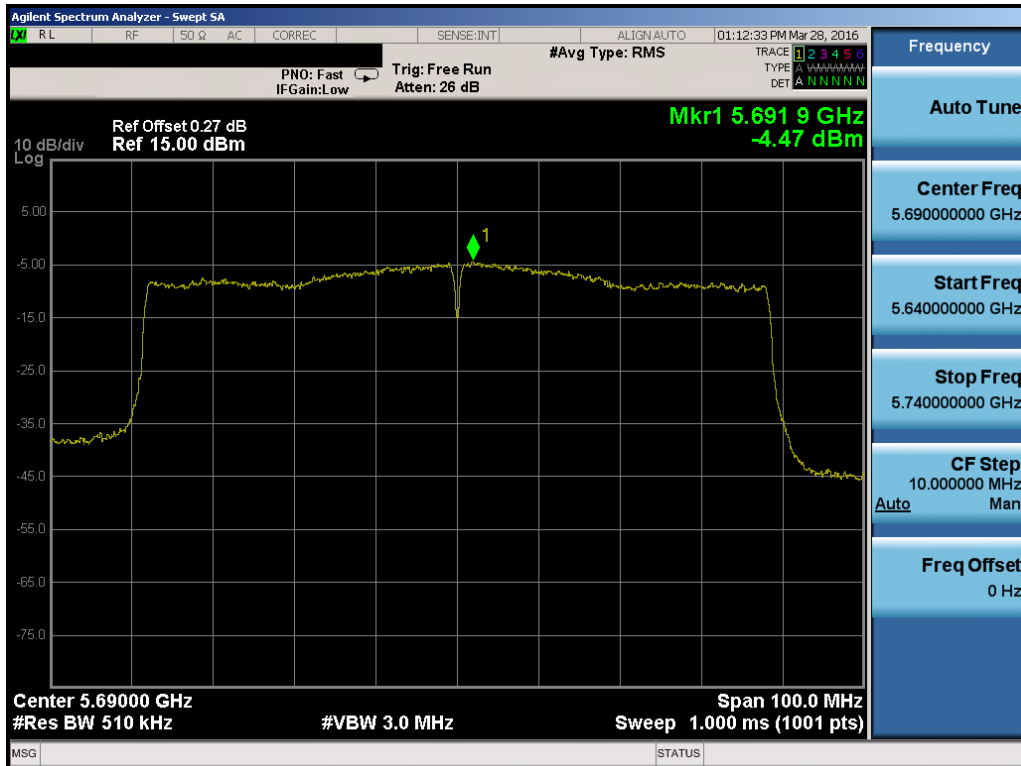


Plot 7-145. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 102 of 246



Plot 7-146. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 122)

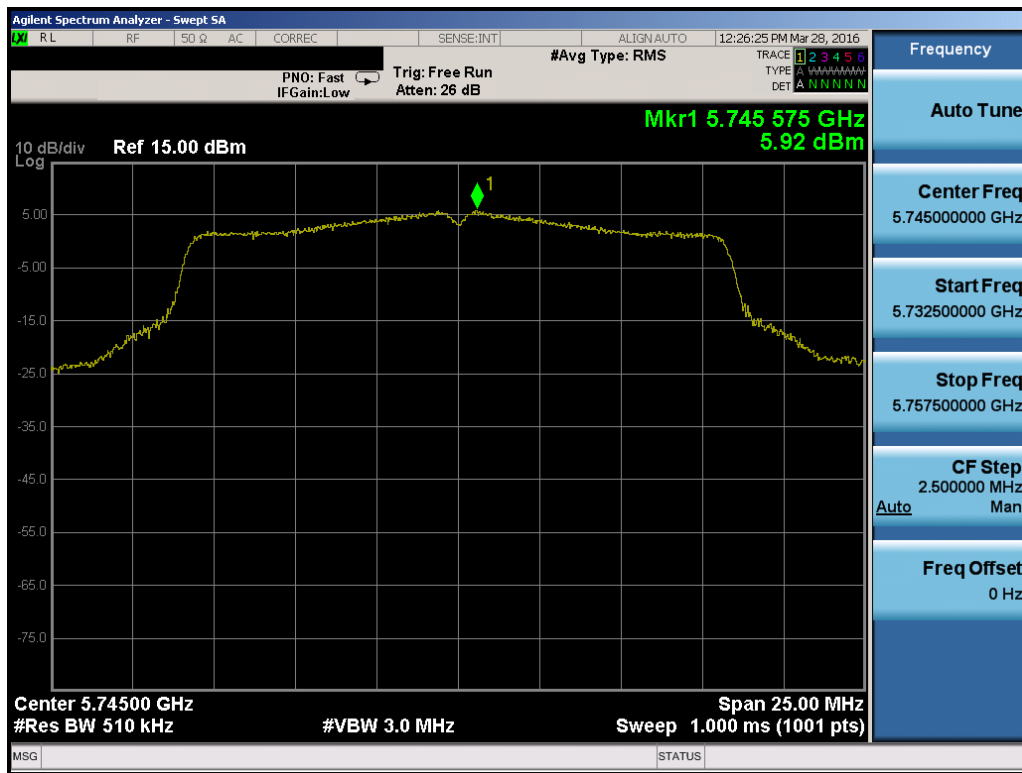


Plot 7-147. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 138)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset		Page 103 of 246

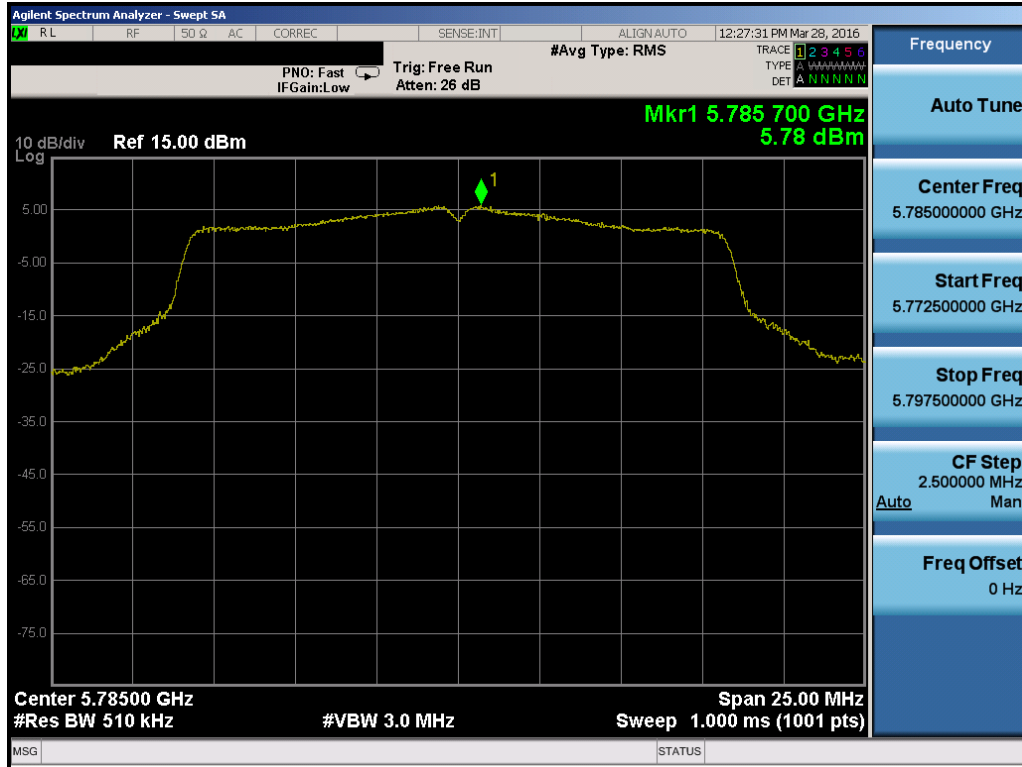
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]	Pass / Fail
Band 3	5745	149	a	6	5.92	30.0	-24.08	Pass
	5785	157	a	6	5.78	30.0	-24.22	Pass
	5825	165	a	6	5.71	30.0	-24.29	Pass
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	3.40	30.0	-26.60	Pass
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	3.43	30.0	-26.57	Pass
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	2.97	30.0	-27.03	Pass
	5755	151	n (40MHz)	13.5/15 (MCS0)	-0.50	30.0	-30.50	Pass
	5795	159	n (40MHz)	13.5/15 (MCS0)	-0.70	30.0	-30.70	Pass
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-0.27	30.0	-30.27	Pass

Table 7-20. Band 3 Conducted Power Spectral Density Measurements

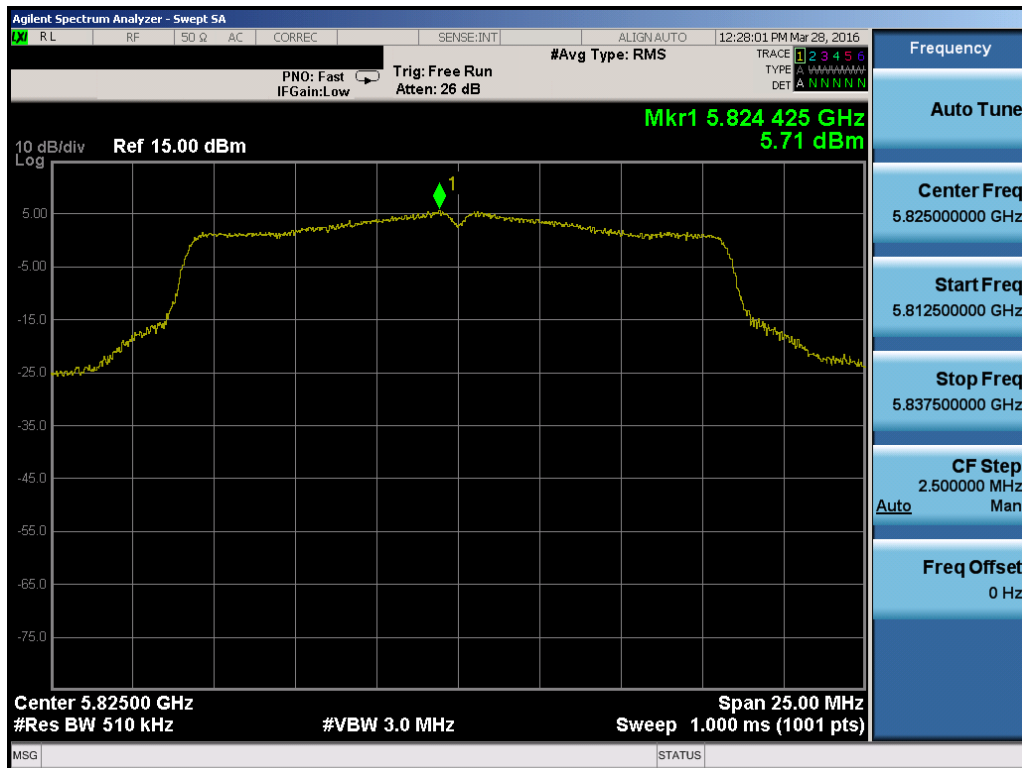


Plot 7-148. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 149)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 104 of 246	

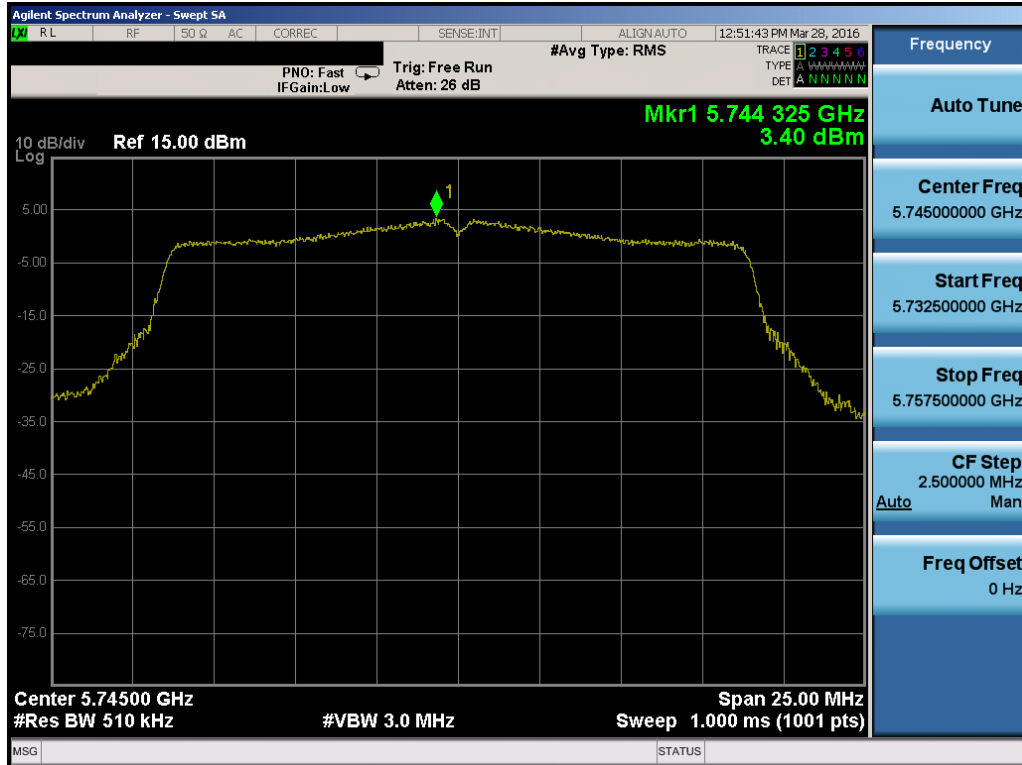


Plot 7-149. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 157)

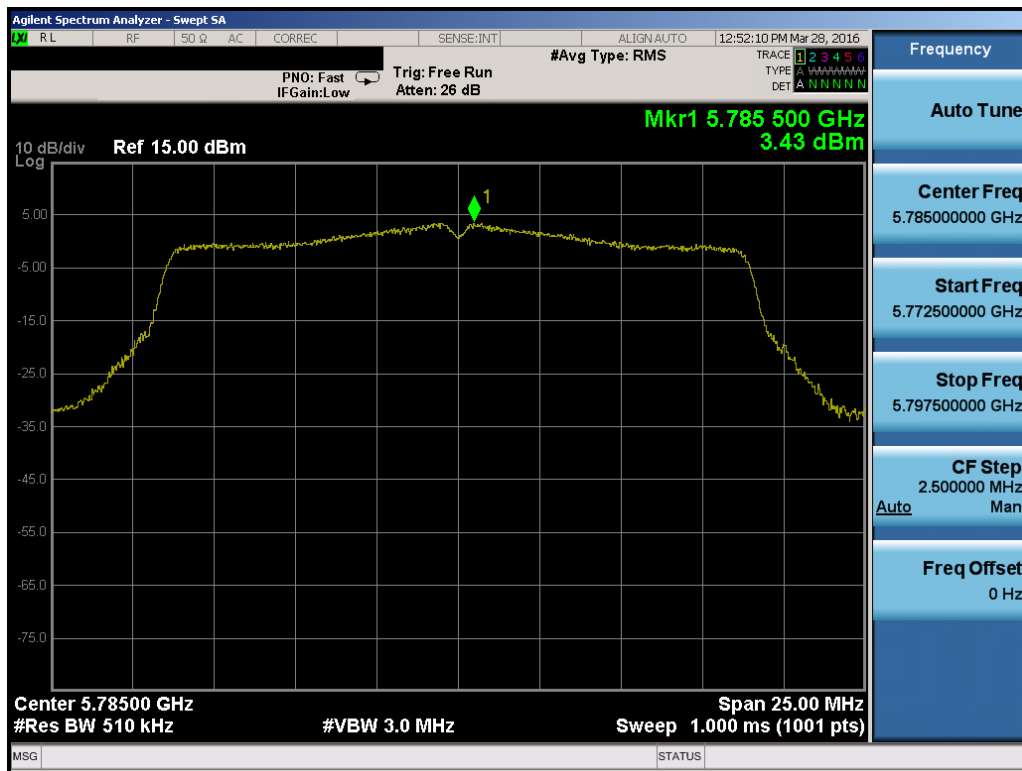


Plot 7-150. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 165)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 105 of 246

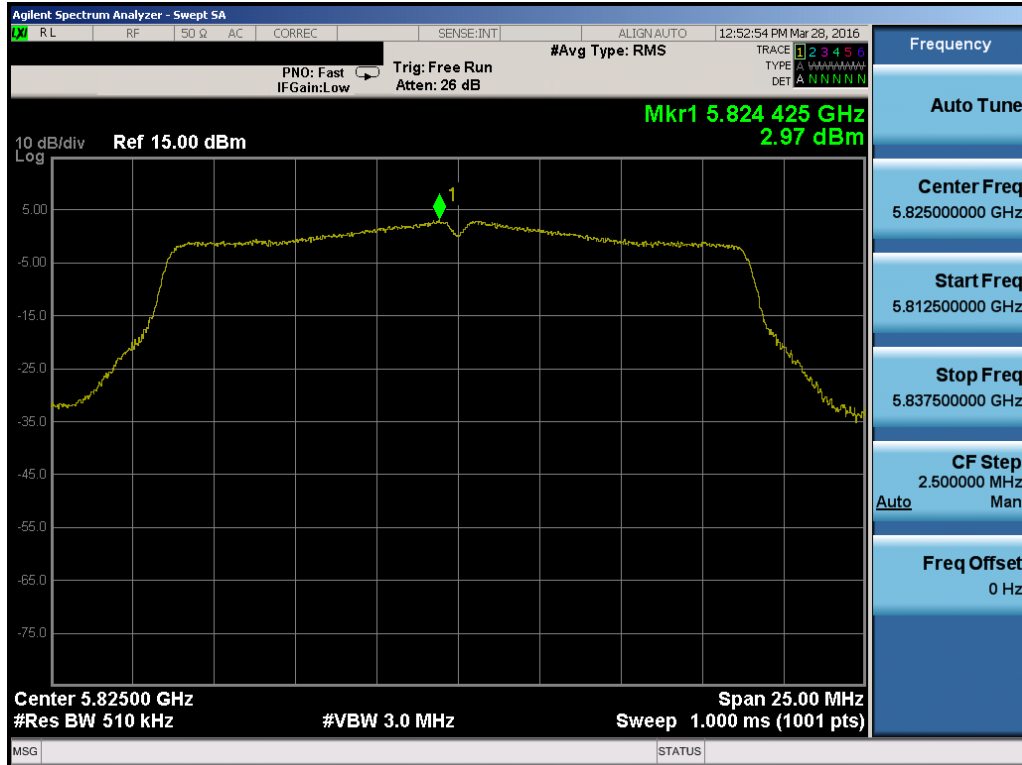


Plot 7-151. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

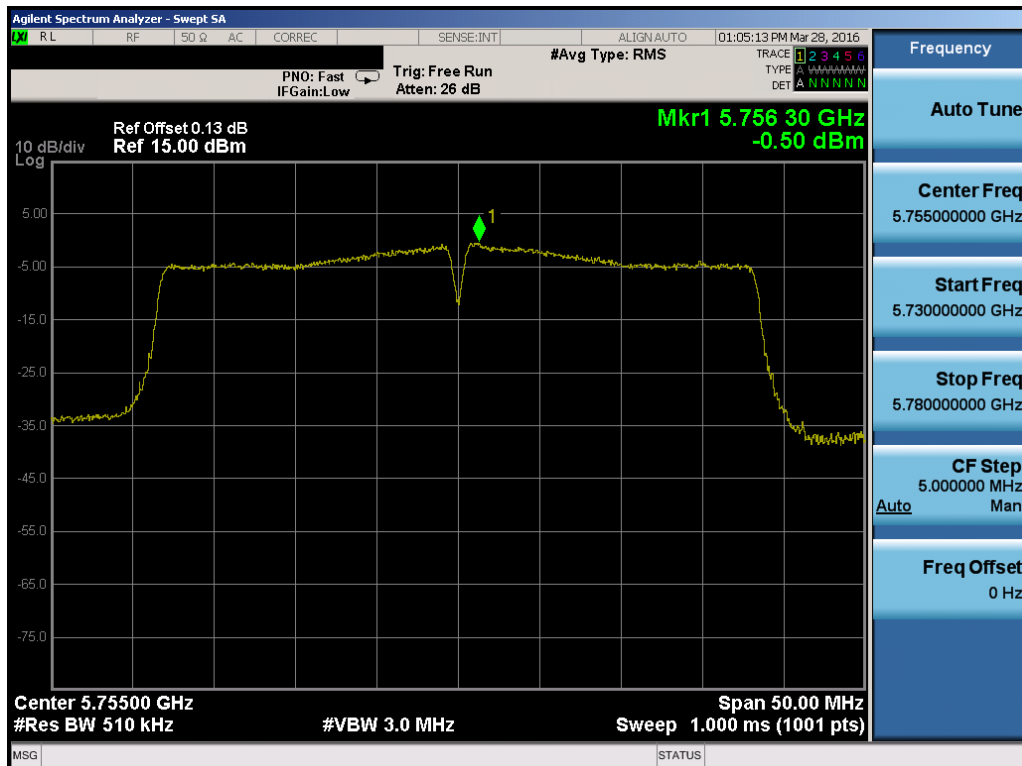


Plot 7-152. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 106 of 246

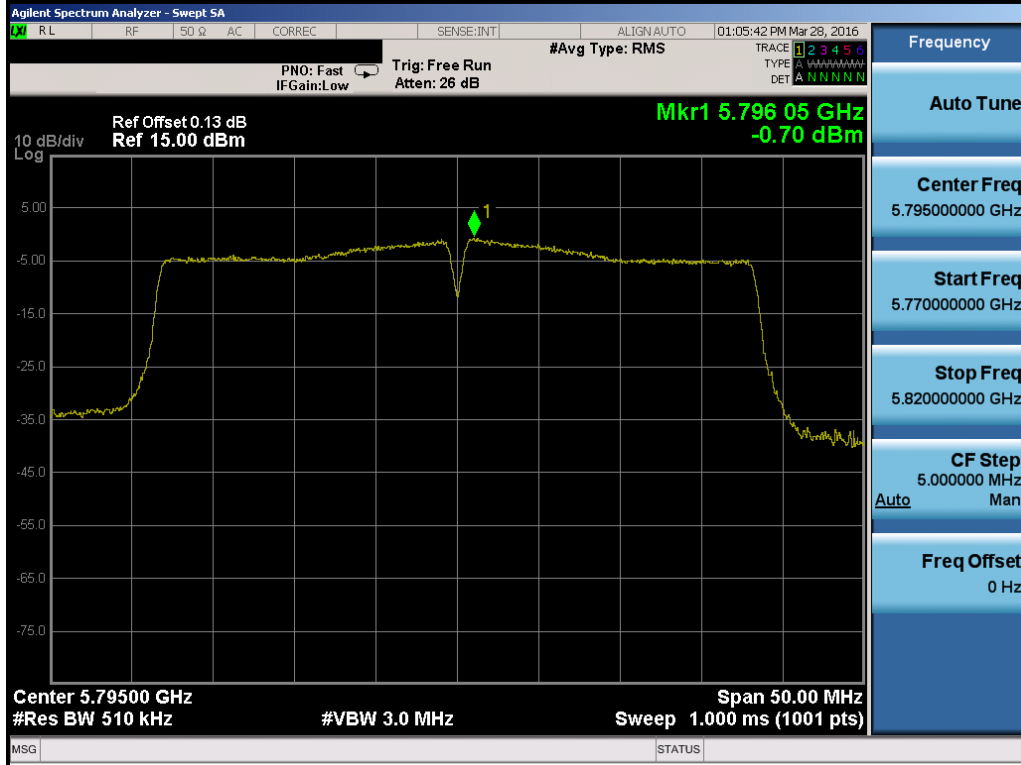


Plot 7-153. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

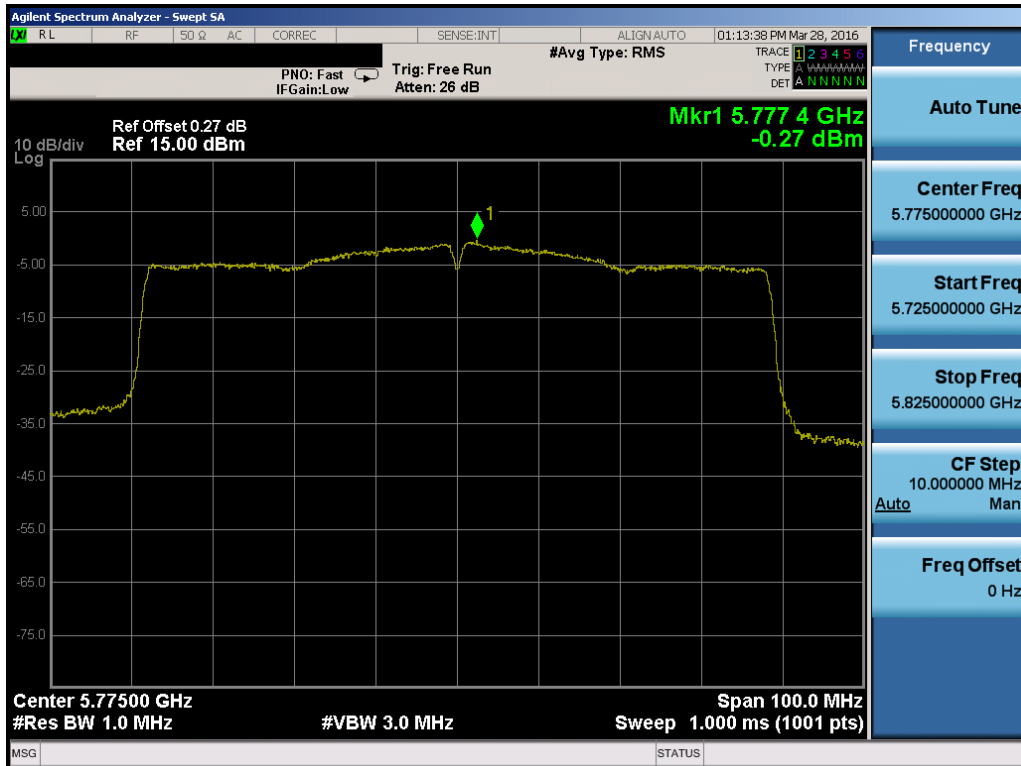


Plot 7-154. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 107 of 246



Plot 7-155. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 159)



Plot 7-156. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 108 of 246

Summed MIMO Power Spectral Density Measurements

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Antenn-1 Power Density [dBm]	Antenn-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density [dBm/MHz]	Margin [dB]	Pass / Fail
Band 1	5180	36	n (20MHz)	6.5/7.2 (MCS0)	6.93	6.72	9.84	11.0	-1.16	Pass
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.88	7.03	9.97	11.0	-1.03	Pass
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	6.76	6.87	9.83	11.0	-1.17	Pass
	5190	38	n (40MHz)	13.5/15 (MCS0)	6.34	2.39	7.81	11.0	-3.19	Pass
	5230	46	n (40MHz)	13.5/15 (MCS0)	6.49	2.36	7.91	11.0	-3.09	Pass
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	0.20	-1.39	2.49	11.0	-8.51	Pass
Band 2A	5260	52	n (20MHz)	6.5/7.2 (MCS0)	7.50	6.00	9.83	11.0	-1.17	Pass
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	7.34	5.79	9.64	11.0	-1.36	Pass
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	7.63	6.06	9.93	11.0	-1.07	Pass
	5270	54	n (40MHz)	13.5/15 (MCS0)	5.84	2.08	7.37	11.0	-3.63	Pass
	5310	62	n (40MHz)	13.5/15 (MCS0)	6.24	1.93	7.61	11.0	-3.39	Pass
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	0.04	-1.81	2.22	11.0	-8.78	Pass
Band 2C	5500	100	n (20MHz)	6.5/7.2 (MCS0)	7.71	5.98	9.94	11.0	-1.06	Pass
	5600	120	n (20MHz)	6.5/7.2 (MCS0)	7.29	5.83	9.63	11.0	-1.37	Pass
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	7.21	6.19	9.74	11.0	-1.26	Pass
	5510	102	n (40MHz)	13.5/15 (MCS0)	4.51	2.33	6.56	11.0	-4.44	Pass
	5590	118	n (40MHz)	13.5/15 (MCS0)	4.43	2.03	6.40	11.0	-4.60	Pass
	5710	142	n (40MHz)	13.5/15 (MCS0)	3.52	2.90	6.23	11.0	-4.77	Pass
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-0.73	-2.04	1.68	11.0	-9.32	Pass
	5610	122	ac (80MHz)	29.3/32.5 (MCS0)	-1.44	-1.33	1.63	11.0	-9.37	Pass
5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-5.02	-4.47	-1.73	11.0	-12.73	Pass	

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

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Antenn-1 Power Density [dBm]	Antenn-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]	Pass / Fail
Band 3	5745	149	n (20MHz)	6.5/7.2 (MCS0)	4.90	3.40	7.22	30.0	-22.78	Pass
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	4.25	3.43	6.87	30.0	-23.13	Pass
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	3.89	2.97	6.46	30.0	-23.54	Pass
	5755	151	n (40MHz)	13.5/15 (MCS0)	0.41	-0.50	2.99	30.0	-27.01	Pass
	5795	159	n (40MHz)	13.5/15 (MCS0)	0.13	-0.70	2.75	30.0	-27.25	Pass
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-2.08	-0.27	1.93	30.0	-28.07	Pass

Table 7-22. Band 3 MIMO Conducted Power Spectral Density Measurements

Note:



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

Sample MIMO Calculation:

At 5180MHz the average conducted power spectral density was measured to be 6.93 dBm for Antenna-1 and 6.72 dBm for Antenna-2.

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

$$(6.93 \text{ dBm} + 6.72 \text{ dBm}) = (4.93 \text{ mW} + 4.69 \text{ mW}) = 9.63 \text{ mW} = 9.84 \text{ dBm}$$

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7.6 Frequency Stability

§15.407(g)

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: 3.80 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	5,179,999,883	-117	-0.00000226
100 %		- 30	5,180,000,002	2	0.00000004
100 %		- 20	5,179,999,755	-245	-0.00000473
100 %		- 10	5,179,999,995	-5	-0.00000010
100 %		0	5,179,999,829	-171	-0.00000330
100 %		+ 10	5,180,000,160	160	0.00000309
100 %		+ 20	5,180,000,371	371	0.00000716
100 %		+ 30	5,180,000,020	20	0.00000039
100 %		+ 40	5,180,000,120	120	0.00000232
100 %		+ 50	5,180,000,014	14	0.00000027
BATT. ENDPOINT		3.40	+ 20	5,180,000,063	63

Table 7-23. 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.

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Frequency Stability

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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: 3.80 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	5,259,999,895	-105	-0.00000200
100 %		- 30	5,260,000,015	15	0.00000029
100 %		- 20	5,260,000,383	383	0.00000728
100 %		- 10	5,259,999,861	-139	-0.00000264
100 %		0	5,259,999,718	-282	-0.00000536
100 %		+ 10	5,260,000,288	288	0.00000548
100 %		+ 20	5,260,000,080	80	0.00000152
100 %		+ 30	5,260,000,358	358	0.00000681
100 %		+ 40	5,259,999,784	-216	-0.00000411
100 %		+ 50	5,260,000,287	287	0.00000546
BATT. ENDPOINT		3.40	+ 20	5,259,999,753	-247

Table 7-24. 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.

FCC ID: A3L5MG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Frequency Stability

§15.407(g)

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: 3.80 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	5,500,000,130	130	0.00000236
100 %		- 30	5,499,999,701	-299	-0.00000544
100 %		- 20	5,499,999,795	-205	-0.00000373
100 %		- 10	5,499,999,892	-108	-0.00000196
100 %		0	5,500,000,002	2	0.00000004
100 %		+ 10	5,499,999,884	-116	-0.00000211
100 %		+ 20	5,499,999,821	-179	-0.00000325
100 %		+ 30	5,500,000,065	65	0.00000118
100 %		+ 40	5,499,999,893	-107	-0.00000195
100 %		+ 50	5,499,999,703	-297	-0.00000540
BATT. ENDPOINT		3.40	+ 20	5,500,000,050	50

Table 7-25. 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

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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: 3.80 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	5,744,999,904	-96	-0.00000167
100 %		- 30	5,744,999,934	-66	-0.00000115
100 %		- 20	5,745,000,087	87	0.00000151
100 %		- 10	5,744,999,806	-194	-0.00000338
100 %		0	5,744,999,995	-5	-0.00000009
100 %		+ 10	5,745,000,121	121	0.00000211
100 %		+ 20	5,744,999,728	-272	-0.00000473
100 %		+ 30	5,744,999,800	-200	-0.00000348
100 %		+ 40	5,745,000,032	32	0.00000056
100 %		+ 50	5,745,000,143	143	0.00000249
BATT. ENDPOINT		3.40	+ 20	5,744,999,943	-57

Table 7-26. 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.1)(b.6) §15.205 §15.209

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 KDB 789033 D02 v01, 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.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table 7-27 per Section 15.209.

Frequency	Field Strength [$\mu\text{V}/\text{m}$]	Measured Distance [Meters]
Above 960.0 MHz	500	3

Table 7-27. Radiated Limits

Test Procedures Used

KDB 789033 D02 v01 – 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 $\geq 2 \times \text{span}/\text{RBW}$)
6. Averaging type = power (RMS)
7. Sweep time = auto couple
8. Trace was averaged over 100 sweeps

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

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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.

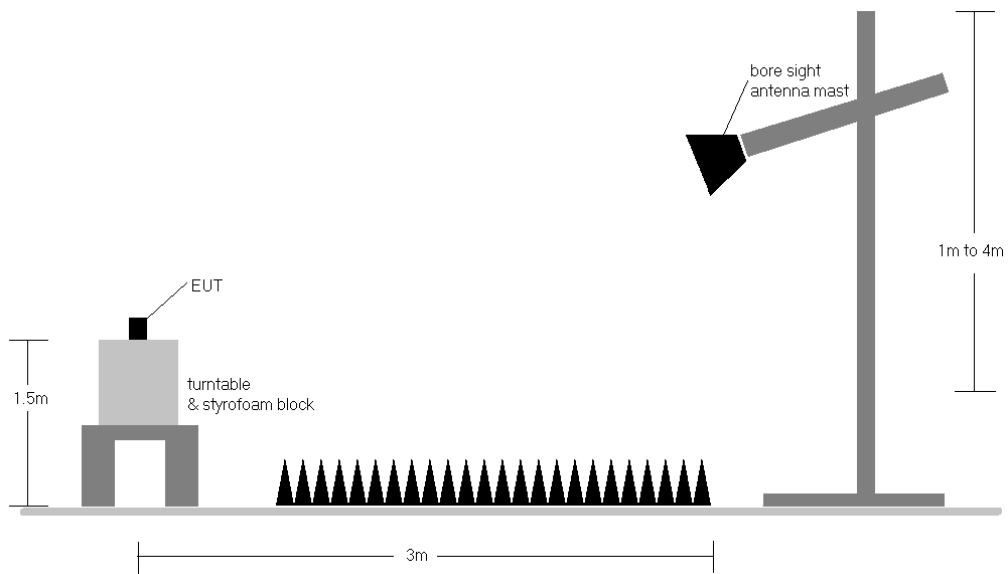






Figure 7-5. Test Instrument & Measurement Setup

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Test Notes

1. All radiated spurious emissions levels were measured in a radiated test setup per the guidance of KDB 789033 D02 v01 Section H.
2. All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 7-27.
3. All spurious emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 6-11. All spurious emissions that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dB μ V/m.
4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
5. This unit was tested with its standard battery.
6. 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.
7. 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.
8. 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.
9. 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. Rohde & Schwarz EMC32, Version 9.15.00 automated test software was used to perform the Radiated Spurious Emissions Pre-Scan testing.
10. The “-“ shown in the following RSE tables are used to denote a noise floor measurement.

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Sample Calculations



Determining Spurious Emissions Levels

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

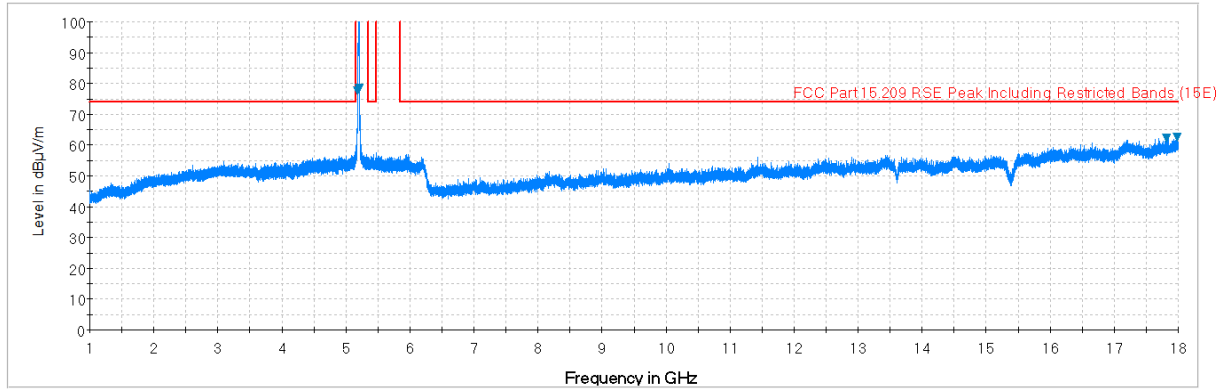
Radiated Band Edge Measurement Offset

- The amplitude offset shown in the radiated restricted band edge plots in Section 6.8 was calculated using the formula:

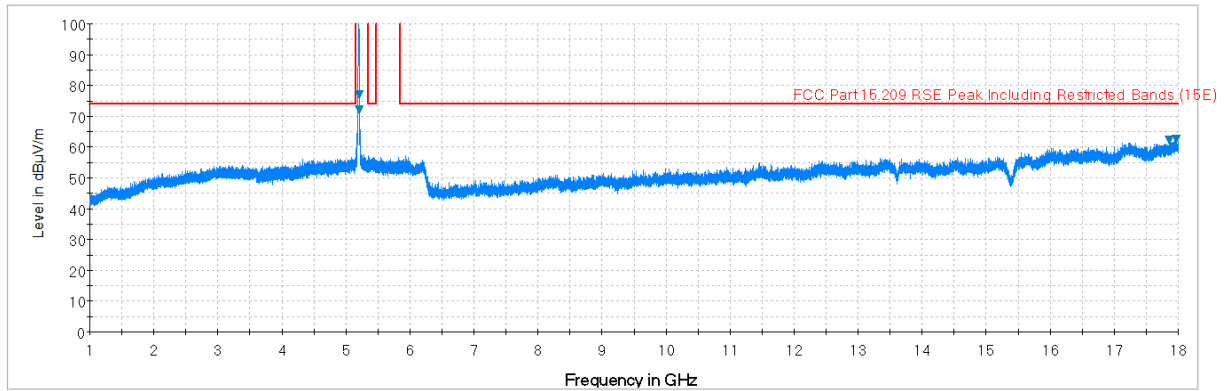
$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + 10 \text{ dB Attenuator}) - \text{Preamplifier Gain}$$

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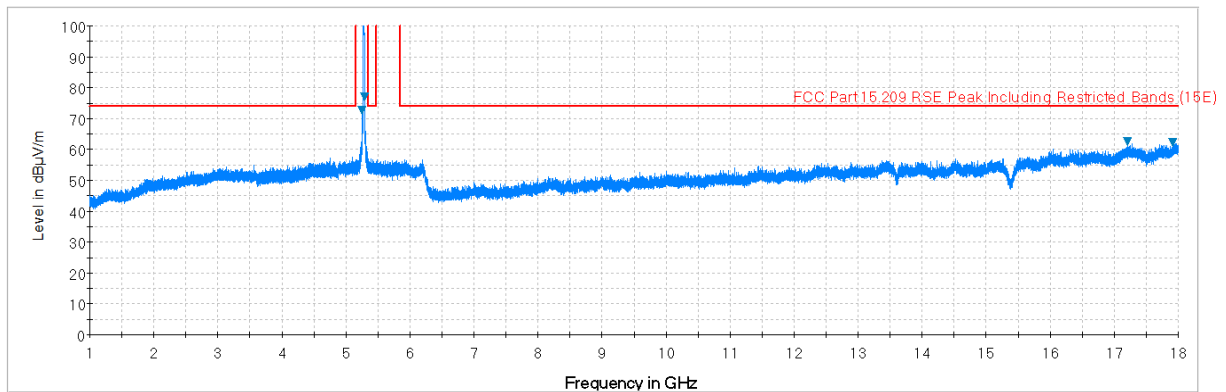
7.7.1 Antenna-1 Radiated Spurious Emission Measurements





Plot 7-157. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. H)

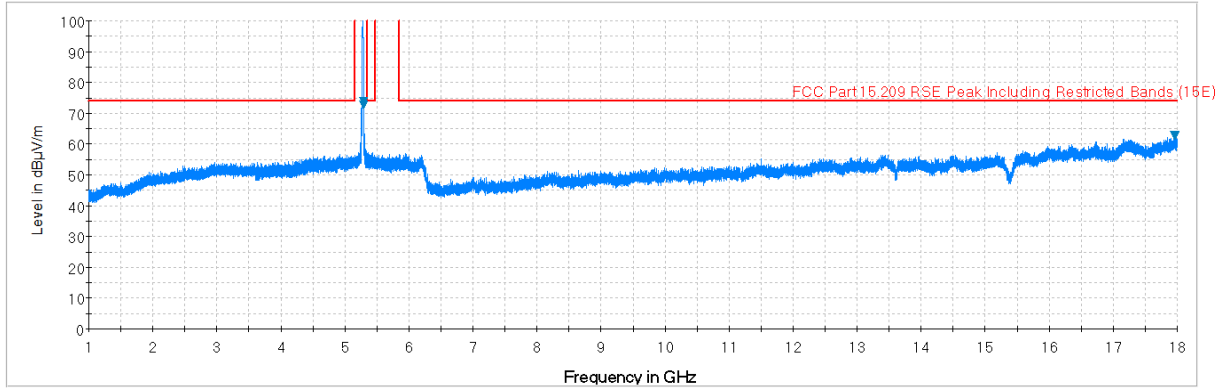


Plot 7-158. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. V)

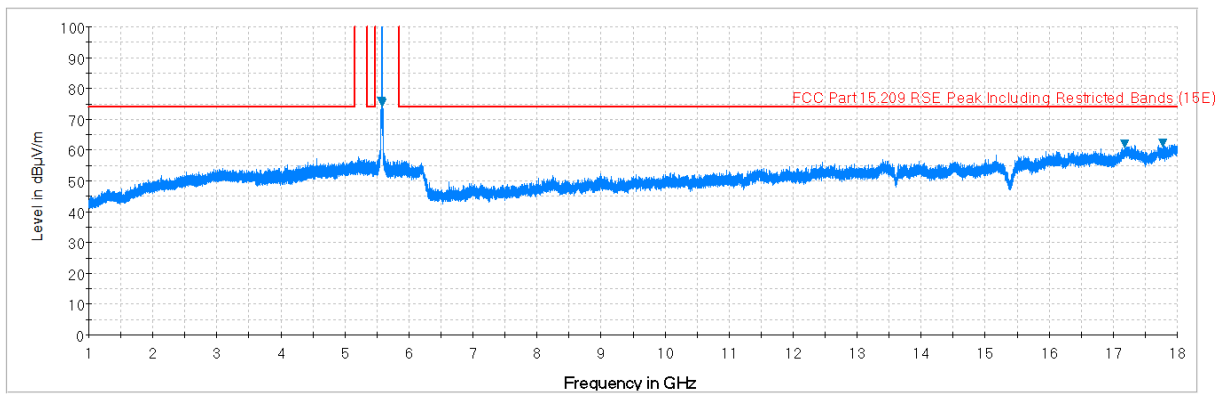


Plot 7-159. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56, Ant. Pol. H)

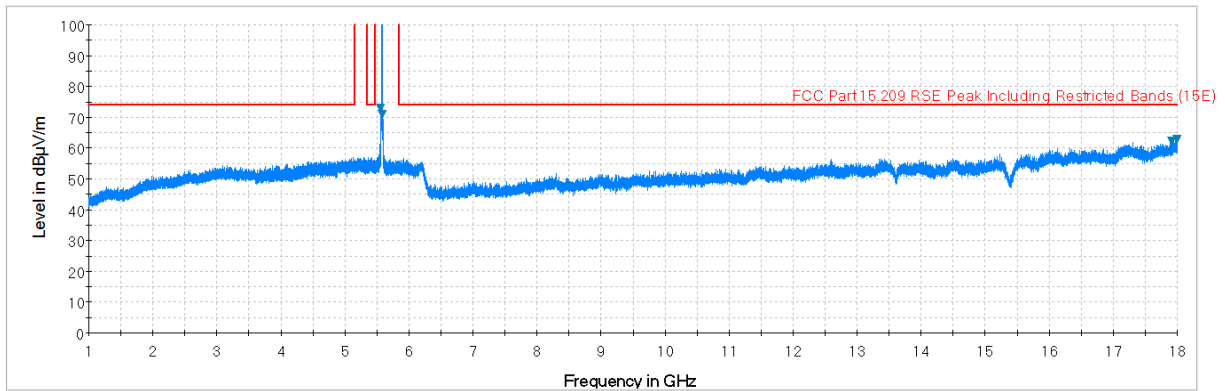
FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Plot 7-160. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56, Ant. Pol. V)

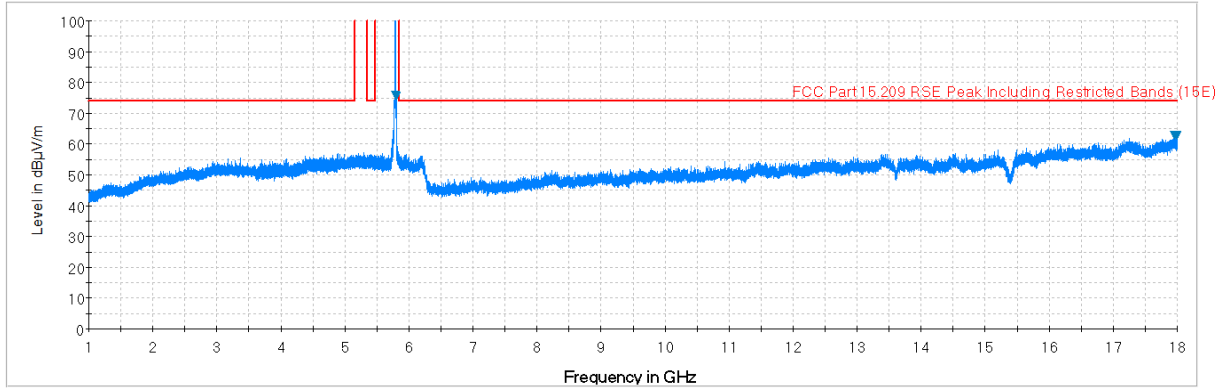


Plot 7-161. Radiated Spurious Plot above 1GHz (802.11a – U2C Ch. 120, Ant. Pol. H)

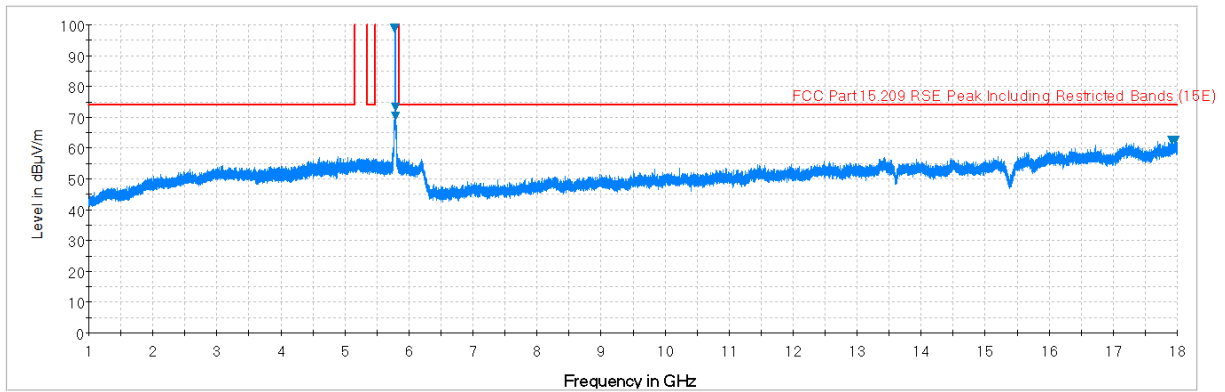


Plot 7-162. Radiated Spurious Plot above 1GHz (802.11a – U2C Ch. 120, Ant. Pol. V)



FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Plot 7-163. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)

