

7.5 Maximum Power Spectral Density – 802.11a/n/ac §15.407(a.1)(2.5)

Test Overview and Limit

The spectrum analyzer was connected to the antenna terminal while the EUT was operating at its maximum duty cycle, at its maximum power control level, as defined in KDB 789033 D02 v01, and at the appropriate frequencies. Method SA-1, as defined in KDB 789033 D02 v01, was used to measure the power spectral density.

In the 5.15 – 5.25GHz, 5.25 – 5.35GHz, 5.47 – 5.725GHz bands, the maximum permissible power spectral density is 11dBm/MHz.

In the 5.725 – 5.850GHz band, the maximum permissible power spectral density is 30dBm/500kHz.

Test Procedure Used

KDB 789033 D02 v01 – Section F

KDB 662911 v02r01 – Section E)2) Measure-and-Sum Technique

Test Settings

1. Analyzer was set to the center frequency of the UNII channel under investigation
2. Span was set to encompass the entire emission bandwidth of the signal
3. RBW = 1MHz
4. VBW = 3MHz
5. Number of sweep points $\geq 2 \times (\text{span}/\text{RBW})$
6. Sweep time = auto
7. Detector = power averaging (RMS)
8. Trigger was set to free run for all modes
9. Trace was averaged over 100 sweeps
10. The peak search function of the spectrum analyzer was used to find the peak of the spectrum.

Test Setup

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

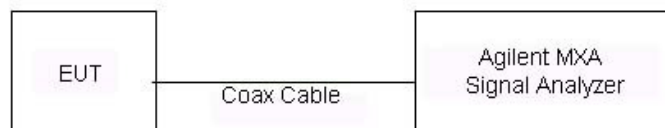


Figure 7-4. Test Instrument & Measurement Setup

Test Notes

None

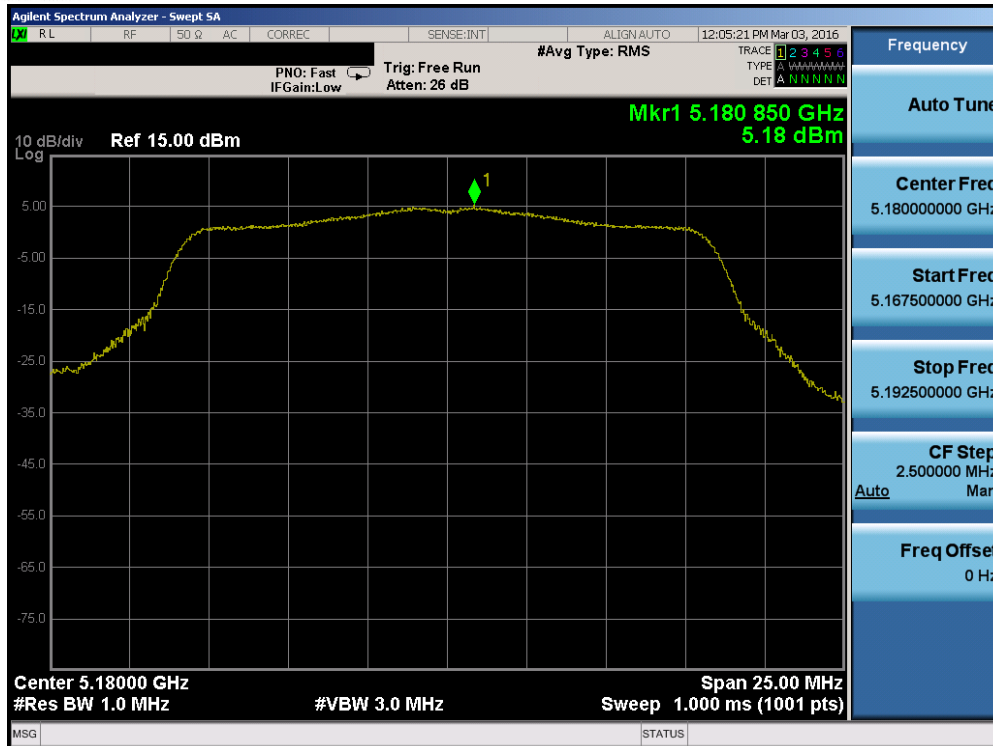
FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 66 of 255

Antenna-1 Power Spectral Density Measurements

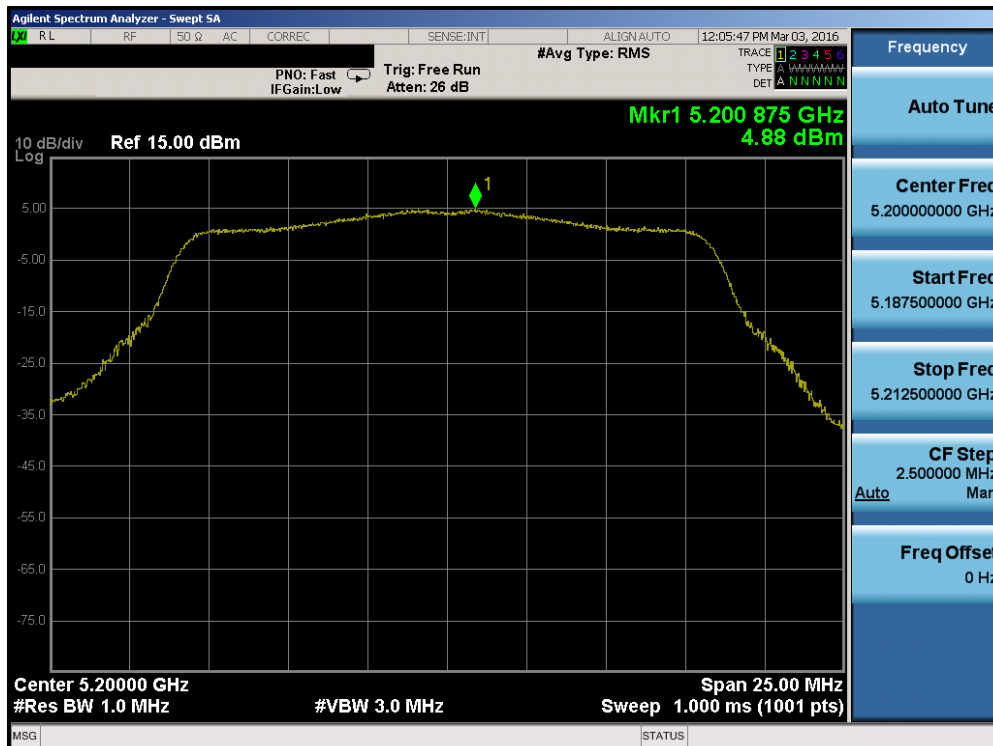
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/MHz]	Margin [dB]	Pass / Fail
Band 1	5180	36	a	6	5.18	11.0	-5.82	Pass
	5200	40	a	6	4.88	11.0	-6.12	Pass
	5240	48	a	6	4.95	11.0	-6.05	Pass
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	4.59	11.0	-6.41	Pass
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	4.64	11.0	-6.36	Pass
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	4.56	11.0	-6.44	Pass
	5190	38	n (40MHz)	13.5/15 (MCS0)	3.94	11.0	-7.06	Pass
	5230	46	n (40MHz)	13.5/15 (MCS0)	3.88	11.0	-7.13	Pass
Band 2A	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	0.24	11.0	-10.76	Pass
	5260	52	a	6	4.64	11.0	-6.36	Pass
	5280	56	a	6	4.67	11.0	-6.34	Pass
	5320	64	a	6	4.84	11.0	-6.16	Pass
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	5.33	11.0	-5.67	Pass
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	5.32	11.0	-5.68	Pass
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	5.39	11.0	-5.61	Pass
	5270	54	n (40MHz)	13.5/15 (MCS0)	4.17	11.0	-6.83	Pass
Band 2C	5310	62	n (40MHz)	13.5/15 (MCS0)	4.01	11.0	-6.99	Pass
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	0.02	11.0	-10.98	Pass
	5500	100	a	6	5.73	11.0	-5.27	Pass
	5600	120	a	6	5.31	11.0	-5.69	Pass
	5720	144	a	6	4.95	11.0	-6.05	Pass
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	5.12	11.0	-5.88	Pass
	5600	120	n (20MHz)	6.5/7.2 (MCS0)	4.81	11.0	-6.19	Pass
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	4.47	11.0	-6.53	Pass
	5510	102	n (40MHz)	13.5/15 (MCS0)	3.56	11.0	-7.44	Pass
	5590	118	n (40MHz)	13.5/15 (MCS0)	1.92	11.0	-9.08	Pass
	5710	142	n (40MHz)	13.5/15 (MCS0)	3.33	11.0	-7.67	Pass
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-0.94	11.0	-11.94	Pass
	5610	122	ac (80MHz)	29.3/32.5 (MCS0)	-1.89	11.0	-12.89	Pass
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-4.12	11.0	-15.12	Pass

Table 7-17. Bands 1, 2A, 2C Conducted Power Spectral Density Measurements

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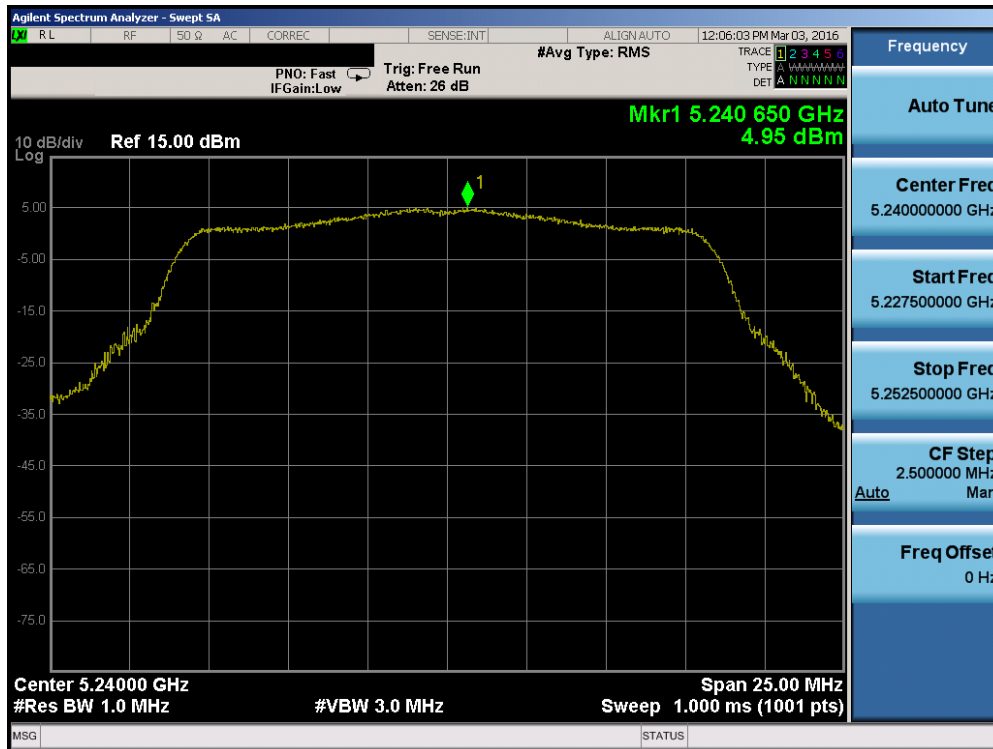


Plot 7-79. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 36)

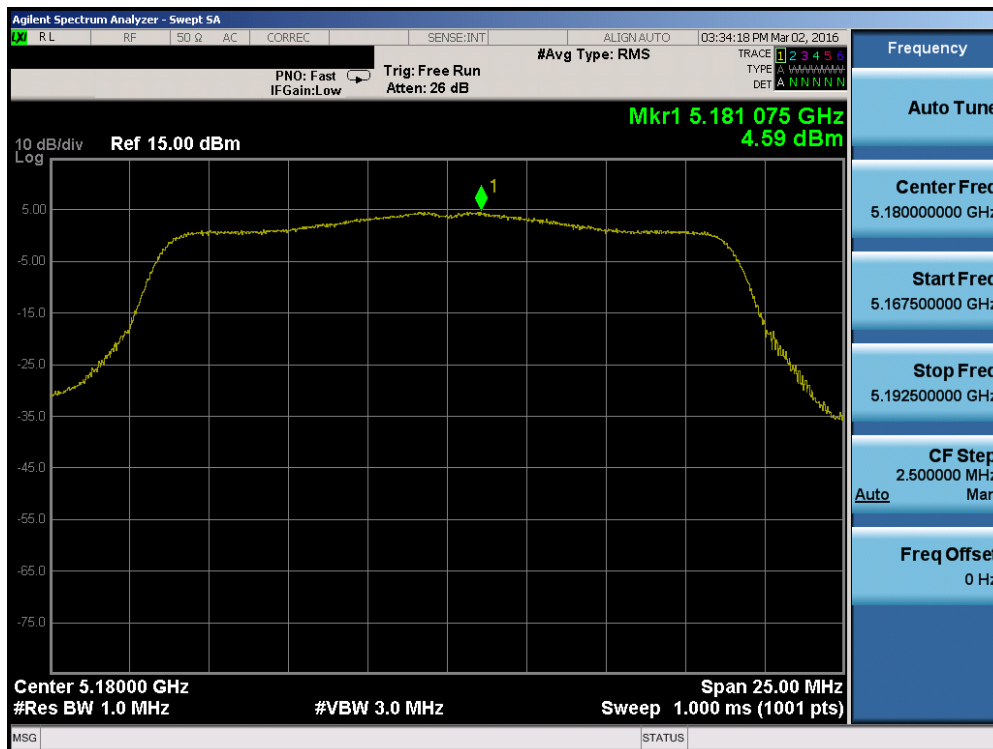


Plot 7-80. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 40)

FCC ID: A3LSCV33	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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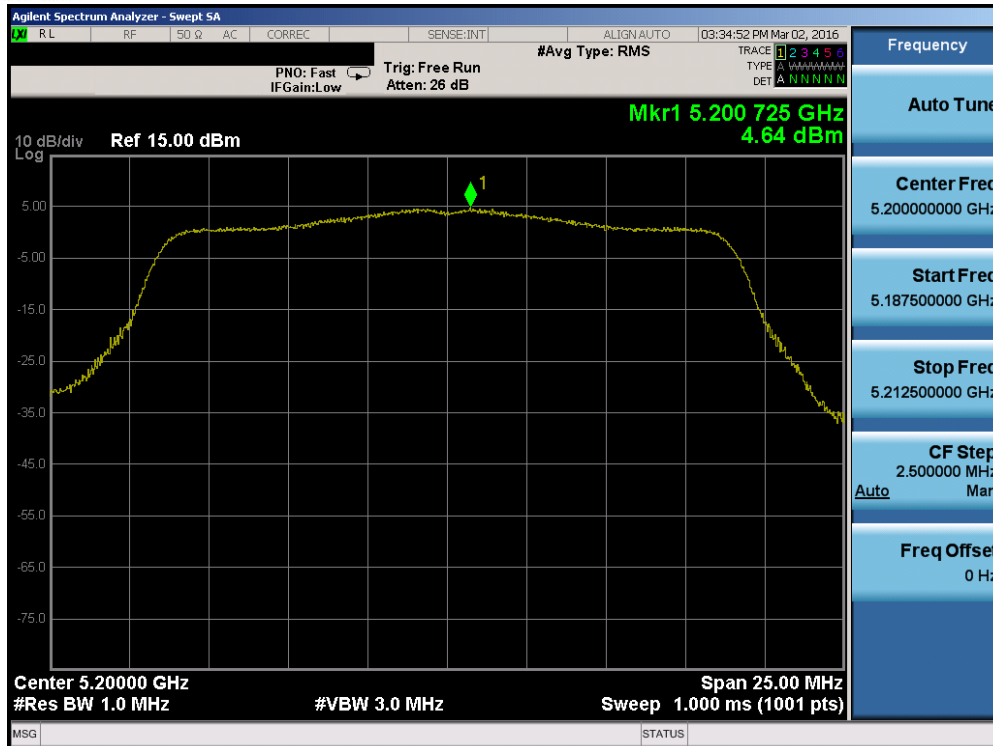


Plot 7-81. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 48)

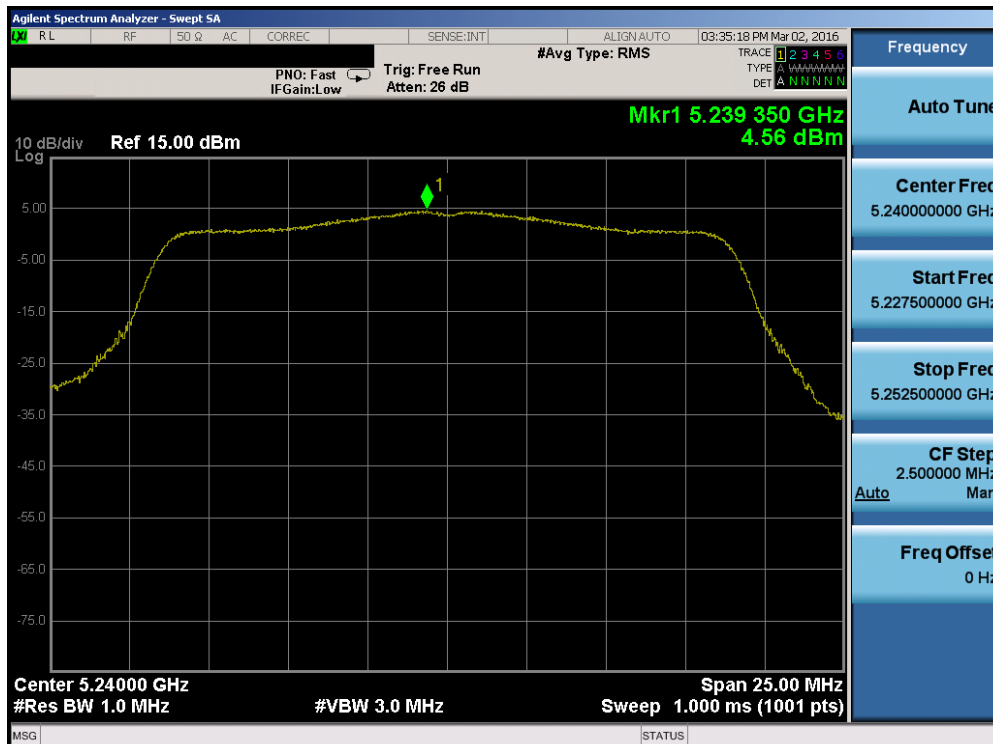


Plot 7-82. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

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Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 69 of 255

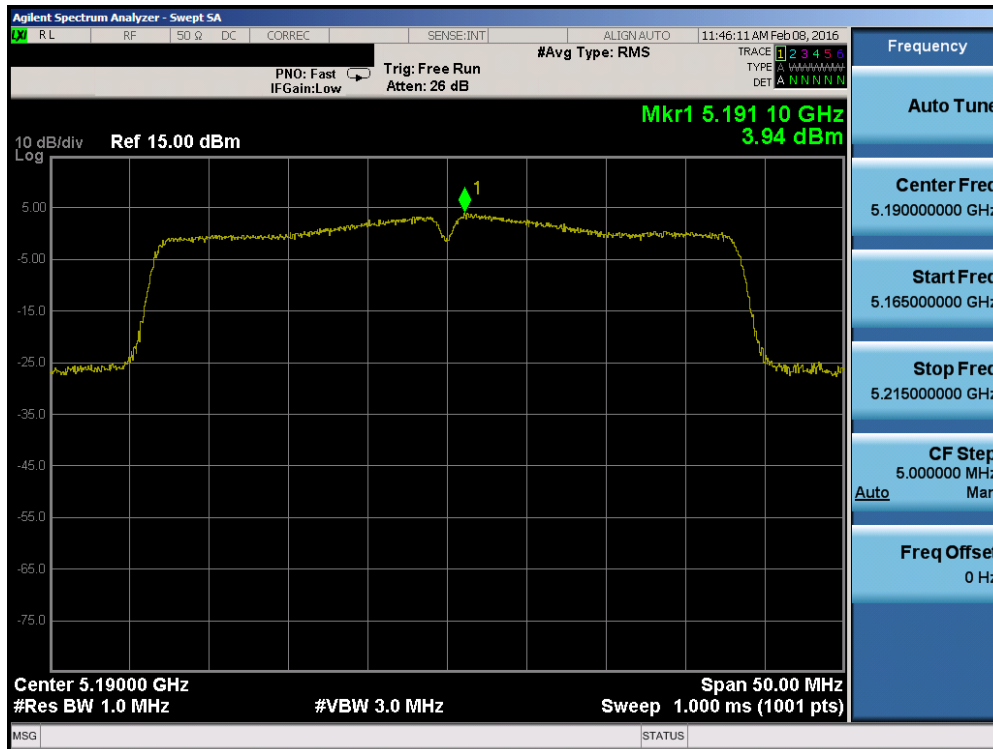


Plot 7-83. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

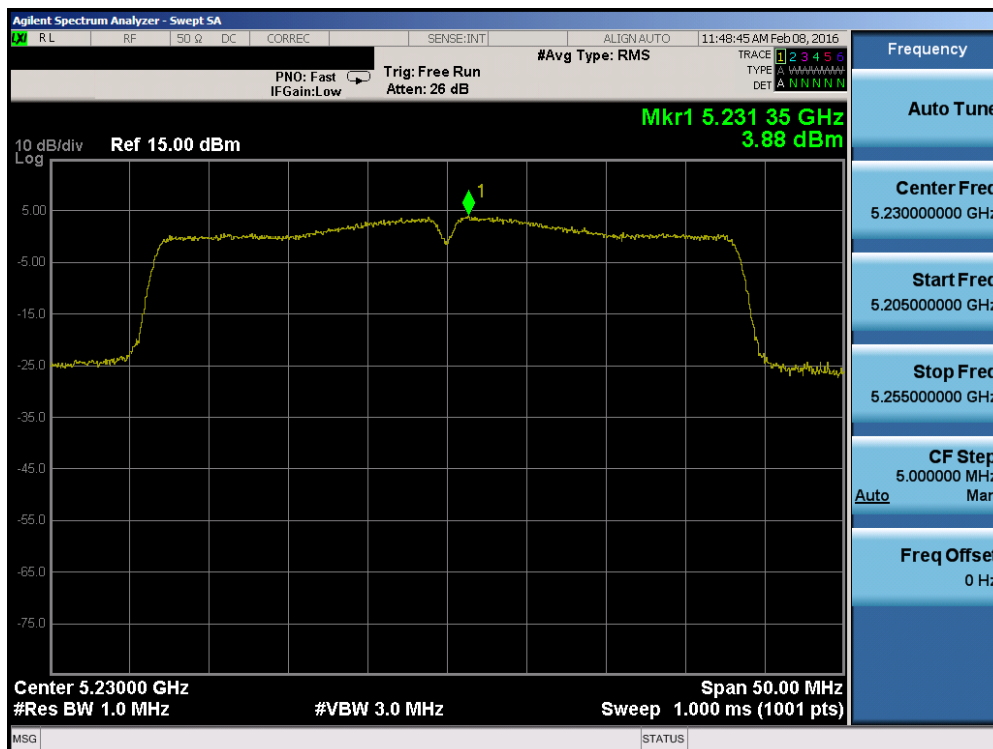


Plot 7-84. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

FCC ID: A3LSCV33	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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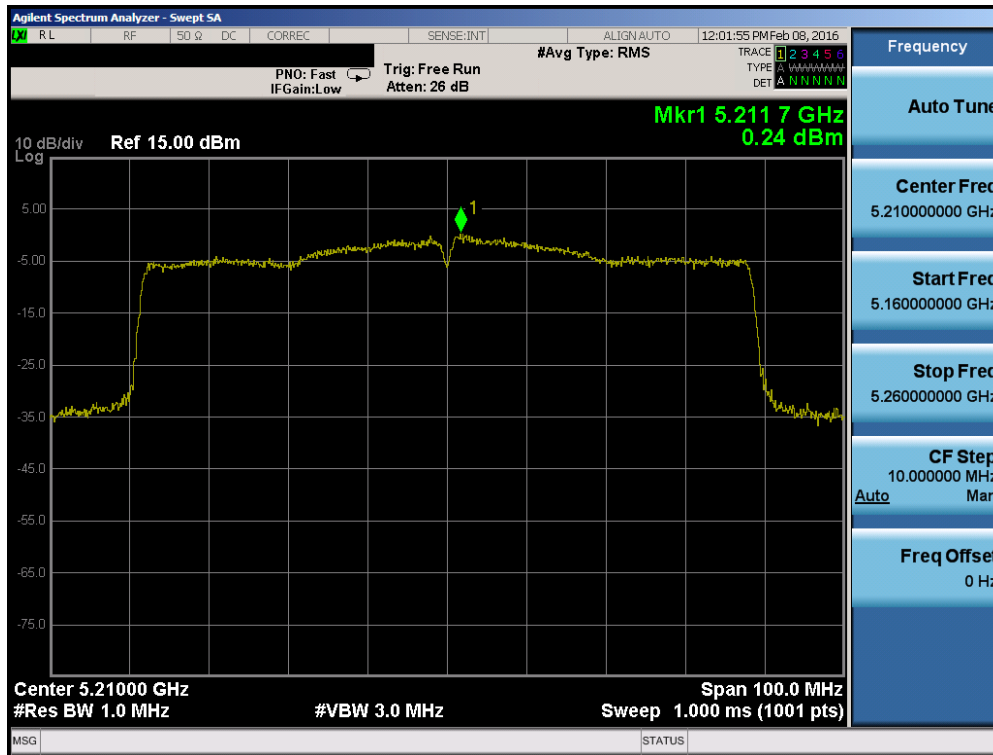


Plot 7-85. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

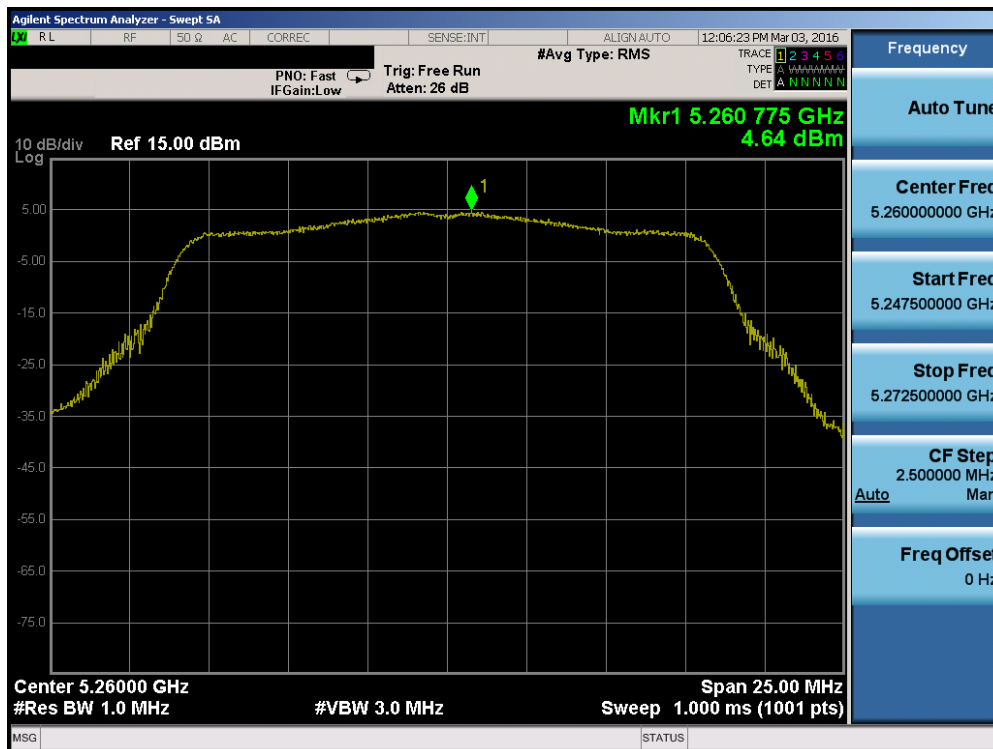


Plot 7-86. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

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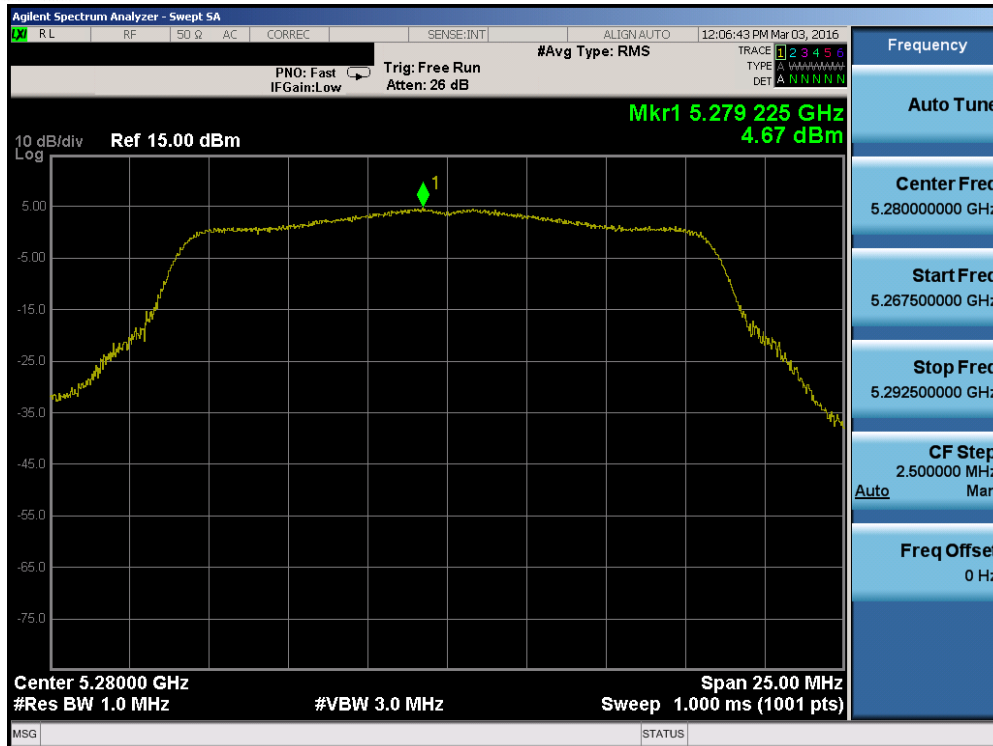


Plot 7-87. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

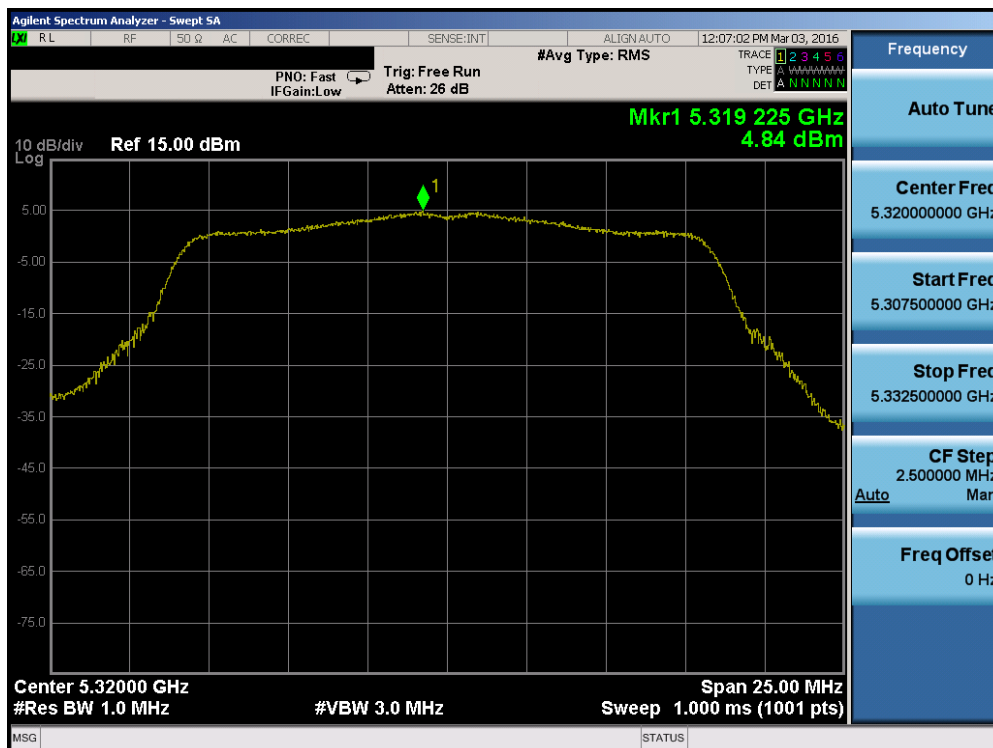


Plot 7-88. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 52)

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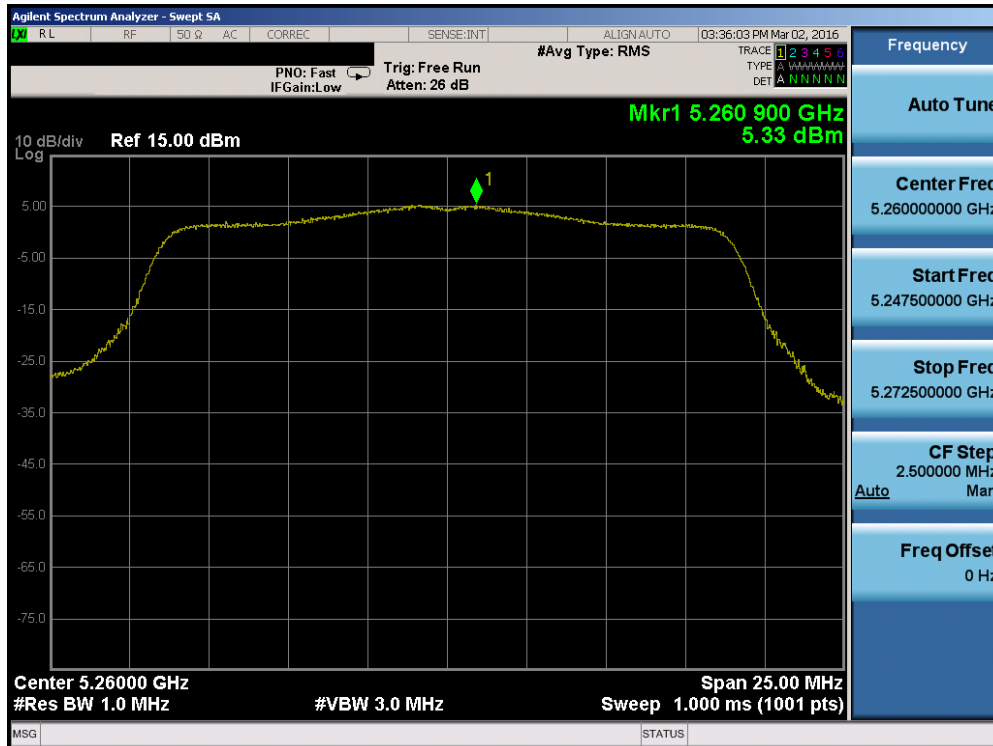


Plot 7-89. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 56)

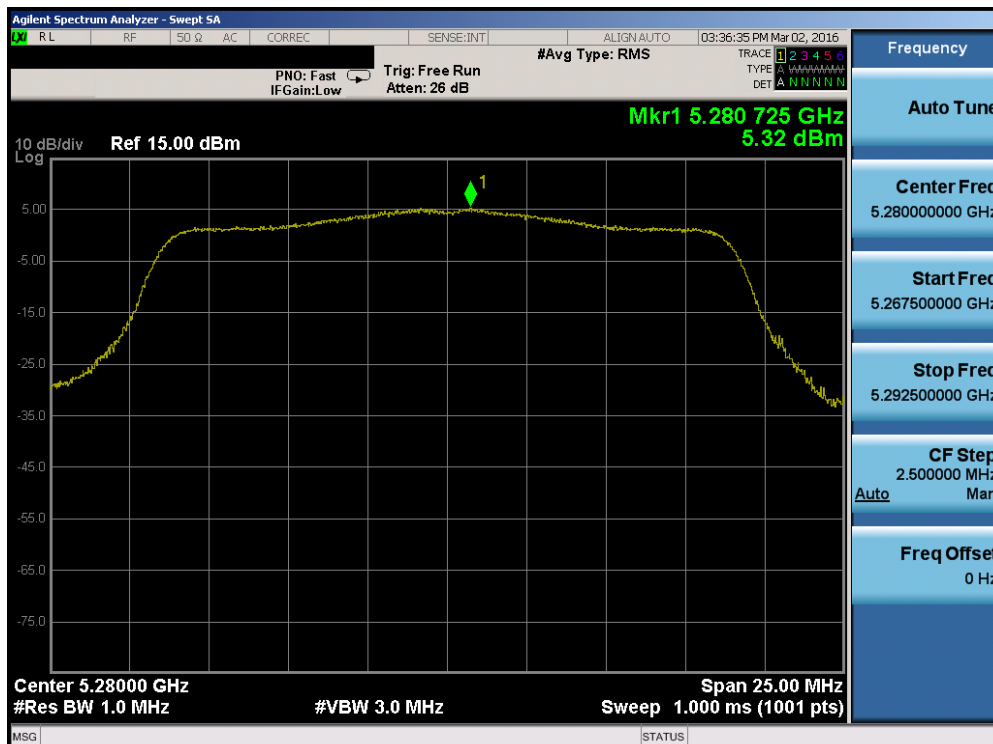


Plot 7-90. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 64)

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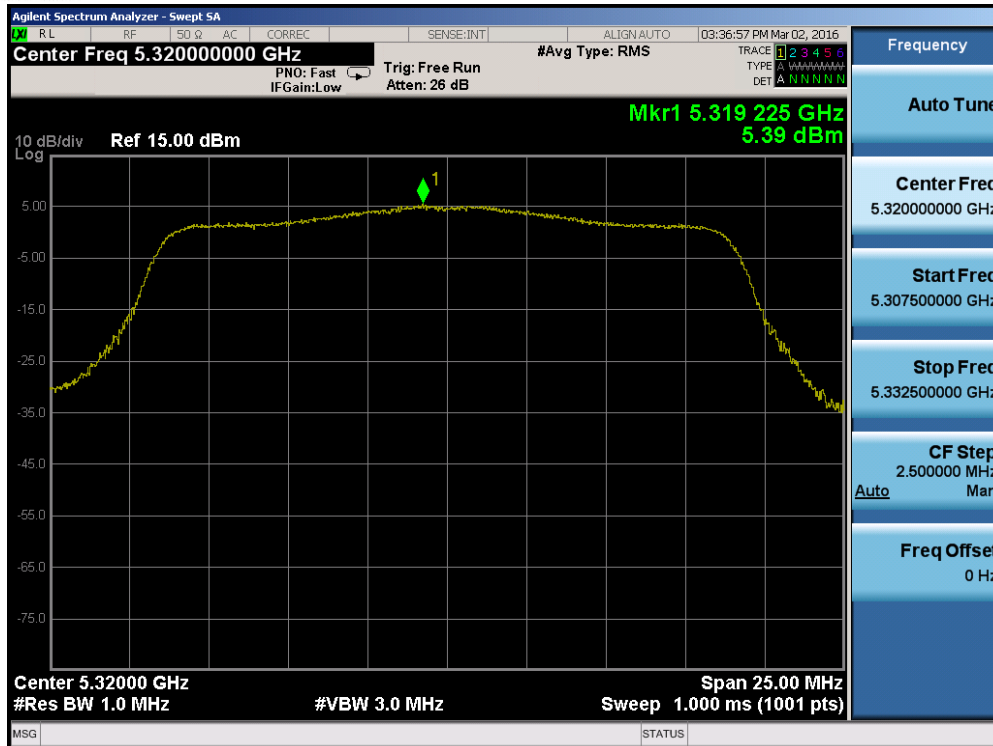


Plot 7-91. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

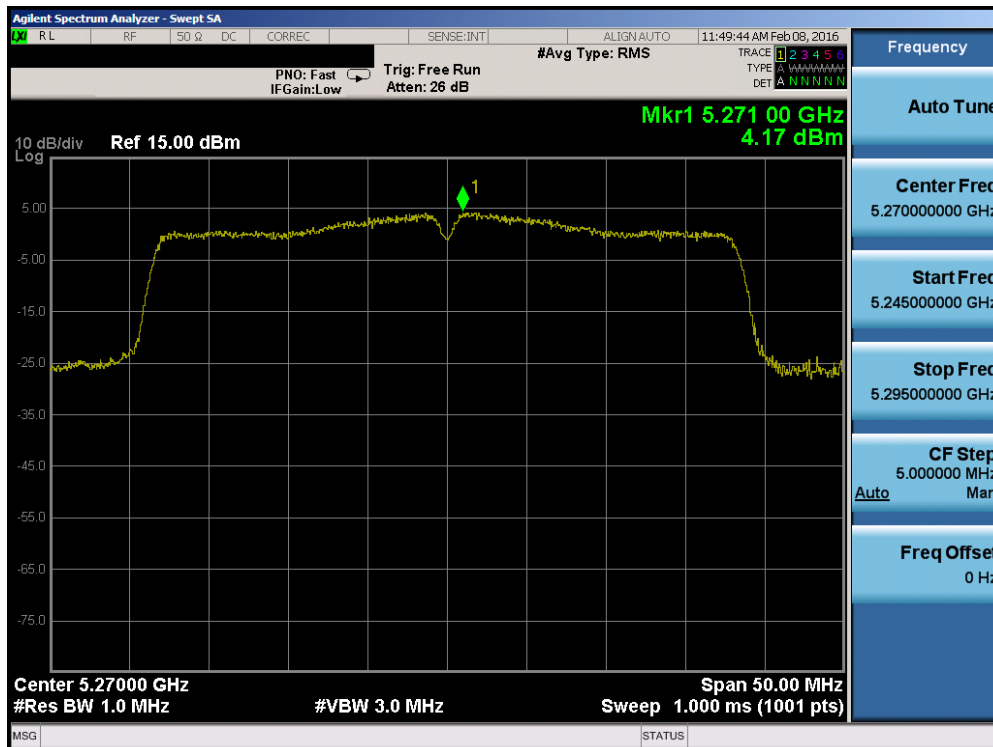


Plot 7-92. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

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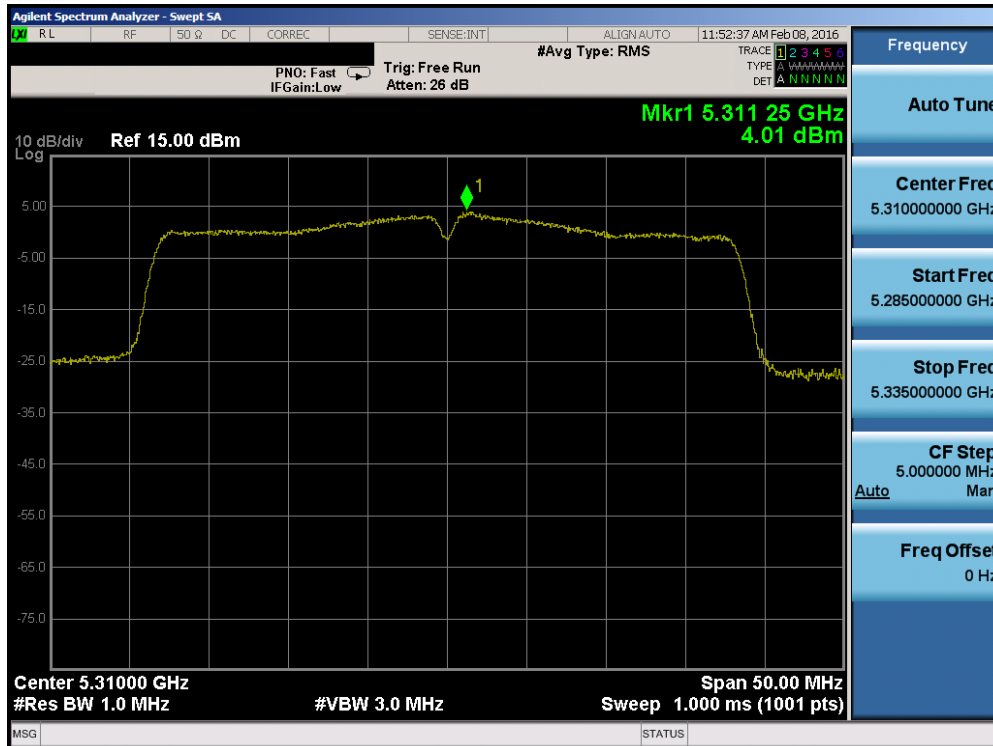


Plot 7-93. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

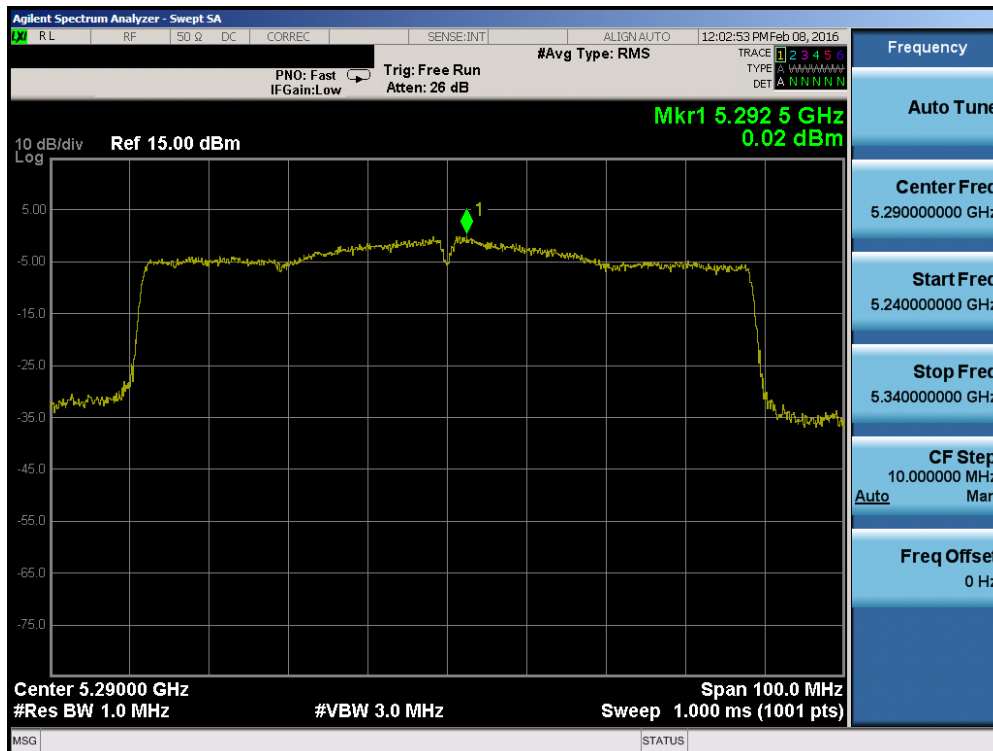


Plot 7-94. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

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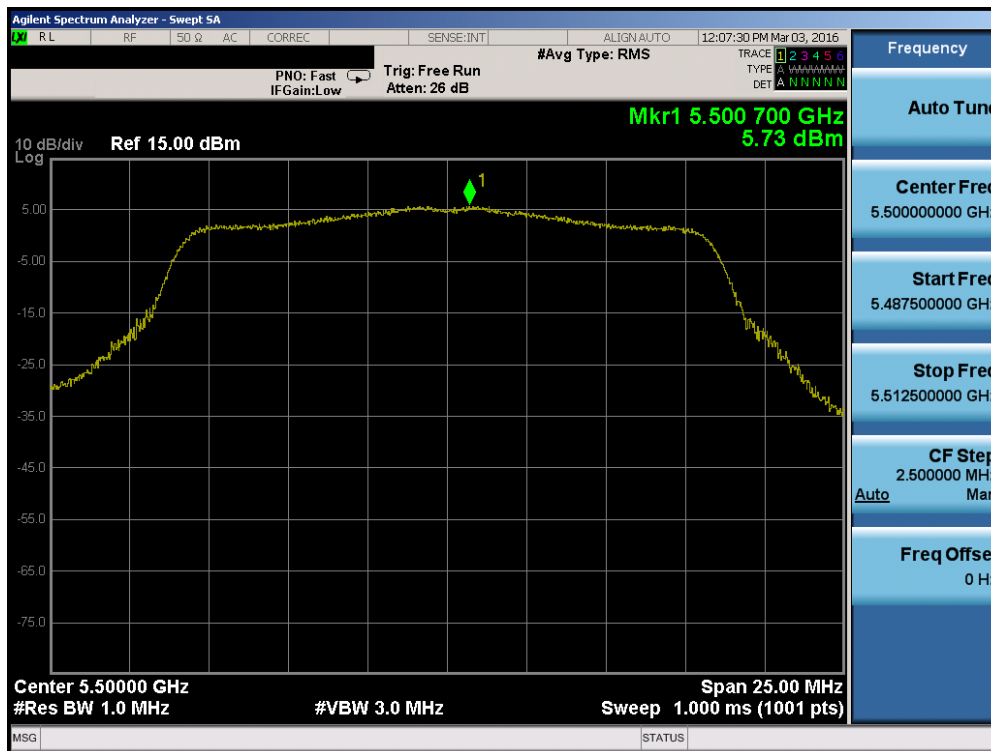


Plot 7-95. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

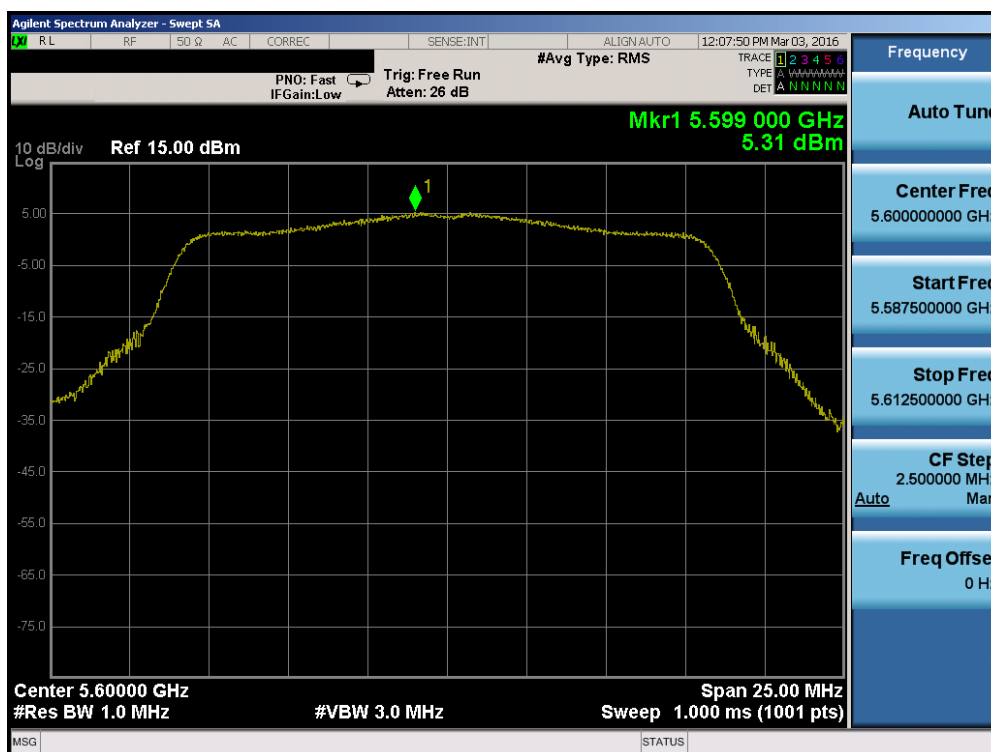


Plot 7-96. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

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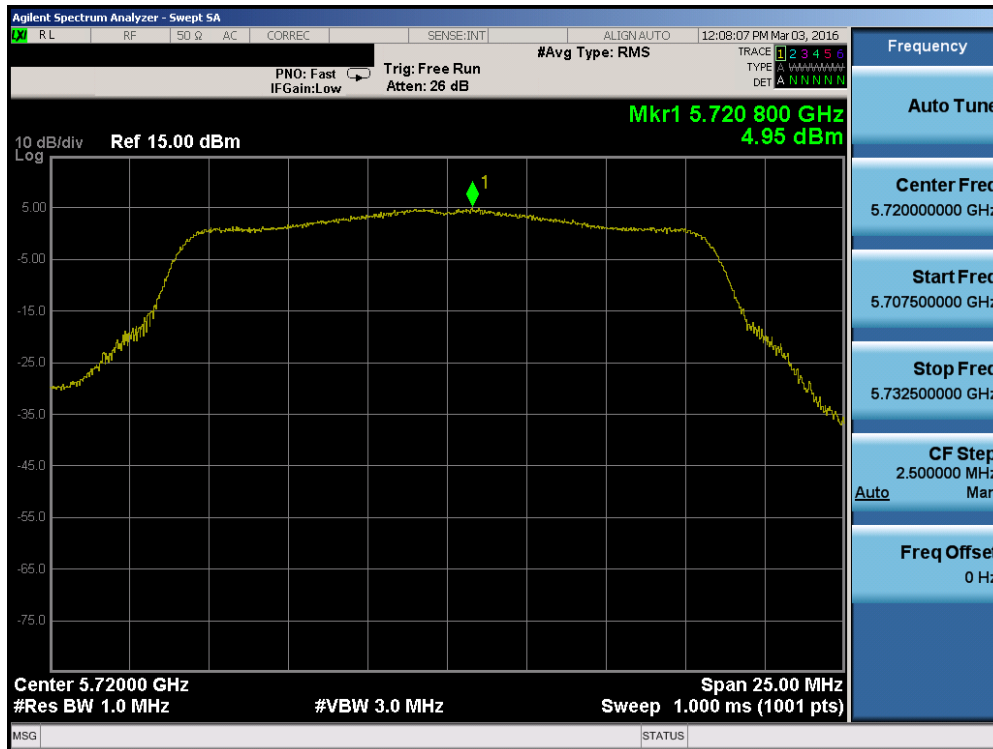


Plot 7-97. Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 100)

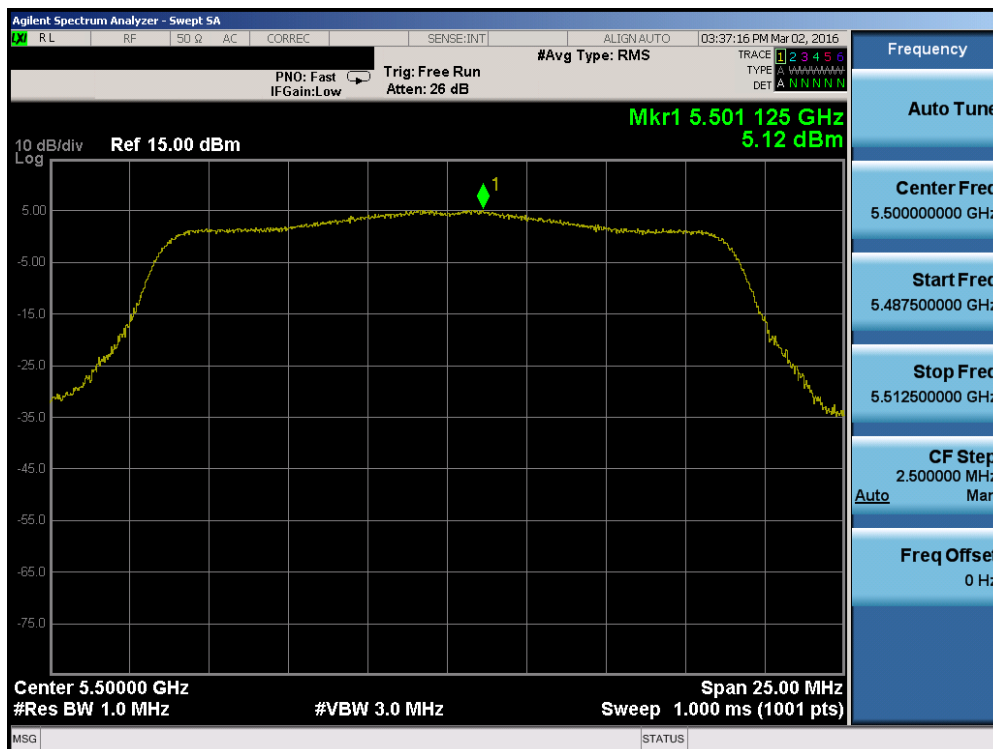


Plot 7-98. Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 120)

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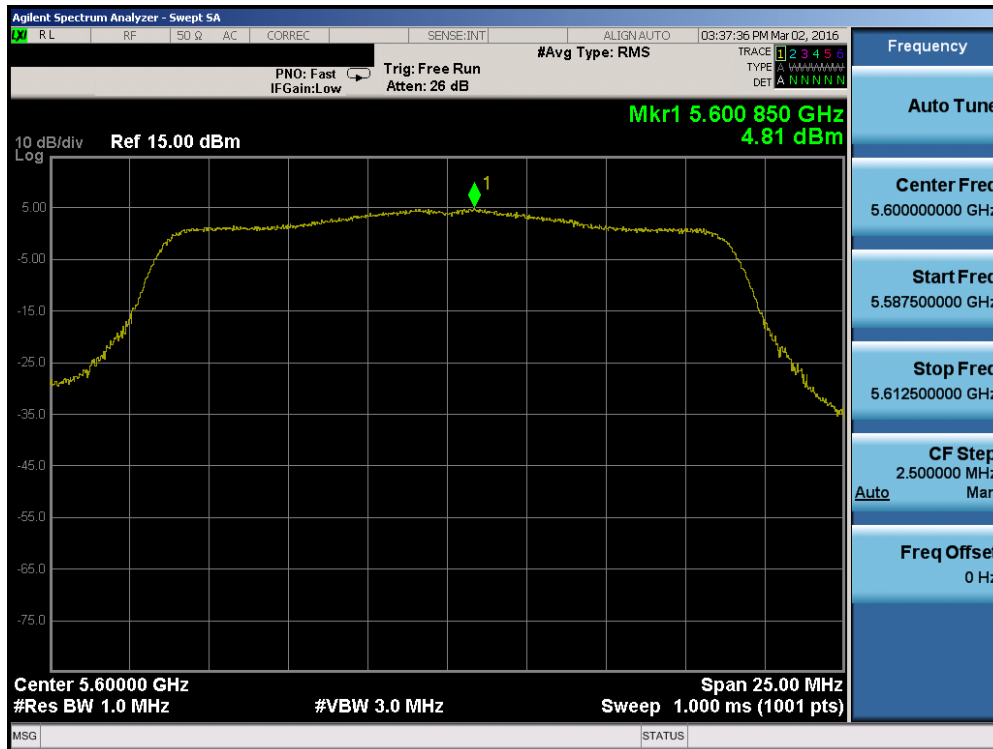


Plot 7-99. Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 144)

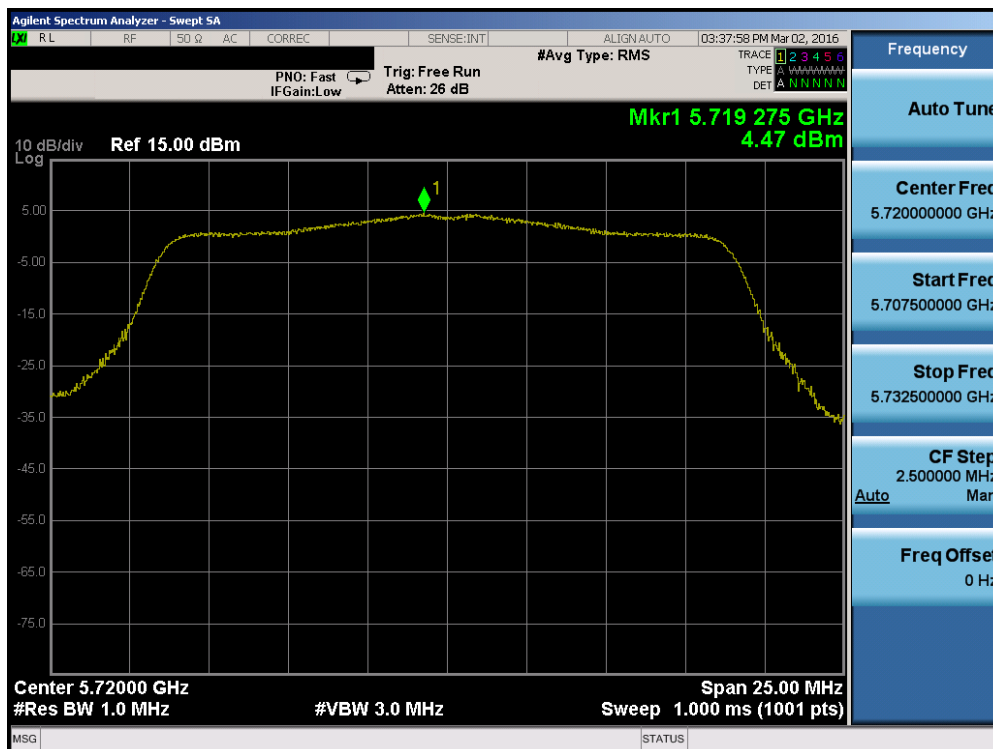


Plot 7-100. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

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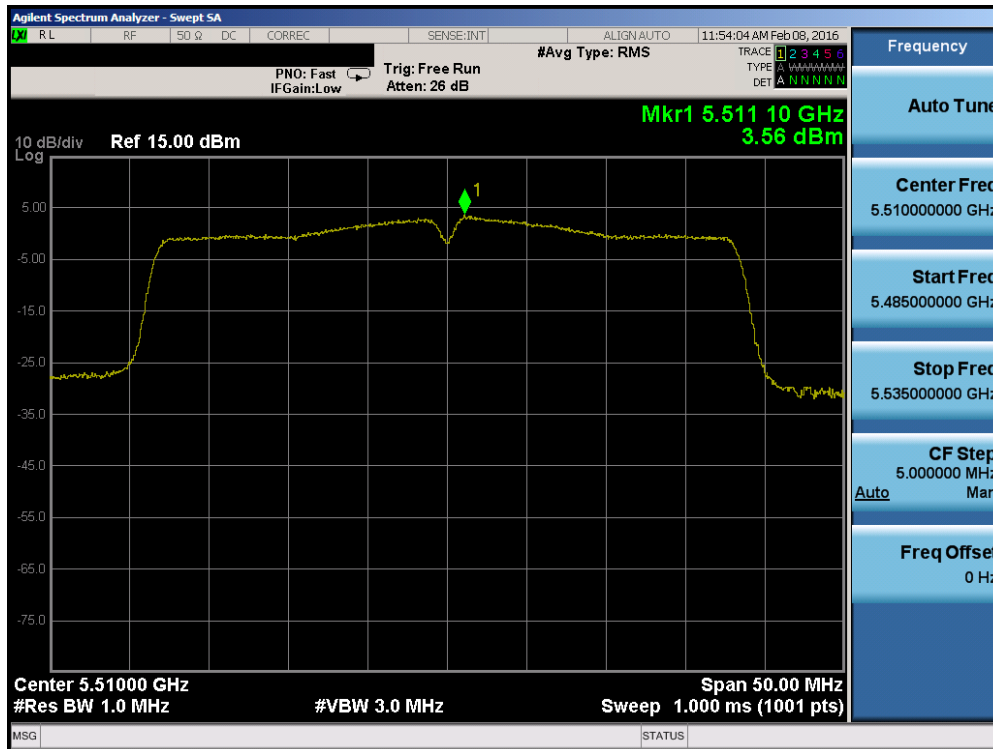


Plot 7-101. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 120)

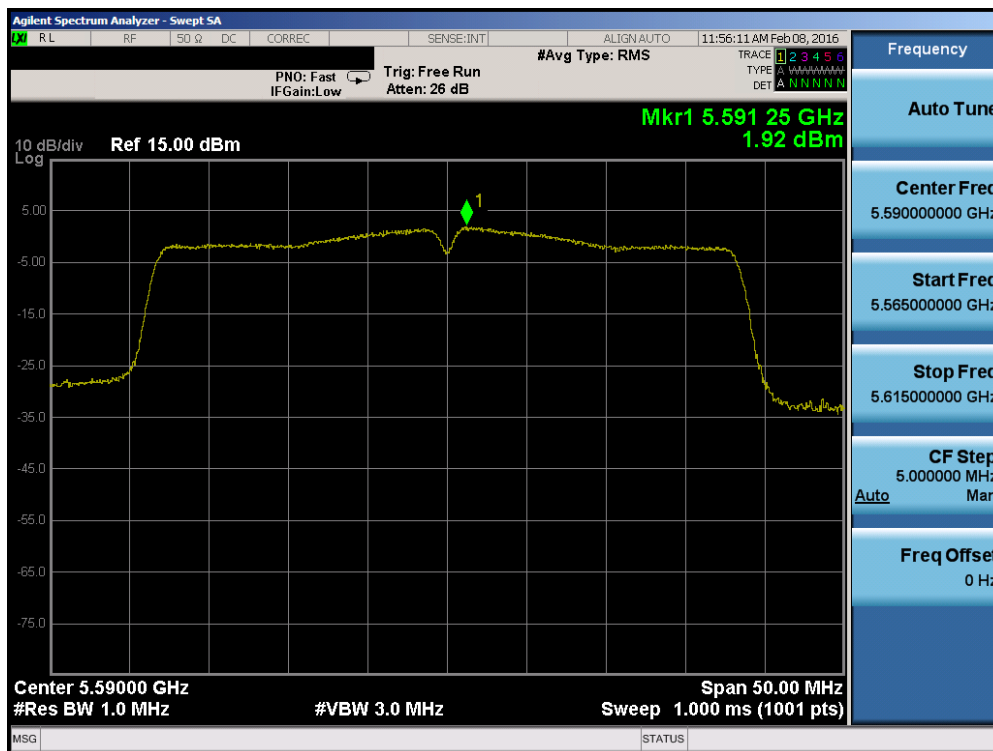


Plot 7-102. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 144)

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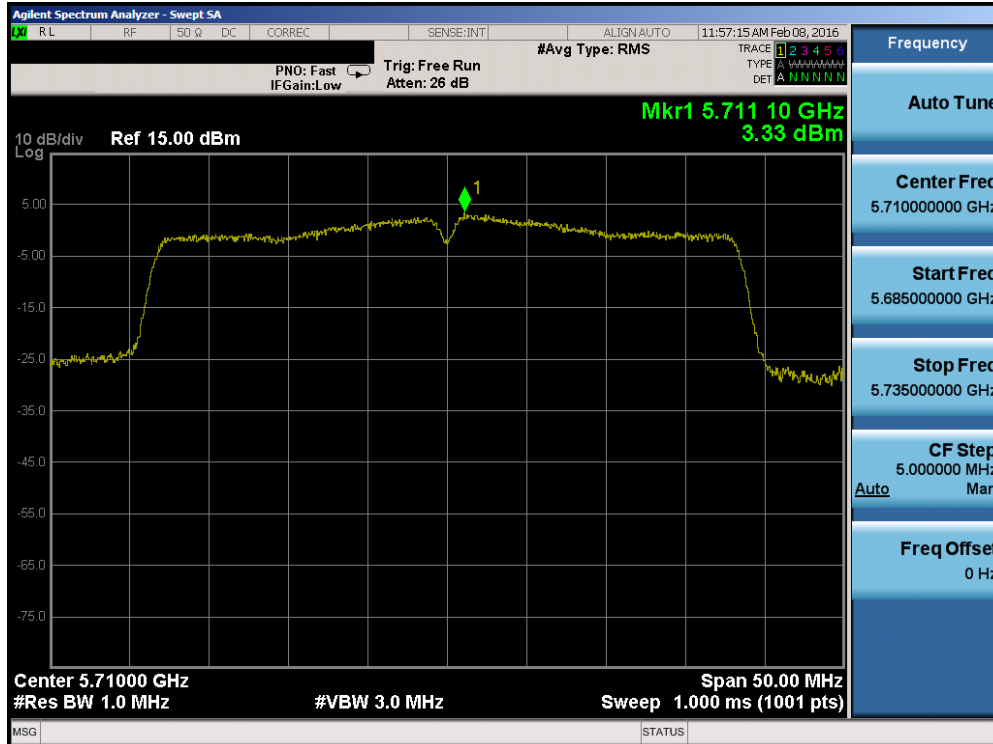


Plot 7-103. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

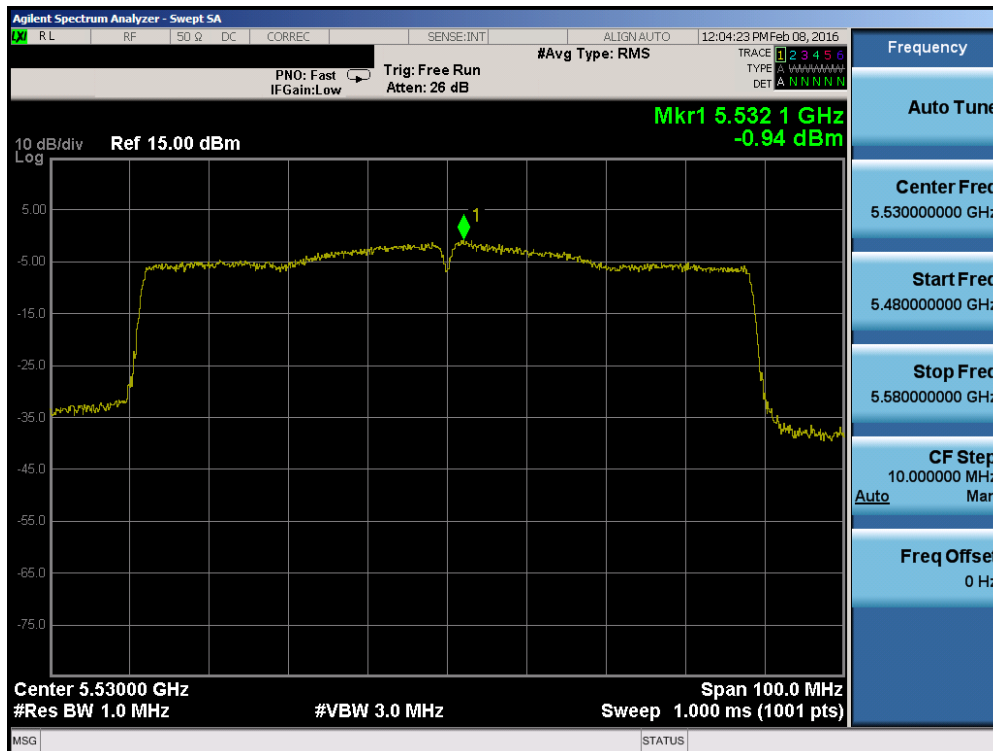


Plot 7-104. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 118)