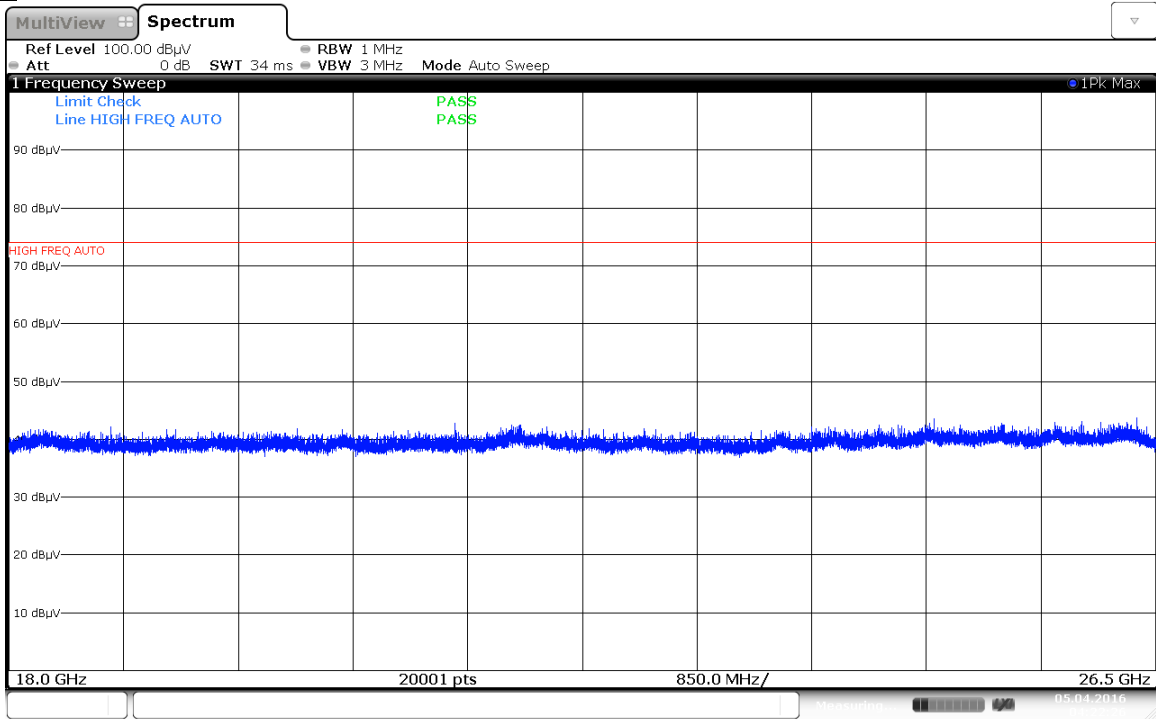


Plot 7-164. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

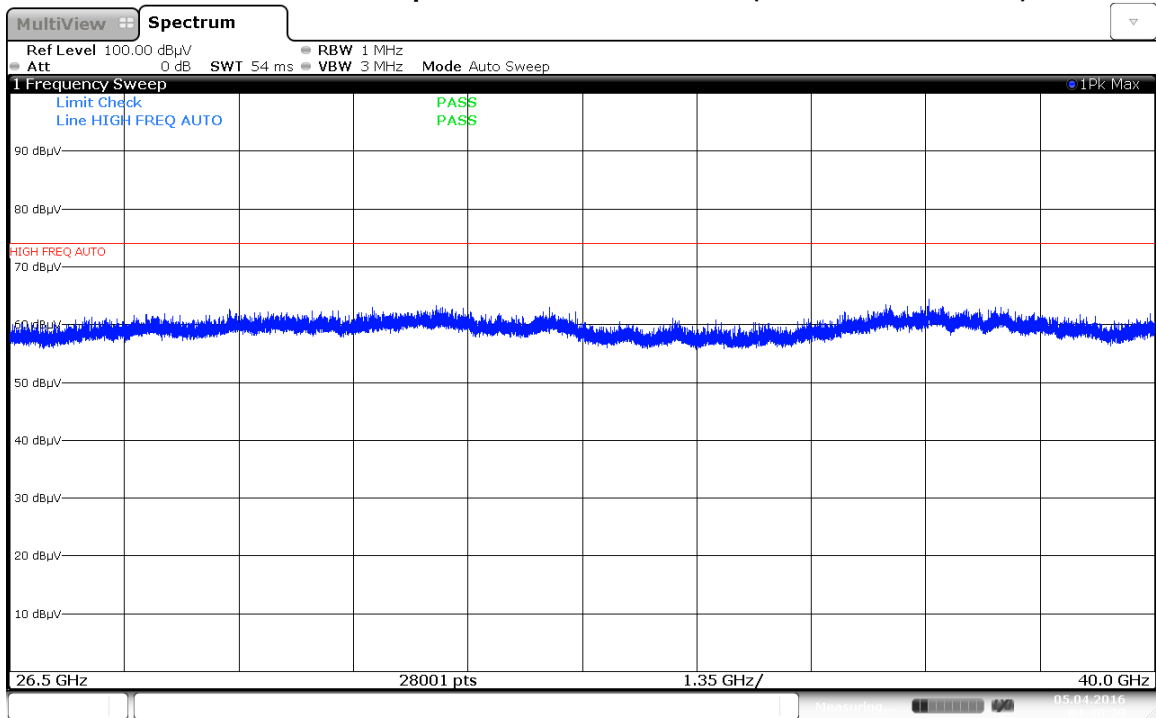
FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Antenna-1 Radiated Spurious Emissions Measurements (Above 18GHz)

§15.209

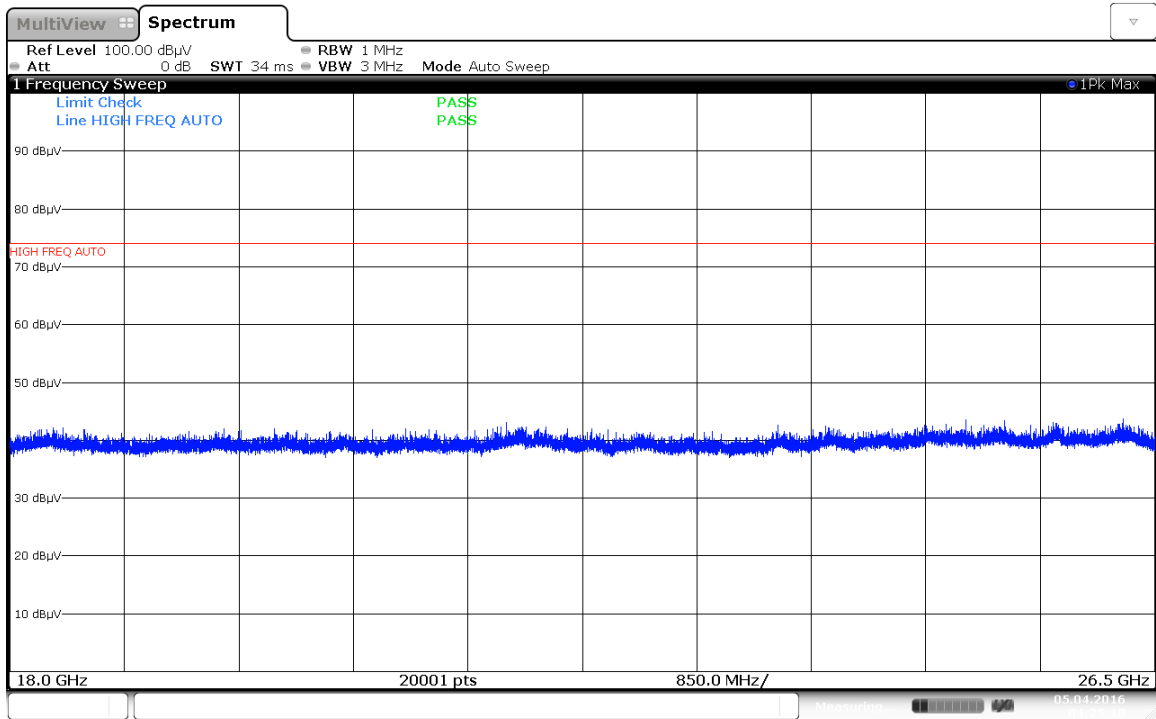


Plot 7-165. Radiated Spurious Plot above 18GHz (802.11a – Ant. Pol. H)

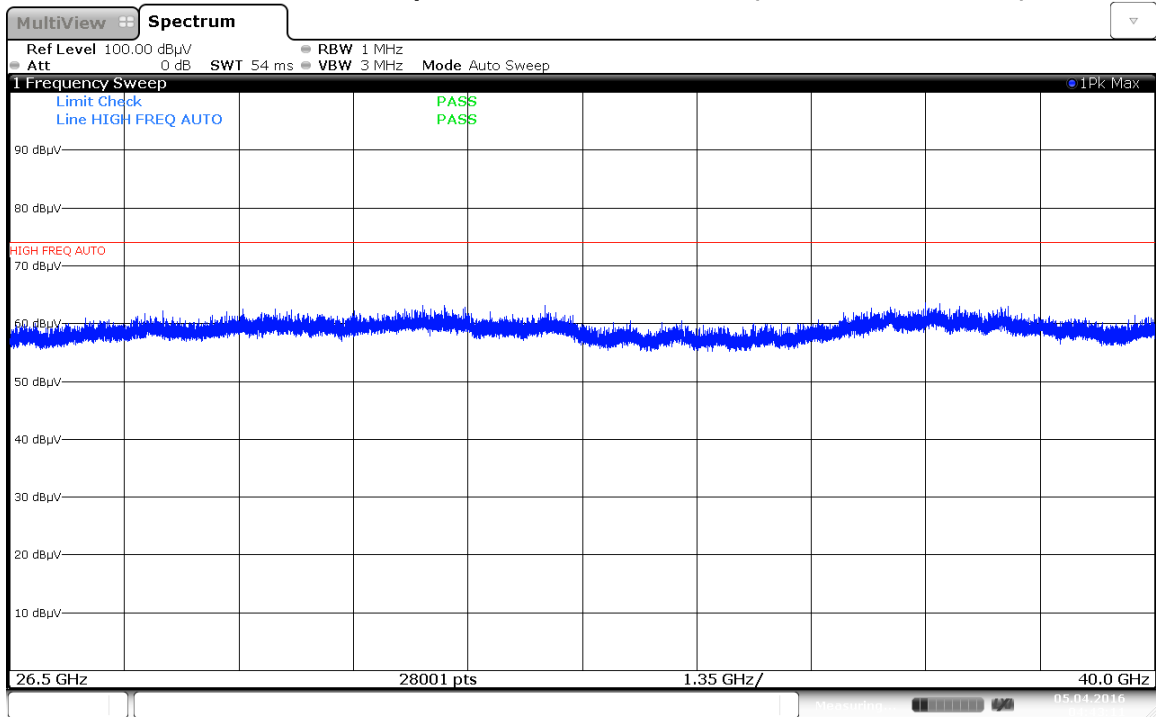


Plot 7-166. Radiated Spurious Plot above 26.5GHz (802.11a – Ant. Pol. H)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Plot 7-167. Radiated Spurious Plot above 18GHz (802.11a – Ant. Pol. V)



Plot 7-168. Radiated Spurious Plot above 18GHz (802.11a – Ant. Pol. V)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Antenna-1 Radiated Spurious Emission Measurements

§15.247(d) §15.205 & §15.209

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5180MHz
 Channel: 36



Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.00	0	-100.41	48.86	0.00	55.45	68.20	-12.75
* 15540.00	Average	H	-	-	-111.94	52.93	0.00	47.99	53.98	-5.99
* 15540.00	Peak	H	-	-	-100.75	52.93	0.00	59.18	73.98	-14.80
* 20720.00	Average	H	-	-	-101.50	44.39	-9.54	40.34	53.98	-13.64
* 20720.00	Peak	H	-	-	-96.47	44.39	-9.54	45.37	73.98	-28.61
25900.00	Peak	H	-	-	-94.09	45.11	-9.54	48.48	68.20	-19.72

Table 7-28. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5200MHz
 Channel: 40

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.00	12	-99.65	48.82	0.00	56.17	68.20	-12.03
* 15600.00	Average	H	-	-	-111.17	53.00	0.00	48.82	53.98	-5.16
* 15600.00	Peak	H	-	-	-99.95	53.00	0.00	60.04	73.98	-13.94
* 20800.00	Average	H	-	-	-101.29	44.39	-9.54	40.56	53.98	-13.42
* 20800.00	Peak	H	-	-	-96.30	44.39	-9.54	45.55	73.98	-28.43
26000.00	Peak	H	-	-	-94.68	45.12	-9.54	47.89	68.20	-20.31

Table 7-29. Radiated Measurements

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 123 of 246	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5240MHz
 Channel: 48



Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.00	5	-99.78	48.76	0.00	55.99	68.20	-12.21
* 15720.00	Average	H	-	-	-110.58	53.28	0.00	49.70	53.98	-4.28
* 15720.00	Peak	H	-	-	-98.98	53.28	0.00	61.30	73.98	-12.68
* 20960.00	Average	H	-	-	-101.17	44.31	-9.54	40.60	53.98	-13.38
* 20960.00	Peak	H	-	-	-96.95	44.31	-9.54	44.82	73.98	-29.16
26200.00	Peak	H	-	-	-94.08	45.01	-9.54	48.39	68.20	-19.81

Table 7-30. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5240MHz
 Channel: 48

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	-	-	-105.15	48.76	0.00	50.62	68.20	-17.58
* 15720.00	Average	H	-	-	-114.26	53.28	0.00	46.02	53.98	-7.96
* 15720.00	Peak	H	-	-	-102.79	53.28	0.00	57.49	73.98	-16.49
* 20960.00	Average	H	-	-	-107.93	44.31	-9.54	33.84	53.98	-20.14
* 20960.00	Peak	H	-	-	-97.55	44.31	-9.54	44.22	73.98	-29.76
26200.00	Peak	H	-	-	-93.11	45.01	-9.54	49.36	68.20	-18.84

Table 7-31. Radiated Measurements with WCP

FCC ID: A3L5MG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 124 of 246	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5260MHz
 Channel: 52



Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.00	25	-100.30	48.80	0.00	55.51	68.20	-12.69
* 15780.00	Average	H	-	-	-111.60	53.28	0.00	48.68	53.98	-5.30
* 15780.00	Peak	H	-	-	-99.70	53.28	0.00	60.58	73.98	-13.40
* 21040.00	Average	H	-	-	-101.60	44.29	-9.54	40.15	53.98	-13.83
* 21040.00	Peak	H	-	-	-96.94	44.29	-9.54	44.81	73.98	-29.17
26300.00	Peak	H	-	-	-92.47	45.00	-9.54	49.98	68.20	-18.22

Table 7-32. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5280MHz
 Channel: 56

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.00	14	-100.10	48.92	0.00	55.82	68.20	-12.38
* 15840.00	Average	H	-	-	-110.88	53.47	0.00	49.58	53.98	-4.40
* 15840.00	Peak	H	-	-	-99.41	53.47	0.00	61.05	73.98	-12.93
* 21120.00	Average	H	-	-	-100.38	44.28	-9.54	41.35	53.98	-12.63
* 21120.00	Peak	H	-	-	-96.01	44.28	-9.54	45.72	73.98	-28.26
26400.00	Peak	H	-	-	-92.37	45.02	-9.54	50.11	68.20	-18.09

Table 7-33. Radiated Measurements

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 125 of 246	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64



Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.00	36	-110.73	49.02	0.00	45.29	53.98	-8.69
* 10640.00	Peak	H	1.00	36	-99.43	49.02	0.00	56.59	73.98	-17.39
* 15960.00	Average	H	-	-	-111.29	54.49	0.00	50.20	53.98	-3.78
* 15960.00	Peak	H	-	-	-99.01	54.49	0.00	62.48	73.98	-11.50
* 21280.00	Average	H	-	-	-106.85	44.26	-9.54	34.87	53.98	-19.10
* 21280.00	Peak	H	-	-	-96.08	44.26	-9.54	45.64	73.98	-28.33
26600.00	Peak	H	-	-	-102.70	47.61	-9.54	42.36	68.20	-25.84

Table 7-34. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	-	-	-114.65	49.02	0.00	41.37	53.98	-12.61
* 10640.00	Peak	H	-	-	-103.55	49.02	0.00	52.47	73.98	-21.51
* 15960.00	Average	H	-	-	-114.07	54.49	0.00	47.42	53.98	-6.56
* 15960.00	Peak	H	-	-	-103.25	54.49	0.00	58.24	73.98	-15.74
* 21280.00	Average	H	-	-	-106.63	44.26	-9.54	35.09	53.98	-18.88
21280.00	Peak	H	-	-	-95.69	44.26	-9.54	46.03	73.98	-27.94
26600.00	Peak	H	-	-	-104.54	47.61	-9.54	40.52	68.20	-27.68

Table 7-35. Radiated Measurements with WCP

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 126 of 246	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5500MHz
 Channel: 100



Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.00	24	-109.39	50.11	0.00	47.71	53.98	-6.27
* 11000.00	Peak	H	1.00	24	-97.75	50.11	0.00	59.35	73.98	-14.63
16500.00	Peak	H	-	-	-97.89	54.60	0.00	63.71	68.20	-4.49
22000.00	Peak	H	-	-	-95.01	44.50	-9.54	46.95	68.20	-21.25
27500.00	Peak	H	-	-	-103.22	47.97	-9.54	42.21	68.20	-25.99

Table 7-36. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5600MHz
 Channel: 120

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11200.00	Average	H	1.00	18	-110.99	50.18	0.00	46.19	53.98	-7.79
* 11200.00	Peak	H	1.00	18	-98.91	50.18	0.00	58.27	73.98	-15.71
16800.00	Peak	H	-	-	-99.35	56.88	0.00	64.53	68.20	-3.67
* 22400.00	Average	H	-	-	-100.72	44.57	-9.54	41.31	53.98	-12.67
* 22400.00	Peak	H	-	-	-95.95	44.57	-9.54	46.08	73.98	-27.90
28000.00	Peak	H	-	-	-104.03	48.11	-9.54	41.54	68.20	-26.66

Table 7-37. Radiated Measurements

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 127 of 246	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5720MHz
 Channel: 144



Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.00	21	-111.37	50.81	0.00	46.44	53.98	-7.54
* 11440.00	Peak	H	1.00	21	-99.78	50.81	0.00	58.03	73.98	-15.95
17160.00	Peak	H	-	-	-103.26	57.01	0.00	60.74	68.20	-7.46
* 22880.00	Average	H	-	-	-101.48	44.61	-9.54	40.59	53.98	-13.39
* 22880.00	Peak	H	-	-	-97.28	44.61	-9.54	44.79	73.98	-29.19
28600.00	Peak	H	-	-	-103.55	48.29	-9.54	42.20	68.20	-26.00

Table 7-38. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5720MHz
 Channel: 144

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	-	-	-115.85	50.81	0.00	41.96	53.98	-12.02
* 11440.00	Peak	H	-	-	-104.98	50.81	0.00	52.83	73.98	-21.15
17160.00	Peak	H	-	-	-103.73	57.01	0.00	60.27	68.20	-7.93
22880.00	Average	H	-	-	-107.78	44.61	-9.54	34.29	53.98	-19.69
22880.00	Peak	H	-	-	-97.28	44.61	-9.54	44.79	73.98	-29.19
28600.00	Peak	H	-	-	-103.42	48.29	-9.54	42.33	68.20	-25.87

Table 7-39. Radiated Measurements with WCP

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 128 of 246	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5745MHz
 Channel: 149



Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.00	9	-111.24	50.95	0.00	46.72	53.98	-7.26
* 11490.00	Peak	H	1.00	9	-99.82	50.95	0.00	58.14	73.98	-15.84
17235.00	Peak	H	-	-	-103.37	57.52	0.00	61.15	68.20	-7.05
* 22980.00	Average	H	-	-	-101.92	44.68	-9.54	40.22	53.98	-13.76
* 22980.00	Peak	H	-	-	-96.63	44.68	-9.54	45.51	73.98	-28.47
28725.00	Peak	H	-	-	-102.87	48.26	-9.54	42.85	68.20	-25.35

Table 7-40. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5785MHz
 Channel: 157

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.00	9	-111.07	50.92	0.00	46.84	53.98	-7.14
* 11570.00	Peak	H	1.00	9	-98.75	50.92	0.00	59.16	73.98	-14.82
17355.00	Peak	H	-	-	-103.51	58.05	0.00	61.54	68.20	-6.66
23140.00	Peak	H	-	-	-95.69	44.75	-9.54	46.52	68.20	-21.68
28925.00	Peak	H	-	-	-102.16	48.29	-9.54	43.59	68.20	-24.61

Table 7-41. Radiated Measurements

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 129 of 246	

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



Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.00	10	-111.18	50.90	0.00	46.72	53.98	-7.26
* 11650.00	Peak	H	1.00	10	-99.45	50.90	0.00	58.45	73.98	-15.53
17475.00	Peak	H	-	-	-102.30	58.55	0.00	63.26	68.20	-4.94
23300.00	Peak	H	-	-	-96.42	44.75	-9.54	45.79	68.20	-22.41
29125.00	Peak	H	-	-	-103.17	48.28	-9.54	42.57	68.20	-25.63

Table 7-42. Radiated Measurements

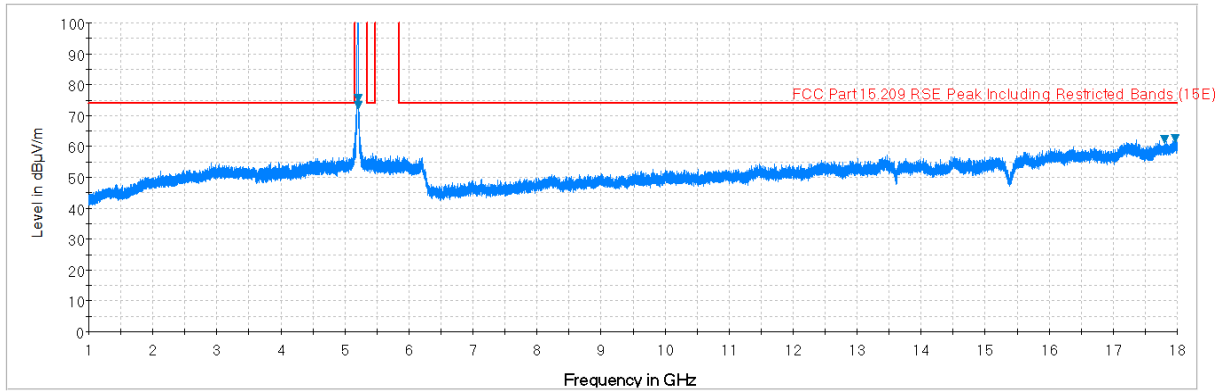
Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	-	-	-115.73	50.90	0.00	42.17	53.98	-11.81
* 11650.00	Peak	H	-	-	-104.32	50.90	0.00	53.58	73.98	-20.40
17475.00	Peak	H	-	-	-102.76	58.55	0.00	62.80	68.20	-5.40
23300.00	Average	H	-	-	-103.02	58.55	-9.54	53.00	68.20	-15.20
23300.00	Peak	H	-	-	-97.16	44.75	-9.54	45.05	68.20	-23.15
29125.00	Peak	H	-	-	-103.25	48.28	-9.54	42.49	68.20	-25.71

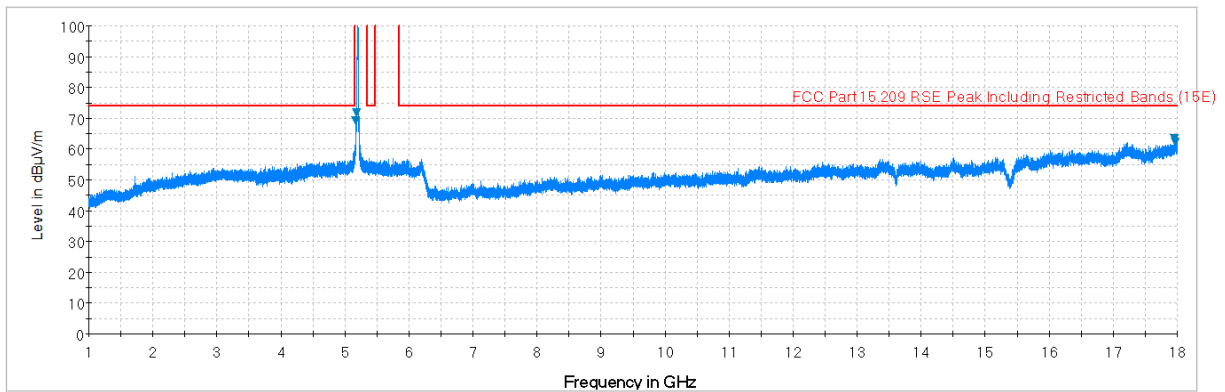
Table 7-43. Radiated Measurements with WCP

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 130 of 246	

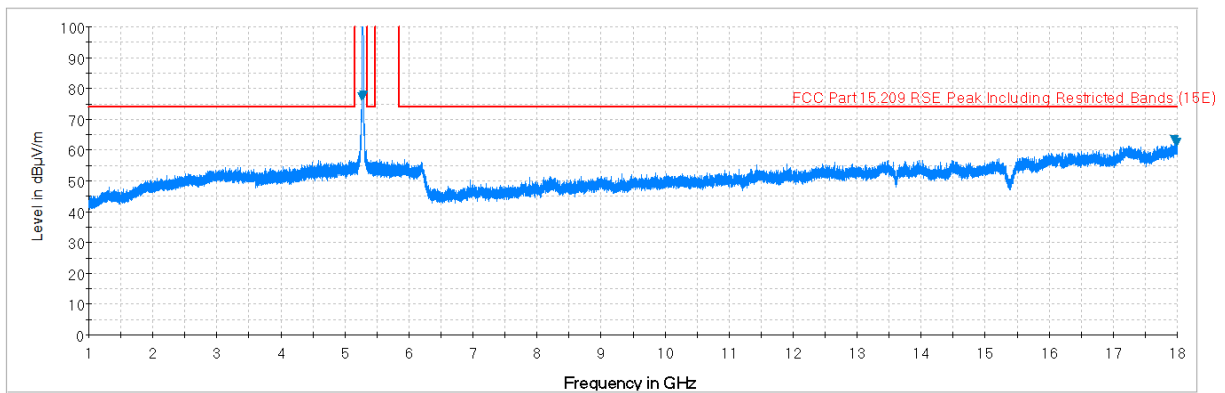
7.7.2 Antenna-2 Radiated Spurious Emission Measurements





Plot 7-169. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. H)

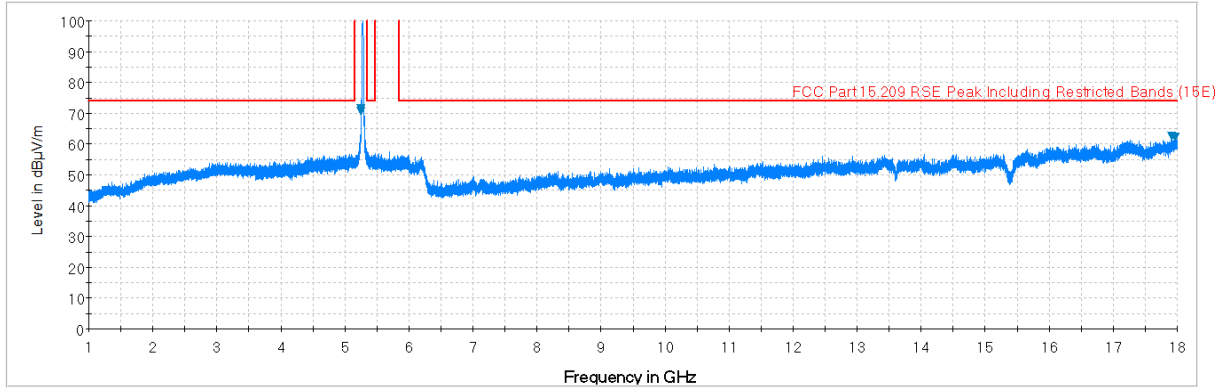


Plot 7-170. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. V)

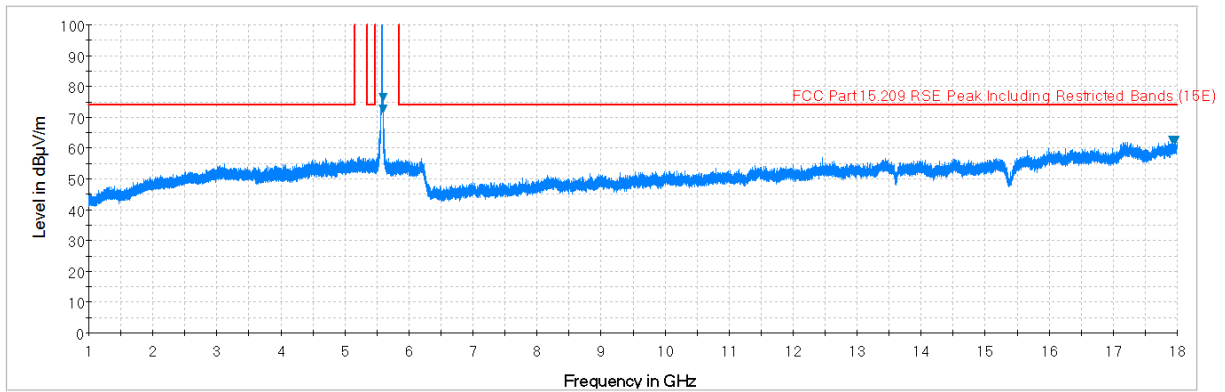


Plot 7-171. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56, Ant. Pol. H)

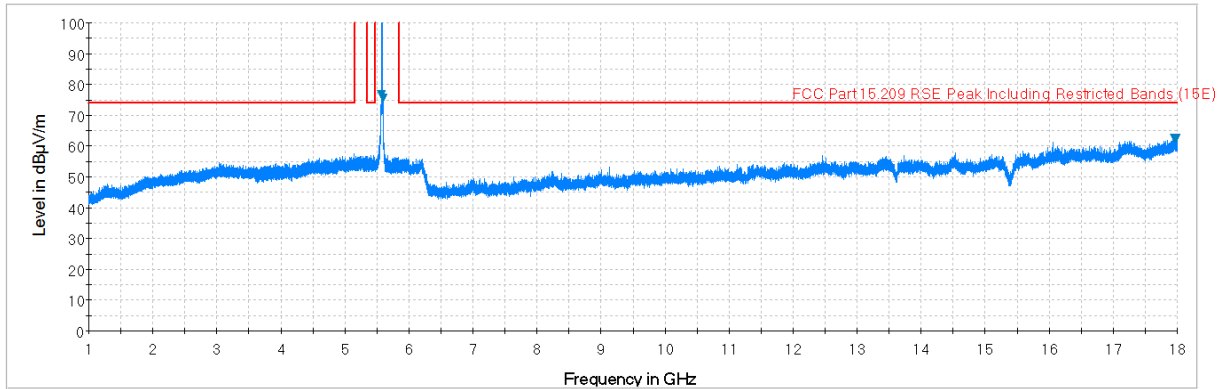
FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 131 of 246	





Plot 7-172. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56, Ant. Pol. V)

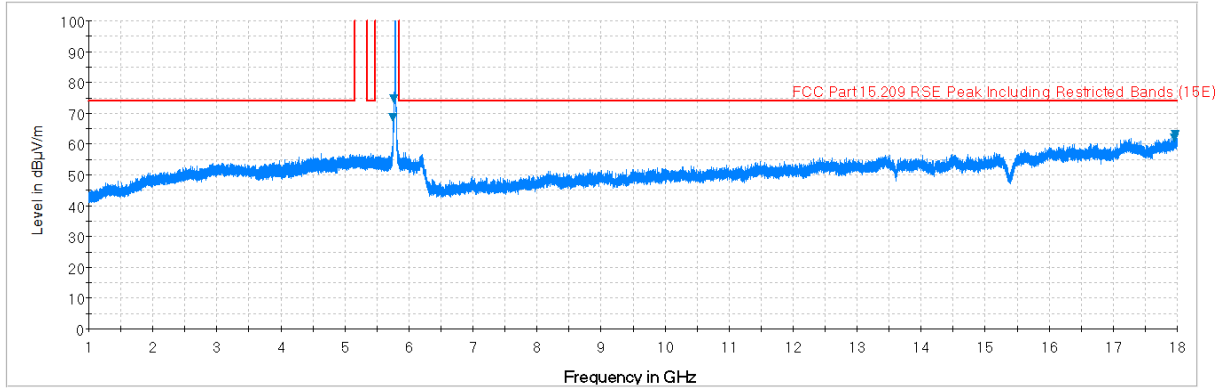


Plot 7-173. Radiated Spurious Plot above 1GHz (802.11a – U2C Ch. 120, Ant. Pol. H)

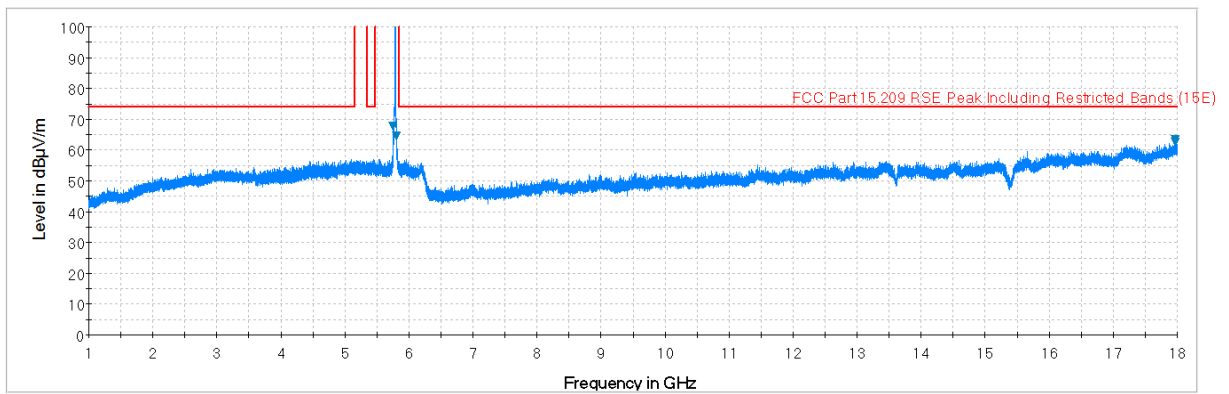


Plot 7-174. Radiated Spurious Plot above 1GHz (802.11a – U2C Ch. 120, Ant. Pol. V)



FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 132 of 246	



Plot 7-175. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)

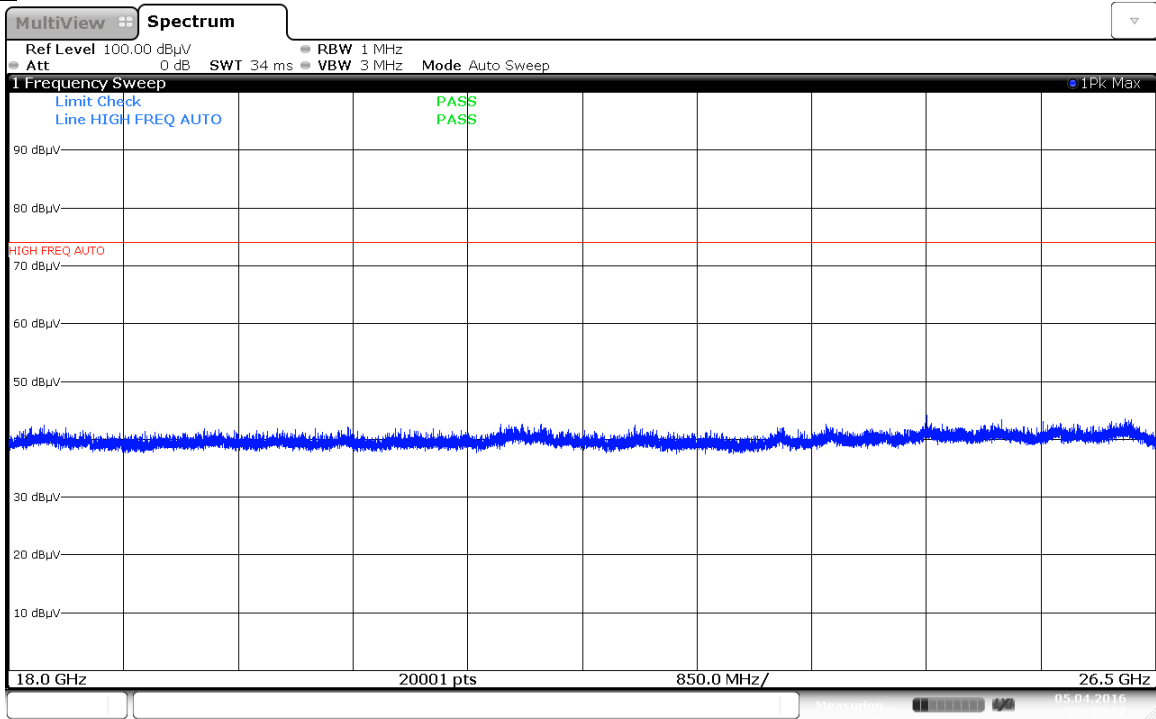


Plot 7-176. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 133 of 246	

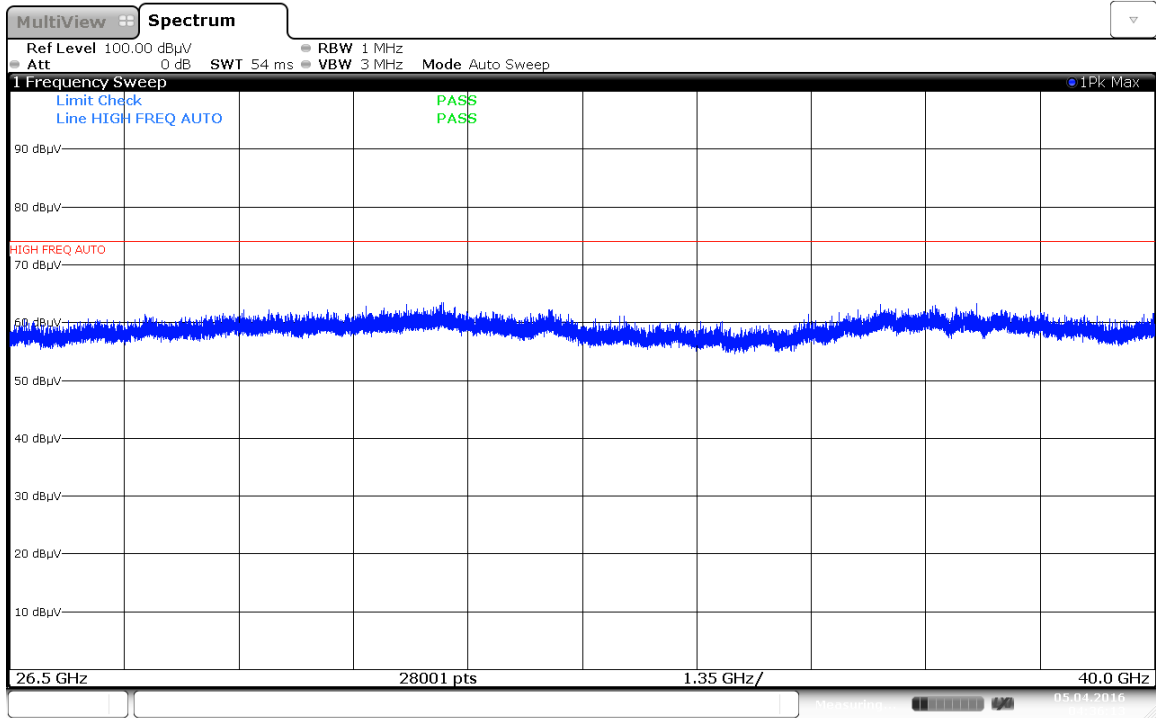
Antenna-2 Radiated Spurious Emissions Measurements (Above 18GHz)

§15.209



Date: 5.APR.2016 04:30:37

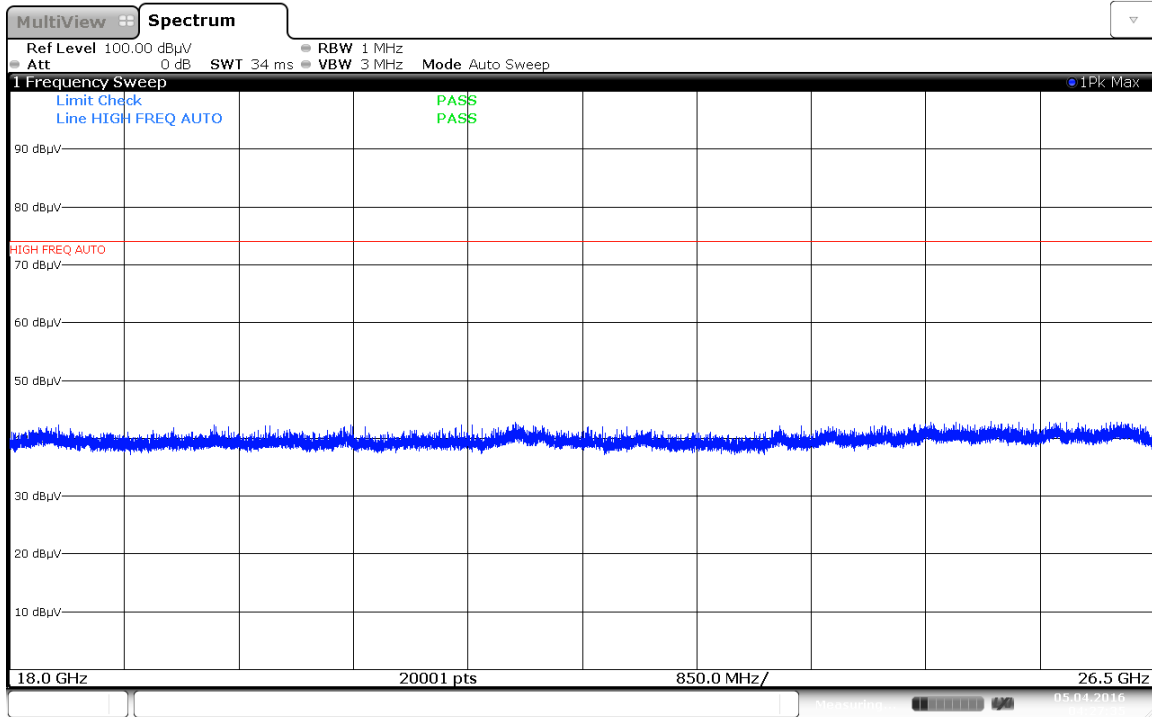
Plot 7-177. Radiated Spurious Plot above 18GHz (802.11a – Ant. Pol. H)



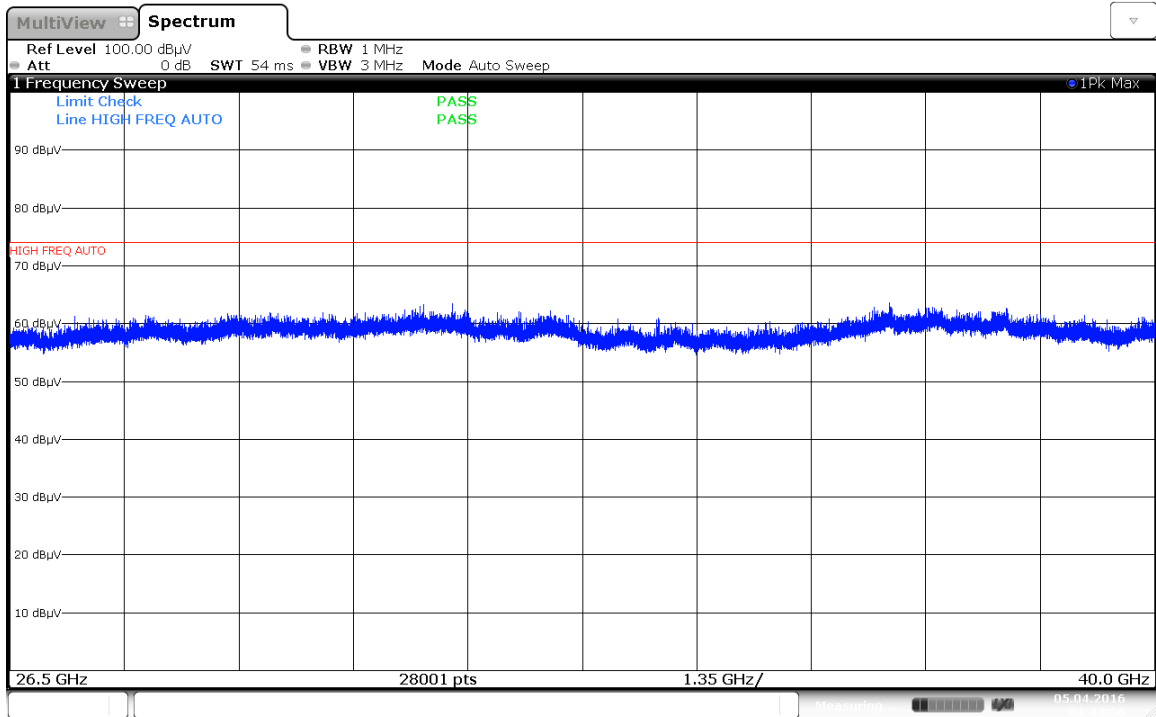
Date: 5.APR.2016 04:36:13

Plot 7-178. Radiated Spurious Plot above 26.5GHz (802.11a – Ant. Pol. V)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 134 of 246



Plot 7-179. Radiated Spurious Plot above 18GHz (802.11a – Ant. Pol. H)



Plot 7-180. Radiated Spurious Plot above 26.5GHz (802.11a – Ant. Pol. V)

FCC ID: A3L5MG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 135 of 246	

Antenna-2 Radiated Spurious Emission Measurements

§15.247(d) §15.205 & §15.209

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5180MHz
 Channel: 36



Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.45	25	-100.32	48.86	0.00	55.54	68.20	-12.66
* 15540.00	Average	H	1.45	25	-111.83	52.93	0.00	48.10	53.98	-5.88
* 15540.00	Peak	H	-	-	-100.88	52.93	0.00	59.05	73.98	-14.93
* 20720.00	Average	H	-	-	-100.74	44.39	-9.54	41.10	53.98	-12.88
* 20720.00	Peak	H	-	-	-96.65	44.39	-9.54	45.19	73.98	-28.79
25900.00	Peak	H	-	-	-94.48	45.11	-9.54	48.09	68.20	-20.11

Table 7-44. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5200MHz
 Channel: 40

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.20	15	-99.83	48.82	0.00	55.99	68.20	-12.21
* 15600.00	Average	H	-	-	-111.13	53.00	0.00	48.86	53.98	-5.12
* 15600.00	Peak	H	-	-	-100.09	53.00	0.00	59.90	73.98	-14.08
* 20800.00	Average	H	-	-	-104.98	44.39	-9.54	36.87	53.98	-17.11
* 20800.00	Peak	H	-	-	-96.72	44.39	-9.54	45.13	73.98	-28.85
26000.00	Peak	H	-	-	-94.31	45.12	-9.54	48.26	68.20	-19.94

Table 7-45. Radiated Measurements

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 136 of 246	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5240MHz
 Channel: 48



Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.35	17	-100.15	48.76	0.00	55.62	68.20	-12.58
* 15720.00	Average	H	-	-	-110.61	53.28	0.00	49.67	53.98	-4.31
* 15720.00	Peak	H	-	-	-99.46	53.28	0.00	60.82	73.98	-13.16
* 20960.00	Average	H	-	-	-108.51	44.31	-9.54	33.26	53.98	-20.72
* 20960.00	Peak	H	-	-	-96.45	44.31	-9.54	45.32	73.98	-28.66
26200.00	Peak	H	-	-	-93.69	45.01	-9.54	48.78	68.20	-19.42

Table 7-46. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5240MHz
 Channel: 48

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	-	-	-105.07	48.76	0.00	50.70	68.20	-17.50
* 15720.00	Average	H	-	-	-114.14	53.28	0.00	46.14	53.98	-7.84
* 15720.00	Peak	H	-	-	-103.31	53.28	0.00	56.97	73.98	-17.01
* 20960.00	Average	H	-	-	-107.87	44.31	-9.54	33.90	53.98	-20.08
* 20960.00	Peak	H	-	-	-97.65	44.31	-9.54	44.12	73.98	-29.86
26200.00	Peak	H	-	-	-94.65	45.01	-9.54	47.82	68.20	-20.38

Table 7-47. Radiated Measurements with WCP

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 137 of 246	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5260MHz
 Channel: 52



Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.22	21	-100.35	48.80	0.00	55.46	68.20	-12.74
* 15780.00	Average	H	-	-	-111.50	53.28	0.00	48.78	53.98	-5.20
* 15780.00	Peak	H	-	-	-99.44	53.28	0.00	60.84	73.98	-13.14
* 21040.00	Average	H	-	-	-106.87	44.29	-9.54	34.88	53.98	-19.10
* 21040.00	Peak	H	-	-	-96.68	44.29	-9.54	45.07	73.98	-28.91
26300.00	Peak	H	-	-	-92.61	45.00	-9.54	49.84	68.20	-18.36

Table 7-48. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5280MHz
 Channel: 56

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.28	32	-100.05	48.92	0.00	55.87	68.20	-12.33
* 15840.00	Average	H	-	-	-110.83	53.47	0.00	49.63	53.98	-4.35
* 15840.00	Peak	H	-	-	-99.64	53.47	0.00	60.82	73.98	-13.16
* 21120.00	Average	H	-	-	-101.30	44.28	-9.54	40.43	53.98	-13.55
* 21120.00	Peak	H	-	-	-96.41	44.28	-9.54	45.32	73.98	-28.66
26400.00	Peak	H	-	-	-93.39	45.02	-9.54	49.09	68.20	-19.11

Table 7-49. Radiated Measurements

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 138 of 246	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64



Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.31	30	-110.74	49.02	0.00	45.28	53.98	-8.70
* 10640.00	Peak	H	1.31	30	-99.30	49.02	0.00	56.72	73.98	-17.26
* 15960.00	Average	H	-	-	-111.05	54.49	0.00	50.44	53.98	-3.54
* 15960.00	Peak	H	-	-	-98.73	54.49	0.00	62.76	73.98	-11.22
* 21280.00	Average	H	-	-	-101.35	44.26	-9.54	40.37	53.98	-13.60
* 21280.00	Peak	H	-	-	-96.10	44.26	-9.54	45.62	73.98	-28.35
26600.00	Peak	H	-	-	-102.37	47.61	-9.54	42.69	68.20	-25.51

Table 7-50. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	-	-	-114.84	49.02	0.00	41.18	53.98	-12.80
* 10640.00	Peak	H	-	-	-102.76	49.02	0.00	53.26	73.98	-20.72
* 15960.00	Average	H	-	-	-114.28	54.49	0.00	47.21	53.98	-6.77
* 15960.00	Peak	H	-	-	-103.44	54.49	0.00	58.05	73.98	-15.93
* 21280.00	Average	H	-	-	-106.73	44.26	-9.54	34.99	53.98	-18.98
21280.00	Peak	H	-	-	-95.99	44.26	-9.54	45.73	73.98	-28.24
26600.00	Peak	H	-	-	-104.27	47.61	-9.54	40.79	68.20	-27.41

Table 7-51. Radiated Measurements with WCP

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 139 of 246	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5500MHz
 Channel: 100



Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.15	18	-109.19	50.11	0.00	47.91	53.98	-6.07
* 11000.00	Peak	H	1.15	18	-97.97	50.11	0.00	59.13	73.98	-14.85
16500.00	Peak	H	-	-	-98.60	54.60	0.00	63.00	68.20	-5.20
22000.00	Peak	H	-	-	-95.15	44.50	-9.54	46.81	68.20	-21.39
27500.00	Peak	H	-	-	-103.62	47.97	-9.54	41.81	68.20	-26.39

Table 7-52. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5600MHz
 Channel: 120

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11200.00	Average	H	1.20	37	-110.81	50.18	0.00	46.37	53.98	-7.61
* 11200.00	Peak	H	1.20	37	-99.43	50.18	0.00	57.75	73.98	-16.23
16800.00	Peak	H	-	-	-99.14	56.88	0.00	64.74	68.20	-3.46
* 22400.00	Average	H	-	-	-99.32	44.57	-9.54	42.71	53.98	-11.27
* 22400.00	Peak	H	-	-	-95.17	44.57	-9.54	46.86	73.98	-27.12
28000.00	Peak	H	-	-	-104.01	48.11	-9.54	41.56	68.20	-26.64

Table 7-53. Radiated Measurements

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 140 of 246	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5720MHz
 Channel: 144



Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.18	22	-111.37	50.81	0.00	46.44	53.98	-7.54
* 11440.00	Peak	H	1.18	22	-100.06	50.81	0.00	57.75	73.98	-16.23
17160.00	Peak	H	-	-	-103.00	57.01	0.00	61.00	68.20	-7.20
* 22880.00	Average	H	-	-	-101.31	44.61	-9.54	40.76	53.98	-13.22
* 22880.00	Peak	H	-	-	-96.90	44.61	-9.54	45.17	73.98	-28.81
28600.00	Peak	H	-	-	-103.98	48.29	-9.54	41.77	68.20	-26.43

Table 7-54. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5720MHz
 Channel: 144

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	-	-	-115.83	50.81	0.00	41.98	53.98	-12.00
* 11440.00	Peak	H	-	-	-104.95	50.81	0.00	52.86	73.98	-21.12
17160.00	Peak	H	-	-	-104.00	57.01	0.00	60.00	68.20	-8.20
22880.00	Average	H	-	-	-107.96	44.61	-9.54	34.11	53.98	-19.87
22880.00	Peak	H	-	-	-97.61	44.61	-9.54	44.46	73.98	-29.52
28600.00	Peak	H	-	-	-103.53	48.29	-9.54	42.22	68.20	-25.98

Table 7-55. Radiated Measurements with WCP

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 141 of 246	

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5745MHz
 Channel: 149



Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.10	7	-111.09	50.95	0.00	46.87	53.98	-7.11
* 11490.00	Peak	H	1.10	7	-100.08	50.95	0.00	57.88	73.98	-16.10
17235.00	Peak	H	-	-	-104.09	57.52	0.00	60.43	68.20	-7.77
* 22980.00	Average	H	-	-	-107.76	44.68	-9.54	34.38	53.98	-19.60
* 22980.00	Peak	H	-	-	-97.15	44.68	-9.54	44.99	73.98	-28.99
28725.00	Peak	H	-	-	-102.80	48.26	-9.54	42.92	68.20	-25.28

Table 7-56. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5785MHz
 Channel: 157

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.05	12	-111.00	50.92	0.00	46.91	53.98	-7.07
* 11570.00	Peak	H	1.05	12	-100.23	50.92	0.00	57.68	73.98	-16.30
17355.00	Peak	H	-	-	-103.05	58.05	0.00	62.00	68.20	-6.20
23140.00	Peak	H	-	-	-96.48	44.75	-9.54	45.73	68.20	-22.47
28925.00	Peak	H	-	-	-103.04	48.29	-9.54	42.71	68.20	-25.49

Table 7-57. Radiated Measurements

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 142 of 246	

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



Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	1.12	15	-109.80	50.90	0.00	48.10	53.98	-5.88
* 11650.00	Peak	H	1.12	15	-99.34	50.90	0.00	58.56	73.98	-15.42
17475.00	Peak	H	-	-	-101.60	58.55	0.00	63.96	68.20	-4.24
23300.00	Peak	H	-	-	-97.23	44.75	-9.54	44.98	68.20	-23.22
29125.00	Peak	H	-	-	-102.44	48.28	-9.54	43.30	68.20	-24.90

Table 7-58. Radiated Measurements

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

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [m]	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	-	-	-115.60	50.90	0.00	42.30	53.98	-11.68
* 11650.00	Peak	H	-	-	-102.89	50.90	0.00	55.01	73.98	-18.97
17475.00	Peak	H	-	-	-103.36	58.55	0.00	62.20	68.20	-6.00
23300.00	Average	H	-	-	-102.82	58.55	-9.54	53.20	68.20	-15.00
29125.00	Peak	H	-	-	-96.65	44.75	-9.54	45.56	68.20	-22.64

Table 7-59. Radiated Measurements with WCP

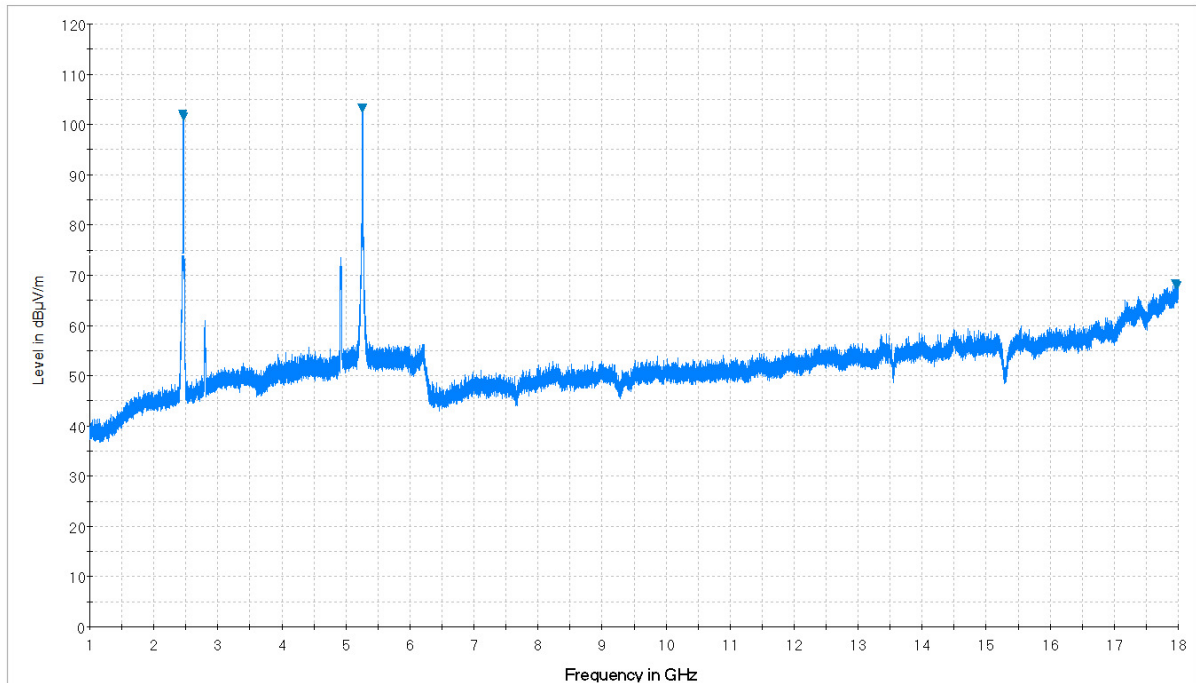
FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 143 of 246	

7.7.3 Simultaneous Transmission Radiated Spurious Emissions Measurements (Above 1GHz)



§15.209

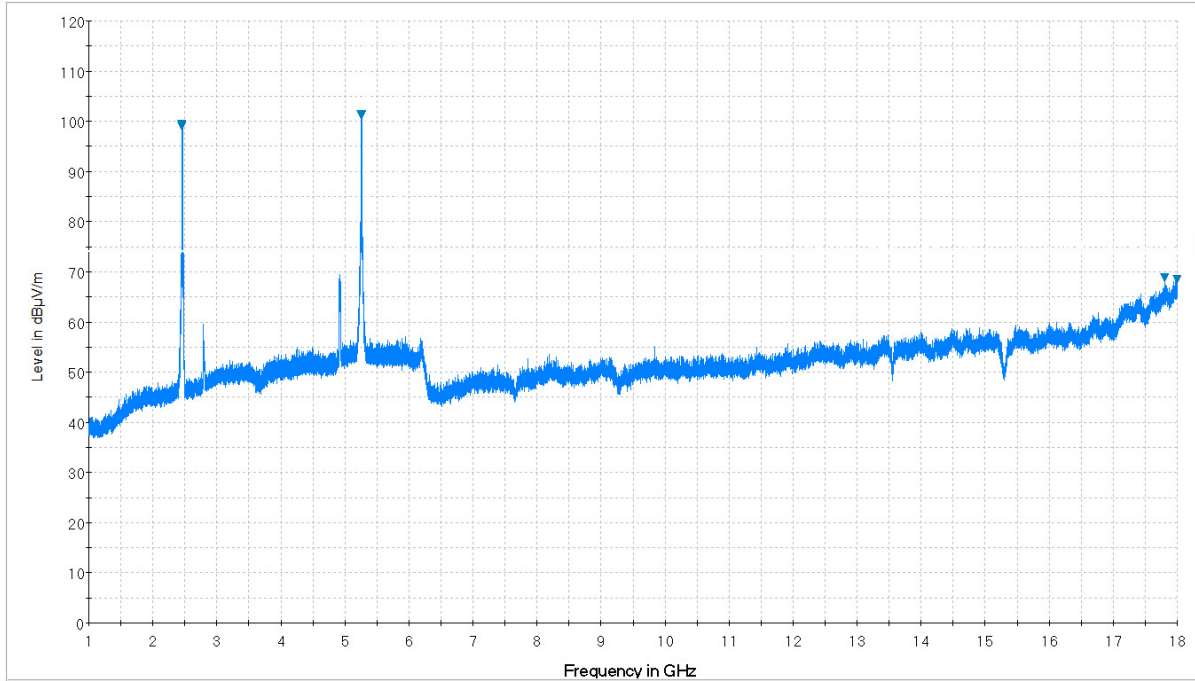
Description	2.4 GHz Emission	5 GHz Emision
Antenna	1	2
Channel	11	100
Operating Frequency(MHz)	2462	5500
Data Rate (Mbps)	1	6
Mode	802.11b	802.11a

Table 7-60. Simultaneous Transmission Config-1





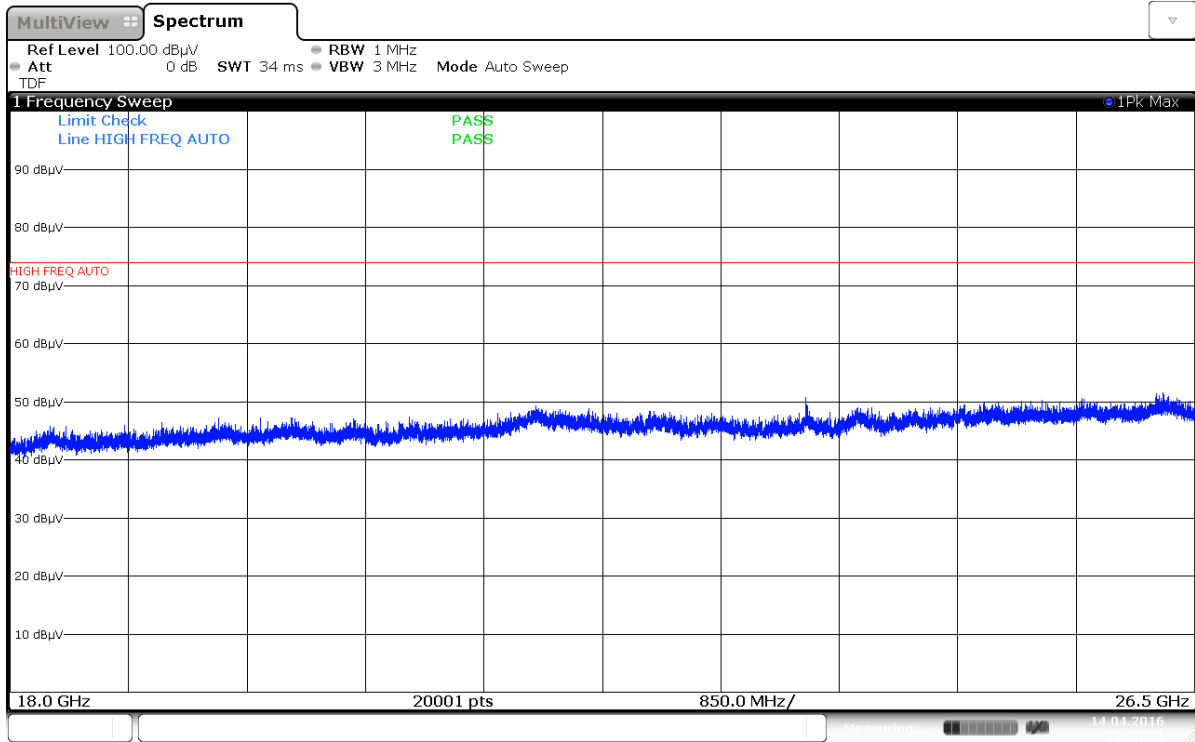
Plot 7-181. Radiated Spurious Plot above 1GHz (2.4GHz – 5GHz, Ant. Pol. H)

FCC ID: A3L5MG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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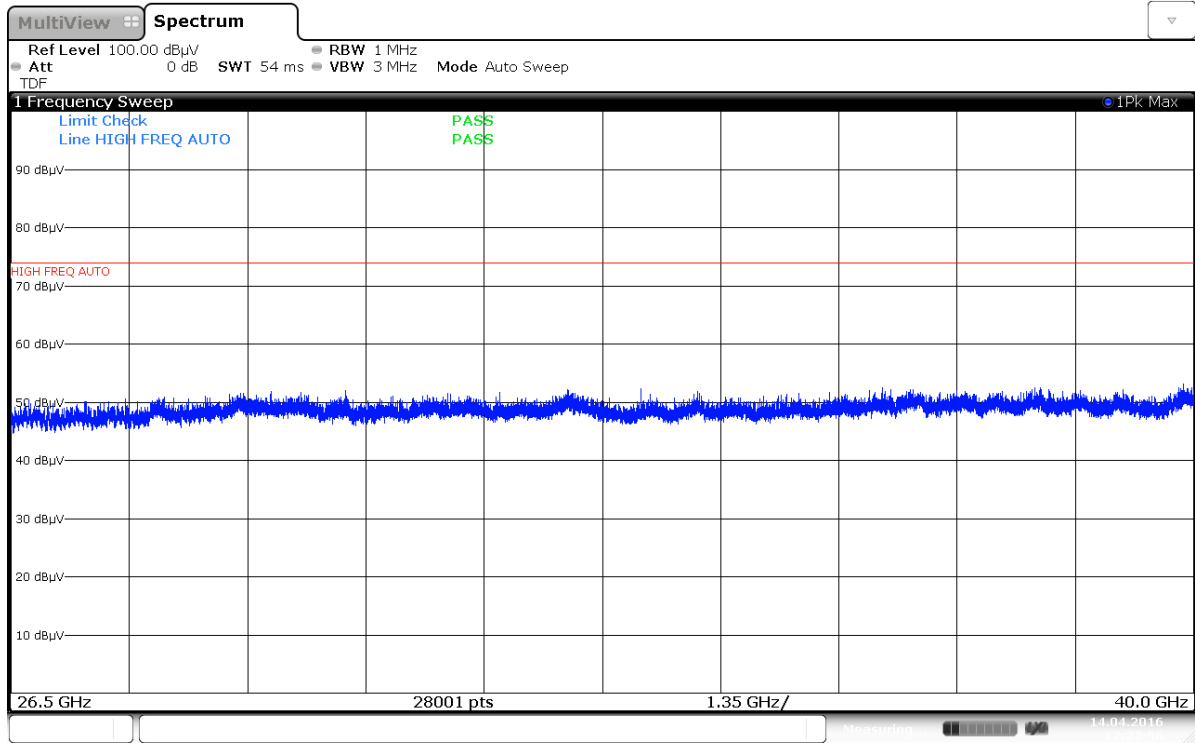


Plot 7-182. Radiated Spurious Plot above 1GHz (2.4GHz – 5GHz, Ant. Pol. V)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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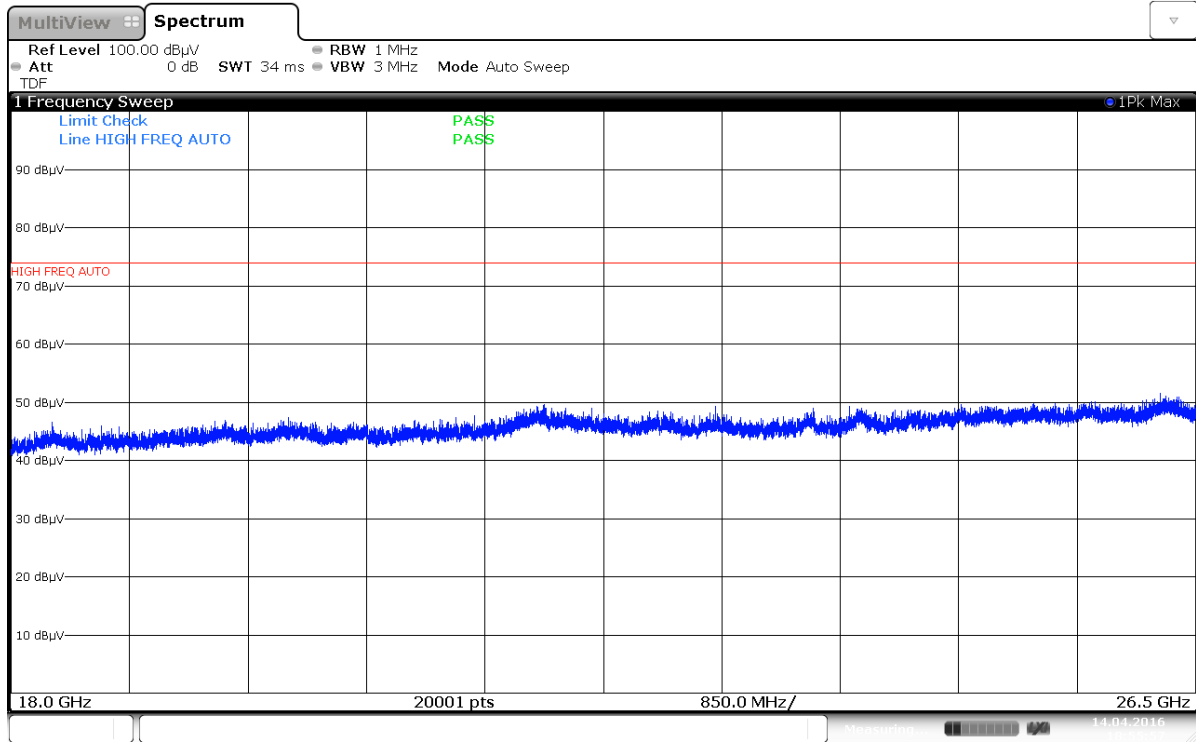


Plot 7-183. Radiated Spurious Plot above 18GHz (2.4 GHz – 5 GHz, Ant. Pol. H)

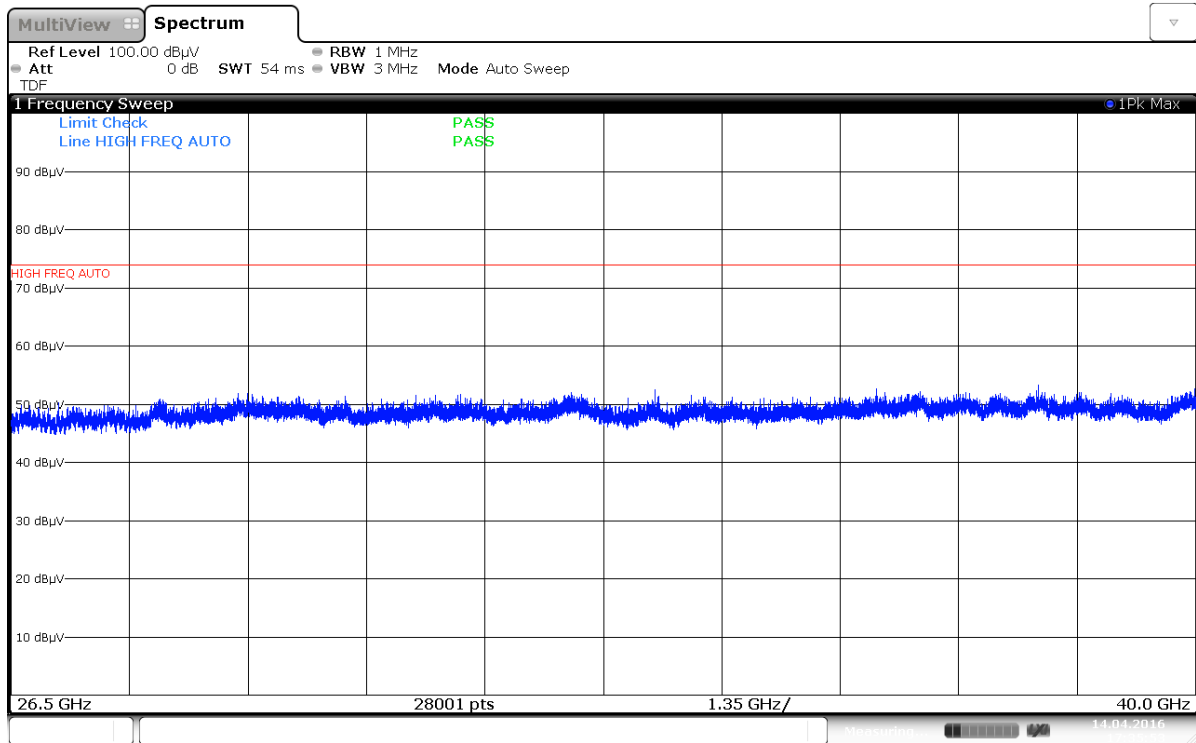


Plot 7-184. Radiated Spurious Plot above 18GHz (2.4 GHz – 5 GHz, Ant. Pol. H)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 146 of 246



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



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



FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 147 of 246

Simultaneous Tx Radiated Spurious Emission Measurements

§15.247(d) §15.205 & §15.209

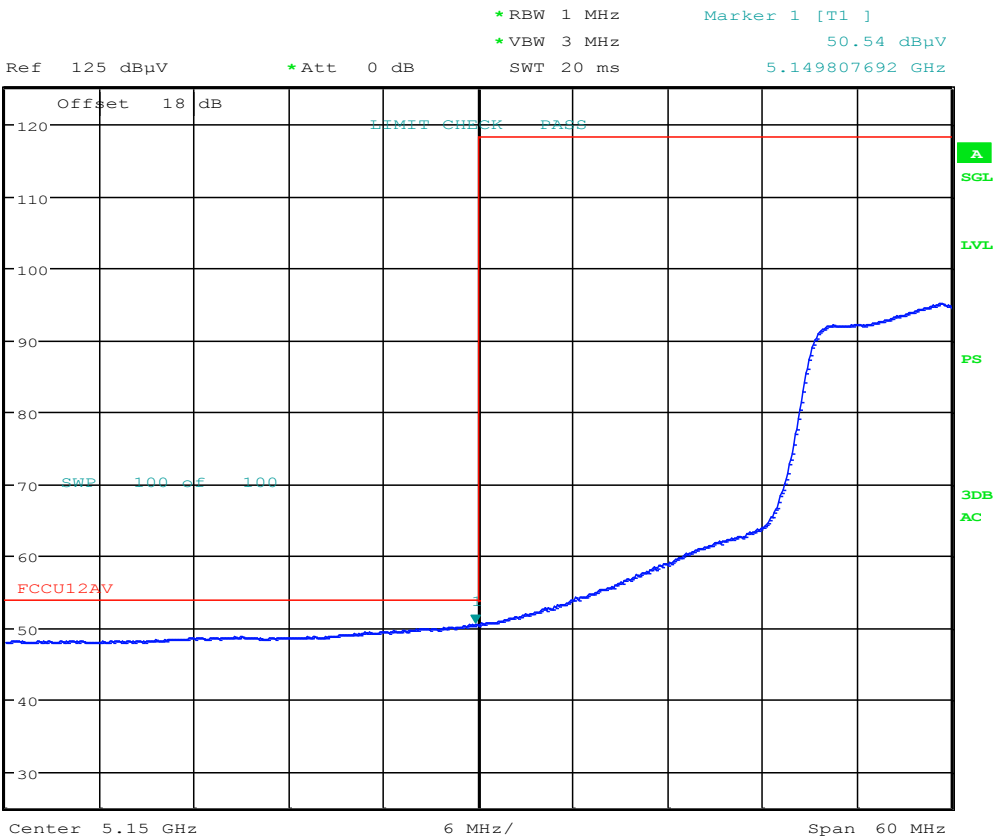
Frequency [MHz]	Analyzer Level [dBm]	Detector	Ant. Pol. [H/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
2798.00	-99.86	Avg	H	43.10	0.00	50.23	53.98	-3.75
2798.00	-87.43	Peak	H	43.10	0.00	62.66	73.98	-11.32
4924.00	-112.33	Avg	H	39.90	0.00	34.57	53.98	-19.41
4924.00	-100.33	Peak	H	39.90	0.00	46.57	73.98	-27.41
7722.00	-112.59	Avg	H	43.80	0.00	38.21	53.98	-15.77
7722.00	-101.08	Peak	H	43.80	0.00	49.72	73.98	-24.26
8058.00	-112.51	Avg	H	45.31	0.00	39.80	53.98	-14.18
8058.00	-100.83	Peak	H	45.31	0.00	51.48	73.98	-22.50
10184.00	-100.55	Peak	H	48.28	0.00	54.74	73.98	-19.24
12982.00	-100.79	Peak	H	51.59	0.00	57.79	73.98	-16.19

Table 7-61. Radiated Measurements (ANT1 2.4GHz – ANT2 5GHz)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 148 of 246

7.7.4 Antenna-1 Radiated Band Edge Measurements (20MHz BW) §15.407(b.1)(b.2) §15.205 §15.209

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

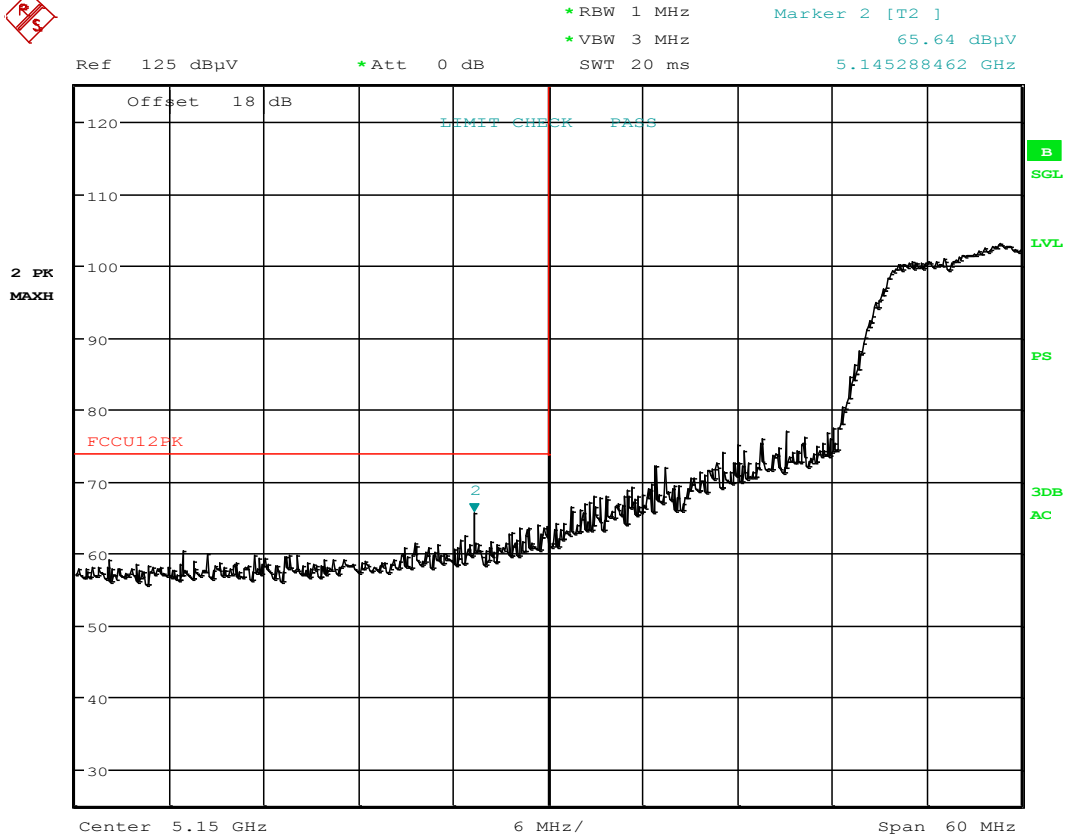


Date: 25.MAR.2016 01:37:39

Plot 7-187. Radiated Restricted Lower Band Edge Plot (Average - UNII Band 1)



FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset		Page 149 of 246

Antenna-1 Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



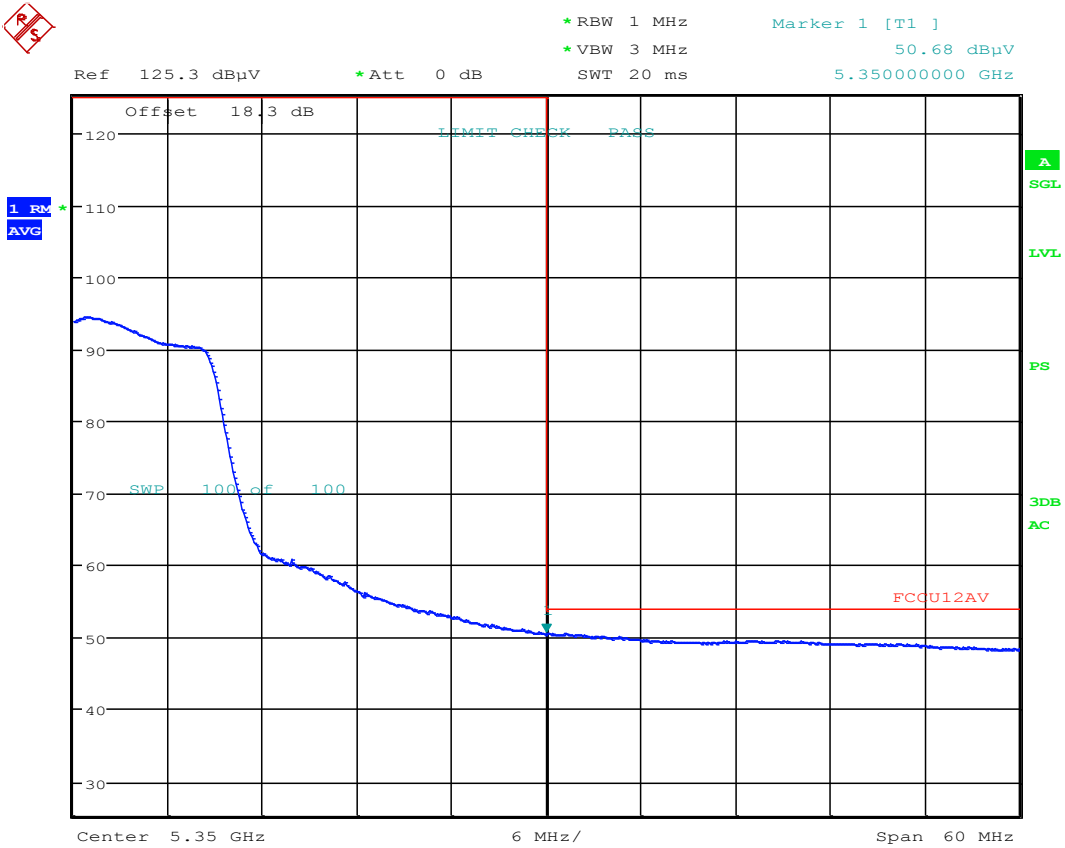
Date: 25.MAR.2016 01:37:19

Plot 7-188. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 150 of 246	

Antenna-1 Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

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

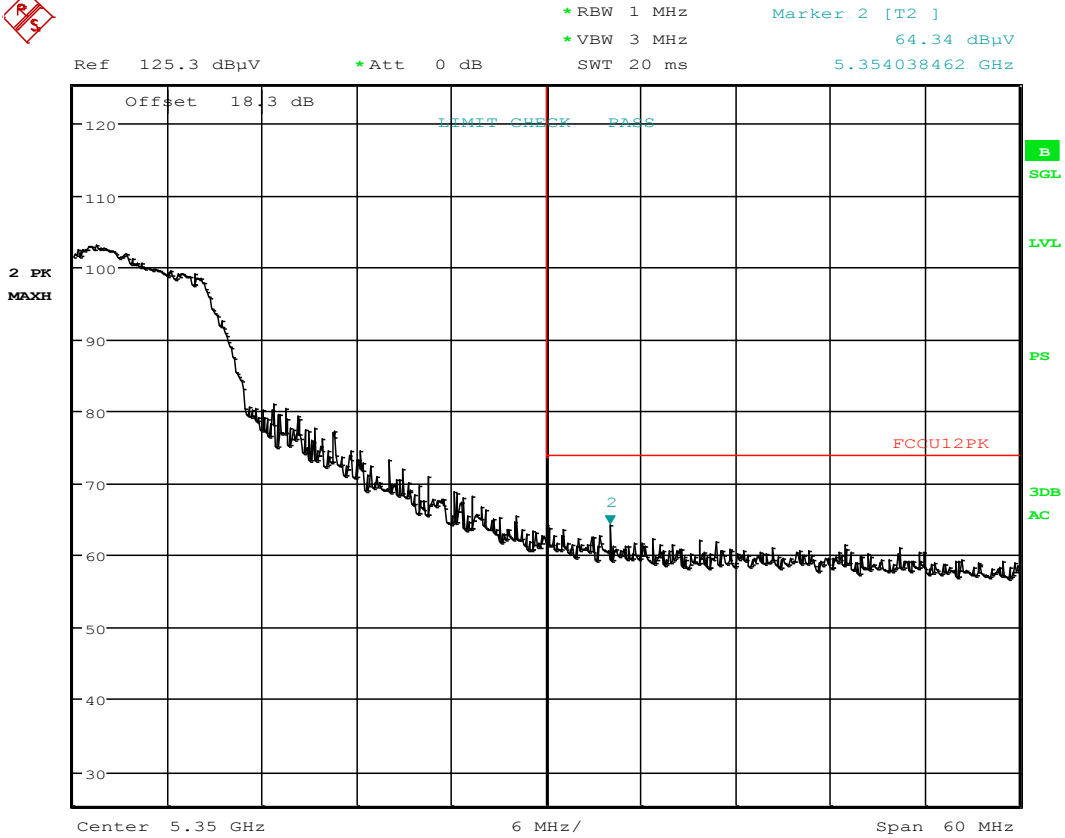


Date: 25.MAR.2016 02:01:52

Plot 7-189. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 151 of 246

Antenna-1 Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



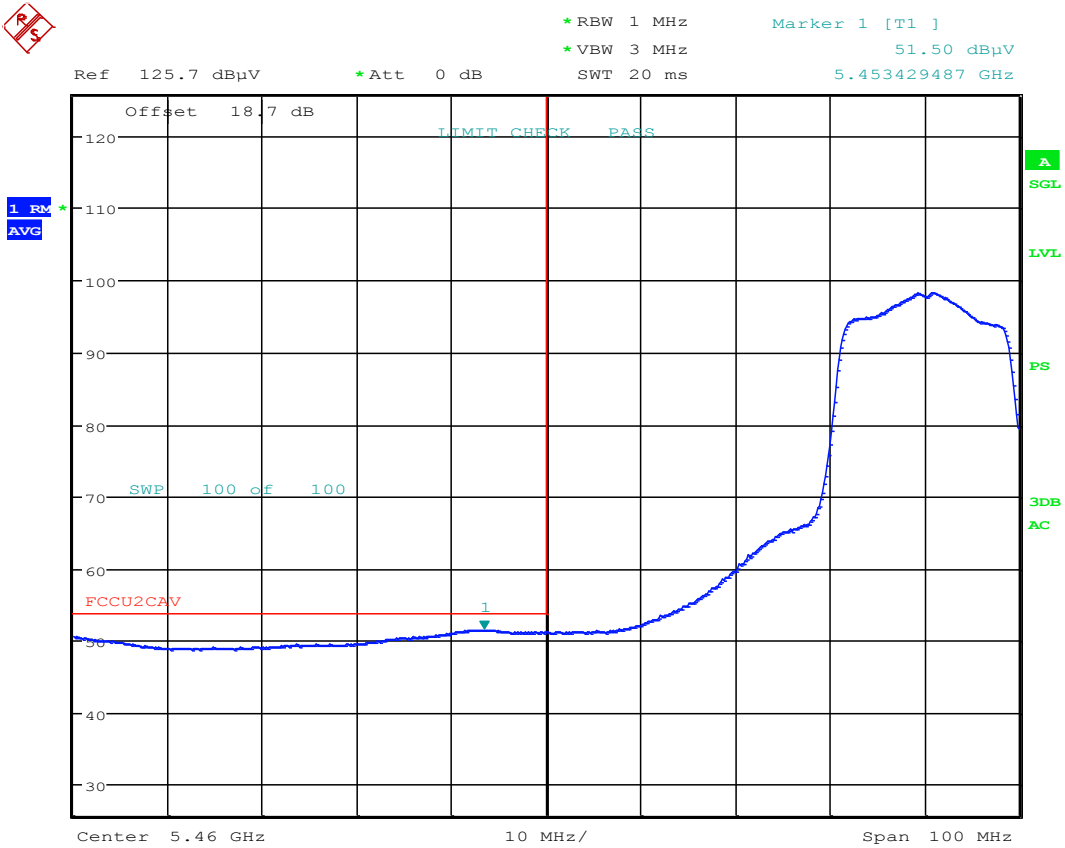
Date: 25.MAR.2016 02:02:16

Plot 7-190. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 152 of 246	

Antenna-1 Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

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



Date: 25.MAR.2016 02:05:44

Plot 7-191. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

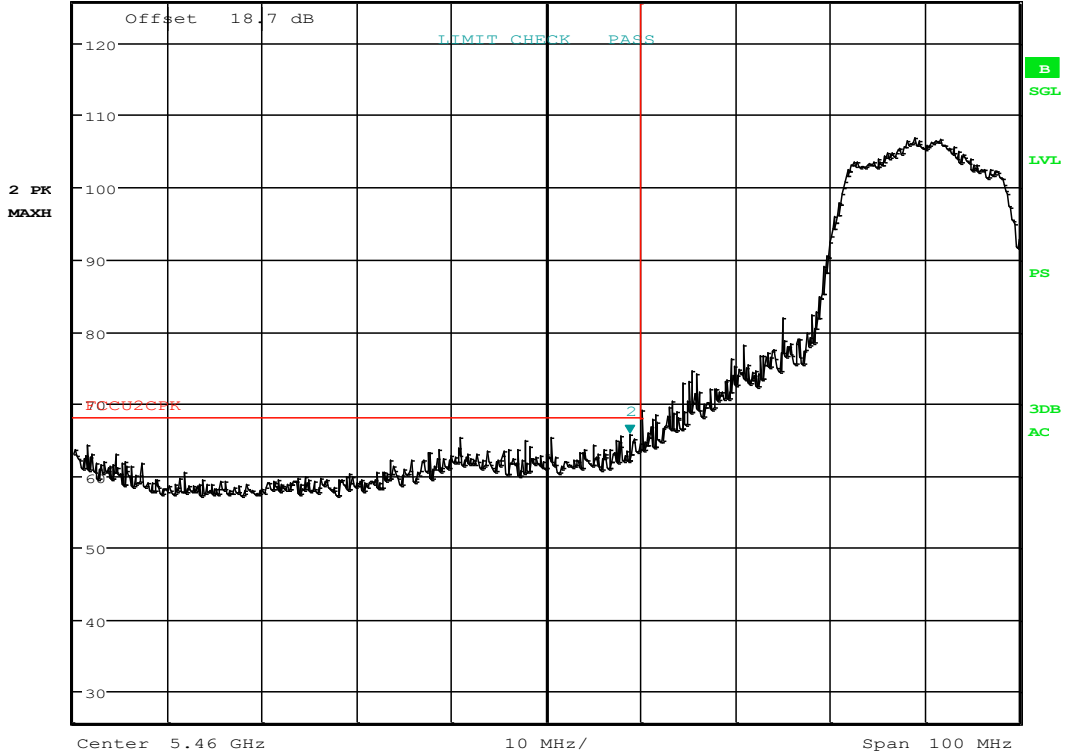
FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 153 of 246	

Antenna-1 Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209





MARKER 2
5.468814103 GHz
Ref 125.7 dBµV *Att 0 dB

*RBW 1 MHz Marker 2 [T2]
*VBW 3 MHz 65.69 dBµV
SWT 20 ms 5.468814103 GHz



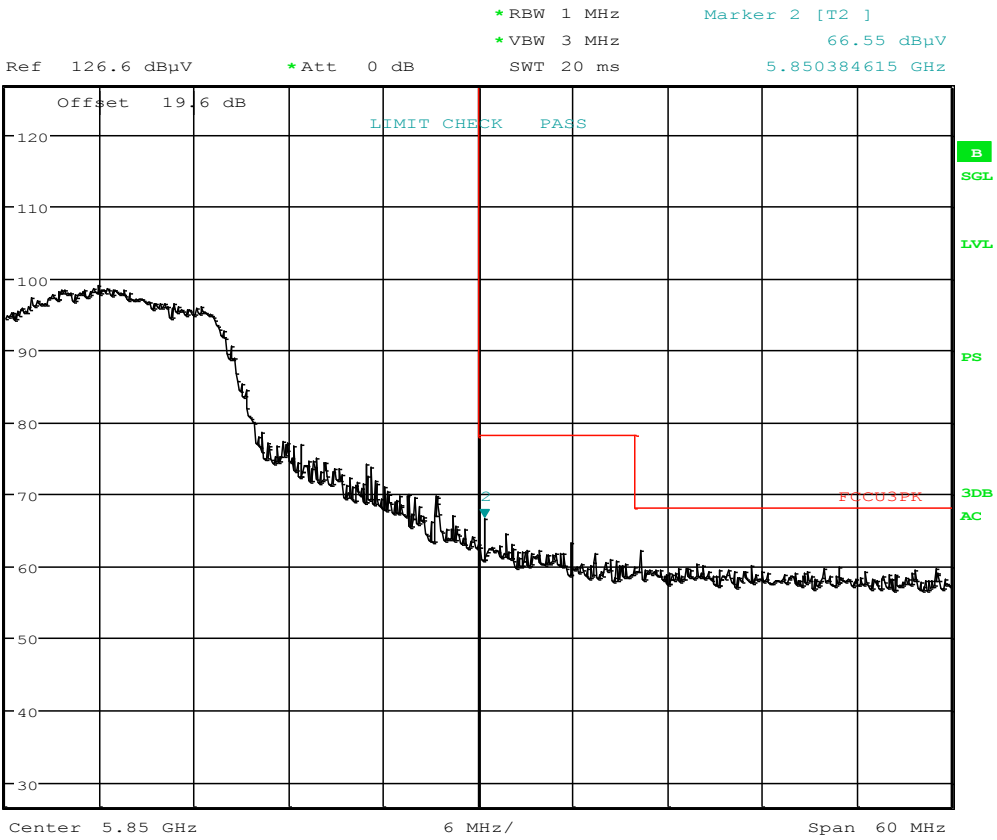
Date: 25.MAR.2016 02:06:45

Plot 7-192. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 154 of 246	

Antenna-1 Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

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



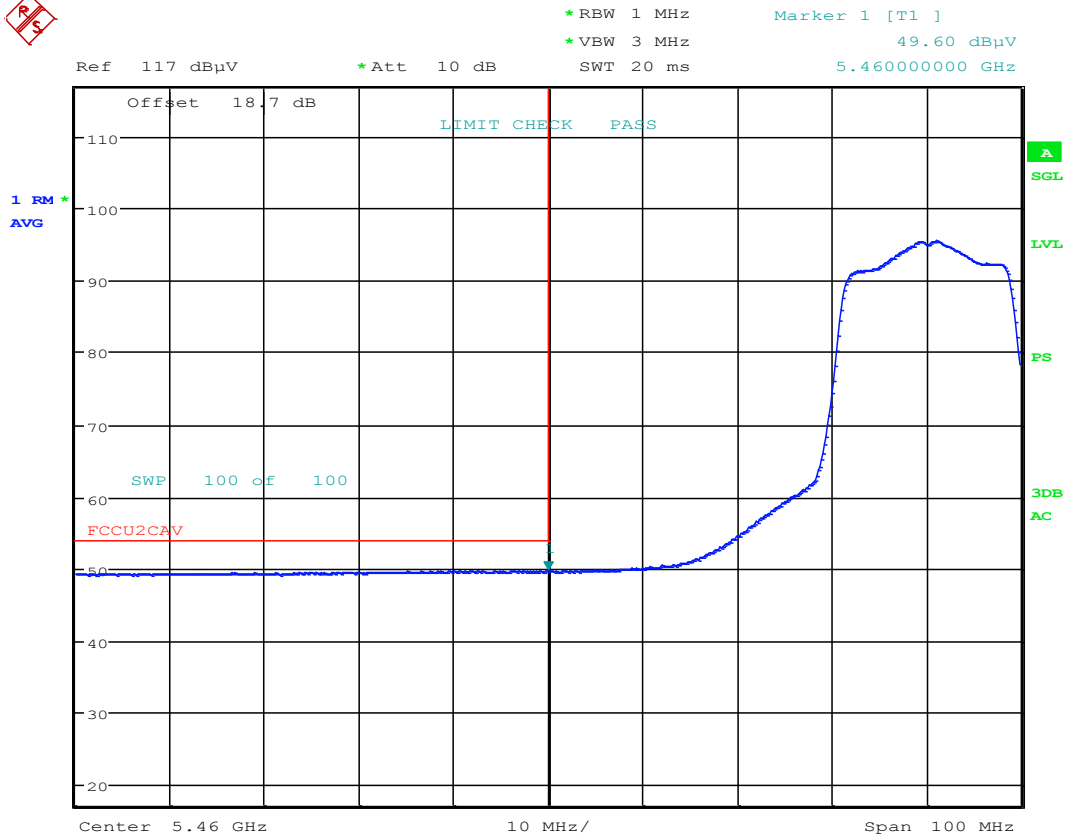
Date: 25.MAR.2016 02:16:54

Plot 7-193. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset		Page 155 of 246

Antenna-1 WCP Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

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

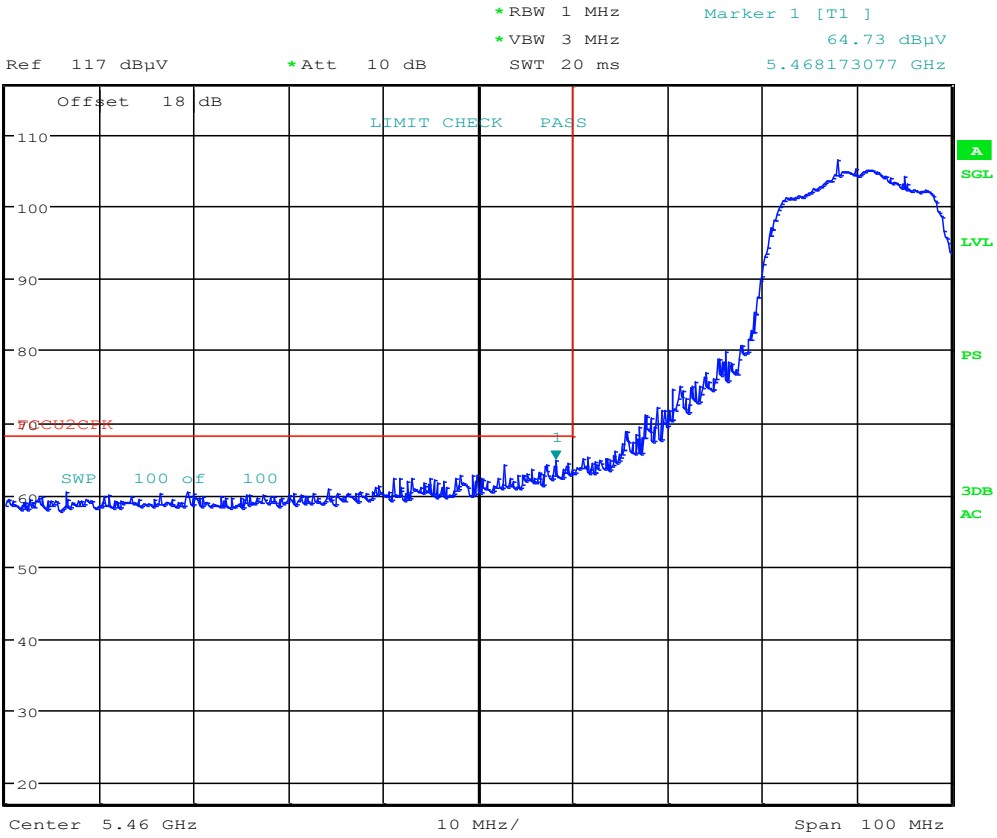


Date: 10.APR.2016 23:21:09

Plot 7-194. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3L5MG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 156 of 246	