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Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset	Page 80 of 255

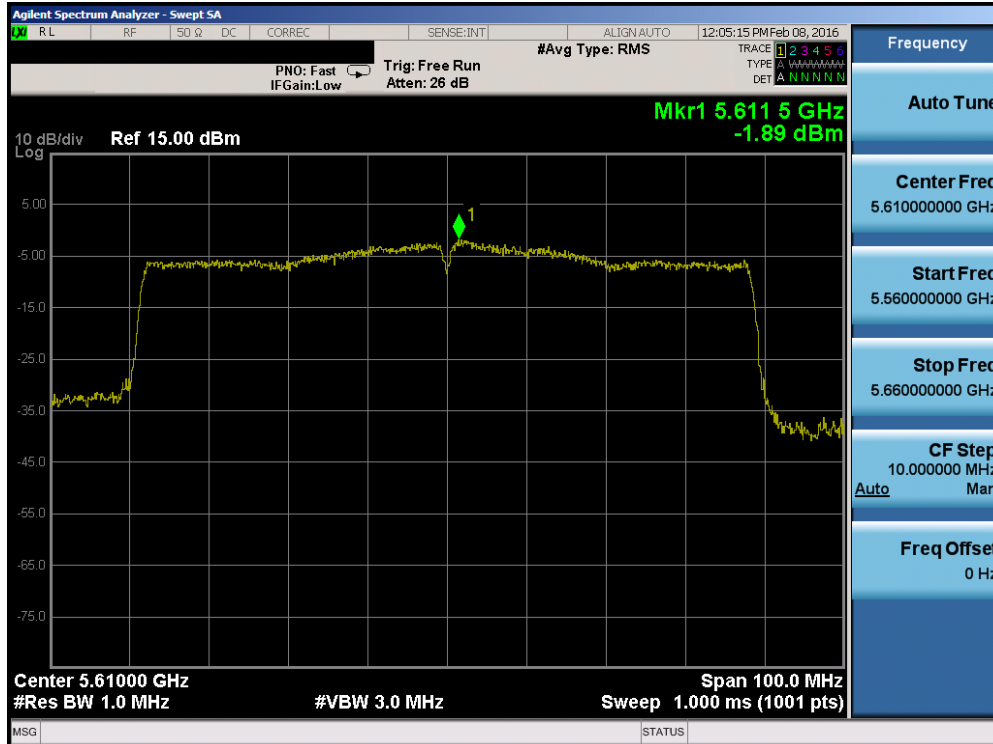


Plot 7-105. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)

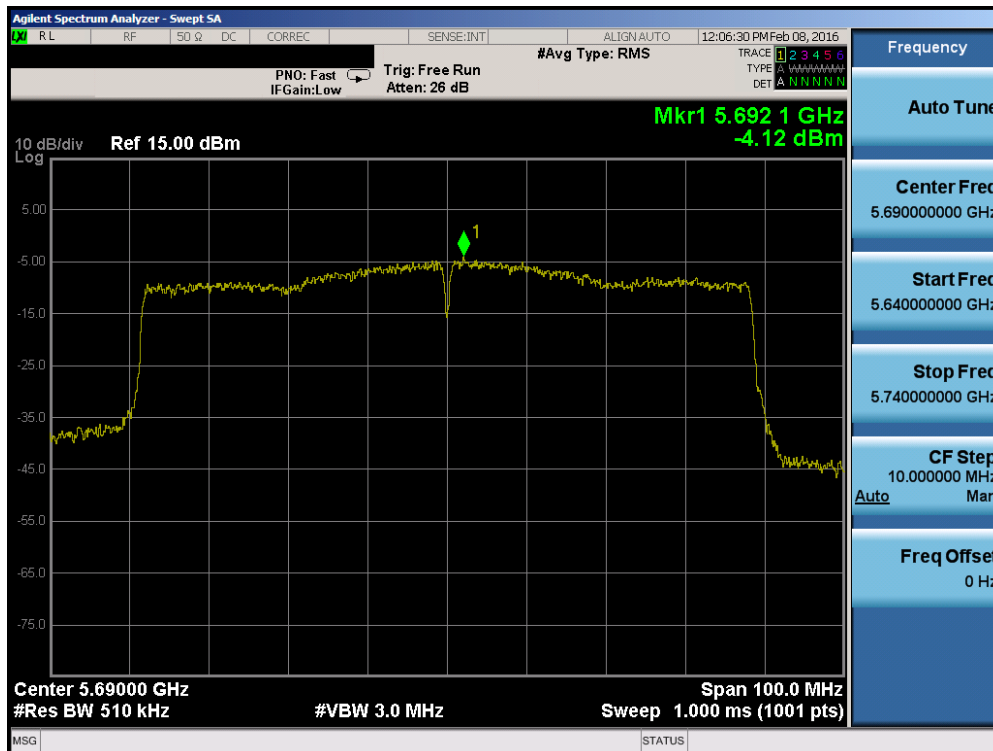


Plot 7-106. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

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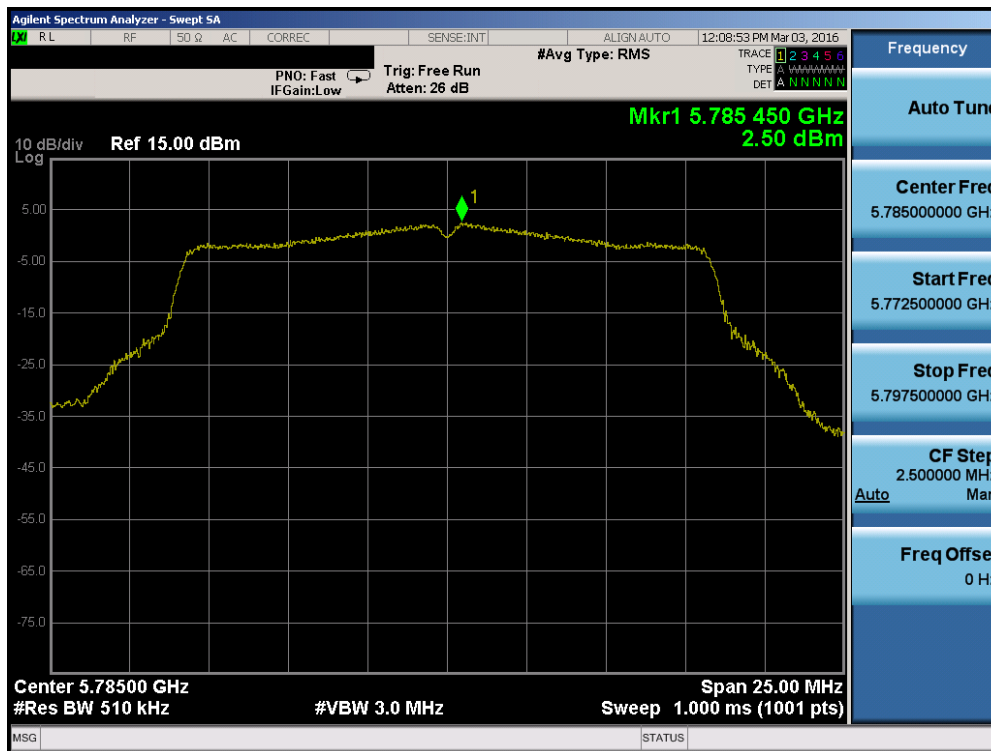


Plot 7-107. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 122)

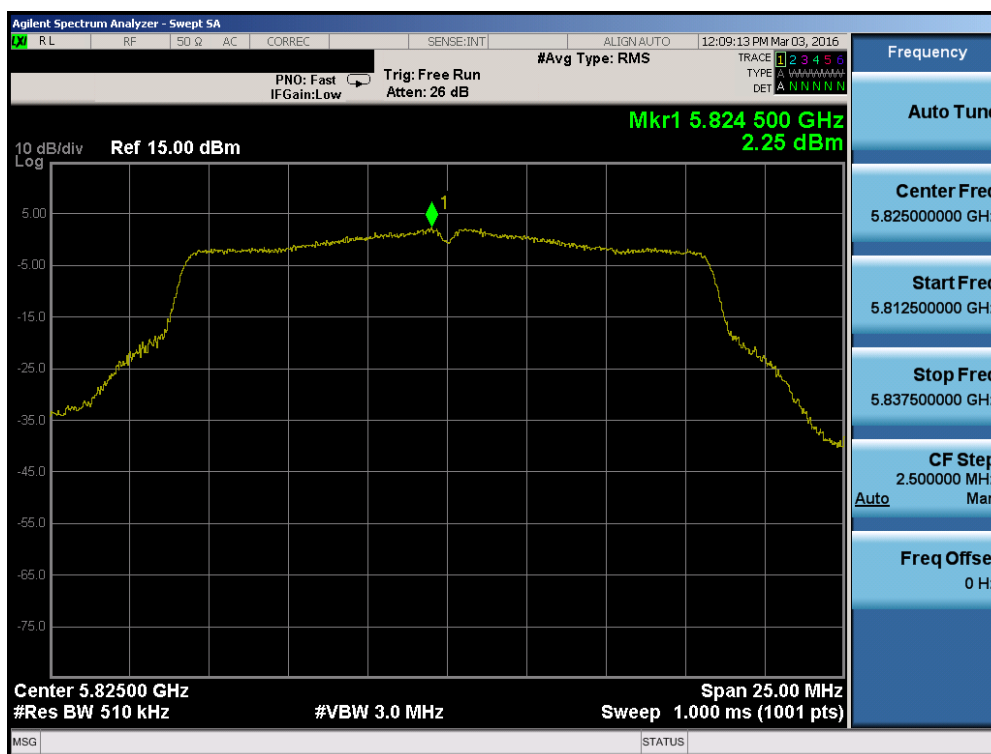


Plot 7-108. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 138)

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Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 82 of 255

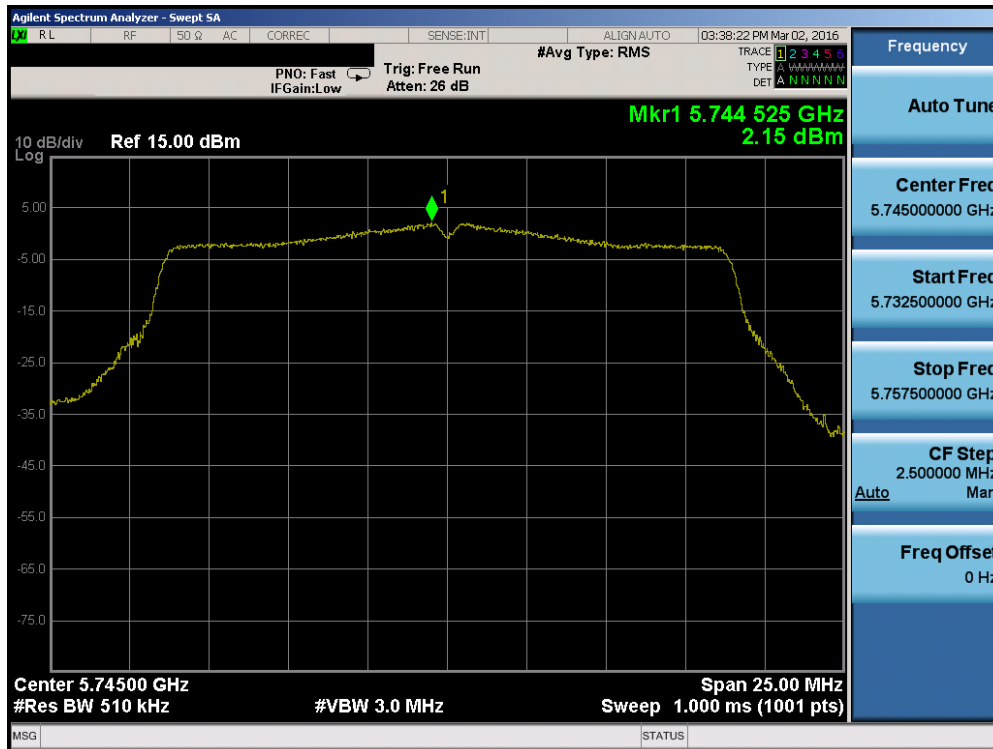


Plot 7-110. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 157)

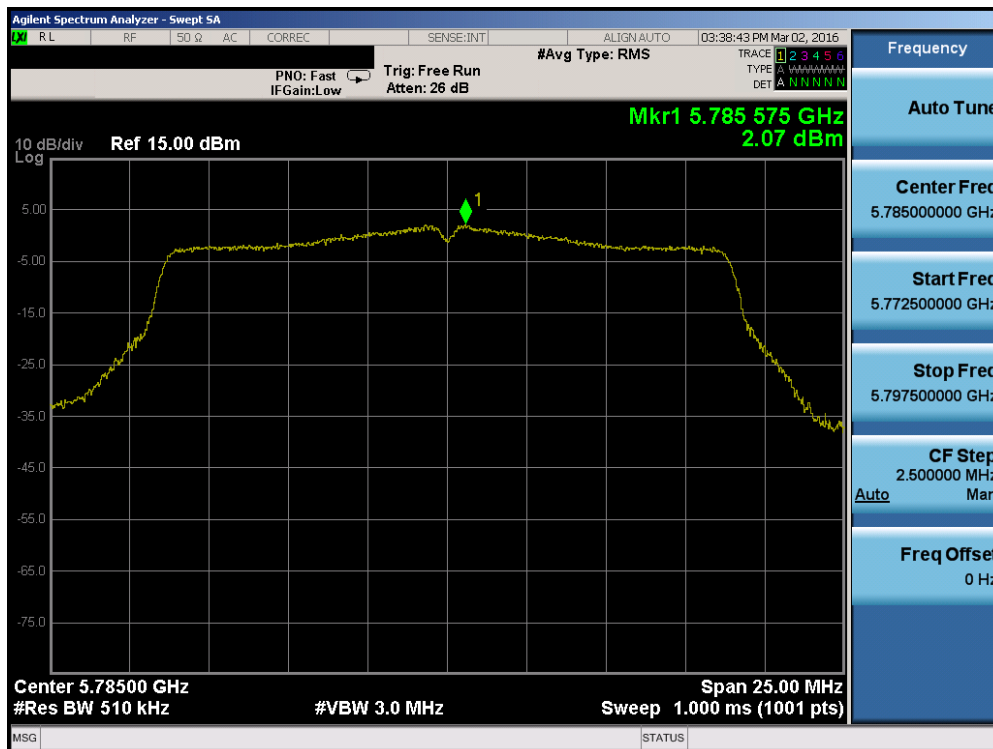


Plot 7-111. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 165)

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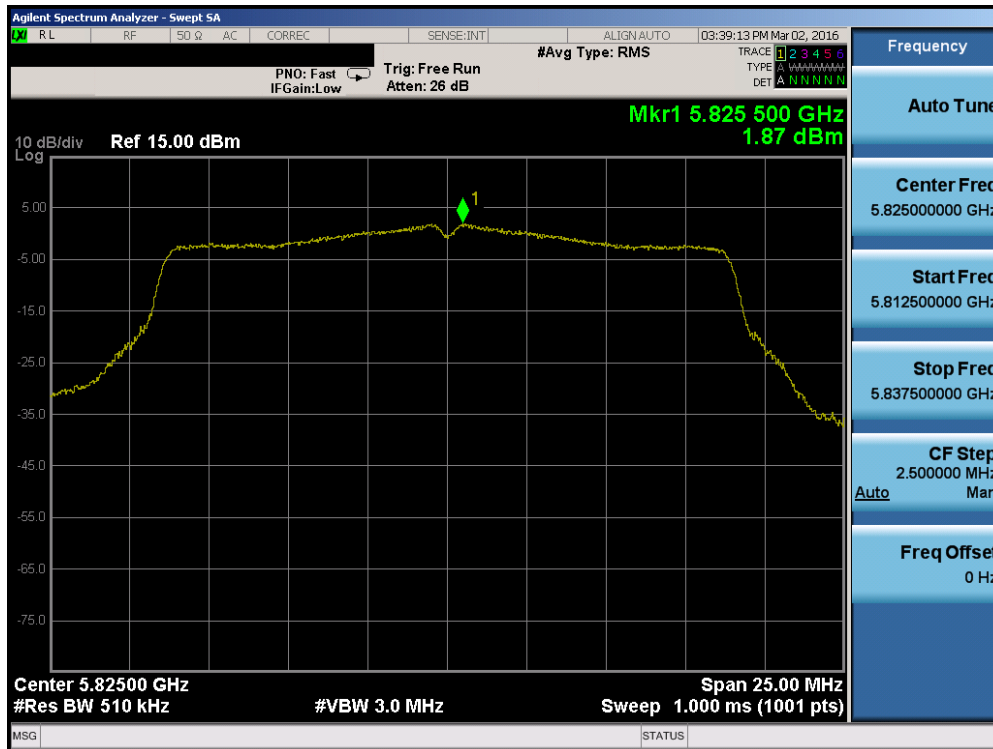


Plot 7-112. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

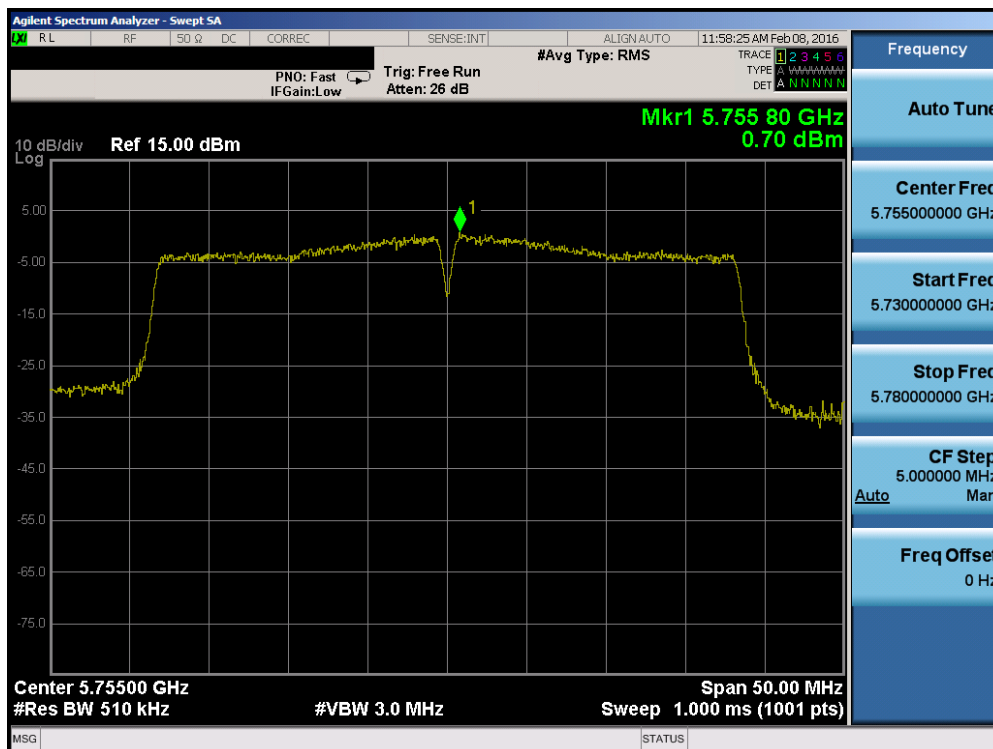


Plot 7-113. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 85 of 255

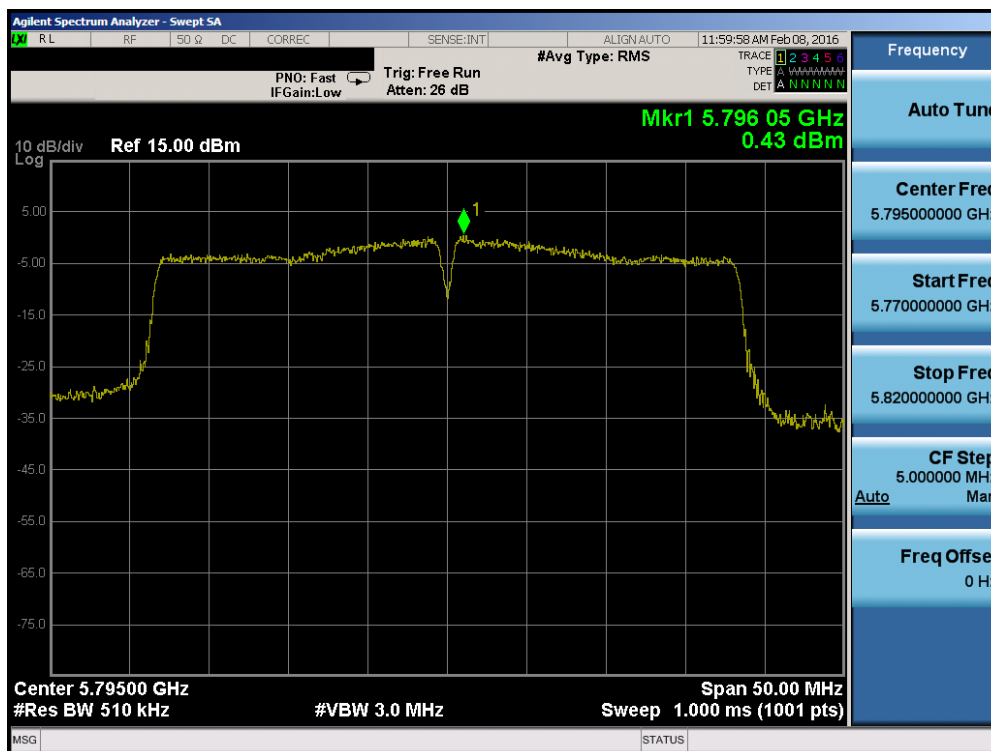


Plot 7-114. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 165)



Plot 7-115. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 86 of 255

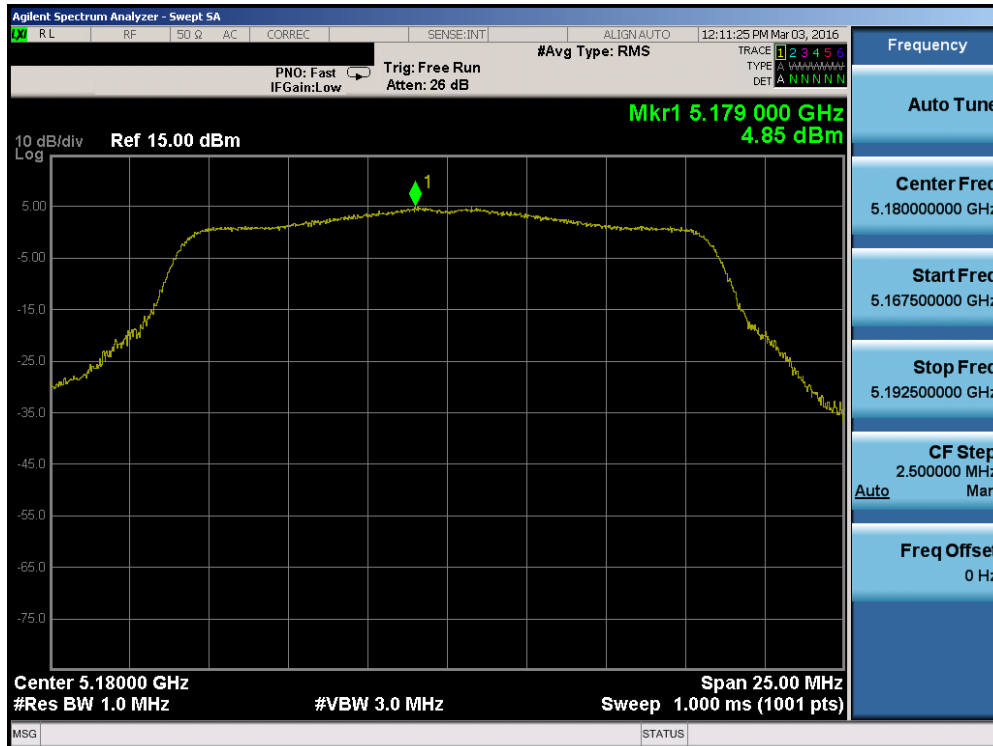


Antenna-2 Power Spectral Density Measurements

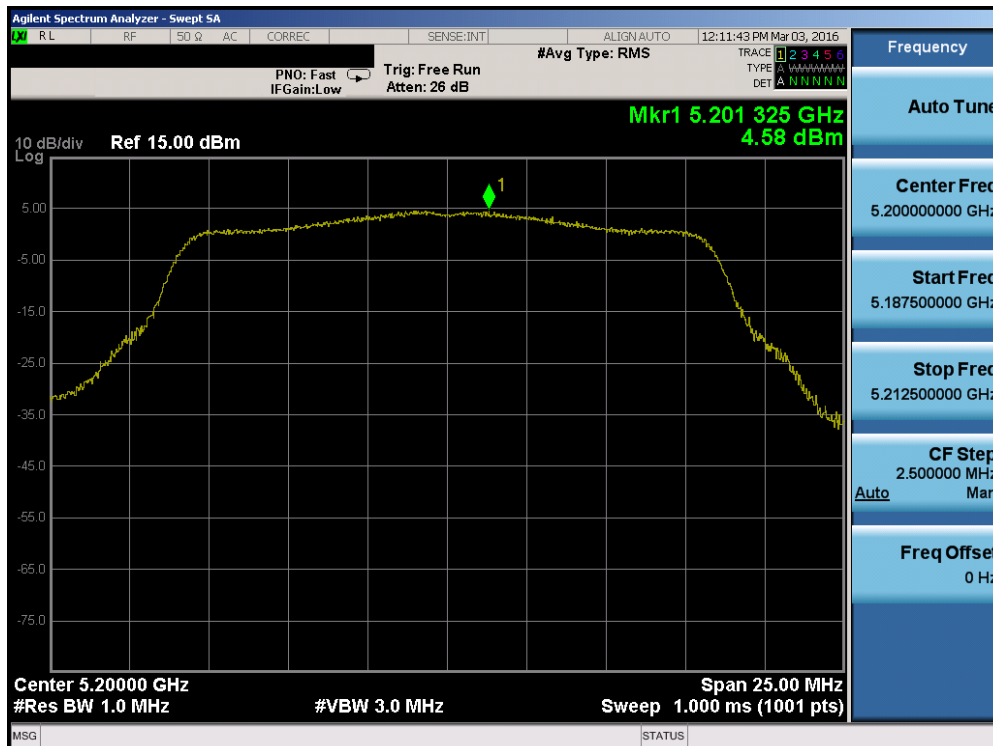
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/MHz]	Margin [dB]	Pass / Fail
Band 1	5180	36	a	6	4.85	11.0	-6.15	Pass
	5200	40	a	6	4.58	11.0	-6.42	Pass
	5240	48	a	6	4.65	11.0	-6.35	Pass
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	4.84	11.0	-6.16	Pass
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	4.72	11.0	-6.28	Pass
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	4.62	11.0	-6.38	Pass
	5190	38	n (40MHz)	13.5/15 (MCS0)	5.30	11.0	-5.70	Pass
	5230	46	n (40MHz)	13.5/15 (MCS0)	5.51	11.0	-5.49	Pass
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	1.13	11.0	-9.87	Pass
Band 2A	5260	52	a	6	5.41	11.0	-5.59	Pass
	5280	56	a	6	5.61	11.0	-5.39	Pass
	5320	64	a	6	5.57	11.0	-5.43	Pass
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	5.27	11.0	-5.73	Pass
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	5.19	11.0	-5.81	Pass
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	5.19	11.0	-5.81	Pass
	5270	54	n (40MHz)	13.5/15 (MCS0)	6.20	11.0	-4.80	Pass
	5310	62	n (40MHz)	13.5/15 (MCS0)	5.67	11.0	-5.33	Pass
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	0.59	11.0	-10.41	Pass
Band 2C	5500	100	a	6	5.84	11.0	-5.16	Pass
	5600	120	a	6	5.69	11.0	-5.31	Pass
	5720	144	a	6	5.14	11.0	-5.86	Pass
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	5.37	11.0	-5.63	Pass
	5600	120	n (20MHz)	6.5/7.2 (MCS0)	5.12	11.0	-5.88	Pass
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	4.74	11.0	-6.26	Pass
	5510	102	n (40MHz)	13.5/15 (MCS0)	6.12	11.0	-4.88	Pass
	5590	118	n (40MHz)	13.5/15 (MCS0)	5.16	11.0	-5.84	Pass
	5710	142	n (40MHz)	13.5/15 (MCS0)	5.34	11.0	-5.66	Pass
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-0.09	11.0	-11.09	Pass
	5610	122	ac (80MHz)	29.3/32.5 (MCS0)	-0.65	11.0	-11.65	Pass
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-3.11	11.0	-14.11	Pass

Table 7-19. Conducted Power Spectral Density Measurements

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 88 of 255

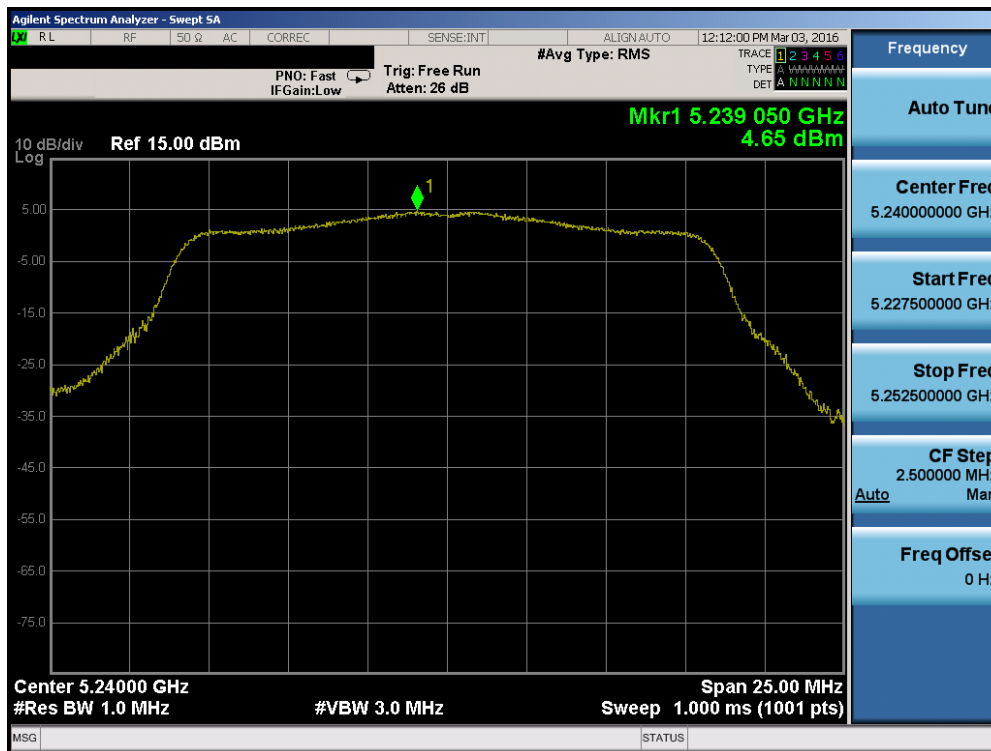


Plot 7-118. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 36)

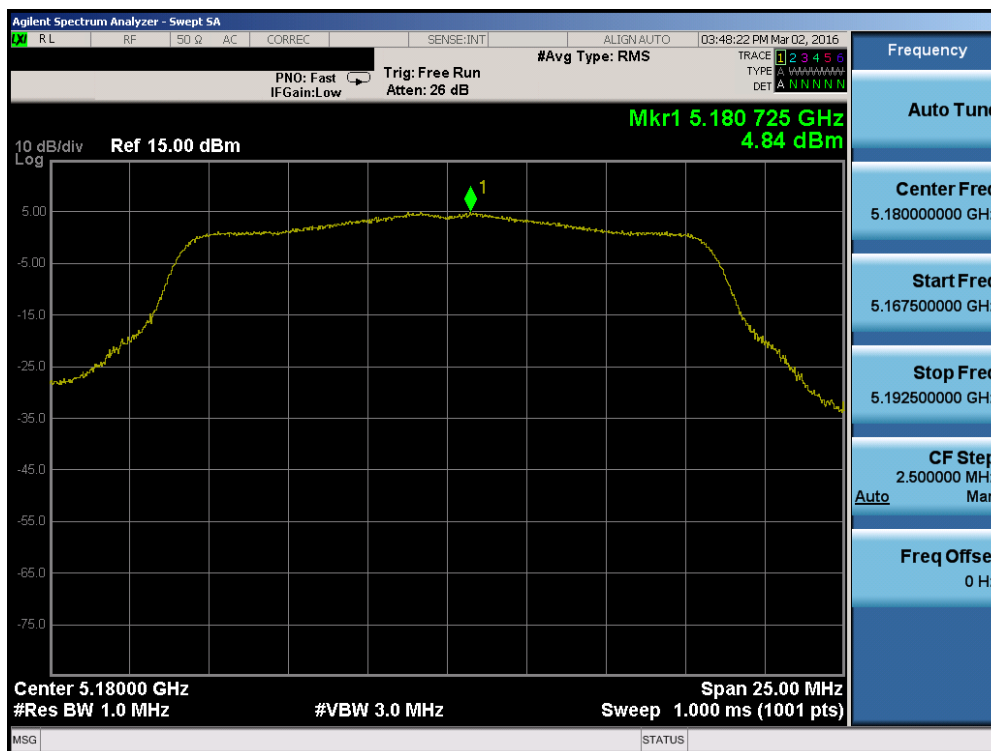


Plot 7-119. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 40)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 89 of 255

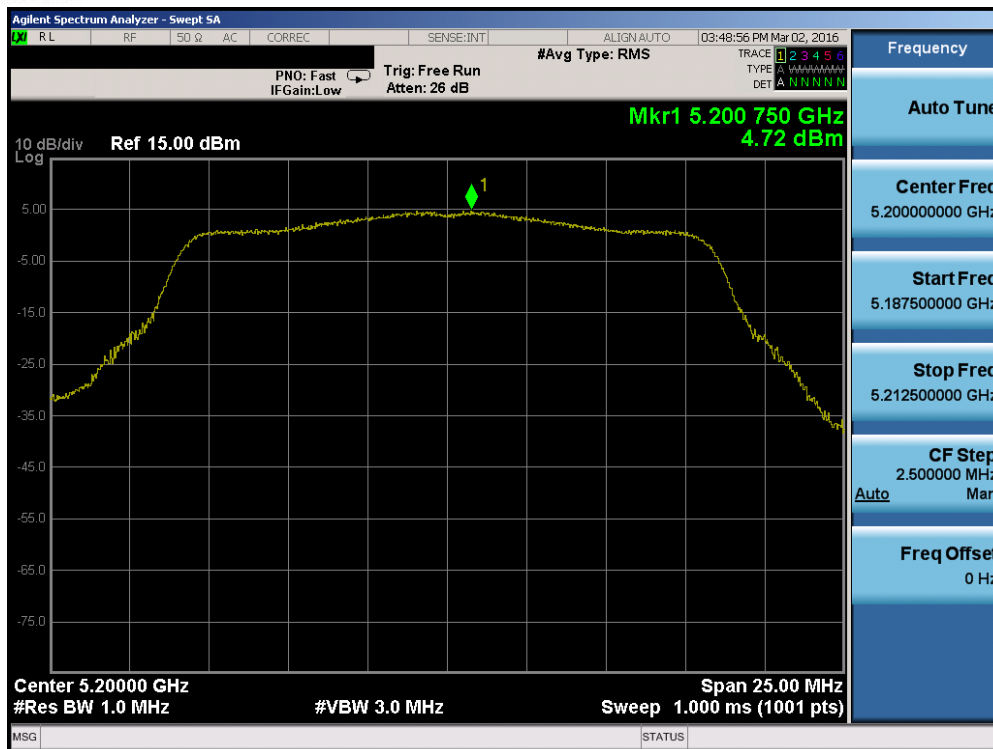


Plot 7-120. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 48)

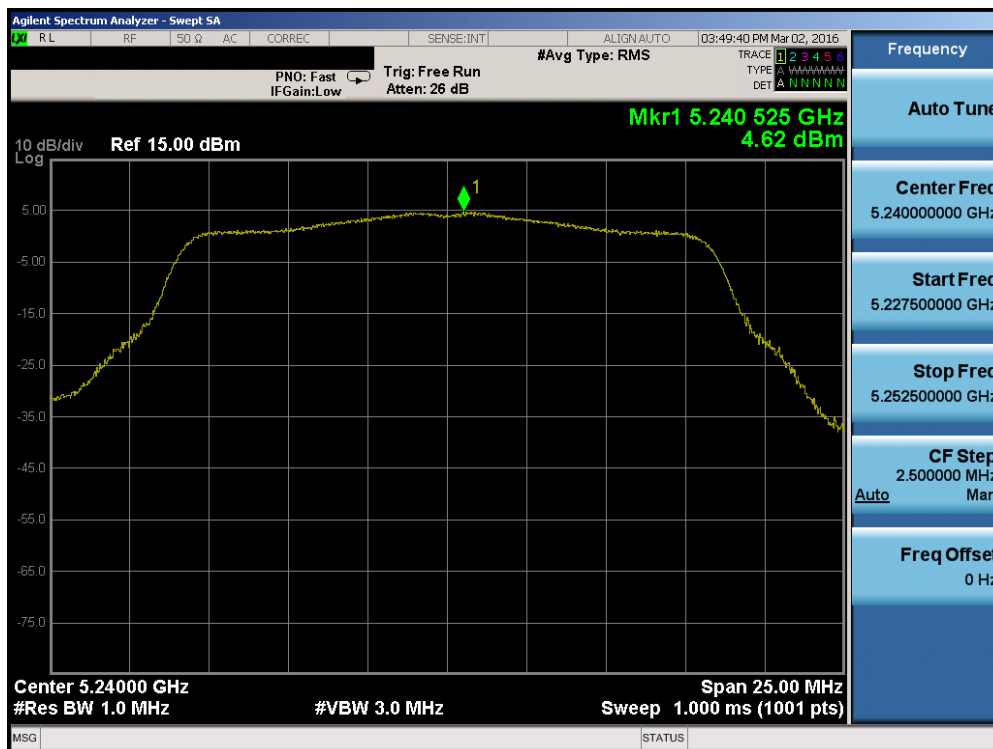


Plot 7-121. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 90 of 255

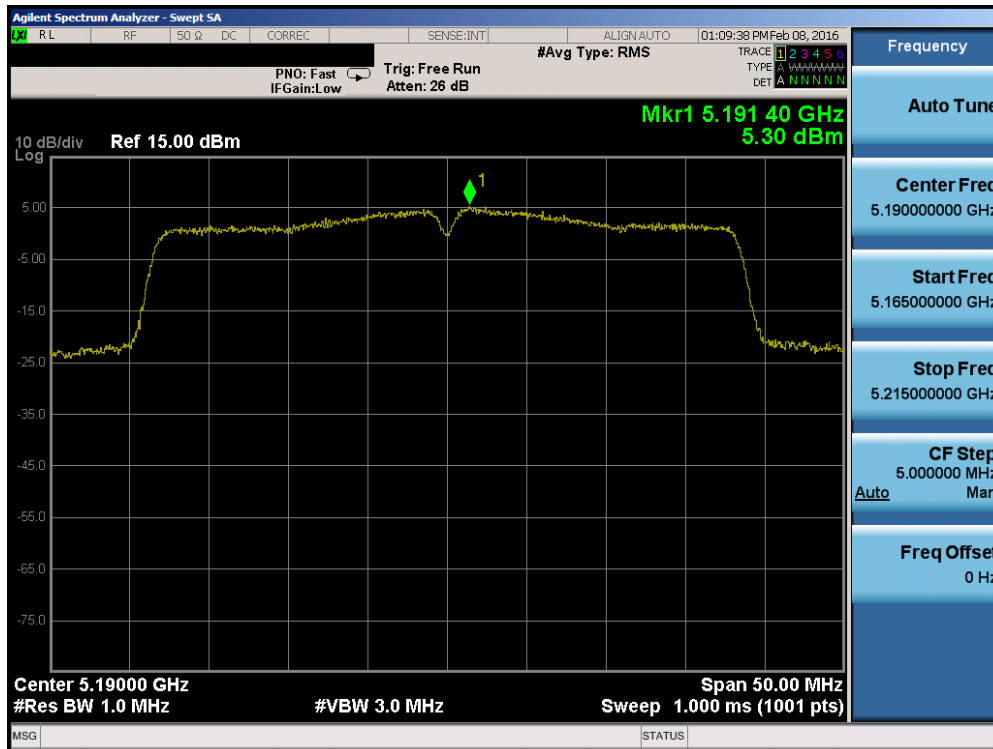


Plot 7-122. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

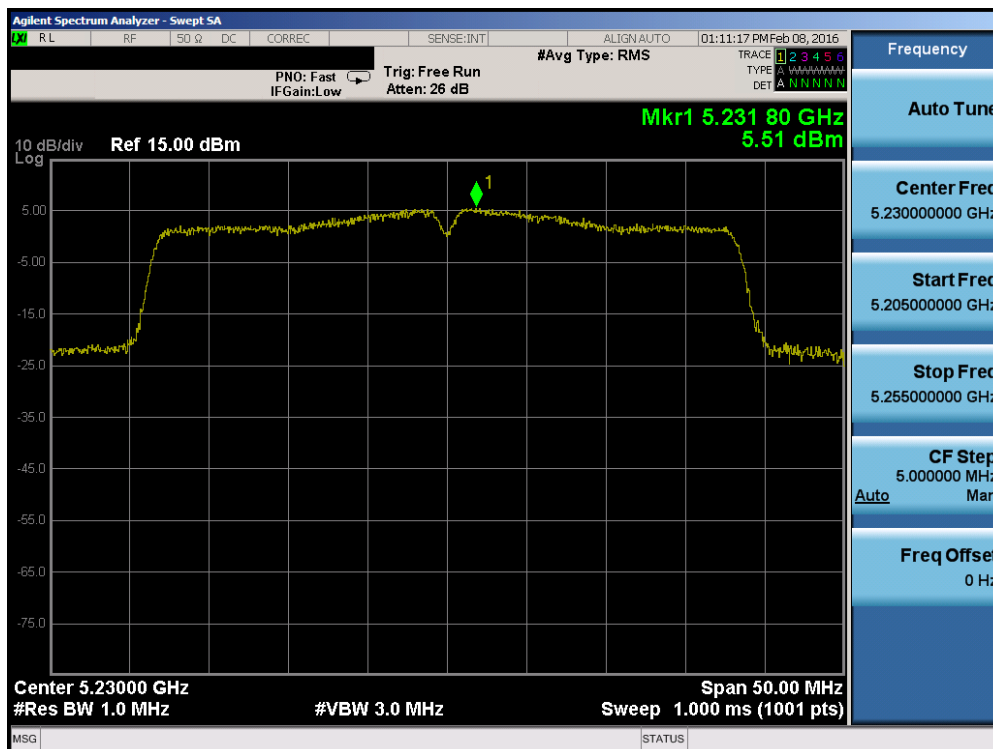


Plot 7-123. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 91 of 255

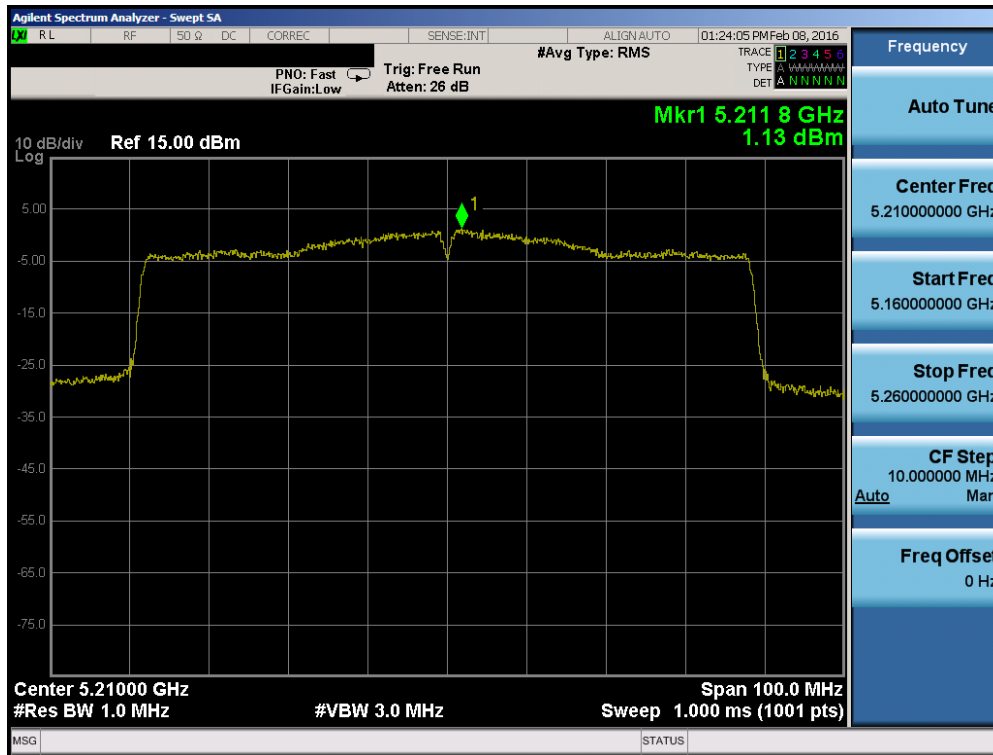


Plot 7-124. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

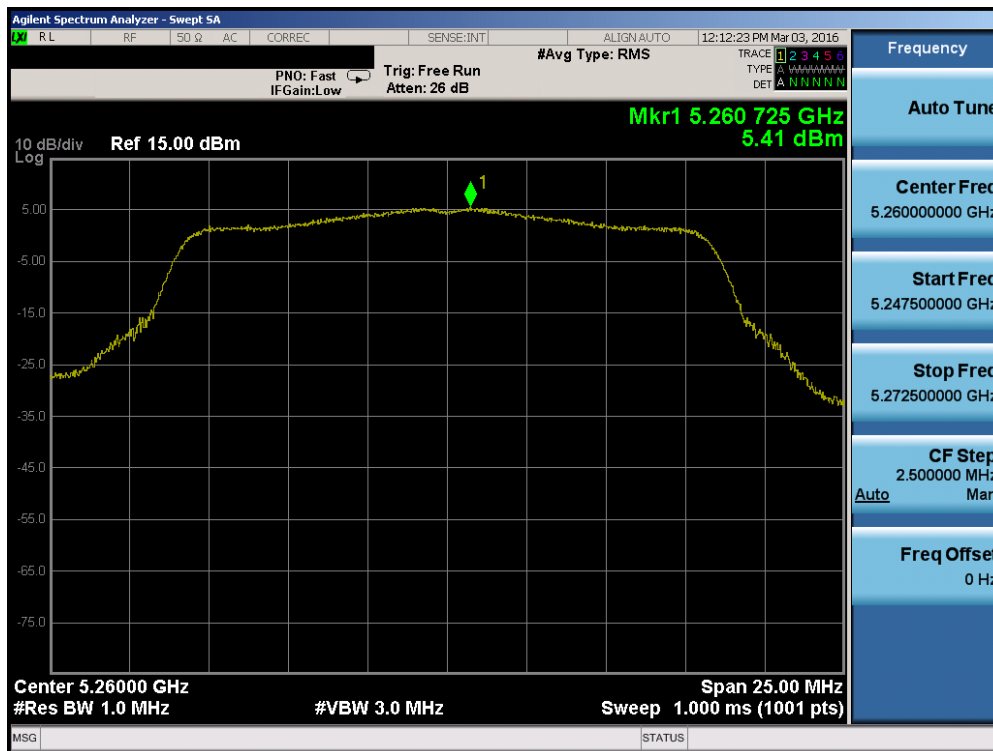


Plot 7-125. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 92 of 255

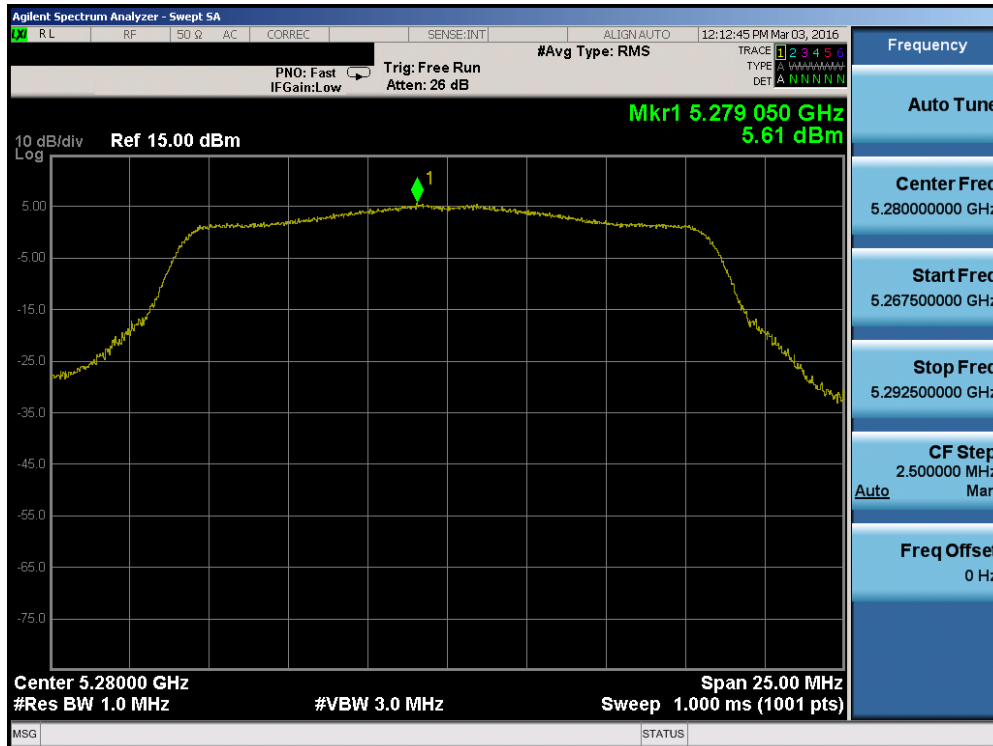


Plot 7-126. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

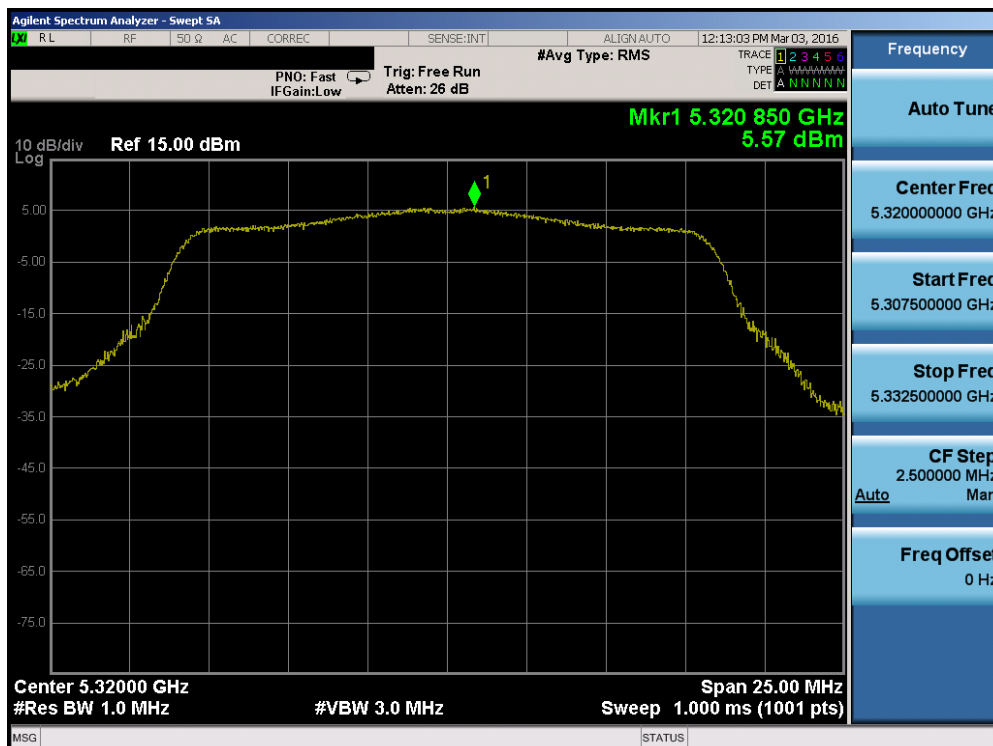


Plot 7-127. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 52)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 93 of 255

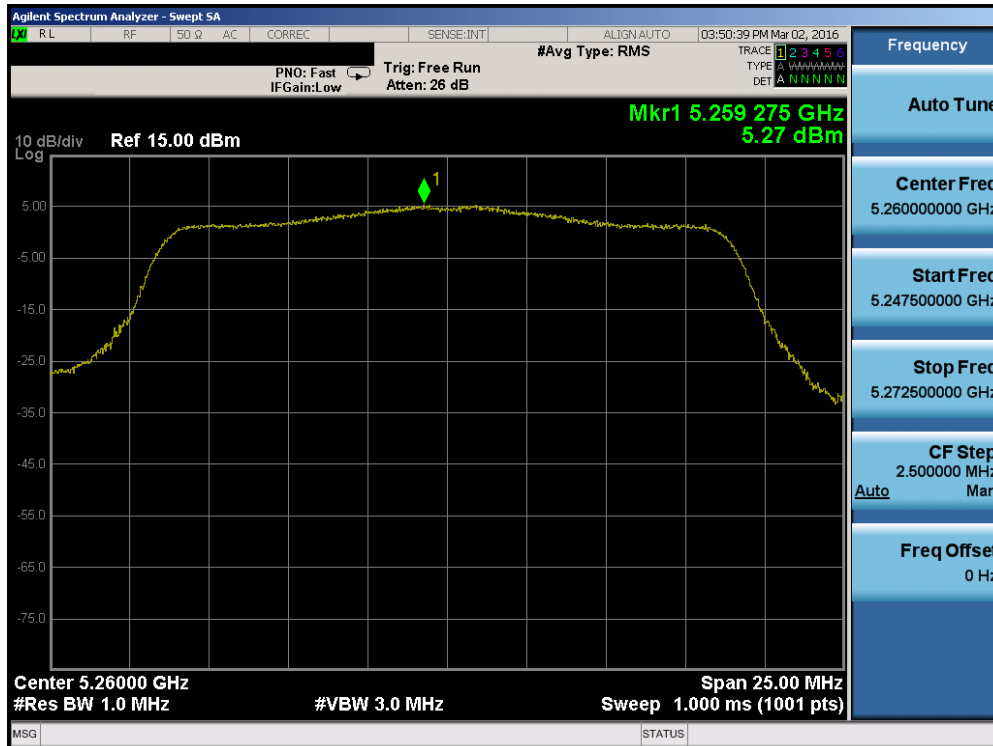


Plot 7-128. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 56)

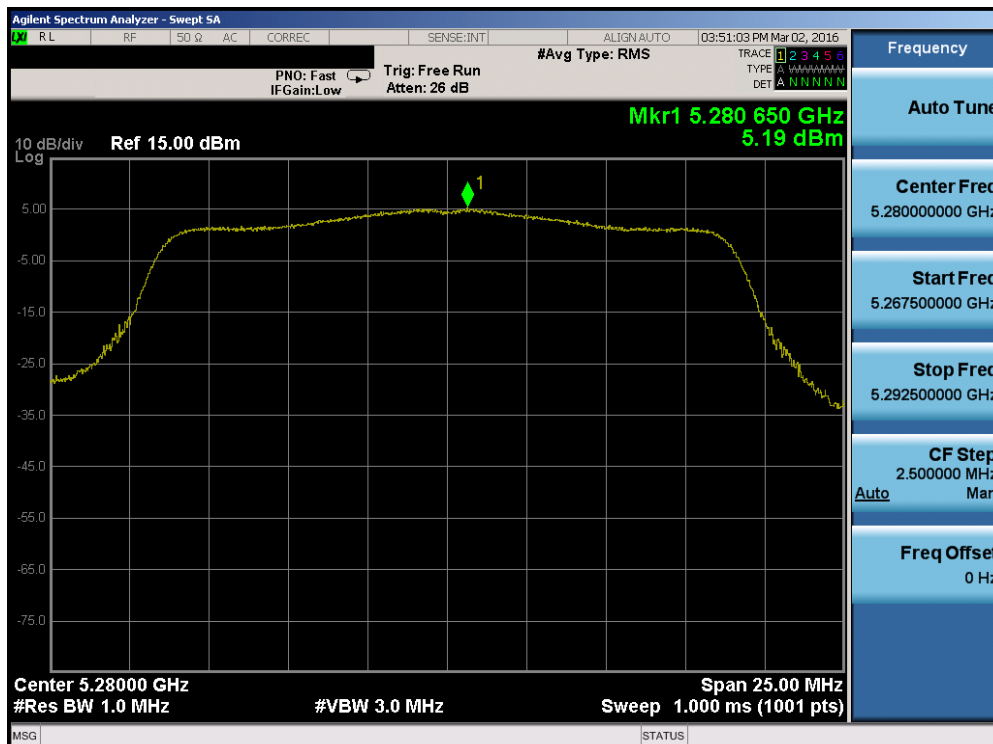


Plot 7-129. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 64)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 94 of 255

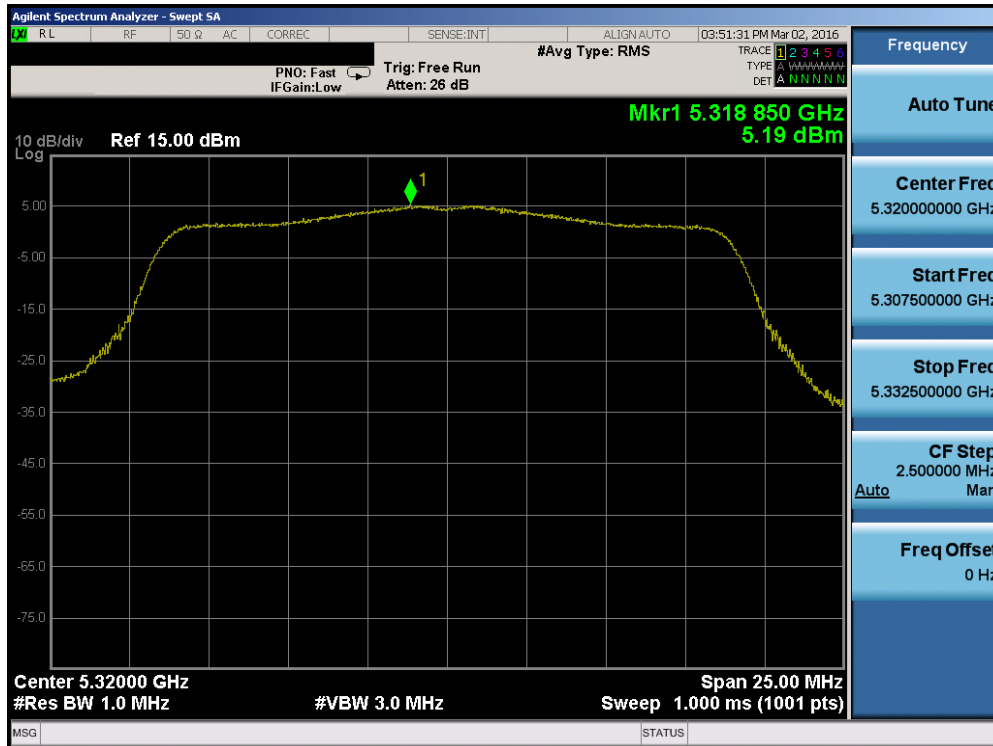


Plot 7-130. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

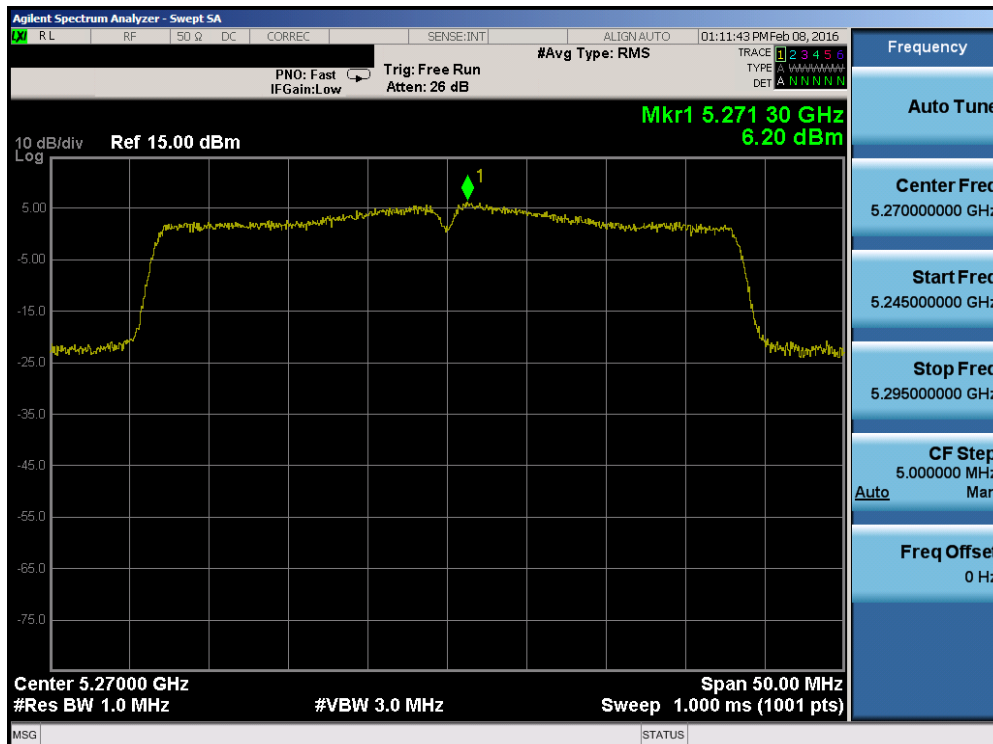


Plot 7-131. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 95 of 255

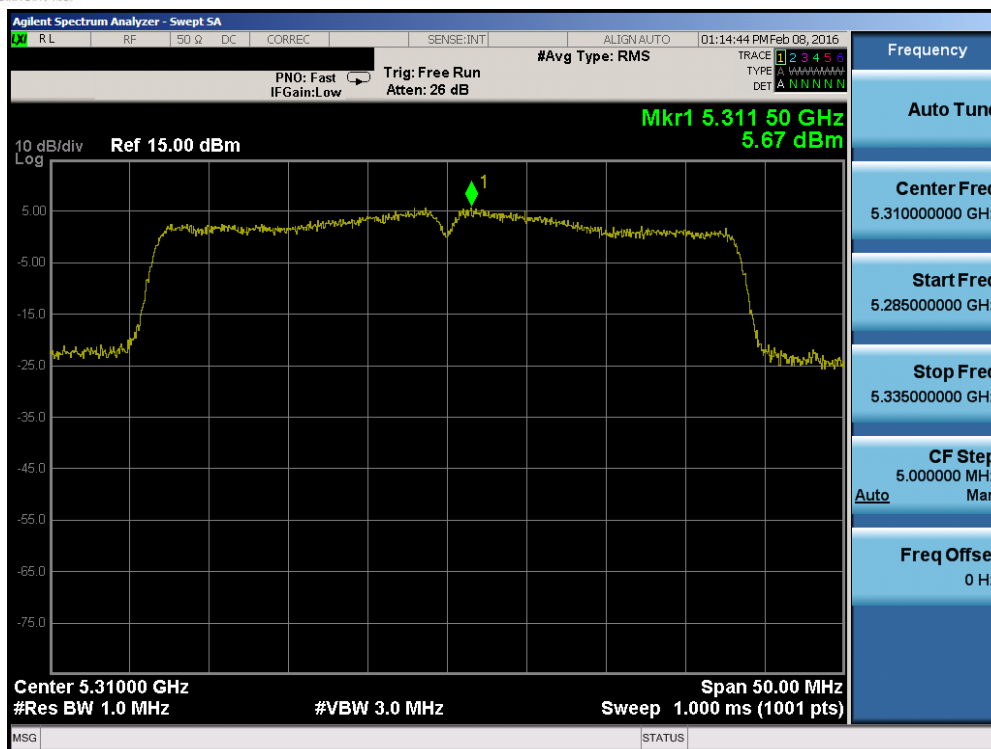


Plot 7-132. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

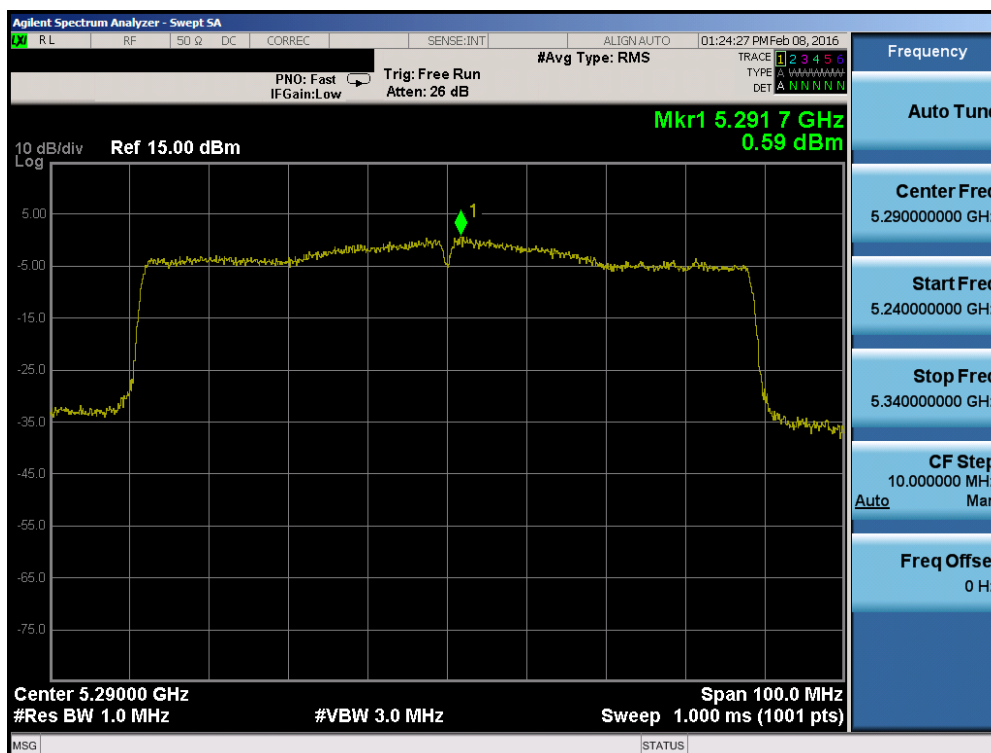


Plot 7-133. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 96 of 255

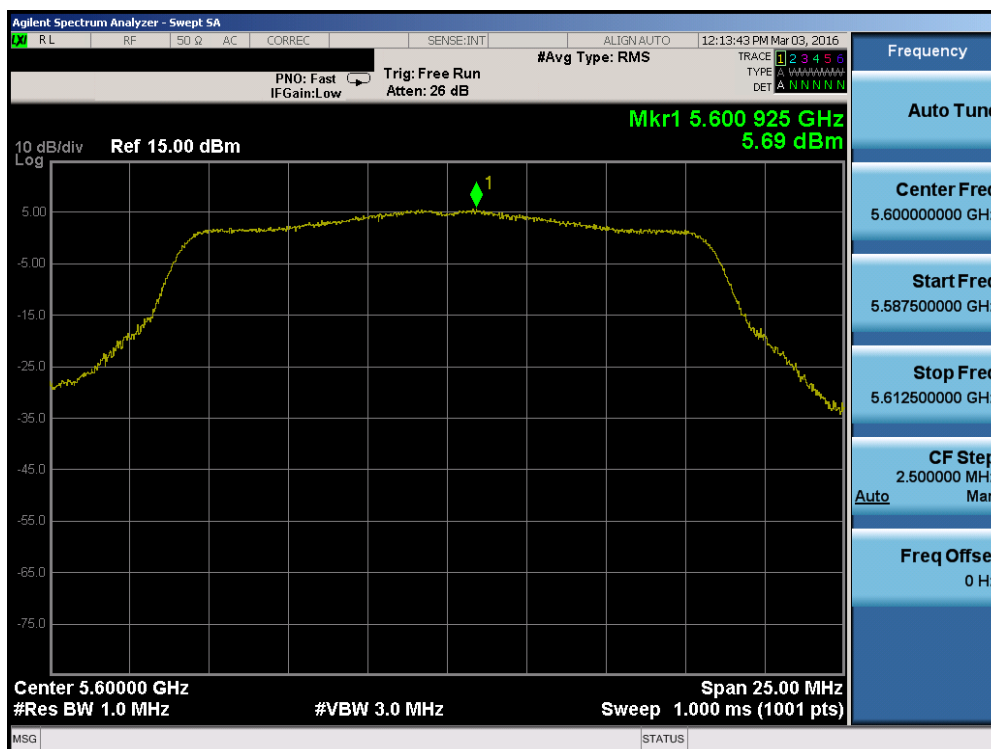
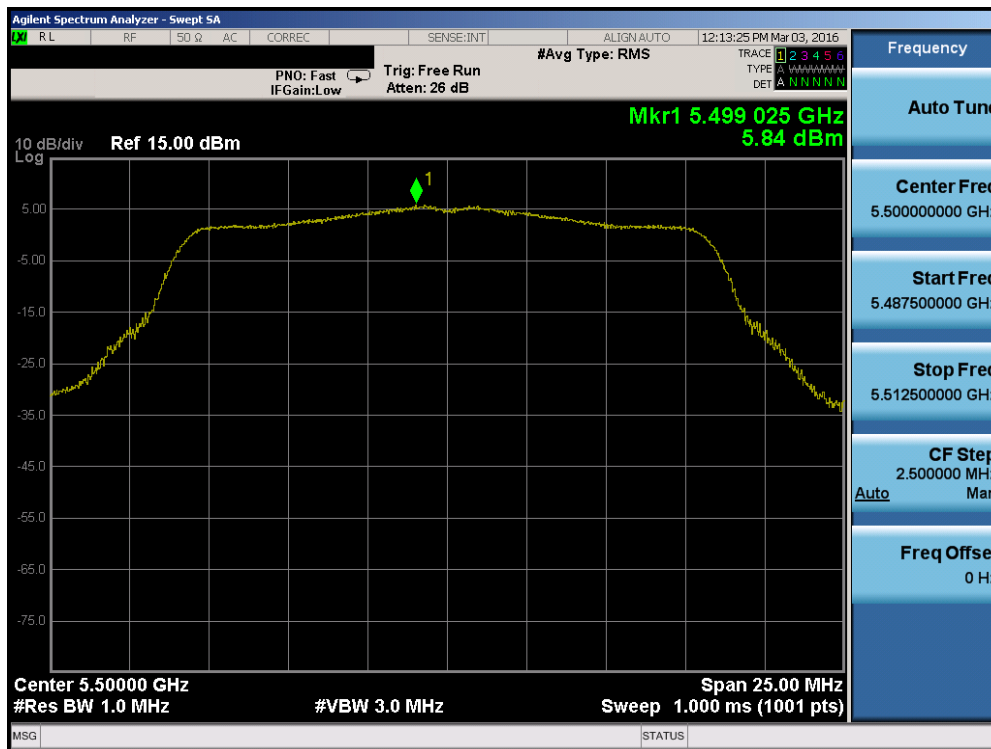