Antenna-1 WCP Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



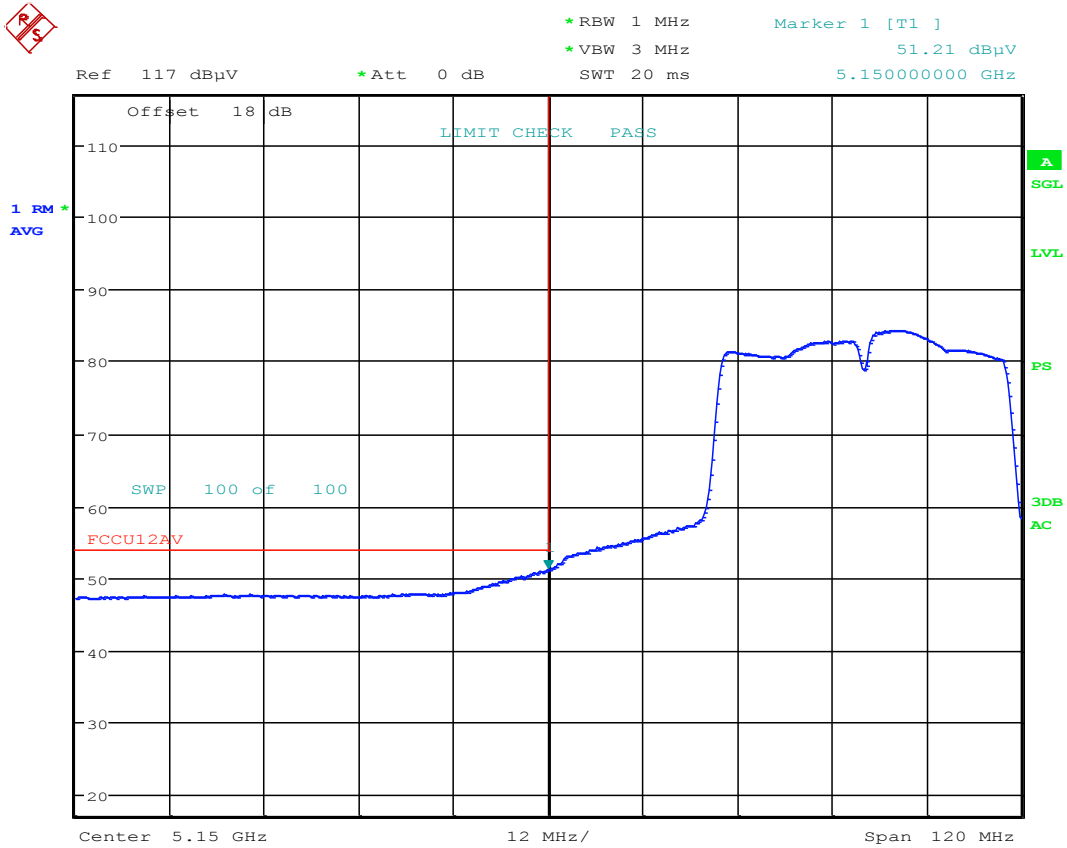
Date: 10.APR.2016 23:14:42

Plot 7-195. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 157 of 246	

7.7.5 Antenna-1 Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5190MHz
 Channel: 38

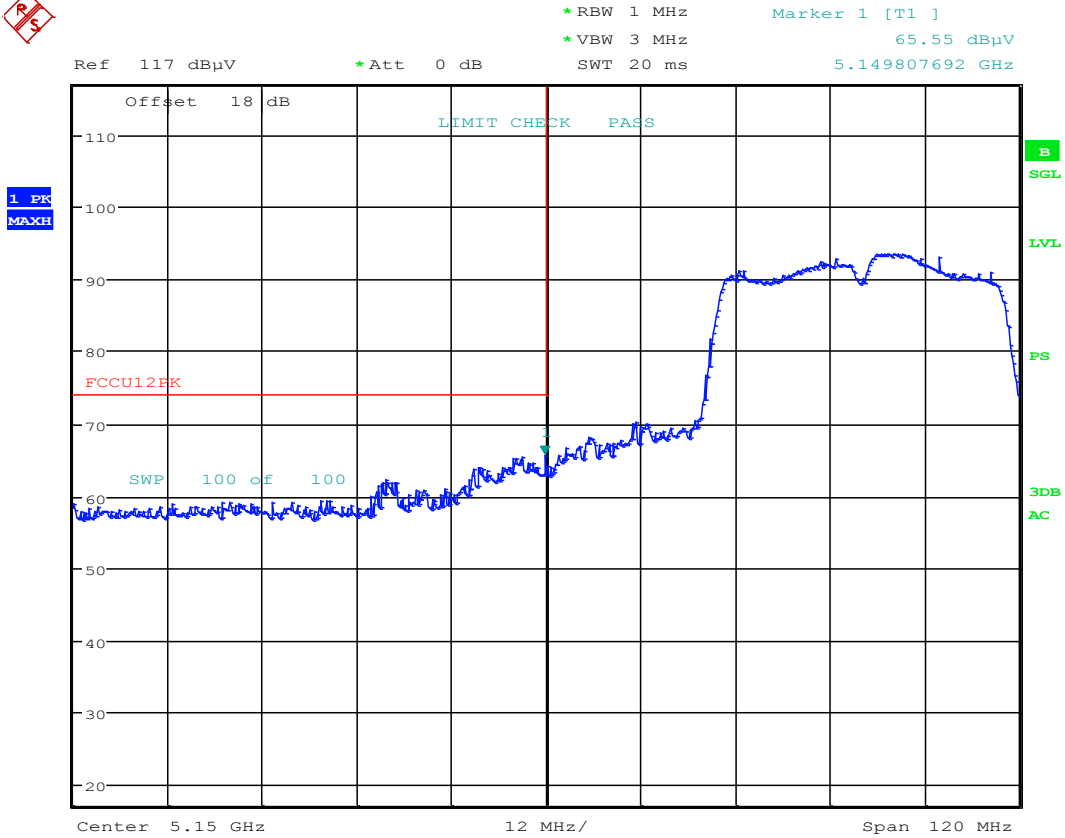


Date: 25.MAR.2016 17:27:16

Plot 7-196. Radiated Restricted Lower Band Edge Plot (Average - UNII Band 1)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 158 of 246

Antenna-1 Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



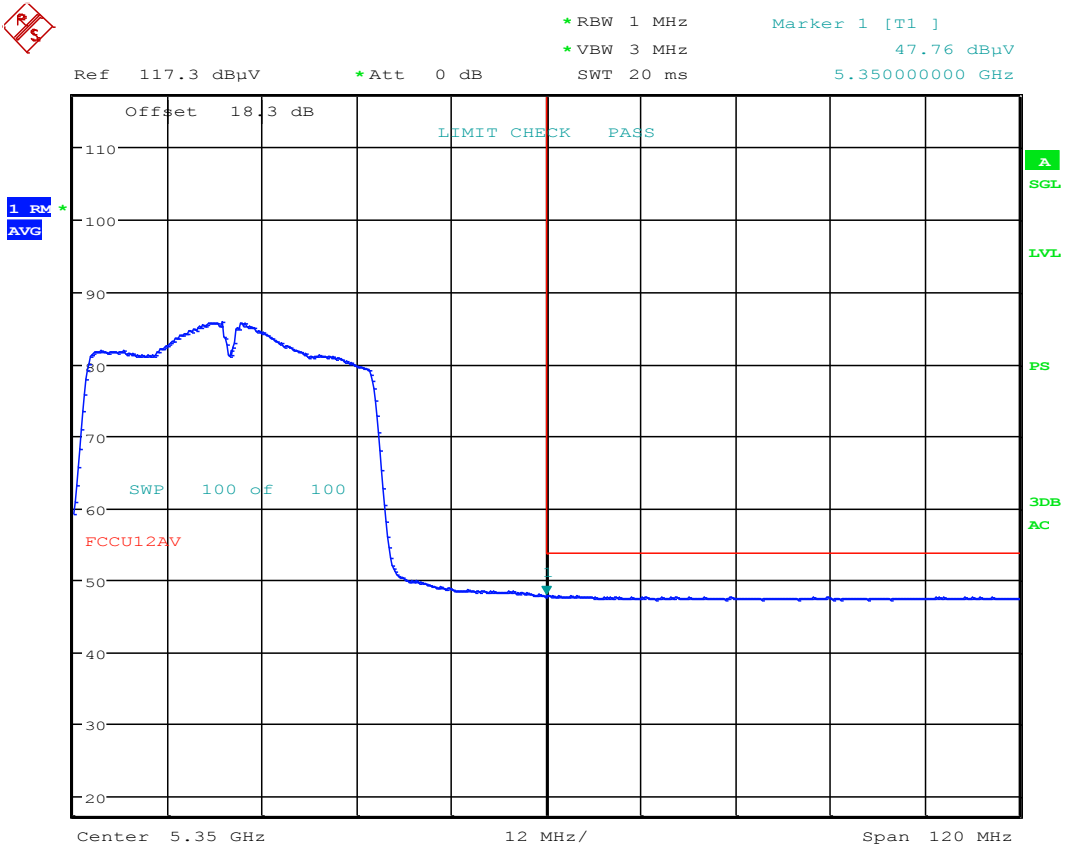
Date: 25.MAR.2016 17:28:39

Plot 7-197. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 159 of 246	

Antenna-1 Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5310MHz
 Channel: 62

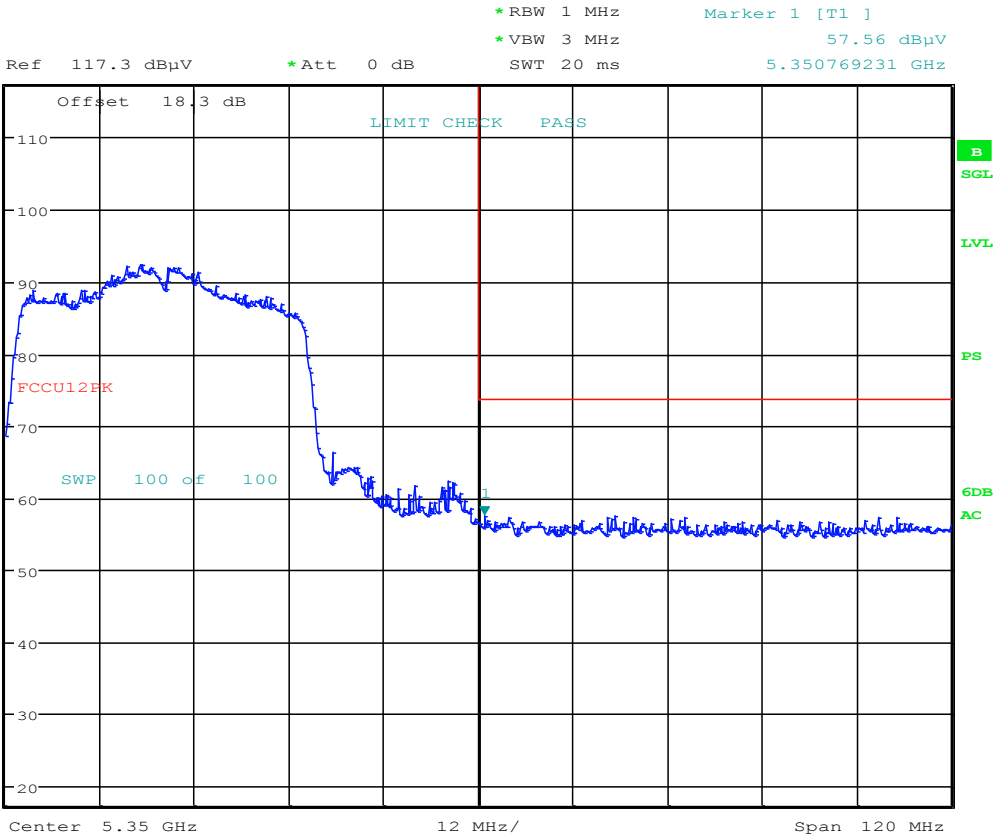


Date: 25.MAR.2016 17:44:18

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

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 160 of 246

Antenna-1 Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



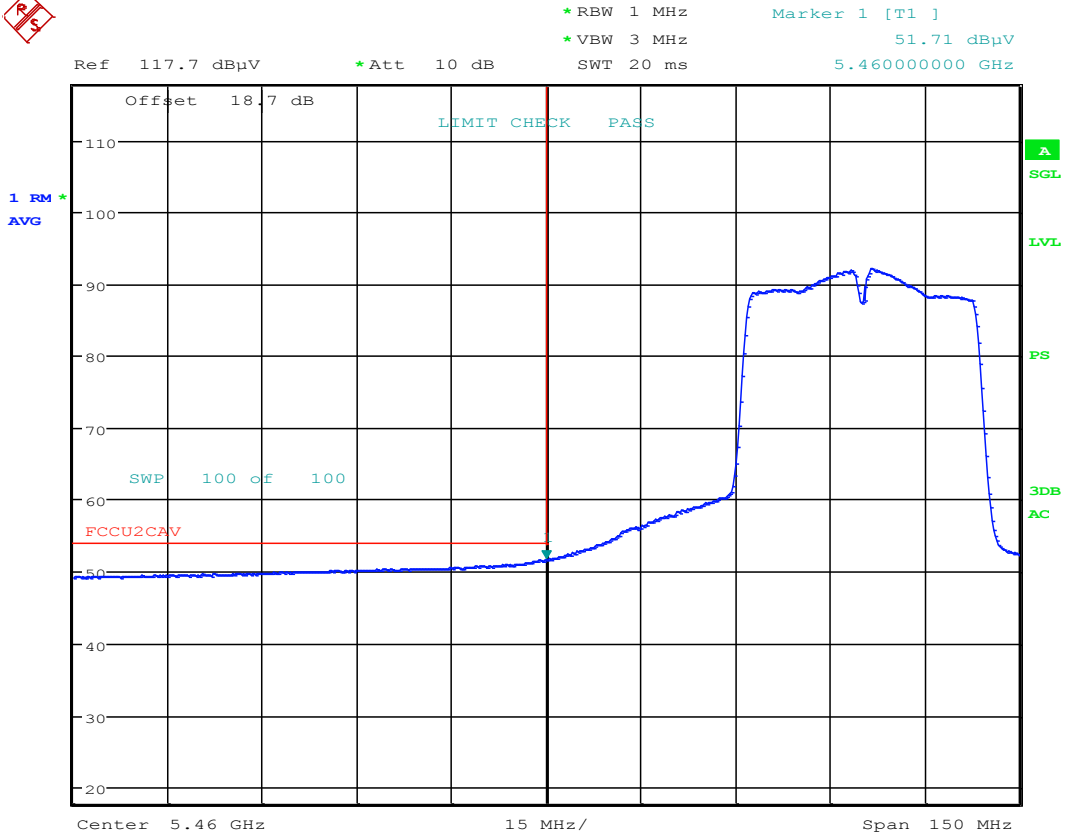
Date: 25.MAR.2016 17:44:50

Plot 7-199. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 161 of 246	

Antenna-1 Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5510MHz
 Channel: 102

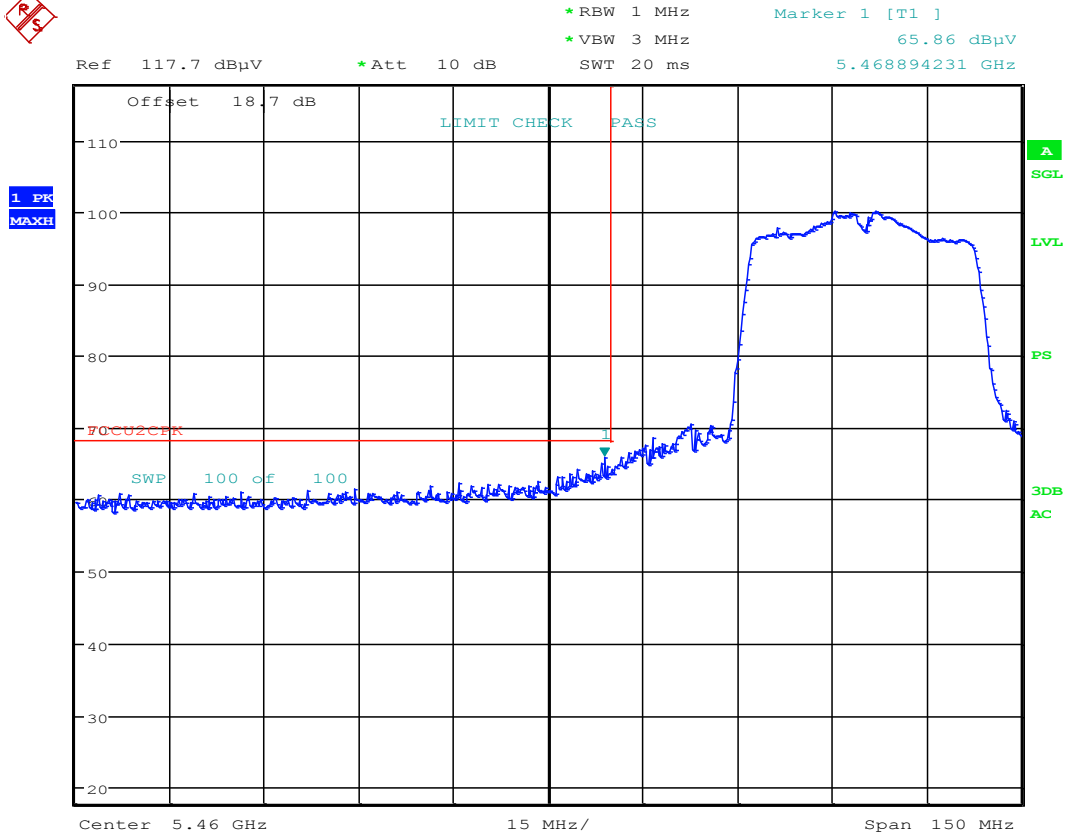


Date: 11.APR.2016 00:24:38

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

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 162 of 246	

Antenna-1 Radiated Band Edge Measurements (40MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209



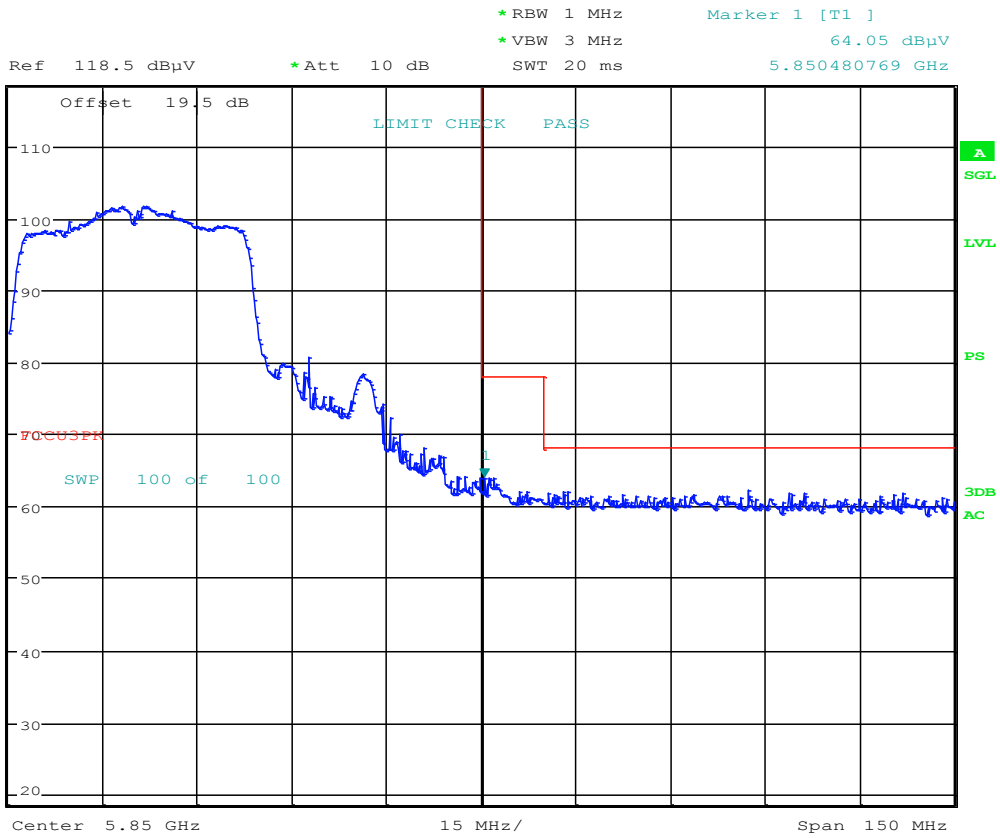
Date: 11.APR.2016 00:25:51

Plot 7-201. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 163 of 246	

Antenna-1 Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5795MHz
 Channel: 159



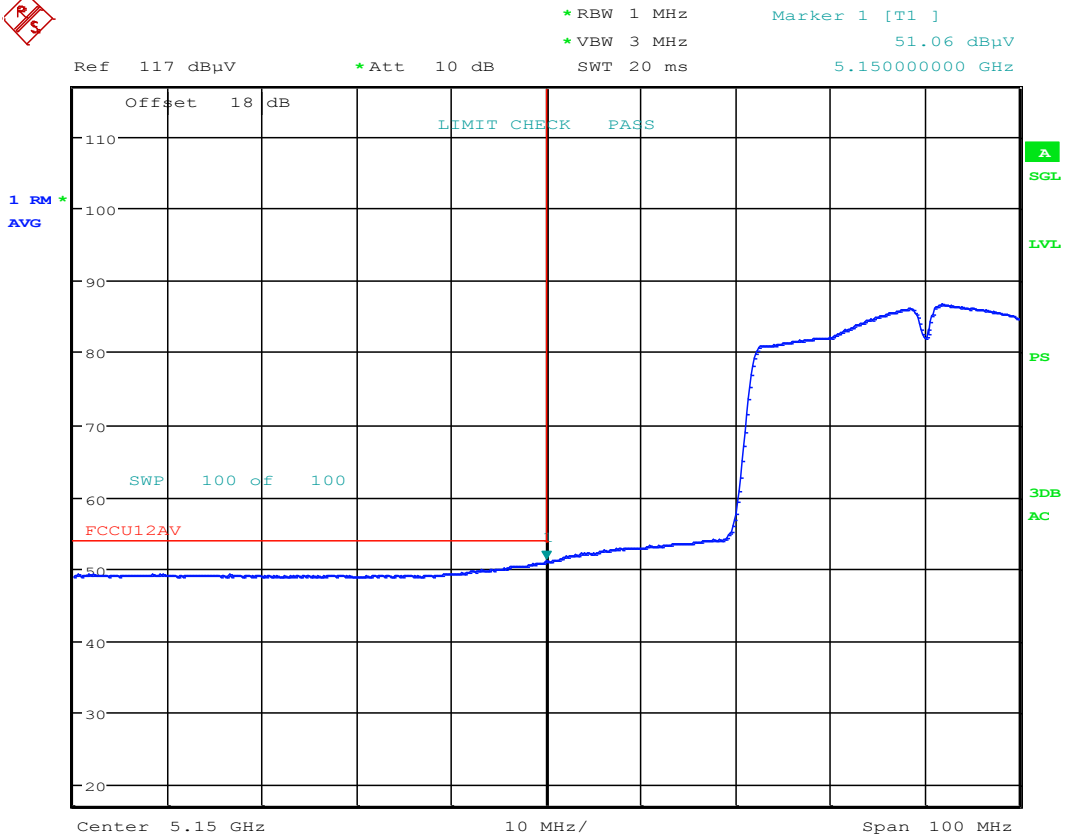
Date: 11.APR.2016 00:27:21

Plot 7-202. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG891A	ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 164 of 246	

Antenna-1 WCP Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5190MHz
 Channel: 38

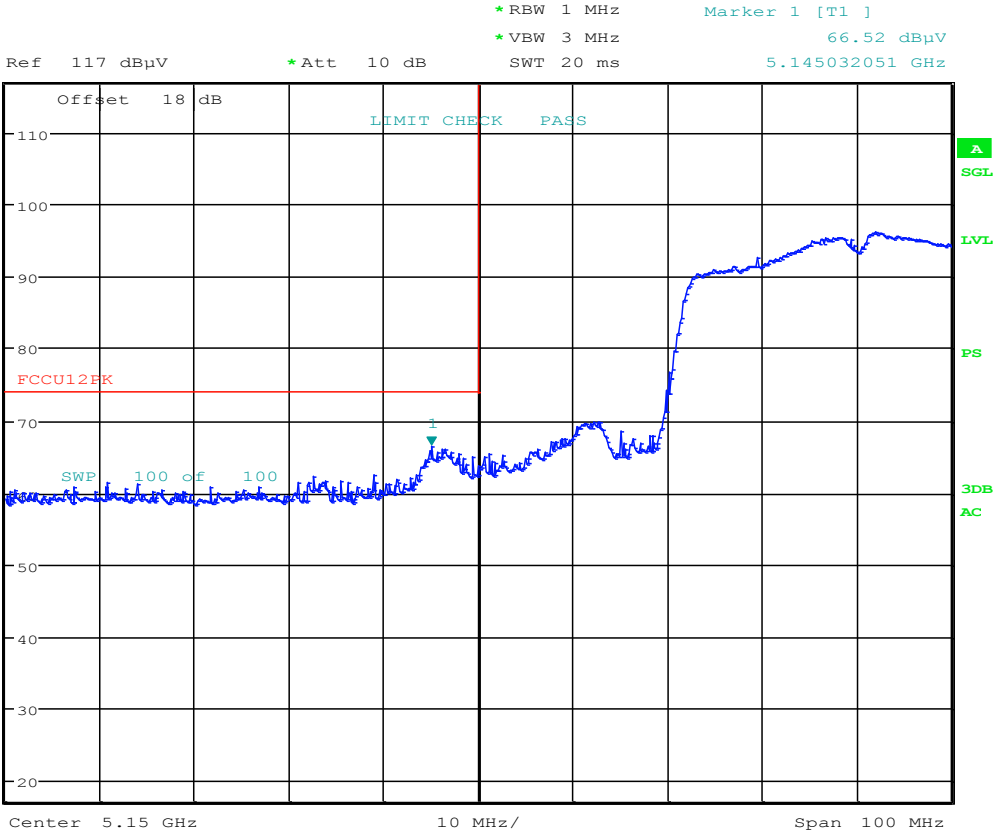


Date: 10.APR.2016 23:41:08

Plot 7-203. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3L5MG891A	ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 165 of 246

Antenna-1 WCP Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



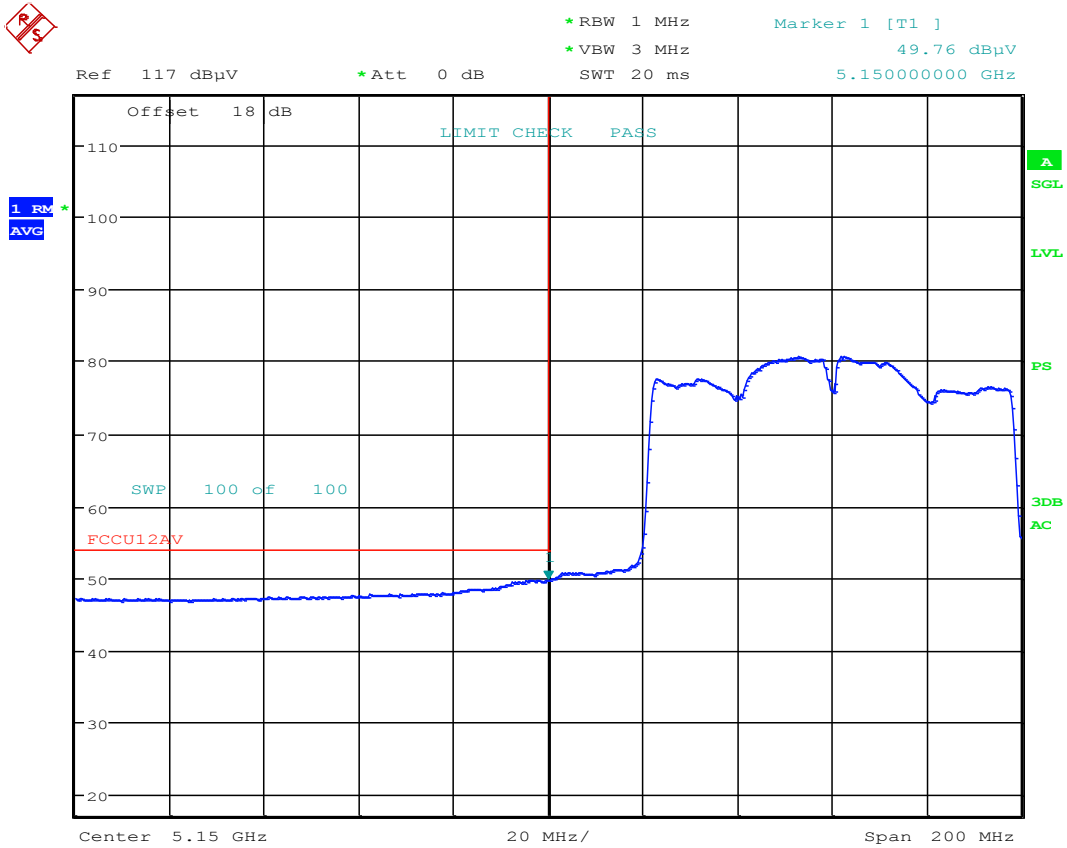
Date: 10.APR.2016 23:41:43

Plot 7-204. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 166 of 246	

7.7.6 Antenna-1 Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5210MHz
 Channel: 42

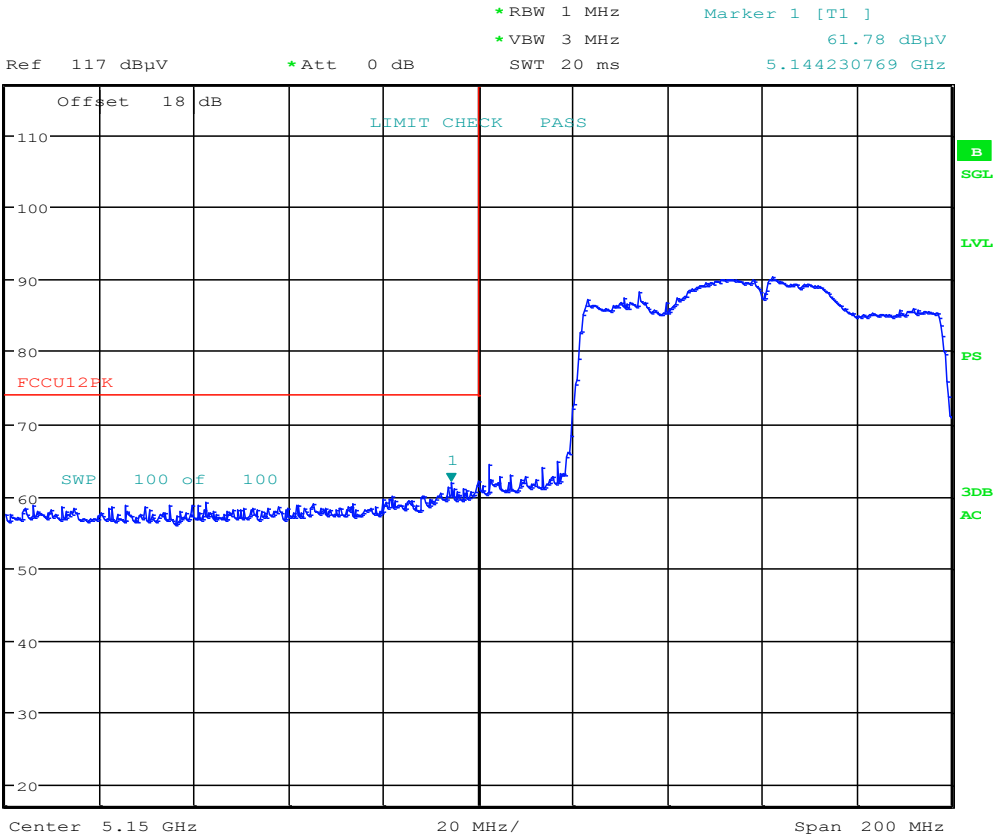


Date: 25.MAR.2016 17:35:35

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

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 167 of 246

Antenna-1 Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



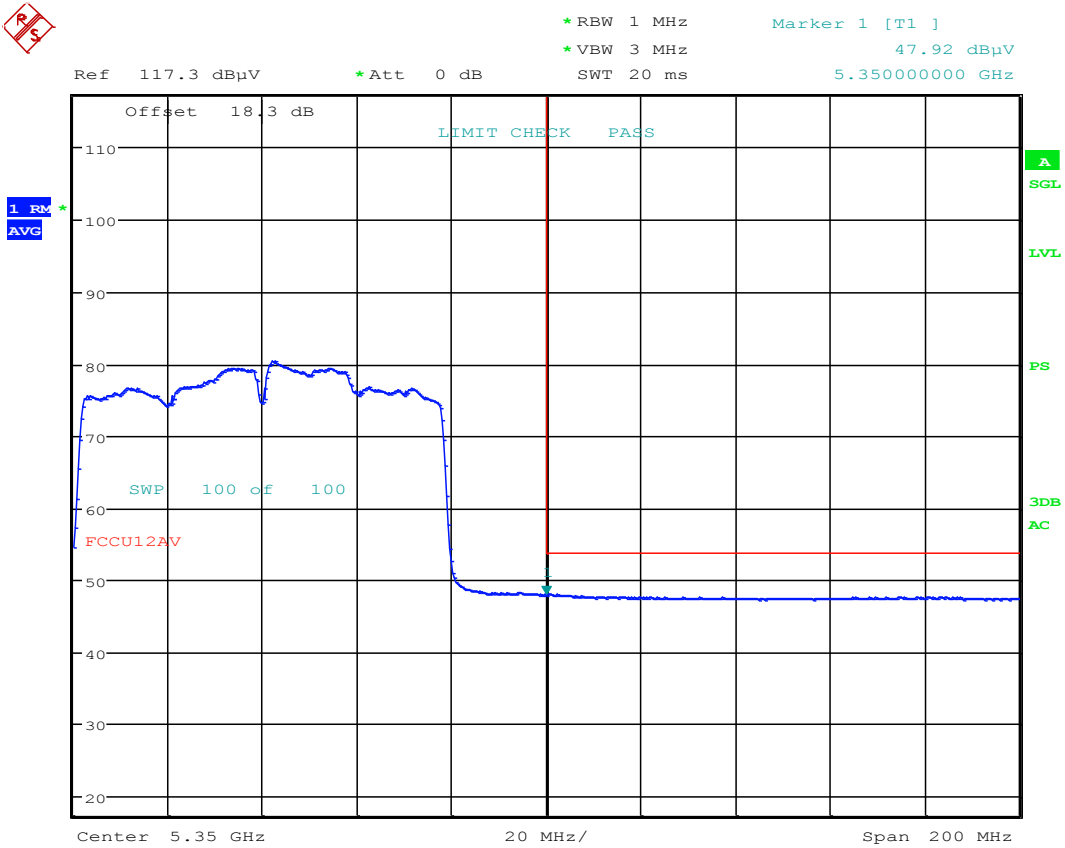
Date: 25.MAR.2016 17:36:38

Plot 7-206. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 168 of 246	

Antenna-1 Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5290MHz
 Channel: 58

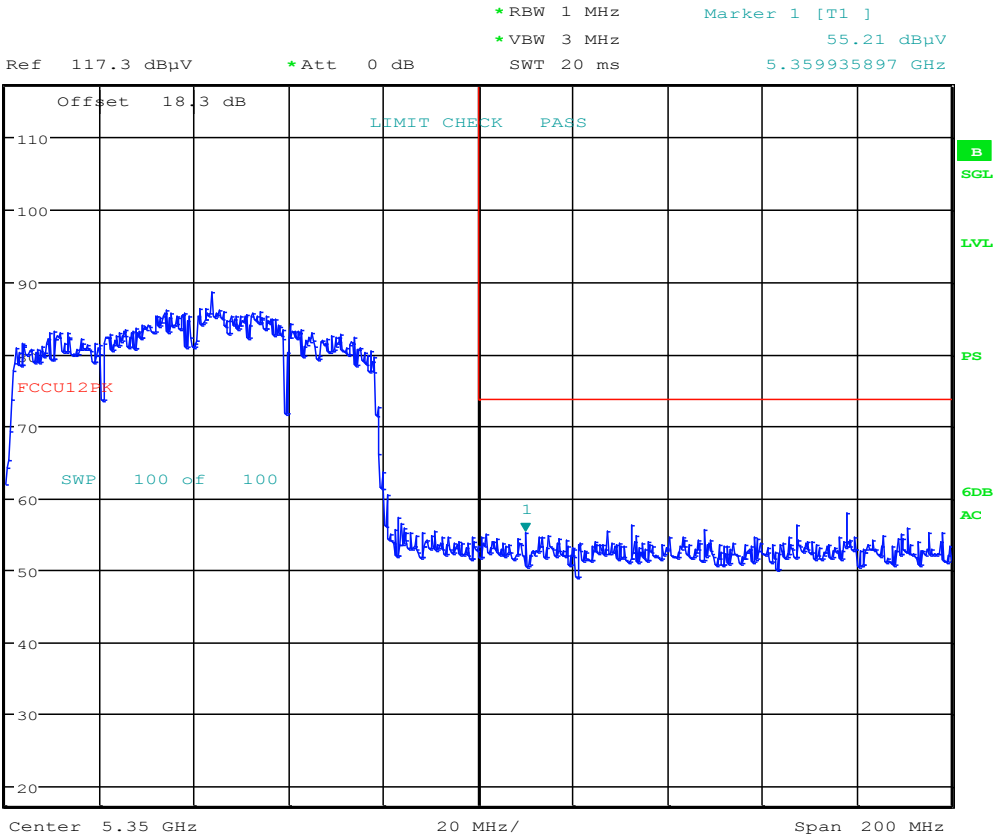


Date: 25.MAR.2016 17:50:03

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

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 169 of 246	

Antenna-1 Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



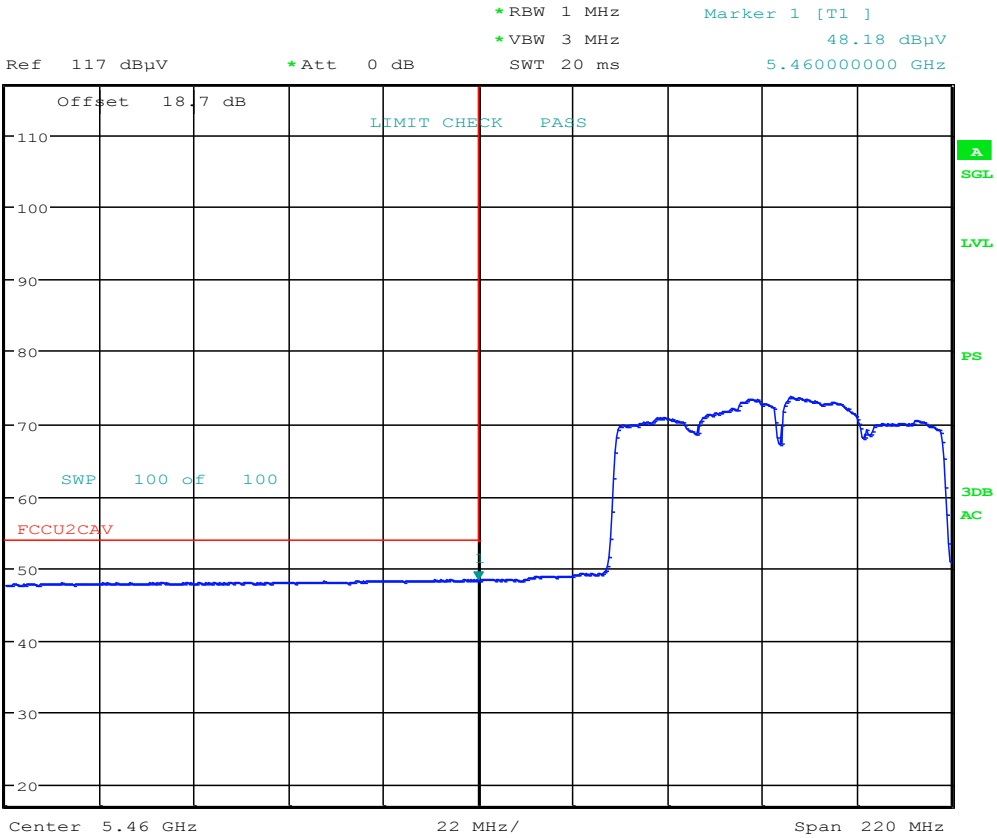
Date: 25.MAR.2016 17:50:41

Plot 7-208. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 170 of 246	

Antenna-1 Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5530MHz
 Channel: 106



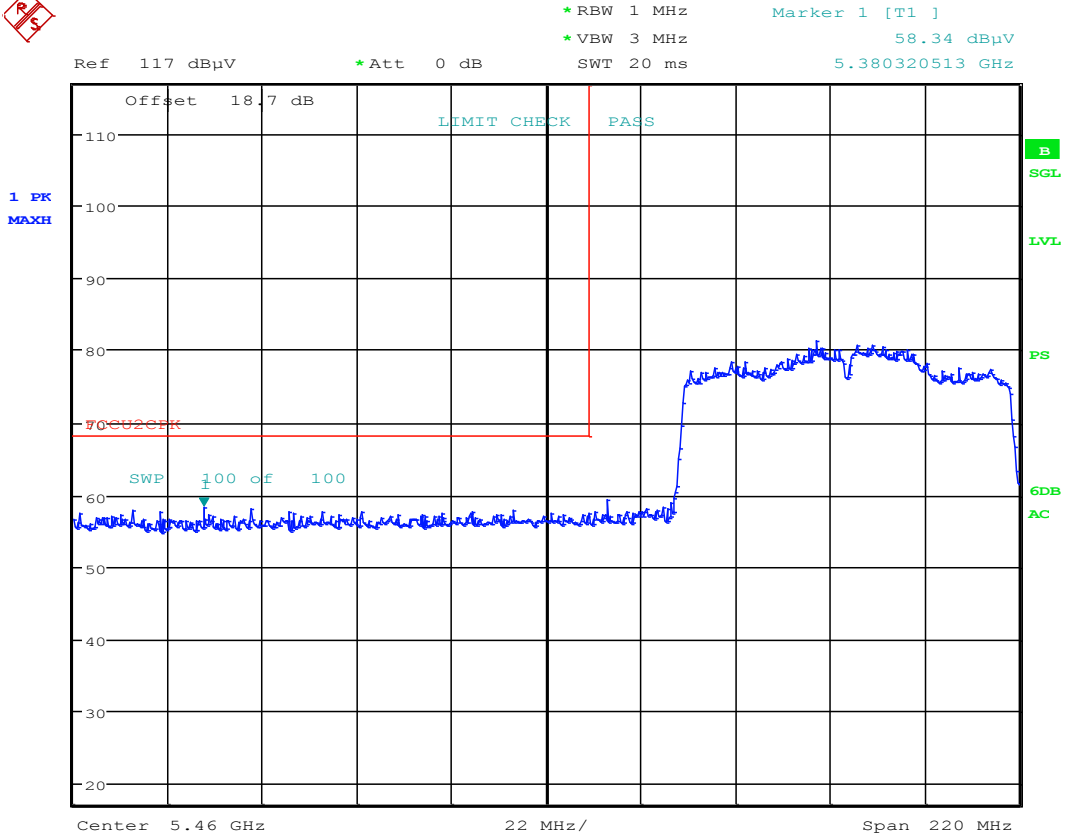
Date: 25.MAR.2016 18:10:23

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

FCC ID: A3L5MG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 171 of 246	

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

§15.407(b.1)(b.2) §15.205 §15.209



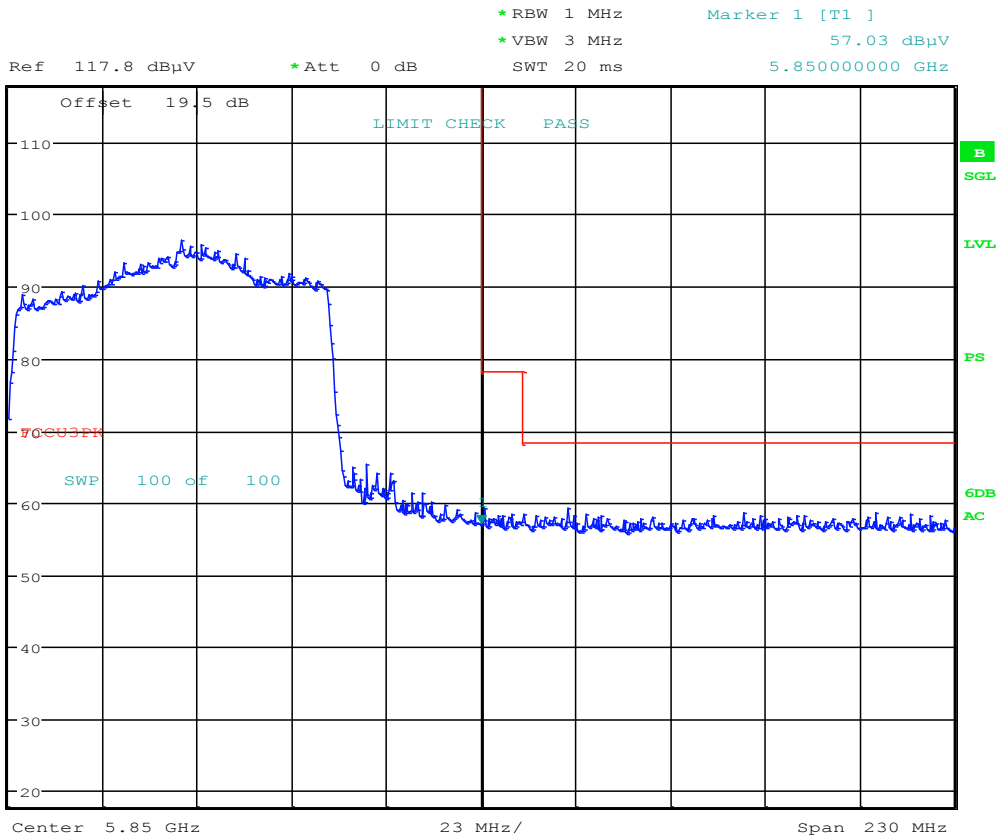
Date: 25.MAR.2016 18:10:59

Plot 7-210. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 172 of 246	

Antenna-1 Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5775MHz
 Channel: 155



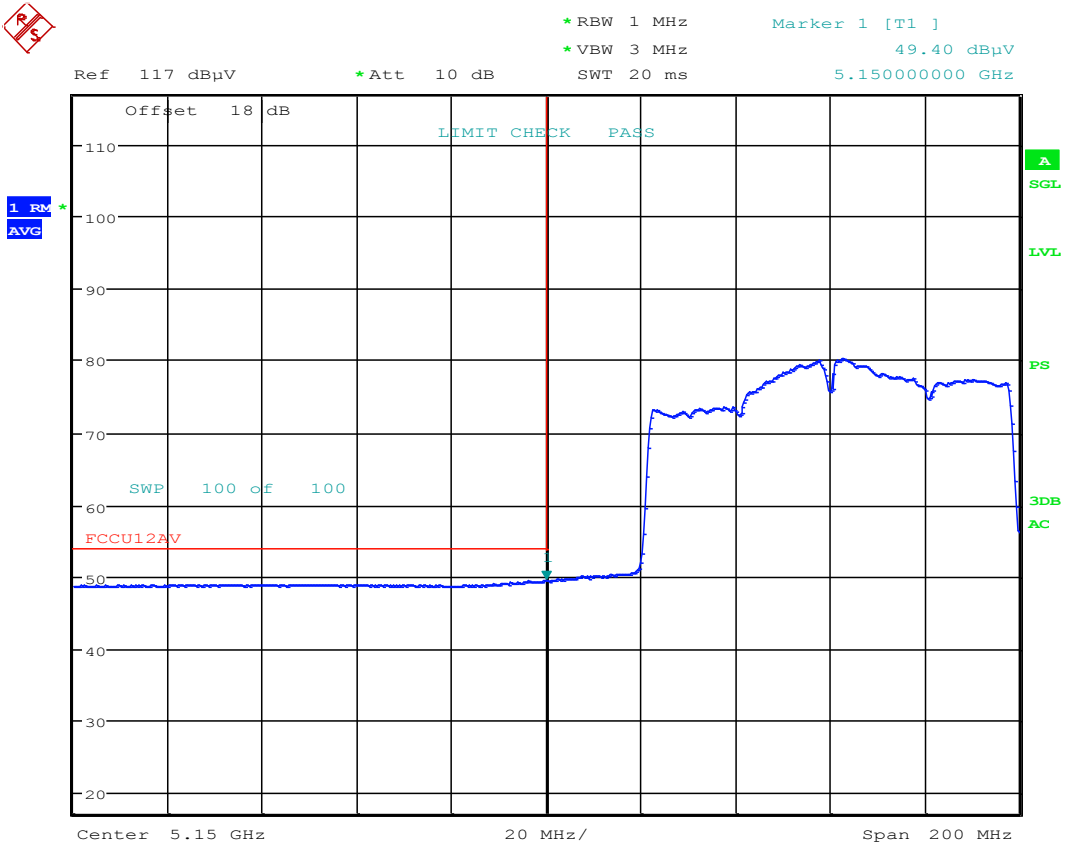
Date: 25.MAR.2016 18:47:02

Plot 7-211. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 173 of 246	

Antenna-1 WCP Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5210MHz
 Channel: 42

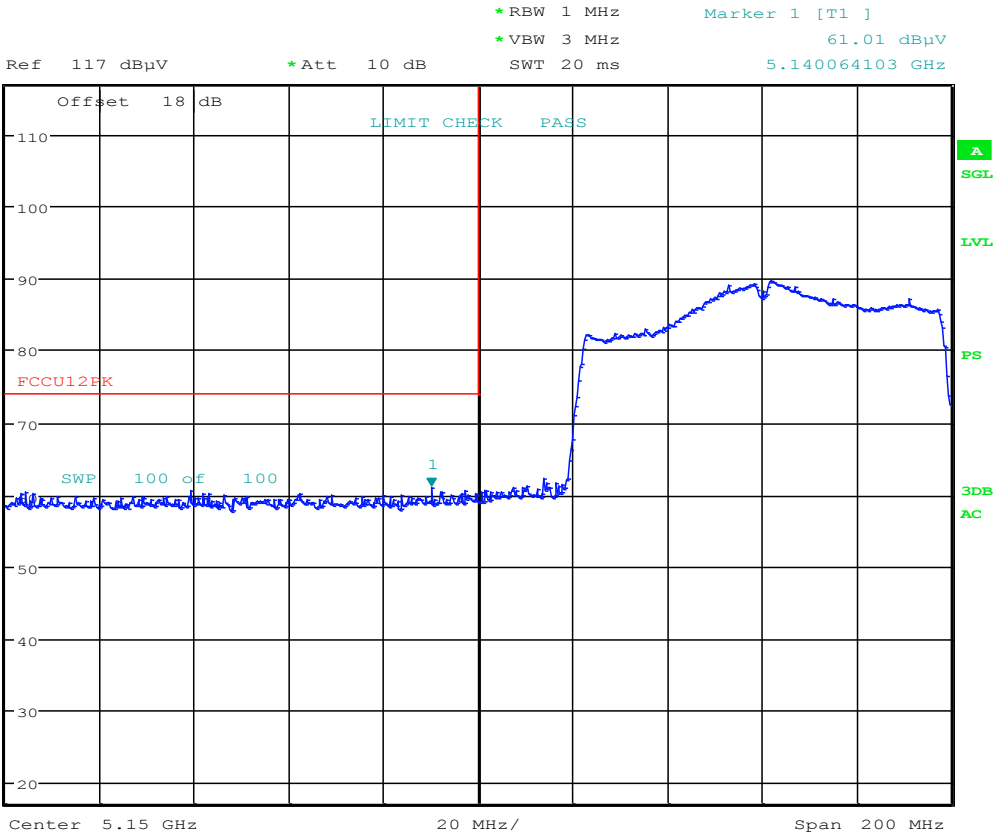


Date: 10.APR.2016 23:54:10

Plot 7-212. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3L5MG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 174 of 246