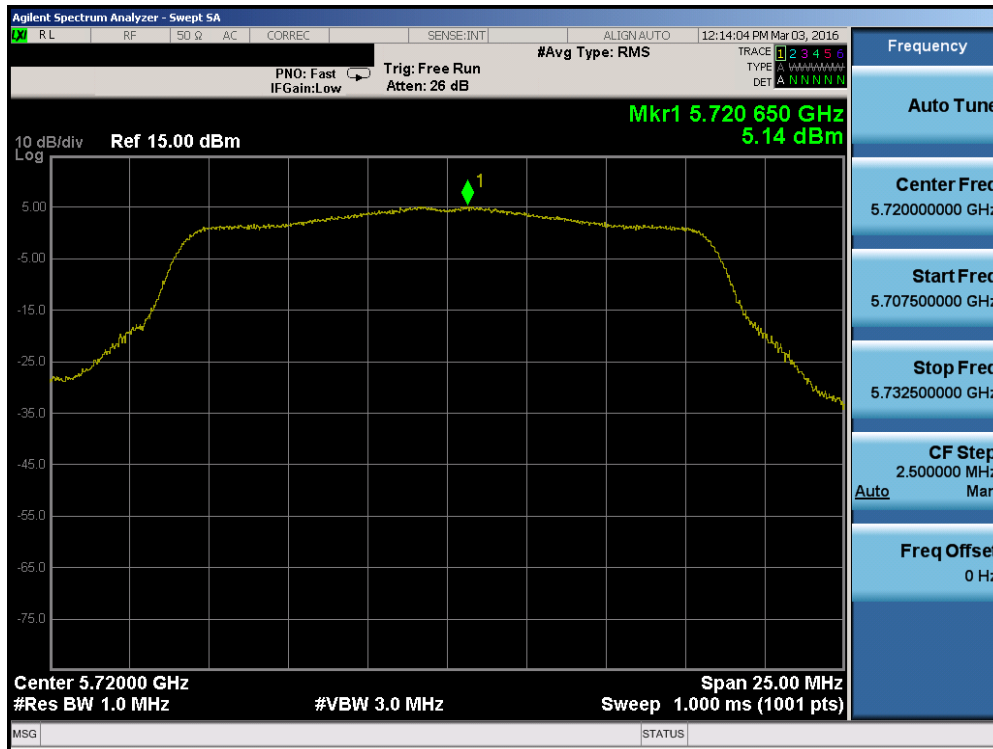
Plot 7-134. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)



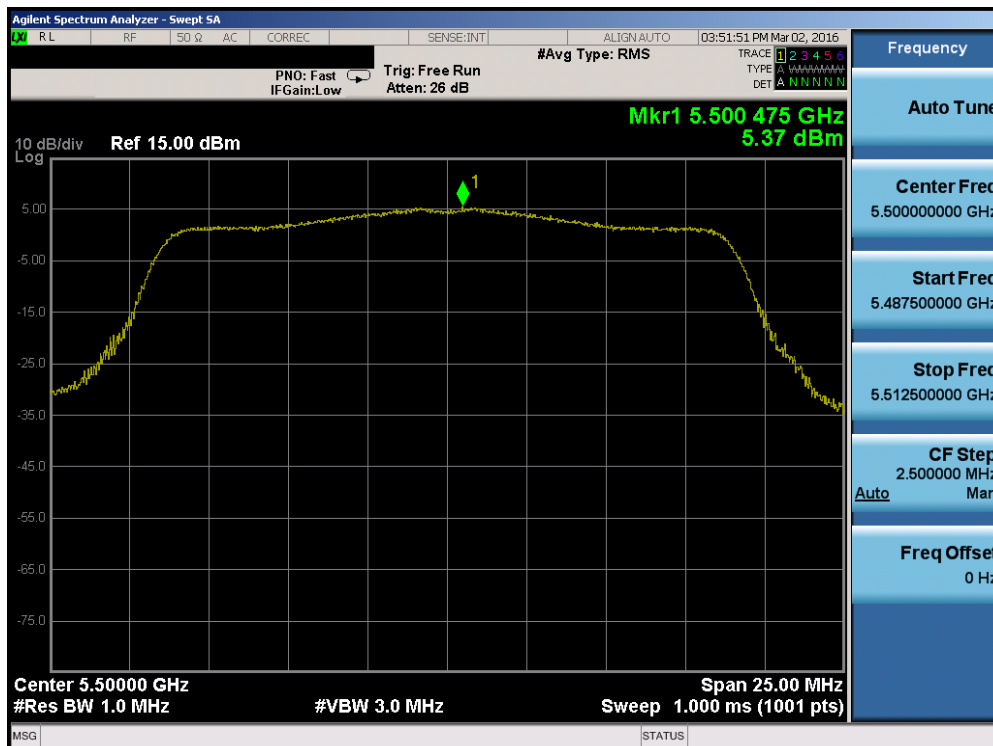
Plot 7-135. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

FCC ID: A3LSCV33	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset	Page 97 of 255



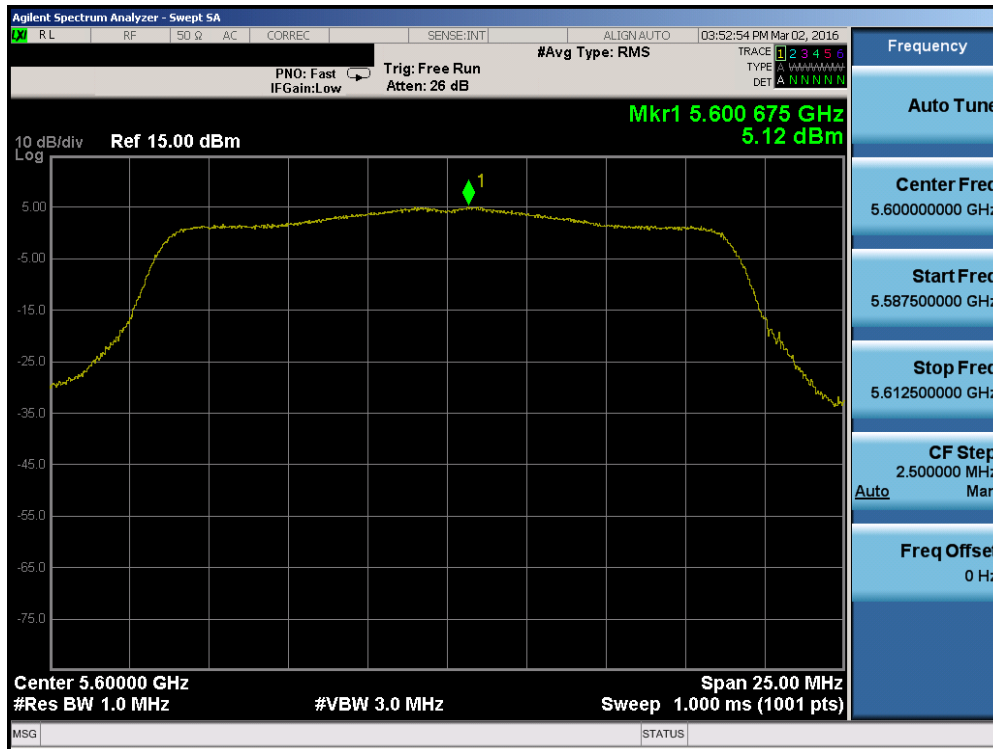


Plot 7-138. Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 144)

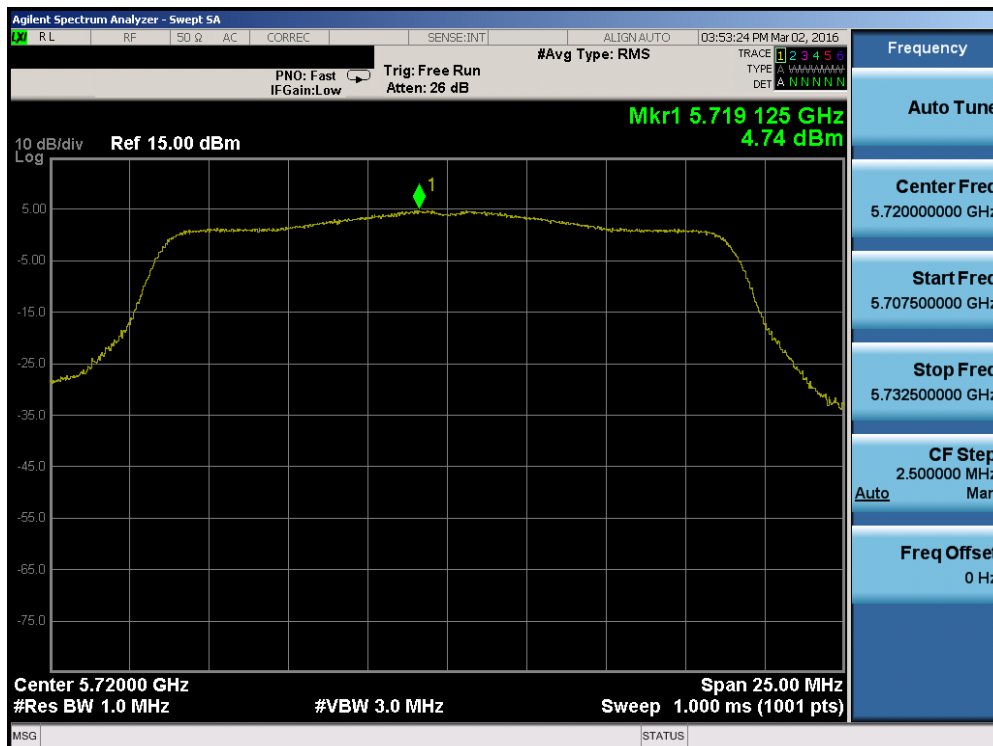


Plot 7-139. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 99 of 255

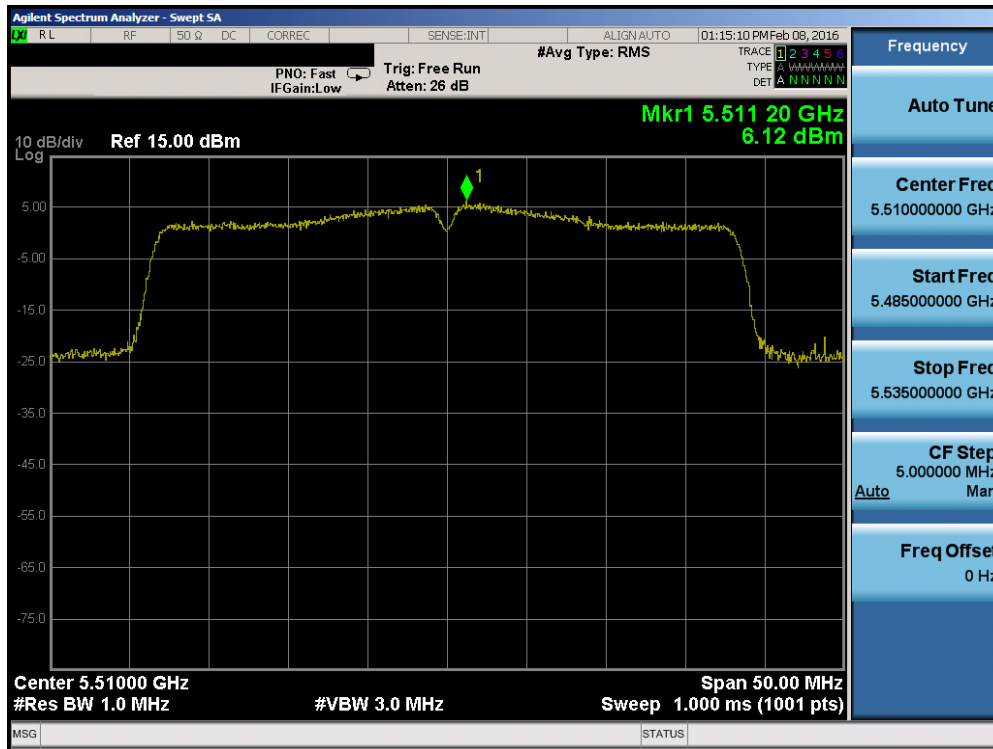


Plot 7-140. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 120)

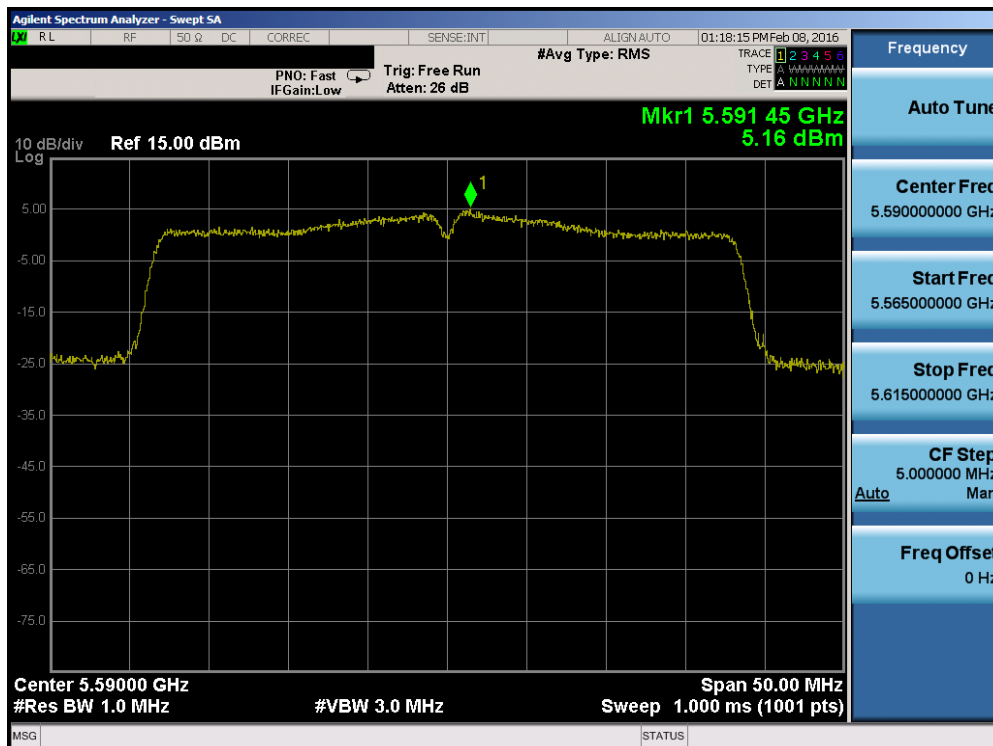


Plot 7-141. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 144)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 100 of 255

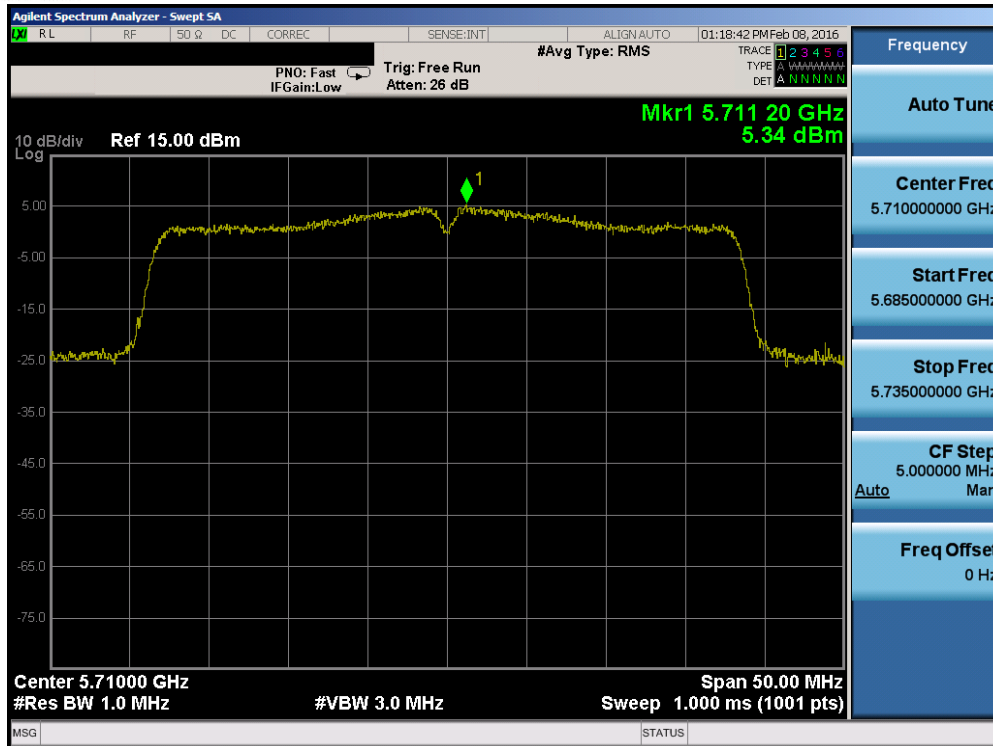


Plot 7-142. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

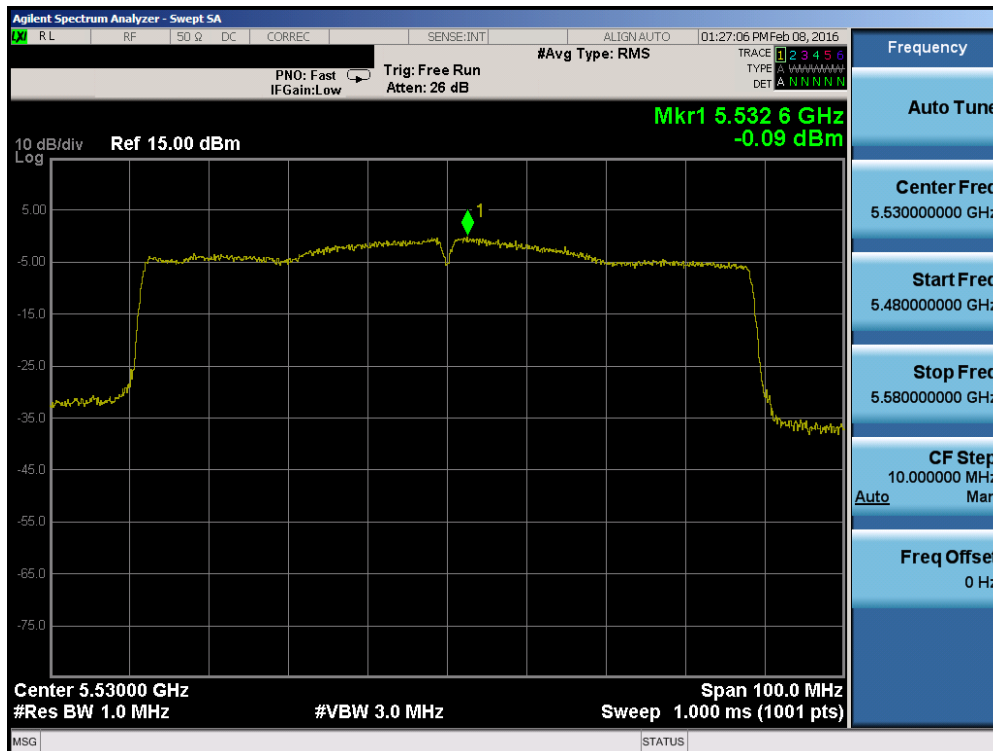


Plot 7-143. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 118)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 101 of 255

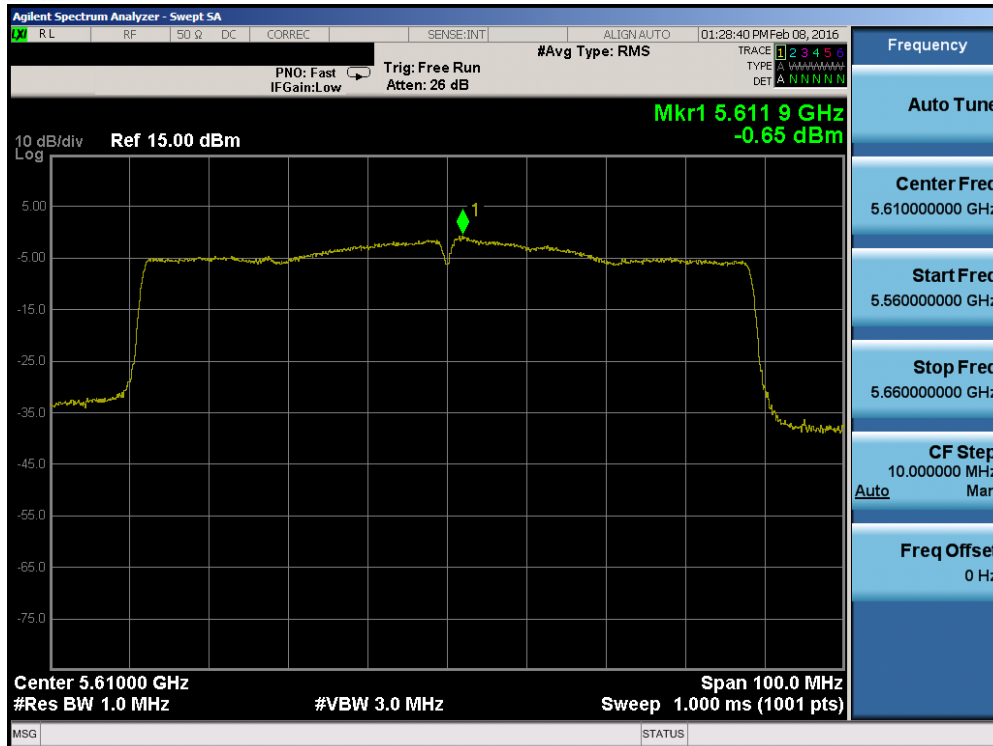


Plot 7-144. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)

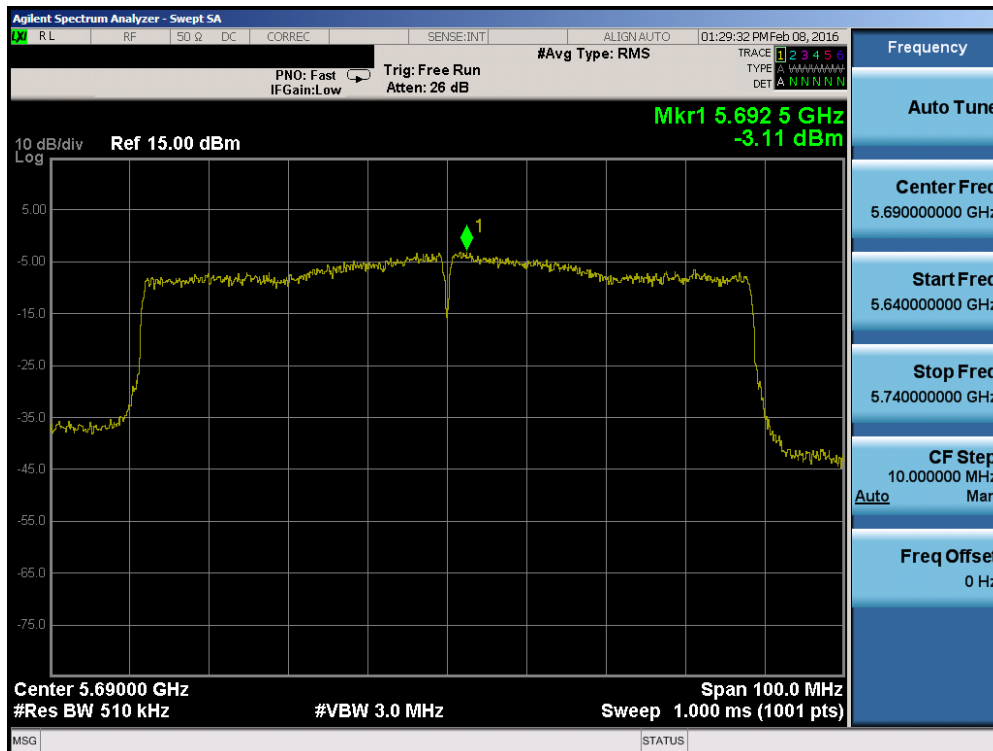


Plot 7-145. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 102 of 255



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

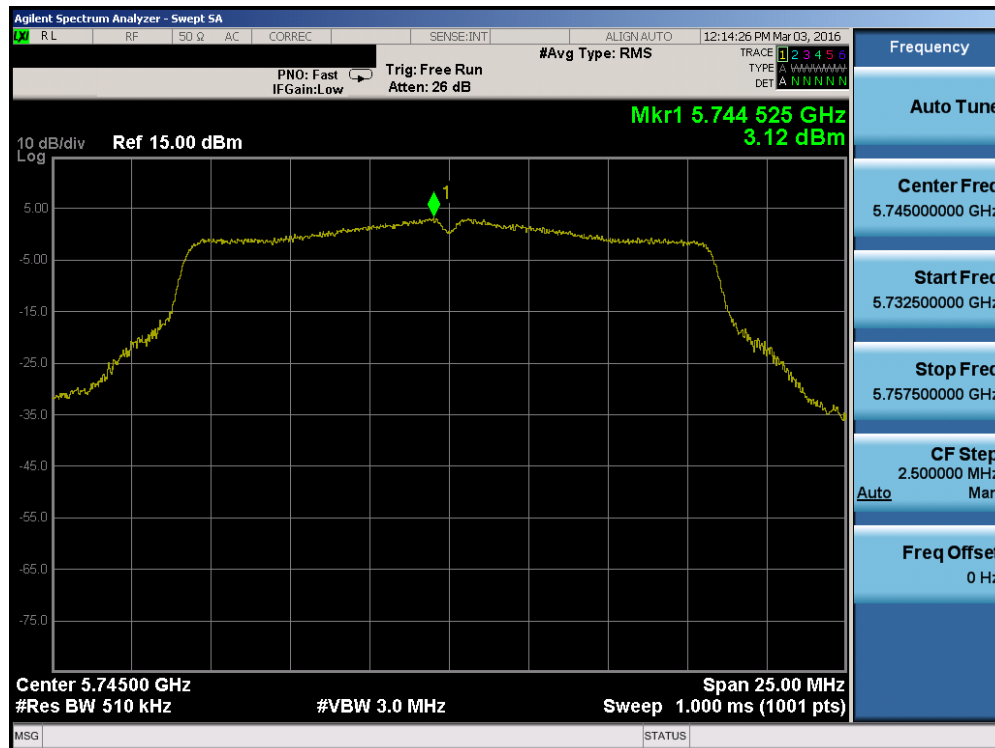


Plot 7-147. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 138)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 103 of 255

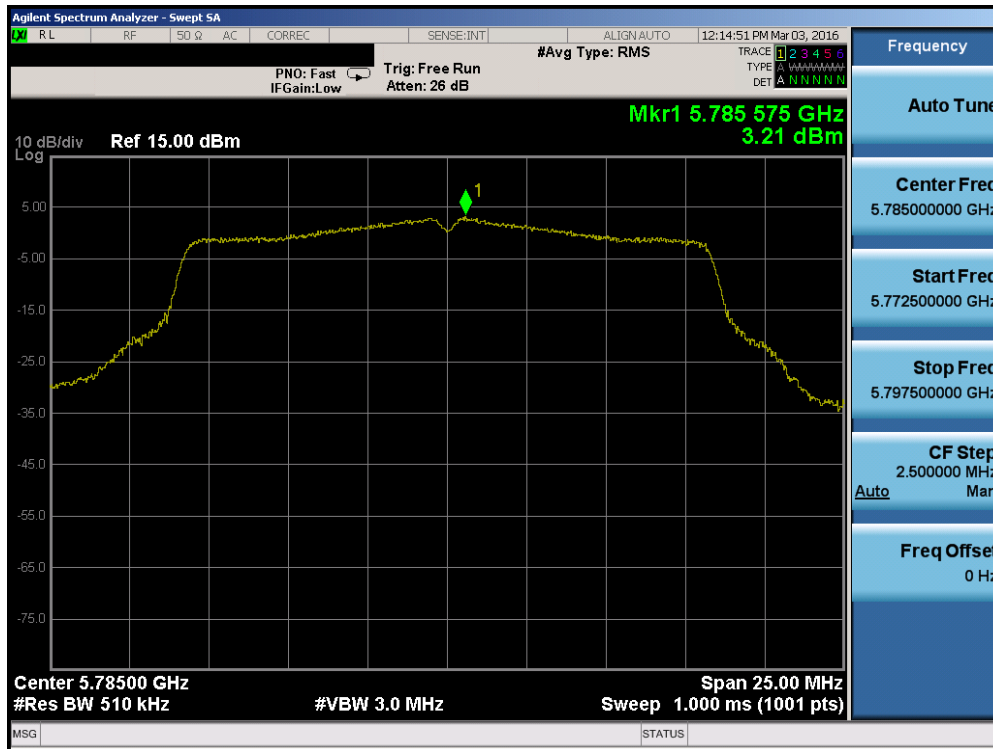
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]	Pass / Fail
Band 3	5745	149	a	6	3.12	30.0	-26.88	Pass
	5785	157	a	6	3.21	30.0	-26.79	Pass
	5825	165	a	6	3.23	30.0	-26.77	Pass
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	2.73	30.0	-27.27	Pass
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	2.88	30.0	-27.12	Pass
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	2.74	30.0	-27.27	Pass
	5755	151	n (40MHz)	13.5/15 (MCS0)	2.01	30.0	-27.99	Pass
	5795	159	n (40MHz)	13.5/15 (MCS0)	1.56	30.0	-28.44	Pass
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-1.13	30.0	-31.13	Pass

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

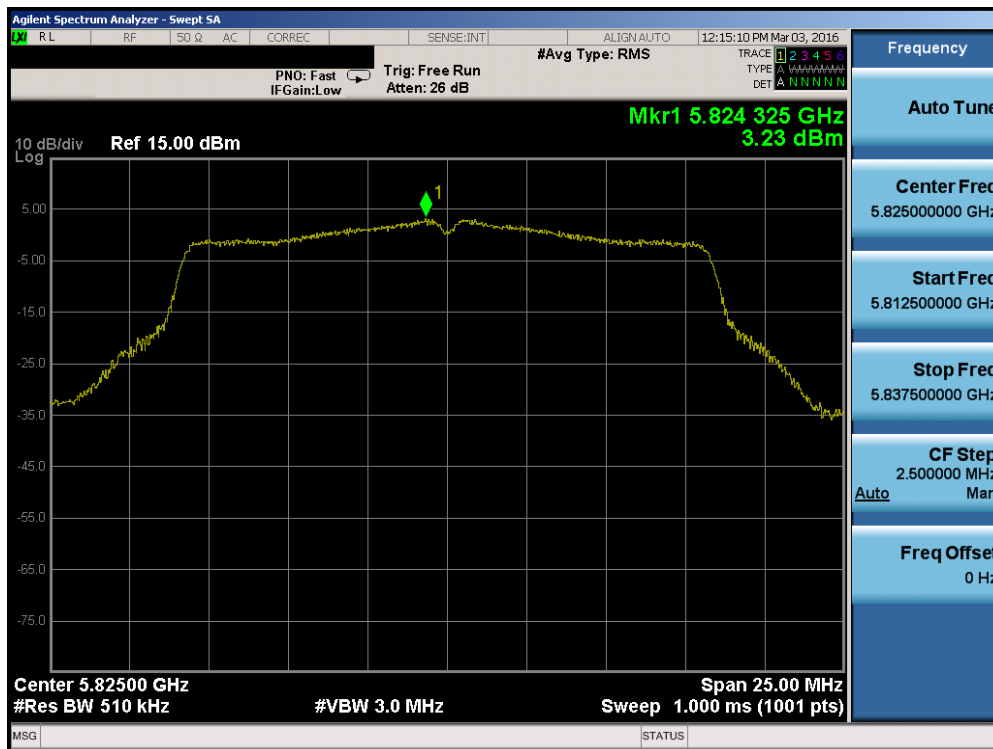


Plot 7-148. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 149)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 104 of 255

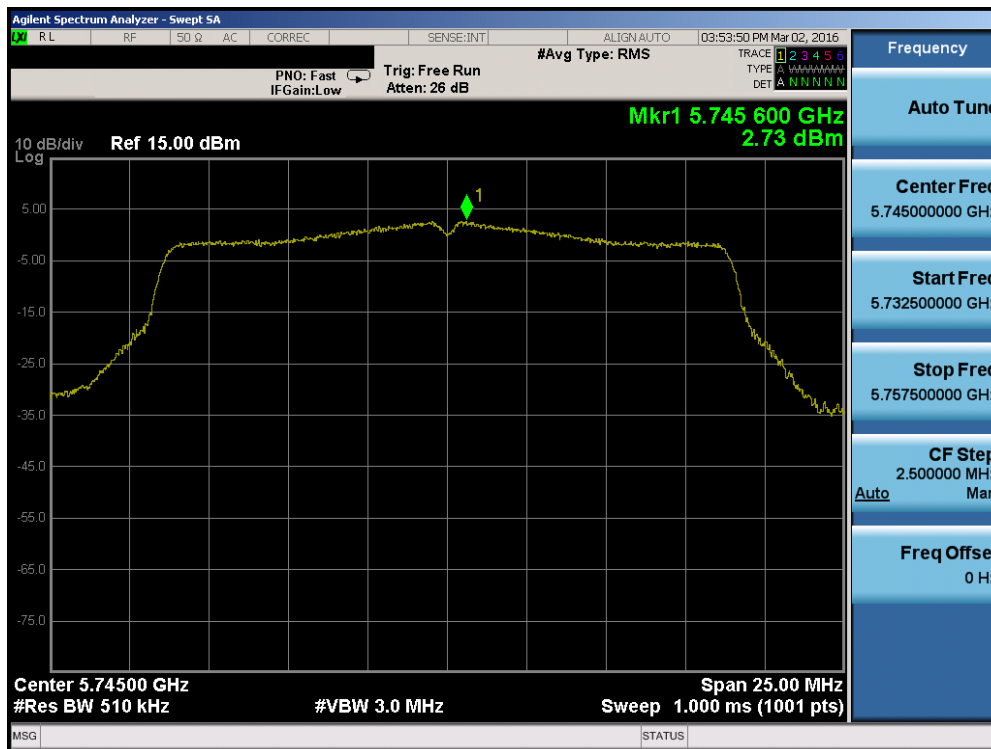


Plot 7-149. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 157)

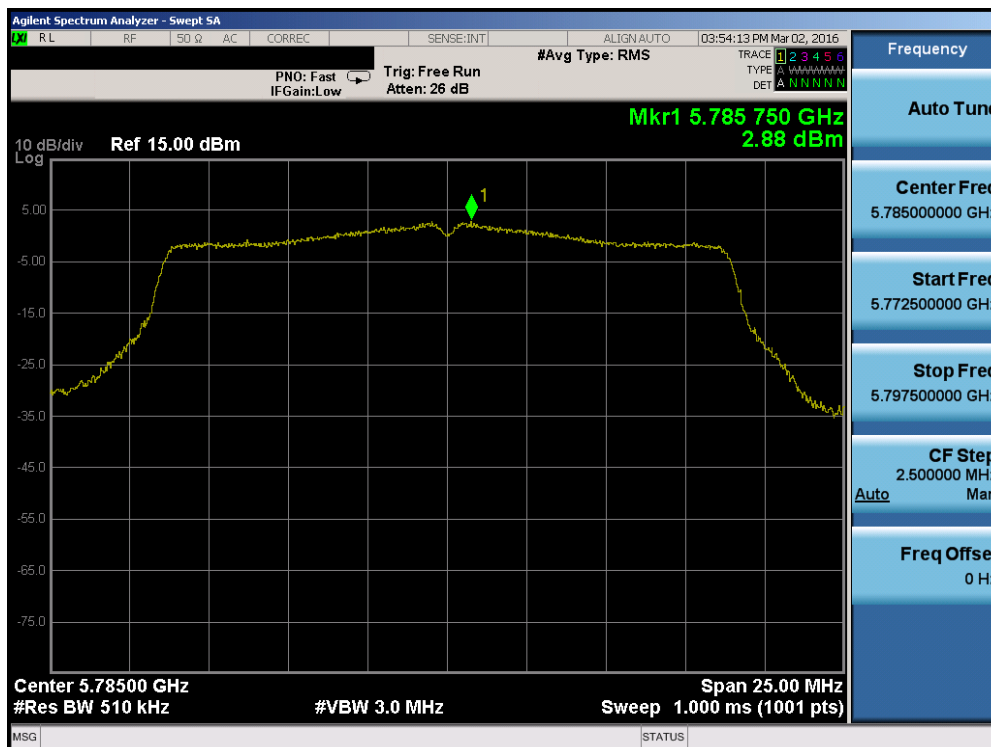


Plot 7-150. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 165)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 105 of 255

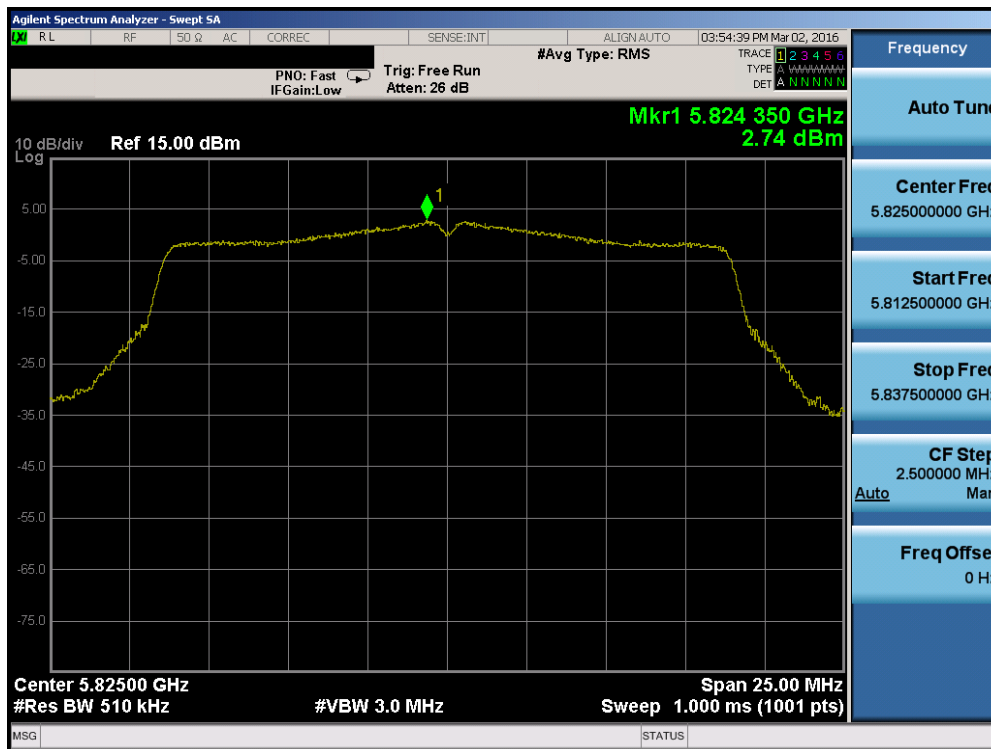


Plot 7-151. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

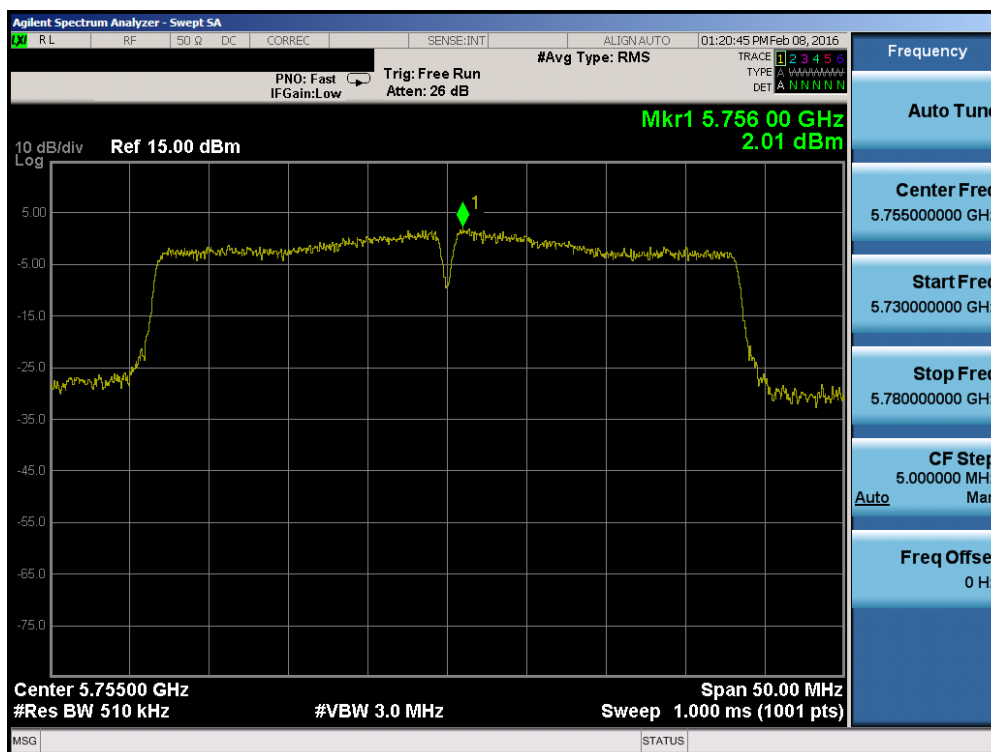


Plot 7-152. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

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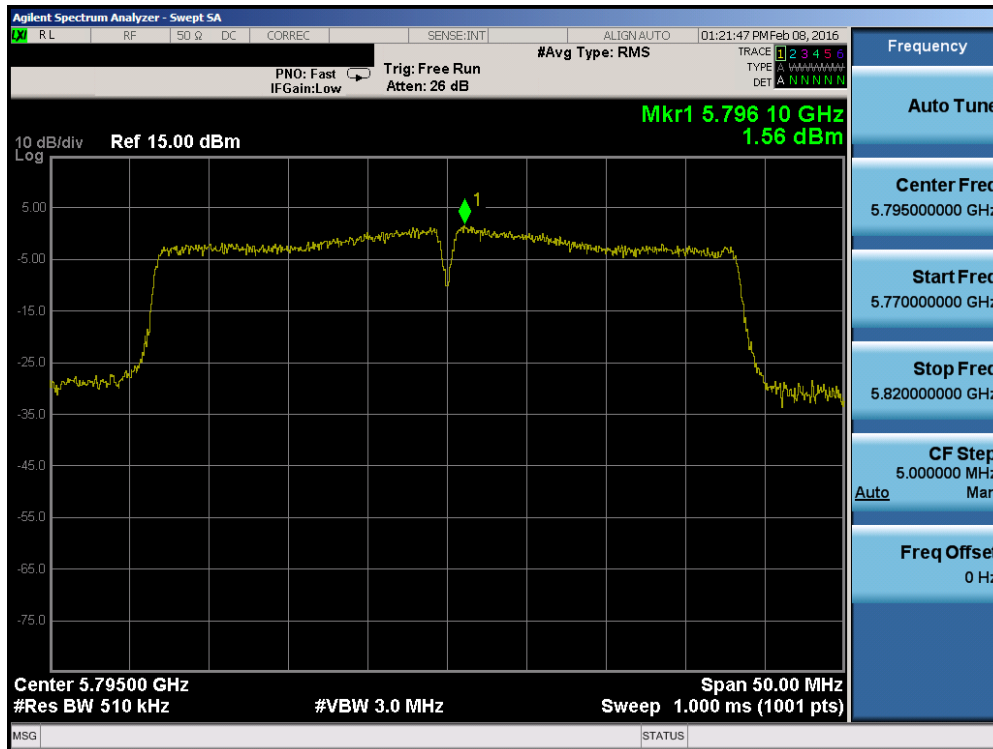


Plot 7-153. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

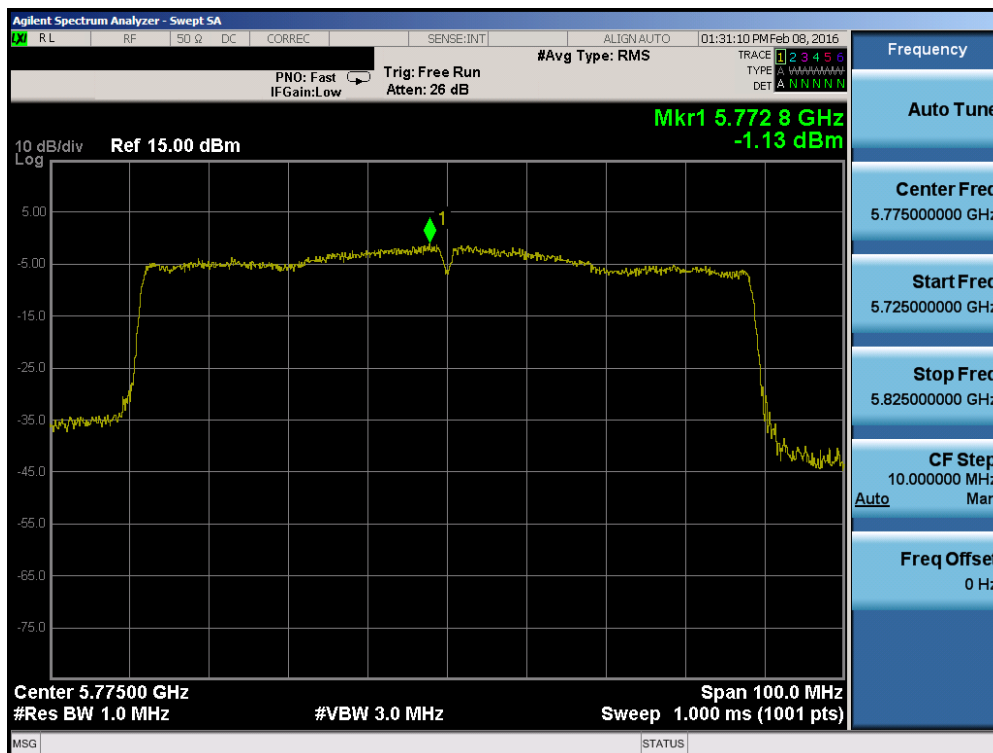


Plot 7-154. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

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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)

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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)	4.59	4.84	7.73	11.0	-3.27	Pass
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	4.64	4.72	7.69	11.0	-3.31	Pass
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	4.56	4.62	7.60	11.0	-3.40	Pass
	5190	38	n (40MHz)	13.5/15 (MCS0)	3.94	5.30	7.68	11.0	-3.32	Pass
	5230	46	n (40MHz)	13.5/15 (MCS0)	3.88	5.51	7.78	11.0	-3.22	Pass
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	0.24	1.13	3.72	11.0	-7.28	Pass
Band 2A	5260	52	n (20MHz)	6.5/7.2 (MCS0)	5.33	5.27	8.31	11.0	-2.69	Pass
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	5.32	5.19	8.27	11.0	-2.73	Pass
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	5.39	5.19	8.30	11.0	-2.70	Pass
	5270	54	n (40MHz)	13.5/15 (MCS0)	4.17	6.20	8.31	11.0	-2.69	Pass
	5310	62	n (40MHz)	13.5/15 (MCS0)	4.01	5.67	7.93	11.0	-3.07	Pass
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	0.02	0.59	3.33	11.0	-7.67	Pass
Band 2C	5500	100	n (20MHz)	6.5/7.2 (MCS0)	5.12	5.37	8.26	11.0	-2.74	Pass
	5600	120	n (20MHz)	6.5/7.2 (MCS0)	4.81	5.12	7.98	11.0	-3.02	Pass
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	4.47	4.74	7.61	11.0	-3.39	Pass
	5510	102	n (40MHz)	13.5/15 (MCS0)	3.56	6.12	8.04	11.0	-2.96	Pass
	5590	118	n (40MHz)	13.5/15 (MCS0)	1.92	5.16	6.85	11.0	-4.15	Pass
	5710	142	n (40MHz)	13.5/15 (MCS0)	3.33	5.34	7.46	11.0	-3.54	Pass
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-0.94	-0.09	2.52	11.0	-8.48	Pass
	5610	122	ac (80MHz)	29.3/32.5 (MCS0)	-1.89	-0.65	1.78	11.0	-9.22	Pass
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-4.12	-3.11	-0.57	11.0	-11.57	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)	2.15	2.73	5.46	30.0	-24.54	Pass
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	2.07	2.88	5.50	30.0	-24.50	Pass
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	1.87	2.74	5.33	30.0	-24.67	Pass
	5755	151	n (40MHz)	13.5/15 (MCS0)	0.70	2.01	4.41	30.0	-25.59	Pass
	5795	159	n (40MHz)	13.5/15 (MCS0)	0.43	1.56	4.04	30.0	-25.96	Pass
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-1.24	-1.13	1.83	30.0	-28.17	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 4.59 dBm for Antenna-1 and 4.84 dBm for Antenna-2.

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

$$(4.59 \text{ dBm} + 4.84 \text{ dBm}) = (2.88 \text{ mW} + 3.05 \text{ mW}) = 5.92 \text{ mW} = 7.73 \text{ dBm}$$

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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: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	5,179,999,970	-30	-0.00000058
100 %		- 30	5,180,000,284	284	0.00000548
100 %		- 20	5,180,000,186	186	0.00000359
100 %		- 10	5,180,000,164	164	0.00000317
100 %		0	5,179,999,935	-65	-0.00000125
100 %		+ 10	5,179,999,766	-234	-0.00000452
100 %		+ 20	5,179,999,912	-88	-0.00000170
100 %		+ 30	5,179,999,941	-59	-0.00000114
100 %		+ 40	5,179,999,933	-67	-0.00000129
100 %		+ 50	5,179,999,952	-48	-0.00000093
BATT. ENDPOINT	3.45	+ 20	5,180,000,004	4	0.00000008

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.

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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: 5,260,000,000 Hz
 CHANNEL: 52
 REFERENCE VOLTAGE: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	5,260,000,023	23	0.00000044
100 %		- 30	5,259,999,769	-231	-0.00000439
100 %		- 20	5,259,999,958	-42	-0.00000080
100 %		- 10	5,259,999,663	-337	-0.00000641
100 %		0	5,260,000,013	13	0.00000025
100 %		+ 10	5,259,999,961	-39	-0.00000074
100 %		+ 20	5,259,999,775	-225	-0.00000428
100 %		+ 30	5,259,999,801	-199	-0.00000378
100 %		+ 40	5,259,999,787	-213	-0.00000405
100 %		+ 50	5,259,999,909	-91	-0.00000173
BATT. ENDPOINT	3.45	+ 20	5,259,999,619	-381	-0.00000724

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.

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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: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	5,500,000,009	9	0.00000016
100 %		- 30	5,499,999,981	-19	-0.00000035
100 %		- 20	5,499,999,660	-340	-0.00000618
100 %		- 10	5,500,000,213	213	0.00000387
100 %		0	5,500,000,109	109	0.00000198
100 %		+ 10	5,499,999,970	-30	-0.00000055
100 %		+ 20	5,500,000,237	237	0.00000431
100 %		+ 30	5,499,999,944	-56	-0.00000102
100 %		+ 40	5,500,000,204	204	0.00000371
100 %		+ 50	5,499,999,962	-38	-0.00000069
BATT. ENDPOINT	3.45	+ 20	5,500,000,062	62	0.00000113

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

§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: 5,745,000,000 Hz
 CHANNEL: 149
 REFERENCE VOLTAGE: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	5,745,000,103	103	0.00000179
100 %		- 30	5,745,000,227	227	0.00000395
100 %		- 20	5,744,999,941	-59	-0.00000103
100 %		- 10	5,744,999,639	-361	-0.00000628
100 %		0	5,744,999,857	-143	-0.00000249
100 %		+ 10	5,744,999,873	-127	-0.00000221
100 %		+ 20	5,745,000,075	75	0.00000131
100 %		+ 30	5,745,000,221	221	0.00000385
100 %		+ 40	5,744,999,963	-37	-0.00000064
100 %		+ 50	5,745,000,045	45	0.00000078
BATT. ENDPOINT	3.45	+ 20	5,745,000,060	60	0.00000104

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 [$\mu\text{V/m}$]	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 $\geq 2 \times \text{span/RBW}$)
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.

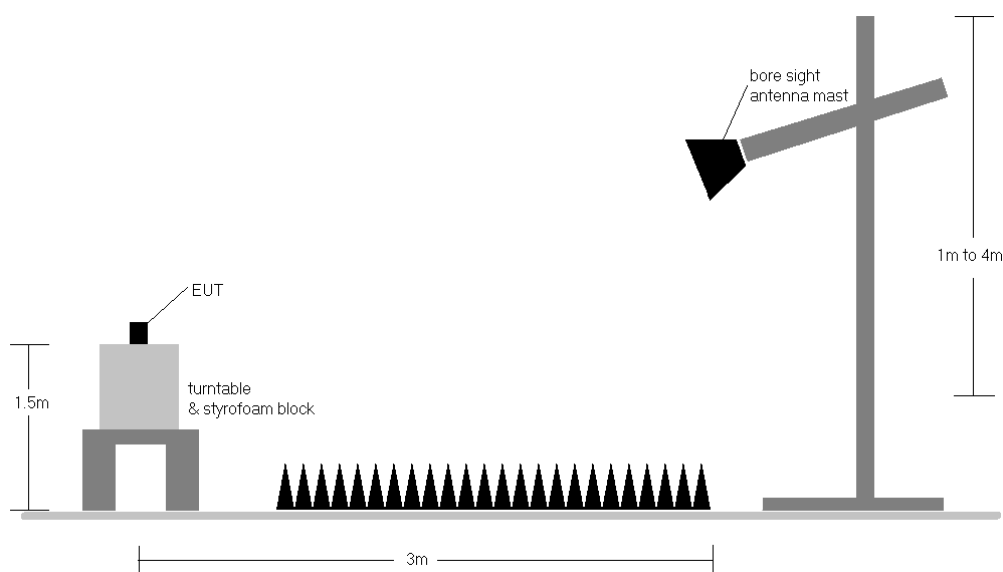


Figure 7-5. Test Instrument & Measurement Setup

Test Notes

1. All radiated spurious emissions levels were measured in a radiated test setup per the guidance of KDB 789033 D02 v01 Section G.
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 7-27. All spurious emissions that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dBμV/m.

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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.

Sample Calculations

Determining Spurious Emissions Levels

- Field Strength Level $[\text{dB}_{\mu\text{V/m}}] = \text{Analyzer Level} [\text{dBm}] + 107 + \text{AFCL} [\text{dB/m}]$
- $\text{AFCL} [\text{dB/m}] = \text{Antenna Factor} [\text{dB/m}] + \text{Cable Loss} [\text{dB}]$
- $\text{Margin} [\text{dB}] = \text{Field Strength Level} [\text{dB}_{\mu\text{V/m}}] - \text{Limit} [\text{dB}_{\mu\text{V/m}}]$

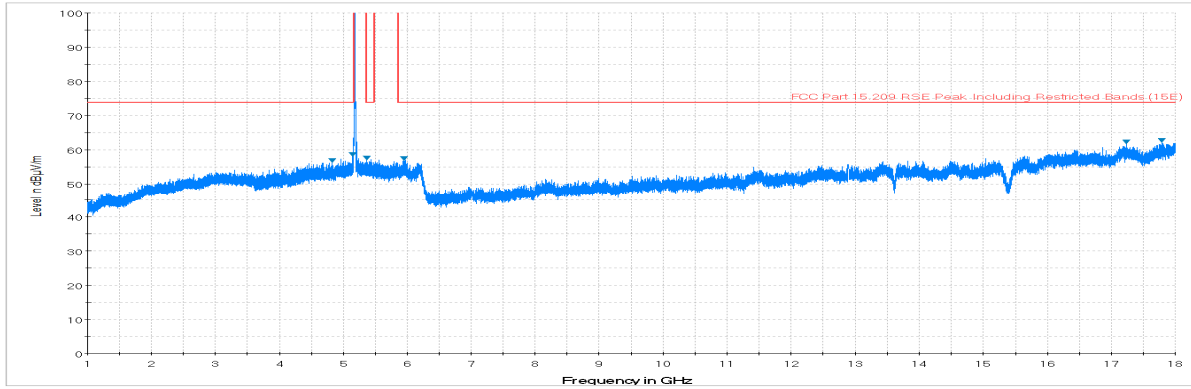
Radiated Band Edge Measurement Offset

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

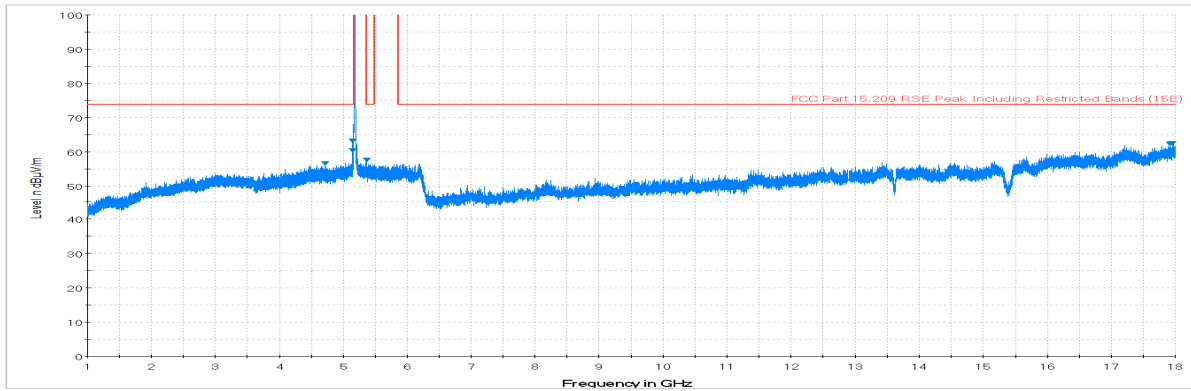
$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + 10 \text{ dB Attenuator}) - \text{Preamplifier Gain}$$

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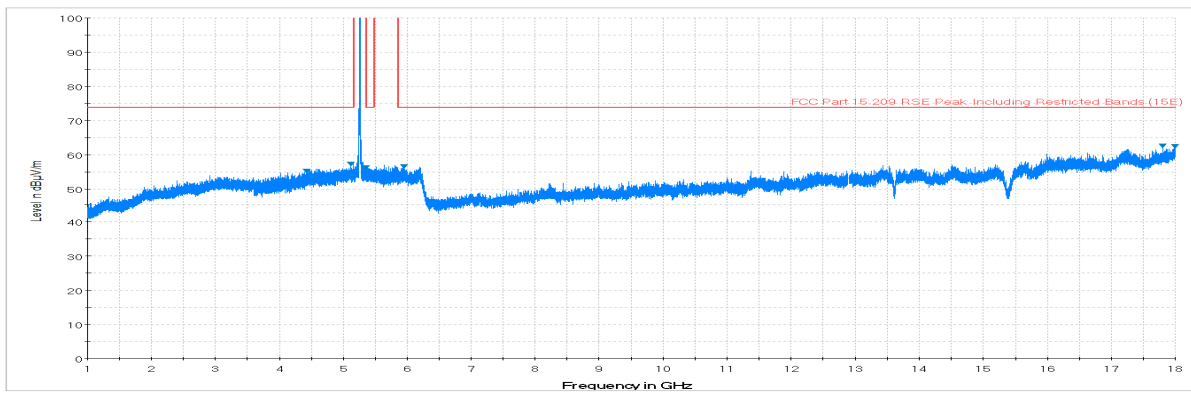
7.7.1 Antenna-1 Radiated Spurious Emission Measurements



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

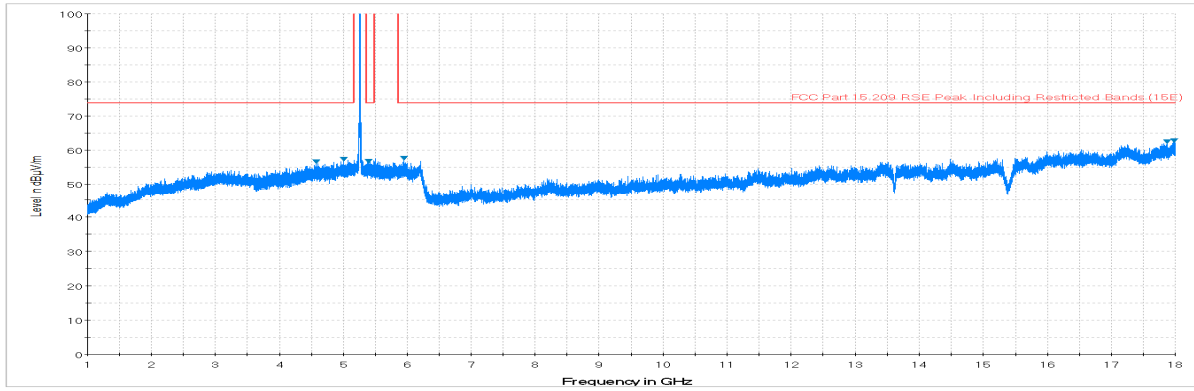


Plot 7-158. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. V)

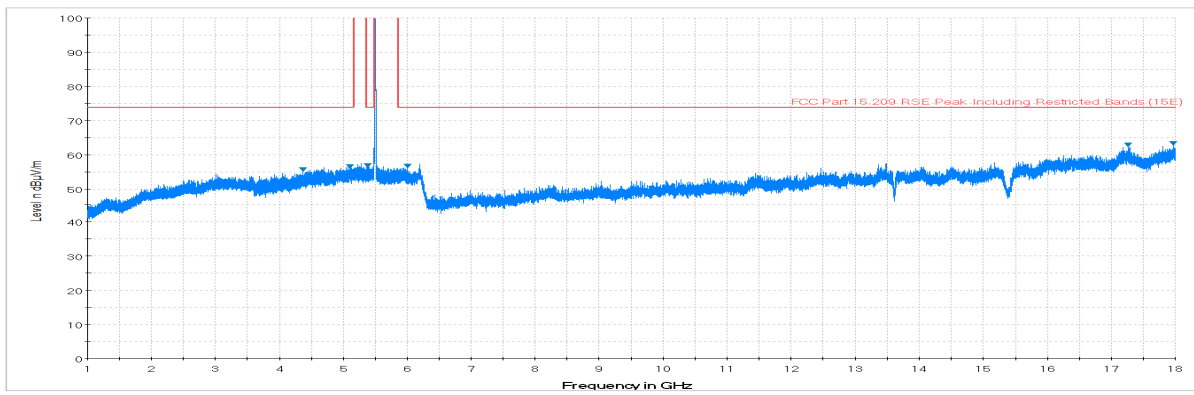


Plot 7-159. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56, Ant. Pol. H)

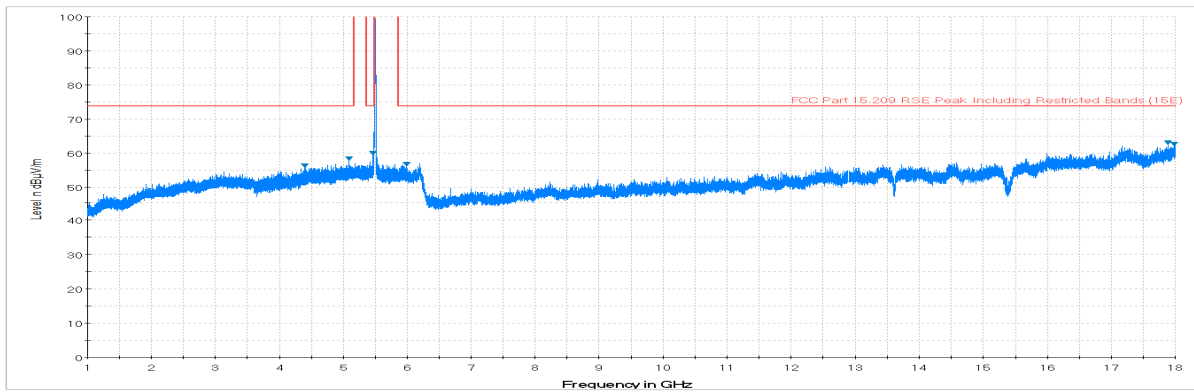
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Plot 7-160. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56, Ant. Pol. V)

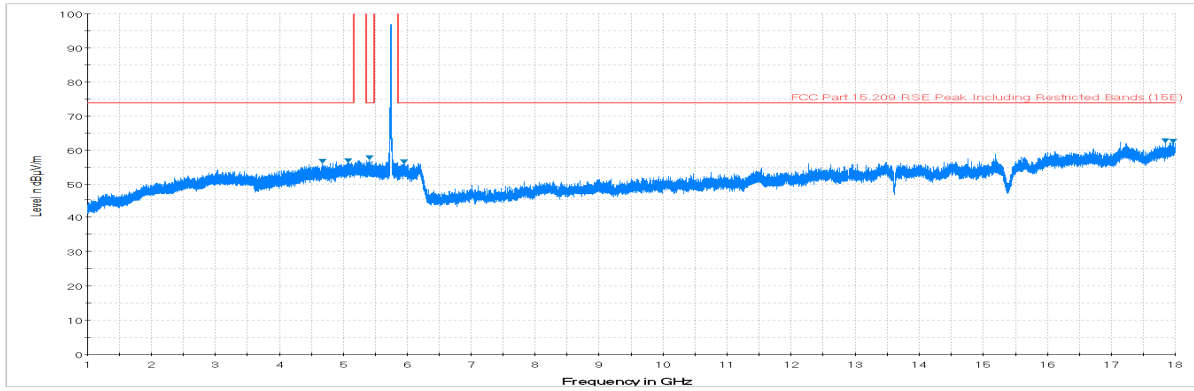


Plot 7-161. Radiated Spurious Plot above 1GHz (802.11a – U2C Ch. 116, Ant. Pol. H)

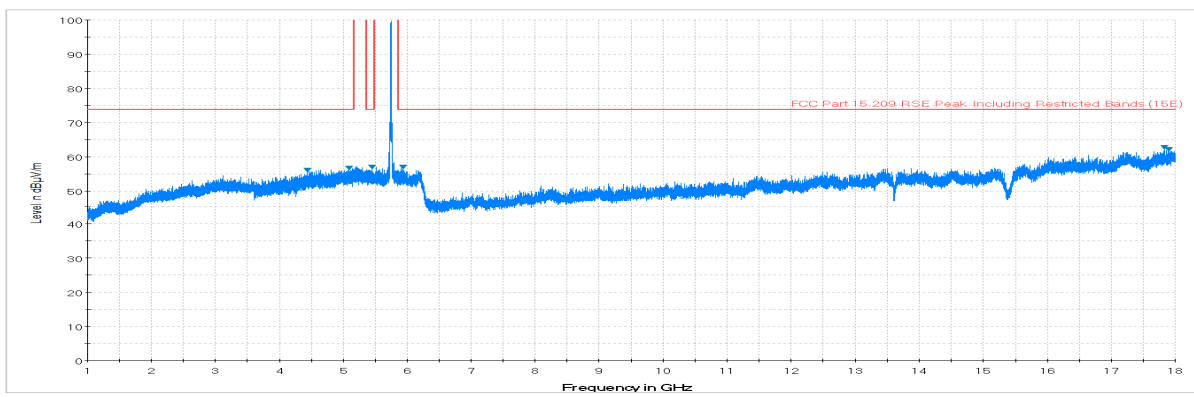


Plot 7-162. Radiated Spurious Plot above 1GHz (802.11a – U2C Ch. 116, Ant. Pol. V)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 118 of 255



Plot 7-163. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)

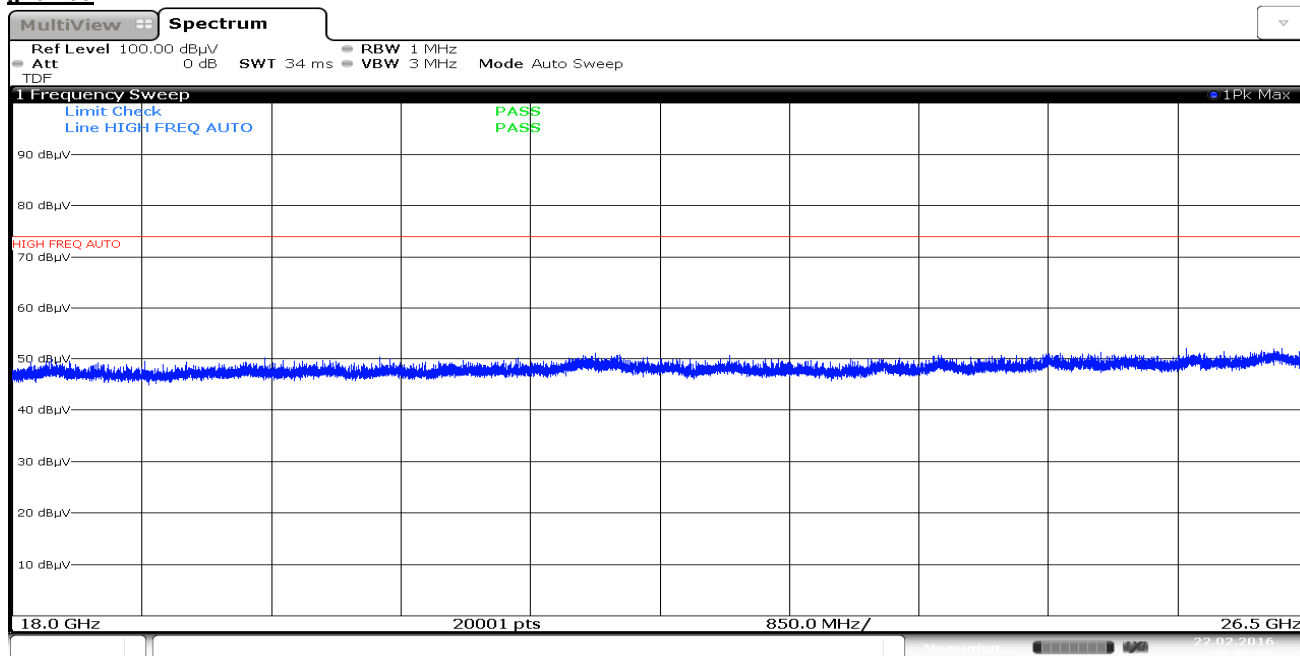


Plot 7-164. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 119 of 255

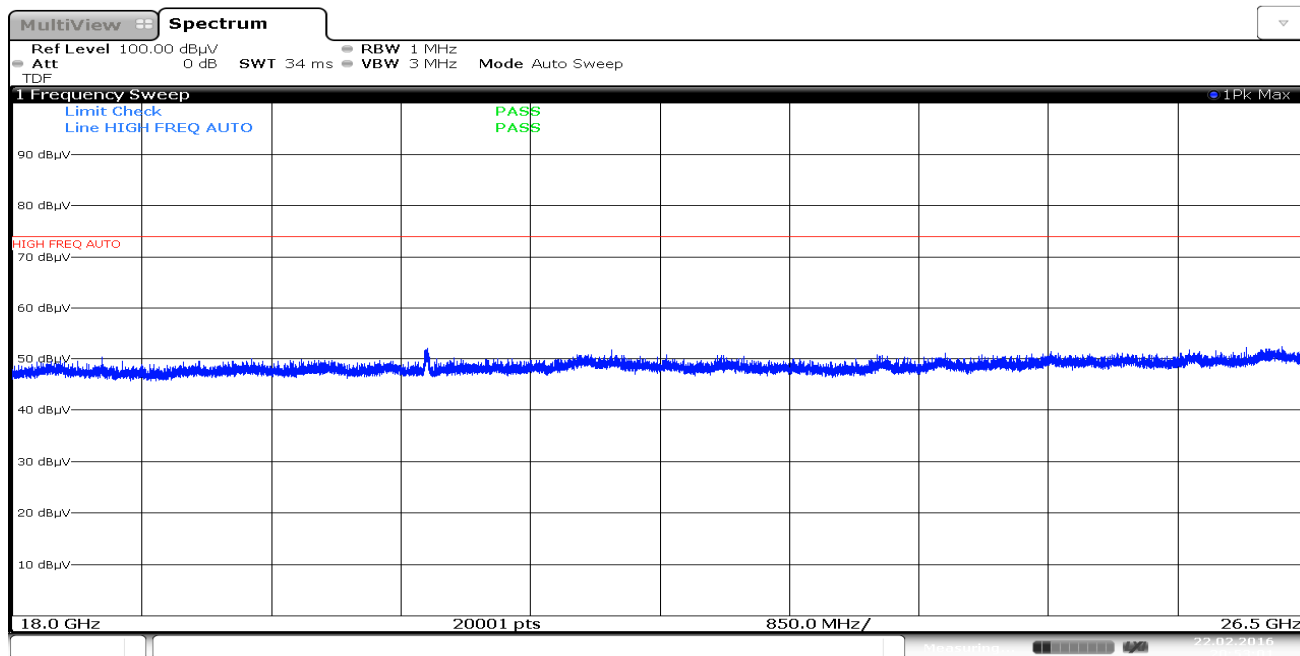
Antenna-1 Radiated Spurious Emissions Measurements (Above 18GHz)

\$15.209



Date: 22.FEB.2016 20:56:26

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



Date: 22.FEB.2016 20:53:00

Plot 7-166. Radiated Spurious Plot above 18GHz (802.11a – Ant. Pol. V)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 120 of 255

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	H	-	-	-98.52	48.83	0.00	57.32	68.20	-10.88
* 15540.00	Average	H	-	-	-110.95	53.51	0.00	49.56	53.98	-4.42
* 15540.00	Peak	H	-	-	-99.08	53.51	0.00	61.43	73.98	-12.55
* 20720.00	Average	H	-	-	-111.27	44.39	-9.54	30.58	53.98	-23.40
* 20720.00	Peak	H	-	-	-98.30	44.39	-9.54	43.55	73.98	-30.43
25900.00	Peak	H	-	-	-99.87	45.11	-9.54	42.70	68.20	-25.50

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	Peak	H	-	-	-99.06	48.92	0.00	56.86	68.20	-11.34
* 15600.00	Average	H	-	-	-110.76	53.07	0.00	49.31	53.98	-4.67
* 15600.00	Peak	H	-	-	-98.41	53.07	0.00	61.66	73.98	-12.32
* 20800.00	Average	H	-	-	-111.20	44.39	-9.54	30.65	53.98	-23.33
* 20800.00	Peak	H	-	-	-98.57	44.39	-9.54	43.28	73.98	-30.70
26000.00	Peak	H	-	-	-99.74	45.12	-9.54	42.83	68.20	-25.37

Table 7-29. Radiated Measurements

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 121 of 255

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	Peak	H	-	-	-99.06	48.93	0.00	56.87	68.20	-11.33
* 15720.00	Average	H	-	-	-110.51	52.34	0.00	48.82	53.98	-5.16
* 15720.00	Peak	H	-	-	-97.52	52.34	0.00	61.81	73.98	-12.17
* 20960.00	Average	H	-	-	-110.74	44.31	-9.54	31.03	53.98	-22.95
* 20960.00	Peak	H	-	-	-96.97	44.31	-9.54	44.80	73.98	-29.18
26200.00	Peak	H	-	-	-100.11	45.01	-9.54	42.36	68.20	-25.84

Table 7-30. Radiated Measurements

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	H	-	-	-98.88	48.83	0.00	56.96	68.20	-11.24
* 15540.00	Average	H	-	-	-111.95	53.51	0.00	48.56	53.98	-5.42
* 15540.00	Peak	H	-	-	-100.46	53.51	0.00	60.05	73.98	-13.93
* 20720.00	Average	H	-	-	-110.84	44.39	-9.54	31.01	53.98	-22.97
* 20720.00	Peak	H	-	-	-100.49	44.39	-9.54	41.36	73.98	-32.62
25900.00	Peak	H	-	-	-99.39	45.11	-9.54	43.18	68.20	-25.02

Table 7-31. Radiated Measurements with WCP

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10520.00	Peak	H	-	-	-99.65	49.00	0.00	56.36	68.20	-11.84
* 15780.00	Average	H	-	-	-111.47	52.08	0.00	47.61	53.98	-6.37
* 15780.00	Peak	H	-	-	-100.15	52.08	0.00	58.93	73.98	-15.05
* 21040.00	Average	H	-	-	-110.93	44.29	-9.54	30.81	53.98	-23.17
* 21040.00	Peak	H	-	-	-98.87	44.29	-9.54	42.87	73.98	-31.11
26300.00	Peak	H	-	-	-99.19	45.00	-9.54	43.27	68.20	-24.93

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	Peak	H	-	-	-99.32	49.15	0.00	56.82	68.20	-11.38
* 15840.00	Average	H	-	-	-111.70	52.13	0.00	47.43	53.98	-6.55
* 15840.00	Peak	H	-	-	-98.84	52.13	0.00	60.29	73.98	-13.69
* 21120.00	Average	H	-	-	-111.26	44.28	-9.54	30.48	53.98	-23.50
* 21120.00	Peak	H	-	-	-99.19	44.28	-9.54	42.55	73.98	-31.43
26400.00	Peak	H	-	-	-99.82	45.02	-9.54	42.66	68.20	-25.54

Table 7-33. Radiated Measurements

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 123 of 255

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	Average	H	-	-	-110.56	49.32	0.00	45.76	53.98	-8.22
* 10640.00	Peak	H	-	-	-99.34	49.32	0.00	56.98	73.98	-17.00
* 15960.00	Average	H	-	-	-111.02	52.71	0.00	48.69	53.98	-5.29
* 15960.00	Peak	H	-	-	-99.37	52.71	0.00	60.34	73.98	-13.64
* 21280.00	Average	H	-	-	-110.57	44.26	-9.54	31.15	53.98	-22.83
* 21280.00	Peak	H	-	-	-99.02	44.26	-9.54	42.70	73.98	-31.28
26600.00	Peak	H	-	-	-101.17	47.61	-9.54	43.90	68.20	-24.30

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	Average	H	-	-	-111.09	49.32	0.00	45.23	53.98	-8.75
* 10640.00	Peak	H	-	-	-99.46	49.32	0.00	56.86	73.98	-17.12
* 15960.00	Average	H	-	-	-111.54	52.71	0.00	48.17	53.98	-5.81
* 15960.00	Peak	H	-	-	-99.61	52.71	0.00	60.10	73.98	-13.88
* 21280.00	Average	H	-	-	-110.74	44.26	-9.54	30.98	53.98	-23.00
* 21280.00	Peak	H	-	-	-99.68	44.26	-9.54	42.04	73.98	-31.94
26600.00	Peak	H	-	-	-102.38	47.61	-9.54	42.69	68.20	-25.51

Table 7-35. Radiated Measurements with WCP

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 124 of 255

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11000.00	Average	H	-	-	-110.59	49.28	0.00	45.69	53.98	-8.29
* 11000.00	Peak	H	-	-	-98.41	49.28	0.00	57.87	73.98	-16.11
16500.00	Peak	H	-	-	-98.79	51.47	0.00	59.67	68.20	-8.53
22000.00	Peak	H	-	-	-100.21	44.50	-9.54	41.74	68.20	-26.46
27500.00	Peak	H	-	-	-101.74	47.97	-9.54	43.69	68.20	-24.51

Table 7-36. Radiated Measurements

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

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11200.00	Average	H	-	-	-110.97	49.21	0.00	45.24	53.98	-8.74
* 11200.00	Peak	H	-	-	-99.38	49.21	0.00	56.83	73.98	-17.15
16800.00	Peak	H	-	-	-99.23	52.52	0.00	60.29	68.20	-7.91
* 22400.00	Average	H	-	-	-110.99	44.57	-9.54	31.04	53.98	-22.94
* 22400.00	Peak	H	-	-	-100.73	44.57	-9.54	41.30	73.98	-32.68
28000.00	Peak	H	-	-	-102.70	48.11	-9.54	42.87	68.20	-25.33

Table 7-37. 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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11440.00	Average	H	-	-	-110.87	49.21	0.00	45.35	53.98	-8.63
* 11440.00	Peak	H	-	-	-98.97	49.21	0.00	57.25	73.98	-16.73
17160.00	Peak	H	-	-	-97.15	54.00	0.00	63.86	68.20	-4.34
* 22880.00	Average	H	-	-	-111.03	44.61	-9.54	31.04	53.98	-22.94
* 22880.00	Peak	H	-	-	-100.84	44.61	-9.54	41.23	73.98	-32.75
28600.00	Peak	H	-	-	-102.20	48.29	-9.54	43.55	68.20	-24.65

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11440.00	Average	H	-	-	-111.48	49.21	0.00	44.74	53.98	-9.24
* 11440.00	Peak	H	-	-	-99.78	49.21	0.00	56.44	73.98	-17.54
17160.00	Peak	H	-	-	-96.97	54.00	0.00	64.04	68.20	-4.16
* 22880.00	Average	H	-	-	-109.99	44.61	-9.54	32.08	53.98	-21.90
* 22880.00	Peak	H	-	-	-100.20	44.61	-9.54	41.87	73.98	-32.11
28600.00	Peak	H	-	-	-102.34	48.29	-9.54	43.41	68.20	-24.79

Table 7-39. Radiated Measurements with WCP

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 126 of 255

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	H	-	-	-111.02	49.19	0.00	45.18	53.98	-8.80
* 11490.00	Peak	H	-	-	-99.09	49.19	0.00	57.11	73.98	-16.87
17235.00	Peak	H	-	-	-98.45	54.60	0.00	63.15	68.20	-5.05
* 22980.00	Average	H	-	-	-111.60	44.68	-9.54	30.54	53.98	-23.44
* 22980.00	Peak	H	-	-	-96.00	44.68	-9.54	46.14	73.98	-27.84
28725.00	Peak	H	-	-	-101.49	48.26	-9.54	44.23	68.20	-23.97

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	H	-	-	-111.11	49.27	0.00	45.16	53.98	-8.82
* 11570.00	Peak	H	-	-	-99.74	49.27	0.00	56.53	73.98	-17.45
17355.00	Peak	H	-	-	-98.24	54.73	0.00	63.49	68.20	-4.71
23140.00	Peak	H	-	-	-95.20	44.75	-9.54	47.01	68.20	-21.19
28925.00	Peak	H	-	-	-102.21	48.29	-9.54	43.54	68.20	-24.66

Table 7-41. Radiated Measurements

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 127 of 255

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	H	-	-	-110.91	49.37	0.00	45.46	53.98	-8.52
* 11650.00	Peak	H	-	-	-99.81	49.37	0.00	56.56	73.98	-17.42
17475.00	Peak	H	-	-	-98.78	54.82	0.00	63.04	68.20	-5.16
23300.00	Peak	H	-	-	-95.93	44.75	-9.54	46.27	68.20	-21.93
29125.00	Peak	H	-	-	-101.47	48.28	-9.54	44.28	68.20	-23.92

Table 7-42. Radiated Measurements

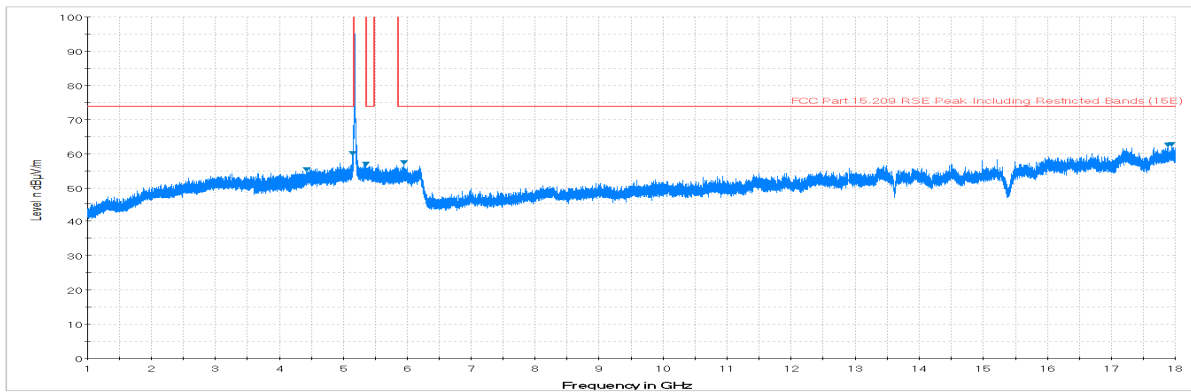
Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5785MHz
 Channel: 157

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	H	-	-	-111.03	49.27	0.00	45.24	53.98	-8.74
* 11570.00	Peak	H	-	-	-98.23	49.27	0.00	58.04	73.98	-15.94
17355.00	Peak	H	-	-	-97.33	54.73	0.00	64.40	68.20	-3.80
23140.00	Peak	H	-	-	-100.45	44.75	-9.54	41.76	68.20	-26.44
28925.00	Peak	H	-	-	-101.04	48.29	-9.54	44.71	68.20	-23.49

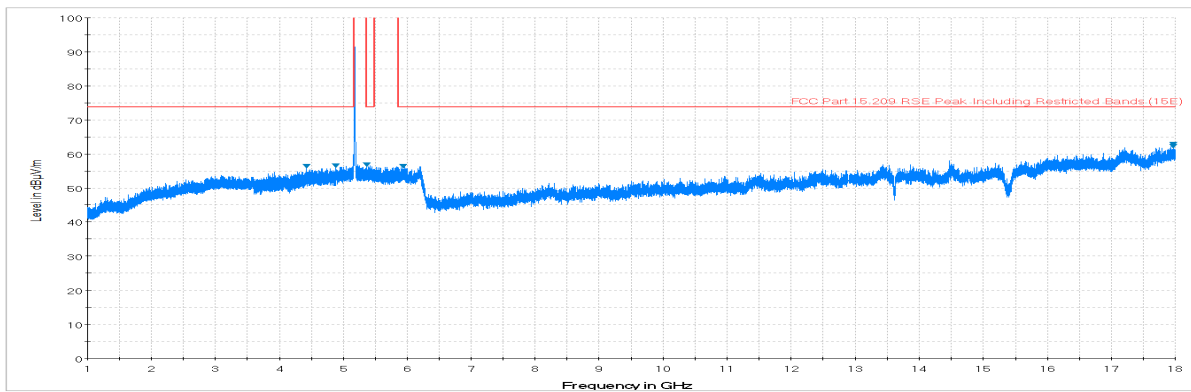
Table 7-43. Radiated Measurements with WCP

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 128 of 255

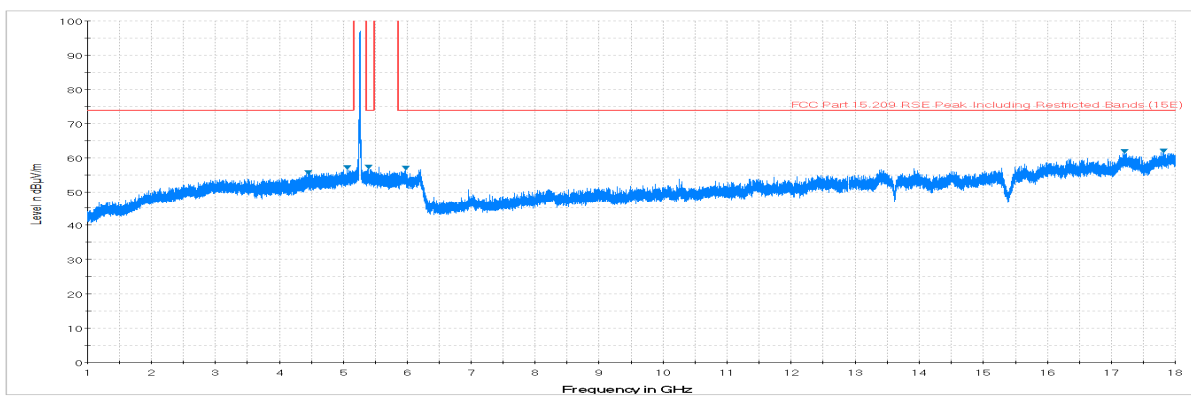
7.7.2 Antenna-2 Radiated Spurious Emission Measurements



Plot 7-167. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. H)

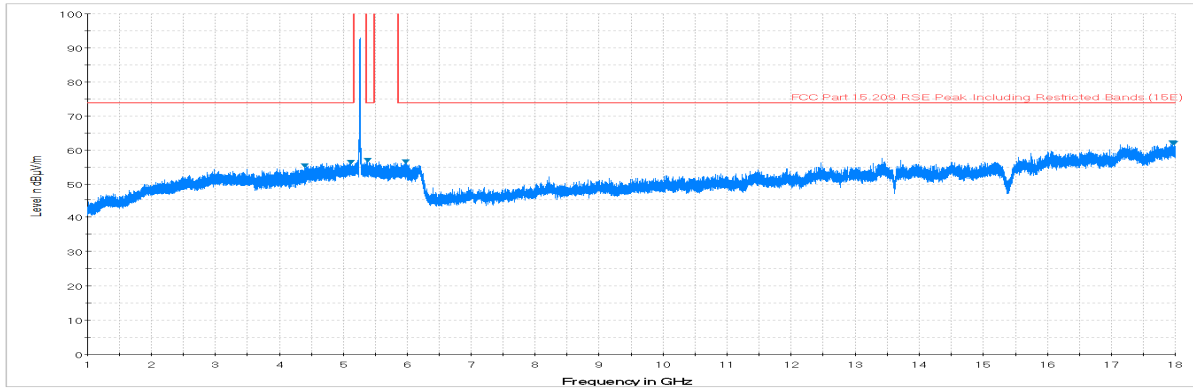


Plot 7-168. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. V)

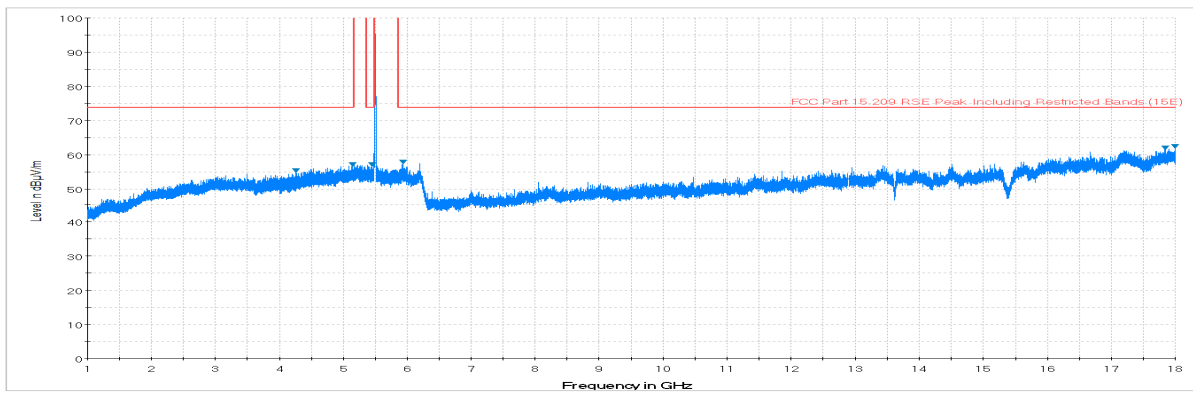


Plot 7-169. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56, Ant. Pol. H)

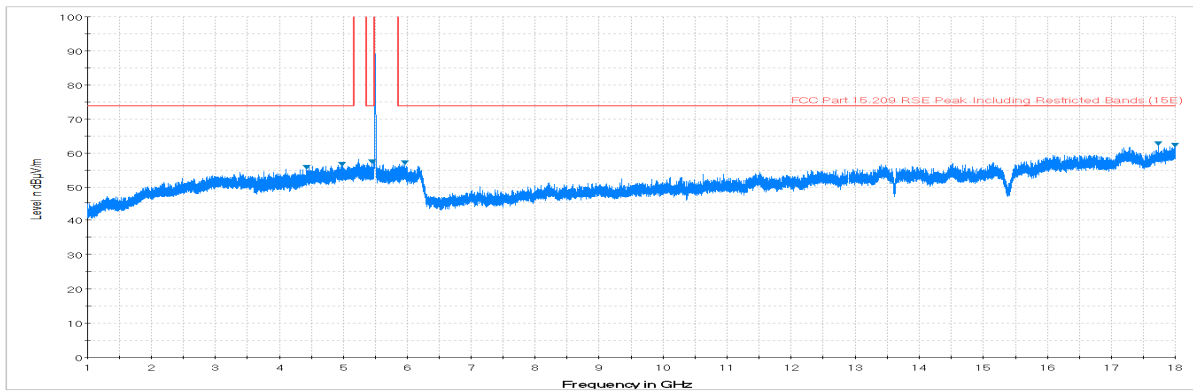
FCC ID: A3LSCV33	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 129 of 255



Plot 7-170. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56, Ant. Pol. V)

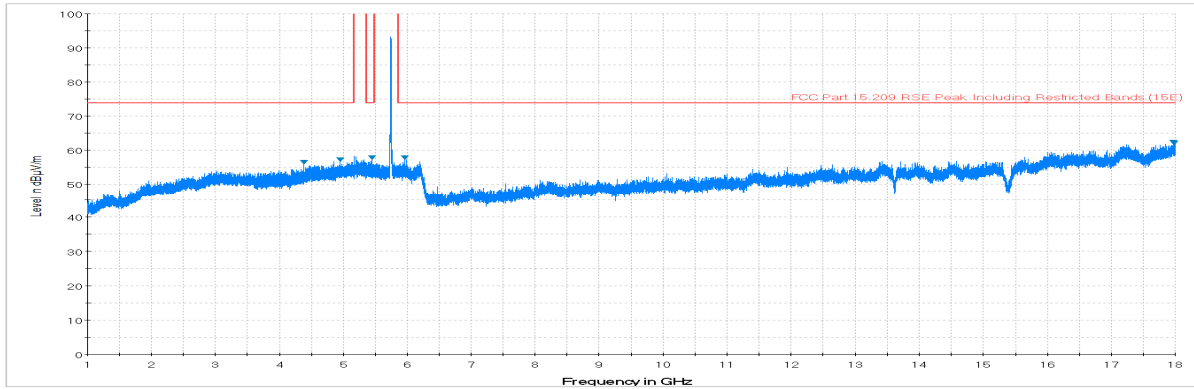


Plot 7-171. Radiated Spurious Plot above 1GHz (802.11a – U2C Ch. 116, Ant. Pol. H)

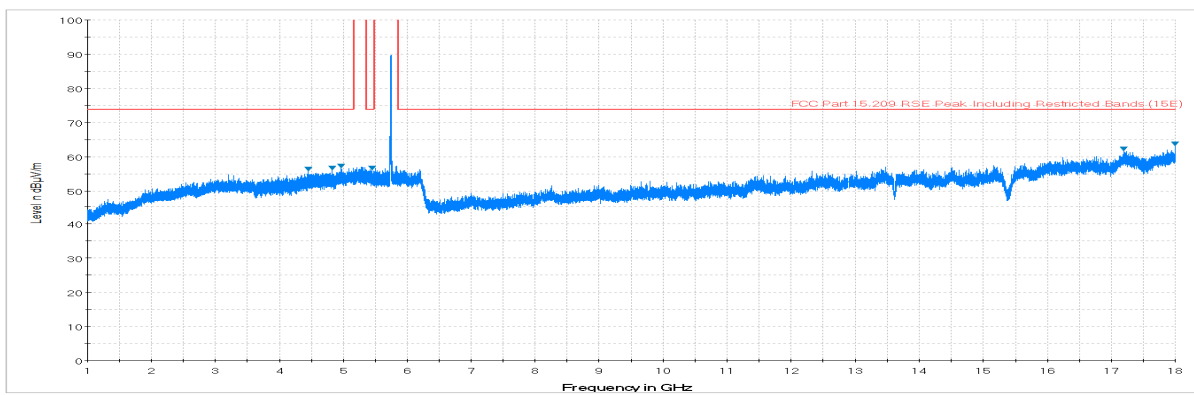


Plot 7-172. Radiated Spurious Plot above 1GHz (802.11a – U2C Ch. 116, Ant. Pol. V)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 130 of 255



Plot 7-173. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)

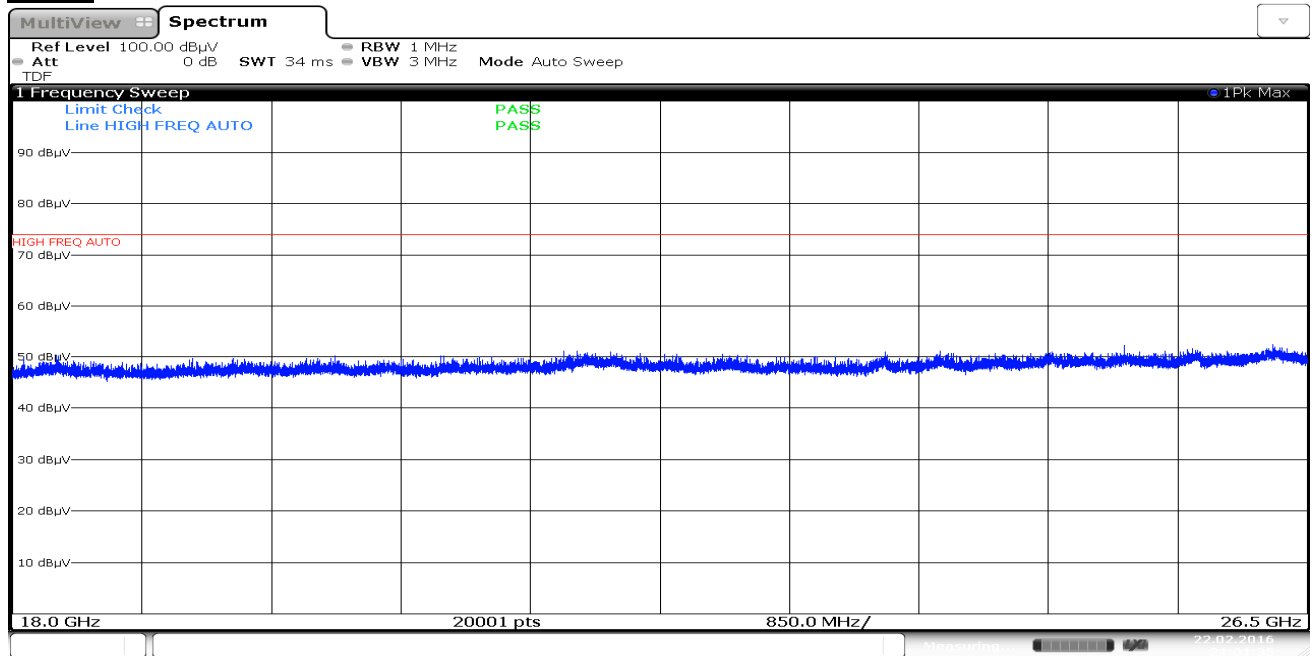


Plot 7-174. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 131 of 255

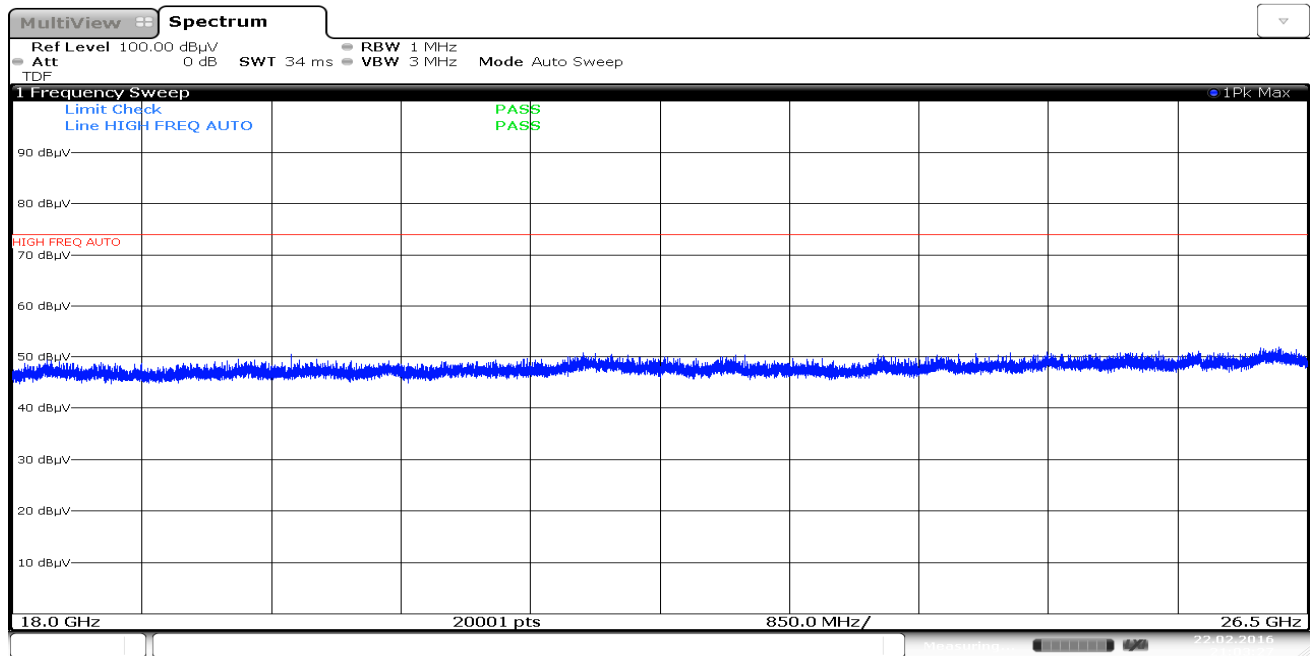
Antenna-2 Radiated Spurious Emissions Measurements (Above 18GHz)

\$15.209



Date: 22.FEB.2016 21:01:34

Plot 7-175. Radiated Spurious Plot above 18GHz (802.11a – Ant. Pol. H)



Date: 22.FEB.2016 21:03:27

Plot 7-176. Radiated Spurious Plot above 18GHz (802.11a – Ant. Pol. V)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 132 of 255

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	H	-	-	-99.15	48.83	0.00	56.69	68.20	-11.51
* 15540.00	Average	H	-	-	-111.13	53.51	0.00	49.38	53.98	-4.60
* 15540.00	Peak	H	-	-	-99.26	53.51	0.00	61.25	73.98	-12.73
* 20720.00	Average	H	-	-	-111.53	44.39	-9.54	30.32	53.98	-23.66
* 20720.00	Peak	H	-	-	-101.09	44.39	-9.54	40.76	73.98	-33.22
25900.00	Peak	H	-	-	-99.60	45.11	-9.54	42.97	68.20	-25.23

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	Peak	H	-	-	-98.38	48.92	0.00	57.54	68.20	-10.66
* 15600.00	Average	H	-	-	-110.95	53.07	0.00	49.12	53.98	-4.86
* 15600.00	Peak	H	-	-	-99.59	53.07	0.00	60.48	73.98	-13.50
* 20800.00	Average	H	-	-	-111.35	44.39	-9.54	30.50	53.98	-23.48
* 20800.00	Peak	H	-	-	-100.76	44.39	-9.54	41.09	73.98	-32.89
26000.00	Peak	H	-	-	-99.79	45.12	-9.54	42.78	68.20	-25.42

Table 7-45. Radiated Measurements

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 133 of 255

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	Peak	H	-	-	-98.71	48.93	0.00	57.22	68.20	-10.98
* 15720.00	Average	H	-	-	-110.95	52.34	0.00	48.38	53.98	-5.60
* 15720.00	Peak	H	-	-	-99.52	52.34	0.00	59.81	73.98	-14.17
* 20960.00	Average	H	-	-	-110.67	44.31	-9.54	31.10	53.98	-22.88
* 20960.00	Peak	H	-	-	-100.82	44.31	-9.54	40.95	73.98	-33.03
26200.00	Peak	H	-	-	-99.41	45.01	-9.54	43.06	68.20	-25.14

Table 7-46. Radiated Measurements

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	H	-	-	-99.50	48.83	0.00	56.34	68.20	-11.86
* 15540.00	Average	H	-	-	-111.95	53.51	0.00	48.56	53.98	-5.42
* 15540.00	Peak	H	-	-	-100.66	53.51	0.00	59.85	73.98	-14.13
* 20720.00	Average	H	-	-	-111.41	44.39	-9.54	30.44	53.98	-23.54
* 20720.00	Peak	H	-	-	-101.45	44.39	-9.54	40.40	73.98	-33.58
25900.00	Peak	H	-	-	-98.48	45.11	-9.54	44.09	68.20	-24.11

Table 7-47. Radiated Measurements with WCP

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset	Page 134 of 255	

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10520.00	Peak	H	-	-	-99.18	49.00	0.00	56.83	68.20	-11.37
* 15780.00	Average	H	-	-	-111.47	52.08	0.00	47.61	53.98	-6.37
* 15780.00	Peak	H	-	-	-99.86	52.08	0.00	59.22	73.98	-14.76
* 21040.00	Average	H	-	-	-111.19	44.29	-9.54	30.55	53.98	-23.43
* 21040.00	Peak	H	-	-	-99.83	44.29	-9.54	41.91	73.98	-32.07
26300.00	Peak	H	-	-	-98.54	45.00	-9.54	43.92	68.20	-24.28

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	Peak	H	-	-	-99.07	49.15	0.00	57.07	68.20	-11.13
* 15840.00	Average	H	-	-	-111.74	52.13	0.00	47.39	53.98	-6.59
* 15840.00	Peak	H	-	-	-100.07	52.13	0.00	59.06	73.98	-14.92
* 21120.00	Average	H	-	-	-110.99	44.28	-9.54	30.75	53.98	-23.23
* 21120.00	Peak	H	-	-	-100.81	44.28	-9.54	40.93	73.98	-33.05
26400.00	Peak	H	-	-	-98.90	45.02	-9.54	43.58	68.20	-24.62

Table 7-49. Radiated Measurements

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 135 of 255

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	Average	H	-	-	-110.47	49.32	0.00	45.85	53.98	-8.13
* 10640.00	Peak	H	-	-	-98.36	49.32	0.00	57.96	73.98	-16.02
* 15960.00	Average	H	-	-	-111.11	52.71	0.00	48.60	53.98	-5.38
* 15960.00	Peak	H	-	-	-99.46	52.71	0.00	60.25	73.98	-13.73
* 21280.00	Average	H	-	-	-111.10	44.26	-9.54	30.62	53.98	-23.36
* 21280.00	Peak	H	-	-	-100.63	44.26	-9.54	41.09	73.98	-32.89
26600.00	Peak	H	-	-	-101.89	47.61	-9.54	43.18	68.20	-25.02

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	Average	H	-	-	-111.12	49.32	0.00	45.20	53.98	-8.78
* 10640.00	Peak	H	-	-	-98.84	49.32	0.00	57.48	73.98	-16.50
* 15960.00	Average	H	-	-	-111.46	52.71	0.00	48.25	53.98	-5.73
* 15960.00	Peak	H	-	-	-100.03	52.71	0.00	59.68	73.98	-14.30
* 21280.00	Average	H	-	-	-110.97	44.26	-9.54	30.75	53.98	-23.23
* 21280.00	Peak	H	-	-	-100.41	44.26	-9.54	41.31	73.98	-32.67
26600.00	Peak	H	-	-	-101.91	47.61	-9.54	43.16	68.20	-25.04

Table 7-51. Radiated Measurements with WCP

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 136 of 255

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11000.00	Average	H	-	-	-110.63	49.28	0.00	45.65	53.98	-8.33
* 11000.00	Peak	H	-	-	-98.90	49.28	0.00	57.38	73.98	-16.60
16500.00	Peak	H	-	-	-99.82	51.47	0.00	58.64	68.20	-9.56
22000.00	Peak	H	-	-	-100.06	44.50	-9.54	41.89	68.20	-26.31
27500.00	Peak	H	-	-	-102.10	47.97	-9.54	43.33	68.20	-24.87

Table 7-52. Radiated Measurements

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

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11200.00	Average	H	-	-	-110.98	49.21	0.00	45.23	53.98	-8.75
* 11200.00	Peak	H	-	-	-99.00	49.21	0.00	57.21	73.98	-16.77
16800.00	Peak	H	-	-	-100.07	52.52	0.00	59.45	68.20	-8.75
* 22400.00	Average	H	-	-	-110.63	44.57	-9.54	31.40	53.98	-22.58
* 22400.00	Peak	H	-	-	-101.07	44.57	-9.54	40.96	73.98	-33.02
28000.00	Peak	H	-	-	-101.67	48.11	-9.54	43.90	68.20	-24.30

Table 7-53. Radiated Measurements

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 137 of 255

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11440.00	Average	H	-	-	-110.87	49.21	0.00	45.35	53.98	-8.63
* 11440.00	Peak	H	-	-	-99.05	49.21	0.00	57.17	73.98	-16.81
17160.00	Peak	H	-	-	-99.32	54.00	0.00	61.69	68.20	-6.51
* 22880.00	Average	H	-	-	-110.90	44.61	-9.54	31.17	53.98	-22.81
* 22880.00	Peak	H	-	-	-100.71	44.61	-9.54	41.36	73.98	-32.62
28600.00	Peak	H	-	-	-101.99	48.29	-9.54	43.76	68.20	-24.44

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11440.00	Average	H	-	-	-111.31	49.21	0.00	44.91	53.98	-9.07
* 11440.00	Peak	H	-	-	-99.54	49.21	0.00	56.68	73.98	-17.30
17160.00	Peak	H	-	-	-97.80	54.00	0.00	63.21	68.20	-4.99
* 22880.00	Average	H	-	-	-111.11	44.61	-9.54	30.96	53.98	-23.02
* 22880.00	Peak	H	-	-	-101.01	44.61	-9.54	41.06	73.98	-32.92
28600.00	Peak	H	-	-	-101.91	48.29	-9.54	43.84	68.20	-24.36

Table 7-55. Radiated Measurements with WCP

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 138 of 255

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	H	-	-	-111.02	49.19	0.00	45.18	53.98	-8.80
* 11490.00	Peak	H	-	-	-99.15	49.19	0.00	57.05	73.98	-16.93
17235.00	Peak	H	-	-	-98.62	54.60	0.00	62.98	68.20	-5.22
* 22980.00	Average	H	-	-	-111.77	44.68	-9.54	30.37	53.98	-23.61
* 22980.00	Peak	H	-	-	-100.68	44.68	-9.54	41.46	73.98	-32.52
28725.00	Peak	H	-	-	-101.85	48.26	-9.54	43.87	68.20	-24.33

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	H	-	-	-111.13	49.27	0.00	45.14	53.98	-8.84
* 11570.00	Peak	H	-	-	-99.18	49.27	0.00	57.09	73.98	-16.89
17355.00	Peak	H	-	-	-99.15	54.73	0.00	62.58	68.20	-5.62
23140.00	Peak	H	-	-	-100.63	44.75	-9.54	41.58	68.20	-26.62
28925.00	Peak	H	-	-	-101.77	48.29	-9.54	43.98	68.20	-24.22

Table 7-57. Radiated Measurements

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 139 of 255

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 [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	H	-	-	-110.92	49.37	0.00	45.45	53.98	-8.53
* 11650.00	Peak	H	-	-	-98.99	49.37	0.00	57.38	73.98	-16.60
17475.00	Peak	H	-	-	-99.15	54.82	0.00	62.67	68.20	-5.53
23300.00	Peak	H	-	-	-101.14	44.75	-9.54	41.06	68.20	-27.14
29125.00	Peak	H	-	-	-101.76	48.28	-9.54	43.99	68.20	-24.21

Table 7-58. Radiated Measurements

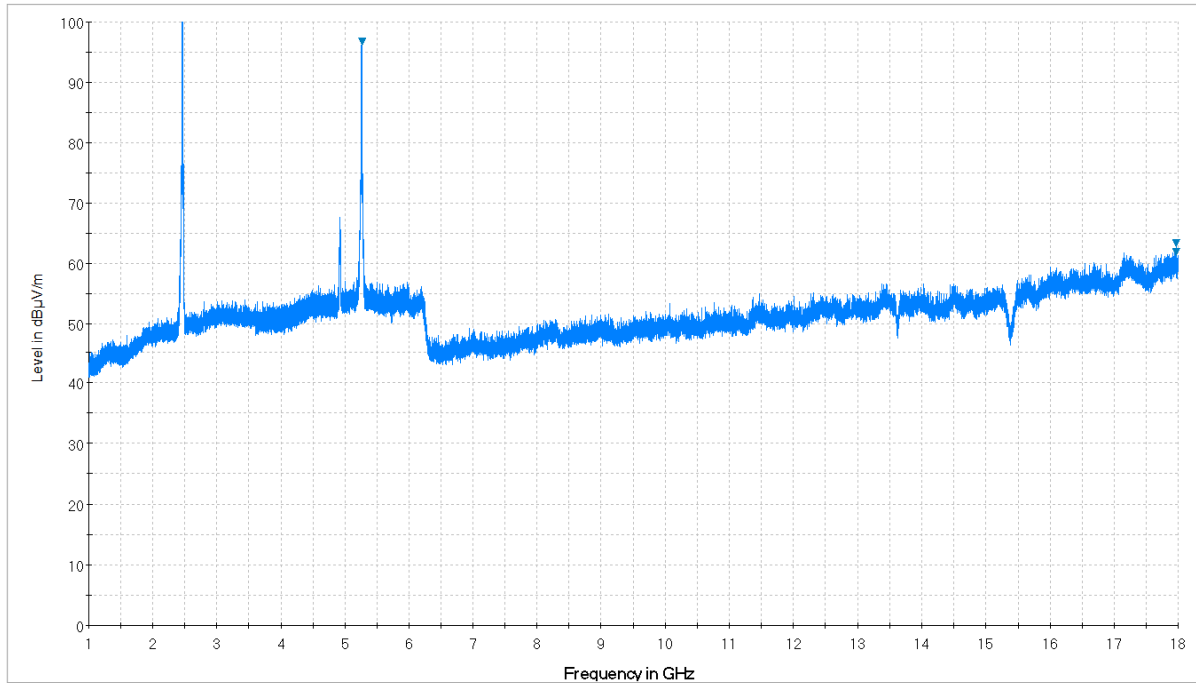
Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5745MHz
 Channel: 149

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	H	-	-	-111.38	49.19	0.00	44.82	53.98	-9.16
* 11490.00	Peak	H	-	-	-99.37	49.19	0.00	56.83	73.98	-17.15
17235.00	Peak	H	-	-	-98.60	54.60	0.00	63.00	68.20	-5.20
* 22980.00	Average	H	-	-	-111.33	44.68	-9.54	30.81	53.98	-23.17
* 22980.00	Peak	H	-	-	-95.80	44.68	-9.54	46.34	73.98	-27.64
28725.00	Peak	H	-	-	-100.58	48.26	-9.54	45.14	68.20	-23.06

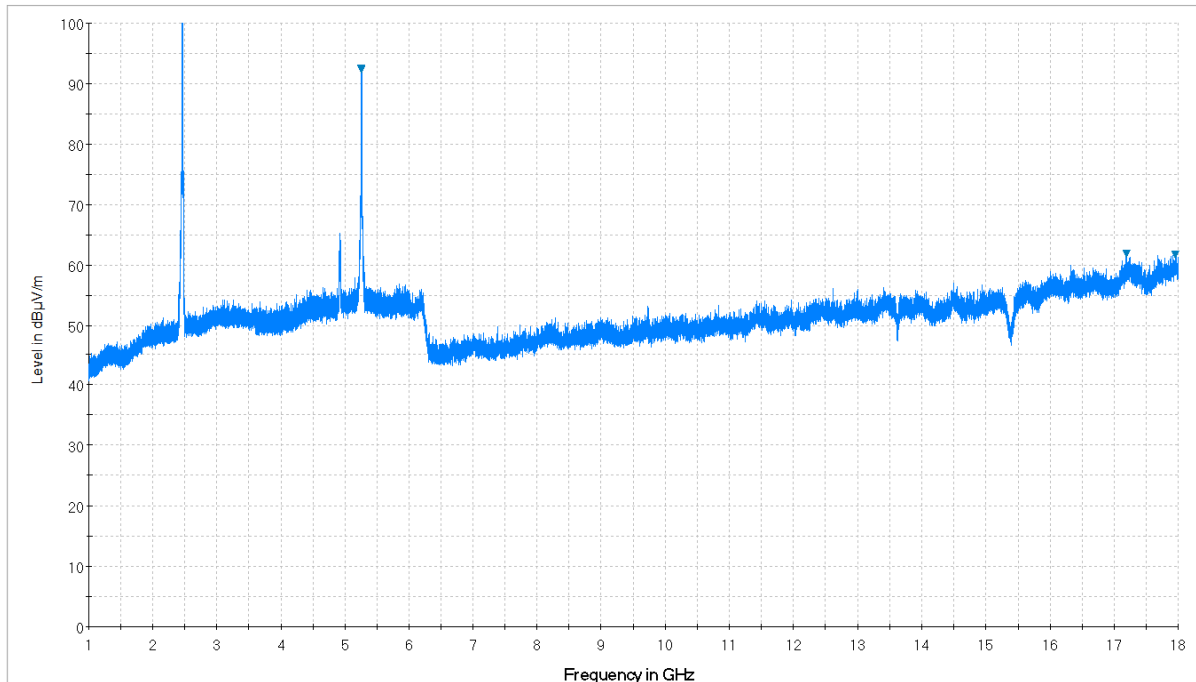
Table 7-59. Radiated Measurements with WCP

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 140 of 255

7.7.3 Simultaneous Tx Radiated Spurious Emissions Measurements §15.247(d) §15.205 & §15.209

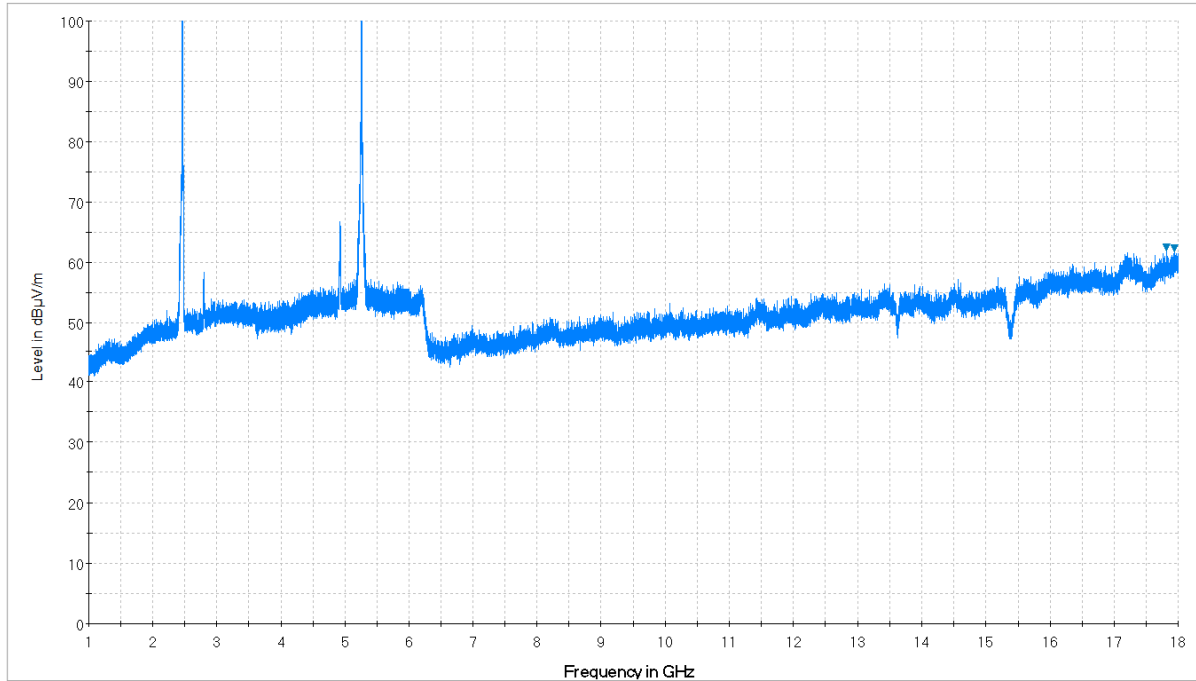


Plot 7-177. Radiated Spurious Plot above 1GHz (2.4GHz – 5GHz, Ant. Pol. H)

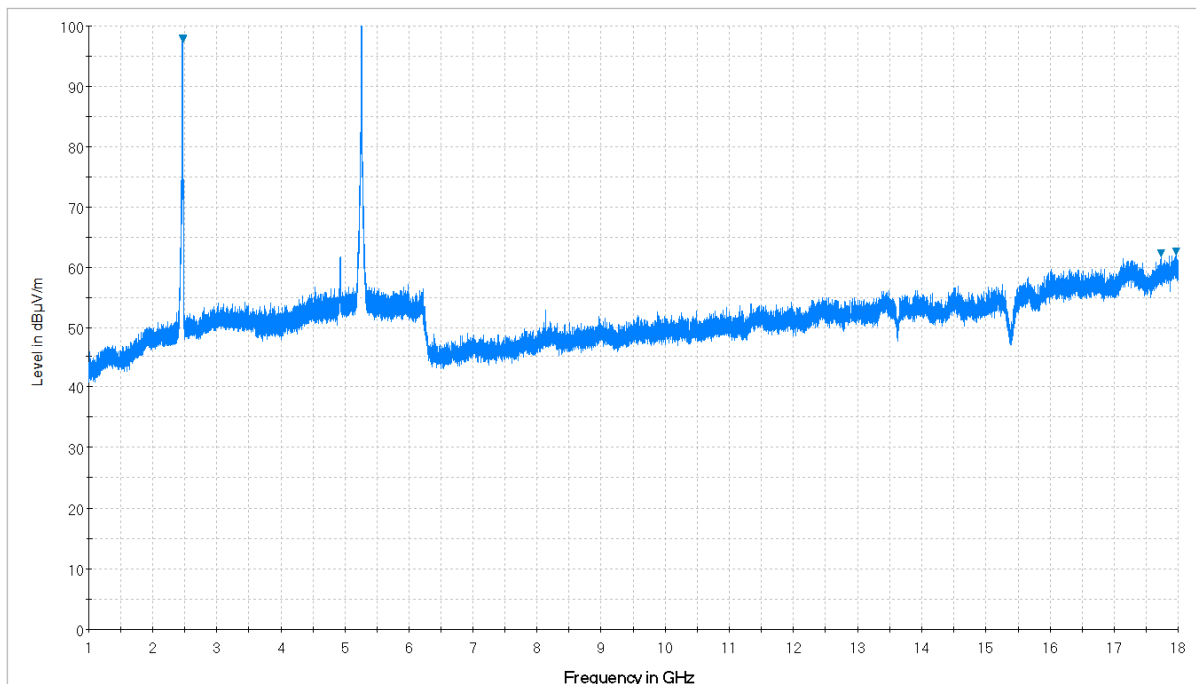


Plot 7-178. Radiated Spurious Plot above 1GHz (2.4GHz – 5GHz, Ant. Pol. V)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 141 of 255

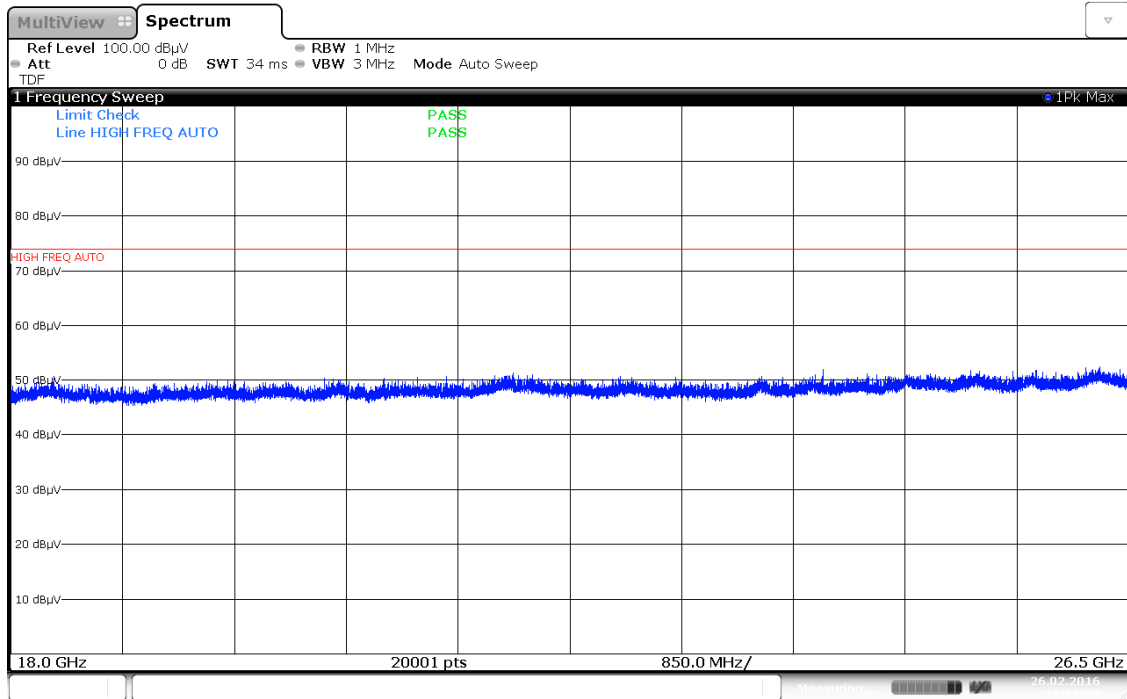


Plot 7-179. Radiated Spurious Plot above 1GHz (5GHz – 2.4 GHz, Ant. Pol. H)

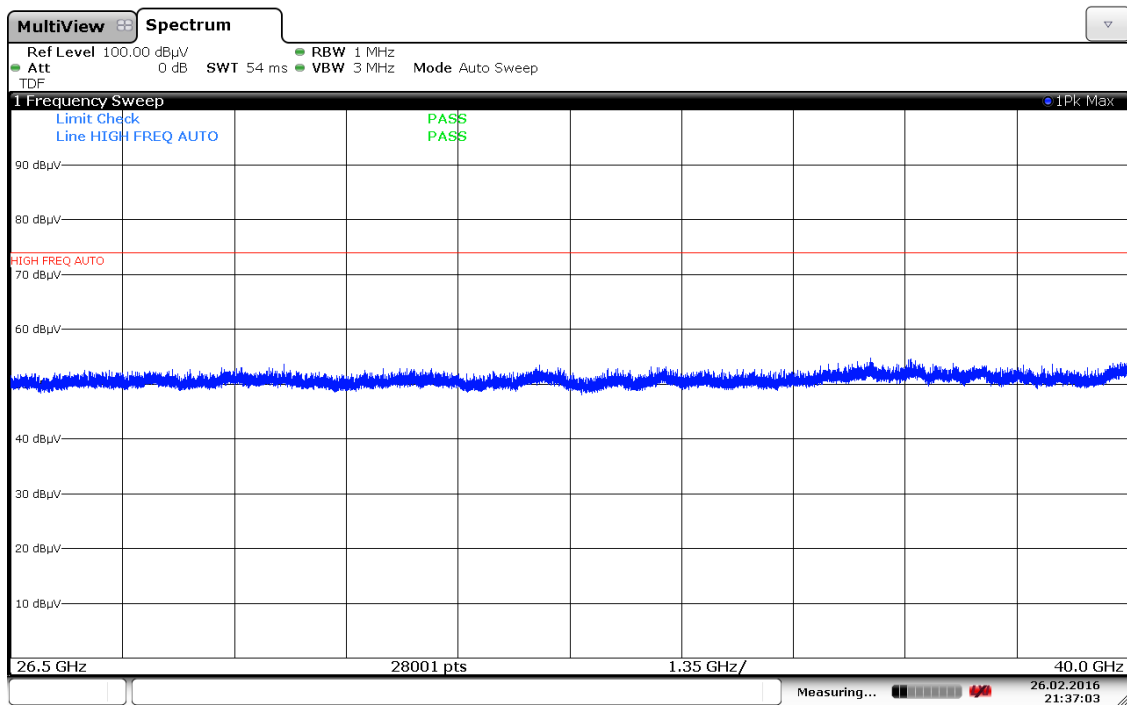


Plot 7-180. Radiated Spurious Plot above 1GHz (5GHz – 2.4 GHz, Ant. Pol. V)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 142 of 255

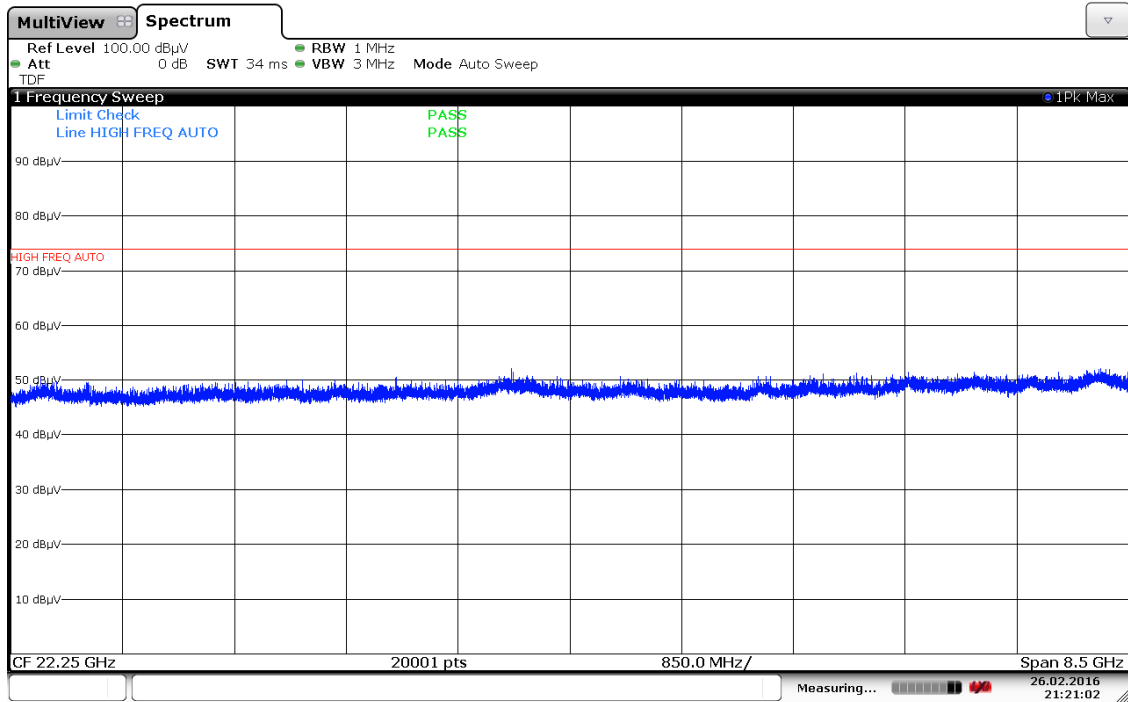


Plot 7-181. Radiated Spurious Plot 18GHz – 26GHz (2.4 GHz – 5 GHz, Ant. Pol. H)



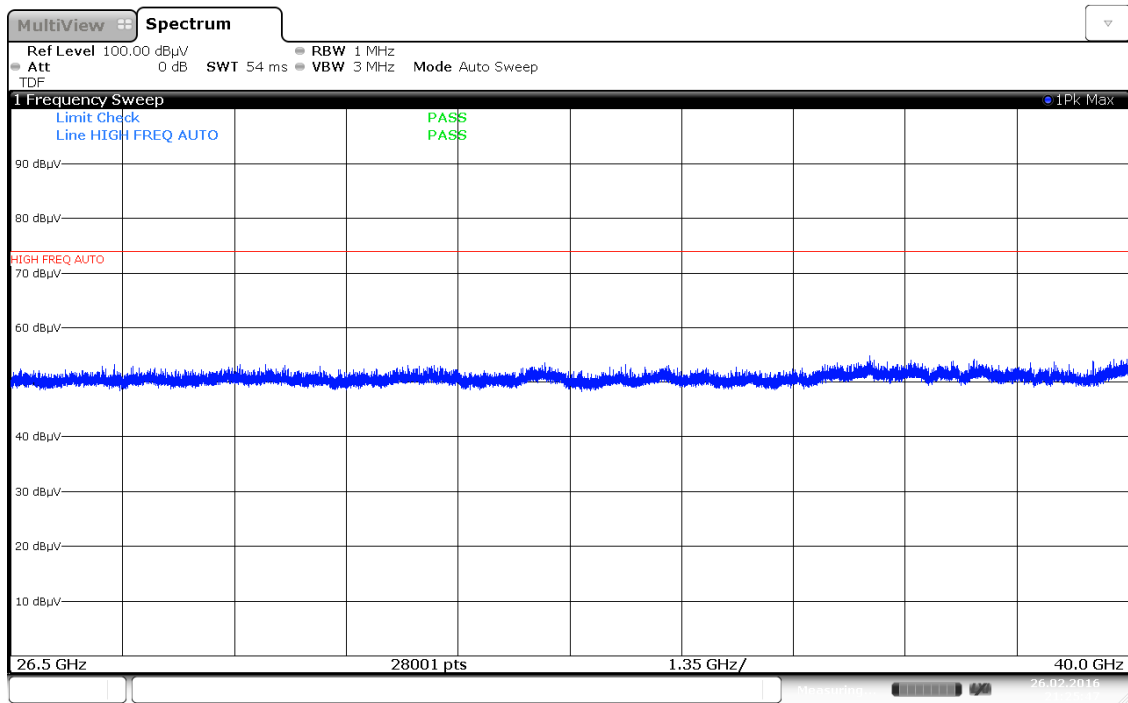
Plot 7-182. Radiated Spurious Plot above 26GHz (2.4 GHz – 5 GHz, Ant. Pol. H)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 143 of 255



Date: 26.FEB.2016 21:21:01

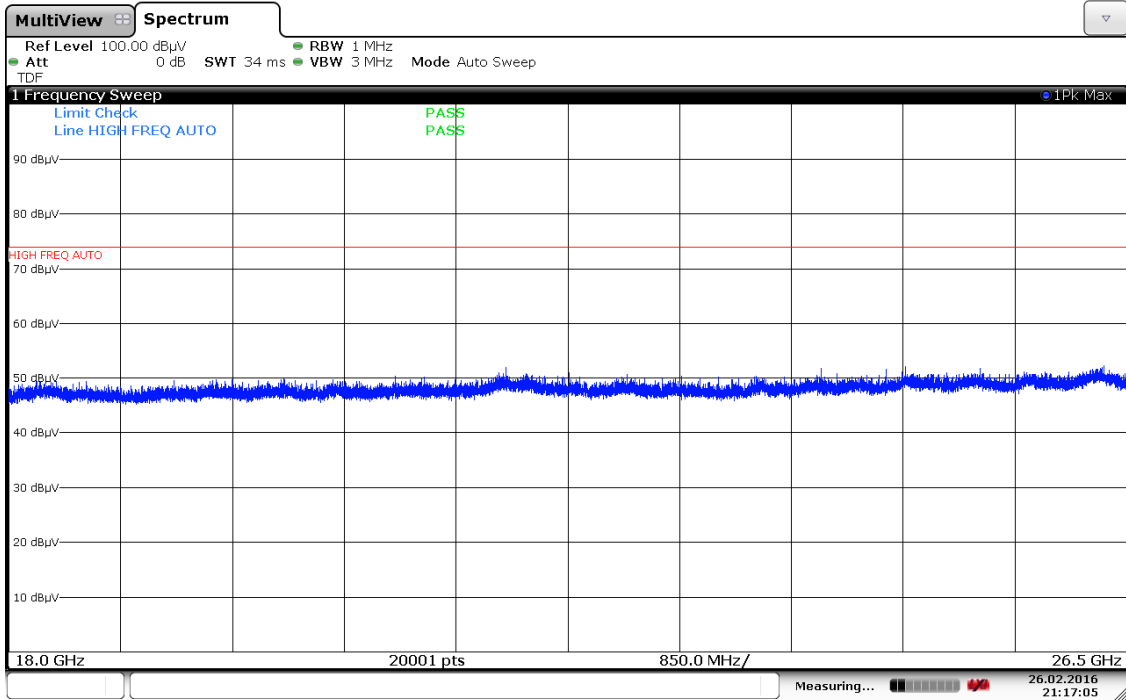
Plot 7-183. Radiated Spurious Plot 18GHz – 26GHz (2.4 GHz – 5 GHz, Ant. Pol. V)



Date: 26.FEB.2016 21:25:47

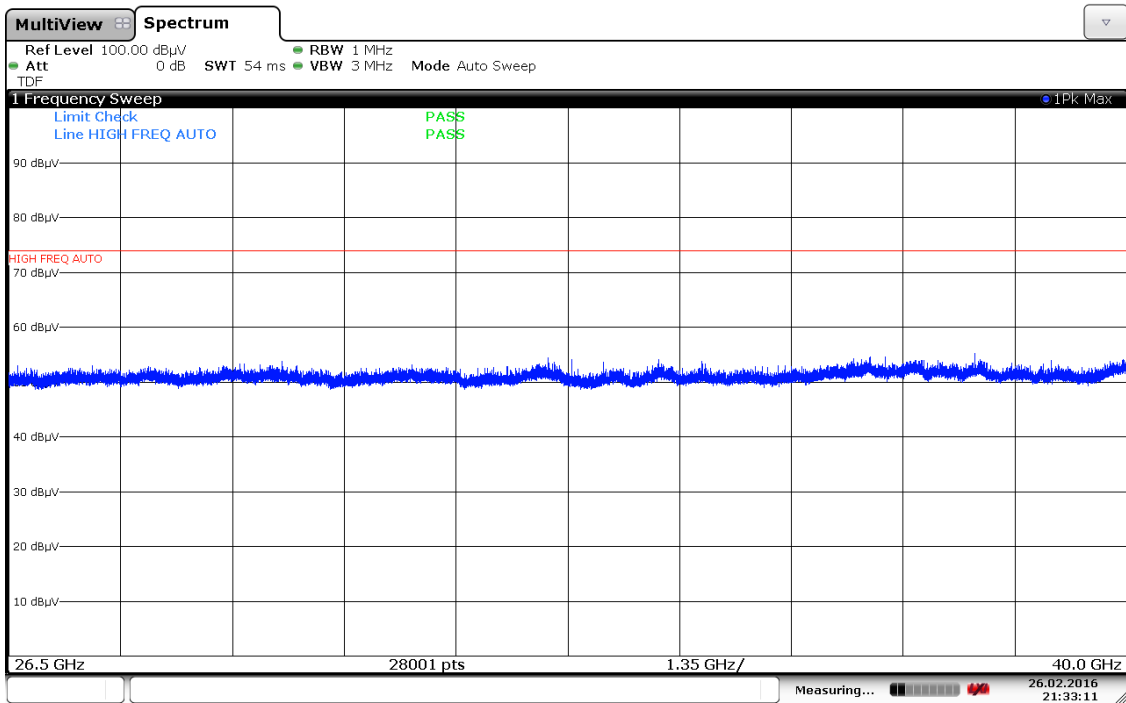
Plot 7-184. Radiated Spurious Plot above 26GHz (2.4 GHz – 5 GHz, Ant. Pol. V)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 144 of 255