Antenna-1 WCP Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



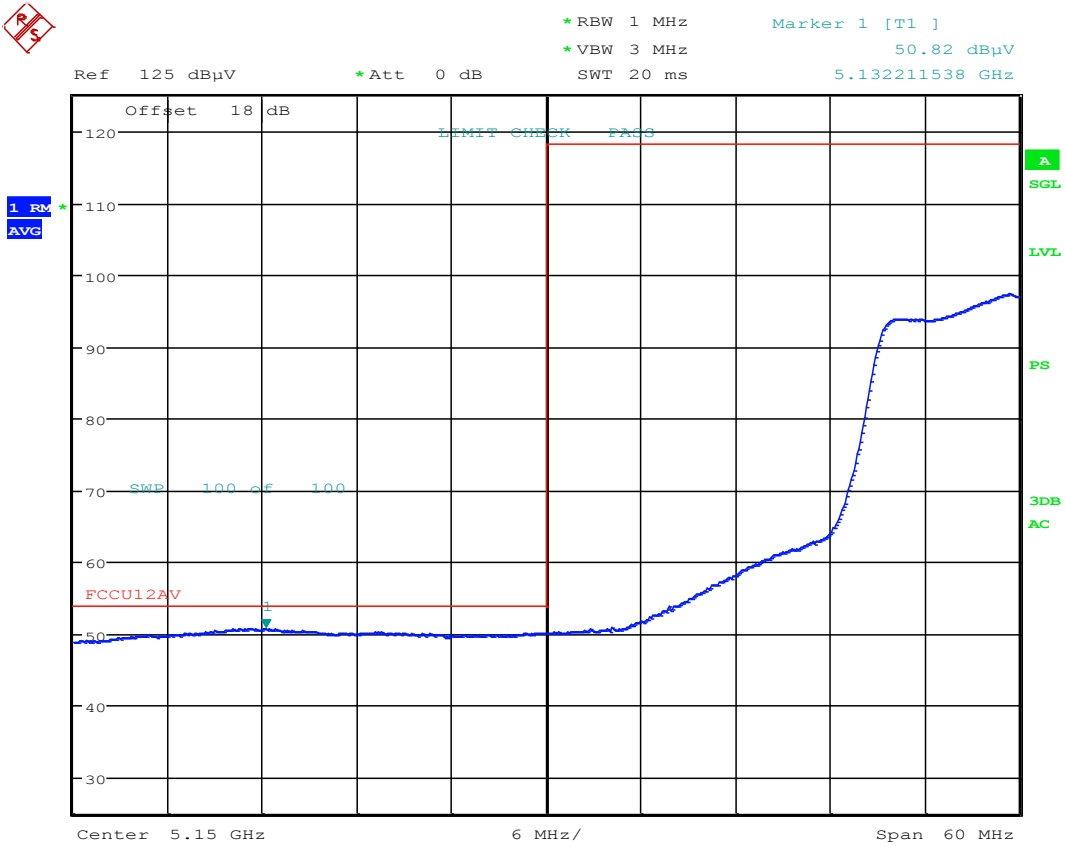
Date: 10.APR.2016 23:55:04

Plot 7-213. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 175 of 246	

7.7.7 Antenna-2 Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

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

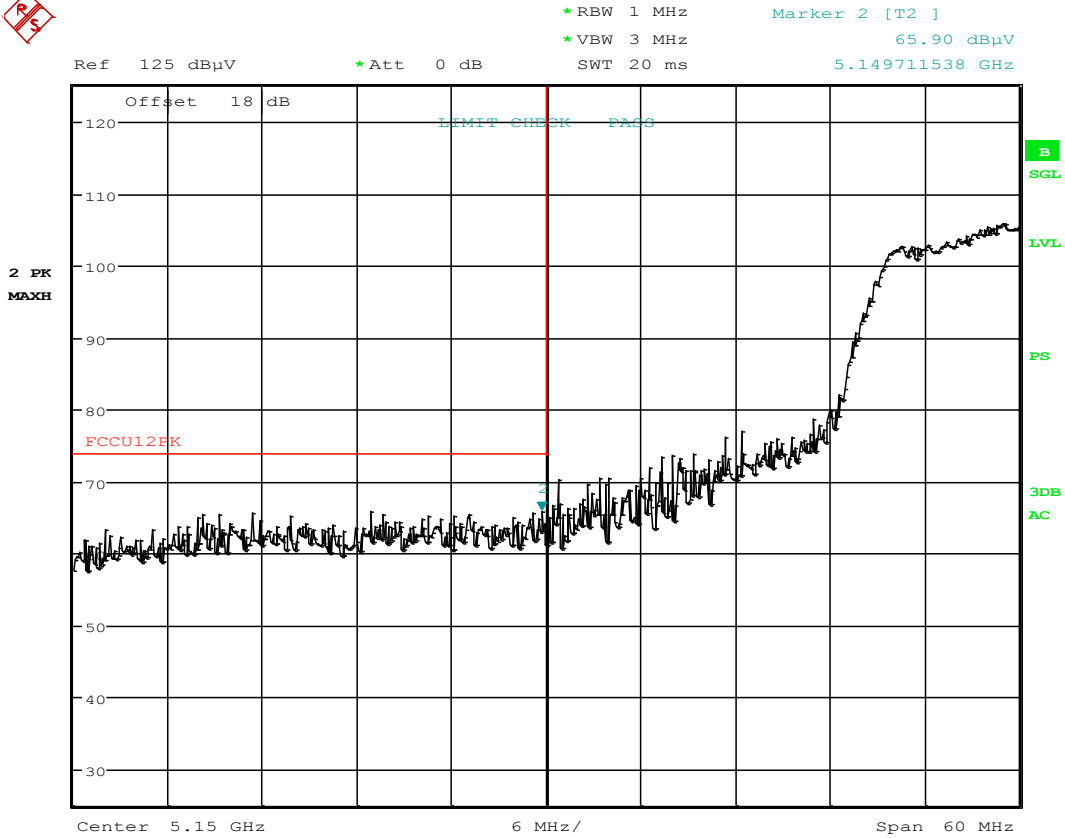


Date: 25.MAR.2016 02:44:45

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

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 176 of 246

Antenna-2 Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



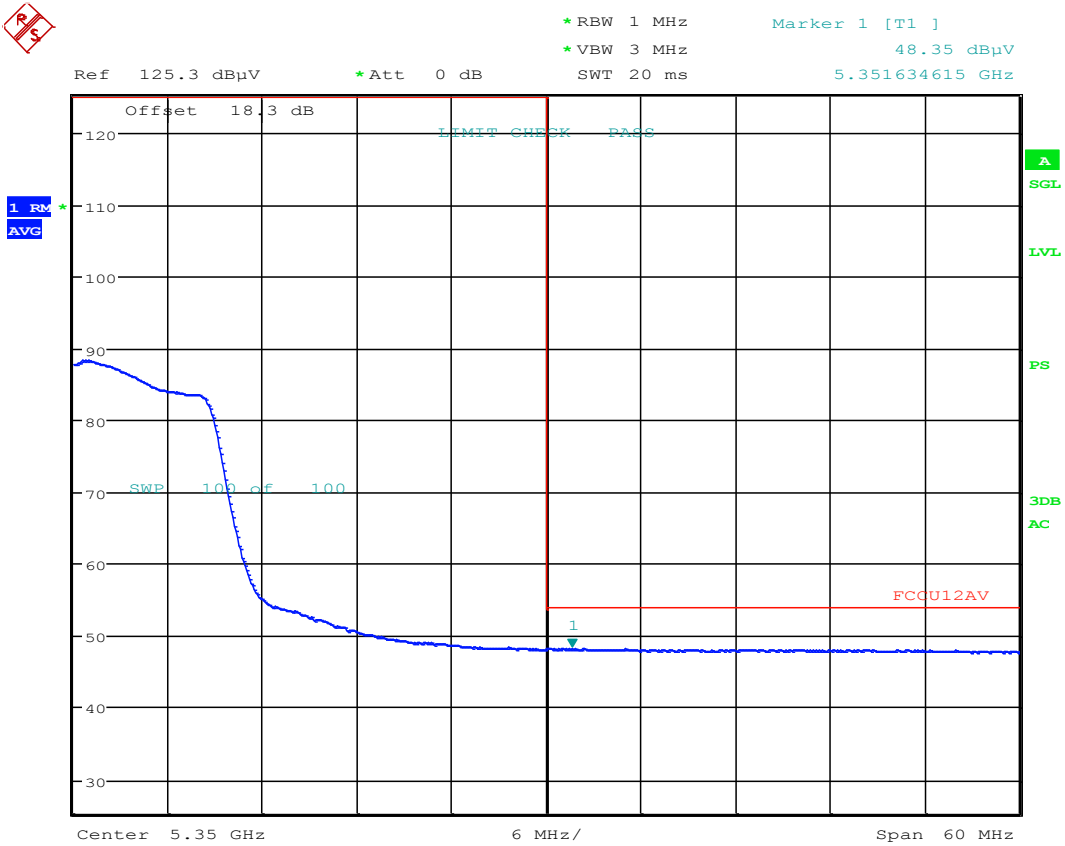
Date: 25.MAR.2016 02:46:29

Plot 7-215. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 177 of 246	

Antenna-2 Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

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

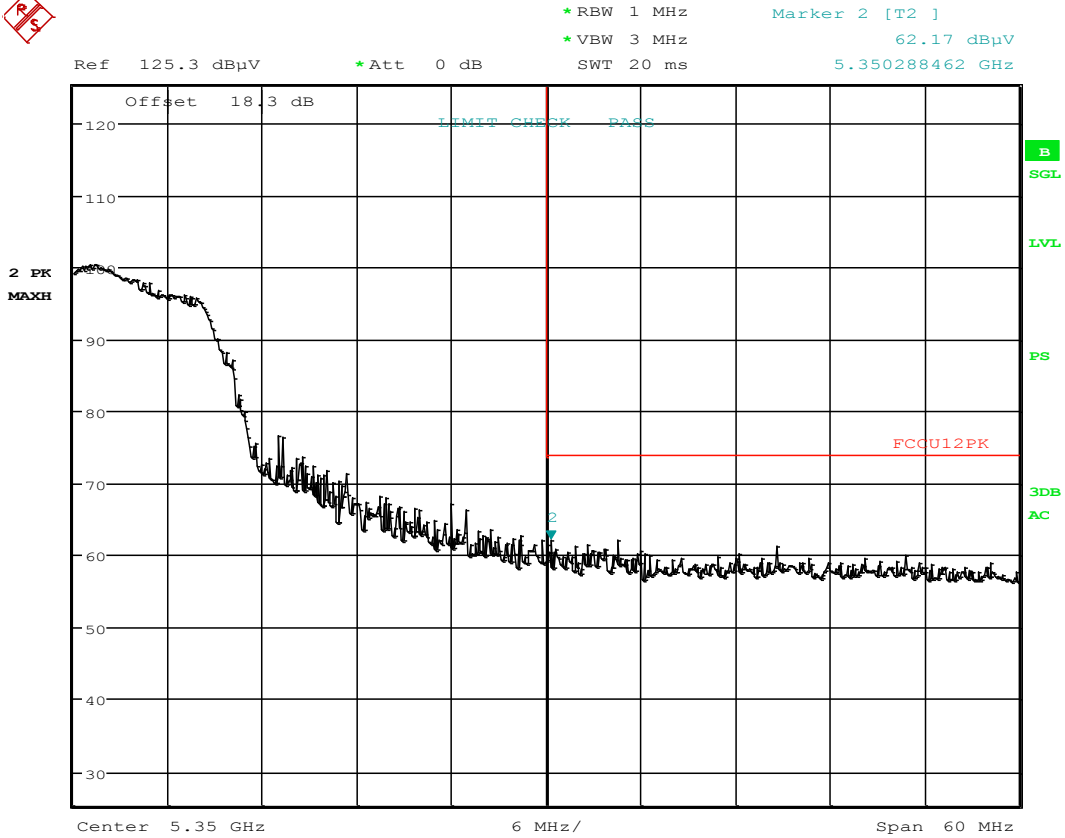


Date: 25.MAR.2016 03:12:24

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



FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 178 of 246

Antenna-2 Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



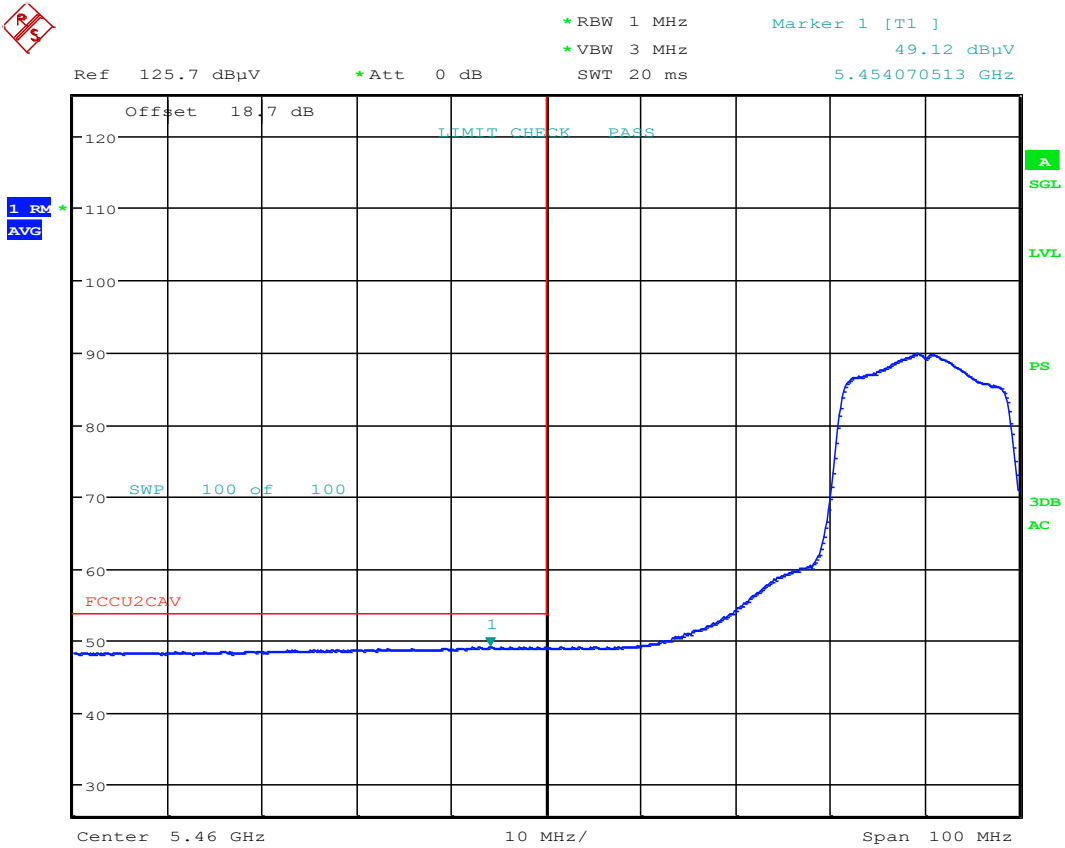
Date: 25.MAR.2016 03:12:50

Plot 7-217. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 179 of 246	

Antenna-2 Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

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

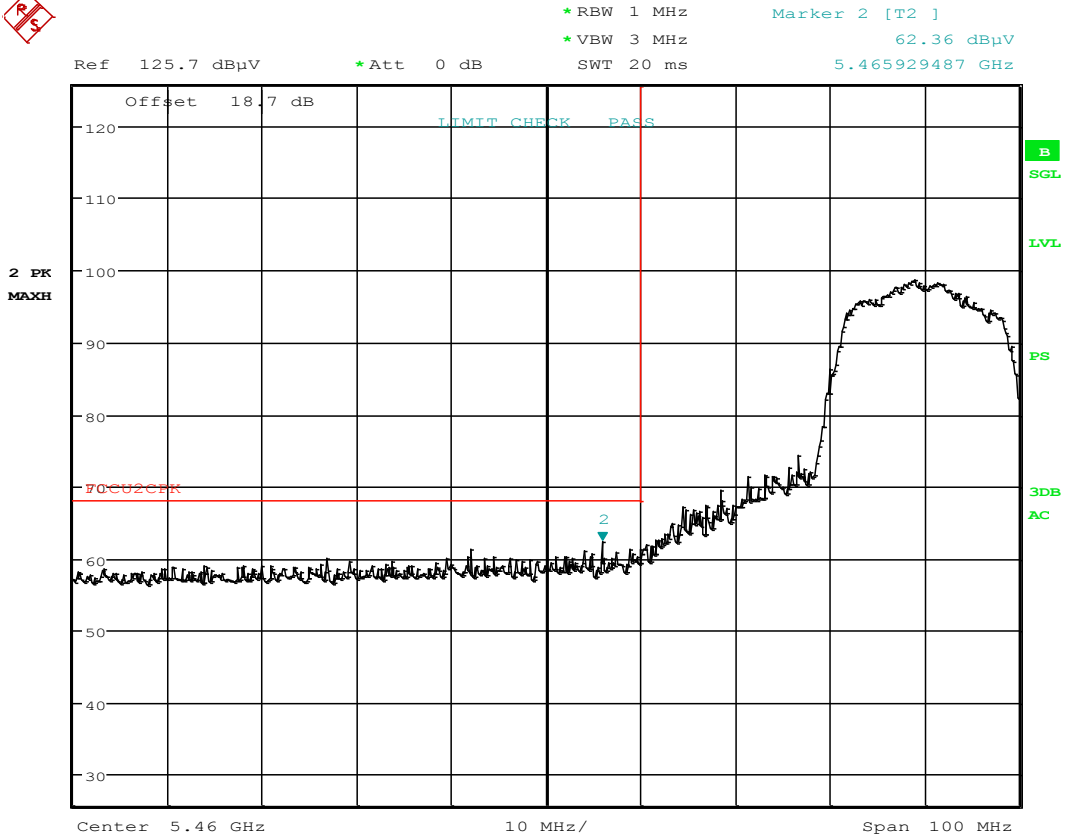


Date: 25.MAR.2016 03:24:44

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

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 180 of 246

Antenna-2 Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



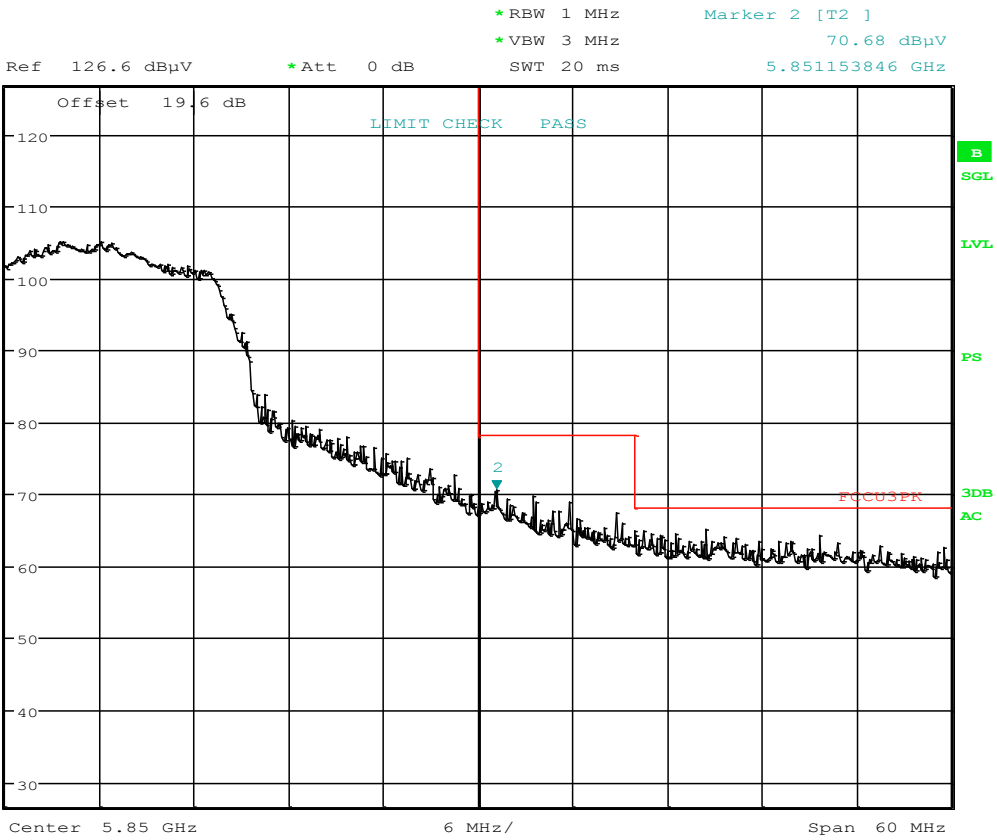
Date: 25.MAR.2016 03:25:06

Plot 7-219. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 181 of 246	

Antenna-2 Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

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



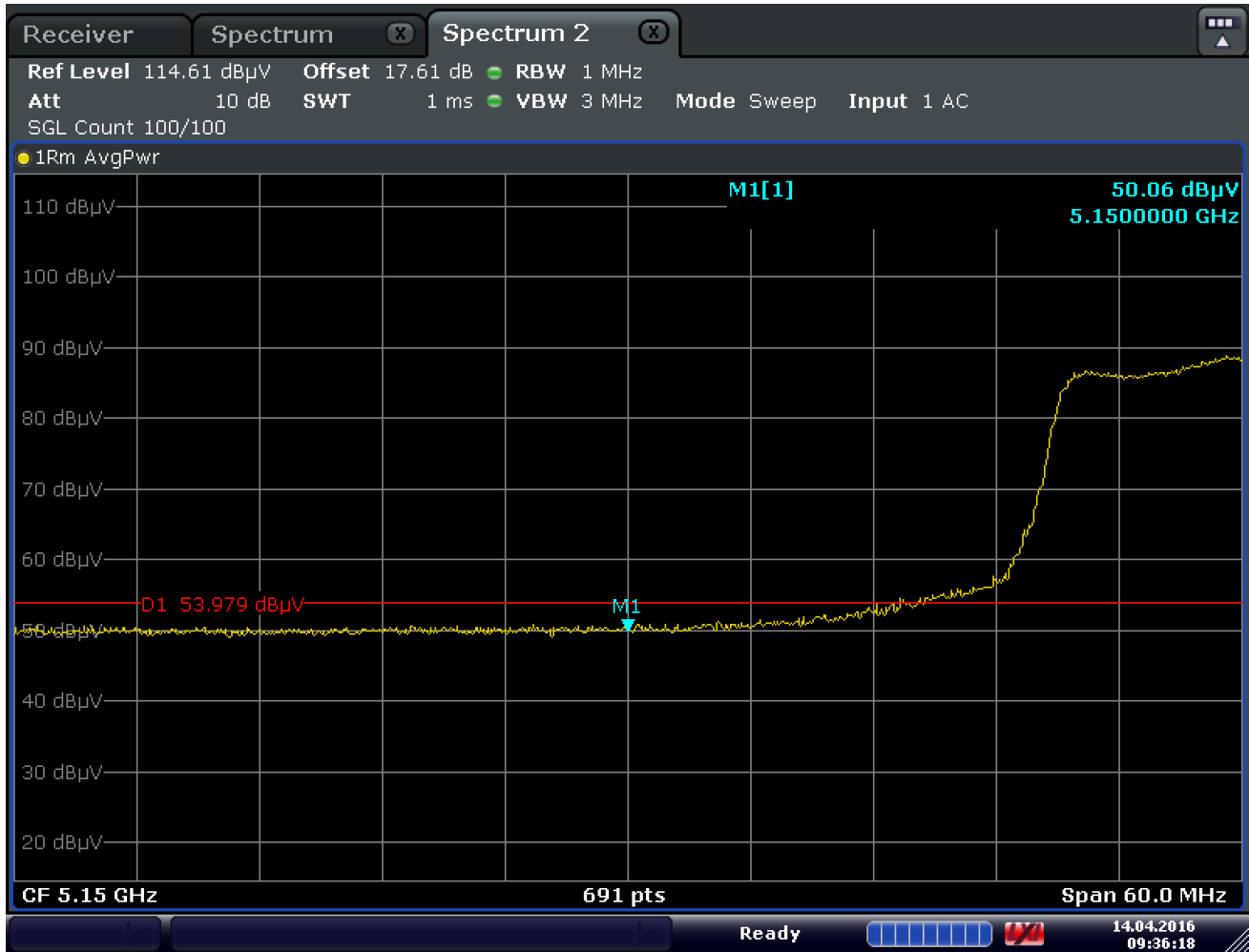
Date: 25.MAR.2016 03:38:18

Plot 7-220. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 182 of 246	

Antenna-2 WCP Radiated Band Edge Measurements (20MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

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



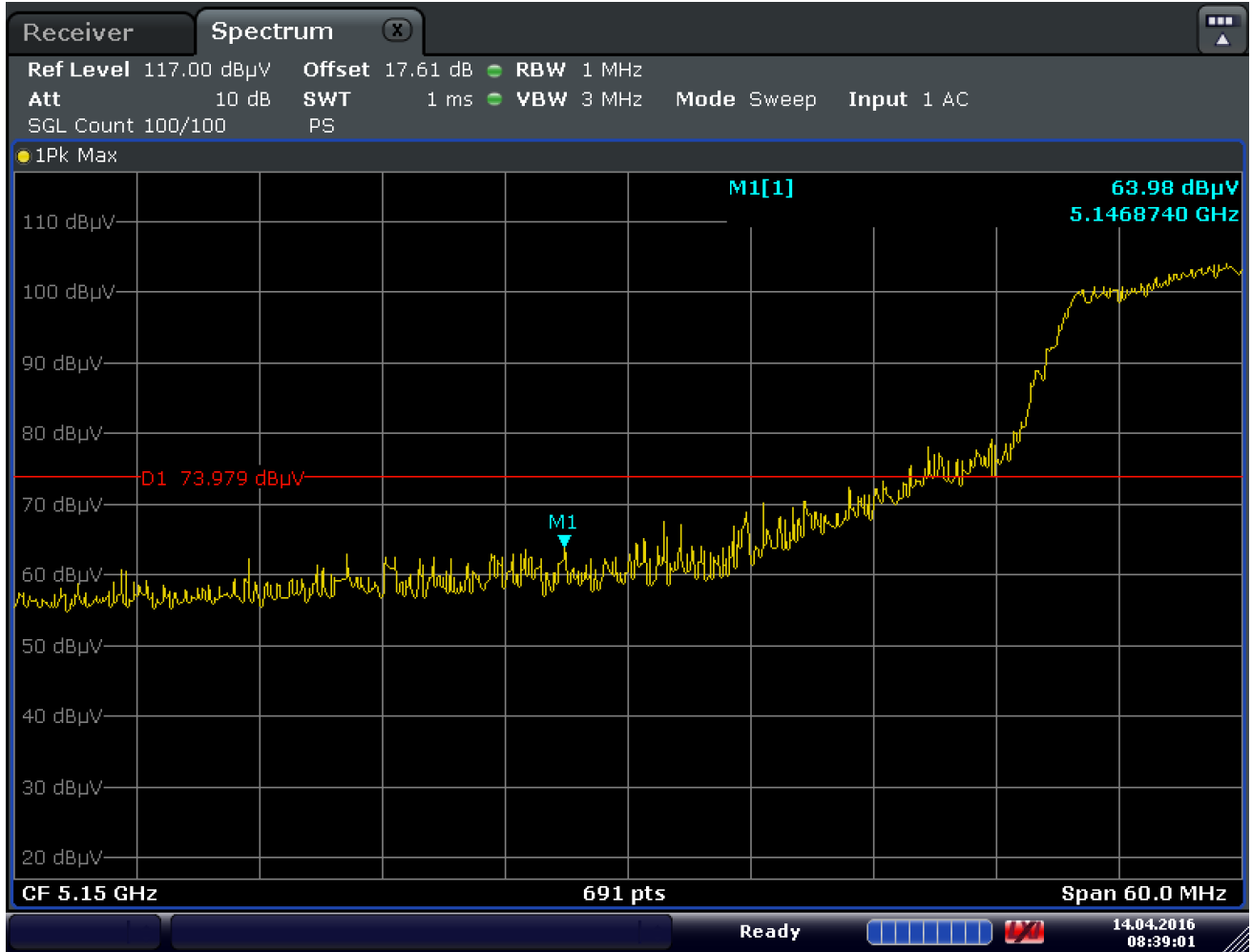
Date: 14.APR.2016 09:36:18

Plot 7-221. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3L5MG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset		Page 183 of 246



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

\$15.407(b.1)(b.2) \$15.205 \$15.209



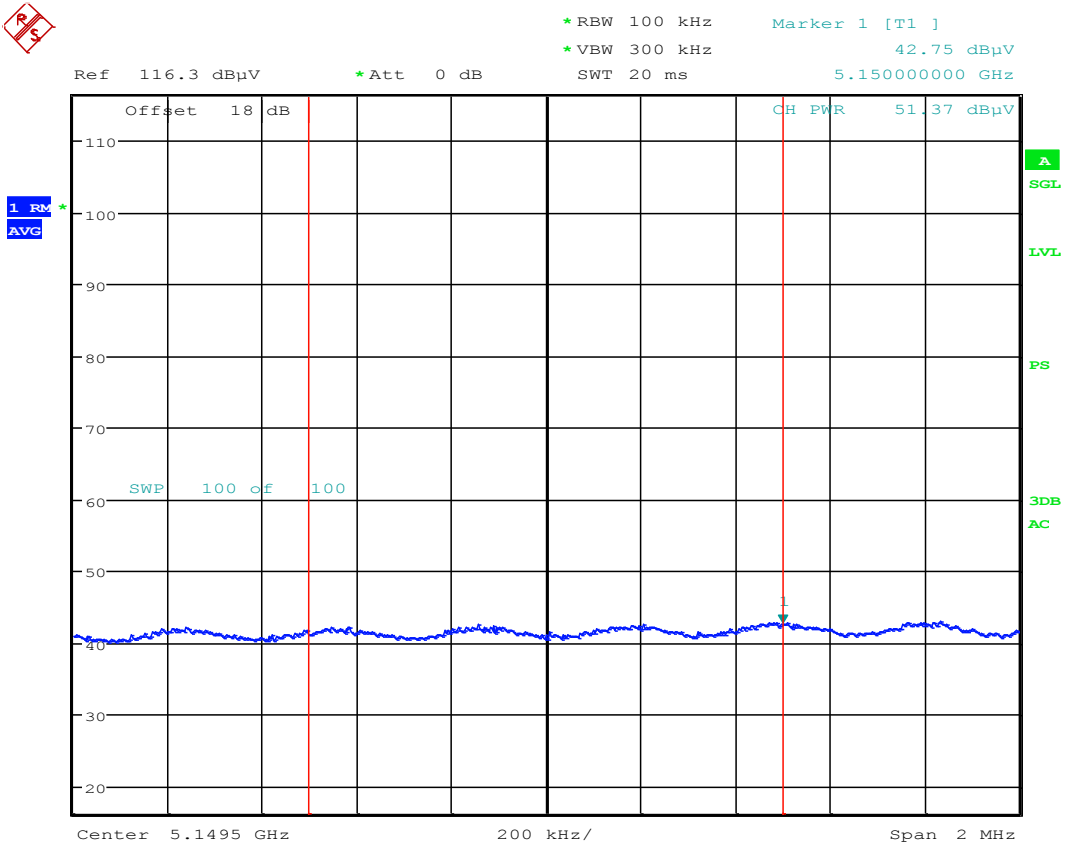
Date: 14.APR.2016 08:39:01

Plot 7-222. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3L5MG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 184 of 246	

7.7.8 Antenna-2 Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5190MHz
 Channel: 38

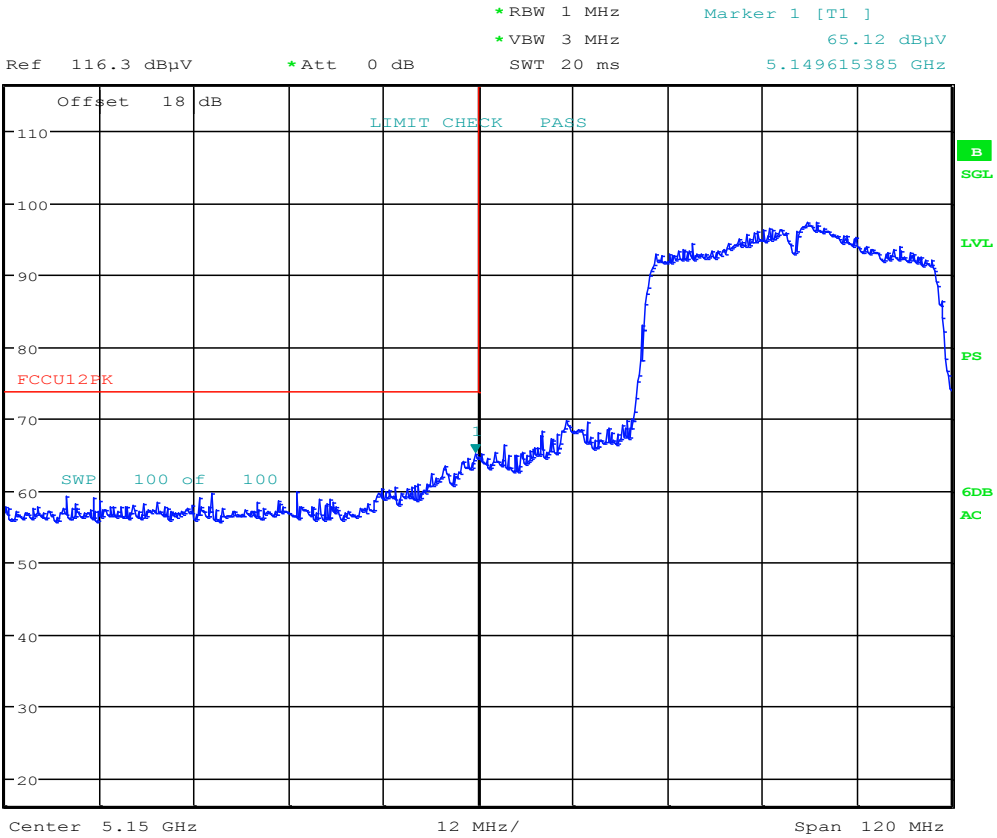


Date: 25.MAR.2016 19:03:47

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

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 185 of 246

Antenna-2 Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



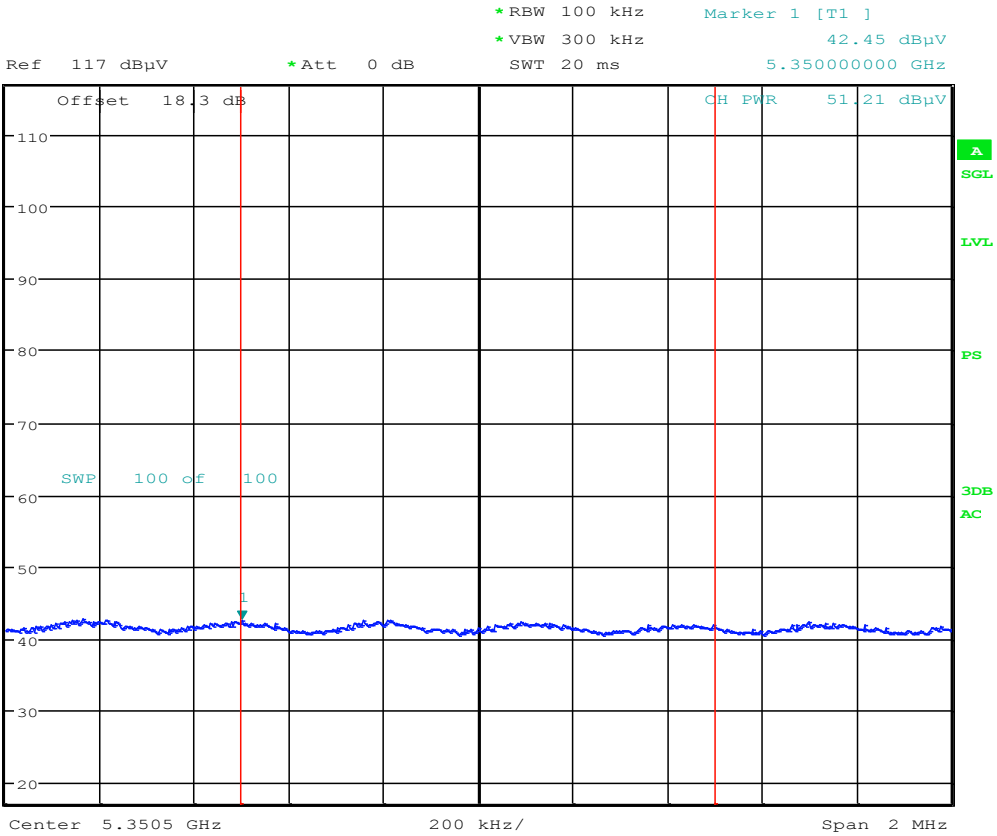
Date: 25.MAR.2016 19:04:28

Plot 7-224. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 186 of 246	

Antenna-2 Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5310MHz
 Channel: 62

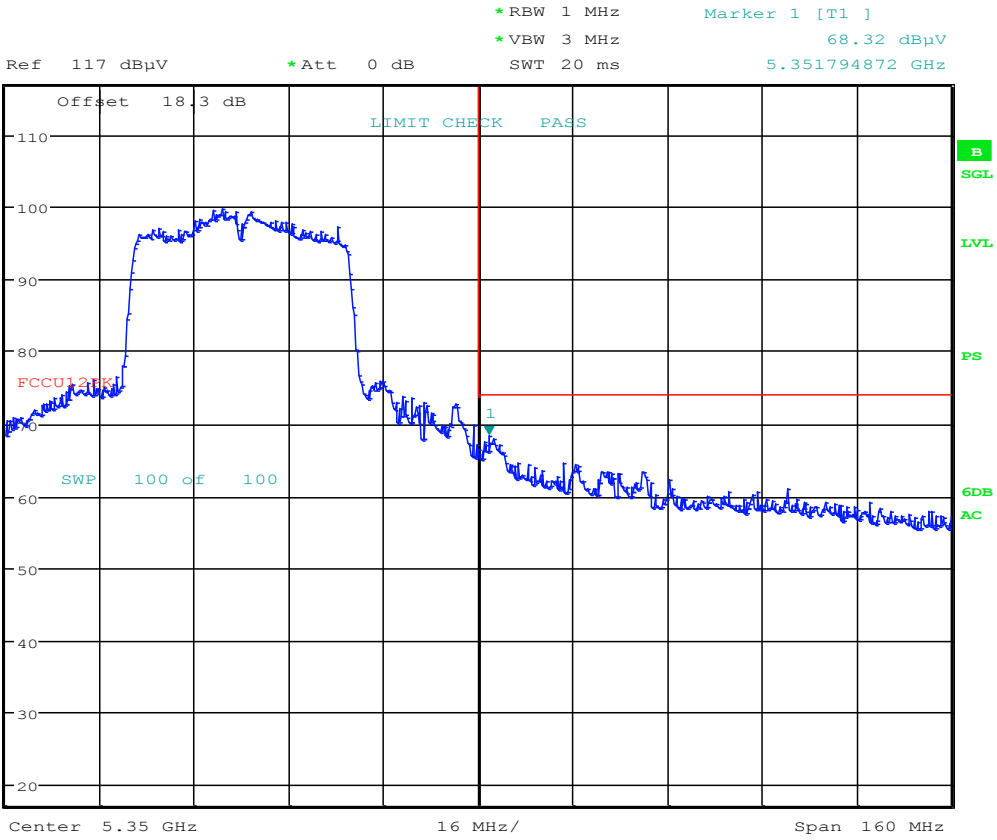


Date: 25.MAR.2016 19:22:32

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

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 187 of 246	

Antenna-2 Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



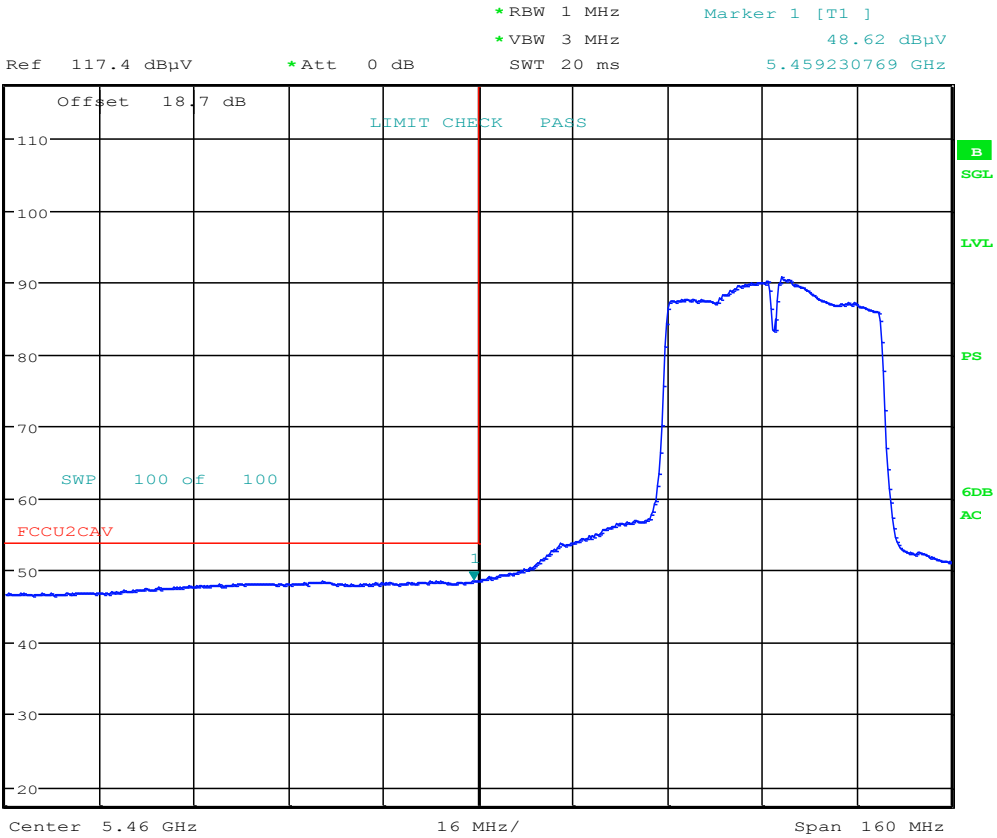
Date: 25.MAR.2016 19:20:14

Plot 7-226. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 188 of 246	

Antenna-2 Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5510MHz
 Channel: 102

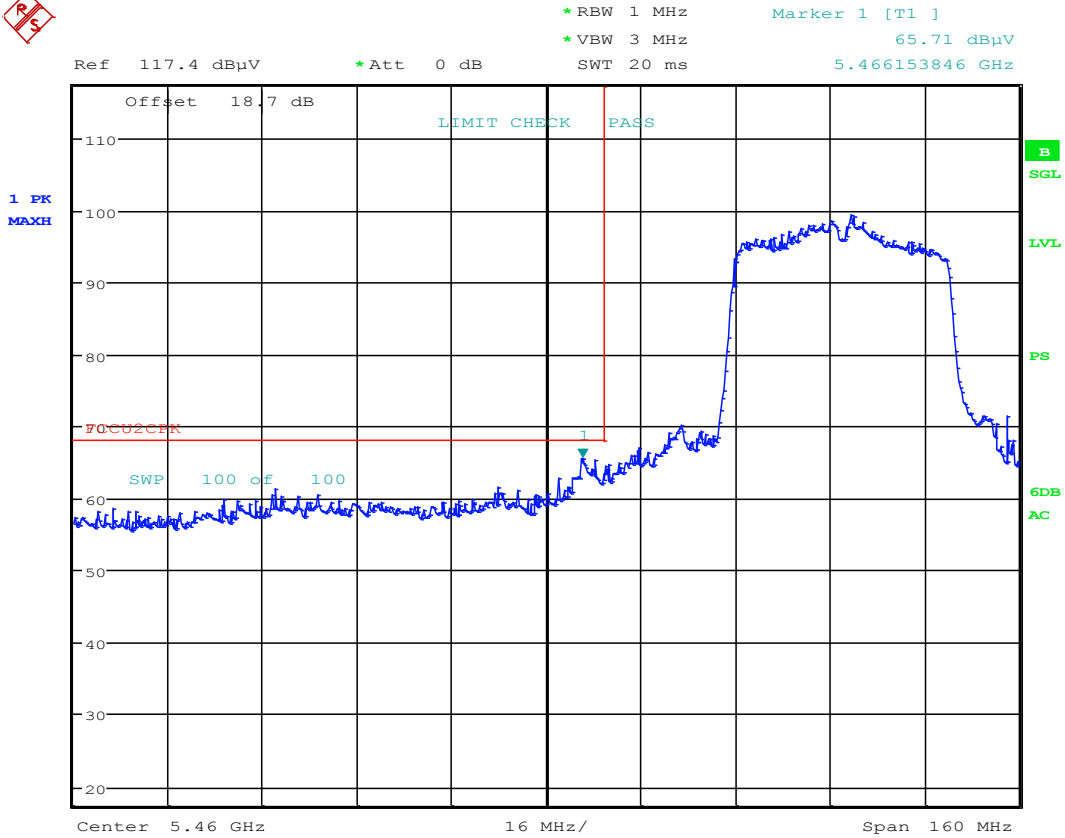


Date: 25.MAR.2016 19:41:15

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

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 189 of 246	

Antenna-2 Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



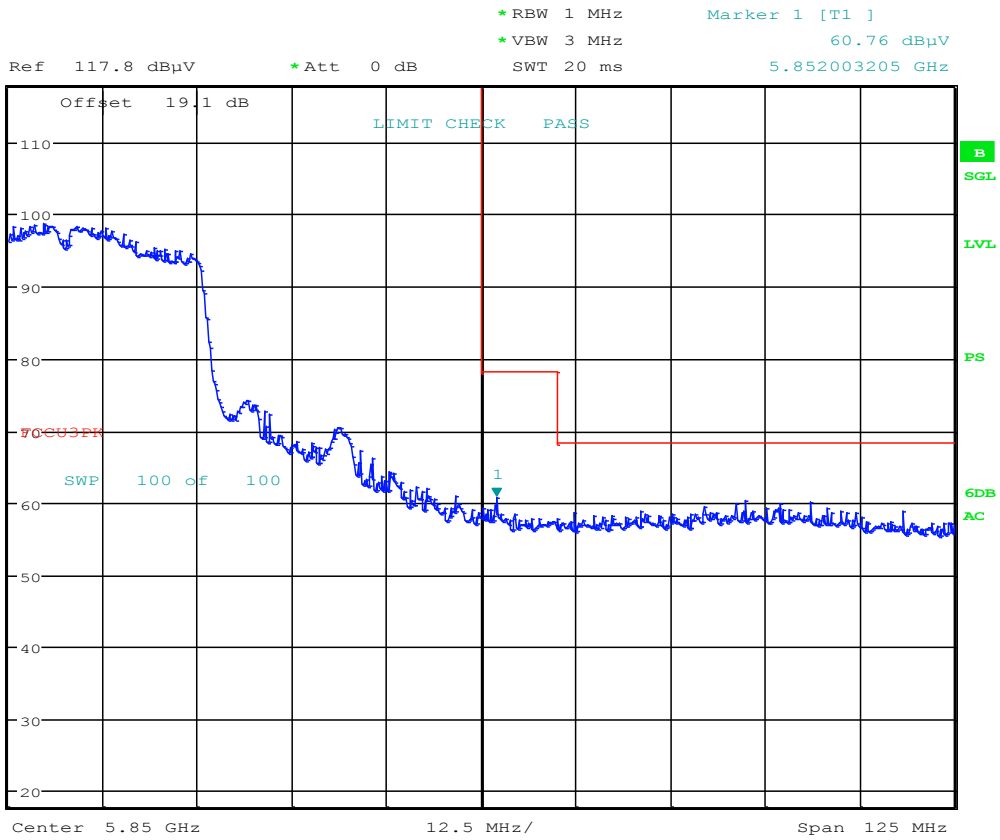
Date: 25.MAR.2016 19:39:33

Plot 7-228. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 190 of 246	

Antenna-2 Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5795MHz
 Channel: 159



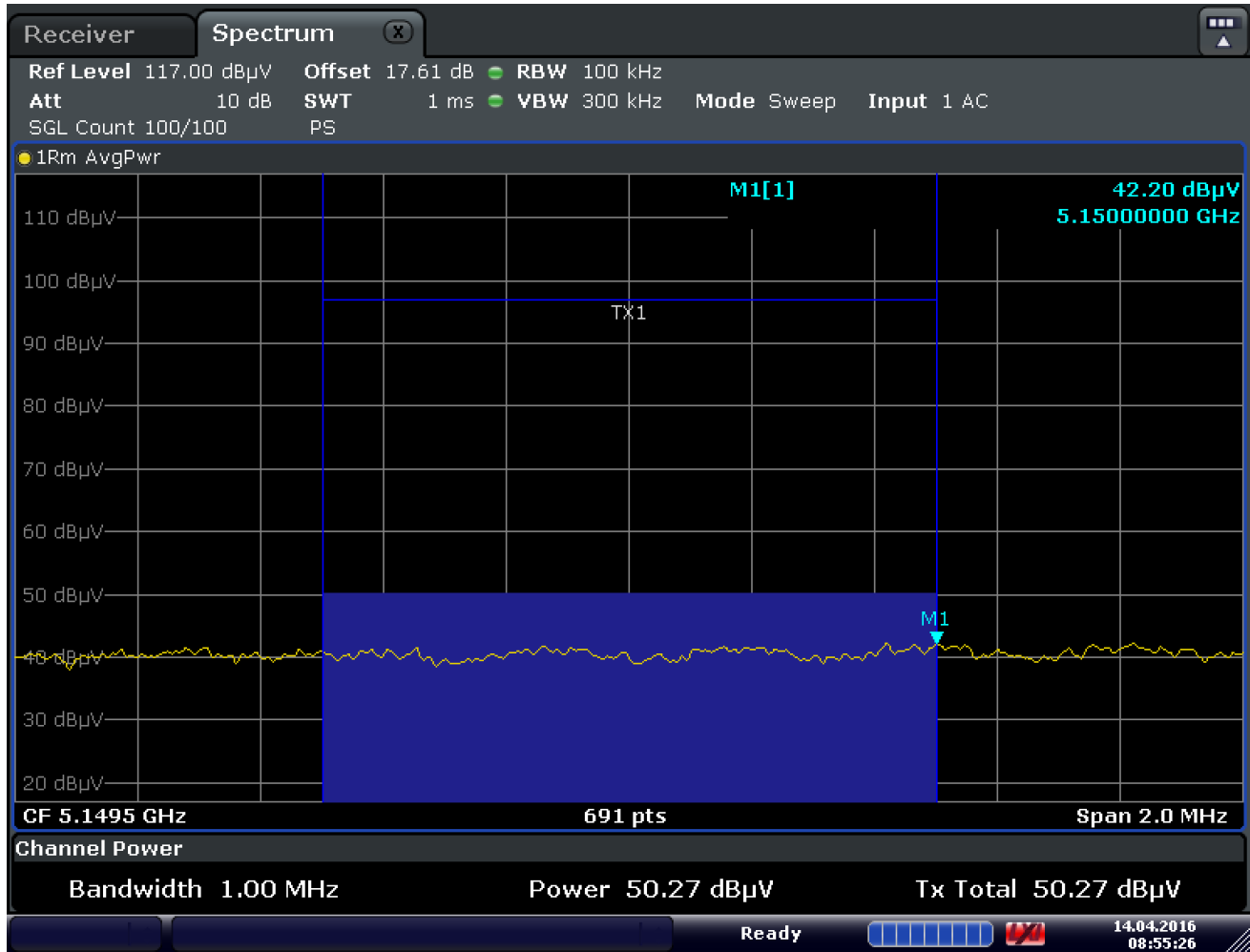
Date: 25.MAR.2016 19:58:59

Plot 7-229. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset		Page 191 of 246