Date: 26.FEB.2016 21:17:05

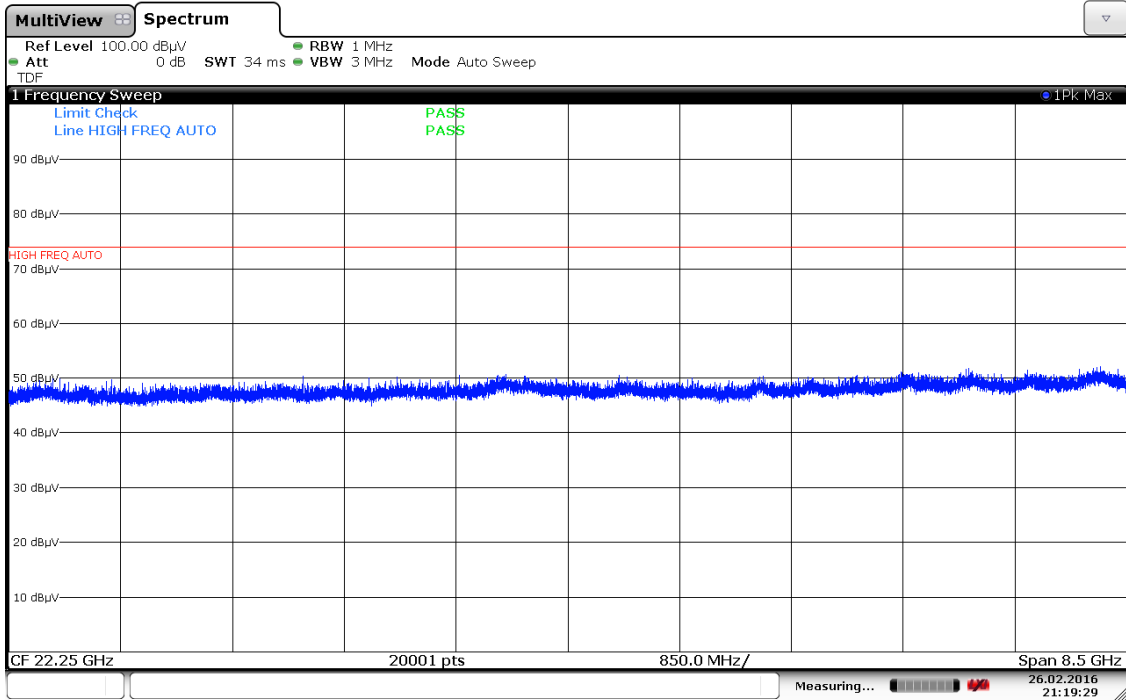
Plot 7-185. Radiated Spurious Plot 18GHz – 26GHz (5 GHz – 2.4 GHz, Ant. Pol. H)



Date: 26.FEB.2016 21:33:10

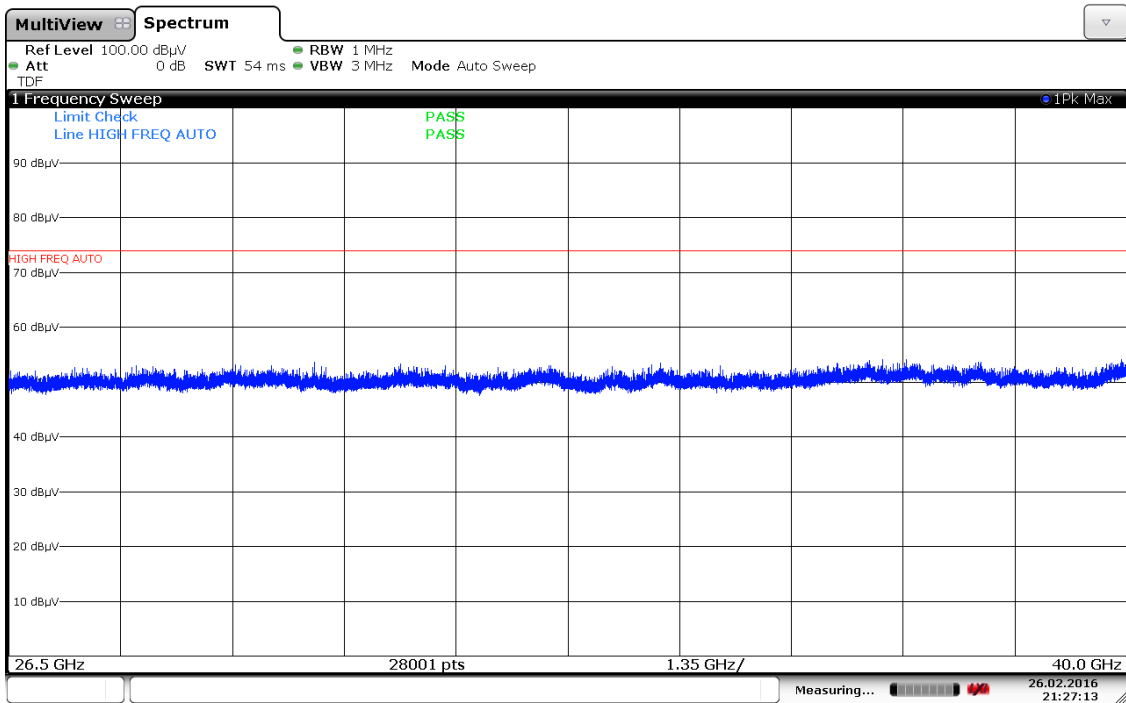
Plot 7-186. Radiated Spurious Plot above 26GHz (5 GHz – 2.4 GHz, Ant. Pol. H)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 145 of 255



Date: 26.FEB.2016 21:19:29

Plot 7-187. Radiated Spurious Plot 18GHz – 26GHz (5 GHz – 2.4 GHz, Ant. Pol. V)



Date: 26.FEB.2016 21:27:13

Plot 7-188. Radiated Spurious Plot above 26GHz (5 GHz – 2.4 GHz, Ant. Pol. V)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 146 of 255

Simultaneous Tx Radiated Spurious Emission Measurements

§15.247(d) §15.205 & §15.209

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 2798.00	Peak	H	272.00	342.00	-94.75	43.85	56.10	73.98	-17.88
* 2798.00	Average	H	272.00	342.00	-108.52	43.85	42.33	53.98	-11.65
* 4924.00	Peak	H	104.00	148.00	-93.03	40.78	54.75	73.98	-19.23
* 4924.00	Average	H	104.00	148.00	-106.07	40.78	41.71	53.98	-12.27
* 7722.00	Peak	H	-	-	-98.62	46.43	54.81	73.98	-19.17
* 7722.00	Average	H	-	-	-110.81	46.43	42.62	53.98	-11.36
* 8058.00	Peak	H	-	-	-99.79	47.65	54.86	73.98	-19.12
* 8058.00	Average	H	-	-	-111.78	47.65	42.87	53.98	-11.11
10184.00	Peak	H	-	-	-99.27	48.12	55.85	68.20	-12.35
12982.00	Peak	H	-	-	-99.28	50.74	58.46	68.20	-9.74

Table 7-60. Radiated Measurements (ANT1 2.4GHz – ANT2 5GHz)

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 2798.00	Peak	H	132.00	145.00	-91.51	43.85	59.34	73.98	-14.64
* 2798.00	Average	H	132.00	145.00	-102.76	43.85	48.09	53.98	-5.89
* 4924.00	Peak	H	187.00	135.00	-97.09	40.78	50.69	73.98	-23.29
* 4924.00	Average	H	187.00	135.00	-110.20	40.78	37.58	53.98	-16.40
* 7722.00	Peak	H	-	-	-99.73	46.43	53.70	73.98	-20.28
* 7722.00	Average	H	-	-	-110.74	46.43	42.69	53.98	-11.29
* 8058.00	Peak	H	-	-	-100.76	47.65	53.89	73.98	-20.09
* 8058.00	Average	H	-	-	-111.79	47.65	42.86	53.98	-11.12
10184.00	Peak	H	-	-	-99.10	48.12	56.02	68.20	-12.18
12982.00	Peak	H	-	-	-99.37	50.74	58.37	68.20	-9.83

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

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 147 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209

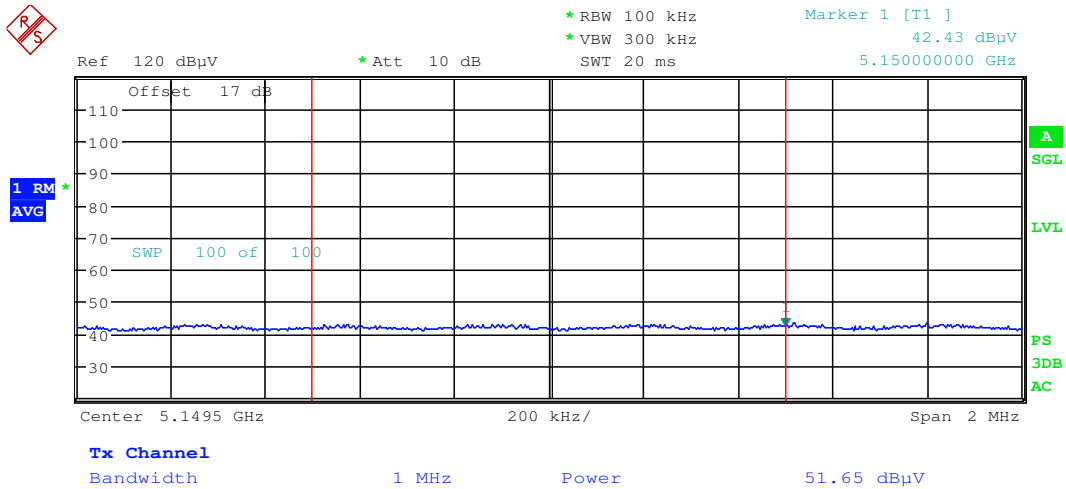
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



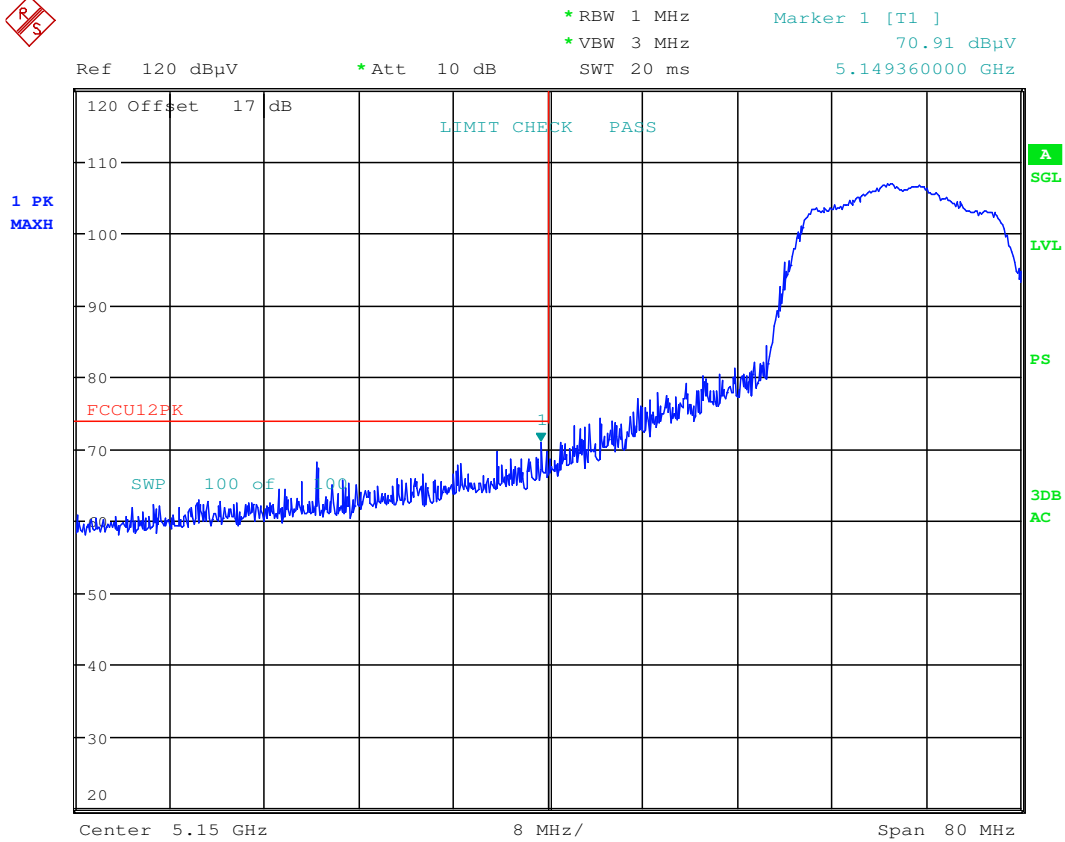
Date: 8.FEB.2016 18:24:26

Plot 7-189. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 148 of 255

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

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



Date: 8.FEB.2016 18:26:02

Plot 7-190. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 149 of 255

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

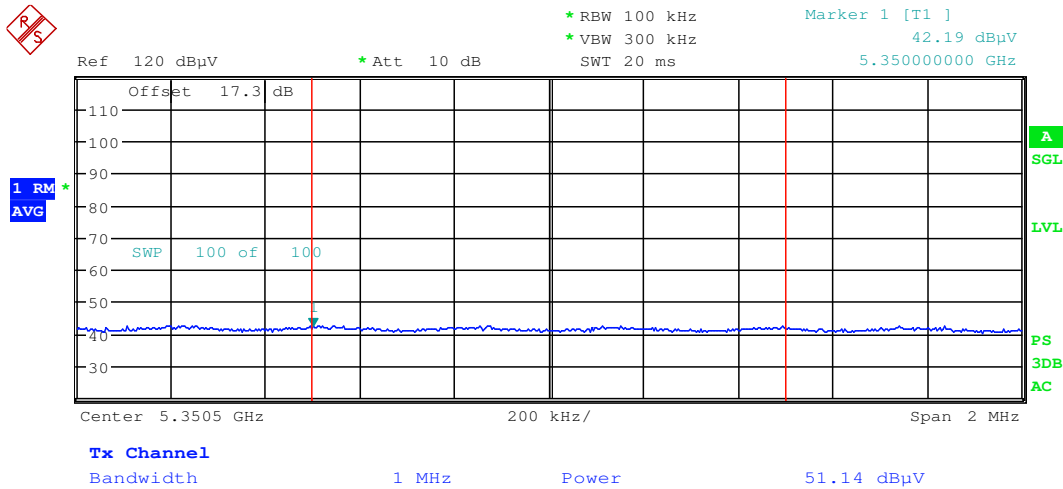
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64



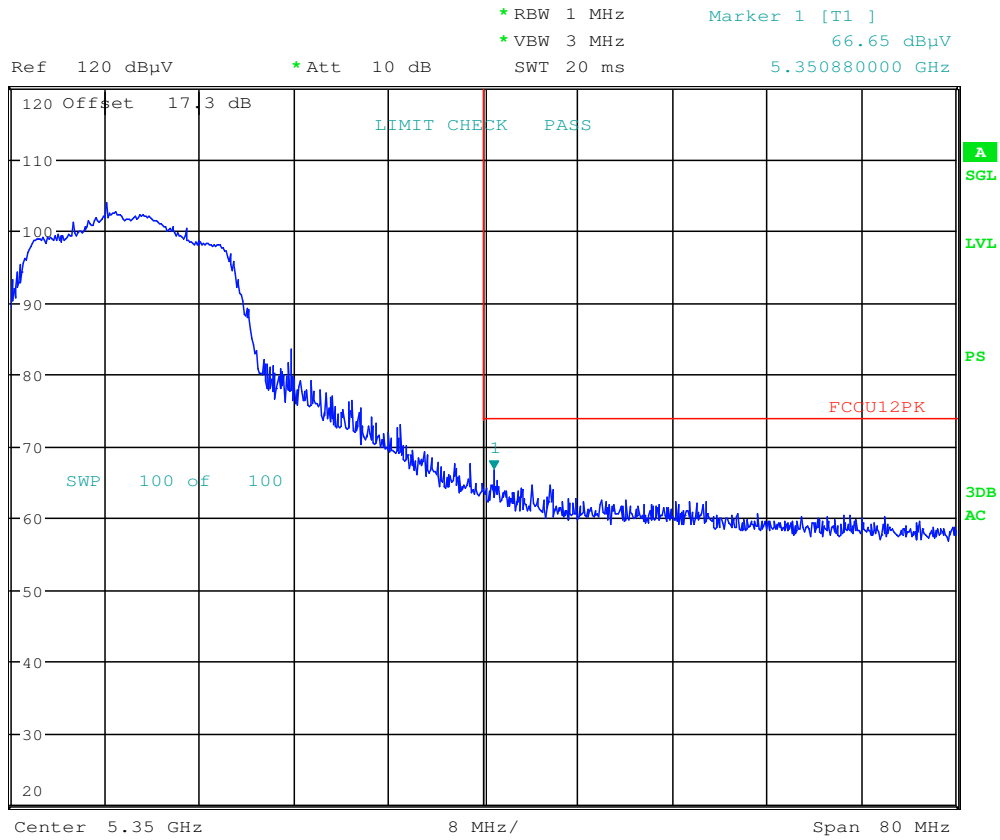
Date: 8.FEB.2016 20:50:54

Plot 7-191. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 150 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209



Date: 8.FEB.2016 20:51:55

Plot 7-192. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 151 of 255

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

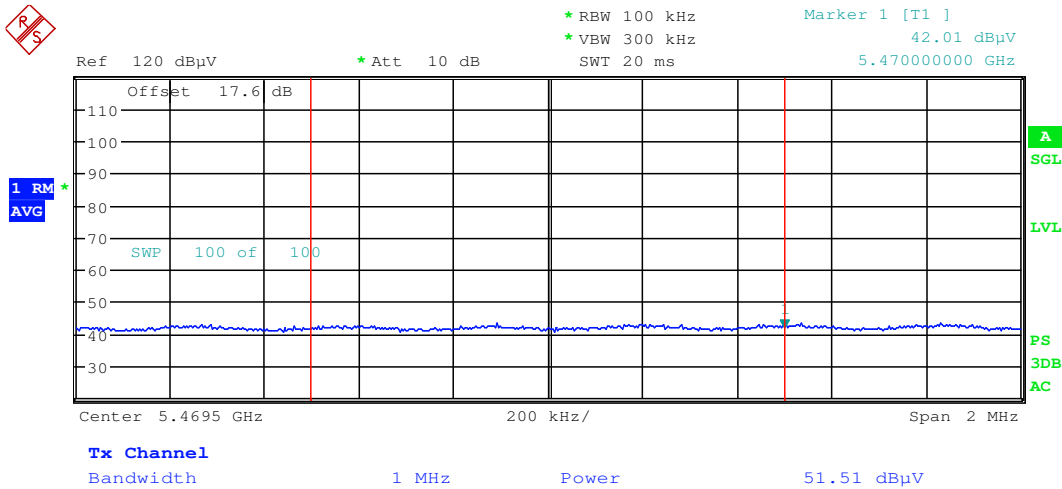
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100



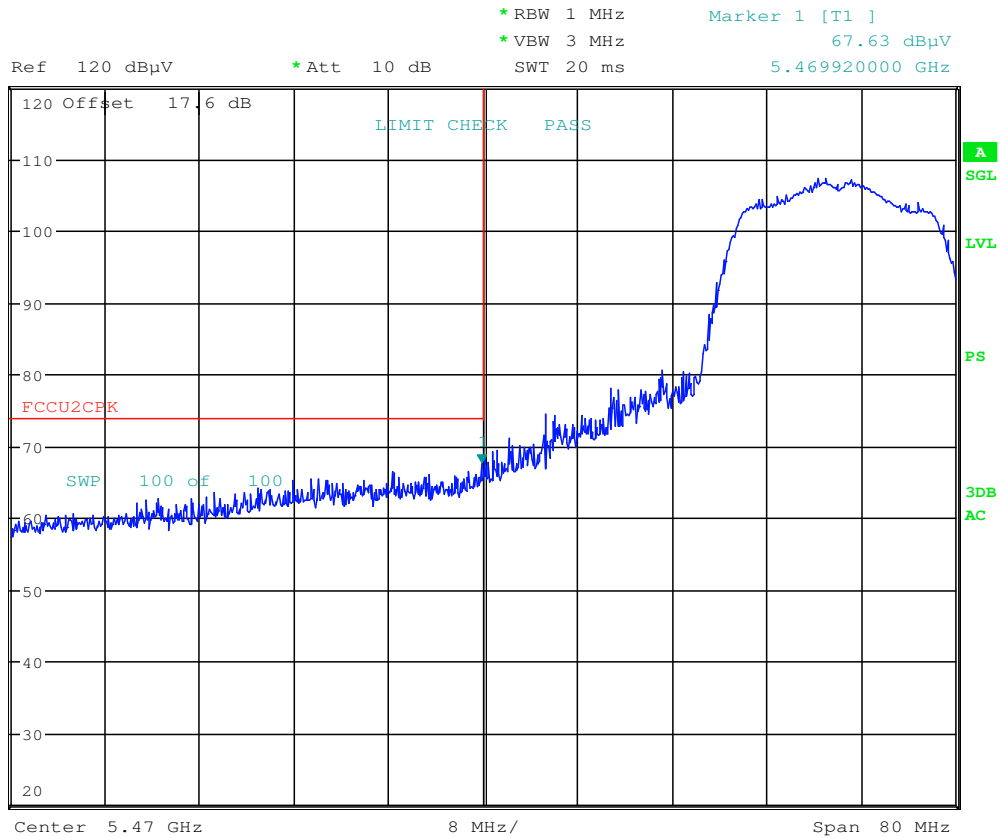
Date: 8.FEB.2016 21:40:54

Plot 7-193. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 152 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209



Date: 8.FEB.2016 21:45:12

Plot 7-194. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 153 of 255

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

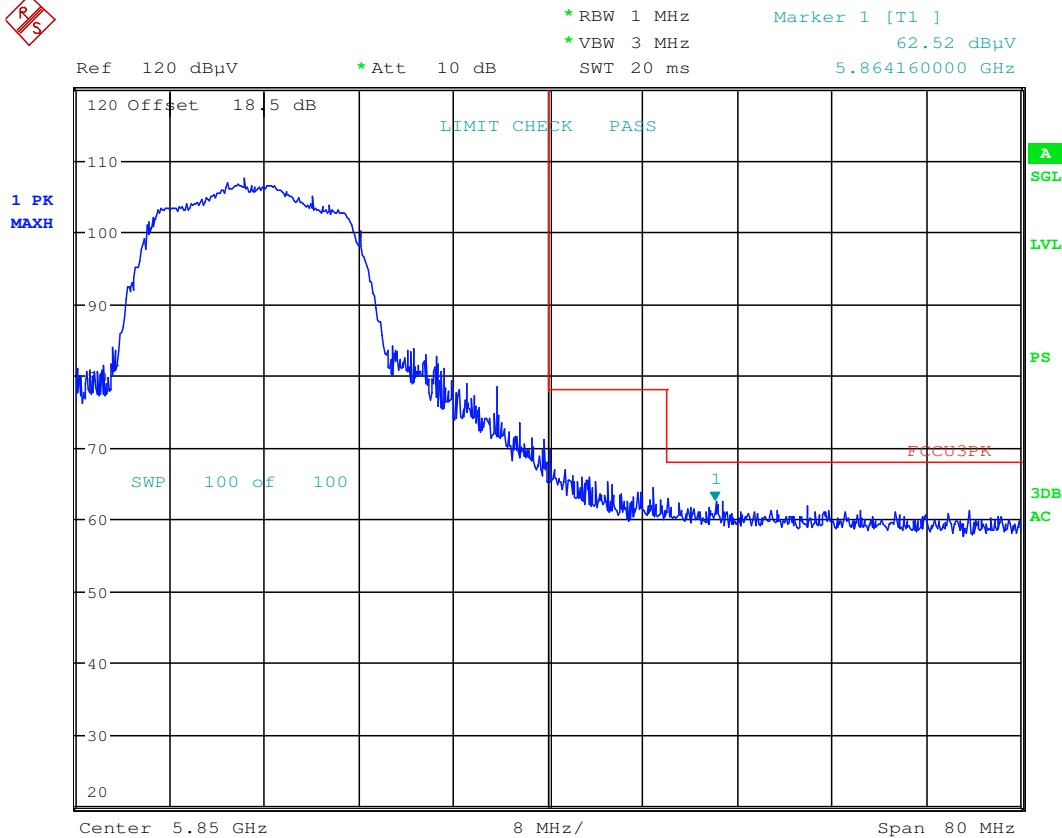
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5825MHz

Channel: 165



Date: 8.FEB.2016 22:40:41

Plot 7-195. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 154 of 255

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

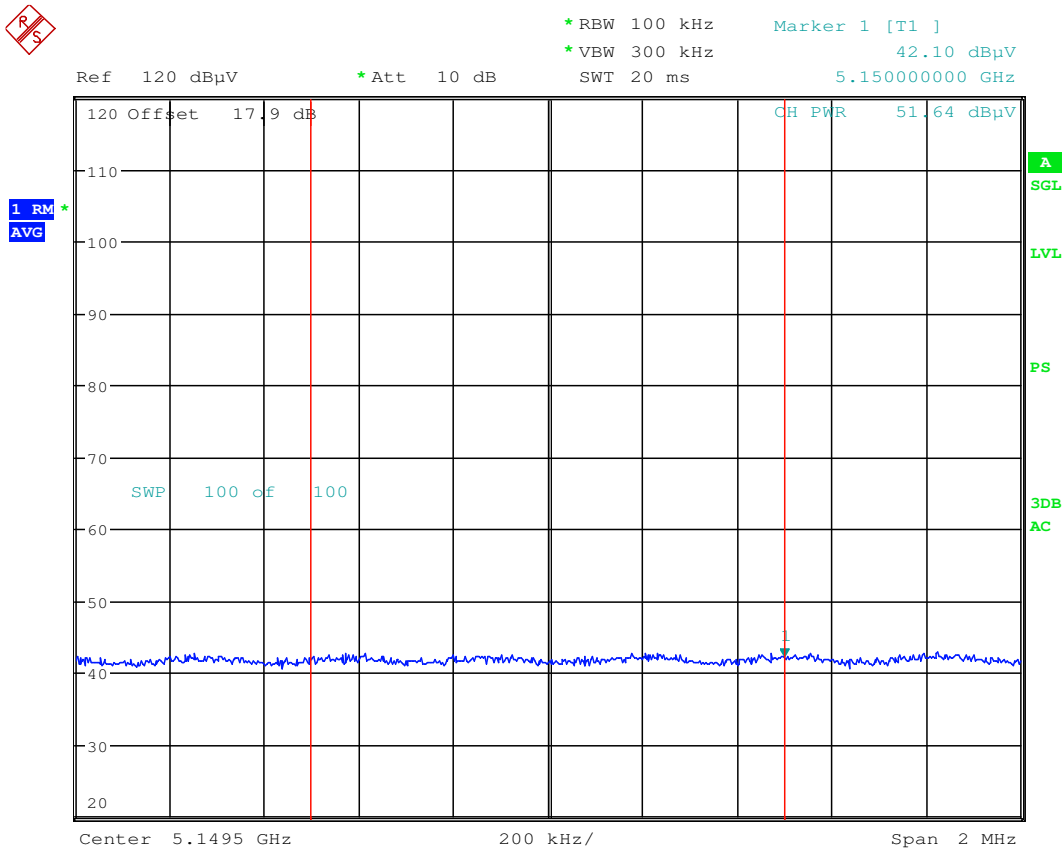
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



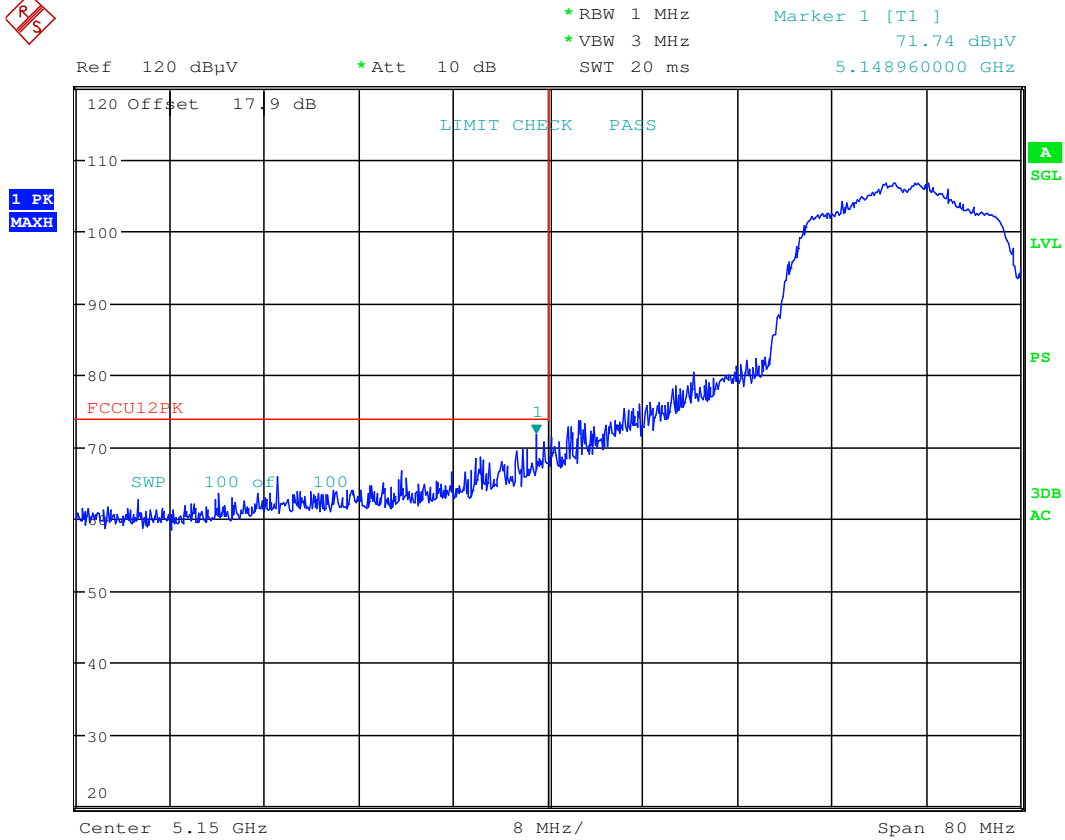
Date: 11.MAR.2016 12:29:31

Plot 7-196. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 155 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209



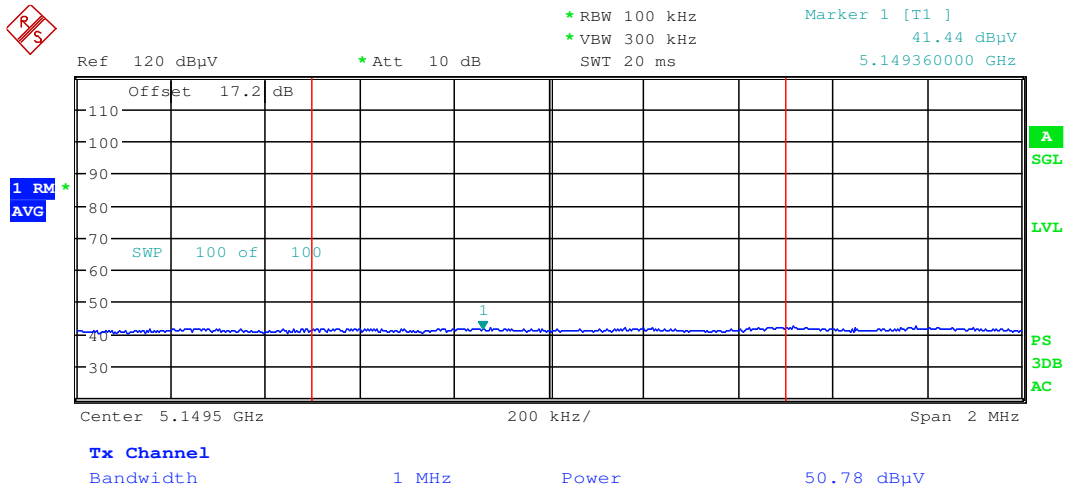
Date: 11.MAR.2016 12:26:32

Plot 7-197. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 156 of 255

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

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



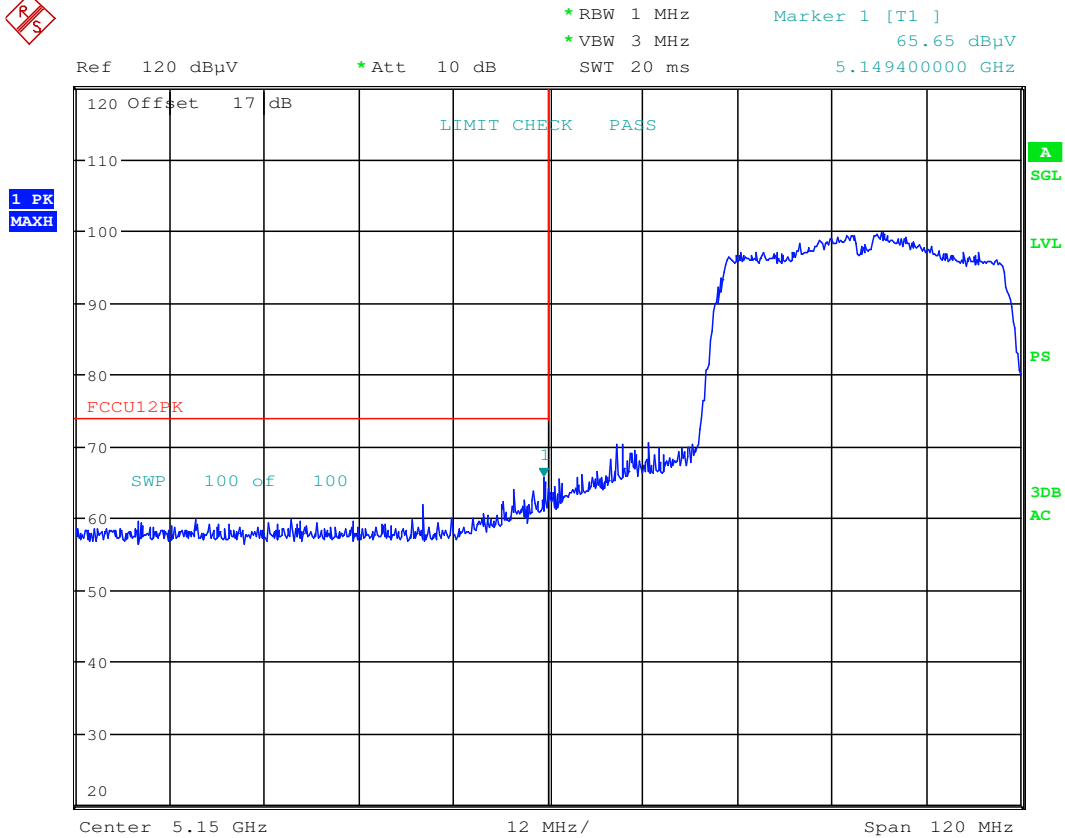
Date: 8.FEB.2016 19:03:56

Plot 7-198. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSCV33	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset	Page 157 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209



Date: 8.FEB.2016 19:05:24

Plot 7-199. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 158 of 255

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

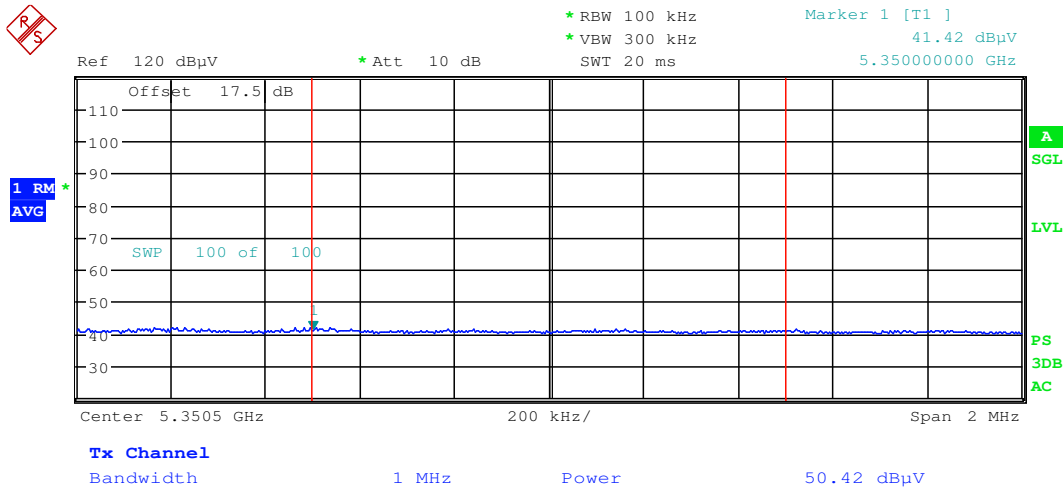
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5310MHz

Channel: 62



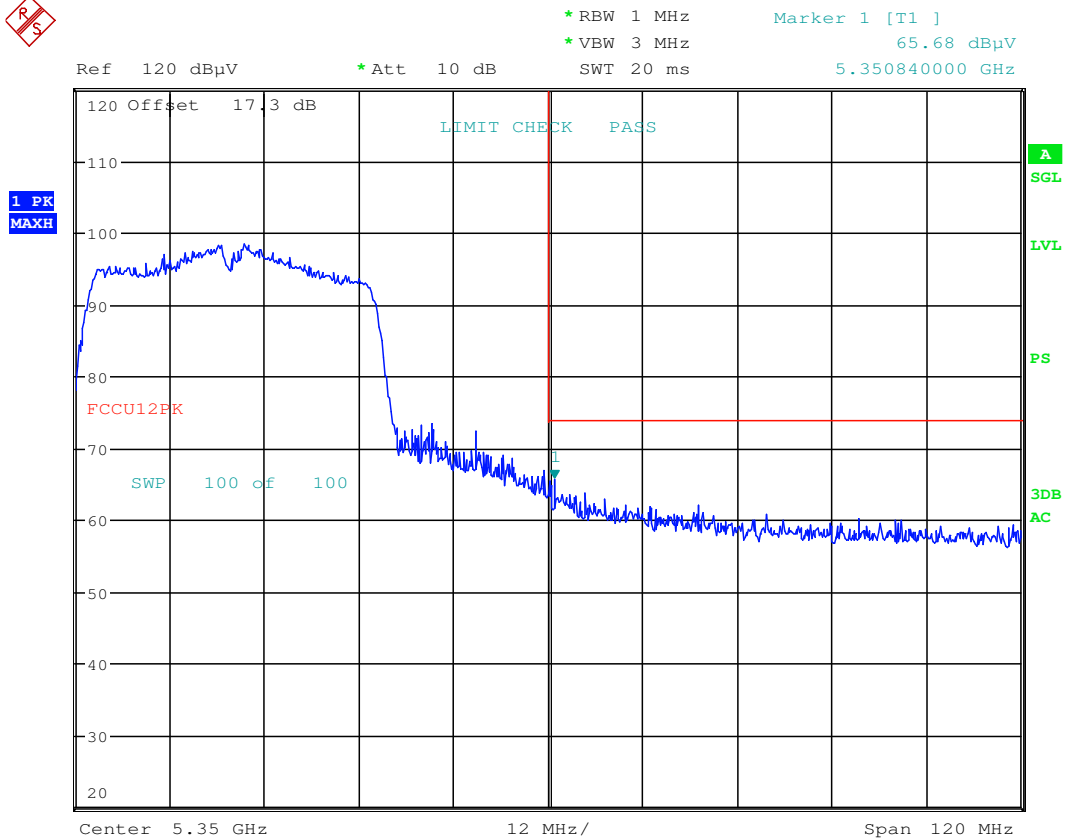
Date: 8.FEB.2016 21:01:12

Plot 7-200. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 159 of 255

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

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



Date: 8.FEB.2016 21:02:10

Plot 7-201. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 160 of 255

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

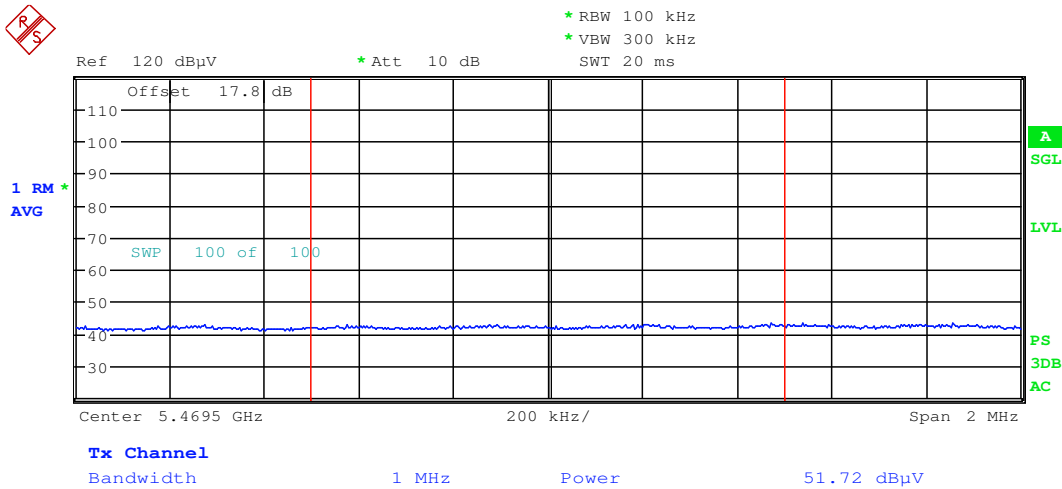
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5510MHz

Channel: 102



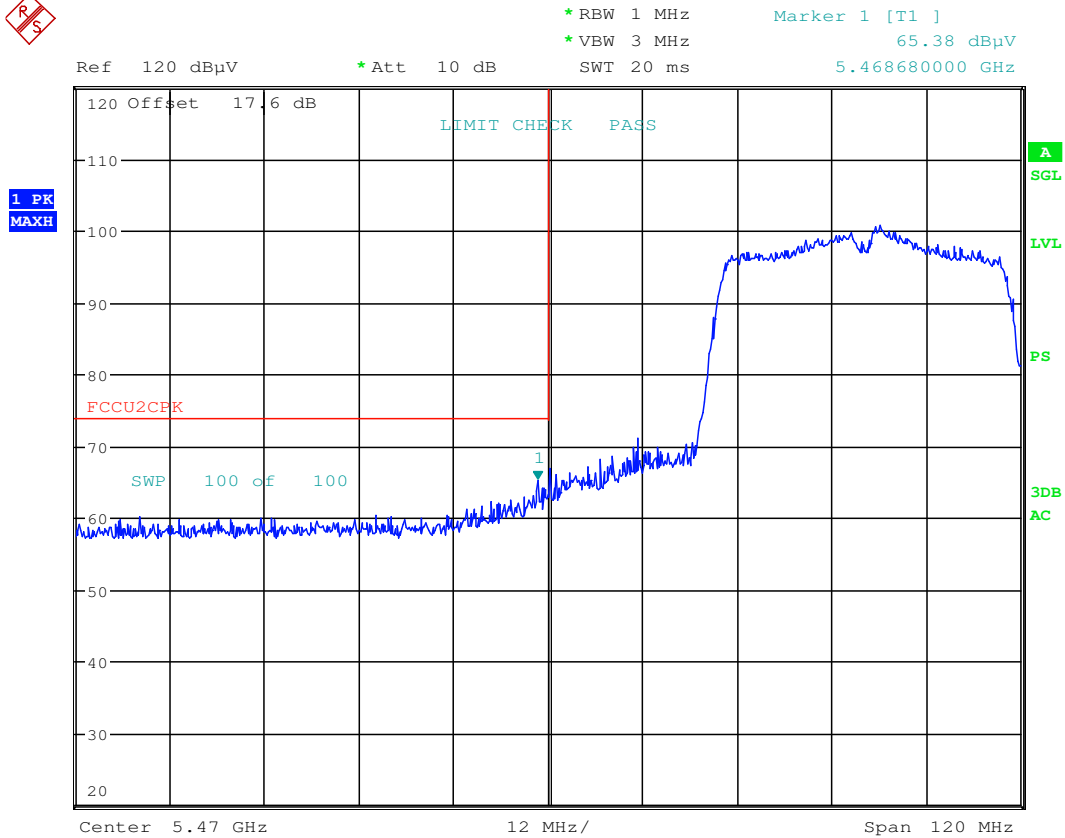
Date: 8.FEB.2016 22:07:22

Plot 7-202. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 161 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209



Date: 8.FEB.2016 22:11:07

Plot 7-203. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 162 of 255

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

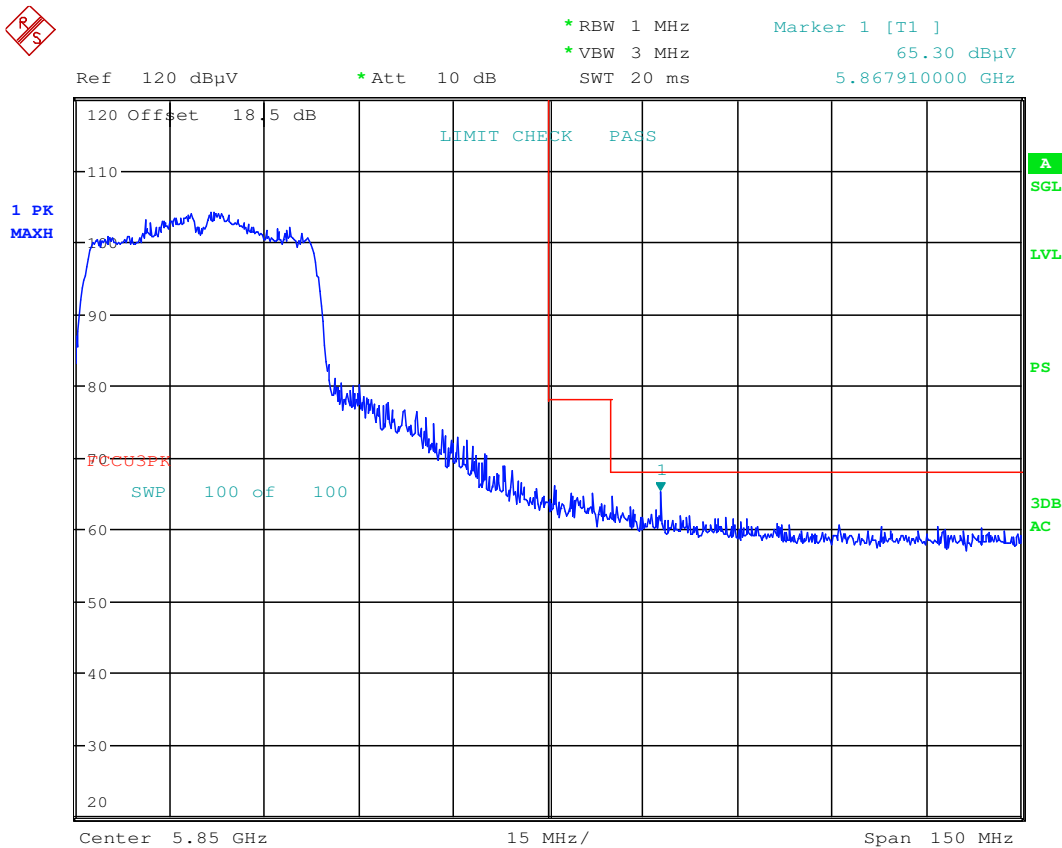
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5795MHz

Channel: 159



Date: 8.FEB.2016 22:43:04

Plot 7-204. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 163 of 255

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

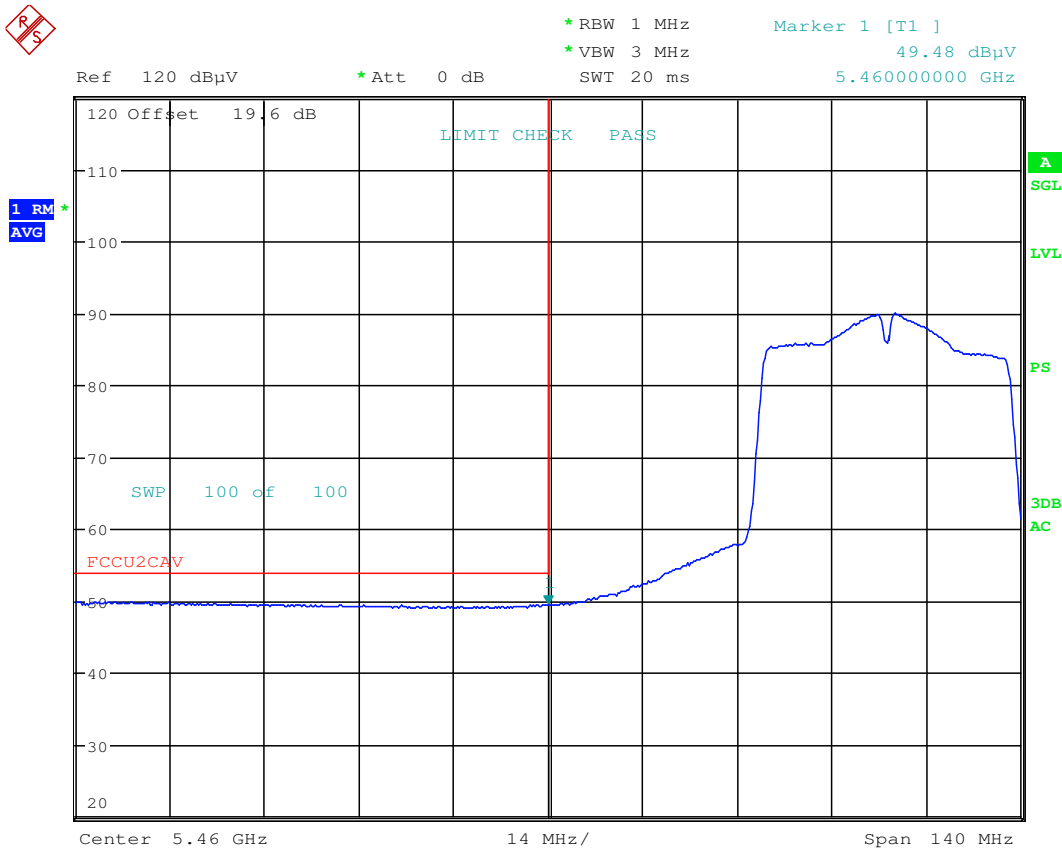
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5310MHz

Channel: 62



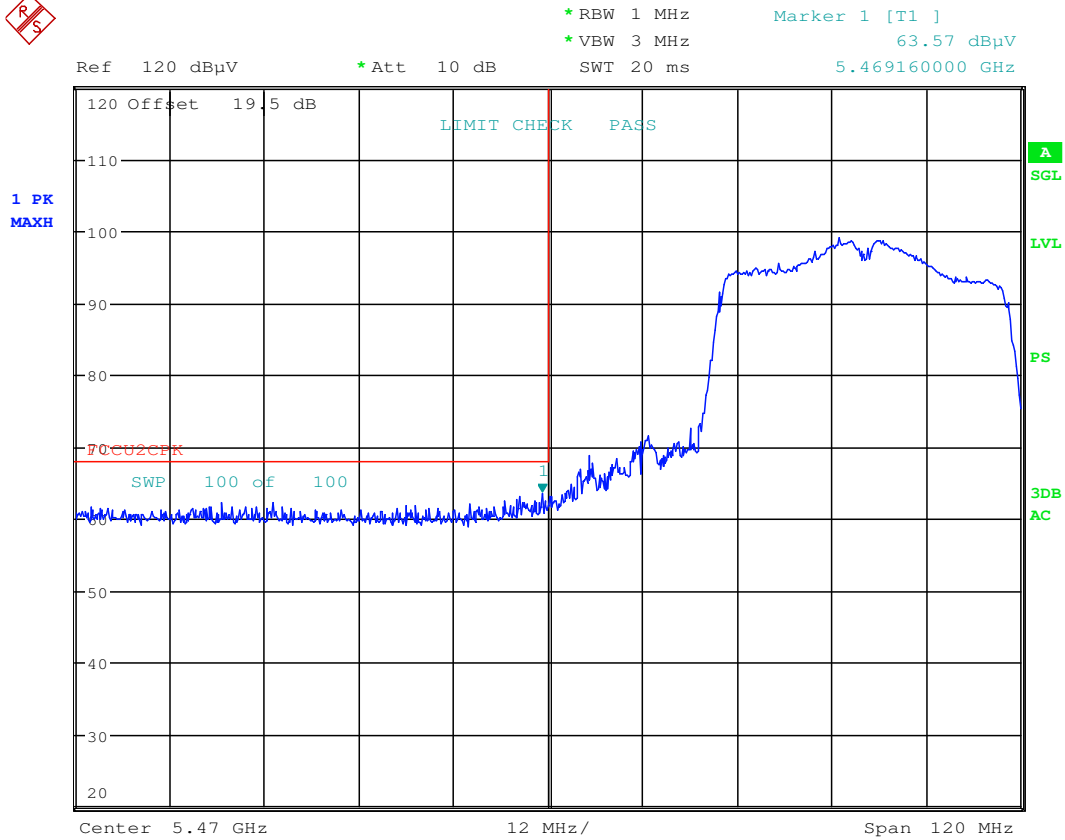
Date: 24.FEB.2016 13:07:21

Plot 7-205. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 164 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209



Date: 24.FEB.2016 13:05:08

Plot 7-206. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 165 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209

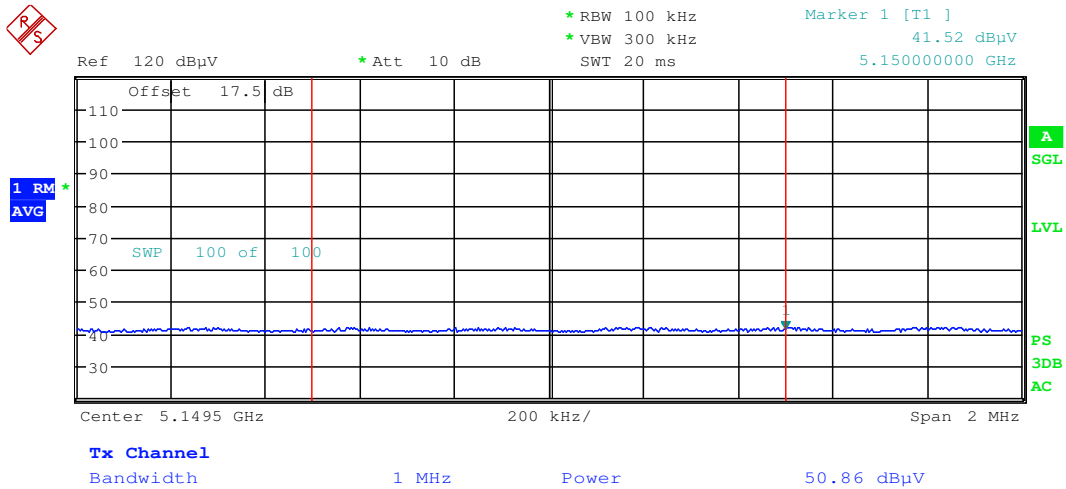
Worst Case Mode: 802.11n (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42



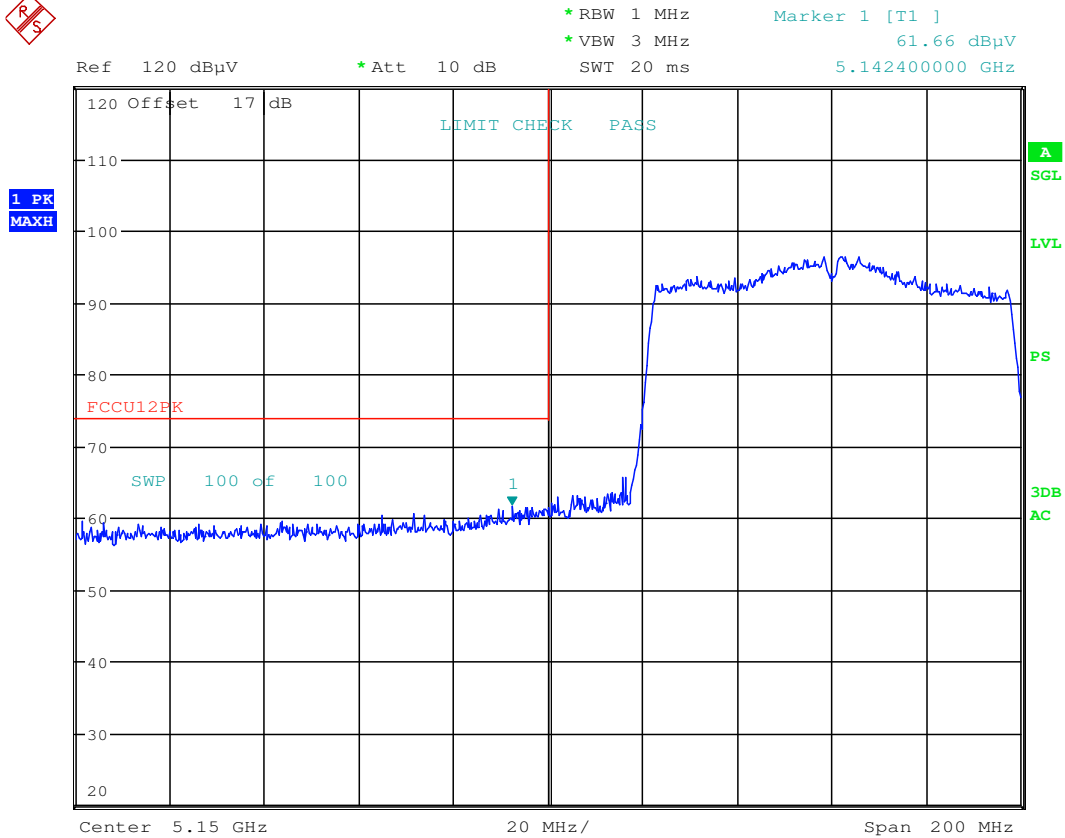
Date: 8.FEB.2016 19:22:01

Plot 7-207. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 166 of 255

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

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



Date: 8.FEB.2016 19:24:14

Plot 7-208. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 167 of 255

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

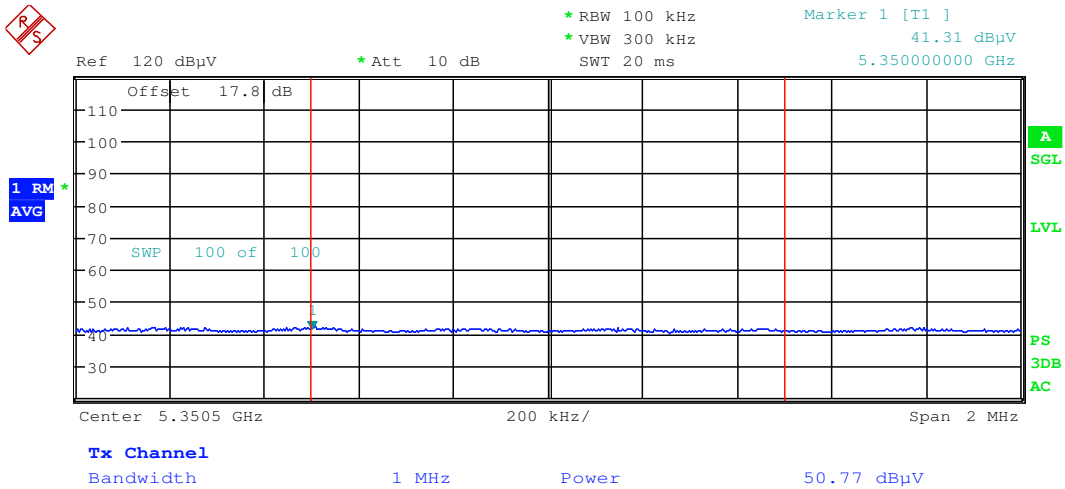
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5290MHz

Channel: 58



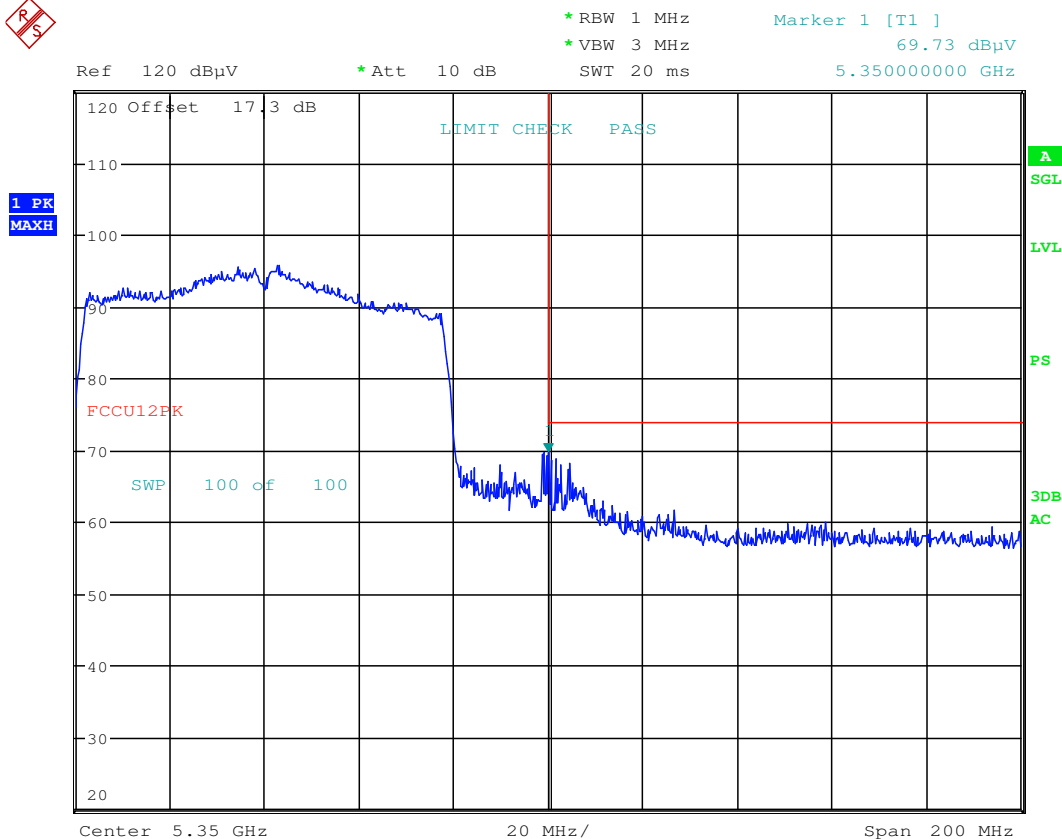
Date: 8.FEB.2016 21:14:26

Plot 7-209. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 168 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209



Date: 8.FEB.2016 21:17:47

Plot 7-210. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 169 of 255

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

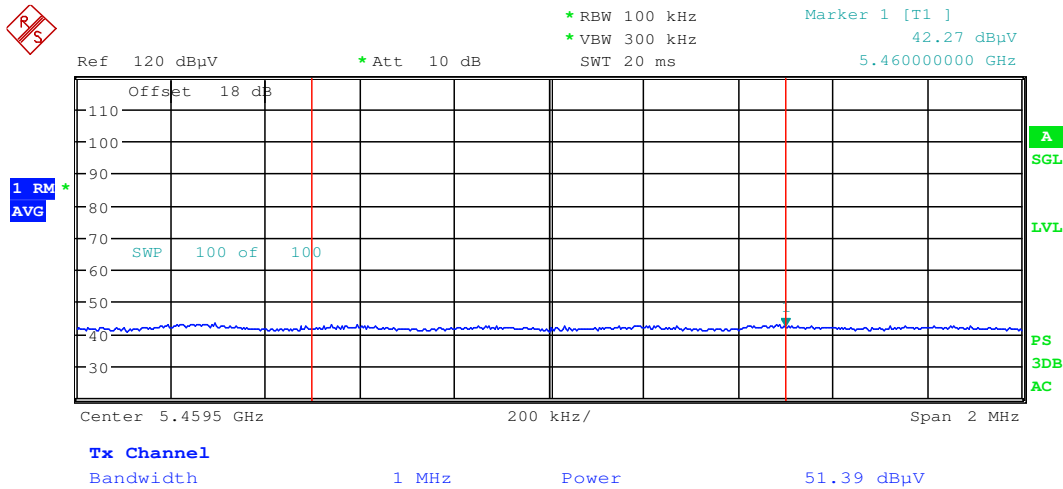
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5530MHz

Channel: 106



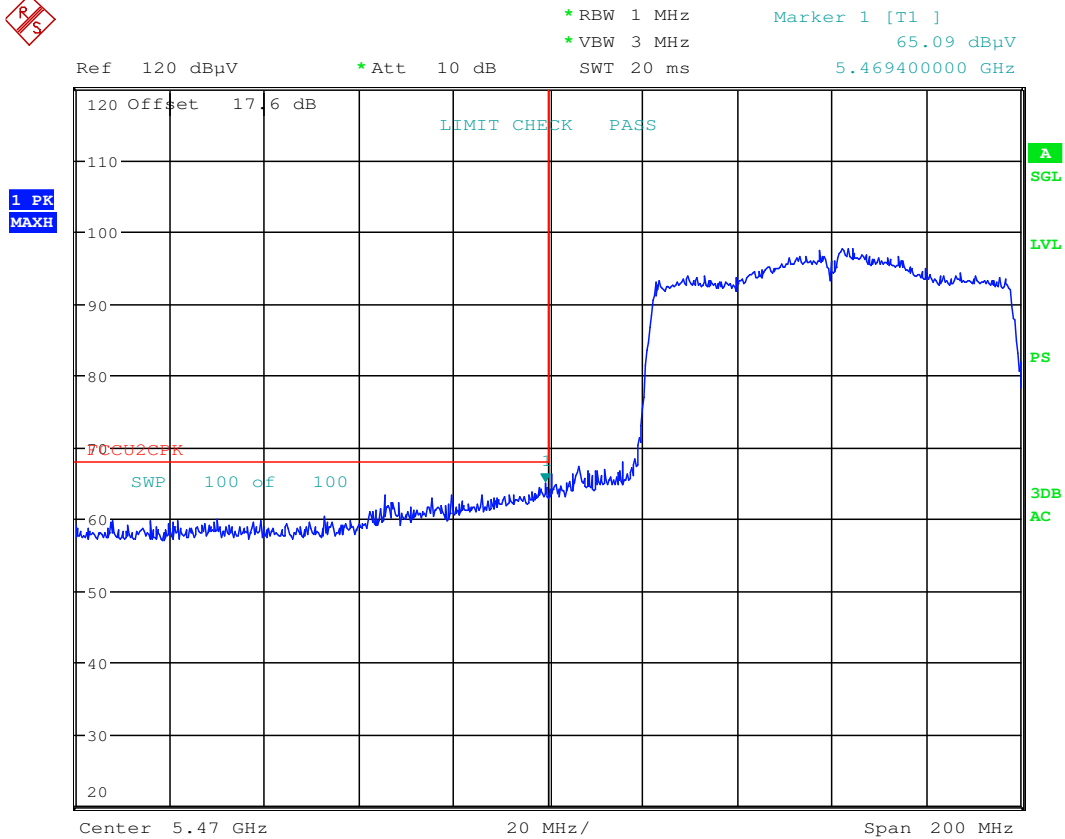
Date: 8.FEB.2016 22:30:03

Plot 7-211. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 170 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209



Date: 8.FEB.2016 22:26:02

Plot 7-212. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 171 of 255

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

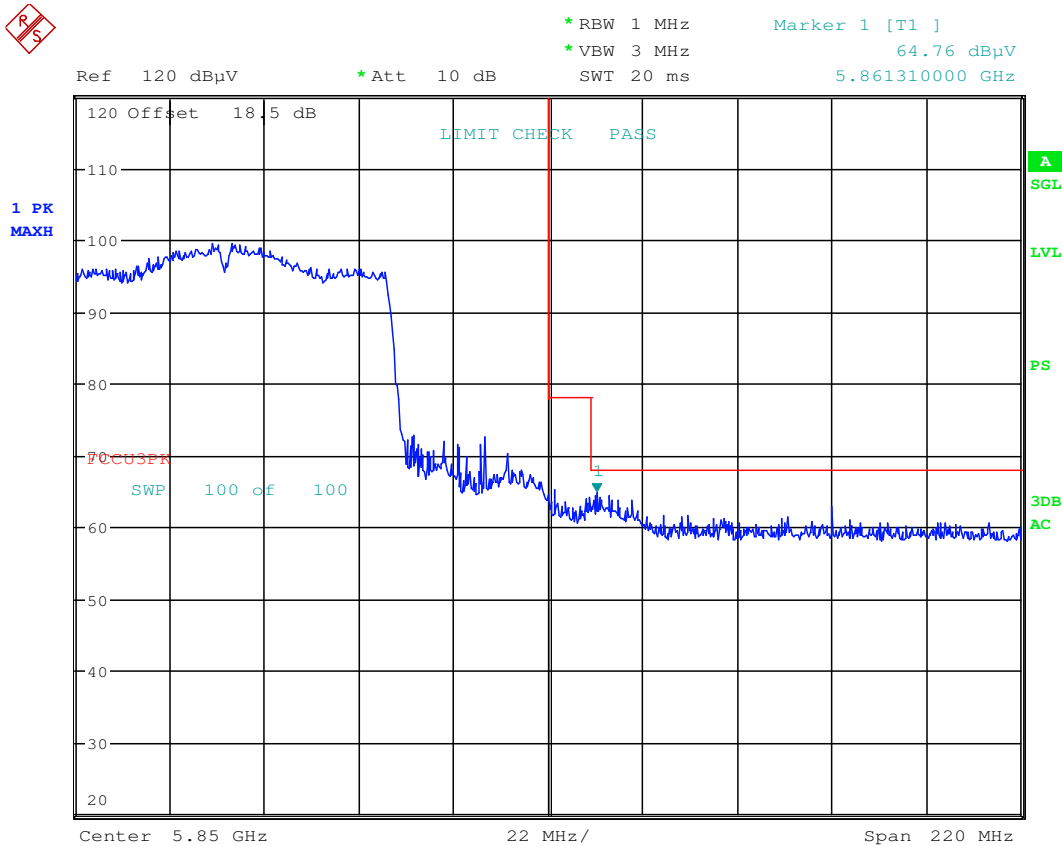
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5775MHz