Antenna-2 WCP Radiated Band Edge Measurements (40MHz BW) §15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5190MHz
 Channel: 38



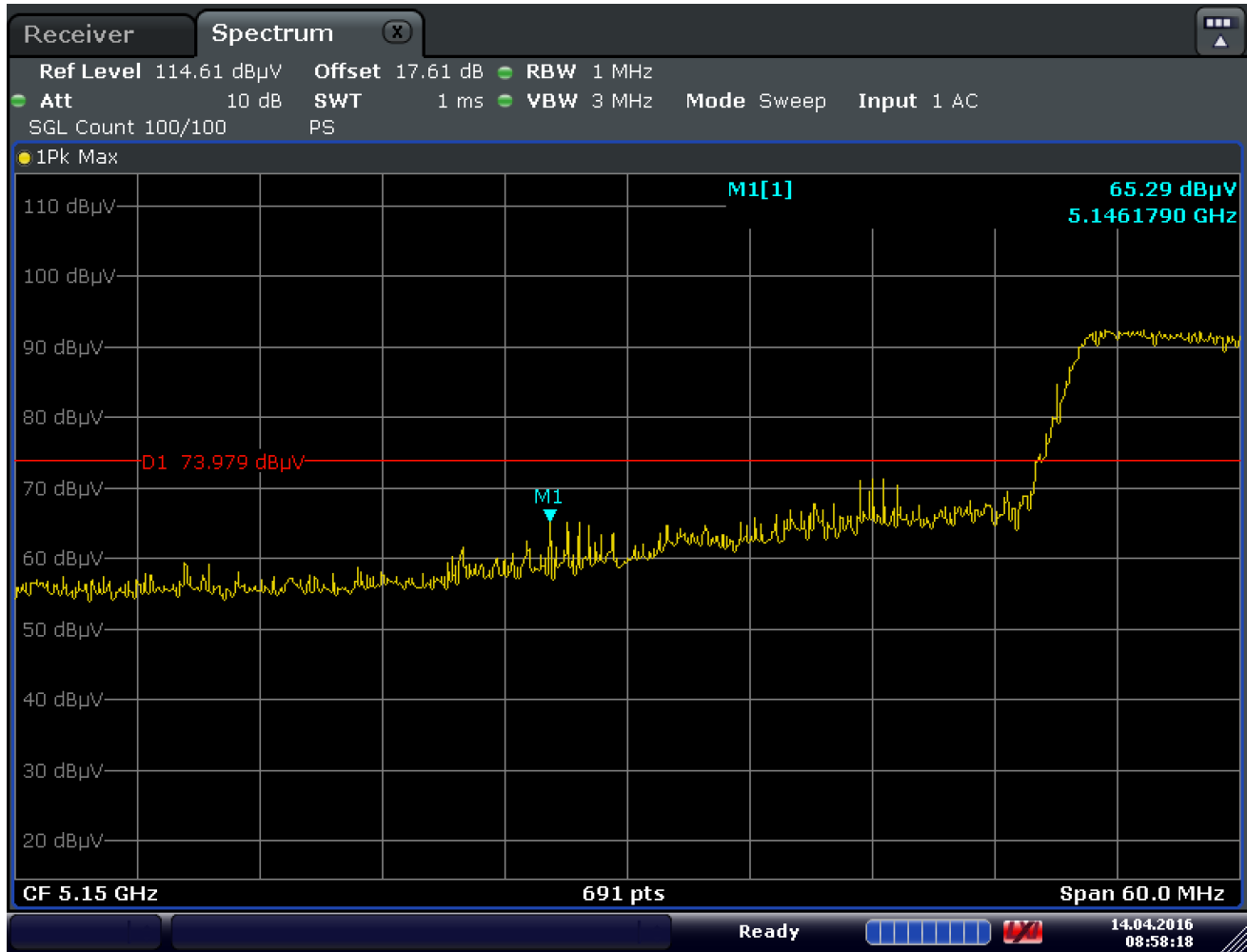
Date: 14.APR.2016 08:55:26

Plot 7-230. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 192 of 246

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

§15.407(b.1)(b.2) §15.205 §15.209



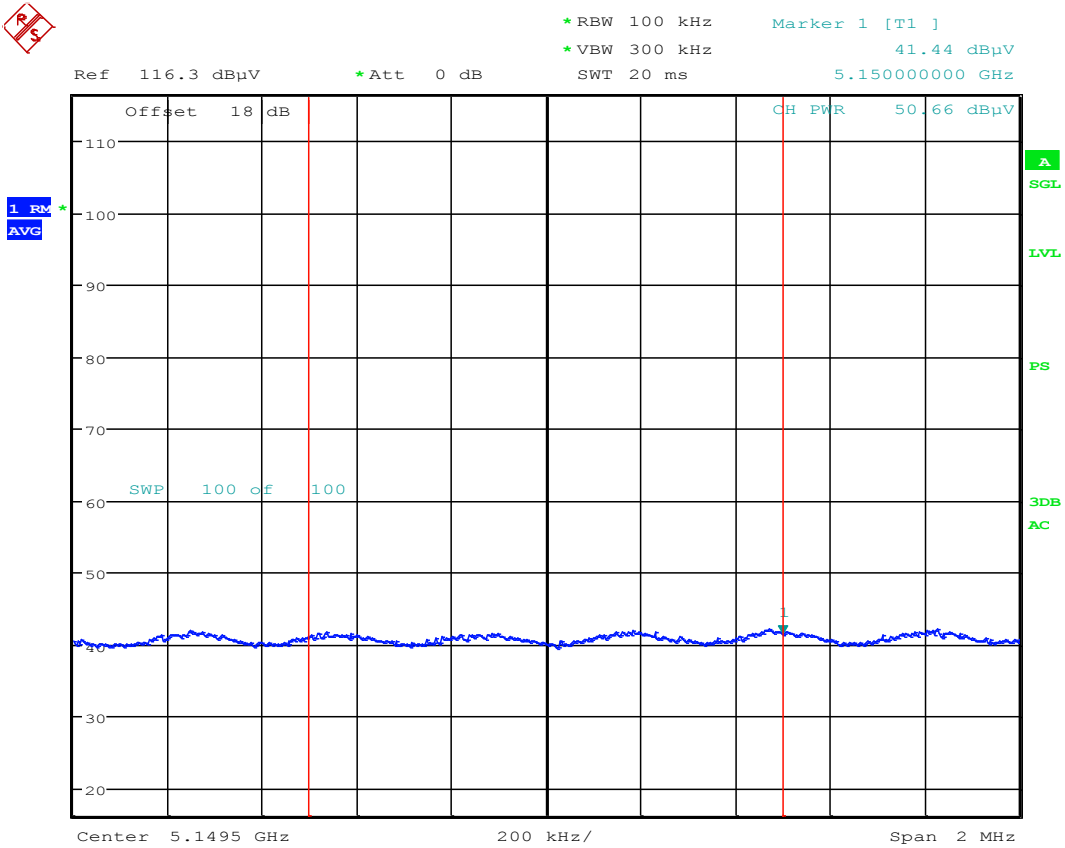
Date: 14.APR.2016 08:58:18

Plot 7-231. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 193 of 246	

7.7.9 Antenna-2 Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5210MHz
 Channel: 42

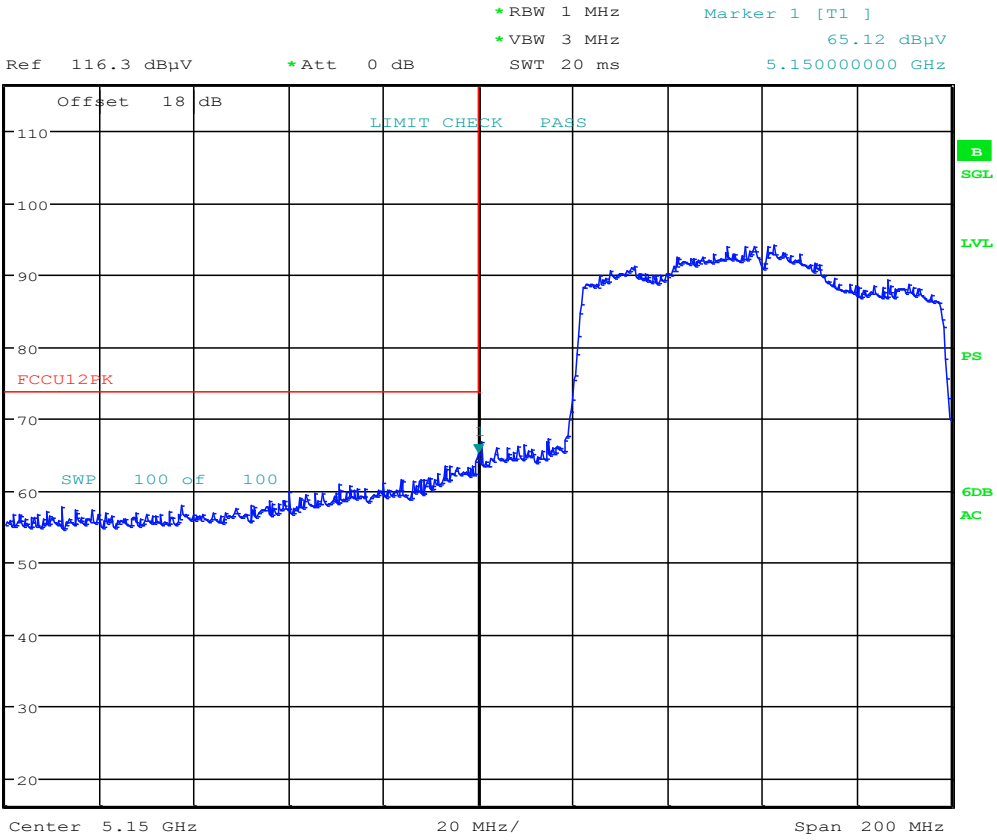


Date: 25.MAR.2016 19:07:45

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

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 194 of 246	

Antenna-2 Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



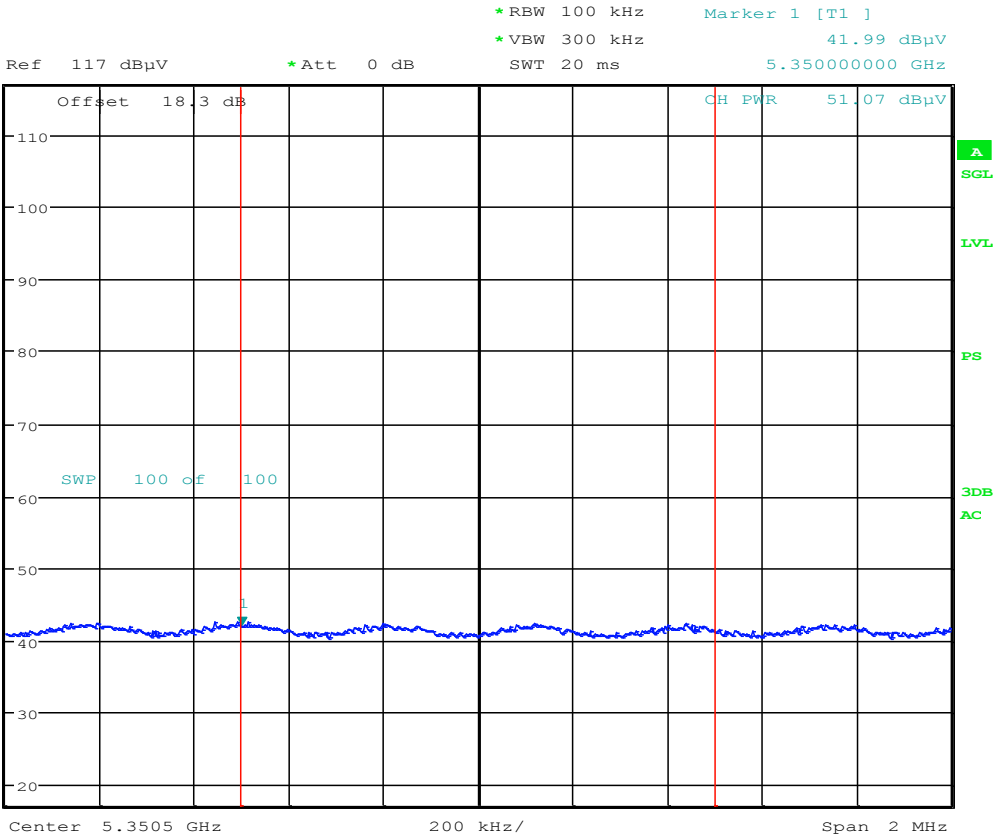
Date: 25.MAR.2016 19:06:20

Plot 7-233. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 195 of 246	

Antenna-2 Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5290MHz
 Channel: 58

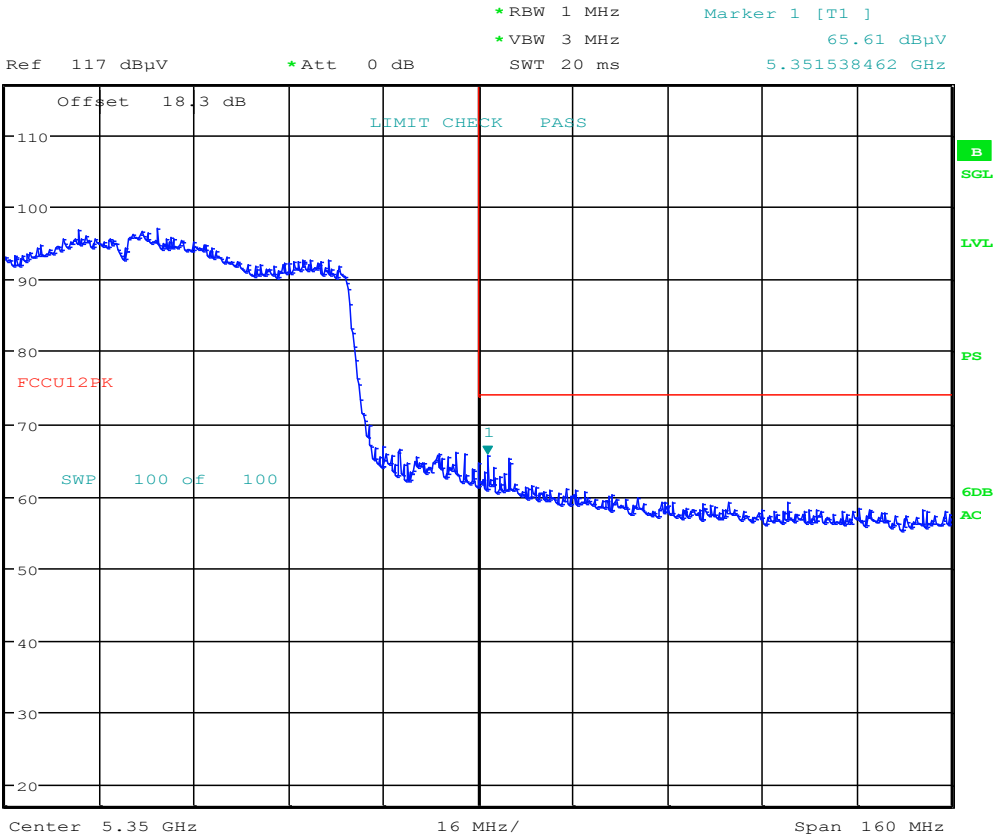


Date: 25.MAR.2016 19:30:54

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

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 196 of 246

Antenna-2 Radiated Band Edge Measurements (80MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209



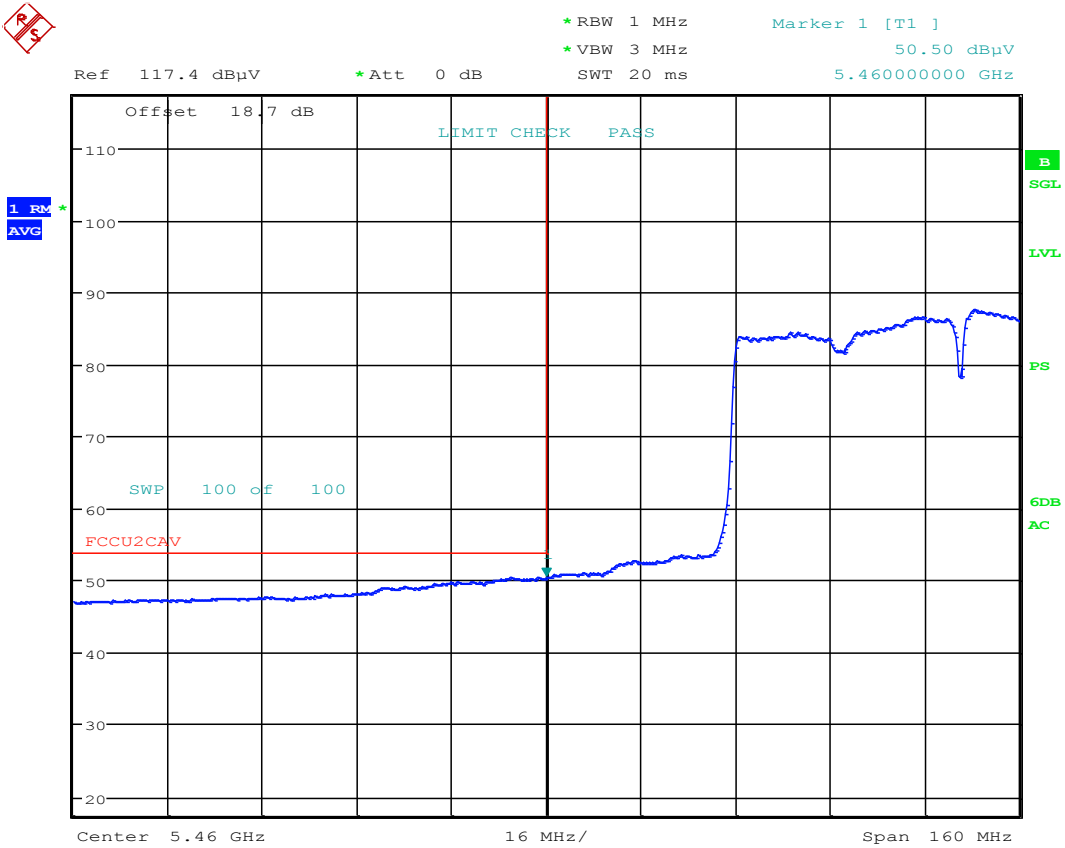
Date: 25.MAR.2016 19:30:33

Plot 7-235. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 197 of 246	

Antenna-2 Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5530MHz
 Channel: 106

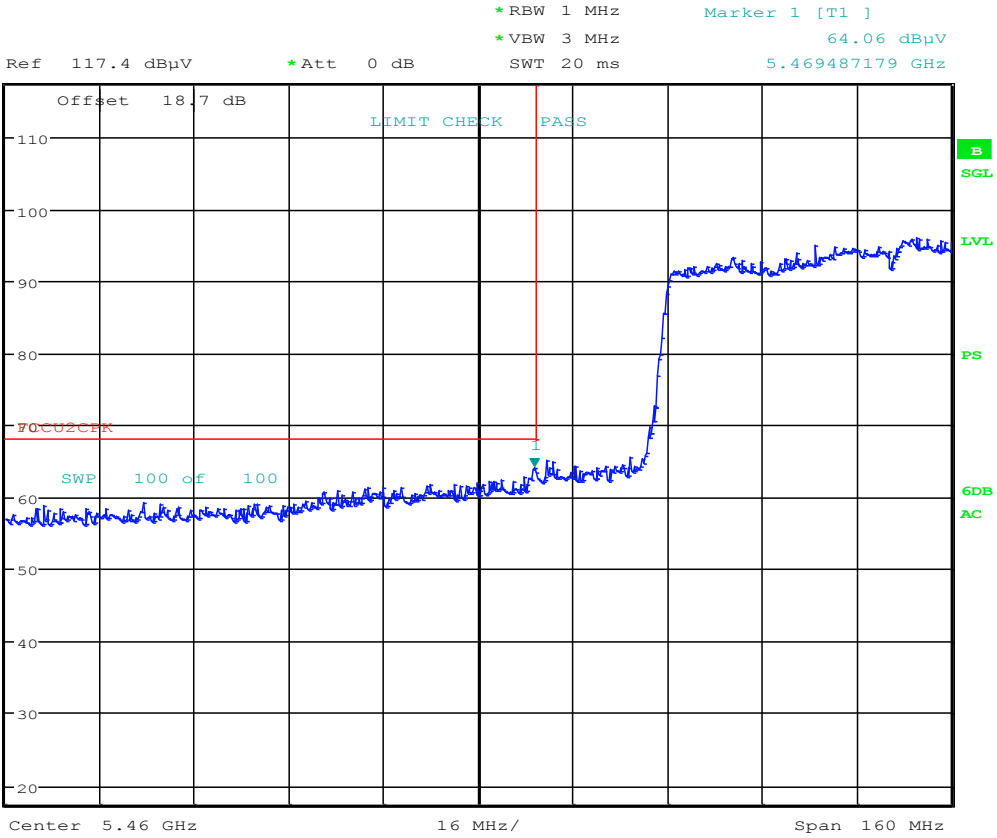


Date: 25.MAR.2016 19:48:22

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

FCC ID: A3L5MG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset		Page 198 of 246

Antenna-2 Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



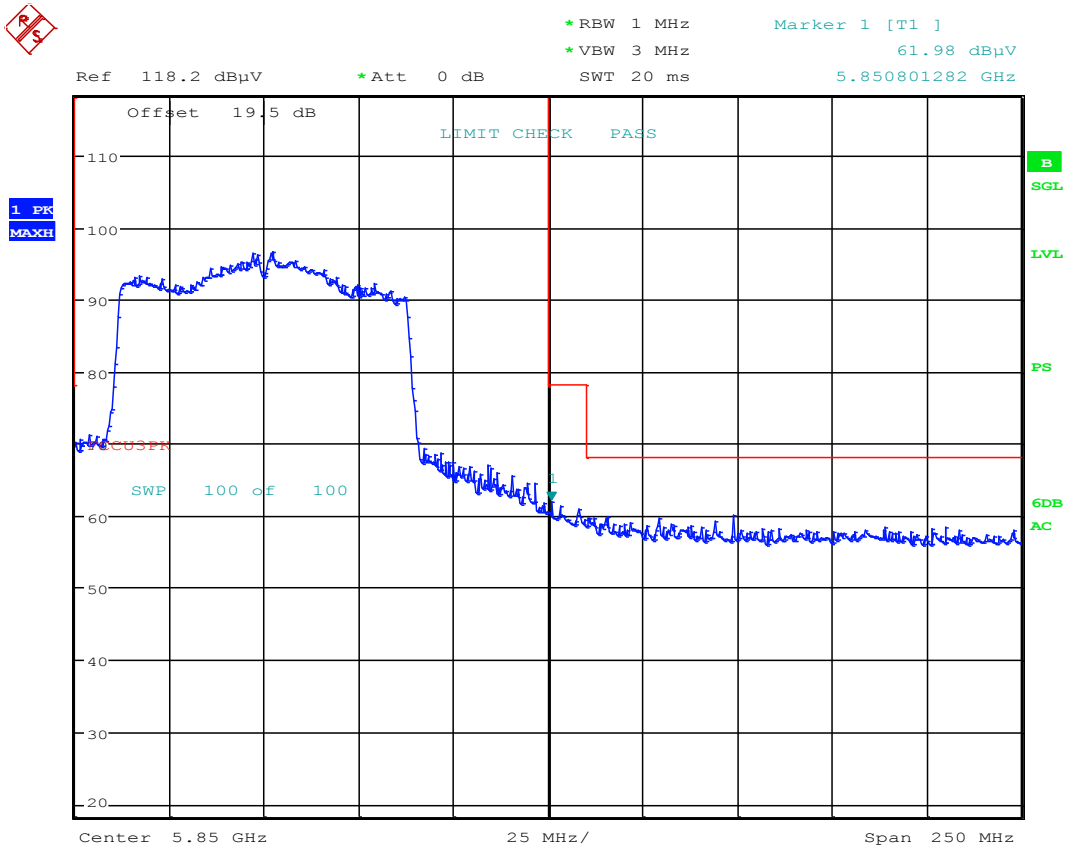
Date: 25.MAR.2016 19:47:54

Plot 7-237. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 199 of 246	

Antenna-2 Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5775MHz
 Channel: 155



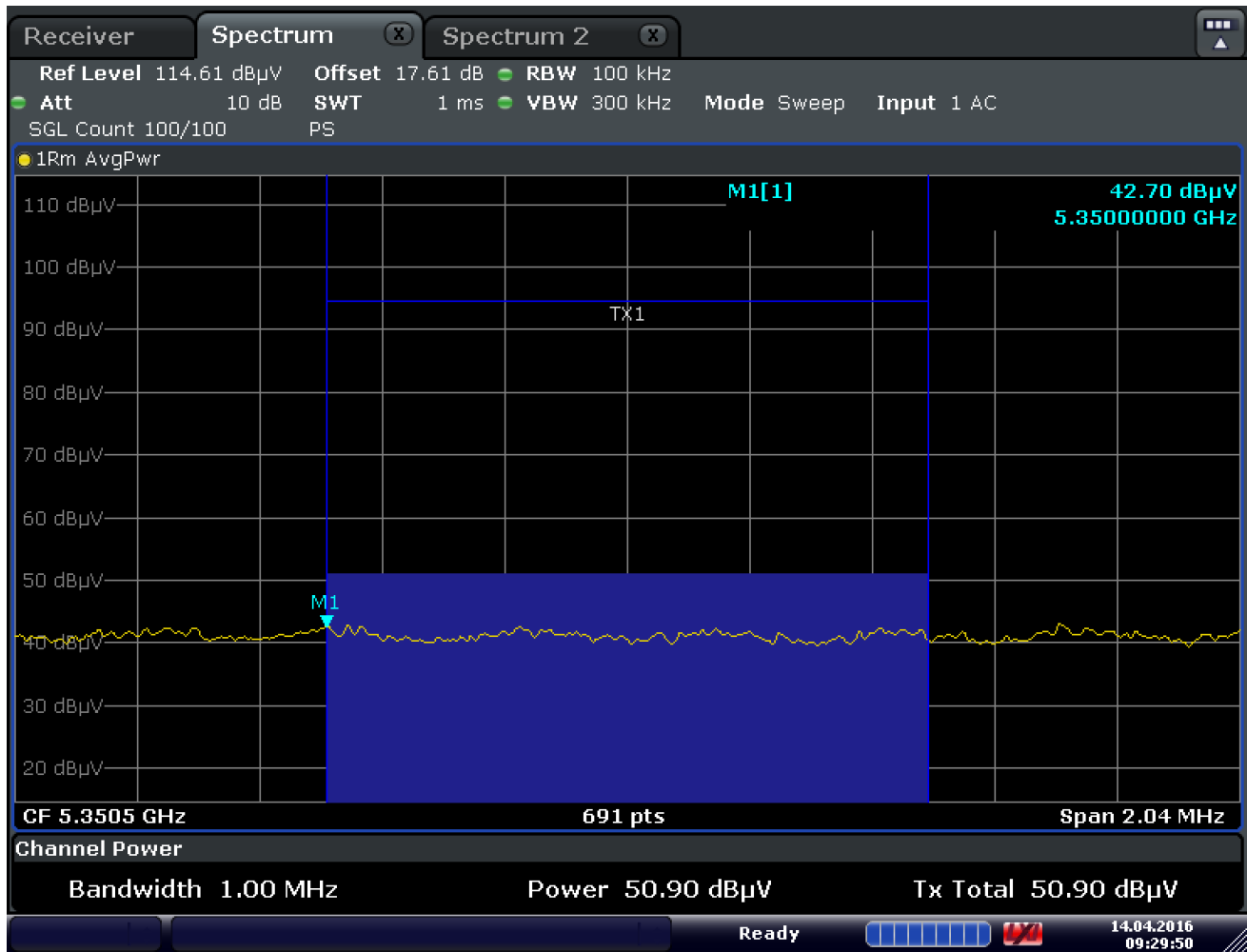
Date: 25.MAR.2016 20:13:22

Plot 7-238. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset		Page 200 of 246

Antenna-2 WCP Radiated Band Edge Measurements (80MHz BW) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5290MHz
 Channel: 58



Date: 14.APR.2016 09:29:50

Plot 7-239. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 201 of 246

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

§15.407(b.1)(b.2) §15.205 §15.209



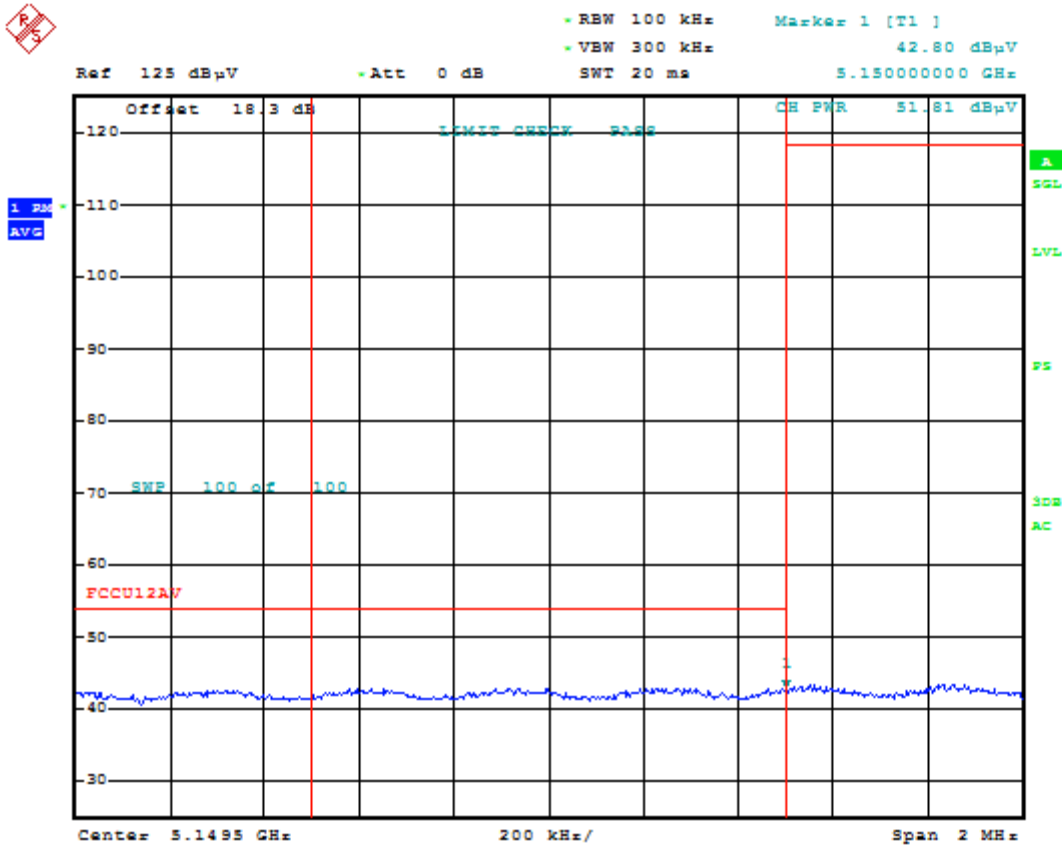
Date: 14.APR.2016 09:27:50

Plot 7-240. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset		Page 202 of 246

7.7.10 MIMO Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (20MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5180MHz
 Channel: 36

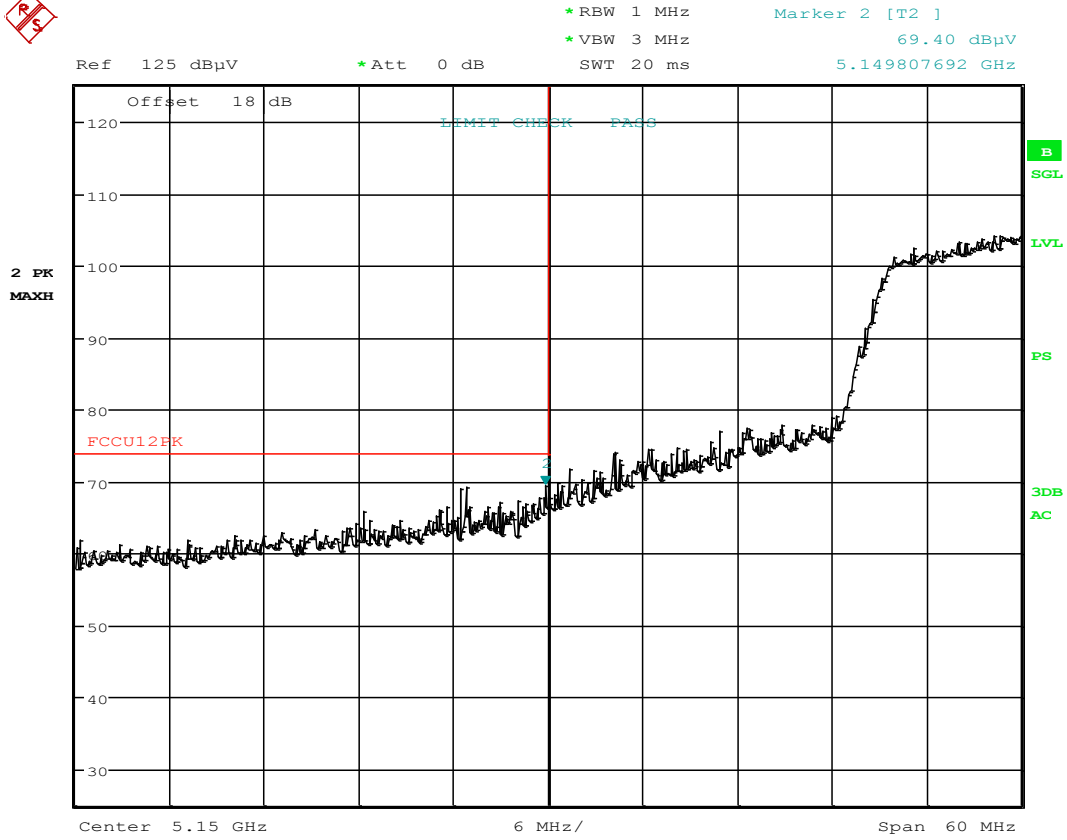


Date: 25.MAR.2016 03:56:00

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



FCC ID: A3L5MG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 203 of 246

MIMO Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



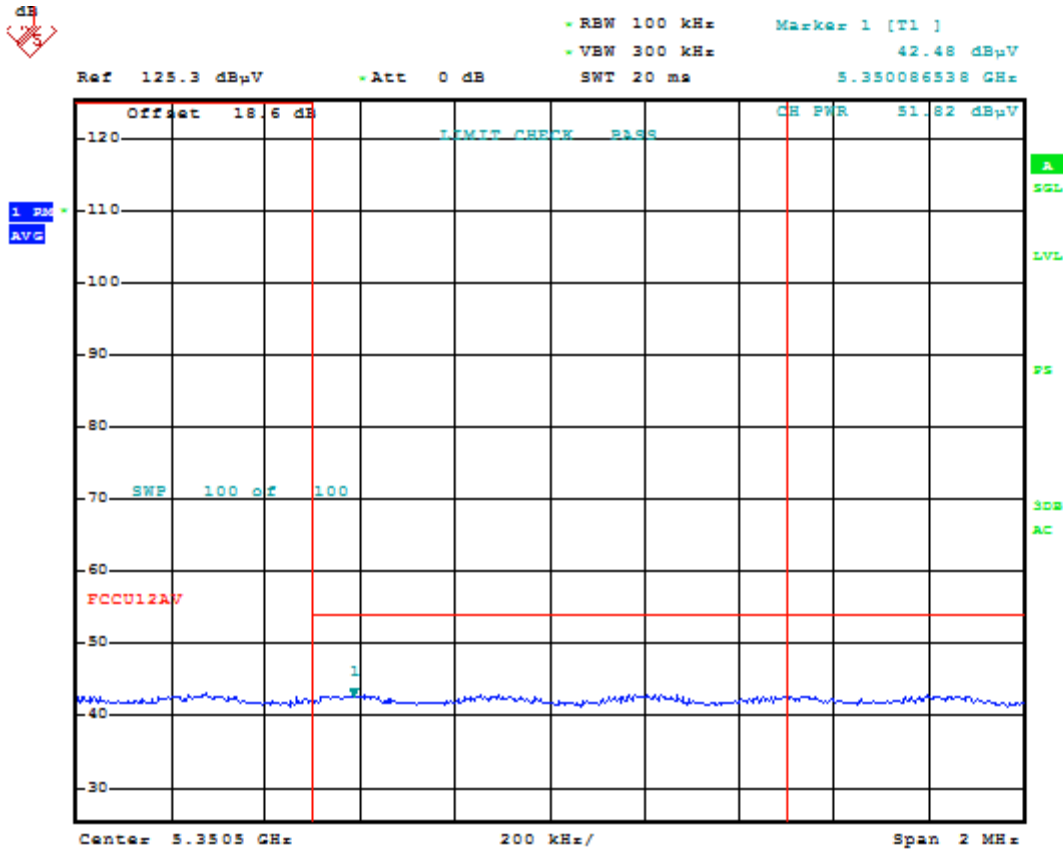
Date: 25.MAR.2016 03:56:37

Plot 7-242. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 204 of 246	

MIMO Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (20MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64

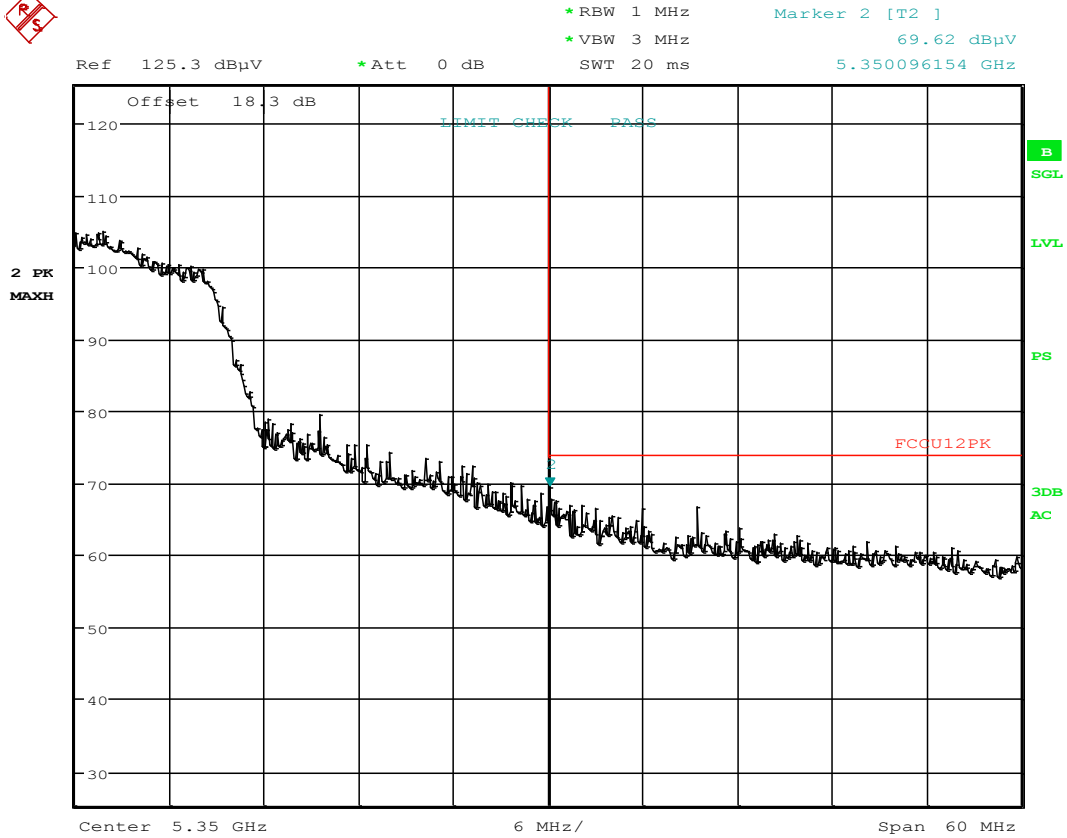


Date: 25.MAR.2016 04:14:38

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

FCC ID: A3L5MG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 205 of 246

MIMO Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



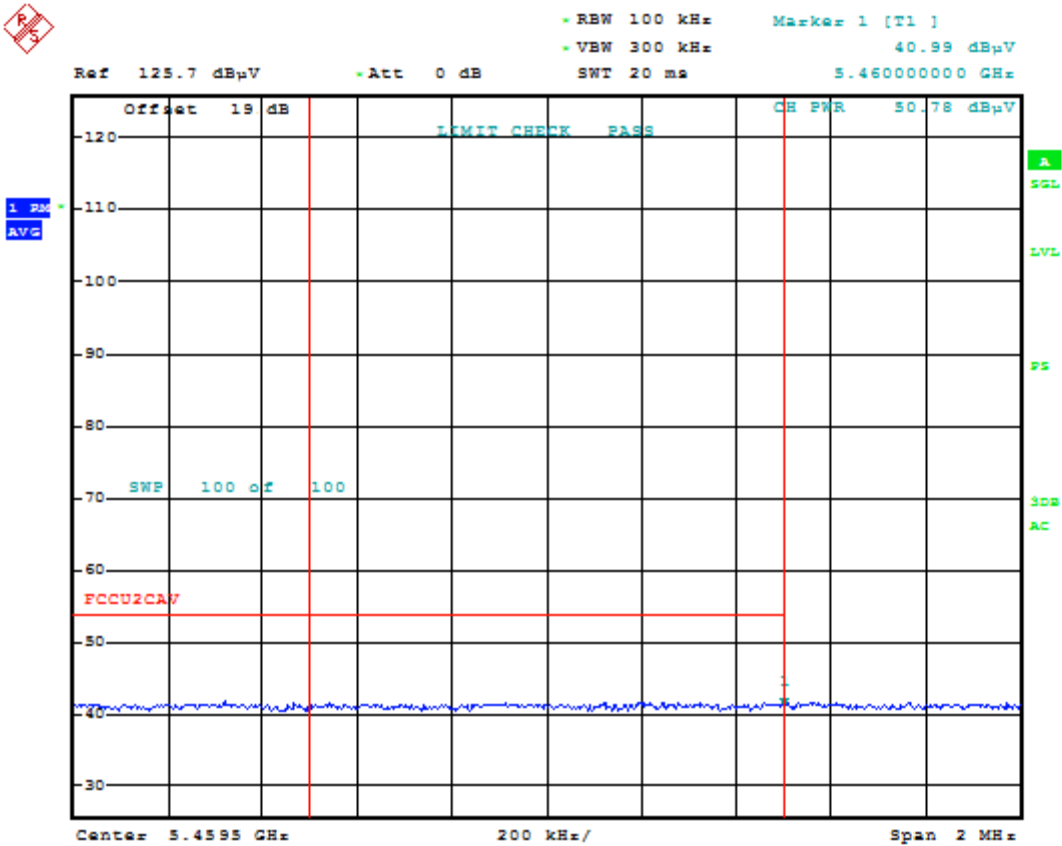
Date: 25.MAR.2016 04:16:19

Plot 7-244. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 206 of 246	

MIMO Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (20MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5500MHz
 Channel: 100

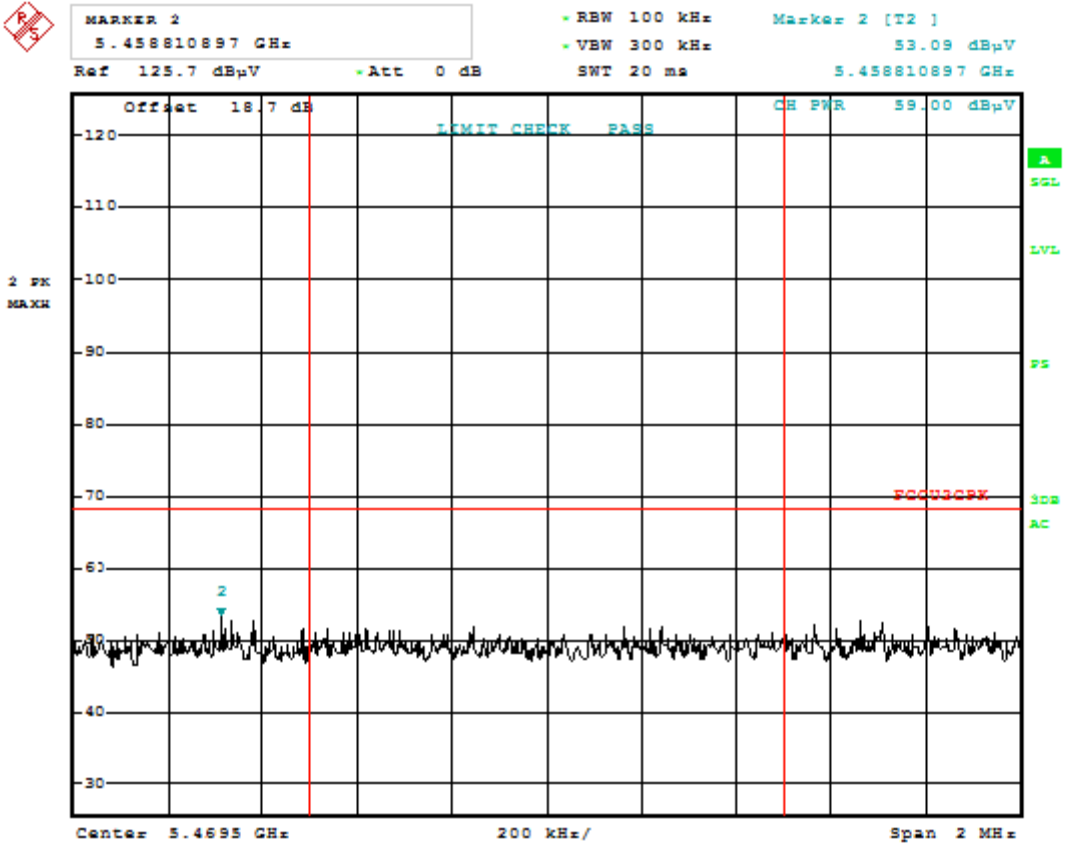


Date: 25.MAR.2016 04:42:58

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

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset		Page 207 of 246

MIMO Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



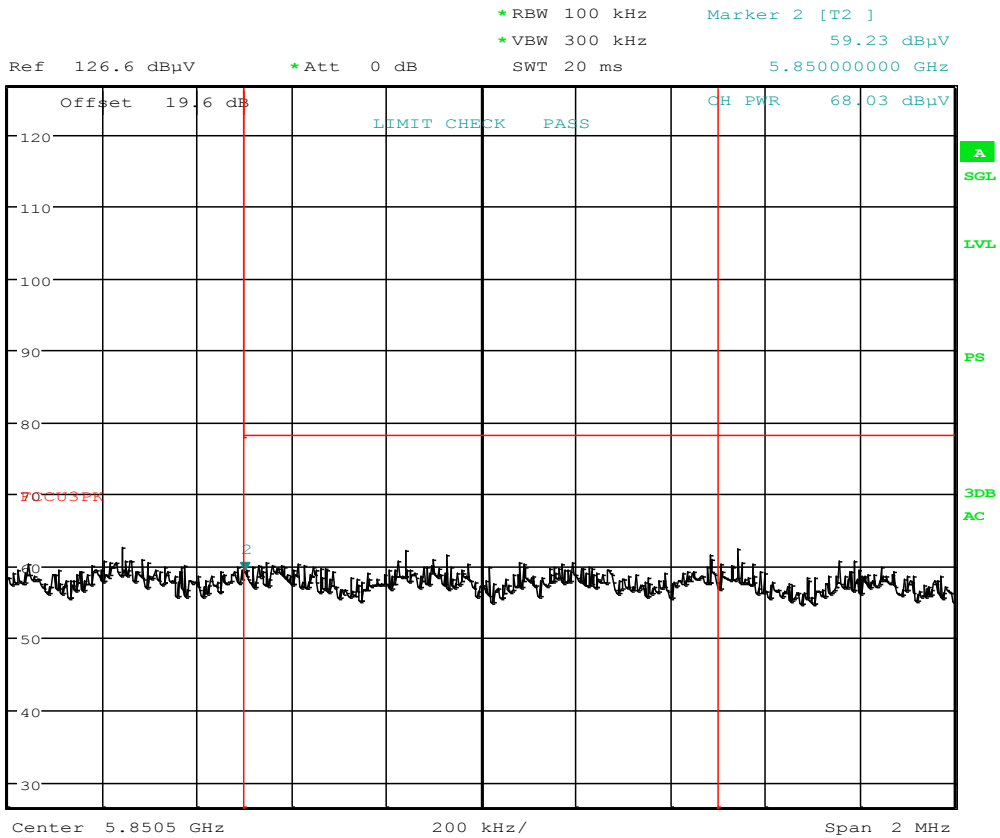
Date: 25.MAR.2016 04:44:37

Plot 7-246. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset		Page 208 of 246

MIMO Radiated Band Edge Measurements (20MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (20MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165