Channel: 155



Date: 8.FEB.2016 22:45:17

Plot 7-213. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 172 of 255

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

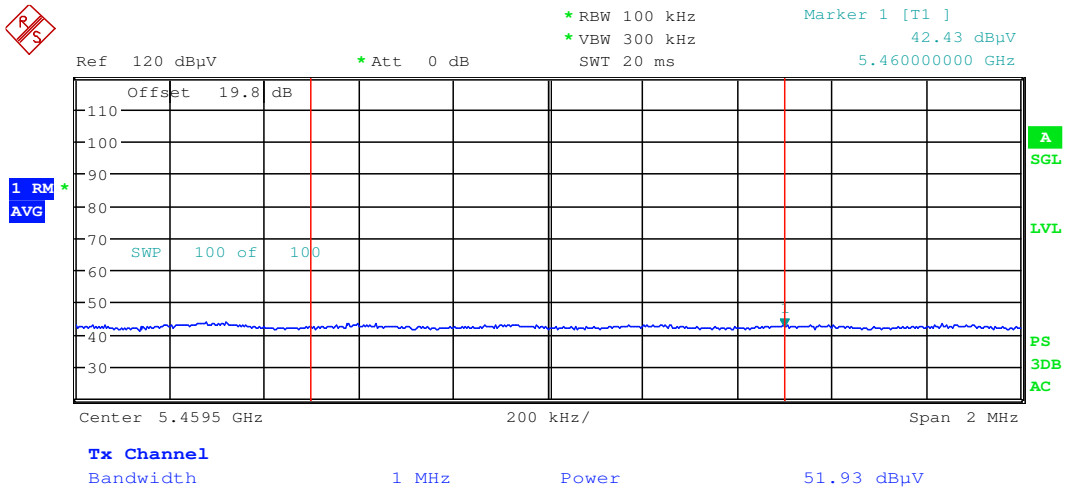
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5530MHz

Channel: 106



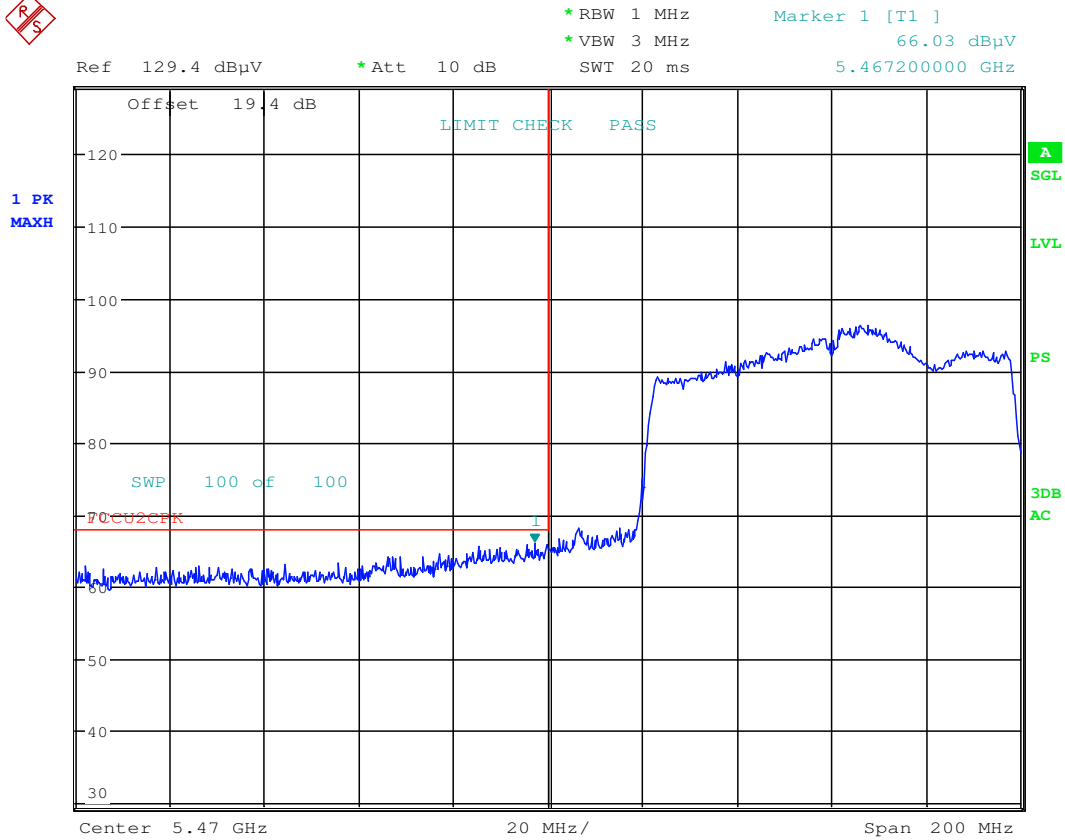
Date: 11.MAR.2016 12:59:45

Plot 7-214. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 173 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209



Date: 11.MAR.2016 12:50:14

Plot 7-215. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 174 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209

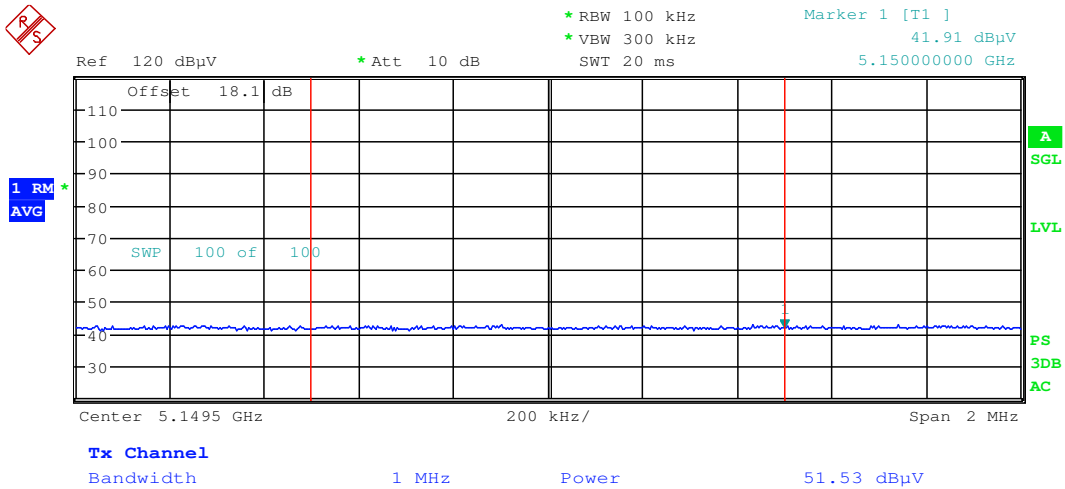
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



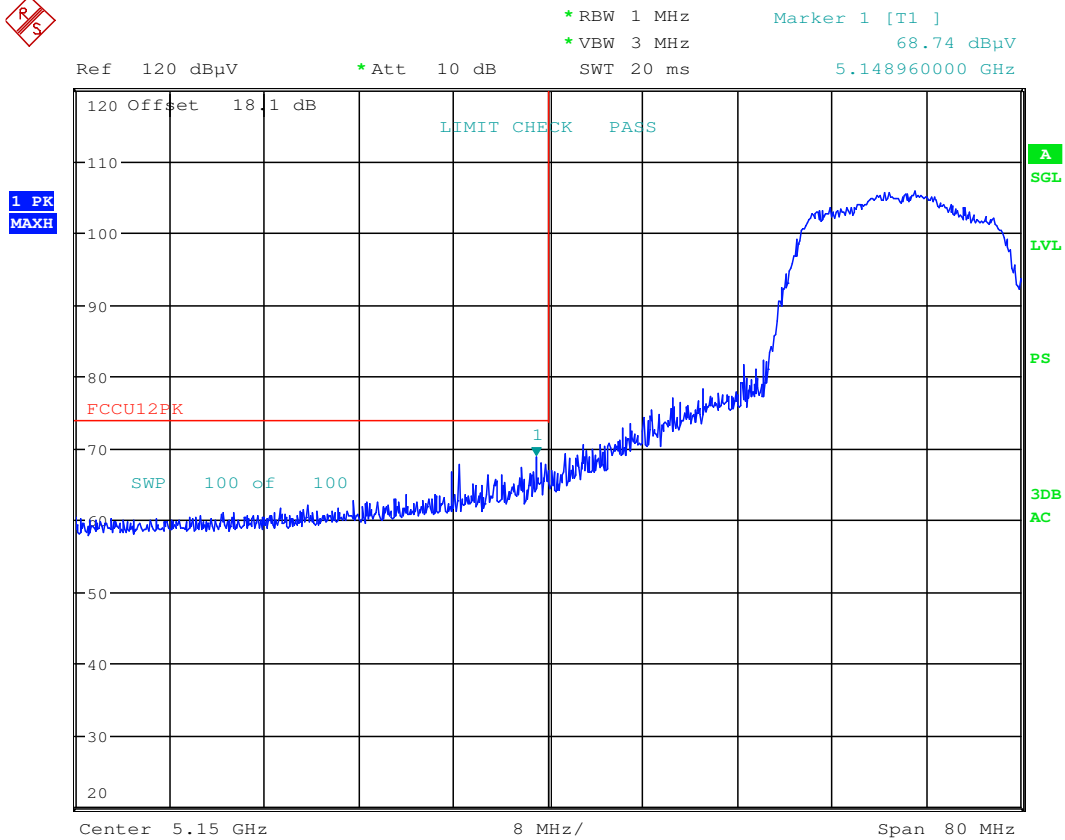
Date: 9.FEB.2016 10:36:13

Plot 7-216. Radiated Restricted Lower Band Edge Plot (Average - UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 175 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209



Date: 9.FEB.2016 10:37:46

Plot 7-217. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 176 of 255

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

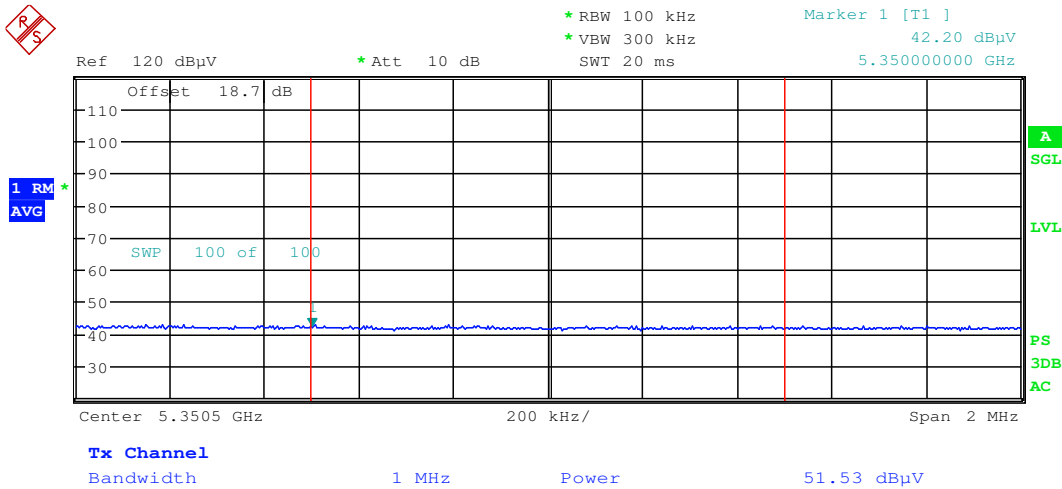
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64



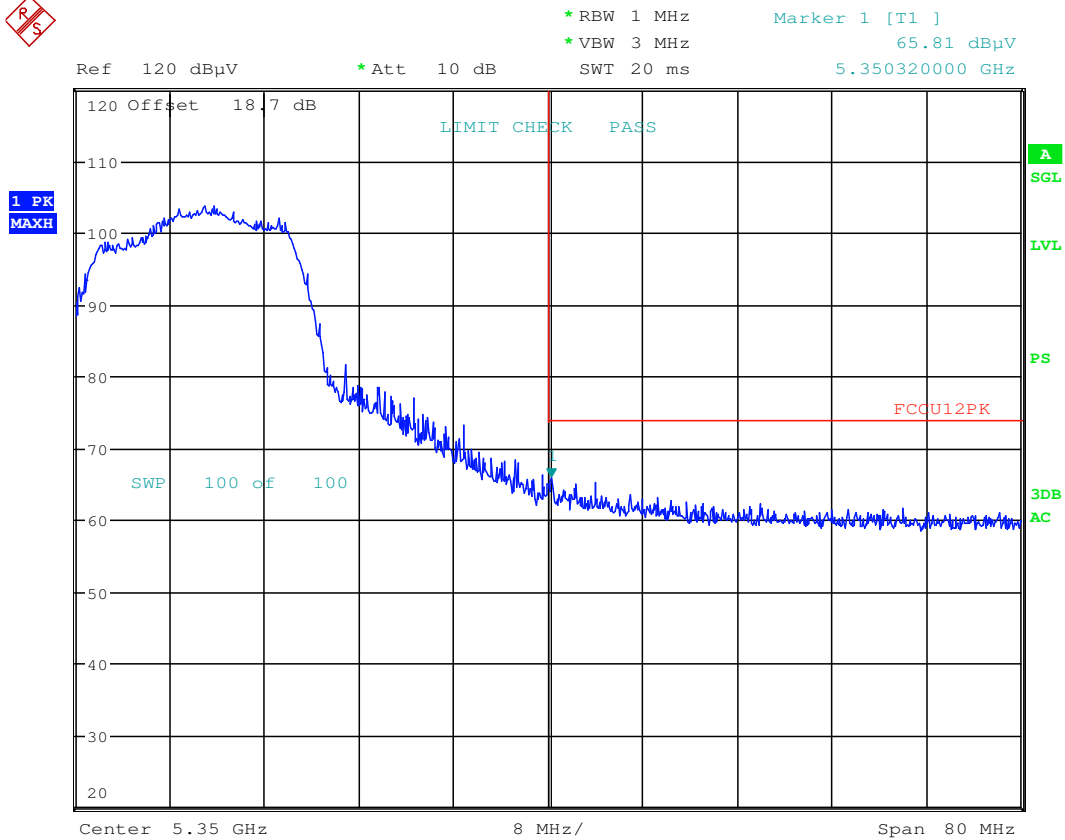
Date: 9.FEB.2016 11:30:59

Plot 7-218. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 177 of 255

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

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



Date: 9.FEB.2016 11:32:00

Plot 7-219. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 178 of 255

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

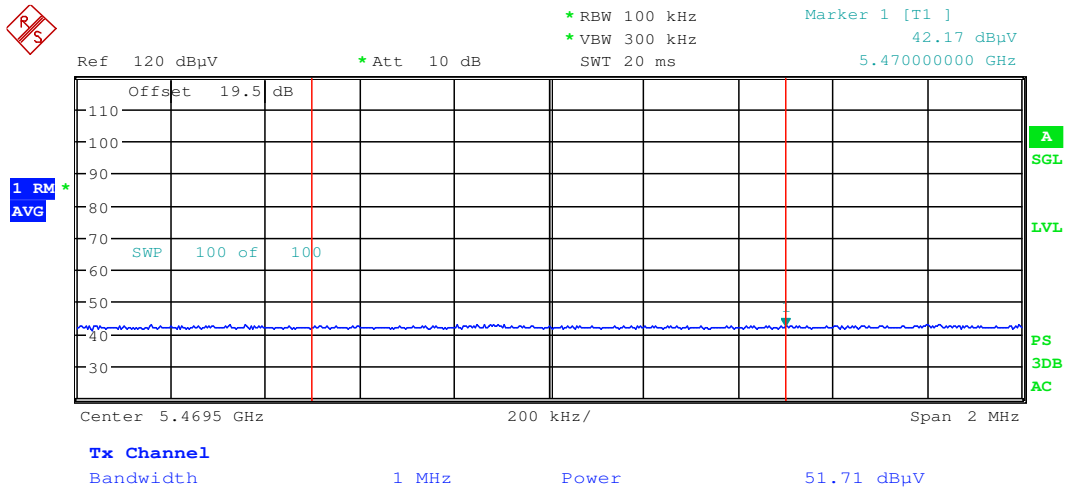
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100



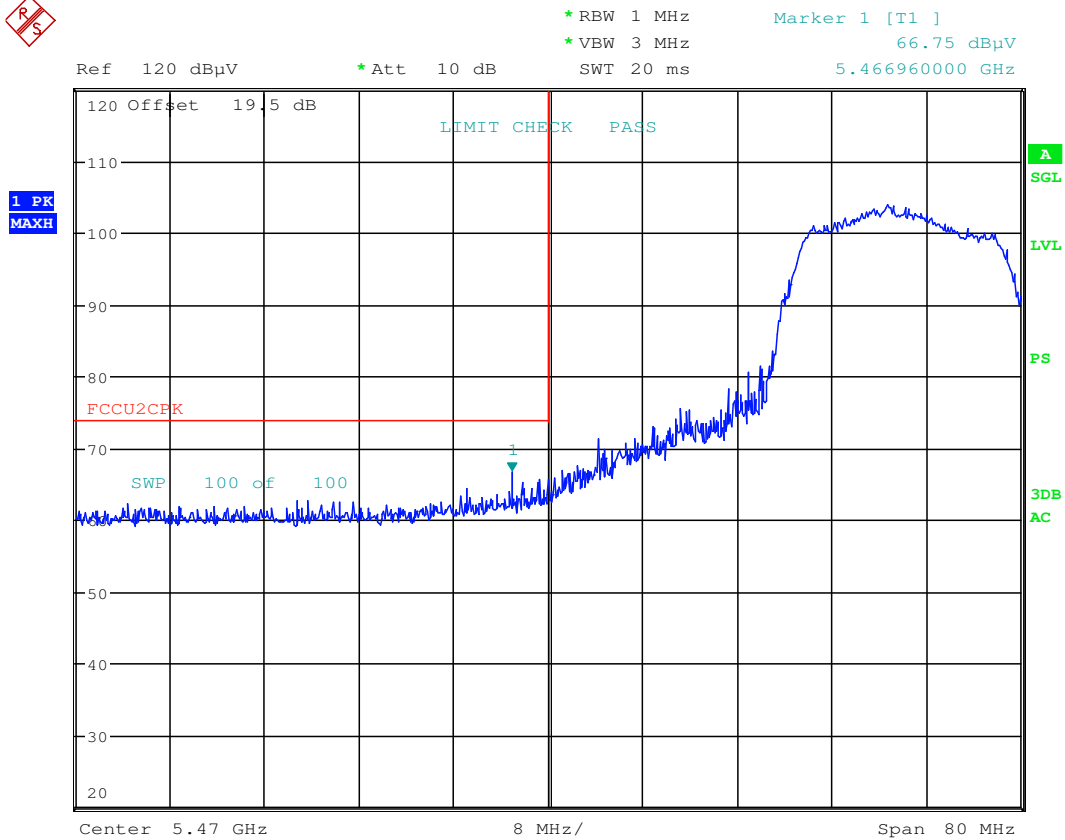
Date: 9.FEB.2016 12:21:24

Plot 7-220. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 179 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209



Date: 9.FEB.2016 12:22:55

Plot 7-221. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 180 of 255

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

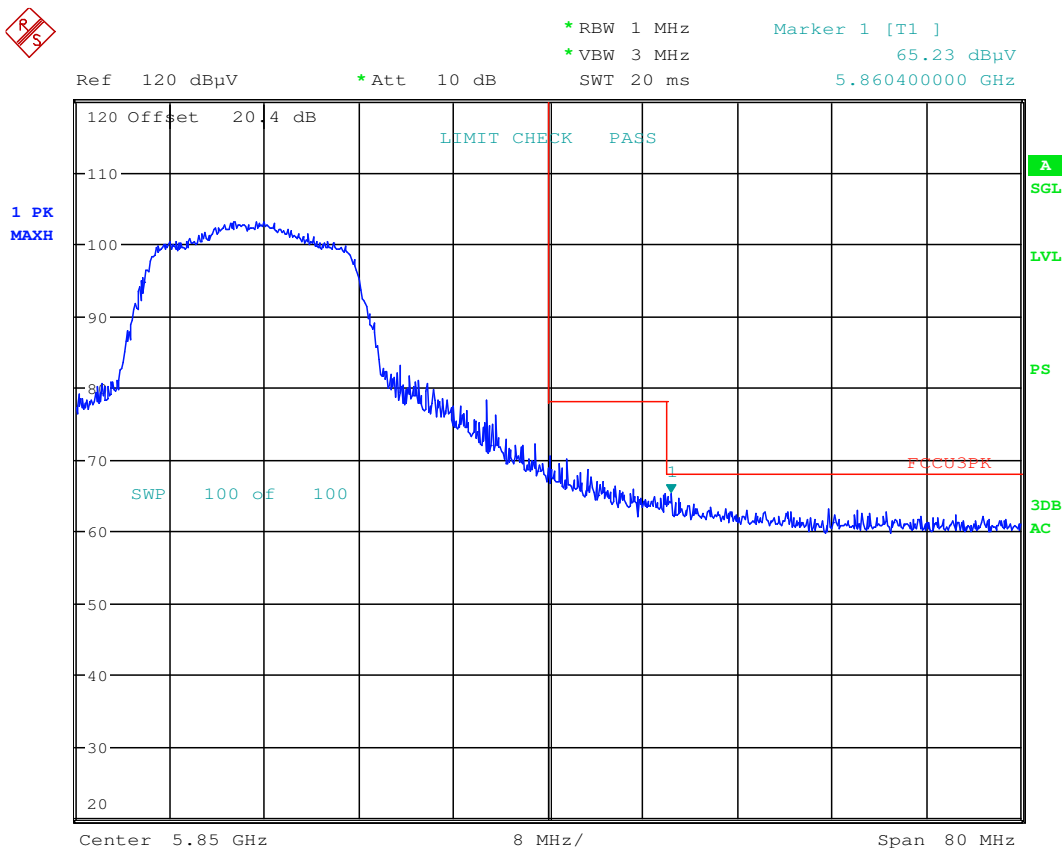
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5825MHz

Channel: 165



Date: 9.FEB.2016 12:59:29

Plot 7-222. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 181 of 255

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

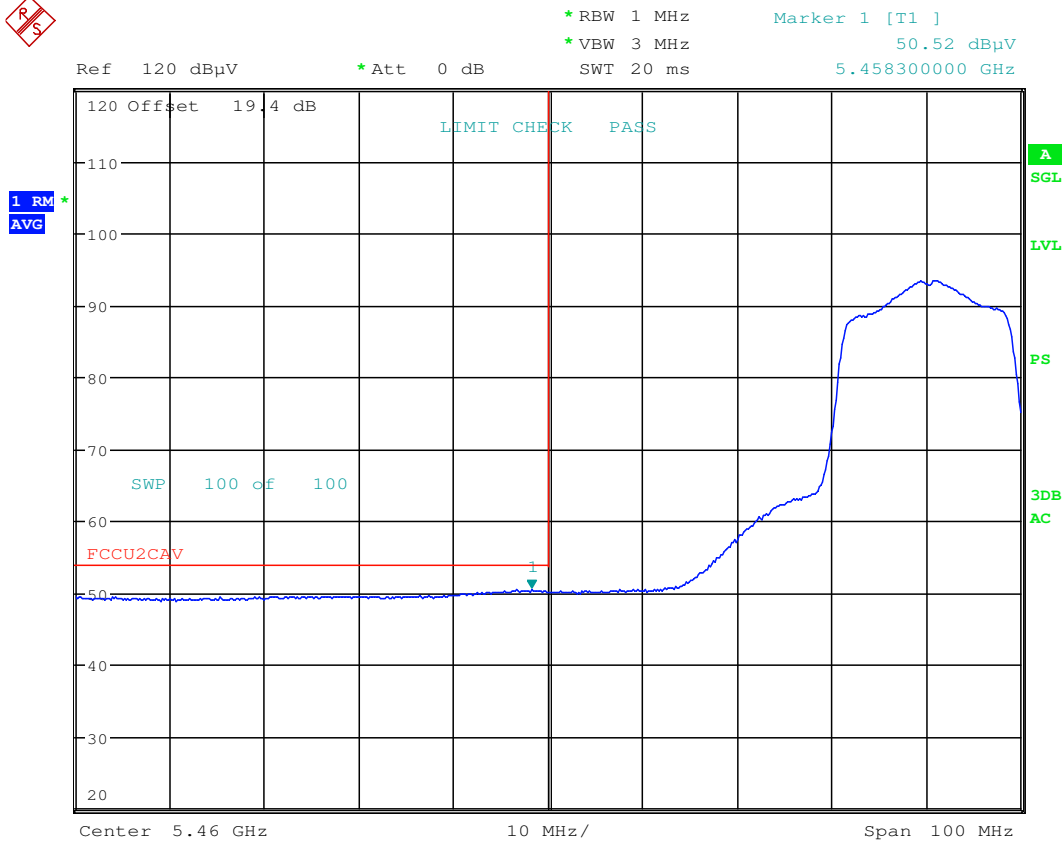
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100



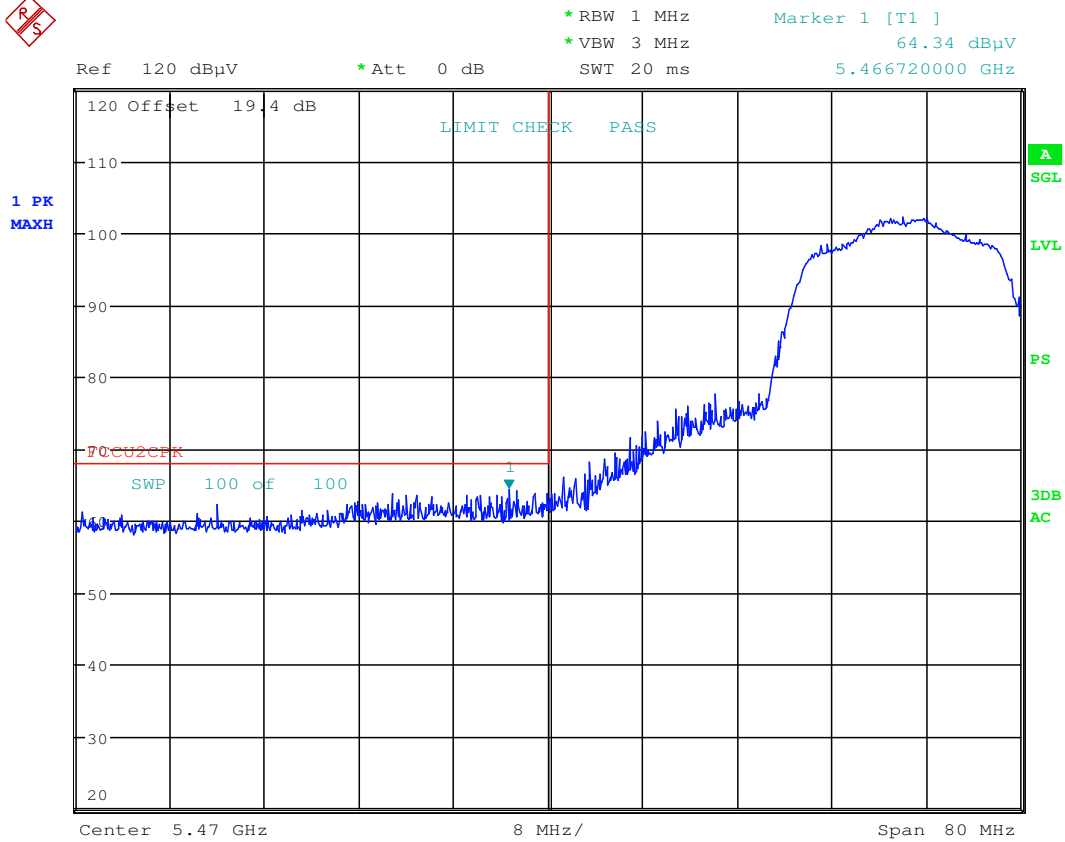
Date: 11.MAR.2016 13:11:50

Plot 7-223. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 182 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209



Date: 11.MAR.2016 13:10:13

Plot 7-224. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 183 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209

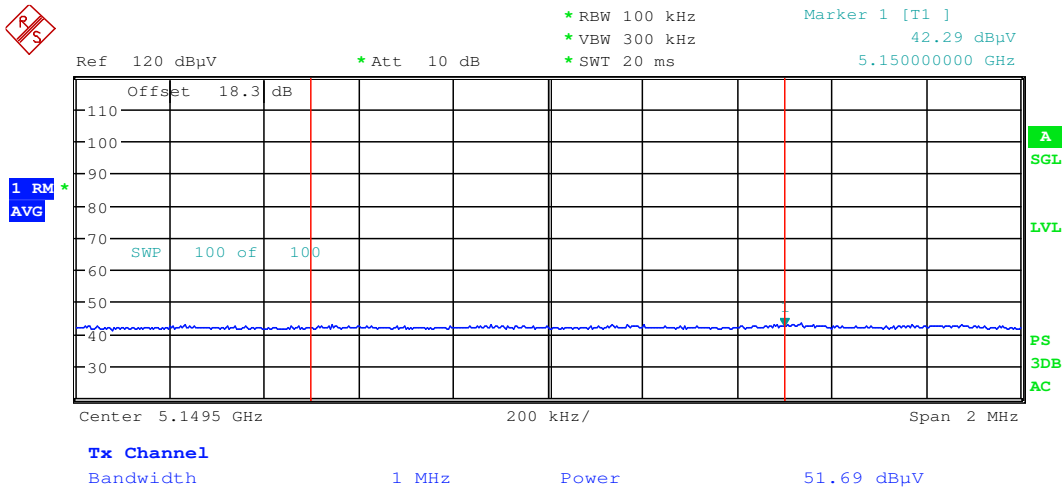
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38



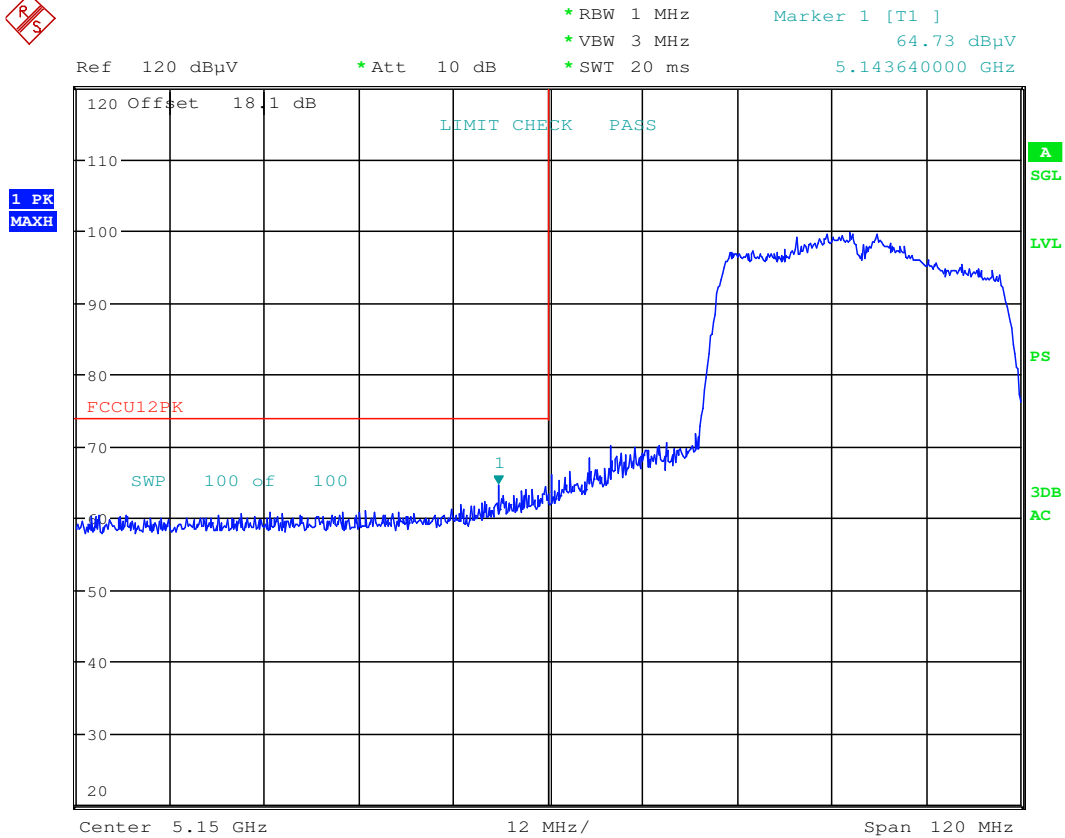
Date: 9.FEB.2016 10:48:10

Plot 7-225. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 184 of 255

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

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



Date: 9.FEB.2016 10:50:48

Plot 7-226. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 185 of 255

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

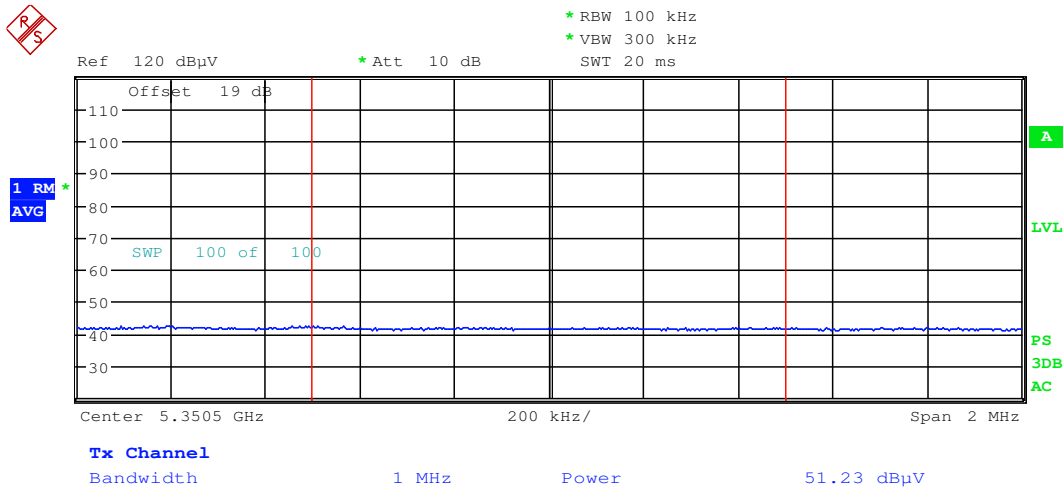
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5310MHz

Channel: 62



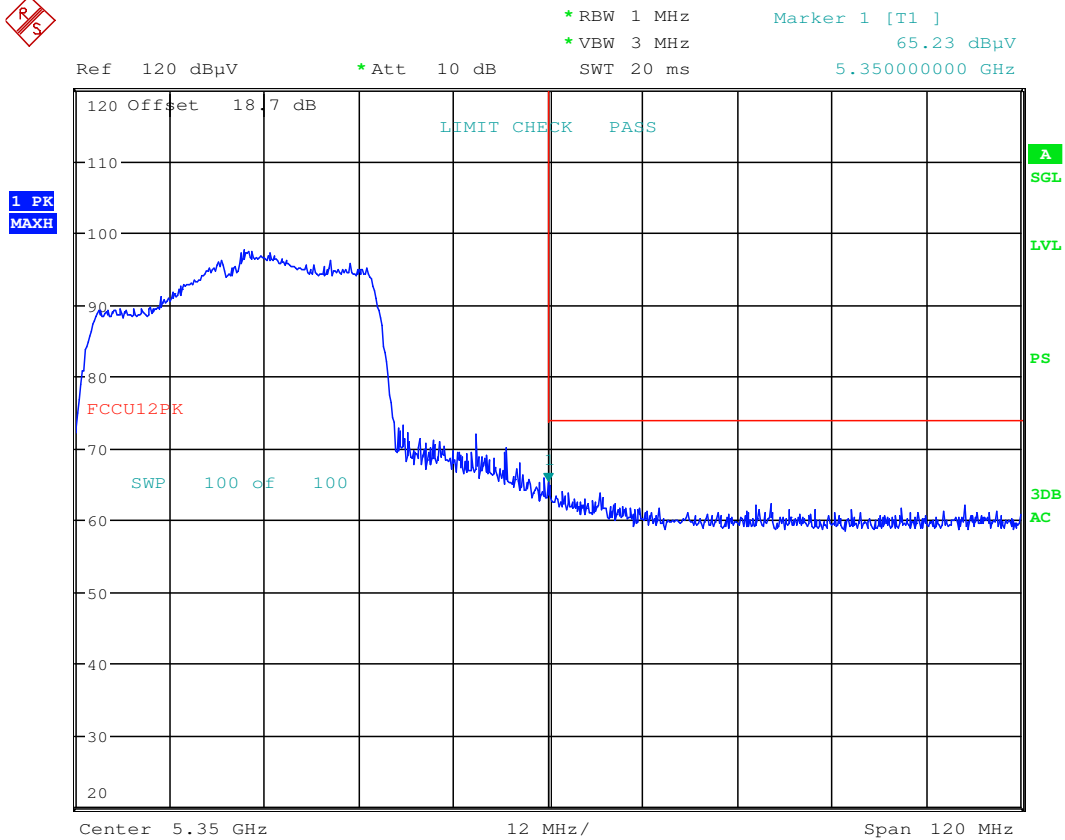
Date: 9.FEB.2016 11:38:56

Plot 7-227. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset	Page 186 of 255	

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

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



Date: 9.FEB.2016 11:40:25

Plot 7-228. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 187 of 255

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

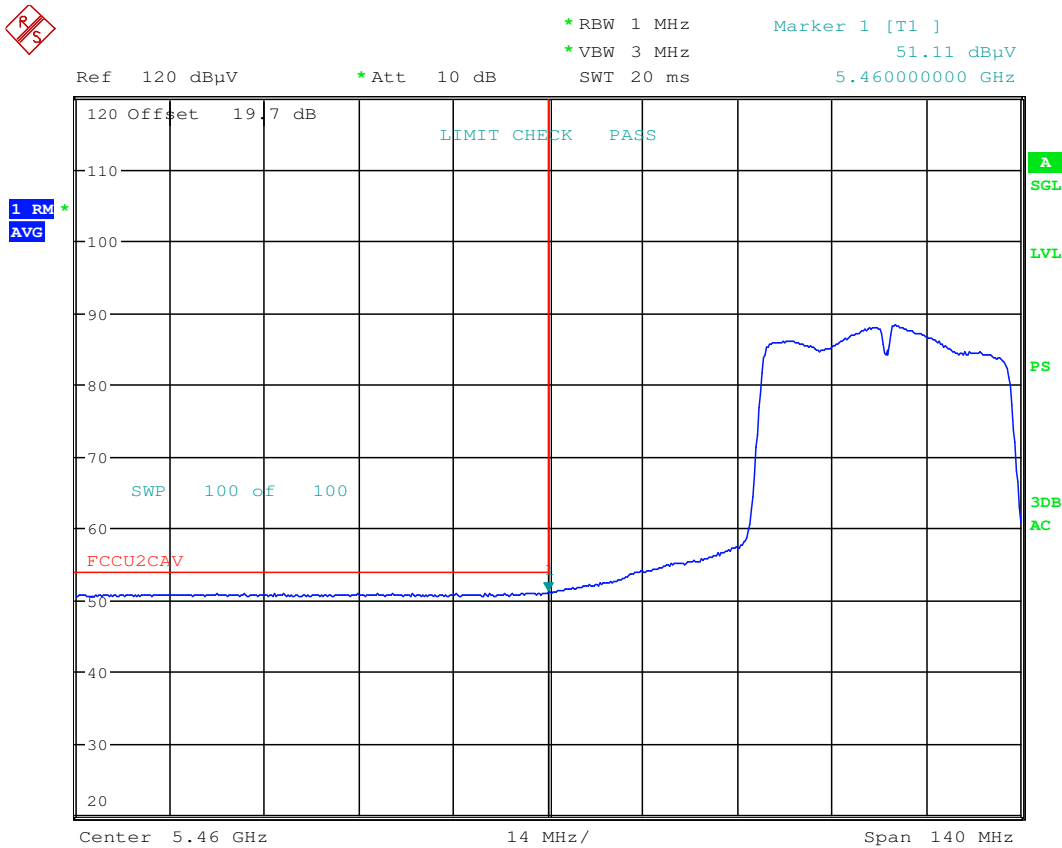
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5510MHz

Channel: 102



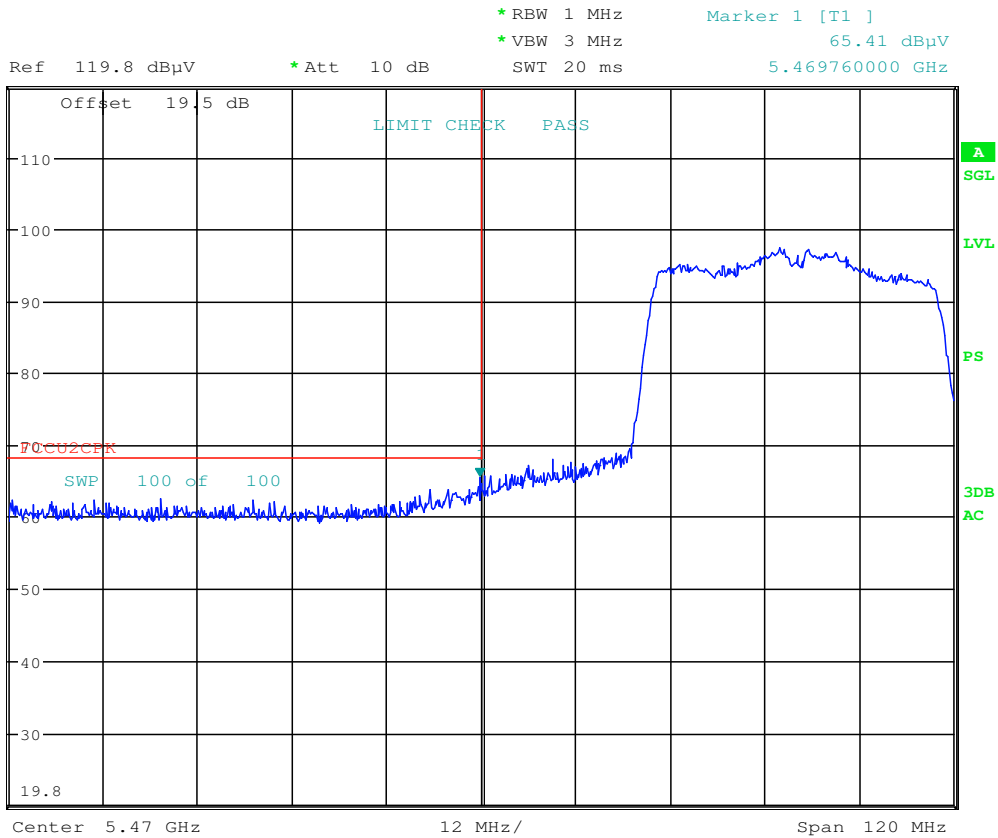
Date: 9.FEB.2016 12:38:09

Plot 7-229. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 188 of 255

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

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



Date: 9.FEB.2016 12:36:34

Plot 7-230. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 189 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209

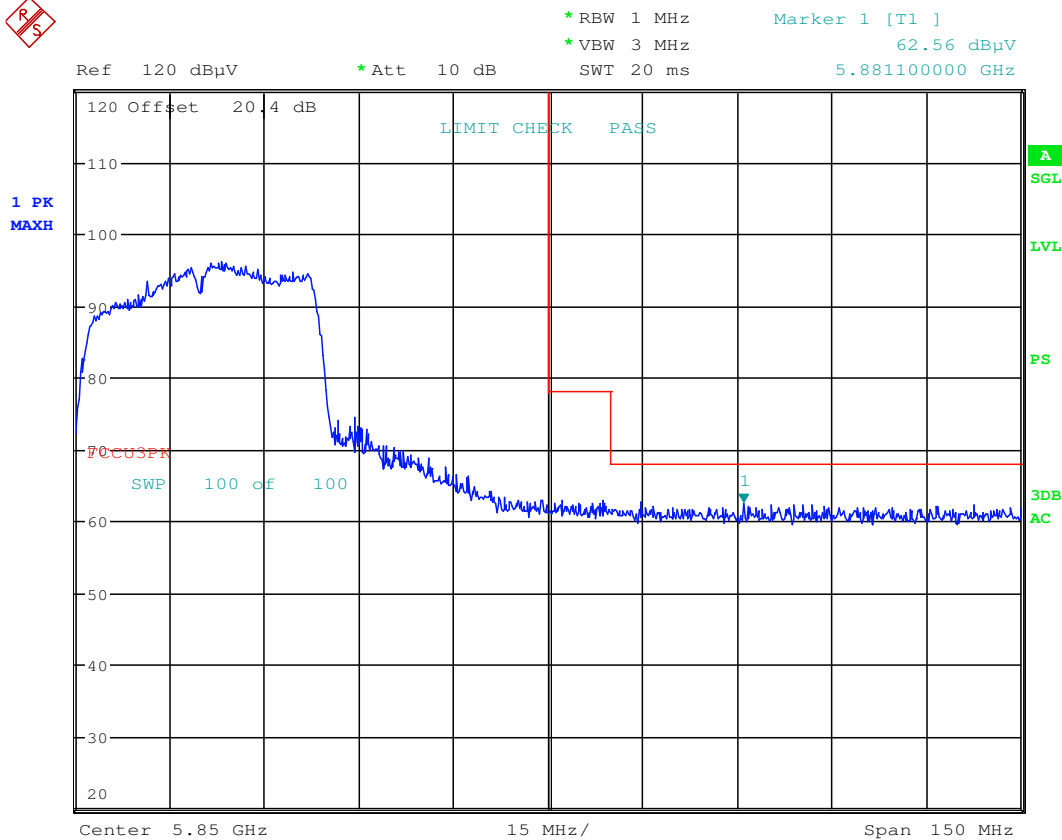
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5795MHz

Channel: 159



Date: 9.FEB.2016 13:01:57

Plot 7-231. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 190 of 255

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

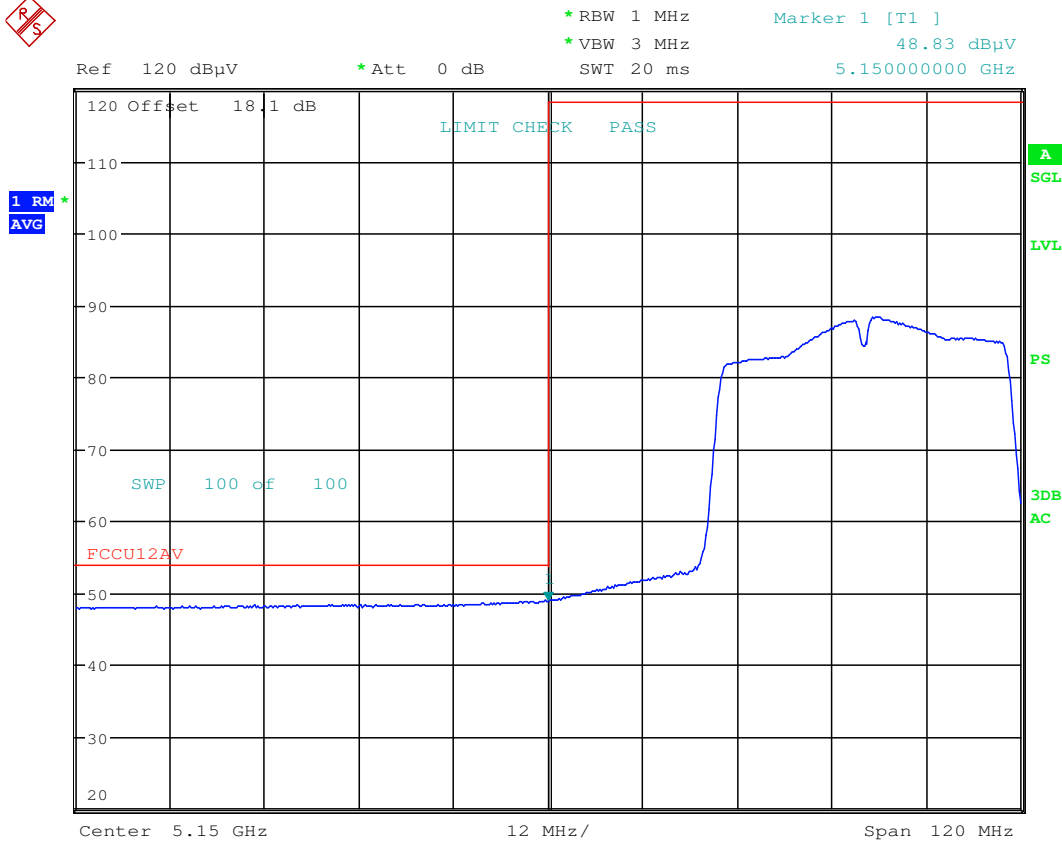
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38



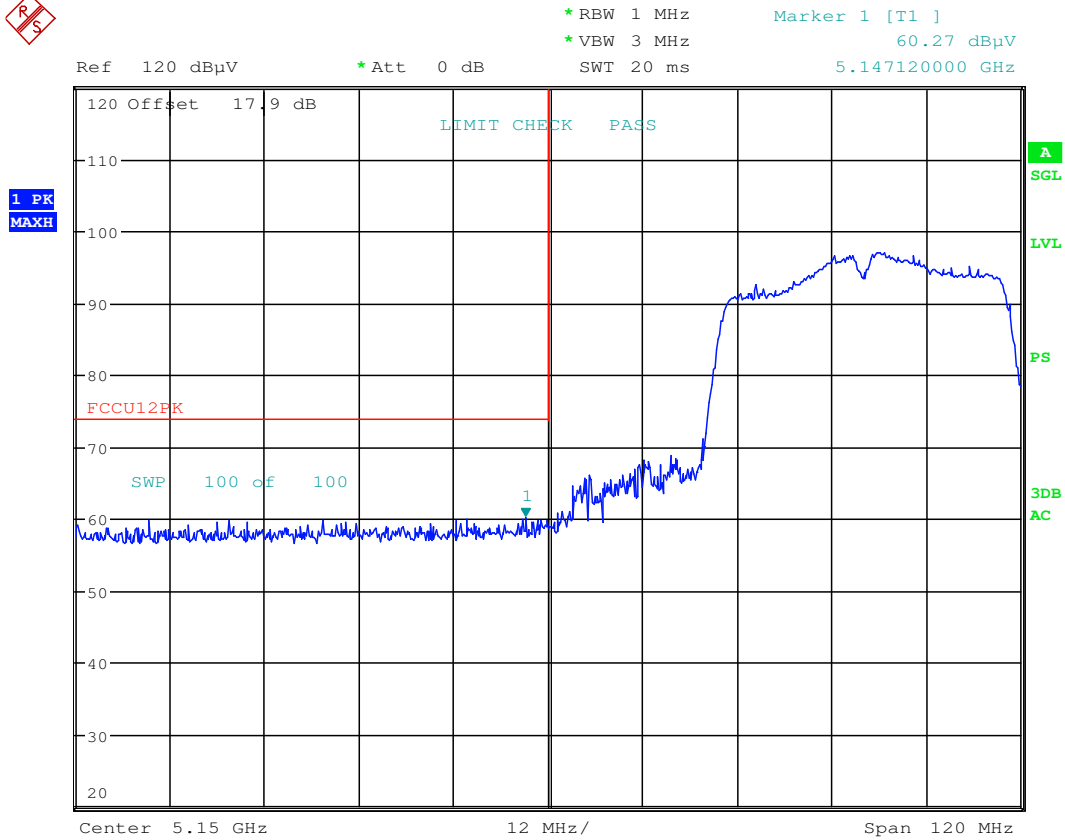
Date: 11.MAR.2016 13:27:19

Plot 7-232. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 191 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209



Date: 11.MAR.2016 13:28:36

Plot 7-233. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 192 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209

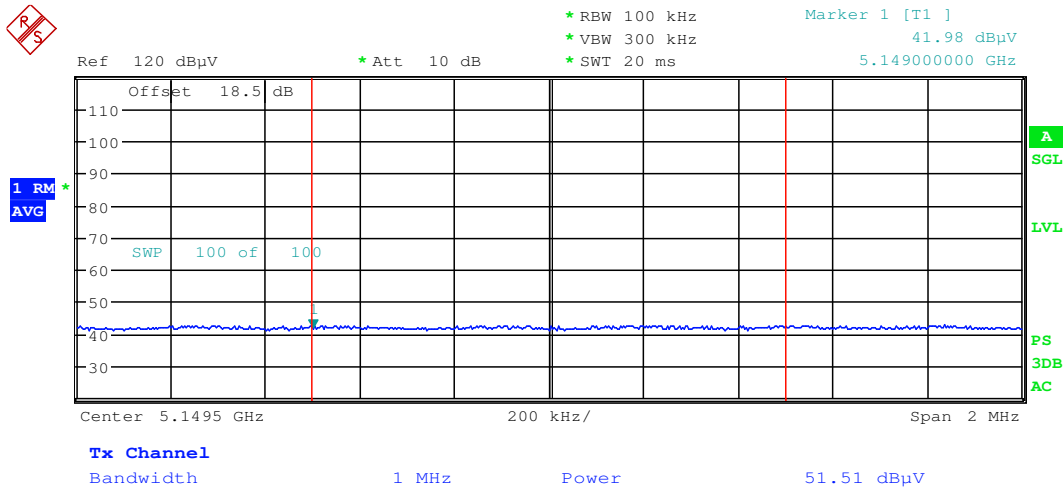
Worst Case Mode: 802.11n (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42



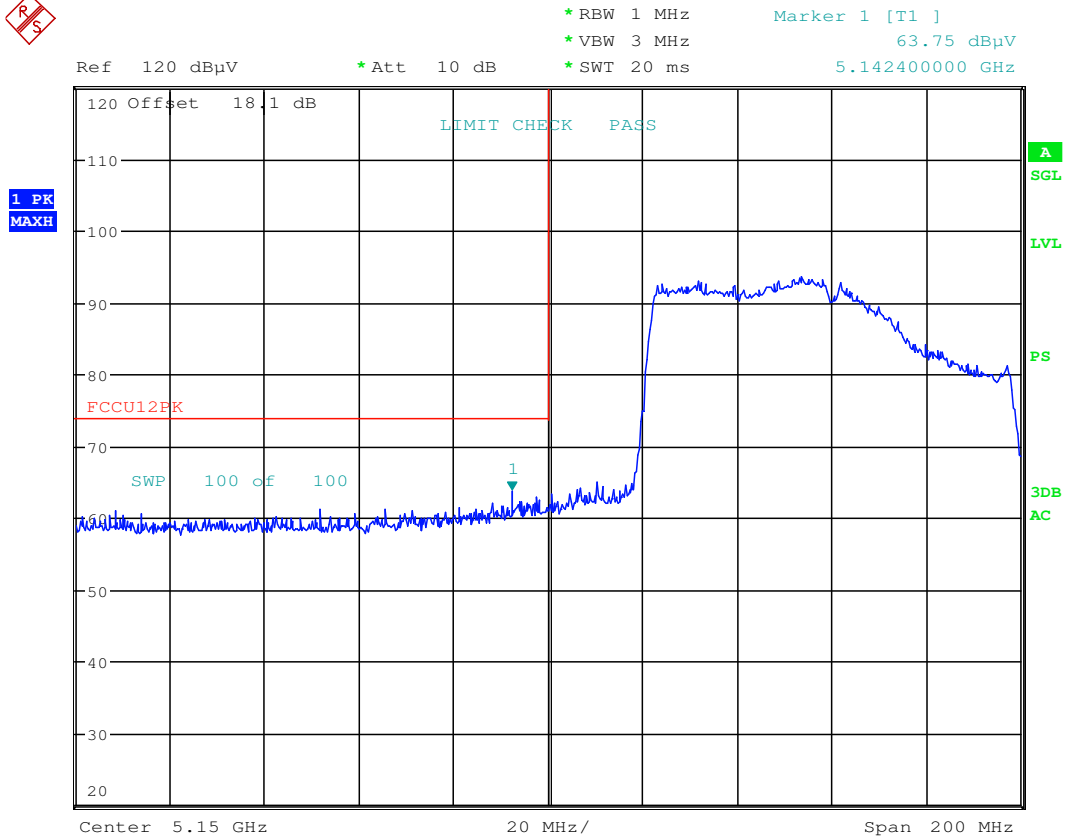
Date: 9.FEB.2016 10:55:57

Plot 7-234. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 193 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209



Date: 9.FEB.2016 10:57:00

Plot 7-235. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 194 of 255

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

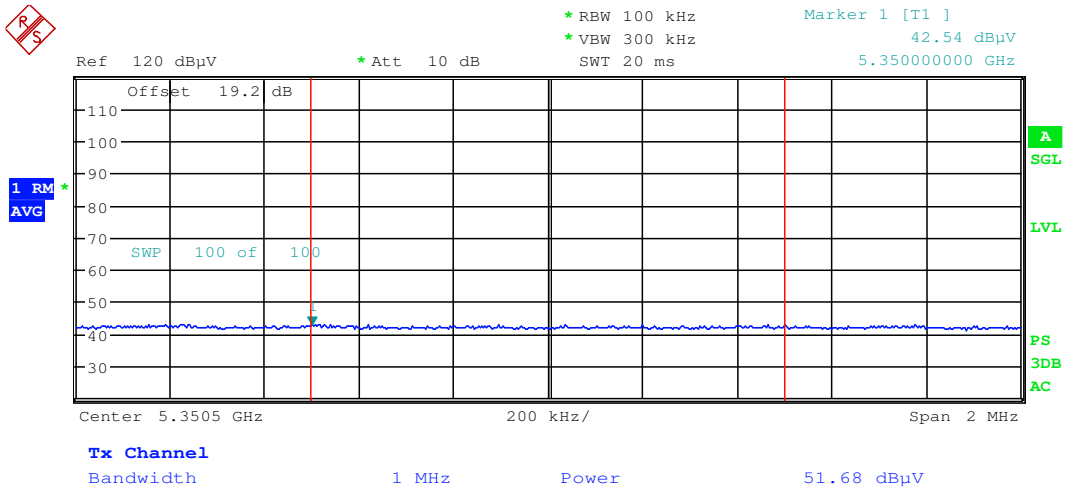
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5290MHz

Channel: 58



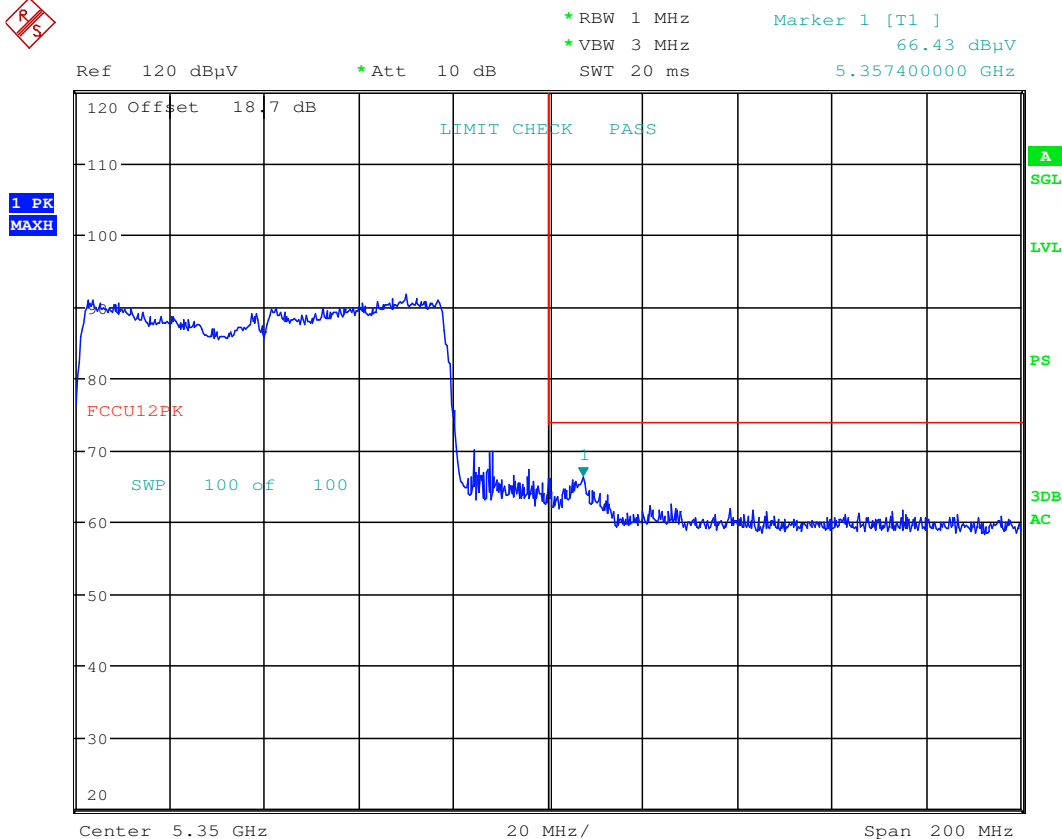
Date: 9.FEB.2016 11:44:30

Plot 7-236. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 195 of 255

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

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



Date: 9.FEB.2016 11:45:58

Plot 7-237. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 196 of 255

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

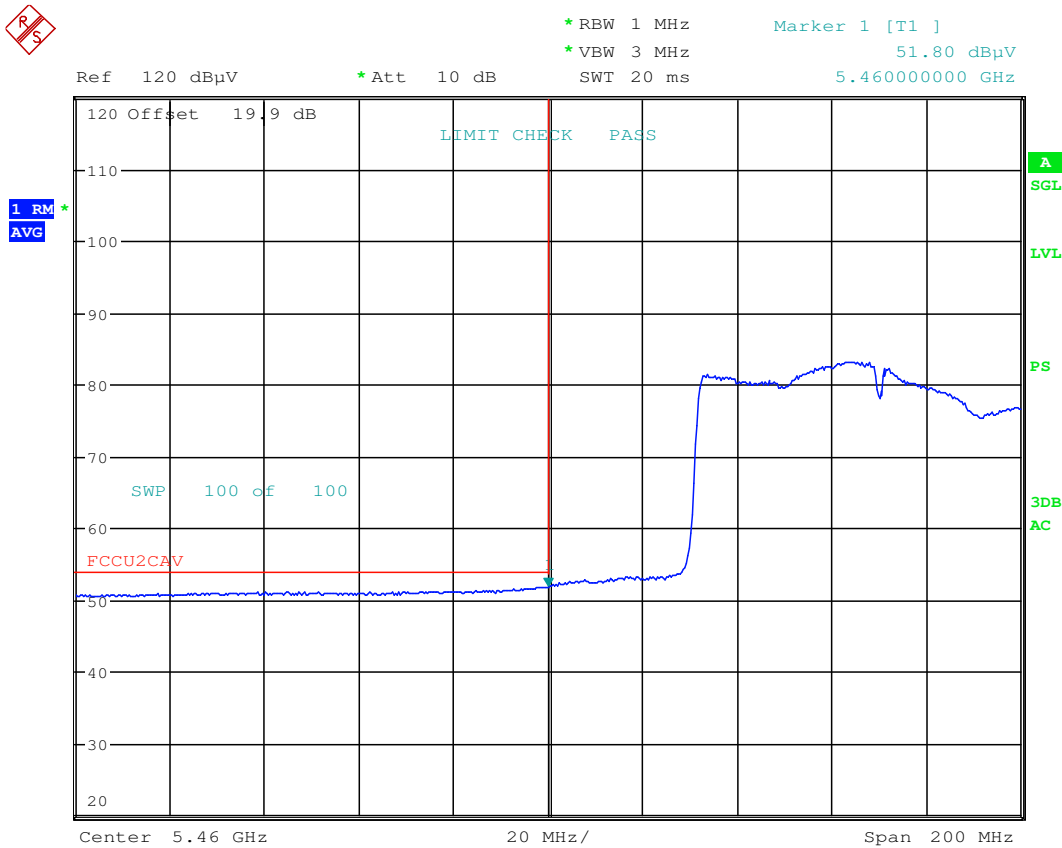
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5530MHz

Channel: 106



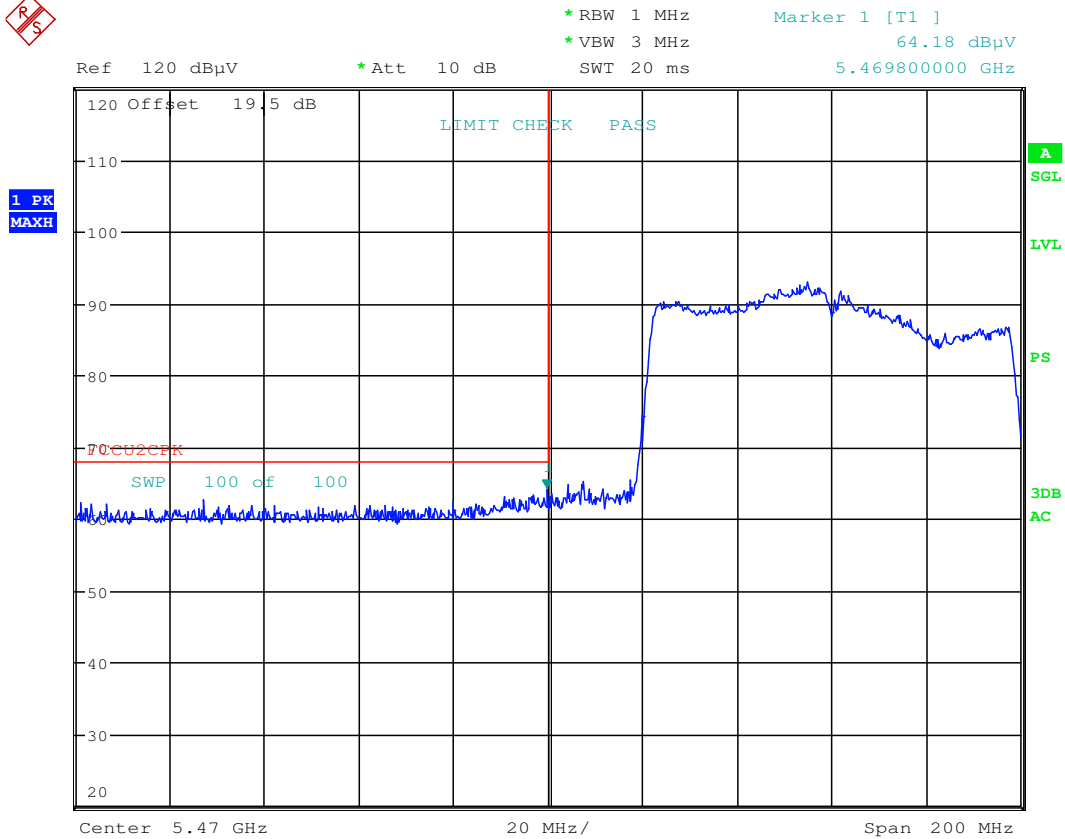
Date: 9.FEB.2016 12:50:00

Plot 7-238. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 197 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209



Date: 9.FEB.2016 12:48:06

Plot 7-239. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 198 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209

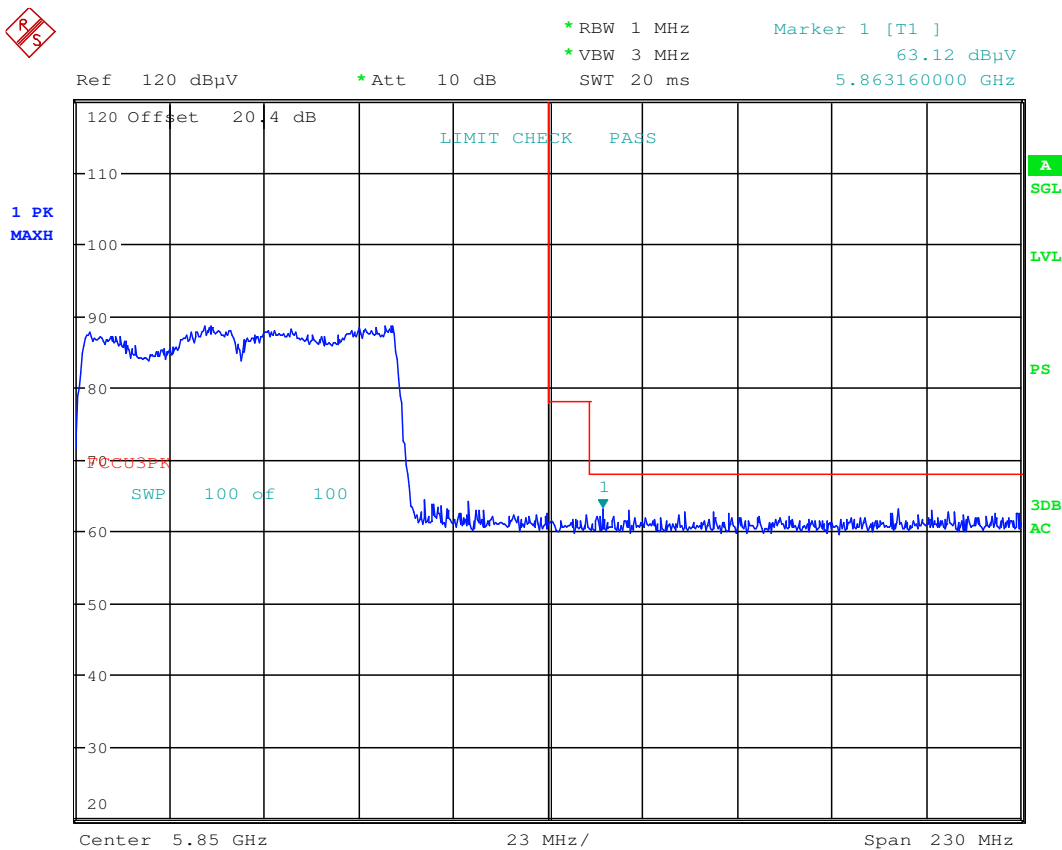
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5775MHz