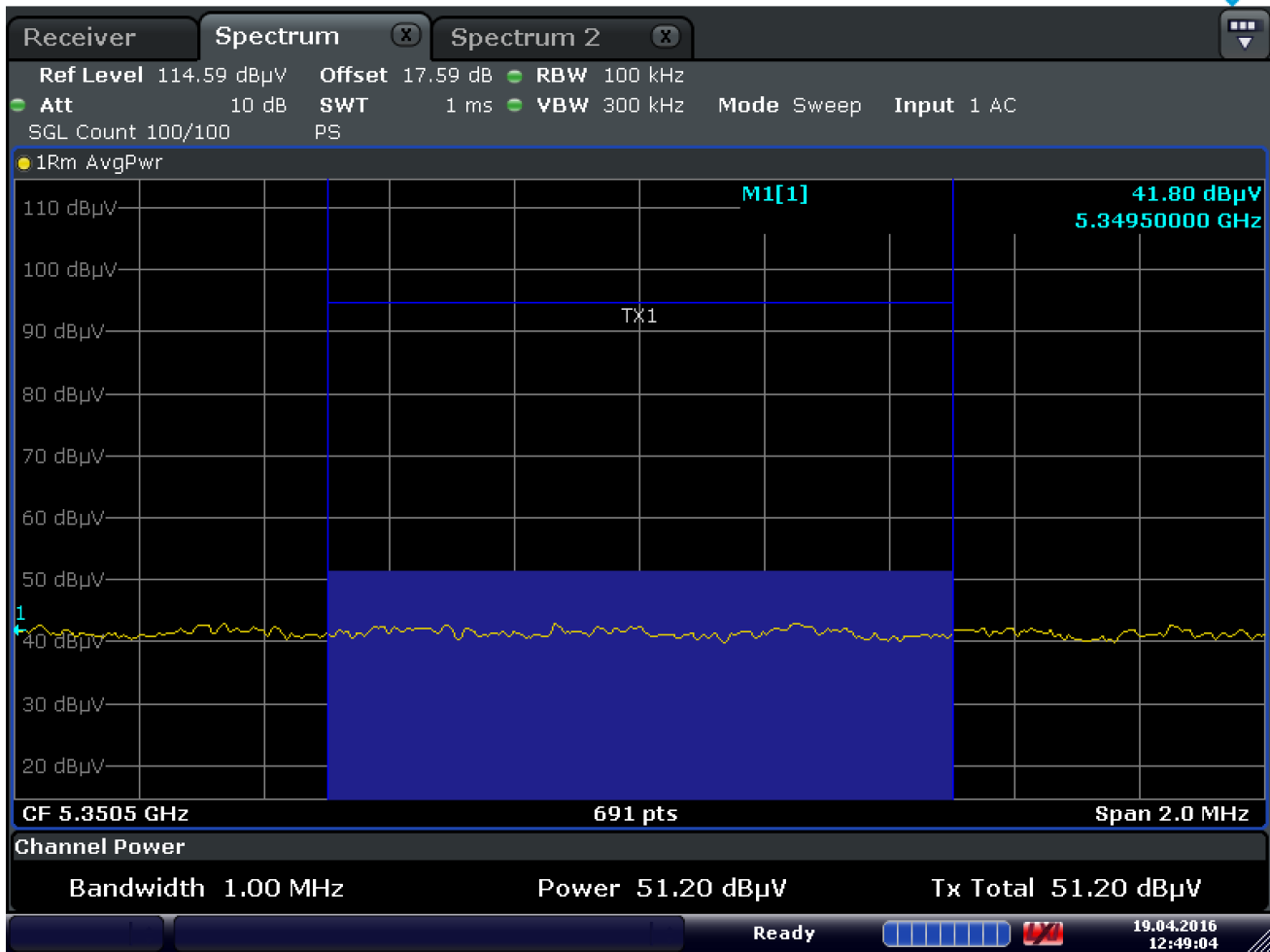
Date: 25.MAR.2016 04:59:42

Plot 7-247. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 209 of 246	

MIMO WCP Radiated Band Edge Measurements (20MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (20MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64



Date: 19.APR.2016 12:49:04

Plot 7-248. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3L5MG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset		Page 210 of 246

MIMO WCP Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



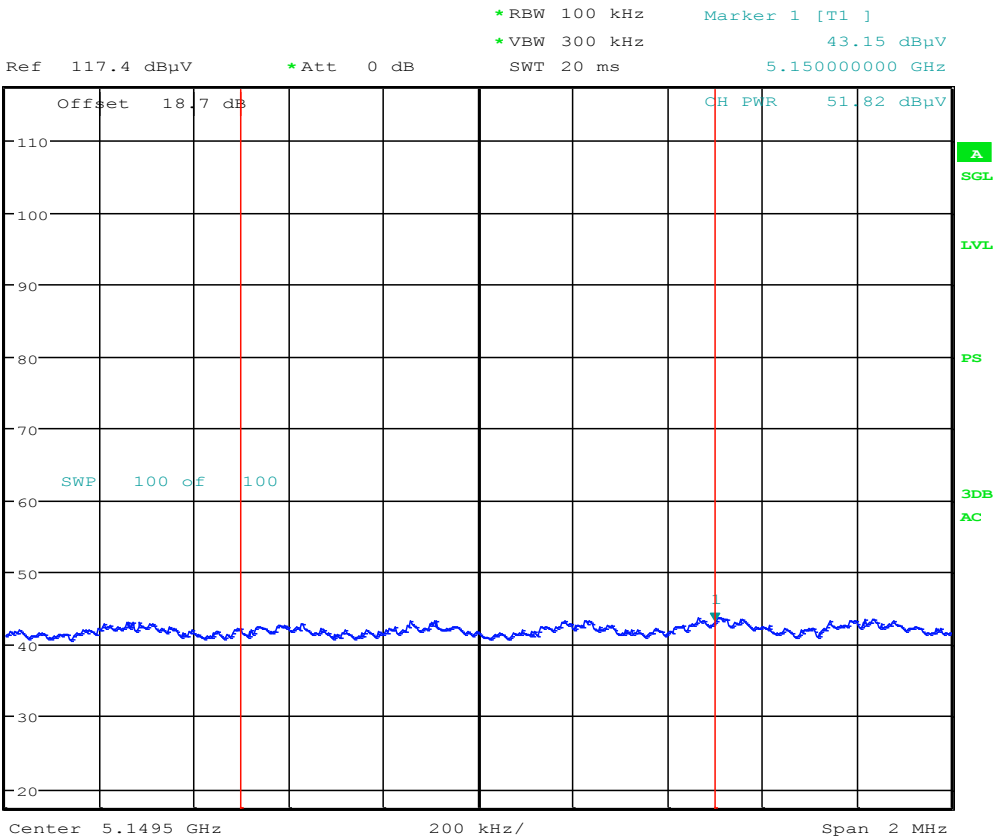
Date: 19.APR.2016 12:49:38

Plot 7-249. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 211 of 246	

7.7.11 MIMO Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5190MHz
 Channel: 38

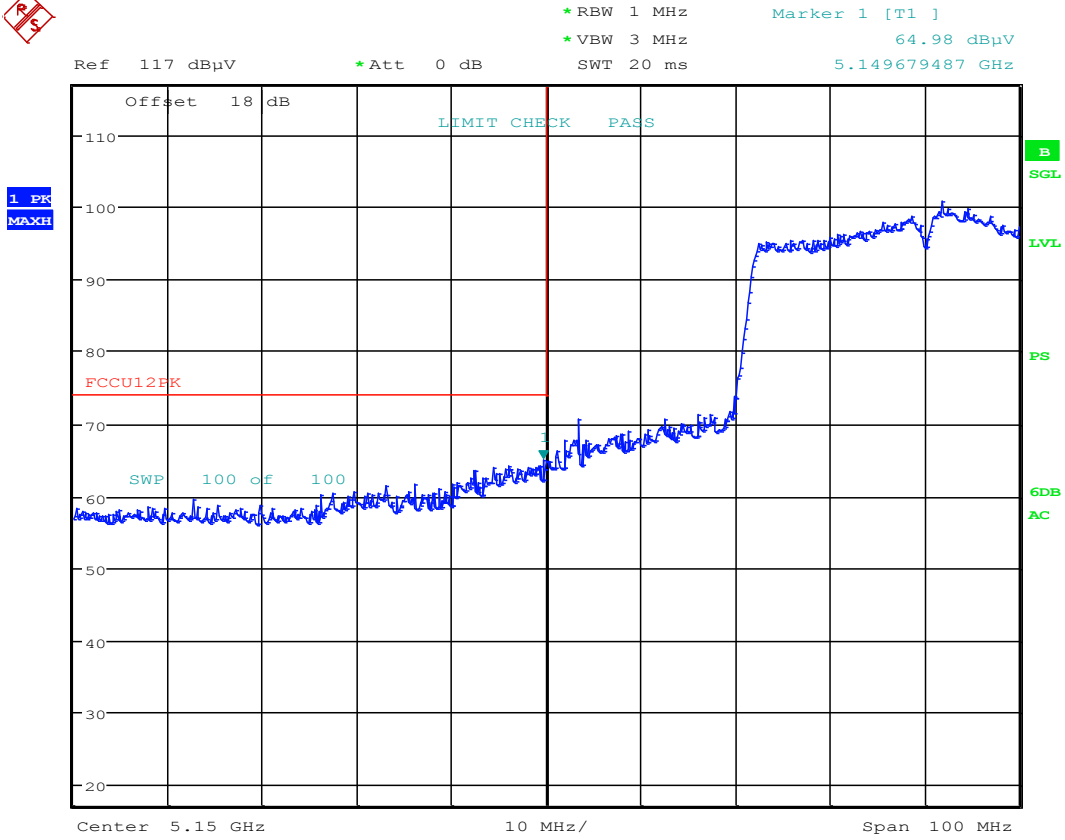


Date: 25.MAR.2016 21:23:51

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

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 212 of 246	

MIMO Radiated Band Edge Measurements (40MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209



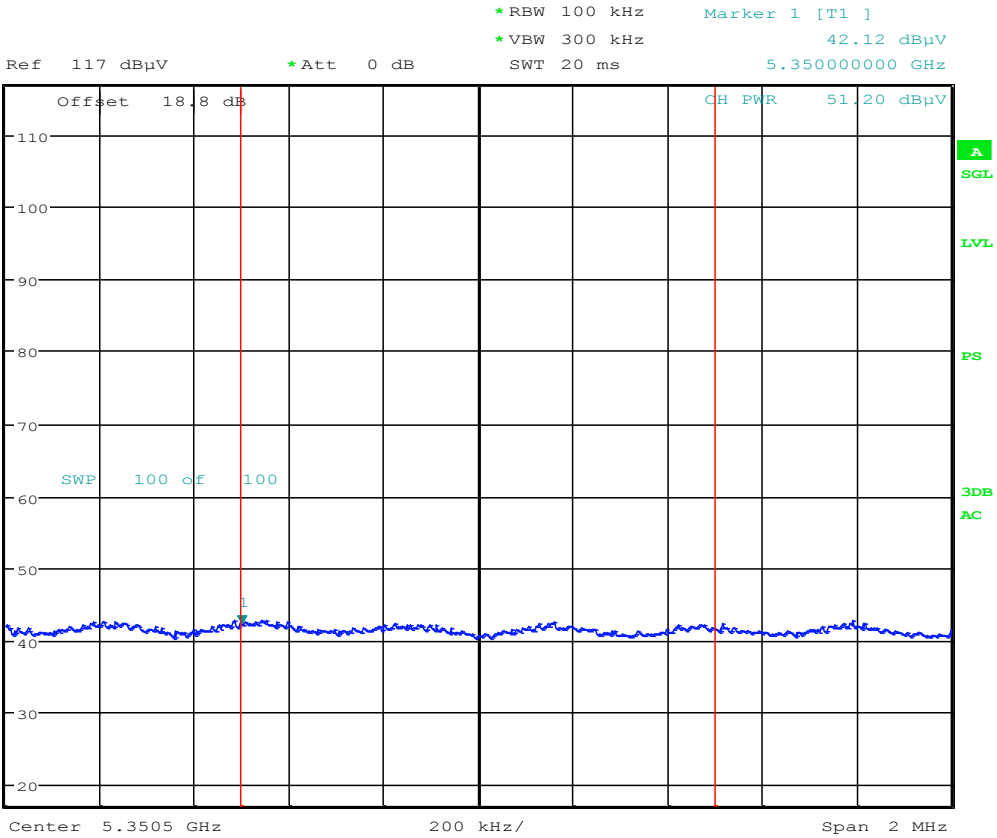
Date: 25.MAR.2016 21:24:41

Plot 7-251. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 213 of 246	

MIMO Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5310MHz
 Channel: 62

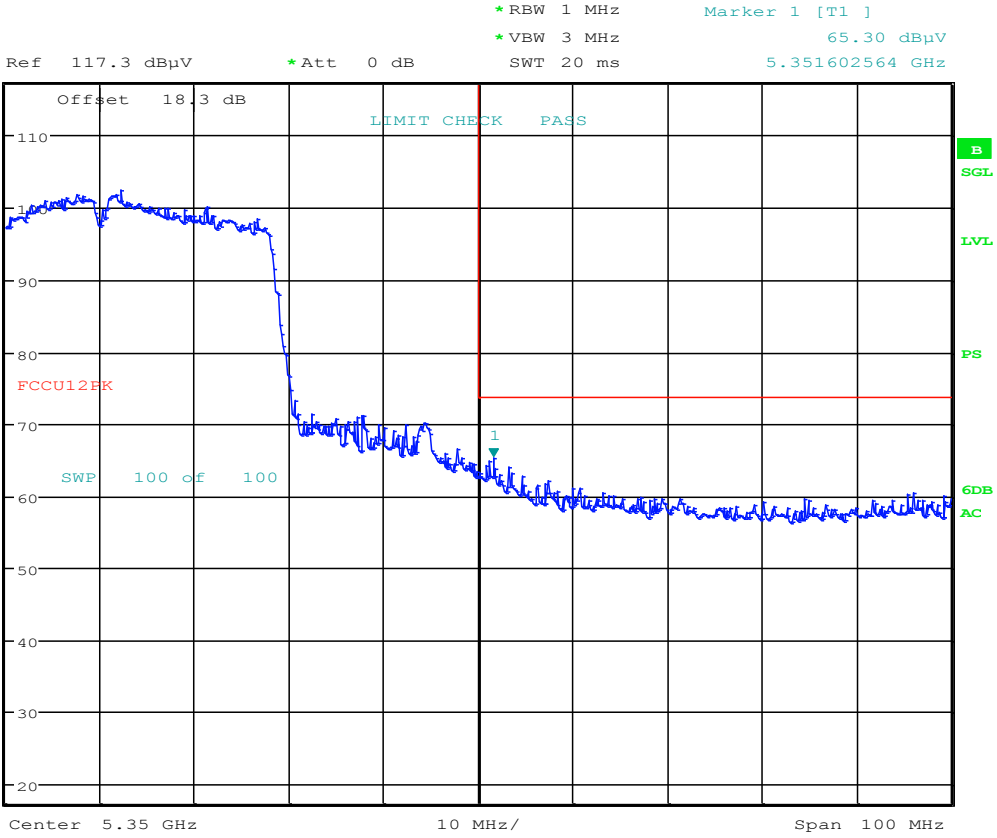


Date: 25.MAR.2016 21:59:39

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

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 214 of 246	

MIMO Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



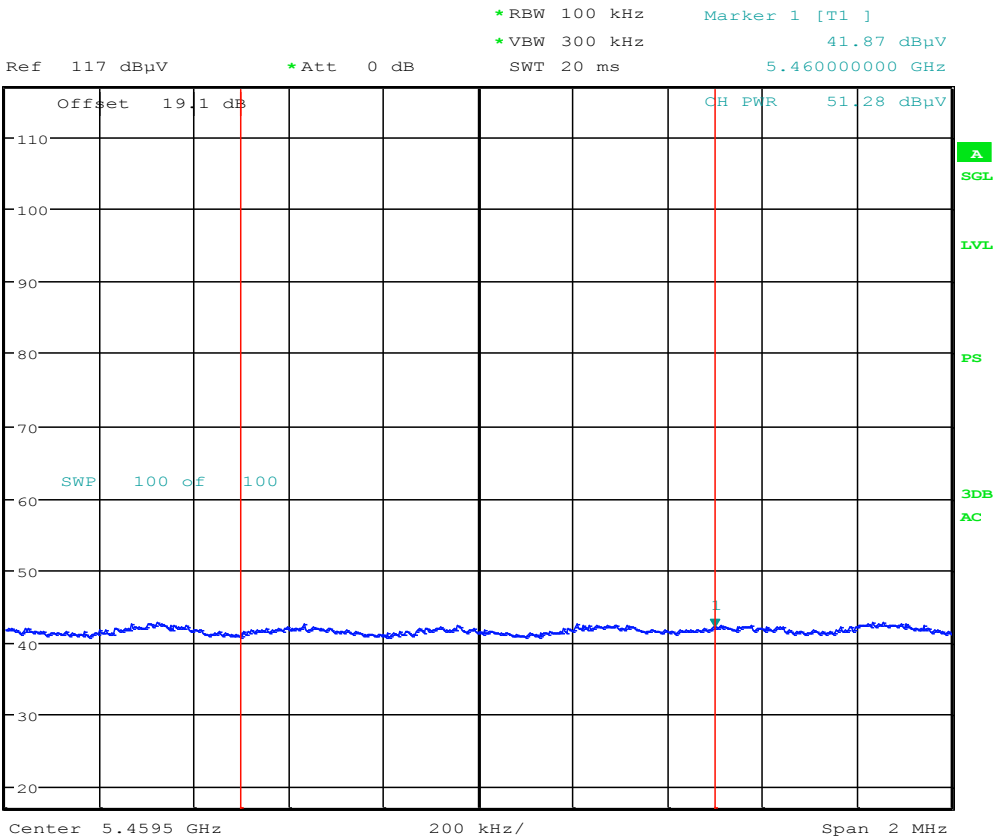
Date: 25.MAR.2016 22:00:03

Plot 7-253. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 215 of 246	

MIMO Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5510MHz
 Channel: 102

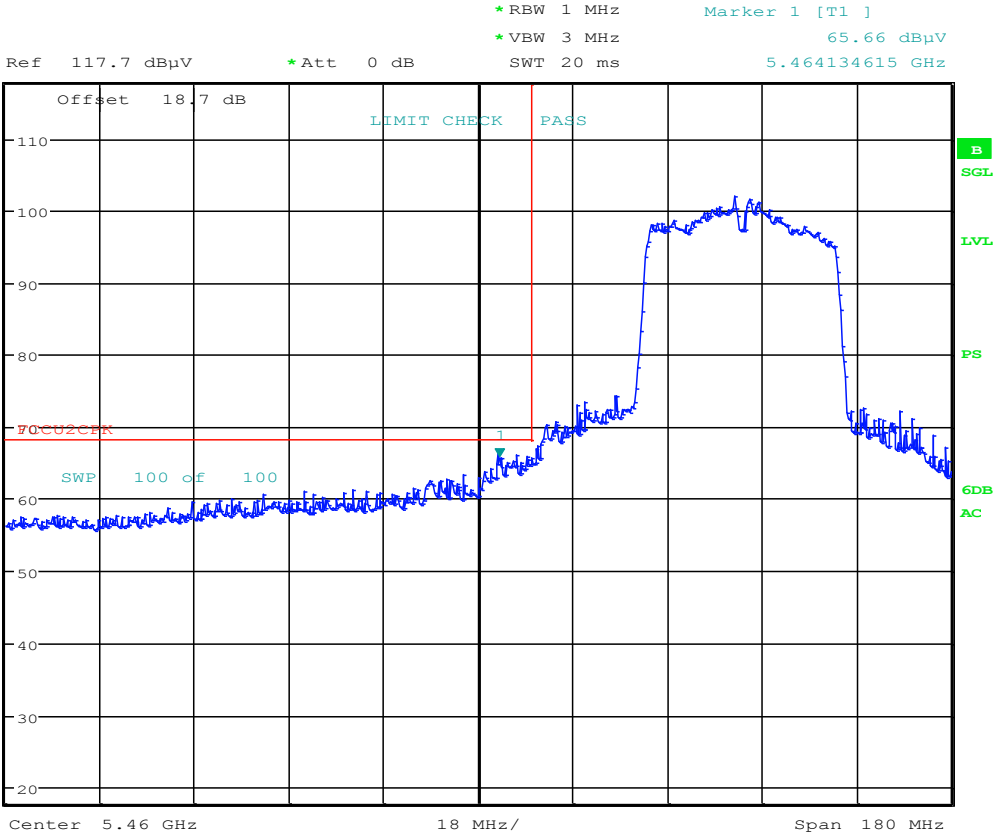


Date: 25.MAR.2016 22:36:12

Plot 7-254. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 216 of 246	

MIMO Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



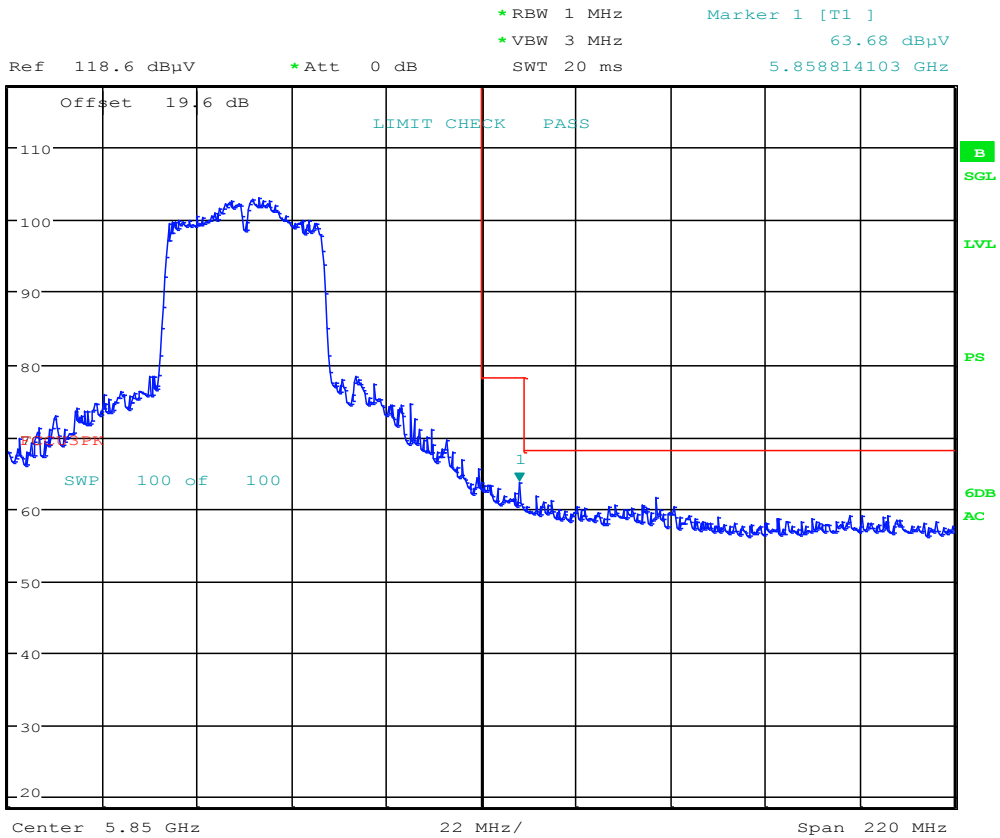
Date: 25.MAR.2016 22:42:11

Plot 7-255. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 217 of 246	

MIMO Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
 Worst Case Transfer Rate: MCS8
 Distance of Measurements: 3 Meters
 Operating Frequency: 5795MHz
 Channel: 159



Date: 25.MAR.2016 23:08:27

Plot 7-256. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 218 of 246	

MIMO WCP Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

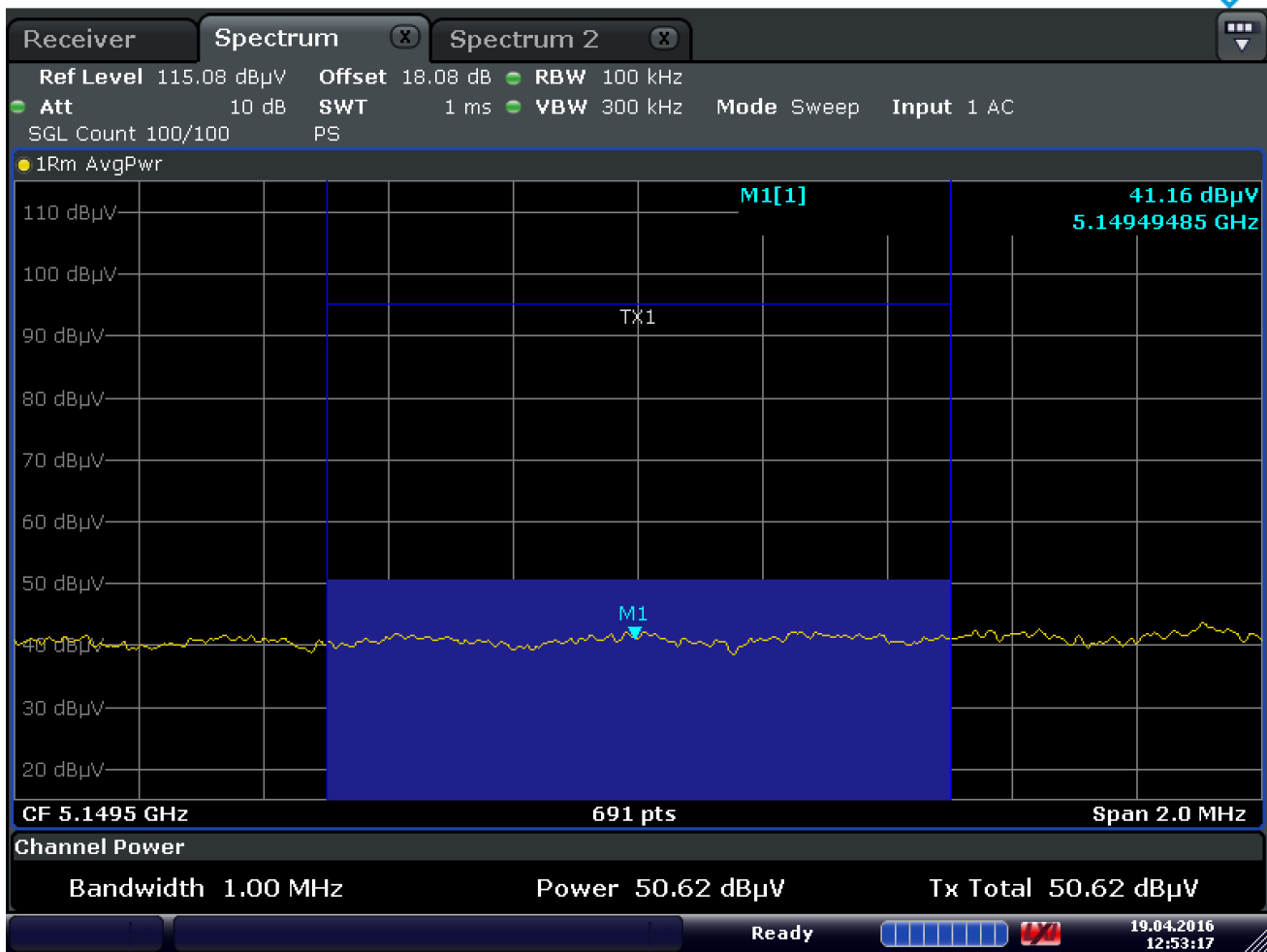
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38



Date: 19.APR.2016 12:53:17

Plot 7-257. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset		Page 219 of 246

MIMO WCP Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



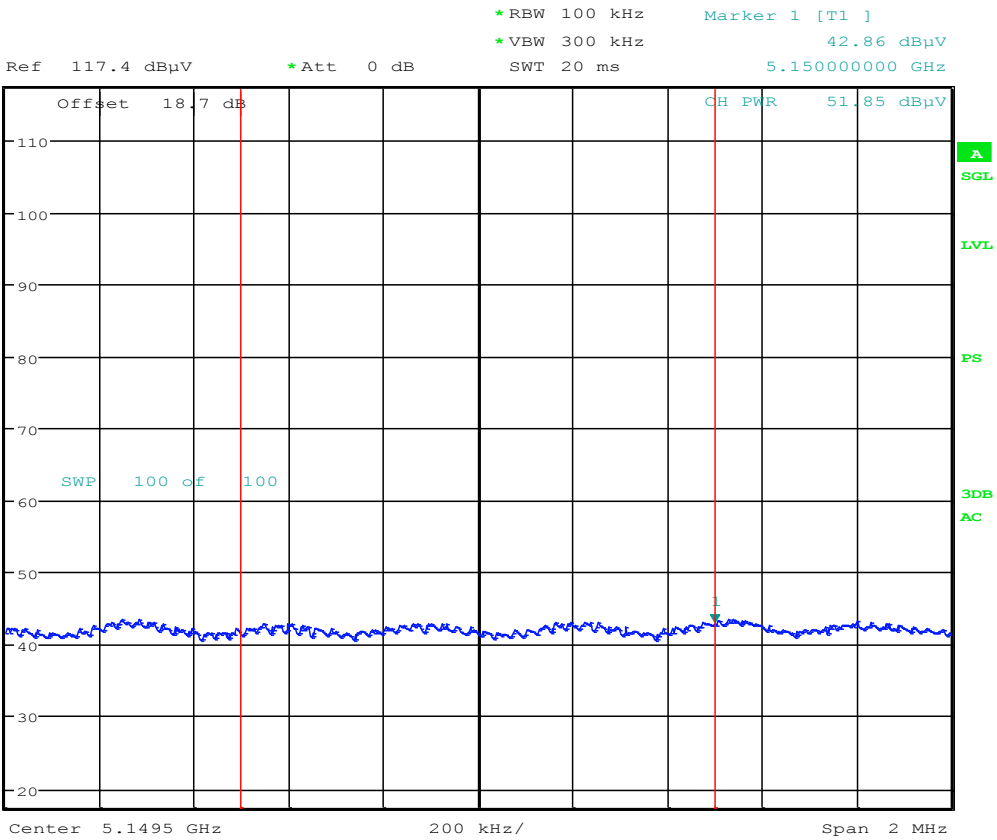
Date: 19.APR.2016 12:41:38

Plot 7-258. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 220 of 246	

7.7.12 MIMO Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5210MHz
 Channel: 42

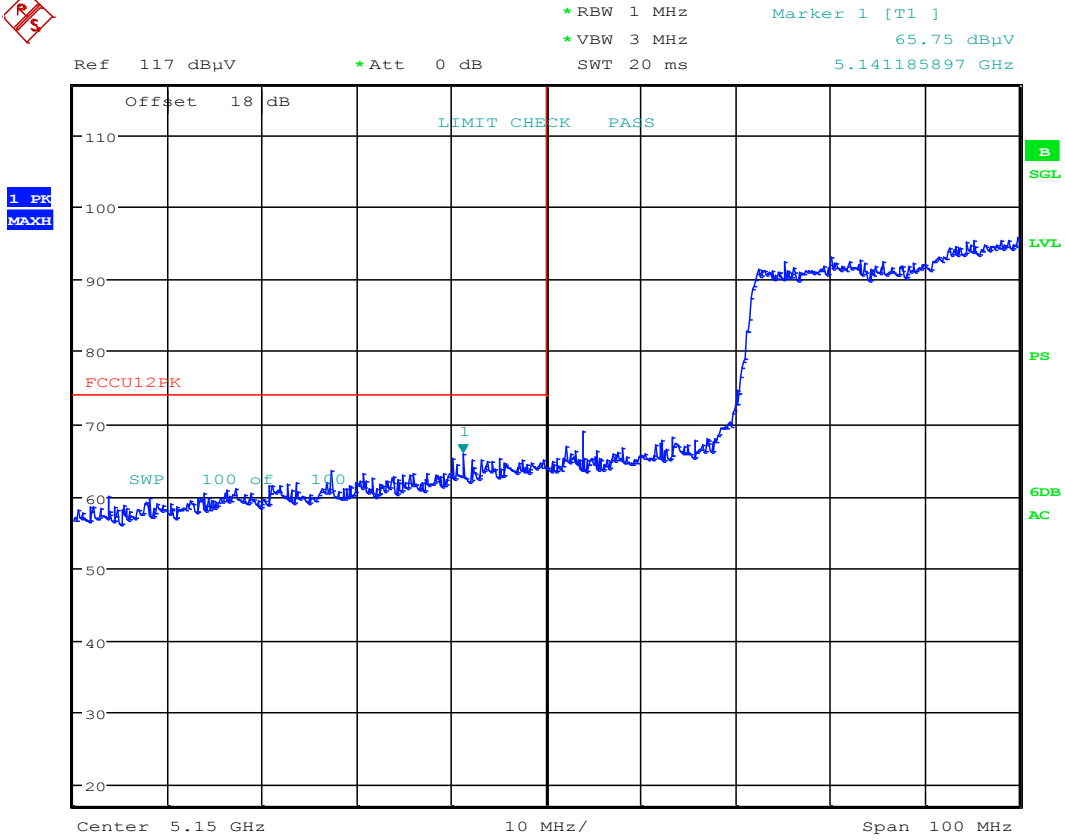


Date: 25.MAR.2016 21:50:25

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

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 221 of 246	

MIMO Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209



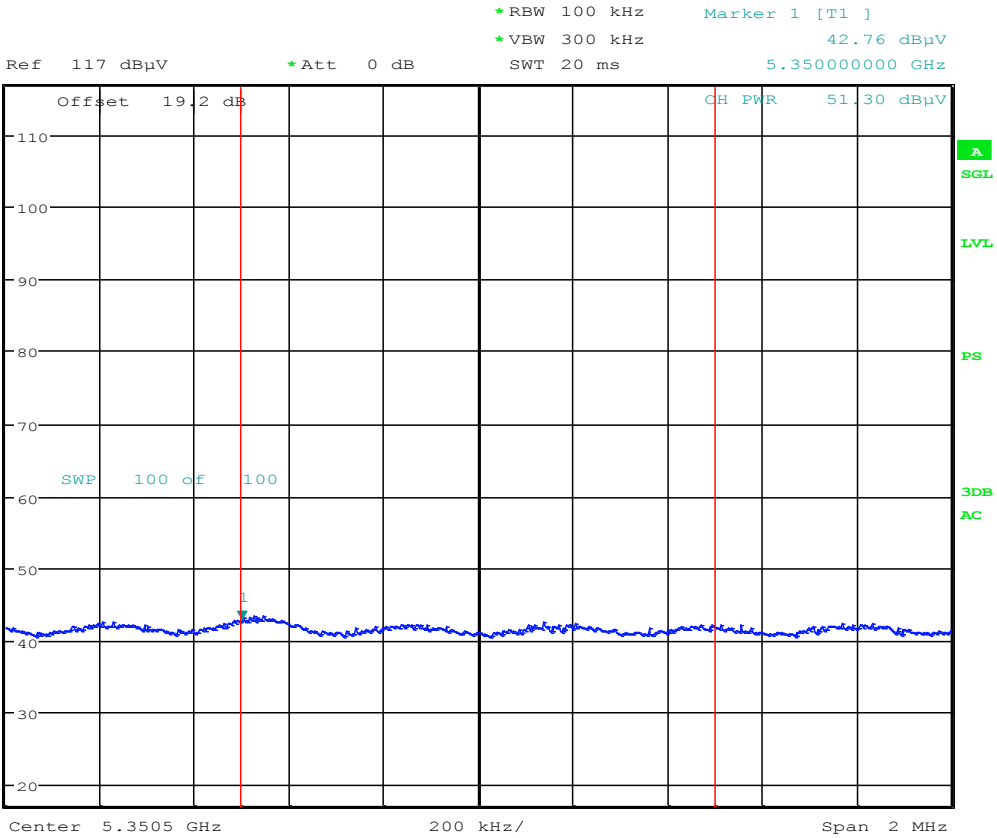
Date: 25.MAR.2016 21:50:43

Plot 7-260. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 222 of 246	

MIMO Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5290MHz
 Channel: 58

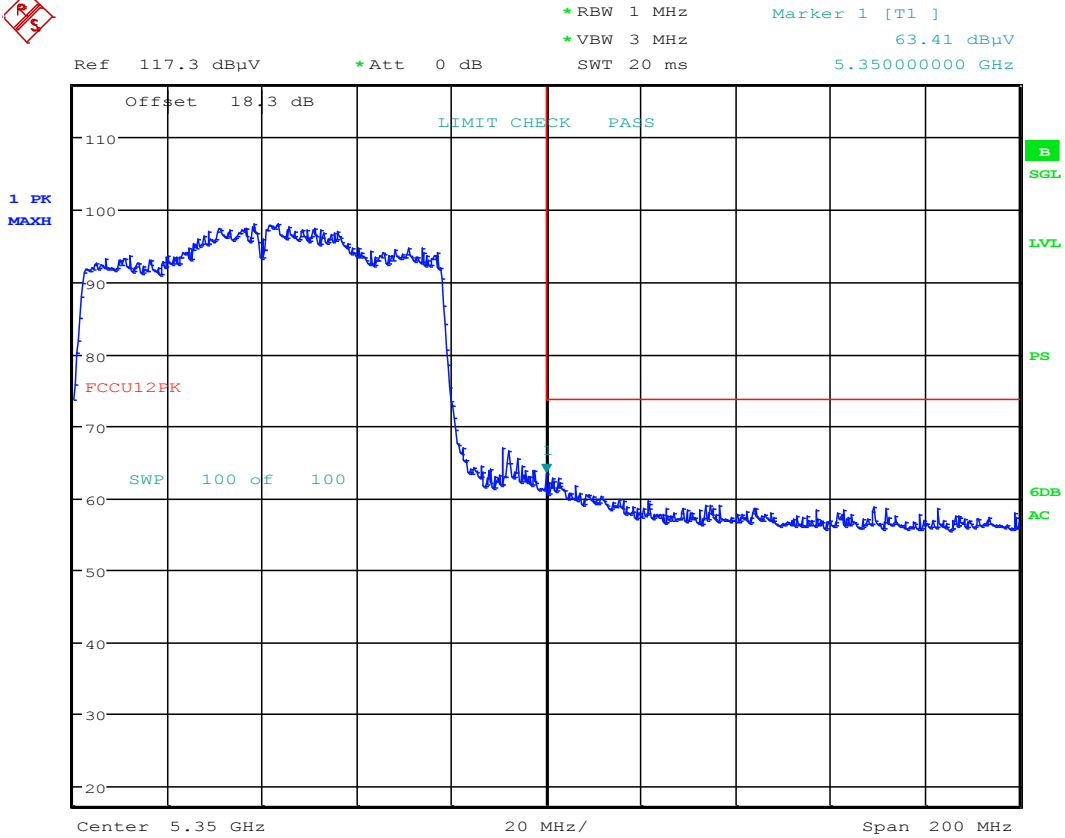


Date: 25.MAR.2016 22:28:27

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

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 223 of 246	

MIMO Radiated Band Edge Measurements (80MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209



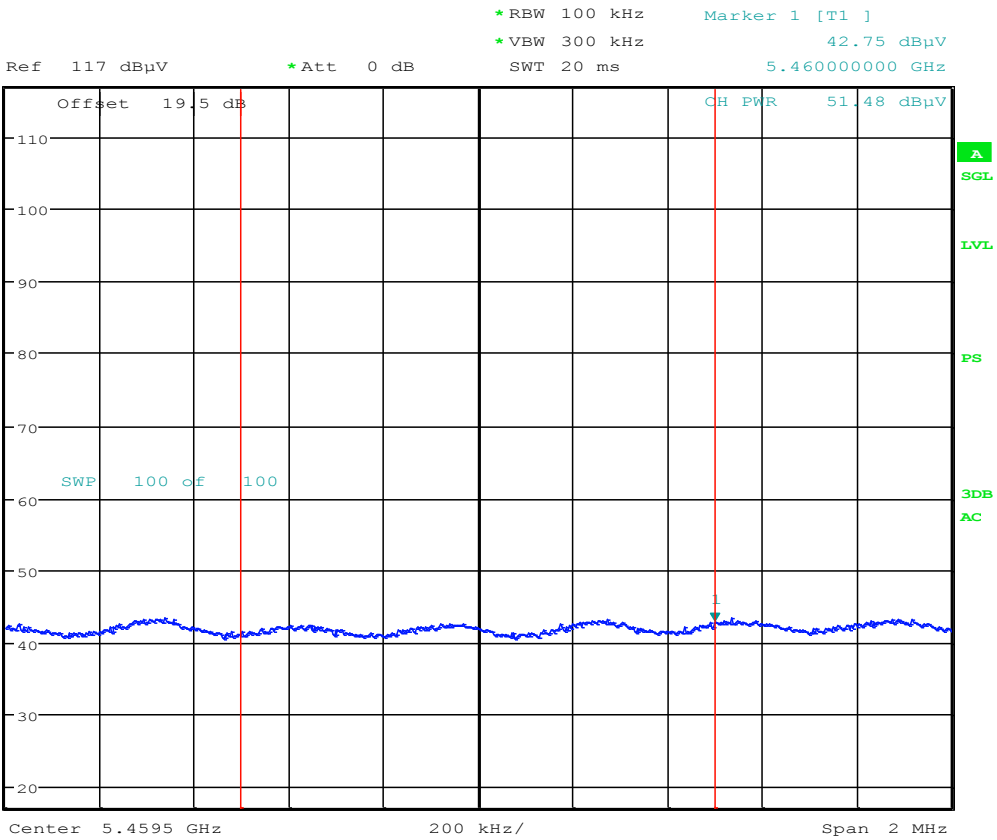
Date: 25.MAR.2016 22:29:03

Plot 7-262. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 224 of 246	

MIMO Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5530MHz
 Channel: 106

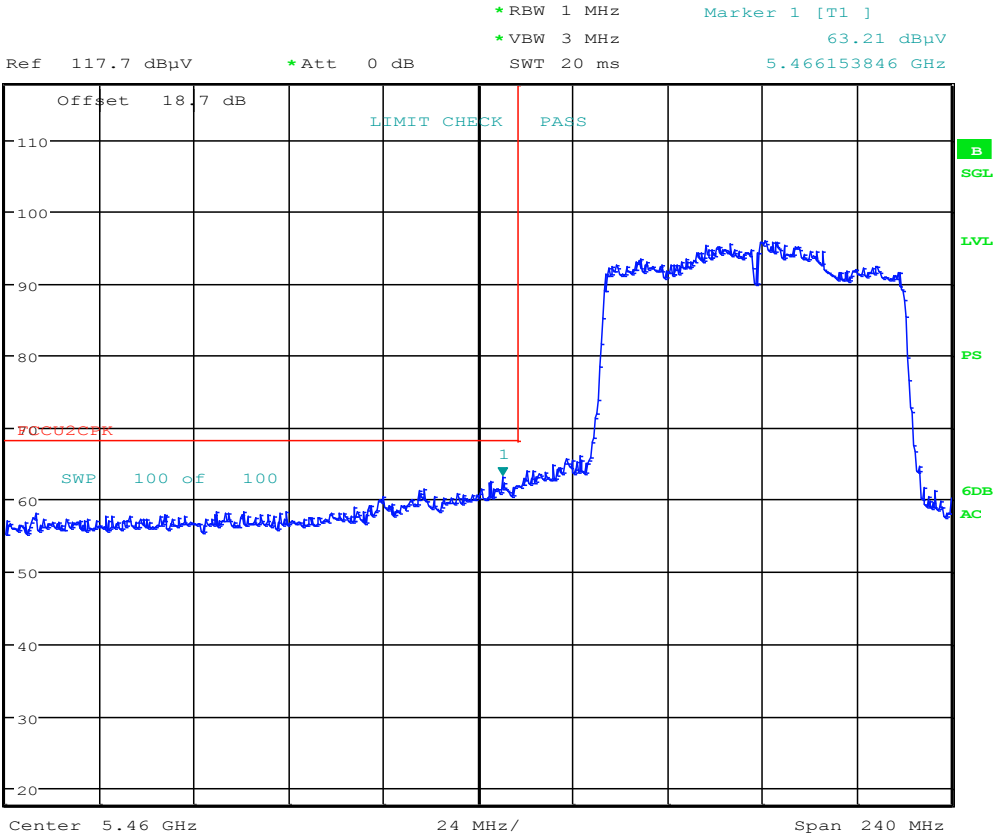


Date: 25.MAR.2016 22:49:10

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



FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 225 of 246	

MIMO Radiated Band Edge Measurements (80MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209



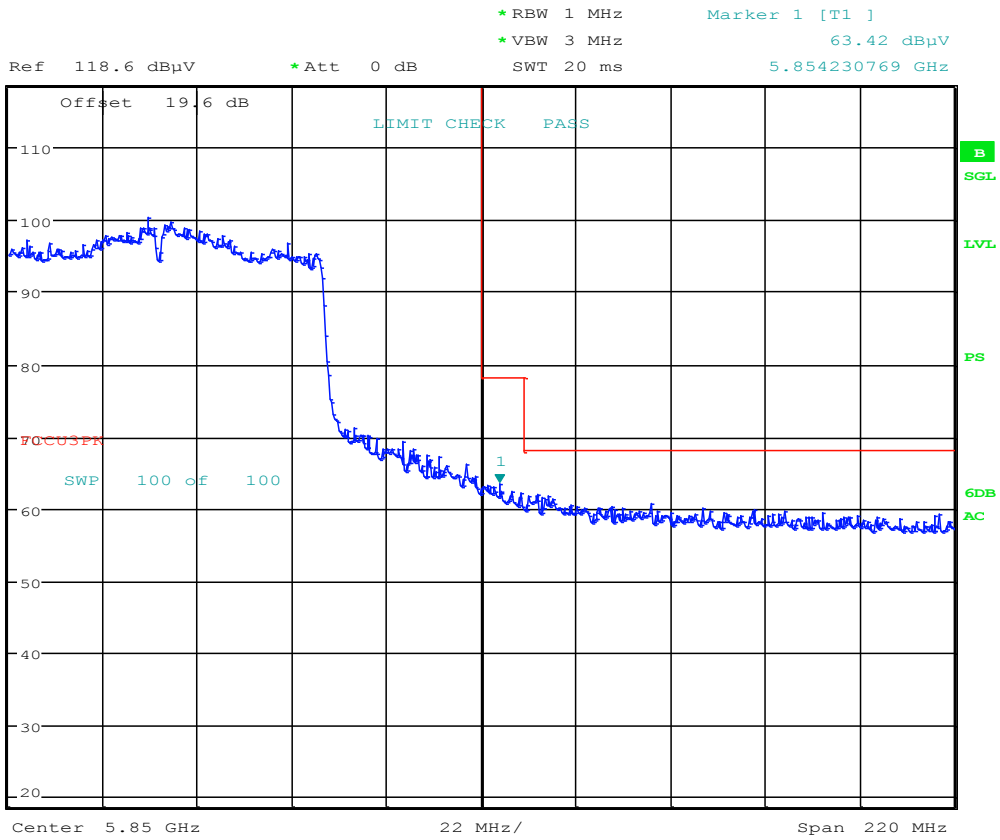
Date: 25.MAR.2016 22:49:55

Plot 7-264. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 226 of 246	

MIMO Radiated Band Edge Measurements (80MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
 Worst Case Transfer Rate: MCS0
 Distance of Measurements: 3 Meters
 Operating Frequency: 5775MHz
 Channel: 155



Date: 25.MAR.2016 23:06:49

Plot 7-265. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset		Page 227 of 246

MIMO WCP Radiated Band Edge Measurements (80MHz BW)

\$15.407(b.1)(b.2) \$15.205 \$15.209

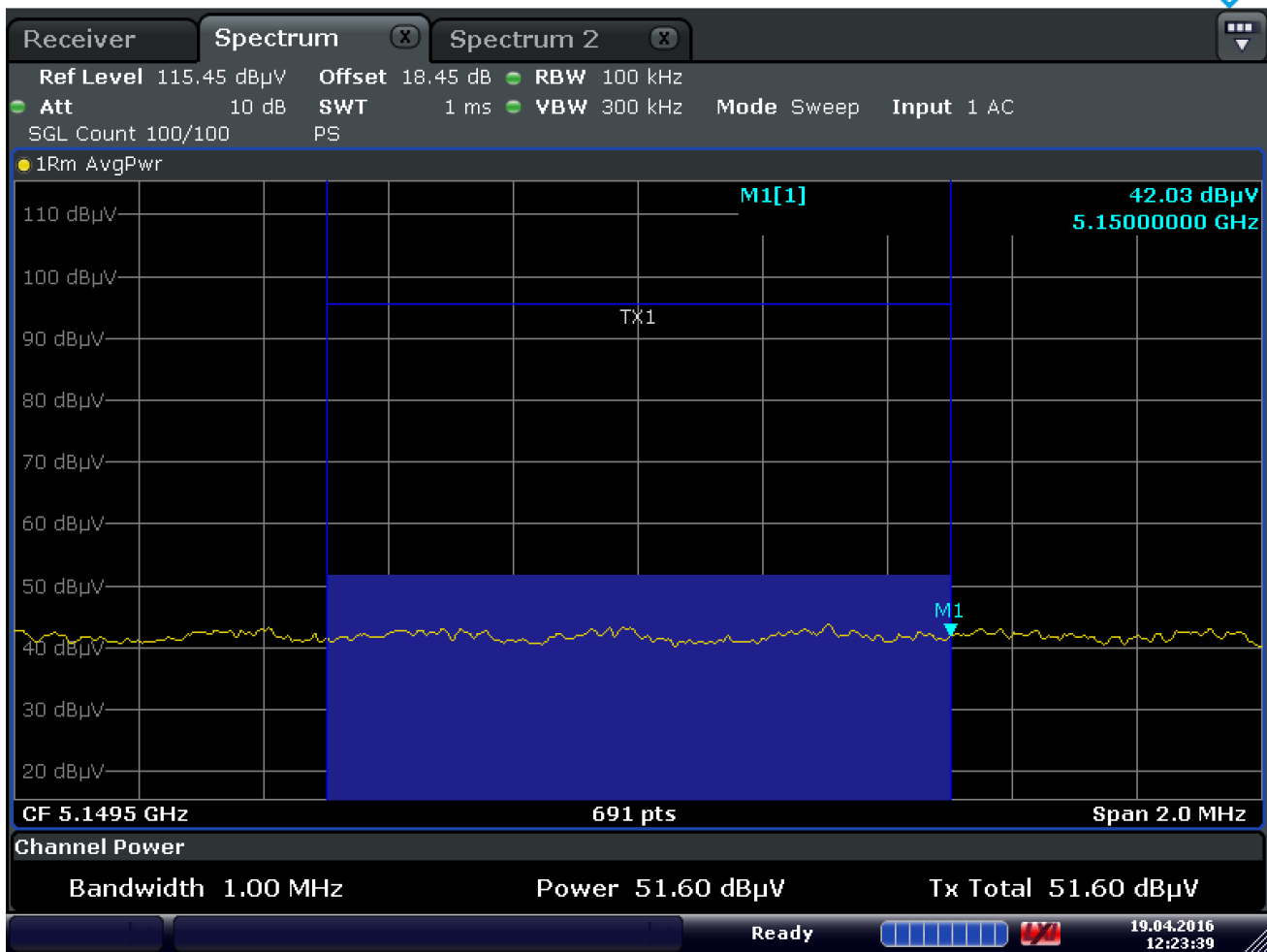
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42



Date: 19.APR.2016 12:23:39

Plot 7-266. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset		Page 228 of 246

MIMO WCP Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 19.APR.2016 12:26:28

Plot 7-267. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 229 of 246	

7.8 Radiated Spurious Emissions Measurements – Below 1GHz

§15.209

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 must not exceed the limits shown in Table 7-62 per Section 15.209.