Channel: 155



Date: 9.FEB.2016 13:04:49

Plot 7-240. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 199 of 255

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

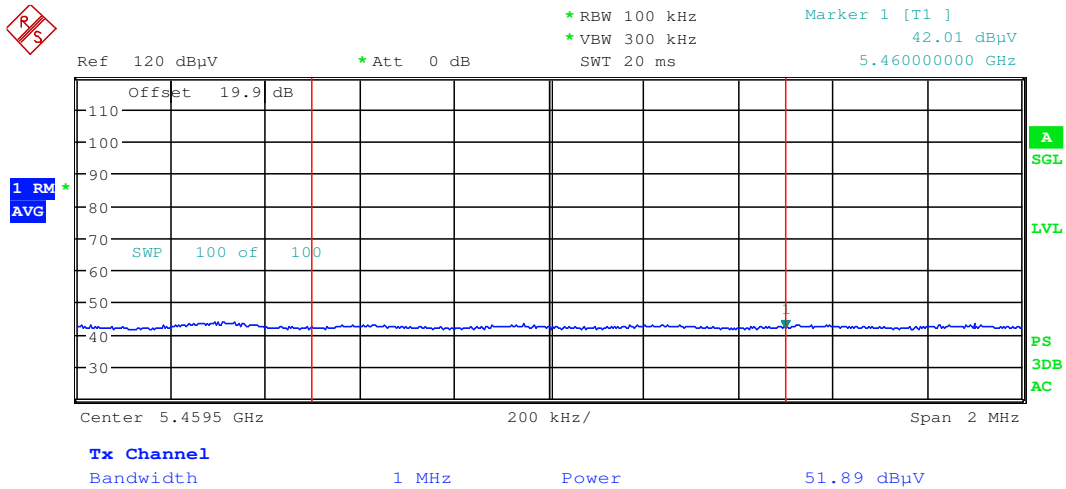
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5530MHz

Channel: 106



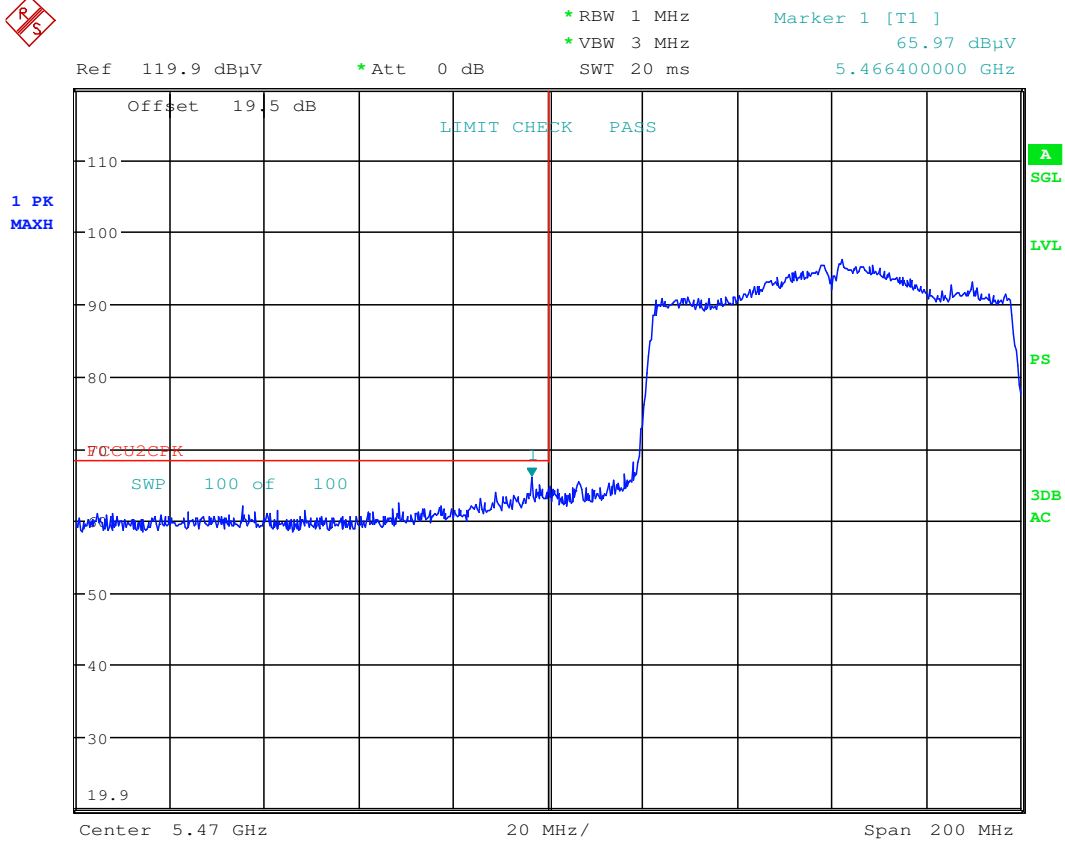
Date: 24.FEB.2016 13:33:42

Plot 7-241. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 200 of 255

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

§15.407(b.1)(b.2) §15.205 §15.209



Date: 24.FEB.2016 13:31:23

Plot 7-242. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 201 of 255

7.7.10 MIMO Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

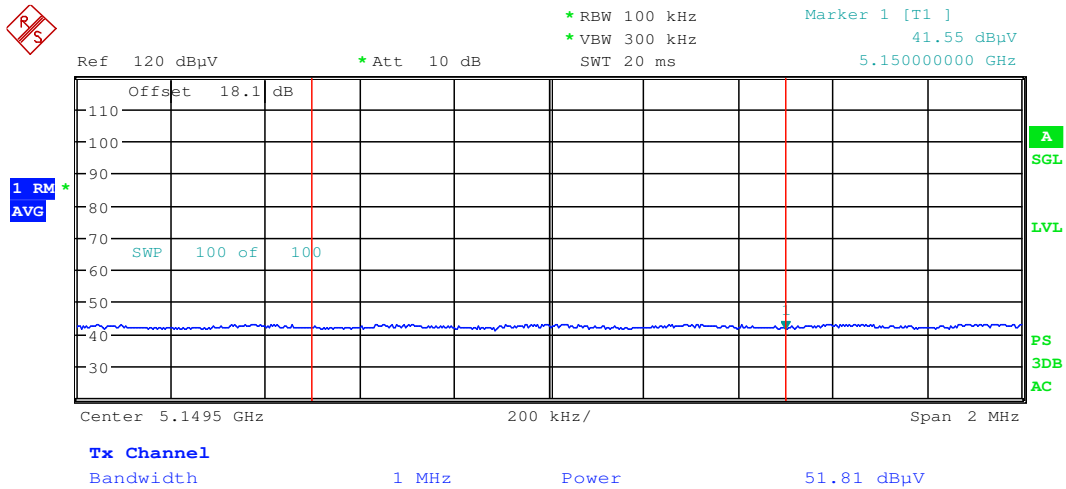
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



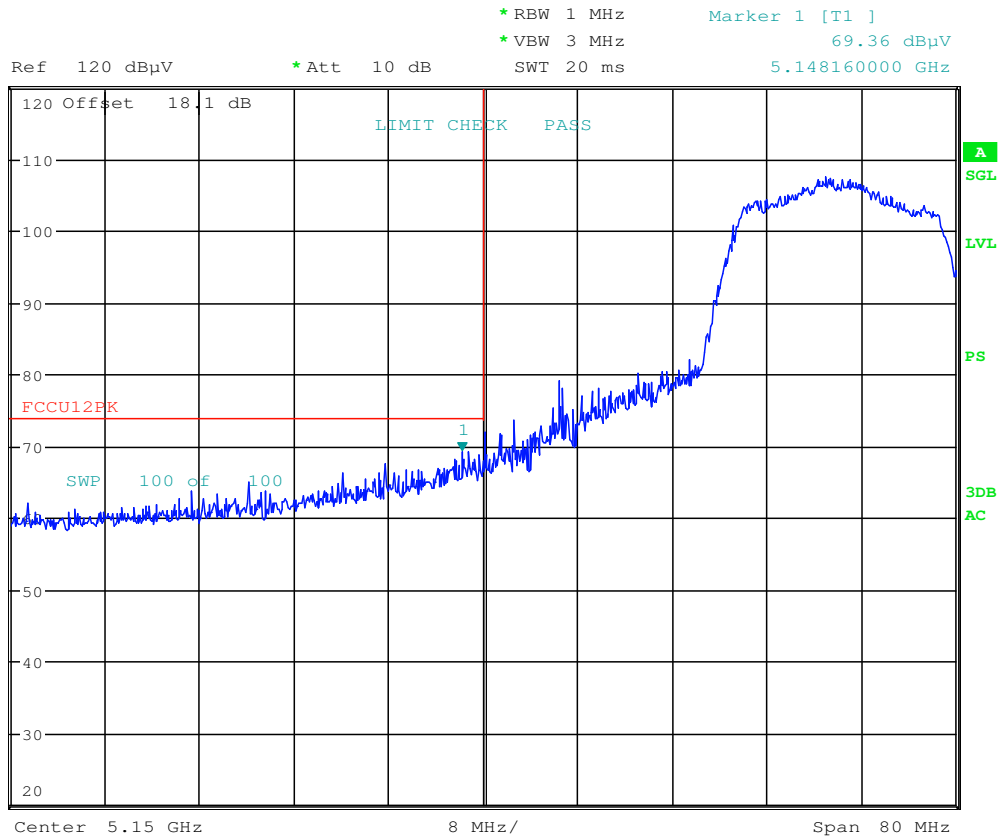
Date: 9.FEB.2016 14:09:26

Plot 7-243. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 202 of 255

MIMO Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 9.FEB.2016 14:10:14

Plot 7-244. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 203 of 255

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

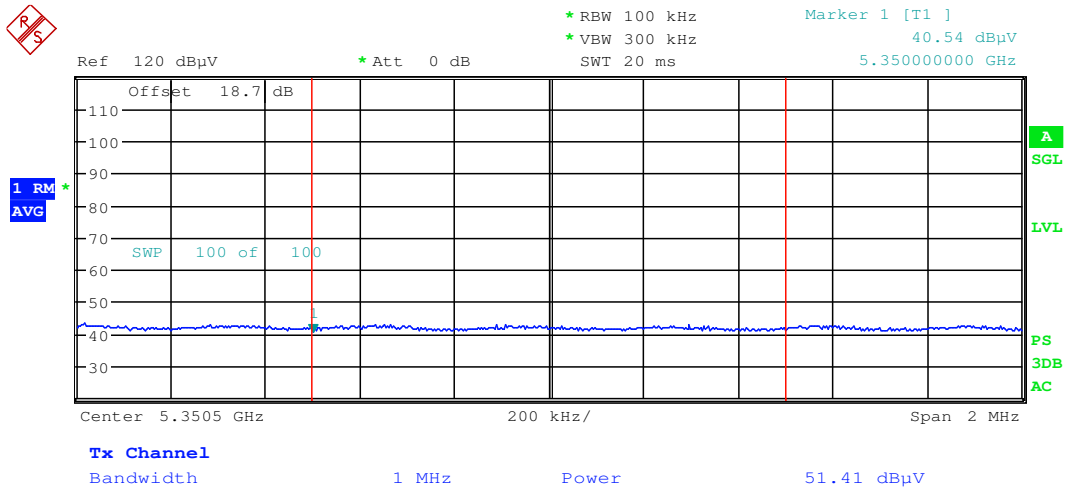
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64



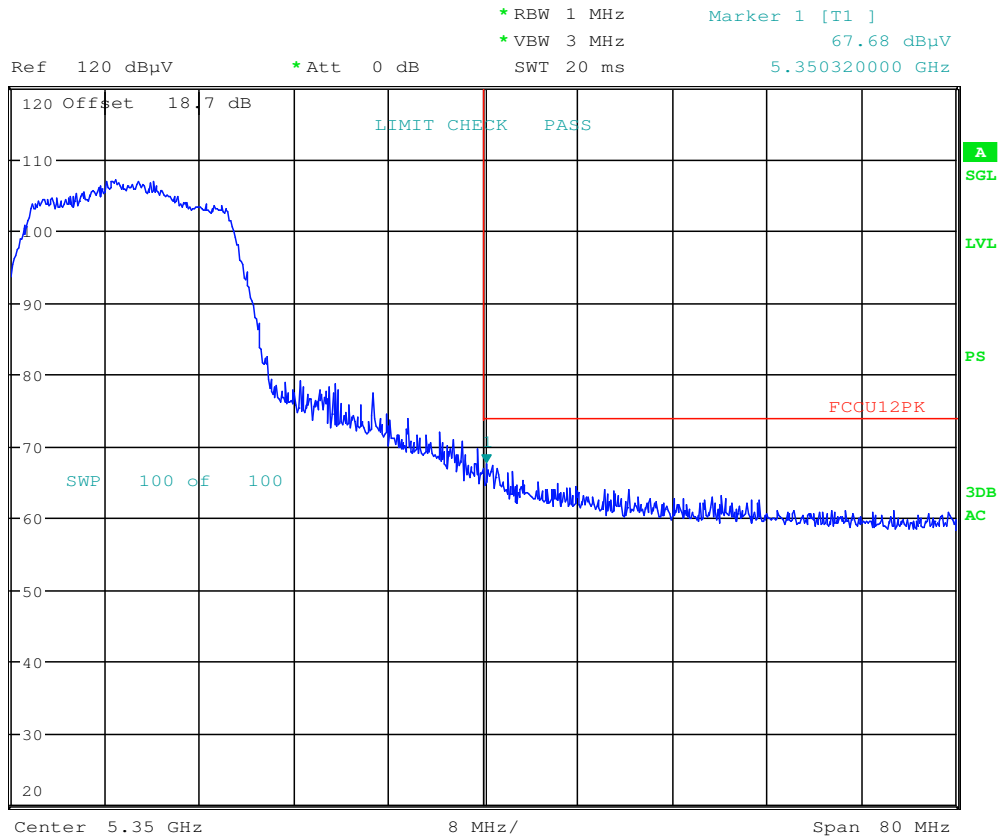
Date: 9.FEB.2016 14:40:52

Plot 7-245. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 204 of 255

MIMO Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 9.FEB.2016 14:41:36

Plot 7-246. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 205 of 255

MIMO Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

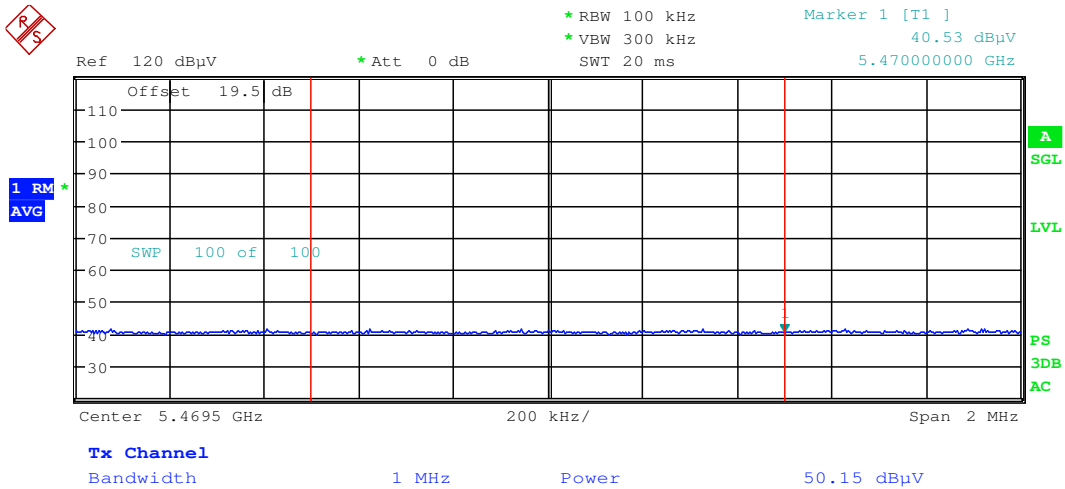
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100



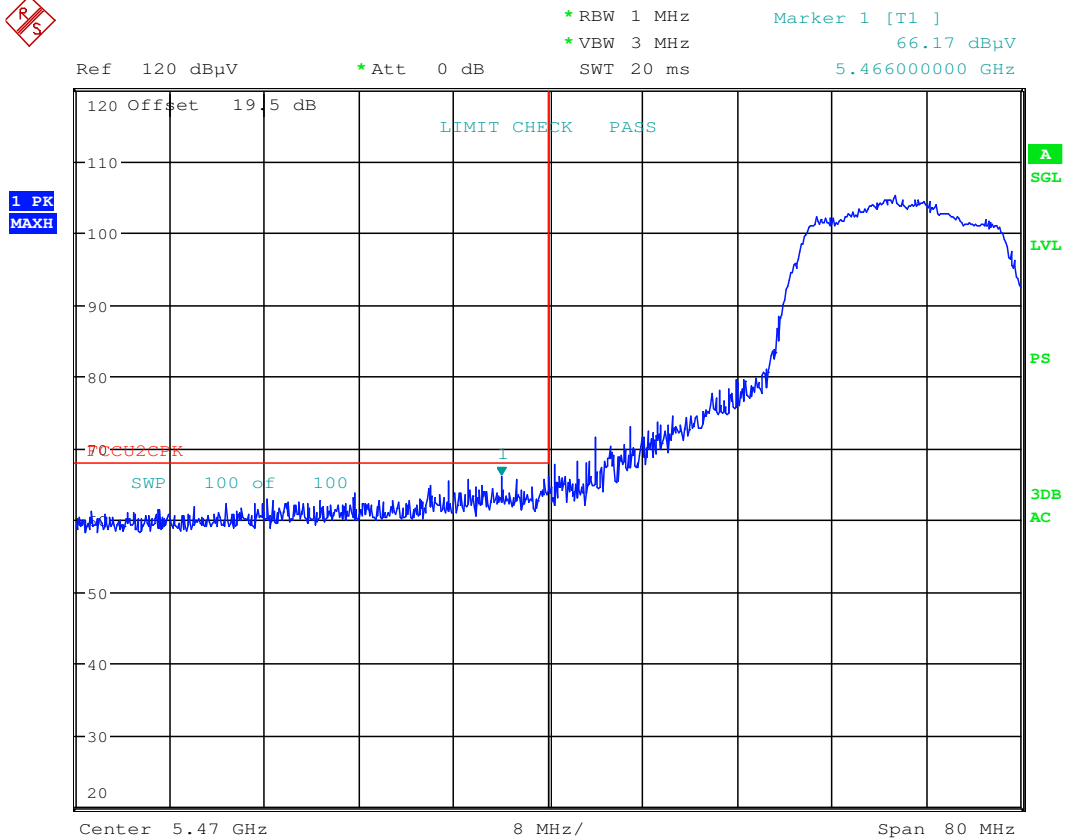
Date: 9.FEB.2016 15:10:31

Plot 7-247. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 206 of 255

MIMO Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 9.FEB.2016 15:11:45

Plot 7-248. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 207 of 255

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

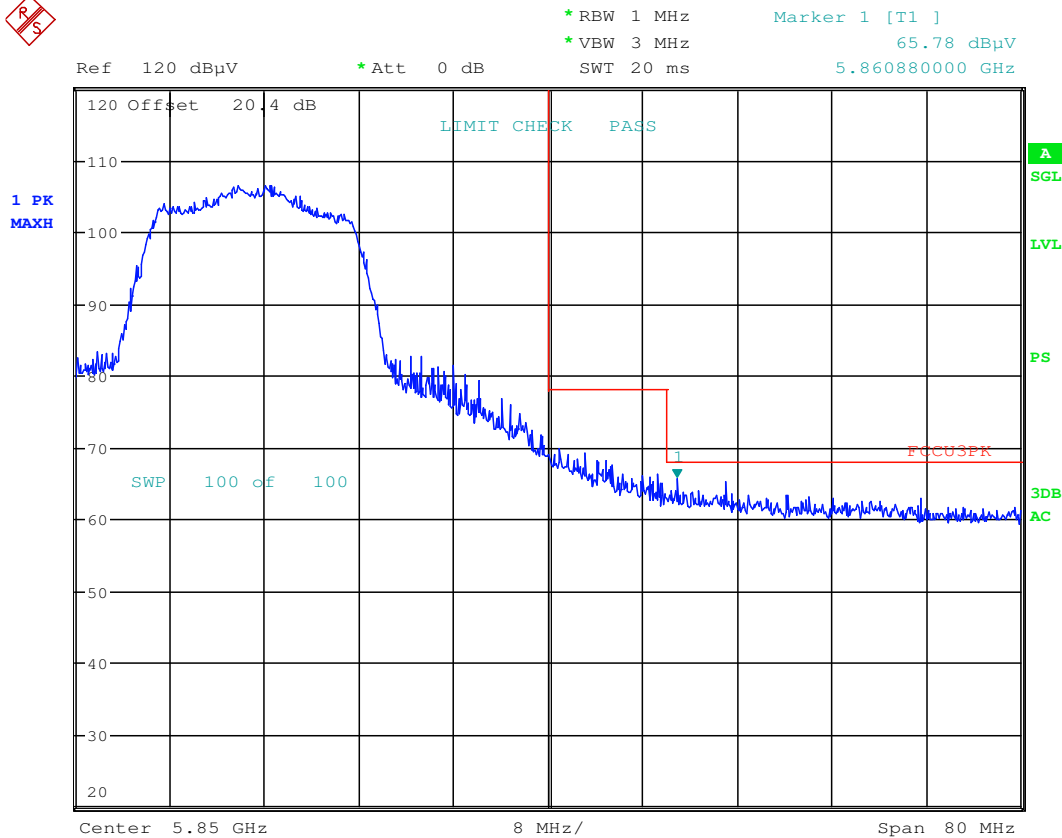
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5825MHz

Channel: 165



Date: 9.FEB.2016 15:51:47

Plot 7-249. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 208 of 255

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

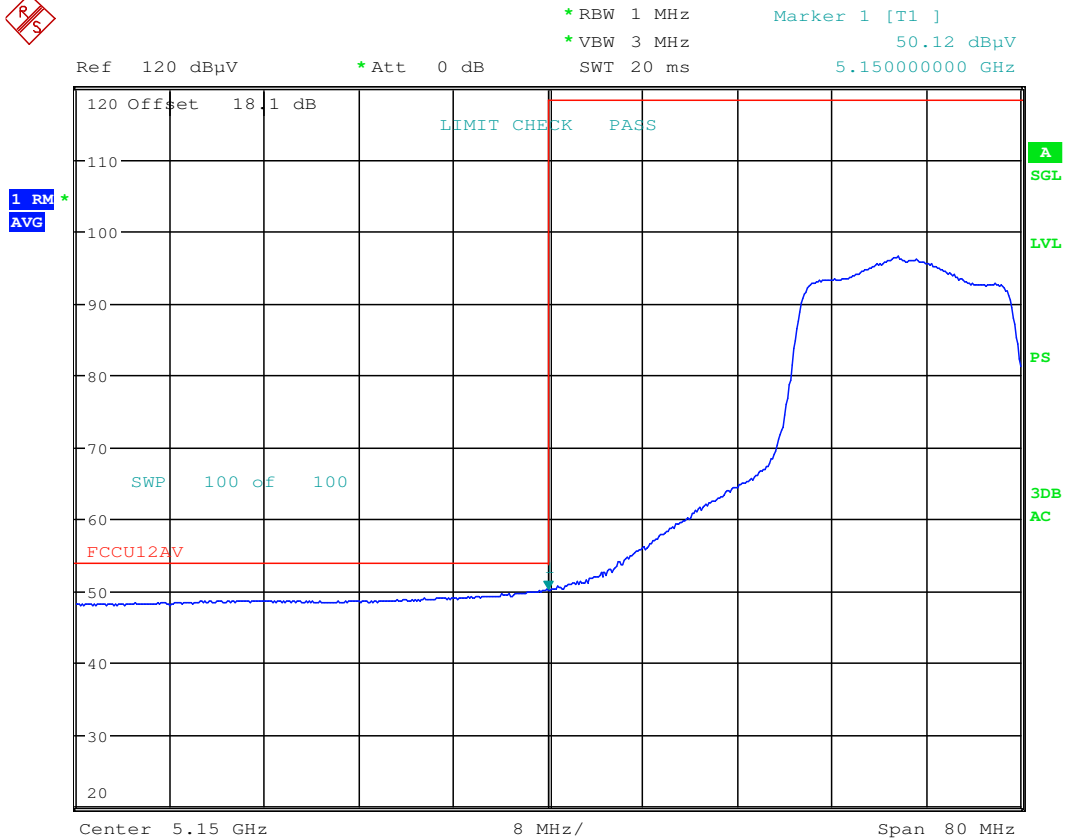
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



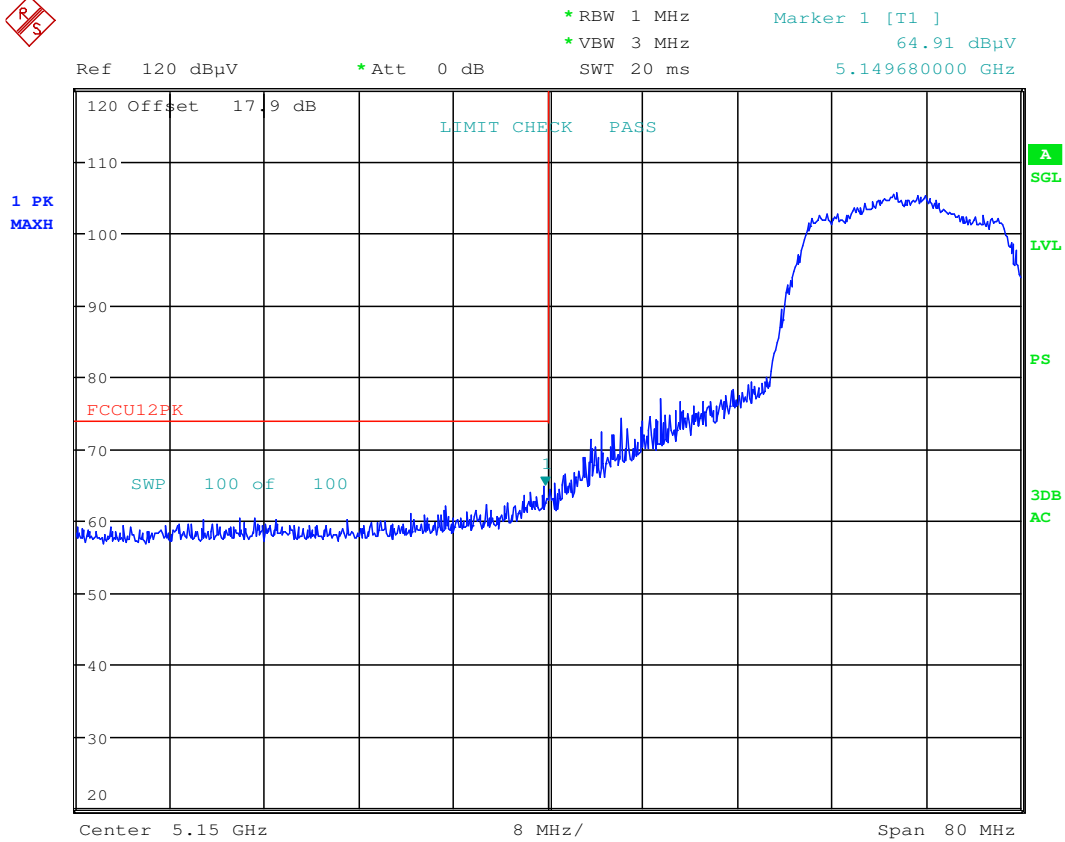
Date: 11.MAR.2016 13:56:04

Plot 7-250. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 209 of 255

MIMO WCP Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 11.MAR.2016 13:54:49

Plot 7-251. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 210 of 255

7.7.11 MIMO Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

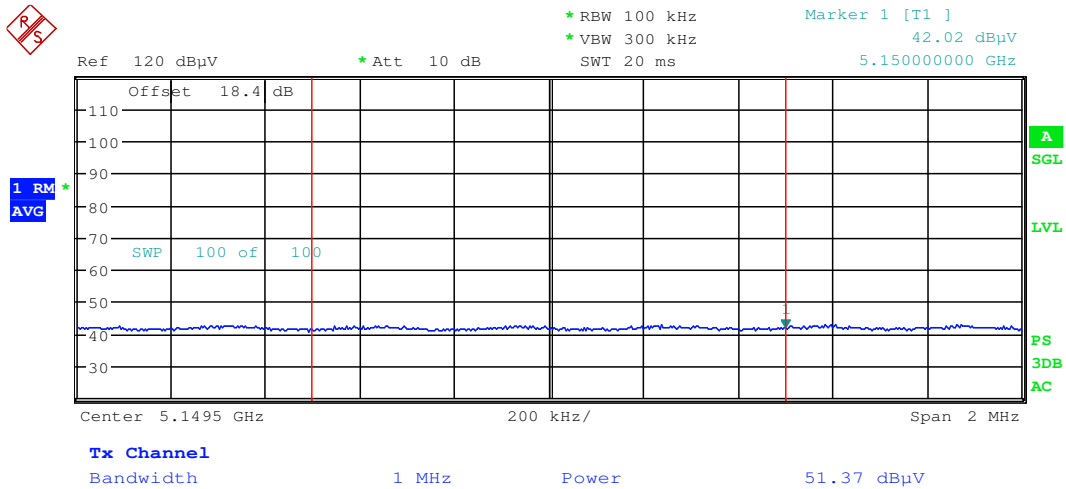
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38



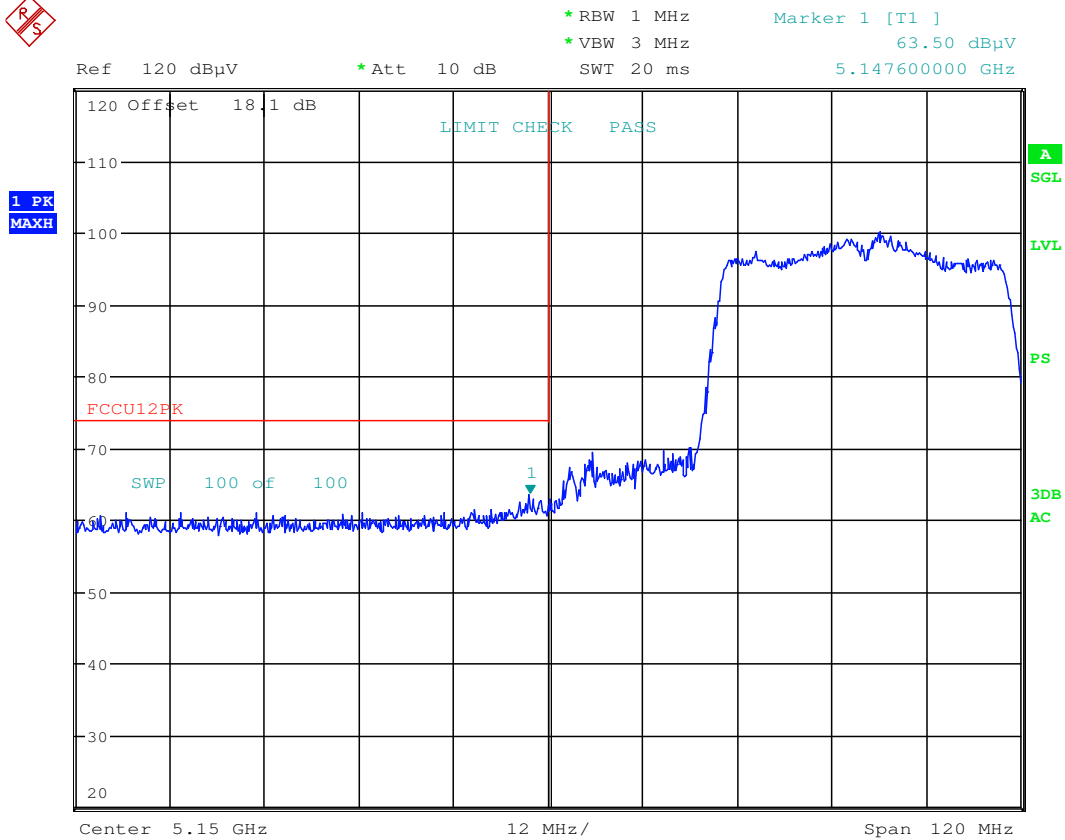
Date: 9.FEB.2016 14:19:51

Plot 7-252. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 211 of 255

MIMO Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



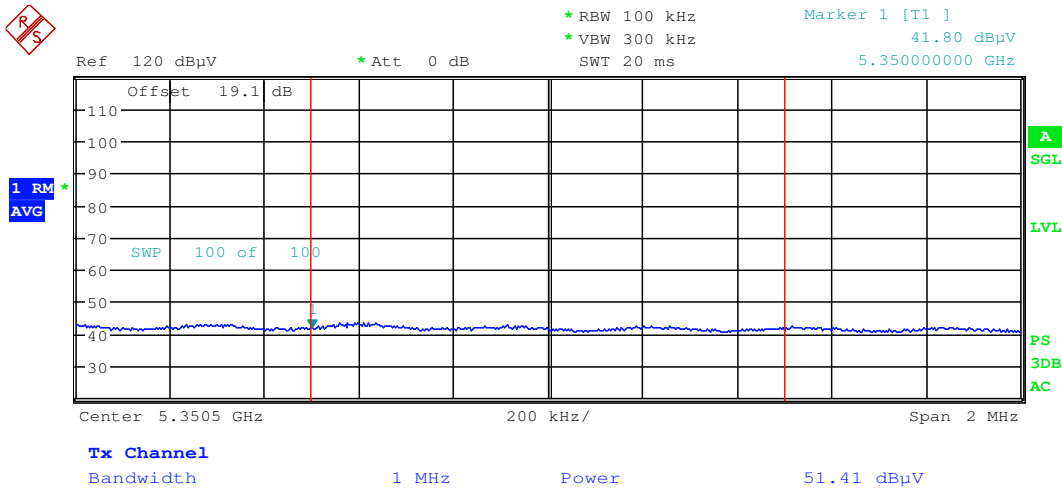
Date: 9.FEB.2016 14:20:58

Plot 7-253. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 212 of 255

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



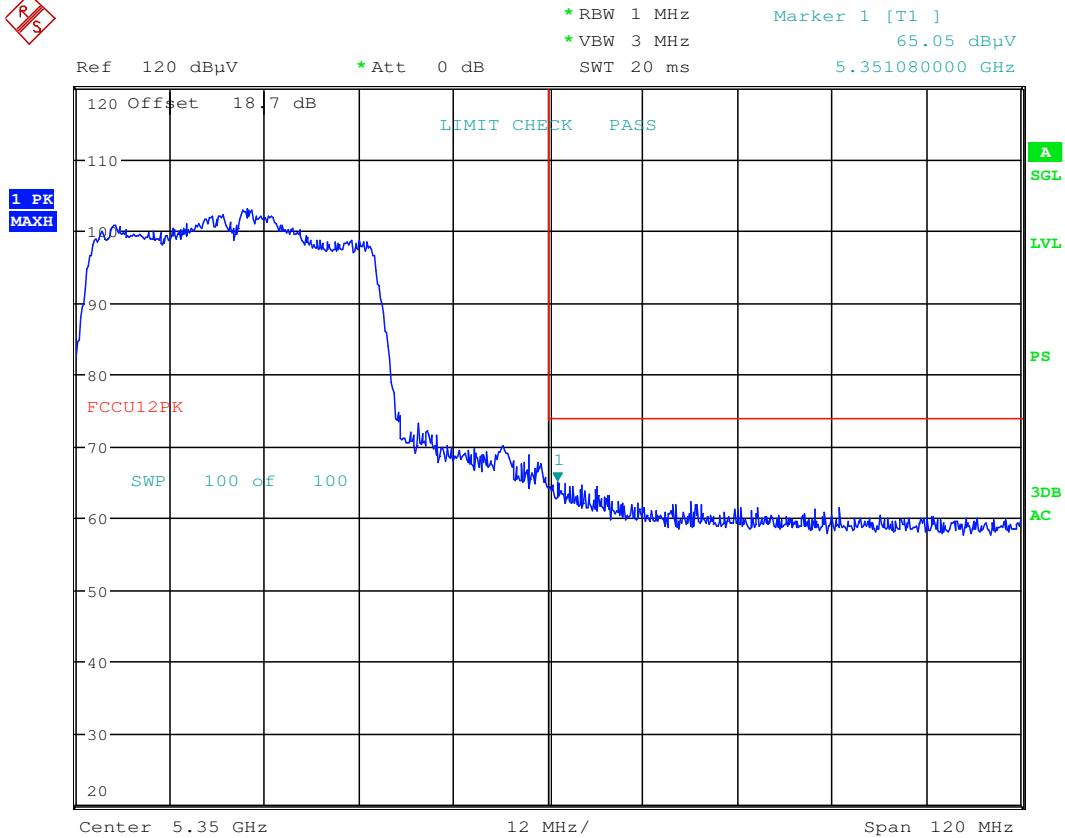
Date: 9.FEB.2016 14:49:07

Plot 7-254. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 213 of 255

MIMO Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



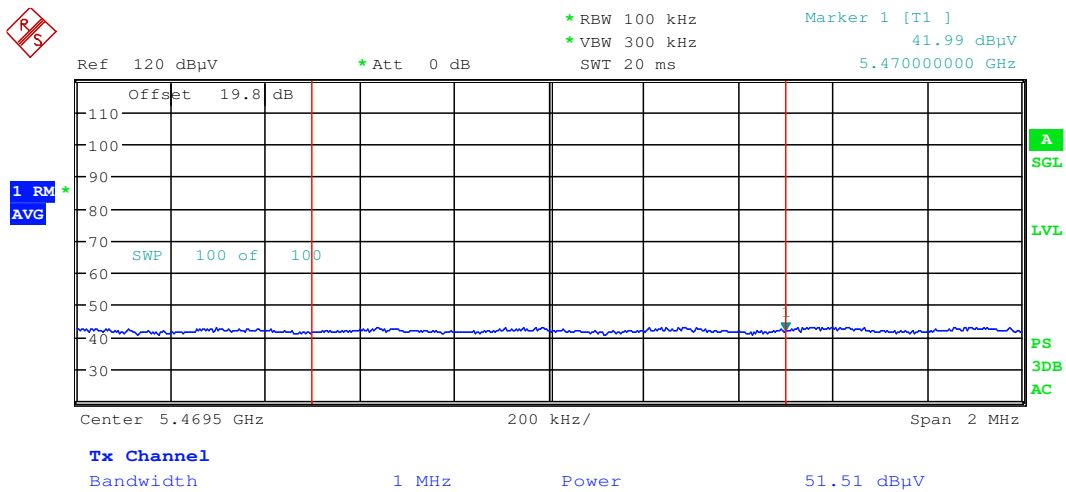
Date: 9.FEB.2016 14:50:13

Plot 7-255. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 214 of 255

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

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



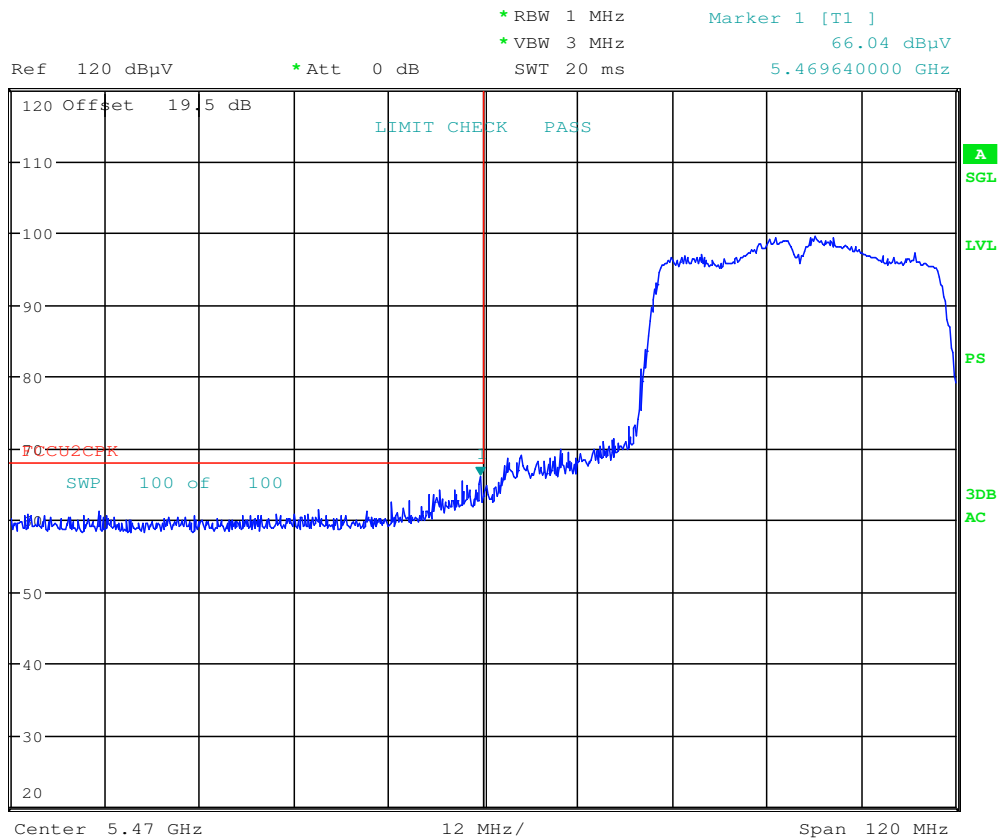
Date: 9.FEB.2016 15:20:37

Plot 7-256. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSCV33	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset	Page 215 of 255

MIMO Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



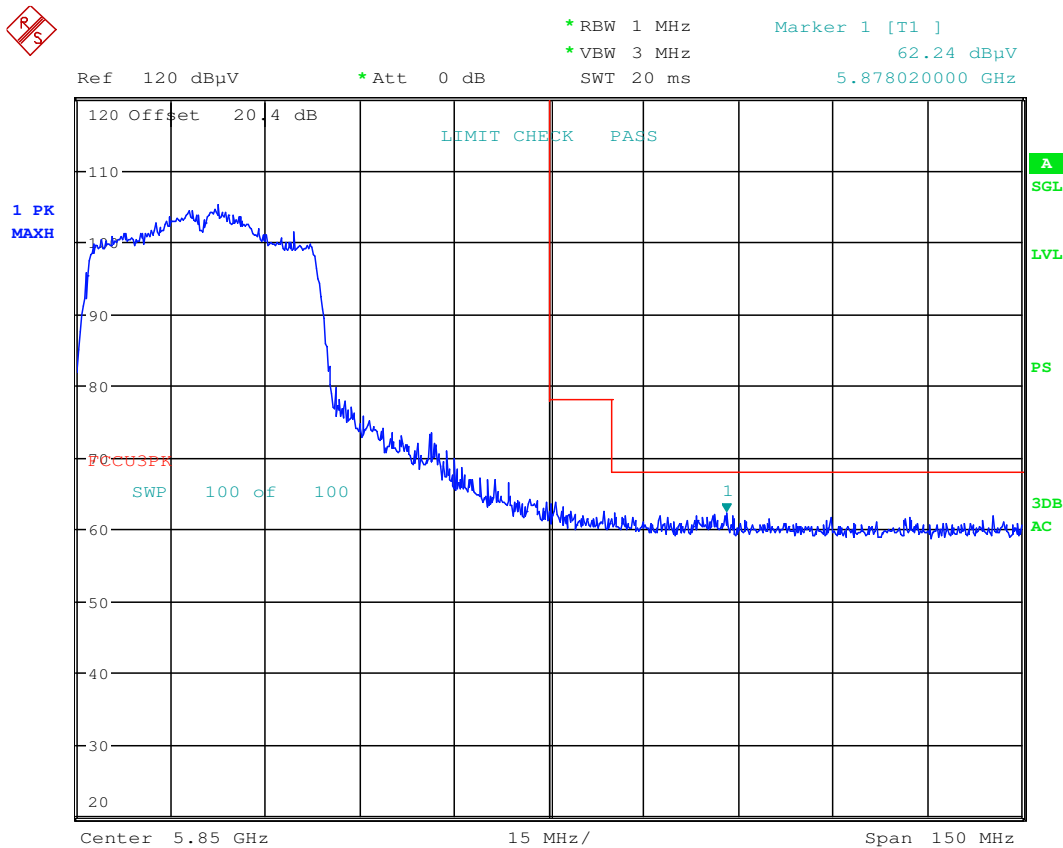
Date: 9.FEB.2016 15:22:09

Plot 7-257. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 216 of 255

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

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



Date: 9.FEB.2016 15:56:49

Plot 7-258. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSCV33	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset	Page 217 of 255

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

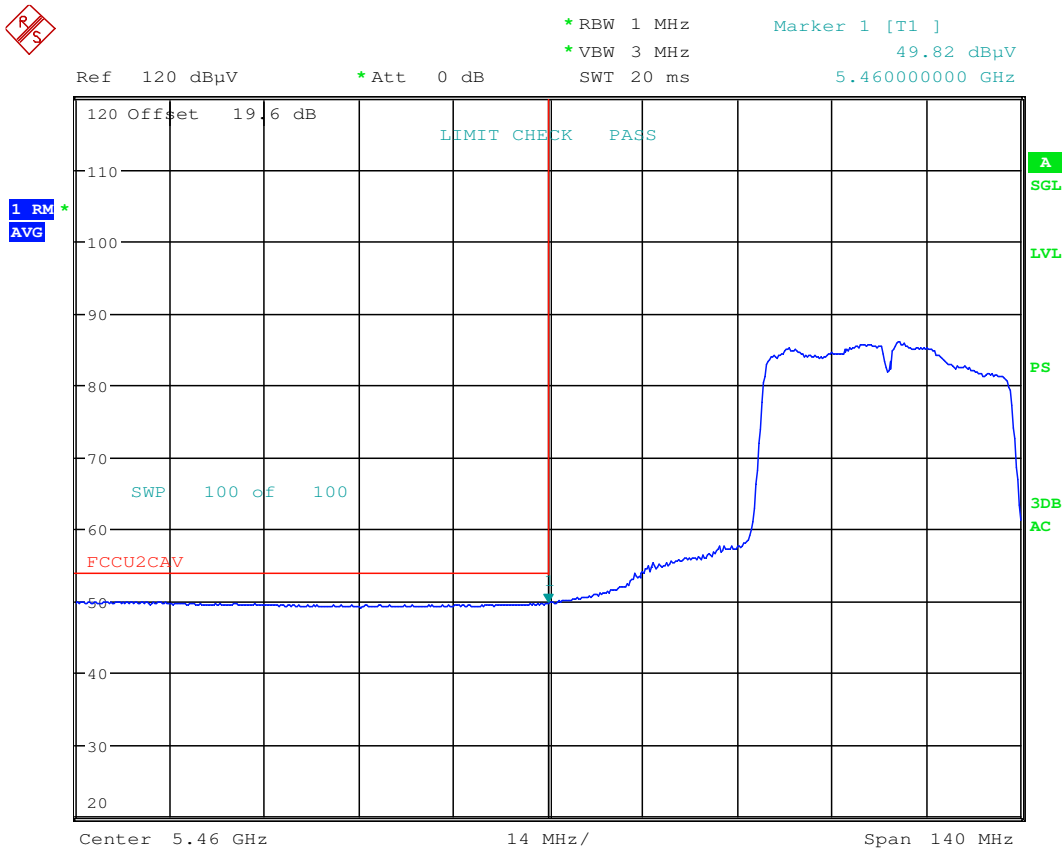
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5510MHz

Channel: 102



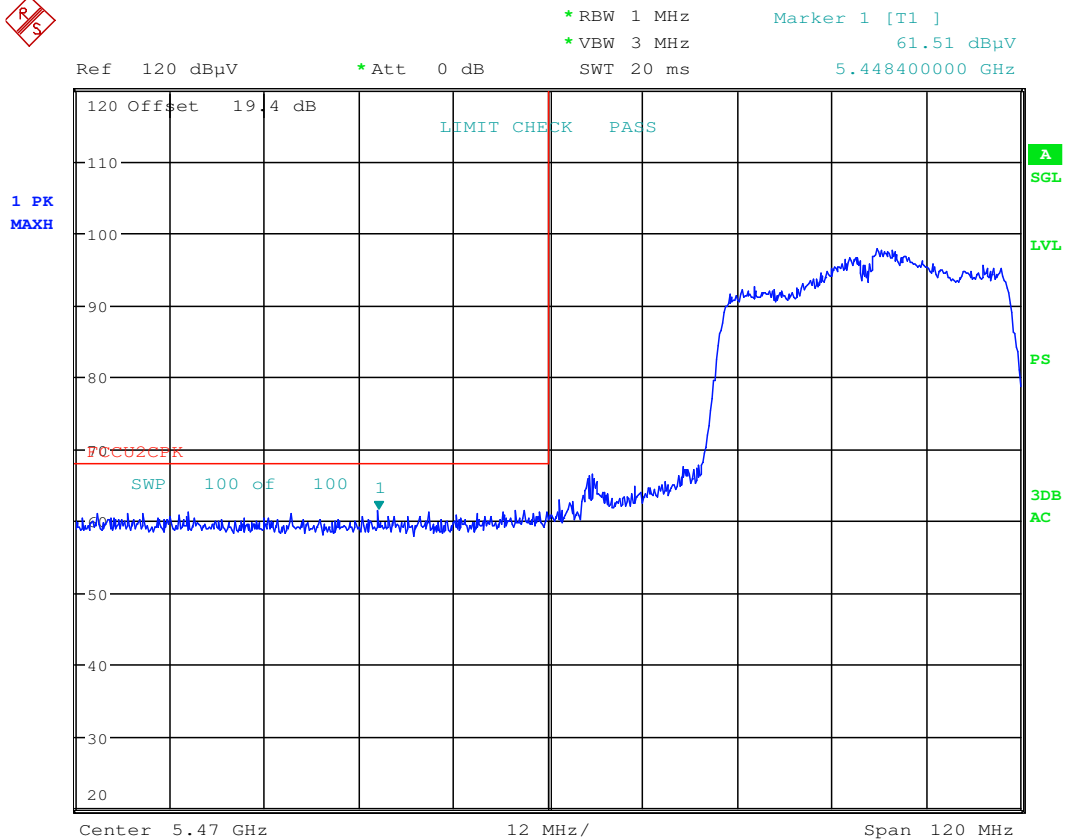
Date: 11.MAR.2016 14:09:56

Plot 7-259. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 218 of 255

MIMO WCP Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



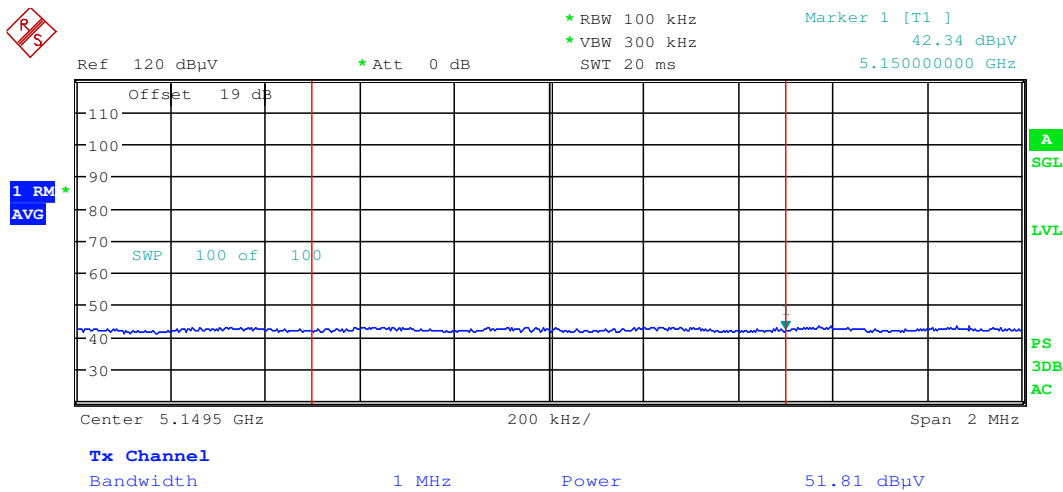
Date: 11.MAR.2016 14:06:38

Plot 7-260. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 219 of 255

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

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



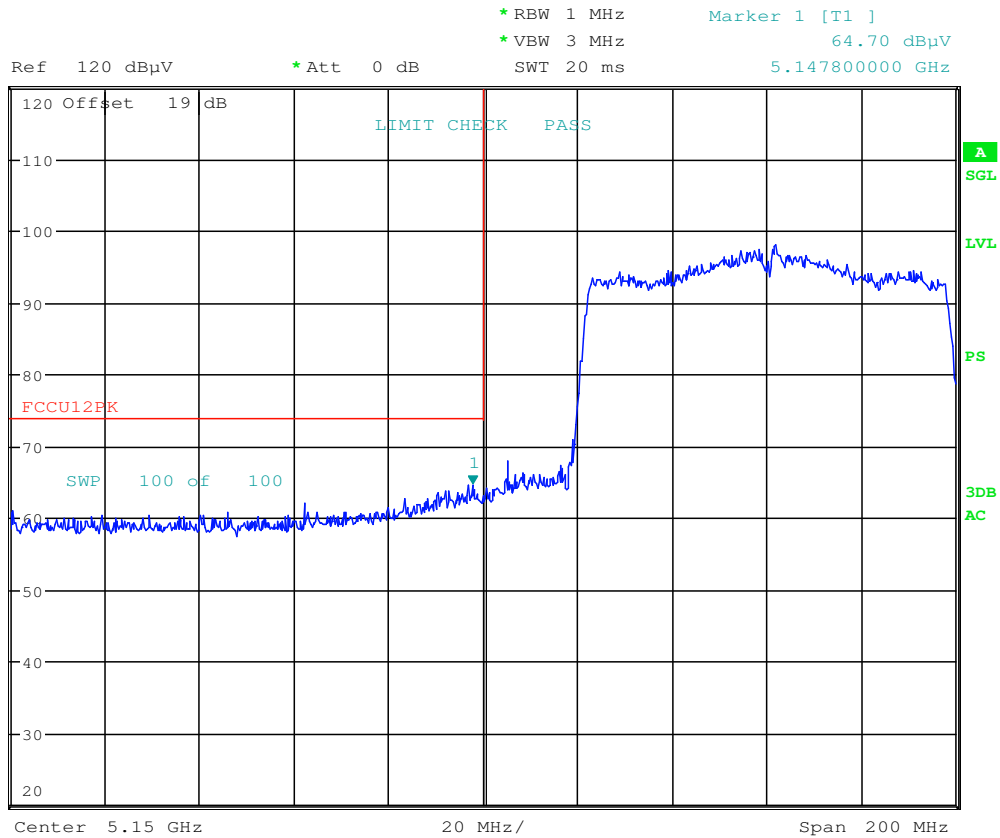
Date: 9.FEB.2016 14:28:12

Plot 7-261. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSCV33	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset	Page 220 of 255

MIMO Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 9.FEB.2016 14:29:22

Plot 7-262. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 221 of 255

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

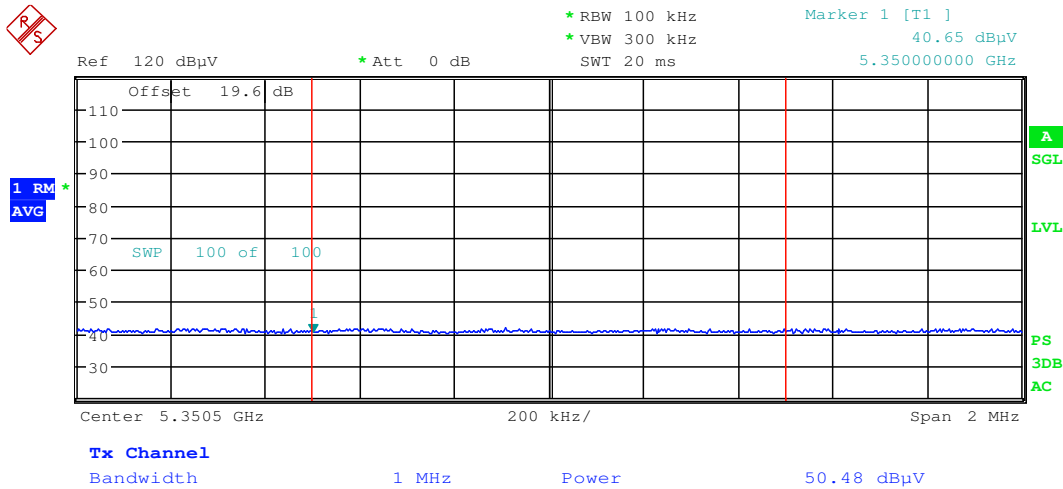
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5290MHz

Channel: 58



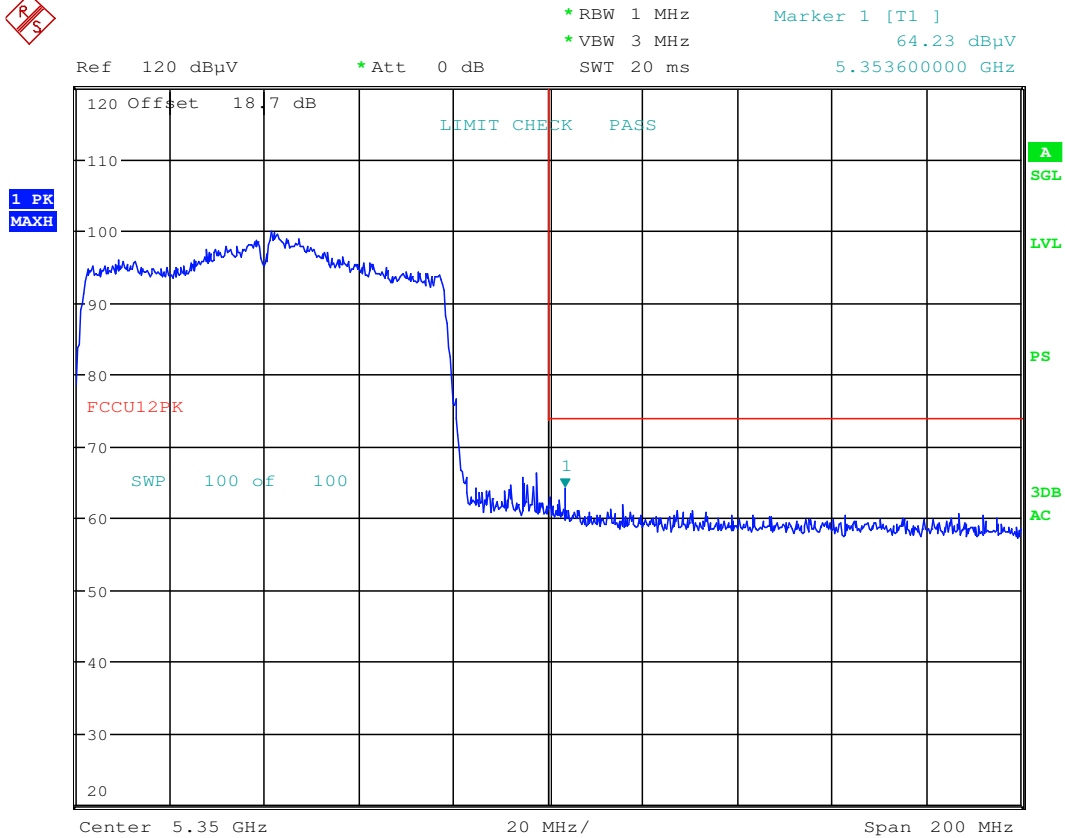
Date: 9.FEB.2016 14:57:00

Plot 7-263. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 222 of 255

MIMO Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 9.FEB.2016 14:57:59

Plot 7-264. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 223 of 255

MIMO Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

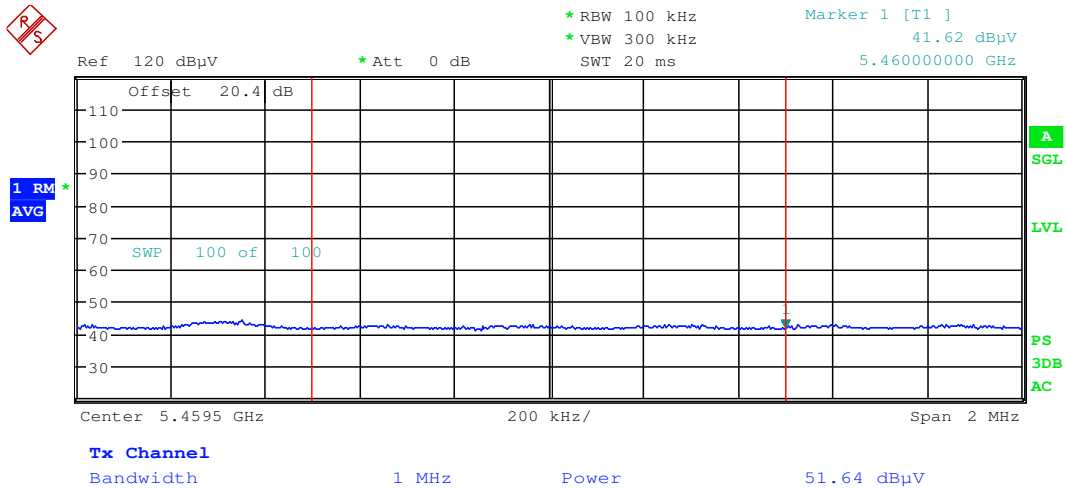
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5530MHz

Channel: 106



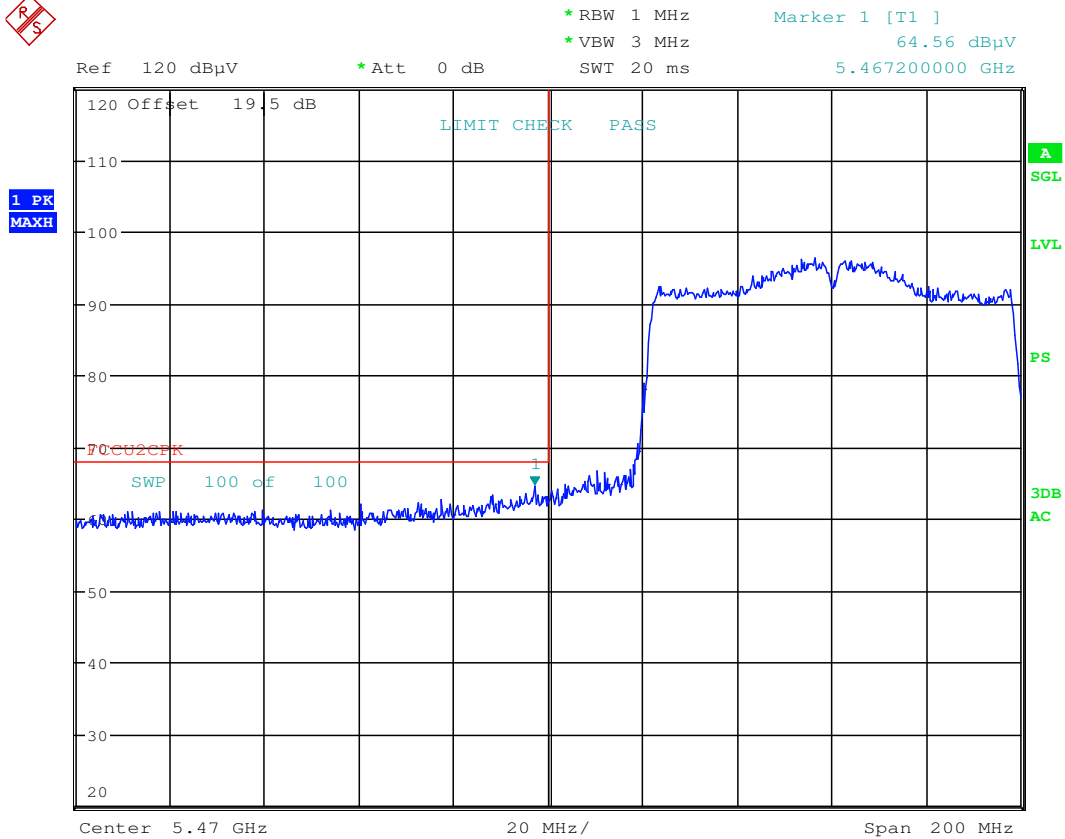
Date: 9.FEB.2016 15:44:57

Plot 7-265. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 224 of 255

MIMO Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 9.FEB.2016 15:46:04

Plot 7-266. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 225 of 255

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

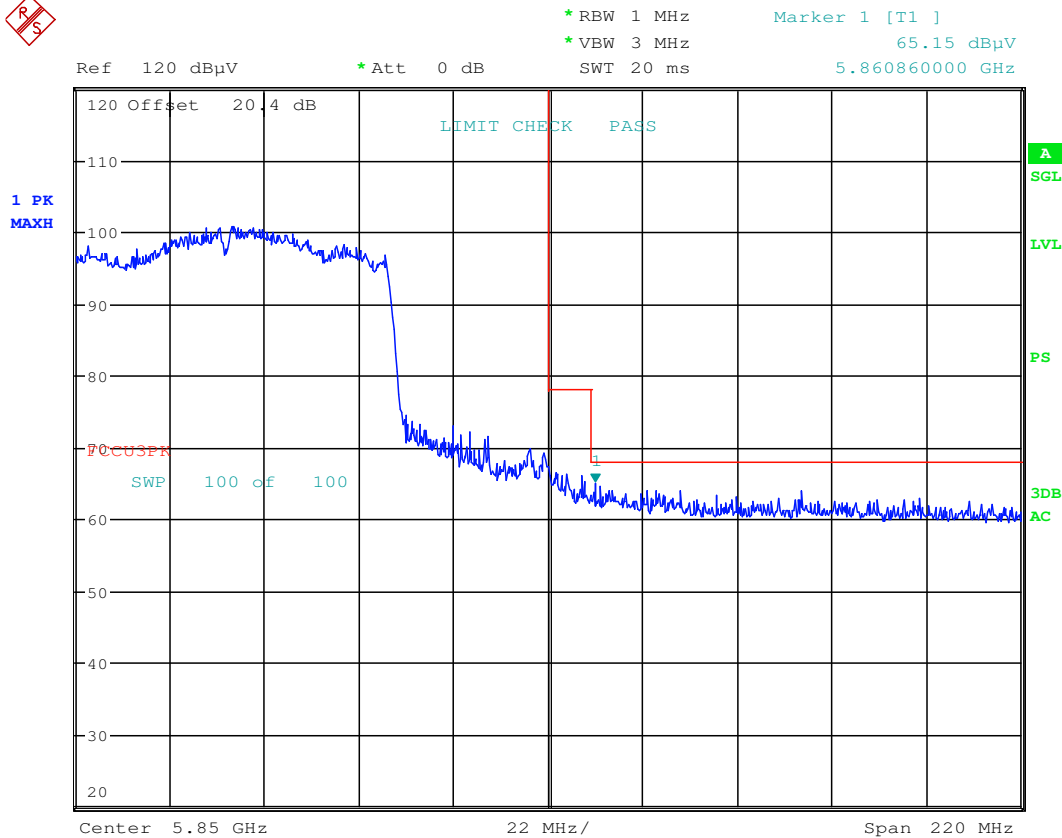
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5775MHz

Channel: 155



Date: 9.FEB.2016 15:58:13

Plot 7-267. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 226 of 255

MIMO WCP Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

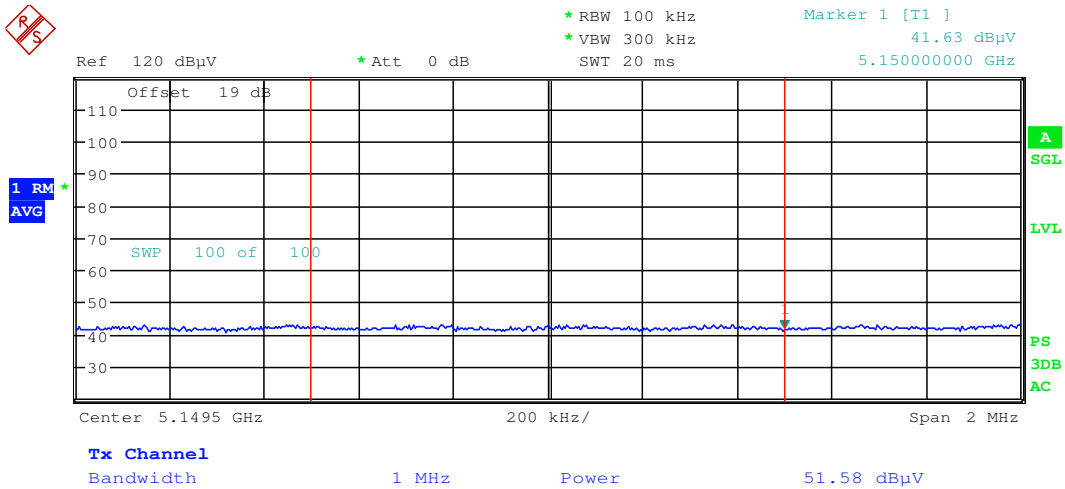
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42