Frequency	Field Strength [μ 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 7-62. Radiated Limits


Test Procedures Used

ANSI C63.4-2014

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

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Test Setup

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

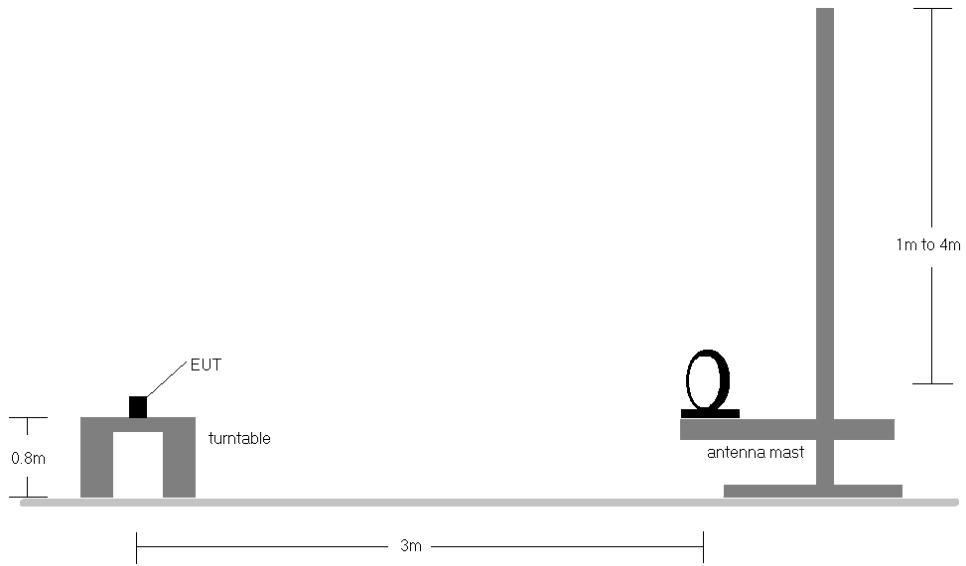


Figure 7-6. Radiated Test Setup < 30MHz

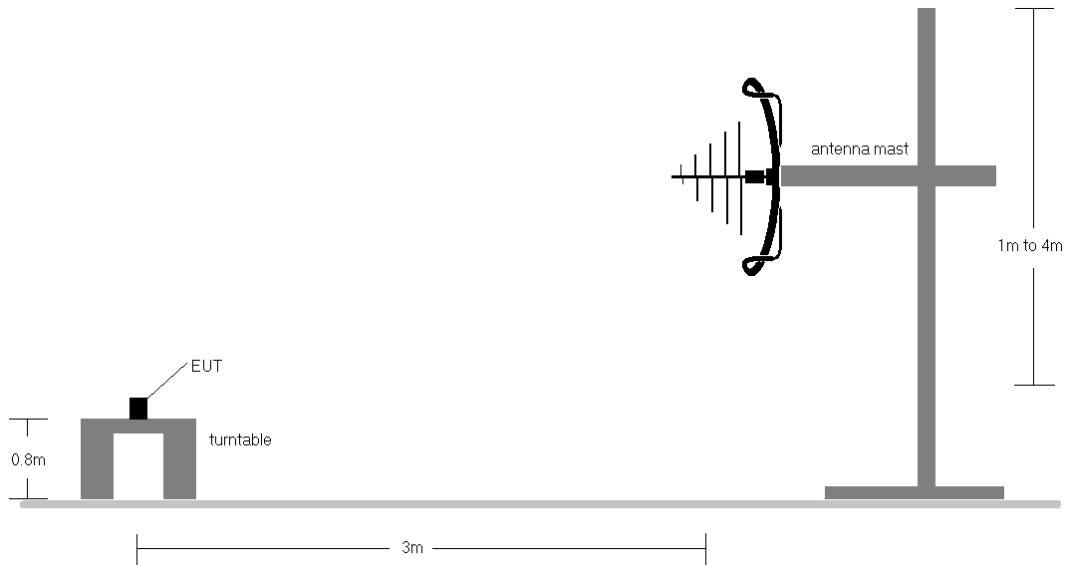




Figure 7-7. Radiated Test Setup < 1GHz

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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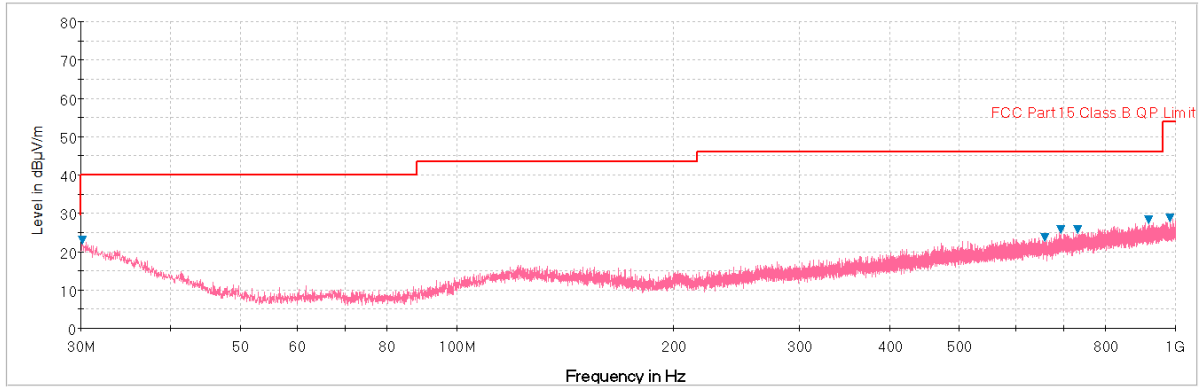
Test Notes

1. All emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 7-27.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
3. This unit was tested with its standard battery.
4. The spectrum is investigated using a peak detector and final measurements are recorded using CISPR quasi peak detector. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
5. Emissions were measured at a 3 meter test distance.
6. Emissions are investigated while operating on the center channel of the mode, band, and modulation that produced the worst case results during the transmitter spurious emissions testing.
7. No spurious emissions were detected within 20dB of the limit below 30MHz.
8. The results recorded using the broadband antenna is known to correlate with the results obtained by using a tuned dipole with an acceptable degree of accuracy. The VSWR for the measurement antenna was found to be less than 2:1.
9. The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. There were no emissions detected in the 30MHz – 1GHz frequency range, as shown in the subsequent plots.

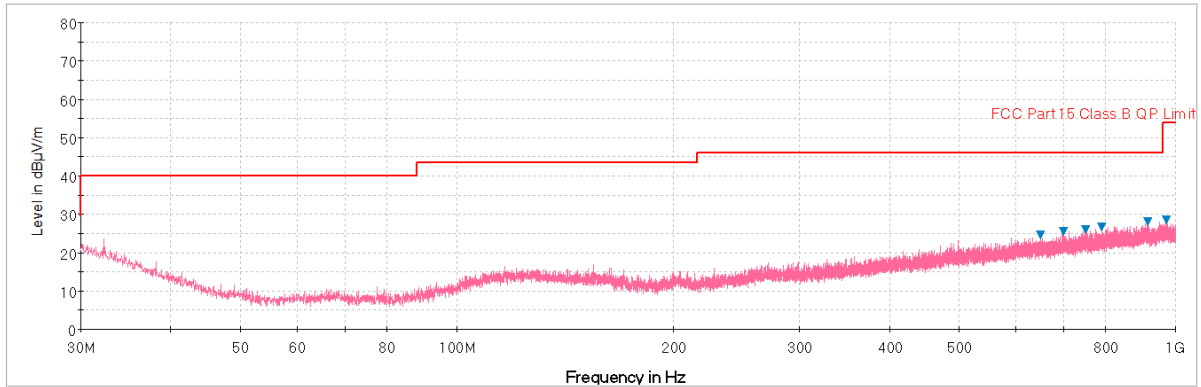
FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 232 of 246	

Antenna-1 Radiated Spurious Emissions Measurements (Below 1GHz)



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Plot 7-268. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)

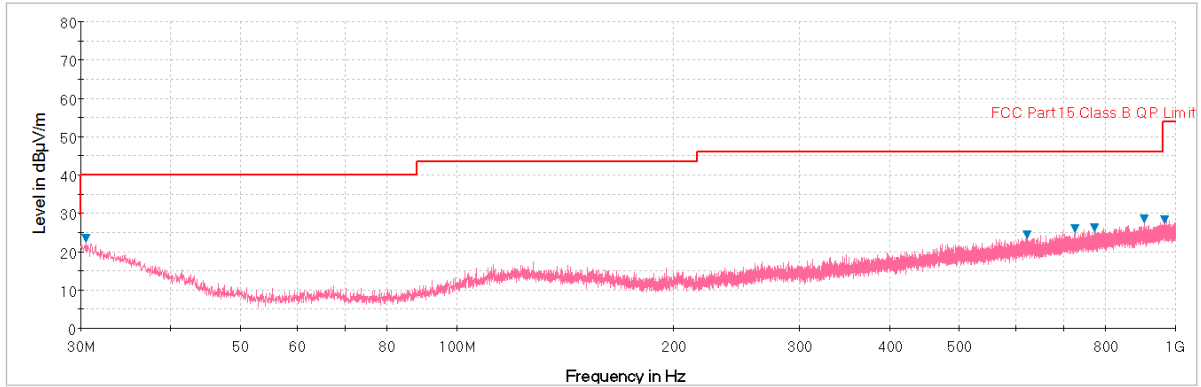


Plot 7-269. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

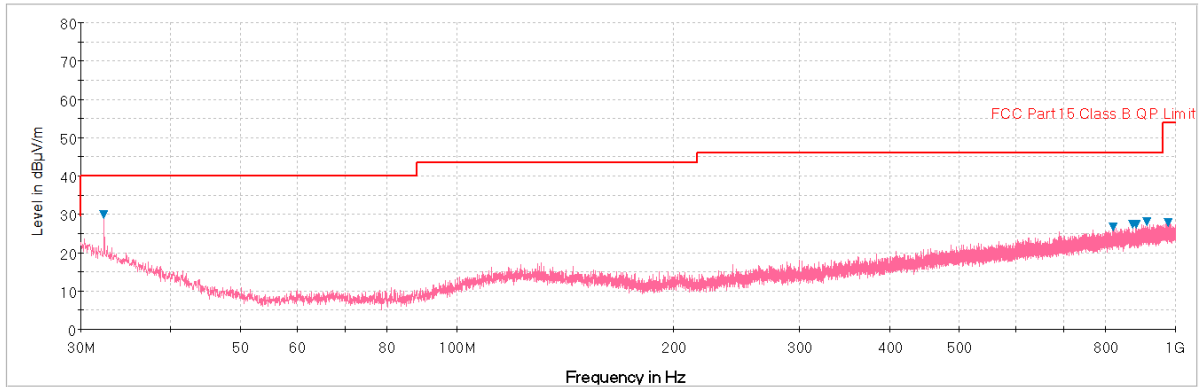
FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 233 of 246	

Antenna-2 Radiated Spurious Emissions Measurements (Below 1GHz)



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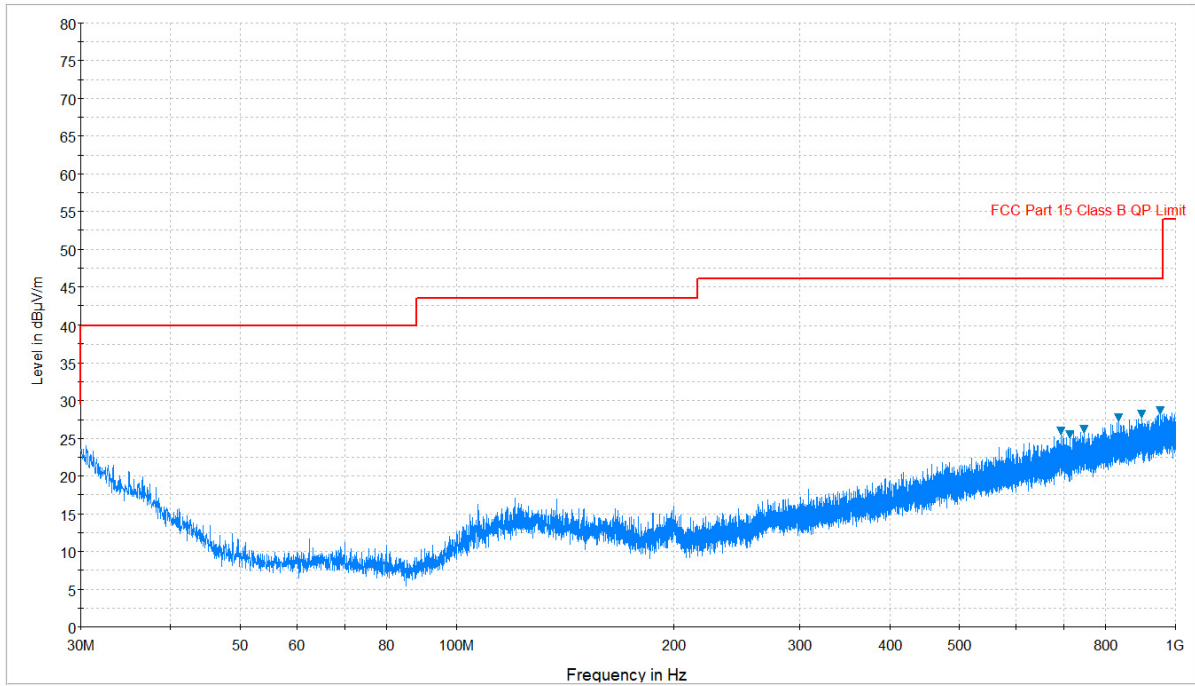
Plot 7-270. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)



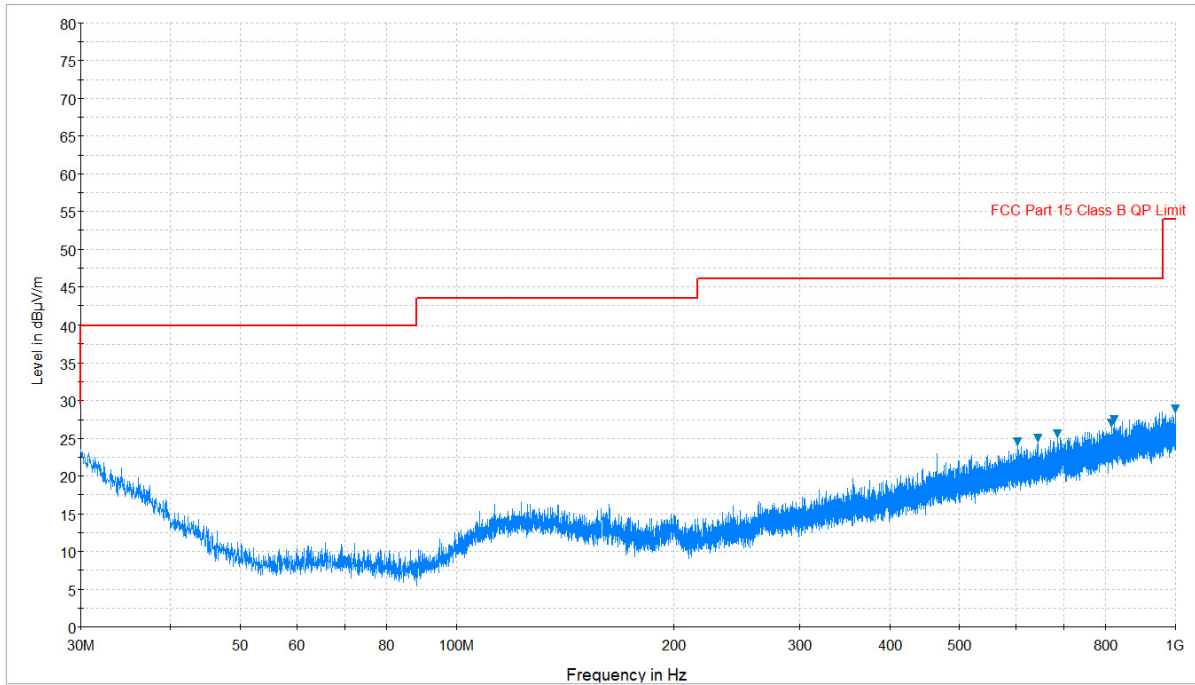
Plot 7-271. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 234 of 246	



Simultaneous Transmission Radiated Spurious Emissions Measurements (Below 1GHz) §15.209



Plot 7-272. Radiated Spurious Plot below 1GHz (2.4GHz – 5GHz, Ant. Pol. H)



Plot 7-273. Radiated Spurious Plot below 1GHz (2.4GHz – 5GHz, Ant. Pol. V)

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/192016	EUT Type: Portable Handset	Page 235 of 246	

7.9 Line-Conducted Test Data

§15.407

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.

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 7-63. 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.

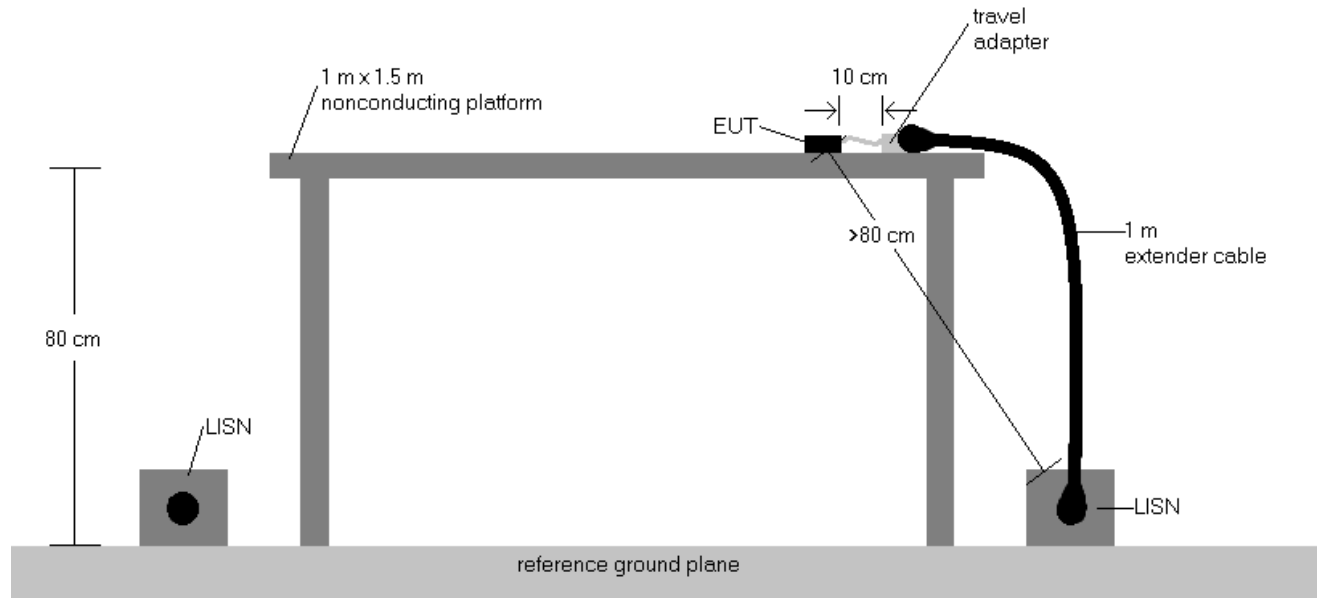




Figure 7-8. Test Instrument & Measurement Setup

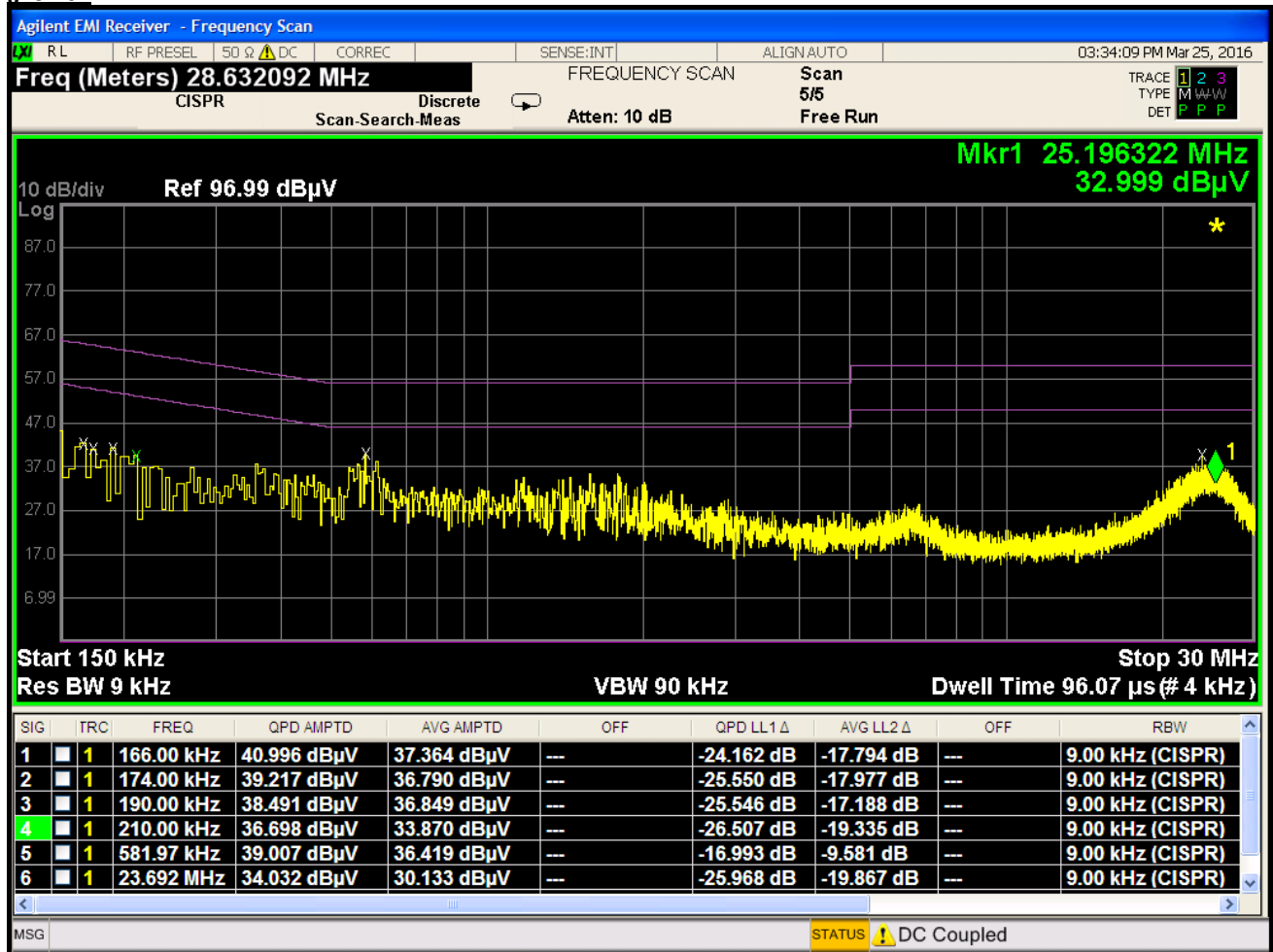
Test Notes

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.
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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Line-Conducted Test Data

\$15.407

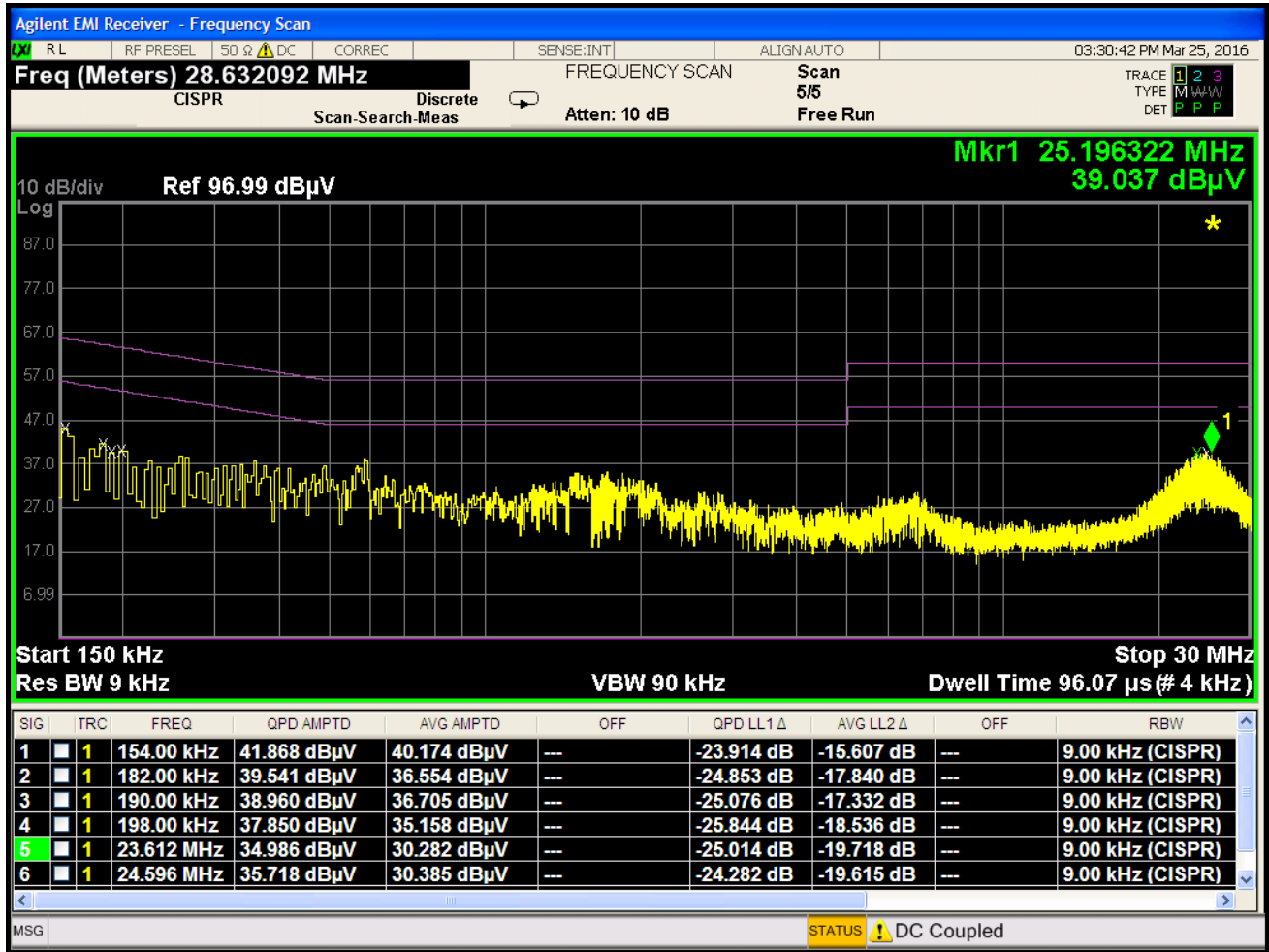


Plot 7-274. Line Conducted Plot with 802.11a UNII Band 1 (L1)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset		Page 238 of 246

Line-Conducted Test Data

\$15.407

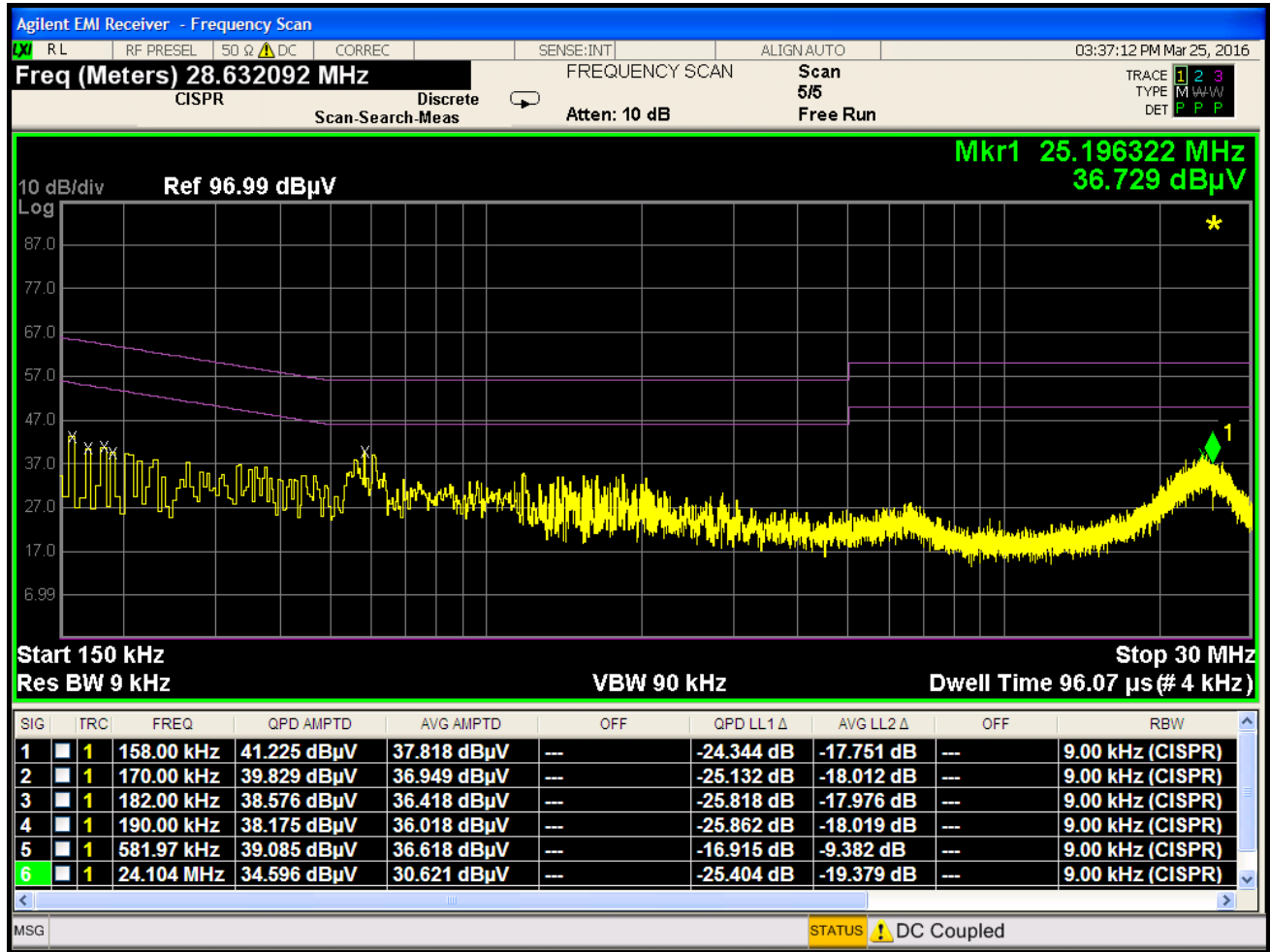


Plot 7-275. Line Conducted Plot with 802.11a UNII Band 1 (N)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1603220564.A3L	Test Dates: 3/22 - 4/19/2016	EUT Type: Portable Handset	Page 239 of 246	

Line-Conducted Test Data

\$15.407

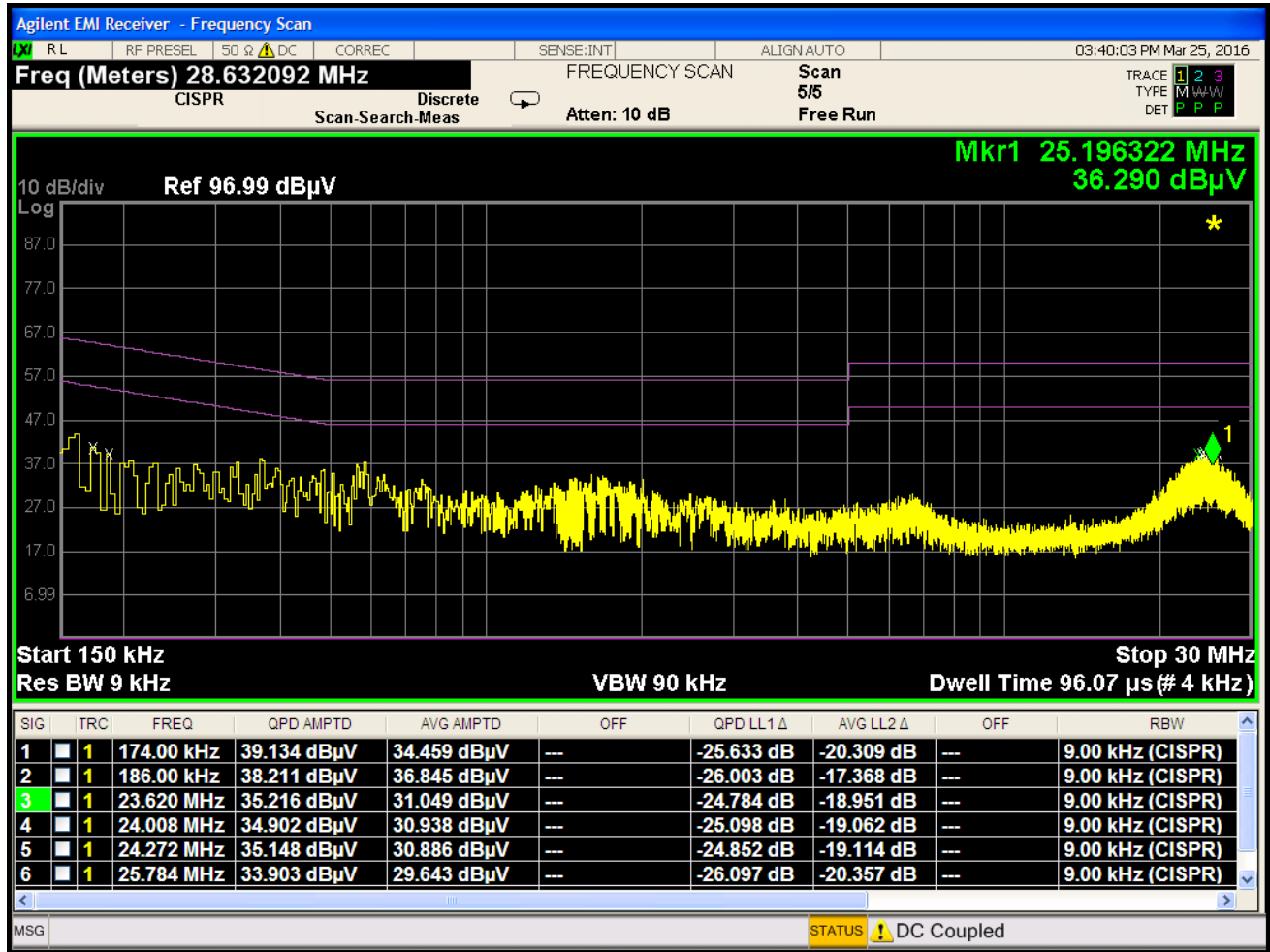


Plot 7-276. Line Conducted Plot with 802.11a UNII Band 2A (L1)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Line-Conducted Test Data

\$15.407

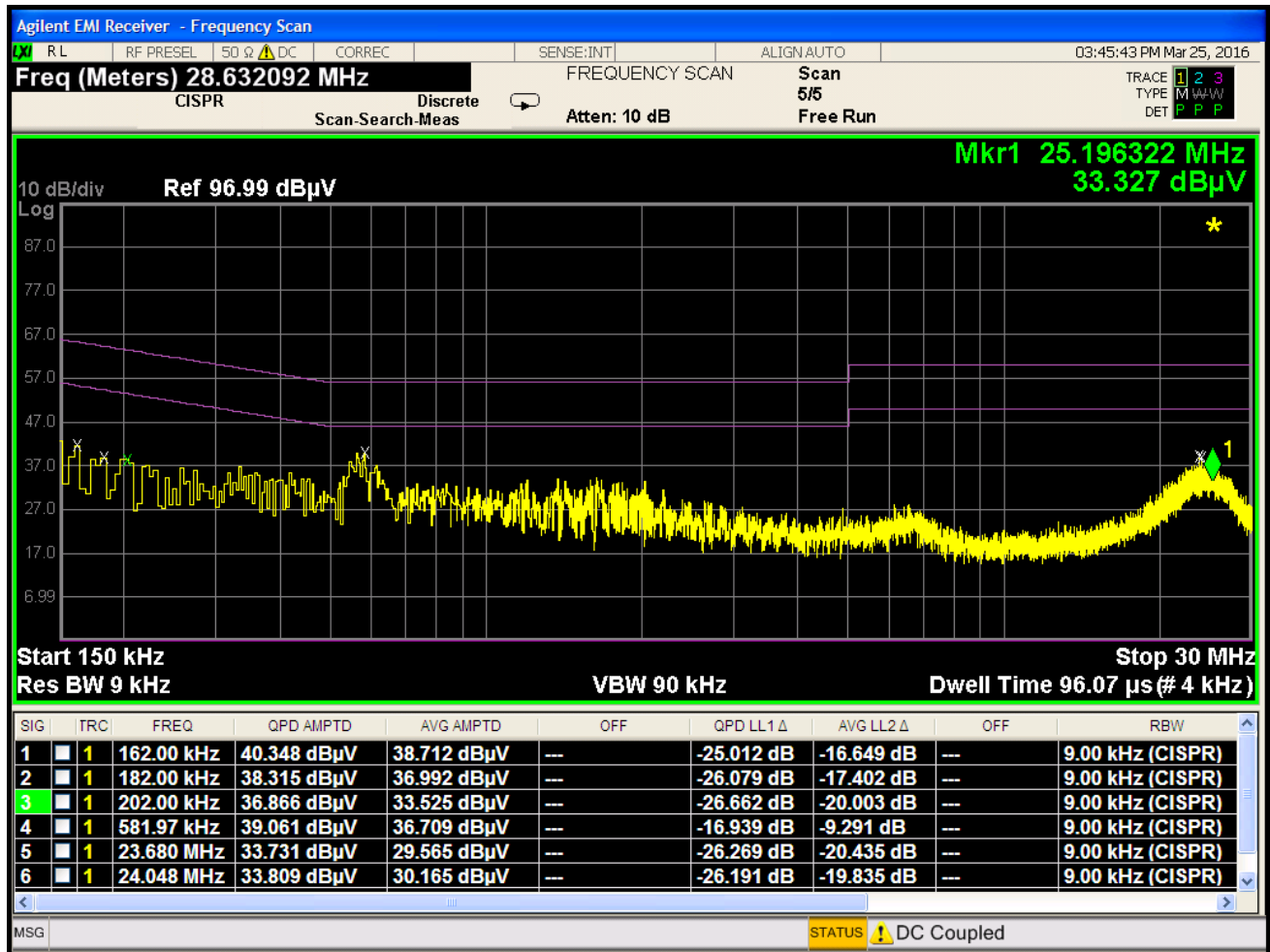


Plot 7-277. Line Conducted Plot with 802.11a UNII Band 2A (N)

FCC ID: A3L5MG891A		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Line-Conducted Test Data

\$15.407

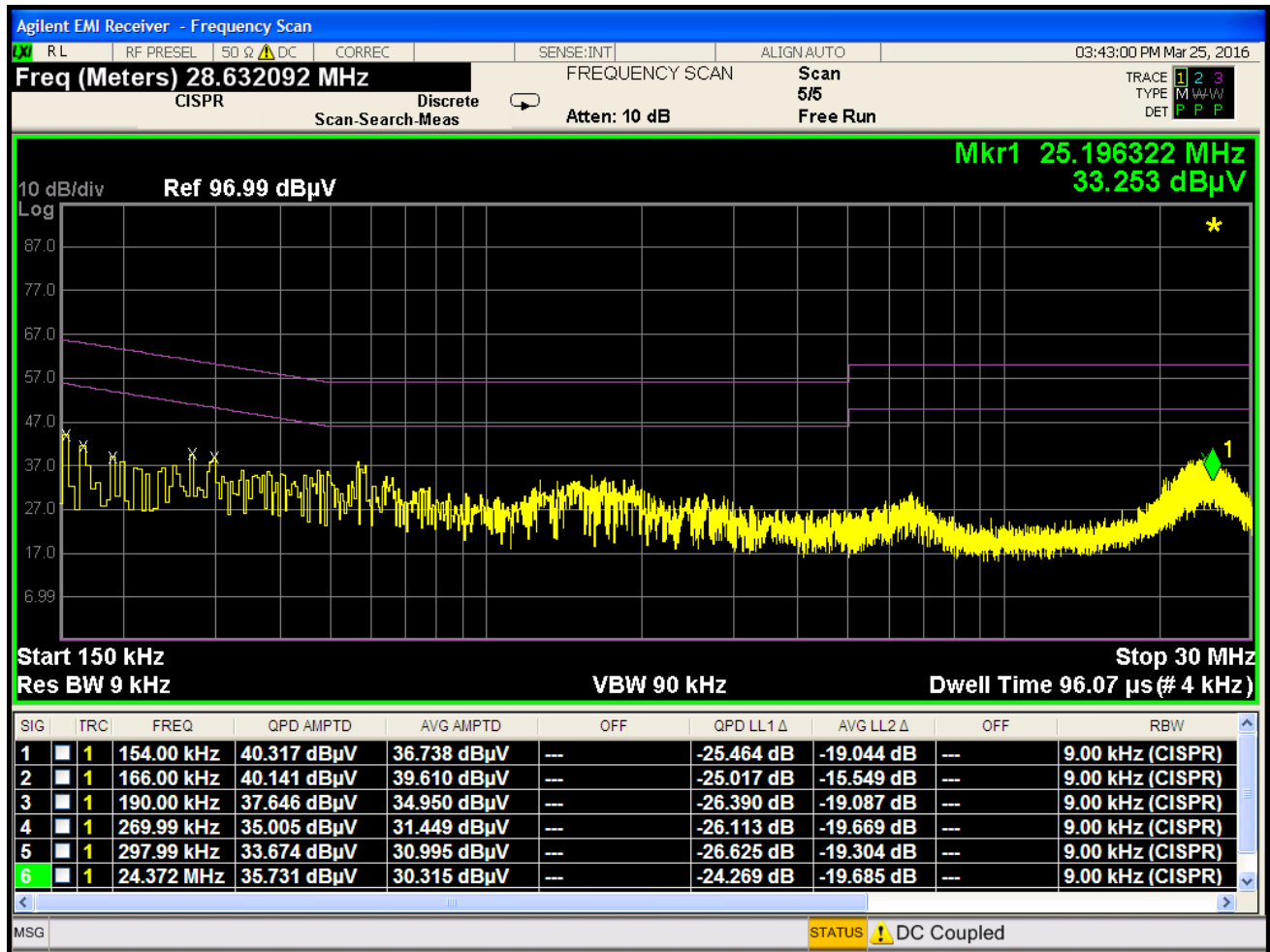


Plot 7-278. Line Conducted Plot with 802.11a UNII Band 2C (L1)

FCC ID: A3L5MG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Line-Conducted Test Data

\$15.407

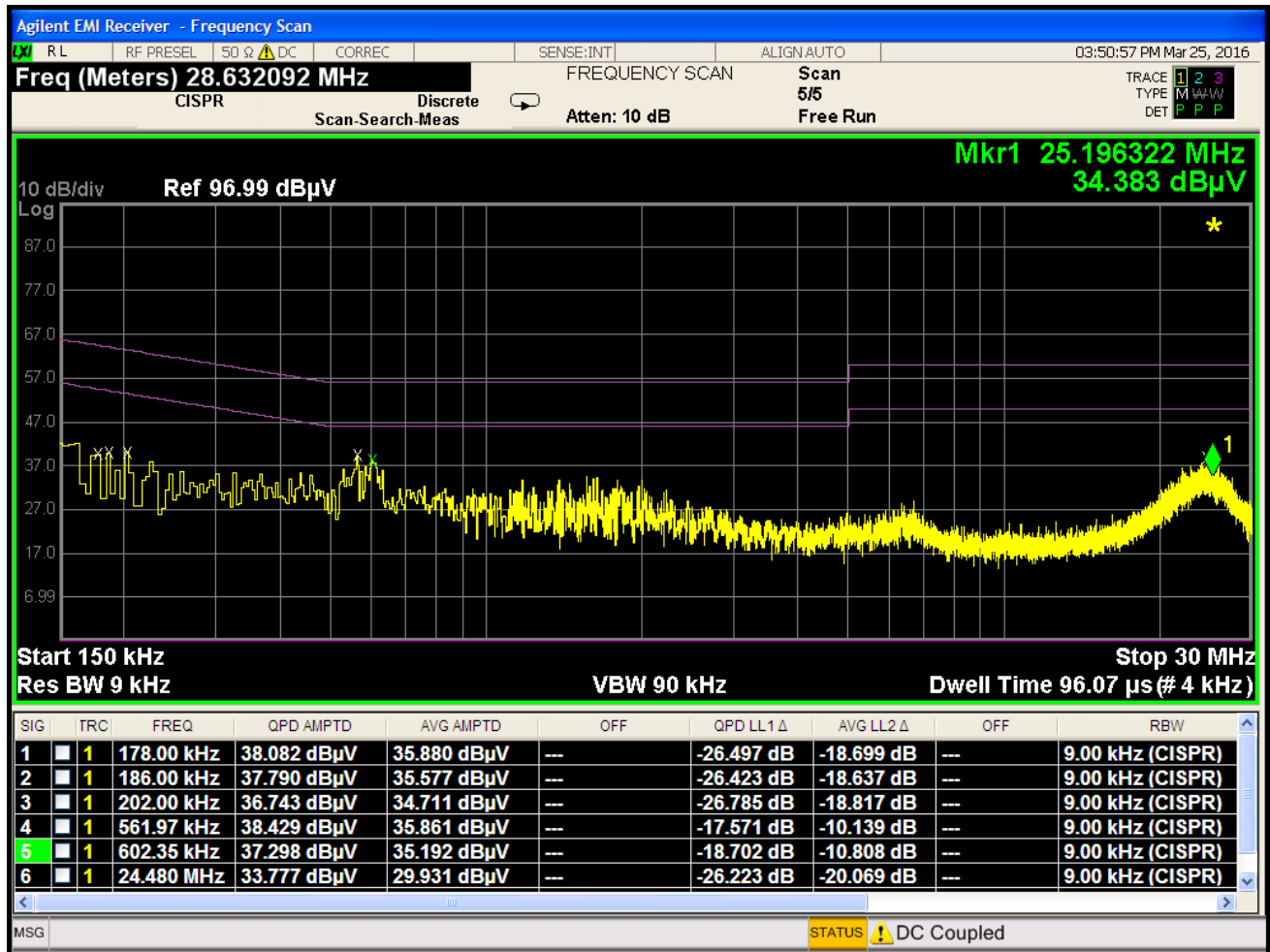


Plot 7-279. Line Conducted Plot with 802.11a UNII Band 2C (N)

FCC ID: A3LSMG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Line-Conducted Test Data

\$15.407

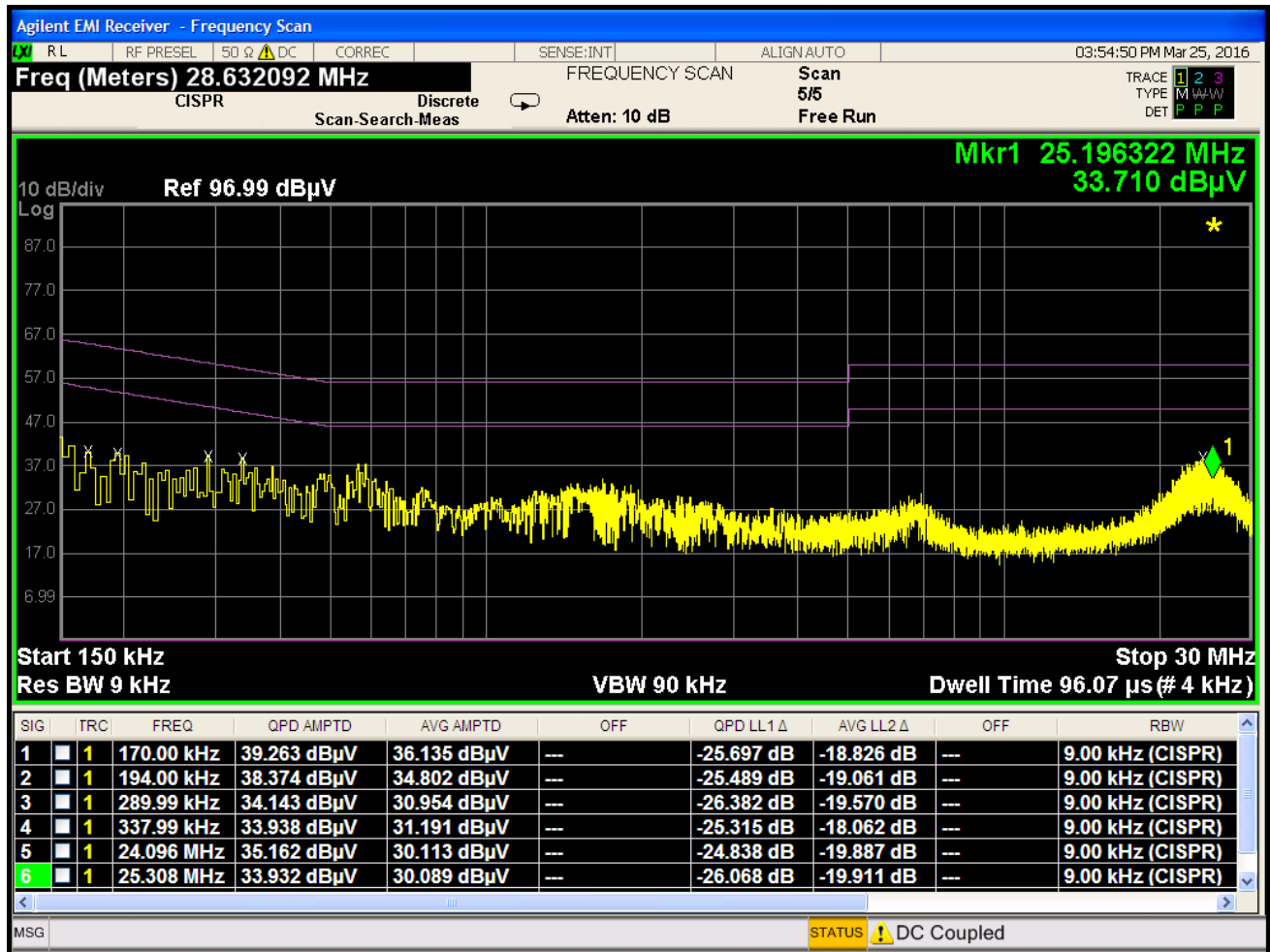


Plot 7-280. Line Conducted Plot with 802.11a UNII Band 3 (L1)

FCC ID: A3L5MG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Line-Conducted Test Data

\$15.407





Plot 7-281. Line Conducted Plot with 802.11a UNII Band 3 (N)

FCC ID: A3L5MG891A	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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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: A3LSMG891A** is in compliance with Part 15E of the FCC Rules.

FCC ID: A3LSMG891A		FCC Pt. 15.407 802.11a/n/ac UNI MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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