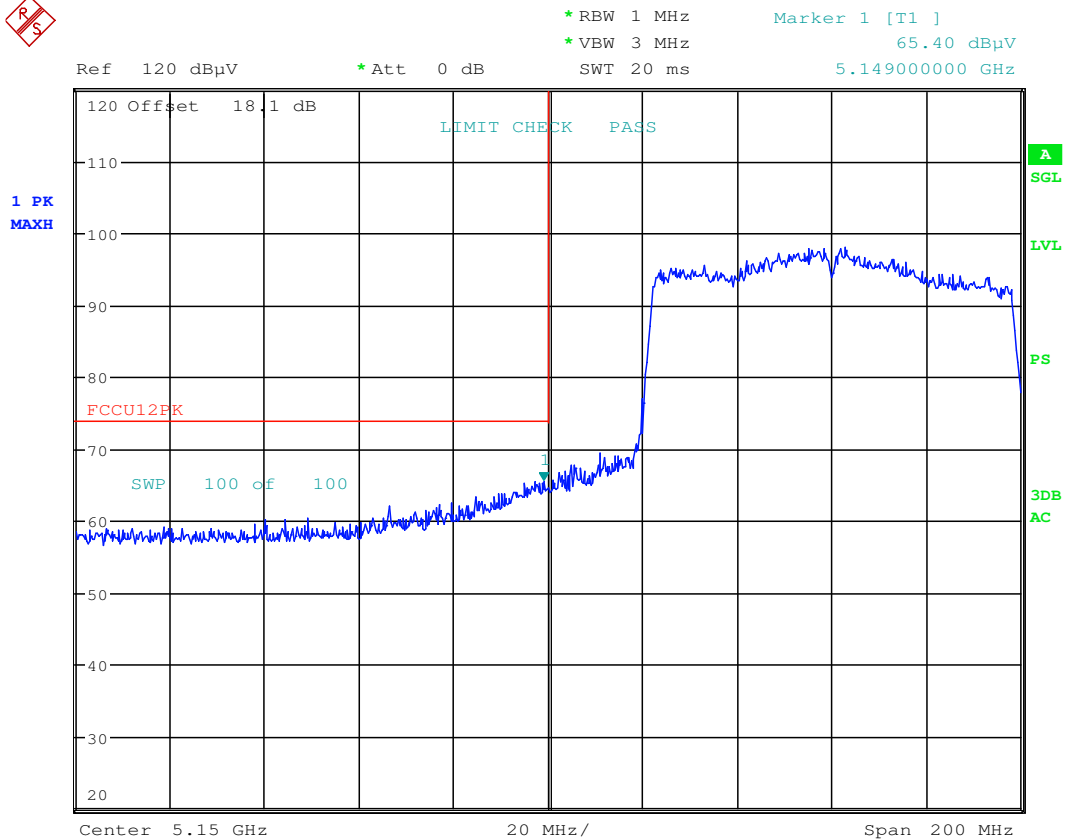
Date: 24.FEB.2016 13:51:34

Plot 7-268. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 227 of 255

MIMO WCP Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 24.FEB.2016 13:44:23

Plot 7-269. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 228 of 255

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 [$\mu\text{V/m}$]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3

Table 7-62. 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: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 229 of 255

Test Setup

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

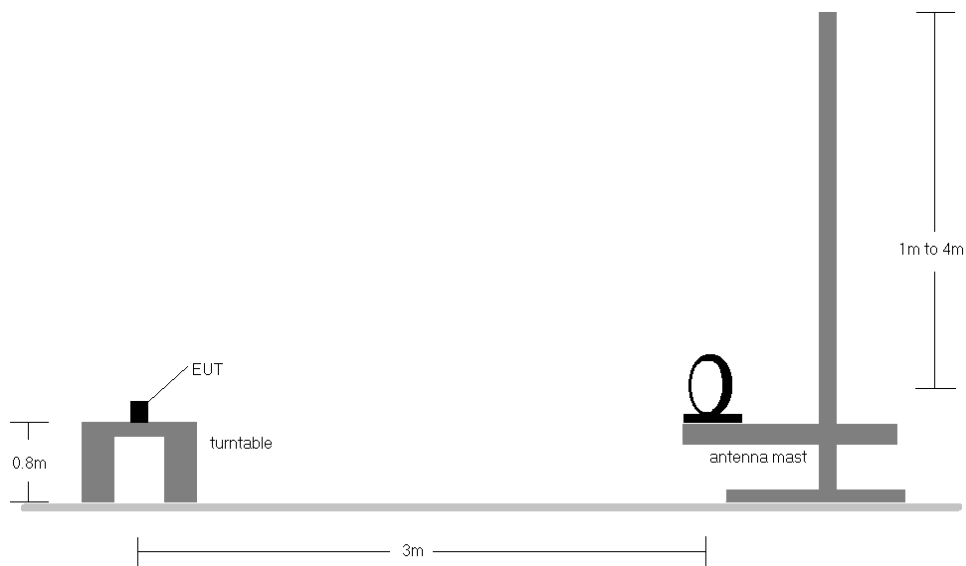


Figure 7-6. Radiated Test Setup < 30MHz

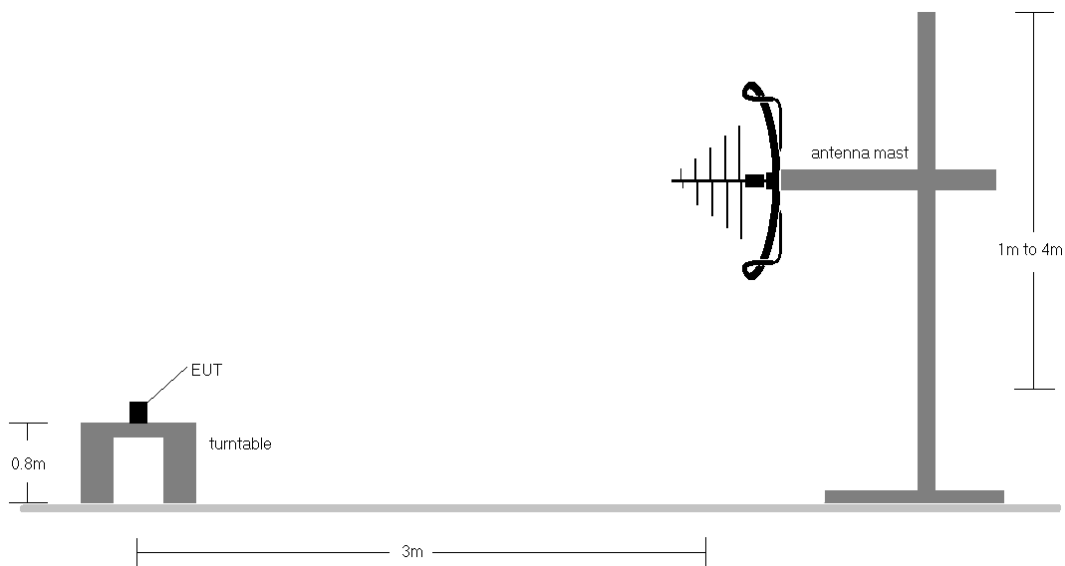


Figure 7-7. Radiated Test Setup < 1GHz

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 230 of 255

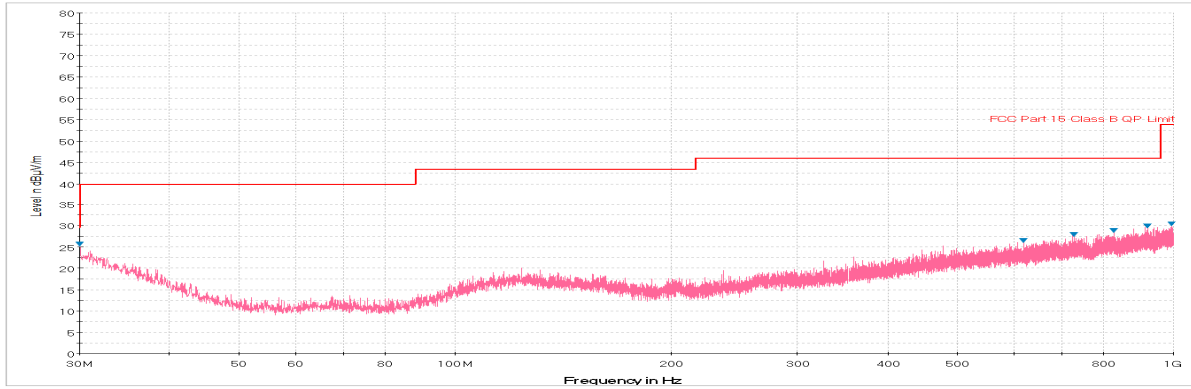
Test Notes

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: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset	Page 231 of 255	

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

§15.209



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

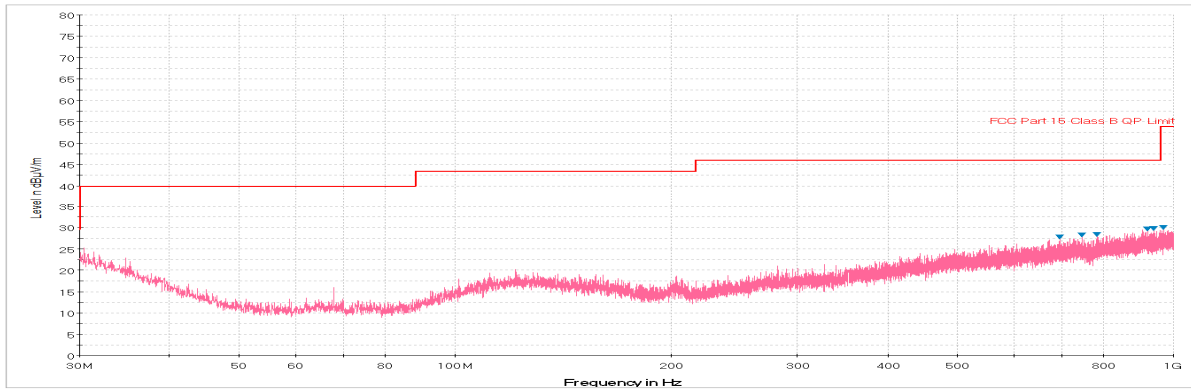


Plot 7-271. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

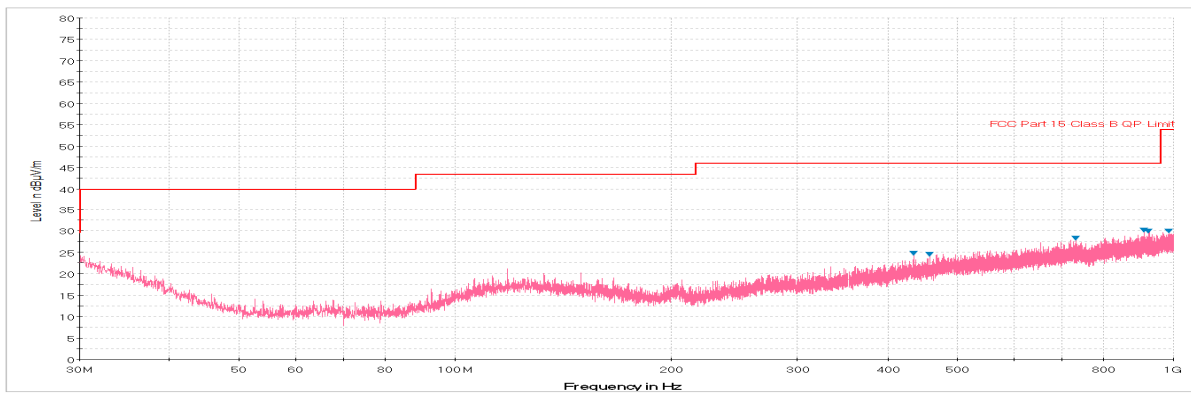
FCC ID: A3LSCV33	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 232 of 255

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

§15.209



Plot 7-272. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)



Plot 7-273. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 233 of 255

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 (dBμV)	
	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

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset	Page 234 of 255	

Test Setup

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

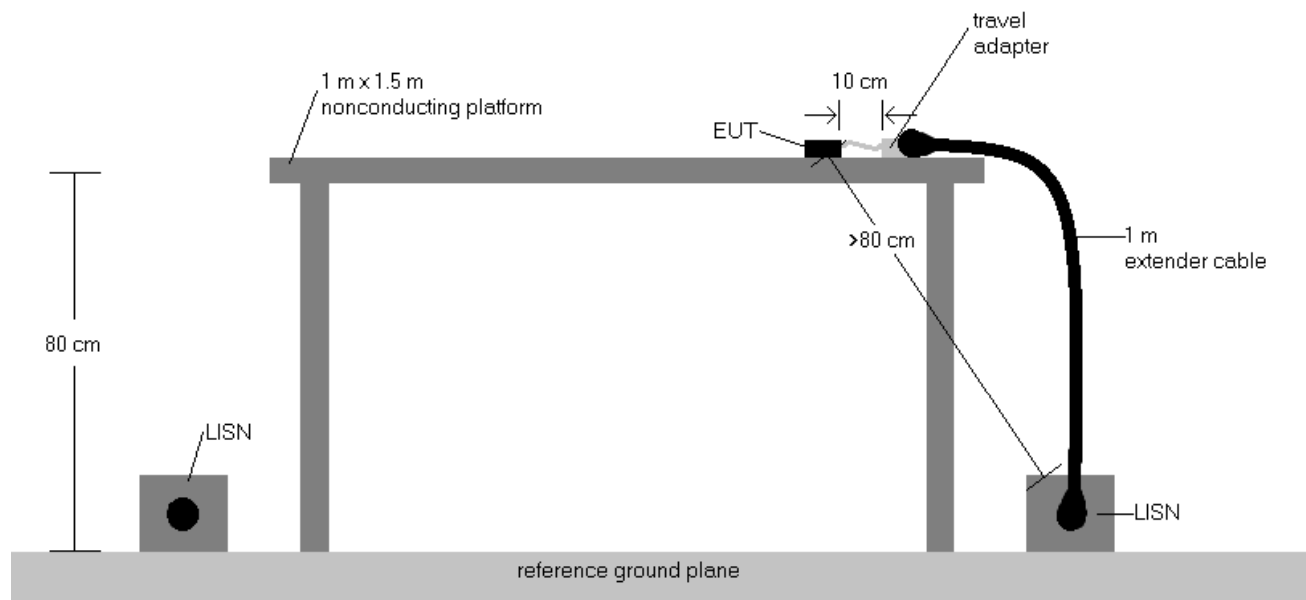


Figure 7-8. Test Instrument & Measurement Setup

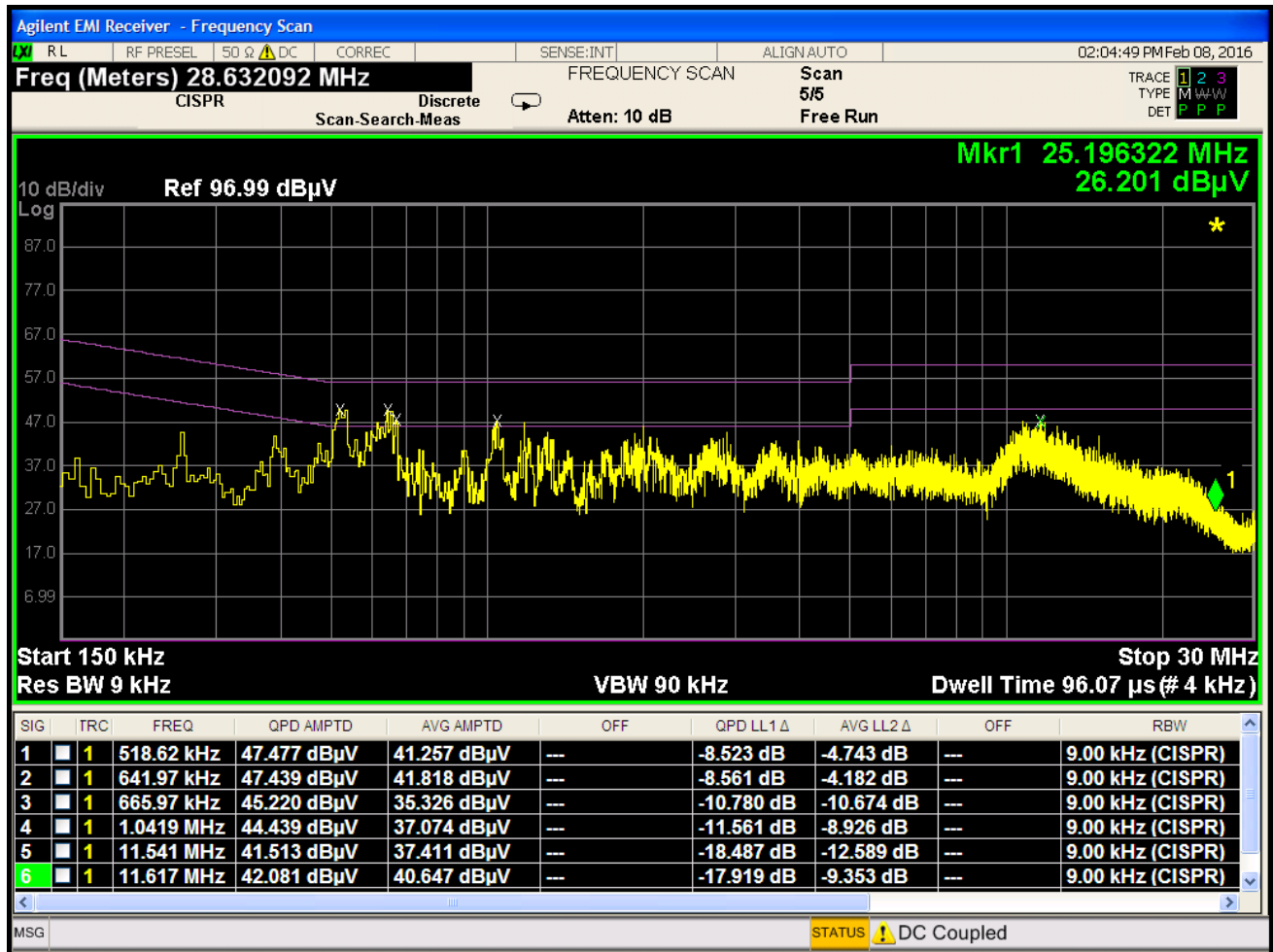
Test Notes

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.

FCC ID: A3LSCV33	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

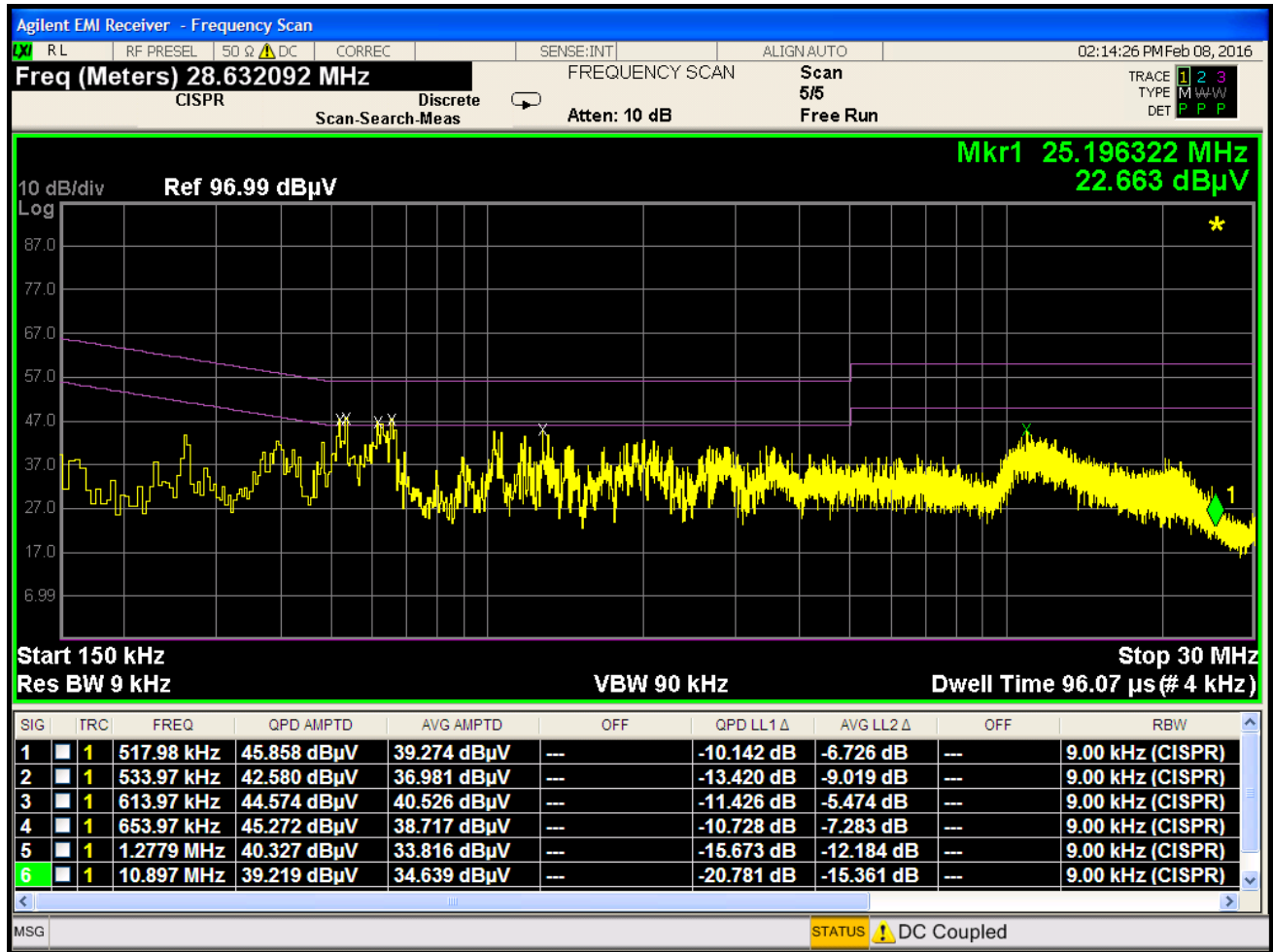


Plot 7-274. Line Conducted Plot with 802.11a UNII Band 1 (L1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 236 of 255

Line-Conducted Test Data

\$15.407

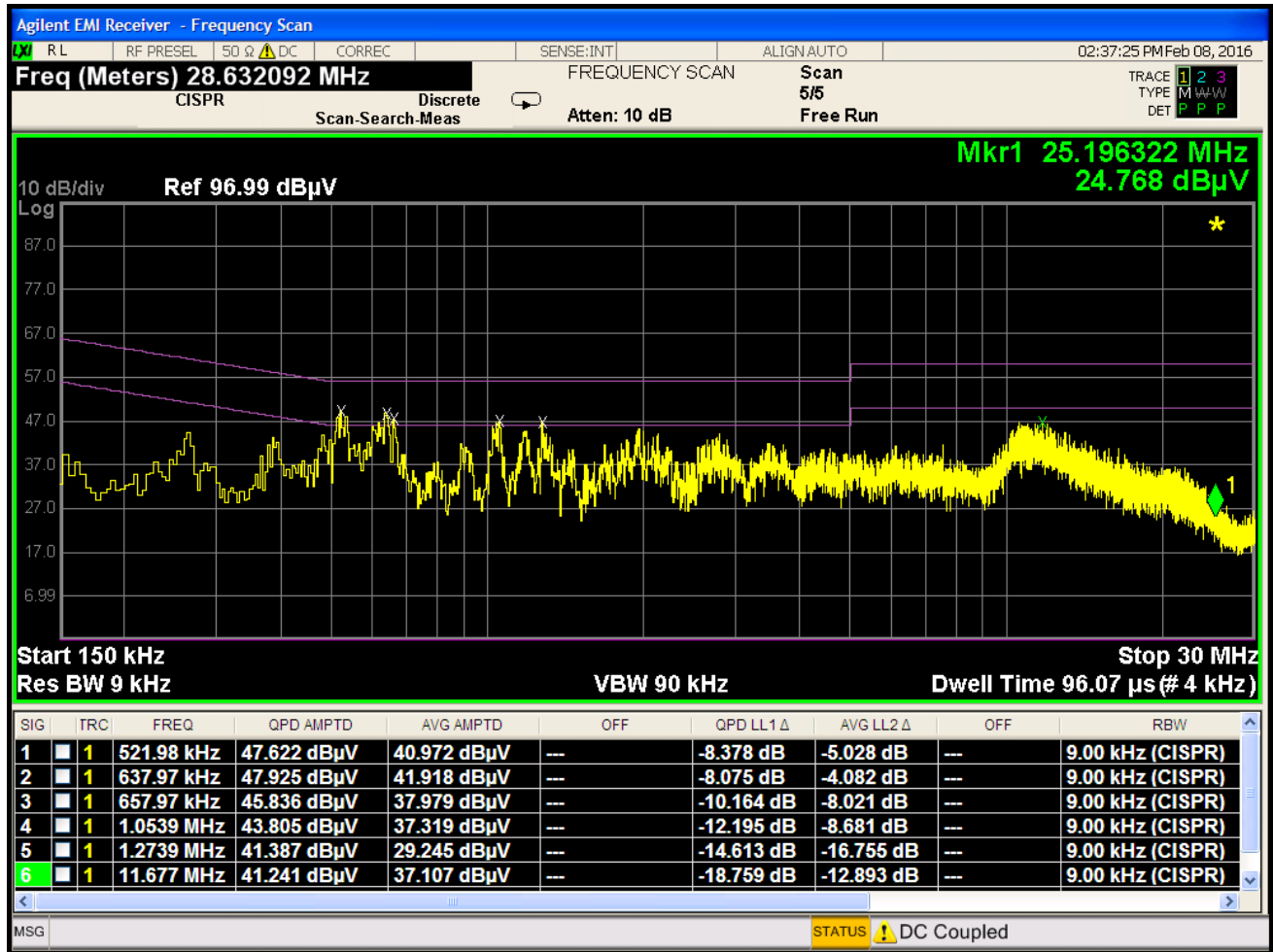


Plot 7-275. Line Conducted Plot with 802.11a UNII Band 1 (N)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 237 of 255

Line-Conducted Test Data

\$15.407

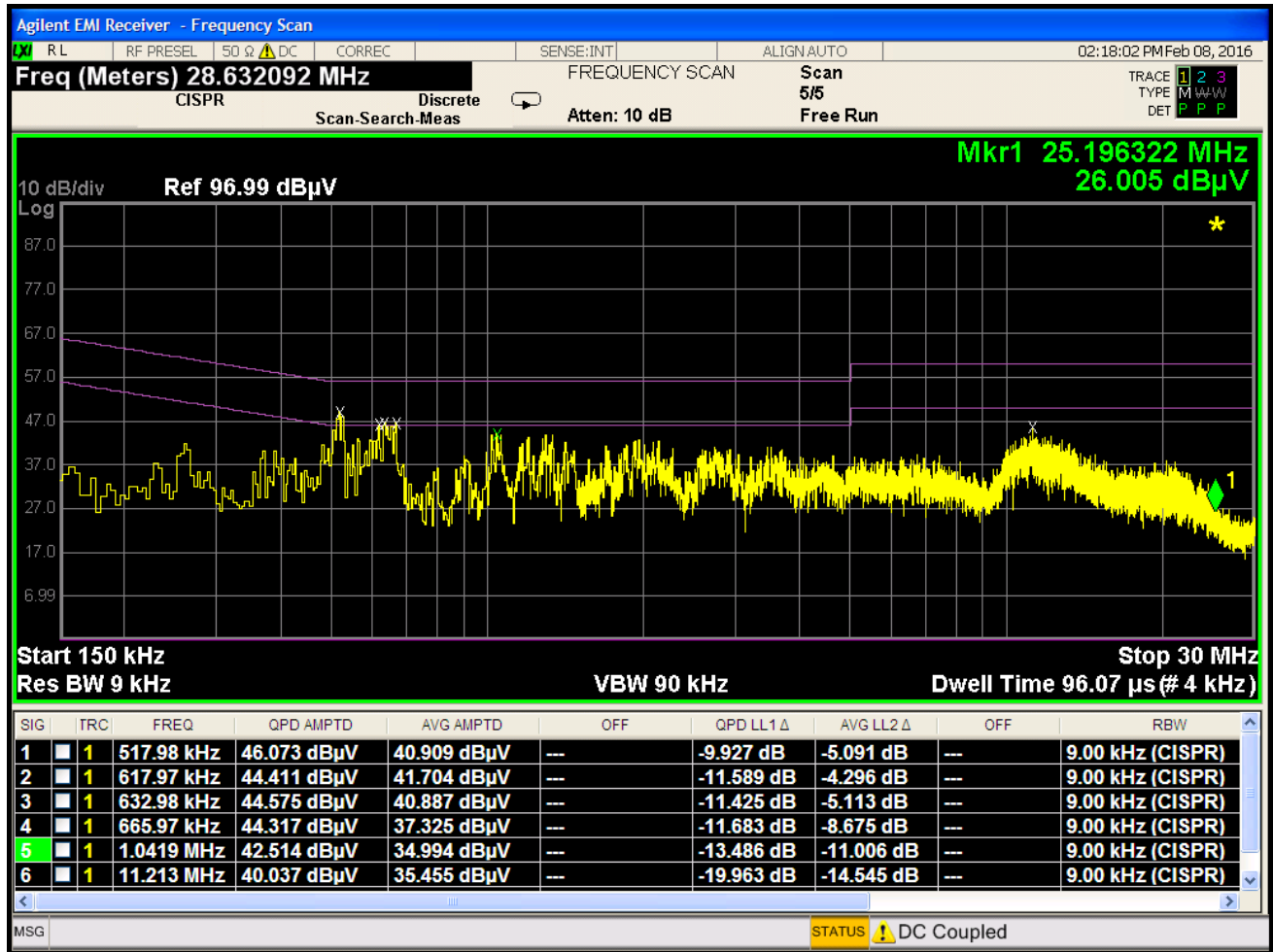


Plot 7-276. Line Conducted Plot with 802.11a UNII Band 2A (L1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 238 of 255

Line-Conducted Test Data

\$15.407

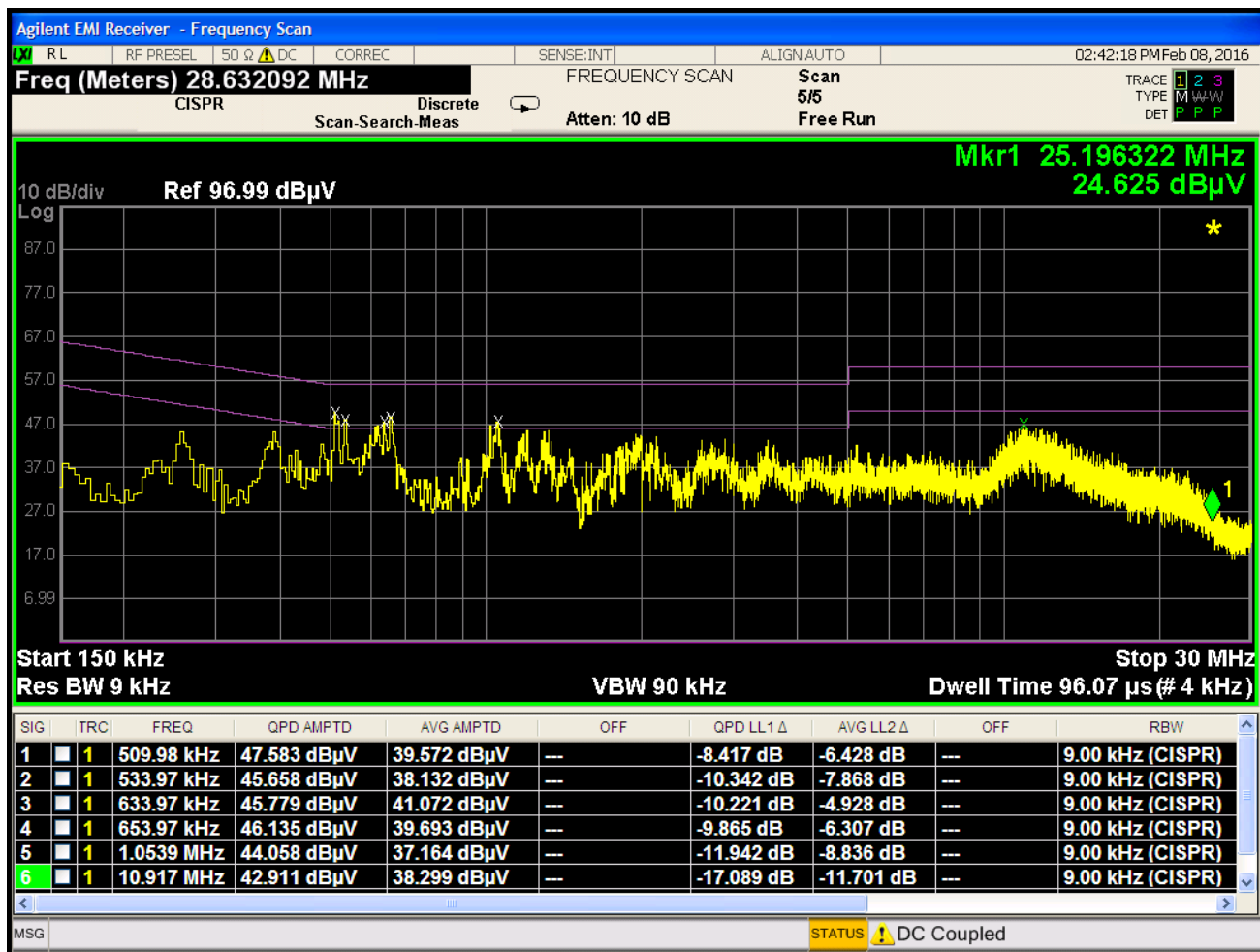


Plot 7-277. Line Conducted Plot with 802.11a UNII Band 2A (N)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 239 of 255

Line-Conducted Test Data

\$15.407

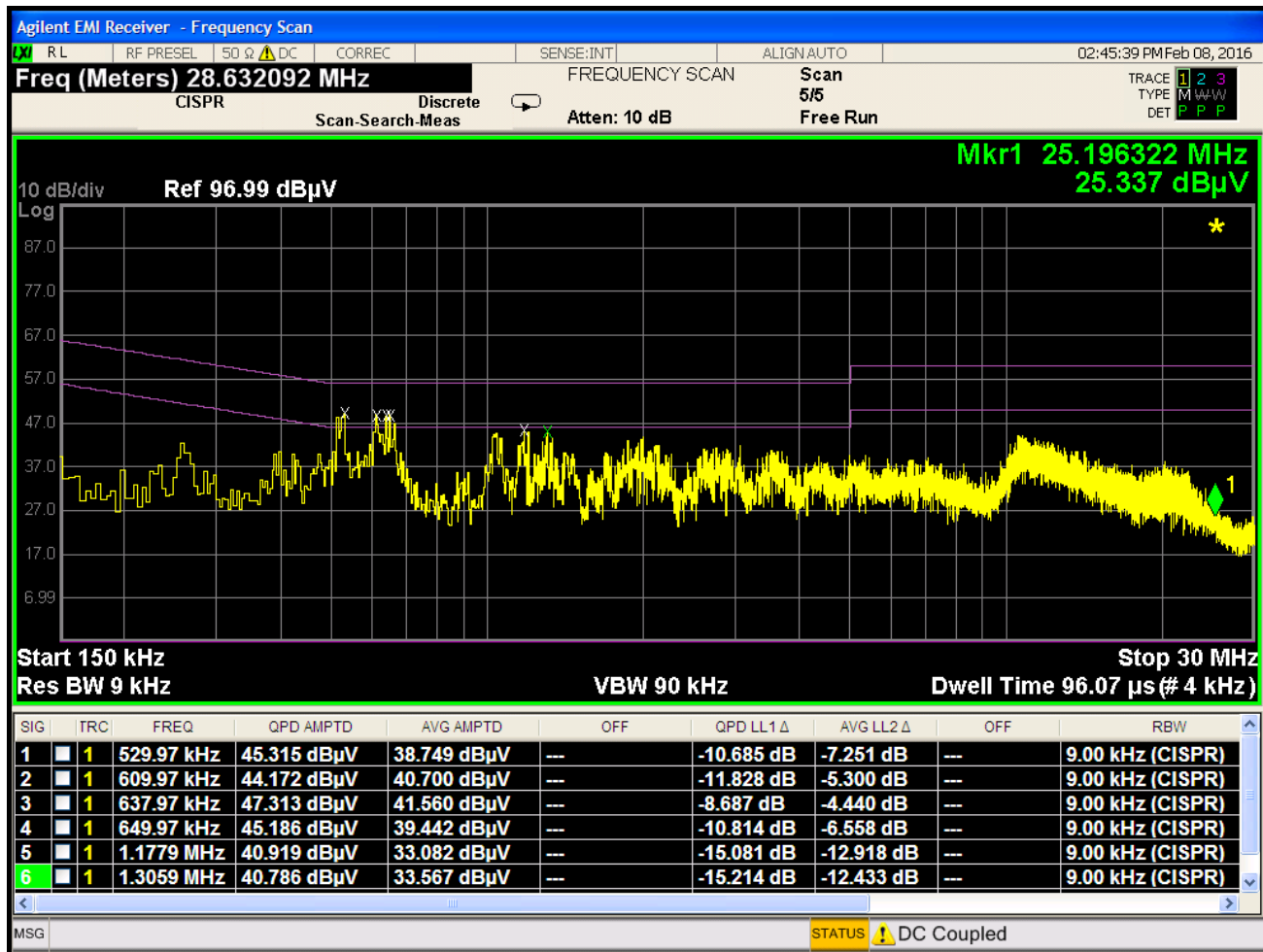


Plot 7-278. Line Conducted Plot with 802.11a UNII Band 2C (L1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 240 of 255

Line-Conducted Test Data

\$15.407

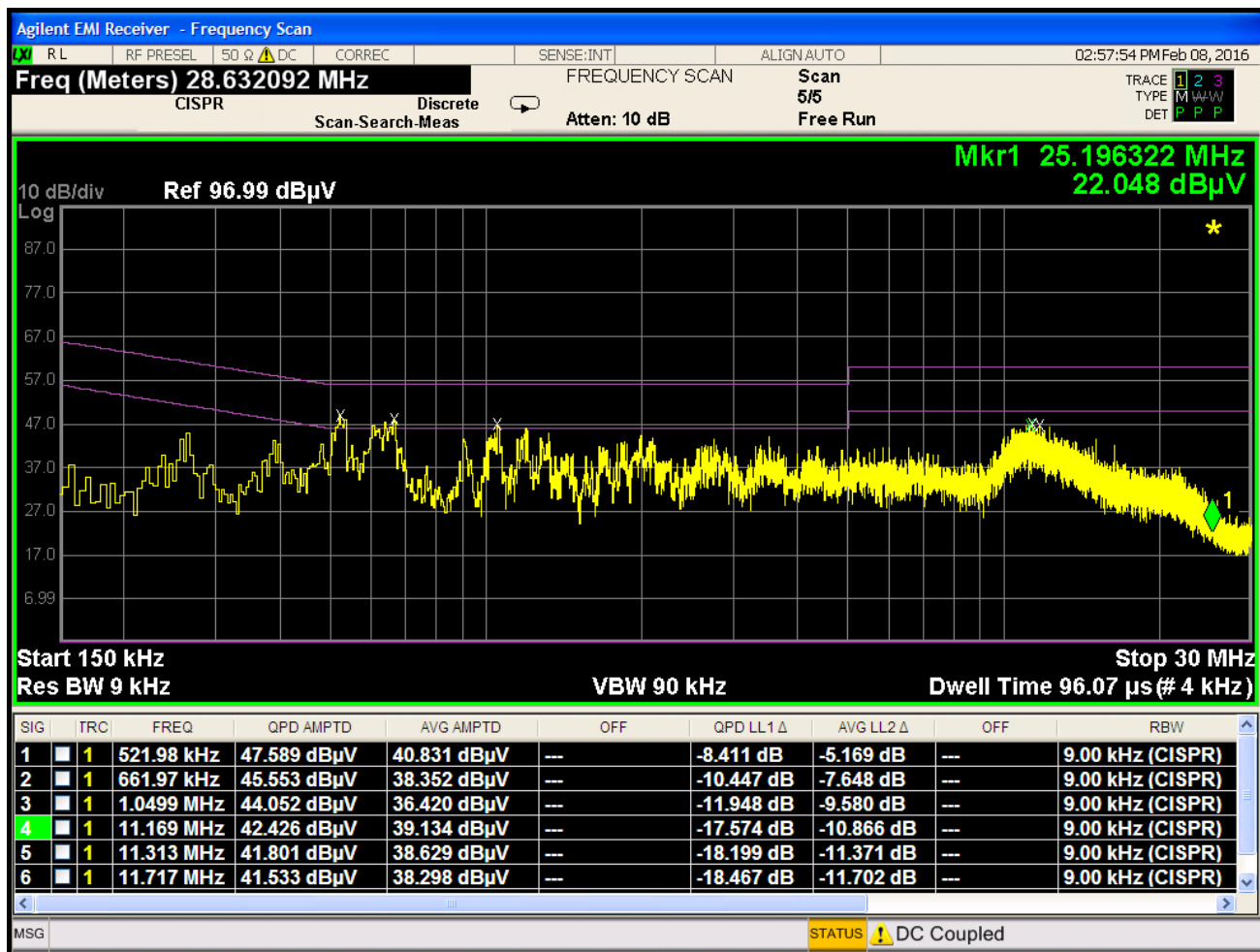


Plot 7-279. Line Conducted Plot with 802.11a UNII Band 2C (N)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 241 of 255

Line-Conducted Test Data

\$15.407

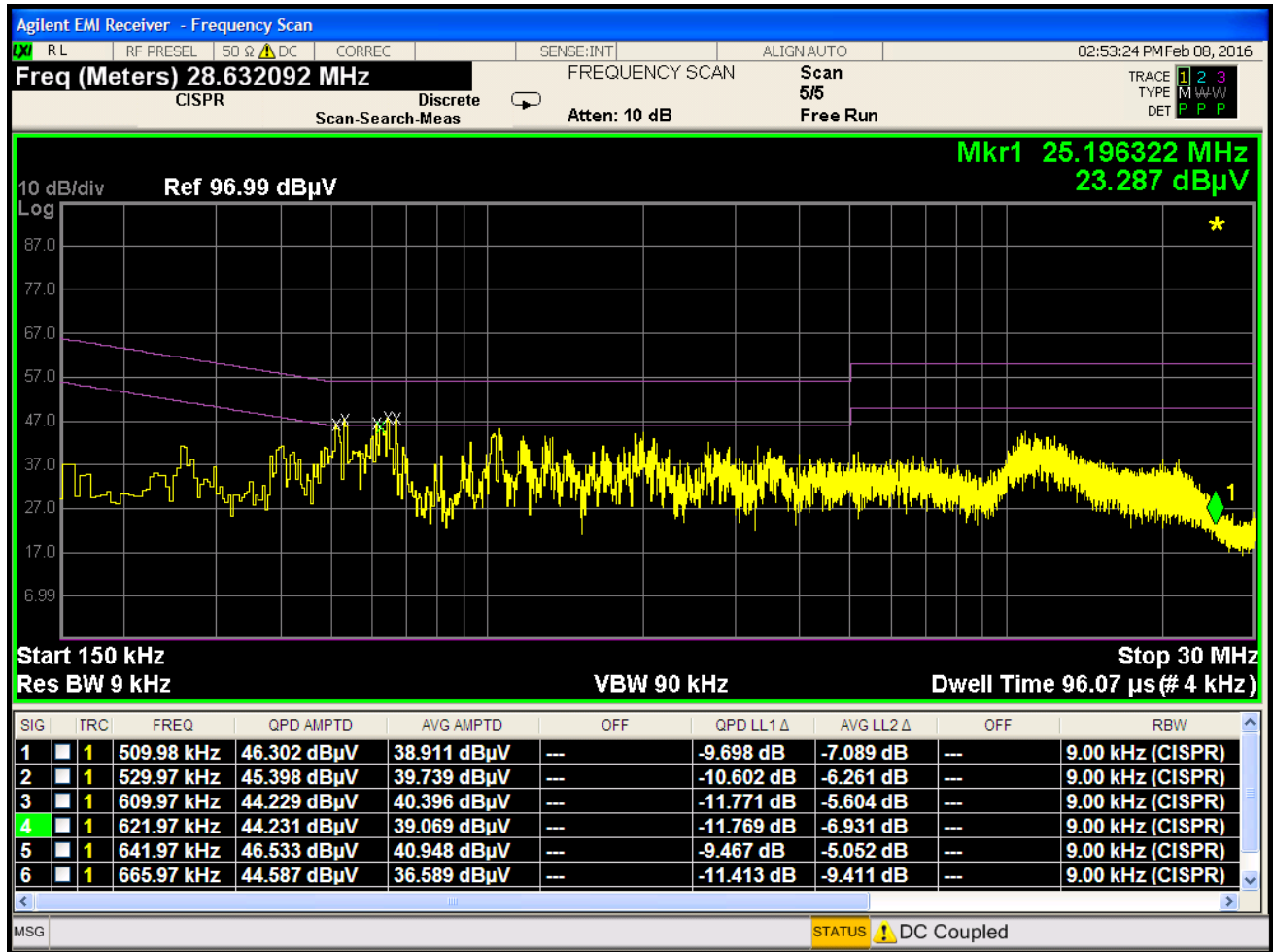


Plot 7-280. Line Conducted Plot with 802.11a UNII Band 3 (L1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 242 of 255

Line-Conducted Test Data

\$15.407



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

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 243 of 255

8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSCV33** is in compliance with Part 15E of the FCC Rules.

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset	Page 244 of 255	

APPENDIX A. 802.11A DUAL TX

A.1 Summary

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE (TX)					
15.407 (a.1)	Maximum Conducted Output Power	< 1W (30dBm) (All UNII Bands)	CONDUCTED	PASS	Section A.2
15.407 (a.1), (5)	Maximum Power Spectral Density	< 11 dBm/MHz (5150-5250MHz, 5250-5350MHz, 5470-5725MHz) < 30 dBm/500kHz (5725-5850MHz)		PASS	Section A.3
15.205, 15.407(b.1),(5),(6)	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209		PASS	Section A.4

Table A.1-1. Summary of Test Results

Notes:

- 1) This device employs dual transmission in 802.11a and 802.11g modes using Cyclic Delay Diversity. For all test cases, the device was set to transmit from both antennas simultaneously. The data in this section demonstrates compliance to the dual-transmission requirements specified in KDB 662911 v02r01.
- 2) All data found in this section is compiled from plots found in the main body of this test report.
- 3) Since this device is able to transmit the same data through both of its antennas in a given symbol period, then, by the definition specified in KDB 662911 v02r01 Section F)1), the transmission symbols are correlated.
- 4) Since two antennas are supported in this device and a minimum of $N_{ss} = 1$ antenna can operate at any given time, the maximum array gain for two correlated signals is $10\log_{10}(N_{ant}/N_{ss}) = 3\text{dBm}$ where N_{ss} is the number of spatial streams and N_{ant} is the total number of antennas.
- 5) For conducted spurious emissions, per KDB 662911 v02r01 Section E)3)b), the emissions on each individual output complied with its corresponding relative limit for that output, so additional testing was not required for dual transmission operation.

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A.2 Output Power Measurement

§15.247(b.3)

Test Overview

Using the “Measure and Sum” technique, the measured conducted power values were summed in linear power units then converted back to dBm.

Freq [MHz]	Channel	Detector	5GHz (20MHz) Conducted Power [dBm]		
			IEEE Transmission Mode		
			ANT1	ANT2	MIMO
5180	36	AVG	14.13	14.69	17.43
5200	40	AVG	14.75	14.60	17.69
5220	44	AVG	14.79	14.59	17.70
5240	48	AVG	14.78	14.63	17.72
5260	52	AVG	14.55	15.22	17.91
5280	56	AVG	14.58	15.17	17.90
5300	60	AVG	14.52	15.27	17.92
5320	64	AVG	13.90	14.55	17.25
5500	100	AVG	13.85	14.61	17.26
5520	104	AVG	15.00	15.12	18.07
5540	108	AVG	14.90	15.11	18.02
5560	112	AVG	15.01	14.97	18.00
5580	116	AVG	15.01	14.98	18.01
5600	120	AVG	14.91	14.90	17.92
5620	124	AVG	14.86	14.93	17.91
5640	128	AVG	15.10	14.92	18.02
5660	132	AVG	15.00	14.91	17.97
5680	136	AVG	15.10	14.82	17.97
5700	140	AVG	15.16	14.87	18.03
5720	144	AVG	15.23	14.76	18.01
5745	149	AVG	14.83	15.22	18.04
5765	153	AVG	14.65	15.19	17.94
5785	157	AVG	14.63	15.19	17.93
5805	161	AVG	14.57	15.12	17.86
5825	165	AVG	14.00	14.55	17.29

Table A2-1. Dual Tx 802.11a-mode Conducted Output Power Measurements

A.3 Power Spectral Density

§15.247(e)

Test Overview

Using the “Measure and Sum” technique, the measured conducted power density values were summed in linear power units then converted back to dBm. Original measured values are found in Section 7.5 of this report.

	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	5.18	11.0	-5.82	Pass
	5200	40	a	6	4.88	11.0	-6.12	Pass
	5240	48	a	6	4.95	11.0	-6.05	Pass
Band 2A	5260	52	a	6	4.64	11.0	-6.36	Pass
	5280	56	a	6	4.67	11.0	-6.34	Pass
	5320	64	a	6	4.84	11.0	-6.16	Pass
Band 2C	5500	100	a	6	5.73	11.0	-5.27	Pass
	5600	120	a	6	5.31	11.0	-5.69	Pass
	5720	144	a	6	4.95	11.0	-6.05	Pass
Band 3	5745	149	a	6	2.65	30.0	-27.36	Pass
	5785	157	a	6	2.51	30.0	-27.50	Pass
	5825	165	a	6	2.25	30.0	-27.75	Pass

Table A3-1. 802.11a Antenna-1 Conducted Power 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	4.85	11.0	-6.15	Pass
	5200	40	a	6	4.58	11.0	-6.42	Pass
	5240	48	a	6	4.65	11.0	-6.35	Pass
Band 2A	5260	52	a	6	5.41	11.0	-5.59	Pass
	5280	56	a	6	5.61	11.0	-5.39	Pass
	5320	64	a	6	5.57	11.0	-5.43	Pass
Band 2C	5500	100	a	6	5.84	11.0	-5.16	Pass
	5600	120	a	6	5.69	11.0	-5.31	Pass
	5720	144	a	6	5.14	11.0	-5.86	Pass
Band 3	5745	149	a	6	3.12	30.0	-26.88	Pass
	5785	157	a	6	3.21	30.0	-26.79	Pass
	5825	165	a	6	3.23	30.0	-26.77	Pass

Table A3-2. 802.11a Antenna-2 Conducted Power Density Measurements

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Antenn-1 Power Density [dBm]	Antenn-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density [dBm/MHz]	Margin [dB]	Pass / Fail
Band 1	5180	36	a	6	5.18	4.85	8.03	11.0	-2.97	Pass
	5200	40	a	6	4.88	4.58	7.75	11.0	-3.25	Pass
	5240	48	a	6	4.95	4.65	7.81	11.0	-3.19	Pass
Band 2A	5260	52	a	6	4.64	5.41	8.05	11.0	-2.95	Pass
	5280	56	a	6	4.67	5.61	8.18	11.0	-2.82	Pass
	5320	64	a	6	4.84	5.57	8.23	11.0	-2.77	Pass
Band 2C	5500	100	a	6	5.73	5.84	8.79	11.0	-2.21	Pass
	5600	120	a	6	5.31	5.69	8.51	11.0	-2.49	Pass
	5720	144	a	6	4.95	5.14	8.05	11.0	-2.95	Pass
Band 3	5745	149	a	6	2.65	3.12	5.90	30.0	-24.10	Pass
	5785	157	a	6	2.51	3.21	5.88	30.0	-24.12	Pass
	5825	165	a	6	2.25	3.23	5.78	30.0	-24.22	Pass

Table A3-3.802.11a Dual Tx Conducted Power Density Measurements

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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A.4 Dual Tx Radiated Restricted Band Edge Measurements

§15.205 §15.209

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting on both outputs in 802.11a mode.

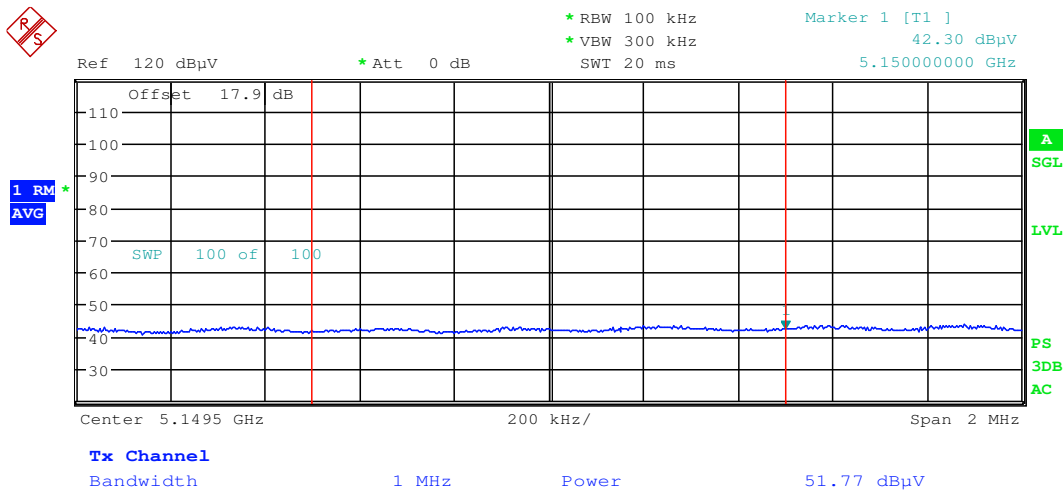
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



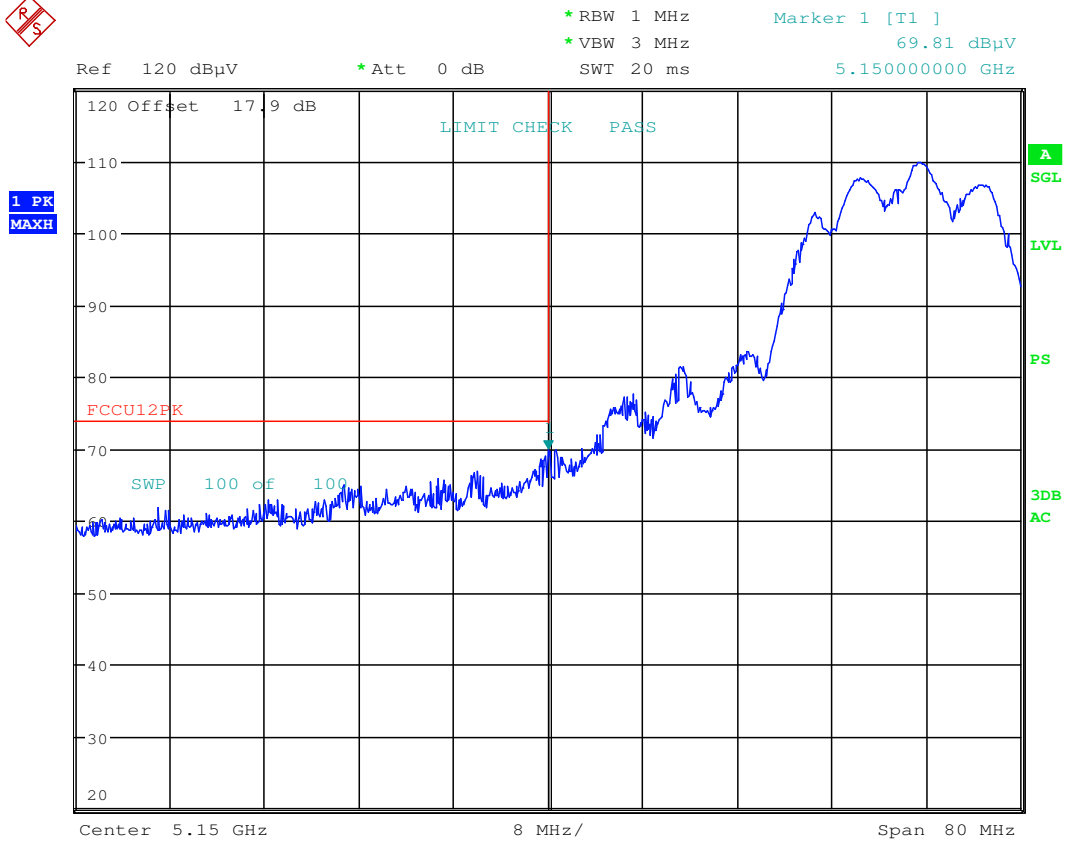
Date: 3.MAR.2016 16:09:52

Plot A.4-1. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSCV33		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Dual Tx Radiated Restricted Band Edge Measurements

§15.407(b.1)(b.2) §15.205 §15.209



Date: 3.MAR.2016 16:10:40

Plot A.4-2. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 250 of 255

Dual Tx Radiated Restricted Band Edge Measurements §15.407(b.1)(b.2) §15.205 §15.209

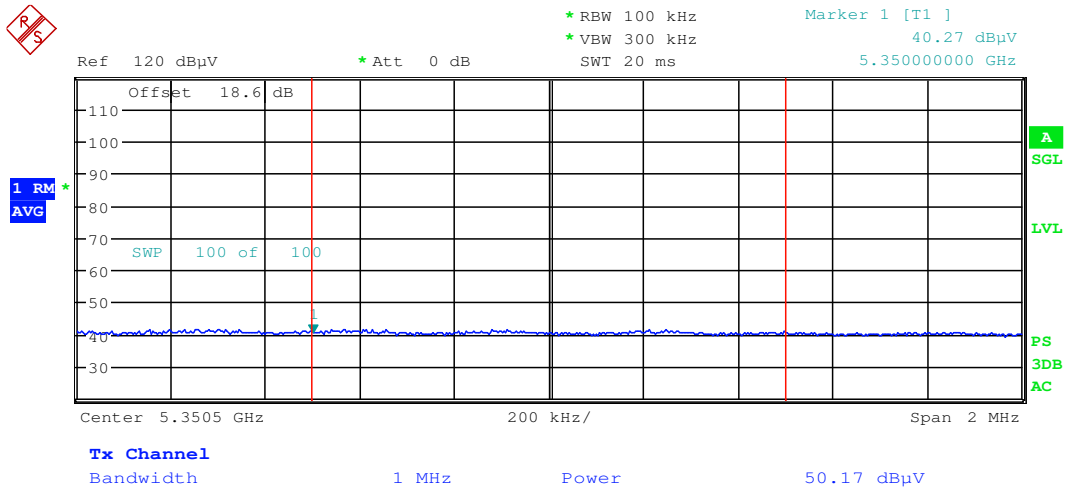
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64



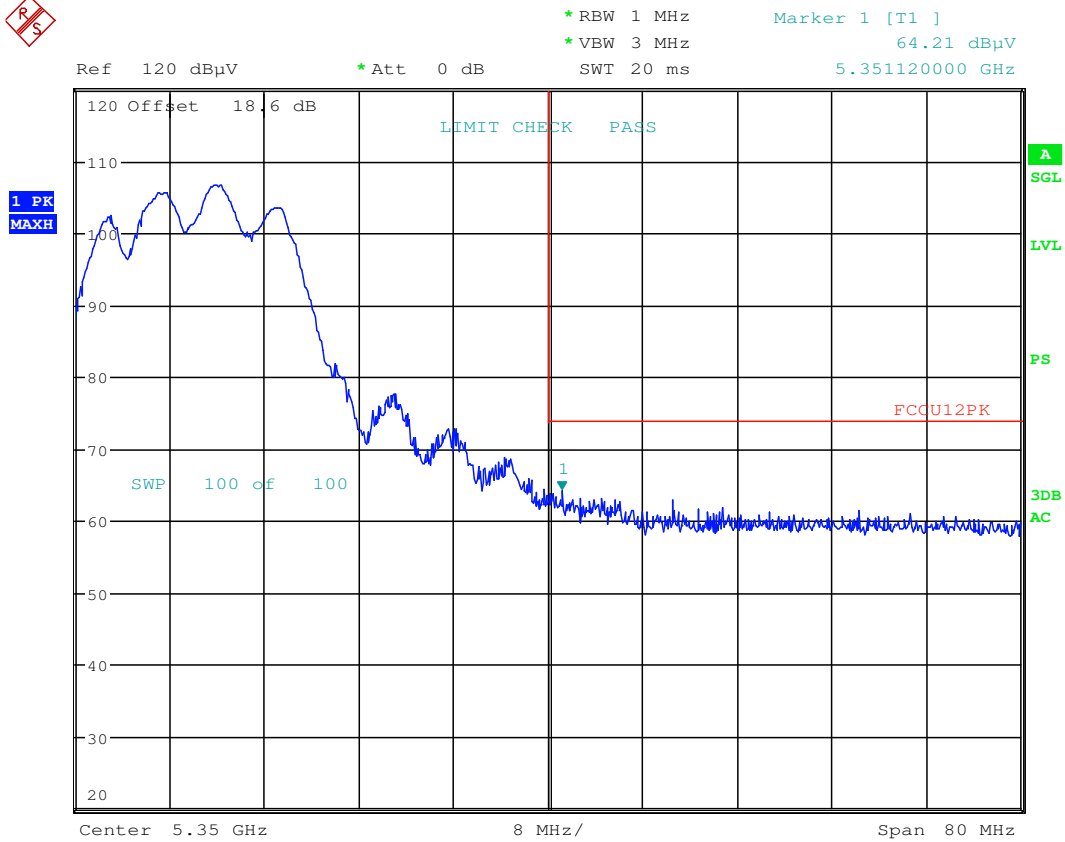
Date: 3.MAR.2016 16:27:16

Plot A.4-3. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 251 of 255

Dual Tx Radiated Restricted Band Edge Measurements

§15.407(b.1)(b.2) §15.205 §15.209



Date: 3.MAR.2016 16:28:09

Plot A.4-4. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 252 of 255

Dual Tx Radiated Restricted Band Edge Measurements

§15.407(b.1)(b.2) §15.205 §15.209

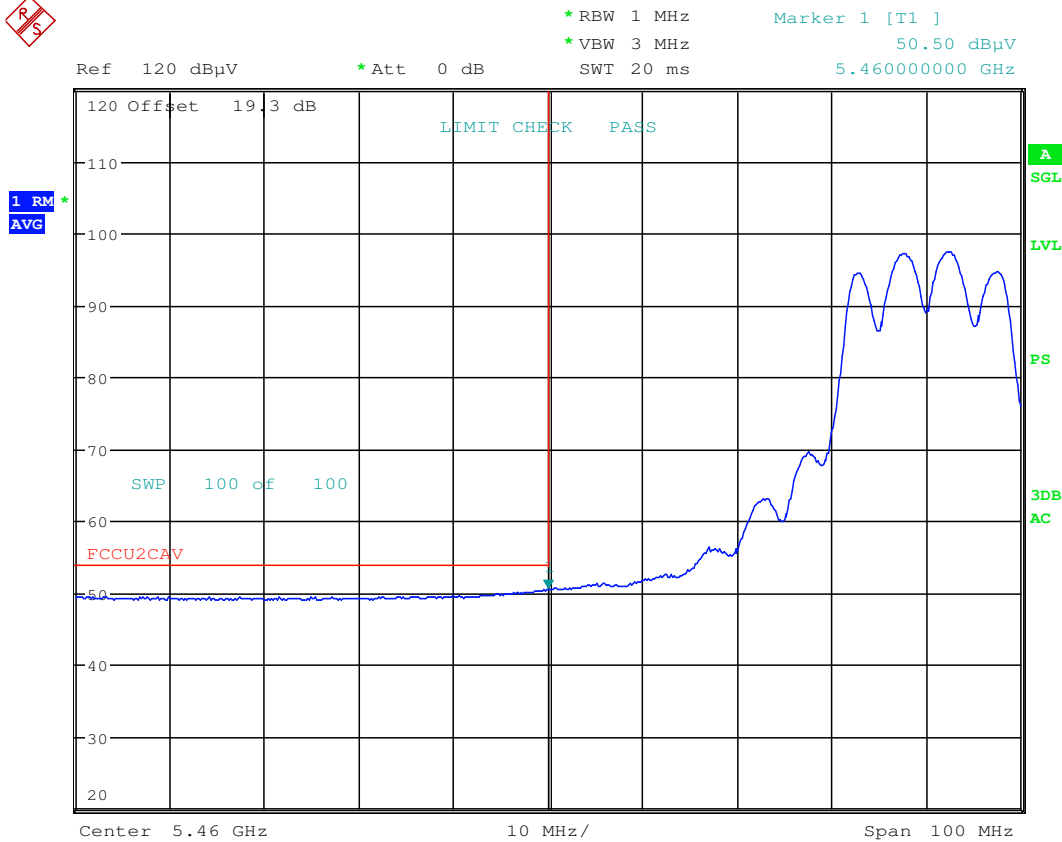
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100



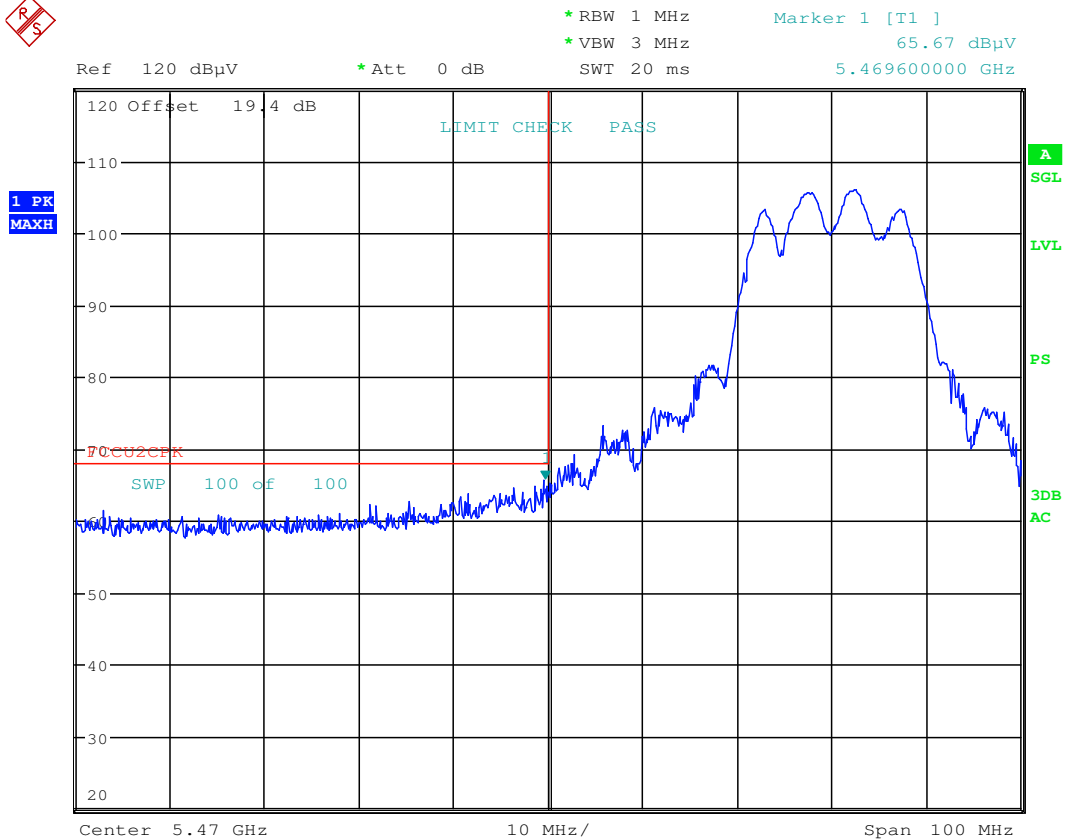
Date: 3.MAR.2016 16:59:00

Plot A.4-5. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 253 of 255

Dual Tx Radiated Restricted Band Edge Measurements

§15.407(b.1)(b.2) §15.205 §15.209



Date: 3.MAR.2016 16:56:08

Plot A.4-6. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 254 of 255

Dual Tx Radiated Restricted Band Edge Measurements

§15.407(b.1)(b.2) §15.205 §15.209

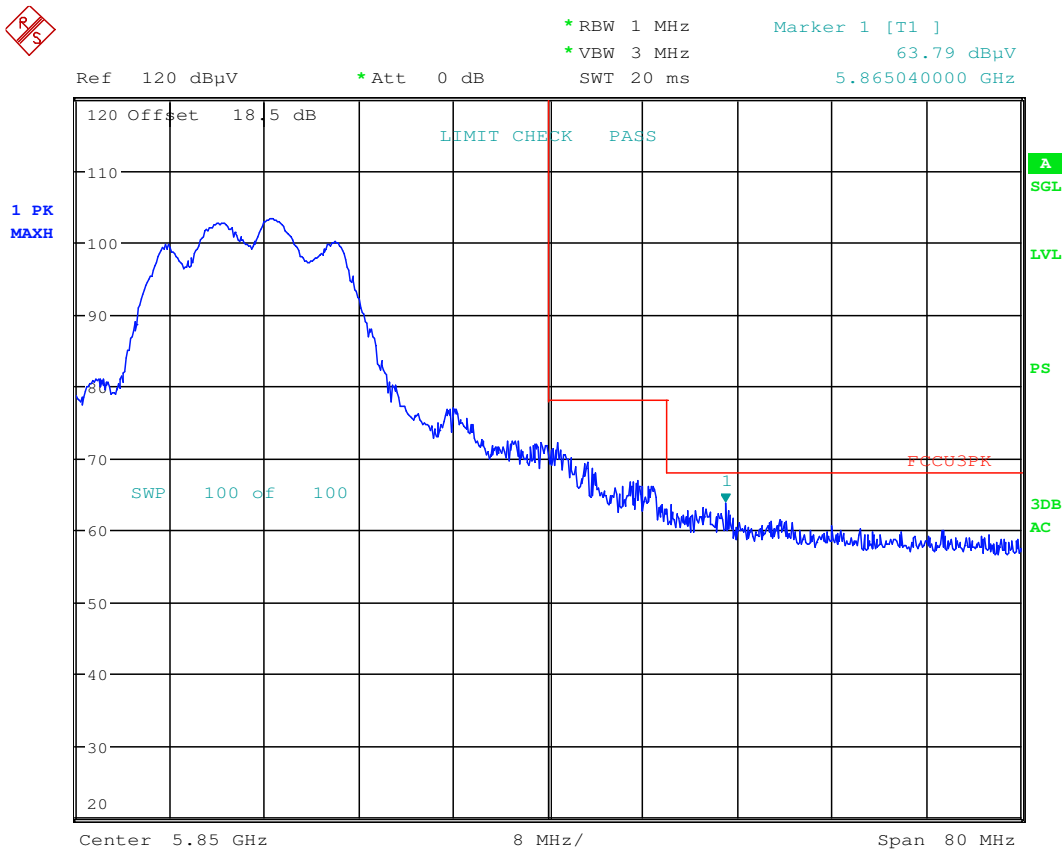
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5700MHz

Channel: 140



Date: 4.MAR.2016 17:25:13

Plot A.4-7. Radiated Upper Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSCV33	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: 0Y1601280197.A3L	Test Dates: 2/3 - 3/11/2016	EUT Type: Portable Handset		Page 255 of 255